

AFE70
OPERATING INSTRUCTIONS
SERVICING INSTRUCTIONS
PARTS LIST

Desoutter



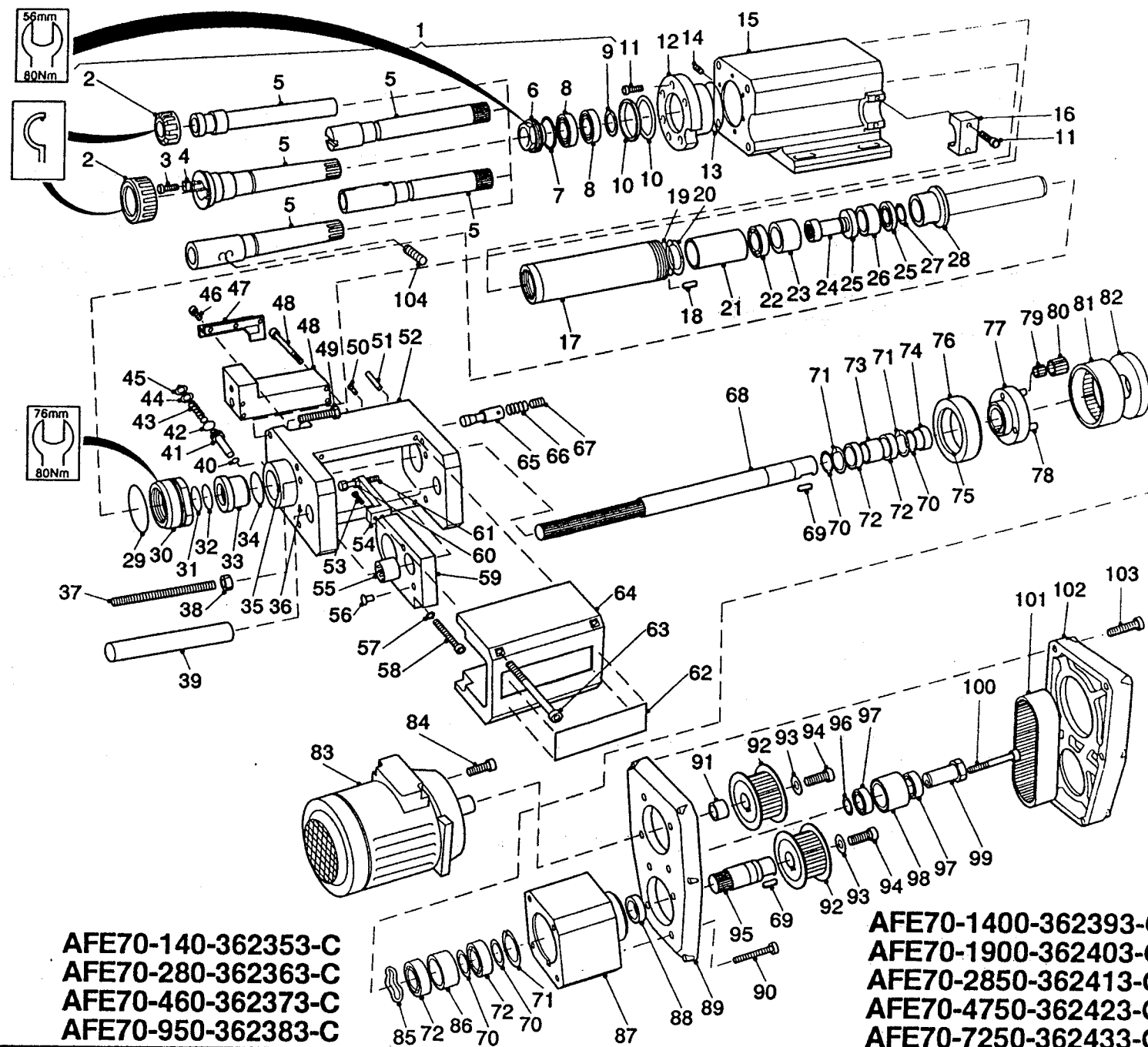
***Desoutter Limited,
319 Edgware Rd,
Colindale NW9 ND
Tel:081-205 7050
Fax:081-205 5167
Telex:21392***

