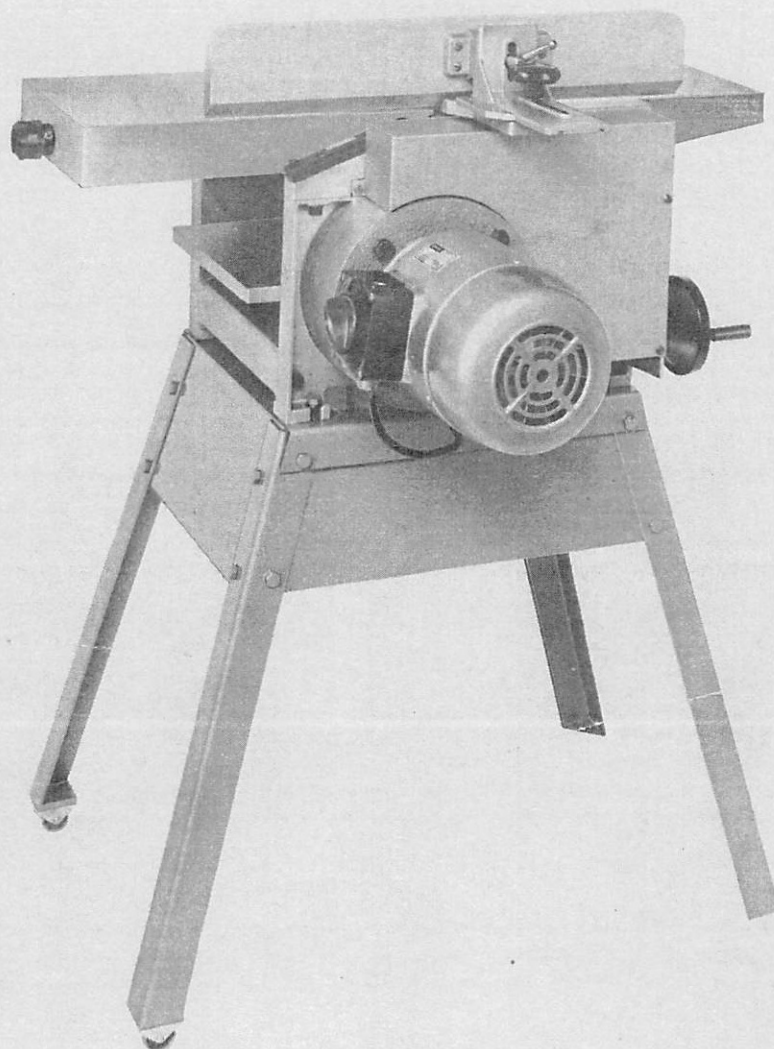


# **OPERATING INSTRUCTIONS FOR THE**



## **EMCO-REX B20 PLANING AND THICKNESSING MACHINE**



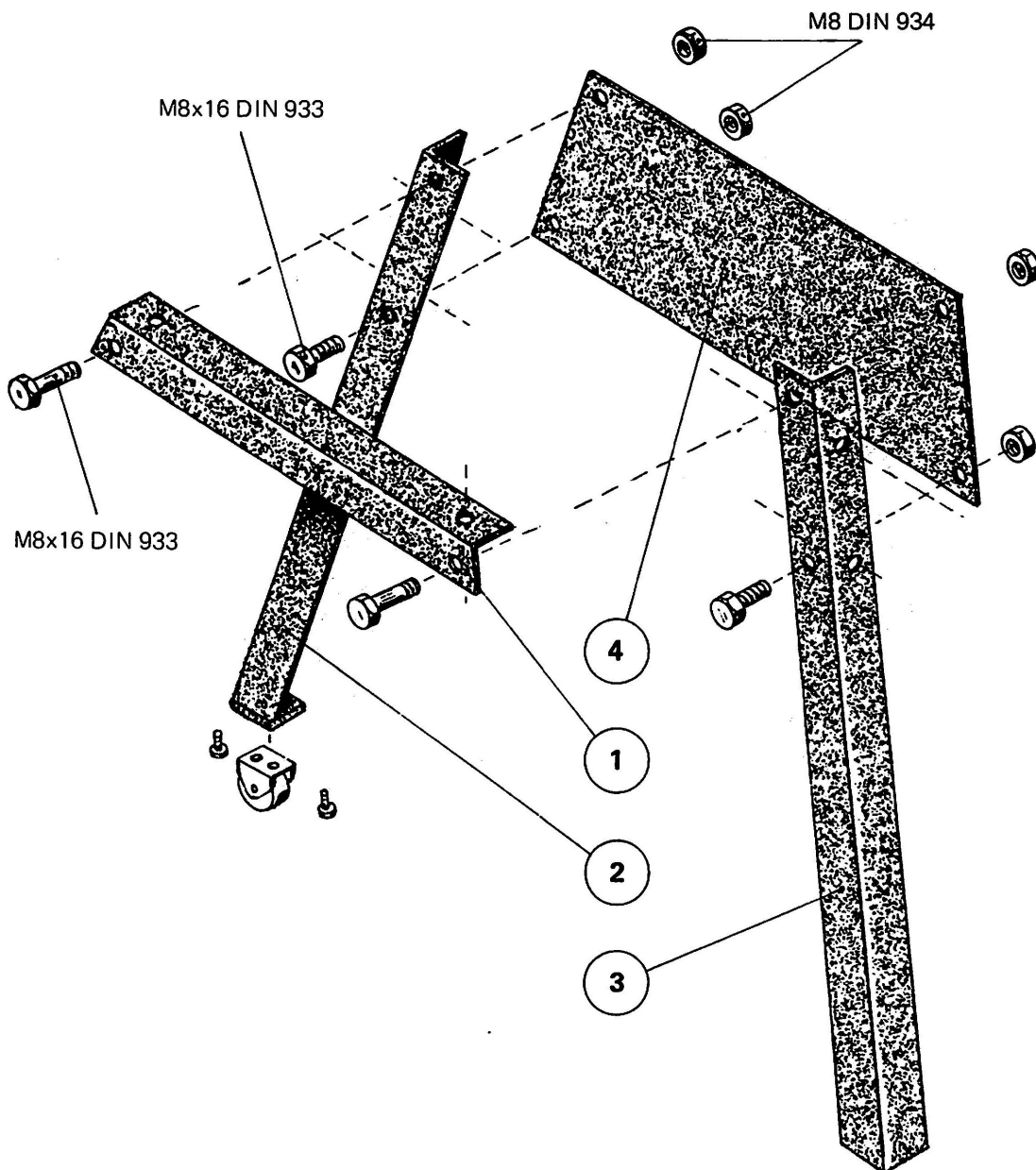
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## INSTRUCTIONS FOR THE ASSEMBLY OF THE MACHINE STAND      Group A

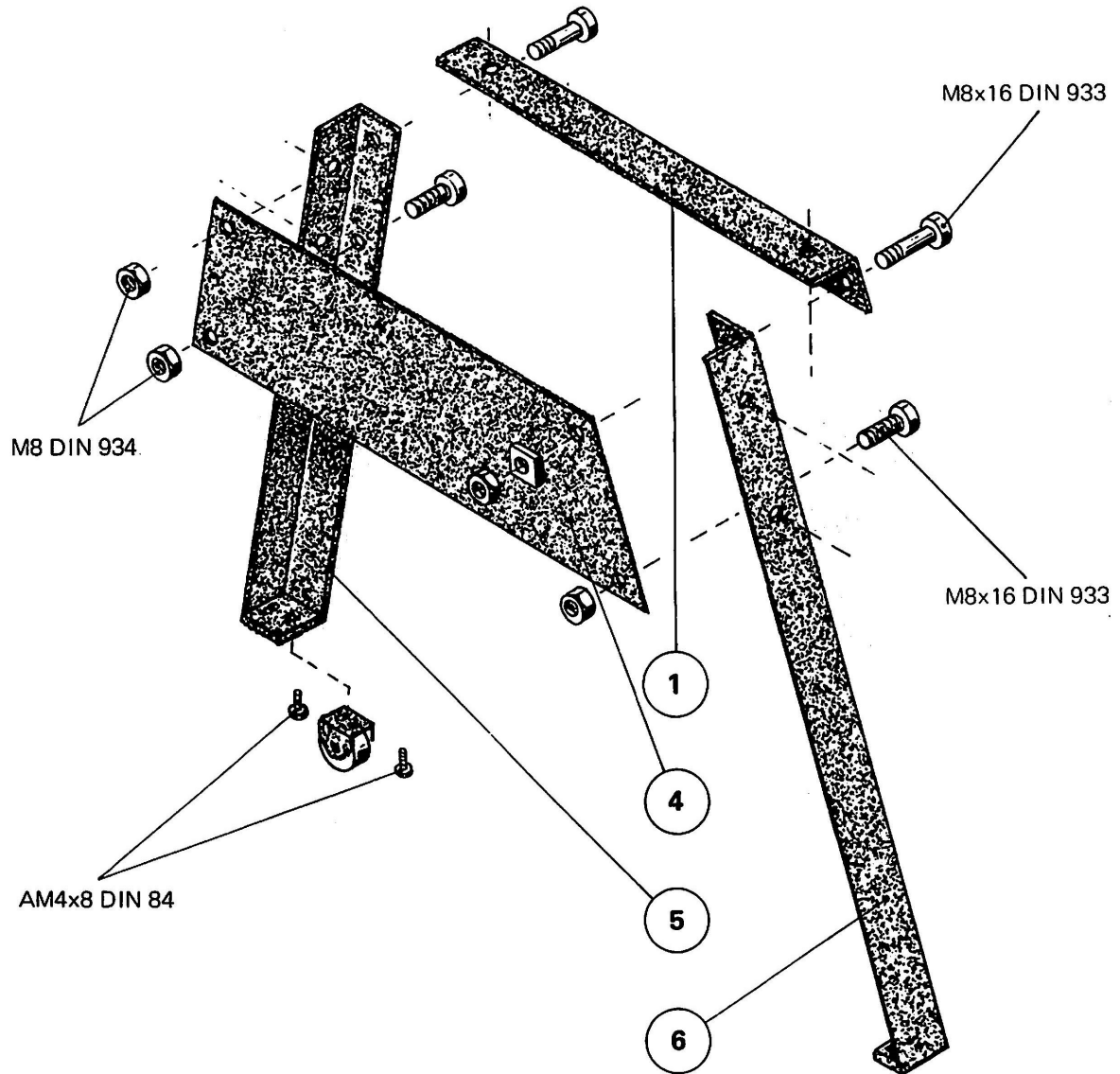


**Before you start the assembly arrange the individual parts of Groups A, B and C.**

**Start the assembly with Group A, by placing Part 1 against the Parts 2 and 3, and inside Part 4, and screw them together with the respective nuts and bolts.**

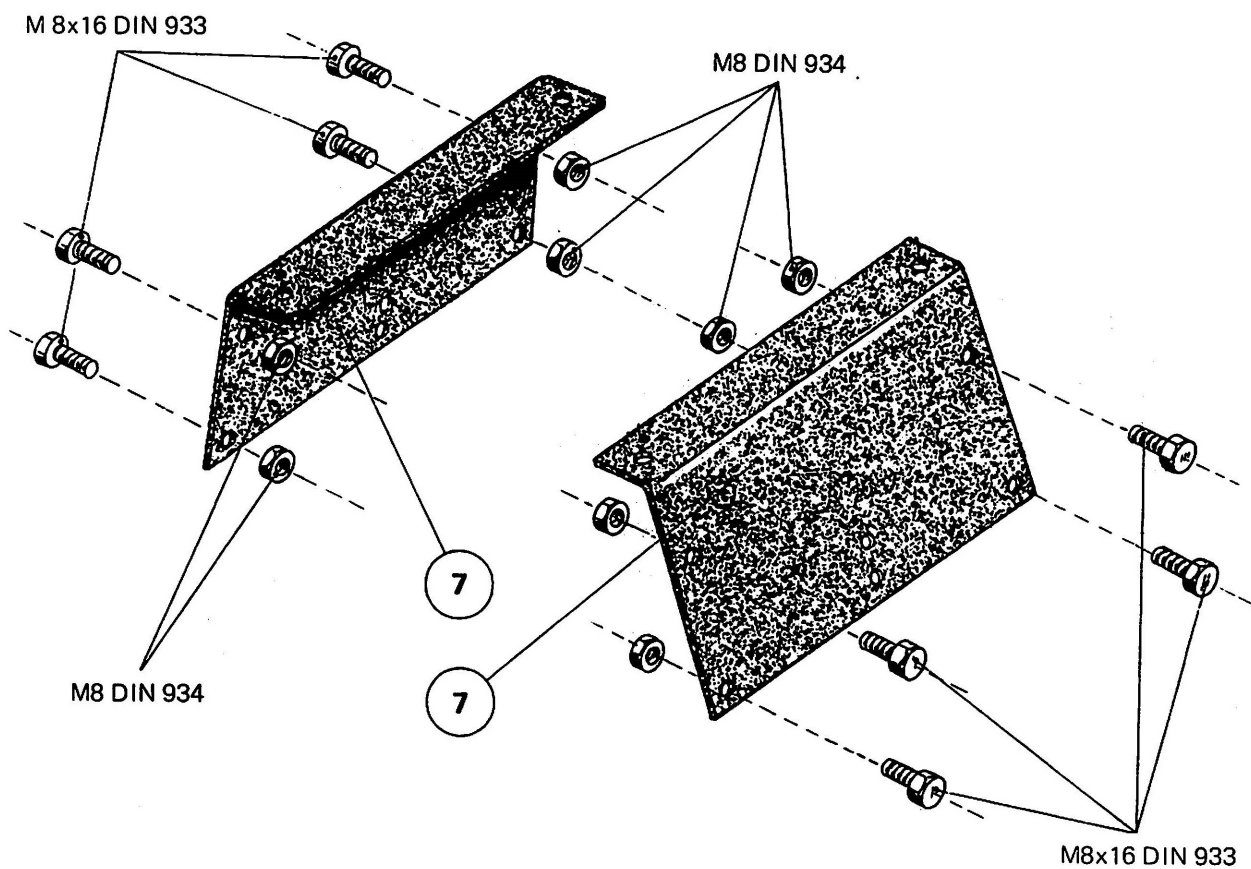
**To begin with the screws are not to be tightened.**

