

Note: P4-01.01. - - - -

INTRODUCTION

TOGETHER WITH THE MACHINE, YOU WILL RECEIVE THIS INSTRUCTIONS MANUAL WHICH WE ADVISE YOU TO READ CAREFULLY, OBSERVING ITS CONTENT.

THE PURPOSE OF THIS MANUAL, APART FROM THE INSTRUCTIONS FOR STARTING UP THE MACHINE AND THE NECESSARY EXPLANATIONS, IS TO SOLVE ANY DOUBTS WHICH MIGHT ARISE WITH RESPECT TO ANY MECHANISM, CONSULTING THE RELATIVE PAGE NUMBER.

VERIFICATION CERTIFICATE

MACHINE TYPE/MODEL:
MANUFACTURING NUMBER:
MANUFACTURER: METOSA

WE HEREBY CERTIFY THAT:

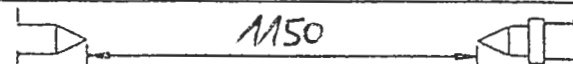
- THE MACHINE WHOSE DATA ARE GIVEN ABOVE, HAS BEEN VERIFIED ACCORDING TO DIN 8606 STANDARDS.
- THE VERIFICATION HAS PROVED THE CORRECT OPERATION OF THE MACHINE IN ALL ITS ASPECTS.
- THE MACHINE IS SUPPLIED EX-FACTORY WITHOUT ANY MANUFACTURING DEFECT. COMPLYING WITH THE SAFETY REGULATION REQUIREMENTS FOR MACHINES.
- NOISE LEVEL \leq 80 dB

NOTE: THE VERIFICATION TESTS WHICH FIGURE IN THE SHEET OF STANDARDS WHICH HAVE BEEN CARRIED OUT IN THE FACTORY, MUST BE APPROVED BEFORE USING LATHE; THEY HAVE TO BE IN CONFORMITY WITH THOSE OBTAINED IN THE ABOVE MENTIONED VERIFICATION SHEETS.

A CENTESIMAL LEVEL MUST BE USED FOR THIS OPERATION.

WE RECOMMEND A PERIODICAL REVISION OF THE LEVELLING, UNTIL THE FOUNDATIONS ARE COMPLETELY SET.

Mod. TRL 1745P



N° 27321

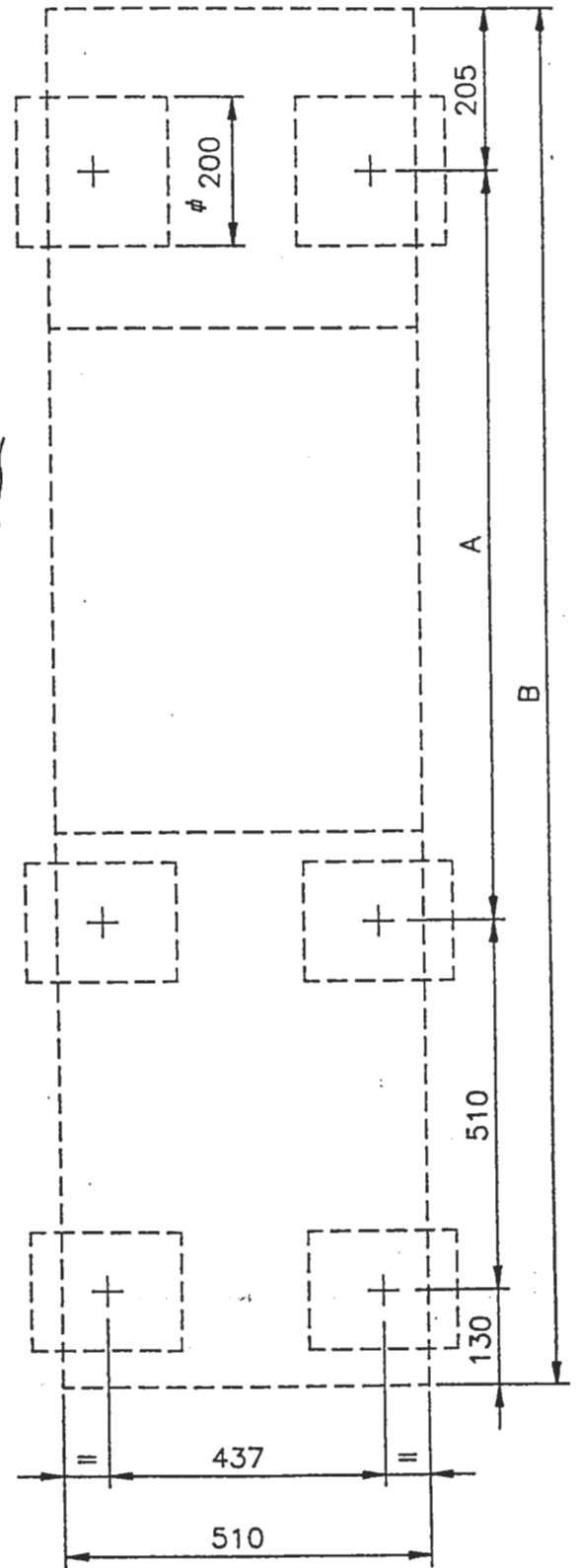
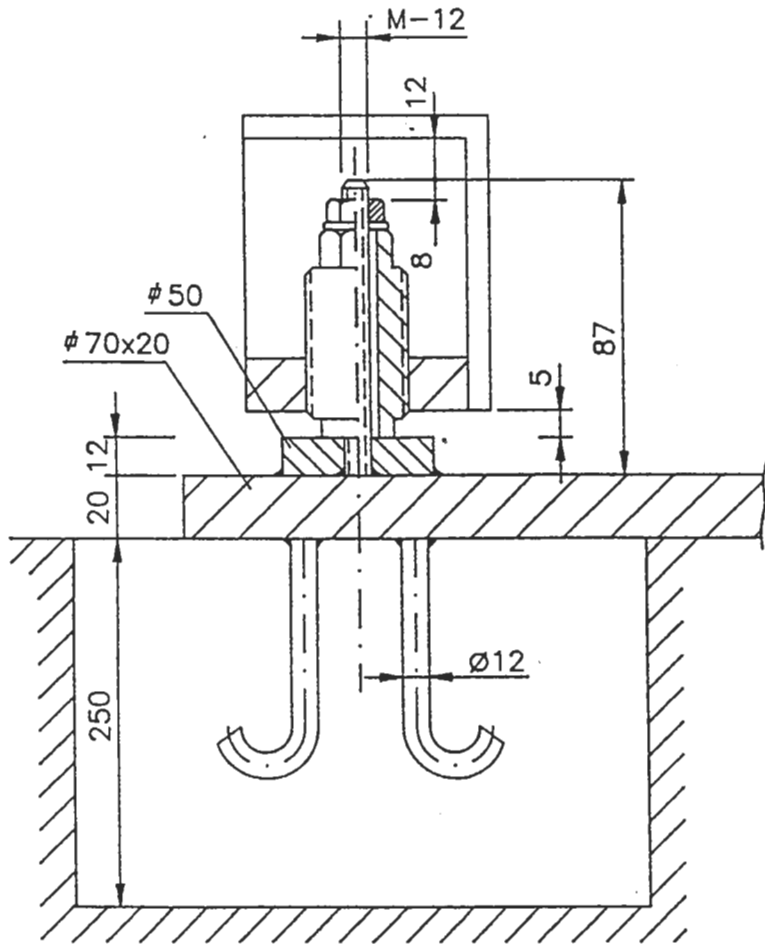
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1		a 0.02 b 0.02	7		0.01	13		0.03
2		0.015	8		0.01	14		0.02
3		0.01	9		0.01	15		0.01
4		0.015	10		0.02	16		0.01
5		0.01 0.02	11		0.02	17		0.02
6		0.01	12		a 0.02 b 0.02	18		
EL VERIFICADOR THE TESTER DE PRÜFER LE VÉRIFICATEUR						19		



⇒ — ⇐	A	B
750	1005	1850
1150	1370	2215
1650	1855	2705

INSTRUCTIONS FOR LEVELLING AND PERIODICAL VERIFICATION

It is absolutely necessary for the lathe to be perfectly level, as indicated below, for the machine to 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 6 levelling points, between the foundation and the machine leg.

b) ANTIVIBRATORY POSITIONING

On a light foundation, make the 6 square holes 200 mm. each side by 250 mm. deep approximately. See page 8.

c) FIXED POSITIONING

- On a light foundation, make the 6 square holes 200 mm. each side by 250 mm. deep approximately. See page 8.
- Fit the three 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 levellingpoint 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.
- Proceed to level

