OPERATION MANUAL

UNIPRESS 4 (UP4)

GATES TUBE FITTINGS GMBH

OPERATION MANUAL

1 GENERAL DESCRIPTION

In this chapter, you will find information for using the operation manual and general safety instructions for handling the machine.

1.1 NOTES ON THE OPERATION MANUAL (OM)

This Operation Manual is part of the product:

- **UNIPRESS 4** (universal drive unit for pipe presetting)

As a central part of the operator's reference material, this Operation Manual is of special importance. Heeding the instructions, data and regulations of the OM will help you to operate the machine safely and efficiently.

In reference to the illustrations and details of this Operation Manual, the machine is subject to technical alterations if these serve the purpose of improvement.

This Operation Manual may describe special equipment which is not part of your machine.

1.1.1 DESIGN OF THE OPERATION MANUAL

Safety precautions are indicated by corresponding symbols and printed in ***bold italics.***

1.1.2 WORKING WITH THE OPERATION MANUAL

With the help of this Operation Manual, we want you to become acquainted with the machine and so be able to operate it according to its intended application possibilities.

The Operation Manual contains important information on safe, proper and economic use of the machine. Heeding it will help you to avoid danger, reduce repair costs and non-productive time and increase the reliability and service life of the machine.

In addition to the Operation Manual, the instructions according to the national accident prevention and environmental protection regulations must be observed.

The Operation Manual has to be permanently available and in legible condition at the working site of the machine.

Any persons working with the machine or in its vicinity must read and follow the instructions of the Operation Manual. This applies to persons concerned with

- Operation of the machine, including setting-up, clearing machine problems in process, disposal of waste matter collected during production, machine care, disposal of fuel and process materials
- Maintenance (service, inspection, maintenance) and/or
- Transport

In addition to the Operation Manual and the national regulations for accident prevention valid on the working site, the technical standard regulations for safe and proficient work demand observation.

1.1.3 COPYRIGHT

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1.2 GENERAL SAFETY PRECAUTIONS

It is essential to heed all warnings, regulations and prohibitions.

ATTENTION!

Respect all safety precaution and warning signs attached to the machine!

Avoid any dangerous operation that might present a risk for your safety!

Preserve all safety precaution and warning signs attached to the machine completely and in legible condition!

Keep this Operation Manual permanently handy on any working site of the machine!

Should any changes concerning the safety of the operator or the machine's functions occur, switch off the machine instantly and report to the responsible authority / person!

Pay attention to the valid accident prevention regulations of the trade association!

1.2.1 SAFETY SYMBOLS AND SIGNS

PROHIBITED!

This symbol can be found in places where certain actions are prohibited because of imminent danger.

PROHIBITED, DO NOT PUT YOUR HAND IN!

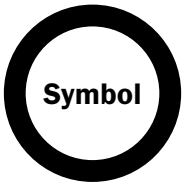
You find this symbol in spots where a certain risk remains and the operator should not come too close or reach in.

ONE-MAN WORKING PLACE!

The Tuboform must be treated as a working place for a single operator. If the machine is operated by two persons, they run the risk of additional hazards.

ATTENTION!

This is a warning symbol to attract attention to objects or situations that might involve danger.



RULES!

This symbol reminds you to follow certain instructions in order to protect yourself from danger and prevent damage to property.

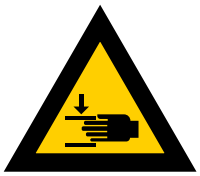
NOTE!

Ignoring this sign may lead to severe damage of property.

CAUTION - HIGH VOLTAGE!

In the event of current discharge caused by faulty structural components or cables, leave the danger area immediately and cut off the power supply.

Only electricians are allowed to install the machine and only according to the electric circuit diagram.



RISK OF GETTING CRUSHED!

Never reach into moving machine elements or facilities.

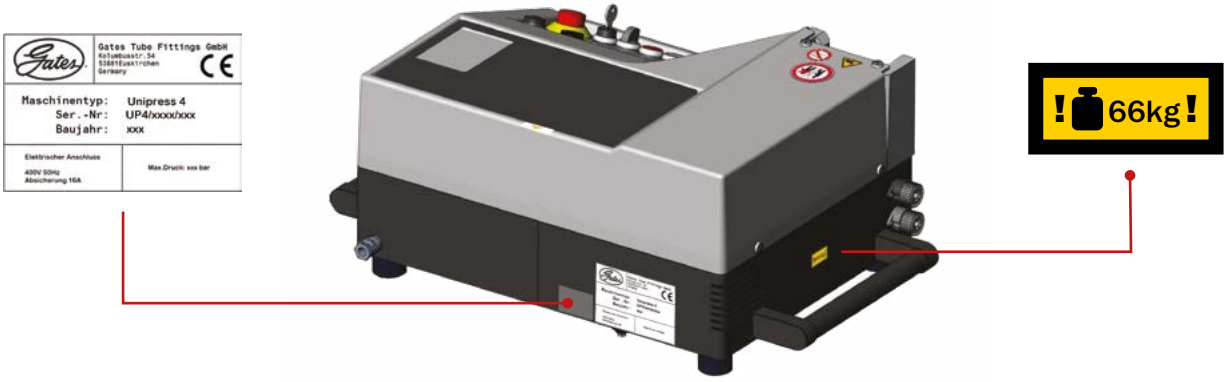
All existing protective caps and facilities must be assembled correctly. Do not remove protective caps or facilities during machine operation.

SUSPENDED LOADS!

Do not stand beneath suspended loads! You risk injury if the load falls down!

HOT SURFACES!

Malfunction may cause the surface to get hot. It can cause burns.



1.2.2 OBLIGATIONS OF THE OWNER

The operator is obliged to let only persons operate the machine, who:

- are familiar with the basic safety regulations at work and accident prevention and are briefed on the proper use of the machine.
- have read the chapters concerning safety and warning directions in this Operation Manual, understood them and confirmed this with their signature.
- have been thoroughly trained and instructed; their area of responsibility for operation, setting-up, maintenance and repair should be framed clearly and precisely!

In addition to this Operation Manual, please heed the legal rules in general and other binding regulations concerning accident prevention and environmental protection and pass them on!

For instance, these regulations may concern the handling of hazardous materials or making available and wearing personal protection outfits.

The safety-aware attitude of the staff must be reappraised frequently.

The operating employees must be qualified, well instructed in their field of work and familiar with handling the machine.

1.2.3 REFERENCE TO TRAINING

Appoint well instructed staff only! Sharply define the responsibilities of the staff concerning operation, setting-up, maintenance and repair!

Personal being apprenticed, generally trained, educated or briefed in any way shall be constantly supervised by an experienced person while working with the machine!

1.2.4 QUALIFICATIONS OF THE EMPLOYEES

Before starting to work, all persons entrusted with operating the machine are obliged to

- acknowledge the basic regulations concerning safety at work and accident prevention,
- read the safety precautions and warning directions in this Operation Manual and confirm their comprehension by signature,
- wear their personal protection outfit or the equipment belonging to a specific workplace for the benefit of safety and use the necessary protection aids while working.

The defined areas of competence must be maintained.

As an example

- repair or maintenance of electric and hydraulic components of the machine shall be carried out only by qualified personnel or a trained person under the supervision of a qualified person, according to the valid technical regulations.

1.2.5 RISKS OF MACHINE OPERATION

The machine has been built according to state-of-the-art technology and the acknowledged safety-specific rules. Nevertheless it may pose a threat to the health and life of users or third parties; operating the machine may affect adversely the machine itself or other valuables.

Because of the working stroke of the tool, an element of risk remains. In normal operation, the pipe is held in the left hand of the operator, the right hand actuates the pushbutton for the working stroke. The operator cannot reach into the working stroke range with his hand.

The Tuboform was designed as a one-man working place; a second operator means additional risks.

The machine shall only be applied

- for its intended use
- in a safety-related sound condition.

Before starting the machine, make sure that all protective facilities and safety requirements, for instance removable protective facilities and emergency-off facilities, are available and in working order!
Any safety-related failures shall be corrected immediately!

1.2.6 USE AS INTENDED

The basic unit of the TUBOFORM C is a universal basic adaptor for different attachments. With the cutting ring attachment, a variety of different cutting rings from 6 to 42 mm or 1/4 “ to 2 “ in diameter can be fitted up to the maximum operation pressure.

The flaring head has been laid out for 37° flared edges from 6 to 42 mm or 1/4 “ to 1 1/2 “Ø. Precision steel pipes according to DIN 2391/C Material St.37.4 NBK and stainless steel tubes 1.4571 /1.4541 within the diameter range from 6 to 42 mm can be machined.

With the presetting attachment for 10° flares, VOSS BV-10 as well as Zako flange connections from 16 to 38 mm Ø can be fitted.

Any operation going beyond the use mentioned above is not according to regulations. **PIPE BENDING SYSTEMS** cannot be held responsible for damage resulting from misuse.

Operation according to regulations also means

- acknowledging all rules and regulations of the Operation Manual and
- keeping the schedule for inspection and maintenance according to directions or within the period stipulated by the OM.

1.2.7 APPLICATIONS VIOLATING THE REGULATIONS

If the TUBOFORM is used in any other way than described in chapter 1.2.5, the application is not according to the intended use. Employing insufficiently qualified staff to operate the machine violates the regulations. The company **Gates Tube Fittings GmbH** cannot be held responsible for damage caused by noncompliant operation of the machine.

Any operations going beyond the utilisation mentioned above, e.g.:

- clamping and bending of unsuitable component part geometries
- operating the machine without its safety arrangements is regarded as **not according to regulations**.

1.2.8 GUARANTEE AND LEGAL LIABILITY

Basically, our “general sales terms and delivery conditions” apply. These are available to the user from the date of the contract on.

Guarantee and claims on liability for damage to persons or property shall be precluded if they result from at least one of the following causes:

- misuse of the machine;
- improper assembly, starting up, operation and maintenance of the machine;
- operating the machine despite defective safety arrangements and inadequately fitted or non-functioning safety and protection systems;
- ignoring the directions of the Operation Manual concerning transportation, storage, setting-up, starting up, operation, maintenance and rigging of the machine;
- unauthorised structural alterations of the machine;
- unauthorised alterations of the machine control;
- insufficient supervision of the machine parts exposed to wear;
- carelessly performed repair works;
- disasters following the influence of alien elements and superior force.

1.2.9 DISPOSAL

Once the service life of the unit / machine is over, the owner is responsible for the disposal at his own expenses and according to legal regulations; he releases us from the obligation of taking back any part of the machine and also from the liability towards third parties in this context.

DISPOSAL OF POL PRODUCTS

Empty hydraulic oil containers, waste oil, coolants or lubricants, oil and oily cloths shall be disposed at collecting points according to the local legislation. Further information concerning POL products (i.e. quantity and type) can be found in the technical data and safety data sheets of the appendix.

DISPOSAL OF THE MACHINE

Please heed the local accident prevention regulations!

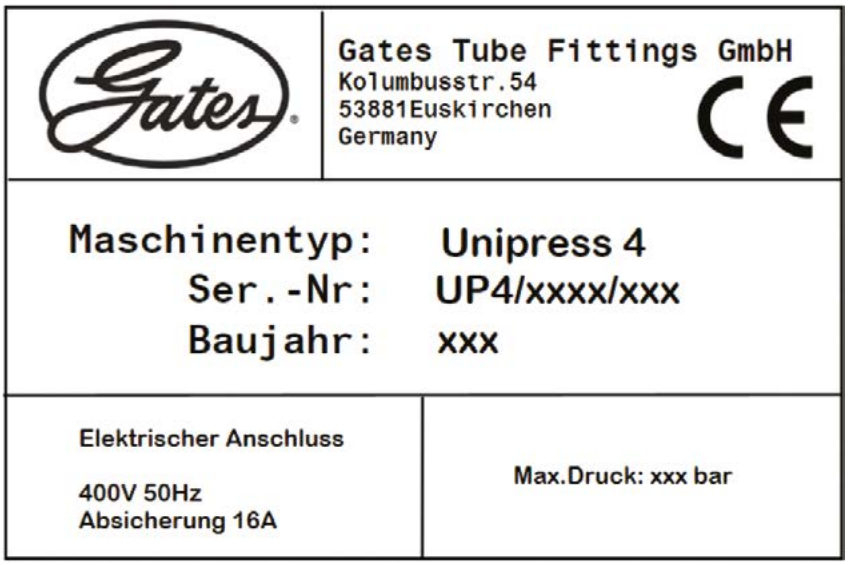
Before disassembly, the machine shall be shut down and all hydraulic oil in the machine removed.