**Group B**

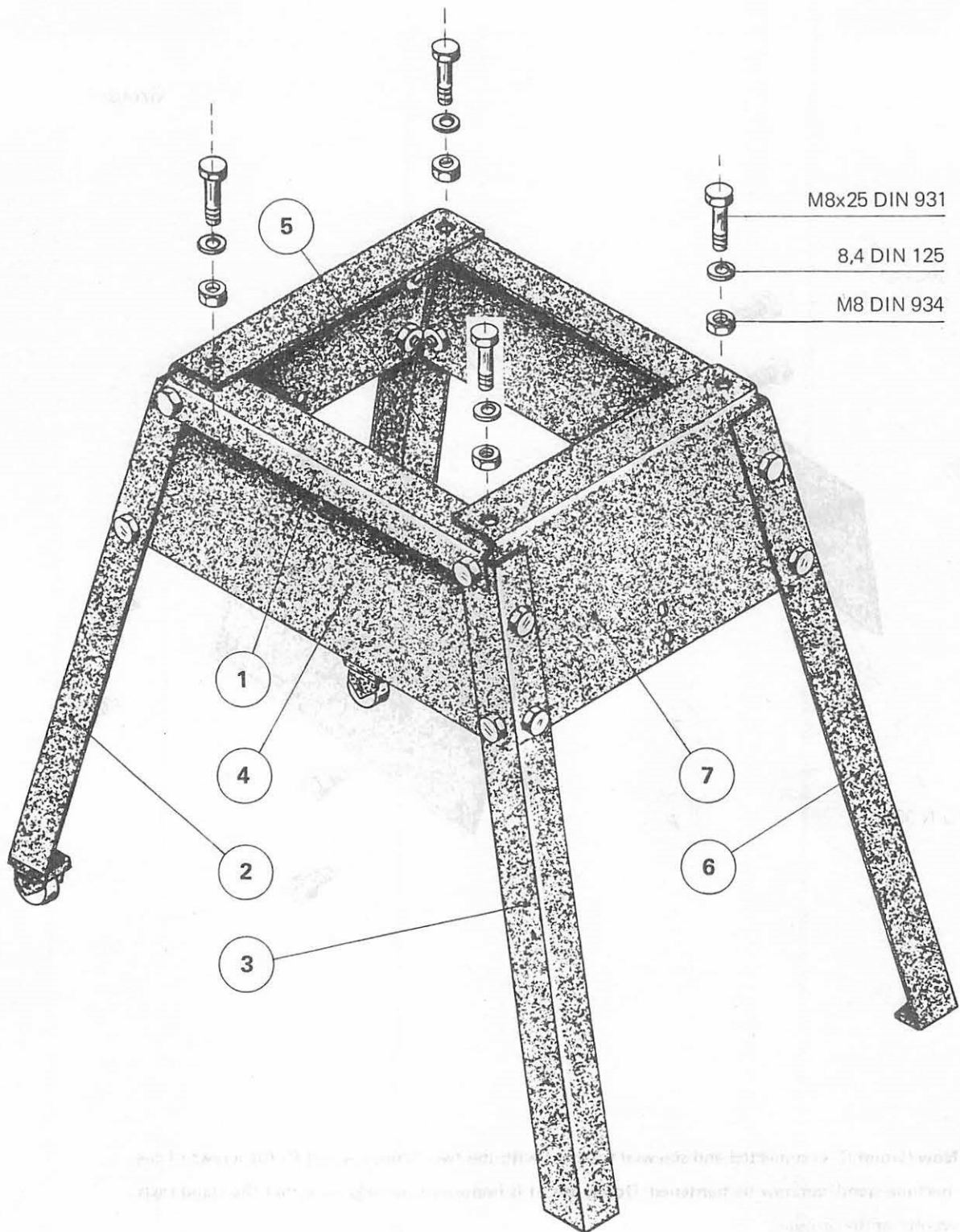


The assembly of Group B is carried out in the same way as Group A, i.e. Part 1 is placed against the Parts 5 and 6, and Part 4 inside. Then they are screwed together with the respective nuts and bolts.

## Group C



Now Group C is connected and screwed together with the two Groups A and B. All screws of the machine stand can now be tightened. Doing this, it is important to make sure that the stand rests evenly on the ground.



If now the EMCO-REX B 20 is mounted on the machine stand, the following has to be observed:

The machine has to be placed on to the stand in such a way that the handle which is used for adjusting the surfacing part is on the side of the two castors.

Now the 4 bolts (M8x25 DIN 931) are entered into the bores from above and tightened with the nuts (M8 DIN 934) and the washers (8.4 DIN 125). The machine can be moved about by lifting it at the opposite side of the handle mentioned above.

## MOUNTING DIMENSIONS FOR A SELF-BUILT TABLE FOR EMCO - REX B 20

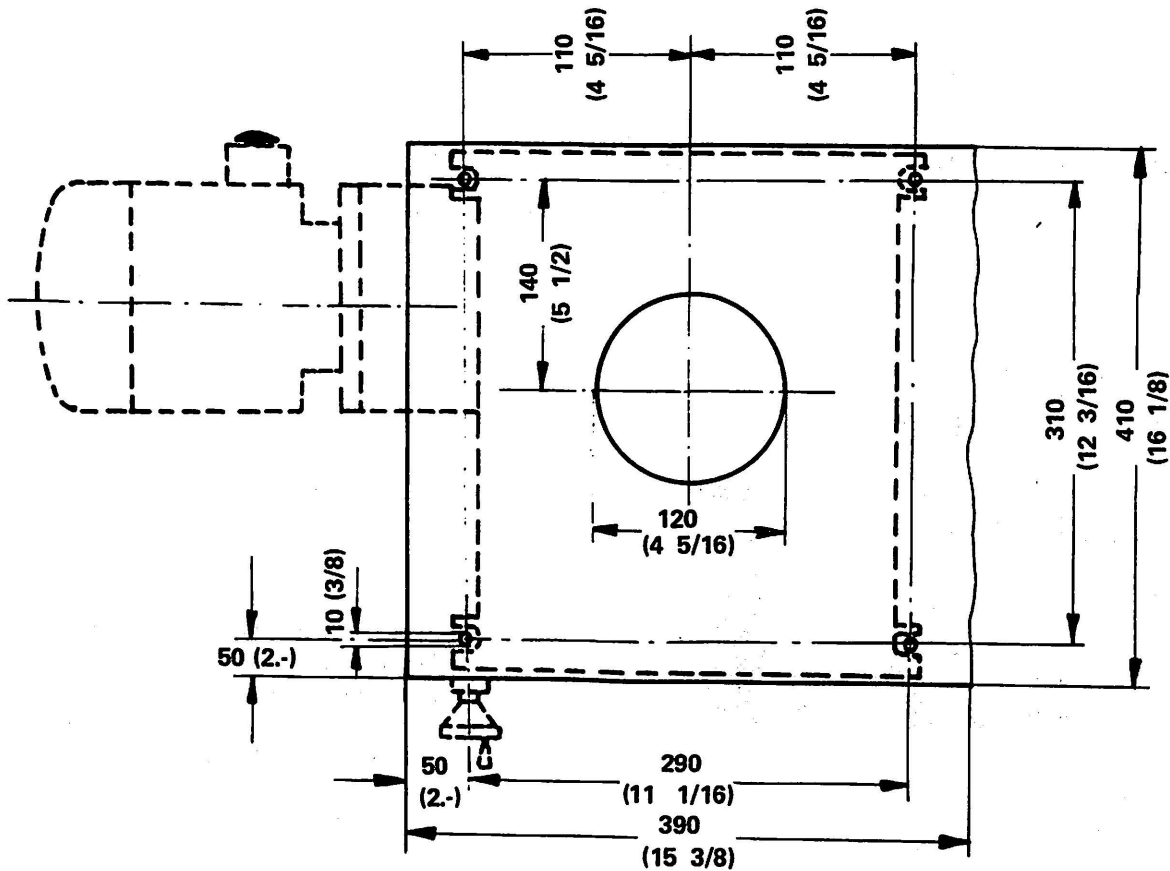
If our machine base Order Ref. 6260 was not ordered with the EMCO - REX B 20, a table with the following mounting dimensions has to be built (see Diagram):

The minimum size of the table top would have to be 410 x 390 x 24 mm (approx. 16 1/8 x 15 3/8 x 1 in.).

The dimensions given in the diagram have to be adhered to. An extension of the table top is only possible on the side opposite to the motor.

The ideal height of the table for this machine is 565 mm (approx. 22 in.).

Dimensions in mm (approximation in inches).





## PREPARING THE EMCO - REX B 20 FOR OPERATION

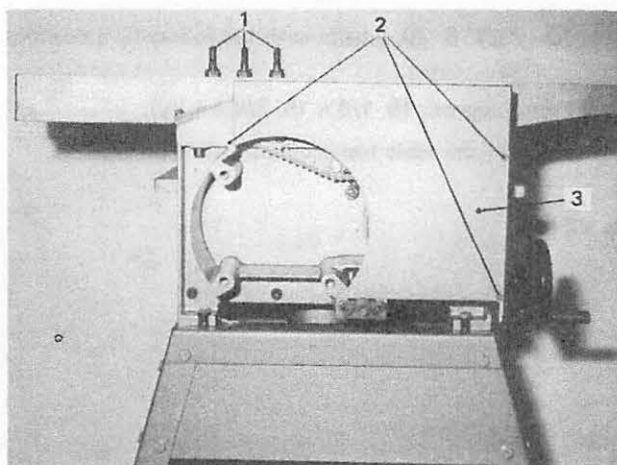


Fig. 1

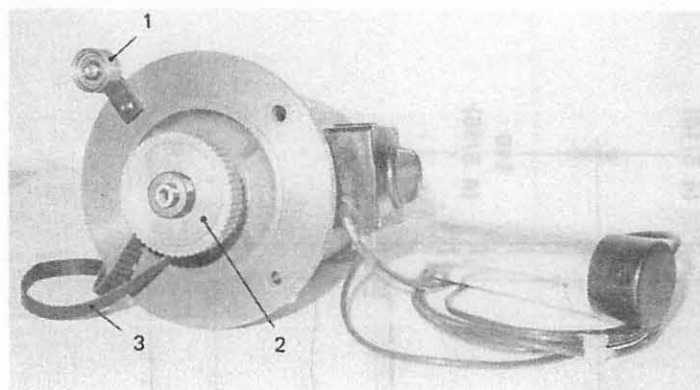


Fig. 2

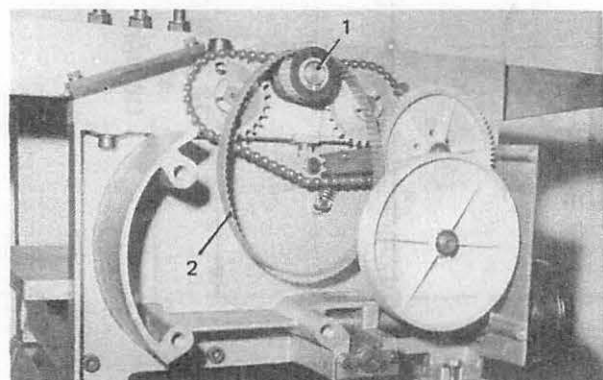


Fig. 3

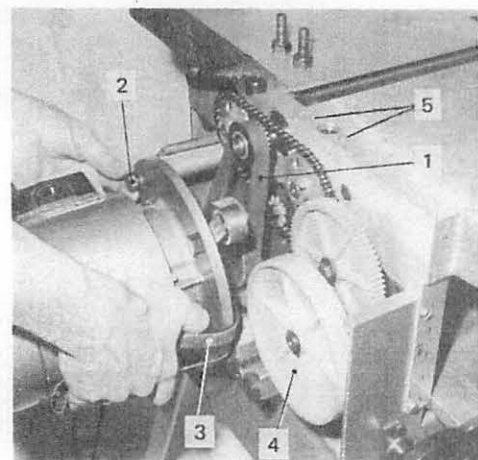


Fig. 4

The Combined Surfacing and Thicknessing Machine EMCO - REX B 20 is delivered assembled, ready for erection and requires only the following additions to make it ready for operation:

- A) Mounting the motor
- B) Mounting the thicknesser-setting units
- C) Mounting the cutter-guard
- D) Mounting the fence unit
- E) Electrical connection

### A) Mounting the Motor

1. Unpack the machine and fasten with 4 hexagon bolts on to the assembled machine stand (Fig.1).
2. Take the motor from its wrappings and prepare as shown in Fig.2.
  - a) Mount the flat-belt tensioning pulley (Fig.2, No.1) in the position shown with the Spanner SW 17.
  - b) Place the flat belt (Fig.2, No.3) on the belt pulley (at the back of No.2).

