



Operation Manual & Parts List For TL15 Version A

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<u>SECTION</u>	<u>PAGE</u>
<u>Section 1: DESCRIPTION</u>	
- Functional and dimensional descriptions	4
- Verification sheet	5
- Introduction	6
<u>Section 2: INSTALLATION</u>	
- Foundation and anchorage drawing	8
- General machine measurement drawing	9
- Installations instructions	10
- Lifting, machine unpacking	10
- Initial cleaning	10
- Lubrication	10
- Lubrication diagram	11
- Levelling instructions	12
- Initial start up	12
<u>Section 3: OPERATION</u>	
- Visible parts nomenclature	14
- Visible parts drawing	15
- Face plate mounting instructions	16
<u>Section 4: MAINTENANCE</u>	
- Transmission belt adjustment	19
- Headstock set-over adjustment	19
- Tailstock set-over	21
- Tailstock locking lever adjustment	21
- Spindle nose	22
<u>Section 5: PIÈCES DE RECHANGE</u>	
- Spare parts ordering procedure	24
- Spare parts illustrations and description index	25
 <u>Section A: SAFE WORKING PRACTISE</u>	
- Safety devices (mechanisms)	6A
- Safety measures	7A
- Electrical information	8A
- General safety norms (rules)	15A
- Hazzards and accidents	19A
- Noise level	24A



DESCRIPTION

CAPACITY

Centre height.....	200
Distance between centres.....	1000-1500
Swing over bed.....	400
Swing over carriage.....	370
Swing over crossslide.....	210
Bed width.....	300

HEADSTOCK

Main spindle bore.....	65
Main spindle nose.....	CAMLOCK-n°6 DIN 55027-n°6
Main spindle taper.....	5
N° speed ranges.....	2
Variable spindle speed r.p.m..... (1st. range)	0-675
(2nd. range)	675-3000

FEEDS

Z,X working feed (mm/min.).....	0-10.000
Z,X rapid motion (m/min.).....	10

TAILSTOCK

Tailstock shank diameter.....	68
Tailsstock shank travel.....	155
Tailstock taper.....	4

MOTORS

Main motor power in Kw.....	7,5
Feed force longitudinal (N).....	7.9
Feed force transverse (N).....	4
Pump motor power in Kw.....	0,57

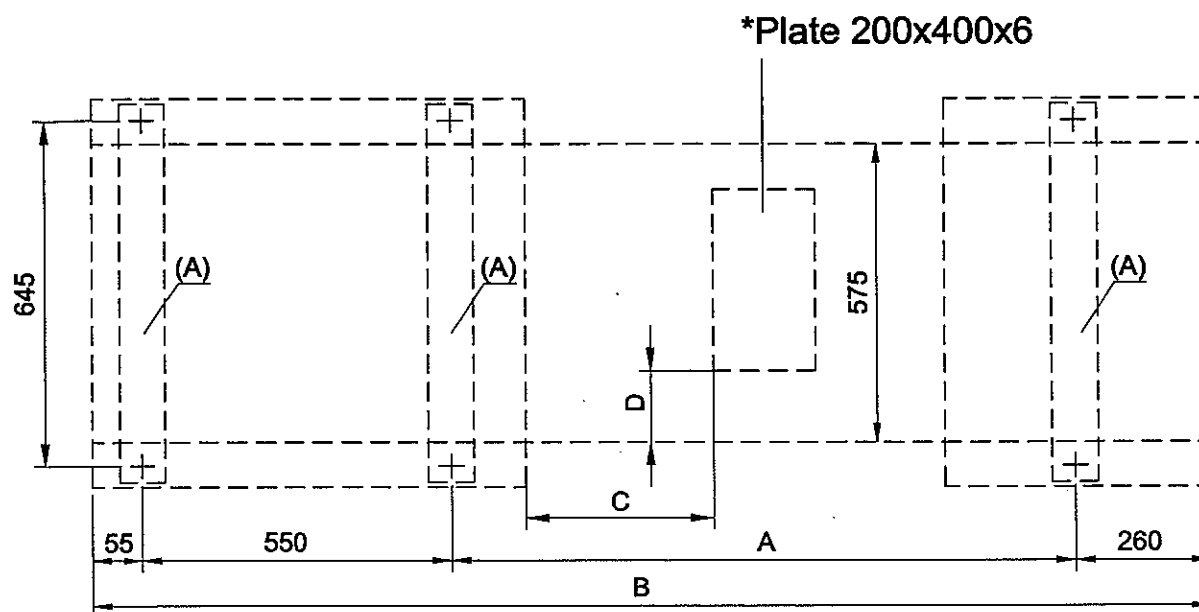
STEADIES

Max-min. capacity of fixed steady.....	10-130
Max-min. capacity of fixed steady.....	100-200
Max-min. capacity of travelling steady.....	10-80

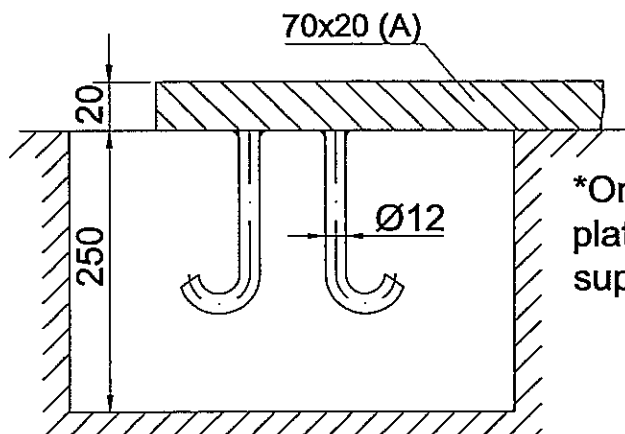
MAXIMUM ADMITTED DIAMETER IN TURNING AND GRINDING DEPENDING ON TURRET

MODEL	AUTOMATIC TURRET BARUFALDI	SEMI-AUTOMATIC TURRET ALGRA	MANUAL TURRET	MODELO BARUFALDI	MODELO ALGRA
	ØMAX. ADMISI.	ØMAX. ADMISI.	ØMAX. ADMISI.		
	370 400	370	370	BARUFALDI TS-120 DISCO DFI-30-255-8+80-B-12-S	TGA-R-250
				DISCO DF2-20-220-8	

INSTALLATION

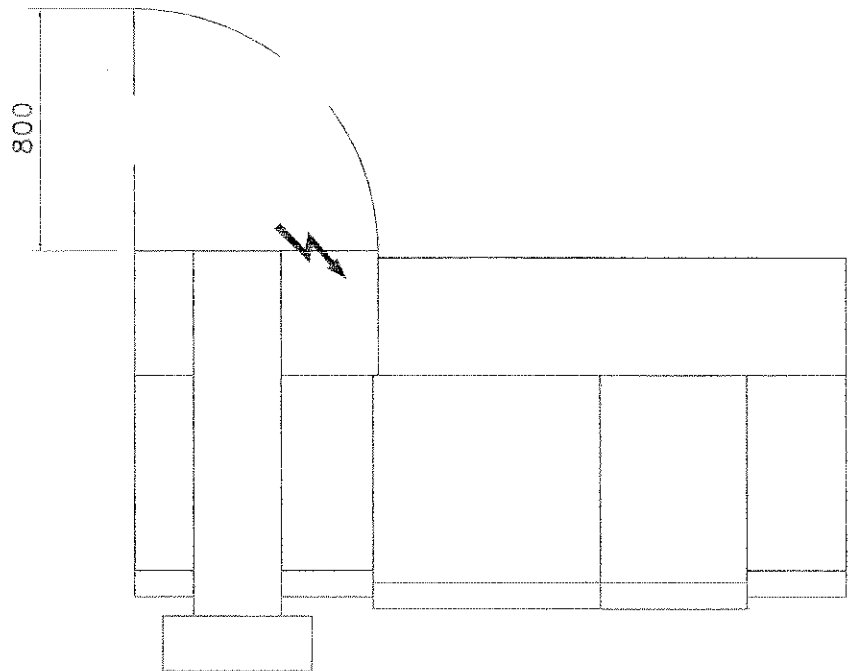
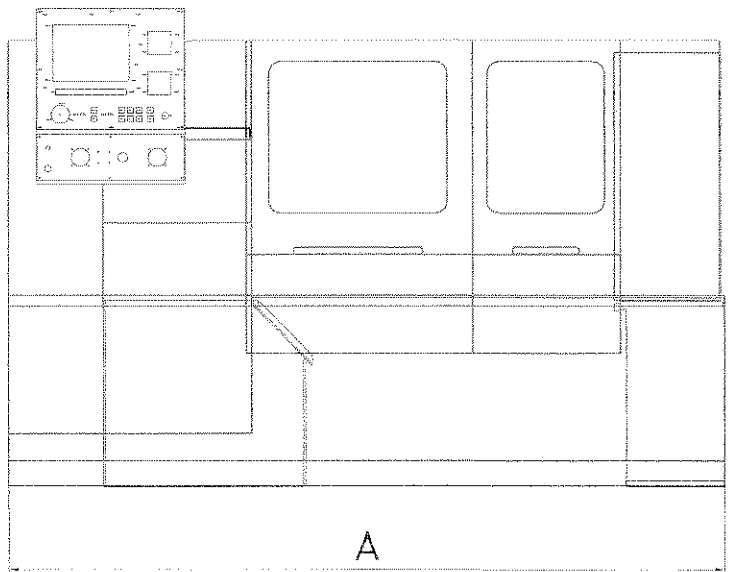
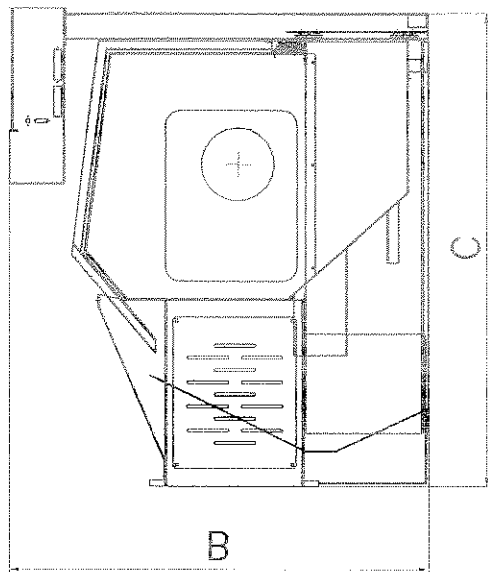


For instructions to see page 12



***On the 1000 and 1500 lathes fit a steel metal plate 200x400 with a thickness of 6 mm. To support both bed supports.**

 — 	A	B	C	D
1000	1414	2279	460	110



			A	B	C
KGS. NETO NET NETTO	2180	1000	2560	1575	1690

- INSTALLATION INSTRUCTIONS

The quality of the work produced by the machine depends mainly on the experience and skill of the operator, therefore it is essential to provide the best possible working conditions for the operator and the machine.

Lighting is an important element in order to obtain the best results. Natural light is best, however artificial lighting will suffice as long as it forms few shadows and is sufficiently intense. A good location for your new lathe would be a warm dry place, well away from walk through areas, with sufficient space around all sides of the machine and allowing enough space for the operator and for access for maintenance.

Vibration is a detriment for any lathe, it can adversely affect the operation of your lathe and also the results of the work being carried out. A cement floor is recommended, however, any solid foundation is admissible provided the machine is solidly supported. In other circumstances we recommend placing the machine on antivibratory supports.

- LIFTING

The machine must be lifted using slings as indicated in the drawing, taking the necessary precautions. The carriage and tailstock must be moved to the end of the bed in order to obtain balance under the hook.

- UNPACKING THE MACHINE

Place the lathe near to its final permanent location before proceeding to unpack. If the packaging shows signs of possible transport damage, take the necessary precautions not to damage the machine when unpacking. If any damage is found, the carrier and/or shipper must immediately notified of this fact to establish any claim which might arise.

Inspect the machine completely and carefully, making sure that all the materials, such as shipping documents, manuals and accessories supplied with the machine, have been received.

WARNING

DO NOT MOVE THE CARRIAGE OR THE TAILSTOCK UNTIL THE LATHE HAS BEEN CLEANED AND LUBRICATED AS EXPLAINED IN THE FOLLOWING PARAGRAPHS.

- FINAL CLEANING

Your new lathe must be completely cleaned after being unpacked, to make sure that all the moving parts and sliding surfaces cannot be damaged when operating the machine. Each unit leaves the factory with all its polished parts and sliding surfaces suitably greased, to avoid oxidation in the period of time that elapses until it is started up. Remove all the wrapping and clean all the surfaces with a degreaser to soften and remove the protective greases and coatings.

Clean all the surfaces with a clean piece of cotton and lubricate the lathe as explained in the following paragraph, before connecting to the power supply and beginning work with the machine.

WARNING

DO NOT USE COMPRESSED AIR TO CLEAN THE LATHE, OR DRY AFTER THE CLEANING, THE JET OF AIR MAY DRAW PARTICLES TO SENSITIVE AREAS, DAMAGING THEM.

- LUBRICATION

Lubrication is carried out automatically from a centralized lubrication unit which is located on the right hand side of the apron. The tank holds one litre of lubrication oil.

When the oil level goes down a message will appear on the monitor screen, (OIL LEVEL LOW), and if the machine is in automatic mode the programme will be interrupted. Lubrication takes place automatically every 45 minutes and last 10 seconds - this can be adjusted. At the same time using key  you can manually lubricate whenever you think necessary. To stop manual lubrication release the key.

On the apron there is an oil distribution valve which distributes oil to the cross-slide carriage, the longitudinal carriage and the bed guides.

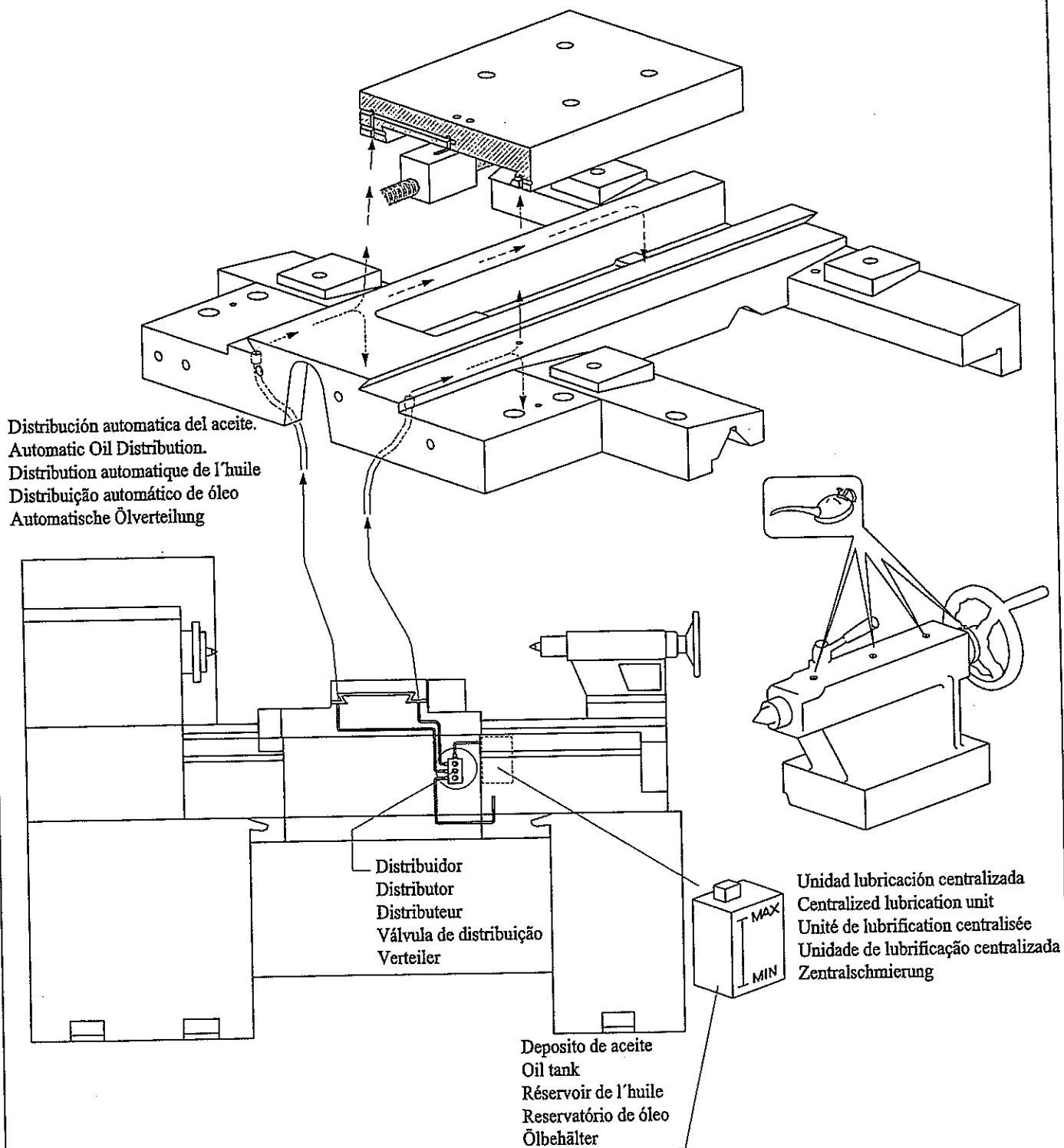
In addition all the points indicated on the enclosed drawing must be lubricated.

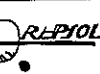
Use any of the oil types recommended in the table, where a list of the main companies, makes and grades are given for machine oils which meet our specifications.

This table can be used for making comparisons with the characteristics of any other make you may prefer.

WARNING

CHECK WEEKLY THE AUTOMATIC LUBRICATION PUMP UNIT IS OPERATING CORRECTLY AND THAT SUFFICIENT OIL IS REACHING ALL SLIDES, CROSS SCREW AND LONGITUDINAL SCREW.



						
 8 h.	Premium SAE 30	Esso extra Motor Oil 3	Mobil A	Motor oil SAE 30	K100 Motor Oil 30	Renolin 30
 1 l.	Guias 68	Febis K68	Vactra N°2 LC	Zeus guia68	Tonna Oil T68 (XHVI)	RENEP 2

INSTRUCTIONS FOR LEVELLING AND PERIODICAL VERIFICATION

It is essential that the lathe is perfectly levelled, as indicated below, so that the machine can work properly and to obtain the desired quality in the work.

The lathe can be positioned in three ways:

a) FREE POSITIONING.

This must be done by laying down a strong base, on each support of the 4, 6 or 8 levelling points (depending on the model of lathe), between the foundation and the machine leg.

b) ANTIVIBRATORY POSITIONING.