Before disposal, the machine shall be disassembled, the materials separated and grouped as

- plastic
- non-ferrous metals
- electronic scrap
- steel

The materials shall be disposed of according to the customary legislation.

1.2.10 SPECIFICATION PLATE



1.2.11 DECLARATION OF INCORPORATION

DECLARATION OF INCORPORATION (ORIGINAL)

EC Guideline Machines 2006/42/EC, Appendix II, 1, A

This is to certify that the incomplete machine

Product name: Cutting ring assembly and flaring machine

Type designation: UNIPRESS 4

Machine number:

Year of construction: 2016

conforms, in its serial version, to the following relevant regulations:

Guideline 2006/42/EC in the version from 17.05.2006

Guideline 2014/30/EC in the version from 26.02.2014

The low voltage directive 2014/35/EC in the version from 26.02.2014 was maintained in reference to its objective

(s. Appendix I, No. 1.5.1 of the guideline 2006/42/EC).

Selection of applied harmonised standards, their source having been published in the Official Journal of the European Communities:

EN ISO 12100:2010
EN 349:1993 + A1:2008
EN ISO 4413:2010
EN ISO 13857:2008
EN ISO 14120:2015
EN ISO 13849-1:2015
EN ISO 13849-2:2012

The special technical documents according to directive 2006/42/EC, Annex VII, B have been prepared.

Commissioning of the partly completed machinery in prohibited until the partly completed machinery complied with the provisions of the EC Machine Directive and the EC Declaration of conformity according to annex II A is available.

For this purpose, the operating instructions in accordance with the above Machine Directive must be enclose.

Manufacturer: **PIPE BENDING-SYSTEMS GmbH & CO. KG**, Hunold-Rump-Str.76-80, 57368 Lennestadt
Authorised person for the compilation of the technical documents: Dipl.-Ing. Manfred Schauerte

Lennestadt, den 2016

Meinolf Rameil, Technischer Geschäftsführer

Note: The conformity declaration loses its validity if the customer alters any details of the unit without having contacted the manufacturer first.

2. TECHNICAL DATA

GENERAL DATA	
Designation	UNIPRESS 4
Max. sound level at the working place	ca. 60 db (A)
Feed rate	6,9 mm/s
Back stroke speed	31mm/s
Feed force	173 KN
Maximal stroke	40 mm

HYDRAULICS	
Tank capacity	ca. 3 Liter
Flow quantity	3,7 l/min
Pressure medium	Esso Nuto H 32 or similar quality. The maximum permissible soiling degree of the pressure fluid corresponds with grade 7 according to NAS 1638.
Operating pressure	Digitally adjustable up to 200 bar

ELECTRICS	
Driving mechanism	Elektroantrieb: 1,2 KW
Voltage	400V/50Hz/3phases - special voltage see identification plate
Power input	2.8 A - special voltage see identification plate
Standard for electricity	VDE
Protective system	IP 54
Connection type	5 pole 16A-CEE plug
Control voltage	24V

LIMITS OF APPLICATION	
Operation temperature	+10 - +50°C
Storing temperature	-10 - +70°C
Relative air humidity	90% max., not condensing

DIMENSIONS	
Weight	Basic machine: 66 kg / attachment heads 5-10 kg
Height	265 mm
Width	660 mm
Depth	515 mm

3. TRANSPORT/ERECTION OF THE MACHINE

3.1 UNPACKING, CLEANING

- Check the machine and tools to rule out transport damage.
- Make sure that machine and tools are complete by comparing with the delivery and order notes.

3.2 PREPARING THE SET-UP

3.2.1 SPACE REQUIREMENTS

The UNIPRESS 4 requires a footprint of app. 700 mm width and 550 mm depth on top of a stable rest, for instance a work bench. The height of the working place should be laid out according to ergonomic recommendations. The required space depends on the dimensions of the work pieces to be finished.

3.2.2 SURFACE

A solid, level, horizontal and non-slip surface is required!

3.2.3 POWER SUPPLY

5-pole CEE plug, 16 A, with interpoles for reversing rotation.

Other voltages according to regulations.

Check rotational direction and alter if required (the pump cannot build up pressure if the rotational direction is wrong).

Correction: Use a screwdriver to twist the interpoles of the mains plug by 180 (comp. fig. 3.2).

Attention!
Pull out the plug before beginning to work!

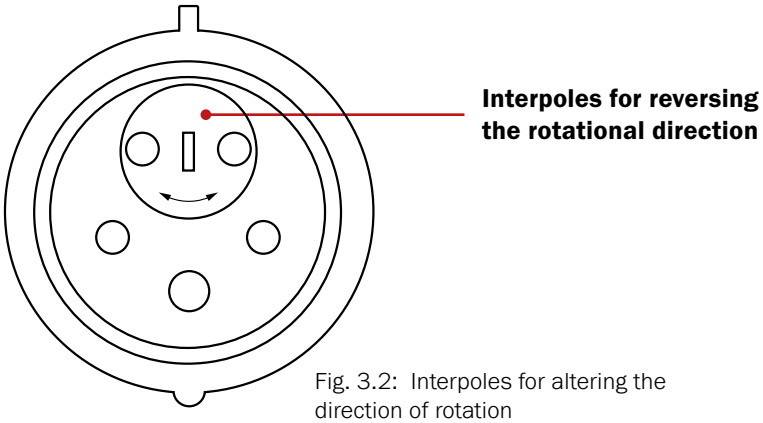


Fig. 3.2: Interpoles for altering the direction of rotation

Check direction of rotation again.

3.2.4 ESTABLISHING THE REQUIRED CONNECTIONS

Connect the shock-proof plugs of the machine with the power supply. Activate the machine control with the 0-1 switch.
The digital display lights up to indicate that the machine is ready. If nothing happens, the emergency-off switch might be activated. Deactivate the emergency-off switch by twisting it to the right.

Attention!
Pull out the plug after completing work!

4. OPERATION

4.1 START OF OPERATION

Activate the control of the machine with the 0-1 switch.

The pressing operation is started by actuating the button.

4.1.1 USE

The machine is assigned to its intended use only.

4.1.2 SAFETY PRECAUTIONS

Never remove or alter any safety facilities or signs attached to the machine! This would pose a threat to life or physical condition!

Damaged signs or safety facilities shall be replaced instantly!

The machine must stand on a level, steady and slip-proof surface!

The machine owner is obliged to lay down the tasks of the persons responsible for the correct operation of the machine!

Heed all the valid health, work and fire protection regulations when operating the machine!

Before starting, the operating staff must check the machine, making sure that it is in operational and functional order; eliminate all risks for persons or the machine!

If a dangerous situation for man or equipment arises, take the necessary steps to prevent injury or damage immediately!

Heed all safety precaution and warning signs attached to the machine!

The personnel qualified for working with the machine shall study the operation manual thoroughly prior to starting, especially the chapters on safety instructions. Once the machine has started, it will be too late! This is most important for persons who don't usually work with the machine, e. g. setting-up or maintenance staff!

Handle machines in a technically faultless condition only; use according to regulations, beware of danger, take no security risks and observe the OM! Any interference relating to safety aspects should be eliminated immediately!

Special attention must be paid towards the risk of exceeding or falling below the capacity marks indicated in chapter "Technical Data"! If the owner fails to prevent misuse of the machine, he allows for a further potential source of danger to operational safety!

Unauthorised alterations are prohibited!

Never open protective caps before pulling out the plug!

In particular, there are dangers caused by exceeding or falling short of the performance characteristics specified in the technical data! Furthermore, failure by the operator to take measures to prevent unauthorized use is also a possible threat to operational safety.

Unauthorized modifications are not permitted

Only open the protective covers after unplugging the power plug

4.1.3 EMERGENCY-OFF SWITCH

Sudden imminent danger for man or equipment demands immediate action! Activate the emergency-off switch, marked in bright colours (red/yellow). This deactivates the drive, which can only be restarted after release of the mechanical interlock.

Make sure that all sources of danger have been cleared before releasing the emergency-off switch!

4.1.4 SAFETY PRECAUTIONS

If it is necessary to remove protective facilities for repair and adjusting works, this shall be performed with deactivated drives and secured machine only!

After having completed the setting-up and adjusting works, be sure to replace the protection facilities and check their flawless state and serviceability!

The skilled employee responsible for initial operation is obliged to check the state of the machine, making sure it matches the nominal state described in the Operation Manual!

The machine must always comply with the technical safety requirements before any operation may be started! This is the basic prerequisite for faultless machine operation! The machine shall be ready for operation and in functional order, any risk for persons and the machine itself shall be eliminated!

It is absolutely necessary for the operating staff to be familiar with the functions of the machine and the contents of the Operation Manual! The staff is obliged to read and comprehend the Operation Manual!

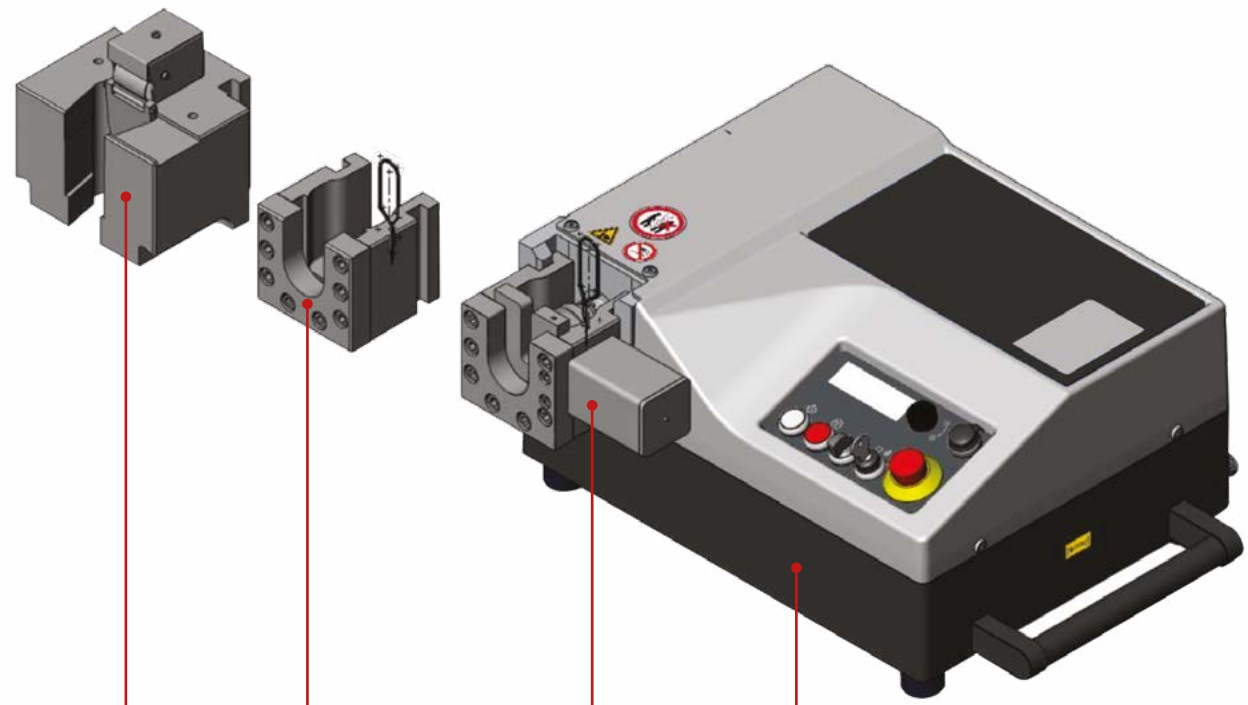
Any alterations of the control, switch gear and safety systems are prohibited!

The cooling space for the electric motor shall never be covered up or blocked!

Members of the operating staff are obliged to report to the shift leader immediately if they discover any faults, damage, accidents, interference or other irregularities!

