

PA93 & PA94

Spares manual



SPARE PARTS MANUAL

FOR BEST PERFORMANCE....

USE ONLY McCONNEL SPARE PARTS

To be assured of the latest design improvements purchase your genuine replacements from the original equipment manufacturer F.W. McConnel Ltd. through your local dealer or stockist.

Always quote machine type and serial number as well as the part number.

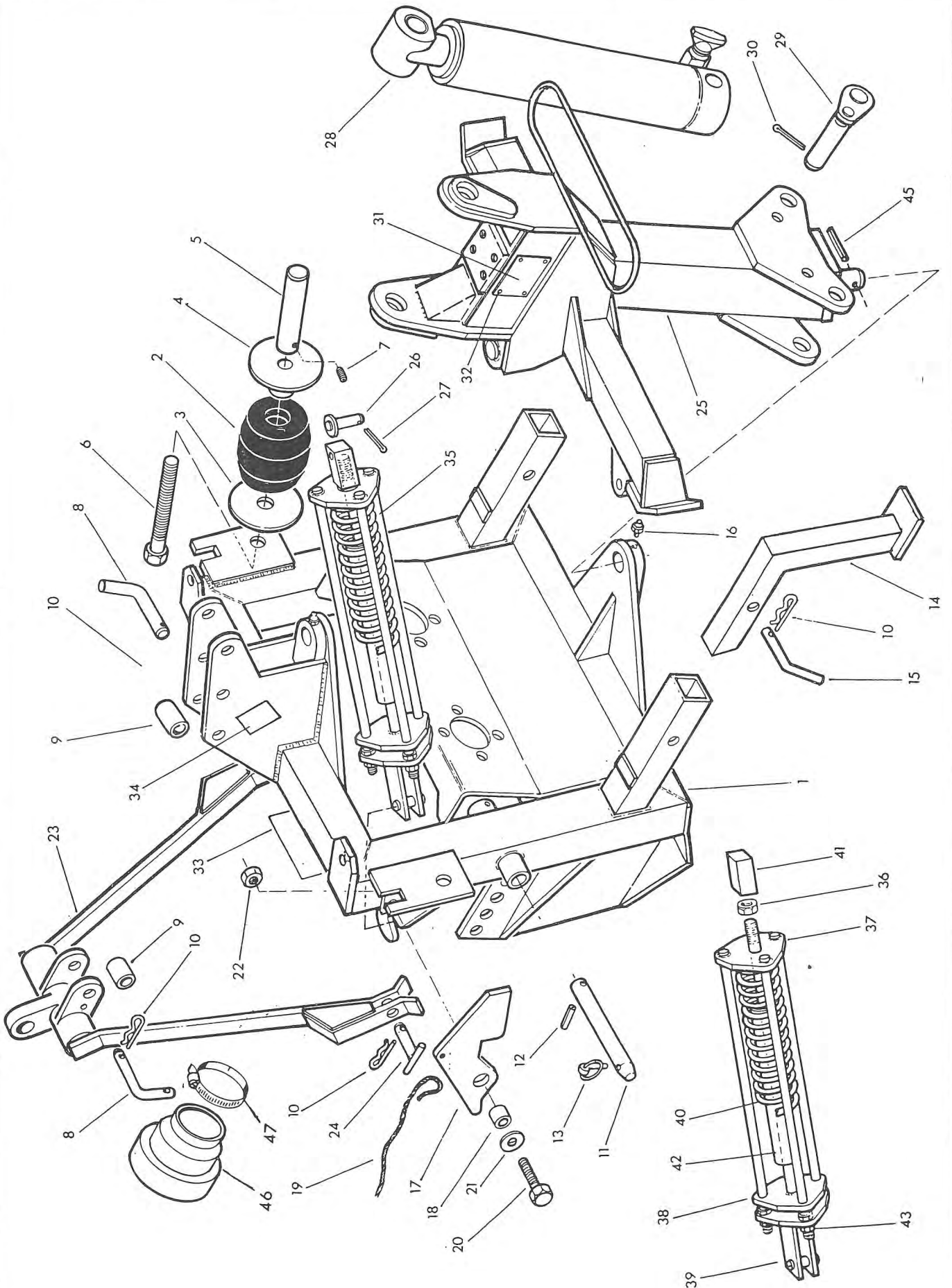
Design improvement may have altered some of the parts listed in this manual - The latest part will always be supplied when it is interchangeable with an earlier one

Model

YOKE, MAIN FRAME &
PILLAR

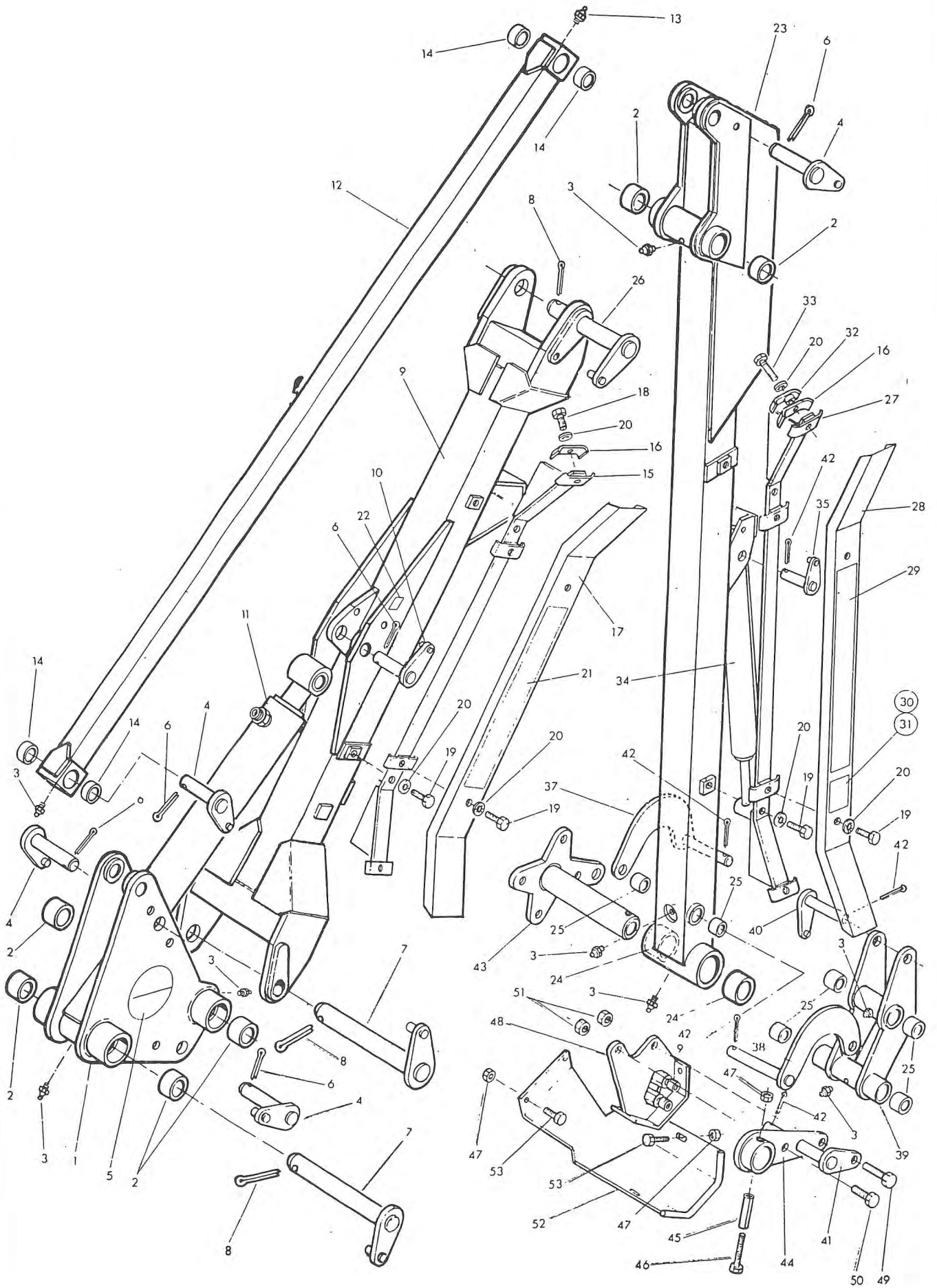
McCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.





Ref.	Part No.	Qty.	Description
MAIN FRAME, STABILISER & PILLAR			
1	71-93-300	1	Main frame
2	71-35-033	1	Buffer
3	71-35-035	1	Buffer disc
4	71-35-034	1	Buffer locating disc
5	71-93-323	1	Buffer abutment
6	71-35-293	1	Buffer bolt
7	93-63-034	1	Grubscrew M8 x 12 cup point
8	71-92-026	2	Top link pin
9	14-67-063	2	Sleeve
10	04-31-105	6	Spring cotter
11	71-93-020	1	Linkage pin
12	04-22-628	2	Spring dowel 3/8" dia x 1 3/4" long
13	04-31-217	2	Linch pin
14	71-92-307	2	Stand leg
15	71-920023	2	Leg pin
16	09-01-121	2	Greaser 1/8 BSP- straight
17	71-93-325	1	Latch
18	71-35-097	1	Spacer
19	71-35-036	1	Operating cord
20	92-13-106	1	Bolt M12 x 50
21	91-00-106	1	Plain washer dia 12
22	91-43-006	1	Self locking nut M12
23	71-92-327	1	Stabiliser
24	71-92-027	2	Stabiliser pin
25	71-93-311	1	Pillar
26	71-93-021	1	Anchor pin
27	95-01-406	1	Split pin dia 5 x 40
28	71-93-333	1	Lift ram assembly see page 74
29	71-93-025	1	Pin - Lift ram base
30	05-03-166	1	Split pin 1/4" dia x 2" long
31	71-93-018	1	Serial No. plate
32	71-03-230	4	Pop rivet 1/8" dia
33	71-35-295	1	Sticker - "Tighten check chains"
34	71-05-130	1	Sticker - "Read instruction book first"
35	71-35-314	1	Breadaway assistor spring assy.includes
36	01-11-006	1	Nut 5/8 UNF
37	71-35-315	1	Spring cage
38	71-35-316	1	Tie Rod
39	71-35-317	1	Jaw end
40	71-35-298	1	Spring
41	71-35-081	1	Pinned end
42	71-35-318	1	Spacer
43	01-11-003	6	Nut 3/8 UNF
44	71-14-289	1	P.T.O. shaft assembly - not illus.
45	04-21-289	1	spring Dowel 1/4 " dia x 2" long
46	09-04-114	1	Hose clip
47	71-11-038	1	PTO Guard





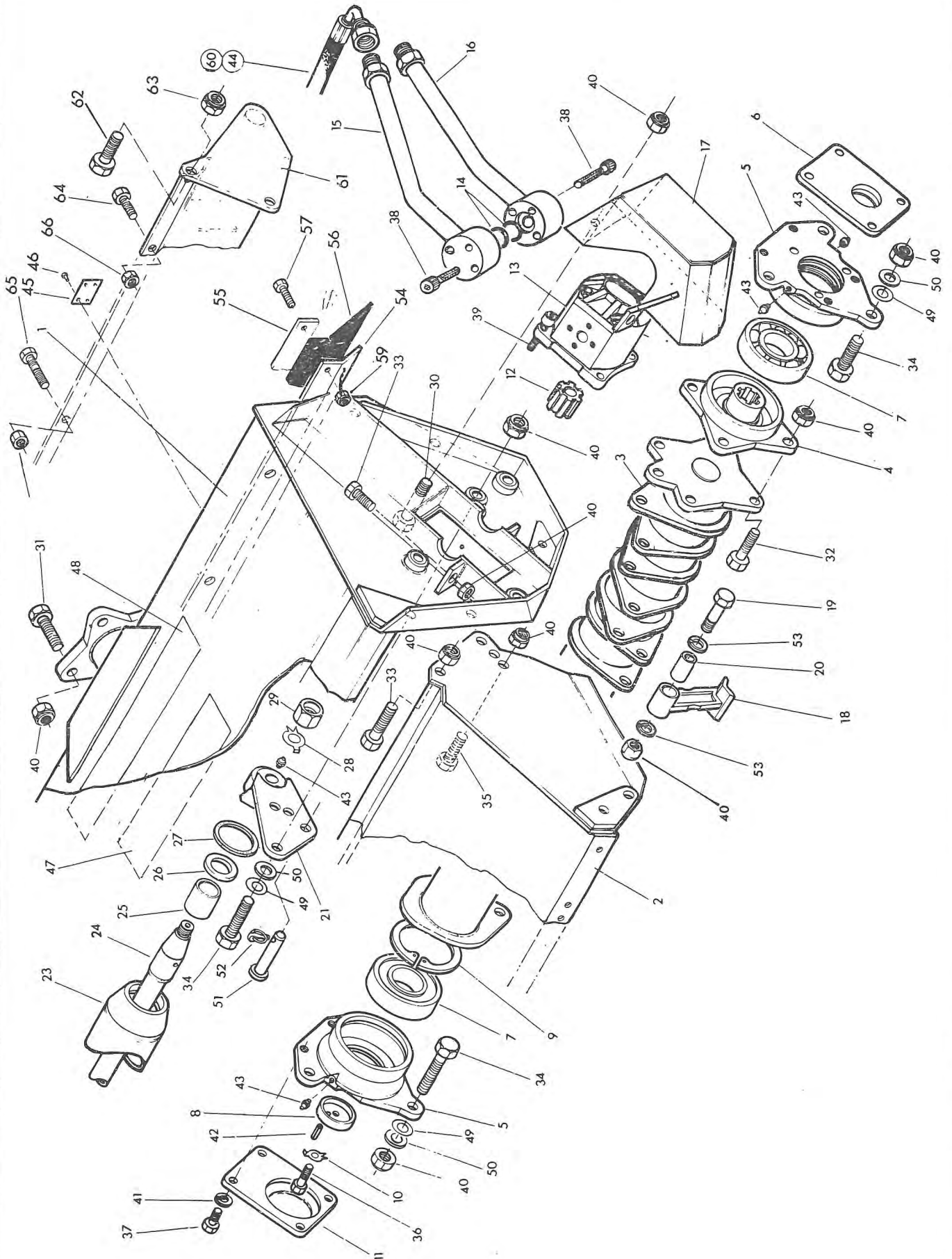
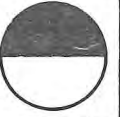
Ref.	Part No.	Qty.	Description
ROCKER AND ARMS			
1	71-93-330	1	Rocker
2	72-13-023	6	Bush-Rocker and dipper pivot
3	09-01-121	8	Greaser 1/8" BSP - straight
4	71-93-025	4	Pivot pin - Tension link, Reach ram base and lift ram rod
5	12-90-296	1	Sticker "Logo roundel"
6	05-03-166	5	Split pin 1/4" dia x 2" long
7	71-93-033	2	Pivot pin - Main Arm and rocker
8	95-01-509	3	Split pin dia 10 x 50
9	71-93-304	1	Main arm
10	71-93-022	1	Pivot pin - Reach ram rod
11	71-93-334	1	Reach ram assembly - see page 76
12	71-93-326	1	Tension link
13	09-01-124	1	Greaser 1/8 BSP 67 1/2 degree
14	60-12-032	4	Bush
15	71-93-312	1	Hose guide - Main arm
16	71-93-014	4	Hose clamp
17	71-93-320	1	Hose cover - main arm
18	92-13-085	3	Bolt M10 x 40
19	93-13-055	8	Setscrew M10 x 25
20	91-00-305	12	Internal serrated washer dia 10
21	12-90-255	1	Sticker "McConnel"
22	60-55-002	1	Sticker "Sling here"
23	71-93-308	1	Dipper arm
24	71-11-175	2	Bush - head pivot
25	71-01-083	6	Bush - Radius arm pivot & slave link
26	71-93-034	1	Pivot pin - Dipper
27	71-93-313	1	Hose guide - dipper
28	71-93-321	1	Hose cover - dipper
29	12-90-295	1	Sticker "Power Arm"
30	12-90-293	1	Sticker "93"
31	12-90-292	1	Sticker "94"
32	71-93-019	1	Hose clip - angle
33	92-13-125	1	Bolt M10 x 60
34	71-35-290	1	Angle ram assembly -see page 77
35	71-92-024	1	Pivot pin - Angle ram base
36	05-03-126	1	Split pin 1/4" dia x 1 1/2" long
37	71-92-311	1	Radius arm - front
38	71-92-310	1	Radius arm - rear
39	71-92-309	1	Slave link
40	71-92-008	1	Pivot pin - Angle ram rod
41	71-92-009	1	Pivot pin - Slave link
42	95-01-406	2	Split pin dia 5 x 40
43	71-92-308	1	Head pivot tube
44	71-92-316	1	Jaw plate
45	04-23-548	1	Spring dowel 5/8" dia x 3" long
46	92-13-185	1	Bolt M10 x 90
47	91-43-005	5	Self locking nut M10
48	71-92-321	1	Hose junction bracket
49	02-11-146	1	Bolt 5/8" UNF x 1 3/4" long
50	02-11-126	1	Bolt 5/8" UNF x 1 1/2" long
51	01-41-006	2	Self locking nut 5/8 UNF
52	71-92-324	1	Hose tray
53	93-13-045	4	Setscrew M10 x 20

Model

HEDGE FLAIL HEAD

McCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.