Desoutter

Desoutter Limited, London, NW9 6ND

AFE 70

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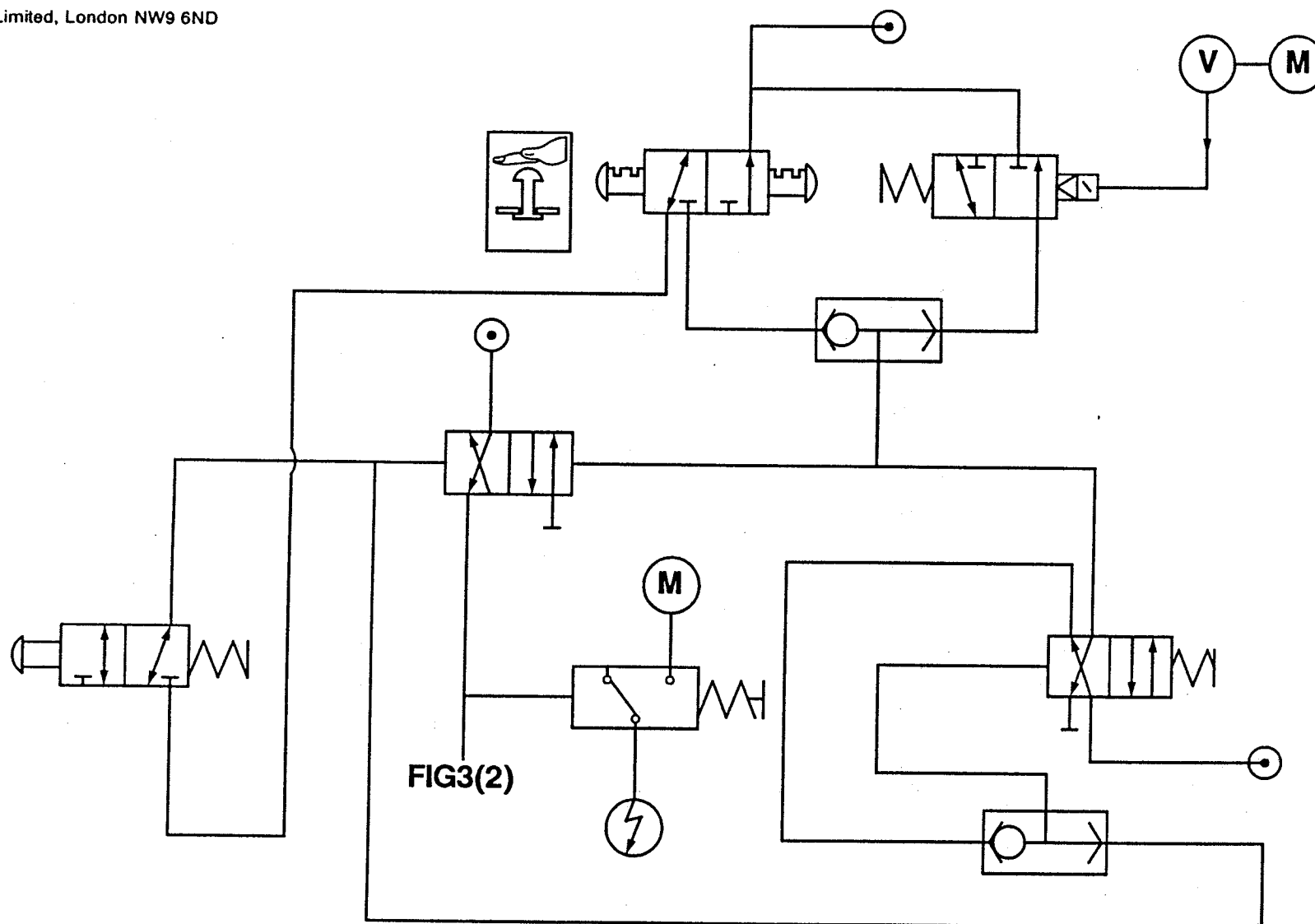


