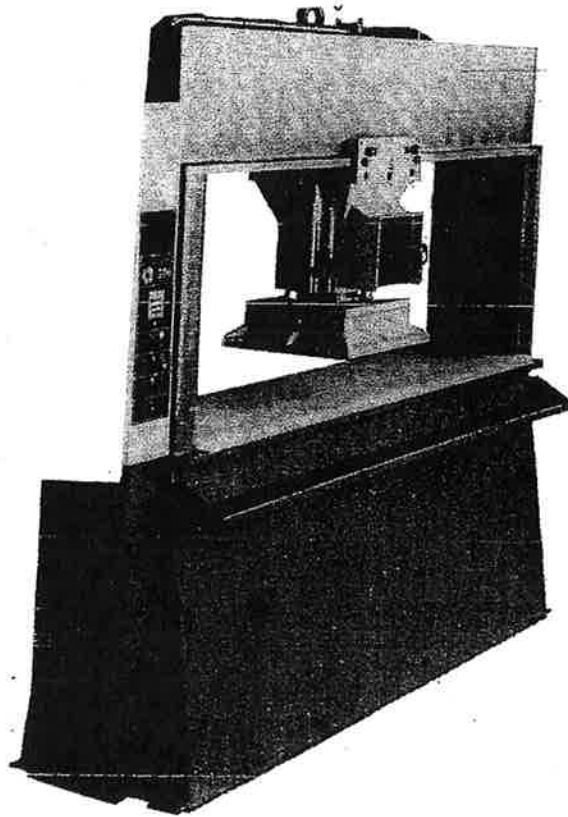


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# **GTH TRAVELLING HEAD PRESS**

## **SERVICE AND OPERATING INSTRUCTIONS**



MACHINERY GROUP

**EMHART**

# Counter Clock wise on engine & Fly wheel.

## INTRODUCTION

The GTH range of Travelling Head Cutting Presses are designed for cutting all forms of sheet or roll material. They are hydraulically and electrically operated and electrically controlled.

The press consists of three separate fabricated structures - base, shoulders and cross beam - which are joined together mechanically by pre-stressed tie rods. The resulting structure has excellent resistance to both torsional and bending loads under all cutting conditions.

Housed in the base fabrication are the motor drive parts, the central hydraulic group and the hydraulic sump; a compact arrangement with excellent access for service and maintenance.

The shoulders, which are important structural members, have located within them the tie rods that join the base and cross beam together. The left hand shoulder carries the hydraulic and electrical services to the travelling head.

The cross beam, a deep open box section, has precision machined slides to give guidance and support to the travelling head. The travelling head is suspended beneath the cross beam on special purpose heavy duty needle bearings that track on hard steel wear strips on the upper surface of the cross beam slides. The under side of the slides are adequately proportioned to give minimum surface loadings at maximum cutting load.

The travelling head drive mechanism is also housed in the cross beam; drive being transmitted by a heavy duty chain driven from a 0.75 HP motor through a reduction gearbox.

To reduce inertia the travelling head is an aluminium casting and houses the cutting platen, hydraulic cutting cylinder, cutting platen return springs, operator controls in the form of the 'joystick' directional controller, interlocked side push buttons, and bottom and top of stroke controls. Additionally the aside controller and operate/adjust selector are located on the travelling head; in essence a compact unit where all the cyclic operator controls are immediately to hand to aid and simplify operation.

Traverse movement of the travelling head is arrested by application of d.c. voltage to the traverse motor as opposed to the mechanical friction brake found on many competing machines. The d.c. converter and controller is a simple printed circuit board interlocked with the main control circuit and located in the left hand electrical box. The use of this system practically eliminates brake maintenance.

The electrical box as well as housing the main control circuit has on its front face all the non-cyclic operator controls such as mode selection and motor stop/start controls.

The main control circuit is of 'hardwired' configuration designed and developed by USM to give trouble free service under the most arduous operating conditions. All the control relays are of Sprecner and Schuh manufacture and use a standard contact pattern to simplify spares stocking and maintenance.

Easily accessible manual lubrication points have been provided at all the critical points with clearly identified lubrication frequencies.

In operation, downward movement of the 'joystick' controller and depression of either of the side push buttons directs oil to the cutting cylinder in the travelling head causing the cutting platen to move downwards. It is necessary to continue to engage the 'joystick' controller and side push button until the bottom of stroke limit switch has been made. Failure to do so will result in the head prematurely returning to its upper position. Contact with the bottom of stroke limit switch opens the hydraulic circuit to tank and the cutting platen is moved upwards by its return springs until the top of stroke limit switch is made closing the hydraulic circuit to tank and locking the cutting platen in the pre-selected upper position.

The control circuit is so designed as to incorporate an anti-repeat feature to prevent repeated tripping. In the interest of safety, it is also necessary for the operator to use both hands throughout the cutting and traverse operations.

Lateral movement of the 'joystick' controller and depression of either one of the side push buttons will traverse the travelling head in the direction of movement of the 'joystick' controller. Releasing the side push button or the 'joystick' controller will engage the traverse brake and stop the travelling head movement.

A low pressure stroke adjustment facility is incorporated which provides a simple and accurate system for setting the cutting stroke. There is a stroke compensation device which enables small changes to be made to the stroke under actual cutting conditions.

The aside movement of the travelling head can be made manually or can be predisposed to operate automatically at the completion of the cutting stroke. Additionally the aside movement of the travelling head can be set to initiate during the upstroke of the cutting platen offering considerable productivity advantages.

Pre-programming of the travelling head aside movement in the automatic mode is effected through the 'joystick' controller.

The press is available with two cutting forces - 20 metric tonnes and 30 metric tonnes - with two cutting speeds 110mm/sec. for the 20 metric tonnes machine and 75mm/sec for the 30 metric tonnes machine.

Additionally the press is available with range of cutting areas and cutting platen sizes as shown below together with the model code.

<u>Model Nr.</u>	<u>Cutting Area</u>	<u>Cutting Platen.</u>
GTH 1655	1.6 x 0.5M	0.5 x 0.5M ~
GTH 1665	1.6 x 0.65M	0.5 x 0.65M
GTH 2055	1.9 x 0.5M	0.5 x 0.5M ~
GTH 2065	1.9 x 0.65M	0.5 x 0.65M

Also available as standard option 16 is a cutting platen of 0.65 x 0.65M

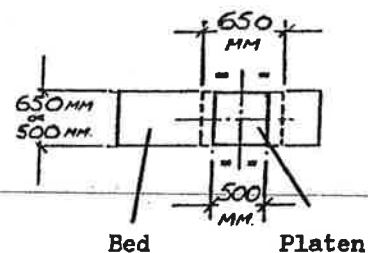
STANDARD OPTIONS

CUTTING PAD 25mm THICK  
50mm THICK

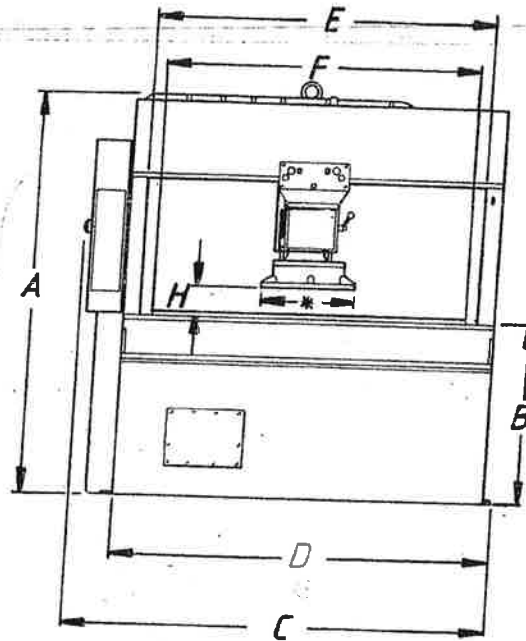
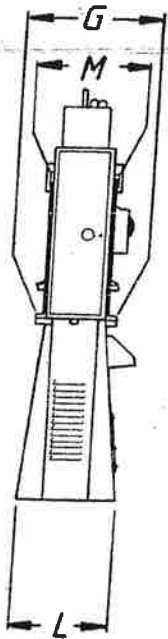
- S.O.1 - RESERVED FOR EXTENDED DAYLIGHT
- S.O.2 - RESERVED FOR PLAYED OUT MACHINES

- S.O.10 - BATCH COUNTER
- S.O.15 - Continuously Running Supplementary Fan.
- S.O.16 - CUTTING PLATEN EXTENDED TO 650 MM IN THE WIDTH DIMENSION - SEE BELOW.-

- S.O.8 - NIP ROLL FEED (OPENING 120MM)
- S.O.9 - ROLL HOLDERS: 4 ROLL - S09/4  
8 ROLL - S09/8



2. TECHNICAL DATA



\* See Options.

Machine Size		1655	1665	2055	2065
Overall Height	A	2.26M	2.26M	2.290M	2.29M
Table Height w/out cutting pad	B	1.0M	1.0M	1.0M	1.0M
Overall Length	C	2.20M	2.20M	2.51M	2.51M
Base Length	D	2.01M	2.01M	2.32M	2.32M
Distance Between Shoulders	E	1.7M	1.7M	2.0M	2.0M
Cutting Area	F x G	1.6 x 0.5M	1.6 x 0.65M	1.9 x 0.5M	1.9 x 0.65M
Daylight	H Max.	180	180	180	180
	Min.	30	30	30	30
Base Width	L	0.635M	0.635M	0.635M	0.635M
Cross Beam Width	M	0.40M	0.40M	0.40M	0.40M
Gross Weight (Dry)		1860 Kg.	1900 Kg.	2060 Kg.	2100 Kg.
Oil Capacity	Gallons	15	15	15	15
Recommended Oil		ISO 68	USM.300 BCW		
Max.System Pressure		270 bar	270 bar	270 bar	270 bar
Motors: Pump Kw.		2.25	2.25	2.25	2.25
Traverse Kw.		0.56	0.56	0.56	0.56
Max. Stroke mm		50	50	50	50



## SAFETY INSTRUCTIONS

### IMPORTANT:

This machine is provided with electrical controls and mechanical guarding carefully designed in the interest of increased operator safety and confidence.

The following safety instructions are provided in the same interest. Make these and all Operating/Service Manual instructions available to any persons involved in machine setup, operation and service so that they may read, understand, and follow the rules given.

#### 1. Machine Setup

- a. The gross weight of the GTH 2055 is approximately 2060 Kg and the GTH 1655 1860Kg. Where any question exists regarding floor capacity, have the proposed installation plan approved by a competent structural engineer.
- b. Make sure this machine is properly connected to the required electrical service by a competent electrician. Also, make sure the machine is grounded in accordance with all applicable national and local electrical codes.
- c. Provide the electrical service connection with a lockout device for the off position.
- d. See that all guards, enclosures and other safety devices are securely attached and in proper working order before releasing machine to production.
- e. Locate machine with sufficient clearance to allow safe and unrestricted personnel passage and work flow between this and adjacent work stations.

#### 2. Machine Operation

- a. Make no attempt to use this machine for other than its intended purpose of die cutting leather or other common materials within the capacity of machine.
- b. Operate this machine only with all guards, enclosures and other safety devices in place and in proper working order. These are provided for your protection and should be checked out at the start of every working shift. Make no attempt to defeat their purpose by alteration, by-passing, removal or maladjustment.
- c. Develop the habit of never placing hands in the cutting area and see that no other personnel approach the controls or be in a position to reach into the vicinity of the cutting die and traversing cutting head with power turned on.
- d. Wear clothing unlikely to be caught in any way by the downward or traverse motions of the cutting head.
- e. Keep all tools and dies off the table except for the die needed for cutting.

- f. To avoid damage to dies and machine always check the adjustment of head height relative to the die being used.
- g. Never leave the machine unattended with power turned on.
- h. In the event of plant electrical power interruption, ~~turn off machine main power switch manually. Do not switch on again until plant electrical power is restored.~~
- i. This machine is equipped with a large rotating flywheel attached to the hydraulic pump. This flywheel will contain stored energy for several seconds after the pump motor is switched off. Be sure to allow sufficient time for flywheel to coast to a stop before leaving machine unattended or attempting any service on machine.
- j. Make immediate report of any obvious or suspected malfunction.
- k. Make no attempt to tamper with the factory-set adjustment of hydraulic pressure relief valves or hydraulic system safety pressure switch.
- l. Electrical overload protective devices are set for the maximum safe operating ratings for their protected components. Do not attempt to alter these settings.

#### 4. Machine Service

- a. Repairs or adjustment to the machine must be made only by highly qualified service personnel who are trained in all aspects of machine function, circuitry and service procedures.
- b. Unless the type of service to be performed demands otherwise, all power to the machine should be turned off and locked out. If, for any reason, the power must be on, extreme caution must be taken to see that no one is in a position to cause unexpected machine action. Cleaning or lubricating the machine should always be done with power off.
- c. Make no attempt to work on the hydraulic system and high pressure lines with power to the pump motor.
- d. Remember to allow flywheel to coast to a stop after power is shut off before attempting any service.

#### 5. Safety Devices

- 1. Two-hand control system for cutting action.
- 2. Two-hand control system for head traverse.
- 3. Electrical enclosure control switch, warning label and high voltage barriers.
- 4. Electrical terminal switch covers.
- 5. Electrical grounding label.
- 6. Machine covers.
- 7. Electrical service rating plate.
- 8. Machine Operation/Service Manual.
- 9. General safety warning label.

## 6. Safety Parts

Motor Flywheel Guard  
Sump Cover  
Electrical Box  
Mains Isolator Switch  
Earth Terminals  
Joystick Controller  
Side Push Buttons  
Pump Motor Overload  
Traverse Motor Overload  
Head Safety Stops  
Head Traverse Limit Switches  
Cutting Platen  
Traverse Brake P.C.B.  
Anti Repeat Relay CR-2  
Braking Relay CR-10  
Pressure Switch  
Relief Valve  
Information Plate  
Lighting Flash-Electrical Box Door

## 7. Installation

### Lifting the Press

Remember that the weight of the machine is 2060 Kg for the GIH 2055 and 1860 Kg for the GIH 1655 and that over 50% of the weight is above the machine center line.

