PULLMAX model P-5 7/32" Cap.

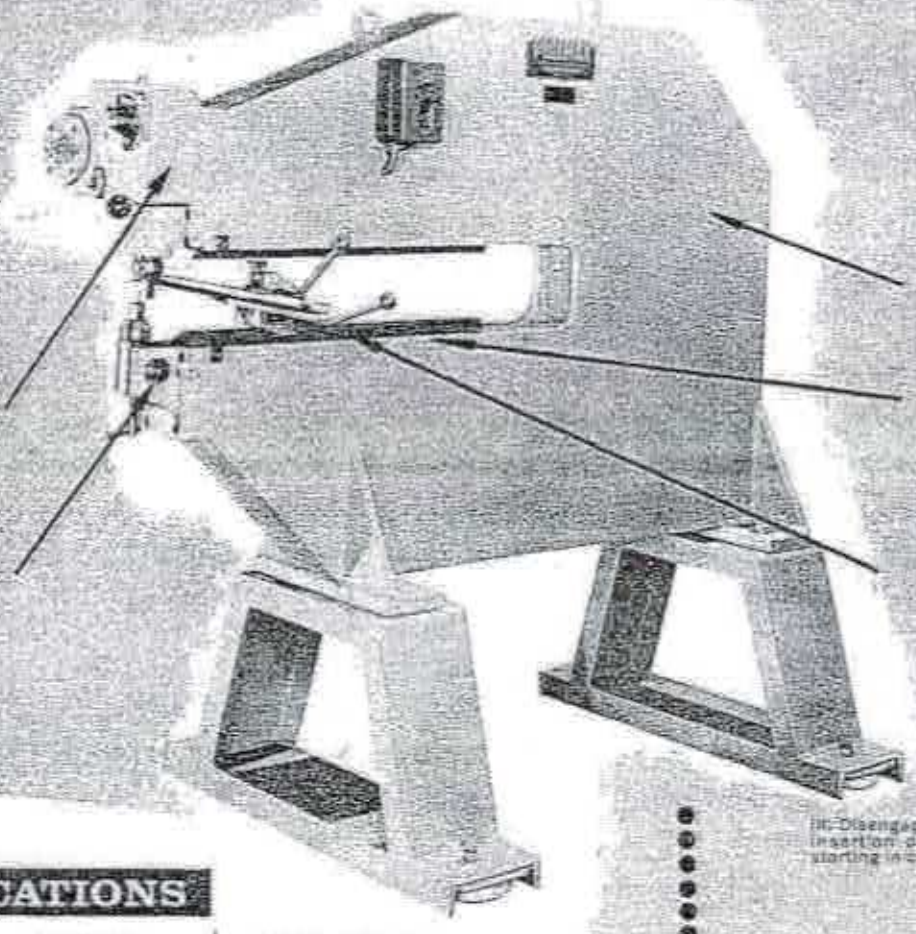
PULLMAX Model P-5—Edge cutting capacity 7/32" mild steel. A precision machine, ideal for sheet metal work. Very popular in Engineering Departments and Model Shops for experimental and developing work.

Here are some of the superior and outstanding, patented features of Pullmax Machines.

Totally enclosed, fan cooled ball bearing motor fully guaranteed. Connected with flexible coupling.

Totally enclosed mechanism, with all moving parts running in oil bath. Change of speed stroke length without stopping.

Heavy Duty Tool Holders with patented Locking Device for rapid change from cutting to all forming operations.



Box frame welded and heat treated of heavy plate construction, very important for smooth operation without side sway or vibration.

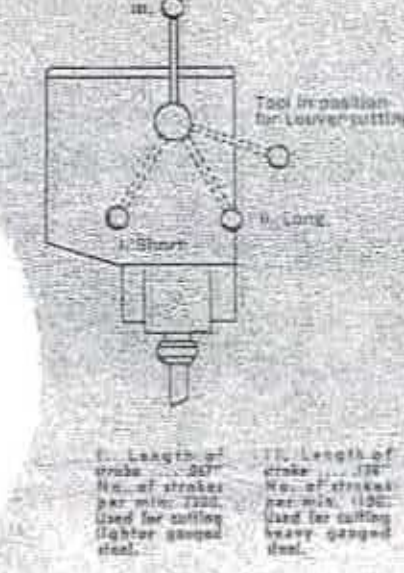
Guide rails graduated for quick setting of various size of circles and different widths of cuts when straight shearing.

All attachments quick locking for speedy set-up and adjustment without wrenches.

SPECIFICATIONS

Capacity:	Pullmax P-5		
Tensile strength of the plate lbs. p.s.i.	56200	85350	113600
Edge-cutting	3/8"	5/16"	1/4"
Cutting in center of plate without starting hole	3/8"	1/4"	12 ga.
Inside slot cutting plate thickness		3/4"	
Joggling up to plate thickness		1/4"	
Depth of joggle		1/2"	
Beading up to plate thickness		1/4"	
Depth of bead		1/2"	
Louver forming up to stock size		1/4"	
Dishing		1/2"	
Flanging (max. height of flange ½-max. thickness		14 ga.	
Edge Bending (⅛ or 1" Radius) max. thickness		12 ga.	

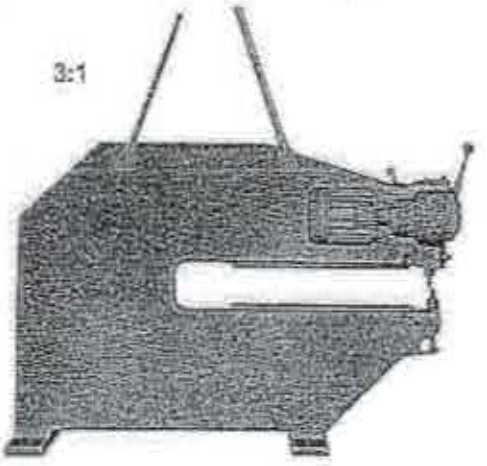
Cutting speed foot per min.	5'-16'
Number of cuts per minute	2200-1100
Cuts circle with inner center attachment	
Maximum diameter	40"
Minimum diameter	3-1/8"
Minimum diameter with special attachment	1 1/8"
Cuts segments with inner center attachment:	
Maximum radius	21"
Minimum radius	1 5/8"
Throat depth	42"
Electric motor h.p.	2
Total length	74"
Total height	51"
Total width	22½"
Shipping weight	2100 lbs.



[redacted] PULLMAX CO. INC.

CAPACITY AND TECHNICAL DATA

		P 3/3			P 5/2		
Tensile strength of plate	tons p.s.i.	25	38	50	25	38	50
Edge cutting	inches	5/32	1/8	1/8	7/32	3/16	5/32
Cutting in center of plate	inches	1/8	12 ga	13 ga	3/16	5/32	1/8
D:o without starting hole	inches	12 ga	13 ga	13 ga	5/32	1/8	1/8
Beading	inches	13 ga	14 ga	16 ga	1/8	1/8	12 ga
Joggling	inches	13 ga	14 ga	16 ga	1/8	1/8	12 ga
Slot cutting	inches	14 ga	17 ga	20 ga	1/8	12 ga	14 ga
Louvering	inches	14 ga	17 ga	20 ga	1/8	12 ga	14 ga
Nibbling	inches	17 ga	18 ga	20 ga	14 ga	16 ga	19 ga
Doming	inches	14 ga	17 ga	17 ga	1/8	12 ga	12 ga
Flanging	inches	14 ga	17 ga	17 ga	14 ga	16 ga	16 ga
Edge bending	inches	14 ga	17 ga	20 ga	14 ga	16 ga	16 ga
Electric motor	HP		1			2	
Cutting speed	fpm		3—16			3—16	
Cuts per minute			2800—1400			2800—1400	
Stroke length	inches		.071/.118			.067/.137	
Circle cutting:							
Max. diameter	inches		41			41	
Min. diameter	inches		3			3 1/8	
D:o with extension for small circles	inches		1 3/16			3/8	
Segment cutting:							
Max. radius	inches		26 1/2			26 1/2	
Min. radius	inches		1 1/2			19/16	
D:o with extension for small circles	inches		19/32			11/16	
Band cutting							
Largest width	inches		26 1/2			26 1/2	
Smallest width	inches		11/16			11/16	
Depth of jaw	inches		41 3/8			41 3/8	
Overall length	inches		73			75	
Overall height	inches		45 7/8			50	
Overall width	inches		21			23 1/4	
Weight excl. accessories	lbs		1270			1736	



3:1

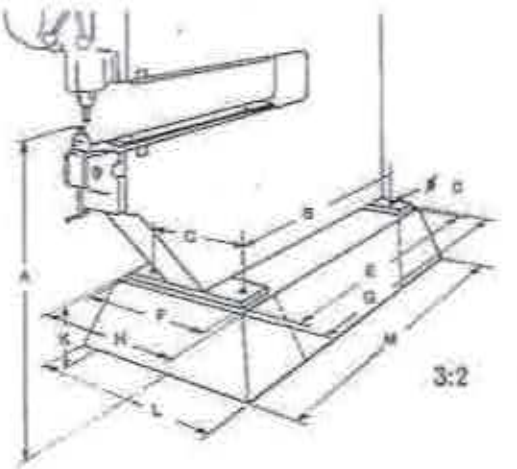
TRANSPORT AND INSTALLATION

Lift the machine only in the manner as shown in the illustration.
Align the machine vertically and horizontally with a spirit level at the base. Use wood, compressed machine felt, rubber buffers or similar material as padding to dampen vibration.

When tightening, check that diagonal stress does not arise. The necessary measurements are given in the adjoining table.

Measurements in inches.

	A	B	C	D	E	F
P 3/3	43 5/16	44 1/8	9 7/8	Ø 6 23/32	50 1/2	15 3/4
P 5/2	43 5/16	43 1/8	11 23/32	Ø 6 23/32	50	17 3/4
	G	H	K	L	M	
P 3/3	51 1/2	16 9/32	20 1/32	26 3/4	55 1/32	
P 5/2	51	18 1/2	17 3/4	26 13/32	54 7/8	

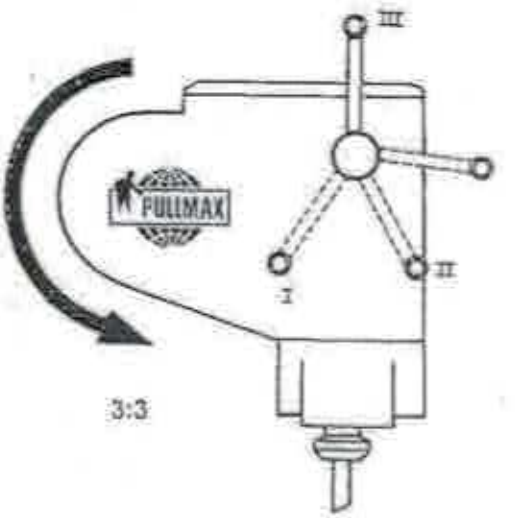


3:2

ELECTRICAL INSTALLATION

Connect power line to starting apparatus. Check that motor's rated voltage and connection agrees with mains voltage. Starting apparatus protects motor only against overloading. Fuses must therefore be connected between power line and motor protector.

Motor's direction of rotation is counterclockwise when seen from the front; see arrow on motor casing.



3:3

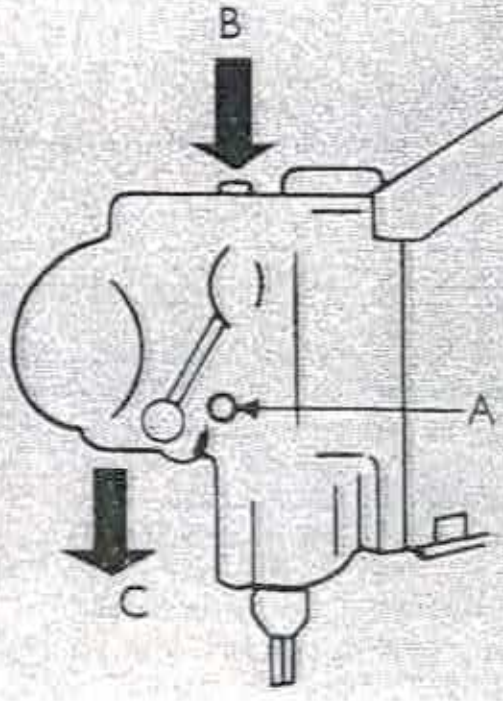
LUBRICATION

Motor casing is to contain oil to visible level at control glass (A). Oil filling at B. Oil draining at C. Check during operation that the plug at B, of which the ventilating hole is to be kept clean, is closed tightly.

SUITABLE OILS

Caltex No 400 Red Oil
Wakefield Perfecto NN
Esso Esstic 55
Gargoyle DTE Heavy Medium
Shell Carnea Oil 35
Gulf Harmony 53
BP Energol ~~[illegible]~~ HP30

Required oil quantities:
P3 approx: 1 pts
P5 approx. 1 1/4 pts
Change oil after
1000 hours operation.



PULLMAX AT WORK

Start and stop the machine with the buttons at A.
Stroke length is adjusted by the control lever at B. Stroke length at different positions are shown in fig. 5:2.

Adjustment of lower block is at C.
Lower block is locked into position at D.
Height of lower tool is regulated at E.
Tool is locked at F.
Guide bar is laterally adjusted at G.
Guide bar is locked at H.

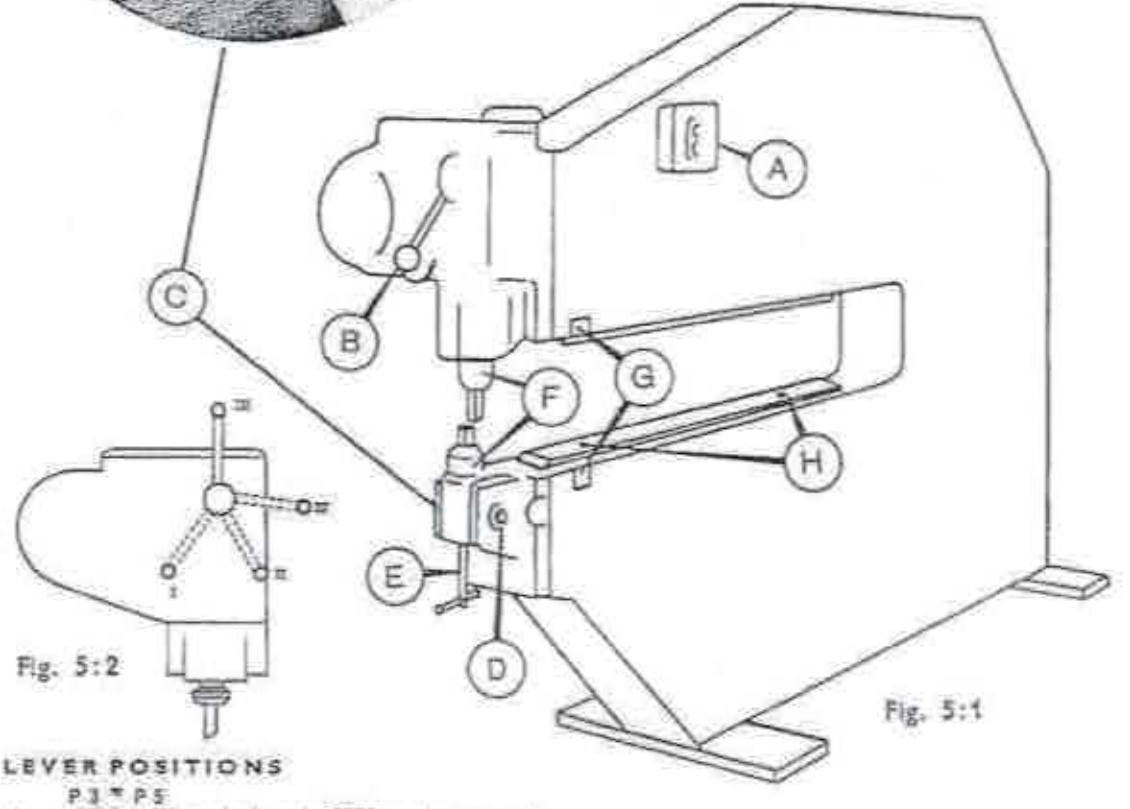


Fig. 5:1

Fig. 5:2

LEVER POSITIONS

	P 3 * P 5
I	.071" .067" stroke length: 2800 strokes per min.
II	.118" .137" stroke length: 1400 strokes per min.
III	Upper tool in lifted position.
IV	Position for louvering.

