JAKOBSEN

OPERATION MANUAL

SJ618/824/1026/1032/1424/1432

STANDARD MACHINE

SWU02(1988-1993)

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INSTALLATION OF MACHINE

UNCRATING

Your JAKOBSEN surface grinding machine has been carefully crated for shipment to ensure its accuracy when it reaches your factory. It is important that the packing is removed carefully to avoid damage to the machine and bypacked parts.

When opening the packing be sure not to damage the control panel.

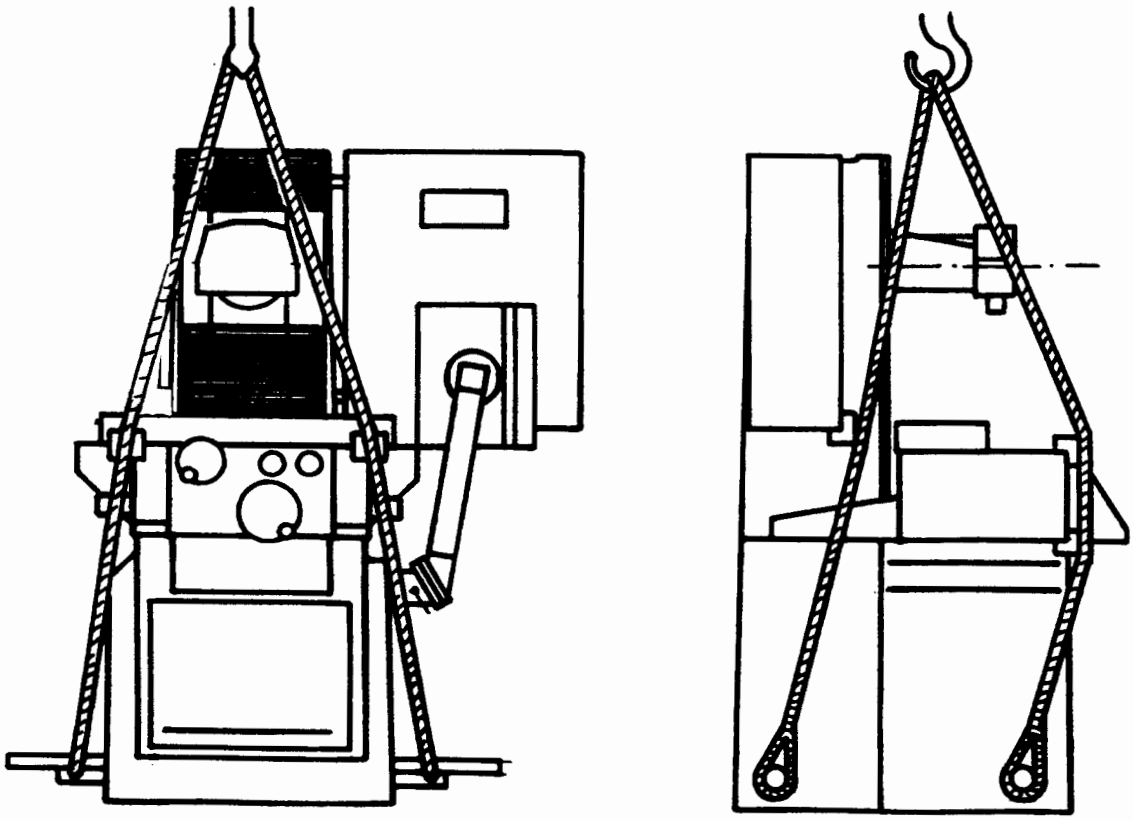
1) Dismantle the hydraulic power station, endcovers of table, coolant tank, and other accessories attached to the bottom of the packing.

2) Inspect the machine and equipment for broken or damaged parts.

3) Remove the bolts attaching the machine to the bottom of the packing.

LIFTING INSTRUCTION

The machine should be lifted as shown below. Use two iron rods with a diameter of 1 3/4" and a length of 1100 and 1300 mm respectively, and two straps approximately 6 meters long.



DEGREASING

Before the machine was packed all unpainted surfaces have been protected against corrosion. This anti-corrosive liquid can be removed with paraffin. It is especially important to clean the free surfaces of the guideways.

The ribbed rubber plate for protecting the top surface of the cross saddle must **not** be cleaned off with paraffin.

After degreasing, lubricating oil must be applied to all machined surfaces.

NONE OF THE MACHINE MOVEMENTS MUST BE ACTIVATED BEFORE DEGREASING AND LUBRICATION OF THE GUIDEWAYS HAS TAKEN PLACE.

INSTALLATION ON FLOOR

The machine should be placed on a solid non-vibrating floor. No special foundation is required and any floor can be used, provided it is sufficiently strong to carry the weight of the machine without vibrations. See foundation plan page 22/23.

The machine must be aligned by means of three adjustment screws (L) resting in the three **foundation plates** supplied with the machine.

The alignment is carried out by means of a precision machine level which is placed on the table surface. First, the machine is aligned in the longitudinal direction of the table, then in the transverse direction after which the longitudinal direction is re-controlled.

ASSEMBLY

1) Mount the endcovers of the table with the screws placed at the ends of the table.

2) Mount the left-hand piston rod of the longitudinal cylinder by inserting the threaded end into the stuffing box. Avoid damaging the gasket in the stuffing box.

3) Place the hydraulic power station as shown on the foundation plan page 22/23.

4) Mount all hydraulic hoses between the hydraulic power station and the machine in symmetrical order. Remove all seal plugs from the hoses before mounting.

5) Connect from the hydraulic power station all electrical cables according to numbers and the electrical diagram.

6) Remove the forwarding bracket and mount the control panel box in the correct position.

OIL FILLING

Remove the front cover of the machine and fill up with lubricating oil till the middle of the oil-level glass. The container holds approximately 5 litres. Pos. 4. See lubrication chart page 21.

Remove the upper cover of the hydraulic power station and fill up with approx. 110 litres hydraulic oil. Pos. 5. See lubrication chart page 21.

As **lubricating oil** we recommend **MOBIL OIL VACTRA No. 2** or as stated in the lubrication chart page 21.

As **hydraulic oil** we recommend **MOBIL OIL VACOULINE 1405**, but other products may be used as well, see lubrication chart page 21.

LUBRICATION

The table- and saddle guideways are lubricated automatically by means of a lubricating pump which is driven by impulses from the hydraulic system. The function is controlled through the control glass on the front side of the cross saddle and an impulse will appear by each reversal of the table at one side.

All moving parts which are not lubricated in accordance with the lubrication chart page 21, are running in sealed pre-lubricated bearings. Lubricate these parts only when they are dismantled for inspection.

ELECTRICAL CONNECTIONS

Before the machine is connected to the main supply, it is necessary to ensure that it corresponds to the voltage of the motors as stated in the electrical control cabinet.

The main switch is placed on the back of the electrical cabinet.

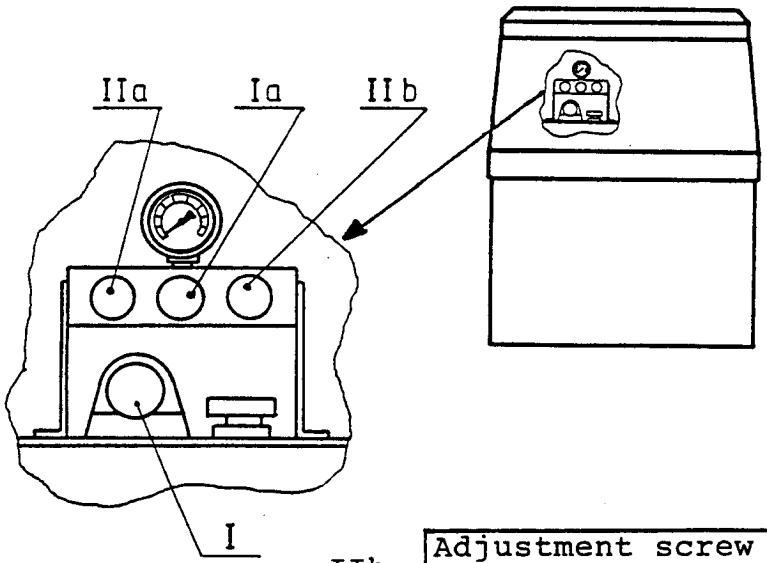
Control the direction of rotation by means of the push buttons F and G for rapid vertical feed. See page 15 Lower control panel.

The electro magnetic chuck (optional equipment) must be switched on before the rapid vertical feed can be activated.

In case the symbols do not correspond to the movements, two phases of the mains connection must be interchanged, and all motors will automatically have the correct direction of rotation.

NEVER USE THE GRINDING WHEEL MOTOR TO CONTROL THE DIRECTION OF ROTATION.

ADJUSTMENT OF HYDRAULIC PRESSURE



IIb	Adjustment screw for table reversals, right.
Ia	Shut-off valve for pressure gauge.
IIa	Adjustment screw for table reversals, left.
I	Adjustment screw for hydraulic pressure.

SJ	Hydraulic pressure
618	17kg/cm^2
824	18kg/cm^2

OPERATION OF MACHINE CONTROLS

T. Handwheel for manual cross feed.

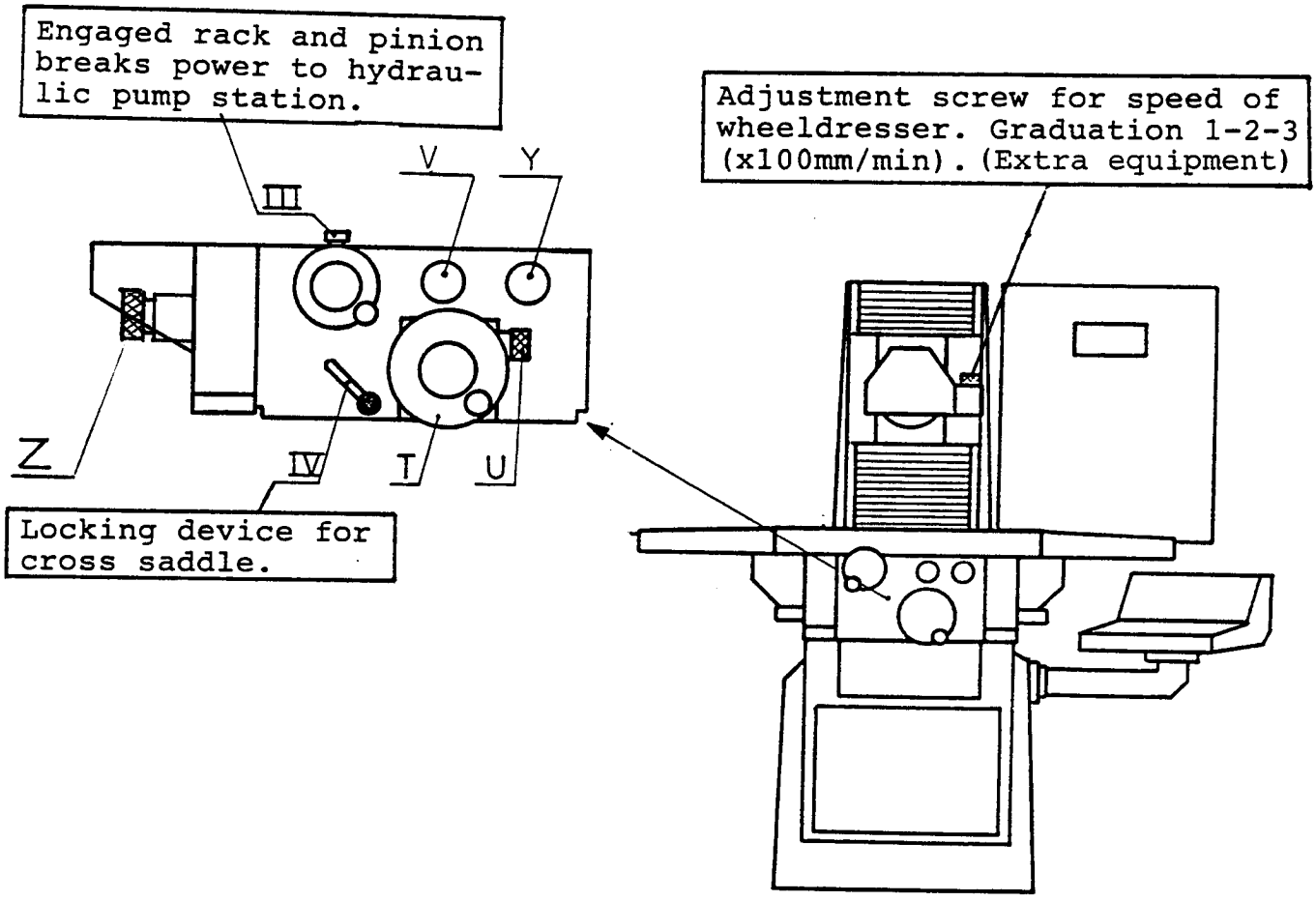
U. Fine adjustment screw for manual crossfeed.