It is recommended that the machine is lifted by overhead crane with the travelling head disposed to the right end of the cross beam.

The machine can be transported by fork lift truck by locating the forks, suitably protected, under the cross beam and lifting more than is enough to clear the ground; normally 2cm. Proceed slowly and with care.

### Positioning

A level concrete, wooden or similar floor is suitable provided it is capable of supporting the machine weight. The press does not require bolting down. However, it should be checked to ensure that it does not 'rock' and suitably wedged if it does. Alternatively it can be bolted down using the corner lugs provided.

### Connecting the Electrical Supply

Ensure that the mains Isolator is in the off position. Open the electrical box door and connect the 3 phase supply to the terminals marked R,S and T - extreme left hand terminals.



Motor Rotation (Hydraulic Pump and Head Drive Motors)

The pump and traverse motors are matched to drive in the correct direction.

To check for correct rotation start the pump motor and operate the joystick controller and either side push button; the travelling head should move in the same direction as the movement of joystick controller.

If it does not, switch any two phases of the supply.

Head Limit Switches

The head stopping distance is factory set. However, as the machine settles down it may be necessary to adjust the end of traverse limit switch cams.

Referring to page 48 reset the cams such that the travelling head moves to within 20mm of the rubber buffer and stops.

IMPORTANT Ensure that the machine isolator is in the off position before making this adjustment.

8. MAINTENANCE

LUBRICATION

All external lubrication points are clearly identified and must be lubricated at the specified intervals with Mobil Vactra Oil #2 or its equivalent.

Each week apply Mobil Vactra Oil #2 to the platen return springs, located on top of the travelling head and accessible from the top of the cross rail.

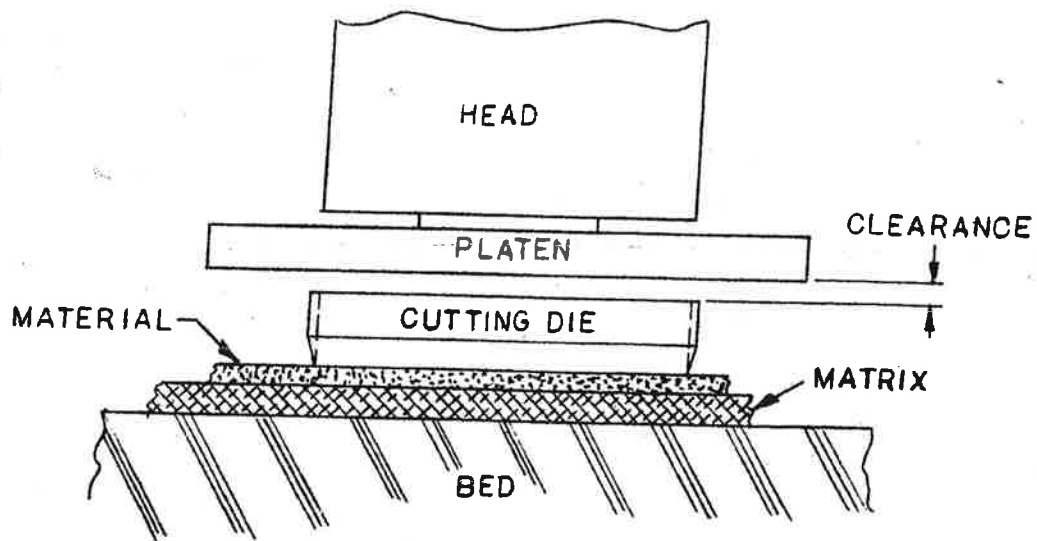
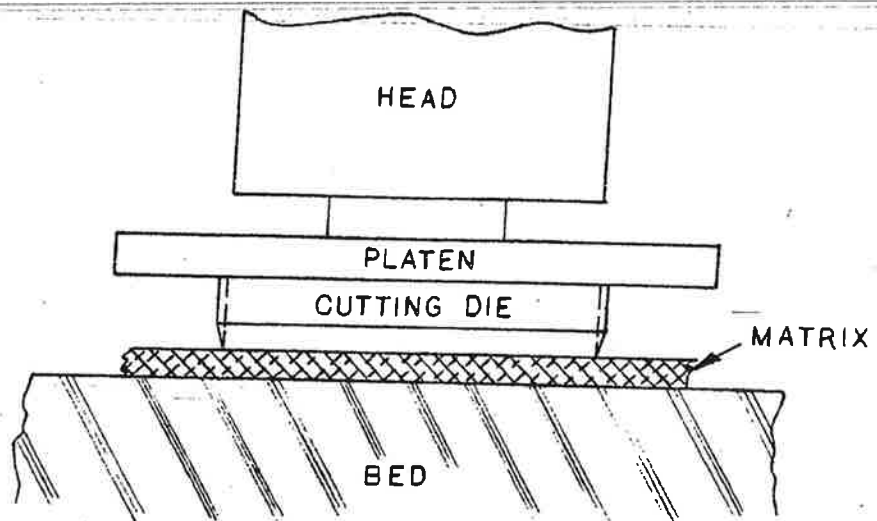
At 6 monthly intervals, the traverse chain should be lightly oiled using Mobil Vactra Oil #2 or its equivalent.

IMPORTANT: Before lubricating, switch the machine isolator to the off position.

Annually replace the hydraulic oil in the sump with 15 gallons of USM Spec. 300 BCW or equivalent, and clean or replace the filter.

ISO 68 ↗

# SETTING UP PROCEDURE



9. OPERATING THE MACHINE

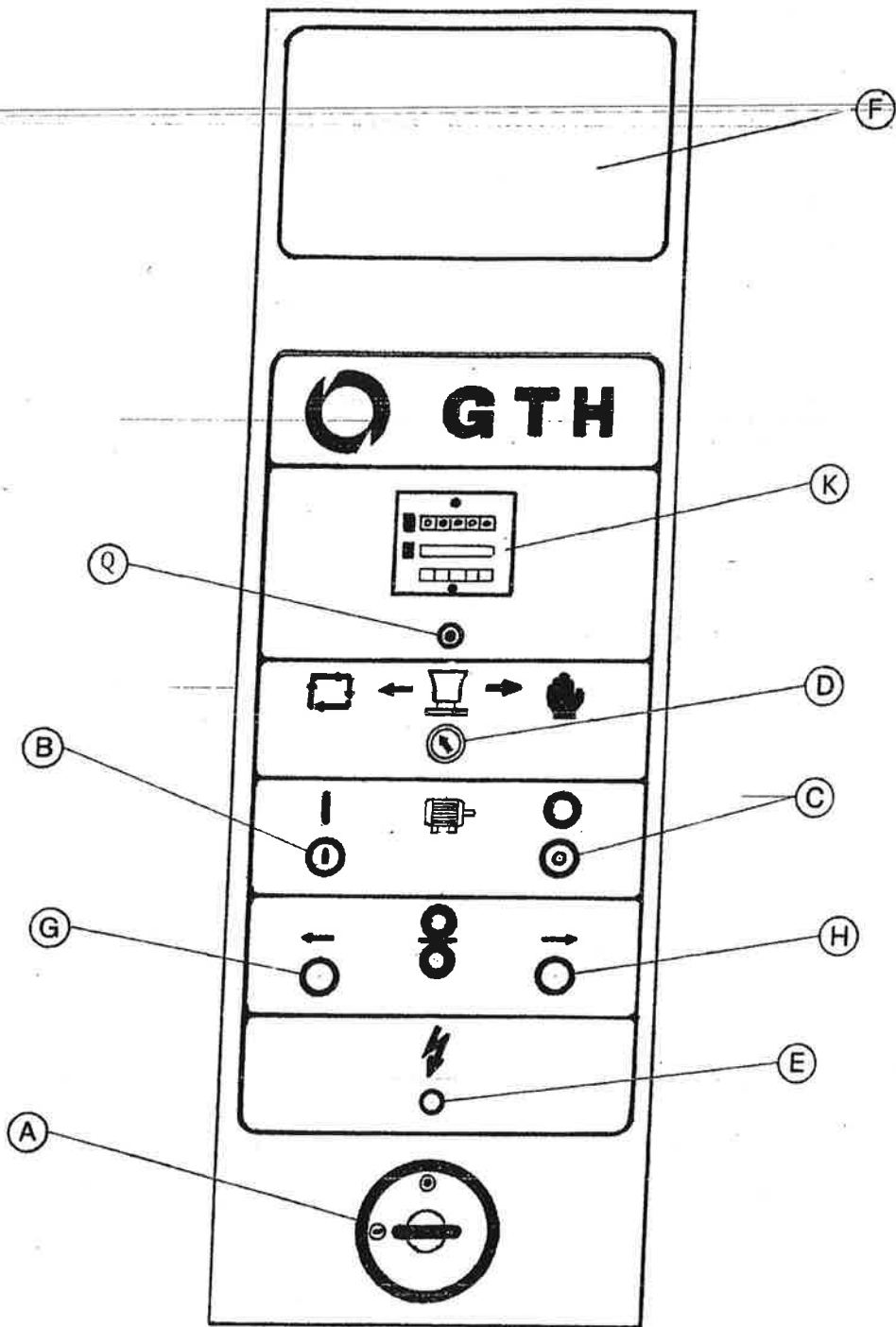
SETTING-UP PROCEDURE

1. Place cutting die on the cutting matrix.
2. Switch 'ON' the Circuit Breaker (A)
3. Press Start Button (B) and switch control (D) to manual operation.
4. Traverse the head by means of the joystick (N) and one of the push buttons (P) until the head is immediately above the cutting die.
5. Select 'ADJUST' on control (L) putting the machine into low pressure operating mode.
6. Release knob (R) allowing block (S) to fall onto the lower limit micro switch. Lower the platen until it rests on the cutting die, by operating the joystick (N) and one of the push buttons(P).
7. Set desired upper limit position (normally to give a clearance over the combined height of die and material of 3mm to 6mm by positioning the upper limit cam (M) in conjunction with its metric scale.
8. Lock up knob (R). Switch the control (L) to OPERATE to raise the platen.
9. Place the material on the cutting matrix and position the cutting die on the material.
10. Operate the press to 'cut' by moving the joystick downwards and pressing one of the push buttons (P). Move the head to one side and examine the cut. The material should be cut clean, but the cutting die must not cut into the matrix too deeply (Deep cutting will reduce matrix life). If not clearly cut, adjust micrometer control on lower limit control block.

Setting up of the Automatic Head Travel

Select semi-automatic on control (D) and set Head Travel control (V) so that after the cutting stroke is completed, the head moves clear of the cutting die by just over a die's width, then stops. (This enables the die to be moved into position for the next cut).

The head will continue to travel automatically in the same direction after each cutting stroke, until it operates a 'Limit Switch' at the end of the Beam. Operation of the limit switch stops the head, which will not operate semi-automatically again until it is traversed away from the end of the beam, or the Joystick is moved laterally in the opposite direction to the required direction of movement.



MACHINE CONTROL PANEL

9. OPERATING THE MACHINE

CONTROLS

Circuit Breaker (A)

Switch circuit breaker 'ON' power supplied to the machine.  
Switch circuit breaker 'OFF' machine "ISOLATED" from power supply.

Power on Light (E)

Indicates that power is 'ON'.

Start Button (B)

Energises the control circuits and starts the hydraulic pump motor.

Stop Button (C)

De-energises the control circuits and stops the hydraulic pump motor.

Manual Auto Selector (D)

Manual

When selected; moving the joystick (N) sideways (i.e. left or right) and operating either one of the side push buttons (P) causes the head to move in the direction in which the joystick has been pushed. Releasing the joystick and or the side push button stops the head movement.

Automatic Traverse

When Semi-Automatic is selected, the head after each complete cutting operation will move automatically sideways to the left or right a predetermined distance so that the cutting die is free to be moved to the next cutting position.

Machine Information Plate (F)

Reference should be made to this plate before connecting any electrical services or filling with hydraulic oil.

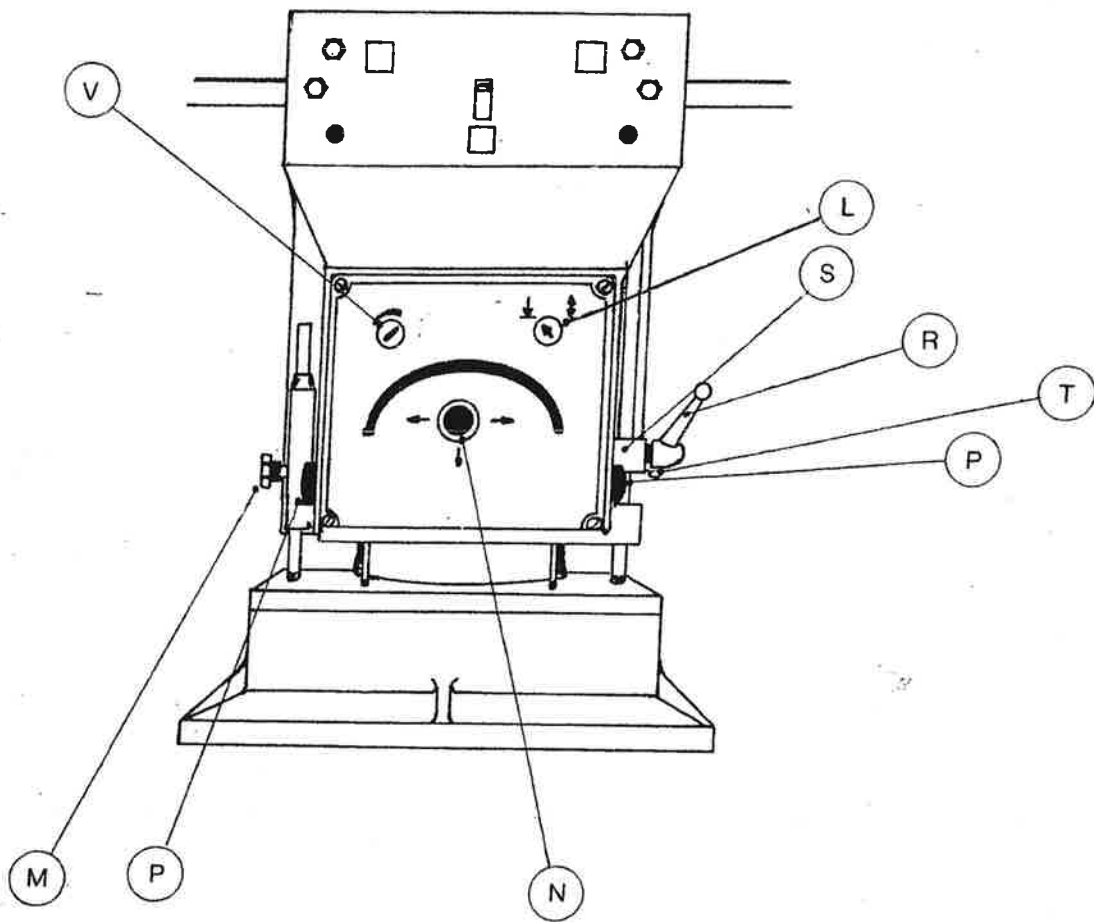
Nip Roll Feed Controls - G & H (Only fitted when Option S.O.8 is supplied)

These buttons provide a convenient facility to advance and retard the material; particularly when setting up new rolls. Normal advancement of the material is effected by the conveniently positioned foot pedal mounted at floor level in the centre of the base.

