JAKOBSEN

INSTRUKTIONSBOG
OPERATION MANUAL
BETRIEBSANLEITUNG

RO/STD Machine

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PREFACE

This precision surface grinding machine is used for surface grinding of metallic/non-metallic components and is produced in conformity with the provisions of the Counsil Directive of 14th June 1989 on the approximation of the laws of the EEC Member States relating to machinery (89/392/EEC) with supplementing Directives 91/368/EEC, 93/44/EEC and 93/68/EEC.

Correct installation by instructed personnel - mechanically and electrically - before use of the surface grinding machine is of critical importance. Follow the instructions carefully and proceed in the order as described in this manual.

The surface grinding machine must only be operated by personnel instructed in the use hereof.

Attention to the rotating grinding wheel as well as to all moving parts of the machine must always be paid by the operator of the machine.

The operator must always carry protective glasses when operating the machine.

Any amendment made on this surface grinding machine without our approval will make our fulfilment of the EC-Declaration of Confirmity void.

JAKOBSEN

CONTENTS

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.

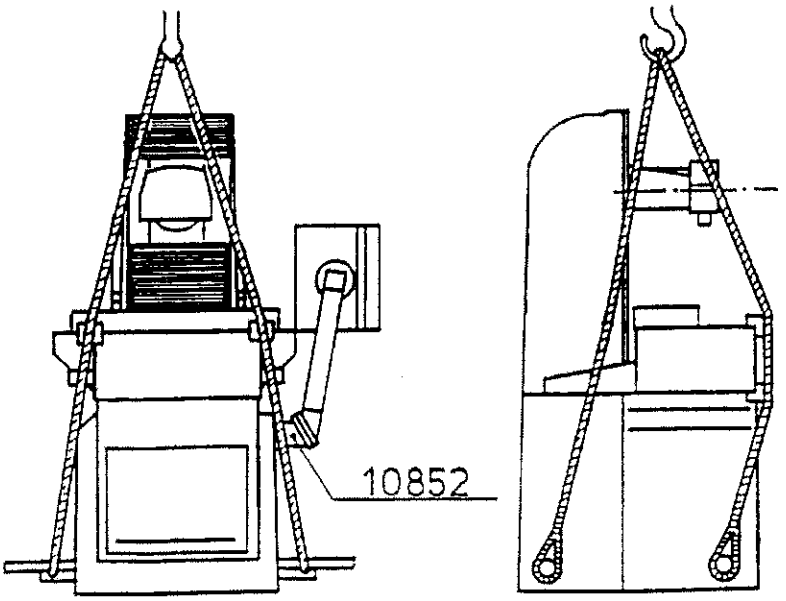
1) Dismantle the hydraulic power station, electrical cabinet, endcovers of table, coolant tank, and other accessories attached to the bottom of the packing.

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 21-22.

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

The alignment is carried out be 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.
Two additional foundation plates are used for the models 1424, 1432 and 1832. Place these under the centre adjustment screws and turn adjustment screw until touch-point (screw/foundation plate).

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 21-22.

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) Place the electrical cabinet to the right of the machine column as shown on the foundation plan page 21-22 and connect all electrical cables according to numbers and the electrical diagram.

7) Remove forwarding bracket and mount the control-panel box in the correct position. (forwarding bracket ref.10852)

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. 5. See lubrication chart page 20.

Remove the upper cover of the hydraulic power station and fill up with approx. 70 litres hydraulic oil. Pos. 6. See lubrication chart page 20.

As lubricating oil we recommend MOBIL OIL VACTRA No. 2 or as stated in the lubrication chart page 20.

As hydraulic oil we recommend MOBIL OIL VACOULINE 1405, but other products may be used as well, see lubrication chart page 20.

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 upper 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 20, 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 the rotation by means of the push buttons 11, 11a and 11b for rapid vertical feed.

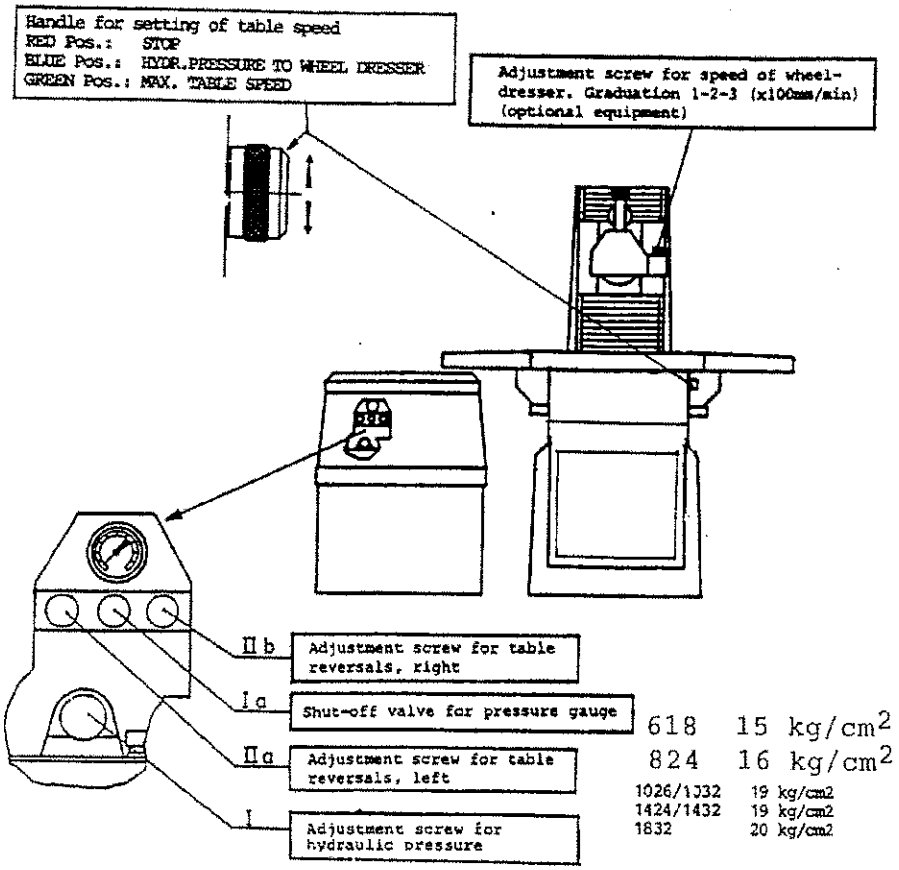
The electro magnetic chuck must be switched on before the rapid vertical feed can be activated.

In case the symbols do not correspond to the movements, two phases of the main 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 THE ROTATION.

OPERATION OF MACHINE CONTROLS

V. Handle for setting the table speed.



BLEEDING THE HYDRAULIC SYSTEM OF AIR

1. Set the handle for table speed (V) in a low speed position.

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

3. After approx. 10 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 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.

NOTE: When the machine is started up in the morning, set the handle for table speed (V) at a low speed rate untill 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.

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	1424	400 kg
824	200 kg	1432	400 kg
1026	250 kg	1832	400 kg
1032	300 kg		

including the weight of the magnetic chuck.

CROSS SADDLE MOVEMENT

Setting of the cross movement stop dogs

To set the cross movement stop dogs for the desired saddle travel.

a. Turn AXIS SELECTOR 24 to Z-position 100x, activate BUTTON 4, and move the saddle to the wanted reversal points - towards the column and towards the operator by means of the ELECTRONIC HANDWHEEL 25.

