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Part No.  
71-93-850

# 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.

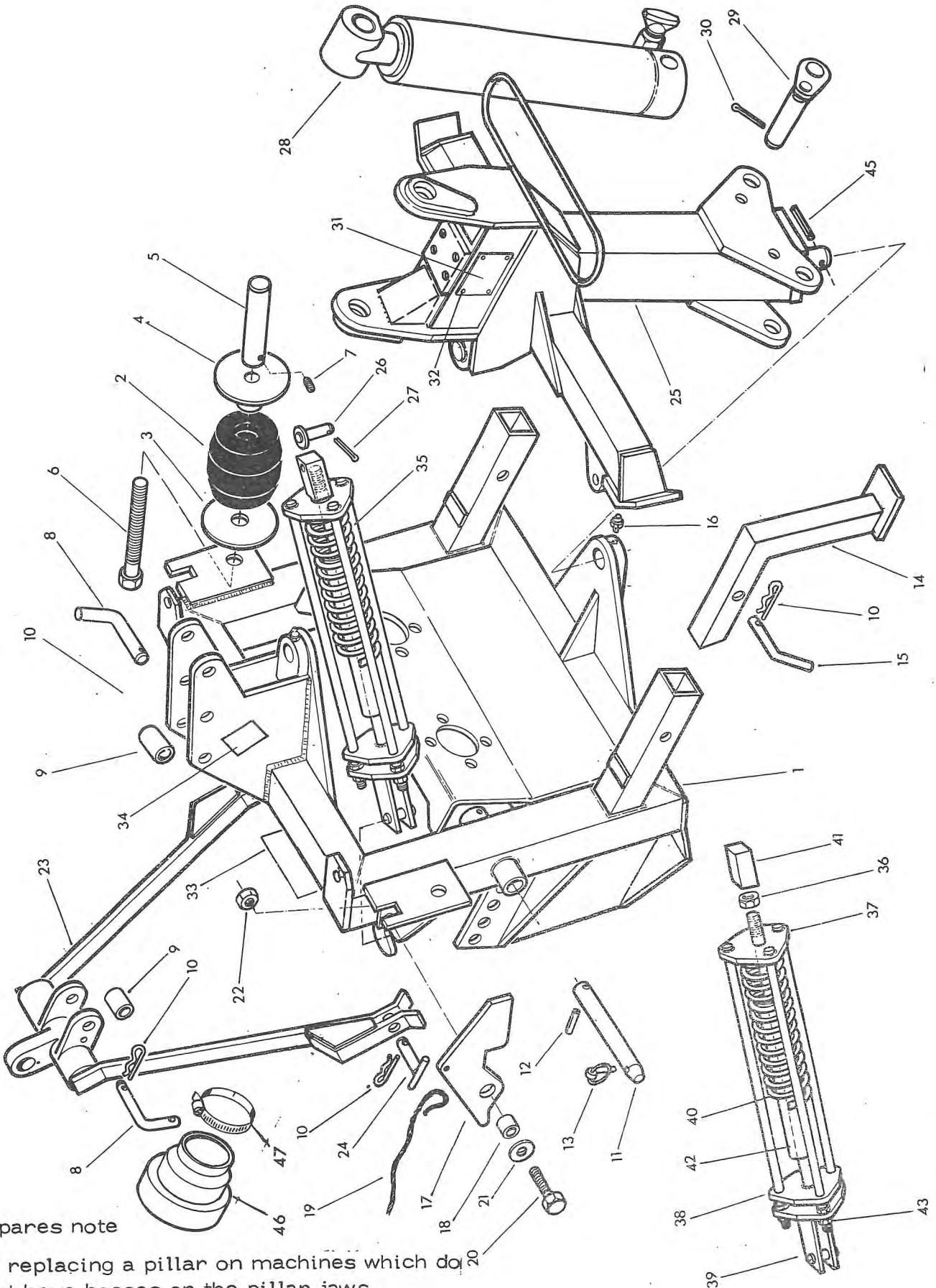
Design improvement may have altered some of the parts listed in this manual - The latest part will always be supplied when it is interchangeable with an earlier one.

Model.

**YOKE , MAIN FRAME &  
PILLAR**

**McCOMEL**

Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
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**Spares note**

If replacing a pillar on machines which do not have bosses on the pillar jaws pin, Part No. 71-93-033 is also required



| Ref. | Part No.  | Qty. | Description                                 |
|------|-----------|------|---|
|      |           |      | MAIN FRAME, STABILISER<br>& 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 | 2    | 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   | 71-92-023 | 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 $\varnothing$ 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 $\varnothing$ 5 x 40              |
| 28   | 71-93-333 | 1    | Lift ram assembly see page 77               |
| 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<br>first " |
| 35   | 71-35-314 | 1    | Breakaway assistor spring assy<br>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   | 71-35-082 | 1    | Spacer                                      |
| 43   | 01-11-003 | 6    | Nut 3/8 UNF                                 |
| 44   | 71-36-330 | 1    | P.T.O. shaft assembly - not illus           |
| 45   | 04-21-289 | 1    | Spring Dowel 1/4" dia x 2" long             |
| 46   | 71-11-038 | 1    | P.T.O. guard                                |
| 47   | 09-04-114 | 1    | Hose clip                                   |

Model.

# McCONEL

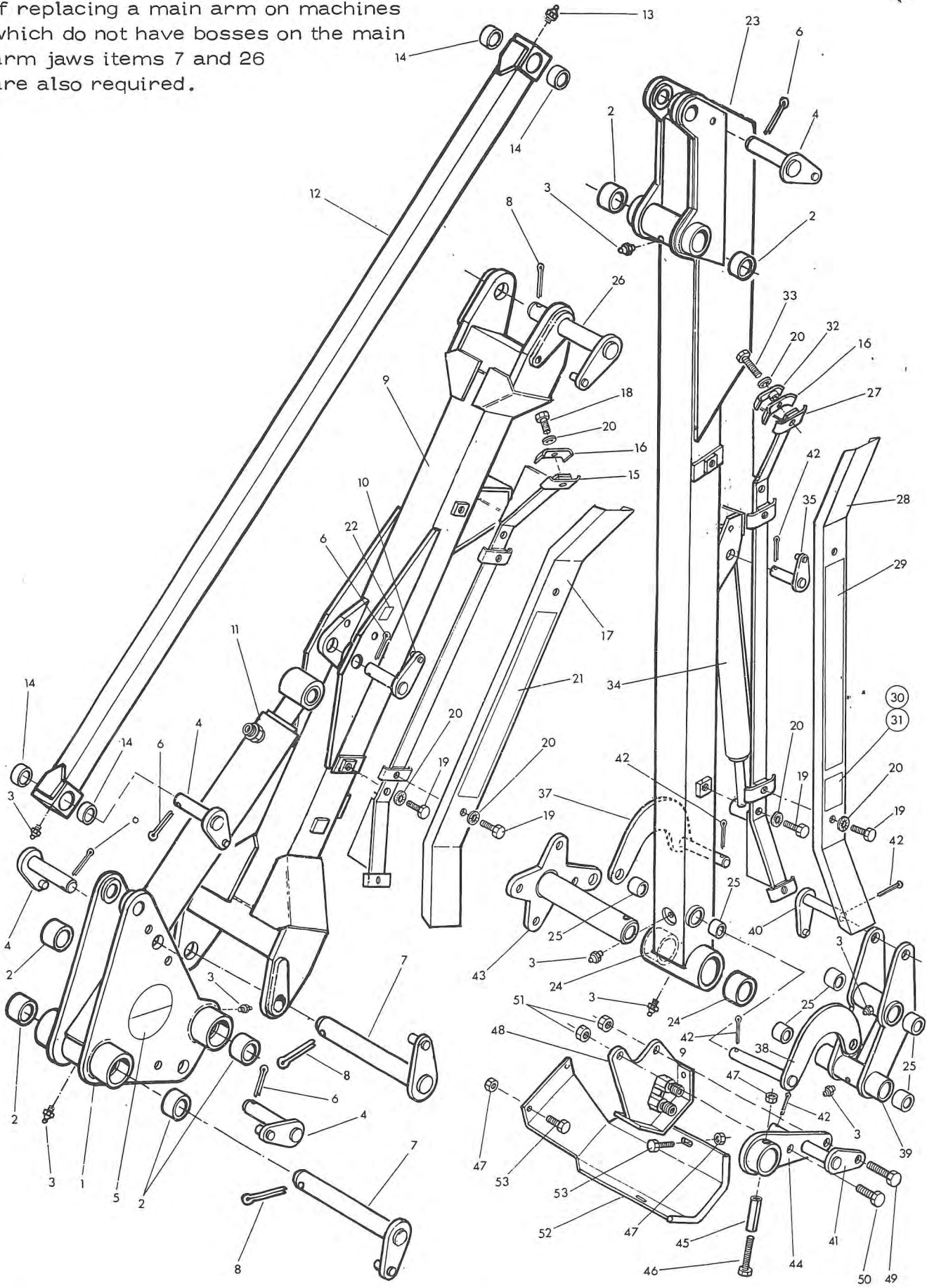
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Telex: 35313



## ROCKER & ARMS

### Spares note

If replacing a main arm on machines which do not have bosses on the main arm jaws items 7 and 26 are also required.



Model.

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| Ref. | Part No.  | Qty. | Description   |
|------|-----------|------|---|
|      |           |      | ROCKER AND ARMS   |
| 1    | 71-93-330 | 1    | Rocker  |
| 2    | 72-13-023 | 6    | Bush-Rocker & 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 Ø 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 °                                |
| 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 Ø 10                           |
| 21   | 12-90-255 | 1    | Sticker "McCConel"                                      |
| 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 79                        |
| 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 Ø 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.

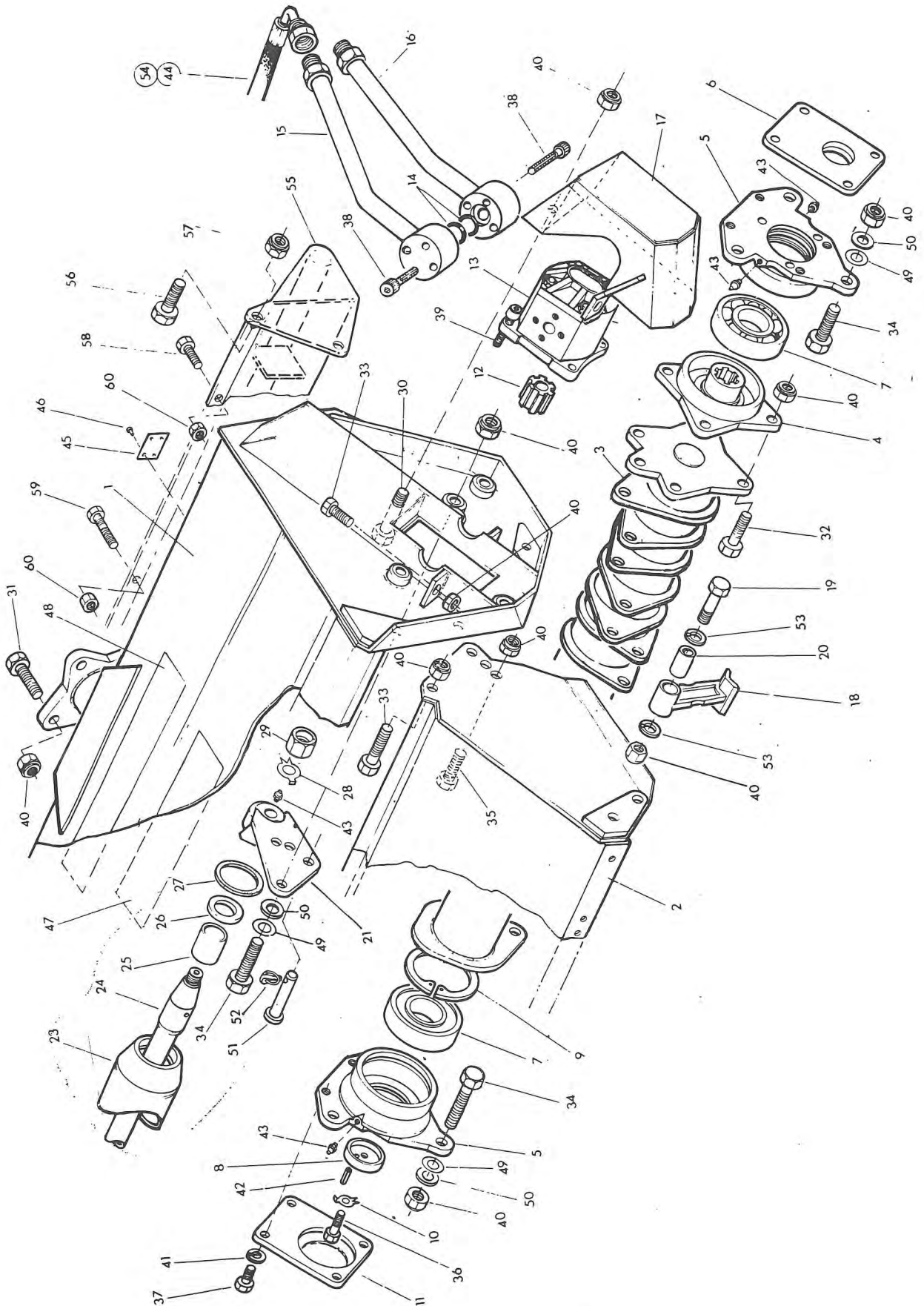
HEDGE FLAIL HEAD

**McCONEL**

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Ludlow, Shropshire SY8 1JL, England.  
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Sheet 1





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

Spares are identical in both builds and comprise:-

|     |                      |    |                                    |
|-----|----------------------|----|------------------------------------|
| 1   | 71-90-262            | 1  | Flail casing                       |
| 2   | 71-90-288            | 1  | Front hood                         |
| * 3 | 71-90-275            | 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 $\varnothing$ 120 |
| 10  | 71-90-024            | 1  | Tab washer $\varnothing$ 12        |
| 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  | <del>73-14-223</del> | 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 $\varnothing$ 20        |
| 29  | 71-14-176            | 2  | Special nut M 20                   |
| 30  | 02-11-266            | 1  | Bolt 5/8 UNF x 3 1/4" long         |

\* Spares Note

For machines prior to November 1988 a new rotor must be ordered c/w items 19,20 and 53.



Model.