Pre-programmable Batch Counter - K, Standard Option 10

This option provides the facility to preset the required number of cuts with any given knife such that when the preset number is achieved the machine stops automatically.

The switch (Q) enables the batch counter to be switched in and out of circuit; a facility that is particularly useful for discounting false cuts.



TRAVELLING HEAD  
Shown with Option Nr. 13

PIN 36/-37  
CR8

OPERATING THE MACHINE cont'd.

CONTROLS

Adjust/Operate Selector (L)

Simplifies setting up by operating the hydraulic system on low pressure.

Operate

Normal Operation.

Upper Limit Cam (M)

This control determines the amount of upward travel of the platen from the lower limit switch position.

Joystick (N)

This lever controls both the cutting and the side traverse of the head. Moving the joystick downwards and pressing either push button (P) will actuate the cutting stroke. Releasing either push button (P) or joystick before completion of the cutting stroke causes the platen to return to the open limit. Moving the joystick sideways (i.e. left or right) and pressing either push button (P) will cause the head to move in the direction in which the joystick has been pushed. Releasing the joystick and/or the side push button stops the head movement.

Push Buttons (P)

Operated in conjunction with the joystick (N) to provide a 'Two Hand Control' for either cutting or head traverse function.

Lower Limit Control Block & Knob (R & S)

Controls lower limit of cutting stroke. Located in the lower limit control block is a micrometer adjustment control which makes contact with the lower limit micro switch. Adjusting this clockwise reduces stroke, and anti-clockwise increases stroke.

Upstroke Aside Control Knob (T)

The relative position of the sliding block controls the point in the upstroke where traverse aside is initiated when the machine is in automatic mode.

Automatic Traverse (V)

The distance of travel (minimum approximately 50mm (2 ins)) is set by the Head Travel Control.



9. OPERATING THE MACHINE

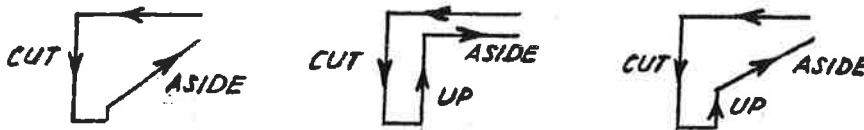
OPERATING PROCEDURE

Manual Operation

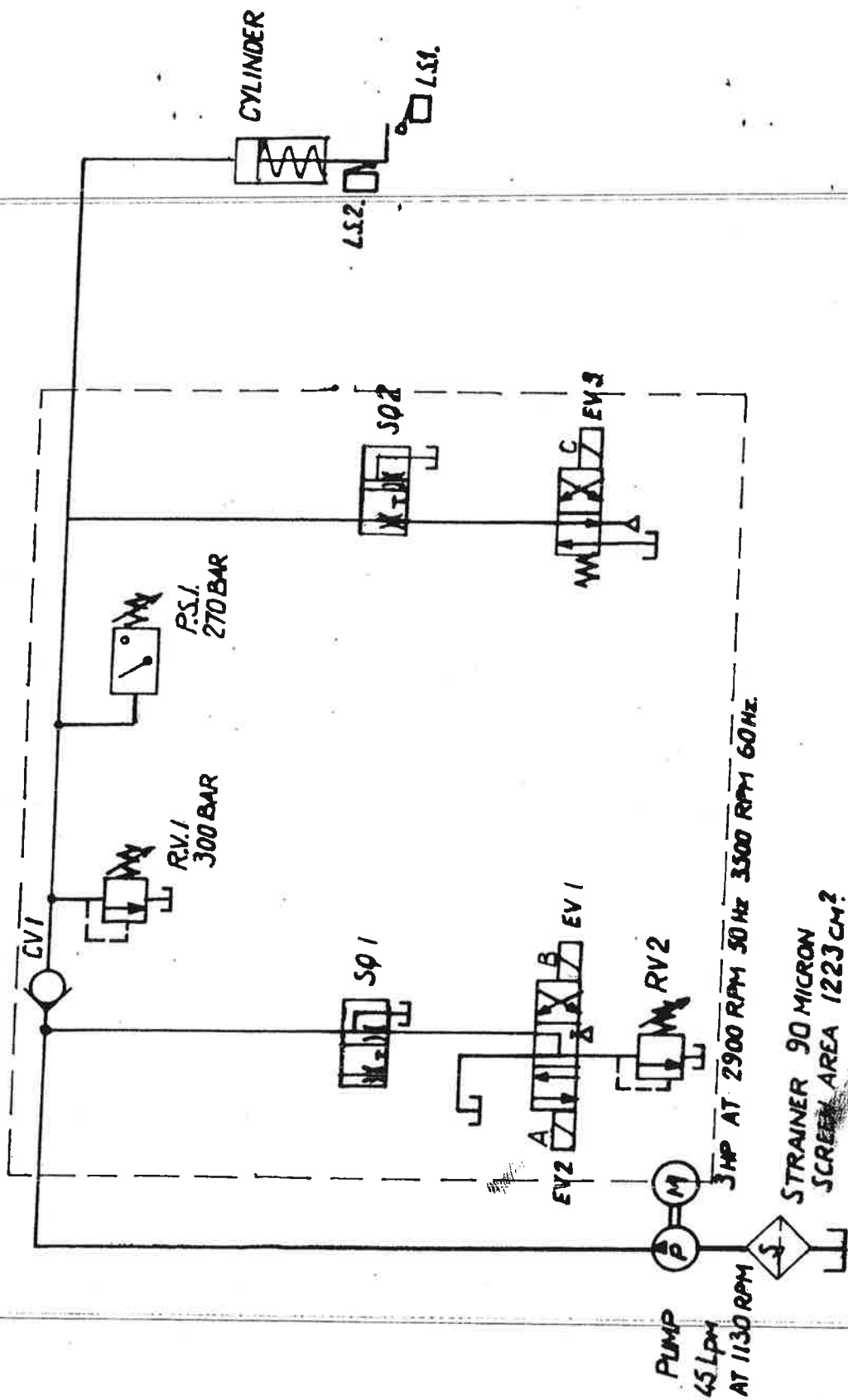
1. With all the controls adjusted as described in the 'setting up procedure' place material on matrix, position cutting die as required. Move the head to be centrally above the cutting die.
2. Press joystick (N) and one of the push buttons (P) to operate the cutting stroke.
3. Press joystick (N) in direction of head traverse (left or right) and one of the push buttons (P) to move the head adjacent to the cutting die.
4. Move the cutting die along, close to the cut material ready for the next cut. Check that the lower limit setting is correct, if necessary make small adjustment to Lower Limit Control (R & S) via the micrometer adjuster.
5. Move the head in the required direction above the cutting die and repeat the cutting cycle.

Automatic Operation

1. Select automatic on control (D), the head can move automatically either to the left or to the right to suit the operator.
2. With the material placed on the cutting matrix, place the cutting die on the left hand corner, move the joystick to the left, moving the head over the cutting die.  
**NOTE:-** The movement of the head to the left or the joystick 'PRIMES' the electrical circuit so that the head will move automatically to the right after the cutting stroke. Similarly, to enable the head to move automatically to the left, the head or joystick must move initially to the right.
3. Move the joystick downwards and at the same time press either of the push buttons (P) to initiate the automatic cycle. With the cutting cycle complete, the head moves to the right until it is clear of the cutting die by just over one die's width, then stops. Adjust control (V) for correct movement. The point in the up stroke where the head moves aside can be controlled by means of micro switch knob (T) located behind the lower limit knob (R). The following diagrams illustrate the possibilities.



4. Move the die along close to the cut material ready for the next cut. Traverse the head back to cover the die. Initiate the automatic cycle again and continue the above procedure until the head has travelled and cut the whole of the width of the material.
5. Remove the cut pieces of material and the die then pull forward or place fresh material onto the cutting pad.



HYDRAULIC CIRCUIT

## 10. HYDRAULICS

The letters and symbols correspond to the hydraulic diagram and, where applicable the electrical schematic.

The circuit is drawn in the idle condition with the cutting plate up and LS-2 made and all valve coils de-energised.

In this mode, SQ-2 is closed to tank and consequently the oil in the cylinder and system up to CV-1 is pressurised by the cutting platen return springs retaining CV-1 closed.

Consequently oil passing from the pump cannot pass CV-1 since SQ-2 and pilot valve EV-1/2 is open to tank putting this side of circuit at a lower pressure.

When the joystick and side button are actuated for the cutting, EV-2 is energised closing the pilot valve to tank, with the result that a pressure is created between EV-1/2 and SQ-1 closing SQ-1 to tank.

Check valve CV-1 is overcome and oil passes to the cylinder, the pressure being limited by RV-1 and PS-1.

Under normal conditions, the cylinder downstrokes until LS-1 is made, de-energising EV-2 and energising EV-3, opening the cylinder to tank via SQ-2. Allow the cutting platen return springs to upstroke the cylinder until LS-2 is made, de-energising EV-3 closing SQ-1 to tank and holding closed CV-1 thus locking the cylinder in the selected upstroke position.

If PS-1 is activated by the system pressure PS-1 will have the same effect as activating LS-2.

When the machine is put into the adjust mode, the joystick and side buttons, when activated for cutting, will energise EV-1 passing the flow through EV-1/2 to tank via RV-2. When RV-2 is correctly adjusted it will create a pressure differential across SQ-1 tending to close SQ-1 until sufficient pressure is created to overcome CV-1 (and therefore the cutting platen return springs) moving the cutting platen down at low pressure until the die is contacted. Releasing the joystick and side button at this or any point in the downstroke will de-energise EV-2 opening the tank causing a pressure drop in that side of the circuit, allowing CV-1 to close holding the cutting platen in that position.

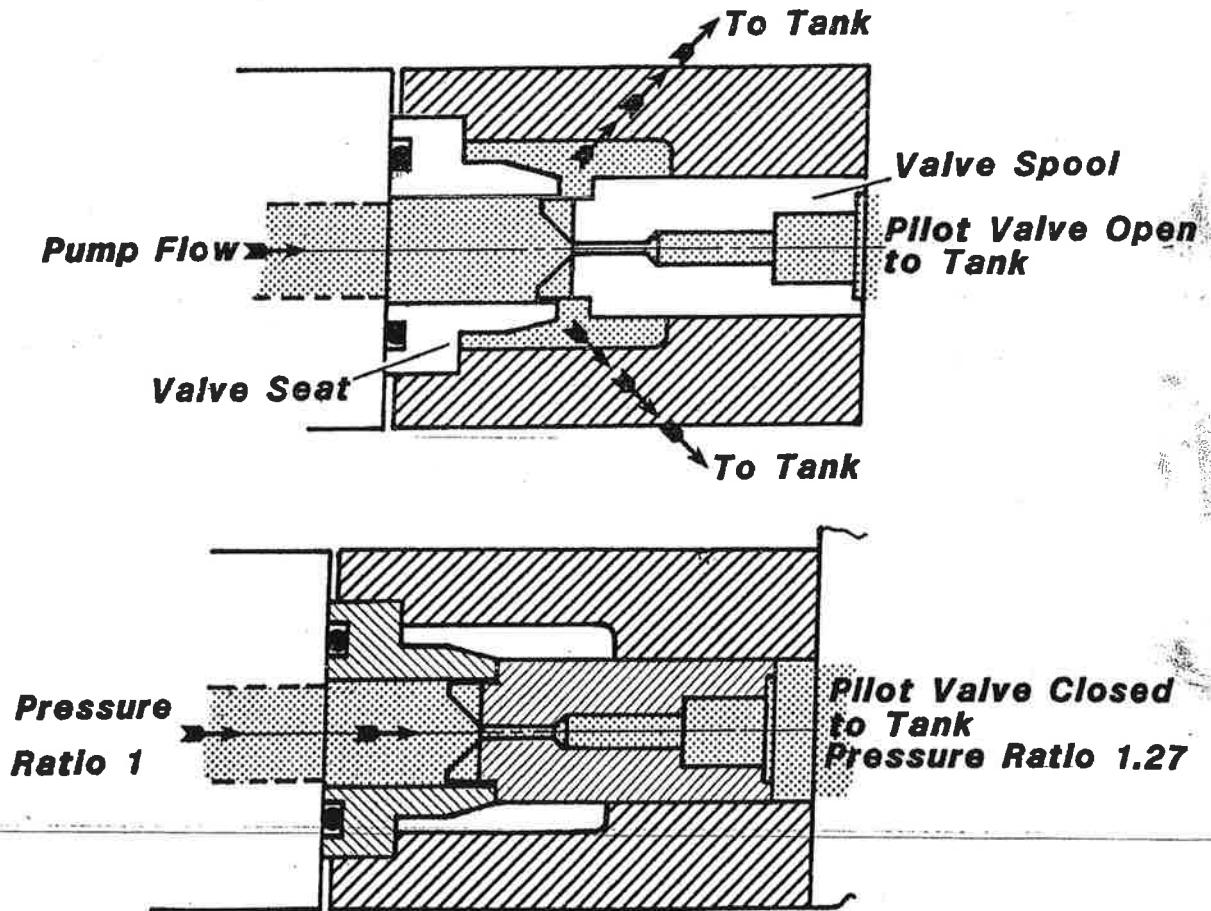
The bottom of stroke limit switch LS-1 is locked out in the adjust mode as are all traverse movements.