**IMPORTANT !** In the case of a.c. motors you have to take care that the working capacitor is not damaged when the motor is mounted.

- c) Place the supplied motor fastening screws on the feed table (Fig.1, No.1).
3. Remove the gearing cover (Fig.1, No.2 and 3) after the 3 flat head screws have been unscrewed.
4. Place the toothed belt on to the toothed-belt pulley of the cutter spindle (Fig.3, No.1 and 2).
5. Flange connection of the motor:
 

Take the flat belt which has already been placed on the pulley with your right hand and connect it under the tensioning pulley to the motor housing (Fig.4, No.3).

Now the motor with its toothed-belt pulley is placed on the suspended toothed belt (Fig.4, No.1).

Then the motor is fastened (for the time being without a spanner — Fig.4, No.2) above the motor switch by means of the prepared hexagon bolt and circlip.
6. After the flat belt has been placed on the pulley (Fig.4, No.4) the remaining motor fastening screws are screwed in. Please make sure that the toothed belt is properly tightened, i.e. the motor has to be pressed down as far as the stop and fastened with 3 hexagon bolts and spanner SW 17.

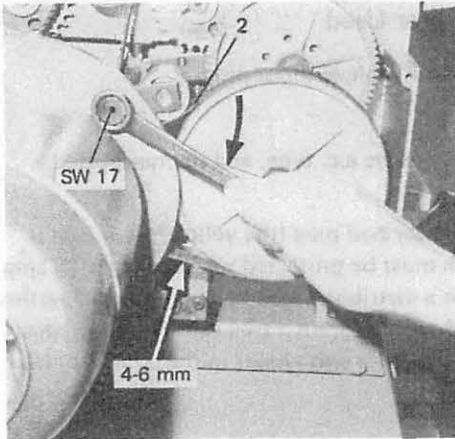


Fig. 5

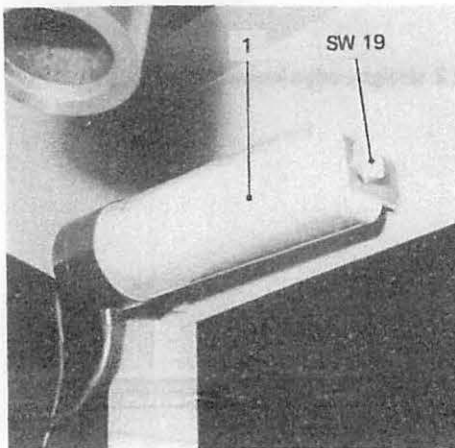


Fig. 6

7. The tensioning pulley which has already been mounted, is now turned down as shown in Fig. 5, so that the flat belt on the opposite side cannot be raised more than 6 mm (approx. 1/4 in.). But on no account must the tensioning roll rest on the belt pulley (Fig. 5, No. 2).

8. Refit the gearing cover to the machine housing.

9. Applies only to single-phase a.c. motors

With a.c. motors the operating capacitor is mounted on the machine stand (Fig. 6, No. 1).

A capacitor plate and 2 flat head screws M 5x8 are supplied with the capacitor.

The plate is fastened to the capacitor with nut and washer with the Spanner SW 19. Subsequently the capacitor is fixed on the inner side of the machine stand with the two flat head screws (Fig. 6). If a self-built worktable is used, the capacitor has to be mounted at a conveniently protected point of the stand.

10. If the flanged motor was not purchased from us, the following points have to be observed:

A threaded hole (M 6) has to be made into the motor shaft on the face side of the motor. The motor belt pulley pressed on to it by you has to be fastened with the cup wheel and socket head screw (M 6x12 DIN 912) (see Fig. 2).

The wiring diagrams on page 16 apply only to motors supplied by us.

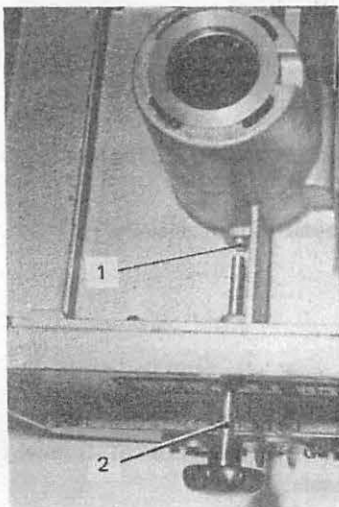


Fig. 7

## B) Mounting the Thicknesser-Setting Unit

Remove the end plug (Fig. 7, No. 1) and screw the clamping bolt (Fig. 7, No. 2) into the threaded hole in the side.

## C) Mounting the Cutter Guard

As you can see from Diagram A, the cutter-guard No. 1 is mounted with the grub screw M 5x35 on the bearing cover of the motor shaft.

If your machine is equipped with the SUVA-guard it has to be mounted instead of the normal cutter guard at the side of the planer table (page 12, Fig. 8).

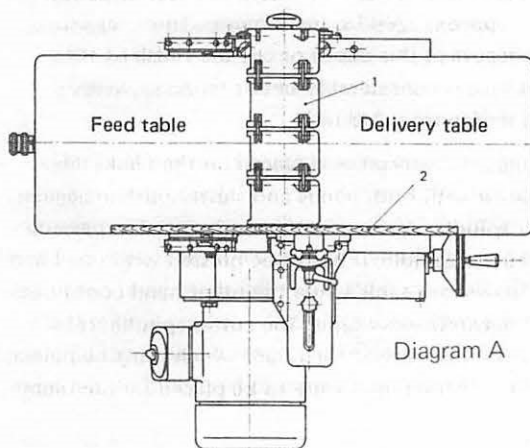


Diagram A

## D) Mounting the Fence Unit

The fence unit, diagram A, No. 2, is mounted with 2 socket head screws on the delivery table (Fig. 4, No. 5).

## E) Connecting a Two or Three-Pin Plug, Depending on the Type of Motor Used

In view of the varying types of plug sockets, the EMCO - REX is supplied with a cable without plug.

Only earthed plugs must be used !

The drive of the machine is effected by built-in flanged motor of single or three-phase a.c. type, and its transmitted directly to the cutter spindle by means of a toothed belt.

If a single-phase motor is used, the cable is connected to a standard commercial earthed plug (the yellow/green lead is the earth wire and has to be connected to the earth contact of the plug) which must be protected with at least a 15 amp. fuse. If a three-phase a.c. motor is used, the cable can be directly connected to a distributor box or to a three-pin earthed plug (the yellow/green lead is the earth wire). After connection the machine should be given a trial run to see, whether the direction of motor rotation is correct. If it is not, it has to be reversed by changing two phases in the plug or in the distributor box.

## SURFACING WITH THE EMCO - REX B 20

- Technical data:
- a) Diameter of cutter spindle 55 mm (approx. 2 5/32 in.) with 2 straight-edge knives 25 x 3 x 260 mm (approx. 1 x 1/8 x 10 1/4 in.).
  - b) Diameter of cutting circle 60 mm (approx. 2 3/8 in.).
  - c) Spindle speed 6700 rev/min.
  - d) Cutting speed 21 m/sec (approx. 4150 ft/min.).
  - e) Surfacing width 260 mm (approx. 10 1/4 in.).
  - f) Maximum depth of cut 3 mm (approx. 1/8 in.).

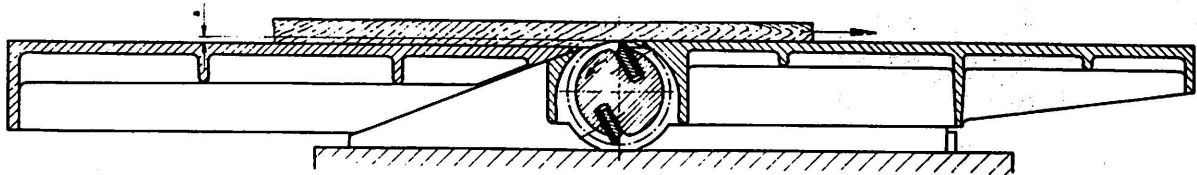


Diagram B

The surfacing machine is used for planing boards and squared timber, for facing the narrow side of boards and for jointing. The knives are set so that they accurately correspond with the height of the delivery table.

If the planer table is lowered by the distance "a", as shown in Diagram B, the depth of cut equals this distance "a".

## CORRECT PROCEDURE FOR SURFACING

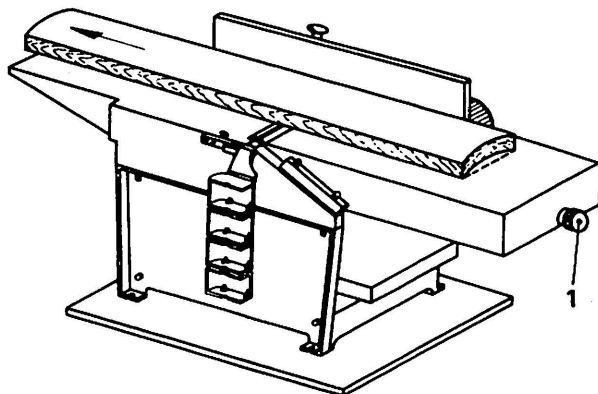


Diagram C

The planer table is adjusted by means of the hand grip shown in Diagram C, No. 1. The depth of cut is shown on a laterally mounted scale.

The average depth of cut for which the machine is set is 1 mm = approx. 3/64 in. (maximum 3 mm = approx. 1/8 in.) because at this depth of cut the finish of the planed surface is considerably better than say with a cut of 3 mm (approx. 1/8 in.).

For planing, the workpiece is placed on the feed table, pressed down with both hands and slowly pushed against the cutter spindle. As soon as the workpiece has passed over the cutter spindle, it has to be pressed with one hand against the delivery table while the other hand continues to press the workpiece against the cutter spindle. It is always the hollow side of the board which must be planed (Diagram C). If the board were to be placed on the table

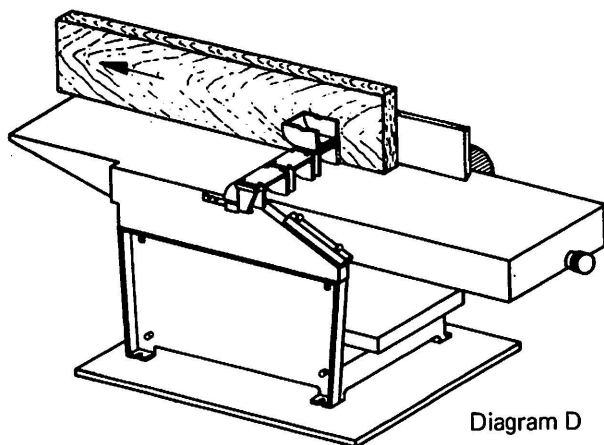


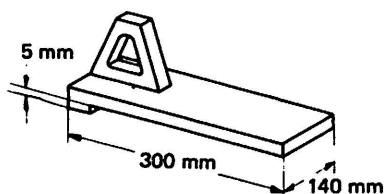
Diagram D

with its curved side, it would be impossible to pass it evenly over the cutter spindle.

For planing the narrow side of a board, the fence is set at right angles with the table surface.

Now the planed surface of the board is pressed against the fence and under even pressure pushed over the cutter spindle (Diagram D).

The cutter spindle has to be covered as far as possible with the cutter guard.



Small workpieces should be planed with the aid of a self-built feeding device to prevent accidents to the hands. The underside of the feeding device can be made slip-resistant by covering it with sanding paper (Diagram E).

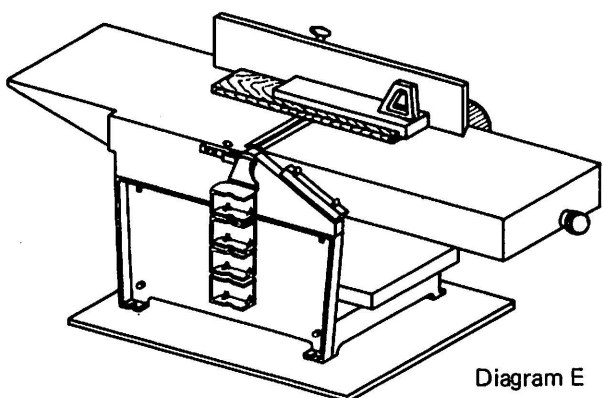


Diagram E

The length stop of the planer is laterally and vertically adjustable and it can be turned sideways in both directions through up to  $45^\circ$  (Diagram F). Hence it is possible also to plane the narrow edges of boards. The lateral adjustability is, therefore, of particular advantage because the cutting edges of the straight-edge knives can be used along their entire length. If for planing the narrow edges the stop would always be in the same position, the knives would blunt much quicker at this point.

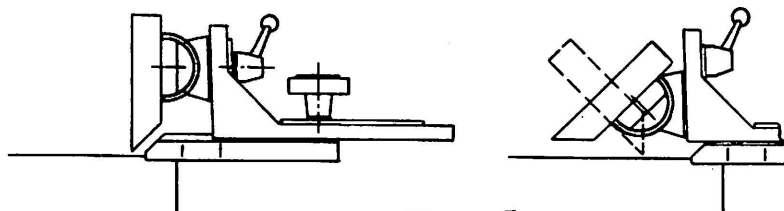


Diagram F

## PREVENTING ACCIDENTS DURING SURFACING

1. The cutter spindle has to be covered as far as possible by means of the cutter-guard. This is particularly important when small workpieces have to be jointed or planed.
2. Only sharp planing knives should be used. This greatly reduces the kick-back danger.
3. For planing small dimensioned (thin) workpieces it is essential that a feeding device is used.
4. The workpieces have to be pressed on to the worktable with the ball of the thumb, not with the fingers.
5. Piled-up wood chips have to be removed with a board, or they have to be blown off the planing and thicknessing table before the workpiece is placed in the machine.