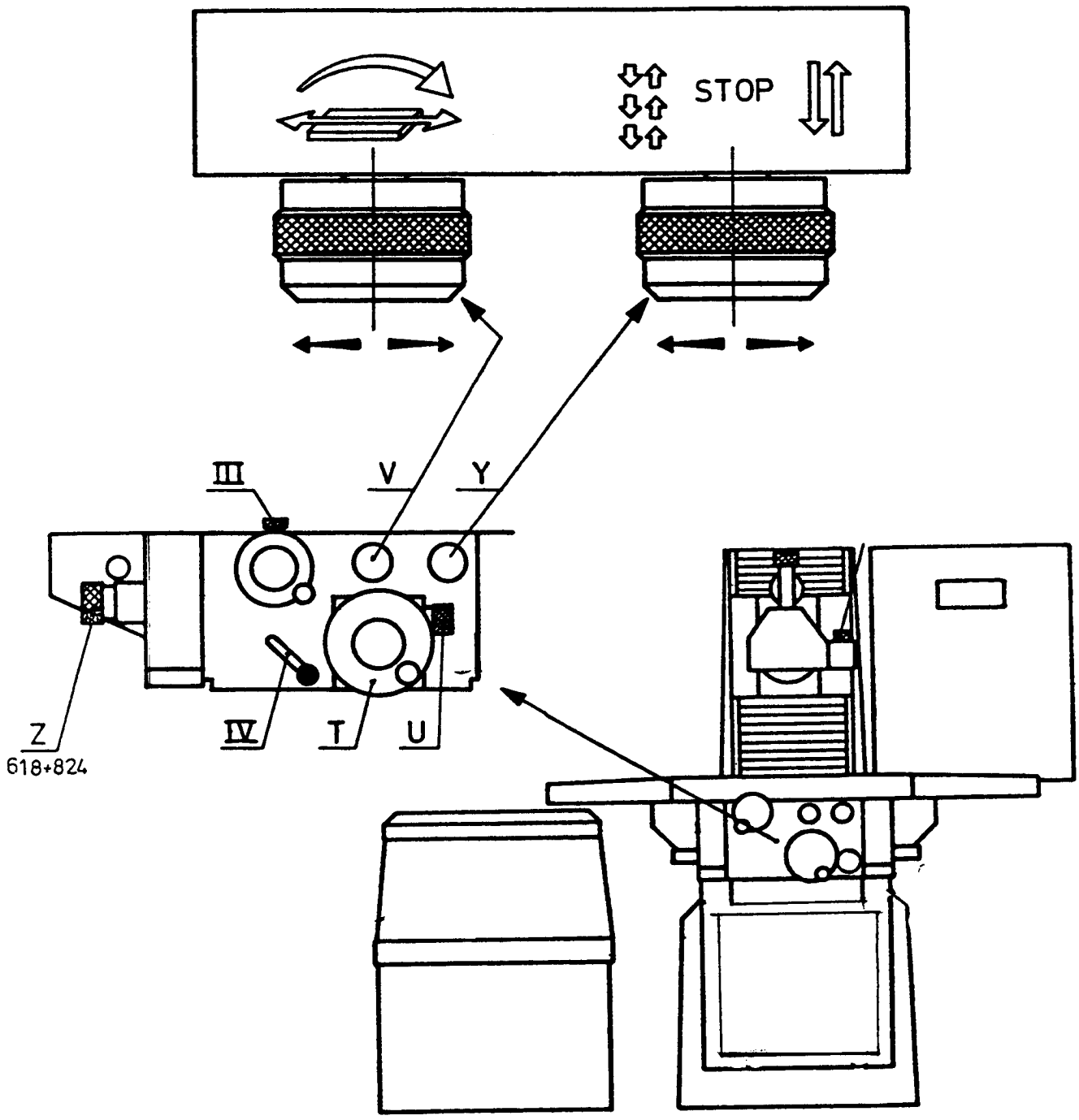
V. Handle for regulation of table speed.

Y. Handle for regulation of rapid cross feed, continuous cross feed, and intermittent cross feed.

Z. Adjusting handle for intermittent cross feed rate.

III. Locking device for engagement of manual table control.




STOP
III
V
Y
Z
618+824
IV
T
U

BLEEDING THE HYDRAULIC SYSTEM OF AIR

Longitudinal table movement

1. Set the handle for regulation of table speed (V) on minimum speed.

2. Place the table stop dogs in their extreme position and let the table move between end positions.

Cross movement

1. Set the handle for regulation of cross feed (Y) on maximum speed (green mark to right-hand position).

2. Place the saddle stop dogs in their extreme position and let the saddle move between end positions.

3. Turn the handle (Y) to position for intermittent cross feed (green mark to left-hand position).

4. Set the handle (Z) on max. cross feed rate.

5. Adjust the handle (V) to a middle speed rate.

6. After 30 minutes operation the hydraulic system will be completely deaired.

TABLE MOVEMENT

Hydraulic longitudinal table movement

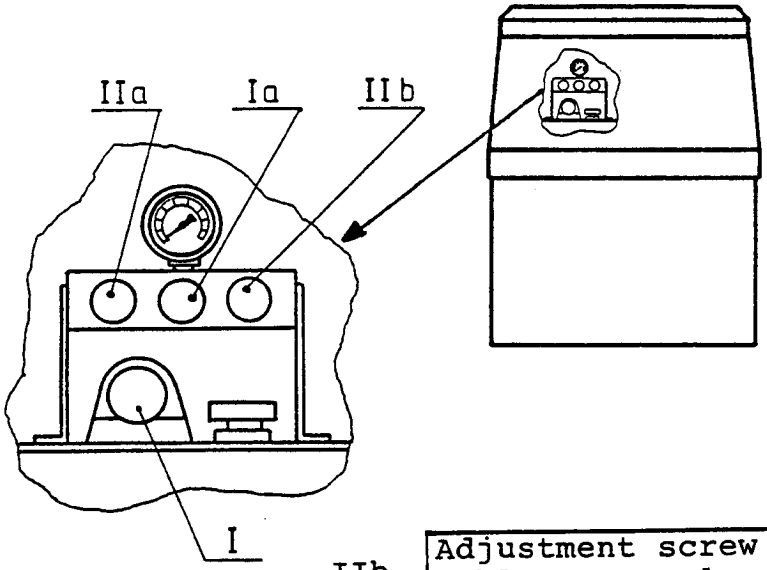
Set the table stop dogs to give the required traverse length. Turn the handle for regulation of table speed (V) clockwise and the table will start traversing between the stop dogs.

Red mark: Stop position

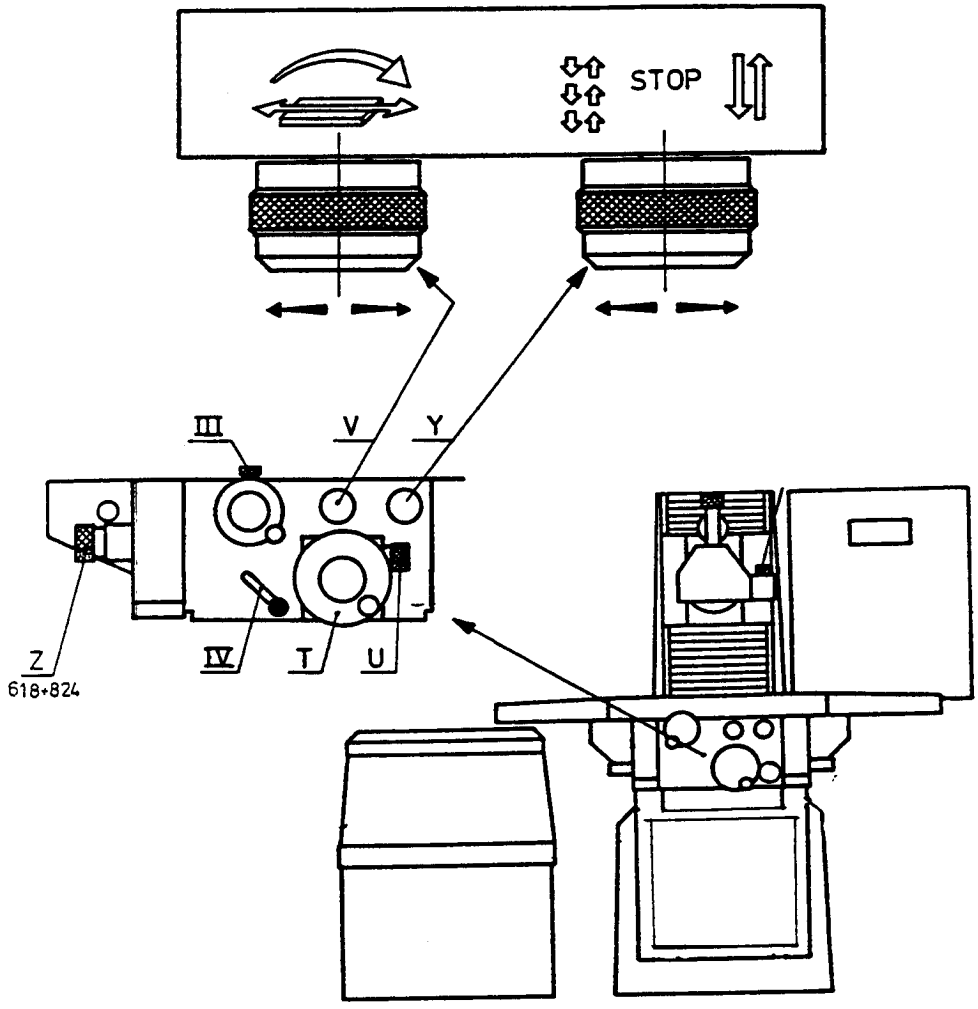
Green mark: Maximum table speed

Blue mark: Hydraulic pressure to the wheel dresser. Hydraulic rapid cross feed and continous cross feed.

NOTE: When the machine is started up in the morning, set the handle for regulation of table speed (V) at a low speed rate until the oil has fully circulated. If the machine is cold, maximum table speed may not be obtained until the hydraulic oil has reached operating temperature.



IIb	Adjustment screw for table reversals, right.
Ia	Shut-off valve for pressure gauge.
IIa	Adjustment screw for table reversals, left.
I	Adjustment screw for hydraulic pressure.



Manual table movement

Engagement of the manual table control is made by lifting up the locking device III and turn the inner handwheel to the right as shown by symbols, whereafter the handwheel for manual table control can by operated. Handle (V) in RED mark position.

Adjustment of table overtravel

The overtravel is the distance the table travels at the end of its stroke after the stop dog has activated the proximity switches. This overtravel will be greater at high table speeds and when the machine is cold. The overtravel can be adjusted (reduced) by means of the adjusting screws IIa and IIb. Loosen the cover screw and turn the adjusting screw counterclockwise until the desired overtravel has been obtained.

Max. load on the table: 618 150 kg
824 200 kg

including the weight of the magnetic chuck.

CROSS SADDLE MOVEMENT

Hydraulic intermittent cross feed

Set the cross feed stop dogs for the desired total saddle travel. Turn the handle (Y) to position for intermittent cross feed (GREEN mark to left-hand position).