-Place the antivibratory pads 4, 6 or 8 (depending on the model of lathe), between the foundation and the leg of the lathe at every levelling point.

c) FIXED POSITIONING.

-On a light foundation, make the correct number of square holes depending on the model of lathe 200 mm. square by approximately 250 mm. deep (See page 8).

-Fit the required number of previously prepared flat irons (70x20), in line with the centres of the levelling points.

-Pour concrete into each of the square holes and leave to set.

-Lift the machine from the floor and fit part (A) into each levelling point with the rod centred in the inner hole of the tightening device (B) and anchor well.

-Place the machine on the previously fitted flat irons and weld.

-Fit the tightening plate (F). (See page 8)

-Proceed to level

Important: In the antivibratory and fixed positioning ways, the rods must NEVER rub against the inner hole of the tightening device (B).

LEVELLING

Once the bases are in place, proceed to level, following our instructions:

-Fit precision levels (0.05 mm/mt) on the cross slide, as indicated in the figure.

-Position the carriage on the centre of the bed and by means of the 4 end tightening devices (C) until you get an approximate reading on the precision levels.

-Move the longitudinal carriage towards the headstock and tailstock in turn, and by means of the 4 end tightening devices obtain a reading of 0.05 mm/mt on the levels.

-Adjust the tightening devices (D) until they place pressure but do not vary the levelling.

-Tightening grub screws (G) of the central tightener (F*) down onto the steel plate 200x400 (See page 8) and in the bed without any variation in the levelling.

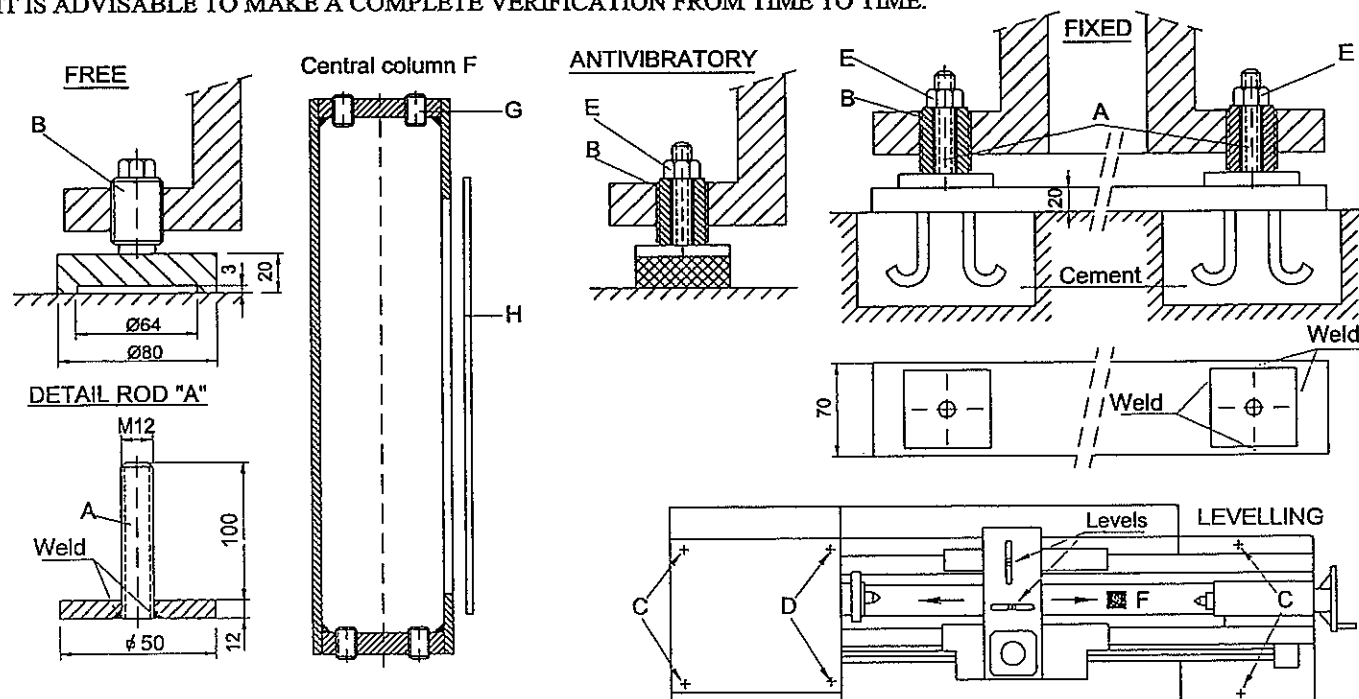
-To accede to the screws (G) remove the cover back of the column.

-Lock with nuts (E) and check the levelling again.

-Check that all the tightening devices are supported.

-Before starting work with the machine, check the tolerances with the verification sheet enclosed with this manual.

IT IS ADVISABLE TO MAKE A COMPLETE VERIFICATION FROM TIME TO TIME.



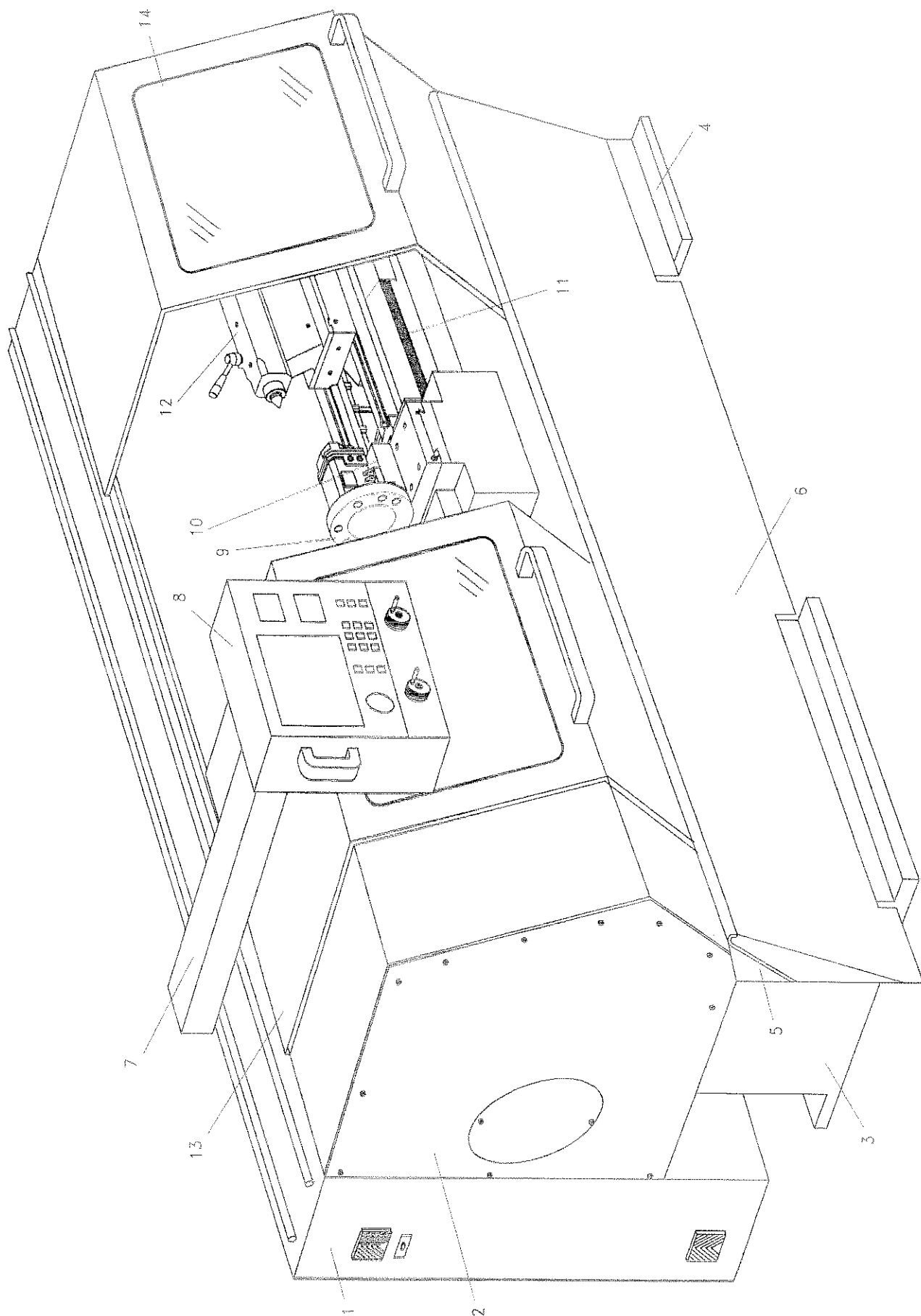
INITIAL START UP

Electrical connection must only be carried out by qualified people.

Connect the motor and the controls to a suitable electricity supply in accordance with all the local codes. Before connecting the motor, make sure that all the voltages and other current requirements of the motor adapt to the electrical power supply. When the connection has been made, check that the motor phase (rotation) is correct, checking that the rotation of the main shaft or face plate is forwards when the start lever is down.

OPERATION

The drawing only tries to show the most common parts of a lathe, not being able to coincide exactly with the design that you have.



* CAM-LOCK *

Insert all the bolts in the plate chuck back, until the circular reference line (F) is in line with the wall of the chuck back (fig. 2) and the semicircular grooves are in line with the holes of the lock or eccentric spindles.

Fit the lock screws (E) into each bolt (D) and tighten.

Make sure that the two contact sides (plate and shaft) are well cleaned of impurities.

-NOW YOUR FACE PLATE CAN BE MOUNTED-

Before coupling the face plate to the shaft nose, check that the reference line of the eccentric lines up with the reference line of each housing in the nose of the shaft (unlocked position).

In these housings there are also two marks (V), one at 90° and another at 180°, from the reference line (I).

The area between 0° and 90° is for attachment and the area from 90° to 180° is the safety area.

Place the face plate in position and tighten the eccentrics by turning in a clockwise direction with the wrench supplied for this purpose.

If the reference line on the eccentric is not in the 90° to 180° area, the face plate must be withdrawn and the face plate bolt must be adjusted again.

HOW TO ADJUST THE CAM-LOCK BOLT

- Slacken and withdraw the locking screw (E).
- Give the bolt (D) one complete turn inwards or outwards as necessary.
- Fit the locking screw (E) on again into its housing and re-tighten.

DO NOT FIT ANY FACE PLATE FROM ANOTHER MACHINE BEFORE VERIFYING BEFOREHAND THE CORRECT ADJUSTMENT OF EACH OF THE BOLTS WITH THEIR ECCENTRICS.

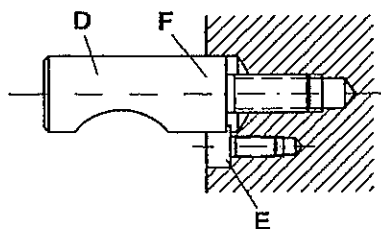


FIG. 2

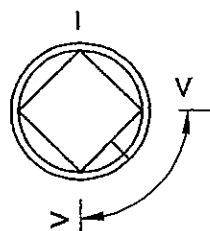


FIG. 3

MAINTENANCE

TRANSMISSION BELT ADJUSTMENT

The belts leave the factory with the tension adjusted.

After a few hours operation, the belts must be tightened again, as they stretch because they are new. We leave the correct tension of the belt or belts to the operator's own criterion, due to his experience. As a guide, we advise starting the lathe up, at maximum speed, the tension being correct if, on starting up, the belts do not slide or make a noise.

The tension is adjusted by tightening screw (H) until the correct tension is reached.

HEADSTOCK SET-OVER ADJUSTMENT

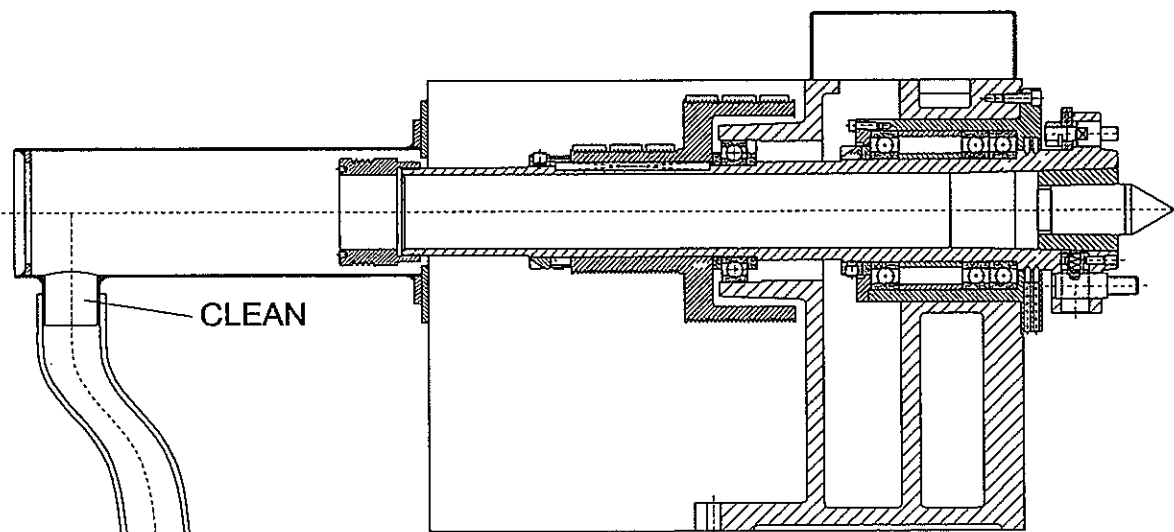
The set-over of the headstock or lack of parallelism of the headstock with the bed, is corrected by adjusting nut (J) in one direction or another, as necessary.

To do this, the four attachment screws of the headstock or bed must be slackened beforehand.

IMPORTANT. Before adjusting the set-over of the headstock, due to the taper turning, **MAKE SURE THAT THE LEVELLING IS CORRECT**, as indicated on page 12.

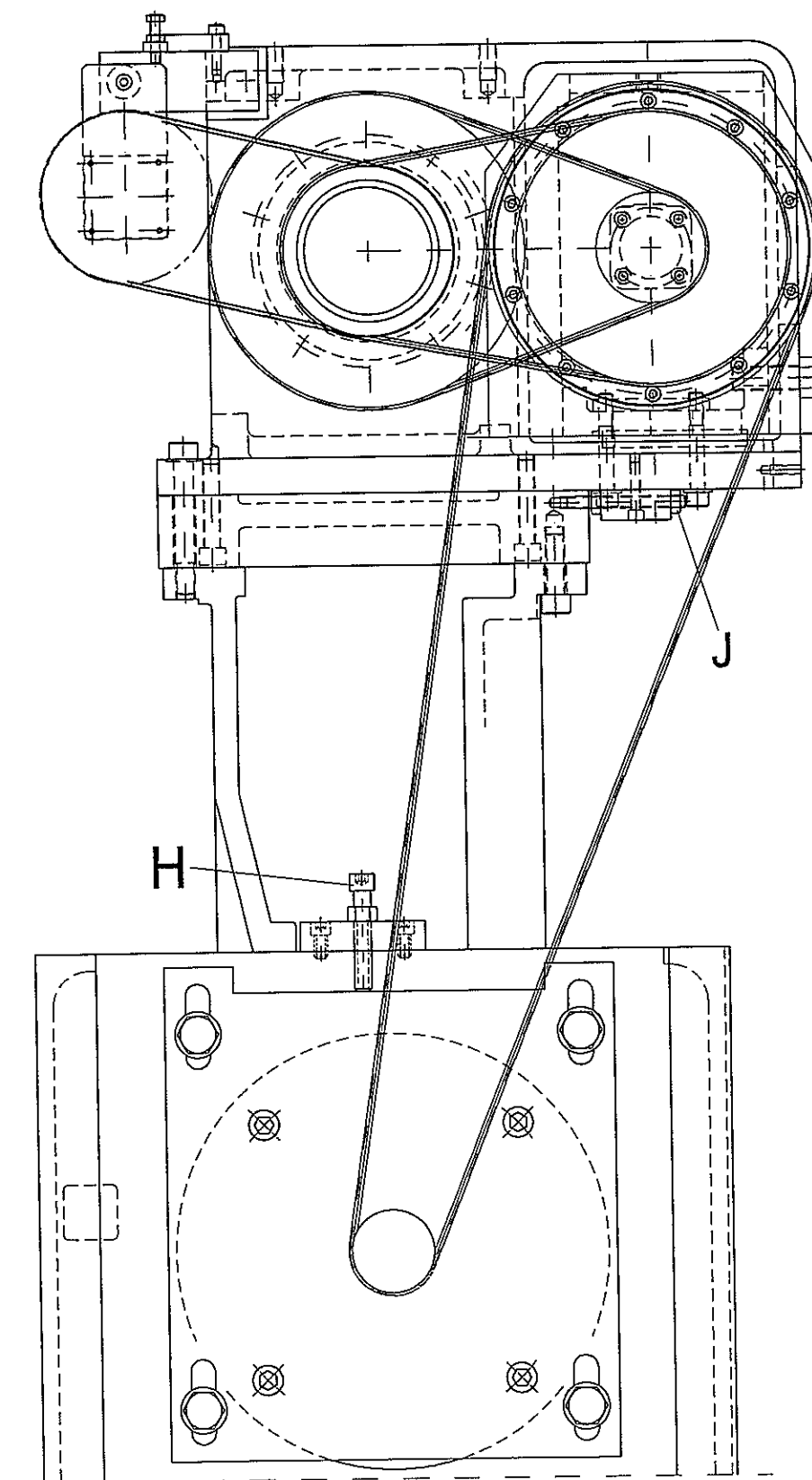
CLEANING OF HEADSTOCK COOLANT RETURN TUBE

IMPORTANT. It is necessary at all times to keep the coolant return tube free from all impurities and cuttings.



REGLAGE DE LA TENSION DE LA COURROIE DU MOTEUR
EINSTELLUNG DES ZAHNRIEMENS, HAUPTANTRIEB
AJUSTE DA TENSÃO DA CORREIA DO MOTOR

AJUSTE TENSION CORREA MOTOR
MOTOR BELT ADJUSTMENT



CORRECCION DESCENTRAMIENTO CABEZAL
HEADSTOCK OFF-CENTER ADJUSTMENT
CORRECTION DESALIGNEMENT POUPÉE

SPINDELSTOCK-JUSTIERUNG
CORRECÇÃO DO DESCENTRAMENTO DO CABEÇOTE

TAILSTOCK LATERAL ALIGNMENT

- Loosen the nuts (D).
 - Loosen the bolts (E).
 - Loosen the lock screws (F).
 - Loosen the lock screw (G2) and fasten lock screw (G1) to move the tailstock towards the operator.
 - Loosen the lock screw (G1) and fasten lock screw (G2) to move the tailstock away from the operator.
 - Fasten the lock screws (F) to maintain the position of the tailstock with the necessary lateral displacement.
 - Fasten the bolts (E) and the nuts (D).
- The alignment marks (H) on the right-hand side can be used as a reference to move the tailstock to its original position again.