Ref	Part No	Qty	Description
	71-90-252		1.2 METRE HEDGE FLAIL TO CUT ON R. HAND OF TRACTOR WITH MOTOR OUTBOARD
	71-90-253		1.2 METRE HEDGE FLAIL TO CUT ON L.HAND OF TRACTOR WITH MOTOR OUTBOARD - as illus.

Spares are identical in both builds and comprise:-

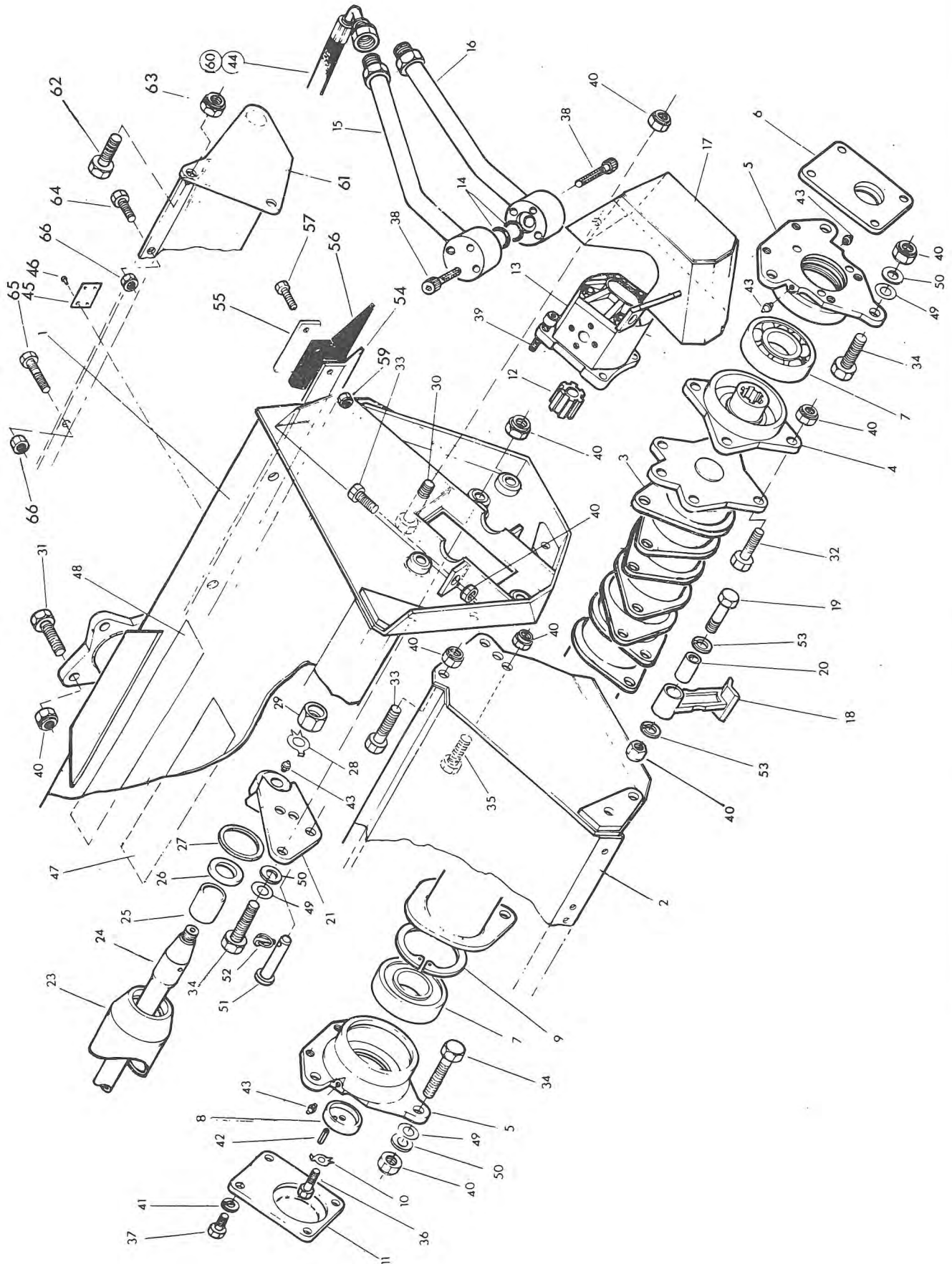
1	71-90-262	1	Flail casing
2	71-90-288	1	Front hood
3	71-90-320	1	Rotor
4	71-90-280	1	Rotor hub
5	71-90-261	2	Bearing housing
6	71-90-293	1	Motor spacer plate
7	06-00-018	2	Bearing
8	71-90-025	1	Clamp washer
9	71-90-022	1	Internal circlip dia 120
10	71-90-024	1	Tab washer dia12
11	71-90-292	1	Cover plate
12	71-90-009	1	Drive coupling
13	83-01-263	1	Hydraulic motor
14	86-00-121	2	'O' ring
15	71-90-295	1	Motor pipe upper
16	71-90-296	1	Motor pipe lower
17	71-90-282	1	Motor cover
18	73-14-366	24	Hedge flail F10H
19	73-14-201	24	Special bolt
20	73-14-223	24	Pivot bush
21	71-90-306	1	Roller bracket L.Hand
22	71-90-305	1	Roller bracket R.Hand - not illus
23	71-90-307	1	Roller
24	71-90-308	1	Roller tie rod
25	72-13-023	2	Bush
26	71-90-026	2	Thrust washer
27	71-90-028	2	Felt seal
28	71-90-023	2	Tab washer dia 20
29	71-14-176	2	Special nut M 20
30	02-11-266	1	Bolt 5/8 UNF x 3 1/4" long

Model

HEDGE FLAIL HEAD

McCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.





Ref.	Part No.	Qty.	Description
	71-90-252		1.2 METRE HEDGE FLAIL TO CUT ON R.HAND SIDE OF TRACTOR WITH MOTOR OUTBOARD- continued
	71-90-253		1.2 METRE HEDGE FLAIL TO CUT ON L.HAND SI DE OF TRACTOR WITH MOTOR OUTBOARD as illustrated- continued.
31	02-11-186	4	Bolt 5/8 UNF x 2 1/4' long
32	03-11-146	4	Setscrew 5/8 UNF x 1 3/4" long
33	03-11-126	4	Setscrew 5/8 UNF x 1 1/4' long
34	03-11-166	8	Setscrew 5/8 UNF x 2" long
35	03-11-106	2	Setscrew 5/8 UNF x 1 1/4" long
36	93-13-076	1	Setscrew M12 x 35
37	93-13-045	4	Setscrew M10 x 20
38	93-00-014	6	Capscrew 'wedglok' M10 x 60
39	93-00-136	4	Capscrew 'wedglok' M10 x 45
40	01-41-006	49	Self locking nut 5/8 UNF
41	91-00-205	4	Spring washer \varnothing 10
42	04-21-608	1	Spring dowel 3/16" dia x 1/2" long
43	09-01-121	6	Greaser
44	85-38-015	2	Hose 3/4" BSP SF-90 F x 34" long for outboard motors
45	73-14-087	1	Serial No. plate
46	71-03-230	4	Pop rivet 1/8" dia
47	12-90-297	1	Flail head instruction Sticker
48	12-90-255	1	'McConnel' sticker
49	81-21-043	as reqd	Shim 0.15"
50	81-21-044	as reqd	Shim 0.25"
51	71-90-032	2	Pin
52	04-31-213	2	Linch pin
53	01-00-206	48	Spring washer 5/8" dia
54	71-90-312	1	Mounting strip
55	71-9-313	1	Clamp strip
56	71-90-314	1	Flap
57	93-13-055	11	Setscrew M10 x 25
58	93-13-045	1	Setscrew M10 x 20
59	91-43-005	12	Self locking nut M10

86-99-166

SEAL KIT FOR HYDRAULIC MOTOR
Contains all seals plus tab washer and nut

OPTIONAL EXTRAS

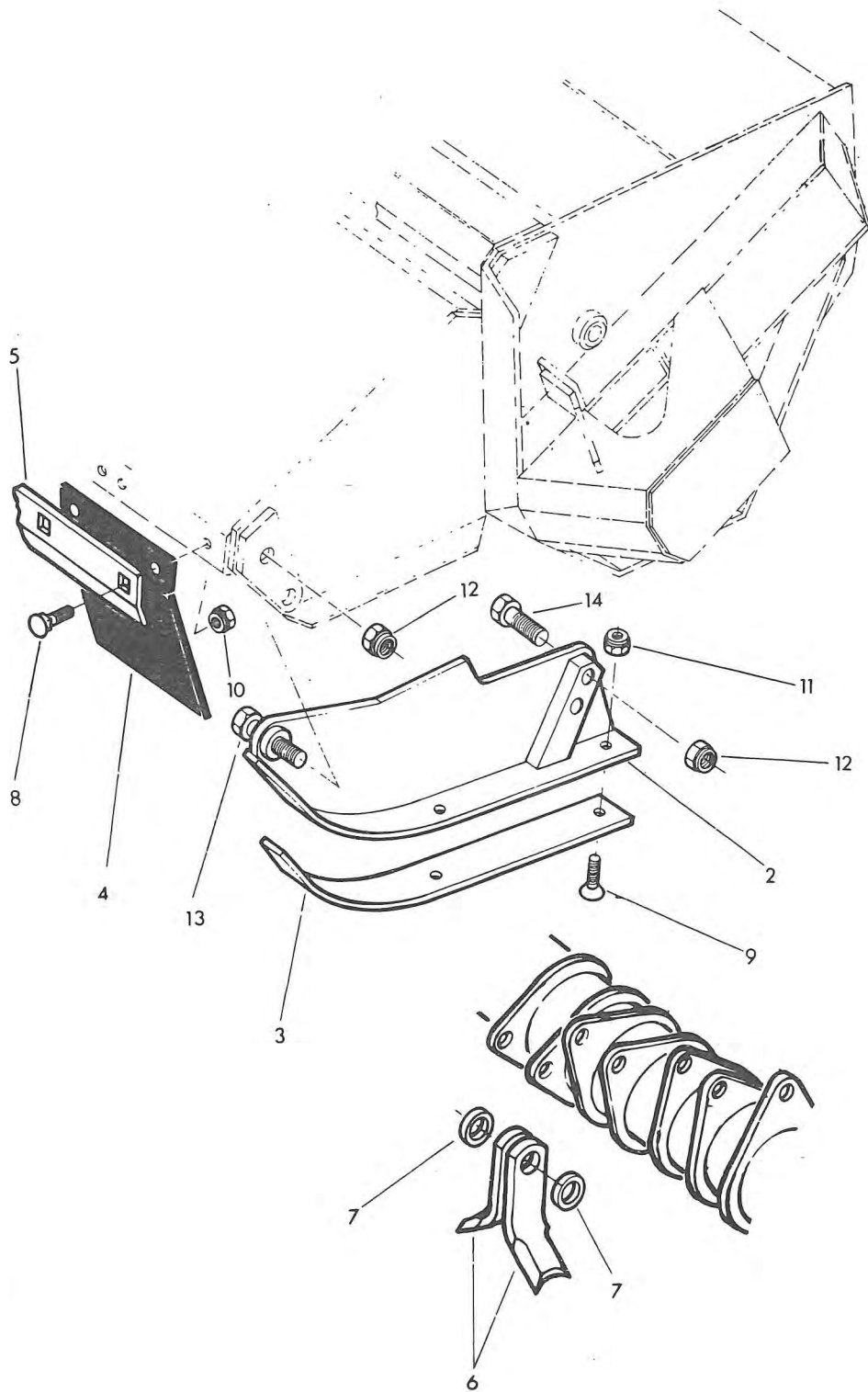
60	85-38-025	2	Hose 3/4" BSP SF-90F x 42" long for flail heads with inboard mounted motors
	71-90-310	1	Rear hood kit for flail heads with downward cutting flails-containing:-
61	71-90-285	1	Hood
62	03-11-106	4	Bolt 5/8 UNF x 1 1/4"
63	01-41-006	4	Self locking nut 5/8 UNF
64	93-13-045	1	Setscrew M10 x 20
65	93-13-055	2	Setscrew M10 x 25
66	91-43-005	3	Self locking nut M10

Model

GRASS FLAIL HEAD

McCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.





Ref.	Part No.	Qty.	Description
	71-90-254		1.2 METRE GRASS FLAIL TO CUT ON R.HAND SIDE OF TRACTOR WITH MOTOR OUTBOARD
	71-90-255		1.2 METRE GRASS FLAIL TO CUT ON L.HAND SIDE OF TRACTOR WITH MOTOR OUTBOARD -As illustrated

Spares are identical in both builds and comprise: :-

Spare parts lists and seal kits are identical with their hedge flail counterparts on the previous page with the following exceptions.

Item 33 Part No. 73-14-36 6, 24 off, hedge flail is deleted

The following items are added

1	71-90-300	1	Skid - R.hand - not illustrated
2	71-90-301	1	Skid - L.hand
3	73-14-323	2	Replaceable skid
4	71-90-020	8	Flap
5	71-90-304	1	Flap clamp strip
6	71-90-299	48	Grass flail
7	71-90-010	48	Flail spacer
8	92-93-054	16	Cup square bolt M8 x 25
9	93-33-065	6	Setscrew c/sunk M10 x 30
10	91-43-004	16	Self locking nut M8
11	91-43-005	6	Self locking nut M10
12	01-41-006	4	Self locking nut 5/8 UNF
13	03-11-146	2	Setscrew 5/8 UNF x 1 3/4" long
14	03-11-186	2	Setscrew 5/8 UNF x 2 1/4' long

Spares Note.

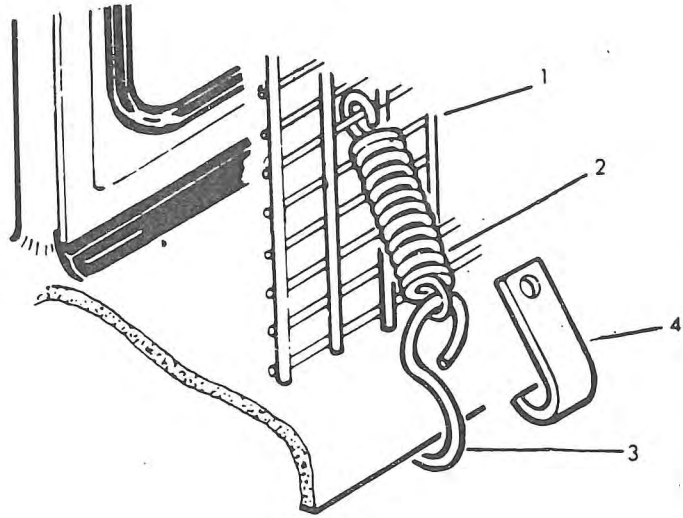
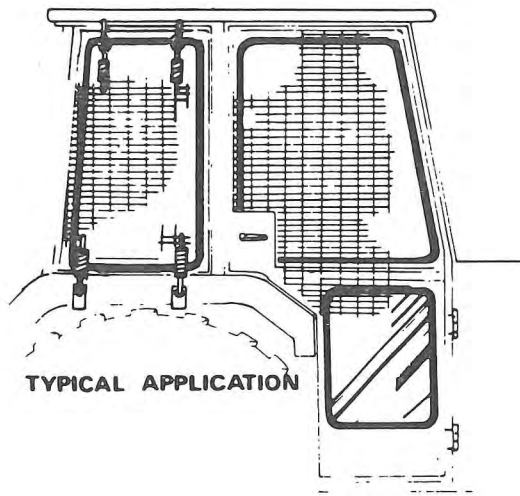
The items listed above can be ordered as a hedge to grass conversion kit under Part No.71-90-260

In addition a grass flail spares handy pak is available Part No. 71-90-259 which comprises