Item No. Pos Nr. No. Article	Part No. Teil. Nr. Pièce No	Qty Menge Qté	Item No. Pos Nr. No. Article	Part No. Teil. Nr. Pièce No	Qty Menge Qté	Item No. Pos Nr. No. Article	Part No. Teil. Nr. Pièce No	Qty Menge Qté	Item No. Pos Nr. No. Article	Part No. Teil. Nr. Pièce No	Qty Menge Qté	Item No. Pos Nr. No. Article	Part No. Teil. Nr. Pièce No	Qty Menge Qté
1	362443	1	27	367437	1	63	370363	3	90	367453	4	95	362093	1
	362453	1	28	361913	1	64	361073	1		236553	4	96	225913	1
	362463	1	*29	362483	1	65	362023	1	91	370353	1	97	275593	2
	(28mm)		30	361923	1	66	367503	1	92	362243	1	98	362203	1
	373333	1	31	367403	1	67	236653	1		(362353)		99	362193	1
	(1 1/16")		*32	362493	1	68	361943	1		362283	1	100	236513	1
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2	370753	1	34	367413	1	70	367493	4		362253	2		(362363)	
	362213	1	35	93893	1	71	370593	3		(362363)			(362373)	
3	229353	2	36	175793	1	72	367343	4		262273	1		(362383)	
4	362183	2	37	361993	1	73	361983	1		(362373)			(362403)	
5	361863	1	38	237023	1	74	370333	1		362243	1		(362413)	
	362163	1	39	367363	1	75	367423	1		(362373)			(362423)	
	362173	1	40	367443	1	76	362153	1		362243	1		362313	1
	373323	1	41	362003	1	77	362113	1		(362383)			(362353)	
	373353	1	42	323483	1	78	362143	3		362263	1		(362393)	
6	361873	1	43	367513	1	79	373173	3		(362383)			362323	1
7	367373	1	44	362013	1	80	362123	3		362243	1		(362433)	
8	367323	2	45	279853	1	81	362133	1		(362393)		102	361053	1
9	367473	1	46	236903		82	362103	1		362283	1	103	209493	6
*10	362473	1	47	362053	1	83	362333	1		(362393)		104	236733	2
11	223133	8	48	324143	1		(362383)			362243	1			
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19	367373	1	55	367353	1		(362363)			362243	1			
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22	367323	1	58	322533	2	85	367523	1		(362433)				
23	361893	1	59	361963	1	86	362153	1		362233	1			
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25	367333	2	61	322493	1	88	370333	2	93	370343	2			
26	361953	1	62	266393	1	89	361043	1	94	227993	2			

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OPERATORS INSTRUCTIONS

Air Supply - Main

A water free and filtered air supply is required, at a pressure of 6.3 bar (91.4 lbf/in²), with a flow rate of 9.9 l/s (21 cu.ft/min) controlled by a pressure regulator selected from the Desoutter Air Line Service Equipment Catalogue.

Air Supply - Remote

The basic requirements are as above but the pressure must be at least 2.7 bar (40 lbf/in²) and the flow requirement when signalling is 0.47 l/s (1 cu.ft/min). The signal duration should be kept to the minimum to reduce air consumption.

DATA

Maximum air pressure P_{max} = 8 bar
Minimum air pressure P_{min} = 6 bar
Sound pressure level = 59 dBA re (CAGI-PNEUROP Test Code)
Weight = 60 kg

Lubrication

A miniature airline lubricator selected from the Desoutter Air Line Service Equipment Catalogue may be fitted into the system down stream of the filter.

Desoutter recommend the use of an ISO Viscosity Classified oil, grade number ISO VG 15, in the lubricator.

The tool can be operated on dry line.

Statement of Use

The tool is designed for drilling holes, but may be adapted for other specified purposes, using Desoutter approved accessories.

WARNING:



- (1) ALWAYS DISCONNECT THE TOOL FROM THE AIR/POWER SUPPLY BEFORE ATTEMPTING ANY REPLACEMENT, ADJUSTING, SERVICING OR DISMANTLING.
- (2) ENSURE THAT NO LOOSE ARTICLES OF CLOTHING, HAIR OR CLEANING MATERIAL CAN BE CAUGHT BY THE ROTATING PARTS OF THE TOOL.
- (3) ALWAYS ALLOW THE TOOL TO STOP BEFORE REMOVING THE WORK.

