

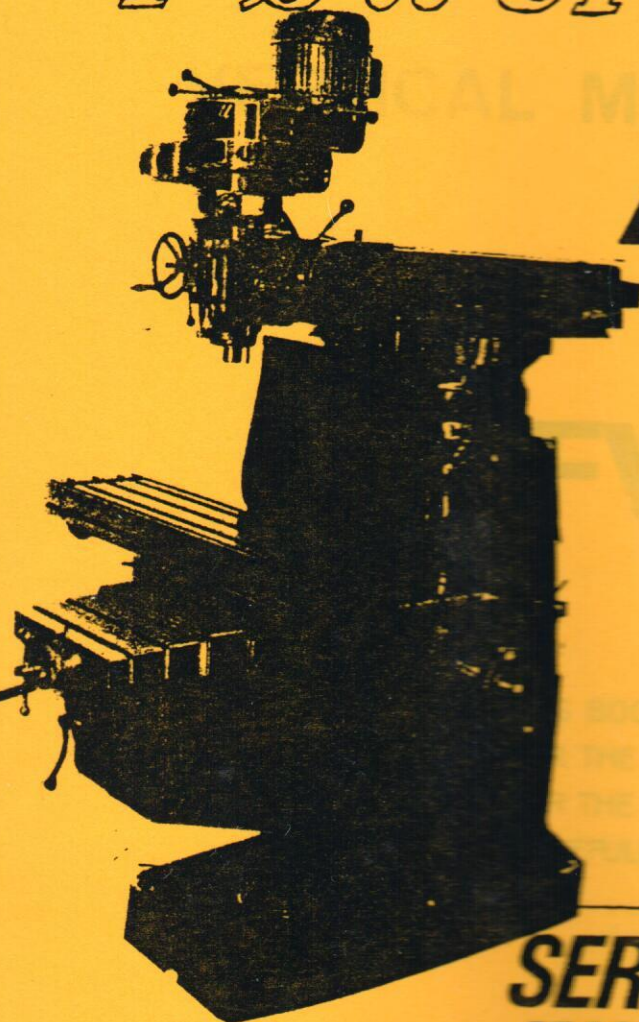


DO NOT OPERATE THIS MACHINE
UNLESS LONG HAIR HAS BEEN CONFINED.
DO NOT WEAR LOOSE CLOTHING, GLOVES,
JEWELRY OR OTHER
ITEMS WHICH CAN BECOME ENTANGLED
IN THE TOOL.

ANTES DE TRABAJAR CON LA MAQUINA
ASEGURENSE DE NO LLEVAR
ELEMENTOS QUE PUEDAN SER ATRAPADOS
POR LA HERRAMIENTA,
PELO LARGO O SUELTO, GUANTES,
MANGAS AMPLIAS, ROPAS SUELTAS, ETC.

Powermill

KONDIA



**SERVICE AND
INSTRUCTIONS MANUAL
FOR MAINTAINING
THE VERTICAL TURRET
MILLING MACHINE**

MODEL FV-300

SERVICE AND INSTRUCTIONS MANUAL FOR
MAINTENANCE OF

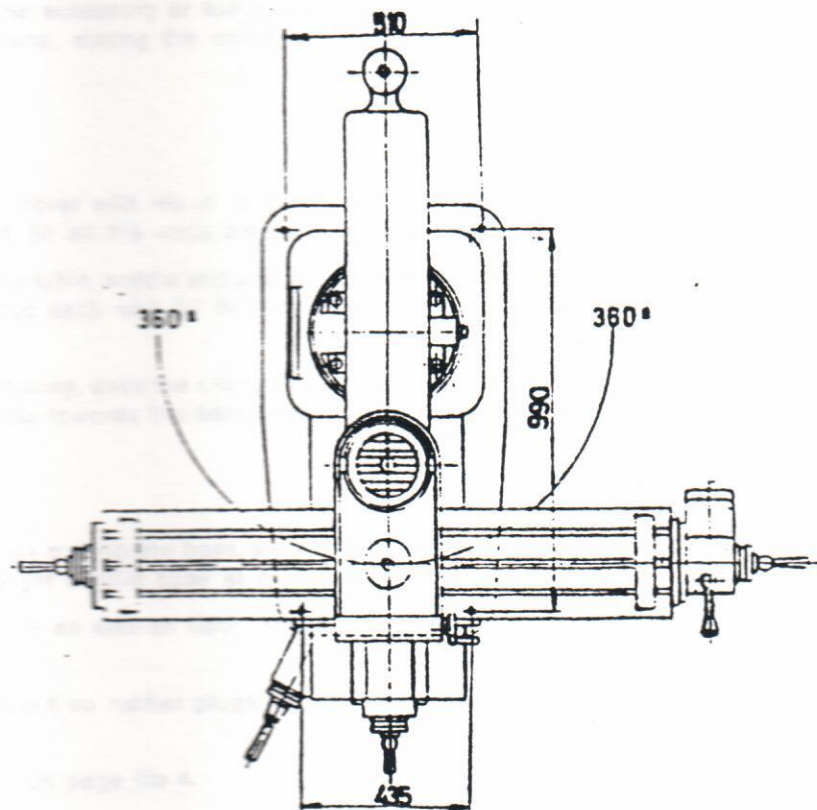
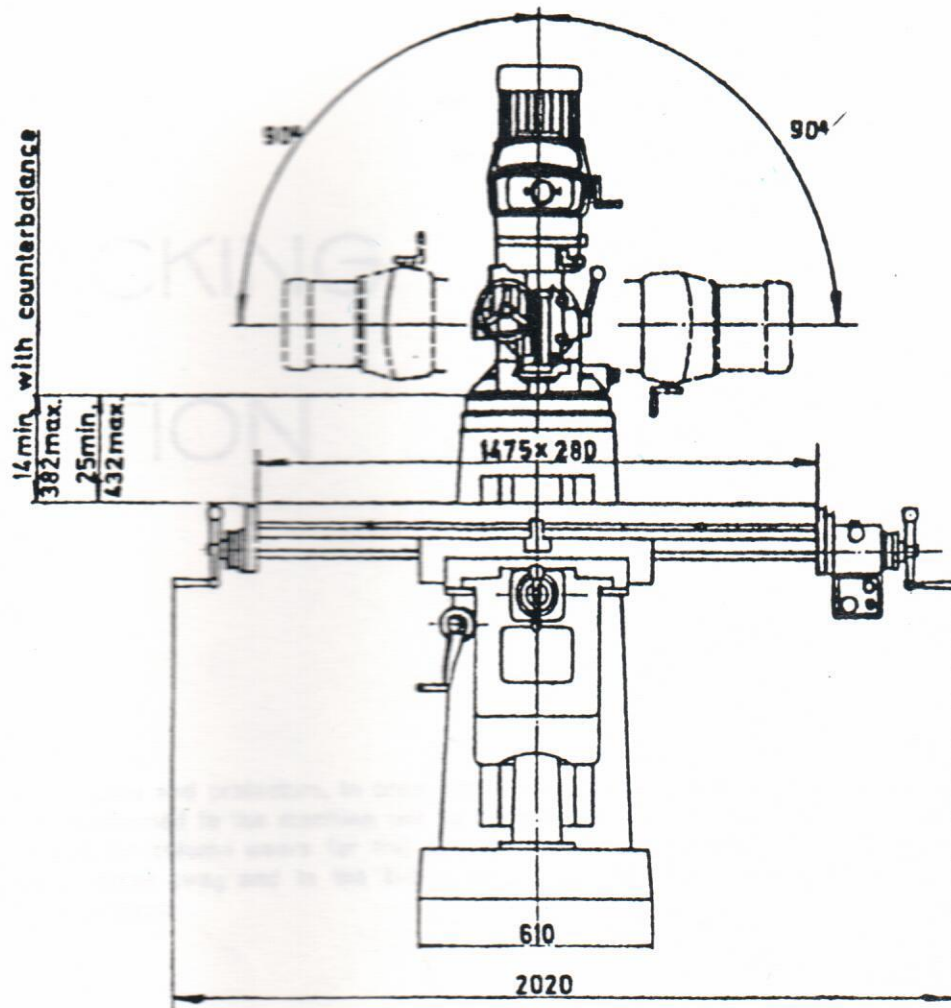
VERTICAL MILLING MACHINE

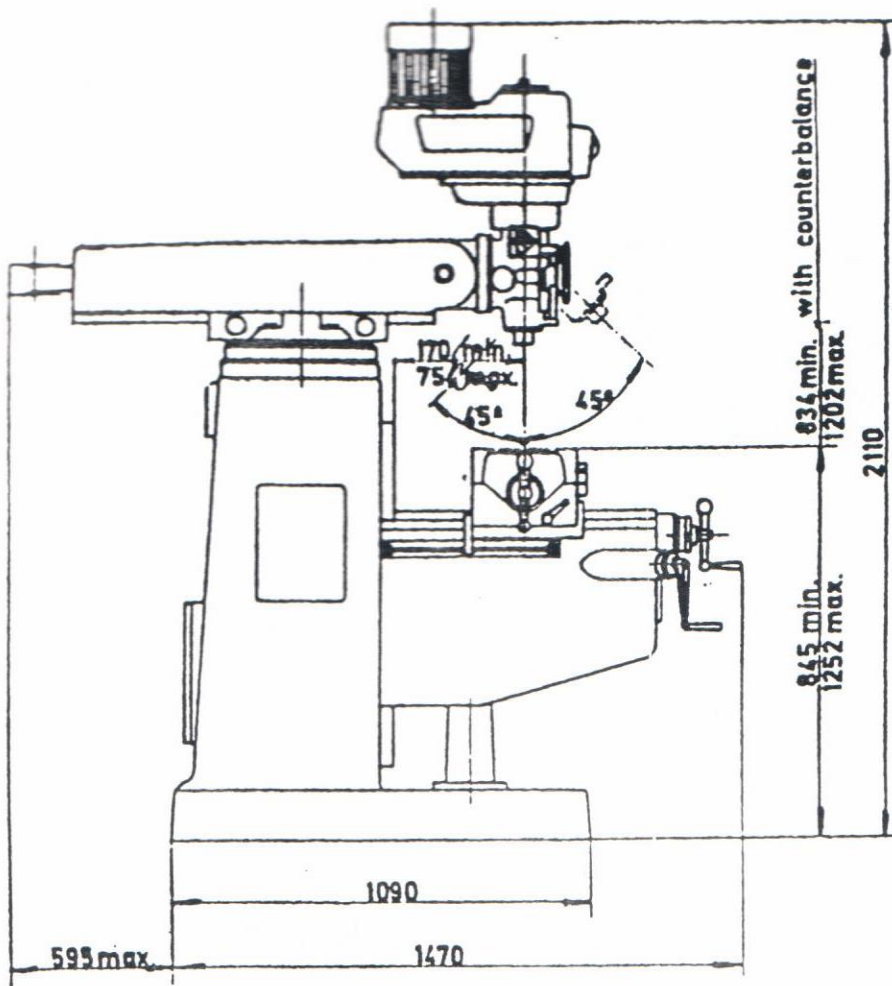
KONDIA

FV-300 TYPE

THIS BOOK CONTAINS USEFUL INSTRUCTIONS,
FOR THE MAINTENANCE AS WELL AS
FOR THE LOCATION; SO, WE ADVISE, TO CHECK
CAREFULLY ALL THE DETAILS

IMPORTANT: Whenever you write us with reference to this machine or you request us spare parts for same, please, state besides of the reference number of the part you request, the serial and number of machine it is for.





