OPERATOR'S MANUAL AND PARTS LIST

MUBEA Hydraulically Powered Flat bar, Section and Bar Shears with Coper-Notcher and Punch

MODEL: KBLH 700

Serial Number:
Motor Type:
Motor Rating:
Operating Voltage:

OPERATOR'S MANUAL

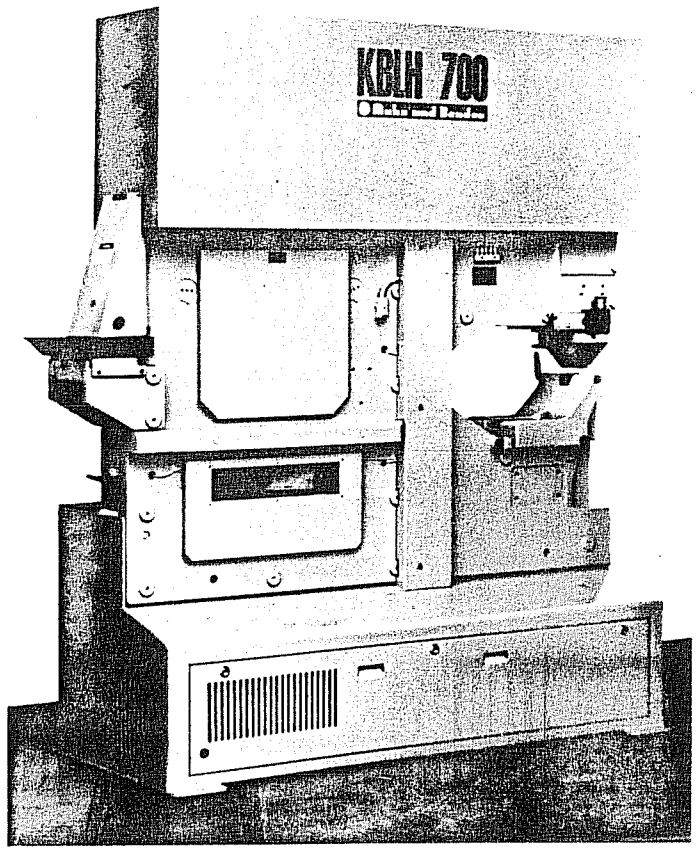
PARTS LIST

Your MUBEA machine is in accordance with the rules for prevention of accidents and the machine protection law.

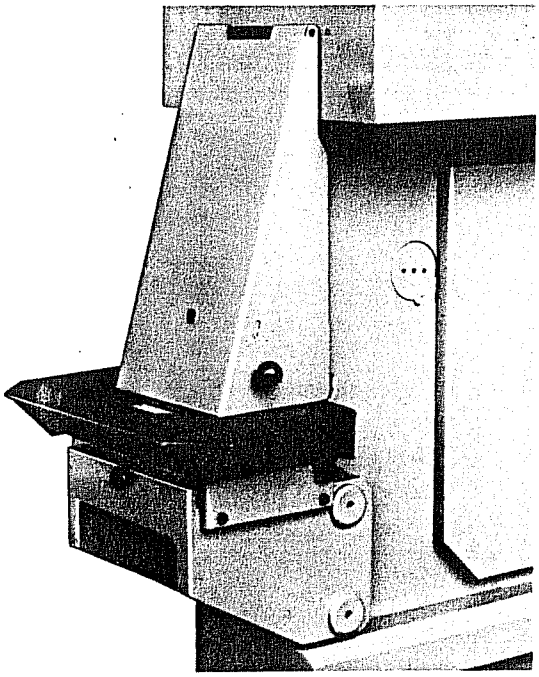
To ensure safe operation all working stations have been provided with suitable guards.

To avoid detraction from their very functions these guards are not shown on the illustrations of the single working stations.

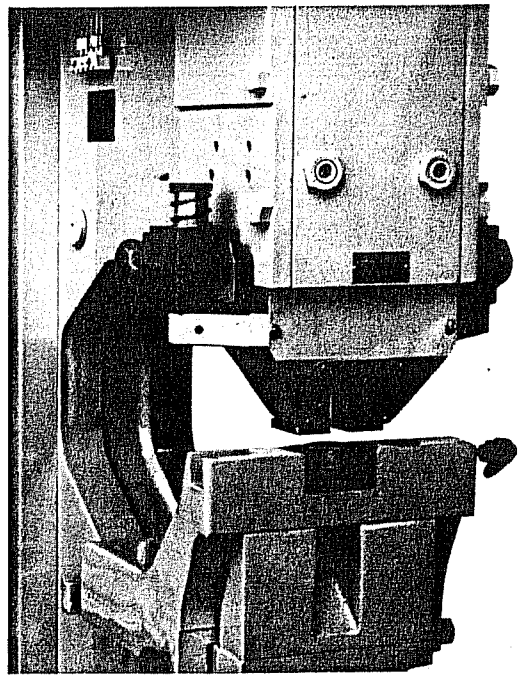
USE ONLY THOSE PUNCHING DEVICES AND TOOLS WHICH ARE SUFFICIENTLY GUARDED TO AVOID FINGER INJURY.



Guards on discharge side for section and flat steel shear



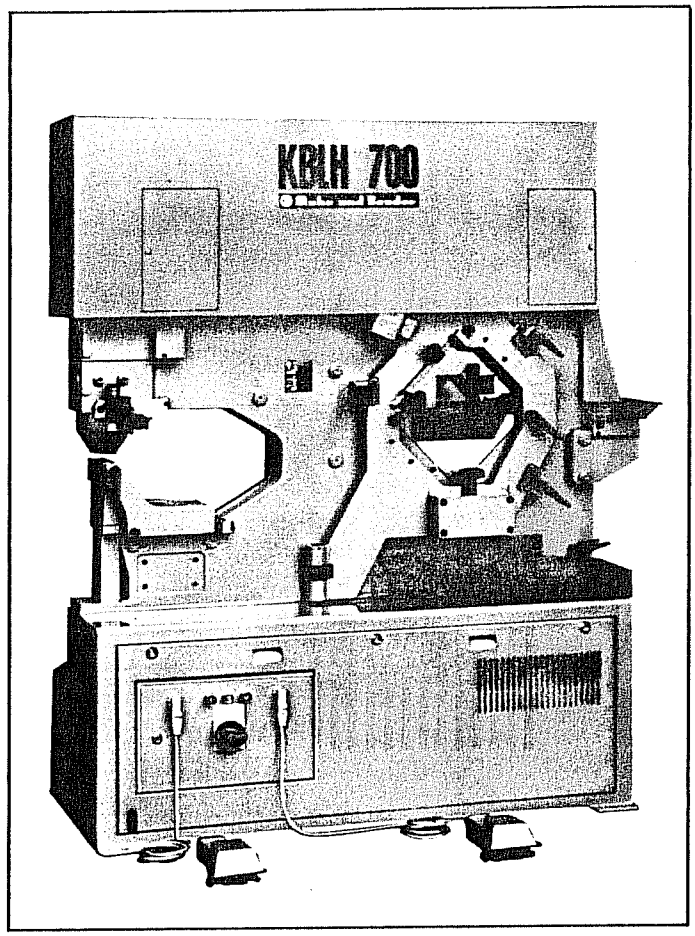
Guard-notching tool



Guard-punching tool

GENERAL

As you will soon confirm, you have made a good choice. Decades of experience and latest findings and trends in punch and shear construction have been considered in developing this MUBEA machine. As many satisfied customers have been confirming, it is just the daily handling of this machine which shows its outstanding advantages. To make optimum use of this machine, please study and thoroughly mind the following operating instructions.



Experience has shown that the machine is of very long service life. Parts being subject to normal wear can be replaced at any time. It is very important that you order original MUBEA spare parts only, for thus the required service life and the steady first-class working quality will be reached. This also applies, if you intend to extend the application range of your machine by using additional tools.

To give you a general idea of the single components of the machine and their interactions, please study the detailed survey of all parts and their article numbers given at the end of these instructions.

And just another important thing: Keep the machine always in the good condition it deserves. Adequate hints can be learned from the following operating instructions.

Shop practice will soon convince you that just MUBEA machines can effectively be completed and are universally usable and efficient.

TRANSPORT

For transport by truck, stabilize, and screw the machine to solid planks.

For transport by crane, hook the machine into the ring bolt provided.

As to the weight of your machine, please confer the leaflet enclosed.

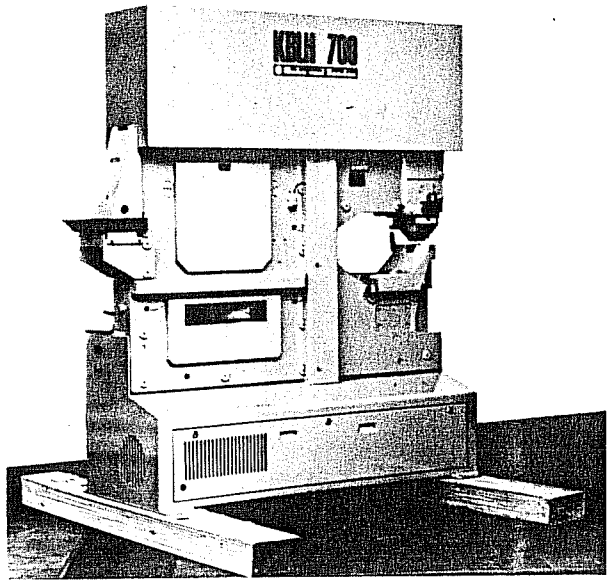


Fig. 1: Transport by truck

Fig. 2: Transport by crane

INSTALLATION

The working stations of the machine have normal working height. Height adjustment by means of platforms or foundations is superfluous.

All instructions required to provide a foundation at ground level for stationary installation can be learned from the foundation plan enclosed. Firmly tighten the foundation screws as soon as the filling compound has set. Instead of foundation screws, plugs can be used as well.

Check whether the machine has been positioned vertically.

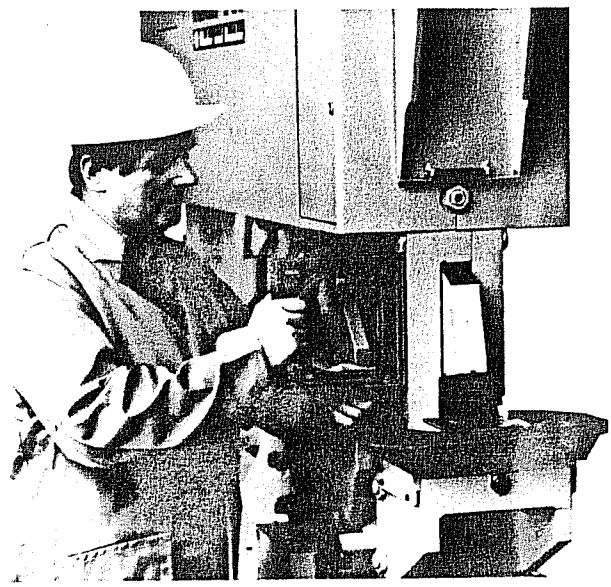


Fig. 3: Position check

CONNECTION AND STARTING

The drive and the appertaining oil reservoir are located in the machine base. See that the reservoir has been filled up to approx. 3 cm below its cover. Check by way of the charging inlet.

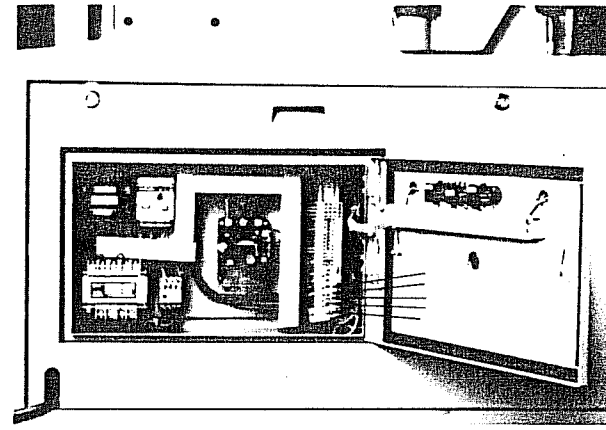


Fig. 4: Connection of power supply

On refilling oil, mind the maintenance instructions.

The machine has been installed ready for operation. The switch cabinet with the main switch, to which the cables must be connected, is located in the machine base. Connection must be done by an electric expert according to the wiring diagramme. (Make sure that the voltages are identical).

Start motor briefly: in case motor will not run according to arrow direction, change two phases. For check of correct direction of rotation, briefly start motor only in tip mode.

Prior to starting, check whether the working slides move properly and the tools have been precisely adjusted. To do so, turn the selector switch to "INCHING", and move the slides stepwise to their lower dead positions. (Cf. section "Engagement").

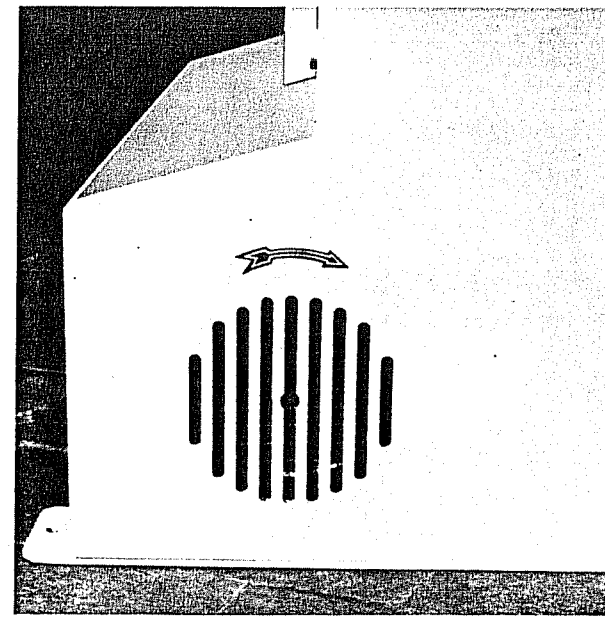


Fig. 5: Mind direction of motor rotation

LUBRICATING THE MACHINE

Types of Lubricants

In principle, grease the machine with oil only, whereby the same type of oil can be used at all lubrication points.

The following brands of oil can be used:

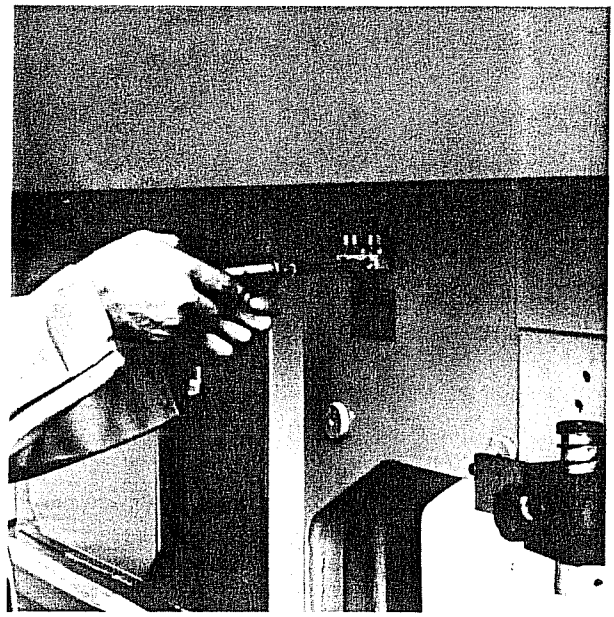


Fig. 6: Lubrication

ARAL Deganit B 220
Viscosity 130 mm²/s at 50° C

SHELL Tonna oil T 220
Viscosity 128 mm²/s at 50° C

MOBIL OIL AG VACTRA OIL No. 4
Viscosity 125 mm²/s at 50° C

ESSO AG MILLCOTT K 220
Viscosity 120 mm²/s at 50° C

BP ENERGOL HP - C 220
Viscosity 127 mm²/s at 50° C

Grease the machine thoroughly. (Cf. the lubrication chart.)

Lubricate by means of the delivered grease gun (tool kit). Mind the enclosed lubrication chart, and take care that the prescribed quantity of oil is injected regularly.

Engagement

Every working station can separately be engaged, stopped, or returned from any position.

1. "Setting" and "Operation" Switch

The selector switches for tool setting and engagement are located under the coverings, within the safety hood. When the switch is set to "INCHING", the working slide can stepwise be moved to its working position.

In this position, tools can be set, mounted, or dismounted.

When the selector switch is turned to "OPERATION", the corresponding working slide will automatically move to its upper start position.

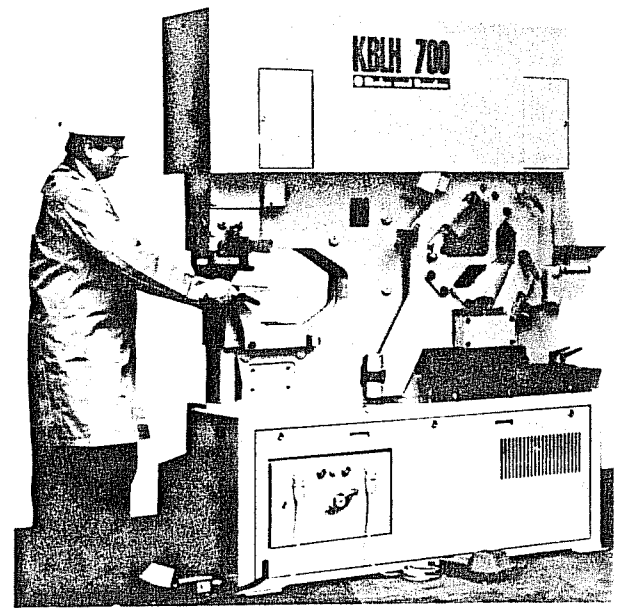


Fig. 7: Foot engagement punch

2. Functions of the Foot Switches

When the switch has been set to "OPERATION", three functions can be actuated by means of the foot switches:

a) Actuating the foot switch over the action point: - the slide will execute a down stroke.

b) Disengaging the foot switch just below its action point: - the slid is stopped.

c) Releasing the foot switch completely: - The slide will move to its upper dead position.

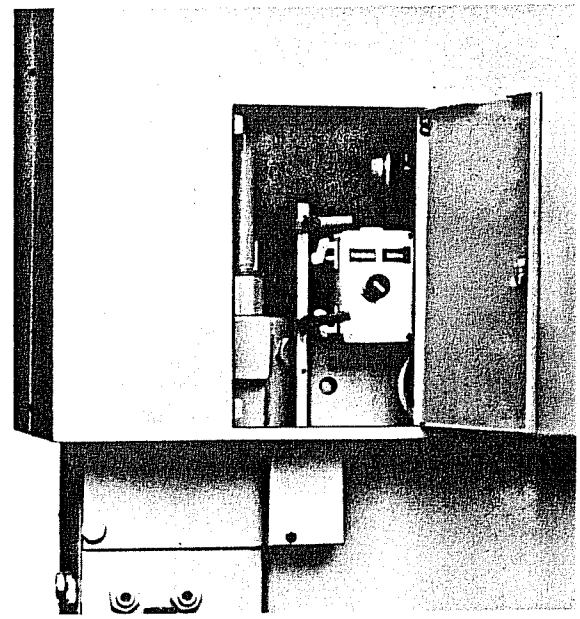


Fig. 8: Setting and operation switch, stroke adjustment punch

3. Stroke Adjustment

The control elements for adjusting position and length of stroke are located behind the casing flaps. Certain working operations do not require a full working stroke.

To save time, merely the working stroke required should be executed.

Adjust the position or length of stroke by means of the variable control rings installed on the control rods: the lower control ring sets the upper, the upper ring the lower stroke limit.

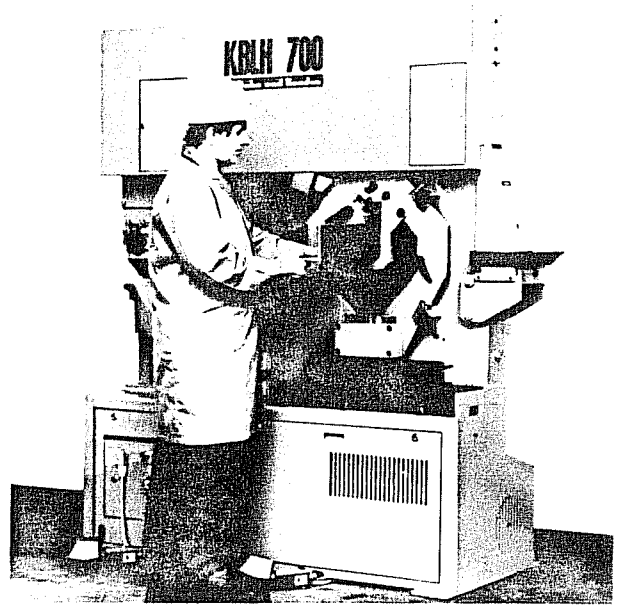


Fig. 9: Foot engagement shear

. Connection of a Length Stop with Contact Switch

n the shear side, there is an dditional plug for connecting a ontact length stop.
s soon as the fed material ctivates the contact switch, ne automatic shearing stroke is tarted, which means an important elp for the operator, and ncreases the efficiency of the achine.

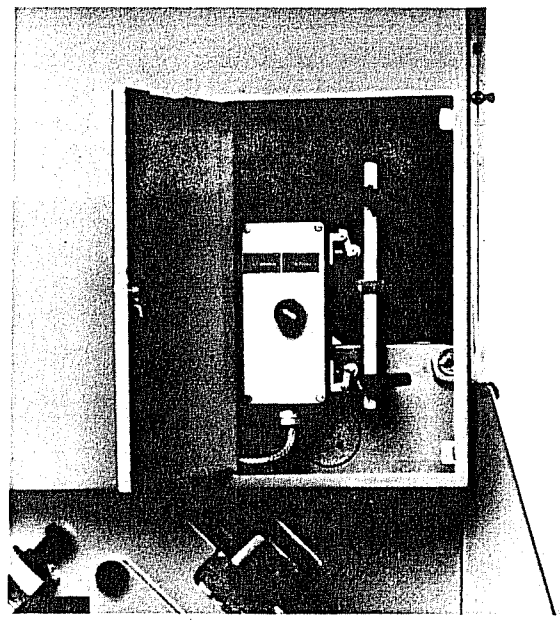


Fig. 10: Setting and operation switch, stroke adjustment shear

FLAT BAR SHEAR

1. Blades

The upper and lower blades are interchangeable, and can be used on four edges.

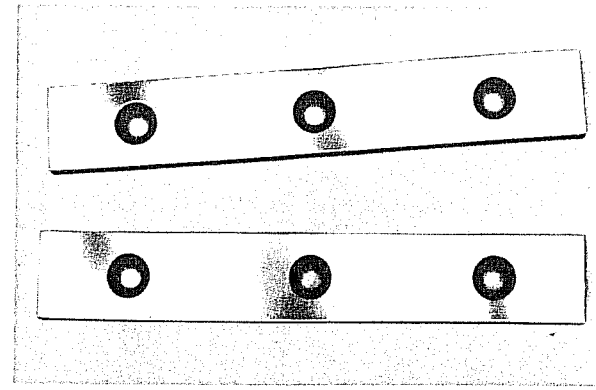


Fig. 11: Flat steel blades with 4 cutting edges

2. Regrinding the Blades

Regrind the blades in time (on their longer front sides only). Regrind rectangularly, and make sure that the front sides are plane to ensure proper adaptation to the slide and body. On doing so, always take care that grinding is done evenly so that the setting angle will not be changed. Replace worn-out blades by new MUBEA ones.

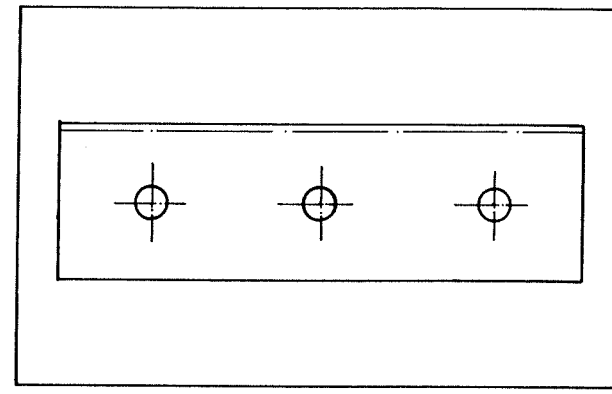


Fig. 12: Regrinding flat steel blades

3. Cutting Clearance

Set the cutting clearance of the blades to 0.2 or 0.3 mm, and check width of the clearance by means of a feeler gauge with the blade slide lowered.

In the factory, the blades have been adjusted such as to cut material of any thickness within the machine's capacity range. For cutting very thin material, reduce the clearance by adding paper board or metal shims.

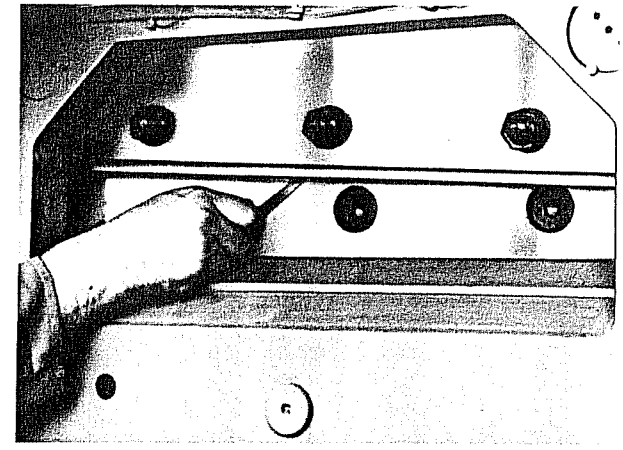


Fig. 13: Checking the cutting-clearance

4. Adjusting the Hold-down

The material to be cut must safely be locked in horizontal position. Improper adjustment of the hold-down causes notching or separation of the blades. On KBLH 300, the material must safely be clamped by the spindle hold-down before it is cut.

The automatic hold-down on KBLH 500 and 700 is set properly, if the hold-down bar lies evenly and close to the material to be processed, after the clamping stroke.

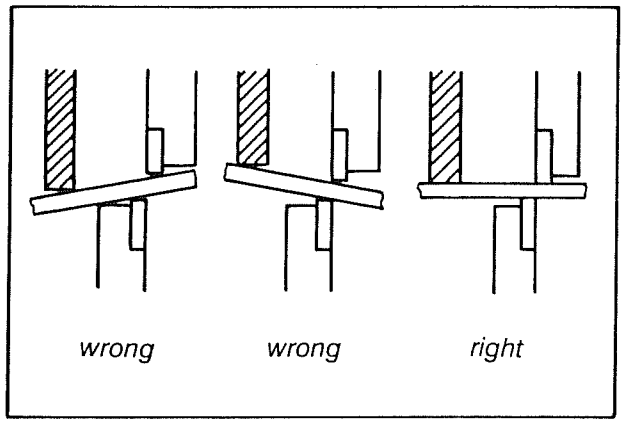


Fig. 14: Right and wrong adjustment of hold-down

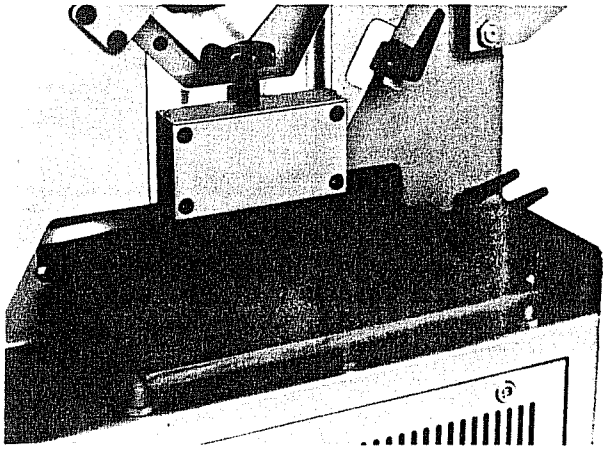


Fig. 15: Cutting flats

5. Exchanging Blades

a) KBLH 300

Disassemble the supporting and guiding table. Loosen fastening screw "A", and take the lower blade from the machine, from the discharge side. Loosen fastening screws "B", and remove the upper blade (Fig. 16, 17).

Assemble in reverse order.

b) KBLH 500 and 700

Loosen clamping lever "A" actuating the supporting brackets "B", push the brackets outwards, and tighten. Swivel hold-down plate "C" to the front (Fig. 38).

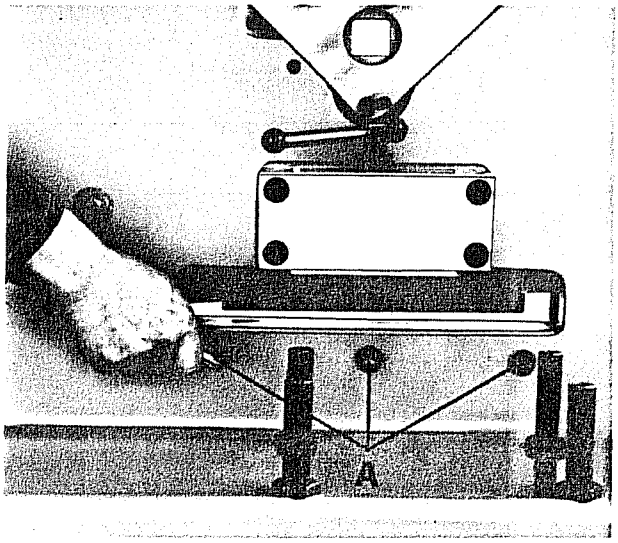


Fig. 16: Changing the lower flat steel balde (KBLH 300)

Loosen locking nuts "A", fastening nuts "B", and take the lower blade out of the machine, from discharge side.

Inch the working slide to its lower dead position.

Loosen locking nuts "C", fastening nuts "D", and eject blade screws "E" to the front, through the opening of the blade. When doing so, see that the upper blade will not fall down. (Cf. fig. 18, 19).
Assemble in reverse order.

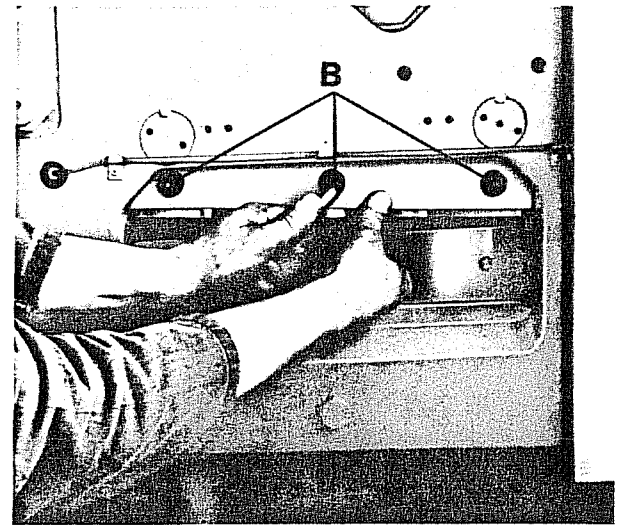


Fig. 17: Changing the upper flat steel blade (KBLH 300)

6. Re-adjusting the Slide Guides

The guides of special sliding material, on which the long slide runs, can be adjusted universally. Thus clearance-free guide even after long service is ensured.

