



CATALOG NO. 37306-000

EDITION 2022

SUPERSEDES 37306-000 (2020)

ENGINE AND EV HOSES, BELTS AND ACCESSORIES

2022 PRODUCT CATALOG



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	DESCRIPTION	GATES SPEC	WHERE SOLD	SAE (OR OTHER) SPEC	COST (1 TO 5 SCALE)	PAGE
COOLANT	STRAIGHT					
	Standard coolant hose	4175EC (75W)	N America	20R1 EC Class D2	●●●○○	32
	Premium EPDM	4178	N America	20R1 EC Class D1	●●●○○	33
	Premium EPDM, aramid	4175SC (Blue Stripe)	N.A. & Europe	20R1 EC Class D1	●●●○○	34
	Higher temperature	4175HT (FleetRunner)	N America	20R1 EC HT Class D3	●●●○○	35
	Thick wall	4176HD (76W)	N America	20R1 Class D2, heavy wall	●●●○○	36
	Light duty, metric	4272 (Flexcord Plus)	Europe	20R4 Class D2, DIN 73422 Class B1	●●●○○	37
	Oil resistant	4169A	N America	20R1 Class B tube, Class C cover	●●●○○	38
	Oil resistant, thicker wall	4176Y	N America	20R1 Cl. B tube / C cover, heavy wall	●●●○○	39
	Oil resistant, thickest wall	4179G (Green Stripe)	N America	20R1 Cl. B tube / C cover, heavy wall	●●●○○	40
	Oil resistant cover only	4169G	N America	20R1 EC Class D1 tube, Class C cover	●●●○○	41
	Silicone	4171 (Durion)	N America	20R1 HT Class A	●●●○○	42
	Silicone	4171 (Durion Aramid)	N America	20R1 HT Class A	●●●○○	42
	Silicone	4171	N America	20R1 HT Class A	●●●○○	43
	Embedded wire helix	4685WG	N.A. & Europe	20R2 EC Class D1	●●●○○	44
	Oil resistant w/ wire helix	4684CF	N America	20R2 Class B tube / C cover, J2006	●●●○○	45
	Silicone w/ wire helix	4684S	N America	20R2 Class A	●●●○○	46
	Convolutions, set lengths	4254 (Vulco-Flex II)	N America	Similar to 20R5 Class D2	●●●○○	48
	Convolutions, ECR tube	4284 (Vulco-Flex Green Stripe)	N.A. & Europe	20R5 EC Class D2	●●●○○	50
	Hump connector	4177W	N.A. & Europe	20R1 Class B tube / C cover	●●●○○	47
	Silicone hump connector	4177S	N America	20R1 Class A	●●●○○	46
	STRAIGHT - SMALL ID					
	Standard heater hose	4230T	N.A. & Europe	20R3 Class D2 except hardness	●○○○○	54
	Light duty	3270 (Safety Stripe)	N America	Similar to 20R3 Class D2	●○○○○	54
	Wiper, overflow tube	4040A	N.A. & Europe	1037, 942B, J200 M4CA710	●○○○○	55
	Wiper, overflow hose	4251D	N America	Similar to SAE 20R3 Class D2	●○○○○	55
	Premium, with blue stripe	4230SB (Blue Stripe)	N.A. & Europe	20R3 EC Class D1	●○○○○	56
	Premium, with no stripe	4230RK	N America	20R3 EC Class D1	●○○○○	56
	Premium, with red stripe	4230RS (Red Stripe)	N America	20R3 EC Class D1	●○○○○	56
	Thick wall, aramid	3269S (Green Stripe)	N America	20R1 EC Class D1 except wall	●○○○○	57
	Metric sizes	3230 (EPDM)	Europe	DIN 73411 Class A except tolerance.	●○○○○	57
	Oil resistant	4230S / 4230SS	N.A. & Europe	20R3 Class B tube / C cover	●○○○○	58
	Silicone	3230 / 3231 (Europe)	N.A. & Europe	20R3 HT Class A	●○○○○	58
	Silicone tubing	4040T	N America	J200 M2GE 705 Z1	●○○○○	59
	FORMED					
	Standard curved hose	4280MH	N.A. & Europe	20R3 / 4 EC Class D1	●●○○○	64
	Non-ECR EPDM	4280GN	N.A. & Europe	20R3 / 4 Class D2	●●○○○	65
	Higher pressure, aramid	4276KR	N.A. & Europe	20R3 / 4 EC Class D1	●●○○○	66
	High-fatigue resistance	4256HY	N.A. & Europe	20R4 EC Class D1	●●○○○	67
	Premium EPDM, aramid	4256SB (Blue Stripe)	N.A. & Europe	20R3 / 4 EC Class D1	●●○○○	68
	Higher temp. p-EPDM	4256LS	N.A. & Europe	20R3 / 4 EC Class D3	●●○○○	69
SCR	SCR					
	DEF tank fill / vent	4217IS	N.A. & Europe	Similar to 20R3 / 4 EC Class D3	●●○○○	102
	DEF tank fill / vent	4256PC	N.A. & Europe	Similar to 20R3 / 4 EC Class D3	●●○○○	102
	Heated DEF line	4202 (Nylon)	N.A. & Europe	None	●●●●●	103
	Heated DEF line	4402 (EPDM)	N.A. & Europe	None	●●●●●	103
EXHAUST	EXHAUST					
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	Wet exhaust w/ helix	4686ME	N America	J2006 R2	●●●○○	107
	Oil resistant w/ wire helix	4684CF	N America	20R2 Class B tube / C cover	●●●○○	108
	Silicone tubing	4040T	N America	J200 M2GE 705 Z1	●○○○○	109
AIR	INLET AIR - STRAIGHT					
	(Use a coolant hose)	Connector	N.A. & Europe			-
	Duct w/ thin wall, helix	7768	N.A. & Europe	DOT FMVSS 302	●○○○○	112
	Oil resistant w/ helix	4663A (63SB)	N.A. & Europe	None	●●○○○	113
	Thicker wall w/ helix	4663J (163SB)	N America	None	●●○○○	114
	Thick wall w/ helix	4663G	N America	None	●●○○○	115
	INLET AIR - FORMED					
	Air cleaner hose	4289E	N.A. & Europe	J200 M3CA 707	●●○○○	116
	Oil resistant	4289N	N.A. & Europe	J200 M3BC 707	●●○○○	118
	TURBO AIR - STRAIGHT					
	Silicone CAC connector	4171H	N.A. & Europe	None	●●●○○	120
	Hump hose connector	4177W (Green Stripe) / 4177C	N.A. & Europe	20R1 Class B tube, Class C cover	●●●○○	121
	Silicone hump connector	4177S	N America	20R1 Class A	●●●○○	122
	Hump & ring connector	4177	N America	J200 Class A	●●●○○	123
	TURBO AIR - FORMED					
	Cold side CAC	4256NP	N.A. & Europe	20R4 Class D1 except wall	●●●○○	125
	Fatigue resistant CAC	4256PM	N.A. & Europe	20R4 Class D1 except wall	●●●○○	125
	Oil resistant CAC	4278AA	N.A. & Europe	20R4 Class D1 except wall	●●●○○	125
	Heat and Oil Resistant CAC	HM6060	N.A. & Europe	Fiat 9.02136/01 B3-0, J200 M5EE 708 G21 Z1 (Duro 60-75)	●●●○○	124

		WORKING PRESSURE RANGE		BURST PRESSURE RANGE		
GATES SPEC	CONSTRUCTION TUBE/ REINFORCEMENT/COVER	MPA (DEPENDS ON ID)	PSI (DEPENDS ON ID)	MPA (DEPENDS ON ID)	PSI (DEPENDS ON ID)	PAGE
STRAIGHT						
4175EC (75W)	EPDM / fabric plies / EPDM	0.08 to 0.95	12 to 138	0.34 to 3.79	50 to 550	32
4178	EPDM / fabric plies / EPDM	0.08 to 0.76	12 to 110	0.34 to 2.93	50 to 425	33
4175SC (Blue Stripe)	EPDM / fabric plies / EPDM	0.34 to 0.69	50 to 100	1.38 to 2.76	200 to 400	34
4175HT (FleetRunner)	p-EPDM / fabric / green p-EPDM	0.86 to 1.03	125 to 150	3.45 to 4.14	500 to 600	35
4176HD (76W)	EPDM / fabric plies / EPDM	0.26 to 1.21	38 to 175	1.03 to 4.83	150 to 700	36
4272 (Flexcord Plus)	EPDM / aramid yarn / EPDM	0.20 to 0.40	29 to 58	0.6 to 1.24	87 to 180	37
4169A	NBR / fabric plies / CR	0.07 to 1.03	10 to 150	0.34 to 4.14	50 to 600	38
4176Y	NBR / fabric plies / CR	0.17 to 0.95	25 to 138	0.69 to 3.79	100 to 550	39
4179G (Green Stripe)	NBR / fabric 4 plies / CR	0.28 to 0.69	40 to 100	1.10 to 2.76	160 to 400	40
4169G	EPDM / fabric plies / CR	0.13 to 0.95	19 to 138	0.52 to 3.79	75 to 550	41
4171 (Durion)	Red silicone / polyester	0.17 to 0.76	25 to 110	0.69 to 2.93	100 to 425	42
4171 (Durion Aramid)	Aramid / Blue silicone	0.17 to 0.52	25 to 75	0.69 to 2.07	100 to 300	42
4171	Red silicone / polyester / green silicone	0.14 to 0.76	20 to 110	0.55 to 2.93	80 to 425	43
4685WG	EPDM / fabric + wire / EPDM	0.10 to 0.69	15 to 100	0.52 to 2.76	75 to 400	44
4684CF	NBR / fabric + wire / CR	0.09 to 0.69	13 to 100	0.34 to 2.76	50 to 400	45
4684S	Silicone / fabric + wire / Silicone	0.23 to 0.59	33 to 85	0.90 to 2.41	130 to 350	46
4254 (Vulco-Flex II)	EPDM / fabric + wire / EPDM	0.14 to 0.21	20 to 30	0.55 to 0.83	80 to 120	48
4284 (Vulco-Flex Green Stripe)	EPDM / fabric + wire / EPDM + fabric	0.14 to 0.22	21 to 30	0.55 to 0.84	81 to 120	50
4177W	NBR / fabric plies / CR	0.17 to 0.47	25 to 69	0.69 to 1.90	100 to 275	47
4177S	plies of silicone and polyester	0.09 to 0.48	13 to 59	0.34 to 1.980	50 to 275	46
STRAIGHT - SMALL ID						
4230T	EPDM / spiral yarn / EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	54
3270 (Safety Stripe)	EPDM / spiral yarn / EPDM	0.31 to 0.41	45 to 60	1.21 to 1.72	175 to 250	54
4040A	Unreinforced EPDM	0.17	25	no rating	no rating	55
4251D	EPDM / yarn / EPDM	0.34	50	1.72	250	55
4230SB (Blue Stripe)	EPDM / aramid yarn / EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	56
4230RK	EPDM / aramid yarn / EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	56
4230RS (Red Stripe)	EPDM / aramid yarn / EPDM	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	56
3269S (Green Stripe)	EPDM / aramid yarn / EPDM	0.48 to 0.69	70 to 105	1.90 to 2.76	276 to 400	57
3230 (EPDM)	EPDM / aramid yarn / EPDM	0.40 to 0.50	58 to 73	1.0 to 1.2	145 to 174	57
4230S / 4230SS	NBR / yarn / CR	0.52	75	2.07	300	58
3230 / 3231 (Europe)	silicone / yarn / silicone	0.30 to 0.43	44 to 63	1.21 to 1.72	175 to 250	59
4040T	Unreinforced silicone	-0.085	-12.3	no rating	no rating	59
FORMED						
4280MH	EPDM / knit yarn / EPDM	0.07 to 0.43	10 to 63	0.27 to 1.72	40 to 250	64
4280GN	EPDM / knit yarn / EPDM	0.17 to 0.43	25 to 63	0.69 to 1.72	100 to 250	65
4276KR	EPDM / knit aramid yarn / EPDM	0.17 to 0.43	25 to 63	0.69 to 1.72	100 to 250	66
4256HY	EPDM / knit aramid yarn / EPDM	0.35 to 0.63	50 to 90	1.38 to 2.50	200 to 363	67
4256SB (Blue Stripe)	EPDM / knit aramid yarn / EPDM	0.12 to 0.43	18 to 63	0.48 to 1.72	70 to 250	68
4256LS	EPDM / knit aramid yarn / EPDM	0.17 to 0.26	25 to 38	0.69 to 1.03	100 to 150	69
SCR						
4217IS	p-EPDM / PET or aramid / EPDM	2.41	350	6.89	1000	102
4256PC	EPDM / knit aramid yarn / EPDM	0.17 to 0.26	25 to 38	0.69 to 1.03	100 to 150	102
4202 (Nylon)	Nylon tube, heat sleeve, J2044 ends	0.35	50	1.38	200	103
4402 (EPDM)	p-EPDM tube, heat sleeve, J2044 ends	0.35	50	1.38	200	103
EXHAUST						
3137ME	EPDM / 2 ply fabric / EPDM	0.69	100	2.07	300	106
4686ME	NBR / 2 ply fabric + 2 wire / CR	0.69	100	2.07	300	107
4684CF	NBR / fabric + wire / CR	0.09 to 0.69	13 to 100	0.34 to 2.76	50 to 400	108
4040T	Unreinforced silicone	-0.085	-12.3	no rating	no rating	109
INLET AIR - STRAIGHT						
Connector						-
7768	Propylene-ethylene / pp helix	0 to 0.07	0 to 10	no rating	no rating	112
4663A (63SB)	CR / fabric + 2 wire / CR + fabric	0.03 to 0.07	5 to 10	0.14 to 0.28	20 to 40	113
4663J (163SB)	CR / fabric + 2 wire / CR	0.06 to 0.14	8 to 20	0.22 to 0.55	32 to 80	114
4663G	CR / fabric + 2 wire / CR	0.07	10	0.28	40	115
INLET AIR - FORMED						
4289E	Unreinforced EPDM	no rating	no rating	no rating	no rating	116
4289N	Unreinforced CR	no rating	no rating	no rating	no rating	118
TURBO AIR - STRAIGHT						
4171H	silicone / high temp fabric / silicone	0.62 to 1.38	90 to 200	2.48 to 5.52	360 to 800	120
4177W (Green Stripe) / 4177C	NBR / fabric plies / CR	0.17 to 0.47	25 to 69	0.69 to 1.90	100 to 275	121
4177S	plies of silicone and polyester	0.09 to 0.48	13 to 69	0.34 to 1.90	50 to 275	122
4177	4 ply silicone and aramid	0.17	25	0.69	100	123
TURBO AIR - FORMED						
4256NP	EPDM / m-aramid knit yarn / EPDM	no rating	no rating	0.76	110	125
4256PM	EPDM / hybrid knit yarn / EPDM	no rating	no rating	0.93	135	125
4278AA	CPE / hybrid knit yarn / CPE	no rating	no rating	0.83 to 1.38	121 to 200	125
HM6060	AEM / aramid / AEM	no rating	no rating	0.60 to 1.00	87 to 147	124

	DESCRIPTION	GATES SPEC	WHERE SOLD	SAE (OR OTHER) SPEC	COST (1 TO 5 SCALE)	PAGE
FUEL	STRAIGHT					
	Standard fuel/oil hose	4219G / 4219XL	N.A. & Europe	30R6 or 30R7	●●○○○○	72
	Metric sizes	3225ST	Europe	30R, DIN 73379 ex. tolerance	●●○○○○	73
	Metric w/ textile cover	4324	Europe	DIN 73379	●●○○○○	74
	Lower fuel permeation	4219D	N America	30R9, 180 psi	●●●●○	74
	Higher pressure	3284AC / 3284SS (RLA 30R2)	N.A. & Europe	30R2 Type 1	●●○○○○	75
	Low permeation barrier	4219BG (Barricade)	N.A. & Europe	30R14 T1	●●○○○○	75
	Barrier, fuel injection	4219BF (Barricade Fuel Injection)	N.A. & Europe	30R14 T2 excl. kink resist., 1E4340A,B	●●●○○	78
	Diesel/biodiesel fuel injection	4219BD	N.A. & Europe	30R13 NT3, Cat 1E4340B	●●●○○	78
	Nylon tubing for diesel	4327DT	North America	J844, DOT FMVSS 106	●○○○○	79
	Submersible (in-tank)	4219	N.A. & Europe	30R10	●●●●●	79
	Marine fuel and oil hose	4219M	North America	J1527, USCG Type A1	●●●●○	80
	Marine outdoor fuel line	4219N	North America	J1527, USCG Type B1	●●○○○○	80
	Marine barrier fuel hose	4219BM (Barricade Marine)	North America	J1527, USCG Type A1-15	●●●●○	81
	Marine high pressure	3658F (C5M)	North America	J1527, USCG Type A1	●●●●○	81
OIL	Fuel filler w/ wire helix	4663K	N.A. & Europe	30R5 Class B tube / C cover	●●●●○	82
	FORMED					
	Biodiesel fill and vent	4278BD	N.A. & Europe	30R6 with exceptions	●●●●○	83
	STRAIGHT					
	Fiber braid reinforced	3319HT (GTH)	N.A. & Europe	100R6	●●○○○○	88
	Two fiber braids	3319CA (G3H)	N.A. & Europe	100R3	●●○○○○	88
	Transmission oil cooler	4219HT	North America	1532 Type B	●●○○○○	89
	High temperature w/ wire	3658D (C5D)	North America	J1402, DOT FMVSS-106	●●●○○	89
	High temp. and pressure	3658BC (C5C XH)	N.A. & Europe	100R5, DOT FMVSS-106	●●●○○	90
	High temp. true bore	4319 (MegaTech LOC)	North America	None	●●○○○○	91
	High temperature w/ wire	4657AM (MegaTech 250)	North America	None	●●○○○○	91
	High temp., wire, large ID	4657DT (MegaTech 500)	N.A. & Europe	None	●●○○○○	92
	High temp. and pressure	4657PS (MegaTech 3000)	North America	None	●●○○○○	92
	High pressure large ID	4657JT (MegaTech II)	North America	100R2 and 100R2 Type S	●●●○○	93
	High pressure true bore	4657TB (MegaTech G5TB)	North America	None	●●○○○○	93
A/C	POWER STEERING - STRAIGHT					
	Pressure line	3317LE (PS188)	N.A. & Europe	J2050 Type 1	●●●○○	94
	High temp return	3283LF	North America	J189, J2076	●●○○○	95
	Return line	3283SA	North America	J189	●●○○○	95
	FORMED					
	Standard oil fill / suction	4278CN	N.A. & Europe	30R6 (or 30R7 excl. sour gas test)	●●●○○	97
	Higher pressure	4278OB	N.A. & Europe	30R2 Type 1 (except burst)	●●●○○	98
	POWER STEERING - FORMED					
	Higher temperature	4278SS	N.A. & Europe	J200 M5DE 710 B15 E036	●●●○○	99
	REFRIGERANT					
	Air Conditioning - thin wall	3353 (PolarSeal II)	N.A. & Europe	J3062 Type C Class I, J51, J2064	●●●○○	128
	Air Conditioning hose	3353 (PolarSeal)	N America	J3062 Type C Class II, J51, J2064	●●●○○	129
BRAKE	STRAIGHT					
	Standard air brake	3245E	N America	J1402, DOT FMVSS-106	●●○○○○	132
	Arctic air brake	3245T	N America	J1402, DOT FMVSS-106	●●○○○○	132
	Higher pressure	3658C (C5C)	N. America	J1402, DOT FMVSS 106, SAE 100R5	●●○○○○	133
	Higher temperature	4657AB (TR500)	N.A. & Europe	J1402, DOT FMVSS 106	●●○○○○	133
	Higher pressure, temp.	3658E (C5E)	N America	J1402, DOT FMVSS 106	●●●○○	134
	Higher pressure, temp.	4657DT (MegaTech 1000)	N.A. & Europe	J1402, DOT FMVSS-106	●●○○○○	134
	High temperature	7752 (C14)	N America	None	●●●●●	135
	Light duty	3276	N America	J1403 type L, DOT FMVSS 106VL	●●○○○○	135
	Nylon air brake tubing	4327 (NABT)	N America	J844, DOT FMVSS-106-74	●○○○○	136

		WORKING PRESSURE RANGE		BURST PRESSURE RANGE		
GATES SPEC	TUBE/REINFORCEMENT/COVER	MPA (DEPENDS ON ID)	PSI (DEPENDS ON ID)	MPA (DEPENDS ON ID)	PSI (DEPENDS ON ID)	PAGE
STRAIGHT						
4219G / 4219XL	NBR / spiral yarn / NBR-PVC	0.24 to 0.34	35 to 50	1.21 to 1.72	175 to 250	72
3225ST	NBR / spiral polyester / NBR+PVC	0.76	110	3.03	440	73
4324	ECO / HNBR or NBR+PVC, rayon	0.6	0.87	2.4	348	74
4219D	FKM+CPE / polyester braid / CPE	1.24	180	6.2	900	74
3284AC / 3284SS (RLA 30R2)	NBR / braided yarn / NBR+PVC	1.10 to 1.72	160 to 250	4.41 to 6.89	640 to 1000	75
4219BG (Barricade)	NBR+plastic / polyester / NBR+PVC	0.24 to 0.34	35 to 50	1.21 to 1.72	175 to 250	75
4219BF (Barricade Fuel Injection)	HNBR+plastic / aramid / CPE	1.55	225	7.76	1125	78
4219BD	HNBR / aramid / CPE	1.21	175	7.2	1050	78
4327DT	Nylon / nylon fiber / nylon	1.03	150	3.45	500	79
4219	FKM / aramid / FKM	0.69	100	2.8 to 3.4	400 to 500	79
4219M	NBR / high tensile fabric / CR	0.28	40	1.38	200	80
4219N	NBR / high tensile fabric / NBR+PVC	0.28	40	1.38	200	80
4219BM (Barricade Marine)	NBR+plastic / poly / NBR+PVC or CSM	0.24	35	1	140	81
3658F (C5M)	NBR / wire braid / NBR-PVC	3.45	500	13.79	2000	81
4663K	NBR / fabric + wire / CR+fabric	0.14	20	0.62	90	82
FORMED						
4278BD	ECO / knit / ECO	0.11	16	0.55	80	83
STRAIGHT						
3319HT (GTH)	NBR / yarn / NBR-PVC	1.72 to 3.45	250 to 500	6.89 to 13.79	1000 to 2000	88
3319CA (G3H)	NBR / yarn / NBR-PVC	2.07 to 8.62	300 to 1250	8.27 to 34.47	1200 to 5000	88
4219HT	NBR / yarn / CR	0.41	60	4.14	600	89
3658D (C5D)	CPE / wire braid / CPE+green textile	2.76 to 10.34	400 to 1500	11.03 to 41.37	1600 to 6000	89
3658BC (C5C XH)	CPE / wire braid / CPE	4.31 to 20.68	625 to 3000	17.24 to 82.74	2500 to 12000	90
4319 (MegaTech LOC)	CPE / yarn / CPE+textile	2.07	300	8.27	1200	91
4657AM (MegaTech 250)	CPE / wire braid / rubber+PET braid	1.72	250	6.89	1000	91
4657DT (MegaTech 500)	CPE / steel braid / rubber+PET braid	3.45	500	13.79	2000	92
4657PS (MegaTech 3000)	CPE / wire braid / rubber+PET braid	20.68	3000	82.74	12000	92
4657JT (MegaTech II)	CPE / 2 wire braid / blue PET braid	8.96 to 15.51	1300 to 2250	35.85 to 62.05	5200 to 9000	93
4657TB (MegaTech G5TB)	CPE / 2 wire braid / rubber+PET braid	3.45 to 20.68	500 to 3000	13.79 to 82.74	2000 to 12000	93
POWER STEERING - STRAIGHT						
3317LE (PS188)	CSM / 2 ply nylon / CSM	10.34	1500	41.37	6000	94
3283SA	NBR / yarn / CR	1.38 to 1.72	200 to 250	5.52 to 6.89	800 to 1000	95
3283LF	CPE / yarn / CPE	1.72	250	12.41	1800	95
FORMED						
4278CN	NBR / knit yarn / NBR-PVC	0.11 to 0.34	16 to 50	0.55 to 1.72	80 to 250	97
4278OB	NBR / knit aramid yarn / NBR-PVC	0.28 to 0.34	40 to 100	1.38 to 1.72	200 to 500	98
POWER STEERING - FORMED						
4278SS	p-CPE / knit yarn / p-CPE	0.15 to 0.24	22 to 35	0.76 to 1.20	110 to 174	98
REFRIGERANT						
3353 (PolarSeal II)	CR / PA / CR / Spiral PET / IIR	2.41	350	9.65	1400	128
3353 (PolarSeal)	CPE / nylon barrier / spiral PET / EPDM	3.45	500	13.79	2000	129
STRAIGHT						
3245E	EPDM / spiral yarn / EPDM	1.55	225	6.21	900	132
3245T	CR / fabric / CR	0.59	85	6.21	900	132
3658C (C5C)	CR / fabric+steel braid / NBR+PET braid	10.34 to 20.68	1500 to 3000	41.37 to 82.74	6000 to 12000	133
4657AB (TR500)	NBR / steel braid / rubber+PET braid	3.45	500	13.79	2000	133
3658E (C5E)	NBR / fabric+steel braid / NBR+PET braid	5.17 to 10.34	750 to 1500	20.68 to 41.37	3000 to 6000	134
4657DT (MegaTech 1000)	CPE / steel braid / rubber+PET braid	6.89	1000	27.58	4000	134
7752 (C14)	PTFE / stainless steel braid	6.89 to 10.34	1000 to 1500	27.58 to 41.37	4000 to 6000	135
3276	EPDM / fabric plies / EPDM	-0.088 to 0.34	-12.8 to 50	2.41	350	135
4327 (NABT)	Nylon / nylon fiber / nylon	1.03	150	4.41 to 7.72	640 to 1120	136

		TEMPERATURE RANGE		FAHRENHEIT TEMPERATURE RANGE																
DESCRIPTION		GATES SPEC	°C	°F	-70	-65	-51	-40	<-- MIN MAX-->	200	212	250	257	275	302	347	400	450	500	PAGE
COOLANT	COOLANT - STRAIGHT																			
	Standard coolant hose	4175EC (75W)	-40 to +125	-40 to +257																32
	Premium EPDM	4178	-40 to +125	-40 to +257																33
	Premium EPDM, aramid	4175SC (Blue Stripe)	-40 to +125	-40 to +257																34
	Higher temperature	4175HT (FleetRunner)	-40 to +149	-40 to +300																35
	Thick wall	4176HD (76W)	-40 to +125	-40 to +257																36
	Light duty, metric	4272 (Flexcord Plus)	-40 to +135	-40 to +275																37
	Oil resistant	4169A	-40 to +100	-40 to +212																38
	Oil resistant, thicker wall	4176Y	-40 to +100	-40 to +212																39
	Oil resistant, thickest wall	4179G (Green Stripe)	-40 to +100	-40 to +212																40
	Oil resistant cover only	4169G	-40 to +125	-40 to +257																41
	Silicone	4171 (Durion)	-54 to +175	-65 to +347																42
	Silicone	4171 (Durion aramid)	-54 to +260	-65 to +500																42
	Silicone	4171	-54 to +175	-65 to +347																43
	Embedded wire helix	4685WG	-40 to +125	-40 to +257																44
	Oil resistant w/ wire helix	4684CF	-40 to +125	-40 to +212																45
	Silicone w/ wire helix	4684S	-57 to +175	-70 to +347																46
	Convolutions, set lengths	4254 (Vulco-Flex)	-40 to +125	-40 to +257																48
	Convolutions, ECR tube	4284 (Vulco-Flex)	-40 to +100	-40 to +212																50
	Hump connector	4177W	-40 to +100	-40 to +212																47
	Silicone hump connector	4177S	-46 to +177	-51 to +350																46
	COOLANT-STRAIGHT; SMALL ID																			
	Standard heater hose	4230T	-40 to +125	-40 to +257																54
	Light duty	3270 (Safety Stripe)	-40 to +125	-40 to +257																55
	Wiper, overflow tube	4040A	-40 to +125	-40 to +257																55
	Wiper, overflow hose	4251D	-40 to +125	-40 to +257																56
	Premium, with blue stripe	4230SB (Blue Stripe)	-40 to +150	-40 to +302																56
	Premium, with no stripe	4230RK	-40 to +150	-40 to +302																56
Premium, with red stripe	4230RS (Red Stripe)	-40 to +150	-40 to +302																56	
Thick wall, aramid	3269S (Green Stripe)	-40 to +135	-40 to +275																57	
Metric sizes	3230 (EPDM)	-46 to +100	-51 to +212																57	
Oil resistant	4230S	-40 to +100	-40 to +212																58	
Silicone	3230 / 3231 (Europe)	-54 to +177	-65 to +350																58	
Silicone tubing	4040T	-40 to +204	-40 to +400																59	
COOLANT - FORMED																				
Standard curved hose	4280MH	-40 to +125	-40 to +257																64	
Non-ECR EPDM	4280GN	-40 to +125	-40 to +257																65	
Higher pressure, aramid	4276KR	-40 to +125	-40 to +257																66	
High-fatigue resistance	4256HY	-40 to +125	-40 to +257																67	
Premium EPDM, aramid	4256SB (Blue Stripe)	-40 to +125	-40 to +257																68	
Higher temp. p-EPDM	4256LS	-40 to +150	-40 to +302																69	
SCR	SCR HOSE																			
	DEF tank fill / vent	4217IS	-40 to +125	-40 to +257																102
	DEF tank fill / vent	4256PC	-40 to +150	-40 to +302																102
	Heated DEF line	4202 (Nylon)	-40 to +125	-40 to +257																103
	Heated DEF line	4402 (EPDM)	-40 to +150	-40 to +302																103
EXHAUST	EXHAUST																			
	Marine wet exhaust	3137ME	-40 to +125	-40 to +257																106
	Wet exhaust w/ helix	4686ME	-40 to +125	-40 to +257																107
	Oil resistant w/ wire helix	4684CF	-40 to +125	-40 to +212																108
	Silicone tubing	4040T	-40 to +204	-40 to +400																109
AIR	INLET AIR - STRAIGHT																			
	(Use a coolant hose)	Connector	-57 to +260	-70 to +500																-
	Duct w/ thin wall, helix	7768	-40 to +107	-40 to +225																112
	Oil resistant w/ helix	4663A (63SB)	-40 to +121	-40 to +250																113
	Thicker wall w/ helix	4663J (163SB)	-40 to +121	-40 to +250																114
	Thick wall w/ helix	4663G	-40 to +125	-40 to +257																115
	INLET AIR - FORMED																			
	Air cleaner hose	4289E	-40 to +135	-40 to +275																116
	Oil resistant	4289N	-40 to +100	-40 to +212																118
	TURBO AIR - STRAIGHT																			
	Silicone CAC connector	4171H	-40 to +288	-40 to +450																120
	Hump hose connector	4177W (Green Stripe)	-40 to +100	-40 to +212																121
	Silicone hump connector	4177S	-46 to +177	-51 to +350																122
	Hump & ring connector	4177	-46 to +260	-51 to +500																123
	TURBO AIR - FORMED																			
	Cold side CAC	4256NP	-40 to +125	-40 to +257																125
	Fatigue resistant CAC	4256PM/HY	-40 to +125	-40 to +257																125
	Oil resistant CAC	4278AA	-40 to +105	-40 to +221																125
	Heat & oil resistant CAC	HM6060	-35 to +150	-31 to +302																124
	CELSIUS TEMPERATURE RANGE																			
				-57	-54	-46	-40	>-- Min Max-->	93	100	121	125	135	150	175	204	232	260		

■ = available
 ■ = peak temperature for certain applications

■ = available
■ = non-stocked size. Minimum order applies.

			TEMPERATURE RANGE		FAHRENHEIT TEMPERATURE RANGE															
DESCRIPTION		GATES SPEC	°C	°F	-70	-65	-51	-40	<-- MIN MAX-->	200	212	250	257	275	302	347	400	450	500	PAGE
FUEL	FUEL - STRAIGHT																			
	Standard fuel/oil hose	4219G / 4219XL	-40 to +125	-40 to +257																72
	Metric sizes	3225ST	-35 to +125	-31 to +257																73
	Metric w/ textile cover	4324	-40 to +100	-40 to +212																74
	Lower fuel permeation	4219D	-40 to +135	-40 to +275																74
	Higher pressure	3284AC / 3284A (RLA 30R2)	-40 to +100	-40 to +212																75
	Low permeation barrier	4219BG (Barricade)	-40 to +125	-40 to +257																75
	Barrier, fuel injection	4219BF (Barricade Fuel Injection)	-40 to +150	-40 to +302																78
	Diesel / biodiesel fuel injection	4219BD	-40 to +150	-40 to +302																78
	Nylon tubing for diesel	4327DT	-40 to +93	-40 to +200																79
	Submersible (in-tank)	4219	-40 to +150	-40 to +302																79
	Marine fuel and oil hose	4219M	-40 to +100	-40 to +212																80
	Marine outdoor fuel line	4219N	-40 to +121	-40 to +250																80
	Marine barrier fuel hose	4219BM (Barricade Marine)	-20 to +100	-4 to +212																81
Marine high pressure	3658F (C5M)	-20 to +100	-4 to +212																81	
Fuel filler w/ wire helix	4663K	-40 to +100	-40 to +212																82	
FUEL - FORMED																				
Biodiesel fill and vent	4278BD	-40 to +100	-40 to +212																83	
OIL	OIL - STRAIGHT																			
	Fiber braid reinforced	3319HT (GTH)	-40 to +135	-40 to +275																88
	Two fiber braids	3319CA (G3H)	-40 to +135	-40 to +275																88
	Transmission oil cooler	4219HT	-40 to +135	-40 to +275																89
	High temperature w/ wire	3658D (C5D)	-40 to +150	-40 to +302																89
	High temp. and pressure	3658BC (C5C XH)	-40 to +150	-40 to +302																90
	High temp. true bore	4319 (MegaTech LOC)	-40 to +150	-40 to +302																91
	High temperature w/ wire	4657AM (MegaTech 250)	-40 to +150	-40 to +302																91
	High temp., wire, large ID	4657DT (MegaTech 500)	-40 to +150	-40 to +302																92
	High temp. and pressure	4657PS (MegaTech 3000)	-40 to +150	-40 to +302																92
	High pressure large ID	4657JT (MegaTech II)	-40 to +150	-40 to +302																93
	High pressure true bore	4657TB (MegaTech G5TB)	-40 to +150	-40 to +302																93
	POWER STEERING - STRAIGHT																			
	Pressure line	3317LE (PS188)	-40 to +150	-40 to +302																94
Return line	3283SA	-40 to +135	-40 to +275																95	
High temp return	3283LF	-40 to +150	-40 to +302																95	
OIL - FORMED																				
Standard oil fill / suction	4278CN	-40 to +125	-40 to +257																97	
Higher pressure	4278OB	-40 to +125	-40 to +257																98	
POWER STEERING - FORMED																				
Higher temperature	4278SS	-40 to +150	-40 to +302																98	
A/C	REFRIGERANT																			
	Air Conditioning hose	3353 (PolarSeal)	-30 to +125	-22 to +257															128	
Air Conditioning - thin wall	3353 (PolarSeal II)	-30 to +125	-22 to +257																129	
BRAKE	AIR BRAKE - STRAIGHT																			
	Standard air brake	3245E	-40 to +100	-40 to +212																132
	Arctic air brake	3245T	-54 to +100	-65 to +212																132
	Higher pressure	3658C (C5C)	-40 to +100	-40 to +212																133
	Higher temperature	4657AB (TR500)	-40 to +121	-40 to +250																133
	Higher pressure, temp.	3658E (C5E)	-40 to +121	-40 to +250																134
	Higher pressure, temp.	4657DT (MegaTech 1000)	-40 to +150	-40 to +302																134
	High temperature	7752 (C14)	-54 to +232	-65 to +450																135
	Light duty	3276	-40 to +121	-40 to +250																135
Nylon air brake tubing	4327 (NABT)	-40 to +93	-40 to +200																136	
				CELSIUS TEMPERATURE RANGE																
				-57	-54	-46	-40	<-- Min Max-->	93	100	121	125	135	150	175	204	232	260		

■ = available

■ = peak temperature for certain applications

	ID SIZES IN INCHES																																												
GATES SPEC	.11"	.16"	.19"	.22"	.25"	.31"	.34"	.36"	.41"	.50"	.59"	.62"	.75"	.86"	.91"	1.00"	1.12"	1.25"	1.38"	1.50"	1.62"	1.75"	1.88"	2.00"	2.12"	2.25"	2.38"	2.62"	2.75"	2.88"	3.00"	3.12"	3.25"	3.38"	3.62"	3.75"	3.88"	4.00"	4.50"	5.00"	5.50"	6.00"	6.50"		
FUEL - STRAIGHT																																													
4219G / 4219XL																																													
3225ST																																													
4324																																													
4219D																																													
3284AC / 3284SS (RLA 30R2)																																													
4219BG (Barricade)																																													
4219BF (Barricade Fuel Injection)																																													
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3319HT (GTH)																																													
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4319 (MegaTech LOC)																																													
4657AM (MegaTech 250)																																													
4657DT (MegaTech 500)																																													
4657PS (MegaTech 3000)																																													
4657JT (MegaTech II)																																													
4657TB (MegaTech G5TB)																																													
POWER STEERING - STRAIGHT																																													
3317LE (PS188)																																													
3283SA																																													
3283LF																																													
OIL - FORMED																																													
4278CN																																													

INTRODUCTION

Gates Engine Hose Design Guide provides detailed information to help you select the right hoses for your engine applications.

Included in this section is a molded hose design guide that helps you determine those made-to-order products for applications where standard engine products cannot be used.

Use this manual to select the right engine hose for your application and economical in terms of design and availability. Contact your local Gates Account Manager for complete stocking and pricing information on any standard hose you select. He or she can also supply you with pricing and delivery schedules for special made-to-order products.

COMMON HOSE TUBE AND COVER COMPOUNDS								
Chemical Name	Poly-Chloroprene	Acrylonitrile & Butadiene	Chlorosulfonated Polyethylene	Ethylene Propylene Diene	Chlorinated Polyethylene	Fluoro-elastomer	Polyamide Resins	Silicone
Common Name or Trade Names	Neoprene*	Nitrile Buna-N	Hypalon*	EPDM	CPE	Viton* Fluorel †	Nylon	Silicone
ASTM	CR	NBR	CSM	EPDM	CM	FKM	PA	VMQ
Physical Strength	Good	Good	Good to Excellent	Good	Good	Fair	Good	Fair
RESISTANCE TO: Abrasion	Good to Excellent	Fair to Good	Good to Excellent	Good	Good	Good	Good	Fair
Weather & Ozone	Good to Excellent	Poor	Excellent	Excellent	Good	Excellent	Excellent	Excellent
Gaseous Permeation	Good	Good to Excellent	Good to Excellent	Fair to Good	Good	Good	Excellent	Fair
Petroleum Oils	Excellent	Excellent	Good to Excellent	Poor	Good	Excellent	Excellent	Poor
Commercial Gasolines	Fair to Good	Excellent	Fair	Poor	Fair	Excellent	Excellent	Poor
High Temperatures	Good to Excellent	Good to Excellent	Good to Excellent	Excellent	Excellent	Excellent	Good	Excellent
Low Temperatures	Fair to Good	Fair to Good	Fair	Fair to Good	Good	Good	Excellent	Excellent

WHAT IS ELECTROCHEMICAL RESISTANCE (ECR)?

Electrochemical degradation was first identified by Gates in 1989 as a root cause of premature coolant hose failure. An electrochemical cell comprised of the metal stem, hose, and coolant together forms a kind of battery current which can degrade rubber. No external electric current is needed. Typically, cracks form in the tube area closest to stem, leading to failure. The industry has since adopted a standard test method, SAE J1684, developed by Gates to qualify the electrochemical resistance of a hose. The SAE J20 specification denotes electrochemically resistant hose with an “EC” before any class D1, D2 or D3 callout.



WATER PERMEATION

In coolant applications, water loss can be a problem, particularly with silicone hoses. Gates Blue Stripe hoses solve this problem, as seen in the YouTube video: <http://www.youtube.com> at “Gates PowerGrip SB Clamps & Blue Stripe Coolant Hose”. The video also shows how cold leaks result in coolant loss, and which clamps solve this problem.

GENERAL DESIGN STEPS FOR HOSE

STEP 1: DETERMINE THE STAMP REQUIREMENTS

Prior to designing the part, you'll need to know the Size, Temperature, Application, Material construction, and Pressure (STAMP).

STEP 2: DETERMINE THE DESIGN

Use the STAMP information to select the best hose solution. The desired hose Material construction (see the Material Construction table) is based on Pressure and bend radius requirements. Use a straight hose if possible, as they generally are the least expensive solution. Formed hoses are used to achieve the tightest bend radii (see the Minimum Bend Radius section). Find the Application in the Keyword Index (page 196-197) or turn to the appropriate application section of this catalog. Choose the hose and confirm the Temperature range is appropriate using the quick guide tables on pages 2-9 or spec sheets. Find the Size needed and confirm the Pressure (burst or vacuum) is adequate. Keep in mind the working pressure is only a guideline based on typical application severity.

STEP 3: DRAW OR SPECIFY THE HOSE

Stocked items do not require a drawing, but cut lengths of straight hose are usually drawn, and made-to-order formed hoses are always drawn. Drawings should be identified with a unique part number and should contain at least a material specification and dimensions to define the hose. For straight hose, the required dimensions are hose inside diameter and hose length. For formed hose, the layout dimensions are also required (see Formed Hose Layout section). Other information on the drawing may include testing requirements, tolerances (see Tolerance section), application data, or cleanliness (see Cleanliness section). Drawing or specification requirements beyond the standard specification may be more costly or may not be accepted.

STEP 4: DETERMINE THE FEASIBILITY

Send the drawing to your Gates Account Manager or Gates Product Application contact to confirm the material callout is the most appropriate and the design has no manufacturing concerns.

STEP 5: VALIDATE THE DESIGN

It is recommended to test the parts in the application well before the start of production. Testing is particularly important if the failure of the parts could cause a safety issue or cause other damage. If there are any concerns, please contact your Gates Account Manager, or contact Gates Product Application at fppasupport@gates.com, or +1.303.744.5070.

MATERIAL CONSTRUCTION

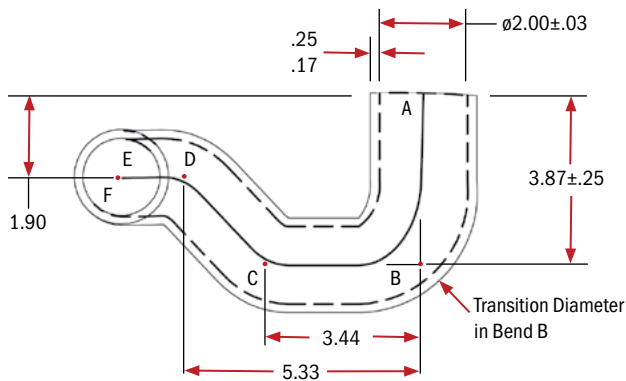
CONSTRUCTION TYPE	PRESSURE	BEND RADIUS	ADVANTAGES	DISADVANTAGES
Formed hose	Low (to 0.5 KPa or 75psi)	Very Small (~1 x Hose Diameter)	Tightest bend routing capability.	Limited lengths, setup cost.
Bent pipe with hose connectors	Low (to 0.5 KPa or 75psi)	Small (~2x Hose Diameter)	Long lengths require less support. Withstands higher vacuum. Can have brackets and ports.	Potential leak points. Limitations on bend capability. Stress at connectors.
Straight hose length	Low to Medium (to 2 KPa or 300psi)	Large (~10x Hose Diameter)	Low cost, easy installation.	May require support to avoid interference or excessive movement.
Wire helix embedded	Low to Medium (to 2 KPa or 300psi)	Small (~2x Hose Diameter)	For high vacuum and tighter bend radius	Higher cost than other constructions.
Wire braid reinforced	High (to 20 KPa or 3000psi)	Medium (~5x Hose Diameter)	Flexible with high pressure capability	Higher cost than other constructions.

FORMED HOSE LAYOUT

The best way to dimension a hose is by its centerline, using X, Y, and Z coordinates of each theoretical bend intersection point (not tangency points) as in the following example. An XYZ chart is also a very good way to specify the hose. The chart follows the “right hand rule” (i.e. if X is positive to the right, and Y is positive up, then Z is positive toward you).

Another method of specifying a formed hose is by dimensions of arms (or straights), angles, and twists. This can be more difficult because each arm (or straight) length and each angle must be dimensioned in a true (flat) view.

Tolerancing layout dimensions is not advisable since dimensions that span more than one arm length should be reference only (see Tolerances section),



JLGI 1001001812

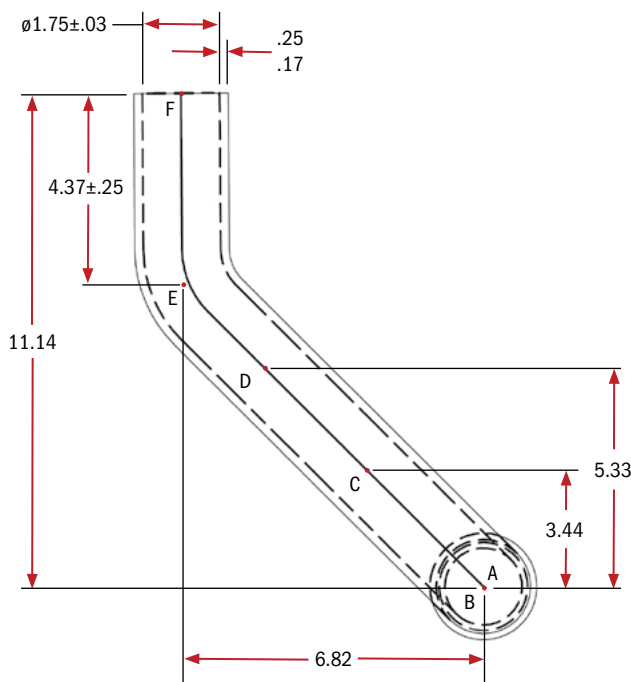
Pt	X	Y	Z	Radius	Angle
A	0.000	0.000	0.000		
B	0.000	3.870	0.000	2.000	90
C	3.440	3.870	3.540	2.000	37
D	5.330	1.900	5.430	2.000	38
E	6.820	1.900	6.820	2.000	45
F	6.820	1.900	11.140		

Centerline = 17.445 in

NOTES:

1. Material: SAE 20R4 EC Class D1.
2. Unspecified tolerances per SAE J20.
3. Identify with part number on the Hose OD.
4. Hose shall not collapse under 7kPa at 100°C spring insert permitted.
5. Hose shall be visibly clean.

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00	GP	PROTOTYPE RELEASE	30JAN14
REV	BY	GATES REVISION	DATE
THE GATES RUBBER CO. DENVER COLORADO, USA			
DRAWING UNITS ARE IN INCHES			
MATERIAL: (SEE NOTES)			
CUSTOMER:			
PART #: 1234-5678			
TITLE: COOLANT HOSE, LOWER RADIATOR			
3RD ANGLE PROJECTION (DO NOT SCALE DRAWING)			

TOLERANCES

HOSE LENGTH TOLERANCE

LENGTH MM (INCH)	FORMED HOSE ARM LENGTH TOLERANCE MM (INCH)	STRAIGHT HOSE LENGTH TOLERANCE MM (INCH)
Up to 300 (12)	±6.4 (±0.25)	±3.0 (±0.12)
To 610 (24)	±7.2 (±0.28)	±4.8 (±0.19)
To 910 (36)	±9.7 (±0.38)	±6.4 (±0.25)
To 1220 (48)	±9.7 (±0.38)	±9.5 (±0.38)
To 1830 (72)	±15.9 (±0.63)	±12.7 (±0.50)
Over 1830 (72)	±2% of length	±1% of length

END SQUARENESS TOLERANCE

HOSE ID MM (INCH)	STANDARD TOLERANCE MM (INCH)	PRECISION TOLERANCE MM (INCH)
Less than 25.4 (1.00)	3.75 (0.15)	2.54 (0.10)
25.4 (1.00) and over	15% of ID	10% of ID

Formed hoses are dimensioned to it's centerline which is intangeable, and hoses may distort during shipping and handling, so layout dimensions are not measured directly. Instead, the hose is supported with the ends held in their designed position using a jig or template, and the actual hose OD contour should be within 9.6mm (0.375") of the theoretical contour. Length tolerances may be applied along true arm lengths only. They do not apply to dimensions covering more than one arm length. Layout dimensions only establish the theoretical contour and have no tolerance. See SAE J2370 for guidance in applying geometric tolerancing to formed hoses.

CLEANLINESS

Hoses are supplied "visibly clean". Certain applications such as fuel, oil, or air may require increased cleanliness. In general, engine hose cleanliness is measured by sloshing solvent in the hose, filtering the solvent, and weighing the impurities, as well as measuring the largest particle dimension. Wire braid reinforced hose cleanliness is inspected by suspending the impurities in fluid and measured by a laser particle counter. Typical cleanliness levels are shown below.

CONSTRUCTION	STANDARD CLEANLINESS	INCREASED CLEANLINESS
Wire Braid Hose	Visibly clean	ISO 4406 17/14 500µ max. particle size Max. 110mg/m ² of inside surface area
Formed or Hump Hose	2500µ max. particle size (or 1200µ when excluding fibers and soft particles) Max. 110mg/m ² of inside surface area	800µ max. particle size (or 500µ when excluding fibers and soft particles) Max. 70mg/m ² of inside surface area

FORMED HOSE WALL THICKNESS AND VACUUM PERFORMANCE

Most formed hose types are only available in one wall thickness as per their specification. However, formed hose with no reinforcing layer are available in various thicknesses. The table below is a guide for estimating the vacuum performance of a formed hose based on wall thickness.

HOSE ID MM (INCH)		WALL THICKNESS MM (INCH)											
		5.08	(0.20)	6.35	(0.25)	7.37	(0.29)	8.00	(0.32)	8.76	(0.35)	9.53	(0.38)
		VACUUM KPA (INCHES OF WATER)											
31.8	(1.25)	29.9	(120)	37.3	(150)	43.5	(175)	49.8	(200)	56	(225)		
38.1	(1.5)	18.7	(75)	22.4	(90)	27.4	(110)	29.9	(120)	33.6	(135)	36.1	(145)
44.5	(1.75)	8.5	(34)	13.5	(54.4)	16.9	(68)	19.9	(80)	22.4	(90)	27.4	(110)
50.8	(2)	5.1	(20.4)	8.5	(34)	11.8	(47.6)	15.2	(61.2)	19.9	(80)	24.9	(100)
57.2	(2.25)	3.4	(13.6)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)	18.7	(75)	22.4	(90)
63.5	(2.5)	3.4	(13.6)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)	16.9	(68)	19.9	(80)
69.9	(2.75)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	10.2	(40.8)	15.2	(61.2)	18.7	(75)
76.2	(3)	1.7	(6.8)	3.4	(13.6)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)	16.9	(68)
82.6	(3.25)	1.7	(6.8)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	10.2	(40.8)	13.5	(54.4)
88.9	(3.5)	1.7	(6.8)	1.7	(6.8)	5.1	(20.4)	6.8	(27.2)	8.5	(34)	11.8	(47.6)
95.3	(3.75)			1.7	(6.8)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	10.2	(40.8)
101.6	(4)			1.7	(6.8)	3.4	(13.6)	5.1	(20.4)	6.8	(27.2)	8.5	(34)

These values assume a straight length of hose at a temperature of 82C (180F) degrees. Complex shapes or long I.D. expansions may reduce the vacuum resistance by half, whereas short elbow hoses can double the vacuum. If a vacuum requirement can not be met with a thicker wall, then add a note to the drawing that a spring insert is required.

For unreinforced hose, the default wall tolerance is ± 1.3 mm (± 0.05 in.). Wall tolerance increases to ± 1.6 mm (± 0.06 in.) for enlarged diameter ends up to 50% or when there is only 25 to 50mm (1.0 to 2.0 in.) of straight length on either end of the hose. Wall tolerance increases to ± 2.0 mm (± 0.08 in) on enlarged diameter ends over 50% or when there is less than 25 mm (1.0 in) of straight length on either end of the hose. The thickness in the body of the hose can be expected to vary up to $\pm 66\%$ in and adjacent to severe bends.

When in doubt, the wall thickness should be confirmed with Gates Product Application Engineers.

MINIMUM BEND RADIUS GUIDELINES

CURVED HOSE

For radiator, and heater hoses:

$$R = [(B \div 180) + .5] \times D$$

For fuel and oil hoses:

$$R = [(B \div 180) + .5] \times D \times 1.25$$

For air intake hoses:

$$R = [(B \div 360) + .5] \times D$$

For turbo air hoses:

$$R = [(B \div 180) + .5] \times D \times 2$$

STRAIGHT HOSE

For radiator, and heater hoses:

$$R = 10 \times \text{Hose OD}$$

For fuel and oil hoses:

$$R = 7 \times \text{Hose OD}$$

For wire reinforced hoses*:

$$R = 4 \times \text{Hose OD}$$

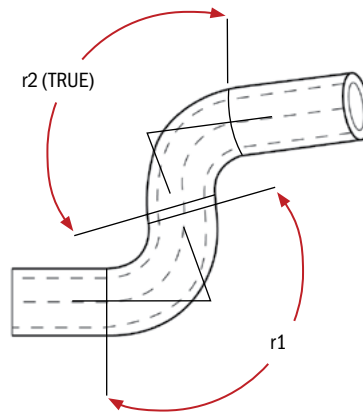
*Call Gates for hoses > 3" ID
or specific hose types

BACK-TO-BACK BENDS

B = Bend angle in degrees

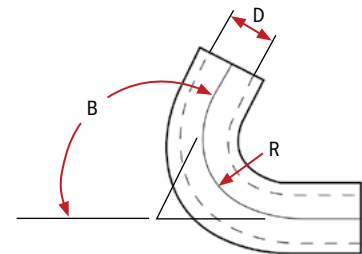
R = Minimum centerline bend radius

D = Inside diameter of hose

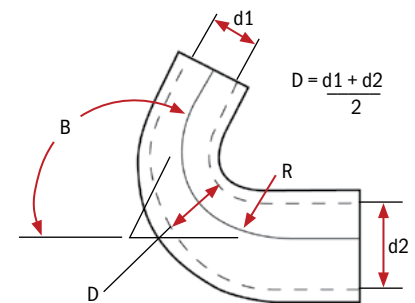


When bends are closer than a quarter of the diameter, add their bend angles to use in the formula as variable B.

NORMAL



BLENDED ID TRANSITION



COST REDUCTION CONSIDERATIONS

CURVED HOSE

- Minimize the number of bends
- Avoid very sharp bends (Stay above minimum bend radius guidelines)
- Avoid long I.D. expansions
- Blend ID transitions into a nearby bend (See minimum bend radius guidelines)
- Avoid costly testing requirements beyond those covered by the hose material callouts

STRAIGHT HOSE

- Do not over-specify requirements
- Buy bulk or standard lengths
- Use plain ends on wire embedded hose instead of straight ends (no wire)
- Specify additional printing or marking only when necessary
- Contact Gates Application Engineering for other hose options

DEVIATION REDUCTION

- Let Gates Application Engineering review the drawing before finalizing drawing
- Use standard specification tolerances
- Double-check material callouts for applicability
- Consult Gates Application Engineering before adding new notes and requirements
- Make sure curved hose routings are completely dimensioned
- For curved hose, any minimum straight length requirement for clamping area must be at least 1/4" (6.4mm) less than the nominal straight length
- Small ID hoses typically specify OD instead of wall thickness for ease of inspection



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COOLANT THERMAL MANAGEMENT

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ALSO SEE:

THE COOLANT SECTION

CONNECTORS

SAE J2044	23
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REFRIGERANT THERMAL MANAGEMENT

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AIR DUCTING

4663A (63SB) WIRE REINFORCED, OIL RESISTANT, THIN WALL AIR HOSE	26 - 27
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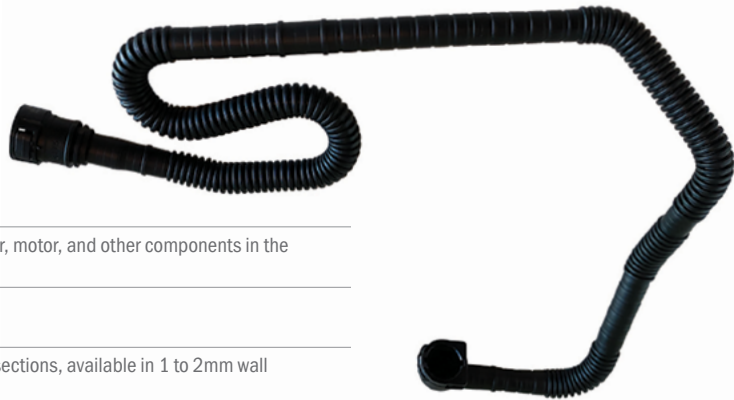
ALSO SEE:

THE AIR SECTION



4361CN THERMAL PRO

CONVOLUTED NYLON (FORMABLE)



RELATIVE COST ●●●○○

APPLICATIONS Thermal control loop of battery, cab heater, motor, and other components in the thermal management system.

TEMPERATURE -40°C to +120°C (-40°C to +248°F)

STANDARDS Formed polyamide tubing with convolute sections, available in 1 to 2mm wall thickness.

CONSTRUCTION

PACKAGING Bulk bagged in a box. End plugs optional. Setup charge and minimum order quantity applies.

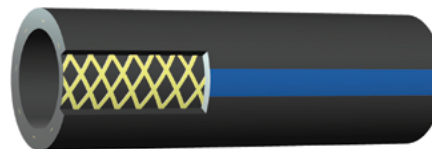
COUPLINGS VDA or SAE J2044 style connectors (pages 23 - 24).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE	
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
8.0 ±0.3	0.315 ±0.012	12.2	0.480	0.26	38	1.05	152	67.7	20	30	1.18	0.30	0.20
10.0	0.394	14.4	0.567	0.26	38	1.05	152	67.7	20	34	1.34	0.40	0.27
12.0	0.472	16.5	0.630	0.26	38	1.05	152	67.7	20	40	1.57	0.45	0.30
14.0	0.551	18.5	0.728	0.26	38	1.05	152	67.7	20	48	1.89	0.60	0.40
16.0	0.630	20.5	0.807	0.26	38	1.05	152	67.7	20	56	2.20	0.70	0.47
18.0	0.748	23.7	0.933	0.26	38	1.05	152	67.7	20	62	2.44	0.100	0.67
20.0	0.787	24.7	0.972	0.26	38	1.05	152	67.7	20	66	2.60	0.110	0.74



4230SB / 4230RK THERMAL PRO

PREMIUM PERFORMANCE SMALL ID COOLANT HOSE



RELATIVE COST



APPLICATIONS

Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil. Also available with a red stripe (4230RS), or no stripe (4230RK) for color coding supply/return connections with minimum order quantity.

TEMPERATURE

-40°C to +135°C (-40°F to +275°F) and ambient air to 150°C (302°F) when used in a coolant hose application.

STANDARDS

SAE 20R3 EC Class D1 or D2.

CONSTRUCTION

EPDM tube, aramid fiber reinforcement, EPDM cover.

PACKAGING

Bulk lengths coiled in a box, except as noted. Custom lengths available with minimum order quantity.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	mpa	psi	mpa	psi	kpa	in. hg	mm	in.	kg/m	lbs/ft	meters	feet	4230sb	4230rk
6.4 ±0.8	1/4 ±0.03	14.5 * ±0.8	0.57 * ±0.03	0.43	63	1.72	250	33.8	10			0.15	0.10	152	500		4230-7143
7.9	5/16	15.7 *	0.62 *	0.43	63	1.72	250	33.8	10			0.18	0.12	152	500		4230-4720 (reel)
9.5	3/8	17.5	0.68	0.43	63	1.72	250	33.8	10	127	5	0.21	0.14	152	500	4230-4114	4230-3301 (650 ft reel ***)
12.7	1/2	20.7	0.81	0.52	75	2.07	300	33.8	10	152	6	0.27	0.18	76	250	4230-4229 reel	
15.9	5/8	23.9	0.94	0.43	63	1.72	250	27.0	8	178	7	0.31	0.21	76	250	4230-4112	4230-6448 reel ***
19.1	3/4	27.1	1.06	0.34	50	1.38	200	23.6	7	191	7.5	0.39	0.26	61	250	4230-4109	4230-0198 reel ***
25.4	1	34.0 ±1.2	1.34 ±.05	0.30	44	1.21	175	20.3	6	229	9	0.49	0.33	46	150	4230-4107	

* Not per SAE

4256SB THERMAL PRO**PREMIUM PERFORMANCE FORMED COOLANT HOSE**
RELATIVE COST ●●●○○

APPLICATIONS Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE -40°C to +125°C (-40°F to +257°F), with ambient temperature to +150°C (302°F) when used in a coolant application.

STANDARDS SAE 20R3 EC Class D1 or SAE 20R4 EC Class D1 depending on size.

CONSTRUCTION EPDM tube, aramid knit reinforcement, EPDM cover.

PACKAGING Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT REFERENCE	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
15.9 ±0.8	5/8 ±0.03	23.9 ±0.8	0.94 ±0.03	1.72	250	27.0	8	23.8	0.94	0.28	0.19
19.0	3/4	27.0	1.06	1.72	250	23.6	7	28.6	1.12	0.33	0.22
20.3***	0.80	28.3	1.11	1.72	250	20.3	6	30.5	1.20	0.35	0.24
22.2	7/8	30.2	1.19	1.72	250	20.3	6	31.8	1.25	0.38	0.25

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT REFERENCE	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
23.1 ±0.8	0.91 ±0.03	4.95 ±0.65	0.195 ±0.025	0.97	140	**	**	34.7	1.37	0.46	0.31
23.9	0.94	4.95	0.195	0.97	140	**	**	35.8	1.41	0.51	0.34
25.4	1	4.95	0.195	0.97	140	**	**	38.1	1.50	0.50	0.33
28.6	1-1/8	4.95	0.195	0.97	140	**	**	42.9	1.69	0.53	0.36
30.2***	1.19	4.95	0.195	0.97	140	**	**	45.3	1.79	0.58	0.39
31.8	1-1/4	4.95	0.195	0.97	130	**	**	47.0	1.85	0.60	0.40
33.3	1.31	4.95	0.195	0.90	130	**	**	49.9	1.97	0.63	0.42
34.9	1-3/8	4.95	0.195	0.90	130	**	**	52.4	2.06	0.71	0.48
36.6***	1.44	4.95	0.195	0.90	130	**	**	54.1	2.13	0.74	0.50
38.1	1-1/2	4.95	0.195	0.83	120	**	**	54.1	2.13	0.76	0.51
39.6***	1.56	4.95	0.195	0.83	120	**	**	54.1	2.13	0.79	0.53
41.3	1-5/8	4.95	0.195	0.83	120	**	**	57.2	2.25	0.82	0.55
44.5	1-3/4	4.95	0.195	0.76	110	**	**	55.9	2.20	0.87	0.58
47.6	1-7/8	4.95	0.195	0.76	110	**	**	58.7	2.31	0.89	0.60
49.0	1.93	4.95	0.195	0.69	100	**	**	68.1	2.68	0.93	0.62
50.8	2	5.35 ±1.05	0.21 ±0.04	0.69	100	**	**	69.9	2.75	0.93	0.63
57.2	2-1/4	5.35	0.21	0.62	90	**	**	79.5	3.13	1.04	0.70
60.5	2.38	5.35	0.21	0.62	90	**	**	82.6	3.25	1.11	0.75
63.5	2-1/2	5.35	0.21	0.55	80	**	**	84.1	3.31	1.16	0.78
66.5	2.62	5.35	0.21	0.55	80	**	**	82.6	3.25	1.21	0.81
69.9 ±1.6	2-3/4 ±0.06	5.35	0.21	0.48	70	**	**	84.1	3.31	1.27	0.85

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

*** Contact Gates for availability.

4256LS THERMAL PRO**HIGHER TEMPERATURE FORMED
COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +150°C (-40°F to +302°F), and ambient temperature to 165°C (329°F) if used in a coolant application.

STANDARDS

SAE 20R3 EC HT Class D3 or SAE 20R4 EC HT Class D3 depending on size.

CONSTRUCTION

p-EPDM tube, aramid knit reinforcement, p-EPDM cover.

PACKAGING

Various size boxes. Setup charge and minimum order quantity may apply.
Available with end caps, individually bagged, or bulk bagged in the box.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT REFERENCE	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
8.0 ±0.8***	5/16 ±0.03	15.0 ±0.8	0.59 ±0.03	1.72	250	33.8	10			0.13	0.09
9.5	3/8	17.5	0.69	1.72	250	33.8	10	14.2	0.56	0.18	0.12
12.7	1/2	20.7	0.81	1.72	250	33.8	10	18.3	0.72	0.27	0.18
14.5	0.57	22.5	0.89	1.38	200	27.0	8	19.1	0.75	0.30	0.20

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT REFERENCE	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
19.0 ±0.8	3/4 ±0.03	4.95 ±0.65	0.195 ±0.025	1.03	150	**	**	28.5	1.12	0.42	0.28
25.4	1	4.95	0.195	0.97	140	**	**	38.1	1.50	0.54	0.36
28.6***	1.12	4.95	0.195	0.90	130	**	**	42.6	1.68	0.60	0.40
31.8	1-1/4	4.95	0.195	0.90	130	**	**	47.6	1.87	0.64	0.43
38.1	1-1/2	4.95	0.195	0.83	120	**	**	50.8	2.00	0.76	0.51
44.5***	1-3/4	4.95	0.195	1.21	175	**	**	66.0	2.60	0.94	0.63
50.8	2	5.35 ±1.05	0.21 ±0.04	0.76	110	**	**	66.8	2.63	1.06	0.71
57.0	2-1/4	5.35	0.21	0.62	90	**	**	69.9	2.75	1.21	0.81
62.5	2-1/2	5.35	0.21	0.62	90	**	**	76.2	3.00	1.31	0.88
66.7***	2-5/8	5.35	0.21	0.55	80	**	**	82.6	3.25	1.37	0.92
88.9***	3-1/2	5.35	0.21	0.34	50	**	**	101.6	4.00	1.90	1.28

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

*** Contact Gates for availability.

HENN QUICK CONNECTORS:

RELIABLE HIGH-TECH HOSE CONNECTIONS.

When clamped hose connections leak or cause assembly problems, look to Gates for your solution. HENN Quick Connectors offer simple assembly with proven reliable technology, especially in tight spaces. No matter what kind of job you have, Gates has the hose solution that works as hard as you and your team.