CROSS SLIDE GUIDE ADJUSTMENT

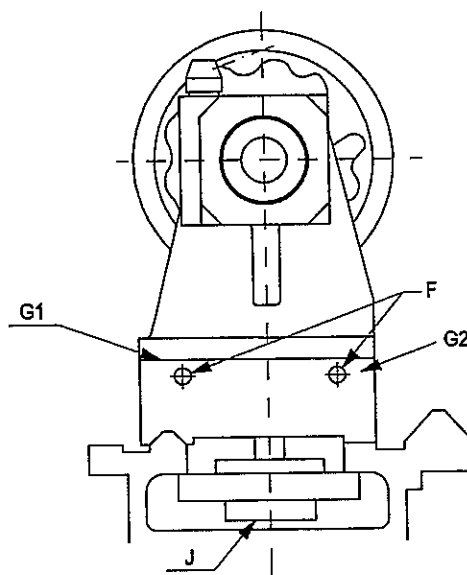
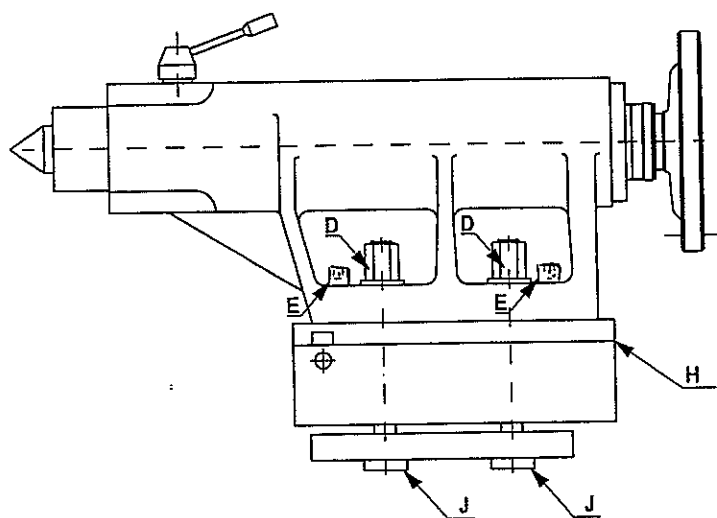
After to 200 hours of work carry out the First adjust to cross slide guides.

The play in the cross slide guides is corrected by means of the tapered gib, situated on the right hand side of the cross slide.

To correct, adjust screw (G) situated on the rear part of the carriage loosening it. Then, tighten screw (H) situated on the front part of the carriage until the correct adjustment is obtained.

Once the correct adjustment has been obtained, tighten screw (G) again to fix the gib in its proper position.

CNC-*



(G1,G2)

TORNILLO DESPLAZAMIENTO LATERAL
TAPER ADJUSTMENT SCREW

VIS DE DEPLACEMENT LATERAL

SCHRAUBE ZUM VERSTELLEN DES RETTSTOCKES

PARAFUSO DE DESCENTRAMENTO LATERAL

(H)

MARCAS DE ALINEACION
ALIGNMENT MARKS

REPÈRE D'ALIGNEMENT DE LA CONTRE-POINTE

MARKIERUNG ZUM AUSRICHTEN

MARCAS DE ALINHAMENTO

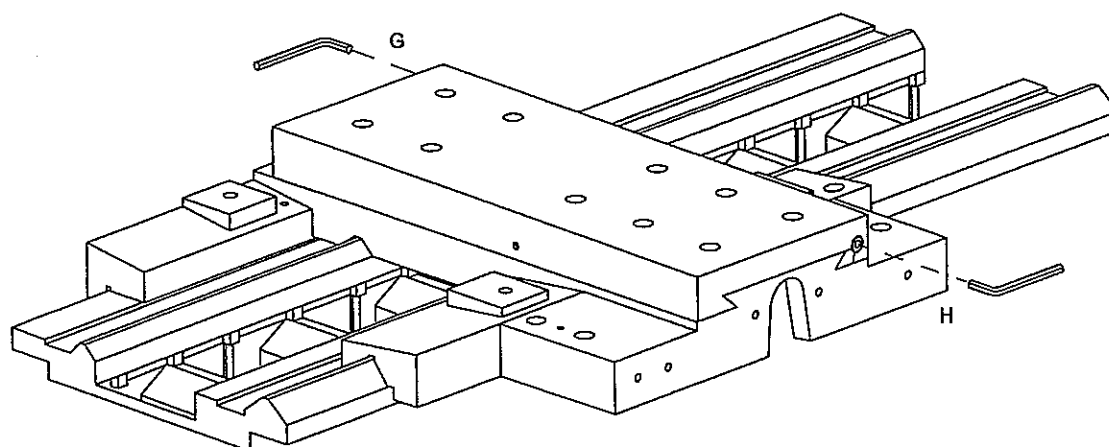
(D)

FRENO DEL CONTRAPUNTO
TAILSTOCK CLAMPING LEVER

BLOCAGE DE LA CONTRE-POINTE

VERSTELLUNG DER KLEMMSCHRAUBEN

TRAVÃO DO CONTRAPONTO



REGLAS CONICAS DE AJUSTE

ADJUSTMENT TAPER RULERS

REGLES CONIQUES DE REAJUSTEMENT

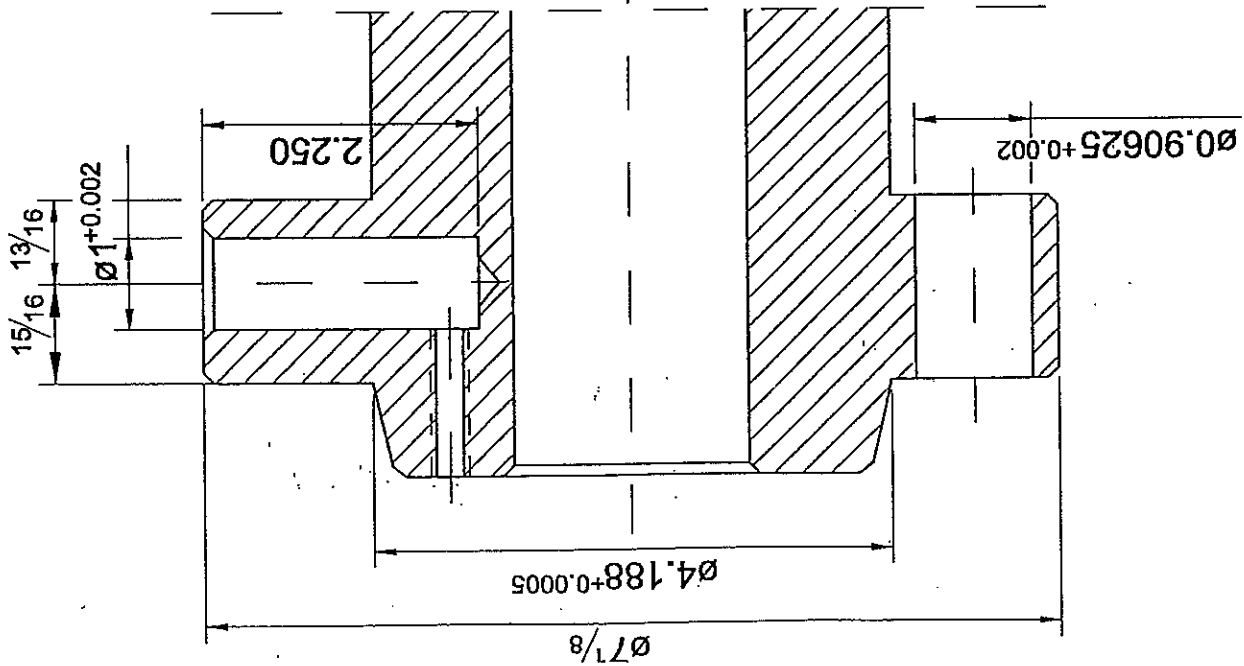
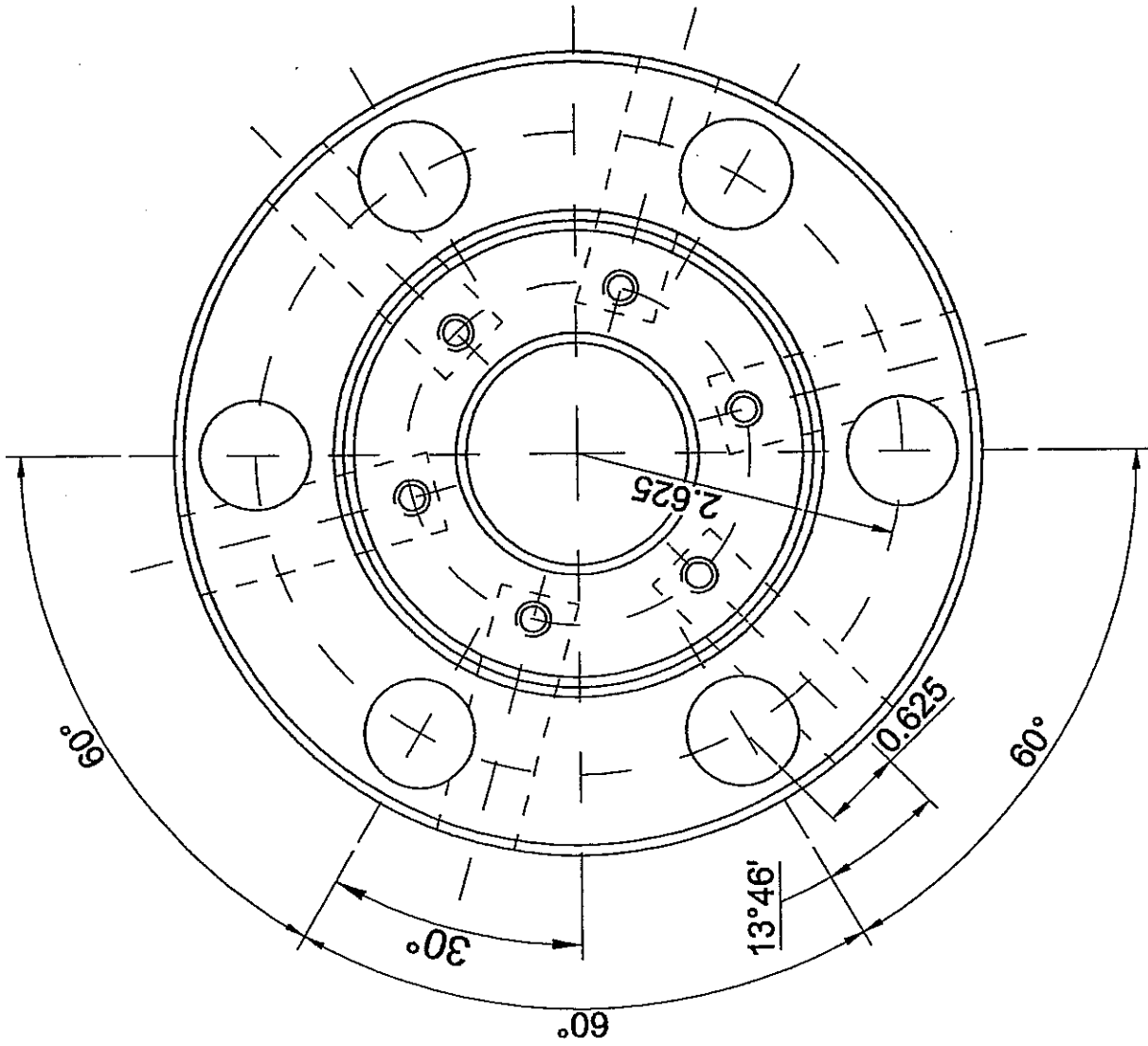
KEILLEISTE FÜR PLANSCHLITTEN

RÉGUAS CÔNICAS PARA AJUSTE

DIN-55029, CAM-LOCK n°6

NC-200

JUL-96



SPARE PARTS

*** INDICATE MACHINE MODEL***** INDICATE MACHINE SERIAL NUMBER**

This is engraved on the end of the bed in the guide free area. (see drawing).

*** MAKING REFERENCE TO THE ASSEMBLY DESIRED**

Indicate:

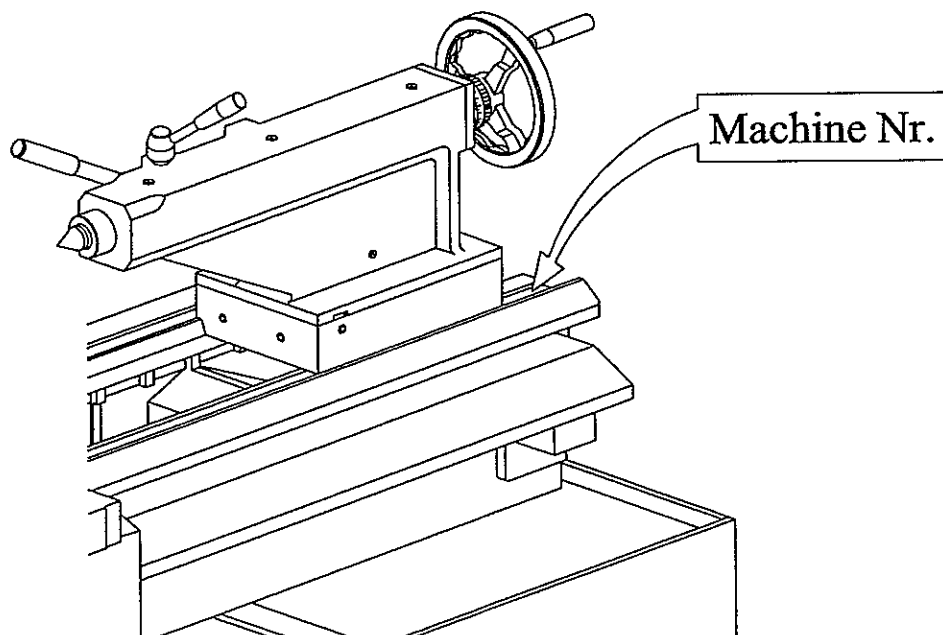
- Page no. of manual.
- Part number and description.

Once the part has been located on the illustrative drawing (right hand page), on the previous page or left-hand page you will see the part no. and its denomination.

- Indicate Qty. to be supplied.

* When requesting spare parts which might vary in length, indicate the distance between centres of the machine.

* When requesting lead screw or lead screw nut spare, indicate if it is MM or T.P.I.



*Mustang

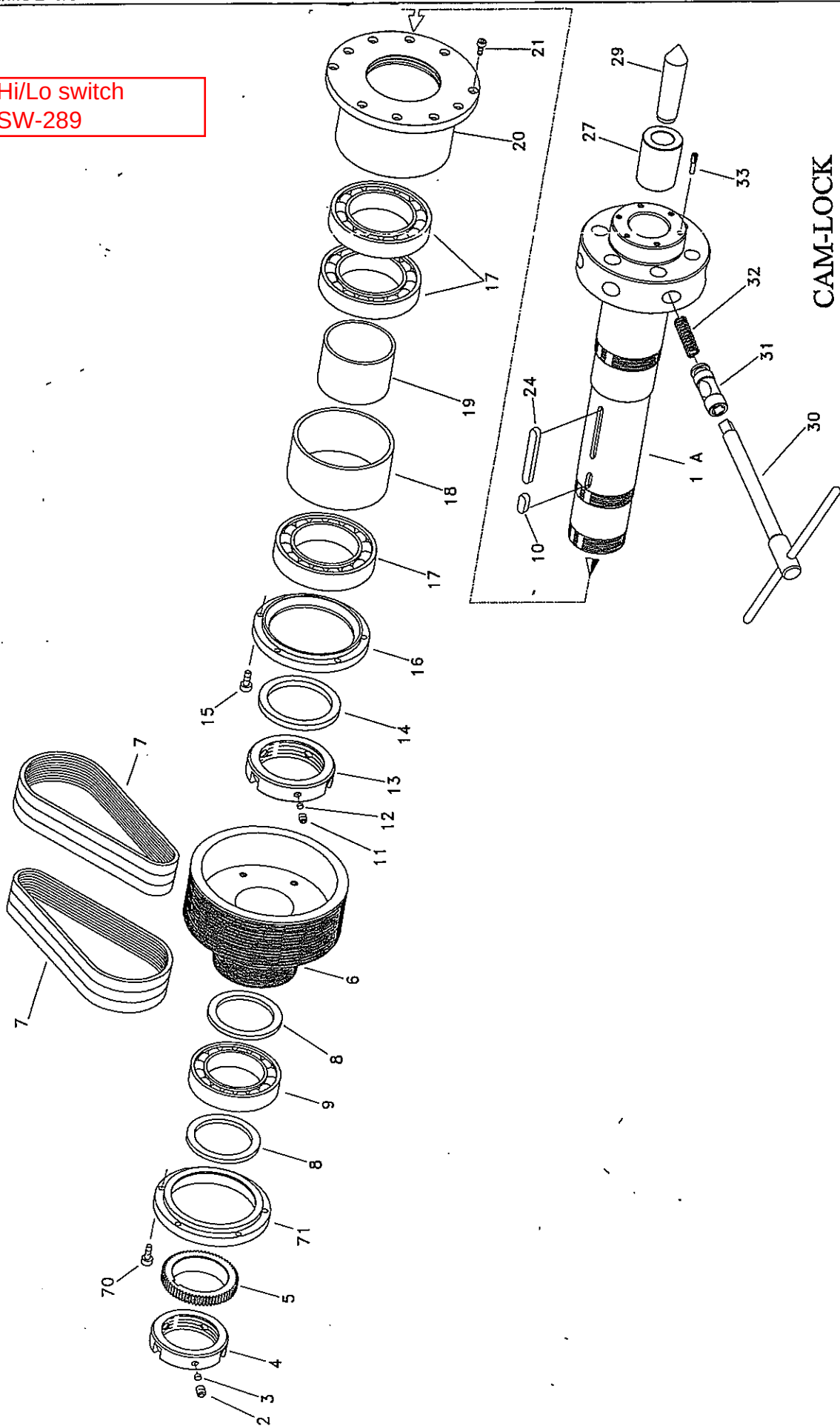
ASSEMBLY	PAGE
- HEADSTOCK Main spindle	27
- HEADSTOCK Input shat	29
- HEADSTOCK Roller tightener	31
- Z AXIS BALL SCREW	35
- X AXIS BALL SCREW	39
- "Z" & "X" HANDWHEELS	41
- AUTOMATIC TURRET	43
- QUICK CHANGE TURRET	45
- MANUAL TURRET	47
- M H TURRET	49
- TAILSTOCK	51
- BED - LEGS	53
- STEADIES CAPACITY	55
- FRONT GUARD	57