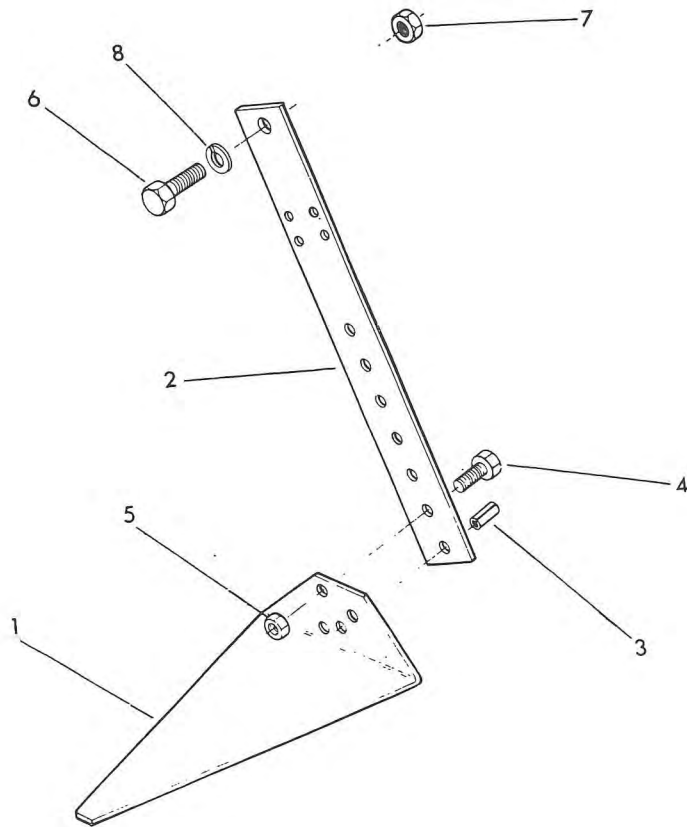
71-90-299	10	Grass flail
71-90-100	2	Space
71-36-133	1	Pivot bush
73-14-222	1	Special flail bolt
01-41-06	1	Self locking nut 5/8 UNF

OPTIONAL EXTRAS

85-01-154	2	Hose 1" BSP SF-90 F x 42" long for flail heads with inboard mounted motors-not illustrated
-----------	---	--



Ref.	Part No.	Qty.	Description
	73-13-324		CAB GUARD KIT
1	73-13-049	1	Guard panel - large
2	73-13-050	1	Guard panel - small
3	60-01-064	12	Spring
4	60-01-065	6	Hook
5	73-13-051	6	Hook



Ref.	Part No.	Qty.	Description
	71-90-319		CONTROL MOUNTING ASSEMBLY
1	71-09-320	1	Sandwich plate
2	71-09-146	1	Pillar including spring dowel
3	04-22-816	1	Spring dowel
4	93-13-066	1	Setscrew M12 x 30
5	91-13-006	1	Nut M12
6	93-11-086	1	Setscrew 5/8 UNF x 1" long
7	01-11-006	1	Nut 5/8 UNF
8	01-00-206	1	Spring washer 5/8" dia

Model

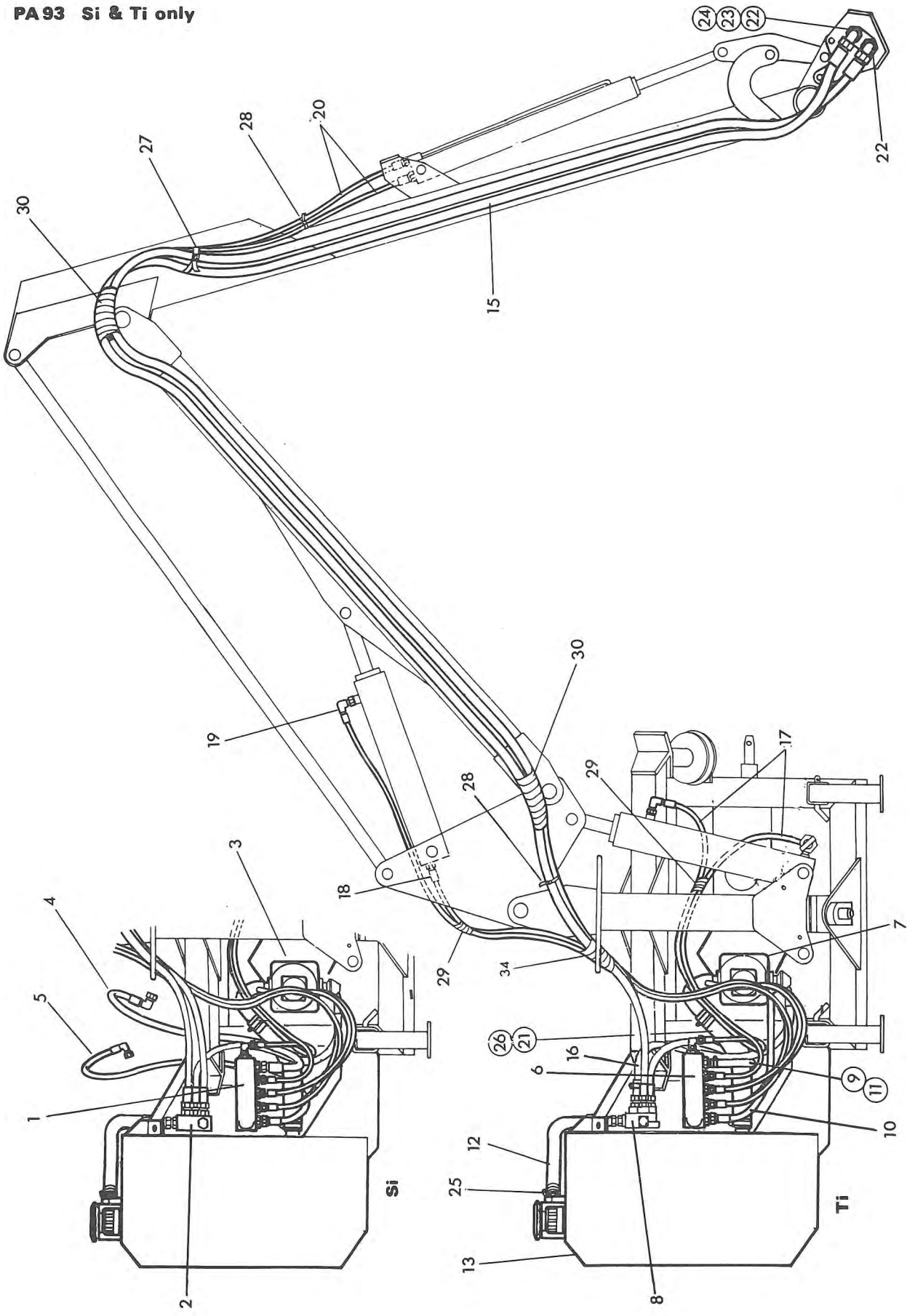
HYDRAULIC INSTALLATION

McCOMEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.



PA93 Si & Ti only





Ref.	Part No.	Qty.	Description
HYDRAULIC INSTALLATION PA93 SEMI INDEPENDENT MODEL ONLY			
1	81-30-372	1	Control valve assembly (see pages 50-53)
2	81-25-360	1	Rotor relief valve assembly (see page 48)
3	80-13-401	1	Gearbox /pump assembly (see page 46)
4	85-32-014	1	Hose 1/2 BSP-SF-90F x 80" long Return tractor
5	85-31-323	1	Hose 3/8 BSP SF 90 F x 80" long supply- tractor

**HYDRAULIC INSTALLATION PA 93
FULLY INDEPENDENT MODEL ONLY**

6	81 30 372	1	Control valve assembly (see pages 50-53)
7	80-13-392	1	Gearbox/pump assembly (see page 56)
8	81-25-358	1	Rotor control valve assembly (see page 66)
9	85-01-158	1	Hose 5/8" bore x 24" long. Return to rotor on/off valve
10	85-11-253	1	Hose 3/8" BSP-SF-SF x 18" long. Supply from pump
11	09-04-204	2	Hose clip - 5/8 bore hose

The remaining items are common to all PA 93 models

12	85-00-828	1	Hose low pressure 1" bore x 28" long rotor valve-tank
13			Tank assembly see page 66
14	71-09-319	1	Control mounting assembly-not illus-see page 43
15	85-38-065	2	Hose 3/4" BSP SF-90F x 200" long motor supply
16	85-38-045	1	Hose 3/4 BSP SF-90F x 29" long.Pump-RC valve
17	85-35-022	2	Hose 1/4' BSP SF-90F x 48" long. Lift
18	85-15-132	1	Hose 1/4' BSP SF-SF x 64" long. Reach base
19	85-35-142	1	Hose 1/4' BSP SF-90F x 80" long.Reach gland
20	85-15-122	2	Hose 1/4' BSP SF-SF x 162" long- Angle
21	85-01-122	1	Hose 1 1/2" bore x 11 3/4" long.Suction from tank
22	85-81-160	2	Elbow 3/4" BSP 90MF
23	85-81-247	1	Adaptor 3/4" BSP M-F
24	86-50-106	1	Bonded seal 3/4" BSP
25	09-04-106	4	Hose clip - 1" bore hose
26	09-04-107	4	Hose clip - 1 1/2' bore hose
27	71-06-187	2	Hose tie
28	71-35-084	2	Hose tie
29	72-13-005	2	Hose armour coil 3/8" dia
30	71-93-026	3	Hose armour coil 3/4" dia

Model

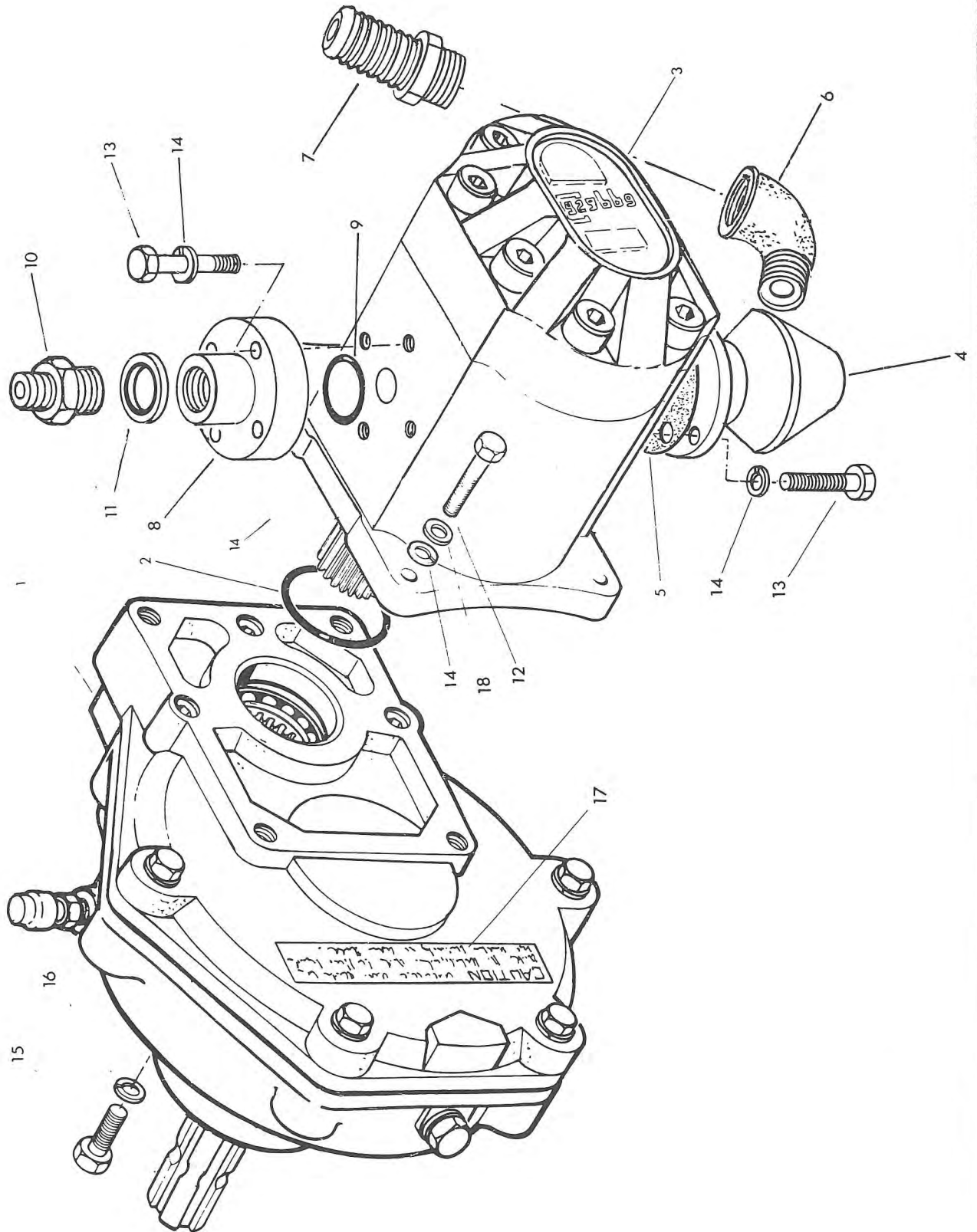
GEARBOX, PUMP

McCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.



PA 93 Si only





Ref	Part No.	Qty.	Description
	80-13-401		GEARBOX PUMP ASSEMBLY FOR PA93 SEMI INDEPENDENT MODEL ONLY
1	80-13-360	1	Gearbox 4.59:1 (see page 58)
2	86-00-523	1	'O' ring
3	82-01-463	1	Pump CPL 33
4	80-13-402	1	Suction adaptor
5	80-13-023	1	Gasket
6*	85-81-280	1	Elbow 3/4" BSPM -1" BSPF
7*	85-81-281	1	Adaptor 1" BSP M 1 1/2" low pressure
8	80-13-088	1	Pump flange 3/4 BSP F
9	86-00-119	1	'O' ring
10	85-81-136	1	Union 3/4" BSP MM
11	86-50-106	1	Bonded seal 3/4" BSP
12	92-13-094	4	Bolt M8 x 45
13	93-13-054	8	Setscrew M8 x 25
14	91-00-204	12	Spring washer dia 8
15	93-13-056	4	Setscrew M12 x 25
16	91-00-206	4	Spring washer dia 12
17	80-13-081	1	Gearbox label
18	91-00-104	4	Plain washer dia 8
	86-99-215		PUMP SEAL KIT

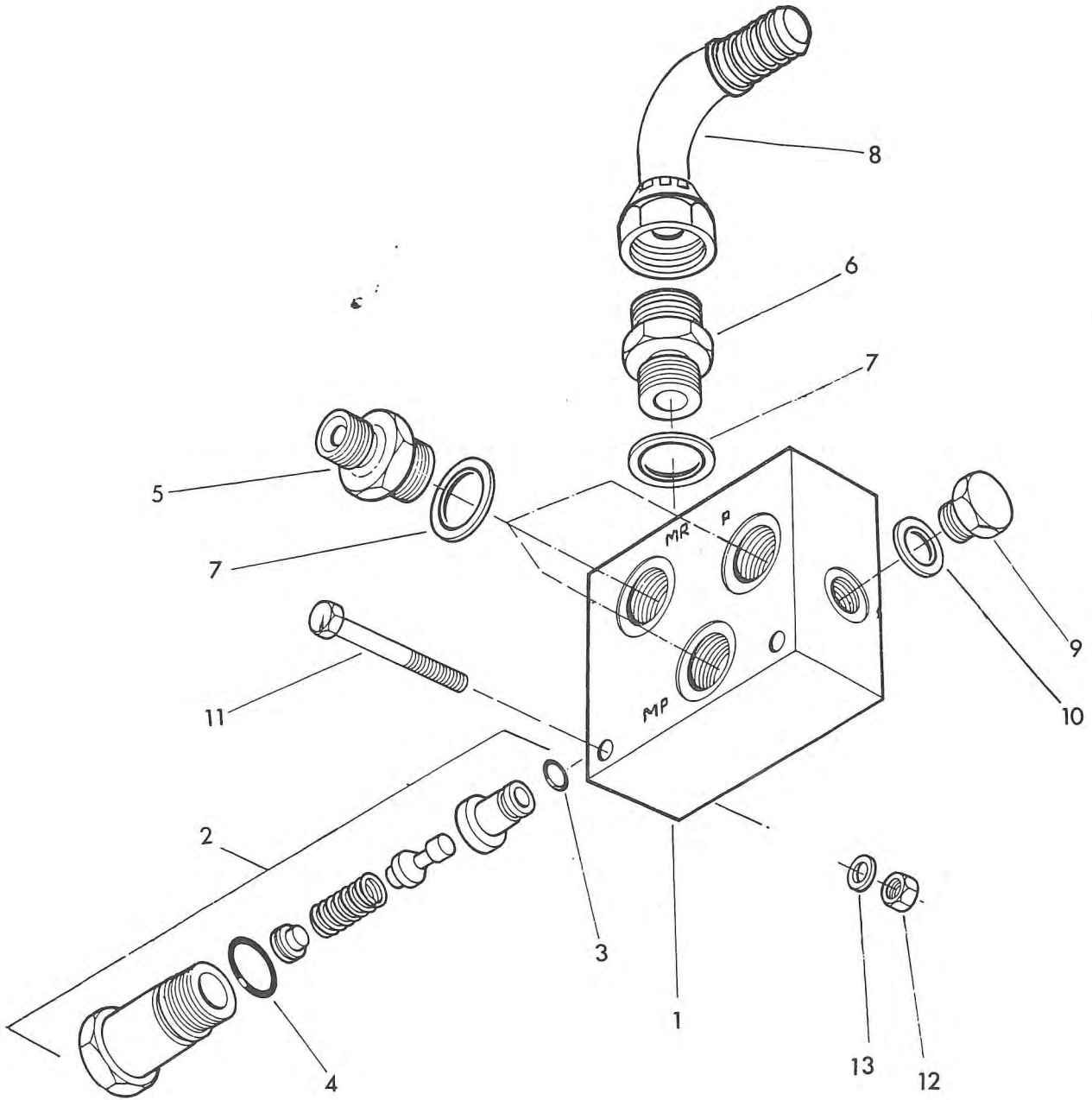
* Assembly note Items 6 & 7 to be assembled using PTFE tape