FV-300
KONDIA

UNPACKING AND LOCATION

Unpacking

Remove carefully the case and protectors, in order not to damage the machine or scrape it. All the movements that will have to be performed to the machine, will be done rising it by means of a wire, which will be placed, in the two holes that the column wears for this purpose. Once the machine is located in the correspondent place, the wire will be taken away and in the two holes of the framework will be placed the Bronze plugs that are forwarded in the toolbox.

Control

Check the shipment carefully in accordance with the detailed despatch list, which is included in the toolbox. In case you notice that some accessory or tool is missing, advise it immediately to the representative to whom has been bought the machine, stating the components that have not been received and which are stated in the despatch list.

Cleaning

Clean carefully the antirust cover with which is protected the machine. Do not move the table, saddle arm or square nor any mobile part, till all the ways are perfectly clean and duly lubricated.

Afterwards, move by hand the table, saddle and arm till the end of their travels in one direction. Clean lubricated exposed ways and then move each unit till the end of its travel in the contrary sense and perform the same operation.

For ram lubrication and greasing, once the antirust cover has been taken away, loosen the three fastening screws No 28 of page 5, and operate towards the back and the front by means of lever No 16 of same page.

Foundation

When setting the machine on a concrete base, we advise to use thin mortar in order to prevent any contingency on the floor, as well as to get a solid base at every point.

When setting the machine on an uneven floor, shoes or wedges should be used to correct same as much as possible.

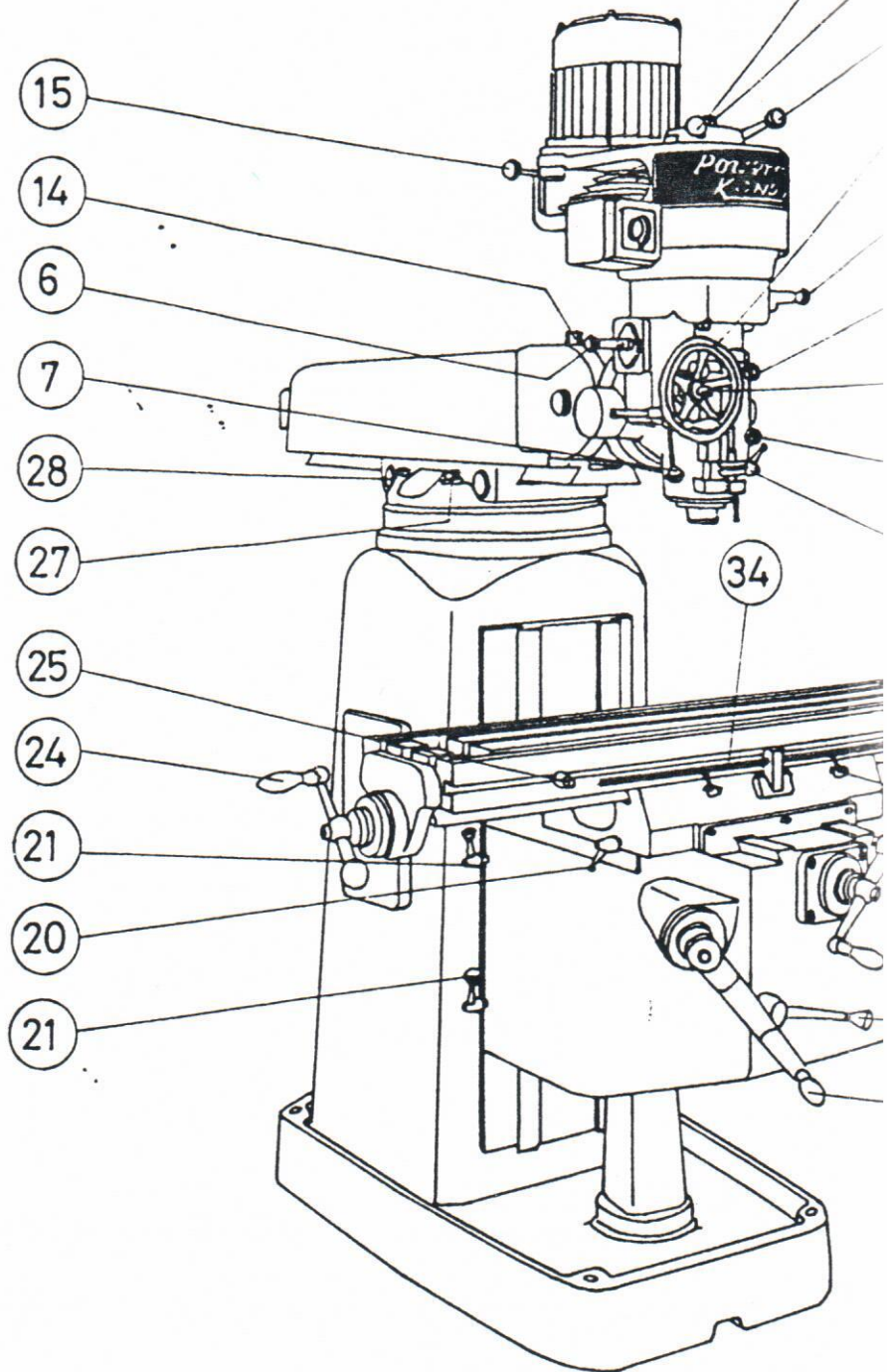
In case the machine is placed on rubber plugs, you may take advantage of the 4 base holes for their levelling and fastening.

See foundation dimensions on page No 4.

Levelling of machine

Place the machine levelling worktable in longitudinal and transversal with an accuracy device.

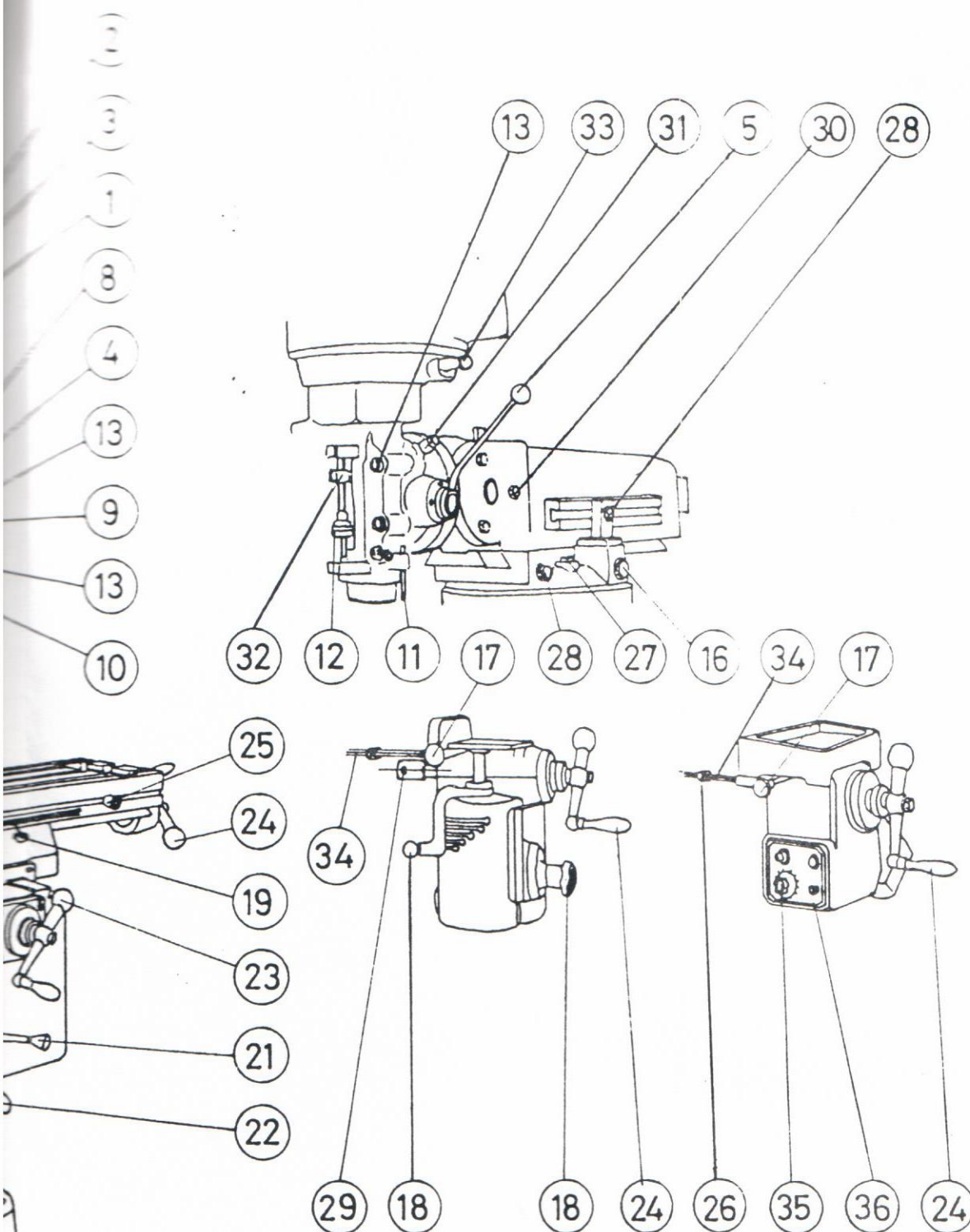
GENERAL DESCRIPTION OF MACHINE



1. Control for speeds change.
2. Control for pulleys brake.
3. Toolholder shaft tie rod.
4. Control for the automatic movement of main spindle.
5. Control for movement by hand of main spindle.
6. Control for feeds change.

7. Control for automatic clutch.
8. Hand wheel for slow feed by hand of main shaft.
9. Nozzle for feed reversal of main shaft.
10. Control of locking-brake of main shaft.
11. Micrometric comparerholder support.
12. Micrometric nut.
13. Headstock fastening screws.

14. Worm screw for movement of headstock with reference to the bridge.
15. Control to change belt of step.
16. Control of longitudinal movement of ram.
17. Control to reverse table automatic feed sense.
18. Controls for feeds change.
19. Controls for table locking.



headstock

mt of ram.
matic feed

- 20. Control for locking transversal carriage.
- 21. Controls for locking vertical carriage.
- 22. Handle for vertical movement.
- 23. Handle for transversal movement.
- 24. Handle for longitudinal movement.
- 25. Limit stops of longitudinal displacement by hand.

- 26. Limit stops of automatic longitudinal displacement.
- 27. Screws for locking circular rotation of bridge.
- 28. Screws for locking longitudinal movement of ram.
- 29. Safety pin of feed box.

- 30. Fastening screws of headstock with bridge.
- 31. Endless screw for headstock movement with reference to tool post.
- 32. Sleeve stop (main spindle).
- 33. Speeds change control (high-low).
- 34. Stop Rod.
- 35. Control potentiometer knob.
- 36. Fast travel pushbutton.