Returning the adjust/operate selector switch SS to the operate mode will energise EV-3 allowing the cutting platen to upstroke as previously described.

"Sequence" Valves SQ-1 and 2.

The valves have an area differential between the tank side and pilot valve side in the ratio of 1.27:1 in favour of the pilot side. The restrictor hole in the valve spool serves to pass oil to the pilot side of the valve spool and "sense" pressure.

When the pilot side is open to tank the valve is held open by the pressure drop across the valve spool. Closure of the pilot valve to tank rapidly closes the valve spool pressures equalising and because of the area differential the valve spool is held closed against the valve seat.





Ordering Instructions

Certain parts differ between machines, due to improvement. Please be sure to identify those parts listed by reference to the Serial # of the specific machine being ordered for.

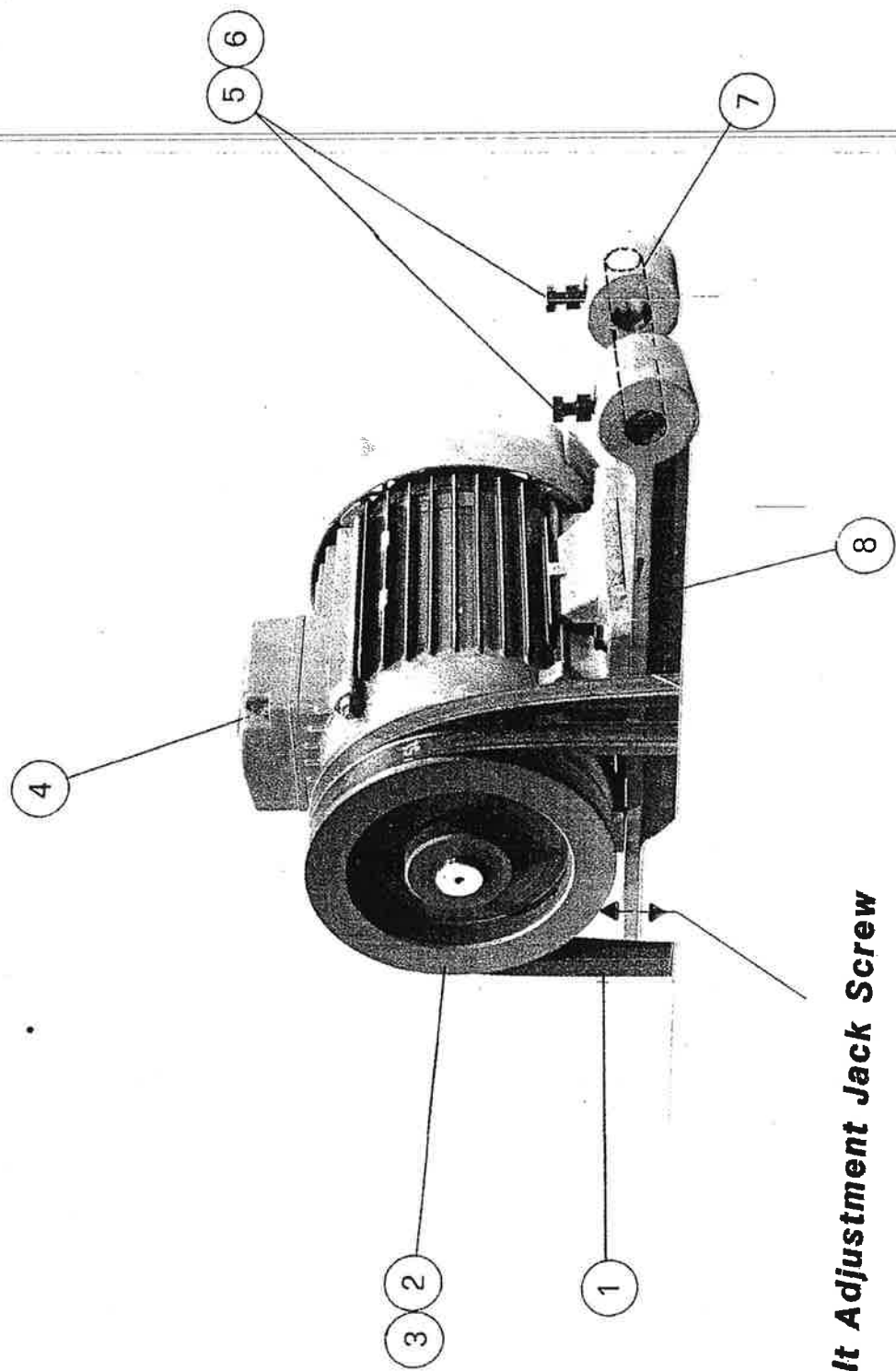
Serial # Code

Sequential # for Year

Serial # 8. 092. 2

Year of Manufacture

The Serial # can be found on the information plate attached to front face of electrical cabinet.



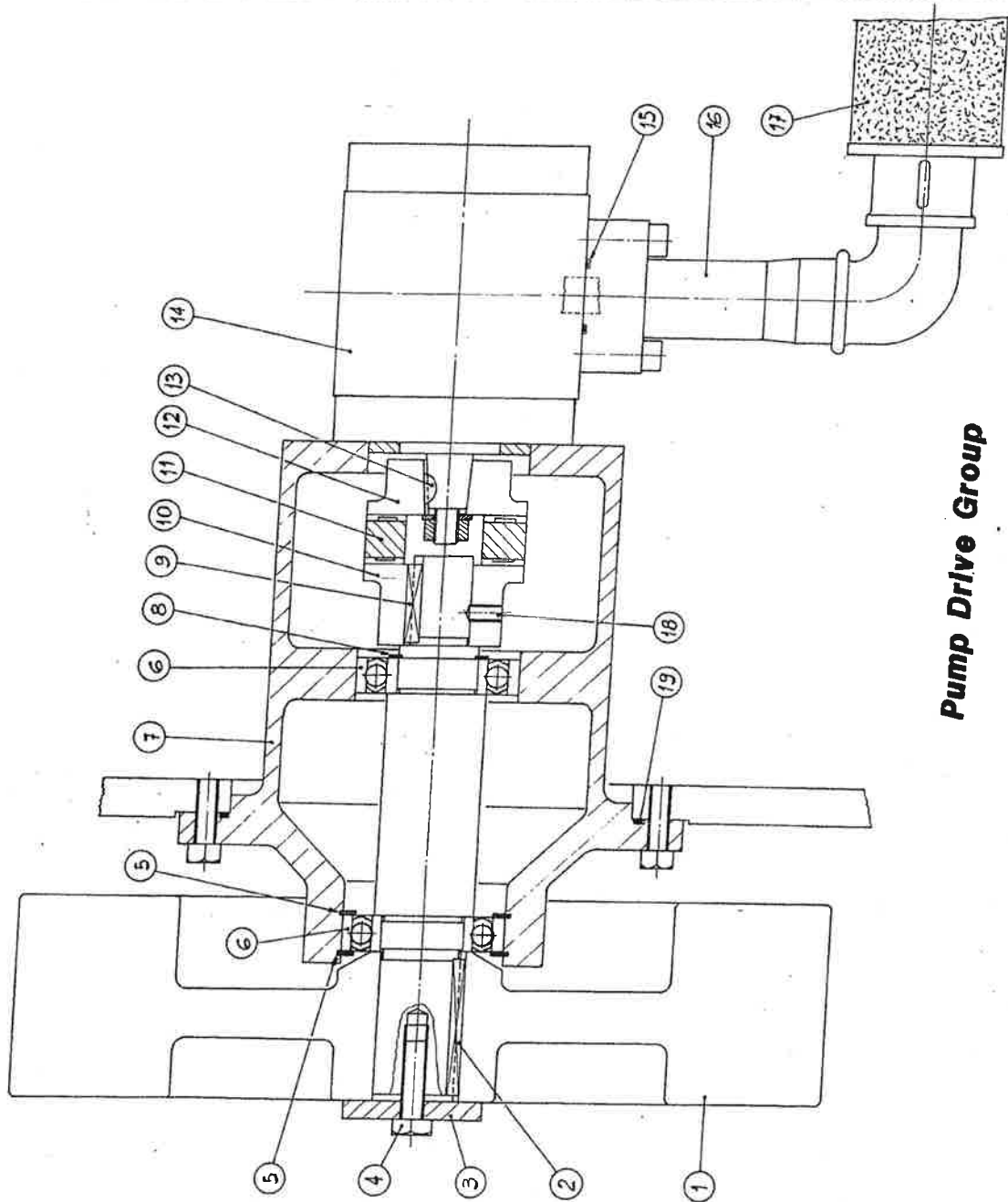
**Belt Adjustment Jack Screw**

**Pump Motor Assembly**

PUMP MOTOR ASSEMBLY

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c</u>
1	Drive Belts 60 HZ	GTH 3034	2
2	Motor Pulley 60 HZ	GTH 9037	1
3	Locking Screw	SL 80ME	1
4	Pump Motor 220/380/60	GTH 1213	1
	*Normally Stocked 230/460/60*	GTH 1216	1
	320/550/60	GTH 1217	1
5	Locking Screws	SL 193ME	2
6	Screw Locknuts	NL 6ME	2
7	Motor Base Plate Shaft	GTH 5160	1
8	Motor Base Plate	GTH 5159	1





**Pump Drive Group**

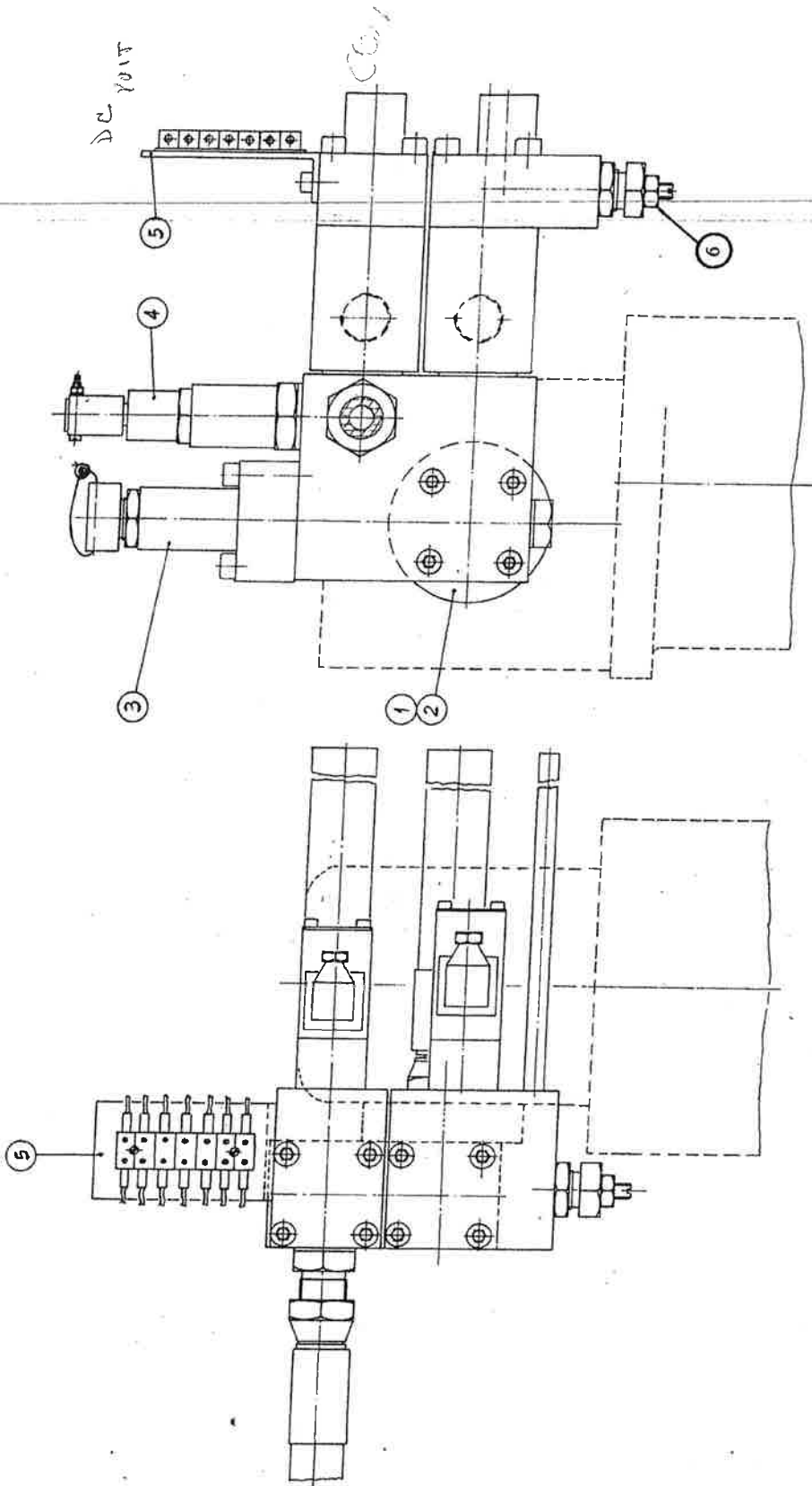
PUMP DRIVE UNIT

<u>Item Nr</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Flywheel	GTH 9041	1
2	Key	GTH 5158	1
3	Security Washer	GTH 5274	1
4	Retaining Screw	SL 237ME	1
5	Bearing Retaining Circlip	80mm Internal	2
6	Shaft Bearing	GTH 3001	2
7	Pump Support Housing	GTH 9029	1
8	Bearing Circlip	38mm External	1
9	Coupling Key	GTH 5156	1
10	Coupling - Drive Side	GTH 5155	1
11	Coupling Spider	GTH 3000	1
12	Coupling - Pump Side	GTH 5000	1
13	Coupling - Pump Side Drive Key (included with pump)	GTH 2104	1
14	Pump <b>REPAIR KIT</b>	GTH <del>2182</del> GTH 2238	1
15	Suction Flange 'O' Ring	GTH 2045	1
16	Suction Flange: For M/cs.up to 8.148.1	GTH 5088	1
	For M/c 8.161.1 & onward	GTH 6032	1
17	Suction Filter: For M/cs.up to 8.148.1	GTH 2060	1
	For M/c.8.161.1 & onward	GTH 2108	1
18	Coupling - Drive Side Locking Screw	SL 90ME	1
19	Pump Support Housing 'O' Ring	GTH 2072	1