ROTOR RELIEF VALVE



McCORMICK

S.I. Only





Ref.	Part No.	Qty.	Description
	81-25-360		ROTOR RELIEF VALVE ASSEMBLY (SI MODELS ONLY)
1	81-25-352	1	Valve block
2	81-25-107	1	Relief valve cartridge c/w 'O' rings
3	86-00-505	1	'O' Ring
4	86-00-507	1	'O' Ring
5	85-81-136	3	Union 3/4" BSP MM
6	80-02-086	1	Adaptor 3/4" BSP - 1" BSP MM
7	86-50-106	4	Bonded seal 3/4" BSP
8	71-14-005	1	Swept 90 elbow 1" BSP F - 1" low pressure
9	80-03-001	1	Plug 3/8 BSP
10	86-50-103	1	Bonded seal 3/8" BSP
11	92-13-135	2	Bolt M10 x 65
12	91-13-005	2	Nut M10
13	91-00-205	2	Spring washer dia 10

Model

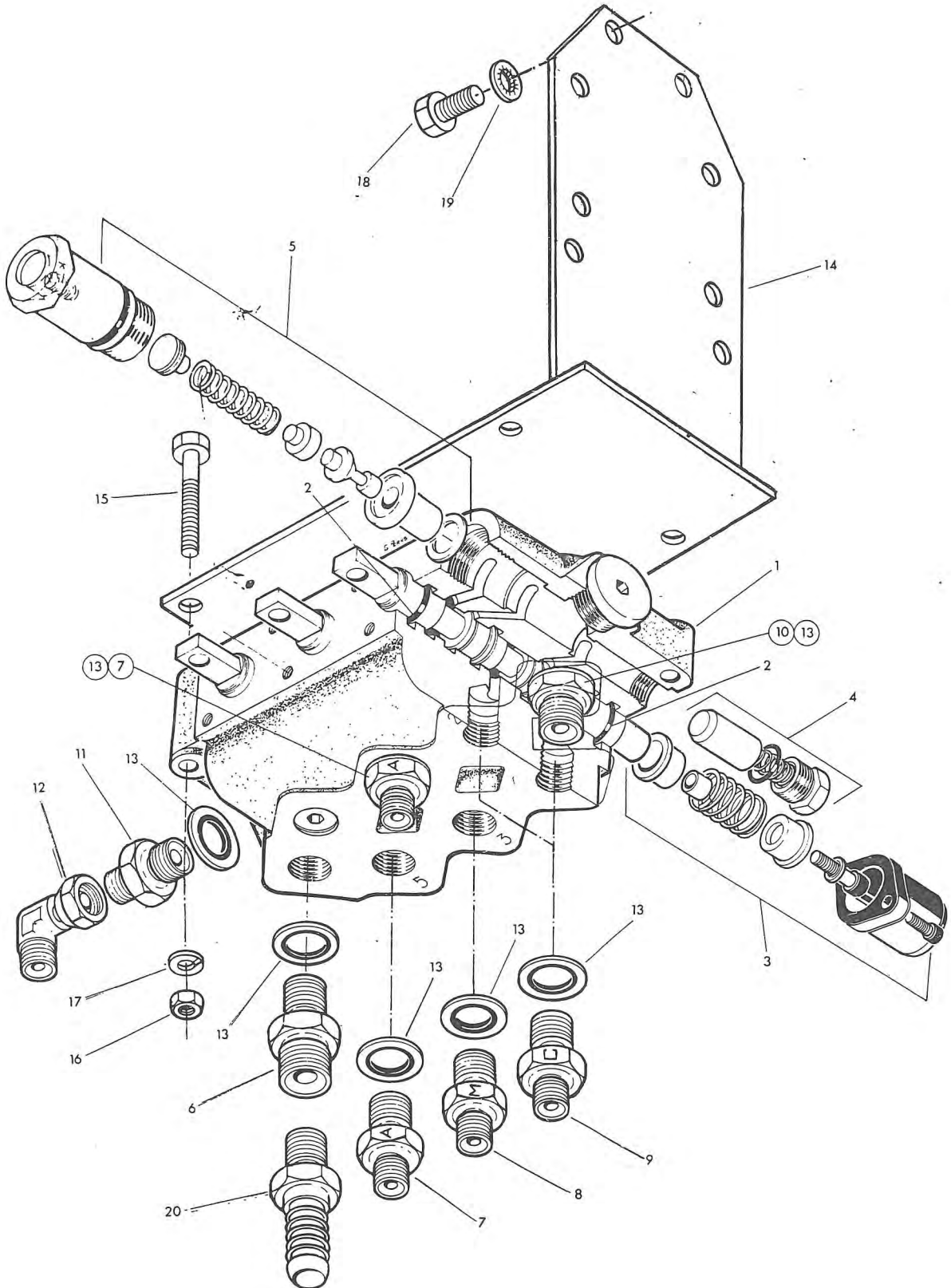
CONTROL VALVE

McCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.



PA 93 Si & Ti only





Ref.	Part No.	Qty.	Description
	81-30-372		HYDRAULIC CONTROL ASSEMBLY FOR PA 93 SEMI INDEPENDENT MODEL
	81-30-376	1	Valve c/w connections
1	81-30-252	1	Valve block c/w spools 'O' rings
2	86-00-112	6	'O' ring
3	81-30-022	1	Centering spring assembly
4	81-30-022	1	Non-return valve assembly
5	G381-2537	1	Relief valve assembly
6	60-00-112	1	Union 3/8" BSP - 1/2" BSP MM
7	81-30-046	2	Restrictor union A 1/4" BSP - 3/8 BSP-MM
8	81-30-066	1	Restrictor union M3/8" BSP - 1/4" BSP MM
9	81-30-048	2	Restrictor union 'C' 1/4" BSP- 3/8 BSP MM
10	60-00-113	1	Union 3/8 BSP M-M
11	85-81-115	1	Union 3/8 BSP -1/4 BSP M-M
12	85-81-190	1	Elbow 1/4 BSP
13	86-50-103	8	Bonded seal 3/8 BSP
14	71-93-322	1	Valve mounting plate
15	92-13-124	3	Bolt M8 x 60
16	91-13-004	3	Nut M8
17	91-00-204	3	Spring washer
18	93-13-045	2	Setscrew M10 x 20
19	91-00-305	2	Internal serrated washer dia 10

86-00-163

SEAL KIT

81-30-371

HYDRAULIC CONTROL ASSEMBLY FOR PA 93 FULLY INDEPENDENT MODEL

The parts list is identical to above with the following exceptions.

Second line becomes

81-30-375 1 Valve c/w connections

Item 6 becomes

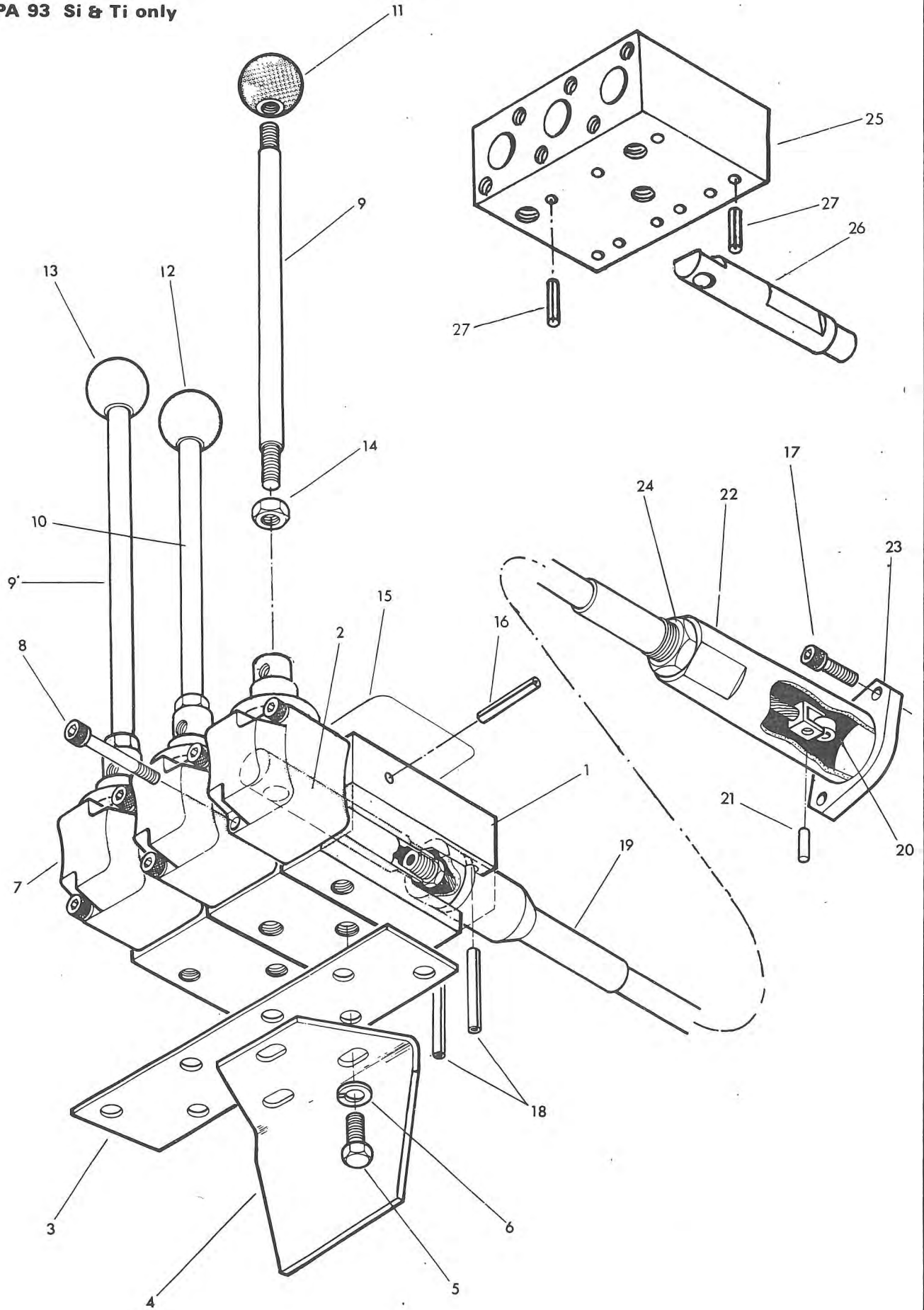
81-25-008 1 Return connection 5/8" bore
Lever control. See following page

**CONTROL HANDLE ASSY
& CABLES**



MCCORMEL

PA 93 Si & Ti only





Ref.	Part no.	Qty.	Description
	81-30-371		HYDRAULIC CONTROL ASSY. FOR PA 93 FULLY INDEPENDENT MODEL-continued
	81-30-372		HYDRAULIC CONTROL ASSY. FOR PA 93 SEMI INDEPENDENT MODEL ONLY- continued
1	81-30-052	3	Control block
2	81-30-053	3	Control block spindle
3	71-14-071	1	Control block mounting base
4	80-17-006	1	Mounting bracket
5	93-13-034	6	Setscrew M8 x 16
6	01-00-102	6	Thin washer 5/16" diameter
7	81-30-065	3	Lever pivot box assembly
8	92-43-072	6	Socket headed capscrew M5 x 35
9	71-09-131	2	Lever handle long
10	71-09-132	1	Lever handle short
11	09-03-112	1	Lever knob-Reach (Red)
12	09-03-113	1	Lever knob -Angle (Green)
13	09-03-114	1	Lever knob - Lift (Yellow)
14	91-13-004	3	Hexagon nut M8
15	81-19-010	1	Operating instruction label
16	04-25-540	3	Spring dowel dia 5 x 40
17	93-43-022	6	Socket headed capscrew M5 x 12
18	04-25-540	3	Spring dowel o 5 x 40
19	81-25-046	3	Cable & spacer and pin, sleeve, flange etc.
20	71-15-158	1	Spool eye bush
21	71-15-160	1	Pin
22	71-15-162	1	Sleeve
23	81-25-050	1	Flange
24	01-31-006	1	Thin locknut 5/8 UNF

* An alternative cable assembly may be fitted depending on supply availability

The complete assembly is interchangeable and thus retains the same assembly Part Number i.e 81-25-046

Individual cable components are not interchangeable thus before ordering spares the cable must be correctly identified.

The cable listed above is manufactured by "BOWDEN" and is **BLACK**

The alternative cable manufactured by "TELEFLEX MORSE" is **RED** and consists of

19	81-25-046	1	Cable assembly c/w sleeve, flange etc.
20	81-25-049	1	Cable sleeve
21	81-25-050	1	Flange
22	81-25-051	1	Pin
23	91-00-016	1	Thin locknut M16 x 1.5 pitch
24	80-17-004	1	Spool eye bush

Spares Note

Some machines may be supplied with an alternative "single block" control unit

Item 1 is replaced by Item 25 Part No. 81 30 391 1 off

Item 2 is replaced by Item 26 Part No. 81-30-144 3 off

Item 16 and 18 are replaced by item 27 Part No. 04 25 525 9 off

Item 5 now becomes 3 off and item 6 becomes 3 off.

Model

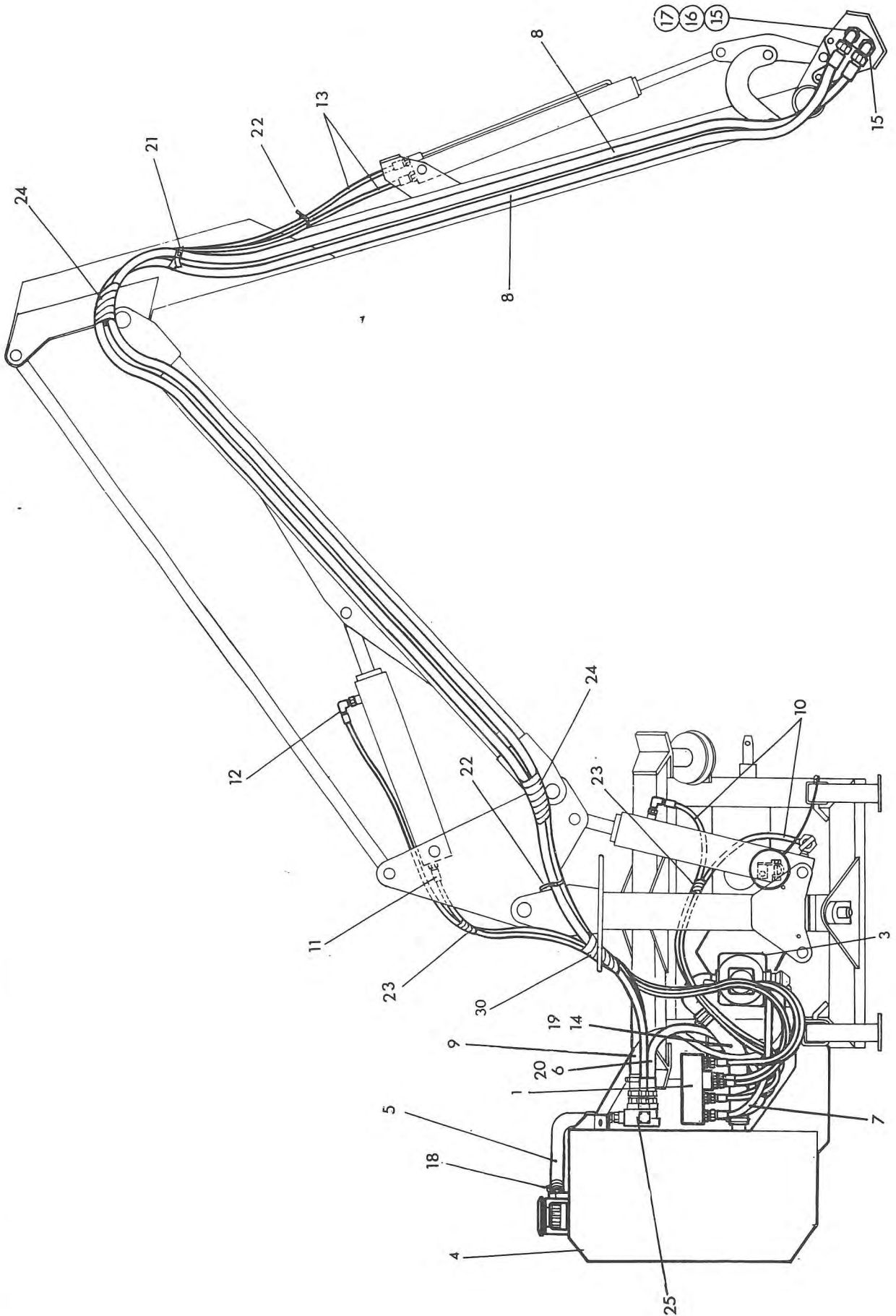
McCOMEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.



