

## ROUGHNECK 2000.

OPERATING THE ROUGHNECK EXCAVATOR, ONCE YOU ARE FAMILIAR WITH ITS CONTROLS AND CHARACTERISTICS IS SIMPLE, BUT TO ENSURE COMPLETE SAFETY YOU SHOULD READ THE FOLLOWING, BEFORE YOU COMMENCE DIGGING.

### BASIC SAFETY RULES

1. Never operate the machine where there are young children in the vicinity or where their safety is endangered.
2. Ensure that stabilising outriggers are adjusted to give maximum stability for the digging operation being performed. Secure stabilisers with locking pins.
3. Adjust rear jacking wheels to give maximum stability for the digging operation being performed. Secure 'Axles' with locking pins.
4. Exercise special care when 'walking' the machine about especially over uneven terrain, by avoiding jerky operation of the control joysticks. When manoeuvring sideways or in line always keep the front stabiliser feet as near to the ground as possible.
5. Ensure that the front outriggers are placed onto firm ground to avoid toppling.
6. Ensure that rear jacking wheels are raised before digging commences. Approximately 6" above ground level gives maximum stability.
7. Locate and avoid all electrical cables, water/gas pipes etc. (find someone that knows the site). Gas and electrical lines have plastic locating strips above them. When in doubt about power lines etc. hand dig until these are located.
8. Never lower yourself into deep narrow trenches in case collapse of the trench occurs.

9. Always plan your digging operation prior to commencing and ensure that your point of finish is not (1) In a corner (2) Behind your accumulated spoil or (3) that you have to cross one of your trenches to get out.  
Never slew the backhoe whilst front outriggers are folded in the 'in' position.  
Do not dig in hazardous conditions, or uneven terrain without first levelling.  
When trench digging always push yourself away from your trench and follow pre marked lines.
10. The machine was designed for excavating and should be used for no other purpose, it is not designed to be used as a crane.  
  
See separate instructions for use of Power Take-off facility.
11. Take extra care whilst slewing with a large bucket fitted, when working with dense spoil ie clay.

### CONTROLS.

Looking at the control joystick from a seated position the arrangement is as follows:

DOWN	RIGHT	DOWN	OPEN	OPEN
0	0	0	0	0
1	1	1	1	1
UP	LEFT	UP	CLOSE	CLOSE
JIB	SLEW	REAR BEAM	DIPPER ARM	BUCKET CROWDING

With practice you will find that you can 'feather' (ie. Marginally open the valves) by cautious movement of the joysticks, giving very good control over the hydraulic cylinders, therefore reducing jerkiness. More than one function may be operated at once, for example the dipper and bucket may be opened together.

1. 'WALKING' THE MACHINE.  
Lower rear beam until the anchor spades are clear of the ground.
2. Open bucket in line with dipper arm.
3. Close dipper arm cylinder so that arm is in line with jib.
4. Lower jib until front stabilisers are just clear of ground.
5. Open dipper cylinder and machine will pull itself along.  
As the cylinders open, the machine will tend to raise, this can be adjusted by raising the jib, therefore lowering the machine nearer to the ground. Reversal will obviously push the machine backwards.

### HYDRAULIC VALVE BANK.

The hydraulic valves are generally very reliable in operation and require little maintenance. Should a leak occur, obtain a service exchange block from Roughneck Excavators Limited.

### FAULT FINDING.

#### SLUGGISH OPERATION

- |    |  |   |                   |
|----|--|---|-------------------|
| a) | Hydraulic fluid level low                | - | Replenish         |
| b) | Blocked hydraulic line                   | - | Check and replace |
| c) | Blocked filter                           | - | Replace           |
| d) | Split hose                               | - | Replace           |
| e) | Seals in cylinder worn and passing fluid | - | Replace           |

### HYDRAULIC HOSES AND COUPLINGS.

Hoses and couplings should receive weekly inspection for wear leaks at screwed connections. Any hoses found to have severe abrasions should be replaced.