Re-adjust as follows:

a) Frontal (see fig. 20):
First, loosen the locking nuts "A" by lefthand rotation. Tighten pressure screws "B" up to resistance, by means of a screw driver. Then loosen pressure screw "B" again by about 1/16 rotation, and tighten locking nut "A". This must be done to ensure proper guide of the slide.

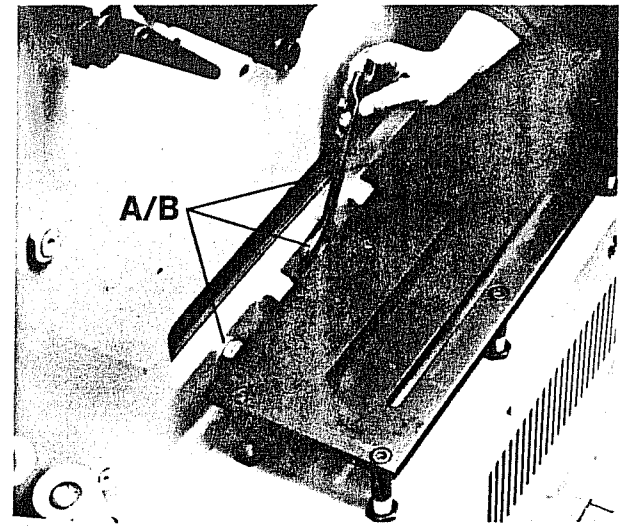


Fig. 18: Changing the lower flat steel blade (KBLH 500/700)

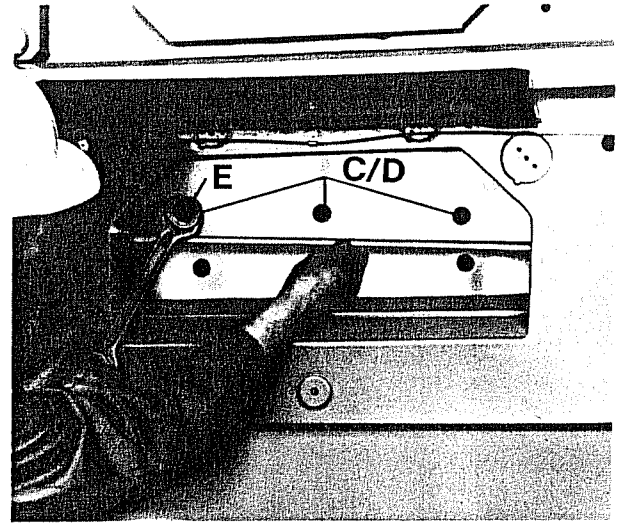


Fig. 19: Changing the upper flat steel blade (KBLH 500/700)

b) Lateral (Cf. fig. 21):
Prior to re-adjustment, disassemble the section and the flat steel blades, as well as the coping/notching tools.

To re-adjust, loosen locking screws "A", and adjust the guide screws "B". First, tighten the guide screws "B", and then loosen them again by about 1/16 rotation. This ensures proper seat of the slide. All 6 guide screws (8 screws on model KBLH 700) must be adjusted in this way.

With the adjustment having been finished, drill guide screws "B" by means of a 4.5 mm drill, and fasten by locking screws "A".

Now, first install the flat steel blade, lower the blade slide, and check width of the cutting clearance. (See section "Flat steel shear").
In case the cutting clearance should be too small or wide, regrind, or insert shims.

After the flat steel blades have been installed and checked, mount the section blades and the coper/notcher, and carefully check width of the cutting clearance.

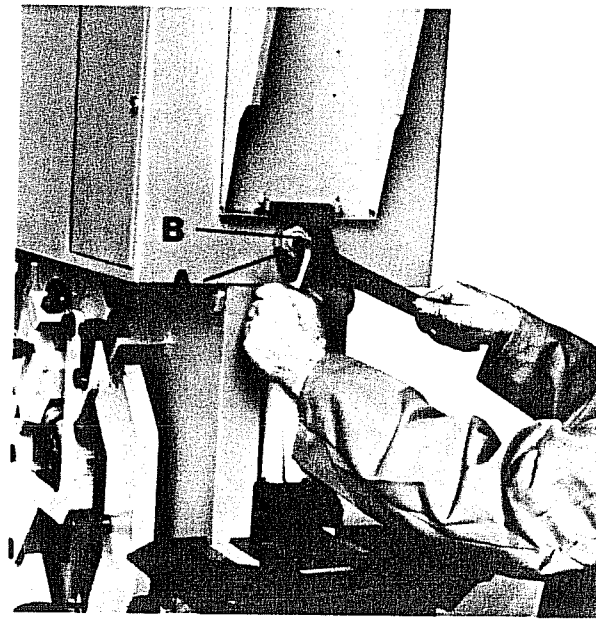


Fig. 20: Adjusting the slide guide - on the front

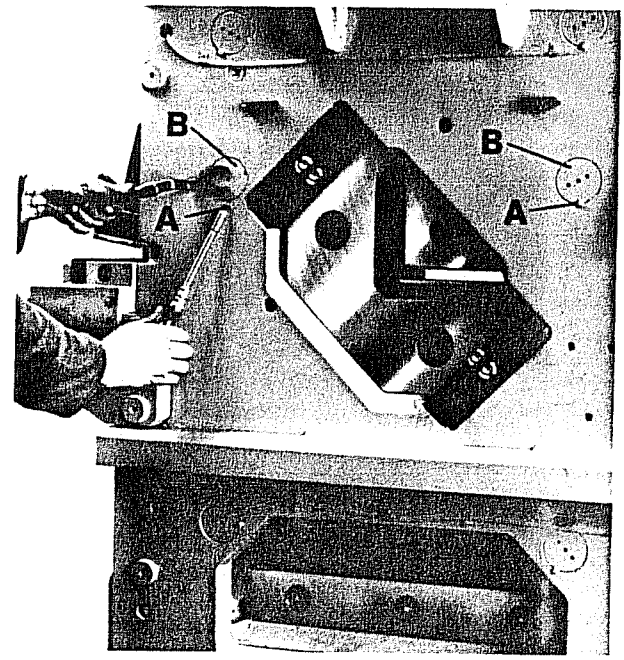


Fig. 21: Adjusting the slide guide - laterally

COPER/NOTCHER

1. General

On request you have got a machine equipped either with the triangular notching or the rectangular coping tool. These tools can easily be interchanged and ordered subsequently.

2. Triangular Notcher

This tool is especially suitable for economic production of frames out of angles or tees. To prevent any upsetting in the area of the section root, the tip of the triangular notcher is flattened. Thus the section can be bent to frames.

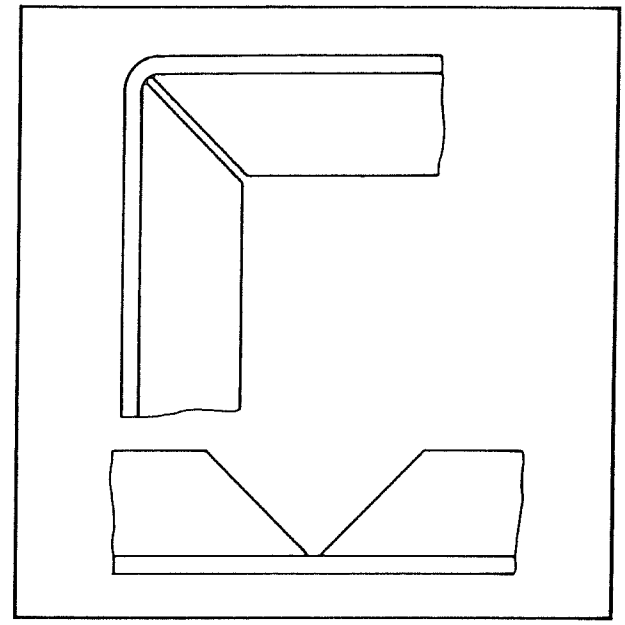


Fig. 22: Triangular notching for frame bending

By inserting the angles to be processed under 45^{o}, the triangular notcher enables performance of rectangular and notchings. By means of appropriate feed, any length desired can be obtained.

To notch the web of tees, remove the front cross blade "A" by loosening screw "B", so that the flange of the tee can be inserted.

3. Rectangular Coper

The rectangular coper is most suitable to cope flanges and webs. Wider or deeper copings can be obtained by appropriate feed. To notch triangularly, insert the material under 45^{o}. However,

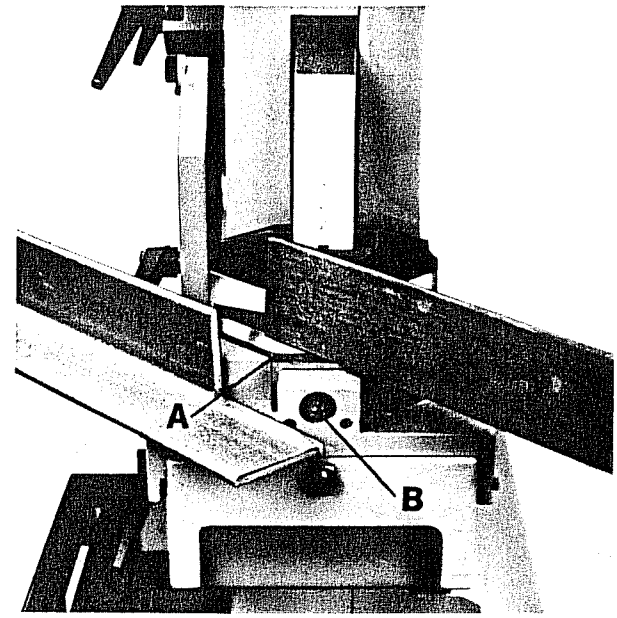


Fig. 23: Rectangular copings by means of triangular notcher

because of the then resulting sharp edges, this procedure is not to be recommended for manufacturing frames.

4. Adjusting the Coping/Notching Tools

As the coping saddle is universally adjustable, the tool's underpart can easily be adjusted to the upper blade.

Mind evenness of the cutting clearance.

The cutting clearance has already been adjusted for maximum performance. Reduce the clearance when coping very thin material. To do so, lower the blade slide until the upper coping blade just inserts into the underpart of the tool, and check width of the cutting clearance by means of a feeler gauge.

To adjust the tool (Cf. fig. 27), loosen the saddle screws "A", locking nut "B", and pressure screw "C", and properly adjust the saddle by means of the setting screws "D". Tighten saddle screws "A", pressure screw "C", and lock by nut "B".

5. Grinding the Rectangular and Triangular Coper-Notcher

Grind the upper blades on their lower, the lower blades on their upper faces only. When installing the blades, take care of the proper cutting clearance. (Daub the cutting edges with oil several times.)

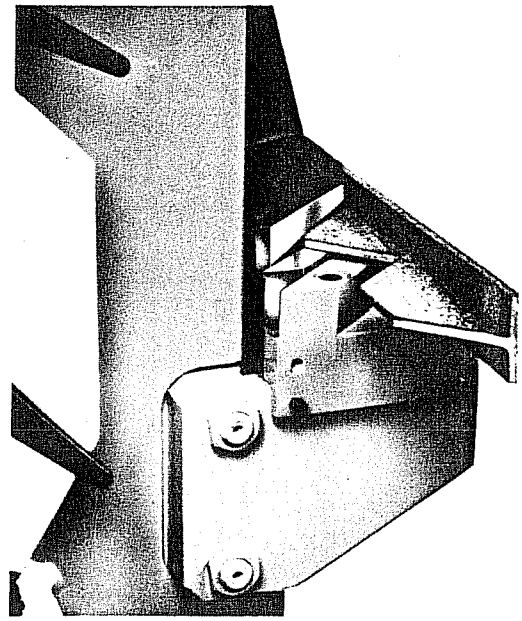


Fig. 24: Notching the webs of tees

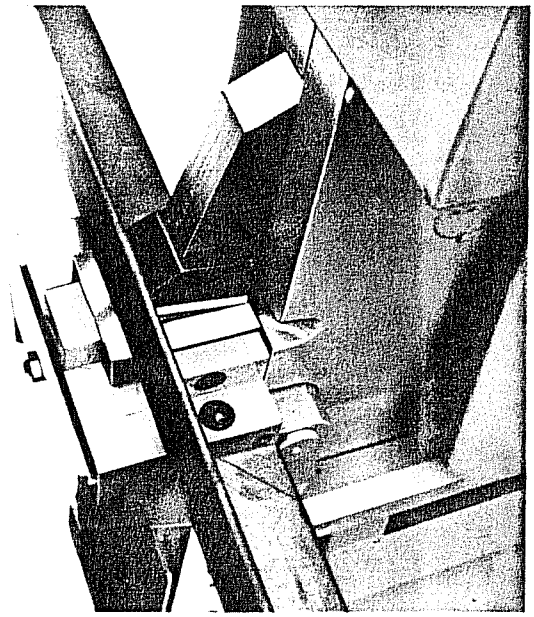


Fig. 25: Wide rectangular coping

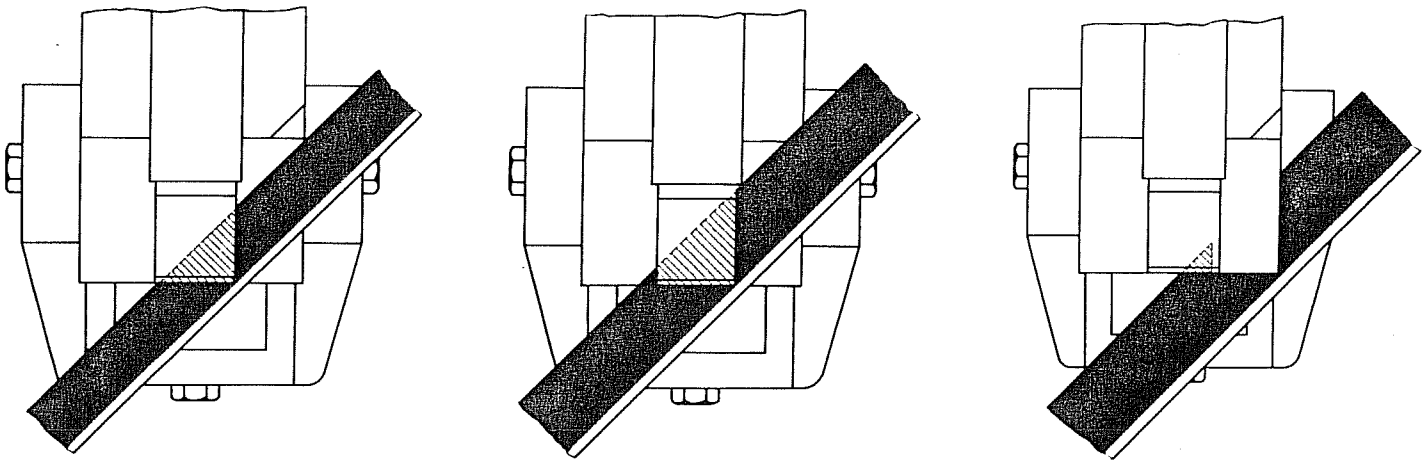


Fig. 26: Provisional triangular notching by means of rectangular coper

6. Special Tools

Instead of standard triangular and rectangular coping/notching tools, other special coping/ notching tools can be used as well, such as coping tools for rounding fish plates or tools for coping flats to be welded to round bars or tubes.

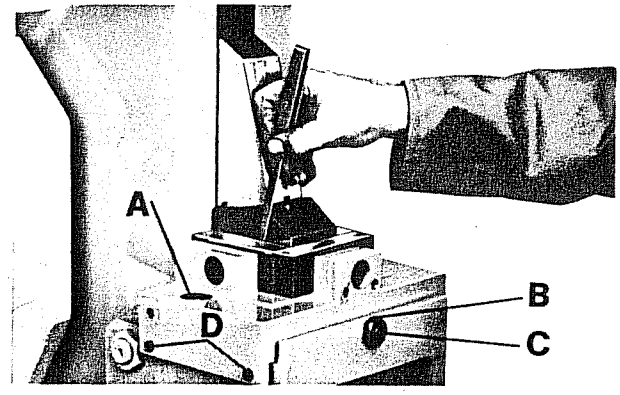


Fig. 27: Checking the cutting clearance

7. Special Accessories

For notching without previous scribing, we additionally supply special supporting tables, index rails etc.

Please let us know your inquiries. So we can prepare, and offer the best possible solution.

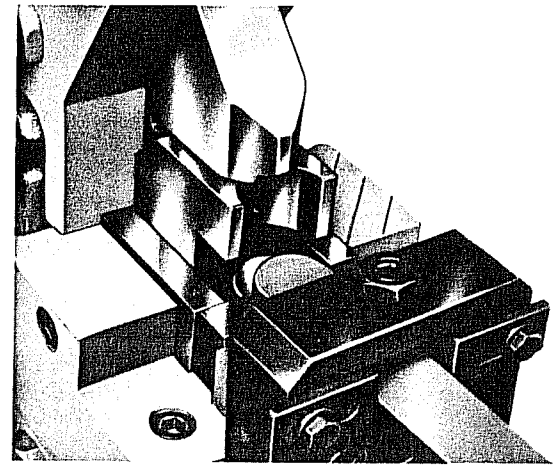


Fig. 28: Rounding flats

Please note!

The coper/notcher has been provided with a safety hood.

We strongly advise you to keep this safety device always ready for use.

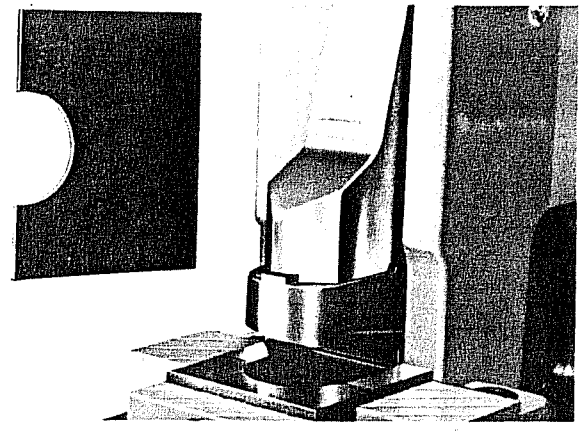


Fig. 29: Rounding out flats

SECTION SHEAR

1. General

The movable section blade is moved by the vertically running shear slide. The running direction of the movable section blade is turned round to 45^{o} by means of the guides firmly installed within the machine body. This construction enables mitre cuts as well as feeding angles and other steel sections by means of flat tracks.

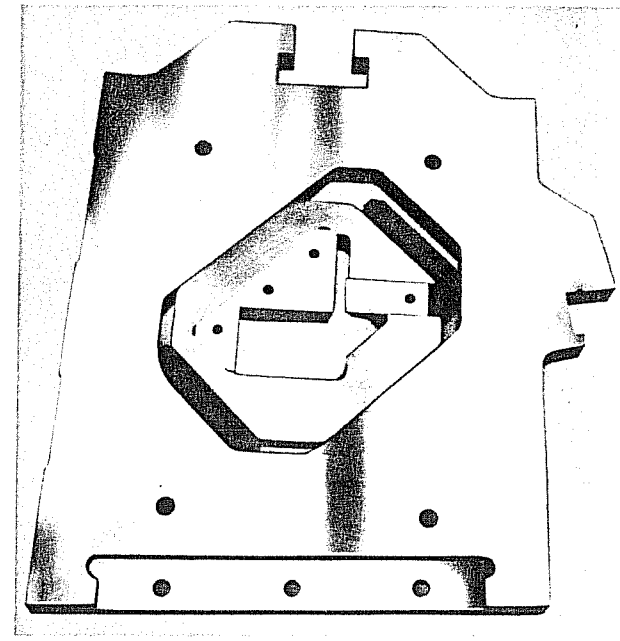


Fig. 30: Drive of the movable section blade within the section slide

2. Adjusting the Slide Guides

The guide of special sliding material, on which the long slide runs, can be adjusted universally. Thus clearance-free guide even after long service is ensured, which means an important safety measure regarding the immence forces occurring at the section shear.

Re-adjust the slide as described under "Flat steel shear" item 6.

3. Removing Scales

There are channels between the body plates and the shear slide. Due to width of these channels, dry scales will fall perfectly through.
However should scales accumulate, rinse the channels by petroleum.

4. Types of Blades

A) PMG Blades

In standard version, the machines are equipped with blades for cutting angles (90^{o} and 45^{o}) and tees (90^{o}). A detailed description as well as maintenance and operation instructions for your blades are given below.

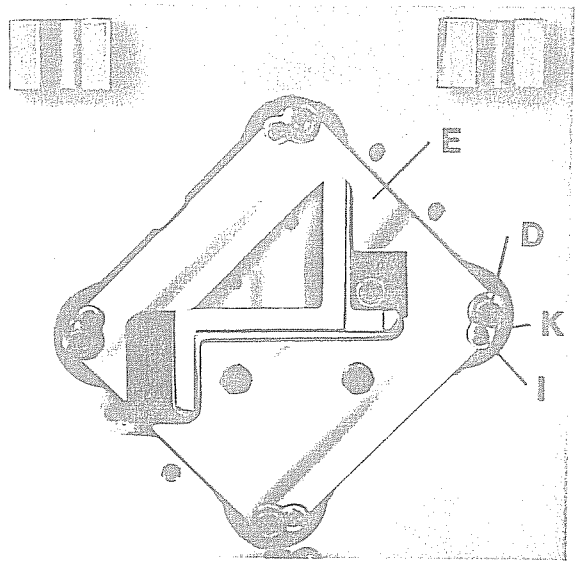


Fig. 31: PMG section blade, seen from body side (KBLH 300)

1. Dismounting the Section Blades

(KBLH 300: cf. fig. 31, 32, 37, KBLH 500 and 700: cf. fig. 33, 34, 38)

a) KBLH 300: Loosen clamping lever "B", and push the hold-down plate "C" off the stop rail (Cf. fig. 37).

b) KBLH 500/700: Loosen clamping lever "A", push supporting bracket "B" outwards, and t nten again. Remove hold-down plate "C" to the front (Cf.fig.38).

c) Unscrew the four cylinder screws "D".

d) Remove stationary section blade "E" from the machine.

e) Remove movable section blade "F" from the machine.

f) When cleaning the blades, carefully inspect the stationary and movable guides within the machine body, in the slide and the blade itself.

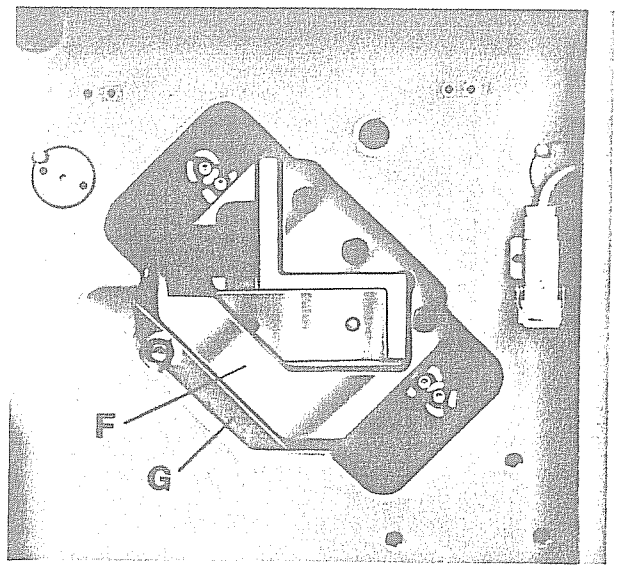


Fig. 32: PMG section blade, seen from cover plate side (KBLH 300)

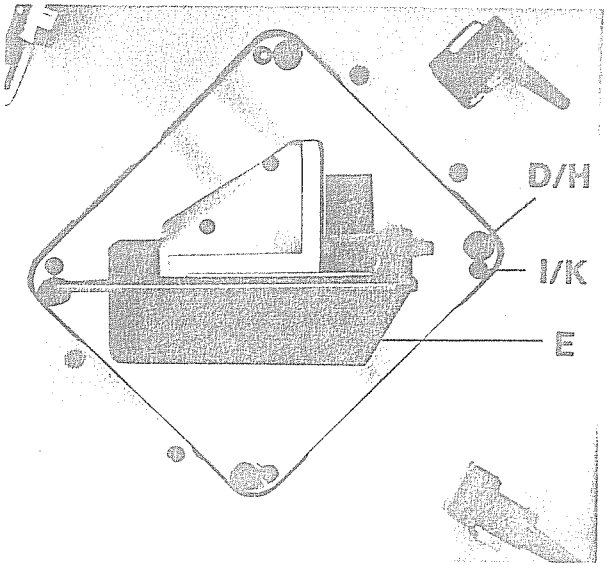


Fig. 33: PMG section blade, seen from body side (KBLH 500/700)

2. Installing the Section Blade

(KBLH 300: Cf.fig. 31, 32, 37
KBLH 500/700: Cf.fig. 33, 34, 38)

a) Prior to mounting the movable section blade "F", properly lubricate the outer guide sides (Cf. fig. 36, arrows).

b) Insert the movable section blade "F" into section slide "G", and press it on the guides backwards till it sits close to the stop.

c) Insert the stationary section blade "E" into the body.

d) Insert cylinder head screws "D" together with disk spring "H", and tighten.

e) Tighten setscrew "I".

f) Loosen cylinder head screw "D" by a full rotation, and tighten the four setscrews "I" by approx. 1/8 rotation to the right. This must be done to prevent the two blades from being drawn one on top of the other, and to ensure a proper cutting clearance.

g) Tighten cylinder head screws "D" by means of a wrench extension (approx. 300 mm), and lock setscrew "I" by means of locking cap "K". (On KBLH 300, lock cylinder head screw "D" by means of washer "K")

h) KBLH 300: Push hold-down plate "A" onto the stop rail, and lock by means of the clamping levers.

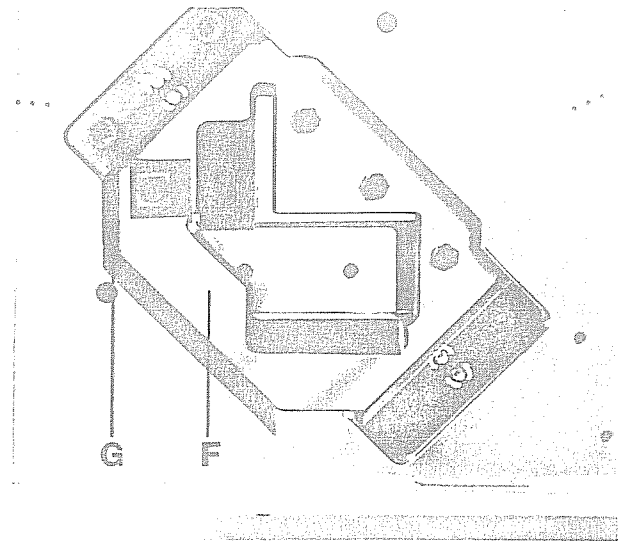


Fig. 34: PMG section blade, seen from cover plate side (KBLH 500/700)

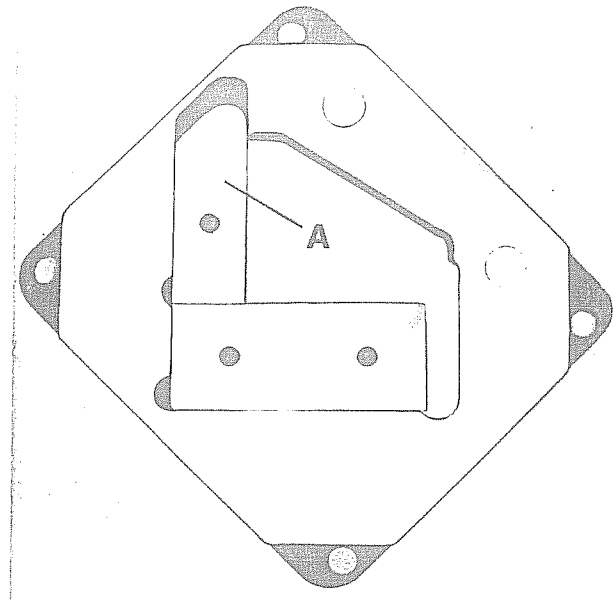


Fig. 35: PMG section blade, stationary

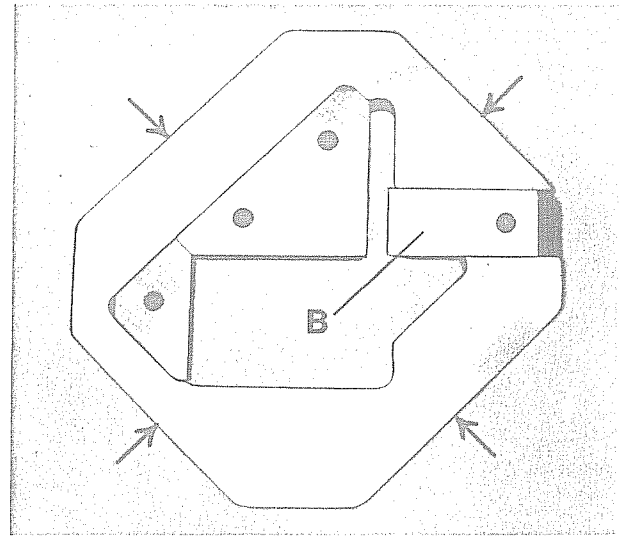


Fig. 36: PMG section blade, movable

i) KBLH 500/700: Swivel in hold-down plate, and lock by means of supporting brackets "B".

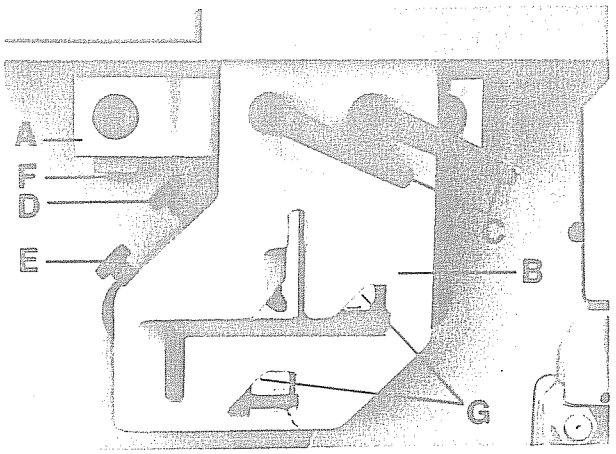


Fig. 37: Hold-down KBLH 300

3. Cleaning the Section Blades

The section blades need no extensive maintenance, for there are no trouble-prone parts. You merely should clean them in time, depending on the resulting amount of scales.

a) Disassembling the section blades according to instructions given under item 1.

b) For disassembling the sliding blades "A" and "B"(see fig. 35 and 36).

c) Thoroughly clean both the section and the insert blades.

d) Assemble in reverse order.

e) Install the section blades acc. to the instruction, item 2.