SAFE AND INNOVATIVE CONNECTION TECHNOLOGY

INDUSTRIES + APPLICATIONS

- Truck + Bus
- Construction
- Agriculture
- Mining
- Charge Air Cooler
- Turbocharger
- Intake Manifold
- Radiator

HC TYPE	HOSE ID (IN)	HOSE ID (MM)	HC HOSE WALL THICKNESS (MM)	HC MAXIMUM HOSE OD (MM)	HCW HOSE WALL THICKNESS (MM)	HCW MAXIMUM HOSE OD (MM)
HC 32	1.50 to 1.56	38 to 39.6	2.5 to 5.2 +/- 0.6	50.0	-	-
HC 35	1.57 to 1.64	40 to 41.6	2.5 to 5.2 +/- 0.6	52.0	-	-
HC 38	1.74 to 1.81	44.3 to 45.9	2.5 to 5.2 +/- 0.6	56.3	-	-
HC 40	1.81 to 1.87	46 to 47.6	2.5 to 5.2 +/- 0.6	58.0	-	-
HC45/HCW45	2.0 to 2.07	51 to 52.6	2.5 to 5.2 +/- 0.6	63.0	5.2 to 7.1 +/- 0.6	66.5
HC50/HCW50	2.20 to 2.27	56 to 57.6	2.5 to 5.2 +/- 0.6	68.0	5.2 to 7.1 +/- 0.6	71.5
HC55/HCW55	2.40 to 2.46	61 to 62.6	2.5 to 5.2 +/- 0.6	73.0	5.2 to 7.1 +/- 0.6	76.5
HC60/HCW60	2.64 to 2.70	67 to 68.6	2.5 to 5.2 +/- 0.6	79.0	5.2 to 7.1 +/- 0.6	82.5
HC65/HCW65	2.83 to 2.90	72 to 73.6	2.5 to 5.2 +/- 0.6	84.0	5.2 to 7.1 +/- 0.6	87.5

PRODUCT SPECIFICATIONS FOR WATER:

- **PLUG:** Galvanized Steel
- **CATCH SPRINGS + COVER:**
Catch Springs: Stainless steel
Catch Spring Covering: PA 6.6/
PA 6-blend
- **SEALING ELEMENT:** LSR
- **OPERATING PRESSURE:**
14.3 psi vacuum to 72.5 psi
pressure (1 bar vacuum to 5
bar pressure)
- **TEMPERATURE RANGE:**
LSR -40°F to +275°F (-40°C to
+135°C)

PRODUCT SPECIFICATIONS FOR AIR:

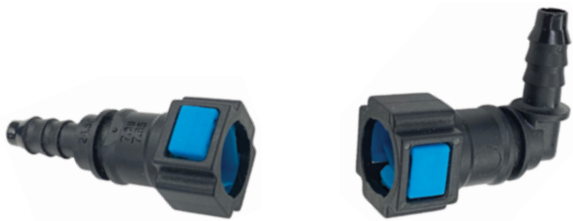
- **PLUG:** Stainless Steel
- **CATCH SPRINGS + COVER:**
Catch Springs: Stainless steel
Catch Spring Covering: PA 6.6/
PA 6-blend
- **SEALING ELEMENT:** AEM or FPM
- **OPERATING PRESSURE:**
5.8 psi vacuum to 50 psi
pressure (0.4 bar vacuum to
3.5 bar pressure)
- **TEMPERATURE RANGE:**
AEM -40°F to +320°F (-40°C to
+160°C); FPM -4°F to +446°F
(-20°C to +230°C)





SAE J2044

2-BUTTON STYLE QUICK CONNECTOR



RELATIVE COST	●●●○○
APPLICATIONS	Connector for polyamide or rubber hose used in thermal control of battery, cab heater, motor, and other components.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F).
STANDARDS	SAE J2044.
CONSTRUCTION	Glass-filled nylon with 2-button release.
PACKAGING	Pre-assembled to hoses. Dust plugs available. Setup charge and minimum order quantity applies. Also available bulk bagged in a box with minimum order quantity.

CONNECTOR NOMINAL DIAMETER		FITS HOSE/TUBE I.D.			ANGLE
mm	in.	Nylon or Rubber	mm	in.	Degrees
9.49	3/8	Nylon	10	0.393	Straight
		Nylon	10	0.393	45
		Nylon	10	0.393	90
		Rubber	9.49	0.375	Straight
		Rubber	9.49	0.375	90
15.82	5/8	Nylon	14	0.551	Straight
		Nylon	14	0.551	45
		Nylon	14	0.551	90
		Rubber	14.13	0.563	Straight
		Rubber	14.13	0.563	90
		Rubber	15.87	0.625	Straight
		Rubber	15.87	0.625	90
16	0.630	Nylon	14	0.551	Straight
		Nylon	14	0.551	45
		Nylon	14	0.551	90
		Rubber	14.3	0.563	Straight
		Rubber	14.3	0.563	45
		Rubber	14.3	0.563	90
18	0.748	Nylon	15	0.591	Straight
		Nylon	15	0.591	35
		Nylon	15	0.591	55
		Nylon	15	0.591	90
		Rubber	16	0.630	Straight
		Rubber	16	0.630	45
		Rubber	16	0.630	90
20	0.787	Nylon	24	0.945	Straight
		Rubber	18	0.709	Straight

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESSORIES
BELTS

QUICK CONNECTOR

VDA STYLE



RELATIVE COST ●●●○○

APPLICATIONS Connector for rubber hose used in the thermal control of battery, cab heater, motor, and other components.

TEMPERATURE -40°C to +135°C (-40°C to +275°F).

STANDARDS VDA.

CONSTRUCTION Glass-filled nylon 6.6 with p-EPDM o-ring and spring wire retainer.

PACKAGING Pre-assembled to hoses. Dust plugs available. Setup charge and minimum order quantity applies. Also available bulk bagged in a box with minimum order quantity.

CONNECTOR NOMINAL DIAMETER		FITS HOSE/TUBE I.D.			ANGLE
mm	in.	Nylon or Rubber	mm	in.	Degrees
6	0.236	Both	6	0.236	Straight
	0.236	Both	6	0.236	90
8	0.315	Both	8	0.315	Straight
	0.315	Both	8	0.315	90
10	0.394	Both	8	0.315	90
	0.394	Both	10	0.315	90
	0.394	Both	12	0.472	45
	0.394	Both	12	0.472	90
12	0.472	Both	12	0.472	45
	0.472	Both	12	0.472	90
	0.472	Both	15	0.591	30
	0.472	Both	16	0.630	90
	0.472	Both	16	0.630	Male Straight
14	0.551	Both	16	0.630	45
	0.551	Both	16	0.630	90
	0.551	Both	16	0.630	Male Straight
16	0.630	Both	16	0.630	Straight
	0.630	Both	16	0.630	90
	0.630	Both	16	0.630	Male Straight
	0.630	Both	20	0.866	Straight
20	0.787	Both	20	0.787	Straight
	0.787	Both	26	1.023	Straight
	0.787	Both	26	1.023	45
	0.787	Both	26	1.023	90
22	0.866	Both	26	1.023	90
	0.866	Both	32	1.260	Straight
	0.866	Both	32	1.260	90
	0.866	Both	32	1.260	Male Straight

Note: Many additional sizes and configurations exist, including sensor ports. Custom designs available.



3353 POLARSEAL II THERMAL PRO

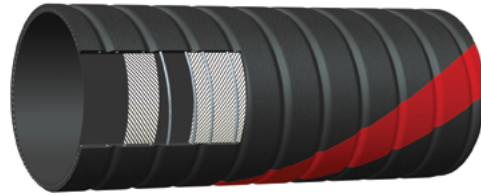
THIN WALL AIR CONDITIONING HOSE



RELATIVE COST	●●●○○
APPLICATIONS	Liquid and gaseous R1234yf, R134a and R12 refrigerants in air conditioning and refrigeration units with reduced bend radius and weight.
TEMPERATURE	-40°C to +135°C (-40°F to +275°F).
STANDARDS	SAE J3062 Type C Class I and SAE J2064.
CONSTRUCTION	Neoprene, nylon barrier, neoprene, braided polyester, butyl rubber cover. Pages 26 - 36. Also see Gates Hydraulic Catalog, G47 series.
PACKAGING	Bulk lengths are on a reel, 50 foot lengths are boxed. Custom lengths available with minimum order quantity.
COUPLINGS	PolarSeal II couplings (see Clamps & Connectors section or Gates Hydraulic Catalog), G47 (ACB) or G46 (ACC) series.

SIZE			ID		OD NOMINAL		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT NOMINAL		GATES ITEM NUMBER	BULK LENGTH		GATES ITEM NUMBER
Dash	mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	50ft. length	mm	ft	Bulk Length
-6	8	5/16	7.9 / 8.6	.309 / .339	14.2 / 15.2	.560 / .600	3.4	500	13.8	2000	38	1.5	0.17	0.12	3353-5007	152.4	500	3353-5006
-8	10	13/32	10.2 / 11.2	.401 / .440	16.8 / 17.8	.660 / .700	3.4	500	13.8	2000	51	2.0	0.22	0.146	3353-5009	152.4	500	3353-5008
-10	12	1/2	12.5 / 13.5	.490 / .530	18.9 / 19.9	.745 / .785	3.4	500	13.8	2000	64	2.5	0.25	0.168	3353-5011	91.4	300	3353-5010
-12	16	5/8	15.6 / 16.6	.615 / .655	23.1 / 24.1	.910 / .950	2.4	350	12	1750	76	3	0.39	0.264	3353-5013	76.2	250	3353-5012

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

4663A (63SB)**WIRE REINFORCED, OIL RESISTANT,
THIN WALL AIR HOSE****RELATIVE COST** ●●●○○○**APPLICATIONS** Air cleaner or defroster duct where tight bends are required. Not for conveying liquids.**TEMPERATURE** -34°C to +121°C (-30°F to +250°F).**STANDARDS** None.**CONSTRUCTION** Neoprene tube, synthetic fabric reinforcement with two helical wires, neoprene impregnated fabric cover.**PACKAGING** Bulk lengths are 10 foot coil in a box. Custom lengths or ends with no wire are available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

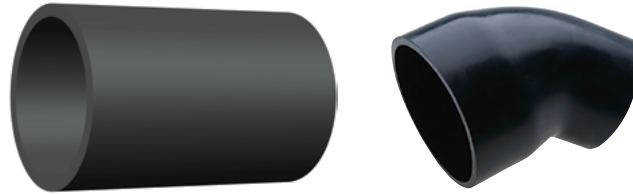
ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	mpa	psi	mpa	psi	kpa	in. hg	mm	in.	kg/m	lbs/ft	
15.9	5/8	20.7	0.81	0.07	10	0.28	40	16.9	5	25	1	0.16	0.11	4663-4108 ***
19.1	3/4	23.9	0.94	0.07	10	0.28	40	16.9	5	25	1	0.19	0.13	4663-4109
22.2	7/8	27.0	1.06	0.07	10	0.28	40	16.9	5	25	1	0.22	0.15	4663-4110
25.4	1	30.2	1.19	0.07	10	0.28	40	16.9	5	25	1	0.27	0.18	4663-4111
31.8	1-1/4	36.6	1.44	0.07	10	0.28	40	16.9	5	25	1	0.33	0.22	4663-4112
34.9	1-3/8	39.7	1.56	0.07	10	0.28	40	16.9	5	38	1.5	0.34	0.23	4663-4113
38.1	1-1/2	42.9	1.69	0.07	10	0.28	40	16.9	5	38	1.5	0.37	0.25	4663-4114
41.3	1-5/8	46.1	1.81	0.07	10	0.28	40	16.9	5	51	2	0.40	0.27	4663-4115
44.5	1-3/4	49.3	1.94	0.07	10	0.28	40	16.9	5	51	2	0.43	0.29	4663-4116
47.6	1-7/8	52.4	2.06	0.07	10	0.28	40	16.9	5	51	2	0.46	0.31	4663-4117
50.8	2	55.6	2.19	0.03	5	0.14	20	10.1	3	51	2	0.49	0.33	4663-4118
54.0	2-1/8	58.8	2.31	0.03	5	0.14	20	10.1	3	64	2.5	0.52	0.35	4663-4119
57.2	2-1/4	62.0	2.44	0.03	5	0.14	20	10.1	3	64	2.5	0.55	0.37	4663-4120
60.3	2-3/8	65.1	2.56	0.03	5	0.14	20	10.1	3	64	2.5	0.57	0.38	4663-4121
63.5	2-1/2	68.3	2.69	0.03	5	0.14	20	10.1	3	64	2.5	0.60	0.40	4663-4122
66.7	2-5/8	71.5	2.81	0.03	5	0.14	20	10.1	3	71	2.8	0.62	0.42	4663-4123
69.9	2-3/4	74.7	2.94	0.03	5	0.14	20	10.1	3	71	2.8	0.65	0.44	4663-4124
76.2	3	81.0	3.19	0.03	5	0.14	20	10.1	3	76	3	0.71	0.48	4663-4125

4663A (63SB) (CONTINUED)

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	mpa	psi	mpa	psi	kpa	in. hg	mm	in.	kg/m	lbs/ft	
88.9	3-1/2	93.7	3.69	0.03	5	0.14	20	10.1	3	89	3.5	0.83	0.56	4663-4126
92.1	3-5/8	96.8	3.81	0.03	5	0.14	20	10.1	3	102	4	0.86	0.58	4663-4127
101.6	4	106.4	4.19	0.03	5	0.14	20	10.1	3	102	4	1.09	0.73	4663-4128
114.3	4-1/2	119.1	4.69	0.03	5	0.14	20	10.1	3	127	5	1.21	0.81	4663-4129
127.0	5	131.8	5.19	0.03	5	0.14	20	10.1	3	152	6	1.34	0.90	4663-4130
139.7	5-1/2	144.5	5.69	0.03	5	0.14	20	10.1	3	152	6	1.47	0.99	4663-4131
152.4	6	157.2	6.19	0.03	5	0.14	20	10.1	3	**	**	1.59	1.07	4663-1491 ***
177.8	7	182.6	7.19	0.03	5	0.14	20	10.1	3	**	**	1.86	1.25	4663-3992 ***

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4289E**STANDARD FORMED AIR INTAKE/
VACUUM HOSE**
RELATIVE COST ●●●○○

APPLICATIONS Engine air intake or air ducting. Also suitable for water suction. Not for conveying fuel or oil.

TEMPERATURE -40°C to +135°C (-40°F to +275°F) continuous with peaks of 150°C (302°F).

STANDARDS SAE J200 M3CA 707 A25 B35 C32 F17 Z1 (Duro 60-75), or
SAE J200 M4CA 710 A25 B35 C32 EA14 F17 G21 Z1 (EPDM) Z2 (Duro 60-75).

CONSTRUCTION EPDM tube with no reinforcement.

PACKAGING Various size boxes. Setup charge and minimum order quantity may apply.
Available with end caps, individually bagged, or bulk bagged in the box

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		EXTRUDED ID		WALL NOMINAL			VACUUM MINIMUM,**		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	mm	in.	rtg.	kpa	in. hg	mm	in.	kg/m	lbs/ft
5.6 ±0.8	7/32 ±0.03	4.8	0.19	2.92 ±0.51	0.115 ±0.02	1			11.1	0.4375	0.09	0.06
6.4	1/4	6.4	0.25	2.92	0.115	1			12.7	0.5	0.10	0.07
8.7	11/32	8.1	0.32	2.41	0.095	1			17.5	0.6875	0.10	0.07
8.7	11/32	8.1	0.32	4.95	0.195	2			17.5	0.6875	0.24	0.16
8.7	11/32	8.1	0.32	7.62	0.300	6	95	28.0	17.5	0.6875	0.44	0.30
9.5	3/8	9.1	0.36	1.40	0.055	1			19.1	0.75	0.06	0.04
11.9	15/32	11.4	0.45	4.57 ±0.76	0.180 ±0.030	1			23.8	0.9375	0.27	0.18
12.7	1/2	11.4	0.45	3.05	0.120	1			25.4	1	0.17	0.11
15.9	5/8	14.2	0.56	3.81	0.150	1			31.8	1.25	0.26	0.17
18.5	.73	17.5	0.69	4.06	0.160	1			37.1	1.46	0.31	0.21
19.1	3/4	18.0	0.71	0.51	0.020	2			38.1	1.5	0.43	0.29
19.1	3/4	18.0	0.71	6.48	0.255	4	95	28.0	38.1	1.5	0.57	0.38
22.2	7/8	21.1	0.83	3.81	0.150	1			44.5	1.75	0.36	0.24
25.4	1	24.1	0.95	5.59 ±1.02	0.220 ±0.040	2	37	11.0	50.8	2	0.61	0.41
28.6	1-1/8	27.2	1.07	4.70	0.185	2	22	6.6	57.2	2.25	0.55	0.37
31.8	1-1/4	30.2	1.19	6.35 ±1.27	0.250 ±0.050	4	37	11.0	63.5	2.5	0.85	0.57
33.3	1.31	31.5	1.24	6.35	0.250	4	30	8.8	66.5	2.62	0.43	0.29
34.9	1-3/8	33.3	1.31	6.35	0.250	4	27	8.1	69.9	2.75	0.92	0.62
36.6	1.44	34.8	1.37	6.35	0.250	4	22	6.6	73.2	2.88	0.95	0.64
36.6	1.44	34.8	1.37	9.91	0.390	9	37	11.0	73.2	2.88	1.58	1.06
38.1	1-1/2	36.1	1.42	4.83	0.190	3	19	5.5	76.2	3	0.70	0.47
38.1	1-1/2	36.1	1.42	6.35	0.250	4	22	6.6	76.2	3	0.98	0.66
38.1	1-1/2	36.1	1.42	6.73	0.265	5	22	6.6	76.2	3	1.06	0.71
41.3	1-5/8	39.1	1.54	6.35	0.250	4	22	6.6	82.6	3.25	1.06	0.71
44.5	1-3/4	42.2	1.66	4.95	0.195	2	8	2.5	88.9	3.5	0.86	0.58
44.5	1-3/4	42.2	1.66	5.97	0.235	3	10	3.0	88.9	3.5	1.06	0.71
44.5	1-3/4	42.2	1.66	6.35	0.250	4	14	4.0	88.9	3.5	1.13	0.76
44.5	1-3/4	42.2	1.66	6.60	0.260	5	14	4.0	88.9	3.5	1.18	0.79
44.5	1-3/4	42.2	1.66	7.75	0.305	7	17	5.0	88.9	3.5	1.41	0.95
47.6	1-7/8	45.5	1.79	5.08	0.200	2	7	2.0	95.3	3.75	0.94	0.63

4289E (CONTINUED)

ID		EXTRUDED ID		WALL NOMINAL			VACUUM MINIMUM.**		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	mm	in.	rtg.	kpa	in. hg	mm	in.	kg/m	lbs/ft
47.6	1-7/8	45.5	1.79	6.35	0.250	4	10	3.0	95.3	3.75	1.21	0.81
47.6	1-7/8	45.5	1.79	6.86	0.270	5	14	4.0	95.3	3.75	1.31	0.88
50.8	2	48.3	1.90	5.08	0.200	2	5	1.5	101.6	4	1.00	0.67
50.8	2	48.3	1.90	6.35	0.250	4	8	2.5	101.6	4	1.26	0.85
50.8	2	48.3	1.90	7.87	0.310	5	15	4.5	101.6	4	1.61	1.08
50.8	2	48.3	1.90	8.89	0.350	8	20	5.9	101.6	4	1.85	1.24
53.8	2.12	51.3	2.02	2.92	0.115	1	2	0.5	107.7	4.24	0.60	0.40
53.8	2.12	51.3	2.02	7.87	0.310	6	14	4.3	107.7	4.24	1.70	1.14
53.8	2.12	48.5	1.91	9.65	0.380	9	24	7.0	107.7	4.24	2.04	1.37
55.6	2.19	52.8	2.08	6.35	0.250	4	8	2.3	111.3	4.38	1.37	0.92
57.2	2-1/4	54.4	2.14	4.95	0.195	2	3	1.0	114.3	4.5	1.06	0.71
57.2	2-1/4	54.4	2.14	6.35	0.250	4	7	2.0	114.3	4.5	1.41	0.95
57.2	2-1/4	54.4	2.14	7.62	0.300	5	12	3.5	114.3	4.5	1.73	1.16
57.2	2-1/4	54.4	2.14	8.76	0.345	7	19	5.5	114.3	4.5	2.01	1.35
57.9	2.28	55.1	2.17	3.99	0.157	1	2	0.5	115.8	4.56	0.85	0.57
57.9	2.36	56.9	2.24	6.35	0.250	4	7	2.0	119.9	4.72	1.47	0.99
57.9	2.36	56.9	2.24	7.87	0.310	8	14	4.0	119.9	4.72	1.86	1.25
63.5	2-1/2	60.2	2.37	4.83	0.190	1	3	1.0	127.0	5	1.13	0.76
63.5	2-1/2	60.2	2.37	5.59	0.220	2	5	1.5	127.0	5	1.35	0.91
63.5	2-1/2	60.2	2.37	6.35	0.250	4	7	2.0	127.0	5	1.55	1.04
63.5	2-1/2	60.2	2.37	7.37	0.290	6	10	3.0	127.0	5	1.82	1.22
63.5	2-1/2	60.2	2.37	8.13	0.320	8	14	4.0	127.0	5	2.02	1.36
63.5	2-1/2	60.2	2.37	9.14	0.360	9	17	5.0	127.0	5	2.31	1.55
65.0	2.56	61.7	2.43	6.35	0.250	4	7	2.0	130.0	5.12	1.58	1.06
69.9 ±1.5	2 3/4 ±0.06	66.3	2.61	6.35	0.250	4	5	1.5	139.7	5.5	1.68	1.13
69.9	2-3/4	66.3	2.61	6.73	0.265	5	5	1.5	139.7	5.5	1.79	1.20
69.9	2-3/4	66.3	2.61	7.37	0.290	6	7	2.0	139.7	5.5	1.98	1.33
69.9	2-3/4	66.3	2.61	8.13	0.320	8	10	3.0	139.7	5.5	2.20	1.48
69.9	2-3/4	66.3	2.61	9.53	0.375	9	19	5.5	139.7	5.5	2.62	1.76
76.2	3	72.4	2.85	6.35	0.250	4	3	1.0	152.4	6	1.83	1.23
76.2	3	72.4	2.85	6.86	0.270	5	5	1.5	152.4	6	1.98	1.33
76.2	3	72.4	2.85	7.37	0.290	6	7	2.0	152.4	6	2.14	1.44
76.2	3	72.4	2.85	8.13	0.320	7	10	3.0	152.4	6	2.38	1.60
76.2	3	72.4	2.85	8.76	0.345	8	14	4.0	152.4	6	2.59	1.74
76.2	3	72.4	2.85	9.40	0.370	9	17	5.0	152.4	6	2.80	1.88
79.4	3-1/8	75.4	2.97	6.35	0.250	4	3	1.0	158.8	6.25	1.90	1.28
82.6	3-1/4	78.5	3.09	6.35	0.250	4	3	1.0	165.1	6.5	1.96	1.32
82.6	3-1/4	78.5	3.09	8.13	0.320	7	7	2.0	165.1	6.5	2.56	1.72
88.9	3-1/2	84.3	3.32	6.35	0.250	4	2	0.5	165.1	6.5	2.10	1.41
88.9	3-1/2	84.3	3.32	8.13	0.320	6	7	2.0	165.1	6.5	2.74	1.84
88.9	3-1/2	84.3	3.32	8.76	0.345	7	8	2.5	165.1	6.5	2.96	1.99
88.9	3-1/2	84.3	3.32	9.53	0.375	8	12	3.5	165.1	6.5	3.24	2.18
95.3	3.75	90.4	3.56	6.35	0.250	4	2	0.5	165.1	6.5	2.25	1.51
95.3	3.75	90.4	3.56	8.13	0.320	8	5	1.5	165.1	6.5	2.92	1.96
101.6	4	90.4	3.80	6.35	0.250	4	2	0.5	165.1	6.5	2.38	1.60
101.6	4	96.5	3.80	7.87	0.310	6	5	0.5	165.1	6.5	2.99	2.01
101.6	4	96.5	3.80	8.89	0.350	8	7	2.0	165.1	6.5	3.41	2.29
101.6	4	96.5	3.80	9.53	0.375	9	8	2.5	165.1	6.5	3.66	2.46
101.6	4	96.5	3.80	10.03	0.395	7	10	3.0	165.1	6.5	3.93	2.64
106.9	4.21	101.6	4.00	9.53	0.375	9	8	2.5	165.1	6.5	3.84	2.58

* For cuff length on one end only. This guideline is subject to change based on the complexity of the hose design.

** Not a specification requirement. See the hose design section. Can be increased with a wire coil inserted in the hose ID.



DRIVEN BY POSSIBILITY™

KEEP YOUR ENGINES RUNNING

GATES COOLANT HOSE YOUR EQUIPMENT RELIES ON THE PERFORMANCE OF YOUR ENGINE. YOUR ENGINE RELIES ON THE PERFORMANCE OF YOUR COOLANT HOSE. WHEN YOU NEED TO DESIGN OR IMPROVE CRITICAL PIECES OF YOUR COMPLEX MACHINERY, TRUST GATES TO DELIVER HIGH

PERFORMANCE SOLUTIONS WITH OUR CUSTOMIZED COOLANT HOSES. WE'LL MANUFACTURE A TAILOR-MADE COOLANT HOSE FOR YOUR INDUSTRIAL, AGRICULTURAL, RECREATIONAL, AND HEAVY-DUTY AUTOMOTIVE APPLICATIONS, SO YOU CAN KEEP YOUR ENGINES RUNNING WITH THE POWER OF GATES.

COOLANT HOSES

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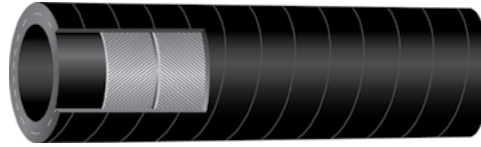
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4175EC (75W)**STANDARD COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose such as radiator and heater hoses or connectors. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.

STANDARDS

SAE 20R1 EC Class D2, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

CONSTRUCTION

EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

PACKAGING

Bulk lengths are 3 foot sticks in a box, or 50 foot coil in a box. Custom lengths available with minimum order quantity.

COUPLINGS

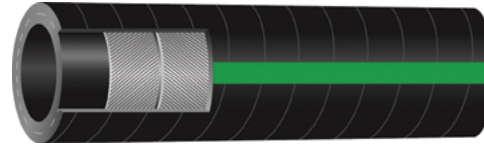
Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	50 ft. Length
12.7 ±0.8	1/2 ±0.03	22.6	0.89	0.72	105	2.93	425	33.8	10	127	5	0.39	0.27	***	***
15.9	5/8	25.9	1.02	0.66	95	2.59	375	27.0	8	203	8	0.45	0.30	***	***
19.1	3/4	29.7	1.17	0.55	80	2.24	325	27.0	8	152	6	0.51	0.34	4175-0005	4175-0855
22.2	7/8	33.0	1.30	0.52	75	2.07	300	23.6	7	178	7	0.59	0.40	4175-0006	4175-0856
25.4	1	36.1	1.42	0.95	138	3.79	550	23.6	7	203	8	0.66	0.44	4175-0007	4175-0857
28.6	1-1/8	39.4	1.55	0.86	125	3.45	500	20.3	6	203	8	0.74	0.50	4175-0009	4175-0859
31.8	1-1/4	42.4	1.67	0.69	100	2.76	400	16.9	5	305	12	0.78	0.53	4175-0011	4175-0861
34.9	1-3/8	45.7	1.80	0.69	100	2.76	400	13.5	4	305	12	0.86	0.58	4175-0013	4175-0863***
38.1	1-1/2	48.8	1.92	0.69	100	2.76	400	10.1	3	305	12	0.93	0.62	4175-0015	4175-0865
41.3	1-5/8	52.1	2.05	0.61	88	2.41	350	6.8	2	381	15	0.95	0.64	4175-0017	4175-0867
44.5	1-3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	381	15	0.99	0.67	4175-0019	4175-0869
47.6	1-7/8	58.4	2.30	0.52	75	2.07	300	*	*	**	**	1.03	0.70	4175-0021	4175-0871
50.8 ±1.6	2 ±0.06	61.5	2.42	0.43	62	1.72	250	*	*	**	**	1.13	0.76	4175-0022	4175-0872
54.0	2-1/8	64.8	2.55	0.43	62	1.72	250	*	*	**	**	1.18	0.79	4175-0023	4175-0873***
57.2	2-1/4	67.8	2.67	0.43	62	1.72	250	*	*	**	**	1.31	0.88	4175-0024	4175-0874
60.3	2-3/8	71.1	2.80	0.43	62	1.72	250	*	*	**	**	1.36	0.92	4175-0025	4175-0875
63.5	2-1/2	74.2	2.92	0.43	62	1.72	250	*	*	**	**	1.47	0.99	4175-0026	4175-0876
66.7	2-5/8	77.5	3.05	0.43	62	1.72	250	*	*	**	**	1.51	1.02	4175-0027	4175-0877***
69.9	2-3/4	80.5	3.17	0.43	62	1.72	250	*	*	**	**	1.60	1.08	4175-0028	4175-0878
73.0	2-7/8	83.8	3.30	0.39	56	1.55	225	*	*	**	**	1.64	1.10	4175-0029	4175-0879***
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.76	1.18	4175-0030	4175-0880
82.6	3-1/4	92.5	3.64	0.26	38	1.03	150	*	*	**	**	1.77	1.19	4175-0032	***
88.9	3-1/2	99.6	3.92	0.12	18	0.52	75	*	*	**	**	1.96	1.32	4175-0033	4175-0883
95.3	3-3/4	105.2	4.14	0.11	16	0.46	66	*	*	**	**	2.02	1.36	4175-0035	***
101.6	4	112.3	4.42	0.08	12	0.34	50	*	*	**	**	2.24	1.51	4175-0036	4175-0886
114.3	4-1/2	125.0	4.92	0.08	12	0.34	50	*	*	**	**	2.52	1.70	4175-0039	4175-0889
127.0	5	137.7	5.42	0.08	12	0.34	50	*	*	**	**	2.79	1.88	***	4175-0839***
139.7	5-1/2	150.4	5.92	0.08	12	0.34	50	*	*	**	**	2.90	1.95	***	***
152.4	6	163.1	6.42	0.08	12	0.34	50	*	*	**	**	3.29	2.21	***	4175-0902***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4178 (GREEN STRIPE)**PREMIUM COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Premium engine coolant hose such as radiator hoses or connectors. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +125°C (-40°F to +257°F) continuous and +150°C (+302°F) peak.

STANDARDS

SAE 20R1 EC Class D1, except wall is 5.35±0.76mm (0.21±0.03 inch). Sizes 1/2", 3-1/8", 3-1/4", and 3-3/4" have the SAE 20R1 standard wall of 4.95±0.65mm (0.195±0.026 inch). Wall thickness excludes lap area.

CONSTRUCTION

EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

PACKAGING

Packaging Bulk lengths are straight pieces in a box. Custom lengths available with a minimum order quantity.

COUPLINGS

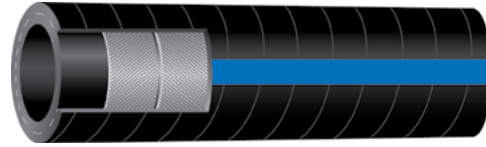
Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	AUTO-MOTIVE NUMBER	EUROPE ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length		1 m. Length
12.7 ±0.08	1/2 ±0.03	22.6	0.89	0.72	105	2.93	425	33.8	10	**	**	0.40	0.27	***		
19.1	3/4	29.8	1.17	0.55	80	2.24	325	27.0	8	**	**	0.52	0.35	4168-1712	24212	4168-8019
22.2	7/8	32.9	1.30	0.52	75	2.06	300	23.7	7	**	**	0.60	0.4	4168-1714	24214	4168-8022
25.4	1	36.1	1.42	0.52	75	2.07	300	23.7	7	**	**	0.65	0.44	4168-1716	24216	4168-8025
28.6	1-1/8	39.3	1.55	0.52	75	2.07	300	20.3	6	**	**	0.74	0.5	4168-1718	24218	4168-8029
31.8	1-1/4	42.5	1.67	0.47	68	1.90	275	16.9	5	**	**	0.79	0.53	4168-1720	24220	4168-8032
34.9	1-3/8	45.6	1.80	0.47	68	1.90	275	13.5	4	**	**	0.86	0.58	4168-1722	24222	4168-8035
38.1	1-1/2	48.8	1.92	0.43	62	1.72	250	10.1	3	**	**	0.92	0.62	4168-1724	24224	4168-8038
41.3	1-5/8	52.0	2.05	0.43	62	1.72	250	6.8	2	**	**	0.95	0.64	4168-1726	24226	4168-8041
44.5	1-3/4	55.2	2.17	0.39	56	1.55	225	3.4	1	**	**	1.00	0.67	4168-1728	24228	4168-8044
47.6	1-7/8	58.3	2.30	0.37	53	1.46	212	*	*	**	**	1.04	0.7	4168-1730	24230	4168-8048
50.8 ±1.6	2 ±0.06	61.5	2.42	0.34	50	1.38	200	*	*	**	**	1.19	0.8	4168-1732	24232	4168-8051
54.0	2-1/8	64.7	2.55	0.32	47	1.29	187	*	*	**	**	1.24	0.83	4168-1734	24234	4168-8054
57.2	2-1/4	67.9	2.67	0.30	44	1.21	175	*	*	**	**	1.32	0.89	4168-1736	24236	4168-8057
60.3	2-3/8	71.0	2.80	0.30	44	1.21	175	*	*	**	**	1.37	0.92	4168-1738	24238	4168-8060
63.5	2-1/2	74.2	2.92	0.26	38	1.03	150	*	*	**	**	1.47	0.99	4168-1740	24240	4168-8064
66.7	2-5/8	77.4	3.05	0.23	34	0.94	137	*	*	**	**	1.52	1.02	4168-1742	24242	4168-8067
69.9	2-3/4	80.6	3.17	0.21	31	0.86	125	*	*	**	**	1.58	1.06	4168-1744	24244	4168-8070
73.0	2-7/8	83.7	3.30	0.19	28	0.77	112	*	*	**	**	1.64	1.1	4168-1746	24246	4168-8073
76.2	3	86.9	3.42	0.17	25	0.69	100	*	*	**	**	1.76	1.18	4168-1748	24248	4168-8076
79.4	3-1/8	89.3	3.52	0.17	24	0.63	92	*	*	**	**	1.71	1.15	4168-1750***	24250	
82.6	3-1/4	92.5	3.64	0.15	22	0.60	87	*	*	**	**	1.77	1.19	4168-1752	24252	4168-8083
88.9	3-1/2	99.6	3.92	0.12	18	0.52	75	*	*	**	**	1.96	1.32	4168-1756	24256	4168-8089
95.3	3-3/4	105.2	4.14	0.10	15	0.43	62	*	*	**	**	2.02	1.36	4168-1760***	24260	
101.6	4	112.3	4.42	0.08	12	0.34	50	*	*	**	**	2.25	1.51	4168-1764	24264	4168-8102
114.3	4-1/2	125.0	4.92	0.08	12	0.34	50	*	*	**	**	2.53	1.7	4168-1772	24272	4168-8114

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4175SC (BLUE STRIPE)**PREMIUM COOLANT HOSE, HIGHER PRESSURE**
RELATIVE COST ●●●○○○

APPLICATIONS Premium engine coolant hose such as radiator hoses or connectors. Not for conveying fuel or oil.

TEMPERATURE -40°C to +125°C (-40°F to +257°F) continuous and +150°C (+302°F) peak.

STANDARDS SAE 20R1 EC Class D1, standard wall (except with higher burst).
Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

CONSTRUCTION EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

PACKAGING Bulk lengths are 3 ft sticks packed 10 per box. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
22.2±0.08	7/8±0.03	33.0	1.30	0.52	75	2.06	300	23.6	7	**	**	0.60	0.40	***
25.4	1	36.0	1.42	0.95	138	3.79	550	23.6	7	**	**	0.65	0.44	***
28.6	1-1/8	39.4	1.55	0.86	125	3.45	500	20.3	6	**	**	0.74	0.50	***
31.8	1-1/4	42.4	1.67	0.69	100	2.76	400	16.9	5	**	**	0.78	0.53	4175-3701
38.1	1-1/2	49.6	1.95	0.69	100	2.76	400	10.1	3	**	**	0.93	0.62	4175-3702
41.3	1-5/8	52.1	2.05	0.61	88	2.41	350	6.8	2	**	**	0.95	0.64	4175-3703
44.5	1-3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	**	**	0.99	0.67	4175-3704
50.8±1.6	2±0.06	61.5	2.42	0.43	62	1.72	250	*	*	**	**	1.19	0.80	4175-3705
57.2	2-1/4	67.8	2.67	0.43	62	1.72	250	*	*	**	**	1.33	0.89	4175-3706
60.3	2-3/8	71.1	2.80	0.43	62	1.72	250	*	*	**	**	1.36	0.92	***
63.5	2-1/2	74.2	2.92	0.43	62	1.72	250	*	*	**	**	1.49	1.00	4175-3707
69.9	2-3/4	80.5	3.17	0.43	62	1.72	250	*	*	**	**	1.59	1.07	4175-3708
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.76	1.18	4175-3709
88.9	3-1/2	99.6	3.92	0.13	18.8	0.52	75	*	*	**	**	1.96	1.32	***
101.6	4	112.3	4.42	0.08	12	0.34	50	*	*	**	**	2.24	1.51	***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4175HT (FLEETRANNER)**HIGHER TEMPERATURE COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose such as radiator hoses or connectors. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +150°C (-40°F to +302°F).

STANDARDS

SAE 20R1 EC Class D3, standard wall (except with higher burst).
Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

CONSTRUCTION

p-EPDM tube, synthetic fabric reinforcement plies, green p-EPDM cover with wrapped appearance.

PACKAGING

Bulk lengths are 3 foot sticks packed in a box. Custom lengths available with minimum order quantity.

COUPLINGS

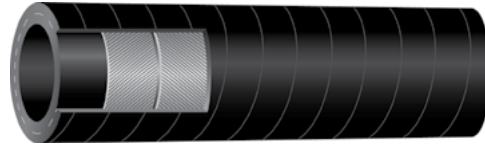
Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
22.2 ±0.08	7/8 ±0.03	33.0	1.30	1.03	150	4.14	600	23.6	7	**	**	0.58	0.39	4175-3190
25.4	1	36.1	1.42	1.03	150	4.14	600	23.6	7	**	**	0.61	0.41	4175-0583***
28.6	1-1/8	39.4	1.55	1.03	150	4.14	600	20.3	6	**	**	0.68	0.46	4175-3191
31.8	1-1/4	42.4	1.67	1.03	150	4.14	600	16.9	5	**	**	0.71	0.48	4175-0584***
34.9	1-3/8	45.7	1.80	1.03	150	4.14	600	13.5	4	**	**	0.79	0.53	4175-3192
38.1	1-1/2	48.8	1.92	1.03	150	4.14	600	10.1	3	**	**	0.85	0.57	4175-0585***
41.3	1-5/8	52.1	2.05	1.03	150	4.14	600	6.8	2	**	**	0.92	0.62	4175-3193***
44.5	1-3/4	54.6	2.15	1.03	150	4.14	600	3.4	1	**	**	0.98	0.66	4175-0586***
47.6	1-7/8	58.4	2.30	1.03	150	4.14	600	*	*	**	**	1.00	0.67	4175-3194
50.8 ±1.6	2 ±0.06	61.5	2.42	1.03	150	4.14	600	*	*	**	**	1.09	0.73	4175-0587***
57.2	2-1/4	66.8	2.63	0.86	125	3.45	500	*	*	**	**	1.22	0.82	4175-0588***
60.3	2-3/8	70.1	2.76	0.86	125	3.45	500	*	*	**	**	1.25	0.84	4175-3195***
63.5	2-1/2	73.7	2.90	0.86	125	3.45	500	*	*	**	**	1.35	0.91	4175-0589
69.9	2-3/4	79.5	3.13	0.86	125	3.45	500	*	*	**	**	1.47	0.99	4175-0590***
76.2	3	86.9	3.42	0.86	125	3.45	500	*	*	**	**	1.58	1.06	4175-0591***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4176HD (76W)**THICK WALL COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose such as radiator and heater hoses or connectors. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.

STANDARDS

SAE 20R1 Class D2, heavy wall. Wall thickness is 6.45±0.65mm (0.255±0.025 inch) excluding lap area.

CONSTRUCTION

EPDM tube, synthetic fabric reinforcement plies, EPDM cover with wrapped appearance.

PACKAGING

Bulk lengths are 3 foot sticks in a box, or 50 foot coil in a box. Custom lengths available with minimum order quantity.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	50 ft. Length
19.1±0.8	3/4±0.03	32.3	1.27	0.86	125	3.45	500	50.7	15	152	6	0.72	0.49	4176-0005	4176-3374
22.2	7/8	35.6	1.40	1.21	175	4.83	700	50.7	15	178	7	0.72	0.49	4176-0006	4176-0856
25.4	1	38.6	1.52	1.21	175	4.83	700	33.8	10	203	8	0.82	0.55	4176-0007	4176-0857
28.6	1-1/8	41.9	1.65	1.21	175	4.83	700	33.8	10	203	8	0.89	0.60	4176-0009	4176-0859
31.8	1-1/4	45.0	1.77	0.86	125	3.45	500	33.8	10	305	12	0.98	0.66	4176-0011	4176-0861
34.9	1-3/8	48.3	1.90	0.77	112	3.10	450	33.8	10	305	12	1.05	0.71	4176-0013	4176-0863
38.1	1-1/2	51.3	2.02	0.77	112	3.10	450	33.8	10	305	12	1.13	0.76	4176-0015	4176-0865
41.3	1-5/8	54.6	2.15	0.73	106	2.93	425	23.7	7	356	14	1.20	0.81	4176-0017	4176-0867
44.5	1-3/4	57.7	2.27	0.69	100	2.76	400	16.9	5	381	15	1.27	0.85	4176-0019	4176-0869
47.6	1-7/8	61.0	2.40	0.65	94	2.59	375	13.5	4	**	**	1.36	0.92	4176-0021	4176-0871***
50.8±1.6	2±0.06	64.0	2.52	0.61	88	2.41	350	10.1	3	**	**	1.44	0.97	4176-0022	4176-0872
54.0	2-1/8	67.3	2.65	0.61	88	2.41	350	6.8	2	**	**	1.52	1.02	4176-0023	
57.2	2-1/4	70.4	2.77	0.61	88	2.41	350	3.4	1	**	**	1.59	1.07	4176-0024	4176-0874
60.3	2-3/8	73.7	2.90	0.56	81	2.24	325	*	*	**	**	1.69	1.13	4176-0025	4176-0875***
63.5	2-1/2	76.7	3.02	0.52	75	2.07	300	*	*	**	**	1.76	1.18	4176-0026	4176-0876
66.7	2-5/8	80.0	3.15	0.48	69	1.90	275	*	*	**	**	1.84	1.24	4176-0027	4176-0877***
69.9	2-3/4	83.1	3.27	0.43	63	1.72	250	*	*	**	**	1.92	1.29	4176-0028	4176-0878
73.0	2-7/8	86.4	3.40	0.43	63	1.72	250	*	*	**	**	2.01	1.35	4176-0029	4176-0879***
76.2	3	89.4	3.52	0.43	63	1.72	250	*	*	**	**	2.07	1.39	4176-0030	4176-0880
82.6	3-1/4	95.8	3.77	0.39	56	1.55	225	*	*	**	**	2.39	1.61	4176-0032	
88.9	3-1/2	102.1	4.02	0.34	50	1.38	200	*	*	**	**	2.40	1.62	4176-0033	4176-0883
95.3	3-3/4	108.5	4.27	0.30	44	1.21	175	*	*	**	**	2.74	1.84	4176-0035	
101.6	4	114.8	4.52	0.26	38	1.03	150	*	*	**	**	2.72	1.83	4176-0036	4176-0886

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4272 (FLEXCORD PLUS)**LIGHT DUTY METRIC COOLANT HOSE**
(EUROPEAN MARKET ONLY)**RELATIVE COST****APPLICATIONS**

Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +135°C (-40°F to +275°F).

STANDARDS

SAE 20R4 Class D2 and DIN 73411 Class B1.

CONSTRUCTION

EPDM tube, aramid knit reinforcement, EPDM cover.

PACKAGING

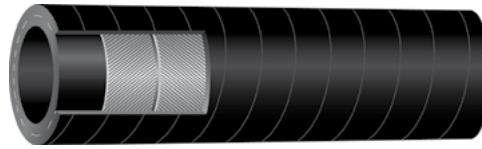
Bulk lengths are 1 meter sticks in a box. Custom lengths available with minimum order quantity.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		WEIGHT REFERENCE		EUROPE ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	kg/m	lbs/ft	1m Length
8	5/16	18	0.70	0.40	58	1.24	180	*	*	0.12	0.08	4272-10080
10	3/8	20	0.78	0.40	58	1.24	180	*	*	0.13	0.09	4272-10100
12	1/2	22	0.86	0.40	58	1.20	174	*	*	0.14	0.09	4272-10120
15	5/8	25	0.98	0.40	58	1.20	174	*	*	0.17	0.11	4272-10150
18	11/16	28	1.10	0.40	58	1.20	174	*	*	0.20	0.14	4272-10180
20	13/16	30	1.18	0.30	44	1.00	145	*	*	0.24	0.16	4272-10200
22	7/8	32	1.26	0.30	44	1.00	145	*	*	0.28	0.19	4272-10220
25	1	35	1.37	0.30	44	1.00	145	*	*	0.33	0.22	4272-10250
28	1-1/8	38	1.49	0.30	44	1.00	145	*	*	0.35	0.24	4272-10280
30	1-3/16	40	1.57	0.30	44	1.00	145	*	*	0.38	0.26	4272-10300
32	1-1/4	42	1.65	0.30	44	1.00	145	*	*	0.42	0.28	4272-10320
35	1-3/8	45	1.77	0.30	44	1.00	145	*	*	0.44	0.29	4272-10350
38	1-1/2	48	1.89	0.30	44	1.00	145	*	*	0.46	0.31	4272-10380
40	1-9/16	50	1.96	0.20	29	0.76	110	*	*	0.50	0.33	4272-10400
42	1-5/8	52	2.04	0.20	29	0.76	110	*	*	0.55	0.37	4272-10420
45	1-3/4	55	2.16	0.20	29	0.69	100	*	*	0.53	0.36	4272-10450
48	1-7/8	58	2.28	0.20	29	0.69	100	*	*	0.58	0.39	4272-10480
50	2	60	2.36	0.20	29	0.69	100	*	*	0.60	0.40	4272-10500

* No specification requirement.

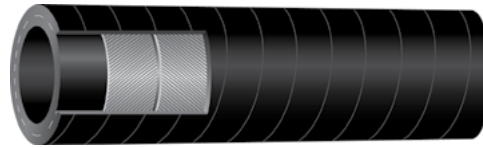
4169A**OIL-RESISTANT COOLANT HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions.**TEMPERATURE** -40°C to +100°C (-40°F to +212°F).**STANDARDS** SAE 20R1 Class B tube and Class C cover, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.**CONSTRUCTION** NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.**PACKAGING** Bulk lengths are 3 foot sticks in a box, or 10 foot coil in a box. Custom lengths or enlarged ends available with minimum order quantity.**COUPLINGS** Couplings Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	10 ft. Length
19.1±0.8	3/4±0.03	29.7	1.17	1.03	150	4.14	600	27.0	8	254	10	0.46	0.31	4169-0210	4169-0158***
22.2	7/8	33.0	1.30	1.03	150	4.14	600	23.6	7	279	11	0.61	0.41	4169-0220	4169-0156
25.4	1	36.1	1.42	0.93	135	3.79	550	23.6	7	305	12	0.68	0.46	4169-0224	4169-0157
28.6	1-1/8	39.4	1.55	0.93	135	3.45	500	20.3	6	330	13	0.77	0.52	4169-0240	4169-0159
31.8	1-1/4	42.4	1.67	0.93	135	2.76	400	16.9	5	356	14	0.81	0.55	4169-0246	4169-0161
34.9	1-3/8	45.7	1.80	0.69	100	2.76	400	13.5	4	635	25	0.88	0.59	4169-0260	4169-0163
38.1	1-1/2	48.8	1.92	0.69	100	2.76	400	10.1	3	762	30	0.96	0.65	4169-0270	4169-0165
41.3	1-5/8	52.1	2.05	0.59	85	2.41	350	6.8	2	**	**	1.01	0.68	4169-0280	4169-0167
44.5	1-3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	**	**	1.09	0.73	4169-0288	4169-0169
47.6	1-7/8	58.4	2.30	0.52	75	2.07	300	*	*	**	**	1.16	0.78	4169-0300	4169-0171
50.8±1.6	2±0.06	61.5	2.42	0.41	60	1.72	250	*	*	**	**	1.19	0.80	4169-0484	4169-0172
54.0	2-1/8	64.8	2.55	0.41	60	1.72	250	*	*	**	**	1.30	0.87	4169-0320	
57.2	2-1/4	67.8	2.67	0.41	60	1.72	250	*	*	**	**	1.34	0.90	4169-0491	4169-0174
60.3	2-3/8	71.1	2.80	0.41	60	1.72	250	*	*	**	**	1.41	0.95	4169-0340	4169-0175
63.5	2-1/2	74.2	2.92	0.41	60	1.72	250	*	*	**	**	1.48	1.00	4169-0345	4169-0176
66.7	2-5/8	77.5	3.05	0.41	60	1.72	250	*	*	**	**	1.56	1.05	4169-0360***	
69.9	2-3/4	80.5	3.17	0.41	60	1.72	250	*	*	**	**	1.63	1.10	4169-0362	4169-0178
73.0	2-7/8	83.8	3.30	0.38	55	1.55	225	*	*	**	**	1.70	1.14	4169-0376***	
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.74	1.17	4169-0383	4169-0180
82.6	3-1/4	93.2	3.67	0.24	35	1.03	150	*	*	**	**	1.89	1.27	4169-0402***	
88.9	3-1/2	99.6	3.92	0.13	19	0.52	75	*	*	**	**	2.02	1.36	4169-0420	4169-0183
101.6	4	112.3	4.42	0.07	10	0.34	50	*	*	**	**	2.31	1.55	4169-0425	4169-0186
114.3	4-1/2	125.0	4.92	0.07	10	0.34	50	*	*	**	**	2.57	1.73	4169-0433***	4169-0189***
127.0	5	137.7	5.42	0.07	10	0.34	50	*	*	**	**	2.84	1.91		4169-0192***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4176Y**OIL-RESISTANT THICK-WALL COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions.

TEMPERATURE

-40°C to +100°C (-40°F to +212°F).

STANDARDS

SAE 20R1 Class B tube and Class C cover, heavy wall. Wall thickness is 6.45±0.65mm (0.255±0.025 inch) excluding lap area.

CONSTRUCTION

NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.

PACKAGING

Bulk lengths are 3 foot sticks in a box, or 10 foot coil in a box. Custom lengths or enlarged ends available with minimum order quantity.

COUPLINGS

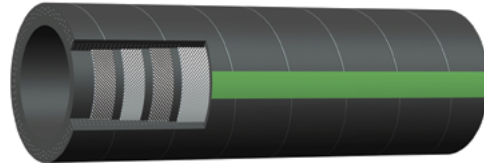
Couplings Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	10 ft. Length
25.4 ±0.08	1 ±0.03	39.4	1.55	0.95	138	3.79	550	40.6	12	254	10	0.93	0.63		4176-1803
28.6	1-1/8	42.7	1.68	0.95	138	3.79	550	33.8	10	279	11	1.03	0.69		4176-1806***
31.8	1-1/4	45.7	1.80	0.86	125	3.45	500	33.8	10	305	12	1.11	0.75		4176-1807
34.9	1-3/8	49.0	1.93	0.82	119	3.28	475	33.8	10	356	14	1.20	0.81		***
38.1	1-1/2	52.1	2.05	0.78	113	3.10	450	33.8	10	381	15	1.28	0.86		4176-1810
44.5	1-3/4	58.4	2.30	0.69	100	2.76	400	16.9	5	457	18	1.46	0.98	4176-0103***	4176-1789
50.8 ±1.6	2 ±0.06	64.8	2.55	0.60	88	2.41	350	10.1	3	**	**	1.64	1.10		4176-1812
57.2	2-1/4	71.1	2.80	0.60	88	2.41	350	3.4	1	**	**	1.82	1.22	4176-1879***	4176-1793
60.3	2-3/8	74.4	2.93	0.56	81	2.24	325	*	*	**	**	1.90	1.28		4176-1813***
63.5	2-1/2	77.5	3.05	0.52	75	2.07	300	*	*	**	**	2.00	1.34		4176-1814
66.7	2-5/8	80.8	3.18	0.47	69	1.90	275	*	*	**	**	2.08	1.40	4176-0132***	
69.9	2-3/4	83.8	3.30	0.43	63	1.72	250	*	*	**	**	2.17	1.46	4176-1823***	4176-1701***
76.2	3	90.2	3.55	0.43	63	1.72	250	*	*	**	**	2.35	1.58		4176-1816
88.9	3-1/2	102.9	4.05	0.34	50	1.38	200	*	*	**	**	2.70	1.82		4176-1826
101.6	4	115.6	4.55	0.26	38	1.03	150	*	*	**	**	3.05	2.05		4176-1830
114.3	4-1/2	128.3	5.05	0.21	30	0.83	120	*	*	**	**	3.31	2.23	4176-1917***	4176-1834***
127.0	5	141.0	5.55	0.19	28	0.76	110	*	*	**	**	3.76	2.53		4176-0150***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

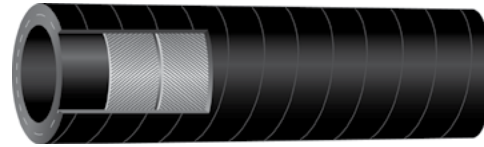
4179G (GREEN STRIPE)**OIL-RESISTANT THICK-WALL,
HIGHER PRESSURE COOLANT HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions.**TEMPERATURE** -40°C to +100°C (-40°F to +212°F).**STANDARDS** SAE 20R1 Class B tube and Class C cover, heavy wall. Wall thickness is 6.45±0.65mm (0.255±0.025 inch) excluding lap area.**CONSTRUCTION** NBR (nitrile) tube, synthetic fabric reinforcement 4 plies, CR (neoprene) cover with wrapped appearance.**PACKAGING** Bulk lengths are 3 foot sticks in a box. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
44.5±0.8	1 3/4 ±0.03	58.7	2.31	0.69	100	2.76	400	16.9	50	381	15	1.47	0.99	4179-1660
47.6	1-7/8	61.7	2.43	0.69	100	2.76	400	10.1	30	**	**	1.63	1.09	4179-1661
50.8±1.6	2 ±0.06	65.0	2.56	0.61	88	2.41	350	10.1	30	**	**	1.67	1.12	4179-1662
54.0	2-1/8	68.1	2.68	0.61	88	2.41	350	3.4	10	**	**	1.77	1.19	4179-1663
57.2	2-1/4	71.4	2.81	0.61	88	2.41	350	3.4	10	**	**	1.85	1.25	4179-1664
60.3	2-3/8	75.4	2.97	0.61	88	2.41	350	*	*	**	**	1.97	1.32	4179-1665
63.5	2-1/2	77.7	3.06	0.52	75	2.07	300	*	*	**	**	2.05	1.38	4179-1666
66.7	2-5/8	80.8	3.18	0.52	75	2.07	300	*	*	**	**	2.15	1.44	4179-1667
69.9	2-3/4	84.1	3.31	0.43	62	1.72	250	*	*	**	**	2.17	1.46	4179-1668
73.0	2-7/8	87.1	3.43	0.43	62	1.72	250	*	*	**	**	2.33	1.57	4179-1669
76.2	3	90.4	3.56	0.43	62	1.72	250	*	*	**	**	2.37	1.59	4179-1670
79.4	3-1/8	93.5	3.68	0.43	62	1.72	250	*	*	**	**	2.35	1.58	4179-1671
82.6	3-1/4	96.8	3.81	0.43	62	1.72	250	*	*	**	**	2.41	1.62	4179-1672
88.9	3-1/2	103.1	4.06	0.34	50	1.38	200	*	*	**	**	2.74	1.84	4179-1673
92.1	3-5/8	106.2	4.18	0.34	50	1.38	200	*	*	**	**	2.66	1.79	4179-1674
95.3	3-3/4	109.5	4.31	0.34	50	1.38	200	*	*	**	**	2.76	1.85	4179-1675***
101.6	4	115.8	4.56	0.26	38	1.03	150	*	*	**	**	3.16	2.12	4179-1676
127.0	5	141.2	5.56	0.26	38	1.03	150	*	*	**	**	3.81	2.56	4179-1680

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4169G**OIL-RESISTANT,
HIGHER TEMPERATURE COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose such as radiator and heater hoses or connectors, particularly for oily conditions. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air or water.

STANDARDS

SAE 20R1 EC Class D1 tube and Class C cover, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

CONSTRUCTION

EPDM tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.

PACKAGING

Bulk lengths are 3 foot sticks in a box. Custom lengths or enlarged ends available with minimum order quantity.

COUPLINGS

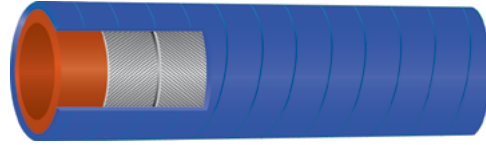
Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length
19.1±0.08	3/4±0.03	29.7	1.17	0.55	80	2.24	325	27.0	8	**	**	0.51	0.34	4168-2653*** (10ft)
25.4	1	36.1	1.42	0.95	138	3.45	500	23.6	7	305	12	0.72	0.48	4169-2550
28.6	1-1/8	39.4	1.55	0.69	100	2.76	400	20.3	6	356	14	0.81	0.55	4169-2562***
31.8	1-1/4	42.4	1.67	0.69	100	2.76	400	16.9	5	381	15	0.85	0.57	4169-2551
38.1	1-1/2	48.8	1.92	0.69	100	2.76	400	10.1	3	610	24	1.01	0.68	4169-2552
41.3	1-5/8	52.1	2.05	0.60	88	2.41	350	6.8	2	**	**	1.03	0.69	4169-2736***
44.5	1-3/4	55.1	2.17	0.52	75	2.07	300	3.4	1	**	**	1.09	0.73	4169-2553
47.6	1-7/8	58.4	2.30	0.52	75	2.07	300	*	*	**	**	1.13	0.76	4169-2737***
50.8±1.6	2±0.06	61.5	2.42	0.43	63	1.72	250	*	*	**	**	1.29	0.87	4169-3264
54.0	2-1/8	64.8	2.55	0.43	63	1.72	250	*	*	**	**	1.34	0.90	4169-2563***
57.2	2-1/4	67.8	2.67	0.43	63	1.72	250	*	*	**	**	1.44	0.97	4169-2555
60.3	2-3/8	71.1	2.80	0.43	63	1.72	250	*	*	**	**	1.49	1.00	4169-2556***
63.5	2-1/2	74.2	2.92	0.43	63	1.72	250	*	*	**	**	1.60	1.07	4169-2557***
66.7	2-5/8	77.5	3.05	0.43	63	1.72	250	*	*	**	**	1.64	1.10	4169-2760***
69.9	2-3/4	80.5	3.17	0.43	63	1.72	250	*	*	**	**	1.60	1.08	4169-2558
73.0	2-7/8	83.8	3.30	0.39	56	1.55	225	*	*	**	**	1.78	1.20	4169-2761***
76.2	3	86.9	3.42	0.34	50	1.38	200	*	*	**	**	1.87	1.26	4169-2559
88.9	3-1/2	99.6	3.92	0.13	19	0.52	75	*	*	**	**	2.13	1.43	4169-2560***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4171 (DURION)**HIGH TEMPERATURE SILICONE
COOLANT HOSE**
RELATIVE COST ●●●●○

APPLICATIONS Engine coolant hose to withstand temperature extremes. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE -55°C to +175°C (-65°F to +347°F) continuous to +260°C (500°F) for aramid reinforcement.

STANDARDS SAE 20R1 Class A, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

CONSTRUCTION Orange silicone tube, 4 plies of polyester or aramid fabric reinforcement, blue silicone cover with glossy appearance.

PACKAGING Lengths are 3 foot sticks in a box.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM POLYESTER REINFORCED	GATES ITEM ARAMID REINFORCED
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	3 ft. Length
12.7 ±0.8	1/2 ±0.03	22.1	0.87	0.73	106	2.93	425	40.6	12	**	**	0.42	0.28	4171-1900	
15.9	5/8	25.1	0.99	0.65	94	2.59	375	40.6	12	**	**	0.48	0.32	4171-1901	
19.1	3/4	28.4	1.12	0.56	81	2.24	325	33.8	10	**	**	0.55	0.37	4171-1902	
22.2	7/8	31.8	1.25	0.52	75	2.07	300	23.6	7	**	**	0.61	0.41	4171-1903	
25.4	1	34.8	1.37	0.52	75	2.07	300	23.6	7	**	**	0.68	0.46	4171-1904	4171-1000
28.6	1-1/8	38.1	1.50	0.52	75	2.07	300	20.3	6	**	**	0.73	0.49	4171-1905	
31.8	1-1/4	41.1	1.62	0.47	69	1.90	275	16.9	5	**	**	0.82	0.55	4171-1906	4171-1016
34.9	1-3/8	44.5	1.75	0.47	69	1.90	275	13.5	4	**	**	0.88	0.59	4171-1907	
38.1	1-1/2	47.5	1.87	0.43	63	1.72	250	10.1	3	**	**	0.92	0.62	4171-1908	4171-1017
41.3	1-5/8	50.5	1.99	0.43	63	1.72	250	6.8	2	**	**	1.01	0.68	4171-1909	
44.5	1-3/4	53.8	2.12	0.39	56	1.55	225	3.4	1	**	**	1.07	0.72	4171-1910	4171-1018
50.8 ±1.6	2 ±0.06	60.2	2.37	0.34	50	1.38	200	*	*	**	**	1.21	0.81	4171-1911	4171-1019
57.2	2-1/4	66.5	2.62	0.30	44	1.21	175	*	*	**	**	1.34	0.90	4171-1912	4171-1024
60.3	2-3/8	69.9	2.75	0.30	44	1.21	175	*	*	**	**	1.41	0.95	4171-1913	
63.5	2-1/2	72.9	2.87	0.26	38	1.03	150	*	*	**	**	1.49	1.00	4171-1914	4171-1025
69.9	2-3/4	79.2	3.12	0.22	31	0.86	125	*	*	**	**	1.64	1.10	4171-1915	4171-1026
76.2	3	85.6	3.37	0.17	25	0.69	100	*	*	**	**	1.77	1.19	4171-1916	4171-1027
79.4	3-1/8	88.9	3.50	0.17	25	0.69	100	*	*	**	**	1.85	1.24	4171-1917	
82.6	3-1/4	91.9	3.62	0.17	25	0.69	100	*	*	**	**	1.90	1.28	4171-1918	
88.9	3-1/2	98.3	3.87	0.17	25	0.69	100	*	*	**	**	2.05	1.38	4171-1919	
95.3	3-3/4	104.6	4.12	0.17	25	0.69	100	*	*	**	**	2.19	1.47	4171-1920	
101.6	4	111.0	4.37	0.17	25	0.69	100	*	*	**	**	2.37	1.59	4171-1921	
114.3	4-1/2	123.7	4.87	0.17	25	0.69	100	*	*	**	**	2.60	1.75	4171-1922	

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

4171**HIGH TEMPERATURE AND PRESSURE
SILICONE COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose to withstand temperature extremes. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-55°C to +175°C (-65°F to +347°F).

STANDARDS

SAE 20R1 Class A, standard wall. Wall thickness is 4.95±0.65mm (0.195±0.025 inch) excluding lap area.

CONSTRUCTION

Orange silicone tube, synthetic fabric reinforcement plies, green silicone cover with wrapped appearance.

PACKAGING

Bulk lengths are 10 foot sticks in a box. Custom lengths available with minimum order quantity.

COUPLINGS

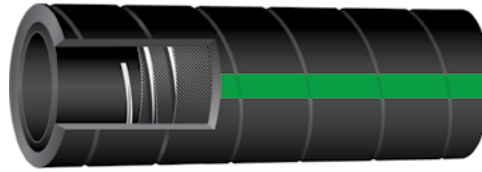
Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
9.5±0.8	3/8±0.03	18.8	0.74	0.76	110	2.93	425	40.6	12	203	8	0.31	0.21	4171-0195
12.7	1/2	22.1	0.87	0.76	110	2.93	425	40.6	12	203	8	0.42	0.28	4171-0197***
15.9	5/8	25.1	0.99	0.76	110	2.93	425	40.6	12	203	8	0.48	0.32	4171-0204
19.1	3/4	28.4	1.12	0.76	110	2.93	425	33.8	10	254	10	0.55	0.37	4171-0206***
22.2	7/8	31.5	1.24	0.76	110	2.93	425	23.6	7	279	11	0.61	0.41	4171-0210
25.4	1	34.8	1.37	0.62	90	2.59	375	23.6	7	305	12	0.68	0.46	4171-0213***
28.6	1-1/8	38.1	1.50	0.62	90	2.59	375	20.3	6	330	13	0.73	0.49	4171-0217
31.8	1-1/4	41.4	1.63	0.59	85	2.41	350	16.9	5	356	14	0.82	0.55	4171-0265***
34.9	1-3/8	44.5	1.75	0.59	85	2.41	350	13.5	4	660	26	0.88	0.59	4171-0260***
38.1	1-1/2	47.8	1.88	0.59	85	2.41	350	10.1	3	762	30	0.92	0.62	4171-0270
41.3	1-5/8	50.8	2.00	0.55	80	2.24	325	6.8	2	**	**	1.01	0.68	4171-0275
44.5	1-3/4	54.1	2.13	0.55	80	2.24	325	3.4	1	**	**	1.07	0.72	4171-0280***
47.6	1-7/8	57.2	2.25	0.55	80	2.24	325	*	*	**	**	1.15	0.77	***
50.8±1.6	2±0.06	60.5	2.38	0.52	75	2.07	300	*	*	**	**	1.21	0.81	4171-0285
54.0	2-1/8	63.8	2.51	0.52	75	2.07	300	*	*	**	**	1.28	0.86	4171-0224
57.2	2-1/4	66.8	2.63	0.52	75	2.07	300	*	*	**	**	1.34	0.9	4171-0223***
60.3	2-3/8	69.9	2.75	0.45	65	1.72	250	*	*	**	**	1.41	0.95	4171-0229***
63.5	2-1/2	73.2	2.88	0.45	65	1.72	250	*	*	**	**	1.49	1	4171-0234
69.9	2-3/4	79.5	3.13	0.34	50	1.38	200	*	*	**	**	1.64	1.1	4171-0238***
76.2	3	85.9	3.38	0.34	50	1.38	200	*	*	**	**	1.77	1.19	4171-0246***
82.6	3-1/4	92.2	3.63	0.28	40	1.21	175	*	*	**	**	1.90	1.28	4171-0249
88.9	3-1/2	98.6	3.88	0.24	35	1.03	150	*	*	**	**	2.05	1.38	4171-0241***
95.3	3-3/4	104.9	4.13	0.24	35	1.03	150	*	*	**	**	2.19	1.47	4171-0835***
101.6	4	111.3	4.38	0.24	35	1.03	150	*	*	**	**	2.37	1.59	4171-0290***
114.3	4-1/2	124.0	4.88	0.17	25	0.69	100	*	*	**	**	2.60	1.75	4171-0295***
127.0	5	136.7	5.38	0.14	20	0.55	80	*	*	**	**	2.81	1.89	4171-0841***

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4685WG**WIRE REINFORCED COOLANT HOSE**
RELATIVE COST ●●●○○

APPLICATIONS Engine coolant or water hose where tight bends or vacuum is required. Also suitable for air. Not for conveying fuel or oil.