### UNLOADING AND TOWING.

The trailer has been designed for quick loading/unloading of the excavator.

#### TO UNLOAD.

1. Lower rear jacking beam.
2. Raise jib.
3. Extend dipper arm.
4. Open bucket in line with dipper arm.
5. Lower jib until stabilisers are approximately 24'' clear of ground surface.
6. Tilt trailer by lifted towing hitch and pull away from excavator.
7. Loading is the reversal of the above procedure, but ensure that the rear spades are located properly, the bucket lugs are sitting on either side of the trailer spine, and that the excavator is securely lashed to the trailer.

#### TOWING.

Before towing the machine check:

1. The machine is securely anchored to the trailer.
2. The tyres for pressure and condition.
3. Lighting board is connected and secured.
4. Your vehicle can tow 500 Kg unbraked.  
Refer to C & U regulations.

MANOEUVERING.

RESTRICTED ACCESS.

The front stabilising legs can be substituted by a pair of wheels that slide into the hinging leg adaptors. Once these are fitted , the jib and dipper are closed right up. The rear jacking beam is lowered to raise the rear spades just clear of the ground. The machine is very easy to push and manoeuvre about.

LOADING DUMPERS ETC.

A higher load over height can be obtained by moving the jib cylinder into position 2.

### MAINTENANCE.

The Roughneck 2000 has been designed for low maintenance and ease of servicing. All fulcrum points are fitted with self lubricating and re\_greasable bearings. All cylinders are fitted with special, re\_greasable bearings, for complete alignment. Acces to the hydraulic power unit is obtained by simply hinging the seat and cowling up.

### ENGINE.

Refer to the manufacturers instructions for full details.

### HYDRAULIC CYLINDERS.

All the cylinders are identical and are all fitted with spherical bearings. The bearing should be greased daily or after each 8 hour shift. Should it be necessary to change the hydraulic cylinder seals refer to manufacturers for instructions.

### FULCRUM PINS.

All fulcrum pins to be greased daily or after each 8 hour shift.