If persons or the machine are at risk, the mandatory measures shall be taken at once!

4.2 DESCRIPTION OF THE MACHINE



UNIPRESS 4
BASIC UNIT

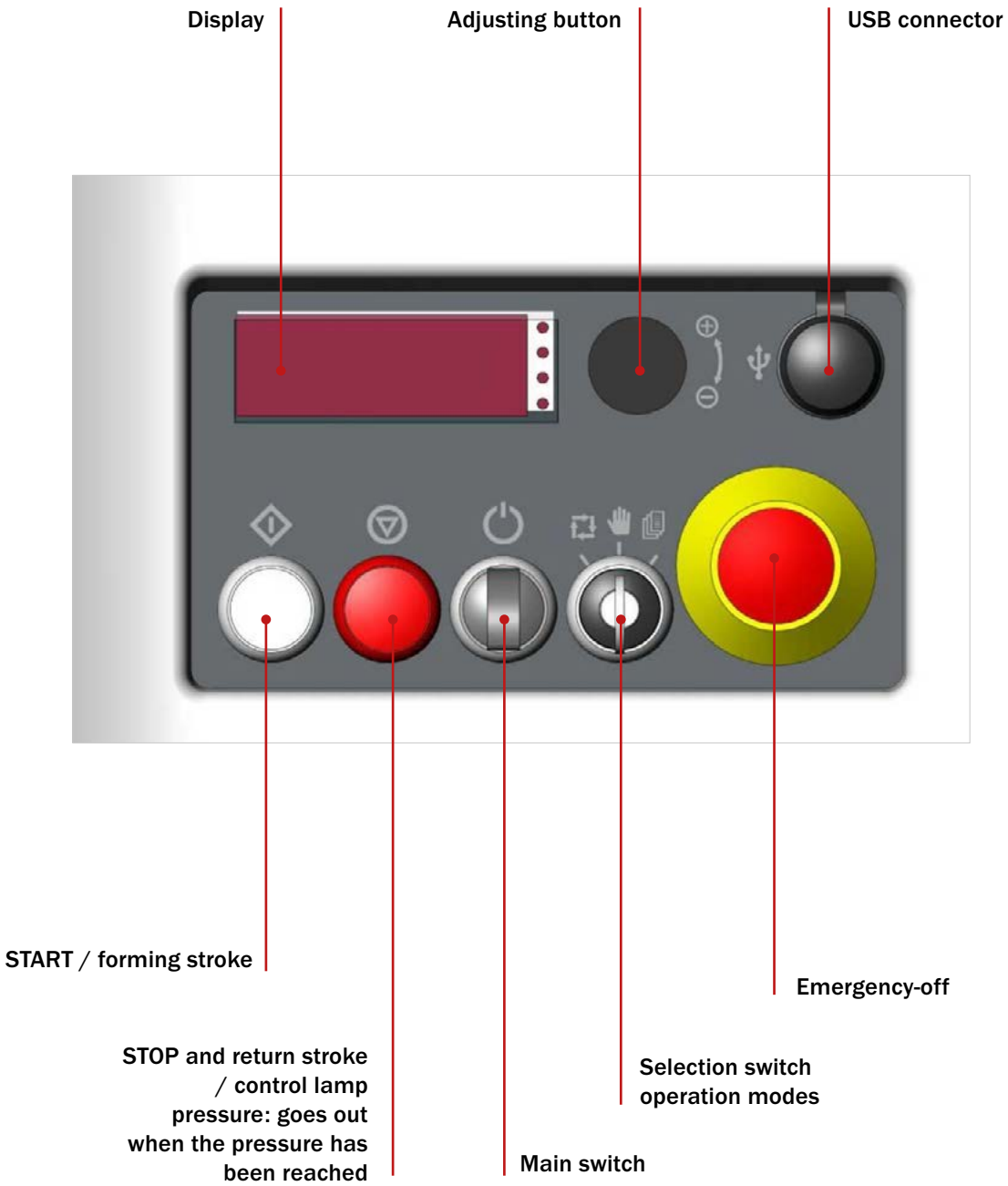
Presetting attachment for presetting with tool identification for metallic fittings with 24° cone

Presetting attachment for presetting for metallic fittings with 24° cone

Flaring attachment for flares according to DIN EN ISO 8434-1:2008-02, - Metallic pipe fittings for fluid technology and general application - part 2: Fittings with 37° cone

4.3 OPERATION

4.3.1 DESCRIPTION OF THE CONTROLS



4.3.2 DESCRIPTION OF THE SETTING PARAMETERS

BASICS

The required parameter is indicated after twisting the knob. If you press the knob, the selection is actuated, the parameter variable (P, L, F, A) starts to blink. The value is set by turning the knob in the required direction in increments of ten. Changing the direction alters the intervals to increments of one. The first catch when twisting does not change the value in order to prevent accidental altering.

Parameter adjustment is stopped by pressing the button. If no further values are changed, it stops automatically after 6 seconds.

From the parameters F (back stroke) and A (absolute counter), the indicator leaps back to pressure indication by itself. The lot size counter can be displayed permanently.

OPERATION MODE PRESSURE ADJUSTMENT

Which pressure (P) you have to set can be taken from the table of values.

The piece counter (C) can be adjusted up to 999 and counts backwards.

The cycle time is optimised by limiting the back stroke (F).

The absolute counter serves for maintaining the service intervals.

OPERATION MODE AUTOMATIC PRESSURE ADJUSTMENT

Via list selection (L), up to 7 programmed pressure tables which select the pressure according to the inserted presetting plate can be called up. When you select the list, the key switch must be set to “List” position.

OPERATION MODE SELECTION VIA KEY SWITCH

Automatic mode **Manual mode** **List selection for automatic mode**

	PARAMETERS	ADJUSTMENT RANGE	ACTIVE IN
	Presetting pressure	10-210bar	
	Lot size	0-999	
	Return stroke of the cylinder	The way can be set from 1 to 10 (100%)	
	List selection	Depends on programming up to 7 lists	
	Absolute counter cylinder strokes in thousands (034.000)	Continuous counter, no setting	

BASICS

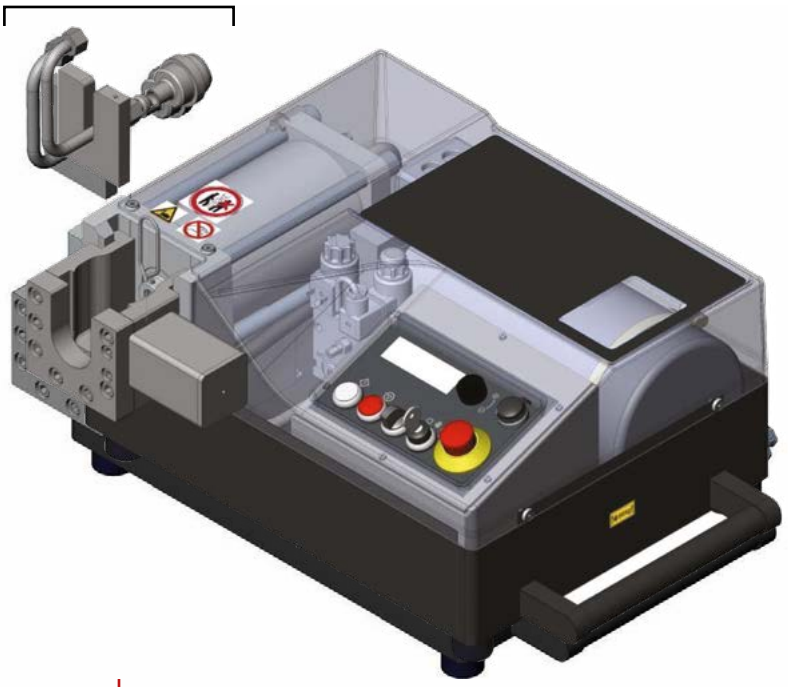
After a period of 20 minutes, the display is dimmed. 60 minutes later, the display is switched off. The machine indicates that it is ready for operation when the lamp between display and adjusting button is continuously alight. Pressing the adjusting button activates the display again. If automatic pressure adjustment is deactivated, e.g. after pulling the plug, only the key position “manual mode” is active.

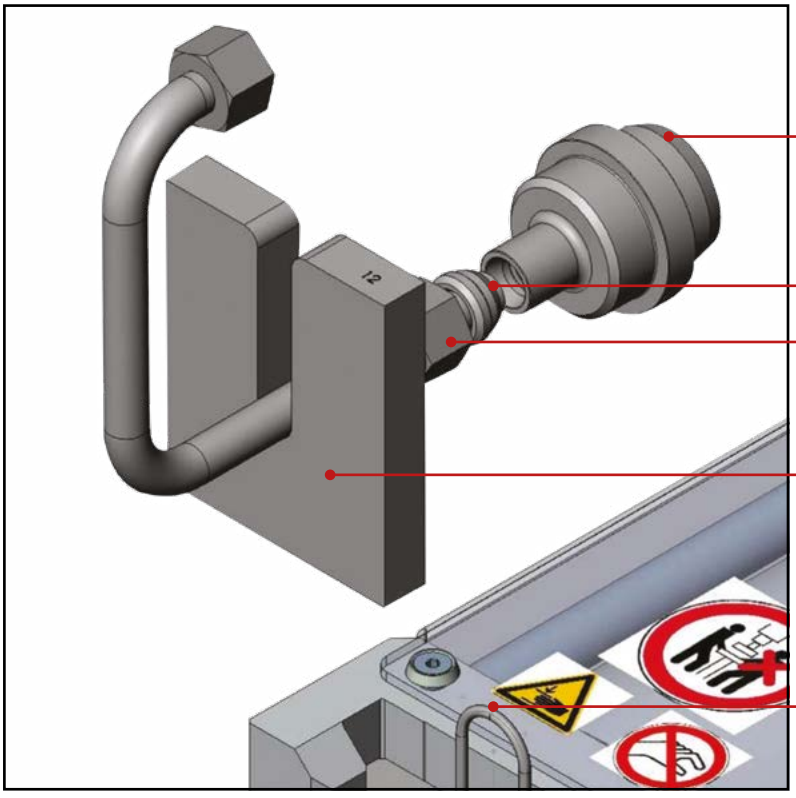
The assembly process can only be carried out as long as a pipe is inserted. Remove the counter-support plate or the flaring jaws for performing a working stroke without inserted pipe.

Ignoring these instructions can cause tool damage.

Never come too close to the working area when the working piston is running forward or backward!

4.4.1 CUTTING RING PRESETTING





SEQUENCE OF WORKING STEPS FOR CUTTING RING PRESETTING

- The attachment for cutting ring presetting is suspended in the universal basic adaptor.
- Select presetting connection piece and counter-support plate according to the pipe, ring and fitting specifications. Check the presetting connection with a taper gauge.
- Insert the presetting connection piece in the piston rod and secure it with the fastening clip.
- Push the counter-support plate into the reception in front of the front plate.
- Enter the assembly pressure at the control.
- Lubricate the cone in the presetting connection piece.
- Push spigot nut and cutting ring (larger diameter first) onto the pipe which is cut at right angles and deburred.
- Place the pipe with the spigot nut and cutting ring between the counter-support plate and presetting connection. Mind the correct position of the cutting ring – the sealing head points in the direction of the presetting connection.
- Push the pipe against the stop in the presetting connection. Hold the pipe in this position. Avoid canting of long pipes by using a pipe support.
- Press the start button and hold it until the assembly operation switches off and the working piston drives back home. The piston never drives back before the preset assembly pressure has been reached. The red control lamp goes out when the assembly pressure is reached
- Remove the preset pipe from the counter-support plate.
- In dangerous situations or when the machine does not switch off, please use the emergency-off switch.

4.4.2 PIPE FLARING

Always heed the following points when flaring a pipe:

1. The material quality of the pipe in process must be suitable for flaring. Recommended is seamless precision steel pipe according to DIN 2391/C, material St.35.4 NBK, or use stainless steel pipes 1.4571 or 1.4541.
2. The pipe or tube must be cut at right angles. Face surfaces shall be lightly deburred from within and without.
3. The inner and outer surface of the pipe must be chip and grease free around the flaring die area.
4. Flaring cone and sliding surfaces of the flaring dies need a bit of grease now and then.