Intermittent crossfeed

The intermittent crossfeed can be adjusted from 1-30mm.
The requested intermittent crossfeed rate is set as follows:

a. Activate BUTTON 5

b. Move cursor to display 19 by activating the CURSOR-button 14

c. While display 19 flashes, key-in the requested crossfeed rate on the numerical touchpanel and confirm the value by activating the ENTER-button 15. The programmed intermittent crossfeed rate will now appear in display 19.

Continuous crossfeed

The continuous crossfeed can be adjusted to max. 990mm/Min.
The requested continuous crossfeed rate is set as follows:

a. Activate BUTTON 6

b. Move cursor to display 20 by activating the CURSOR-button 14

c. While display 20 flashes, key-in the requested continuous crossfeed rate on the numerical touchpanel and confirm the value by activating the ENTER-button 15. The programmed continuous crossfeed rate will now appear in display 20.

Manual crossfeed

The manual crossfeed is made by means of the ELECTRONIC HANDWHEEL 25.

a. Set AXIS SELECTOR 24 in the requested Z-position (1x, 10x or 100x 0,001mm)

b. Turn the ELECTRONIC HANDWHEEL 25 in direction (-) saddle towards column or in direction (+) saddle towards operator.

Each step of the electronic handwheel will move the saddle 1 x 0,001mm, 10 x 0,001mm or 100 x 0,001mm.

DESCRIPTION OF THE CONTROL SYSTEM

CONTROL PANEL

A turned-on light in a button indicates that the button is activated.

START-button

This button starts the cross movement (Z) after selection of (5) or (6) and the vertical movement (Y), provided the cycle-button (3) is activated. When activated, it will start all cycle executions in connexion with selection of 3, 4, 5 or 6.

STOP-button

This button stops the cross movement (Z) after selection of (5) or (6) and the vertical movement (Y), provided the cycle-button (3) is activated. When activated, it will stop all cycle executions in connexion with selection of 3, 4, 5 or 6.

CYCLE-button

This button activates a grinding programme that in advance has been specified by selection of one of the buttons 4, 5 or 6 and shown in the displays 17, 18, 19 or 20.

PLUNGE GRINDING (X axis)

Execution of a plunge grinding programme with vertical feed at each table reversal.

INTERMITTENT CROSSFEED (Z axis)

Execution of a surface grinding programme with intermittent crossfeed and digital display of the feedrate in (19).

CONTINUOUS CROSSFEED (Z axis)

Execution of a surface grinding programme with continuous crossfeed and digital display of the feedrate in (20).

HYDRAULIC PUMP

Start/stop of the hydraulic pump after the el-magnetic chuck has been switched on. Value of the holding power is shown in the display 21.

COOLANT

Start/stop of the coolant pump (coolant clarifier - optional equipment).

DUST EXTRACTOR/AQUASEPARATOR

Start/stop of the dust extractor/aquaseparator (Optional equipment).

GRINDING MOTOR

Start/stop of the grinding wheel motor.

RAPID VERTICAL FEED (Y axis)

Selector-button for rapid vertical feed in connexion with 11a or 11b.

11a) Rapid vertical feed, upwards.
11b) Rapid vertical feed, downwards.

VERTICAL CREEP FEED (Y axis)

Selector-button for vertical creep feed in connexion with 12a or 12b.

12a) Vertical creep feed, upwards.
12b) Vertical creep feed, downwards.

SWITCH-ON OF ELECTRO MAGNETIC CHUCK
(optional equipment)

The el-magnetic chuck is switched on by activating this button. The holding power value is shown in display 21.

DEMAGNETIZING OF ELECTRO-MAGNETIC CHUCK

The el-magnetic chuck is demagnetized by activating this button. Display 21 flashes until the demagnetization has been completed.

CURSOR-button

By activating this button the cursor will move through the displays 17-22.
When a display flashes, it is possible to enter a value by means of the numerical touchpanel, which subsequently must be confirmed by activating the ENTER-button (15).
A display will flash in approx. 5 sec. If during flashing the new value is not confirmed by the ENTER-button (15), the display will show the previous value.

ENTER-button

This button is used to confirm the values entered via the numerical touchpanel.

16. NUMERICAL TOUCHPANEL

17. DISPLAY OF TOTAL GRINDING DEPTH

This display shows the total grinding depth provided the buttons 4, 5 or 6 and 1 and 3 are activated.
The display continuously shows the remaining value to be ground-off.

18. DISPLAY OF VERTICAL FEED RATE

This display shows the feed rate in the Y axis.

19. DISPLAY FOR INTERMITTENT CROSSFEED

This display shows the intermittent crossfeed rate (max. 30mm).
ONLY ACTIVE IN CONNEXION WITH BUTTON 5.

20. DISPLAY FOR CONTINUOUS CROSSFEED

This display shows the continuous crossfeed speed, max. 99 (990mm/min.).
ONLY ACTIVE IN CONNEXION WITH BUTTON 6.

21. DISPLAY OF HOLDING POWER FOR EL-CHUCK

This display shows the holding power value of the electro-magnetic chuck 40-100% (1-6) provided button 13 is activated.

22. DISPLAY OF THE RELATIVE POSITION OF THE WHEELHEAD AND THE CROSS SADDLE

This display shows the relative position of the wheelhead and cross saddle within 0-100mm when operating the electronic handwheel 25 and the push buttons 11a, 11b, 12a and 12b. It also shows in reciprocal value to display 17 the movement of the wheelhead.

23. SPARKOUT-switch

Selector switch for automatic sparkout 0-8 passes after completion of the total downfeed in display 17.

Max. numbers of passes: 8

Infinite number of passes: 0 position.

The table stops with the grinding wheel free of the workpiece when the preselected sparkout passes have been carried out.

24. AXIS SELECTOR FOR MANUAL VERTICAL AND CROSS MOVEMENT

This selector switch can be set in Y-position for manual vertical movement in steps of 1x, or 10x 0,001mm or in Z-position for manual cross movement in steps of 1x, 10x or 100x 0,001mm. The movements are made by means of the electronic handwheel (25) after activation of the push buttons 4 and 12.

25. ELECTRONIC HANDWHEEL

For manual vertical and cross movement.

For Y axis movement set the axis selector (24) in the requested Y-position and activate button (12) followed by activation of one of the buttons 4, 5 or 6.

For Z axis movement set axis selector (24) in the requested Z-position and activate button (4).

26. EMERGENCY STOP

When the emergency stop is activated, the 24V control circuit to the control panel is disconnected.

Error message (2) occurs in display 22.

By disengagement of the emergency stop all displays will automatically by resetted.

EXAMPLE: GRINDING OFF 0,100 MM OF A WORKPIECE IN A SURFACE GRINDING OPERATION

1. Place the workpiece on the table and switch on the magnetic chuck by activating the BUTTON 13. The programmed holding power value will appear in display 21.

2. Set the stop dogs for the desired table and saddle travel.

3. Move the wheelhead/grinding wheel with rapid vertical feed as close as possible towards the workpiece by activating SELECTOR-button 11 followed by activation of button 11b.
   PAY ATTENTION TO THE FREERUN OF THE VERTICAL MOTOR.

4. Change to vertical creep feed for further close move towards the workpiece by activating SELECTOR-button 12 followed by activation of button 12b.

5. Use the ELECTRONIC HANDWHEEL 25 for final touch of the grinding wheel to the workpiece.

6. Reset DISPLAY 22 by moving the cursor to display 22 (CURSOR-button 14). Activate the button "0" on the numerical touchpanel followed by activation of the ENTER-button 15.