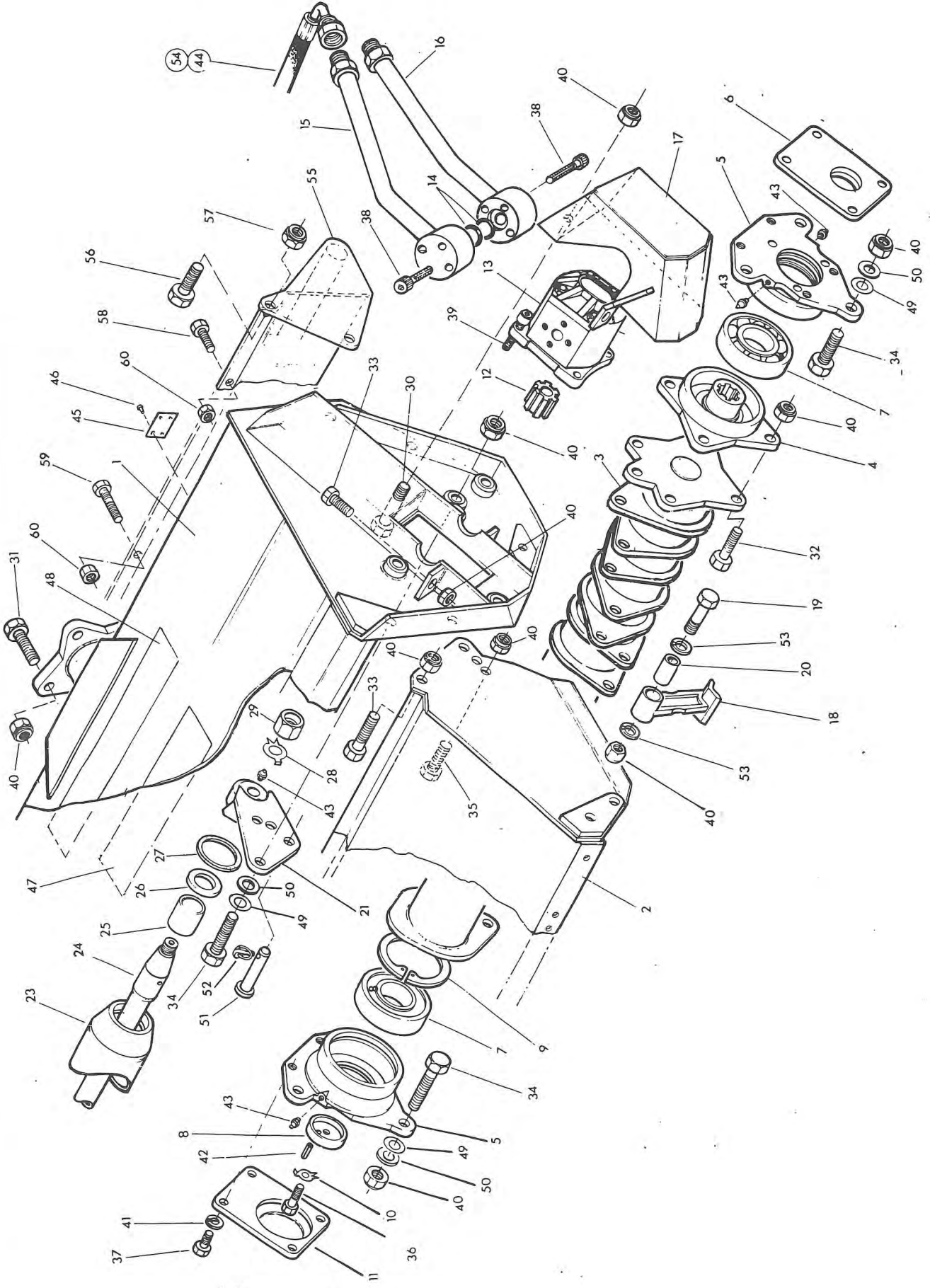
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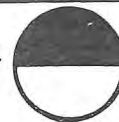


# HEDGE FLAIL HEAD

# McCORMICK

Sheet 2





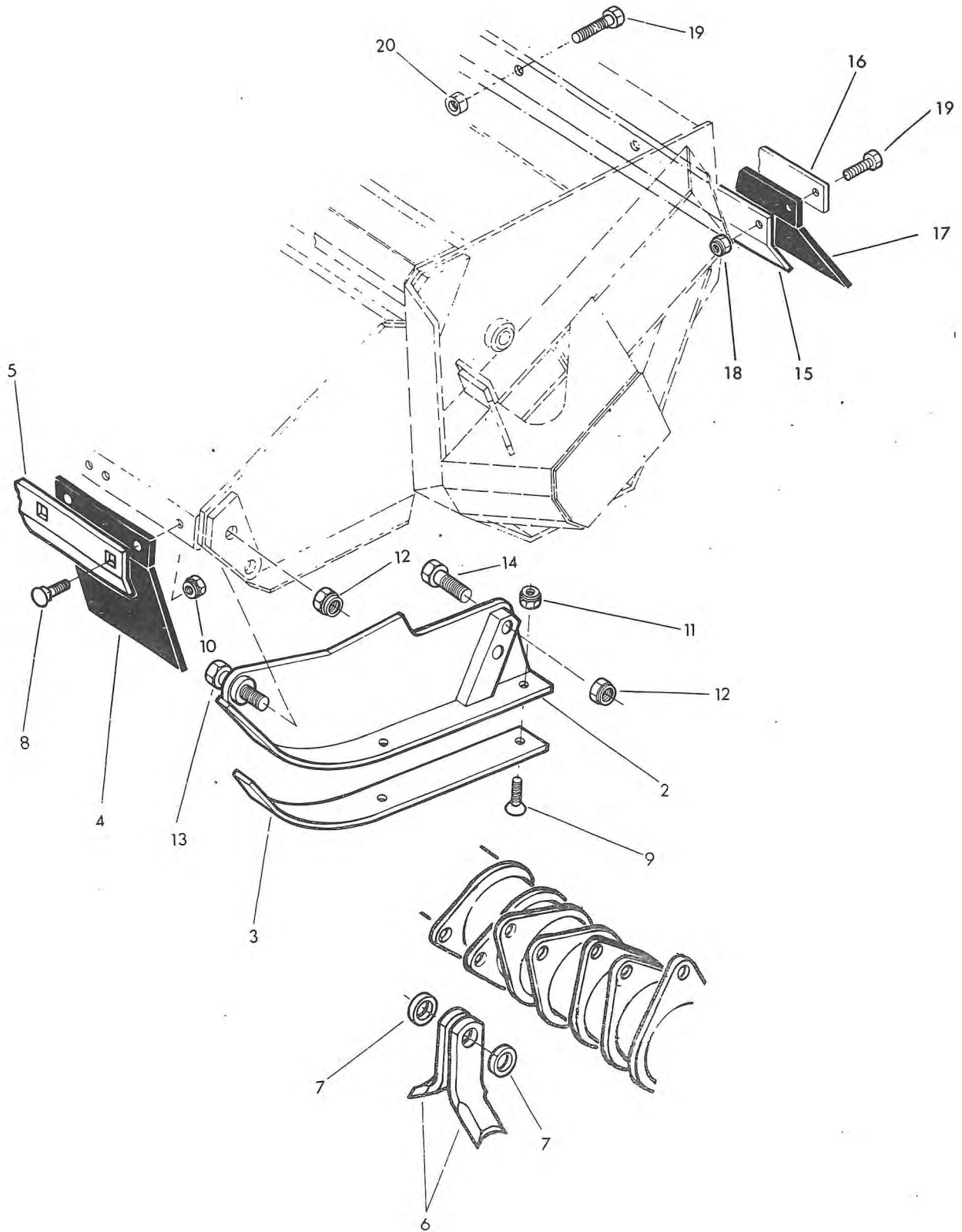
| Ref.                   | Part No.  | Qty.    | Description   |
|------------------------|-----------|---------|---|
|                        | 71-90-252 |         | 1.2 METRE HEDGE FLAIL TO CUT ON R.HAND SIDE OF TRACTOR WITH MOTOR OUTBOARD-continued                  |
|                        | 71-90-253 |         | 1.2 METRE HEDGE FLAIL TO CUT ON L.HAND SIDE OF TRACTOR WITH MOTOR OUTBOARD-as illustrated - continued |
| 31                     | 02-11-186 | 4       | Bolt 5/8 UNF x 2¼" long   |
| 32                     | 03-11-146 | 4       | Setscrew 5/8 UNF x 1¾" long   |
| 33                     | 03-11-126 | 4       | Setscrew 5/8 UNF x 1½" long   |
| 34                     | 03-11-166 | 8       | Setscrew 5/8 UNF x 2" long  |
| 35                     | 03-11-106 | 2       | Setscrew 5/8 UNF x 1¼" 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 Ø 10  |
| 42                     | 04-21-608 | 1       | Spring dowel 3/16" dia x ½" long  |
| 43                     | 09-01-121 | 6       | Greaser   |
| 44                     | 85-38-015 | 2       | Hose ¾" 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  |
|                        | 86-99-166 |         | <u>SEAL KIT FOR HYDRAULIC MOTOR</u><br>Contains all seals plus tab washer and nut                     |
| <b>OPTIONAL EXTRAS</b> |           |         |   |
| 54                     | 85-38-025 | 2       | Hose ¾" BSP SF-90°F 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:-                               |
| 55                     | 71-90-285 | 1       | Hood  |
| 56                     | 03-11-106 | 4       | Bolt 5/8 UNF x 1¼"  |
| 57                     | 01-41-006 | 4       | Self locking nut 5/8 UNF  |
| 58                     | 93-13-045 | 1       | Setscrew M10 x 20   |
| 59                     | 93-13-055 | 2       | Set screw M10 x 25  |
| 60                     | 91-43-005 | 3       | Self locking nut M10  |

Model.

GRASS FLAIL HEAD

**McCONEL**

Registered office: Temeside Works,  
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Telex: 35313





| 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. 73-14-366, 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 | 03-11-166 | 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 off | Grass flail              |
| 71-90-010 | 2 off  | Spacer                   |
| 71-36-133 | 1 off  | Pivot bush               |
| 73-14-222 | 1 off  | Special flail bolt       |
| 01-41-006 | 1 off  | 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  |
|      | 71-90-311 | 1 | Rear flap kit - to provide additional guarding for flail heads with upward cutting flails suitable for grass or hedge - containing:- |
| 15   | 71-90-312 | 1 | Mounting strip   |
| 16   | 71-90-313 | 1 | Clamp strip  |
| * 17 | 71-90-314 | 1 | Flap   |
| 18   | 91-43-005 | 9 | Self locking nut M10   |
| 19   | 92-13-065 | 7 | Setscrew M10 x 30  |

#### \* Spares Note

For machines prior to NOV 1988 a new flap must be ordered c/w 9 off item 19.

Model.

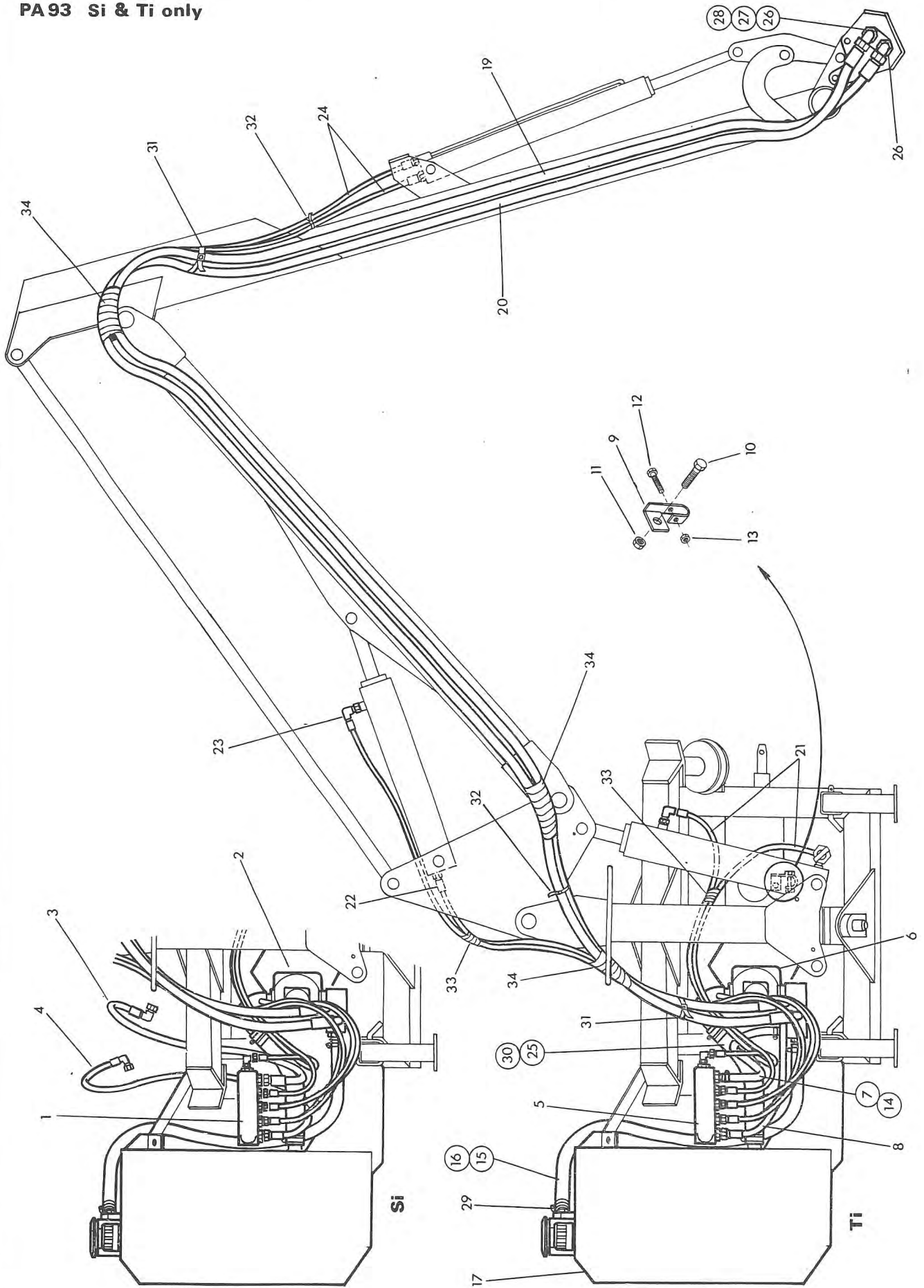
# McCOMEL

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## HYDRAULIC INSTALLATION

PA 93 Si & Ti only



Model.