TEMPERATURE -40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.

STANDARDS SAE 20R2 EC Class D1 except vacuum. Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.

CONSTRUCTION EPDM tube, synthetic fabric reinforcement plies with two embedded helical wires, EPDM cover with wrapped appearance.

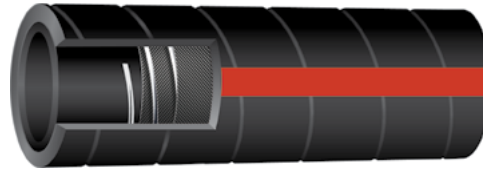
PACKAGING Bulk lengths are 5 foot sticks in a box. Custom lengths or enlarged ends available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	5 ft. Length***	10 ft. Length***
25.4 ±0.08	1 ±0.03	37.1	1.46	0.69	100	2.76	400	84.5	25	51	2	0.72	0.48	4685-2016	4685-2016
28.6	1-1/8	40.1	1.58	0.69	100	2.76	400	84.5	25	64	2.5	0.79	0.53	4685-2018	
31.8	1-1/4	43.4	1.71	0.69	100	2.76	400	84.5	25	64	2.5	0.87	0.58	4685-2020	4685-2820
34.9	1-3/8	46.5	1.83	0.59	85	2.41	350	84.5	25	76	3	0.93	0.63	4685-2022	
38.1	1-1/2	49.8	1.96	0.59	85	2.41	350	67.6	20	89	3.5	1.04	0.70	4685-2024	4685-2824
41.3	1-5/8	52.8	2.08	0.52	75	2.07	300	67.6	20	89	3.5	1.12	0.75	4685-2026	4685-2826
44.5	1-3/4	56.1	2.21	0.52	75	2.07	300	67.6	20	102	4	1.19	0.80	4685-2028	4685-2828
47.6	1-7/8	59.2	2.33	0.41	60	1.72	250	67.6	20	114	4.5	1.26	0.85	4685-2030	4685-2830
50.8 ±1.6	2 ±0.06	62.5	2.46	0.41	60	1.72	250	67.6	20	114	4.5	1.39	0.93	4685-2032	4685-2832
54.0	2-1/8	65.5	2.58	0.38	55	1.55	225	67.6	20	140	5.5	1.47	0.99	4685-2034	
57.2	2-1/4	68.8	2.71	0.38	55	1.55	225	67.6	20	140	5.5	1.54	1.04	4685-2036	4685-2836
60.3	2-3/8	71.9	2.83	0.34	50	1.38	200	67.6	20	165	6.5	1.62	1.09	4685-2038	
63.5	2-1/2	75.2	2.96	0.34	50	1.38	200	67.6	20	165	6.5	1.70	1.14	4685-2040	4685-2840
66.7	2-5/8	78.2	3.08	0.28	40	1.21	175	50.7	15	191	7.5	1.77	1.19	4685-2042	
69.9	2-3/4	81.5	3.21	0.28	40	1.21	175	50.7	15	191	7.5	1.85	1.24	4685-2044	4685-2844
73.0	2-7/8	84.6	3.33	0.28	40	1.21	175	50.7	15	229	9	1.92	1.29	4685-2046	
76.2	3	87.1	3.43	0.28	40	1.21	175	50.7	15	229	9	2.00	1.34	4685-2048	4685-2848
88.9	3-1/2	99.8	3.93	0.24	35	1.03	150	50.7	15	305	12	2.30	1.55	4685-2056	4685-2856
101.6	4	112.5	4.43	0.21	30	0.86	125	33.8	10	508	20	2.62	1.76	4685-2064	
127.0	5	137.9	5.43	0.10	15	0.52	75	16.9	5	610	24	3.95	2.65	4685-2080	
152.4	6	163.3	6.43	0.10	15	0.52	75	16.9	5	-	-	4.69	3.15	4685-2096	

For Larger sizes; to 305mm (12 inch) ID, see Water Master 100-150SD in the Industrial Hose Catalog.

*** Not stocked. Minimum order quantity may apply.

4684CF**WIRE REINFORCED,
OIL RESISTANT COOLANT HOSE**

RELATIVE COST ●●●○○

APPLICATIONS

Engine coolant lower radiator hose where fuel and oil resistance and tight bends or vacuum is required.
Also suitable for marine wet exhaust.

TEMPERATURE

-40°C to +100°C (-40°F to +212°F).

STANDARDS

SAE 20R2 Class B tube, Class C cover except vacuum, SAE J2006.
Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.

CONSTRUCTION

Nitrile tube, synthetic fabric reinforcement plies with two embedded helical wires, neoprene cover with wrapped appearance.

PACKAGING

Bulk lengths are 10 foot sticks in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

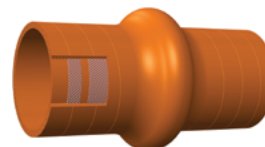
ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
25.4 ±0.08	1 ±0.03	37.3	1.47	0.69	100	2.76	400	84.5	25	76	3	0.73	0.49	4684-1540
28.6	1-1/8	40.6	1.60	0.69	100	2.76	400	84.5	25	102	4	0.80	0.54	4684-1545***
31.8	1-1/4	43.7	1.72	0.69	100	2.76	400	84.5	25	102	4	0.88	0.59	4684-1551***
34.9	1-3/8	47.0	1.85	0.60	88	2.41	350	84.5	25	102	4	0.95	0.64	4684-1556***
38.1	1-1/2	50.0	1.97	0.60	88	2.41	350	67.6	20	102	4	1.01	0.68	4684-1561
41.3	1-5/8	53.3	2.10	0.52	75	2.07	300	67.6	20	127	5	1.08	0.72	4684-1601***
44.5	1-3/4	56.4	2.22	0.52	75	2.07	300	67.6	20	127	5	1.15	0.77	4684-1611
47.6	1-7/8	59.4	2.34	0.43	63	1.72	250	67.6	20	127	5	1.20	0.81	4684-1651***
50.8 ±1.6	2 ±0.06	62.7	2.47	0.43	63	1.72	250	67.6	20	127	5	1.27	0.86	4684-1660
54.0	2-1/8	66.0	2.60	0.39	56	1.55	225	67.6	20	152	6	1.35	0.91	4684-1670***
57.2	2-1/4	69.1	2.72	0.39	56	1.55	225	67.6	20	152	6	1.42	0.95	4684-1680***
60.3	2-3/8	72.4	2.85	0.34	50	1.38	200	67.6	20	178	7	1.49	1.00	4684-1690***
63.5	2-1/2	75.4	2.97	0.34	50	1.38	200	67.6	20	178	7	1.55	1.04	4684-1700
66.7	2-5/8	78.7	3.10	0.30	44	1.21	175	50.7	15	229	9	1.61	1.08	4684-1711***
69.9	2-3/4	81.8	3.22	0.30	44	1.21	175	50.7	15	254	10	1.69	1.13	4684-1720***
73.0	2-7/8	85.1	3.35	0.30	44	1.21	175	50.7	15	279	11	1.75	1.18	4684-1730
76.2	3	88.1	3.47	0.30	44	1.21	175	50.7	15	305	12	1.82	1.22	4684-1740
88.9	3-1/2	100.8	3.97	0.26	38	1.03	150	50.7	15	432	17	2.10	1.41	4684-1750
101.6	4	113.5	4.47	0.22	31	0.86	125	33.8	10	610	24	2.38	1.60	4684-1760***
114.3	4-1/2	126.2	4.97	0.17	25	0.69	100	16.9	5	686	27	2.66	1.79	4684-1764***
127.0	5	138.9	5.47	0.13	19	0.52	75	16.9	5	762	30	2.94	1.98	4684-1766***
152.4	6	164.3	6.47	0.13	19	0.52	75	16.9	5	914	36	3.50	2.35	4684-1722***

*** Not stocked. Minimum order quantity may apply.

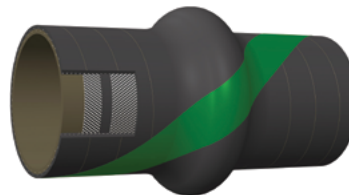
4684S**WIRE REINFORCED,
HIGH TEMPERATURE COOLANT HOSE****RELATIVE COST** ●●●●●**APPLICATIONS** Engine coolant hose for extreme temperatures where tight bends or vacuum is required. Also suitable for air. Not for conveying fuel or oil.**TEMPERATURE** -57°C to +175°C (-70°F to +347°F).**STANDARDS** SAE 20R2 Class A, or MIL STD ZZ-H-428 Type V Grade A Class 2.
Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.**CONSTRUCTION** Orange silicone tube, synthetic fabric reinforcement plies with two embedded helical wires, green silicone cover with wrapped appearance.**PACKAGING** Bulk lengths are 10 foot sticks in a box. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
25.4 ±0.08	1 ±0.03	37.1	1.46	0.59	85	2.41	350	84.5	25	76	3	0.74	0.5	4684-2917***
31.8	1-1/4	44.2	1.74	0.59	85	2.41	350	84.5	25	102	4	0.98	0.66	4684-0879***
38.1	1-1/2	50.5	1.99	0.52	75	2.07	300	67.6	20	102	4	1.13	0.76	4684-0880***
50.8 ±1.6	2 ±0.06	63.2	2.49	0.34	50	1.38	200	67.6	20	127	5	1.44	0.97	4684-0890***
57.2	2-1/4	69.6	2.74	0.30	44	1.21	175	67.6	20	152	6	1.59	1.07	4684-0882***
63.5	2-1/2	75.9	2.99	0.26	38	1.03	150	67.6	20	178	7	1.92	1.29	4684-1624***
76.2	3	88.6	3.49	0.23	33	0.90	130	50.7	15	305	12	2.07	1.39	4684-1620***

*** Not stocked. Minimum order quantity may apply.

4177S**HIGH TEMP SILICONE HUMP HOSE****RELATIVE COST** ●●●●●**APPLICATIONS** Vibration dampening connector for turbocharger or charge air cooler. Also suitable for coolant.**TEMPERATURE** -51°C to +177°C (-60°F to +350°F).**STANDARDS** SAE 20R1 Class A.**CONSTRUCTION** Multiple plies of silicone and polyester.**PACKAGING** All parts made and packaged to order. Minimum order quantity applies.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		OD HUMP		VACUUM MINIMUM		LENGTH		WORKING PRESSURE MAXIMUM		BURST MINIMUM	
mm	in.	mm	in.	mm	in.	kPa	in. Hg	mm	in.	MPa	psi	MPa	psi
31.8	1-1/4	41.7	1.64	56.4	2.22	17	5	101.6	4	0.45	65	1.90	275
44.5	1-3/4	54.4	2.14	71.4	2.81	17	5	86 to 127	3 3/8 to 5	0.38	55	1.55	225
50.8	2	60.7	2.39	81.8	3.22	17	5	70 to 230	2 3/4 to 9	0.34	50	1.38	200
57.2	2-1/4	67.1	2.64	88.9	3.50	17	5	76 to 230	3 to 9	0.28	40	1.21	175
63.5	2-1/2	73.4	2.89	96.8	3.81	17	5	76 to 203	3 to 8	0.24	35	1.03	150
69.9	2-3/4	79.8	3.14	103.9	4.09	17	5	70 to 178	2 3/4 to 7	0.21	30	0.86	125
76.2	3	86.1	3.39	112.0	4.41	17	5	76 to 178	3 to 7	0.17	25	0.69	100
88.9	3-1/2	98.8	3.89	127.0	5	17	5	89 to 178	3 1/2 to 7	0.12	17	0.52	75
101.6	4	111.5	4.39	139.7	5.5	17	5	102 to 165	4 to 6 1/2	0.08	12	0.34	50

4177W**OIL RESISTANT COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Vibration dampening connector between the engine and radiator.
Also suitable for air inlet. There is no vacuum rating. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +100°C (-40°F to +212°F).

STANDARDS

SAE 20R1 Class B tube, Class C cover.

CONSTRUCTION

NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.

PACKAGING

Individually bagged and shipped in a box.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		OD HUMP		LENGTH		WORKING PRESSURE MAXIMUM		BURST MINIMUM		GATES ITEM NUMBER	AUTOMOTIVE NUMBER
mm	in.	mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	P/N	
31.8	1-1/4	41.7	1.64	56.4	2.22	101.6	4	0.47	69	1.90	275	3177-0027	23505
34.9	1-3/8	44.8	1.76	61.2	2.41	127.0	5	0.43	63	1.72	250	3177-0034	23511
38.1	1-1/2	48.0	1.89	63.5	2.50	127.0	5	0.43	63	1.72	250	3177-0023	23515
44.5	1-3/4	54.4	2.14	71.4	2.81	127.0	5	0.39	56	1.55	225	3177-0022	23520
50.8	2	60.7	2.39	81.8	3.22	88.9	3 1/2	0.34	50	1.38	200	3177-0032	23531
50.8	2	60.7	2.39	81.8	3.22	127.0	5	0.34	50	1.38	200	3177-0024	23533
57.2	2-1/4	67.1	2.64	88.9	3.50	114.3	4 1/2	0.30	44	1.21	175	3177-0026	23547
60.3	2-3/8	70.2	2.76	94.5	3.72	127.0	5	0.26	38	1.03	150	3177-0025	23557
60.3	2-3/8	70.2	2.76	94.5	3.72	158.8	6 1/4	0.26	38	1.03	150	3177-0015	23559
63.5	2-1/2	73.4	2.89	96.8	3.81	114.3	4 1/2	0.26	38	1.03	150	3177-0030	23562
63.5	2-1/2	73.4	2.89	96.8	3.81	152.4	6	0.26	38	1.03	150	3177-0028	23550
69.9	2-3/4	79.8	3.14	103.9	4.09	82.6	3 1/4	0.22	31	0.86	125	3177-0040	23566
69.9	2-3/4	79.8	3.14	103.9	4.09	114.3	4 1/2	0.22	31	0.86	125	3177-0033	23567
69.9	2-3/4	79.8	3.14	103.9	4.09	136.5	5 3/8	0.22	31	0.86	125	3177-0039	23568
76.2	3	86.1	3.39	112.0	4.41	101.6	4	0.17	25	0.69	100	3177-0004	23572
76.2	3	86.1	3.39	112.0	4.41	177.8	7	0.17	25	0.69	100	3177-0038	23575
88.9	3-1/2	98.8	3.89	127.0	5	139.7	5 1/2	0.10	15	0.41	60	3177-0043	23585

4254 (VULCO-FLEX II)**MOLDED CONVOLUTED COOLANT HOSE WITH WIRE INSERT****RELATIVE COST** ●●○○○**APPLICATIONS** Engine coolant or water hose where tight bends or vacuum is required. Also suitable for air. Not for fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F).**STANDARDS** Similar to SAE 20R5 Class D2. Wall thickness is 4.35±1.17mm (0.17±0.045 inch).**CONSTRUCTION** EPDM tube, synthetic fabric reinforcement, EPDM cover with convoluted appearance except for 41.3±3mm (1.62±0.12inch) cuff length on each end. Spring inserted in hose ID.**PACKAGING** Hoses are boxed.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID (END 1) X (END 2)		OD REFERENCE		LENGTH*		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		GATES ITEM NUMBER	AUTO- MOTIVE NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	P/N	
28.6 + .8/-2.3	1-1/8 + .03/-0.09	37.3	1.47	305	12	0.21	30	0.83	120	67.6	20	102	4	4254-0095	25150
28.6	1-1/8	37.3	1.47	381	15	0.21	30	0.83	120	67.6	20	102	4	4254-0053	25152
28.6	1-1/8	37.3	1.47	457	18	0.21	30	0.83	120	67.6	20	102	4	4254-0051	25154
28.6	1-1/8	37.3	1.47	584	23	0.21	30	0.83	120	67.6	20	102	4	4254-0050	25157
28.6 x 31.8	1-1/8 x 1-1/4	37.3 x 40.5	1.47 x 1.59	483	19	0.21	30	0.83	120	67.6	20	102	4	4254-0052	25180
31.8	1-1/4	40.5	1.59	191	7.5	0.21	30	0.83	120	67.6	20	102	4	4254-0100	25249
31.8	1-1/4	40.5	1.59	241	9.5	0.21	30	0.83	120	67.6	20	102	4	4254-0101	25250
31.8	1-1/4	40.5	1.59	330	13	0.21	30	0.83	120	67.6	20	102	4	4254-0055	25251
31.8	1-1/4	40.5	1.59	381	15	0.21	30	0.83	120	67.6	20	102	4	4254-0074	25252
31.8	1-1/4	40.5	1.59	432	17	0.21	30	0.83	120	67.6	20	102	4	4254-0075	25253
31.8	1-1/4	40.5	1.59	470	18.5	0.21	30	0.83	120	67.6	20	102	4	4254-0056	25254
31.8	1-1/4	40.5	1.59	508	20	0.21	30	0.83	120	67.6	20	102	4	4254-0076	25255
31.8	1-1/4	40.5	1.59	584	23	0.21	30	0.83	120	67.6	20	102	4	4254-0077	25257
31.8	1-1/4	40.5	1.59	673	26.5	0.21	30	0.83	120	67.6	20	102	4	4254-0057	25260
31.8	1-1/4	40.5	1.59	762	30	0.21	30	0.83	120	67.6	20	102	4	4254-0058	25262
31.8	1-1/4	40.5	1.59	889	35	0.21	30	0.83	120	67.6	20	102	4	4254-0059	25265
31.8	1-1/4	40.5	1.59	1041	41	0.21	30	0.83	120	67.6	20	102	4	4254-0060	25269
31.8 x 34.9	1-1/4 x 1-3/8	40.5 x 43.6	1.59 x 1.72	660	26	0.21	30	0.83	120	67.6	20	102	4	4254-0066	25284
31.8 x 38.1	1-1/4 x 1-1/2	40.5 x 46.8	1.59 x 1.84	305	12	0.21	30	0.83	120	67.6	20	102	4	4254-0104	25300
31.8 x 38.1	1-1/4 x 1-1/2	40.5 x 46.8	1.59 x 1.84	394	15.5	0.21	30	0.83	120	67.6	20	102	4	4254-0078	25302
31.8 x 38.1	1-1/4 x 1-1/2	40.5 x 46.8	1.59 x 1.84	495	19.5	0.21	30	0.83	120	67.6	20	102	4	4254-0079	25305
31.8 x 38.1	1-1/4 x 1-1/2	40.5 x 46.8	1.59 x 1.84	584	23	0.21	30	0.83	120	67.6	20	102	4	4254-0061	25307
31.8 x 38.1	1-1/4 x 1-1/2	40.5 x 46.8	1.59 x 1.84	660	26	0.21	30	0.83	120	67.6	20	102	4	4254-0062	25309
31.8 x 38.1	1-1/4 x 1-1/2	40.5 x 46.8	1.59 x 1.84	737	29	0.21	30	0.83	120	67.6	20	102	4	4254-0063	25311

4254 (CONTINUED)

ID (END 1) X (END 2)		OD REFERENCE		LENGTH*		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		GATES ITEM NUMBER	AUTO- MOTIVE NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	P/N	
31.8 x 38.1	1-1/4 x 1-1/2	40.5 x 46.8	1.59 x 1.84	1118	44	0.21	30	0.83	120	67.6	20	102	4	4254-0065	25321
34.9	1-3/8	43.6	1.72	635	25	0.21	30	0.83	120	67.6	20	102	4	4254-0067	25384
34.9 x 38.1	1-3/8 x 1-1/2	43.6 x 46.8	1.72 x 1.84	660	26	0.21	30	0.83	120	67.6	20	102	4	4254-0068	25409
34.9 x 41.3	1-3/8 x 1-5/8	43.6 x 50.0	1.72 x 1.97	432	17	0.21	30	0.83	120	67.6	20	102	4	4254-0069	25428
38.1	1-1/2	46.8	1.84	203	8	0.21	30	0.83	120	67.6	20	76	3	4254-0102	25472
38.1	1-1/2	46.8	1.84	267	10.5	0.21	30	0.83	120	67.6	20	76	3	4254-0103	25473
38.1	1-1/2	46.8	1.84	305	12	0.21	30	0.83	120	67.6	20	76	3	4254-0105	25474
38.1	1-1/2	46.8	1.84	356	14	0.21	30	0.83	120	67.6	20	76	3	4254-0080	25476
38.1	1-1/2	46.8	1.84	394	15.5	0.21	30	0.83	120	67.6	20	76	3	4254-0081	25477
38.1	1-1/2	46.8	1.84	432	17	0.21	30	0.83	120	67.6	20	76	3	4254-0082	25478
38.1	1-1/2	46.8	1.84	508	20	0.21	30	0.83	120	67.6	20	76	3	4254-0084	25480
38.1	1-1/2	46.8	1.84	559	22	0.21	30	0.83	120	67.6	20	76	3	4254-0085	25482
38.1	1-1/2	46.8	1.84	635	25	0.21	30	0.83	120	67.6	20	76	3	4254-0087	25484
38.1	1-1/2	46.8	1.84	762	30	0.21	30	0.83	120	67.6	20	76	3	4254-0089	25487
38.1	1-1/2	46.8	1.84	889	35	0.21	30	0.83	120	67.6	20	76	3	4254-0070	25490
38.1	1-1/2	46.8	1.84	1219	48	0.21	30	0.83	120	67.6	20	76	3	4254-0071	25499
38.1** (90°)	1-1/2	46.8	1.84	425	16.75	0.21	30	0.83	120	67.6	20	76	3	4254-0083	25804
38.1** (90°)	1-1/2	46.8	1.84	508	20	0.21	30	0.83	120	67.6	20	76	3	4254-0086	25806
38.1** (90°)	1-1/2	46.8	1.84	572	22.5	0.21	30	0.83	120	67.6	20	76	3	4254-0088	25808
38.1 x 44.5	1-1/2 x 1-3/4	46.8 x 53.2	1.84 x 2.09	337	13.25	0.21	30	0.83	120	67.6	20	76	3	4254-0090	25526
38.1 x 44.5	1-1/2 x 1-3/4	46.8 x 53.2	1.84 x 2.09	381	15	0.21	30	0.83	120	67.6	20	76	3	4254-0091	25527
38.1 x 44.5	1-1/2 x 1-3/4	46.8 x 53.2	1.84 x 2.09	419	16.5	0.21	30	0.83	120	67.6	20	76	3	4254-0092	25528
38.1 x 44.5	1-1/2 x 1-3/4	46.8 x 53.2	1.84 x 2.09	508	20	0.21	30	0.83	120	67.6	20	76	3	4254-0093	25530
38.1 x 44.5	1-1/2 x 1-3/4	46.8 x 53.2	1.84 x 2.09	559	22	0.21	30	0.83	120	67.6	20	76	3	4254-0094	25532
38.1 x 44.5	1-1/2 x 1-3/4	46.8 x 53.2	1.84 x 2.09	686	27	0.21	30	0.83	120	67.6	20	76	3	4254-0072	25535
38.1 x 50.8	1-1/2 x 2	46.8 x 59.5	1.84 x 2.34	559	22	0.21	30	0.83	120	67.6	20	76	3	4254-0073	25582

* Length tolerance up to 507mm (19.9 inch) = +6.4/-9.5 (+0.25/-0.38).
Length tolerance 508mm (20 inch) to 634 (24.9) = +12.7/-9.5 (+0.50/-0.38).
Length tolerance 635mm (25 inch) and more = ±12.7 (±0.50)
** One end has a 90° bend with a 102mm (4 inch) arm length.

4284 (VULCO-FLEX GREEN STRIPE)

MOLDED CONVOLUTED COOLANT HOSE WITH EMBEDDED WIRE



RELATIVE COST ●●●○○

APPLICATIONS	Engine coolant or water hose where tight bends, vacuum, or exterior oil resistance is required. Also suitable for air. Not for conveying fuel or oil.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F).
STANDARDS	Similar to SAE 20R5 Class D2. Wall thickness is 4.35±1.17mm (0.17±0.045 inch).
CONSTRUCTION	EPDM tube, synthetic fabric reinforcement plies with embedded wire helix, EPDM cover with neoprene coated fabric. Convoluted appearance except for 41.3±3mm (1.62±0.12inch) cuff length on each end.
PACKAGING	Hoses are boxed.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID (END 1) X (END 2)		OD REFERENCE		LENGTH*		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		GATES ITEM NUMBER	AUTO- MOTIVE NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	P/N	
44.5 + .8/-2.3	1-3/4 + .03/- .09	53.2	2.09	152	6	0.21	30	0.83	120	67.6	20	152	6	4284-0001	26601
44.5	1-3/4	53.2	2.09	216	8.5	0.21	30	0.83	120	67.6	20	152	6	4284-0005	26602
44.5	1-3/4	53.2	2.09	279	11	0.21	30	0.83	120	67.6	20	152	6	4284-0032	26603
44.5	1-3/4	53.2	2.09	343	13.5	0.21	30	0.83	120	67.6	20	152	6	4284-0122	26501
44.5	1-3/4	53.2	2.09	419	16.5	0.21	30	0.83	120	67.6	20	152	6	4284-0123	26502
44.5	1-3/4	53.2	2.09	483	19	0.21	30	0.83	120	67.6	20	152	6	4284-0015	26611
44.5	1-3/4	53.2	2.09	597	23.5	0.21	30	0.83	120	67.6	20	152	6	4284-0017	26612
44.5 x 50.8	1-3/4 x 2	53.2 x 59.5	2.09 x 2.34	254	10	0.21	30	0.83	120	67.6	20	152	6	4284-0134	26503
44.5 x 50.8	1-3/4 x 2	53.2 x 59.5	2.09 x 2.34	419	16.5	0.21	30	0.83	120	67.6	20	152	6	4284-0124	26504
44.5 x 50.8	1-3/4 x 2	53.2 x 59.5	2.09 x 2.34	483	19	0.21	30	0.83	120	67.6	20	152	6	4284-0120	26505
44.5 x 50.8	1-3/4 x 2	53.2 x 59.5	2.09 x 2.34	597	23.5	0.21	30	0.83	120	67.6	20	152	6	4284-0135	26506
50.8	2	59.5	2.34	241	9.5	0.17	25	0.69	100	50.7	15	152	6	4284-0121	26507
50.8	2	59.5	2.34	311	12.25	0.17	25	0.69	100	50.7	15	152	6	4284-0115	26508
50.8	2	59.5	2.34	368	14.5	0.17	25	0.69	100	50.7	15	152	6	4284-0113	26509
50.8	2	59.5	2.34	432	17	0.17	25	0.69	100	50.7	15	152	6	4284-0114	26510
50.8	2	59.5	2.34	508	20	0.17	25	0.69	100	50.7	15	152	6	4284-0107	26511
50.8	2	59.5	2.34	610	24	0.17	25	0.69	100	50.7	15	152	6	4284-0101	26512
50.8	2	59.5	2.34	838	33	0.17	25	0.69	100	50.7	15	152	6	4284-0137	26513
50.8 x 57.1	2 x 2-1/4	59.5 x 65.8	2.34 x 2.59	216	8.5	0.17	25	0.69	100	50.7	15	152	6	4284-0118	26514
50.8 x 57.1	2 x 2-1/4	59.5 x 65.8	2.34 x 2.59	381	15	0.17	25	0.69	100	50.7	15	152	6	4284-0131	26515
50.8 x 57.1	2 x 2-1/4	59.5 x 65.8	2.34 x 2.59	445	17.5	0.17	25	0.69	100	50.7	15	152	6	4284-0125	26516
50.8 x 57.1	2 x 2-1/4	59.5 x 65.8	2.34 x 2.59	635	25	0.17	25	0.69	100	50.7	15	152	6	4284-0133	26517
50.8 x 63.5	2 x 2-1/2	59.5 x 72.2	2.34 x 2.84	508	20	0.17	25	0.69	100	50.7	15	152	6	4284-0108	26518
57.1	2-1/4	65.8	2.59	229	9	0.17	25	0.69	100	40.6	12	203	8	4284-0102	26519

4284 (CONTINUED)

ID (END 1) X (END 2)		OD REFERENCE		LENGTH*		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		GATES ITEM NUMBER	AUTO- MOTIVE NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	P/N	
57.1	2-1/4	65.8	2.59	279	11	0.17	25	0.69	100	40.6	12	203	8	4284-0103	26520
57.1	2-1/4	65.8	2.59	356	14	0.17	25	0.69	100	40.6	12	203	8	4284-0104	26521
57.1	2-1/4	65.8	2.59	432	17	0.17	25	0.69	100	40.6	12	203	8	4284-0105	26522
57.1	2-1/4	65.8	2.59	483	19	0.17	25	0.69	100	40.6	12	203	8	4284-0106	26523
57.1	2-1/4	65.8	2.59	610	24	0.17	25	0.69	100	40.6	12	203	8	4284-0140	26524
57.1	2-1/4	65.8	2.59	686	27	0.17	25	0.69	100	40.6	12	203	8	4284-0126	26525
57.1 x 63.5	2-1/4 x 2-1/2	65.8 x 72.2	2.59 x 2.84	457	18	0.17	25	0.69	100	40.6	12	203	8	4284-0109	26526
57.1 x 63.5	2-1/4 x 2-1/2	65.8 x 72.2	2.59 x 2.84	533	21	0.17	25	0.69	100	40.6	12	203	8	4284-0110	26527
57.1 x 63.5	2-1/4 x 2-1/2	65.8 x 72.2	2.59 x 2.84	635	25	0.17	25	0.69	100	40.6	12	203	8	4284-0132	26528
63.5	2-1/2	72.2	2.84	279	11	0.14	20	0.55	80	33.8	10	203	8	4284-0128	26529
63.5	2-1/2	72.2	2.84	356	14	0.14	20	0.55	80	33.8	10	203	8	4284-0136	26530
63.5	2-1/2	72.2	2.84	406	16	0.14	20	0.55	80	33.8	10	203	8	4284-0112	26531
63.5	2-1/2	72.2	2.84	610	24	0.14	20	0.55	80	33.8	10	203	8	4284-0111	26532
63.5	2-1/2	72.2	2.84	711	28	0.14	20	0.55	80	33.8	10	203	8	4284-0138	26533
69.9	2-3/4	78.6	3.09	178	7	0.14	20	0.55	80	33.8	10	254	10	4284-0139	26534
69.9	2-3/4	78.6	3.09	356	14	0.14	20	0.55	80	33.8	10	254	10	4284-0141	26535
69.9	2-3/4	78.6	3.09	457	18	0.14	20	0.55	80	33.8	10	254	10	4284-0130	26536
69.9	2-3/4	78.6	3.09	813	32	0.14	20	0.55	80	33.8	10	254	10	4284-0117	26537
76.2	3	84.9	3.34	940	37	0.14	20	0.55	80	27.0	8	254	10	4284-0116	26538

* Length tolerance to 507mm (19.9 inch) = +6.4/-9.5 (+0.25/-0.38).
Length tolerance 508mm (20 inch) to 634 (24.9) = +12.7/-9.5 (+0.50/-0.38).
Length tolerance 635mm (25 inch) and more = ±12.7 (±0.50)



DRIVEN BY POSSIBILITY™

GATES POWERGRIP CLAMPS

**MAINTENANCE-FREE SHRINKBAND HOSE CLAMPS,
AVAILABLE IN SB + RT**

RELIABLY STOPS LEAKS WITHOUT THE NEED FOR RE-TIGHTENING.

Designed for coolant and low-pressure assemblies, Gates PowerGrip clamps are maintenance-free, durable hose clamps that retain dynamic tension in hot and cold conditions, even on out-of-round fittings and corrosive environments.

The proprietary PowerGrip clamps are designed for a secure, tight fit in extreme operating temperatures to eliminate antifreeze leaks and groundwater contamination.

Gates PowerGrip clamps have decades of proven performance in heavy-duty applications, and are engineered for the optimal fit to your existing Gates hoses and assemblies.

FEATURES + BENEFITS

- Easy to install with an ordinary heat gun, and easy to remove with a soldering iron
- Wider sealing area entraps connector bead
- Conforms to any shape of hose, even out-of-round fittings
- Made from heat-sensitive thermoplastic with memory to prevent over- or under-tightening
- Can be used with all brands of silicone hose
- Low profile and clean design
- Temperature rating: -40°F to +302°F (-40°C to +150°C)
- Eliminates anti-freeze leaks and ground water contamination

GATES POWERGRIP CLAMPS:

STOP LEAKS, EVEN ON POOR QUALITY CONNECTIONS.

Made of a heat-shrinking material, Gates PowerGrip SB and RT clamps solve coolant leakage problems in both silicone and standard rubber hoses.

The thermoplastic clamps maintain a dynamic tension in hot and cold conditions. When the engine reaches operating temperature, the shrink forces of PowerGrip readjust to a consistent clamping force. The unique material also conforms to misalignment, inconsistent hose thickness and out-of-round fittings.

OPTIMIZED HEATING EFFICIENCY

INDUSTRIES + APPLICATIONS

- Truck + Bus
- Automotive + Light Trucks
- Construction
- Mining
- Agriculture
- Forestry
- Recreational Vehicles
- Marine
- Radiator Hose
- Heater Hose
- Air Intake
- Low Pressure Fuel + Oil

POWERGRIP CLAMP SPECIFICATIONS				
SIZE	NOMINAL HOSE ID (IN)	NOMINAL HOSE ID (MM)	FITS HOSE OD (IN)	FITS HOSE OD (MM)
SB15	1/4	6	1/2 to 11/16	13 to 17
SB19	3/8	10	11/16 to 13/16	17 to 21
SB22	1/2	13	13/16 to 15/16	21 to 24
SB25	5/8	16	15/16 to 1-1/16	24 to 27
SB29	3/4	19	1-1/16 to 1-3/16	27 to 30
SB32	7/8	22	1-3/16 to 1-5/16	30 to 33
SB34	1	25	1-5/16 to 1-1/2	33 to 38
SB41	1-1/4	32	1-1/2 to 1-3/4	38 to 44
SB48	1-1/2	38	1-3/4 to 2	44 to 51
SB54	1-3/4	44	2 to 2-1/4	51 to 57
SB60	2	51	2-1/4 to 2-1/2	57 to 64
SB67	2-1/4	57	2-1/2 to 2-3/4	64 to 70
SB73	2-1/2	64	2-3/4 to 3	70 to 76
SB79	2-3/4	70	3 to 3-1/4	76 to 83
SB86	3	76	3-1/4 to 3-1/2	83 to 89
SB90	3-1/8	79	3-1/2 to 3-5/8	89 to 92
RT038	3/8	10	11/16 to 13/16	17 to 21
RT062	5/8	16	15/16 to 1-1/16	24 to 27
RT075	3/4	19	1-1/16 to 1-3/16	27 to 30
RT100	1	25	1-5/16 to 1-1/2	33 to 38
RT125	1-1/4	32	1-1/2 to 1-3/4	38 to 44
RT150	1-1/2	38	1-3/4 to 2	44 to 51
RT200	2	51	2-1/4 to 2-1/2	57 to 64
RT225	2-1/4	57	2-1/4 to 2-1/2	57 to 64
RT250	2-1/2	64	2-3/4 to 3	70 to 76
RT275	2-3/4	70	3 to 3-1/4	76 to 83
RT300	3	76	3-1/4 to 3-1/2	83 to 89

Note: SB clamps shrink using a heat gun. RT clamps shrink at room temperature and must be frozen during installation, which is most suitable for production lines.



4230T**STANDARD SMALL ID COOLANT HOSE****RELATIVE COST** ●○○○○**APPLICATIONS** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F).**STANDARDS** SAE 20R3 Class D2 except hardness (70-85 Shore A durometer).**CONSTRUCTION** EPDM tube, synthetic fiber reinforcement, EPDM cover.**PACKAGING** Bulk lengths shipped on a reel, except 9.5mm (3/8"), 19.1 (3/4") and 25.4 (1") boxed. The 15m (49.2 ft) lengths are shipped in a bag. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH			EUROPE ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Gates Item No.	15m / 49.2' Length***
7.9 ±0.8	5/16 ±0.03	15.7* ±0.8	0.62* ±0.03	0.43	63	1.72	250	33.8	10	64	2.5	0.19	0.13	183	600	4230-0193	
9.5	3/8	17.5	0.69	0.43	63	1.72	250	33.8	10	76	3	0.24	0.16	152	500	4230-0129	
12.7	1/2	20.7	0.81	0.43	63	1.72	250	33.8	10	102	4	0.28	0.19	183	600	4230-0060	4230-4376
15.9	5/8	23.9	0.94	0.43	63	1.72	250	27.0	8	159	6.25	0.34	0.23	91	300	4230-0135	4230-4377
19.1	3/4	27.1	1.06	0.34	50	1.38	200	23.6	7	191	7.5	0.39	0.26	61	200	4230-0134	4230-4378
25.4	1	34.0 ±1.2	1.34 ±0.05	0.30	44	1.21	175	20.3	6	254	10	0.55	0.37	183	600	4230-0150	4230-4379

* Not per SAE For smaller sizes, see page 39 (4251D)

*** Minimum order quantity applies.

3270 (SAFETY STRIPE)**LIGHT DUTY SMALL ID COOLANT HOSE****RELATIVE COST** ●○○○○**APPLICATIONS** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F).**STANDARDS** SAE 20R3 Class D2 except hardness (80 duro), compression set, and thickness on some sizes.**CONSTRUCTION** EPDM tube, synthetic fiber reinforcement, EPDM cover.**PACKAGING** Coiled in a box, except bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	Feet	Bulk Length
6.35 ±0.8	1/4 ±0.03	12.7 ±0.8	0.50 ±0.03	0.41	60	1.72	250	33.8	10	89	3.50	0.13	0.09	168	550	3270-0029***
7.9	5/16	15.7	0.62	0.41	60	1.72	250	33.8	10	111	4.38	0.21	0.14			
9.5	3/8	17.5	0.69	0.41	60	1.72	250	33.8	10	124	4.88	0.22	0.15			
12.7	1/2	19.6*	0.77*	0.41	60	1.72	250	33.8	10	137	5.38	0.24	0.16			
15.9	5/8	22.6*	0.89*	0.41	60	1.72	250	27.0	8	159	6.25	0.28	0.19	76	250	3270-4382
19.1	3/4	25.9*	1.02*	0.34	50	1.38	200	23.6	7	178	7.00	0.33	0.22	76	250	3270-4383
25.4 ±1.5	1 ±0.06	34.0 ±1.20	1.34 ±0.05	0.31	45	1.21	175	20.3	6	238	9.38	0.55	0.37			

* Thinner than SAE

*** Not stocked. Minimum order quantity may apply.

**4040A****STANDARD WINDSHIELD WIPER/
VACUUM TUBING RELATIVE COST**

RELATIVE COST ●○○○○○

APPLICATIONS	Windshield washer lines and engine vacuum lines. Also suitable for coolant overflow or vent, or pressure sensor tubing. Not for conveying fuel or oil.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F).
STANDARDS	SAE 1037, SAE 942, SAE J200 M4CA710 A25 B35 C32 EA14 F19.
CONSTRUCTION	EPDM tube with no reinforcement.
PACKAGING	Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting with or without hose clamps (pages 139 - 145).

ID		SIZE FITTING		OD		WORKING PRESSURE MAXIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length	50 ft. Length
2.8 +.64/- .51	7/64 +.025/- .020	3.2	1/8	5.8±0.8	0.23±0.03	0.17	25	81	24	38	1.5	0.021	0.014	305	1000	4040-0260	4040-4101
3.9±0.40	5/32 ±0.016	4.8	3/16	7.9	0.31	0.17	25	81	24	38	1.5	0.043	0.029	305	1000	4040-0387	4040-4104
5.6	7/32	6.4	1/4	10.7	0.42	0.17	25	81	24	51	2	0.078	0.053	457	1500	4040-0269	4040-4107
6.4±0.51	1/4 ±0.02	7.9	5/16	11.4	0.45	0.17	25	81	24	51	2	0.086	0.058	305	1000	4040-0580	4040-4110
7.3	9/32	9.5	3/8	11.1	0.44	0.17	25	81	24	64	2.5	0.046	0.031	305	1000	4040-0136***	
7.9	5/16	9.5	3/8	12.7	0.50	0.17	25	81	24	64	2.5	0.094	0.063	244	800	4040-0370	
9.5	3/8	11.1	7/16	15.9	0.63	0.17	25	81	24	76	3	0.150	0.101	91	300	4040-4361	4040-4359

*** Minimum order quantity applies.

4251D**REINFORCED WINDSHIELD WIPER/
VACUUM HOSE**

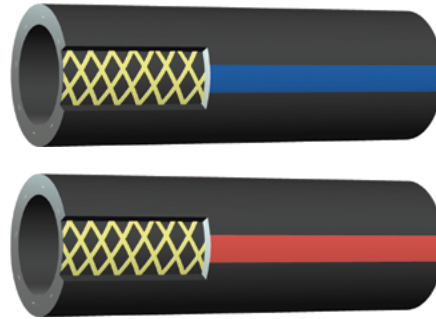
RELATIVE COST ●○○○○○

APPLICATIONS	Windshield washer lines, engine vacuum lines, and coolant hose. Also suitable for coolant overflow or vent. Not for conveying fuel or oil.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F).
STANDARDS	Similar to SAE 20R3 Class D2, except hardness (80 duro), compression set and OD (thickness).
CONSTRUCTION	EPDM tube, synthetic fiber reinforcement, EPDM cover.
PACKAGING	Bulk lengths shipped on a reel except 4251-0122 and 4251-0125 shipped in a box. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting with or without hose clamps (pages 139 - 145).

ID		SIZE FITTING		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	m	ft.	Bulk Length	50 ft. Length
4.1±0.5	5/32±0.02	4.8	3/16	9.7±0.8	0.38±0.03	0.34	50	1.72	250	88	26	**	**	0.09	0.06	152	500	4251-0119	4251-4115
5.6	7/32	6.4	1/4	10.9	0.43	0.34	50	1.72	250	88	26	**	**	0.10	0.07	244	900	4251-0122***	4251-4118
6.4	1/4	7.9	5/16	12.4	0.49	0.34	50	1.72	250	88	26	**	**	0.13	0.09	244	600	4251-0125	4251-4121

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

**4230SB (BLUE STRIPE)****4230RS (RED STRIPE)****4230RK****PREMIUM PERFORMANCE SMALL ID COOLANT HOSE****RELATIVE COST** ●○○○○

APPLICATIONS Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil. Also available with a red stripe (4230RS), or no stripe (4230RK) for color coding supply/return connections with minimum order quantity.

TEMPERATURE -40°C to +135°C (-40°F to +275°F) and ambient air to 150°C (302°F) when used in a coolant hose application.

STANDARDS SAE 20R3 EC Class D1 or D2.

CONSTRUCTION EPDM tube, aramid fiber reinforcement, EPDM cover.

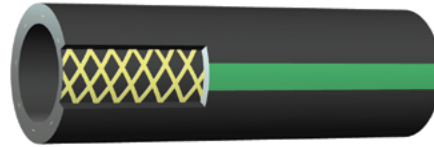
PACKAGING Bulk lengths coiled in a box, except as noted. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER	GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	4230SB	4230RS	4230RK
6.4 ±0.8	1/4 ±0.03	14.5 * ±0.8	0.57 * ±0.03	0.43	63	1.72	250	33.8	10			0.15	0.10	152	500			4230-7143
7.9	5/16	15.7 *	0.62 *	0.43	63	1.72	250	33.8	10			0.18	0.12	152	500			4230-4720 (reel)
9.5	3/8	17.5	0.68	0.43	63	1.72	250	33.8	10	127	5	0.21	0.14	152	500	4230-4114	4230-0084 ***	4230-3301 (650 ft reel) ***
12.7	1/2	20.7	0.81	0.52	75	2.07	300	33.8	10	152	6	0.27	0.18	76	250	4230-4229 reel		
15.9	5/8	23.9	0.94	0.43	63	1.72	250	27.0	8	178	7	0.31	0.21	76	250	4230-4112	4230-0083 ***	4230-6448 reel ***
19.1	3/4	27.1	1.06	0.34	50	1.38	200	23.6	7	191	7.5	0.39	0.26	61	200	4230-4109		4230-0198 reel ***
25.4	1	34.0 ±1.2	1.34 ±.05	0.30	44	1.21	175	20.3	6	229	9	0.49	0.33	46	150	4230-4107		

* Not per SAE

*** Not stocked. Minimum order quantity may apply.

3269S (GREEN STRIPE)**THICK WALL, SMALL ID COOLANT HOSE**

RELATIVE COST ●●○○○

APPLICATIONS Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +135°C (-40°F to +275°F).**STANDARDS** SAE 20R1 EC Class D1. Wall thickness is 4.95±0.65mm (0.195±0.025 inch).**CONSTRUCTION** EPDM tube, aramid fiber reinforcement, EPDM cover.**PACKAGING** All 50 foot lengths are coiled in a box, and 300 foot lengths are on a reel. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	50 ft. Length	300 ft. Length
9.5±0.8	3/8±0.03	19.4	0.76	0.69	100	2.76	400	33.8	10	140	5.5	0.27	0.18	3269-0038	3269-0033***
12.7	1/2	22.6	0.89	0.72	105	2.93	425	33.8	10	152	6	0.33	0.22	3269-4414	3269-0004
15.9	5/8	25.8	1.02	0.66	95	2.59	375	27.0	8	178	7	0.40	0.27	3269-4416	3269-1015
19.1	3/4	29.0	1.14	0.55	80	2.24	325	27.0	8	203	8	0.46	0.31	3269-4417	3269-1016
22.2	7/8	32.1	1.26	0.55	80	2.24	325	23.7	7	229	9	0.52	0.35	3269-4419	
25.4	1	35.3	1.39	0.52	75	2.07	300	23.7	7	254	10	0.58	0.39	3269-4418	3269-1017
31.8	1-1/4	41.7	1.64	0.48	70	1.90	276	16.9	5	292	11.5	0.70	0.47	3269-4411	

*** Minimum order quantity applies.

3230 (EPDM)**METRIC SMALL ID COOLANT HOSE (EUROPEAN MARKET ONLY)**

RELATIVE COST ●○○○○

APPLICATIONS Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -50°C to +100°C (-58°F to +212°F) continuous, to 110°C (230°F) intermittent.**STANDARDS** DIN 73411 Class A except tolerances.**CONSTRUCTION** EPDM tube, rayon reinforcement, EPDM cover.**PACKAGING** Bulk lengths are 15 meters coiled in a box with knock-out lid.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	15m Length
8±0.8	5/16±0.03	16±0.8	0.63±0.03	0.50	73	1.20	174	*	*	65	2.6	0.18	0.12	3230-12081
10	3/8	18	0.71	0.50	73	1.20	174	*	*	75	3.0	0.22	0.14	3230-12101
12	1/2	20	0.79	0.50	73	1.20	174	*	*	85	3.3	0.24	0.16	3230-12121
15	5/8	23	0.91	0.50	73	1.20	174	*	*	110	4.3	0.30	0.20	3230-12151
17	11/16	25	0.98	0.50	73	1.20	174	*	*	120	4.7	0.33	0.22	3230-12171
19	3/4	27	1.06	0.50	73	1.20	174	*	*	135	5.3	0.35	0.24	3230-12191
22	7/8	31±1.0	1.22±0.04	0.50	73	1.00	145	*	*	170	6.7	0.46	0.31	3230-12221

* No specification requirement

4230S, 4230SS**OIL RESISTANT SMALL ID COOLANT HOSE****RELATIVE COST** ●●○○○**APPLICATIONS** Engine coolant hose such as cab heater or oil cooler. Also suitable for crank case vent, water, fuel, or oil.**TEMPERATURE** -40°C to +100°C (-40°F to +212°F).**STANDARDS** SAE 20R3 Class B tube, Class C cover.**CONSTRUCTION** Nitrile tube, synthetic fiber reinforcement, neoprene cover.**PACKAGING** Bulk lengths coiled in a box, except 1" ID is on a reel. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in.Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
9.5 ±0.8	3/8 ±0.03	17.5 ±0.8	0.68 ±0.03	0.52	75	2.07	300	33.8	10	76	3	0.24	0.16	107	350	4230-0148
12.7	1/2	20.7	0.81	0.52	75	2.07	300	33.8	10	102	4	0.28	0.19	84	275	4230-0149
15.9	5/8	23.9	0.94	0.52	75	2.07	300	27.0	8	159	6.25	0.36	0.24	76	250	4230-0145
19.1	3/4	27.1	1.06	0.52	75	2.07	300	23.6	7	191	7.5	0.49	0.33	244	800	4230-0146
25.4	1	34.0 ±1.2	1.34 ±.05	0.52	75	2.07	300	20.3	6	254	10	0.64	0.43	213	700	4230-0147

3230 (3231 EUROPE & MEXICO)**HIGH TEMPERATURE SILICONE SMALL ID COOLANT HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Engine coolant hose for extreme temperature exposure. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -54°C to +177°C (-65°F to +350°F).**STANDARDS** SAE 20R3 HT Class A.**CONSTRUCTION** Orange silicone rubber tube, synthetic fiber reinforcement, silicone rubber cover.**PACKAGING** Bulk lengths coiled in a box. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER (EU AND US)	GATES ITEM NUMBER (US ONLY)
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	25 ft. Length	50 ft. Length
9.5 ±0.8	3/8 ±0.03	17.5 ±0.8	0.68 ±0.03	0.43	63	1.72	250	33.8	10	76	3	0.25	0.17	3230-0039	3230-0298
12.7	1/2	20.7	0.81	0.43	63	1.72	250	33.8	10	102	4	0.31	0.21	3230-0040	
15.9	5/8	23.9	0.94	0.43	63	1.72	250	27.0	8	159	6.25	0.39	0.26	3230-0041	3230-0285
19.1	3/4	27.1	1.06	0.34	50	1.38	200	23.6	7	191	7.5	0.43	0.29	3230-0042	3230-0289
25.4	1	34.0 ±1.2	1.34 ±.05	0.30	44	1.21	175	20.3	6	254	10	0.61	0.41	3230-0044	3230-0293, 3230-0002 (200 ft reel)***

*** Made to order.



4040T

HIGH TEMPERATURE SILICONE
VACUUM TUBING



RELATIVE COST	●○○○○
APPLICATIONS	Differential pressure sensor tubing and vacuum lines for extreme temperatures. Also suitable for coolant overflow or vent. Not for conveying fuel or oil.
TEMPERATURE	-55°C to +177°C (-67°F to +350°F).
STANDARDS	SAE J200 M2GE 705 Z1(60-70 Shore A).
CONSTRUCTION	Orange silicone tube without reinforcement.
PACKAGING	Coiled in a plastic clamshell container. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting with or without hose clamps (pages 139 - 145).

ID		SIZE FITTING		OD		WORKING PRESSURE MAXIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	6 ft. Length
2.77 +0/-8	0.109 +0/-03	3.2	1/8	5.8	0.229	*	*	85	25	25	1	0.021	0.014	4040-4140
3.96	.156	4.8	3/16	7.0	0.276	*	*	85	25	38	1.5	0.039	0.026	4040-4141
5.54	.218	6.4	1/4	8.6	0.338	*	*	85	25	38	1.5	0.050	0.033	4040-4142
6.35	.250	7.9	5/16	9.4	0.370	*	*	85	25	38	1.5	0.057	0.038	4040-4143

* No specification requirement.
** If minimum bend radius is required, use 8 times the O.D. as a guide.

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

4261 (4275 EUROPE)**FORMED COOLANT HOSE -
STANDARD SHAPES****RELATIVE COST** ●●○○○**APPLICATIONS** Engine coolant hose with 90° bend. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +135°C (-40°F to +275°F).**STANDARDS** SAE 20R3 EC Class D1 (under 25mm ID), SAE 20R4 EC Class D1 (over 25mm ID)**CONSTRUCTION** EPDM tube, synthetic fiber reinforcement, EPDM cover.**PACKAGING** Boxed.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		ARM LENGTHS		EXPANDED END LENGTH		BEND RADIUS		GATES ITEM NUMBER
mm	in.	mm	in.	mm	inch	mm	inch	mm	in.	
6.35 ±0.8	1/4 ±0.03	12.7 ±0.8	0.50 ±0.03	102 x 152	4 x 6			25.4	1	4257-0083
6.4	1/4	12.7	0.50	102 x 305	4 x 12			25.4	1	4257-0001
7.9	5/16	14.9	0.59	102 x 152	4 x 6			25.4	1	4257-0002
7.9	5/16	14.9	0.59	102 x 305	4 x 12			25.4	1	4257-0003
9.5	3/8	16.5	0.65	102 x 152	4 x 6			25.4	1	4257-0004
9.5	3/8	16.5	0.65	102 x 305	4 x 12			25.4	1	4257-0005
12.7	1/2	20.7	0.81	102 x 152	4 x 6			25.4	1	4261-1676
12.7	1/2	20.7	0.81	102 x 305	4 x 12			25.4	1	4261-1677
12.7	1/2	20.7	0.81	102 x 457	4 x 18			25.4	1	4261-1678
12.7	1/2	20.7	0.81	203 x 457	8 x 18			25.4	1	4261-1679
12.7	1/2	20.7	0.81	102 x 610	4 x 24			25.4	1	4261-1680
12.7	1/2	20.7	0.81	102 x 914	4 x 36			25.4	1	4261-1681
15.9	5/8	23.9	0.94	102 x 152	4 x 6			25.4	1	4261-1682
15.9	5/8	23.9	0.94	102 x 305	4 x 12			25.4	1	4261-1683
15.9	5/8	23.9	0.94	102 x 457	4 x 18			25.4	1	4261-1684
15.9	5/8	23.9	0.94	203 x 457	8 x 18			25.4	1	4261-1685
15.9	5/8	23.9	0.94	102 x 610	4 x 24			25.4	1	4261-1686
15.9	5/8	23.9	0.94	102 x 914	4 x 36			25.4	1	4261-1687
15.9	5/8	23.9	0.94	102 x 1219	4 x 48			25.4	1	4261-1688
15.9	5/8	23.9	0.94	102 x 1524	4 x 60			25.4	1	4261-1689
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 152	4 x 6	76.2*	3*	25.4	1	4257-0209
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 457	4 x 18	88.9*	3.5*	25.4	1	4257-0210
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 838	4 x 33	101.6*	4*	25.4	1	4257-0211
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 152	4 x 6	76.2	3	25.4	1	4257-0009
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 305	4 x 12	76.2	3	25.4	1	4257-0010
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	203 x 457	8 x 18	177.8	7	25.4	1	4257-0011
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 610	4 x 24	76.2	3	25.4	1	4257-0012
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	203 x 864	8 x 34	101.6	4	25.4	1	4257-0212
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 914	4 x 36	76.2	3	25.4	1	4257-0013
15.9 x 19.0	5/8 x 3/4	23.9 x 27.0	0.94 x 1.06	102 x 1524	4 x 60	76.2	3	25.4	1	4257-0014
19.0	3/4	27.0	1.06	102 x 152	4 x 6			25.4	1	4261-1690
19.0	3/4	27.0	1.06	102 x 305	4 x 12			25.4	1	4261-1691
19.0	3/4	27.0	1.06	102 x 457	4 x 18			25.4	1	4261-1692
19.0	3/4	27.0	1.06	102 x 610	4 x 24			25.4	1	4261-1693
19.0	3/4	27.0	1.06	203 x 610	8 x 24			25.4	1	4261-1694
19.0	3/4	27.0	1.06	102 x 914	4 x 36			25.4	1	4261-1695
19.0	3/4	27.0	1.06	102 x 1219	4 x 48			25.4	1	4261-1696
19.0	3/4	27.0	1.06	102 x 1524	4 x 60			25.4	1	4261-1697
25.4	1	4.95±0.65 wall	.195±.025 wall	88.9 x 289.1	3.5 x 11.38			50.8	2	4261-1488
38.1	1-1/2	4.95±0.65 wall	.195±.025 wall	203 x 305	8 x 12			38.1	1.5	4276-8500
44.5	1-3/4	4.95±0.65 wall	.195±.025 wall	254 x 305	10 x 12			44.5	1.75	4276-8501
50.8	2	5.35±1.05 wall	0.21±0.04 wall	254 x 356	10 x 14			76.2	3	4276-8502
57.2	2-1/4	5.35±1.05 wall	0.21±0.04 wall	254 x 356	10 x 14			57.2	2.25	4276-8503

* Expanded end is on the long arm of the hose.



4278 (EUROPE)

FORMED COOLANT HOSE - STANDARD SHAPES (EUROPEAN MARKET ONLY)



RELATIVE COST ●●○○○

APPLICATIONS Engine coolant hose with 90° bend. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE -40°C to +135°C (-40°F to +275°F).

STANDARDS SAE 20R4 EC Class D2, DIN 73411 Class A.

CONSTRUCTION EPDM tube, aramid fiber reinforcement, EPDM cover.

PACKAGING Boxed.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		ARM LENGTHS		GATES ITEM NUMBER
mm	inch	mm	inch	MPa	psi	mm	inch	
10 ± 0.8	3/8	19.9 ± 0.8	0.78	0.57	83	150	5.91	4278-17023
12	1/2	21.9	0.86	0.57	83	150	5.91	4278-17024
15	5/8	24.9	0.98	0.57	83	150	5.91	4278-17025
18	11/16	27.9	1.10	0.46	67	150	5.91	4278-17026
22	7/8	31.9	1.26	0.40	58	150	5.91	4278-17027
25	1	34.9	1.37	0.40	58	150	5.91	4278-17028
28	1-1/8	37.9	1.49	0.30	44	200	7.87	4278-17029
30	1-3/16	39.9	1.57	0.30	44	200	7.87	4278-17030
32	1-1/4	41.9	1.65	0.30	44	200	7.87	4278-17031
35	1-3/8	44.9	1.77	0.28	41	300	11.81	4278-17032
38	1-1/2	47.9	1.89	0.28	41	300	11.81	4278-17033
40	1-9/16	49.9	1.96	0.25	36	300	11.81	4278-17034
45	1-3/4	54.9	2.16	0.25	36	300	11.81	4278-17035
50	2	60.7	2.39	0.23	33	300	11.81	4278-17036
55	2-1/8	65.7	2.59	0.21	30	300	11.81	4278-17037
60	2-3/8	70.7	2.78	0.18	26	300	11.81	4278-17038
65	2-9/16	75.7	2.98	0.18	26	300	11.81	4278-17041
70 ± 1.6	2-3/4	80.7	3.18	0.16	23	300	11.81	4278-17042
75	3	85.7	3.37	0.14	20	300	11.81	4278-17043
80	3-1/8	90.7	3.57	0.12	17	300	11.81	4278-17044

4281 (ELBOWS)**HIGH TEMPERATURE SILICONE
FORMED COOLANT HOSE
(EUROPEAN MARKET ONLY)****RELATIVE COST****APPLICATIONS**

Engine coolant hose with 90° bend for external exposure to extreme temperatures.
Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-50°C to +180°C (-58°F to +356°F).

STANDARDS

SAE 20R1 HT Class A except burst.

CONSTRUCTION

Green silicone rubber tube, polyester fiber reinforcement, green silicone rubber cover with wrapped appearance.

PACKAGING

Boxed.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		ARM LENGTHS		90° ELBOW CERTELINE BEND RADIUS		
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	in	mm	in	Item No.
10±0.5	3/8	20 +1/-0.75	0.79	0.57	83	2.20	319	33.9	10.0	150	5.9	15	0.6	4281-17123
12	1/2	22	0.87	0.57	83	1.90	276	33.9	10.0	150	5.9	18	0.7	4281-17124
15	5/8	25	0.98	0.57	83	1.60	232	27.1	8.0	150	5.9	23	0.9	4281-17125
18±0.5/-0.75	11/16	28 ± 1	1.10	0.46	67	1.20	174	27.1	8.0	150	5.9	27	1.1	4281-17126
22	7/8	32	1.26	0.40	58	1.00	145	23.7	7.0	150	5.9	33	1.3	4281-17127
25	1	35	1.38	0.40	58	1.00	145	23.7	7.0	150	5.9	38	1.5	4281-17128
28	1-1/8	38	1.50	0.30	44	0.90	131	20.3	6.0	200	7.9	42	1.7	4281-17129
30	1-3/16	40	1.57	0.30	44	0.90	131	16.9	5.0	200	7.9	45	1.8	4281-17130
32	1-1/4	42	1.65	0.30	44	0.90	131	13.5	4.0	200	7.9	48	1.9	4281-17131
35	1-3/8	45	1.77	0.28	41	0.80	116	10.2	3.0	300	11.8	53	2.1	4281-17132
38	1-1/2	48	1.89	0.28	41	0.80	116	7.1	2.1	300	11.8	57	2.2	4281-17133
40	1-9/16	50	1.97	0.25	36	0.70	102	6.8	2.0	300	11.8	60	2.4	4281-17134
45	1-3/4	55	2.17	0.25	36	0.70	102	5.4	1.6	300	11.8	68	2.7	4281-17135
50±0.5/-1	2	60 +1/-1.25	2.36	0.23	33	0.65	94	4.1	1.2	300	11.8	75	3.0	4281-17136
55	2-1/8	65	2.56	0.21	30	0.60	87	3.4	1.0	300	11.8	83	3.2	4281-17137
60	2-3/8	70	2.76	0.18	26	0.55	80	3.4	1.0	300	11.8	90	3.5	4281-17138
65	2-9/16	75	2.95	0.18	26	0.52	75	2.7	0.8	300	11.8	98	3.8	4281-17141
70	2-3/4	80	3.15	0.16	23	0.50	73	2.7	0.8	300	11.8	105	4.1	4281-17142
75	3	85	3.35	0.14	20	0.45	65	2.7	0.8	300	11.8	113	4.4	4281-17143



4177 (ELBOWS)

HIGH TEMPERATURE SILICONE FORMED COOLANT HOSE - STANDARD SHAPES



RELATIVE COST



APPLICATIONS

Engine coolant hose with 45° or 90° bend for external exposure to extreme temperatures. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-54°C to +177°C (-65°F to +350°F).

STANDARDS

SAE 20R1 HT Class A.

CONSTRUCTION

Orange silicone rubber tube, polyester fiber reinforcement, blue silicone rubber cover with wrapped appearance.

PACKAGING

Individually bagged and boxed.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		ARM LENGTHS		90° ELBOW CENTERLINE BEND RADIUS			45° ELBOW CENTERLINE BEND RADIUS		
mm	in.	mm	in.	MPa	psi	MPa	psi	mm	inch	mm	inch	Item No.	mm	inch	Item No.
44.5	1-3/4	53.9	2.12	0.39	56	1.54	224	152	6	44.5	1.75	4177-7013	44.5	1.75	4177-7012
50.8	2	60.3	2.37	0.34	50	1.37	199	152	6	101.6	4	4177-7005	101.6	4	4177-7014
50.8	2	60.3	2.37	0.34	50	1.37	199	305	12	101.6	4	4177-7016			
57.2	2-1/4	66.6	2.62	0.30	44	1.21	175	152	6	57.2	2.25	4177-7006	57.2	2.25	4177-7015
57.2	2-1/4	66.6	2.62	0.30	44	1.21	175	305	12	57.2	2.25	4177-7017			
63.5	2-1/2	73.0	2.87	0.26	37	1.03	149	152	6	63.5	2.5	4177-7007	63.5	2.5	4177-7000
63.5	2-1/2	73.0	2.87	0.26	37	1.03	149	305	12	63.5	2.5	4177-0005			
69.9	2-3/4	79.3	3.12	0.21	31	0.85	124	152	6	88.9	3.5	4177-7008	88.9	3.5	4177-7001
69.9	2-3/4	79.3	3.12	0.21	31	0.85	124	305	12	88.9	3.5	4177-7019			
76.2	3	85.7	3.37	0.17	25	0.69	100	152	6	76.2	3	4177-7009	76.2	3	4177-7002
88.9	3-1/2	98.4	3.87	0.17	25	0.69	100	152	6	88.9	3.5	4177-7010	88.9	3.5	4177-7003
101.6	4	111.1	4.37	0.17	25	0.69	100	152	6	101.6	4	4177-7011	101.6	4	4177-7004

4280MH**STANDARD FORMED COOLANT HOSE****RELATIVE COST** ●●○○○**APPLICATIONS** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F).**STANDARDS** SAE 20R3 EC Class D1 or SAE 20R4 EC Class D1 depending on size.**CONSTRUCTION** EPDM tube, synthetic knit reinforcement, EPDM cover.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in.Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC CLASS D1											
6.35±0.8	1/4±0.03	12.35*±0.8	0.49*±0.03	1.72	250	33.8	10	9.5	0.38	0.12	0.08
7.0	0.27	13.0*	0.51*	1.72	250	33.8	10	10.3	0.40	0.13	0.09
7.9	5/16	13.9*	0.55*	1.72	250	33.8	10	11.9	0.47	0.14	0.09
9.5	3/8	16.5	0.65	1.72	250	33.8	10	14.2	0.56	0.17	0.11
11.1	7/16	19.1	0.75	1.72	250	33.8	10	16.0	0.63	0.20	0.14
12.7	1/2	20.7	0.81	1.72	250	33.8	10	19.1	0.75	0.24	0.16
15.9	5/8	23.9	0.94	1.72	250	27.0	8	23.8	0.94	0.28	0.19
19.0	3/4	27.0	1.06	1.38	200	23.6	7	27.9	1.10	0.33	0.22
20.3	.80	28.3	1.11	1.38	200	20.3	6	29.7	1.17	0.35	0.24
22.2	7/8	30.2	1.19	1.38	200	20.3	6	30.7	1.21	0.38	0.25

* Thin wall dimensions

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in.Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC CLASS D1											
18.8±0.8	0.74±0.03	4.95±0.65	0.195±0.025	1.03	150	**	**	27.9	1.10	0.38	0.26
20.8	.82	4.95	0.195	1.03	150	**	**	29.7	1.19	0.42	0.28
22.1	.87	4.95	0.195	1.03	150	**	**	30.7	1.17	0.44	0.29
23.1	.91	4.95	0.195	0.97	140	**	**	34.7	1.21	0.46	0.31
25.4	1	4.95	0.195	0.97	140	**	**	38.1	1.50	0.50	0.33
27.0	1.06	4.95	0.195	0.97	140	**	**	40.4	1.59	0.55	0.37
28.6	1-1/8	4.95	0.195	0.97	140	**	**	41.4	1.63	0.53	0.36
30.2	1.19	4.95	0.195	0.90	130	**	**	43.2	1.70	0.58	0.39
31.8	1-1/4	4.95	0.195	0.90	130	**	**	44.5	1.75	0.60	0.40
33.3	1.31	4.95	0.195	0.90	130	**	**	49.9	1.97	0.63	0.42
34.9	1-3/8	4.95	0.195	0.90	130	**	**	52.4	2.06	0.71	0.48
36.6	1.44	4.95	0.195	0.83	120	**	**	54.9	2.16	0.74	0.50
38.1	1-1/2	4.95	0.195	0.83	120	**	**	55.9	2.20	0.76	0.51
39.6	1.56	4.95	0.195	0.76	110	**	**	57.2	2.25	0.79	0.53
41.3	1-5/8	4.95	0.195	0.76	110	**	**	58.7	2.31	0.82	0.55
44.5	1-3/4	4.95	0.195	0.76	110	**	**	60.5	2.38	0.87	0.58
47.6	1-7/8	4.95	0.195	0.69	100	**	**	63.5	2.50	0.89	0.60
49.0	1.93	4.95	0.195	0.69	100	**	**	63.5	2.50	0.93	0.62
50.8	2	5.35±1.05	0.21±0.04	0.69	100	**	**	63.5	2.50	0.93	0.63
53.8	2.12	5.35	0.21	0.62	90	**	**	66.8	2.63	1.02	0.68
57.2	2-1/4	5.35	0.21	0.62	90	**	**	69.9	2.75	1.04	0.70
60.5	2.38	5.35	0.21	0.55	80	**	**	74.9	2.95	1.11	0.75
63.5	2-1/2	5.35	0.21	0.55	80	**	**	76.2	3.00	1.16	0.78
66.5	2.62	5.35	0.21	0.48	70	**	**	79.5	3.13	1.21	0.81
69.9±1.6	2 3/4±0.06	5.35	0.21	0.48	70	**	**	82.6	3.25	1.27	0.85
76.2	3	5.35	0.21	0.41	60	**	**	92.2	3.63	1.42	0.95
88.9	3-1/2	5.35	0.21	0.34	50	**	**	103.1	4.06	1.64	1.10
101.6***	4	5.35	0.21	0.27	40	**	**	114.3	4.50	1.89	1.27

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID

*** Contact Gates for availability.

4280GN**LIGHT DUTY / NON-ECR
FORMED COOLANT HOSE**
RELATIVE COST ●○○○○

APPLICATIONS Engine coolant hose connected to plastic fittings, or not requiring electrochemical resistance. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE -40°C to +125°C (-40°F to +257°F).