HYDRAULIC GROUP - SHEET 1

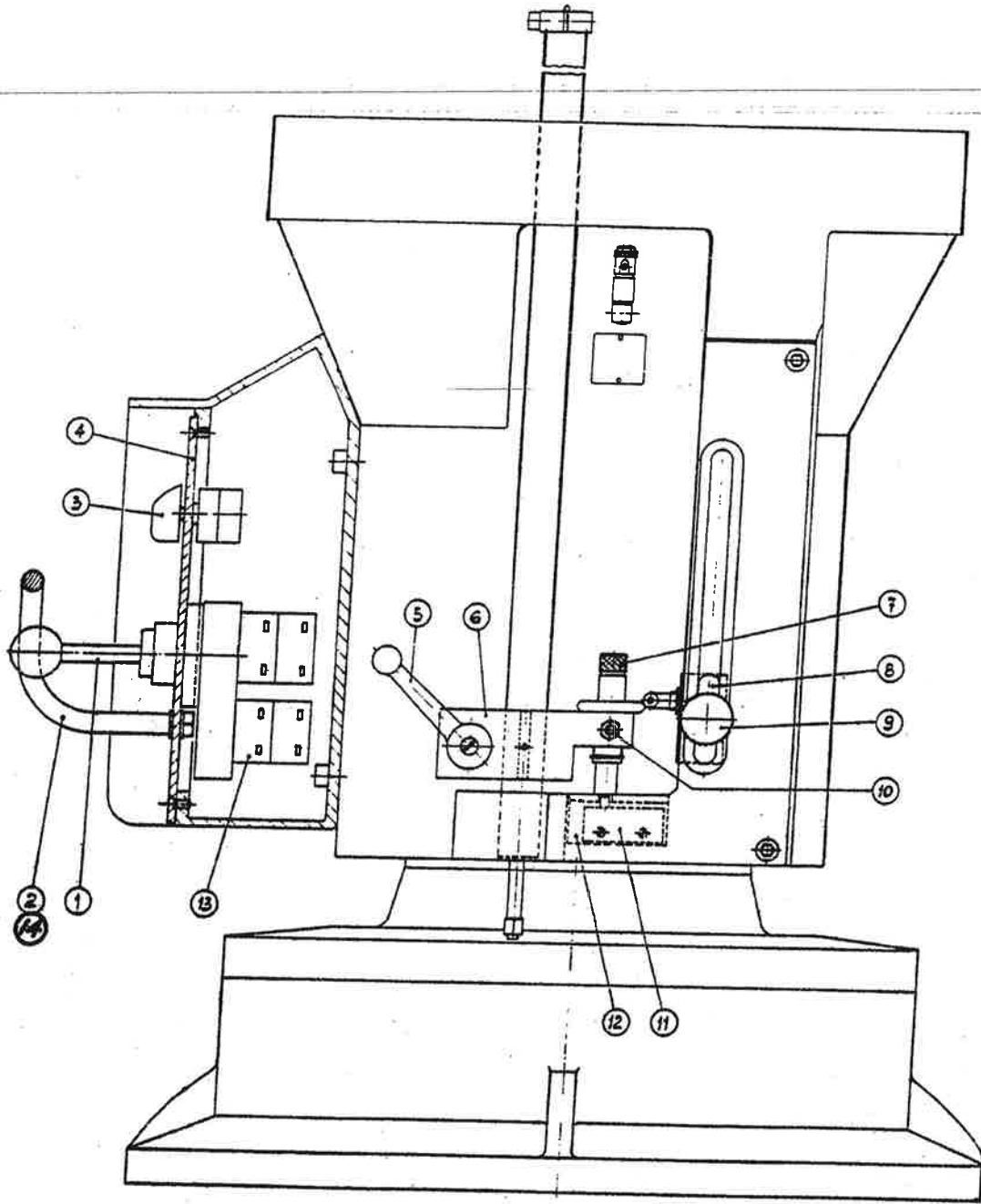
<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Sequence Valve 'O' Ring	GTH 2063	2
2	Sequence Valve Seat	GTH 5173	2
3	Sequence Valve Piston For M/cs.up to No.8.116.1	GTH 5172	2
3A	Sequence Valve Piston - Upstroke. For M/cs.No.8.137.1 & onwards	GTH 6039	1
3B	Sequence Valve Piston - Cut and Adjust For M/cs.No.8.137.1 & onwards.	GTH 6040	1
4	Sequence Valve 'O' Ring	GTH 2045	2
5	Valve Body - Upstroke	GTH 5487	1
6	Pilot Valve - Upstroke: 60 HZ	GTH 2105	1
7	Pilot Valve Coil for Item No.6 60 HZ Coil for GTH 1371		1
	Pilot Valve Coil for Item No.10 60 HZ Coil for GTH 1373		1
8	Valve Body-Cut & Adjust	GTH 5486	1
9	Low Pressure Relief Valve	See page 34	1
10	Pilot Valve - Cut & Adjust: 60 HZ	GTH 2106	1
11	Cylinder Hose	GTH 2070	1



**Hydraulic Group Sheet 2**

HYDRAULIC GROUP - SHEET 2

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M/c.</u>
1	Pump to Manifold Connector	GTH 5174	1
2	Connector 'O' Rings	GTH 2064	2
3	Pressure Switch Complete	GTH G116	1
4	High Pressure Relief Valve Complete	GTH G184	1
5	T.B.3 Support Bracket	GTH 6038	1
6	Low Pressure Relief Valve	GTH G185	1

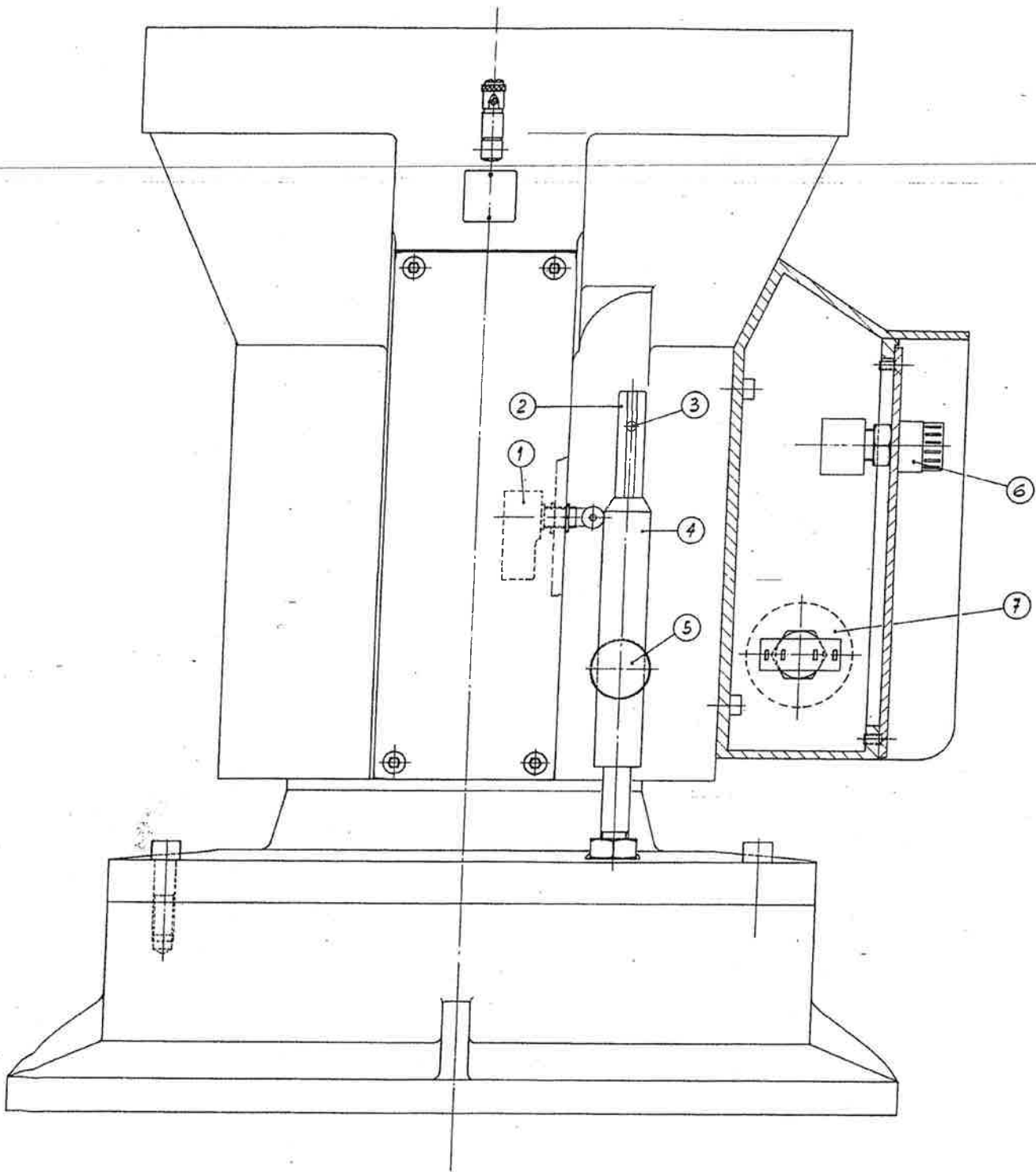


**Travelling Head Sheet 1**

TRAVELLING HEAD ASSEMBLY - SHEET 1

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Joystick Controller	GTH 1282	1
2	Safety Bar	GTH 6062	1
3	Traverse Aside Pot	GTH 1020	1
4	Legend Plate	GTH 3173	1
5	Bottom of Stroke Locking Handle	GTH 3039	1
6	Bottom of Stroke Block	GTH 5250	1
7	Bottom of Stroke Fine Adjustment Screw and Aside Cam.	GTH 5252	1
8	Initiate Aside Micro-Switch	GTH 1095	1
9	Positioning Knob - Aside Micro	GTH 3052	1
10	Fine Adjust Screw Friction Pad	GTH 5087	1
11	Bottom of Stroke Micro Switch	GTH 1002	1
12	Bottom of Stroke Micro Safety Cover	GTH 1281	1
13	Joystick Contact Blocks		
	N.O. - N.C.	GTH 1283	3
	N.O. - N.O.	GTH 1284	1
14	Safety Bar Plastic Cover	GTH 3172	1





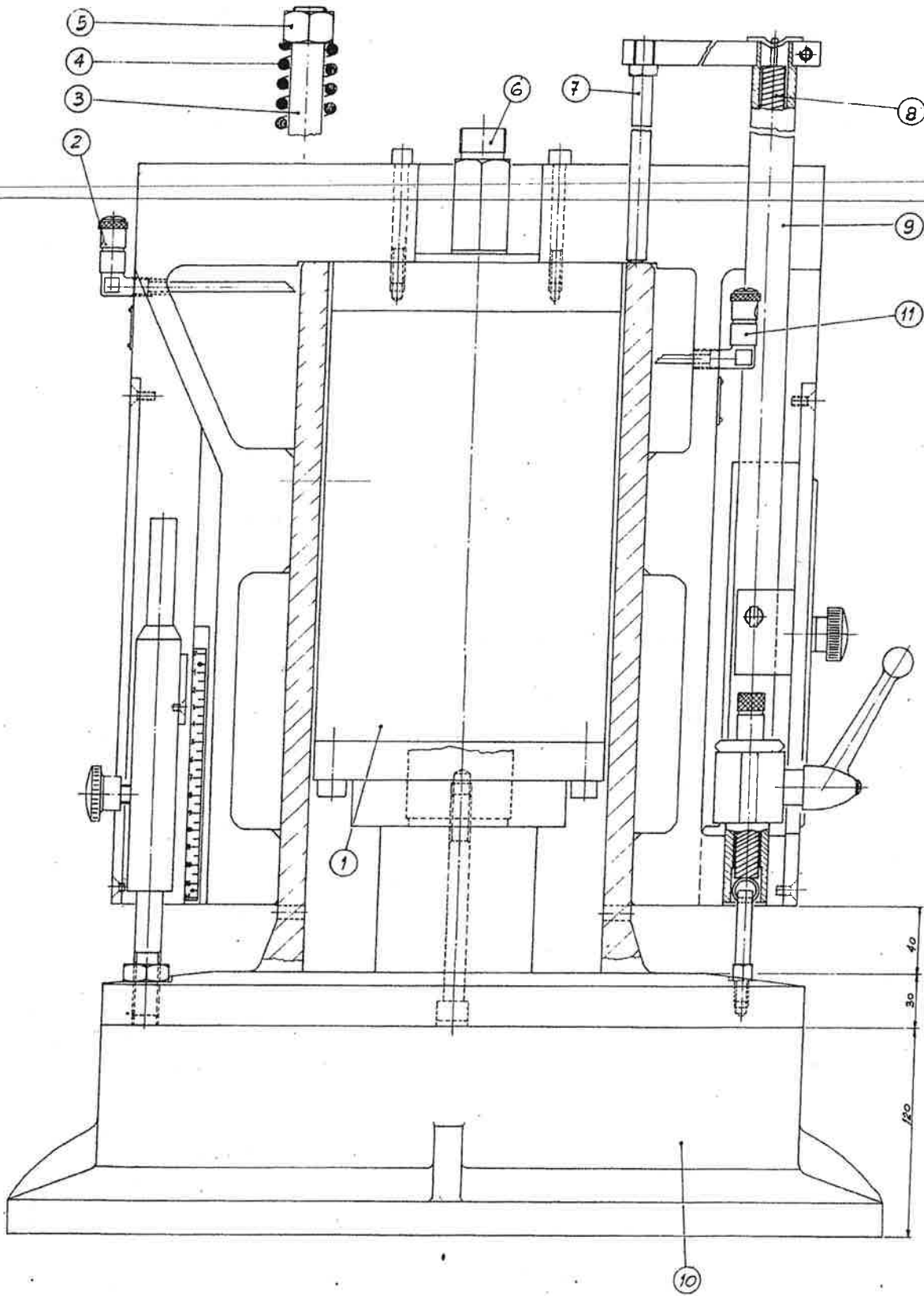
**Travelling Head Sheet 2**

TRAVELLING HEAD ASSEMBLY - SHEET 2.