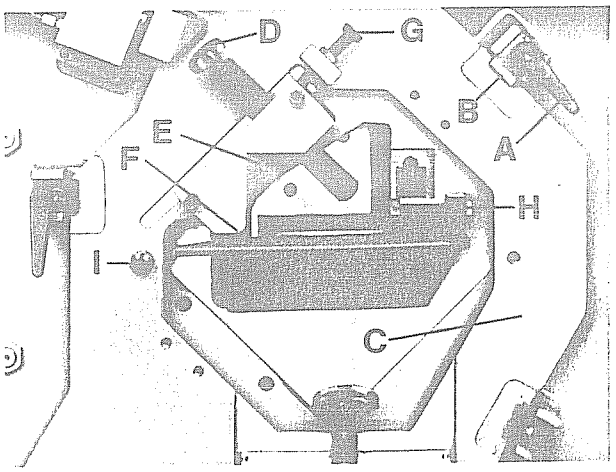


Fig. 38: Hold-down KBLH 500/700: design for PMG blades

To be noted:
To keep the scales dry, the section blades must be free from grease.

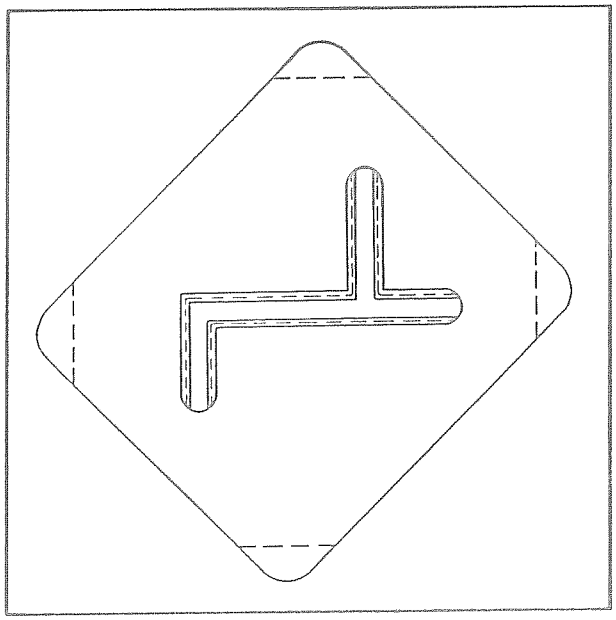


Fig. 39: Regrind blades evenly

4. Regrinding the Section Blades

Regrind the sliding and insert blades evenly, and on their front cutting faces only. In case of improper regrinding, i.e., if the edges will not meet at one point, there will be no clear cut.

Regrind the sliding and insert blades only so that, after the slide has been moved to its

lowest position, the blade will completely and evenly cover the cutting edges. Otherwise, the blades must be replaced. (The corresponding article number, which is your order number, is shown on the blades). Please order Original MUBEA blades only.

To enable cutting all kinds of steel sections (even sharp-edged ones), the sliding and insert blades are pointed. For processing steel sections with different root radii, the blades can be provided with adequate radii. Thus there will be no deformation in the root area.

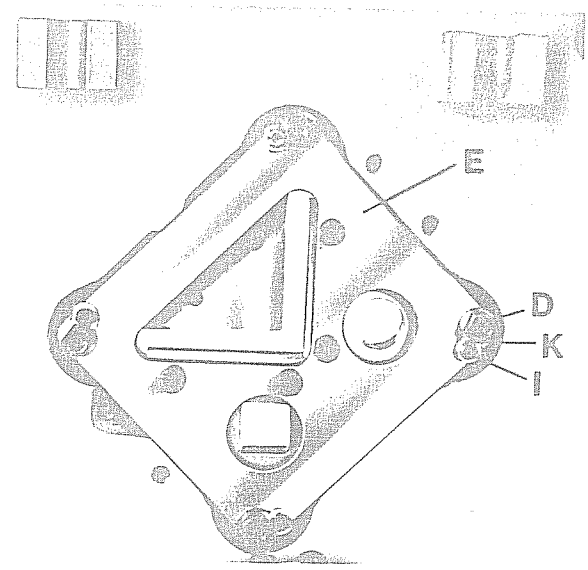


Fig. 40: Blades for angles, seen from body side (KBLH 300)

5. KBLH 300 Hold-down

(Cf. fig. 37)

According to marks engraved on the stop rail "A" ($90^{o}/45^{o}$), the hold-down can be properly adjusted. It is fixed by means of the clamping levers "C".

Adjust the proper height of the steel section by means of the hold-down screws "D" (for 90^{o} cuts), respectively "D" and "E" (for 45^{o} cuts).

When the material lies evenly and horizontally during being cut, height is correct. In case of resulting incorrect vertical leg re-adjust stop rail "A" by means of the setting screws "F" (required in case of processing sections of different size).

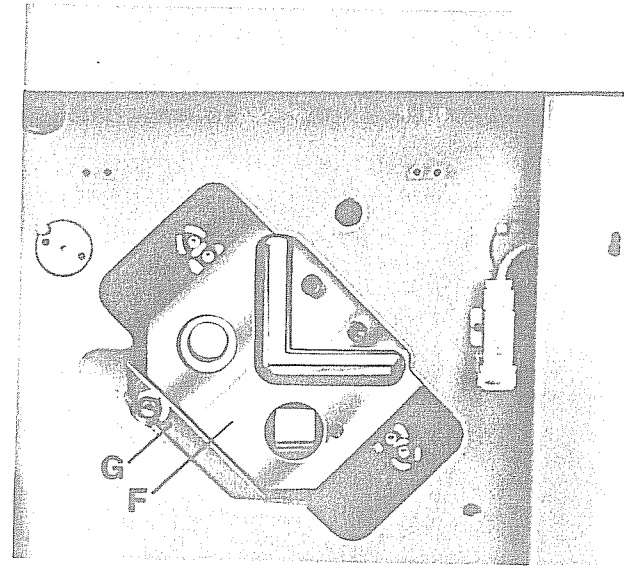


Fig. 41: Blade for angles, seen from cover plate side (KBLH 300)

In case of incorrect horizontal leg, correct by shifting the hold-down on the stop rail.

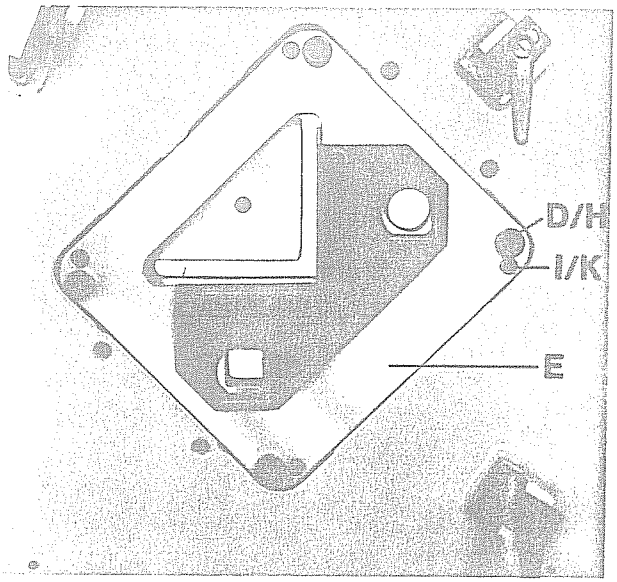


Fig. 42: Blade for angles, seen from body side (KBLH 500/700)

6. Hold-down - KBLH 500/700

(cf. fig. 38)

The automatic hold-down has been designed in such shape, that for rectangular cuts the material is fixed by pressure screw "D", for mitre cuts, by the stop edges "E" and "F" of the pressure piece. For 90^{o} cuts, adjust by means of the pressure screw, for mitre cuts by shifting the pressure piece laterally. Should the latter one have been shiftet, adjust the stop screw "G", and lock. In case of using special blades, pull the pressure piece down through the channels of the hold-down plate. Then another pressure piece can be used.

While cutting, take care that the tip of the pressure screw exactly meets the root of the steel section to be processed, respectively, that when doing mitre cuts, the stop edges of the pressure piece sit close to the material.

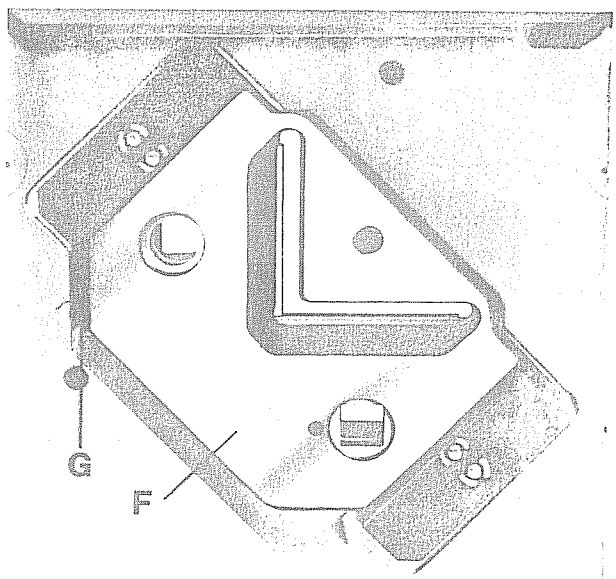


Fig. 43: Blade for angles, seen from cover plate side (KBLH 500/700)

In case the cut will not been done at exactly right angle or 45^{O}, adjust by means of the screws "H" (for 90^{O}) and "I" resp., or slightly shift the pressure piece (for 45^{O} cuts). Cf. fig. 38.

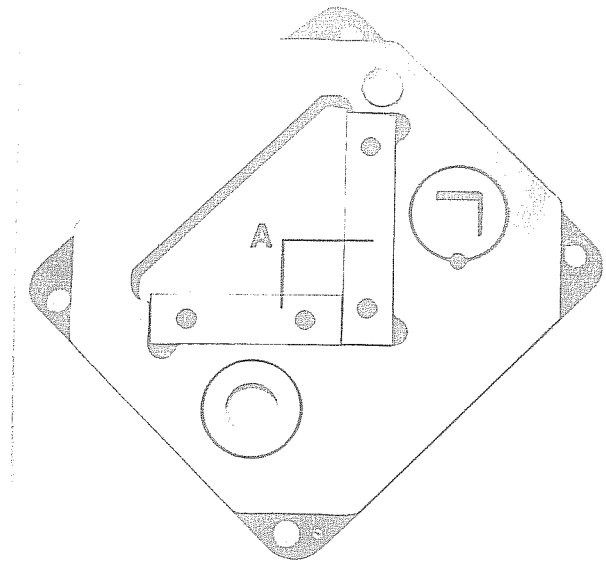


Fig. 44: Blade for angles, stationary

B) PML Section Blades

The machines can be equipped with blades for cutting angles at 90^{O}, as well as blades for cutting round and square bars. This type of blade can be installed very easily. For detailed description, as well as maintenance and operation hints for your blades, please study the following instructions.

1. Dismounting the Section Blades

(KBLH 300: Cf.fig. 40, 41, 46, KBLH 500 and 700: Cf.fig. 42, 43, 47)

a) KBLH 300: Loosen clamping levers "B", and push the hold-down plate"C"off the stop rail (Cf.fig. 46).

b) KBLH 500 and 700: Loosen clamping lever "A", push supporting brackets "B" outwards, and tighten. Swivel hold-down plate "C" to the front (Cf.fig. 47).

c) Unscrew the 4 cylinder head screws "D".

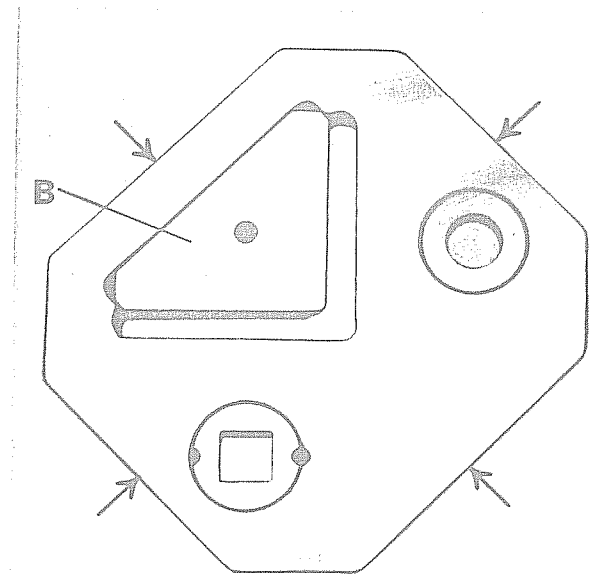


Fig. 45: Blade for angles, movable

d) Take the stationary section blade "E" out of the machine.

e) Take the movable section blade "F" out of the machine.

f) On cleaning the blades, carefully inspect the stationary and the movable guides in the machine body, the slide and the blade itself.

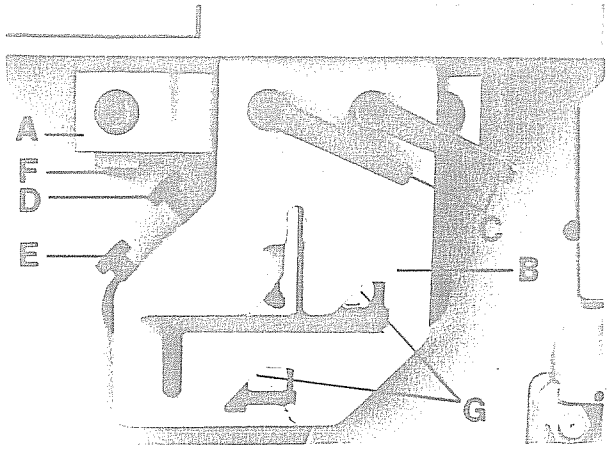


Fig. 46: Hold-down KBLH 300

2. Installing the Section Blades

(KBLH 300 - Cf.fig. 40, 41, 46, KBLH 500 and 700 - Cf.fig. 42, 47)

a) Prior to mounting the movable section blade "F", properly lubricate the outer guide sides (See fig. 45, arrows).

b) Insert the movable section blade "F" into section slide "G", and press it on the guides backwards till it sits close to the stop.

c) Insert the stationary section blade "E" into the body.

d) Insert the cylinder head screws "D" together with the disk springs "H", and tighten.

e) Tighten setscrew "I".

f) Loosen cylinder head screws "D" again by a full rotation, and tighten all 4 setscrews "I" by approx. 1/8 rotation to the right. This must be done to prevent the two blades from being drawn one on top of the other, and to ensure a proper cutting clearance.

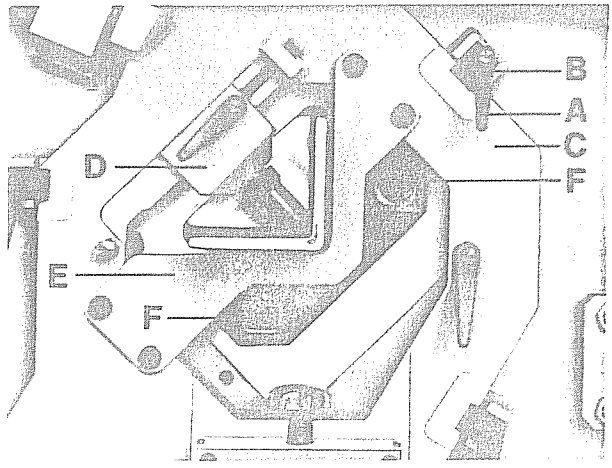


Fig. 47: Hold-down KBLH 500/700, design for blades for angles

g) Tighten the cylinder head screws "D" by means of a wrench extension (approx. 300 mm), and lock setscrew "I" by locking cap "K". (On KBLH 300, lock cylinder head screw "D" by means of washer "K".)

h) KBLH 300: Push hold-down plate "A" onto the stop rail, and lock by means of the clamping levers.

i) KBLH 500/700: Swivel in hold-down plate, and lock by means of supporting brackets "B".

3. Cleaning the Section Blades

The section blades need no extensive maintenance, for they have no troble-prone parts. Clean them in time, depending on the resulting amount of scales.

a) For disassembling the section blades, confer instruction, item 1.

b) Disassemble the insert blades "A" and "B". (See fig. 44 and 45).

c) Thoroughly clean both the section and the insert blades.

d) Assemble in reverse order.

e) For installation of the section confer instruction, item 2.

To be noted: To keep the scales dry, the section blades must be free from grease.

4. Regrinding the Section Blades

Regrind the insert blades evenly and only on their front cutting faces. In case of improper regrinding, i.e., if the edges will not meet at one point, there will be no clear cut.

Regrind the insert blades only so far that, after the slide has been moved to its lowest position, the blade will completely and evenly cover the cutting edges. Otherwise, the blades must be replaced. (The article number which is identical with your order number, is shown on the blades). Please order Original MUBEA blades only.

The insert blade withing the movable blade is pointed to enable cutting of all kinds of sections, even sharp-edged ones. For processing steel sections with given root radii, the blades can be provided with adequate radii. Thus there will be no deformation in the root area.

5. Hold-down KBLH 300

(Cf. fig. 46)

According to the mark on stop rail "A", hold-down "B" can be set for 90^{o} cuts. It is fixed in the position wanted, by means of the clamping levers "C".

Adjust proper height of the section to be processed by means of hold-down screw "D".

Adjustment is correct, when the material lies evenly and horizontrally during being cut.

In case of incorrect vertical leg, adjust stop rail "A" by means of the setting screws "F" (Required when processing sections of different size).
In case of incorrect horizontal leg, adjust by shifting the hold-down on the stop rail.

When cutting round and square sections, move the hold-down on the stop rail to a position ensuring safe horizontal clamping of material by the stop edge.

6. Hold-down KBLH 500/700

When using the combined blade for angles, round and square steel sections, push the appertaining pressure piece "D" onto the hold-down plate, and screw the hold-down rail "E" by the pressure screws "F" for round and square sections to the hold-down plate (See fig. 47).

When cutting angles, make sure that the tip of the pressure screw exactly meets the root of the steel section to be processed. Cutting round or square steel must be done in such manner that the material to be processed is safely clamped in horizontal position, by means of the pressure screw.

C) Special Blades

a, Quick-Change Blades

In case you will process channels, I-beams or other steel sections in frequently changing succession, you should use MUBEA Quick-Change Blades, consisting of a blade holder and insert blades.
Then you only need the considerably cheaper insert blades for each shape of steel section to be processed.

Changing blades is done in virtually no time, i.e. the clamping levers can be loosened, the insert blades removed, and new blades inserted by only a few movements and without any helping devices.

The uniform working height means a further important advantage of quick-change blades, when processing different steel sections.
This is very important in case there is a feed conveyor.

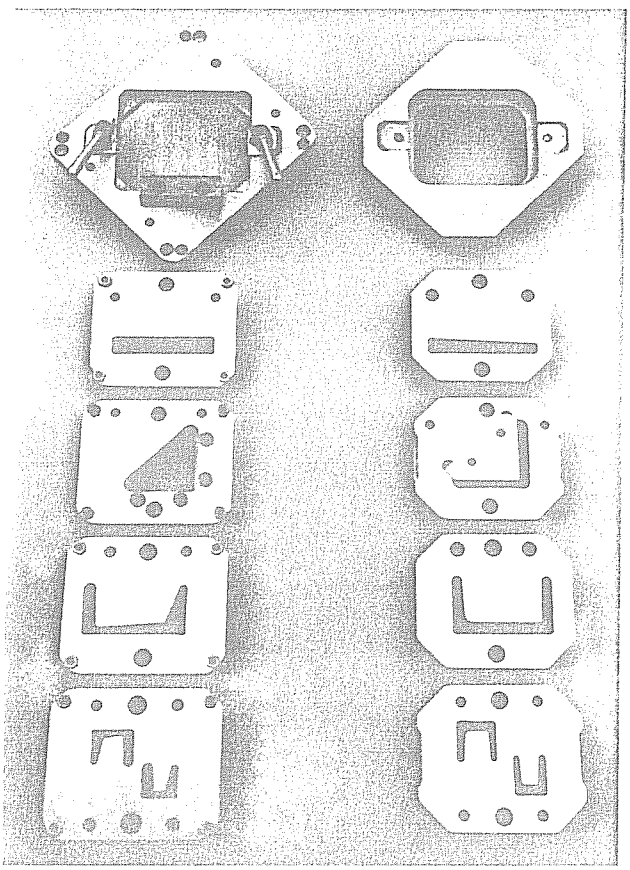


Fig. 48: Quick-change blade section shear

b) Section Blades for Special Steel Sections

For cutting channels, I-beams, zees cr other special steel sections, we can supply section blades with stationary cutting inserts.
Depending on the section size, several cutting openings can be incorporated in one pair of blades.

Standardized section blades can be supplied for channels and I-beams of DIN standard.

For steel sections of identical dimensions, combined blades for channels and I-beams can be supplied.

c) Pipe Notcher

The low-priced pipe notching device for the section shear means a special advantage. By means of this equipment, pipes of up to 60 mm outer diameter and a maximum thicknes of 6 mm can be processed. For processing pipes of different diameter, you only need the 2 cutting inserts for the moveable and the stationary blade.

PUNCH

USE ONLY PUNCHING DEVICES AND TOOLS WHICH ARE UP TO THE CUTTING AREA SUFFICIENTLY GUARDED AGAINST FINGER INJURY.

In case of using unprotected tools for insert operations, mind the safety rules reg. bending operations on powered press brakes, published in ZH 1/387, 4th edition, 1981.

1. General

Owing to its advantageous construction, the MUBEA punch is much more than a simple hole punching unit, for it can perform many tasks which previously required use of an eccentric press.

The clamping surface of the very long punch slide is of very large and nearly square cross section. Thus, large and projecting tools can be used without difficulty, for due to the length of the slide, tilting forces can easily be compensated.

Even most complicated punchings and copings can precisely be performed by using various special tools, such as multiple-punch, follow-on, and guided die tools etc., all manufactured by the MUBEA Tool Manufacturing Department.

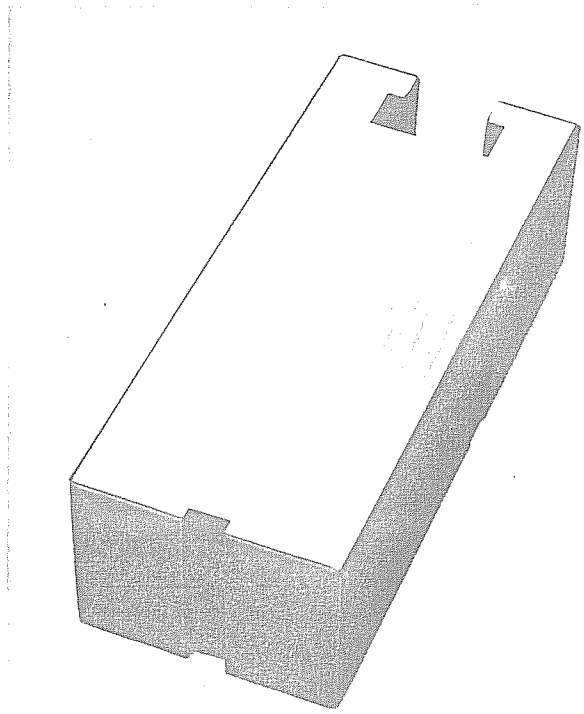


Fig. 54: Punch slide

2. Adjusting the Slide Guide

The guides of special sliding material, on which the long slide runs, are universally adjustable. Thus clearance-free guide even after long service is ensured.

Adjust as follows:
(See fig. 55, 56)

First, loosen locking nuts "A" by lefthand rotation. Tighten pressure screws "B" up to resistance, by means of a screw driver. Then lift pressure screw "B" by approx. 1/16 rotation, and tighten locking nut "A". This must be done to ensure proper guide of the slide.

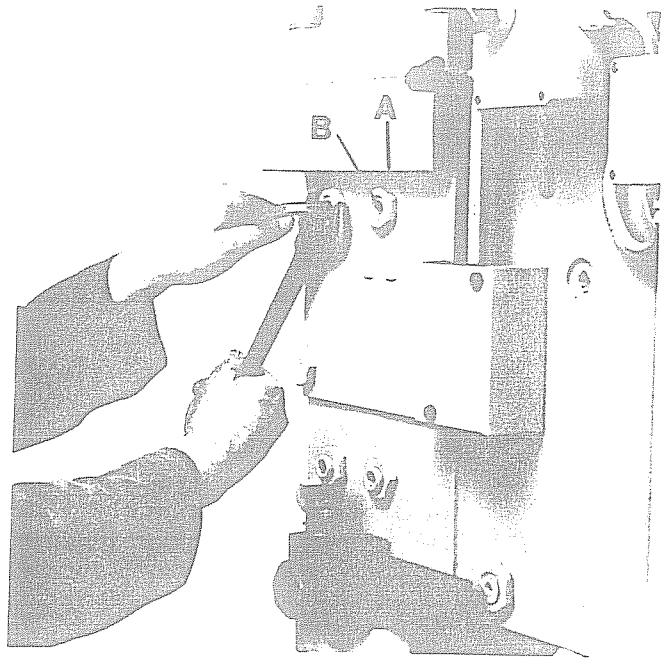


Fig. 55: Re-adjusting the slide guide laterally

3. Saddle and Saddle Support

The construction of MUBEA punches intentionally provides a special saddle support "B/C" to support punch saddle "A". Advantage of this design is that thus the saddle cannot spring or tilt, and the punching pressure is vertically led into the machine body.

The saddle support can remain mounted for all punching operations. Only when punching flanges of channels and I-beams, it must be removed. To do so, merely loosen mounting screw "D" (See fig. 57).

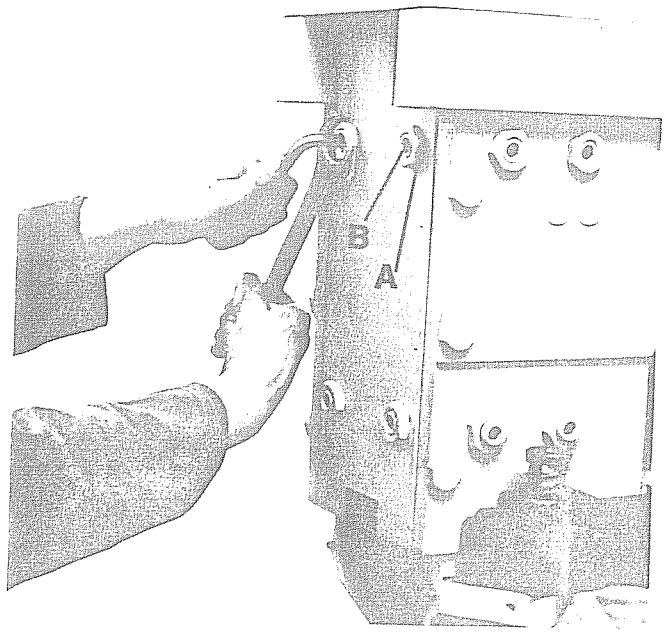


Fig. 56: Re-adjusting the slide guide on the front

This construction is especially advantageous when using big and projecting tools, for thus they can safely and universally be supported which means the best possible protection.

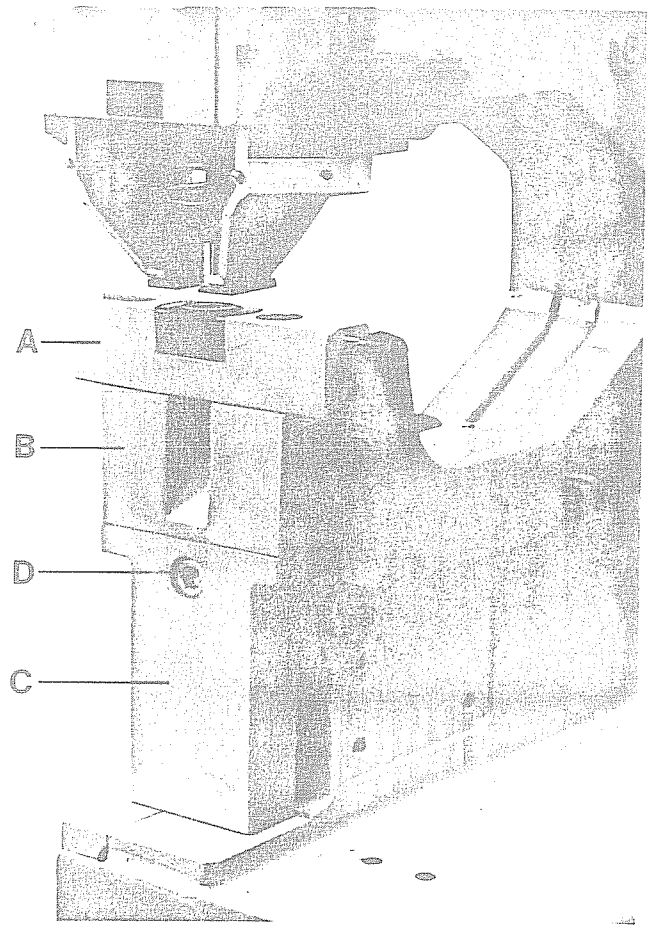


Fig. 57: Saddle with saddle support

4. MUBEA Standard Punches and Dies

MUBEA punches and dies are available in 4 standardized sizes, and will fit all machines:

Size I up to 15 mm dia.
Size II over 15 mm up to 30mm dia.
Size III over 30 mm up to 40mm dia.
Size IV over 40 mm up to 50mm dia.

The standard machine equipment allows use of punches and dies up to size II.

For punches and dies exceeding this standard range, see section 10, "Special Tools".

For punching flanges of channels or I-beams, we supply flange punching dies with inclined surface matching the inclination of the steel section to be processed. To punch small angles, tees, channels or I-beams according to gauge line near the web, flange or leg, eccentric dies are required, having the bore near their edges. When mounting the eccentric dies, push the punch saddle backwards until the punch and the bore of the die lie on one axis.

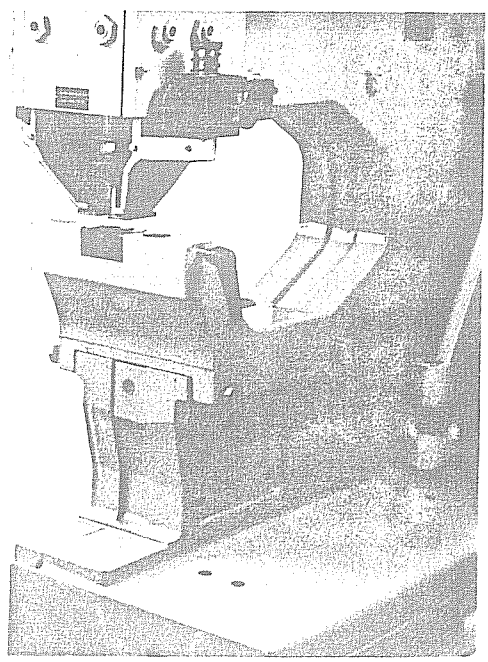


Fig. 58: Saddle without saddle support

Please ask for our detailed catalogue on MUBEA Standardized Punches and Dies.