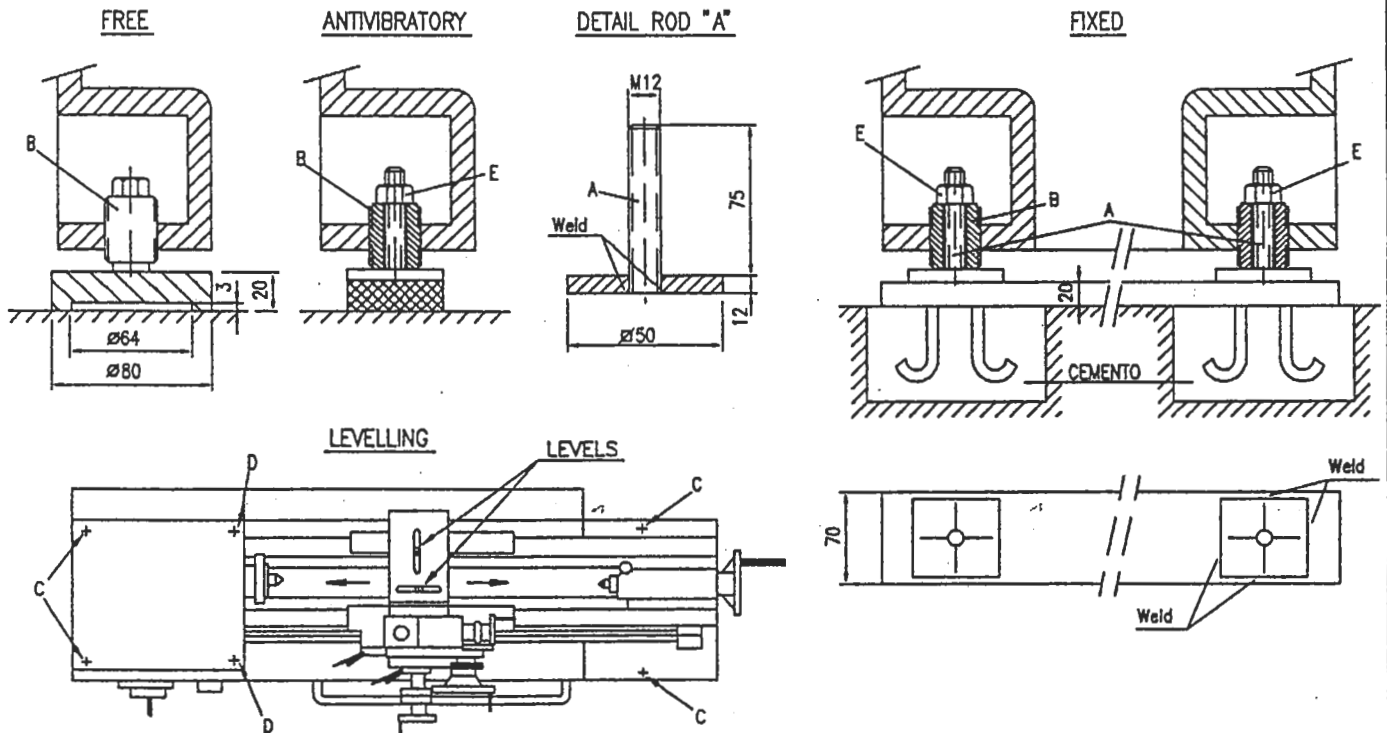
IMPORTANT: In the antivibratory and fixed positioning ways, the rods must NEVER rub against the inner hole of the tightening device (B).

LEVELLING

Once the bases are in place, proceed to level, following the instructions given by us:

- 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) 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.
- 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.

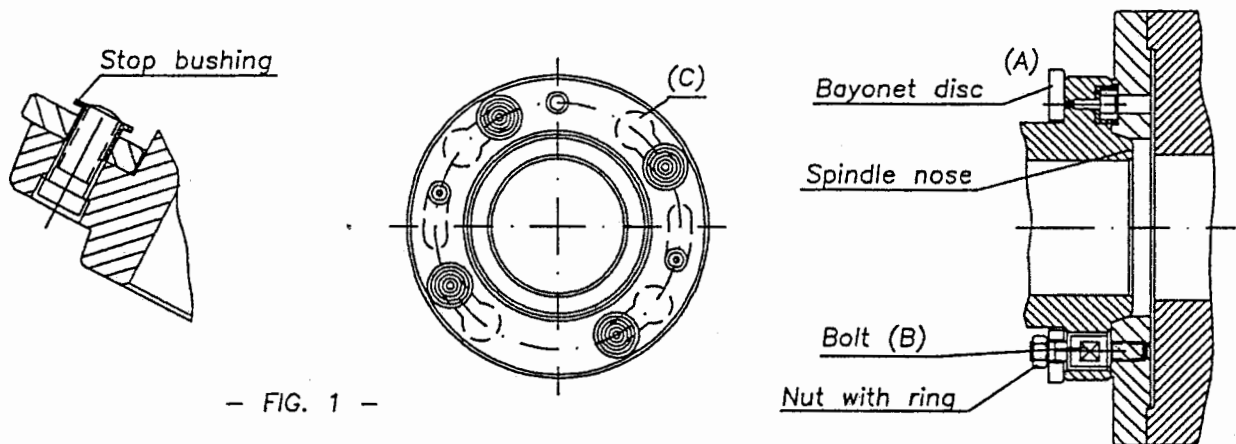


INITIAL START UP

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.

* DIN 55022 *

- Insert all the bolts (B) into the chuck back of the face plate.
- Fit the nuts and washers in the bolts (B).
- Turn the bayonet disc (A) in clockwise direction, until the stop.
- Once turned, the hole (C) of the bayonet disc must coincide with the hole of the shaft nose.
- Turn the bayonet disc (A) again in anticlockwise direction until the stop, and tighten the nuts adequately.



- FIG. 1 -

* 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 suitable 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, coincides with the reference line of each housing in the nose of the shaft (unlocked position). In those housings there are also two marks (V), one at 90° and another at 180°, from the reference line (1).

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 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 that bolt in particular must be adjusted again.

WAY TO ADJUST THE CAM-LOCK BOLT

- Slacken and withdraw the locking screw (E).
- Turn the bolt (D) completely round inwards and outwards as necessary.
- Fit the locking screw (E) on again into its housing and tighten again.