Service Instructions - HEADSTOCK

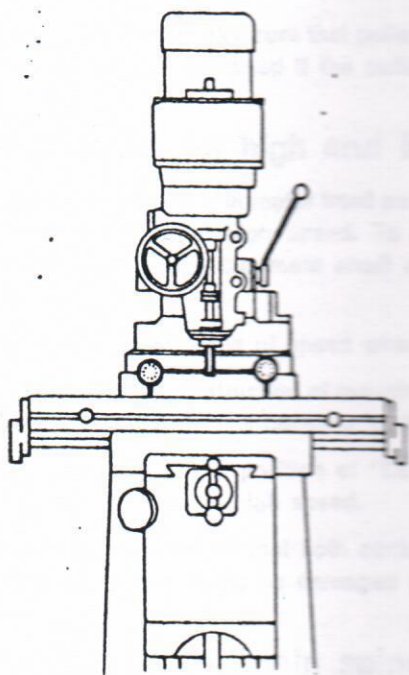


Fig. 2

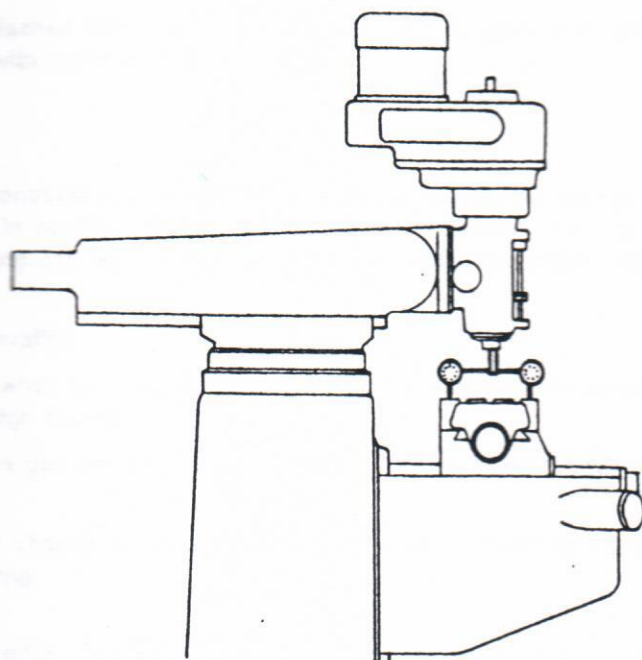


Fig. 1

Headstock alignment

For normal milling operations, the graduations of the turret as well as of the headstock are accurate enough.

In case of accuracy boring or drilling or whenever it is necessary keep perfectly square the main spindle with table, use the method that is described as follows:

Place the micrometric comparer in the main spindle nose in such a way that it gets the ends of the table in the transversal sense, as it is stated in Fig. 1; undo the three screws that the headstock wears for fastening turn No. 30, page 5, in such a way that it presses smoothly on the support faces. By means of worm screw No. 14 page 5 and the comparer that we have placed, the headstock is aligned in table transversal sense. To aligne it in table longitudinal sense, the micrometric comparer is placed in the way that states Fig. No. 2; screws No. 13 are undone, page 5, and afterwards, by means of a worm screw No. 31, page 5, we shall have obtained a perfect alignment in table longitudinal sense.

Belts adjustment and location

By means of Lever No 15 of page 5, loose the motor and adjust "V" Belt to the pulley step that you wish and, tightening it correctly, oppress afterwards motor both fastening levers.

Pulley brake of main spindle

The control can be moved in both directions, No 2 page 5, nevertheless to get a continuous spindle blocking the control should be moved to one side or the other lifting it afterwards.

CAUTION: You must make sure that pulley brake is detached before starting the motor. This is most important, as the motor can be damaged if the switch is pulsed with brake in closed position.

Clutch control for high and low speed

Clutch control is directly in motor front part. When the control is in position that is stated in sketch No. 1 page 5, clutch is in position of high speed. To place clutch in position of low speed, turn lever towards the right. It is convenient to turn the main shaft when connecting for high speed, in order to enable the mechanism connection.

CAUTION: Do not change of speed when motor is operating

NOTE: Due to the construction of reducing gears and when the machine is working in the range of low speed, the main spindle rotation is contrary to the range of high speed.

Lever No. 33 has to be in position of "Connection" when you are working in low speed and in "disconnection" when you are working in high speed.

CAUTION: It is important that both controls for speed change be synchronized for the same speed range, as if it is not so, motor would be damaged when connecting.

Clutch control for main spindle automatic feed

Control No. 4, page 5, connects endless gear of automatic feeds of main spindle. The plate that the machine wears located under the control, states the position of connection or disconnection.

Worm of feeds can be connected when the main spindle is in motion; nevertheless it must be carefully connected in order to avoid that the worm gets damaged. It can be disconnected at any time.

IMPORTANT: We advise that the endless gear of feeds be disconnected as long as they are not used. This will avoid an unnecessary wear in the spindle feeds system.

Control for feeds change

This control is used to select the three feeds of main spindle: .0028", .00157" and .0047" per revolution of main spindle, No. 6, page 5.

The plate that machine wears located under the control states feeds positions.

It is easier to change of position when the main spindle is rotating.

Feeds reverse nozzle

The position of this nozzle, No. 9, page 5, states feed direction of main of shaft, being its direction reverse, depending on if you work in low speeds or high speeds, for each position of nozzle.

It is advised to let nozzle in neutral position when automatic feed is not used.

Main spindle hand feed

BY MEANS OF HAND WHEEL: Nozzle No. 9 should be in intermediate position, and control lever No. 7 aligned.

BY MEANS OF LEVER: Lever No. 5 operation, page 5, in reverse sense to the one of the movement of watch needles, moves downwards bushing of (main shaft).

WARNING: It is necessary to sling feeds control lever No. 7, page 5, if you wish to use the stops of automatic release. Lever as well as hand wheel can be taken away when they are not being used.

Feeds control command

The command of feeds control (automatic clutch) No. 7, page 5, overloading clutch meshes when you pull it towards the left; and it remains in this position till stop of main shaft No. 32, page 5, gets in contact with micrometric nut No. 12, page 5, making clutch release automatically. Clutch can be released by hand as well, operating lever No. 7 towards the right.

NOTE: Feeds control lever is carefully located to be automatically released when sleeve stop presses against micrometric nut or against safety pin of upper part; nevertheless, if this comes out of adjustment, it can be placed again easily regulating the screw located in the end of released rod.

CAUTION: When adjusting main spindle, check if the automatic releases in both directions.

Sleeve stop (main shaft)

This stop No. 32, page 5, is used to release clutch of automatic feed in both directions; upwards and downwards, as well as the location point to work in determined depths.

Sleeve blocking (main shaft)

It is a positive blocking to use when it is in stationary position, for instance, in milling operations, etc. No. 10, page 5.

We advise to use this blocking whenever it is not wished a sleeve movement.

Micrometric comparer of suport rod

This rod is used for fastening the micrometric comparer, No. 11, page 5; and moving control No. 16, page 5, towards the left or towards the right, till placing it in wished position. You must be careful to tighten nuts once it is conveniently located.

WARNING: For works of heavy millings, it is advised to keep the headstock as near to the face column as possible, in order to get the maximum of rigidity.

Main spindle sleeve

This sleeve wears its external part protected by a cover of hard chrome of .003".

Service instructions - SADDLES

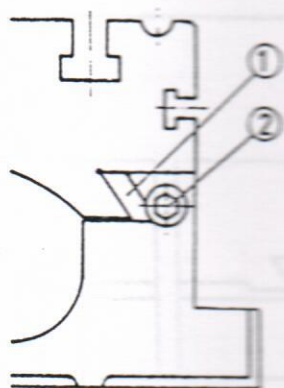


Fig. 3

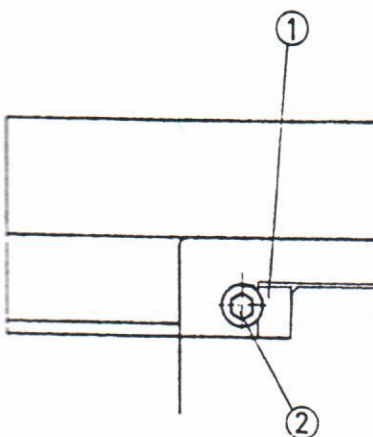


Fig. 4

Fitting of rule to table

The table is provided with a conical rule, Fig. 3, No. 1, in the whole saddle length, with two adjustment screws on both sides, Fig. 3, No. 2. To adjust the rule unfasten the screw of the thin part of the rule and tighten from opposite side until a light friction is felt when moving the table by hand.

Fitting of transversal saddle rule

For this operation the same procedure as in the case before will be followed; however, the steel-wiper will have to be removed first. Rule Fig. 4, No. 1, and screw, Fig. 4, No. 2.

Vertical saddle (blocking brakes)

When milling only with the table longitudinal feed it is recommended the fastening of the square to the column, and the saddle to the square to add stiffness to those pieces and avoid deeper cut with a minimum of vibrations. The fastening lever of the saddle is situated on the left hand side of the saddle, page 9, Fig. 6.

WARNING (locking brake): An excessive pressure may cause a light table fastening. Use moderate pressure, as this will fasten saddle well enough.

Table (blocking brake)

The table fastening lever is located in the frontal part of the saddle and must be used for fastening whenever that a longitudinal movement is not required, page 9, Fig. 7.

Blocking brake of vertical saddle with column

The control to tighten square is at the front and on the left side of it and must be turned round clockwise to brake the square. This is only a tension brake and will not block the square completely.

In case of needing a stronger blocking follow the instructions given before with the two levers that are on the left side of it, page 5, No. 21.

Leave it always braked unless the square is needed for other works.

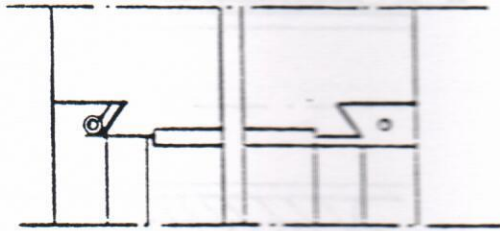


Fig. 5

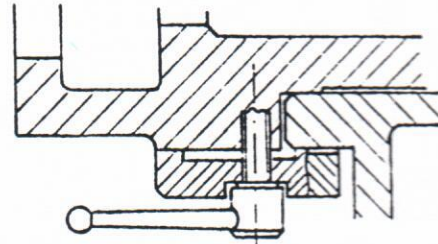


Fig. 6

Table demounting

Release first of all joint socket of spindle to support shaft or to the automatic feed box of table (see page 11) and afterwards the 4 screws that fasten the spindle support to table. Make rotate the spindle on the support, and nut will come out completely.

Once this is done, it can be easily demounted from table, just by sliding it on saddle.

Transversal saddle demounting

Release 4 screws that fasten shield of front part and make rotate afterwards the spindle in such a way that the whole lot comes out.

Afterwards nuts support that goes screwed to transversal saddle will be removed and sliding it on vertical saddle (knee), after having taken away wedge No. 1, Fig. 4, will come out easily from saddle.