*CN/200 3°F

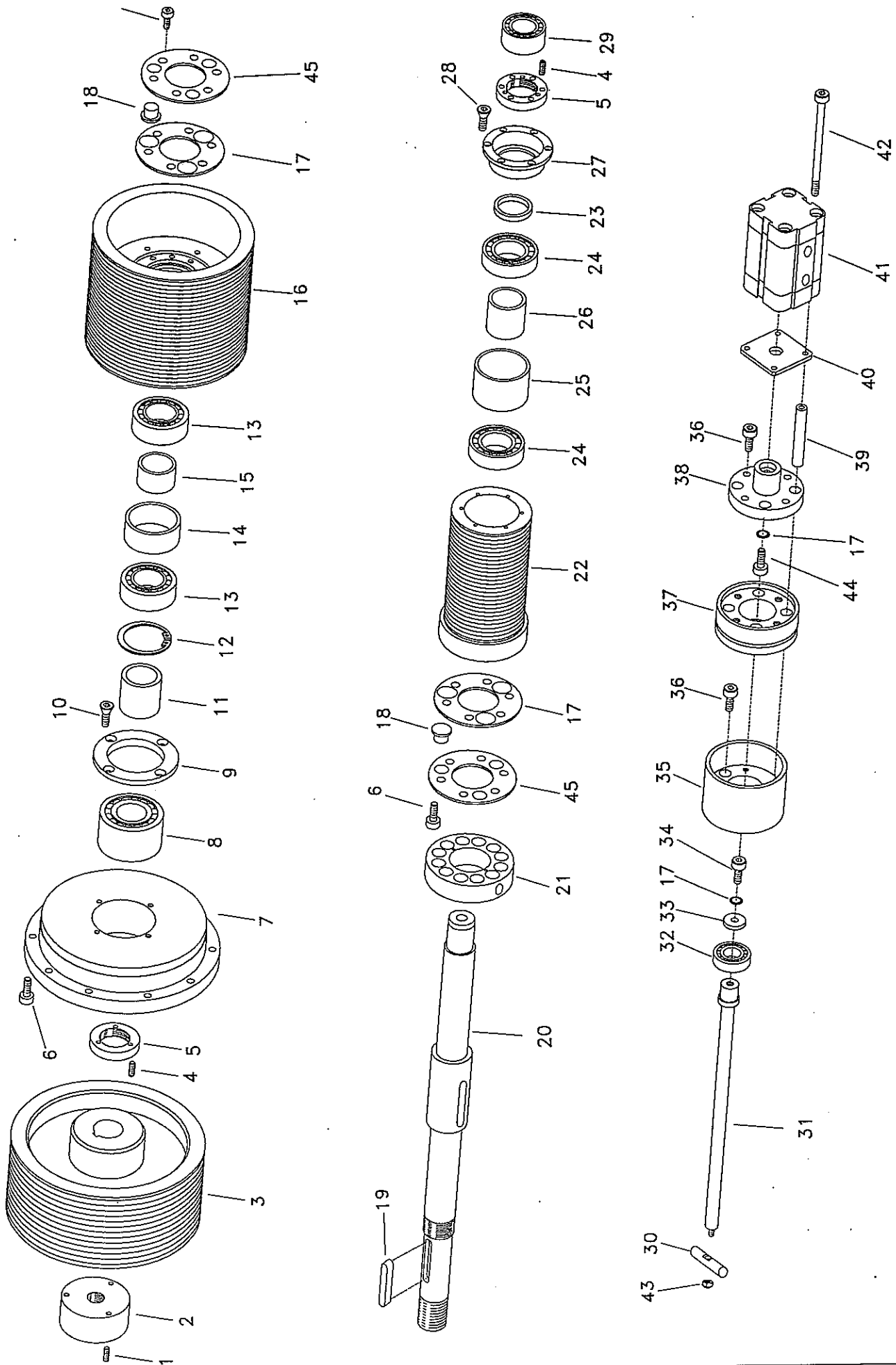
Item	Part number	Description	Qua.	Item	Part number	Description	Qua.
1A	15.01.01164	Main spindle CAM-LOCK N°6	1	51			
1B				52			
2	DIN 913	Allen grub screw M12x10	3	53			
3	01.01.00131	Adjusting nut plug	3	54			
4	15.01.01043	Main spindle nut lock	1	55			
5	15.01.01413	Main spindle toothed pulley	1	56			
6	15.01.01408	Main spindle double pulley	1	57			
7	Belt POLY-V	Profile PK Lefe.=1015 (9 grooves)	3				
8	15.01.01157	Bearing tightening bushing	2				
9	DIN 625	Bearing 6016- 2Z BG-189	1	60			
10				61			
11	DIN 913	Allen grub screw M10x10	3	62			
12	10.01.02053	Adjusting nut plug	3	63			
13	15.01.01022	Main spindle nut lock	1	64			
14	15.01.01042	Bearing tightening bushing	1	65			
15	DIN 912	Allen screw M6x20 MLA-28	6	66			
16	15.01.01024	Main spindle cover	1				
17	DIN 628	Bearing 7018 ET 3ULP4 BG-199	3	70	DIN 912	Allen screw M8x20	6
18	15.01.01155	Bearing separator bushing	1	71	15.01.01407	Main spindle rear cover	1
19	15.01.01156	Bearing separator bushing	1	72			
20	15.01.01154	Main spindle bearing sleeve	1				
21	DIN 912	Allen screw M8x25 MLA-24	10				
22							
23							
24	DIN 6885	Key 12x7x100	1				
25							
26							
27	01.01.00030	Main spindle conical bushing	1				
28							
29	01.01.00042	Main spindle fixed centre	1				
30	01.01.00103	Eccentric key	1				
31	01.01.00102	Eccentric Cam - Lock	6				
32	01.01.00135	Eccentric spring	6				
33	01.01.01155	Eccentric grub screw	6				
34							
35							
36							
37	DIN 6885	Key 6x6x15	1				
38	DIN 7984	Allen screw M6x15	2				
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

Spindle motor - MO-114
 Mount plate for MO-114 - MP-587
 Spindle motor pulley bushing PY-184
 Inverter PS-55/PS-78
 Converter PS-60
 Spindle encoder 9595
 Spindle encoder bracket MPL-151

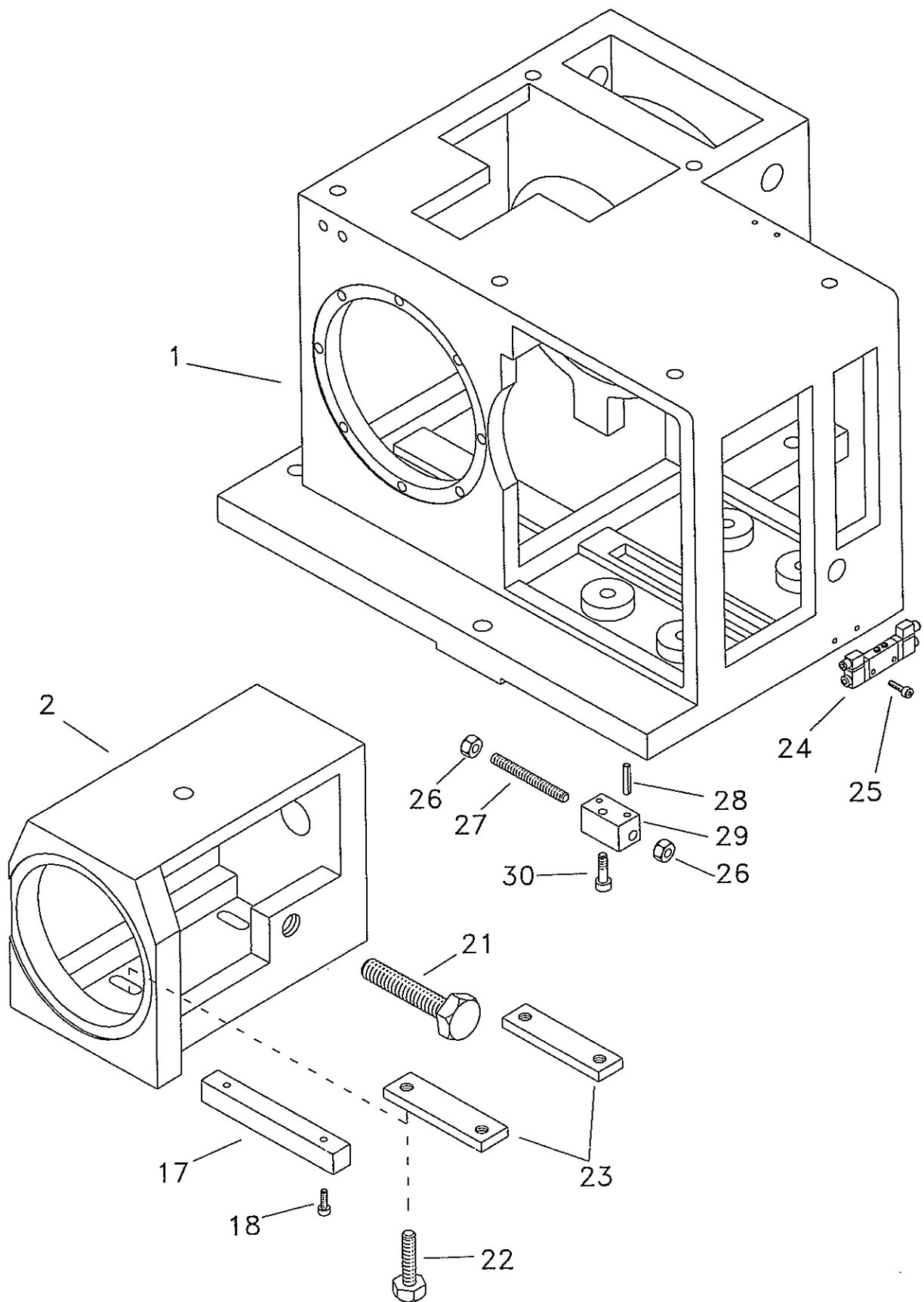
Hi/Lo switch
SW-289



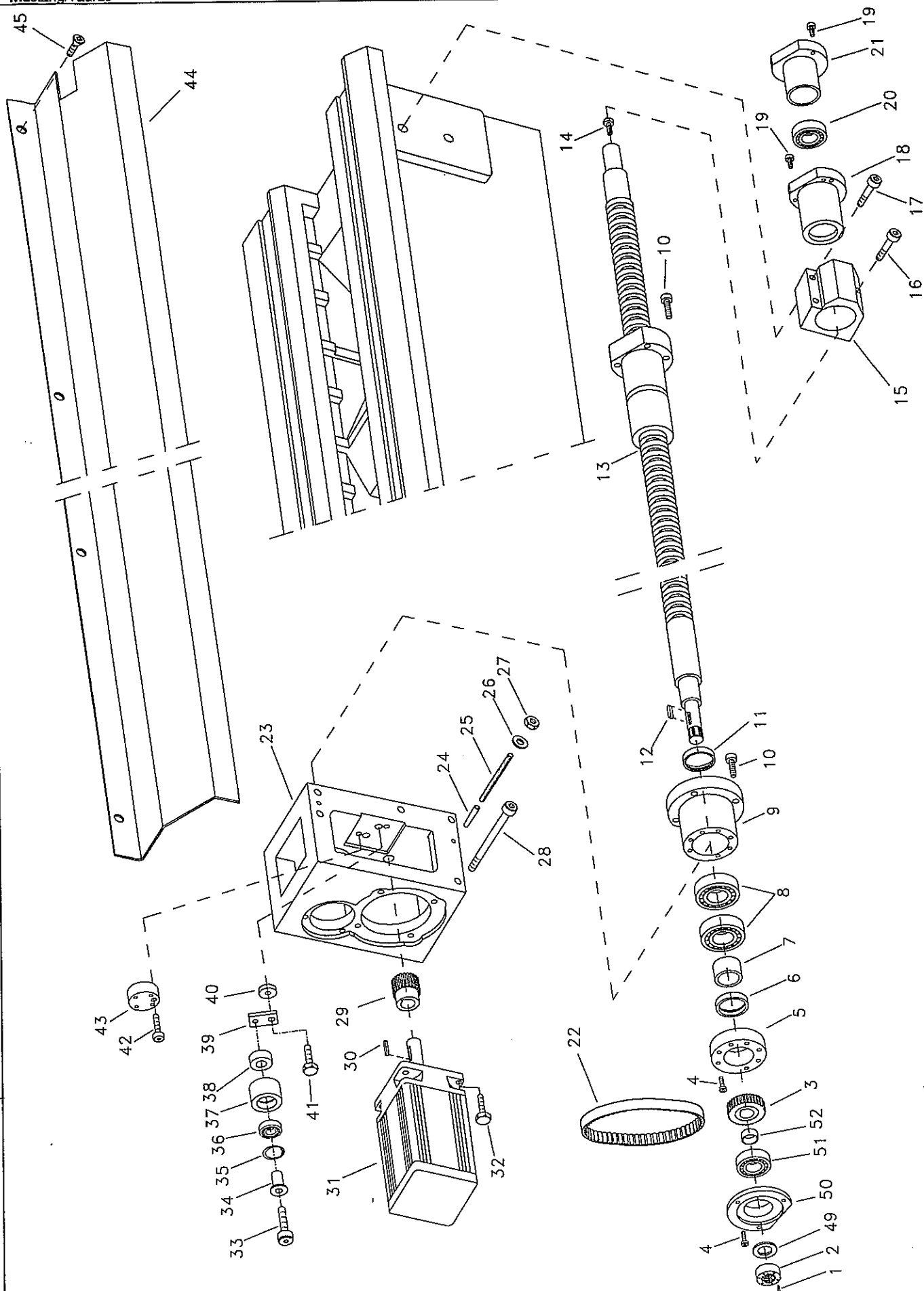
Item	Part number	Description	Qua.
1	DIN 913	Allen grub screw M6x15	3
2	15.01.00128	Nut input shaft	1
3	15.01.00403	Input shaft pulley Taurus ø80 & ø105	1
3	15.01.00403	Input shaft pulley Mustang	1
3	15.01.01403		1
4	DIN 913	Allen grub screw M5x10	6
5	15.01.01074	Nut	2
6	DIN 912	Allen screw M8x20	25
7	15.01.00126	Pulley shaft cover	1
8	DIN 628	Bearing 3207-2Z	1
9	15.01.00082	Cover	1
10	DIN 7991	Countersunk Allen screw M6x10	4
11	15.01.00198	Bearing separator bushing	1
12	DIN 472	Cir clip J-62	4
13	DIN 628	Bearing 6007-2Z BG-03	2
14	15.01.00195	Exterior bushing	1
15	15.01.00194	Interior bushing	1
16	15.01.00186 R1	Input shaft exterior pulley	1
17	15.01.00418	Separator washer	2
18	15.01.00416	Dragging bolt change speed	6
19	DIN 6885	Key 8x10x40	1
20	15.01.00185	Input shaft	1
21	15.01.00130	Dragging disk change speed	1
22	15.01.00188 R1	Pulley	1
23	15.01.01070	Bushing	1
24	DIN 625	Bearing 7007-X2	2
25	15.01.00197	Exterior bushing	1
26	15.01.00196	Interior bushing	1
27	15.01.01073	Cover	1
28	DIN 7991	Countersunk Allen screw M4x12	6
29		Bearing 3206	1
30	15.01.00145	Pin	1
31	15.01.00193	Speed change rod	1
32		Bearing 6004-2RS BG-115	1
33	01.01.00565	Washer	1
34	DIN 7984	Allen screw M8x10	1
35	15.01.00189	Connecting rod shaft guide	1
36	DIN 912	Allen screw M8x30	6
37	15.01.00190	Support bearing cylinder	1
38	15.01.00191	Fixation cylinder cover	1
39	15.01.00192	Connecting rod shaft guide	4
40	15.01.01081	Supplement sheet metal plate	1
41		Pneumatic cylinder SMC-CQ2-6050/20	1
42	DIN 912	Allen screw M6x125	4
43	MPL-736	Autoblock nut M8	1
44	DIN 7984	Allen screw M8x15	1
45	15.01.00417	Whaser	2



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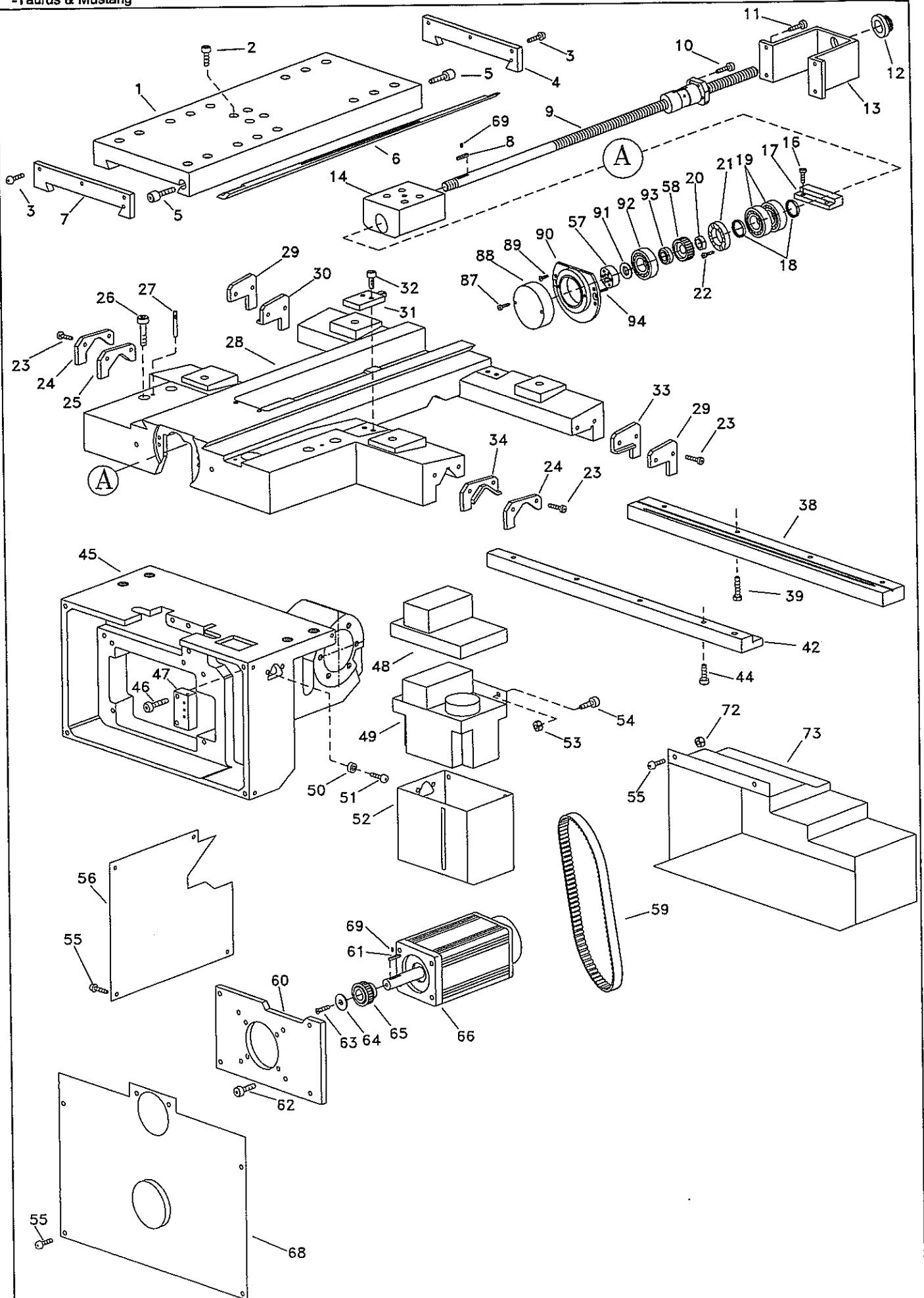