## SUVA - GUARD



### Mounting:

The SUVA-guard is screwed to the side of the planer table with 2 socket head cap screws M 6x20 DIN 912.

### Operation:

By raising the lever (Fig. 8, No. 1) the guard can be removed from the cutter spindle.

Fig. 8

This is necessary:

1. When surfacing a board (setting the board thickness).
2. When thicknessing, in order to ensure satisfactory chip removal.

For facing the narrow side of a board, the SUVA-guard is moved laterally according to the board thickness and placed on the planer table.

If workpieces have to be surfaced which are wider than the planer table, the knurled nut "b" is loosened and the guard turned away or removed from the planer table altogether.

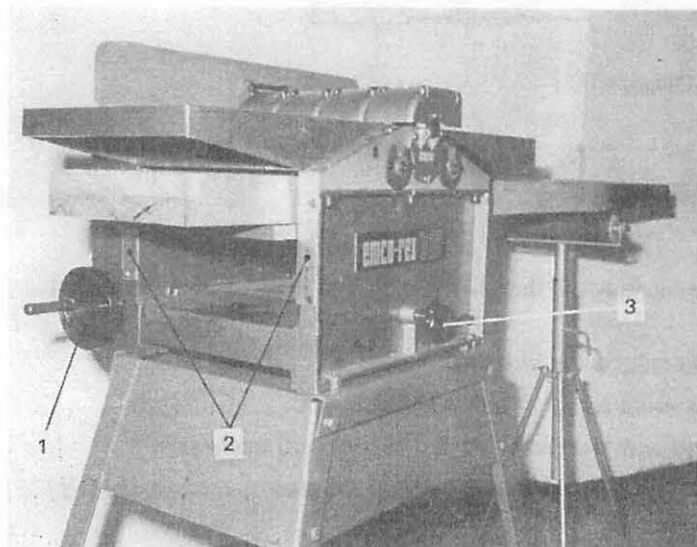
## THICKNESSING WITH THE EMCO - REX B 20

### Technical data:

- a) Thicknessing capacity 130 x 250 mm (approx. 5 1/8 x 9 7/8 in.).
- b) Table length 440 mm (approx. 17 5/16 in.).
- c) Maximum depth of cut 3 mm (approx. 1/8 in.).
- d) Automatic feed 6.2 m/min (approx. 20 ft 4 in./min).
- e) 2 straight-edge knives 25 x 3 x 260 mm (approx. 1 x 1/8 x 10 1/4 in.).
- f) Diameter of cutting circle 60 mm (approx. 2 3/8 in.).
- g) Spindle speed 6700 rev/min.
- h) Cutting speed 21 m/sec (approx. 4150 ft/min).

With the thicknessing machine boards and planks can be planed parallel to a desired thickness.

The automatic feed and the multi-plate kick-back guard ensure a continuous and safe operation of the machine.



The required thickness of the workpiece is set by means of the handwheel (Fig. 9, No.1) and setting scale (Fig. 9, No. 2). Subsequently the thicknesser table is locked with a clamping screw (Fig. 9, No. 3). The automatic feed operated by the flanged motor is transmitted to the transport and grooved roller respectively by way of flat belts (safty factor in case of overloads), a gear-wheel and chain wheels with simple and roller chains.

Fig. 9



## CORRECT PROCEDURE FOR THICKENING

1. Prior to thickening, every workpiece must be planed on one side. This is absolutely essential to ensure that the surfaces become even.
2. The planed board is placed with the planed side on to the thickener table and moved forward as far as the grooved roller.
3. Workpiece of uneven thickness are always inserted with the thicker end first to prevent jamming the machine.
4. If the maximum depth of cut of 3 mm (approx. 1/8 in.) is exceeded, the workpiece cannot be fed into the machine.
5. Hence greater depths of cut can only be obtained by several machine passages.
6. If the workpiece jams during its passage through the machine (due to an excessive depth of cut) the thickener table has to be lowered by about 1 mm (approx. 3/64 in.) by means of the handwheel and the workpiece pushed forward again.
7. If narrow workpieces (fillets) have to be machined, they must not always be placed on the same point of the table so that the entire length of the knife is utilized.
8. The thickener table should at intervals be cleaned to remove chips and other contaminating deposits.
9. If after some time a workpiece should become stuck due to excessive friction, the thickener table has become tacky through resin accumulations (especially if fir wood and others have been worked). In this case the table must be cleaned with a turpentine-soaked rag. After that the table surface has to be wiped dry and rubbed with paraffin. The table must not be treated with oil as the workpieces would absorb the oil and become unfit for gluing, staining and varnishing.
10. If very thin (less than 5 mm = approx. 13/64 in.), small boards have to be surfaced, they should be placed on a planed board which is about 20 mm (approx. 3/4 in.) thick and be passed through the machine together.

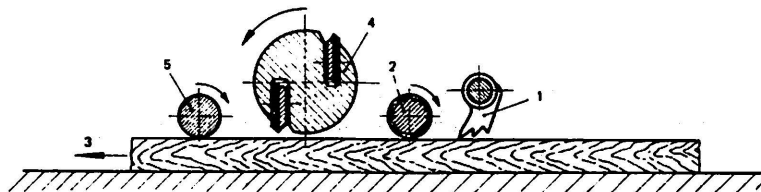


Diagram G

1. The EMCO - REX B 20 Thickening Machine is provided with 16 kick-back plates (fingers) which are spaced across the entire width of the table to prevent the workpieces from recoiling (Diagram G).

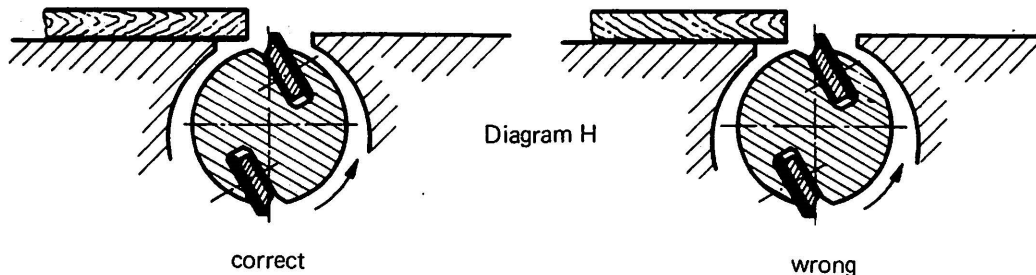
- 1 — Kick-back guard
- 2 — Grooved roller
- 3 — Workpiece
- 4 — Cutter spindle
- 5 — Transporting roller

If workpieces of different thicknesses are planed simultaneously it could happen that the thinner pieces recoil. This is prevented by the multi-plate kick-back guard.

2. The cutter spindle is covered with the linked covers of the cutter-guard.
3. Care must be taken that any nails or other foreign bodies are removed from the workpieces prior to thickening.
4. Workpieces which are shorter than 130 mm (approx. 5 1/8 in.) must not be fed into the machine because the transporting roller is unable to safely guide them through the machine.
5. After the work has been completed, the thickener table has to be lowered into the bottommost position and the chips removed.

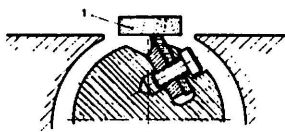
## HANDLING THE WORKPIECES

Boards are mostly placed upended on the floor so that sand and small stones become embedded in the ends which can cause damage to the planing knives. You can protect your cutters by having the rough ends of the boards cut off prior to planing.



To ensure that a perfect surface is obtained, it is important that for surfacing and thicknessing the workpieces are fed into the machine in the direction of the grain (Diagram H).

## SHARPENING (HONING) THE STRAIGHT-EDGE KNIVES



If apart from the chips much wood dust is generated during planing this is an indication that the knives are no longer sufficiently sharp. In this case the straight-edge knives can, without dismantling them, be sharpened in the machine with a fine-grain whetstone (Diagram J, No. 1) (size approx. 25 x 15 x 100 mm = approx. 1 x 5/8 x 4 in.). The whetstone is oiled and placed against the cutter spindle as shown in Diagram J. In this position the stone is evenly moved forward and backward along the entire length of the knife under moderate pressure until the knife is sharp.

## CHANGING AND SETTING THE STRAIGHT-EDGE KNIVES

After the machine has been used for some time, the knives may become notchy, due to foreign bodies in the workpieces (sand, small stones etc.). These notches will show in the machined workpieces in the form of raised longitudinal ribs. Straight-edge knives which are notchy or blunt, and are unsuitable for further sharpening with the whetstone, must be dismantled and ground outside the machine.

It is very advantageous if you have a spare set of knives which you can use until the first set is available again.

### 1. Dismantling the straight-edge knives

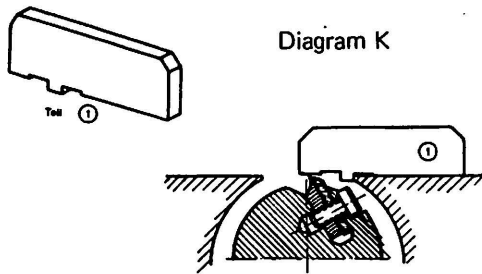
The feed table is lowered into its bottommost position by means of the handle so that the fixing screws of the knives can be easily reached.

Now the screws of one of the knives are removed with the socket key, and the backing plate with the straight-edge knife taken out. After turning the cutter spindle a little further, the second knife is removed in the same way. The grooves of the cutter spindle, the backing plates and the straight-edge knives have to be thoroughly cleaned to remove all wood dust.

### 2. Installation of the ground straight-edge knives and setting by means of a surfaced wood fillet

One of the knives is inserted together with the backing plate into one of the grooves of the cutter spindle, and temporarily held by the 4 socket screws. Now a ruler is held upended on the delivery table and the cutter spindle is turned so that the knife reaches its highest point. In this position both ends of the cutting edge of the knife must just touch the ruler. If they do not touch it, the knife, with slightly tightened screws, must be adjusted with both its laterally projecting ends until it reaches the level of the ruler. In this position the screws are tightened.

### 3. Setting the straight-edge knives with the Setting Gauge Ref. 6275



For this purpose the straight-edge knives are inserted into the cutter spindle and temporarily fixed. The setting gauge (Diagram K, No. 1) is placed on the side of the delivery table as shown in Diagram K. The cutter spindle is turned until the knife is parallel with the setting gauge. A correctly set knife must with both its ends fully bear against the setting gauge. Care must be taken that the setting gauge rests evenly on the delivery table.

### MAINTENANCE OF THE MACHINE

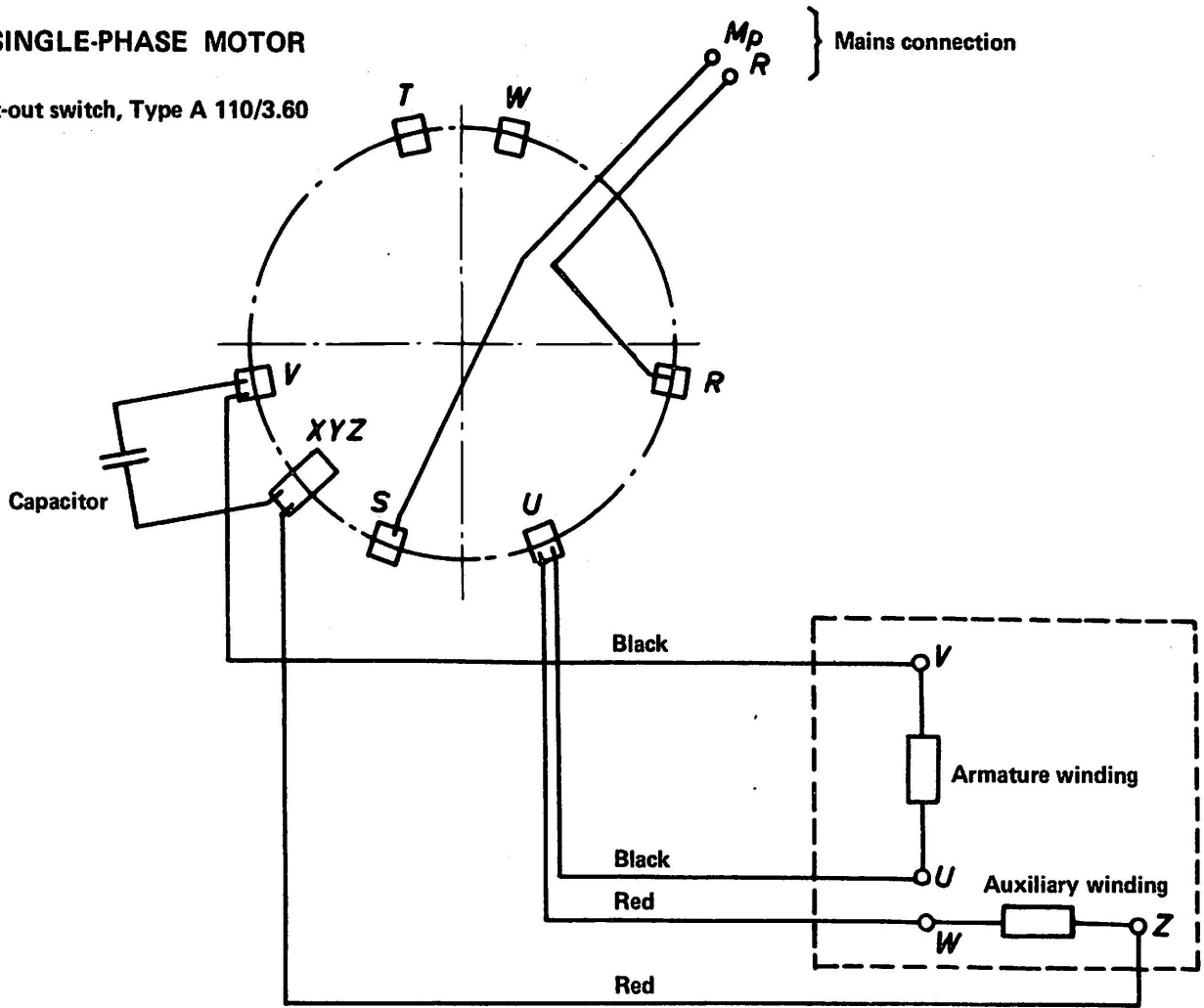
The machine is maintenance-free and therefore not subject to any lubrication instructions.