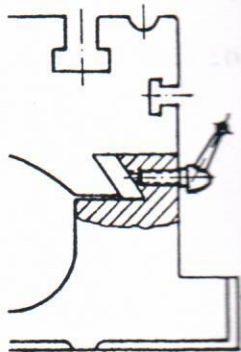


Fig. 7

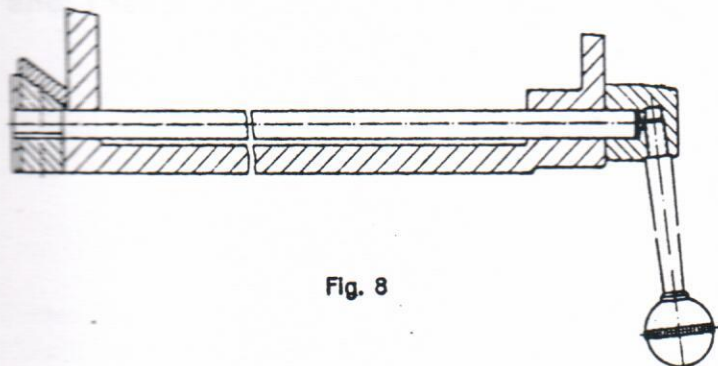
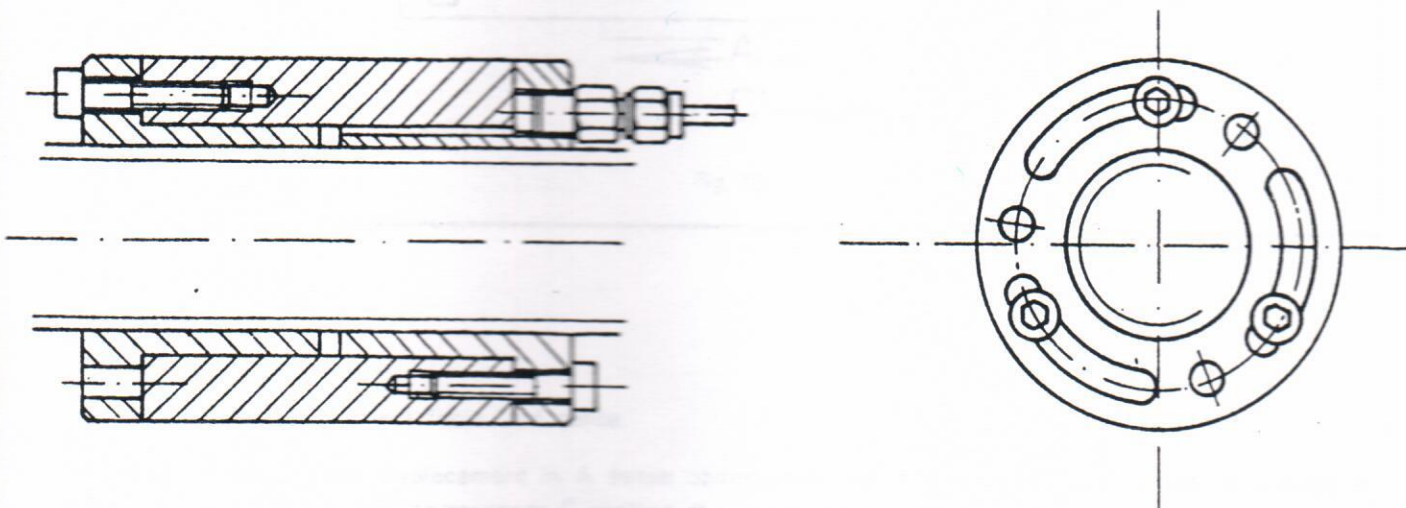


Fig. 8



In order to compensate the possible backlash both in nuts and leadscrews of table and cross saddle, these nuts have 3 adapting screws set in their teared holes.

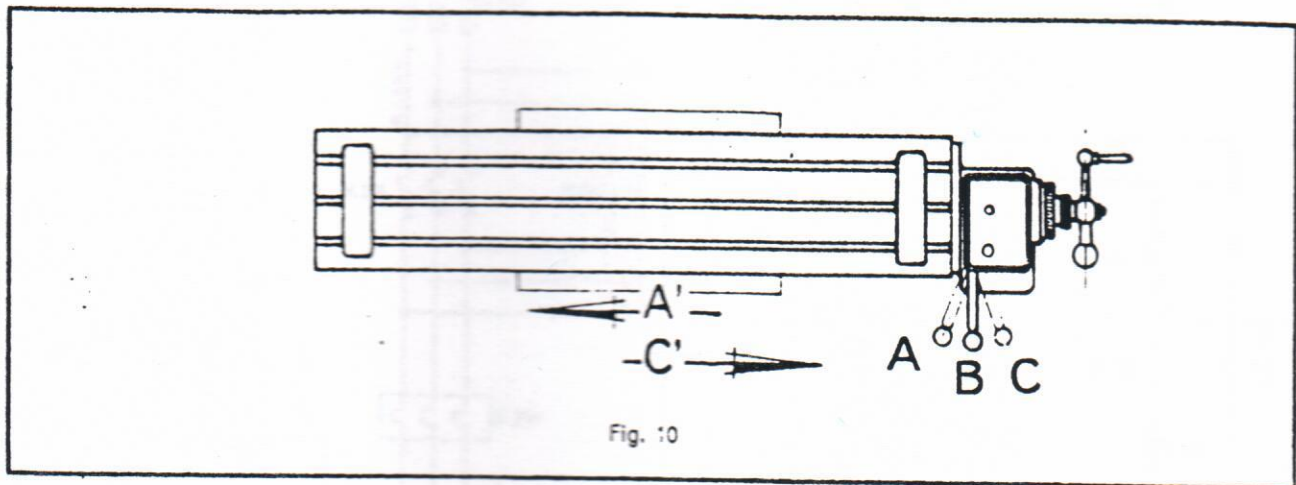
If there is backlash, we have to proceed as follows:

Loosen the 3 screws and turn the nut round till backlash is eliminated,

This turning can be done by hand o with a key which will be introduced in 3 holes the nut has for this purpose.

After fitting nuts and leadscrews, the 3 screws will be tightened.

General instructions - FEED BOX



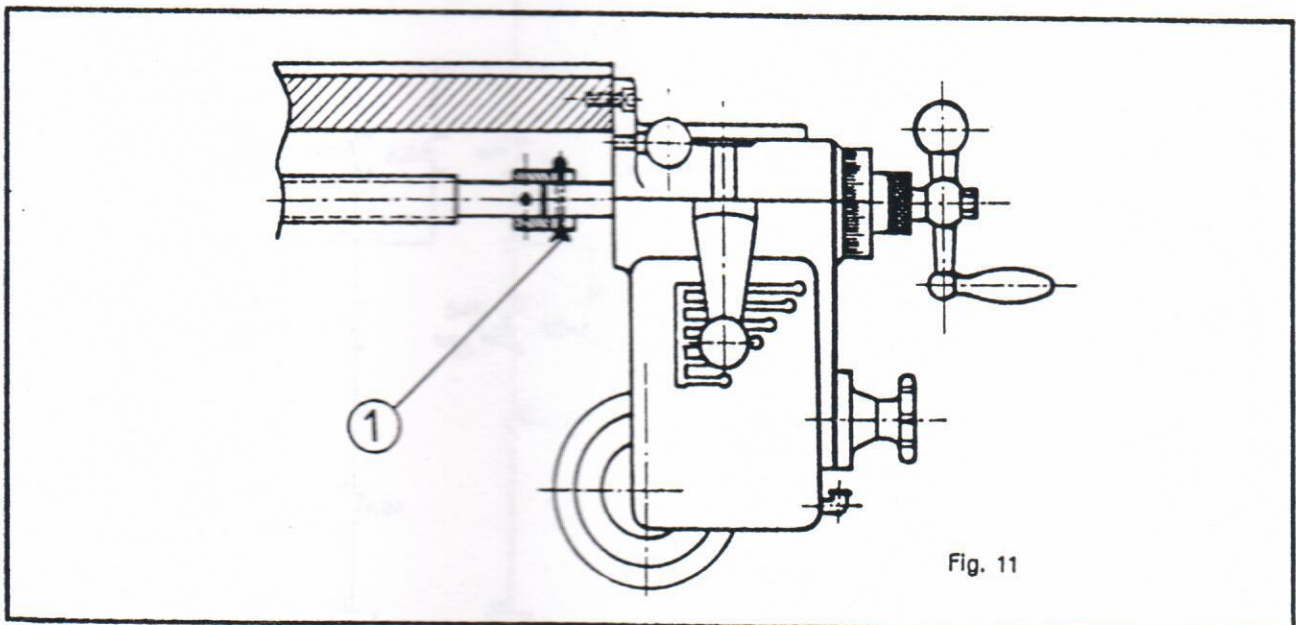
Feed sense

It is very important to check table feed sense.

It is correct when table displacement in A sense corresponds with A position of control lever; and when for the displacement as per C' corresponds C position of said control lever.

Position B of lever corresponds to the clutch release of operation.