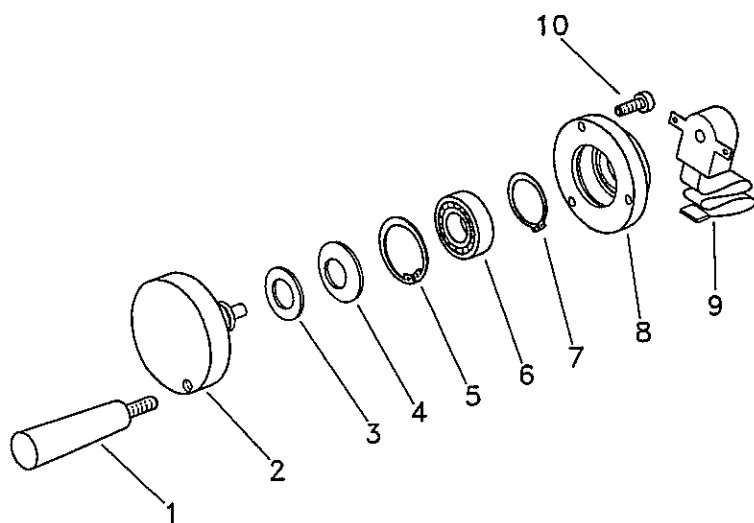
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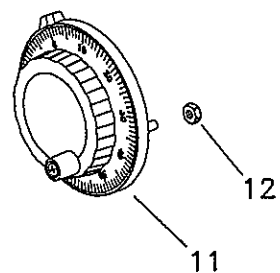
Item	Part N°	Description	Qua.	Item	Part N°	Description	Qua.
1	12.05.01078	Cross slide	1	54	ISO 7380	Allen screw M5x15	2
2	DIN 912	Allen screw M8x35	4	55	ISO 7380	Allen screw M6x15	16
3	DIN 7984	Allen screw M5x15	6	56			
4	08.05.01150	Rear cross slide wiper	1	57	12.05.10094	Fastening nut	1
5	01.05.01061	Adjustment gib screw MLT-332	2	58	12.05.11145	Pulley 26-5M 34 MPL-897	1
6	12.05.01041	Cross slide gib	1	59		Belt 565-5M34	1
7	08.05.01149	Front cross-slide wiper	1	60	12.05.11112	Motor fastening plate MPL-175	1
8	DIN 6885	Key 5x5x20	1	61	DIN 6885	Key 6x6x30	1
9	12.05.11001	Ball screw	1	62	DIN 912	Allen screw M8x20	4
10	DIN 912	Allen screw M5x15	4	63	DIN 7991	Countersunk screw Allen M6x20	1
11	DIN 912	Allen screw M6x45 MLT-338	4	64	12.05.11043	Washer	1
12	12.05.11103	Rubber washer	1	65	12.05.11144	Pulley 26-5M 34 MPL-897	1
13	12.05.01098	Rear stop	1	66		motor	1
14	12.05.01002	Nut support for ball screw MLT-341	1	67			
15				68			
16	DIN 7984	Allen screw M8x30	2	69	DIN 913	Allen grub screw M5x5	2
17	12.05.00090	Ball screw stop	1	70			
18	DIN 3760	O-ring 20x30x5	2	71	12.05.11122	Motor protection left guard	1
19	BG-133	Ball bearing 7202 CTDUH P4V	2	72	DIN 934	Hexagonal nut M6	2
20	12.05.11046	Separator bearing bushing	7	73	12.05.11119	Motor protection guard	1
21	12.05.11092	Screw support MPL-876	1	74			
22	DIN 912	Allen screw M4x15	6	75			
23	DIN 912	Allen screw M6x20	8	76			
24	01.05.01053	Prism metal plate	2	77			
25	01.05.01037	Left V-wiper	1	78			
26	DIN 912	Allen screw M10x60	4	79			
27	01.04.00049	Apron pin	2	80			
28	12.05.11016	Longitudinal carriage	1	81			
29	01.05.01054	Straight metal plate	1	82			
30	01.05.01039	Rubber left flat wiper	1	83			
31		Safety micro tailstock	1	84			
32	ISO 7380	Allen screw M4x25	2	85	12.05.11123	Motor protection right guard MLT-378	
33	01.05.01038	Rubber right flat wiper	1	86	12.05.01105	Motor protection front guard	1
34	01.05.01036	Right V-wiper	1	87	DIN 912	Allen screw M4x30	2
35				88	12.05.10091	Cover	1
36				89	DIN 7991	Allen screw M5x10	2
37				90	12.05.10090	Cover support bearing	1
38	12.05.11148	Carriage rear gib	1	91	12.05.10092	Separator washer	1
39	DIN 933	Hexagonal screw M10x35	4	92	BG-92	Bearing 6202-2Z	1
40				93	12.05.10095	Bushing presses bearing	1
41				94	DIN 913	Allen grub screw M5x15	3
42	12.05.01027	Carriage front gib	1				
43							
44	DIN 912	Allen screw M8x25	5				
45	12.02.11033	Screw nut support	1				
46	DIN 912	Allen screw M5x35	2				
47	12.05.01058	Oil distribution valve	1				
48	12.05.11137	Lubrication unit cover	1				
49		Centralized lubrication unit	1				
50	12.05.11138	Washer	2				
51	ISO 7380	Allen screw M8x25	2				
52	12.05.11139	Lubrication unit guard	1				
53	DIN 934	Hexagonal nut M5	2				

Cross slide cover MPL-561
Servo drive AM-58
Motor MO-125
Motor plate MPL-175
Limit switch SW-193

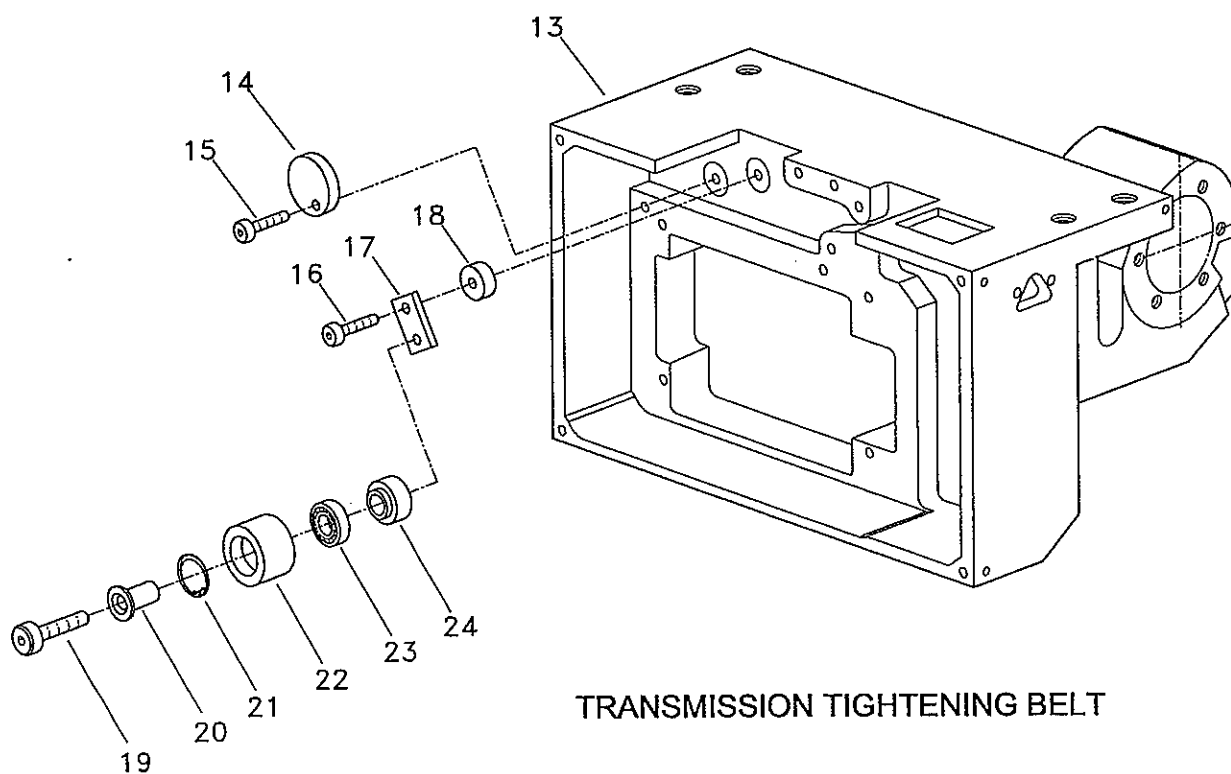




Z & Y METOSA HANDWHEELS



Z & Y HANDWHEELS

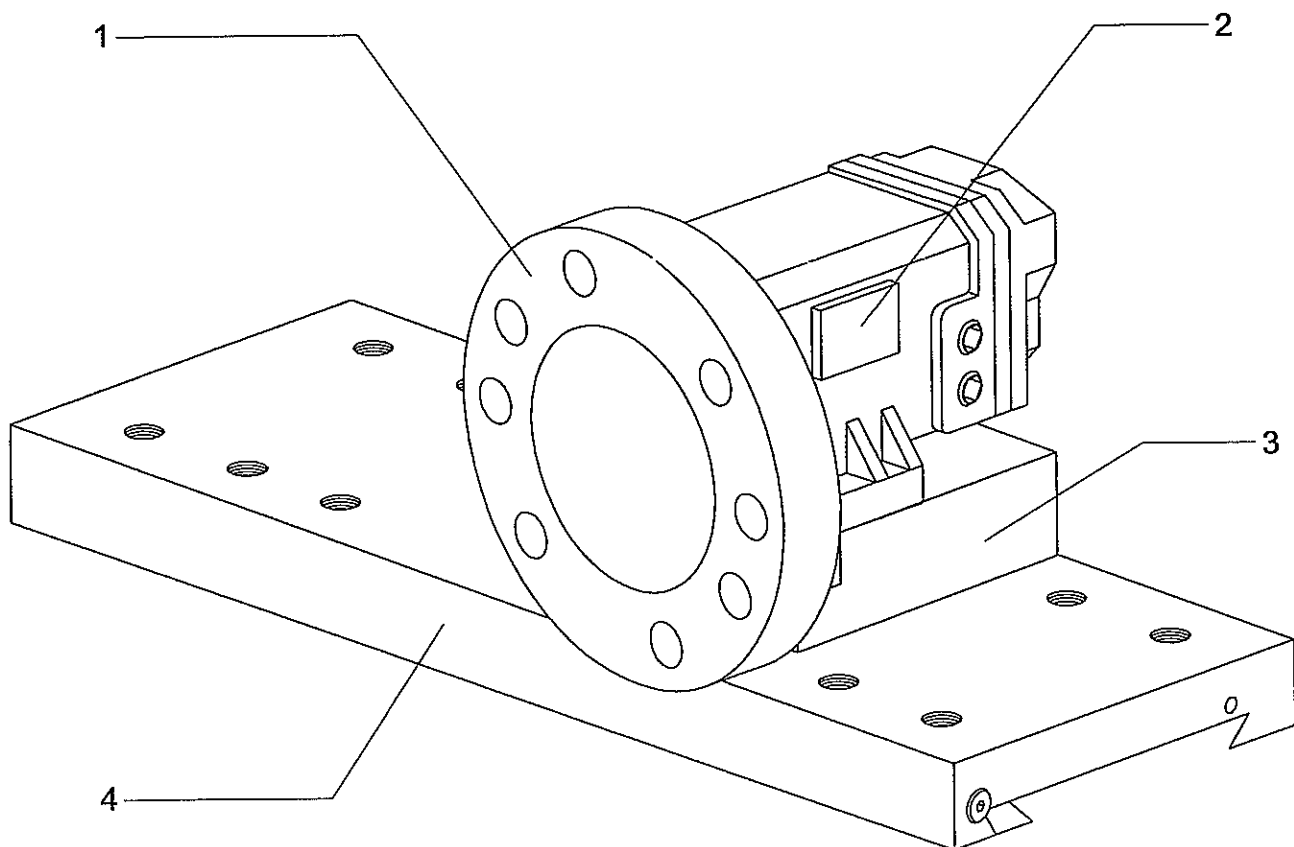
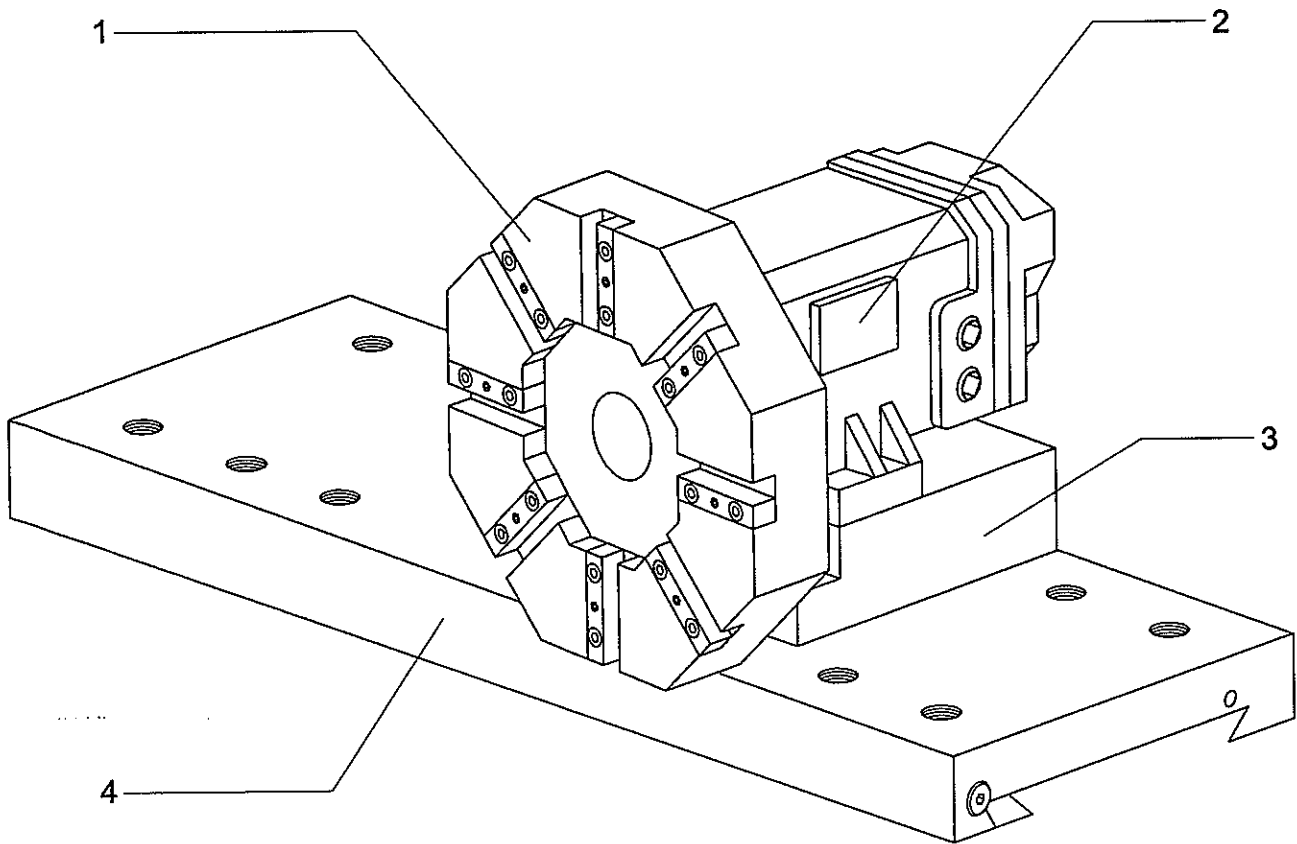