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| Ref. | Part No.  | Qty. | Description  |
|------|-----------|------|--|
|      |           |      | HYDRAULIC INSTALLATION PA93<br>SEMI INDEPENDENT MODEL ONLY   |
| 1    | 81-30-372 | 1    | Control valve assembly (see pages 53-56)                     |
| 2    | 80-13-394 | 1    | Gearbox/pump/rotor relief valve see page 57+71               |
| 3    | 85-32-014 | 1    | Hose ½" BSP-SF-90° F x 80" long Return tractor               |
| 4    | 85-31-223 | 1    | Hose 3/8 BSP SF 90° F x 59" long supply-tractor              |
|      |           |      | HYDRAULIC INSTALLATION PA 93<br>FULLY INDEPENDENT MODEL ONLY |
| 5    | 81-30-371 |      | Control valve assembly (see pages 53-56)                     |
| 6    | 80-13-392 | 1    | Gearbox /pump/rotor on/off valve see page 67-72              |
| 7    | 85-01-158 | 1    | Hose 5/8" bore x 24" long. Return to rotor on/off valve      |
| 8    | 85-11-253 | 1    | Hose 3/8" BSP-SF-SF x 18" long. Supply from pump             |
| 9    | 71-35-094 | 1    | Rotor control cable clamp c/w nuts and bolts                 |
| 10   | 93-13-046 | 1    | Setscrew M12 x 20  |
| 11   | 91-43-006 | 1    | Self locking nut M12   |
| 12   | 93-13-054 | 1    | Setscrew M8 x 25   |
| 13   | 91-43-004 | 1    | Self locking nut M8  |
| 14   | 09-04-204 | 2    | Hose clip - 5/8 bore hose                                    |
|      |           |      | <u>Item 15 is common to both PA93 right hand builds</u>      |
| 15   | 85-00-834 | 1    | Hose low pressure 1" bore x 34" long rotor valve - tank      |
|      |           |      | <u>Item 16 is common to both PA93 left hand builds</u>       |
| 16   | 85-00-838 | 1    | Hose low pressure 1" bore x 38" long rotor valve-tank        |
|      |           |      | <u>The remaining items are common to all PA93 models</u>     |
| 17   |           |      | Tank assembly see page 73                                    |
| 18   | 71-09-319 | 1    | Control mounting assembly-not illus-see page 75              |
| 19   | 85-01-116 | 1    | Hose ¾" BSP SF-90° F x 205" long motor supply                |
| 20   | 85-01-121 | 1    | Hose ¾" BSP St x 1 1/16 JIC 90° x 205" long motor return     |
| 21   | 85-35-022 | 2    | Hose ¼" BSP SF-90° F x 48" long. Lift                        |
| 22   | 85-15-132 | 1    | Hose ¼" BSP SF-SF x 64 long. Reach base                      |
| 23   | 85-35-142 | 1    | Hose ¼" BSP SF-90° F x 80" long. Reach gland                 |
| 24   | 85-15-122 | 2    | Hose ¼" BSP SF-SF x 162" long - Angle                        |
| 25   | 85-01-122 | 1    | Hose 1½" bore x 11¾" long. suction from tank                 |
| 26   | 85-81-160 | 2    | Elbow ¾" BSP 90° MF  |
| 27   | 85-81-247 | 1    | Adaptor ¾" BSP M-F   |
| 28   | 86-50-106 | 1    | Bonded seal ¾" BSP   |
| 29   | 09-04-106 | 4    | Hose clip - 1" bore hose                                     |
| 30   | 09-04-107 | 4    | Hose clip - 1½" bore hose                                    |
| 31   | 71-06-187 | 2    | Hose tie   |
| 32   | 71-35-084 | 2    | Hose tie   |
| 33   | 72-13-005 | 2    | Hose armour coil 3/8" dia                                    |
| 34   | 71-93-026 | 3    | Hose armour coil ¾" dia                                      |

Model.

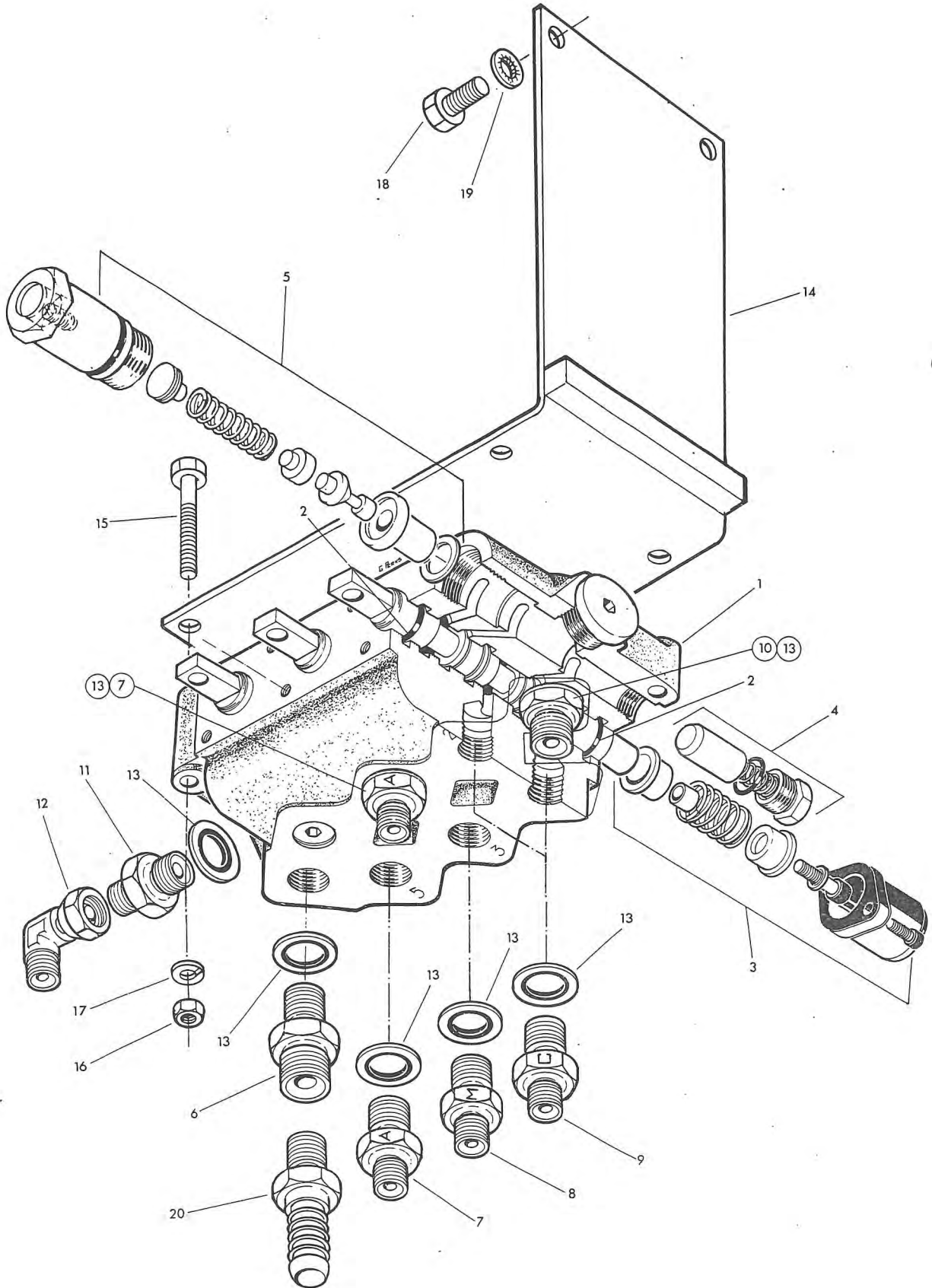
**CONTROL VALVE**

**McCONEL**

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Telephone: Ludlow (0584) 3131  
Telex: 35313



PA93 Si & Ti only





| Ref. | Part No.         | Qty. | Description  |
|------|------------------|------|--|
|      | 81-30-372        |      | HYDRAULIC CONTROL ASSEMBLY<br>FOR PA93 SEMI INDEPENDENT<br>MODEL |
| *    | 81-30-376        | 1    | Valve c/w connections  |
| 1    | 81-30-334        | 1    | Valve block c/w spools 'O' rings                                 |
| 2    | 86-00-112        | 6    | 'O' ring   |
| 3    | 81-30-134        | 3    | Centering spring assembly  |
| 4    | 81-30-022        | 1    | Non-return valve assembly  |
| 5    | <b>G381-2537</b> | 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 1/4BSP-3/8 BSP-<br>MM                         |
| 8    | 81-30-066        | 1    | Restrictor union M3/8"BSP-1/4BSP<br>MM                           |
| 9    | 81-30-048        | 2    | Restrictor union 'C' 1/4BSP-3/8BSP<br>MM                         |
| 10   | 60-00-113        | 1    | Union 3/8 BSP M-M  |
| 11   | 85-81-115        | 1    | Union 3/8 BSP-1/4BSP 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 Ø 10                                    |

86-99 163

SEAL KIT

81-30-371

HYDRAULIC CONTROL ASSEMBLY  
FOR PA93 FULLY INDEPENDENT  
MODEL

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

\* becomes

81-30-375 1

Valve c/w connections

■ becomes

81-25-008 1

Return connection 5/8" bore

20

Lever control. See following page



Model.

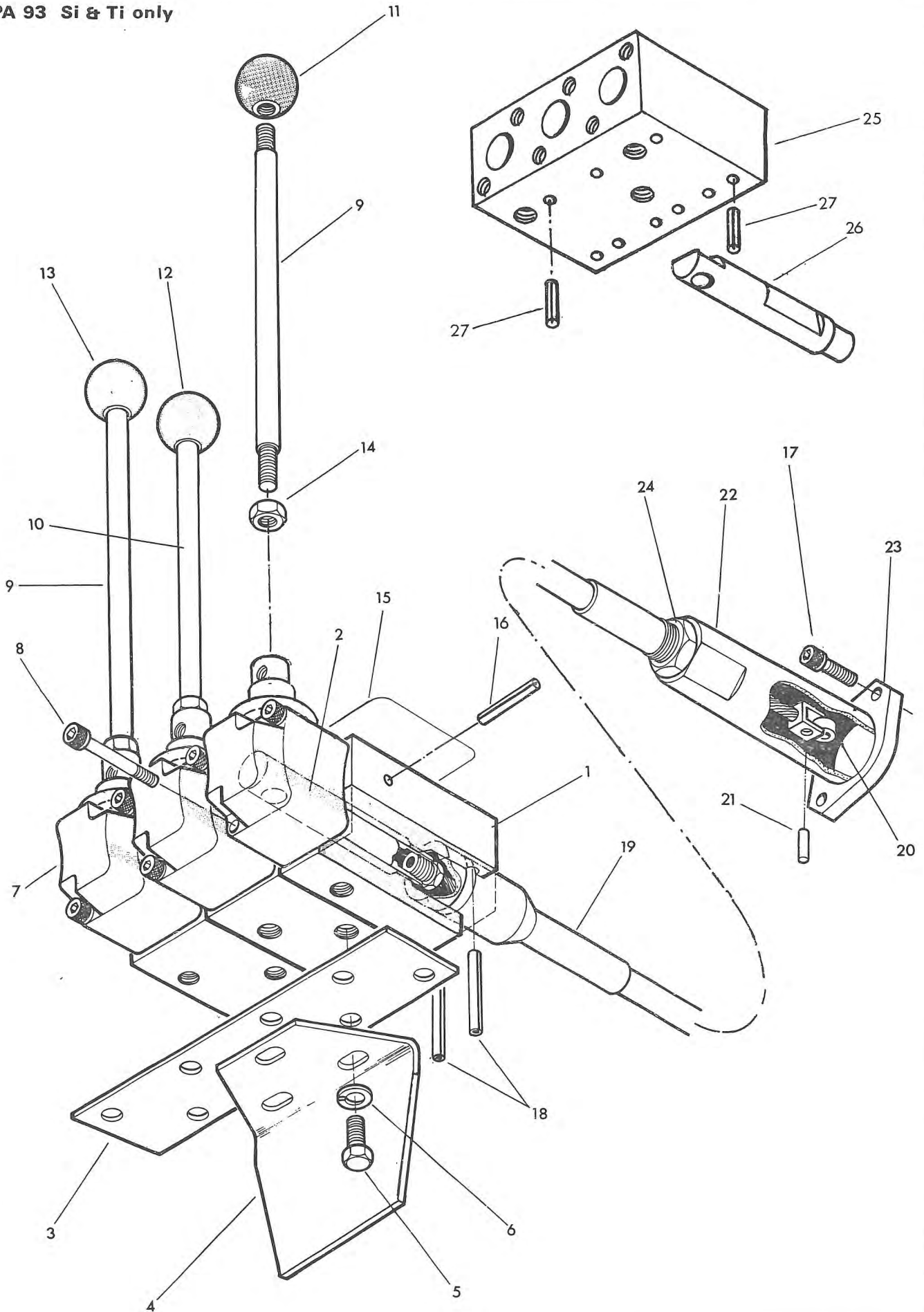
**CONTROL HANDLE ASSY  
& CABLES**

**McCONEL**

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



PA 93 Si & Ti only





| Ref. | Part No.  | Qty. | Description   |
|------|-----------|------|---|
|      | 81-30-371 |      | HYDRAULIC CONTROL ASSY. FOR<br>PA93 FULLY INDEPENDENT MODEL-<br>continued     |
|      | 81-30-372 |      | HYDRAULIC CONTROL ASSY. FOR<br>PA 93 SEMI INDEPENDENT MODEL<br>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 Ø5 x 40  |
| 17   | 93-43-022 | 6    | Socket headed capscrew M5 x 12  |
| 18   | 04-25-540 | 3    | Spring dowel Ø 5 x 40   |
| * 19 | 81-25-046 | 3    | Cable & spacer and pin, sleeve,<br>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,<br>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 Ø16 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

Items 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.