Attention: The roughened surface of the flaring dies must remain absolutely oil and grease free to prevent the pipe from slipping through.

Working step sequence for flaring:

- The attachment for pipe flaring is suspended in the universal basic adaptor. When hanging in the head, please make sure that the carrier tappet of the piston rod extends into the internal groove of the flaring cone seat.
- Enter the flaring pressure at the control.
- Spigot nut and sleeve are pushed onto the pipe before flaring. Make sure that the thinner part of the sleeve is facing the spigot nut.
- Insert the flaring jaw set corresponding with the pipe size into the device.
- Push the pipe through the flaring die bore hole until it reaches the stop plate. Avoid canting of long pipes by using a pipe support.
- Press the push-button and hold it down until the flaring process switches off automatically. The red control lamp goes out when the flaring pressure is reached.
- Release the button – spring force pushes the flaring cone back into its original position.

In dangerous situations or when the machine does not switch off, please use the emergency-off switch.

WORKING STEP SEQUENCE AFTER FLARING:

- Lift the pipe out of the device with the flaring dies pointing upward.
- Release the flaring dies by placing them into the milled-in groove of the flaring head and canting the pipe sideways.
- Check the flare. The flared collar must be in a rectangular and centric position to the sleeve. Check the outer diameter of the flare as demanded by the fittings manufacturer.

5. WARNING

The following maintenance and inspection work must be carried out at the specified intervals. Any defects found must be rectified or have them rectified.

5.1 SAFETY PRECAUTIONS

Carry out maintenance and repair work as well as troubleshooting only when the machine is shut down.

Switch off the hydraulics and disconnect the power supply before starting maintenance and repair work as well as troubleshooting. Secure the machine against being switched on again.

Before starting maintenance work, carefully read all safety instructions contained in this manual.

Have maintenance work carried out only by personnel authorized to do so.

Only carry out the maintenance and adjustment work listed in these instructions yourself. If you need to carry out any other work, inform the customer service department of PIPE BENDING SYSTEMS GmbH & Co. KG.

Only use spare parts that comply with the specifications of PIPE BENDING SYSTEMS GmbH & Co. KG.

If necessary, secure the maintenance area over a wide area.

Reattach all safety devices after maintenance and repair work as well as troubleshooting and check their function.

Retighten any screw connections that have been loosened during maintenance and repair work or for troubleshooting.

After completing the maintenance work, remove the tools or repair materials from the site of operation.

5.2 MAINTENANCE

The following maintenance intervals are based on an 8-hour working day. If the specified number of operating hours is exceeded during the corresponding period (e.g. due to shift work), shorten the period accordingly.

Info!
During the first six months of operation after commissioning and after major repairs, all parts of the device must be checked more frequently.

HYDRAULICS

- The entire hydraulic installation must be checked regularly for leaks.
- Leaks can only be detected and located if the hydraulic system is cleaned regularly.
- An oil change must be performed every 75,000 preassemblies (see absolute counter diagram, p.24) or after two years at the latest. Use branded oil according to ISO VG 32 (HLP 32).
- Hydraulic hoses must be checked regularly for damage.
- According to DIN 20 066 for assessing functional capability, the period of use of a hose assembly, including any storage period, must not exceed six years. The storage period should not exceed two years. The hoses must therefore be replaced at intervals of four years.

ELEKTRICAL SYSTEM

- Before starting work, check the electrical connection cable and electrical command devices for damage every day. Damaged components must be replaced immediately.
- Carry out the prescribed electrical tests in accordance with the applicable national regulations.

FUNCTION

When using a pre-assembly attachment with automatic tool recognition, the calibration must be checked monthly.

To do this, insert counterholding plates of different sizes and check whether the display shows the correct preassembly pressure by pressing the return stroke key. (comparison with pressure tables).

The calibration of the device itself and the checking of the shut-off accuracy can only be carried out by the manufacturer. As a rule, the device should be checked every two years.

6. TROUBLE SHOOTING

If you have any questions relating to machine problems, please contact our service department.

für Deutsch +48718814505
für Polnisch +48718814502
für Englisch +48718814503
für Französisch +48718814504
für Italienisch +48718814506
für Spanisch +48718814507

You should correct any operational faults the moment they occur in order to avoid greater damage.

Look into the operation manuals of the various unit parts for information on how to detect the source of machine trouble and eliminate it.

If you are having trouble with the control and the electric parts, please call an electrician; he can find the fault with the aid of the circuit diagrams and eliminate it.

The same goes for problems with the hydraulics; please call a specialist to find the error and rectify it.

6.1 SAFETY PRECAUTIONS

All repair works bear an increased accident risk!
Disconnect the power plug!

While carrying out jobs concerning operation, adjustment of production capacities, retooling or setting up of the machine and its safety facilities as well as inspection, maintenance and repair, please heed the instructions for switching the machine on or off issued in the operation manual and in the directions for maintenance works!

All security facilities have to be replaced and their functions checked after carrying out any of the works mentioned above!

Wipe away any oil, fuel or cleansing agents from the machine surface, particularly from connections and screw fittings, before starting with maintenance/repair! Never use aggressive cleansing agents! Provide lint-free cleansing cloths!

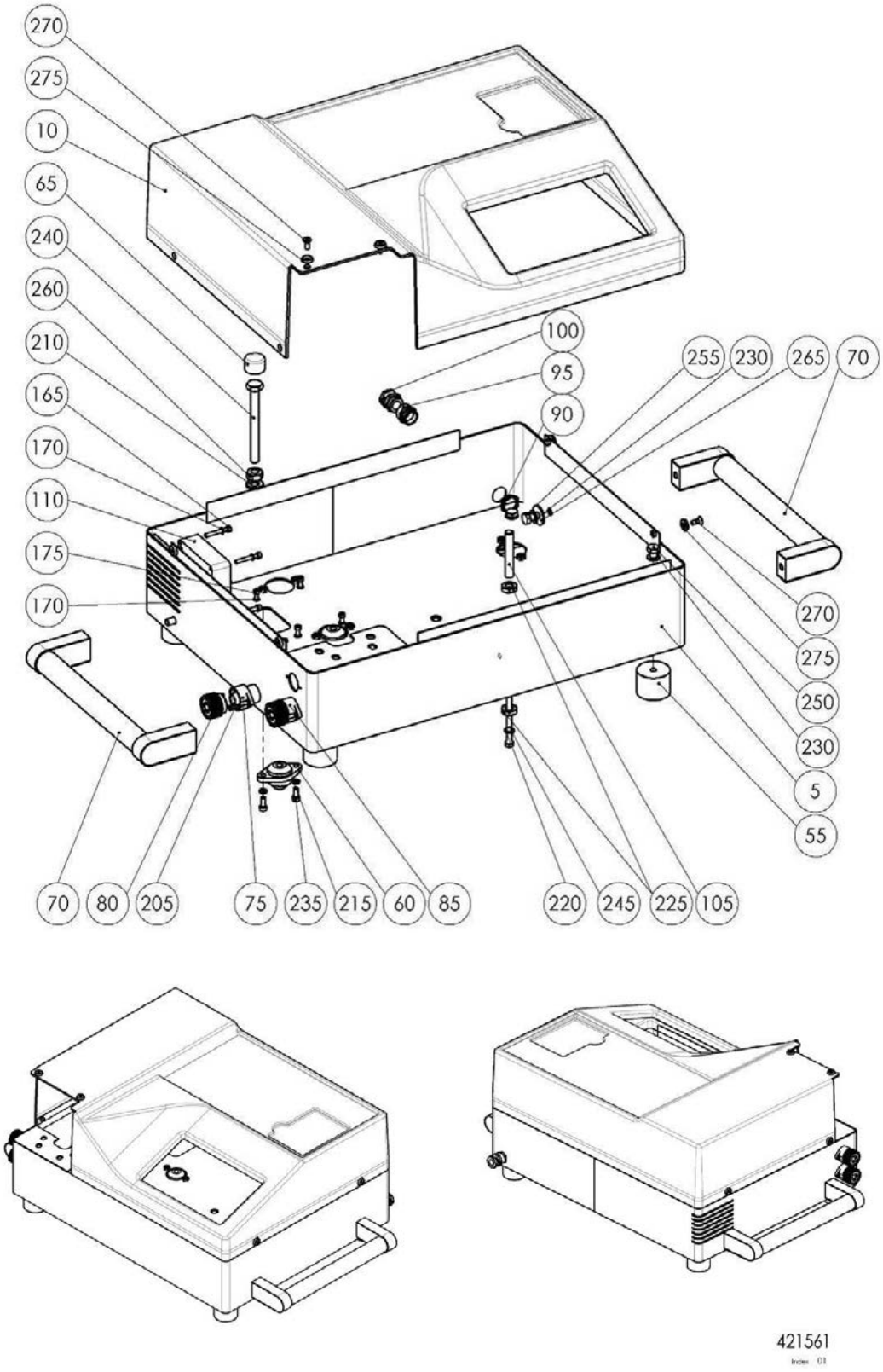
Make sure to tighten all screwed connections that have been unscrewed during maintenance and upkeep! Never leave tools or maintenance materials lying around in the working area!

6.2 BEHAVIOUR DURING DISTURBANCES

DISTURBANCE	POSSIBLE CAUSE	CLEARANCE
The engine is not running	supply lines are not connected	check and connect properly, if necessary
	the socket is dead	call an electrician
	emergency-off switch is activated	de-activate after the emergency situation has been taken care of
	on-switch is not activated	switch on