7. Key-in the requested total grinding depth - in this example 0,100mm - by moving the cursor to display 17 (CURSOR-button 14).
   While display 17 flashes, key-in the total grinding depth 100 micron on the numerical touchpanel 16 and confirm the value by activating the ENTER-button 15.

8. Key-in the requested vertical feed rate value - in this example 5 micron - by moving the cursor to display 18 (CURSOR-button 14).

While display 18 flashes, key-in the requested vertical feed rate value on the numerical touchpanel 16 and confirm the value by activating the ENTER-button 15.

9. Activate BUTTON 5 for intermittent crossfeed.

10. Key-in the requested crossfeed rate by moving the cursor to DISPLAY 19 (CURSOR-button 14). While display 19 flashes, key-in the requested crossfeed rate (in mm) on the numerical touchpanel 16 and confirm the value by activating the ENTER-button 15.

    If, instead of intermittent crossfeed, a continuous crossfeed is wanted then activate BUTTON 6 for continuous crossfeed and move cursor to DISPLAY 20 (CURSOR-button 14).
    While display 20 flashes, key-in the requested continuous crossfeed rate on the numerical touchpanel 16 and confirm the value by activating the ENTER-button 15.

11. Select the requested number of sparkout passes by SELECTOR SWITCH 23. After completion of the total downfeed in display 17 the table will automatically stop with the grinding wheel free of the workpiece when the preselected number of sparkout passes have been carried out.

12. Activate CYCLE-button 3.

13. Start table movement by turning HANDLE FOR SETTING OF TABLE SPEED (V) to green mark position (max. table speed).

14. Start grinding programme by activating START-button 1.

15. Dress the wheel during execution of the program (see description below) and compensate for the wheel dressing by means of the electronic hand-wheel.

16. After completion of the grinding program and stop of the table demagnetize the el-chuck by activating the BUTTON 13a and remove the ground workpiece from the table. Holding power value flashes in display 21.
ONLY WHEN HANDLE FOR SETTING OF TABLE SPEED (V) IS AT RED-MARK POSITION THE TABLE MOVEMENT/ HYDRAULIC PUMP CAN BE RE-STARTED.

DRESSING OF WHEEL DURING EXECUTION OF A GRINDING PROGRAM

1. Stop the ongoing program by activating the STOP-button 2.

2. Turn HANDLE FOR SETTING OF TABLE SPEED (V) to blue-mark position.

3. Feed down vertically the dressing diamond by means of the knob 3 (page 16-17) - for example 1/2 a graduation = 0.025mm - and feed the diamond across the wheel by turning the lever (2) forwards/backwards page 16-17.

4. Compensate for the dressing of the wheel by means of the ELECTRONIC HANDWHEEL 25. The value is shown in DISPLAY OF THE RELATIVE POSITION OF WHEELHEAD AND CROSS SADDLE 22 - in this example 25 my.
This display is resetted automatically when the grinding program is interrupted.

5. Start table movement by HANDLE FOR SETTING OF TABLE SPEED (V). Turn to green-mark position.

6. Re-start the grinding program by activating the START-button 1. The value shown in DISPLAY 22 before the interruption of the grinding program appears again by activating START-button 1.

CHANGE OF THE VERTICAL AND CROSSFEED RATES DURING EXECUTION OF A GRINDING PROGRAM

Change of the vertical feed rate

1. Move the cursor to DISPLAY 18 by means of CURSOR-button 14.

2. While display 18 flashes, key-in the requested/ amended vertical feed rate on the numerical touchpanel and the confirm value by activating the ENTER-button 15.

Change of the intermittent crossfeed rate

1. Move the cursor to DISPLAY 19 by means of the CURSOR-button 14.

2. While display 19 flashes, key-in the requested/ amended intermittent crossfeed rate on the numerical touchpanel and confirm the value by activating the ENTER-button 15.

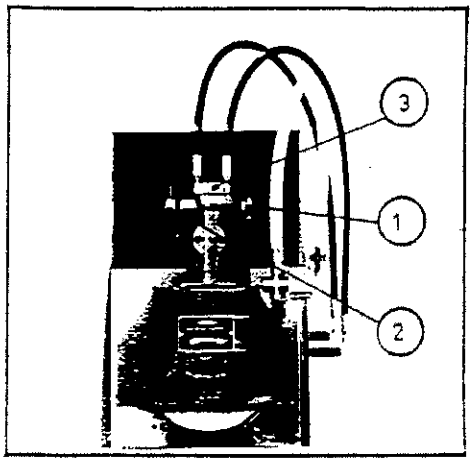
Change of the continuous crossfeed rate

1. Move the cursor to DISPLAY 20 by means of the CURSOR-button 14.

2. While display 20 flashes, key-in the requested/ amended continuous crossfeed rate on the numerical touchpanel and the confirm the value by activating the ENTER-button 15.

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 wheel in standard execution.



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

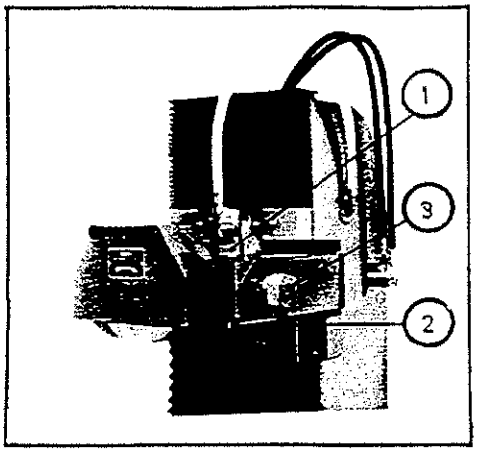
The diamond is fed down vertically by means of the knob (3) and the speed by which the diamond is fed across the wheelface is adjusted by means of the knob (1).

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 SETTING 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).



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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 SETTING 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 DRESSERHEAD.

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 EFFICIENT DRESSING.

Instruction in the use of the hydraulic dresser, see page 16 and 17.

Balancing of the grinding wheel

Balancing of 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.

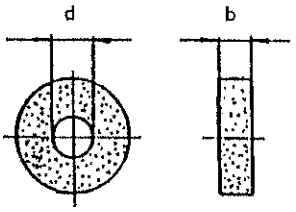
4. Remount the assembly on the wheel spindle and redress wheel before starting grinding.

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:

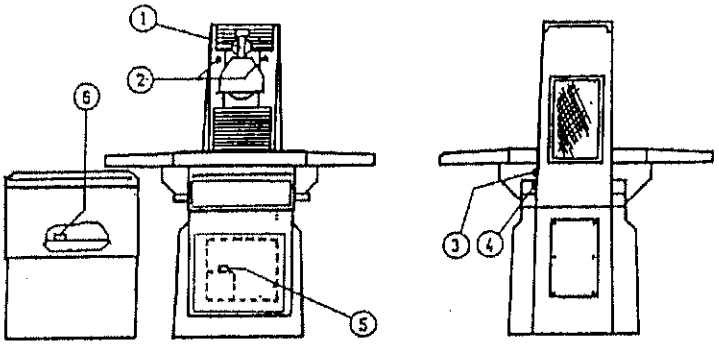
TYPE SJ	HZ	D	d	STD. b	EXT. b
1026/1032	50/60	350 (14")	127 (5")	40 (1½")	50 (2")
1424/1432	50/60	350 (14")	127 (5")	50 (2")	76 (3")
1832	50/60	350 (14")	127 (5")	50 (2")	76 (3")



6.4 Lubrication chart

Lubrication should take place according to the timetable specified in the lubrication chart.

See also the comments on lubrication chart.



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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	MAGNAGLIDE D68	MACCURAT 68	
2.	SPINDELSLÆDE SPINDLE SLIDE SPINDELSCHLITTEN	HVER UGE WEEKLY JEDE WOCHE	VACTRA NR. 2	GLIDEWAY ZX 68	TONNA T.68	FEBIS K. 68	WAGNER Q8 68	WAY LUBRIC 68	MAGNAGLIDE D68	MACCURAT 68	
3.	VERTIKALSPINDEL VERTICAL LEADSCREW VERTIKALSPINDEL	HVER UGE WEEKLY JEDE WOCHE	VACTRA NR. 2	GLIDEWAY ZX 68	TONNA T.68	FEBIS K. 68	WAGNER Q8 68	WAY LUBRIC 68	MAGNAGLIDE D68	MACCURAT 68	
4.	TVÆRSPINDEL CROSS SPINDLE QUERSPINDEL	HVER UGE WEEKLY JEDE WOCHE	VACTRA NR. 2	GLIDEWAY ZX 68	TONNA T.68	FEBIS K. 68	WAGNER Q8 68	WAY LUBRIC 68	MAGNAGLIDE D68	MACCURAT 68	
5.	SMØREOLIEBEHOLDER LUBR. OIL TANK SCHMIERÖLBEHÄLTER	HVERT ÅR YEARLY JÄHRLICH	VACTRA NR. 2	GLIDEWAY ZX 68	TONNA T.68	FEBIS K. 68	WAGNER Q8 68	WAY LUBRIC 68	MAGNAGLIDE D68	MACCURAT 68	Capacity 5 ltr.
6.	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	MAGNAGLIDE D32	HLP-D 32	Capacity 70 ltr.

FUNDAMENTSPLAN
FOUNDATION
FUNDAMENT

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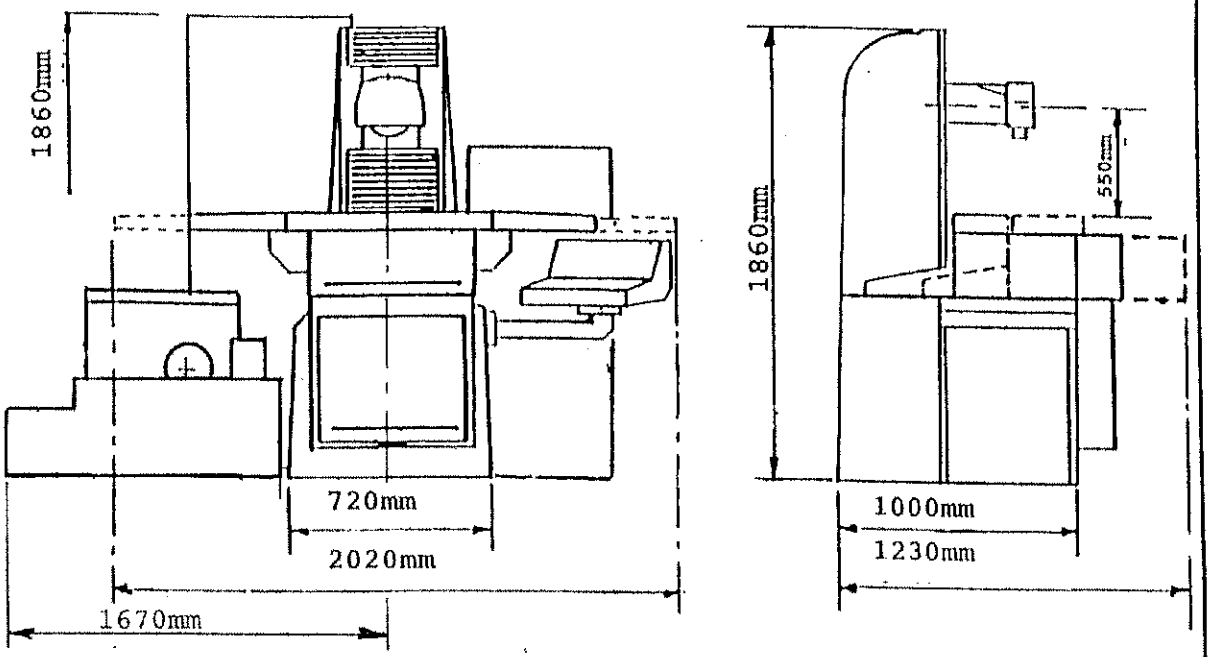

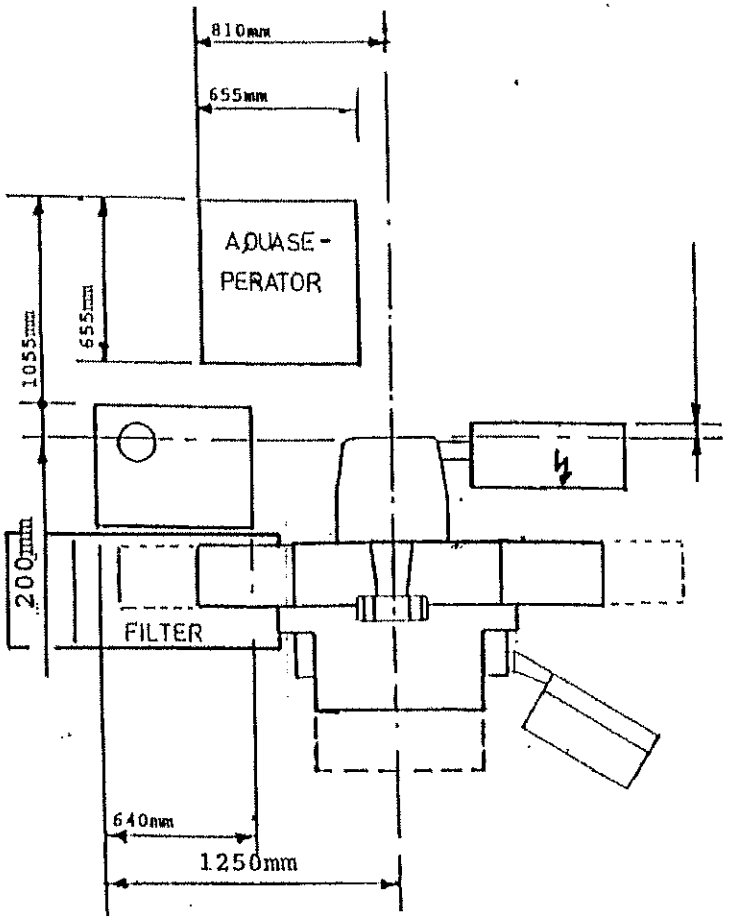

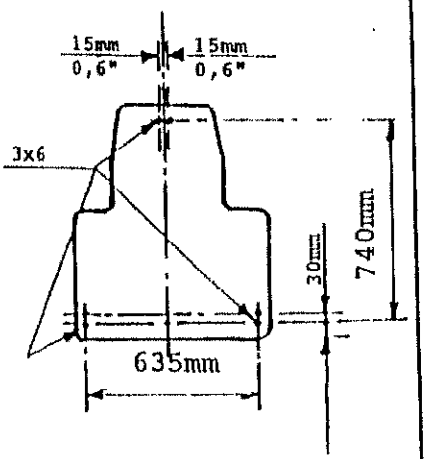

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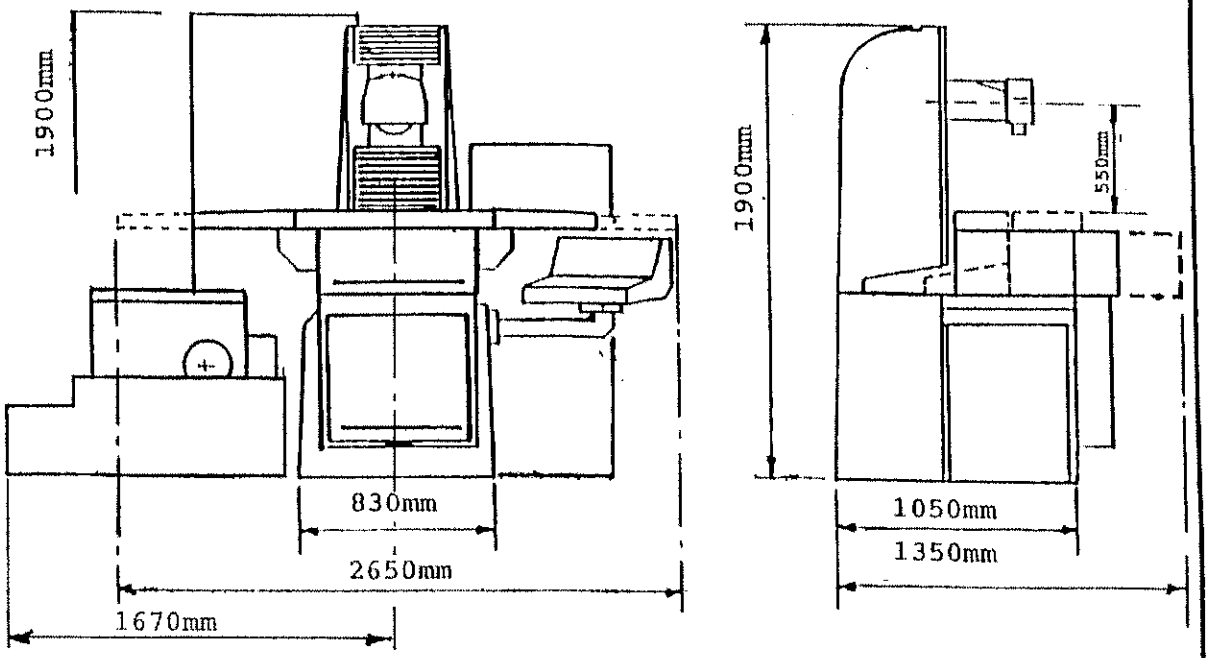
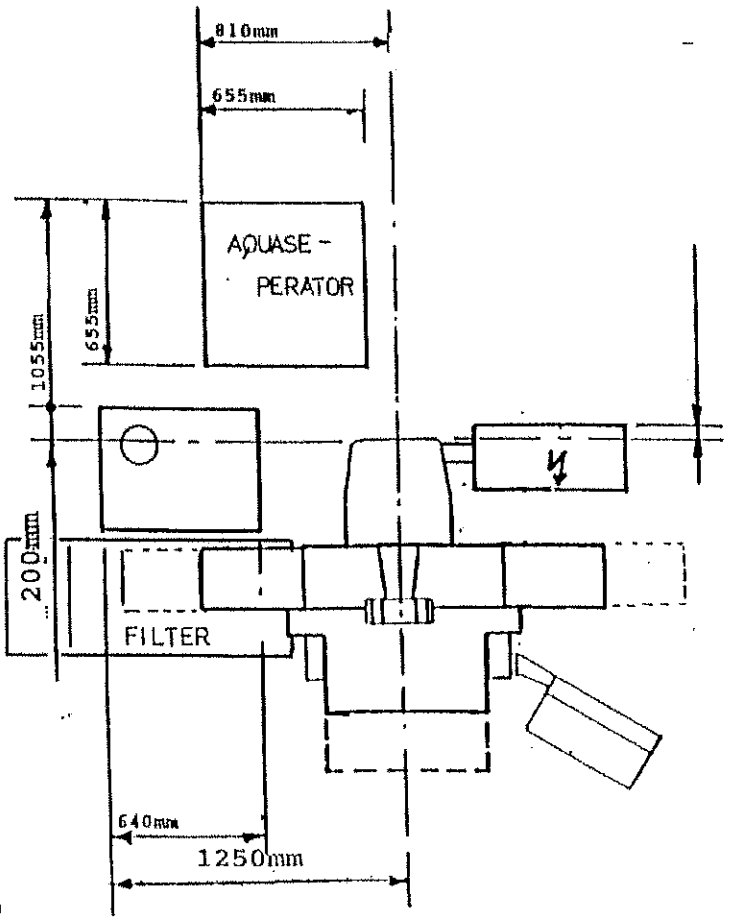
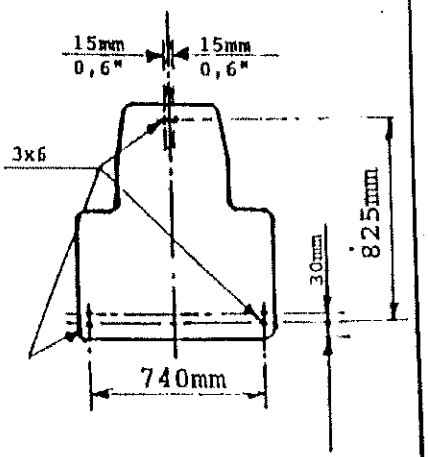
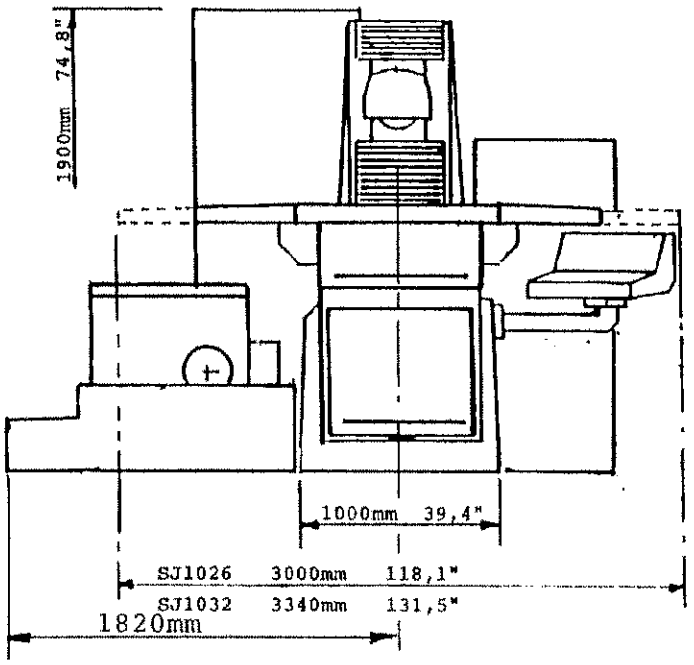


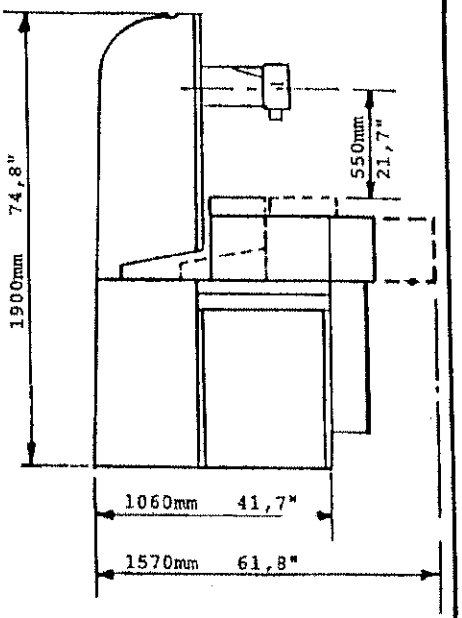


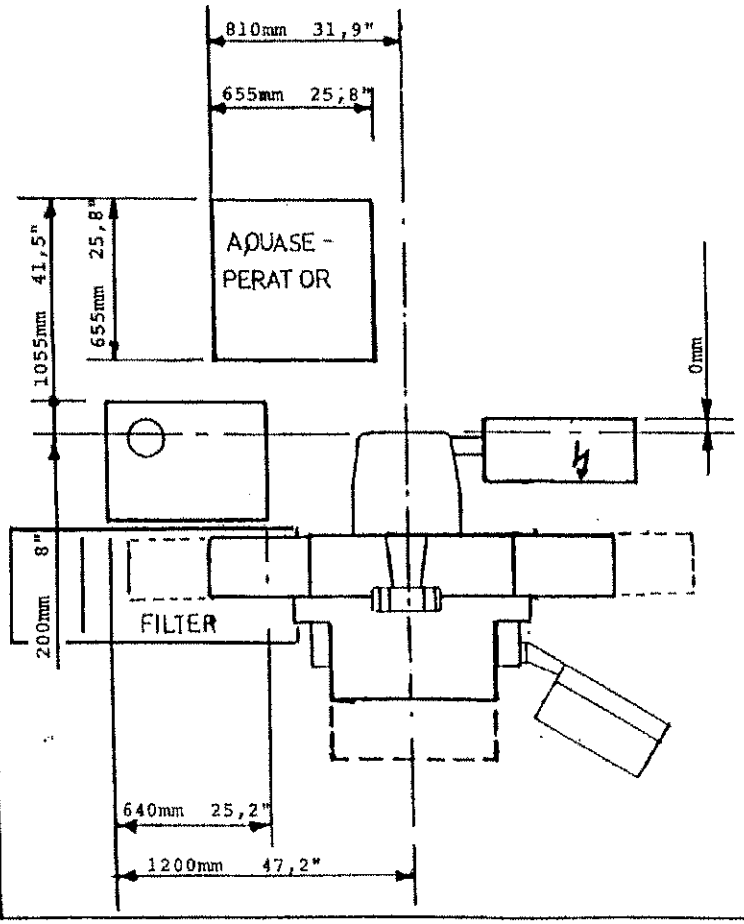


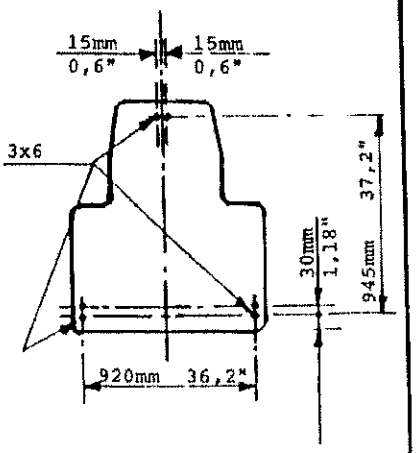
FUNDAMENTSPLAN
FOUNDATION
FUNDAMENT

SJ 1026
SJ 1032



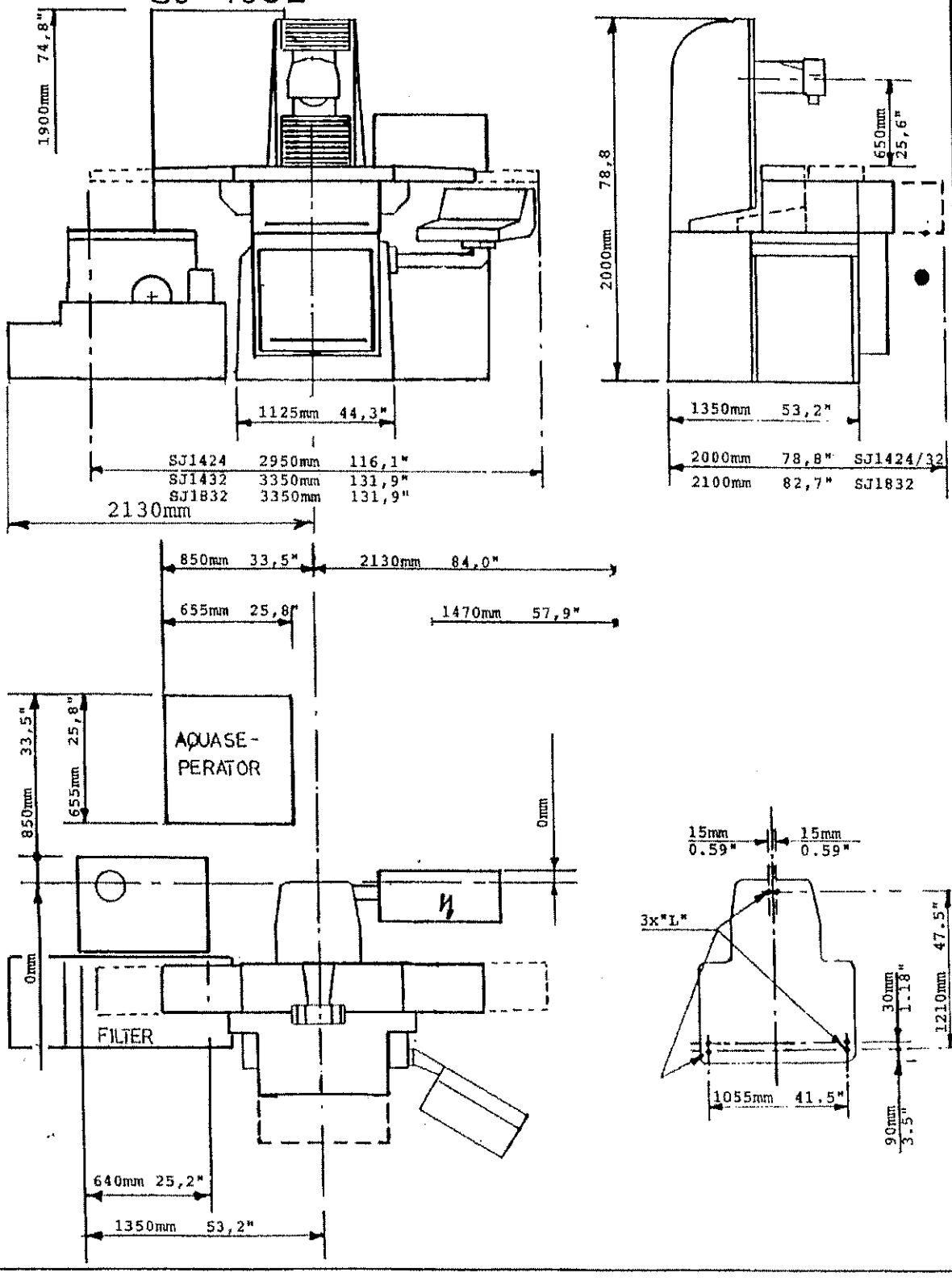




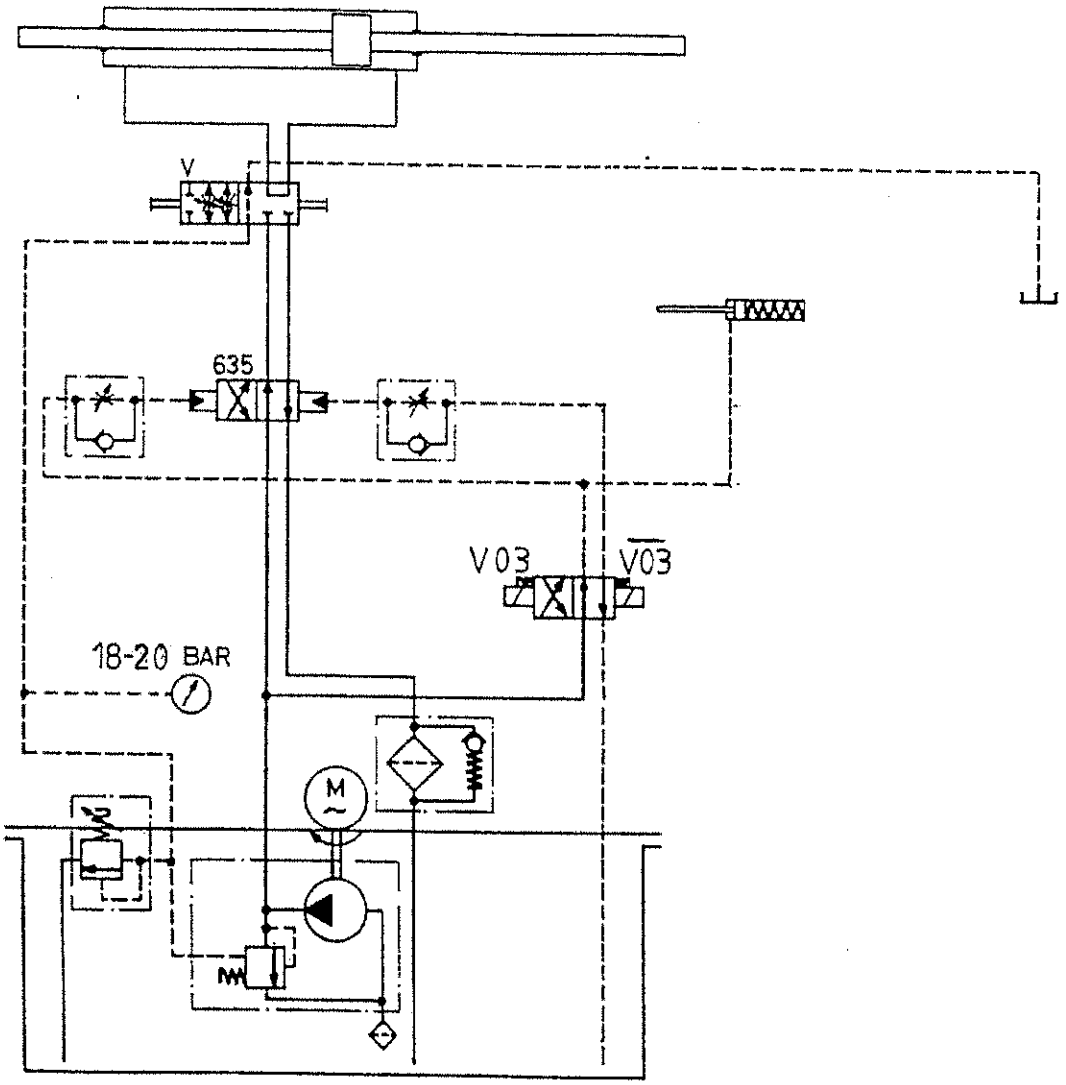


FUNDAMENTSPLAN
FOUNDATION
FUNDAMENT

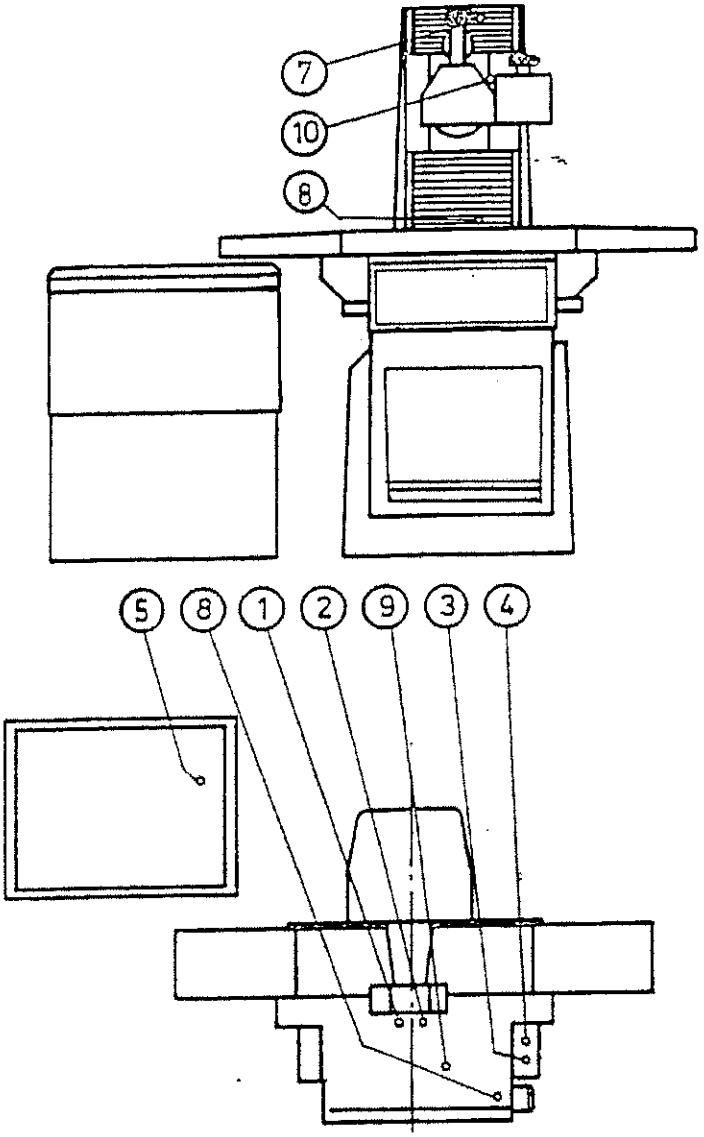
SJ 1424
SJ 1432
SJ 1832



HYDRAULISK SYSTEM
HYDRAULIC SYSTEM
HYDRAULISCHES SYSTEM



LOCATION OF SWITCHES



POS.		OPERATION
1	TR	Proximity switch, table reversal, right
2	TL	Proximity switch, table reversal, left
3	SB	Proximity switch, saddle reversal, back
4	SF	Proximity switch, saddle reversal, front
5		Solenoid V03-$\overline{V03}$, table reversal, right/left
7	YH	Switch, for vertical movement, upper position
8	YB	Switch, for vertical movement, lower position (1424/32 + 1832 only)
9	TF	Switch, for stop of table movement
10	DL	Switch, dresser in locked position (Option).
11	ZB	Switch f. cross movement, front
12	ZF	Switch f. cross movement, back

TROUBLE SHOOTING

Machine not grinding parts flat

1. Excessive heat expands work. Adjust coolant application, downfeed too excessive, table speed too slow, wheel dresser 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).

3. Check that voltage to magnetic valves is correct.

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

5. Check power supply.

AC-Motors

1. Check whether an overload has disengaged.

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

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

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

5. Check main supply.

Vertical movement

See specification of components on electric diagrams.

Power rapid vertical movement

1. Check that push button 11 on 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 control-interface-module by removing 4 screws.
   Pay attention to location/placing of all plugs before demounting the control unit.

No automatic vertical feed

1. Check continuous movement by stepping motor.

FAULTS MESSAGES ON CONTROL SWUO 3

All alarm messages are shown on the lowest display (No.22) as a one-figure number.

Fault No.

1. **Fail in communication**
SWUO3 is kept active by SIM01 and vice versa, by which all outputs are disconnected to inactive position.
Is reset by restarting the system.
Fault on SIM01, SWUO3 or communication cables.

2. **Emergency stop activated.**
All motors are disconnected and the displayvalues are set to default-value.
Remove alarm signal by disengaging the emergency stop.

3. **Line circuit-breaker disconnected.**
All motors are disconnected.
Remove faultsignal by reengaging the line circuit-breaker manually.

4. **Proximity switches for the table movement (TL/TR) are activated at the same time.**
Hydraulic pumpmotor is disconnected.
Stop dogs for table movement must be moved from each other.

5. **Proximity switches for the saddle movement (SF/SB) are activated at the same time.**
Hydraulic pumpmotor is disconnected.
Stop dogs for cross movement must be moved from each other.

6. **Fault on the servomotor-system**
Fault on SIM01, the servodrive, the servointerface or on the frequency converter (optional equipment)

	TEST SHEET	JAKOBSEN

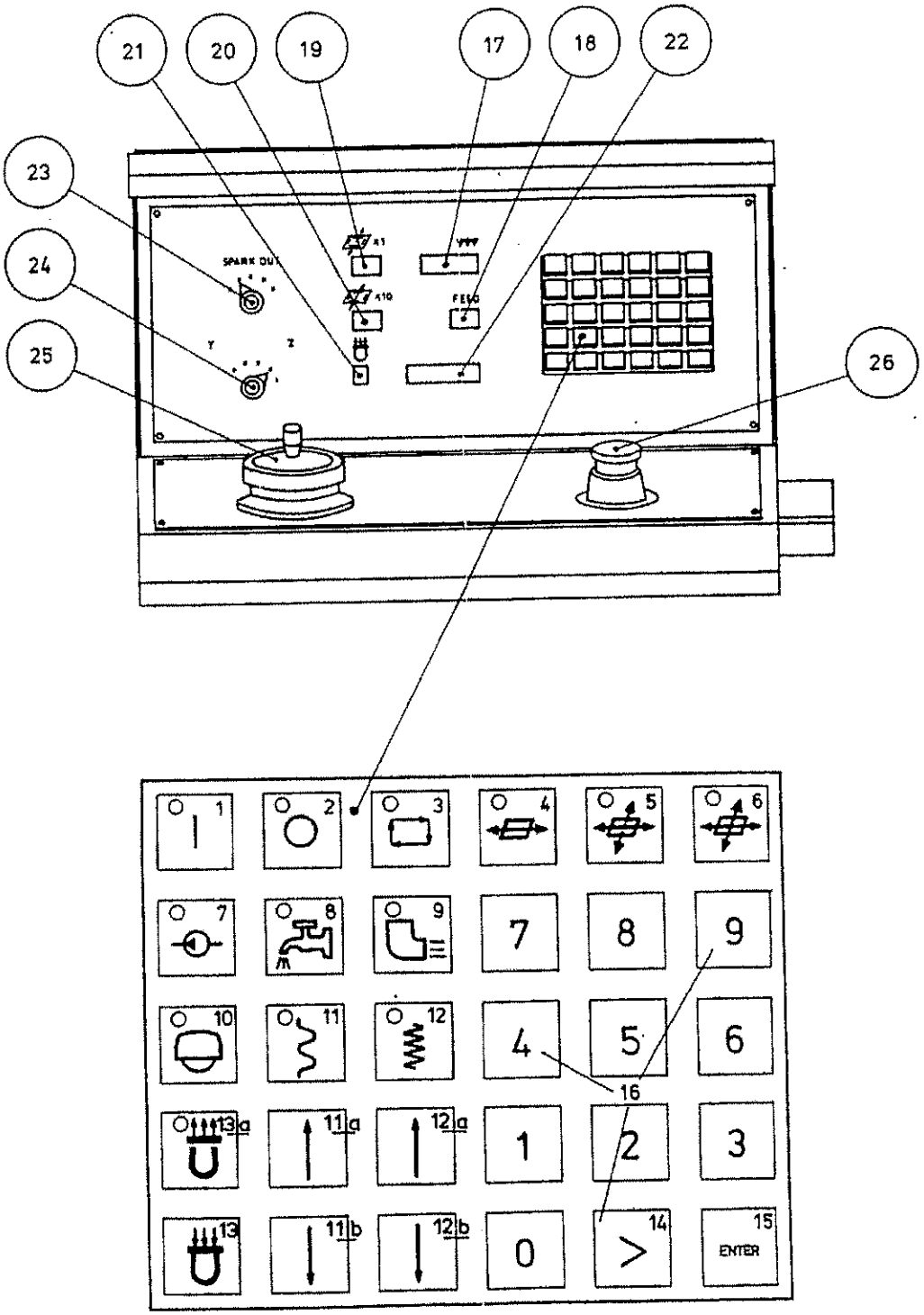
DIN 8632

MACHINE TYPE:

MACHINE SERIAL NO.:

	TEST		Tolerance permitted	Tolerance measured
G2	Bed level - longitudinal direction	a - b	0,02 in 1000 mm	
	Bed level - transverse direction	c - d	0,02 in 1000 mm	
G3	Surface of table parallel to the longitudinal travel	a	0,01 in 1000 mm.Max 0,005 in 300 mm	
	Surface of table parallel to the transversal travel	b	0,005 in 300 mm	
G4	T-groove of table parallel to the longitudinal travel		Max. 0,01 in 1000 mm.Max. 0,005 in 300mm	
G5	T-groove of table at right angles to the transversal travel	a b	0,01 in 100mm. Max. 0,03 in the movement	
G6	Vertical movement of wheel-head at right angles to the transversal direction of table	a b	0,01 in 100mm. Max. 0,05 in the movement	
G7	Runout of spindle, radial	a b	0,005	
G8	Runout of spindle, axial		0,005	
G9	Grinding spindle parallel to the table. Measured at 180° swivelling arm 100 mm	a b	0,02 in 200 mm	
G10	Grinding spindle at right angles to the T-groove of table. Swivelling arm 200 mm	a b	0,02 in 400 mm	
P1	Test grinding of 5 test pieces		0,01 in 400-800 mm	

DATO:	SIGN.:	SIDE: 1/2


21
20
19
17
18
22
23
24
25
26
SPARK OUT
X
Y
Z
FEED
1
2
3
4
5
6
7
8
9
10
11
12
13a
11a
12a
13
11b
12b
7
8
9
4
5
6
16
1
2
3
0
14
>
15
ENTER