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

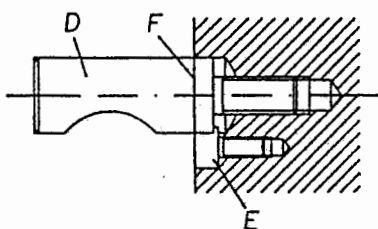


FIG. 2

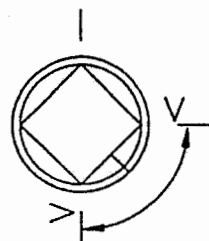
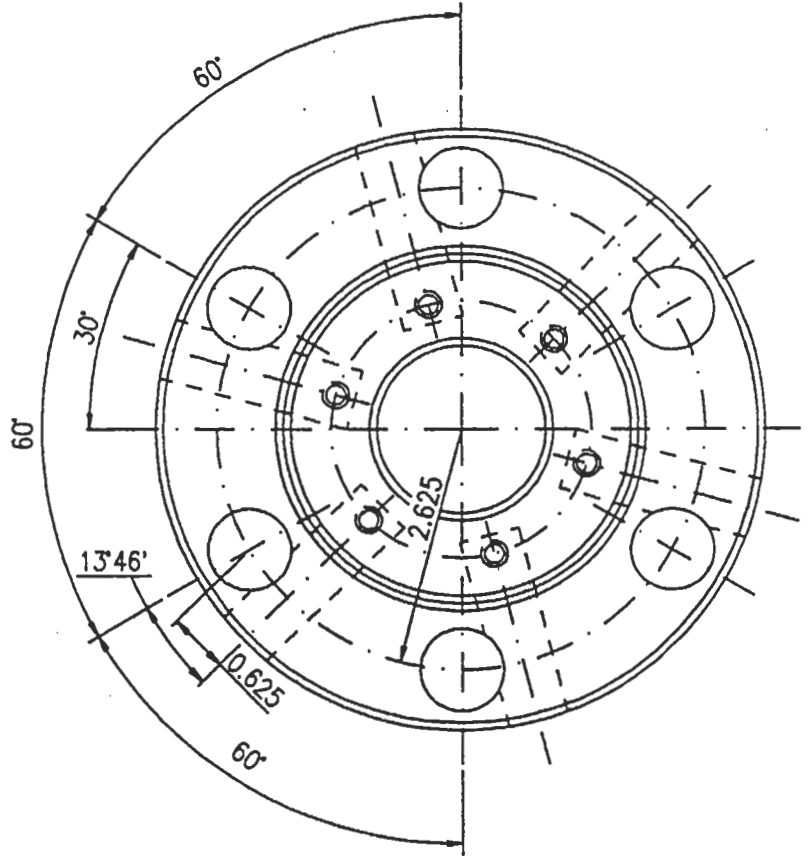
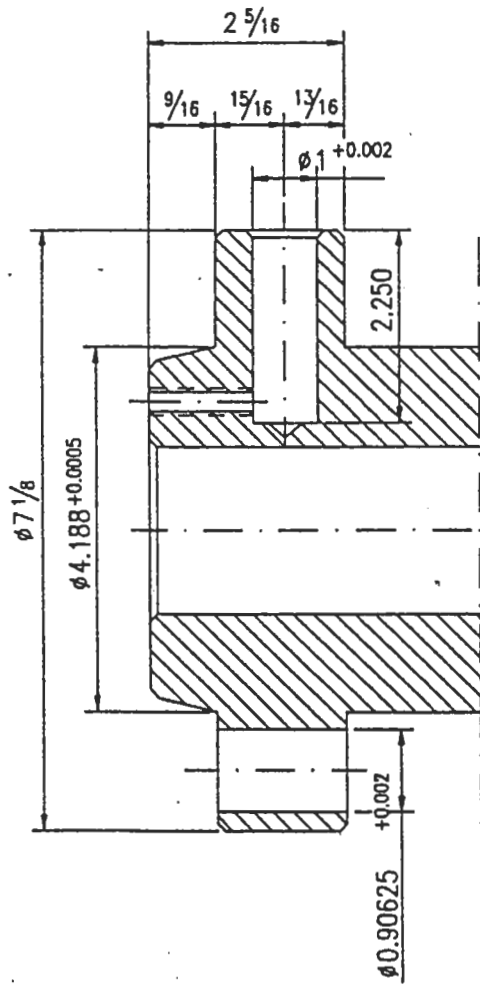
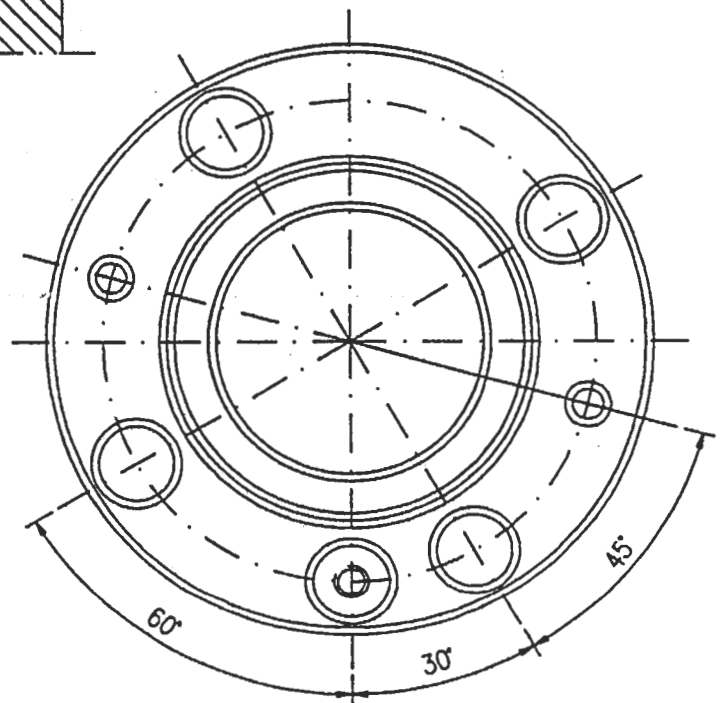
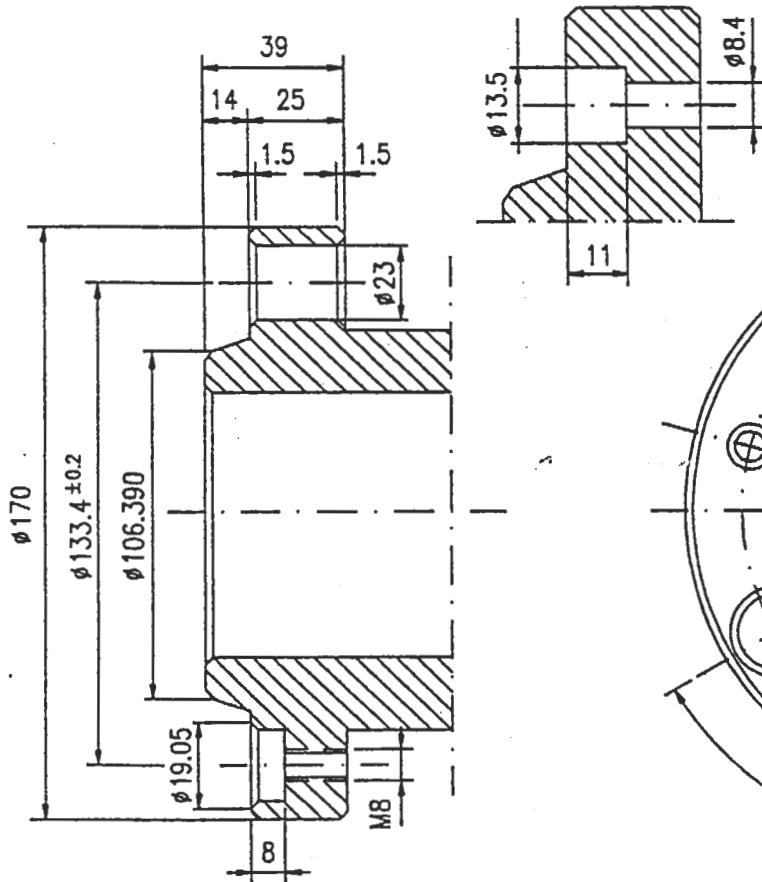


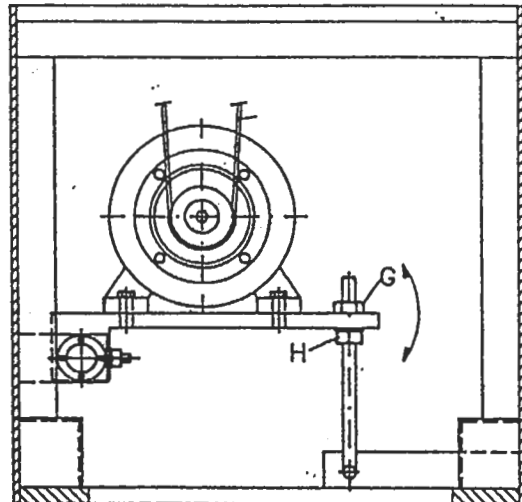
FIG. 3

DIN 55029, CAM-LOCK n°6



DIN-55022 n°6

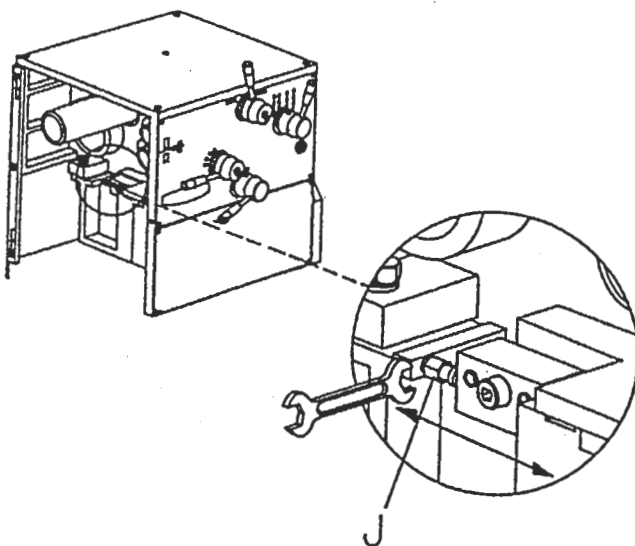




MOTOR BELT ADJUSTMENT.

TRANSMISSION BELT ADJUSTMENT

The belts leave the factory with the tension adjusted. After a few hours operation, the belts must be tightened again, because they stretch as 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 adequate if, on starting up, the belts do not slide or make a noise. The tension is adjusted by slackening the nut (H) and tightening nut (G) until the suitable tension is reached.



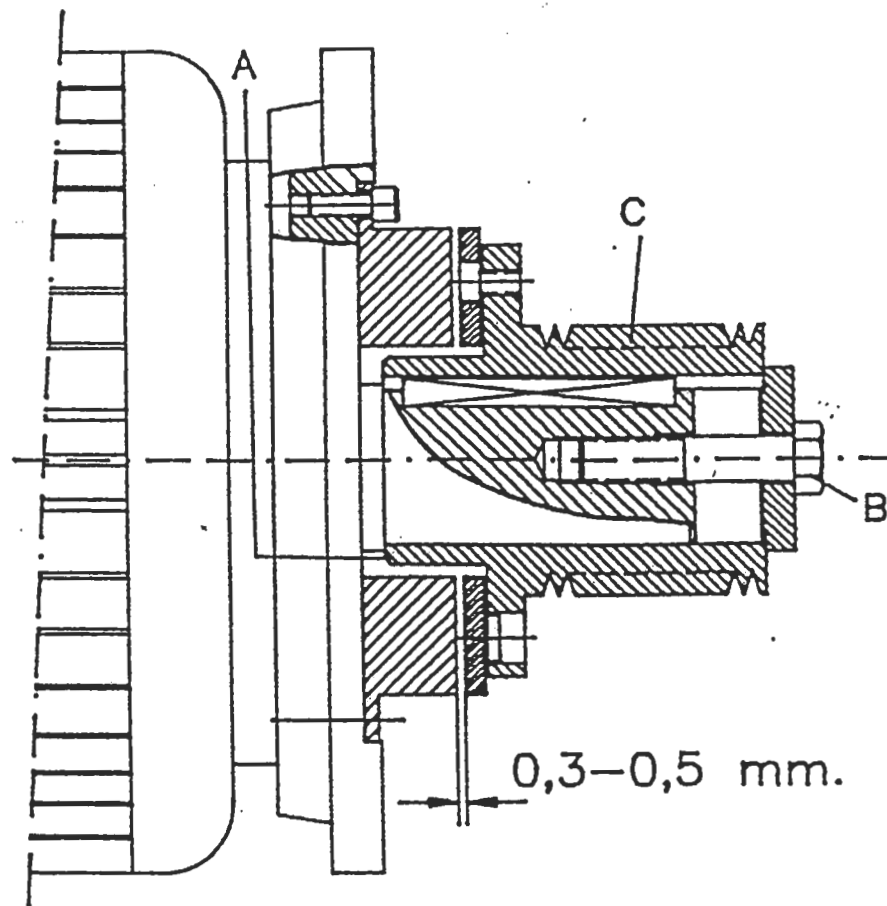
HEADSTOCK OFF-CENTER ADJUSTMENT

HEADSTOCK SET-OVER ADJUSTMENT

The set-over of the headstock or lack of parallelism of the headstock with the bed, is corrected by adjusting screw (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 4