TRANSMISSION TIGHTENING BELT

AUTOMATIC TOOLPOST

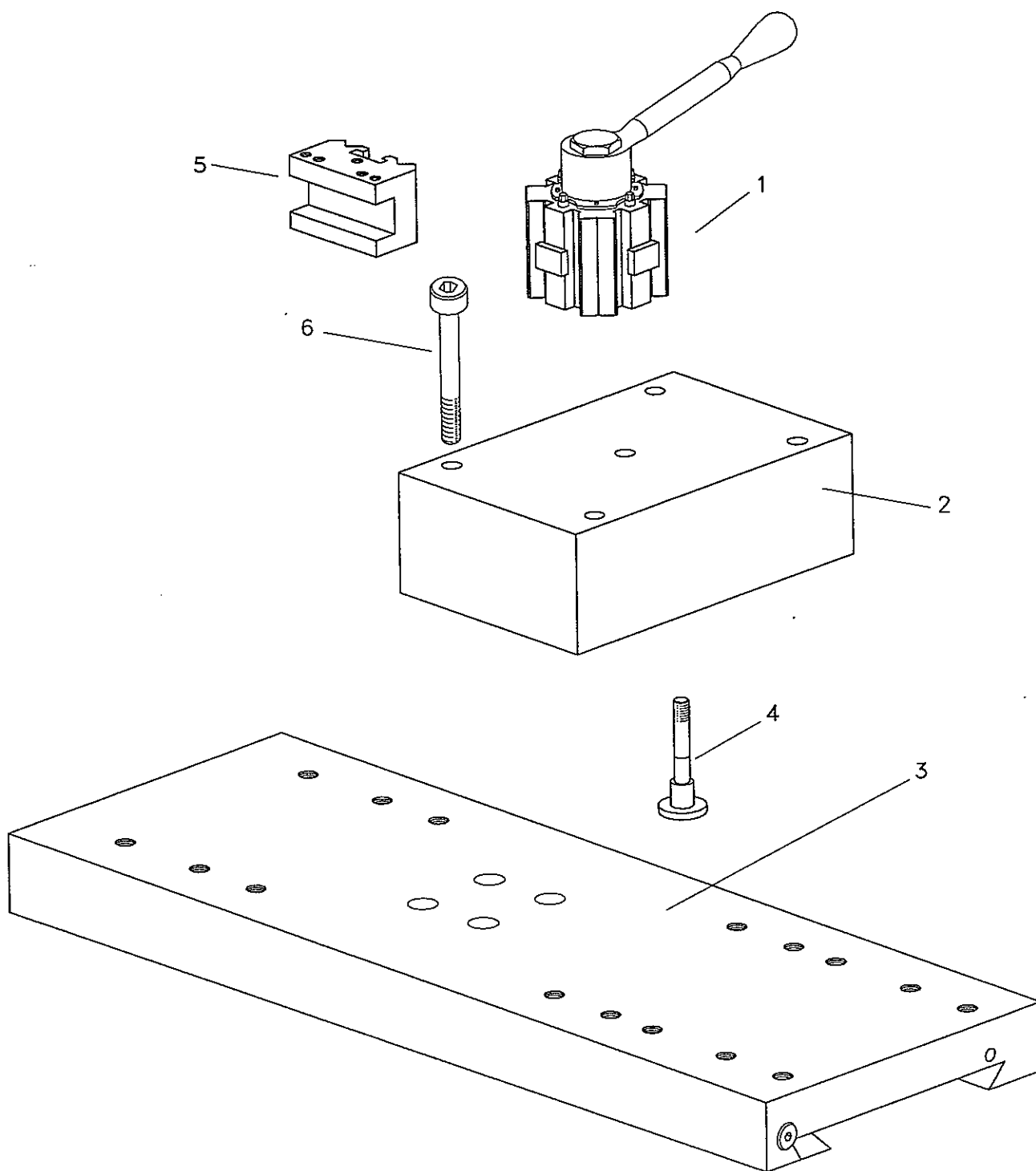
MUSTANG 200-225

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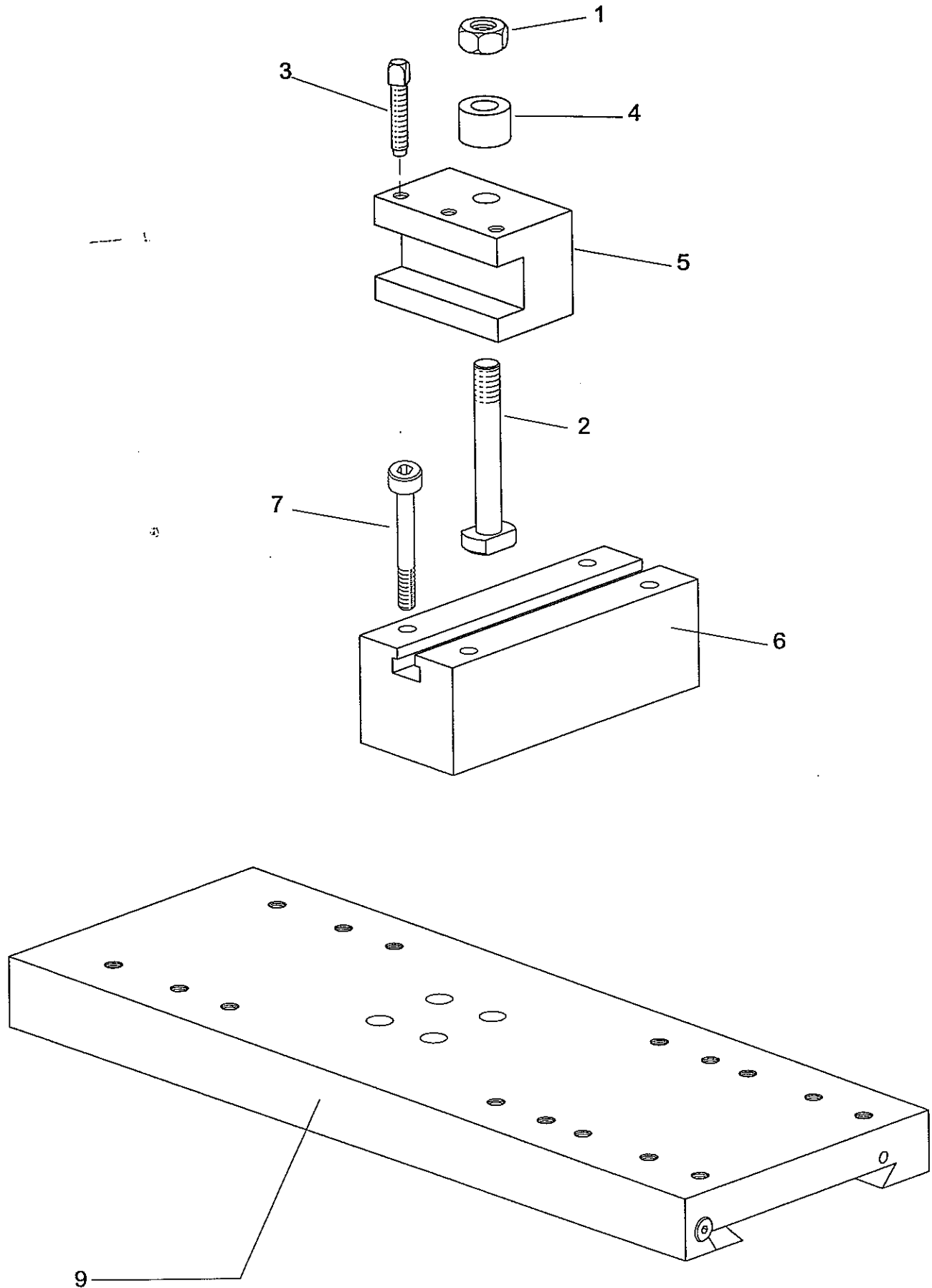
RAPID CHANGE TOOLPOST MUSTANG & Smart/ 200-225

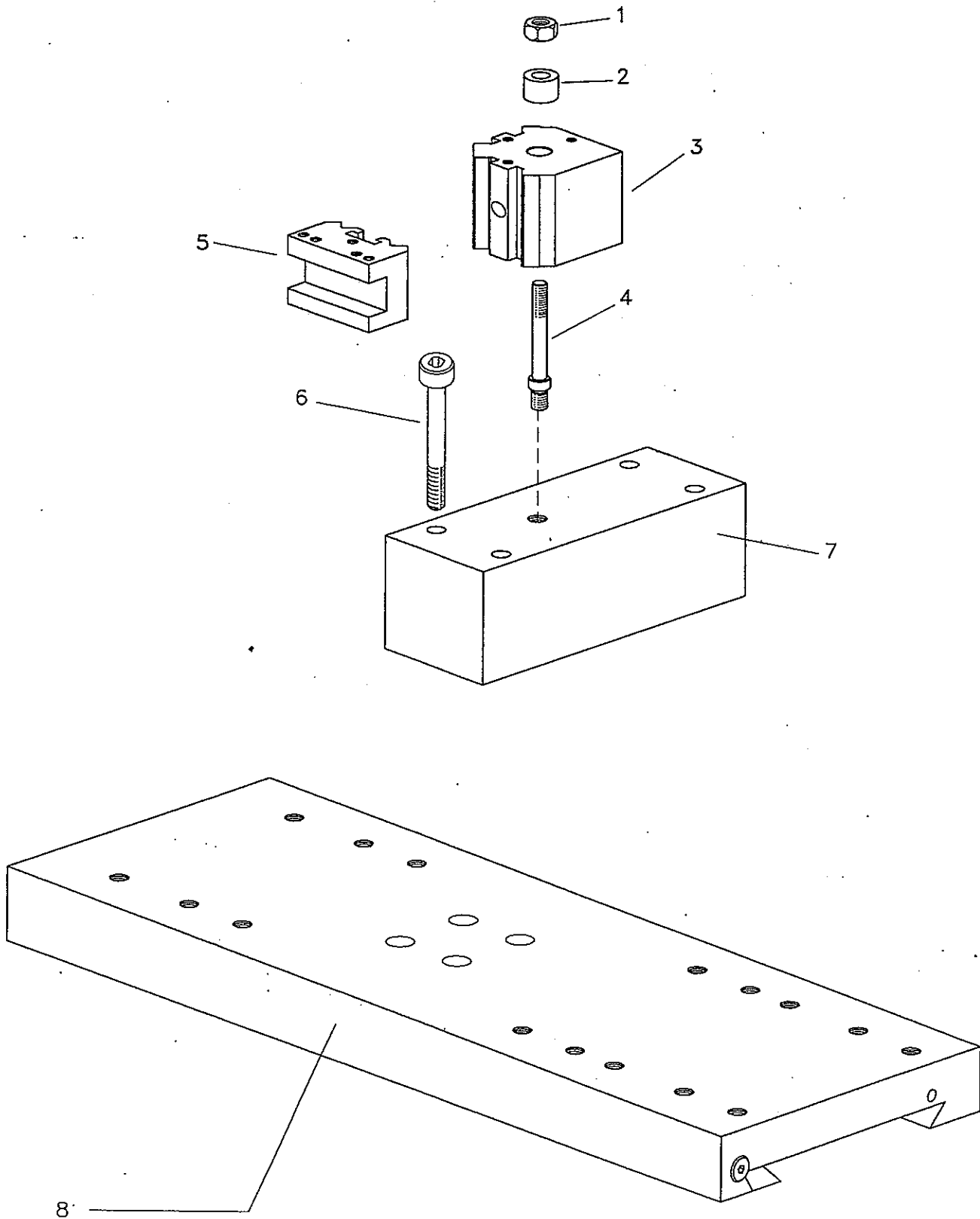
Item	Part N°	Description	Amo.
1	230-05-54	ALGRA toolpost TGA-R-250	1
2	12.05.01207	Toolpost base (200)	1
2	12.05.01208	Toolpost base (225)	1
3	12.05.01004	Cross-slide carriage	1
4	12.05.01205	Toolpost shaft (200)	1
4	12.05.01206	Toolpost shaft (225)	1
5	240-05-12	Tool holder	1
6	Din 912	Allen screw M10x65 (200)	4
6	Din 912	Allen screw M10x95 (225)	4



MANUAL TOOLPOST MUSTANG 200-225

Item	Part N°	Description	Amo.
1	DIN 934	Nut M20	1
2	12.05.01028	Toolpost stud	1
3	12.05.01030	Tool fastening screw	3
4	01.15.00006	Bush	1
5	12.05.01025	Toolholder block	1
6	12.05.01024	Toolpost base (200)	1
6	12.05.01029	Toolpost base (225)	1
7	DIN 912	Allen screw M10x65 (200)	4
7	DIN 912	Allen screw M10X90 (225)	4
8	12.05.01057	Toolpost base T gib	2
9	12.05.01004	Cross-slide carriage	1