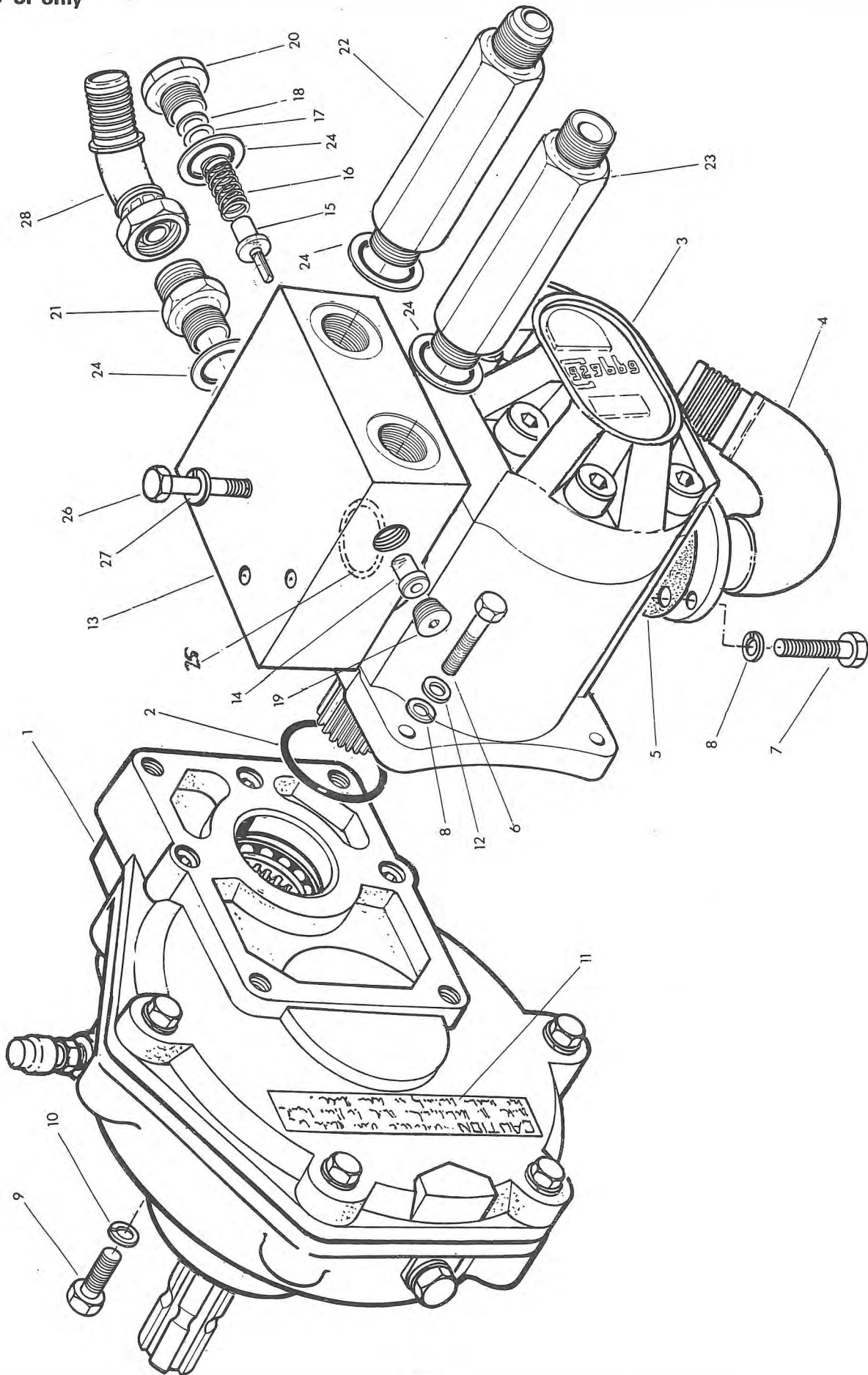
**GEARBOX, PUMP, ROTOR  
RELIEF VALVE ASSY.**

**McCONEL**

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



PA 93 Si only



Model.

**McCONEL**Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
Telex: 35313

| Ref. | Part No.  | Qty.     | Description  |
|------|-----------|----------|--|
|      | 80-13-394 |          | GEARBOX-PUMP-ROTOR RELIEF VALVE FOR PA93 SEMI INDEPENDENT MODEL ONLY |
| 1    | 80-13-360 | 1        | Gearbox 4.59:1 (see page 71)   |
| 2    | 86-00-523 | 1        | 'O' ring   |
| 3    | 82-01-463 | 1        | Pump CPL 33  |
| 4    | 71-35-297 | 1        | Suction Connection   |
| 5    | 80-13-023 | 1        | Gasket   |
| 6    | 92-13-094 | 4        | Bolt M8 x 45   |
| 7    | 93-13-044 | 4        | Setscrew M8 x 20   |
| 8    | 91-00-204 | 8        | Spring washer $\varnothing$ 8  |
| 9    | 93-13-056 | 4        | Setscrew M12 x 25  |
| 10   | 91-00-206 | 4        | Spring washer $\varnothing$ 12                                       |
| 11   | 80-13-081 | 1        | Gearbox label  |
| 12   | 91-00-104 | 4        | Plain washer $\varnothing$ 8   |
|      | 81-25-337 | 1        | Rotor relief valve assembly compr:                                   |
| 13   | 81-25-322 | 1        | Valve block  |
| 14   | 81-25-084 | 1        | Drill bush   |
| 15   | 81-25-083 | 1        | Needle/spring register   |
| * 16 | 81-25-086 | 1        | Spring   |
| 17   | 60-01-232 | As reqd. | Shim 0.4mm   |
| 18   | 01-00-102 | As reqd. | 5/16" dia. bright washer   |
| 19   | 85-82-043 | 1        | Taper plug 3/8 BSPT  |
| * 20 | 81-25-088 | 1        | Relief valve cap   |
| 21   | 80-02-086 | 1        | Union $\frac{3}{4}$ " BSP-1" BSP MM                                  |
| 22   | 85-81-253 | 1        | Union $\frac{3}{4}$ " BSP x 1 1/16" J.I.C. M-M extended              |
| 23   | 85-81-252 | 1        | Union $\frac{3}{4}$ " BSP M-M extended                               |
| 24   | 86-50-106 | 4        | Bonded seal $\frac{3}{4}$ " BSP                                      |
| 25   | 86-00-119 | 1        | 'O' ring   |
| 26   | 92-13-124 | 3        | Bolt M8 x 60   |
| 27   | 91-00-204 | 3        | Spring washer $\varnothing$ 8  |
| 28   | 85-81-245 | 1        | Elbow 1" BSP 135° low pressure connection                            |
|      | 86-99 215 |          | PUMP SEAL KIT  |

\* These two parts must be used together, introduced ISS2 of manual FEB 1989

Model.

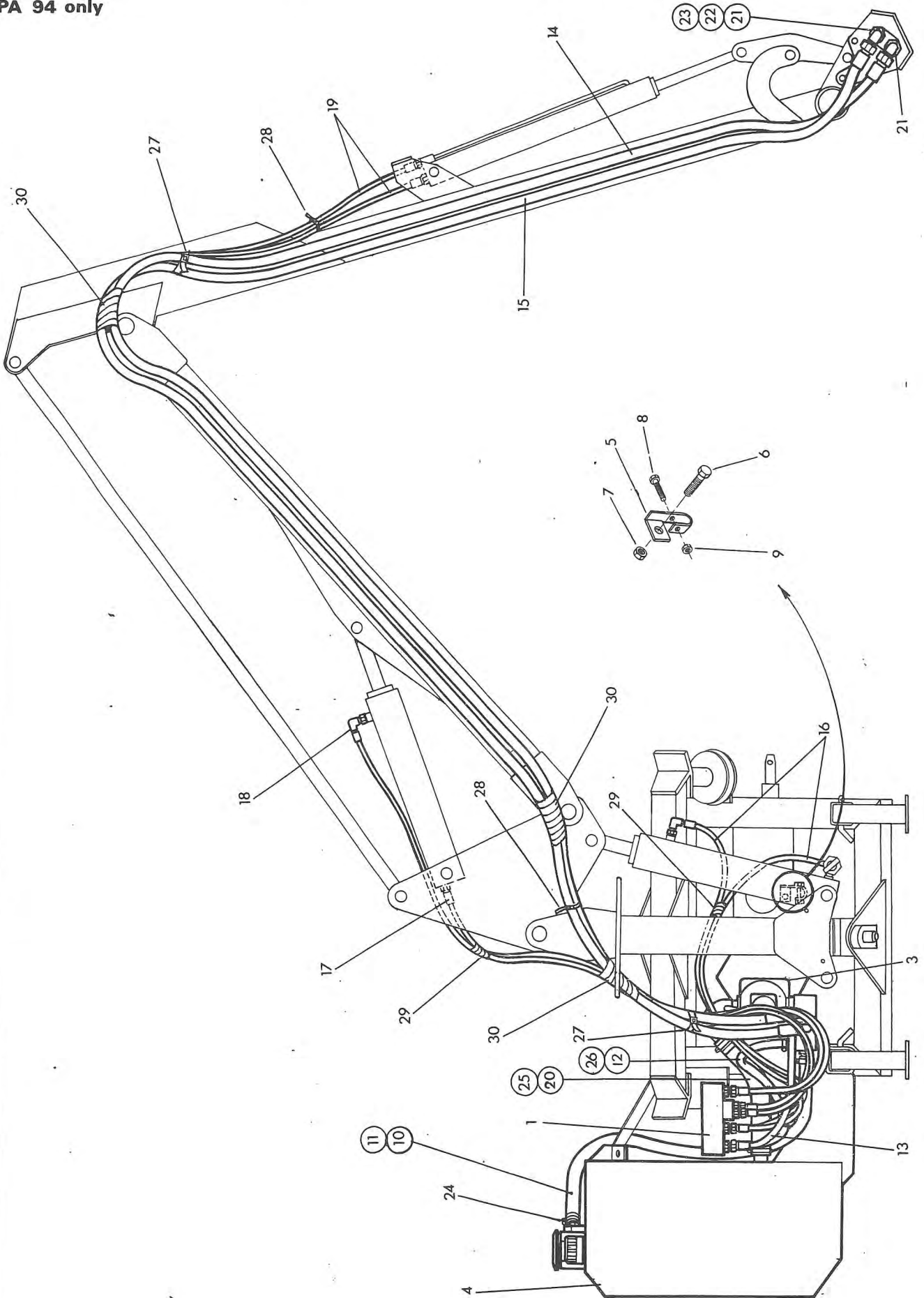
HYDRAULIC INSTALLATION

**McCONEL**

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



PA 94 only



Model.

**McCONEL**Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
Telex: 35313

| Ref. | PART No.  | Qty. | Description   |
|------|-----------|------|---|
|      |           |      | HYDRAULIC INSTALLATION PA94<br>ONLY   |
| 1    | 81-30-367 | 1    | Control valve assembly (see pages 61-66)  |
| 2    | 71-09-319 | 1    | Control mounting assembly not illus- see page 75                                      |
| 3    | 80-13-392 | 1    | Gearbox/pump/rotor on /off valve<br>(see pages 67-72)                                 |
| 4    |           | 1    | Tank assembly - see page 73   |
| 5    | 71-35-094 | 1    | Rotor control cable clamp c/w nuts and bolts  |
| 6    | 93-13-046 | 1    | Setscrew M12 x 20   |
| 7    | 91-43-006 | 1    | Self locking nut M12  |
| 8    | 93-13-054 | 1    | Setscrew M8 x 25  |
| 9    | 91-43-004 | 1    | Self locking nut M8   |
| 10   | 85-00-834 | 1    | Hose-low pressure 1" bor x 34" long-rotor<br>valve-tank-for right hand build machine  |
| 11   | 85-00-838 | 1    | Hose-low pressure 1" bore x 38" long-rotor<br>valve-tank-for left hand build machines |
| 12   | 85-01-158 | 1    | Hose 5/8" bore x 24" long. Return to rotor<br>on/off valve                            |
| 13   | 85-11-253 | 1    | Hose 3/8" BSP SF-SF x 18" long -Supply<br>from pump                                   |
| 14   | 85-01-116 | 1    | Hose 3/4" BSP SF-90° x 205" long-motor supply   |
| 15   | 85-01-121 | 1    | Hose 3/4" BSP ST x 1 1/16" JIC 90° x 205 long<br>motor return                         |
| 16   | 85-35-022 | 2    | Hose 1/4" BSP SF-90° x 48" long-Lift  |
| 17   | 85-15-132 | 1    | Hose 1/4" BSP SF-SF x 64" long Reach base   |
| 18   | 85-35-142 | 1    | Hose 1/4" BSP SF-90° x 80" long-Reach gland   |
| 19   | 85-15-122 | 2    | Hose 1/4" BSP SF-SF x 162" long-Angle   |
| 20   | 85-01-122 | 1    | Hose 1 1/2" bore x 1 1/4" long-suction from tank                                      |
| 21   | 85-81-160 | 2    | Elbow 3/4" BSP 90° M-F  |
| 22   | 85-81-247 | 1    | Adaptor 3/4" BSP M-F  |
| 23   | 86-50-106 | 1    | Bonded seal 3/4" BSP  |
| 24   | 09-04-106 | 4    | Hose clip - 1" bore hose  |
| 25   | 09-04-107 | 4    | Hose clip - 1 1/2" bore hose  |
| 26   | 09-04-204 | 2    | Hose clip - 5/8" 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.