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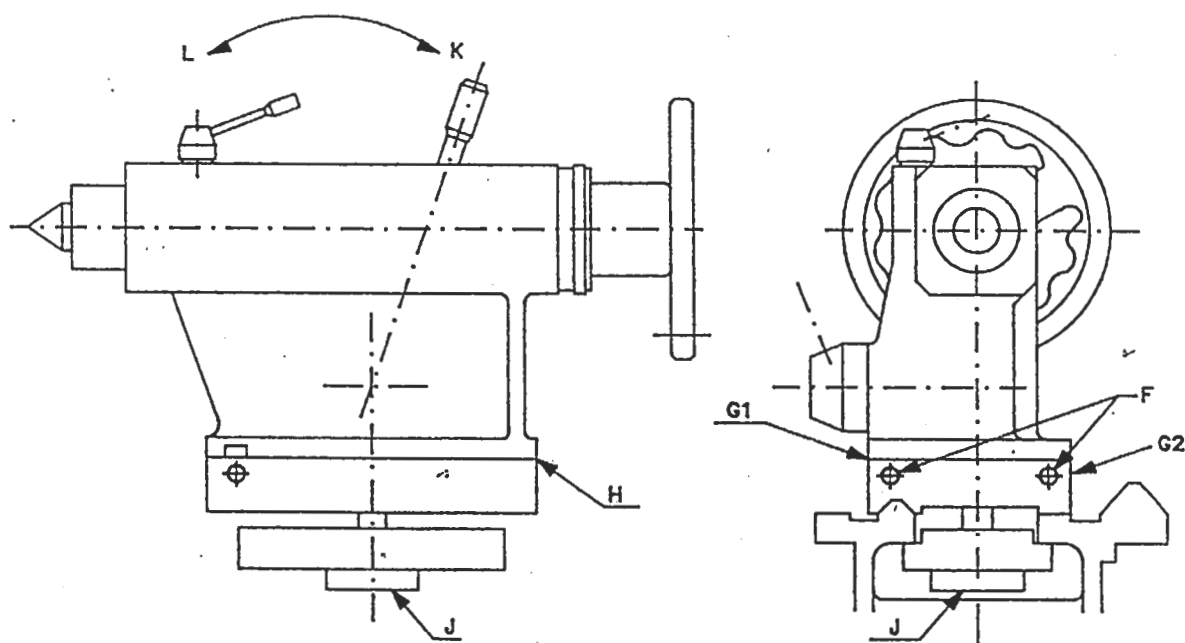
ELECTROMAGNETIC BRAKE

ELECTRIC BRAKE ADJUSTMENT

All the machine leave the factory with the brake adjusted, with play of 0,3 to 0,5 mm.

To adjust, take off screw (B), dismount pulley (C) and grind on the side wall (A), until the play indicated is obtained.

To adjust the braking time, adjust the timer, situated on the left-hand area of the electric panel.



(G1,G2)

TAPER ADJUSTMENT SCREW

(H)

ALIGNMENT MARKS

(J)

ADJUST CLAMPING LEVER POSITION

TAILSTOCK SIDE MOVEMENT

- Unlock the tailstock, moving the handle (K) backwards.
- Slacken the grub screws (F).
- Slacken grub screw (G2) and tighten grub screw (G1), if we wish to move the tailstock towards the operator's side.
- Slacken grub screw (G1) and tighten grub screw (G2), if we wish to move the tailstock towards the other side.
- Tighten grub screws (F) again to leave the tailstock secured with the necessary side movement.
- Lock the tailstock by moving the handle forwards (L).

The alignment marks (H) on the right-hand side, can be used as reference to move the tailstock back to its original position again.

TAILSTOCK LOCKING LEVER ADJUSTMENT

- The angular locking position of the lock lever can be adjusted with the tailstock lock released, turning nut (J) to the right (more locking pressure) or the left (less locking pressure).

- * 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

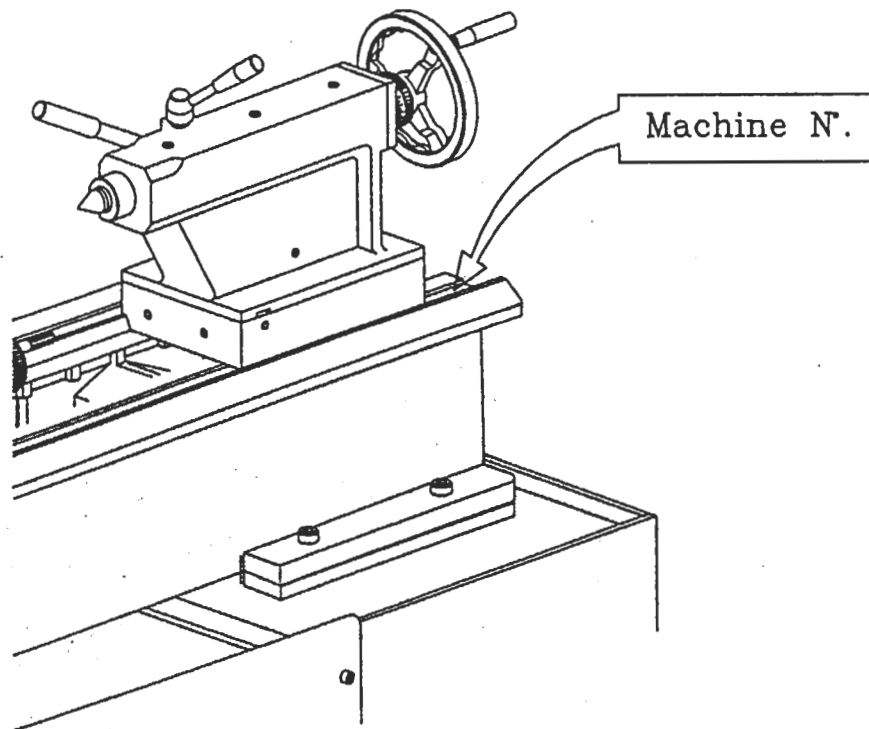
Indicate:

- 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 the part n° and its denomination.

- Indicate Qty. to be supplied.

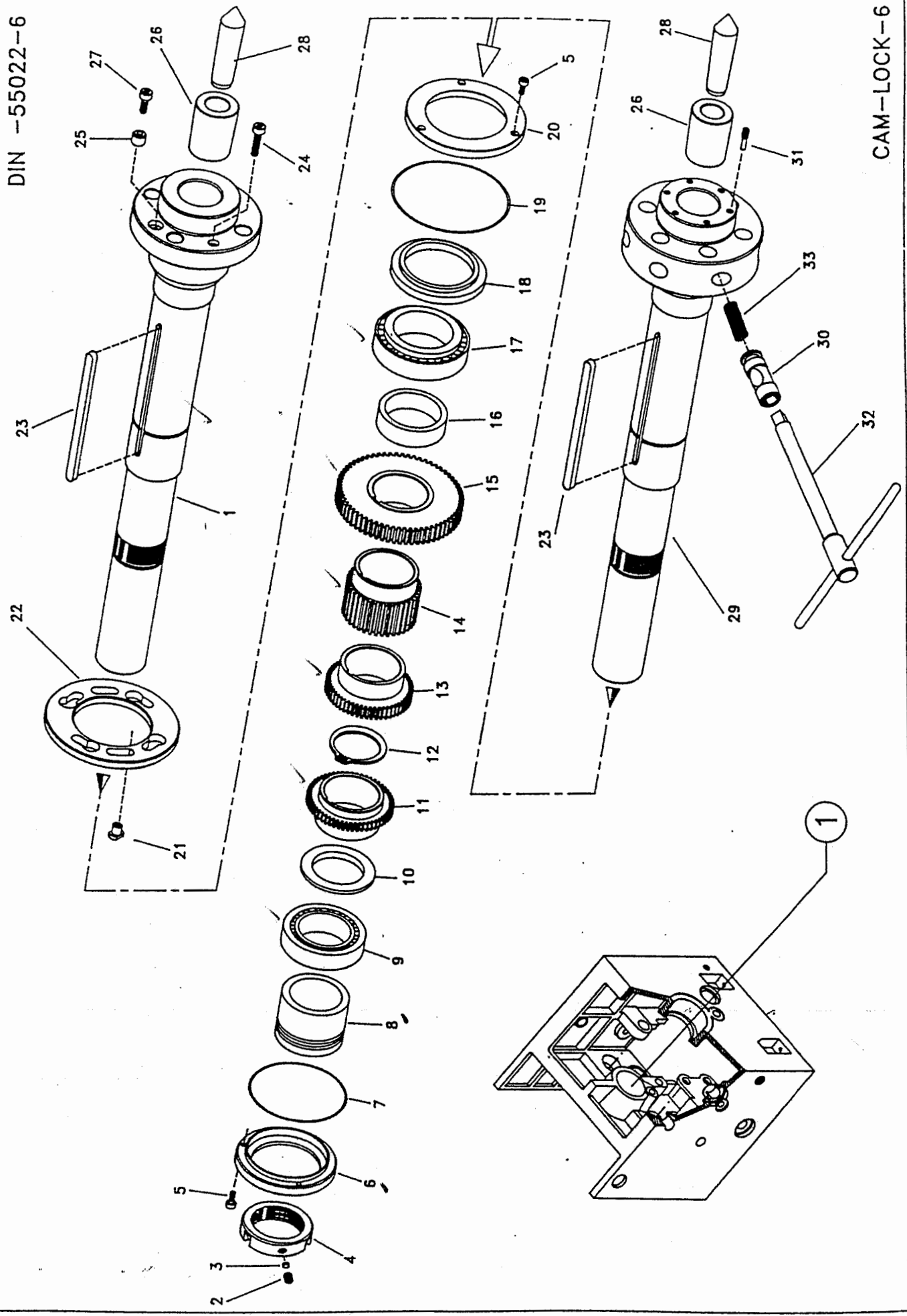
- * When requesting spare parts which might vary in length, indicate the distance between centres of the machine.
- * When requesting lead screw or lead screw nut spare, indicate if it is MM or T.P.I.