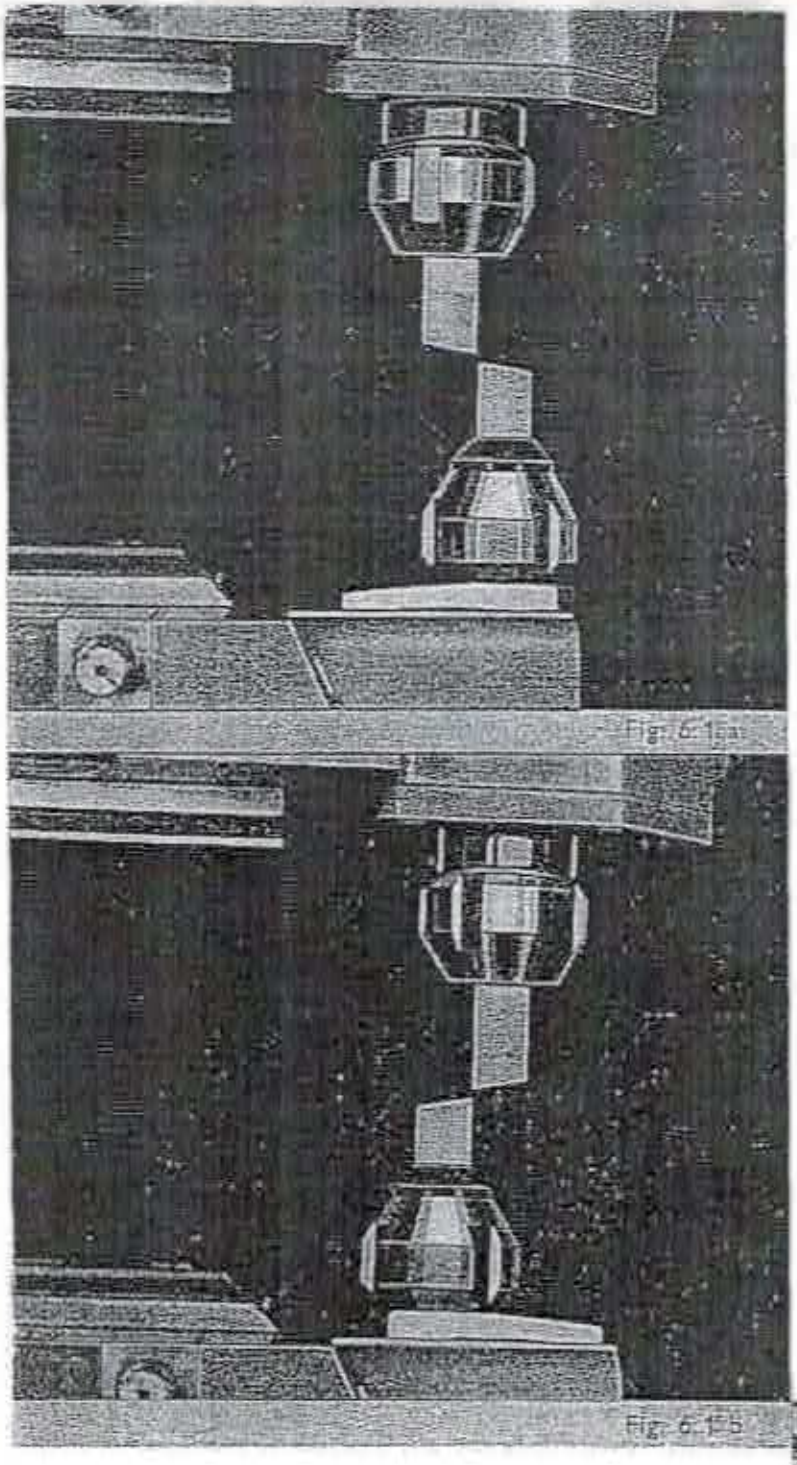


Fig. 6:1a

Fig. 6:1b

THERE ARE TWO DIFFERENT LOWER TOOL HOLDERS FOR PULLMAX P3 AND P5

For cutting steel, the tool holder shown in fig. 6:1 is used. This holder can be mounted with the lower tool before (1a), or behind (1b), the upper tool. See also under "Straight Cutting" and "Circle Cutting". This tool holder, from now onwards, will be called the "standard block".

For all other working operations the tool holder shown in fig. 6:2 is used and this will be called, from now onwards, the "center block".

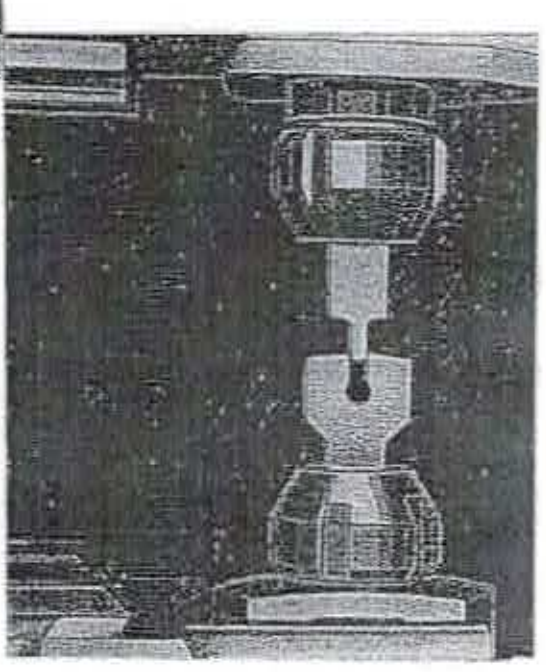


Fig. 6:2

CUTTING STEEL

The PULLMAX standard cutting steel is available i two types: the "universal" steel and the straight cutting steel. For both types the standard block is used.

GRINDING

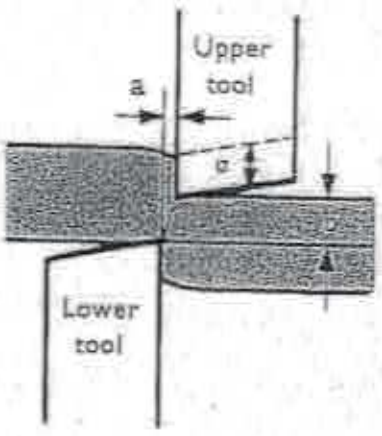
The cutting edge of the cutting steel must be kept sharp. Cutting and clearance angles have been determined and should be maintained in regrinding. Check angles with a grinding template. See fig. 7:2. Grind with great care; excessively heavy pressure against the grinding wheel results in loss of hardness in the steel through undesired tempering. Use a medium grinding wheel. Hone cutting edge after grinding.

ALIGNMENT OF STEEL

After considering the thickness and hardness of the work piece, select appropriate lateral distance (a), from now onwards called the a-measurement, appropriate distance between upper and lower steel (b), from now onwards called the b-measurement, and appropriate stroke length (c). See fig. 7:1.
The table below gives the correct values of a-measurements. When cutting tough and soft materials reduce the a-measurement somewhat. The cutting of thin plate with the universal steel requires less a-measurement than when the straight cutting steel is used.
This table also gives the correct values of b- and c-measurements. A tough material requires less b-measurement and more c-measurement.

Plate thickness	Edge cutting			Cutting within plate		
	a	b	c	a	b	c
20 SWG	.002	.020	.067	.002	.020	.067
14 SWG	.004	.040	.067	.004	.020	.067
1/8"	.006	.060	.067	.004	.040	.067
5/32"	.012	.080	.137	.010	.040	.137
3/16"	.015	.100	.137	.013	.055	.137
7/32"	.020	.110	.137	.015	.100	.137

Fig.7:1



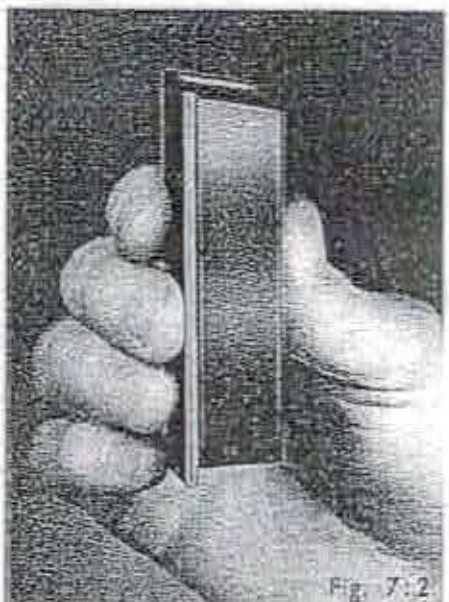


Fig. 7:2

STRAIGHT CUTTING

The straight cutting steel is used. Position the standard block in such a manner so that the lower steel comes in front of the upper. See illustration. Then align the a-, b- and c-measurements.

Fig. 8:1

FIGURE CUTTING

Figure cutting is performed with the same tool position as in straight cutting but the universal steel is used instead.

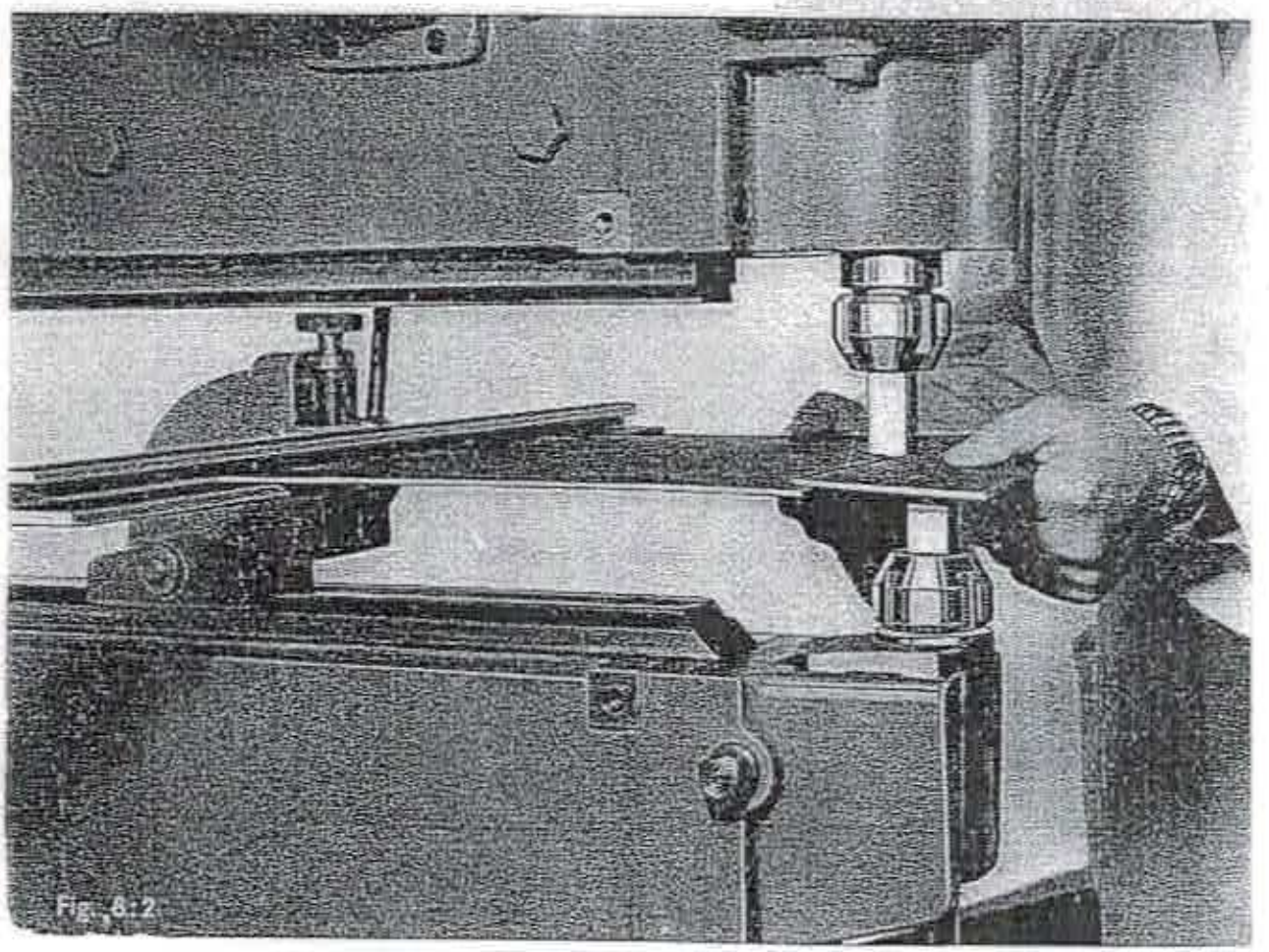


Fig. 8:2

STRAIGHT CUTTING ATTACHMENT

Insert the attachment at the further short-end of the guide bar and push it well into the jaw so that lower cutting steel fits into the space designed for it in the attachment. Loosen lever A and adjust the height of the attachment with screw B so that the point of the lower cutting steel comes level, or somewhat under, the horizontal guide surface of the bar. Tighten the straight cutting attachment with lever D.

When cutting, the plate should press lightly inwards so that good contact against the guide bar is maintained. If the plate tends to fasten between the guide bar and the cutting steel, turn the guide bar somewhat towards 35° on the scale. If the plate attempts to move from the attachment turn the guide bar in the opposite direction.

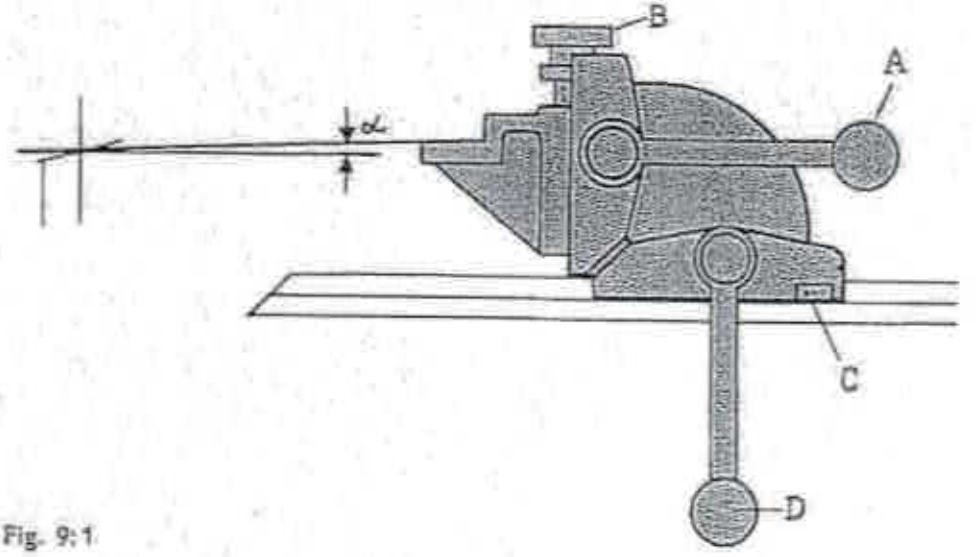


Fig. 9:1

CIRCLE CUTTING

Use the standard block. Use a straight cutting steel as the upper tool and a universal steel in the block. The lower cutting steel is aligned behind upper steel. See fig. 10:1. Alignment is carried out in accordance with what applies in general to cutting steel. See page 7.
To reduce deformation in circles of Ø 8" or more the same special lower cutting tool, which is recommended for cutting soft material, can be used to advantage. See fig. 11:4.

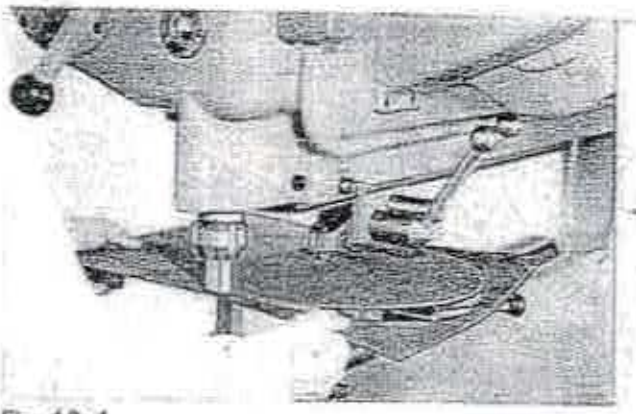


Fig. 10:1

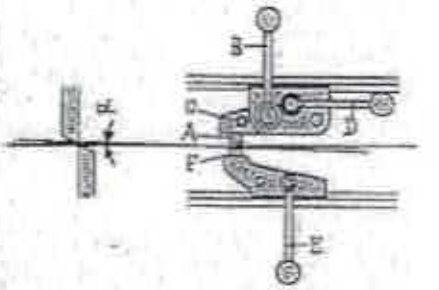
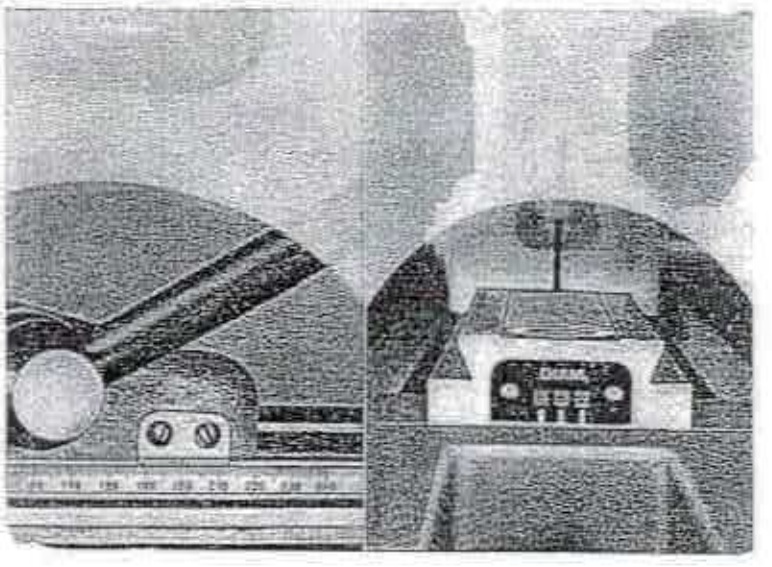


Fig. 10:2

The machine is also provided with an extension center attachment composed of an upper and a lower section. The upper functions as the holder for the center pivot and the lower for the die. The center attachment is inserted in the respective guide bars. The lower section is pushed forwards against the cutting steel and positioned at a height so that the die comes level, or somewhat under, the point of the steel. See fig. 10:2. The die is adjusted by screwing up or down. The desired radius of the circle is set directly from the scale on the guide bar. The lower section is secured by lever E and the upper section by D. The center pivot is then screwed down onto the plate so that sufficient downward pressure on this is maintained when lever B is tightened. Then tighten the die with the clamping-screw C.