In spite of that, the machine parts should at certain intervals be cleaned of adhering wood dust and chips.

# WIRING DIAGRAM EMCO - REX B 20

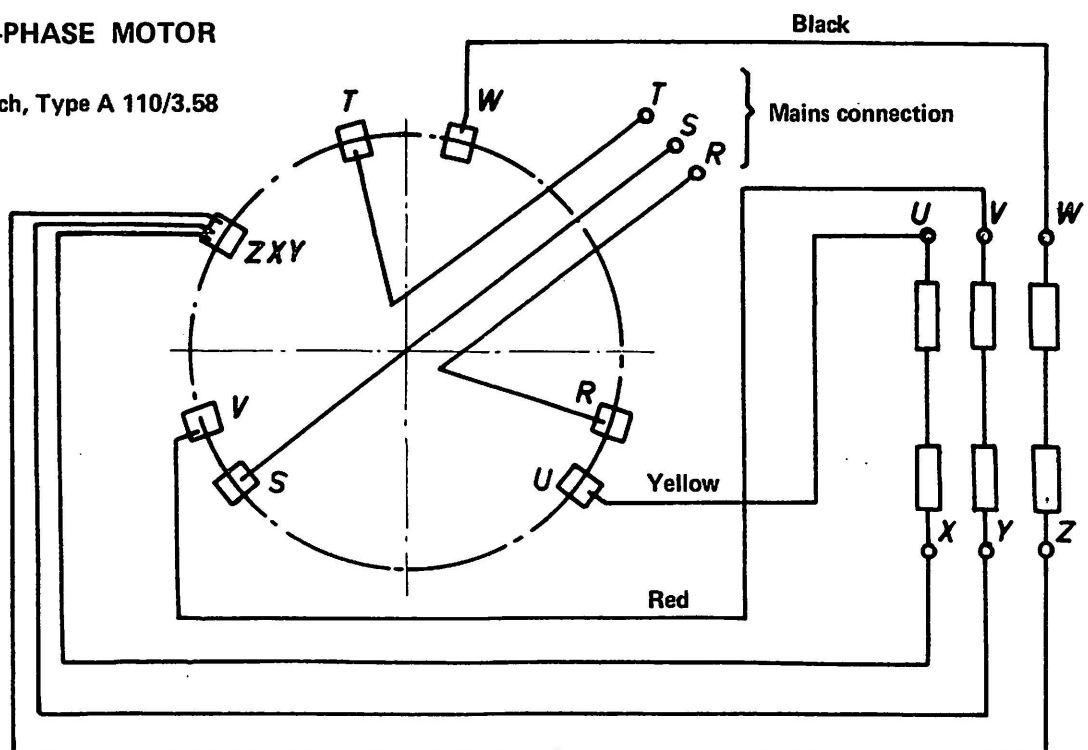
## SINGLE-PHASE MOTOR

Cut-out switch, Type A 110/3.60



## THREE-PHASE MOTOR

Cut-out switch, Type A 110/3.58



# EMCO-REX B 20

ERSATZTEILLISTE

\*

SPARE PARTS LIST

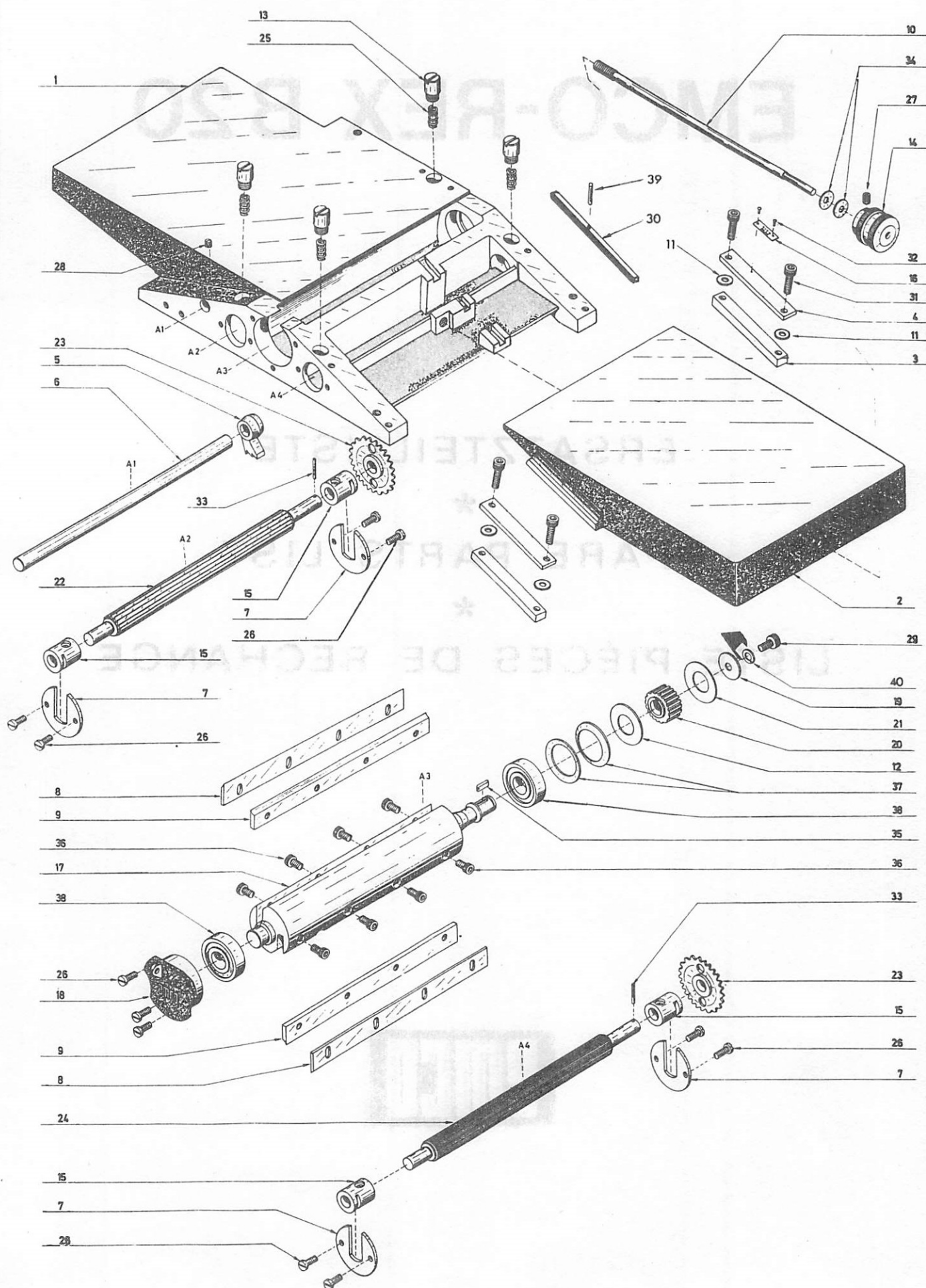
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LISTE PIÈCES DE RECHANGE