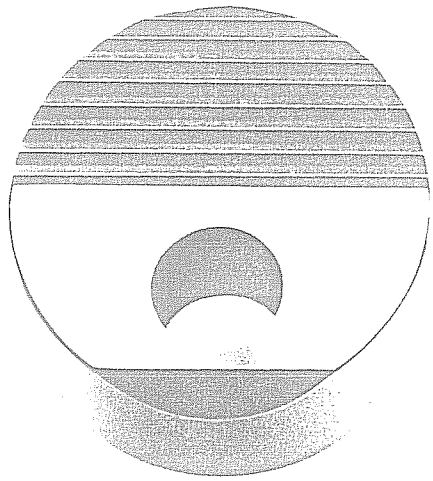


Fig. 59: Flansch die for I-beams

5. Adjusting Punch and Die

Punches and dies must always be centric. The cutting clearance should be approx. 5 % of material thickness (i.e. for punching 10 mm thick material the diameter of the die bore is 1 mm larger than the diameter of the corresponding punch, and the cutting gap is 0.5 mm). Therefore, when ordering state thickness of material to be punched.

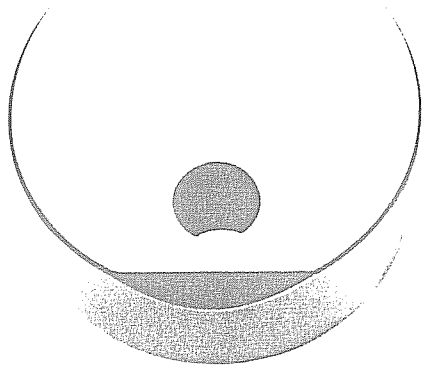


Fig. 60: Eccentric die for small angles

When the fastening screws "A" and the adjusting screws "B" have been loosened, the saddle can be pushed to the front or backwards. The adjusting screws "C" serve to fix the saddle laterally. When the punches and dies have accurately been adjusted, tighten the adjusting screws "C" and "B", as well as the saddle fastening screws "A". (Cf. fig. 61)

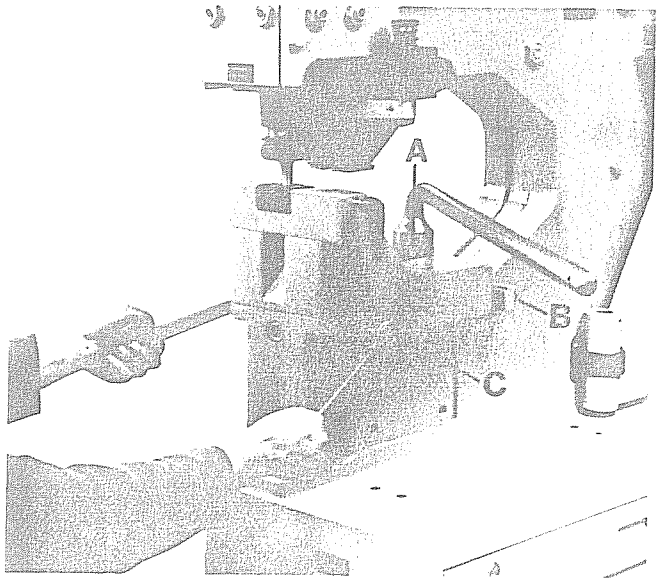


Fig. 61: Adjusting punch and die

During the punching operations, inspect the position of the tools now and again. To do so, inch the punch step by step to and into the die. Repeat this procedure after every tool change.

Centred material can precisely be moved to in inching mode, by means of the built-in foot control, faulty punchings thus bein avoided.

6. Safety device to avoid twisting of Shaped Punches

Square, oblong or punches of other shape must be protected from being twisted. For this purpose, there is a groove on each punch holder on the surface fitting the punch, and on the front surface of each shaped punch.

Insert a centering pin of 4.7 mm dia. into this groove.

7. Stripper

The solid stripper covers the whole punching tool, and can be adjusted to any material thickness.

Hight-adjustment is done by means of the star grip "A" in the throat area. To change the tool, loosen both star grips "B", and shift stripper "C" into the throat area (See fig. 62).

For processing smaller sections and punching holes up to 15 mm diameter into material of small thickness, use the stripper reducing plate supplied.

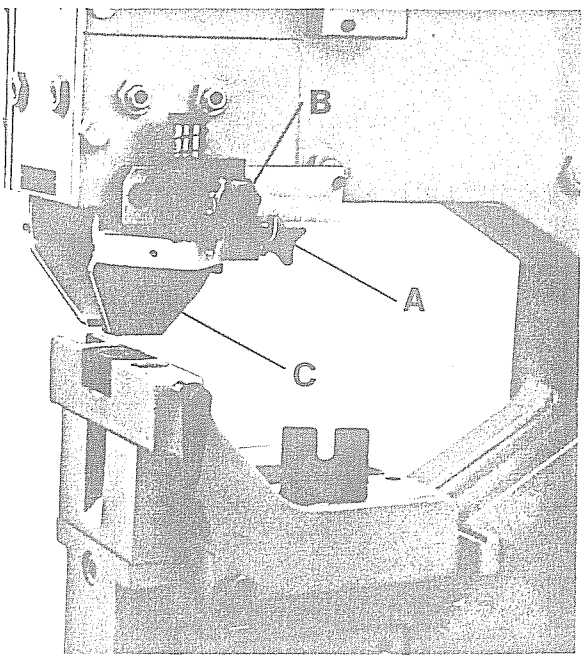


Fig. 62: Stripper

8. Regrinding Punching Tools

Regrind the punching tools on their front faces only, for otherwise the clearance between punch and die will be changed. To increase service life of the tools, grease the cutting edges now and again.

In many cases it is much easier and advisable to order new tools, for this will be more favourable, and guarantees correct grinding.

9. Quick-change Device for Punches and Dies

As standard, the machine is equipped with a quick-change device for round punches and dies. Both tool can easily and quickly be reset.

This device is most economical for small-lot production which requires frequent tool change.

...so shaped punches and dies can be used on this device, however, check the cutting clearance after every change, for often the saddle must be re-adjusted. In addition to this re-adjustment, as well as on installing the coupling nut, fasten the outer ring for the punch again after the first punching stroke, for the centering pin will have been pressed into the guide only after the first punching operation has been done.

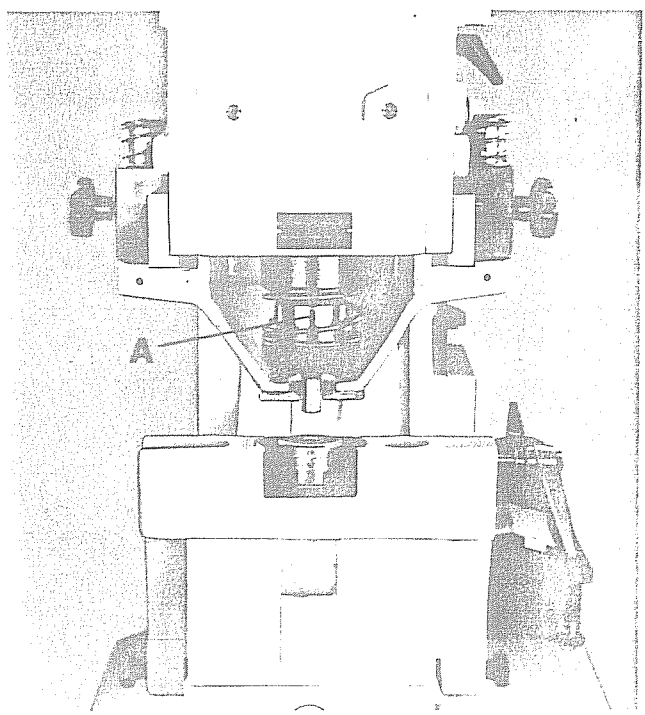


Fig. 63: Quick-change device for punches and dies

In case of processing larger series, it is advisable to use the more rugged punch-fastening device with coupling nut.

Reset the quick-change device for the coupling nut by loosening setscrew "A" (Fig. 63) The centering ring will be unblocked, and can be removed. After these few manipulations, the punch is ready for use of the coupling nut.

Assemble the quick-change device in reverse order.

If, for any reason, a punch cannot precisely be clamped, correct the basic position of the centering ring. To do so, loosen setscrew "A", slightly re-adjust the centering ring, and lock by means of the setscrew again.

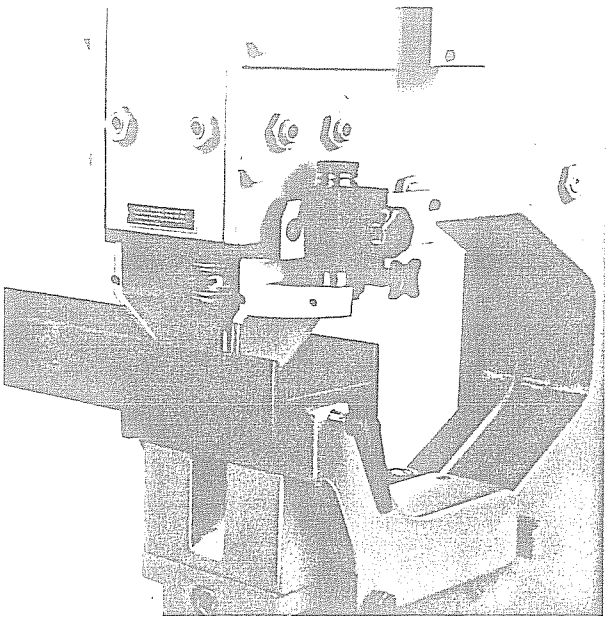


Fig. 64: Punching the web of I-beam

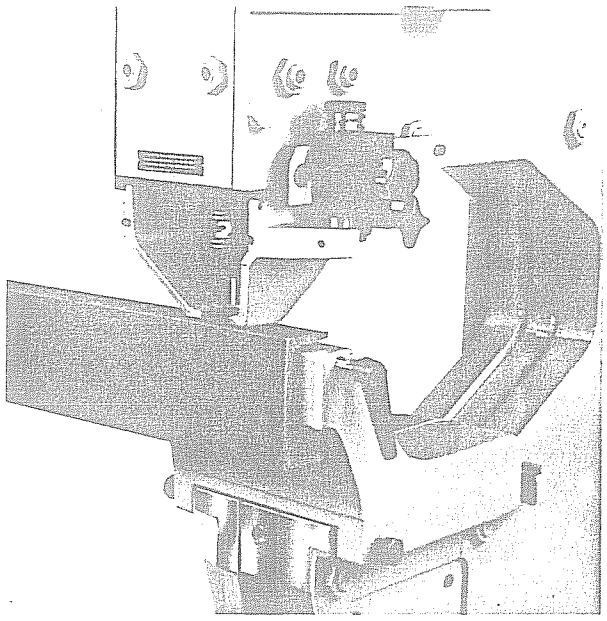
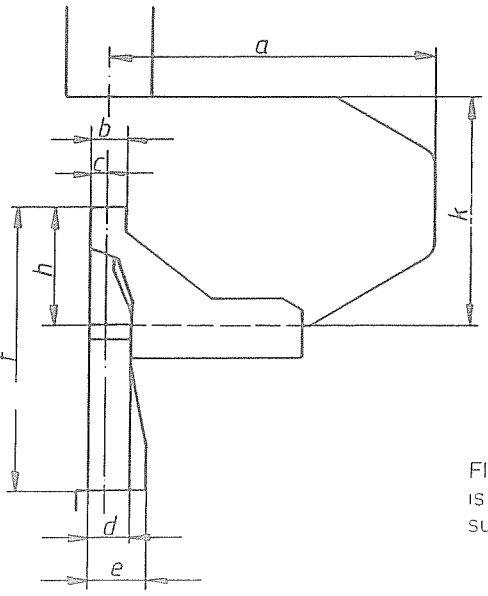
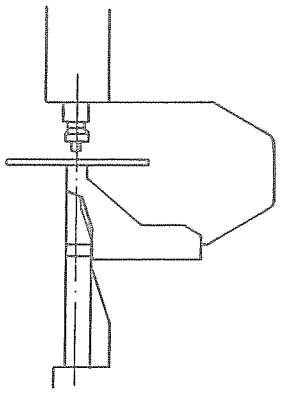
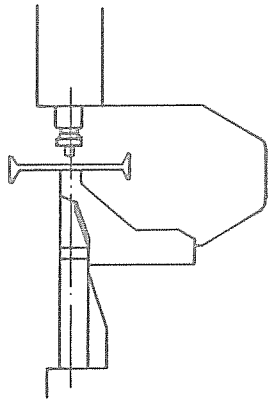


Fig. 65: Punching the flange of a channel

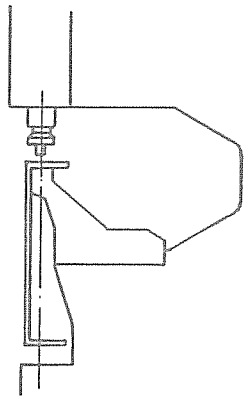




Flat, angel and tee material is being punched with saddle support always.



Channels and beams in the web are being punched with saddle support always.



Channels and beams are being punched in the flange without saddle support.

KBLH	300		500		700	
	mm	inch	mm	inch	mm	inch
a	320	12 5/8	410	16 1/8	510	20 1/16
b	47,5	1 7/8	47,5	1 7/8	47,5	1 7/8
c	22,5	7/8	22,5	7/8	22,5	7/8
d	55,5	2 3/16	55,5	2 3/16	57,5	2 1/4
e	74,5	2 15/16	74,5	2 15/16	82,5	3 1/4
f	280	11	310	12 3/16	403	15 7/8
h	130	5 1/8	130	5 1/8	178	7
k	240	9 7/16	240	9 7/16	322	12 11/16

Fig. 66: Dimensions of punch saddle KBLH

10. Special Tools

Due to the comprehensive standard MUBEA tool programme, all mostly required special tools are available at short notice. Furthermore, the special design of the MUBEA punch enables versatile application of special tools which, however, cannot be described as short summary.

a) Stationary Triple-Punch Tool

In case holes of different diameters are to be punched in short alternation, it will be advisable to use a triple-punch tool enabling punching holes of 3 different diameters in one stroke and without the need of removing tools. By pulling the adequate bar, the punch wanted will be set to its working position.

b) Adjustable Two-Punch Tool

This tool enables simultaneous punching of 2 holes of equal or different diameters, at different spacings. The distance desired can be learned from a scale, and is set by means of a handle, simultaneously for punches and dies.
When these adjusting manipulations have been done, any further setting operation is superfluous.

c) Special punching equipment for punches and dies of up to 50 mm diameter

This tool enables use of all punching tools, such as round, square, rectangular, and oblong tools.

The complete equipment comprises: M 64 punch holder, M 64 Union nut with 50 mm opening, insert with 40 mm opening, stripper, saddle 8^ mm receptacle, 80/60 die holder, and saddle support.

The punches are clamped by means of a union nut. In priciple, the shaped punches have a groove so that the tools can be used lengthwise or at right angle to the machine. When ordering tools, please specify thickness and tensile strength of the material t be processed.

d) Special punching equipment for punches and dies from 50.5 to 100 mm diameter (KBLH 300/500), and 50.5 to 150 mm diameter (KBLH 700) respectively

This tool, consisting of punch holder, stripper, saddle cap, saddle, and saddle support, enables installation of all kinds of punching tools, such as tools for punching round, square, rectangular and oblong holes.

When ordering shaped punches (oblong and rectangular) please state whether the tools will be used lengthwise or at right angle to the machine. Furthermore, generally state both thickness and tensile strength of the material to be punched. Fasten punches by means of a key.

MAINTENANCE PRESCRIPTIONS
for HYDRAULIC PLANT

A. General

For functioning and service life of the hydraulic plant it is extremely important to observe the following maintenance prescriptions.

B. Filling up the Oil Reservoir

Before starting oil level of the oil reservoir should be checked. The oil level shall be about 3 cm below the reservoir cover. Checking is performed by means of the gauge stick at the filling filter. Filling should be carried out only via the filter element. After filling, the filler has to be perfectly closed.

For filling the plant there has to be used only highgrade branded hydraulic oil. At medium ambient temperatures (5°C to 35°C) there should be employed H y d r a u l i c O i l H L P 46 (Viscosity classification: ISO VG 46 DIN 51 519). At extreme low or high temperature, the manufacturer should be consulted.

All reputable oil manufacturers supply suitable oils. As mixing of the hydraulic oil of various manufacturers is not advisable, there should be always refilled the same type. The oil type of machines filled in the factory is stated on the oil reservoir.

C. Starting

At setting plant into operation there has by all means to be observed the correct direction of rotation of the motor. To avoid damages of the pump, the motor must start up in inching operation. The engagements should then not be actuated. When having ascertained the correct direction of rotation, the motor must be kept running for about 3 to 4 min. without actuating the engagements. To ensure escaping of the air eventually existing in the system, each cylinder has afterwards to be moved out and in repeatedly without loading over the whole stroke. After perfect venting the plant can be started up under load.

The max. operating pressure adjusted in the factory is specified on the reference plate at the oil reservoir. Checking of the pressure can be carried out by means of a manometer at the measuring connection above the oil reservoir.

The stated max. operating pressure should not be exceeded.

D. Maintenance

Current checking of the oil level in the oil reservoir is necessary in order to avoid greater damages.

After approx. 10 operating hours the return filter fixed on the oil reservoir has to be cleaned for the first time. Cleaning should be done in rinsing oil or petroleum.

Throw-away filter cartridges have to be replaced. After having fitted the clean resp. new filter element the plant is again ready for work. Further filter cleaning should be done at normal fouling about every 600 operating hours.

The first oil change should be carried out after approx. 600 operating hours. Afterwards the oil has to be renewed every 1 200 to 1 500 operating hours. After draining of the waste oil, the oil reservoir and the whole system have to be cleaned with rinsing oil. Water, leaches and petroleum are not suitable as purifying agents. After complete cleaning the plant has to be closed and to be filled up with new, unused hydraulic oil. All filters have to be cleaned at every oil change. Of course, there has to be taken care of greatest cleanliness when refilling.

During operation there have to be permanently controlled the oil level, the leakage of the plant, the fastening of the units and pipes as well as state of the hydraulic oil and the filters.

E. Eliminating troubles

Fault 1: Excessive noise in the plant

Cause	Reason	Elimination
1.1 Cavitation in the pump	1.1.1 Hydraulic oil too cold (below + 5°C)	Heat the hydraulic oil to the temperature of + 5°C
	1.1.2 Viscosity of the hydraulic oil is too high	Replace the hydraulic oil by a suitable one (see section "Filling up the Oil Reservoir")
	1.1.3 Steam generation	The max. oil temperature of + 70°C is exceeded. Refill hydraulic oil or replace it by prescribed one
	1.1.4 Failure of the pump	Exchange the pump
	1.1.5 Sealed reservoir	Clean vent-filter in the cover of the filler
1.2 Foam formation or air pockets in the pressure fluid	1.2.1 Pressure fluid level in the reservoir is too low	Fill up on the correct level
	1.2.2 Wrong hydraulic oil	Replace by suitable oil
	1.2.3 Entering of air caused by the screwed joints in the suction pipe	Retighten or replace the screwed joints
1.3 Mechanical vibrations	1.3.1 Vibrations of the pipings	Retighten the attachments
1.3.1 Pump	1.3.1.1 Used up or damaged	Replace
1.3.2 Drive motor	1.3.2.1 Used up or damaged	Repair or replace
1.3.3 Safety or pressure limiting valve	1.3.3.1 Flatters	Adjust correctly or replace

Fault 2: No pressure or unsufficient pressure

Cause	Reason	Elimination
2.1 Pump does not feed correctly	2.1.1 Air enters into the suction pipe	See 1.2.3
2.2 High pump temperature	2.2.1 Used up or damaged pump	Replace the pump
	2.2.2 Unsufficient viscosity of the hydraulic oil	See 1.1.3
2.3 Leakage losses of the pressure side in the return motion	2.3.1 Mechanic control valve not connected through	Reset limitations of the engaging path
	2.3.2 Wrong adjustment of the pressure	Correct the adjustment
	2.3.3 Safety valve does not shut as there are dirt and defective parts	Clean, ascertain the damage, replace or renew
	2.3.4 Way valve open as there are dirt or defective parts electric fault	Clean the damaged unit, repair or replace
	2.3.5 Damaged cylinder bore, piston rod or piston seal	Renew the damaged parts
.4 Failure of the pump	2.4.1 Damaged pump, defective drive, unsuitable viscosity of the liquid, etc.	See faults 1.3.1.1, 1.1.2

Fault 3: Anomalous pressure or flow fluctuations and vibrations

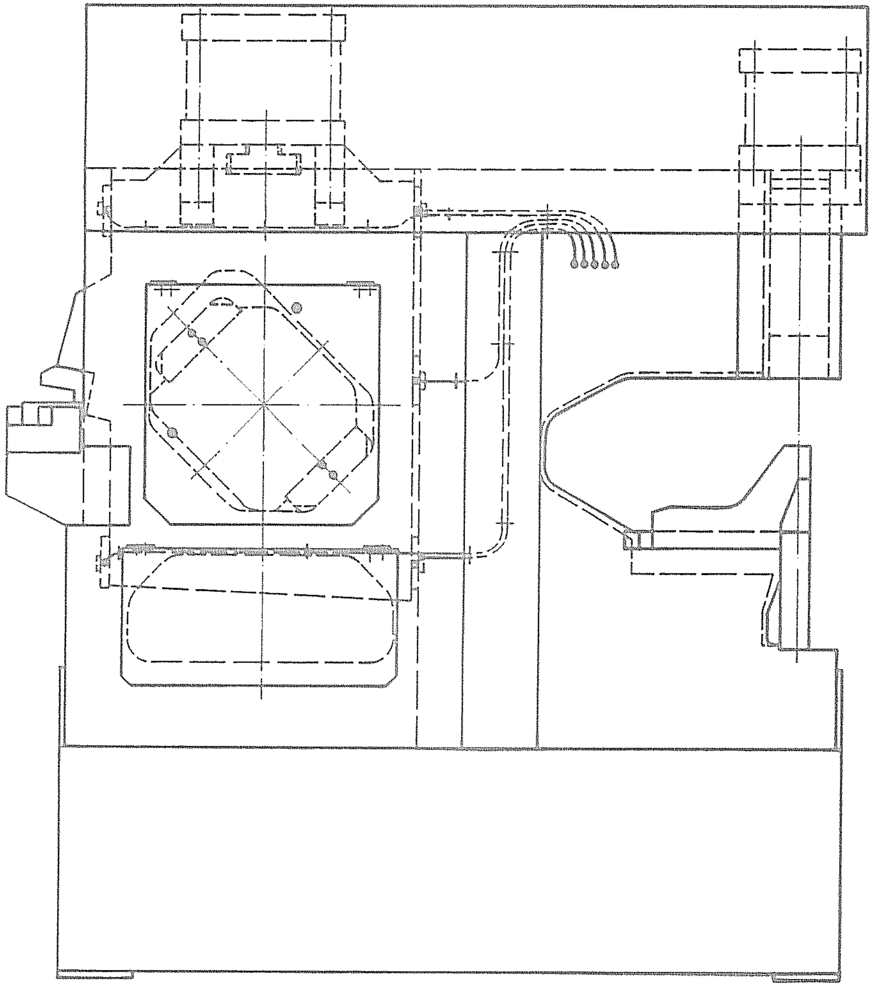
Cause	Reason	Elimination
3.1 Cavitation in the pump	3.1.1 See faults 1.1.1 to 1.1.5	See faults 1.1.1 to 1.1.5
3.2 Foam formation or air pockets in the liquid	3.2.1 See faults 1.2.1 to 1.2.3	See faults 1.2.1 to 1.2.3
3.3 Mechanic vibrations	3.3.1 See faults 1.3.1	See faults 1.3.1
3.4 Flattering pressure limitating or safety valves	3.4.1 See faults 1.3.3.1	See faults 1.3.3.1
	3.4.2 Damaged valve seat	Repair or renew
3.5 Valves seize	3.5.1 Fouling	Drain the hydraulic oil, clean plant and parts, fill up with clean oil
	3.5.2 Defective or distorted	Replace the unit, eliminate distortion
3.6 Air pockets in the plant which cause irregular or yielding motion	3.6.1 Plant is not completely vented	Vent the plant (see section "Starting")
	3.6.2 Electric equipment defective	Trace and eliminate the error

Fault 4: Unsufficient or no feed current

Cause	Reason	Elimination
4.1 Cavitation in the pump	4.1.1 See faults 1.1.1 to 1.1.5	See faults 1.1.1 to 1.1.5
4.2 Foam formation or air pockets in the pressure liquid	4.2.1 See faults 1.2.1 to 1.2.3	See faults 1.2.1 to 1.2.3
4.3 Used up pump	4.3.1 See faults 1.1.4	See faults 1.1.4
4.4 Leak losses from the pressure side in the return motion	4.4.1 See faults 2.3.1 to 2.3.5	See faults 2.3.1 to 2.3.5
4.5 Pump rotates in the wrong direction	4.5.1 Wrong direction of rotation of the motor	Reverse polarity of the electric connections

Fault 5: Too high temperature of the pressure fluid

Cause	Reason	Elimination
5.1 Overflow losses	5.1.1 Pressure adjustment too high	Correct the adjustment
5.2 Leak losses from the pressure side in the return motion	5.2.1 Bad functioning of the valves and defective seals	See faults 2.3.1 to 2.3.5
	5.2.2 Wrong viscosity of the hydraulic oil (too low, too high)	Drain the hydraulic oil and use the prescribed oil
5.3 Overheated pump	5.3.1 Wear of the pump	Replace the pump
5.4 Too quick circulation of the pressure fluid	5.4.1 Pressure fluid level has become too low in the plant	Filling up of the plant on the prescribed level (see section "Filling up the Oil Reservoir")



Alle Schmierstellen sind an der Maschine gelb gekennzeichnet!
All oiling points are yellow marked.
Tous les points de graissage sur la machine sont marqués en jaune

Vor Schichtbeginn und nachfolgend im Abstand von 5 Stunden je Schmierstelle 1 Pumpenhub mittels mitgelieferter Handstoßpresse!

Prior to starting the work shift and following in intervalls off five hours lubricate each oiling point applying one pump stroke with the oil gun supplied with the machine

Lubrification exigée au début des travaux et après en intervalles de 5 heures chaque point de graissage par un coup de pompe de graissage manuelle livrée avec la machine

Schmierstoffe, Lubrikant, Lubrifiant

MOBIL OIL AG VACTRA Oil Nr 4
Viskosität 125 mm^2/s bei 50 °C

ESSO AG MILLCOT K220
Viskosität 120 mm^2/s bei 50 °C

BP Energol HP C 220
Viskosität 127 mm^2/s bei 50 °C

ARAL Deganit B 220
Viskosität 130 mm^2/s bei 50 °C

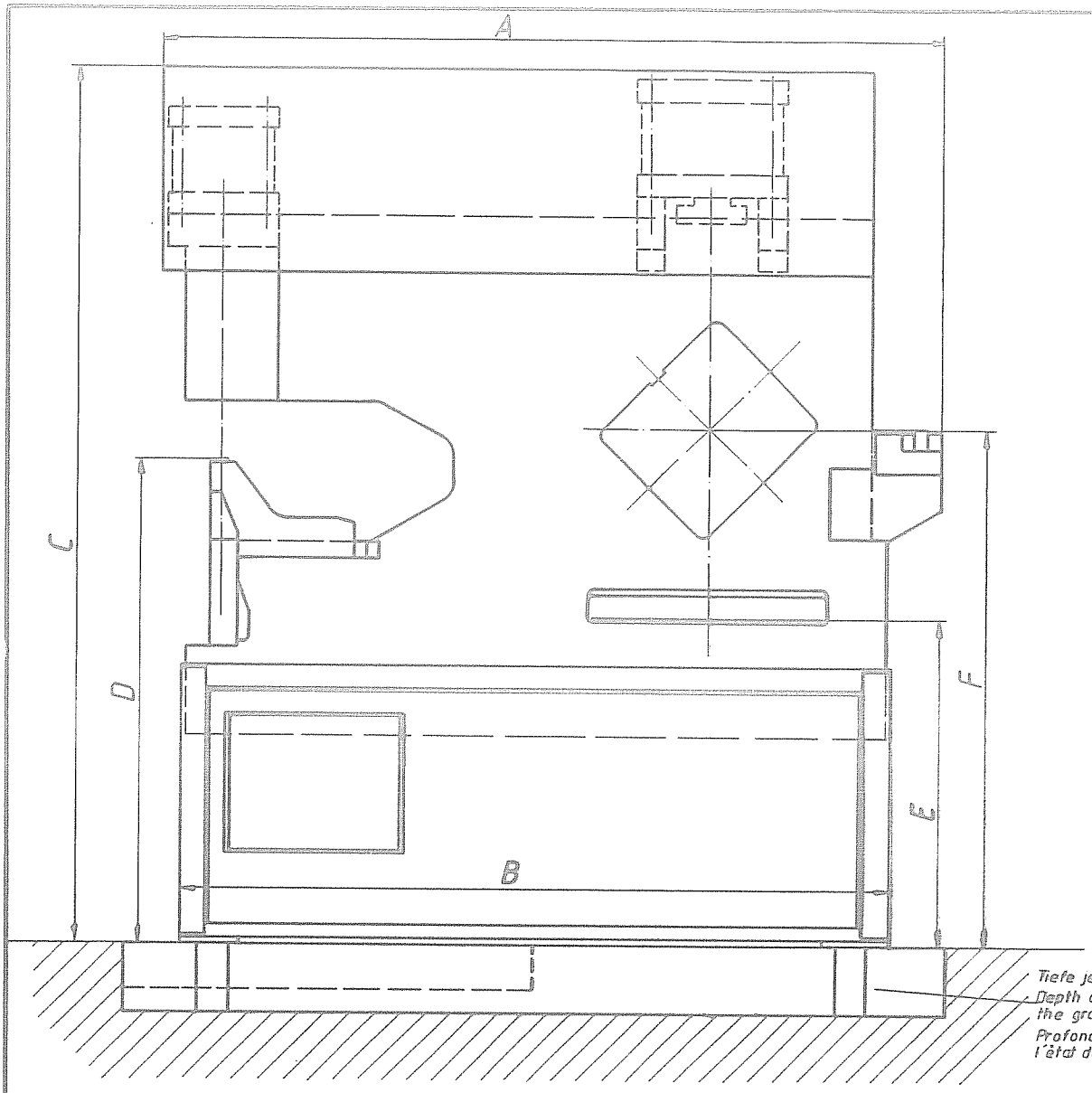
SHELL Tonna Oil T 220
Viskosität 128 mm^2/s bei 50 °C

For machines supplied to the USA

Lubrikant

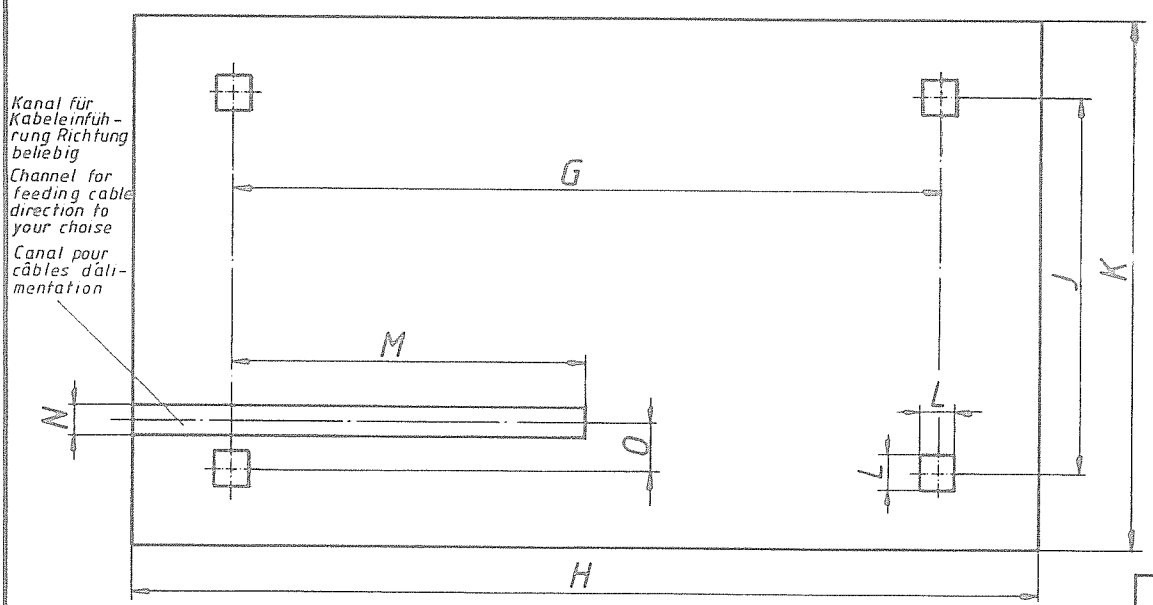
CHEVRON VISTAC OIL 150X

Pos.	Menge	Einheit	Benennung	Sachnummer	Bl.-Gr.	Bemerkung
			Freimaßtoleranz nach DIN 7168 mittel; ~ glatt, roh; ▽ geschruppt; ▽▽ geschlichtet; ▽▽▽ feingeschlichtet	Maßstab 1 : 10		Gewicht
				Werkstoff / Rohteil-Nr. / Modell-Nr.		
			Bearb.: Datum 24.10. Name C. Seller; Geprüft; Freigabe	Benennung: Schmierplan / Lubrication chart / Plan de Lubrification		3
			[illegible]	Zeichnungs-Nr. 01562 103 01		Blatt



KBLH 700	01562	01563
	mm	inch
A	1770	69 5/8
B	1600	63
C	2030	79 15/16
D	1036	40 3/4
E	700	27 9/16
F	1170	46 1/16
G	1454	57 3/16
H	1800	70 13/16
J	700	27 9/16
K	1000	39 3/8
L	70	2 3/4
M	700	27 9/16
N	60	2 3/8
O	100	3 15/16

Tiefe je nach Bodenbeschaffenheit
Depth according to the condition of the ground.
Profondeur de la fondation d'après l'état du sol.