Fig. 10:3



The scale on the front end of the guide bar is then set at the correct value applicable to the circle diameter. See fig. 10:3.
With heavier plate, it is recommended to roughen make a deep centre punch mark first.
Feeding is done from the left. To avoid marks in soft and/or thin plate, the center attachment can be equipped with rotating rubber-covered discs.

CUTTING OF SPECIAL CIRCLES

For cutting very small circles (31/4"–13/8"), a center extension can be mounted on the center attachment (fig. 11:2). And when doing so, use the small-radius steel (fig. 11:1). For larger diameters, the machine can be supplied with an external center attachment. But for this a starting hole in the center of the plate is required.

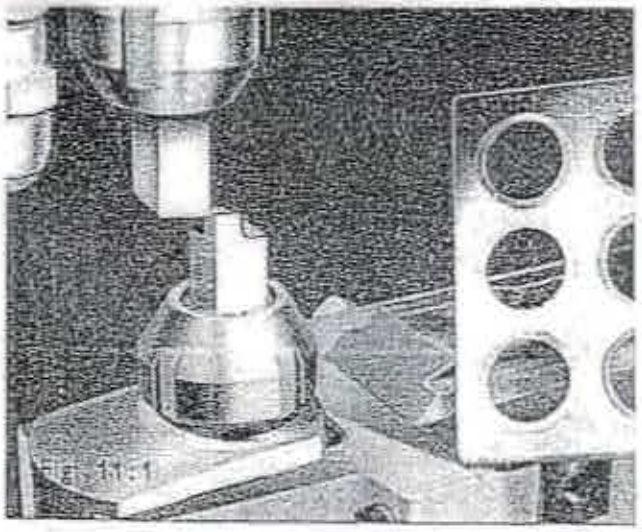


Fig. 11:1

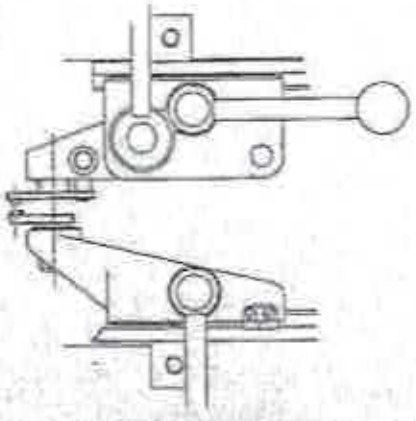


Fig. 11:2

CUTTING IN STAINLESS STEEL

In cutting stainless steel material and ordinary soft iron plate with a thickness of 6 mm, the following special grinding of the steel is recommended:

Give the cutting edge a bevel and a clearing margin with a curvature as shown in fig. 11:3.

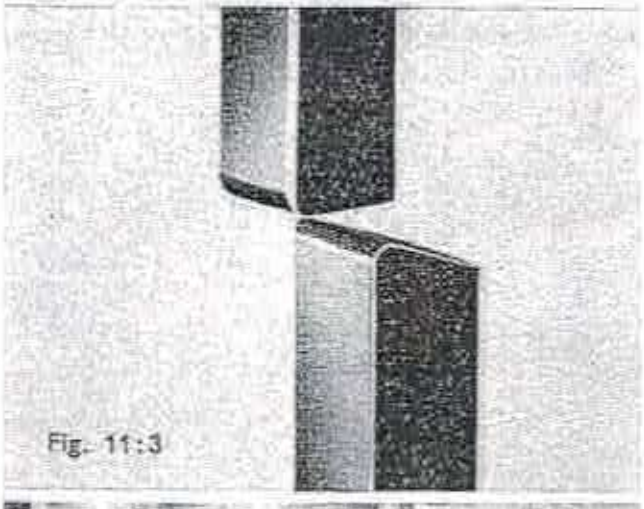


Fig. 11:3

CUTTING IN SOFT MATERIAL

For working soft materials like aluminium, copper, etc., there is a special lower cutting steel, see fig. 11:4. This steel, with cutting angle 0°, has an extended cutting edge which supports the plate over a larger surface and restricts undesired deformation. Minimum diameter in circle cutting: 8".

For straight cutting and circle cutting, use a straight upper steel; for freehand cutting, an upper steel with rounded cutting edge.

Vertical and lateral distances between cutting edges should be kept somewhat closer than for ordinary cutting steels.

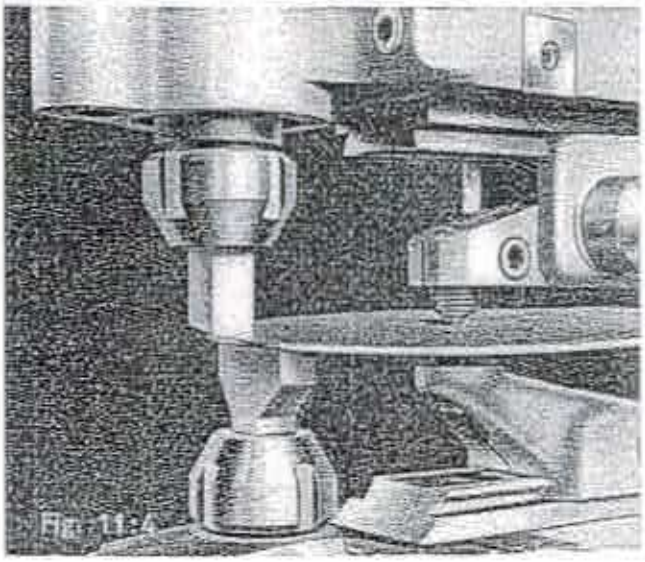


Fig. 11:4

NIBBLING

Use the center block. The tool requires careful setting. Space P, according to fig. 12:1 must be constant all around. The hole in the die is excentrically placed in relation to the shaft to permit precise setting. Cross-connecting setting is effected by turning the die. Setting in depth-connection is effected by the regulating device at the holder for the steel. Check the setting by clamping a thin sheet of paper between punch and die; an even print should be obtained on the paper.

In height, set the tool so that the d-measurement, as in fig. 12:1, is not less than .020".

The material to be nibbled should have a max. plate thickness = .040 to .060" less than the stroke length of the machine. (S) The tougher the material — the lower the S value.

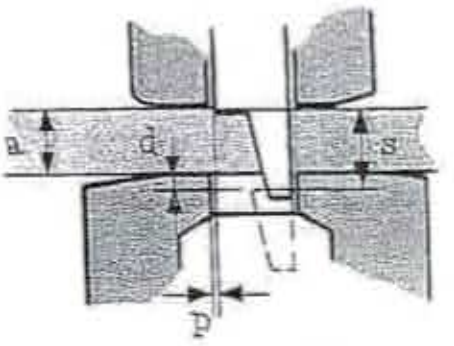


Fig. 12:1

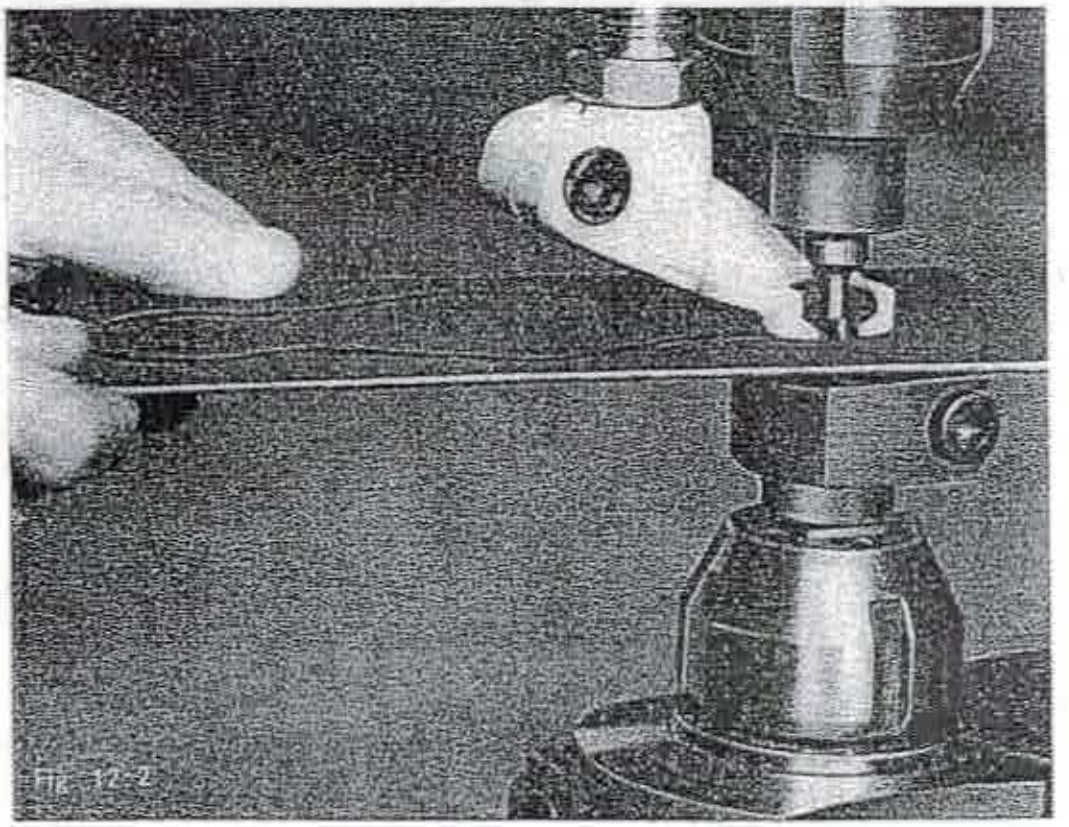


Fig. 12:2

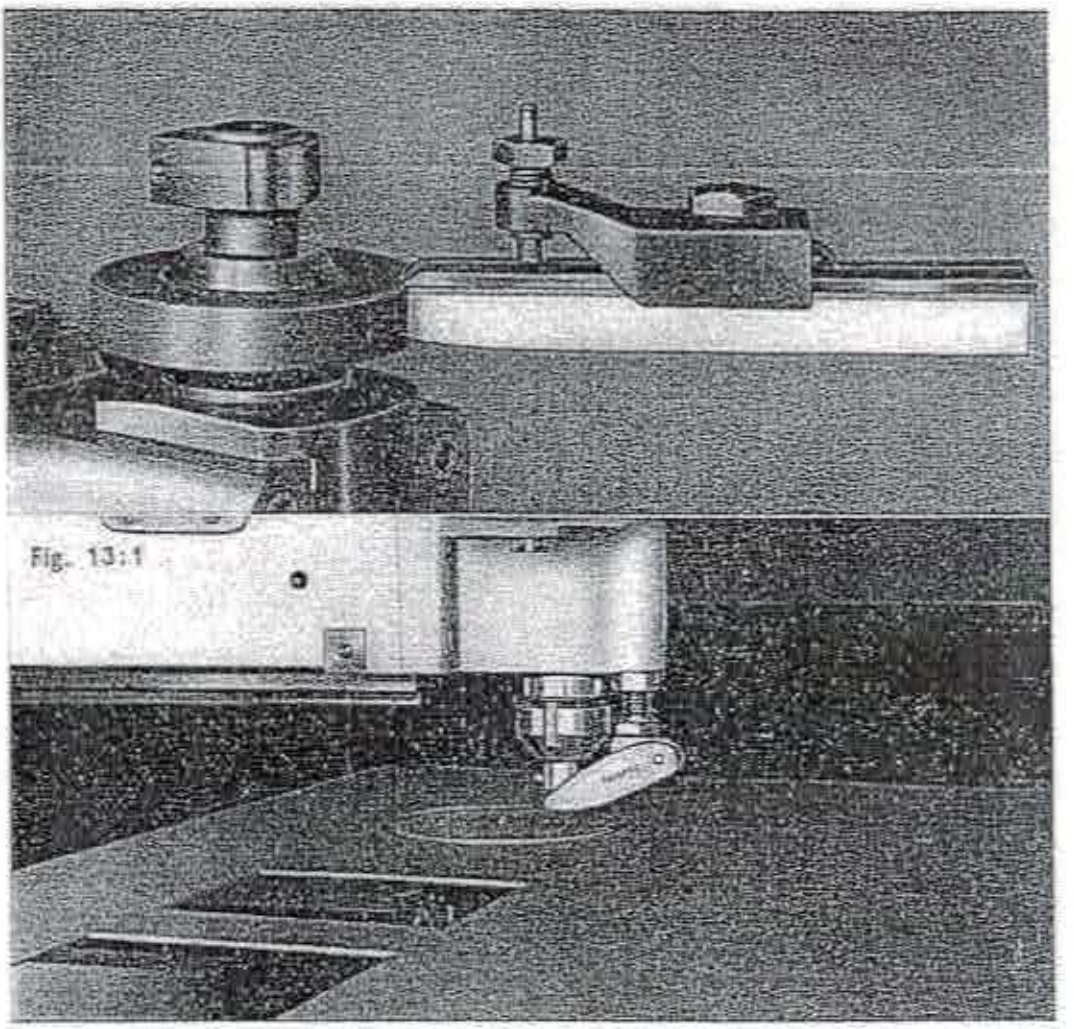


Fig. 13:1

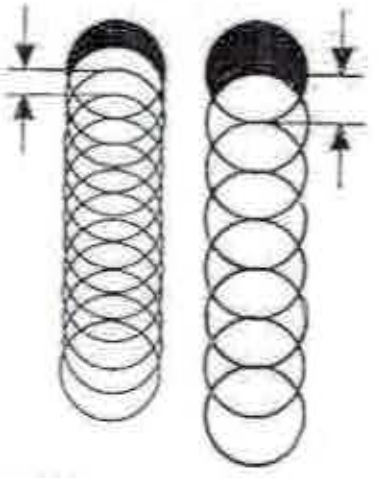


Fig. 13:2

In nibbling circular spaces where the plate cannot be completely turned, the nibbling tool can be supplemented by a planet center. See fig. 13:1.

The tool works like a continuous hole-punching tool. Fast feeding results in a wavy cut edge; slow feeding gives a smoother cut. See fig. 13:2.

The feeding pace is restricted by the plate striking the oblique shoulder of the punch before the cutting edge. In this way, a correct feeding pace is maintained for every punching diameter. But because of the high stroke speed of the machine a good feeding pace, however, is maintained.

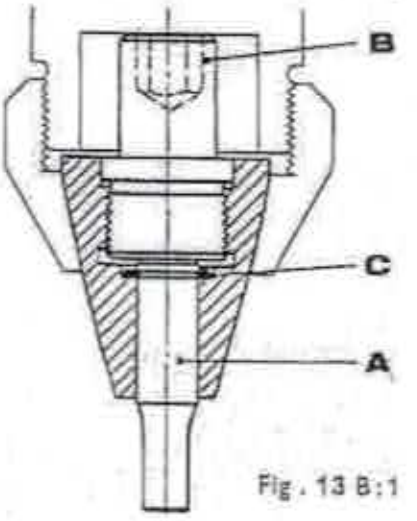


Fig . 13 B:1

When inserting the punch A in a tool according to fig. 13 B:1, tighten the support screw B slightly. Excessive tightening may result in a broken retainer C.
As in cutting, the clearance p according to fig. 12:3 must be adapted to the thickness of the plate being worked.
The machine should be run at the slowest striking rate.
Set the length of stroke in view of the thickness and weight of the plate and the desired feed per stroke. By lengthening or shortening the stroke, the time during which the plate is free from the punch for feeding will be prolonged or shortened. The heavier and/or thicker the plate is, the longer the stroke with which the machine must work will be. For convenient feeding it is recommended that the plate weight with a thickness of 1,5 mm should not exceed the approximate values given below:

Type of machine	Max. weight
P 3	15 kg
P 5	20 kg

For thicker plate, the maximum weights must be reduced.
If the above figures are to apply, the plate must be supported in such a manner that the friction between it and the supporting surface is as little as possible. We recommend steadying against a table with ball supports.