STANDARDS SAE 20R3 Class D2 or SAE 20R4 Class D2 depending on size.

CONSTRUCTION EPDM tube, synthetic knit reinforcement, EPDM cover.

PACKAGING Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged or bulk bagged in the box.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 CLASS D2											
15.9 ±0.8	5/8 ±0.03	23.9 ±0.8	0.94 ±0.03	1.72	250	27.0	8	24.1	0.95	0.28	0.19
19.0	3/4	27.0	1.06	1.38	200	23.6	7	25.4	1.00	0.33	0.22

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 CLASS D2											
25.4 ±0.8	1 ±0.03	4.95 ±0.65	0.195 ±0.025	0.97	140	**	**	38.1	1.50	0.50	0.33
28.6	1-1/8	4.95	0.195	0.97	140	**	**	40.6	1.60	0.53	0.36
30.2	1.19	4.95	0.195	0.90	130	**	**	41.1	1.62	0.58	0.39
31.8	1-1/4	4.95	0.195	0.90	130	**	**	41.7	1.64	0.60	0.40
33.3	1.31	4.95	0.195	0.90	130	**	**	48.3	1.90	0.63	0.42
34.9	1-3/8	4.95	0.195	0.90	130	**	**	48.8	1.92	0.71	0.48
36.6	1.44	4.95	0.195	0.83	120	**	**	50.8	2.00	0.74	0.50
38.1	1-1/2	4.95	0.195	0.83	120	**	**	52.3	2.06	0.76	0.51
39.6	1.56	4.95	0.195	0.76	110	**	**	53.3	2.10	0.79	0.53
44.5	1-3/4	4.95	0.195	0.76	110	**	**	55.9	2.20	0.87	0.58
47.6	1-7/8	4.95	0.195	0.69	100	**	**	58.4	2.30	0.89	0.60
50.8	2	5.35 ±1.05	0.21 ±0.04	0.69	100	**	**	67.1	2.64	0.93	0.63

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

4276KR**HIGHER PRESSURE FORMED
COOLANT HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F), with ambient temperature to +150°C (302°F) when used in a coolant application.**STANDARDS** SAE 20R3 EC Class D1 or SAE 20R4 EC Class D1 depending on size, includes improved burst strength.**CONSTRUCTION** EPDM tube, aramid knit reinforcement, EPDM cover.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply.
Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in.Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC CLASS D1											
9.5 ±0.8	3/8 ±0.03	17.5 ±0.8	0.68 ±0.03	1.72	250	33.8	10	14.2	0.56	0.19	0.13
12.7	1/2	20.7	0.81	1.72	250	33.8	10	19.2	0.75	0.25	0.17
15.1	19/32	23.1	0.91	1.72	250	33.8	10	22.6	0.89	0.27	0.18
18.3	23/32	26.3	1.03	1.38	200	23.6	7	27.4	1.08	0.33	0.22
20.3***	0.80	28.3	1.11	1.38	200	20.3	6	30.5	1.20	0.37	0.25
22.2	7/8	30.2	1.19	1.38	200	20.3	6	33.3	1.31	0.37	0.25

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in.Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC CLASS D1											
23.1 ±0.8	0.91 ±0.03	4.95 ±0.65	0.195 ±0.025	1.38	200	**	**	34.7	1.37	0.45	0.30
24.4	0.96	4.95	0.195	1.38	200	**	**	36.6	1.44	0.48	0.32
25.4	1	4.95	0.195	1.38	200	**	**	38.1	1.50	0.49	0.33
28.6	1-1/8	4.95	0.195	1.38	200	**	**	42.9	1.69	0.55	0.37
30.2***	1.19	4.95	0.195	1.38	200	**	**	45.3	1.79	0.58	0.39
31.8	1-1/4	4.95	0.195	1.38	200	**	**	47.0	1.85	0.61	0.41
33.0	1.30	4.95	0.195	1.24	180	**	**	47.8	1.88	0.63	0.42
34.9	1-3/8	4.95	0.195	1.24	180	**	**	50.0	1.97	0.65	0.44
35.0	1.38	4.95	0.195	0.90	130	**	**	70.1	2.76	0.71	0.48
36.6	1.44	4.95	0.195	1.24	180	**	**	50.8	2.00	0.68	0.46
38.1	1-1/2	4.95	0.195	1.24	180	**	**	50.8	2.00	0.71	0.48
41.3	1-5/8	4.95	0.195	1.10	160	**	**	53.8	2.12	0.76	0.51
44.5	1-3/4	4.95	0.195	1.10	160	**	**	55.9	2.20	0.82	0.55
47.6	1-7/8	4.95	0.195	1.10	160	**	**	58.7	2.31	0.88	0.59
49.5***	1.95	4.95	0.195	1.10	160	**	**	68.1	2.68	0.91	0.61
50.8	2	5.35 ±1.05	0.21 ±0.04	1.10	160	**	**	68.6	2.70	0.92	0.62
53.8	2.12	5.35	0.21	1.10	160	**	**	69.9	2.75	0.98	0.66
57.2	2-1/4	5.35	0.21	1.10	160	**	**	79.5	3.13	1.03	0.69
60.5	2.38	5.35	0.21	0.83	120	**	**	82.6	3.25	1.10	0.74
63.5	2-1/2	5.35	0.21	0.83	120	**	**	84.1	3.31	1.15	0.77
69.9 ±1.6	2-3/4 ±0.06	5.35	0.21	0.83	120	**	**	84.1	3.31	1.34	0.90
76.2	3	5.35	0.21	0.69	100	**	**	95.3	3.75	1.44	0.97

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

*** Contact Gates for availability.



4256HY

FATIGUE RESISTANT FORMED COOLANT HOSE



RELATIVE COST



APPLICATIONS

Engine coolant hose under pressure impulsing or flexing. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +125°C (-40°F to +257°F), with ambient temperature to +150°C (302°F) when used in a coolant application.

STANDARDS

SAE 20R4 EC Class D1.

CONSTRUCTION

EPDM tube, aramid knit reinforcement, EPDM cover.

PACKAGING

Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
15.2 ±0.8	0.60 ±0.03	4.95 ±0.8	0.195 ±0.03	2.50	363	**	**	22.9	0.90	0.36	0.24
19.1	3/4	4.95	0.195	2.50	363	**	**	28.6	1.12	0.39	0.26
25.4	1	4.95	0.195	2.25	326	**	**	33.3	1.31	0.52	0.35
31.8	1-1/4	4.95	0.195	2.07	300	**	**	44.2	1.66	0.68	0.46
38.1	1-1/2	4.95	0.195	2.07	300	**	**	50.8	2.00	0.74	0.50
44.5	1-3/4	4.95	0.195	1.55	225	**	**	60.5	2.38	0.89	0.60
50.8 ±0.8	2 ±0.03	5.35 ±1.05	0.21 ±0.04	1.55	225	**	**	67.3	2.65	0.92	0.62
57.2	2-1/4	5.35	0.21	1.38	200	**	**	69.9	2.75	1.09	0.73
63.5	2-1/2	5.35	0.21	1.38	200	**	**	76.2	3.00	1.16	0.78
76.2 ±1.6	3 ±0.06	5.35	0.21	1.38	200	**	**	88.9	3.50	1.46	0.98
88.9	3-1/2	5.35	0.21	1.38	200	**	**	101.6	4.00	1.68	1.13

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

4256SB (BLUE STRIPE)**PREMIUM PERFORMANCE FORMED COOLANT HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F), with ambient temperature to +150°C (302°F) when used in a coolant application.**STANDARDS** SAE 20R3 EC Class D1 or SAE 20R4 EC Class D1 depending on size.**CONSTRUCTION** EPDM tube, aramid knit reinforcement, EPDM cover.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC CLASS D1											
15.9 ±0.8	5/8 ±0.03	23.9 ±0.8	0.94 ±0.03	1.72	250	27.0	8	23.8	0.94	0.28	0.19
19.0	3/4	27.0	1.06	1.72	250	23.6	7	28.6	1.12	0.33	0.22
20.3***	0.80	28.3	1.11	1.72	250	20.3	6	30.5	1.20	0.35	0.24
22.2	7/8	30.2	1.19	1.72	250	20.3	6	31.8	1.25	0.38	0.25

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC CLASS D1											
23.1 ±0.8	0.91 ±0.03	4.95 ±0.65	0.195 ±0.025	0.97	140	**	**	34.7	1.37	0.46	0.31
23.9	0.94	4.95	0.195	0.97	140	**	**	35.8	1.41	0.51	0.34
25.4	1	4.95	0.195	0.97	140	**	**	38.1	1.50	0.50	0.33
28.6	1-1/8	4.95	0.195	0.97	140	**	**	42.9	1.69	0.53	0.36
30.2***	1.19	4.95	0.195	0.97	140	**	**	45.3	1.79	0.58	0.39
31.8	1-1/4	4.95	0.195	0.90	130	**	**	47.0	1.85	0.60	0.40
33.3	1.31	4.95	0.195	0.90	130	**	**	49.9	1.97	0.63	0.42
34.9	1-3/8	4.95	0.195	0.90	130	**	**	52.4	2.06	0.71	0.48
36.6***	1.44	4.95	0.195	0.90	130	**	**	54.1	2.13	0.74	0.50
38.1	1-1/2	4.95	0.195	0.83	120	**	**	54.1	2.13	0.76	0.51
39.6***	1.56	4.95	0.196	0.83	120	**	**	54.1	2.13	0.79	0.53
41.3	1-5/8	4.95	0.195	0.83	120	**	**	57.2	2.25	0.82	0.55
44.5	1-3/4	4.95	0.195	0.76	110	**	**	55.9	2.20	0.87	0.58
47.6	1-7/8	4.95	0.195	0.76	110	**	**	58.7	2.31	0.89	0.60
49.0	1.93	4.95	0.195	0.69	100	**	**	68.1	2.68	0.93	0.62
50.8	2	5.35 ±1.05	0.21 ±0.04	0.69	100	**	**	69.9	2.75	0.93	0.63
57.2	2-1/4	5.35	0.21	0.62	90	**	**	79.5	3.13	1.04	0.70
60.5	2.38	5.35	0.21	0.62	90	**	**	82.6	3.25	1.11	0.75
63.5	2-1/2	5.35	0.21	0.55	80	**	**	84.1	3.31	1.16	0.78
66.5	2.62	5.35	0.21	0.55	80	**	**	82.6	3.25	1.21	0.81
69.9 ±1.6	2-3/4 ±0.06	5.35	0.21	0.48	70	**	**	84.1	3.31	1.27	0.85

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

*** Contact Gates for availability.

4256LS**HIGHER TEMPERATURE FORMED
COOLANT HOSE****RELATIVE COST****APPLICATIONS**

Engine coolant hose such as cab heater or oil cooler. Also suitable for air or water. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +150°C (-40°F to +302°F), and ambient temperature to 165°C (329°F) if used in a coolant application.

STANDARDS

SAE 20R3 EC HT Class D3 or SAE 20R4 EC HT Class D3 depending on size.

CONSTRUCTION

p-EPDM tube, aramid knit reinforcement, p-EPDM cover.

PACKAGING

Various size boxes. Setup charge and minimum order quantity may apply.
Available with end caps, individually bagged, or bulk bagged in the box.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC CLASS D3											
8.0 ±0.8***	5/16 ±0.03	15.0 ±0.8	0.59 ±0.03	1.72	250	33.8	10	11.9	0.46	0.13	0.09
9.5	3/8	17.5	0.69	1.72	250	33.8	10	14.2	0.56	0.18	0.12
12.7	1/2	20.7	0.81	1.72	250	33.8	10	18.3	0.72	0.27	0.18
14.5	0.57	22.5	0.89	1.38	200	27.0	8	19.1	0.75	0.30	0.20

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC CLASS D3											
19.0 ±0.8	3/4 ±0.03	4.95 ±0.65	0.195 ±0.025	1.03	150	**	**	28.5	1.12	0.42	0.28
25.4	1	4.95	0.195	0.97	140	**	**	38.1	1.50	0.54	0.36
28.6***	1.12	4.95	0.195	0.90	130	**	**	42.6	1.68	0.60	0.40
31.8	1-1/4	4.95	0.195	0.90	130	**	**	47.6	1.87	0.64	0.43
38.1	1-1/2	4.95	0.195	0.83	120	**	**	50.8	2.00	0.76	0.51
44.5***	1-3/4	4.95	0.195	1.21	175	**	**	66.0	2.60	0.94	0.63
50.8	2	5.35 ±1.05	0.21 ±0.04	0.76	110	**	**	66.8	2.63	1.06	0.71
57.0	2-1/4	5.35	0.21	0.62	90	**	**	69.9	2.75	1.21	0.81
62.5	2-1/2	5.35	0.21	0.62	90	**	**	76.2	3.00	1.31	0.88
66.7***	2-5/8	5.35	0.21	0.55	80	**	**	82.6	3.25	1.37	0.92
88.9***	3-1/2	5.35	0.21	0.34	50	**	**	101.6	4.00	1.90	1.28

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

*** Contact Gates for availability.



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MODERN FUELS REQUIRE MODERN FUEL HOSE

BARRICADE FUEL INJECTION AND CARBURETION HOSE
WITH GREENSHIELD TECHNOLOGY

INSTALLING BARRICADE PROTECTS AGAINST THE AGGRESSIVE FUEL MIXTURES OF TODAY'S MODERN FUELS, WHICH CAN DEGRADE BASIC RUBBER HOSE AND RESULT IN EARLY HOSE FAILURE.

BARRICADE OFFERS BEST-IN-CLASS WORKING PSI OF 225 FOR FUEL INJECTION AND WORKS WELL WITH BIODIESEL, UP TO B100, WITHOUT BREAKING A SWEAT.



FUEL

LOW PRESSURE, RUBBER FUEL LINE

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GASEOUS FUELS

LP350, LPG VAPOR 125 SEE GATES INDUSTRIAL HOSE PRODUCTS CATALOG ON WWW.GATES.COM

FUEL FILL HOSE

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ALSO SEE:

FORMED HOSE SECTION BELOW OR FUEL MASTER XTREME 150 SD OR FUEL MASTER XTREME 150SD MEGAFLEX. SEE GATES INDUSTRIAL HOSE CATALOG.

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ELECTRIC
VEHICLE

COOLANT

FUEL

OIL

SCR

EXHAUST

AIR

REFRIGERANT

BRAKE

CLAMPS &
CONNECTORS

ACCESSORIES

BELTS



4219G / 4219XL

STANDARD FUEL AND OIL HOSE



RELATIVE COST ●●○○○

APPLICATIONS	Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, tank vent, crank case vent, or coolant bottle. Not for in-tank, gaseous fuels, or biodiesel above 20% (B20) at 51 °C (124 °F).
TEMPERATURE	-40 °C to +125 °C (-40 °F to +257 °F). Up to B5 biodiesel, 80 °C (176 °F) continuous or 100 °C (212 °F) intermittent. Up to B20, 51 °C (124 °F) maximum.
STANDARDS	SAE 30R6 or SAE 30R7.
CONSTRUCTION	Nitrile tube, synthetic fiber reinforcement, nitrile/PVC cover.
PACKAGING	Bulk lengths shipped on a reel. Maximum 5 pieces. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145). Also can use GC stem with crimp ring.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
3.2 ±0.4	1/8 ±.016	8.3 ±0.58	0.33 ±0.02	0.34	50	1.72	250	81	24	51	2	0.06	0.04	76	250	3225-4038
4.0	5/32	9.2	0.36	0.34	50	1.72	250	81	24	51	2	0.06	0.04	168	550	4219-0104
4.8	3/16	10.4	0.41	0.34	50	1.72	250	81	24	76	3	0.09	0.06	168	550	4219-0093
6.4	1/4	12.7	0.50	0.34	50	1.72	250	81	24	76	3	0.13	0.09	168	550	4219-0103
7.9	5/16	14.3	0.56	0.34	50	1.72	250	81	24	76	3	0.15	0.1	168	550	4219-0107
9.5	3/8	15.9	0.62	0.34	50	1.72	250	81	24	102	4	0.16	0.11	168	550	4219-0109
11.1 ±0.58	7/16 ±0.02	18.3 ±0.79	0.72 ±0.03	0.24	35	1.21	175	81	24	127	5	0.22	0.15	76	250	3225-4810
12.7	1/2	19.8	0.78	0.24	35	1.21	175	34	10	127	5	0.24	0.16	168	550	4219-0102
15.9 ±0.79	5/8 ±0.03	23.8 ±1.59	0.94 ±0.06	0.24	35	1.21	175	34	10	152	6	0.33	0.22	168	550	4219-0097
19.1	3/4	28.6	1.13	0.24	35	1.21	175	34	10	178	7	0.48	0.32	61	200	4219-0116

3225ST**METRIC FUEL AND OIL HOSE
(EUROPEAN MARKET ONLY)****RELATIVE COST****APPLICATIONS**

Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, tank vent, or crank case vent. Not for in-tank, gaseous fuels, or biodiesel applications.

TEMPERATURE

-40°C to +125°C (-40°F to +257°F). Up to B5 biodiesel, 80°C (176°F) continuous or 100°C (212°F) intermittent. Up to B20, 51°C (124°F) maximum.

STANDARDS

SAE 30R7, DIN 73379, tolerances excepted.

CONSTRUCTION

Nitrile tube, synthetic fiber reinforcement, nitrile/PVC cover.

PACKAGING

Bulk lengths shipped on a reel except 3225-10014 and 3225-10015 shipped in a box. Custom lengths available with minimum order quantity.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	15m Length
3.2 ±0.40	1/8	7.7 ±0.58	0.30	0.76	110	3.03	440	81	24	71	2.8	0.05	0.034	3225-00050
4	5/32	9.2	0.36	0.76	110	3.03	440	81	24	76	3	0.07	0.05	3225-00051
5	13/64	10.6	0.42	0.76	110	3.03	440	81	24	76	3	0.09	0.06	3225-00055
6 ±0.50	1/4	12.0 ±0.63	0.47	0.76	110	3.03	440	81	24	79	3.1	0.12	0.08	3225-00052
7	9/32	13.1	0.52	0.76	110	3.03	440	81	24	89	3.5	0.13	0.09	3225-00056
8	5/16	14.0	0.55	0.76	110	3.03	440	81	24	91	3.6	0.13	0.09	3225-00053
10 ±0.63	3/8	17.0 ±0.63	0.67	0.76	110	3.03	440	81	24	114	4.5	0.19	0.13	3225-10014 3225-00054=10m
12.0	15/32	19.05 ±0.79	0.75	0.76	110	3.03	440	34	10	127	5	0.24	0.16	3225-10015

4324**METRIC TEXTILE COVER FUEL AND OIL HOSE (EUROPEAN MARKET ONLY)****RELATIVE COST** ●●○○○**APPLICATIONS** Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, tank vent, crank case vent, or coolant bottle. Not for in-tank, gaseous fuels, or biodiesel applications.**TEMPERATURE** -30°C to +100°C (-22°F to +212°F).**STANDARDS** DIN 73379:1982.**CONSTRUCTION** Nitrile+PVC/braided rayon.**PACKAGING** Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	15m Length
2.7 ±0.25	7/64 ±0.010	7.0	0.28	1.00	145	3.00	435	*	*	*	*	0.040	0.03	4324-10047 ** 4324-10048 ***
3.2	1/8	7.0	0.28	0.60	87	2.30	334	*	*	*	*	0.044	0.03	4324-10050
4 ±0.30	5/32 ±0.012	9.0	0.35	0.60	87	2.30	334	*	*	*	*	0.068	0.05	4324-10051
5	3/16	10.0	0.39	0.60	87	2.30	334	*	*	*	*	0.080	0.05	4324-10055
6	1/4	11.0	0.43	0.60	87	2.30	334	*	*	*	*	0.090	0.06	4324-10052
7 ±0.40	9/32 ±0.016	12.0	0.47	0.60	87	2.30	334	*	*	*	*	0.100	0.07	4324-10056
8	5/16	13.0	0.51	0.60	87	2.30	334	*	*	*	*	0.110	0.07	4324-10053
10 ±0.50	3/8 ±0.020	15.0	0.59	0.60	87	2.30	334	*	*	*	*	0.133	0.09	4324-10054 (10m length)

* No specification requirement.

** ECO rubber tube/braided rayon reinforcement, to meet German automotive standards. -40° to +110°C (-40° to +230°F)

*** HNBR rubber tube/braided rayon reinforcement, to meet German automotive standards. -40° to +110°C (-40° to +230°F)

4219D**HIGHER TEMPERATURE AND PRESSURE FUEL AND OIL HOSE****RELATIVE COST** ●●●●○**APPLICATIONS** Fuel line and fuel injection for high heat and flexibility. Also suitable for low pressure hydraulic oil, engine oil, or crank case vent. Not for in-tank or gaseous fuels.**TEMPERATURE** -40°C to +135°C (-40°F to +275°F) with peaks up to 150°C (302°F). Biodiesel B100 up to 135°C (275°F).**STANDARDS** SAE 30R9.**CONSTRUCTION** FKM/CPE tube, synthetic fiber braid reinforcement, CPE cover.**PACKAGING** Bulk lengths shipped on a reel or in a box. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps. (pages 139 - 145). Also can use GC stem with crimp ring.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Reel***	Pallet Box
6.4 ±0.4	1/4 ±0.016	12.7 ±0.58	0.50 ±0.02	1.24	180	6.2	900	81	24	76	3	0.13	0.09	4219-4102	4219-5147 =5000ft
7.9	5/16	14.3	0.56	1.24	180	6.2	900	81	24	76	3	0.15	0.1	4219-3656	4219-6883 =4000ft
9.5	3/8	15.9	0.62	1.24	180	6.2	900	81	24	102	4	0.16	0.11	4219-3072	

*** Made to order.

3284AC / 3284SS (RLA 30R2)**HIGHER PRESSURE FUEL AND OIL HOSE**

RELATIVE COST ●●○○○

APPLICATIONS	Fuel line from tank to engine. Also suitable for low pressure hydraulic oil, engine oil, or air. Not for in-tank or gaseous fuels.
TEMPERATURE	-40°C to +100°C (-40°F to +212°F), biodiesel up to B-20, max. 52°C. (125°F)
STANDARDS	SAE 30R2 Type 1. Burst, vacuum, and bend radius exceed SAE 30R2. Also JDS-G253 (non-conductive).
CONSTRUCTION	Nitrile tube, synthetic fiber reinforcement, nitrile/PVC cover.
PACKAGING	Bulk lengths shipped on a reel and 25 foot lengths coiled in a box. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145). Also GLP, Megacrimp, or Powercrimp couplings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		25' (7.62M) LENGTH	BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	Item Number	meters	feet	Bulk Length
4.8 ± 0.40	3/16 ± .016	10.52 ± 0.6	0.41 ± 0.03	1.72	250	6.89	1000	95	28	76	3	0.10	0.07	3284-5312***	168	550	3284-5306
6.35	1/4	12.1	0.48	1.72	250	6.89	1000	95	28	76	3	0.15	0.1	3284-5313***	168	550	3284-5307
7.9	5/16	13.7	0.54	1.72	250	6.89	1000	95	28	102	4	0.16	0.11	3284-5314***	168	550	3284-5282
9.5	3/8	15.3	0.60	1.72	250	6.89	1000	95	28	102	4	0.22	0.15	3284-5315***	168	550	3284-5304
12.7 ± 0.58	1/2 ± 0.023	19.0 ± 0.79	0.75 ± 0.03	1.38	200	5.52	800	68	20	127	5	0.34	0.23	3284-5316***	168	550	3284-5308
15.9	5/8	22.2	0.88	1.38	200	5.52	800	51	15	152	6	0.39	0.26	3284-5317***	168	550	3284-5309
19.1	3/4	27.8	1.09	1.38	200	5.52	800	34	10	152	6	0.48	0.32	3284-4088	198	650	3284-0170
25.4 ± 0.79	1 ± 0.03	33.7 ± 1.20	1.33 ± 0.05	1.10	160	4.41	640	34	10	203	8	0.61	0.41	3284-4181	122	400	3284-0180

*** Contact Gates for availability.

4219BG (BARRICADE)**LOW PERMEATION FUEL HOSE**

RELATIVE COST ●●○○○

APPLICATIONS	Low-permeation fuel line including gasoline, ethanol blends, 100% methanol (no blends), diesel, biodiesel (including all blends of SME, RME or PME). Not for in-tank or gaseous fuels.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F) and -40°C to +100°C (-40°F to +212°F) for biodiesel up to B100.
STANDARDS	SAE 30R14 T1. Also JDS G-253 (non-conductive).
CONSTRUCTION	Nitrile tube with thermoplastic barrier, synthetic fiber reinforcement, nitrile/PVC cover.
PACKAGING	Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145). Also can use GC or SAE J2044 stems with crimp rings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
4.8 ± 0.40	3/16 ± .016	10.40 ± 0.58	0.410 ± 0.023	0.34	50	1.72	250	81	24	55	2.17	0.07	0.05	4219-5520
6.4	1/4	12.69	0.500	0.34	50	1.72	250	81	24	65	2.56	0.13	0.09	4219-5521
7.9	5/16	14.28	0.562	0.34	50	1.72	250	81	24	75	2.95	0.15	0.1	4219-5522
9.5	3/8	15.87	0.625	0.34	50	1.72	250	81	24	85	3.35	0.18	0.12	4219-5523
12.7 ± 0.58	1/2 ± 0.023	19.84 ± 0.79	0.780 ± 0.031	0.24	35	1.21	175	34	10	120	4.72	0.24	0.16	4219-5524



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GATES FUEL SYSTEM TECHNOLOGY (4219BD): BIODIESEL FUEL LINE HOSE

FOR HIGH-PRESSURE DIESEL AND BIODIESEL FUEL INJECTION APPLICATIONS

MODERN FUELS REQUIRE MODERN FUEL HOSE. FEATURES + BENEFITS

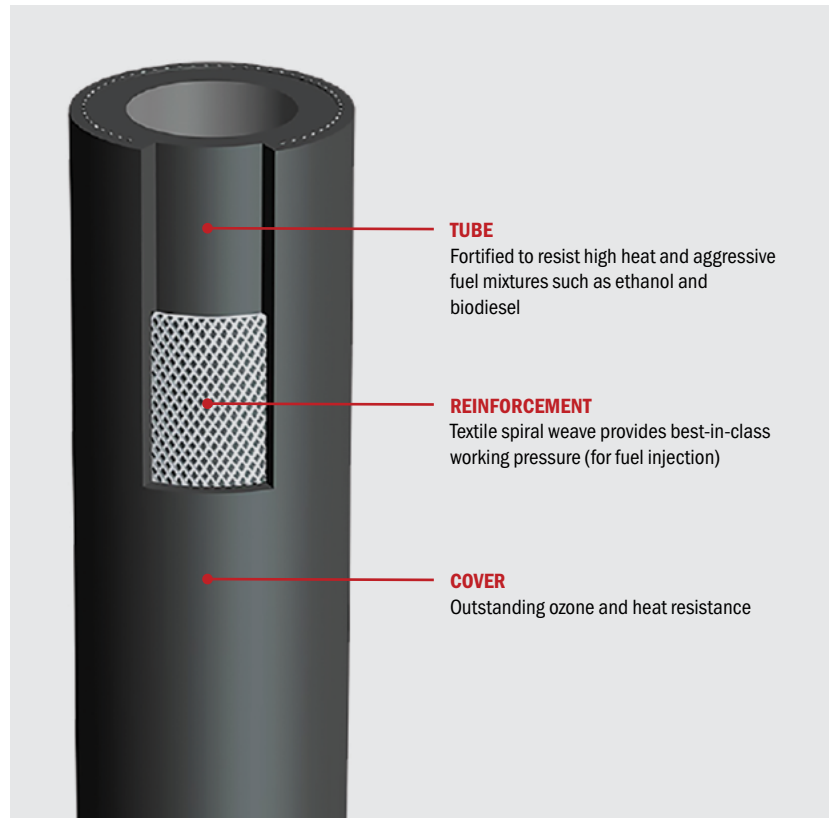
Gates Biodiesel 4219BD hose provides exceptional capability to handle the aggressive mixtures of today's wide range of diesel and biodiesel fuels, which can degrade basic rubber hose and reduce service life. Biodiesel 4219BD offers higher working pressures to 12.1 bar (175 psi) for standard and injection applications, along with exceptional flexibility and bend radius needed for ease of routing and assembly in tight configurations.

Biodiesel 4219BD hose is designed for continuous operating temperatures to 135°C with intermittent to 150°C. The tube material is specially formulated to be "clean" and free of extractables that can cause gelling issues in biodiesel systems.

Gates also offers pre-made assemblies with a variety of couplings, including plastic quick connects and conventional metal couplings with industry-standard terminations, including nickel plated couplings for enhanced zinc-free applications.

- Compatible with ULS petroleum diesel and all global biodiesel fuels, including soy, rapeseed and palm-based fuels in ratios from B0 to B100
- Recommended for high temp, hydraulic oil cooler applications. Meets SAE J1405 Hot Oil Circulation test for 750 hrs @ 150°C (300°F)
- Oil, heat, ozone and abrasionresistant cover
- Compatible with all fuel types including leaded and unleaded gasoline, gasohol (E-15, E-85, ethanol and methanol blends) for transfer and vent applications

GATES BIODIESEL FUEL LINE HOSE TECHNOLOGY: A SAFER CHOICE FOR YOUR ENGINE.



SIZE ID	SIZE OD	WORKING PRESSURE MAXIMUM	BURST MINIMUM	VACUUM MINIMUM	RADIUS MINIMUM*	WEIGHT
MM	MM	MPa	MPa	kPa	MM	KG/M
4.8 +/- 0.40	10.4 +/- 0.6	1.21	7.24	81	25.4	0.09
6.4 +/- 0.61	12.9 +/- 1.0	1.21	7.24	81	25.4	0.13
7.9 +/- 0.40	13.5 +/- 0.6	1.21	7.24	81	31.8	0.15
9.5 +/- 0.61	16.1 +/- 1.0	1.21	7.24	81	38.1	0.16
12.7 +/- 0.61	19.7 +/- 1.0	1.21	7.24	81	44.5	0.24
15.9 +/- 0.79	23.4 +/- 1.2	1.21	7.24	81	63.5	0.33
19.05 +/- 0.79	27.4 +/- 2.0	1.21	7.24	81	76.2	0.48

* per ISO 10619 B <20% collapse.

MODERN FUEL MEETS MODERN FUEL HOSE

HIGH PRESSURE DIESEL + BIODIESEL FUEL HOSE:

Fuel injection hose for diesel and biodiesel (all blends of SME, RME or PME), also for gasoline, ethanol blends, 100% methanol (no blends) or engine oil. Not for in-tank, LNG/CNG, or petroleum fuels requiring EPA/CARB certification.

- **TEMPERATURE RANGE:** -40° F to +302° F (-40° C to +150° C) and -40° F to 275° F (-40° C to 135° C) for biodiesel up to B100
- **STANDARDS:** SAE J30R14 T3, SAE J1405 and CAT 1E4340B
- **CONSTRUCTION:** HNBR tube, aramid fiber reinforcement, CPE cover
- **COUPLINGS:** Hose bead fitting fastened with hose clamps, can also use GC stems with crimp rings (see Gates eCrimp for crimp options for GC stem and J2044)

INDUSTRIES + APPLICATIONS:

- Heavy Duty Truck + Bus
- Construction + Heavy Equipment
- Agriculture + Forestry
- Marine
- Class 5-8 Trucks
- Buses + Recreational Vehicles
- Stationary Diesel Powered Equipment

4219BF BARRICADE FUEL INJECTION



LOW PERMEATION, HIGHER PRESSURE FUEL HOSE

RELATIVE COST ●●●○○○

APPLICATIONS	Low-permeation fuel injection line including gasoline, ethanol blends, 100% methanol (no blends), diesel, biodiesel (including all blends of SME, RME or PME). Not for in-tank or gaseous fuels.
TEMPERATURE	-40°C to +135°C (-40°F to +275°F) with peaks up to 150°C (302°F). Biodiesel B100 up to 135°C (275°F).
STANDARDS	SAE 30R14 T2 except no kink test and higher burst, EPA Non-Road Fuel Lines (<15g/m ² /day) for spark ignition engines, CAT 1E4340B.
CONSTRUCTION	HNBR tube with thermoplastic barrier, aramid fiber reinforcement, CPE cover.
PACKAGING	Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145). Also can use GC or SAE J2044 stems with crimp rings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
4.8±0.40	3/16±.016	10.4±0.58	0.406±0.023	1.55	225	8.0	1160	81	24	55	2.17	0.07	0.05	4219-6705
6.4	1/4	12.69	0.500	1.55	225	8.0	1160	81	24	65	2.56	0.13	0.09	4219-5651
7.9	5/16	14.28	0.562	1.55	225	8.0	1160	81	24	75	2.95	0.15	0.1	4219-5652
9.5	3/8	15.87	0.625	1.55	225	8.0	1160	81	24	85	3.35	0.18	0.12	4219-5653
12.7±0.58	1/2±0.023	19.84±0.79	0.780±0.031	1.55	225	8.0	1160	34	10	140	5.5	0.24	0.16	4219-5654

*** Not stocked. Minimum order quantity may apply.

4219BD DIESEL FUEL INJECTION



HIGHER PRESSURE DIESEL AND BIODIESEL FUEL HOSE

RELATIVE COST ●●●○○○

APPLICATIONS	Fuel injection hose for diesel and biodiesel (including all blends of SME, RME or PME). Also for gasoline, ethanol blends, 100% methanol (no blends), or engine oil. Not for in-tank or gaseous fuels.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F) and -40°C to +135°C (-40°F to +275°F) for biodiesel up to B100.
STANDARDS	CAT 1E4340B, SAE 30R13 NT3.
CONSTRUCTION	HNBR tube, aramid fiber reinforcement, CPE cover.
PACKAGING	Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145). Also can use GC or SAE J2044 stems with crimp rings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM*		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
4.8±0.40	3/16±.016	10.4±0.6	0.410±0.024	1.21	175	7.24	1050	81	24	25.4	1.00	0.09	0.06	4219-7124
6.35±0.61	1/4±.024	12.9±1.0	0.508±0.039	1.21	175	7.24	1050	81	24	25.4	1.00	0.13	0.09	4219-7125
7.94±0.40	5/16±.016	13.5±0.60	0.531±0.024	1.21	175	7.24	1050	81	24	31.8	1.25	0.15	0.10	4219-7127
9.52±0.61	3/8±.024	16.1±1.0	0.634±0.039	1.21	175	7.24	1050	81	24	38.1	1.50	0.16	0.11	4219-7126
12.7±0.61	1/2±.024	19.7±1.0	0.776±0.039	1.21	175	7.24	1050	81	24	44.5	1.75	0.24	0.16	4219-7128
15.9±0.79	5/8±0.031	23.4±1.2	0.922±0.047	1.21	175	7.24	1050	81	24	63.5	2.50	0.33	0.22	4219-6772
19.05±0.79	3/4±0.031	27.4±2.0	1.078±0.078	1.21	175	7.24	1050	81	24	76.2	3.00	0.48	0.32	4219-7129

* per ISO 10619 B, less than 20% collapse

4327DT

NYLON TUBING FOR DIESEL FUEL



RELATIVE COST ○○○○○○

APPLICATIONS Non-conductive fuel line from tank to engine. Also suitable for DEF vent line. Not for in-tank or gaseous fuels.

TEMPERATURE -40°C to +93°C (-40°F to +200°F).

STANDARDS SAE J844

CONSTRUCTION Heat and light stabilized seamless extruded nylon 12 tube and cover. The 1/4" size is Type A, which is non-reinforced and not recognized by DOT. Other sizes are Type B, reinforced with one open ply of fibrous nylon.

PACKAGING Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.

COUPLINGS Gates DOT SureLok or Gates Compression Couplings (see Gates Automotive Hydraulic and Fleet Hose catalog under "Air Brake"). Biodiesel applications should not use brass or zinc plated couplings.

OD		WALL NOMINAL		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.35	1/4	1.01	0.040	0.07	10	0.34	50	81	24	32	1.25	0.02	0.01	30	100	4327-3901
9.53	3/8	1.58	0.062	1.03	150	3.45	500	81	24	38	1.5	0.04	0.03	30	100	4327-3902
12.70	1/2	1.58	0.062	1.03	150	3.45	500	81	24	64	2.5	0.06	0.04	30	100	4327-3903
15.90	5/8	2.35	0.092	1.03	150	3.45	500	81	24	76	3	0.12	0.08	15	50	4327-3904
19.05	3/4	2.35	0.092	1.03	150	4.14	600	81	24	127	5	0.13	0.09	15	50	4327-3905

4219

SUBMERSIBLE FUEL HOSE



RELATIVE COST ●●●●●●

APPLICATIONS Fuel line or vent inside the fuel tank. Not recommended for other applications due to cost.

TEMPERATURE -40°C to +150°C (-40°F to +302°F).

STANDARDS SAE 30R10.

CONSTRUCTION FKM tube, synthetic fiber braid reinforcement, FKM cover.

PACKAGING Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

OD		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft Length	250 ft Length	10 m Length
6.4 ±0.4	1/4 ±.016	12.7 ±0.58	0.50 ±0.02	0.69	100	3.4	500	*	*	*	*	0.15	0.10	4219-0010		4219-0008
7.9	5/16	14.3	0.56	0.69	100	3.4	500	*	*	*	*	0.22	0.15	4219-0012	4219-0024***	4219-0005
9.5	3/8	15.9	0.62	0.69	100	2.8	400	*	*	*	*	0.27	0.18	4219-0013	4219-0030	4219-0006

* No specification requirement.

*** Contact Gates for availability.

4219M MARINE MASTER FUEL LINE 40

STANDARD MARINE FUEL AND OIL HOSE



RELATIVE COST ●●●●○

APPLICATIONS Fuel line with marine fire rating suitable for diesel and gasohol blends of ethanol, methanol, and ethers up to 10%. Also suitable for, tank vent, crank case vent, or coolant bottle. Not for in-tank, gaseous fuels, or biodiesel applications.

TEMPERATURE -40°C to +100°C (-40°F to +212°F).

STANDARDS SAE J1527, USCG Type A Class 1 Style R1. Tube: ARPM (Class A high oil resistance). Hose is NMMA type accepted.

CONSTRUCTION Nitrile tube, synthetic fiber reinforcement, nitrile cover.

PACKAGING The 25 and 50 foot lengths are boxed, and 250 foot lengths shipped on a reel with maximum of 3 pieces. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER	GATES ITEM NUMBER
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	25 ft. Length	50 ft. Length	250 ft. Length
6.4 ±0.4	1/4 ±0.016	16.3 ±0.79	0.64 ±0.03	0.28	40	2.76	400	95	28	64	2.5	0.25	0.17	4219-4145	4219-4146	4219-4140
7.9	5/16	17.8	0.70	0.28	40	2.76	400	95	28	76	3	0.28	0.19	4219-4565		4219-4560***
9.5	3/8	19.6	0.77	0.28	40	2.76	400	95	28	76	3	0.33	0.22	4219-4385	4219-4567	4219-4380
12.7 ±0.58	1/2 ±0.023	22.6	0.89	0.28	40	2.76	400	95	28	127	5	0.39	0.26	4219-4125	***	4219-4120
15.9 ±0.79	5/8 ±0.031	25.7 ±1.59	1.01 ±0.06	0.28	40	276	400	95	28	152	6	0.48	0.32	4219-4585	***	4219-4580

*** Not stocked. Minimum order quantity may apply.

4219N

STANDARD MARINE, OPEN ENVIRONMENT FUEL AND OIL HOSE



RELATIVE COST ●●○○○

APPLICATIONS Fuel line for use when hose is in an open environment. Hose has marine fire rating and is suitable for diesel and gasohol blends of ethanol, methanol and ethers up to 10%. Also suitable for tank vent, crank case vent or coolant bottle. Not for in-tank, gaseous fuels or biodiesel applications. Not approved for use on commercial or for-hire craft.

TEMPERATURE -40°C to +121°C (-40°F to +250°F).

STANDARDS SAE J1527, USCG Type B Class 1 Style R1. Tube: ARPM (Class A high oil resistance). Hose is NMMA type accepted.

CONSTRUCTION Nitrile tube, synthetic fiber reinforcement, nitrile cover.

PACKAGING The 50 foot lengths are boxed and 250 foot lengths shipped on a reel with maximum of 2 pieces. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	50 ft. Length	250 ft. Length
6.4 ±0.40	1/4 ±0.016	12.7 ±0.5	0.50 ±0.02	0.28	40	1.38	200	95	28	64	2.5	0.13	0.09	4219-4046 ***	4219-4040
7.9	5/16	14.7	0.58	0.28	40	1.38	200	95	28	76	3	0.16	0.11	4219-4066 ***	4219-4060

*** Not stocked. Minimum order quantity may apply.



4219BM (BARRICADE MARINE)

LOW PERMEATION FUEL HOSE WITH MARINE FIRE RATING


RELATIVE COST

APPLICATIONS

USCG fire rated low permeation fuel line that is compatible with virtually all fuels in use today for marine applications with working pressures up to 35 PSI.

TEMPERATURE

-20°C to +100°C (-4°F to 212°F).

STANDARDS

SAE J1527, USCG Type A1-15 Style R1.

CONSTRUCTION

NBR tube with thermoplastic barrier, fiber reinforcement, NBR+PVC cover.

PACKAGING

Bulk lengths 7.6 meters (25 feet) shipped on a reel. Custom lengths available with minimum order quantity.

COUPLINGS

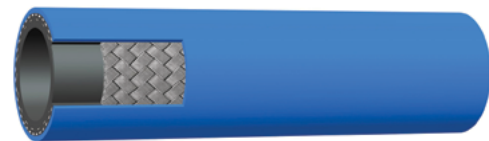
Hose bead fitting fastened with hose clamps (pages 139 - 145). Also can use GC stems with crimp rings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	inch	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	25 feet
6.4 ±0.4	1/4 ±0.016	16.6	0.65	0.24	35	1.2	175	81	24	133	5.25	0.13	0.09	4219-6340
7.9	5/16	18.1	0.71	0.24	35	1.2	175	81	24	146	5.75	0.15	0.10	4219-6341
9.5	3/8	18.9	0.74	0.24	35	1.2	175	81	24	152	6	0.18	0.12	4219-6342
12.7 ±0.58	1/2 ±0.023	22.6	0.89	0.24	35	1.2	175	34	10	184	7.25	0.24	0.16	***

*** Not stocked. Minimum order quantity may apply.

3658F (C5M)

HIGH PRESSURE MARINE FUEL AND OIL HOSE


RELATIVE COST

APPLICATIONS

High-pressure fuel or oil hose with marine fire rating suitable for diesel, gasoline, and oil.

TEMPERATURE

-20°C to +100°C (-4°F to +212°F), biodiesel B100 to +52°C (125°F).

STANDARDS

SAE J1527, USCG Type A Class 1 Style R3, SAE J1942, exceeds SAE 30R2 except dimensions.

CONSTRUCTION

Nitrile tube, wire braid reinforcement, CSM cover except sizes -10 through -16 is nitrile/PVC cover.

PACKAGING

Bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.

COUPLINGS

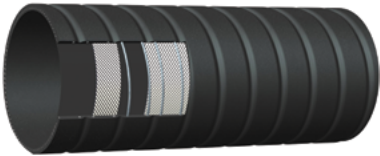
C5 field-attachable coupling (see Gates Hydraulic Catalog). Biodiesel applications should not use brass or zinc plated couplings.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-5	14.7	0.58	3.45	500	13.79	2000	81	24	33	1.3	0.31	0.21	117	385	3658-1965
7.9	5/16	-6	17.0	0.67	3.45	500	13.79	2000	81	24	33	1.3	0.40	0.27	117	385	3658-1969
10.3	13/32	-8	19.6	0.77	3.45	500	13.79	2000	81	24	46	1.8	0.43	0.29	101	330	3658-1973
12.7	1/2	-10	23.4	0.92	3.45	500	13.79	2000	68	20	58	2.3	0.60	0.4	84	275	3658-1977
15.9	5/8	-12	27.4	1.08	3.45	500	13.79	2000	68	20	71	2.8	0.76	0.51	67	220	3658-1981
22.2	7/8	-16	31.2	1.23	3.45	500	13.79	2000	68	20	89	3.5	0.92	0.62	50	165	3658-1985



4663K

WIRE REINFORCED FUEL AND OIL HOSE



RELATIVE COST	●●●●○
APPLICATIONS	Fuel or oil fill or cross-over hose where tight bends or vacuum resistance is required. Also suitable with biodiesel to B20 for intermittent contact.
TEMPERATURE	-40°C to +100°C (-40°F to +212°F).
STANDARDS	SAE 30R5. Wall thickness is 4.47±1.42mm (0.176±0.056 inch) excluding embedded wire area.
CONSTRUCTION	Nitrile tube, synthetic fabric reinforcement plies with two embedded helical wires, neoprene coated fabric cover.
PACKAGING	Bulk lengths are 3 foot sticks in a box. Custom lengths or ends with no wire are available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with super-hex hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE* MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	3 ft. Length	10 ft. Length
34.9 + 0.76 / -2.88*	3/8 + 0.03 / -0.09	41.7	1.64	0.14	20	0.62	90	101	30	127	5	0.62	0.42	***	4663-2828
38.1	1-1/2	45.0	1.77	0.14	20	0.62	90	101	30	127	5	0.65	0.44	4663-3601	4663-2830
41.3	1-5/8	48.3	1.90	0.14	20	0.62	90	101	30	140	5.5	0.71	0.48	***	4663-3624 ***
44.5	1-3/4	51.3	2.02	0.14	20	0.62	90	101	30	152	6	0.76	0.51	***	4663-3976 ***
47.6	1-7/8	56.1	2.21	0.14	20	0.62	90	101	30	152	6	0.79	0.53	4663-3603	4663-2933 ***
50.8	2	59.4	2.34	0.14	20	0.62	90	101	30	178	7	0.85	0.57	4663-3604	4663-2930 ***
57.2	2-1/4	65.8	2.59	0.14	20	0.62	90	101	30	203	8	0.95	0.64	4663-3605	4663-2932 ***
63.5	2-1/2	72.1	2.84	0.14	20	0.62	90	101	30	305	12	1.03	0.69	4663-3606 ***	4663-2929 ***
76.2	3	83.1	3.27	0.14	20	0.62	90	101	30	**	**	1.34	0.90	***	4663-3625 ***

* No specification requirement.
** If minimum bend radius is required, use 8 times the O.D. as a guide.
*** Not stocked. Minimum order quantity may apply.

4278BD**BIODIESEL FORMED FUEL HOSE****RELATIVE COST** ●●●●○**APPLICATIONS** Fuel filler, crossover, supply, or vent. Also suitable for cold side CAC. Compatible with biodiesel SME, RME, and PME to B100. Not for gasoline or fuel injection.**TEMPERATURE** -40°C to +100°C (-40°F to +212°F) continuous, and 125°C (257°F) intermittent.**STANDARDS** SAE 30R6 except oxygenated fuel and extractables tests.**CONSTRUCTION** ECO tube, synthetic knit reinforcement, ECO cover.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
25.4 ±0.79	1 ±0.03	4.77	0.195	1.20	174	**	**	38.1	1.50	0.70	0.47
38.1 ±0.99	1-1/2 ±0.04	4.95 ±0.65	0.195 ±0.025	0.55	80	**	**	50.0	1.97	0.76	0.67
50.8	2	4.95	0.195	0.55	80	**	**	67.1	2.64	0.93	0.96
63.5	2-1/2	5.35 ±1.05	0.21 ±0.04	0.55	80	**	**	79.0	3.11	1.16	1.10
76.2	3	6.35	0.25	0.55	80	**	**	92.2	3.63	1.42	1.31

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

4278**FORMED FUEL AND OIL HOSE
STANDARD SHAPES****RELATIVE COST** ●●●●○**APPLICATIONS** Engine oil, fuel filler, and hydraulic return. Also suitable for tank vent and crank case vent. Not for fuel injection or air intake.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F).**STANDARDS** SAE 30R7 except the oxidized gasoline test, or SAE 30R6.**CONSTRUCTION** Nitrile tube, synthetic knit reinforcement, nitrile/PVC cover.**PACKAGING** Boxed.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		WALL NOMINAL		BURST MINIMUM		90° BEND*		45° BEND*		STRAIGHT LENGTH**		WEIGHT NOMINAL	
mm	inch	mm	inch	MPa	psi	Gates Item No.	Automotive No.	Gates Item No.	Automotive No.	Gates Item No.	Automotive No.	kg/m	lbs/ft
31.8 ±0.99	1-1/4 ±0.039	4.95 ±0.65	0.195 ±0.025	0.55	80					4271-0020	23963	0.68	0.46
34.9	1-3/8	4.95	0.195	0.55	80					4271-0025	24702	0.74	0.50
38.1	1-1/2	4.95	0.195	0.55	80	4278-6998	24715	4278-6988	24710	4271-0030	23964	0.80	0.54
44.5	1-3/4	4.95	0.195	0.55	80	4278-6999	24716	4278-6989	24711	4271-0035	23968	0.94	0.63
50.8	2	4.95	0.195	0.55	80	4278-7000	24717	4278-6990	24712	4271-0045	23972	1.04	0.70
63.5	2-1/2	5.35	0.21	0.55	80	4278-7002	24719	4278-6992	24714	4271-0065	23980	1.22	0.82

* Both leg lengths 203±6.4mm (8.00±0.25 inch).

** Length 914±11.2mm (36.00±0.44 inch).

HOSE LINES CAN BE DESIGNED USING A COMBINATION OF FLEXIBLE HOSE AND METAL TUBING.

THE ADVANTAGES OF THIS TYPE OF ASSEMBLY ARE:

- Utilize standard threaded port connections/adapters instead of hose barb connections with clamps
- Rigid metal line prevents sagging between support points for long lengths
- Metal line can save cost over hose for long lengths
- Crimp hose connections instead of clamp for greater sealing force

HOSE/TUBE COMBO CAN BE USED FOR:

- Oil cooler lines for engine, transmission, or other coolers
- Power steering lines
- Fuel lines
- Air conditioning refrigerant lines
- Hydraulic supply and return
- Turbo oil drain (for large diameter charge air tube/boot combinations, please see page 95)
- Air, coolant, and more

Steel lines per SAE J525 are available in standard sizes from 4.8 to 32mm OD or more (3/16" to 1-1/4" OD), and in standard wall thicknesses from 0.89 to 3.05mm. Also available are SAE J356, J524, J2467, and similar to SAE J2614, among others. Aluminum lines for refrigerant and coolant are also available.

For more tube design guidelines, tolerances, and specifications, please contact Gates Product Application at 303-744-5070 or fppasupport@gates.com.

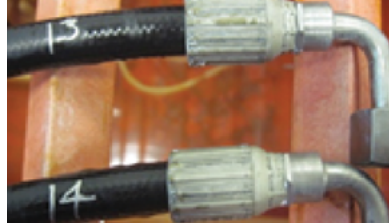


TUBE PLATING

Gates has a long history of providing best-in-class corrosion protection for hose couplings, adapters, and tubing.



Gates Tuffcoat™ enhanced trivalent chrome plating has been a leader in the industry by providing red rust protection to 500 hours of salt spray as tested per ASTM B117. That's well beyond the required 72 hour test specified by SAE for non-deformed surfaces.



Gates Tuffcoat Extreme™ zinc-nickel plating uses proprietary plating technology to provide red rust protection to 500 hours of salt spray on deformed surfaces, and 840 hours on non-deformed surfaces. Tuffcoat Extreme also meets multiple OE specifications for resistance to agricultural chemicals.

Nickel plating, typically used for couplings in contact with biodiesel, avoids the use of zinc which can adhere to the inside passage of the coupling and cause precipitates to form, which can clog injectors, filters, or entire lines.

Powder coating, plastic coating, and painting are also available, depending on the type of tubing and desired corrosion resistance.

TUBE END TERMINATIONS

TERMINATIONS	-4	-6	-8	-10	-12	-16
JIC, 37°	Yes	Yes	Yes	Yes	Yes	Yes
ORS	Yes	Yes	Yes	Yes	Yes	Yes
Quick Lok H	Yes	Yes	Yes	Yes	Yes	Yes
Flange	NA	NA	Yes	Yes	Yes	Yes

NUT SIZE	-4	-6	-8	-10	-12	-16
JIC, 37°	14mm	19mm	24mm	27mm	32mm	41mm
ORS	17mm	22mm	24mm	30mm	36mm	41mm
Quick Lok H	19mm	22mm	24mm	30mm	36mm	41mm

NOTE: For other terminations, please check with Product Application.

NOTE: Jumps should be made in the adapter or in the hose assembly.

NOTE: Flange Terminations include Code 61, Code 62.

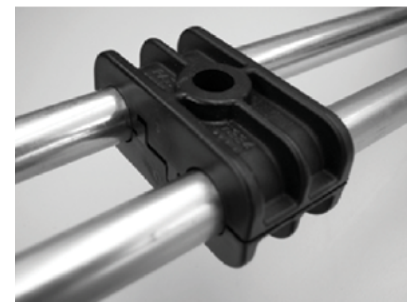
Please check with Product Application for additional flange termination types.

CLAMPING AND BRACKETS

Various clamp types are available to hold a tube line in place. Two of the most common are the P-Clamp and the Shell Clamp. The P-Clamp is typically low-cost, whereas the Shell Clamp provides better holding ability, particularly for dual lines. (insert pictures of p-clamp and shell-clamp).



P-Clamp



Shell Clamp

SAFETY FIRST

Care must be taken to avoid potential injuries resulting from poor designs. For more information, refer to SAE J1273 and to the Gates manual Safe Hydraulics – A Guide to Preventative Maintenance & Safety for Hydraulic Hoses & Couplings.



DRIVEN BY POSSIBILITY™

PERFORMANCE WITHOUT COMPROMISE

TRANSMISSION OIL COOLER HOSE + POWER STEERING

WHETHER YOUR VEHICLE IS INDUSTRIAL OR RECREATIONAL, YOU RELY ON IT TO OPERATE CONSISTENTLY AND EFFICIENTLY. DON'T TAKE CHANCES WHEN IT COMES TO YOUR OIL SYSTEMS. TRUST GATES TO DELIVER SAFE, RELIABLE ENGINE

HOSES AND COMPONENTS, GUARANTEED TO HELP YOUR TRUCKS, RECREATIONAL EQUIPMENT, AND HEAVY-DUTY VEHICLES MEET SAE REQUIREMENTS, AND KEEP THEM RUNNING LONGER.

OIL (ENGINE LUBE, HYDRAULIC, TRANSMISSION, POWER STEERING)

LOWER PRESSURE, TEXTILE REINFORCEMENT

3319HT (GTH) PER SAE 100R6	88
3319CA (G3H) PER SAE 100R3	88
4219HT HIGHER TEMPERATURE NITRILE RUBBER	89
4319 (MEGATECH LOC) HIGHER TEMPERATURE CPE RUBBER, CLAMPS NOT NEEDED (TIGHTENS WITH PRESSURE)	91

ALSO SEE

3284AC (RLA 30R2) OIL HOSE PER SAE 30R2 PERFORMANCE	75
3319CT (RLC) LARGER DIAMETERS THAN RLA 30R2. SEE GATES HYDRAULIC CATALOG	
STEEL OR ALUMINUM TUBE ASSEMBLIES IN THE AIR SECTION	122

HIGHER PRESSURE AND TEMPERATURE, STEEL WIRE REINFORCEMENT, HARD WALL, USED WITH HYDRAULIC COUPLINGS

3658D (C5D) USE FIELD-ATTACHABLE COUPLINGS	89
3658BC (C5C XH) HIGHER PRESSURE PER SAE 100R5	90
4657AM (MEGATECH 250) STANDARD	91
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4657PS (MEGATECH 3000) HIGH PRESSURE, SMALL SIZES	92
4657JT (MEGATECH II) HIGH PRESSURE, LARGER SIZES, PER SAE 100R2	93
4657TB (MEGATECH G5TB) HIGH PRESSURE, TRUE BORE (NOT UNDERSIZED LIKE OTHER HARD WALL HOSES)	93

ALSO SEE:

GATES HYDRAULIC CATALOG LOWER TEMPERATURE NITRILE HOSES, RANGING TO VERY HIGH PRESSURES.
HYDRAULIC TUBE ASSEMBLIES ALSO AVAILABLE

POWER STEERING

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3283SA RETURN LINE	95
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3319 (S/R-XH) HIGHER TEMPERATURE SUCTION OR RETURN LINE. SEE GATES AUTOMOTIVE HYDRAULIC CATALOG	
3658C (C5C) LOWER TEMPERATURE, MULTI-PURPOSE	133
3658D (C5D) USE FIELD-ATTACHABLE COUPLINGS	89
HYDRAULIC TUBE ASSEMBLIES ALSO AVAILABLE	

FORMED HOSE

4278CN STANDARD LOW PRESSURE OIL FILL, TRANSFER, AND VENT	97
42780B HIGHER PRESSURE PER SAE 30R2 TYPE 1	98
4278SS HIGHER TEMPERATURE CPE RUBBER	99
4278 STANDARD ELBOWS	96

ALSO SEE:

STEEL OR ALUMINUM TUBE ASSEMBLIES IN THE AIR SECTION	122
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ELECTRIC
VEHICLE

COOLANT

FUEL

OIL

SCR

EXHAUST

AIR

REFRIGERANT

BRAKE

CLAMPS &
CONNECTORS

ACCESSORIES

BELTS

**3319HT (GTH)
3289 (GTHX) - 6 SIZE****HIGHER PRESSURE TRANSMISSION
OIL COOLER HOSE****RELATIVE COST** ●●○○○**APPLICATIONS** Lube oil, hydraulic oil, and transmission oil cooler. Also suitable for coolant, or water.**TEMPERATURE** -40°C to +135°C (-40°F to +275°F). Do not let coolant or water boil.**STANDARDS** SAE 100R6.**CONSTRUCTION** Nitrile tube, fiber braid reinforcement, neoprene cover.**PACKAGING** Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.**COUPLINGS** MegaCrimp Couplings except -3 size uses PowerCrimp. See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimp data. Also can use hose clamp over a hose bead fitting (pages 139 - 145).

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	3/16	-3	11.2	0.44	3.45	500	13.79	2000	95	28	51	2	0.12	0.08	218	715	3319-3301
6.4	1/4	-4	12.7	0.50	2.76	400	11.03	1600	95	28	75	2.5	0.13	0.09	236	775	3319-3305
7.9	5/16	-5	14.2	0.56	2.76	400	11.03	1600	95	28	76	3	0.16	0.11	198	650	3319-3310
9.5	3/8	-6	16.0	0.63	2.76	400	11.03	1600	95	28	76	3	0.19	0.13	91	300	3289-0002
12.7	1/2	-8	19.8	0.78	2.76	400	11.03	1600	61	18	125	4	0.27	0.18	122	400	3319-3320
15.9	5/8	-10	23.1	0.91	2.41	350	9.65	1400	51	15	140	5	0.31	0.21	76	250	3319-3325
19.1	3/4	-12	26.9	1.06	2.07	300	8.27	1200	51	15	150	5.5	0.43	0.29	69	225	3319-3335
25.4	1	-16	33.5	1.32	1.72	250	6.89	1000	34	10	205	8	0.60	0.40	50	165	3319-3345

3319CA (G3H)**HIGH PRESSURE TRANSMISSION
OIL COOLER HOSE****RELATIVE COST** ●●○○○**APPLICATIONS** Lube oil, hydraulic oil, and transmission oil cooler. Also suitable for coolant, or water.**TEMPERATURE** -40°C to +135°C (-40°F to +275°F) Do not let coolant or water boil.**STANDARDS** SAE 100R3.**CONSTRUCTION** Nitrile tube, two fiber braid reinforcement, neoprene cover.**PACKAGING** Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.**COUPLINGS** MegaCrimp Couplings to -10 and GLX -8 and above. See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimp data. Also can use hose clamp over a hose bead fitting (pages 139 - 145).

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	14.2	0.56	8.62	1250	34.47	5000	95	28	75	3	0.19	0.13	139	455	3319-0088
7.9	5/16	-5	16.8	0.66	8.27	1200	33.10	4800	95	28	89	3.5	0.27	0.18	101	330	3319-4287
9.5	3/8	-6	19.1	0.75	7.76	1125	31.03	4500	95	28	100	4	0.33	0.22	107	350	3319-0087
12.7	1/2	-8	23.9	0.94	6.89	1000	27.58	4000	95	28	125	5	0.48	0.32	69	225	3319-0090
15.9	5/8	-10	27.9	1.10	6.21	900	24.82	3600	95	28	140	5.5	0.57	0.38	61	200	3319-4288
22.2	3/4	-12	31.8	1.25	5.17	750	20.68	3000	95	28	150	6	0.71	0.48	49	160	3319-0091
25.4	1	-16	38.1	1.50	3.90	565	15.58	2260	68	20	205	8	0.92	0.62	37	120	3319-0092
31.8	1-1/4	-20	44.5	1.75	2.59	375	10.34	1500	51	15	250	10	1.10	0.74	37	120	3319-0071
38.1	1-1/2	-24	49.3	1.94	2.07	300	8.27	1200	34	10	300	12	1.31	0.88	37	120	3319-4289

4219HT**STANDARD TRANSMISSION OIL COOLER HOSE**

RELATIVE COST ●●○○○

APPLICATIONS Low pressure transmission oil cooler.

TEMPERATURE -40°C to +135°C (-40°F to +275°F).

STANDARDS SAE 1532 Type B.

CONSTRUCTION Nitrile tube, synthetic fiber reinforcement, neoprene cover.

PACKAGING Bulk lengths 168 meters (550 feet) shipped on a reel. Maximum 4 pieces. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	550 ft. Length
7.9 ±0.50	5/16 ±0.02	14.2 ±0.80	0.56 ±0.03	1.0	145	4.14	600	68	20	76	3	0.13	0.09	4219-3087
8.7	11/32	17.0	0.67	1.0	145	4.14	600	68	20	76	3	0.19	0.13	4219-3039
9.5	3/8	17.5	0.69	1.0	145	4.14	600	68	20	76	3	0.21	0.14	4219-3088
12.7 ±0.59	1/2 ±.023	20.6	0.81	1.0	145	4.14	600	68	20	127	5	0.27	0.18	4219-5300
15.9	5/8	24.6	0.97	1.0	145	4.14	600	68	20	152	6	0.36	0.24	4219-3824***

*** Not stocked. Minimum order quantity may apply.

3658D (C5D)**HIGH TEMPERATURE OIL HOSE**

RELATIVE COST ●●●○○

APPLICATIONS Multi-fluid hose for turbo charger oil, hot lube lines, power steering (heavy duty vehicles only), diesel fuel lines, and hydraulic fluids except concentrated phosphate ester. Not for biodiesel blends greater than 5% (above B5) or gasoline..

TEMPERATURE -40°C to +150°C (-40°F to +302°F).

STANDARDS DOT FMVSS-106-74 type All and SAE J1402 type All for air brake (-4 to -12 sizes).

CONSTRUCTION CPE tube, textile and wire braid reinforcement, CPE with green braided textile cover.

PACKAGING Bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.

COUPLINGS C5 field-attachable couplings (See Gates Hydraulic Catalog).