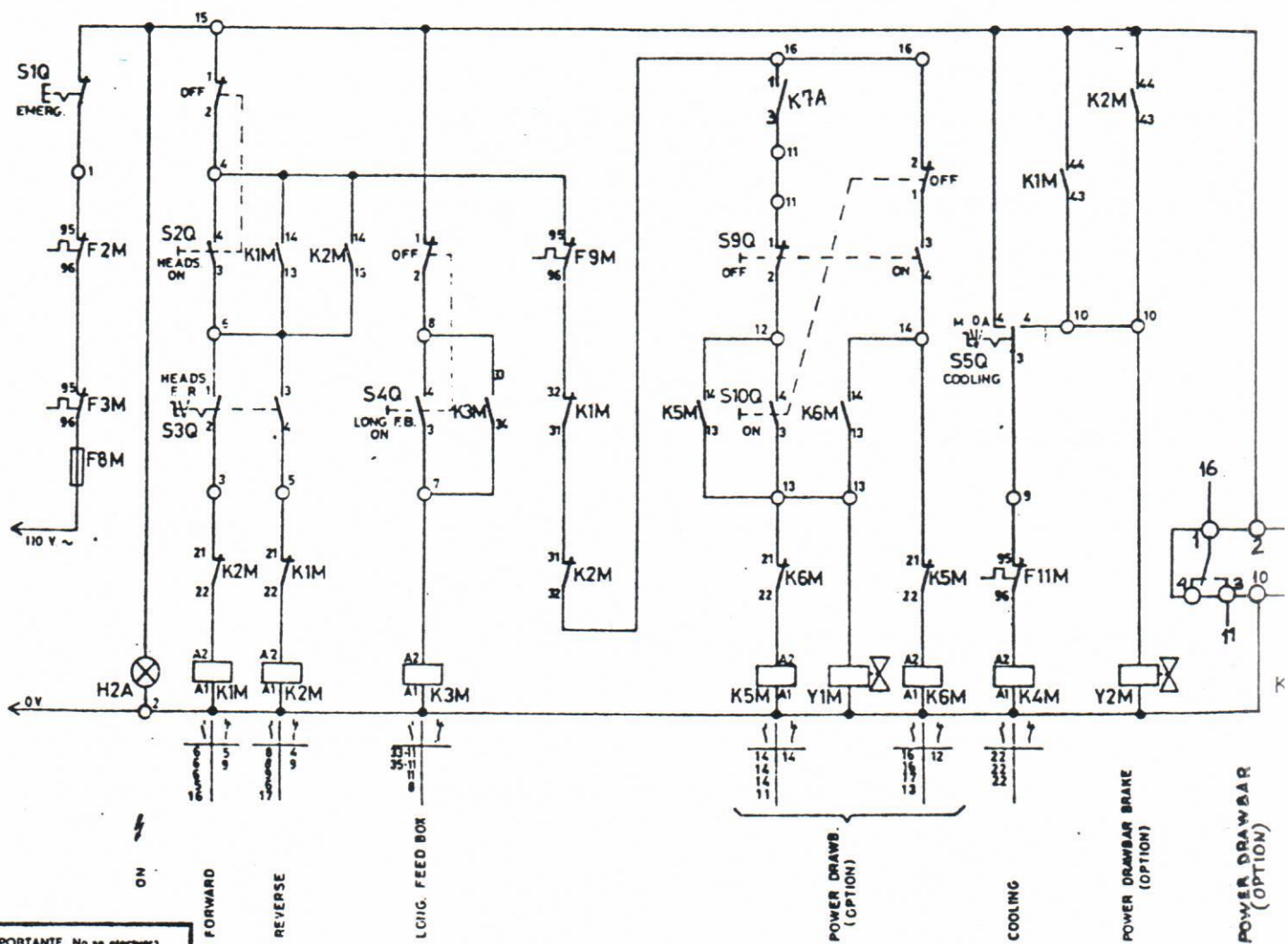
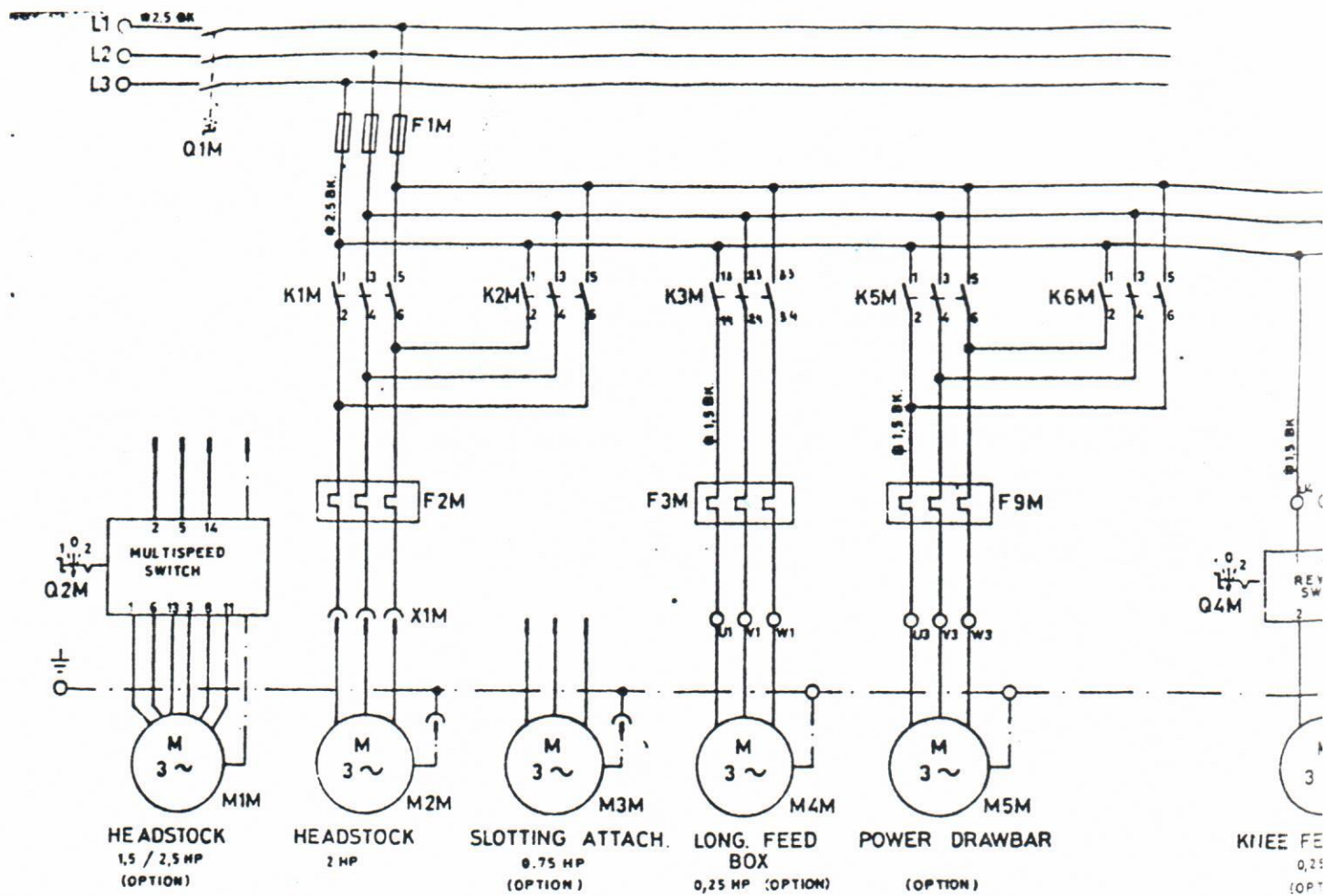
CAUTION: Motor roatation of feeds box is correct when what the previously described is acomplished, if it is not so, motor is rotating on the contrary sense to the correct one and its rotation must be reversed.

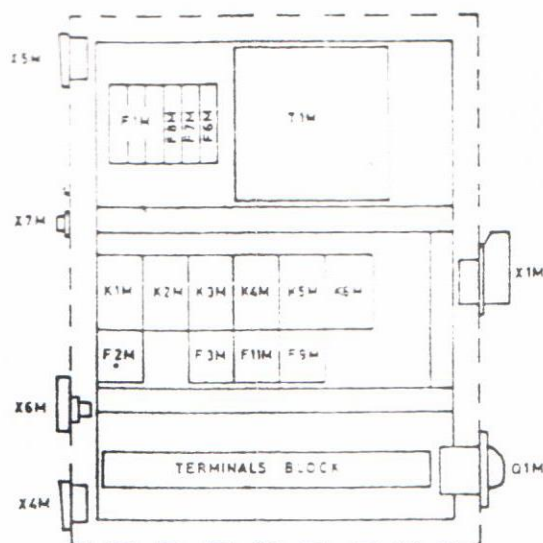
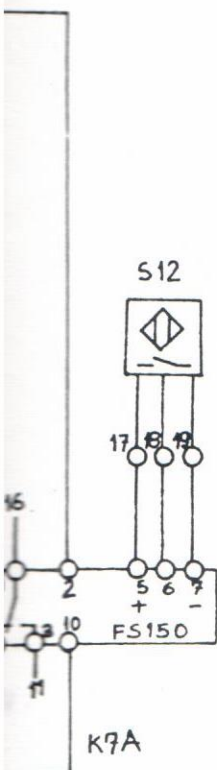
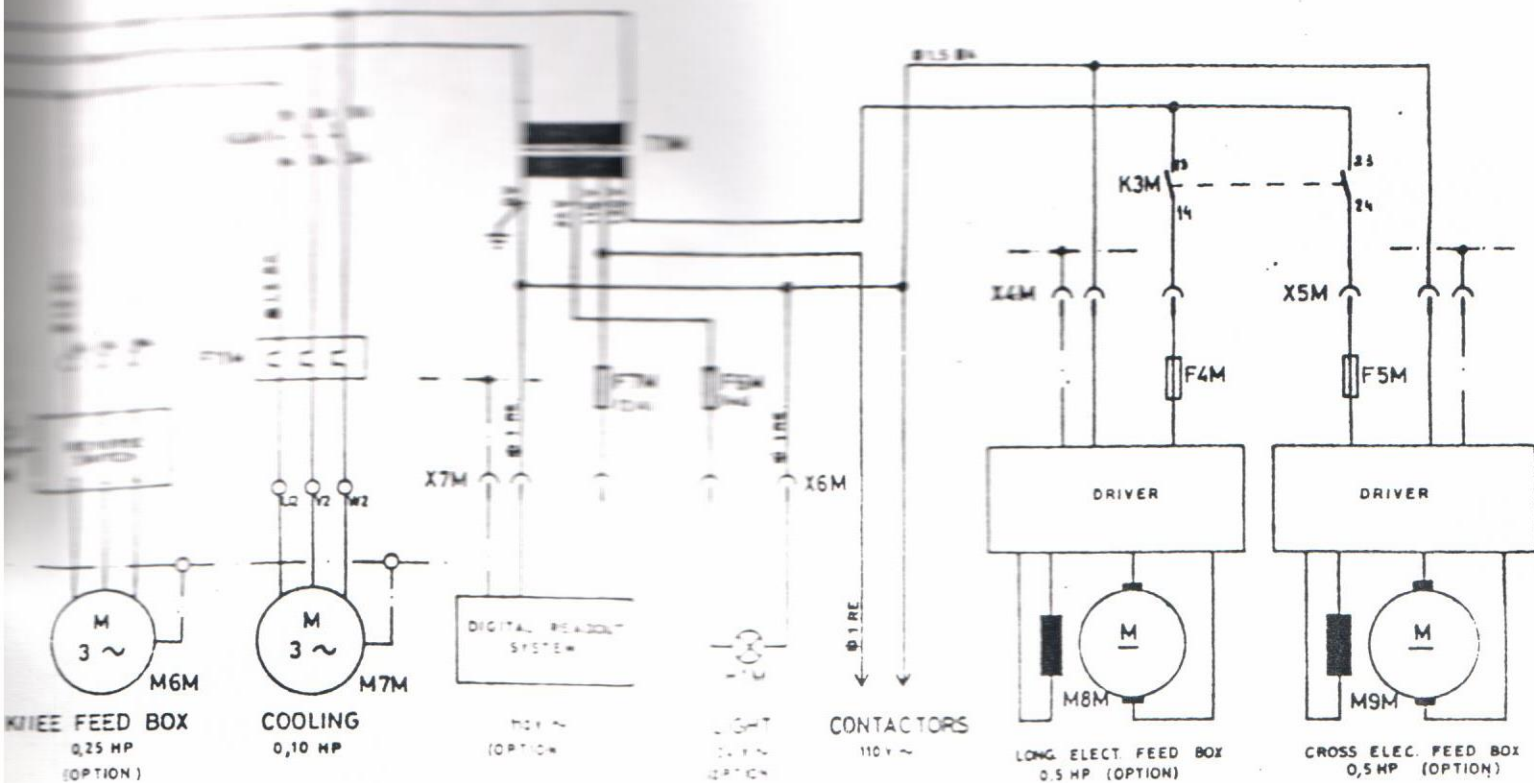


Feeds fittings

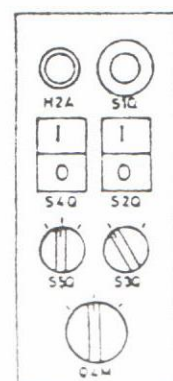
Feeds box is equipped with a stop device in case of overloading. If table stops during work and some "clicks" are heard, feed is overloaded. When weight disappears, feed will start again its work.