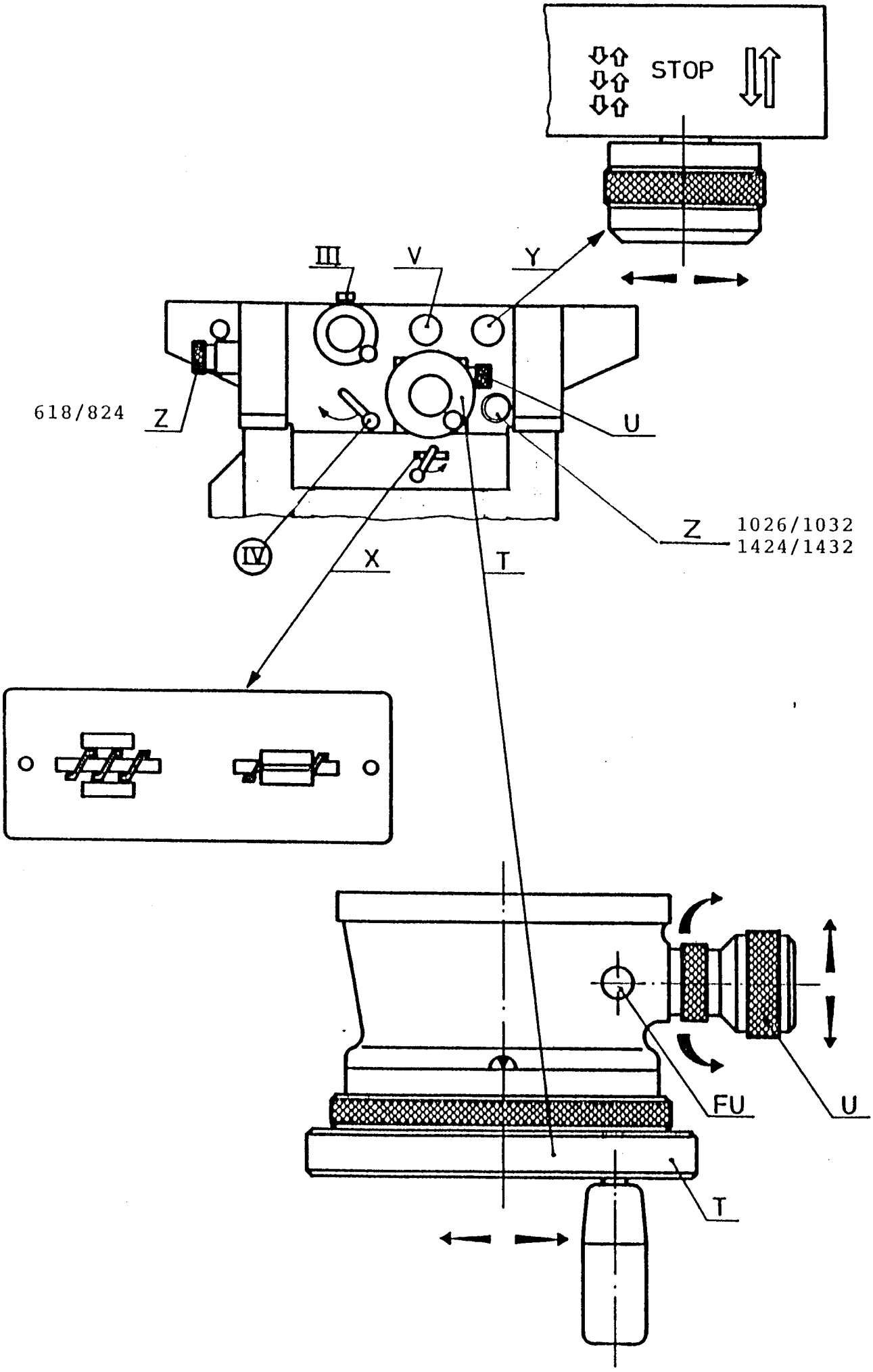
The cross feed rate is infinitely variable by means of the cross feed increment adjusting handle (Z).

Hydraulic rapid cross feed - continuous cross feed

The rapid cross feed is started by turning the handle (Y) to right-hand position and the handle (V) to BLUE mark position.

The continuous cross feed is infinitely adjusted by the handle (Y) between STOP and MAX. SPEED position (GREEN mark to right-hand position).

By normal surface grinding with continuous cross feed the table will stop immediately when the handle (V) for regulation of table speed is turned to RED mark position and it is thus possible to maintain the pre-set speed of the continuous cross feed when starting up the table movement again.


STOP
III
V
Y
618/824
Z
U
Z
1026/1032
1424/1432
IV
X
T
FU
U
T

Manual cross feed

The manual cross feed is operated by turning the handle (Y) to STOP position; engage the lever (X) as shown by symbols, and the saddle can now be moved by means of the handwheel (T).

WHEN DRESSING THE WHEEL UNDER MANUAL CROSS FEED OPERATION THE HANDLE (V) SHALL BE TURNED TO BLUE MARK POSITION.

Fine cross feed

The manual cross feed (T) is equipped with a worm gearing for fine adjustment. The worm is engaged by loosening the screw (FU) and turn the bushing until the worm is put in gear, whereafter the screw (FU) is tightened again.

The fine cross feed knob (U) is gratuated in 0,002mm (.0001"). When the worm is engaged the handwheel (T) cannot be used.

FUNCTIONAL DESCRIPTION OF CONTROL SYSTEM FOR VERTICAL MOVEMENT

SWU02 is a microprocessor-based control unit, which measures the relative position of the wheelhead by means of an encoder. The control unit gives commands for vertical continuous feed by means of two keys or an electronic hand wheel and executes a grinding programme for surface- or plunge grinding.

The resolution is 0.001mm or .0001".

The SWU02 consists of 3 displays - one for programming/keying in the total grinding depth, one for programming of vertical feed rate and one for showing the relative position of the wheelhead - and a touch panel for input of numerical values.

The controls also include a switch for spark-out and an electronic hand wheel for manual vertical feed.

IT IS RECOMMENDED THAT THE FILTERMAT FOR THE VENTILATOR - PLACED ON THE UNDERSIDE OF THE CONTROL PANEL BOX - IS FREQUENTLY CHECKED/REPLACED.

CONTROL PANEL BOX (see unfoldable illustration page 29)

2.1 TOUCHPANEL

A. NUMERICAL TOUCHPANEL

This touchpanel is used for input of numerical values for grinding programme in displays C.1 and C.2 in connexion with the keys B.9 and B.10.

By mispress of a key: Fill in the display completely and re-start the programme or press the key B.9 or B.10.

B.1 GRINDING PROGRAMME - START

This key is used to start a grinding programme, when one of the keys B.3 or B.4 is activated. A lamp in the key is lit until the grinding programme and spark-out are finished.

B.2 GRINDING PROGRAMME - STOP

This key is used to stop a grinding programme.
A lamp in the key is always lit, except during execution of a grinding programme.
Re-start of a programme is made by activating the key B.1.

B.3 SURFACE GRINDING - ON/OFF KEY

For execution of a surface grinding programme.
A lamp is lit when the key is activated.

B.4 PLUNGE GRINDING - ON/OFF KEY

For execution of a plunge grinding programme.
A lamp is lit when the key is activated.

B.5 POWER RAPID VERTICAL FEED - ON/OFF KEY

This key must be activated together with the push buttons F or G, when power rapid vertical feed is required.
A lamp is lit when this feature is operating.
By starting-up the machine this key is always lit.
NO KEY OR HANDWHEEL MUST BE ACTIVATED SIMULTANEOUSLY WITH B.5.

B.6 CONTINUOUS VERTICAL FEED - UPWARDS

Can only be activated when B.5 is switched off.

B.7 CONTINUOUS VERTICAL FEED - DOWNWARDS

Can only be activated when B.5 is switched off.

B.8 RESET KEY (R)

This key resets display C.3.
Cannot be activated after start of a grinding programme.

B.9 PROGRAMMING KEY FOR TOTAL GRINDING DEPTH - ON/OFF KEY

This key is used for programming the total grinding depth. Can only be activated outside the execution of a grinding programme and resets display C.1 whereafter a new value can be entered.
A lamp is lit when the key is activated.

B.10 PROGRAMMING KEY FOR VERTICAL FEED RATE - ON/OFF KEY

This key is used for programming the vertical feed rate. Cannot be activated under power rapid vertical feed (B.5). Resets the display C.2, whereafter a new value can be entered.
A lamp is lit when the key is activated.

2.2 DIGITAL DISPLAYS

C.1 DISPLAY FOR TOTAL GRINDING DEPTH

Shows during execution of a grinding programme as well by activating the keys B.3 and B.4 the grinding depth entered. It furthermore shows the relative movement of the wheelhead during execution of the programme and of the continuous vertical feed, when the keys B.6 and B.7 or the electronic hand wheel are activated.

C.2 DISPLAY FOR VERTICAL FEED RATE

Shows the vertical feed rate under programming and operation.

C.3 DISPLAY FOR THE RELATIVE POSITION OF WHEEL HEAD

Shows the relative position of the wheelhead and follows its movement in reciprocal value to C.1.
Can be reset by pressing the key B.8. (R).
By changing direction of the wheelhead movement the displays C.1 and C.3 may show a disagreement/discrepancy of 1 my. This disagreement will automatically be corrected when the movement is changed back to the original movement of direction.

EXAMPLE: GRINDING OFF 0.100MM OF A WORKPIECE

1. Move the wheelhead/grinding wheel with power rapid vertical feed towards the workpiece by activating B.5 (lamp lights) and hereafter the pushbutton G.
   PAY ATTENTION TO THE FREERUN OG THE VERTICAL MOTOR.

2. Change to CONTINUOUS VERTICAL FEED of the wheelhead/grinding wheel towards the workpiece - deactivate B.5 (lamp switches off) with following press of B.7.
   Eventually use the electronic hand wheel (W) for final touch of grinding wheel to workpiece.

3. Reset the DISPLAY FOR THE RELATIVE POSITION OF WHEELHEAD C.3 by pressing Reset key B.8 (R).

4. Enter the required total grinding depth - in this example 0,100mm. Activate the PROGRAMMING KEY B.9 (lamp lights) followed by entering of the required value (100 my) on the numerical touchpanel (A) - shown in DISPLAY FOR TOTAL GRINDING DEPTH C.1.
   Deactivate B.9 (lamp switches off).

5. Enter the required feed rate value - in this example 0.005mm. Activate the PROGRAMMING KEY FOR VERTICAL FEED RATE B.10 (lamp lights) and enter the required value 5 my on the numerical touchpanel (A) - shown in DISPLAY FOR VERTICAL FEED RATE C.2.
   Deactivate B.10 (lamp switches off).

6. Make choise of SURFACE GRINDING B.3 or PLUNGE GRINDING B.4 and activate the wanted function key (lamp lights).

7. Start the table movement and - when surface grinding is to be performed - then also the saddle movement.

8. Start the grinding programme by activating green START KEY B.1.

   AFTER EXECUTION OF A GRINDING PROGRAMME WITH AUTOMATIC SPARK-OUT AND FOLLOWING STOP OF TABLE CLEAR OF THE WORKPIECE THE HANDLE FOR REGULATION OF TABLE SPEED (V) MUST BE TURNED TO RED-MARK STOP POSITION.
   ONLY WHEN THE HANDLE (V) IS IN RED-MARK STOP POSITION CAN THE TABLE MOVEMENT/HYDRAULIC PUMP BE RE-STARTED.

DRESSING OF WHEEL DURING EXECUTION OF A GRINDING PROGRAMME

1. Stop the ongoing programme by activating the red STOP KEY B.2

2. Turn the handle for regulation of table speed (V) to blue-mark position.

3. Feed down vertically the dressing diamond by means of the knop 3 (page 17/18) - for example ½ a graduation = 0.025mm - and feed the diamond across the wheel by turning the lever (2) forwards/backwards page 17/18.

4. Compensate for dressing of wheel by means of the electronic hand wheel (W). Value is shown in the DISPLAY FOR THE RELATIVE POSITION OF WHEELHEAD C.3 - in this example 25 my. This display is resetted automatically when the grinding programme is interrupted.

5. Start the table movement by handle (V).

6. Re-start the grinding programme by activating the green START KEY B.1. The value shown in C.3 before the interruption of the grinding programme appears again by activating B.1.

CHANGE OF VERTICAL FEED RATE DURING EXECUTION OF A GRINDING PROGRAMME

1. Stop the grinding programme by activating the PROGRAMMING KEY FOR VERTICAL FEED RATE B.10 (lamp lights). Display C.2 is auto-matically reset.