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	0.19	-4	13.1	0.52	10.34	1500	41.37	6000	85	25	25	1	0.21	0.14	134	440	3658-0020
6.8	0.27	-5	14.8	0.58	10.34	1500	41.37	6000	85	25	38	1.5	0.22	0.15	117	385	3658-0027
8.2	0.32	-6	17.2	0.68	10.34	1500	41.37	6000	85	25	46	1.8	0.27	0.18	117	385	3658-0021
10.7	0.42	-8	19.5	0.77	8.62	1250	34.47	5000	85	25	51	2	0.34	0.23	101	330	3658-0022
13.2	0.52	-10	23.4	0.92	8.62	1250	34.47	5000	85	25	51	2	0.40	0.27	84	275	3658-0028
16.4	0.65	-12	27.4	1.08	5.17	750	20.68	3000	85	25	58	2.3	0.60	0.40	67	220	3658-0029
22.8	0.90	-16	31.3	1.23	2.76	400	11.03	1600	85	25	89	3.5	0.68	0.46	50	165	3658-0030



3658BC (C5C XH)

HIGH PRESSURE,
HIGH TEMPERATURE OIL HOSE



RELATIVE COST ●●●●○

APPLICATIONS	Multi-fluid hose for turbo charger oil, hot lube lines, rotary air compressor, diesel fuel and filtration lines, and hydraulic fluids except concentrated phosphate ester. Not for biodiesel blends greater than 5% (above B5) or gasoline.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F).
STANDARDS	SAE 100R5, SAE 1405 for hot oil circulation, DOT FMVSS-106-74 type All and SAE J1402 type All for air brake (-4 to -12 sizes).
CONSTRUCTION	CPE tube, wire braid reinforcement, CPE with blue braided textile cover.
PACKAGING	Bulk lengths are shipped on a reel except 3658-0157 is in a box. Custom lengths available with minimum order quantity.
COUPLINGS	C5 field-attachable couplings (-6, -16, -20 sizes), C5X field attachable couplings (-5, -8, -12 sizes), MegaCrimp couplings (-5, -6, -8, -16, -20 hose sizes, use -4, -5, -6, -12, -16 couplings), GS couplings (-10, -12 hose sizes, use -8, -10 couplings). See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	0.19	-4	13.7	0.54	20.68	3000	82.74	12000	85	25	86	3.4	0.22	0.15	134	440	3658-0150
6.8	0.27	-5	14.8	0.58	20.68	3000	82.74	12000	85	25	86	3.4	0.28	0.19	117	385	3658-0151
8.2	0.32	-6	17.2	0.68	15.51	2250	62.05	9000	85	25	102	4	0.33	0.22	117	385	3658-0152
10.7	0.42	-8	19.5	0.77	13.79	2000	55.16	8000	85	25	117	4.6	0.37	0.25	101	330	3658-0153
13.2	0.52	-10	23.4	0.92	12.07	1750	48.26	7000	85	25	140	5.5	0.51	0.34	84	275	3658-0154
16.4	0.65	-12	27.4	1.08	10.34	1500	41.37	6000	85	25	165	6.5	0.67	0.45	67	220	3658-0155
22.8	0.90	-16	31.3	1.23	5.52	800	22.06	3200	85	25	188	7.4	0.70	0.47	50	165	3658-0156
29.2	1.15	-20	38.0	1.49	4.31	625	17.24	2500	85	25	229	9	0.77	0.52	37	120	3658-0157

4319 (MEGATECH LOC)**HIGH TEMPERATURE LOCK-ON
TRANSMISSION OIL COOLER HOSE**

RELATIVE COST ●●○○○

APPLICATIONS Transmission oil cooler, turbo charger and lube oil, and diesel fuel. Not for biodiesel blends greater than 5% (above B5) or gasoline.**TEMPERATURE** -40°C to +150°C (-40°F to +302°F).**STANDARDS** None.**CONSTRUCTION** CPE tube, textile braid reinforcement, CPE with black braided textile cover.**PACKAGING** Bulk lengths are shipped on a reel. Custom lengths available with minimum order quantity.**COUPLINGS** Field-attachable LOC couplings, GLP couplings (-4 to -12) or MegaCrimp couplings (-16). See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data. Also can use hose clamps over a beaded hose fitting (pages 139 - 145).

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	0.25	-4	13.1	0.50	2.07	300	8.27	1200	76	3	0.15	0.1	175	575	4319-0106
9.5	0.38	-6	17.2	0.64	2.07	300	8.27	1200	76	3	0.18	0.12	183	600	4319-0107
12.7	0.50	-8	19.5	0.78	2.07	300	8.27	1200	127	5	0.24	0.16	102	335	4319-0108
15.9	0.63	-10	23.4	0.91	2.07	300	8.27	1200	152	6	0.31	0.21	79	260	4319-0109
19.1	0.75	-12	27.4	1.08	2.07	300	8.27	1200	178	7	0.37	0.25	67	220	4319-0110
25.4	1.00	-16	31.3	1.33	2.07	300	8.27	1200	178	7	0.51	0.34	61	200	4319-0111

4657AM (MEGATECH 250)**HIGH TEMPERATURE TRANSMISSION OIL
COOLER HOSE**

RELATIVE COST ●●●○○

APPLICATIONS Transmission oil, turbo oil, power steering suction and return, and lubricating oil lines. Also suitable for hydraulic oil, coolant, or water. Not for biodiesel blends greater than 5% (above B5) or gasoline.**TEMPERATURE** -40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100°C (212°F) max.**STANDARDS** None.**CONSTRUCTION** CPE tube, steel wire reinforcement, CPE with black braided textile cover.**PACKAGING** Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.**COUPLINGS** MegaCrimp Couplings -4 to -12. See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	13.2	0.52	1.72	250	6.89	1000	85	25	25	1	0.13	0.09	76	250	4657-2339
9.5	3/8	-6	16.3	0.64	1.72	250	6.89	1000	85	25	46	1.8	0.19	0.13	107	350	4657-2340
12.7	1/2	-8	19.8	0.78	1.72	250	6.89	1000	85	25	64	2.5	0.25	0.17	107	350	4657-2341
15.9	5/8	-10	23.6	0.93	1.72	250	6.89	1000	85	25	76	3	0.36	0.24	91	300	4657-2342
19.1	3/4	-12	26.9	1.06	1.72	250	6.89	1000	85	25	89	3.5	0.42	0.28	61	200	4657-2343
25.4	1	-16	34.5	1.36	1.72	250	6.89	1000	85	25	102	4	0.65	0.44	46	150	4657-2344
31.8	1-1/4	-20	41.9	1.65	1.72	250	6.89	1000	85	25	114	4.5	0.83	0.56	37	120	4657-2345



4657DT (MEGATECH 500)

HIGH TEMPERATURE LARGE DIAMETER
OIL/AIR HOSE



RELATIVE COST	●●●○○○
APPLICATIONS	Air brake, pressurized hot oil return lines and rotary oil/air compressor lines. Not for diesel fuel or gasoline.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100°C (212°F) max.
STANDARDS	None.
CONSTRUCTION	CPE tube, steel wire reinforcement, CPE with black braided textile cover.
PACKAGING	Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.
COUPLINGS	GL Couplings, GSP Couplings for -24 and -32. See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
38.1	1-1/2	-24	49.5	1.95	3.45	500	13.79	2000	381	15	1.49	1.00	30	100	4657-0204
50.8	2	-32	63.0	2.48	3.45	500	13.79	2000	457	18	2.05	1.38	30	100	4657-0205
63.5	2-1/2	-40	75.4	2.97	3.45	500	13.79	2000	559	22	2.19	1.47	30	100	4657-0206
76.2	3	-48	88.9	3.50	3.45	500	13.79	2000	610	24	2.74	1.84	30	100	4657-0207

4657PS (MEGATECH 3000)

HIGH TEMPERATURE AND PRESSURE
OIL/AIR HOSE



RELATIVE COST	●●●○○○
APPLICATIONS	Power steering and rotary air compressor, petroleum based transmission and lubricating oils, and hydraulic oil except concentrated phosphate ester. Not for biodiesel blends greater than 5% (above B5) or gasoline.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100°C (212°F) max.
STANDARDS	None.
CONSTRUCTION	CPE tube, two steel wire braid reinforcement, CPE with black braided textile cover.
PACKAGING	Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.
COUPLINGS	MegaCrimp Couplings. See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	15.0	0.59	20.68	3000	82.74	12000	51	2	0.37	0.25	122	400	4657-2373
9.5	3/8	-6	18.8	0.74	20.68	3000	82.74	12000	64	2.5	0.52	0.35	107	350	4657-2374
12.7	1/2	-8	21.8	0.86	20.68	3000	82.74	12000	89	3.5	0.55	0.37	107	350	4657-2319

4657JT (MEGATECH II)**HIGH TEMPERATURE AND PRESSURE
LARGE DIAMETER OIL/AIR HOSE**

RELATIVE COST ●●●●○

APPLICATIONS	Large diameter lines for rotary air compressor, petroleum based transmission and lubricating oils, and hydraulic oil except concentrated phosphate ester. Not for biodiesel blends greater than 5% (above B5) or gasoline.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F).
STANDARDS	SAE 100R2 and 100R2 Type S.
CONSTRUCTION	CPE tube, two steel wire braid reinforcement, CPE with blue braided textile cover.
PACKAGING	Bulk lengths shipped in a carton. May not be continuous lengths. Custom lengths available with minimum order quantity.
COUPLINGS	MegaCrimp Couplings (-20), GSP Couplings (-24 and -32). See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
31.8	1-1/4	-20	48.0	1.89	15.51	2250	62.05	9000	381	15	2.35	1.58	30	100	4657-8018
38.1	1-1/2	-24	54.1	2.13	10.34	1500	41.37	6000	508	20	2.59	1.74	30	100	4657-2484
50.8	2	-32	66.3	2.61	8.96	1300	35.85	5200	635	25	3.24	2.18	30	100	4657-2485

4657TB (MEGATECH G5TB)**HIGH TEMPERATURE OIL/AIR HOSE**

RELATIVE COST ●●●○○

APPLICATIONS	Turbo hot oil return and rotary air compressor. Not for biodiesel blends greater than 5% (above B5) or gasoline, and -24 and -32 not for diesel fuel or gasoline.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid manufacturer, but to 100°C (212°F) max.
STANDARDS	None.
CONSTRUCTION	CPE tube, steel wire braid reinforcement, CPE with blue braided textile cover.
PACKAGING	Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.
COUPLINGS	MegaCrimp Couplings, GL couplings (-24 and -32). See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	15.0	0.59	20.68	3000	82.74	12000	51	2	0.36	0.24	122	400	4657-2183
9.5	3/8	-6	18.8	0.74	20.68	3000	82.74	12000	64	2.5	0.52	0.35	107	350	4657-2184
12.7	1/2	-8	21.8	0.86	20.68	3000	82.74	12000	89	3.5	0.55	0.37	107	350	4657-2185
15.9	5/8	-10	24.1	0.95	13.79	2000	55.16	8000	102	4	0.58	0.39	91	300	4657-2186
19.1	3/4	-12	27.9	1.10	13.79	2000	55.16	8000	119	4.7	0.88	0.59	61	200	4657-2187
25.4	1	-16	34.8	1.37	6.89	1000	27.58	4000	152	6	1.12	0.75	46	150	4657-2188
31.8	1-1/4	-20	42.4	1.67	6.89	1000	27.58	4000	216	8.5	1.41	0.95	30	100	4657-2189
38.1	1-1/2	-24	49.5	1.95	3.45	500	13.79	2000	241	9.5	1.65	1.11	30	100	4657-2190
50.8	2	-32	64.3	2.53	3.45	500	13.79	2000	267	10.5	2.40	1.61	30	100	4657-2191



3317LE (PS188)

POWER STEERING PRESSURE LINE



RELATIVE COST	●●●○○
APPLICATIONS	Power steering pressure line.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F).
STANDARDS	SAE J2050 Class B (light weight).
CONSTRUCTION	CSM tube, synthetic fabric reinforcement, CSM cover (CPE tube and cover for 3317-0107).
PACKAGING	Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.
COUPLINGS	Power Steering Couplings, See Gates Hydraulic Automotive Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	25 ft. Length	50 ft. Length
9.5+0.8/-0.1	3/8+.03/-0.005	17.9±0.63	0.705±0.025	10.34	1500	41.37	6000	95	28	127	5	0.30	0.2	3317-0107	3317-0108

**3283SA****POWER STEERING RETURN LINE**

RELATIVE COST ●●●○○○

APPLICATIONS Power steering return line.

TEMPERATURE -40°C to +135°C (-40°F to +275°F).

STANDARDS SAE J189.

CONSTRUCTION Nitrile tube, synthetic fiber reinforcement, neoprene cover.

PACKAGING Bulk lengths shipped in a box. May not be continuous lengths. Custom lengths available with minimum order quantity.

COUPLINGS MegaCrimp Couplings -4 to -12. See Gates Hydraulic Catalog for couplings and the eCrimp tool on Gates.com for crimper data.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
9.5	3/8	16.6	0.66	1.72	250	6.89	1000	95	28	100	4	0.22	0.15	7.6	25	3283-4490
12.7	1/2	19.1	0.75	2.07 *	300 *	8.27 *	1200 *	95	28	125	5	0.27	0.18	3.0	10	3283-0922
15.9	5/8	24.6	0.97	1.38 *	200 *	5.52 *	800 *	95	28	140	5.5	0.41	0.27	3.0	10	3283-0923
19.1	3/4	26.2	1.03	1.72 *	250 *	6.89 *	1000 *	95	28	150	7	0.36	0.24	3.0	10	3283-0924

* No specification requirement.

3283LF**HIGH TEMPERATURE POWER STEERING RETURN LINE**

RELATIVE COST ●●●○○○

APPLICATIONS Power steering return line.

TEMPERATURE -40°C to +150°C (-40°F to +302°F).

STANDARDS SAE J189 and SAE J2076.

CONSTRUCTION CPE tube, synthetic fiber reinforcement, CPE cover.

PACKAGING Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
8.7	11/32	17.3	0.68	1.72	250	12.41	1800	95	28	125	5	0.24	0.16	7.6	25	3283-0921
9.5	3/8	16.6	0.66	1.72	250	12.41	1800	95	28	100	4	0.24	0.16	7.6	25	3283-4485



4278

**FORMED FUEL AND OIL HOSE
STANDARD SHAPES**



RELATIVE COST ●●●●○

APPLICATIONS Engine oil, fuel filler, and hydraulic return. Also suitable for tank vent and crank case vent. Not for fuel injection or air intake.

TEMPERATURE -40°C to +125°C (-40°F to +257°F).

STANDARDS SAE 30R7 except the oxidized gasoline test, or SAE 30R6.

CONSTRUCTION Nitrile tube, synthetic knit reinforcement, nitrile/PVC cover.

PACKAGING Boxed.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		WALL NOMINAL		BURST MINIMUM		90° BEND*		45° BEND*		STRAIGHT LENGTH**		WEIGHT REFERENCE	
mm	inch	mm	inch	MPa	psi	Gates Item No.	Automotive No.	Gates Item No.	Automotive No.	Gates Item No.	Automotive No.	kg/m	lbs/ft
31.8 ±0.99	1-1/4 ±0.039	4.95 ±0.65	0.195 ±0.025	0.55	80					4271-0020	23963	0.68	0.46
34.9	1-3/8	4.95	0.195	0.55	80					4271-0025	24702	0.74	0.50
38.1	1-1/2	4.95	0.195	0.55	80	4278-6998	24715	4278-6988	24710	4271-0030	23964	0.80	0.54
44.5	1-3/4	4.95	0.195	0.55	80	4278-6999	24716	4278-6989	24711	4271-0035	23968	0.94	0.63
50.8	2	4.95	0.195	0.55	80	4278-7000	24717	4278-6990	24712	4271-0045	23972	1.04	0.70
57.2	2-1/4	5.35 ±1.05	0.21 ±0.04	0.55	80	4278-7001	24718	4278-6991	24713	4271-0055	23976	1.15	0.77
63.5	2-1/2	5.35	0.21	0.55	80	4278-7002	24719	4278-6992	24714	4271-0065	23980	1.22	0.82

* Both leg lengths 203±6.4mm (8.00±0.25 inch).

** Length 914±11.2mm (36.00±0.44 inch).

4278CN**STANDARD FORMED FUEL
AND OIL HOSE****RELATIVE COST****APPLICATIONS**

Engine oil, fuel filler including biodiesel to B-20, and hydraulic suction. Also suitable for tank vent and crank case vent.
Not for fuel injection or air.

TEMPERATURE

-40°C to +125°C (-40°F to +257°F).

STANDARDS

SAE 30R7 except the oxidized gasoline test, or SAE 30R6. Sizes 66.7 (2 5/8) and 82.6 (3 1/4) meet SAE J2006 for marine wet exhaust.

CONSTRUCTION

Nitrile tube, synthetic knit reinforcement, nitrile/PVC cover.

PACKAGING

Various size boxes. Setup charge and minimum order quantity may apply.
Available with end caps, individually bagged, or bulk bagged in the box.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
4.8 ±0.40	3/16 ±0.016	11.2 ±0.58	0.44 ±0.023	1.72	250	81	24	7.1	0.28	0.10	0.07
6.4	1/4	12.7	0.50	1.72	250	81	24	9.5	0.38	0.12	0.08
7.9	5/16	14.3	0.56	1.72	250	81	24	11.9	0.47	0.13	0.09
8.0	0.32	14.3	0.56	4.14	600	81	24	12.5	0.48	0.15	0.10
8.7	11/32	15.1	0.59	1.72	250	81	24	12.7	0.50	0.15	0.10
9.5	3/8	15.9	0.62	1.72	250	81	24	14.3	0.56	0.15	0.10
11.1 ±0.58	7/16 ±0.023	18.3 ±0.79	0.72 ±0.031	1.21	175	34	10	16.7	0.66	0.20	0.14
12.7	1/2	19.8	0.78	1.21	175	34	10	19.1	0.75	0.22	0.15
14.0 ±0.79	0.55 ±0.031	20.8	0.82	1.21	175	34	10	19.1	0.75	0.25	0.17
15.9	5/8	23.8	0.94	1.21	175	34	10	20.8	0.82	0.30	0.20
16.8	0.66	24.65 ±1.59	0.97 ±0.063	1.21	175	34	10	21.6	0.85	0.34	0.23
18.3	23/32	27.8	1.09	1.21	175	34	10	26.9	1.06	0.42	0.28
19.1	3/4	28.6	1.13	1.21	175	34	10	28.7	1.13	0.43	0.29
22.2	7/8	31.8	1.25	1.21	175	34	10	30.2	1.19	0.48	0.32
23.1	0.91	32.7	1.29	1.21	175	34	10	36.6	1.44	0.60	0.40
25.4	1	34.9	1.38	1.21	175	34	10	38.1	1.50	0.57	0.38

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
26.4 ±0.99	1.04 ±0.039	4.95 ±0.65	0.195 ±0.025	0.55	80	**	**	42.9	1.69	0.60	0.40
28.6	1-1/8	4.95	0.195	0.55	80	**	**	44.5	1.75	0.60	0.40
31.8	1-1/4	4.95	0.195	0.55	80	**	**	46.2	1.82	0.68	0.46
33.0 ***	1.30	4.95	0.195	0.55	80	**	**	47.8	1.88	0.71	0.48
34.9	1-3/8	4.95	0.195	0.55	80	**	**	48.5	1.91	0.74	0.50
38.1	1-1/2	4.95	0.195	0.55	80	**	**	50.8	2.00	0.80	0.54
41.3	1-5/8	4.95	0.195	0.55	80	**	**	52.3	2.06	0.86	0.58
44.5	1-3/4	4.95	0.195	0.55	80	**	**	60.5	2.38	0.94	0.63
47.6	1-7/8	4.95	0.195	0.55	80	**	**	63.5	2.50	1.00	0.67
50.8	2	4.95	0.195	0.55	80	**	**	73.2	2.88	1.04	0.70
57.2	2-1/4	5.35 ±1.05	0.21 ±0.04	0.55	80	**	**	73.2	2.88	1.15	0.77
60.3	2-3/8	5.35	0.21	0.55	80	**	**	76.2	3.00	1.18	0.79
63.5	2-1/2	5.35	0.21	0.55	80	**	**	77.7	3.06	1.22	0.82
66.7	2-5/8	5.35	0.21	0.55	80	**	**	81.0	3.19	1.38	0.93
69.9	2-3/4	5.35	0.21	0.55	80	**	**	81.0	3.19	1.43	0.96
76.2	3	5.70 ±1.40	0.225 ±0.055	0.55	80	**	**	88.9	3.50	1.58	1.06
82.6	3-1/4	5.70	0.225	0.55	80	**	**	101.6	4.00	2.05	1.38
88.9	3-1/2	5.70	0.225	0.55	80	**	**	101.6	4.00	1.83	1.23
92.1	3-5/8	5.70	0.225	0.55	80	**	**	101.6	4.00	1.93	1.30

* For cuff length on one end only. This guideline is subject to change based on hose design.

*** Contact Gates for availability.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

42780B

HIGHER PRESSURE FORMED FUEL AND OIL HOSE



RELATIVE COST	●●●●○
APPLICATIONS	Engine oil and hydraulic suction applications. Not for fuel injection or air.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F).
STANDARDS	SAE 30R2 Type 1 except burst and thickness.
CONSTRUCTION	Nitrile tube, aramid knit reinforcement, nitrile/PVC cover.
PACKAGING	Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
12.7 ±0.58	1/2 ±0.023	20.7 ±0.79	0.81 ±0.031	1.72	250	34	10	19.1	0.75	0.24	0.16
15.9***	5/8	23.9	0.94	1.72	250	**	**	23.8	0.94	0.28	0.19
19.1	3/4	27.7	1.09	1.72	250	**	**	25.4	1.00	0.33	0.22

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
25.4 ±0.99	1 ±0.039	4.95 ±0.65	0.195 ±0.025	2.07	300	**	**	35.1	1.38	0.60	0.40
28.6***	1-1/8	4.95	0.195	2.07	300	**	**	38.1	1.50	0.60	0.40
31.8	1-1/4	4.95	0.195	1.72	250	**	**	38.1	1.50	0.68	0.46
33.3***	1.31	4.95	0.195	1.72	250	**	**	42.7	1.68	0.73	0.49
34.9***	1-3/8	4.95	0.195	1.72	250	**	**	42.9	1.69	0.74	0.50
38.1	1-1/2	4.95	0.195	1.38	200	**	**	44.5	1.75	0.80	0.54

* For cuff length on one end only. This guideline is subject to change based on hose design.
** No specification requirement. Can be increased with a wire coil inserted in the hose ID.
*** Contact Gates for availability.

**4278SS****HIGHER TEMPERATURE FORMED OIL HOSE**

RELATIVE COST ●●●○○

APPLICATIONS Power steering remote reservoir, crank case vent, transmission oil, turbo oil drain, and turbo air. Not for fuel line.**TEMPERATURE** -40°C to +150°C (-40°F to +302°F) for power steering or engine oil, and 135°C (275°F) for crank case vent.**STANDARDS** Material to SAE J200 M5DE 710 B15 E036.**CONSTRUCTION** Peroxide cured CPE tube, polyester knit reinforcement, peroxide cured CPE cover.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
9.5 ±0.76	3/8 ±0.03	16.8 ±0.51	0.66 ±0.02	1.20	174	**	**	14.3	0.56	0.24	0.13
12.7	1/2	20.3	0.80	1.20	174	**	**	17.5	0.69	0.24	0.17
15.1	19/32	23.1 ±0.76	0.91 ±0.03	1.20	174	**	**	18.8	0.74	0.28	0.19
15.9	5/8	23.9	0.94	1.20	174	**	**	19.6	0.77	0.28	0.20
19.1	3/4	28.6	1.12	1.03	150	**	**	25.1	0.99	0.33	0.30

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
25.4 ±1.59	1 ±0.06	4.95 ±0.65	0.195 ±0.025	0.86	125	**	**	35.1	1.38	0.55	0.41
31.8	1-1/4	4.95	0.195	0.76	110	**	**	41.3	1.63	0.60	0.50
38.1	1-1/2	4.95	0.195	0.76	110	**	**	44.5	1.75	0.76	0.59
44.5	1-3/4	4.95	0.195	0.76	110	**	**	50.8	2.00	1.09	0.73

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.



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CARBON FIBER TECHNOLOGY ENGINEERED FOR OPTIMAL SCR PERFORMANCE

GATES SCR SYSTEMS DIESEL ENGINE
EMISSION REGULATIONS ARE SERIOUS BUSINESS,
SO WHEN IT COMES TIME TO DESIGN YOUR SCR
HOSE ASSEMBLY, GATES HAS YOU COVERED.

WE MANUFACTURE SCR HOSES TO NEARLY ANY
LENGTH, WITH INNOVATIVE HEATING SYSTEMS
TO THAW MORE EFFICIENTLY IN COLD WEATHER,
CONSERVE FUEL, AND LAST LONGER.

SCR (SELECTIVE CATALYTIC REDUCTION)

DIESEL EMISSIONS FLUID (DEF) FOR SCR SYSTEMS

4202, 4402 HEATED LINE FOR DEF INJECTION / RETURN	103
4217IS BULK LENGTH TRANSFER AND TANK FILLER / VENT	102
4256PC FORMED TANK FILLER / VENT (NOT CO-AXIAL VENT)	102

ALSO SEE:

4327 COLORED NYLON TUBING FOR UNHEATED DEF INJECTION / RETURN, OR TANK VENT	136 - 137
4697G (RENEGADE OR CHEM MASTER PLUS UHMWPE SD) BULK LENGTH TRANSFER, CHEMICAL HOSE WITH WIRE HELIX. SEE GATES INDUSTRIAL HOSE CATALOG.	
COOLANT HOSE SECTION SCR SYSTEM HEATER / COOLANT HOSES	30 - 69

4217IS

STANDARD DIESEL EMISSION
FLUID HOSE

RELATIVE COST ●●●○○○

APPLICATIONS Transfer of urea solutions such as AdBlue used in exhaust treatment of diesel engines equipped with selective catalytic reduction (SCR) technology.

TEMPERATURE -40°C to +125°C (-40°F to +257°F).

STANDARDS None.

CONSTRUCTION Zinc-free peroxide cured EPDM tube, synthetic fiber reinforcement, EPDM cover, wrapped appearance.

PACKAGING Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with min. order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145) or stainless steel braid couplings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	12.7	0.50	3.45	500	13.79	2000	95	28	76	3	0.15	0.10	152	500	4217-0007
9.5	3/8	16.8	0.66	2.41	350	6.89	1000	95	28	76	3	0.22	0.15	229	750	4217-0302
12.7	1/2	23.9	0.94	2.41	350	6.89	1000	95	28	76	3	0.42	0.28	305	1000	4217-0303***
19.1	3/4	28.5	1.12	2.41	350	6.89	1000	51	15	102	4	0.48	0.32	168	550	4217-0310
25.4	1	34.5	1.36	2.41	350	6.89	1000	34	10	152	6	0.61	0.41	122	350	4217-0311

Also see 4327 nylon tubing (page 62) or 4697G Chem Master Plus UHMWPE (125-200) SD hose in the Gates Industrial Hose catalog.

*** Not stocked. Minimum order quantity may apply.

4256PC

DEF TANK FILL AND VENT



RELATIVE COST ●●●○○○

APPLICATIONS Fill or vent lines for DEF fluid reservoir. Also used for engine coolant. Not for conveying fuel or oil.

TEMPERATURE -40°C to +150°C (-40°F to +302°F).

STANDARDS Similar to SAE 20R3 EC HT Class D3 or 20R4 EC HT Class D3.

CONSTRUCTION p-EPDM tube, aramid knit reinforcement, EPDM cover.

PACKAGING Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	inch	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R3 EC HT CLASS D3											
9.5 ±0.8***	3/8 ±0.03	16.2 ±0.8	0.64 ±0.03	1.72	250	**	**	14.2	0.56	0.14	0.09
19.0***	3/4	27.0	1.03	1.72	250	**	**	29.0	1.14	0.30	0.20

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	inch	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft
SAE 20R4 EC HT CLASS D3											
25.4***	1	5.00 ±0.7	0.197 ±0.028	1.72	250	**	**	43.2	1.70	0.54	0.36
31.8	1-1/4	5.00	0.197	1.72	250	**	**	50.8	2.00	0.62	0.41

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement.

*** Contact Gates for availability.



4202 (NYLON)

DIESEL EMISSION FLUID HEATED LINE



RELATIVE COST	●●●●●
APPLICATIONS	DEF fluid tank to dosing pump, to DEF injector, and return to tank. Electric connections per customer specification, 12V or 24V. Also suitable for diesel fuel or oil heated line when using FKM O-rings.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F).
STANDARDS	Resistance to DEF per ISO 22241, connectors per SAE J2044, coupling integrity per J2045.
CONSTRUCTION	Nylon tube, carbon fiber heating sleeve, nylon convolute, thermoplastic over-molded quick-connect ends (straight or 90° angle). Minimum length = 400mm (24").
PACKAGING	All parts made and packaged to order. Minimum order quantity applies.
COUPLINGS	SAE J2044 quick connect.

ID		OD		WORKING PRESSURE MAXIMUM		SLEEVE OD		BEND RADIUS MINIMUM		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	mm	in.	mm	in.	kg/m	lbs/ft
3.2	0.13	5.2	0.20	1.4	200	12.7	0.5	12.5	0.49	0.13	0.09
6.0	0.24	8.0	0.31	1.4	200	16	0.6	38	1.50	0.15	0.10

4402 (EPDM)

DIESEL EMISSION FLUID HEATED LINE



RELATIVE COST	●●●●●
APPLICATIONS	DEF fluid tank to dosing pump, to DEF injector, and return to tank. Electric connections per customer specification, 12V or 24V. Also suitable for diesel fuel or oil heated line when using FKM O-rings.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F).
STANDARDS	Resistance to DEF per ISO 22241, connectors per SAE J2044 and coupling integrity per J2045.
CONSTRUCTION	Zinc-free peroxide-cured EPDM rubber tube, carbon fiber heating sleeve, nylon convolute, thermoplastic over-molded quick-connect ends (straight or 90° angle). Minimum length = 400mm (24").
PACKAGING	All parts made and packaged to order. Minimum order quantity applies.
COUPLINGS	SAE J2044 quick connect.

ID		OD		WORKING PRESSURE MAXIMUM		SLEEVE OD		BEND RADIUS MINIMUM		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	mm	in.	mm	in.	kg/m	lbs/ft
4.0	0.157	9.4	0.37	1.4	200	18	0.72	51	2.00	0.22	0.15
5.5	0.217	11.4	0.45	1.4	200	21	0.83	70	2.75	0.24	0.16



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ENGINEERED FOR PEACE OF MIND

MARINE WET EXHAUST HOSE

WHEN YOUR OPERATIONS ARE OUT AT SEA, YOU CAN'T AFFORD CRITICAL SYSTEM FAILURE. TRUST GATES WHEN YOU NEED HIGH-PERFORMING, LONG-LASTING SOLUTIONS IN MARINE FUEL HOSE, COOLANT HOSE, AND MARINE WET EXHAUST. GATES ENGINEERS MARINE HOSES WITH CORROSION-RESISTANT CONSTRUCTION, FLEXIBILITY FOR TIGHT BENDS AND HEAVY-DUTY SUCTION. OUR PROCESS OF

DISCOVERY AND INTENTIONAL INNOVATION LEADS TO BREAKTHROUGHS THAT ENHANCE TECHNOLOGY, ALLOWING GATES TO CREATE SOLUTIONS THAT EXCEED THE EXPECTATIONS OF OUR CUSTOMERS AROUND THE WORLD. OUR MATERIALS SCIENCE AND ENGINEERING CAPABILITIES ARE WHAT DIFFERENTIATE US; IT'S OUR BIGGEST COMPETITIVE ADVANTAGE.

EXHAUST

MARINE WET EXHAUST

3137ME STANDARD, TESTED PER SAE J2006 R1	106
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DIFFERENTIAL PRESSURE SENSOR TUBING

4040T HIGH TEMPERATURE SILICONE TUBING, UNREINFORCED	109
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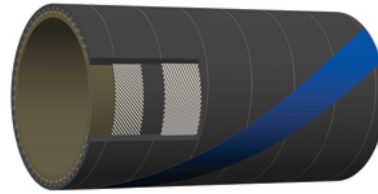
EGR HOSE

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CRANK CASE VENT HOSE

4319 (MEGATECH LOC) STRAIGHT	91
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ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

3137ME**MARINE WET EXHAUST HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Wet exhaust, engine coolant, and water circulation or discharge hose. Also suitable for air. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.**STANDARDS** SAE J2006 R1.**CONSTRUCTION** EPDM tube, synthetic fabric reinforcement plies, EPDM cover with blue spiral and wrapped appearance.**PACKAGING** Bulk lengths are 12.5 foot sticks polyfilm wrapped. Custom lengths available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	12.5 ft. Length
28.6 ±1.6	1-1/8 ±0.06	35.6 ±1.6	1.40 ±0.06	0.69	100	2.07	300	**	**	*	*	0.67	0.45	3137-1207
31.8	1-1/4	38.9	1.53	0.69	100	2.07	300	**	**	*	*	0.72	0.49	3137-1209
34.9	1-3/8	42.9	1.69	0.69	100	2.07	300	**	**	*	*	0.78	0.53	3137-1213
38.1	1-1/2	45.2	1.78	0.69	100	2.07	300	**	**	*	*	0.85	0.57	3137-1215
41.3	1-5/8	48.5	1.91	0.69	100	2.07	300	**	**	*	*	0.91	0.61	3137-1217
44.5	1-3/4	51.6	2.03	0.69	100	2.07	300	**	**	*	*	0.97	0.65	3137-1219
47.6	1-7/8	55.6	2.19	0.69	100	2.07	300	**	**	*	*	1.03	0.69	3137-1221
50.8	2	58.9	2.32	0.69	100	2.07	300	**	**	*	*	1.09	0.73	3137-1223
54.0	2-1/8	62.2	2.45	0.69	100	2.07	300	**	**	*	*	1.15	0.78	3137-1225
57.2	2-1/4	65.3	2.57	0.69	100	2.07	300	**	**	*	*	1.19	0.80	3137-1227
60.3	2-3/8	68.3	2.69	0.69	100	2.07	300	**	**	*	*	1.27	0.86	3137-1229
63.5	2-1/2	71.6	2.82	0.69	100	2.07	300	**	**	*	*	1.34	0.90	3137-1231
66.7	2-5/8	74.9	2.95	0.69	100	2.07	300	**	**	*	*	1.40	0.94	3137-1233
69.9	2-3/4	78.5	3.09	0.69	100	2.07	300	**	**	*	*	1.46	0.98	3137-1235
73.0	2-7/8	82.0	3.23	0.69	100	2.07	300	**	**	*	*	1.52	1.02	3137-1237
76.2	3	85.3	3.36	0.69	100	2.07	300	**	**	*	*	1.72	1.16	3137-1239
88.9	3-1/2	98.0	3.86	0.69	100	2.07	300	**	**	*	*	1.98	1.33	3137-1245
101.6	4	110.7	4.36	0.69	100	2.07	300	**	**	*	*	2.21	1.49	3137-1249
114.3	4-1/2	123.4	4.86	0.69	100	2.07	300	**	**	*	*	2.50	1.68	3137-1252
127.0	5	136.4	5.37	0.69	100	2.07	300	**	**	*	*	2.78	1.87	3137-1253
152.4	6	162.1	6.38	0.69	100	2.07	300	**	**	*	*	3.23	2.17	3137-1254

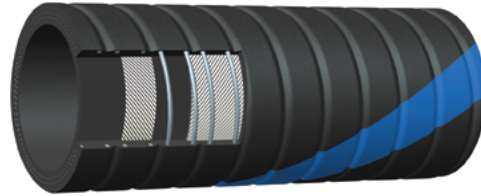
* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.



4686ME

WIRE REINFORCED MARINE WET EXHAUST HOSE



RELATIVE COST ●●●○○

APPLICATIONS Wet exhaust, engine coolant, and water circulation or discharge hose where tight bends or vacuum is required. Also suitable for air. Not for conveying fuel or oil.

TEMPERATURE -40°C to +125°C (-40°F to +257°F) continuous for coolant, and 100°C (212°F) maximum for conveying air.

STANDARDS SAE J2006 R2.

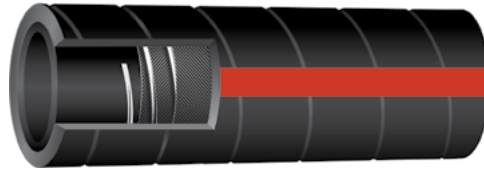
CONSTRUCTION EPDM tube, synthetic fabric reinforcement plies and two helical steel wires, EPDM cover with wrapped appearance.

PACKAGING Bulk lengths are 12.5 foot sticks polyfilm wrapped. Custom lengths available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	12.5 ft. Length	200 ft. Length
28.6 ±1.6	1-1/8 ±0.06	38.1 ±1.6	1.50 ±0.06	0.69	100	2.07	300	101	30	64	2.5	0.87	0.58	4686-0602	
31.8	1-1/4	41.1	1.62	0.69	100	2.07	300	101	30	64	2.5	0.94	0.63	4686-0604	
34.9	1-3/8	44.5	1.75	0.69	100	2.07	300	101	30	76	3.0	1.02	0.68	4686-0606	
38.1	1-1/2	47.8	1.88	0.69	100	2.07	300	101	30	89	3.5	1.09	0.74	4686-0608	
41.3	1-5/8	50.8	2.00	0.69	100	2.07	300	101	30	89	3.5	1.15	0.78	4686-0610	
44.5	1-3/4	53.9	2.12	0.69	100	2.07	300	101	30	102	4.0	1.25	0.84	4686-0612	
47.6	1-7/8	56.9	2.24	0.69	100	2.07	300	101	30	114	4.5	1.32	0.89	4686-0614	
50.8	2	59.9	2.36	0.69	100	2.07	300	101	30	127	5.0	1.42	0.95	4686-0616	
54.0	2-1/8	63.3	2.49	0.69	100	2.07	300	101	30	140	5.5	1.49	1.00	4686-0618	
57.2	2-1/4	66.8	2.63	0.69	100	2.07	300	101	30	152	6.0	1.55	1.04	4686-0620	
60.3	2-3/8	69.9	2.75	0.69	100	2.07	300	101	30	165	6.5	1.64	1.10	4686-0622	
63.5	2-1/2	73.7	2.90	0.69	100	2.07	300	101	30	165	6.5	1.73	1.16	4686-0624	
66.7	2-5/8	76.7	3.02	0.69	100	2.07	300	101	30	178	7.0	1.80	1.21	4686-0626	
69.9	2-3/4	81.8	3.22	0.69	100	2.07	300	101	30	191	7.5	1.87	1.26	4686-0628	
73.0	2-7/8	86.9	3.42	0.69	100	2.07	300	101	30	203	8.0	1.96	1.32	4686-0630	
76.2	3	89.9	3.54	0.69	100	2.07	300	101	30	229	9.0	2.30	1.55	4686-0632	4686-0656 ***
88.9	3-1/2	102.6	4.04	0.69	100	2.07	300	101	30	229	9.0	2.65	1.78	4686-0638	4686-0657 ***
101.6	4	115.3	4.54	0.69	100	2.07	300	101	30	305	12.0	3.28	2.20	4686-0640	
114.3	4-1/2	128.0	5.04	0.69	100	2.07	300	101	30	305	12.0	3.67	2.46	4686-0642	
127.0	5	140.7	5.54	0.69	100	2.07	300	101	30	508	20.0	4.04	2.71	4686-0643	
139.7	5-1/2	153.4	6.04	0.69	100	2.07	300	101	30	559	22.0	4.66	3.13	4686-0645	
152.4	6	165.9	6.53	0.69	100	2.07	300	101	30	610	24.0	4.79	3.22	4686-0646	

*** Not stocked. Minimum order quantity may apply.

4684CF**WIRE REINFORCED,
OIL RESISTANT COOLANT HOSE**
RELATIVE COST ●●●○○

APPLICATIONS Engine coolant lower radiator hose where fuel and oil resistance and tight bends or vacuum is required. Also suitable for marine wet exhaust and diesel fuel filler.

TEMPERATURE -40°C to +100°C (-40°F to +212°F).

STANDARDS SAE 20R2 Class B tube, Class C cover except vacuum SAE J2006.
Wall thickness per SAE 20R2 is 5.35±1.05mm (0.21±0.04 inch) excluding embedded wire area.

CONSTRUCTION Nitrile tube, synthetic fabric reinforcement plies with two embedded helical wires, neoprene cover with wrapped appearance.

PACKAGING Bulk lengths are 10 foot sticks in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length	200 ft. Length
25.4 ±0.08	1 ±0.03	37.3	1.47	0.69	100	2.76	400	84.5	25	76	3	0.73	0.49	4684-1540	
28.6	1-1/8	40.6	1.60	0.69	100	2.76	400	84.5	25	102	4	0.80	0.54	4684-1545	
31.8	1-1/4	43.7	1.72	0.69	100	2.76	400	84.5	25	102	4	0.88	0.59	4684-1551	
34.9	1-3/8	47.0	1.85	0.60	88	2.41	350	84.5	25	102	4	0.95	0.64	4684-1556	
38.1	1-1/2	50.0	1.97	0.60	88	2.41	350	67.6	20	102	4	1.01	0.68	4684-1561	
41.3	1-5/8	53.3	2.10	0.52	75	2.07	300	67.6	20	127	5	1.08	0.72	4684-1601	
44.5	1-3/4	56.4	2.22	0.52	75	2.07	300	67.6	20	127	5	1.15	0.77	4684-1611	
47.6	1-7/8	59.4	2.34	0.43	63	1.72	250	67.6	20	127	5	1.20	0.81	4684-1651	
50.8 ±1.6	2 ±0.06	62.7	2.47	0.43	63	1.72	250	67.6	20	127	5	1.27	0.86	4684-1660	
54.0	2-1/8	66.0	2.60	0.39	56	1.55	225	67.6	20	152	6	1.35	0.91	4684-1670	
57.2	2-1/4	69.1	2.72	0.39	56	1.55	225	67.6	20	152	6	1.42	0.95	4684-1680	
60.3	2-3/8	72.4	2.85	0.34	50	1.38	200	67.6	20	178	7	1.49	1.00	4684-1690	
63.5	2-1/2	75.4	2.97	0.34	50	1.38	200	67.6	20	178	7	1.55	1.04	4684-1700	
66.7	2-5/8	78.7	3.10	0.30	44	1.21	175	50.7	15	229	9	1.61	1.08	4684-1711	
69.9	2-3/4	81.8	3.22	0.30	44	1.21	175	50.7	15	254	10	1.69	1.13	4684-1720	
73.0	2-7/8	85.1	3.35	0.30	44	1.21	175	50.7	15	279	11	1.75	1.18	4684-1730	
76.2	3	88.1	3.47	0.30	44	1.21	175	50.7	15	305	12	1.82	1.22	4684-1740	4684-1706***
88.9	3-1/2	100.8	3.97	0.26	38	1.03	150	50.7	15	432	17	2.10	1.41	4684-1750	4684-1707***
101.6	4	113.5	4.47	0.22	31	0.86	125	33.8	10	610	24	2.38	1.60	4684-1760	
114.3	4-1/2	126.2	4.97	0.17	25	0.69	100	16.9	5	686	27	2.66	1.79	4684-1764***	4684-1708***
127.0	5	138.9	5.47	0.13	19	0.52	75	16.9	5	762	30	2.94	1.98	4684-1766***	4684-1709***
152.4	6	164.3	6.47	0.13	19	0.52	75	16.9	5	914	36	3.50	2.35	4684-1722***	

*** Not stocked. Minimum order quantity may apply.



4040T

HIGH TEMPERATURE SILICONE VACUUM TUBING



RELATIVE COST



APPLICATIONS

Differential pressure sensor tubing and vacuum lines for extreme temperatures. Also suitable for coolant overflow or vent. Not for conveying fuel or oil.

TEMPERATURE

-55°C to +177°C (-67°F to +350°F).

STANDARDS

SAE J200 M2GE 705 Z1(60-70 Shore A).

CONSTRUCTION

Orange silicone tube without reinforcement.

PACKAGING

Coiled in a plastic clamshell container. Custom lengths available with minimum order quantity.

COUPLINGS

Hose bead fitting with or without hose clamps (pages 139 - 145).

ID		SIZE FITTING		OD		WORKING PRESSURE MAXIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	6 ft. Length
2.77 +0/- .8	0.109 +0/- .03	3.2	1/8	5.8	0.229	*	*	85	25	25	1	0.021	0.014	4040-4140
3.96	.156	4.8	3/16	7.0	0.276	*	*	85	25	38	1.5	0.039	0.026	4040-4141
5.54	.218	6.4	1/4	8.6	0.338	*	*	85	25	38	1.5	0.050	0.033	4040-4142
6.35	.250	7.9	5/16	9.4	0.370	*	*	85	25	38	1.5	0.057	0.038	4040-4143

* No specification requirement.

** If minimum bend radius is required, use 8 times the O.D. as a guide.



DRIVEN BY POSSIBILITY™

FLEXIBLE DESIGNS FOR FLEXIBLE HOSES

AIR INTAKE, CHARGE AIR + AIR DUCTING HOSES

ENGINE AIR HOSES ARE THE LARGEST HOSES ON THE ENGINE, AND THE ROUTINGS ARE GETTING MORE DIFFICULT AND COMPLEX. FLEXIBILITY IS KEY, BOTH IN THE DESIGN OF THE HOSES AS WELL AS

THE CONSTRUCTION. TRUST GATES FOR ROBUST, FLEXIBLE SOLUTIONS TO KEEP YOUR EQUIPMENT RUNNING.



AIR

DEFROSTER, AIR DUCT, PRE-CLEANER

7768 LOW COST, THIN PROPYLENE-ETHYLENE WITH PP HELIX	112
4663A THICKER, NEOPRENE WITH WIRE HELIX	113
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AIR CLEANER

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ALSO SEE:

COOLANT HOSE SECTION

TURBO, CHARGE AIR

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AIR BRAKE COMPRESSOR

7752 (C14) COMPRESSOR DISCHARGE	135
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ELECTRIC
VEHICLE

COOLANT

FUEL

OIL

SCR

EXHAUST

AIR

REFRIGERANT

BRAKE

CLAMPS &
CONNECTORS

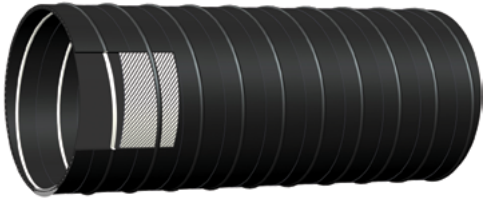
ACCESSORIES

BELTS



7768

DEFROSTER / AIR INTAKE HOSE



RELATIVE COST ●○○○○

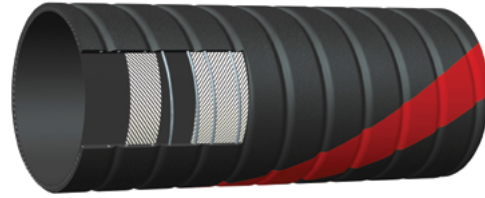
APPLICATIONS	Defrosters, air ducts, air intakes, under-hood applications, and other low pressure/ low suction applications. Also approved for marine applications.
TEMPERATURE	-40°C to +107°C (-40°F to +225°F).
STANDARDS	Meets DOT FMVSS 302.
CONSTRUCTION	Propylene-ethylene reinforced with one polypropylene helix. Wall thickness 0.3mm (0.013 inch) between the coils.
PACKAGING	Individually boxed in 1.83m (6 foot) lengths compressed to 0.53m (21 inches).
COUPLINGS	Fasten with hose clamps (pages 139 - 145).

ID		WORKING PRESSURE MAXIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	AUTOMOTIVE NUMBER
mm	in.	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft		
32 +3/-0	1-1/4 +.12/-0	0.07	10	*	*	38	1.5	0.09	0.06	7768-4070	23820
38	1-1/2	0.07	10	*	*	51	2	0.12	0.08	7768-4071	23824
45	1-3/4	0.07	10	*	*	64	2.5	0.13	0.09	7768-4072	23828
50	2	0.07	10	*	*	76	3	0.15	0.1	7768-4073	23832
57	2-1/4	0.06	9	*	*	89	3.5	0.16	0.11	7768-4074	23836
63	2-1/2	0.06	9	*	*	95	3.75	0.19	0.13	7768-4075	23840
70	2-3/4	0.06	8	*	*	102	4	0.21	0.14	7768-4076	23844
76	3	0.06	8	*	*	108	4.25	0.21	0.14	7768-4077	23848
83	3-1/4	0.03	5	*	*	102	4	0.22	0.15	7768-4085	23850
89	3-1/2	0.02	3	*	*	108	4.25	0.27	0.18	7768-4078	23856
102	4	0.02	3	*	*	114	4.5	0.33	0.22	7768-4080	23864
114	4-1/2	0.05	7	9.5	2.8	64	2.5	0.00		7768-4081	23872
127	5	0.04	6	6.8	2.0	76	3	0.00		7768-4082	23880
152	6	0.03	5	11.9	3.5	102	4	0.67	0.45	7768-4084	23896

* Not recommended.

4663A (63SB)

**WIRE REINFORCED, OIL RESISTANT,
THIN WALL AIR HOSE**



RELATIVE COST ●●●○○○

APPLICATIONS Air cleaner or defroster duct where tight bends are required. Not for conveying liquids.

TEMPERATURE -34°C to +121°C (-30°F to +250°F).

STANDARDS None.

CONSTRUCTION Neoprene tube, synthetic fabric reinforcement with two helical wires, neoprene impregnated fabric cover.

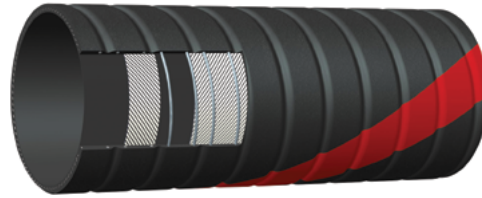
PACKAGING Bulk lengths are 10 foot coil in a box. Custom lengths or ends with no wire are available with minimum order quantity.

COUPLINGS Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
15.9	5/8	20.7	0.81	0.07	10	0.28	40	16.9	5	25	1	0.16	0.11	4663-4108***
19.1	3/4	23.9	0.94	0.07	10	0.28	40	16.9	5	25	1	0.19	0.13	4663-4109
22.2	7/8	27.0	1.06	0.07	10	0.28	40	16.9	5	25	1	0.22	0.15	4663-4110
25.4	1	30.2	1.19	0.07	10	0.28	40	16.9	5	25	1	0.27	0.18	4663-4111
31.8	1-1/4	36.6	1.44	0.07	10	0.28	40	16.9	5	25	1	0.33	0.22	4663-4112
34.9	1-3/8	39.7	1.56	0.07	10	0.28	40	16.9	5	38	1.5	0.34	0.23	4663-4113
38.1	1-1/2	42.9	1.69	0.07	10	0.28	40	16.9	5	38	1.5	0.37	0.25	4663-4114
41.3	1-5/8	46.1	1.81	0.07	10	0.28	40	16.9	5	51	2	0.40	0.27	4663-4115
44.5	1-3/4	49.3	1.94	0.07	10	0.28	40	16.9	5	51	2	0.43	0.29	4663-4116
47.6	1-7/8	52.4	2.06	0.07	10	0.28	40	16.9	5	51	2	0.46	0.31	4663-4117
50.8	2	55.6	2.19	0.03	5	0.14	20	10.1	3	51	2	0.49	0.33	4663-4118
54.0	2-1/8	58.8	2.31	0.03	5	0.14	20	10.1	3	64	2.5	0.52	0.35	4663-4119
57.2	2-1/4	62.0	2.44	0.03	5	0.14	20	10.1	3	64	2.5	0.55	0.37	4663-4120
60.3	2-3/8	65.1	2.56	0.03	5	0.14	20	10.1	3	64	2.5	0.57	0.38	4663-4121
63.5	2-1/2	68.3	2.69	0.03	5	0.14	20	10.1	3	64	2.5	0.60	0.40	4663-4122
66.7	2-5/8	71.5	2.81	0.03	5	0.14	20	10.1	3	71	2.8	0.62	0.42	4663-4123
69.9	2-3/4	74.7	2.94	0.03	5	0.14	20	10.1	3	71	2.8	0.65	0.44	4663-4124
76.2	3	81.0	3.19	0.03	5	0.14	20	10.1	3	76	3	0.71	0.48	4663-4125
88.9	3-1/2	93.7	3.69	0.03	5	0.14	20	10.1	3	89	3.5	0.83	0.56	4663-4126
92.1	3-5/8	96.8	3.81	0.03	5	0.14	20	10.1	3	102	4	0.86	0.58	4663-4127
101.6	4	106.4	4.19	0.03	5	0.14	20	10.1	3	102	4	1.09	0.73	4663-4128
114.3	4-1/2	119.1	4.69	0.03	5	0.14	20	10.1	3	127	5	1.21	0.81	4663-4129
127.0	5	131.8	5.19	0.03	5	0.14	20	10.1	3	152	6	1.34	0.90	4663-4130
139.7	5-1/2	144.5	5.69	0.03	5	0.14	20	10.1	3	152	6	1.47	0.99	4663-4131
152.4	6	157.2	6.19	0.03	5	0.14	20	10.1	3	**	**	1.59	1.07	4663-1491 ***
177.8	7	182.6	7.19	0.03	5	0.14	20	10.1	3	**	**	1.86	1.25	4663-3992 ***

** If minimum bend radius is required, use 8 times the O.D. as a guide.

*** Not stocked. Minimum order quantity may apply.

4663J (163SB)**WIRE REINFORCED, OIL RESISTANT,
AIR HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Heavy-duty air cleaner or defroster duct where tight bends are required. Not for conveying liquids.**TEMPERATURE** -34°C to +121°C (-30°F to +250°F).**STANDARDS** None.**CONSTRUCTION** Neoprene tube, synthetic fabric reinforcement with two helical wires, neoprene cover.**PACKAGING** Bulk lengths are 10 foot coil in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

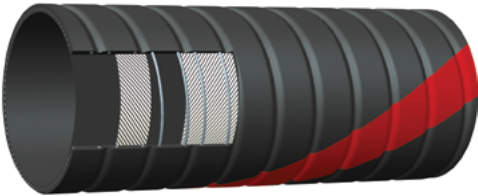
ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
19.1	3/4	24.6	0.97	0.14	20	0.55	80	50.7	15	25	1	0.25	0.17	4663-1516***
25.4	1	31.0	1.22	0.14	20	0.55	80	50.7	15	25	1	0.33	0.22	4663-1518***
31.8	1-1/4	37.3	1.47	0.14	20	0.55	80	50.7	15	25	1	0.43	0.29	4663-1530***
34.9	1-3/8	40.6	1.60	0.10	15	0.41	60	50.7	15	38	1.5	0.49	0.33	4663-3321***
38.1	1-1/2	45.5	1.79	0.10	15	0.41	60	50.7	15	38	1.5	0.52	0.35	4663-1540***
41.3	1-5/8	47.2	1.86	0.10	15	0.41	60	50.7	15	46	1.8	0.55	0.37	4663-1543***
44.5	1-3/4	50.3	1.98	0.10	15	0.41	60	50.7	15	46	1.8	0.60	0.40	4663-3954***
47.6	1-7/8	53.6	2.11	0.10	15	0.41	60	50.7	15	46	1.8	0.64	0.43	4663-1548***
50.8	2	56.6	2.23	0.10	15	0.41	60	50.7	15	51	2	0.65	0.44	4663-1550***
54.0	2-1/8	61.0	2.40	0.07	10	0.28	40	50.7	15	64	2.5	0.70	0.47	4663-3461***
57.2	2-1/4	63.0	2.48	0.07	10	0.28	40	50.7	15	64	2.5	0.73	0.49	4663-1556***
60.3	2-3/8	66.3	2.61	0.07	10	0.28	40	50.7	15	64	2.5	0.77	0.52	4663-1560***
63.5	2-1/2	69.3	2.73	0.07	10	0.28	40	50.7	15	64	2.5	0.82	0.55	4663-1565***
66.7	2-5/8	72.6	2.86	0.07	10	0.28	40	50.7	15	76	3	0.85	0.57	4663-1615***
69.9	2-3/4	75.7	2.98	0.07	10	0.28	40	50.7	15	178	7	0.94	0.63	4663-3456***
76.2	3	82.0	3.23	0.07	10	0.28	40	23.7	7	254	10	0.97	0.65	4663-1570***
79.4	3-1/8	85.1	3.35	0.07	10	0.28	40	23.7	7	254	10	1.01	0.68	4663-1569***
88.9	3-1/2	94.7	3.73	0.07	10	0.28	40	23.7	7	254	10	1.12	0.75	4663-1575***
101.6	4	107.4	4.23	0.07	10	0.28	40	23.7	7	305	12	1.26	0.85	4663-1580***
114.3	4-1/2	120.1	4.73	0.07	10	0.28	40	23.7	7	305	12	1.56	1.05	4663-1589***
127.0	5	132.8	5.23	0.07	10	0.28	40	20.3	6	305	12	1.73	1.16	4663-1595***
139.7	5-1/2	145.5	5.73	0.07	10	0.28	40	20.3	6	305	12	1.89	1.27	4663-3454***
152.4	6	158.2	6.23	0.06	8	0.22	32	20.3	6	381	15	2.07	1.39	4663-1599***

*** Not stocked. Minimum order quantity may apply.



4663G

WIRE REINFORCED, OIL RESISTANT, HEAVY WALL AIR HOSE

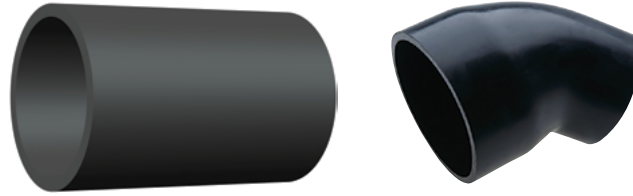


RELATIVE COST	●●●○○
APPLICATIONS	Heavy-duty air cleaner for abrasive environments where tight bends are required. Not for conveying liquids.
TEMPERATURE	-40°C to +125°C (-40°F to +257°F).
STANDARDS	None.
CONSTRUCTION	Neoprene tube, synthetic fabric reinforcement with two helical wires, neoprene cover.
PACKAGING	Bulk lengths are 10 foot coil in a box. Custom lengths, enlarged ends, or ends with no wire are available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
101.6	4	107.4	4.23	0.07	10	0.28	40	23.7	7	305	12	1.32	0.89	4663-4132***
114.3	4-1/2	120.1	4.73	0.07	10	0.28	40	23.7	7	305	12	1.49	1.00	4663-4133
127.0	5	132.8	5.23	0.07	10	0.28	40	20.3	6	305	12	1.64	1.10	4663-4134
139.7	5-1/2	145.5	5.73	0.07	10	0.28	40	20.3	6	305	12	1.80	1.21	4663-4135***

*** Not stocked. Minimum order quantity may apply.

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

4289E**STANDARD FORMED AIR INTAKE/
VACUUM HOSE****RELATIVE COST** ●●●○○**APPLICATIONS** Engine air intake or air ducting. Also suitable for water suction. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +135°C (-40°F to +275°F).**STANDARDS** SAE J200 M3CA 707 A25 B35 C32 F17 Z1 (Duro 60-75), or
SAE J200 M4CA 710 A25 B35 C32 EA14 F17 G21 Z1 (EPDM) Z2 (Duro 60-75).**CONSTRUCTION** EPDM tube with no reinforcement.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply.
Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

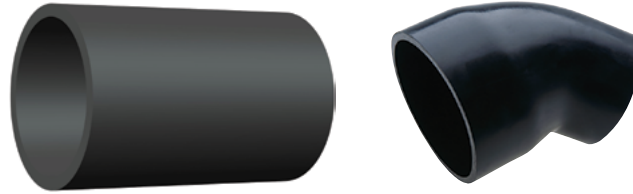
ID		EXTRUDED ID		WALL NOMINAL			VACUUM MINIMUM,**		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	mm	in.	rtg.	kpa	in. hg	mm	in.	kg/m	lbs/ft
5.6 ±0.8	7/32 ±0.03	4.8	0.19	2.92 ±0.51	0.115 ±0.02	1			11.1	0.4375	0.09	0.06
6.4	1/4	6.4	0.25	2.92	0.115	1			12.7	0.5	0.10	0.07
8.7	11/32	8.1	0.32	2.41	0.095	1			17.5	0.6875	0.10	0.07
8.7	11/32	8.1	0.32	4.95	0.195	2			17.5	0.6875	0.24	0.16
8.7	11/32	8.1	0.32	7.62	0.300	6	95	28.0	17.5	0.6875	0.44	0.30
9.5	3/8	9.1	0.36	1.40	0.055	1			19.1	0.75	0.06	0.04
11.9	15/32	11.4	0.45	4.57 ±0.76	0.180 ±0.030	1			23.8	0.9375	0.27	0.18
12.7	1/2	11.4	0.45	3.05	0.120	1			25.4	1	0.17	0.11
15.9	5/8	14.2	0.56	3.81	0.150	1			31.8	1.25	0.26	0.17
18.5	.73	17.5	0.69	4.06	0.160	1			37.1	1.46	0.31	0.21
19.1	3/4	18.0	0.71	0.51	0.020	2			38.1	1.5	0.43	0.29
19.1	3/4	18.0	0.71	6.48	0.255	4	95	28.0	38.1	1.5	0.57	0.38
22.2	7/8	21.1	0.83	3.81	0.150	1			44.5	1.75	0.36	0.24
25.4	1	24.1	0.95	5.59 ±1.02	0.220 ±0.040	2	37	11.0	50.8	2	0.61	0.41
28.6	1-1/8	27.2	1.07	4.70	0.185	2	22	6.6	57.2	2.25	0.55	0.37
31.8	1-1/4	30.2	1.19	6.35 ±1.27	0.250 ±0.050	4	37	11.0	63.5	2.5	0.85	0.57
33.3	1.31	31.5	1.24	6.35	0.250	4	30	8.8	66.5	2.62	0.43	0.29
34.9	1-3/8	33.3	1.31	6.35	0.250	4	27	8.1	69.9	2.75	0.92	0.62
36.6	1.44	34.8	1.37	6.35	0.250	4	22	6.6	73.2	2.88	0.95	0.64
36.6	1.44	34.8	1.37	9.91	0.390	9	37	11.0	73.2	2.88	1.58	1.06
38.1	1-1/2	36.1	1.42	4.83	0.190	3	19	5.5	76.2	3	0.70	0.47
38.1	1-1/2	36.1	1.42	6.35	0.250	4	22	6.6	76.2	3	0.98	0.66
38.1	1-1/2	36.1	1.42	6.73	0.265	5	22	6.6	76.2	3	1.06	0.71
41.3	1-5/8	39.1	1.54	6.35	0.250	4	22	6.6	82.6	3.25	1.06	0.71
44.5	1-3/4	42.2	1.66	4.95	0.195	2	8	2.5	88.9	3.5	0.86	0.58
44.5	1-3/4	42.2	1.66	5.97	0.235	3	10	3.0	88.9	3.5	1.06	0.71
44.5	1-3/4	42.2	1.66	6.35	0.250	4	14	4.0	88.9	3.5	1.13	0.76
44.5	1-3/4	42.2	1.66	6.60	0.260	5	14	4.0	88.9	3.5	1.18	0.79
44.5	1-3/4	42.2	1.66	7.75	0.305	7	17	5.0	88.9	3.5	1.41	0.95
47.6	1-7/8	45.5	1.79	5.08	0.200	2	7	2.0	95.3	3.75	0.94	0.63

4289E (CONTINUED)

ID		EXTRUDED ID		WALL NOMINAL			VACUUM MINIMUM.**		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	mm	in.	rtg.	kpa	in. hg	mm	in.	kg/m	lbs/ft
47.6	1-7/8	45.5	1.79	6.35	0.250	4	10	3.0	95.3	3.75	1.21	0.81
47.6	1-7/8	45.5	1.79	6.86	0.270	5	14	4.0	95.3	3.75	1.31	0.88
50.8	2	48.3	1.90	5.08	0.200	2	5	1.5	101.6	4	1.00	0.67
50.8	2	48.3	1.90	6.35	0.250	4	8	2.5	101.6	4	1.26	0.85
50.8	2	48.3	1.90	7.87	0.310	5	15	4.5	101.6	4	1.61	1.08
50.8	2	48.3	1.90	8.89	0.350	8	20	5.9	101.6	4	1.85	1.24
53.8	2.12	51.3	2.02	2.92	0.115	1	2	0.5	107.7	4.24	0.60	0.40
53.8	2.12	51.3	2.02	7.87	0.310	6	14	4.3	107.7	4.24	1.70	1.14
53.8	2.12	48.5	1.91	9.65	0.380	9	24	7.0	107.7	4.24	2.04	1.37
55.6	2.19	52.8	2.08	6.35	0.250	4	8	2.3	111.3	4.38	1.37	0.92
57.2	2-1/4	54.4	2.14	4.95	0.195	2	3	1.0	114.3	4.5	1.06	0.71
57.2	2-1/4	54.4	2.14	6.35	0.250	4	7	2.0	114.3	4.5	1.41	0.95
57.2	2-1/4	54.4	2.14	7.62	0.300	5	12	3.5	114.3	4.5	1.73	1.16
57.2	2-1/4	54.4	2.14	8.76	0.345	7	19	5.5	114.3	4.5	2.01	1.35
57.9	2.28	55.1	2.17	3.99	0.157	1	2	0.5	115.8	4.56	0.85	0.57
57.9	2.36	56.9	2.24	6.35	0.250	4	7	2.0	119.9	4.72	1.47	0.99
57.9	2.36	56.9	2.24	7.87	0.310	8	14	4.0	119.9	4.72	1.86	1.25
63.5	2-1/2	60.2	2.37	4.83	0.190	1	3	1.0	127.0	5	1.13	0.76
63.5	2-1/2	60.2	2.37	5.59	0.220	2	5	1.5	127.0	5	1.35	0.91
63.5	2-1/2	60.2	2.37	6.35	0.250	4	7	2.0	127.0	5	1.55	1.04
63.5	2-1/2	60.2	2.37	7.37	0.290	6	10	3.0	127.0	5	1.82	1.22
63.5	2-1/2	60.2	2.37	8.13	0.320	8	14	4.0	127.0	5	2.02	1.36
63.5	2-1/2	60.2	2.37	9.14	0.360	9	17	5.0	127.0	5	2.31	1.55
65.0	2.56	61.7	2.43	6.35	0.250	4	7	2.0	130.0	5.12	1.58	1.06
69.9±1.5	2-3/4 ±0.06	66.3	2.61	6.35	0.250	4	5	1.5	139.7	5.5	1.68	1.13
69.9	2-3/4	66.3	2.61	6.73	0.265	5	5	1.5	139.7	5.5	1.79	1.20
69.9	2-3/4	66.3	2.61	7.37	0.290	6	7	2.0	139.7	5.5	1.98	1.33
69.9	2-3/4	66.3	2.61	8.13	0.320	8	10	3.0	139.7	5.5	2.20	1.48
69.9	2-3/4	66.3	2.61	9.53	0.375	9	19	5.5	139.7	5.5	2.62	1.76
76.2	3	72.4	2.85	6.35	0.250	4	3	1.0	152.4	6	1.83	1.23
76.2	3	72.4	2.85	6.86	0.270	5	5	1.5	152.4	6	1.98	1.33
76.2	3	72.4	2.85	7.37	0.290	6	7	2.0	152.4	6	2.14	1.44
76.2	3	72.4	2.85	8.13	0.320	7	10	3.0	152.4	6	2.38	1.60
76.2	3	72.4	2.85	8.76	0.345	8	14	4.0	152.4	6	2.59	1.74
76.2	3	72.4	2.85	9.40	0.370	9	17	5.0	152.4	6	2.80	1.88
79.4	3-1/8	75.4	2.97	6.35	0.250	4	3	1.0	158.8	6.00	1.90	1.28
82.6	3-1/4	78.5	3.09	6.35	0.250	4	3	1.0	165.1	6.00	1.96	1.32
82.6	3-1/4	78.5	3.09	8.13	0.320	7	7	2.0	165.1	6.00	2.56	1.72
88.9	3-1/2	84.3	3.32	6.35	0.250	4	2	0.5	165.1	6.00	2.10	1.41
88.9	3-1/2	84.3	3.32	8.13	0.320	6	7	2.0	165.1	6.00	2.74	1.84
88.9	3-1/2	84.3	3.32	8.76	0.345	7	8	2.5	165.1	6.00	2.96	1.99
88.9	3-1/2	84.3	3.32	9.53	0.375	8	12	3.5	165.1	6.00	3.24	2.18
95.3	3.75	90.4	3.56	6.35	0.250	4	2	0.5	165.1	6.00	2.25	1.51
95.3	3.75	90.4	3.56	8.13	0.320	8	5	1.5	165.1	6.00	2.92	1.96
101.6	4	90.4	3.80	6.35	0.250	4	2	0.5	165.1	6.00	2.38	1.60
101.6	4	96.5	3.80	7.87	0.310	6	5	0.5	165.1	6.00	2.99	2.01
101.6	4	96.5	3.80	8.89	0.350	8	7	2.0	165.1	6.00	3.41	2.29
101.6	4	96.5	3.80	9.53	0.375	9	8	2.5	165.1	6.00	3.66	2.46
101.6	4	96.5	3.80	10.03	0.395	7	10	3.0	165.1	6.00	3.93	2.64
106.9	4.21	101.6	4.00	9.53	0.375	9	8	2.5	165.1	6.00	3.84	2.58

* For cuff length on one end only. This guideline is subject to change based on the complexity of the hose design.