HYDRAULIC INSTALLATION

PA 94 only





Ref	Part.No	Qty	Description
HYDRAULIC INSTALLATION PA 94 ONLY			
1	81-30-367	1	Control valve assembly (see pages 60-63)
2	71-09-319	1	Control mounting assembly (not illus-see page 43)
3	80-13-399	1	Gearbox/pump assembly (see page 56)
4		1	Tank assembly - (see page 68)
5	85-00-828	1	Hose -low pressure 1" bore x 28" long-rotor
6	85-01-158	1	Hose 5/8" bore x 24" long. Return to rotor valve
7	85-11-253	1	Hose 3/8" BSP SF-SF x 18" long-Supplyfrom pump
8	85-38-065	2	Hose 3/4" BSP SF-90F x 200 long-motor supply
9	85-38-045	1	Hose 3/4" BSP SF-90 Fx 29" long. Pump.RC valve
10	85-35-022	2	Hose 1/4" BSP SF-90F x 48" long-Lift
11	85-15-132	1	Hose 1/4" BSP SF-SF x 64" long Reach base
12	85-35-142	1	Hose 1/4" BSP SF-90F x 80" long-R reach gland
13	85-15-122	2	Hose 1/4" BSP SF-SF x 162" long-Angle
14	85-01-122	1	Hose 1 1/2" bore x 11 3/4" long-suction from tank
15	85-81-160	2	Elbow 3/4" BSP 90 M-F
16	85-81-247	1	Adaptor 3/4" BSP M-F
17	86-50-106	1	Bonded seal 3/4" BSP
18	09-04-106	4	Hose clip - 1" bore hose
19	09-04-107	4	Hose clip - 1 1/2" bore hose
20	09-04-204	2	Hose clip - 5/8" bore hose
21	71-06-187	2	Hose tie
22	71-35-084	2	Hose tie
23	72-13-005	2	Hose armour coil 3/8" dia
24	71-93-026	3	Hose armour coil 3/4" dia
24	82-25-358	1	Rotor control valve. (See page66)

Model

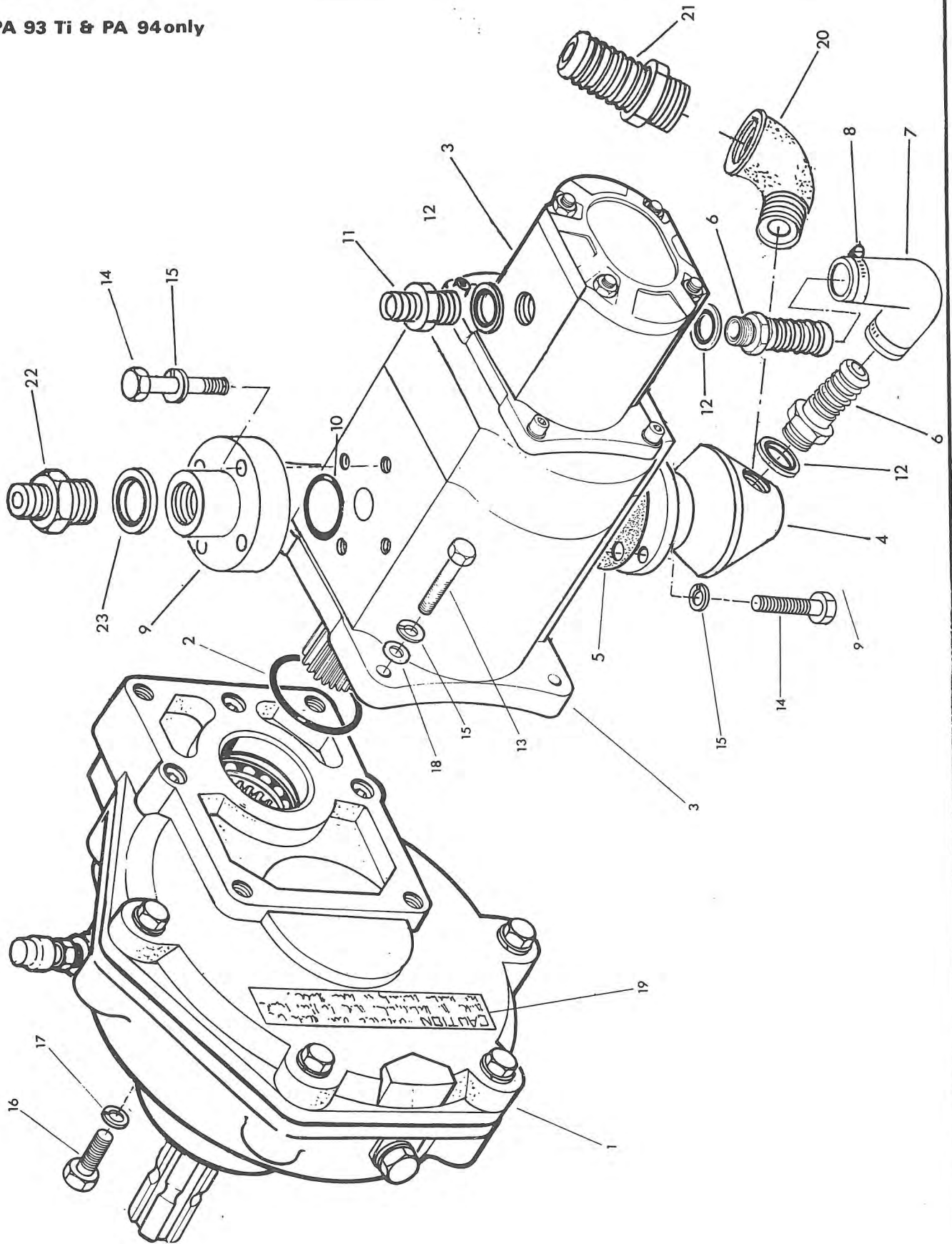
GEARBOX, PUMP

McCOMEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.



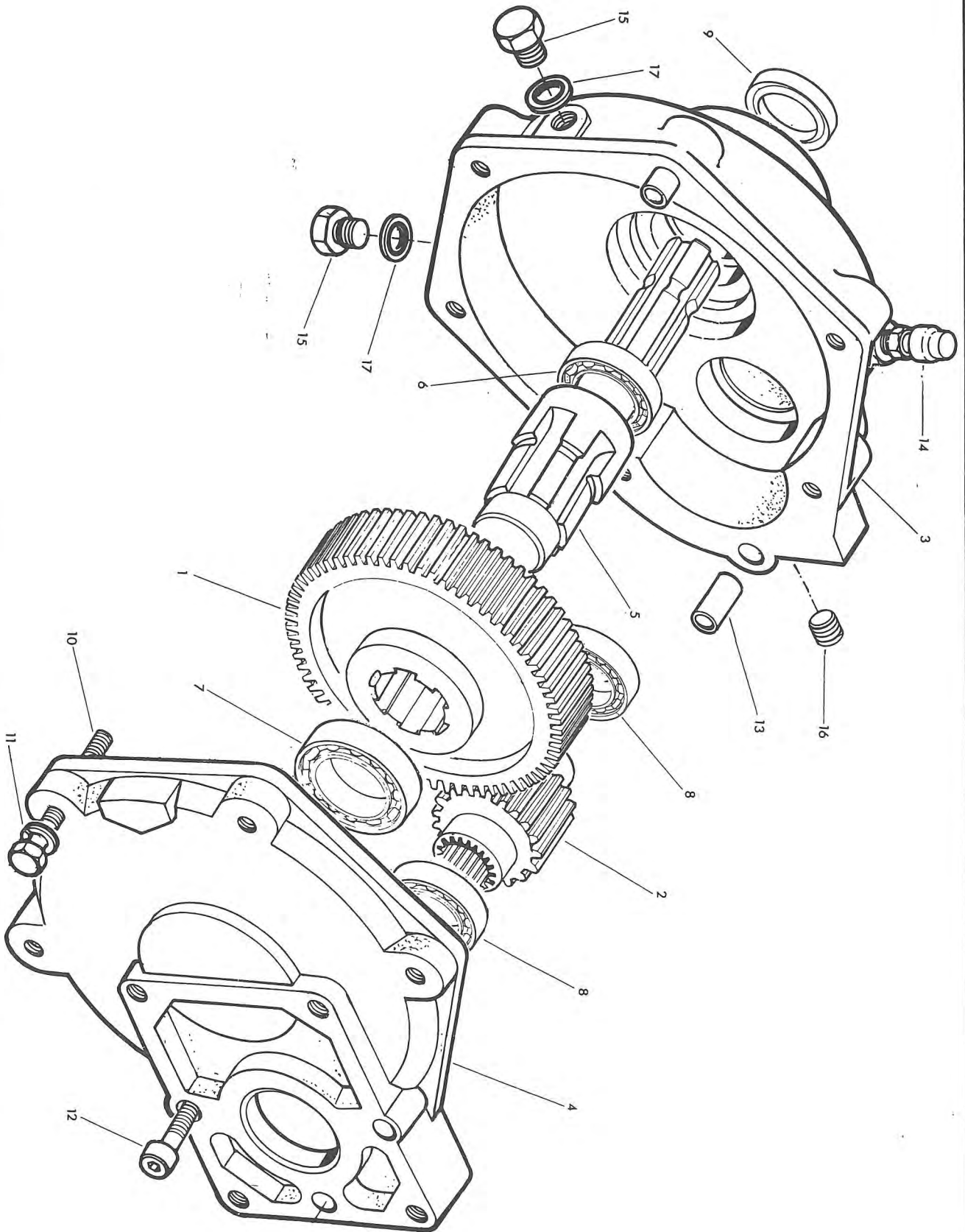
PA 93 Ti & PA 94 only





Ref.	Part No.	Qty.	Description
	80-13-399		GEARBOX-PUMP ASSEMBLY FOR PA94 & PA93 with independent hydraulic
1	86 13 360	1	Gearbox 4.59:1 (see page 58)
2	86-00-523	1	'O' ring
3	82-01-466	1	Tandem pum CPL 33/57
4	80-13-398	1	Suction adaptor
5	80-13-023	1	Gasket
6	80-02-059	2	Adaptor 1/2" BSP - 5/8" low pressure
7	85-01-103	1	Connecting hose
8	09-04-204	2	Hose clip
9	80-13-088	1	Pump flange
10	86-00-119	1	'O' ring
11	60-00-112	1	Adaptor 1/2" BSP - 3/8 BSP MM
12	85-50-104	3	Bonded seal 1/2" BSP
13	92-13-094	4	Bolt M8 x 45
14	93-13-054	8	Setscrew M8 x 25
15	91-00-204	12	Spring washer dia 8
16	93-13-056	4	Setscrew M12 x 25
17	91-00-206	4	Spring washer dia 12
18	81-00-104	4	Plain washer dia 8
19	80-13-081	1	Gearbox label
20	85-81-280	1	Elbow 3/4" BSPM - 1" BSPF
21	85-81-281	1	Adaptor 1" BSPM - 1 1/2' low pressure
22	85-81-136	1	Union 3/4" BSP MM
23	86-50-106	1	Bonded seal 3/4" BSP
	86-99-215		PUMP SEAL KIT

Assembly Note Item 21 and 20 to be assembled using PTFE tape





Ref.	Part No.	Qty.	Description
	80-13-360		GEARBOX ASSEMBLY (4.59:1)
1	80-13-384	1	Gear 78 teeth
2	80-13-385	1	Pinion 17 teeth
3	80-13-370	1	Gearbox casing - input
4	80-13-371	1	Gearbox lid - output
5	80-13-374	1	Input Shaft 1 3/8" dia x 6 spline
6	06-00-063	1	Bearing
7	06-00-064	1	Bearing
8	06-00-065	2	Bearing
9	86-29-151	1	Shaft seal 2 1/8" x 1 3/8" x 1/2"
10	92-13-064	4	Bolt M8 x 30
11	91-00-204	4	Spring Washer dia 8
12	93-43-074	3	Capscrew socket headed M8 x 35
13	80-13-375	2	Sleeve dowel
14	80-13-376	1	Breather
15	85-81-133	2	Plug-level and drain 1/4 BSP
16	85-82-042	1	Taper plug 1/4 BSPT
17	86-50-102	2	Bonded seal 1/4" BSP

Model

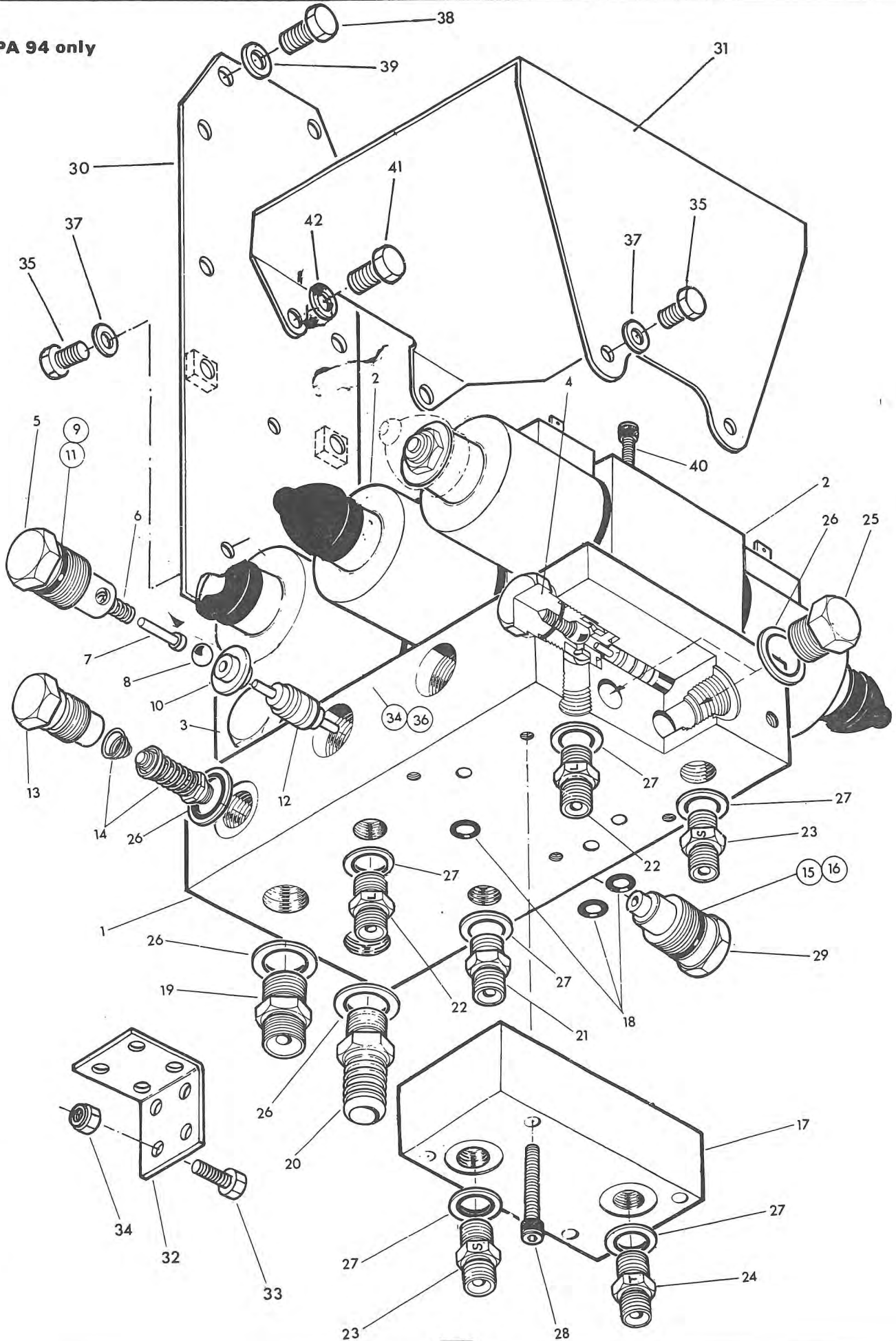
MCCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.