SLOT CUTTING

Use the center block.

Both edges of the slot are cut simultaneously. By this a neat cut, with parallel edges, is obtained. Set the tool carefully so that the p-measurement is identical on both sides of the upper steel (fig. 14:1). Use thickness or feeler gauges.

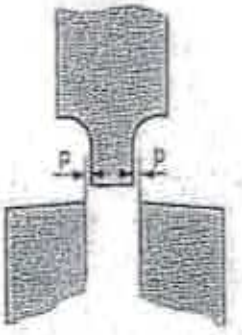
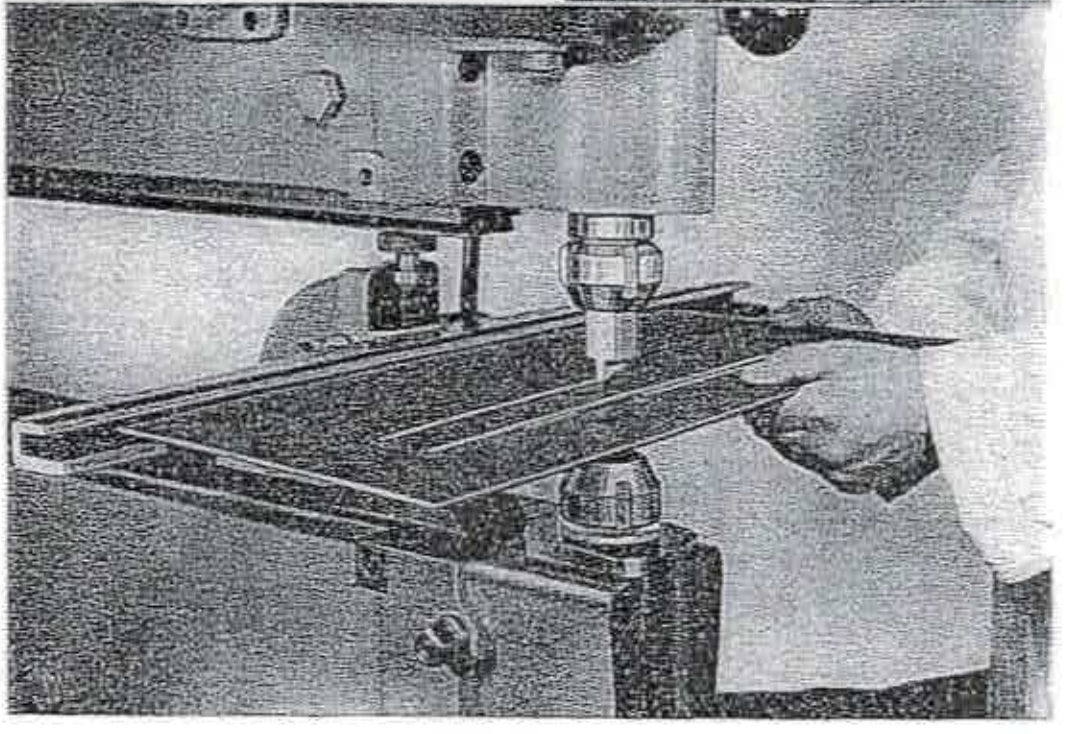


Fig. 14:1

The capacity is shown by the informative data for respective machine types.

Fig. 14:3



SLOT-CUTTING TOOL WITH END-CROPPER

Used for cutting closed slots.
The tool is mounted in a central block with the slot running crosswise to the longitudinal direction of the machine. See fig. 14 B:4.
Careful lateral adjustment is necessary to ensure that the cutting gap is equally large on both sides. Vertically, the tool is adjusted so that the rear cutting edge of the upper tool is level with or slightly above the dye when the control lever of the machine is in the working position.
The operation is completed in three stages:

1. Cutting of start end.

   Turn the cutting ring of the dye to a position according to fig. 14 B:1. Insert the material and move the control lever down to the louvering position. If necessary, calibrate the height position of the tool in order to obtain a good end crop.

2. Cutting of groove.

   Turn the cutting ring of the dye to the position shown in fig. 14 B:2 and then feed the plate the required distance.

3. Cutting of finish end.

   Move the control lever of the machine down to the ordinary cutting position without turning the cutting ring of the dye. See fig. 14 B:3. Adjust the height position of the dye, if necessary, to suit the cutting procedure.
   Slot widths on standard tools: 5 and 7 mm.

   Capacities according to the data for the respective machines.

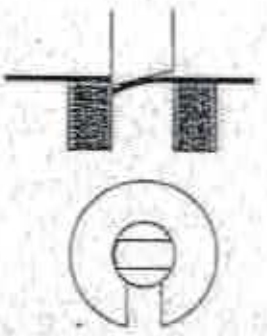


Fig. 14 B:1

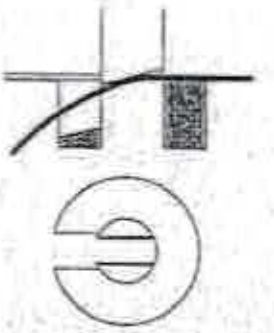


Fig. 14 B:2

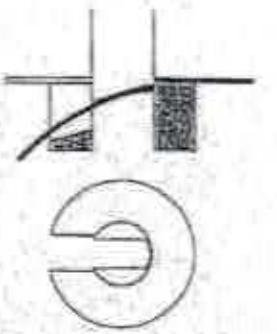


Fig. 14 B:3

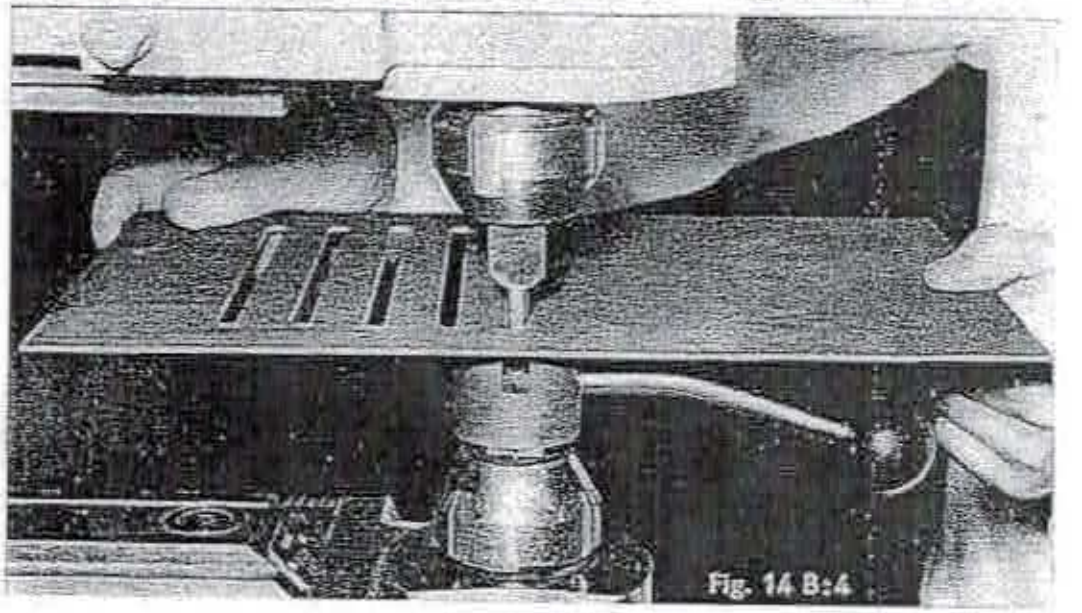


Fig. 14 B:4

LOUVER CUTTING

Use the center block.

This operation i carried out in two steps.

1) Cutting the louver. Lateral distance between the cutting edge of the punch and the cutting steel at the die is set by the same method as for cutting steel. Start the motor; move the control lever to position II; and test the distance for height in the manner shown in fig. 15:1 Feed in the material after the lever is returned to position III. The control lever is then set in position for louvering, see fig. 15:3. Cut the whole length of the louver.

To avoid cracks in the plate, it is desirable at times to extend the cutting at the edges approx. 1/16" further than the actual aperture of the louver.

2) Forming the louver. The control lever is brought to position II and the plate fed the full length of the louver. At the end positions, the die is turned so that the end of the louver is formed. Finish off the shape neatly by making a run with the control lever in position I.

Use the straight cutting attachment for guiding the plate.

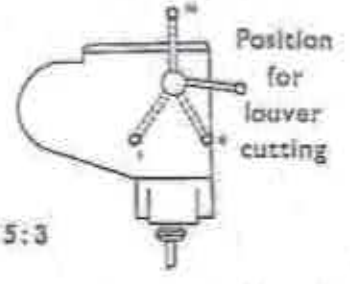


Fig. 15:3

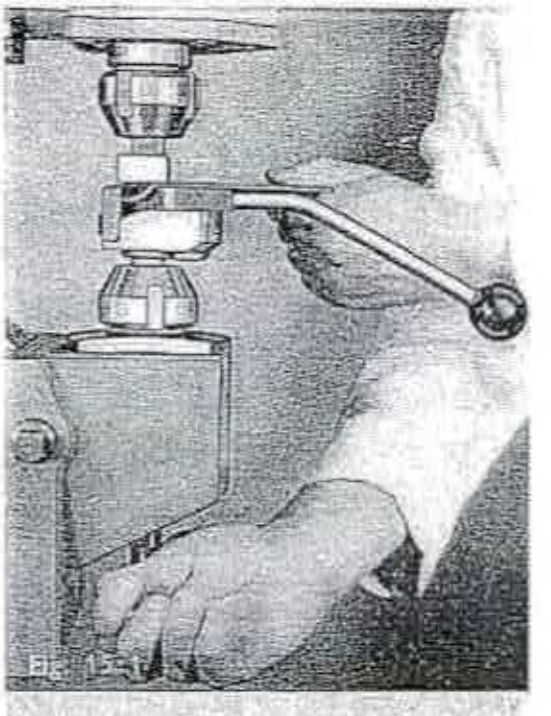


Fig. 15:1

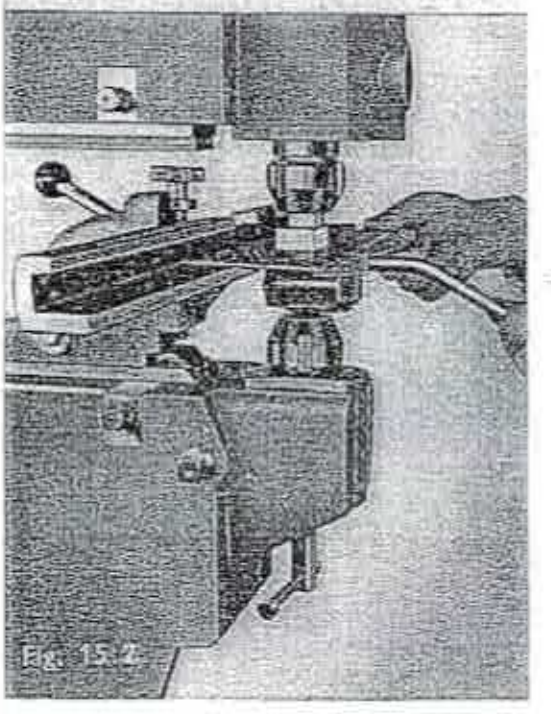


Fig. 15:2

BEADING

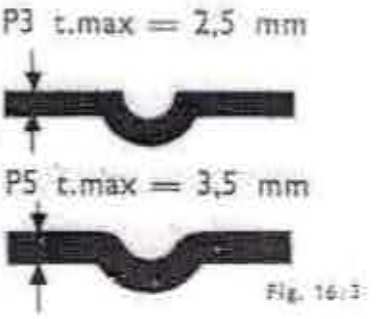


Fig. 16:3

Use the center block.

After the punch and die are centered, the work piece is fed in between.

The operation is carried out in one or more runs; the number of times being decided by the thickness and qualities of the plate, the shape of the profile and the length of the machine stroke.

The striking motion of the tool is successively increased by raising the die of the tool.

With the standard tool, the profile as shown in fig. 16:3 is obtained in soft iron plate. This tool can also be used for plate thinner than the t-measurements shown.

Special tools can be supplied for profiles with dimensions other than standard profiles.

The maximum dimensions possible for such special profiles in mild steel plate are given in fig. 16:4. The possibility of reaching maximum dimensions is greatly dependent upon the size and shape of the profile in relation to the thickness of the material, the ductility of the material and the proximity of the bead to the outer edge of the workpiece.

With unfavourable conditions, stresses on the material can become so heavy that buckling occurs in the plate. As a counter measure "bottom" punching is done to flatten out the material. See fig. 16:5.

A bead situated as shown in fig. 16:6 a is easier to form than one shown in fig. 16:6 b.

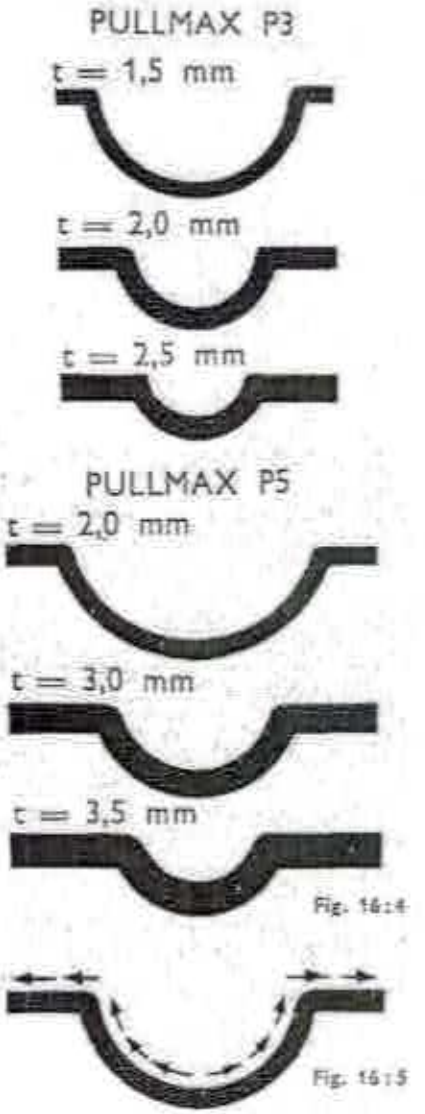
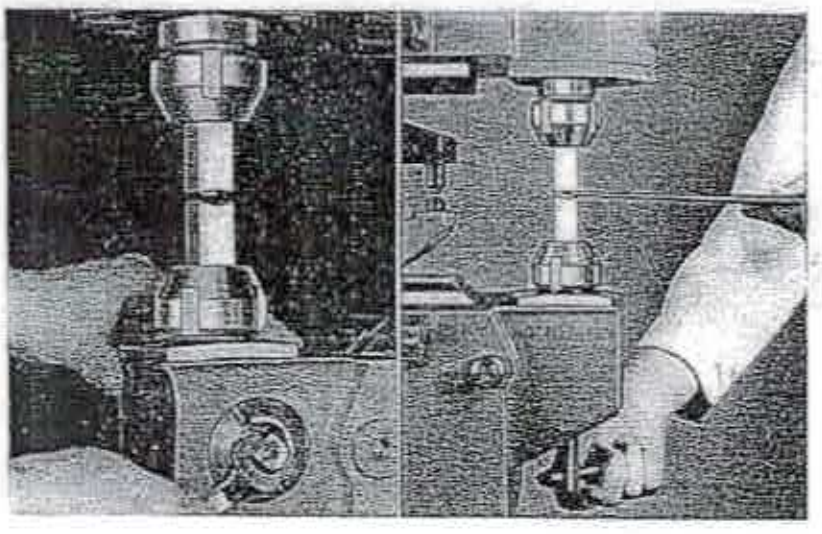


Fig. 16:4

Fig. 16:5



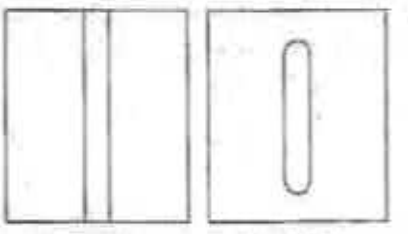


Fig. 16:6a

Fig. 16:6b

Use the center block.