** Not a specification requirement. See the hose design section. Can be increased with a wire coil inserted in the hose ID.

4289N**OIL RESISTANT FORMED AIR INTAKE/
VACUUM HOSE****RELATIVE COST** ●●●●○**APPLICATIONS** Engine air intake with internal oil mist, exhaust fumes, or crank case fumes, or external oily environment. Also suitable for water suction. Not for conveying fuel.**TEMPERATURE** -40°C to +100°C (-40°F to +212°F).**STANDARDS** SAE J200 M3BC 707 EO14 EO34 F17 Z1(8.28MPa Tb), or SAE J200 M3BC 707 A14 C12 EO14 EO34 F17.**CONSTRUCTION** Neoprene tube with no reinforcement.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		EXTRUDED ID		WALL NOMINAL			VACUUM MINIMUM,**		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	mm	in.	rtg.	kpa	in. hg	mm	in.	kg/m	lbs/ft
15.9 ±0.8	5/8 ±0.03	15.0	0.59	6.35 ±0.76	0.250 ±0.03	4	95	28.0	22.05	0.87	0.61	0.41
19.1	3/4	18.0	0.71	0.51	0.020	2	95	28.0	26.67	1.05	0.54	0.36
19.1	3/4	18.0	0.71	6.35	0.250	4	95	28.0	26.67	1.05	0.70	0.47
25.4	1	24.1	0.95	6.35	0.250	4	44	13.0	35.56	1.40	0.88	0.59
28.6	1-1/8	26.9	1.06	5.08 ±1.27	0.200 ±0.05	2	30	8.8	39.83	1.57	0.74	0.50
31.8	1-1/4	30.2	1.19	6.35	0.250	4	37	11.0	44.45	1.75	1.06	0.71
38.1	1-1/2	36.3	1.43	6.35	0.250	4	22	6.6	53.34	2.10	1.22	0.82
39.9	1.57	37.8	1.49	1.52	0.060	1	2	0.5	55.83	2.20	0.28	0.19
41.4	1.63	39.4	1.55	3.43	0.135	1	7	2.0	57.96	2.28	0.67	0.45
41.4	1.63	39.4	1.55	4.19	0.165	2	17	5.0	57.96	2.28	1.00	0.67
44.5	1-3/4	42.2	1.66	6.35	0.250	4	14	4.0	62.23	2.45	1.40	0.94
44.5	1-3/4	42.2	1.66	7.75	0.305	5	19	5.5	62.23	2.45	1.74	1.17
50.8	2	48.3	1.90	5.08	0.200	3	5	1.5	71.12	2.80	1.21	0.81
50.8	2	48.3	1.90	6.35	0.250	4	8	2.5	71.12	2.80	1.56	1.05
50.8	2	48.3	1.90	7.49	0.295	5	12	3.5	71.12	2.80	1.89	1.27
57.2	2-1/4	54.4	2.14	6.35	0.250	5	7	2.0	80.01	3.15	1.74	1.17
63.5	2-1/2	60.5	2.38	6.35	0.250	4	7	2.0	88.90	3.50	1.92	1.29
63.5	2-1/2	60.5	2.38	7.62	0.300	5	12	3.5	88.90	3.50	2.34	1.57
68.8	2.71	65.3	2.57	9.53	0.375	6	19	5.5	96.37	3.79	3.20	2.15
69.9 ±1.5	2-3/4 ±0.06	66.3	2.61	6.99	0.275	5	6	1.8	97.79	3.85	2.31	1.55
76.2	3	72.4	2.85	6.35	0.250	4	3	1.0	106.68	4.20	2.26	1.52
76.2	3	72.4	2.85	8.13	0.320	5	10	3.0	106.68	4.20	2.95	1.98
88.9	3-1/2	84.3	3.32	6.35	0.250	4	2	0.5	124.46	4.90	2.60	1.75
101.6	4	96.5	3.80	6.35	0.250	4	2	0.5	142.24	5.60	2.95	1.98
101.6	4	96.5	3.80	8.00	0.315	6	5	1.5	142.24	5.60	3.76	2.53
127.0	5	106.7	4.20	6.35	0.250	4	2	0.5	152.4	6	3.24	2.18

* For cuff length on one end only. This guideline is subject to change based on the complexity of the hose design.

** Not a specification requirement. See the hose design section. Can be increased with a wire coil inserted in the hose ID.

7736**AIR INTAKE HOSE - STANDARD SHAPES****RELATIVE COST****APPLICATIONS**

Connection to the air filter or other air ducting. Also suitable for water suction. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +107°C (-40°F to +225°F).

STANDARDS

SAE J200 M3BC 714 A14 E034 F17. ID tolerance is +0/-1.6 mm (+0/-0.062 inch) unless otherwise specified.

CONSTRUCTION

Neoprene rubber with or without reinforcement.

PACKAGING

Boxed.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		LENGTH		BEND ANGLE	GATES ITEM NUMBER
mm	in.	mm	in.	Degrees	
HUMP HOSE					
101.6	4	127.00	5.00	-	3177-1005
127.0	5	152.40	6.00	-	3177-1007
139.7	5-1/2	152.40	6.00	-	3177-1006
152.4	6	127.00	5.00	-	3177-1008
REDUCER HUMP HOSE					
76.2 x 88.9	3 x 3-1/2	133.35	5.25	-	7736-1041
76.2 x 101.6	3 x 4	133.35	5.25	-	7736-1042
139.7 x 152.4	5-1/2 x 6	152.40	6.00	-	7736-1027
152.4 x 177.8	6 x 7	127.00	5.00	-	7736-1030
ELBOW HOSE					
76.2	3	133.4 x 133.4	5.25 x 5.25	90	7736-1050
88.9	3-1/2	133.4 x 133.4	5.25 x 5.25	45	7736-1051
88.9	3-1/2	139.7 x 139.7	5.50 x 5.50	90	7736-1052*
127.0	5	133.4 x 133.4	5.25 x 5.25	45	7736-1026
127.0	5	152.4 x 152.4	6.00 x 6.00	90	7736-1025
139.7 x 152.4	5-1/2 x 6	177.8 x 177.8	7.00 x 7.00	90	7736-1063
152.4	6	165.1 x 165.1	6.50 x 6.50	45	7736-1028*
152.4	6	190.5 x 190.5	7.50 x 7.50	45	7736-1058*
152.4	6	177.8 x 177.8	7.00 x 7.00	90	7736-1029*
177.8	7	190.5 x 190.5	7.50 x 7.50	90	7736-1033

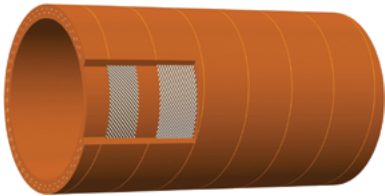
* Ribbed exterior surface for added vacuum resistance.



ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESSORIES
BELTS

4171H

HIGH TEMPERATURE SILICONE AIR HOSE



RELATIVE COST	●●●●○
APPLICATIONS	Turbo hose or connector.
TEMPERATURE	-40°C to +232°C (-40°F to +450°F).
STANDARDS	None.
CONSTRUCTION	Orange silicone tube, high temperature fabric reinforcement plies, orange silicone cover with wrapped appearance.
PACKAGING	Bulk lengths are 10 foot coil in a box. Custom lengths available with minimum order quantity.
COUPLINGS	Hose bead fitting fastened with hose clamps (pages 139 - 145).

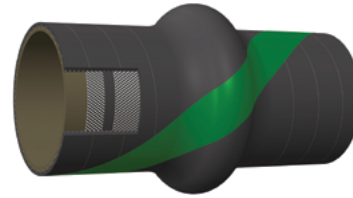
ID		OD REFERENCE		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	10 ft. Length
22.2 ±0.8	7/8 ±0.031	27.8 ±1.6	1.09 ±0.063	1.38	200	5.52	800	*	*	**	**	0.30	0.2	***
25.4	1	31.0	1.22	1.38	200	5.52	800	*	*	**	**	0.33	0.22	4171-0652***
31.8	1-1/4	37.4	1.47	1.38	200	5.52	800	*	*	**	**	0.40	0.27	4171-0672***
34.9	1-3/8	40.5	1.59	1.38	200	5.52	800	*	*	**	**	0.43	0.29	***
38.1	1-1/2	43.7	1.72	1.38	200	5.52	800	*	*	**	**	0.46	0.31	4171-0695***
44.5	1-3/4	50.1	1.97	1.24	180	4.96	720	*	*	**	**	0.54	0.36	4171-0655***
50.8	2	56.4	2.22	1.10	160	4.41	640	*	*	**	**	0.61	0.41	4171-0656***
57.2 ±1.2	2-1/4 ±0.047	62.8	2.47	1.10	160	4.41	640	*	*	**	**	0.67	0.45	4171-0657***
60.3	2-3/8	65.9	2.59	0.97	140	3.86	560	*	*	**	**	0.70	0.47	***
63.5	2-1/2	69.1	2.72	0.92	134	3.68	534	*	*	**	**	0.74	0.5	4171-0659***
69.9	2-3/4	75.5	2.97	0.83	120	3.31	480	*	*	**	**	0.88	0.59	4171-0660***
76.2	3	81.8	3.22	0.78	113	3.12	452	*	*	**	**	0.95	0.64	4171-0661***
82.6	3-1/4	88.2	3.47	0.72	105	2.88	418	*	*	**	**	0.98	0.66	4171-0662***
85.7	3-3/8	91.3	3.60	0.69	100	2.76	400	*	*	**	**	1.26	0.85	***
88.9 ±1.6	3-1/2 ±0.063	95.8	3.77	0.83	120	3.31	480	*	*	**	**	1.35	0.91	4171-0663***
95.3	3-3/4	102.1	4.02	0.83	120	3.31	480	*	*	**	**	1.44	0.97	***
101.6	4	108.5	4.27	0.78	113	3.12	452	*	*	**	**	1.52	1.02	4171-0664***
114.3	4-1/2	121.2 ±3.2	4.77 ±0.125	0.69	100	2.76	400	*	*	**	**	1.61	1.08	4171-0654***
127.0	5	133.9	5.27	0.62	90	2.48	360	*	*	**	**	1.77	1.19	4171-0665***

* No specification requirement.
** If minimum bend radius is required, use 8 times the O.D. as a guide.
*** Not stocked. Minimum order quantity may apply.



4177W (GREEN STRIPE) / 4177C

OIL RESISTANT HUMP HOSE



RELATIVE COST



APPLICATIONS

Vibration dampening connector on the air filter. Also suitable for coolant or cold-side charge air connections. There is no vacuum rating specification. Not for conveying fuel or oil.

TEMPERATURE

-40°C to +100°C (-40°F to +212°F).

STANDARDS

SAE 20R1 Class B tube, Class C cover.

CONSTRUCTION

NBR (nitrile) tube, synthetic fabric reinforcement plies, CR (neoprene) cover with wrapped appearance.

PACKAGING

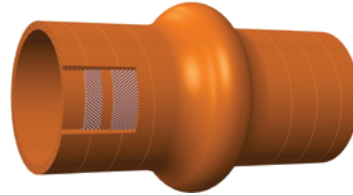
Individually bagged and shipped in a box.

COUPLINGS

Hose bead fitting fastened with hose clamps (pages 139 - 145).

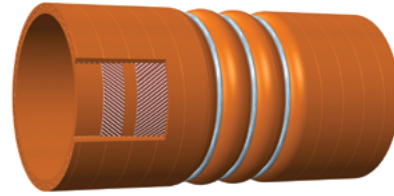
ID		OD NOMINAL		OD HUMP		LENGTH		WORKING PRESSURE MAXIMUM		BURST MINIMUM		GATES ITEM NUMBER	AUTOMOTIVE NUMBER
mm	in.	mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi	P/N	
31.8	1-1/4	41.7	1.64	56.4	2.22	101.6	4	0.47	69	1.90	275	3177-0027	23505
34.9	1-3/8	44.8	1.76	61.2	2.41	127.0	5	0.43	63	1.72	250	3177-0034	23511
38.1	1-1/2	48.0	1.89	63.5	2.50	127.0	5	0.43	63	1.72	250	3177-0023	23515
44.5	1-3/4	54.4	2.14	71.4	2.81	127.0	5	0.39	56	1.55	225	3177-0022	23520
50.8	2	60.7	2.39	81.8	3.22	88.9	3-1/2	0.34	50	1.38	200	3177-0032	23531
50.8	2	60.7	2.39	81.8	3.22	127.0	5	0.34	50	1.38	200	3177-0024	23533
57.2	2-1/4	67.1	2.64	88.9	3.50	114.3	4-1/2	0.30	44	1.21	175	3177-0026	23547
60.3	2-3/8	70.2	2.76	94.5	3.72	127.0	5	0.26	38	1.03	150	3177-0025	23557
60.3	2-3/8	70.2	2.76	94.5	3.72	158.8	6-1/4	0.26	38	1.03	150	3177-0015	23559
63.5	2-1/2	73.4	2.89	96.8	3.81	114.3	4-1/2	0.26	38	1.03	150	3177-0030	23562
63.5	2-1/2	73.4	2.89	96.8	3.81	152.4	6	0.26	38	1.03	150	3177-0028	23550
69.9	2-3/4	79.8	3.14	103.9	4.09	82.6	3-1/4	0.22	31	0.86	125	3177-0040	23566
69.9	2-3/4	79.8	3.14	103.9	4.09	114.3	4-1/2	0.22	31	0.86	125	3177-0033	23567
69.9	2-3/4	79.8	3.14	103.9	4.09	136.5	5-3/8	0.22	31	0.86	125	3177-0039	23568
76.2	3	86.1	3.39	112.0	4.41	101.6	4	0.17	25	0.69	100	3177-0004	23572
76.2	3	86.1	3.39	112.0	4.41	177.8	7	0.17	25	0.69	100	3177-0038	23575
88.9	3-1/2	98.8	3.89	127.0	5	139.7	5-1/2	0.10	15	0.41	60	3177-0043	23585
101.6	4	111.5	4.39	139.7	5.5	127.0	5	*	*	*	*	3177-1005	23002
127.0	5	136.9	5.39	175.5	6.91	152.4	6	*	*	*	*	3177-1007	23004
139.7	5-1/2	149.6	5.89	188.2	7.41	152.4	6	*	*	*	*	3177-1006	23005
152.4	6	162.3	6.39	200.9	7.91	127.0	5	*	*	*	*	3177-1008	23006

* Unreinforced hose - not rated for pressurized applications.

4177S**HIGH TEMPERATURE SILICONE
HUMP HOSE****RELATIVE COST** ●●●●●**APPLICATIONS** Vibration dampening connector for turbocharger or charge air cooler. Also suitable for coolant.**TEMPERATURE** -51°C to +177°C (-60°F to +350°F).**STANDARDS** SAE 20R1 Class A.**CONSTRUCTION** Multiple plies of silicone and polyester.**PACKAGING** All parts made and packaged to order. Minimum order quantity applies.**COUPLINGS** Hose bead fitting fastened with hose clamps (pages 139 - 145).

ID		OD NOMINAL		OD HUMP		VACUUM MINIMUM		LENGTH		WORKING PRESSURE MAXIMUM		BURST MINIMUM	
mm	in.	mm	in.	mm	in.	kPa	in. Hg	mm	in.	MPa	psi	MPa	psi
31.8	1-1/4	41.7	1.64	56.4	2.22	17	5	101.6	4	0.45	65	1.90	275
44.5	1-3/4	54.4	2.14	71.4	2.81	17	5	86 to 127	3-3/8 to 5	0.38	55	1.55	225
50.8	2	60.7	2.39	81.8	3.22	17	5	70 to 230	2-3/4 to 9	0.34	50	1.38	200
57.2	2-1/4	67.1	2.64	88.9	3.50	17	5	76 to 230	3 to 9	0.28	40	1.21	175
63.5	2-1/2	73.4	2.89	96.8	3.81	17	5	76 to 203	3 to 8	0.24	35	1.03	150
69.9	2-3/4	79.8	3.14	103.9	4.09	17	5	70 to 178	2-3/4 to 7	0.21	30	0.86	125
76.2	3	86.1	3.39	112.0	4.41	17	5	76 to 178	3 to 7	0.17	25	0.69	100
88.9	3-1/2	98.8	3.89	127.0	5	17	5	89 to 178	3-1/2 to 7	0.12	17	0.52	75
101.6	4	111.5	4.39	139.7	5.5	17	5	102 to 165	4 to 6-1/2	0.08	12	0.34	50

TUBE ASSEMBLIES**STEEL / ALUMINUM****RELATIVE COST** ●●●●○**APPLICATIONS** Hot or cold side charge air, coolant, low pressure hydraulic, or oil applications.**TEMPERATURE** Depends on hose connectors.**STANDARDS** ASTM A787 aluminized steel, A513 stainless steel, 6061-P4 aluminum, many more.**CONSTRUCTION** Steel, aluminized steel, stainless steel, or aluminum tube, 1/4" to 6" OD, available with brushed, painted, or coated surface. Connector hoses are straight, curved, or hump hoses assembled with clamps or crimped rings.**PACKAGING** Boxed. Optional plugs, bulk bags, or individual bags.**COUPLINGS** Hose bead fitting fastened with hose clamps or T-bolt clamps.

4177**HIGH TEMPERATURE SILICONE HUMP AND RING HOSE****RELATIVE COST****APPLICATIONS**

Vibration dampening connector for turbocharger or charge air cooler. Also suitable for coolant. Not for oil or fuel exposure.

TEMPERATURE

-54°C to +260°C (-65°F to +500°F).

STANDARDS

Material per SAE J20 Class A.

CONSTRUCTION

Multiple plies of silicone and synthetic fabric reinforcement with three or four stainless steel rings.

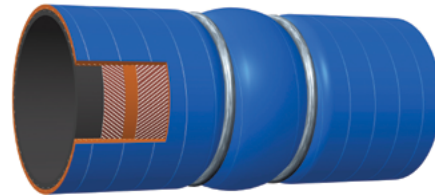
PACKAGING

Parts are bagged and shipped in a box. Custom diameters or designs may be available with minimum order quantity and setup.

COUPLINGS

Hose bead fitting fastened with T-bolt clamps or spring-loaded T-bolt clamps (page 141).

ID		OD NOMINAL		LENGTH*		WORKING PRESSURE MAXIMUM.		BURST MINIMUM		NUMBER OF RINGS	WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi		kg/each	lbs/ea.	
76.2 ±1.6	3.0 ±0.06	81.8	3.22	152	6	0.17	25	0.69	100	3	0.48	0.32	4177-4000
88.9	3-1/2	94.5	3.72	152	6	0.17	25	0.69	100	3	0.61	0.41	4177-4001
101.6	4	109.0	4.29	152	6	0.17	25	0.80	116	3	0.94	0.63	4177-4003
101.6	4	109.0	4.29	203	8	0.17	25	0.80	116	4	1.35	0.91	4177-4004
63.5	76.2	2.5	3	102	4	0.5	73	2	290	0	0.14	0.31	4177-1049
64.0	89.0	2.5	3.5	133	5.25	0.5	73	2	290	2	0.13	0.29	4177-1046
76.2	88.9	3	3.5	127	5	0.32	46	1.27	185	2	0.25	0.56	4177-1050
76.2	101.6	3	4	159	6.25	0.27	40	1.1	160	2	0.31	0.68	4177-1051
88.9	101.6	3.5	4	152	6	0.27	40	1.1	160	3	0.34	0.74	4177-1052
101.6	114.3	4	4.5	152	6	0.24	35	0.96	139	0	0.34	0.75	4177-1053
101.6	114.3	4	4.5	178	7	0.24	35	0.96	139	3	0.44	0.96	4177-1054

4177**HIGH TEMPERATURE SILICONE HUMP AND RING HOSE WITH OIL RESISTANT LINER****RELATIVE COST****APPLICATIONS**

Hot or cold side charge air connector (including clamps) for use with internal recirculated crank case fumes or oil mist. Not for conveying fuel.

TEMPERATURE

-51°C to +225°C (-60°F to +437°F).

STANDARDS

FKM tube per SAE J200 M2HK 710 A19 E036 F17, silicone cover per SAE J200 M5GE 606 A19 E016.

CONSTRUCTION

FKM/silicone tube, meta-aramid fabric reinforcement, silicone cover with stainless steel rings.

PACKAGING

Individually bagged with T-bolt clamps included.

COUPLINGS

Hose bead fitting fastened with T-bolt clamps or spring-loaded T-bolt clamps (page 141).

ID		OD NOMINAL		LENGTH*		WORKING PRESSURE MAXIMUM		BURST MINIMUM		NUMBER OF RINGS	WEIGHT REF. W/ CLAMPS		GATES ITEM NUMBER
mm	in.	mm	in.	mm	in.	MPa	psi	MPa	psi		kg/each	lbs/ea.	
75.0 ±1.6	2.95 ±.06	81.0	3.19	90	3.54	0.20	29	1.00	145.04	1	0.83	0.56	4177-1400
75.0	2.95	81.0	3.19	102	4.02	0.20	29	1.00	145.04	2	0.92	0.62	4177-1600
76.0	2.99	82.0	3.23	130	5.12	0.20	29	1.00	145.04	1	0.74	0.5	4177-1213
76.2x81.0	3.00x3.19	82.2x87	3.24x3.43	102	4.02	0.20	29	1.00	145.04	2	1.06	0.71	4177-1500
89.0	3.50	95.0	3.74	102	4.02	0.20	29	1.00	145.04	1	1.26	0.85	4177-1217

HM6060**OIL RESISTANT CHARGE AIR HOSE**
RELATIVE COST ●●●○○○

APPLICATIONS Charge air hose for use with internal recirculated crank case fumes or oil mist. Not for conveying fuel.

TEMPERATURE -35°C to +150°C (-31°F to +302°F).

STANDARDS Rubber material per FIAT 9.02136 /01 B3-0, SAE J200 M5EE 708 G21 Z1(Duro 60-75).

CONSTRUCTION AEM tube, knit aramid reinforcement, AEM cover.

PACKAGING Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.

COUPLINGS Quick-connect couplings or hose bead fitting fastened with T-bolt clamps or spring loaded T-bolt clamps (Page 141).

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MINIMUM		EXPANDED END ID*		WEIGHT REFERENCE	
mm	Inch	mm	Inch	MPa	psi	kPa	In. Hg	mm	inch	kg/m	lbs/ft
10.0 ± 0.5	0.39 ± 0.02	3.5 ± 0.5	0.14 ± 0.02	1.0	145	**	**	13.0	0.51	0.19	0.13
15.0	0.59	4.5	0.18	1.0	145	**	**	19.5	0.77	0.36	0.24
19.0	0.75	4.0	0.16	1.0	145	**	**	25.0	0.98	0.37	0.25
22.0	0.87	4.5	0.18	0.8	116	**	**	29.0	1.14	0.49	0.33
35.0	1.38	4.5	0.18	0.6	87	**	**	45.0	1.77	0.72	0.48
36.0	1.42	5.0	0.20	0.6	87	**	**	47.0	1.85	0.83	0.56
38.0	1.50	5.0	0.20	0.6	87	**	**	49.0	1.93	0.87	0.58
39.0	1.54	4.5	0.18	0.6	87	**	**	51.0	2.01	0.80	0.54
41.0	1.61	4.5	0.18	0.6	87	**	**	53.0	2.09	0.83	0.56
44.0	1.73	4.0	0.16	0.6	87	**	**	57.2	2.25	0.78	0.52
44.0	1.73	5.0	0.20	0.6	87	**	**	57.2	2.25	1.00	0.67
48.0	1.89	5.0	0.20	0.6	87	**	**	63.0	2.48	1.08	0.73
50.0	1.97	5.0	0.20	0.6	87	**	**	63.5	2.50	1.12	0.75
54.0	2.13	5.0	0.20	0.6	87	**	**	65.0	2.56	1.20	0.81
63.0	2.48	5.0	0.20	0.6	87	**	**	76.2	3.00	1.48	0.99

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement.

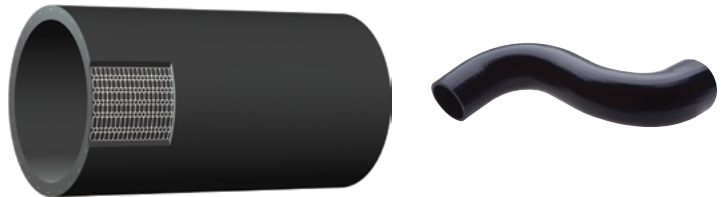
4256NP / 4256PM**COLD SIDE CHARGE AIR HOSE****RELATIVE COST** ●●●●○**APPLICATIONS** Cold side charge air hose. Not for conveying fuel or oil.**TEMPERATURE** -40°C to +125°C (-40°F to +257°F) continuous with peaks to 150°C (302°F).**STANDARDS** SAE 20R4 Class D1 except wall 5.7 ± 1.4 mm (0.225 ± 0.055 inch).**CONSTRUCTION** EPDM tube, meta-aramid fabric knit reinforcement, EPDM cover.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply. Available with end caps, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with T-bolt clamps (page 141).

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MIN.**		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft
57.2 ±0.8	2-1/4 ±0.03	5.7 ± 1.4	0.225 ± 0.055	0.76	110	**	**	73.2	2.88	0.98	0.66
63.5	2-1/2	5.70	0.225	0.76	110	**	**	82.6	3.25	1.08	0.72
66.7	2-5/8	5.70	0.225	0.76	110	**	**	87.6	3.45	1.28	0.86
76.2 ±1.6	3 ±0.06	5.70	0.225	0.76	110	**	**	99.1	3.90	1.43	0.96
88.9	3-1/2	5.70	0.225	0.76	110	**	**	101.6	4.00	1.70	1.14
101.6	4	5.70	0.225	0.76	110	**	**	114.3	4.50	1.92	1.29
101.6***	4	6.5 ± 1.5	0.255 ± 0.060	0.93	135	**	**	114.3	4.50	2.48	1.67

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.

***4256PM specification

4278AA**OIL AND FATIGUE RESISTANT
COLD SIDE CHARGE AIR HOSE****RELATIVE COST** ●●●●○**APPLICATIONS** Cold side charge air hose for use with internal recirculated crank case fumes or oil mist. Not for conveying fuel.**TEMPERATURE** -40°C to +105°C (-40°F to +221°F) continuous with peaks to 125°C (257°F).**STANDARDS** Rubber per SAE J200 M3CE 810 B15 C32 F17 Z1(200% Eb).**CONSTRUCTION** CPE tube, patented hybrid fabric knit reinforcement, CPE cover.**PACKAGING** Various size boxes. Setup charge and minimum order quantity may apply. Available with end plugs, individually bagged, or bulk bagged in the box.**COUPLINGS** Hose bead fitting fastened with T-bolt clamps (page 141).

ID		WALL NOMINAL		BURST MINIMUM		VACUUM MIN.**		EXPANDED END ID*		WEIGHT NOMINAL	
mm	in.	mm	in.	MPa	psi	kPa	inch Hg	mm	inch	kg/m	lbs/ft
63.5 ±0.8	2-1/2 ±0.03	5.35 ±1.05	0.21 ±0.04	0.83	121	**	**	76.2	3.00	1.43	0.96
76.2 ±1.6	3 ±0.06	5.7 ±1.4	0.22 ±0.06	0.83	121	**	**	92.2	3.63	1.90	1.28
101.6	4	5.7 ±1.4	0.22 ±0.06	0.83	121	**	**	114.3	4.50	2.69	1.81

* For cuff length on one end only. This guideline is subject to change based on hose design.

** No specification requirement. Can be increased with a wire coil inserted in the hose ID.



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AIR CONDITIONING HOSE + COUPLINGS

WHETHER YOU'RE DRIVING A SEMI CROSS-COUNTRY OR HAULING YOUR TRACTOR IN THE FIELD, GATES AIR CONDITIONING HOSES, SYSTEMS AND ASSEMBLIES MAKE SURE YOU DON'T LOSE YOUR COOL. WE DESIGN EVERY GATES A/C COMPONENT TO THE MOST STRINGENT STANDARDS IN THE INDUSTRY, WITH ENERGY-EFFICIENT, AIR CONDITIONING HOSE

AND COUPLING SOLUTIONS BUILT TO RESIST HEAT, MOISTURE, AND OZONE DEGRADATION TO MAXIMIZE YOUR SYSTEM LONGEVITY. IF YOU NEED HELP DETERMINING WHICH HOSES AND ASSEMBLIES ARE BEST FOR YOUR APPLICATION, GATES APPLICATION AND PRODUCT EXPERTS ARE ALWAYS HERE TO HELP.

REFRIGERANT

AIR CONDITIONING (REFRIGERANT)

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AIR CONDITIONING DUCT

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AIR CONDITIONING CONDENSATE DRAIN

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ALSO SEE:

COOLANT HOSE SECTION

ELECTRIC VEHICLE
COOLANT
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OIL
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AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESSORIES
BELTS



3353 POLARSEAL II

THIN WALL AIR CONDITIONING HOSE



RELATIVE COST ●●●○○

APPLICATIONS Liquid and gaseous R1234yf, R134a and R12 refrigerants in air conditioning and refrigeration units with reduced bend radius and weight.

TEMPERATURE -40°C to +135°C (-40°F to +275°F).

STANDARDS SAE J3062 Type C Class I, and SAE J2064.

CONSTRUCTION Neoprene, nylon barrier, neoprene, braided polyester, butyl rubber cover.

PACKAGING Bulk lengths are on a reel, 50 foot lengths are boxed. Custom lengths available with minimum order quantity.

COUPLINGS PolarSeal II couplings (see Clamps & Connectors section or Gates Hydraulic Catalog), G47 (ACB) or G46 (ACC) series.

SIZE			ID		OD NOMINAL		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT NOMINAL		GATES ITEM NUMBER	BULK LENGTH		GATES ITEM NUMBER
Dash	mm	inch	mm	inch	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	50ft. length	mm	ft	Bulk Length
-6	8	5/16	7.9 / 8.6	.309 / .339	14.2 / 15.2	.560 / .600	3.4	500	13.8	2000	38	1.5	0.17	0.12	3353-5007	152.4	500	3353-5006
-8	10	13/32	10.2 / 11.2	.401 / .440	16.8 / 17.8	.660 / .700	3.4	500	13.8	2000	51	2	0.22	0.146	3353-5009	152.4	500	3353-5008
-10	12	1/2	12.5 / 13.5	.490 / .530	18.9 / 19.9	.745 / .785	3.4	500	13.8	2000	64	2.5	0.25	0.168	3353-5011	91.4	300	3353-5010
-12	16	5/8	15.6 / 16.6	.615 / .655	23.1 / 24.1	.910 / .950	2.4	350	12.0	1750	76	3	0.39	0.264	3353-5013	76.2	250	3353-5012



3353 POLARSEAL

AIR CONDITIONING HOSE



RELATIVE COST	●●●○○
APPLICATIONS	Liquid and gaseous R134a and R12 refrigerants in air conditioning and refrigeration units.
TEMPERATURE	-30°C to +125°C (-22°F to +257°F).
STANDARDS	SAE J3062 Type C Class II, SAE J51 Type A2 dimensions Type D performance , and SAE J2064.
CONSTRUCTION	CR, nylon barrier, spiral polyester, EPDM.
PACKAGING	Bulk lengths are on a reel, 25 foot lengths are boxed. Custom lengths available with minimum order quantity.
COUPLINGS	PolarSeal couplings (see Gates Hydraulic Catalogs). G45 (ACA) series.

SIZE			ID		OD NOMINAL		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT NOMINAL		GATES ITEM NUMBER	BULK LENGTH		GATES ITEM NUMBER
Dash	mm	inch	mm	inch	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	25ft. length	mm	ft	Bulk Length
-6	8	5/16	7.8/8.6	.31/.34	18.3/19.8	.72/.78	3.4	500	13.8	2000	51	2	0.30	0.20	3353-0901	103.6	340	3353-0903
-8	10	13/32	10.2/11.1	.40/.44	22.2/23.8	.88/.94	3.4	500	13.8	2000	76	3	0.42	0.28	3353-0906	71.6	235	3353-0908
-10	12	1/2	12.4/13.6	.49/.54	24.6/26.2	.97/1.03	3.4	500	13.8	2000	102	4	0.48	0.32	3353-0911	64.0	210	3353-0913
-12	16	5/8	15.6/16.8	.62/.66	27.8/29.4	1.09/1.16	2.4	350	12.0	1750	127	5	0.57	0.38	3353-0916	53.3	175	3353-0918

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS



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ENGINE TO THE DROP LINES ON THE AXLE, YOU CAN TRUST GATES. WE SERVE CUSTOMERS ACROSS INDUSTRIES, BRINGING RELENTLESS INNOVATION, AND UN-COMPROMISING QUALITY TO EVERY PRODUCT WE MAKE.

BRAKE

AIR BRAKE, AIR COMPRESSOR

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3245E



STANDARD AIR BRAKE HOSE

RELATIVE COST	●●○○○
APPLICATIONS	Air brake hose.
TEMPERATURE	-40°C to +100°C (-40°F to +212°F).
STANDARDS	SAE J1402 Type A. Complies with DOT FMVSS 106.
CONSTRUCTION	EPDM tube, spiral nylon reinforcement, EPDM cover.
PACKAGING	Bulk lengths 76.2 meters (250 feet) shipped on a reel or 15.24 meters (50 feet) in a box. Custom lengths available with minimum order quantity.
COUPLINGS	All styles of air brake coupling including conventional brass and plastic couplings.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER	GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	50 ft. Length	250 ft. Length
9.6 ±0.5	3/8 ±0.02	19.1 ±0.8	0.75 ±0.03	1.55	225	6.21	900	81	24	90	3.5	0.30	0.2	3245-0601	3245-0602
12.7 ±0.8	1/2 ±0.03	22.4 ±0.9	.88 ±.035	1.55	225	6.21	900	81	24	100	4	0.37	0.25	3245-0603	3245-0604

3245T



LOW TEMPERATURE AIR BRAKE AND VACUUM BRAKE HOSE

RELATIVE COST	●●●○○
APPLICATIONS	Heavy duty air brake or vacuum brake hose for cold conditions.
TEMPERATURE	-54°C to +100°C (-65°F to +212°F).
STANDARDS	SAE J1402. Complies with DOT FMVSS 106.
CONSTRUCTION	Neoprene tube, braided rayon reinforcement, neoprene cover.
PACKAGING	Bulk lengths are 50 feet shipped in a box. Custom lengths available with minimum order quantity.
COUPLINGS	All styles of air brake coupling including conventional brass and plastic couplings.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	Bulk Length
9.53 ±0.76	3/8 ±0.03	19.1 ±0.76	0.75 ±0.03	0.59	85	6.21	900	101	30	76	3	0.31	0.21	3245-4468 (50ft)
12.70 ±0.76	1/2 ±0.03	22.2 ±0.76	0.88 ±0.03	0.59	85	6.21	900	101	30	127	5	0.42	0.28	3245-0133 (400ft)
														3245-4467



3658C (C5C)

HIGHER PRESSURE BRAKE HOSE



RELATIVE COST	●●●○○
APPLICATIONS	Higher pressure air brake hose with internal wire braid. Also suitable for lube oil and petroleum-based hydraulic oil, and transmission oil. Not for fuel.
TEMPERATURE	-40°C to +100°C (-40°F to +212°F).
STANDARDS	SAE J1402 Type AII and DOT FMVSS 106, and SAE 100R5.
CONSTRUCTION	Nitrile or neoprene tube, synthetic fiber and steel braid reinforcement layers, neoprene cover.
PACKAGING	Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.
COUPLINGS	C5 Field Attachable Couplings. See Gates Hydraulic Catalog.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	3/16	-4	13.2	0.52	20.68	3000	82.74	12000	85	25	75	3	0.24	0.16	134	440	3658-1775
6.4	1/4	-5	14.7	0.58	20.68	3000	82.74	12000	85	25	86	3.4	0.28	0.19	117	385	3658-1776
7.9	5/16	-6	17.0	0.67	15.51	2250	62.05	9000	85	25	100	4	0.36	0.24	117	385	3658-1777
10.3	13/32	-8	19.6	0.77	13.79	2000	55.16	8000	85	25	125	4.6	0.42	0.28	101	330	3658-1778
12.7	1/2	-10	23.4	0.92	12.07	1750	48.26	7000	85	25	140	5.5	0.57	0.38	84	275	3658-1779
15.9	5/8	-12	27.4	1.08	10.34	1500	41.37	6000	85	25	150	6.5	0.70	0.47	67	220	3658-1780

4657AB (TR500)

HIGH TEMPERATURE OIL/AIR HOSE



RELATIVE COST	●●●○○
APPLICATIONS	Air brake, pressurized hot oil return lines and rotary oil/air compressor lines. Not for biodiesel, gasoline, or diesel fuel.
TEMPERATURE	-40°C to +121°C (-40°F to +250°F).
STANDARDS	DOT FMVSS 106-74, SAE J1402 for air brake (-4, -6, -8, -10).
CONSTRUCTION	Nitrile tube, steel wire braid reinforcement, rubber coated textile braid cover.
PACKAGING	Bulk lengths shipped on a reel. May not be continuous lengths. Custom lengths available with minimum order quantity.
COUPLINGS	GLP and MegaCrimp Couplings. See Gates Hydraulic Catlog for couplings and the eCrimp tool on Gates.com for crimper data.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	12.8	0.51	3.45	500	13.79	2000	25	1	0.18	0.12	76	250	4657-2228
9.5	3/8	-6	17.3	0.68	3.45	500	13.79	2000	46	1.8	0.28	0.19	107	350	4657-2520
12.7	1/2	-8	20.3	0.80	3.45	500	13.79	2000	58	2.3	0.34	0.23	107	350	4657-2521
15.9	5/8	-10	23.6	0.93	3.45	500	13.79	2000	71	2.8	0.43	0.29	91	300	4657-2229
22.2	3/4	-12	26.4	1.04	3.45	500	13.79	2000	89	3.5	0.51	0.34	61	200	4657-2230
25.4	1	-16	33.0	1.30	3.45	500	13.79	2000	114	4.5	0.67	0.45	46	150	4657-2231

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESSORIES
BELTS



3658E (C5E)

HIGHER PRESSURE AND HIGHER TEMPERATURE BRAKE HOSE



RELATIVE COST	●●●●○
APPLICATIONS	Higher pressure and temperature air brake hose with internal wire braid. Also suitable for lube oil and fuel filter lines.
TEMPERATURE	-40°C to +121°C (-40°F to +250°F).
STANDARDS	SAE J1402 Type A1 and DOT FMVSS 106.
CONSTRUCTION	Nitrile tube, synthetic fiber and steel braid reinforcement layers, neoprene cover with green stripe.
PACKAGING	Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.
COUPLINGS	C5E Field Attachable Couplings. See Gates Hydraulic Catalog.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	dash	mm	in.	MPa	psi	MPa	psi	kPa	in. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
4.8	3/16	-4	12.4	0.49	10.34	1500	41.37	6000	85	25	75	0.8	0.18	0.12	134	440	3658-0210
6.4	1/4	-5	14.0	0.55	10.34	1500	41.37	6000	85	25	25	1	0.21	0.14	117	385	3658-0211
7.9	5/16	-6	15.5	0.61	10.34	1500	41.37	6000	85	25	100	1.3	0.25	0.17	117	385	3658-0212
10.3	13/32	-8	18.5	0.73	8.62	1250	34.47	5000	85	25	125	1.8	0.33	0.22	101	330	3658-0213
12.7	1/2	-10	21.1	0.83	8.62	1250	34.47	5000	85	25	140	2.3	0.37	0.25	84	275	3658-0214
15.9	5/8	-12	24.1	0.95	5.17	750	20.68	3000	85	25	150	3	0.46	0.31	67	220	3658-0215

4657DT (MEGATECH 1000)

HIGH TEMPERATURE OIL/AIR HOSE



RELATIVE COST	●●●●○
APPLICATIONS	Air brake, pressurized hot oil return lines and rotary oil/air compressor lines. Not for biodiesel blends.
TEMPERATURE	-40°C to +150°C (-40°F to +302°F). Phosphate esters fluids as recommended by the fluid mfr. to 100°C (212°F).
STANDARDS	DOT FMVSS 106-74, SAE J1402 for air brake (-4, -6, -8, -10).
CONSTRUCTION	CPE tube, steel wire braid reinforcement, rubber coated textile braid cover.
PACKAGING	Bulk lengths shipped on a reel. May not be continuous length. Custom lengths available with min. order quantity.
COUPLINGS	MegaCrimp Couplings. See Gates Hydraulic Catalog for couplings & the eCrimp tool on Gates.com for crimper data.

Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	inch	dash	mm	inch	MPa	psi	MPa	psi	mm	inch	kg/m	lbs/ft	meters	feet	Bulk Length
6.4	1/4	-4	13.2	0.52	6.89	1000	27.58	4000	51	2	0.16	0.11	107	350	4657-2332
9.5	3/8	-6	16.8	0.66	6.89	1000	27.58	4000	64	2.5	0.30	0.20	107	350	4657-2297
12.7	1/2	-8	20.3	0.80	6.89	1000	27.58	4000	89	3.5	0.36	0.24	107	350	4657-2334
15.9	5/8	-10	23.6	0.93	6.89	1000	27.58	4000	102	4	0.49	0.33	91	300	4657-2335
22.2	3/4	-12	29.2	1.15	6.89	1000	27.58	4000	119	4.7	0.60	0.40	61	200	4657-2336
25.4	1	-16	34.8	1.37	6.89	1000	27.58	4000	152	6	0.77	0.52	46	150	4657-2337
31.8	1-1/4	-20	41.7	1.64	6.89	1000	27.58	4000	216	8.5	1.24	0.83	30	100	4657-2338

7752 (C14)**HIGH TEMPERATURE AIR COMPRESSOR HOSE WITH STAINLESS STEEL COVER****RELATIVE COST****APPLICATIONS**

High temperature air compressor discharge hose with external stainless steel wire braid. Also suitable for hot lube oil and greasy environments such as turbo oil supply and drain.

TEMPERATURE

-54°C to +232°C (-65°F to +450°F).

STANDARDS

None.

CONSTRUCTION

Non-conductive* or conductive PTFE tube, 300 series stainless steel reinforcement/cover.

PACKAGING

Bulk lengths shipped in a box. Custom lengths available with minimum order quantity.

COUPLINGS

C14 Couplings. See Gates Hydraulic Catalog.

ID			OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER (C14)	GATES ITEM NUMBER (C14CT)
mm	Inch	dash	mm	Inch	MPa	psi	MPa	psi	kPa	Inch Hg	mm	Inch	kg/m	lbs/ft	meters	feet	Non-Conductive*	Conductive
4.8	3/16	-4	7.9	0.31	10.34	1500	41.37	6000	95	28	100	2	0.12	0.08	122	400	7752-0400	
6.4	1/4	-5	9.7	0.38	10.34	1500	41.37	6000	95	28	125	3	0.15	0.1	107	350	7752-0500	
7.9	5/16	-6	11.4	0.45	10.34	1500	41.37	6000	95	28	100	4	0.16	0.11	91	300	7752-0600	7752-3600***
10.3	13/32	-8	14.0	0.55	6.89	1000	27.58	4000	95	28	125	5.3	0.18	0.12	76	250	7752-0800	7752-3800
12.7	1/2	-10	16.5	0.65	5.52	800	22.06	3200	95	28	100	6.5	0.22	0.15	61	200	7752-1000	
15.9	5/8	-12	20.1	0.79	5.52	800	22.06	3200	95	28	125	7.8	0.25	0.17	46	150	7752-1200	
22.2	7/8	-16	26.2	1.03	5.52	800	22.06	3200	95	28	100	9	0.40	0.27	30	100	7752-1600	

* Do not use non-conductive hoses with gasoline or steam or any fluid that can cause a buildup of static electricity. Please see the Electrostatic Discharge page in the Gates Hydraulic Catalog under the Hose/Coupling Selection section.

*** Not stocked.

3276**LIGHT DUTY VACUUM BRAKE HOSE****RELATIVE COST****APPLICATIONS**

Vacuum brake for passenger cars and light trucks.

TEMPERATURE

-40°C to +121°C (-40°F to +250°F).

STANDARDS

SAE J1403 Type L and FMVSS-106VL.

CONSTRUCTION

EPDM tube, synthetic fiber reinforcement, EPDM cover.

PACKAGING

Bulk lengths shipped on a reel. Custom lengths available with minimum order quantity.

COUPLINGS

Hose bead fitting with hose clamps. (pages 139 - 145).

ID		OD		WORKING PRESSURE MAXIMUM		BURST MINIMUM		VACUUM MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	in.	MPa	psi	MPa	psi	kPa	In. Hg	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
8.73 ±0.76	11/32 ±0.03	17.53 ±0.76	0.69 ±0.03	0.59	85	2.41	350	88	26	76	3	0.21	0.14	15	50	3276-4481
11.91	15/32	20.57	0.81	0.59	85	2.41	350	88	26	127	5	0.25	0.17	15	50	3276-4482



ELECTRIC VEHICLE
COOLANT
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AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESSORIES
BELTS

4327 (NABT)

STANDARD NYLON AIR BRAKE TUBING

RELATIVE COST

●○○○○

APPLICATIONS

Air brake for truck, tractor trailer, and other moving equipment. Also suitable for DEF vent line, air accessories and instrumentation, alcohol, and solvents. Not for use where heat or battery acid is present.

TEMPERATURE

-40°C to +93°C (-40°F to +200°F).

STANDARDS

DOT FMVSS 106 and SAE J844 (except burst).

CONSTRUCTION

Heat and light stabilized seamless extruded nylon 12 tube, nylon 11 cover. Type A is non-reinforced and not recognized by DOT for air brake systems (use for service lines only). Type B is reinforced with one open ply of fibrous nylon.

PACKAGING

Lengths of 76m (250 feet) or longer shipped on a reel. Shorter lengths available in most sizes, wrapped in poly film. Custom lengths available with minimum order quantity.

COUPLINGS

Gates G31 SureLok or Gates G32 Compression Couplings (see Gates Automotive Hydraulic and Fleet Hose Catalog).



Note: Federal law requires registration with the Department of Transportation for anyone producing air brake hose assemblies with swaged or crimped fittings.

OD		WALL NOMINAL		TYPE	COLOR	WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	inch			MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
3.2	1/8	0.53	0.021	A	Black	1.03	150	6.9	1001	9	0.37	0.01	0.005	305	1000	4327-0117
4.0	5/32	0.56	0.022	A	Black	1.03	150	8.3	1204	13	0.5	0.01	0.01	30	100	4327-0050
6.4	1/4	0.99	0.039	A	Black	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0101
7.9	5/16	0.97	0.038	A	Black	1.03	150	6.9	1001	32	1.25	0.03	0.02	152	500	4327-0120
9.5	3/8	1.60	0.063	B	Black	1.03	150	9.7	1407	38	1.5	0.04	0.03	305	1000	4327-0201
9.5	3/8	1.60	0.063	B	Black	1.03	150	9.7	1407	38	1.5	0.04	0.03	152	500	4327-0126
12.7	1/2	1.63	0.064	B	Black	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0112
15.9	5/8	2.36	0.093	B	Black	1.03	150	6.2	899	64	2.5	0.10	0.07	76	250	4327-0115
19.1	3/4	2.31	0.091	B	Black	1.03	150	5.5	798	76	3	0.13	0.09	76	250	4327-0116
6.4	1/4	0.99	0.039	A	Green	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0104
9.5	3/8	1.60	0.063	B	Green	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1003
9.5	3/8	1.63	0.064	B	Green	1.03	150	9.7	1407	32	1.25	0.04	0.03	152	500	4327-0129
12.7	1/2	2.36	0.093	B	Green	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0132
15.9	5/8	2.31	0.091	B	Green	1.03	150	6.2	899	64	2.5	0.10	0.07	76	250	4327-1006
19.1	3/4	2.31	0.091	B	Green	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0062
6.4	1/4	0.99	0.039	A	Red	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0105
9.5	3/8	1.60	0.063	B	Red	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1005
9.5	3/8	1.60	0.063	B	Red	1.03	150	9.7	1407	32	1.25	0.04	0.03	152	500	4327-0127
12.7	1/2	1.63	0.064	B	Red	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0131
15.9	5/8	2.36	0.093	B	Red	1.03	150	6.2	899	64	2.5	0.10	0.07	76	250	4327-1007
19.1	3/4	2.31	0.091	B	Red	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0067
6.4	1/4	0.99	0.039	A	Blue	1.03	150	8.3	1204	25	1	0.01	0.01	1524	5000	4327-1001
6.4	1/4	0.99	0.039	B	Blue	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0102
9.5	3/8	1.60	0.063	B	Blue	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1002

4327 (CONTINUED)

OD		WALL NOMINAL		TYPE	COLOR	WORKING PRESSURE MAXIMUM		BURST MINIMUM		BEND RADIUS MINIMUM		WEIGHT REFERENCE		BULK LENGTH		GATES ITEM NUMBER
mm	in.	mm	inch			MPa	psi	MPa	psi	mm	in.	kg/m	lbs/ft	meters	feet	Bulk Length
9.5	3/8	1.60	0.063	B	Blue	1.03	150	9.7	1407	32	1.25	0.04	0.03	152	500	4327-0128
12.7	1/2	1.63	0.064	B	Blue	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0133
15.9	5/8	2.36	0.093	B	Blue	1.03	150	6.2	899	64	2.5	0.10	0.07	15	50	4327-0071
19.1	3/4	2.31	0.091	B	Blue	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0072
6.4	1/4	0.99	0.039	A	Yellow	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0107
9.5	3/8	1.60	0.063	B	Yellow	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-0111
12.7	1/2	1.63	0.064	B	Yellow	1.03	150	6.6	957	51	2	0.06	0.04	30	100	4327-0075
15.9	5/8	2.36	0.093	B	Yellow	1.03	150	6.2	899	64	2.5	0.12	0.08	15	50	4327-0076
19.1	3/4	2.31	0.091	B	Yellow	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0077
9.5	3/8	1.60	0.063	B	Orange	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-1004
12.7	1/2	1.63	0.064	B	Orange	1.03	150	6.6	957	51	2	0.06	0.04	30	100	4327-0080
15.9	5/8	2.36	0.093	B	Orange	1.03	150	6.2	899	64	2.5	0.12	0.08	15	50	4327-0081
19.1	3/4	2.31	0.091	B	Orange	1.03	150	5.5	798	76	3	0.13	0.09	15	50	4327-0082
6.4	1/4	0.99	0.039	A	Purple	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0125
6.4	1/4	0.99	0.039	A	Brown	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0103
9.5	3/8	1.60	0.063	B	Brown	1.03	150	9.7	1407	32	1.25	0.04	0.03	305	1000	4327-0109
6.4	1/4	0.99	0.039	A	Silver	1.03	150	8.3	1204	25	1	0.01	0.01	305	1000	4327-0106
12.7	1/2	1.63	0.064	B	Silver	1.03	150	6.6	957	51	2	0.06	0.04	152	500	4327-0114
9.5	3/8	1.60	0.063	B	White	1.03	150	9.7	1407	38	1.5	0.04	0.03	305	1000	4327-0110



DRIVEN BY POSSIBILITY™

CLAMPS & CONNECTORS



7400/7408**HOSE CLAMP - WORM DRIVE**
RELATIVE COST ●●○○○
APPLICATIONS

Use on coolant, air intake, or low-pressure fuel and oil hoses. For silicone or soft hoses, use 7400 SHC Clamps. For marine or corrosive environments, use Marine Clamps. For self-adjusting clamps, see 7408GSCT or 7408GSHD or 7422 T-Bolt clamps.

STANDARDS

SAE J1508.

CONSTRUCTION

Super Hex - 12.7mm (1/2") wide stainless steel band and one-piece screw housing. Cadmium plated hex head screw with slot.
 Green Stripe - 14.3mm (9/16") wide stainless steel band and 400 series stainless steel hex head screw with slot.
 Green Stripe Marine - 14.3mm (9/16") wide marine grade stainless steel band and 300 series stainless steel hex head screw with slot.

PACKAGING

Ten per box.

COUPLINGS

Clamps hose to beaded or barbed fittings.

FITS HOSE ID		SAE J1508 SIZE	CLAMPING RANGE		7400 SUPER HEX ITEM NUMBER	7408 GREEN STRIPE ITEM NUMBER	7408 GREEN STRIPE MARINE ITEM NUMBER
mm	Inch		mm	inch			
4.0 to 12.7	5/32 to 1/2	4	6.4 to 15.9	1/4 to 5/8	32001*	32201	
6.4 to 9.5	1/4 to 3/8	6	9.5 to 22.2	3/8 to 7/8	32006		
5.6 to 17.5	7/32 to 11/16	7	7.9 to 22.2	5/16 to 7/8	32007*	32207	
7.9 to 12.7	5/16 to 1/2	8	11.1 to 25.4	7/16 to 1	32008	32208	32508
9.5 to 15.9	3/8 to 5/8	10	12.7 to 28.6	1/2 to 1-1/8	32010	32210	32510
15.9 to 19.1	5/8 to 3/4	12	12.7 to 31.8	1/2 to 1-1/4	32012	32212	32512
19.1 to 25.4	3/4 to 1	16	19.1 to 38.1	3/4 to 1-1/2	32016	32216	32516
25.4 to 31.8	1 to 1-1/4	20	19.1 to 44.5	3/4 to 1-3/4	32020	32220	32520
31.8 to 38.1	1-1/4 to 1-1/2	24	25.4 to 50.8	1 to 2	32024	32224	32524
31.8 to 44.5	1-1/4 to 1-3/4	28	33.3 to 57.1	1-5/16 to 2-1/4	32028	32228	32528
38.1 to 50.8	1-1/2 to 2	32	39.7 to 63.5	1-9/16 to 2-1/2	32032	32232	32532
44.5 to 57.1	1-3/4 to 2-1/4	36	22.2 to 69.9	7/8 to 2-3/4	32036	32236	32536
50.8 to 63.5	2 to 2-1/2	40	28.6 to 76.2	1-1/8 to 3	32040		
57.1 to 69.9	2-1/4 to 2-3/4	44	33.3 to 82.6	1-5/16 to 3-1/4	32044		
63.5 to 76.2	2-1/2 to 3	48	41.3 to 88.9	1-5/8 to 3-1/2	32048	32248	32548
76.2 to 82.6	3 to 3-1/4	52	47.6 to 95.3	1-7/8 to 3-3/4	32052	32252	32552
50.8 to 88.9	2 to 3-1/2	56	54.0 to 101.6	2-1/8 to 4	32056	32256	32556
57.2 to 95.3	2-1/4 to 3-3/4	60	58.7 to 108.0	2-5/16 to 4-1/4		32260	32560
57.1 to 101.6	2-1/4 to 4	64	66.7 to 114.3	2-5/8 to 4-1/2	32064	32264	32564
76.2 to 114.3	3 to 4-1/2	72	79.4 to 127	3-1/8 to 5	32072	32272	32572
101.6 to 165	4 to 6-1/2	104	101.6 to 178	4 to 7	32104	32304	32604

* 7.9mm (5/16") clamp width.



7400

HOSE CLAMP - WORM DRIVE



RELATIVE COST ●●●○○○

APPLICATIONS Use on silicone or other soft rubber coolant, air intake, or low-pressure fuel and oil hoses.

STANDARDS SAE J1508.

CONSTRUCTION Silicone Clamp - 14.3mm (9/16") wide 300 series stainless steel band, housing, and hex head screw with slot.

PACKAGING Ten per box.

COUPLINGS Clamps hose to beaded, or barbed fittings.

FITS HOSE ID		SAE J1508 SIZE	CLAMPING RANGE		SILICONE CLAMP ITEM NUMBER
mm	inch		mm	inch	
7.9 to 12.7	5/16 to 1/2	8	11.1 to 25.4	7/16 to 1	32308
9.5 to 15.9	3/8 to 5/8	10	19.1 to 28.6	3/4 to 1-1/8	32310
15.9 to 19.1	5/8 to 3/4	12	22.2 to 31.8	7/8 to 1-1/4	32312
19.1 to 25.4	3/4 to 1	16	25.4 to 38.1	1 to 1-1/2	32316
25.4 to 31.8	1 to 1-1/4	20	28.6 to 44.5	1-1/8 to 1-3/4	32320
31.8 to 38.1	1-1/4 to 1-1/2	24	31.8 to 50.8	1-1/4 to 2	32324
31.8 to 44.5	1-1/4 to 1-3/4	28	33.3 to 57.1	1-5/16 to 2-1/4	32328
38.1 to 50.8	1-1/2 to 2	32	39.7 to 63.5	1-9/16 to 2-1/2	32332
44.5 to 57.1	1-3/4 to 2-1/4	36	46.0 to 69.9	1-13/16 to 2-3/4	32336
50.8 to 63.5	2 to 2-1/2	40	52.4 to 76.2	2-1/16 to 3	32340
57.1 to 69.9	2-1/4 to 2-3/4	44	58.7 to 82.6	2-5/16 to 3-1/4	32344
63.5 to 76.2	2-1/2 to 3	48	65.1 to 88.9	2-9/16 to 3-1/2	32348
76.2 to 82.6	3 to 3-1/4	52	71.4 to 95.3	2-13/16 to 3-3/4	32352
82.6 to 88.9	3-1/4 to 3-1/2	56	77.8 to 101.6	3-1/16 to 4	32356
95.3 to 101.6	3-3/4 to 4	64	90.5 to 114.3	3-9/16 to 4-1/2	32364
101.6 to 114.3	4 to 4-1/2	72	103.2 to 127	4-1/16 to 5	32372

7422**HOSE CLAMP - T-BOLT,
SPRING LOADED T-BOLT****RELATIVE COST****APPLICATIONS**

Self-adjusting to eliminate leaks in cold conditions. Use on coolant, air intake, or CAC hoses on heavy duty applications.

STANDARDS

SAE J1508.

CONSTRUCTION

19.0mm (3/4 inch) wide stainless steel band and 7/16" hex plated locknut with nylon insert.

PACKAGING

Ten per box.

COUPLINGS

Clamps hose to beaded, barbed, or straight fittings using 8.5 Nm (75 in. lbs.) torque.

SAE J1508 SIZE	CLAMPING RANGE		GREEN STRIPE T-BOLT ITEM NUMBER	GREEN STRIPE SPRING LOADED T-BOLT ITEM NUMBER
	mm	Inch		
-	35.1 to 38.6	1-3/8 to 1-9/16	32749	
-	38.1 to 41.7	1-1/2 to 1-5/8	32750	
-	41.4 to 46.0	1-5/8 to 1-7/8	32751	
28	44.5 to 50.8	1-3/4 to 2	32752	
32	47.8 to 55.6	1-7/8 to 2-3/16	32753	
36	50.8 to 58.7	2 to 2-5/16	32754	
40	54.1 to 62.0	2-1/8 to 2-7/16	32755	
44	57.2 to 65.0	2-1/4 to 2-9/16	32756	
48	60.5 to 68.3	2-3/8 to 2-11/16	32757	
52	63.5 to 71.4	2-1/2 to 2-13/16	32758	
56	66.8 to 74.7	2-5/8 to 2-15/16	32759	
60	69.9 to 77.7	2-3/4 to 3-1/16	32760	
64	73.2 to 81.0	2-7/8 to 3-3/16	32761	
68	76.2 to 84.1	3 to 3-5/16	32762	
70	77.8 to 85.7	3-1/16 to 3-3/8		32861
72	79.5 to 87.4	3-1/8 to 3-7/16	32763	
76	82.6 to 90.4	3-1/4 to 3-9/16	32764	
80	85.9 to 93.7	3-3/8 to 3-11/16	32765	
84	88.9 to 96.8	3-1/2 to 3-13/16	32766	
86	90.5 to 98.4	3-9/16 to 3-7/8		32862
88	92.2 to 100.1	3-5/8 to 3-15/16	32767	
92	95.3 to 103.1	3-3/4 to 4-1/16	32768	
100	101.6 to 109.5	4 to 4-5/16	32769	
102	103.2 to 111.1	4-1/16 to 4-3/8		32863
108	108.0 to 115.8	4-1/4 to 4-9/16	32770	
116	114.3 to 122.2	4-1/2 to 4-13/16	32771	
118	115.9 to 123.8	4-9/16 to 4-7/8		32864
124	120.7 to 128.5	4-3/4 to 5-1/16	32772	
132	127.0 to 134.9	5 to 5-5/16	32773	
140	133.4 to 141.2	5-1/4 to 5-9/16	32774	
148	139.7 to 147.6	5-1/2 to 5-13/16	32775	
156	146.1 to 153.9	5-3/4 to 6-1/16	32776	
164	152.4 to 160.3	6 to 6-5/16	32777	
172	158.8 to 166.6	6-1/4 to 6-9/16	32778	
180	165.1 to 173.0	6-1/2 to 6-13/16	32779	
188	171.5 to 179.3	6-3/4 to 7-1/16	32780	
196	177.8 to 185.7	7 to 7-5/16	32781	
204	184.2 to 192.0	7-1/4 to 7-9/16	32782	
212	190.5 to 198.4	7-1/2 to 7-13/16	32783	
220	196.9 to 204.7	7-3/4 to 8-1/16	32784	
228	203.2 to 211.1	8 to 8-5/16	32785	
236	209.6 to 217.4	8-1/4 to 8-9/16	32786	
244	215.9 to 223.8	8-1/2 to 8-13/16	32787	



7408GSCT

HOSE CLAMP - BELLVILLE SPRING
CONSTANT TENSION



RELATIVE COST	●●●●●
APPLICATIONS	Self-adjusting to eliminate leaks in cold conditions. Use on coolant, air intake, turbo, or low-pressure oil hoses. Torque 50 to 85 inch pounds (5.6-9.6 Nm).
STANDARDS	SAE J1508.
CONSTRUCTION	Green Stripe - 301 stainless steel with 14.3mm (9/16") wide band and 410 stainless steel 5/16" hex head screw.
PACKAGING	Ten per box.
COUPLINGS	Clamps hose to beaded or barbed fittings.

SAE J1508 SIZE	CLAMPING RANGE		GREEN STRIPE ITEM NUMBER
	mm	inch	
10	14 to 27	9/16 to 1-1/16	32710
12	16 to 32	5/8 to 1-1/4	32712
16	21 to 38	13/16 to 1-1/2	32716
20	20 to 44	13/16 to 1-3/4	32720
24	27 to 51	1-1/16 to 2	32724
28	33 to 57	1-5/16 to 2-1/4	32728
32	40 to 63	1-9/16 to 2-1/2	32732
36	46 to 70	1-13/16 to 2-3/4	32736
40	52 to 76	2-1/16 to 3	32740
44	59 to 82	2-5/16 to 3-1/4	32744
48	65 to 89	2-9/16 to 3-1/2	32748



7408GSHD

HOSE CLAMP - BELLVILLE SPRING CONSTANT TENSION



RELATIVE COST ●●●●●

APPLICATIONS Self-adjusting to eliminate leaks in cold conditions. Use on coolant, air intake, turbo, or low pressure oil hoses. Torque to 75 to 125 inch pounds (8.5-14.1 Nm).

STANDARDS SAE J1508.

CONSTRUCTION All 304 stainless steel with 14.3mm (9/16") wide band and 410 stainless steel 5/16" hex head screw.

PACKAGING Ten per box.

COUPLINGS Clamps hose to beaded or barbed fittings.

SAE J1508 SIZE	CLAMPING RANGE		GREEN STRIPE HEAVY DUTY ITEM NUMBER
	mm	inch	
175	25 to 45	1 to 1-3/4	32617
212	32 to 54	1-1/4 to 2-1/8	32620
262	45 to 67	1-3/4 to 2-5/8	32625
312	57 to 79	2-1/4 to 3-1/8	32630
362	70 to 92	2-3/4 to 3-5/8	32635
412	83 to 105	3-1/4 to 4-1/8	32640
462	95 to 117	3-3/4 to 4-5/8	32645
512	108 to 130	4-1/4 to 5-1/8	32650
562	121 to 143	4-3/4 to 5-5/8	32655
612	133 to 155	5-1/4 to 6-1/8	32660
662	146 to 168	5-3/4 to 6-5/8	32665
712	159 to 181	6-1/4 to 7-1/8	32670
762	172 to 193	6-3/4 to 7-5/8	32675
812	184 to 206	7-1/4 to 8-1/8	32680
862	197 to 219	7-3/4 to 8-5/8	32685
912	210 to 232	8-1/4 to 9-1/8	32690



7405 (POWERGRIP SB)

POLYMERIC HEAT-SHRINK CLAMP



RELATIVE COST ●●●●●

APPLICATIONS

Coolant hoses that require maintenance-free, low-profile clamps. Compensates for temperature extremes or imperfections in fittings or hose, and adjusts automatically. Also suitable for abrasion protection, wire bundling, or sleeve end encapsulation. Use a heat gun to shrink the clamp in place. To remove, use a soldering iron to cut through.

TEMPERATURE

-40°C to +150°C (-40°F to +302°F).

CONSTRUCTION

Proprietary heat-shrink polymer.

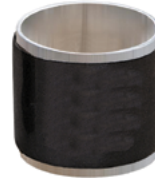
PACKAGING

10 per box.

COUPLINGS

Clamps hose onto beaded, barbed, or straight fittings.