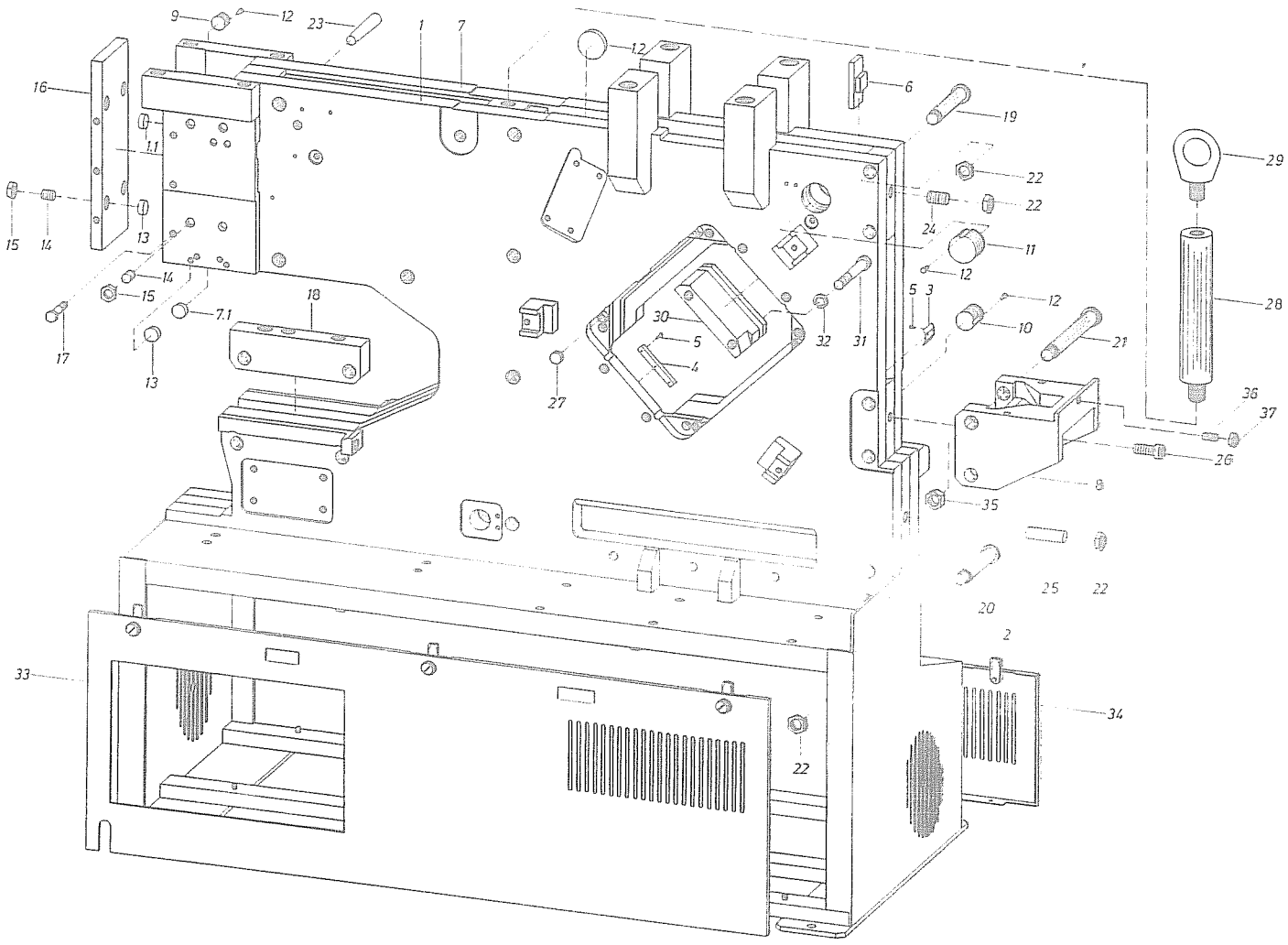
KBLH 700

01562 103 02

Fundamentplan

Foundation drawing

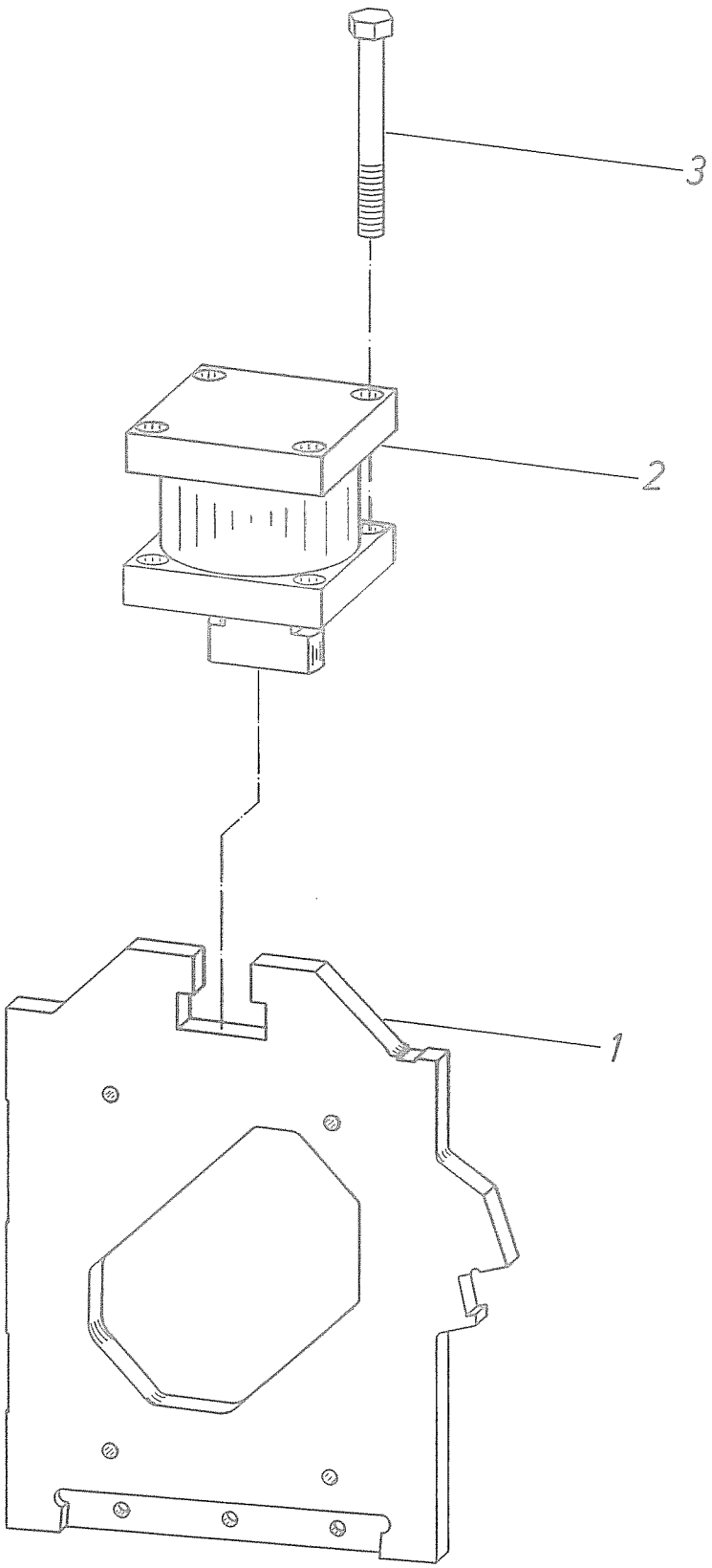
Plan de fondation



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 001 01	1	Körperplatte, komplett	Machine frame, front side, complete	Plaque d'assemblage compl.
1.1	01510 001 14	2	Führungsscheibe	Gib	Rondelle-guide
1.2	01512 001 12	3	Führungsscheibe	Gib	Rondelle-guide
2	01562 001 16	1	Untersatz, komplett	Base, complete	Châssis compl.
3	05019 001 38	1	Federblech	Wiper	Tôle élastique
4	01512 001 45	6	Federblech	Wiper	Tôle élastique
5	810 600 0140	20	POP-Blindniet	"POP" blind rivet	Rivet
6	05093 001 26	5	Gleitstück	Gib	Coulisseau
7	01562 001 12	1	Deckplatte, komplett	Cover plate, complete	Couvercle compl.
7.1	01510 001 14	3	Führungsscheibe	Gib	Rondelle-guide
8	01562 001 17	1	Ausklinkbacke	Saddle bracket	Bloc de grugeoir
9	05060 001 12	1	Führungsscheibe	Gib	Rondelle-guide
10	05055 001 19	2	Führungsscheibe	Gib	Rondelle-guide
11	01562 001 19	7	Führungsscheibe	Gib	Rondelle-guide
12	907 513 1100	10	Schneidschraube	Slotted self cutting screw	Vis auto-taraudeuse
13	01510 001 14	8	Führungsscheibe	Gib	Rondelle-guide
14	900 913 7300	8	Gewindestift	Slotted set screw	Vis sans tête
15	900 936 3100	8	Sechskantmutter	Hex. nut	Ecrou hexagonal
16	01562 001 20	1	Stanzendeckel	Punch cover	Couvercle avant
17	900 610 3000	6	Paßschraube	Hex. frame bolt	Vis à tête hexagonal corp ajusté
18	01562 001 22	1	Sattelbefestigung	Saddle fixture	Semele de fixation
19	01562 001 23	12	Bolzen	Lifting rod	Boulon
20	01562 001 24	4	Bolzen	Lifting rod	Boulon
21	01562 001 25	2	Bolzen	Lifting rod	Boulon
22	900 936 4100	18	Sechskantmutter	Hex. nut	Ecrou hexagonal
23	900 001 8400	2	Kegelstift	Taper pin	Goupille conique
24	900 913 8300	1	Gewindestift	Slotted set screw	Vis sans tête
25	900 913 8900	1	Gewindestift	Slotted set screw	Vis sans tête
26	906 912 4540	1	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
27	05019 001 25	4	Scheibe	Washer	Rondelle plate
28	01562 001 26	1	Bolzen	Lifting rod	Boulon
29	900 580 3100	1	Ringschraube	Lifting eye bolt	Vis à anneau
30	01562 001 27	2	Führungsleiste	Guide rail	Butée de guidage
31	906 912 4670	4	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
32	907 980 3400	4	Federring	Lock washer	Rondelle élastique
33	01562 001 28	1	Verkleidungsblech, vorn	Front cover	Couvercle avant
34	01562 001 29	1	Verkleidungsblech, hinten	Rear cover	Couvercle arrière
35	900 934 6100	2	Sechskantmutter	Hex. nut	Ecrou hexagonal
36	900 913 6200	1	Gewindestift	Slotted set screw	Vis sans tête
37	900 936 2500	1	Sechskantmutter	Hex. nut	Ecrou hexagonal

Scherenschlitten und Scherenzylinder, kpl.
Section shear and slide, complete
Cylindre et coulisseau pour cisaille compl.

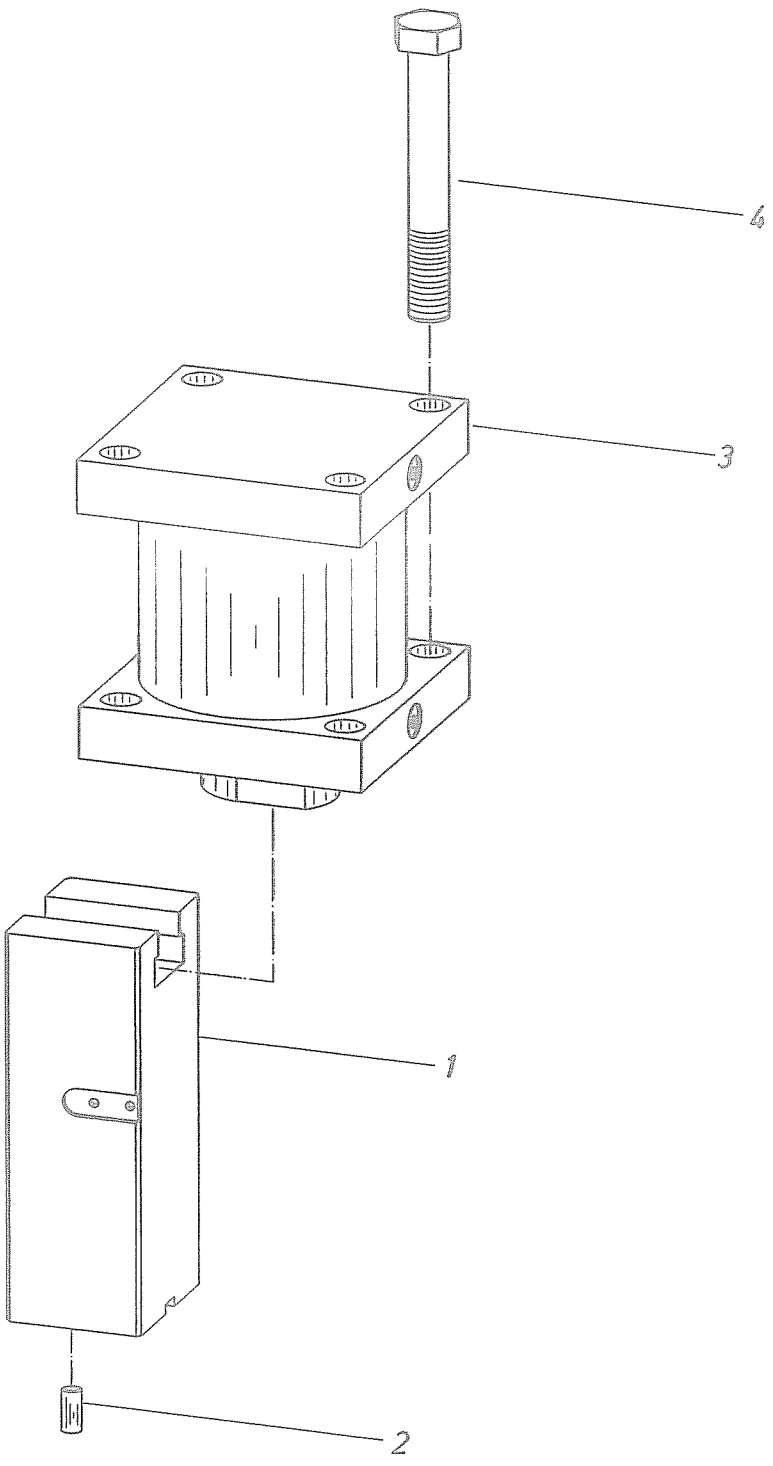
01562 031 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 031 01	1	Scherenschlitten	Slide, plate shear	Chariot de cisaille
2	01562 031 02	1	Hydraulikzylinder, komplett	Hydraulic-Cylinder, complete	Cylindre Hydraulique compl
3	900 931 8020	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal

Stanzenschlitten und Stanzenzylinder, kpl.
Punch slide and punch cylinder, complete
Coulisseau de poinçonnage avec verin hydraulique compl.

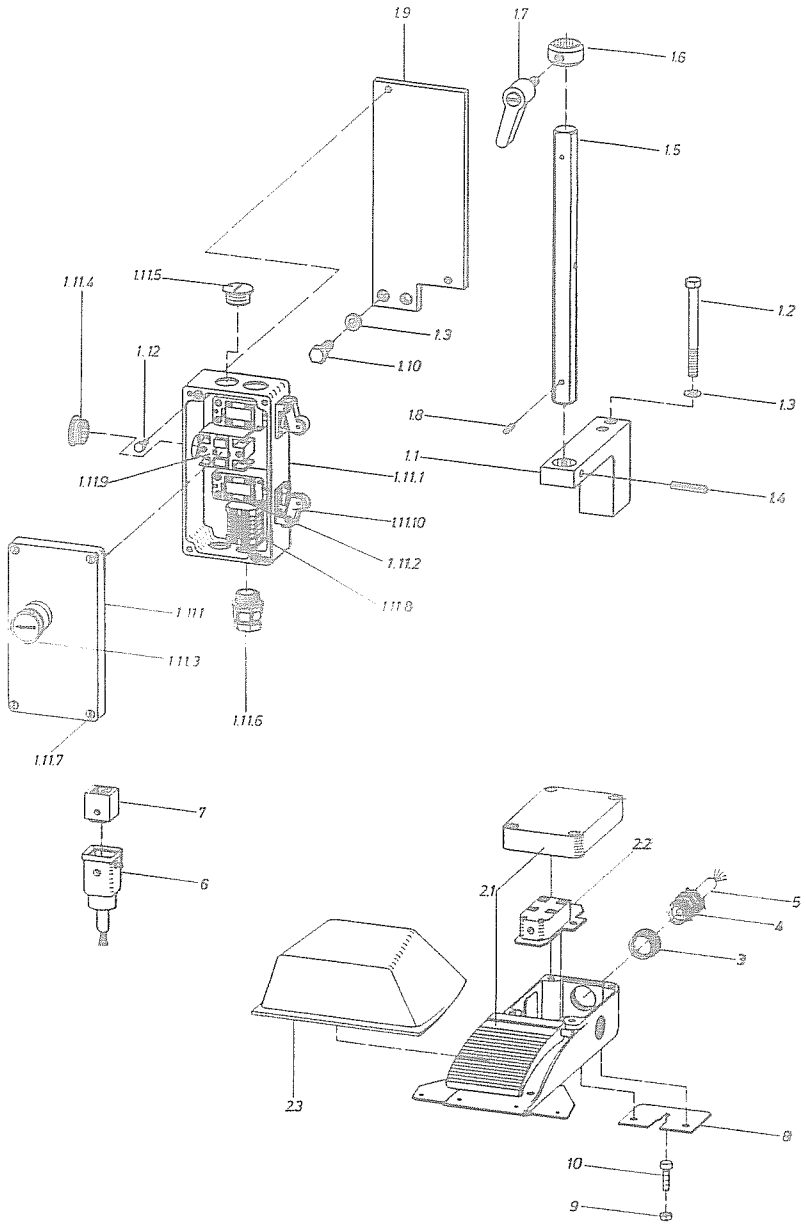
01562 034 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 034 01	1	Stanzenschlitten	Punch slide	Chariot de poinçonnage
2	907 979 5200	1	Stift	Locating pin	Goupille
3	01562 034 02	1	Hydraulikzylinder, komplett	Hydraulic-Cylinder, complete	Cylindre Hydraulique compl.
4	900 9316 790	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal

Elektrische Einrückung zur Schere, kpl.
Electric foot engagement, shear, complete
Commande électrique pour la cisaille compl.

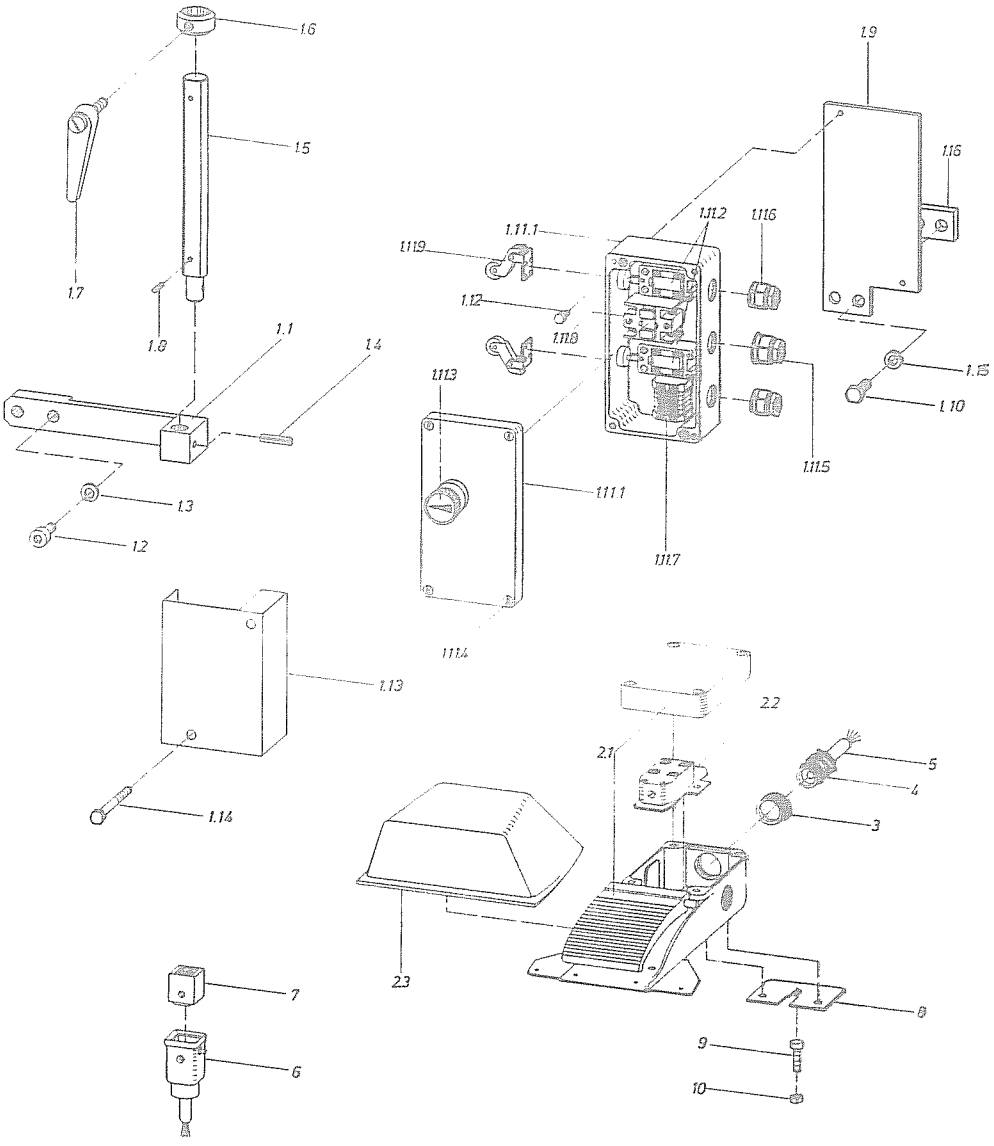
01562 046 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 046 01	1	Hubeinstellung zur Schere, kpl.	Stroke control, shear, complete	Reglage de course pour cisaille compl.
1.1	01562 046 02	1	Befestigungsstück	Fixing piece	Piece de fixation
1.2	900 933 2700	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
1.3	900 127 1400	4	Federring	Lock washer	Rondelle élastique
1.4	901 481 1100	1	Spannstift	Roll pin	Douille de serrage
1.5	01560 046 03	1	Führungsbolzen	Guide pin	Boulon de guidage
1.6	01534 047 02	2	Nocken	Clamp plate	Came
1.7	01540 045 07	2	verstellbarer Klemmhebel mit Schraube	Adjustable clamping handle with screw	Levier de serrage reglable avec vis
1.8	901 481 1100	2	Spannstift	Roll pin	Douille de serrage
1.9	01560 046 04	1	Halter	Holder	Fixation
1.10	900 933 2560	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
1.11	01560 046 05	1	Doppelendschalter, komplett	Double end switch, complete	Double-interrupteur fin de course compl.
1.11.1	01560 046 06	1	Doppelendschaltergehäuse	Housing double end switch	Boîte pour double-interrupteur fin de course
1.11.2	810 100 2310	2	Endschalter	End switch	Interrupteur fin de course
1.11.3	810 100 2950	1	Stellungswähler	Position pre selector	Sélecteur de position
1.11.4	810 100 1260	1	Blindstopfen	Closure plug	Faux-bouchon
1.11.5	810 100 1250	1	Blindstopfen	Closure plug	Faux-bouchon
1.11.6	810 100 1240	3	Verschraubung	Connector	Raccord à vis
1.11.7	900 084 2400	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.11.8	810 100 1280	1	Klemmleiste	Clamping strip	Regle de serrage
1.11.9	810 100 2960	1	Kontaktböckchen	Contact stud	Petit support de contact
1.11.10	810 100 5720	2	Rollenhebel	Lever	Levier à rouleaux
1.12	900 912 1290	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
2	810 100 2580	1	Fußtaster, komplett	Foot pedal, complete	Interrupteur compl.
2.1	810 100 3440	1	Fußtaster mit Kappe	Foot pedal with cover	Interrupteur avec cache
2.2	810 100 0210	1	Schaltereinsatz	Switch	Garniture de circuit pour interrupteur
2.3	810 100 0200	1	Schutzklappe	Flap	Trappe de protection
3	810 100 2540	1	Reduzierring	Reducer ring	Reduction
4	810 100 2550	1	Verschraubung mit Zugentlastung	Connector	Collier avec raccord à vis
5	01530 045 13	1	Kabel	Cable	Cable
6	810 100 1330	1	Tullengehäuse	Socket housing	Boîtier de raccordement
7	810 100 1340	1	Steckereinsatz	Plug insert	Garniture pour fiche de prise de courant
8	05010 071 08	1	Aufhangeblech	Hanging plate	Tôle de suspension
9	900 934 1500	1	Sechskantmutter	Hex. nut	Ecrou hexagonal
10	900 912 1540	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux

Elektrische Einrückung zur Stanze, kpl.
Electric foot engagement, punch, complete
Commande électrique à pédal pour poinçonneuse compl.