CONTROL VALVE

PA 94 only

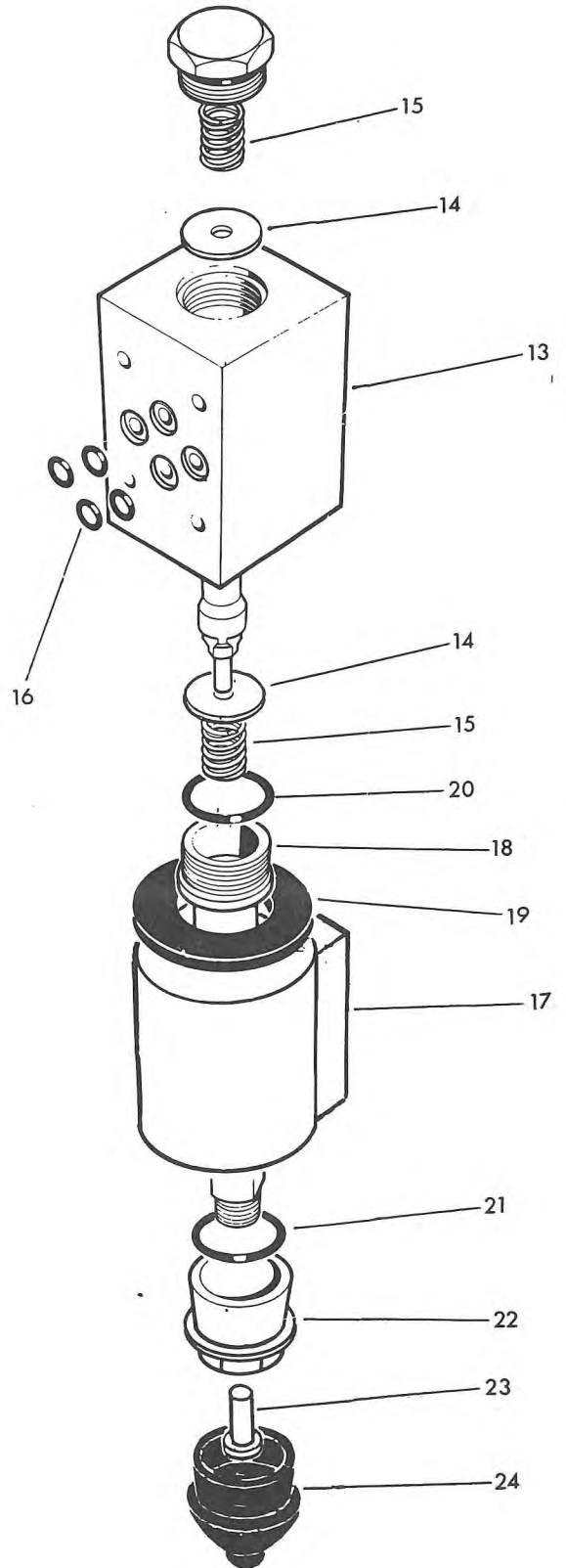
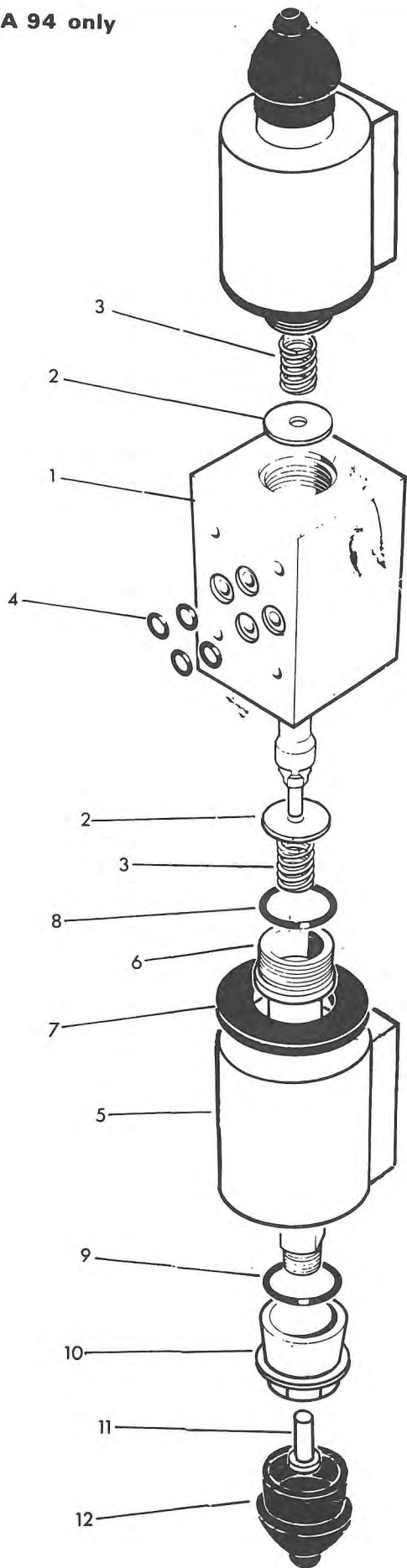




Ref.	Part No.	Qty.	Description
	81-30-367		ELECTRIC CONTROL PACK FOR PA94 ONLY
	81-30-318		Solenoid/manifold assembly compr:
1	81-30-321	1	Manifold block
2*	81-30-421	3	Double solenoid valve} See page 62
3*	81-30-422	1	Single solenoid valve}
4	81-30-090	5	Check valve assembly compr:-
5	81-30-025	1	Check valve cap
6	81-14-045	1	Spring
7	81-30-089	1	Spring guide
8	09-05-509	1	Steel ball dia 9
9	87-00-644	1	'O' ring
10	81-30-088	1	Check valve seat
11	87-09-644	1	Anti extrusion rin
12	81-30-087	3	Actuator
13	81-30-032	1	Relief valve cap
14	81-30-124	1	Relief valve c/w spring
15	87-09-644	1	Anti extrusion ring
16	87-00-644	1	'O' ring
17	81-30-322	1	Hose plate c/w 'O' rings
18	87-00-511	3	'O' ring
19	60-00-113	1	Union 3/8 BSP-MM
20	81-25-008	1	Return connection
21	80-02-117	1	Union 1/4BSP - 1/4" BSP M-M
22	81-30-038	2	Restrictor Union 'L' 1/4" BSP M-M
23	81-30-037	2	Restrictor Union 'S' 1/4" BSP M-M
24	81-30-103	1	Restrictor union 'T' 1/4' BSP M-M
25	80-03-001	2	Plug 3/8" BSP
26	86-50-103	5	Bonded seal 3/8 BSP
27	86-50-102	6	Bonded seal 1/2" BSP
28	92-43-082	20	Socket headed setscrew M5 x 40
29	81-30-078	1	Check valve gallery plug
30	71-94-003	1	Valve mounting plate
31	71-94-277	1	Valve cover
32	81-25-070	1	Flail on/off lever mounting bracket
33	93-13-044	2	Setscrew M8 x 20
34	91-43-004	1	'Clevelok' nut M8
35	93-13-034	5	Setscrew M8 x 16
36	71-09-151	1	Cable clamp
37	91-00-204	4	Spring washer dia 8
38	93-13-045	2	Setscrew M10 x 20
39	91-00-305	2	Int. serrated washer \varnothing 10
40	92-43-102	16	Capscrew, socket headed M5 x 40
41	93-13-035	2	Setscrew M10 x 16
42	91-00-205	2	Spring washer dia10



PA 94 only



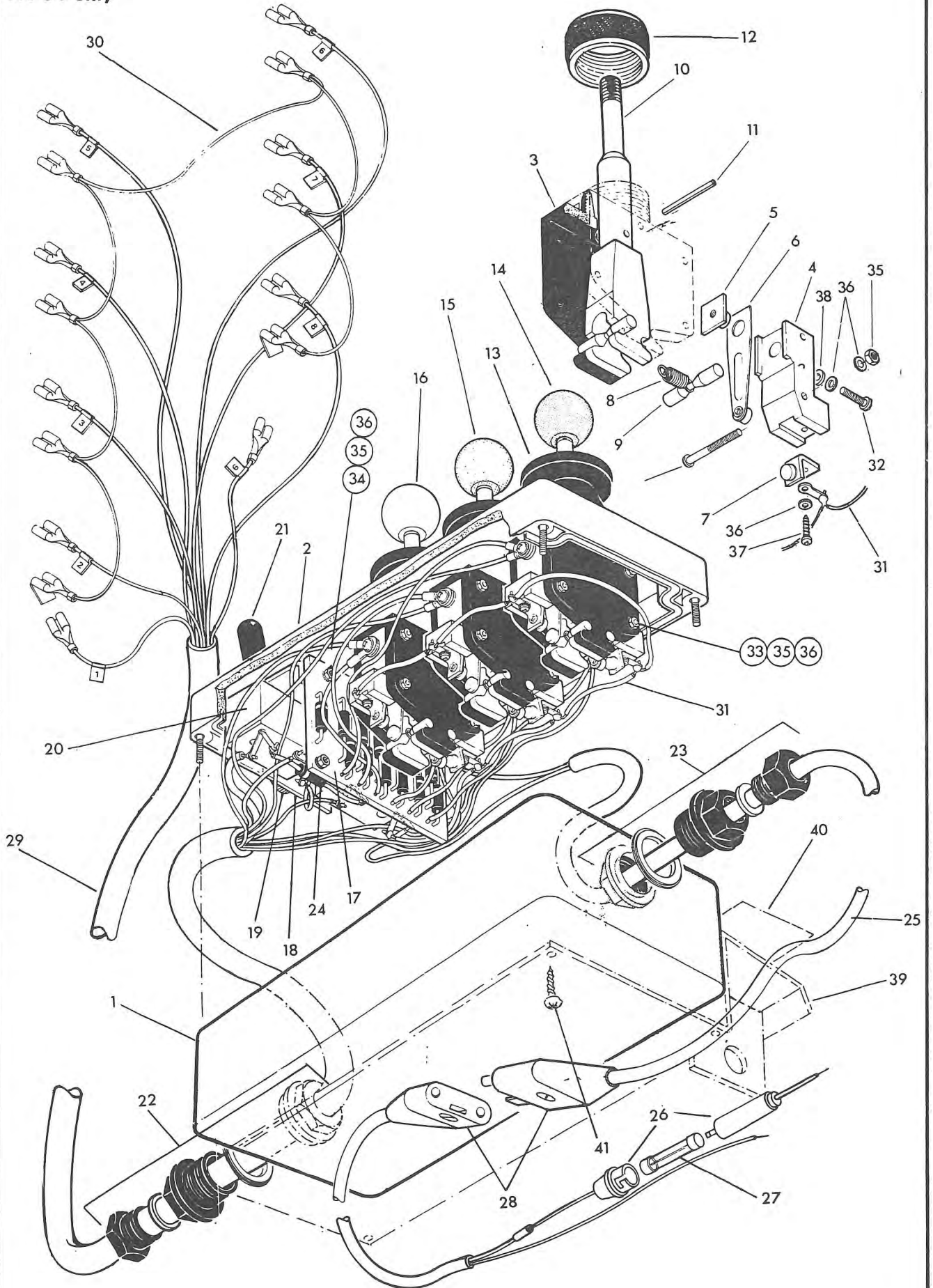
**81-30-318****SOLENOID MANIFOLD ASSEMBLY FOR PA94
only-continued**

	81-30-421	3	Double solenoid valve compr:-
1	84-02-072	1	Block c/w spool
2	84-02-123	2	Washer
3	84-02-124	2	Spring
4	87-00-511	4	'O' ring
	84-02-125	2	Solenoid compr:-
5	84-02-126	1	Coil
6	84-02-127	1	Solenoid tube
7*	84-02-128	1	Gasket
8	86-00-507	1	'O' ring
9*	84-02-088	1	'O' ring
10	84-02-129	1	Shroud nut
11*	84-02-086	1	Push pin
12*	84-02-087	1	Weather gaiter
	81-30-422	1	Single solenoid valve compr:-
13	84-02-073	1	Block c/w spool
14	84-02-123	2	Washer
15	84-02-124	2	Spring
16	87-00-511	4	'O' ring
	84-02-125	1	Solenoid compr:-
17	84-02-126	1	Coil
18	84-02-127	1	Solenoid tube
19*	84-02-128	1	Gasket
20	86-00-507	1	'O' ring
21*	84-02-088	1	'O' ring
22	84-02-129	1	Shroud nut
23*	84-02-086	1	Push pin
24*	84-02-087	1	Weather gaiter

86-99-212***Comprise weather shield kit**



PA 94 only





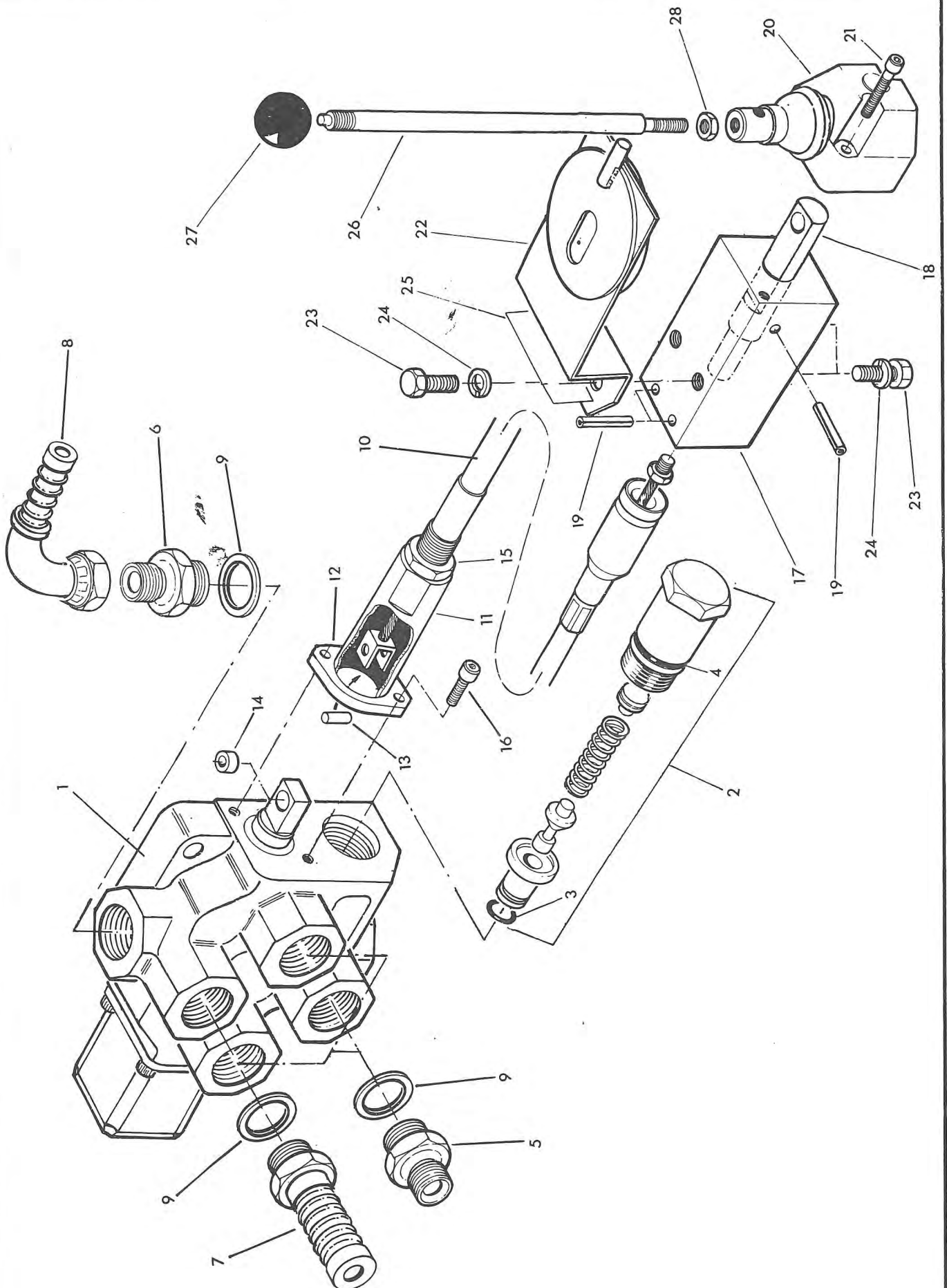
Ref.	Part No.	Qty.	Description
	81-30-367		ELECTRIC CONTROL PACK FOR PA94 -cont
	84-02-28-		Switch box assembly compr:-
	84-02-281	1	Box assembly
1	84-02-263	1	Box body
2	84-02-282	1	Box lid c/w screws
3	84-02-285	3	Body
4	84-02-106	6	Contact holder
5	84-02-109	6	Spring contact retainer
6	84-02-113	6	Spring contact
7	84-02-108	6	Fixed contact
8	84-02-101	3	Spring
9	84-02-111	6	Bar
10	84-02-256	3	Lever
11	04-25-320	3	Spring dowel dia. 3 x 20
12	84-02-051	3	Bezel ring
13	84-02-022	3	Lever gaiter
14	84-02-026	1	Knob red
15	84-02-027	1	Knob green
16	84-02-028	1	Knob yellow
17	84-02-115	1	Printed circuit assembly
18	84-02-110	1	Bracket c/w diode
19	84-02-281	1	Diode
20	84-02-023	2	Toggle switch
21	84-02-024	2	Switch cover
22	84-02-029	1	Gland assembly - large
23	84-02-042	1	Gland assembly - small
24	84-02-025	1	Diode BY 255
25	84-02-284	1	Power supply harness compr:-
26	84-02-114	1	Fuse Holder
27	84-02-037	1	Fuse - 10 amp
28	84-02-062	1	Plug / socket
29	84-02-283	1	Main harness c/w common link
30	84-02-058	1	Common link harness
31	84-02-116	1	Common link - switchbox
32	92-00-005	6	Screw - posidrive pan-head M3 x 12
33	92-00-006	12	Screw- posidrive pan-head M3 x 25
34	92-00-007	3	Screw-posidrive pan-head M3 x 10
35	91-00-013	15	Hexagon nut-plated M3
36	91-00-400	27	External serrated washer dia 3
37	84-02-119	6	Self tapping screw No 4 type 'B' x 10m/m long
38	84-02-280	6	Plain washer dia 3
39	84-02-260	1	Switch box mounting bracket c/w label
40	84-02-117	1	Instruction label
41	28-00-203	4	Self tapping screw No 10 x 1/2" long

Model

ROTOR CONTROL VALVE

McCONEL

Temeside Works, Ludlow,
Shropshire, SY8 1JL, England.
Telephone: (0584) 3131.
Telex 35313. Facsimile: (0584) 6463.