7. SPARE PARTS

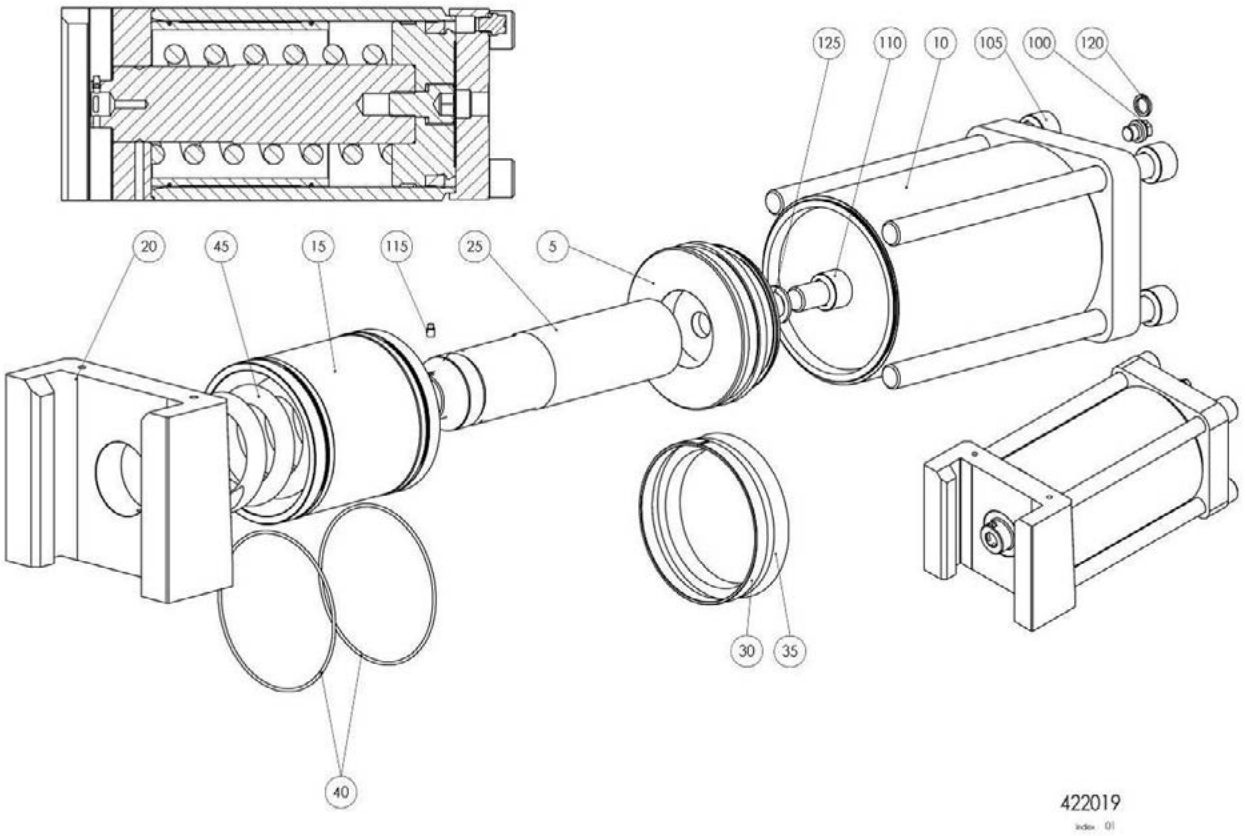
7.1 HOUSING



7.2 ERROR CODES

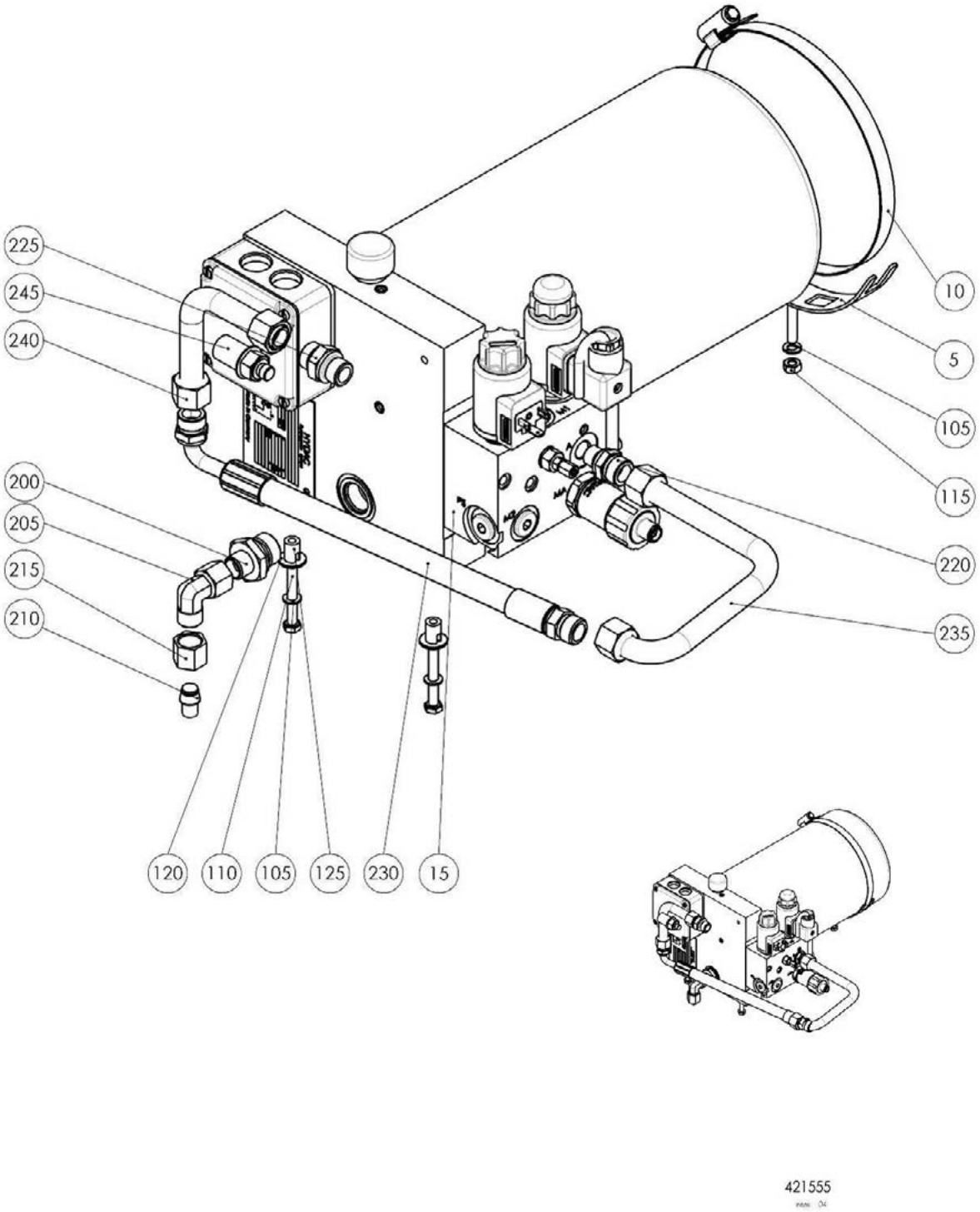
POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
5	1	PC	YY 421582	HOUSING BOTTOM PART (SW)	
10	1	PC	YY 421571	HOOD UNIPRESS 4	
15	1	PC	YY 421568	THREADED NUT BEARING (SW)	
55	4	PCS	0640040001	RUBBER-METAL ROUND BEARING	TYPE 40.30.5; 40/30 M 8
60	3	PCS	0641033001	RUBBER-BONDED METAL FLANGE ELEMENT	D=33; D2=8; D5/A=6.3/45
65	1	PC	13993931	PROTECTION CAP GN806-24-A	W/O SCREW, NEOPRENE, BLACK
70	2	PCS	1932015	SYSTEM HANDLE BLACK	PLASTIC COATED
75	1	PC	2307834800	ROUND CONNECTOR CA 3 GD	BUILT-IN BOX, BLACK, 3 POLES (HIR)
80	2	PCS	2307834801	PROTECTION CAP SERIES CA, IP67	SCREWED, CA00SD3 (HIR)
85	1	PC	2307834900	ROUND CONNECTOR CA 6 GD	BUILT-IN BOX, BLACK, 6 POLES (HIR)
90	1	PC	2309711100	MS HEXAGON NUT PG 36	420/16 (KLE)
95	1	PC	2309811100	MS SCREW FITTING PG 11	490/11 (KLE)
100	1	PC	2309820300	MS-SCREWED CABLE GLAND DZB 11	(4306112) (PRESSURE SCREW)(SLE)
105	4	PCS	2399911900	THREADED PIPE M10X1 60 MM	BRASS (VOSL)
110	1	PC	9923026	EXHAUSTER	3110KL-0.5W-B50 24V-DC
165	4	PCS	180912512014	CHEESE HEAD SCREW DIN 912-8.8	GALVANISED, M 4X30
170	8	PCS	180128012040	SPRING LOCK WASHER DIN 128, SHAPE A, ST	GALVANISED, M 4
175	4	PCS	180912512006	CHEESE HEAD SCREW DIN 912-8.8	GALVANISED, M 4X10
205	4	PCS	180084212009	CHEESE HEAD SCREW DIN 84-4.8	GALVANISED, M 3X8
210	1	PC	180125012021	WASHER DIN 125, SHAPE B, ST	GALVANISED, 10.5 MM
215	6	PCS	180128012050	HIGH COMPRESSION LOAD SPRING WASHER DIN 128	GALVANISED, M 5
220	1	PC	180128012060	HIGH COMPRESSION LOAD SPRING WASHER DIN 128	GALVANISED, M 6
225	2	PCS	180439012510	HEXAGON NUT DIN 439-04	GALVANISED, BM 10X1, SHAPE B
230	8	PCS	180128012080	HIGH COMPRESSION LOAD SPRING WASHER DIN 128	GALVANISED, M 8
235	6	PCS	180912512048	CHEESE HEAD SCREW DIN 912-8.8	GALVANISED, M 5X12
240	1	PC	180931512142	HEXAGON SCREW DIN 931-8.8	GALVANISED, M 10X100
245	4	PCS	180933512153	HEXAGON SCREW DIN 933-8.8	GALVANISED, M 6X70
250	4	PCS	180933512170	HEXAGON SCREW DIN 933-8.8	GALVANISED, M 8X12
255	4	PCS	180933512172	HEXAGON SCREW DIN 933-8.8	GALVANISED, M 8X16
260	1	PC	180934412010	HEXAGON NUT DIN 934/8	GALVANISED, M 10
265	4	PCS	189021012008	WASHER-ST DIN 9021, GALVANISED	8.4 MM
270	6	PCS	187991020079	COUNTER-SUNK SCREW DIN 7991-A2	STAINLESS STEEL, M 5X12
275	6	PCS	187991020980	ROSETTE FOR COUNTERSUNK SCR.	DIN 7991-A2, STAINLESS STEEL, M 5

7.3 CYLINDER



POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
5	1	PC	TUB 072011	PISTON FOR FLARING UNIT 105	
10	1	PC	TUB 072002	HP-TUBE (SW) FOR	FLARING UNIT 105
15	1	PC	TUB 072003	SPACING TUBE FOR FLARING UNIT 105	
20	1	PC	YY 422018	TOOL RECEPTION UNIPRESS 4	
25	1	PC	EO-2 0210700	PISTON ROD FOR FLARING UNIT	
30	0,324	M	21130010	PTFE-BZ-60% GUIDE BELT	10 X 2 MM
35	1	PC	21160095	GROOVE RING AUN 90106, 92 SHORE	SERIES 100 (105X90X12MM)
40	2	PCS	21254667	O-RING, NBR, 70 SHORE A	100X2 MM
45	1	PC	1401125001	PRESSURE SPRING D12.5MM; DM 63.5	LO 193 MM; IF 7.0; IG 8.5
100	1	PC	180910012503	LOCK SCREW DIN 910, ST	GALVANISED, G 1/8”
105	4	PCS	180912611327	CHEESE HEAD SCREW DIN 912-12.9	BLACK, M 16X230
110	1	PC	180912512300	CHEESE HEAD SCREW DIN 912-8.8	GALVANISED, M 16X25
115	1	PC	180915012063	SET-SCREW DIN 915-45 H	GALVANISED, M 5X8
120	1	PC	187603050188	SEAL RING DIN 7603 SHAPE A, CU	10X14X2 MM
125	1	PC	187603050412	SEAL RING DIN 7603 SHAPE A, CU	16X24X2 MM

7.4 HYDRAULIC DRIVE



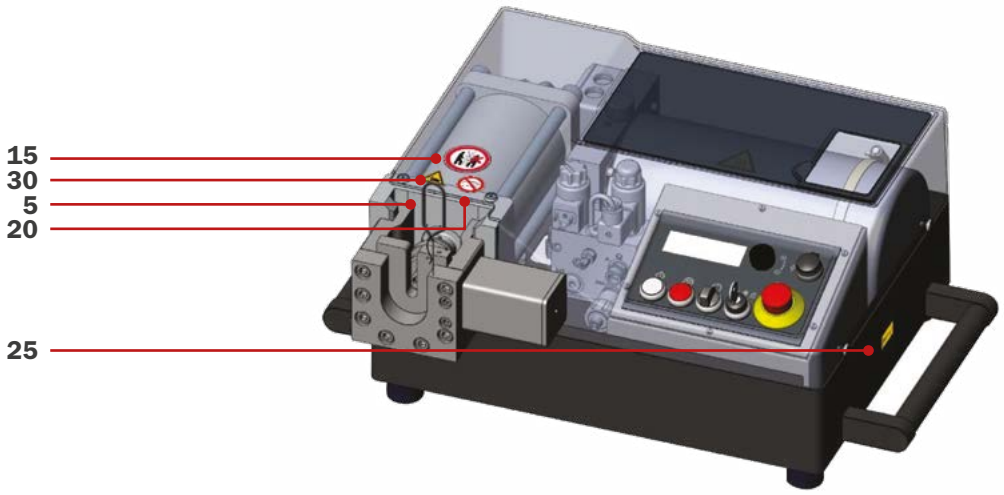
POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
5	1	PC	YY 421614	SHACKLE CLIP VERSION	
10	1	PC	1627016	HIGH-PERFORMANCE HOSE CLIP	HS 170; CLAMP WIDTH:150-170 MM
15	1	PC	240509400	COMPACT UNIT CA2 R05 H 03.7	-230-03-20X+SW3W PDBM06020-01-
105	3	PCS	180128012060	HIGH COMPRESSION LOAD SPRING WASHER DIN 128	GALVANISED, M 6
110	2	PCS	180931512071	HEXAGON SCREW DIN 931-8.8	GALVANISED, M 6X45
115	1	PC	180934412006	HEXAGON NUT DIN 934/8	GALVANISED, M 6
120	2	PCS	189021012006	WASHER-ST DIN 9021, GALVANISED	6,4 MM
125	2	PCS	18G001012019	THREAD INSERT “ENSAT” M6X10	SELFCUTTING, GALV., STEEL
200	1	PC	2014925020	STRAIGHT MALE STUD COUPLING	GE 10 LR 1/2-ED OMD CF
205	1	PC	2056025015	ADJUSTABLE ELBOW CONNECTION FITTING	M.D.; EW 10 L OMD CF
210	1	PC	2058010010	BELL FOR FITTING	CONE VKA 10 L/S CF
215	1	PC	2071020015	SPIGOT NUT M 10 L	CF
220	1	PC	2014905025	STRAIGHT MALE STUD COUPLING	GE 12 LR 1/4-ED OMD CF
225	1	PC	2014055025	STRAIGHT MALE STUD COUPLING	GE 12 LR-ED OMD CF
230	1	PC	06080100.G20	CORD-SET HOSE 2SC 10X325	CEL12L 90GRAD/ CEL12L
235	1	PC	YY 421556	PIPE LINE Ø12X1.5X266.2	2XM12L - 2 BENDS
240	1	PC	YY 421557	PIPE LINE Ø12X1.5X157.1	2XM12L - 1 BEND
245	1	PC	2007110005	MEASURING CONNECTION WITH SCREWED JOINT	EMA 3/R 1/8-ED CF
305	3,6	LTR	460903.1	HYDRAULIC OIL HLP 32	181:38 KG/BARREL