If the overloading clutch binds, safety pin, Fig. 11, No. 1, will brake. This will avoid that feeds box gets damaged.





ELECTRICAL BOX



CONTROL BOX

		2				
		1				
Cantidad	Descripción y Observaciones	Marca	Material	Med. M. T.	Observaciones	Tr.
Modificaciones						
	Fecha	Firma	Δ desbaste	KONDIA E.L.C. S.A. E 000 0-0		
Dibujado	24-1-86		Δ Δ afinar			
Comprobado			Δ Δ Δ rectificar			
Escala	KP-90 - FV-1 - FV-300					
	PULSADORES					

KONDIA
ELECTRIC

B. 000 1-40

POWER DRAWBAR
(OPTION)

KONDIA

BOARD

Q1M	1	Main switch P-552 16A. NVR GAVE
X1M	1	Socket 234/5 METRON
K1M, K2M	2	Contactors 3TB40.17.0AF SIEMENS
K3M, K4M	2	Contactors 3TH80.40.0AF SIEMENS
F1M	3	Fuse AKB3.11.0 20A GAVE
F8M	1	Fuse AKB3.11.0 2A GAVE
T1M	1	transformer 60 VA.220-380-415-440/0-110-130V.
L1	20	Terminal TAC-2,5 (3 earth)
F2M	1	overload relay 3UA5000.1J (6,3-10A. 220V)(4-6,3A 38C
F3M	1	" " 3UA5000.1J (1-1,6A. 220V)(0,6-1A. 380
F9M	1	" " 3UA5000.1J (0,6-1A. 220V)(0,16-0,25A 38C

CONTROL BOX

S2Q, S4Q	2	35A8800.0AB01 SIEMENS
S5Q	1	Selector 3 positions + 1A+1A
S3Q	1	" 2 " + 1A+1C
S1Q	1	Emergency push button red 1C
H2A	1	Lamp G-1435 red 125V.

HEADSTOCK

X1M	1	Plug 234/C METRON
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ELECTRONICA FEED BOX LONGITUDINAL AND CROSS

X4M	2	Socket 11+T 3013 BJC
T1M	1	Transformer 860VA. 220-380-415-440/6-110-130V.
F4M	1	Socket AKB3.11.0 2A. GAVE

DIGITAL READOUT

X7M	1	Conextor SAP FMR/BH type 130
F7M	1	Fuse AKB3.11.0 2A. GAVE
T1M	1	Transformer 150VA. 220-380-415 -440/6-110-130V.

LIGHTING LAMP

X6M	1	Socket 1461-060. COMA
F6M	1	Fuse AKB3.11.0 6A.
T1M	1	Transformer 160Va. 220-380-415-440/6-24-110-130V.

KNEE RAPID FEED BOX

Q4M	1	Reversing swicth TI-3-8216-E K.M.
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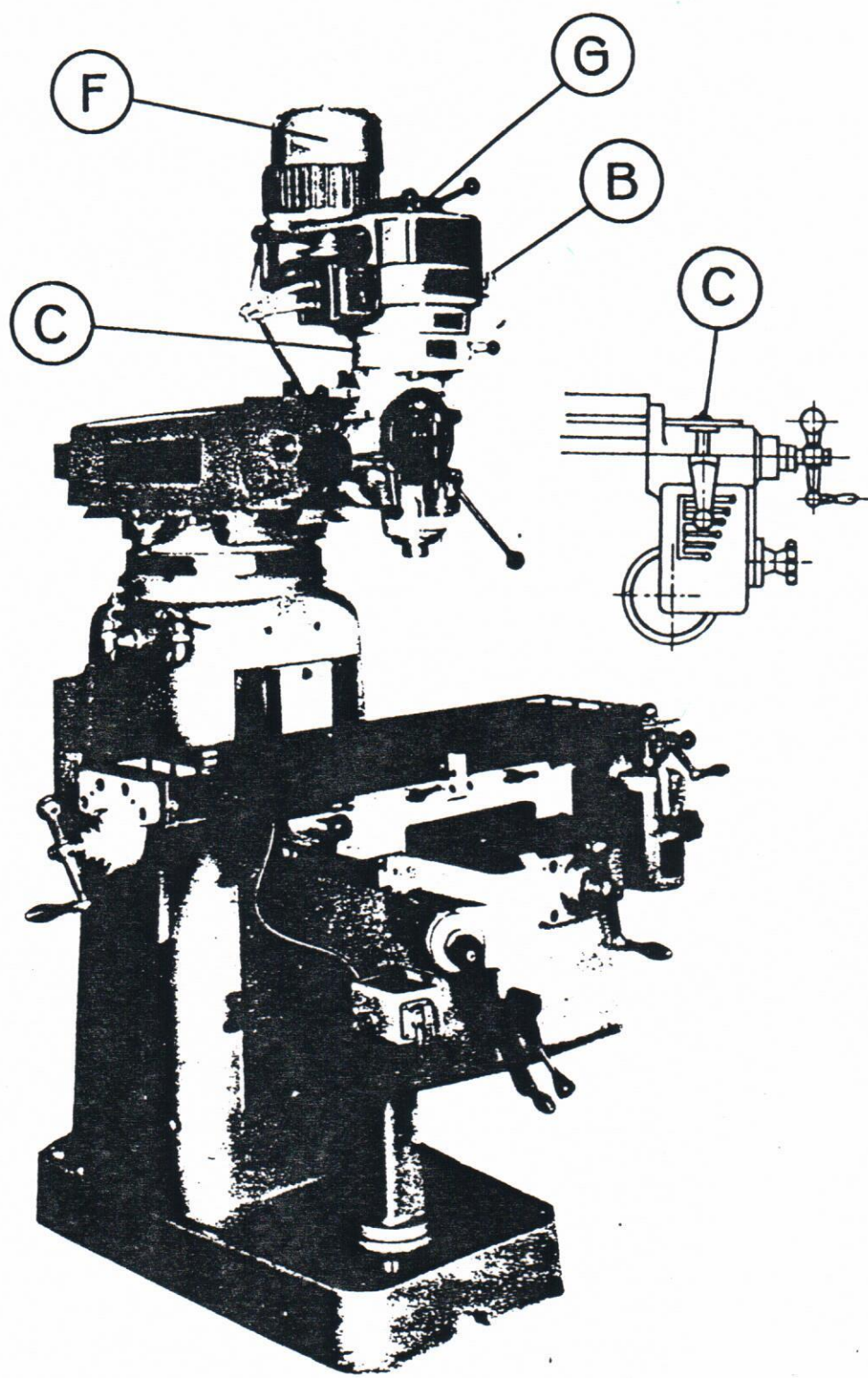
HEADSTOCK WITH TWO SPEED MOTOR

Q2M 1 Swicth H-440 mod. T16A. EGA

SLOTING ATTACHMENT

X1M 1 Plug 234/C METRON

LUBRICATION



LUBRICATION

the useful life, warranty and accuracy of this machine will be determined by its correct operation and proper lubrication. Carefully observe the nameplate recommendations and avoid substitutions.

All bearings making up this assembly are sealed and greased for life.

IMPORTANT: Do not make work the machine until it is properly lubricated.

CENTRALIZED LUBRICATION

The centralized lubrication includes the lubrication of all the carriage and table ways, as well as the lubrication of the three starting screws.

The feed pump is placed on the left side of the knee and we recommend to use it any time you feel it convenient, depending in any case on the works or movements of the machine.

To proceed on the lubrication, pull up the front hand lever of the pump and release it afterwards.

We advise to clean the pump, at least twice a year, for this purpose, take the pump out of the oil tank and put it in a container filled with benzine, in order to obtain a complete cleaning with various absorptions.

See below the different types of oil suitable for the centralized lubrication. Any oil for ways or with E.P. additive can be used.

MANUFACTURER	MOBIL	ESSO	SHELL	AGIP	B. P.	TOTAL	Houghton	GAVIN
TYPE	Febis K 43	Vactra Oil N. 1	Tonna Oil 27	F. 1. OLS 3	Energol HP 10-C Maccurat 32	Dresera 20	Sta-Put 300	MC-EP 960
*E - 50°C	2,8	3	3	3	3	3	3,3	5,8
MANUFACTURER	FINA	GULF	CASTROL	VEEDOL	AMOCO	C. SOTELO	REPSOL	KLUBER
TYPE	Hydram CIN 31	Stainless Machine	Magna GC	Amarex 43 E.P.	American way oil 15 H	Zeus G-50	Gufa - 2	Lamora Super Poladd
*E - 50°C	3	3	2,9	2,8 + 3,1	3	4,8-5,2	4,8-5,1	3 - 5

Recommended oil is a special one for ways, viscosity 3 to 50 E to 500.

HEADSTOCK AND FEED BOX GREASING

In page 16, there are different lubrication points which we comment as follows:

Points B, C, G, F

B.- Fill up lubricator reservoir twice a week.

C + G.- Lubricate twice a week.

F.- Motors are lubricated for as long as the bearings.

RECOMMENDED OILS

CHEMSA LUB 6

HOUGHTON STAP-320

SHELL CARNEA OIL 35

SOCONY CARGOYLE VACIRA OIL and HEAVY OIL

To lubricate the headstock, we advise you to follow up instructions stated in the plate.

RECOMMENDATIONS

Use end mills of 2,3 or 4 grooves. Those of 8 grooves are not usually so satisfactory. When using frontal millers there must be observed the practice of usual or Standard cuts.

The feeds can be used to drill holes until a 3/8" (10 mm.) dia. Use manual feeds for holes that are superior than the mentioned one.