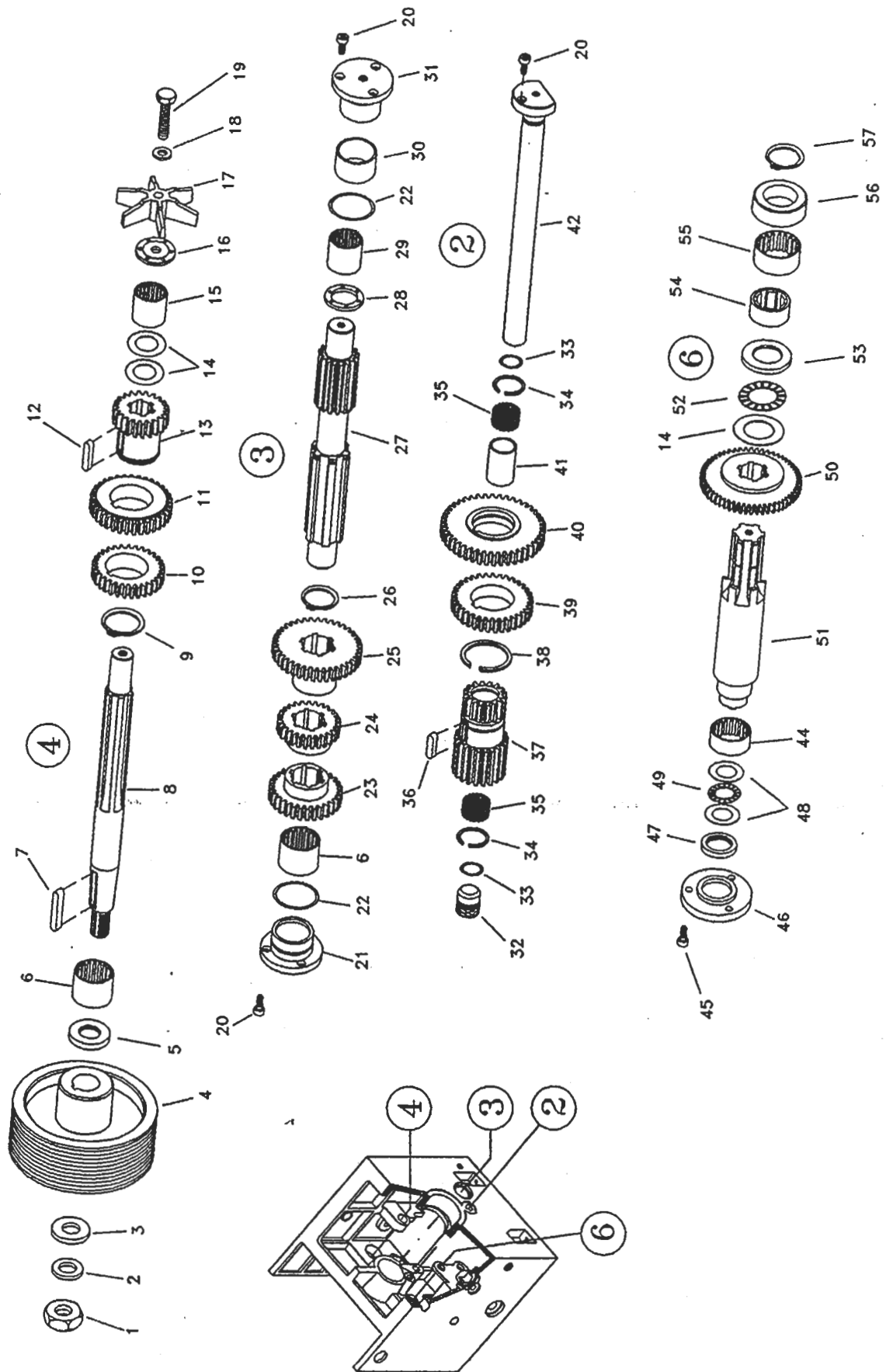


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CAM-LOCK-6





HEADSTOCK PINIONS AND SHAFTS

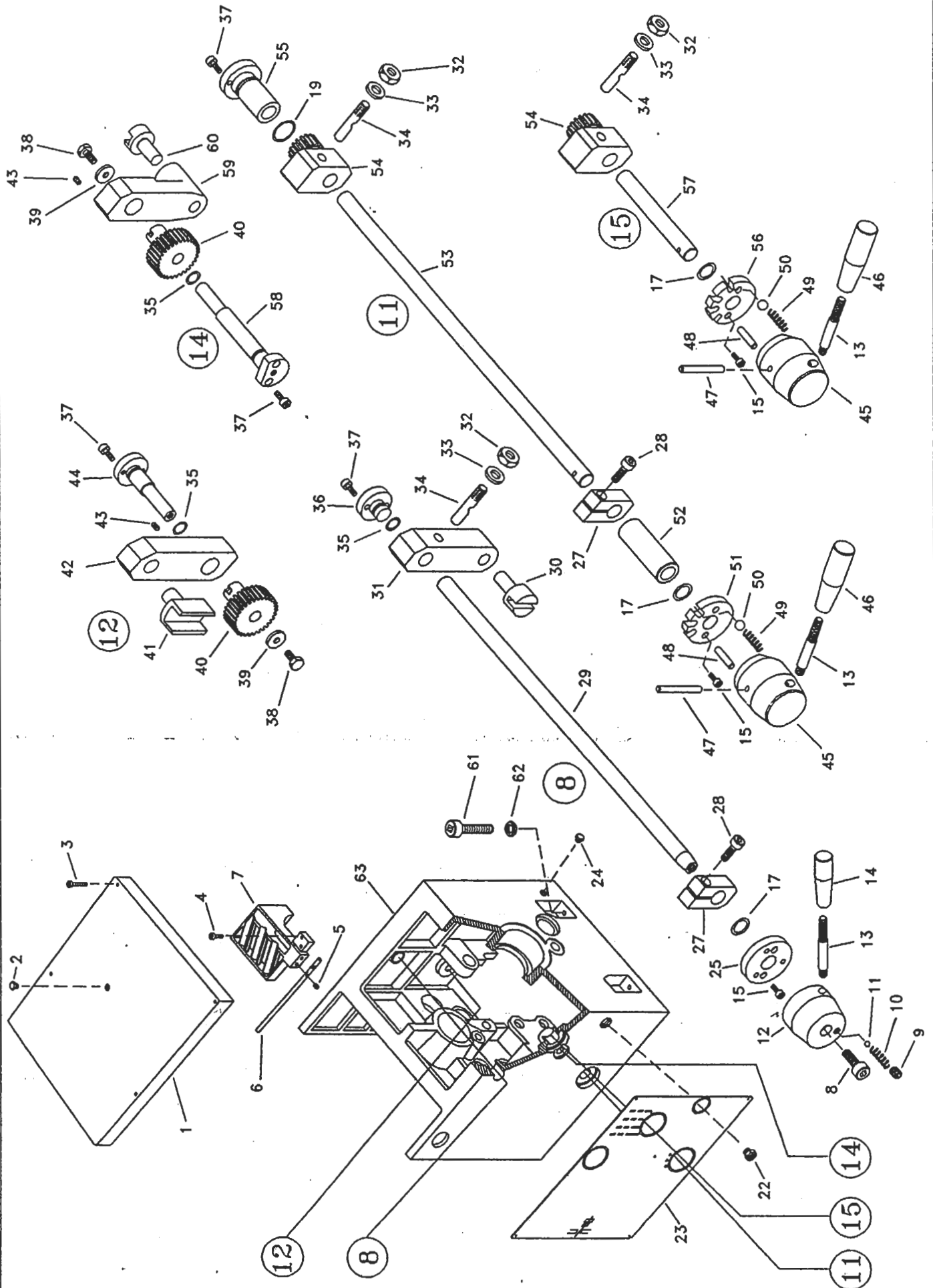
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Item	Part N°	Description	Amo.	Item	Part N°	Description	Amo.
1	DIN 934	Nut M20	1	52	DIN 5405	Bearing AXK 2542	1
2	DIN 6798	Spring washer A-21	1	53		Washer WS 81105	1
3	01.01.72	Pulley washer	1	54	01.02.531	Bruched bushing	1
4	01.01.535	Headstock pulley	1	55	DIN 618	Bearing HK 3016	1
5	DIN 3760	Retainer 32x45x7	1	56	12.01.01061	Outlet shaft bushing	1
6		Bearing RNA 69/28	2	57	DIN 471	Spring ring 25x1.2	1
7	DIN 6885	Key A 8x12x42	-1	58			
8	01.01.1001	Input shaft	1	59			
9	DIN 471	Spring ring 48x1,75	1	60			
10	01.01.1047	Input shaft gear Z	1	61			
11	01.01.1003	Input shaft gear Z	1	62			
12	DIN 6885	Key A 8x7x29	1	63			
13	01.01.1046	Input shaft gear Z	1	64			
14		Washer AS 2542	3	65			
15		Bearing RNA 6904	1	66			
16	01.01.73	Pump washer	1	67			
17	01.01.64	Lubrication pump	1	68			
18	DIN 6798	Washer A-10,5	1	69			
19	DIN 933	Hexagonal screw M10x45	1	70			
20	DIN 912	Allen screw M6x12	10	71			
21	01.01.1013	Gear shaft cover	1	72			
22	DIN 3770	O-ring 39x44,5x2,75	2				
23	01.01.1004	Gear shaft gear Z	1				
24	01.01.1005	Gear shaft gear Z	1				
25	01.01.1007	Gear shaft gear Z	1				
26	DIN 471	Spring ring 42x1,75	1				
27	01.01.1006	Gear shaft Z	1				
28	01.01.91	Gear shaft washer	1				
29		Bearing NK 30/30	1				
30	01.01.1012	Bushing	1				
31	01.01.1014	Gear shaft cover	1				
32	01.01.1179	Gear shaft plug	1				
33	DIN 3770	O-ring 20x25x2,5	2				
34		Spring ring SB-30	2				
35	DIN 5405	Bearing K 25x30x20	2				
36	DIN 6885	Key A 8x7x25	1				
37	01.01.1009	Plain shaft gear Z	1				
38		Spring ring SB-48	1				
39	01.01.1010	Plain shaft gear Z	1				
40	01.01.1011	Plain shaft gear Z	1				
41	01.01.1008	Separator bushing	1				
42	01.01.1015	Plain shaft	1				
43	01.01.1060	Gear shaft cover, feeds	1				
44	DIN 617	Bearing RNA 4904	1				
45	DIN 912	Allen screw M6x15	3				
46	17.45.01060	Gear shaft cover	1				
47	DIN 3760	Retainer 20x28x6	1				
48		Washer AS 2035	2				
49	DIN 5405	Bearing AXK 2035	1				
50	01.01.1033	Headstock feed shaft	1				
51	17.45.01094	Outlet shaft	1				