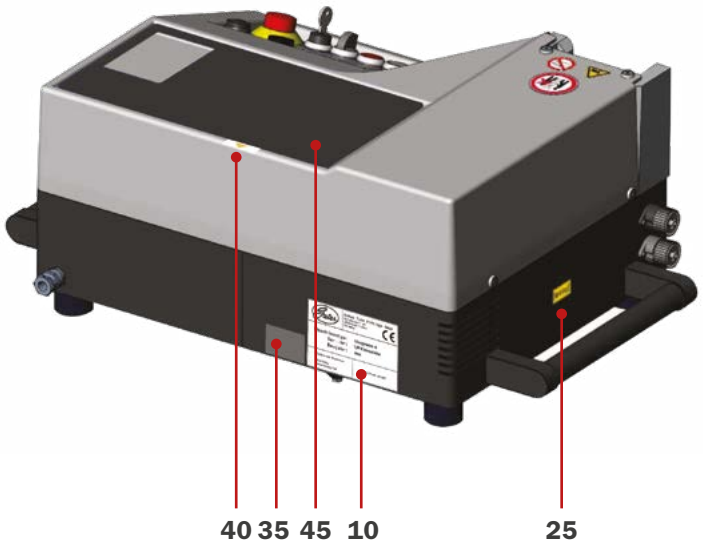
7.5 ELECTRIC SYSTEM

POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
5	1	PC	YY 421552	ELECTRIC CABINET (ZB)	
10	1	PC	2306620900	CONTROL MODULE	PRESETTING UNIT
15	2	PCS	2302620900	ILLUMINATED PUSHBUTTON M22-DL-X	W/O LABEL, RND 216933(MOE)
20	1	PC	2302691200	BUTTON LENSE, FLAT, WHITE, ROUND	M22-XDL-W 216441(MOE)
25	1	PC	2302691400	BUTTON LENSE, FLAT, RED, ROUND	M22-XDL-R 216442(MOE)
30	1	PC	364000013	DISPLAY TRANSPERENCY: “CUTTING RING	PRESETTING UNIT TUBOFORM C”
35	1	PC	2302604600	SAFETY EMERGENCY-OFF SWITCH	XFV 32 (SGL)
40	1	PC	2307665100	CABLE DUCT PLATE	KEL-DPZ 24/25 (ICO)
45	4	PCS	2300510701	FASTENING ADAPTER M22-A	FOR LED AND CONTACT ELEMENTS
50	6	PCS	2302690700	CONTACT ELEMENT M22-CK10	1 TURNKEY, FRONT, (MOE)
55	1	PC	2300523100	LED-ELEMENT M22-CLED-WS, WHITE,	FRONT, 30V, AC/DC, 216569(MOE)
60	1	PC	2304804600	CONTACT MAKER PTF00 (SGL)	
65	2	PCS	2303805300	CONTACTOR 9 AMP. 1S (TEL)	LP 1 K 0910 BD3
70	1	PC	2301906200	ENGINE PROTECTION RELAY LR2-	K0312 3.7 - 5.5 A 3-POLES (TEL)
75	6	PCS	2308608500	2-CONDUCTOR THROUGH TERMINAL	(WAG) 280-601 LATERAL INSCR.
80	1	PC	2308608502	CLOSING AND INTERPLATE	280-330 2.5MM THICK (WAG)
85	8	PCS	2308609400	3-CONDUCTOR THROUGH TERM.(WAG)	280-641 SLANTED, CENT.INSCR.
90	3	PCS	2308609500	3-CONDUCTOR PROTECTION CONDUCTOR TERMINAL (WAG)	280-637 SLANTED, CENTRAL INSCRIPTION
95	1	PC	2308611201	CLOSING AND INTERPLATE	280-312 2.5MM THICK (WAG)
100	2	PCS	2308606600	CROSS BYPASS FOR TERMINAL BLOCK	280-402 ZU 2.5MM^2, GREY(WAG)
105	3	PCS	2308611500	FUSE CLIP F.G.FUSE	281-611 (WAG)
110	1	PC	2308608000	CLOSING AND INTERPLATE 281-309	ORANGE, 2.5MM, (WAG)
115	2	PCS	2304016300	FINE-WIRE FUSE MT (M) 5X20 MM	1.0 A, DIN41.571,2; 521.017 (ES)
120	1	PC	2304018600	FINE-WIRE FUSE MT (M) 5X20 MM	2.0 A, DIN 41.571,2; 521.020 (ES)
125	1	PC	2302230400	POWER UNIT ONE PHASE EGVDC0.075	230/400//24 1.5A, SMOOTHED
130	1	PC	2303002102	PLUG WITH POINTED CABLE	FOR HDA 4446; TYPE: ZBE06-02

POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
135	2	PCS	2334000200	VALVE CABLE MSUD 3124201	(MURR)
140	1	PC	2313431900	CEE PHASE INVERTER 16A, 400V	(3319A) 5 POLES IP X4 5X16 (MEN)
141	1	PC	2309711100	MS HEXAGON NUT PG 11	420/11 (KLE)
142	1	PC	2309811100	MS SCREW FITTING PG 11	490/11 (KLE)
143	1	PC	2309820300	MS SCREWED CABLE GLAND DZB	11 (4306112) (PRESSURE SCREW)(SLE)
145	0,25	M	2307110300	MOUNTING RAIL, PUNCHED, 35 MM	2069/GCL/1115669 TS35 (OBO)
150	5	M	2332041500	CABLE H07RN-F 4 G 1.50 MM^2	NSHÖU (VER)
155	10	M	2332447600	CABLE H05V-K 0.75 MM^2	DARK BLUE (VER)
160	0,5	M	2332614000	CABLE H07V-K 4.0 MM2 GREEN-	YELLOW (VER)
165	1	M	2330241500	CABLE OILFLEX- J 4x1.5 MM^2	HYSLY-IZ (DRA)
170	1	M	2330321000	CABLE OILFLEX 2X1.0 MM^2	HYSLY-OZ (HOE)
175	1	M	2330251000	CABLE OILFLEX- J 5X1.0 MM^2	HYSLY-IZ (DRA)
180	1	M	2330291000	CABLE OILFLEX- J 9X1.0 MM^2	HYSLY (DRA)
200	4	PCS	180912512051	CHEESE HEAD SCREW DIN 912-8.8	GALVANISED, M 5X18
205	4	PCS	180128012050	HIGH COMPRESSION LOAD SPRING WASHER DIN 128	GALVANISED, M 5
210	2	PCS	180934412012	HEXAGON NUT DIN 934/8	GALVANISED, M 1”
215	2	PCS	180933512110	HEXAGON SCREW DIN 933-8.8	GALVANISED, M 5X20
220	4	PCS	180934412005	HEXAGON NUT DIN 934/8	GALVANISED, M 5
225	2	PCS	180125012009	WASHER DIN 125, SHAPE B, ST	GALVANISED, 5.3 MM
230	2	PCS	180128012050	HIGH COMPRESSION LOAD SPRING WASHER DIN 128	GALVANISED, M 5
235	2	M	2333507000	DATA LINE UNITRONIC LIYY	7 X 0,34 QMM^2 (LIYCY-OB) (LAP)
240	1	PC	2302806800	MSDD BUILT-IN BOX USB BF.A.	0.6 M CABLE
245	1	PC	2302623500	KEY OPERATED PUSHBUTTON (MS1), TRIPLE DIGIT	M22-WRS3, 216900 (EAT)
265	1	PC	2302541700	INDICATOR LIGHT ATTACHMENT	M22-L-R FLAT, RED, IP67 (MOE)
275	1	PC	2302613700	SELECTION KEY M22-WRK/K10	(MOE)

7.6 ACCESSORY KIT



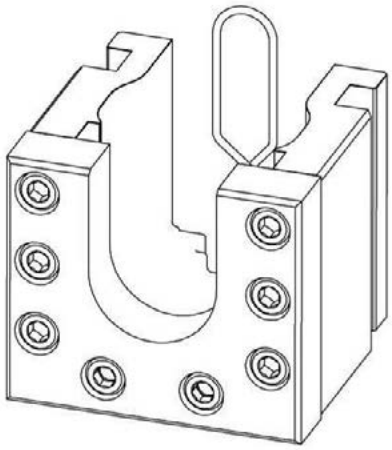


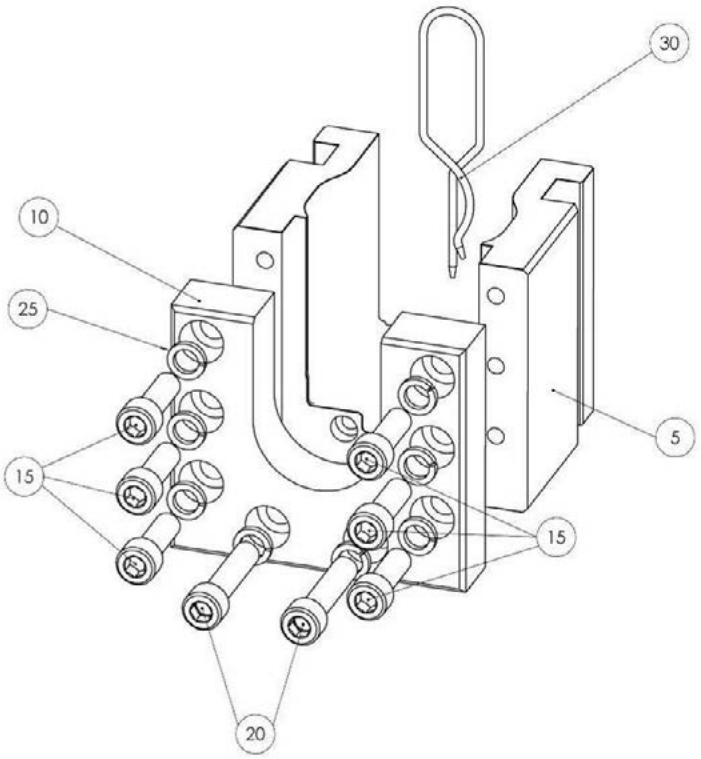
421560

POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
5	1	PC	TUB 062006	SPRING CLASP F. SWAGING UNIT	TUBOMAT
10	1	PC	364000410	SPECIFICATION PLATE “UNIPRESS 4”	(GERMAN/ENGLISH)
15	1	PC	362000005	STICKER: “BEWARE OF	HAND INJURY” SL 30 MM
20	1	PC	362000006	STICKER: “REACHING IN	IS PROHIBITED” D 30 MM
25	2	PCS	362000007	STICKER: “66 KG”	(T-SHAPE C) GERMAN
30	1	PC	369900544	PROHIBITION SIGN DENOTING	MACHINE SHALL BE OPERATED BY ONLY ONE
35	1	PC	364000408	RATING PLATE BLANK	(UNIPRESS 4) GERMAN/ENGLISH
40	1	PC	360800008	STICKER: CAUTION, HOT	SURFACE; SL 50 MM
45	1	PC	YY 421595	COVER PLATE TT	