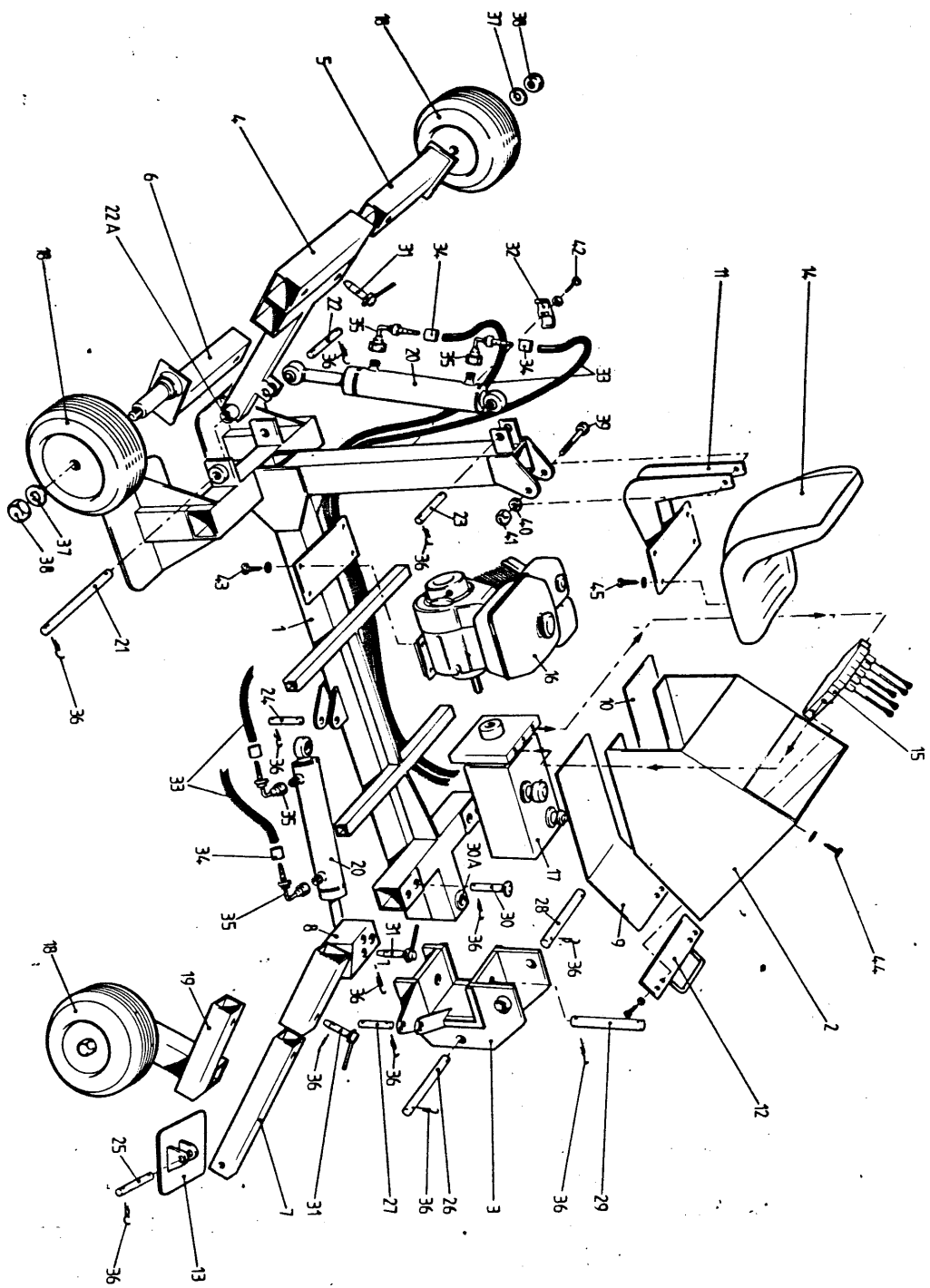
SPARES SCHEDULE.