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<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Top of Stroke Micro-Switch	GTH 1095	1
2	Up Stroke Cam Guide Rod	GTH 6053	1
3	Cam Movement Limit Pin	SL 77ME	1
4	Upstroke Cam	GTH 5492	1
5	Upstroke Cam Locking Knob	GTH 3038	1
6	Adjust/Operate Selector	GTH 1288	1
7	Side Push Button Assembly	See Page 40	2

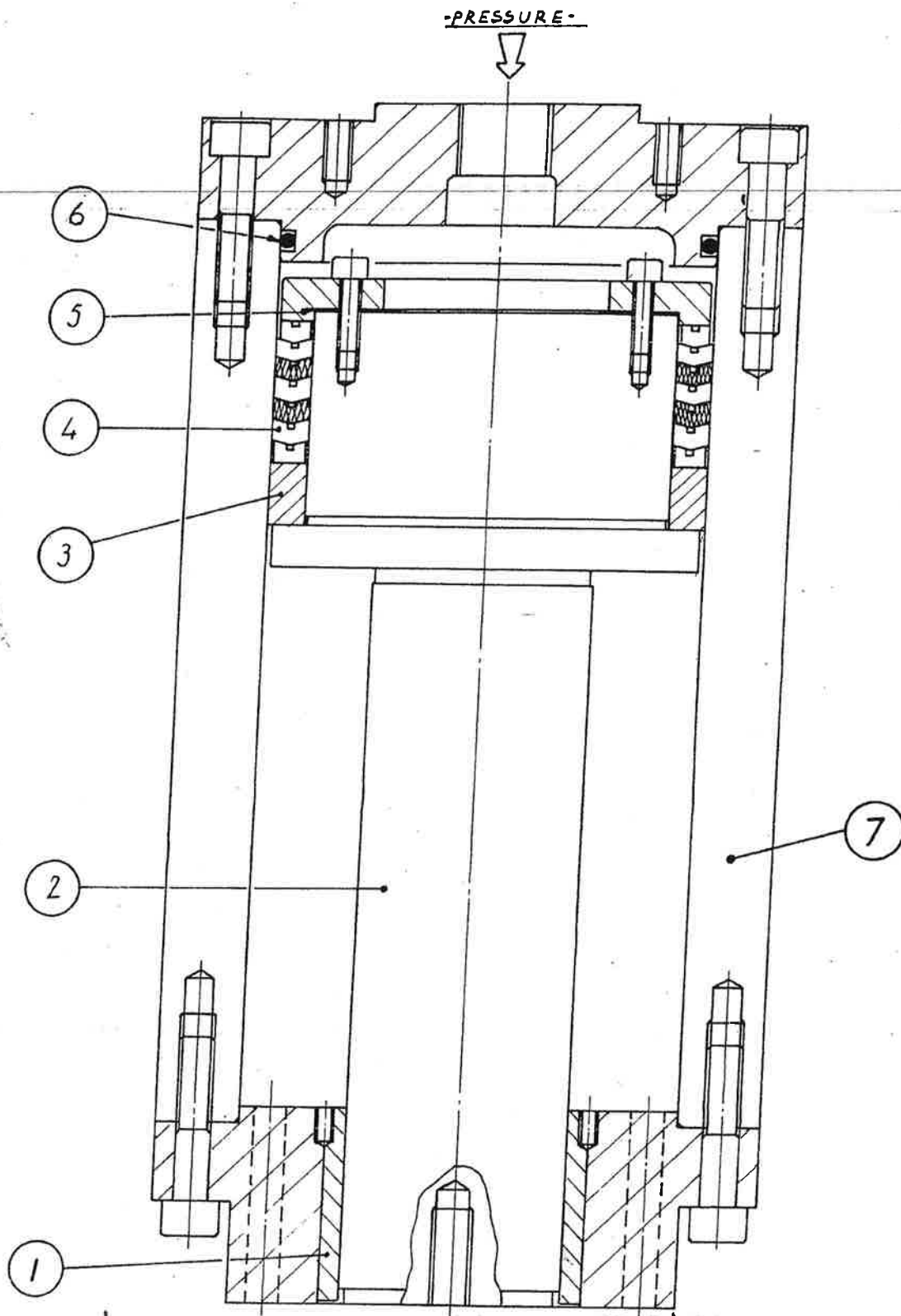
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**Travelling Head Sheet 3.**

TRAVELLING HEAD - SHEET 3.

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Cylinder 20 Metric Tonnes 30 Metric Tonnes	See Page 42	1
2	Cutting Platen Lubricator with Pipe Length 95mm	GTH 2027	1
3	Return Spring Guide Rod	GTH 6054	4
4	Return Spring 20 Metric Tonnes 30 Metric Tonnes	GTH 5243 GTH 5244	4 4
5	Return Spring Compression Nut	M18	4
6	Cylinder Inlet Nipple	GTH 5147	1
7	Sensing Rod	GTH 6051	1
8	Over Stroke Safety Spring For M/cs.up to No.8.116.1 For M/c.8.137.1 onwards	GTH 5249 GTH 6050	1 1
9	Bottom of Stroke Rod	GTH 5248	1
10	Cutting Platen 500mm x 500mm 500mm x 650mm 650mm x 650mm	GTH 9525 GTH 9526 GTH 9528	1 1 1
11	Cutting Platen Lubricator with pipe length 38mm	GTH 2027	1



**Cylinder Assembly**

CUTTING CYLINDER

For M/cs.up to Serial No.8.116.1

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Piston Rod Guide Bush 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5230 GTH 5232	1 560
2	Piston Rod 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5223 GTH 5225	1
3 X	Piston Head Guide Bush 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5220 GTH 5222	1 250
4 X	Cylinder Seal Pack 20 tonnes Cylinder 30 tonnes Cylinder	GTH 2046 GTH 2055 - PART	1 \$ 465
5 X	Seal Pack Shim 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5217 GTH 5219	As required
6 X	Cylinder End Cap 'O' Ring 20 tonnes Cylinder 30 tonnes Cylinder	GTH 2049 GTH 2010	1 275
7	Cylinder Body 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5226 GTH 5228	1

To gain access to the cylinder it is necessary to remove the travelling head.

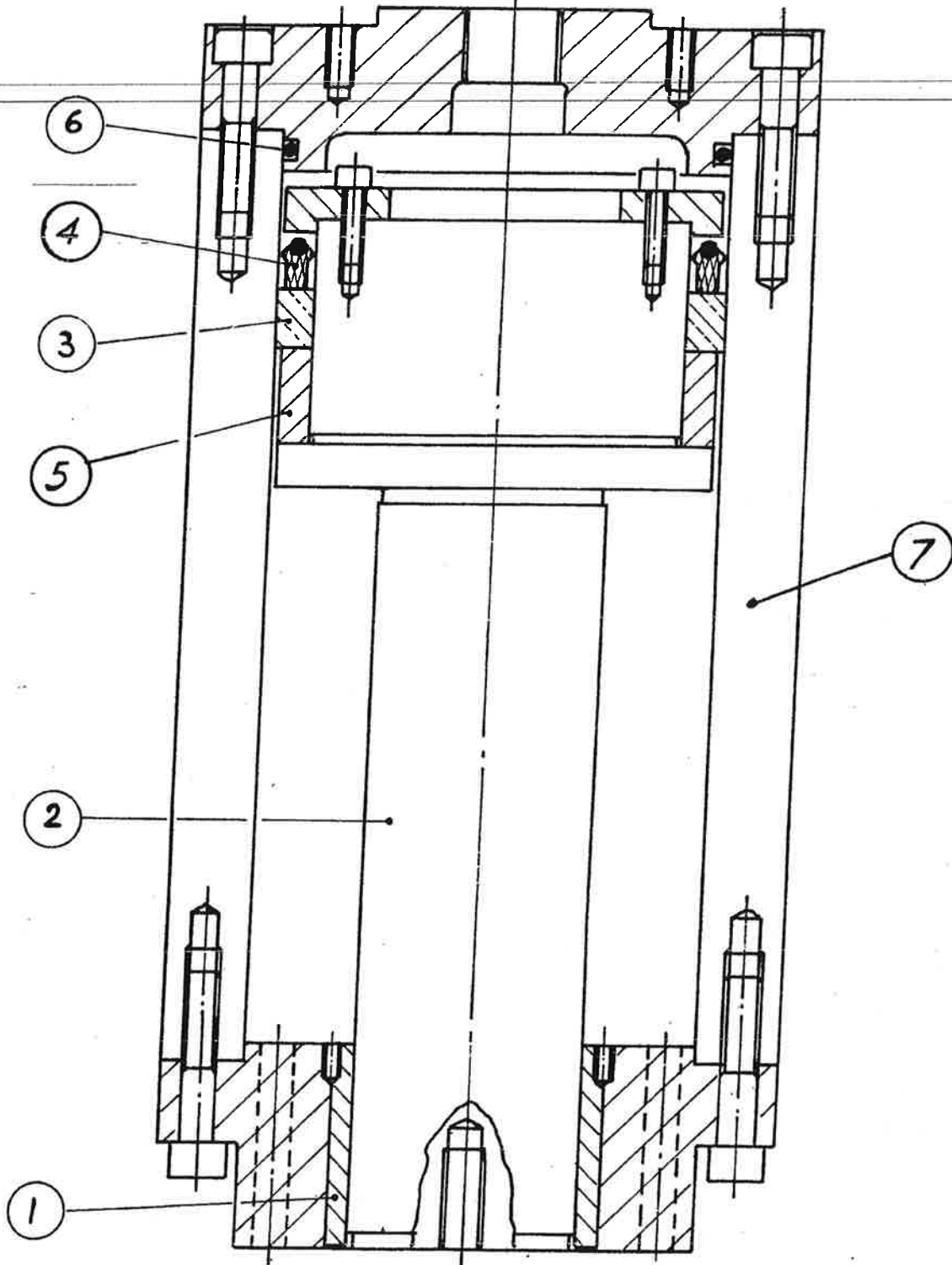
When reassembling the new seal pack it is necessary to compress the cylinder seal pack approximately 0.4 - 0.5mm. assuming the pack has not been split. If the pack has been split, it is necessary first to over compress, then set to above figure.

Soaking in warm oil prior to assembly is recommended.

When correctly assembled, a shop air line applied to the pressure part at about 1.10 - 1.20kg/cm. should move the piston rod.

~~Failure to observe this pre-compression may result in oil leakage past the seal and oil subsequently coming out onto the working surface.~~

-PRESSURE-



CUTTING CYLINDER

For M/c.No.8.137.1 and onward.

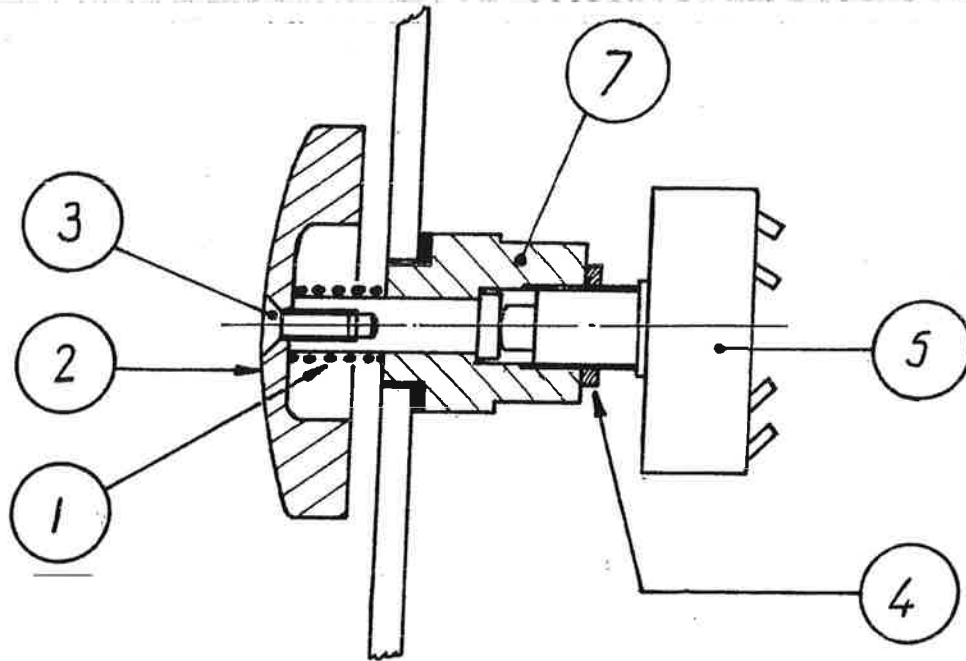
<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Piston Rod Guide Bush 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5230 GTH 5232	1
2	Piston Rod 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5223 GTH 5225	1
3	Piston Head Guide Bush 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5220 GTH 5222	1
4	Cylinder Seal Pack 20 tonnes Cylinder 30 tonnes Cylinder	GTH 2112 GTH 2114	1
5	Spacer for Seal 20 tonnes Cylinder 30 tonnes Cylinder	GTH 6058 GTH 6060	1
6	Cylinder End Cap 'O' Ring 20 tonnes Cylinder 30 tonnes Cylinder	GTH 2049 GTH 2010	1
7	Cylinder Body 20 tonnes Cylinder 30 tonnes Cylinder	GTH 5226 GTH 5228	1

To gain access to the cylinder it is necessary to remove the travelling head.