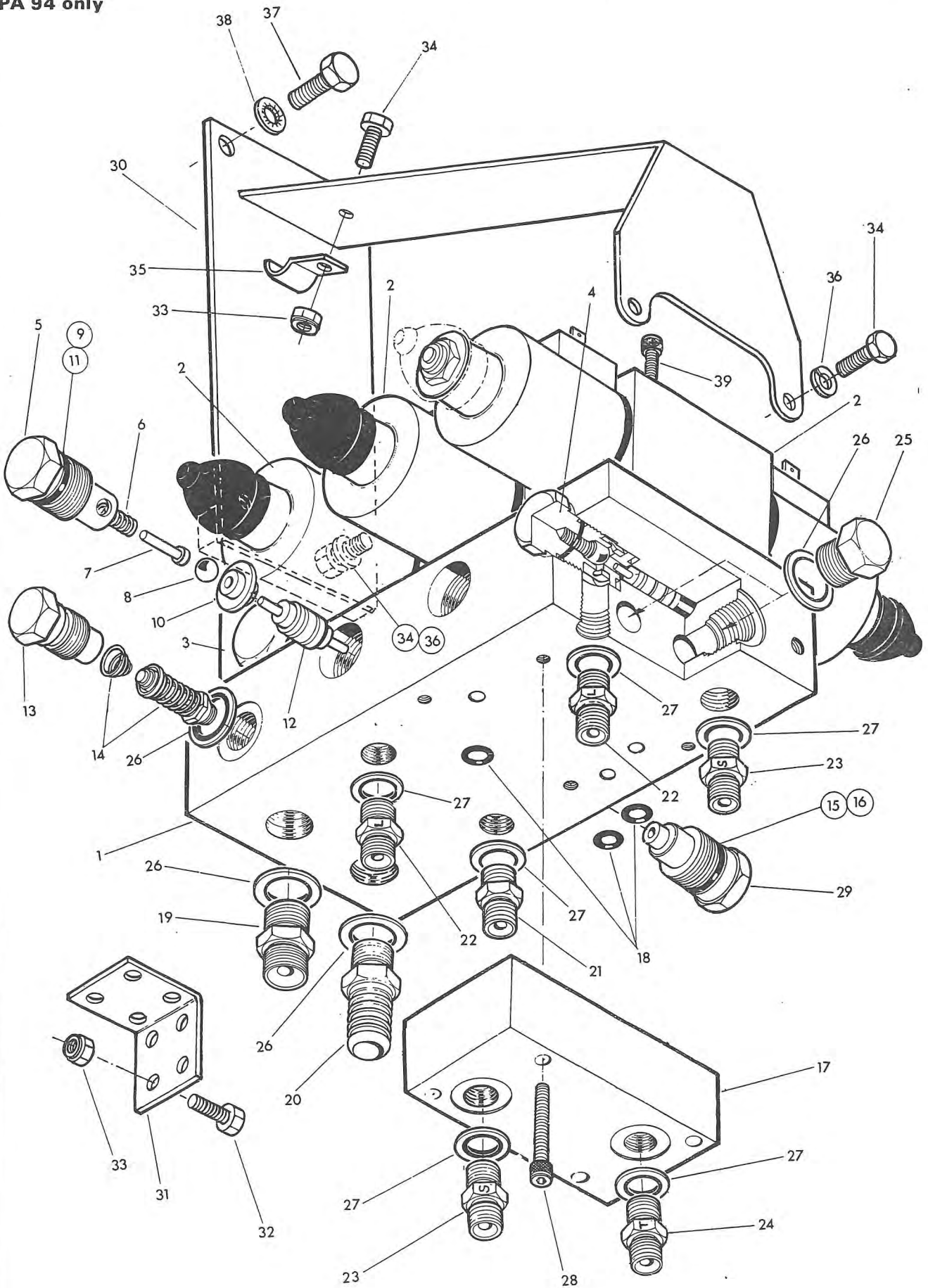
# McCONEL

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



## CONTROL VALVE

PA 94 only





| Ref. | Part No.  | Qty. | Description                         |
|------|-----------|------|-------------------------------------|
|      | 81-30-367 |      | ELECTRIC CONTROL PACK FOR PA94 ONLY |
|      | 81-30-318 | 1    | Solenoid/manifold assembly compr:   |
| 1    | 81-30-321 | 1    | Manifold block                      |
| * 2  | 81-30-421 | 3    | Double solenoid valve               |
| * 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 Ø 9                      |
| 9    | 87-00-644 | 1    | 'O' ring                            |
| 10   | 81-30-088 | 1    | Check valve seat                    |
| 11   | 87-09-644 | 1    | Anti extrusion ring                 |
| 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 ¼BSP-¼" BSP M-M               |
| 22   | 81-30-038 | 2    | Restrictor Union 'L' ¼" BSP M-M     |
| 23   | 81-30-037 | 2    | Restrictor union 'S' ¼" BSP M-M     |
| 24   | 81-30-103 | 1    | Restrictor union 'T' ¼" 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 ¼" BSP                  |
| 28   | 92-43-082 | 20   | Socket headed setscrew M5 x 40      |
| 29   | 81-30-078 | 1    | Check valve gallery plug            |
| 30   | 71-94-276 | 1    | Valve mounting bracket              |
| 31   | 81-25-070 | 1    | Flail on/off lever mounting bracket |
| 32   | 93-13-044 | 2    | Setscrew M8 x 20                    |
| 33   | 91-43-004 | 3    | 'Clevelok' nut M8                   |
| 34   | 93-13-034 | 5    | Setscrew M8 x 16                    |
| 35   | 71-09-151 | 1    | Cable clamp                         |
| 36   | 91-00-204 | 4    | Spring washer Ø 8                   |
| 37   | 93-13-045 | 2    | Setscrew M10 x 20                   |
| 38   | 91-00-305 | 2    | Int. serrated washer Ø 10           |
| 39   | 92 43 102 | 16   | Cap screw , socket headed M5 x 40   |
|      | 86-99-197 |      | SEAL KIT                            |
|      |           |      | Switch box. See page 65             |

\* Spares note

For machines prior to July 1988 a new solenoid must be ordered c/w  
4 off item 38



Model.

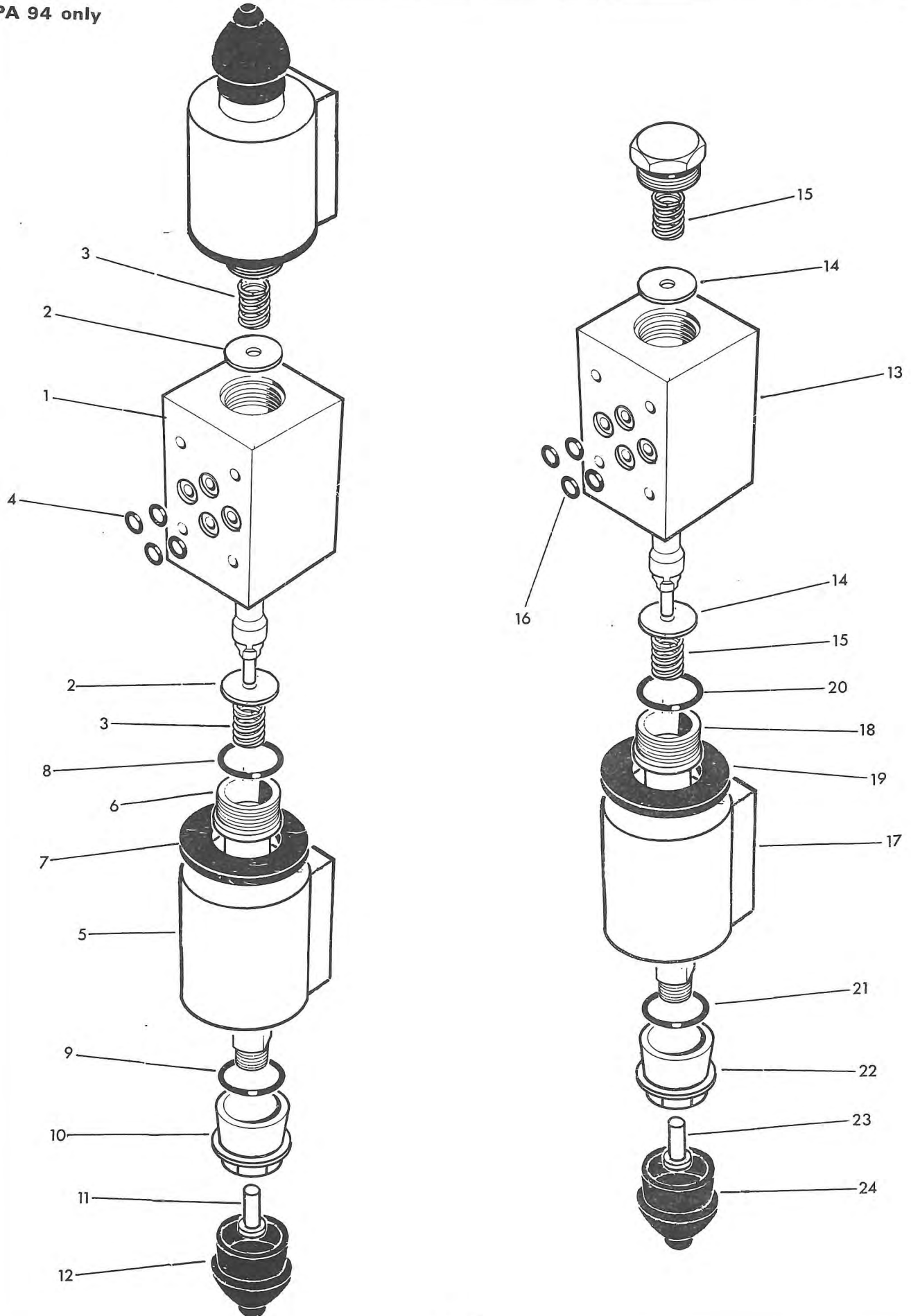
SOLENOID ASSEMBLIES

**McCOMEL**

Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 31 31  
Telex: 35313



PA 94 only



Model.

**McCONEL**Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
Telex: 35313

| Ref. | Part No.  | Qty. | Description   |
|------|-----------|------|---|
|      | 81-30-318 |      | SOLENOID MANIFOLD ASSEMBLY<br>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                         |

**Spares note**

For machines prior to July 1988 a new solenoid must be ordered  
c/w 4 off Part No. 92 43 102

Model.

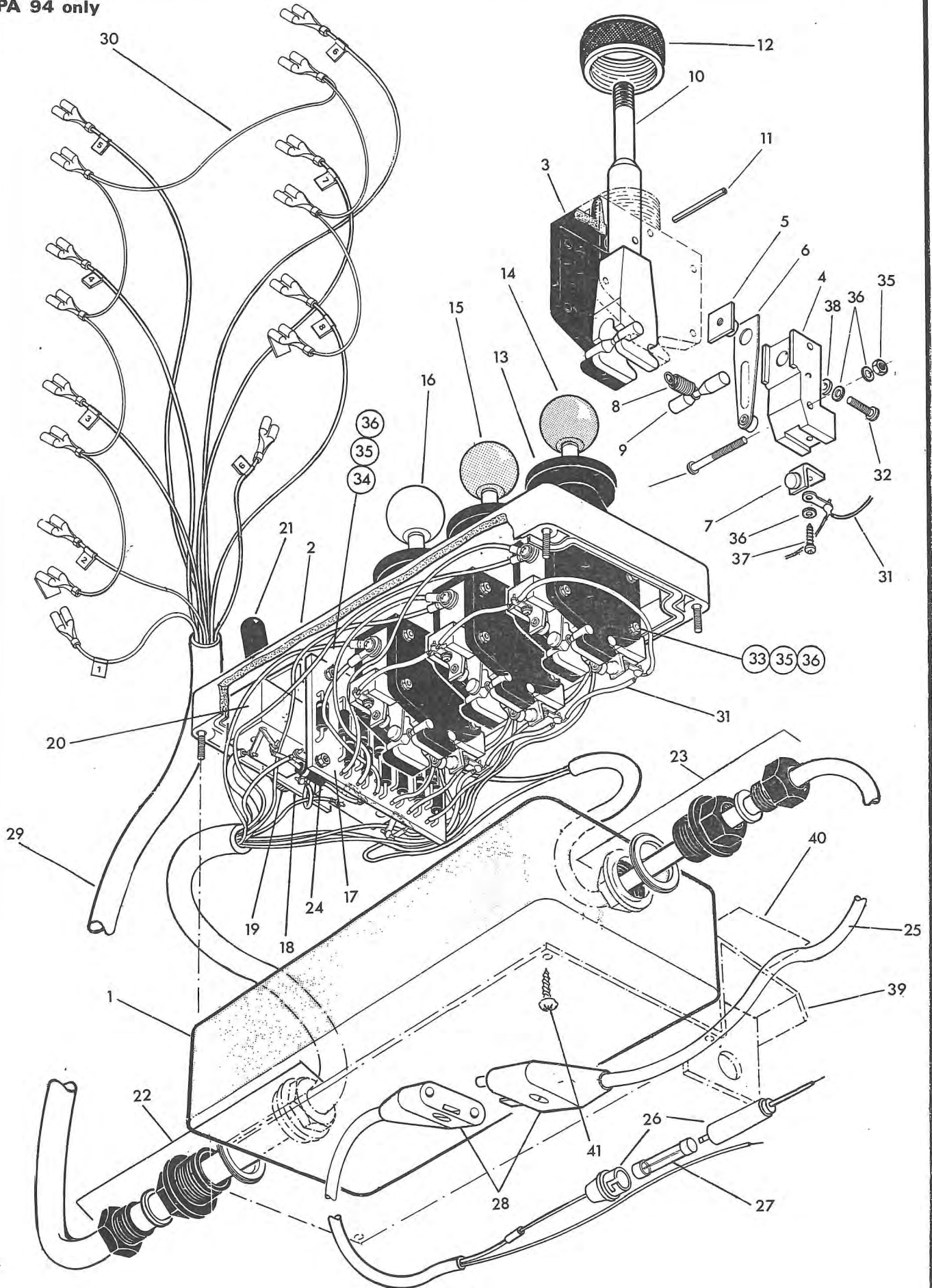
SWITCHBOX & LOOM

# McCONEL

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



PA 94 only





| Ref. | Part No.  | Qty. | Description                                      |
|------|-----------|------|--|
|      | 81-30-367 |      | ELECTRIC CONTROL PACK FOR PA94-cont.             |
|      | 84-02-280 |      | 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 $\varnothing$ 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 board assembly                   |
| 18   | 84-02-110 | 1    | Bracket c/w diode                                |
| 19   | 84-02-081 | 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 - 10amp                                     |
| 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 $\varnothing$ 3         |
| 37   | 84-02-119 | 6    | Self tapping screw No4 type 'B'x 10m/m long      |
| 38   | 84-02-280 | 6    | Plain washer $\varnothing$ 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 $\frac{1}{2}$ " long |

Model.

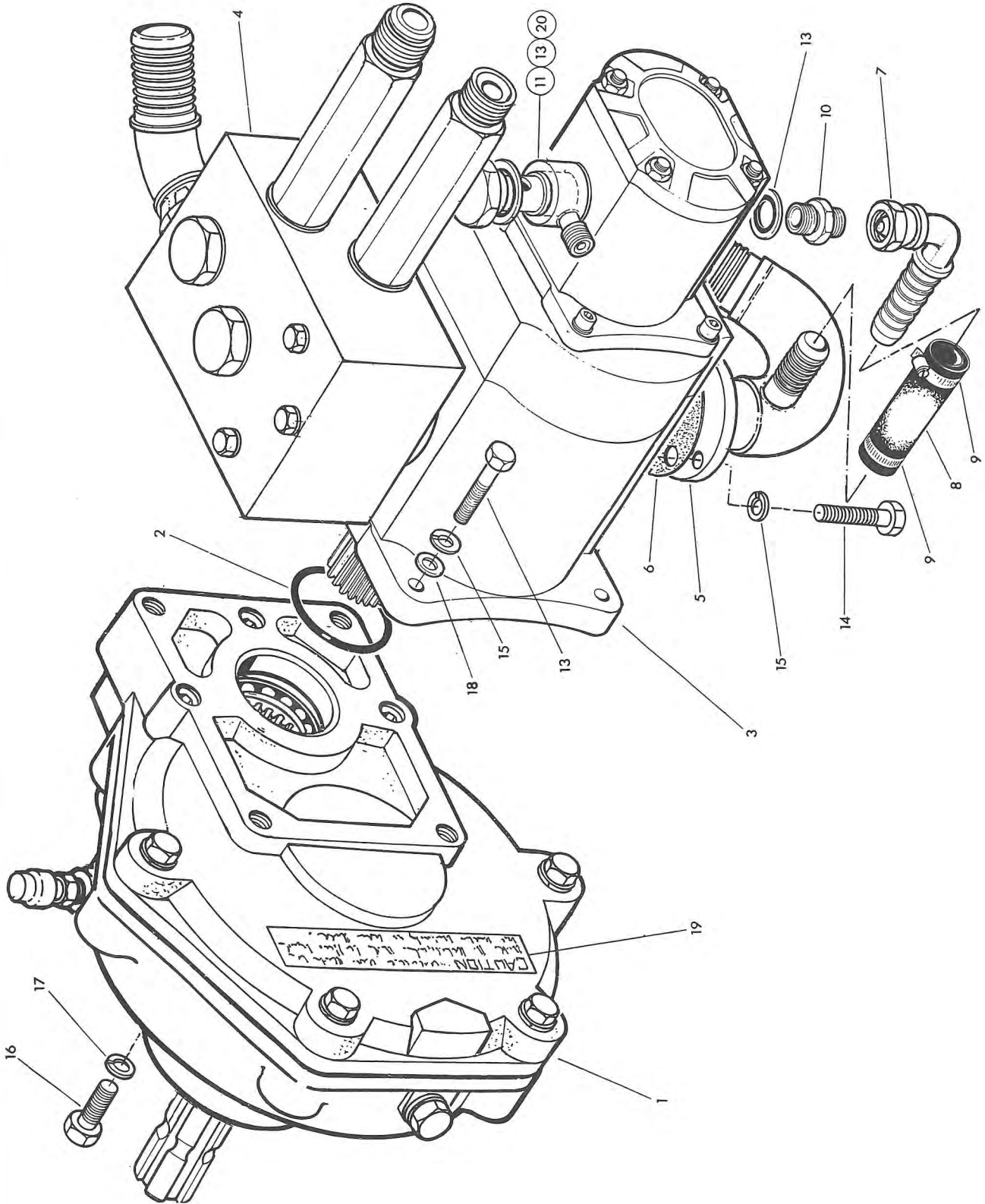
GEARBOX, PUMP, ROTOR  
CONTROL VALVE ASSY.