2. Enter a new feed rate on the numerical touchpanel - the new value is shown in display C.2.

3. Re-start the grinding programme by deactivating the PROGRAMMING KEY FOR VERTICAL FEED RATE B.10 (lamp switches off).

PRE-SELECTED SPARK-OUT PASSES AS PART OF THE GRINDING PROGRAMME

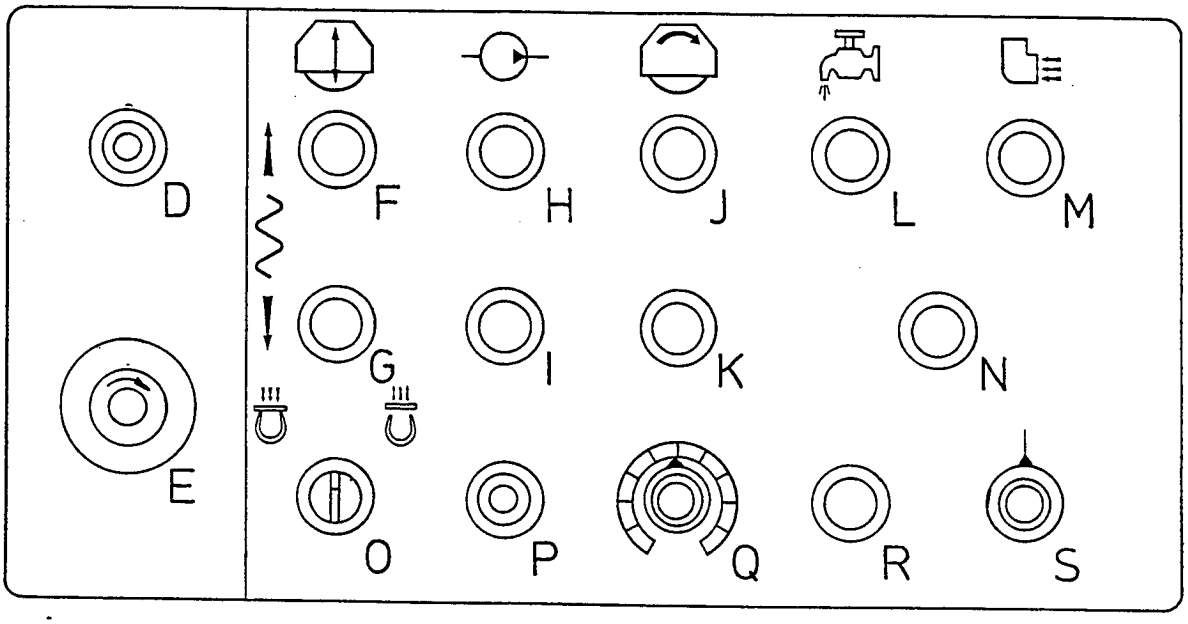
After programming of the total grinding depth, the downfeed rate, and the surface grinding/plunge grinding, the wanted number of spark-out passes is set by means of the SELECTOR SWITCH (U).

The spark-out can be selected between 0 and 8 passes.
In position "0" the spark-out will continue until the table/saddle movements are manually brought to stop.

ELECTRONIC HANDWHEEL FOR MANUAL VERTICAL MOVEMENT

By activating the ELECTRONIC HANDWHEEL (W) the wheelhead is moved in up- and down direction. The relative position of the wheelhead is shown in display C.3. The display can be reset by activating the RESET KEY B.8.

LOWER CONTROL PANEL



CONTROL PANEL, LOWER

D. Indicator lamp

E. Emergency stop

F. Rapid vertical feed, up

G. Rapid vertical feed, down

H. Start of hydraulic power station

I. Stop of hydraulic power station

J. Start of grinding wheel

K. Stop of grinding wheel

L. Start of coolant

M. Start of dust exhauster (optional equipment)

N. Stop of coolant/dust exhauster

O. Switch for el-chuck (see symbols) (optional equipment)

P. Indicator lamp for el-chuck

Q. Potentiometer for holding power adjustment of el-chuck (optional equipment)

R. Start of frequency converter for infinite variation of wheel speed. (Optional equipment).

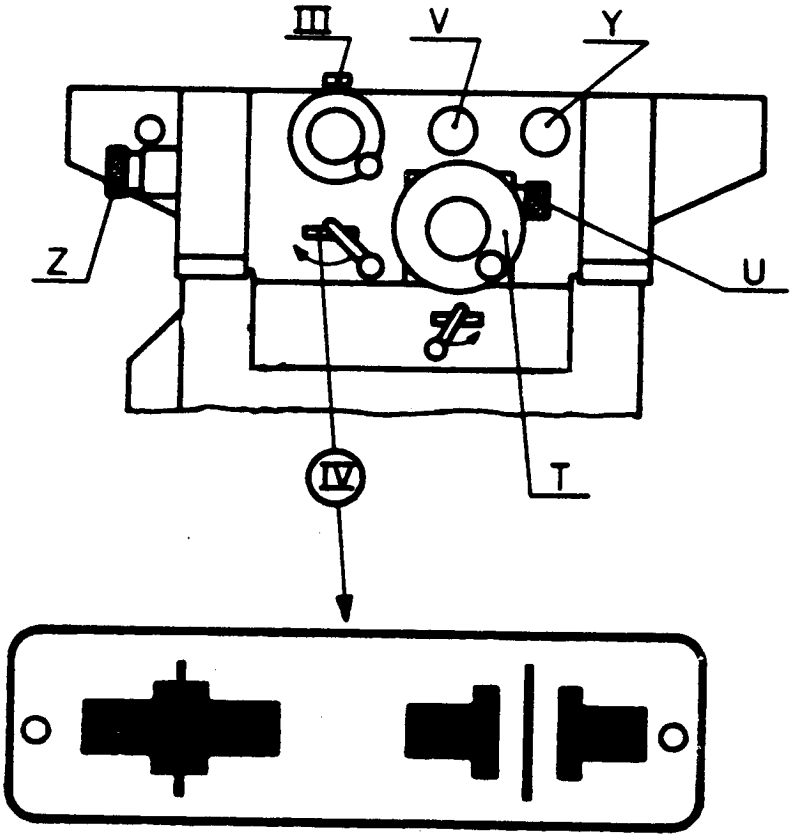
S. Potentiometer for adjustment of wheel spindle speed.

DOUBLE SADDLE LOCKING DEVICE

The locking of the cross saddle is made by turning the lever (IV) to the left - as shown by symbols, when the desired position of the cross saddle has been reached.

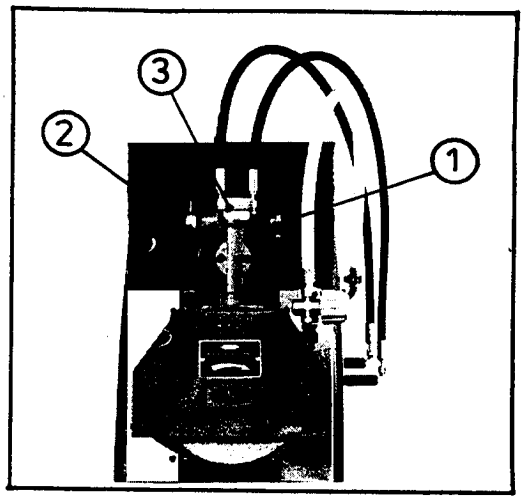
By positioning the cross saddle use the manual cross movement as described on page 8.

BE SURE THAT THE LOCKING MECHANISM HAS BEEN DISENGAGED BEFORE MOVING THE SADDLE.



HYDRAULIC WHEEL DRESSING ATTACHMENT (Optional equipment)

The hydraulic wheel dresser is mounted on the top of the wheel spindle assembly and permits straight-line dressing of the wheel in standard execution (standard width of wheel).



Feed the diamond across the wheel by turning the lever (2) to forward position (towards the operator).

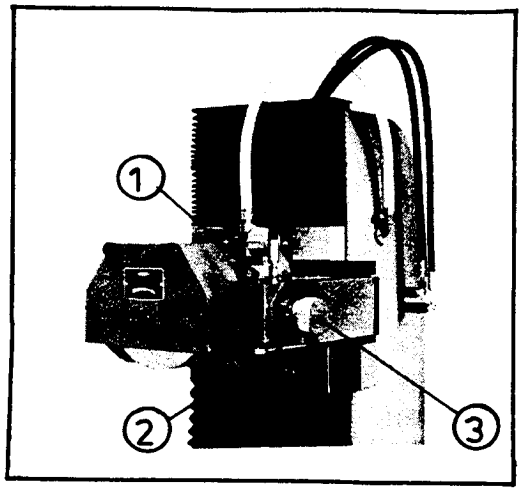
The diamond is fed down vertically by means of the knob (3) and the speed by which the diamond is fed across the wheel-face is adjusted by means of the knob (1).

By irregular movement of the dresser, bleed the cylinder of air by setting the knob (1) at max. speed and let the piston bottom 5-6 times in inner and outer position.

WHEN DRESSING THE WHEEL THE HANDLE (V) FOR REGULATION OF TABLE SPEED MUST BE TURNED TO BLUE MARK POSITION.

HYDRAULIC WHEEL DRESSING ATTACHMENT (Optional equipment)

The hydraulic wheel dresser is mounted on the right-hand side of the wheelhead and permits straight-line dressing of wheel in extra execution (extra width of wheel).



Feed the diamond across the wheel by turning the lever (2) to forward position (towards the operator).

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By irregular movement of the dresser, bleed the cylinder of air by setting the knob (1) at max. speed and let the piston bottom 5-6 times in inner and outer position.

WHEN DRESSING THE WHEEL THE HANDLE (V) FOR REGULATION OF TABLE SPEED MUST BE TURNED TO BLUE MARK POSITION.

NOTE: THE DRESSER WILL BREAK THE POWER TO THE HYDRAULIC PUMP MOTOR IF THE DRESSER IS NOT LOCKED FIRMLY IN DRESSING POSITION OR PLACED IN REAR POSITION AGAINST STOP.
IT IS RECOMMENDED AT LEAST ONCE A MONTH TO SCREW OUT FULLY THE DIAMONDHOLDER FROM THE DRESSERHEAD BY MEANS OF THE KNOB (3). LUBRICATE THE DIAMONDHOLDER WITH LUBRICATION OIL AND REMOUNT SAME IN DRESSER-HEAD.

BALANCING OF GRINDING WHEEL

The grinding wheel is mounted on the hub and dressed until it is round. Eventually the faces are dressed until they are running.
ALWAYS USE SHARP DIAMONDS FOR AN EFFICIENT DRESSING.

Instruction in the use of the hydraulic dresser, see page 17 and 18.

Balancing of the grinding wheel

Balancing of the hub and grinding wheel takes place by means of a balancing arbor and a balancing stand, while all balancing weights are removed from the hub. When the heaviest place has been found, place one of the weights 180° from this point, and by placing and moving the other weights symmetrically in relation to the first one, the unit is balanced as carefully as possible.

For dressing and balancing of the grinding wheel the following procedure is suggested:

1. Mount the grinding wheel on the hub and place the whole unit on the wheel spindle.
   ATTENTION: The nut which holds the hub to the wheel spindle has left-hand thread.

2. Dress the grinding wheel.

3. Remove the wheel assembly from the wheel spindle and balance the wheel as described above.

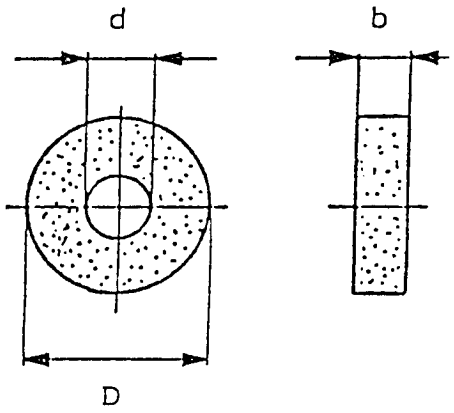
4. Remount the assembly on the wheel spindle and redress wheel before starting grinding.