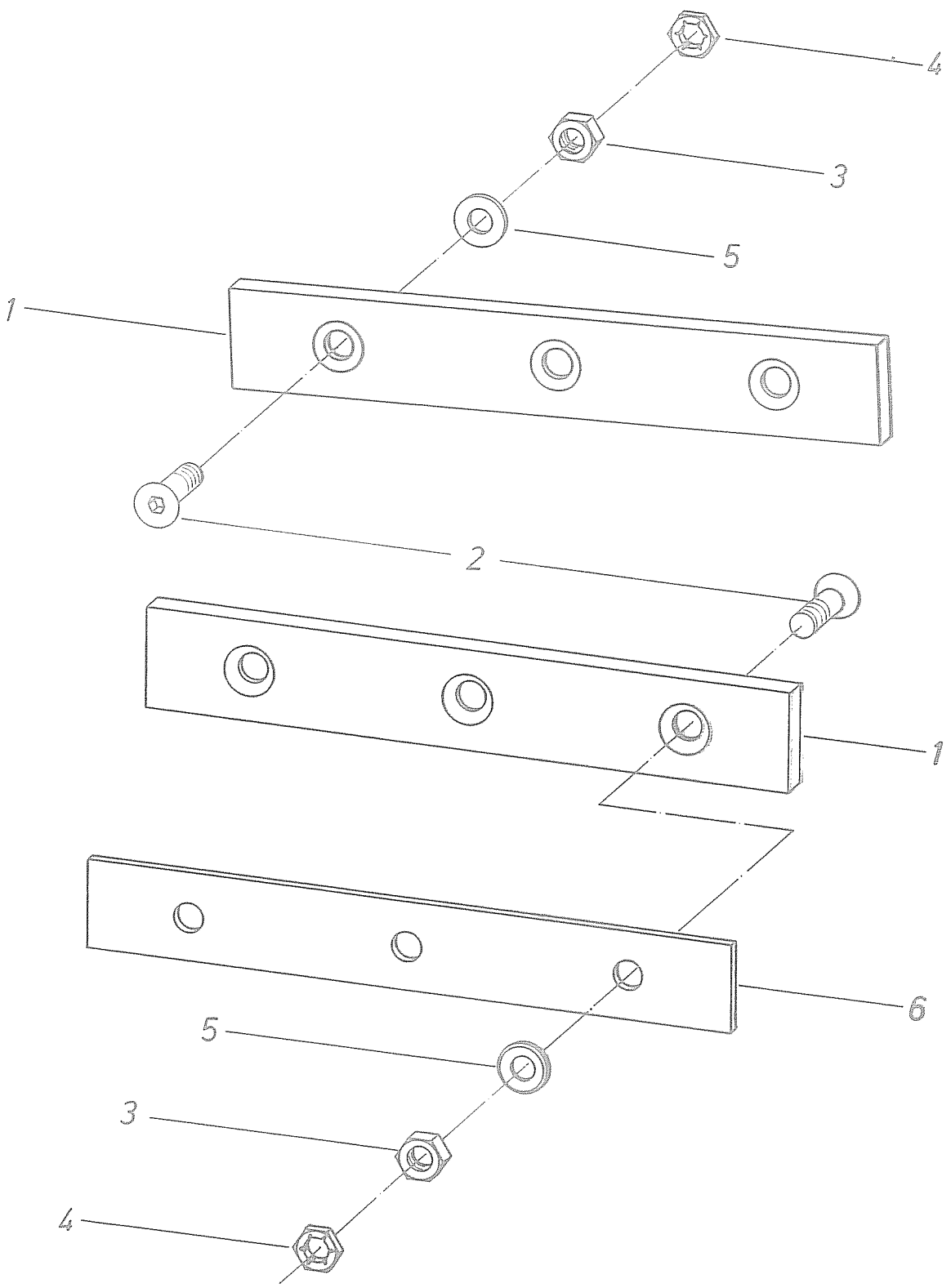
01560 047 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01560 047 01	1	Hubeinstellung zur Stanze, kpl.	Stroke control, punch, complete	Reglage de course pour poinçonneuse compl.
1.1	01560 047 02	1	Haltearm, komplett	Stop arm, complete	Bras de support compl.
1.2	900 012 2520	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.3	907 980 1400	2	Federring	Lock washer	Rondelle élastique
1.4	901 481 3300	1	Spannstift	Roll pin	Douille de serrage
1.5	01560 047 08	1	Führungsbolzen	Guide pin	Boulon de guidage
1.6	01534 047 02	2	Nocken	Clamp plate	Came
1.7	01540 045 07	2	verstellbarer Klemmhebel mit Schraube	Adjustable clamping handle with screw	Levier de serrage reglable avec vis
1.8	901 481 1100	2	Spannstift	Roll pin	Douille de serrage
1.9	01560 046 04	1	Halter	Holder	Fixation
1.10	900 933 2570	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
1.11	01560 047 10	1	Doppelendschalter, komplett	Double end switch, complete	Double-interrupteur fin de course compl.
1.11.1	01560 047 11	1	Doppelendschaltergehäuse	Housing double end switch	Boîte pour double-interrupteur fin de course
1.11.2	810 100 2310	2	Endschalter	End switch	Interrupteur fin de course
1.11.3	810 100 2950	1	Stellungswähler	Position pre selector	Sélecteur de position
1.11.4	900 084 2400	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.11.5	810 100 0990	1	Verschraubung	Connector	Raccord à vis
1.11.6	810 100 1240	2	Verschraubung	Connector	Raccord à vis
1.11.7	810 100 1280	1	Klemmleiste	Clamping strip	Regle de serrage
1.11.8	810 100 2960	1	Kontaktböckchen	Contact stud	Petit support de contact
1.11.9	810 100 5720	2	Rollenhebel	Lever	Levier à rouleaux
1.12	900 912 1290	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.13	01560 047 09	1	Abdeckung Hubeinstellung	Cover stroke adjustment	Couverture pour reglage de course
1.14	900 933 2180	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
1.15	900 127 1400	2	Federring	Lock washer	Rondelle élastique
1.16	01560 047 12	1	Distanzstück	Spacer	Pièce d'écartement
2	810 100 2580	1	Fußtaster, komplett	Foot pedal, complete	Interrupteur compl.
2.1	810 100 3440	1	Fußtaster mit Kappe	Foot pedal with cover	Interrupteur avec cache
2.2	810 100 0210	1	Schalteinsatz	Switch	Garniture de circuit pour interrupteur
2.3	810 100 0200	1	Schutzklappe	Flap	Trappe de protection
3	810 100 2540	1	Reduzierring	Reducer ring	Reduction
4	810 100 2550	1	Verschraubung mit Zugentlastung	Connector	Collier avec raccord à vis
5	01530 045 13	1	Kabel	Electric cable	Cable
6	810 100 1330	1	Tüllengehäuse	Socket housing	Boîtier de raccordement
7	810 100 1340	1	Steckereinsatz	Plug insert	Garniture pour fiche de prise de courant
8	05010 071 06	1	Aufhängeblech	Hanging plate	Tôle de suspension
9	900 912 1540	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
10	900 934 1500	1	Sechskantmutter	Hex. nut	Ecrou hexagonal

Flachstahlmesser, kpl.
Plate shear blade, complete
Lame à fers plats compl.

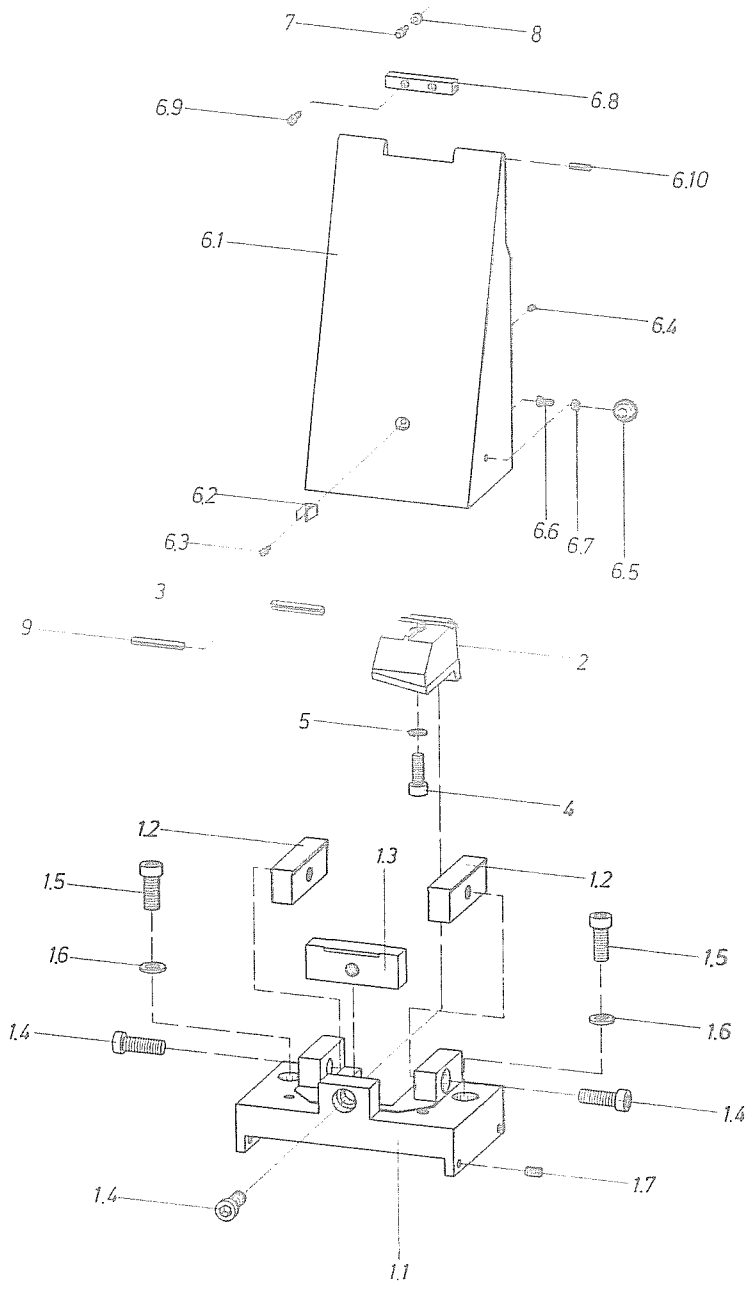
01562 051 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	51427 000 00	2	Flachstahlmesser	Blade	Lame à fers plats
2	907 9918 500	6	Senkschraube	Countersunk screw	Vis à tête fendue
3	900 936 3100	6	Sechskantmutter	Hex. nut	Ecrou hexagonal
4	907 967 4500	6	Sicherungsmutter	Counter nut	Contre-écrou
5	900 125 4400	6	Scheibe	Washer	Rondelle plate
6	01562 051 01	1	Beilage	Spacer	Pièce de calage

Rechteck-Ausklinkwerkzeug, kpl.
Rectangular coper and guard, complete
Grugeoir rectangulaire avec protection compl.

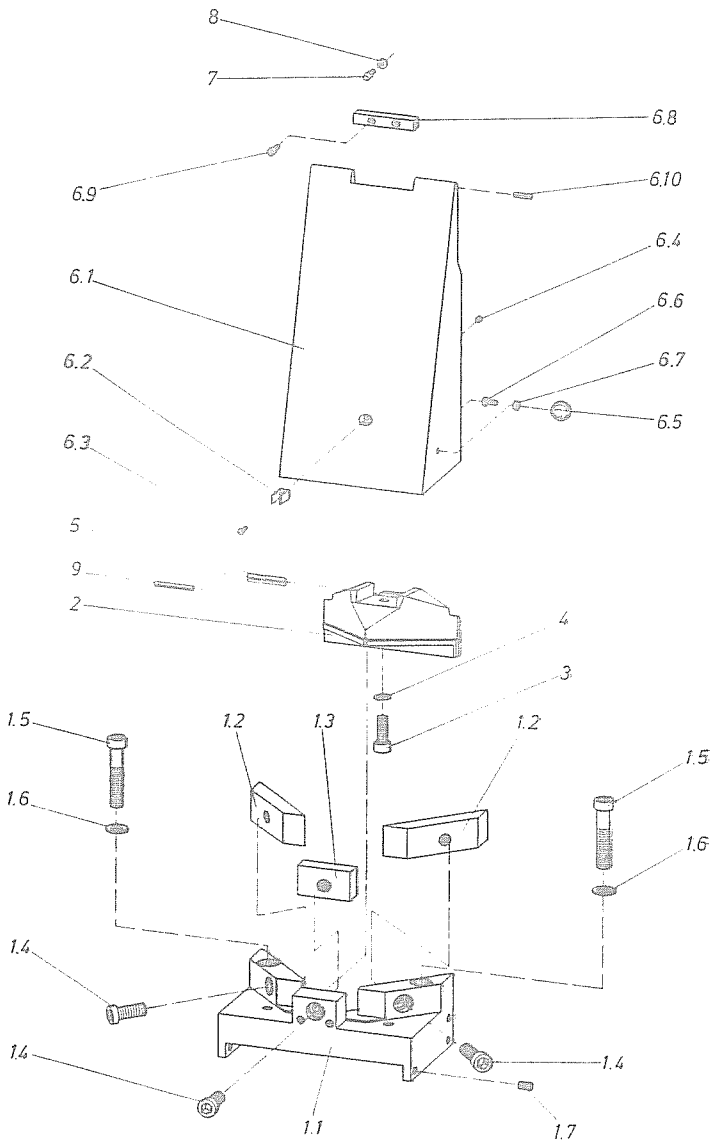
01562 053 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 053 01	1	Ausklinksattel, komplett	Rectangular coping saddle, complete	Bloc de grugeoir rectangulaire compl.
1.1	01562 053 02	1	Ausklinksattel	Rectangular coping saddle	Bloc de grugeoir rectangulaire
1.2	01562 053 03	2	Untermesser, seitlich	Rectangular coping blade, side	Couteau inferieur latéral
1.3	01562 053 04	1	Untermesser, vorn	Rectangular coping blade, front	Couteau inferieur à l'avant
1.4	906 912 4040	3	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.5	900 912 4030	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.6	01562 053 05	2	Scheibe	Washer	Rondelle plate
1.7	900 913 4300	4	Gewindestift	Socket set screw	Vis sans tête à 6 pans creux
2	01562 053 06	1	Obermesser	Rectangular coping blade, top	Couteau supérieur
3	901 481 6100	1	Spannstift	Roll pin	Douille de serrage
4	900 912 3530	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
5	907 980 2100	1	Federring	Lock washer	Rondelle élastique
6	01562 053 07	1	Klinkerhaube, komplett	Notcher guard, complete	Câpot de grugeage compl.
6.1	01562 053 08	1	Klinkerhaube	Notcher guard	Câpot de grugeage
6.2	05090 054 02	1	Klemmfeder	Clamp	Ressort de blocage
6.3	900 084 1200	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à [illegible]ans creux
6.4	900 934 0500	1	Sechskantmutter	Hex. nut	Ecrou hexagonal
6.5	900 319 5100	1	Kugelknopf	Ball knob	Bouton spherique
6.6	900 933 2050	1	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
6.7	900 934 2100	1	Sechskantmutter	Hex. nut	Ecrou hexagonal
6.8	05090 054 03	1	Böckchen	Bracket	Petit support
6.9	900 912 2030	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
6.10	901 481 3200	2	Spannstift	Roll pin	Douille de serrage
7	971 803 2000	1	Kugelzapfen	Ball-headed	Tourillon à boulet
8	900 125 1700	1	Scheibe	Washer	Rondelle plate
9	901 481 3700	1	Spannstift	Roll pin	Douille de serrage

Dreieck-Ausklinkwerkzeug, kpl.
Triangular notcher and guard, complete
Grugeoir triangulaire avec protection compl.

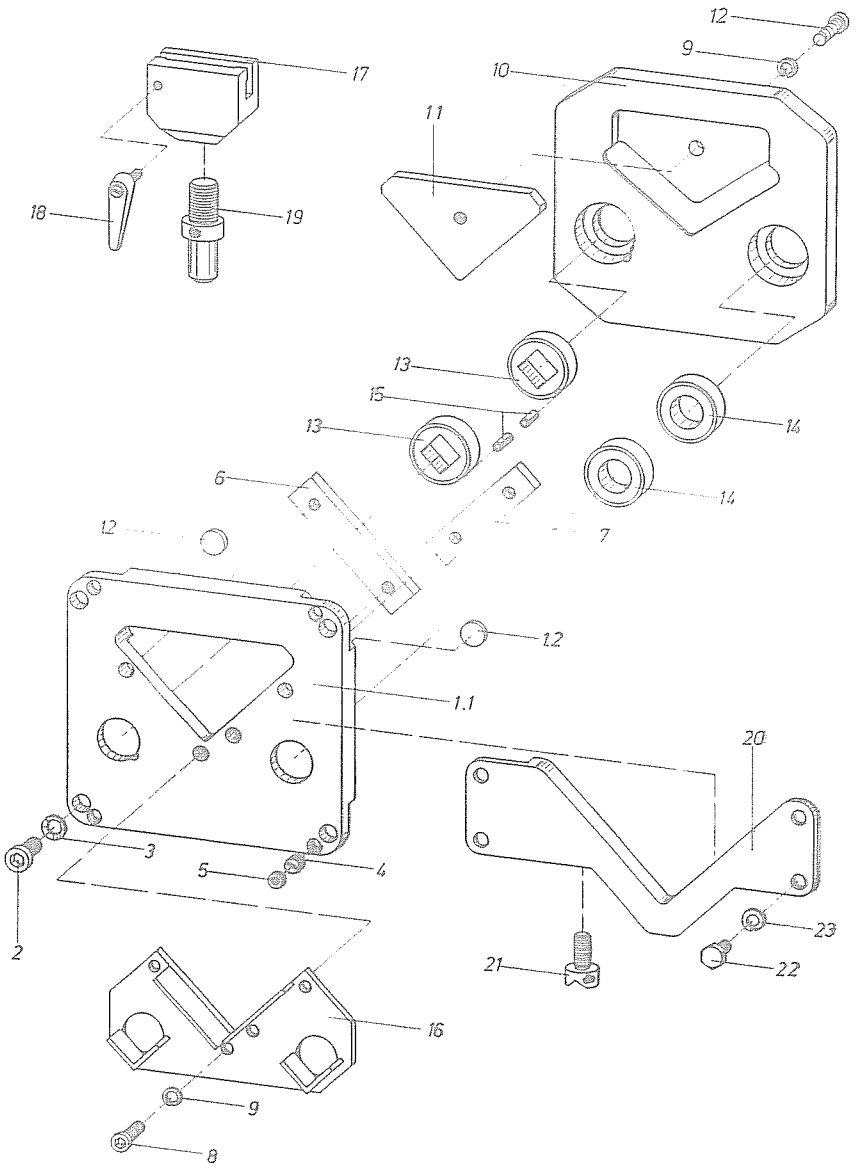
01562 054 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 054 01	1	Ausklinksattel, komplett	Triangular notching saddle, complete	Bloc de grugeoir triangulaire compl.
1.1	01562 054 02	1	Ausklinksattel	Triangular notching saddle	Bloc de grugeoir triangulaire
1.2	05019 054 02	2	Untermesser, seitlich	Triangular notching blade, side	Couteau inferieur latéral
1.3	05019 054 03	1	Untermesser, vorn	Triangular notching blade, front	Couteau inferieur à l'avant
1.4	906 912 4040	3	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.5	900 912 4110	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.6	01562 053 05	2	Scheibe	Washer	Rondelle plate
1.7	900 913 4300	4	Gewindestift	Socket set screw	Vis sans tête à 6 pans creux
2	01562 054 03	1	Obermesser	Triangular notching blade, top	Couteau supérieur
3	900 912 3530	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
4	907 980 2100	1	Federring	Lock washer	Rondelle élastique
5	901 481 5900	1	Spannstift	Roll pin	Douille de serrage
6	01562 053 07	1	Klinkerhaube, komplett	Notcher guard, complete	Càpot de grugeage compl.
6.1	01562 053 08	1	Klinkerhaube	Notcher guard	Càpot de grugeage
6.2	05090 054 02	1	Klemmfeder	Clamp	Ressort de blocage
6.3	900 084 1200	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
6.4	900 934 0500	1	Sechskantmutter	Hex. nut	Ecrou hexagonal
6.5	900 319 5100	1	Kugelknopf	Ball knob	Bouton spherique
6.6	900 933 2050	1	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
6.7	900 934 2100	1	Sechskantmutter	Hex. nut	Ecrou hexagonal
6.8	05090 054 03	1	Böckchen	Bracket	Petit support
6.9	900 912 2030	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
6.10	901 481 3200	2	Spannstift	Roll pin	Douille de serrage
7	971 803 2060	1	Kugelzapfen	Ball-headed	Tourillon à boulet
8	900 125 1700	1	Scheibe	Washer	Rondelle plate
9	901 481 3600	1	Spannstift	Roll pin	Douille de serrage

Profil-Stabstahlmesser, kpl.
Section and bar shear knives, complete
Couteau à profilés et à barres d'acier compl.

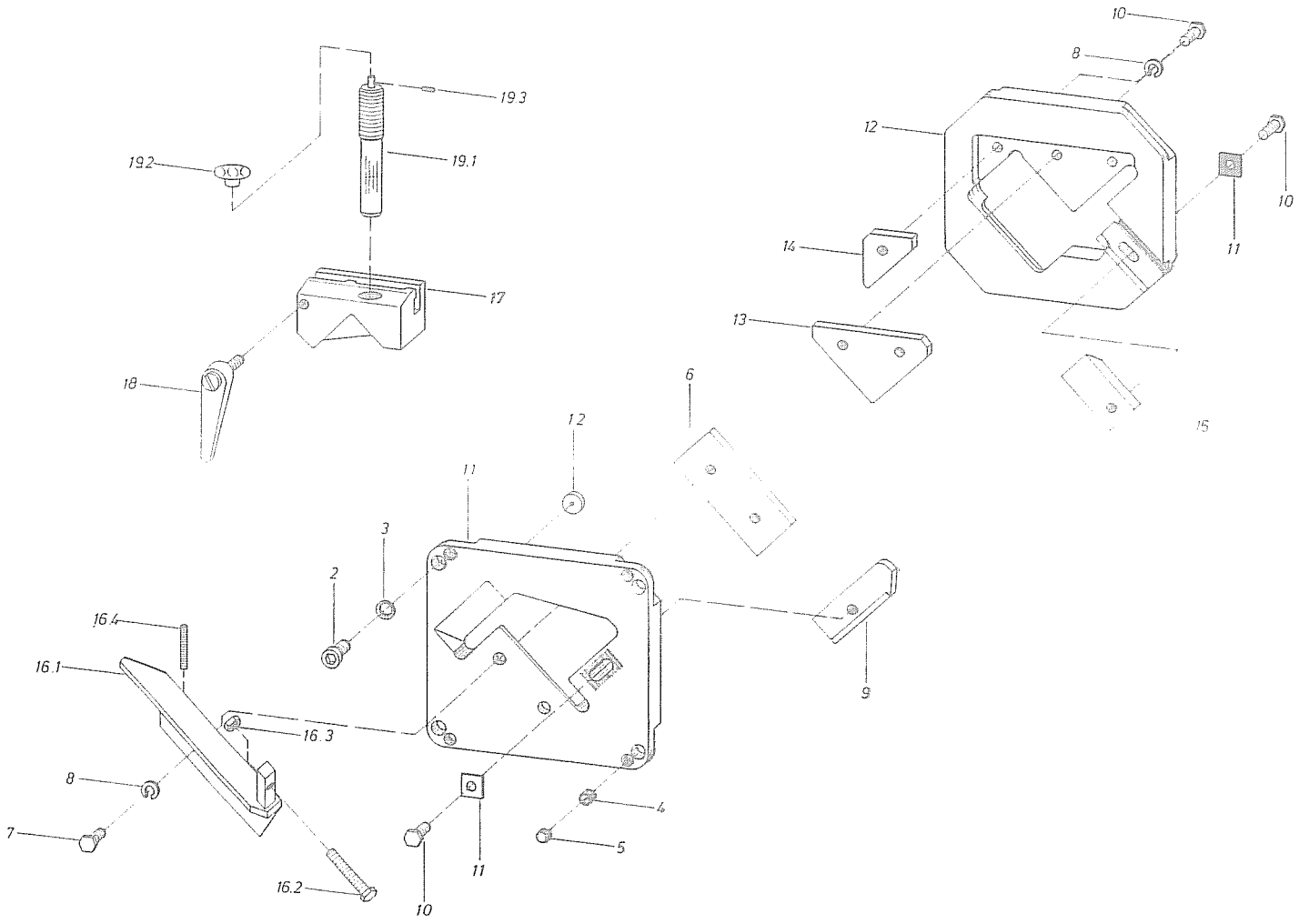
01563 056 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01563 056 01	1	Profilmesserkörper, fest, kpl.	Section knife block, stationary, complete	Couteau profile fixe compl.
1.1	01563 056 02	1	Profilmesserkörper, fest	Section knife block, stationary	Couteau profile fixe
1.2	01510 001 14	2	Führungsscheibe	Gib	Rondelle-guide
2	05019 055 03	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
3	05019 055 04	4	Tellerfeder	Spring washer	Rondelle ressort
4	05019 055 05	4	Gewindestift	Slotted set screw	Goujon fileté
5	05019 055 20	4	Konterkappe	Counter cap	Contre-écrou
6	01563 056 03	1	Einsatzmesser, lang	Insert blade, long	Lame d'insertion, longue
7	01563 056 04	1	Einsatzmesser, kurz	Insert blade, short	Lame d'insertion, curte
8	906 912 4080	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
9	907 980 2700	5	Federring	Lock washer	Rondelle élastique
10	01563 056 05	1	Profilmesserkörper, beweglich	Section knife block, movable	Couteau profile mobile
11	01563 056 06	1	Einsatzmesser	Insert blade	Lame d'insertion
12	906 912 4070	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
13	50224 000 00	2	Rundeinsatz	Round insert	Lame d'insertion ronde
14	50225 000 00	2	Rundeinsatz	Round insert	Lame d'insertion ronde
15	901 481 8200	2	Spannstift	Roll pin	Douille de serrage
16	01563 056 07	1	Auflage, komplett	Support, complete	Support compl.
17	01563 056 12	1	Niederhalterschuh, komplett	Hold-down shoi, complete	Sabot pour presse-matériaux compl.
18	810 600 0220	1	verstellbarer Klemmhebel	Adjustable handle	Levier de serrage réglable
19	01563 056 13	1	Druckspindel	Pressure spindle	Broche de pression
20	01563 056 14	1	Niederhalterleiste	Hold-down bar	Lardon presse-matériaux
21	01563 056 15	2	Druckschraube	Pressure screw	Vis de pression
22	900 933 4080	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
23	900 127 2700	4	Federring	Lock washer	Rondelle élastique

Profilmesser PMG, kpl.
PMG section knife, complete
Couteau à profilés PMG compl.

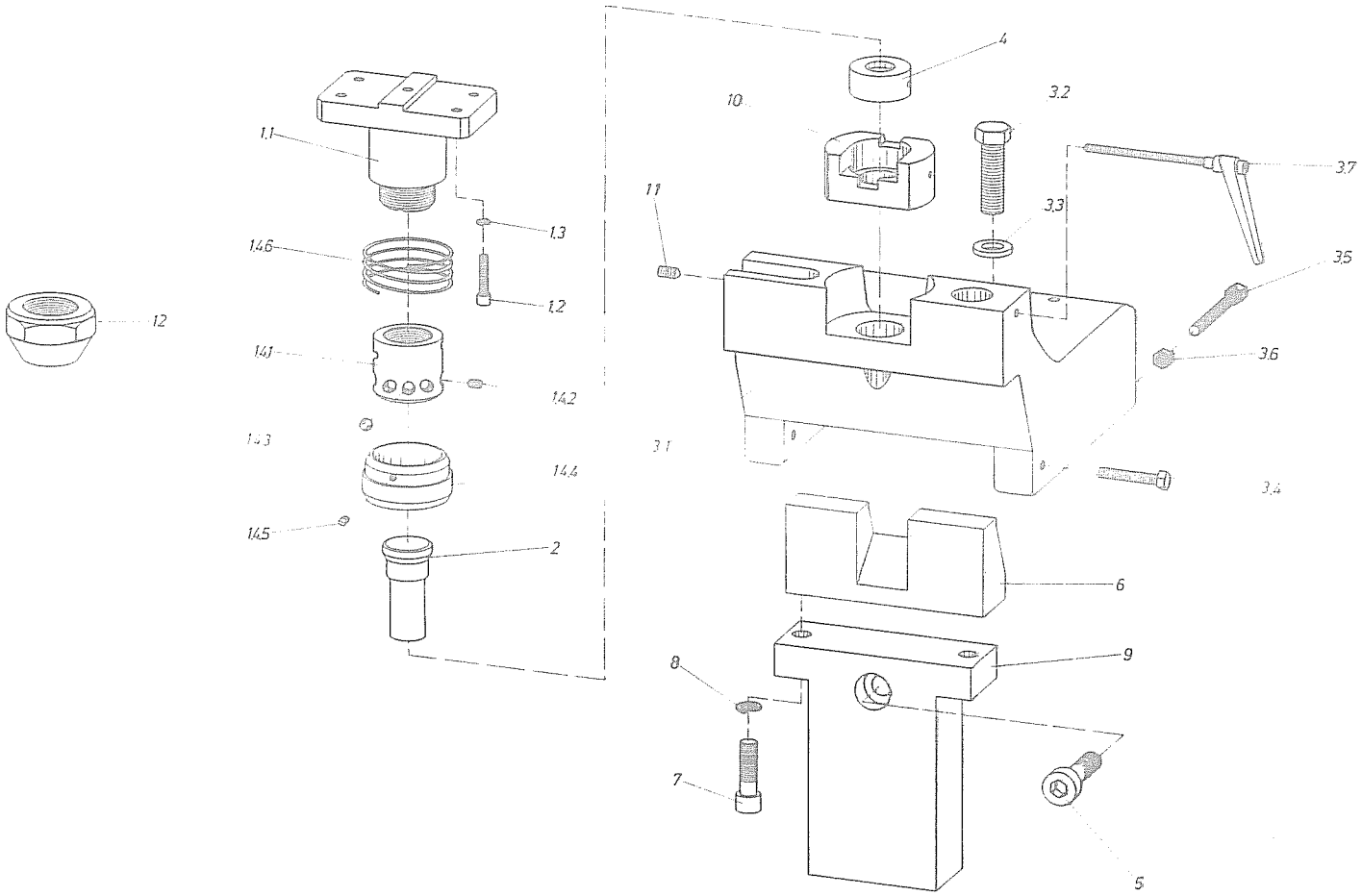
01562 057 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 057 01	1	Profilmesserkörper, fest, kpl.	Section knife block, stationary, complete	Couteau profile fixe compl.
1.1	01562 057 02	1	Profilmesserkörper, fest, PMG	PMG section knife block, stationary	Couteau profile PMG fixe
1.2	01510 001 14	2	Führungsscheibe	Gib	Rondelle-guide
2	05019 055 03	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
3	05019 055 04	4	Tellerfeder	Spring washer	Rondelle ressort
4	05019 055 05	4	Gewindestift	Slotted set screw	Vis sans tête à 6 pans creux
5	05019 055 20	4	Konterkappe	Counter cap	Contre-écrou
6	05019 057 05	1	Einsatzmesser	Insert blade	Lame d'insertion
7	900 931 4020	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
8	900 127 2700	5	Federring	Lock washer	Rondelle élastique
9	05019 057 08	1	Schiebemesser	Sliding blade	Couteau coulissant
10	900 931 4000	5	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
11	51007 300 00	2	Sicherungsscheibe Gr. III	Locking washer size III	Bague de securité Gr. III
12	01562 057 03	1	Profilmesserkörper, beweglich	Section knife block, movable	Couteau profile mobile
13	05019 057 06	1	Einsatzmesser	Insert blade	Lame d'insertion
14	05019 057 07	1	Einsatzmesser	Insert blade	Lame d'insertion
15	05019 057 09	1	Schiebemesser	Sliding blade	Couteau coulissant
16	01562 057 04	1	Auflage, komplett	Support, complete	Support compl.
16.1	01562 057 05	1	Auflage	Support	Support
16.2	900 933 4210	1	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
16.3	900 933 2500	1	Sechskantmutter	Hex. nut	Ecrou hexagonal
16.4	900 913 4000	1	Gewindestift	Slotted set screw	Vis sans tête à 6 pans creux
17	01562 057 07	1	Niederhalterschuh, komplett	Hold-down shoi, complete	Sabot pour presse-matériaux compl.
18	810 600 3710	1	verstellbarer Klemmhebel mit Schraube	Adjustable handle with screw	Levier de serrage reglable avec vis
19	01562 057 08	1	Druckspindel, komplett	Pressure spindle, complete	Broche de pression compl.
19.1	01562 057 09	1	Druckspindel	Pressure spindle	Broche de pression
19.2	906 336 5300	1	Sterngriff	Star knob	Poignée etoile
19.3	901 481 1300	1	Spannstift	Roll pin	Douille de serrage

Stanzwerkzeug, kpl.
Punch tool, complete
Outil poinçonnage compl.