- (4) ENSURE THAT THE WORK PIECE IS SECURELY CLAMPED BEFORE COMMENCEMENT OF OPERATION.
- (5) ENSURE THAT THE TOOL IS SECURELY MOUNTED BEFORE COMMENCEMENT OF OPERATION.
- (6) ENSURE THAT BOTH GUARDS ARE FITTED.
- (7) BEWARE OF TOOL OUTPUT. THIS ADVANCES AND ROTATES.
- (8) EYE PROTECTION MUST BE WORN WHEN OPERATING THE TOOL.
- (9) DO NOT OPERATE THE TOOL IN EXPLOSIVE ATMOSPHERES.
- (10) WHEN MACHINING HAZARDOUS MATERIALS, PROVISION MUST BE MADE FOR DUST COLLECTION OR SUPPRESSION.
- (11) ENSURE THAT AN EMERGENCY STOP IS PROVIDED FOR THE TOOL, WHETHER USED ALONE OR BUILT INTO A MACHINE. A SUITABLE EMERGENCY STOP CIRCUIT IS DETAILED IN FIGURE 2.



Electricity Supply

The motor must be connected to a three phase supply in accordance with the VOLTAGE CHART and provided with a starter fitted with an overload protection.

Voltage Chart - 3 Phase

Recommended Starter Crabtree BD 15	Voltage V	Frequency Hz	Motor Connections Link	Overload Setting
20100/MB	220 to 240	50	Delta	10 - 13.5 Amps
20100/MB	220 to 264	60	Delta	10 - 13.5 Amps
20100/KJ	380 to 440	50	Star	5.2 - 7.7 Amps
20100/KH 440/480 60 Hz Coil	380 to 520	60	Star	5.2 - 7.7 Amps

Connecting to the Electrical Supply

- WARNING:**
- (1) ENSURE THE SUPPLY IS OFF BEFORE MAKING CONNECTIONS.
 - (2) STAR AND DELTA CONNECTIONS ARE TO BE STRICTLY IN ACCORDANCE WITH THE SUPPLY VOLTAGE GIVEN IN THE CHART. ANY DEVIATION FROM THE CHART WILL RESULT IN DAMAGE TO THE MOTOR.

Determine the supply voltage and refer to the voltage chart for motor connections details.

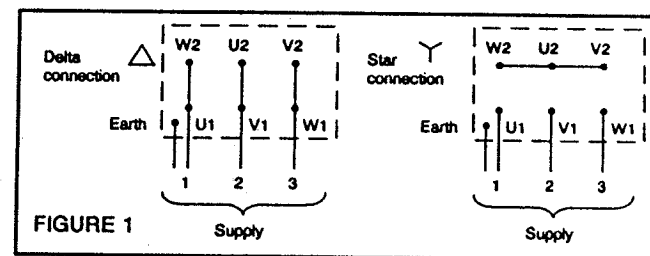
For Y (star) connection, couple terminal W2 to U2 and U2 to V2.

For Δ (Delta) connection, couple terminal W2 to U1, U2 to V1 and V2 to W1.

In both methods the motor will be direct on line connected.

NOTE: The terminals are fitted with 4mm pozidrive screws and the connecting links are connected between the screws. The earth connection is a 4mm pozidrive screw for which a suitable screwdriver will be required.

IMPORTANT: Do not remove or loosen the bottom nut on the terminals.



For all voltages: The supply cable (min. cable rating: armoured flexible 1.0mm conductors) is connected to the motor terminals U1, V1, W1 and earth, which are in the terminal box (see Figure 1). A suitable cable clamp should be fitted; the terminal box is provided with four (19mm diameter) "KNOCK-OUTS".

The Electric Motor

The motor is a totally enclosed, fan-cooled three-phase squirrel cage, class B minimum insulation with working ambient temperature of 40°C. Looking at the fan end of the motor the rotation should be anti-clockwise. If the rotation is opposite, interchange connections U1 and V1 to correct the rotation.

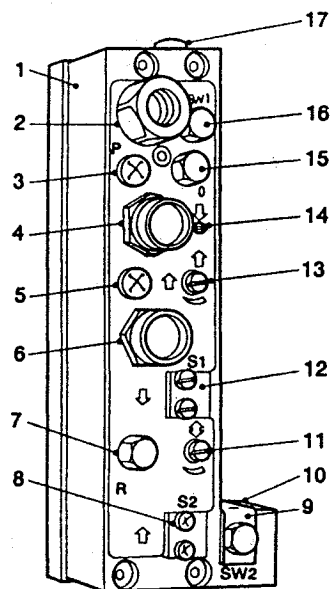


FIGURE 3 VALVE BLOCK MODULE COMPLETE

CONTROL VALVE (FIGURE 3)

The valve block module complete (1) contains all the control functions and signal originations for external control.