FITS HOSE I.D.		FITS HOSE O.D.		LENGTH		GATES ITEM NUMBER	ASSEMBLY COMPONENT NUMBER	PART REFERENCE	AUTOMOTIVE NUMBER
mm	inch	mm	inch	mm	inch				
6.4	1/4	12.7 to 17.5	1/2 to 11/16	19.1	0.75	7405-4001	0056-0043	SB15	32915
9.5	3/8	17.5 to 20.6	11/16 to 13/16	19.1	0.75	7405-4002	0056-0063	SB19	32919
12.7	1/2	20.6 to 23.8	13/16 to 15/16	19.1	0.75	7405-4003	0056-0083	SB22	32922
15.9	5/8	23.8 to 27.0	15/16 to 1-1/16	25.4	1	7405-4004	0056-0105	SB25	32925
19.1	3/4	27.0 to 30.2	1-1/16 to 1-3/16	25.4	1	7405-4005	0056-0125	SB29	32929
22.2	7/8	30.2 to 33.3	1-3/16 to 1-5/16	25.4	1	7405-4017	0056-0145	SB32	32932
25.4	1	33.3 to 38.1	1-5/16 to 1-1/2	25.4	1	7405-4006	0056-0165	SB34	32934
31.8	1-1/4	38.1 to 44.5	1-1/2 to 1-3/4	31.8	1.25	7405-4007	0056-0205	SB41	32941
38.1	1-1/2	44.5 to 50.8	1-3/4 to 2	31.8	1.25	7405-4008	0056-0245	SB48	32948
44.5	1-3/4	50.8 to 57.2	2 to 2-1/4	31.8	1.25	7405-4009	0056-0285	SB54	32954
50.8	2	57.2 to 63.5	2-1/4 to 2-1/2	31.8	1.25	7405-4010	0056-0325	SB60	32960
57.2	2-1/4	63.5 to 69.9	2-1/2 to 2-3/4	38.1	1.5	7405-4011	0056-0365	SB67	32967
63.5	2-1/2	69.9 to 76.2	2-3/4 to 3	38.1	1.5	7405-4012	0056-0405	SB73	32973
69.9	2-3/4	76.2 to 82.6	3 to 3-1/4	38.1	1.5	7405-4013	0056-0445	SB79	32979
76.2	3	82.6 to 88.9	3-1/4 to 3-1/2	38.1	1.5	7405-4014	0056-0485	SB86	32986
79.4	3-1/8	88.9 to 92.1	3-1/2 to 3-5/8	38.1	1.5	7405-4015	0056-0505	SB90	32990

7407 (POWERGRIP RT)**POLYMERIC ROOM-TEMPERATURE SHRINK CLAMP****RELATIVE COST****APPLICATIONS**

Coolant hoses that require maintenance-free, low-profile clamps. Compensates for temperature extremes or imperfections in fittings or hose, and adjusts automatically. Also suitable for abrasion protection, wire bundling, or sleeve end encapsulation. Room-temperature shrink capability preferred on assembly lines to eliminate the need for heat guns.

TEMPERATURE

-40°C to +150°C (-40°F to +302°F).

CONSTRUCTION

Proprietary heat-shrink polymer.

PACKAGING

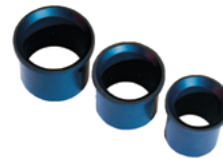
Boxed. Minimum order quantity applies to all sizes.

COUPLINGS

Clamps hose onto beaded, barbed, or straight fittings.

FITS HOSE I.D.		FITS HOSE O.D.		LENGTH		QUANTITY PER BOX	PART REFERENCE	GATES ITEM NUMBER
mm	inch	mm	inch	mm	inch			
9.5	3/8	17.5 to 20.6	.66 to .78	14.1	0.56	300	RT038	7407-3202
15.9	5/8	23.8 to 27.0	.91 to 1.03	17.8	0.70	250	RT062	7407-3204
19.1	3/4	27.0 to 30.2	1.03 to 1.22	17.8	0.70	200	RT075	7407-3205
25.4	1	33.3 to 38.1	1.29 to 1.39	17.8	0.70	125	RT100	7407-3207
31.8	1-1/4	38.1 to 44.5	1.56 to 1.72	24.1	0.95	450	RT125	7407-3209
38.1	1-1/2	44.5 to 50.8	1.81 to 1.97	24.1	0.95	500	RT150	7407-3211*
50.8	2	57.2 to 63.5	2.28 to 2.54	24.1	0.95	225	RT200	7407-3215
57.2	2-1/4	63.5 to 69.9	2.53 to 2.79	24.1	0.95	150	RT225	7407-3217
63.5	2-1/2	69.9 to 76.2	2.78 to 3.04	24.1	0.95	125	RT250	7407-3225
69.9	2-3/4	76.2 to 82.6	3.03 to 3.32	24.1	0.95	110	RT275	7407-3221*
76.2	3	82.6 to 88.9	3.28 to 3.57	24.1	0.95	100	RT300	7407-3223*

* Not stocked. Minimum order quantity may apply.

7736**HOSE ID REDUCERS****RELATIVE COST****APPLICATIONS**

Coolant hose for light duty or temporary use. Also suitable for low-pressure air applications. Place inside a hose end to adapt it to a smaller diameter hose bead fitting.

TEMPERATURE

-40°C to +250°C (-40°F to +480°F).

STANDARDS

Material per SAE J200/ASTM D2000 M2AA 707 A13 B13 F17.

CONSTRUCTION

EPDM rubber with no parting line on sealing surfaces.

PACKAGING

Boxed 5 per package.

COUPLINGS

Inserted in hose ID, then assembled over hose bead fitting fastened with hose clamps.

I.D.		LENGTH		GATES ITEM NUMBER	INTERCHANGE NUMBER
mm	inch	mm	inch		
38.1 to 31.8	1-1/2 to 1-1/4	50.8	2.00	7736-9390	26390
44.5 to 38.1	1-3/4 to 1-1/2	50.8	2.00	7736-9391	26391
50.8 to 44.5	2 to 1-3/4	50.8	2.00	7736-9392	26392
57.2 to 50.8	2-1/4 to 2	50.8	2.00	7736-9393	26393
63.5 to 57.2	2-1/2 to 2-1/4	50.8	2.00	7736-9394	26394
76.2 to 63.5	3 to 2-1/2	50.8	2.00	7736-9395	26395

7315 (CONNECTORS)

GLASS-FILLED NYLON HOSE CONNECTORS

RELATIVE COST ●●○○○

APPLICATIONS Coolant, diesel, or gasoline (petrol). Also suitable for water, air, or oil.

TEMPERATURE -40°C to +250°C (-40°F to +480°F).

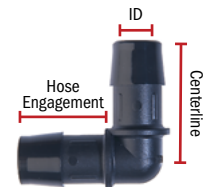
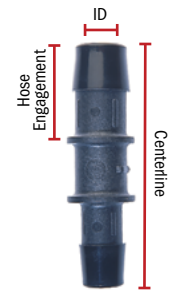
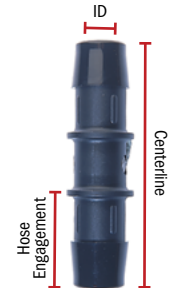
CONSTRUCTION Injection molded glass-filled nylon with no parting lines on the extra long sealing surface of the barbs, and with anti-rotation ridges on connectors up to 1".

PACKAGING Boxed 5 per package except 1" connectors are 2 per package.

COUPLINGS Hose clamps (pages 139 - 145).

FITS HOSE I.D.		CONNECTOR O.D.		LENGTH ON CENTERLINE		HOSE ENGAGEMENT LENGTH		AUTOMOTIVE NUMBER	GATES PRODUCT NUMBER
mm	inch	mm	inch	mm	inch	mm	inch		
STRAIGHT CONNECTORS									
2.4	3/32	1.8	0.07	18.7	0.74	6.8	0.27	28561*	7315-0861
3.2	1/8	2.3	0.09	25.1	0.99	9.6	0.38	28562*	7315-0862
4.0	5/32	2.4	0.09	32.1	1.27	12.7	0.50	28563	7315-0863
4.8	3/16	2.9	0.12	35.6	1.40	14.0	0.55	28564	7315-0864
6.4	1/4	3.6	0.14	49.8	1.96	20.3	0.80	28601	7315-0913
7.9	5/16	5.0	0.20	54.1	2.13	21.6	0.85	28600	7315-0103
9.5	3/8	6.4	0.25	58.4	2.30	22.9	0.90	28602	7315-0914
12.7	1/2	9.1	0.36	67.1	2.64	25.4	1.00	28603	7315-0915
15.9	5/8	11.9	0.47	75.7	2.98	27.9	1.10	28604	7315-0916
15.9	5/8	10.9	0.43	62.5	2.46	30.0	1.18	0052-5207 **	7315-1917
19.1	3/4	14.7	0.58	84.3	3.32	30.5	1.20	28605	
25.4	1	20.3	0.80	101.6	4.00	35.6	1.40	28606	
44.5	1-3/4	44.5	1.75	76.2	3.00	36.8	1.45	0052-5545**	
STRAIGHT REDUCER CONNECTORS									
3.2x2.4	1/8x3/32	2.4x1.8	0.09x0.07	22.8	0.90	9.6x6.8	0.38x0.27	28591*	7315-0891
4x3.2	5/32x1/8	2.6x1.9	0.10x0.07	31.0	1.22	12.7x11.4	0.50x0.45	28592	7315-0892
6.4x4.8	1/4x3/16	3.4x3.1	0.13x0.12	43.4	1.71	20.3x14.0	0.80x0.55	28593	7315-0893
9.5x7.9	3/8x5/16	5.9x5.1	0.23x0.20	57.2	2.25	22.9x21.6	0.90x0.85	28594	7315-0104
12.7x9.5	1/2x3/8	8.9x6.5	0.35x0.26	64.5	2.54	25.4x22.9	1.00x0.90	28609	7315-0121
15.9x12.7	5/8x1/2	11.7x9.3	0.46x0.37	73.2	2.88	27.9x25.4	1.10x1.00	28610	7315-0122
19.1x15.9	3/4x5/8	14.4x12.2	0.57x0.48	81.8	3.22	30.5x27.9	1.20x1.10	28611	7315-0923
25.4x19.1	1x3/4	19.9x15.1	0.78x0.59	96.0	3.78	35.6x30.5	1.40x1.20	28612	7315-0924
ELBOW CONNECTORS									
2.4	3/32	1.8	0.07	10.2x9.4	0.40x0.37	7.1	0.28	28571*	7315-0871
3.2	1/8	2.4	0.09	13.5x12.4	0.53x0.49	9.4	0.37	28572*	7315-0872
4.0	5/32	2.4	0.10	16.0x16.0	0.63x0.63	12.7	0.50	28573	7315-0873
4.8	3/16	2.9	0.12	16.5x16.5	0.65x0.65	14.0	0.55	28574	7315-0874
6.4	1/4	3.6	0.14	25.4x24.9	1.00x0.98	20.3	0.80	28621	7315-0908
7.9	5/16	5.0	0.20	27.4x26.9	1.08x1.06	21.6	0.85	28620	7315-0102
9.5	3/8	6.4	0.25	29.7x29.2	1.17x1.15	22.9	0.90	28622	7315-0909
12.7	1/2	9.1	0.36	34.0x33.5	1.34x1.32	25.4	1.00	28623	7315-0910
15.9	5/8	11.9	0.47	42.2x41.7	1.66x1.64	27.9	1.10	28624	7315-0911
19.1	3/4	14.8	0.58	42.7x42.2	1.68x1.66	30.5	1.20	28625	7315-0912
25.4	1	20.3	0.80	50.8x50.8	2.00x2.00	35.6	1.40	28626	7315-0919

*Nylon material (not glass-filled)

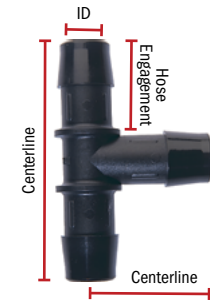


7315 (CONTINUED)

FITS HOSE I.D.		CONNECTOR O.D.		LENGTH ON CENTERLINE		HOSE ENGAGEMENT LENGTH		AUTOMOTIVE NUMBER	GATES PRODUCT NUMBER
mm	inch	mm	inch	mm	inch	mm	inch		
TEE CONNECTORS									
2.4	3/32	1.8	0.07	18.8x9.9	0.74 x 0.39	7.1	0.28	28581*	7315-0881
3.2	1/8	2.3	0.09	25.1 x 15.2	0.99 x 0.52	9.4	0.37	28582*	7315-0882
4.0	5/32	2.5	0.10	32.5 x 16.0	1.28 x 0.63	12.7	0.50	28583	7315-0883
4.8	3/16	3.0	0.12	35.6 x 17.8	1.40 x 0.70	14.0	0.55	28584	7315-0884
6.4	1/4	3.6	0.14	49.8 x 25.4	1.96 x 1.00	20.3	0.80	28631	7315-0931
7.9	5/16	5.1	0.20	54.1 x 27.7	2.13 x 1.09	21.6	0.85	28630	7315-1101
9.5	3/8	6.4	0.25	58.4 x 30.0	2.30 x 1.18	22.9	0.90	28632	7315-0932
12.7	1/2	9.3	0.37	67.1 x 34.5	2.64 x 1.36	25.4	1.00	28633	7315-0933
15.9	5/8	12.1	0.48	75.7 x 41.9	2.98 x 1.65	27.9	1.10	28634	7315-0934
19.1	3/4	14.9	0.59	84.3 x 42.7	3.32 x 1.68	30.5	1.20	28635	7315-0935
25.4	1	20.6	0.81	101.6 x 50.8	4.00 x 2.00	35.6	1.40	28638	7315-0938
12.7X6.4	1/2 x 1/4	14.5 x 7.6	0.57 x 0.30	67.1 x 29.2	2.64 x 1.15	25.4 x 19.3	1.00 x 0.76	28642	7315-0011
15.9 x 9.5	5/8 x 3/8	12.2 x 6.6	0.48 x 0.26	75.7 x 30.7	2.98 x 1.21	27.9 x 22.9	1.10 x 0.90	28636	7315-0936
19.1 x 9.5	3/4 x 3/8	14.7 x 6.9	0.58 x 0.27	84.3 x 30.2	3.32 x 1.19	30.5 x 21.3	1.20 x 0.84	28637	7315-0937
22.2 x 15.9	7/8 x 5/8	22.1 x 15.9	7/8 x 5/8	82.6 x 39.62	3.25 x 1.56	25.4 x 26.9	1.00 x 1.06	0052-5584 **	
25.4 x 9.6	1 x 3/8	20.2 x 7.4	0.87 x 0.29	76.2 x 31.8	3.00 x 1.25	37.8 x 20.3	1.32 x 0.80	0052-5592 **	
25.4 x 15.9	1 x 5/8	20.2 x 11.8	0.80 x 0.46	101.6 x 50.8	4.00 x 2.00	35.6 x 38.1	1.40 x 1.50	0052-5334 **	
31.8 x 12.7	1-1/4 x 1/2	31.8 x 12.7	1.25 x 0.50	86.1 x 49.7	3.39 x 1.95	30.4 x 26.9	1.20 x 1.06	0052-5594 **	
31.8 x 19.1	1-1/4 x 3/4	31.8 x 19.1	1.25 x 0.75	89.2 x 42.8	3.51 x 1.69	25.4 x 25.4	1.00 x 1.00	0052-5224 **	
38.1 x 19.1	1-1/2 x 3/4	38.1 x 19.1	1.50 x 0.75	90.7 x 46.0	3.57 x 1.81	25.4 x 25.4	1.00 x 1.00	0052-5214 **	
44.5 x 12.7	1-3/4 x 1/2	44.5 x 12.7	1.75 x 0.50	86.1 x 56.0	3.39 x 2.21	22.2 x 26.9	0.88 x 1.06	0052-5546 **	
44.5 x 19.1	1-3/4 x 3/4	44.5 x 15.5	1.75 x 0.61	86.1 x 60.8	3.39 x 2.40	22.2 x 31.8	0.88 x 1.25	0052-5394 **	
44.5 x 22.2	1-3/4 x 7/8	44.5 x 21.8	1.75 x 0.86	86.1 x 56.0	3.39 x 2.21	22.2 x 26.9	0.88 x 1.06	0052-5206 **	
44.5 x 25.4	1-3/4 x 1	44.5 x 25.4	1.75 x 1.00	86.1 x 49.2	3.39 x 1.94	22.2 x 25.4	0.88 x 1.00	0052-5073 **	
"Y" CONNECTORS (60°, 150°, 150°)									
2.4	3/32	1.8	0.07	7.9 x 12.4	0.31 x 0.49	6.9	0.27	28551	7315-0851
3.2	1/8	1.9	0.08	9.7 x 15.0	0.38 x 0.59	8.4	0.33	28552	7315-0852
6.4	1/4	3.6	0.14	21.8 x 29.7	0.86 x 1.17	19.8	0.78	28554	7315-0854
15.9	5/8	14.0	0.55	30.0 x 47.5	1.18 x 1.87	27.9	1.10	28555	7315-0006
REDUCER "Y" CONNECTORS (STRAIGHT RUN WITH 45° BRANCH)									
25.4 x 15.9	1 x 5/8	22.1 x 15.9	0.87 x 0.63	105.9 x 73.3	4.17 x 2.89	25.4 x 25.4	1.00 x 1.00	0052-5547 **	
31.8 x 19.1	1-1/4 x 3/4	31.8 x 19.1	1.25 x 0.75	93.0 x 73.3	3.66 x 2.89	25.4 x 25.4	1.00 x 1.00	0052-5205 **	
34.9 x 9.5	1-3/8 x 3/8	31.8 x 9.5	1.25 x 0.38	93.0 x 73.3	3.66 x 2.89	25.4 x 25.4	1.00 x 1.00	0052-5380 **	

*Nylon material (not glass-filled)

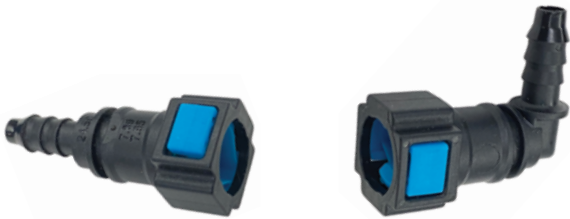
** Not stocked. Minimum order quantity may apply.



ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESSORIES
BELTS

SAE J2044

2-BUTTON STYLE QUICK CONNECTOR



RELATIVE COST ●●●○○

APPLICATIONS	Connector for polyamide or rubber hose used in thermal control of battery, cab heater, motor, and other components.
TEMPERATURE	-40°C to +125°C (-40°C to +257°F).
STANDARDS	SAE J2044.
CONSTRUCTION	Glass-filled nylon with 2-button release.
PACKAGING	Pre-assembled to hoses. Dust plugs available. Setup charge and minimum order quantity applies. Also available bulk bagged in a box with minimum order quantity.

CONNECTOR NOMINAL DIAMETER		FITS HOSE/TUBE I.D.			ANGLE
mm	in.	Nylon or Rubber	mm	in.	Degrees
9.49	3/8	Nylon	10	0.393	Straight
		Nylon	10	0.393	45
		Nylon	10	0.393	90
		Rubber	9.49	0.375	Straight
		Rubber	9.49	0.375	90
15.82	5/8	Nylon	14	0.551	Straight
		Nylon	14	0.551	45
		Nylon	14	0.551	90
		Rubber	14.3	0.563	Straight
		Rubber	14.3	0.563	90
		Rubber	15.87	0.625	Straight
16	0.630	Rubber	15.87	0.625	90
		Nylon	14	0.551	Straight
		Nylon	14	0.551	45
		Nylon	14	0.551	90
		Rubber	14.3	0.563	Straight
		Rubber	14.3	0.563	45
18	0.748	Rubber	14.3	0.563	90
		Nylon	15	0.591	Straight
		Nylon	15	0.591	35
		Nylon	15	0.591	55
		Nylon	15	0.591	90
		Rubber	16	0.630	Straight
		Rubber	16	0.630	45
20	0.787	Rubber	16	0.630	90
		Nylon	24	0.945	Straight
		Rubber	18	0.709	Straight

QUICK CONNECTOR

VDA STYLE



RELATIVE COST ●●●○○

APPLICATIONS Connector for rubber hose used in the thermal control of battery, cab heater, motor, and other components.

TEMPERATURE -40°C to +135°C (-40°C to +275°F).

STANDARDS VDA

CONSTRUCTION Glass-filled nylon 6.6 with p-EPDM o-ring and spring wire retainer.

PACKAGING Pre-assembled to hoses. Dust plugs available. Setup charge and minimum order quantity applies. Also available bulk bagged in a box with minimum order quantity.

CONNECTOR NOMINAL DIAMETER		FITS HOSE/TUBE I.D.			ANGLE
mm	inch	Nylon or Rubber	inch	mm	Degrees
6	0.236	Both	6	0.236	Straight
6	0.236	Both	6	0.236	90
8	0.315	Both	8	0.315	Straight
8	0.315	Both	8	0.315	90
10	0.394	Both	8	0.315	90
10	0.394	Both	10	0.315	90
10	0.394	Both	12	0.472	45
10	0.394	Both	12	0.472	90
12	0.472	Both	12	0.472	45
12	0.472	Both	12	0.472	90
12	0.472	Both	15	0.591	30
12	0.472	Both	16	0.630	90
12	0.472	Both	16	0.630	Male Straight
14	0.551	Both	16	0.630	45
14	0.551	Both	16	0.630	90
14	0.551	Both	16	0.630	Male Straight
16	0.630	Both	16	0.630	Straight
16	0.630	Both	16	0.630	90
16	0.630	Both	16	0.630	Male Straight
16	0.630	Both	22	0.866	Straight
20	0.787	Both	20	0.787	Straight
20	0.787	Both	26	1.023	Straight
20	0.787	Both	26	1.023	45
20	0.787	Both	26	1.023	90
22	0.866	Both	26	1.023	90
22	0.866	Both	32	1.260	Straight
22	0.866	Both	32	1.260	90
22	0.866	Both	32	1.260	Male Straight

Note: Many additional sizes and configurations exist, including sensor ports. Custom designs available.



HOSE BEAD ADAPTER

SINGLE BEAD

RELATIVE COST ●●●●○

APPLICATIONS Connector for rubber hose used for low pressure fuel, oil, compressed air and coolant lines used in small engines.

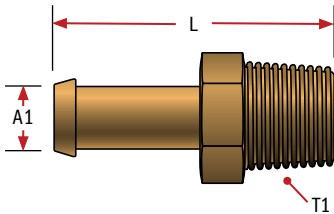
TEMPERATURE -40°C to +121°C (-40°C to +250°F).

WORKING PRESSURE 60psi (0.41MPa)

CONSTRUCTION 360 brass.

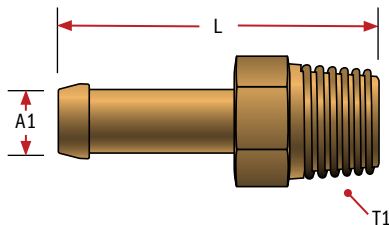
PACKAGING Individually bagged.

MALE PIPE WITH CONE SEAT



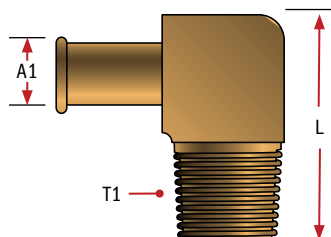
PART NUMBER	DESCRIPTION	A1		THREAD SIZE	L	
		"	mm	T1 (inch)	"	mm
G37100-0302	3SB-2RMP	3/16	4.8	1/8 -27	1.26	32.0
G37100-0402	4SB-2RMP	1/4	6.4	1/8 -27	1.32	33.5
G37100-0404	4SB-4RMP	1/4	6.4	1/4 -18	1.63	41.4
G37100-0502	5SB-2RMP	5/16	7.9	1/8 -27	1.55	39.4
G37100-0504	5SB-4RMP	5/16	7.9	1/4 -18	1.55	39.4
G37100-0602	6SB-2RMP	3/8	9.7	1/8 -27	1.55	39.4
G37100-0604	6SB-4RMP	3/8	9.7	1/4 -18	1.63	41.4
G37100-0606	6SB-6RMP	3/8	9.7	3/8 -18	1.72	43.7
G37100-0806	8SB-6RMP	1/2	12.7	3/8 -18	1.72	43.7
G37100-0808	8SB-8RMP	1/2	12.7	1/2 -14	1.79	45.5
G37100-1006	10SB-6RMP	5/8	15.9	3/8 -18	1.78	45.5
G37100-1008	10SB-8RMP	5/8	15.9	1/2 -14	1.78	45.5
G37100-1012	10SB-12RMP	5/8	15.9	3/4 -14	1.92	48.8
G37100-1208	12SB-8RMP	3/4	19.1	1/2 -14	1.78	45.2
G37100-1212	12SB-12RMP	3/4	19.1	3/4 -14	1.92	48.8

MALE STRAIGHT THREAD CONNECTOR



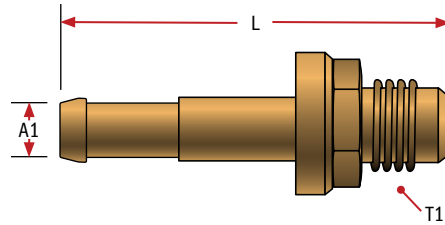
PART NUMBER	DESCRIPTION	A1		THREAD SIZE
		"	mm	T1 (inch)
G37103-0609	6SB-9MSC	3/8	9.7	9/16-24
G37103-0610	6SB-10MSC	3/8	9.7	5/8-20
G37103-0614	6SB-14MSC	3/8	9.7	7/8-20

MALE PIPE 90° BLOCK CONE SEAT



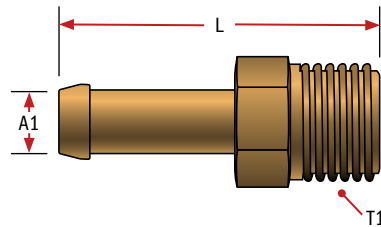
PART NUMBER	DESCRIPTION	A1		THREAD SIZE	L	
		"	mm	T1 (inch)	"	mm
G37106-0402	4SB-2RMP90	1/4	6.4	1/8-27	1.00	25.4
G37106-0502	5SB-2RMP90	5/16	7.9	1/8-27	1.01	25.7
G37106-0504	5SB-4RMP90	5/16	7.9	1/4-18	1.01	25.7
G37106-0602	6SB-2RMP90	3/8	9.7	1/8-27	1.01	25.7
G37106-0604	6SB-4RMP90	3/8	9.7	1/4-18	1.04	26.4
G37106-0606	6SB-6RMP90	3/8	9.7	3/8-14	1.08	27.4
G37106-0806	8SB-6RMP90	1/2	12.7	3/8-14	1.08	27.4
G37106-0808	8SB-8RMP90	1/2	12.7	1/2-14	1.10	29.0
G37106-1006	10SB-6RMP90	5/8	15.9	3/8-18	1.13	29.7
G37106-1008	10SB-8RMP90	5/8	15.9	1/2-14	1.21	30.7
G37106-1206	12SB-6RMP90	3/4	19.1	1/2-14	1.26	32.5

MALE SAE 45° FLARE CONNECTOR



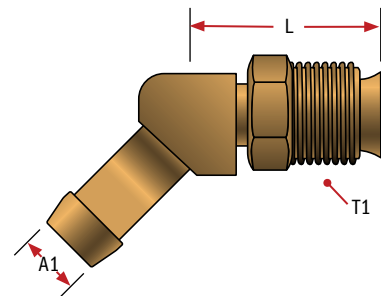
PART NUMBER	DESCRIPTION	A1		THREAD SIZE	L	
		"	mm	T1 (inch)	"	mm
G37195-0605	6SB-5RMP90	3/8	9.7	1/2 -20	2.00	50.0
G37195-0606	6SB-6RMP90	3/8	9.7	3/8 -16	2.00	50.0

MALE SAE INVERTED FLARE SWIVEL



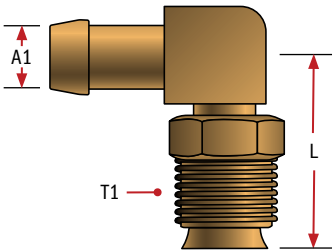
PART NUMBER	DESCRIPTION	A1		THREAD SIZE	L	
		"	mm	T1 (inch)	"	mm
G37500-0404	4SB-4RMIX	1/4	6.4	7/16 -24	1.72	43.7
G37500-0405	4SB-5RMIX	1/4	6.4	1/2 -20	1.78	45.2
G37500-0504	5SB-4RMIX	5/16	7.9	7/16 -24	1.58	40.1
G37500-0505	5SB-5RMIX	5/16	7.9	1/2 -20	1.58	40.1
G37500-0506	5SB-6RMIX	5/16	7.9	5/8 -18	1.63	41.4
G37500-0605	6SB-5RMIX	3/8	9.7	1/2 -20	1.73	44.0
G37500-0606	6SB-6RMIX	3/8	9.7	5/8 -18	2.00	50.8

MALE SAE INVERTED FLARE SWIVEL - 45°



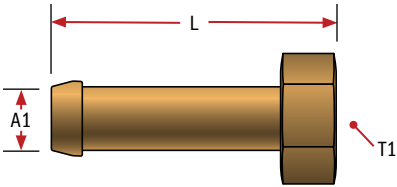
PART NUMBER	DESCRIPTION	A1		THREAD SIZE	L	
		"	mm	T1 (inch)	"	mm
G37503-0605	6SB-5RMIX45	3/8	9.7	1/2 -20	1.25	31.5

MALE SAE INVERTED
FLARE SWIVEL - 90°



PART NUMBER	DESCRIPTION	A1		THREAD SIZE	L	
		"	mm	T1 (inch)	"	mm
G37504-0404	4SB-4RMIX90	1/4	6.4	7/16 -24	1.01	25.7
G37504-0405	4SB-5RMIX90	1/4	6.4	1/2 -20	1.01	25.7
G37504-0506	5SB-6RMIX90	5/16	7.9	5/8 -18	1.21	30.7
G37504-0605	6SB-5RMIX90	3/8	9.7	1/2 -20	1.21	30.7
G37504-0606	6SB-6RMIX90	3/8	9.7	5/8 -18	1.40	35.6

FEMALE SAE
INVERTED FLARE



PART NUMBER	DESCRIPTION	A1		THREAD SIZE	L	
		"	mm	T1 (inch)	"	mm
G37506-0505	5SB-5RFI	5/16	7.9	1/2 -20	2.03	51.6
G37506-0605	6SB-5RFI	3/8	9.7	1/2 -20	2.09	53.1
G37506-0606	6SB-6RFI	3/8	9.7	5/8 -18	2.16	54.9

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

HOSE BEAD ADAPTER

BARBED STEM

RELATIVE COST ●●●●○

APPLICATIONS Connector for rubber hose and thermoplastic tubing in low pressure fuel, oil, compressed air and coolant lines in heavy-duty truck, construction, industrial and mobile applications.

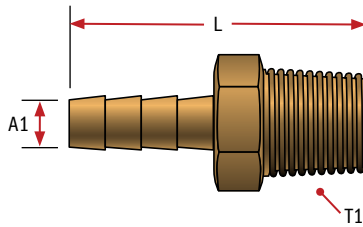
TEMPERATURE -40°C to +71°C (-40°F to +160°F).

WORKING PRESSURE 150psi (1.0 MPa).

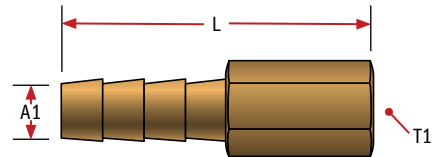
CONSTRUCTION 360 brass.

PACKAGING Individually bagged.

MALE PIPE NPTF WITH CONE SEAT



FEMALE PIPE NPTF

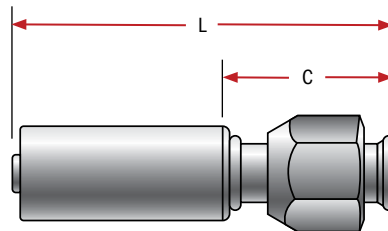


PART NUMBER	DESCRIPTION	A1	THREAD SIZE
		"	T1 (Inch)
G38100-0202	2SB-2MP	1/6	1/6 -27
G38100-0302	3SB-2MP	3/16	1/6 -27
G38100-0304	3SB-4MP	3/16	1/4 -16
G38100-0402	4SB-2MP	1/4	1/6 -27
G38100-0404	4SB-4MP	1/4	1/4 -16
G38100-0406	4SB-6MP	1/4	3/8 -16
G38100-0502	5SB-2MP	5/16	1/6 -27
G38100-0504	5SB-4MP	5/16	1/4 -16
G38100-0602	6SB-2MP	3/8	1/6 -27
G38100-0604	6SB-4MP	3/8	1/4 -16
G38100-0606	6SB-6MP	3/8	3/8 -16
G38100-0608	6SB-8MP	3/8	1/2 -14
G38100-0804	8SB-4MP	1/2	1/4 -16
G38100-0806	8SB-6MP	1/2	3/8 -16
G38100-0808	8SB-8MP	1/2	1/2 -14
G38100-0812	8SB-12MP	1/2	3/4 -14
G38100-1006	10SB-6MP	5/6	3/8 -16
G38100-1008	10SB-8MP	5/6	1/2 -14
G38100-1012	10SB-12MP	5/6	3/4 -14
G38100-1206	10SB-6MP	3/4	1/2 -14
G38100-1212	12SB-12MP	3/4	3/4 -14

PART NUMBER	DESCRIPTION	A1	THREAD SIZE
		"	T1 (Inch)
G38110-0202	2SB-2FP	1/6	1/6 -27
G38110-0302	3SB-2FP	3/16	1/6 -27
G38110-0402	4SB-2FP	1/4	1/6 -27
G38110-0404	4SB-4FP	1/4	1/4 -16
G38110-0502	5SB-2FP	5/16	1/6 -27
G38110-0504	5SB-4FP	5/16	1/4 -16
G38110-0602	6SB-2FP	3/8	1/6 -27
G38110-0604	6SB-4FP	3/8	1/4 -16
G38110-0606	6SB-6FP	3/8	3/8 -16
G38110-0804	8SB-4FP	1/2	1/4 -16
G38110-0806	8SB-6FP	1/2	3/8 -16
G38110-0808	8SB-8FP	1/2	1/2 -14

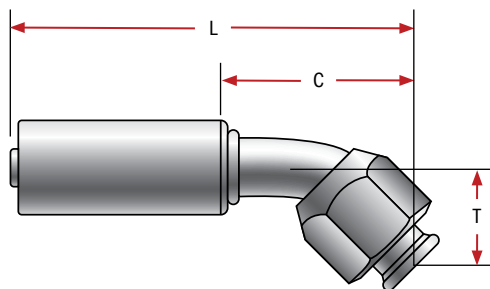
POLARSEAL II COUPLINGS (ACB)

FEMALE SAE 45° FLARE SWIVEL - ALUMINUM



PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	L	C
			"	"	"	"
G47200-0606	6ACB-6FSX	7332-51435	1/3	5/8 - 18	2.88	1.38
G47200-0608	6ACB-8FSX	7332-51445	1/3	3/4 - 16	2.70	1.20
G47200-0806	8ACB-6FSX	7332-52335	2/5	5/8 - 18	2.69	1.19
G47200-0808	8ACB-8FSX	7332-51455	2/5	3/4 - 16	2.69	1.19
G47200-1008	10ACB-8FSX	7332-52345	1/2	3/4 - 16	3.00	1.50
G47200-1010	10ACB-10FSX	7332-51465	1/2	7/8 - 14	3.00	1.50
G47200-1212	12ACB-12FSX	7332-51475	5/8	1-1/16 - 14	3.25	1.75

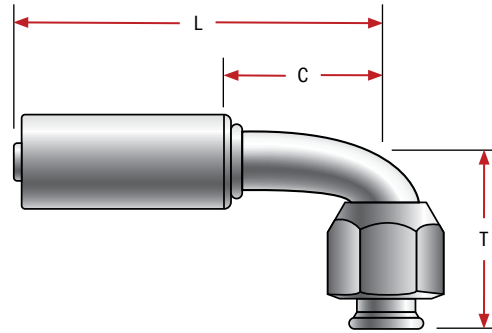
FEMALE SAE 45° FLARE SWIVEL - 45° BENT TUBE - ALUMINUM



PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47202-0606	6ACB-6FSX45	7332-51485	1/3	5/8 - 18	0.56	2.84	1.34
G47202-0808	6ACB-8FSX45	7332-51495	2/5	3/4 - 16	0.63	3.07	1.57
G47202-1010	10ACB-10FSX45	7332-51505	1/2	7/8 - 14	0.88	3.63	2.13
G47202-1212	12ACB-12FSX45	7332-51515	5/8	1-1/16 - 14	1.00	4.00	2.50

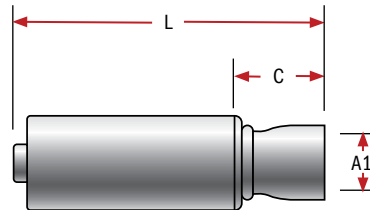


FEMALE SAE 45° FLARE SWIVEL - 90° BENT TUBE - ALUMINUM



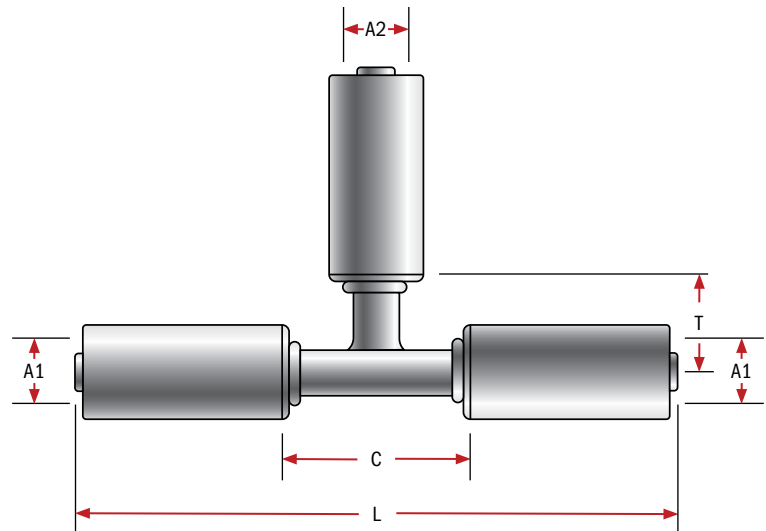
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47205-0606	6ACB-6FSX90	7332-51525	1/3	5/8 - 18	1.06	2.56	1.06
G47205-0808	8ACB-8FSX90	7332-51535	2/5	3/4 - 16	1.25	2.75	1.25
G47205-1010	10ACB-10FSX90	7332-51545	1/2	7/8 - 14	1.50	3.00	1.50
G47205-1210	12ACB-10FSX90	7332-51555	5/8	7/8 - 14	1.50	3.25	1.75
G47205-1212	12ACB-12FSX90	7332-51565	5/8	1-1/16 - 14	1.50	3.25	1.75

FEMALE BRAZE-ON STEMS - ALUMINUM



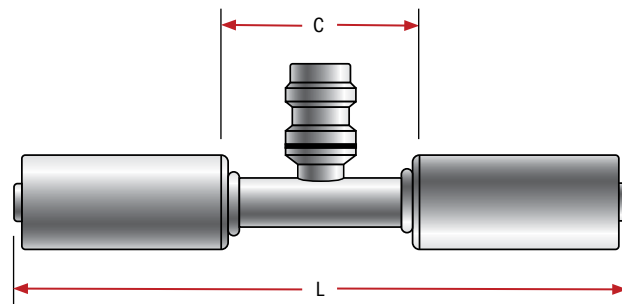
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	A1	L	C
			"	"	"	"
G47527-0606	6ACB-6FBO	7332-52355	1/3	3/8	2.10	.60
G47527-0808	8ACB-8FBO	7332-52365	2/5	1/2	2.10	.60
G47527-1010	10ACB-10FBO	7332-52375	1/2	5/8	2.10	.60
G47527-1210	12ACB-10FBO	7332-52385	5/8	5/8	2.10	.60
G47527-1212	12ACB-12FBO	7332-52395	5/8	3/4	2.10	.60

TEE - ALUMINUM



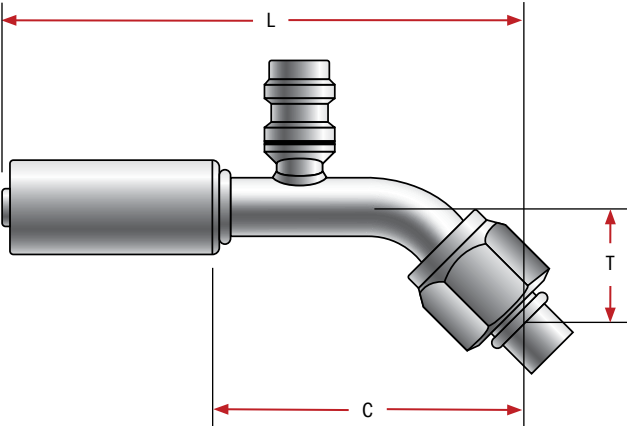
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	A1	A2	T	L	C
G47539-0606	6ACB-6HLET	7332-52305	1/3	5/16	5/16	0.94	4.75	1.75
G47539-1010	10ACB-10HLET	7332-52315	1/2	1/2	1/2	1.00	5.00	2.00
G47539-1212	12ACB-12HLET	7332-52325	5/8	5/8	5/8	1.12	5.25	2.25

HOSE SPLICER WITH R134A SERVICE PORT - ALUMINUM



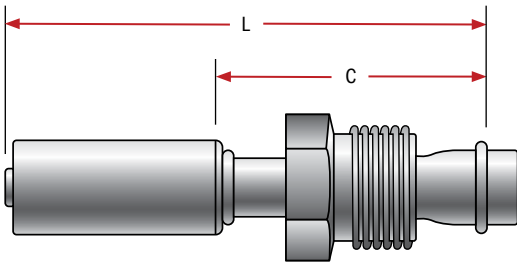
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	L	C
G47956-0606	6ACB-R134SP	7332-52095	1/3	4.50	1.50
G47956-0808	8ACB-R134SP	7332-52105	2/5	4.50	1.50
G47956-1010	10ACB-R134SP	7332-52115	1/2	4.63	1.63
G47956-1212	12ACB-R134SP	7332-52125	5/8	4.75	1.75

FEMALE O-RING WITH R134
SERVICE PORT - 45° BENT TUBE -
ALUMINUM



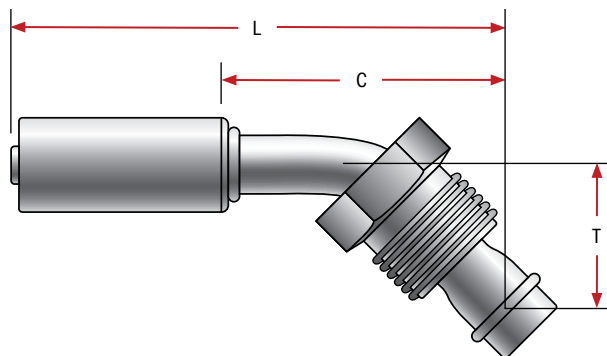
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47576-0808	8ACB-8FTON134SP45	7332-52745	2/5	3/4 - 16	0.63	3.76	2.26
G47576-1010	10ACB-10FTON134SP45	7332-52775	1/2	7/8 - 14	0.88	4.13	2.63

MALE SAE TUBE O-RING
NUT SWIVEL - ALUMINUM



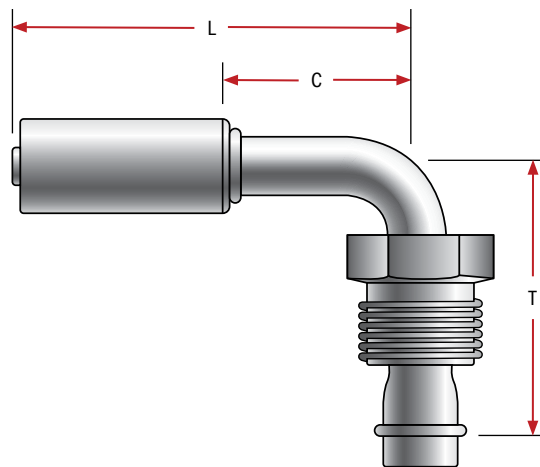
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	L	C
			"	"	"	"
G47583-0606	6ACB-6MTON	7332-51585	1/3	5/8 - 18	3.19	1.69
G47583-0806	8ACB-6MTON	7332-52415	2/5	5/8 - 18	3.25	1.75
G47583-0808	8ACB-8MTON	7332-51595	2/5	3/4 - 18	3.25	1.75
G47583-1010	10ACB-10MTON	7332-51605	1/2	7/8 - 18	3.38	1.88
G47583-1210	12ACB-10MTON	7332-52425	5/8	7/8 - 18	3.38	2.38
G47583-1212	12ACB-12MTON	7332-51615	5/8	1-1/16 - 16	3.38	2.38

MALE SAE TUBE O-RING NUT - 45° BENT TUBE - ALUMINUM



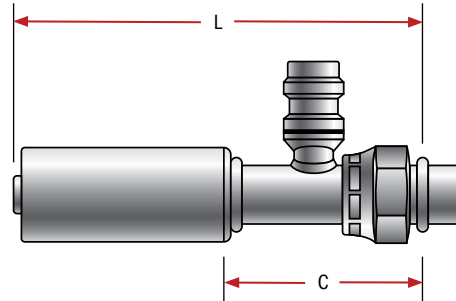
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47584-0606	6ACB-6MTON45	7332-51625	1/3	5/8 - 18	0.88	3.19	1.69
G47584-0808	8ACB-8MTON45	7332-51635	2/5	3/4 - 18	1.00	3.44	1.94
G47584-1010	10ACB-10MTON45	7332-51645	1/2	7/8 - 18	0.88	3.63	2.13
G47584-1212	12ACB-12MTON45	7332-51655	5/8	1-1/16 - 16	1.19	4.19	2.69

MALE SAE TUBE O-RING NUT - 90° BENT TUBE - ALUMINUM



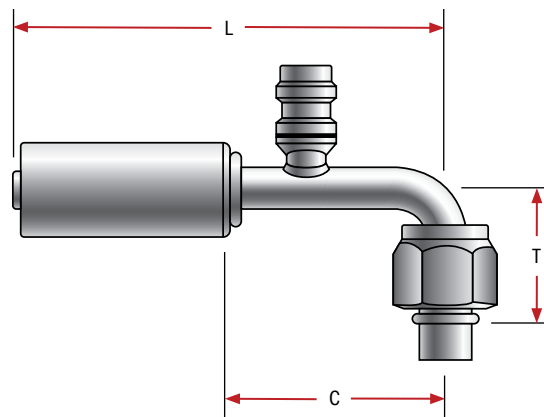
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47585-0606	6ACB-6MTON90	7332-51665	1/3	5/8 - 18	1.63	2.56	1.06
G47585-0806	8ACB-6MTON90	7332-52435	2/5	5/8 - 18	1.88	2.75	1.25
G47585-0808	8ACB-8MTON90	7332-51675	2/5	3/4 - 18	0.88	2.75	1.25
G47585-1010	10ACB-10MTON90	7332-51685	1/2	7/8 - 18	2.12	3.00	1.50
G47585-1210	12ACB-10MTON90	7332-52445	5/8	7/8 - 18	2.25	3.25	1.75
G47585-1212	12ACB-12MTON90	7332-51695	5/8	1-1/16 - 16	2.25	3.25	1.75

FEMALE SAE TUBE O-RING NUT SWIVEL WITH R134A SERVICE PORT - ALUMINUM



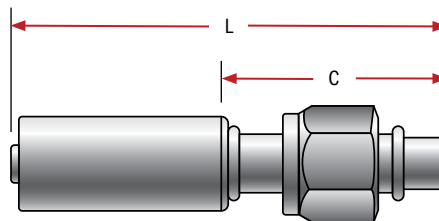
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	L	C
			"	"	"	"
G47588-0606	6ACB-6FTON134SP	7332-51705	1/3	5/8 - 18	3.38	1.88
G47588-0808	8ACB-8FTON134SP	7332-51715	2/5	3/4 - 16	3.38	1.88
G47588-1010	10ACB-10FTON134SP	7332-51725	1/2	7/8 - 14	3.62	2.12
G47588-1212	12ACB-10FTON134SP	7332-51735	5/8	7/8 - 14	3.75	2.25

FEMALE SAE TUBE O-RING NUT SWIVEL WITH R134A SERVICE PORT - 90° BENT TUBE - ALUMINUM



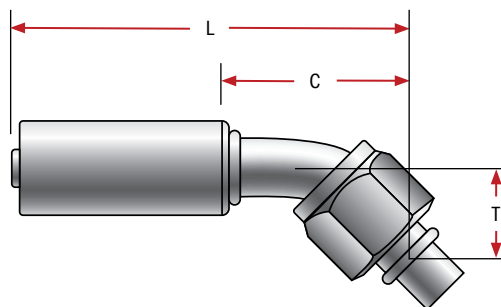
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47589-0606	6ACB-6MTON134SP90	7332-51745	1/3	5/8 - 18	1.12	3.62	2.12
G47589-0808	8ACB-8MTON134SP90	7332-51755	2/5	3/4 - 16	1.31	3.62	2.12
G47589-1010	10ACB-10MTON134SP90	7332-51765	1/2	7/8 - 14	1.50	3.88	2.38
G47589-1210	12ACB-10MTON134SP90	7332-51775	5/8	7/8 - 14	1.75	4.19	2.69

FEMALE SAE TUBE O-RING NUT SWIVEL - ALUMINUM



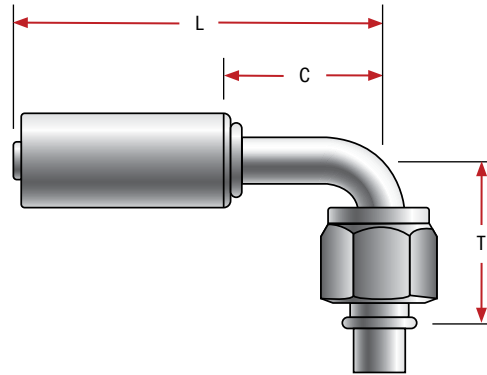
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	L	C
			"	"	"	"
G47590-0606	6ACB-6FTON	7332-51785	1/3	5/8 - 18	2.88	1.38
G47590-0608	8ACB-8FTON	7332-51795	1/3	3/4 - 16	3.00	1.50
G47590-0806	8ACB-6FTON	7332-52465	2/5	5/8 - 18	3.00	1.50
G47590-0808	8ACB-8FTON	7332-51805	2/5	3/4 - 16	3.00	1.50
G47590-1008	10ACB-8FTON	7332-52195	1/2	3/4 - 16	3.19	1.69
G47590-1010	10ACB-10FTON	7332-51815	1/2	7/8 - 14	3.19	1.69
G47590-1012	10ACB-12FTON	7332-52205	1/2	1-1/16 - 14	3.31	1.81
G47590-1210	12ACB-10FTON	7332-51825	5/8	7/8 - 14	3.31	1.81
G47590-1212	12ACB-12FTON	7332-51835	5/8	1-1/16 - 14	3.31	1.81

FEMALE SAE TUBE O-RING NUT SWIVEL - 45° BENT TUBE - ALUMINUM



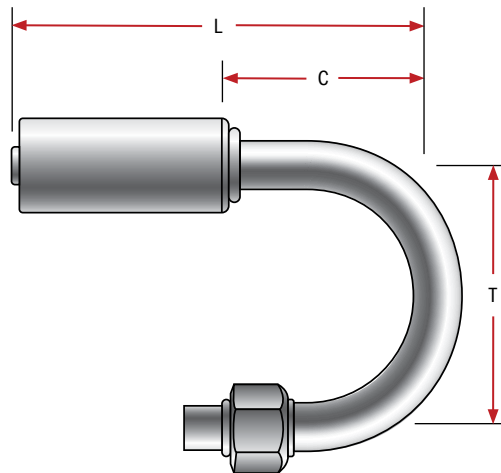
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47591-0606	6ACB-6FTON45	7332-51845	1/3	5/8 - 18	0.63	2.87	1.37
G47591-0806	8ACB-6FTON45	7332-52475	2/5	5/8 - 18	0.63	3.07	1.57
G47591-0808	8ACB-8FTON45	7332-51855	2/5	3/4 - 18	0.63	3.07	1.57
G47591-1008	10ACB-8FTON45	7332-52485	1/2	3/4 - 18	0.88	3.63	2.13
G47591-1010	10ACB-10FTON45	7332-51865	1/2	7/8 - 18	0.88	3.63	2.13
G47591-1210	12ACB-10FTON45	7332-52495	5/8	7/8 - 18	0.94	3.94	2.44
G47591-1212	12ACB-12FTON45	7332-51875	5/8	1-1/16 - 14	0.94	3.94	2.44

FEMALE SAE TUBE O-RING NUT SWIVEL - 90° BENT TUBE - ALUMINUM



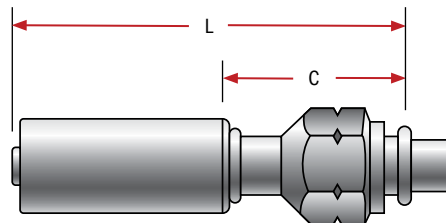
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47592-0606	6ACB-6FTON90	7332-51885	1/3	5/8 - 18	1.12	2.56	1.06
G47592-0608	6ACB-8FTON90	7332-51895	1/3	3/4 - 16	1.31	2.75	1.25
G47592-0806	8ACB-6FTON90	7332-52455	2/5	5/8 - 18	1.31	2.75	1.25
G47592-0808	8ACB-8FTON90	7332-51905	2/5	3/4 - 16	1.31	2.75	1.25
G47592-1008	10ACB-8FTON90	7332-52215	1/2	3/4 - 16	1.50	3.00	1.50
G47592-1010	10ACB-10FTON90	7332-51915	1/2	7/8 - 14	1.50	3.00	1.50
G47592-1012	10ACB-12FTON90	7332-52225	1/2	1-1/16 - 14	1.75	3.25	1.75
G47592-1210	12ACB-10FTON90	7332-51925	5/8	7/8 - 14	1.75	3.25	1.75
G47592-1212	12ACB-12FTON90	7332-51935	5/8	1-1/16 - 14	1.75	3.25	1.75

FEMALE SAE TUBE O-RING NUT - 180° BENT TUBE - ALUMINUM



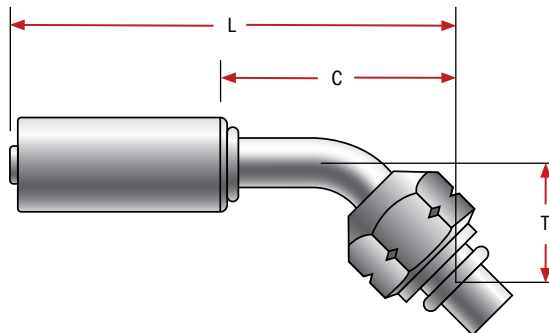
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47610-0606	6ACB-6FTON180	7332-52615	1/3	5/8 - 18	1.65	1.00	2.15
G47610-0808	8ACB-8FTON180	7332-52625	2/5	3/4 - 16	1.75	1.00	2.25
G47610-1212	12ACB-12FTON180	7332-52635	5/8	1-1/16 - 14	2.12	1.50	2.94

FEMALE SAE TUBE O-RING METRIC NUT SWIVEL - ALUMINUM



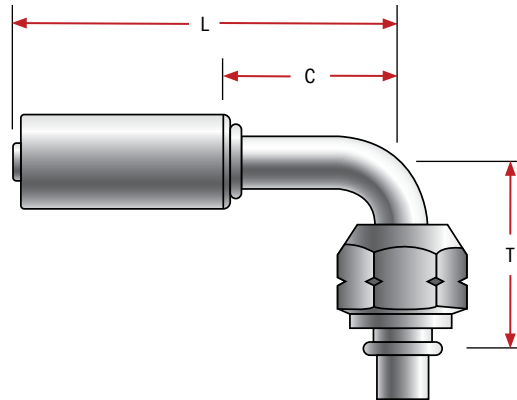
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	L	C
G47593-0620	6ACB-20FTON	7332-52505	1/3	M18X1.5	2.94	1.44
G47593-0820	8ACB-20FTON	7332-52515	2/5	M18X1.5	2.94	1.44
G47593-1022	10ACB-22FTON	7332-51945	1/2	M18X1.5	3.19	1.69

FEMALE SAE TUBE O-RING METRIC NUT SWIVEL - 45° BENT TUBE - ALUMINUM



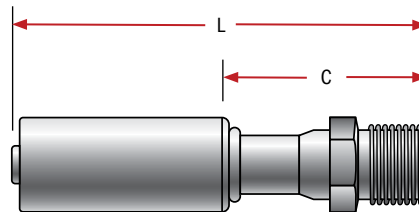
PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
G47594-0618	6ACB-18FTOMN45	7332-52525	1/3	M18X1.5	0.69	3.56	2.06
G47594-0620	6ACB-20FTOMN45	7332-52535	1/3	M18X1.5	0.75	3.07	1.57
G47594-0820	8ACB-20FTOMN45	7332-52545	2/5	M18X1.5	0.75	3.75	2.25
G47594-1227	12ACB-27FTOMN45	7332-52555	5/8	M18X1.5	1.00	4.62	3.12

FEMALE SAE TUBE O-RING METRIC NUT SWIVEL - 90° BENT TUBE - ALUMINUM

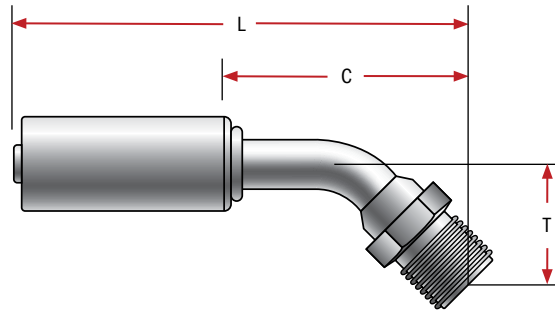


PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
G47595-0618	6ACB-18FTOMN90	7332-52565	1/3	M18X1.5	1.12	2.75	1.25
G47595-0820	8ACB-20FTOMN90	7332-52575	2/5	M18X1.5	1.37	2.94	1.44
G47595-1227	12ACB-27FTOMN90	7332-51955	5/8	M18X1.5	1.75	3.38	1.88

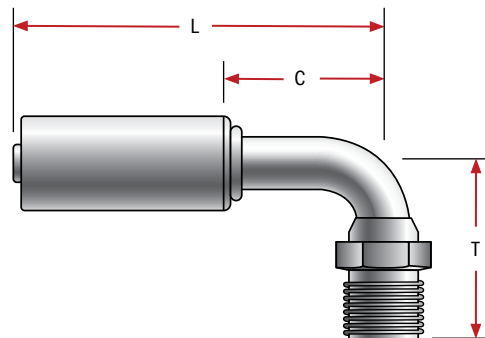
MALE INVERTED O-RING - ALUMINUM



PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	L	C
G47597-0606	6ACB-6MIO	7332-51965	1/3	5/8 - 18	2.94	1.44
G47597-0808	8ACB-8MIO	7332-51975	2/5	3/4 - 16	3.13	1.63
G47597-1010	10ACB-10MIO	7332-51985	1/2	7/8 - 14	3.62	2.12
G47597-1212	12ACB-12MIO	7332-51995	5/8	1-1/16 - 14	3.88	2.38

**MALE INVERTED O-RING -
45° BENT TUBE - ALUMINUM**

PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47598-0606	6ACB-6MIO45	7332-52585	1/3	5/8 - 18	0.75	3.06	1.56
G47598-0808	8ACB-8MIO45	7332-52595	2/5	3/4 - 16	1.00	3.44	1.94
G47598-1010	10ACB-10MIO45	7332-52605	1/2	7/8 - 14	1.25	4.00	2.50

**MALE INVERTED O-RING -
90° BENT TUBE - ALUMINUM**

PART NUMBER	DESCRIPTION	PRODUCT NUMBER	ID	THREAD SIZE	T	L	C
			"	"	"	"	"
G47599-0606	6ACB-6MIO90	7332-52005	1/3	5/8 - 18	1.50	2.56	1.06
G47599-0808	8ACB-8MIO90	7332-52015	2/5	3/4 - 16	1.75	2.75	1.25
G47599-1010	10ACB-10MIO90	7332-52025	1/2	7/8 - 16	2.00	3.00	1.50



DRIVEN BY POSSIBILITY™

WITH GATES YOU GET MORE THAN A HOSE

GATES HOSE CLAMPS MEET OR EXCEED THE TOUGHEST INDUSTRY REQUIREMENTS, AND ARE ENGINEERED FOR THE OPTIMAL FIT TO YOUR EXISTING GATES HOSES AND ASSEMBLIES. OUR FLUID POWER PRODUCTS OFFER MAXIMUM

FLEXIBILITY AND LEAK PREVENTION ON YOUR HEAVY-DUTY APPLICATIONS. NO MATTER WHAT KIND OF JOB YOU HAVE, GATES HAS THE HOSE SOLUTION THAT WORKS AS HARD AS YOU AND YOUR TEAM.



7277

NYLON SLEEVE



RELATIVE COST	●○○○○
APPLICATIONS	Hose abrasion and environmental protection. Oversize by at least 3mm (1/8") to the hose OD for installation. Affix with banded clamp or wire tie if needed. Cut with a hot knife, or heat the ends after cutting to keep from fraying.
TEMPERATURE	121°C (250°F) maximum.
STANDARDS	MSHA flame-resistance approval.
CONSTRUCTION	Nylon woven fabric, designed to “friz” into a self-renewing shield that is extremely resistant to severe abrasion.
PACKAGING	Boxed.

MINIMUM ID		FLAT WIDTH (NOMINAL)		LENGTH		PART NUMBER	DESCRIPTION	ITEM NUMBER
mm	inch	mm	inch	meters	feet			
16.3	0.64	27.2	1.07	91.4	300	G81800-0010	HG-10	7277-1067
21.8	0.86	35.6	1.40	91.4	300	G81800-0014	HG-14	7277-1010
21.8	0.86	35.6	1.40	7.6	25	G81801-0014	HG-14x25FT	7277-1278
26.9	1.06	42.2	1.74	91.4	300	G81800-0016	HG-16	7277-1011
26.9	1.06	42.2	1.74	7.6	25	G81801-0016	HG-16x25FT	7277-1279
31.0	1.22	50.8	2.00	91.4	300	G81800-0020	HG-20	7277-1012
31.0	1.22	50.8	2.00	7.6	25	G81801-0020	HG-20x25FT	7277-1280
38.4	1.51	61.5	2.42	91.4	300	G81800-0024	HG-24	7277-1013
38.4	1.51	61.5	2.42	7.6	25	G81801-0024	HG-24x25FT	7277-1281
42.2	1.66	67.8	2.67	91.4	300	G81800-0026	HG-26	7277-1377
42.2	1.66	67.8	2.67	7.6	25	G81801-0026	HG-26x25FT	7277-1378
46.0	1.81	73.7	2.90	91.4	300	G81800-0028	HG-28	7277-1014
46.0	1.81	73.7	2.90	7.6	25	G81801-0028	HG-28x25FT	7277-1282
55.6	2.19	89.9	3.54	91.4	300	G81800-0032	HG-32	7277-1015
60.2	2.37	96.5	3.80	91.4	300	G81800-0038	HG-38	7277-1016
65.0	2.56	104.7	4.12	91.4	300	G81800-0042	HG-42	7277-1018
71.6	2.82	115.1	4.53	91.4	300	G81800-0046	HG-46	7277-1024
110.2	4.34	175.5	6.91	30.5	100	G81800-0064	HG-64	7277-1276

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS



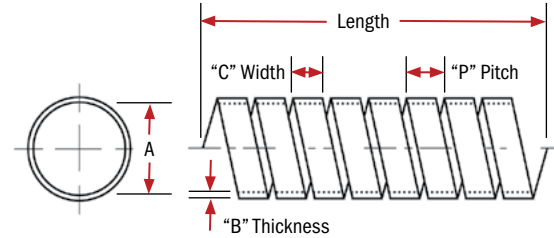
7277

HOSE ABRASION GUARDS

PLATED FLAT ARMOR SPRING GUARDS

APPLICATIONS

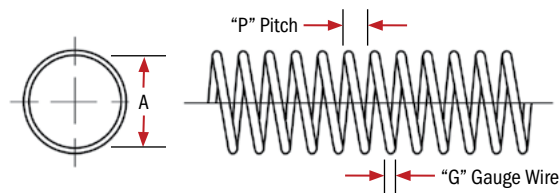
Zinc plated flat steel coil for resistance to high abrasion against flat surfaces. Typically used on high-pressure hydraulic or other steel reinforced hoses. Allow 0.8mm (1/32 inch) between the hose OD and guard ID for installation.



COIL ID "A"		WALL THICKNES "B"		COIL WIDTH "C"		PITCH "P"		BULK LENGTH		AUTOMOTIVE NUMBER	ITEM NUMBER
mm	Inch	mm	Inch	mm	Inch	mm	Inch	meters	feet		
16.7	21/32	0.5	0.019	9.5	3/8	12.7	1/2	7.6	25	G82801-0009	7277-0501
15.5	39/64	0.8	0.032	6.4	1/4	9.5	3/8	7.6	25	G82801-0010	7277-0533
17.5	11/16	0.5	0.019	9.5	3/8	12.7	1/2	7.6	25	G82801-0011	7277-0502
20.6	13/16	0.7	0.028	6.4	1/4	9.5	3/8	7.6	25	G82801-0012	7277-0503
20.2	51/64	0.8	0.032	9.5	3/8	12.7	1/2	7.6	25	G82801-0013	7277-0534
22.2	7/8	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0014	7277-0504
24.2	61/64	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0015	7277-0505
25.4	1	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0016	7277-0506
27.8	1- 3/32	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0017	7277-0530
31.0	1- 7/32	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0019	7277-0507
32.5	1- 9/32	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0020	7277-0508
34.9	1- 3/8	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0022	7277-0532
39.7	1- 9/16	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0025	7277-0520
41.3	1- 5/8	0.7	0.028	12.7	1/2	15.9	5/8	7.6	25	G82801-0026	7277-0509
42.9	1-11/16	0.7	0.028	12.7	1/2	15.9	5/8	1.5	5	G82801-0027	7277-0529
45.6	1-51/64	0.7	0.028	12.7	1/2	15.9	5/8	4.6	15	G82801-0028	7277-0525
46.8	1-27/32	0.7	0.028	12.7	1/2	15.9	5/8	4.6	15	G82801-0029	7277-0531
53.2	2- 3/32	0.7	0.028	12.7	1/2	15.9	5/8	3.0	10	G82801-0033	7277-0527
59.5	2-11/32	0.7	0.028	12.7	1/2	15.9	5/8	1.5	5	G82801-0037	7277-0528
73.0	2- 7/8	0.7	0.028	12.7	1/2	15.9	5/8	1.5	5	G82801-0046	7277-0526

7277**HOSE ABRASION GUARDS****PLATED WIRE SPRING GUARDS****APPLICATIONS**

Zinc plated round wire coil for resistance to high abrasion against flat surfaces. Typically used on high-pressure hydraulic or other steel reinforced hoses. Allow 0.8mm (1/32 inch) between the hose OD and guard ID for installation.