**McCOMEL**

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



PA 93 Ti & PA 94 only



Model.

**McCONEL**Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
Telex: 35313

| Ref. | Part No.  | Qty. | Description  |
|------|-----------|------|--|
|      | 80-13-392 |      | GEARBOX-PUMP-ROTOR CONTROL VALVE FOR PA94 & PA93 with independent hydraulics |
| 1    | 80-13-360 | 1    | Gearbox 4.59:1 (see page 71 )  |
| 2    | 86-00-523 | 1    | 'O' ring   |
| 3    | 82-01-462 | 1    | Tandem pump CPL 33/57  |
| 4    | 81-25-334 | 1    | Rotor control valve (see page 69)  |
| 5    | 71-35-296 | 1    | Suction Union  |
| 6    | 80-13-023 | 1    | Gasket   |
| 7    | 85-81-173 | 1    | Swept elbow connection   |
| 8    | 85-01-103 | 1    | Connecting hose  |
| 9    | 09-04-204 | 2    | Hose clip  |
| 10   | 85-81-206 | 1    | Union ½" BSP-5/8" BSP M-M  |
| 11   | 85-81-249 | 1    | Banjo  |
| 12   | 85-50-104 | 3    | Bonded seal ½" BSP   |
| 13   | 92-13-094 | 4    | Bolt M8 x 45   |
| 14   | 93-13-044 | 4    | Setscrew M8 x 20   |
| 15   | 91-00-204 | 8    | Spring washer Ø 8  |
| 16   | 93-13-056 | 4    | Setscrew M12 x 25  |
| 17   | 91-00-206 | 4    | Spring washer Ø 12   |
| 18   | 91-00-104 | 4    | Plain washer Ø 8   |
| 19   | 80-13-081 | 1    | Gearbox label  |
| 20   | 71-06-077 | 1    | Banjo bolt ½" BSP  |
|      | 86-99-215 |      | PUMP SEAL KIT  |

Model.

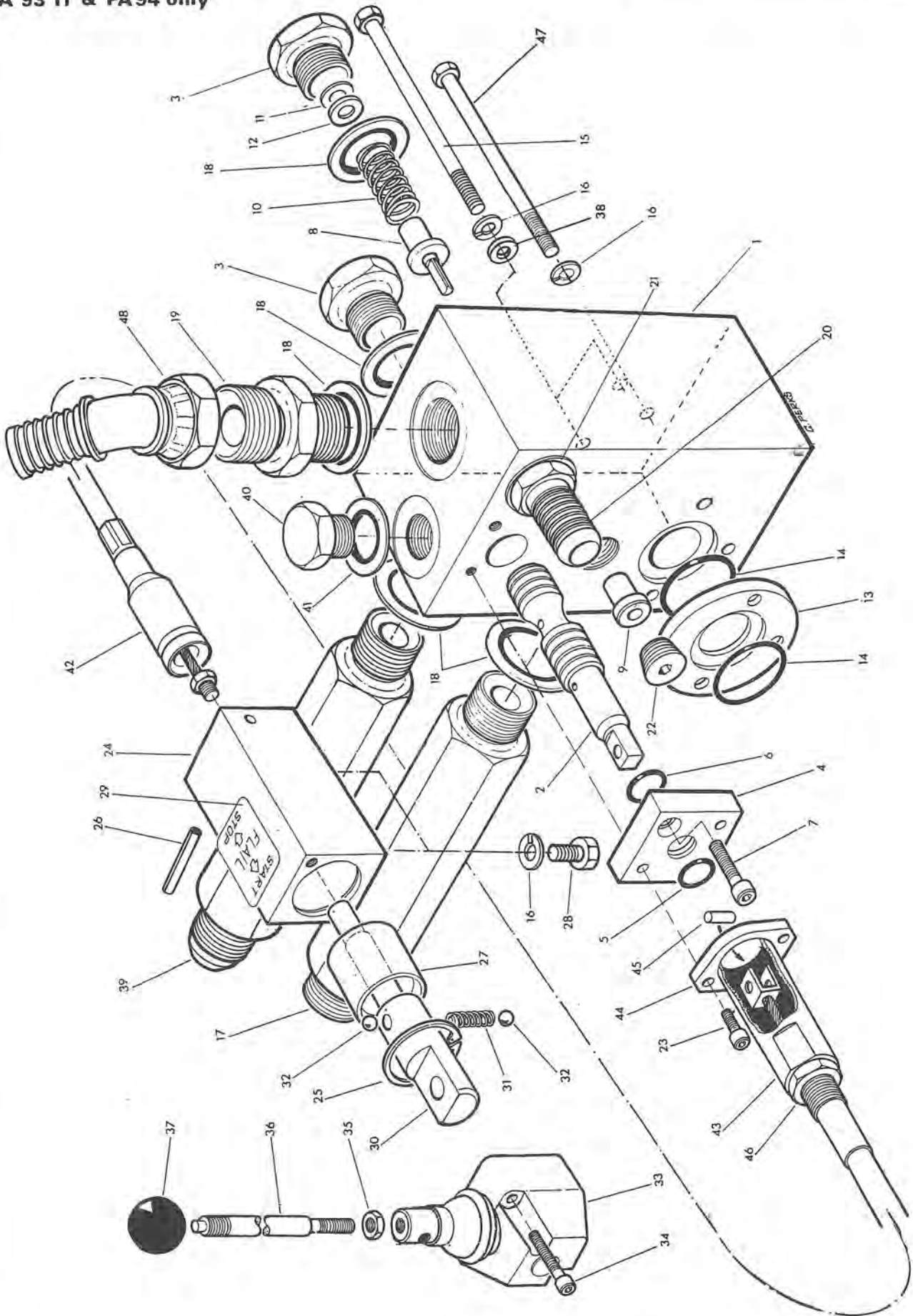
# ROTOR CONTROL VALVE

# McCONEL

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



PA 93 Ti & PA94 only





| Ref. | Part No.  | Qty.     | Description  |
|------|-----------|----------|--|
|      | 81-25-334 |          | ROTOR CONTROL VALVE FOR PA94 & PA93<br>with independent hydraulics |
| 1    | 81-25-074 | 1        | Valve body c/w spool (not supplied separately)                     |
| 2    |           | 1        | Spool (reference only)   |
| * 3  | 81-25-088 | 2        | Spool or Relief valve cap  |
| 4    | 81-25-039 | 1        | Control plate c/w 'O' rings  |
| 5    | 86-00-502 | 1        | 'O' ring   |
| 6    | 86-00-503 | 1        | 'O' ring   |
| 7    | 93-43-023 | 2        | Capscrew M6 x 12   |
| 8    | 81-25-083 | 1        | Needle/spring register   |
| 9    | 81-25-084 | 1        | Drill bush Ø5  |
| * 10 | 81-25-086 | 1        | Relief valve spring  |
| 11   | 60-01-232 | as reqd. | 0.4 Shim washer  |
| 12   | 01-00-102 | as reqd. | 5/16" dia bright washer  |
| 13   | 81-25-085 | 1        | Spacer   |
| 14   | 86-00-119 | 2        | 'O' ring   |
| 15   | 92-13-224 | 2        | Bolt M8 x 110  |
| 16   | 91-00-204 | 5        | Spring washer Ø 8  |
| 17   | 85-81-252 | 1        | Union 3/4" BSP M-M extended  |
| 18   | 86-50-104 | 1        | Bonded seal 3/4" BSP   |
| 19   | 80-02-086 | 1        | Adaptor 3/4" BSP-1" BSP MM   |
| 20   | 81-25-008 | 1        | Low pressure connection 3/8 BSP                                    |
| 21   | 86-50-103 | 1        | Bonded seal 3/8 BSP  |
| 22   | 85-82-044 | 1        | Taper plug 1/2" BSPT   |
| 23   | 93-43-022 | 2        | Capscrew M5 x 12   |
| 24   | 71-14-069 | 1        | Control block c/w spring dowel and circlip                         |
| 25   | 04-11-110 | 1        | Internal circlip   |
| 26   | 04-25-540 | 1        | Spring dowel Ø 5 x 40  |
| 27   | 71-14-067 | 1        | Detent cage  |
| 28   | 93-13-034 | 2        | Setscrew M8 x 16   |
| 29   | 71-14-073 | 1        | Instruction label  |
| 30   | 71-14-070 | 1        | Spindle  |
| 31   | 71-14-068 | 1        | Spring   |
| 32   | 09-05-108 | 2        | Steel ball 1/4" diameter   |
| 33   | 81-30-065 | 1        | Lever pivot box assembly   |
| 34   | 93-43-072 | 2        | Capscrew M5 x 35   |
| 35   | 91-13-004 | 1        | Thin hexagon nut M8  |
| 36   | 71-14-072 | 1        | Lever handle   |
| 37   | 09-03-121 | 1        | Knob - black   |
| 38   | 81-25-068 | 2        | Special washer   |
| 39   | 85-81-253 | 1        | Union 3/8 BSP- 1 1/16 J.I.C. M-M -extended                         |
| 40   | 81-03-001 | 1        | Blank plug 1/2" BSP  |
| 41   | 86-50-104 | 1        | Bonded seal  |
| 42   | 81-25-046 | 1        | Cable assembly including   |
| 43   | 71-15-162 | 1        | Sleeve   |
| 44   | 81-25-050 | 1        | Flange   |
| 45   | 71-15-160 | 1        | Pin  |
| 46   | 01-31-066 | 1        | Thin locknut 5/8 UNF   |
| 47   | 92-13-204 | 1        | Bolt M8 x 100  |
| 48   | 85-81-245 | 1        | 1" BSP - 135° elbow low pressure connection                        |

86-99-196 SEAL KIT  
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

|    |           |   |                                       |
|----|-----------|---|---------------------------------------|
| 42 | 81-25-046 | 1 | Cable assembly c/w sleeve, flange etc |
| 43 | 81-25-049 | 1 | Cable sleeve                          |
| 44 | 81-25-050 | 1 | Flange                                |
| 45 | 81-25-051 | 1 | Pin                                   |
| 46 | 91-00-016 | 1 | Thin locknut Ø 16 x 1.5 pitch         |

With 81-25-046 a spool eye bush is supplied. This item is discarded, when the cable is used with the rotor control valve.

\* These two parts must be used together, introduced ISS2 of manual FEB 1989

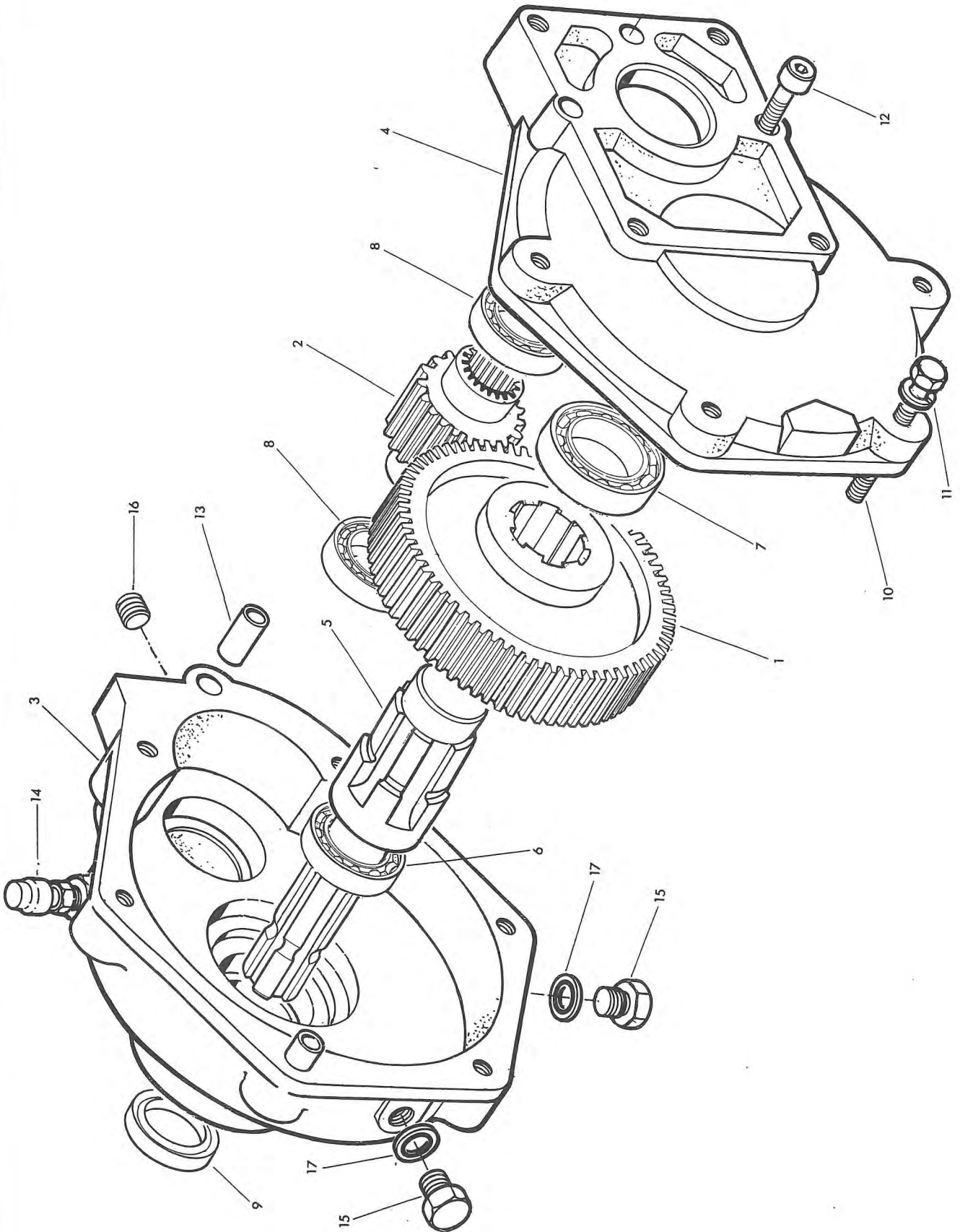


Model.