The controls and locations are identified below and detailed in the Drilling operation.

- LOCATION:
- 2 Main Air Inlet port, tapped $\frac{1}{2}$ in BSP or NPT.
 - 3 'P' Input port, tapped M5. Signal point for peck feed or Dwell control kit circuit.
 - 4 Manual Retract Button (Red).
 - 5 'I' Remote Start Input port, tapped M5. Receives external signal to start the tool cycle.
 - 6 Manual Start Button (Green).
 - 7 'R' Retract Output port, tapped 1/8in BSP.

- †8 Position for 'S2' Solenoid Valve for Electric Emergency Retract.
- †9 Position for 'SW2' Proximity Switch, detects a signal at the end of a cycle for interface kit connection (i.e. It is High at depth).
- 10 Stroke Control Valve.
- 11 Feed Rate Regulating Screw.
- †12 Position for 'S1' Solenoid Valve for Electric Start.
- 13 Retract Rate Regulating Screw.
- 14 Advance rate regulating Screw.
- 15 'O' port, tapped 1/8in BSP receives signal to return the feed to start position for peck feed or Dwell control.
- †16 Position for 'SW1' Proximity Switch, detects a signal at the beginning of a cycle for interface kit connection. (i.e. is High in datum position).
- 17 'M' port, is tapped M5. Used for sequence control. The signal is produced when the tool is at rest.

† Available in KIT form. See Desoutter Catalogue for details.

Control Valve Block Module - Basic (Figure 4)

This control valve block module is used when the tool is to be controlled remotely. Figure 4 details the signal originations.

NOTE: External circuitry will be required to control the speed of the advance and retract feeds.

LOCATION

1. Air supply inlet, tapped $\frac{1}{2}$ in BSP or NPT.
2. Retract Air port, tapped 1/8in BSP.
3. Advance Air port, tapped 1/8in BSP.

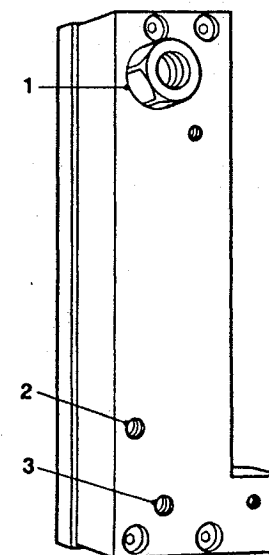
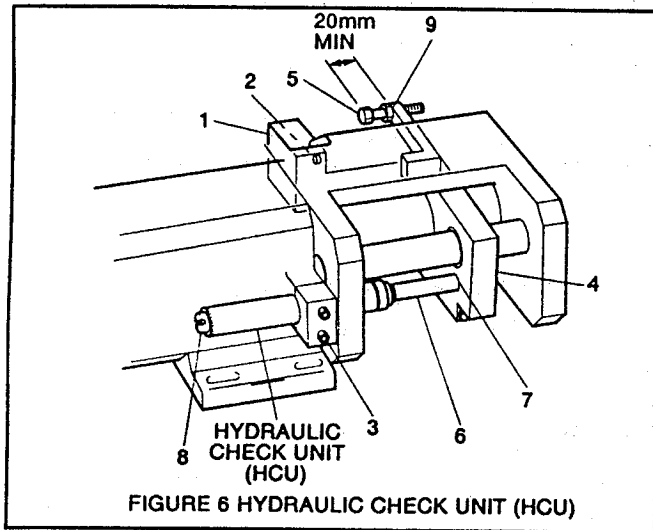
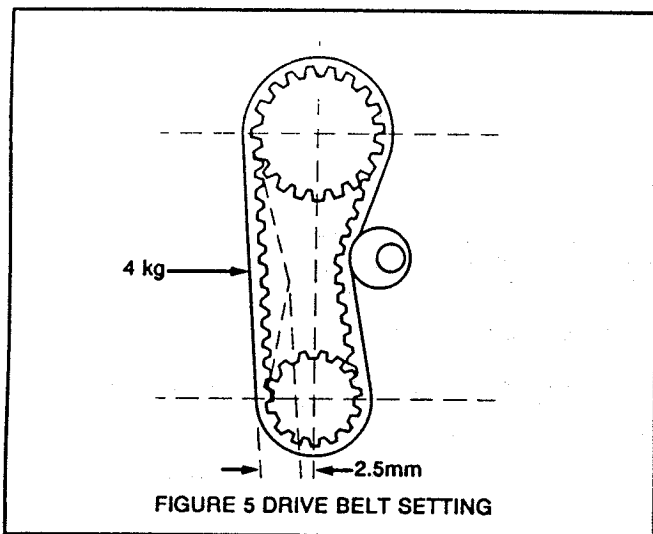