After both parts of the tool have been centered, the work piece is fed in between.

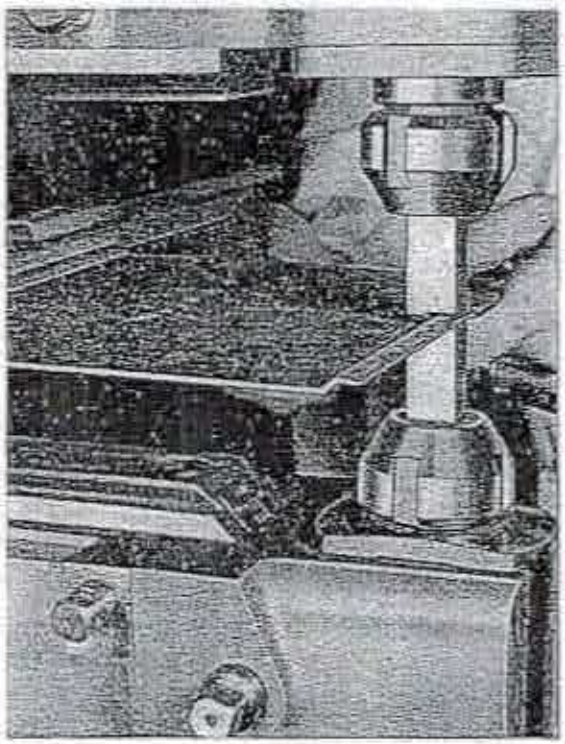
The operation is performed in one or more runs; the number of times being decided by the thickness and qualities of the plate, the shape of the profile and the length of the machine stroke. The striking motion of the tool is successively increased by raising the lower tool.

With the standard tool, the profile as shown in fig. 17:1 is obtained in soft iron plate.

The maximum dimensions possible for special profiles in soft iron plate is given in fig. 17:2. The possible of reaching maximum dimensions is greatly dependent upon the ductility of the material of the joggle and its proximity to the outer edge of the work piece.

Fig. 17:1

Fig. 17:3



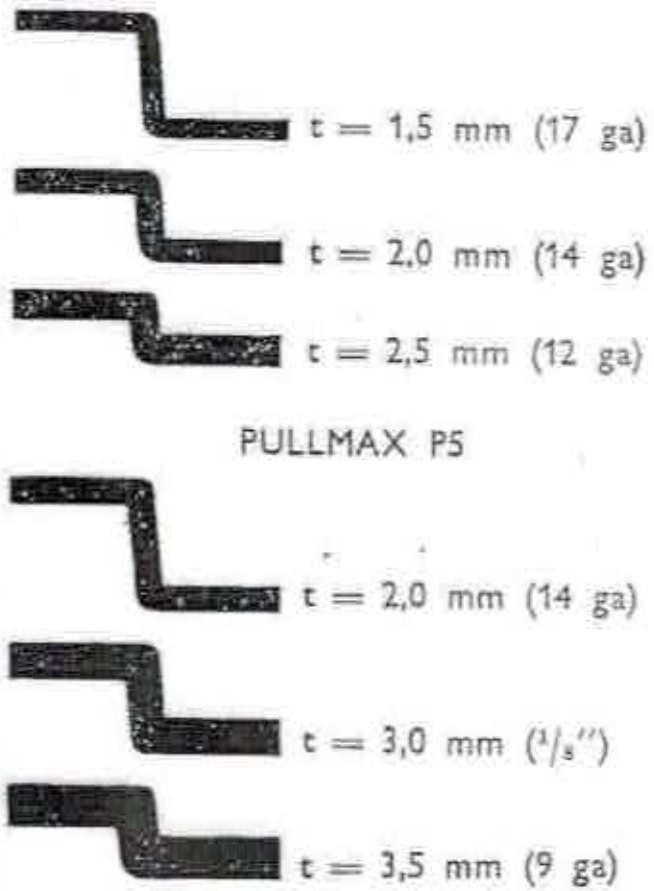


Fig. 17:2

Fig. 18:1

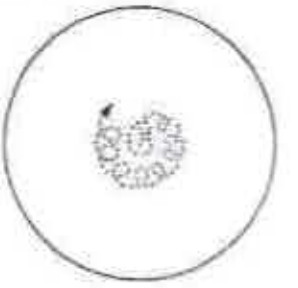


Fig. 18:2

Use the center block.

Center the punch and die by turning the lower tool and adjusting the block. As a check, clamp a sheet of paper between the tools, and a uniform circular impression should be shown on the paper.

Doming is started by light strokes around the center of the work piece to be domed and continues by feeding the plate in a spiral manner from the center. See fig. 18:2. Raise the lower tool in small stages until the desired curvature is obtained. Do not raise the lower tool too much at a time or the machine will become overloaded. In deep domes, the outer edge should be processed as little as possible.

Check doming with templates.

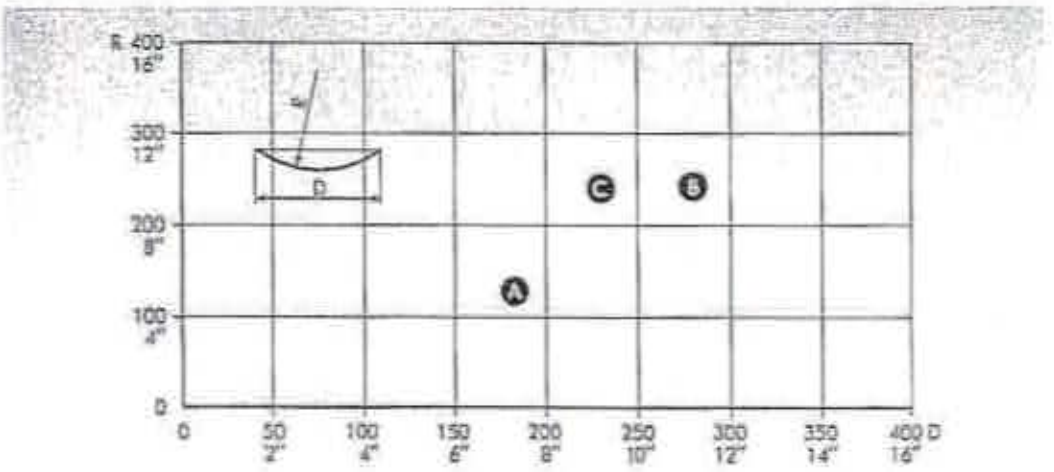
Depending upon the shape of the dome, it may sometimes be necessary to control the working process by the aid of hand tools.

Plate guiding, especially if the plate is uneven, is simplified by oiling the plate.

As standard these tools are manufactured for the different machines as follows:

	A 25/50	B 55/75	C 85/115
P3	×	×	
P5/T5	×	×	
P6/T6	×	×	
P7	×	×	×
P8	×	×	×
P9	×	×	×
U-10	×	×	×

The performances achievable with the different tools are shown in the curve below.



EDGE BENDING

Use the center block.

Center both parts of the tool and then adjust the tool to the actual thickness of the plate as shown in fig. 19:2. The straight cutting attachment or circle cutting attachment can be used to advantage. When the operation is performed without the aid of these guiding devices, see that the work piece gets sufficient counter support at the front edge of the tool. The process is carried out in one operation.

With the standard tool, the profile as shown in fig. 19:3 is obtained in soft iron plate.

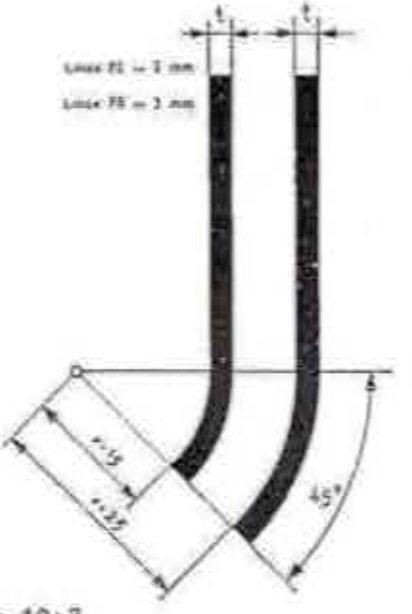
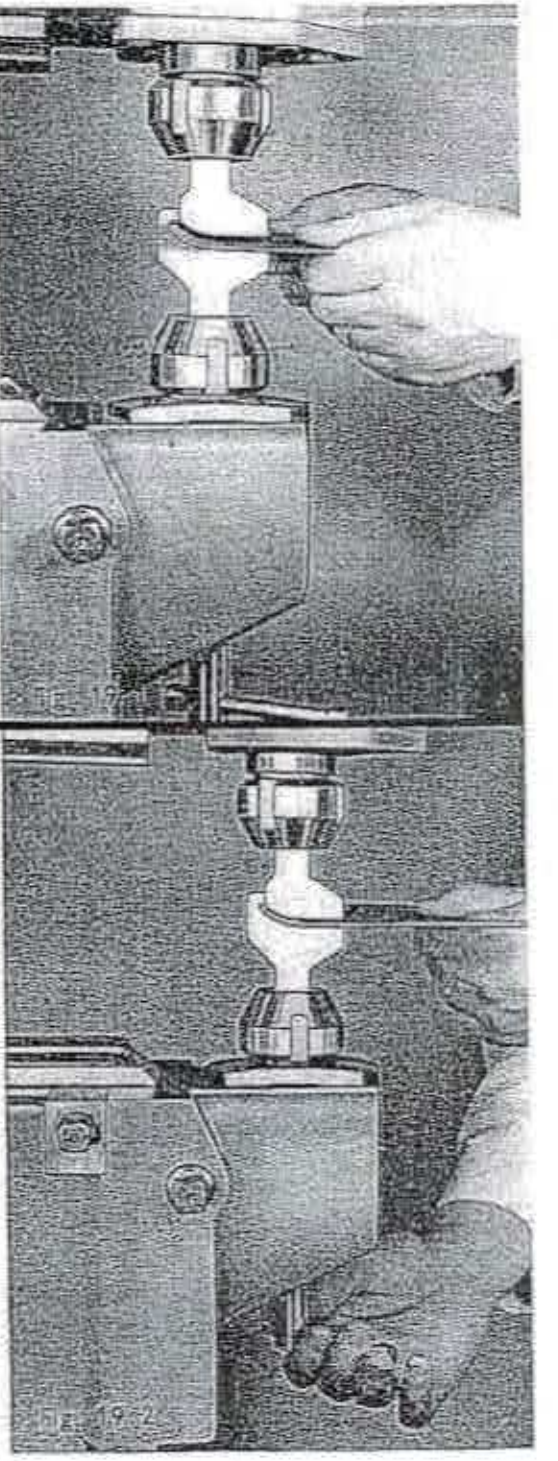


Fig. 19:3



FLANGING

Use the center block.

Center the tool and check that the V space between the die and the punch is constant throughout its entire length. In the flanging of curves, one section of the V space is narrowed to obtain sufficient drawing. Raise the lower tool sufficiently so that the punch in the working position strikes the plate at 20 to 30° (a i fig. 20:3).

Insert the work piece into the tool; start the machine and lower the upper tool to the working position. The work piece should be lying well upp against the holding-up tool A. The operation is carried out in several runs with a successive increase in angle until the plate edge is flanged fully 90°. In processing, use the longest stroke length possible. After the flange is made, make a final run with the shorter stroke length. The smallest curve radius is 4".

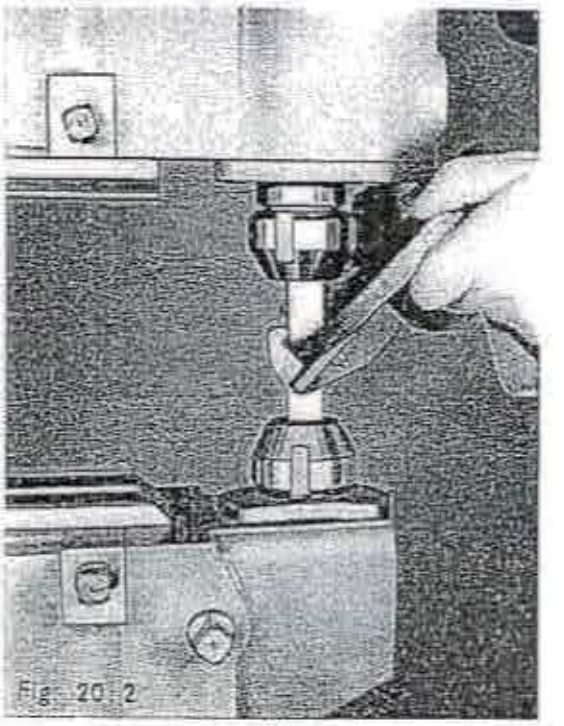


Fig. 20:2

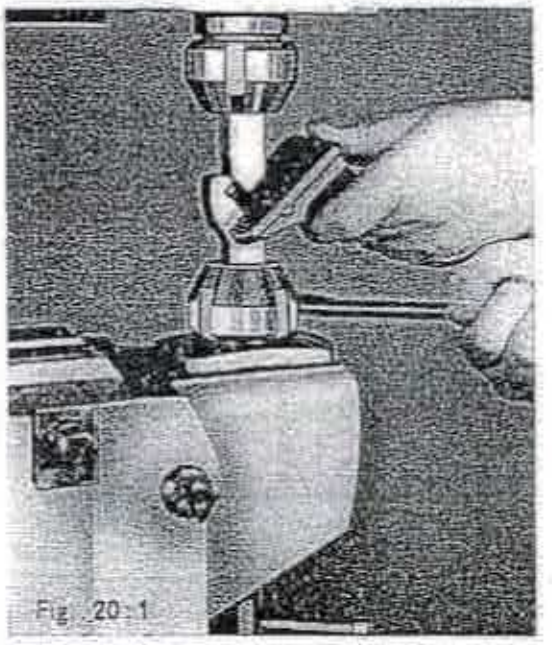


Fig. 20:1

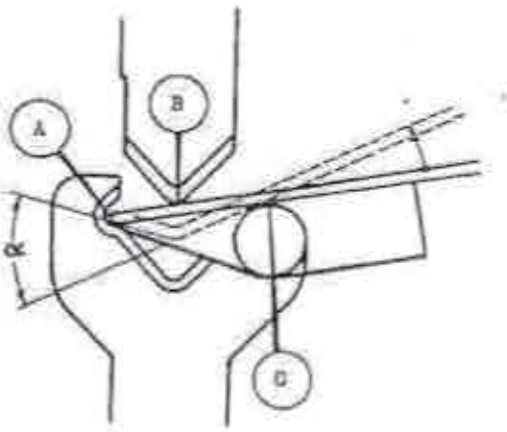


Fig. 20:3

FORMING TOOLS

With the exception of the slide lock tool, the following instructions apply in the mounting and use of these tools:

1. Use the center block.

2. Center the tool. The edged side surfaces are to be turned towards the machine and in line with each other. See fig. 21:1.

3. Use the straight cutting attachment provided with the special guide rail belonging to the respective tool. Lock the guide rail on the standard attachment as shown in fig. 21:2. During assembly, see that the tool fits in between the in-feed and out-feed guides. In locking, it is necessary to bore holes in the straight cutting attachment.