When fitting new seal pack, soaking in cold oil prior to assembly is recommended.

When correctly assembled, a shop air line applied to the pressure part at about 1.10 - 1.2 kg/cm. should move the piston rod.

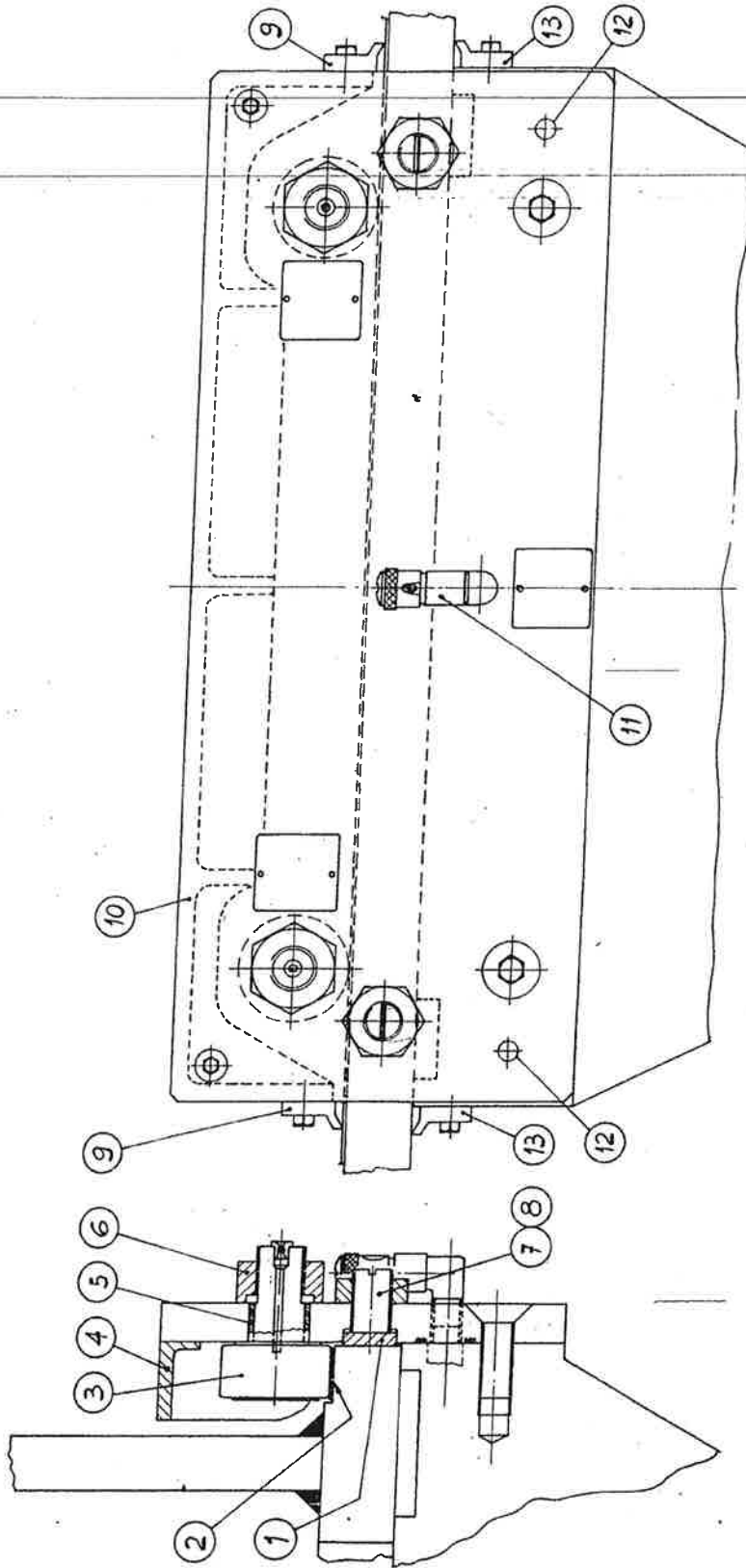




**Side Push Button  
Travelling Head**

SIDE PUSH BUTTON - TRAVELLING HEAD - 2 Per M/c

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Return Spring	GTH 5509	2
2	Mushroom Button	GTH 5508	2
3	Button Screw	SL 460ME	2
4	Micro-Switch Locknut included with switch	)	)
5	Micro-Switch Standard Machine	GTH 1102 )	2 )
7	Micro-Switch Support Standard Machine	GTH 5511	2

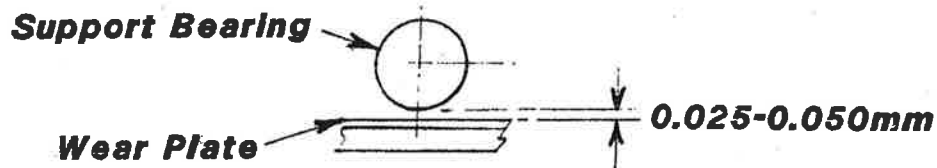


**Travelling Head Support Group**

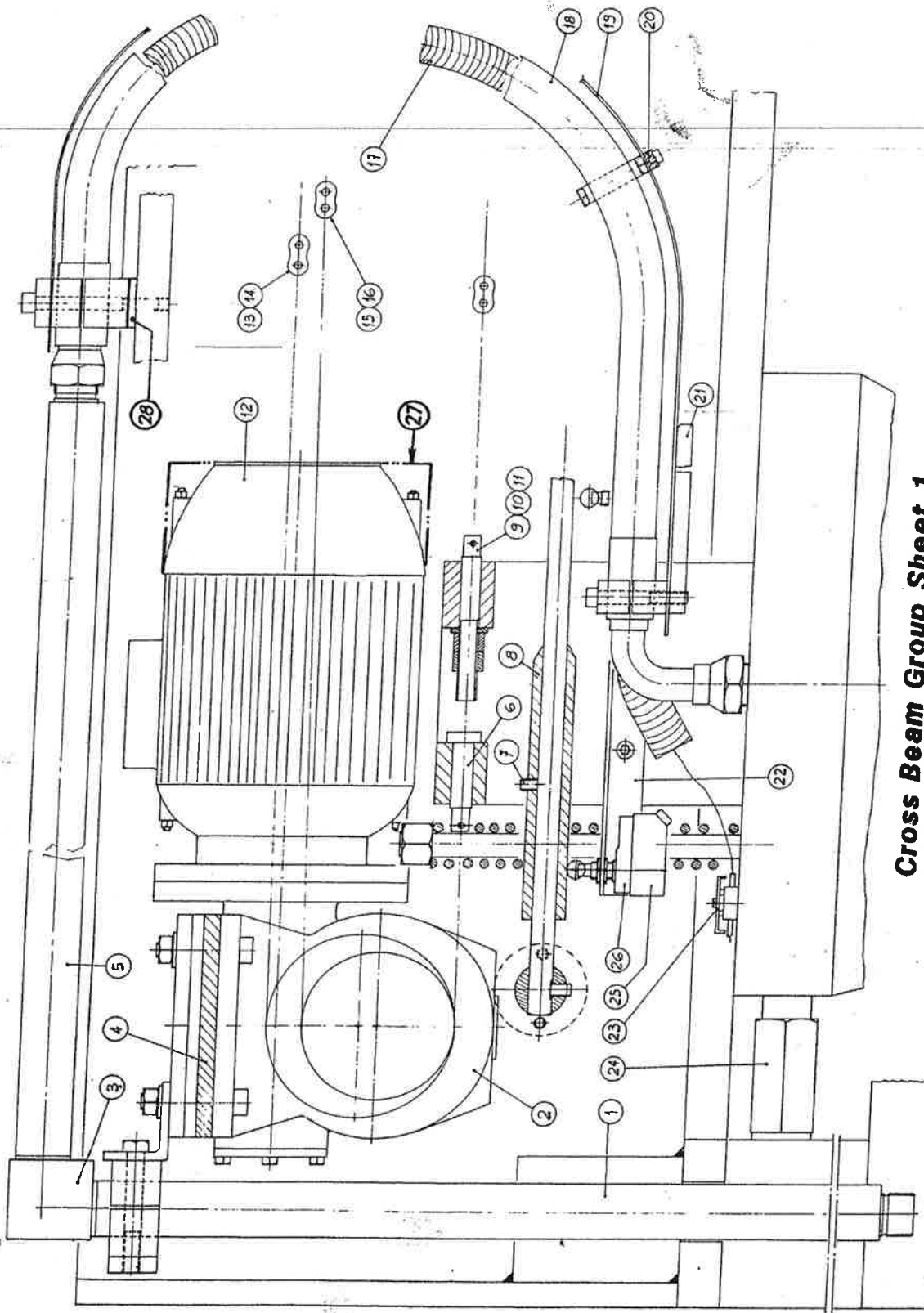
TRAVELLING HEAD SUPPORT GROUP

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Side Location Bearing Pad	GTH 6046	4
2	Slide Wear Strip: GTH 1655/1665 GTH 2055/2065	GTH 5265 GTH 5202	2
3	Support Bearing	GTH 3165	4
4	Support Housing Cover	GTH 9557	2
5	Support Bearing Adjusting Bush	GTH 6045	4
6	Support Bearing Locknut	GTH 6044	4
7	Side Location Bearing Thrust Screw	GTH 5179	4
8	Thrust Screw Locknut	GTH 5065	4
9	Slides Wipers	GTH 3166	4
10	Support Housing	GTH 6041	2
11	Lubricator	GTH 2027	2
12	Support Housing Dowel	GTH 6043	4
13	Slide Wiper	GTH 3170	4

To adjust the support bearings, remove the cutting pad and place a block of steel or similar hard material in the centre of the table. Start machine and bring travelling head centrally over block. Proceed as if setting stroke (refer to page // ), releasing stroke setting and putting press in adjust mode. Bring cutting platen into contact with block. With cover 4 removed adjust support bearings until a feeler of 0.025 - 0.05mm is a grip fit between bearing and wear strip. Repeat above at both ends of travel and set as above in tightest position.



With support bearings correctly set, release tension in chain (not necessary to remove) and release locknut 8 and slacken screw 7. Push travelling head backwards and forwards by hand, progressively ~~tightening screw 7 until resistance to movement is felt.~~ Lockup nut 8, retighten chain.