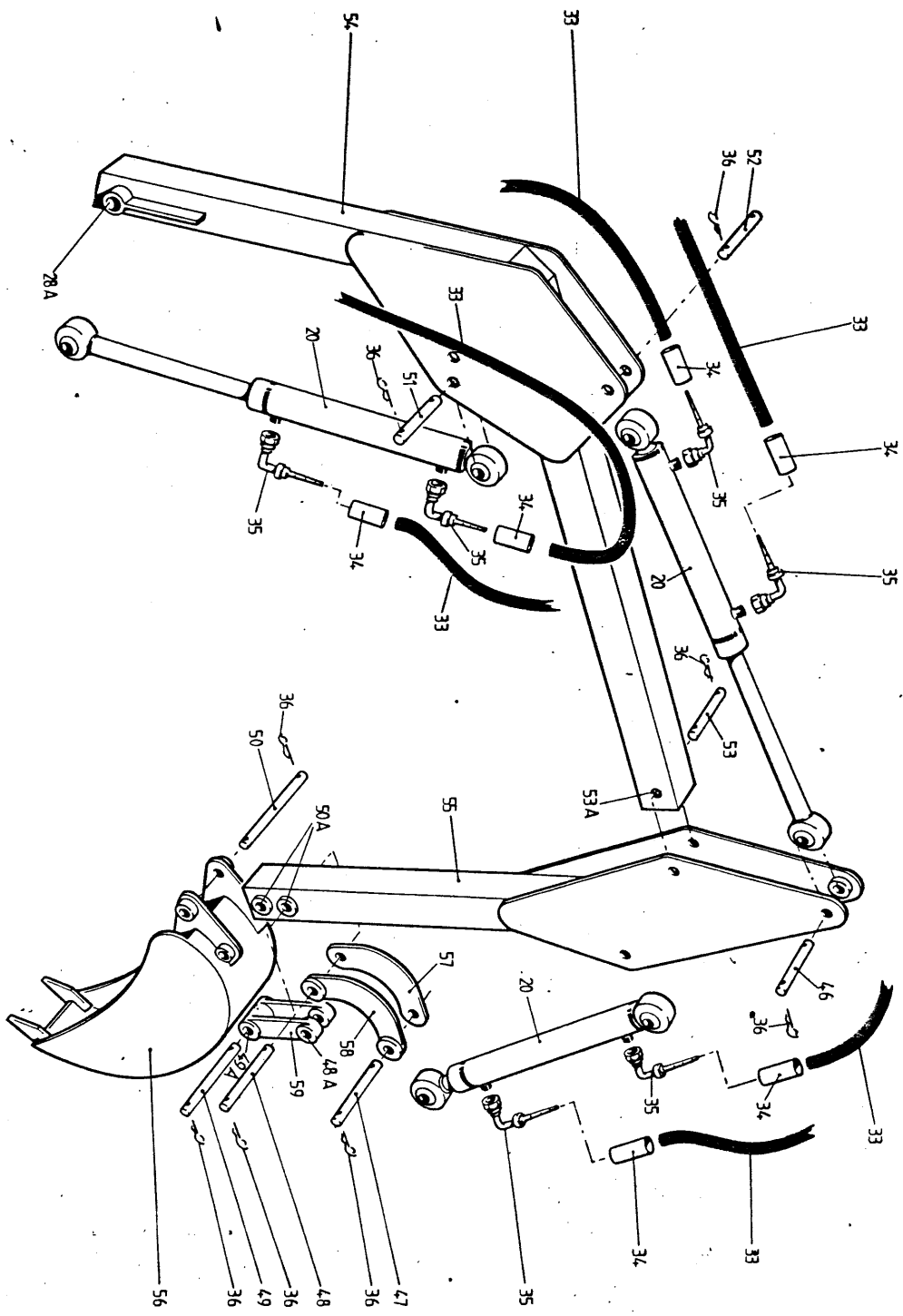
<u>ITEM.</u>	<u>PART NO.</u>	<u>DESCRIPTION.</u>	<u>QUANTITY.</u>
1	1001	CHASSIS	1
2	1007/6	POWER UNIT COVER	1
3	1008	KINGPOST	1
4	1006/2	JACKING BEAM	1
5	1006/7	TELESCOPING AXLE	1
6	1006/7	TELESCOPING AXLE	1
7	1016/6	TELESCOPING LEG	2
8	1013/2	LEG BRACKET	2
9	1007/1	FOOT SUPPORT R H	1
10	1007/1	FOOT SUPPORT L H	1
11	1009	SEAT BRACKET	1
12	1007/3	HOSE CARRIERS	1
13	1016/2	SWIVEL FOOT	2
14	1000/1	SEAT-SELF DRAINING	1
15	1000/2	VALVE BANK 5 SLICE	1
16	1000/3	3.7 KW PETROL ENGINE	1
17		POWER PACK COMPRISING:-	
	1000/4	GEAR PUMP	1
	1000/5	MANIFOLD	1
	1000/6	COUPLING	1
	1000/7	TANK	1
	1000/8	RETURN LINE FILTER	1
	1000/9	FILLER CAP	1
	1000/10	MAIN PRESSURE HOSE	1
	1000/11	RETURN LINE HOSE	1
	KIRON 32	HYDRAULIC FLUID	
18	1006/12	WHEEL-JACKING AXLE	2
18	1020/2	WHEEL-BOGIE WHEELS	2
19	1020/1	LEG-BOGIE WHEELS	2
20	50-25-305SP	HYDRAULIC CYL' 305 STROKE	5
21	1010/7	JACKING BEAM FULCRUM PIN	1
22	1010/7	JACKING BEAM CYL PIN LOWER	1
22A	1006/6	JACKING BEAM BEARING	2
23	1010/3	JACKING BEAM CYL PIN UPPER	1
24	1010/3	SLEW CYL PIN REAR	1
25	1010/5	SWIVEL FOOT PIN	2
26	1010/8	JIB CYL PIN LOWER	1
27	1010/4	SLEW CYL PIN FRONT	1
28	1010/7	JIB FULCRUM PIN	1
29	1010/13	KING PIN & KEEPER BOLT	1
30	1010/14	LEG BRACKET FULCRUM PIN	2
30A	1001/20	KING PIN BEARING	2
	1010/16	LEG BRACKET SECURING PIN	2
		HOSE CLIP (State SINGLE / DOUBLE).	
		HOSE ASSEMBLIES:-	
32	FLEXI 1	JACKING BEAM-LIFTING	1
33	FLEXI 2	JACKING BEAM-LOWERING	1