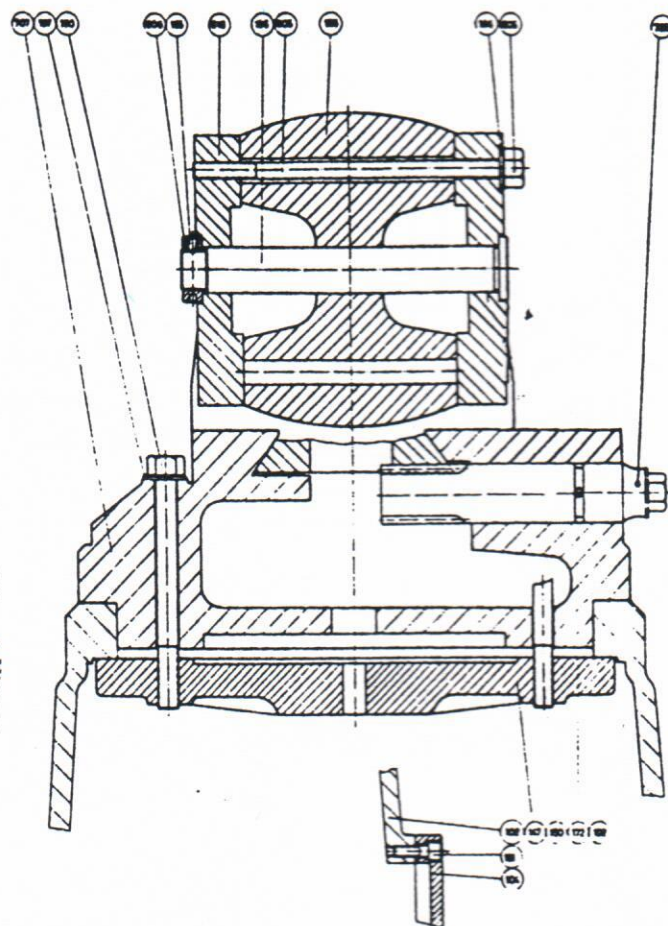
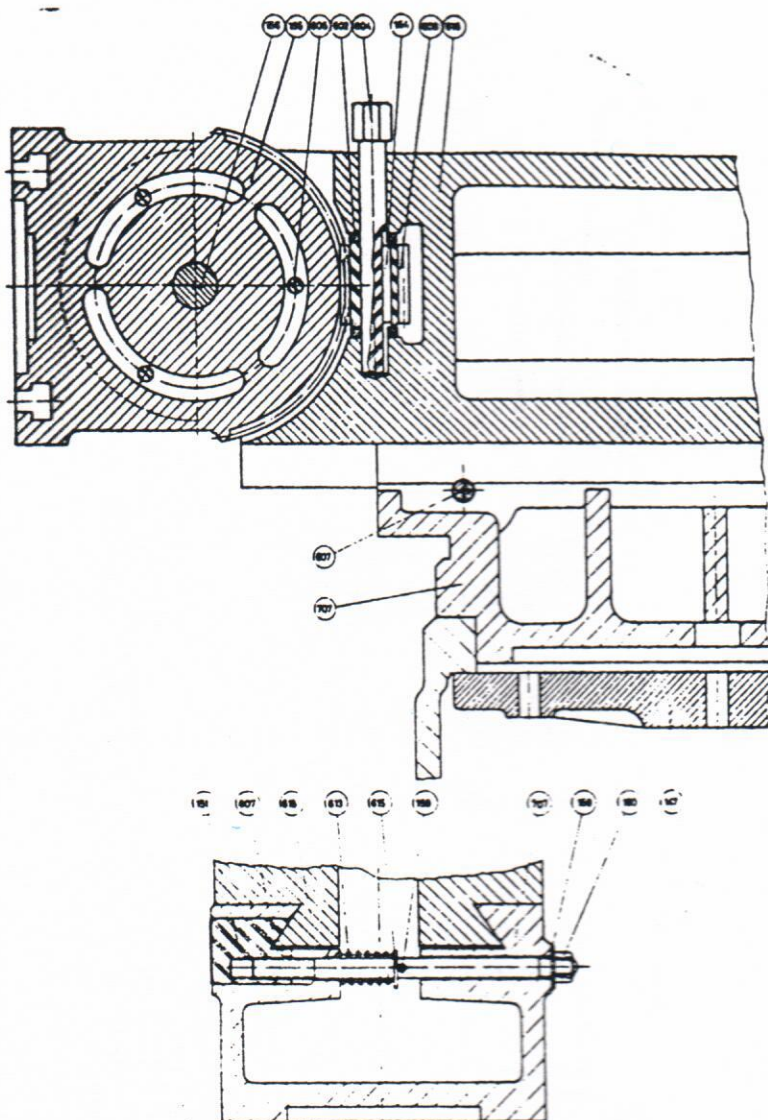
The surcharge clutch is mounted to bear weight of as much as 200 lbs (95 Kg) of downwards pressure on the sleeve when allows drillings of until 3/8" (10 mm.) dia. in soft steel tools.

CAUTION: This clutch is to be used only when it is absolutely necessary.

EQUIV = 150LG

↳ DTE 26

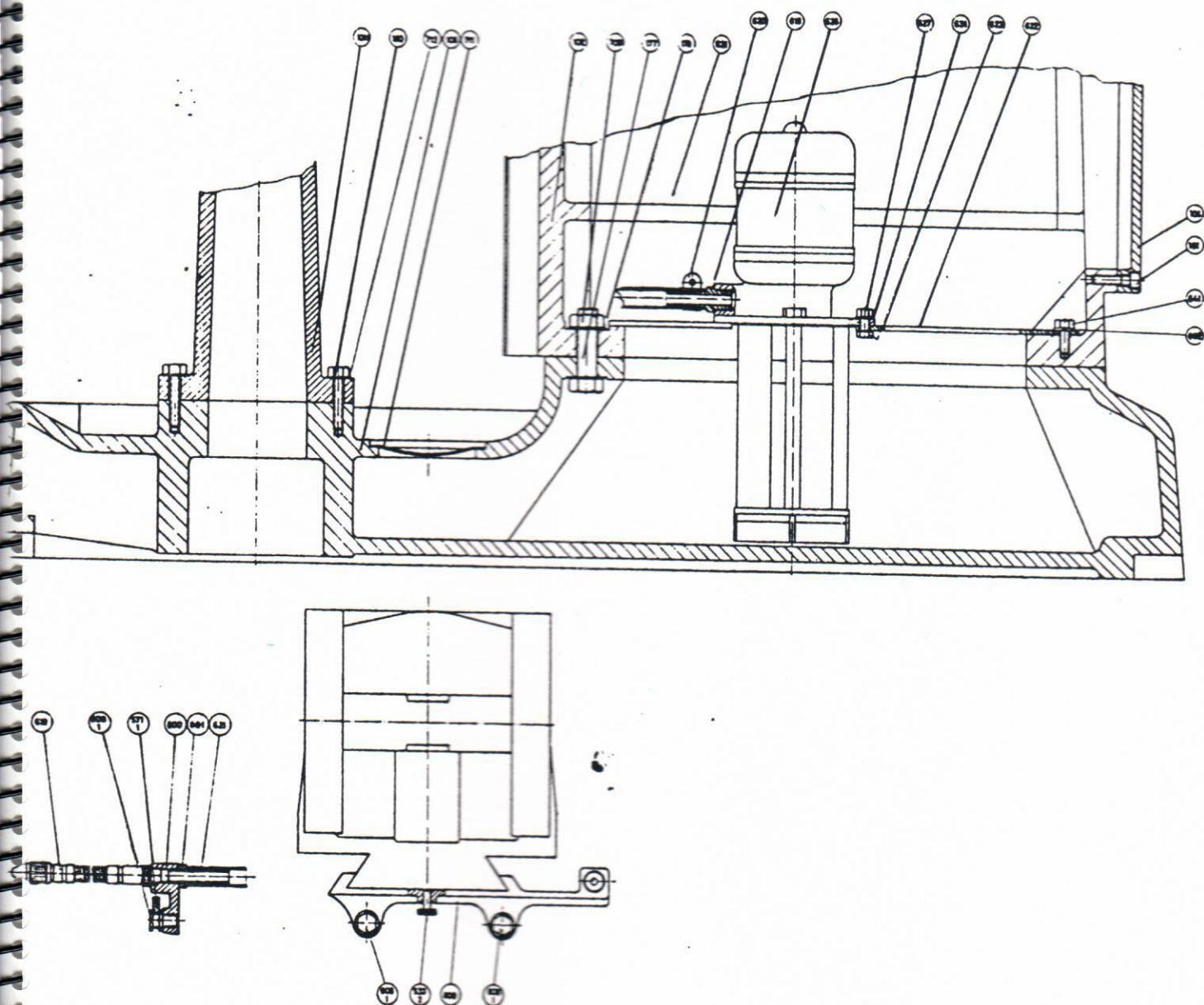
MOBIL



- 102-0 Column
- 103-0 Base
- 104-0 Rear Cover
- 147-0 Spider
- 148-0 Bridge Brake Support
- 150-0 Turret Clamp Bolts
- 151-0 Ram Brake
- 153-0 Bridge Brake Screw
- 155-0 Ram Adapter

- 156-0 Adapter pivot stud
- 157-0 Washers $\varnothing$ 14
- 158-0 Pin
- 159-0 Washer $\varnothing$ 12
- 160-0 Nuts RM-12
- 164-0 Key 6x6x56
- 165-0 Setscrew without head
- 166-0 Washer $\varnothing$ 12
- 168-0 Washer $\varnothing$ 12

- 170-0 Hexagonal nut RM-12
- 171-0 Allen Setscrews RM-6x20
- 172-0 Ram pinion Screw RM-6x30
- 173-0 Door
- 177-0 Hexagonal Screw RM-16
- 178-0 Washer $\varnothing$ 30
- 602-0 Washer
- 603-0 Worm
- 604-0 Worm shaft

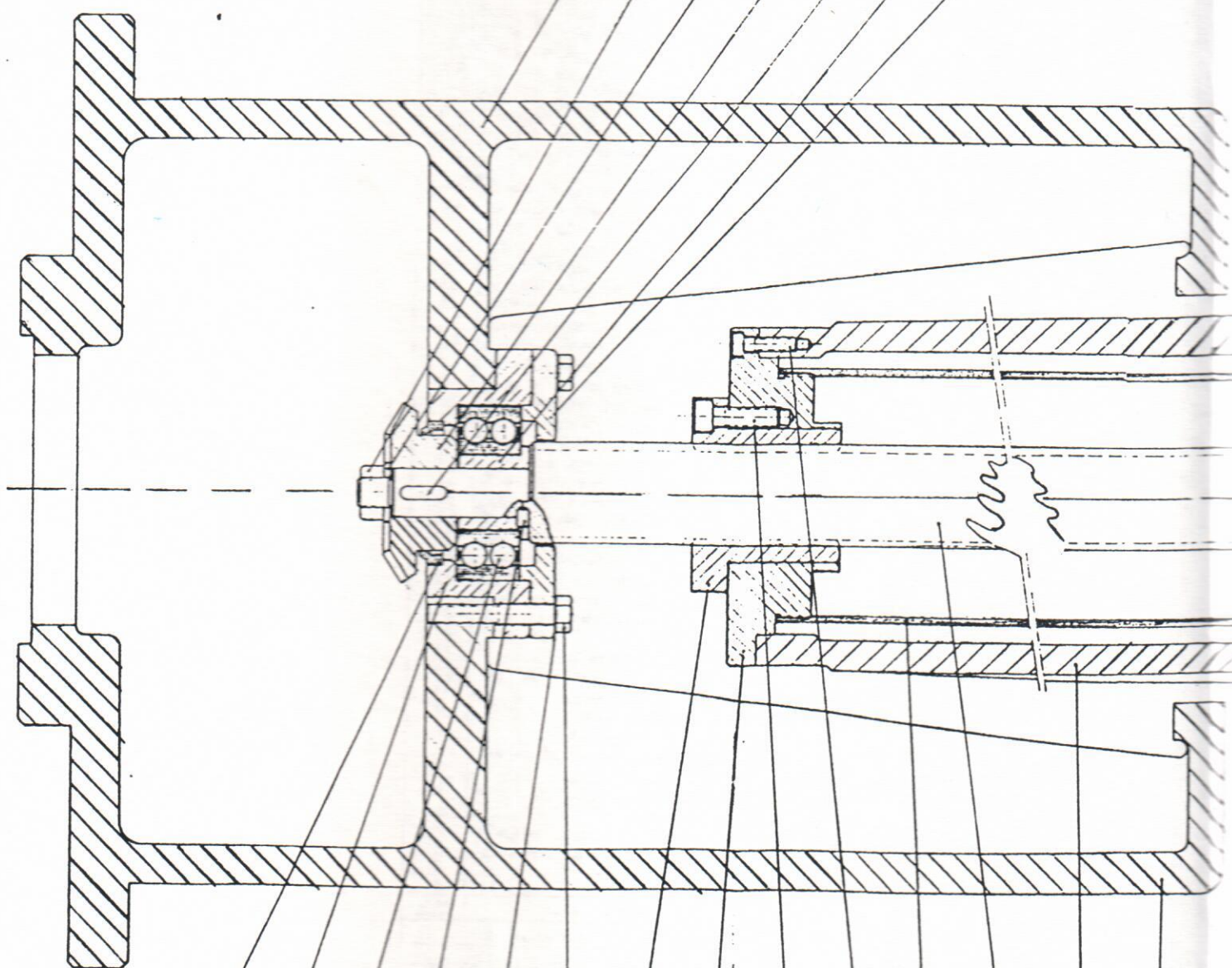
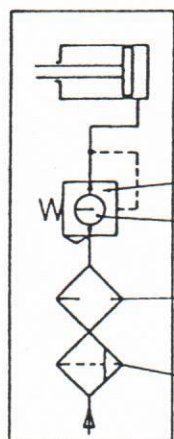