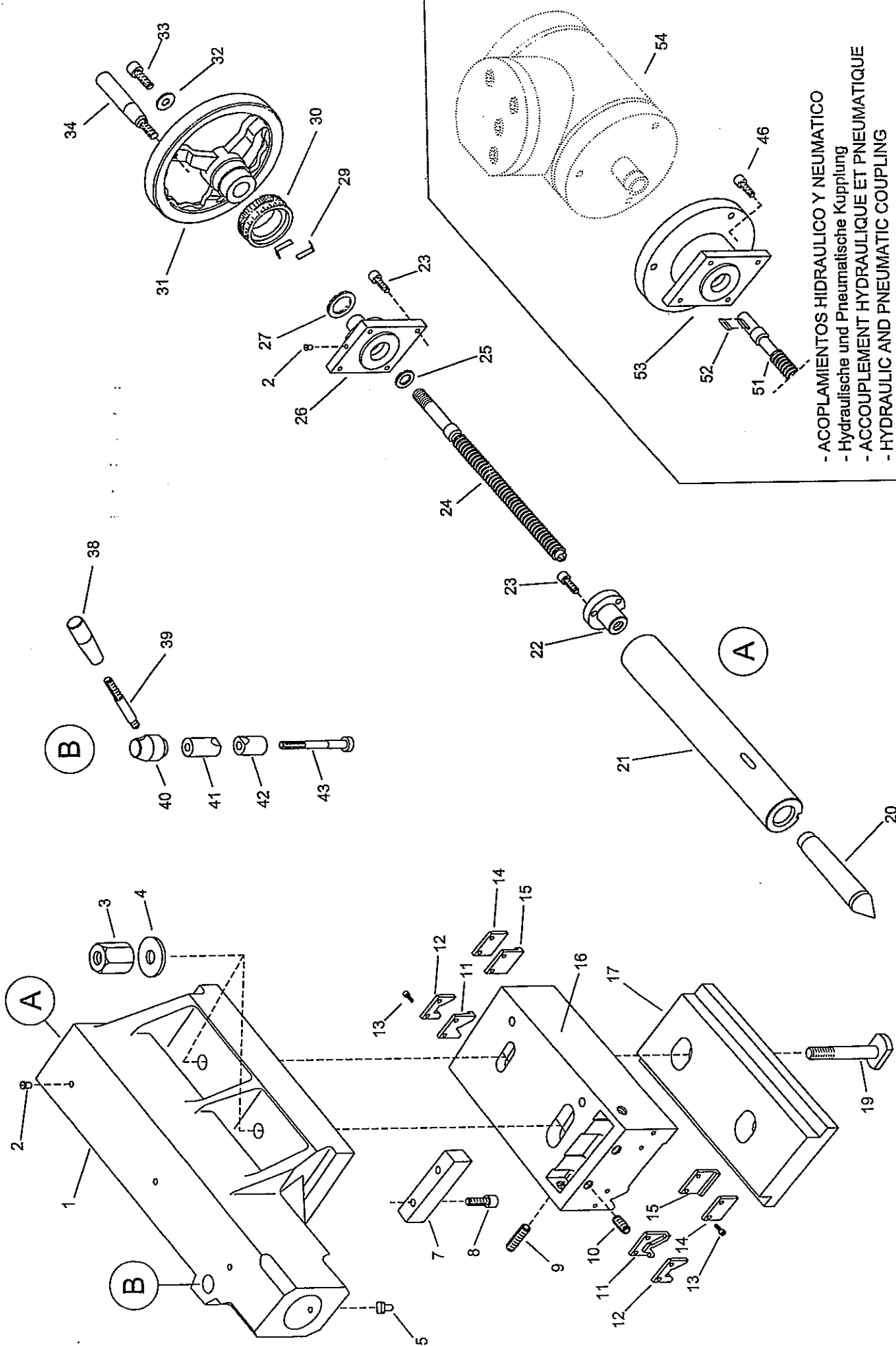


TAILSTOCK

*-Mustang

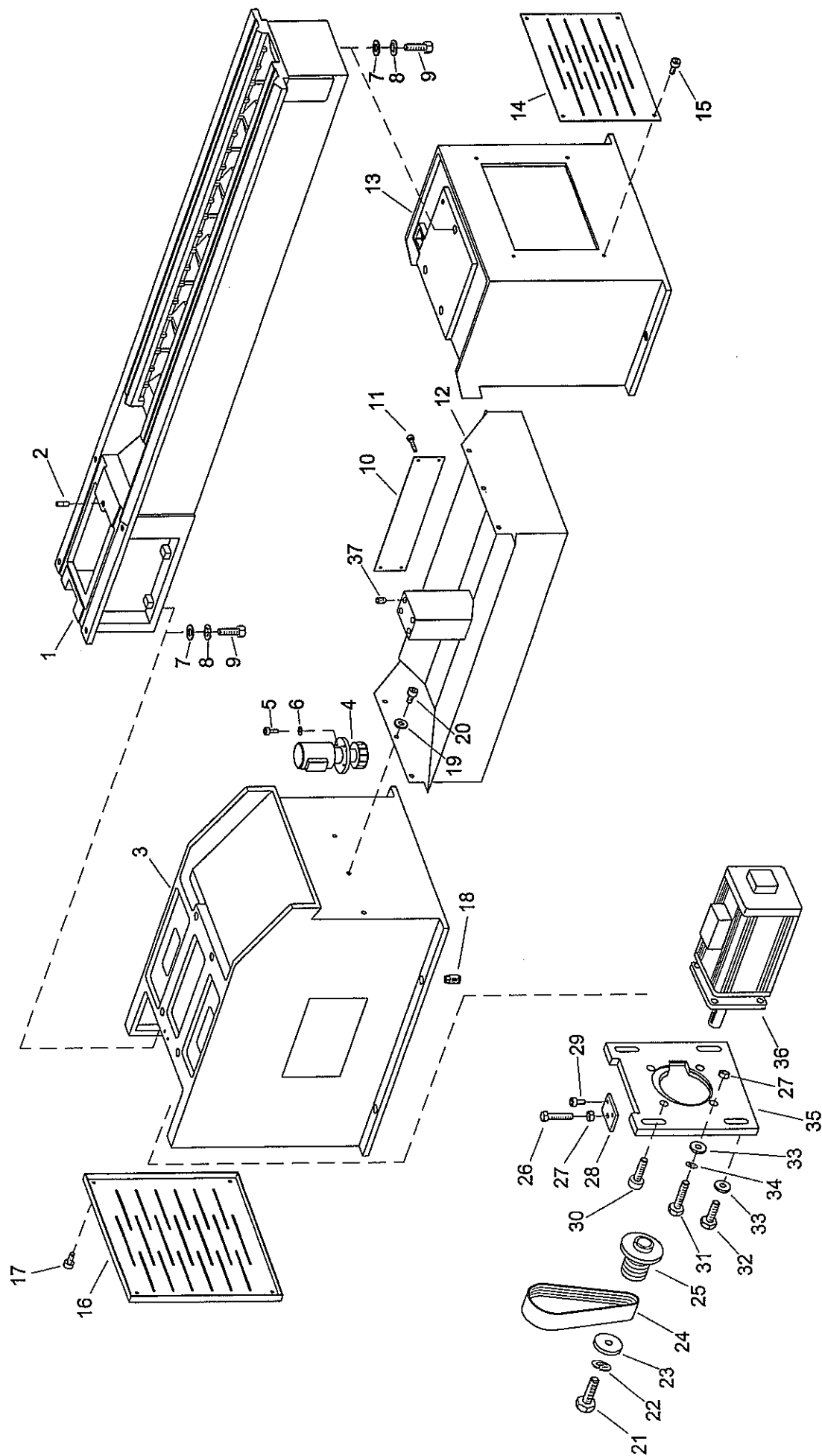
MAY-06

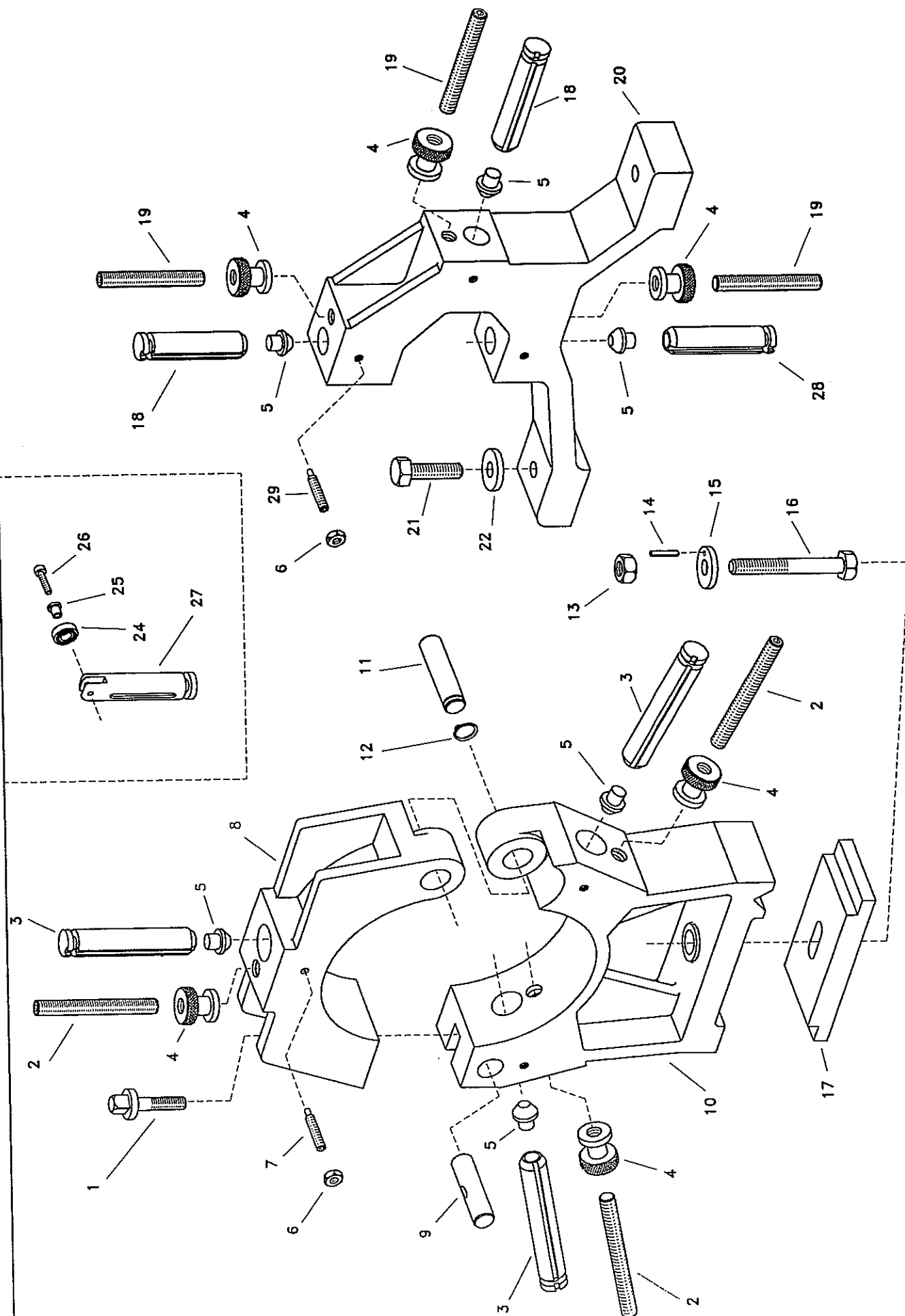
Item	Part N°	Description	Amo.
1	12.07.01021	Tailstock framework	1
2	700EN8	ø8 ball oiler	4
3	DIN 934	Hexagonal nut M18x2	2
4	--	Lock washer	2
5	01.07.01016	Shank key	1
7	01.07.01028	Centering gib	1
8	DIN 912	Allen screw M10x25	2
9	DIN 914	Centring grub screw M12x35	2
10	DIN 914	Attachment grub screw M12x20	2
11	01.07.01024	Rubber prism wiper	2
12	01.07.01026	Metal plate prism wiper	2
13	DIN 912	Allen screw M6x12	8
14	01.07.01027	Metal plate straight wiper	2
15	01.07.01025	Rubber straight wiper	2
16	01.07.01031	Tailstock base Mustang 200	1
16	01.07.01002	Tailstock base Mustang 225	1
17	12.07.00052	Attaching flange	1
18			
19	12.07.01049	Lock screw Mustang 200	2
19	12.07.01048	Lock screw Mustang 225	2
20	01.07.00030	Taper fixed centre	1
21	12.07.01032	Tailstock shank	1
22	01.07.01005	Barrel nut tailstock	1
23	DIN 912	Allen screw M8x20	7
24	12.07.00033	Screw tailstock	1
25	DIN 5405	Axial bearing (WS81104+AXK2035+AS2035)	1
26	01.07.00007	Screw support	1
27	DIN 5405	Axial bearing (AXK3047+2 AS3047)	1
28			
29	01.05.00060	Strip spring	5/8
30	01.07.00008	Vernier	1
31	08.07.00010	Tailstock handwheel	1
32	08.07.00050	Washer	1
33	DIN 912	Allen screw M12x25	1
34	01.04.00020	Handle MLA-161	1
38	01.01.00124	Handle knob	1
39	01.01.00047	Lock handle	1
40	01.07.01014	Barrel lock knob	1
41	12.07.01013	Barrel lock bushing MLA-167	1
42	12.07.01012	Barrel lock bushing	1
43	12.07.01011	Barrel lock screw	1
51	12.07.01007	Pneumatic screw tailstock	1
51	12.07.01047	Hydraulic screw tailstock	1
52	DIN 6885	Key 20x6x6	1
53	12.07.01014	Pneumatic cylinder coupling	1
53	12.07.01019	Hydraulic cylinder coupling	1
54	230-12-06	Pneumatic cylinder	1
54	230-11-10	Hydraulic cylinder	1
		Tailstock limit switch SW-201(2 plunger) or SW-284 (Single plunger)	



- ACOPLAMIENTOS HIDRAULICO Y NEUMATICO
 - Hydraulische und Pneumatische Kupplung
 - ACCOUPLEMENT HYDRAULIQUE ET PNEUMATIQUE
 - HYDRAULIC AND PNEUMATIC COUPLING

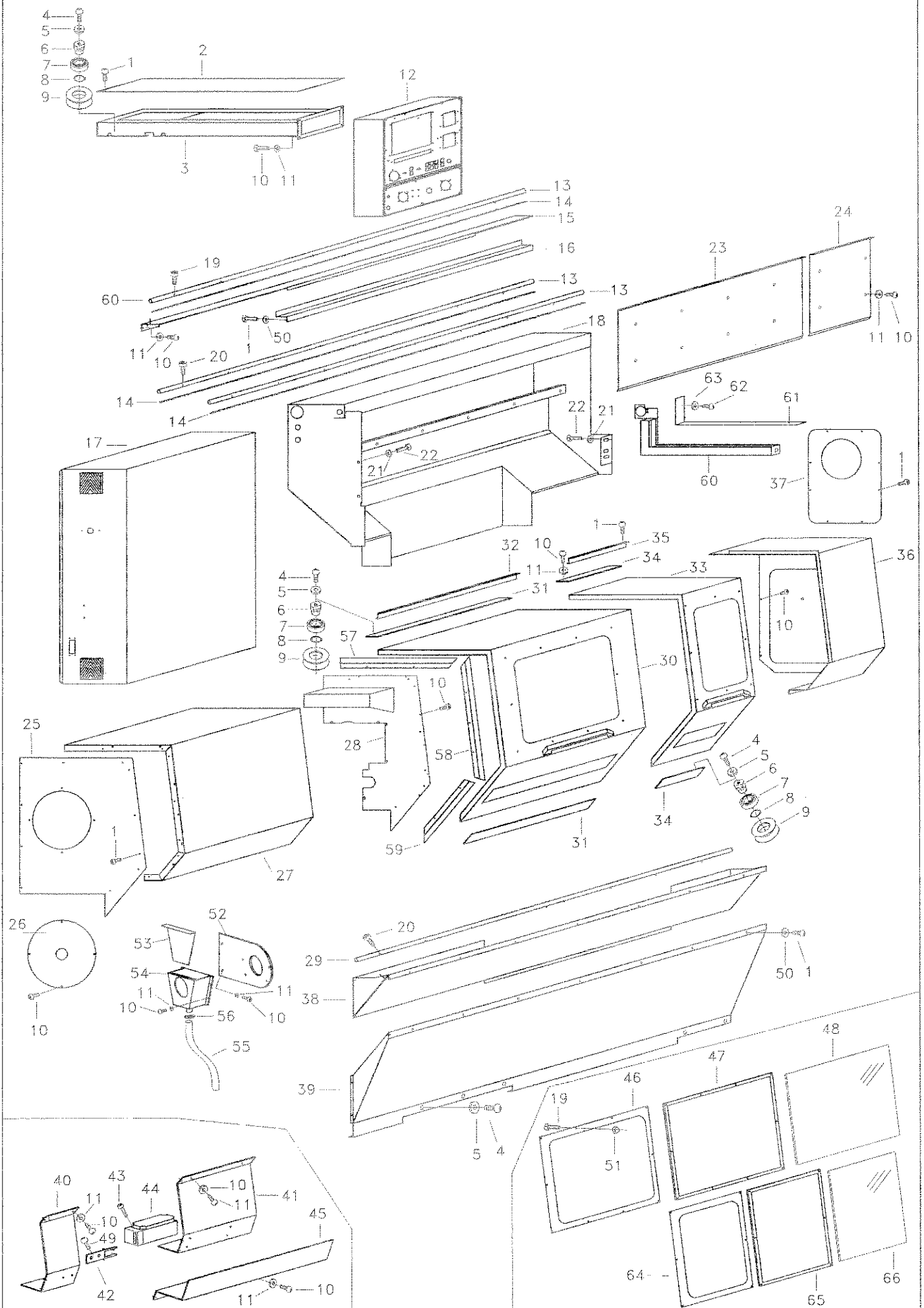
*-Mustang			SEP-00
Item	Part N°	Description	Quant
1	01.06.00001	Bed 1000	1
1	01.06.00002	Bed 1500	1
1	01.06.00003	Bed 2000	1
2	01.01.01099	Headstock centering pin	1
3	15.08.01012	Front leg	1
4		Cooling pump motor	2
5	DIN 912	Allen screw M6x12	4
6	DIN 7980	Grower washer ø6.2	4
7	DIN 125	Washer A-14	7
8	DIN 7980	Grower washer ø14.2	7
9	DIN 912	Hexagonal screw M14x75	7
10	01.06.00002	Rear cover	1
11	DIN 912	Allen screw M6x20 MLA-28	4
12	12.08.00004	Chip tray 1000	1
12	12.08.00005	Chip tray 1500	1
12	12.08.00006	Chip tray 2000	1
13	15.08.01013	Rear leg	1
14	01.08.00008	Rear vented cover plate	1
15	ISO 7380	Round headed screw M6x12	4
16		Fagor front vented cover plate	1
16		Fanuc front vented cover plate	1
17	ISO 7380	Round headed screw M6x20	4
18	01.08.00007	Levelling tightening device	6
19	DIN 125	Washer A-8	6
20	DIN 912	Allen screw M8x10	6
21	DIN 933	Hexagonal screw M10x35	1
21	DIN 933	Hexagonal screw M12x35	1
22	DIN 7980	Grower washer ø10.2	1
22	DIN 7980	Grower washer ø12.2	1
23		Washer	1
24		Transmission belt	1
25			1
25		motor pulley	1
26	DIN 933	Hexagonal screw M12x70	1
27	DIN 934	Nut M12	5
28		Motor tightening plug	1
29	DIN 912	Allen screw M10x16	2
30	DIN 912	Allen screw M12x40	2
31	DIN 933	Hexagonal screw M12x50	2
32	DIN 933	Hexagonal screw M12x60	4
33	DIN 125	Washer A-12	4
34	DIN 7980	Grower washer ø12.2	2
35		Motor plate	1
36		motor	1
36			1
37	DIN 912	Allen screw M14x90	4
38	15.08.00015	Motor support block	1
		MP-82 leveling pad	





Milltronics Mustang							
Item	Part N°	Description	Amo.	Item	Part N°	Description	Amo.
1	ISO 7380	Round headed screw M5x10	49	52	15.08.01240	Receptor support of coolant	1
2	15.08.01200	Monitor arm cover	1	53	15.08.01241	Receptor cover of coolant	1
3	15.08.01201	Monitor arm	1	54	15.08.01242	Receptor of coolant	1
4	ISO 7380	Round headed screw M8x15	37	55		Tubo retorno taladrina	1
5	DIN 125	Flat washer ø8	37	56		Clamp	2
6	17.55.01004	Rear bearing shaft	32	57	15.08.01245	Profile of rubber	1
7	MPS-623	Bearing 6200 – 2RS	32	58	15.08.01246	Profile of rubber	1
8	DIN 471	Cir clip 10x1	32	59	15.08.01247	Profile of rubber	1
9	15.08.00005	Sliding wheels	32	60	15.08.01248	Wire guard	1
10	ISO 7380	Round headed screw M6x10	80	61	15.08.01249	Wire guard cover	1
11	DIN 125	Flat washer ø6	57	62	ISO 7380	Round headed screw M4x10	12
12	15.08.00702	Monitor cabinet	1	63	DIN 125	Flat washer ø4	12
13	15.08.00119	Countersunk bar guard	3	64	15.08.01250	Polycarbonate glass guard 2mm	1
14	15.08.01205	Bar guard supplement	3	65	15.08.01251	Polycarbonate glass guard 8mm.	1
15	15.08.01207	Bar guard support	1	66	15.08.01252	Polycarbonate glass	1
16	15.08.01208	Chain rear guard support	1				
17	15.08.00710	Electric cabinet	1				
18	15.08.01211	Rear guard	1				
19	DIN 912	Allen screw M6x20	26				
20	DIN 912	Allen screw M6x25	24				
21	09.01.00517	Washer	5				
22	DIN 933	Hexagonal screw M12x20	5				
23	15.08.01213	Left rear guard cover	1				
24	15.08.01214	Right rear guard cover	1				
25	15.08.01217	Left headstock cover	1				
26	15.08.01218	Cover	1				
27	15.08.01219	Headstock guard	1				
28	15.08.01220	Right headstock cover	1				
29	15.08.00120	Threaded bar	1				
30	15.08.01221	Left door	1				
31	15.08.01222	Left sliding shaft support	2				
32	15.08.01223	Left sliding wheels cover	1				
33	15.08.01224	Right door	1				
34	15.08.01225	Right sliding shaft support	2				
35	15.08.01226	Right sliding wheels cover	1				
36	15.08.01228	Tailstock guard	1				
37	15.08.01229	Tailstock guard cover	1				
38	15.08.01230	Drip plate	1				
39	15.08.01232	Front skirt	1				
40	15.08.00734	Left safety micro support	1				
41	15.08.00735	Right safety micro support	1				
42		Safety micro (B)	1				
43	DIN 912	Allen screw M5x40	4				
44		Safety micro (A)	1				
45	15.08.01236	Chain support	1				
46	15.08.01237	Polycarbonate glass guard 2mm	1				
47	15.08.01238	Polycarbonate glass guard 8mm.	1				
48	15.08.01239	Polycarbonate glass	1				
49	ISO 7380	Round headed screw M5x16	2				
50	DIN 125	Flat washer ø5	12				
51		Nut	18				

Worklight MA-220
Leveling pad MP-82





It is important that the person who is going to work with this machine has a good working knowledge of this type of machine and is an experienced operator.

Before starting the machine it is important to read and understand the manual.

Lathes are quick and powerful machines and therefore can be dangerous when not properly used for this reason it is important to read the following instructions carefully.

SAFETY NORMS AT THE WORKPLACE

- Keep the machine and the working area clean and tidy.
- Do not leave anything in the working area that might fall onto any moving part of the machine.
- All protections of the machine must be mounted in position.
- Remove and replace any defective protection device.
- When working, keep all machine protections closed.
- Do not touch any moving part of the machine when the machine is in operation.
- Know how to stop the machine before starting the machine.
- Do not work the machine over its capacity.
- When working with material through the main spindle bore which protrudes from the rear of the headstock it is VERY IMPORTANT to guard this area to avoid any accident which might occur.
- When fitting chucks or any other accessory to the main spindle make sure the fixing system is working correctly.
- Before fitting any accessory or working device to the machine make sure that the machine is suitable for it.
- Do not leave the machine unattended whilst it is in operation.
- Do not wear any loose clothing, ties, rings, bracelets or watches as they can get caught on the moving parts of the machine and cause injury.
- Long hair should be tied back and/or worn under a hat.
- When machining large diameter components, select low speed gear range of the main spindle.
- The operator should wear safety glasses when operating the machine.

A-1 ELECTRICAL CONNECTION

A-1.1 Warning:

In the electrical equipments of the lathe high tensions exist.

- * Only qualified personnel should work with this equipment.
- * For any electrical manipulation safety measures must be respected and use the material and the tools adapted to the existing levels of tension.
- * If any electrical equipment is damaged or broken it must be repaired or replaced immediately.
- * Connection of the machine must be carried out within the regulation laid down in the country where the machine is installed.
- * A correctly fused Isolator or circuit breaker must be supplied to connect the machine.

A-1.2 Electrical specifications

Electric power requirements CNC lathes.

Modelo Torno CNC	Potencia cabezal	Potencia Total	In(Ip _{S6})	In(Ip _{S6})
			230V	400V
Rayo	5,5kW	10kW	31 A* (48 A)	18 A (28 A)
Mustang	7,5kW	13kW	41 A* (56 A)	24 A (32 A)
Taurus	11kW	15kW	47 A* (69 A)	28 A (40 A)

* The option of transformer is needed.

* I_{S6}: Intensidad de pico servicio S6

The above values cover only the basic machine and do not include any electrical accessories such as:

- * Hydraulic power unit
- * Electrically operated toolpost
- * Rapid traverse (manual machines only)
- * Additional coolant pump motors
- Etc.

A-1.3 Connection to the power supply

Before connecting to the power supply, it is necessary to check that the power supply voltage is the same as the input voltage of the machine.

- The machine must be connected to the power supply by a qualified electrician in accordance with the regulations in force in the country where the machine is installed.
- The power supply cables should be introduced through the entry made available at the bottom of the electrical cabinet using a suitable gland.
- Special attention should be made to the connection of the earth wire. (The 1st wire that has to be connected to the machine must always be earth wire).
- Connection must be carried out using appropriate cable and ancillary equipment.

A-1.4 Turning direction of the motors:

A-1.4.1 Before carrying out this operation you should check that:

- The machine has been correctly connected to the power supply.
- The power supply voltage is the same as the input of the machine.
- The protective earth line is continuous.
- The spindle turns freely and all protection guarding is in good condition.
- The headstock gear control is set in lowest speed range.
- The chuck and jaws are correctly fitted.

A-1.4.2 For lathes fitted with variable speed motor control

- The electronic speed regulator indicates the correct turning direction of the motor.
- The direction of the coolant motor must be checked.

A-1.4.3 For lathes fitted without variable speed motor control.

- The correct motor direction depends on the phase connection.
- The correct motor direction can be checked by either the main motor or coolant motor.

If the motor direction is correct you can continue with the starting up process (levelling, accuracy checks, fitting of chucks, etc.)

If the motor direction is incorrect change any two of the input phases to the machine. (This must be carried out by a qualified electrician).

A-2 ELECTRICITY SAFETY NORMS:

In the electrical equipment of the machine there are high voltages.

- Only qualified personnel should work on the electrical equipment and installation of the machine.
- All electrical work carried out must comply with the regulation safety standards using the correct materials and tools suitable for the appropriate voltage level being used.
- Inspect regularly the power connections. No overheating in the conductors or connections elements should be detected.
- When cleaning or carrying out maintenance work check the cables for damage.
- If any damaged cables are broken or defective they should be repaired or replaced immediately before starting the machine again.
- All maintenance work and operation of the machine must be carried out in compliance with the standards in force at the country where the machine is installed and used.

Maintenance norms:

- Isolate the electrical supply to the machine before carrying out any electrical work.
- Do not carry out any unauthorised modifications to the electrical or electronic equipment of the machine.
- When cleaning the machine special attention must be paid to the wires, cables, cabinets and electrical components.
- Replace defective fuses with an equal or similar type fuse.
- The thermal relays must be set to the correct setting to suit the motors fitted to the machine.
- Do not adjust any electrical equipment of the machine whilst it is under power.
- If any sign of dampness, coolant or oil is detected inside the electrical cabinet the machine must be switched off and the leak repaired.
- Before carrying out maintenance inside the electrical cabinet the supply voltage must be switched off.
- All manuals and diagrams of the machine must be kept in a safe place and be at the disposal of the operator of the machine.
- Periodically inspect the electrical protection devices.

Basic Safety Precautions for electricians:

- Do not carry out any adjustments to the electrical and electronic equipment without the required authorization or being adequately qualified to do so.
- Do not use the machine under excessively high humidity levels.
- Do not use the machine when wearing wet or unsuitable clothes or shoes.
- Do not introduce any element into the machine that will affect the protection system.
- Warn the person in charge of the machine of any defect or failure found on the machine immediately.
- Once the machine is connected to the power supply it must comply with all the safety regulations in force at that time even if the machine is not being used.

- The operator must be fully trained in the use of this machine.
- Ensure you know how to operate the machine controls correctly.
- Do not fit any workpiece to the lathe that is contaminated with oil or grease (Always clean workpiece first).
- Always ensure that hand tools are free from oil or grease.
- Always use the recommended securing position for holding tools.
- Do not use any tool in the wrong position.
- Make sure that the workpiece is securely held in the chuck or other holding device.
- Never leave the chuck key or other keys in the operating position.
- Do not use any damaged or defective tools.
- Special care should be taken when holding irregular workpieces.
- Always use the correct tool for each operation.
- Be careful of burrs and sharp edges on the workpiece.
- Never leave the machine unattended while the machine is in operation.
- Make sure the tool is securely fastened to the toolpost.
- Always use the appropriate chuck, faceplate, steadies and correct operational procedure to the requirements of the workpiece.

- Do not use any inappropriate tools if the correct ones are not available.
- Always use the correct speeds and feeds for the appropriate workpiece.
- Do not touch any moving parts with your hands or body.
- Do not open the protection guards while the machine is in operation, otherwise the machine stopped, suddenly, could cause an accident.
- Pay attention to the moving parts of the machine that could fall.
- Always be aware of the position of your hands and body in relation to the lathe movement.
- Be careful not to unintentionally move any lever or device which could start the machine up.
- Hold hand tools and handles firmly.
- Never put your hand on the chuck, spindle or workpiece to slow it down.
- Make sure the machine is disconnected from the electrical supply if it is not being used for a long period of time.
- Always wait until the spindle has stopped before proceeding with next operation.
- Never start the spindle if the key is still in the chuck.
- Do not be distracted while the machine is in operation.
- Do not talk whilst operating the machine.
- Be careful of dangers when using lathe accessories such as tailstock centres.
- Do not wear any loose clothing which may be caught in moving parts of the machine.

- Do not wear long hair loose while operating machinery as it can be caught in moving parts of the machine.
- Always avoid the risk of being near any moving part of the machine.
- Special care must be taken when filing or trimming the workpiece when the spindle is running.
- In machines with clutches make sure that the clutch is completely disconnected when you stop the machine.
- In lathes with clutches make sure that the clutch lever is returned to a neutral position before carrying out any measurement checks.
- Make sure the motor is not running in clutch lathes when workpiece is being measured.
- Always wear the correct protection before operating the lathe.
- Never take off any protection while operating the lathe.
- You should know how to wear the correct protection before starting the machine.
- Do not attempt to put your hands or any part of the body under or behind the chuck or workpiece to make adjustments while the machine is running.
- Do not attempt to approach underneath or around the workpiece to catch anything while the machine is running.
- Always be aware of where the tooling is before starting the machine.
- Do not attempt to adjust any tool around the workpiece while the machine is running.
- Do not approach underneath or around the chuck or workpiece to clear any swarf.

- Do not approach underneath or around the chuck or workpiece to adjust or tighten any lathe part while the machine is running.
- Beware of swarf flying out of the machine.
- Do not mount workpieces that are too big for the machine.
- Do not mount a workpiece that is too big to be handled by the operator.
- Always use the correct equipment for handling the workpiece.
- Only use the correct equipment for the machine.
- Do not carry out any work that might overload the machine.
- Do not force any part of the machine when cleaning or servicing the machine.
- Always use the correct equipment when removing swarf from the machine make sure that the area around the chuck is kept clear.
- Move the tailstock to the end of the bedway when not in use to allow easy access to workpiece and loading/unloading.
- Ensure that there is adequate space around the machine for safe working and easy access for maintenance/repairs.
- Always wear safety glasses and appropriate clothing when operating the machine.
- Ensure that the coolant is directed at the workpiece before switching it on.
- For your own safety read and implement all warning messages that the lathe carries..

1.- SAFETY NORMS FOR WORKING WITH THE CHUCKS OF THE LATHE

- In machines where the maximal recommended speeds are indicated, these values will be considered as approximate.
- Defective plates can be dangerous when turning at high speeds.
- The required fixing force for any job or application is not known in advance.
- A piece can be wrongly fixed due to the centrifugal force influenced by certain conditions:
 - High speed in some applications.
 - Kind of jaws or fixing.
 - Plate counterbalancing.
 - Radius in which jaws are placed.
 - Piece fixing with external or internal jaws.

Special attention must be paid to these circumstances. As they can be different for each job, the manufacturer can not give data for general application.

2.- COOLANT FLUIDS :

- Avoid unnecessary contacts.
- Use appropriate safety clothes.
- Do not mix different types or classes.
- Change fluids regularly.
- Do not wear soaked clothes

DANGERS:

A high percentage of accidents on lathes are due to the use of emery cloth causing injuries such as broken fingers and sometimes amputations.

Generally emery cloth is used to remove burrs and to clean polish a wide range of metallic material when they are turning in the lathe chuck.

SAFETY MEASURES:

Sandpaper must not be used on any CNC or conventional lathes, emery cloth must not be used on CNC lathes.

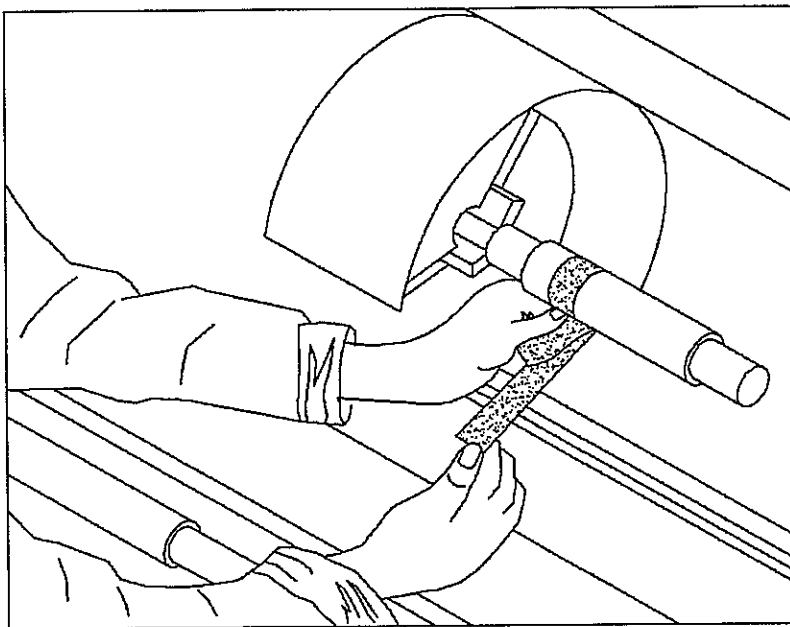
If the use of emery cloth is required choose one of the following options:

- a) A strong board of good quality on which the emery cloth can be supported with each hand, one at each end of the board ends.
- b) A short 'nutcracker' consisting of two wooden boards which are used to support the emery cloth. These boards are jointed at one end by means of a leather strap and are so applied that they can contain the surface to be polished.
- c) A turret to which a tool holding handle with emery cloth can be attached.

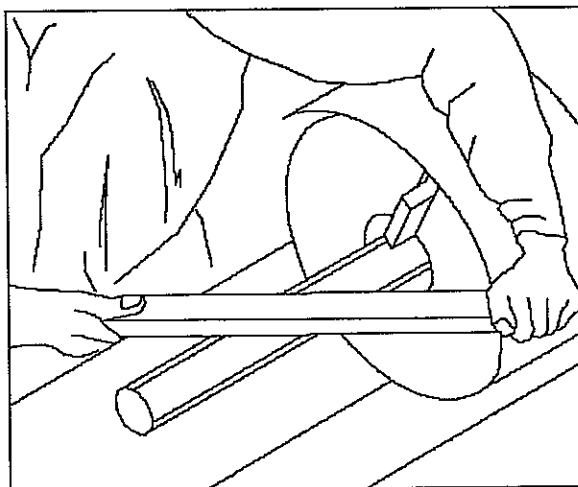
If none of the above mentioned options can be applied and it is necessary to use emery cloth to polish the material the emery cloth must be used in long strips passing one of its ends under the workpiece. The emery cloth will be held with each hand at both ends applying force in an upwards direction. Do not allow the emery cloth to wrap around the operators fingers or the workpiece.

To polish the end of a workpiece using emery cloth use short pieces or pads that cannot be entangled.

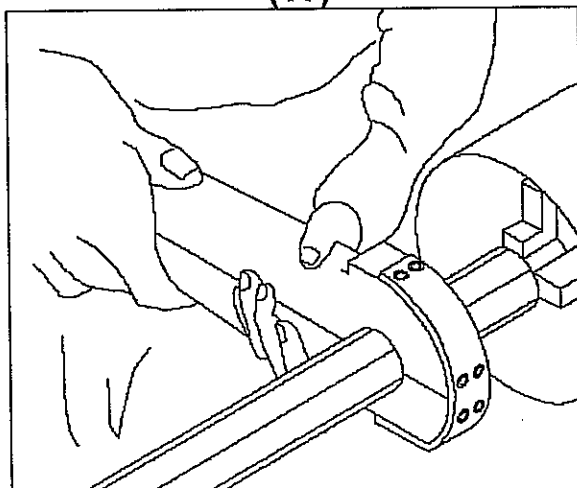
Never wear gloves when using emery cloth.



DANGER: Even with long strips of cloth, there is a danger of trapping.



(A)



(B)

WARNING

- Do not handle or remove the shavings while the machine is in operation.

DANGER**HIGH VOLTAGE**

- Disconnect the main switch before opening the electric cabinet.
- It is vitally important that the person checking the control circuit for maintenance or rectification work must be undertaken by a fully qualified and authorised person.

WARNING

- Disconnect the main switch before starting any checking and/or maintenance work.
- It is vitally important that the instruction book is read carefully before the machine is put into operation.
- Never try to use the machine if any of the protections have been disconnected i.e. end limit switches or other safety devices.
- Do not open the front sliding doors while the machine is operating.
- It is important that the operator does not put either hand, arm or part of their body inside the working area when the sliding doors or protection are closed or activated otherwise there is a risk of damage being incurred to the operator.

WARNING

- Do not remove the guards giving protection while the machine is operating.
- Before disengaging the sliding guards disconnect the main switch, failure to do this could result in the risk of damage to the operator.

WARNING

- Ensure that the chuck scrolls, jaws and any accessories on the main spindle are correctly fitted.
- Always close the safety guards before starting the main spindle.
- Never operate the guard spindle above its normal speed limit or the maximum speed of the chuck.
- Do not operate the machine above its normal capacity.
- Check that the workpiece is level in the main spindle before commencing turning operation.
- Ensure that the weight of the workpiece is within the capacity of the chuck.
- While the main spindle is rotating:
 - Do not touch either the chuck or workpiece
 - Do not touch the jaws of the chuck
 - Do not remove or try to remove the sward
- Ensure the safety sliding doors are closed while the job is being machined.
- Do not try to stop the rotation of the workpiece or spindle with the operators hand or in any other way as this will cause severe damage.

If these instructions are not followed there is risk of damage to both operator or machine.

RECOMMENDED SPEEDS

VITESSES RECOMMANDÉES

VELOCIDADES RECOMENDADAS

EMPFOHLENE GESCHWINDIGKEIT

SP/165-180-200	
Ø	R.P.M.
0-18	2000
18-25	1400
25-40	860
40-60	530
60-95	360
95-150	220
150-230	140
230-320	92
320-560	60

S-90/165-180	
Ø	R.P.M.
0-18	2000
18-25	1400
25-30	1000
30-38	860
38-50	700
50-60	530
60-75	430
75-90	360
90-125	265
125-150	220
150-180	180
180-225	140
225-290	110
290-325	92
325-450	70
450-510	60
510-560	46
+560	30

S-90/200-225, SP-250	
Ø	R.P.M.
5-15	2200
15-20	1750
20-25	1400
25-30	1150
30-35	950
35-50	625
50-75	425
75-95	340
95-175	185
175-350	92
350-450	72
450-600	40

S-90/250-105	
Ø	R.P.M.
0-28	1200
28-35	962
35-45	770
45-55	635
55-70	510
70-100	334
100-140	230
140-200	180
200-330	100
330-500	60
500-700	44
+700	25

S-90/260-310	
Ø	R.P.M.
0-25	1500
25-30	1100
30-45	750
45-65	500
65-90	350
90-130	230
130-200	170
200-300	110
300-400	86
400-500	62
500-600	44
600-780	30

S-90/310-155	
Ø	R.P.M.
0-45	750
45-60	600
60-85	400
85-130	260
130-200	160
200-260	125
260-400	85
400-550	55
500-650	46
650-800	36
800-830	25
+830	16

Schnittgeschwindigkeit

Vitesse de coupe

Velocidad corte

Cutting speed

= 80÷100 mts./min.

Chuck recommended according to model of lathe to be employed at ideal conditions:

Chuck recommended according to model of lathe to be employed at local convenient.

	Torno Lathe Tours Drehmaschine	Ø		Torno Lathe Tours Drehmaschine	Ø	
Plato universal 3 garras 3 jaws chuck Mandrin à trois mors Konzentrische 3 Spannbacken	S-90/165, 180 SP/165, 180	160	Plato de 4 garras independiente 4 jaw independent chucks Mandrin à quatre mors indépendant 4 Kiefer-Unabhängig-Würfe	S-90/165, 180 SP/165, 180 S-90 VS/165, 180	250	
	S-90 VS/165, 180					
	SP/200	200		SP/200 S-90/200, 225 S-90 VS/200, 225	300	
	S-90/200, 225					
	S-90 VS/200, 225					
	SP/250	250		SP/250	350	
	S-90/260-310					
	S-90 VS/260-310					
	S-90/250-105	315			S-90/250-105 S-90/260 S-90 VS/260	400
	S-90/310-155	380			S-90/310-155 S-90/310 S-90 VS/310	500

NOISE LEVEL

According to section 1-7-4- f of annexe II of the Directive 89/392/eeC these are the noise levels produced by this lathe.

The level of continuous acoustic pressure equivalent, in the working area is:

$L_{Aeq} = 85 \text{ dB (A)}$

MEASUREMENT CONDITIONS

This measurement has been carried out in a supposed theoretic working position at 1000 mm. distance from the headstock at a height of 1600 mm. from de floor.

Spindle running at maximum RPM with no load.

Note: The figures quoted are emission levels and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure of the work-force include the characteristics of the work room, the other sources of noise, etc i.e. the number of machines and other adjacent processes, and the length of time for which an operator is exposed to the noise. Also the permissible exposure level can vary from country to country. This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk

Equipment used for measurement:

CHAUVIN ARNOUX SOUND METER
MODEL CDA 830