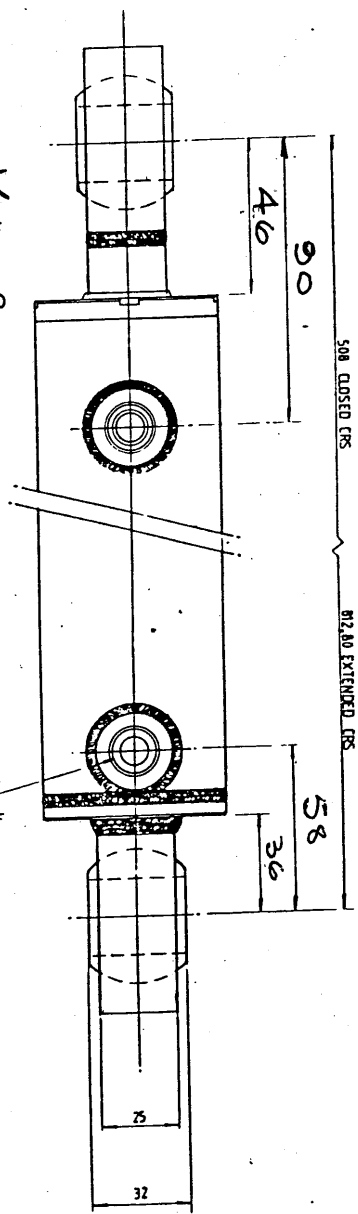
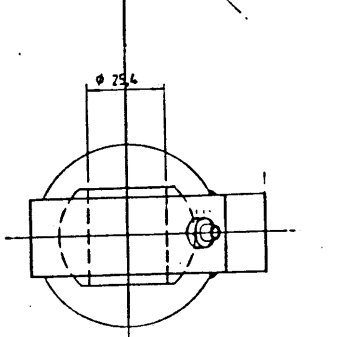
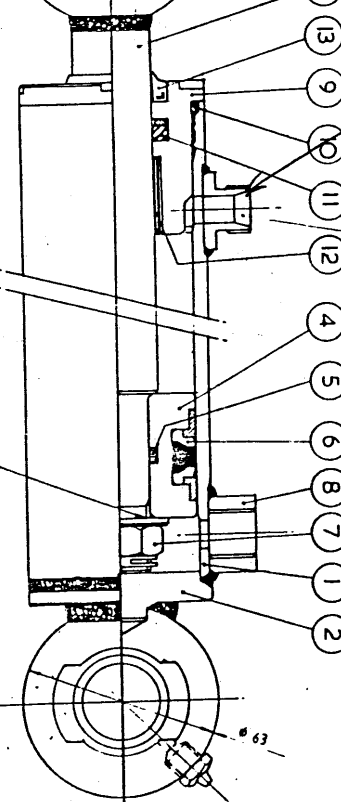
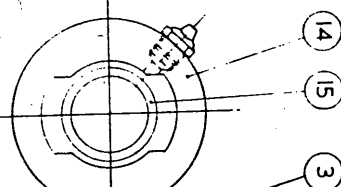
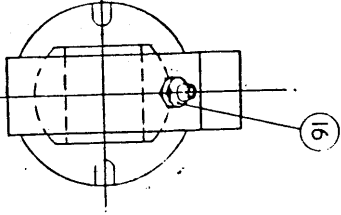
SPARES SCHEDULE.

ITEM.	PART NO.	DESCRIPTION.	QUAN.
33	FLEXI 3	SLEW PUSHING	1
	FLEXI 4	SLEW PUSHING	1
	FLEXI 5	JIB LIFTING	1
	FLEXI 6	JIB LOWERING	1
	FLEXI 7	DIPPER CLOSING	1
	FLEXI 8	DIPPER OPENING	1
	FLEXI 9	BUCKET OPENING	1
35	FLEXI 10	BUCKET CROWDING	1
36	Large/Small	SPRING CLIPS	1
37	1006/20	20 DIA WASHER (LIGHT)	2
38	1006/11	M20 NYLOC NUT	2
39	1009/5	M12 X BOLT	1
40	1009/6	12 DIA WASHER	1
41	1009/7	M12 NYLOC NUT	1
42		M6 X BOLT (PLATED)	11
43			
44			
45			
46	1010/2	DIPPER CYL PIN FRONT	
47	1010/12	BUCKET CYL PIN FRONT	
48	1010/16	CRESCENT FULCRUM PIN	1
48A	1004/7	BUCKET LINK BEARING TOP	2
49	1004/8	BUCKET LINK PIN	1
49A	1004/8	BUCKET LINK BEARING BOTTOM	2
50	1010/6	BUCKET FULCRUM PIN	1
50A	1003/5	BEARING	4
51	1010/7	JIB CYL PIN UPPER	1
52	1010/2	DIPPER CYL PIN REAR	1
53	1010/5	DIPPER FULCRUM PIN	1
53A	1002/6	DIPPER FULCRUM BEARING	2
54	1002	JIB	
55	1003	DIPPER ARM	
56	1005	BUCKET (OPTIONS)	
		203 WIDE	
		305 WIDE	
		407 WIDE	
		SIDE CUTTERS	2
		CLAY SPADE	
		DITCHING BUCKET	
		FACE SHOVEL	
57	1004/1	BUCKET CRESCENT LINK L H	1
58	1004/1	BUCKET CRESCENT LINK R H	1
59	1019/	TRAILER CHASSIS	1
60	1019/	SUSPENSION UNITS	2
61	1019/	SUSPENSION MOUNTING BOLTS	
		NUTS & WASHERS	
62	1019/	WHEELS	2
63	1019/	MUDGUARDS	2
64	1019/	TOW HITCH	
65	1019/	TOW HITCH BOLTS^ NUTS & WASHERS	2 EA





	C.D.S.	BSS 5242 HP 5 28 Tref L
	END CAP	
	PISTON ROD	
1	PISTON	
1	O-RING	
1	UNIT SEAL	MDM 050034/24
1	LOCKNUT	
2	BLOCK - PORT	
1	BEARING END CAP	
1	O-RING	
1	ROD SEAL	
1	BEARING	SEE NOTE
1	WIPER SEAL	
2	SPHERICAL HSG	
2	BEARING SPH'CL	
2	1/8" NIPPLE	



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612.00 EXTENDED CRS

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1/4" BSP PORTS

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TEST PRESSURE 207 BARS

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APPROVED OXIDE	
SCALE: FULL SIZE	
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TITLE:	
ISSUE	PART CHANGE NUMBER
1	NEW ISSUE

DYACTING CYLINDER 50 x 75 x 30.