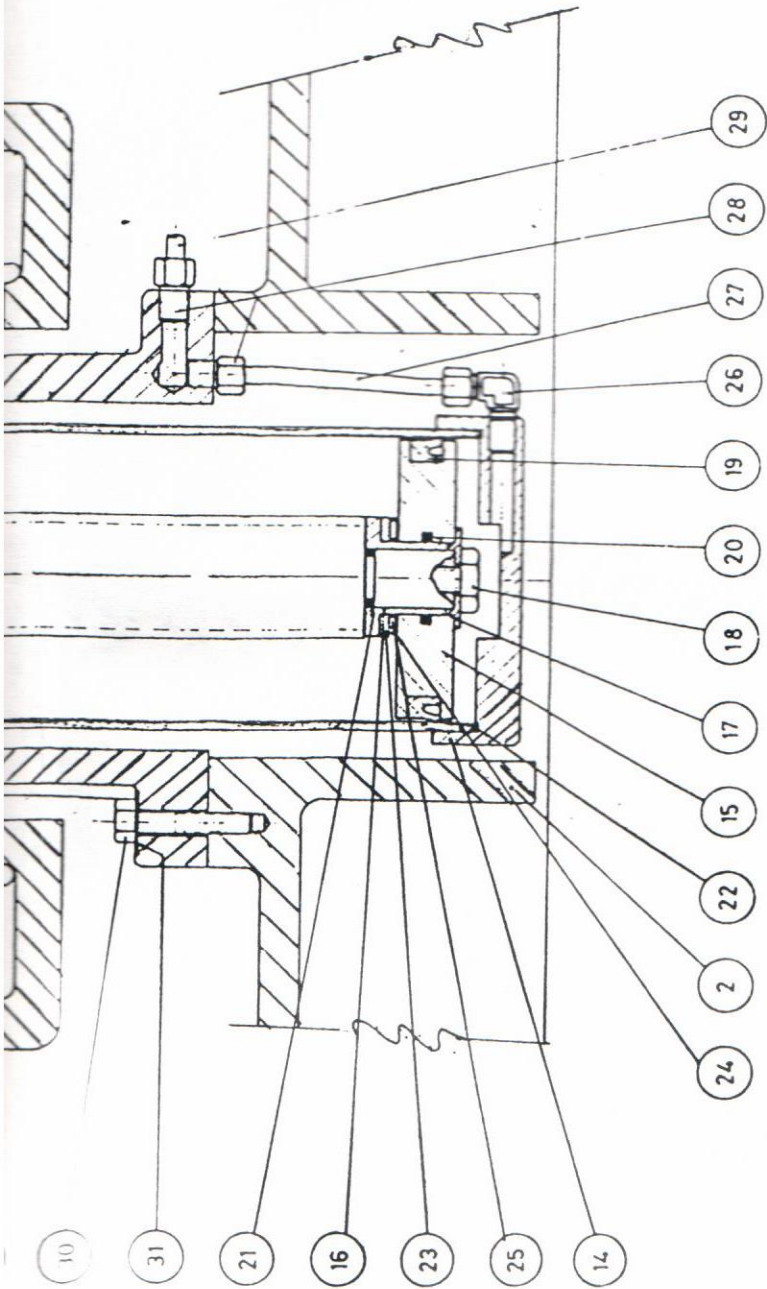
605-0 Adapter Locking Bolt
 606-0 Adapter pivot stud
 607-0 Ram Brake Pins
 613-0 Ram Brake Springs
 615-0 Washer
 616-0 Side Cover Shaft
 618-0 Bridge
 618-A-0 Screw joint
 619-0 Cock

620-0 Clamp
 621-0 Driving Pipe
 622-0 Pump and Engine Support
 623-0 Nut RM-8
 626-0 Cooling Pump and Engine
 627-0 Fastening Screws of RM-8x30
 631-0 Washer Ø 17
 632-0 Washer Ø 17
 639-0 Screw joint

641-0 Screw RM-8
 707-0 Ram Bracket
 708-0 Nut RM-16
 711-0 Filtering rack
 712-0 Washer
 725-0 Ram pinion
 800-0 Cock support
 801-0 Screw joint

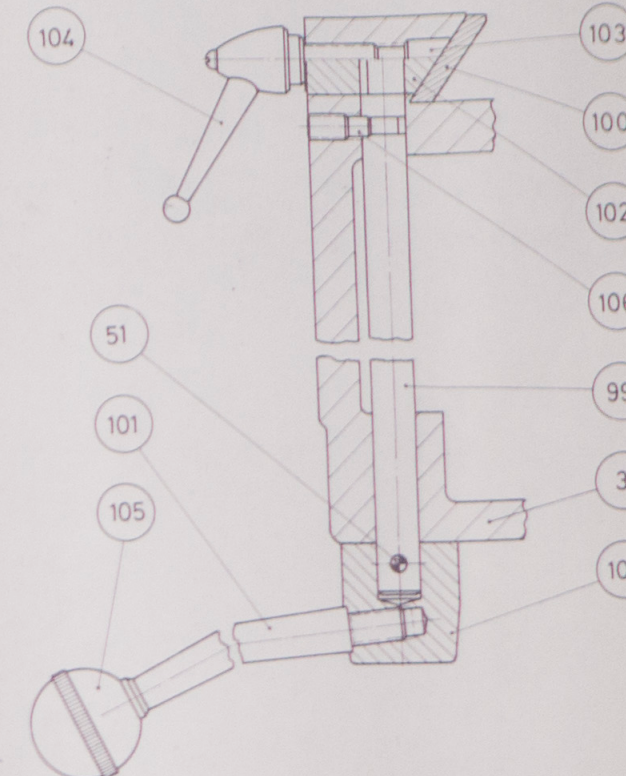
ESQUEMA NEUMATICO





47	Adaptador 10-0215	320112301	1	Coupling
46	Gasquillo CIP 6/8	32011210806	2	Bushing
45	Manguera	151002006006	1	Hose
44	Racord 15-02-LBRK 1/4	320112008081	2	Fitting 1902-L
43	Racord 15-01-LLBRK	3201110604	1	Fitting 1501-L
42	Regulador	FV-544-9	1	Regulator
41	Manómetro	FV-543-9	1	Manometer
40	Lubrificador	FV-541-9	1	Lubricator
39	Filtro	FV-541-9	1	Filter
38	Arandela Ø12	FV-380-1	1	Washer Ø12
37	Tuerca M12	FV-373-1	1	Nut M12
36	Chaveta de 6x6x20	FV-361-1	1	Key 6x6x20
35	Rascador	FV-540-9	1	Fitting
34	Rodamiento 62906 2RS	FV-362-1	1	Bearing 62
33	Tornillo Allen M8x30	FV-539-9	4	Allen scr
32	Tornillo exagonal M8x50	FV-363-1	4	Exagonal screw
31	Arandela de B	FV-538-9	8	Washer Ø8
30	Tornillo exagonal M8x40	FV-537-9	4	Exagonal screw
29	Tubo	FV-503-9/19	1	Pipe
28	Racer	FV-503-9/18	2	Fitting
27	Tubo	FV-503-9/19	1	Pipe
26	Codo	FV-503-9/16	1	Elbow
25	Rodamiento AXK 2542	FV-503-9/15	1	Bearing AXK
24	Arandela AS 2542	FV-503-9/15	1	Washer AS 2
23	Arandela LS 2542	FV-503-9/15	1	Washer LS 2
22	Junta plana	FV-503-9/12	1	Blat Joint
21	Junta torica	FV-503-9/11	1	O'ring
20	Junta torica	FV-503-9/10	1	O'ring
19	Rascador	FV-503-9/9	1	Fitting
18	Tornillo exagonal M10x15	FV-503-9/8	1	Exagonal screw
17	Arandela	FV-503-9/7	1	Washer
16	Gasquillo	FV-503-9/6	1	Bushing
15	Piston	FV-503-9/5	1	Piston
14	Tapa posterior	FV-503-9/4	1	Cover
13	Tornillo Allen M6x20	FV-503-9/3	6	Allen screw
12	Camisa	FV-503-9/2	1	Cage
11	Tapa frontal cilindro	FV-503-9/1	1	Cylinder's front
10	Piton	FV-542-1	1	Screw
9	Gasquillo	FV-122-1	1	Bushing
8	Esgrene conico	FV-108-1	1	Conical gear
7	Tapa rodamiento	FV-120-1	1	Bearing stop
6	Caja rodamiento	FV-124-1	1	Bearing house
5	Tuerca husillo vertical	SM 2-142	1	Vertical screw
4	Husillo vertical	SM 2-143	1	Vertical screw
3	Soporte	FV-502-9	1	Support
2	Base	FV-2010-4	1	Base
1	Cerro vertical	SM 2-143	1	Vertical padlock

Dibujado	Fecha	Firma	KONDIA ELGOIBAR
Calçada	21-4-83	<i>[Signature]</i>	
Escala			
1:1			FRESADORA VERTICAL FV-2 CONJUNTO CILINDRO COMPENSACION
			SM 2-200 Sus. Hoya a. Sustituido por.



Nº de Cuentas	Mesa	S.M. 1-1-81		7/10/81
	Denominación	Referencia	Control	Observaciones
	Eche	Dirreca	KONDIA ELGOIBAR	
Dibujado	9-9-83	Algo		
Comprobado				S.M. 2-100 A
Escala	FRESADORA VERTICAL FV-2			
tit	CONJUNTO CARROS			Se incluye a: Se incluye en: