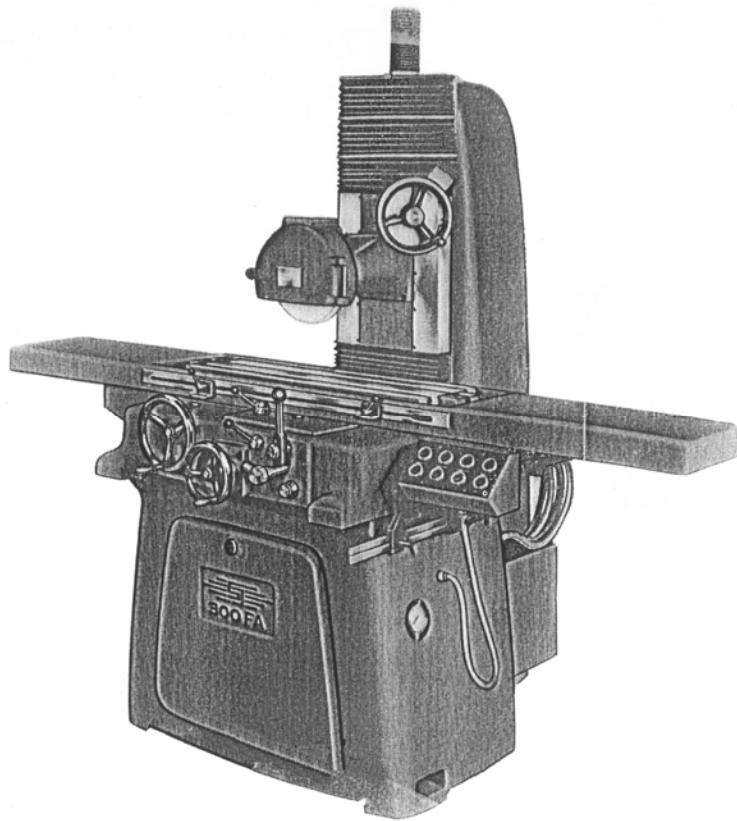


JAKOBSEN

PLANSLIBERE

OPERATION MANUAL



SJ16 MACHINE

Version 1GB

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Contents

Text	Page		Page
Lifting	3	Adjustment of the Hydr. System	5
Foundation	3	Mounting the Wheel	5
Electrical Controls	3	Dressing the Wheel	6
Preparations	4	Grinding Wheels	6
Lubrication	4	Working Troubles	7
Operation	4	Hydraulic table operation	7
Air in the Hydraulic System	5	Automatic Downfeed	7
Manual Crossfeed	5	Electrical Equipment	7
Automatic Downfeed	5	Grinding Finish	7
Drawings			
Foundation	9	Table Cylinder	21
Lubrication Chart	10	Control Knob Parts	22
Wiring Diagram	11	Hydraulic Valves	23
Switchgear Cabinet	12	Automatic Downfeed System	24
Control Knobs	13	Hydraulic Power Unit	25
Hydraulic System	14	Lubrication Pump	26
Hydraulic Pipes and Fittings	15	Normal Equipment	27
Cross Section	16	Hydraulic Diamond Dresser	28
Counterweight	17	Coolant System	29
Wheel Spindle	18	Table Handfeed System	30
Vertical Feed System	19	Test sheet	31
Cross Feed System	20		

When ordering spare parts, please give this information:

Serial no. of machine (stamped on table).

Voltage and cycles of power supply.

The name or function of the part.

The part number as indicated on one of the drawings in this book.

Important:

Release the counterweight before operating the machine.

Lifting

The proper method of rigging the machine is shown on page 9. Use two rods 1½" diameter and 4 feet long and two straps approx. 18 feet long.

Foundation

See page 9. The Machine should be erected on a solid, vibrationless floor. Three steel plates C are placed under the adjusting-screws B and the table surface is levelled by means of the adjusting screws. The machine may be bolted to the floor with three ½" bolts, and concrete may be cast under the edge of the base.

The Machine must be supported on the adjusting screws only.

Electrical controls

Wiring diagram page 9. Switchgear cabinet page 12. Connection to power supply is at the bottom of the cabinet at rear, left side of machine.

The supply should be protected by 15. amp. slow fuses.

Check direction of rotation of the wheel spindle just after connecting. The spindle should rotate clockwise as seen from the front. This being the case, the pump motor and the vertical rapid traverse motor will also rotate correctly.

Check rotation of coolant pump separately.

Magnetic starters for all motors are located in the cabinet.

The starters for wheelspindle-motor and pumpmotor are with overload protection.

The vertical power feed motor is protected by a limit switch, No. 1005, page 16, stopping the wheel head in top position. Furthermore is built in a switch, No. 1006, page 24, the function of which being to prevent starting the vertical power feed motor when automatic downfeed is engaged.

Preparations

When the machine is erected on the foundation, the counter-weight should be unlocked by removing the bolts D and the traverses; see page 9.

The left hand side piston rod for the table cylinder should be reassembled (see page 21). First check that the rod is completely without burrs or scars; then insert the rod, thread-end first, into the bronze stuffing-box 582; be careful not to damage scraper-ring. The left side rod is screwed into the right-hand side rod; use two spanners, one on each rod.

Mount the table end covers; add jointing-paste to the assembling surfaces.

The right hand side rod is connected to the end cover, the disc springs being arranged as shown on drawing.

Lubrication

Before operating, fill on oil according to the lubrication chart page 10. The table- and

saddleways are power-lubricated; the lubrication pump is shown on page 26; it is energized by the hydraulic system, but circuits for the lubricant and the hydraulic fluid are separate.

The function is checked through the control glass on top of the saddle; and impulse should appear at every full cycle of the table.

Moving parts which are not to be lubricated according to the chart are running in permanently greased, sealed bearings. They should be lubricated only when parts are disassembled for overhaul. This includes the wheel spindle.

Operation

See drawing page 13.

After oil-filling and preparing the table cylinder the machine is ready for operation.

Turn table control lever K left (stop).

Start the hydraulic pump, and read the pressure gauge; the pressure should be 300 p.s.i. (22 kg/cm²). Pressure may be adjusted on the hand wheel No. 676, page 25 (remove front cover).

The table is started by turning lever K clockwise.

The position of lever M indicates the direction of the saddle travel; lever M is controlled manually or automatically by the lever Q and the cross-feed dogs Z.

The cross-feed selector **L** has three positions:

Left position: Continuous, rapid traverse.

Intermediate position: Intermittant cross-feed at table reversals.

Right position: No cross-feed.

The increments for the intermittant cross-feed are adjusted on the knob **N**; the stem carries a scale.

The lever **R**: see the chapter „automatic downfeed“.

Air in the Hydraulic System

will disturb the functions.

The air is eliminated as follows:

Table dogs and cross-feed dogs are placed in their extreme positions.

Run the table at a low speed; make the table reciprocate a few times with full stroke by manipulating the lever **E**.

Let the saddle go the full travel a few times using the rapid cross movement.

Whenever the motions become jerky or unstable, this de-airing operation should be performed.

Manual Crossfeed Control

When the handwheel **X** is to be used:

Run the saddle towards the column with the hydraulic rapid traverse and leave the lever **M** in inward position and the lever **L** in left position; leave the pump running.

Automatic Downfeed

is engaged by turning lever **S** forward. The downfeed-increments are adjusted on the knob **T**; one division on the stem is equivalent to one division on the downfeed hand wheel. The total stock removal is adjusted on the slip **W**, while lever **S** is in the neutral position. When the slip **W** hits the pointer **U**, the downfeed stops. When the pointer **U** is turned backwards, the downfeed will continue until it is stopped by the operator.

The lever **R**:

Left position: Automatic downfeed at every saddle reversal.

Right position: Automatic downfeed at the table reversal in one end.

The position is for plunge-grinding only.

Adjustment of the Hydraulic System

The deceleration of the table-reversals can be adjusted.

On page 23 is shown the valve unit. On top of the housing is shown a plug 533 covering the adjusting screw 532. When the screw no. 532 is turned clockwise, the table will be further decelerated at the reversals, and the reversals will be smoother, but slower. When this adjustment is made, the screw should be turned only $\frac{1}{4}$ turn at a time.

Mounting the Wheel

Careful balancing of the wheel is essential for the quality of the work.

A new wheel should be mounted on the

machine and be dressed before being balanced.

A balancing arbor No. 2013 is supplied as standard equipment.

Dressing the Wheel

The wheel could be dressed from the table by the diamond no. 1989 in the holder no. 2024 mounted on the magnetic chuck; the diamond should be placed approx. 1" to the left of the wheel center.

The diamond is passed across the wheel by the hydraulic continuous cross-feed.

A Hydraulic wheel dresser for wheel head mounting is supplied as optional equipment

(see page 28). The lever 818 controls the direction and the knob 817 controls the speed of the cross-feed.

Grinding Wheels

The machine is furnished with a general purpose wheel.

The wheel manufacturers will give advice in selecting the right type of wheel for any particular job.

The wheel size:

Diameter 10"; max. width 1½"; hole 3".

The speed is 2300 R.P.M.

Working Troubles

Hydraulic Table Operation

In any case of trouble first of all:

- 1) check oil pressure and adjust to 300 p.s.i. (22 kg/cm²)
- 2) check oil level in tank
- 3) evacuate the air from the system as described on page 5.

If the table reversals are jerky or too slow the hydraulic system may need adjustment, read page 5.

If the pressure gauge is at zero while the motor is running:

Check direction of rotation of the pump; the pump should rotate counterclockwise as seen from front of machine.

Check tension of V-belt;

V-belt may be tightened by the screw 1723, page 25.

The first time the pump is started after oil filling, the pump may be too dry and therefore unable to suck the oil from the tank.

In that case, oil is added through one of the hoses 1271 on page 15. The hose next to the column is disconnected at the upper end; hydraulic fluid is poured into the hose; the hose is reassembled and the pump is started.

The filter No. 1951 page 25 may be blocked. In that case the tank must be pulled out and the pump dismantled. The filter is cleaned in kerosene.

Automatic Downfeed

In case of troubles:

Bleed the hydraulic hose by opening the screw V.

If the pawl is working (can be heard) without moving the hand wheel the friction clutch should be tightened (see page 24).

The parts nos. 553 and 570 have threaded holes and are screwed on the shaft 177. When these parts are screwed further up on the shaft, the friction clutch is tightened.

Electrical Equipment

If all motors are dead:

Check the fuses.

Note: The vertical feed motor is switched off when automatic downfeed is engaged.

Grinding Finish

A poor finish may have one of these reasons:
Wrong choice of wheel for the job at hand.
Wheel out of balance.

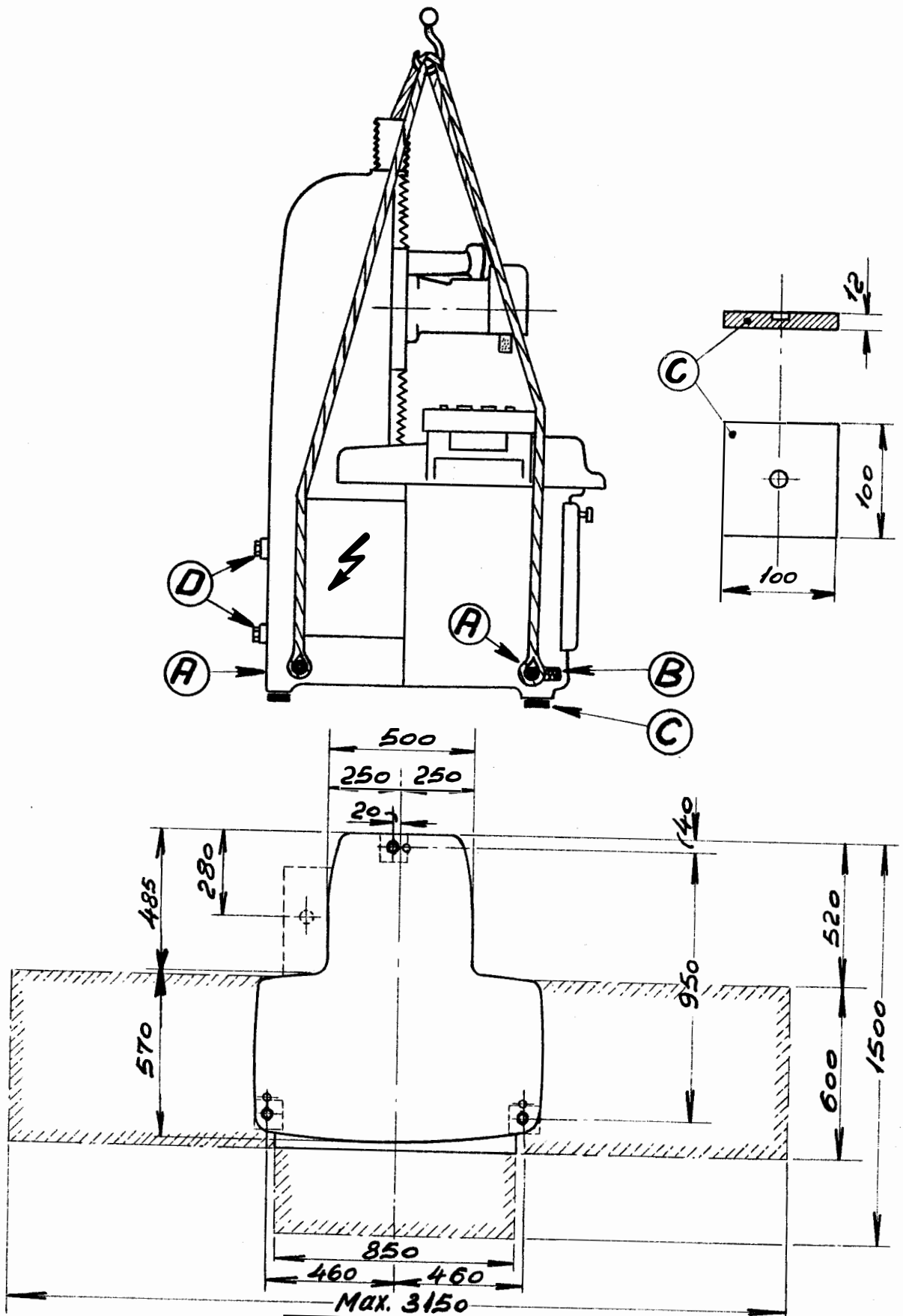
Wheel not dressed properly.

These points were mentioned above.

Excessive play in the spindle bearings may also have a bad influence on the performance.

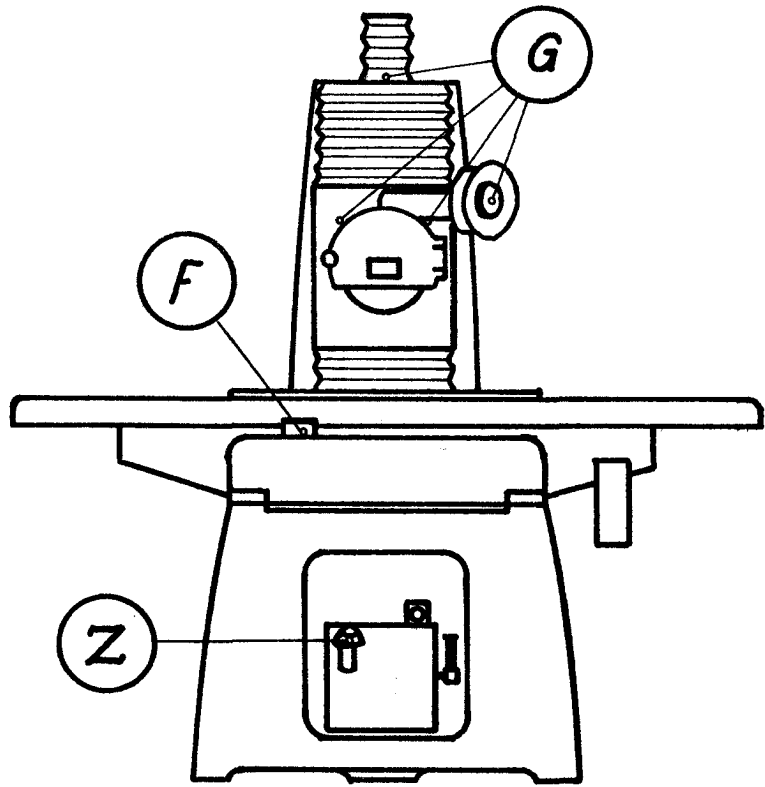
The radial play in the front-bearing should be .0001"—.00015" (0,002—0,004 mm).

It is strongly recommended that spindle adjustments be left to the factory.

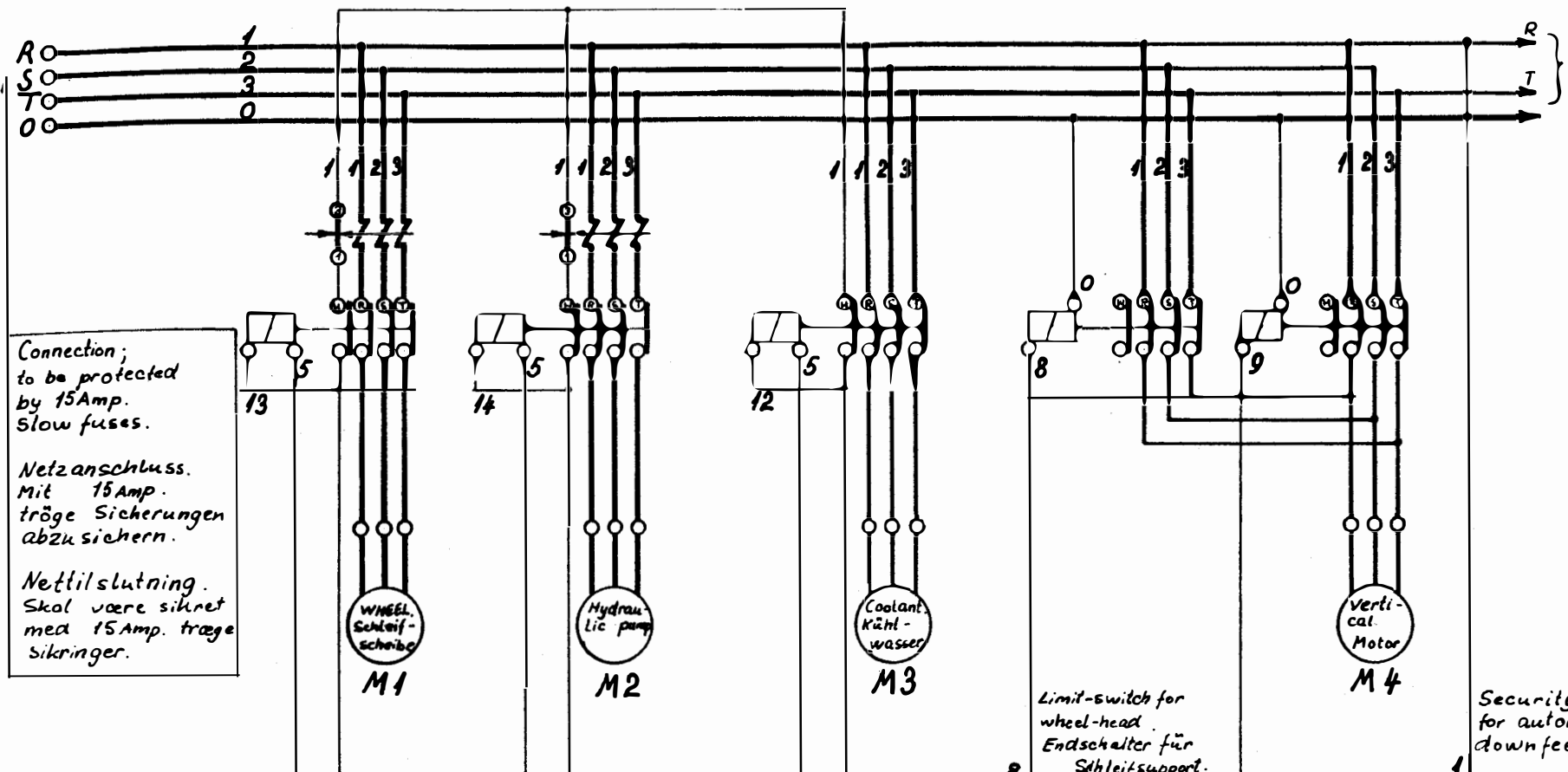


Fundament.

SJ-16



Pos.	LUBRICANT SCHMIERMITTEL SMØREMIDDEL	METHOD OF LUBRICATING VORGANG SMØREMETODE	INTERVAL
G	VACTRA No. 2 (Mobil Oil product)	HANDPUMP HANDFETTPRESSE FEDTPRESSE	1 WEEK 1 WOCHE 1 UGE
F		OILFILLING 1 GALLON ÖLFÜLLUNG 4 LITER PÅFYLDNING 4 LITER	CHECK REGULARLY. CHANGE EACH YEAR. ÖLSTAND PRÜFEN. JÄHRLICH UMWECHSELN OLISTAND KONTROLL. UDSKIFT HVERT ÅR
Z	VACOULINE 1405 (Mobil Oil product)	OILFILLING 13 US GALLONS ÖLFÜLLUNG 11 IMP. GALLONS PÅFYLDNING 50 LITER	CHANGE EACH YEAR. JÄHRLICH UMWECHSEL UDSKIFT HVERT ÅR

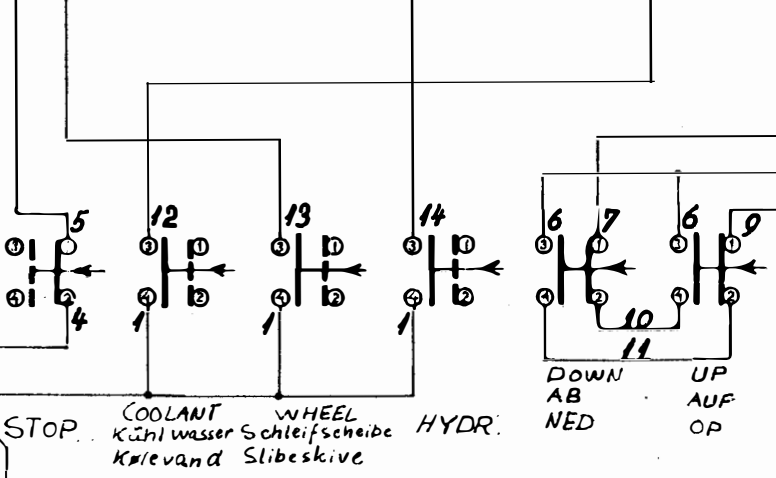


Connection;
to be protected
by 15Amp.
Slow fuses.

Netzanschluss.
Mit 15Amp.
träge Sicherungen
abzusichern.

Nettilslutning.
Skal være sikret
med 15Amp. trøge
sikringer.

Ekstra tilbehør
Aut. stop for
tilspænding.
Optionalequipment
Aut. stop-switch
for downfeed
Sonderzūbehør
Aut stop schalter
für schein-zustellung



Limit-switch for
wheel-head.
Endschalter für
Schleifsupport.
Endestop for
Slibedok.

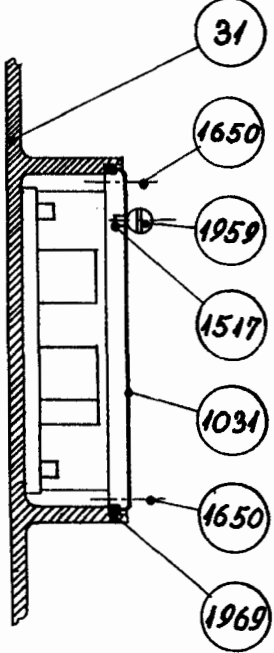
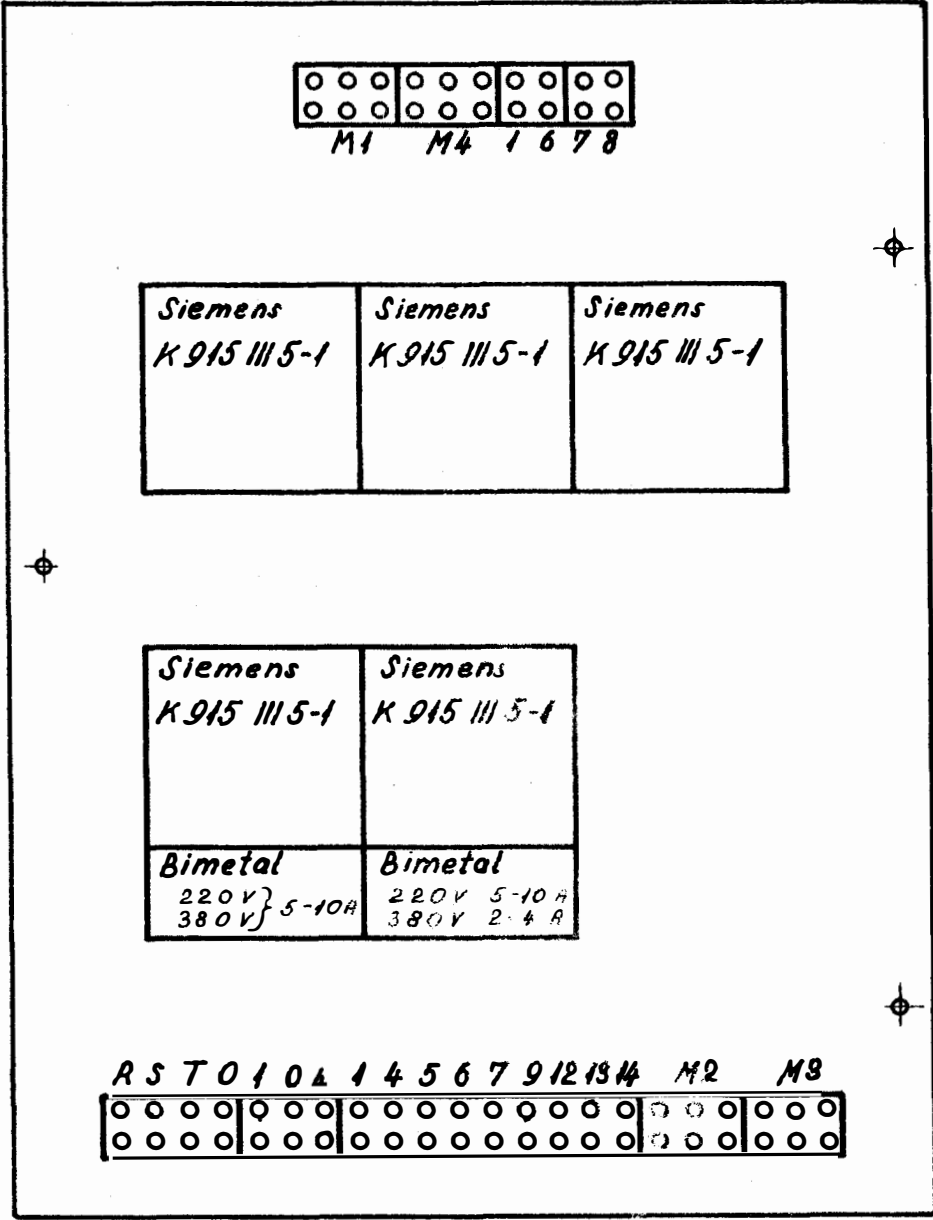
Security-switch
for automatic
down feed.

Sikkerheds-
schalter
für aut.
Scheiben-
zustellung.

Sikkerhedsafbry-
der for aut. til-
spænding.

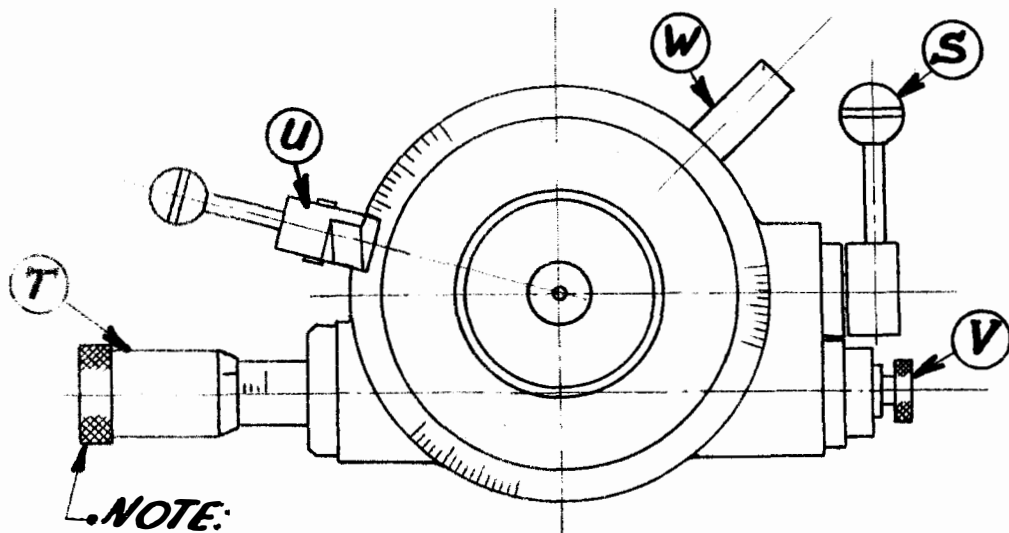
Push-buttons
Druckknöpfe
Trykknapper

<p>SJ 16</p>	<p>Wiring - Diagram Schaltplan El - diagram.</p>
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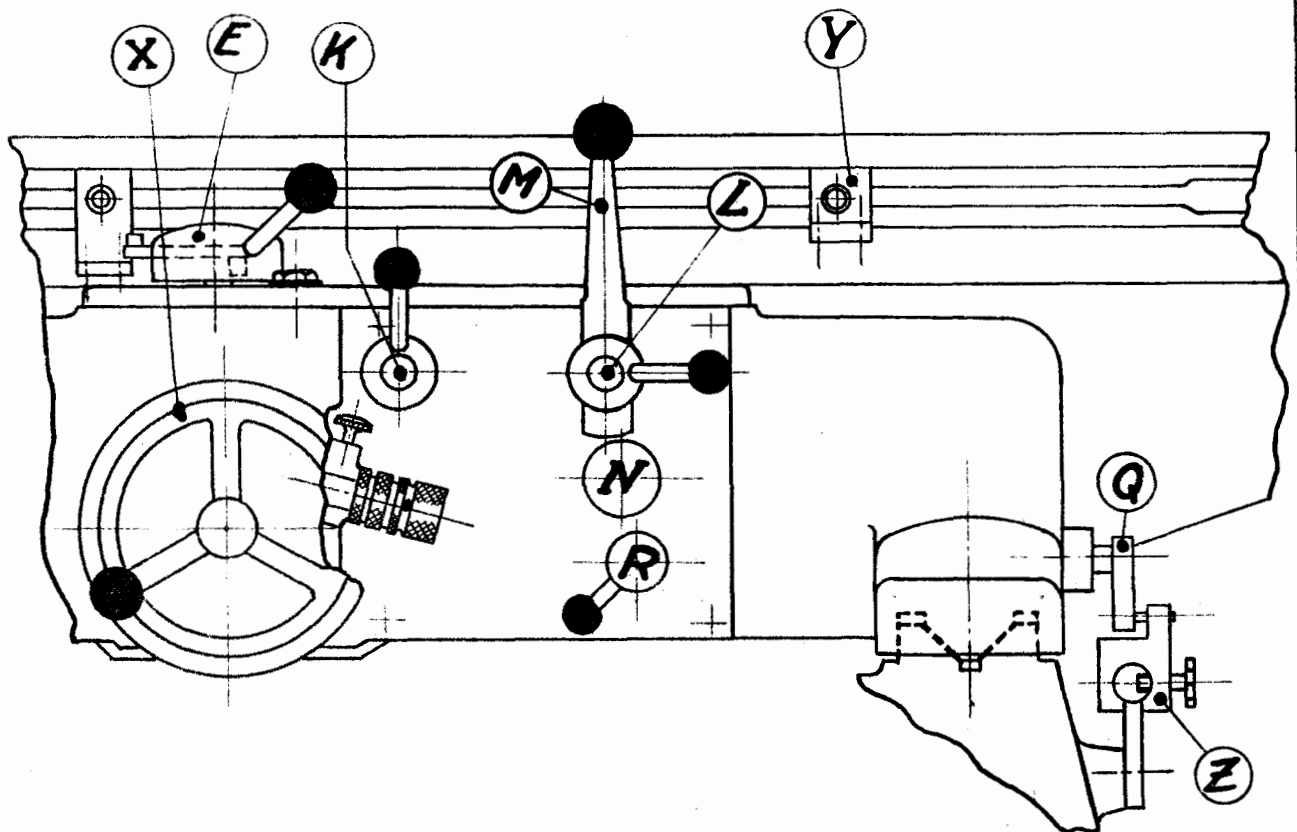
Switchgear Cabinet
 Schalttafel
 Relæskab

SJ16



.NOTE:

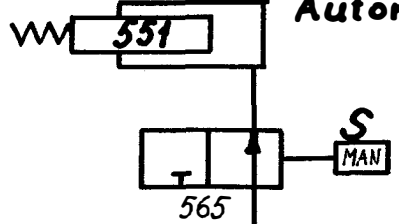
On machines with English units the knob T is mounted on the right hand side.



*Control Knobs.
Handgriffe.
Kontrollhandtag.*

SJ-16

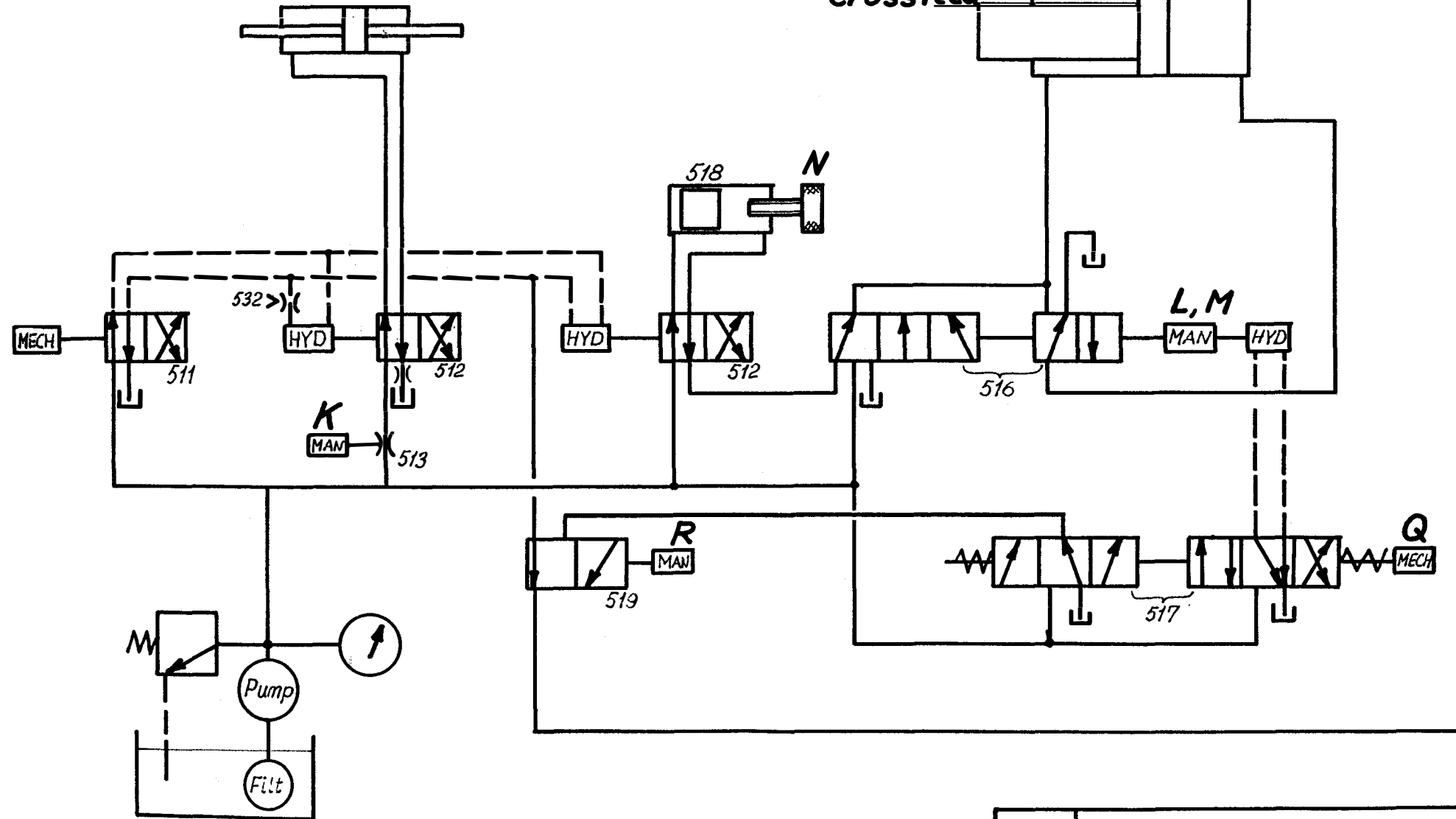
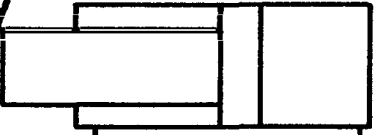
Automatic downfeed



Table



Crossfeed



SJ16 HYDRAULIC SYSTEM