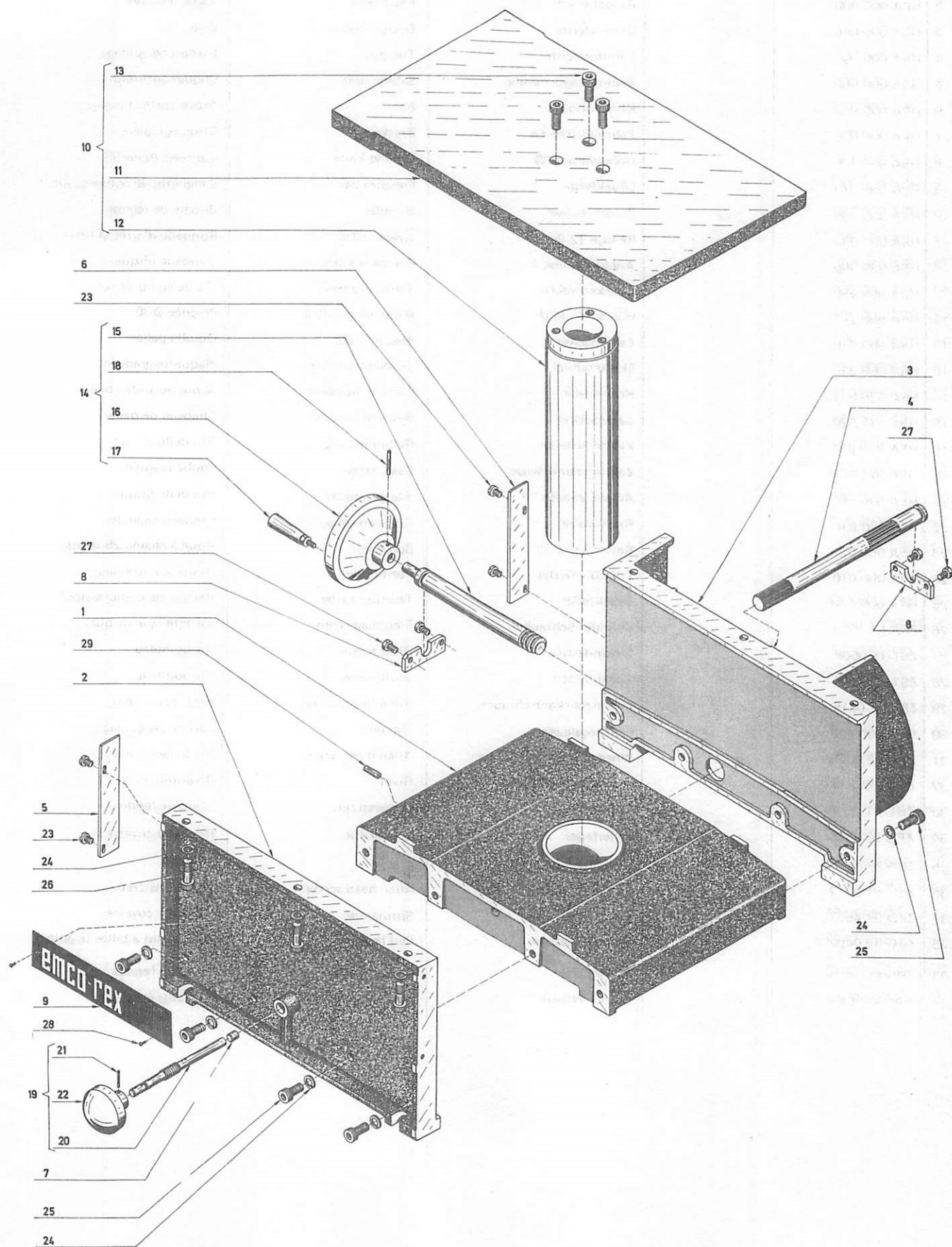


ABRICHTTISCH / VORSCHUBEINHEIT  
 SURFACING TABLE / FEED UNIT  
 TABLES DE DEGAUCHISSEUSE / DISPOSITIF D'AVANCE



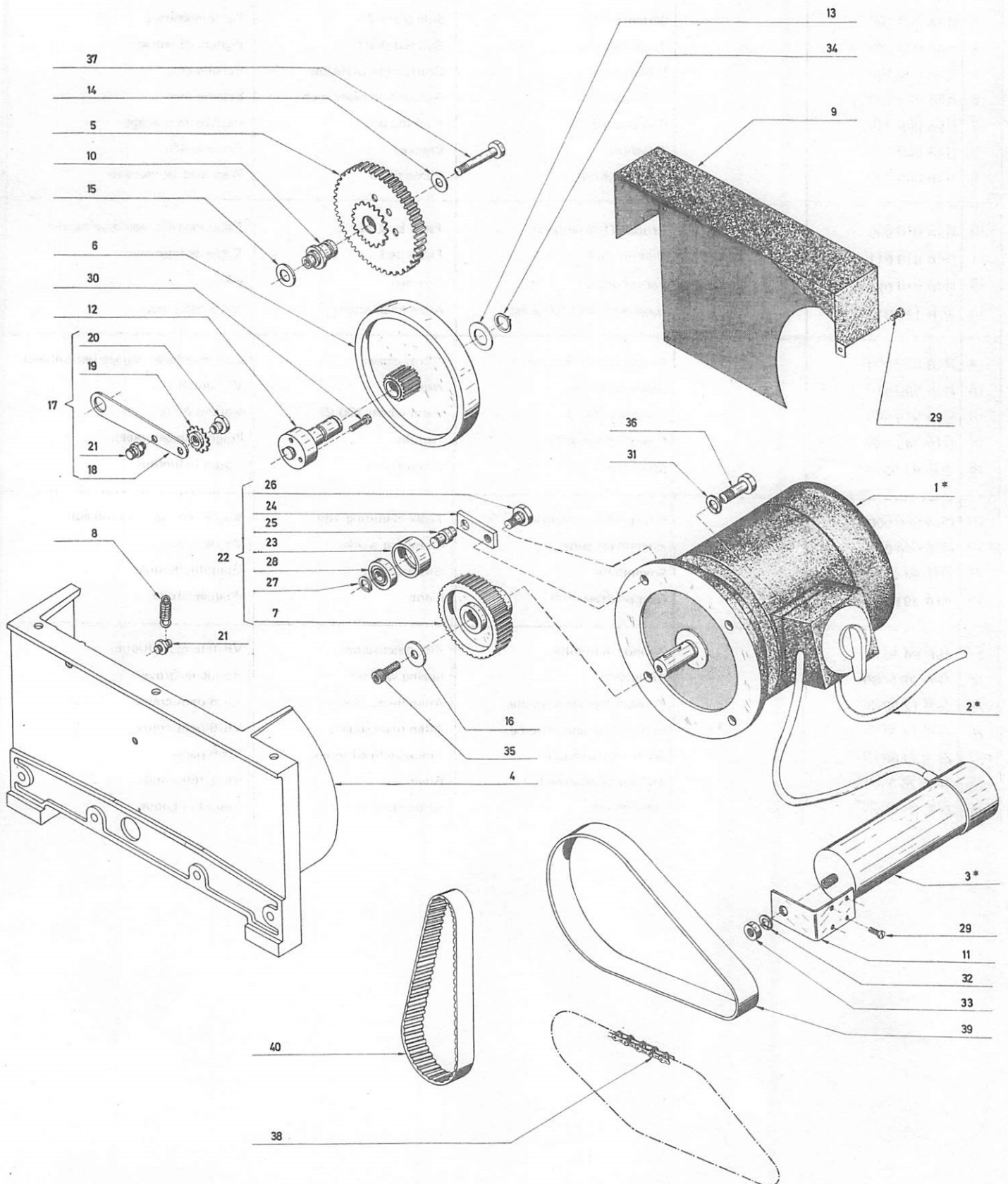
			<b>Abrichttisch/ Vorschubeinheit</b>	<b>Surfacing table/ feed unit</b>	<b>Tables de dégauchisseuse/ Dispositif d'avance</b>
<b>Pos.</b>	<b>No.</b>		<b>Benennung</b>	<b>Description</b>	<b>Désignation</b>
1	H5A 000 020		Abgabetisch	Discharge table	Table de sortie
2	H5A 000 030		Aufgabetisch	Feed table	Table d'entrée
3	H5A 000 040		Distanzleiste	Bottom gib	Cale
4	H5A 000 050		Führungsleiste	Top gib	Lardon de guidage
5	H5A 000 060		Rückschlagsicherung	Safety stop	Cliquet anti-retour
6	H5A 000 070		Klinkenbolzen	Bar	Arbre porte-cliquets
7	H5A 000 080		Führungsscheibe	Bracket	Disque-glissière
8	H5A 000 130		Hobelmesser SS	Planing knife	Couteau Acier SS
9	H5A 000 141		Druckleiste	Pressure bar	Languette de compression
10	H5A 000 200		Zustellspindel	Spindle	Broche de réglage
11	H5A 000 390		Beilage 12 Ø	Spacer 12 Ø	Rondelle d'arrêt Ø 12
12	H5A 020 050		Anlaufscheibe 2	Flange washer	Rondelle disque 2
13	H5A 000 250		Druckschraube	Tension screw	Vis de compression
14	H5A 000 261		Handgriff 30 Ø	Hand wheel 30 Ø	Poignée Ø 30
15	H5A 000 270		Lagerbüchse	Bearing bush	Douille-palier
16	H5A 000 280		Skalenschild	Graduation plate	Plaquette-graduée
17	H5A 020 011		Hobelwelle	Planing Spindle	Arbre porte-couteaux
18	H5A 020 020		Lagerdeckel	Bearing housing	Chapeau de palier
19	H5A 020 031		Klemmscheibe	Retaining ring	Rondelle d'arrêt
20	H5A 020 060		Zahnriemenscheibe	Gear wheel	Poulie crantée
21	H5A 020 040		Anlaufscheibe 1	Flange washer	Rondelle disque 1
22	H5A 050 010		Riffelwalze	Grooved roller	Rouleau cannelé
23	H5A 050 020		Kettenrad Z 25	Sprocket	Roue à chaîne 25 dents
24	H5A 060 010		Transportwalze	Feed roller	Rouleau entraineur
25	H4A 000 140		Druckfeder	Tension spring	Ressort de compression
26	ZSR 84 0512		Zylinder-Schraube	Flat head screw	Vis tête cylindrique
27	ZST 16 0608		Gewindestift	Grub screw	Vis pointeau
28	ZST 38 0506		Gewindestift	Grub screw	Vis pointeau
29	ZSR 12 0615		Innensechskantschraube	Allen head screw	Vis 6 pans creux
30	H5A 000 420		Führungsleiste	Top gib	Lardon de guidage
31	ZSR 12 0625		Innensechskantschraube	Allen head screw	Vis 6 pans creux
32	ZNA 76 0144		Halbrundkerbnagel	Rivet	Rivet tête ronde
33	ZHL 81 0326		Spannhülse	Grooved pin	Goupille fendue
34	ZFD 93 1600		Tellerfeder	Spring disc	Rondelle cuvette
35	ZFD 85 5516		Paßfeder	Key	Clavette
36	ZSR 11 0612		Innensechskantschraube	Allen head screw	Vis 6 pans creux
37	ZFD 94 4653		Tellerfeder	Spring disc	Rondelle cuvette
38	ZLG 62 0402		Rillenkugellager	Ball bearing	Roulement à billes (à gorge)
39	ZHL 81 0416		Spannhülse	Grooved pin	Goupille fendue
40	ZSB 98 0640		Fächerscheibe	Spring washer	Rondelle éventail

**TISCHGEHÄUSE / DICKTENTISCH**  
**TABLE HOUSING / TABLE BED**  
**CARTER INFERIEUR / TABLE DE RABOTAGE**



			<b>Tischgehäuse/ Dicktentisch</b>	<b>Table housing/ Table bed</b>	<b>Carter inférieur/ Table de rabotage</b>
<b>Pos.</b>	<b>No.</b>		<b>Benennung</b>	<b>Description</b>	<b>Désignation</b>
1	H5A 000 010		Tischgehäuse	Table housing	Carter inférieur
2	H5A 000 090		Seitenteil 1	Side plate 1	Paroi latérale 1
3	H5A 000 100		Seitenteil 2	Side plate 2	Paroi latérale 2
4	H5A 000 170		Zustellritzel	Splined shaft	Pignon de réglage
5	H5A 000 180		Maßstab cm	Graduation plate cm	Echelle cm.
6	H5A 000 190		Maßstab inch	Graduation plate inch	Echelle inch
7	H5A 000 210		Klemmpfropfen	Locking pin	Pastille de blocage
8	H5A 000 220		Anschlag	Bracket	Palier-butée
9	H5A 000 320		Firmenschild	Name plate	Plaquette de marque
10	H5A 010 000		Gruppe Dicktentisch	Table bed, comp.	Table de rabotage (assemblée)
11	H5A 010 011		Dicktentisch	Table bed	Table de rabotage
12	H5A 010 021		Führungssäule	Column	Fût
13	ZSR 12 0815		Innensechskantschraube	Allen head screw	Vis 6 pans creux
14	H5A 030 000		Gruppe Zustellschnecke	Worm comp.	Commande de réglage (assemblée)
15	H5A 030 010		Zustellschnecke	Worm	Vis sans fin
16	C3A 010 080		Handrad 100 Ø	Hand wheel 100 Ø	Volant Ø100
17	C3A 042 000		Gruppe Kegelgriff	Handle	Poignée (assemblée)
18	ZHL 81 0328		Spannhülse	Grooved pin	Goupille fendue
19	H5A 040 000		Gruppe Klemmschraube	Table clamping assy	Vis de blocage (assemblée)
20	H5A 040 010		Klemmschraube	Clamping screw	Vis de blocage
21	ZHL 81 0320		Spannhülse	Grooved pin	Goupille fendue
22	H1A 291 000		Gruppe Sterngriff	Knob	Poignée étoile
23	ZSR 84 0510		Zylinderschraube	Flat head screw	Vis tête cylindrique
24	ZRG 28 0080		Federring	Spring washer	Rondelle Grover
25	ZSR 12 0820		Innensechskantschraube	Allen head screw	Vis 6 pans creux
26	ZSR 12 0825		Innensechskantschraube	Allen head screw	Vis 6 pans creux
27	ZSR 33 0510		Sechskantschraube	Hexagon head screw	Vis 6 pans
28	ZNA 76 0144		Halbrundkerbnagel	Rivet	Rivet tête ronde
29	ZHL 81 0520		Spannhülse	Grooved pin	Goupille fendue

**MOTOR / GETRIEBE**  
**MOTOR / DRIVE SYSTEM**  
**MOTEUR / ENTRAÎNEMENT**



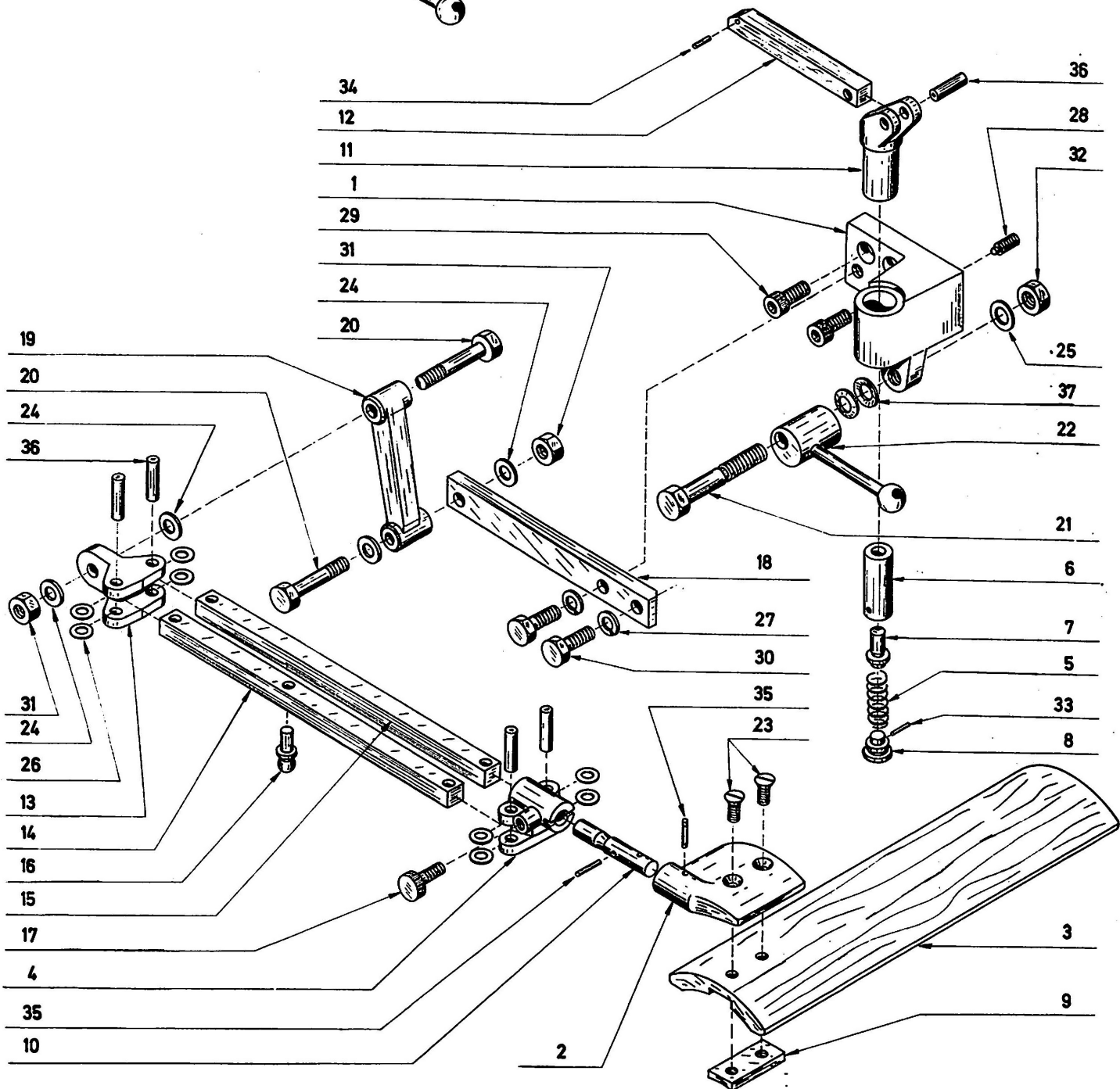
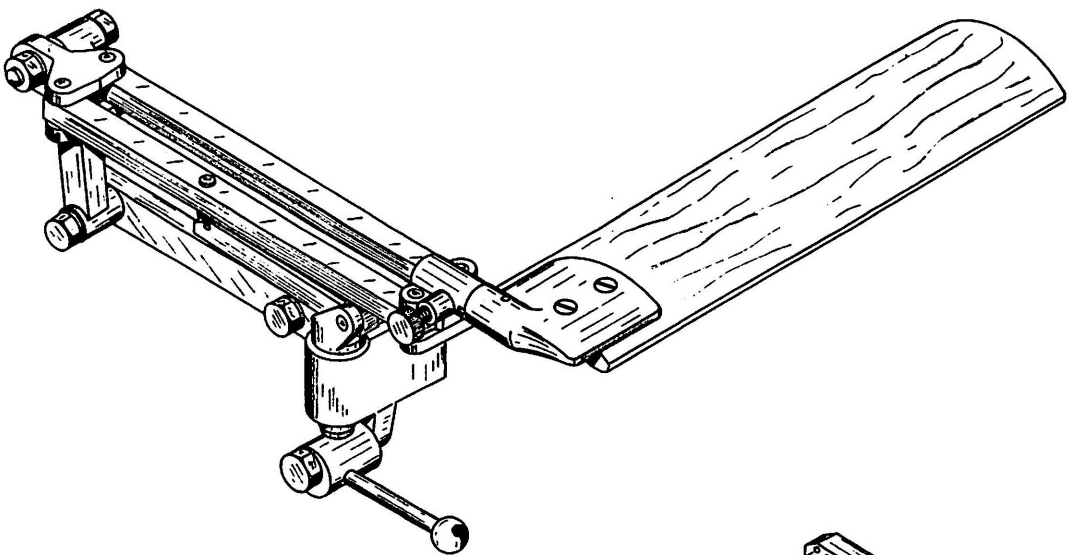