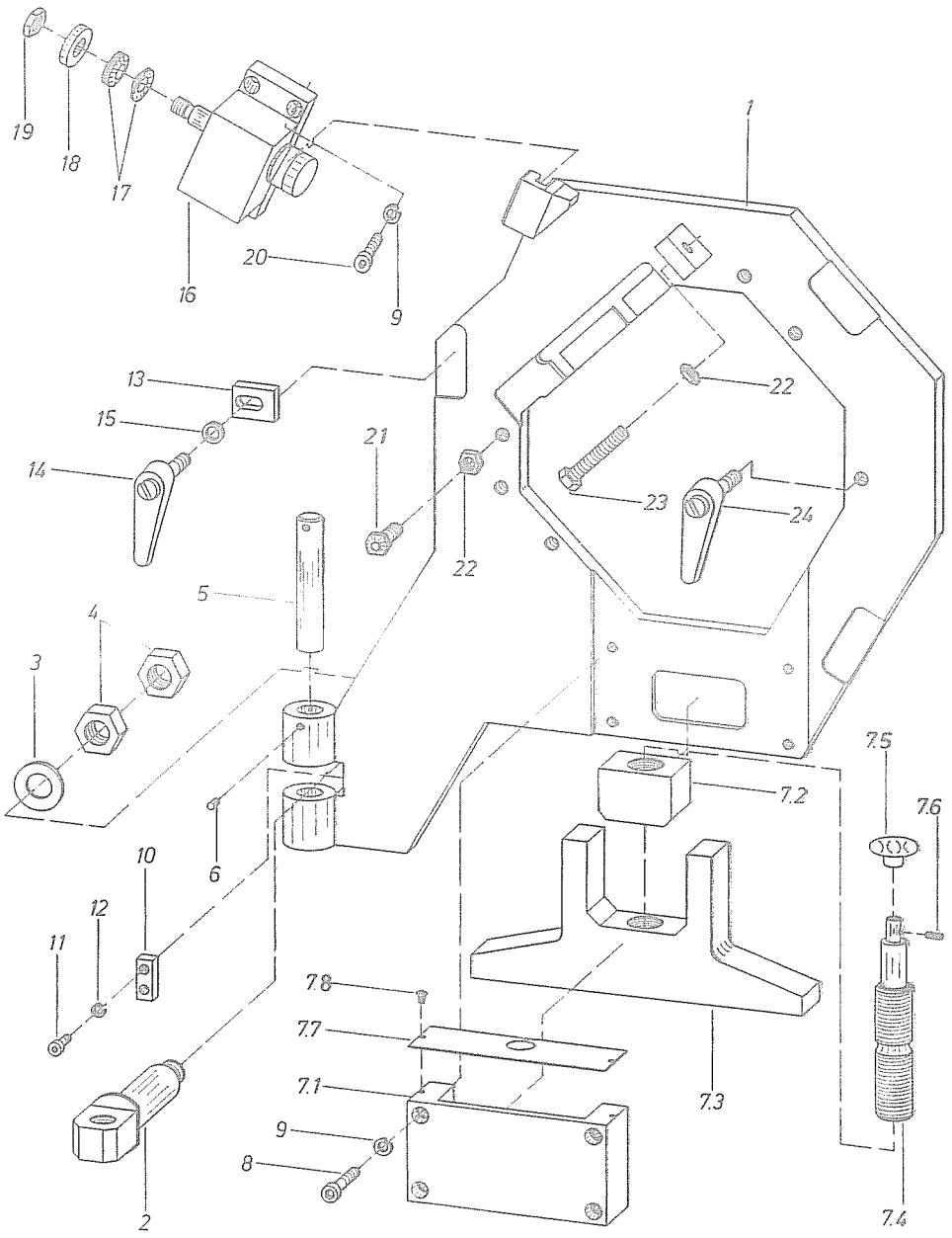
01563 059 00



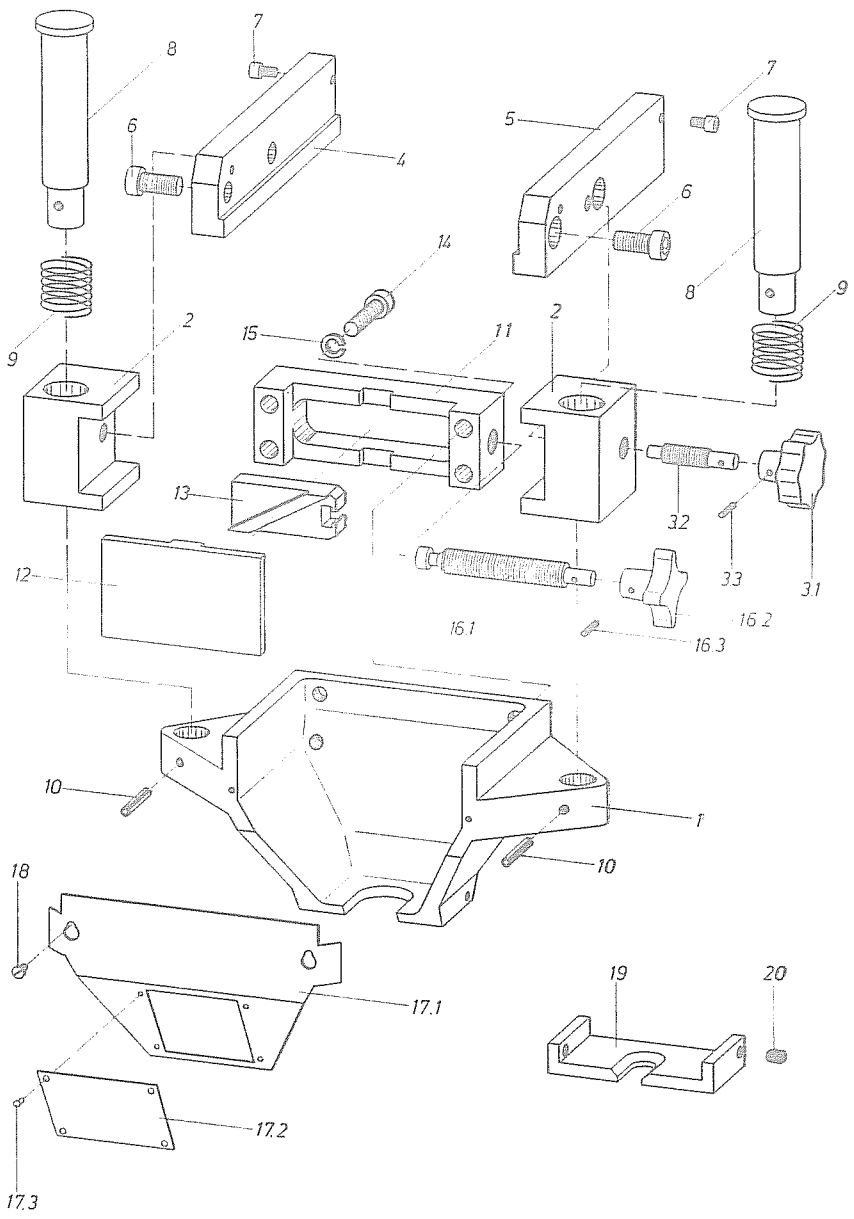
Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	05021 059 03	1	Stempelhalter, komplett	Punch holder, complete	Porte-poinçon compl.
1.1	05021 059 01	1	Stempelhalter	Punch holder	Porte-poinçon
1.2	906 912 3540	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
1.3	907 980 2100	4	Federring	Lock washer	Rondelle élastique
1.4	05021 059 04	1	Schnellspannvorrichtung, komplett	Quick chucking fixture, complete	Dispositif de serrage rapide compl.
1.4.1	05012 059 03	1	Zentrierring	Centering ring	Bague de centrage
1.4.2	900 914 2100	1	Gewindestift	Slotted set screw	Vis sans tête à 6 pans creux
1.4.3	905 401 4000	8	Kugel	Steel ball	Bille
1.4.4	05010 059 11	1	Außenring	Clamping ring	Bague extérieure
1.4.5	05010 059 12	1	Gewindestift mit Schlitz	Slotted head set screw	Goujon fileté
1.4.6	05010 059 13	1	Druckfeder	Spring	Ressort de pression
2	50534 11 638	1	Stempel H I 9/16	Punch H I 9/16	Poinçon H I 9/16
3	05093 059 02	1	Stanzsattel, komplett	Die saddle, complete	Semele pour poinçon compl.
3.1	05093 059 01	1	Stanzsattel	Die saddle	Semele pour poinçon
3.2	900 933 5570	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
3.3	900 125 5700	2	Scheibe	Washer	Rondelle plate
3.4	900 933 4100	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
3.5	900 933 4170	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
3.6	900 936 2500	2	Sechskantmutter	Hex. nut	Ecrou hexagonal
3.7	810 600 1510	1	verstellbarer Klemmhebel	Adjustable handle	Levier de serrage reglable
4	506 601 1642	1	Matrize H I 19/32	Die H I 19/32	Matrice H I 19/32
5	900 912 4540	1	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
6	05019 059 03	1	Satteluntersützung	Intermediate saddle support	Support pour porte-matrices
7	900 912 3540	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
8	907 980 2100	2	Federring	Lock washer	Rondelle élastique
9	01562 059 01	1	Satteluntersatz	Lower saddle support	Support
10	01505 059 02	1	Satteleinsatz	Saddle insert	Pièce d'insertion pour porte-matrices
11	900 914 3200	1	Gewindestift	Slotted set screw	Vis sans tête à 6 pans creux
12	50535 10 000	1	Überwurfmutter H I	Coupling nut H I	Ecrou de serrage H I

Niederhalter, kpl.
Hold-down, plate shear, complete
Serre-flanc pour cisaille à fers plats compl.

01562 063 00



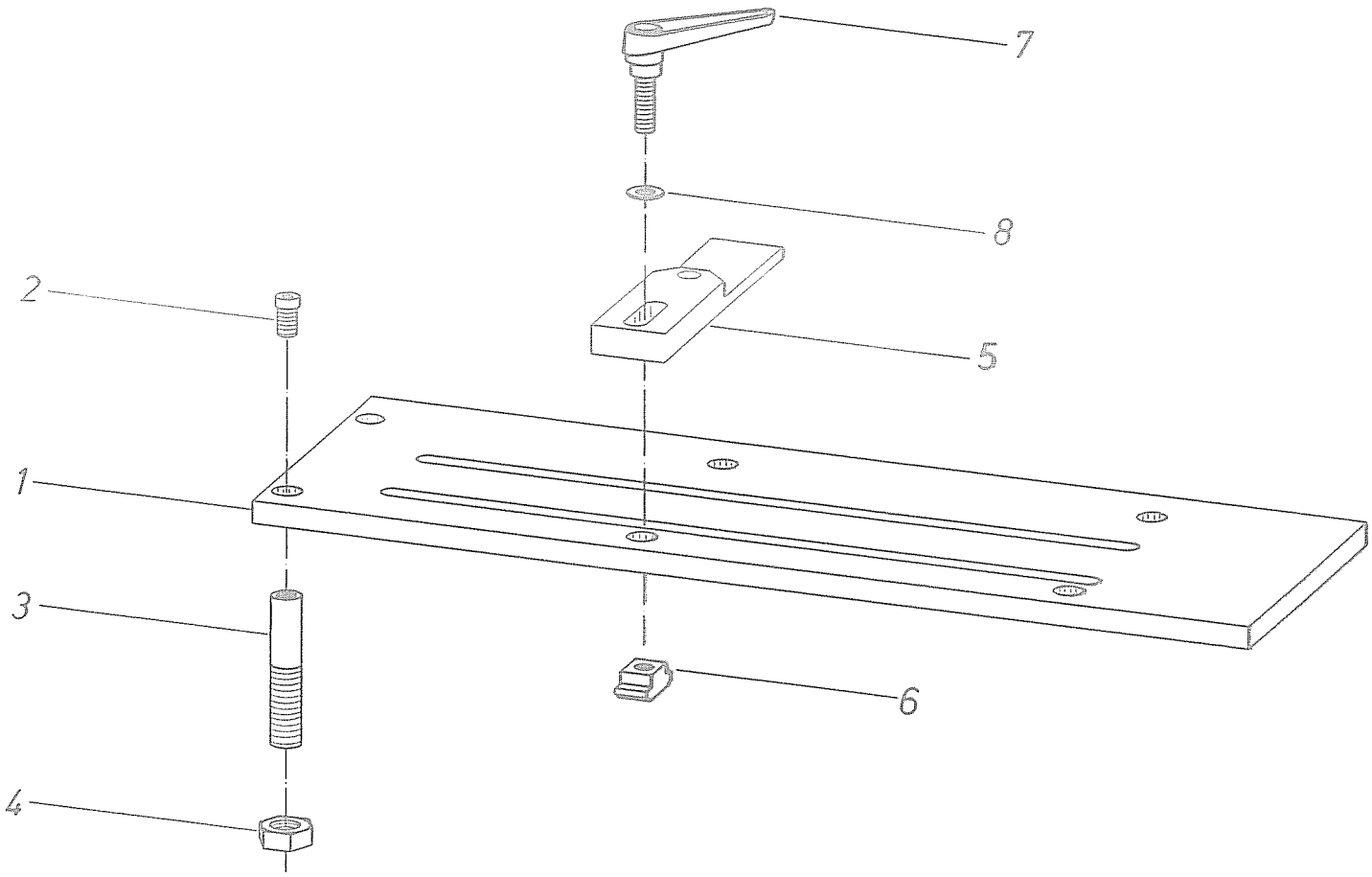
Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 063 01	1	Niederhalterplatte, kpl.	Hold-down plate, complete	Plaque pour presse-matériau compl.
2	01562 063 05	1	Paßbolzen	Adjusting bolt	Axe d'ajustage
3	900 125 5700	1	Scheibe	Washer	Rondelle plate
4	900 936 5100	2	Sechskantmutter	Hex. nut	Ecrou hexagonal
5	01562 063 06	1	Bolzen	Lifting rod	Boulon
6	900 914 3200	1	Gewindestift	Slotted set screw	Vis sans tête
7	01562 063 07	1	Führungsbock, komplett	Guide bracket, complete	Support de guidage compl.
7.1	01562 063 08	1	Führungsbock	Guide bracket	Support de guidage
7.2	01562 063 09	1	Mutter	Nut	Ecrou
7.3	01562 063 10	1	Niederhalter	Hold-down	Serre-flanc
7.4	01562 063 12	1	Spindel	Spindle	Broche filetée
7.5	906 336 7300	1	Sterngriff	Star knob	Poignee etoile
7.6	901 481 1500	1	Spannstift	Adapter sleeve	Goupille élastique
7.7	01562 063 13	1	Abdeckblech	Cover	Tôle de suspension
7.8	900 084 3200	2	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
8	900 912 3600	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
9	907 980 2100	8	Federring	Lock washer	Rondelle élastique
10	01562 063 14	1	Anschlag	Stop	Butée
11	906 912 3040	2	Zylinderschraube	Slotted head screw	Vis à tête cylindrique à 6 pans creux
12	907 980 1700	2	Federring	Lock washer	Rondelle élastique
13	01562 063 16	3	Halterung	Fixture	Fixation
14	810 600 0220	3	verstellbarer Klemmhebel	Adjustable handle	Levier de serrage reglable
15	900 125 3100	3	Scheibe	Washer	Rondelle plate
16	01562 063 17	1	Hydraulischer Zylinder	Hydraulic cylinder	Cylindre hydraulique
17	902 083 2700	16	Tellerfeder	Disc spring	Rondelle ressort
18	01562 063 18	1	Scheibe	Washer	Rondelle plate
19	900 936 3100	2	Sechskantmutter	Hex. nut	Ecrou hexagonal
20	900 912 3530	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
21	01562 063 19	1	Anschlagschraube	Stop screw	Vis
22	900 936 2500	2	Sechskantmuter	Hex. nut	Ecrou hexagonal
23	900 933 4170	1	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
24	810 600 0280	1	verstellbarer Klemmhebel	Adjustable handle	Levier de serrage reglable



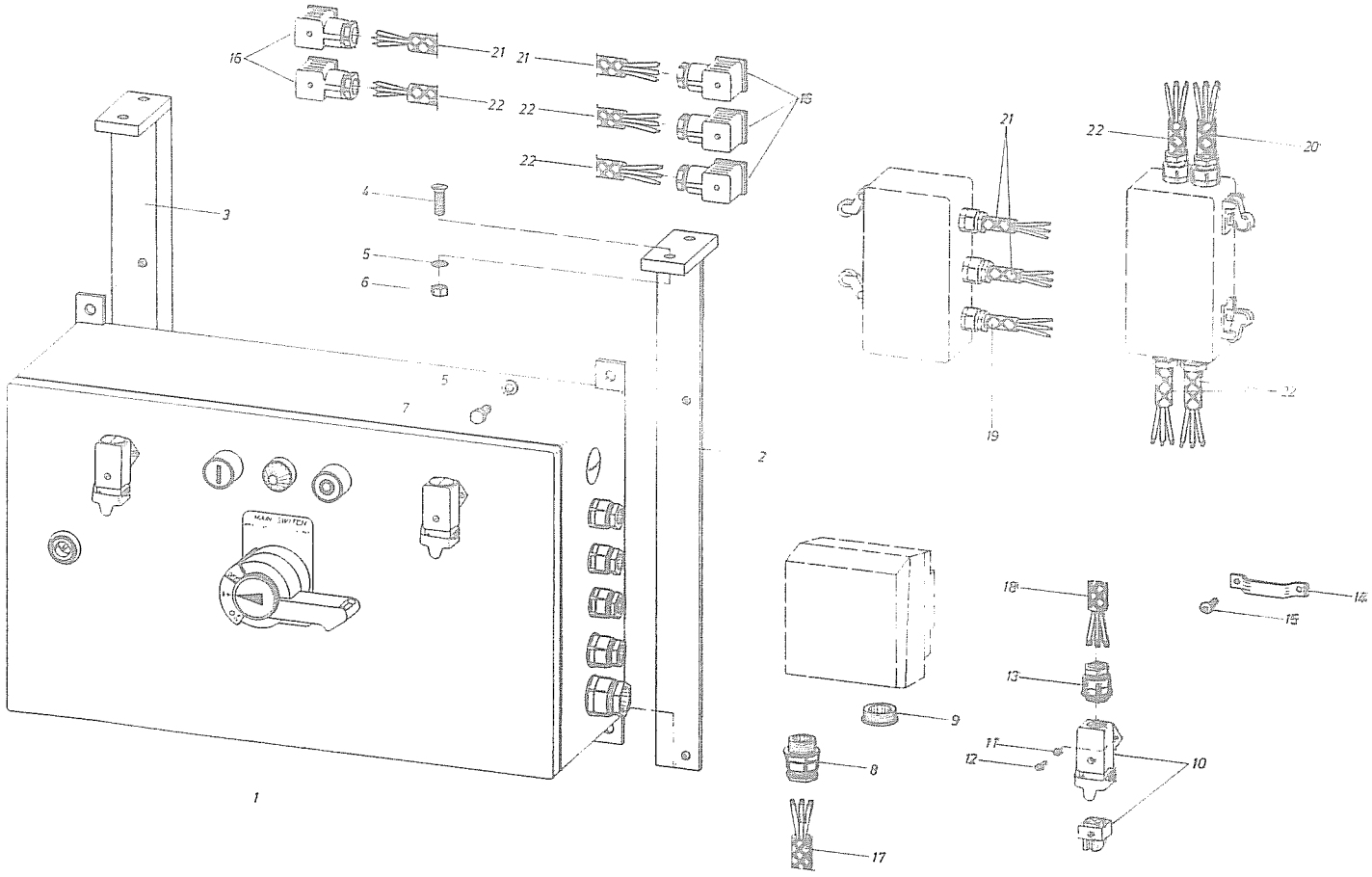
Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01563 065 01	1	Abstreifer	Stripper	Racleur
2	01563 065 02	2	Führungsbock	Guide bracket	Support de guidage
3	01562 065 11	2	Sterngriff, kpl.	Star knob, complete	Poignee etoile compl.
3.1	906 336 5300	1	Sterngriff	Star knob	Poignee etoile
3.2	01562 065 12	1	Gewindebolzen	Threaded bolt	Boulon fileté
3.3	901 481 1300	1	Spannstift	Roll pin	Douille de serrage
4	01563 065 03	1	Führungsleiste	Guide bar	Lardon de guidage
5	01563 065 04	1	Führungsleiste	Guide bar	Lardon de guidage
6	906 912 3530	4	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
7	900 912 2010	4	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
8	01562 065 06	2	Führungsbolzen	Guide pin	Boulon de guidage
9	01562 065 15	2	Druckfeder	Spring	Ressort de pression
10	901 481 3500	2	Spannstift	Roll pin	Douille de serrage
11	01563 065 05	1	Führung	Guide	Guidage
12	01563 065 06	1	Druckstück	Angle	Cornière
13	01563 065 07	1	Schieber	Pusher	Coulisse
14	900 912 3070	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
15	907 980 1700	4	Federring	Lock washer	Rondelle élastique
16	01563 065 08	1	Kreuzgriff komplett	Star handle, complete	Poignee etoile compl.
16.1	01563 065 09	1	Bolzen	Bolt	Axe
16.2	906 335 5300	1	Kreuzgriff	Star handle	Poignee etoile
16.3	901 481 1300	1	Spannstift	Roll pin	Douille de serrage
17	01562 065 08	1	Schutzhaube, komplett	Covering, complete	Capot de protection compl
17.1	01562 065 09	1	Schutzhaube, Abstreifer	Covering stripper	Capot de protection racleur
17.2	01562 065 10	1	Abdeckung	Cover	Tôle de protection
17.3	910 600 0140	4	POP-Blindniet	"POP" blind rivet	Rivet
18	900 984 2100	2	Zylinderschraube	Slotted head screw	Vis à cylindrique fendue
19	01563 065 10	1	Abstreiferplatte	Stripper plate	Plaque racleur
20	900 913 3000	2	Gewindestift	Slotted set screw	Vis sans tête

Blechauflagetisch, kpl.
Support table, complete
Table de support pour cisaille à fers plats compl.

01562 066 00



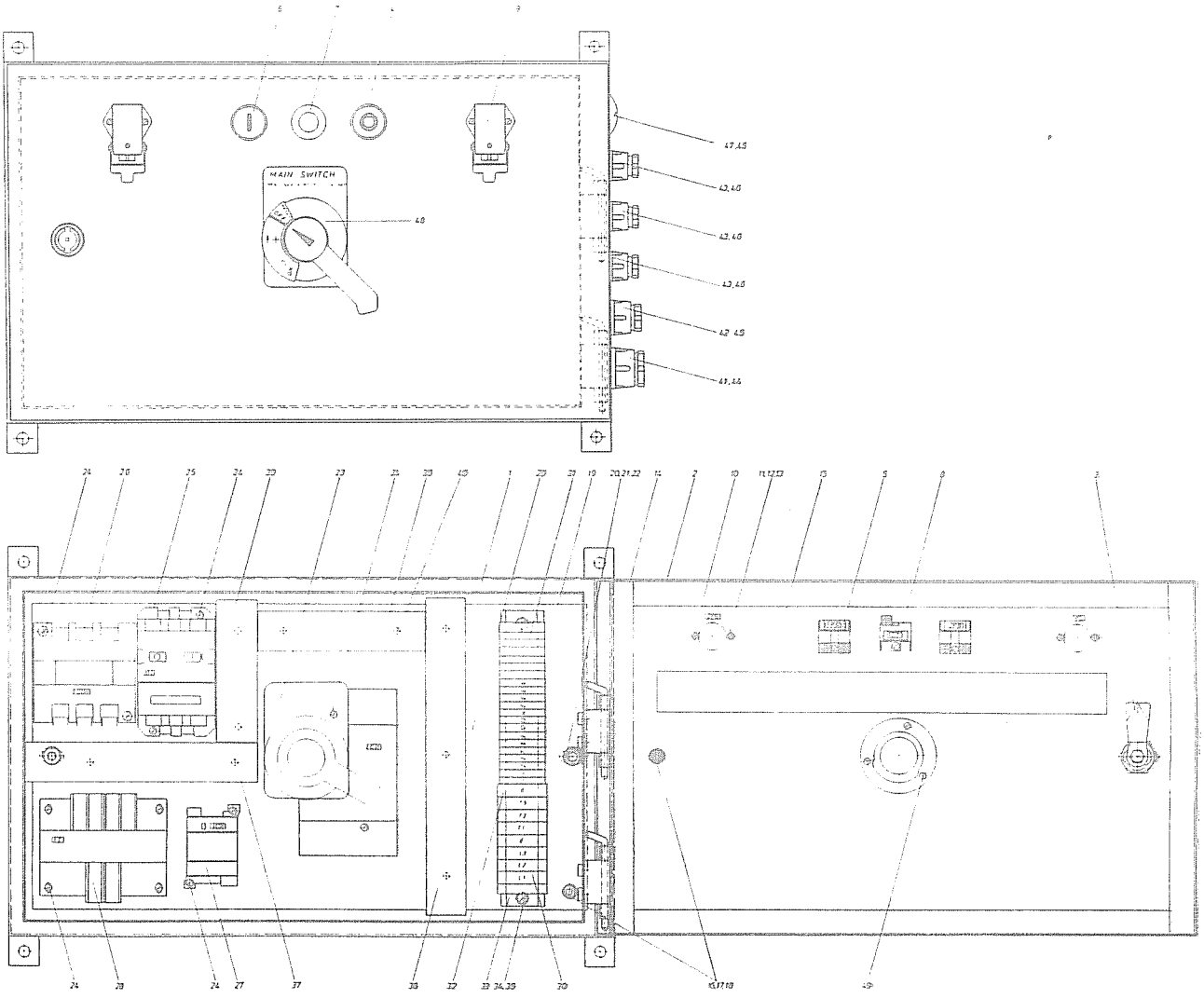
Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 066 01	1	Auflagetisch	Table	Table de support
2	906 912 3520	6	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
3	01562 066 02	6	Stehbolzen	Stay bolt	Boulon fileté
4	900 936 3100	6	Sechskantmutter	Hex. nut	Ecrou hexagonal
5	01562 066 03	1	Anschlagleiste	Guide plate	Listel de butée
6	900 508 3500	2	Mutter	Nut	Ecrou
7	810 600 1460	2	verstellbarer Klemmhebel mit Schraube	Adjustable clamping lever with screw	Levier de serrage réglable avec vis
8	900 125 3100	2	Scheibe	Washer	Rondelle plate



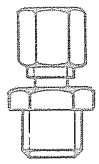
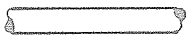
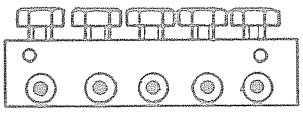
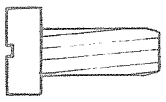
Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01563 071 01	1	Schaltschrank, komplett	Switch cabinet, complete	Armoire électrique compl.
2	01562 071 01	1	Winkel, rechts, komplett	Angle, right, complete	Cornière, à droite compl.
3	01562 071 04	1	Winkel, links, komplett	Angle, left, complete	Cornière, à gauche compl.
4	907 991 4300	4	Senkschraube	Countersunk screw	Vis à tête fendue
5	900 127 1400	8	Federring	Lock washer	Rondelle élastique
6	900 934 2500	4	Sechskantmutter	Hex. nut	Ecrou hexagonal
7	900 933 2540	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
8	810 100 1880	1	Verschraubung	Connector	Raccord à vis
9	810 100 1940	1	Blindstopfen	Closure plug	Faux-bouchon
10	810 100 2820	1	Steckvorrichtung, komplett	Plug device, complete	Prise de courant compl.
11	900 125 0900	2	Scheibe	Washer	Rondelle plate
12	900 084 1200	2	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
13	810 100 1240	1	Verschraubung	Connector	Raccord à vis
14	972 573 6300	1	Befestigungsschelle	Clip	Collier de fixation
15	810 600 0120	2	Hammerschraube	Drive screw	Vis à tête à marteau
16	810 100 0020	5	Gleichrichter mit Kappe	Rectifier	Redresseur avec capot
17	01563 071 04	1	Kabel	Electric cable	Cable
18	01563 071 05	1	Kabel	Electric cable	Cable
19	01563 071 06	1	Kabel	Electric cable	Cable
20	01563 071 07	1	Kabel	Electric cable	Cable
21	01563 071 08	2	Kabel	Electric cable	Cable
22	01563 071 09	3	Kabel	Electric cable	Cable

Schaltschrank, kpl.
Switch cabinet, complete
Armoire électrique compl.