4. The distance between the tools should be slightly greater than the thickness of the material to be formed.

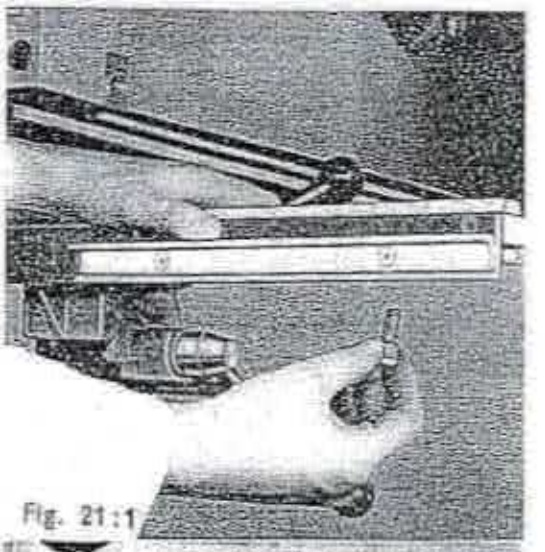


Fig. 21:1

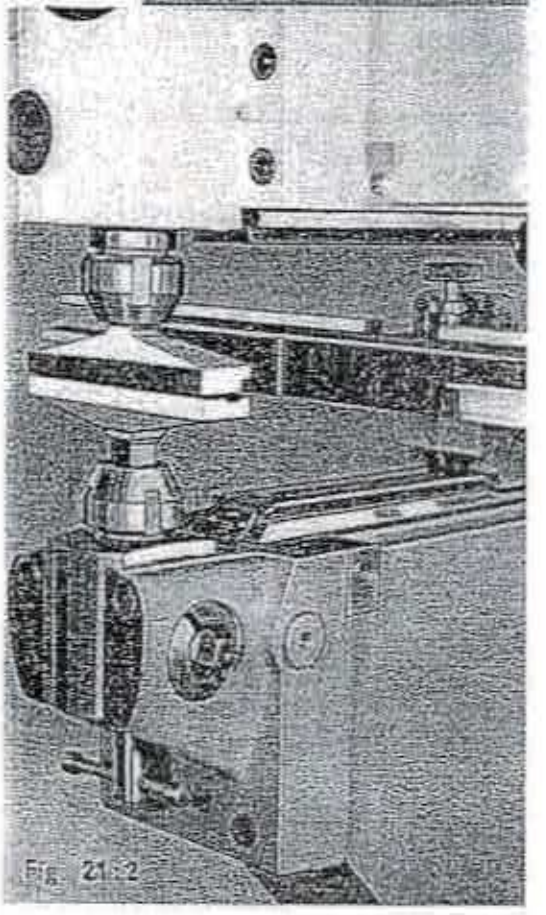


Fig. 21:2

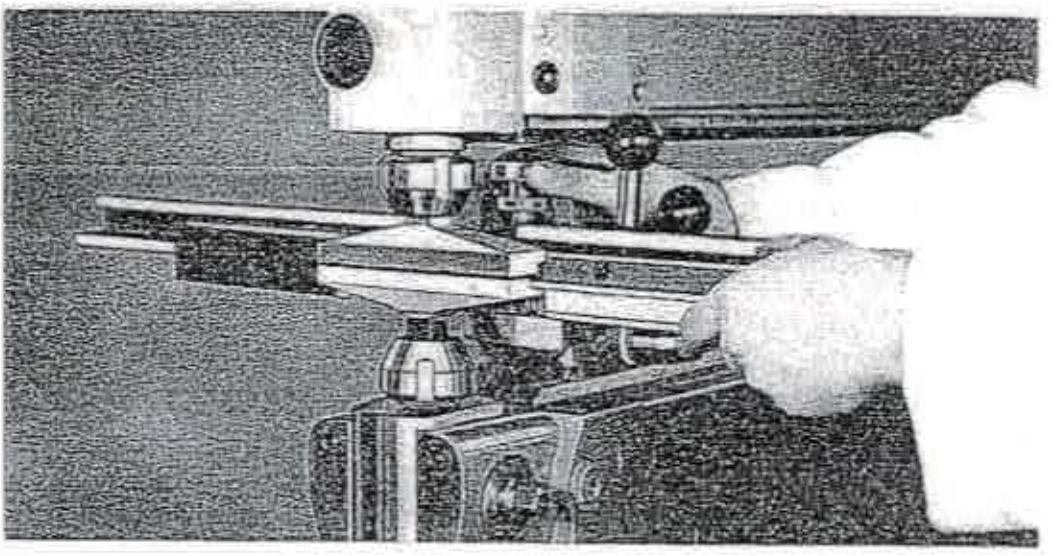


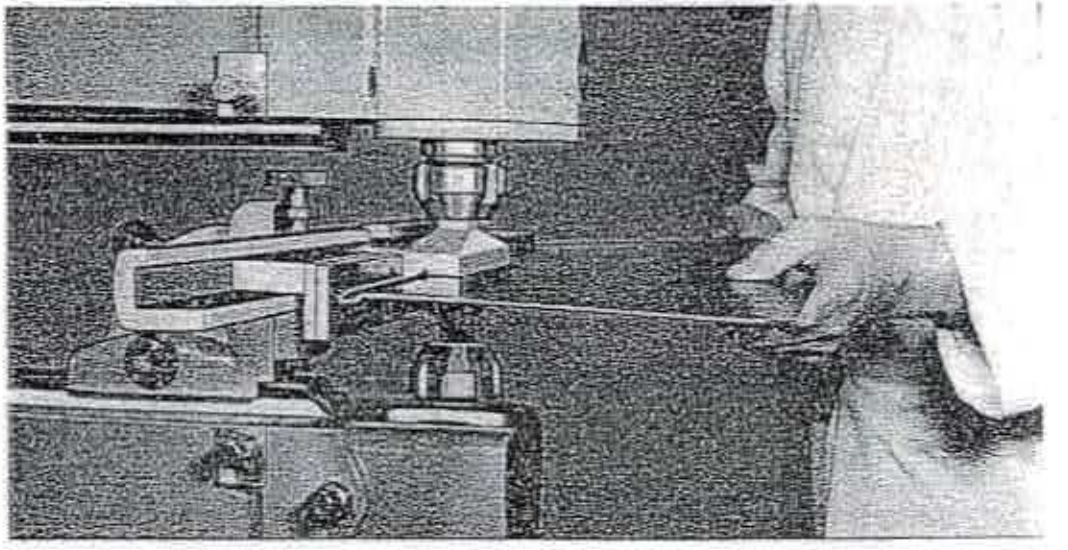
Fig. 22:1

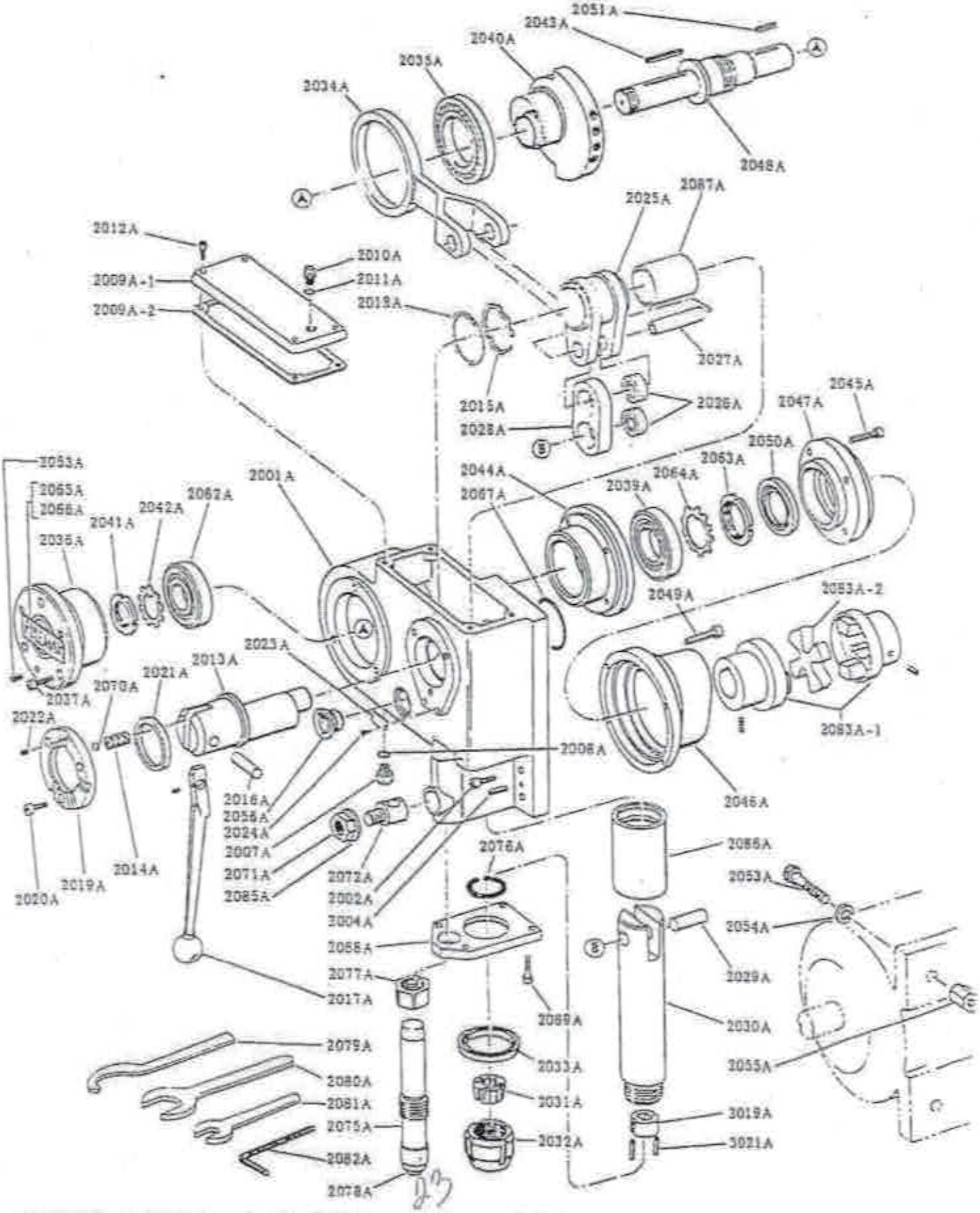
5. Set the height of the straight cutting attachment in the usual manner. See that the tool and the guide rail are parallel with each other.

6. Feeding of the material is simplified if it is first oiled or greased. Any residual burrs on the cut edge of the plate should be turned upward.

7. Hold the material constantly pressed against the guide rail during in- and out-feeding. This is particularly important at the start and finish of a working operation.

Fig. 22:2




2051A
2043A
2040A
2035A
2034A
2048A
2025A
2087A
2012A
2010A
2009A-1
2011A
2009A-2
2019A
2027A
2015A
2026A
2028A
2045A
2047A
2050A
2053A
2044A
2067A
2039A
2064A
2001A
2065A
2066A
2042A
2062A
2041A
2036A
2049A
2083A-2
2083A-1
2023A
2013A
2021A
2037A
2070A
2022A
2006A
2046A
2016A
2056A
2024A
2007A
2071A
2085A
2072A
2002A
2004A
2076A
2086A
2053A
2054A
2029A
2030A
2055A
2014A
2019A
2020A
2058A
2077A
2017A
2089A
2079A
2033A
2080A
2031A
2081A
2075A
2032A
2019A
2021A
2082A
2078A

PULLMAX

MECHANISM

PART NO.	DESCRIPTION
2001A	CRANK CASE
2002A	SCREW
2003A	WASHER
3004A	TAPERED PIN
2005A	WEDGE
2006A	ELASTIC PIN
2007A	OIL PLUG
2008A	PACKING
2009A-1	COVER
2009A-2	COVER GASKET
2010A	OIL PLUG
2011A	PACKING
2012A	SCREW
2013A	ECCENTRIC PIVOT
2014A	SPRING 12115501
2015A	RETAINING RING
2016A	BEARING PIVOT
2017A	LEVER
	STOP RING
	LEVER STOP DISC
2020A	SCREW
2021A	SEALING RING
2022A	ELASTIC PIN
2023A	INSTRUCTION PLATE
2024A	SCREW
2025A	FORK LINK
2026A	NEEDLE BEARING
2027A	BEARING PIVOT
2028A	CONNECTING LINK
2029A	BEARING PIVOT
2030A	U TOOLHOLDER
2031A	CLAMPING SLEEVE 10213
2032A	LOCKING NUT - 10012
2033A	SEALING RING 6166 2246
2034A	CRANK ROD
2035A	BALL BEARING
2036A	FRONT COVER
2037A	SCREW
2038A	STOP SCREW
2039A	BALL BEARING
2040A	DRIVE ECCENTER
2041A	NUT
2042A	LOCKING WASHER
2043A	WEDGE
2044A	BEARING BOX

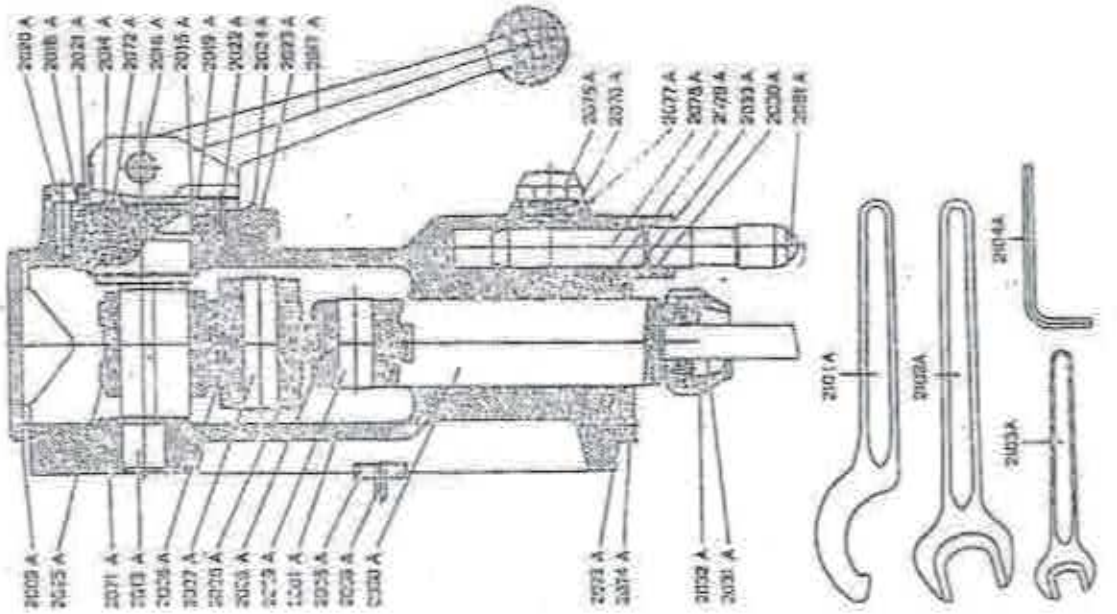
PART NO.	DESCRIPTION
2045A	SCREW
2046A	COVER
2047A	COVER
2048A	SHAFT
2049A	SCREW
2050A	SEALING RING
2051A	WEDGE
* 2052A	COUPLING
2053A	SCREW
2054A	WASHER
2055A	LOCKING NUT
2056A	OIL GLASS
* 2057A	SCREW
* 2058A	NUT
* 2059A	WASHER
* 2060A	DISTANCE RING
* 2061A	DRIVE ECCENTER
2062A	BALL BEARING
2063A	NUT
2064A	LOCKING WASHER
2065A	FRONT PLATE
2066A	SCREW
2067A	O-RING 6116217
2068A	COVER
2069A	SCREW
2070A	STEEL BALL
2071A	LOCKING NUT
2072A	LOCKING PISTON
2075A	HOLD DOWN
2076A	O-RING 6161226
2077A	ADJUSTING NUT
2078A	STEEL BALL
2079A	WRENCH - 6095 5017 68/62
2080A	WRENCH
2081A	WRENCH
2082A	WRENCH
2083A-1	COUPLING 23264
2083A-2	RUBBER INSERT 6116517
* 2084A	SCREW
2085A	RETAINING RING
2086A	UPPER TOOLHOLDER SHAFT BUSHING
2087A	ECCENTRIC PIVOT BUSHING
3019A	TOOL GUIDE
3021A	ELASTIC PIN

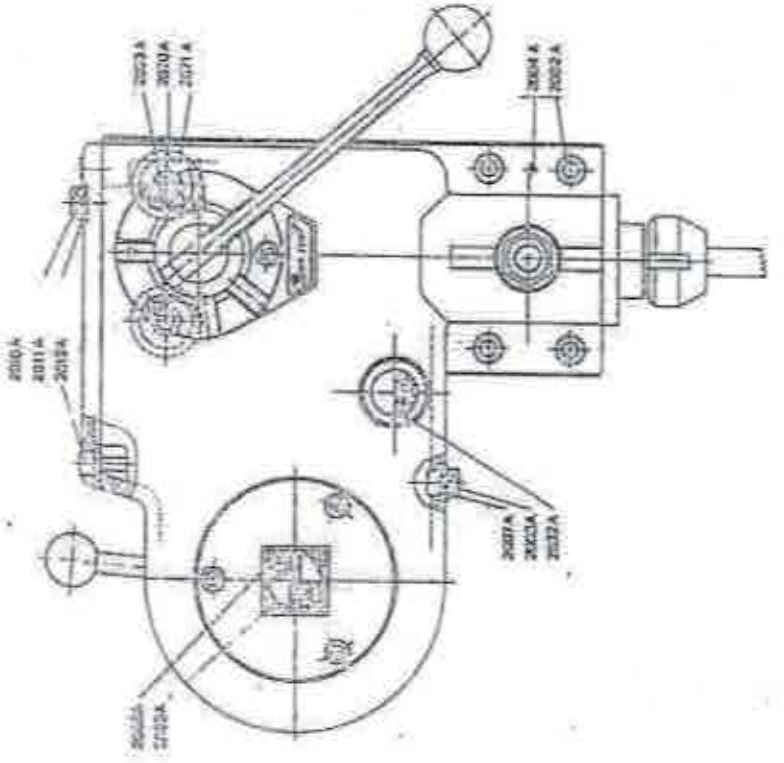
* NOT ILLUSTRATED

MEKANISM
Mechanism

För maskintyp: P5 X
For type of machine:

Modell A





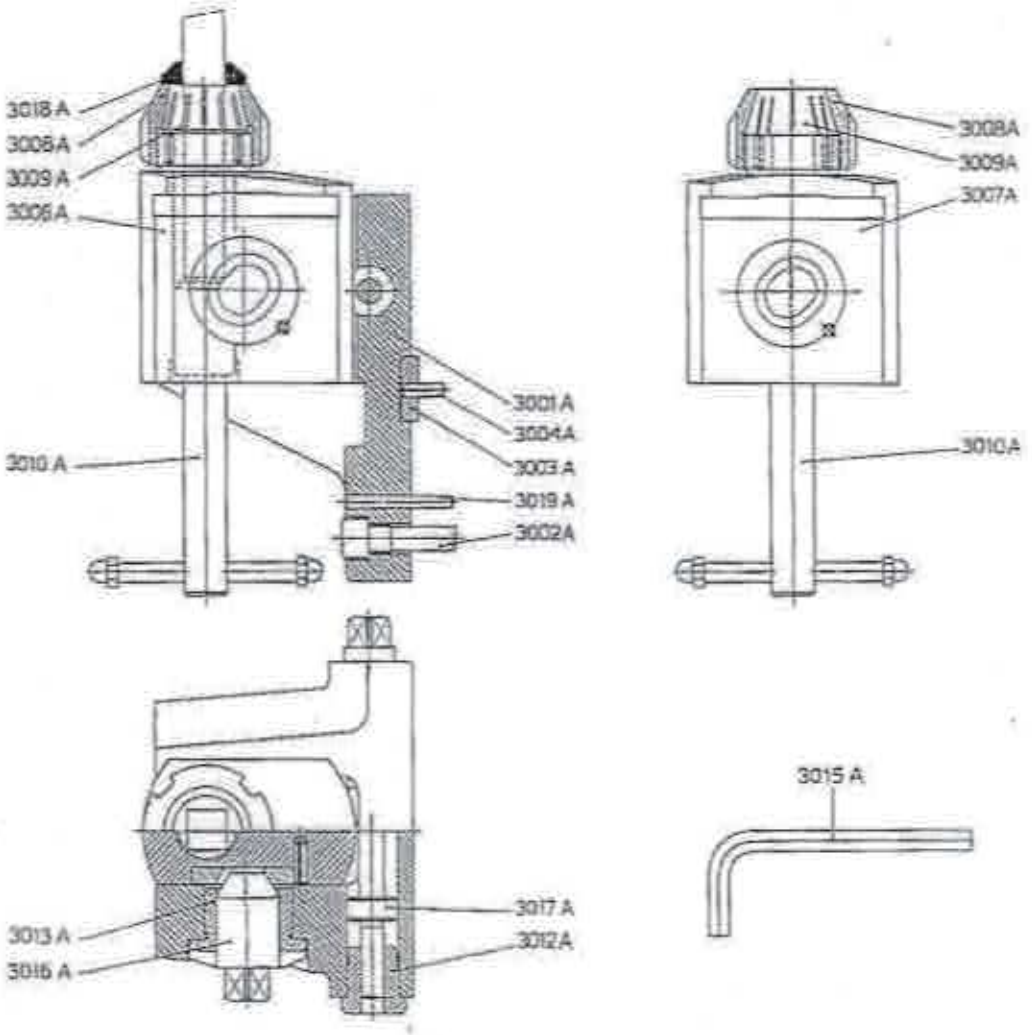
Detaljen betecknas: Maskintyp – detaljnummer (t. ex. P5X-2010A).
Vid beställning av PULLMAX reservdelar skall även maskinnumret angivas.

The part will be quoted as: Type of machine – number of components (e. g. P5X-2010A).
When ordering PULLMAX spare parts please also state number of machine.

NEDRE VERKTYGSFÄSTE
Lower toolholder

För maskintyp:
For type of machine: P5/2

Modell A



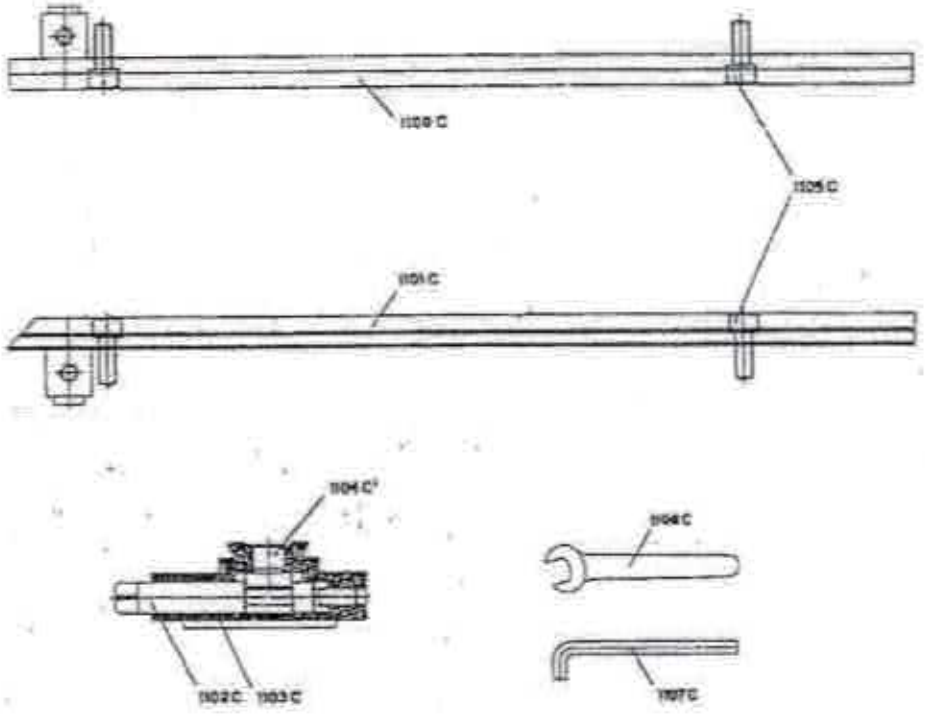
Detaljen betecknas: Maskintyp – detaljnummer (t.ex. P5/2-3010A).
Vid beställning av PULLMAX reservdelar skall även maskinnumret angivas.

The part will be quoted as: Type of machine – number of components (e.g. P5/2-3010A).
When ordering PULLMAX spare parts please also state number of machine.

GEJDSKENA
Guide

För maskintyp: P3/3
For type of machine:

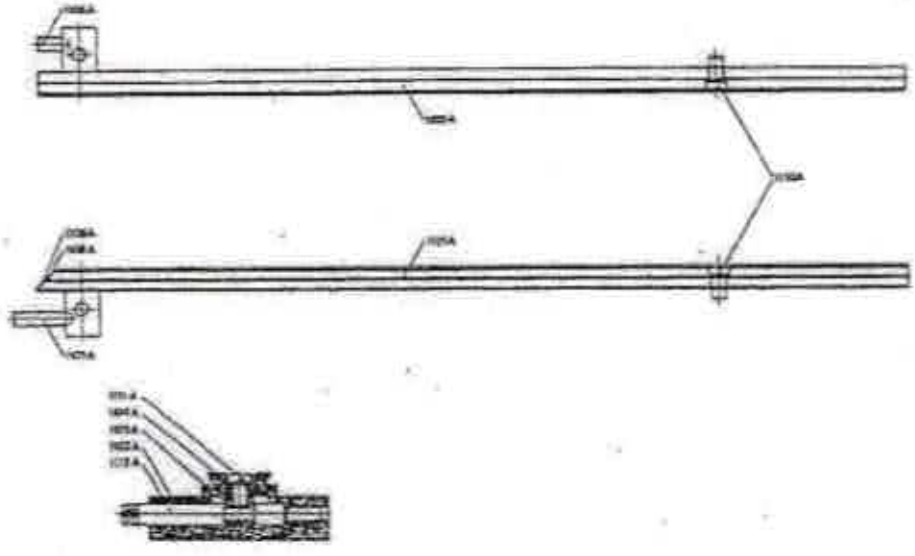
Modell C



GEJDSKENA
Guide

För maskintyp: P5/2, P6
For type of machine:

Modell A

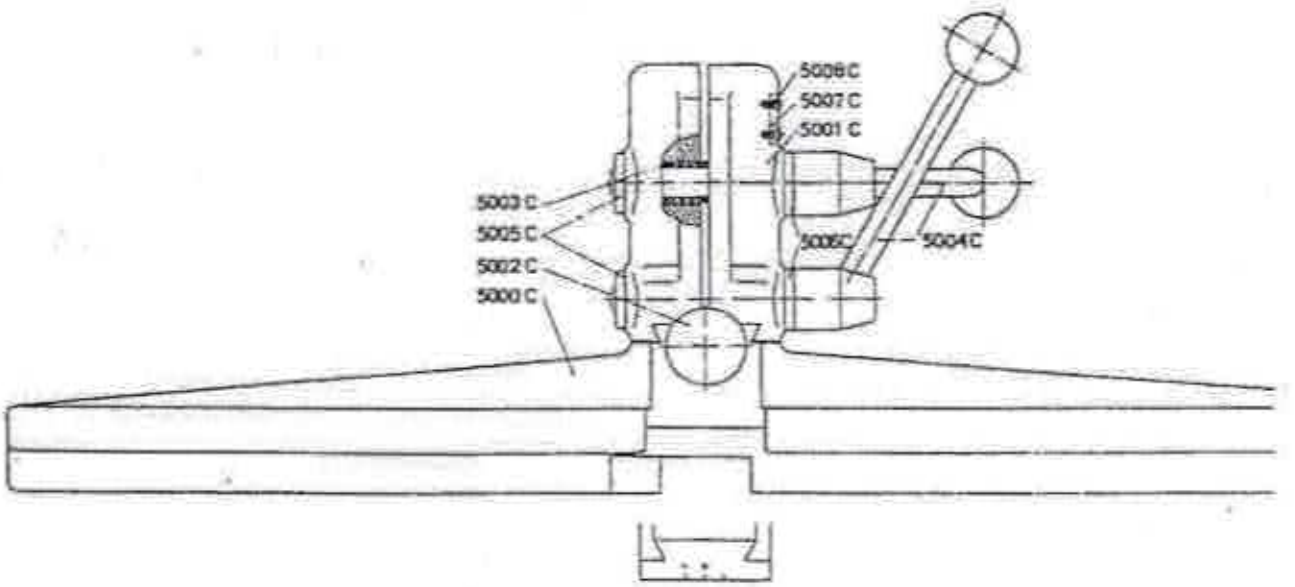


Detaljen betecknas: Maskintyp – detaljnummer (t. ex. P7-1103C).
Vid beställning av PULLMAX reservdelar skall även maskinnumret angivas.

The part will be quoted as: Type of machine – number of components (e. g. P7-1103C).
When ordering PULLMAX spare parts please also state number of machine.

RAKKLIPPNINGSLINJAL
Straight cutting attachment

För maskintyp: P3, T3, P5, P6, T5, D3 och P7 Modell C
For type of machine:

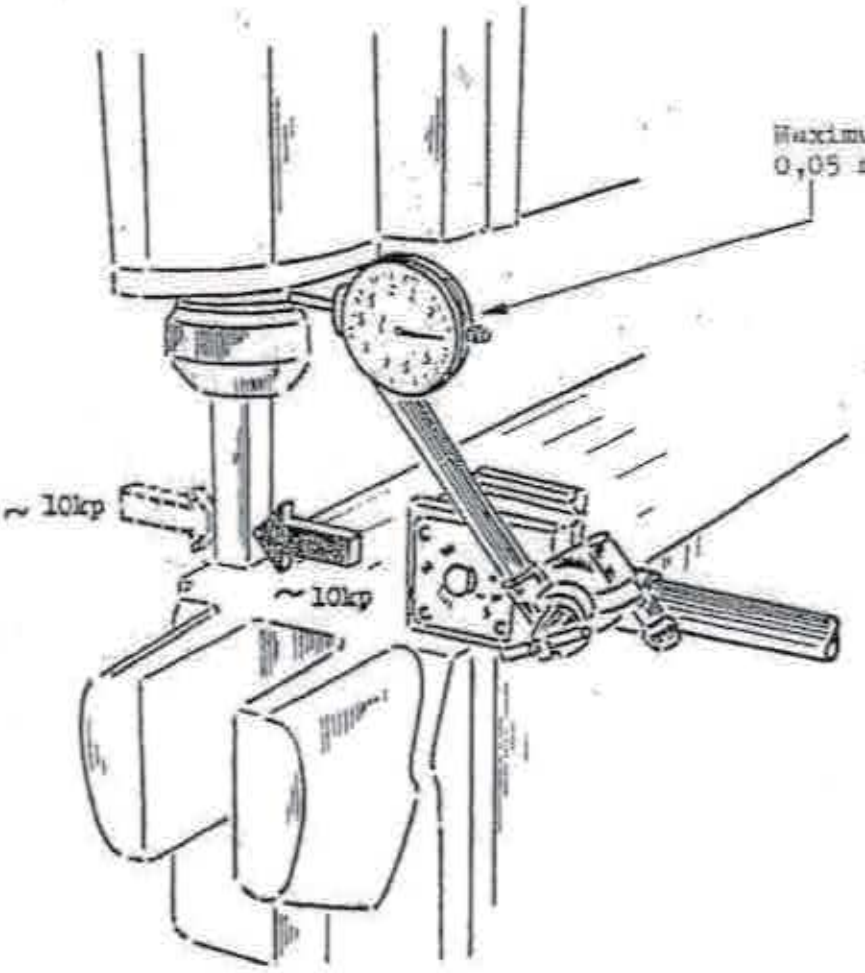


Detaljen betecknas: Maskintyp – detaljnummer (t. ex. P3-5004C).
Vid beställning av PULLMAX reservdelar skall även maskinnumret angivas.

The part will be quoted as: Type of machine – number of components (e. g. P3-5004C).
When ordering PULLMAX spare parts please also state number of machine.

SERVICE INSTRUCTION - FULLMAX UNIVERSAL MACHINES

Control of play in upper toolholder



1. Put an ordinary cutting tool in the upper toolholder.
2. Adjust the operating device of the machine in such a way that the toolholder is in its lower position.
3. Arrange a measuring clock in such a way that its measuring point reaches the cylindric part of the toolholder.
4. Set the measuring clock to zero.
5. Pull resp. push alternatively the cutting tool manually crosswise with a power of 10 kp. (20 lbs.)
6. Read the measuring clock. The above value is normal for machines delivered up till now.
7. If the play is greater than is normal, the parts worn out must be replaced by new ones.