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HEADSTOCK CONTROLS

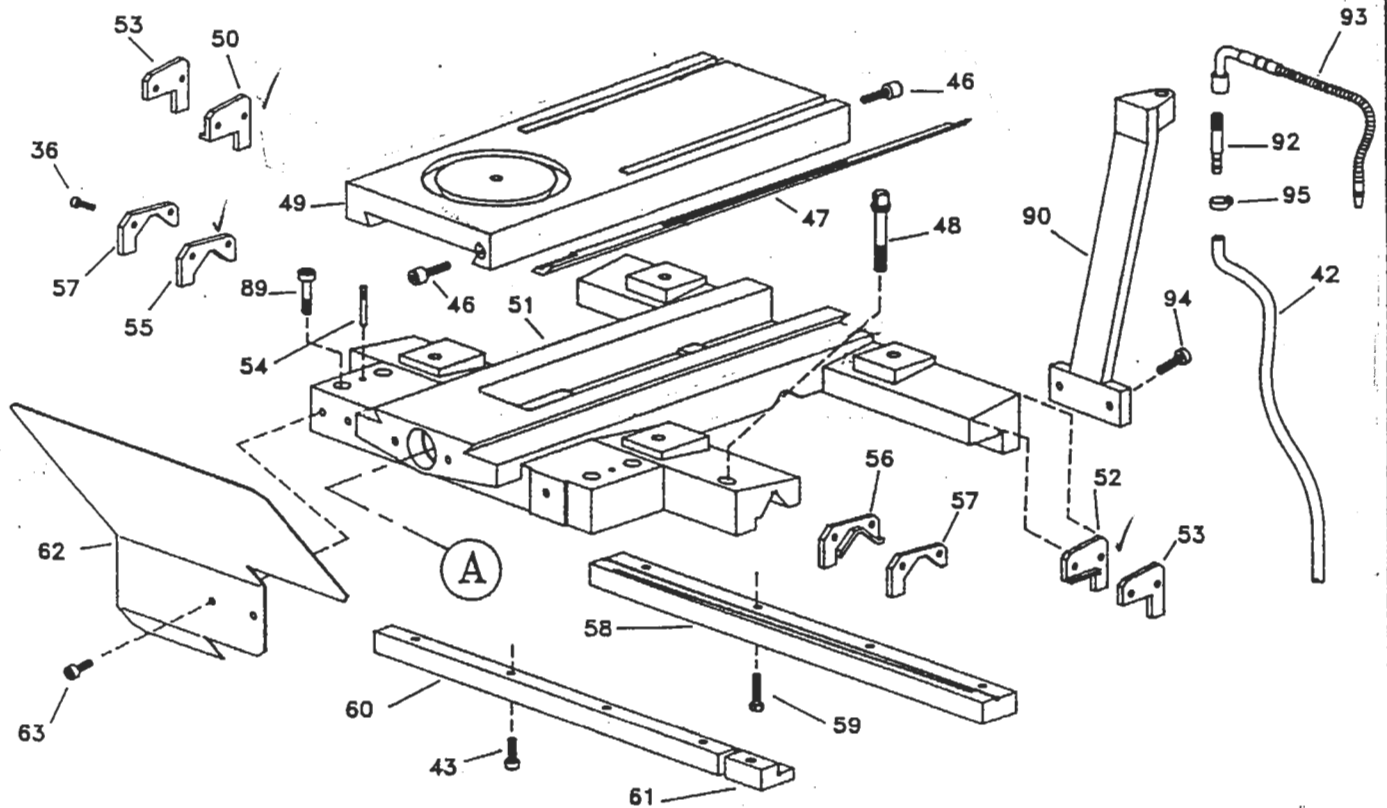
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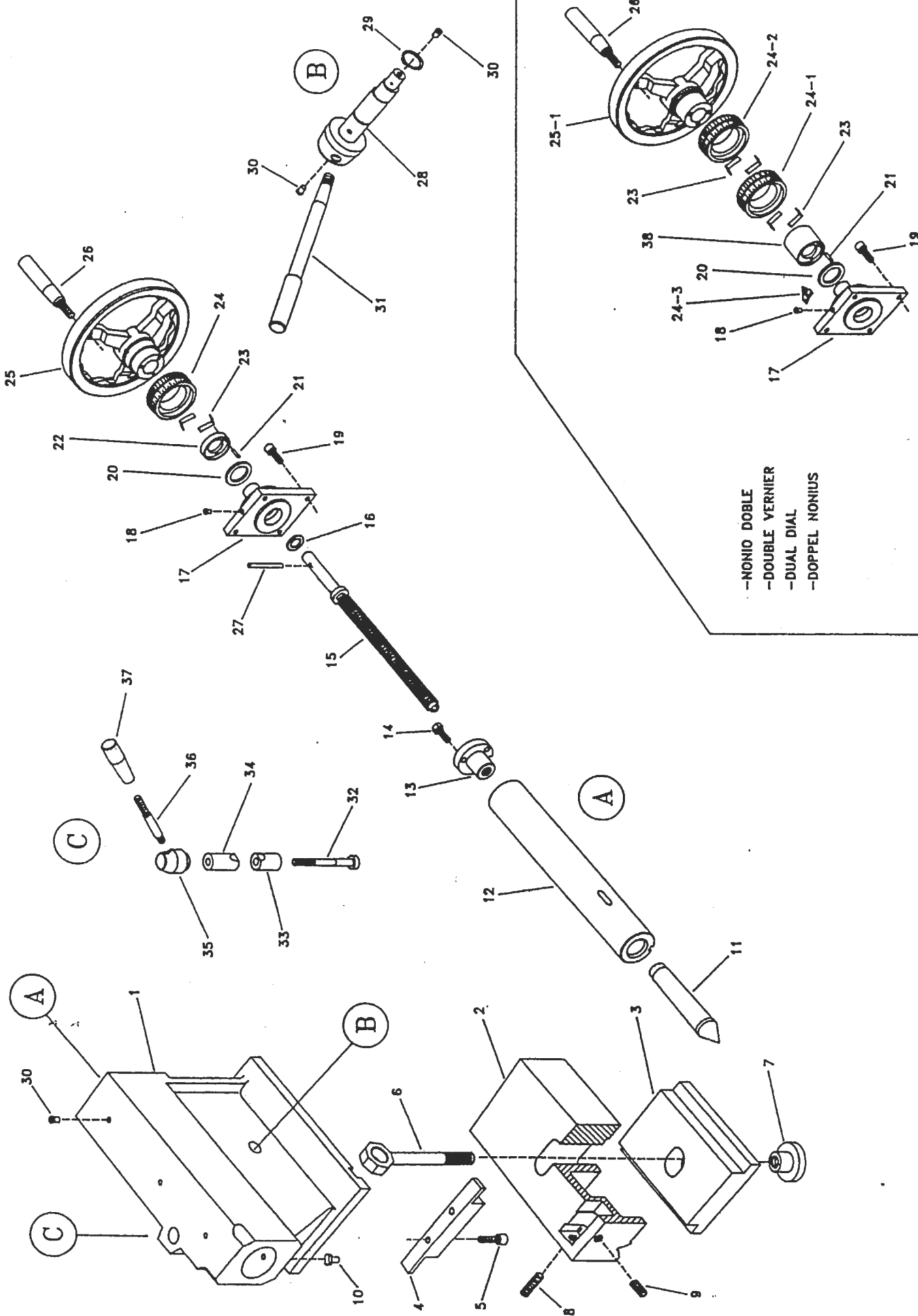
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Item	Part N°	Description	Amo.	Item	Parts N°	Description	Amo.
1	01.01.1036	Headstock cover	1	52	01.01.1171	Separator bushing	1
2	01.02.81	Oil plug 3/8" gas	1	53	01.01.1150	Control shaft	1
3	DIN 912	Allen screw M8x40	4	54	01.01.52	Change pinion	2
4	DIN 912	Allen screw M8x25	2	55	01.01.1152	Control cover	1
5	DIN 913	Allen grub screw M10x10	2	56	01.01.1167	Control washer	1
6	01.01.1079	Lubrication tray tube	1	57	01.01.1166	Control shaft	1
7	01.01:1063	Lubrication tray	1	58	01.01.1165	Control shaft	1
8	DIN 912	Allen screw M10x25	1	59	01.01.1169	Connecting rod	1
9	DIN 913	Allen grub screw M8x8	3	60	01.01.1045	Fork	1
10	01.01.1181	Spring	3	61	DIN 913	Allen screw M14x55	2
11	DIN 5401	Ø 6,35 ball	3	62	01.01.1100	Washer	2
12	01.01.1159	Control	1	63	08.01.1059	Headstock casting S-90/225	1
13	01.01.47	Handle	3	63	08.01.1200	Headstock casting S-90/200	1
14	01.01.124	Handle knob	1				
15	DIN 912	Allen screw M5x10	6				
16							
17	DIN 3770	O-ring 19x26x3,5	3				
18							
19	DIN 3770	O-ring 27x32x2,5	1				
20							
21							
22		TLT oil level window 1" gas	1				
23		Headstock plate	1				
24		Oil plug TC/4 3/*" gas	1				
25	01.01.1068	Control washer	1				
26							
27	01.01.547	Strop flange	2				
28	DIN 912	Allen screw M8x25	2				
29	08.01.1061	Feed reverse control shaft	1				
30	01.01.1163	Feed reverse fork	1				
31	01.01.1162	Feed reverse connecting rod	1				
32	DIN 934	Nut M12	3				
33	DIN 6798	Ø12,5 star washer	3				
34	01.01.570	Semicircular pin	3				
35	DIN 3770	O-ring 15x20x2,5	3				
36	01.01.111	Feed reverse control cover	1				
37	DIN 912	Allen screw M5x10	7				
38	DIN 933	Hexagonal screw M8x15	2				
39	01.01.565	Control washer	2				
40	01.01.51	Control pinion	2				
41	01.01.1044	Fork	1				
42	01.01.1156	Connecting rod	1				
43	DIN 913	Allen grub screw M6x8	4				
44	01.01.1154	Cover shaft	1				
45	01.01.551	Control	2				
46	01.01.120	Handle knob	2				
47	DIN 7343	Spring pin 8x60	2				
48	01.01.581	Sliding screw eye	2				
49	01.01.69	Spring	2				
50	DIN 5401	Ø 12 ball	2				
51	01.01.1151	Control washer	1				