GEARBOX

**McCONEL**

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



**Model.****McCONEL**Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
Telex: 35313

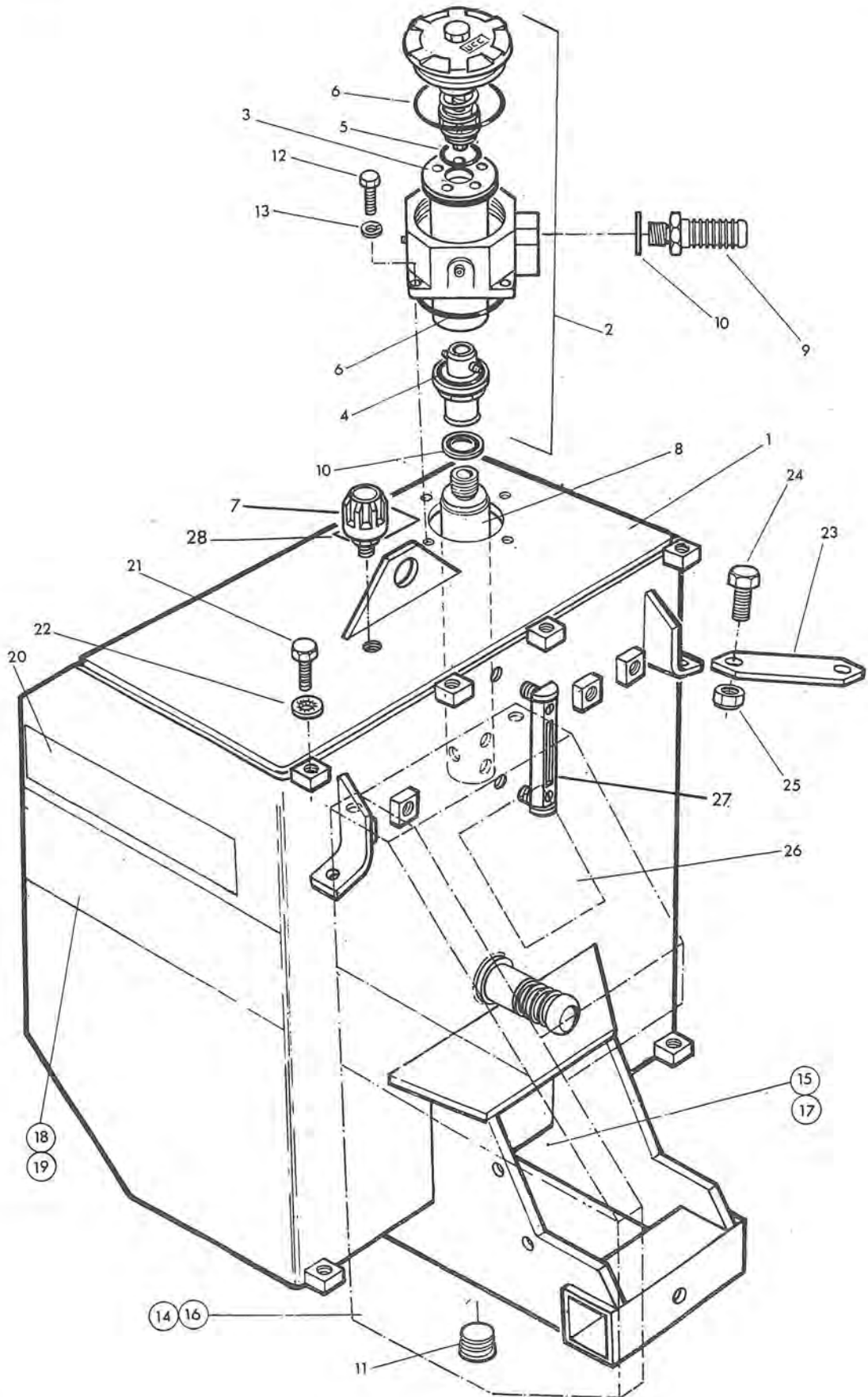
| Ref. | Part No.  | Qty. | Description                        |
|------|-----------|------|------------------------------------|
|      | 80-13-360 |      | GEARBOX ASSEMBLY (4.59:1)          |
| 1    | 80-13-384 | 1    | Gear 78 teeth                      |
| 2    | 80-13-385 | 1    | Pinion 17 teeth                    |
| 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 Ø 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 1/4BSP        |
| 16   | 85-82-042 | 1    | Taper plug 1/4 BSPT                |
| 17   | 86-50-102 | 2    | Bonded seal 1/4" BSP               |

Model.

**HYDRAULIC TANK &  
COVER PLATE**

**McCOMEL**

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





| Ref. | Part No.  | Qty. | Description  |
|------|-----------|------|--|
|      |           |      | HYDRAULIC TANK & COVER PLATE<br>(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<br>and 'O' rings              |
| 3    | 84-01-054 | 1    | Element  |
| 4    | 86-00-131 | 1    | 'O' Ring   |
| 5    | 86-00-126 | 1    | 'O' Ring   |
| 6    | 87-00-220 | 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 Ø8   |
| 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 Ø 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 Ø 12  |
| 26   | 71-09-143 | 1    | Solenoid wiring label-PA 94 only                               |
| 27   | 84-01-048 | 1    | Oil level gauge  |
| 28   | 12-90-023 | 1    | Label 'OIL FILTER'   |

## \* Spares Note

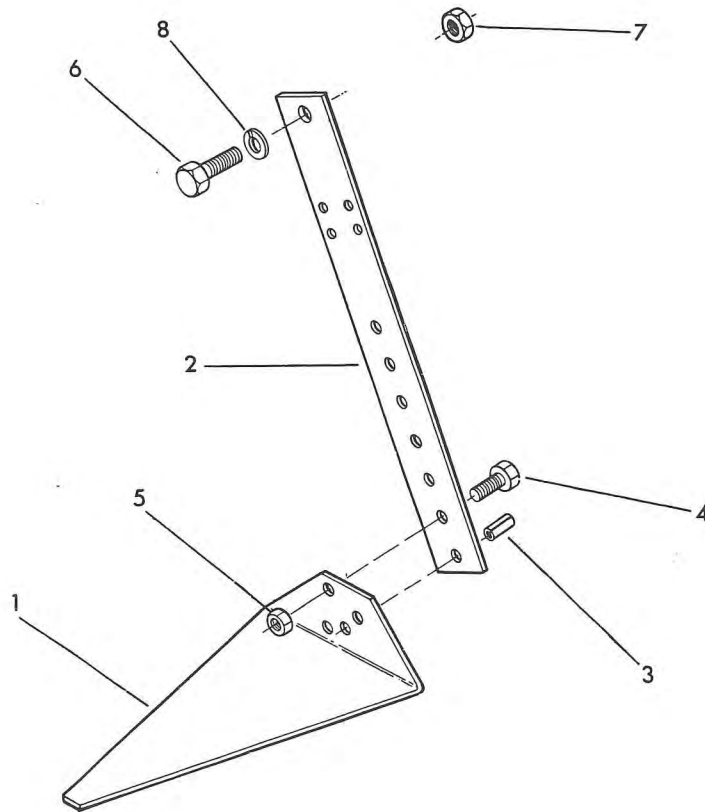
For machines prior to July 1988 a new tank must be ordered c/w oil level gauge and breather.

Model.

**CONTROL MOUNTING  
ASSY**

**McCONEL**

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



| Ref. | Part No.  | Qty. | Description                   |
|------|-----------|------|-------------------------------|
|      | 71-09-319 |      | 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        |

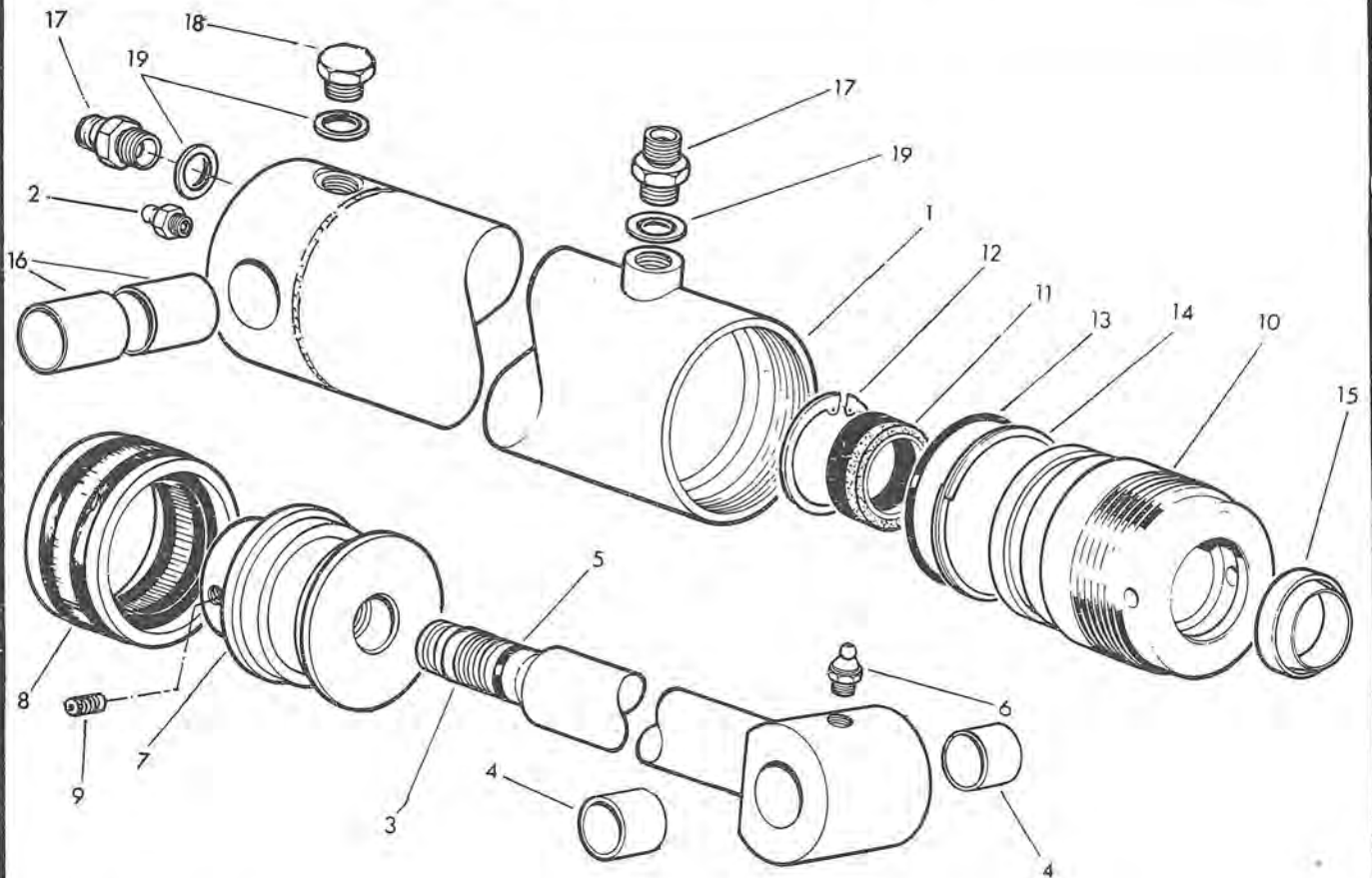
Model.

**McCONEL**

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



**REACH RAM**



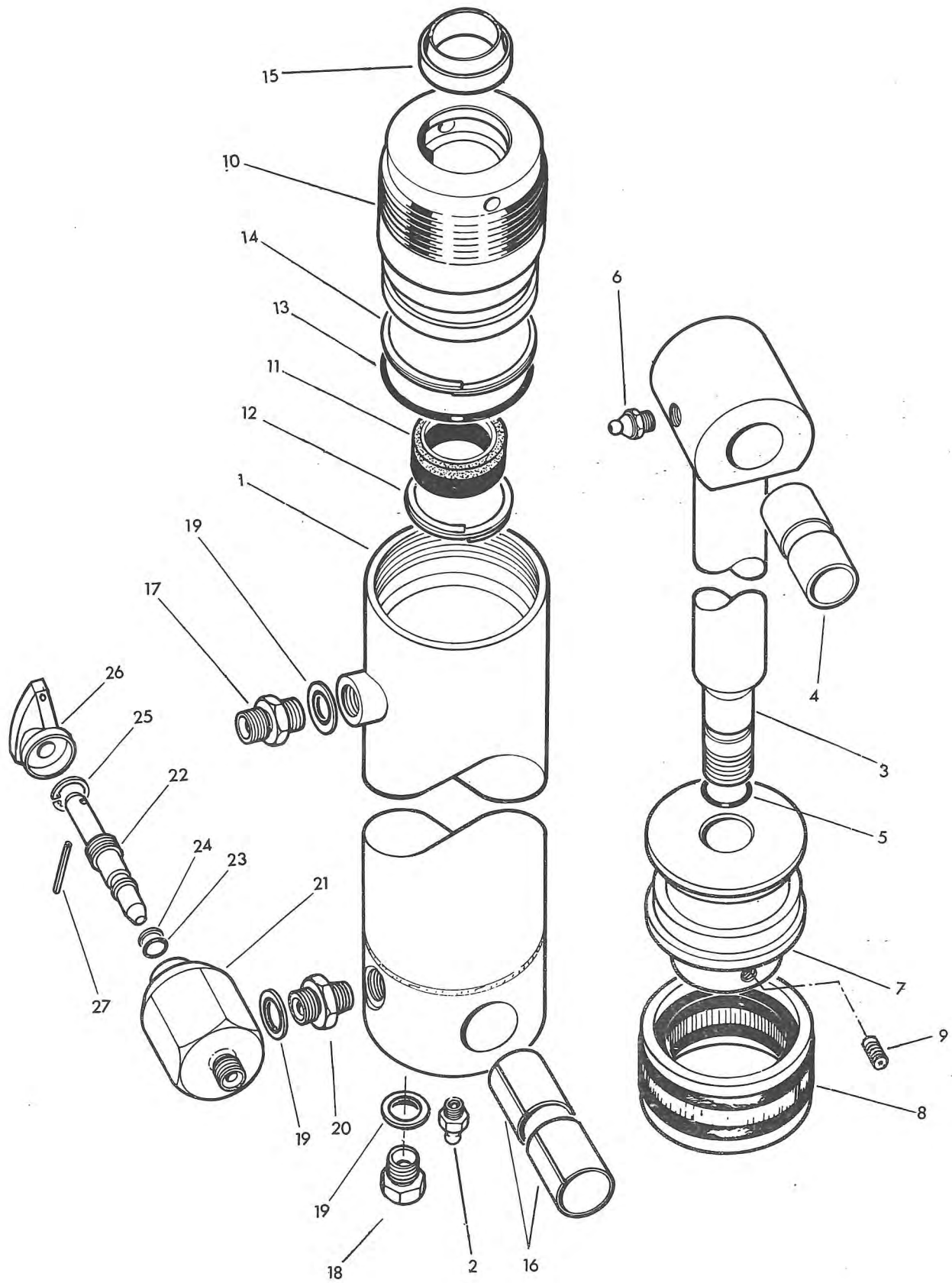
| Ref. | Part No.  | Qty. | Description *                   |
|------|-----------|------|---------------------------------|
|      | 71-93-334 |      | REACH RAM ASSEMBLY              |
|      | 71-93-332 |      | Ram basic compr:-               |
| 1    | 71-35-283 | 1    | Ram cylinder c/w greaser        |
| 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   | 86-29-164 | 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                        |

Model.