GRINDING WHEELS

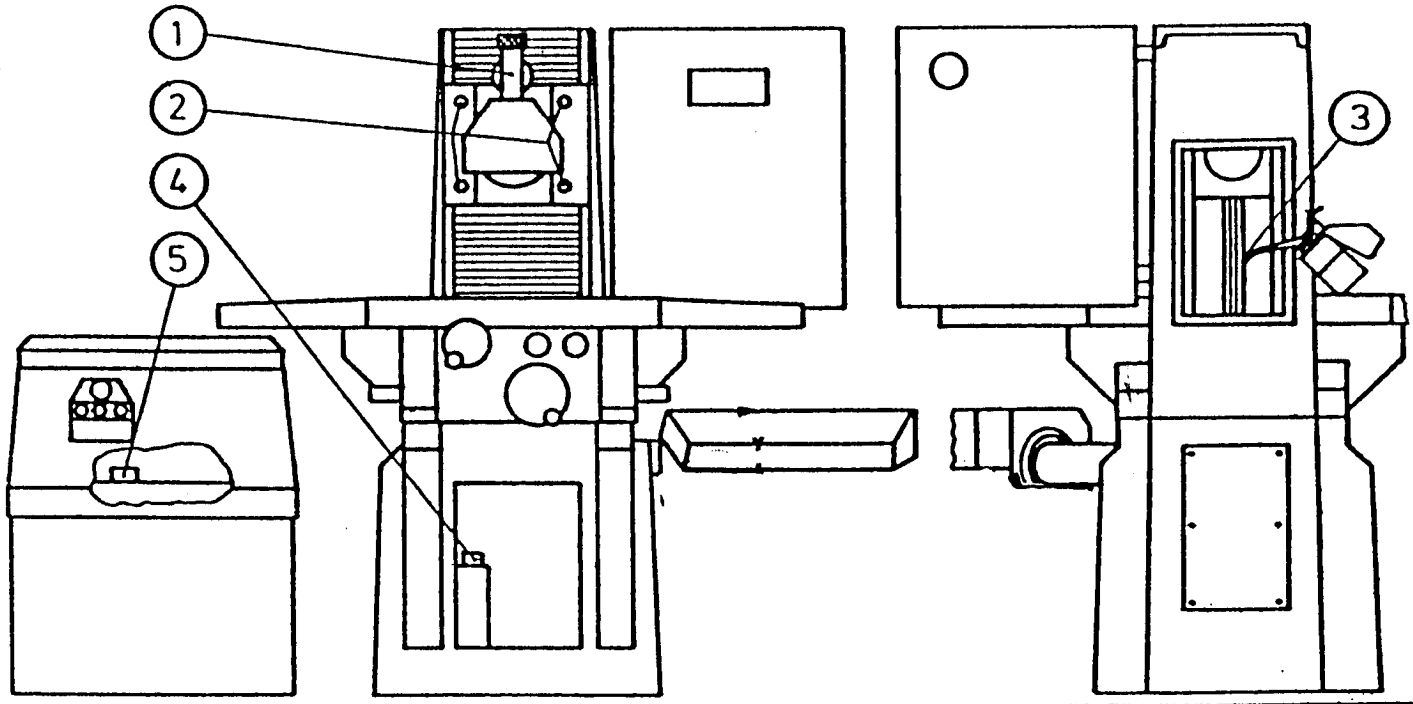
The machine is supplied with a general purpose wheel suitable for most materials. It will however be recommendable to contact a wheel manufacturer to get advice in selecting the right type of wheel for any particular job.

The wheel sizes are as follows:

TYPE SJ	HZ	D	d	STD. b	EXT. b
618	50	200 (8")	76,2 (3")	25 (1")	40 (1½")
618	60	200 (8")	76,2 (3")	25 (1")	40 (1½")
824	50	225 (9")	76,2 (3")	25 (1")	40 (1½")
824	60	200 (8")	76,2 (3")	25 (1")	40 (1½")

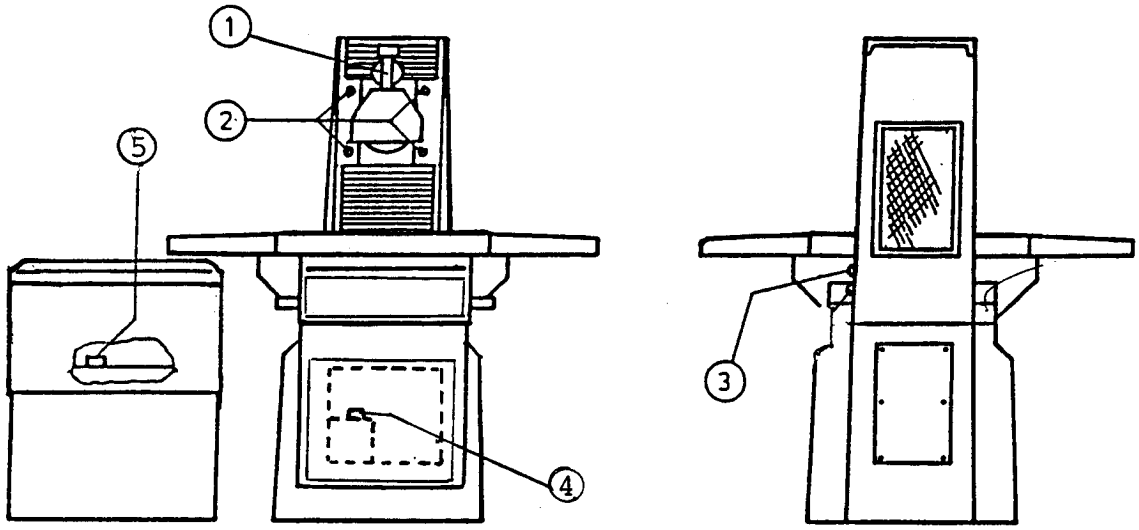


SMØRESKEMA
LUBRICATION SYSTEM
SCHMIERTABELLE



			OLIE - OIL - ÖL							
POS	SMØRESTEDER LUBRICATION POINTS SCHMIERSTELLEN	INTERVAL INTERVAL INTERVALLE	MOBIL	BP	TEXACO	CASTROL	ESSO	GULF	SHEEL	
1	AFRETTER WHEEL DRESSER ABRICHTER	HVER UGE WEEKLY JEDE WOCHE	VACTRA NR2	MACCURAT 68	WAY LUBRIC D	MAGNA BD 62	FEBIS K 68	GULF WAY 52	TONNA 68	
2	SPINDELSLÆDE SPINDELSLIDE SPINDELSCHLITTEN	HVER UGE WEEKLY JEDE WOCHE	VACTRA NR2	MACCURAT 68	WAY LUBRIC D	MAGNA BD 62	FEBIS K 68	GULF WAY 52	TONNA 68	
3	VERTIKALSPINDEL VERTICAL LEADSCREW VERTIKALSPINDEL	HVER UGE WEEKLY JEDE WOCHE	VACTRA NR2	MACCURAT 68	WAY LUBRIC D	MAGNA BD 62	FEBIS K 68	GULF WAY 52	TONNA 68	
4	SMØREOLIEBEHOLDER LUBRICATION OIL TANK SCHMIERÖLBEHÄLTER	UDSKIFT HVER ÅR ONCE A YEAR JÄHRLICH UMWECHL	VACTRA NR2	MACCURAT 68	WAY LUBRIC D	MAGNA BD 62	FEBIS K 68	GULF WAY 52	TONNA 68	CAPACITY 5 LITRES
5	PUMPESTATION HYDRAULIC PUMP UNIT HYDR. PUMPENEINHEIT	UDSKIFT HVER ÅR ONCE A YEAR JÄHRLICH UMWECHL	VACOULINE 1405	HLP-D 32	REGAL OIL A	MAGNA GC 32	NUTO HP 32	HARMONY 47	TONNA 32	CAPACITY 110 LITRES

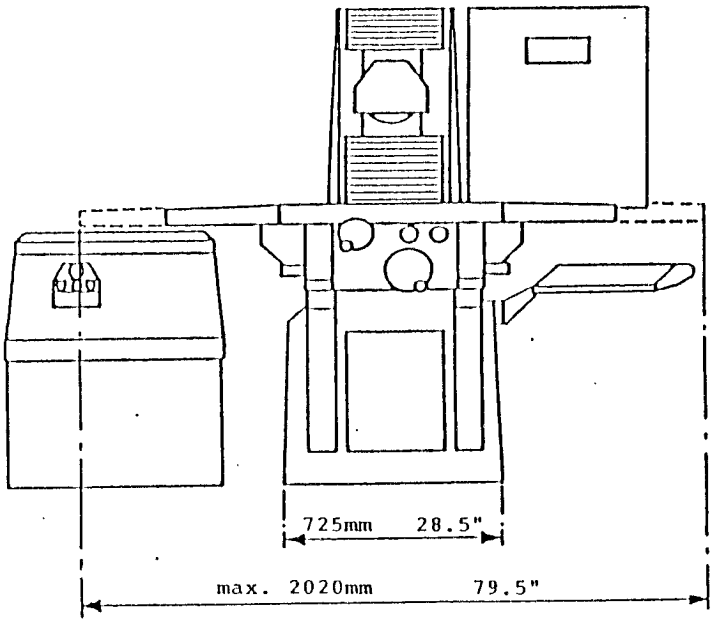
SMØRESKEMA
LUBRICATION SYSTEM
SCHMIERTABELLE

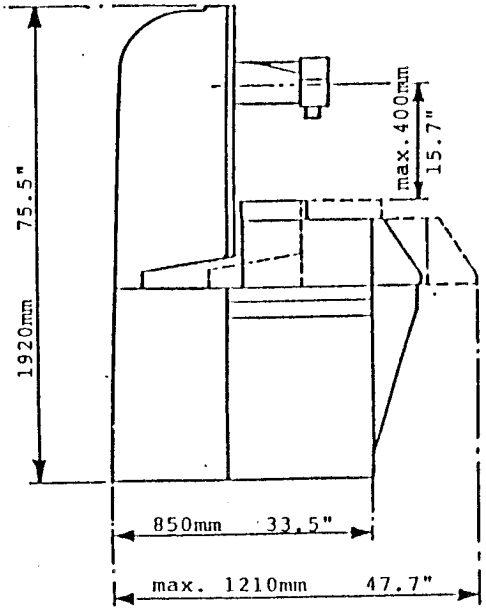


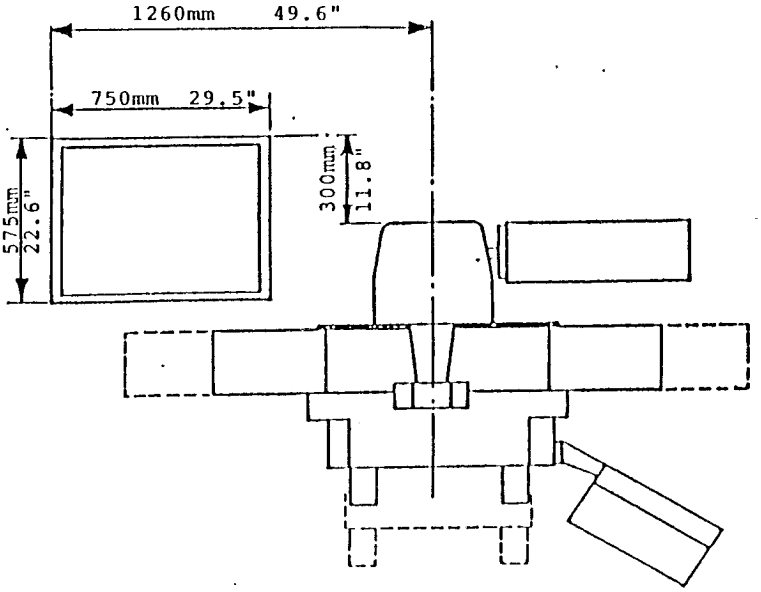
			OLIE - OIL - ÖL								11/90
POS.	SMØRESTEDER LUBRICATION POINTS SCHMIERSTELLEN	INTERVAL INTERVAL INTERVALLE	MOBIL	STATOIL	SHELL	ESSO	Q 8	TEXACO	CASTROL	BP	
1.	AFRETTER WHEEL DRESSER ABRICHTER	HVER UGE WEEKLY JEDE WOCHE	VACTRA NR. 2	GLIDEWAY ZX 68	TONNA T.68	FEBIS K. 68	WAGNER Q8 68	WAY LUBRIC 68	MAGNA 67 BDX	MACCURAT 68	
2.	SPINDELSLÆDE SPINDLE SLIDE SPINDELSCHLITTEN	HVER UGE WEEKLY JEDE WOCHE									
3.	VERTIKALSPINDEL VERTICAL LEADSCREW VERTIKALSPINDEL	HVER UGE WEEKLY JEDE WOCHE									
4.	SMØREOLIEBEHOLDER LUBR. OIL TANK SCHMIERÖLBEHÄLTER	HVERT ÅR YEARLY JÄHRLICH									CAPACITY 5 LTR.
5.	PUMPESTATION HYDR. PUMP STATION HYDRAULIKSTATION	HVERT ÅR YEARLY JÄHRLICH	VACOULINE 1405	HYDRAWAY HM 32	HYDROL DO 32	NUTO H 32	HAYDN Q8 46	REGAL R&O 32	MAGNA GC 32	HLP-D 32	CAPACITY 110 LTR.