Item	Part N°	Description	Am.
36	DIN 912	Allen screw M6x20	8
42		Coolant hose	1
43	DIN 912	Allen screw M8x25	5
46	01.05.1061	Gib tightening screw	2
47	01.05.1002	Adjustment gib	1
48	01.05.51	Carriage brake screw	1
49	01.05.1003	Cross slide	1
50	01.05.1039	Rubber left flat wiper	1
51	01.05.1001	Saddle	1
52	01.05.1038	Rubber right flat wiper	1
53	01.05.1054	Square metal plate	2
54	01.04.49	Apron pin	2
55	01.05.1037	Left V-wiper	1
56	01.05.1036	Right V-wiper	1
57	01.05.1053	V-wiper retainer	2
58	01.05.1026	Plain gib	1
59	DIN 933	Hexagonal screw M8x35	4
60	01.05.1027	Square gib	1
61	01.05.1111	Saddle lock	1
62	01.05.77	Topslide protection	1
63	DIN 912	Allen screw M8x10	2
89	DIN 912	Allen screw M10x60	4
90	01.08.1023	Coolant nozzle support	1
92	01.08.24	Boring raccord	1
93		Coolant nozzle	1
94	DIN 912	Allen screw M8x25	2
95		Clamp NPL 16/9 W1	1

