

# **ULTRA C FELLER BUNCHER**

**(WHEELED, INCLUDES SHEAR HEAD OPTION)**

**VIN :**

## **PARTS MANUAL**

**Document Part Number 870144**

**Issue: April 1996**

**Technical Documentation  
BELL EQUIPMENT COMPANY  
Richards Bay**

## **IMPORTANT**

Due to BELL's policy of continuous product improvement, the information contained in this manual was correct upto the time of printing (Issue date of manual). Any changes after this date will only be included in the next update of this manual.

Illustrations in this manual are pictorial representations of the component and are not drawn to scale.

## INTRODUCTION

This manual has been produced to assist you in ordering of parts for the maintenance of your BELL machine.

The information contained in the manual is in a logical sequence. Each illustrated breakdown is supported with a parts list.

The parts manual has been produced by the Technical Documentation Department of BELL EQUIPMENT Co. Every effort has been made to ensure that the information in this manual was correct at the time of publication. BELL EQUIPMENT Co. has a policy of continuous product development, improvement and design. BELL EQUIPMENT Co. reserves the right to change, amend and update the design of its product at any time without prior notice. With this policy, changes may have occurred that are not included in this manual.

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The user is urged to strictly comply with the instructions and warnings that are given in the interests of general safety. Please do not hesitate to contact your BELL Product Support Representative whenever you have a query on you BELL product or this manual. The address of your nearest BELL branch or dealer is as follows:-

The following address list was correct as at 31 July 1996.

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 (01343) 3467  
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Otahuhu  
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Welshpool  
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## USER'S COMMENT FORM

Should you , as user of this manual, have any suggestion for improving the manual, or you find any errors or omissions, then we would like to know.

Please complete a facsimile of this form and hand it in to your nearest BELL Product Support Representative or post it directly to your nearest BELL Branch. Addresses are given at the beginning of this manual.

|  |
|--|
| <b>YOUR COMMENTS, SUGGESTIONS, OR QUERIES:</b> |
|  |
|  |
|  |
|  |
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|  |

|  |
|--|
| <b>MACHINE MODEL:</b>                  |
| <b>SERIAL NUMBER:</b>                  |
| <b>VIN:</b>                            |
| <b>DOCUMENT PART NUMBER AND ISSUE:</b> |
| <b>PAGE NUMBER:</b>                    |

|   |            |           |
|---|------------|-----------|
| <b>DOES THE MANUAL MEET YOUR NEEDS ?</b>                          | <b>YES</b> | <b>NO</b> |
| <b>DID YOU FIND THE INFORMATION ACCURATE ?</b>                    | <b>YES</b> | <b>NO</b> |
| <b>DID YOU FIND THE INFORMATION EASY TO READ AND UNDERSTAND ?</b> | <b>YES</b> | <b>NO</b> |
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Thank you for your cooperation.



# **CONTENTS**

**SECTION 1. GENERAL INFORMATION**

**SECTION 2. ENGINE**

**SECTION 3. POWER TRAIN**

**SECTION 4. SYSTEMS**

**SECTION 5. FRAME AND BODY**



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# **SECTION 1 GENERAL INFORMATION**



Record the relevant information from the Technical Documentation Bulletins, Service Bulletins and Parts Bulletins into this manual as follows:-

- File the bulletins in numerical order in a suitable 3 or 4 ring binder.

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## LIST OF ABBREVIATIONS

|                 |                                |                 |   |
|-----------------|--------------------------------|-----------------|---|
| ADE             | Atlantic Diesel Engines        | GAL/min         | Gallon Per Minute                       |
| °C              | Degree Celsius                 | Gr              | Grade                                   |
| Ω               | Ohm                            | hex             | Hexagonal                               |
| A               | Ampere                         | HT              | High Tensile                            |
| A/R             | As Required                    | hz              | Hertz                                   |
| AC              | Alternating Current            | ID              | Internal Diametre                       |
| Ah              | Ampere Hours                   | in <sup>3</sup> | Cubic Inch                              |
| API             | American Petroleum Institute   | incl            | Including                               |
| approx          | Approximately                  | ISO             | International Organisation of Standards |
| Apr             | April                          | Jan             | January                                 |
| assy            | Assembly                       | JIC             | Joint Industry Conference Standards     |
| ATDC            | After Top Dead Centre          | Jul             | July                                    |
| Aug             | August                         | Jun             | June                                    |
| BHP             | Brake Horse Power              | kg              | Kilogram                                |
| BSP             | British Standard Pipe          | km/h            | Kilometre Per Hour                      |
| BTDC            | Before Top Dead Centre         | kPa             | Kilopascal                              |
| CGA             | Compressed Gas Association Inc | kW              | Kilowatt                                |
| CO <sub>2</sub> | Carbon Dioxide                 | l/min           | Litre Per Minute                        |
| CTD             | Control Traction Differential  | lb              | Pound                                   |
| db              | Decibels                       | LED             | Light Emitting Diode                    |
| DBH             | Diametre at Breast Height      | LH              | Left Hand                               |
| DC              | Direct Current                 | lube            | Lubrication                             |
| Dec             | December                       | m               | Metre                                   |
| deg or °        | Degree                         | m <sup>3</sup>  | Cubic Metre                             |
| dia             | Diametre                       | mA              | Miliampere                              |
| diff            | Differential                   | Mar             | March                                   |
| E.G.S.          | Electronic Gear Shifting       | max             | Maximum                                 |
| ext             | Extension                      | min             | Minimum                                 |
| Feb             | February                       | mm              | Millimetre                              |
| FMC             | Front Mount Cab                | mm <sup>3</sup> | Cubic Milimetre                         |

|         |                                   |       |                                     |
|---------|-----------------------------------|-------|-------------------------------------|
| Nm      | Newton Metre                      | SAE   | Society of Automotive Engineers     |
| No.     | Number                            | Sep   | September                           |
| Nov     | November                          | SMC   | Side Mounted cab                    |
| N/O     | Normally Open                     | SMR   | Service Metre Reading               |
| NPT     | National Pipe Thread              | std   | Standard                            |
| NSI     | Non Stock Item                    | strt  | Straight                            |
| Oct     | October                           | TBN   | Total Base Number                   |
| OD      | Outside Diametre                  | TDC   | Top Dead Centre                     |
| P/N     | Part Number                       | temp  | Temperature                         |
| press   | Pressure                          | thru  | Through to and Including            |
| psi     | Pound per Square Inch             | UNC   | Unified National Coarse             |
| PTO     | Power Take Off                    | USGAL | United States Gallon (3.7854 litre) |
| Qty     | Quantity                          | V     | Volt                                |
| REV     | Reverse                           | W     | Watt                                |
| rev/min | Revolutions Per Minute            | W/O   | With out                            |
| RH      | Right Hand                        | ZF    | Zahnradfabrik Passau Gmbh           |
| RSG     | Recommended Service Guide         |       |                                     |
| SABS    | South African Bureau of Standards |       |                                     |

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## ORDERING OF PARTS

To facilitate the ordering of parts, the following information is required to determine the correct part for your BELL product.

1. The model and serial number of your BELL product.
2. The serial number of the relevant assembly.
3. The part number.
4. The section, page and item number where the part appears in the parts manual.
5. The quantity required.
6. Your order number.
7. The delivery address.
8. The method of delivery.

Any other information which will assist us in getting the parts to you with the least amount of trouble or delay should be given. This information will be noted and filed for future reference.



## MACHINE DIMENSIONS

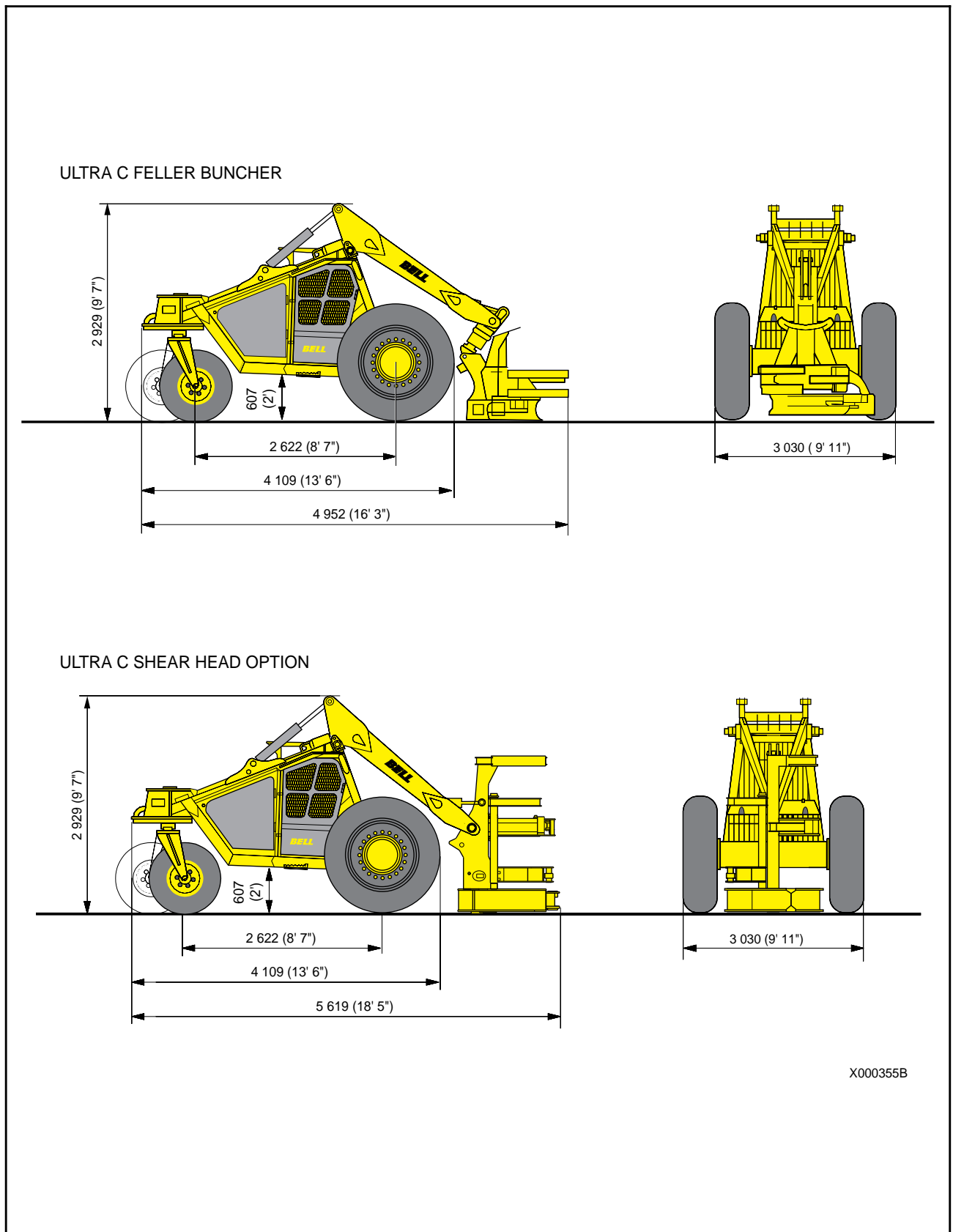


Figure 1



## SERIAL NUMBER PLATES

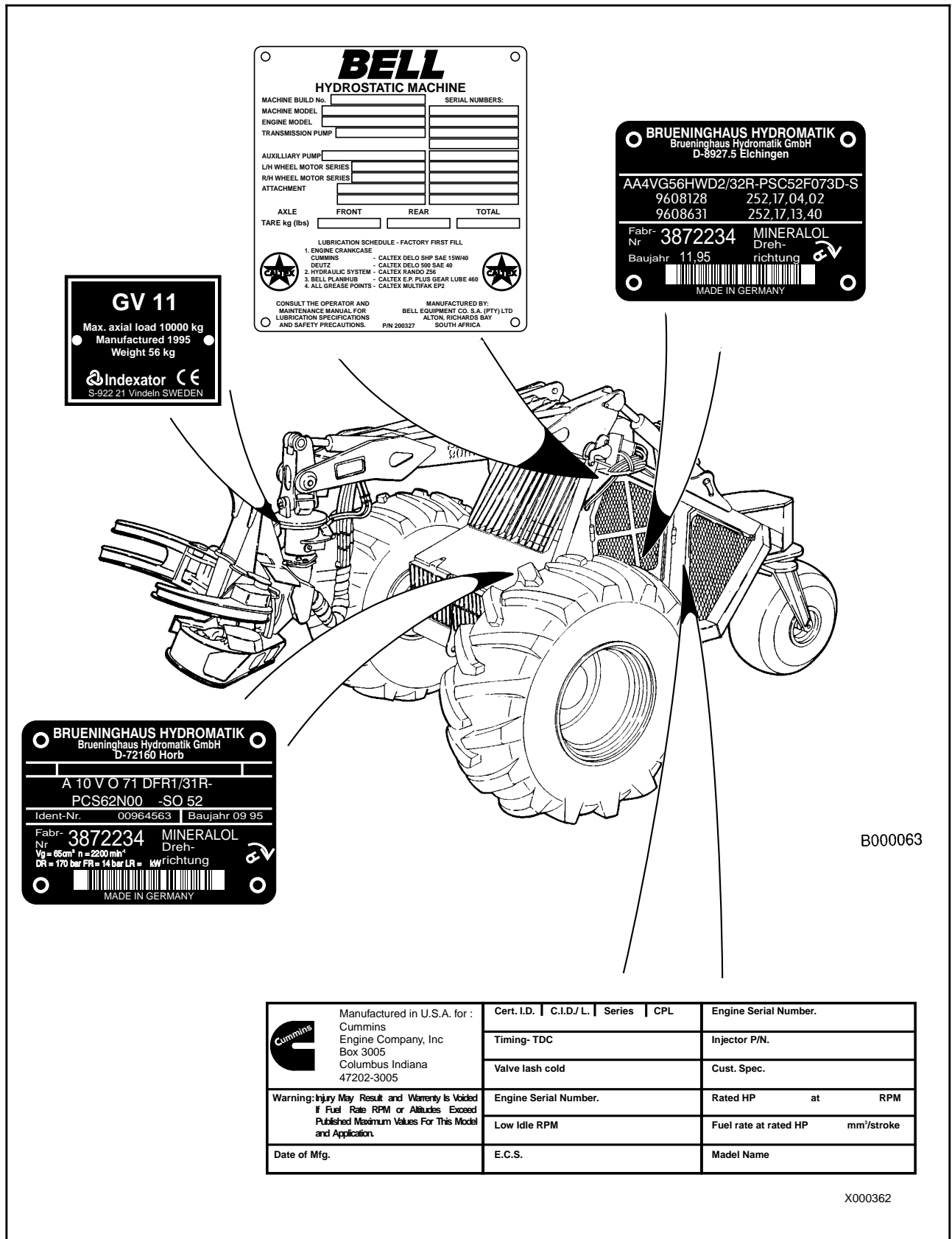


Figure 2



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**SERVICE KITS - ULTRA C**
**SERVICE KIT 100 SMR, P/N 360436**

| PART NUMBER | QTY | DESCRIPTION                |
|-------------|-----|----------------------------|
| CU10199     | 1   | WASHER, Sealing            |
| CU10279     | 4   | SEAL, O Ring               |
| 202914      | 2   | ELEMENT, Filter, Schroeder |
| 210341      | 2   | STRAINER, Suction          |
| 210469      | 2   | FILTER, Element, Spin On   |
| 221390      | 4   | GASKET, Valve Cover        |
| 221391      | 1   | FILTER, Oil                |
| 221392      | 1   | FILTER, Fuel, Secondary    |
| 221393      | 1   | FILTER, Fuel, Primary      |

**SERVICE KITS 250/750 SMR, P/N 360437**

| PART NUMBER | QTY | DESCRIPTION              |
|-------------|-----|--------------------------|
| CU10199     | 1   | WASHER, Sealing          |
| 210469      | 2   | FILTER, Element, Spin On |
| 221391      | 1   | FILTER, Oil              |
| 221392      | 1   | FILTER, Fuel, Secondary  |

**SERVICE KITS 500 SMR, P/N 360438**

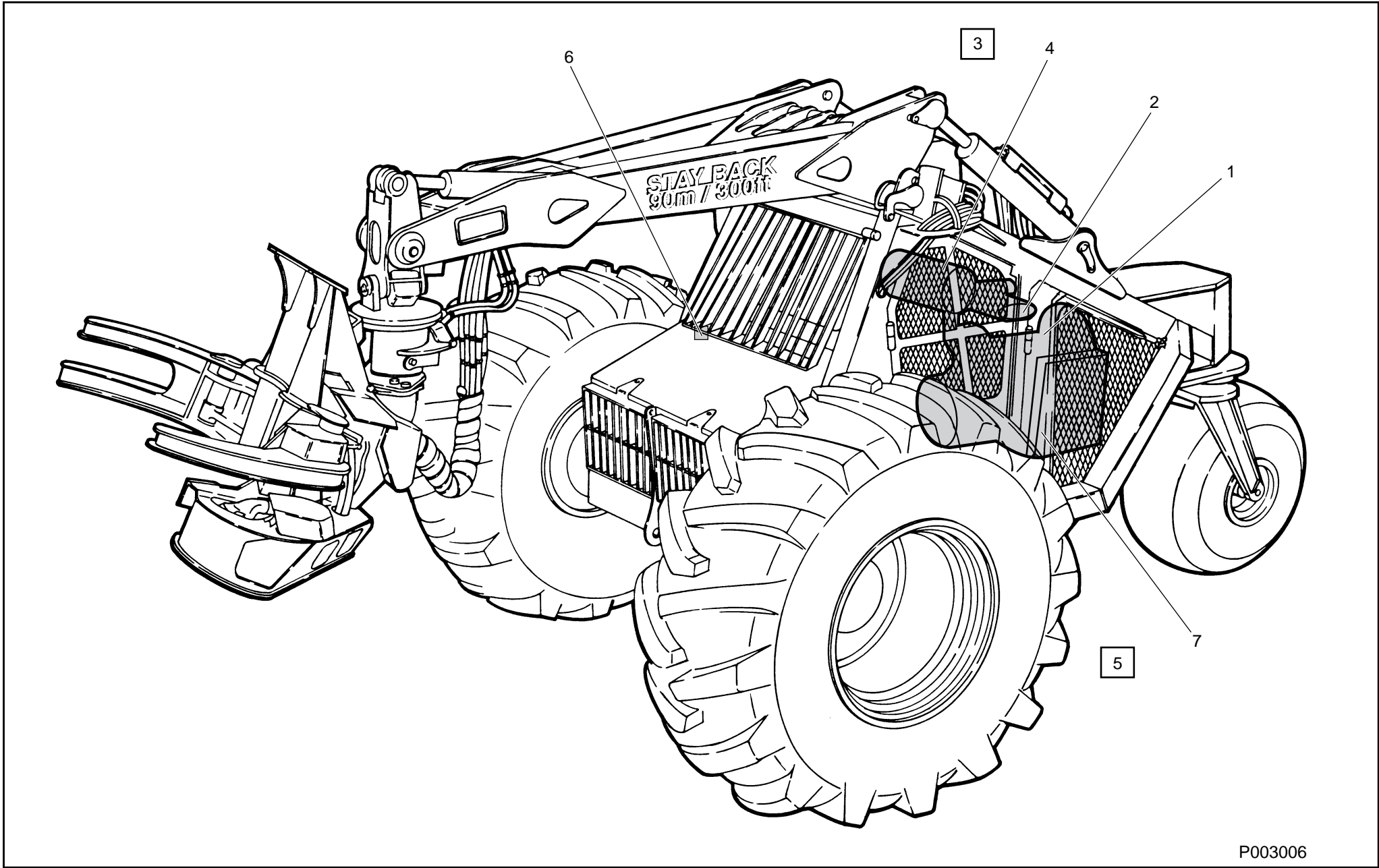
| PART NUMBER | QTY | DESCRIPTION              |
|-------------|-----|--------------------------|
| CU10199     | 1   | WASHER, Sealing          |
| CU10279     | 4   | SEAL, O Ring             |
| 200276      | 1   | ELEMENT, Safety          |
| 200277      | 1   | ELEMENT, Primary         |
| 210469      | 2   | FILTER, Element, Spin On |
| 221390      | 4   | GASKET, Valve Cover      |
| 221391      | 1   | FILTER, Oil              |
| 221392      | 1   | FILTER, Fuel, Secondary  |
| 221393      | 1   | FILTER, Fuel, Primary    |
| 221395      | 1   | BELT, Drive              |

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**SERVICE KIT 1 000 SMR, P/N 360439**

| PART NUMBER | QTY | DESCRIPTION                |
|-------------|-----|----------------------------|
| CU10199     | 1   | WASHER, Sealing            |
| CU10279     | 4   | SEAL, O Ring               |
| 140017      | 1   | SEAL                       |
| 140099      | 1   | SEAL, Oil                  |
| 140173      | 1   | SEAL, Oil                  |
| 200276      | 1   | ELEMENT, Safety            |
| 200277      | 1   | ELEMENT, Primary           |
| 202914      | 2   | ELEMENT, Filter, Schroeder |
| 210341      | 1   | STRAINER, Suction          |
| 210469      | 2   | FILTER, Element, Spin On   |
| 221390      | 4   | GASKET, Valve Cover        |
| 221391      | 1   | FILTER, Oil                |
| 221392      | 1   | FILTER, Fuel, Secondary    |
| 221393      | 1   | FILTER, Fuel, Primary      |
| 221395      | 1   | BELT, Drive                |
| 280016      | 1   | LOCTITE                    |

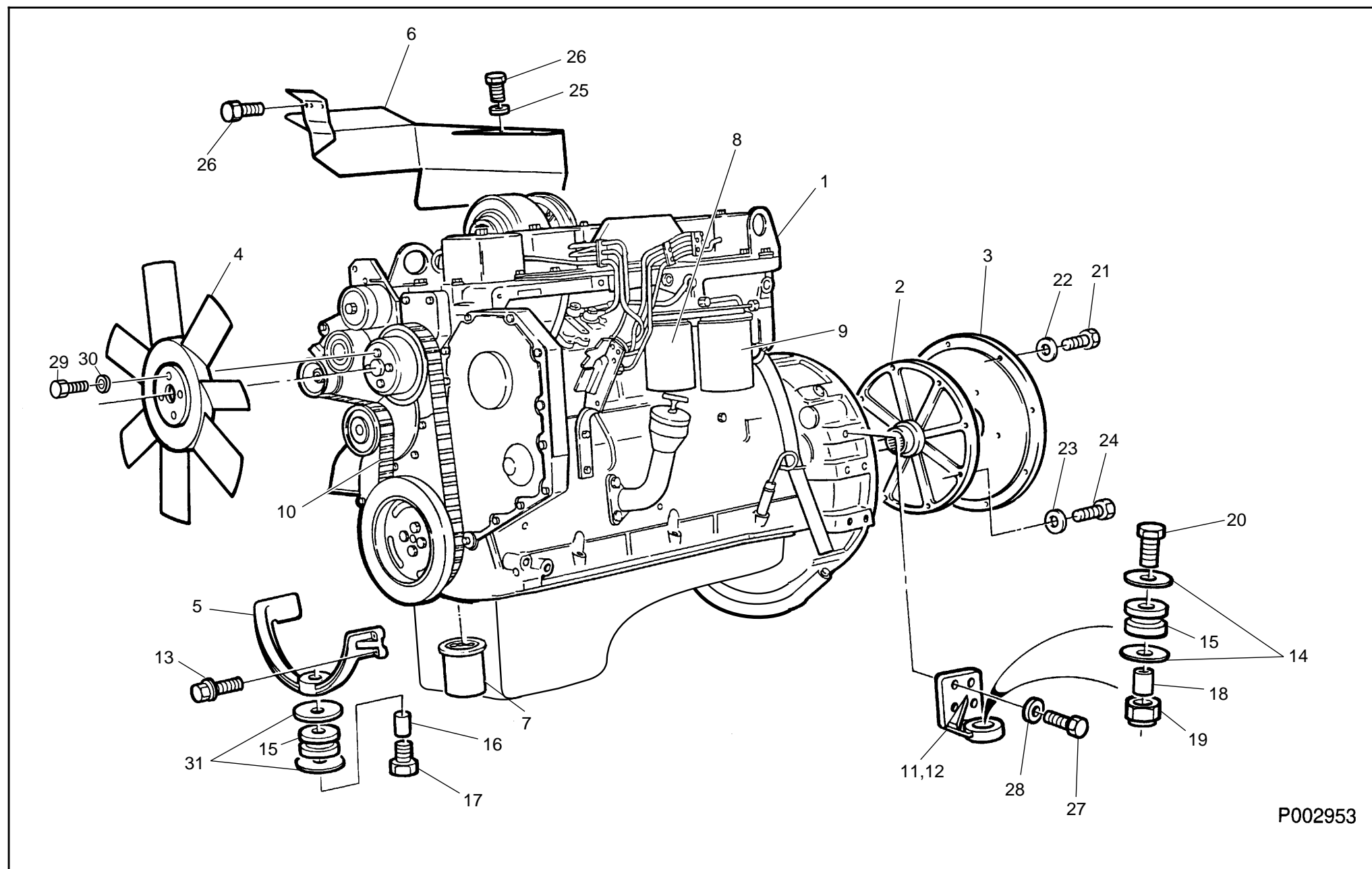
## **SECTION 2 ENGINE**



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**March 13, 1996**

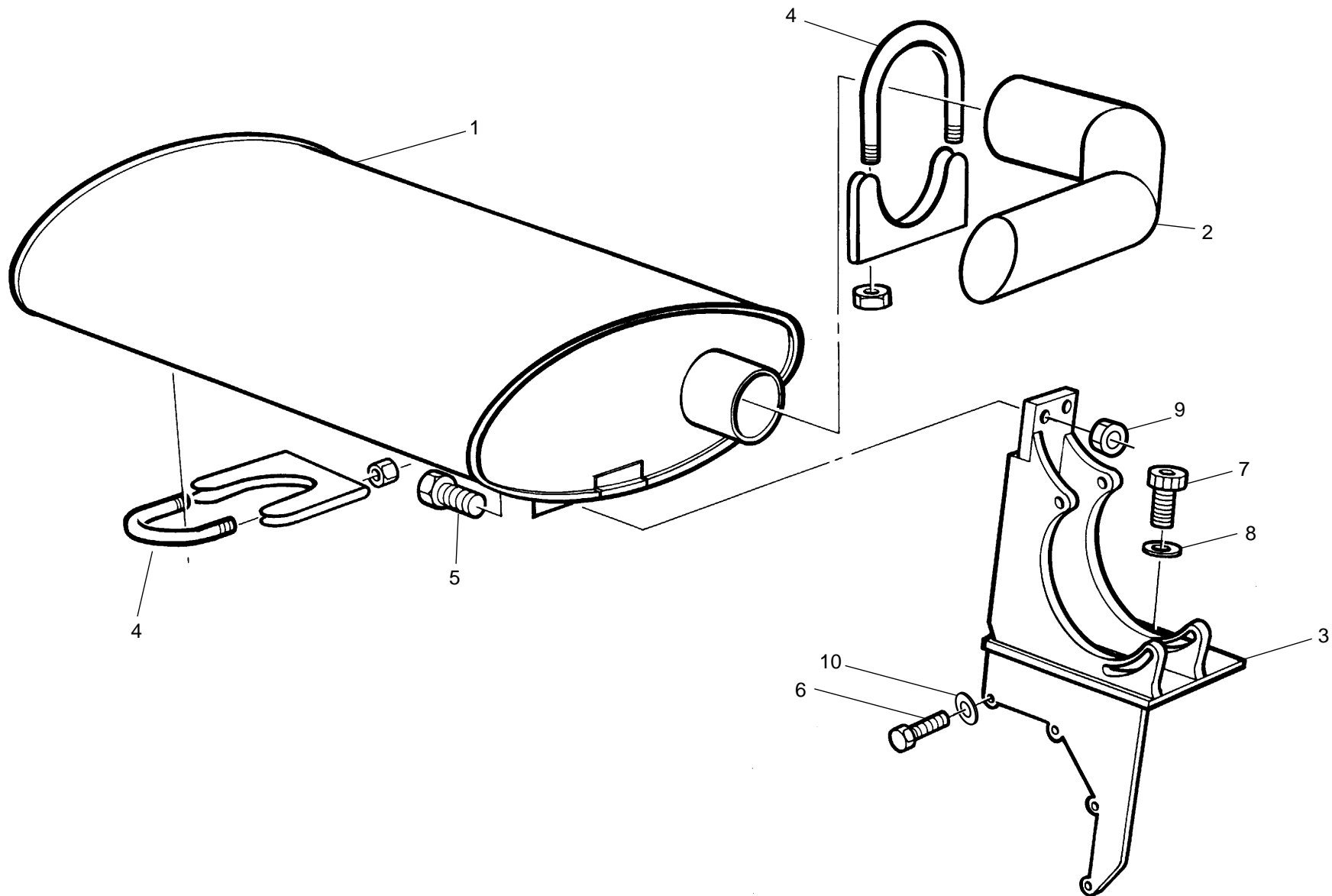
## ENGINE AND MISCELLANEOUS PARTS



P002953

**ENGINE AND MISCELLANEOUS PARTS**

| ITEM | PART NUMBER | QTY | DESCRIPTION              | REMARKS |
|------|-------------|-----|--------------------------|---------|
| 1    | 250094      | 1   | ENGINE, Cummins, 4BT3.9C |         |
| 2    | 203822      | 1   | COUPLING, Flexible       |         |
| 3    | 161729      | 1   | FLANGE                   |         |
| 4    | NSI         | 1   | FAN                      |         |
| 5    | NSI         | 1   | BRACKET                  |         |
| 6    | 174107      | 1   | SHEILD, Heat             |         |
| 7    | 221391      | 1   | FILTER, Oil              |         |
| 8    | 221392      | 1   | FILTER, Oil, Secondary   |         |
| 9    | 221393      | 1   | FILTER, Oil, Primary     |         |
| 10   | 221395      | 1   | BELT                     |         |
| 11   | 182691      | 1   | MOUNTING, LH             |         |
| 12   | 182690      | 1   | MOUNTING, RH             |         |
| 13   | NSI         | 1   | BOLT                     |         |
| 14   | 172234      | 4   | SPACER                   |         |
| 15   | 203761      | 3   | MOUNTING                 |         |
| 16   | 161582      | 1   | SLEEVE                   |         |
| 17   | 100911      | 1   | BOLT, Hex                |         |
| 18   | 161809      | 2   | SLEEVE                   |         |
| 19   | 100410      | 2   | NUT, Cleavelock          |         |
| 20   | 100165      | 2   | BOLT, Hex                |         |
| 21   | 100255      | 8   | SCREW, Hex               |         |
| 22   | 100064      | 8   | WASHER, Flat             |         |
| 23   | 100062      | 8   | WASHER, Flat             |         |
| 24   | 100225      | 8   | SCREW, Cap               |         |
| 25   | 100064      | 4   | WASHER, Hardened         |         |
| 26   | 100085      | 4   | SCREW, Hex               |         |
| 27   | 100478      | 8   | SCREW, Hex               |         |
| 28   | 100059      | 8   | WASHER, Flat             |         |
| 29   | 100082      | 4   | BOLT                     |         |
| 30   | 100062      | 4   | WASHER                   |         |
| 31   | 160445      | 2   | WASHER                   |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |

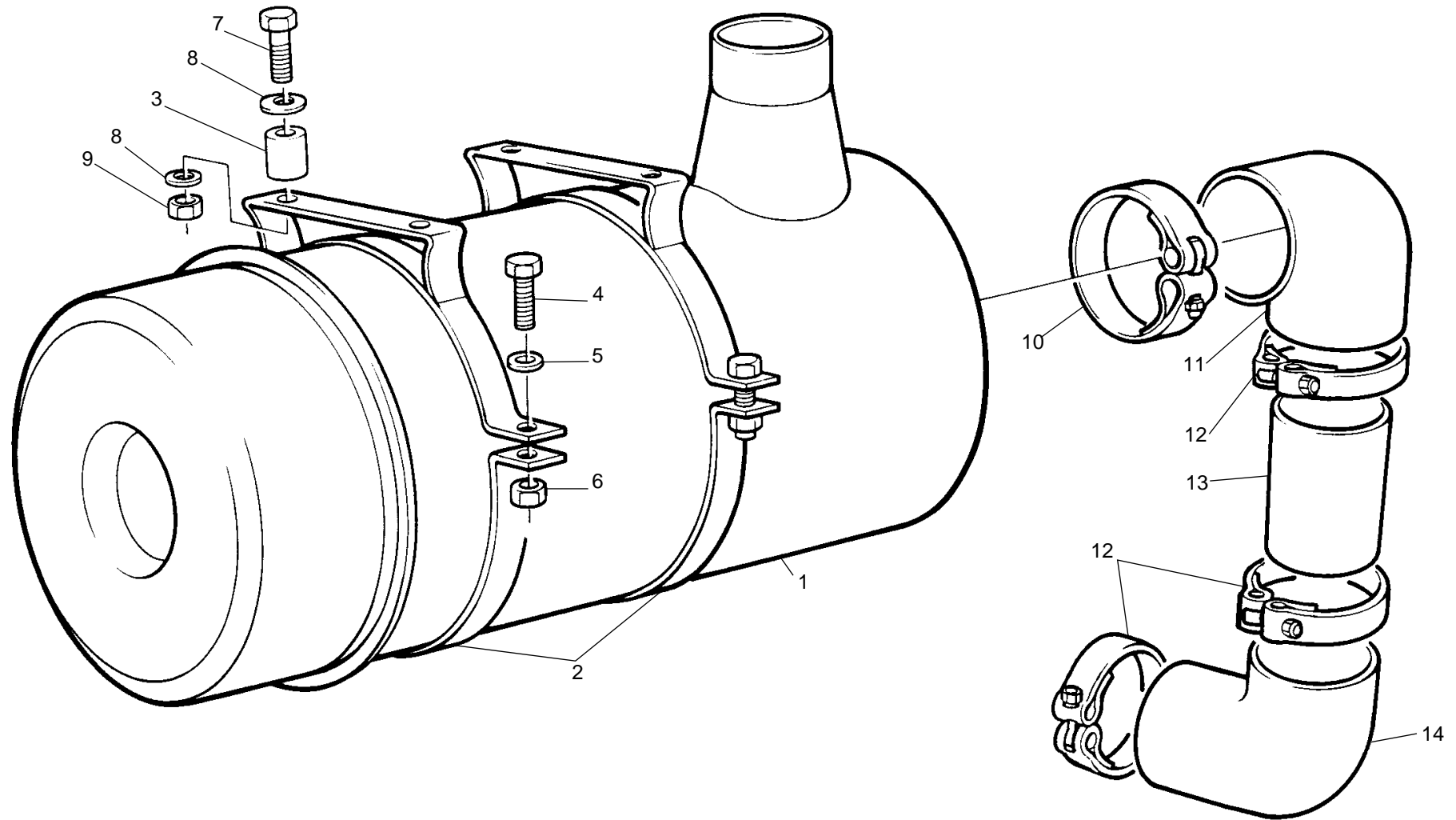


P002956

## EXHAUST SYSTEM

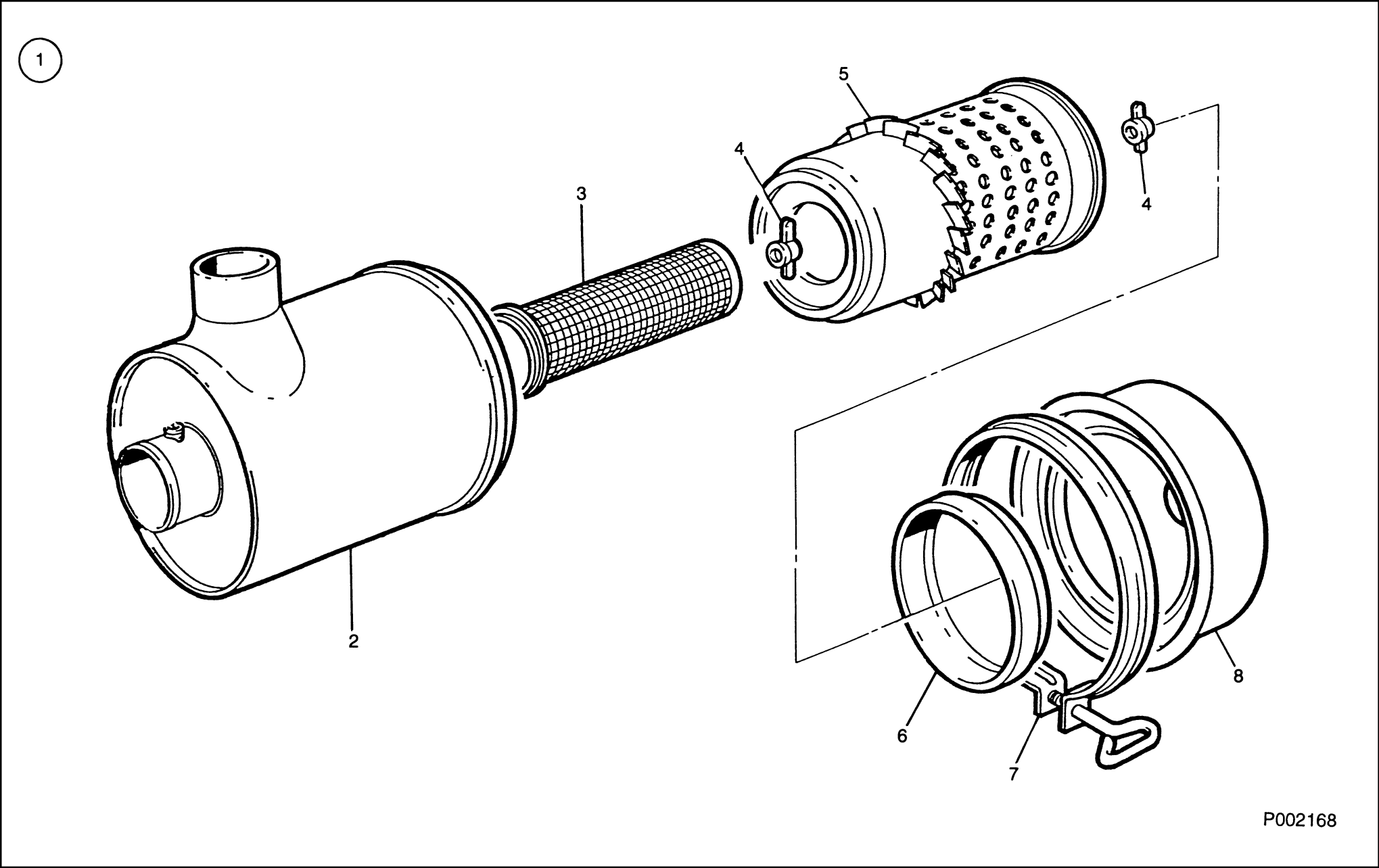
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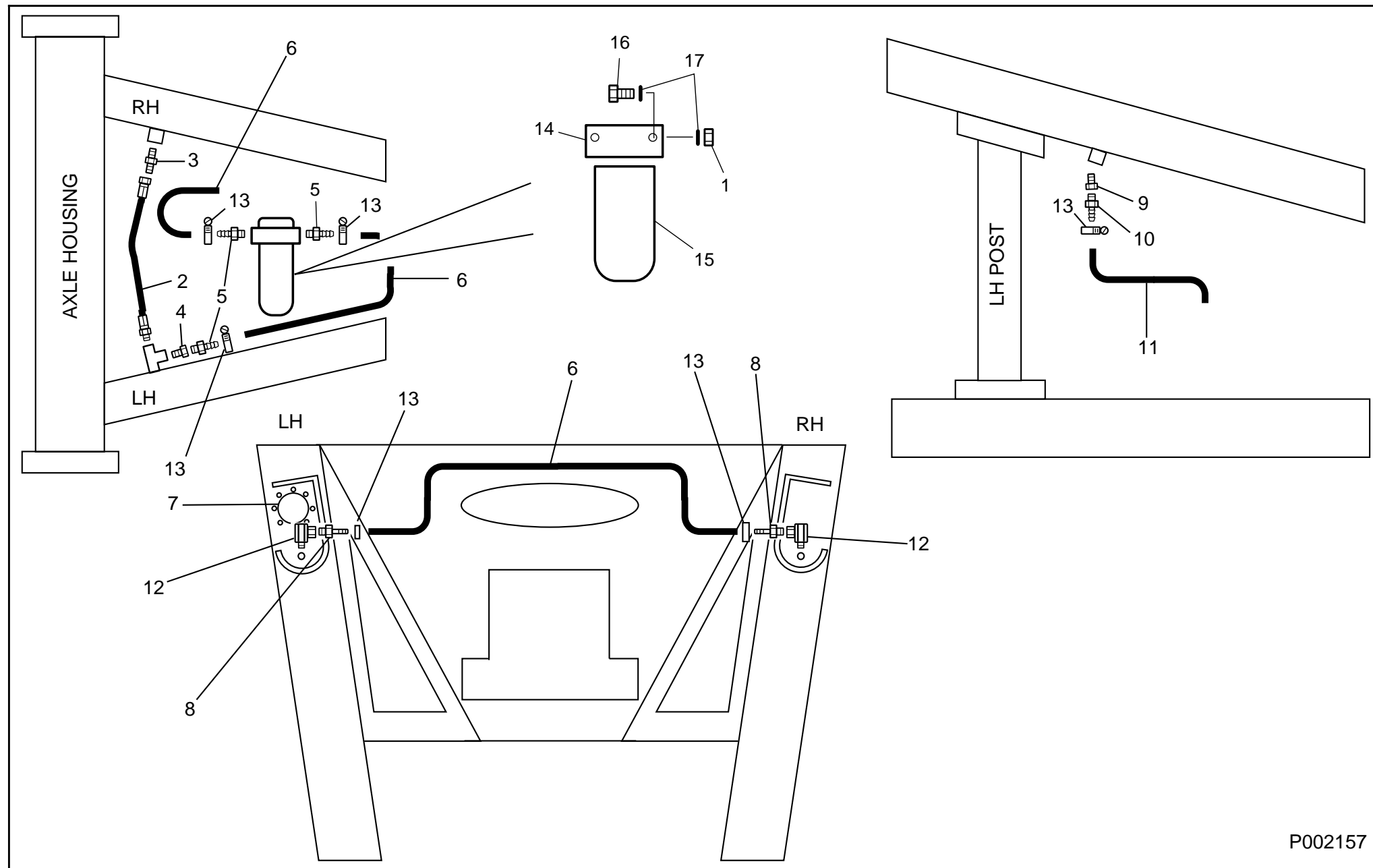
**February 22, 1996**



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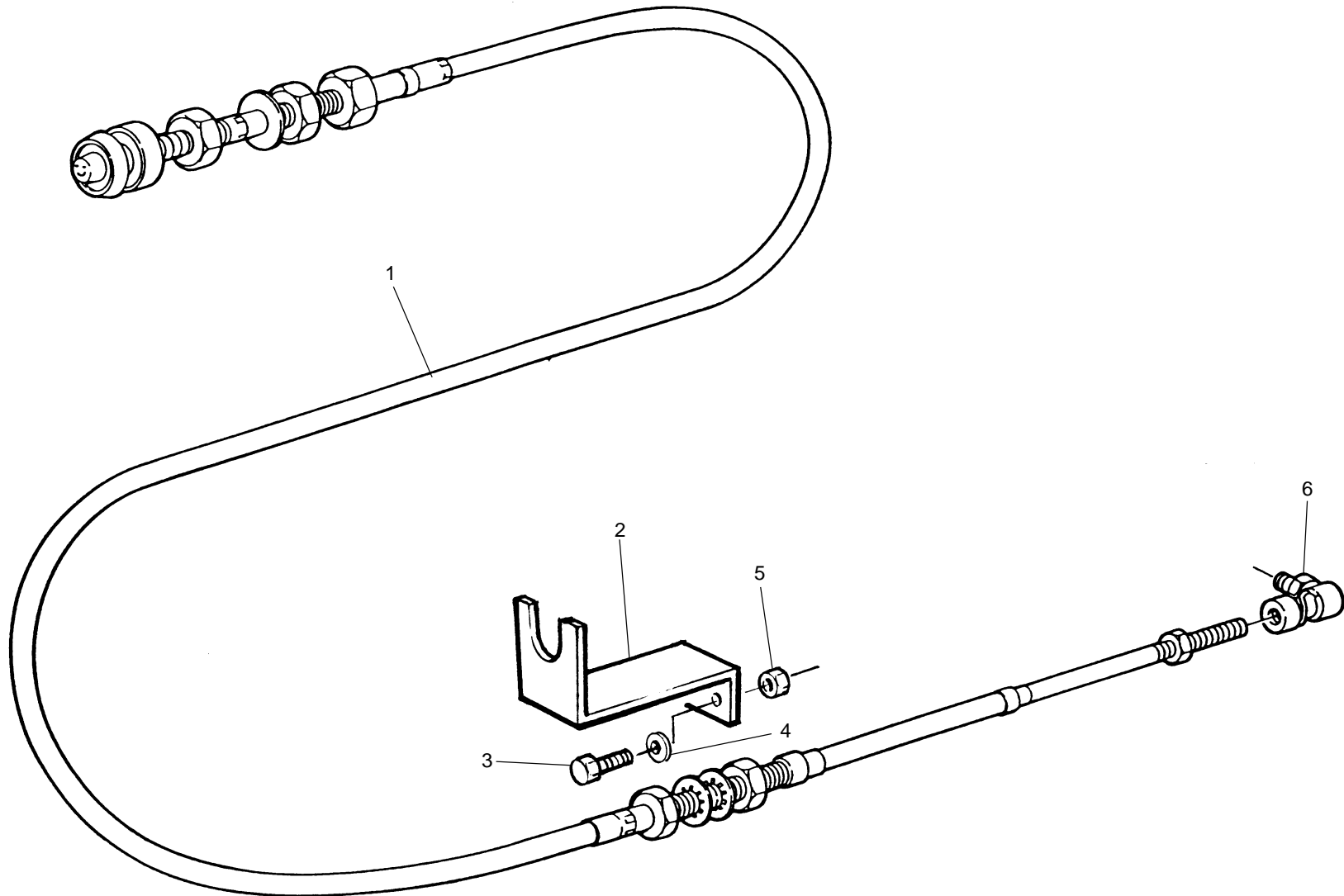
**February 7, 1996**

## FUEL SYSTEM

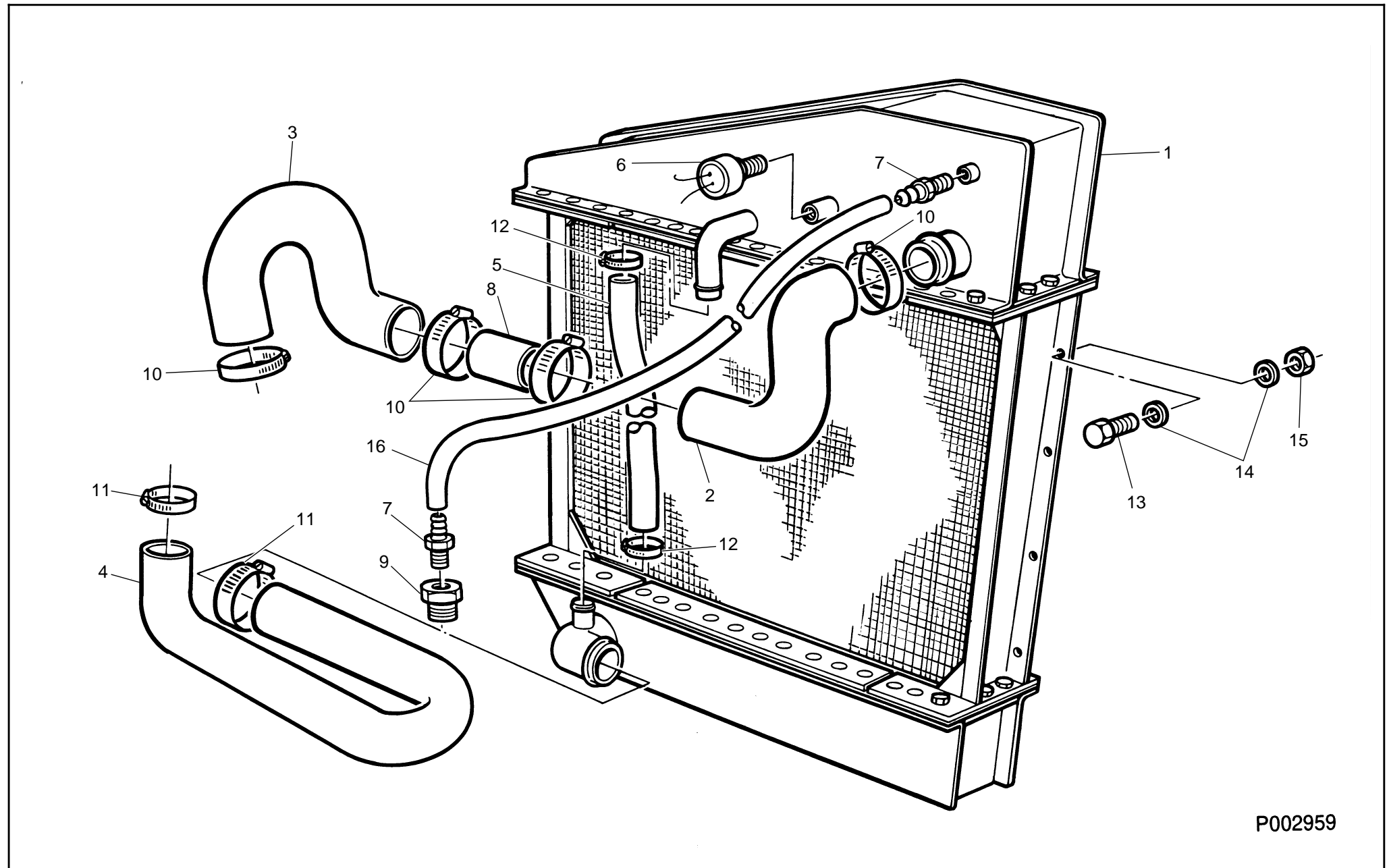


P002157

**February 22, 1996**



**March 15, 1996**

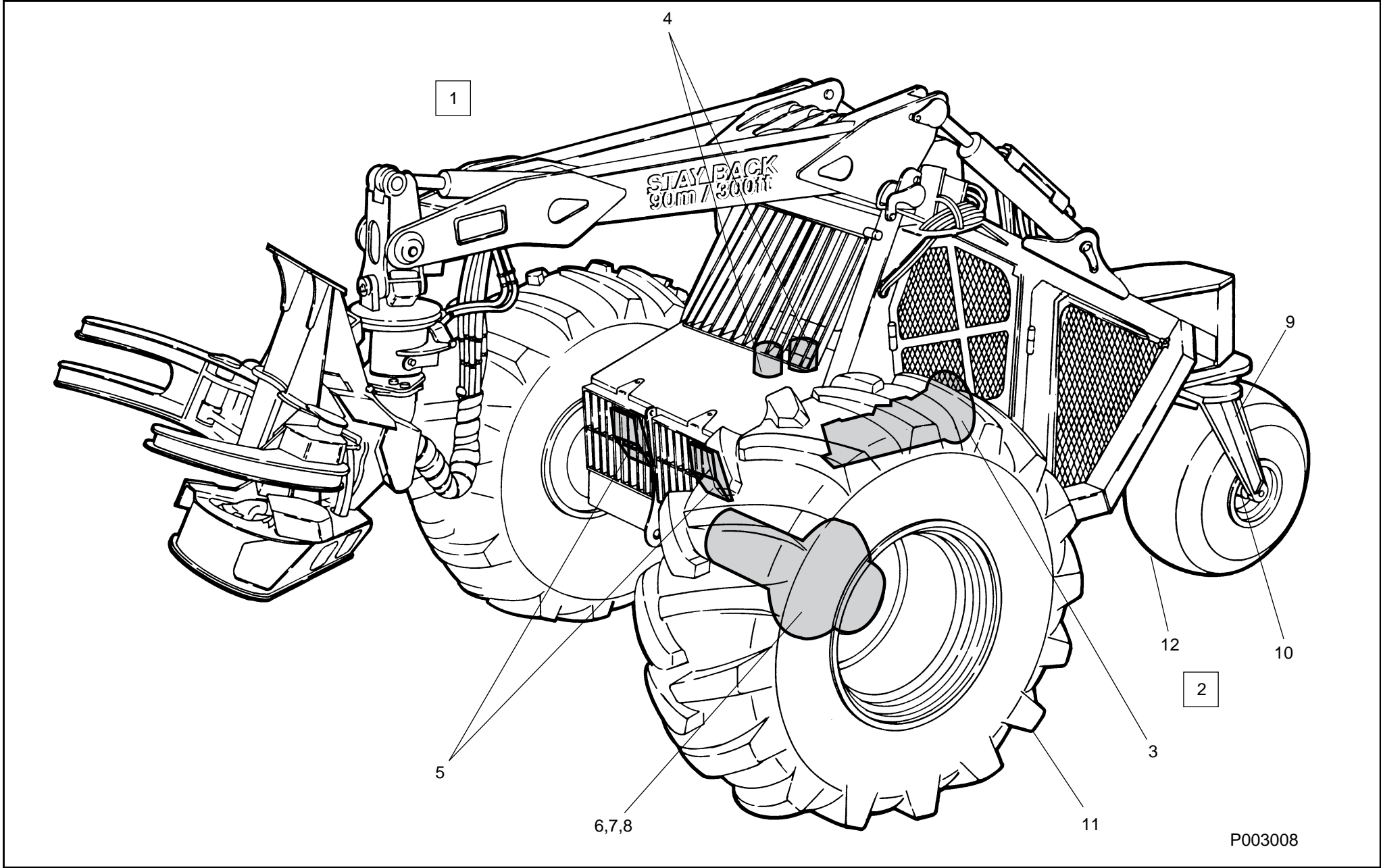


P002959

**2-18**



## **SECTION 3 POWER TRAIN**

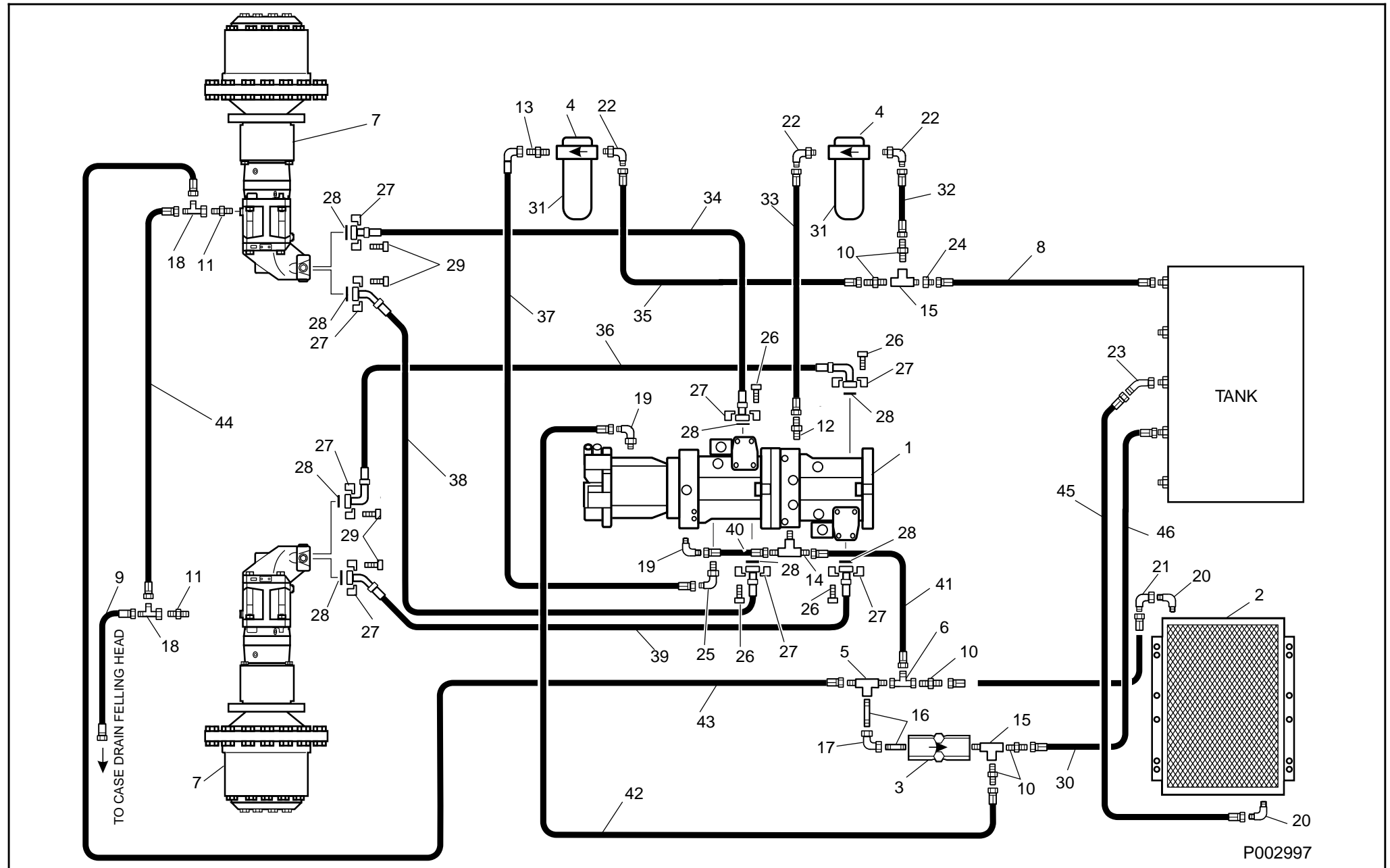


**CONTENTS LIST**

| ITEM | DESCRIPTION   | PAGE No. | REMARKS |
|------|---|----------|---------|
| 1    | TRANSMISSION SYSTEM (WITH INTERNAL FLUSHING VALVE)  | 3-5      |         |
| 1    | TRANSMISSION SYSTEM (WITH EXTERNAL FLUSHING VALVE)  | 3-9      |         |
| 2    | TRANSMISSION PUMP MISCELLANEOUS PARTS               | 3-13     |         |
| 3    | TRANSMISSION PUMP                                   | 3-15     |         |
| 3    | VARIABLE DISPLACEMENT PUMP (HOUSING)                | 3-17     |         |
| 3    | HYDRAULIC CONTROL                                   | 3-19     |         |
| 3    | CONTROL MODULE                                      | 3-21     |         |
| 3    | PORT PLATE WITH VALVES                              | 3-23     |         |
| 3    | PRESSURE RELIEF VALVE                               | 3-25     |         |
| 3    | CONTROL CARTRIDGE, DA                               | 3-27     |         |
| 3    | PRESSURE OVERRIDE VALVE                             | 3-29     |         |
| 3    | PRESSURE RELIEF VALVE                               | 3-31     |         |
| 3    | ROTARY GROUP  | 3-33     |         |
| 3    | INTERNAL GEAR PUMP ASSEMBLY                         | 3-35     |         |
| 3    | HYDRAULIC PUMP                                      | 3-37     |         |
| 4    | TRANSMISSION PUMP OIL FILTER ASSEMBLY               | 3-41     |         |
| 5    | PEDAL ASSEMBLY                                      | 3-43     |         |
| 6    | WHEEL DRIVE (SERIES 45)                             | 3-45     |         |
| 6    | WHEEL DRIVE (SERIES 38)                             | 3-49     |         |
| 6    | PRIMARY REDUCTION ASSEMBLY (MODEL 8, 23:1, C INPUT) | 3-53     |         |
| 6    | PRIMARY REDUCTION ASSEMBLY (MODEL 8, 28:1, C INPUT) | 3-55     |         |
| 7    | HYDRAULIC PUMP (F12 WITH EXTERNAL FLUSHING VALVE)   | 3-57     |         |
| 7    | HYDRAULIC PUMP (F12 WITH INTERGRAL FLUSHING VALVE)  | 3-59     |         |
| 8    | MULTI DISC BRAKE ASSEMBLY (4 BOLT C MOUNT)          | 3-61     |         |
| 9    | TAIL WHEEL FORK ASSEMBLY                            | 3-63     |         |
| 10   | TAIL WHEEL AXLE                                     | 3-65     |         |
| 11   | WHEEL ASSEMBLY ( 23.1X26)                           | 3-67     |         |
| 12   | WHEEL ASSEMBLY (1800X15.5)                          | 3-69     |         |
|      |   |          |         |
|      |   |          |         |
|      |   |          |         |
|      |   |          |         |
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# TRANSMISSION SYSTEM (WITH INTERNAL FLUSHING VALVE)

**BELL**



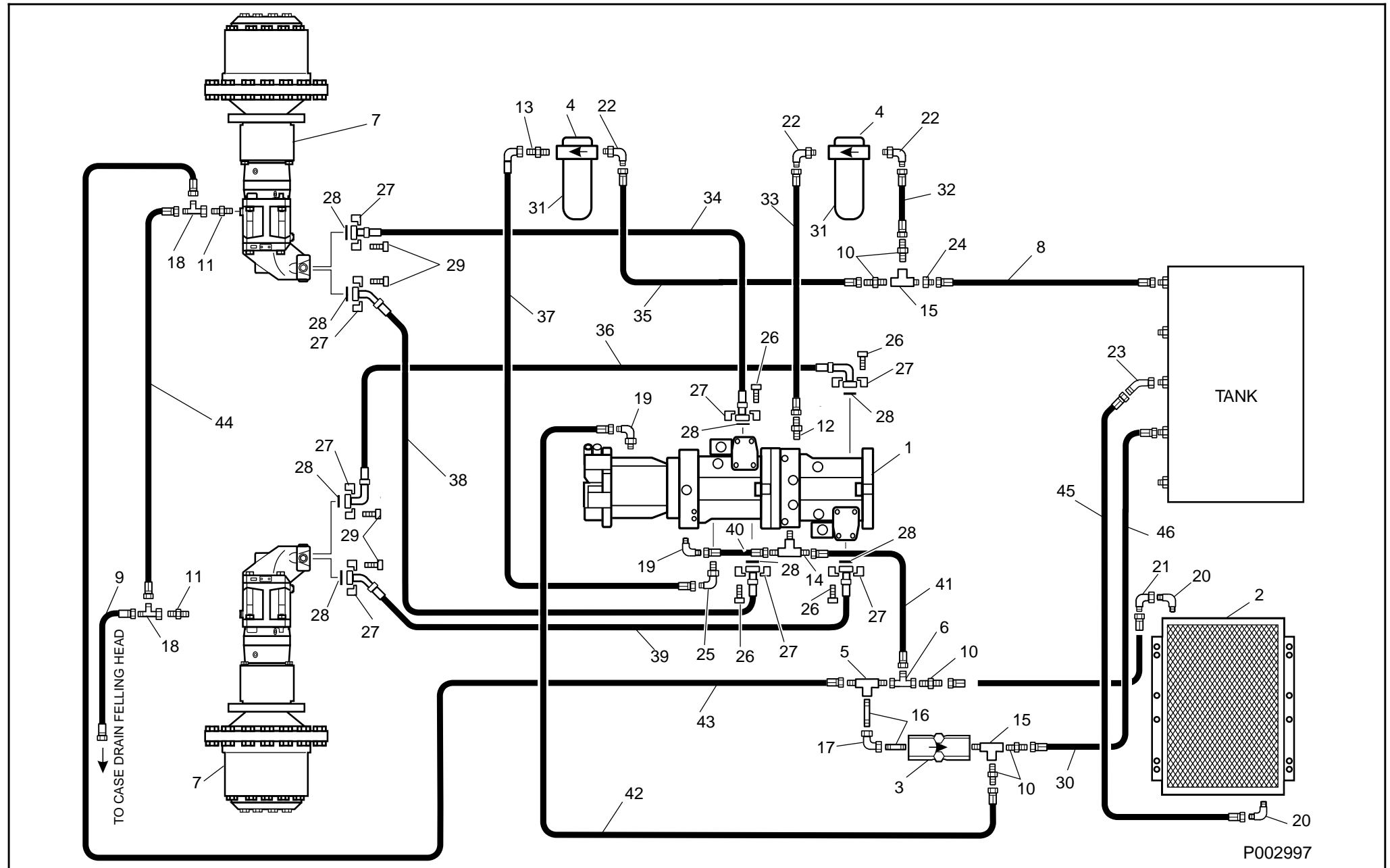
P002997

**TRANSMISSION SYSTEM (WITH INTERNAL FLUSHING VALVE)**

| ITEM | PART NUMBER | QTY | DESCRIPTION             | REMARKS |
|------|-------------|-----|-------------------------|---------|
| 1    | 210462      | 1   | PUMP, Transmission      |         |
| 2    | 203379      | 1   | COOLER, Oil             |         |
| 3    | 210287      | 1   | VALVE                   |         |
| 4    | 210468      | 2   | FILTER                  |         |
| 5    | 120385      | 1   | T PIECE                 |         |
| 6    | 120208      | 1   | T PIECE                 |         |
| 7    | 260539      | 2   | WHEEL DRIVE (SERIES 45) |         |
| 7    | 260526      | 2   | WHEEL DRIVE (SERIES 38) |         |
| 8    | 290301      | 1   | PIPE, Donaspin Scavenge |         |
| 9    | 240670      | 1   | HOSE                    |         |
| 10   | 120146      | 5   | CONNECTOR               |         |
| 11   | 120031      | 2   | CONNECTOR               |         |
| 12   | 120033      | 1   | CONNECTOR               |         |
| 13   | 120242      | 1   | CONNECTOR               |         |
| 14   | 121028      | 1   | T PIECE                 |         |
| 15   | 120386      | 2   | T PIECE                 |         |
| 16   | 121230      | 2   | CONNECTOR, Male         |         |
| 17   | 120193      | 1   | ELBOW                   |         |
| 18   | 120365      | 2   | ELBOW, Run              |         |
| 19   | 120047      | 2   | ELBOW                   |         |
| 20   | 120817      | 2   | ELBOW                   |         |
| 21   | 120100      | 1   | ELBOW                   |         |
| 22   | 125065      | 3   | ELBOW                   |         |
| 23   | 120812      | 1   | ELBOW                   |         |
| 24   | 190626      | 1   | PLUG                    |         |
| 25   | 120025      | 1   | ELBOW                   |         |
| 26   | 100387      | 16  | SCREW, Set, Hex         |         |
| 27   | 120229      | 8   | FLANGE                  |         |
| 28   | 140086      | 8   | O RING                  |         |
| 29   | 100746      | 16  | BOLT, Hex, Head         |         |
| 30   | 240446      | 1   | HOSE                    |         |
| 31   | 210469      | 2   | HOSE                    |         |
| 32   | 240359      | 1   | HOSE                    |         |
| 33   | 240449      | 1   | HOSE                    |         |
| 34   | 240731      | 1   | HOSE                    |         |

# TRANSMISSION SYSTEM (WITH INTERNAL FLUSHING VALVE)

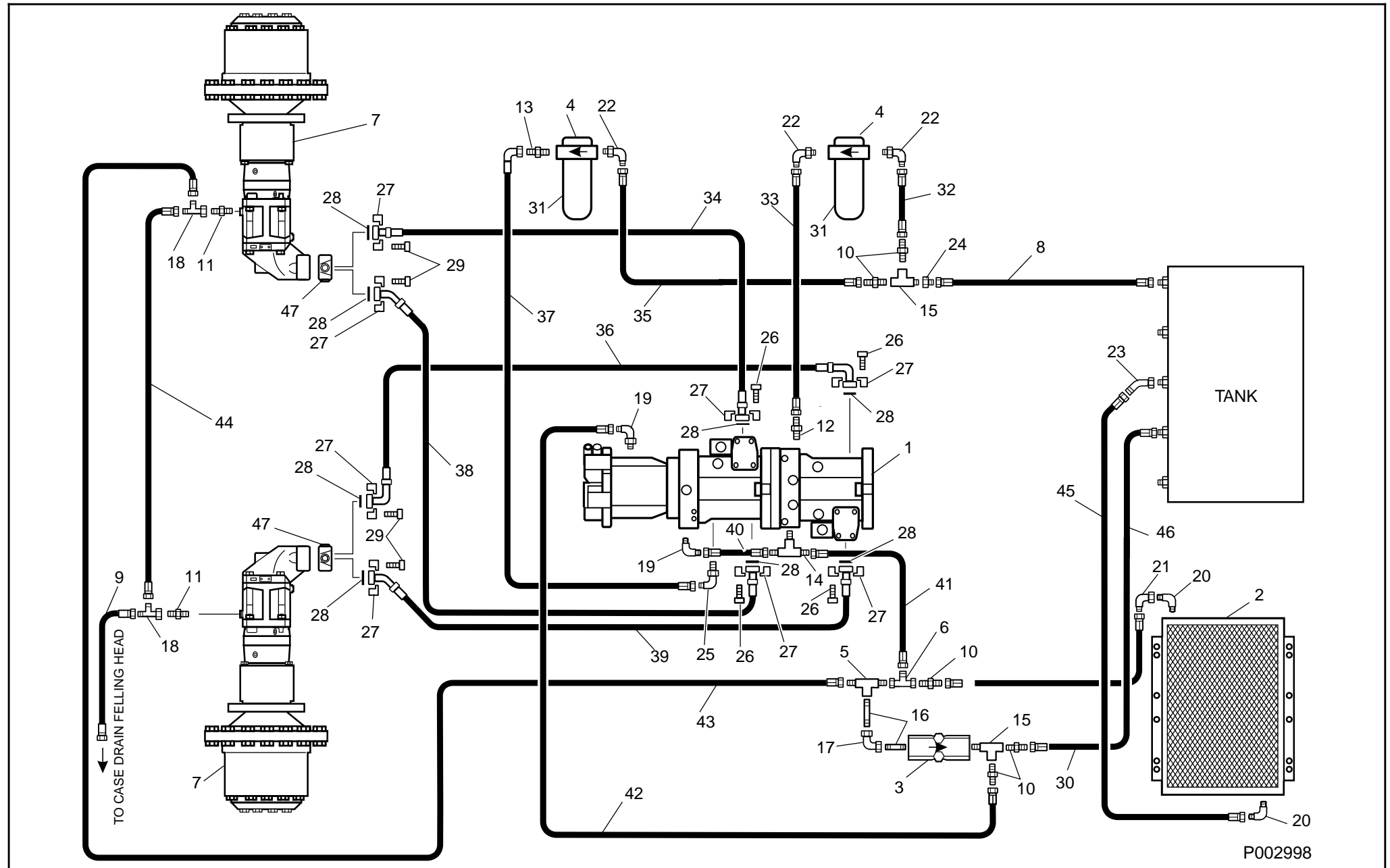
**BELL**



**3-8**

# TRANSMISSION SYSTEM (WITH EXTERNAL FLUSHING VALVE)

**BELL**

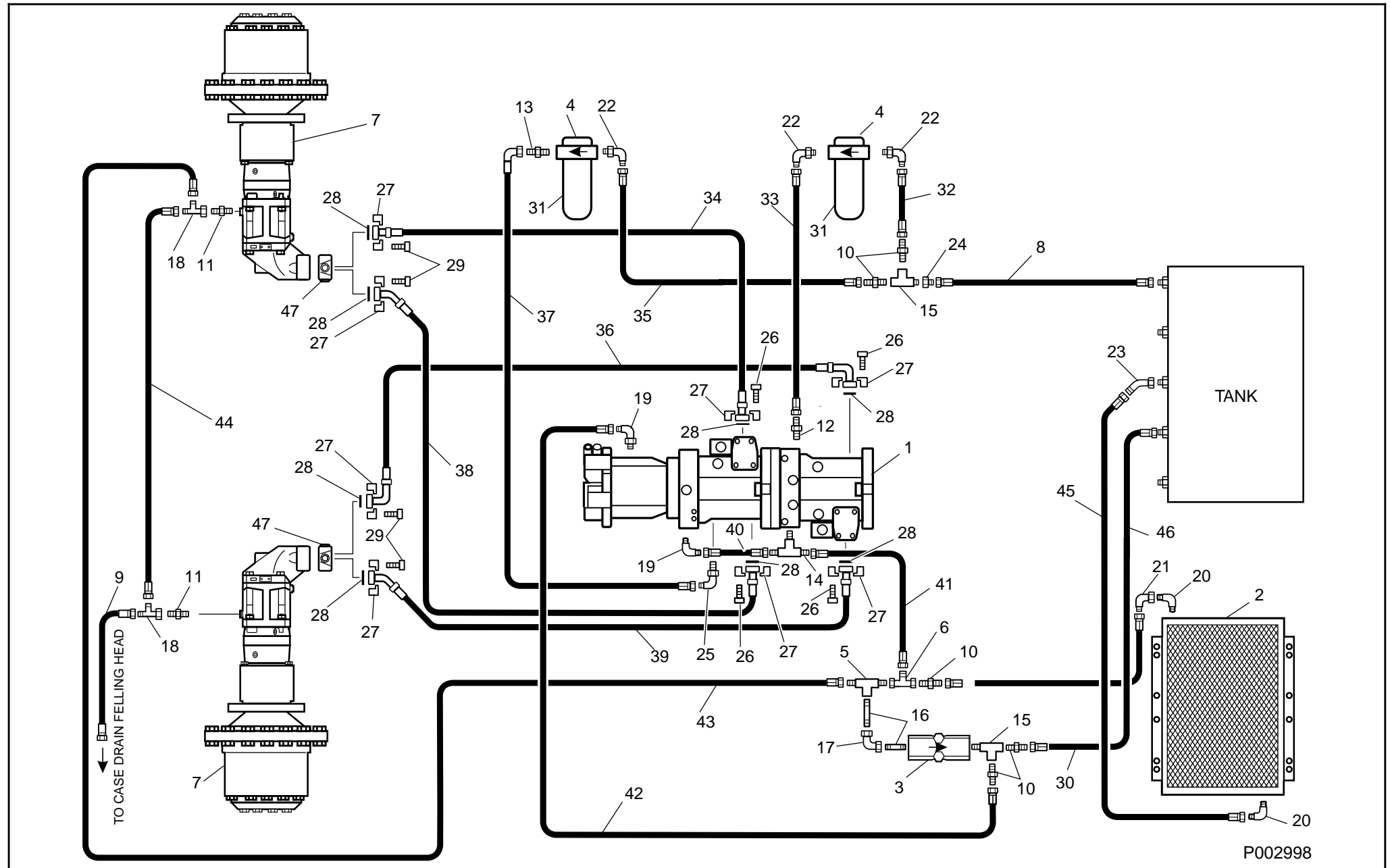


**TRANSMISSION SYSTEM (WITH EXTERNAL FLUSHING VALVE)**

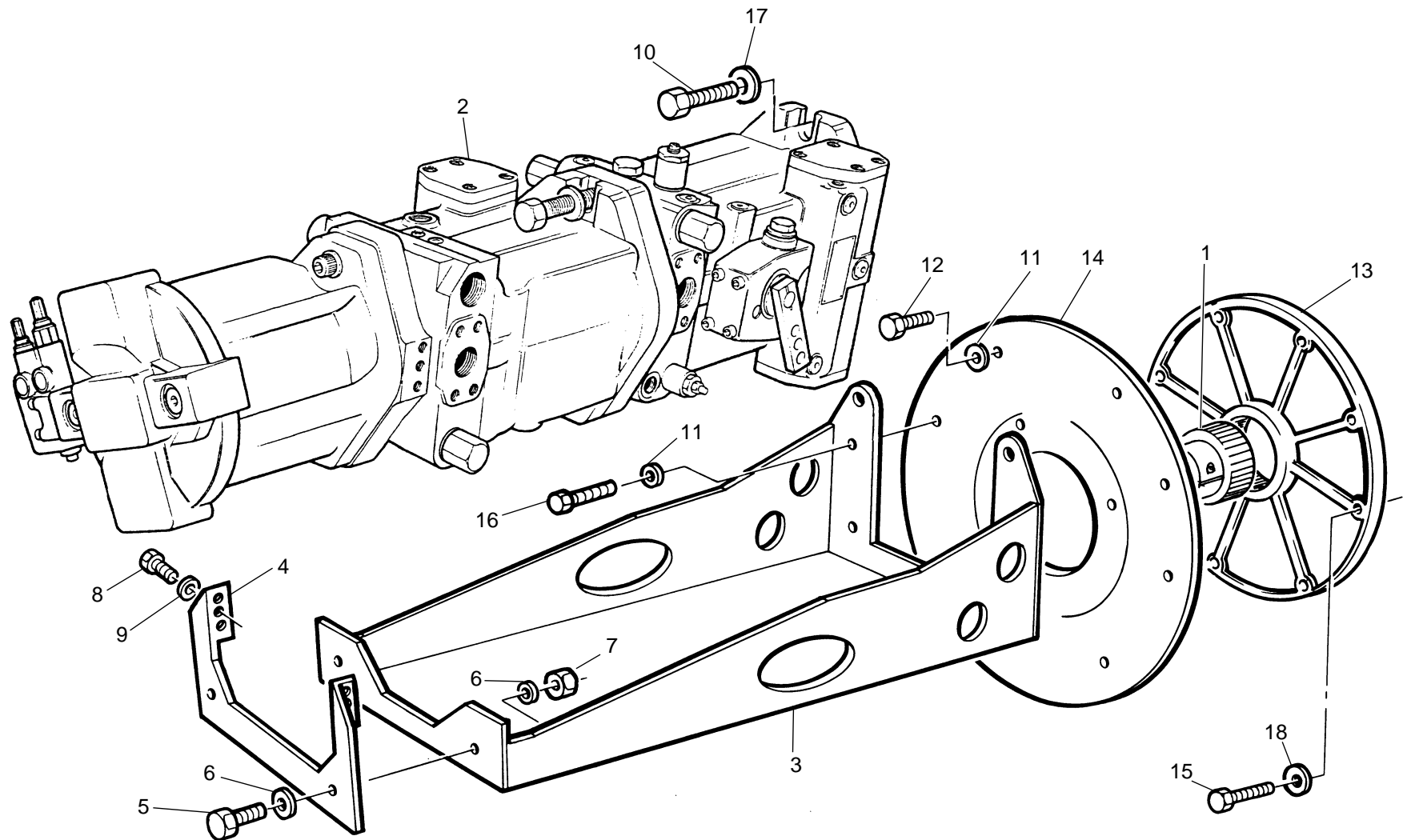
| ITEM | PART NUMBER | QTY | DESCRIPTION             | REMARKS |
|------|-------------|-----|-------------------------|---------|
| 1    | 210462      | 1   | PUMP, Transmission      |         |
| 2    | 203379      | 1   | COOLER, Oil             |         |
| 3    | 210287      | 1   | VALVE                   |         |
| 4    | 210468      | 2   | FILTER                  |         |
| 5    | 120385      | 1   | T PIECE                 |         |
| 6    | 120208      | 1   | T PIECE                 |         |
| 7    | 260539      | 2   | WHEEL DRIVE (SERIES 45) |         |
| 7    | 260526      | 2   | WHEEL DRIVE (SERIES 38) |         |
| 8    | 290301      | 1   | PIPE, Donaspin Scavenge |         |
| 9    | 240670      | 1   | HOSE                    |         |
| 10   | 120146      | 5   | CONNECTOR               |         |
| 11   | 120031      | 2   | CONNECTOR               |         |
| 12   | 120033      | 1   | CONNECTOR               |         |
| 13   | 120242      | 1   | CONNECTOR               |         |
| 14   | 121028      | 1   | T PIECE                 |         |
| 15   | 120386      | 2   | T PIECE                 |         |
| 16   | 121230      | 2   | CONNECTOR, Male         |         |
| 17   | 120193      | 1   | ELBOW                   |         |
| 18   | 120365      | 2   | ELBOW, Run              |         |
| 19   | 120047      | 2   | ELBOW                   |         |
| 20   | 120817      | 2   | ELBOW                   |         |
| 21   | 120100      | 1   | ELBOW                   |         |
| 22   | 125065      | 3   | ELBOW                   |         |
| 23   | 120812      | 1   | ELBOW                   |         |
| 24   | 190626      | 1   | PLUG                    |         |
| 25   | 120025      | 1   | ELBOW                   |         |
| 26   | 100387      | 16  | SCREW, Hex, Head        |         |
| 27   | 120229      | 16  | FLANGE                  |         |
| 28   | 140086      | 8   | O RING                  |         |
| 29   | 100746      | 16  | BOLT, Hex, Head         |         |
| 30   | 120239      | 8   | HOSE                    |         |
| 31   | 210469      | 2   | FILTER                  |         |
| 32   | 240359      | 1   | HOSE                    |         |
| 33   | 240449      | 1   | HOSE                    |         |
| 34   | 240731      | 1   | HOSE                    |         |

# TRANSMISSION SYSTEM (WITH EXTERNAL FLUSHING VALVE)

**BELL**

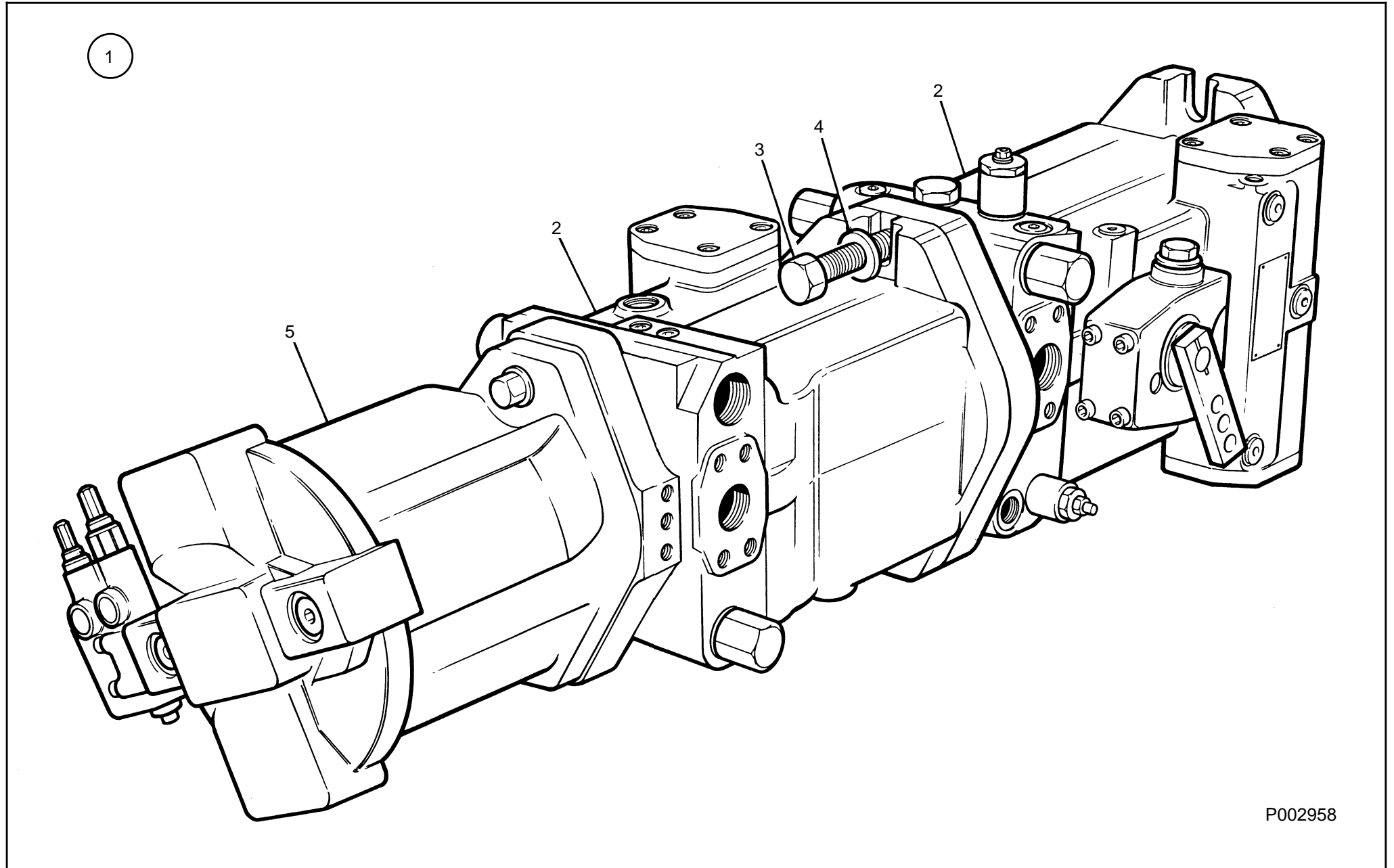


**3-12**



P002961

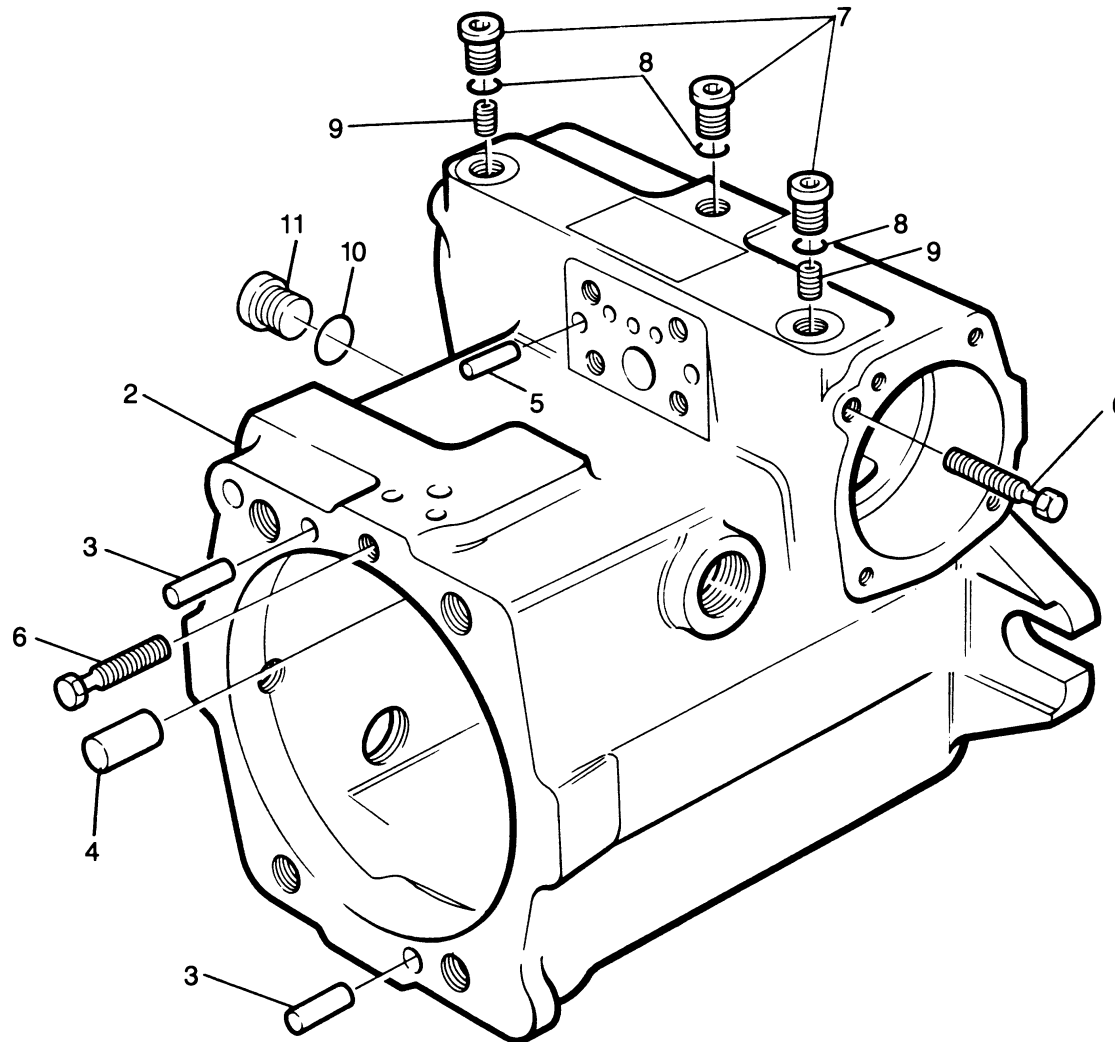
**3-14**



P002958

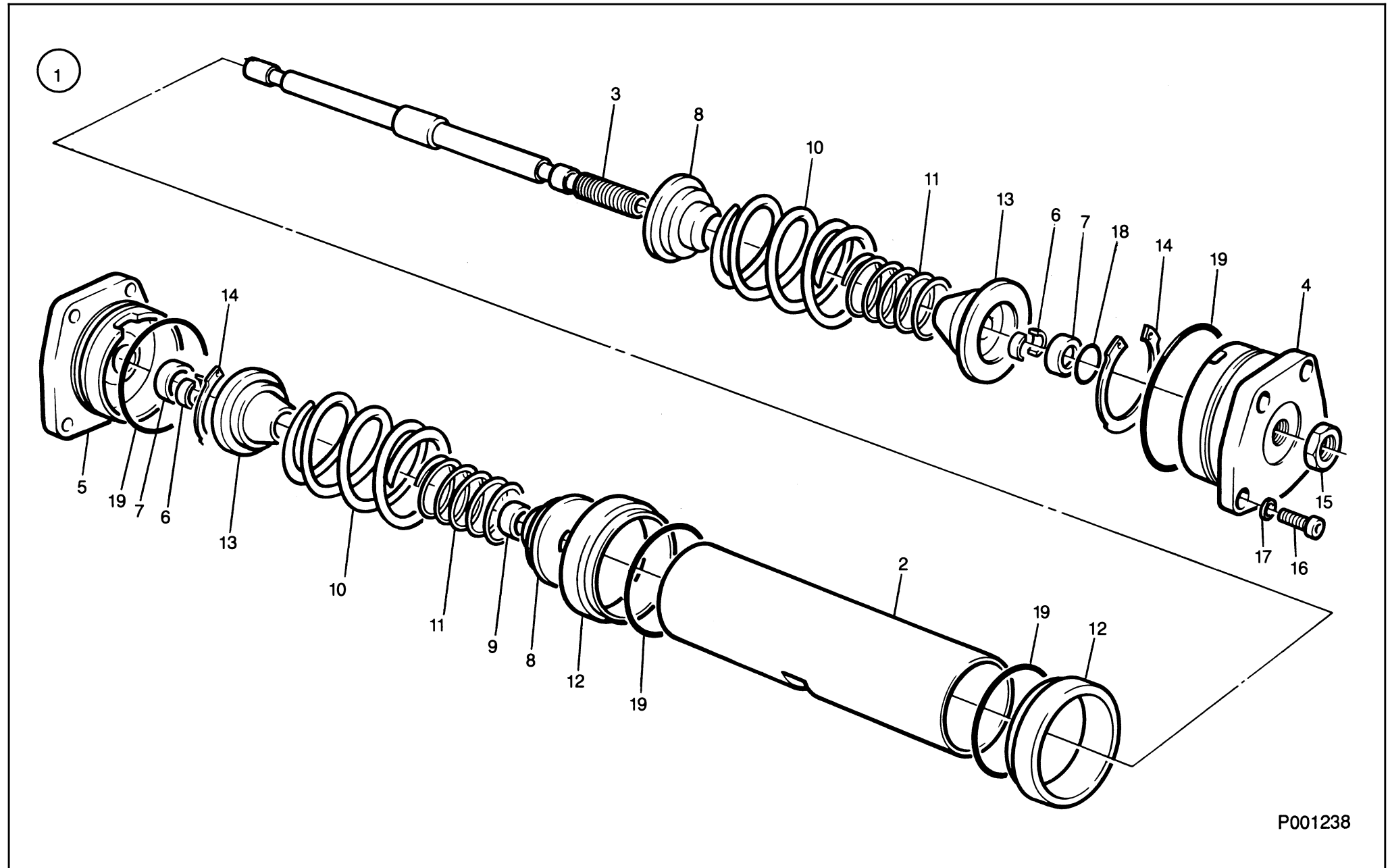
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P001253

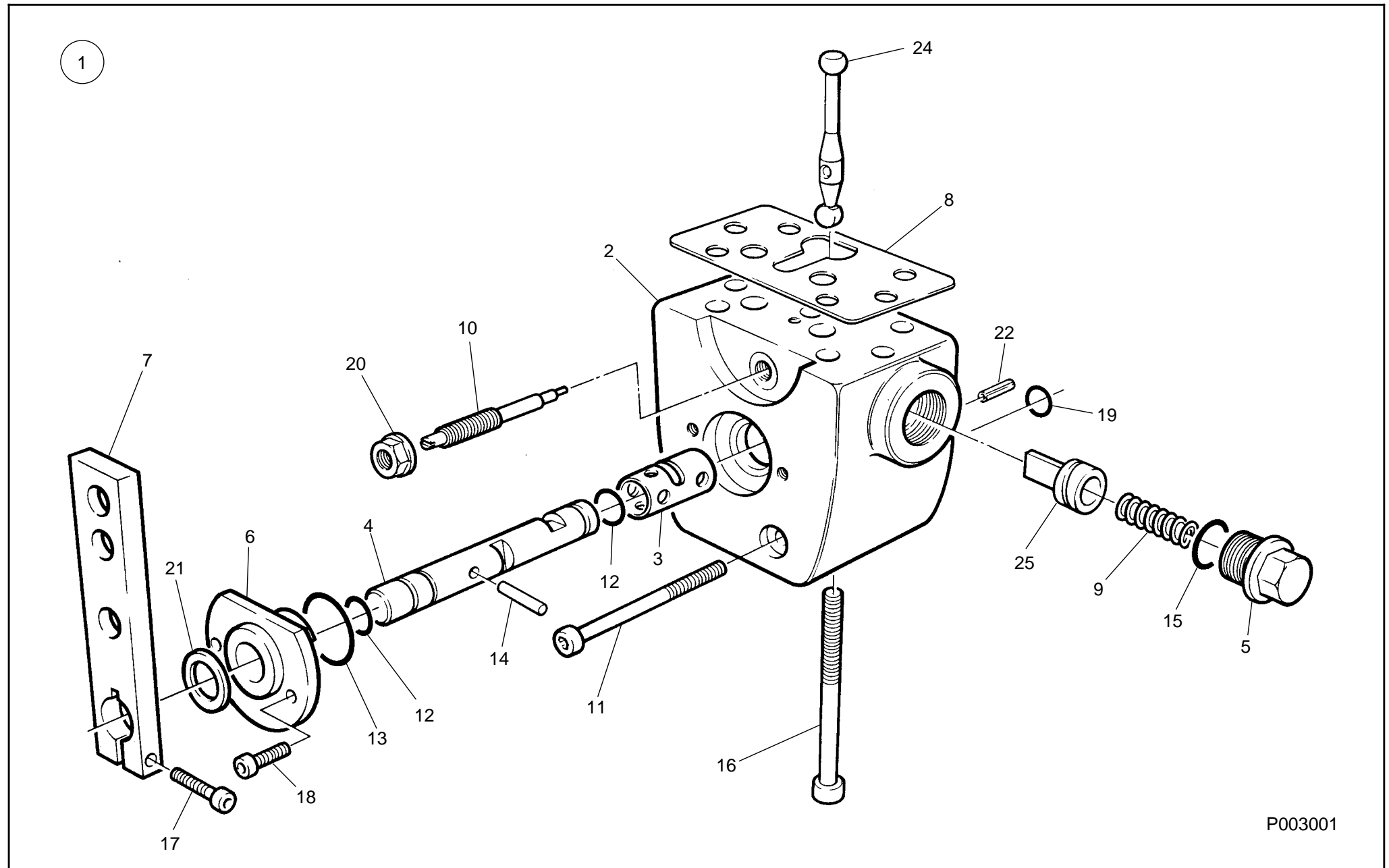
**3-18**



P001238

**HYDRAULIC CONTROL**

| ITEM | PART NUMBER | QTY | DESCRIPTION         | REMARKS |
|------|-------------|-----|---------------------|---------|
| 1    | 223263      | 1   | HYDRAULIC CONTROL   |         |
| 2    | 223288      | 1   | PISTON, Positioning |         |
| 3    | 223289      | 1   | ROD                 |         |
| 4    | 223290      | 1   | COVER               |         |
| 5    | 223291      | 1   | COVER               |         |
| 6    | 223031      | 2   | RING                |         |
| 6    | 223032      | A/R | RING                |         |
| 6    | 223033      | A/R | RING                |         |
| 6    | 223034      | A/R | RING                |         |
| 6    | 223035      | A/R | RING                |         |
| 6    | 223036      | A/R | RING                |         |
| 7    | 223292      | 2   | RING                |         |
| 8    | 223293      | 2   | RING                |         |
| 9    | 223294      | 2   | COLLAR, Spring      |         |
| 9    | 223040      | A/R | SPACER, Ring        |         |
| 9    | 223041      | A/R | SPACER, Ring        |         |
| 10   | 223295      | 2   | SPRING, Pressure    |         |
| 11   | 223296      | 2   | SPRING, Pressure    |         |
| 12   | 223297      | 2   | BUSH                |         |
| 13   | 223298      | 2   | COLLAR, Spring      |         |
| 14   | 223299      | 2   | RING, Retaining     |         |
| 15   | 223047      | 1   | NUT, Hex            |         |
| 16   | 223056      | 8   | BUSH                |         |
| 17   | 100065      | 8   | WASHER, Spring      |         |
| 18   | 223049      | 1   | O RING              |         |
| 19   | 223527      | 4   | O RING              |         |
|      |             |     |                     |         |
|      |             |     |                     |         |
|      |             |     |                     |         |
|      |             |     |                     |         |
|      |             |     |                     |         |
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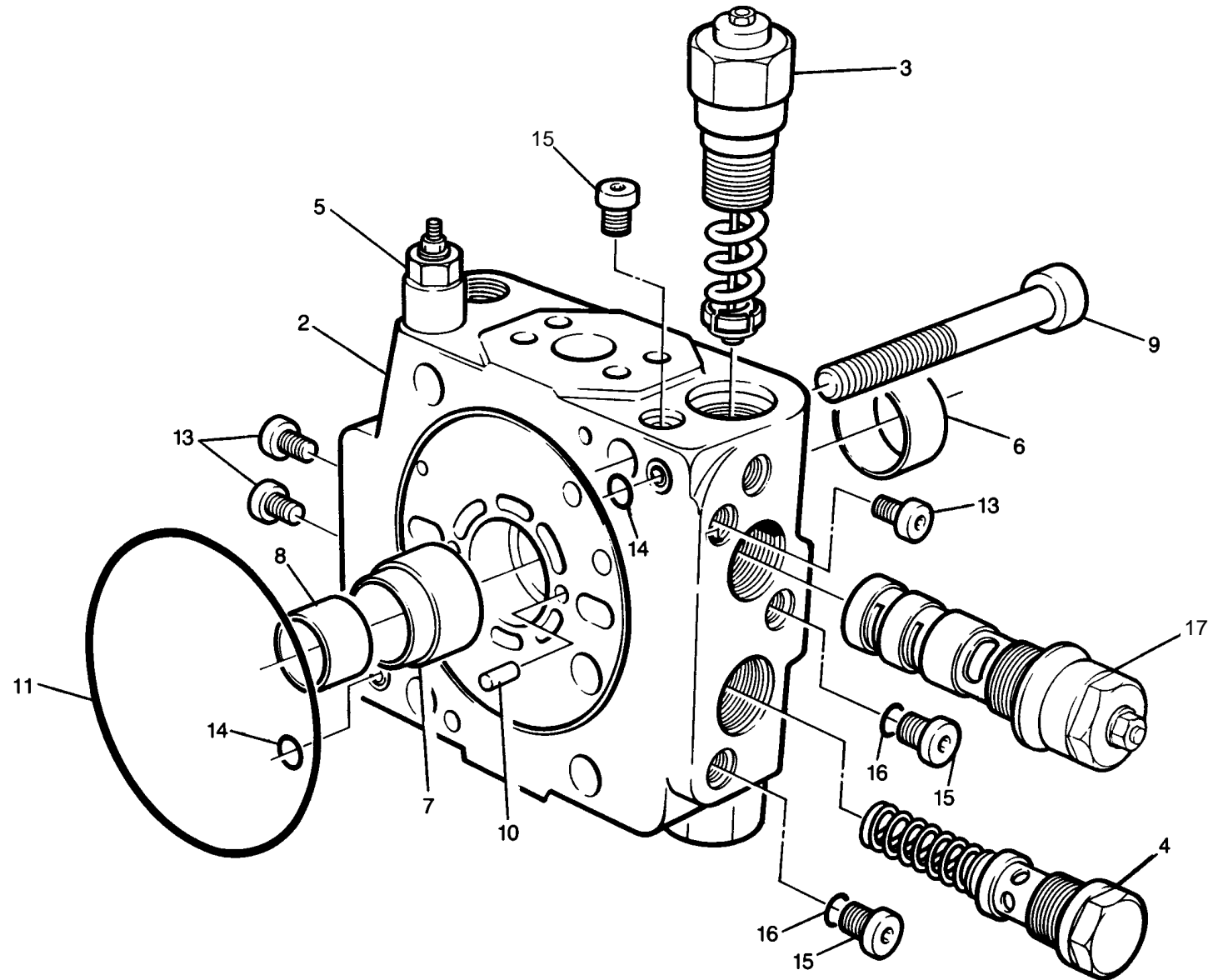


P003001

# BELL

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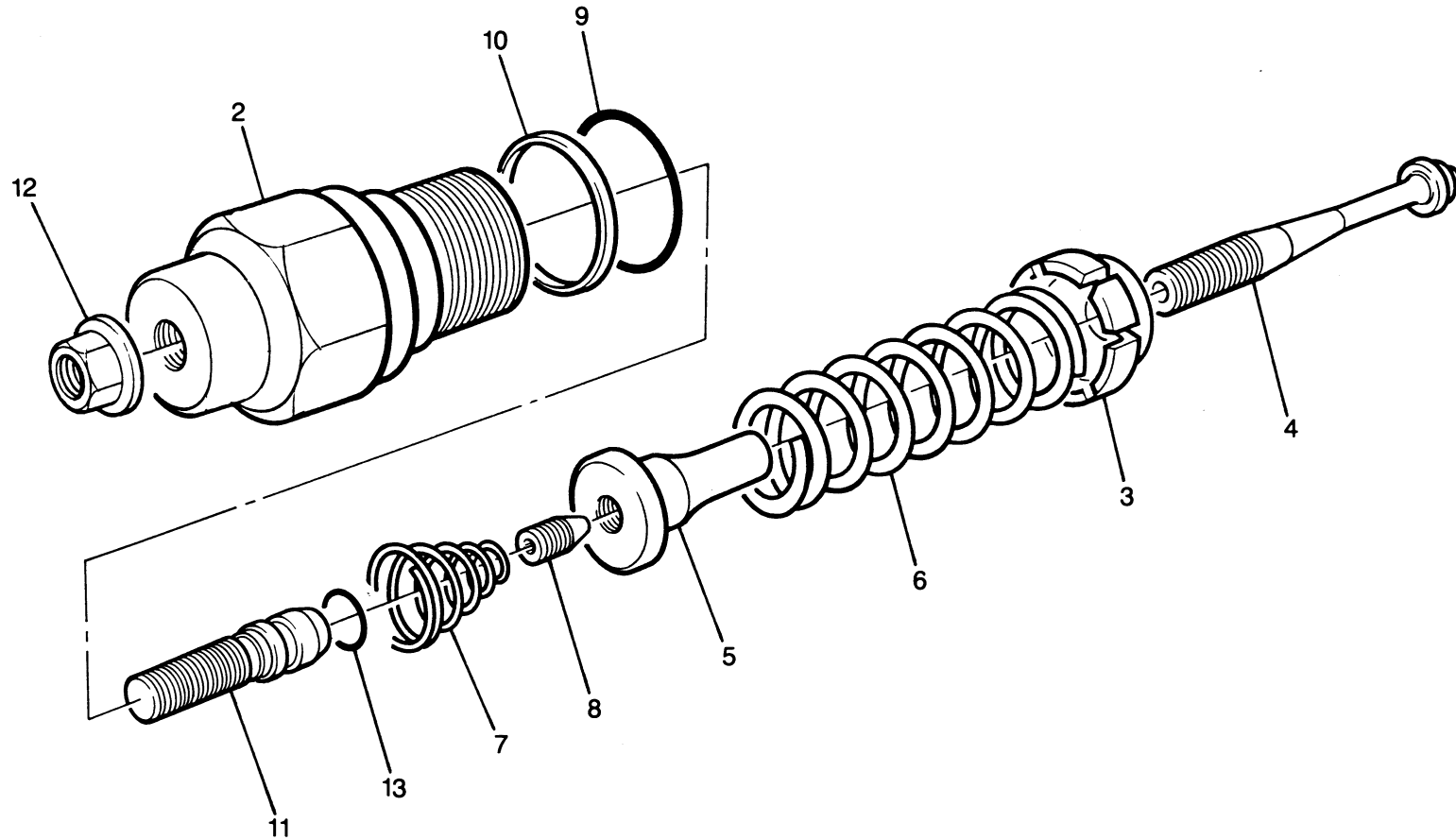
## PORT PLATE WITH VALVES



P002968

3-24

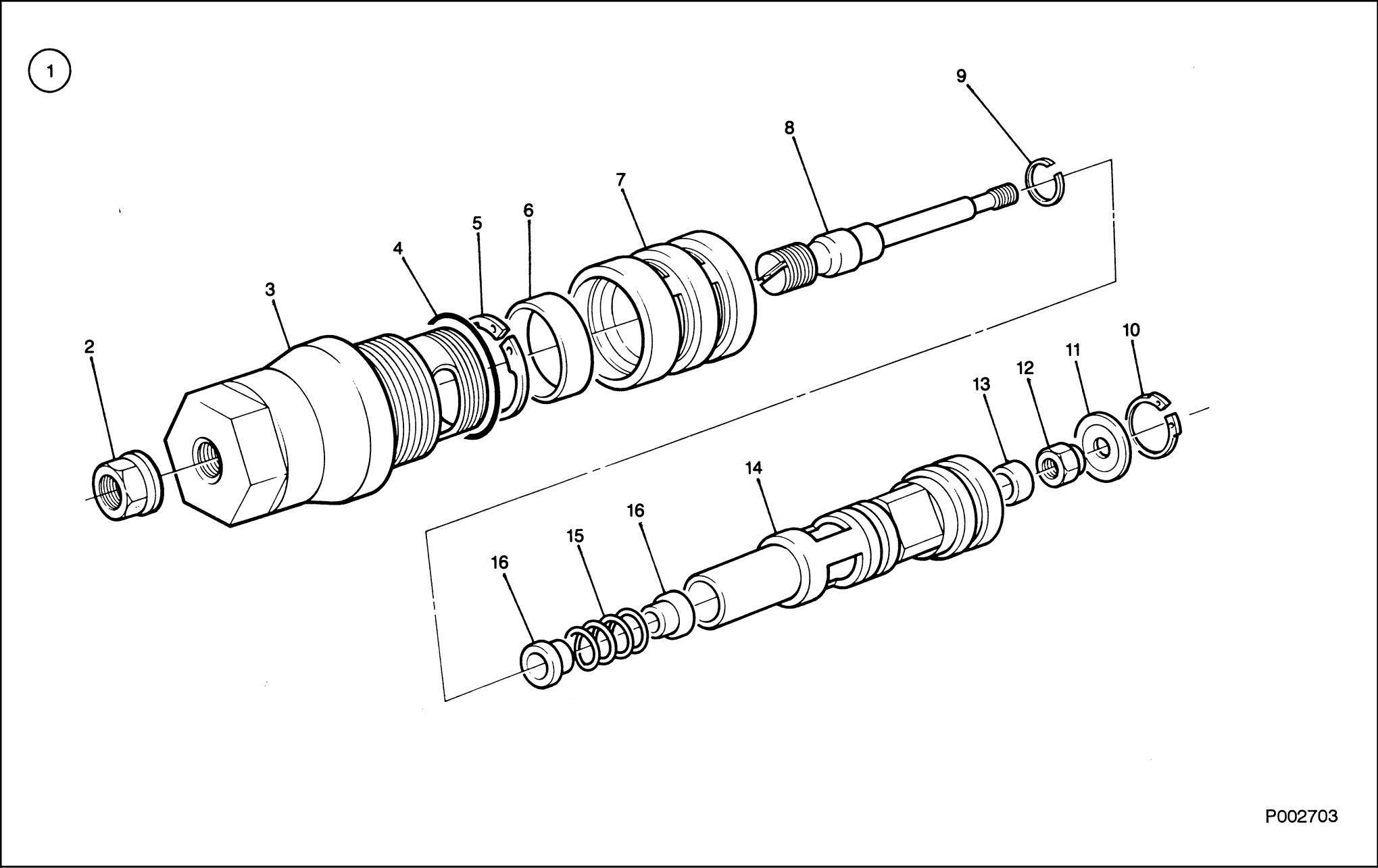
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P001925

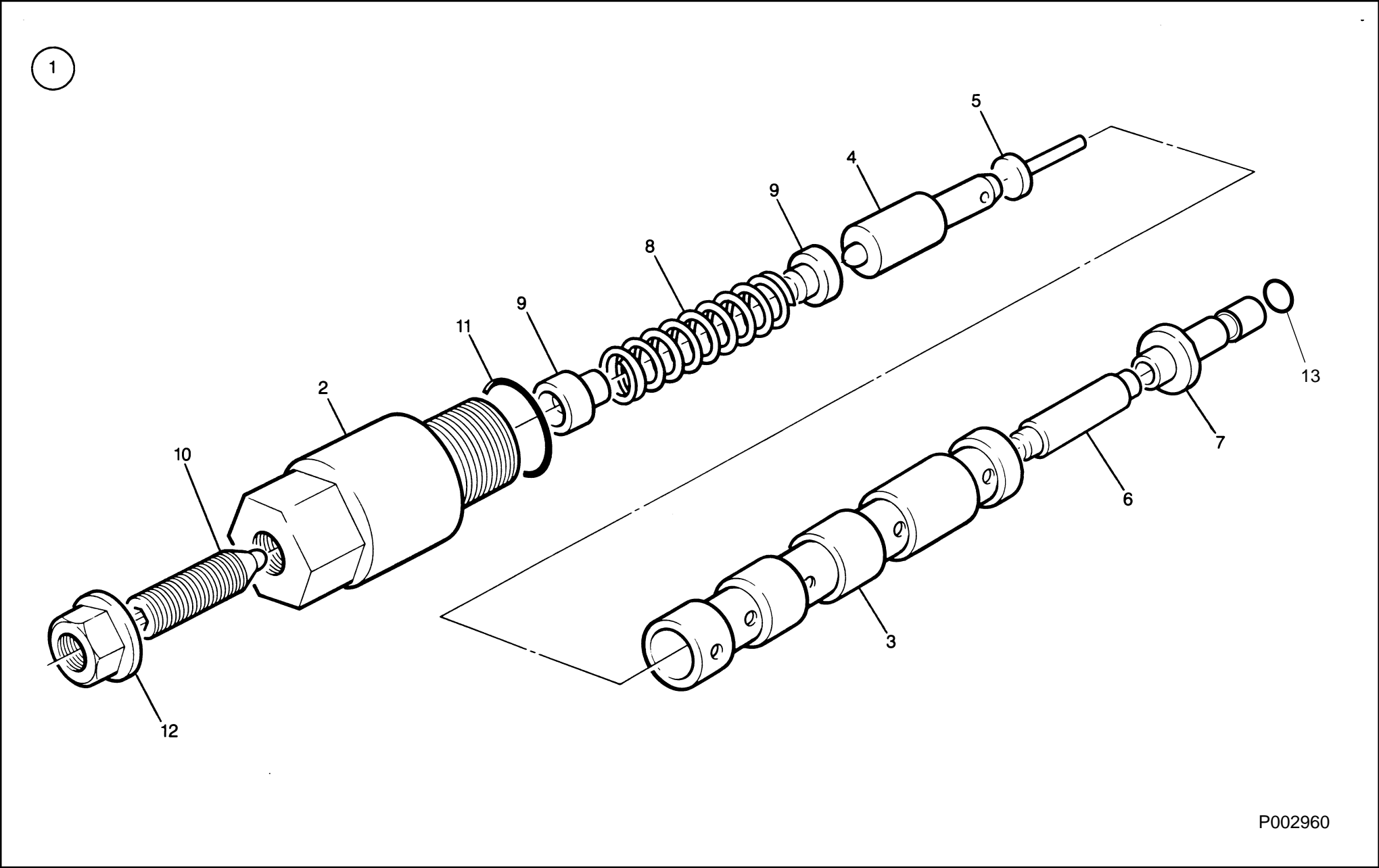
## PRESSURE RELIEF VALVE

[illegible]



P002703

3-28



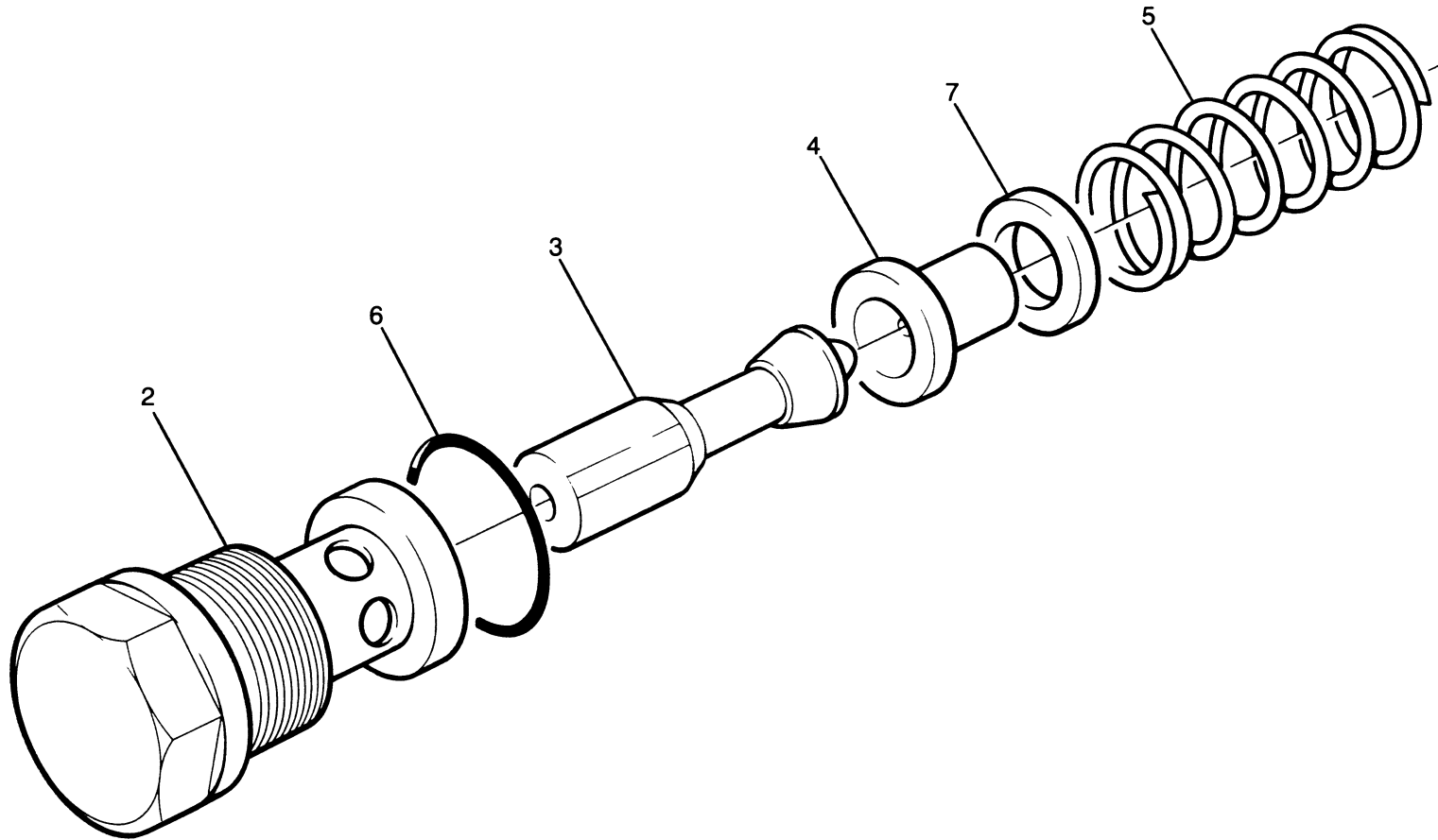
P002960



## PRESSURE OVERRIDE VALVE

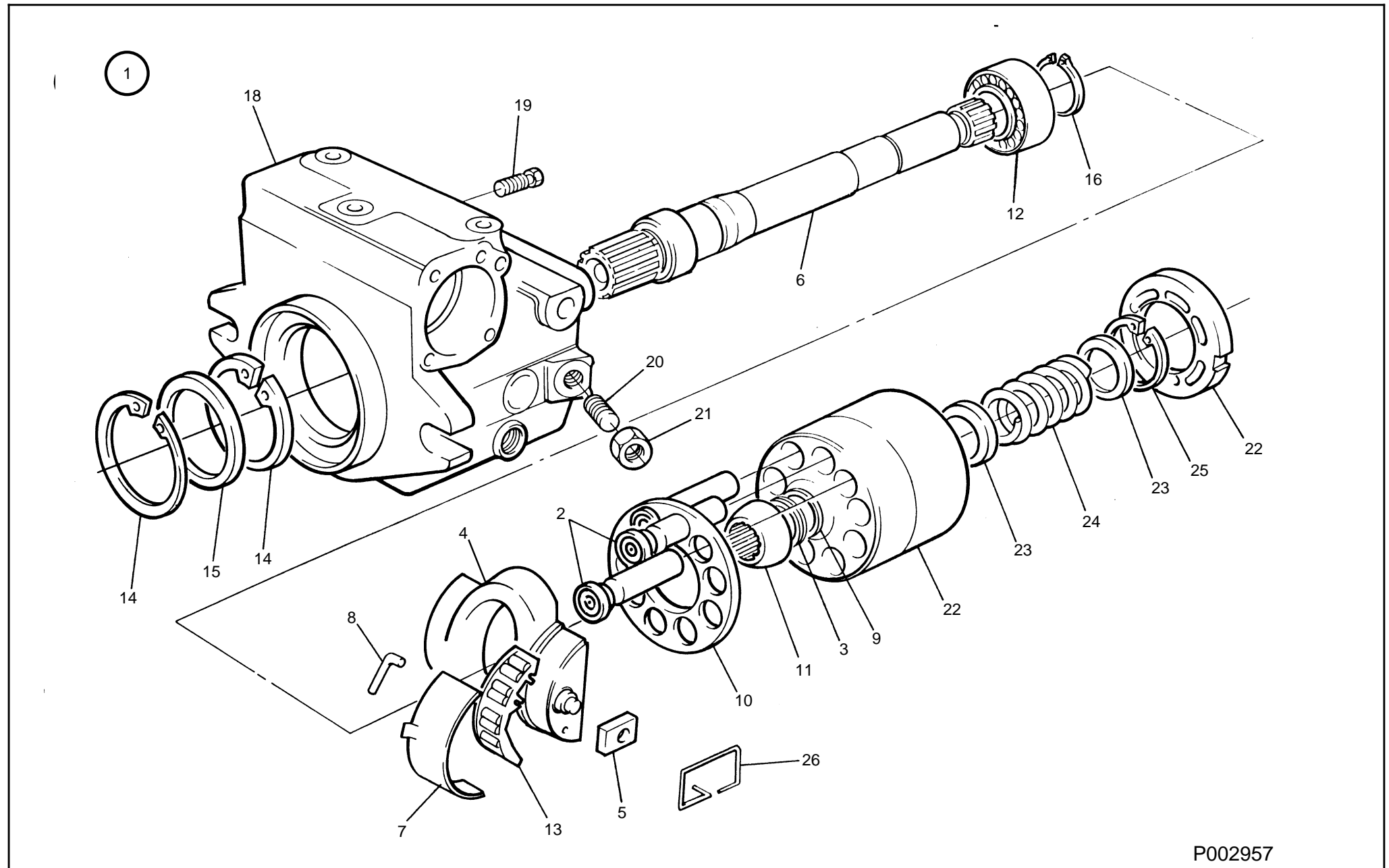
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P001245

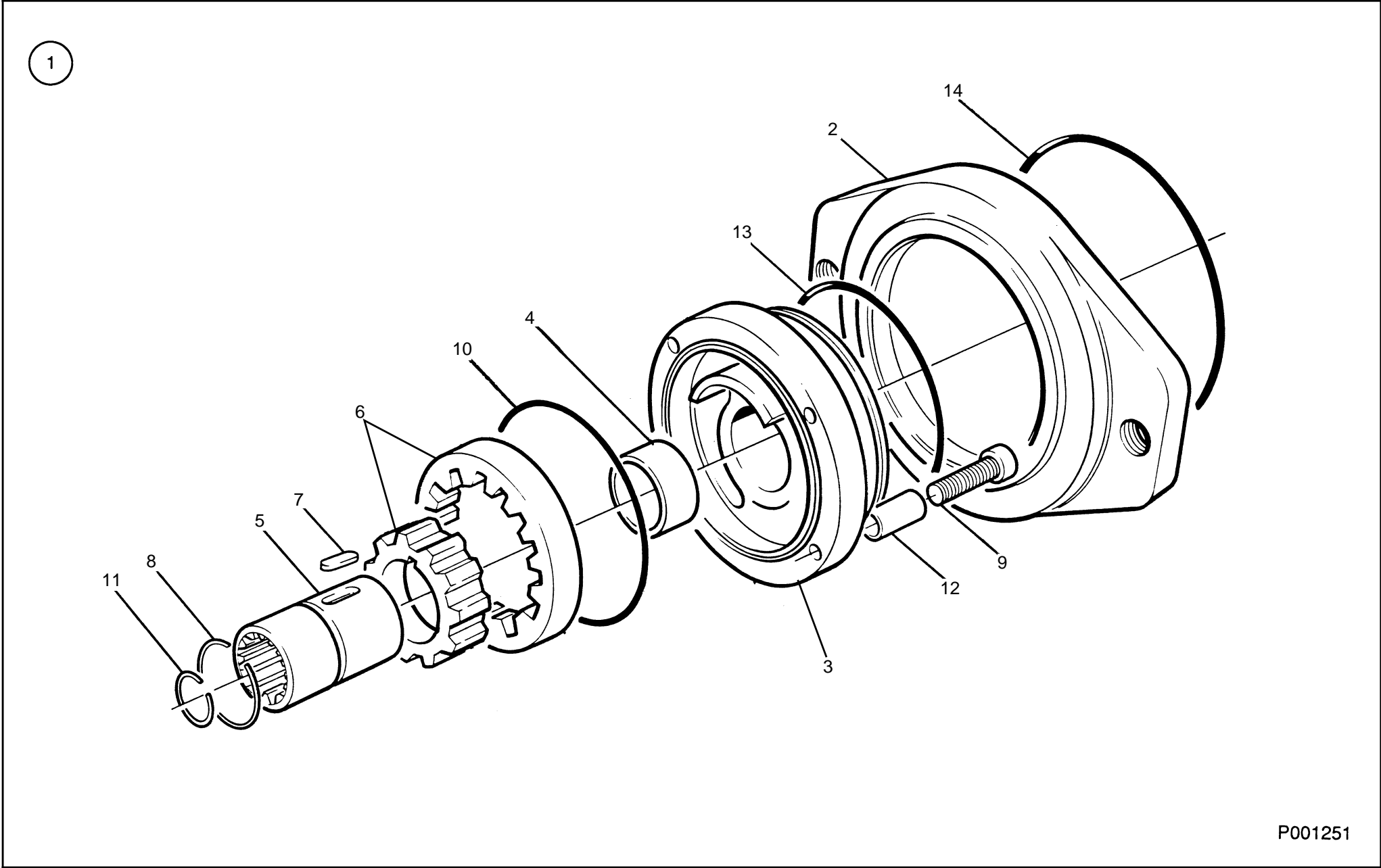
3-32



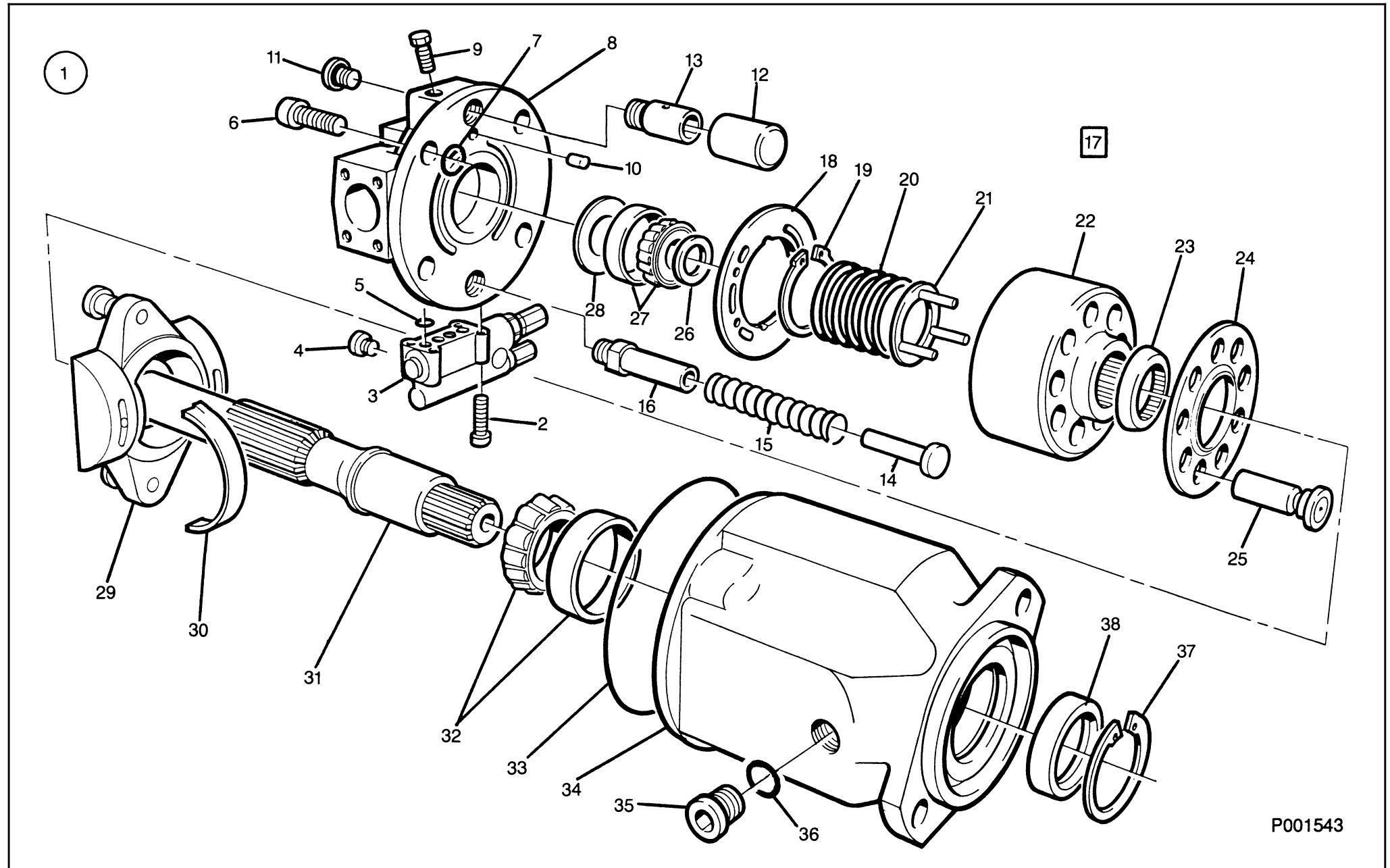
P002957

**ROTARY GROUP**

| ITEM | PART NUMBER | QTY | DESCRIPTION                 | REMARKS |
|------|-------------|-----|-----------------------------|---------|
| 1    | 223262      | 1   | ROTARY GROUP                |         |
| 2    | 223521      | 9   | PAD, Piston Slipper         |         |
| 3    | 223607      | 1   | STACK, Cup Spring           |         |
| 4    | 223608      | 1   | CRADLE                      |         |
| 5    | 223609      | 1   | RING, Slide                 |         |
| 6    | 223610      | 1   | SHAFT, Drive                |         |
| 7    | 223525      | 1   | BEARING, Flange             |         |
| 8    | 223612      |     | WIRE                        |         |
| 9    | 223277      | A/R | SHIM                        |         |
| 9    | 223278      | A/R | SHIM                        |         |
| 9    | 223279      | A/R | SHIM                        |         |
| 9    | 223280      | A/R | SHIM                        |         |
| 10   | 223613      | 1   | PLATE, Retaining            |         |
| 11   | 223614      | 1   | BALL, Retaining             |         |
| 12   | 223284      | 1   | BEARING, Roller             |         |
| 13   | 223618      | 1   | CRADLE BEARING ASSY         |         |
| 14   | 223619      | 1   | RING, Retaining             |         |
| 15   | 223620      | 1   | SEAL, Shaft                 |         |
| 16   | 223285      | 1   | RING, Retaining             |         |
| 17   | 223621      | 1   | RING, Retaining             |         |
| 18   | 223603      | 1   | HOUSING                     |         |
| 19   | 223026      | 2   | PIN, Double Break Off       |         |
| 20   | 223189      | 1   | SCREW, Eccentric            |         |
| 21   | 223190      | 1   | NUT, Seat, locking          |         |
| 22   | 223606      | 1   | CYLINDER WITH CONTROL PLATE |         |
| 23   | 223616      | 2   | WASHER                      |         |
| 24   | 223617      | 1   | SPRING                      |         |
| 25   | 223621      | 1   | RING, Retaining             |         |
| 26   | 223612      | 1   | WIRE                        |         |
|      |             |     |                             |         |
|      |             |     |                             |         |
|      |             |     |                             |         |
|      |             |     |                             |         |
|      |             |     |                             |         |
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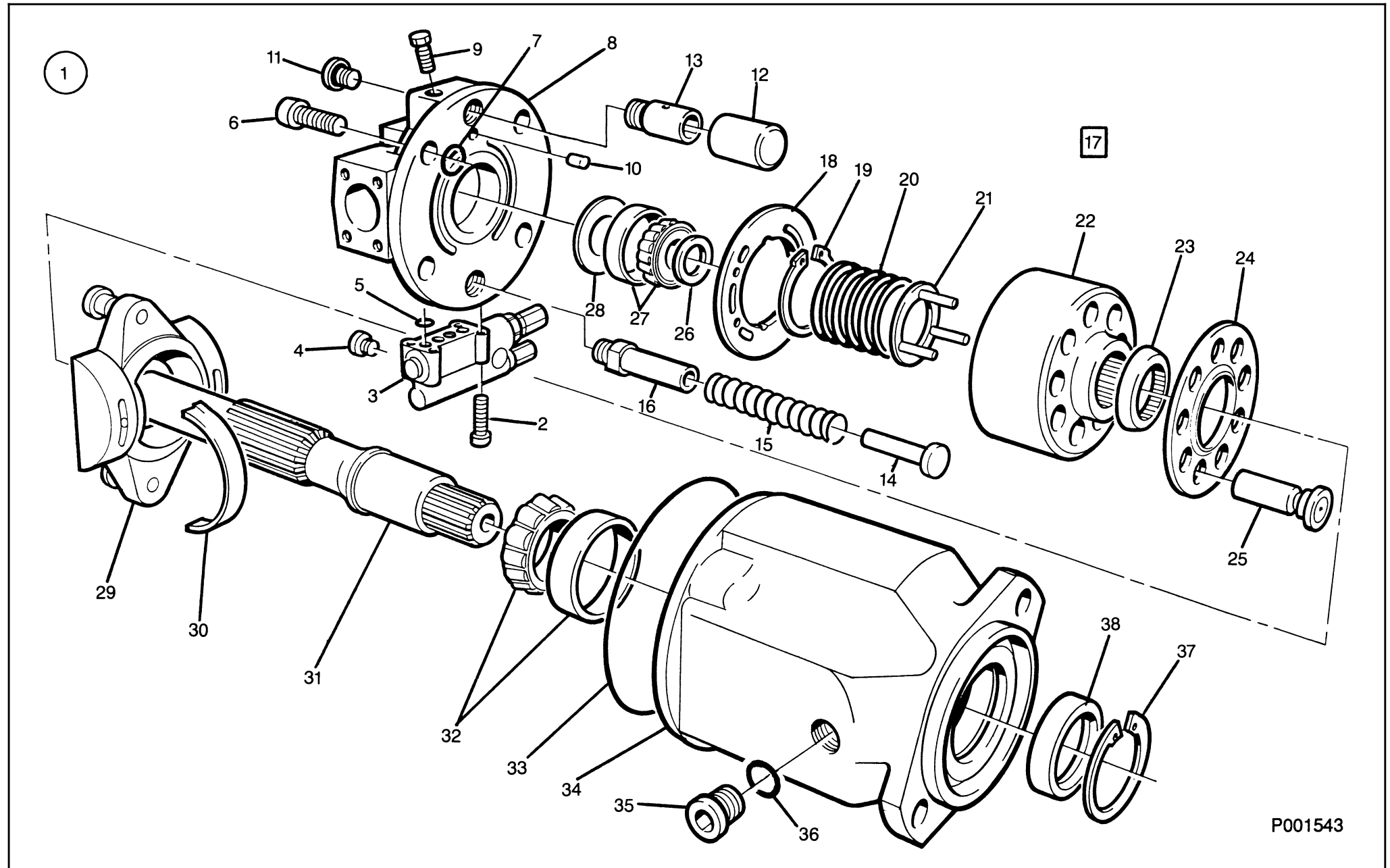
3-36



P001543

**HYDRAULIC PUMP**

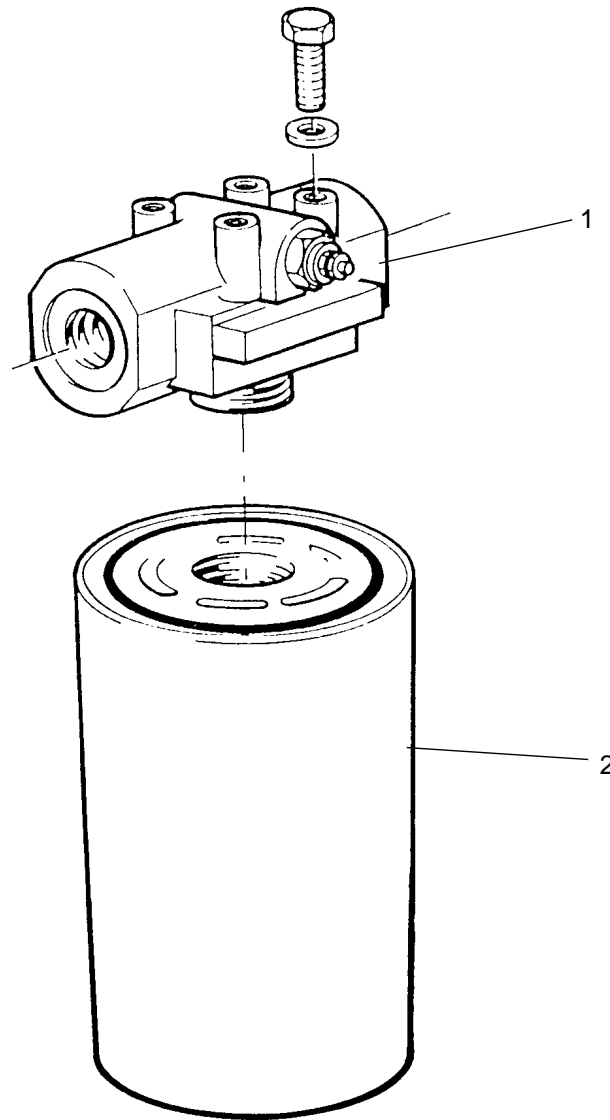
| ITEM | PART NUMBER | QTY | DESCRIPTION            | REMARKS |
|------|-------------|-----|------------------------|---------|
| 1    | 210431      | 1   | HYDRAULIC PUMP         |         |
| 2    | 223219      | 4   | SCREW, Cap             |         |
| 3    | 223247      | 1   | VALVE, Pilot           |         |
| 4    | 223220      | 1   | PLUG                   |         |
| 5    | 223218      | 3   | O RING                 |         |
| 6    | 100256      | 4   | SCREW, Cap             |         |
| 7    | 223244      | 4   | O RING                 |         |
| 8    | 223234      | 1   | PLATE, Port            |         |
| 9    | 223213      | 2   | PIN, Double Break Off  |         |
| 10   | 223214      | 1   | PIN, Dowel             |         |
| 11   | 223246      | 2   | PLUG, Seal             |         |
| 12   | 223257      | 1   | PISTON, Control        |         |
| 13   | 223258      | 1   | GUIDE, Piston          |         |
| 14   | 223259      | 1   | PISTON,                |         |
| 15   | 223261      | 1   | SPRING                 |         |
| 16   | 223260      | 1   | GUIDE, Piston          |         |
| 17   | 223231      | 1   | ROTARY GROUP           |         |
| 18   | 223250      | 1   | PLATE, Distributor     |         |
| 19   | 223255      | 1   | CIRCLIP, Internal      |         |
| 20   | 223253      | 1   | SPRING                 |         |
| 21   | 223254      | 1   | PIN, Pressure          |         |
| 22   | 223249      | 1   | CYLINDER               |         |
| 23   | 223252      | 1   | BALL, Retaining        |         |
| 24   | 223251      | 1   | PLATE, Retaining       |         |
| 25   | 223248      | 9   | PISTON                 |         |
| 26   | 223238      | 1   | DISC, Tuning           |         |
| 27   | 223240      | 1   | BEARING, Roller, Taper |         |
| 28   | 223237      | 1   | DISC                   |         |
| 29   | 223235      | 1   | PLATE, Swash           |         |
| 30   | 223241      | 2   | BEARING, Plate, Swash  |         |
| 31   | 223236      | 1   | SHAFT, Drive           |         |
| 32   | 223239      | 1   | BEARING, Roller, Taper |         |
| 33   | 223243      | 1   | O RING                 |         |
| 34   | 223233      | 1   | HOUSING, Pump          |         |
| 35   | 223212      | 1   | PLUG                   |         |



P001543

## HYDRAULIC PUMP

**BELL**[illegible]



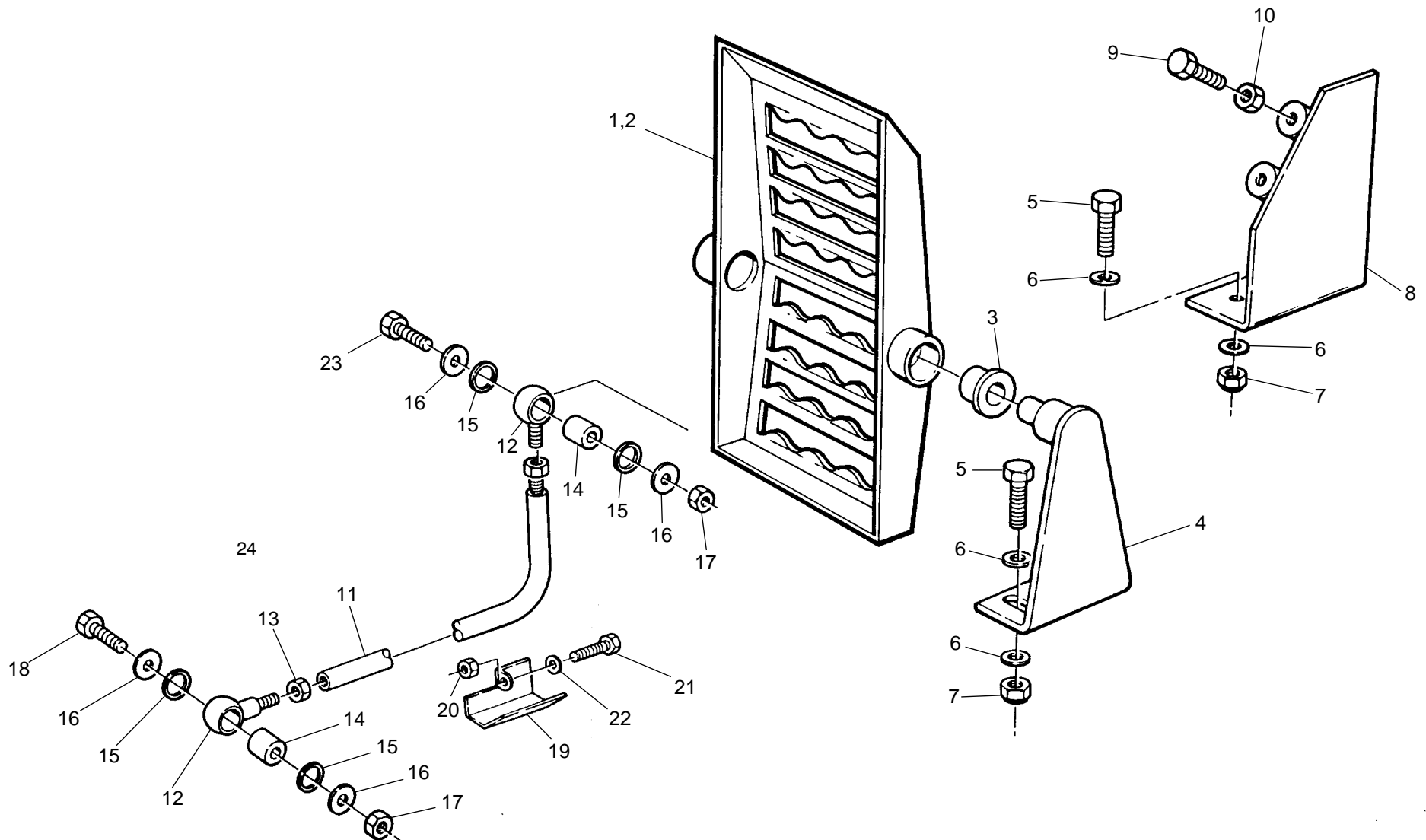
P003010

## TRANSMISSION PUMP OIL FILTER ASSEMBLY

**BELL**[illegible]

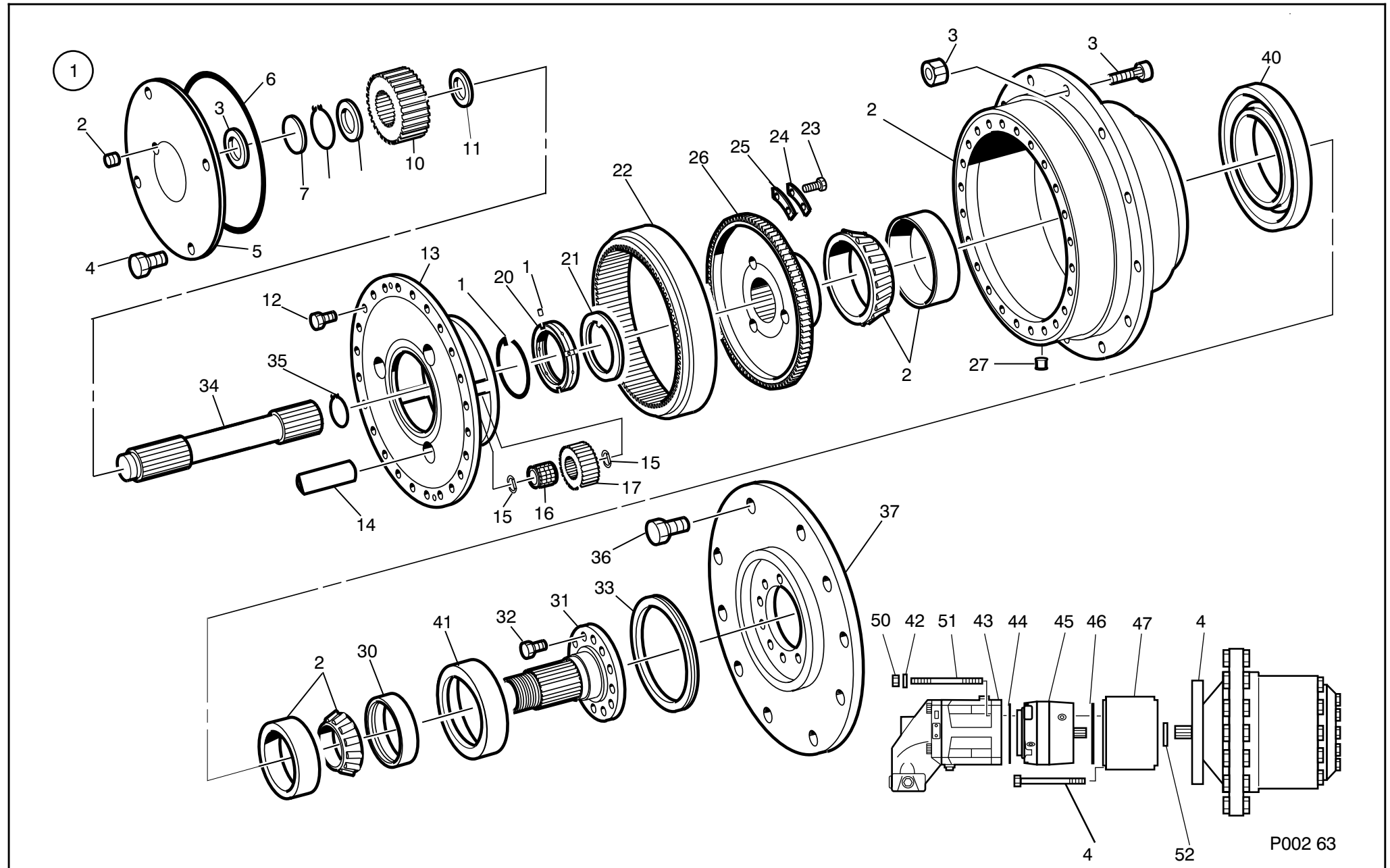
# PEDAL ASSEMBLY

**BELL**



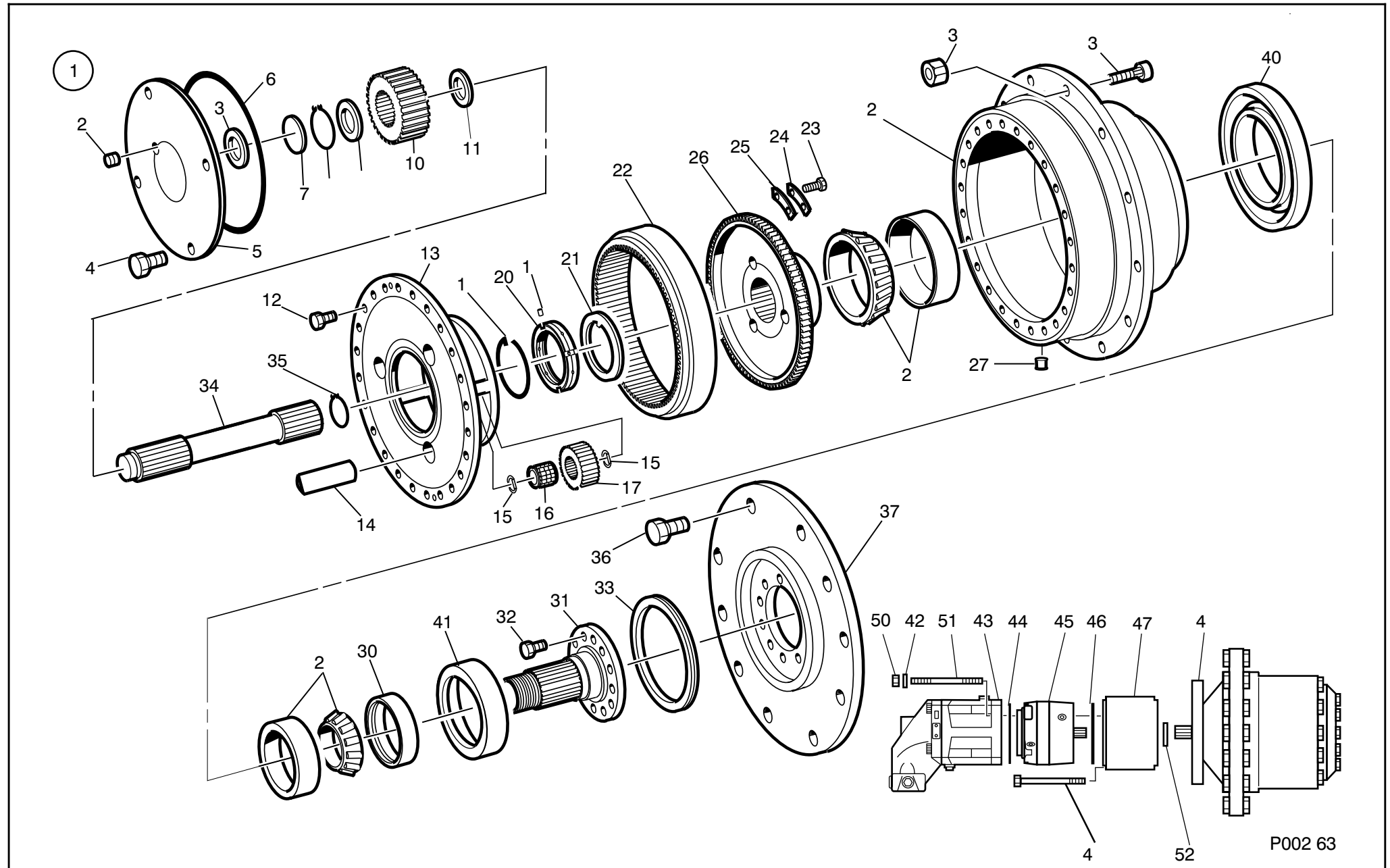
P002081

3-44

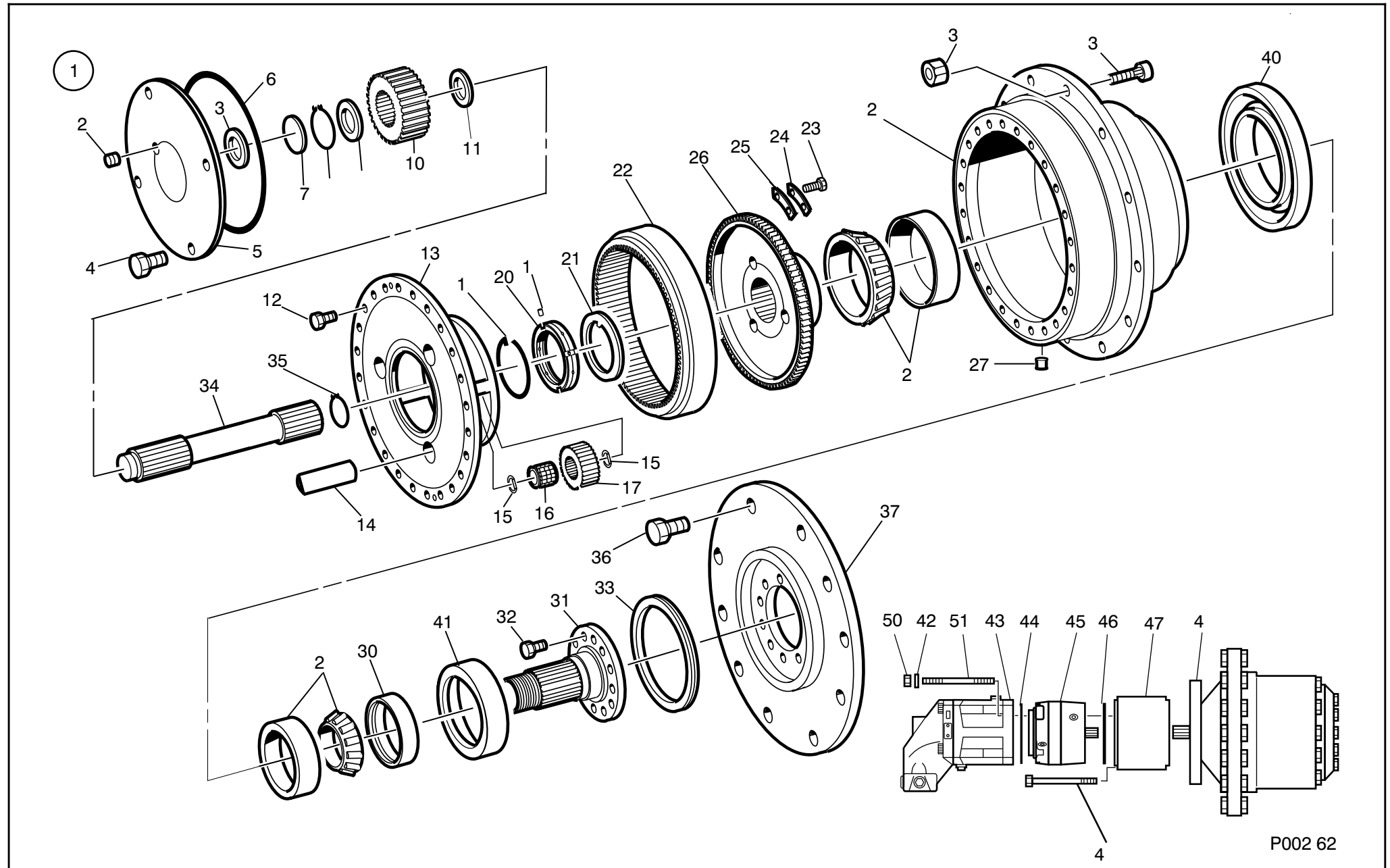


**WHEEL DRIVE (SERIES 45)**

| ITEM | PART NUMBER | QTY | DESCRIPTION                | REMARKS |
|------|-------------|-----|----------------------------|---------|
| 1    | 260539      | 2   | WHEEL DRIVE (SERIES 45)    |         |
| 2    | 120396      | 2   | PLUG                       |         |
| 3    | 100421      | A/R | WASHER, Fender             |         |
| 4    | 100111      | 6   | SCREW, Hex                 |         |
| 5    | 160180      | 1   | COVER, Plate               |         |
| 6    | 140191      | 1   | O RING                     |         |
| 7    | 160194      | 1   | PLUG, Thrust, Bronze       |         |
| 8    | 201650      | 1   | CIRCLIP                    |         |
| 9    | 160193      | 1   | RING, Steel                |         |
| 10   | 200846      | 1   | PINION, Sun, Heavy Duty    |         |
| 11   | 160192      | 1   | RING, Thrust               |         |
| 12   | 100211      | 24  | SCREW, Hex                 |         |
| 13   | 190092      | 1   | CARRIER, Planetary, 3 Cage |         |
| 14   | 160181      | 3   | PIN, Planetary             |         |
| 15   | 160182      | 6   | SHIM, Planet               |         |
| 16   | 150060      | 3   | BEARING, Roller            |         |
| 17   | 200273      | 3   | PINION, Planetary          |         |
| 18   | 170222      | 1   | CIRCLIP                    |         |
| 19   | 150018      | 1   | BEARING, Roller            |         |
| 20   | 160263      | 1   | NUT, Lock                  |         |
| 21   | 190141      | 1   | WASHER, Heat Treated       |         |
| 22   | 200271      | 1   | GEAR, Ring                 |         |
| 23   | 100149      | 8   | SCREW, Hex                 |         |
| 24   | 160360      | 4   | PLATE, Lock                |         |
| 25   | 171108      | 4   | PLATE, Retainer            |         |
| 26   | 160575      | 1   | CARRIER, Ring Gear         |         |
| 27   | 120128      | 1   | PLUG                       |         |
| 28   | 161787      | 1   | HUB                        |         |
| 29   | 150069      | 2   | BEARING, Taper Roller      |         |
| 30   | 140192      | 1   | SEAL, Oil                  |         |
| 31   | 160571      | 1   | AXLE, Stub                 |         |
| 32   | 100484      | 14  | SCREW, Hex                 |         |
| 33   | 140344      | 1   | V RING                     |         |
| 34   | 202019      | 1   | SHAFT, Side                |         |
| 35   | 201497      | 1   | CIRCLIP                    |         |



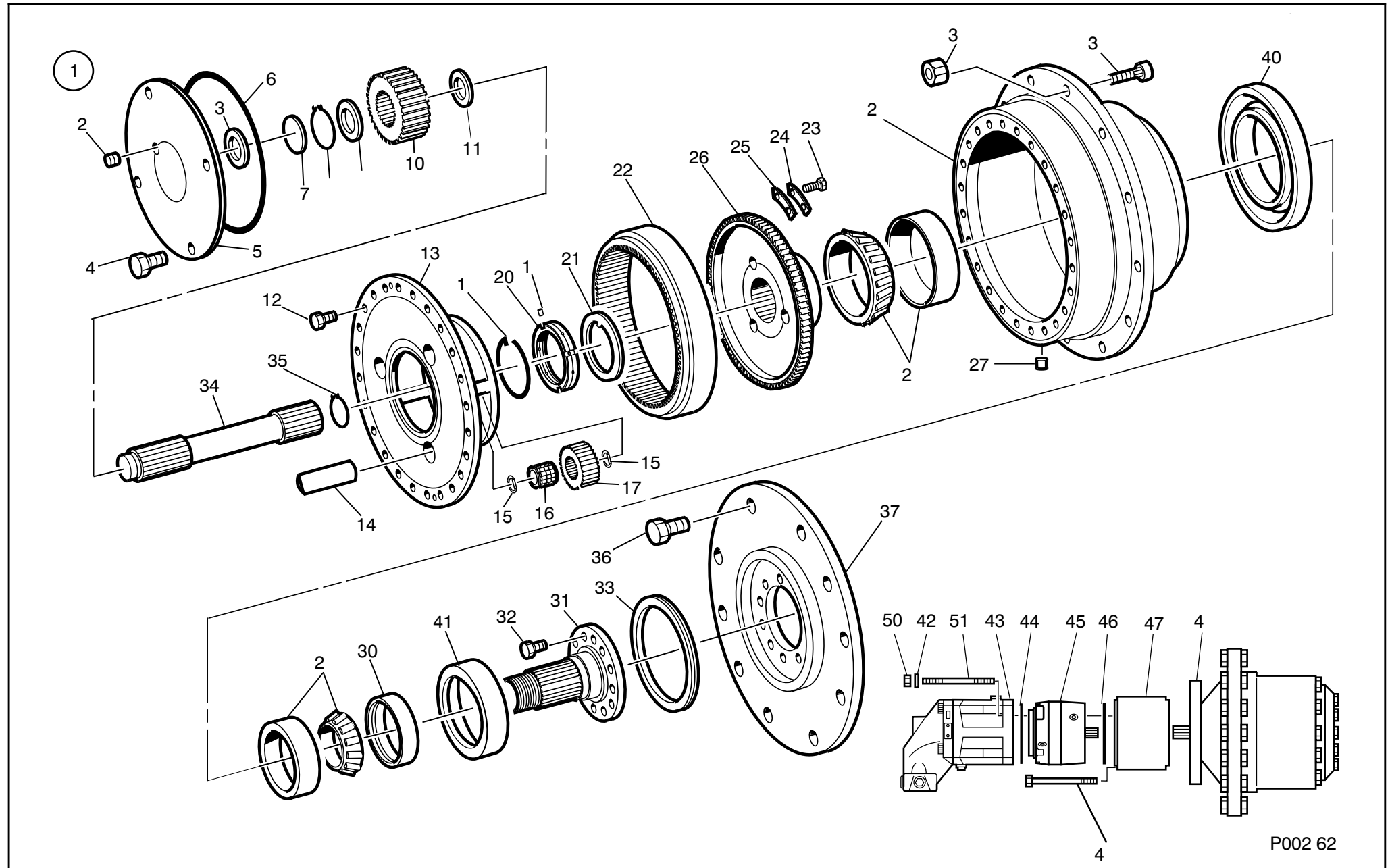
3-48



P002 62

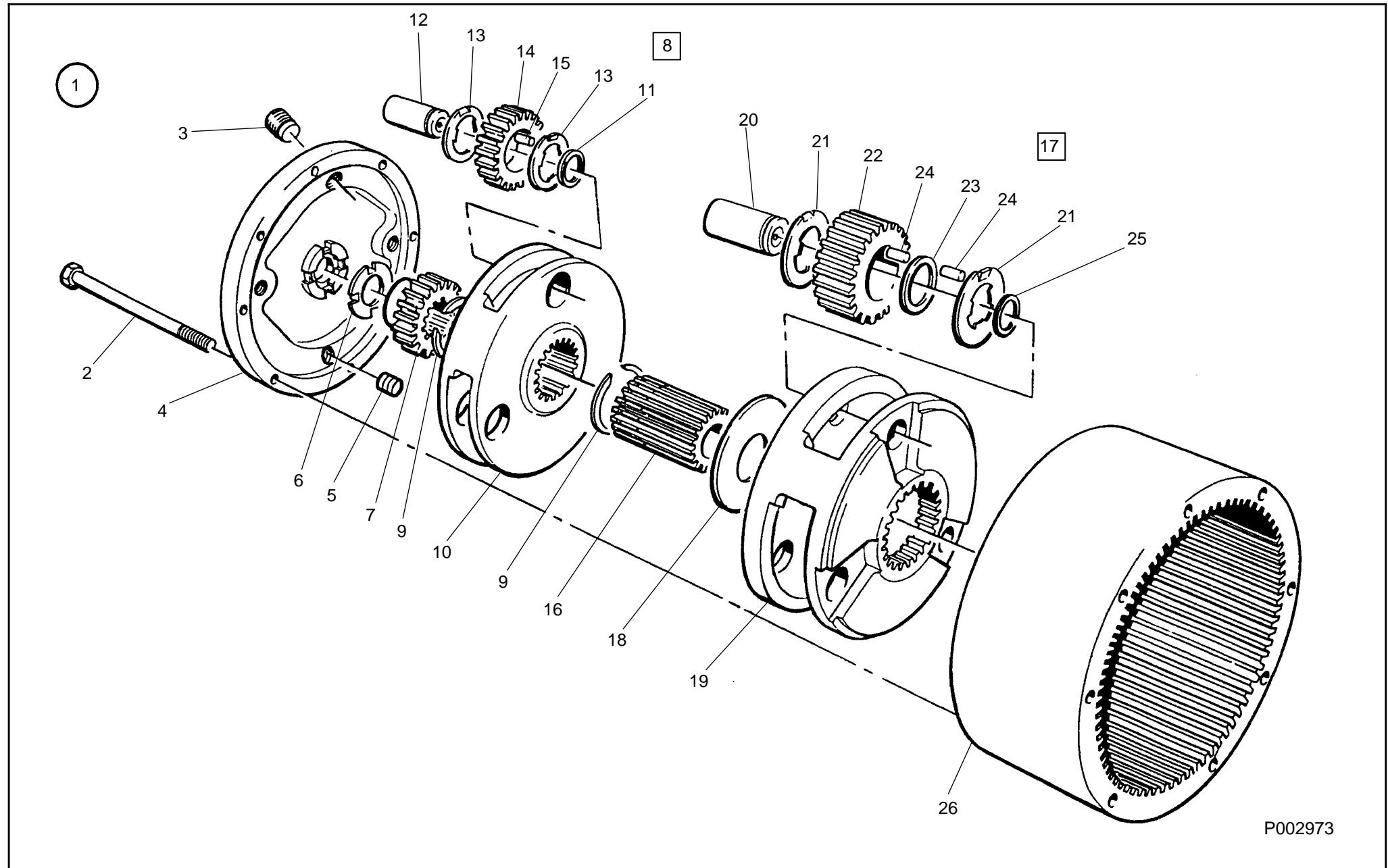
**WHEEL DRIVE (SERIES 38)**

| ITEM | PART NUMBER | QTY | DESCRIPTION             | REMARKS |
|------|-------------|-----|-------------------------|---------|
| 1    | 260526      | 2   | WHEEL DRIVE (SERIES 38) |         |
| 2    | 120396      | 2   | PLUG, Steam             |         |
| 3    | 100421      | A/R | WASHER, Fender          |         |
| 4    | 100111      | 6   | SCREW, Hex              |         |
| 5    | 160180      | 1   | COVER, Plate            |         |
| 6    | 140191      | 1   | O RING                  |         |
| 7    | 160194      | 1   | PLUG, Thrust, Brass     |         |
| 8    | 201650      | 1   | CIRCLIP                 |         |
| 9    | 160193      | 1   | WASHER, Steel           |         |
| 10   | 200846      | 1   | GEAR, Sun               |         |
| 11   | 160192      | 1   | WASHER, Thrust, Bronze  |         |
| 12   | 100211      | 24  | SCREW, Hex              |         |
| 13   | 190092      | 1   | CARRIER, Planetary      |         |
| 14   | 160181      | 3   | PIN, Planetary          |         |
| 15   | 160182      | 6   | SHIM, Planet            |         |
| 16   | 150060      | 3   | BEARING, Roller         |         |
| 17   | 200273      | 3   | GEAR, Planetary         |         |
| 18   | 170222      | 1   | CIRCLIP                 |         |
| 19   | 150018      | 1   | PIN, Lock               |         |
| 20   | 160263      | 1   | NUT, Lock               |         |
| 21   | 190141      | 1   | WASHER                  |         |
| 22   | 200271      | 1   | GEAR, Ring              |         |
| 23   | 100149      | 8   | BOLT                    |         |
| 24   | 160360      | 4   | PLATE, Lock             |         |
| 25   | 171108      | 4   | PLATE, Retainer         |         |
| 26   | 160575      | 1   | CARRIER, Ring Gear      |         |
| 27   | 120128      | 1   | PLUG                    |         |
| 28   | 161787      | 1   | HUB                     |         |
| 29   | 150069      | 2   | BEARING                 |         |
| 30   | 140192      | 1   | SEAL, Oil               |         |
| 31   | 160571      | 1   | SHAFT, Stub             |         |
| 32   | 100484      | 14  | BOLT                    |         |
| 33   | 140344      | 1   | V RING                  |         |
| 34   | 202019      | 1   | SHAFT, Side             |         |
| 35   | 201497      | 1   | CIRCLIP                 |         |



3-52

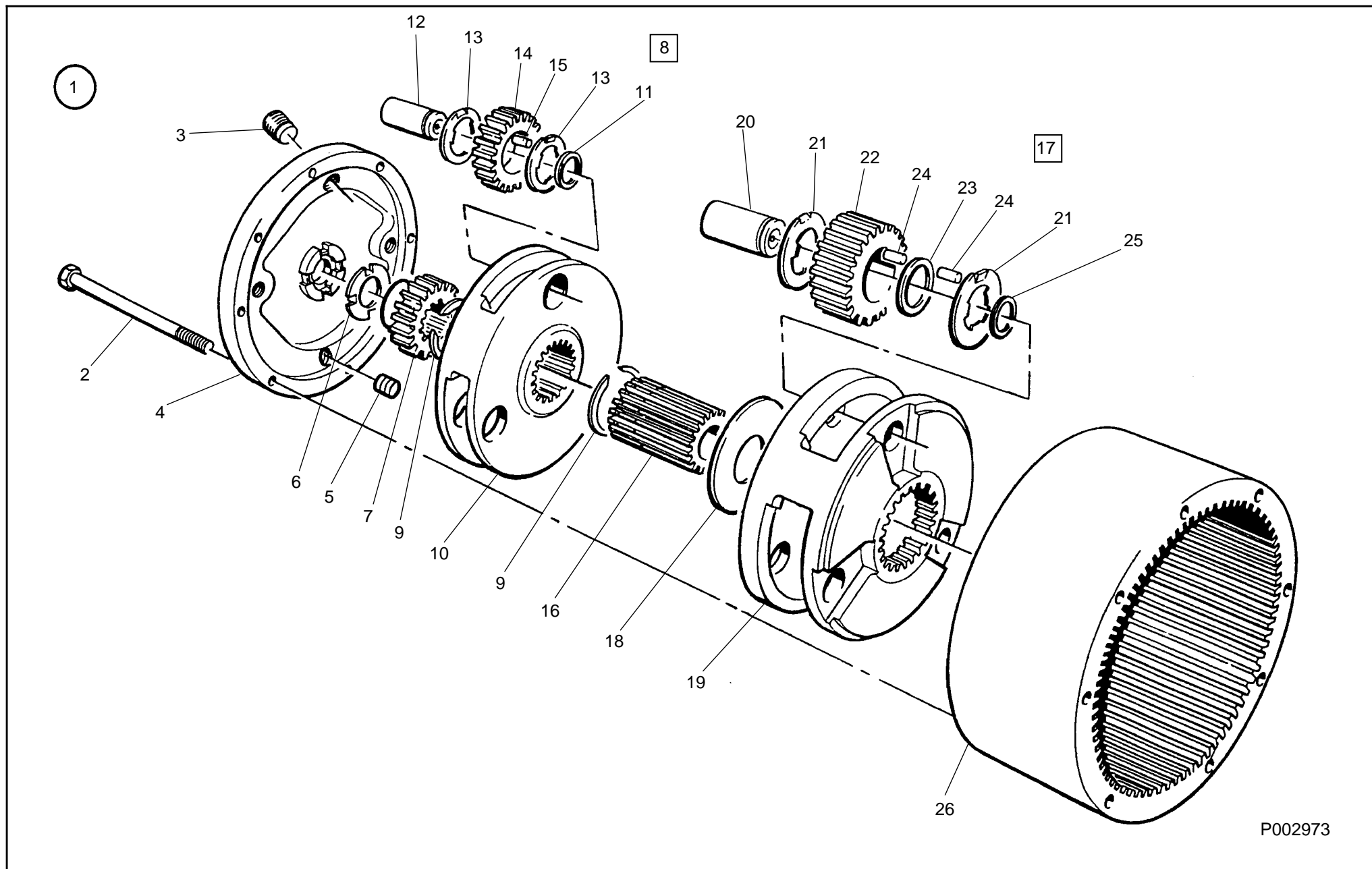
## PRIMARY REDUCTION ASSEMBLY (MODEL 8, 23:1, C INPUT)



P002973

**3-54**

## PRIMARY REDUCTION ASSEMBLY (MODEL 8, 28:1, C INPUT)



P002973

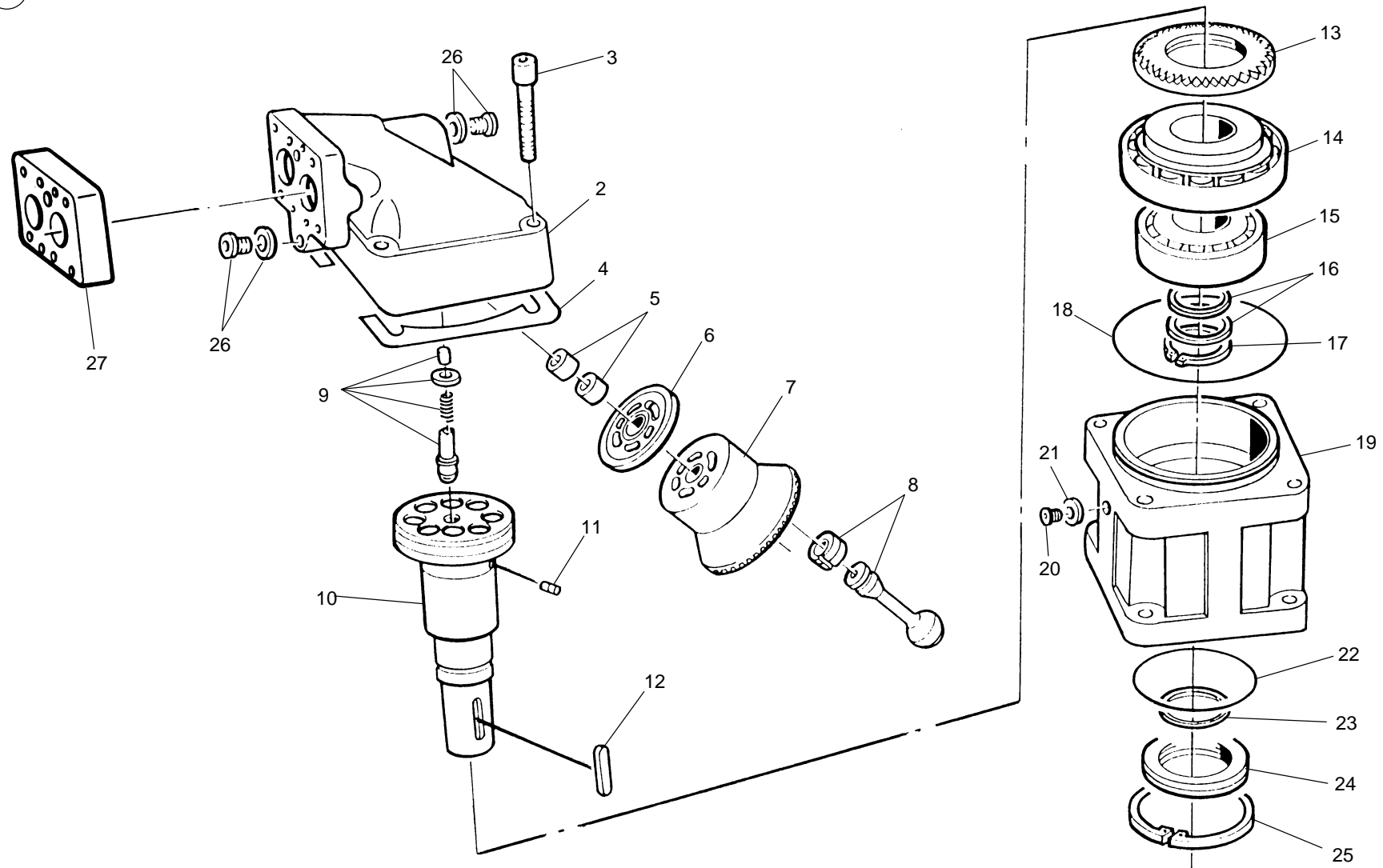
**PRIMARY REDUCTION ASSEMBLY (MODEL 8, 28:1, C INPUT)**

| ITEM | PART NUMBER | QTY | DESCRIPTION                       | REMARKS |
|------|-------------|-----|-----------------------------------|---------|
| 1    | 215013      | 1   | PRIMARY REDUCTION ASSEMBLY        |         |
| 2    | 220792      | 12  | SCREW, Cap                        |         |
| 3    | 201902      | 1   | PLUG, Magnetic                    |         |
| 4    | 205120      | 1   | COVER                             |         |
| 5    | 201922      | 1   | PLUG                              |         |
| 6    | 205121      | 1   | WASHER, Thrust                    |         |
| 7    | 205149      | 1   | GEAR, Sun, Primary, Model 8, 28:1 |         |
| 8    | 220790      | 1   | CARRIER ASSY, Model 8, 28:1       |         |
| 9    | 222903      | 2   | RING, Retaining                   |         |
| 10   | 222919      | 1   | CARRIER, Planetary, Primary       |         |
| 11   | 220794      | 3   | CIRCLIP                           |         |
| 12   | 222901      | 3   | PIN                               |         |
| 13   | 202234      | 6   | WASHER, Thrust                    |         |
| 14   | 222911      | 3   | GEAR, Planetary, Primary          |         |
| 15   | 222925      | 96  | BEARING, Roller, Needle           |         |
| 16   | 222916      | 1   | GEAR, Sun, Secondary              |         |
| 17   | 220791      | 1   | SECONDARY CARRIER, Model 8, 28:1  |         |
| 18   | 222900      | 1   | WASHER, Thrust                    |         |
| 19   | 222920      | 1   | CARRIER, Planetary, Secondary     |         |
| 20   | 222902      | 3   | PIN                               |         |
| 21   | 202234      | 3   | WASHER, Thrust                    |         |
| 22   | 222908      | 3   | GEAR, Planetary, Secondary        |         |
| 23   | 222904      | 3   | RING, Separating                  |         |
| 24   | 222926      | 48  | BEARING, Roller, Needle           |         |
| 25   | 220794      | 3   | CIRCLIP                           |         |
| 26   | 220797      | 1   | GEAR, Ring                        |         |
|      |             |     |                                   |         |
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# HYDRAULIC PUMP (F12 WITH EXTERNAL FLUSHING VALVE)

**BELL**

1

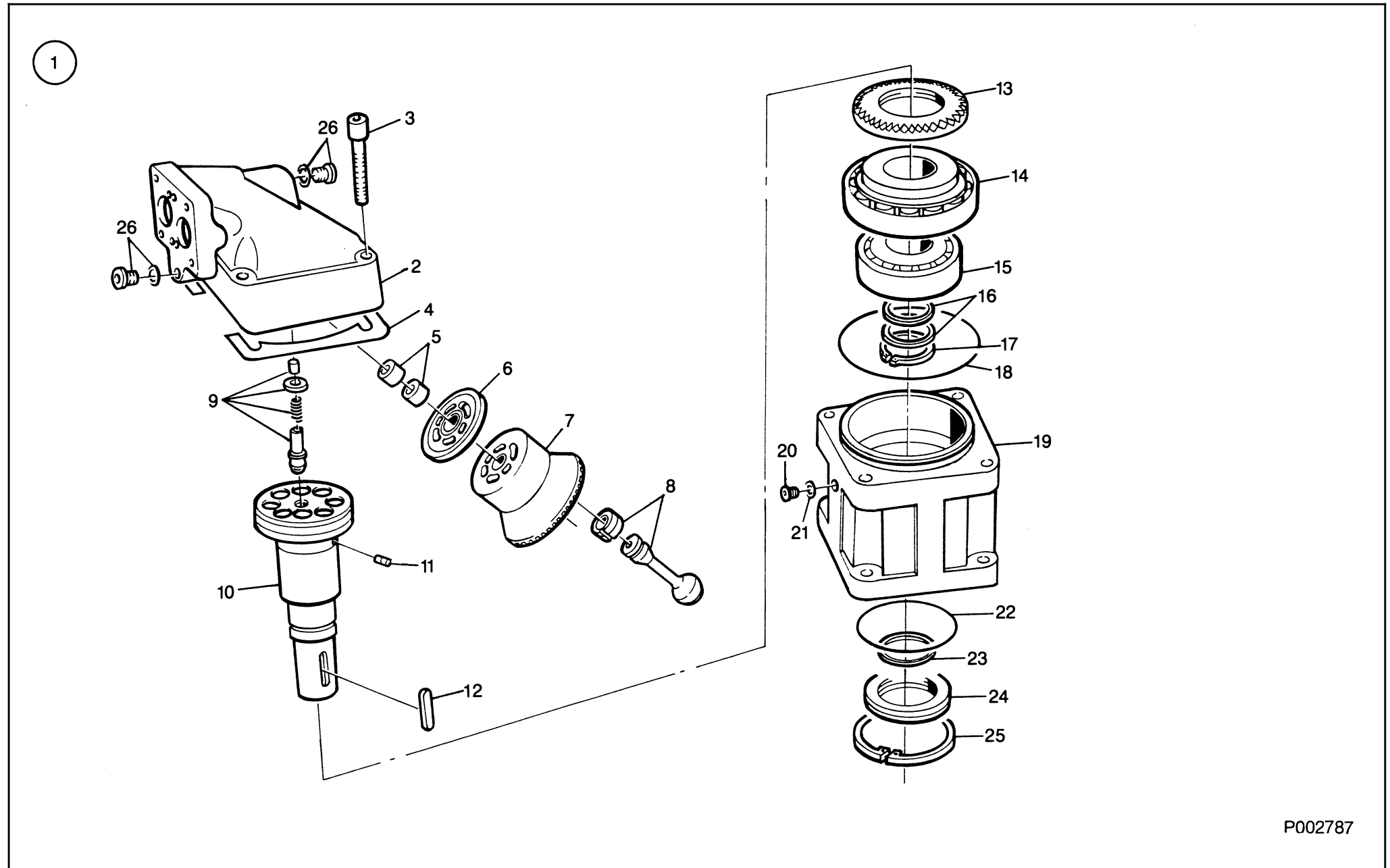


**HYDRAULIC PUMP (F12 WITH EXTERNAL FLUSHING VALVE)**

| ITEM | PART NUMBER | QTY | DESCRIPTION           | REMARKS |
|------|-------------|-----|-----------------------|---------|
| 1    | 210296      | 1   | HYDRAULIC PUMP        |         |
| 2    | NSI         | 1   | BARREL HOUSING ASSY   |         |
| 3    | NSI         | 4   | SCREW, Socket, Hex    |         |
| 4    | NSI         | 2   | SHIM                  |         |
| 5    | 225075      | 2   | BEARING, Needle       |         |
| 6    | 225071      | 1   | PLATE, Valve          |         |
| 7    | NSI         | 1   | BARREL, Cylinder      |         |
| 8    | 225077      | 1   | PISTON ASSY           |         |
| 9    | 225076      | 1   | SUPPORT, Barrel       |         |
| 10   | NSI         | 1   | SHAFT                 |         |
| 11   | NSI         | 1   | PIN, Guide            |         |
| 12   | NSI         | 1   | KEY, Flat             |         |
| 13   | NSI         | 1   | GEAR, Ring            |         |
| 14   | 225079      | 1   | BEARING, Tapered      |         |
| 15   | 225080      | 1   | BEARING, Roller       |         |
| 16   | NSI         | 2   | WASHER, Spacer        |         |
| 17   | NSI         | 1   | RING, Retaining       |         |
| 18   | 225072      | 1   | O RING                |         |
| 19   | NSI         | 1   | HOUSING, Bearing      |         |
| 20   | NSI         | 1   | PLUG, Bleeder         |         |
| 21   | NSI         | 1   | WASHER, Seal          |         |
| 22   | 220245      | 1   | O RING                |         |
| 23   | 225074      | 1   | SEAL, Shaft           |         |
| 24   | NSI         | 1   | CARRIER, Seal         |         |
| 25   | NSI         | 1   | RING, Retaining       |         |
| 26   | NSI         | 2   | PLUG ASSY, Hex Socket |         |
| 27   | 225042      | 1   | VALVE, Flushing       |         |
|      |             |     |                       |         |
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# HYDRAULIC PUMP (F12 WITH INTEGRAL FLUSHING VALVE)

**BELL**



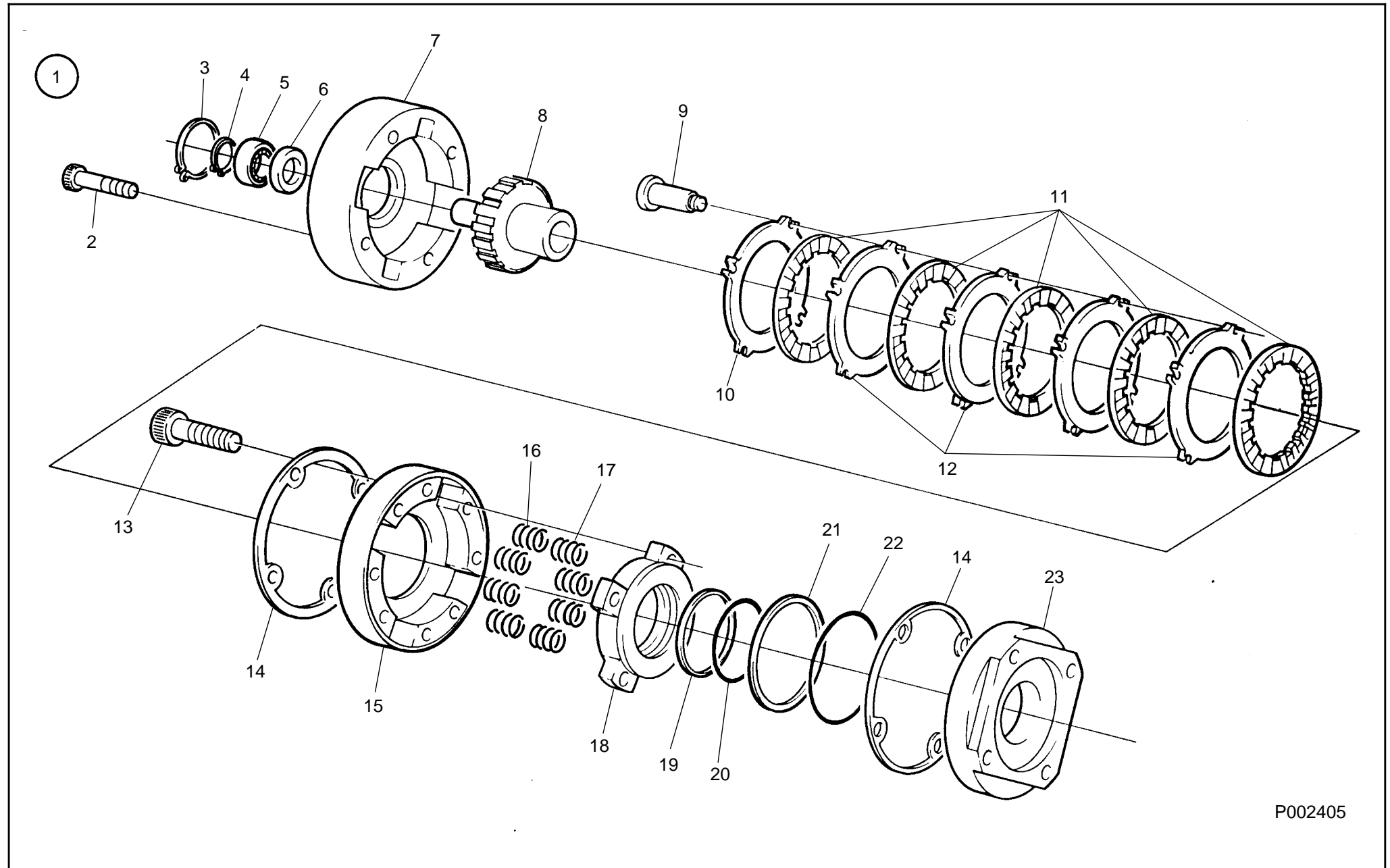
P002787

**HYDRAULIC PUMP (F12 WITH INTERGRAL FLUSHING VALVE)**

| ITEM | PART NUMBER | QTY | DESCRIPTION           | REMARKS |
|------|-------------|-----|-----------------------|---------|
| 1    | 210304      | 1   | HYDRAULIC PUMP        |         |
| 2    | NSI         | 1   | BARREL HOUSING ASSY   |         |
| 3    | NSI         | 4   | SCREW, Socket, Hex    |         |
| 4    | NSI         | 2   | SHIM                  |         |
| 5    | 225075      | 2   | BEARING, Needle       |         |
| 6    | 225071      | 1   | PLATE, Valve          |         |
| 7    | NSI         | 1   | BARREL, Cylinder      |         |
| 8    | 225077      | 1   | PISTON ASSY           |         |
| 9    | 225076      | 1   | SUPPORT, Barrel       |         |
| 10   | NSI         | 1   | SHAFT                 |         |
| 11   | NSI         | 1   | PIN, Guide            |         |
| 12   | NSI         | 1   | KEY, Flat             |         |
| 13   | NSI         | 1   | GEAR, Ring            |         |
| 14   | 225079      | 1   | BEARING, Tapered      |         |
| 15   | 225080      | 1   | BEARING, Roller       |         |
| 16   | NSI         | 2   | WASHER, Spacer        |         |
| 17   | NSI         | 1   | RING, Retaining       |         |
| 18   | 225072      | 1   | O RING                |         |
| 19   | NSI         | 1   | HOUSING, Bearing      |         |
| 20   | NSI         | 1   | PLUG, Bleeder         |         |
| 21   | NSI         | 1   | WASHER, Seal          |         |
| 22   | 220245      | 1   | O RING                |         |
| 23   | 225074      | 1   | SEAL, Shaft           |         |
| 24   | NSI         | 1   | CARRIER, Seal         |         |
| 25   | NSI         | 1   | RING, Retaining       |         |
| 26   | NSI         | 2   | PLUG ASSY, Hex Socket |         |
|      |             |     |                       |         |
|      |             |     |                       |         |
|      |             |     |                       |         |
|      |             |     |                       |         |
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# MULTI DISC BRAKE ASSEMBLY (4 BOLT C MOUNT)

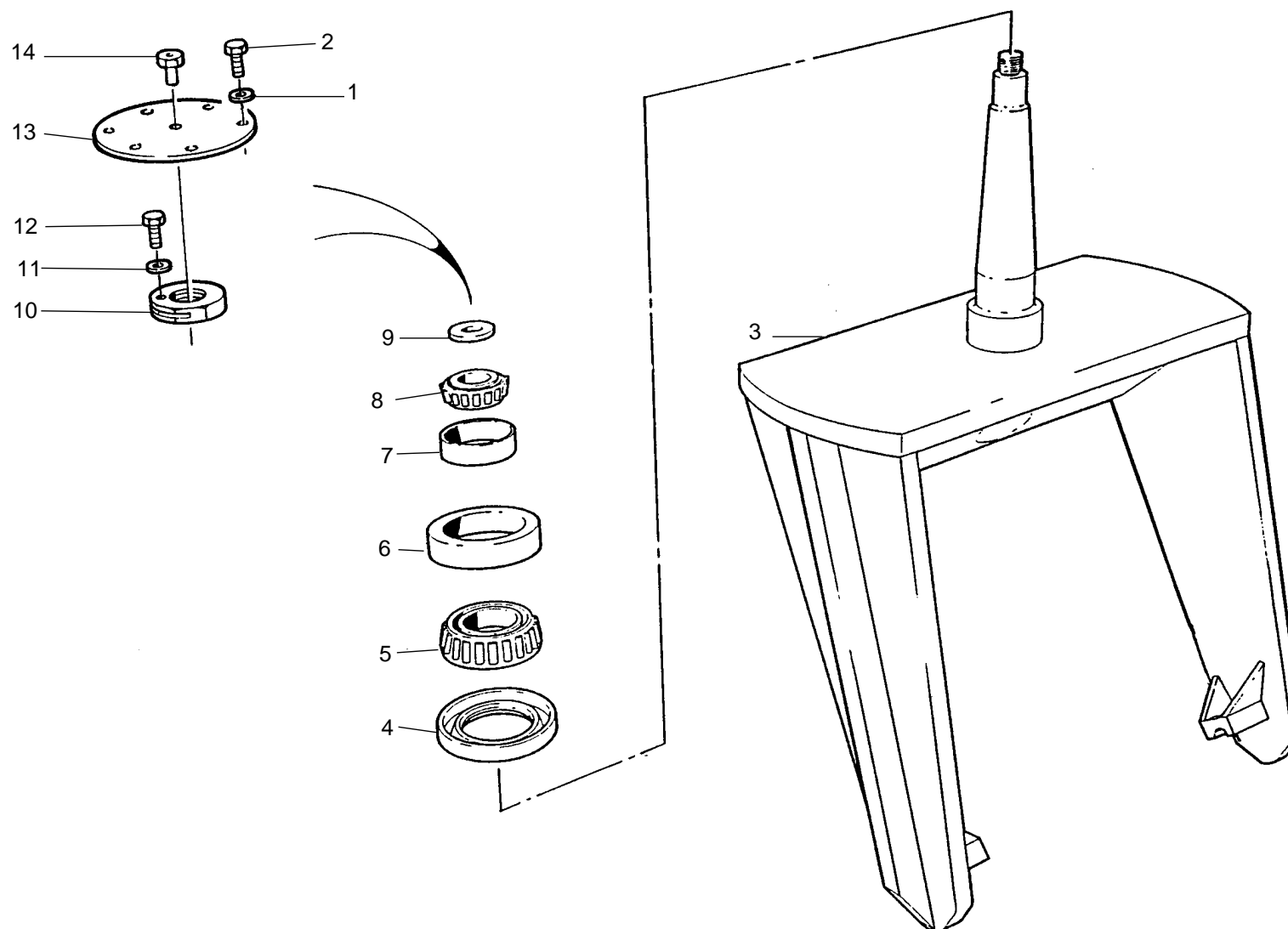
**BELL**



P002405

## MULTI DISC BRAKE ASSEMBLY (4 BOLT C MOUNT)

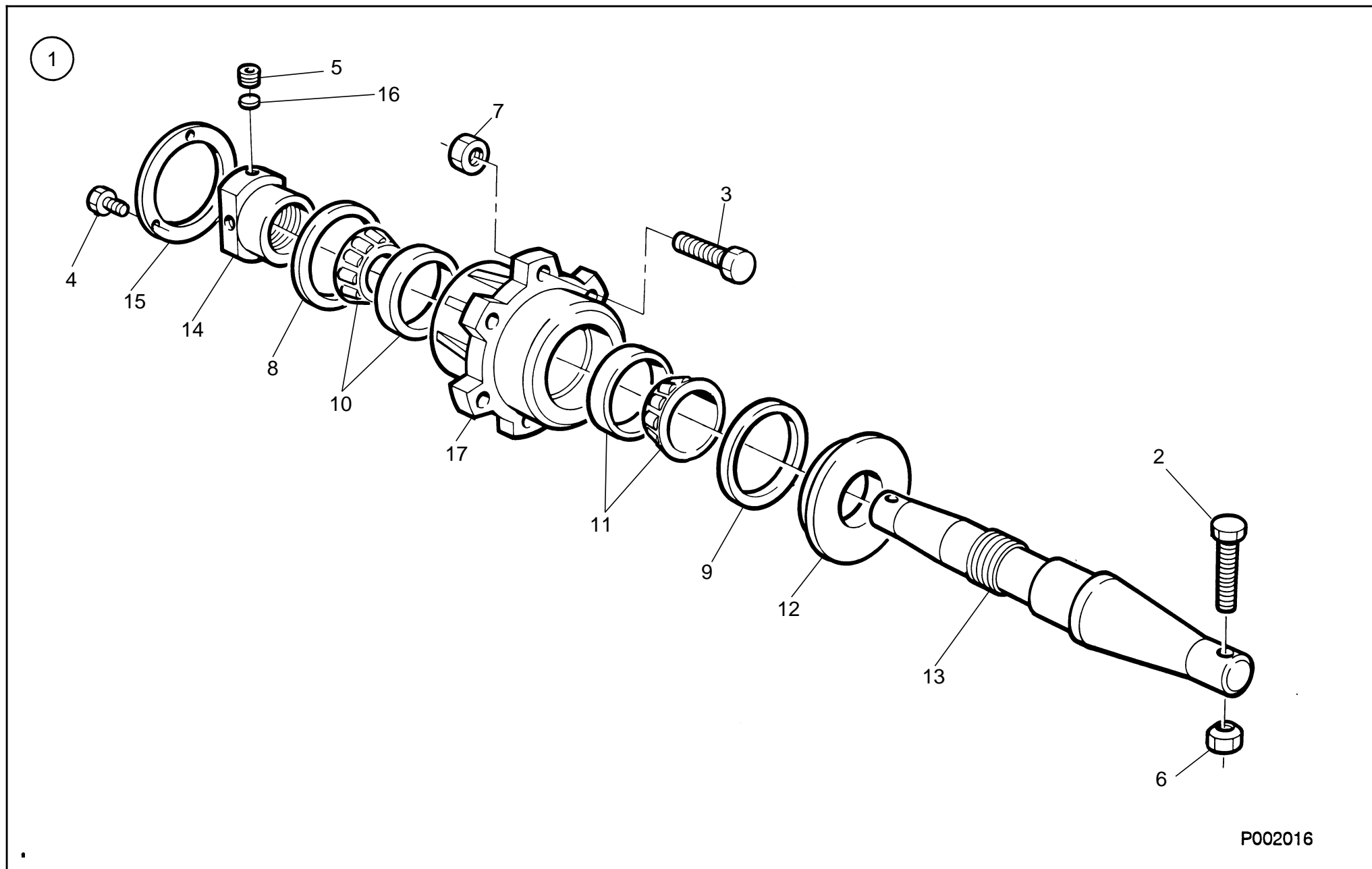
| ITEM | PART NUMBER | QTY | DESCRIPTION                                | REMARKS                    |
|------|-------------|-----|--|----------------------------|
| 1    | 205119      | 1   | MULTI DISC BRAKE ASSEMBLY (4 BOLT C MOUNT) |                            |
| 2    | NSI         | 2   | BOLT, Socket Head                          |                            |
| 3    | NSI         | 1   | CIRCLIP                                    |                            |
| 4    | NSI         | 1   | CIRCLIP                                    |                            |
| 5    | ***         | 1   | BEARING                                    |                            |
| 6    | */***       | 1   | SEAL, Oil                                  |                            |
| 7    | NSI         | 1   | COVER                                      |                            |
| 8    | NSI         | 1   | SHAFT ASSY, Spline                         |                            |
| 9    | NSI         | 1   | BOLT, Shoulder, Socket Head                |                            |
| 10   | **          | 1   | DISC, Primary                              |                            |
| 11   | **          | 5   | DISC, Rotor                                |                            |
| 12   | **          | 4   | DISC, Stator                               |                            |
| 13   | NSI         | 4   | SCREW, Socket Head                         |                            |
| 14   | */**/***/*  | 2   | GASKET, Case                               |                            |
| 15   | NSI         | 1   | PLATE, Spring                              |                            |
| 16   | ****        | 4   | SPRING, Red                                |                            |
| 17   | ****        | 4   | SPRING, Blue                               |                            |
| 18   | NSI         | 1   | PISTON                                     |                            |
| 19   | *           | 1   | RING, Backup                               |                            |
| 20   | *           | 1   | O RING                                     |                            |
| 21   | *           | 1   | RING, Backup                               |                            |
| 22   | *           | 1   | O RING                                     |                            |
| 23   | NSI         | 1   | PLATE, Pressure                            |                            |
| 24   | 220386      | 1   | KIT, O Ring and Backup Ring                | Includes Items Marked *    |
| 25   | 220387      | 1   | KIT, Standard Torque Lining                | Includes Items Marked **   |
| 26   | 220388      | 1   | KIT, Bearing                               | Includes Items Marked ***  |
| 27   | 220389      | 1   | KIT, Spring                                | Includes Items Marked **** |
|      |             |     |  |                            |
|      |             |     |  |                            |
|      |             |     |  |                            |
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**TAIL WHEEL FORK ASSEMBLY**

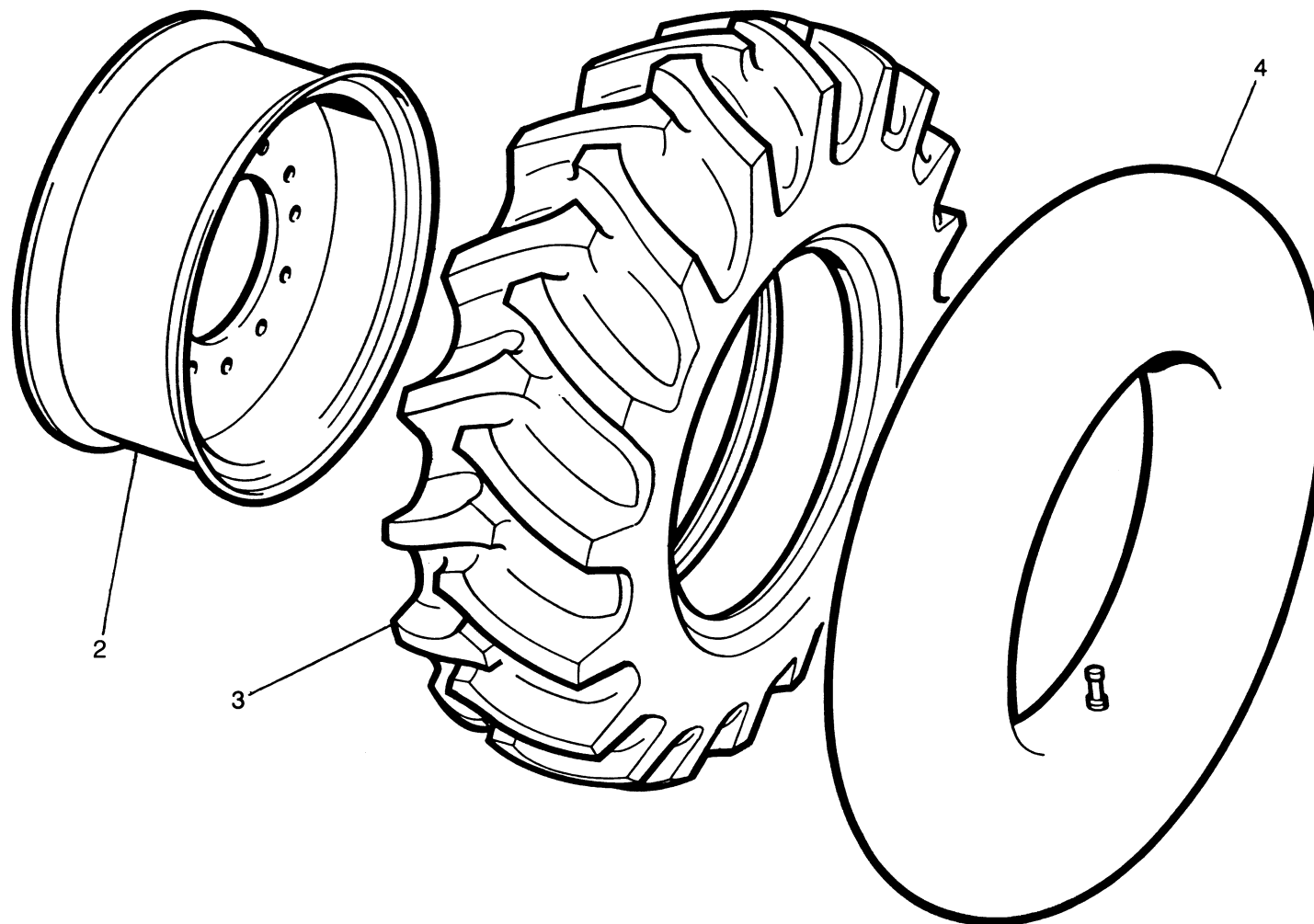
P002239

**3-64**

## TAIL WHEEL AXLE

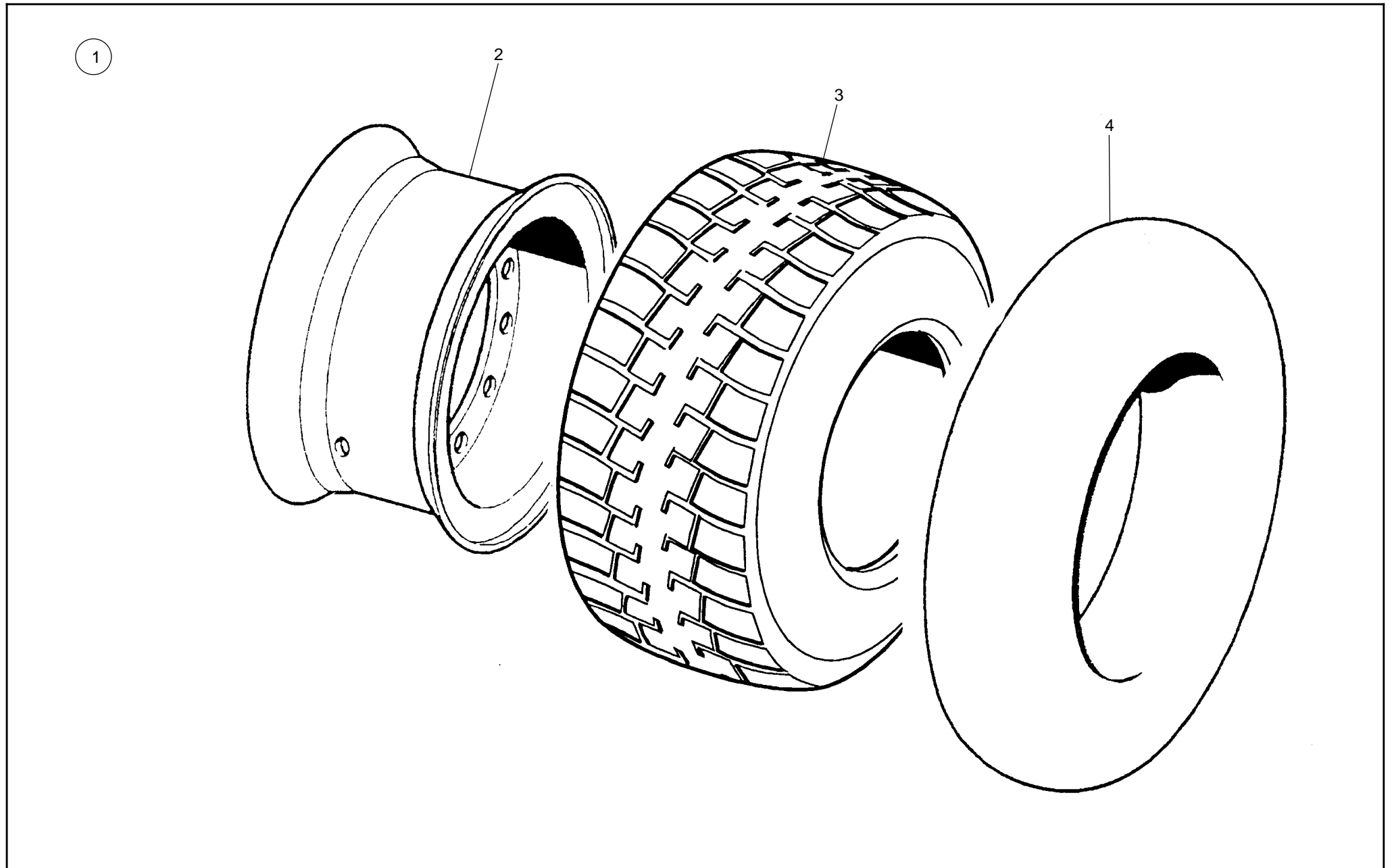


3-66

**WHEEL ASSEMBLY ( 23.1X26)****1**

P000676

**February 22, 1996**



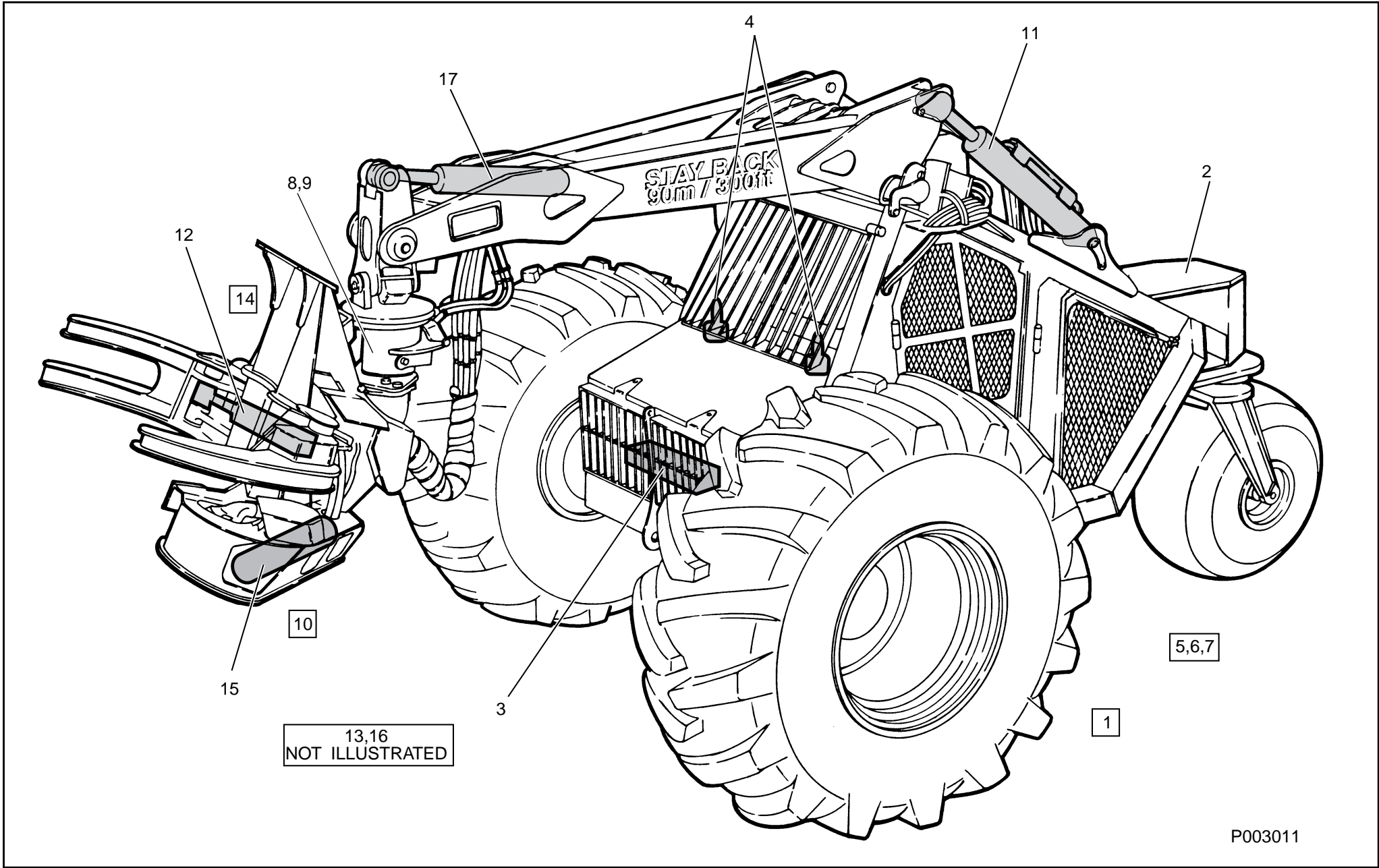
**3-70**



## **SECTION 4 VEHICLE SYSTEMS**



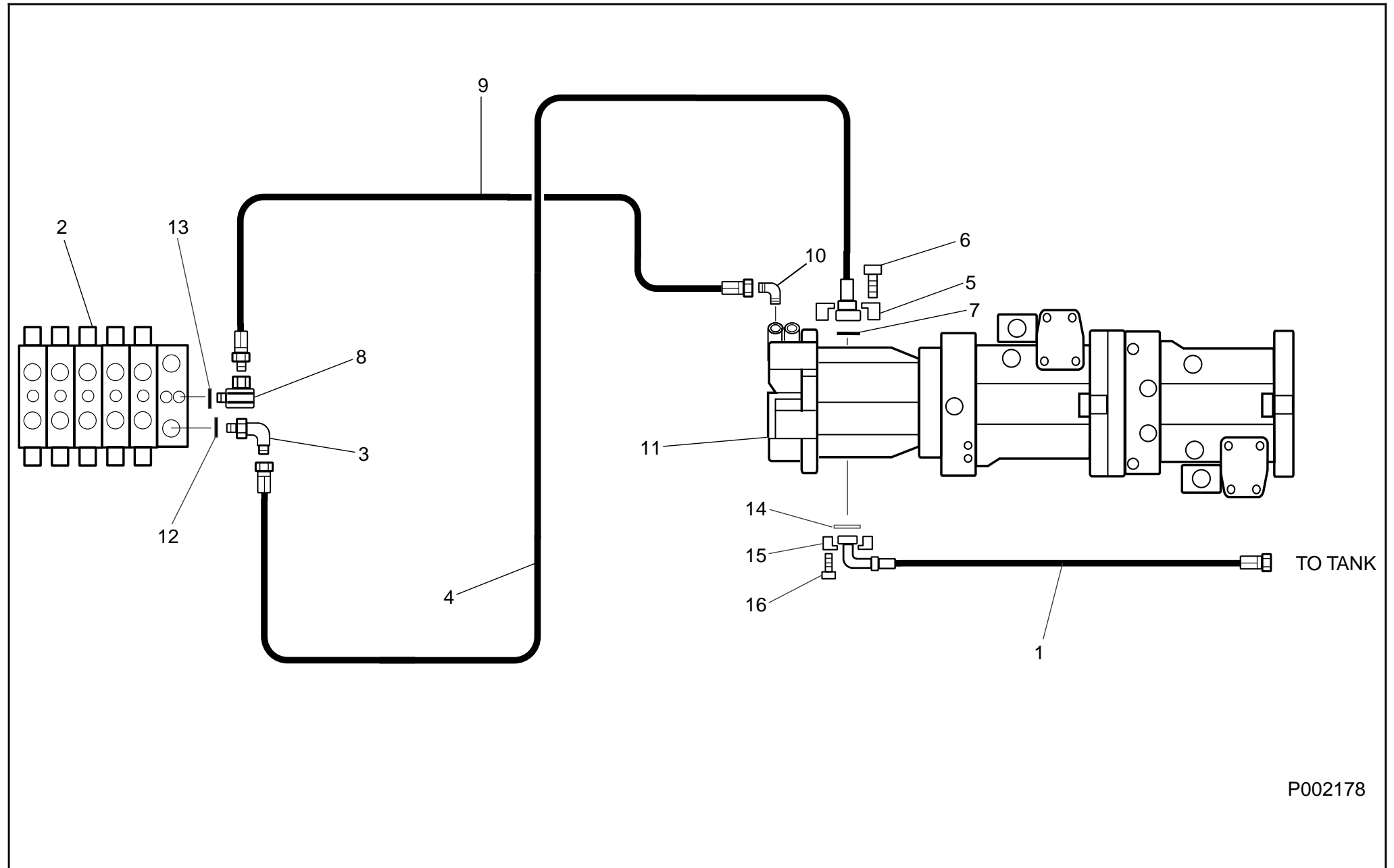
## **SECTION 4A HYDRAULIC SYSTEM**



**March 13, 1996**

# PUMP TO CONTROL VALVE SYSTEM

**BELL**

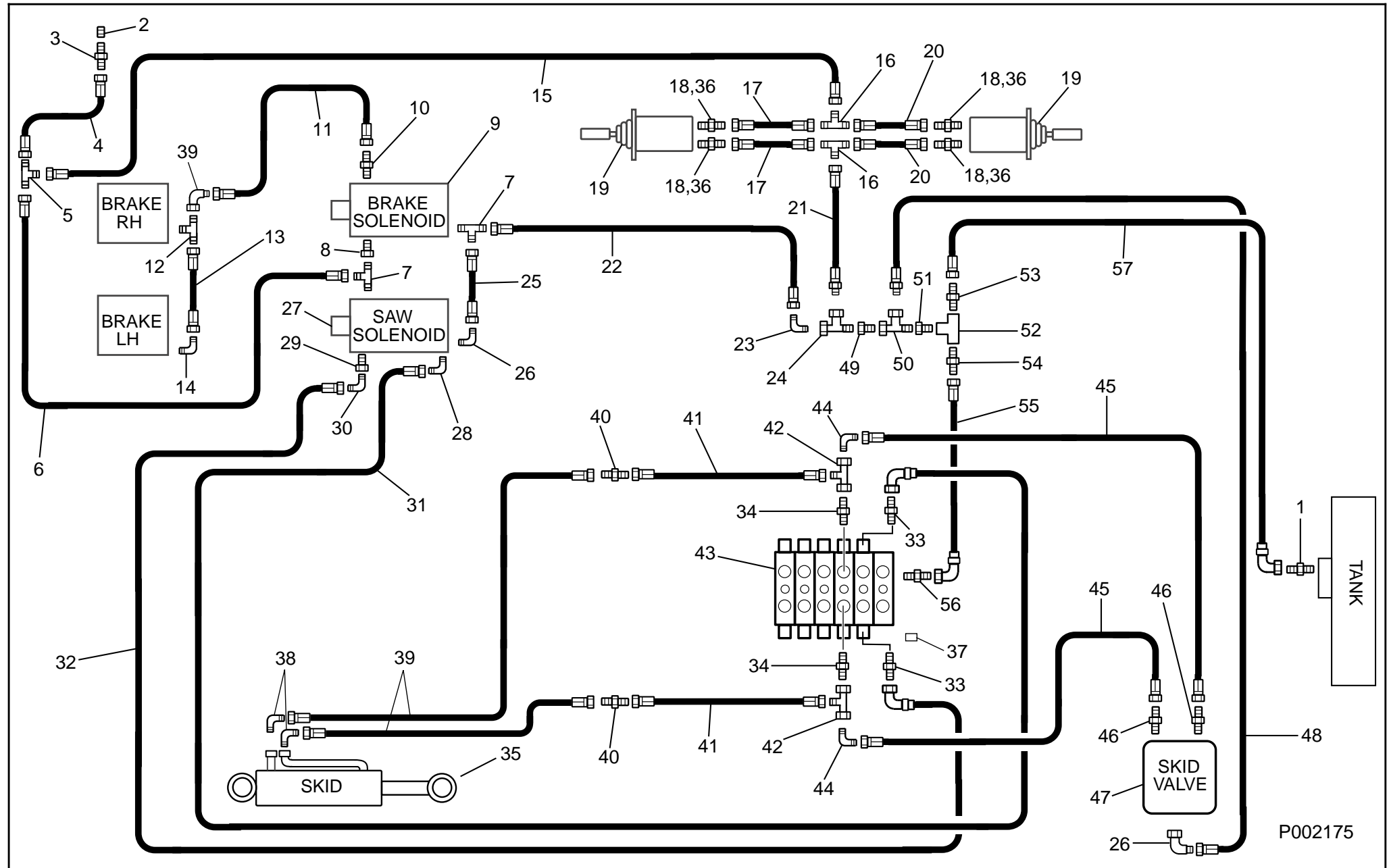


P002178

**4-8**

# SKID AND BRAKE SYSTEM

**BELL**

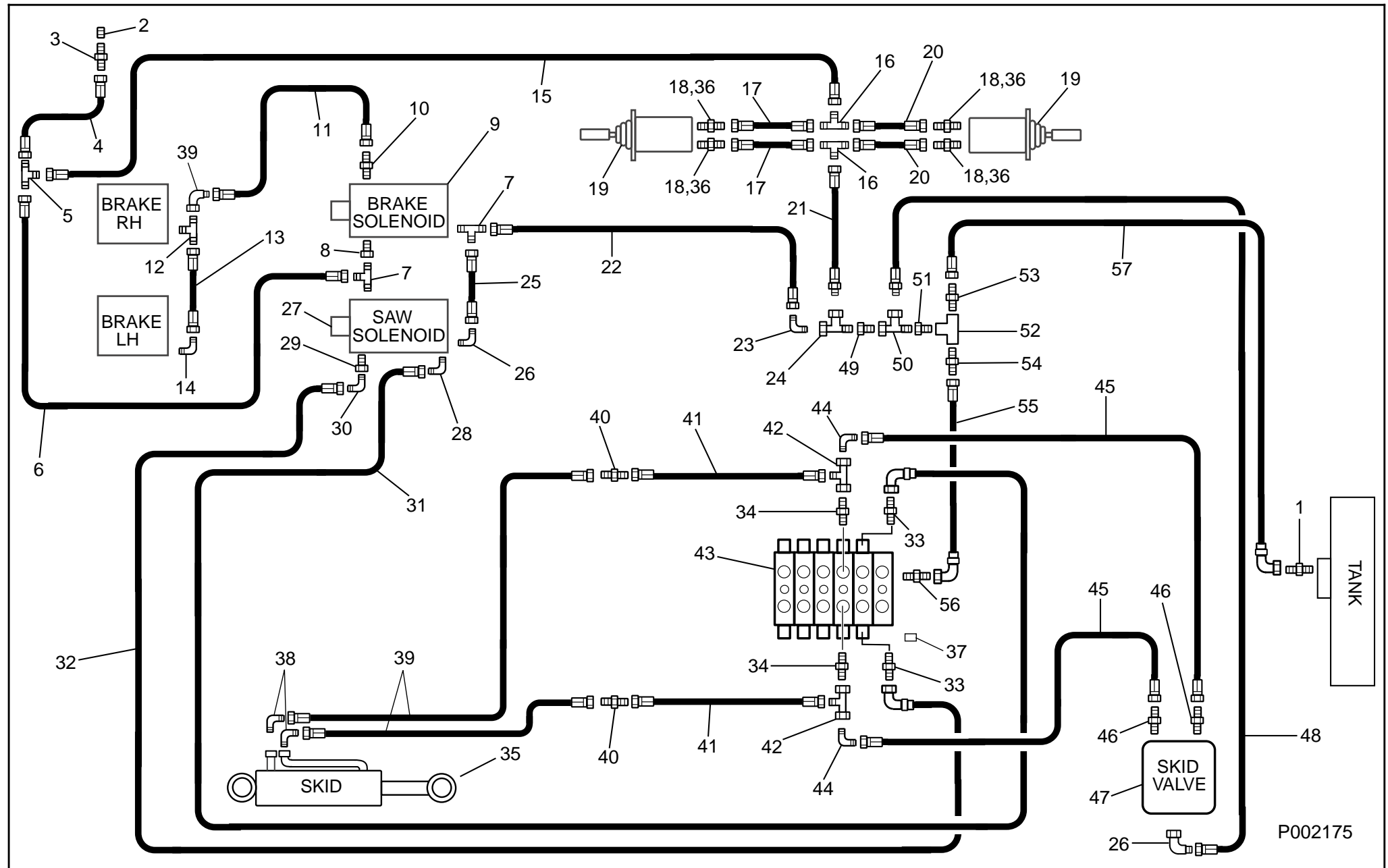


**SKID AND BRAKE SYSTEM**

| ITEM | PART NUMBER | QTY | DESCRIPTION     | REMARKS |
|------|-------------|-----|-----------------|---------|
| 1    | 120311      | 1   | ADAPTOR         |         |
| 2    | 190629      | 1   | PLUG, Orifice   |         |
| 3    | 190391      | 1   | ADAPTOR         |         |
| 4    | 240691      | 1   | HOSE ASSY       |         |
| 5    | 121031      | 1   | T PIECE         |         |
| 6    | 240694      | 1   | HOSE ASSY       |         |
| 7    | 121029      | 2   | T PIECE         |         |
| 8    | 120934      | 1   | ADAPTOR         |         |
| 9    | 210390      | 1   | SOLENOID, Brake |         |
| 10   | 120933      | 1   | ADAPTOR         |         |
| 11   | 240410      | 1   | HOSE ASSY       |         |
| 12   | 121026      | 1   | T PIECE         |         |
| 13   | 240698      | 1   | HOSE ASSY       |         |
| 14   | 120315      | 1   | ELBOW           |         |
| 15   | 240696      | 1   | HOSE ASSY       |         |
| 16   | 120366      | 2   | T PIECE         |         |
| 17   | 240491      | 2   | HOSE ASSY       |         |
| 18   | 120188      | 4   | BUSH, Reducing  |         |
| 19   | 210143      | 2   | JOYSTICK        |         |
| 20   | 240713      | 2   | HOSE ASSY       |         |
| 21   | 240699      | 1   | HOSE ASSY       |         |
| 22   | 240697      | 1   | HOSE ASSY       |         |
| 23   | 120127      | 1   | ELBOW           |         |
| 24   | 125024      | 1   | T PIECE         |         |
| 25   | 240695      | 1   | HOSE ASSY       |         |
| 26   | 120252      | 2   | ELBOW           |         |
| 27   | 210392      | 1   | SOLENOID, Saw   |         |
| 28   | 125023      | 1   | ELBOW           |         |
| 29   | 120318      | 1   | ADAPTOR         |         |
| 30   | 120212      | 1   | ADAPTOR, Swivel |         |
| 31   | 240693      | 1   | HOSE ASSY       |         |
| 32   | 240692      | 1   | HOSE ASSY       |         |
| 33   | 190470      | 2   | ADAPTOR         |         |
| 34   | 120032      | 2   | ADAPTOR         |         |
| 35   | 230065      | 1   | CYLINDER, Skid  |         |

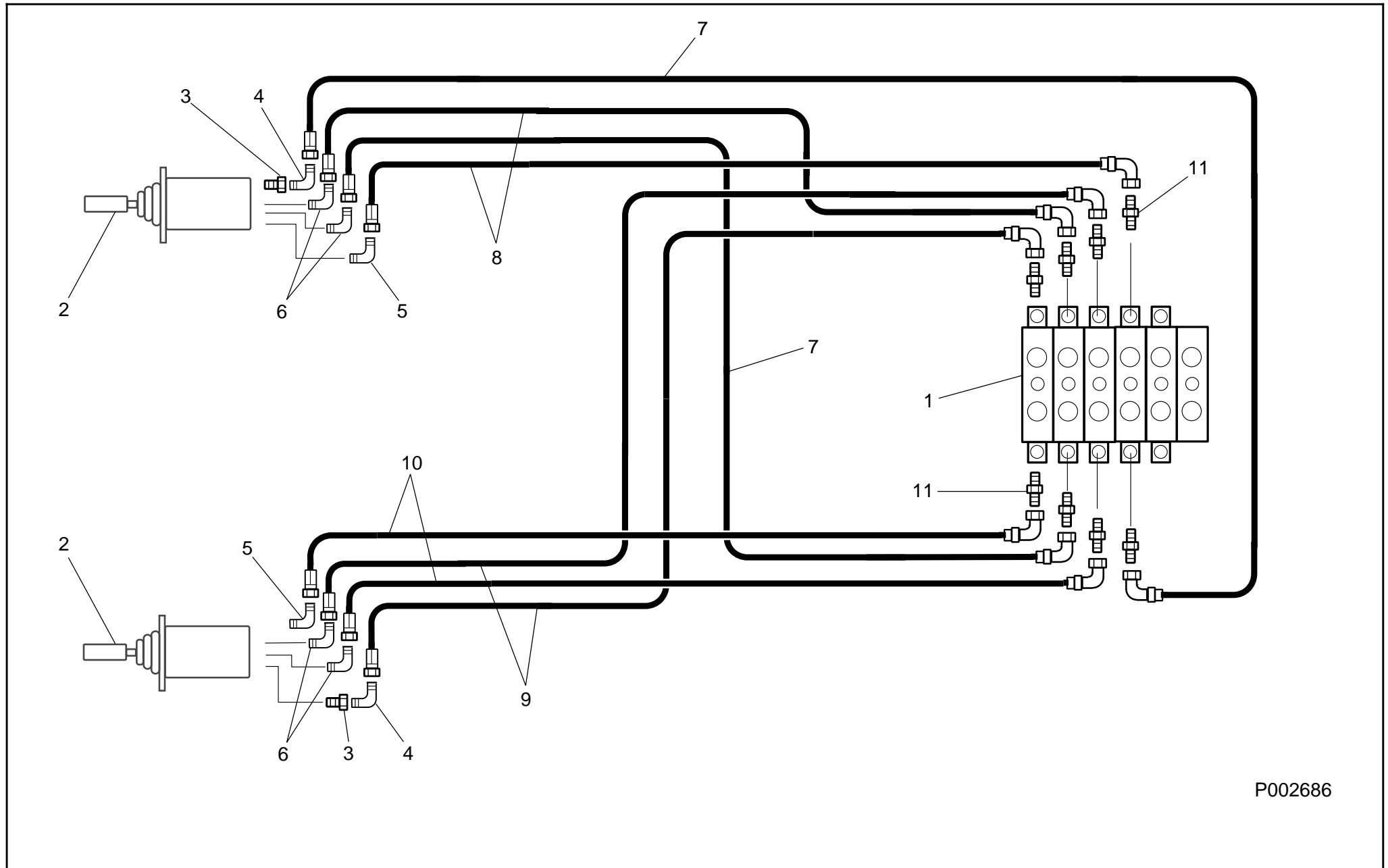
# SKID AND BRAKE SYSTEM

**BELL**



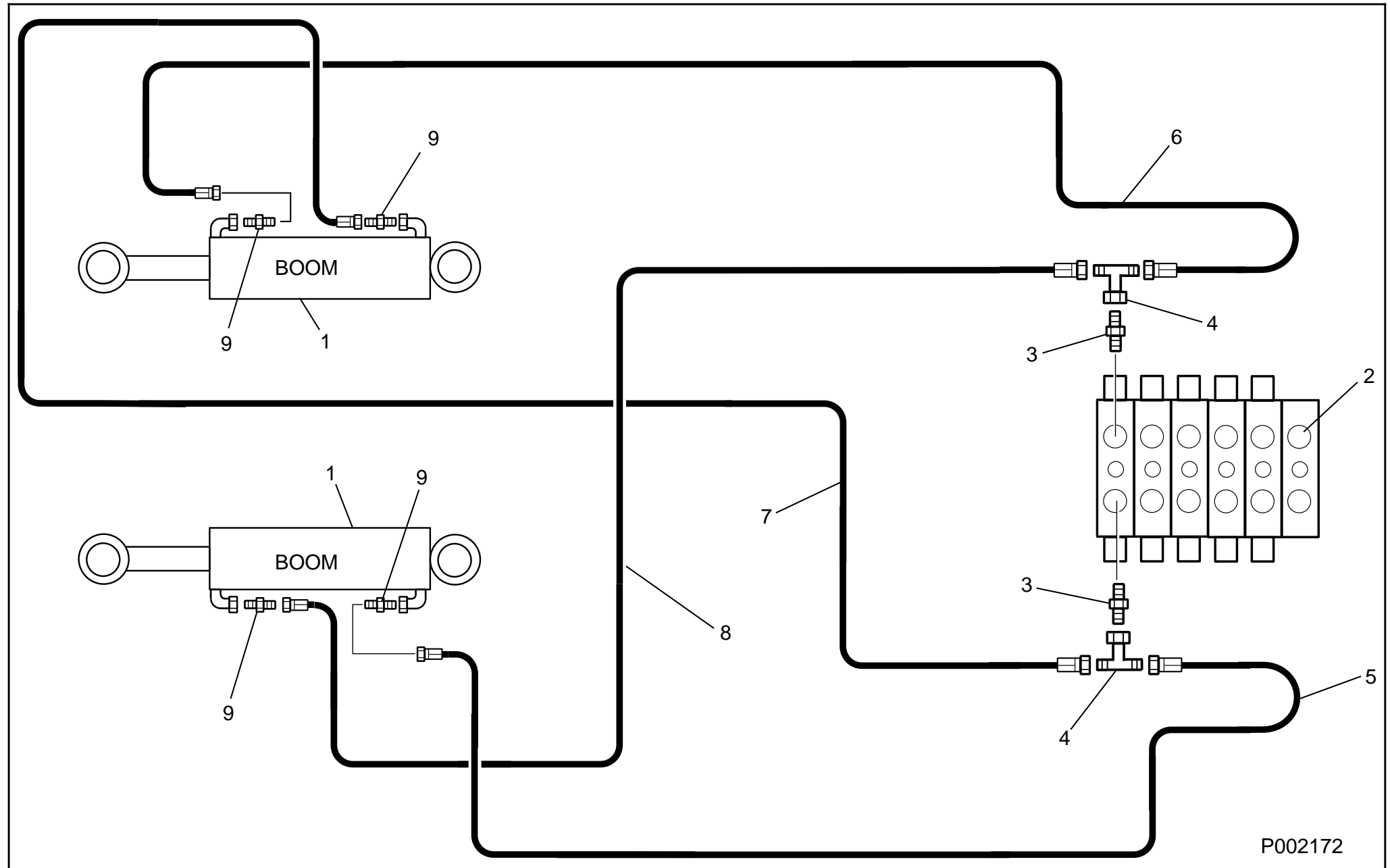
**4-12**

## JOYSTICK TO CONTROL VALVE



P002686

4-14



P002172

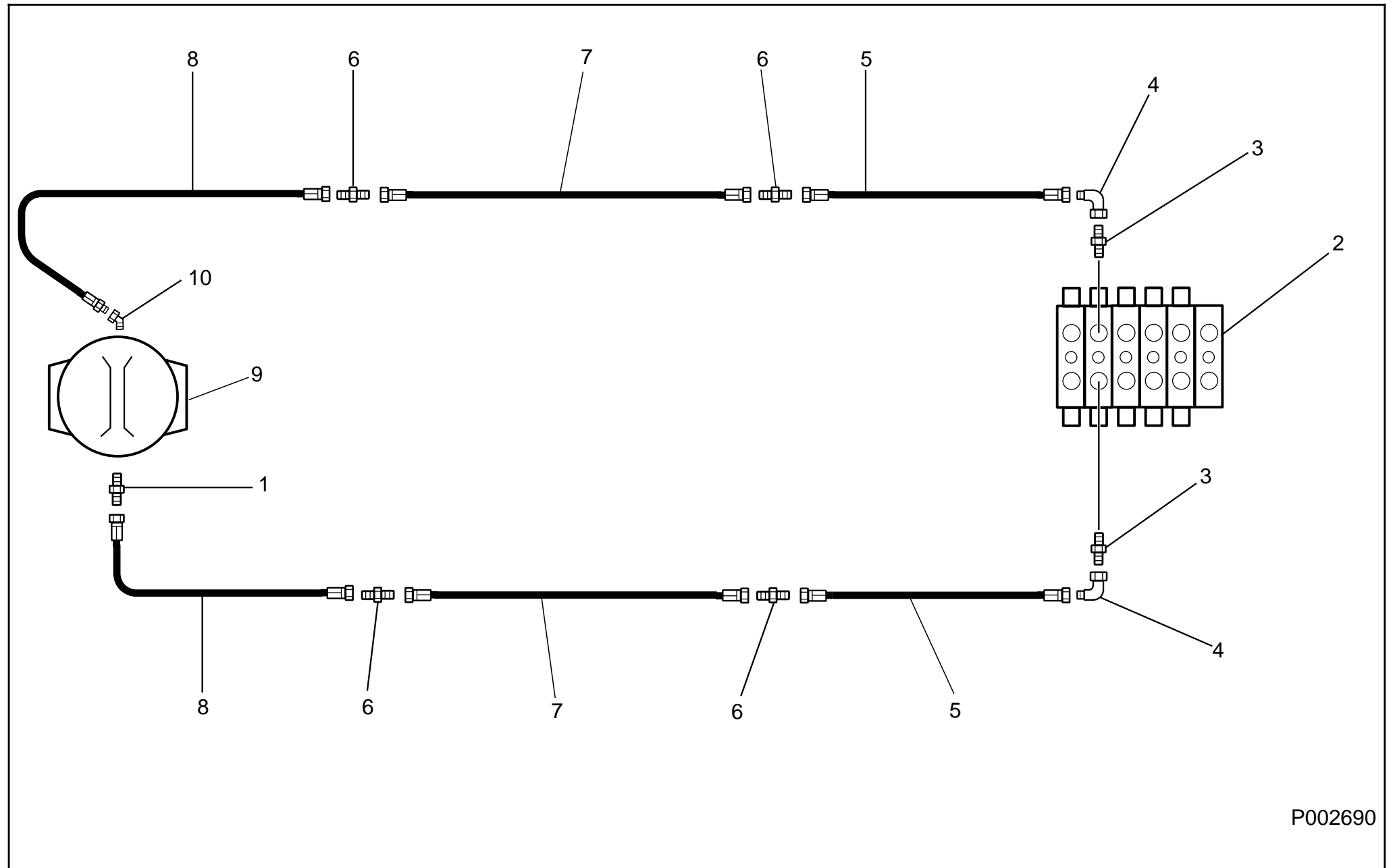
## BOOM LIFT SYSTEM

# BELL

[illegible]

# ROTATOR SYSTEM

**BELL**



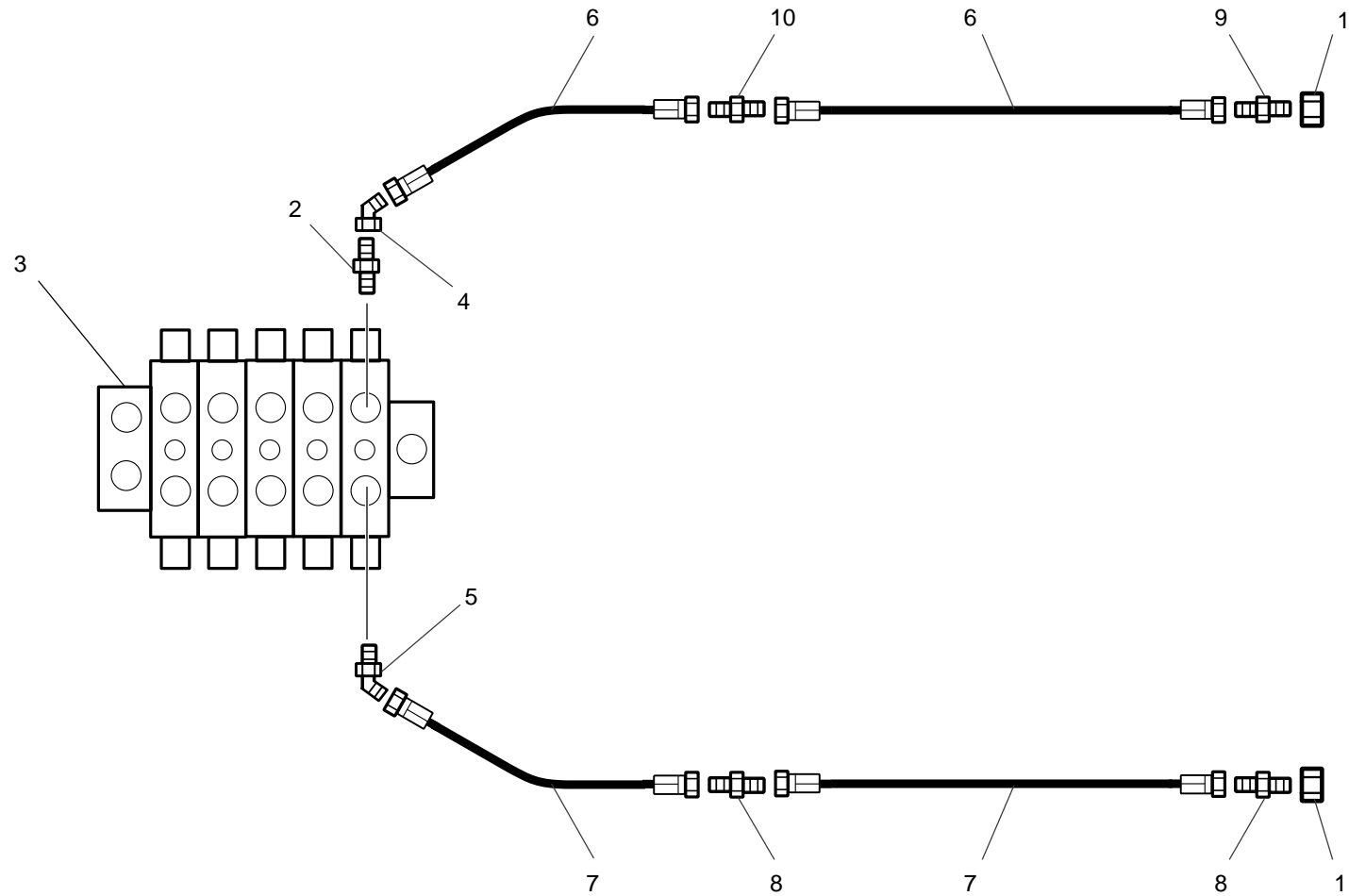
P002690

# BELL

[illegible]

# CONTROL VALVE TO FELLING HEAD / SHEAR HEAD

**BELL**



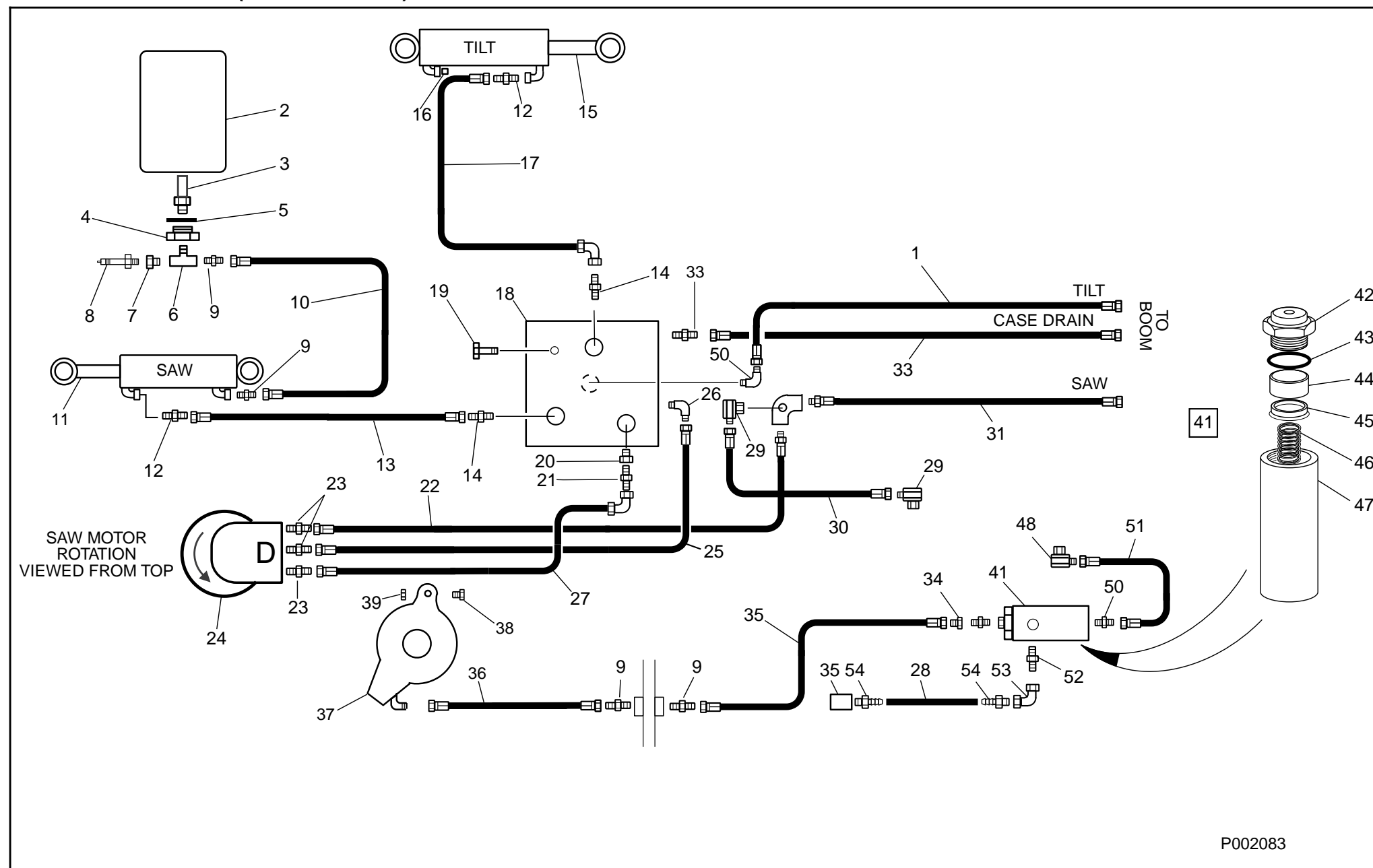
P002692



## CONTROL VALVE TO FELLING HEAD / SHEAR HEAD

[illegible]

## HYDRAULIC SYSTEM (FELLING HEAD)

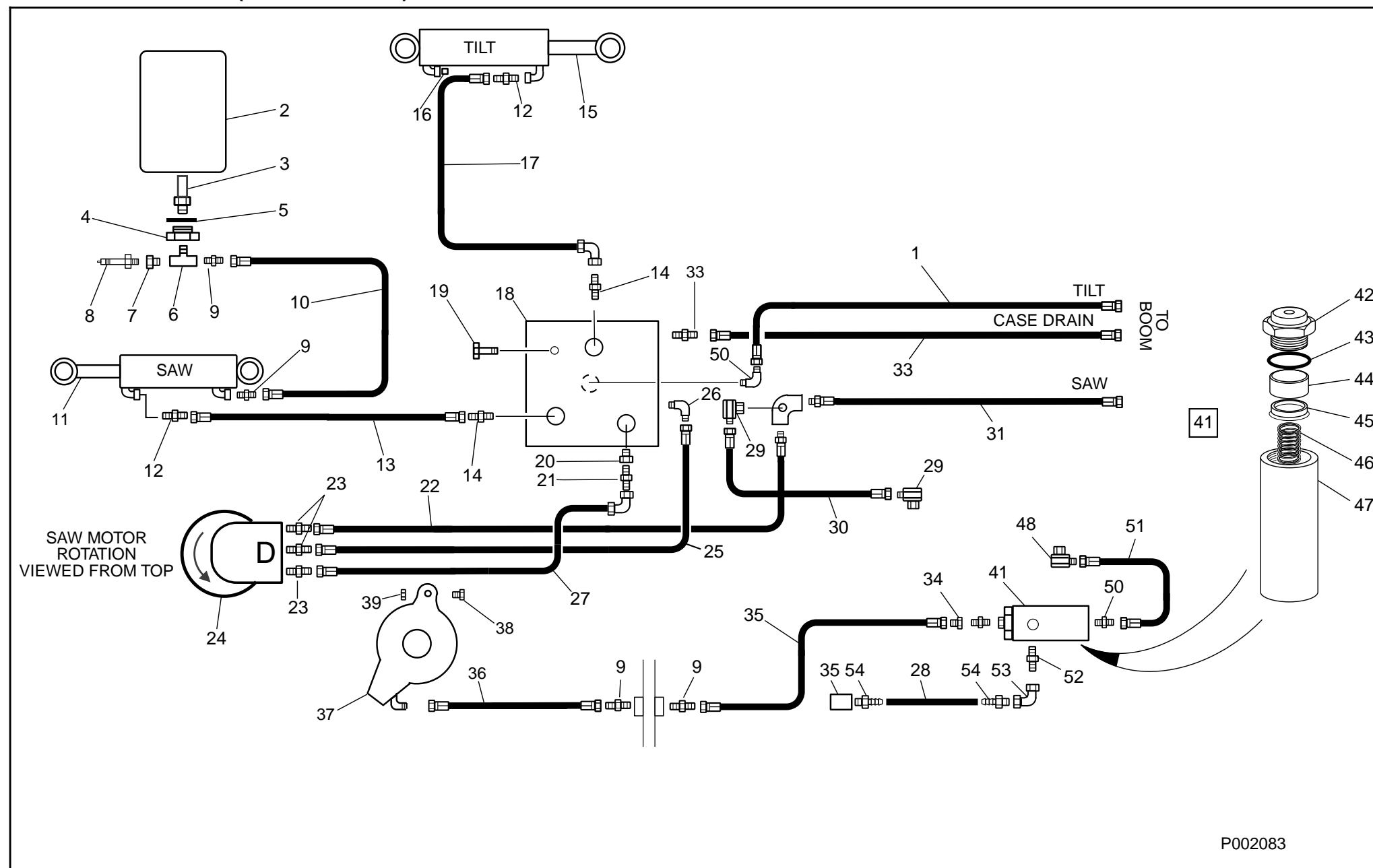


P002083

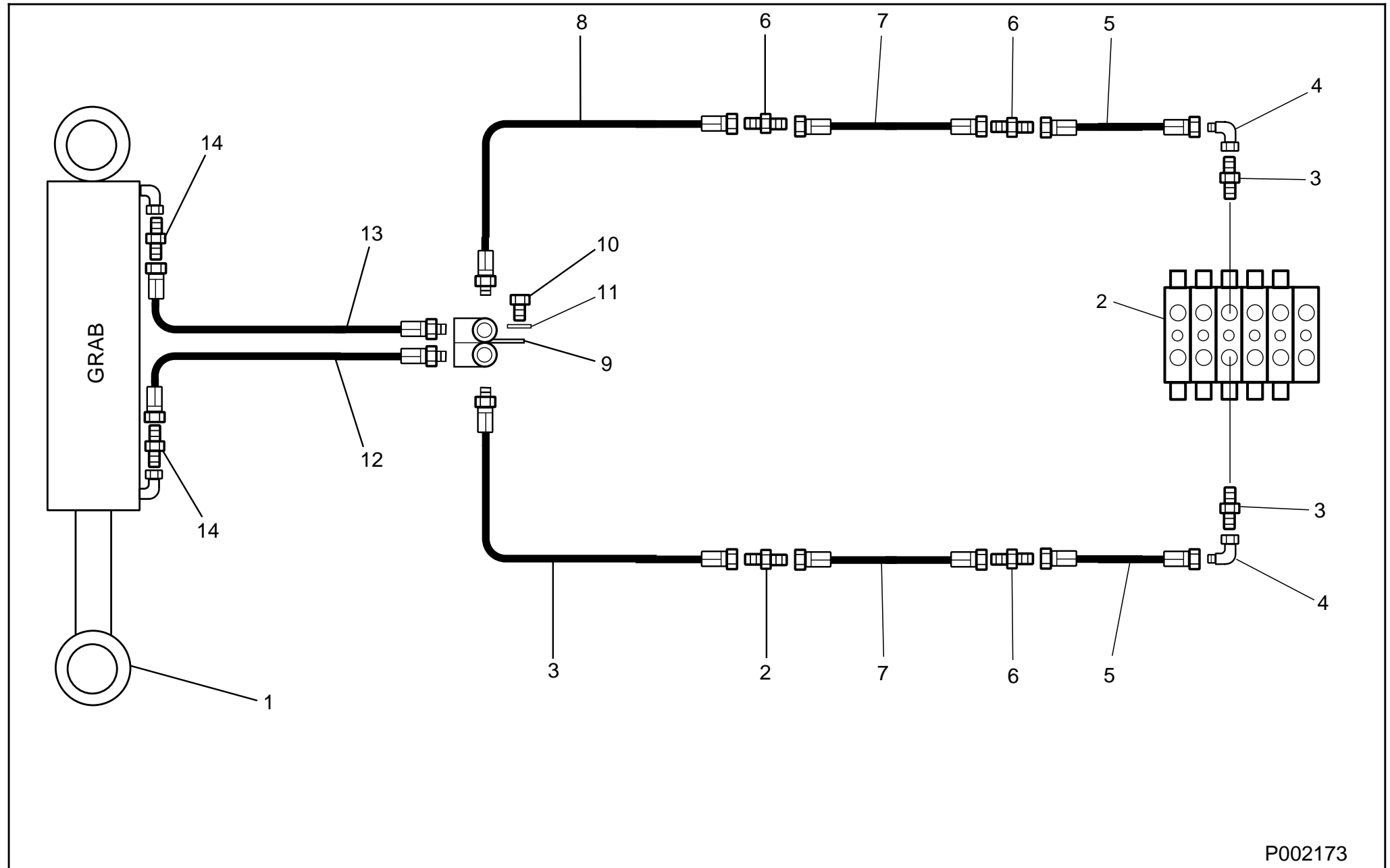
**HYDRAULIC SYSTEM (FELLING HEAD)**

| ITEM | PART NUMBER | QTY | DESCRIPTION          | REMARKS |
|------|-------------|-----|----------------------|---------|
| 1    | 240727      | 1   | HOSE ASSY            |         |
| 2    | 172397      | 1   | RESEVOIR, Air        |         |
| 3    | 121220      | 1   | PLUG, Sintered       |         |
| 4    | 160437      | 1   | FITTING, Oiler       |         |
| 5    | 140201      | 1   | O RING               |         |
| 6    | 120363      | 1   | T PIECE              |         |
| 7    | 120188      | 1   | BUSH, Reducing       |         |
| 8    | 201223      | 1   | VALVE, Tank          |         |
| 9    | 120123      | 4   | ADAPTOR              |         |
| 10   | 240114      | 1   | HOSE ASSY            |         |
| 11   | 230105      | 1   | CYLINDER, Saw Feed   |         |
| 12   | 120021      | 2   | ADAPTOR, Swivel      |         |
| 13   | 240130      | 1   | HOSE ASSY            |         |
| 14   | 120031      | 2   | ADAPTOR              |         |
| 15   | 230104      | 1   | CYLINDER, Tilt       |         |
| 16   | 190254      | 1   | BREATHER             |         |
| 17   | 240626      | 1   | HOSE ASSY            |         |
| 18   | 210389      | 1   | VALVE, Throttle Feed |         |
| 19   | 100112      | 3   | SCREW, Set, Hex      |         |
| 20   | 120318      | 1   | ADAPTOR              |         |
| 21   | 120048      | 1   | ADAPTOR              |         |
| 22   | 240659      | 1   | HOSE ASSY            |         |
| 23   | 120004      | 2   | ADAPTOR              |         |
| 24   | 210163      | 1   | MOTOR, Saw           |         |
| 25   | 240709      | 1   | HOSE ASSY            |         |
| 26   | 120810      | 1   | ELBOW                |         |
| 27   | 240724      | 1   | HOSE ASSY            |         |
| 28   | 130020      | A/R | HOSE, Pushlock       |         |
| 29   | 120212      | 1   | ADAPTOR, Swivel      |         |
| 30   | 240114      | 1   | HOSE ASSY            |         |
| 31   | 240723      | 1   | HOSE ASSY            |         |
| 32   | 120129      | 1   | ADAPTOR              |         |
| 33   | 240113      | 1   | HOSE ASSY            |         |
| 34   | 120016      | 1   | SOCKET               |         |
| 35   | 210165      | 1   | STRAINER             |         |

## HYDRAULIC SYSTEM (FELLING HEAD)



4-24

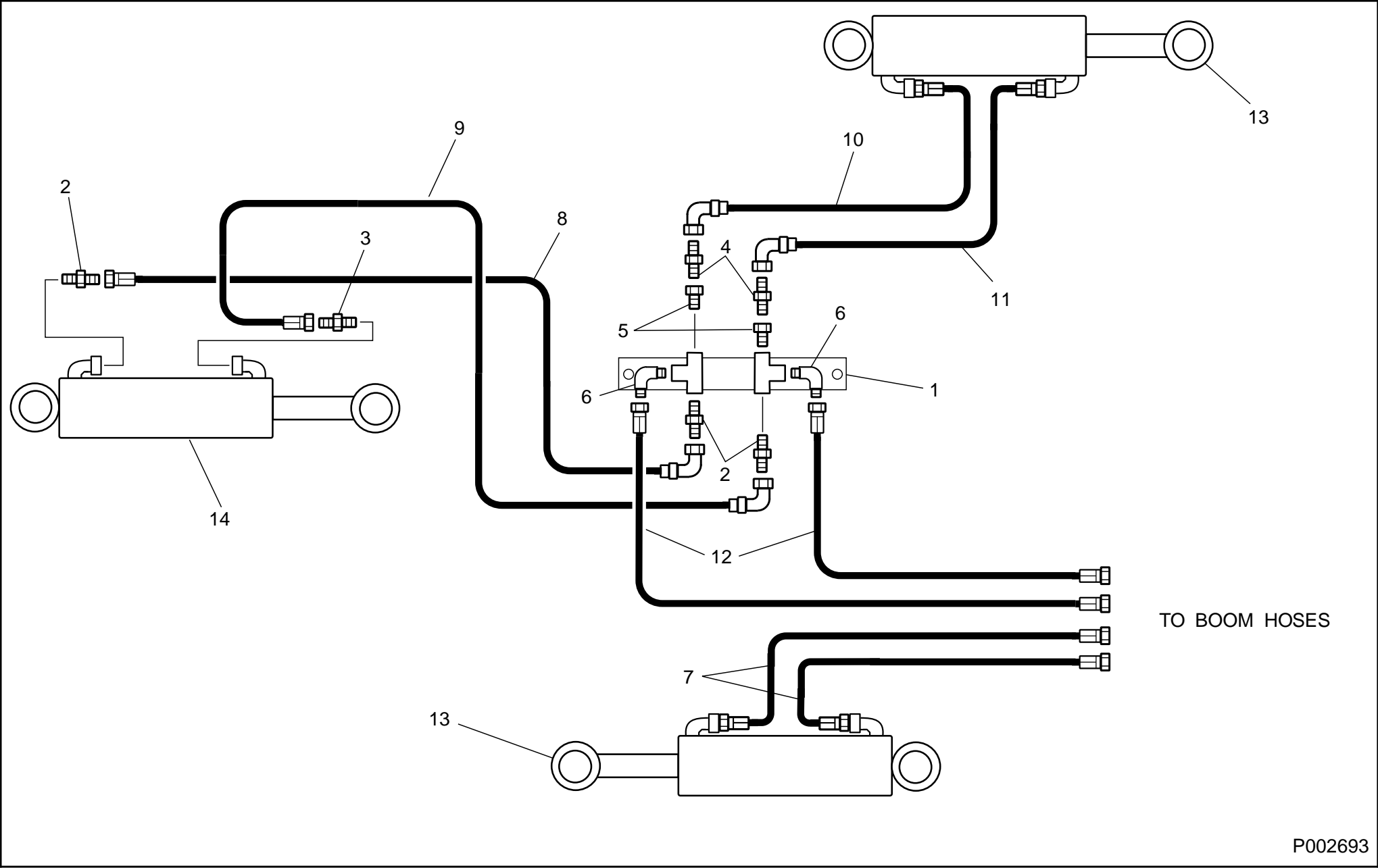


P002173

# GRAB SYSTEM

# BELL

[illegible]