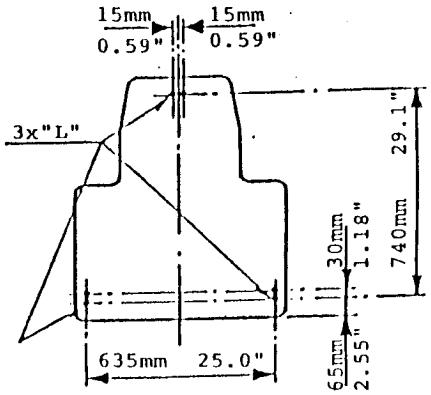
FUNDAMENTSPLAN
FOUNDATION
FUNDAMENT

SJ 618



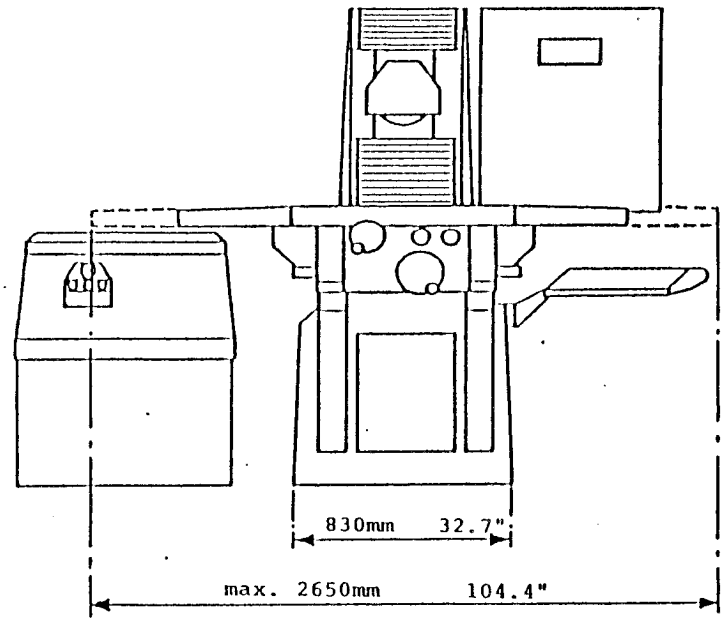


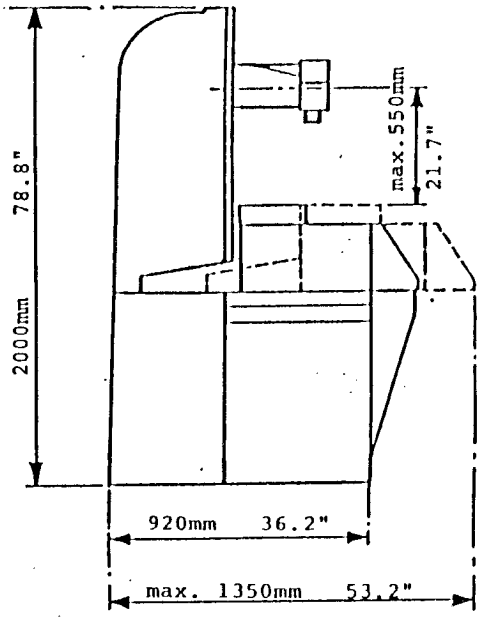


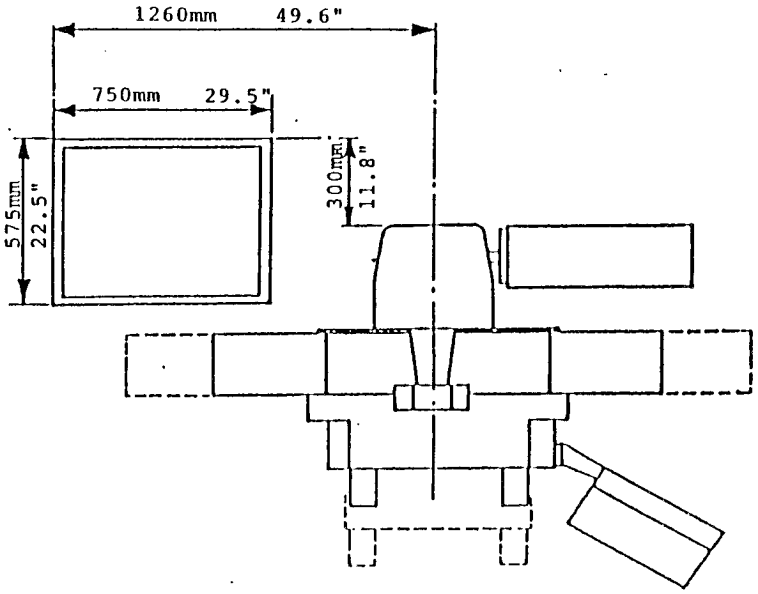


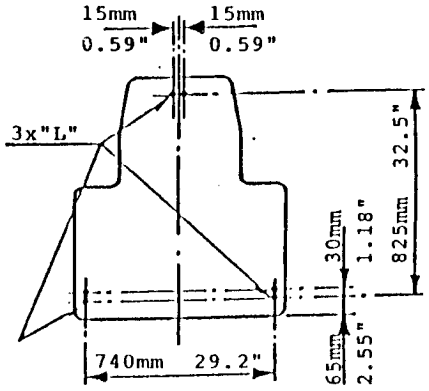
FUNDAMENTSPLAN
FOUNDATION
FUNDAMENT

SJ 824



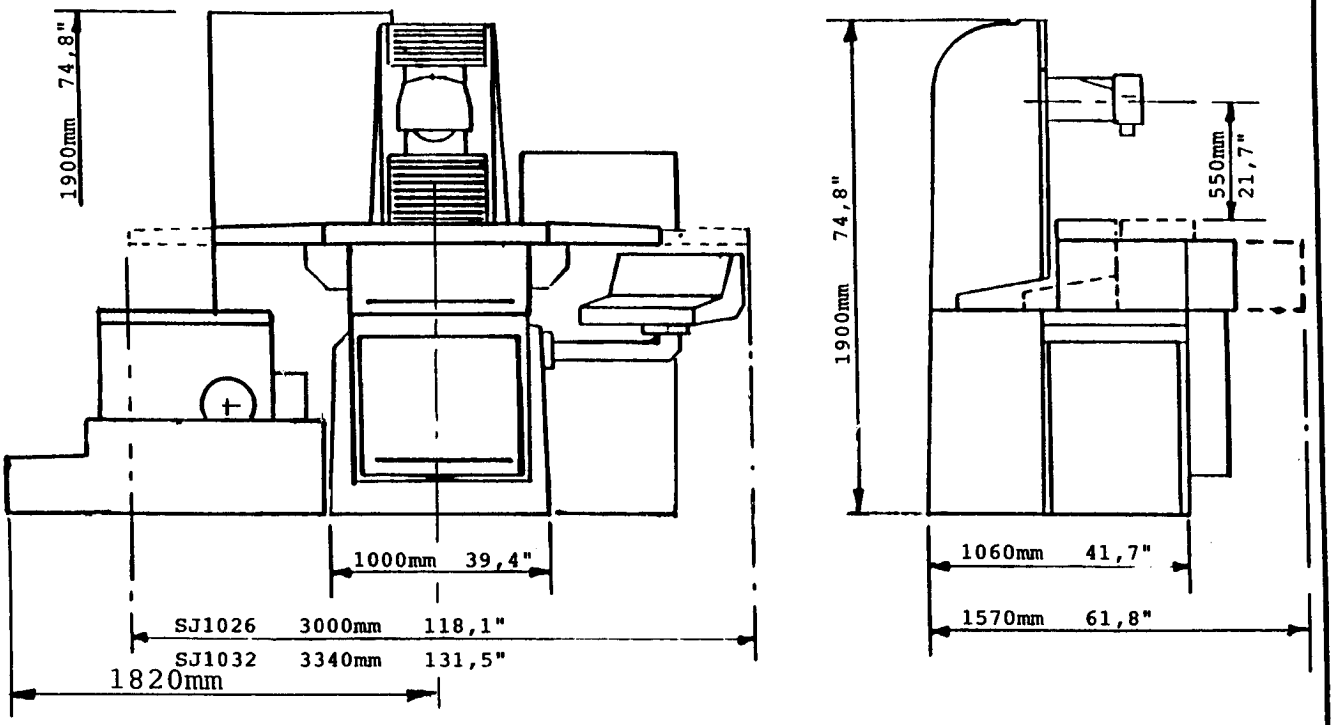


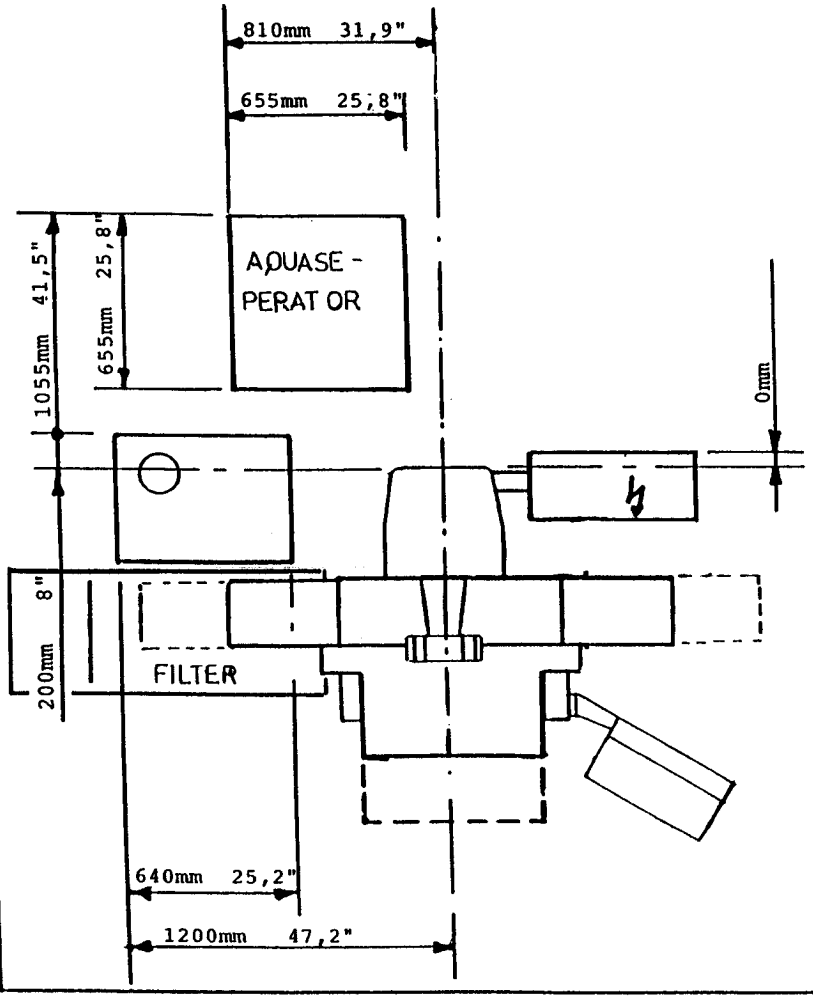


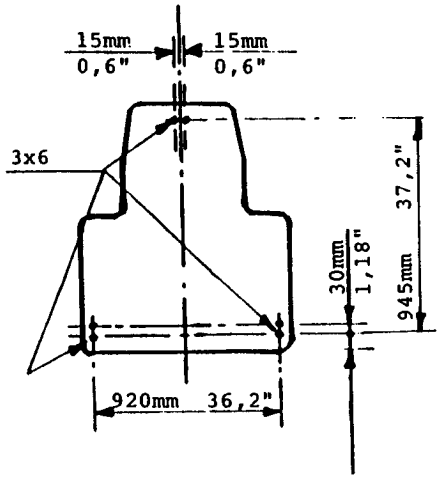


FUNDAMENTSPLAN
FOUNDATION
FUNDAMENT

SJ 1026
SJ 1032

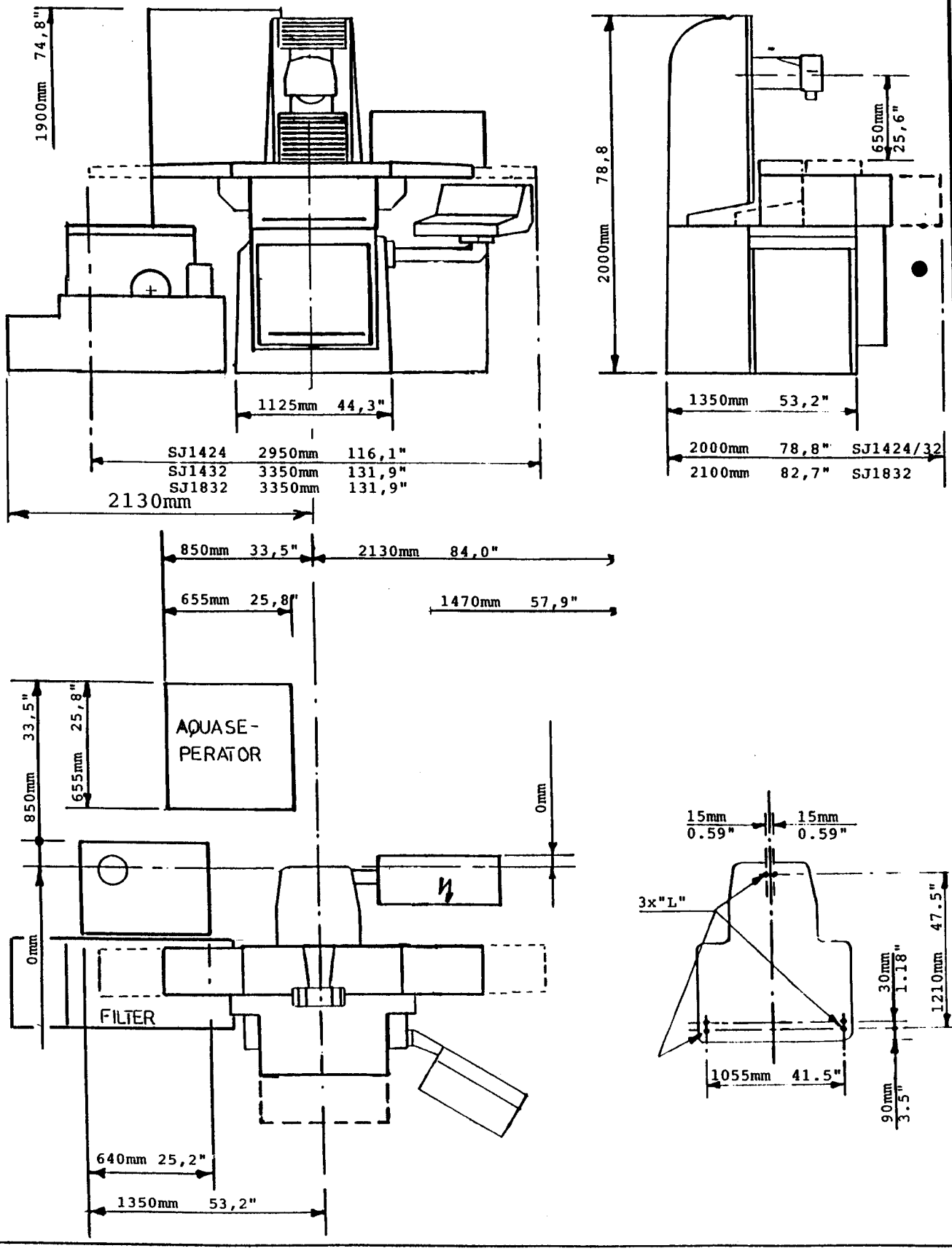




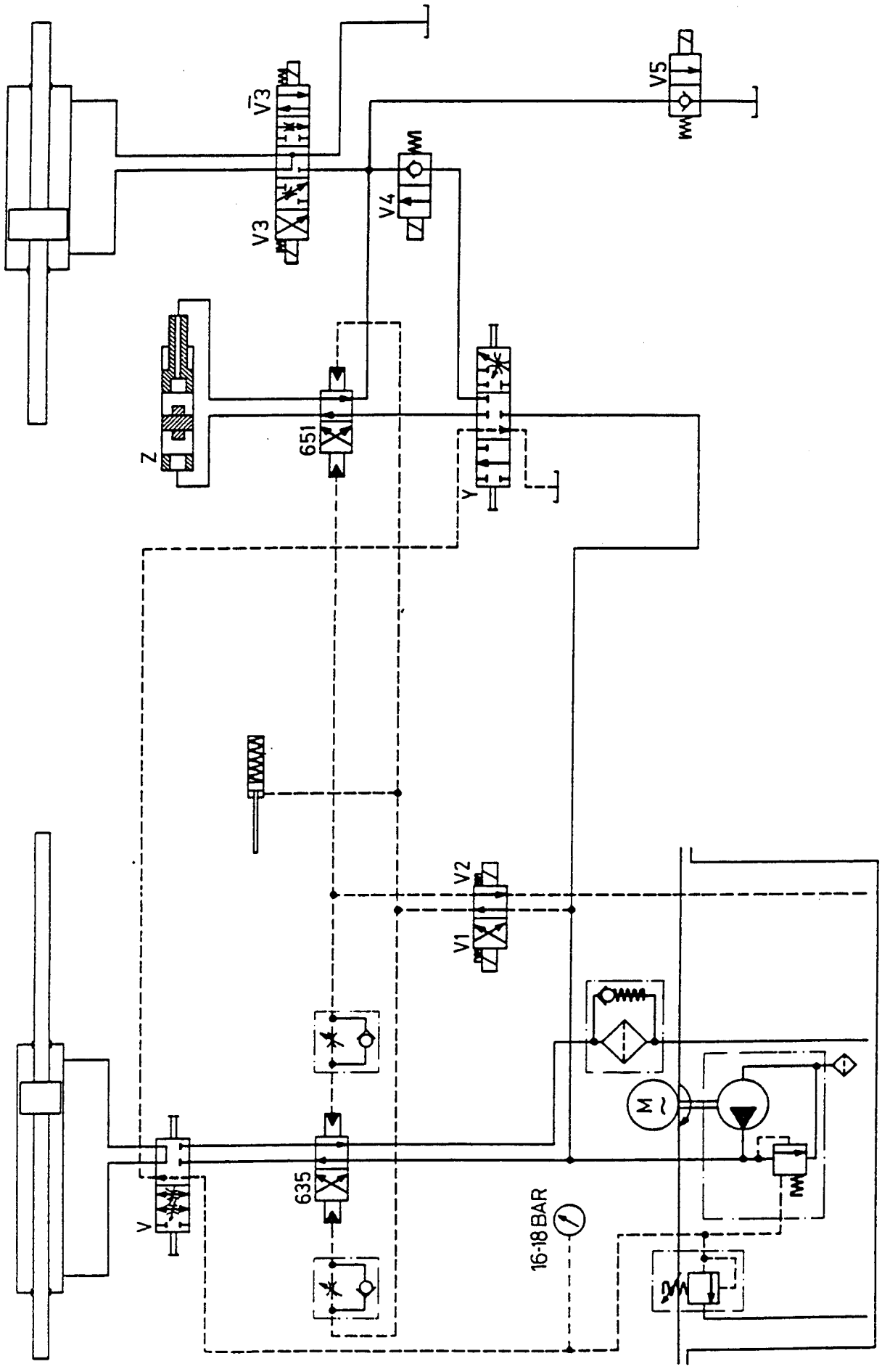


FUNDAMENTSPLAN
FOUNDATION
FUNDAMENT

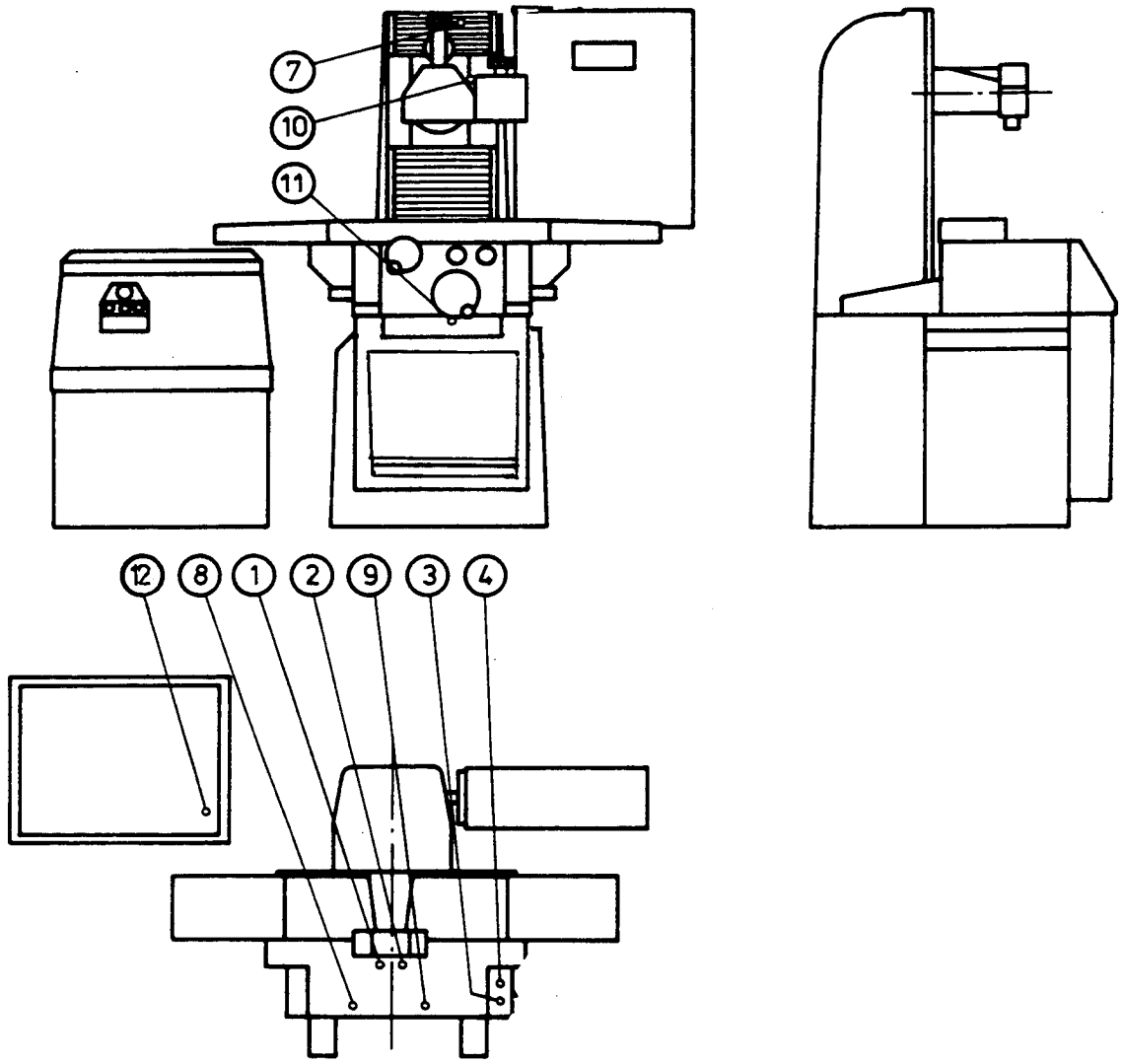
SJ 1424
SJ 1432



HYDRAULISK SYSTEM
HYDRAULIC SYSTEM
HYDRAULISCHES SYSTEM



LOCATION OF SWITCHES



POS.	S.	OPERATION
1	HEST	Proximity switch, table reversal, right
2	VEST	Proximity switch, table reversal, left
3	BEST	Proximity switch, saddle reversal, back
4	YEST	Proximity switch, saddle reversal, front
7	Q 1	Switch, for vertical movement, upper position
8	Q 2	Switch, activated by manual table control
9	Q 3	Switch, for stop of continuous cross feed
10	Q 4	Switch, dresser in rear position
11	Q 5	Switch, activated by manual cross feed
12	BOX 2	Terminal box hydr. power station

TROUBLE SHOOTING

Machine not grinding parts flat

1. Excessive heat expands work. Adjust coolant application, downfeed too excessive, table speed too slow, wheel dressed too fine, diamondtip not sharp.