7.7 ACCESSORIES

7.7.1 PRESETTING ATTACHMENT





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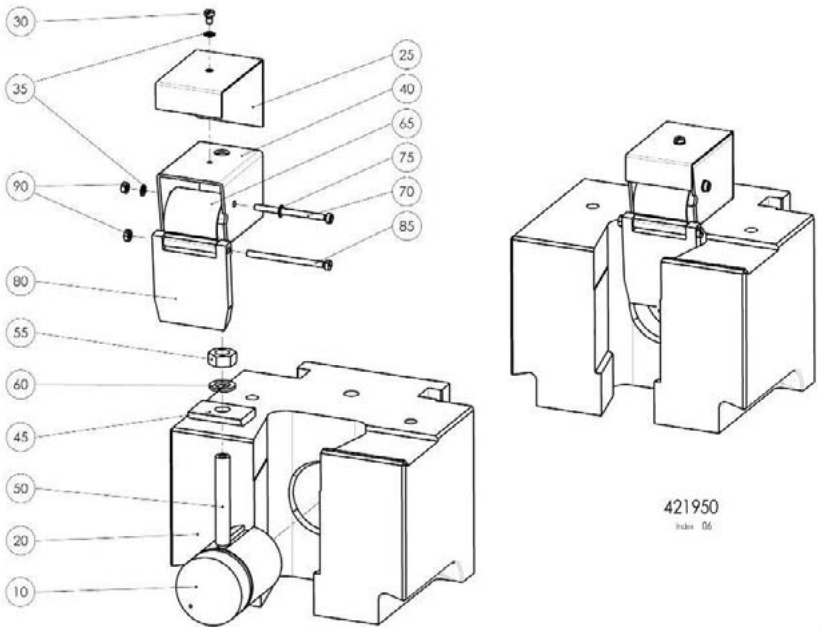
POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
5	1	PC	EO-2 0312300	HOUSING FOR CUTTING RING	PRESETTING EOMAT II
10	1	PC	EO-2 0312400	PLATE FOR CUTTING RING	ATTACHMENT
15	6	PCS	180912512178	CHEESE HEAD SCREW DIN 912-8.8	GALVANISED, M 10X30
20	2	PCS	180912512181	CHEESE HEAD SCREW DIN 912-8.8	GALVANISED, M 10X45
25	8	PCS	187980012035	SPRING LOCK WASHER DIN 7980,	GALVANISED M 10
30	1	PC	TUB 062006	SPRING CLASP F. SWAGING UNIT	TUBOMAT

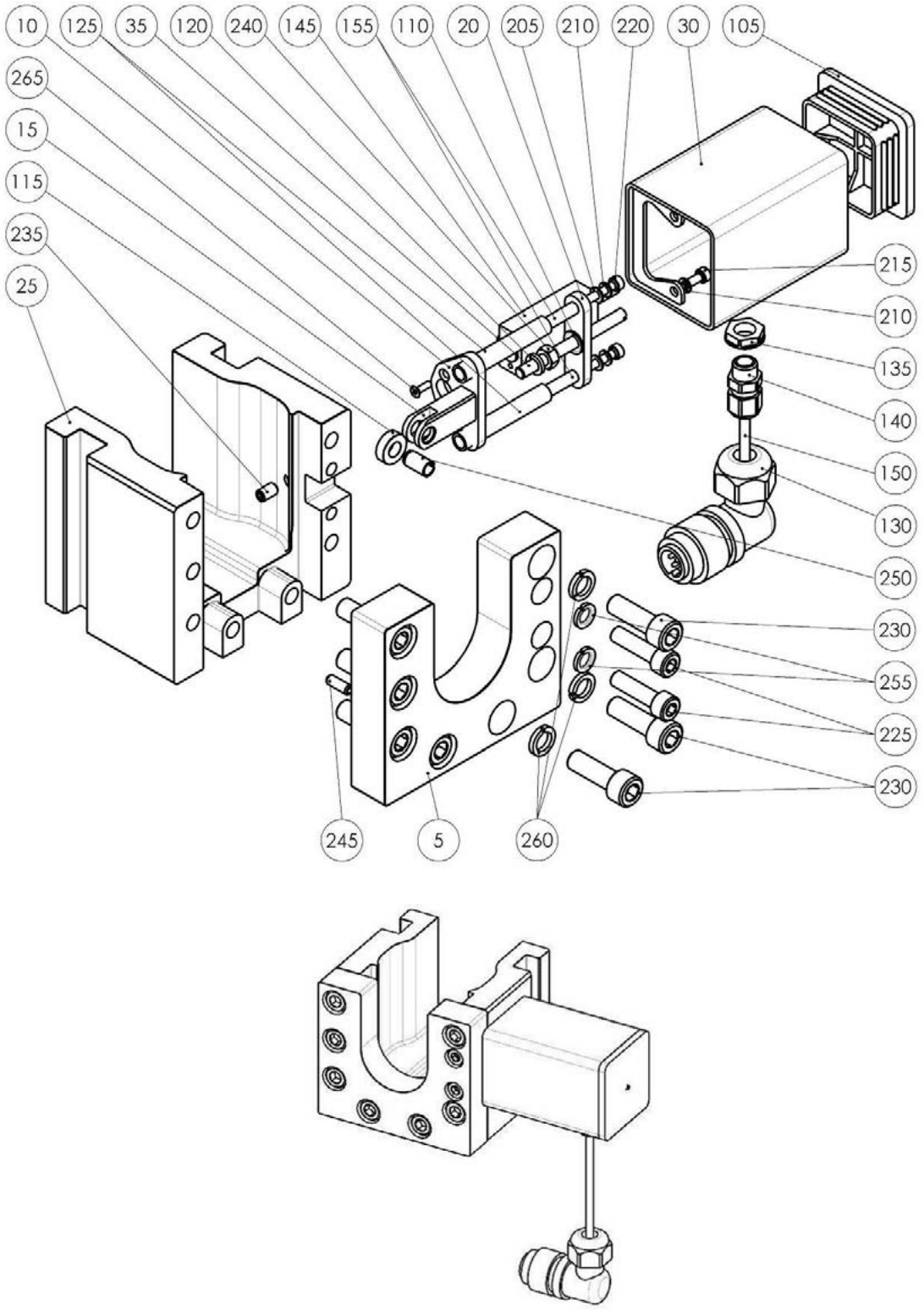
7.7.2 FLARING ATTACHMENT FOR FITTINGS WITH 37° CONE



Art.Nr.:EO VBG 642

POS	QTY	UNIT	ORDER NO.	DESIGNATION 1	DESIGNATION 2
10	1	PC	YY 421904	FLARING CONE FOR FLARING	DEVICE EOMAT II
15	1	PC	21252696	O-RING, NBR, 70 SHORE A	44x3 MM
20	1	PC	EO-2 0212300	HOUSING	EOMAT II / FLARING UNIT
25	1	PC	TUB 072027	MUDGUARD	
30	1	PC	180084212082	CHEESE HEAD SCREW DIN 84-4.8	GALVANISED, M 4X10
35	2	PCS	180128012040	SPRING LOCK WASHER DIN 128, SHAPE A, ST	GALVANISED, M 4
40	1	PC	TUB 072028	PROTECTIVE CAP	
45	1	PC	TUB 072030	HOLDER FOR SPRING	FLARING UNIT 105
50	1	PC	180915011148	SET-SCREW DIN 915-45 H	BLACK, M 10X70
55	1	PC	180934412010	HEXAGON NUT DIN 934/8	GALVANISED, M 10
60	1	PC	180128012100	HIGH COMPRESSION LOAD SPRING WASHER DIN 128	GALVANISED, M 10
65	1	PC	TUB 072029	LEAF SPRING FLARING UNIT 105	105 FLARING UNIT
70	1	PC	180084212112	CHEESE HEAD SCREW DIN 84-4.8	GALVANISED, M 4X55
75	1	PC	180125012006	WASHER DIN 125, SHAPE B, ST	GALVANISED, 4.3 MM
80	1	PC	EO-2 0213800	STOP FOR EOMAT II	
85	1	PC	180084212115	CHEESE HEAD SCREW DIN 84-4.8	GALVANISED, M 4X60
90	2	PCS	180934412004	HEXAGON NUT DIN 934/8	GALVANISED, M 4

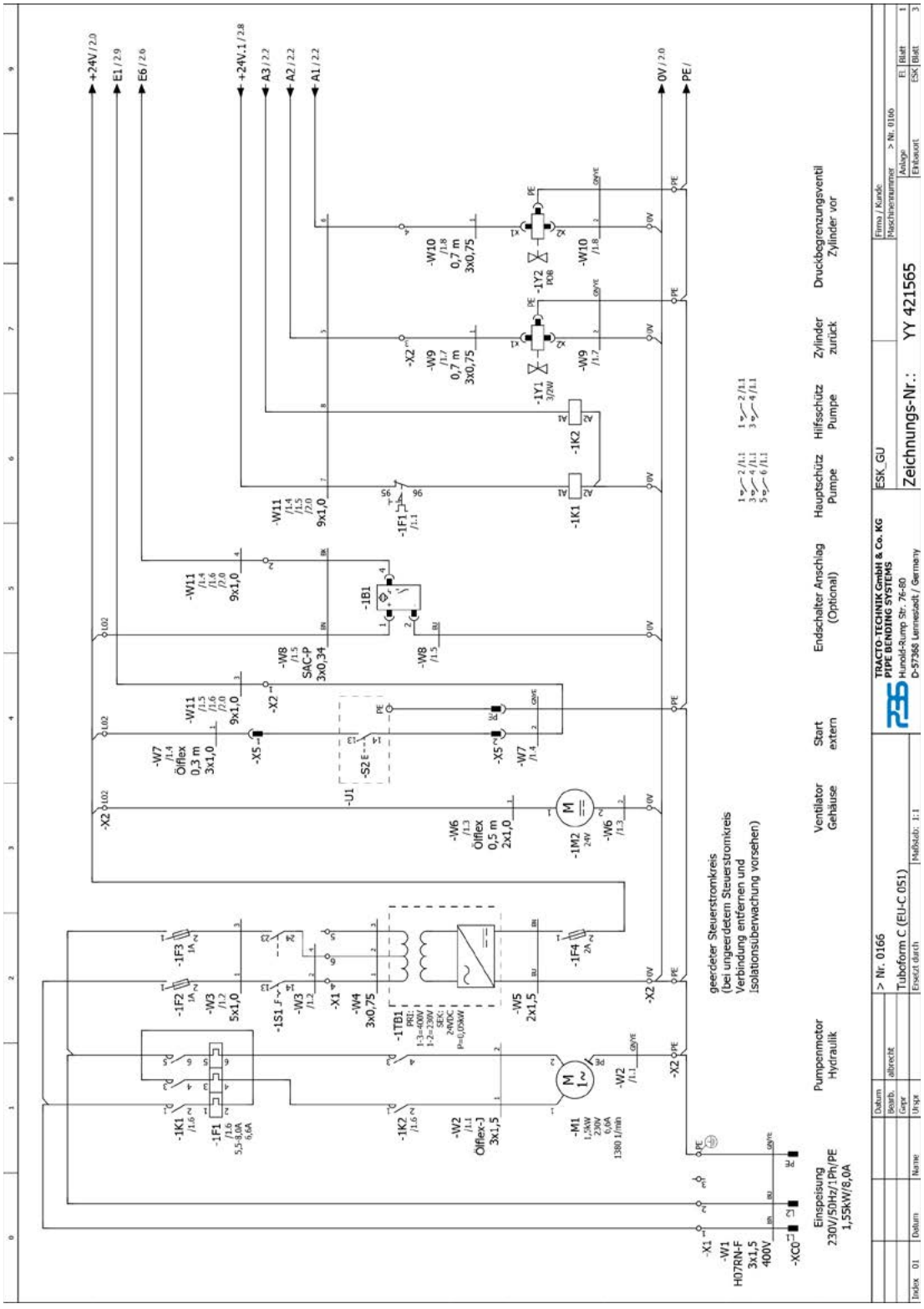
7.7.3 FLARING ATTACHMENT WITH TOOL IDENTIFICATION 24°