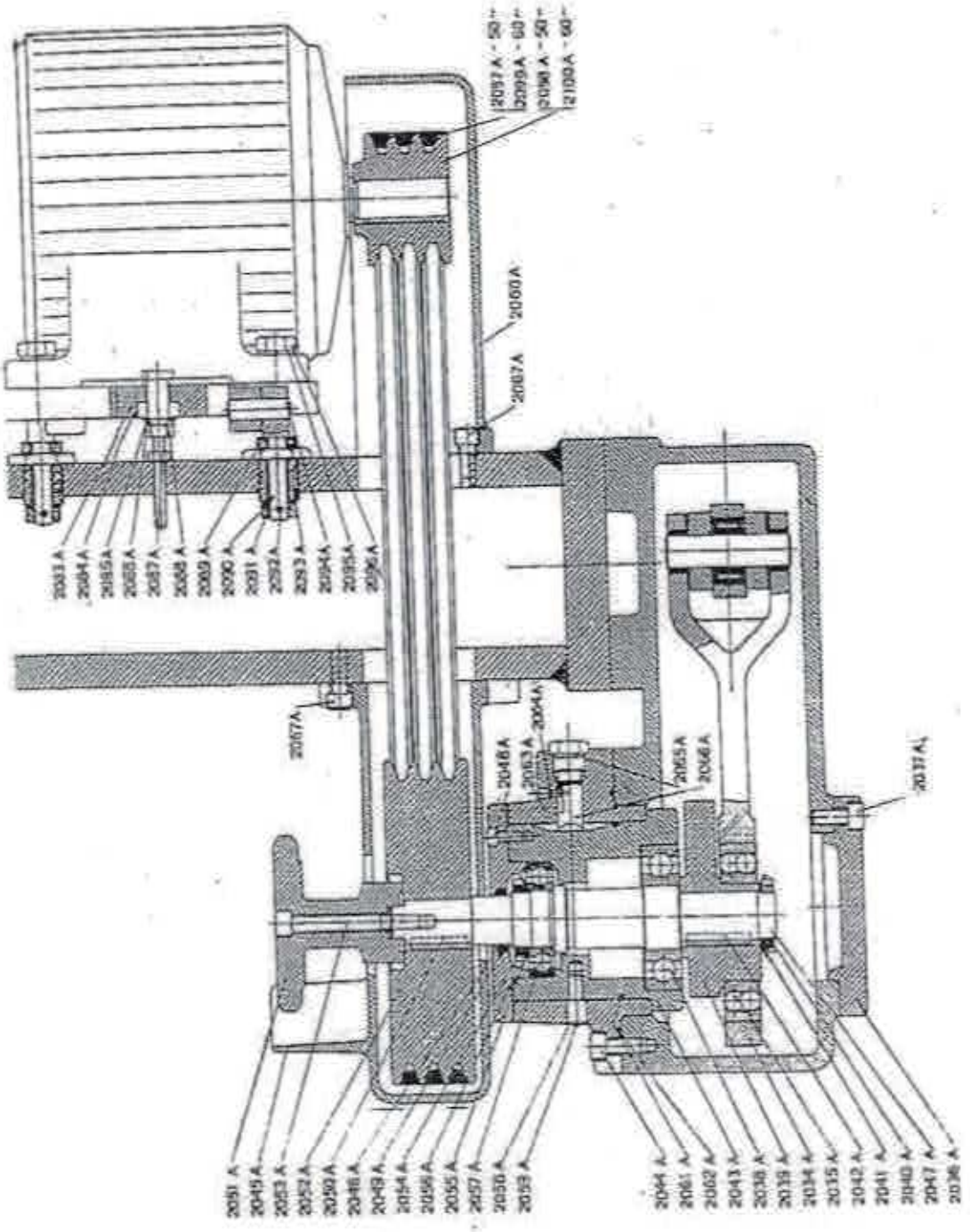
U Stålklint/IW
31.8.1966

PULLMAX

MEKANISM
Mechanism

För maskintyp: P5X
For type of machine:

Modell A

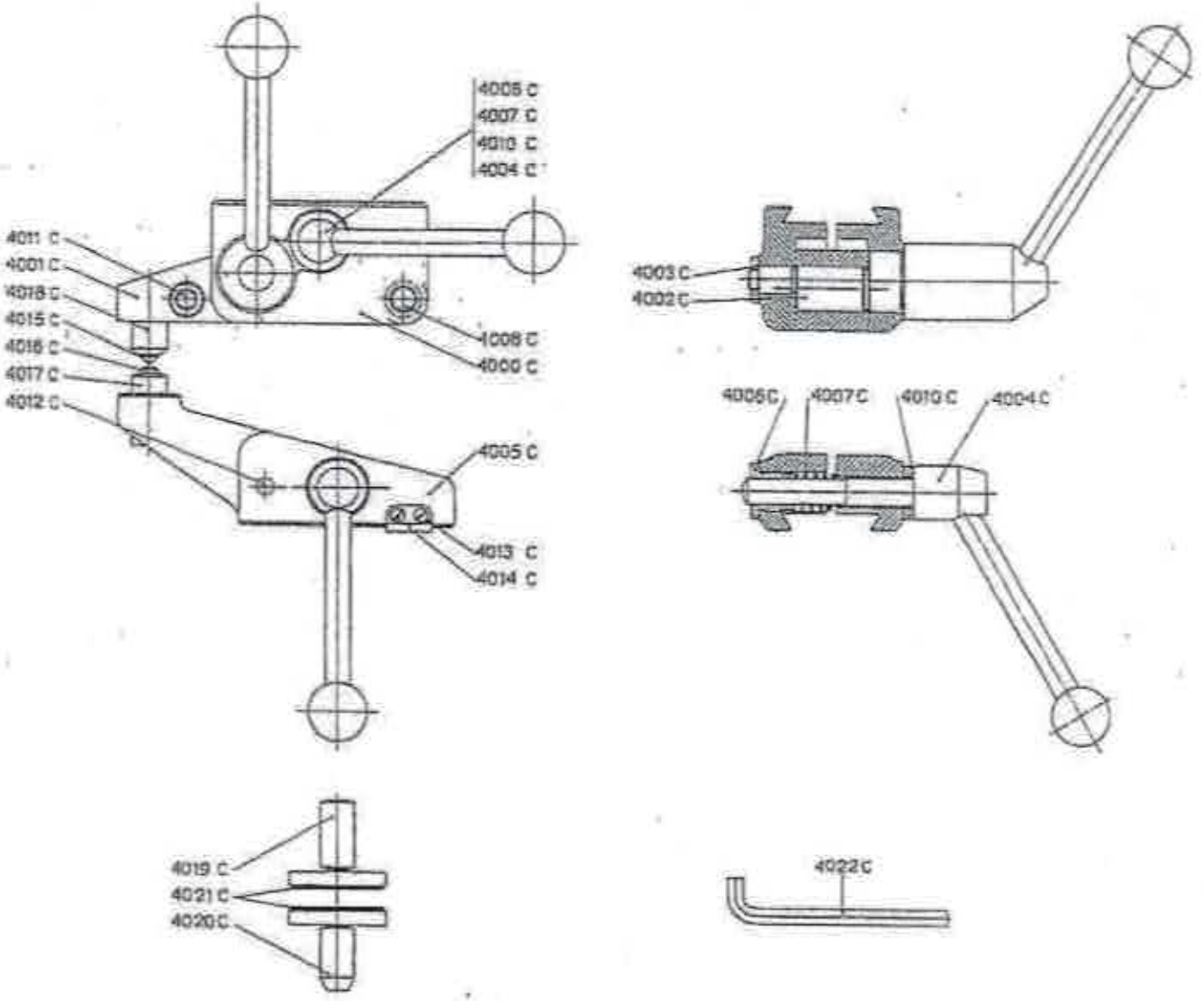


Detaljen betecknas: Maskintyp — detaljnummer (t. ex. P5X-2050A).
Vid beställning av PULLMAX reservdelar skall även maskinnumret angivas.

The part will be quoted as: Type of machine — number of components (e. g. P5X-2050A).
When ordering PULLMAX spare parts please also state number of machine.

CENTRUMANORDNING
Circle cutting attachment

För maskintyp:
For type of machine: P3, T3, P5, P6, T5, D3 och P7 Modell C



Detaljen betecknas: Maskintyp – detaljnummer (t. ex. P5-4004C).
Vid beställning av PULLMAX reservdelar skall även maskinnumret angivas.

The part will be quoted as: Type of machine – number of components (e. g. P5-4004C).
When ordering PULLMAX spare parts please also state number of machine.

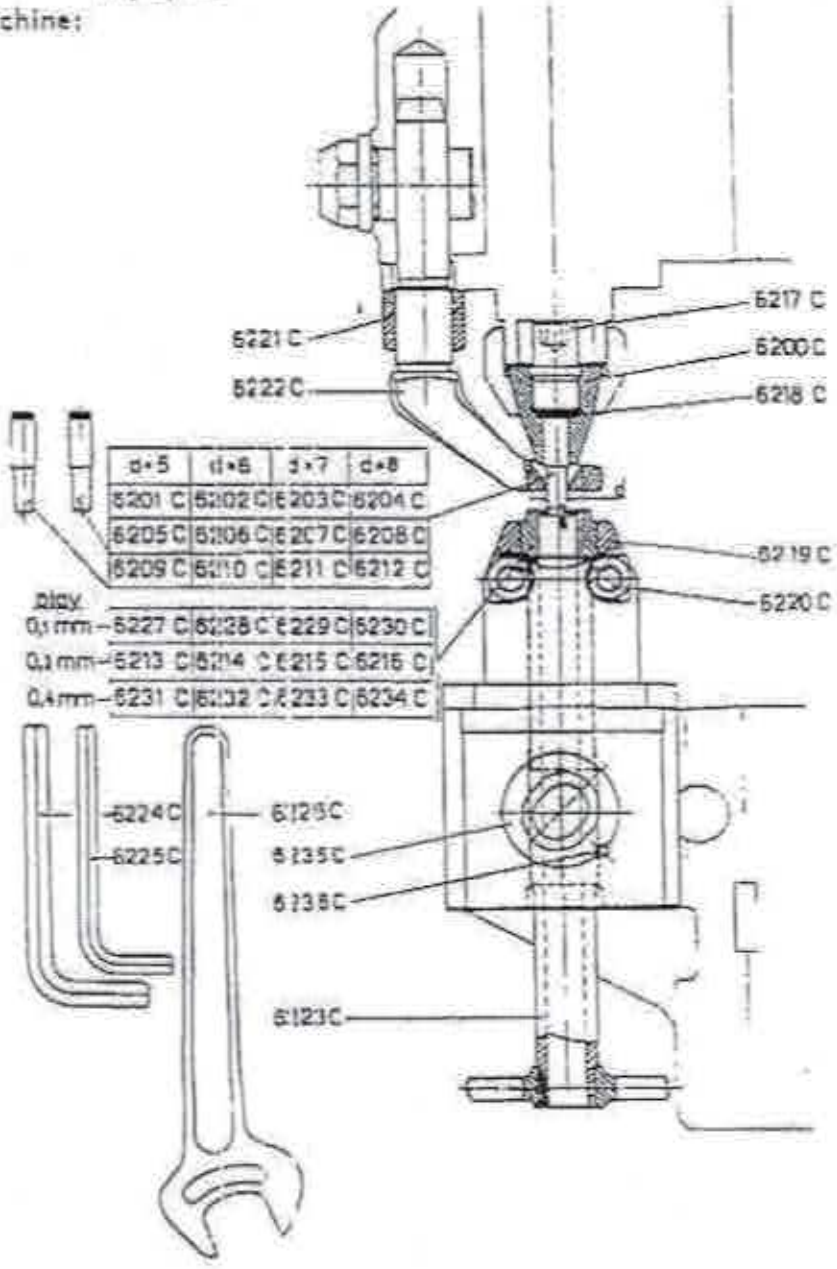
NIBBLINGSVERKTYG

Modell C

Nibbling tool

För maskintyp: P5/2, P6

For type of machine:



	d=5	d=6	d=7	d=8
	6201 C	6202 C	6203 C	6204 C
	6205 C	6106 C	6207 C	6208 C
	6209 C	6110 C	6211 C	6212 C
Play				
0,1 mm	6227 C	6228 C	6229 C	6230 C
0,2 mm	6213 C	6214 C	6215 C	6216 C
0,4 mm	6231 C	6232 C	6233 C	6234 C

Detaljen betecknas: Maskintyp - detaljnummer (t.ex. P5/2-6200C).

Vid beställning av PULLMAX reservdelar skall även maskinnumret angivas.

The part will be quoted as: Type of machine - number of components (e.g. P5/2-6200C).

When ordering PULLMAX spare parts please also state number of machine.

Part	Name of part	Article no.
2039A	Drive center	24348
2040A	Nut SKF KM5	605.211.16
2041A	Locking washer SKF MB6,	606.211.16
2042A	Wedge R8x7x35	624.131.16
2043A	Eccentric sleeve	24350
2044A	Screw UC6S 3/8"x22	604.218.53
2045A	Cover	27644
2046A	Cover	24345
2047A	Shaft	24346
2048A	Screw UC6S 1/4"x16	604.218.12
2049A	Sealing ring 30x40x7	616.622.07
2050A	Wedge R8x7x35	624.131.16
2051A	Adjusting wheel	22358
2052A	Pulley	26975
2053A	Screw UC6S 3/8"x80	604.218.68
2054A	Nut SKF KM7	605.211.17
2055A	Locking washer SKF MB7	606.211.17
2056A	O-ring 74.5x3A	616.112.26
2057A	Ball bearing SKF 6207	622.114.17
2058A	Lever	25109
2059A	Plate	24363
2060A	Screw DS nr 2x6	604.554.20
2061A	O-ring 104.5x3A	616.112.32
2062A	O-ring 144.5x3A	616.112.40
2063A	Bearing sleeve	24351
2064A	Stop screw	25108
2065A	Spring screw	24861
2066A	Piston	24860
2067A	Spring	24859
2069A	Screw DS nr 4x5	604.554.25
2071A	O-ring 36.2x3A	616.112.17
2072A	Steel ball 3/8"	622.812.30
2073A	Cover	23661
2074A	Screw UC6S 1/4"x16	604.218.12
2075A	Locking nut	23659
2076A	Locking piston	23658

SPARE PARTS P6 P5/2

Part	Name of part	Article no
2001A	Crank case complete	24354
2002A	Screw UC6S 1/2"x40	604.218.80
2003A	Screw UC6S 1/2"x50	604.218.82
2004A	Tapered pin KP 8x50	601.211.88
2005A	Wedge	23383
2006A	Elastic pin SS 6x20	601.512.13
2007A	Oil plug	21465
2008A	Packing 17x24x2	616.211.25
2009A	Cover	23351
2010A	Oil plug	21464
2011A	Packing 17x24x2	616.211.25
2012A	Screw UC6S 3/8"x22	604.218.53
2013A	Eccentric pivot	23381
2014A	Spring	121.155.01
2015A	Retaining ring SgA 55	607.111.47
2016A	Bearing pivot	23384
2017A	Lever	23350 — N/A
2018A	Stop ring	10022
2019A	Lever stop disc	26884 — N/A
2020A	Screw UC6S 3/8"x22	604.218.53
2021A	Sealing ring 60x75x8	616.622.24
2022A	Elastic pin SS 6x20	601.512.13
2023A	Instrct. plate	23394
2024A	Screw DS nr 4x5	604.554.25
2025A	Fork link incl bushing	29021
2026A	Needle bearing SKF Na 20	622.512.06
2027A	Bearing pivot	10032 — N/A
2028A	Connecting link	121.113.01
2029A	Bearing pivot	121.117.01 — N/A
2030A	D. toolholder	23378/11580 — N/A
2031A	Clamping sleeve	10213
2032A	Locking nut	10012
2033A	Sealing ring 50x70x10	616.622.46
2034A	Crank rod/bushing ditto	23349/10035 — N/A
2035A	Ball bearing SKF 1212	622.176.17
2036A	Front cover	24347
2037A	Screw UC6S 3/8"x22	604.218.53
2038A	Ball bearing SKF 6308	622.117.18

PULLMAX MODEL P5/2 AND P6 LOWER TOOL HOLDER & GUIDE RAILS

PART NO.	DRAWING NO.	DESCRIPTION
3001A	23368	Block base
3002A	EC65-1/2" x40	Screw
	EC65-1/2" x130	Screw
3003A	23383	Wedge
3004A	S56x20	Elastic pin
3006A	29016	L.toolhol. offs. complete
3007A	23405	Center toolh. complete
3008A	10012	Locking nut
3009A	10213	Clamp sleeve
3010A	29018	Feeding screw complete
3012A	10059	Adjusting nut
3013A	23387	Thread bushing
3015A	6-K N10	Wrench
3016A	24228	Locking screw
3017A	24229	Adjusting wedge
3018A	P6 21921	Rubber collar
3019A	KP-8x50	Tapered pin
	29015/ 29016	Lower tool-holder compl. excl. 3007A
1100A	23407	U. guide
1101A	23406/ 21511-1	L. guide, grad. scale mm
1101A	23406/ 21511-2	L. guide, grad. scale inches
1103A	29060	Block incl. 1112A
1104A	23410	Washer
1105A	23409	Driving pin
1106A	23411	Locking screw
1107A	23412	Locking screw
1108A	22833	Adjust. scale mm
	23083	Scale inches
	24266	Scale (USA)
1109A	DS nr 2 x 4	Screw
1110A	FK 1/2" x 20	Screw
1111A	FK 1/2" x 20	Screw
		Guides compl.

PULLMAX MODEL P2, P3/3, P13, P5, P5/2, T5, P6

CIRCLE CUTTING ATTACHMENT - STRAIGHT CUTTING ATTACHMENT

PART NO.	DRAWING NO.	DESCRIPTION
4000C	28319-2	U. circle cutting attachm.
4005C	28319-1	L. circle cutting attachm.
4001C	10084	Lever arm
4002C	10085	Eccentric pin
4003C	10148	Locking nut
4004C	10086/ 21865	Locking screw
4006C	10088	Thread bushing
4007C	20031	Spring
4008C	20788	Bearing pivot
4010C	10089	Washer
4011C	MC6S 12x30	Screw
4012C	CP-10^{m6}x80	Pin 60111252
4013C	10100	Adjusting plate
4014C	KFS-4x10	Screw 60432523
4015C	10091	Center point
4016C	10092	Center die
4017C	10093/ 10092	L. adjust. screw incl. center die
4018C	10090/ 10091	U. adjust. screw incl. center point
4019C	25771	U. screw rotot.
4020C	25772	L. screw rotot.
4021C	22859	Rubber washer
4022C	6-K10MM spec.	Wrench 60950242
5000C	24313	Rail
5001C	24314 exkl 24313	Block compl. incl. 5003-08
5002C	10099 10099	Adjust. screw
5003C	20031	Spring
5004C	10086/ 21865	Locking screw
5005C	10088	Thread bushing
5006C	10089	Washer
5007C	10100	Adjusting plate
5008C	KFS-4x8	Screw