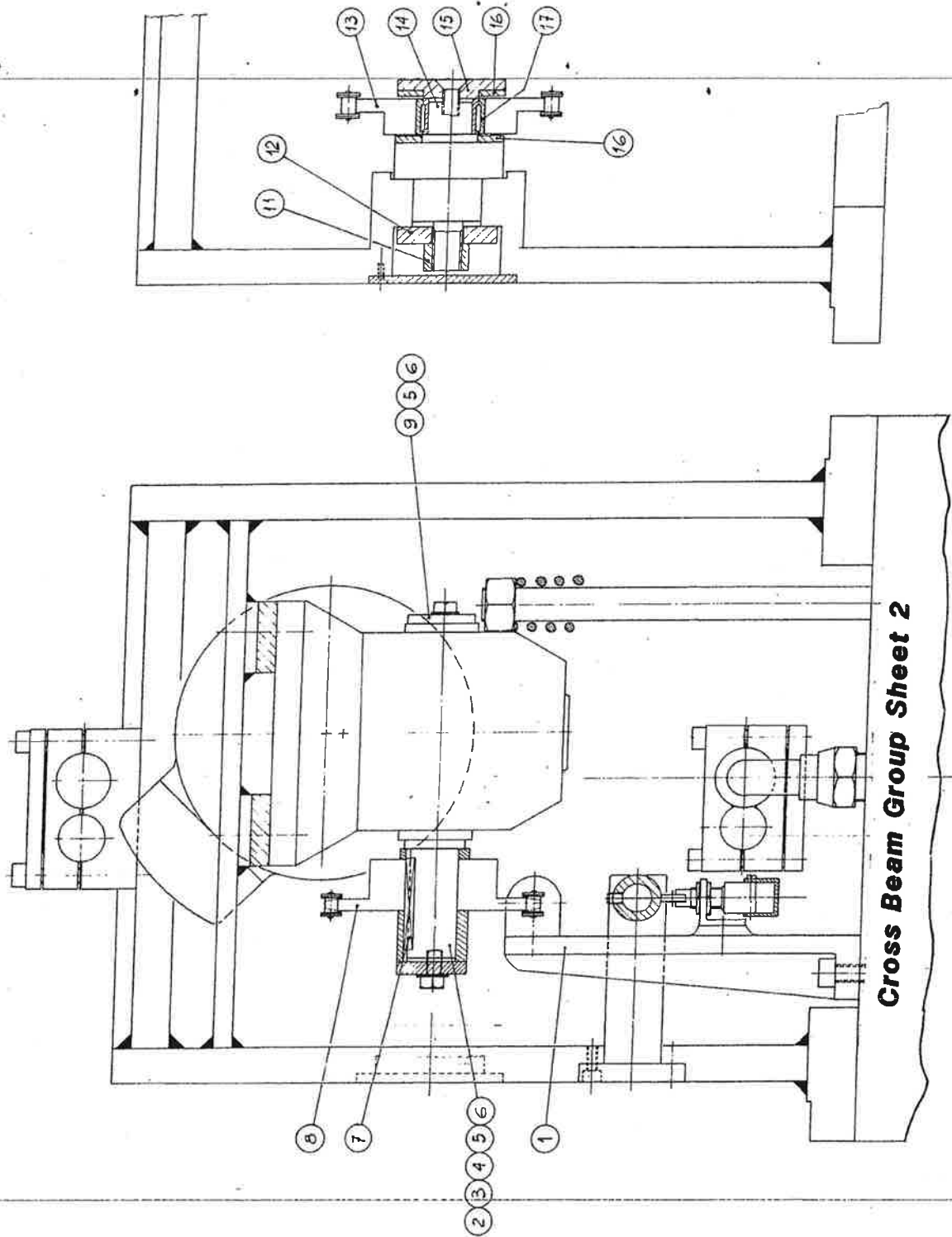
**Cross Beam Group Sheet 1**

CROSS BEAM ASSEMBLY - SHEET 1

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/m<sup>3</sup>c</u>
1	Hydraulic Tube: M/cs.up to No.8.148.1 GTH 1655/1665 GTH 2055/2065 M/c.No.8.161.1 & onwards-all GTH m/cs	GTH 6091 GTH 6084 GTH 6084	1
2	Reduction Gearbox: M/cs.up to No.8.148.1. (10:1) M/c.NO.8.161.1 & onwards (7:1)	GTH 3027 GTH 3183	1
3	Hydraulic Tube Elbow	GTH 5488	1
4	Gearbox Spacer - 60HZ only Not on M/c 8.137.1 to 8.148.1 (Incl)	GTH 5411	1
5	Hydraulic Tube	GTH 5569	1
6	Chain Retainer	GTH 5068	1
7	End of Stroke Cam Locking Screw	SL 87ME	2
8	End of Stroke Cam	GTH 5518	
9	Chain Adjuster	GTH 5066	1
10	Adjuster Washer	WL 8ME	1
11	Adjuster Locknuts	NL 8 ME	2
12	Traverse Motor: For M/cs.up to 8.116.1	230/460/60 GTH 1223	1
	For M/cs.8.137.1 to 8.148.1 (Incl)	230/265/395/460/60 GTH 1295	
	For M/c 8.161.1 & onwards Standard	220/ 380/60 * 230/265/ 395/460/60 320/ 550/60 GTH 1294 GTH 1295 GTH 1296	
13	Drive Chain 60 Hz	GTH 1655/1665 GTH 3201	
14	Drive Chain 60 Hz	GTH 2055/2065 GTH 3199	

CROSS BEAM ASSEMBLY - SHEET 1 (CONTINUED)

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c</u>
17	Flexible Electrical Conduit GTH 1655/1665 GTH 2055/2065	GTH 1299 GTH 1298	1
18	Flexible Hydraulic SAE/100 R 10 GTH 1655/1665 GTH 2055/2065	GTH 2051 GTH 2052	1
19	Hose & Conduit, Support Spring GTH 1655/1665 GTH 2055/2065	GTH 5679 GTH 5570	1
20	Hose, Conduit, Spring Clamp Block	GTH 5474	3
21	Spring Support	GTH 5473	1
22	End Stroke Switch Bracket	GTH 5236	1
23	Terminal Block TB.2	GTH 1012	1
24	End of Traverse Safety Buffer (Rubber)	GTH 5206	2
25 X	Micro Switch Isolator Cover	GTH 1126	2
26 X	End of Stroke Limit Switch	GTH 1001	2
27	Supplementary Fan, Continuous running M/c. 8.137.1 to 8.148.1 M/c. 8.161.1 and onwards	GTH 1277	1 S.O.15
28	Spacer: GTH 1655/1665 only M/c. 8.161.1 and onwards	GTH 6082	1





CROSS BEAM ASSEMBLY - SHEET 2.

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Chain Drive Bracket M/cs. up to No.8.116.1 M/cs.No.8.137.1 to 8.148.1 (incl) M/c.No.8.161.1 & onward	GTH 9039 GTH 6047 GTH 6080	1
2	Gearbox Output Shaft	GTH 3113	1
3	Sleeve	GTH 5409	1
4	Washer	GTH 5410	1
5	Lock Washer	GTH 5118	1
6	Retaining Screw	SL 213ME	2
7	Output Shaft Key	GTH 3114	1
8	Drive Sprocket M/cs.up to 8.116.1: 60HZ M/c.No.8.137.1 to 8.148.1 (incl) 60HZ only M/c.No.8.161.1 & onward: 60HZ	GTH 3068 GTH 3168 GTH 3181	1
9	Output Shaft Washer	WL 40ME	2
11	Idle Shaft Nut	NL 18ME	1
12	Idle Shaft Washer	GTH 5052	1
13	Idle Wheel: M/cs.up to 8.116.1 M/c.No.8.137.1 to 8.148.1 (incl) M/c.No.8.161.1 & onwards	GTH 5412 GTH 6048 GTH 6081	1
14	Idle Shaft	GTH 5201	1
15	Idle Shaft Washer	GTH 5483	1
16	Idle Shaft Washer	GTH 5196	2
17	Idle Wheel Bearing	GTH 3007	1

Control Circuit Components - Electrical Box

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c</u>	
1M	Pump Motor Contactor	GTH 1302	1	
	Auxiliary Contact Block	GTH 1303	1	
1.O.L.	Pump Motor Overload (see legend)	GTH 1312	1	
2M	Traverse Left Contactor	GTH 1302	1	
	Auxiliary Contact Block	GTH 1304	1	
3M	Traverse Right Contactor	GTH 1302	1	
	Auxiliary Contact Block	GTH 1304	1	
4M	Nip Roll Feed Advance Contactor	GTH 1302	1	S.O.8
	Auxiliary Contact Block	GTH 1303	1	only
5M	Nip Roll Feed Reverse Contactor	GTH 1302	1	S.O.8
	Auxiliary Contact Block	GTH 1303	1	only
CR.1	Adjust Relay	GTH 1302	1	
	Auxiliary Contact Block	GTH 1303	1	
CR.2	Anti-Repeat Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1304	1	
CR.3	Auto-Aside Set Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1303	1	
CR.4	Cutting Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1303	1	
CR.5	Left Traverse Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1304	1	
CR.6	Right Traverse Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1304	1	
CR.8	Auto-Aside Direction Selection Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1303	1	
CR.9	Auto-Aside Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1304	1	
CR.10	D.C.Injection Brake Relay	GTH 1301	1	
	Auxiliary Contact Block	GTH 1303	1	
T.2	Traverse Aside Timer	GTH 1173	1	

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225-  
2546

See Diagram in Plastic Wallet at back of Manual

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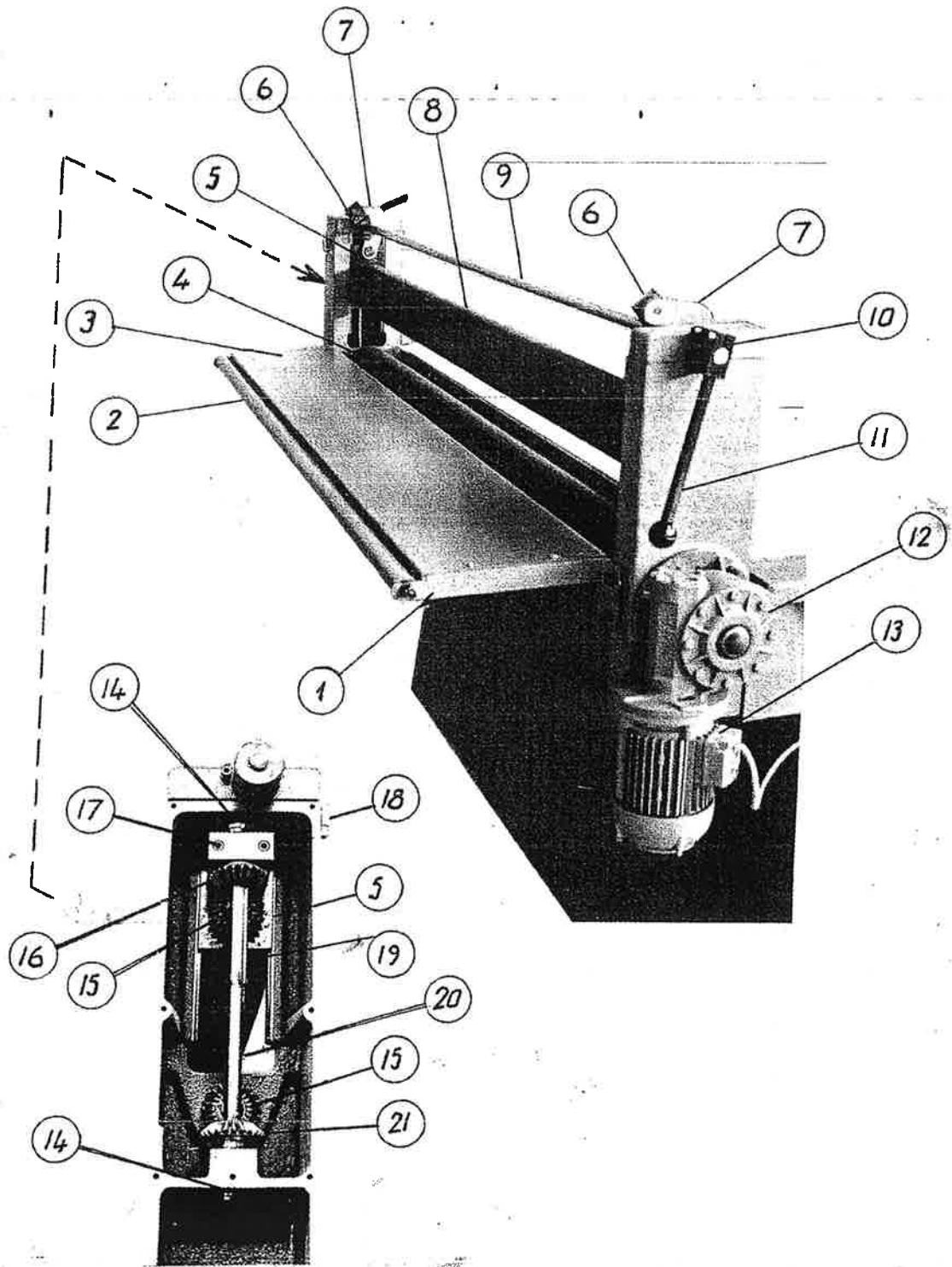
Control Circuit Components - Electrical Box

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1 FU )	Mains Input Fuses		3
2 FU )	380/415v = 25A	GTH 1285	
3 FU )	220/240v = 35A	GTH 1286	
4 FU )	Transformer Input Fuses	GTH 1177	2
5 FU )			
6 FU )	Brake Input Fuse:		
	380/415v = 4A	GTH 1177	1
	220/240v = 6A	GTH 1178	
7 FU )	Circuit Control Fuse	GTH 1177	1
8 FU )	Supplementary Fan Fuses	GTH 1287	2 S.O.15
9 FU )			
T	Transformer - 500 VA	GTH 1268	1
D.C.INJ.PCB	Brake PCB	GTH 1176	1
2. OL	Traverse Motor Overload (see legend) (for machines up to serial No.8.116.1)	GTH 1312	1

L E G E N D

<u>Part Nr.</u>	<u>Description</u>
1301	Sprecher + Schuh CA3-9/10 - 110Vac
1302	Sprecher + Schuh CA3-16/10 -110Vac
1303	Sprecher + Schuh CS3-P/22 - 110Vac
1304	Sprecher + Schuh CS3-P/04 - 110Vac
1312	Sprecher + Schuh CT3-12-amps rating to suit M/C voltage
1173	Timer CET PI 40 S - 110Vac
1285	Fuse 25A 0 13 x 50
1286	Fuse 35A 0 13 x 50
1177	Fuse 4A 0 8 x 35
1178	Fuse 6A 0 8 x 35
1287	Fuse 4A-2,5A 0 5 x 20

See diagram in Plastic Wallet at back of Manual



**Nip Roll Feed S.O.8**

NIP ROLL FEED OPTION S.O.8

<u>Item Nr.</u>	<u>Description</u>	<u>Part Nr.</u>	<u>Qty/M'c.</u>
1	Rear Table Bracket: Left	GTH 5126	1
	Right	GTH 5127	1
2	Auxiliary Roller:		1
	GTH 1655/1665 GTH 2055/2065	GTH 5393 GTH 5394	
3	Rear Table:		1
	GTH 1655/1665 GTH 2055/2065	GTH 5395 GTH 5396	
4	Drive Roller:		1
	GTH 1655/1665 GTH 2055/2065	GTH 5375 GTH 5374	
5	Sliding Block-Driven Roller:		
	Left Right	GTH 5469 GTH 5468	1 1
6	Toggle Lever:		
	Left Right	GTH 5466 GTH 5465	1 1
7	Sliding Block Lever:		
	Left Right	GTH 5664 GTH 5663	1 1
8	Driven Roller:		1
	GTH 1655/1665 GTH 2055/2065	GTH 5373 GTH 5372	
9	Toggle Connecting Bar:		1
	GTH 1655/1665 GTH 2055/2065	GTH 5680 GTH 5371	
10	Connecting Bar Handle Block	GTH 5389	1
11	Roll Opening Lever	GTH 5390	1
12	Reduction Gearbox	GTH 3054	1
13	Roll Drive Motor		1
	220/380/50	GTH 1043	
	240/415/50	GTH 1226	
	400/440/50	GTH 1227	
	220/380/60	GTH 1228	
	230/460/60	GTH 1229	
14	Bevel Gear Locknuts: Upper Part	GTH 3056	2
	Lower Part	GTH 3055	2
15	Bevel Gears (Driver & Driven)	GTH 5379	2
16	Idler Bevel Gear	GTH 5384	1
17	Idler Bevel Gear Bearing Block	GTH 9031	1
18	Idler Lubricator	GTH 2027	1
19	Drive Shaft Sliding Key	GTH 5464	1
20	Drive Shaft	GTH 5467	1
21	Idler Bevel Gear (Driven Roller)	GTH 5287	1