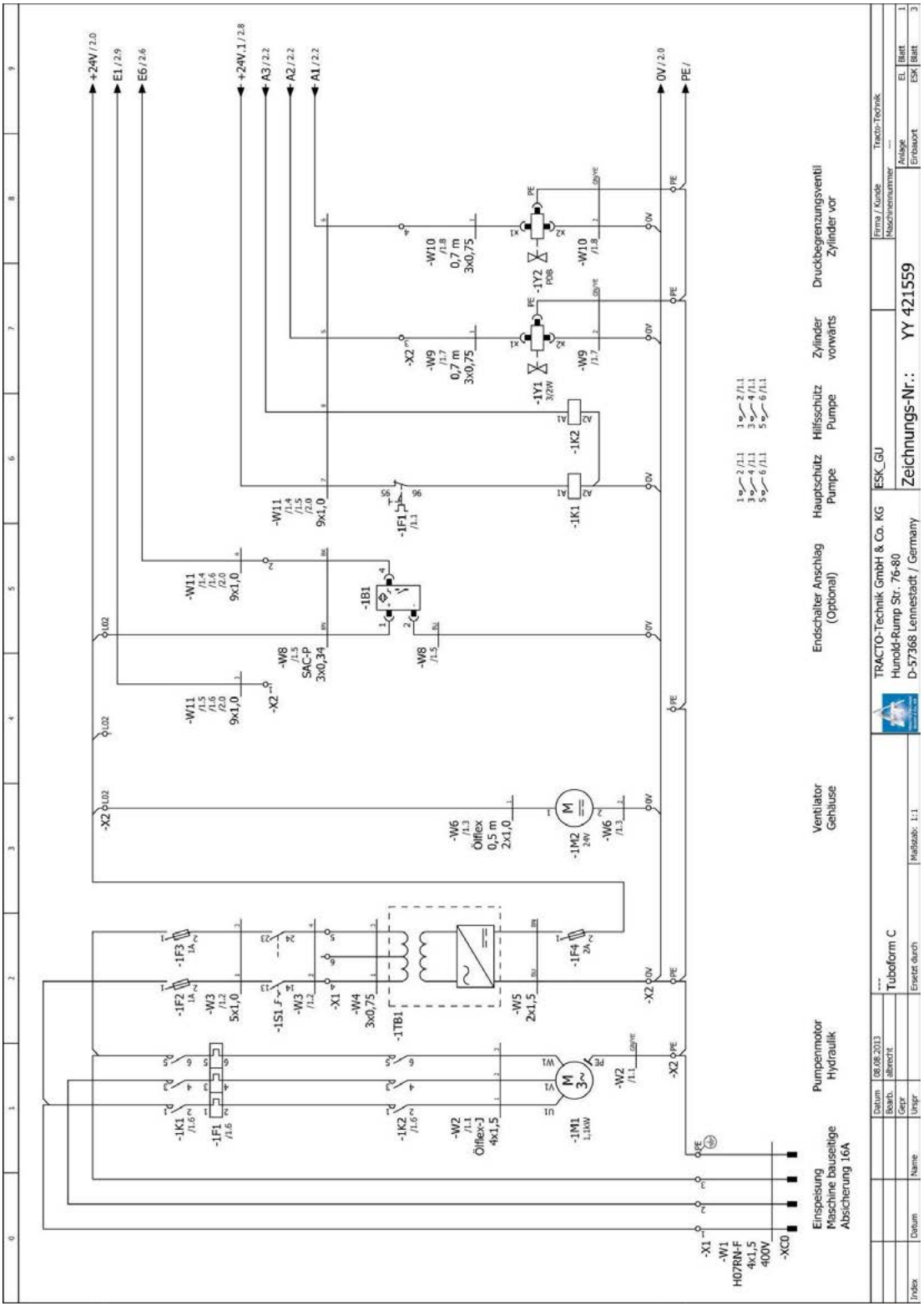
YY 401169

8. APPENDIX

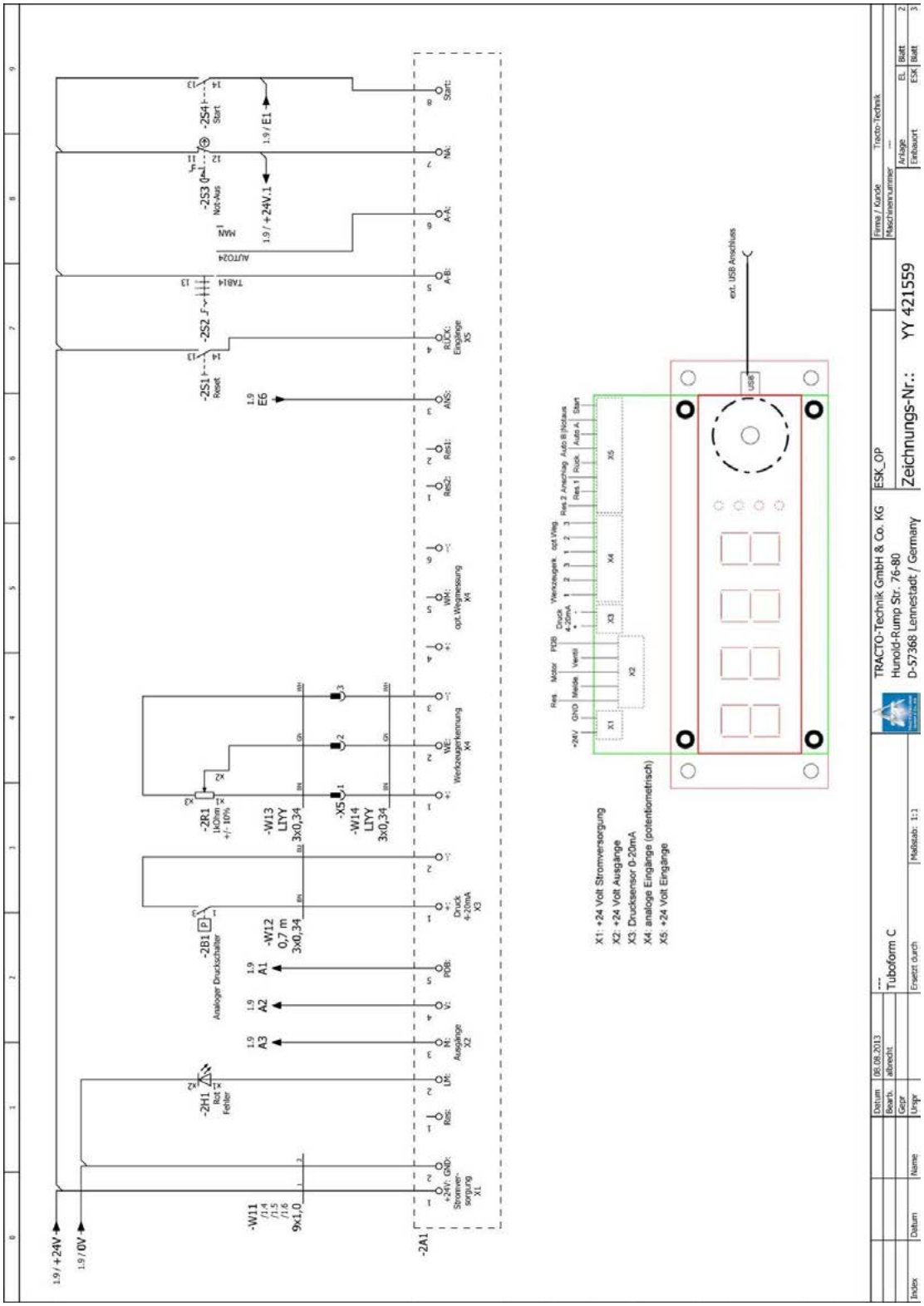
8.1 ELECTRIC CIRCUIT DIAGRAM



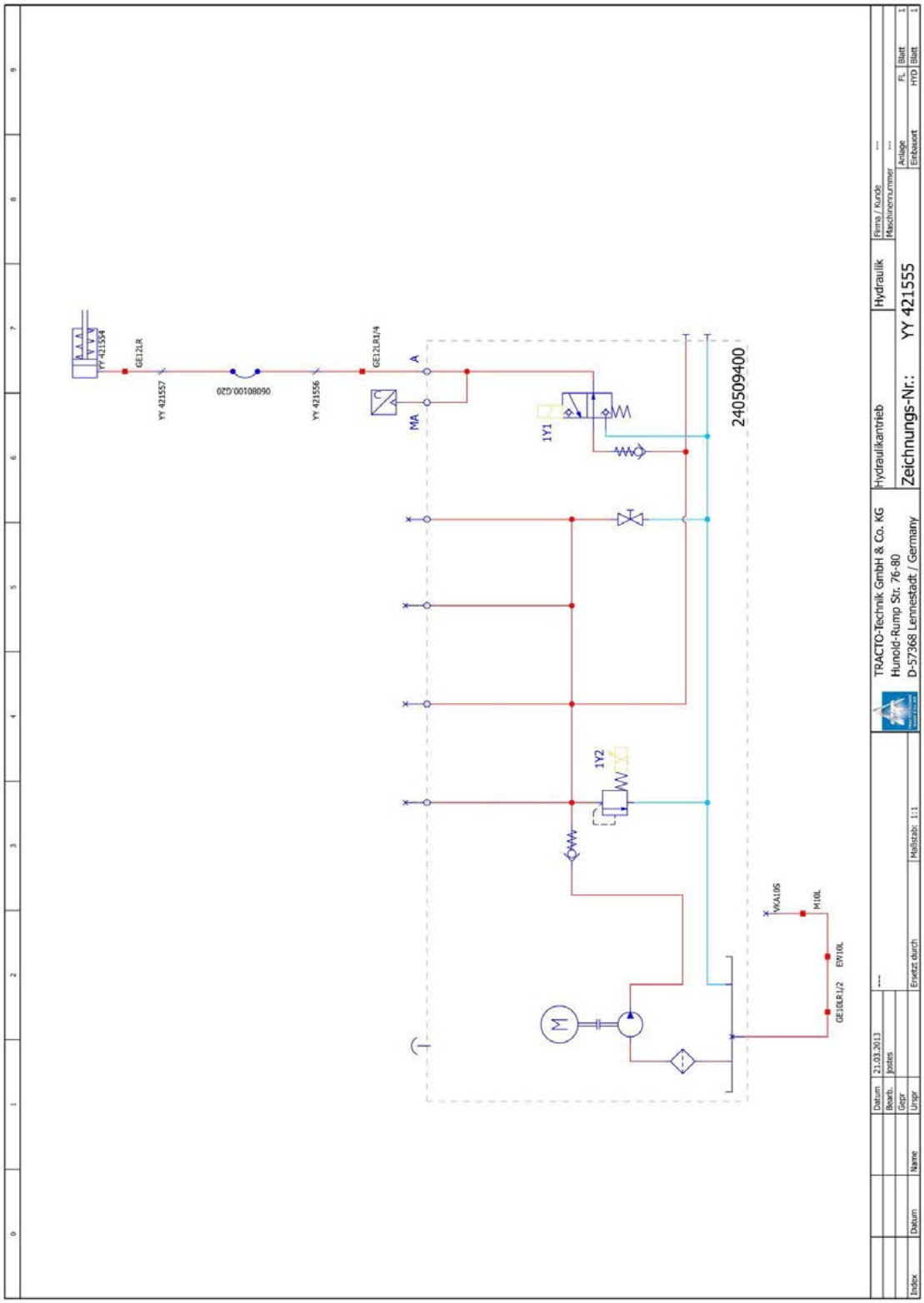
ELECTRIC CIRCUIT DIAGRAM



ELECTRIC CIRCUIT DIAGRAM



8.2 HYDRAULIC CIRCUIT DIAGRAM



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