01563 071 01

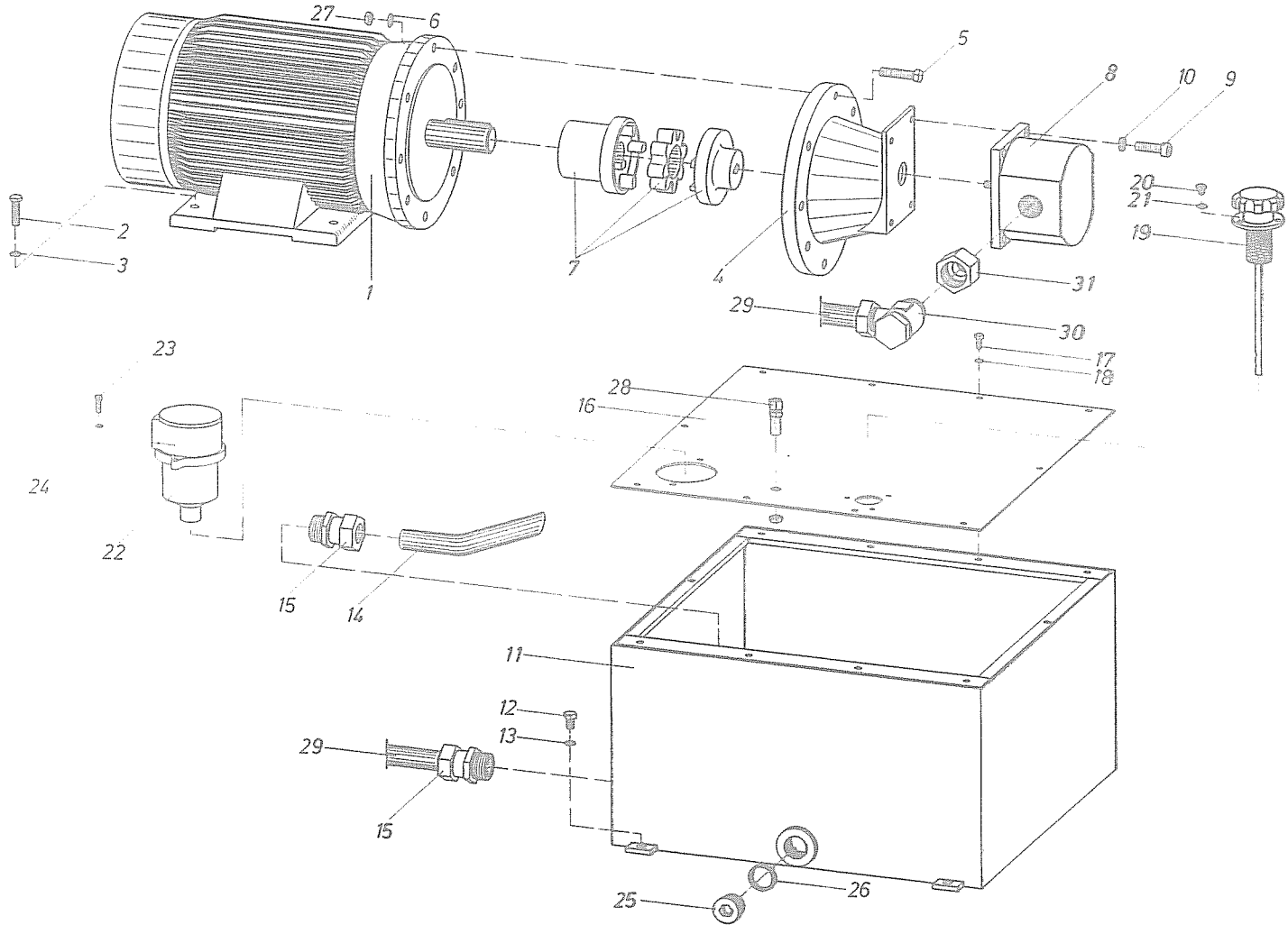


Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 071 03	1	Schaltschrankgehäuse	Switch cabinet box	Armoire électrique
2	01563 071 02	1	Deckel zum Schaltschrank	Cover for switch cabinet box	Couvercle pour armoire électrique
3	810 100 5780	1	Vorreiber, einschraubbar	Sash fastener	Tourniquet avec vis de serrage
4	810 100 0970	1	Drucktaster	Press button	Bouton-poussoir
5	810 100 2960	2	Kontaktböckchen	Contac jaw	Pièce à contacts
6	810 100 0960	1	Drucktaster	Press button	Bouton-poussoir
7	810 100 0480	1	Leuchtmelder	Ground light assy	Lampe de signalisation
8	810 100 0470	1	Kontrollampe	Bulb, ground	Lampe de controle
9	810 100 2820	2	Steckvorrichtung, komplett	Plug device, complete	Prise de courant compl.
10	900 084 1200	4	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
11	900 125 0906	4	Scheibe	Washer	Rondelle plate
12	906 798 2100	4	Fächerscheibe	Serrated washer	Rondelle élastique à denture
13	900 934 0500	4	Sechskantmutter	Hex. nut	Ecrou hexagonal
14	810 600 2480	1,45 m	Dichtung	Seal	Joint
15	810 100 3420	0,36 m	Kabelkanal	Cable duct	Canal câble
16	900 934 2100	2	Sechskantmutter	Hex. nut	Ecrou hexagonal
17	900 125 1700	4	Scheibe	Washer	Rondelle plate
18	906 798 3100	2	Fächerscheibe	Serrated washer	Rondelle élastique à denture
19	01563 071 03	1	Gerätetafel	Mounting plate	Tableau des instruments
20	900 934 2500	2	Sechskantmutter	Hex. nut	Ecrou hexagonal
21	900 125 2400	2	Scheibe	Washer	Rondelle plate
22	906 798 4100	2	Fächerscheibe	Serrated washer	Rondelle élastique à denture
23	810 100 0400	1	Motorschutzschalter	Overload switch	Disjoncteur
24	900 084 2200	10	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
25	810 100 2930	1	Motorschutzschalter	Overload switch	Disjoncteur
26	810 100 1670	1	Schütz	Magnetic contactor	Contacteur
27	810 100 5790	1	Schütz	Magnetic contactor	Contacteur
28	810 100 2760	1	Transformator	Transformer	Transformateur de commande
29	810 100 2920	10	Klemme	Clamp	Borne
30	810 100 2860	6	Klemme	Clamp	Borne
31	810 100 2870	4	Klemme	Clamp	Borne
32	810 100 2910	2	Klemme	Clamp	Borne
33	810 100 3410	1	Schiene	Gib	Rail
34	01524 047 03	2	Distanzstück	Distance tube	Pièce intercalaire
35	900 084 3500	2	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
36	810 100 3420	0,26 m	Kabelkanal	Cable duct	Canal câble
37	810 100 3420	0,21 m	Kabelkanal	Cable duct	Canal câble
38	810 100 3420	0,14 m	Kabelkanal	Cable duct	Canal câble
39	810 100 3420	0,11 m	Kabelkanal	Cable duct	Canal câble
40	810 600 0140	9	POP-Blindniet	"POP" blind rivet	Rivet
41	810 100 1880	1	Verschraubung	Connector	Raccord à vis
42	810 100 1000	1	Verschraubung	Connector	Raccord à vis
43	810 100 1240	3	Verschraubung	Connector	Raccord à vis
44	810 100 1920	1	Gegenmutter	Lock nut	Contre-ecrou
45	810 100 1910	2	Gegenmutter	Lock nut	Contre-ecrou
46	810 100 1890	3	Gegenmutter	Lock nut	Contre-ecrou
47	810 100 3740	1	Blindstopfen	Closure plug	Faux- bouchon
48	810 100 0410	1	Hauptschalter	Main switch	Interupteur principale
49	900 963 2200	3	Senkschraube	Countersunk screw	Vis à tête fendue

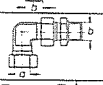
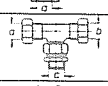
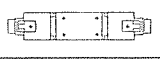
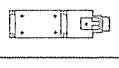
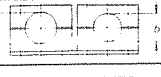
Benennung Nomenclature Désignation		Artikel-Nr. Article-No.	01562
	Gerade Einschraubverschrb. Straight connector Raccord fileté droite	811 100 0050	5
	Einschraubnippel Straight oil fitting Nipple fileté	811 100 0010	6
 1×4	Befestigungsschelle Clip Collier de fixation	972 571 1100	6
 2×4		972 571 1300	3
 3×4		972 573 1000	2
 5×4		972 573 1400	1
	Nylon-Rohr, biegsam Nylon tubing Tube nylon	811 100 0620	5,5 m
	„POP"-Blindniet „POP"-blind rivet Faux-rivet „POP"	810 600 0140	15
	Schmiernippelleiste Oil distrubitor Listeau de graisseur	811 100 1200	1
	Schneidschraube Slotted self cutting screw Vis auto-taraudeuse	907 513 0800	2
	Unterlegscheibe Washer Rondell plate	811 100 1030	2
	Einsteckhülse Sleeve Douille d'emmanchement	811 100 0600	5

Hydraulikstation, kpl.
Hydraulic station, complete
Station hydraulique compl.

01563 083 00

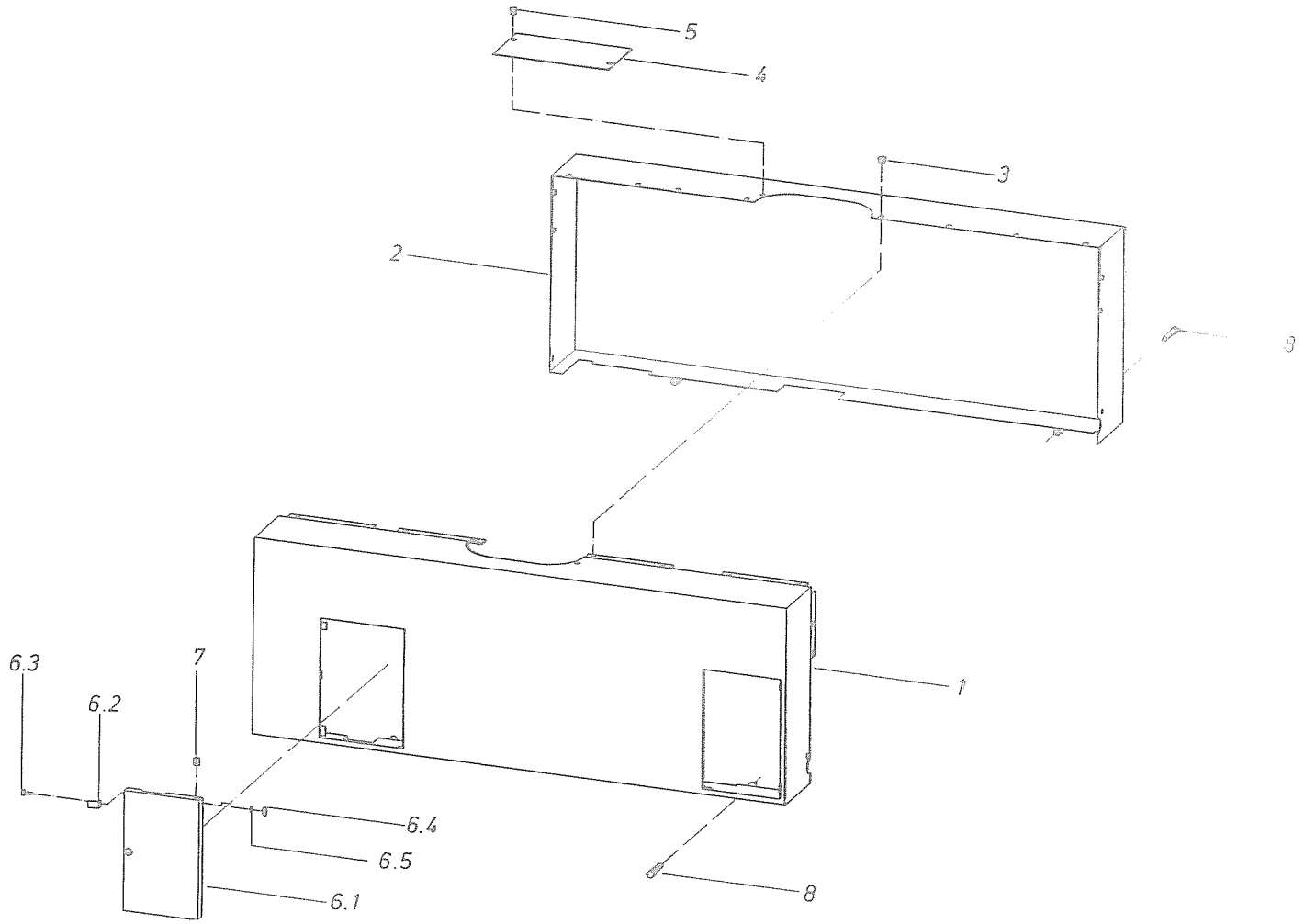


Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	810 100 1700	1	Drehstrommotor	Rotary current motor	Moteur à courant triphasé
2	900 933 3100	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
3	900 127 1700	4	Federring	Lock washer	Rondelle élastique
4	811 600 3090	1	Pumpenträger	Pump support	Porte-Pompe
5	900 931 3530	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
6	900 127 2100	4	Federring	Lock washer	Rondelle élastique
7	811 600 5700	1	Kupplung	Coupling assembly	Raccord
8	811 600 5690	1	Hochdruckzahnradpumpe	High-Pressure toth wheel	Pompe à engrenage pour haute pression
9	900 912 3060	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
10	907 980 1700	4	Federring	Lock washer	Rondelle élastique
11	01562 083 01	1	Ölbehälter 90 Liter	Oil tank - 90 Liters	Reservoir à l'huile 90 Litres
12	900 933 3040	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
13	900 125 2700	4	Scheibe	Washer	Rondelle plate
14	01562 083 03	1	Ansaugrohr	Suction pipe	Tuyau d'aspiration
15	811 600 3610	2	Gerade Einschraubverschraubung	Straight connector	Raccord droit
16	01562 083 02	1	Deckel	Tank cover	Couvercle
17	900 933 2540	10	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
18	900 125 2400	10	Scheibe	Washer	Rondelle plate
19	811 600 2170	1	Einfüll- und Belüftungsfilter	Fill-Airing filter	Filtre de remplissage et d'aération
20	900 084 3100	3	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
21	900 125 1400	3	Scheibe	Washer	Rondelle plate
22	811 600 3110	1	Rücklauffilter	Return filter	Filtre de recul
23	900 933 2560	2	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal
24	900 127 1400	2	Federring	Lock washer	Rondelle élastique
25	900 908 6000	1	Verschlußschraube	Screw plug	Bouchon fileté
26	907 603 6100	1	Dichtung	Seal	Anneau
27	900 934 3500	4	Sechskantmutter	Hex. nut	Ecrou hexagonal
28	811 600 6150	1	Schottverschraubung	Bulkhead elbow	Goude égaux passe cloison
29	811 600 5590	1	Hochdruckschlauch	High pressure hose	Tuyau flexible pour haute pression
30	811 600 5636	1	Schwenkverschraubung	Swivel Connector	Raccord pivotant
31	811 600 6160	1	Gewindereduzierung	Thread reduction	Réduction de filets

Benennung Nomenclature Designation		a	b	c	d	Artikel - Nr. Article - No.	01562 084 00	01563 084 00
	Gewindereduzierung Thread reducer Reduction	R 1/2"	R 1/2"	/	/	811 600 2470	1	1
	Gerade Einschraubverschraubung Straight connector Raccord droit	16	R 1/2"	/	/	811 600 2480	1	1
		8	R 1/2"	/	/	811 600 6120	2	2
	Schwenkverschraubung Swivel connector Raccord pivotant	8	R 1/4"	/	/	811 600 6140	1	1
		16	R 1/2"	/	/	811 600 2500	9	9
		18	R 1/2"	/	/	811 600 6100	1	1
	Einstellbare Winkelverschraubung Adjustable elbow connector Raccord a vis coude	16	R 1/2"	/	/	811 600 2530	1	1
		18	R 1/2"	/	/	811 600 6170	1	1
		20	R 3/4"	/	/	811 600 3640	1	1
	Einstellbare T-Verschraubung Adjustable T- screw fitting Vissage en Treglable	16	16	R 1/2"	/	811 600 3830	1	1
	DKO-Stutzen mit Kupplung Connection piece with coupling Manchon DKO avec raccord	18,5	44	16	/	811 600 6620	2	2
	Rohr Steel tube Tube	8	6	500	/	786 000 6054	1	1
	Hochstdruckschlauch Hight pressure connector Tuyau flexible pour haute pression	M 24×1,5	1980	/	/	811 600 3460	1	1
		M 24×1,5	350	/	/	811 600 3360	2	2
		M 24×1,5	540	/	/	811 600 3390	1	1
		M 26×1,5	750	/	/	811 600 6230	1	1
	Hochstdruckschlauch Hight pressure connector Tuyau flexible pour haute pression	M24×1,5	460	/	/	811 600 6220	1	1
	Tecalan-Rohr Tecalan tubing Tube Tecalan	8	6	2500	/	811 100 1860	1	1
	Zylinderschraube Slotted head screw Vis à tête cylindrique fendue	M4	10	/	/	900 084 2200	2	2
		M6	55	/	/	900 084 4800	3	3
	Zylinderschraube Slotted head screw Vis à tête cylindrique fendue	M8	20	/	/	906 912 2530	3	3
		M8	30	/	/	900 912 2540	2	2
	Senkschraube Countersunk screw Vis à tête fraisée	M6	12	/	/	907 991 3000	6	6
	Federring Lock washer Rondelle elastique	8,1	/	/	/	907 980 1400	5	5
	Einsteckhulse Sleeve Douille d'emmanchement	6	5	15	/	811 100 1870	2	2
	Befestigungsschelle Clip Collier de fixation	8	/	/	/	972 571 3100	2	2
	Facherscheibe Serrated washer Rondelle élastique à denture	6,4	/	/	/	906 798 3100	3	3
	Ventiltrager Valve bracket Porte-vanne	/	/	/	/	01562 084 03	1	1
	Montageplatte Assembling plate Plaq de montage	/	/	/	/	811 600 6190	1	1
	Wegeventil Way valve Valve a diverses voies	WEE 4/3-10-207-S1 190 V				811 600 3170	1	/
		WEE 4/3-10-207- 190 V				811 600 3180	1	/
		WEE 4/3-10-207-S1 96 V				811 600 3190	/	1
		WEE 4/3-10-207- 96 V				811 600 3200	/	1
	Wegeventil Way valve Valve a diverses voies	WEF 4/2-06-111a/190 V				811 600 6210	1	/
		WEF 4/2-06-111a/ 96 V				811 600 6200	/	1
	Zylinderschraube Slotted head screw Vis à tête cylindrique fendue	M5	30	/	/	900 912 1560	4	4
		M6	35	/	/	900 912 2070	8	8
	Rohrschelle Tube clamp Collier pour tube	8	/	/	/	811 600 6610	1	1
	Zylinderschraube Slotted head screw Vis à tête cylindrique fendue	M6	25	/	/	900 912 2050	2	2
	Scheibe Washer Disque	6,4	/	/	/	900 433 1700	2	2
	Schlauchschelle, kpl Hose clip Collier pour tuyau complete	25	22	/	/	01562 084 04	3	3
	Schlauchabdeckung Hose cover Couverture de protection pour tuyau	/	/	/	/	01562 084 01	1	1

Schutzhaube, kpl.
Guard, complete
Capôt de protection compl.

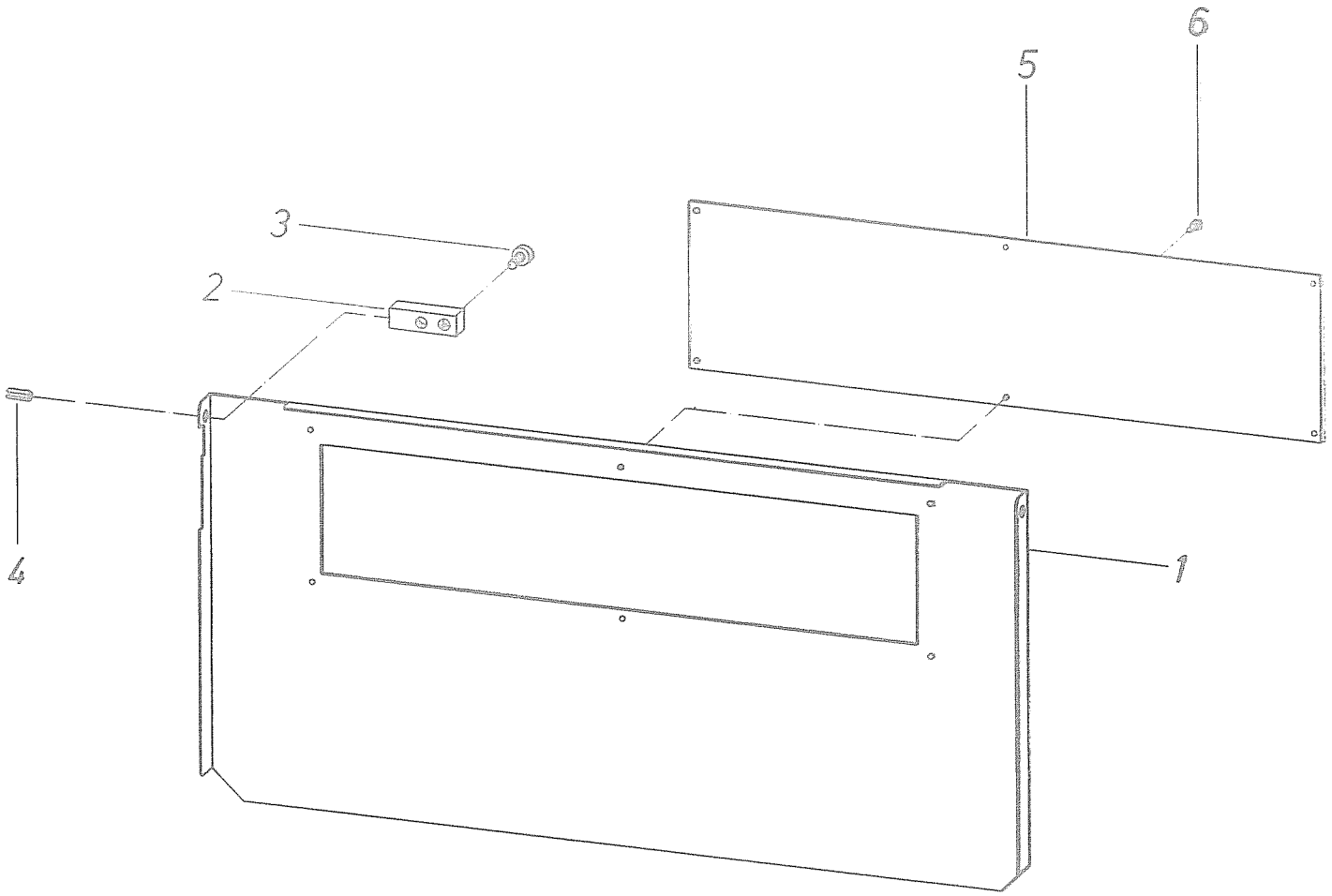
01562 091 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 091 01	1	Schutzhaube, Körperplattenseite	Guard, body plate	Capôt de protection plaque de bâti
2	01562 091 02	1	Schutzhaube, Deckplattenseite	Guard, cover plate	Capôt de protection contre-plaque
3	900 084 4100	12	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
4	05060 091 03	1	Deckblech	Cover plate	Tôle de protection
5	900 084 4100	2	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
6	01562 091 04	1	Verkleidungstür, komplett	Guard flap, complete	Porte de coffrage compl.
6.1	01562 091 03	1	Verkleidungstür	Guard flap	Porte de coffrage
6.2	05047 047 04	1	Blattfeder	Leaf spring	Ressort à lames
6.3	900 084 2100	2	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue
6.4	900 934 1100	2	Sechskantmutter	Hex. nut	Ecrou hexagonal
6.5	900 127 0700	2	Federring	Lock washer	Rondelle élastique
7	401 081 2200	4	Spannstift	Tension pin	Goupille élastique
8	900 912 3590	4	Zylinderschraube	Slotted head screw	Vis à tête cylindrique fendue

Schutzklappe zur Flachstahlschere, kpl.
Movable guard, plate shear, complete
Plaque de protection pour cisaille à fers plats compl.

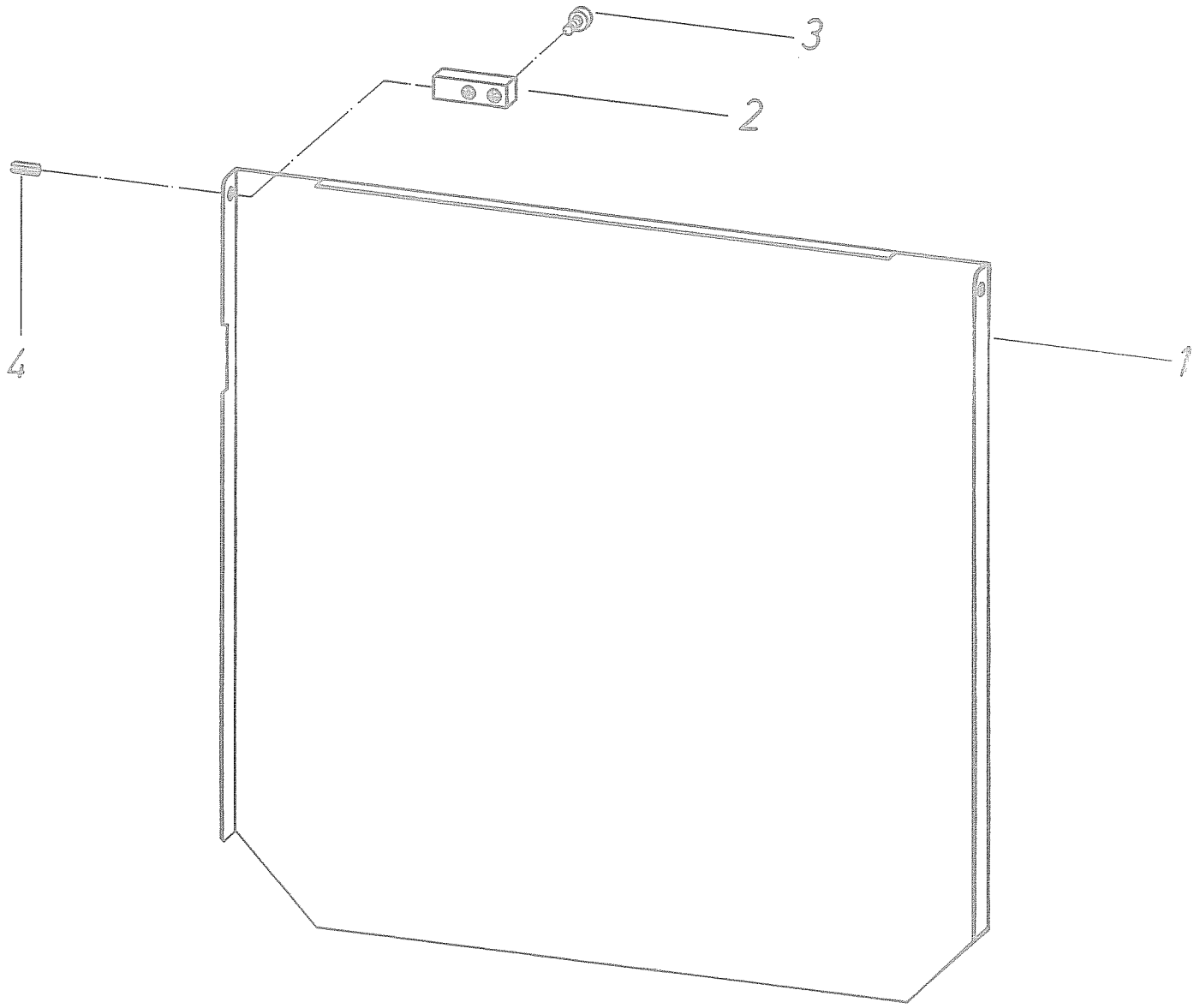
01562 095 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Pago Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 095 01	1	Schutzklappe	Protection flap	Plaque de protection
2	05040 095 02	2	Bockchen	Bracket	Petit support
3	900 912 2030	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
4	[illegible] 481 2200	2	Spannstift	Roll pin	Douille de serrage
5	0 [illegible]2 095 02	1	Plexiglasabdeckung	Plexiglas cover	Couvercle en plexiglas
6	8[illegible] 600 01-40	6	POP-Blindniet	"POP" blind rivet	Rivet

Schutzklappe zur Profilschere, kpl.
Movable guard, section shear, complete
Plaque de protection pour cisaille à profilés compl.

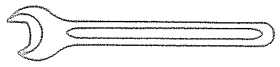
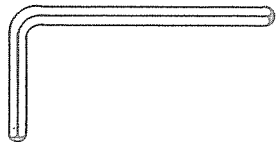
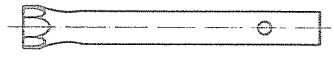
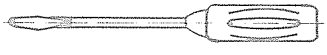
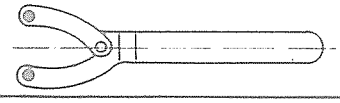
01562 096 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 096 01	1	Schutzklappe	Protection flap	Plaque de protection
2	05040 095 02	2	Böckchen	Bracket	Petit support
3	900 412 2030	4	Zylinderschraube	Socket head screw	Vis à tête cylindrique à 6 pans creux
4	901 481 2200	2	Spannstift	Roll pin	Douille de serrage

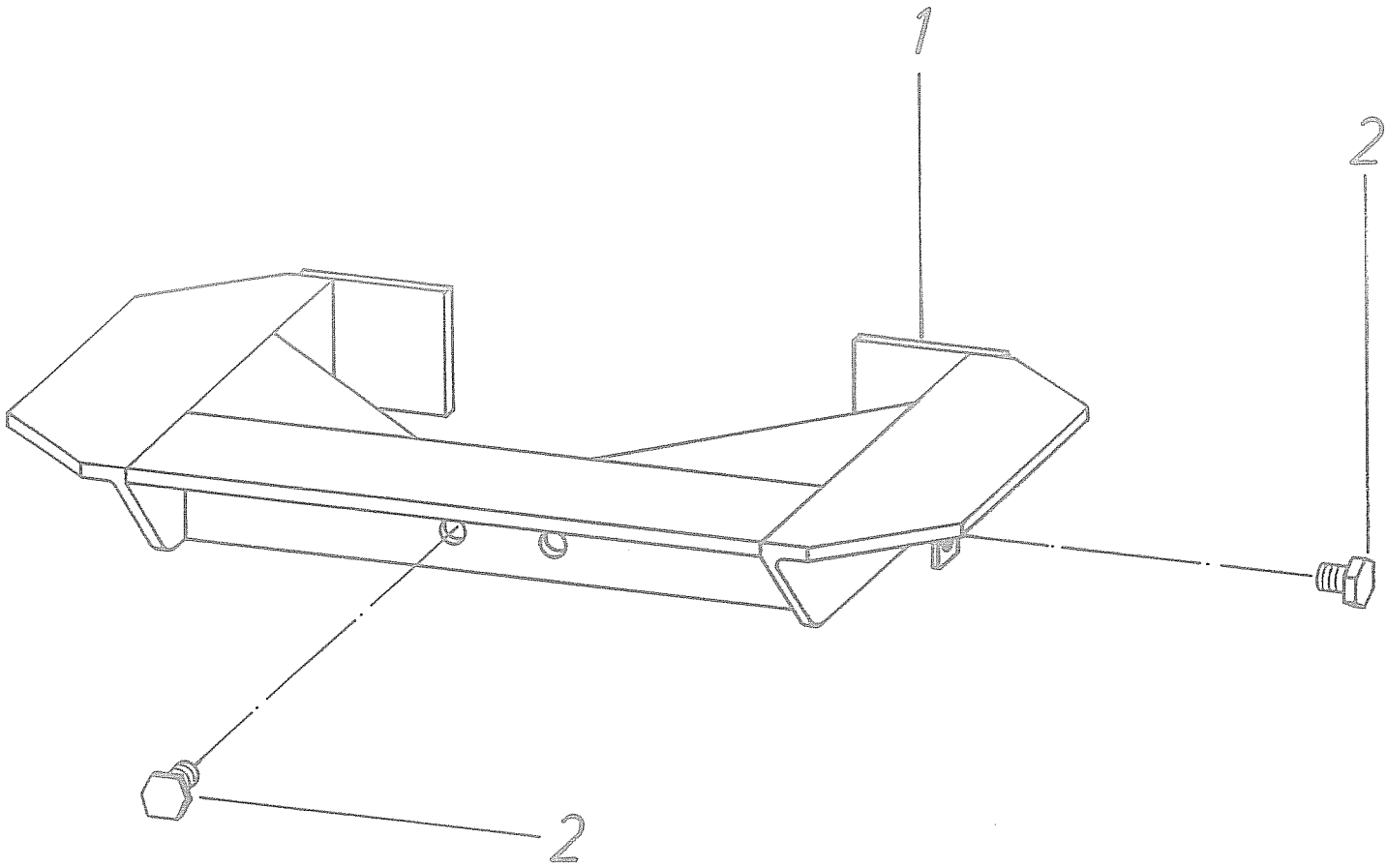
Bedienwerkzeug, kpl.
Accessories, complete
Outillage d'entretien compl.

01562 102 00

Benennung Nomenclature Désignation	Größe Size Dimension	Artikel-Nr. Article-No.	KBLH 700 01562	 01563				
	17×19	9008953200	1	1				
	24×30	9008954200	1	1				
	10×13	9008952000	1	1				
	36	9008944400	1	1				
	50	9008945000	–	1				
	60	9008945400	1	–				
	5	9009112000	1	1				
	6	9009112200	1	1				
	8	9009112600	1	1				
	10	9009112800	1	1				
	12	9009113000	1	1				
	14	9009113200	1	1				
	17	9009113400	1	1				
	46	9006594500	1	1				
	A 14	9009004100	1	1				
	Gr. 4	8106000750	1	1				
		8106001320	1	1				
		8111001090	1	1				
Putzlappen Rag for cleaning Torchon		8106000260	1	1				
Fühlerlehre Thickness gauge Jauge d'épaisseur	15×0,3×140	8106000810	1	1				

Schutzvorrichtung zum Ausklinksattel, kpl.
Support bracket for coper-notcher saddle, complete
Support et piéce de secrité pour selle grugeoir compl.

01562 125 00



Pos. Item Rep.	Artikel-Nr. Part No. Article-No.	Stück/Masch. Piece/Page Pièce-Mach.	Benennung	Denomination	Désignation
1	01562 125 01	1	Schutzvorrichtung	Support bracket	Support et pièce securité
2	900 993 3050	4	Sechskantschraube	Hex. cap screw	Vis à tête hexagonal