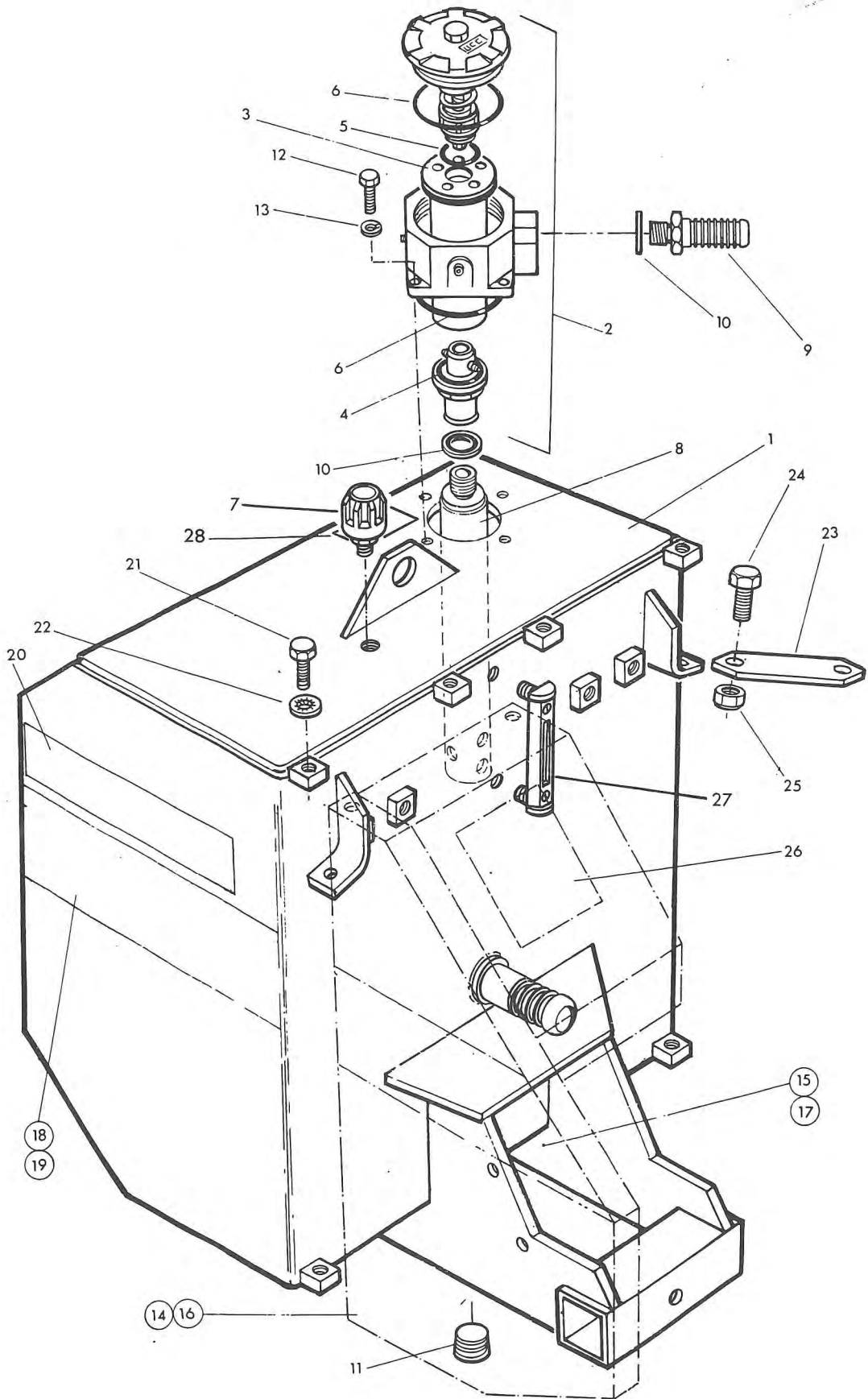


Ref.	Part No.	Qty.	Description
	81-25-358		ROTOR CONTROL VALVE ASSEMBLY
1	81-25-355	1	Rotor control valve
2	81-25-107	1	Relief valve 3000 (210 Bar) including:-
3	86-00-505	1	'O' ring
4	86-00-507	1	'O' ring
5	85-81-270	3	Union 3/4 BSP MM
6	80-02-086	1	Adaptor 3/4" BSP - 1" BSP MM
7	85-81-269	1	Adaptor 3/4" BSP x 5/8" low pressure connection
8	71-14-005	1	Elbow 1" BSP F- 1" low pressure connection
9	86-50-106	5	Bonded seal 3/4" BSP
10	81-25-102	1	Cable assembly c/w sleeve flange etc
11	81-25-097	1	Sleeve
12	81-25-098	1	Flange
13	81-25-099	1	Pin
14	81-25-100	1	Bush
15	01-31-006	1	Thin locknut
16	93-43-033	2	Capscrew - socket headed M6 x 16
17	81-25-093	1	Control block
18	81-30-053	1	Control spindle
19	05-25-525	3	Spring dowel dia 5 x 25
20	81-30-065	1	Pivot box assembly
21	92-13-072	2	Capscrew - socket headed M5 x 35
22	81-25-089	1	Lever control gate
23	93-13-034	4	Setscrew M8 x 16
24	91-00-204	4	Spring washer dia 8
25	12-90-338	1	Operating label
26	71-14-072	1	Lever
27	09-03-121	1	Knob - black
28	91-13-004	1	Thin nut M8

HYDRAULIC TANK &
COVER PLATE

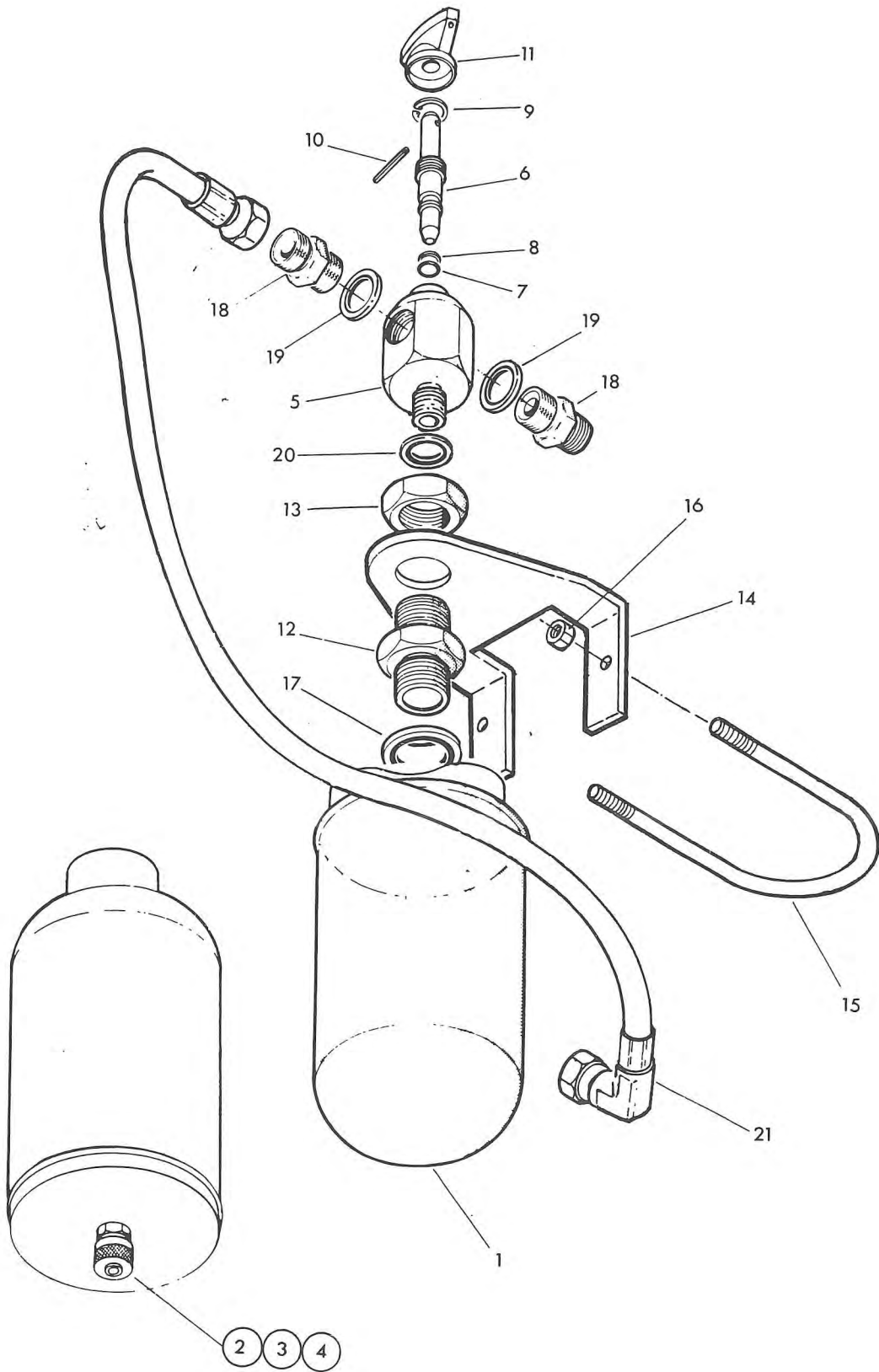


McCormel





Ref.	Part No.	Qty.	Description
			HYDRAULIC TANK & COVER PLATE (for machines after July 1988)
	71-95-316		Oil tank assembly compr:-
1*	71-95-315	1	Oil tank
2	84-01-053	1	Return filter assy. inc. element and 'O' rings
3	84-01-054	1	Element
4	86-00-135	1	'O' ring
5	86-00-126	1	'O' ring
6	87-00-223	2	'O' ring
7	84-01-055	1	Breather assembly
8	71-92-019	1	Return pipe
9	85-81-246	1	Return connection
10	86-50-106	2	Bonded seal 3/4" BSP
11	85-81-203	1	Drain plug 1" BSP
12	93-13-054	4	Setscrew M8 x 25
13	91-00-204	4	Spring Washer dia 8
14	71-93-327	1	Cover plate R-Hand
15	12-90-283	1	'Stripe'
16	71-93-328	1	Cover plate - not illustrated
17	12-90-284	1	'Stripe' - not illustrated
18	12-90-286	1	'Tank stripe - PA94'
19	12-90-287	1	'Tank stripe - PA93'
20	12-90-253	1	Sticker 'McConnel'
21	93-13-045	3	Setscrew M10 x 20
22	91-00-305	3	Internal serrated washer dia 10
23	71-92-029	1	Tank strap
24	93-13-056	2	Setscrew M12 x 25
25	91-43-006	2	Self locking nut M 12
26	71-09-143	1	Solenoid wiring label - PA 94 only
27	84-01-048	1	Oil level guage

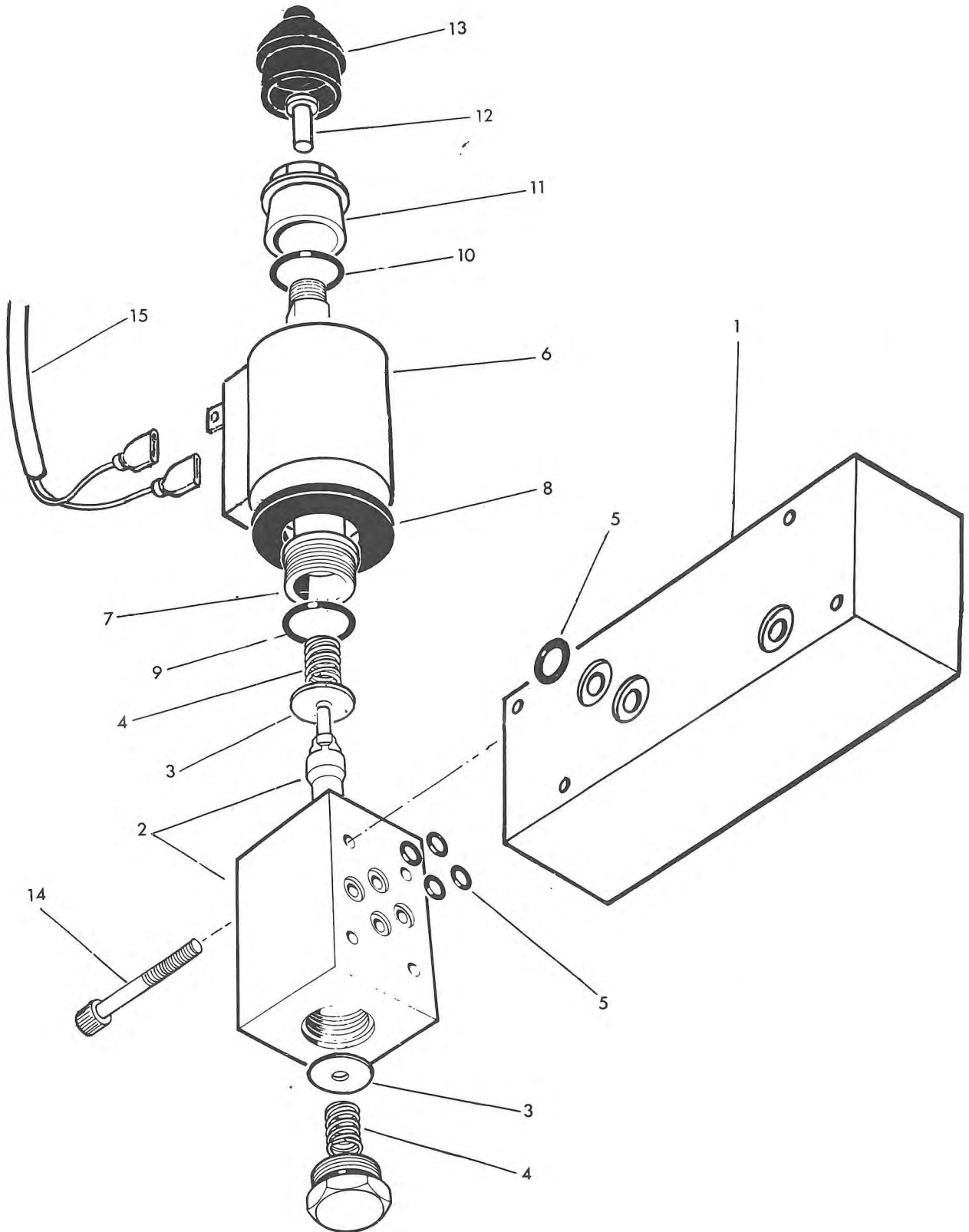




Ref.	Part No.	Qty.	Description
	81-26-273		LIFT FLOAT KIT
1	81-26-271	1	Accumulator (600 psi)
2	81-26-015	1	Charge valve assembly c/w 'O' ring
3	81-26-016	1	Charge valve core
4	86-00-103	1	'O' ring
	71-35-007	1	Tap assembly compr:-
5	71-35-294	1	Tap body
6	71-35-006	1	Tap spindle
7	86-00-107	1	'O' Ring
8	86-09-107	1	Anti extrusion ring
9	04-16-110	1	Internal circlip
10	04-20-820	1	Spring dowel
11	81-08-006	1	Knob
12	85-81-205	1	Adaptor
13	85-81-151	1	Back nut
14	81-26-277	1	Bracket
15	81-26-031	1	'U' bolt M8
16	91-43-004	2	Self locking nut M8
17	85-50-106	1	Bonded seal 3/4" BSP
18	85-81-115	2	Adaptor 3/8 BSP 1/4" BSP M-M
19	86-50-103	2	Bonded seal 3/8 BSP
20	85-50-102	1	Bonded seal 1/4" BSP
21	85-35-062	1	Hose 1/4 " BSP SF-90 F x 15" long