			Motor/Getriebe	Motor/Drive system	Moteur/Entrainement
Pos.	No.		Benennung	Description	Désignation
1	ZMO 35 3380 3440		Drehstrommotor * 80/B5/P33 N = 1,5 PS n = 3000 U/min. mit 3-pol.angebautem Ausschalter	Three phase motor * 80/B5/P33 N = 1,5 HP n = 3000 RPM with built-in switch	Moteur triphasé * 80/B5/P33 N = 1,5 CV n = 3000 t/minute avec interrupteur tripolaire incorporé
1	ZMO 35 1110 1220 1230 1240 1250 36 1110 1115 1220		Einph.Wechselstrommotor 80/B5/P33 N = 1,36 PS n = 3000 U/min. mit 3-pol.angebautem Ausschalter	Single phase motor 80/B5/P33 N = 1,36 HP n = 3000 RPM with built-in switch	Moteur monophasé 80/B5/P33 N = 1,36 CV n = 3000 t/minute avec interrupteur tripolaire incorporé
2	ZKB 02 3100		Kabel (schwarz) YMM3x1 Länge: 3 m	Cable (black) YMM3x1 single phase Length: 118 inch	Cable conducteur (noir) YMM 3x1 longueur = 3 m
2	ZKB 02 4100		Kabel (schwarz) YMM4x1 Länge: 3 m	Cable (black) YMM4x1 three phase Length: 118 inch	Cable conducteur (noir) YMM4x1 longueur = 3 m
3	ZKO 16 4447		Kondensator 30 $\mu$ F 220 Volt (60 $\phi$ x195) 50 Hz	Condenser 30 $\mu$ F 220Volt(60 $\phi$ x7 43/64in)50Hz	Condensateur 30 $\mu$ F 220 Volts (60 $\phi$ x195) 50 C/s
3	ZKO 15 0100		Kondensator 100 $\mu$ F 115 Volt (70 $\phi$ x180) 60 Hz	Condenser 100 $\mu$ F 115Volt(70 $\phi$ x7 3/32in.)60Hz	Condensateur 100 $\mu$ F 115 Volts (70 $\phi$ x180) 60 C/s
4	H5A 000 100		Seitenteil 2	Side plate 2	Paroi latérale 2
5	H5A 000 110		Getrieberad	Gear wheel	Engrenage d'entraînement
6	H5A 000 120		Riemenscheibe	Pulley	Poulie plate
7	H5A 000 152		Zahnriemenscheibe	Toothed belt sprocket	Poulie crantée
8	H5A 000 160		Zugfeder	Tensioning spring	Ressort de traction
9	H5A 120 000		Gr. Getriebeschutz	Cover	Couvercle projecteur
10	H5A 000 300		Lagerbolzen	Bearing shaft	Axe-palier
11	H5A 000 310		Kondensatorlasche	Condenser bracket	Equerre du condensateur
12	H5A 000 340		Lagerbolzen	Bearing shaft	Axe-palier
13	H5A 000 350		Beilagscheibe	Washer	Rondelle plate
14	H5A 000 360		Beilagscheibe	Washer	Rondelle plate
15	H5A 000 370		Beilagscheibe	Washer	Rondelle plate
16	H5A 000 380		Klemmscheibe	Retaining ring	Rondelle de blocage
17	H5A 080 000		Gruppe Kettenspanner	Chain tensioner comp.	Tendeur de chaîne
18	H5A 080 010		Spannblech	Lever arm	Bras du tendeur
19	H5A 080 020		Kettenrad	Sprocket	Roue à chaîne
20	H5A 080 030		Führungsschraube	Bearing bolt	Vis-pivot
21	H5A 080 040		Federbolzen	Tensioning spring bolt	Attache supérieure du ressort
22	H5A 130 000		Gruppe Rollenspanner	Tensioning roller comp.	Rouleau tendeur (assemblé)
23	H5A 130 010		Rolle	Roller	Rouleau
24	H5A 130 020		Spannblech	Lever arm	Bras du tendeur
25	H5A 130 030		Lagerbolzen	Bearing shaft	Axe-palier
26	H5A 130 040		Klemmschraube	Fixing bolt	Vis de blocage
27	ZRG 71 1010		Sicherungsring	Circlip	Circlip
28	ZLG 60 0002		Rillenkugellager	Ball bearing	Roulement à billes (à gorges)
29	ZSR 84 0508		Zylinder-Schraube	Flat head screw	Vis tête cylindrique
30	ZSR 84 0520		Zylinder-Schraube	Flat head screw	Vis tête cylindrique
31	ZRG 28 0100		Federring	Spring washer	Rondelle grover
32	ZRG 28 0120		Federring	Spring washer	Rondelle grover
33	ZMU 34 1200		Sechskantmutter	Hexagon nut	Ecrou 6 pans
34	ZRG 71 1610		Sicherungsring	Circlip	Circlip
35	ZSR 12 0612		Innensechskantschraube	Allen head screw	Vis 6 pans creux
36	ZSR 33 1030		Sechskantschraube	Hexagon head screw	Vis 6 pans
37	ZSR 31 0850		Sechskantschraube	Hexagon head screw	Vis 6 pans
38	ZKE 18 8680		Rollenkette	Chain	Chaîne à rouleau
39	ZRM 71 6251		Flachriemen	Flat belt	Courroie plate
40	ZRM 51 9190		Zahnriemen	Tooth belt	Courroie crantée

\* ) Bei Bestellung bitte Spannung und Frequenz angeben. — When ordering please state voltage and frequency. —

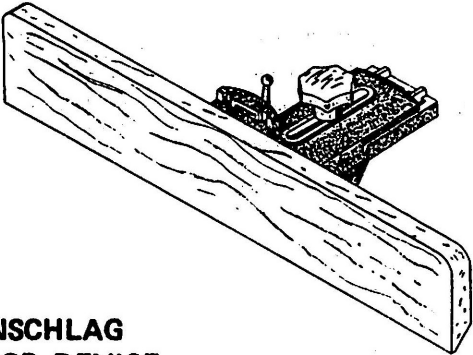
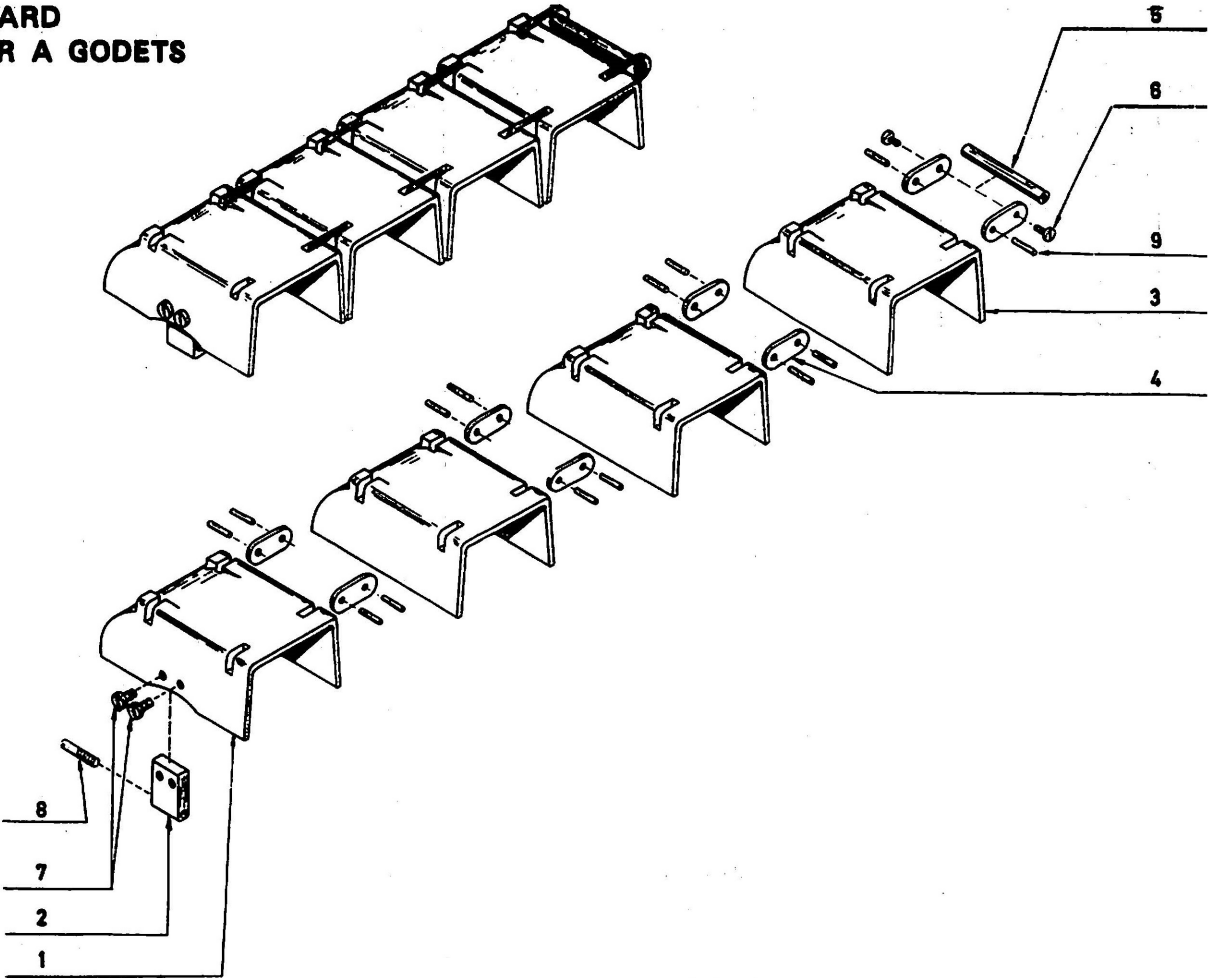
A la commande spécifier le voltage et la fréquence du moteur.