FIGURE 4 VALVE BLOCK MODULE BASIC

Accessories

Hydraulic Check Unit (HCU) - The tool will function satisfactorily, when drilling a blind hole at the set feed rate. Should it be required to break through the material and possibly through into another hole, feed acceleration will occur with possible drill breakage. To obviate this, the fitment of an HCU is strongly recommended. Request information from Desoutter.

Peck Feed Drills - The Desoutter Peck Feed Drill System should be used when the depth of the hole to be drilled is five or more times the hole diameter. This helps clear drill chips and avoids excessive overheating of drill bit. Hole size accuracy can be improved and drill bit run-out can be kept to the minimum. Request information from Desoutter.



SETTING DRILLING OPERATION (See Figure 6)

Remove both the guards.

The drill must be at least 6mm (0.25in) above the work piece.

NOTE: This setting details a unit with a HCU, reference to the HCU should be ignored when setting the standard tool.

Set the gap between the (2) and (5) to equal the depth of drilling required PLUS the distance the bit is above the work piece, by sliding (4). Lock in position with (4) to the recommended torque.

Position the HCU in (3). Set the gap between (6) and (7) to a distance as required above the work piece.

Unscrew (8) away from the HCU to adjust the resistance within the HCU to the minimum.

Fully open the Figure 3 (13).

Close Figure 3 (11/14).

Connect the air supply and press Figure 3 (6).

Adjust Figure 3 (11/13/14) to give the required advance, retract feeds for the operation.

Use Figure 6 (5) for the final depth adjustment.

Lock using Figure 6 (9).

Carry out a set of trial drillings to determine the ideal advance and HCU settings using Figure 3 (11/14).



When setting is complete, re-fit both the guards.

SERVICING REQUIREMENTS

General Notes

Use the following lubricants:

- Grease - BP FG00 EP, for bearings.
- Grease - Duckhams Type Q5618, for gears, splines and threads.
- Grease - Molykote PG75 Plastislip, for 'O' rings and seals.

Cleaning

Requirements:

- (1) Container to immerse components.
- (2) Good quality clean paraffin.

Soak the components in the container containing the paraffin. Ensure full immersion, agitate components to ensure that air passages are flushed through. Remove components from the container, thoroughly dry and blow through air passages to remove moisture. Place components in an air tight container until required for assembly. Dispose of the dirty paraffin in accordance with health and safety regulations.

MAINTENANCE

It is recommended that the tool is serviced at 1000hrs running time.

Dismantle the tool using the exploded view. Clean all components and inspect for wear or damage, exchange if necessary. Apply new lubricant to the relevant parts in accordance with list. Assemble the tool using the exploded view.

Torque values given are $\pm 5\%$.

Special tools shown in exploded view are in addition to normal workshop tools.

NOTE: Protective gloves and eye protection should be worn during cleaning of parts. Eating or smoking is prohibited when cleaning, dismantling or assembling tool.

Worn components should be carefully handled and disposed of safely.

* Indicates normal replacement items. It is recommended that adequate stocks are held for servicing requirements.

Always quote the tool number, serial number and spare part number when ordering spares.

Electric Motor

Electric motor testing and checking as necessary should be carried out by a competent electrician in accordance with the relevant section of the Health and Safety Act.



Desoutter Limited.
319, Edgware Road, Colindale, London NW9 6ND