Optional extra for grass cutting . PA 94 only



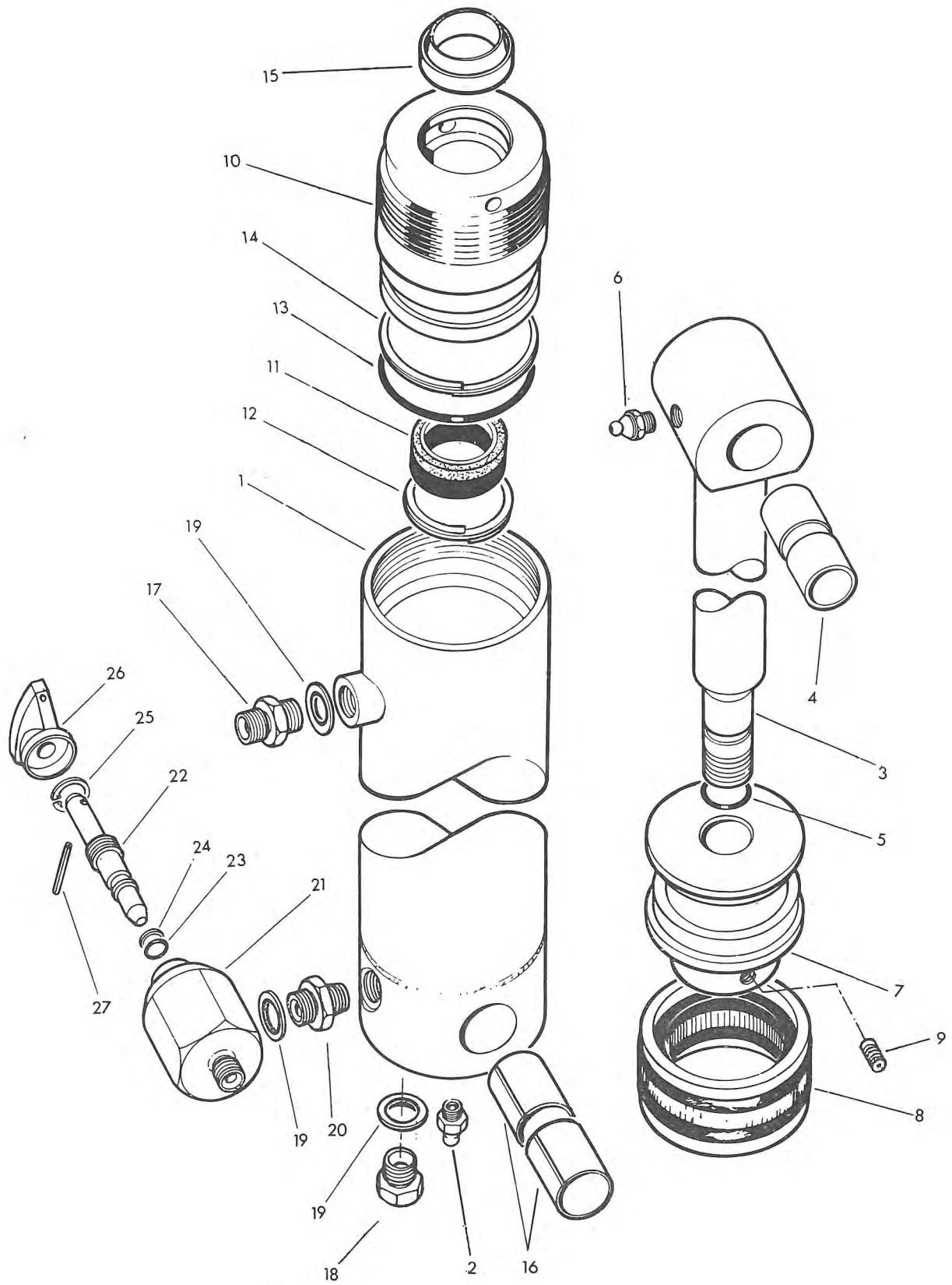


Ref.	Part No.	Qty.	Description
	81-26-261		ANGLE FLOAT KIT -Optional extra for ground cutting - available on PA94 only
1	81-30-323	1	Float valve block
	81-30-314	1	Angle float solenoid compr:-
2	81-30-091	1	Block c/w spool
3	84-02-069	2	Washer
4	84-02-070	2	Spring
5	87-00-511	4	'O' ring
	84-02-125	1	Solenoid compr:-
6	84-02-126	1	Coil
7	84-02-127	1	Solenoid tube
8*	84-02-128	1	Gasket
9	86-00-507	1	'O' ring
10*	84-02-088	1	'O' ring
11	84-02-129	1	Shroud nut
12*	84-02-086	1	Push pin
13*	84-02-087	1	Weather gaiter
14	92-43-102	4	Setscrew socket headed M5 x 50
15	84-02-059	1	Wiring harness
	86-99-212		*Comprises weather shield kit

LIFT RAM



McCORMEL



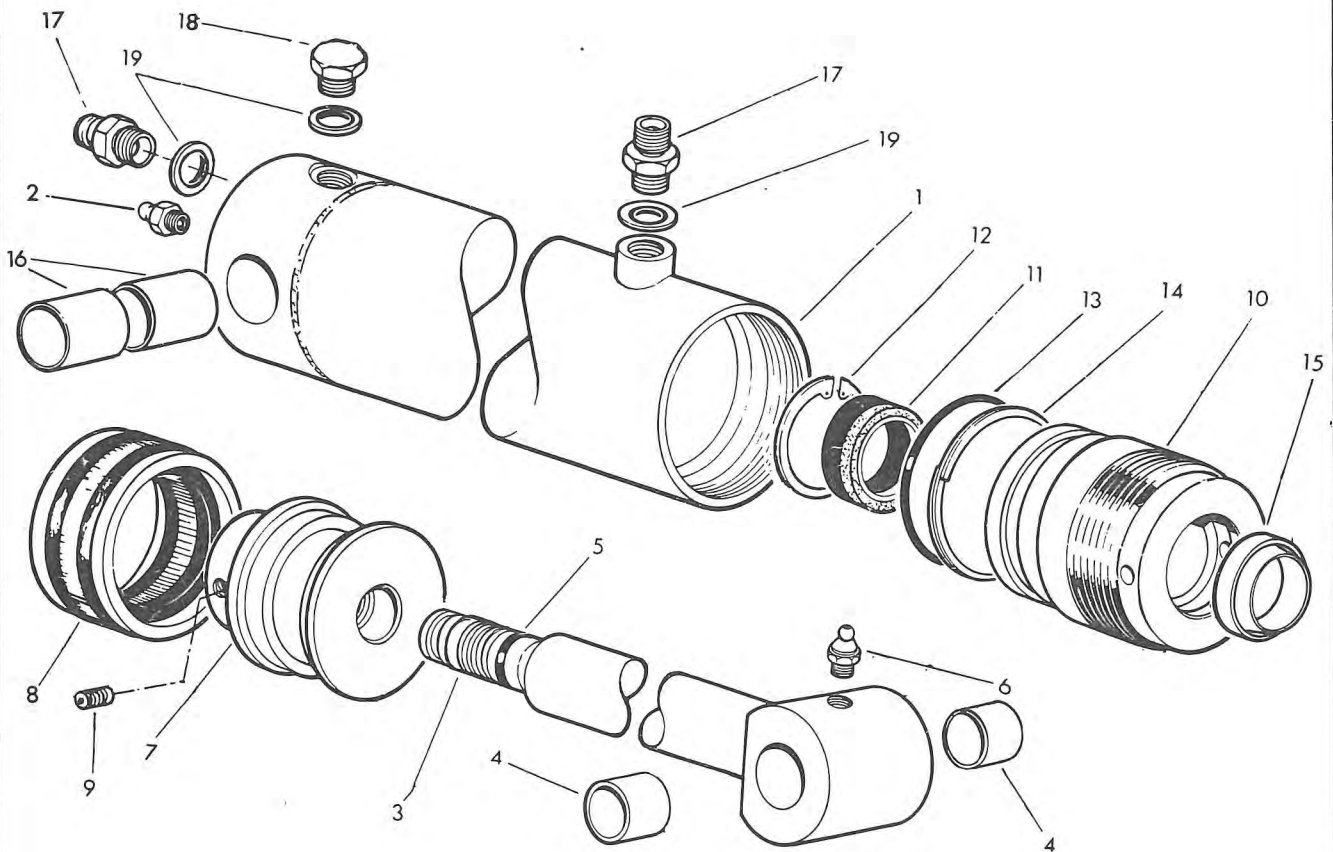


Ref.	Part No.	Qty.	Description
	71-93-333		LIFT RAM ASSEMBLY
	71-93-332		Ram basic compr:-
1	71-35-283	1	Ram cylinder c/w greaser
2	09-01-121	1	Greaser 1/8 BSP - straight
3	71-93-029	1	Piston rod
4	60-12-032	2	Bush
5	86-00-119	1	'O' ring
6	09-01-121	1	Greaser 1/8" BSP- straight
7	71-35-004	1	Piston c/w seal and grub screw
8	86-38-740	1	Piston seal
9	93-00-110	1	Grub screw M6 x 8 socket headed
10	71-35-282	1	Gland housing c/w seals etc
11	86-22-127	1	Gland seal
12	04-11-132	1	Internal circlip
13	87-00-740	1	'O' ring
14	87-09-740	1	Anti extrusion ring
15	86-29-147	1	Wiper
16	71-01-134	2	Bush - ram base
17	85-81-115	1	Union 1/4 BSP - 3/8 BSP M-M
18	80-03-001	1	Plug 3/8 BSP
19	86-50-103	3	Bonded seal 3/8 BSP
20	80-05-007	1	Taper adaptor 3/8 BSPT
	71-35-005	1	Lock tap assembly compr:
21	71-35-284	1	Tap body
22	71-35-006	1	Tap spindle
23	86-00-107	1	'O' ring
24	86-09-107	1	Anti extrusion ring
25	04-16-110	1	Internal circlip
26	81-08-006	1	Tap knob
27	04-20-820	1	Spring dowel 1/8" dia x 1 1/4" long

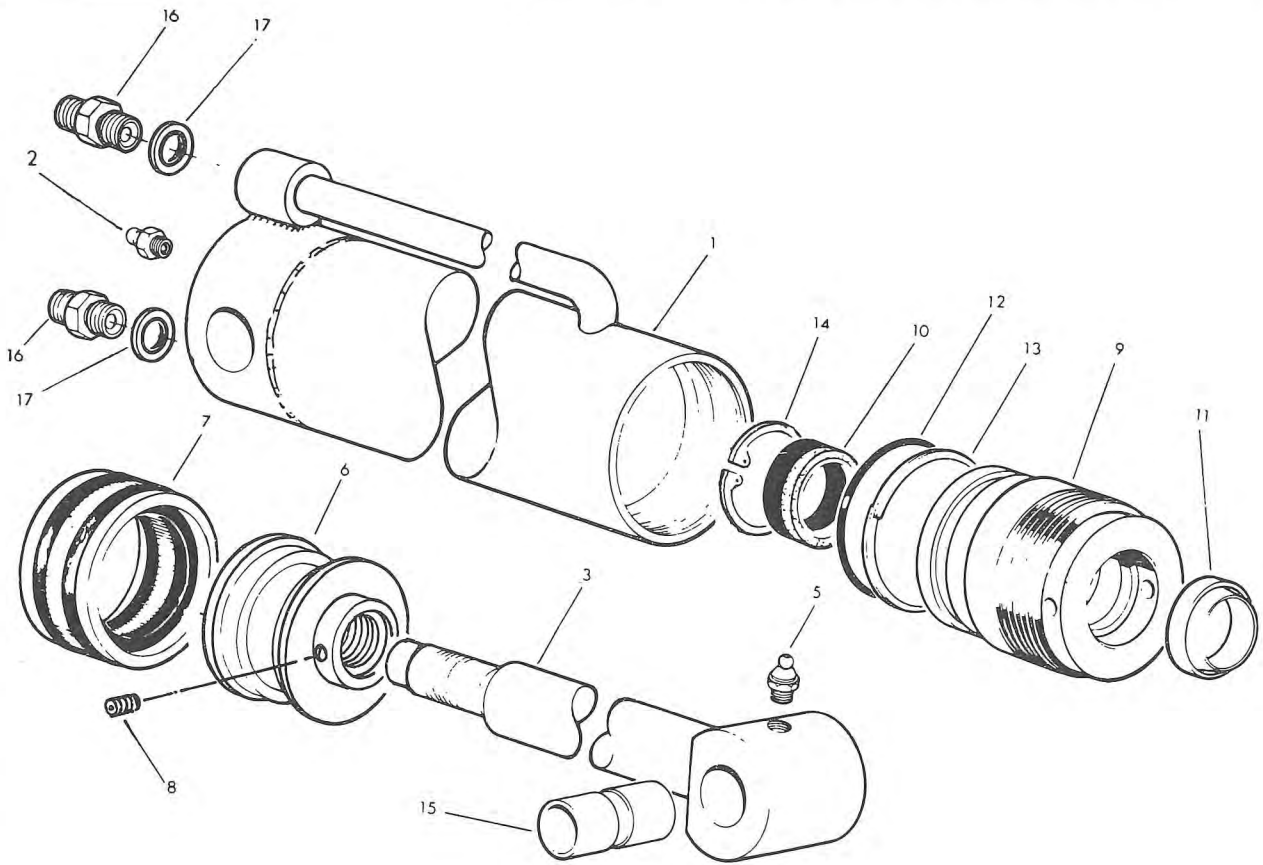
86-99-187**SEAL KIT**

*Taper adaptor to be assembled into ram cylinder using 'Permabond' A 121 or other suitable sealant.

Assembly note. Piston is assembled onto piston rod using 'Permabond A 113' or other similar thread locking compound



Ref.	Part No.	Qty.	Description
	71-93-334		REACH RAM ASSEMBLY
	71-93-332		Ram base compr:-
1	71-35-283	1	Ram cylinder c/w greaser
2	09-01-121	1	Greaser 1/8 BSP-straight
3	71-93-029	1	Piston rod
4	60-12-032	2	Bush
5	86-00-119	1	'O' ring
6	09-01-121	1	Greaser 1/8 BSP - straight
7	71-35-004	1	Piston c/w seal and grub screw
8	86-38-740	1	Piston seal
9	93-00-110	1	Grub screw M6 x 8 socket headed
10	71-35-282	1	Gland housing c/w seals etc
11	86-22-127	1	Gland seal
12	04-11-132	1	Internal circlip
13	87-00-740	1	'O' ring
14	87-09-740	1	Anti extrusion ring
15	86-29-147	1	Wiper
16	71-01-134	2	Bush - ram base
17	85-81-115	2	Union 1/4 BSP - 3/8 BSP M-M
18	80-03-001	1	Plug 3/8 BSP
19	86-50-103	3	Bonded seal 3/8 BSP
	86-99-187		SEAL KIT



Ref.	Part No.	Qty.	Description
	71-35-290		ANGLING RAM ASSEMBLY
1	71-35-292	1	Ram cylinder c/w greaser
2	09-01-121	1	Greaser 1/8 BSP-straight
3	71-35-009	1	Piston rod c/w greaser
5	09-01-121	1	Greaser 1/8 BSP-straight
6	71-35-008	1	Piston c/w seal & grub screw
7	86-38-788	1	Piston seal
8*	93-63-033	1	Grub screw M6 x 16 socket headed
9	71-35-291	1	Gland housing c/w seals etc
10	86-29-148	1	Gland seal
11	86-29-149	1	Piston rod wiper seal
12	86-00-302	1	'O' ring
13	86-09-302	1	Anti extrusion ring
14	04-16-240	1	Internal circlip
15	71-05-050	1	Piston rod bush
16	85-81-169	2	Union 1/4 BSP M-M
17	86-50-102	2	Bonded seal 1/4 BSP

86-99-188 SEAL KIT

*Item 8 is not required on rams with blind piston

*Item 8 is assembled with 'Permabond A121' or equivalent

Item 6 is assembled onto rod using 'Permabond A113' or equivalent if piston locking grubscrew is not fitted.



F.W. McConnel Limited, Temeside Works, Ludlow, Shropshire, SY8 1JL, England.
Telephone: (0584) 3131. Telex 35313. Facsimile: (0584) 6463.