2. Electromagnetic chuck may not be flat.

Chatter (vibration) marks on work

1. "Outside" vibrations from other machinery.

2. Grinding wheel not proper balanced.

3. Worn out or too fine dressed wheel.

4. Diamondtip not sharp.

5. Coolant not turned off by stopped wheel creating out of balance condition.

Discoloured spots on work from overheating

1. Table speed too slow.

2. Not enough coolant or coolant not applied properly.

3. Wheel too hard.

4. Worn out or too fine dressed wheel.

5. Diamondtip not sharp.

6. Downfeed too excessive.

Cross feed lines on work

1. Dresser may need to be realigned.

Grain marks on work

1. Wheel too soft.

2. Coolant not filtered properly.

Hydraulic movement

1. Check that hydraulic pump is running.

2. Check whether pressure relief is in action. (Handle (V) in RED MARK STOP position and handle (Y) in STOP position).

3. Check whether cross movement is set for manual cross feed.

4. Check that voltage to magnetic valves is correct.

5. Check proximity switches for table- and saddle reversal.

6. Check power supply.

AC-Motors

1. Check whether an overload has disengaged.

2. Check whether handle for regulation of table speed (V) is in stop-position (red-mark position).

3. Check whether manual table control is disengaged.

4. Check whether side-mounted wheel dresser is in correct position (optional equipment).

5. Check whether electro-magnetic chuck is engaged (optional equipment).

6. Check main supply.

Vertical movement

See specification of components on electric diagrams. Driver system/sandwich 6619 to 6022.

Power rapid vertical movement

1. Check RL1 on stepping motor control.

2. Check that push button B.5 on the control panel is activated.

Continuous movement by stepping motor

1. Check tooth-belt.

2. Check electronic handwheel.

3. Check fuses for stepping motor control.

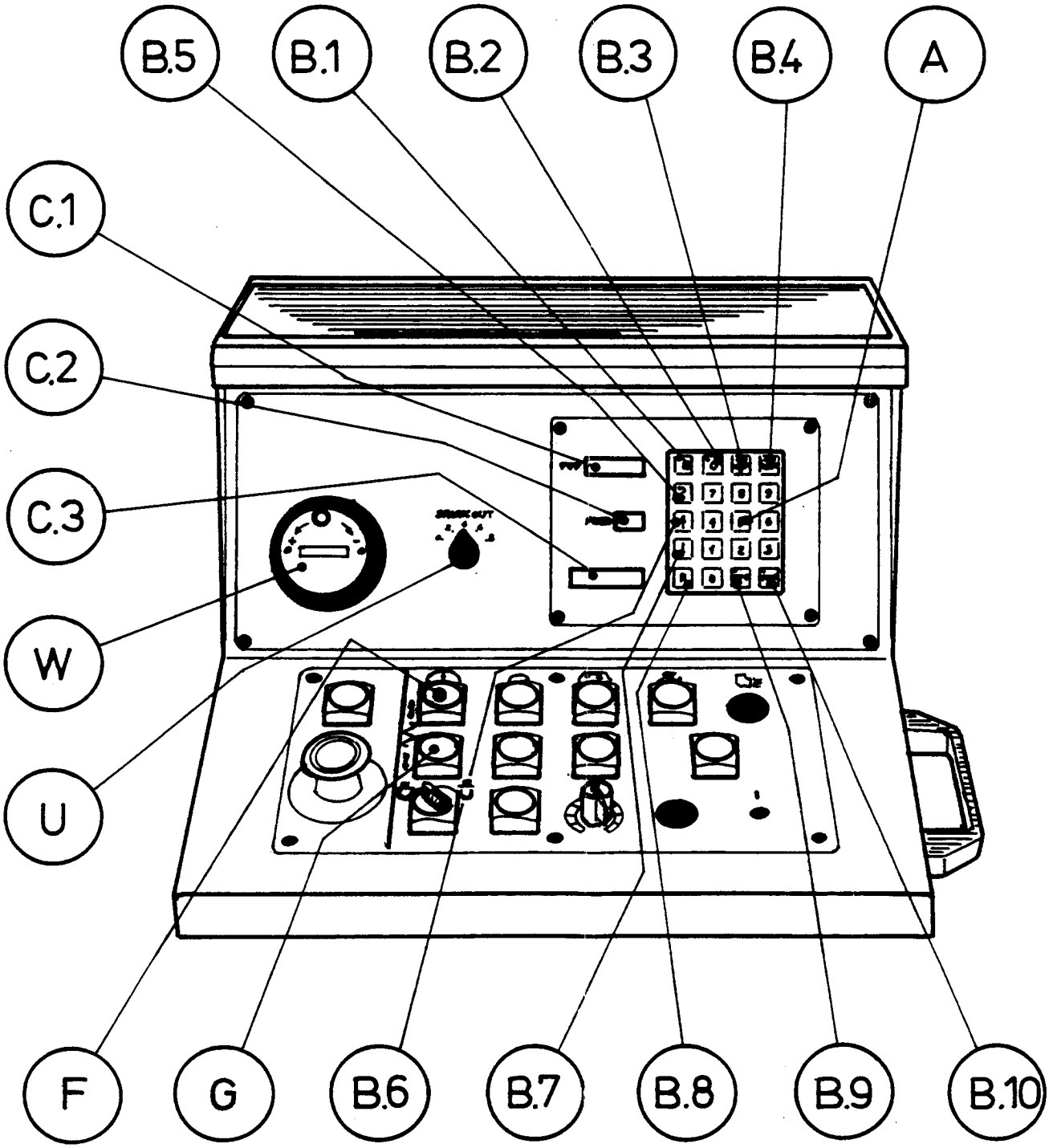
For replacing control-interface-module

1. Demount stepping motor control by removing 4 screws. **Pay attention to the location/placing of the multiplugs A and P before demounting the control unit.**

No automatic vertical feed

1. Check continuous movement by stepping motor push buttons B.6 and B.7 on the control panel.

2. Check the automatic downfeed mechanism.


B.5
B.1
B.2
B.3
B.4
A
C.1
C.2
C.3
W
U
F
G
B.6
B.7
B.8
B.9
B.10

JAKOBSEN

TEST SHEET for Surface Grinder

Model

Serial No.:

	Test	Tolerance permitted	Tolerance measured
1 a	Bed level – longitudinal direction	0,02 mm in 1000 mm	
1 b	Bed level – transverse direction	0,02 mm in 1000 mm	
2	Surface of table parallel to the longitudinal travel	0,015 mm in 1000 mm	
3	Surface of table parallel to the transversal travel	0,01 mm in table width	
4	T-grooves of table parallel to the longitudinal travel	0,015 mm in 1000 mm	
5	T-grooves of table at right angles to the transversal travel	0,03 mm in 300 mm	
6 a	Runout of spindle, radial	0,01 mm	
6 b	Runout of spindle, axial	0,01 mm	
7	Grinding spindle parallel to table. Measured at 180° swivelling Arm 100 mm = 4"	0,02 mm in 300 mm	
8	Grinding spindle at right angles to the T-grooves of table. Measured at 180° swivelling Arm 200 mm = 8"	0,02 mm in 300 mm	
9	Vertical movement of wheelhead at right angles to the transversal direction of table	0,02 mm in 100 mm	

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Warranted

Tested by

JAKOBSEN

TEST SHEET for Surface Grinder

Model

Serial No.:

	Test	Tolerance permitted	Tolerance measured
1 a	Bed level – longitudinal direction	0.0008″ in 40″	
1 b	Bed level – transverse direction	0.0008″ in 40″	
2	Surface of table parallel to the longitudinal travel	0.0006″ in 40″	
3	Surface of table parallel to the transversal travel	0.0004″ in table width	
4	T-grooves of table parallel to the longitudinal travel	0.0006″ in 40″	
5	T-grooves of table at right angles to the transversal travel ur	0.0012″ in 12″	
6 a	Runout of spindle, radial	0.0004″	
6 b	Runout of spindle, axial	0.0004″	
7	Grinding spindle parallel to table. Measured at 180° swivelling Arm 100 mm = 4″	0.0008″ in 12″	
8	Grinding spindle at right angles to the T-grooves of table. Measured at 180° swivelling Arm 200 mm = 8″	0.0008″ in 12″	
9	Vertical movement of wheelhead at right angles to the transversal direction of table	0.0008″ in 4″	
	Accurary testing of maohine in operation:		
	Fine grinding:	0.0004″ in 40″	
	Coarse grinding:	0.0012″ in 40″	

Kastrup, ... 19

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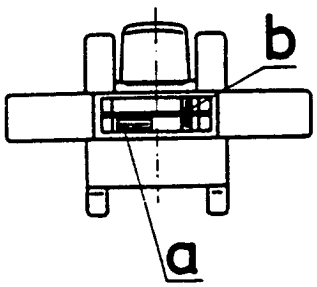
ILLUSTRATION TIL PRØVESKEMA
ILLUSTRATION FOR TEST CHART
ILLUSTRATION FÜR PRÜFKARTE

1



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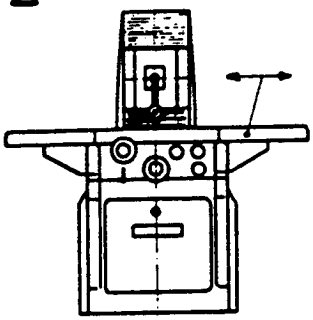

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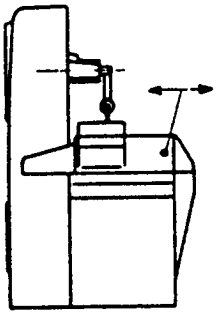

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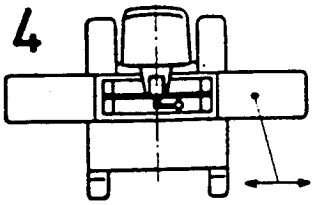

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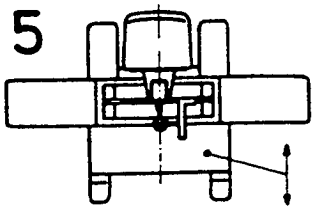

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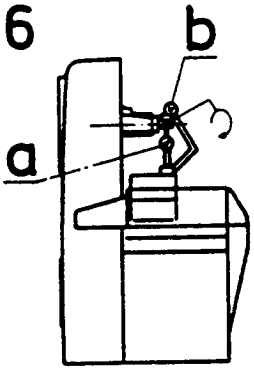

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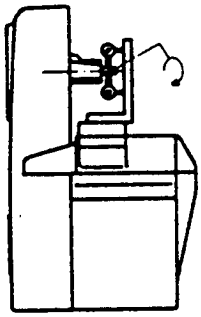

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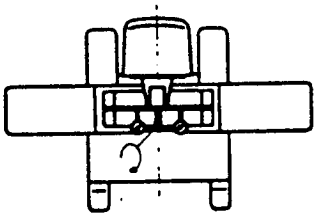

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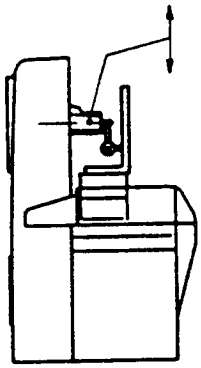

Elektromotorer - Electrical motors - Elektromotoren

Spænding Voltage Spannung	V
Frekvens Frequency Frequenz	Hz

	HK-HP-PS	omdr/min - RPM umdr/min	Serie nr.-Serial no. Serien nr.
Spindelmotor Spindlemotor Spindelmotor			
Pumpemotor Pumpmotor Pumpenmotor			
Vertikalmotor Verticalmotor Vertikalmotor			