LIFT RAM

# McCONEL

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





| 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   | 86-291147 | 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' A121 or other suitable sealant.

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

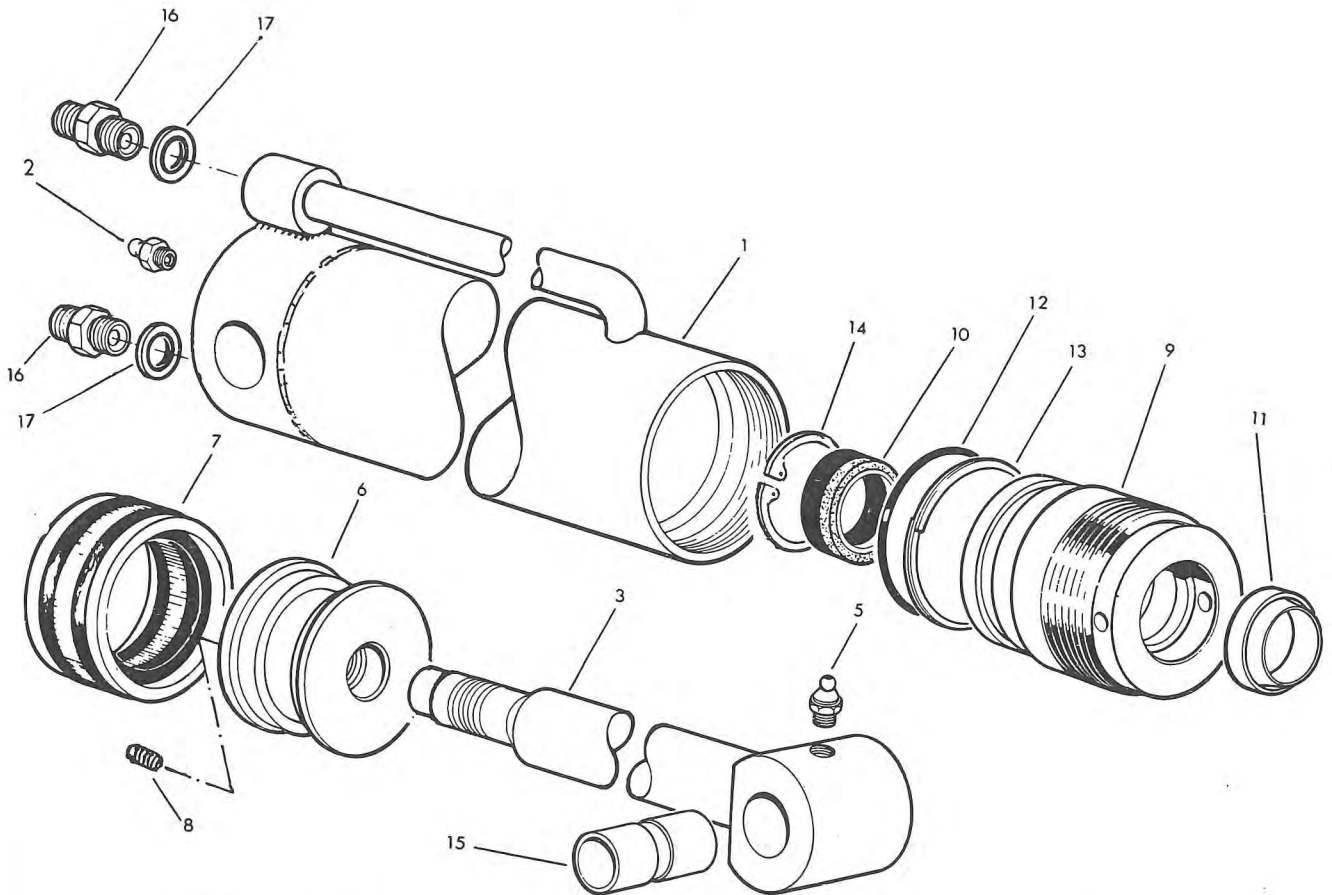


Model.

ANGLE RAM

**McCONEL**

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



| 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 1/4BSP                 |
|     | 86 99 188 |      | SEAL KIT                            |

\*Item 8 is not required on rams with blind piston

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

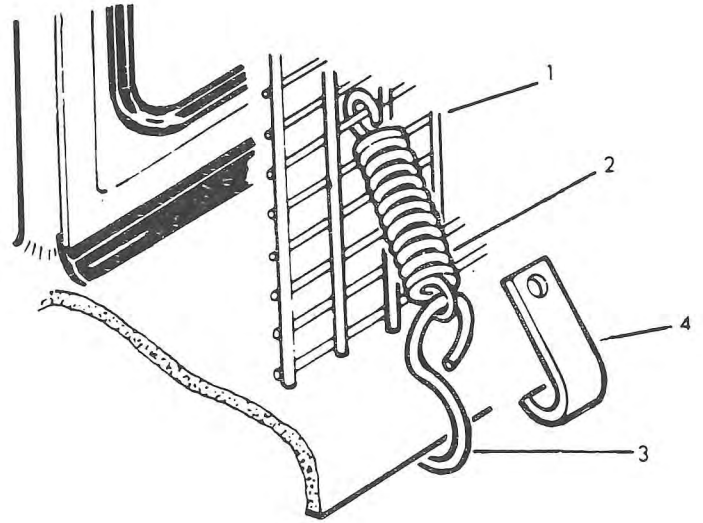
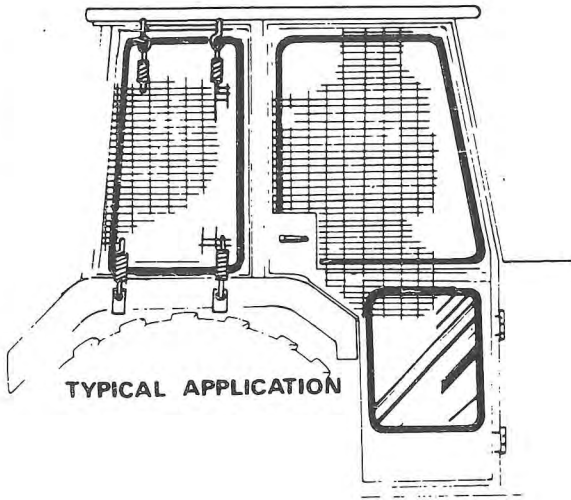
▣ Item 6 is assembled onto rod using 'Permabond A113' or equivalent if piston locking grubscrew is not fitted.

Model.

**OPERATOR GUARD**

**McCONEL**

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



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

Model.

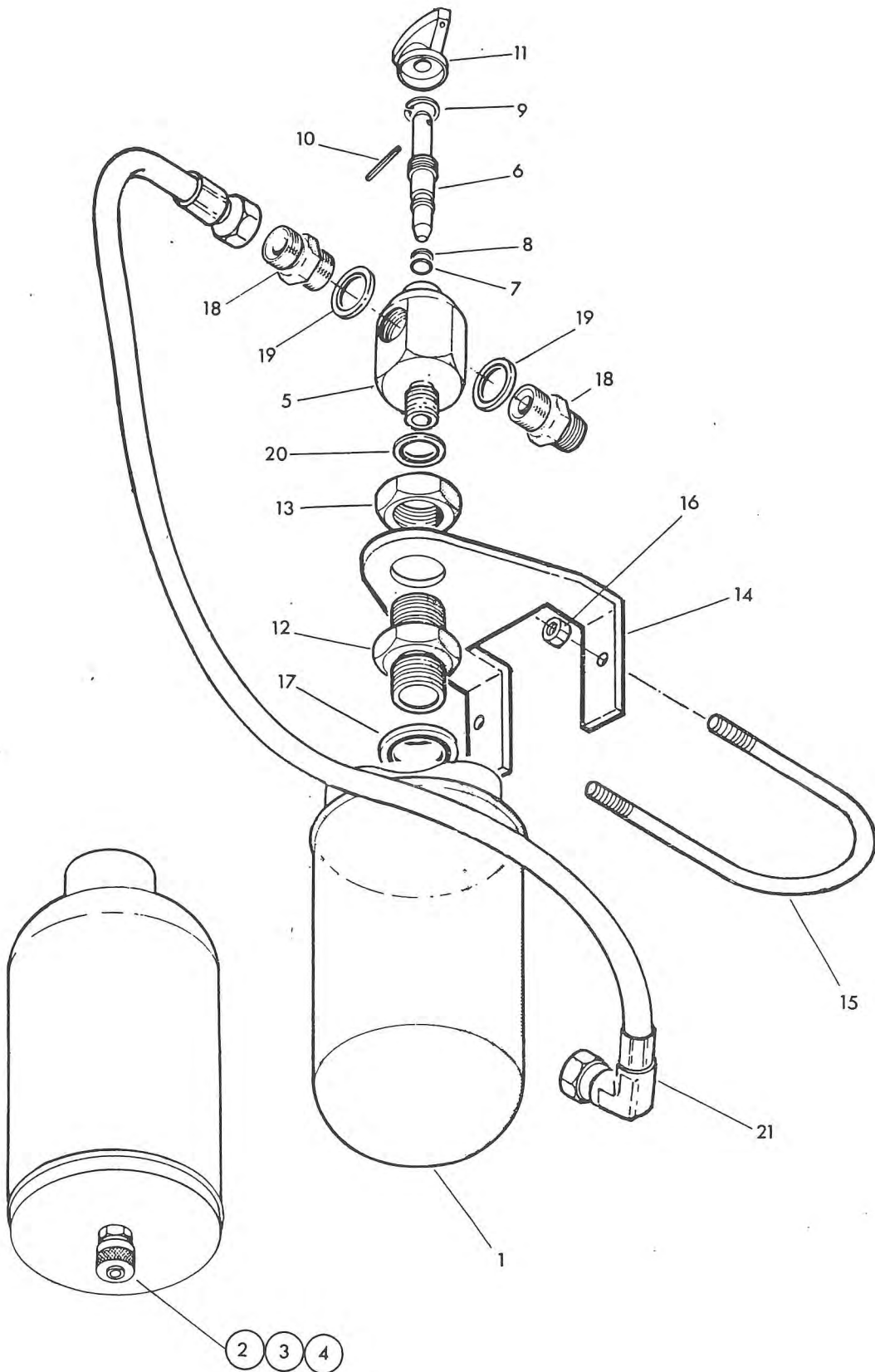
LIFT FLOAT KIT

**McCONEL**

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



Optional extra for grass cutting



Model.

**McCONEL**Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
Telex: 35313

| 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   |

Model.

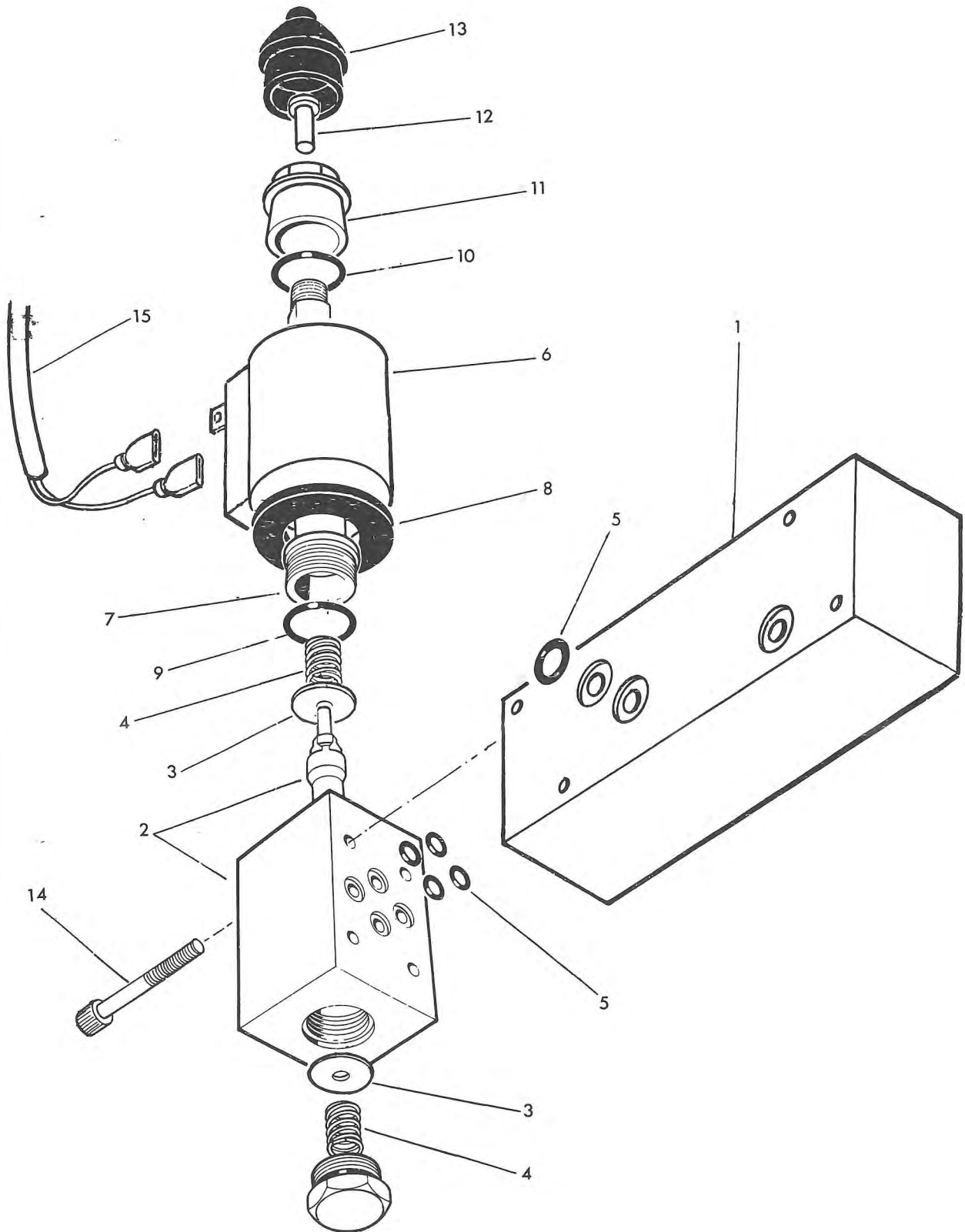
ANGLE FLOAT KIT

**McCONEL**

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



Optional extra for grass cutting . PA 94 only



Model.

**McCOMEL**Registered office: Temeside Works,  
Ludlow, Shropshire SY8 1JL, England.  
Telephone: Ludlow (0584) 3131  
Telex: 35313

| 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 | 5    | '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 M5x50   |
| 15   | 84 02 059 | 1    | Wiring harness   |
|      | 86-99-212 |      | * Comprises weather shield kit   |

## ☐ Spares note

For machines prior to July 1988 a new solenoid must be ordered c/w  
4 off item 14



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