COIL ID "A"		WIRE THICKNESS "G"			PITCH "P"		BULK LENGTH		AUTOMOTIVE NUMBER	ITEM NUMBER
mm	Inch	mm	Inch	Gauge	mm	Inch	meters	Feet		
14.0	0.55	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0009	7277-0521
17.2	0.676	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0010	7277-0510
17.3	0.682	1.65	0.07	16	5.6	7/32	7.6	25	G83801-0011	7277-0535
18.7	0.738	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0012	7277-0511
21.6	0.852	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0014	7277-0512
23.2	0.915	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0015	7277-0513
24.8	0.977	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0016	7277-0514
26.4	1.04	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0017	7277-0515
28.5	1.122	2.03	0.08	14	5.6	7/32	7.6	25	G83801-0018	7277-0522
32.5	1.278	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0020	7277-0516
34.0	1.34	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0021	7277-0517
40.1	1.578	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0025	7277-0518
41.3	1.625	3.05	0.12	11	8.7	11/32	7.6	25	G83801-0026	7277-0519
46.9	1.847	2.03	0.08	14	10.3	13/32	3.0	10	G83801-0029	7277-0524
53.8	2.12	3.05	0.12	11	8.7	11/32	2.1	7	G83801-0034	7277-0548
53.6	2.112	2.03	0.08	14	10.3	13/32	2.1	7	G83801-0040	7277-0523

7277 (HEATGUARD)**SILICONE FIBERGLASS SLEEVES****APPLICATIONS**

Non-asbestos, heat-resistant sleeving of knitted fiberglass coated with silicone rubber. It goes on easily over most hose and couplings, with hose clamps or wire ties for fastening. Also available in High Temp (HTGH).

TEMPERATURE

-54°C to +260°C (-65°F to +500°F) for continuous exposure.

CONSTRUCTION

Knitted, coated fiberglass.

ID		LENGTH		AUTOMOTIVE NUMBER	ITEM NUMBER	DESCRIPTION
mm	Inch	meters	feet			
6.35	0.25	15.24	50	G81100-0004	7277-1571	HTG-4
7.87	0.31	15.24	50	G81100-0005	7277-1572	HTG-5
9.65	0.38	15.24	50	G81100-0006	7277-1573	HTG-6
11.18	0.44	15.24	50	G81100-0007	7277-1574	HTG-7
12.70	0.5	15.24	50	G81100-0008	7277-1575	HTG-8
14.22	0.56	15.24	50	G81100-0009	7277-1576	HTG-9
15.75	0.62	15.24	50	G81100-0010	7277-1577	HTG-10
17.53	0.69	15.24	50	G81100-0011	7277-1578	HTG-11
19.05	0.75	15.24	50	G81100-0012	7277-1579	HTG-12
20.57	0.81	15.24	50	G81100-0013	7277-1580	HTG-13
22.35	0.88	15.24	50	G81100-0014	7277-1581	HTG-14
23.88	0.94	15.24	50	G81100-0015	7277-1582	HTG-15
25.40	1	15.24	50	G81100-0016	7277-1196	HTG-16
28.45	1.12	15.24	50	G81100-0018	7277-1197	HTG-18
31.75	1.25	15.24	50	G81100-0020	7277-1583	HTG-20
35.05	1.38	15.24	50	G81100-0022	7277-1584	HTG-22
38.10	1.5	15.24	50	G81100-0024	7277-1585	HTG-24
41.15	1.62	15.24	50	G81100-0026	7277-1586	HTG-26
44.45	1.75	15.24	50	G81100-0028	7277-1587	HTG-28
47.75	1.88	15.24	50	G81100-0030	7277-1588	HTG-30
50.80	2	15.24	50	G81100-0032	7277-1589	HTG-32
53.85	2.12	15.24	50	G81100-0034	7277-1590	HTG-34
57.15	2.25	15.24	50	G81100-0036	7277-1591	HTG-36
60.45	2.38	15.24	50	G81100-0038	7277-1592	HTG-38
63.50	2.5	15.24	50	G81100-0040	7277-1593	HTG-40
69.85	2.75	15.24	50	G81100-0044	7277-1595	HTG-44
76.20	3	15.24	50	G81100-0056	7277-1600	HTG-56
101.60	4	15.24	50	G81100-0064	7277-1602	HTG-64

STANDARDS

SAE AS1072A.

TEMPERATURE

-54°C to +260°C (-65°F to +500°F) for continuous exposure, to 1090°C (2000°F) for 15-20 minutes, or 1650°C (3000°F) for 15-30 seconds.

ID		LENGTH		AUTOMOTIVE NUMBER	ITEM NUMBER	DESCRIPTION
mm	Inch	meters	feet			
38.10	1.5	15.24	50	G81101-0024	7277-1611	24-HTGH
44.45	1.75	15.24	50	G81101-0028	7277-1612	28-HTGH
53.85	2.12	15.24	50	G81101-0034	7277-1613	34-HTGH
82.55	3.25	15.24	50	G81101-0052	7277-1616	52-HTGH

7412 THERMOSTATS



THERMOSTATS

Quality controlled factory calibration assures accuracy of opening and closing, regardless of pressure changes.

- Positive piston heat motor provides accurate temperature control
- Sturdy metal construction throughout



SUPERSTAT™* THERMOSTATS

The SuperStat thermostat incorporates an all stainless steel construction, larger heat motor and larger spring to provide superior performance. These new features provide:

- Precision temperature control
- More efficient engine operation
- Faster engine warm up
- Fewer emissions
- Better fuel economy



OFFSET THERMOSTATS

- Offset design thermostat is specified by many Japanese manufacturers
- Stem, spring and heat motor is offset from the center of the thermostat flange
- A "jiggle pin" located in the offset flange of the thermostat allows release of trapped air behind the thermostat



WEIR-STAT™* THERMOSTATS

The most effective cooling system control ever developed. Provides faster engine warm-up, stable temperature control, longer thermostat and seal life, improved fuel economy and driver comfort. Vehicles can operate without radiator shutters, reducing front axle weight, cost and noise. Fleets can operate at higher temperatures without the unnecessary activation of shut-down devices or fan clutches.

- Machined bead edge seats positively down on a resilient 3-piece flange resulting in greater no-leak, precision control than the original Weir-Stat
- Flange retains its elasticity, resists abrasion and corrosion and remains stable during extreme temperature and pressure changes

* SuperStat™ and Weir-Stat is a registered trademark of STANT USA Corporation.



7412 THERMOSTATS



GREEN STRIPE HEAVY-DUTY THERMOSTATS

Quality controlled factory calibration assures accurate heat control under extreme variations in temperature, load and engine vibrations. Approved for marine applications.

- Heavy-gauge brass and stainless steel with positive piston heat motor
- Available in Choke type, Top By-Pass, Bottom By-Pass, Side By-Pass, Normally Open and other types to meet heavy-duty cooling system designs
- Packaging: Individually boxed



GREEN STRIPE HEAVY-DUTY THERMOSTAT SEALS

Fits securely around thermostat valve to prevent leakage. Approved for marine applications.

- Corrosion-resistant steel construction
- Specially constructed to assure accurate fit
- Packaging: Individually boxed, 10 boxes to over-pack



SEAL-EZE THERMOSTAT GASKETS

Cuts installation time in half. Adhesive-backed gasket material helps prevent breaking of water outlet. Gasket cement is not needed. Approved for marine applications.

- Self-adhesive backing holds thermostat in place while water outlet is being installed
- Rubber thermostat seals also available
- Packaging: 10 per box



7410 CAPS

RADIATOR CAPS

ALL GATES RADIATOR PRESSURE CAPS ARE CONSTRUCTED OF CORROSION-RESISTANT, HEAVY-GAUGE METAL. THIS ASSURES LONG SERVICE LIFE AND ACCURATE CONTROL OF PRESSURE.



STANDARD CAPS

- Covers a wide range of pressures



SPINLOK CAPS

Can be used for applications with or without coolant recovery systems. Inventory requirements are dramatically reduced.

- Unique eight-sided, scalloped crown allows for a firm grip for easy installation and removal
- Neoprene upper and lower seal
- Body rotates independently of crown – operator merely pushes down and twists
- Safe and reliable



SAFTI-VENT PRESSURE RELEASE CAPS

Can be used for applications with or without coolant recovery systems. Inventory requirements are dramatically reduced.

- Safety release lever
- Protects against accidental burns by releasing steam through overflow tube



COOL CONTROL CAPS

Diverts pressurized coolant to a reservoir rather than to an overflow valve.

- Constant pressure-type cap for use on closed cooling systems
- Increases cooling system efficiency by eliminating air from the cooling system

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESSORIES
BELTS



7410 CAPS

RADIATOR CAPS



HEAVY-DUTY RADIATOR CAPS

For use on heavy-duty trucks, buses and tractors.

- Fits applications with 3/4" deep filler necks
- Packaging: Individually boxed

AUTOMOTIVE NUMBER	PRESSURE PSI	FITS FILLER NECK I. D. INCH
31307	4	2-11/16
31308	7	2-11/16
31309	10	2-11/16



HEAVY-DUTY COOL CONTROL CAPS

Diverts pressurized coolant to reservoir instead of an overflow tube.

- Corrosion-resistant, heavy-gauge metal construction assures long life and accurate control of pressure
- Atmospheric type valve allows cooling system to pressurize as needed, resulting in less strain on system components
- Packaging: Individually boxed

AUTOMOTIVE NUMBER	PRESSURE PSI
31348	7
31349	10
31350	15

7410 CAPS

FUEL CAPS


**HEAVY-DUTY FLEET AND OFF-ROAD EQUIPMENT
HEAVY-DUTY SADDLE TANK CAPS**

Heavy metal construction throughout. Meets I.C.C. requirements.

- Available for side or saddle tanks
- Locking caps come with two keys. Keyed-alike caps available on special order

AUTOMOTIVE NUMBER	DESCRIPTION	TYPE
31801	Solid Brass - 2-11/16" Non-Vented (2 1/8" x 12 UN Male Thread)	Non-Locking
31803	Solid Brass - 2-49/64" Vented (2"x 11 1/2 NPSM Female Thread)	Non-Locking
31804	Zinc Plated Steel or Aluminum - 4 7/16" Vented (Bayonet - Fits 3 Cam-Ordinance Type Filler Neck)	
31805	Solid Brass - 5-3/32" Non-Vented (4 1/4" x 12 NS Male Thread)	Non-Locking
31806	Solid Brass - 4-31/32" Non-Vented (4 1/4" x 8 NS Male Thread)	Non-Locking
31807	Aluminum - 4-5/32" Non-Vented (4" x 8 NPSM Female Thread)	Non-Locking
31821	Solid Brass - 2-1/2" Vented (2 1/8" x 12 UN Male Thread)	Locking
31823	Solid Brass - 2-1/2" Vented (2"x 11 1/2 NPSM Female Thread)	Locking
31826	Solid Brass - 4-63/64" Non-Vented (4 1/4" x 8 NS Male Thread)	Locking
31827	Solid Brass - 4-25/32" Non-Vented (4" x 8 NPSM Female Thread)	Locking

EVAPORATIVE EMISSION CONTROL FUEL CAPS

MEETS FEDERAL AND STATE EMISSION REQUIREMENTS. TWO-WAY ACTION PRESSURE RELIEF/VACUUM RELIEF VALVE ALLOWS FUEL TANK TO "BREATHE" WHILE PREVENTING THE ESCAPE OF FUEL FUMES. SEALS ARE COMPOUNDED FROM FUEL-RESISTANT RUBBER. AVAILABLE IN THREE CONFIGURATIONS.



FENDERWELL

- Zinc-plated and dichromate dipped for superior corrosion resistance
- Some models are made from rugged plastic



EXTERIOR

- Caps have chrome-plated finish



LOCKING

- Comes with two keys. Keyed-alike caps available on special order



7410 CAPS

FUEL CAPS

RUGGED, HEAVY-DUTY CONSTRUCTION. CAPS FIT BOTH SHALLOW AND DEEP CAM FILLER NECKS – VENTED, NON-VENTED AND VENTED ANTI-SURGE. THREE CONFIGURATIONS AVAILABLE FOR MOST POPULAR APPLICATIONS.



FENDERWELL

- Sturdy metal construction throughout



LOCKING

- Comes with two keys. Keyed-alike caps available on special order



EXTERIOR

- Attractive chrome-plated finish



VAPORVENT

- Handy push button allows owner to release pressure from fuel system prior to removing cap from the filler neck
- Reduces the risk of fuel spray and vapor surge



7410 CAPS

OIL FILLER CAPS



OIL FILLER CAPS

Durable construction assures long service life.

- Special finish resists rust and provides excellent protection against under-hood heat



PCV OIL FILLER CAPS

Meets requirements of emission control systems on late model cars and light trucks. Universal design offers maximum coverage with minimum inventory.

- Sealed construction prevents engine crankcase gases from escaping into the atmosphere
- Heavy-gauge steel construction resists under-hood heat and corrosion

ELECTRIC VEHICLE
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ACCESSORIES
BELTS

1170**SPLASH GUARDS**

Minimizes splashing of rain and settled water from wheels on medium and heavy-duty trucks.

- Tough rubber and fabric-filled construction for maximum service life
- Special half-round reinforced ridge resists tearing and cracking
- Body is 1/4" thick and edge is 3/8" thick for extra strength
- Packaging: Order in pairs (unpackaged)

LENGTH	WIDTH	AUTOMOTIVE NUMBER
Inch	Inch	
26	24	90335
30	24	90333
36	24	90334
40	24	90332

2960**STATIC STRAPS**

Discharges potentially dangerous static electricity from equipment when properly grounded.

- Specially compounded rubber conducts static electricity
- Resists weathering, abrasion and tearing
- Meets, military specifications MILR3065C
- Packaging: 25 per carton

LENGTH	WIDTH	DEPTH	AUTOMOTIVE NUMBER
Inch	Inch	Inch	
25	1 1/16	3/16	90330
30	1 1/16	3/16	90331



7469

HOSE CUTTERS



SMALL NYLON TUBING CUTTER + REPLACEMENT BLADES

Tubing cutter gives straight, clean, square cuts on J844 tubing.

- Lightweight and compact size – 3/4" by 3".
- Designed to ensure user safety.
- Blade guard offers more protection against accidental blade contact.
- Handle has ribs for improved grip.
- P/N 7208-40205



HOSE CUTTERS (HAND-HELD) AND REPLACEMENT BLADES

Makes clean cuts with no ragged edges. Cuts most non-metal reinforced rubber hoses up to 3" I.D.

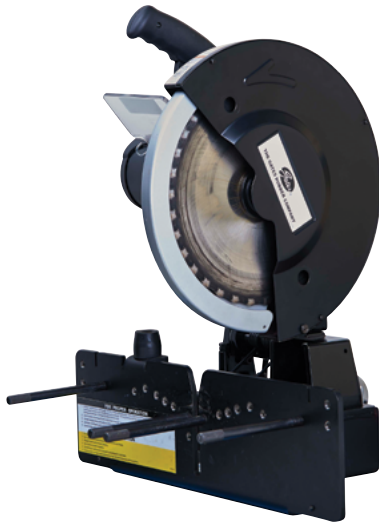
- Lightweight with nylon handles
- Blade closes into handle for safety
- Use small cutter for hoses up to 1 1/2" I.D.
- Packaging: Cutter and blades individually packaged on shrink-wrapped cards

HOSE CUTTER	DESCRIPTION	REPLACEMENT BLADE	CUTS TO HOSE I.D.
91143	Large I.D. Hose Cutter	91144	3"
91153	Small I.D. Hose Cutter	91154	1-1/2"

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7469

HOSE CUTTERS

**GATES POWER CUTTER 208**

Safely cuts two and four-wire hose through 2", six-wire hose through 1-1/4". Effortless Straight Cuts Every Time.

- Clear face shield for added safety
- Powerful high torque, 4.5 horsepower peak motor
- Includes scalloped, 12" blade to dissipate heat, reducing friction for clean, faster cuts up to 1-1/4" I.D.
- Optional abrasive blade for continuous use with 1-1/4" I.D. and larger spiral-wire reinforced hose
- Reversible blade can be sharpened; removal and installation is easy
- Easy to use, front face plate with movable pins holds hose securely for a clean straight cut
- Sturdy blade guard shields blade for safety
- Permanent mounting brackets (included) to attach saw to table

SHAFT/ARBOR HOLE DIAMETER:	1"
POWER SOURCE:	4.5 HP Peak, 115/50/60 Hz, 20 Amps.
NO LOAD SPEED:	3,500 rpm.
DIMENSIONS:	22-1/2" wide by 18-1/4" length by 23-1/2" high.
WEIGHT:	65 lbs.
P/N:	7480-6609.

Caution: Keep blade sharp. Heat generated by a dull blade can damage steel and flare the hose.



7469

HOSE CUTTERS



GATES 28VDC PORTABLE HYDRAULIC HOSE SAW
PART NUMBER: 78394
PRODUCT NUMBER: 7480-6610

FEATURES:

- Battery power provides unmatched portability. Milwaukee M28 battery as the GC™ 16XD™ Crimper Battery Pump. Battery sold separately
- Cuts up to 1", 4-spiral hose
- Safety "C" clamp secures saw in cutting position
- Quick adjusting locator pins make changing hose sizes easy

SPECIFICATIONS

DIMENSIONS:	12" wide by 8" deep by 19" high
WEIGHT:	16 lbs
WHEEL TYPE:	Abrasive
WHEEL DIAMETER:	6"
NO LOAD RPM:	8000
ARBOR:	7/8"
SPINDLE THREAD SIZE:	5/8" - 11
SWITCH TYPE:	Slide
SOFT START:	Large Spindle Lock
BATTERY INCLUDED:	NO
BATTERY TYPE:	LI-ION
BATTERY VOLTAGE:	28V
BATTERY CAPACITY:	3.0AH
SERIES:	M28
BATTERY PACK REPLACEMENT:	5AB52

M28 is a trademark of Milwaukee Tools.

ELECTRIC VEHICLE
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ACCESSORIES
BELTS



DRIVEN BY POSSIBILITY™

THE POWER BEHIND POWER TRANSMISSION

SYNCHRONOUS BELTS

TOUGH INDUSTRIAL APPLICATIONS CALL FOR EVEN TOUGHER SYNCHRONOUS BELTS. DESIGNED WITH VARYING TOOTH PROFILES TO ACCOMMODATE A VARIETY OF APPLICATIONS, FROM POLY CHAIN, AND RUBBER SYNCHRONOUS BELTS TO AUTOMOTIVE

SYNCHRONOUS BELTS WHEN HIGH-POWER TRANSMISSION IS DESIRED. LEANER, MEANER, AND CLEANER. NO OIL. NO STRETCH. THAT'S HOW GATES SYNCHRONOUS BELTS POWER PROGRESS.

V-BELTS

XL V-BELTS (NORTH AMERICA)

STANDARD V-BELT



For the most demanding engine drives. Due to thermal forces, this variable notched belt tightens on the drive as it gets hot. This results in improved belt performance by reducing tension decay and noise.

- Fiber-loaded rubber stock puts more flexibility along the length of the belt, yet gives the belt greater lateral stability in the pulley
- Thermally active tensile cords for maintenance-free performance when properly installed and tensioned
- Form ground to ensure precise top width and sidewall dimensional control for proper fit in pulley as well as a smoother, quieter running belt
- Meets or exceeds SAE J636c specifications

FLEETRANNER V-BELT (EUROPE)

STANDARD V-BELT

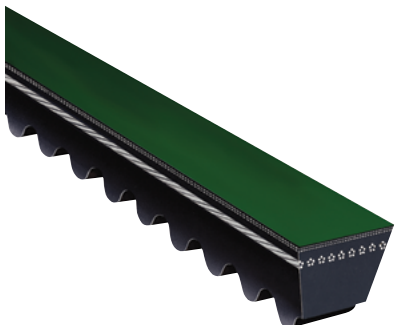


Designed for heavy-duty applications with improved belt performance and increased stability.

- Special, double layer of reinforcement not only protects the belt top, but also increases belt flexibility, thus ensuring long performance. Thermally active tensile cords for maintenance-free performance when the belt is properly installed and tensioned
- Fibre-loaded rubber stock puts more flexibility along the belt length, yet gives the belt greater lateral stability and improved load-carrying capacity
- Belt cogs are aramid fibre reinforced. Aramid fibre is self-lubricating, allows the belt to run smoothly and quietly in the pulleys and keeps it from turning over or coming off the drive. Fibre-reinforced rubber also improves wear resistance and therefore reduces maintenance
- V-form is ground for precise top width, exact sidewall dimensions and proper belt fit

FLEETRANNER / EXTRA SERVICE XF (NORTH AMERICA)

HEAVY DUTY V-BELT



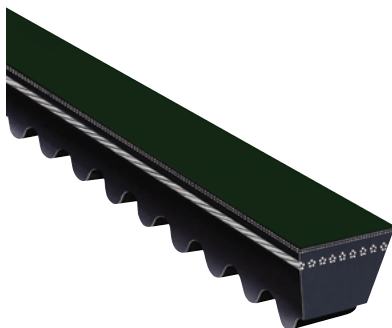
Patented EPDM construction built specifically for more durability and longer life on heavy duty drives.

- Special compound provides unmatched flexibility, stability, load carrying capacity and belt life
- Patented material provides peak performance at extreme prolonged operating temperatures
- Heavy-duty construction resists cracking and wear
- Oil and heat resistant
- Unique under-cord notch pattern offers increased flexibility for smaller diameter pulleys.
- Available in over 70 sizes

V-BELTS

FLEETRANNER BANDLESS LAMINATED V-BELT (EUROPE)

HEAVY DUTY TRUCK AND BUS V-BELT

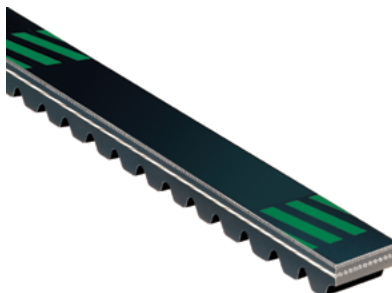


Specially suited for long centre distance drives. Flexibility, stability and quality materials ensure long belt life.

- Extra strong, heat resistant polyester tensile cords
- Cross-cord layers to support the load-carrying belt section and to increase lateral stability
- Special fibre-reinforced rubber compound. Oil, head and wear resistant
- Flex-Weave layers in under-cord for more flexibility along the length, increased lateral rigidity and crack resistance

GREEN STRIPE TRUCK AND BUS SERIES V-BELTS (NORTH AMERICA)

HEAVY DUTY TRUCK AND BUS V-BELT

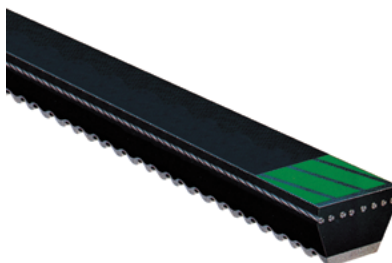


Specifically designed for heavy-duty truck, bus and off-road equipment applications. Absorbs normal shock loads without damage to belt.

- Special tensile cords give high stretch resistance
- Special notch design resists cracking while providing tensile support during operation
- Oil and heat-resistant construction throughout
- Meets SAE J636b and SAE J637 specifications

GREEN STRIPE XL V-BELTS (NORTH AMERICA)

HEAVY DUTY PREMIUM V-BELT



Premium quality belts for heavy-duty engines.

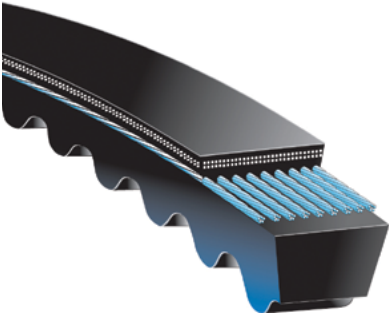
- Fiber loaded rubber stock puts added flexibility along belt's length, yet affords greater lateral stability
- Variable notch pattern causes belt to run cooler, quieter and with less bending stress
- Precision V-forming process assures exact size and angle control
- Meets or exceeds SAE 636 specifications
- Meets or exceeds ARPM standards for static conductivity



V-BELTS

SUPER HC AND SUPER HC MOLDED NOTCH V-BELTS (NORTH AMERICA)

NARROW V-BELT

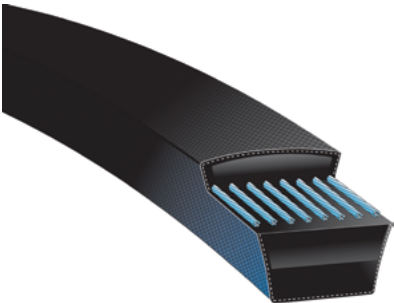


Recommended for use on special drives where space and weight limitations are critical. These “narrow” cross-sections can transmit up to three times the horsepower of the classical cross-sections (A, B, C and D) in the same amount of drive space. Suitable for all industrial applications, particularly where space, weight and horsepower capacity are critical.

- Gates curves provide proper cord support and full contact with the sheave-groove for uniform loading, uniform wear and increased belt life
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration
- The Flex-Weave cover is a patented construction for longer cover life, providing extended protection to the core of the belt from oil, dirt, and heat
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance

HI-POWER II BELTS (NORTH AMERICA)

INDUSTRIAL V-BELT



Featuring a composite, multi-purpose construction, these belts resist oil and heat, ozone, sunlight, weather and aging. Suitable for all industrial applications, including v-flat drives.

- Gates Curves provide proper cord support and full contact with the sheave-groove for uniform loading, uniform wear and increased belt life
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration
- The Flex-Weave Cover is a patented fabric construction for longer cover life, providing extended protection to the belt core from oil, dirt and heat
- Meet or exceed ARPM standards for static conductivity and oil and heat resistance

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

V-BELTS

TRI-POWER BELTS (NORTH AMERICA)

SMALL DIAMETER SHEAVE V-BELT



Constructed with Gates proprietary construction, this belt has a superior combination of flex and load carrying capacity, as well as less stretch resulting in less maintenance. This provides superior performance on the toughest heavy-duty A, B and C Section industrial drives. Suitable for all industrial applications, particularly where small or sub-minimal sheave diameters are required.

- Notches molded into the belt during manufacturing make this belt well suited for drives with smaller diameter sheaves
- Belt edge is machined for even sheave groove contact resulting in less slip and wear
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration
- Meets ARPM oil and heat resistant standards
- Meets ARPM static conductivity requirements

Note: Tri-Power belts are available in AX, BX, and CX sizes.
Tri-Power belts longer than 210 inches are a banded, cut notch construction.

INDUSTRIAL V-BELTS (EUROPE)

HEAVY DUTY FOR EUROPEAN INDUSTRIAL APPLICATIONS

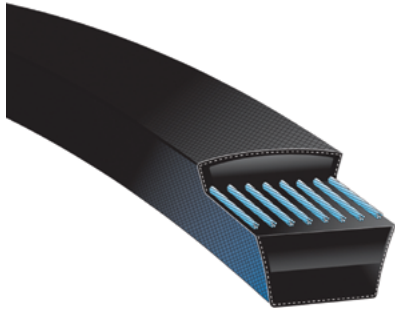
Premium belts such as the raw edge, narrow section Quad-Power II and Super HC MN V-belts and the classical section Hi-Power MN V-belts ensure excellent performance on the heaviest drives. They feature high modulus thermally active polyester cords that exhibit extremely low stretch. A leading-edge technology delivering the advantages every user is looking for: less maintenance and greater cost savings.

More information on sizes and applications of Gates belts can be found in Gates' catalogues E/70107 and E/70385.

V-BELTS SETS

FLEETRANNER BANDED V-BELT (EUROPE)

HEAVY DUTY V-BELT SET



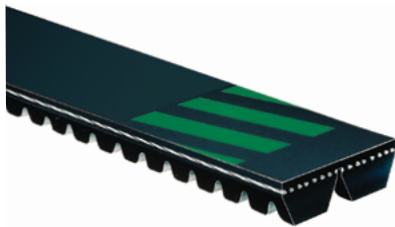
Wrapped V-belt providing maximum protection in severe working conditions.

- Concave sidewalls straighten out to assure optimum contact with the pulley and uniform belt load
- Strong flex-bonded tensile cords work as one solid and inseparable unit
- Flexible Flex-Weave cover protects against dirt, grit and oil. With static conductivity
- Rubber compound withstands oil, heat and wear

Recommended for: older generations of heavily loaded V-belt drives (classical section - 8527); drives subjected to heavy vibration (high-capacity section - 8569) where bandless laminated belts show stability problems.

GREEN STRIPE POWERBAND BELTS (NORTH AMERICA)

HEAVY DUTY V-BELT SET



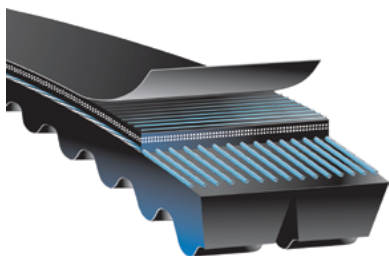
Designed for problem, heavy-duty, heavily vibrating applications requiring belt sets. Tie-band feature joining belts together ensures stability lacking in ordinary belt sets.

- Even load distribution between strands provides better shock load absorption
- Belt cannot turn over or slip off drive
- Unique tensile cord design gives belt extra strength, added flexibility and shock-load resistance
- Molded notches reduce bending stress, especially on small diameter pulleys, while dissipating heat
- Meets or exceeds SAE J1459 specifications

V-BELTS SETS

SUPER HC AND SUPER HC MOLDED NOTCH POWERBAND V-BELTS (NORTH AMERICA) FLEETRANNER POWERBAND (EUROPE)

NARROW V-BELT SET

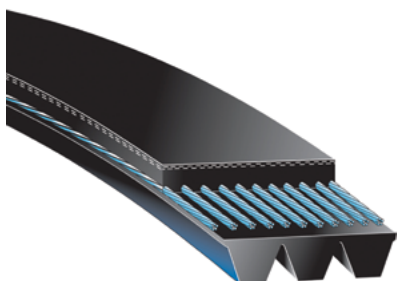


The PowerBand construction allows multiple belts to function as a single unit, with even load distribution and each strand fitting securely in the sheave groove. Recommended for multiple V-belt drives exposed to pulsating or heavy shock loads which can make belts whip, turn over or jump off the drive.

- The tie band assures high lateral rigidity, guiding the belt in a straight line and preventing it from coming off the drive
- Concave sidewalls provide proper cord support and full contact with the sheave-groove for equal loading and uniform wear
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance

FLEETRANNER POWERBAND BANDED V-BELT (EUROPE)

HEAVY DUTY V-BELT SET

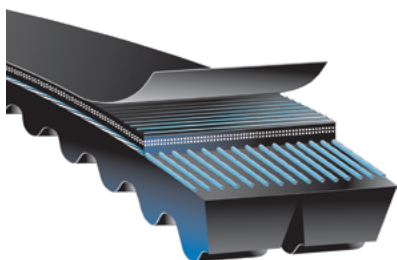


This belt replaces original equipment joined belts on heavy-duty problem or high-load drives. It consists of two or more banded V-belts joined together by a permanent reinforced rubber tie band. This strong band controls belt-to-belt distance and keeps the belts from bending sideways. Thanks to its construction PowerBand is specially suited for vibration and shock sensitive drives where single belts turn over or jump off the pulleys.

- Wrapped with Flex-Weave fabric for maximum protection in severe working conditions
- Concave sidewalls for optimum contact with the pulley and uniform belt load
- Strong flex-bonded tensile cords
- Polychloroprene compound withstands oil, heat and wear

FLEETRANNER POWERBAND MOLDED NOTCH MULTIPLE V-BELT (EUROPE)

HEAVY DUTY V-BELT SET



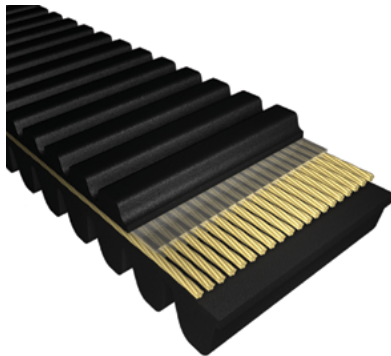
Consists of two or more molded cog belts joined together by a high-strength tie band, thus being tougher than belts taken separately. Ensures excellent stability lacking in ordinary belt sets. The clogged PowerBand cannot turn over or slip off the drive.

- Evenly distributed strand-to-strand distance provides better shock load absorption
- Molded cogs reduce bending stress, especially on small diameter pulleys, and help dissipate heat
- Unique tensile cord design gives extra strength, added flexibility and shock load resistance

Recommended for: Heavy-duty automotive drives, subject to severe and problematic vibrations.

RECREATIONAL V-BELTS

G-FORCE CVT BELTS



Gates G-Force belts are the first of a new generation of Continuously Variable Transmission (CVT) belts. Designed using Finite Element Analysis (FEA) techniques, the latest construction, materials and measuring technology G-Force drive belts are designed for superior fit, performance and durability for today's recreational and utility all-terrain equipment. Identical to OEM, G-Force belts are constructed with double or single cog designs to match the OEM belt. Extreme testing, in controlled environments as well as on race vehicles, has proven the G-Force belt to be high performing and durable, with no clutching adjustments necessary at installation.

- OEM constructed drop-in belt with no clutching adjustments
- Tested under extreme conditions in controlled environments as well as on race vehicles
- Viability testing completed to match shift curves
- Dynamometer testing proves G-Force belts outlast other high-performance belts by as much as five times
- Advanced aramid tensile cords and reinforced fiber loaded under-cord are used in construction for durability and dependability
- Proprietary measuring technology assures exact fit

POWERLINK BELTS

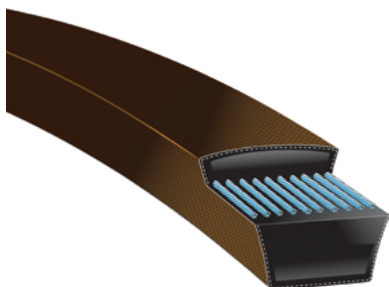


Gates PowerLink drive belts are specially designed for a variety of motorized Continuous Variable Transmission (CVT) applications including street legal step-through scooters and Go-Karts. PowerLink belts are available in two types:

- Conventional belt offers OE-equivalent performance and durability
- Premium belt provides longer durability for high performance applications

LAWN AND GARDEN V-BELTS

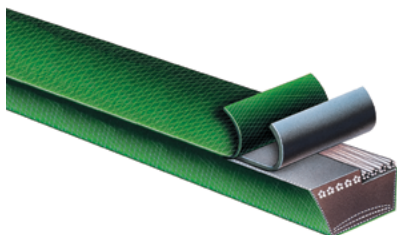
BLADERUNNER BELTS



Designed to specific unique applications providing exact OEM fit, construction and performance of leading lawn and garden equipment manufacturers. Built to withstand the rigorous start and stop operation of outdoor power equipment.

- Meets or exceeds the performance of each specific application
- Utilizes aramid cord construction in most cases
- Smooth operation during frequent and severe shock loads
- Reduces costly downtime and labor associated with replacing a belt
- Superior performance over fractional horsepower belts on recommended applications

POWERATED V-BELTS



These green belts are an alternative to conventional light-duty belts, with high performance construction delivering more horsepower, less stretch and providing longer service life. PoweRated belts are suitable for outdoor power equipment, appliances and industrial applications where Fractional Horsepower (FHP) belts are typically used

- Bareback construction for smooth clutching on shock loaded, backside-idler driven equipment
- Aramid tensile cords combine limited stretch with extraordinary strength and durability.
- Meets ARPM oil and heat resistant standards

Note: PoweRated V-Belts can be substituted for equivalent sizes of Truflex V-Belts.
Note: PoweRated belts do not meet ARPM requirements for static conductivity.

TRUFLEX V-BELTS



Truflex belts feature superior length stability for minimal take-up requirements. Suitable for all industrial light duty applications, usually using fractional horsepower (FHP) motors.

- Gates curves provide proper cord support and full contact with the sheave-groove for uniform loading, uniform wear and increased belt life
- Flex-bonded cords are strongly bonded to the body of the belt resulting in equal load distribution and the absorption of bending stress without cord deterioration
- The Flex-Weave cover is a patented construction for longer cover life, providing extended protection to the core of the belt from oil, dirt and heat
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance

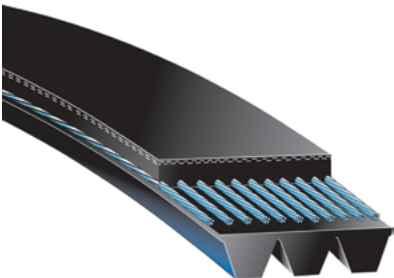
Note: Truflex belts are offered in cross sections 2L (0), 3L (1), 4L (2), 5L (3).



SERPENTINE BELTS

MICRO-V STRETCH FIT BELTS (NORTH AMERICA)

STANDARD, SELF-TENSIONING SERPENTINE BELT



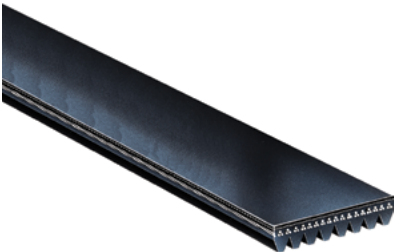
New Stretch Fit Drive Systems Demand New Solutions. Gates Micro-V Stretch Fit Belts, with exclusive self-tensioning technology, are the first and only Aftermarket belts engineered to fit like a glove and perform properly on these unique stretch fit drive systems.

- Patented highly engineered EPDM belt ribs are extremely resistant to oil leaks, wear and pilling
- New TwistLock™ technology provides the strength and flexibility of advanced polyamide tensile cord
- Specially formulated adhesive locks onto the cord allowing it to elongate and stretch, but never lose tension

Prior to installation, Stretch Fit belts are shorter than the actual working length, but once installed they automatically tension – maintaining the proper tension over the life of the belt and ensuring optimum load-carrying capacity.

MICRO-V BELT (NORTH AMERICA)

STANDARD SERPENTINE BELT



Belt for Accessory Belt Drive Systems (ABDS) and other serpentine belt applications. Designed using advanced manufacturing technology and premium EPDM construction to provide customers with superior ABDS and new vehicle type performance.

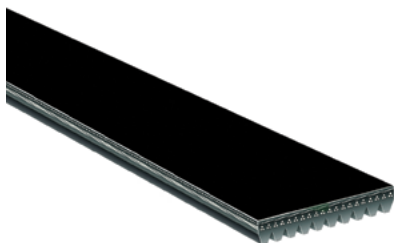
- Precision dimension control of rib profile transmits load efficiently throughout the ABDS allowing components to operate at optimum levels
- Able to operate and accept misalignment in the ABDS system better than other serpentine belts
- Flexible construction allows the belt to withstand billions of topside and backside bends resulting in long belt life
- Meets or exceeds SAE J1459

ELECTRIC VEHICLE
COOLANT
FUEL
OIL
SCR
EXHAUST
AIR
REFRIGERANT
BRAKE
CLAMPS & CONNECTORS
ACCESORIES
BELTS

SERPENTINE BELTS

MICRO-V BELT (EUROPE)

STANDARD SERPENTINE BELT



Belt for Accessory Belt Drive Systems (ABDS) and other serpentine belt applications. Designed using special aramid fibre reinforced rubber compound for improved abrasion resistance.

- Precision dimension control of rib profile transmits load efficiently throughout the ABDS allowing components to operate at optimum levels
- Able to operate and accept misalignment in the ABDS system better than other serpentine belts
- Flexible construction allows the belt to withstand billions of topside and backside bends resulting in long belt life
- Meets or exceeds SAE J1459

CENTURY™ SERIES MICRO-V DUAL-SIDED BELT (NORTH AMERICA)

HEAVY DUTY DUAL-SIDED SERPENTINE BELT

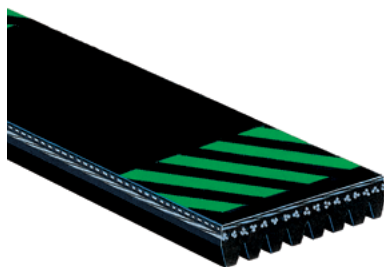


For equipment belts on serpentine drives that require a higher degree of efficiency when transmitting power. Designed for small diameter pulleys and for use with or without automatic tensioners.

- V-ribbed on both sides of the belt
- Specially designed to resist wear and cracking due to overall reduced thickness in construction
- Broad coverage on unique applications
- Custom setup for Gates specialized solution kits for Serpentine drives that cause problems from the OEM

GREEN STRIPE MICRO-V AT BELTS (NORTH AMERICA) FLEETRUNNER MICRO-V BELTS (EUROPE)

HEAVY DUTY SERPENTINE BELT



Long wearing fiber-loaded stocks with greater load-carrying capacity designed for demanding, heavy-service drives. Designed for replacing original belts on serpentine drives and other heavy-duty V-ribbed belt applications.

- Special belt constructions eliminate belt noise, reduce tension loss and solve problem drive applications
- Extra heavy-duty construction resists cracking and wear
- Precision ground to assure optimum belt-to-pulley fit
- Special formation process for precise dimensional control
- Reinforced with stretch-resistant, thermally active polyester tensile members
- Meets or exceeds SAE J1459 specifications

SERPENTINE BELTS

FLEETRANNER MICRO-V BELTS (EUROPE)

HEAVY DUTY SERPENTINE BELT

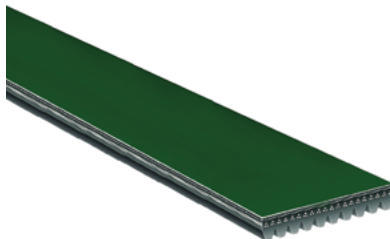


Engineered specifically for fleets and heavy-duty applications in trucks, buses and tractors. They are also recommended for high-speed, small-diameter applications requiring increased power transmission.

- Back fabric provides extremely high resistance to wear
- Polyester tensile cords guarantee low stretch and optimum load-carrying capacity at even the highest tensions
- Aramid fibre-reinforced EPDM compound guarantees optimum resistance to high/low temperature, wear, pilling, oil drops and ozone and improved coefficient of friction
- Low belt profile increases flex life, thus ensuring higher mileage performance
- Re-engineered heavy-duty construction resists cracking and wear to provide longer service life

FLEETRANNER MICRO-V BELTS (NORTH AMERICA)

HEAVY DUTY SERPENTINE BELT



Designed for the toughest applications, FleetRunner construction provides superior flexibility, stability, load capacity and unsurpassed belt life. Patented materials deliver peak performance at extreme prolonged operating temperatures making this belt the ultimate problem solver. An advanced blend of EPDM rubber technology withstands the modern threats of deterioration from increased exposure to ozone and water-based coolants. FleetRunner does this all while providing the lowest cost per mile for fleets, including ¾ & 1 ton pickups.

- Belt of choice by fleets, including ¾ & 1 ton pickups
- Lowest cost per mile
- Consistently outperforms all competitors
- Outstanding crack resistance at extreme temperatures
- Problem-solver designed for the toughest applications

INDUSTRIAL MICRO-V BELTS (J, L AND M SERIES) (NORTH AMERICA)

INDUSTRIAL SHORT PROFILE SERPENTINE BELT



Exclusive truncated (shortened) profile gives Micro-V belts increased flexibility, reduced heat buildup and allows performance at higher speeds on smaller diameter sheaves. Well suited for applications such as appliances, outdoor power equipment, roller conveyors, machine tools, medical equipment and exercise equipment.

- Fiber reinforced ribs for excellent wear resistance
- High modulus, low stretch tensile member for added strength and dependability
- Smooth running for minimal vibration at high speeds
- Meets or exceeds ARPM standards for static conductivity and heat and oil resistance



DRIVEALIGN

AUTOMATIC BELT TENSIONERS



Gates is a global leader in Original Equipment (OE) System Design, with a full line of over 500 tensioners globally. Gates ensures that every tensioner they manufacture is built to rigid tolerances and specifications that guarantee fit, form and function.

- Patented vibration damping system improves tensioners, belts and accessory life
- Torsional round spring design provides consistent tension and does not allow contamination

DRIVEALIGN

HEAVY-DUTY
AUTOMATIC BELT TENSIONERS



The longest lasting belt tensioners in the industry. Engineered to exceed demanding OEM requirements.

- Labyrinth Seal – prevents contamination of internal parts for maximum durability and service life
- Machined Steel Pulley – reduces surface wear while shielding internal bearing from outside contaminants
- Double Row Bearings – twin rows of bearings carry more load and last up to three times longer than two individual bearings
- Round Spring Wire – includes chrome-silicone torsion spring for less flex-fatigue than flat-wire designs
- Patented Damping Mechanism – provides maximum stability, reducing vibration and increasing the life of belt, tensioner and other accessory drive components

HYDRAULIC TENSIONERS



For applications with high loads and/or angular vibrations, where a mechanical automatic tensioner cannot provide sufficient damping or tensioner movement.

- Use Gates tensioner pin set tool (PN#91010) for securing piston

DRIVEALIGN

IDLER PULLEYS



Designed for use on automobiles and light trucks as a locked center tensioning pulley, an automatic belt tensioner pulley or an idler pulley.

- Steel or thermoplastic construction provides high durability for long life
- Bearing is designed for application specific speed and load requirements
- Reliable operation under severe conditions

DRIVEALIGN

HEAVY-DUTY IDLER PULLEYS



Long-lasting pulleys built to endure the rigors of today's heavy-duty, fleet and off-road equipment.

- Superior bearings out perform OE Idler Pulleys
- Robust and high quality pulley materials to withstand contaminants
- New hardware included on some popular applications
- Built with precise dimensional tolerance to ensure proper fit and long lasting performance
- Built with corrosive-resistant coating to prevent rust and increase durability

EUROGRIP

OE DRIVE COUPLERS



Flexible coupler dampens shock and tolerates misalignment.

- Designed to connect a decoupler pulley on an alternator or air conditioning compressor
- Lubricated jacket minimizes coupling and end piece wear and retains tooth integrity during operation
- Glass fiber cord provides excellent dimensional stability at high rotational speeds
- Fiber-loaded construction maximizes torque capability, controls damping and provides excellent age resistance
- Coupling's flexibility tolerates misalignment in components
- Predictable shear properties allow for component protection

WATER PUMPS

FOR HEAVY DUTY APPLICATIONS



Gates carries an extensive line of water pumps for heavy duty applications

- Designed to handle rugged Fleet standards
- New pumps manufactured to ISO/TS 16949 standards
- 100% fully tested unitized bearings/seals
- Gates heavy duty water pumps, represented as a part number with an HD suffix, carry a warranty of 18 months or 150,000 miles/5,400 hours, whichever comes first
- Computerized machined surfaces for proper fit/sealing

LIST BY KEYWORDS

AdBlue	See SCR.	Elbow	Coolant or air hose - page 60-63. (4261, 4278, 4281, 4177 (Elbows))
Air Brake	Page 132-137, (3245E, 3245T, 3276, 3658C, 3658E, 4327, 4657AB, 4657DT, 7752) Also see Vacuum Brake.	Engine Oil	See Oil section.
Air Cleaner	See Air Intake/Inlet.	EPDM	Straight - page 32-37, 44, 48-51, 106-107, 116-117, 125. (4175EC, 4178, 4175SC, 4175HT, 4176HD, 4272, 4685WG, 4254, 4284, 3137ME, 4686ME, 4289E, 4256NP, 4256PM) Small Diameter - page 54-57, 132, 135. (4230T, 4040A, 4251D, 4230SB, 4230RS, 4230RK, 3269S, 3230, 3245E, 3276) Hump - page 48-51. (4254, 4284) Formed - page 64-69. (4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS) Peroxide cured - page 69, 102. (4256LS, 4217IS)
Air Compressor	Compressed air or brake supply - see Air Brake. Compressor supply from charge air - see Coolant, Small Diameter.	Exhaust Gas Recirculation	Coolant supply/return - see Coolant section. Exhaust air connection - page 123. (4177)
Air Conditioning	Page 25, 128-129. (3353)	Flexible	See Wire Reinforced for highest flexibility in large diameters.
Air Duct	Page 112. (7768) Also see Air Intake, Coolant Hose, or Scavenge Hose.	Fuel Fill	Page 82-82, 97. (4663K, 4278BD, 4278, 4278CN)
Air Intake/Inlet	Straight - page 112-115, 120. (7768, 4663A, 4663J, 4663G, 4171H) Hump - page 121-123. (4177W, 4177S, 4177) Formed - page 116-119. (7736, 4289E, 4289N) Also see Coolant section page 30-69.	Fuel Line	Straight - page 72-75, 78-81, 89-90, 134. (4219G, 3225ST, 4324, 4219D, 3284AC, 4219BG, 4219BF, 4219BD, 4327DT, 4219M, 4219N, 4219BM, 3658F, 3658D, 3658BC, 3658E) Formed - page 83, 97-99. (4278BD, 4278CN, 4278OB, 4278SS)
ATAAC	See CAC.	Gaseous fuels	See Gates Industrial Hose Catalog.
Belt	V-Belt - page 183-189. PowerBand - 187-188. Recreational V-Belt - page 189. Micro-V serpentine - page 191-193. Belt Accessories - page 194-195.	Fuel Tank	Submersible in-tank - page 79. (4219)
Biodiesel	Straight - page 72, 74-75, 78-79, 81-82. (4219G, 4219D, 4219BG, 4219BF, 4219BD, 4219, 4663K, 3658F) Formed - page 83. (4278BD)	Gasoline	See Fuel Fill, Fuel Line, or Fuel Tank.
Brake	See Air Brake or Vacuum Brake. Brake fluid reservoir - page 55-59. (4040A, 4251D, 4230T). Hydraulic brake pressure line not supplied by Gates	Government	See Gates Government Hose Catalog
CAC (Charge Air Cooler)	Straight - page 120. (4171H) Also see Coolant section for cold side CAC only. Hump - page 121-123. (4177W, 4177S, 4177) Formed - page 67, 125 (4256HY, 4256NP, 4256PM, 4278AA)	Guard	For hose guard, see Sleeve. Also see Splash Guard.
Caps	Radiator, fuel, oil - page 173-177.	Heater	Straight - page 54-58. (4230T, 3270, 4040A, 4251D, 4230SB, 4230RK, 4230RS, 3269S, 3230, 4230S, 3231) Formed - page 64-69. (4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS)
Clamp	Page 139-145	Hot Side CAC	Straight - page 120. (4171H) Hump - page 121-123. (4177W, 4177S, 4177) Formed - page 123. (4177)
CNG (Natural Gas)	See Gates Industrial Hose Catalog 39496-000 for LP350, LP350x, and LPG Vapor.	Hump	Page 119, 121-123. (7736, 4177W, 4177S, 4177)
Cold Side CAC	See CAC.	Hump and Ring	Page 123. (4177)
Coolant Bottle	Page 55. (4040A, 4251D). Also see Coolant section. page 30-69.	Hydraulic Oil	For low pressure suction, return, or tank hose, see Oil section. For high pressure lines, pilot lines, see Gates Hydraulic Catalog.
Coolant	Straight - page 32-46, 48-51, 106-108. (4175EC, 4178, 4175SC, 4175HT, 4176HD, 4272, 4169A, 4176Y, 4179G, 4169G, 4171, 3137ME, 4685WG, 4684CF, 4686ME, 4684S, 4254, 4284) Small Diameter (Heater Hose) - page 54-58, 88, 91. (4230T, 3270, 4230SB, 3269S, 3230, 4230S, 3231, 3319HT, 3319CA, 4657AM) Hump - page 46-47. (4177W, 4177S) Formed - page 60-69. (4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS, 4256VT, 4261)	LP (Liquid Propane)	See Gates Industrial Hose Catalog 39496-000 for LP350, LP350X, and LPG Vapor.
Crank Case Vent	Straight - page 72-74, 78, 80. (4219G, 3225ST, 4324, 4219D, 4219BD, 4219M) Formed - page 96, 97, 99. (4278, 4278CN, 4278SS)	Marine	Wet exhaust - page 97, 106-108. (4278CN, 3137ME, 4686ME, 4684CF) Fuel - page 80-81. (4219M, 4219N, 4219BM, 3658F)
Cutters	Page 178-181 (7469)	Micro-V Belt	Page 191-193.
DEF (Diesel Emission Fluid)	See SCR.	Military	See Gates Government Hose Catalog.
DEF Heater Hose	See Heater.	Mud Flap	See Splash Guard.
Diesel	See Fuel Fill, Fuel Line, or Fuel Tank.	Nitrile	Very common type of rubber in most fuel, oil, and some coolant hoses.
DIN 73379	Page 73-74. (3225ST, 4324)	Nylon	See Tubing (Plastic).
DIN 73411	Page 37, 58. (4272, 3230)	Oil	Straight - page 72-75, 78, 80-81, 83, 88-91, 94-95. (4219G, 3225ST, 4324, 4219D, 3284AC, 3284SS, 4219BD, 4219M, 4219N, 3658F, 4278, 3319HT, 3319CA, 4219HT, 3658BC, 4319, 3317LE, 3317AB, 3283SA, 3283LF). Straight Large Diameter - page 38-39, 82, 108. (4169A, 4176Y, 4663K, 4684CF) Formed - page 83, 97-99. (4278BD, 4278, 4278CN, 4278OB, 4278SS)
DPF Sensor	Page 59. (4040T)		
EGR	See Exhaust Gas Recirculation.		

LIST BY KEYWORDS

	High Pressure - page 89-93. (3658D, 3658BC, 4657AM, 4657DT, 4657PS, 4657JT, 4657TB) Very High Pressure - See Gates Hydraulic Catalog.		
Oil Cap	Page 177.	SAE J1527	3245E, 3245T, 3658C, 4657AB, 3658E, 4657DT, 3276)
Oil Cooler	Coolant Lines - See Coolant section. Oil Lines - See Oil section.	SAE J2006	Marine Fuel Hose - page 80-81. (4219M, 4219N, 4219BM, 3658F)
Oil Drain	Servicing engine, hydraulic, or other oil systems - see Engine Oil section. Turbo oil return, see Turbo Oil Drain.	Scavenge Hose	See Marine, Wet Exhaust.
PCV	See Crank Case Vent.	SCR	See Coolant section or see Gates Industrial Hose Catalog Material Handling section or Master-Flex Vapor Recovery.
Plastic	Tubing for air brake - page 136-137. (4327 NABT) Tubing for fuel - page 79. (4327DT)		Heated line with couplings - page 103. (4202, 4402) Tank fill/vent - page 102, 136-137. (4217IS, 4256PC, 4327)
PowerBand Belt	Page 187-188.	Serpentine Belt	See Micro-V Belt.
PowerGrip Clamp	Page 144-145.	Silicone	Page 42-43, 46, 58, 62, 63, 109, 120, 123. (4171, 4684S, 4177S, 3230, 3231, 4281, 4040T, 4171H, 4177 Hump / Ring, 4177 (Elbows))
Power Steering	Return/Reservoir - page 95. (3283SA, 3283LF) Supply - page 94. (3317LE)	Silicone Tubing	Page 59. (4040T)
Propane	See Gates Industrial Hose Catalog for LP350, LP350X and LPG Vapor.	Sleeve	Page 167-170.
Radiator	See Coolant.	Splash Guard	Page 178.
Radiator Cap	Page 173-174.	Static Strap	Page 178.
Reducer	Page 60, 119. (4261, 7736) Also see Formed hose for the specific application.	Suction (Hydraulic)	See Oil.
Return (Hydraulic)	Straight - page 72, 74, 88-89. (4219G, 4324, 3319HT, 4219HT) Straight Large Diameter - page 38, 39, 45, 92. (4169A, 4176Y, 4663K, 4684CF, 4657DT) Formed - page 96-99. (4278, 4278CN, 4278OB, 4278SS) High Pressure - See Gates Hydraulic Catalog.	Thermostat	Pages 171-172.
SAE 20R1	Coolant hose - page 32-36, 39-42, 57. (4175EC, 4178, 4175SC, 4175HT, 4176HD, 4169A, 4176Y, 4179G, 4169G, 4171, 3269S)	Transmission Oil Cooler	Page 88-89, 91-92. (3319HT, 3319CA, 4219HT, 4319, 4657AM, 4657DT) Also see Oil section.
SAE 20R2	Coolant hose with embedded wire - page 44-46. (4685WG, 4684CF, 4684S)	Tubing	Plastic - Page 136-137. (4327 (NABT)) Rubber - Page 55, 59. (4040A, 4040T)
SAE 20R3	Small ID coolant hose. Straight - page 54-58. (4230T, 3270, 4251D, 4230SB, 4230RS, 4230RK, 3230, 4230S, 3231) Formed - page 60, 64-66, 68-69. (4261/4275, 4280MH, 4280GN, 4276KR, 4256SB, 4256LS)	Turbo	For turbo air inlet, see Air Intake/Inlet. For turbo air outlet, see Charge Air Cooler Turbo vacuum tubing - page 59. (4040T)
SAE 20R4	Coolant hose. Straight - page 37. (4272) Formed - page 60, 64-69. (4261, 4275, 4280MH, 4280GN, 4276KR, 4256HY, 4256SB, 4256LS)	Turbo Oil Drain	Straight, high temperature - page 74, 91, 95, 135 (4219D, 4319, 3283LF, 7752). Formed, high temperature - page 99. (4278SS). Also see Oil section.
SAE 20R5	Coolant hose with wire reinforcement - page 48, 51. (4254, 4284)	USCG	See Marine section.
SAE 30R2	Higher pressure fuel/oil hose - page 75, 89. (3284AC/3284SS, 4278OB)	Vacuum Brake	Page 135. (3276)
SAE 30R5	Wire Reinforced Fuel / Oil Fill hose - page 82. (4663K)	Vacuum Tubing	Page 55, 59. (4040A, 4251D, 4040T)
SAE 30R6	Fuel/oil vent or fill - page 72, 97. (4219G/4219XL, 4278CN)	V-Belt	Page 183-187.
SAE 30R7	Fuel/oil vent or fill - page 72-73, 97. (4219G/4219XL, 3225ST, 4278CN)	Water Pump	Page 195.
SAE 30R9	Lower permeation fuel hose - page 74. (4219D)	Wet Exhaust	Page 97, 106-108. (4278CN, 3137ME, 4686ME, 4684CF)
SAE 30R10	In-Tank / Submersible Fuel - page 79. (4219)	Windshield Wiper Tubing	Page 55. (4040A, 4251D)
SAE 30R14	Low permeation fuel hose with barrier layer - page 75, 78. (4219BG, 4219BF)	Wire Reinforced	Coolant and water, embedded helix - page 44, 46, 50-51, 107, 108. (4685WG, 4684S, 4284, 4686ME, 4684CF) Inserted helix - page 48-49. (4254) Air - embedded helix - page 112-115. (7768, 4663A, 4663J, 4663G). External braid - page 135. (7752) Ring reinforced - page 123. (4177) Fuel / oil - embedded helix - page 82, 107. (4663K, 4686ME) Wire braid - page 81, 89-93. (3658F, 3658D, 3658BC, 4657AM, 4657DT, 4657PS, 4657JT, 4657TB) Brake, air - page 133-134. (3658C, 4657AB, 3658E, 4657DT)
SAE J189	Power steering return line - page 95. (3283SA, 3283LF)		
SAE J200	Specification for classifying rubber types by their heat and oil resistance.		
SAE J844	Air Brake Tubing - page 136-137. (4327 NABT) Fuel Tubing - Page 79 (4327DT)		
SAE J1402	Air brake hose, page 89, 132-135. (3658D,		

AMERICAN STANDARDS

ARPM – General guidelines for rubber products. Previously part of RMA (Association for Rubber Products Manufacturers)

ASTM D2000 – Adopted from SAE J200 – (see below)

CARB – Fuel permeation certification for gasoline hose (California Air Resources Board)

DOT FMVSS 106-74 – Brake hose performance testing, labeling, and registration (U.S. Dept. of Transportation, Federal Motor Vehicle Safety Standard)

EPA – Fuel permeation certification for gasoline hose (U.S. Environmental Protection Agency per 40CFR Part 1060)

NMMA – Marine approval listing (National Marine Manufacturers Association)

SAE J20 – Reinforced hose for engine coolant systems (Society of Automotive Engineers)

SAE 20R1 – Heavy-duty service, standard wall or heavy wall

SAE 20R2 – Heavy-duty service with embedded wire for kink and vacuum resistance

SAE 20R3 – Normal service heater hose (ID under 1 inch)

SAE 20R4 – Normal service radiator hose (larger IDs)

SAE 20R5 – Normal service with embedded wire for high flexibility and vacuum resistance

Class A – High-temperature resistant (e.g. silicone)

Class B – High oil resistant (e.g. nitrile)

Class C – Medium oil resistant (e.g. neoprene)

Class D-1 – Low oil resistant, improved service (e.g. EPDM)

Class D-2 – Low oil resistant, standard service

Class D-3 – Low oil resistant, high-temperature resistant (e.g. p-EPDM)

EC suffix – Electrochemically resistant rubber (see the ECR info box on page 10)

HT suffix – High temperature resistant rubber (>125°C)

SAE J20-1 and J20-2 are supplements to SAE J20 for hoses for government use, replacing part of MS51008 and ZZ-H-428.

SAE J30 – Reinforced hose for fuel and oil

SAE 30R2 – Higher pressure than 30R7 usually used for oil up to 100°C

SAE 30R5 – Wire helix embedded fuel fill hose

SAE 30R6 – Low pressure, to 100°C

SAE 30R7 – Low pressure, to 125°C

SAE 30R9 – Fuel injection pressures, to 135°C

SAE 30R10 – Only used for in-tank or submerged in fuel

SAE 30R13 – Biodiesel resistant

SAE 30R14 – Low permeation to fuel

SAE J189 – Reinforced hose for power steering return (low pressure)

SAE J200 – Classification of rubber materials (typically used for unreinforced hose)

Suffix requirements further define properties and material testing

Does not define tolerances or performance requirements for hoses

M3BC 707 – Temperature resistant to 100°C with medium oil resistant (i.e. neoprene)

M3CA 707 – Temperature resistant to 125°C with no oil resistant requirement (i.e. EPDM)

M3CE 810 or M5DE – 150°C with good oil resistance (i.e. CPE)

M2GE 705 – 225°C with good oil resistance (i.e. silicone)

M2HK 710 – 250°C with high oil resistance (i.e. FKM)

SAE J517 – Hydraulic hose 100R1 through 100R19

100R5 – Steel wire reinforced, textile cover

100R6 – Fiber reinforced, rubber cover

SAE J844 – Nylon brake tubing. Type A = non-reinforced. Type B = with reinforcement

SAE J942 and 1037 – Windshield washer fluid tubing

SAE J1402 – Air brake hose. Type A = fiber reinforced, rubber cover

SAE J1403 – Vacuum brake hose. VH = heavy wall. VL = light wall

SAE J1405 – Optional impulse and high temperature circulation test for hydraulic assemblies

SAE J1527 – Marine fuel hose. Type A = fire tested. Style R1 = yarn reinforced w/o wire or helix

SAE J1532 – Transmission oil cooler (TOC) hose. Type B = 4.1MPa burst pressure. Class 1 = 125°C

SAE J2050 – High temperature power steering pressure line hose

SAE J2076 – High temperature power steering return line hose

SAE J2260 – Plastic fuel tubing

EUROPEAN STANDARDS

BS EN 854 – Hydraulic hose, textile reinforced (British spec)

GB/T 18948 – Coolant hose for cars and light commercial vehicles (Chinese Spec)

DIN 73379 – Fuel hose (German spec)

DIN 73411 – Reinforced hose for engine coolant systems (German spec)

Class A – EPDM to 125°C

Class B – peroxide cured EPDM to 135°C

Class C – silicone to 175°C

ISO 4639 – Fuel hose (obsolete)

ISO 19013 – Fuel hose. -1 = diesel fuel, -2 = gasoline

COMPANY STANDARDS

AGCO CMS M1620 – SAE 20R3 and 20R4, and J200 BA 707 with added requirements

Bobcat MS77 – SAE 20R4, 30R6, 30R7, and J200 3CA 707 with added requirements

CNH FZG-5754 – SAE J200 M3CA 707 with added requirements

Caterpillar 1E0515 – SAE 20R3. 1E0515A = 20R3 D1, 1E0515B = 20R3 EC D1, 1E0515C = 20R3 Class B tube/Class C cover, 1E0515D = 20R3 D3, 1E0515E = 20R3 Class A

Caterpillar 1E0584 – SAE 20R4. 1E0584A = 20R4 D1, 1E0584B = 20R4 EC D1, 1E0584C = 20R4 Class B tube/Class C cover, 1E0584D = 20R4 D3, 1E0584E = 20R4 Class A

Caterpillar 1E1543D – SAE 30R2 through 30R9 as shown on the print

Caterpillar 1E2815A – Neoprene rubber similar to SAE J200 M3BC 707 with added requirements

Caterpillar 1E2815B – EPDM rubber similar to SAE J200 M3CA 707 with added requirements

Caterpillar 1E2815C – Silicone rubber similar to SAE J200 M5GE 606 E036 F19 G11

Caterpillar 1E2815D – Same as 1E2815C with tube liner similar to SAE J200 M2HK 707 B37 EF31

Caterpillar 1E4353 – SAE 20R1 standard wall. 1E4353A = 20R1 D1, 1E4353B = 20R1 EC D1, 1E4353C = 20R1 Class B tube/Class C cover, 1E4353D = 20R1 D3, 1E4353E = 20R1 Class A

Caterpillar 1E4355 – SAE 20R1 standard wall. 1E4355A = 20R1 D1 or D2, 1E4355B = 20R1 EC D1 or D2, 1E4355C = 20R1 Class B tube/Class C cover, 1E4355D = 20R1 D3, 1E4355E = 20R1 Class A

Cummins 25001 – SAE 20R1 Class B tube/Class C cover with added requirements

Cummins 25003 – SAE 20R4 Class A with added requirements

Deere DTW1223 – SAE 20R3 and 20R4 with added requirements

Deere JDS G253 – Biodiesel compatibility of hose and fittings

Freightliner 48-25121 – SAE 20R1 EC D1

Freightliner 48-25122 – SAE 20R3 EC D1 with aramid reinforcement

Freightliner 48-25951 – Gates Blue Stripe material SAE 20R4 EC D1 with added requirements

Nacco HCE-59 – SAE 20R1 D1 or D2, heavy wall

Nacco HCE-103 – SAE 30R7

Nacco HCE-129 Class 5 – EPDM rubber SAE J200 M3CA 707 A25 B35 F17 with added requirements

Nacco HCE-129 Class 6 – Neoprene rubber SAE J200 M3BC 710 E014 E034 F17 with added requirements

Nacco HCE-137 Class 1 – SAE 20R3 or R4 Class D1

Nacco HCE-137 Class 2 – SAE 20R3 or R4 Class D2

Nacco HCE-137 Class 3 – SAE 20R3 or R4 Class D3

Navistar MPAPS F30 Grade 1B – SAE 20R4 EC Class D1 with added requirements

Navistar TMS-6034 Grade CB – SAE 20R4 with added requirements, for charge air applications

Volvo TR20994097 – Peroxide cured EPDM hose specification for coolant applications

Please see the Keyword Index pages 156 - 157 for Gates hose types to meet these specifications.



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