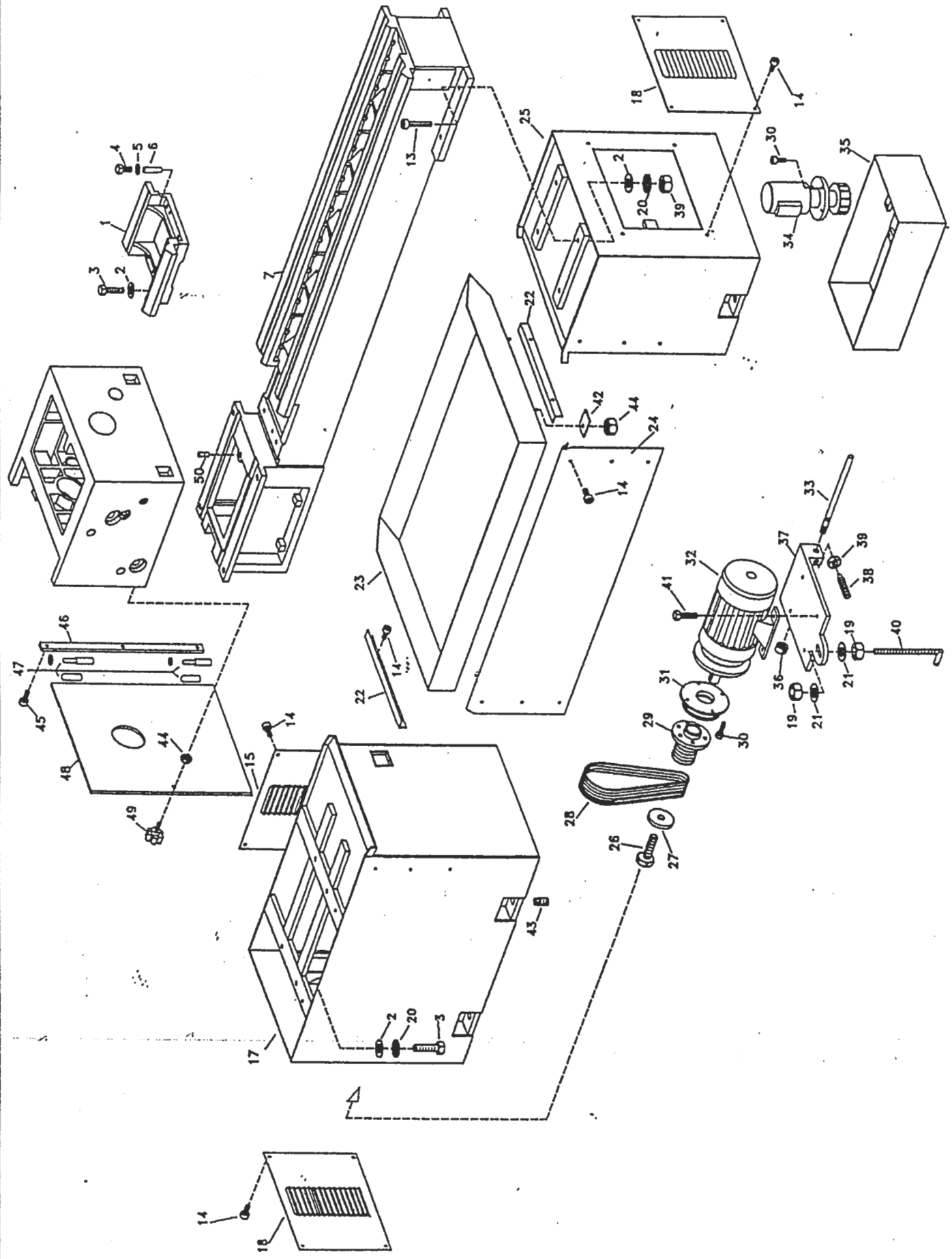


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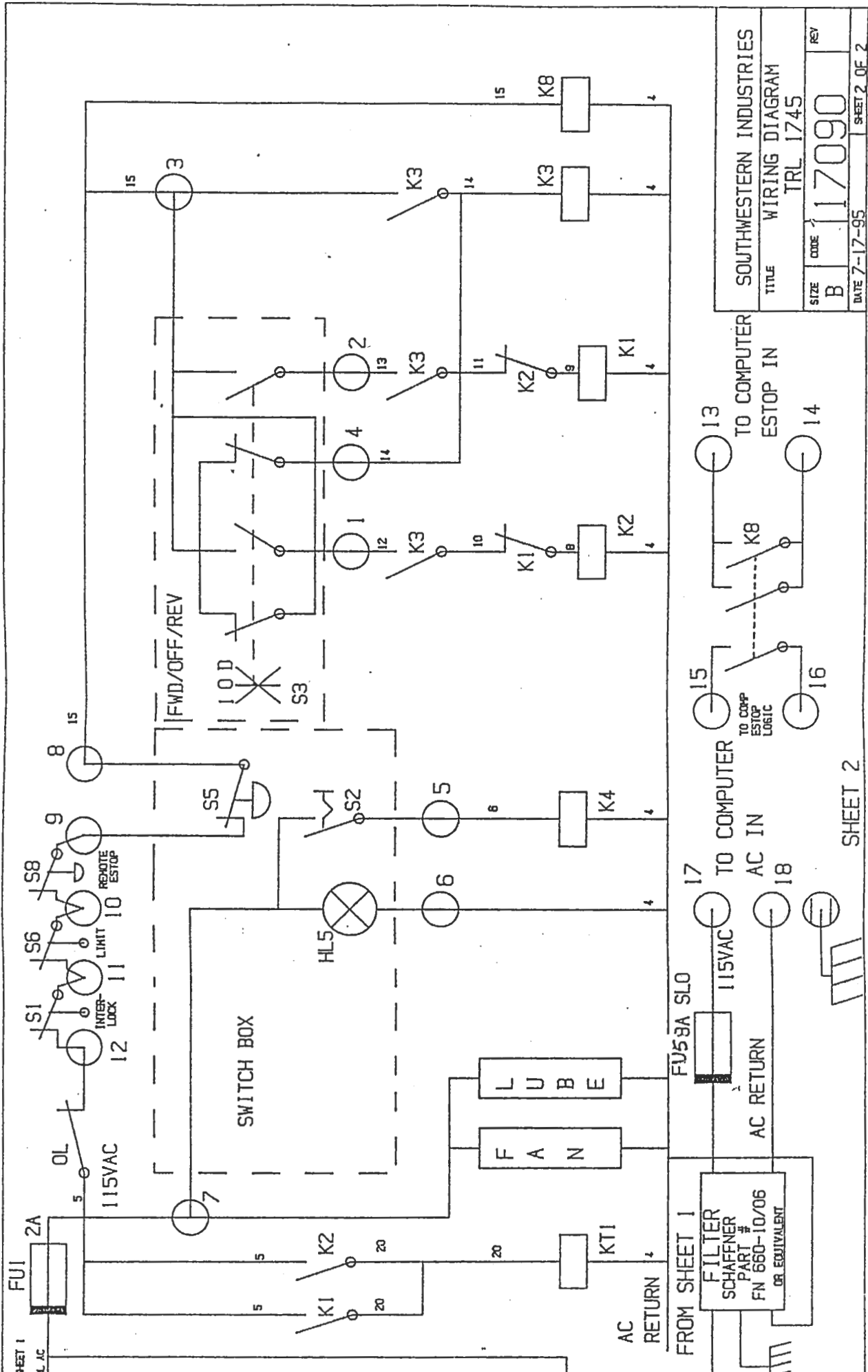
--NONIO DOBLE
--DOUBLE VERNIER
--DUAL DIAL
--DOPPEL NONIUS

Item	Part N°	Description	Amo.	Item	Part N°	Description	Amo.
1	01.07.1001	Tailstock casting	1	37	01.01.124	Handle knob	1
2	01.07.1031	Tailstock S-90/200	1	38	01.07.1042	Double vernier wheel bushing	1
2	01.07.1002	Tailstock base	1				
2	02.07.3302	Tailstock base S-90/250-105	1				
2	10.07.2002	Tailstock base S-90E/205	1				
2	10.07.2003	Tailstock base S-90E/230	1				
3	01.07.1003	Attaching flange	1				
4	01.07.1028	Centering gib	1				
5	DIN 912	Allen screw M10x25	2				
6	01.07.1020	Lock screw	1				
6	01.07.1032	Lock screw S-90/200	1				
6	02.07.3020	Lock screw S-90/250-105	1				
7	01.07.1022	Lock nut	1				
8	DIN 914	Centering grub screw M12x35	2				
9	DIN 914	Attachment grub screw M12x20	2				
10	01.07.1016	Shank key	1				
11	01.07.1030	Dead center	1				
12	01.07.1004	Tailstock barrel	1				
13	01.07.1005	Barrel nut	1				
13	01.07.1045	Barrel nut version TPI	1				
14	DIN 933	Hexagonal screw M8x20	3				
15	01.07.1006	Tailstock screw	1				
15	01.07.1046	Screw version TPI	1				
16	DIN 5405	Bearing ASK 1730	1				
17	01.07.1007	Screw support	1				
18		Ø 8 ball oiler	1				
19	DIN 912	Allen screw M8x20	4				
20	DIN 5405	Bearing AXK 2542	1				
21	DIN 7343	Spring pin Ø4x15	3				
22	01.07.1009	Vernier washer	1				
23	01.05.60	Strip spring	4/8				
24	01.07.1008	Vernier	1				
24	01.07.1047	Vernier version TPI	1				
24.1	01.07.1043	Vernier m/m	1				
24.1	01.07.10450	Vernier h/h version TPI	1				
24.2	01.07.1044	Vernier h/m	1				
24.2	01.07.10460	Vernier m/h version TPI	1				
24.3		"O" indicator	1				
25	01.07.1010	Handwheel	1				
25.1	01.07.1041	Handwheel	1				
26	01.04.20	Wheel handle	1				
27	DIN 7343	Spring pin Ø6x50	1				
28	01.07.1017	Clamping shaft	1				
29	DIN 471	Spring ring 30x1,5	1				
30		Ø 8 ball oiler	5				
31	01.07.1018	T.S. clamp handle	1				
32	01.07.1011	Barrel lock screw	1				
33	01.07.1012	Barrel lock bushing	1				
34	01.07.1013	Barrel lock bushing	1				
35	01.07.1014	Barrel lock knob	1				
36	01.01.47	Barrel lock handle	1				



BED - PEDESTALS

Item	Part N°	Description	Amo.	Item	Part. N°	Description	Amo.
1	01.06.1004	Gap piece	1	50	01.01.1099	Headstock centering screw eye	1
2	DIN 125	Washer A-15	12				
3	DIN 933	Hexagonal screw M14x45	8				
4	DIN 933	Hexagonal screw M10x15	2	53			
5	DIN 125	Washer A-11	2	54			
6	01.06.16	Taper pin	2	55			
7	01.06.1001	Bed	1	56			
				57			
				58			
				59			
				60			
13	DIN 912	Hexagonal screw M14x70	4				
14	DIN 912	Allen screw M8x10	22				
15	01.08.09	Motor cover plate	1				
17	01.08.1001	Headstock pedestal	1				
18	01.08.08	Cover plate	2				
19	DIN 934	Nut M16	2				
20	DIN 6798	Star washer A-15	8				
21	DIN 125	Flat washer A-18	2				
22		Tray support angle	2				
23	01.08.1004	Chip tray	1				
24	01.08.1005	Skirt	1				
25	01.08.1002	Tailstock pedestal	1				
26	DIN 933	Hexagonal screw M10x30	1				
27	01.08.1049	Motor washer	1				
28		Transmission belt	1				
29		Motor pulley	1				
30	DIN 912	Allen screw M6x12	7				
31	4.62.04.900	Electromagnetic brake	1				
32		Motor	1				
33	01.08.13	Motor support shaft	1				
34		Cooling pump motor	1				
35	01.08.1006	Coolant tank	1				
36	01.08.48	Motor support shaft nut	1				
37	01.08.12	Motor support	1				
38	DIN 913	Grub screw M14x40	1				
39	DIN 934	Nut M14	6				
40	01.08.25	Motor tightening stud	1				
41	DIN 933	Hexagonal screw M10x30	4				
42		Tray fastening plate	4				
43	01.08.07	Levelling tightening device	6				
44	DIN 934	Nut M8	5				
45	DIN 912	Allen screw M6x12	3				
46	01.03.1028	Quadrant plate door fastening flat irons	1				
47		Tubular pin hinge 10x60	2				
48	01.03.1027	Quadrant plate door	1				
49	01.03.20	Quadrant plate door knob	1				



SOUTHWESTERN INDUSTRIES	
TITLE WIRING DIAGRAM	
SIZE B	CODE 117090
DATE 7-17-95	REV
SHEET 2 OF 2	

SHEET 2

Machine model TRL1745P Centre distance 1150 Serial No. 27321

CERTIFICATE OF GUARANTY

The manufacturer guarantees the good operation of the delivered machine, for the period of ONE year from the date of putting into operation. (Excepting electric components).

It is well understood that the machine is working under the normal conditions of a work shop, without having suffered any modification after its delivery.

The guaranty is limited to the replacement of the material (except the electric part) wich our technicians admit to be defective.

On no account at all, neither the factory nor the representative will accept any responsibility for indirect or consequential damages and losses.

Castejón del Puente.....

IMPORTANT: As an indispensable condition for this certificate of guaranty to be valid, the user has to fill in the lower part of this sheet in detail and to return it to factory, once having separated it.

(To be filled in by the user and TO BE RETURNED TO FACTORY)

Machine model Centre distance Serial No.

Representative/seller Place

Date of putting the machine into operation

Did you level and test the machine and did you achieve the allowances indicated in the test record of this instruction manual?

Did you observe the instructions of the manual for putting the machine into operation?

Did you find any anomalies?

The User,

ADDRESS OF USER: Firm name

Address