SUVA - SCHUTZ  
SUVA - GUARD  
PROTECTEUR "SUVA"

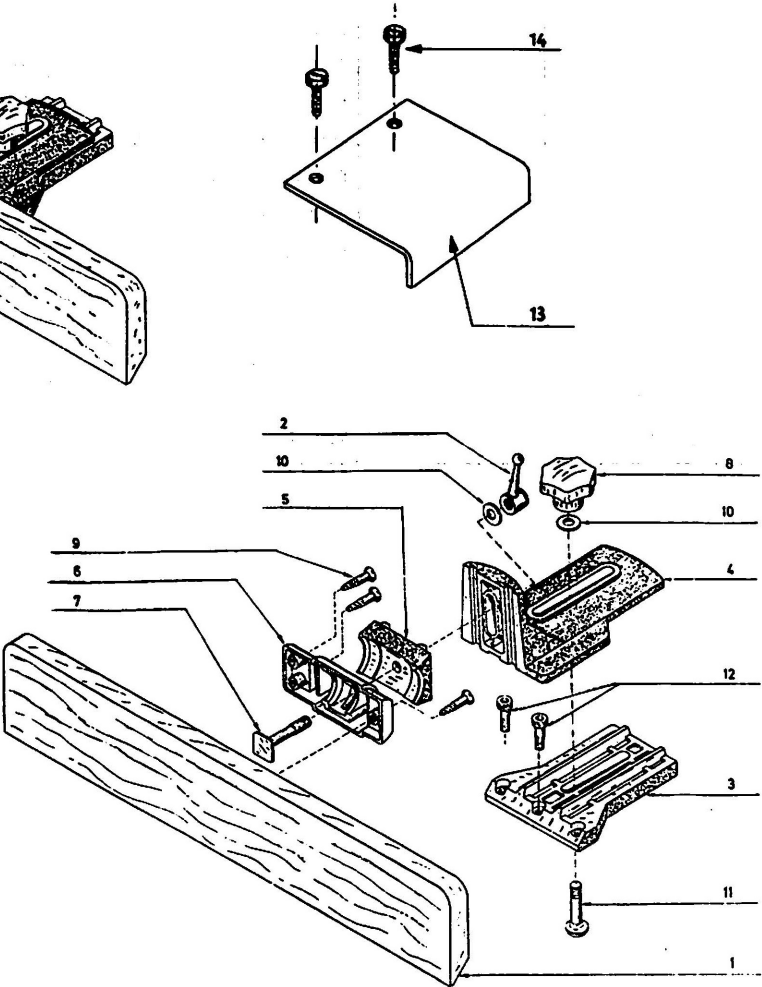


			SUVA-Schutz	SUVA-Guard	Protecteur "SUVA"
Pos.	No.		Benennung	Description	Désignation
1	H5B 210 010		Schutzträger	Guard bracket	Support du protecteur
2	H5B 211 010		Plattenträger	Guard holder	Support du protège-lame
3	H5B 211 020		Deckplatte	Guard	Protège-lame
4	H5B 212 010		Gelenkkopf	Swivel head	Tête d'articulation
5	H4A 000 140		Druckfeder	Compression spring	Ressort de compression
6	H4B 211 010		Federhülse	Spring housing	Douille du ressort
7	H4B 211 020		Federbolzen	Spring bolt	Cheville du ressort
8	H4B 211 030		Stopfen	Plug	Bouchon-arrêt
9	H4B 213 030		Schraubblech	Fixing plate	Contre-plaquette de fixation
10	H4B 213 040		Drehstift	Shaft	Tige tournante
11	H4B 212 010		Gelenkbolzen	Swivel bolt	Axe d'articulation
12	H4B 210 030		Gelenkhebel	Swivel arm	Bras de levier
13	H4B 214 020		Gelenk	Swivel	Articulation
14	H4B 214 030		Gelenkarm	Swivel arm	Bras articulé
15	H4B 214 040		Parallelarm	Parallel arm	Bras parallèle
16	H4B 214 050		Kugelzapfen	Pivot	Cheville tête sphérique
17	H4B 214 060		Rändelschraube	Knurled screw	Vis tête moletée
18	H5B 210 030		Ausleger	Arm	Bras-flèche
19	H5B 210 020		Gelenkhebel	Swivel arm	Levier articulé
20	H4B 210 040		Paßschraube M 8	Pivot bolt M 8	Boulon M 8
21	H4B 210 050		Paßschraube M 10	Pivot bolt M 10	Boulon M 10
22	H4B 215 000		Gruppe Exzenter	Eccentric bush comp.	Excentrique (assemblé)
23	ZSR 63 0515		Senkschrauben	Countersunk screw	Vis tête fraisée
24	ZSB 25 0840		Scheibe 8,4	Washer 8,4	Rondelle plate 8,4
25	ZSB 25 1050		Scheibe 10,5	Washer 10,5	Rondelle plate 10,5
26	A2A 060 050		Scheibe	Washer	Rondelle plate
27	ZRG 27 0080		Federring	Spring washer	Rondelle Grover
28	ZST 17 0618		Gewindestift	Grub screw	Vis pointeau
29	ZSR 12 0620		Innensechskantschraube	Allen head screw	Vis 6 pans creux
30	ZSR 33 0825		Sechskantschraube	Hexagon head screw	Ecrou 6 pans
31	ZMU 34 0800		Sechskantmutter	Hexagon nut	Ecrou 6 pans
32	ZMU 34 1000		Sechskantmutter	Hexagon nut	Ecrou 6 pans
33	ZHL 81 0316		Spannhülse	Grooved pin	Goupille fendue
34	ZHL 81 0212		Spannhülse	Grooved pin	Goupille fendue
35	ZHL 81 0420		Spannhülse	Grooved pin	Goupille fendue
36	ZST 61 0628		Nietstift	Pin	Tige rivetée
37	ZFD 93 2001		Tellerfeder	Spring disc	Rondelle assiette

**MESSERSCHUTZ  
CUTTER GUARD  
PROTECTEUR A GODETS**

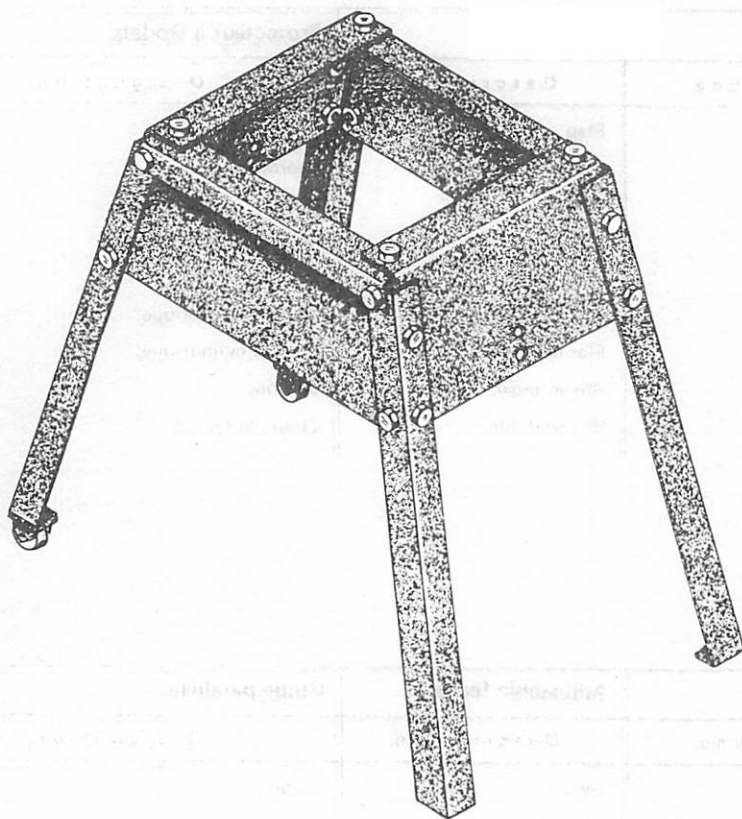


**ANSCHLAG  
STOP DEVICE  
GUIDE PARALLELE**

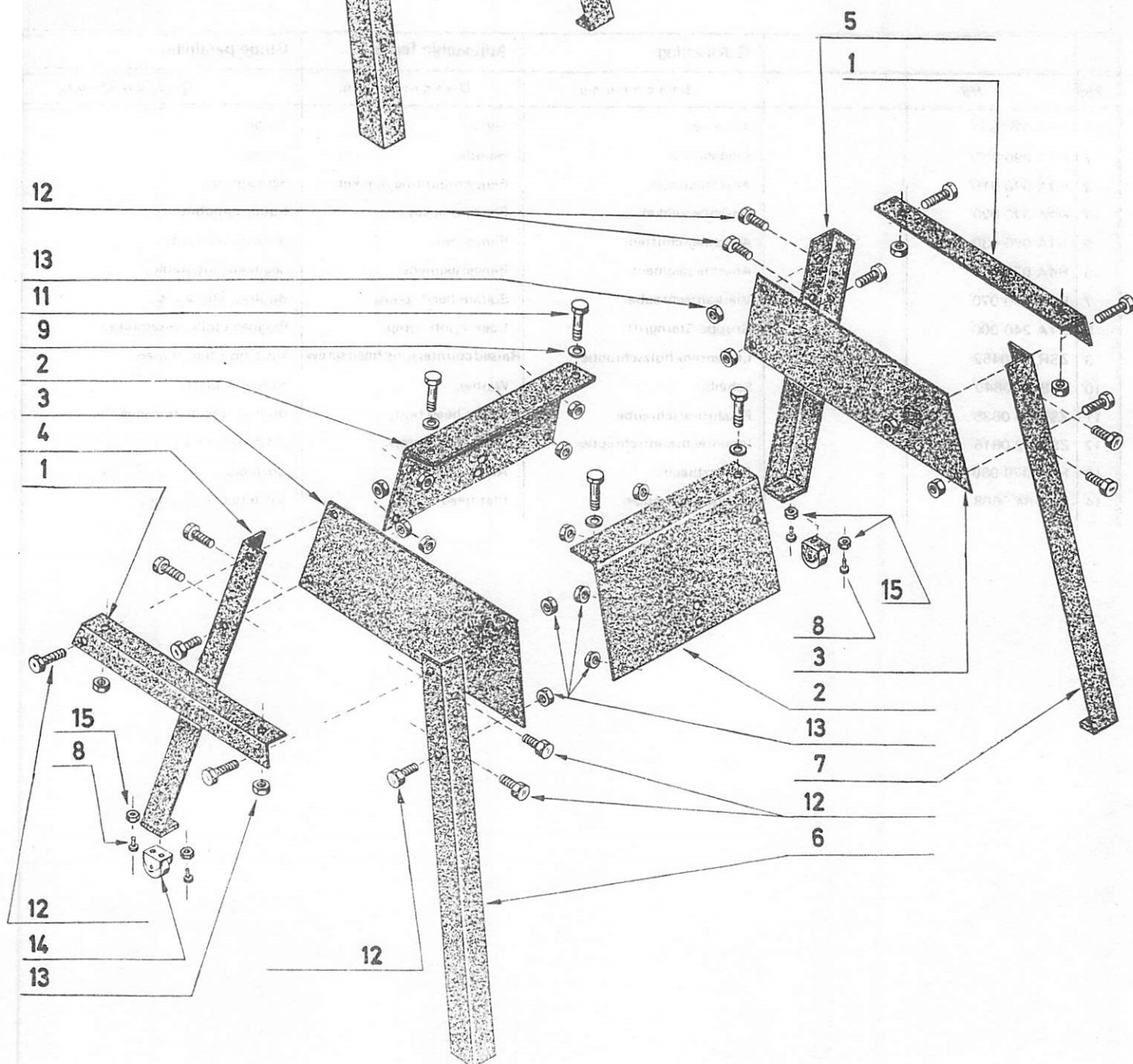


			Messerschutz	Cutter guard	Protecteur à Godets
Pos.	No.		Benennung	Description	Désignation
1	H5A 070 010		Klappe	Flap	Godet
2	H5A 070 030		Scharnier	Hinge	Charnière
3	H4A 080 020		Klappe	Flap	Godet
4	H4A 080 030		Lasche	Fishplate	Articulation
5	H4A 080 050		Stift 6 Ø	Bush 6 Ø	Tige Ø 6
6	ZSR 84 0408		Zylinder-Schraube	Flat head screw	Vis tête cylindrique
7	ZSR 84 0510		Zylinder-Schraube	Flat head screw	Vis tête cylindrique
8	ZSR 27 0535		Schaftschraube	Hinge screw	Goujon
9	ZHL 46 0416		Spannhülse	Grooved pin	Goupille fendue

			G.Anschlag	Adjustable fence	Guide parallèle
Pos.	No.		Benennung	Description	Désignation
1	H5A 090 011		Anschlag	Fence	Guide
2	H5A 090 020		Knebelgriff	Handle	Levier
3	H4A 070 010		Anschlagträger	Fence mounting bracket	Semelle fixe
4	H4A 070 020		Anschlagwinkel	Fence bracket	Equerre mobile
5	H4A 070 030		Anschlagschlitten	Fence cam	Semelle verticale
6	H4A 070 040		Anschlagsegment	Fence segment	Segment orientable
7	H4A 070 070		Vierkantschraube	Square head screw	Boulon tête carrée
8	H1A 240 000		Gruppe Sterngriff	Lock knob comp.	Poignée étoile (assemblée)
9	ZSR 95 0452		Linsensenkholzschraube	Raised countersunk head screw	Vis a bois tête fraisée
10	ZSB 25 0840		Scheibe	Washer	Rondelle plate
11	ZSR 03 0835		Flachrundschraube	Dome head bolt	Boulon tête plate ronde
12	ZSR 12 0616		Innensechskantschraube	Allen head screw	Vis 6 pans creux
13	H4A 070 060		Schutzblech	Angle plate	Cornière
14	ZSR 84 0608		Zylinderschraube	Flat head screw	Vis tête cylindrique



MASCHINEN-UNTERSATZ  
MACHINE STAND  
SOCLE



			<b>Maschinen-Ständer</b>	<b>Machine stand</b>	<b>Socle</b>
<b>Pos.</b>	<b>No.</b>		<b>Benennung</b>	<b>Description</b>	<b>Désignation</b>
1	H5Z 220 100		Winkelblech	Angle plate	Cornière
2	H5Z 220 110		Knotenblech	Gusset plate	Plaque de jonction
3	H5Z 220 120		Knotenblech	Gusset plate	Plaque de jonction
4	H5Z 220 150		Ständerfuß	Table leg	Pied
5	H5Z 220 160		Ständerfuß	Table leg	Pied
6	H5Z 220 130		Ständerfuß	Table leg	Pied
7	H5Z 220 140		Ständerfuß	Table leg	Pied
8	ZSR 84 0408		Zylinderschraube	Flat head screw	Vis tête cylindrique
9	ZSB 25 0840		Scheibe	Washer	Rondelle
11	ZSR 33 0825		Sechskantschraube	Hexagon head bolt	Boulon 6 pans
12	ZSR 33 0816		Sechskantschraube	Hexagon head bolt	Boulon 6 pans
13	ZMU 34 0800		Sechskantmutter	Hexagon nut	Ecrou 6 pans
14	H5Z 221 000		Gruppe Bockrolle	Castor	Roulette
15	ZMU 34 0400		Sechskantmutter	Hexagon.nut	Boulon 6 pans