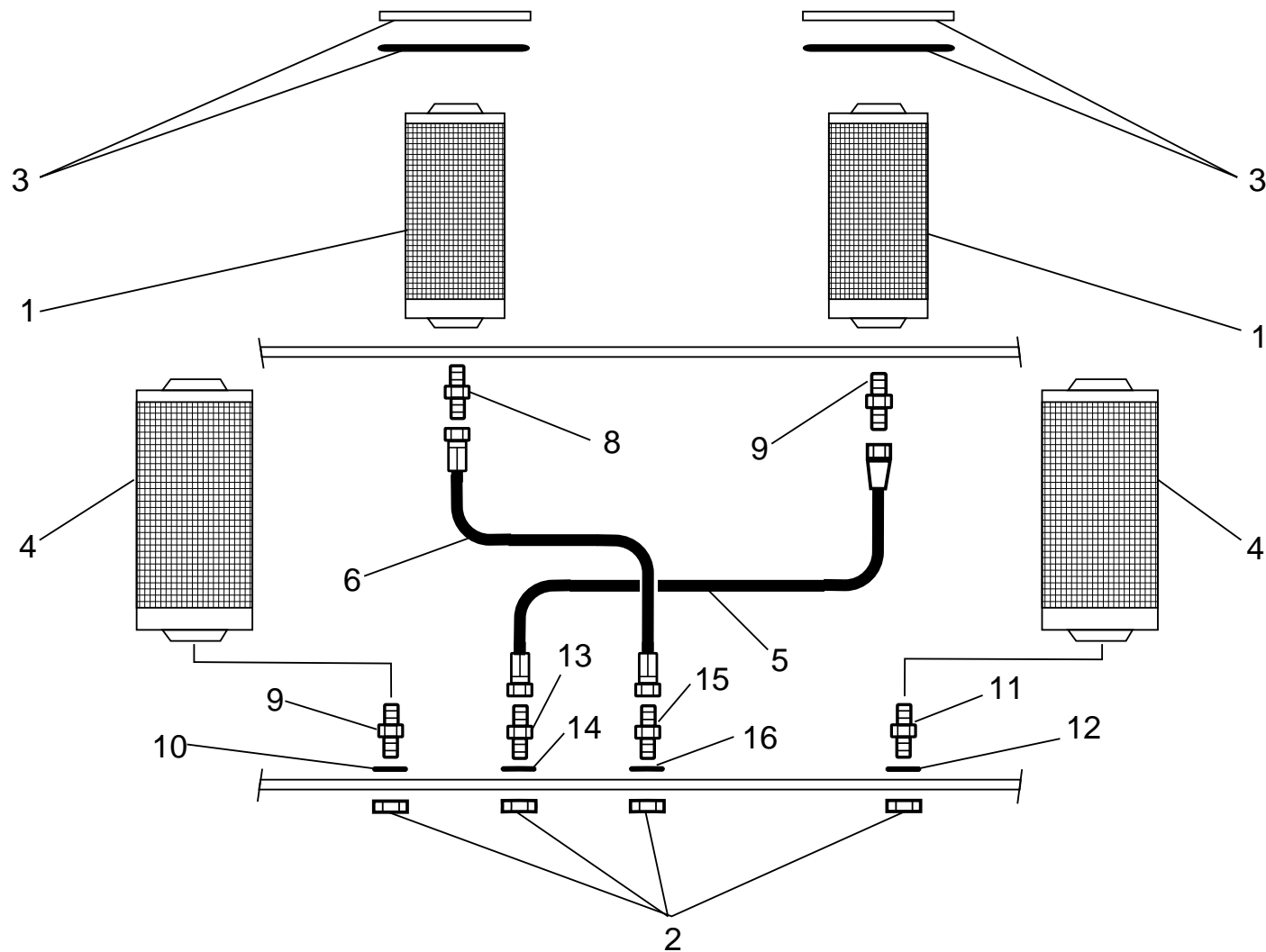


TO BOOM HOSES

P002693

## SHEAR HEAD HYDRAULIC SYSTEM

**BELL**[illegible]



P003002

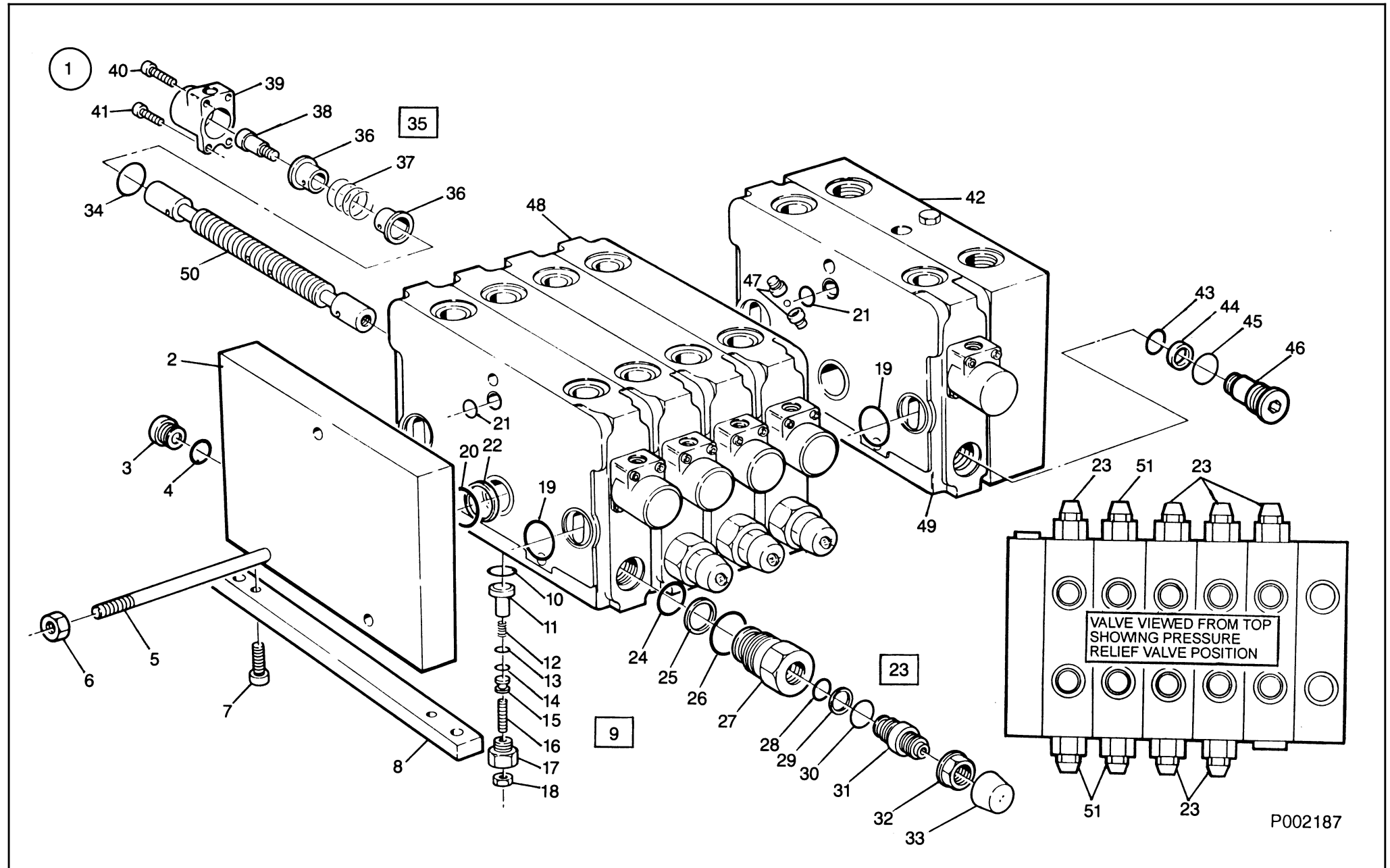
## HYDRAULIC FILTER ASSEMBLY

# BELL

[illegible]

# CONTROL VALVE (FIVE BANK)

**BELL**

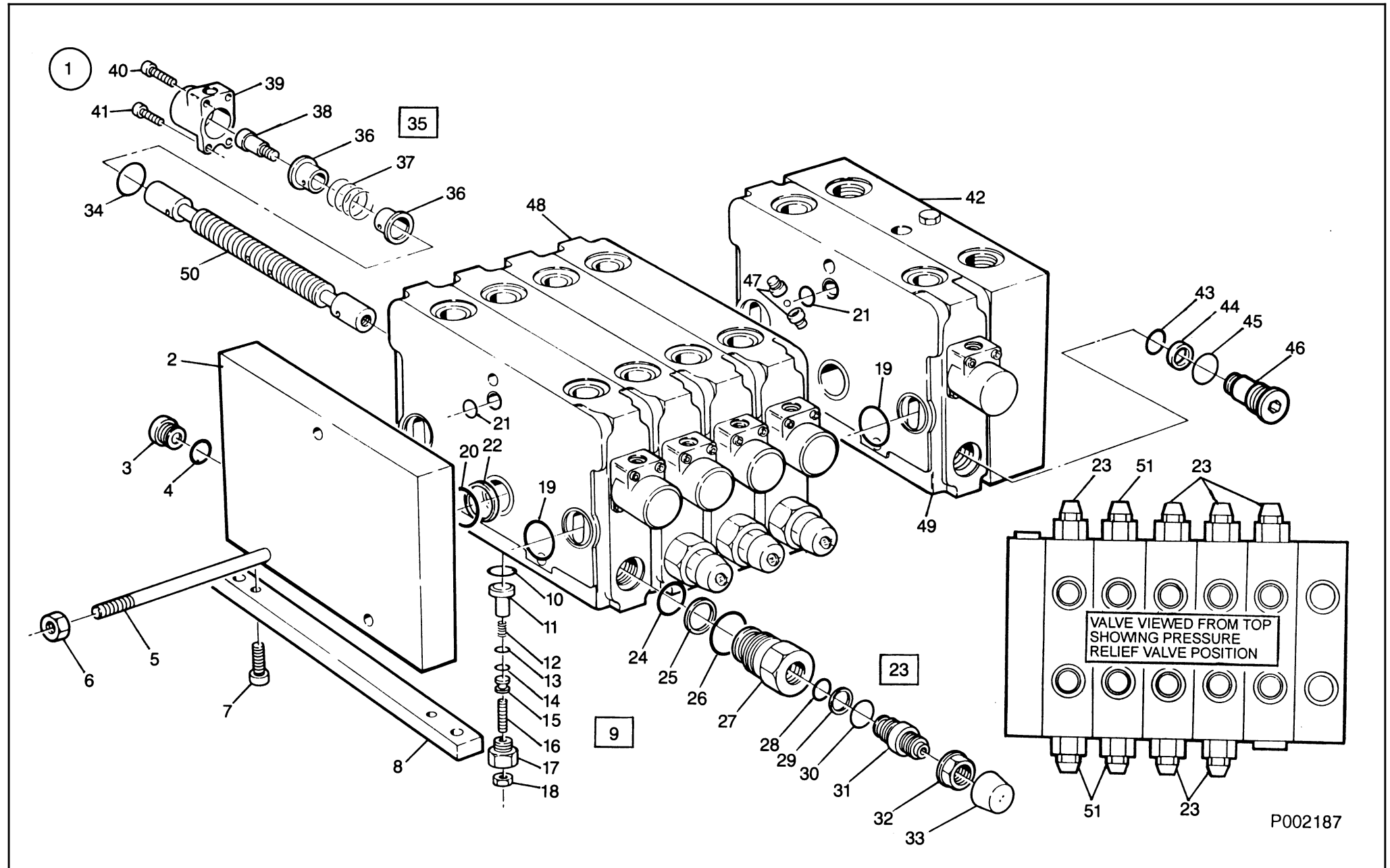


**CONTROL VALVE (FIVE BANK)**

| ITEM | PART NUMBER | QTY | DESCRIPTION                  | REMARKS |
|------|-------------|-----|------------------------------|---------|
| 1    | 210282      | 1   | CONTROL VALVE (FIVE BANK)    |         |
| 2    | NSI         | 1   | COVER, End                   |         |
| 3    | NSI         | 1   | PLUG                         |         |
| 4    | NSI         | 1   | O RING                       |         |
| 5    | NSI         | 3   | STUD                         |         |
| 6    | 100314      | 3   | NUT, Nyloc                   |         |
| 7    | NSI         | 4   | SCREW, Cap                   |         |
| 8    | NSI         | 2   | MOUNTING                     |         |
| 9    | 223581      | 1   | VALVE, Adjustable Load Check |         |
| 10   | 140177 *    | 1   | O RING                       |         |
| 11   | NSI         | 1   | POPPET                       |         |
| 12   | NSI         | 1   | SPRING                       |         |
| 13   | *           | 1   | O RING                       |         |
| 14   | *           | 1   | O RING                       |         |
| 15   | NSI         | 1   | SEAT                         |         |
| 16   | NSI         | 1   | SCREW, Set                   |         |
| 17   | NSI         | 1   | REDUCER                      |         |
| 18   | NSI         | 1   | NUT                          |         |
| 19   | * / **      | 2   | O RING                       |         |
| 20   | * / **      | 1   | O RING                       |         |
| 21   | * / **      | 1   | O RING                       |         |
| 22   | * / **      | 1   | RING, Thrust                 |         |
| 23   | 223574      | 6   | VALVE, Relief                |         |
| 24   | ***         | 1   | O RING                       |         |
| 25   | ***         | 1   | SEAL                         |         |
| 26   | ***         | 1   | O RING                       |         |
| 27   | NSI         | 1   | ADAPTOR                      |         |
| 28   | ***         | 1   | O RING                       |         |
| 29   | ***         | 1   | SEAL                         |         |
| 30   | ***         | 1   | O RING                       |         |
| 31   | NSI         | 1   | ADAPTOR                      |         |
| 32   | NSI         | 1   | NUT                          |         |
| 33   | NSI         | 1   | CAP, End                     |         |
| 34   | *           | 2   | O RING                       |         |
| 35   | 223580      | 10  | HYDRAULIC OPERATION ASSY     |         |

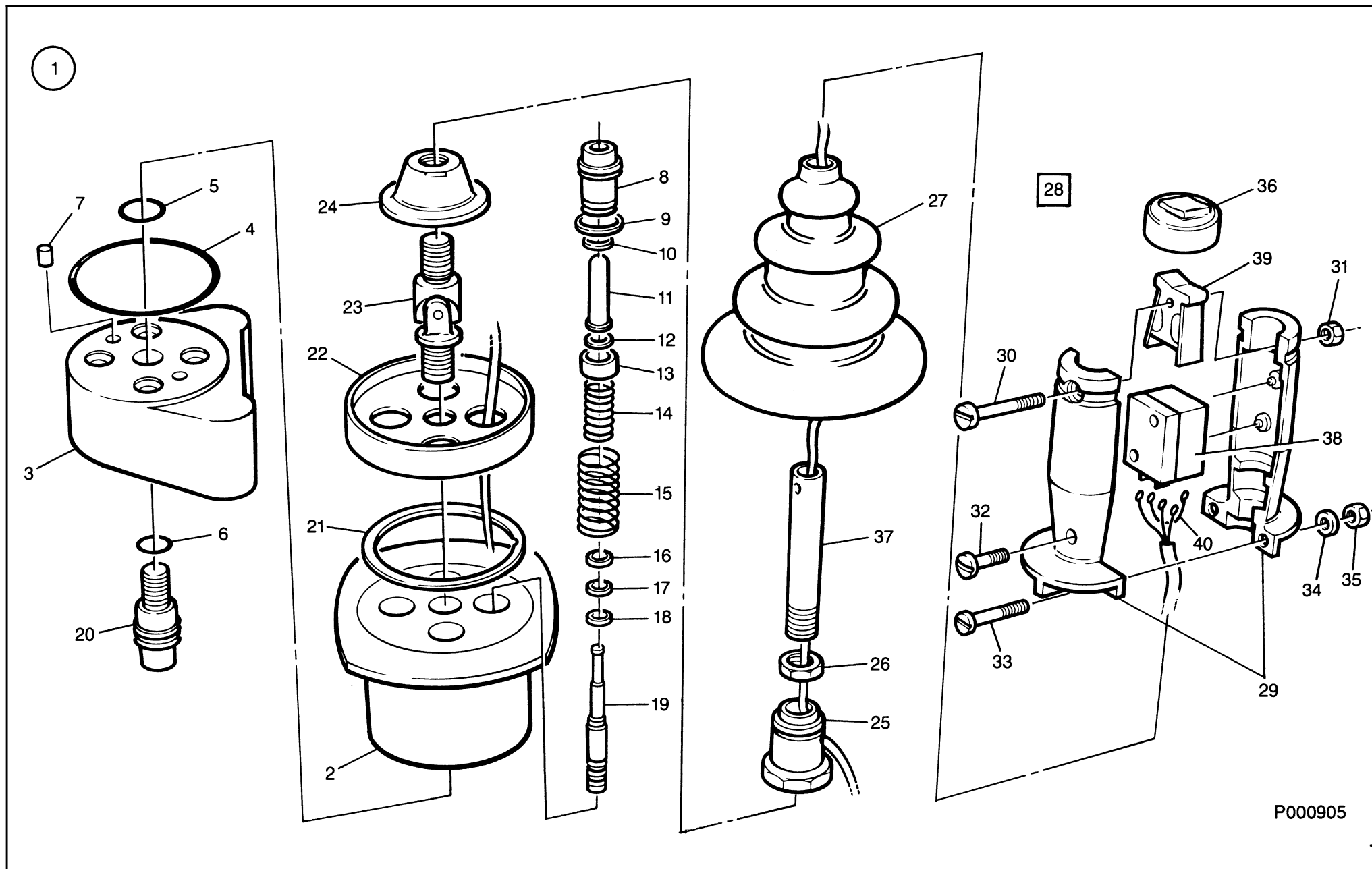
# CONTROL VALVE (FIVE BANK)

**BELL**



4-34

## JOYSTICK CONTROL (3RD FUNCTION)

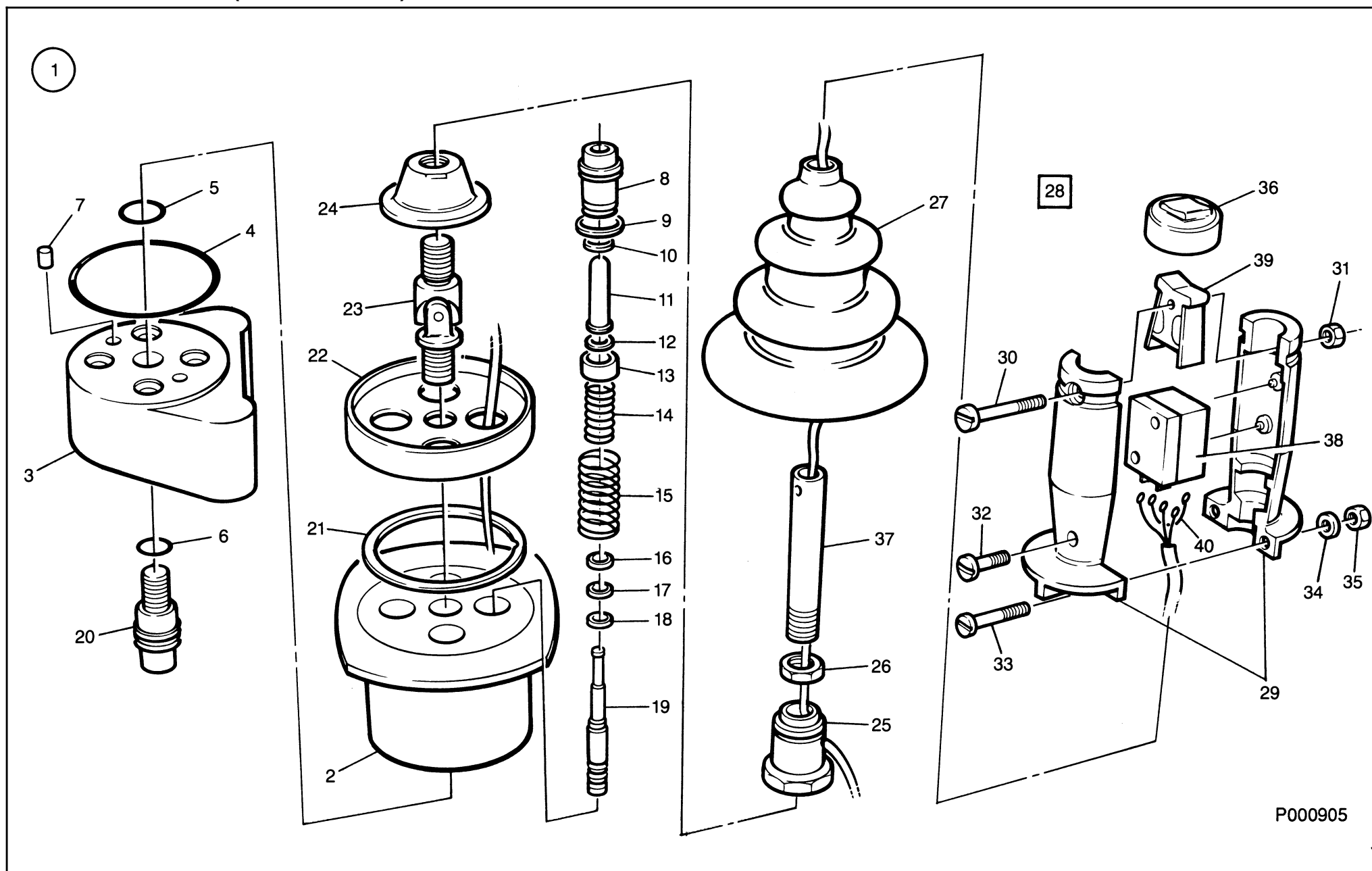


P000905

**JOYSTICK CONTROL (3RD FUNCTION)**

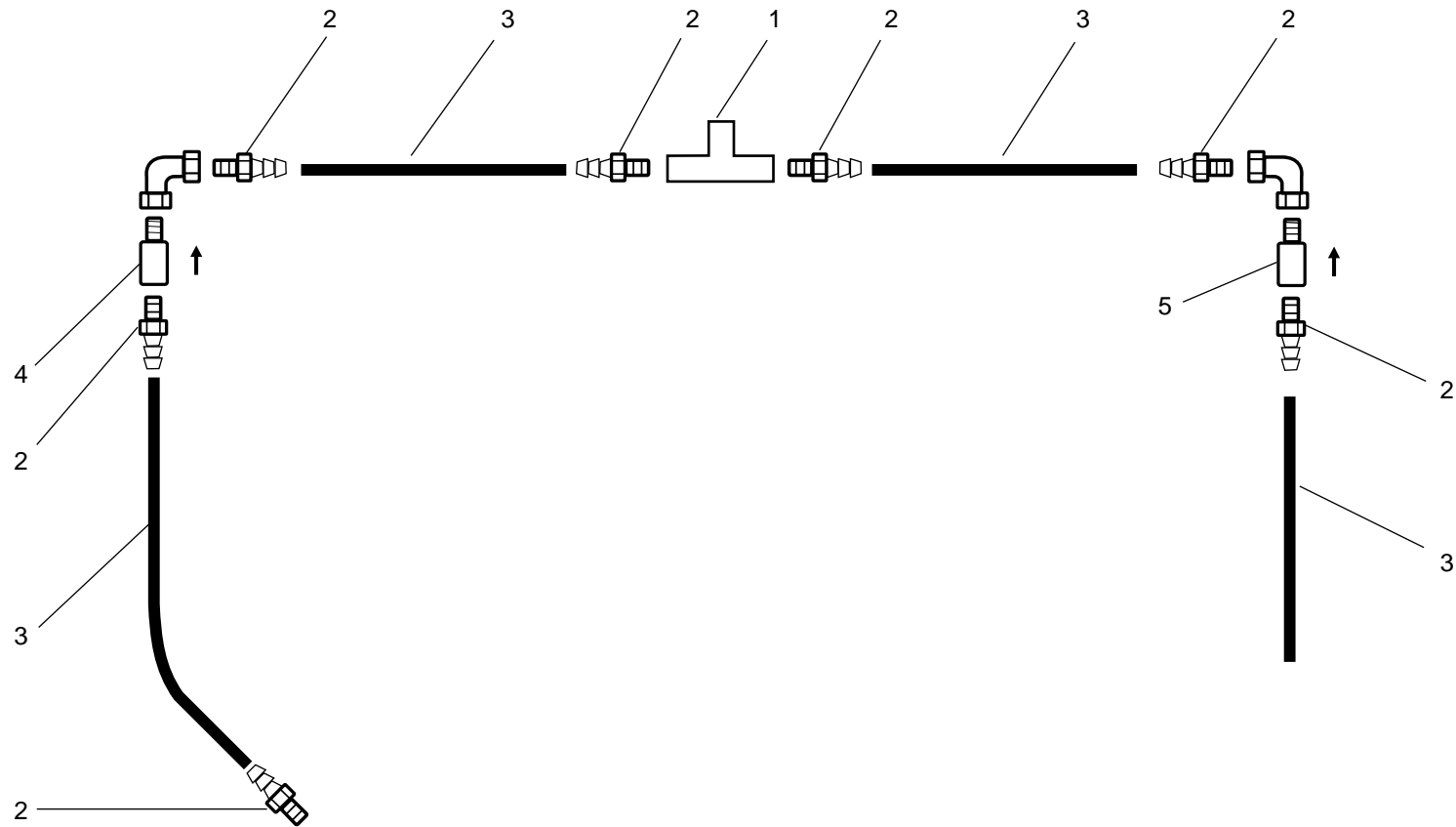
| ITEM | PART NUMBER | QTY | DESCRIPTION                     | REMARKS     |
|------|-------------|-----|---------------------------------|-------------|
| 1    | 210143      | 1   | JOYSTICK CONTROL (3RD FUNCTION) |             |
| 2    | 220581      | 1   | HOUSING, Upper                  |             |
| 3    | NSI         | 1   | HOUSING, Lower                  |             |
| 4    | *           | 1   | O RING                          |             |
| 5    | *           | 1   | O RING                          |             |
| 6    | *           | 1   | O RING                          |             |
| 7    | *           | 2   | PIN                             |             |
| 8    | **          | 4   | GUIDE, Plunger                  |             |
| 9    | **          | 4   | RING, Sealing                   |             |
| 10   | **          | 4   | RING, Sealing                   |             |
| 11   | **          | 4   | PLUNGER                         |             |
| 12   | 220583      | 4   | DISC, Locking                   |             |
| 13   | 220584      | 4   | RETAINER, Spring                |             |
| 14   | 220585      | 4   | SPRING                          |             |
| 15   | 220586      | 4   | SPRING                          |             |
| 16   | 220587      | A/R | SHIM                            |             |
| 17   | 220588      | A/R | SHIM                            |             |
| 18   | 220589      | A/R | SHIM                            |             |
| 19   | NSI         | 4   | PISTON                          |             |
| 20   | NSI         | 1   | S.H.C.S                         |             |
| 21   | 220566      | 1   | SEAL, Shaped                    |             |
| 22   | 220570      | 1   | PLATE, Retaining                |             |
| 23   | 220569      | 1   | CARDON                          |             |
| 24   | 220568      | 1   | PLATE, Switch                   |             |
| 25   | 220575      | 1   | NUT                             |             |
| 26   | 220574      | 1   | NUT                             |             |
| 27   | 220567      | 1   | BELLOW, Rubber                  |             |
| 28   | 220236      | 1   | LEVER ASSY                      | With Switch |
| 29   | NSI         | 1   | JOYSTICK, Handle                |             |
| 30   | NSI         | 1   | SCREW                           |             |
| 31   | NSI         | 1   | NUT                             |             |
| 32   | NSI         | 2   | SCREW                           |             |
| 33   | NSI         | 2   | SCREW                           |             |
| 34   | NSI         | 2   | SCREW                           |             |
| 35   | NSI         | 2   | WASHER                          |             |

## JOYSTICK CONTROL (3RD FUNCTION)



4-38

## BREATHER ASSEMBLY



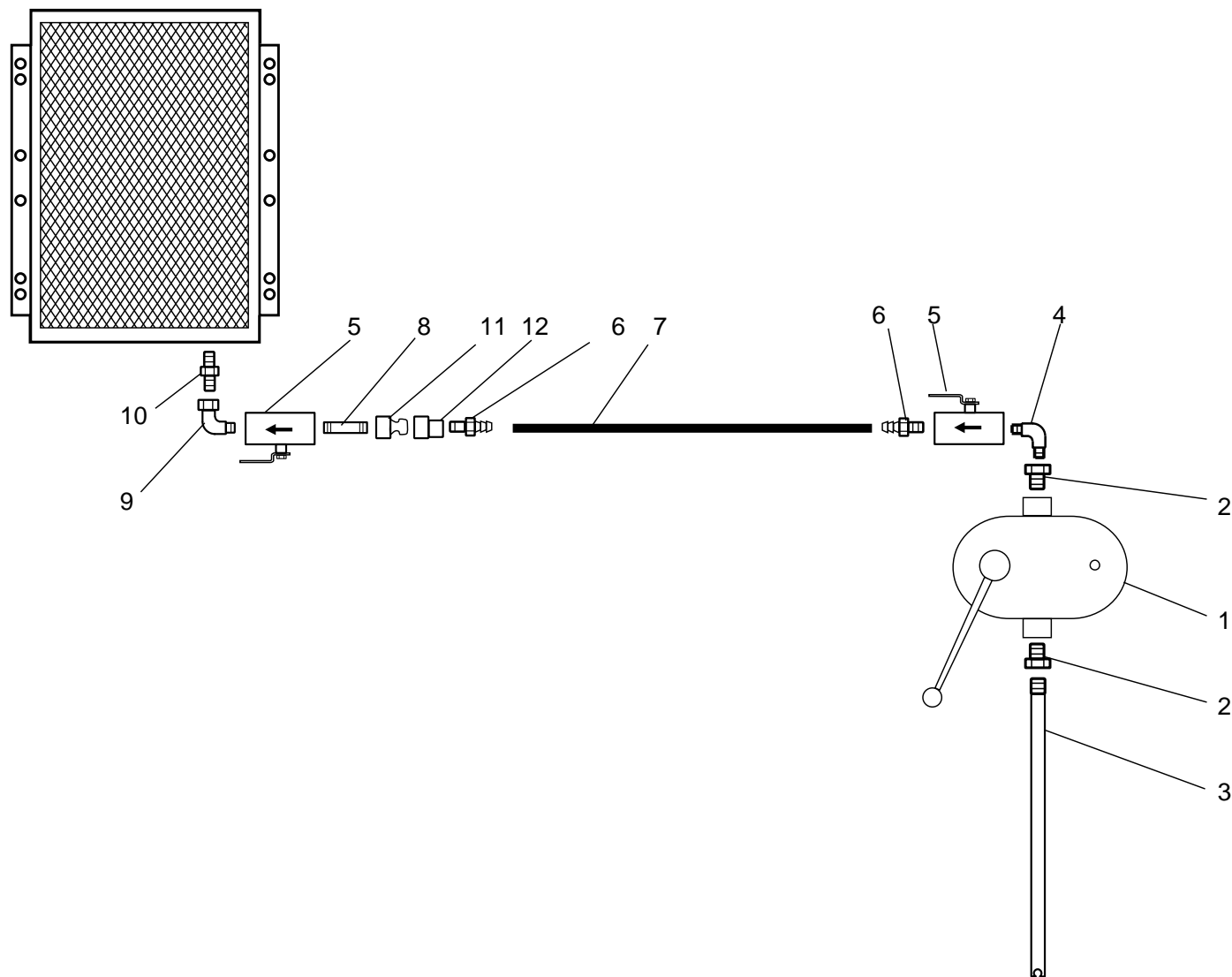
P003003

## BREATHING ASSEMBLY

# BELL

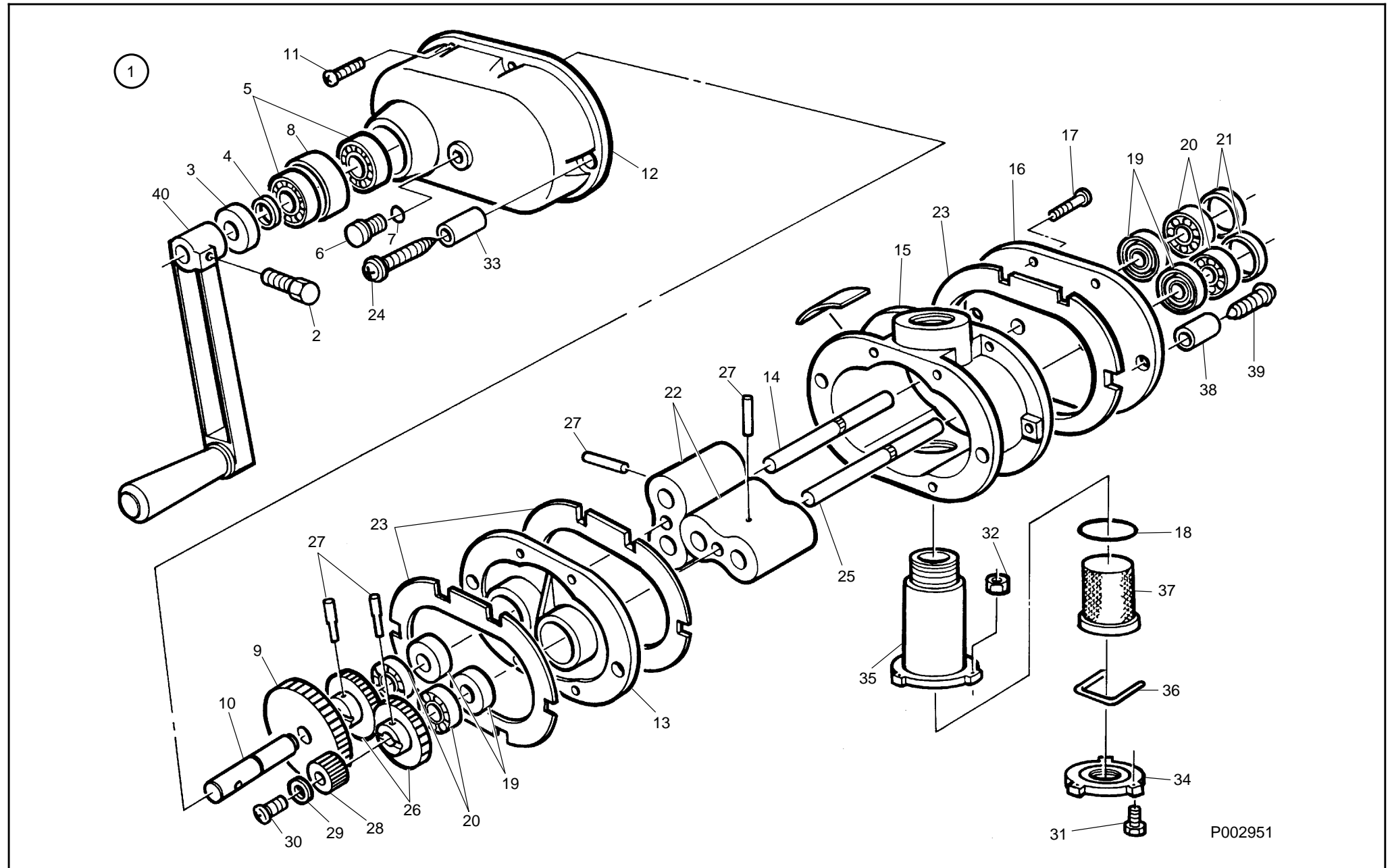
[illegible]

## HYDRAULIC TANK FILLING ASSEMBLY



P003004

4-42



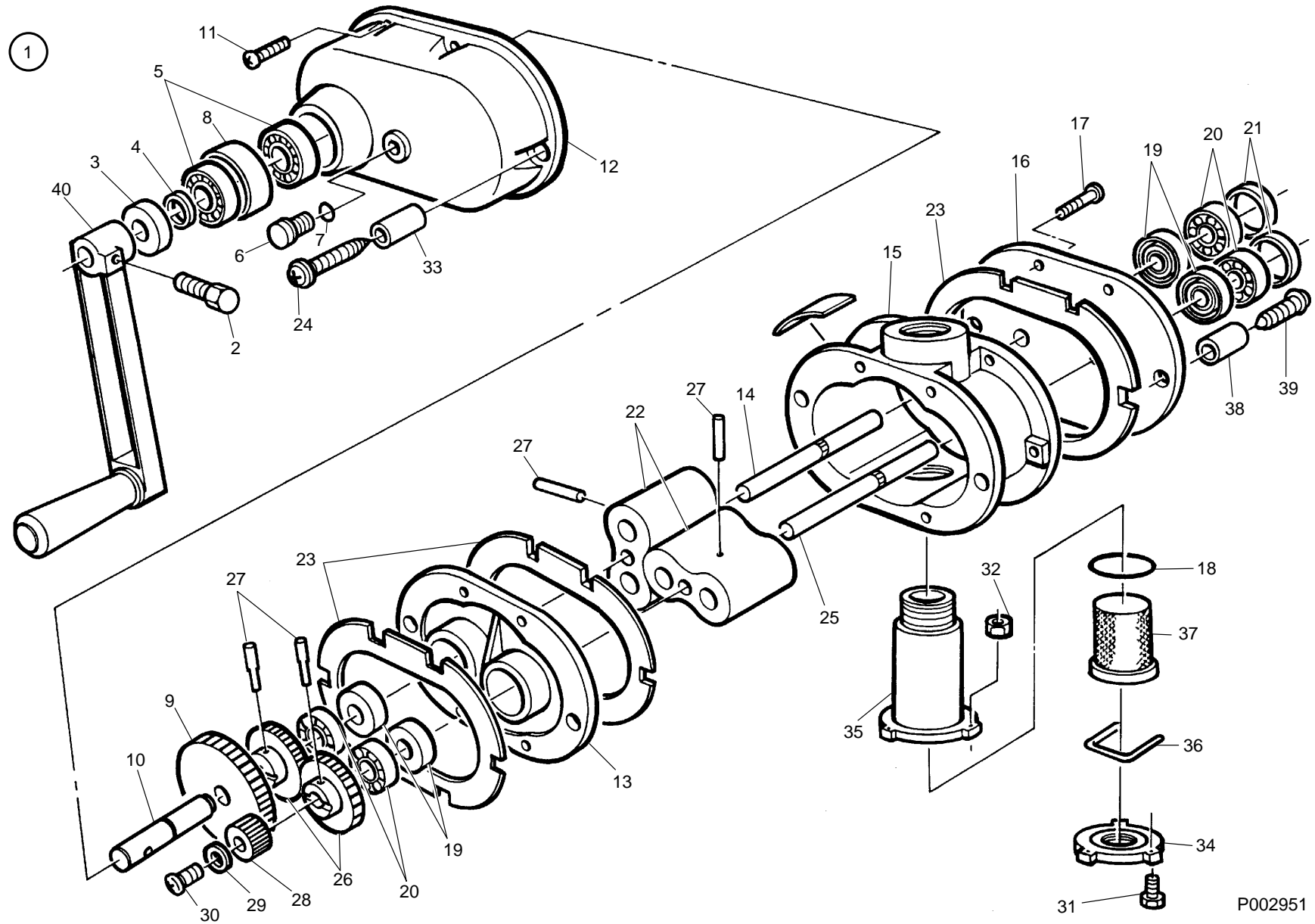
P002951

**HAND ROTARY PUMP**

| ITEM | PART NUMBER | QTY | DESCRIPTION      | REMARKS |
|------|-------------|-----|------------------|---------|
| 1    | 205248      |     | HAND ROTARY PUMP |         |
| 2    | NSI         | 1   | BOLT, Hex        |         |
| 3    | 140500      | 1   | SEAL, Oil        |         |
| 4    | NSI         | 1   | RING, Stop       |         |
| 5    | NSI         | 2   | BEARING          |         |
| 6    | NSI         | 1   | PLUG, Oil        |         |
| 7    | NSI         | 1   | O RING           |         |
| 8    | NSI         | 1   | COLLAR, Bearing  |         |
| 9    | NSI         | 1   | GEAR, Drive      |         |
| 10   | NSI         | 1   | SHAFT, Drive     |         |
| 11   | NSI         | 8   | SCREW            |         |
| 12   | NSI         | 1   | CASE, Gear       |         |
| 13   | NSI         | 1   | COVER            |         |
| 14   | NSI         | 1   | DRIVE, Roller    |         |
| 15   | NSI         | 1   | HOUSING          |         |
| 16   | NSI         | 1   | COVER            |         |
| 17   | NSI         | 8   | SCREW            |         |
| 18   | NSI         | 1   | O RING           |         |
| 19   | 140501      | 4   | SEAL, Oil        |         |
| 20   | NSI         | 4   | BEARING          |         |
| 21   | NSI         | 2   | BEARING, Cap     |         |
| 22   | NSI         | 2   | ROLLER           |         |
| 23   | 224903      | 3   | GASKET           |         |
| 24   | NSI         | 2   | SCREW            |         |
| 25   | NSI         | 1   | DRIVE, Roller    |         |
| 26   | NSI         | 2   | GEAR             |         |
| 27   | ,SI         | 4   | PIN              |         |
| 28   | NSI         | 1   | GEAR             |         |
| 29   | NSI         | 1   | WASHER           |         |
| 30   | NSI         | 1   | SCREW            |         |
| 31   | NSI         | 3   | BOLT             |         |
| 32   | NSI         | 3   | NUT              |         |
| 33   | NSI         | 2   | COLLAR           |         |
| 34   | NSI         | 1   | PLATE            |         |
| 35   | NSI         | 1   | BODY             |         |

# HAND ROTARY PUMP

**BELL**



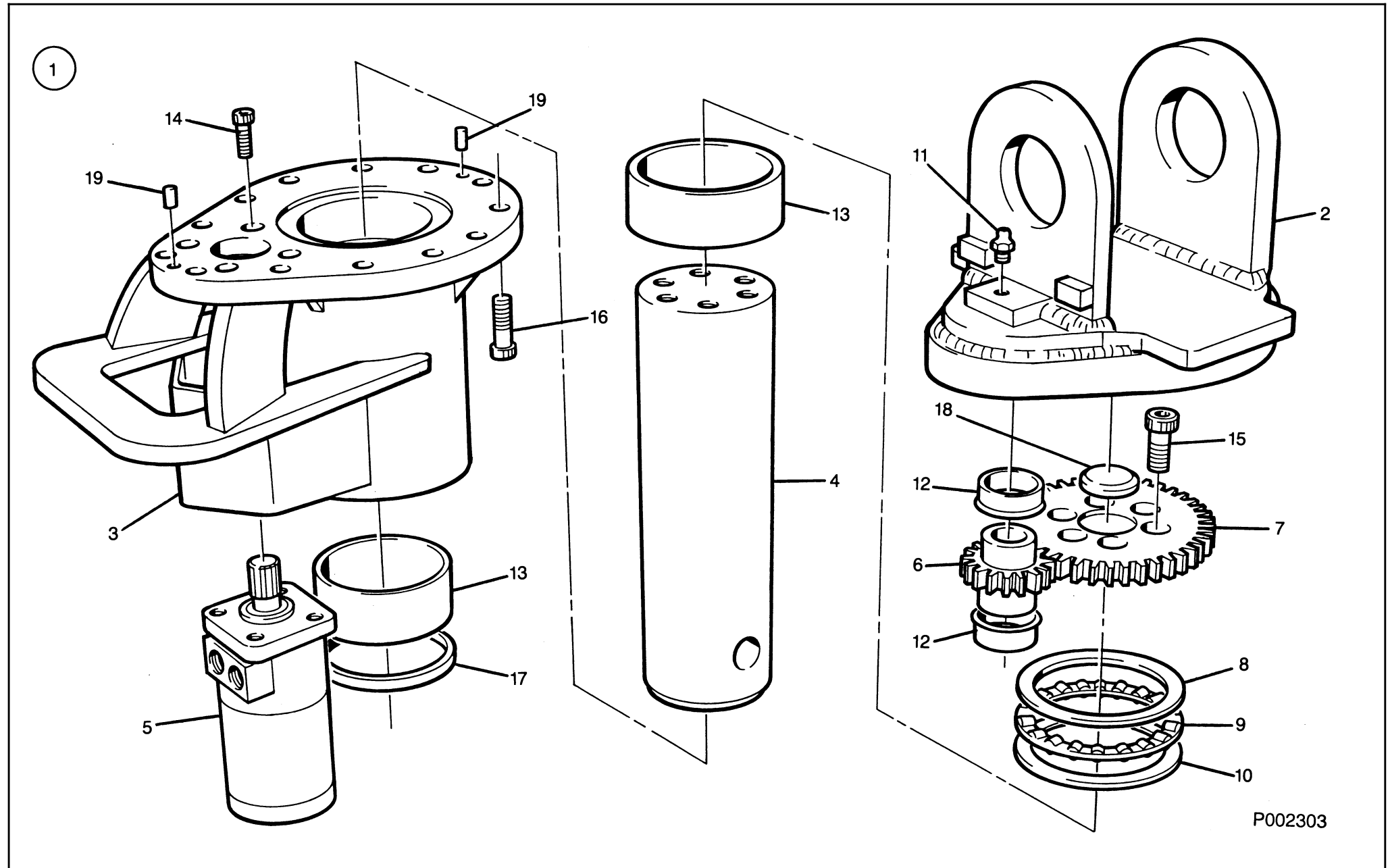
P002951

## HAND ROTARY PUMP

**BELL**[illegible]

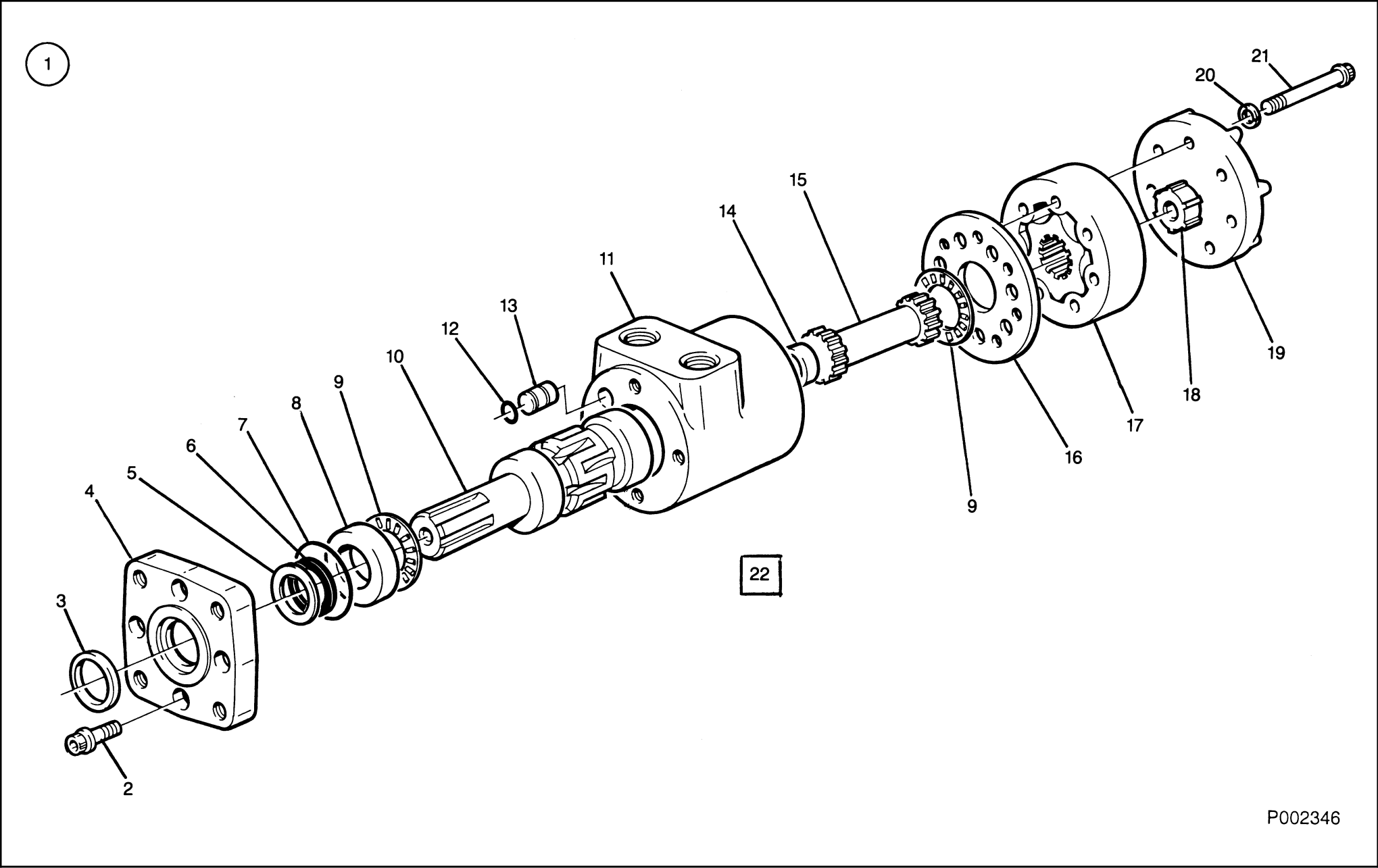
# CONTINUOUS GEAR ROTATOR

**BELL**



## CONTINUOUS GEAR ROTATOR

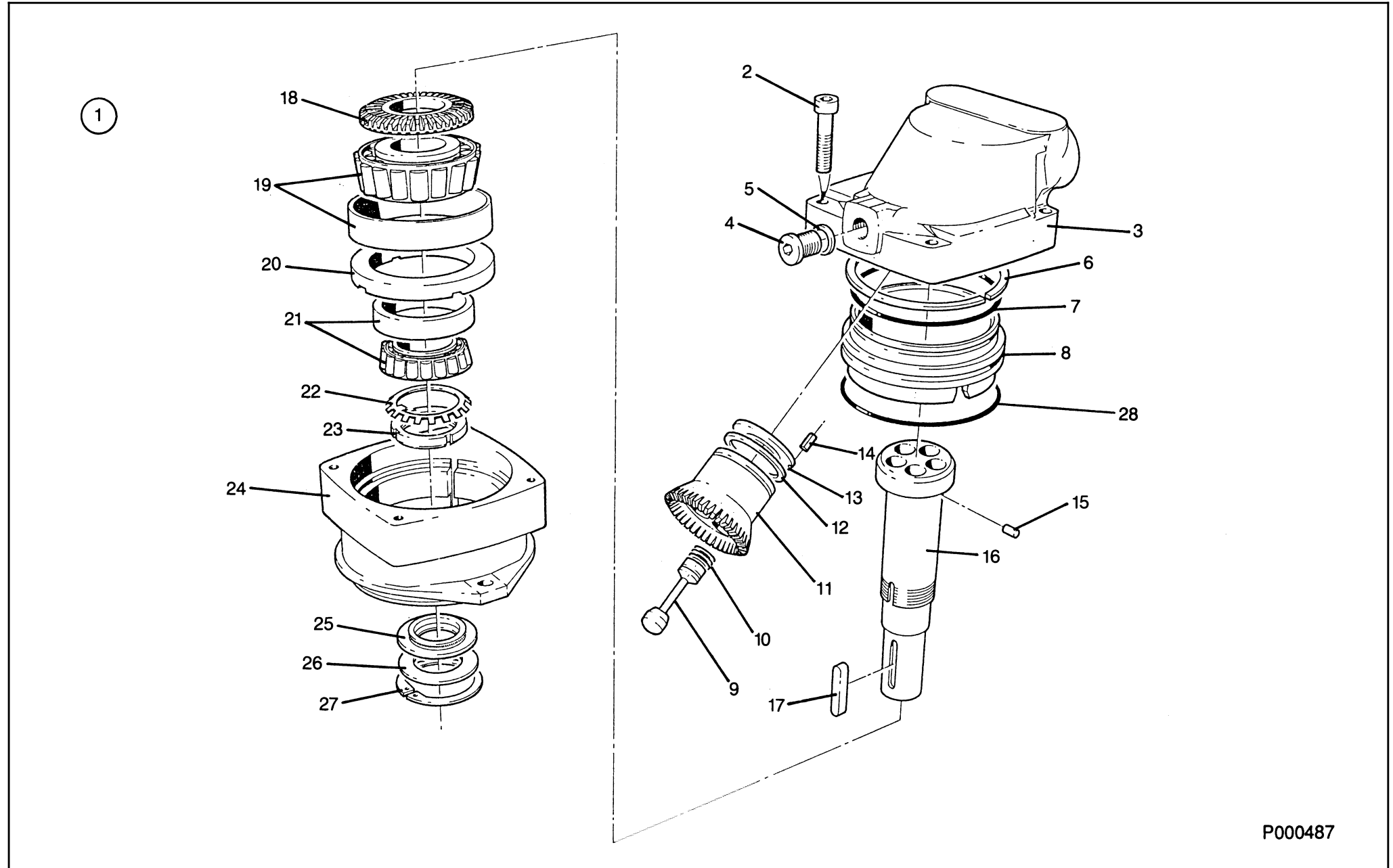
[illegible]



P002346

## MOTOR, CHAR-LYNN (H-PLUS SERIES)

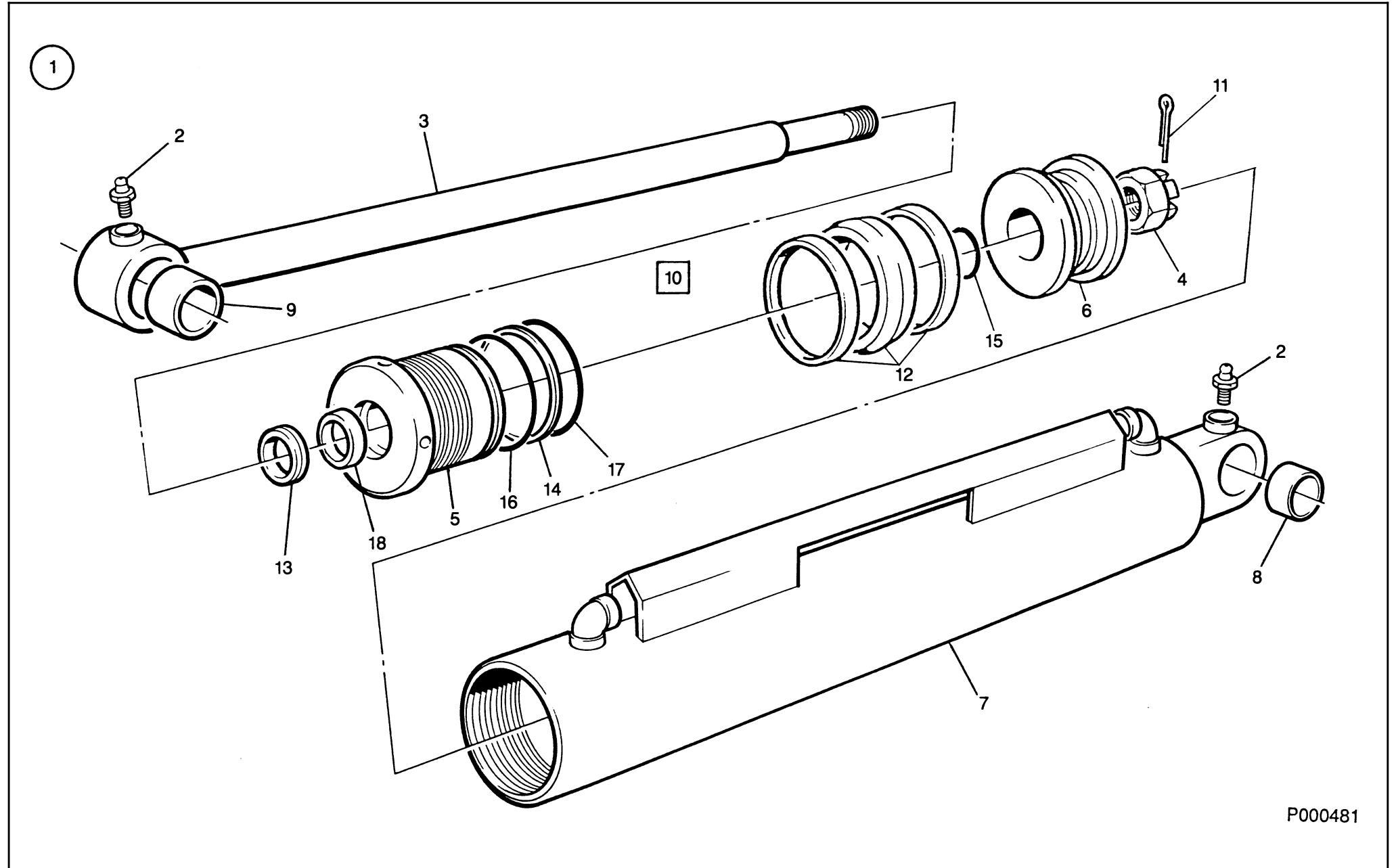
[illegible]



P000487

**SAW MOTOR ASSEMBLY**

| ITEM | PART NUMBER | QTY | DESCRIPTION              | REMARKS |
|------|-------------|-----|--------------------------|---------|
| 1    | 210163      | 1   | SAW MOTOR ASSEMBLY       |         |
| 2    | V959243     | 4   | SCREW, Cap               |         |
| 3    | V3703436    | 1   | HOUSING, Barrel          |         |
| 4    | V944506     | 1   | PLUG                     |         |
| 5    | V957180     | 1   | WASHER, Seal             |         |
| 6    | V72811-817  | 1   | WASHER, Adjustment       |         |
| 7    | V925257     | 2   | O RING                   |         |
| 8    | V72807      | 1   | SPACER, Guide            |         |
| 9    | V72970      | 5   | PISTON                   |         |
| 10   | V72517      | 15  | RING, Piston             |         |
| 11   | V3702959    | 1   | BARREL, Cylinder         |         |
| 12   | V72686      | 1   | RING, Retaining, Barrel  |         |
| 13   | V72846      | 1   | PLATE, Valve             |         |
| 14   |             | 1   | PIN, Roll                |         |
| 15   | V118044     | 1   | PIN, Cylinder, Type K    |         |
| 16   | V72952      | 1   | SHAFT                    |         |
| 17   | V909305     | 1   | KEY                      |         |
| 18   | V73257      | 1   | GEAR, Ring               |         |
| 19   | V118025     | 1   | BEARING, Roller, Tapered |         |
| 20   | V73384      | 1   | SPACER                   |         |
| 21   | V118202     | 1   | BEARING, Roller, Tapered |         |
| 22   | V901026     | 1   | WASHER, Lock             |         |
| 23   | V906636     | 1   | NUT, Lock                |         |
| 24   | V72834      | 1   | HOUSING, Bearing         |         |
| 25   | 140208      | 1   | SEAL, Oil                |         |
| 26   |             | 1   | WASHER, Retainer         |         |
| 27   | V914529     | 1   | CIRCLIP, Internal        |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |
|      |             |     |                          |         |

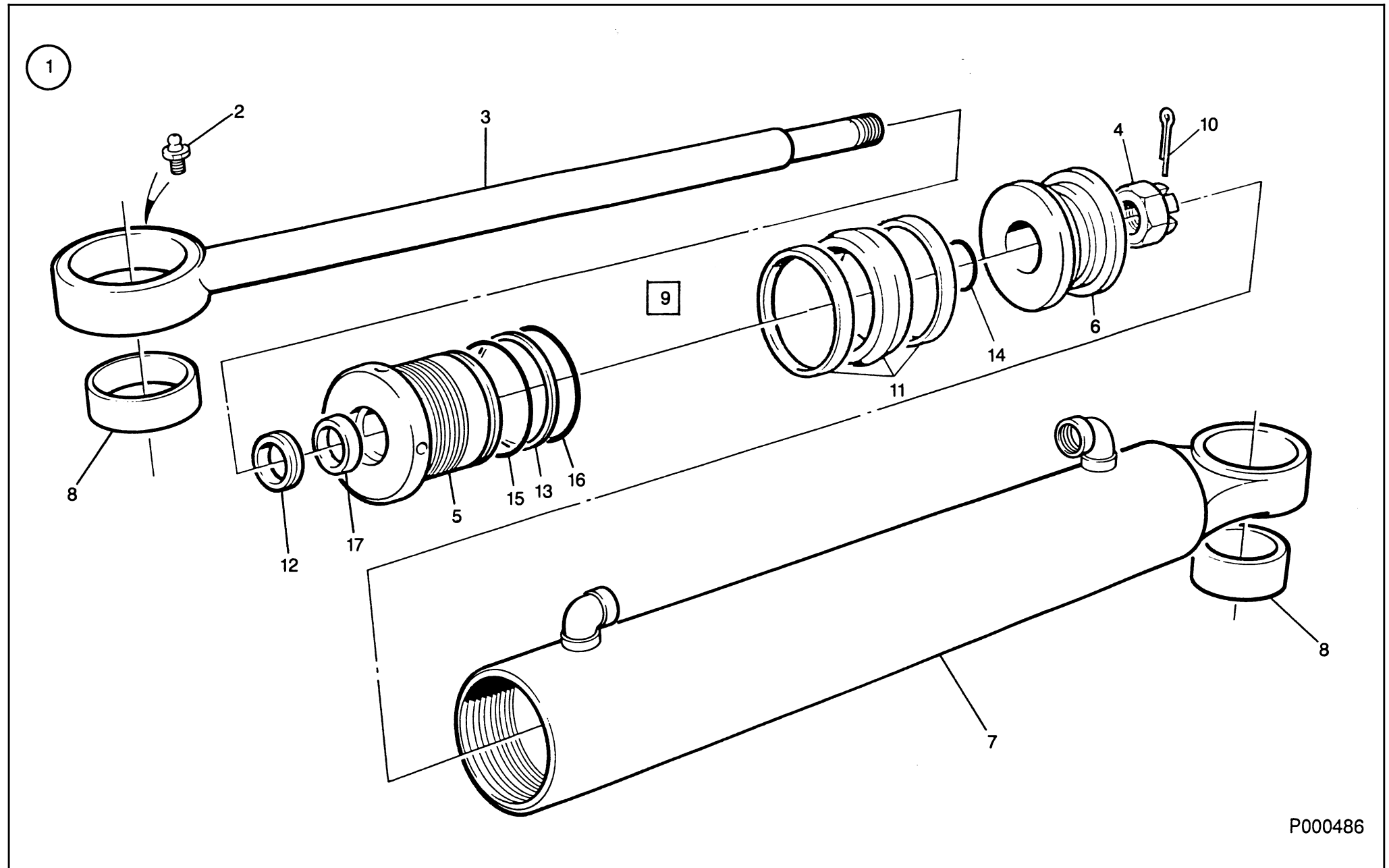


P000481

## BOOM CYLINDER

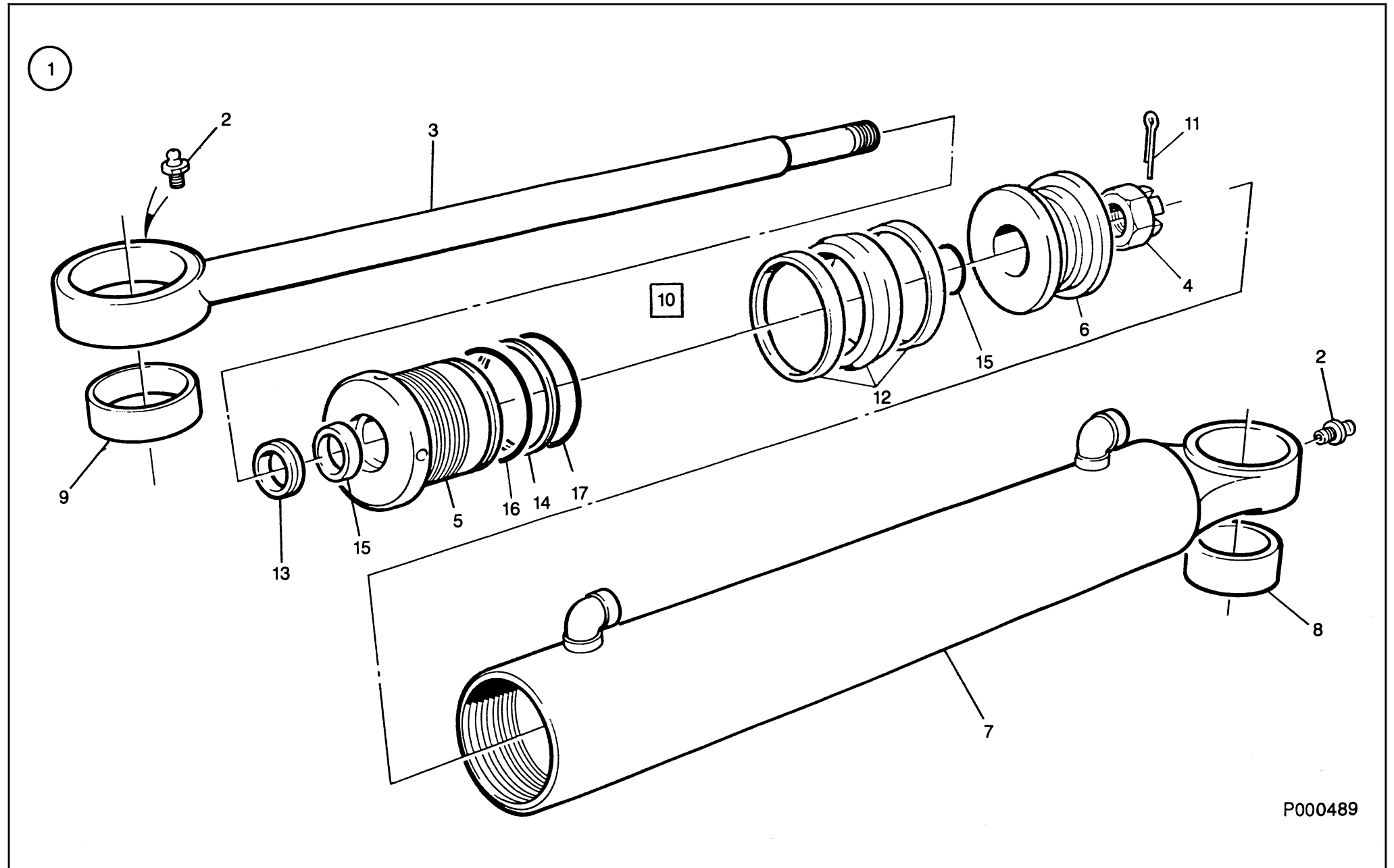
# BELL

[illegible]



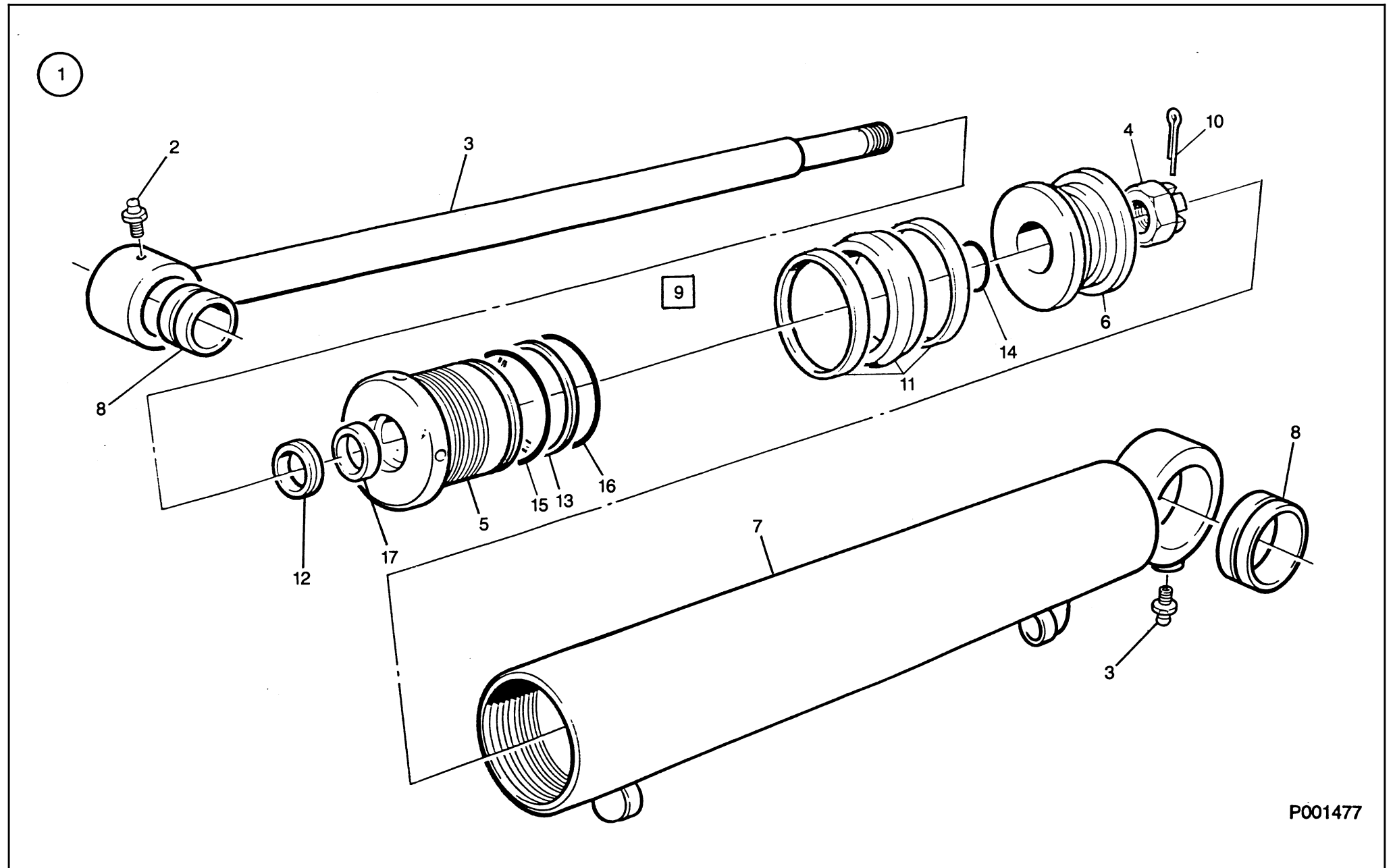
P000486

**4-56**



P000489

**4-58**



P001477

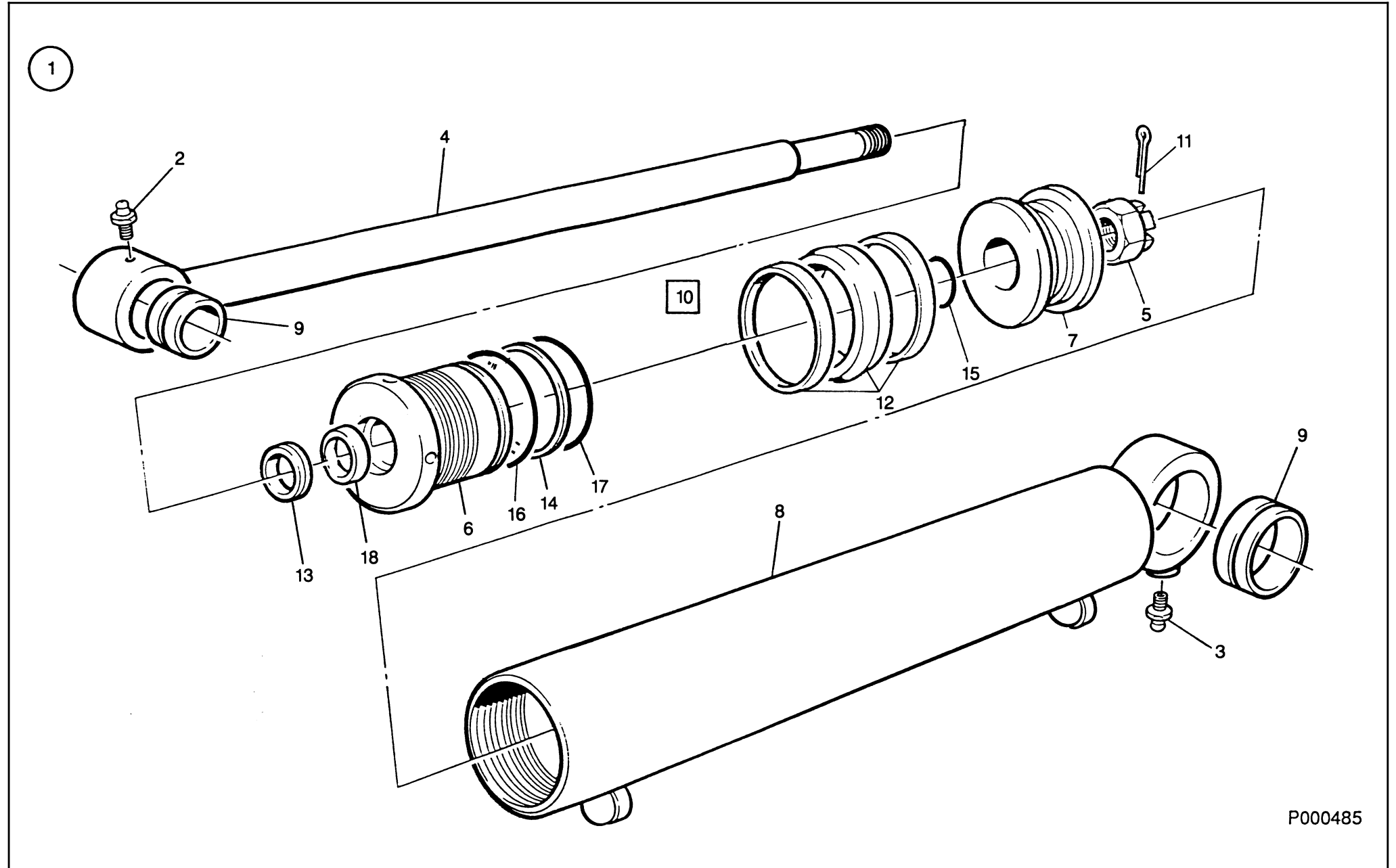
# TILT CYLINDER

# BELL

[illegible]

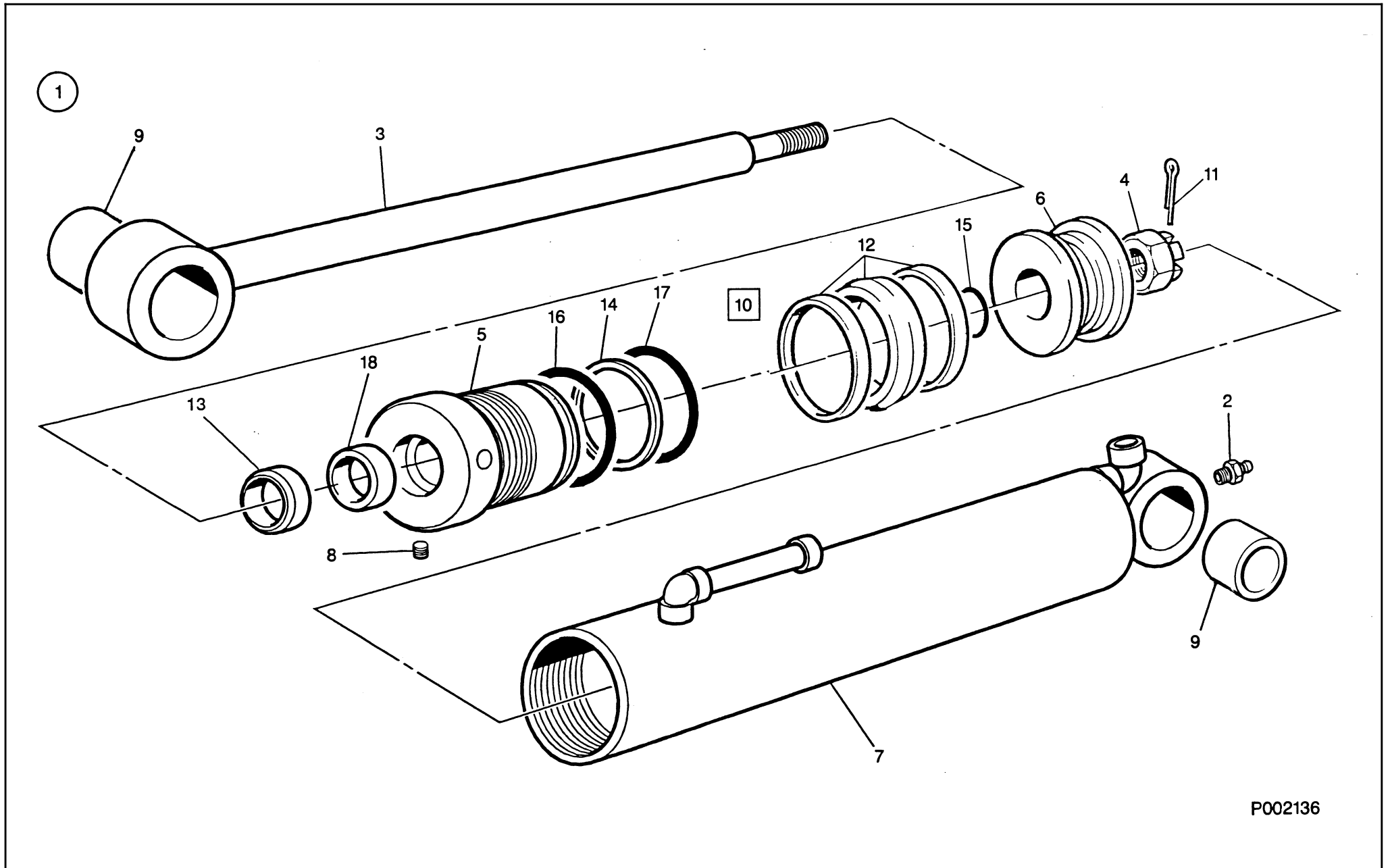
# SAW FEED CYLINDER

**BELL**



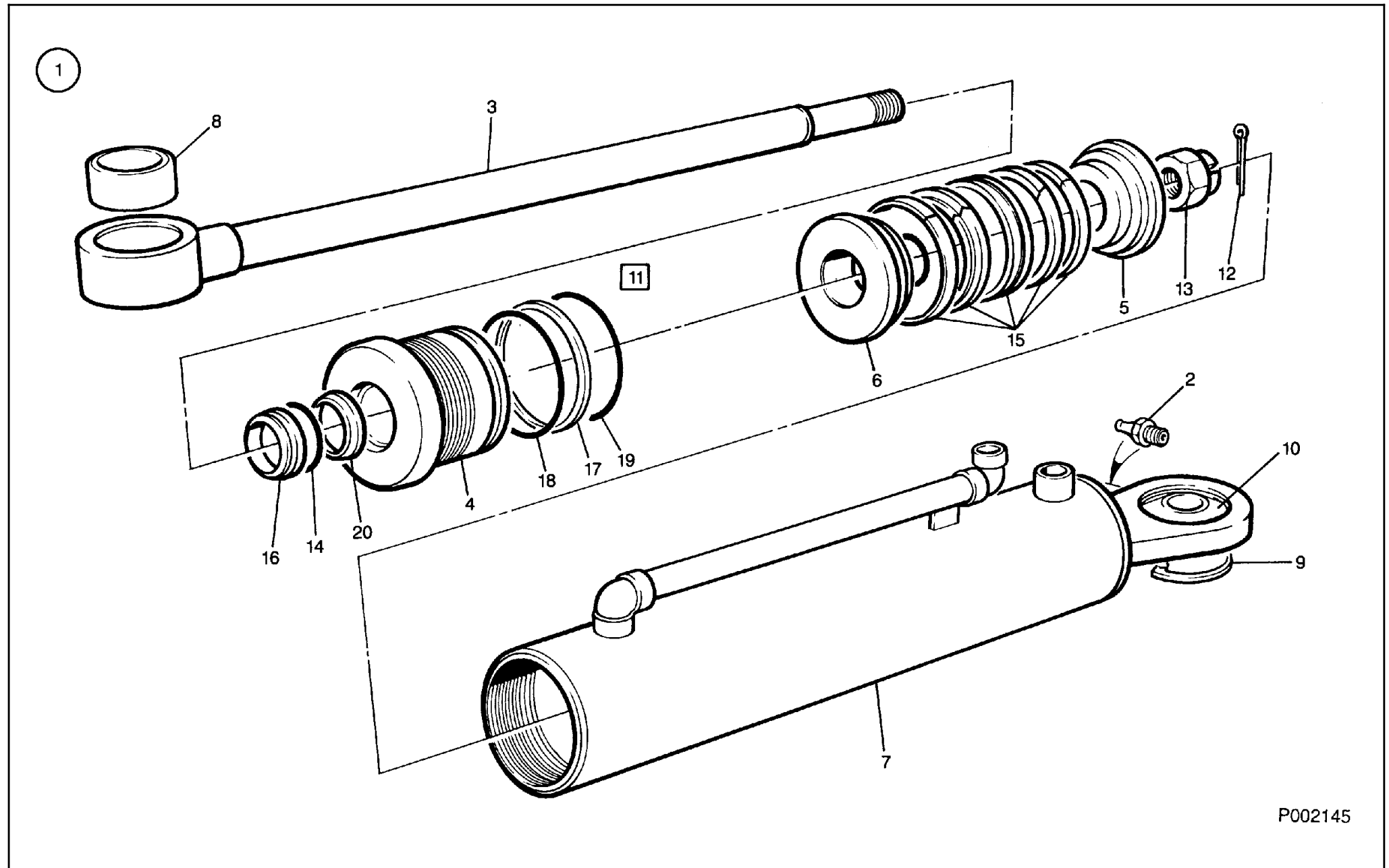
P000485

4-62



P002136

**February 2, 1996**



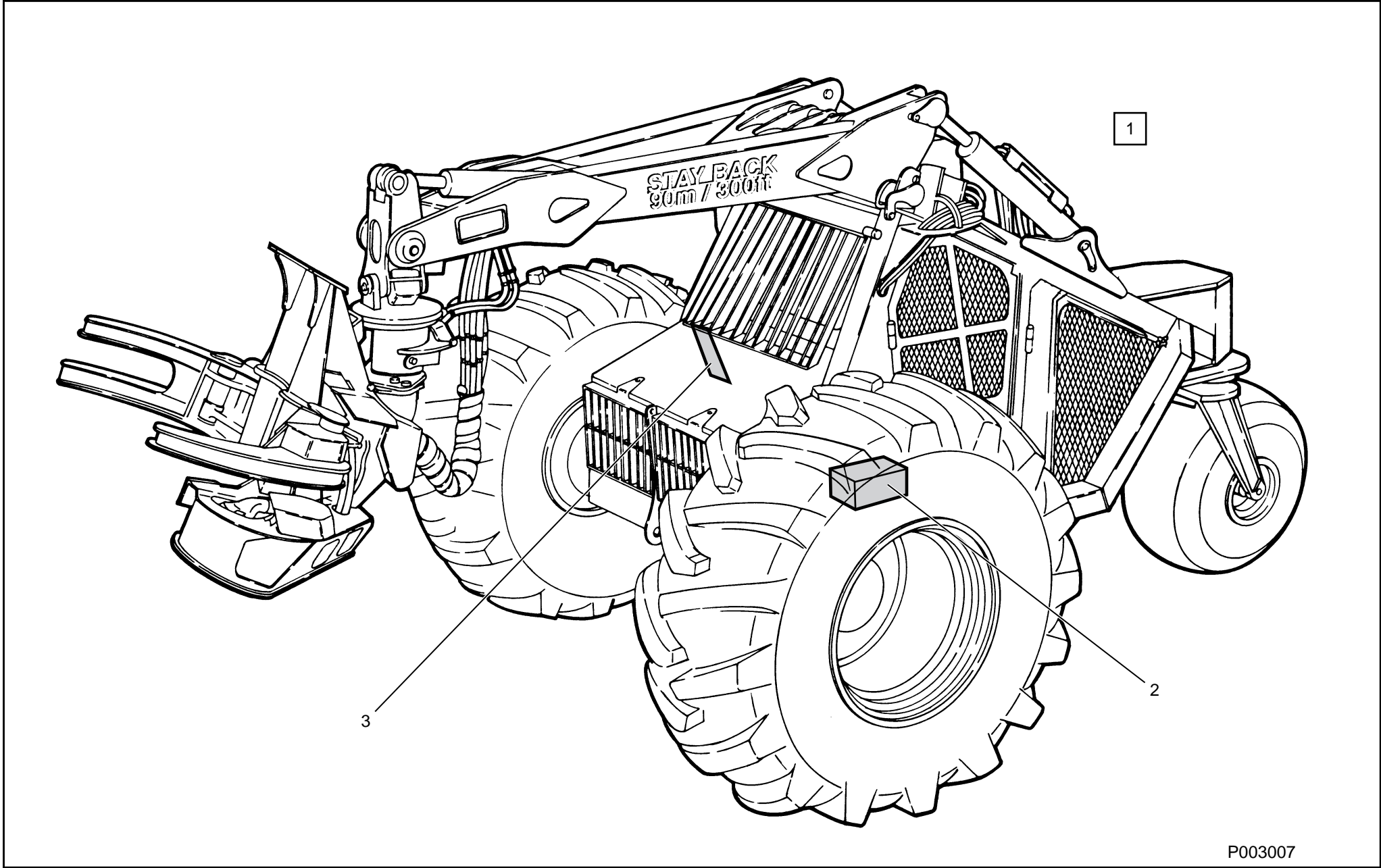
P002145

# BELL

[illegible]

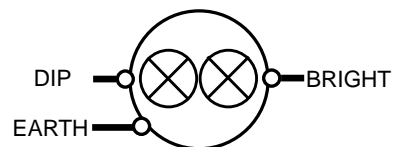


# **SECTION 4C ELECTRICAL SYSTEM**



**March 13, 1996**

## LIGHTS & AUDIO VISUAL WARNING SCHEMATIC SYMBOLS



DUAL FILAMENT LIGHT EG. HEADLIGHT ; TAIL/STOP LIGHT WITH CONNECTORS



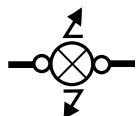
SINGLE FILAMENT LIGHT WITH CONNECTORS



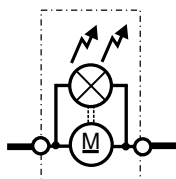
SINGLE FILAMENT LIGHT WITH CONNECTOR ON POSITIVE AND A CHASSIS GROUND (i.e. : THE BODY OF THE LAMP HOLDER FASTENED TO THE CHASSIS MASS OF THE MACHINE ACTS AS THE NEGATIVE WIRE)



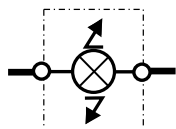
SMALL SINGLE FILAMENT LIGHT WITH CONNECTORS (E.G : DASH PANEL OR INSTRUMENT LAMP)



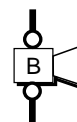
SMALL SINGLE FILAMENT LIGHT WITH CONNECTORS WHICH FLASHES WHEN OPERATING (E.G : DASH PANEL WARNING LIGHTS)



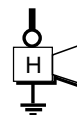
MOTORISED FLASHING BEACON LIGHT



ELECTRONIC STROBE FLASHING BEACON LIGHT



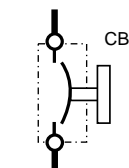
ELECTRONIC BEEPER/BUZZER WITH TWO CONNECTIONS.



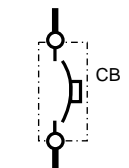
ELECTRIC HOOTER / HORN WITH SINGLE CONNECTION AND CHASSIS EARTH.

P002985

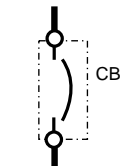
## MANUAL ACTUATED SWITCHES SCHEMATIC SYMBOLS



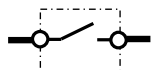
MANUAL RESET THERMAL CIRCUIT BREAKER (PRESS TO RESET /PULL TO SWITCH OFF)



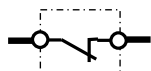
MANUAL RESET THERMAL CIRCUIT BREAKER (PRESS TO RESET)



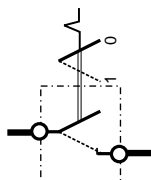
AUTOMATIC RESET THERMAL CIRCUIT BREAKER



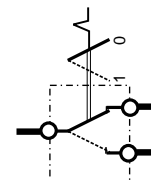
SPRING LOADED NORMALLY OPEN SWITCH  
(CONTACTS ARE OPEN WHEN THE SWITCH IS AT REST)



SPRING LOADED NORMALLY CLOSED SWITCH  
(CONTACTS ARE CLOSED WHEN THE SWITCH IS AT REST)



NORMALLY OPEN SWITCH WITH A DETENT(SWITCH WILL REMAIN  
IN THE LAST POSITION IT WAS SWITCHED TO)

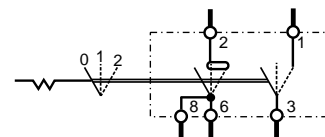


CHANGE OVER SWITCH WITH A DETENT(SWITCH WILL REMAIN  
IN THE LAST POSITION IT WAS SWITCHED TO)

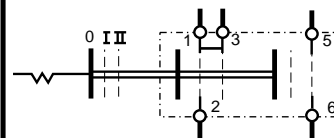


IGNITION SWITCH

KEY SYMBOL INDICATING THE IGNITION SWITCH(THIS IS ALWAYS SHOWN  
ALONG WITH SCHEMATIC SYMBOL FOR THE TYPE OF SWITCH USED)



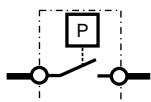
MULTIPLE CONTACT SWITCH WITH THREE DETENT POSITIONS(IN THIS  
CASE THE EXAMPLE SHOWN IS A TWO POSITION HEAD LIGHT SWITCH.  
VARIATIONS IN SWITCHES DEPENDING ON FUNCTION WILL BE FOUND.  
ALL NUMBERING AT TERMINALS IS THE SAME AS THAT FOUND ON THE  
BODY OF THE ACTUAL SWITCH)



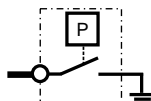
MULTIPLE CONTACT PUSH/PULL SWITCH WITH THREE DETENT  
POSITIONS(IN THIS CASE THE EXAMPLE SHOWN IS A TWO POSITION  
HEAD LIGHT SWITCH.VARIATIONS IN SWITCHES DEPENDING ON  
FUNCTION WILL BE FOUND.ALL NUMBERING AT TERMINALS IS THE  
SAME AS THAT FOUND ON THE BODY OF THE ACTUAL SWITCH)

P002986

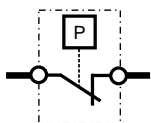
## PRESSURE & TEMPERATURE SWITCHES / SENDERS SCHEMATIC SYMBOLS



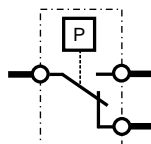
NORMALLY OPEN PRESSURE ACTUATED SWITCH WITH DUAL CONNECTORS  
(SWITCH CONTACTS ARE OPEN WHEN THERE IS NO APPLIED PRESSURE  
E.G : BRAKE LIGHT SWITCH)



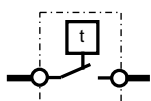
NORMALLY OPEN PRESSURE ACTUATED SWITCH WITH SINGLE CONNECTOR  
INPUT AND CHASSIS GROUND.(SWITCH CONTACTS ARE OPEN WHEN THERE IS NO APPLIED  
PRESSURE .SWITCH BODY ACTS AS THE EARTH WIRE))



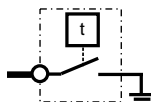
NORMALLY CLOSED PRESSURE ACTUATED SWITCH WITH DUAL CONNECTORS  
(SWITCH CONTACTS ARE CLOSED WHEN THERE IS NO APPLIED PRESSURE  
E.G : LOW AIR PRESSURE SWITCH)



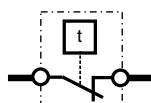
CHANGE OVER PRESSURE ACTUATED SWITCH WITH THREE TERMINAL CONNECTIONS  
I.E :COMMON "C" ; NORMALLY OPEN(CONTACTS OPEN WHEN NO PRESSURE)"N/O" ;  
NORMALLY CLOSED (CONTACTS CLOSED WHEN NO PRESSURE) "N/C".



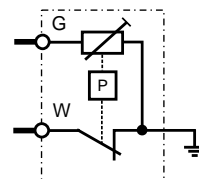
NORMALLY OPEN TEMPERATURE ACTUATED SWITCH WITH DUAL CONNECTORS  
(SWITCH CONTACTS ARE OPEN WHEN THERE IS NO APPLIED HEAT)



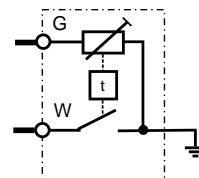
NORMALLY OPEN TEMPERATURE ACTUATED SWITCH WITH SINGLE CONNECTOR  
INPUT AND CHASSIS GROUND.(SWITCH CONTACTS ARE OPEN WHEN THERE IS NO APPLIED  
HEAT .SWITCH BODY ACTS AS THE EARTH WIRE))



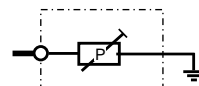
NORMALLY CLOSED TEMPERATURE ACTUATED SWITCH WITH DUAL CONNECTORS  
(SWITCH CONTACTS ARE CLOSED WHEN THERE IS NO APPLIED HEAT)



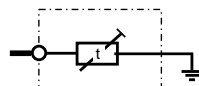
COMBINATION PRESSURE ACTUATED SENDER AND SWITCH(N/C) WITH INPUT  
CONNECTORS AND COMMON CHASSIS EARTH(BODY OF THE SWITCH/SENDER  
ACTS AS THE EARTH WIRE."G" INDICATES THE SENDER CONNECTION;"W" OR  
"WK" INDICATES THE SWITCH CONNECTION.N.B : NEVER CONNECT +12/24 DIRECTLY  
TO THESE TERMINALS AS THIS WILL DESTROY THE RESISTOR AND SWITCH CONTACT)  
EG: OIL PRESSURE SENDER.



COMBINATION TEMPERATURE ACTUATED SENDER AND SWITCH(N/O) WITH INPUT  
CONNECTORS AND COMMON CHASSIS EARTH(BODY OF THE SWITCH/SENDER  
ACTS AS THE EARTH WIRE."G" INDICATES THE SENDER CONNECTION;"W" OR  
"WK" INDICATES THE SWITCH CONNECTION.N.B : NEVER CONNECT +12/24 DIRECTLY  
TO THESE TERMINALS AS THIS WILL DESTROY THE RESISTOR AND SWITCH CONTACT)  
EG: ENGINE TEMPERATURE SENDER.



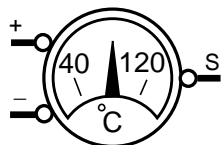
PRESSURE SENDER WITH SINGLE TERMINAL AND CHASSIS EARTH.



TEMPERATURE SENDER WITH SINGLE TERMINAL AND CHASSIS EARTH.

P002987

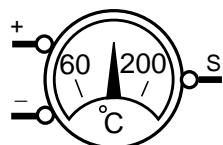
## GAUGES SCHEMATIC SYMBOLS



TEMPERATURE GAUGE 40 TO 120 DEGREES CELCIUS. "+"= 12/24 VOLT IN; "-"= EARTH  
;"S"= SIGNAL TO SENDER UNIT- **NEVER CONNECT 12/24 VOLTS DIRECTLY TO THE "S" TERMINAL.**



TEMPERATURE GAUGE 50 TO 150 DEGREES CELCIUS. "+"= 12/24 VOLT IN; "-"= EARTH  
;"S"= SIGNAL TO SENDER UNIT- **NEVER CONNECT 12/24 VOLTS DIRECTLY TO THE "S" TERMINAL.**



TEMPERATURE GAUGE 60 TO 200 DEGREES CELCIUS. "+"= 12/24 VOLT IN; "-"= EARTH  
;"S"= SIGNAL TO SENDER UNIT- **NEVER CONNECT 12/24 VOLTS DIRECTLY TO THE "S" TERMINAL.**



PRESSURE GAUGE 0 TO 10 KILOPASCAL. "+"= 12/24 VOLT IN; "-"= EARTH  
;"S"= SIGNAL TO SENDER UNIT- **NEVER CONNECT 12/24 VOLTS DIRECTLY TO THE "S" TERMINAL.**



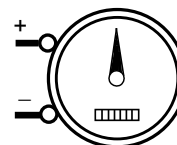
PRESSURE GAUGE 0 TO 5 KILOPASCAL. "+"= 12/24 VOLT IN; "-"= EARTH  
;"S"= SIGNAL TO SENDER UNIT- **NEVER CONNECT 12/24 VOLTS DIRECTLY TO THE "S" TERMINAL.**



ELECTRONIC TACHOMETER. "+"= 12/24 VOLT IN; "-"= EARTH  
;"S"= SIGNAL FROM ALTERNATOR "W" TERMINAL.

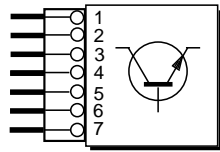


FUEL GAUGE. "+"= 12/24 VOLT IN; "-"= EARTH  
;"S"= SIGNAL TO SENDER UNIT- **NEVER CONNECT 12/24 VOLTS DIRECTLY TO THE "S" TERMINAL.**

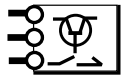


HOURLMETER "+"= 12/24 VOLT IN FROM ALTERNATOR "D+" TERMINAL; "-"= EARTH

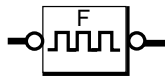
P002988



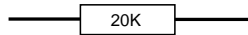
ELECTRONIC MODULE (E- MODULE ) WITH 7 WAY CONNECTOR.



ELECTRONIC SWITCH WITH 3 CONNECTORS.



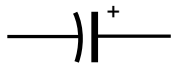
ELECTRONIC FLASHER UNIT WITH 2 CONNECTORS.



20 KILO-OHM RESISTOR.



BIPOLAR CAPACITOR( HAS NO SPECIFIC "+" AND "-" CONNECTION.)



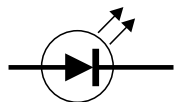
POLAR CAPACITOR(USUALLY OF THE ELECTRLYTIC TYPE WHERE "+" OR "-" TERMINAL IS INDICATED ON THE PRINTING OF THE CAN.)



SILICON DIODE( CURRENT FLOW IS IN THE DIRECTION OF THE ARROWHEAD.ON THE ACTUAL DIODE THE"V" PART OF THE SYMBOL IS INDICATED BY A THIN RING AROUND THE DIODE-CURRENT FLOW IS "TO" THE CIRCUIT FROM THE RING.)



ZENER DIODE



LED(LIGHT EMITTING DIODE)



TRANSZORB DIODE



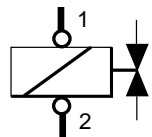
BIPOLAR TRANSISTOR (NPN)



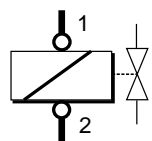
BIPOLAR TRANSISTOR (PNP)

P002989

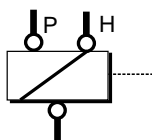
## SOLENOID CONTROLLED DEVICES SCHEMATIC SYMBOLS



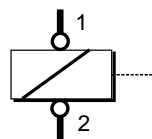
HYDRAULIC SOLENOID VALVE WITH TWO CONNECTORS



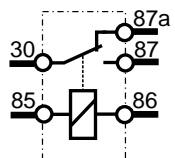
PNEUMATIC SOLENOID VALVE WITH TWO TERMINALS



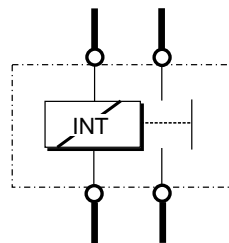
SLAVE SOLENOID WITH PULL AND HOLD COILS AND THREE CONNECTORS. ("P" PULL COIL DRAWS A LARGE CURRENT OVER A SHORT TIME AND IS NOT FOR CONTINUOUS DUTY. "H" HOLD COIL IS A LOW CURRENT COIL WHICH HOLDS THE SOLENOID IN AFTER "P" HAS PULLED IT IN.



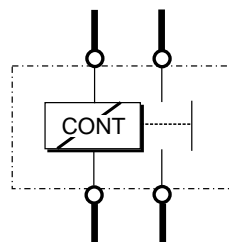
GENERAL SOLENOID DEVICE EG. AIRCON COMPRESSOR CLUTCH



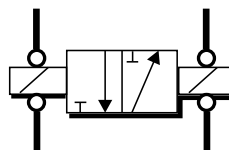
CHANGEOVER RELAY. "85" & "86" ARE THE SOLENOID CONNECTIONS OF THE RELAY. "30" IS COMMON & "87" , "87a" ARE N/O AND N/C RESPECTIVELY.



BODY MOUNT HEAVY DUTY SOLENOID .RATED FOR INTERMITTANT DUTY .  
EG : STARTER SOLENOID TRACKED SLEW BOOM.



BODY MOUNT HEAVY DUTY SOLENOID .RATED FOR CONTINUOUS DUTY .  
EG : IGNITION SOLENOID- TRACKED SLEW BOOM.



DUAL SOLENOID CONTROLLED 3/2 VALVE

P002990

## GENARAL WIRING SCHEMATIC SYMBOLS

|  |   |
|--|---|
|  | WIRE WITH COLOUR AND SIZE ABBREVIATION (IN THIS CASE RED WITH A BLUE TRACER STRIPE AND A SIZE OF 1.6 mm)  |
|  | OPTIONAL EXTRA CIRCUITS AND WIRING  |
|  | SPARE OR UNUSED WIRES USUALLY PROVIDED FOR CUSTOMER EXTRAS.   |
|  | HEAVY DUTY ELECTRICAL CABLE SUCH AS A STARTER OR BATTERY CABLE.   |
|  | ARROW :WIRE GOES TO ANOTHER PAGE(SHEET 2) TO THE CORRESPONDING NUMBER / LETTER AND FLIGHTS.   |
|  | FLIGHTS :WIRE COMING FROM ANOTHER PAGE(SHEET 1) FROM AN ARROW WITH THE CORRESPONDING NUMBER/ LETTER   |
|  | SHEET NUMBER -IE: A COMPLETE MACHINE SCHEMATIC WILL CONSIST OF A NUMBER OF SEPARATE A4 PAGES .THEY COLLECTIVELY HAVE A 700 NUMBER eg:700190/1 WHERE THE "/> |

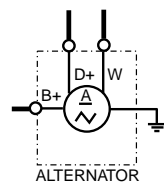
|  |   |
|--|---|
|  | COMPONENT OUTLINE .ANYTHING INSIDE THIS IS INSIDE THE COMPONENT.  |
|  | SOLID COMPONENT OUTLINE WHERE THE INTERNAL STRUCTURE IS NOT KNOWN NO CONNECTORS -THE WIRES ENTER THE DEVICE DIRECTLY.<br>EG : ELECTRONIC MODULE.  |
|  | THREE CONTACTS FROM A MULTIWAY CONNECTOR WITH MORE THAN TREE CONTACTS SHOWING TERMINAL NUMBERING IF PRESENT. "P1" ISTHE PLUG /CONNECTOR NUMBER AND CAN BE FOUND ON THE LIST OF PLUGS PROVIDED WITH THE SCHEMATIC DIAGRAMS |
|  | COMPLETE SINGLE WAY CONNECTOR NUMBER "4".   |
|  | FEMALE HALF OF A SINGLE POSITION CONNECTOR( A PLUG IS DETERMINED MALE OR FEMALE ACCORDING TO THE TYPE CONTACT IT HAS ;IN THIS CASE THE CONTACT IS FEMALE AND THEREFORE THE CONNECTOR IS ALSO TERMED FEMALE.               |
|  | FEMALE CONTACT  |
|  | MALE CONTACT  |
|  | ONE CONTACT FROM CONNECTOR "02" CONTACT"AB". THIS SYMBOL REPLACES THE LARGE SYMBOL ALSO SHOWN ON THIS PAGE. IN NEWER DRAWINGS CONNECTORS WILL NOT BE SHOWN AS COMPLETE OR PARTIAL.ALL WILL BE REPRESENTED LIKE THIS.      |
|  | MALE AND FEMALE COMPONENTS OF CONNECTOR   |

P002991

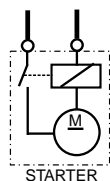
## BATTERY AND ELECTRIC MOTOR SCHEMATIC SYMBOLS



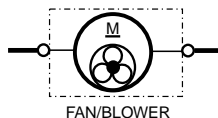
12 VOLT BATTERY (TWO OF THESE CONNECTED IN SERIES = 24 VOLT )



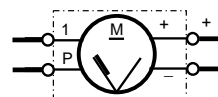
ALTERNATOR UNIT



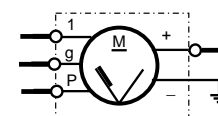
STARTER MOTOR /CRANKING MOTOR SHOWING THE SOLENOID CONTACTOR



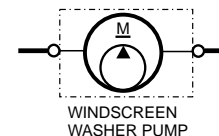
FAN / BLOWER MOTOR OR UNIT



SINGLE SPEED WINDSCREEN WIPER MOTOR WITH PARK FUNCTION



TWO SPEED WINDSCREEN WIPER MOTOR WITH PARK FUNCTION



ELECTRIC PUMP (EG. WINDSCREEN WASHER PUMP)

### WIRE COLOUR ABBREVIATIONS

BLACK =BK  
 BLUE=BL  
 BROWN=BN  
 GREEN=GN  
 GREY=GY  
 ORANGE=OR  
 PINK=PK  
 PURPLE=PL  
 RED=RD  
 WHITE=WH  
 YELLOW=YL

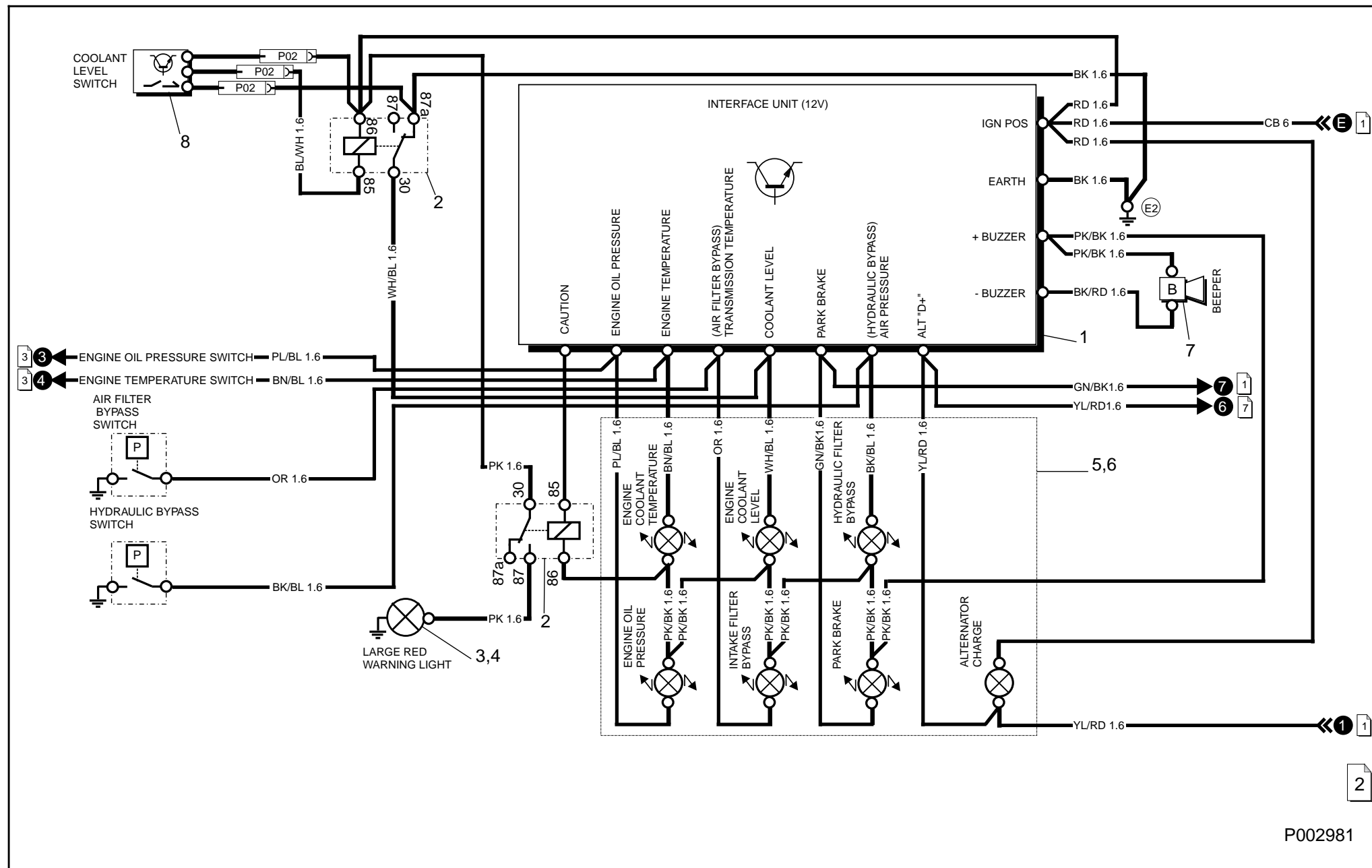
P002992



## STARTING AND CHARGING CIRCUIT

[illegible]

## WARNING LIGHT CIRCUIT

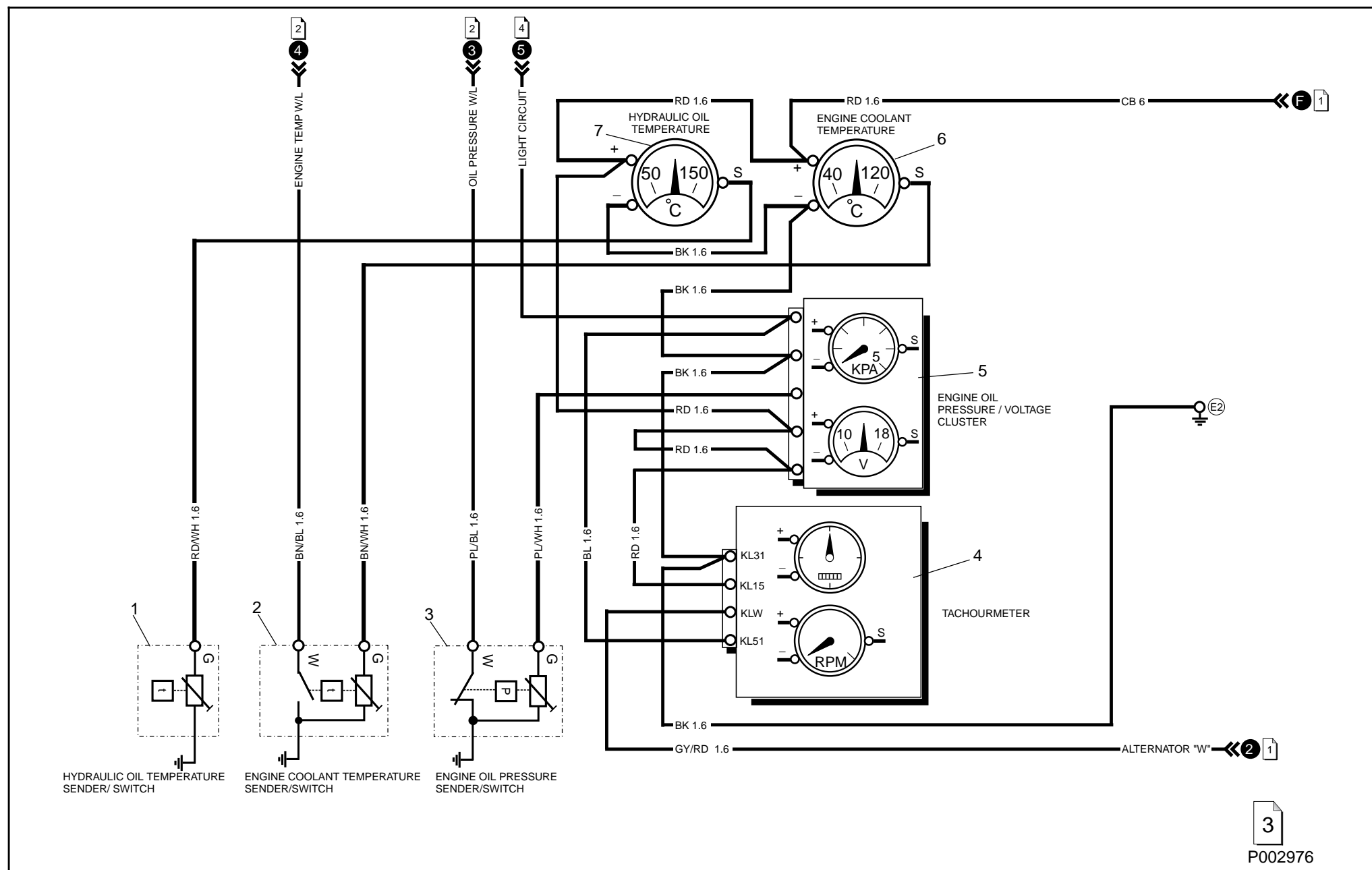


P002981

4-82

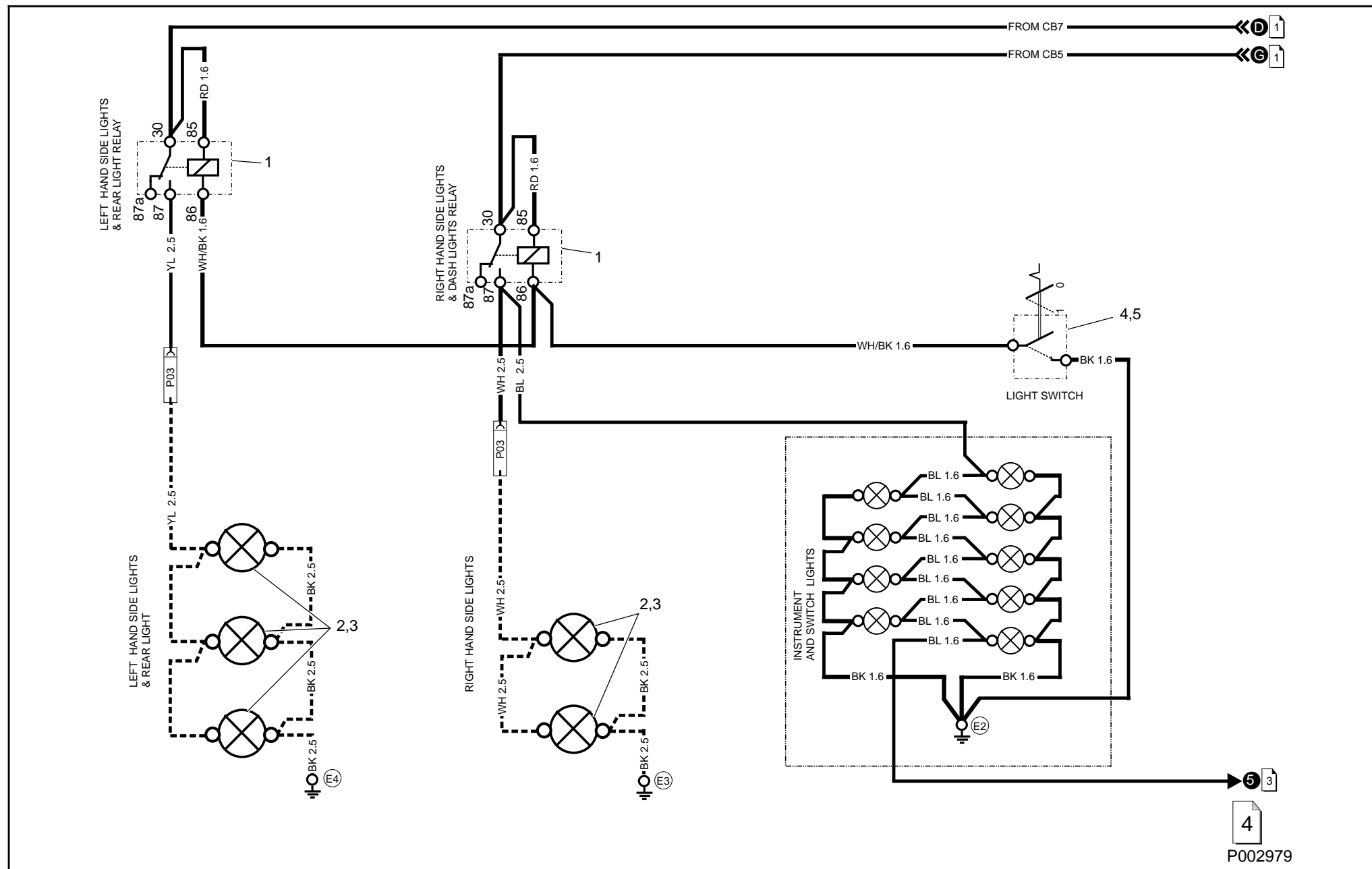
# GAUGES CIRCUIT

**BELL**



**March 19, 1996**

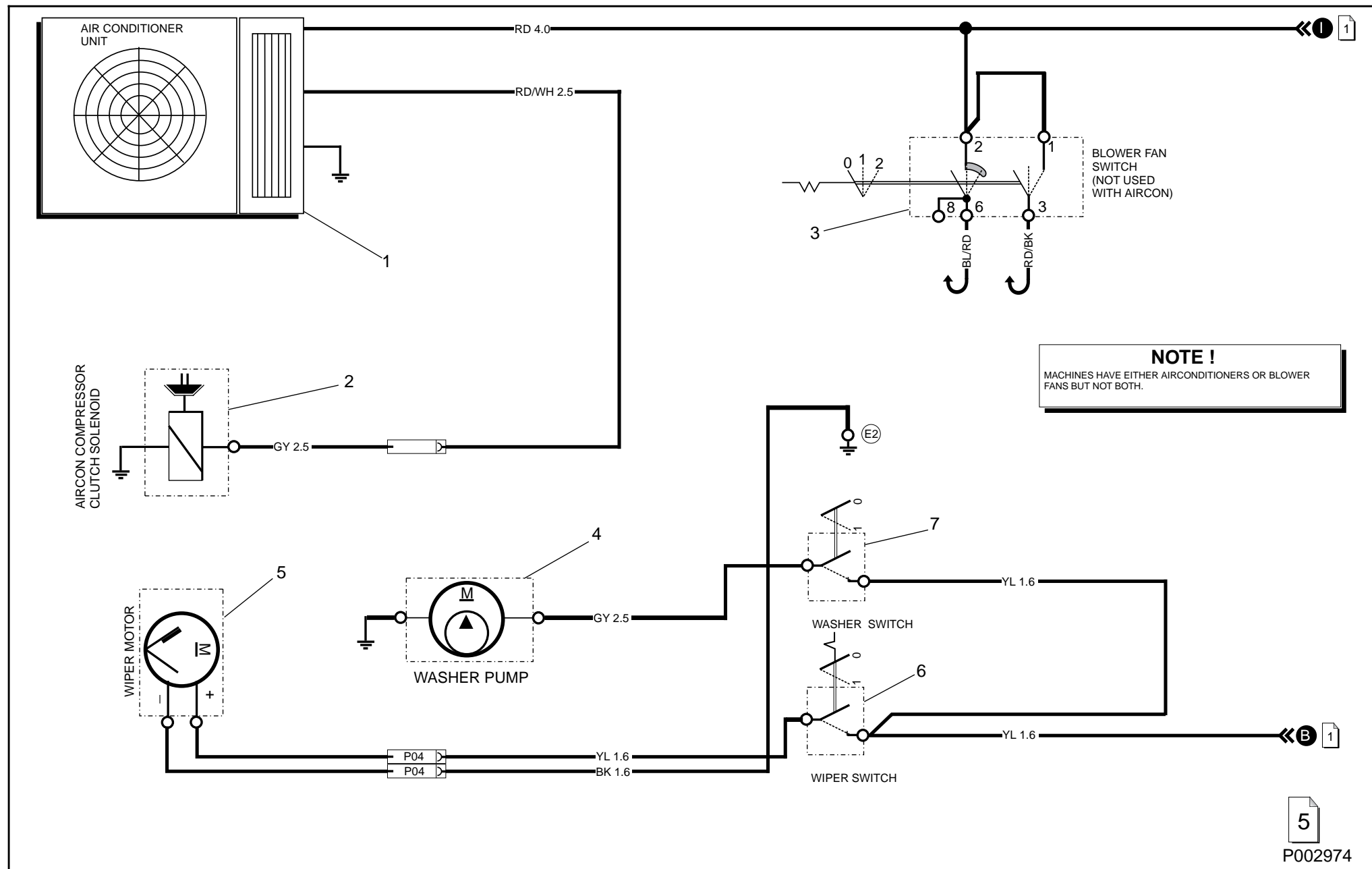
## LIGHTING OPTION CIRCUIT



P002979

**March 19, 1996**

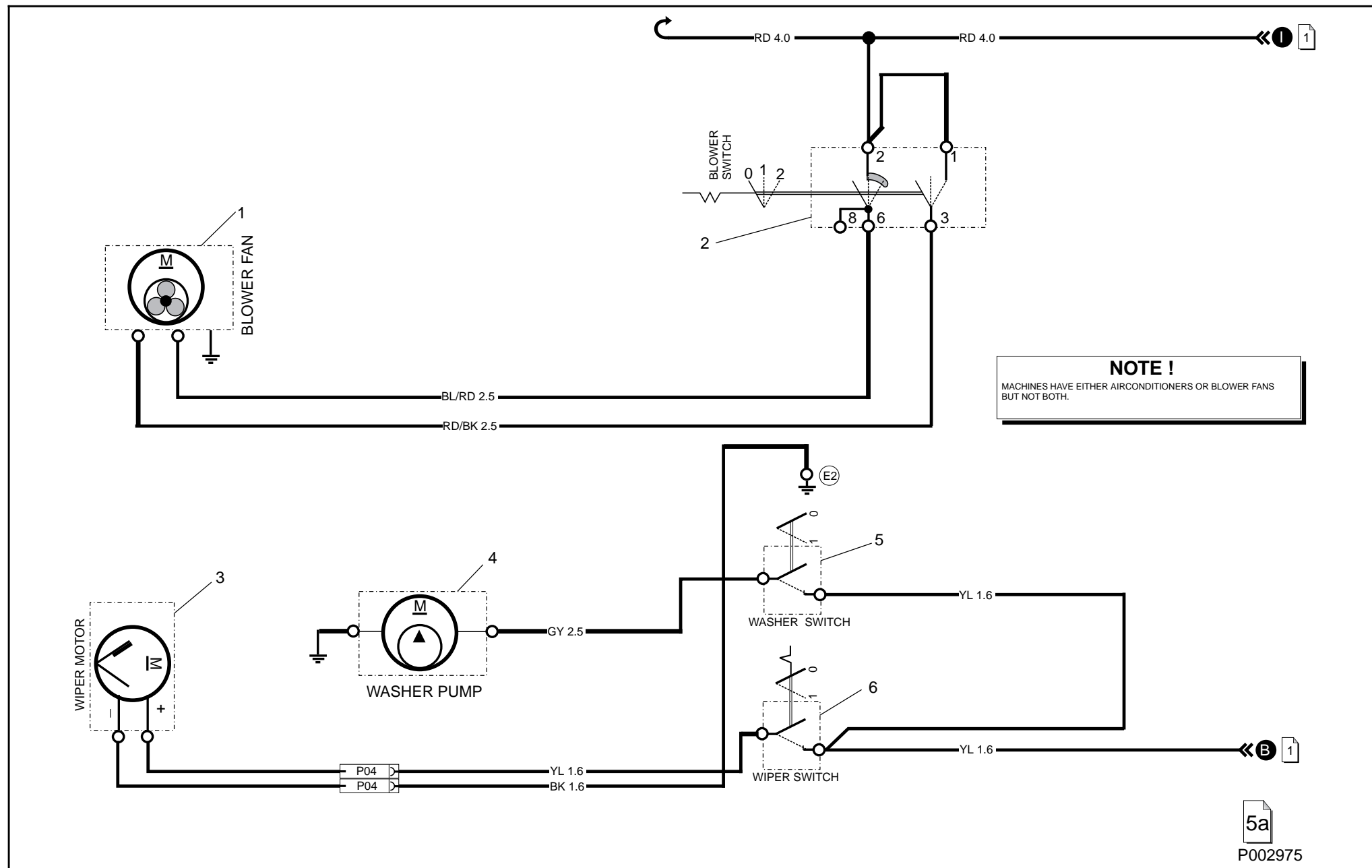
## AIRCONDITIONER AND WIPER CIRCUIT



**4-88**

# BLOWER AND WIPER CIRCUIT

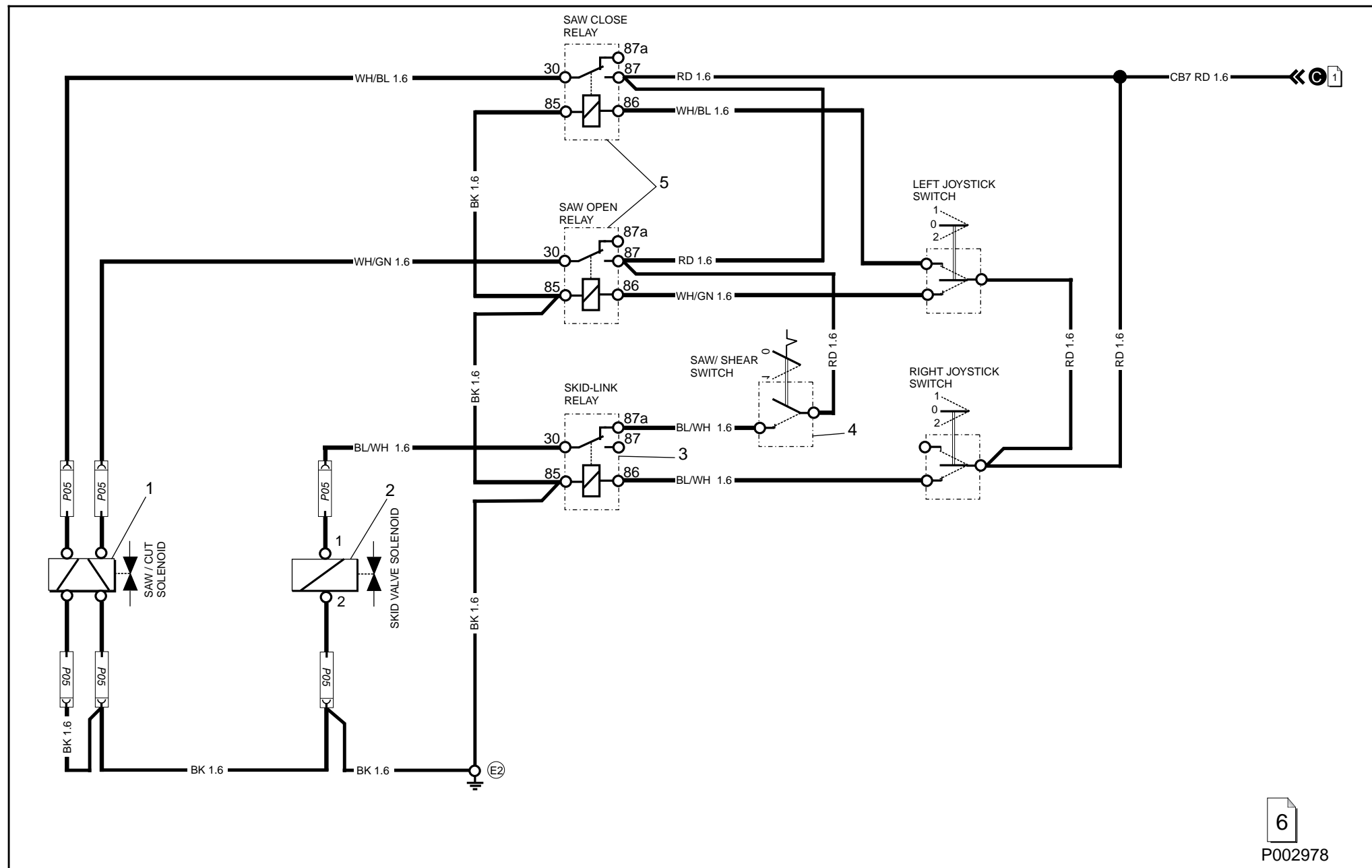
**BELL**



**4-90**

# JOYSTICK CIRCUIT

**BELL**

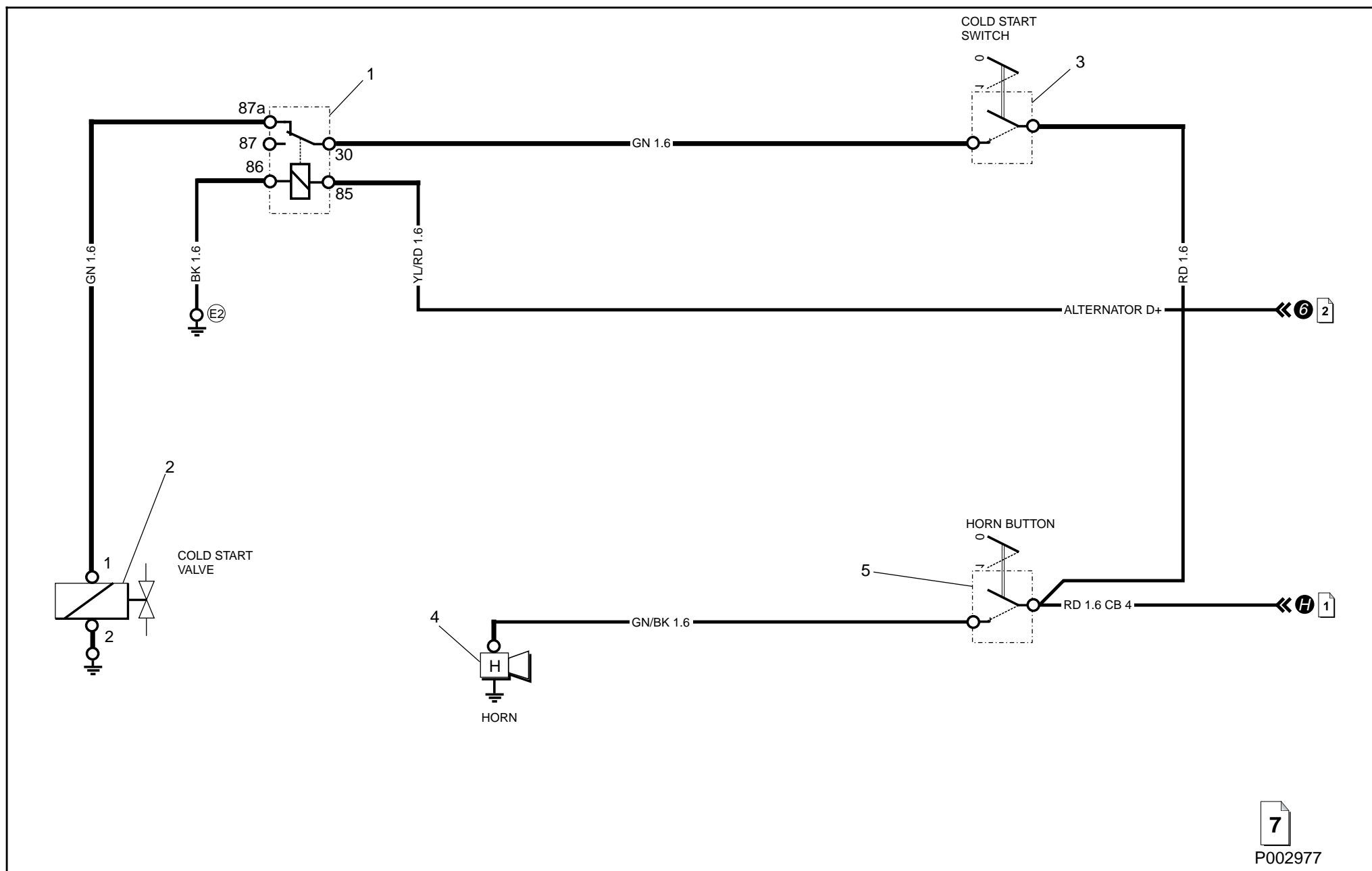


6  
P002978

## JOYSTICK CIRCUIT

**BELL**[illegible]

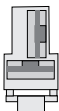
## COLD START HORN CIRCUIT



## COLD START HORN CIRCUIT

**BELL**[illegible]

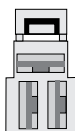
## ELECTRICAL CONNECTIONS



P01

2 WAY PLASTIC CONNECTOR -MAIN HARNESS TO PARK BRAKE SOLENOID  
**NOTE:** PIN / SOCKET NUMBERING IS NOT RELATED TO POSITION ON THE CONNECTOR. WIRE COLOUR IS CLEARLY VISIBLE ON THIS TYPE OF CONNECTOR.

| PIN/SOCKET | PAGE | WIRE COLOUR | FUNCTION                           | TEST LIGHT |            |
|------------|------|-------------|------------------------------------|------------|------------|
| P02/AB     | ?    |             |                                    |            |            |
| 1          | 1    | GREEN 2.5   | 12V POSITIVE FROM START RELAY "87" | X          | ✓ SWITCHED |
| 2          | 1    | BLACK 1.6   | EARTH                              | ✓          | X          |

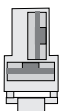


P02

3 WAY PLASTIC CONNECTOR -MAIN HARNESS TO COOLANT LEVEL SWITCH WIRES (ON RADIATOR).  
**NOTE:** PIN / SOCKET NUMBERING IS NOT RELATED TO POSITION ON THE CONNECTOR. WIRE COLOUR IS CLEARLY VISIBLE ON THIS TYPE OF CONNECTOR.

*\* DO NOT CONNECT DIRECTLY TO POSITIVE AS THIS WILL DESTROY THE INTERNAL ELECTRONICS OF THE UNIT*

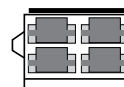
| PIN/SOCKET | PAGE | WIRE COLOUR | FUNCTION                        | TEST LIGHT |   |
|------------|------|-------------|---------------------------------|------------|---|
| P02/AB     | ?    |             |                                 |            |   |
| 1          | 2    | RED 1.6     | 12V SUPPLY FROM CB 6            | X          | ✓ |
| 2          | 2    | BL/WH 1.6   | SIGNAL TO LOW COOLANT RELAY"85" | ✓ *        | X |
| 3          | 2    | BK 1.6      | EARTH                           | ✓          | X |



P03

2 WAY PLASTIC CONNECTOR -MAIN HARNESS TO LIGHTS HARNESS  
**NOTE:** PIN / SOCKET NUMBERING IS NOT RELATED TO POSITION ON THE CONNECTOR. WIRE COLOUR IS CLEARLY VISIBLE ON THIS TYPE OF CONNECTOR.

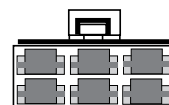
| PIN/SOCKET | PAGE | WIRE COLOUR | FUNCTION                           | TEST LIGHT |            |
|------------|------|-------------|------------------------------------|------------|------------|
| P02/AB     | ?    |             |                                    |            |            |
| 1          | 4    | YELLOW 2.5  | 12V POSITIVE FROM RH LT RELAY "87" | X          | ✓ SWITCHED |
| 2          | 4    | WHITE 2.5   | 12V POSITIVE FROM LH LT RELAY "87" | X          | ✓ SWITCHED |



P04

4 WAY PLASTIC CONNECTOR -DISTRIBUTION HARNESS TO WIPER MOTOR (INSIDE CAB ).  
**NOTE:** PIN / SOCKET NUMBERING IS NOT RELATED TO POSITION ON THE CONNECTOR. WIRE COLOUR IS CLEARLY VISIBLE ON THIS TYPE OF CONNECTOR.

| PIN/SOCKET | PAGE | WIRE COLOUR | FUNCTION                | TEST LIGHT |   |
|------------|------|-------------|-------------------------|------------|---|
| P02/AB     | ?    |             |                         |            |   |
| 1          |      |             |                         |            |   |
| 2          | 5    | YELLOW 1.6  | +24 V TO CB & SWITCH"2" | X          | ✓ |
| 3          | 5    | BLACK 1.6   | EARTH                   | ✓          | X |
| 4          |      |             |                         |            |   |



P05

6 WAY PLASTIC CONNECTOR -MAIN HARNESS TO HYDRAULIC SOLENOIDS  
**NOTE:** PIN / SOCKET NUMBERING IS NOT RELATED TO POSITION ON THE CONNECTOR. WIRE COLOUR IS CLEARLY VISIBLE ON THIS TYPE OF CONNECTOR.

| PIN/SOCKET | PAGE | WIRE COLOUR     | FUNCTION                    | TEST LIGHT |            |
|------------|------|-----------------|-----------------------------|------------|------------|
| P02/AB     | ?    |                 |                             |            |            |
| 1          | 6    | BLACK 1.6       | EARTH                       | ✓          | X          |
| 2          | 6    | BLACK 1.6       | EARTH                       | ✓          | X          |
| 3          | 6    | BLACK 1.6       | EARTH                       | ✓          | X          |
| 4          | 6    | WHITE/BLUE 1.6  | SAW CLOSE RELAY TO SOLENOID | X          | ✓ SWITCHED |
| 5          | 6    | WHITE/GREEN 1.6 | SAW OPEN RELAY TO SOLENOID  | X          | ✓ SWITCHED |
| 6          | 6    | BLUE/WHITE 1.6  | SKID LINK RELAY TO SOLENOID | X          | ✓ SWITCHED |

## EARTH POINTS



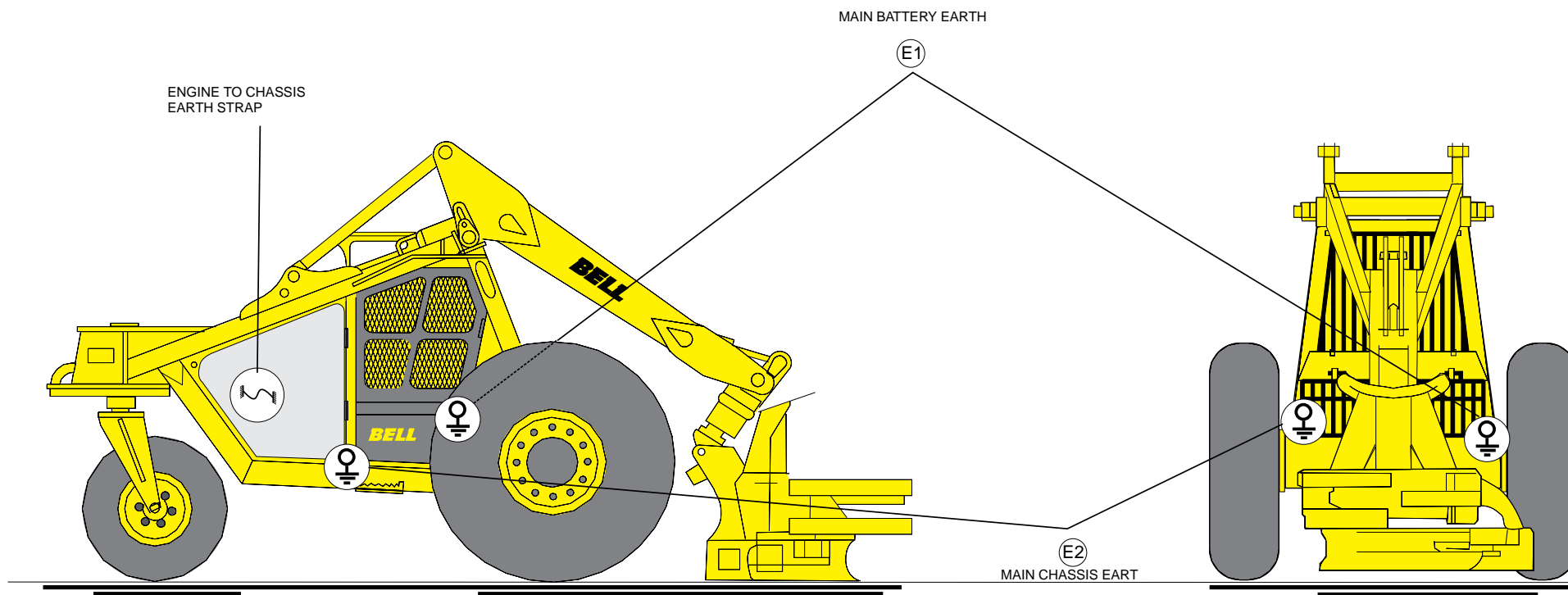
EARTH STRAP



COLLECTIVE WIRING EARTH POINTS

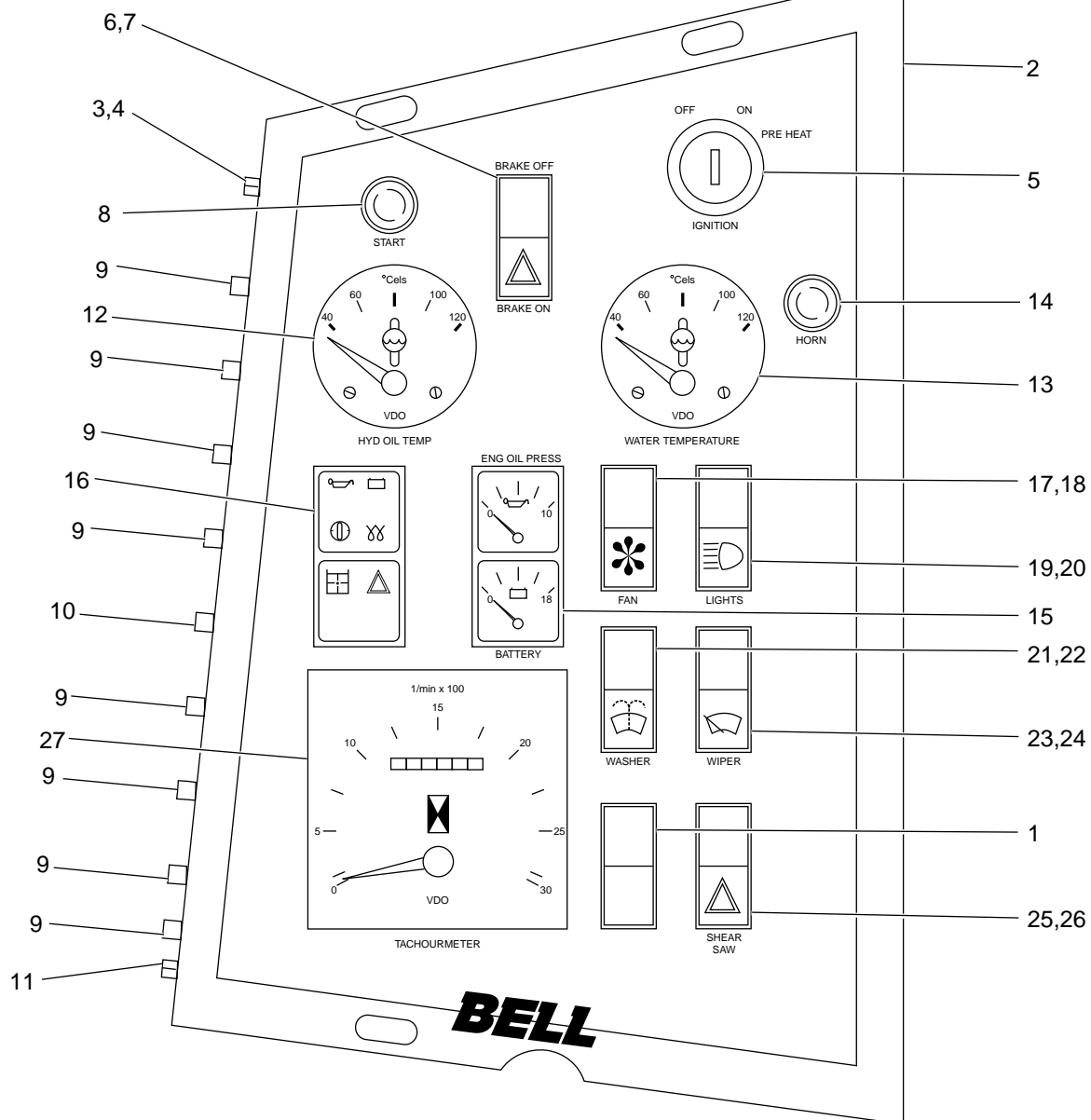
### IMPORTANT !

IT IS VERY IMPORTANT THAT ALL EARTH CONNECTION POINTS ARE FREE OF PAINT AND CORROSION TO ENSURE METAL TO METAL CONTACT BETWEEN THE EARTH RING LUG AND MACHINE CHASSIS FOR PROPER ELECTRICAL CONNECTION.



# INSTRUMENT PANEL ASSEMBLY

**BELL**



28

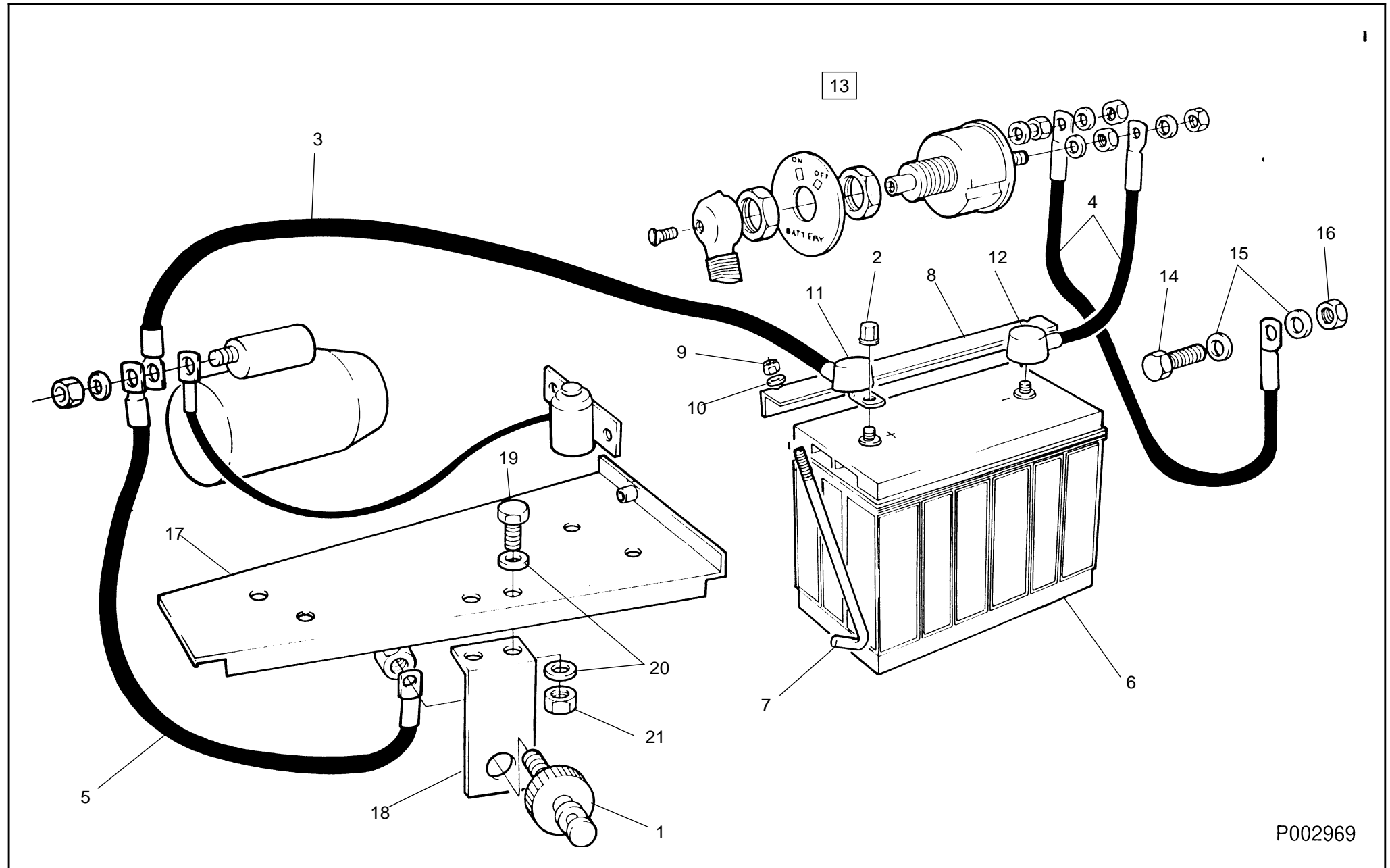
P002143

**INSTRUMENT PANEL ASSEMBLY**

| ITEM | PART NUMBER | QTY | DESCRIPTION                      | REMARKS |
|------|-------------|-----|----------------------------------|---------|
| 1    | 202423      | A/R | INSERT, Blank Switch             |         |
| 2    | 174709      | 1   | INSTRUMENT PANEL                 |         |
| 3    | 100439      | 5   | SCREW, Hex                       |         |
| 4    | 101307      | 5   | WASHER, Flat                     |         |
| 5    | 200398      | 1   | SWITCH, Ignition                 |         |
| 6    | 202541      | 1   | SWITCH, Brake                    |         |
| 7    | 202416      | 1   | LENS, Hazard                     |         |
| 8    | 200706      | 2   | SWITCH, Starter, Push Button     |         |
| 9    | 201467      | 6   | CIRCUIT BREAKER, 5A              |         |
| 10   | 201469      | 2   | CIRCUIT BREAKER, 30A             |         |
| 11   | 202575      | 1   | CIRCUIT BREAKER, 40A             |         |
| 12   | 201861      | 1   | GAUGE, Hydraulic Oil Temperature |         |
| 13   | 201861      | 1   | GAUGE, Water Temperature         |         |
| 14   | 200372      | 1   | SWITCH, Hooter, Press Button     |         |
| 15   | 201693      | 1   | GAUGE, Volt/Engine Oil Pressure  |         |
| 16   | 201695      | 1   | INDICATOR, Warning Light         |         |
| 17   | 202409      | 1   | SWITCH, Fan                      |         |
| 18   | 202412      | 1   | LENS, Fan                        |         |
| 19   | 202408      | 1   | SWITCH, Light                    |         |
| 20   | 202415      | 1   | LENS, Light                      |         |
| 21   | 202487      | 1   | SWITCH, Wash, Wiper              |         |
| 22   | 202529      | 1   | LENS, Washer                     |         |
| 23   | 202408      | 1   | SWITCH, Wiper                    |         |
| 24   | 202417      | 1   | LENS, Wiper                      |         |
| 25   | 202408      | 1   | SWITCH, Shear Saw                |         |
| 26   | 202416      | 1   | LENS, Hazard                     |         |
| 27   | 201692      | 1   | GAUGE, Tachometer                |         |
| 28   | 202672      | 1   | HARNESS                          |         |
|      |             |     |                                  |         |
|      |             |     |                                  |         |
|      |             |     |                                  |         |
|      |             |     |                                  |         |
|      |             |     |                                  |         |
|      |             |     |                                  |         |
|      |             |     |                                  |         |

# BATTERY CLAMP AND CABLES

**BELL**



P002969

## BATTERY CLAMP AND CABLES

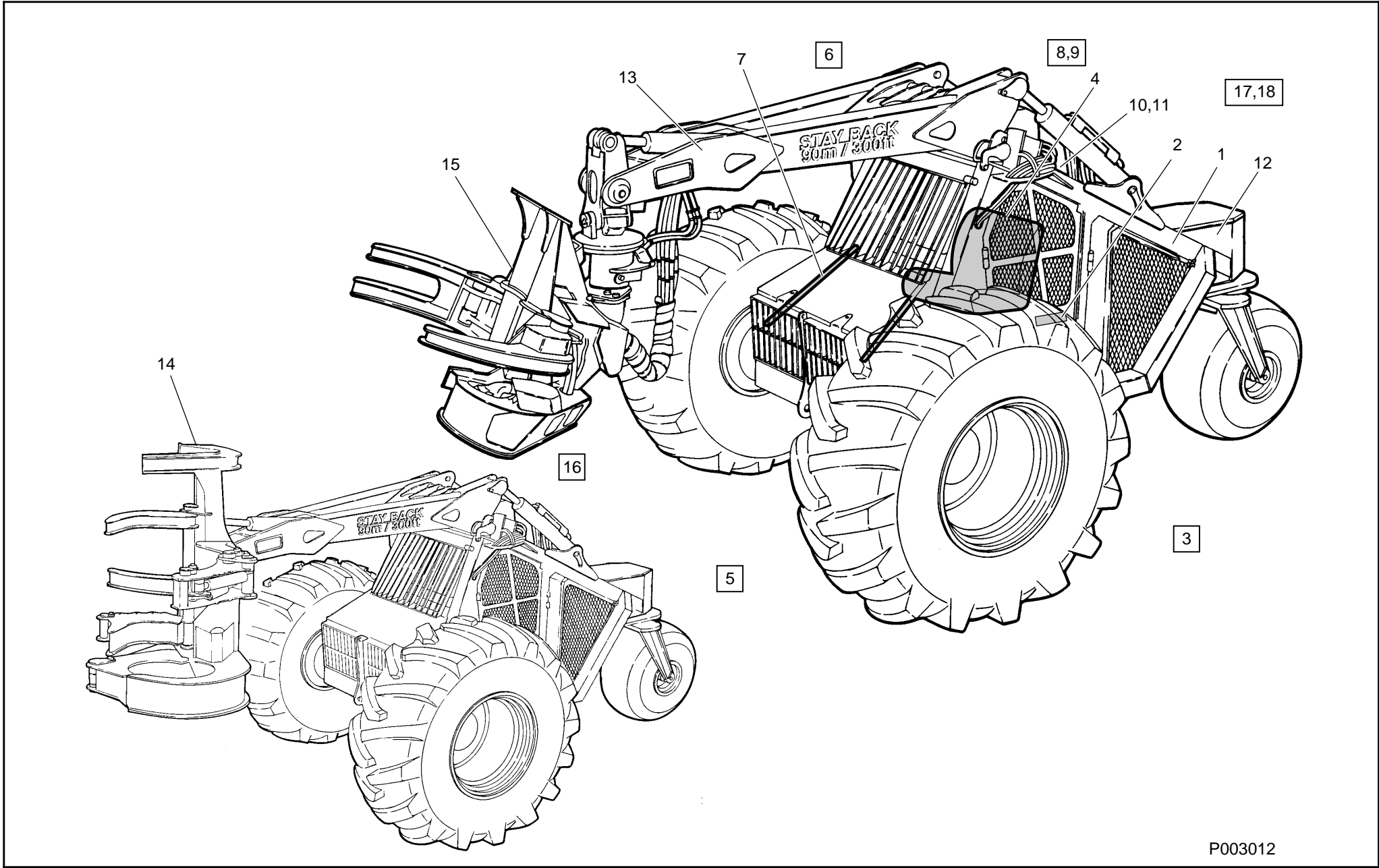
[illegible]



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## **SECTION 5 FRAME AND BODY**

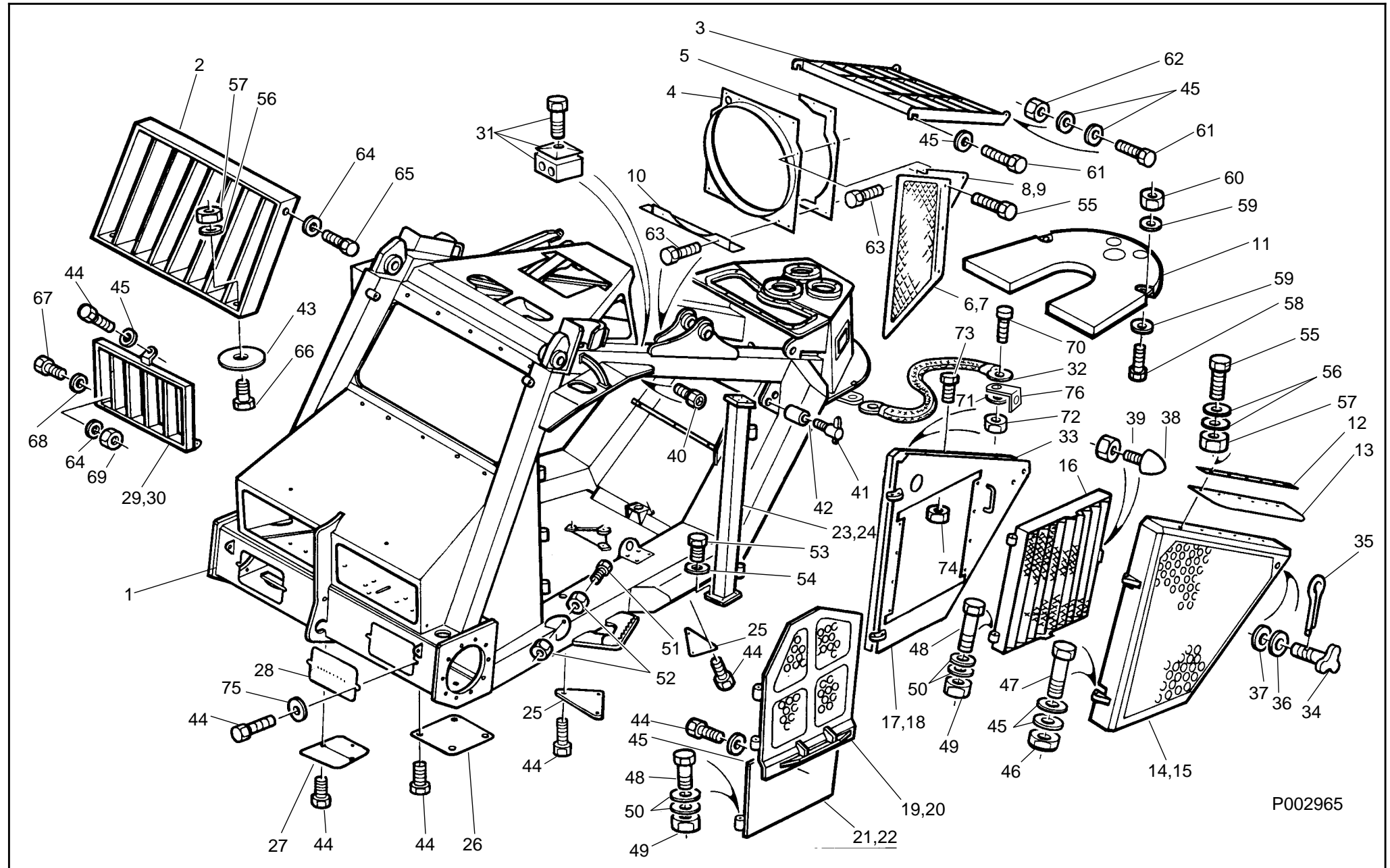
ILLUSTRATED REFERENCE FOR FRAME AND BODY



P003012

## CONTENT LIST

[illegible]

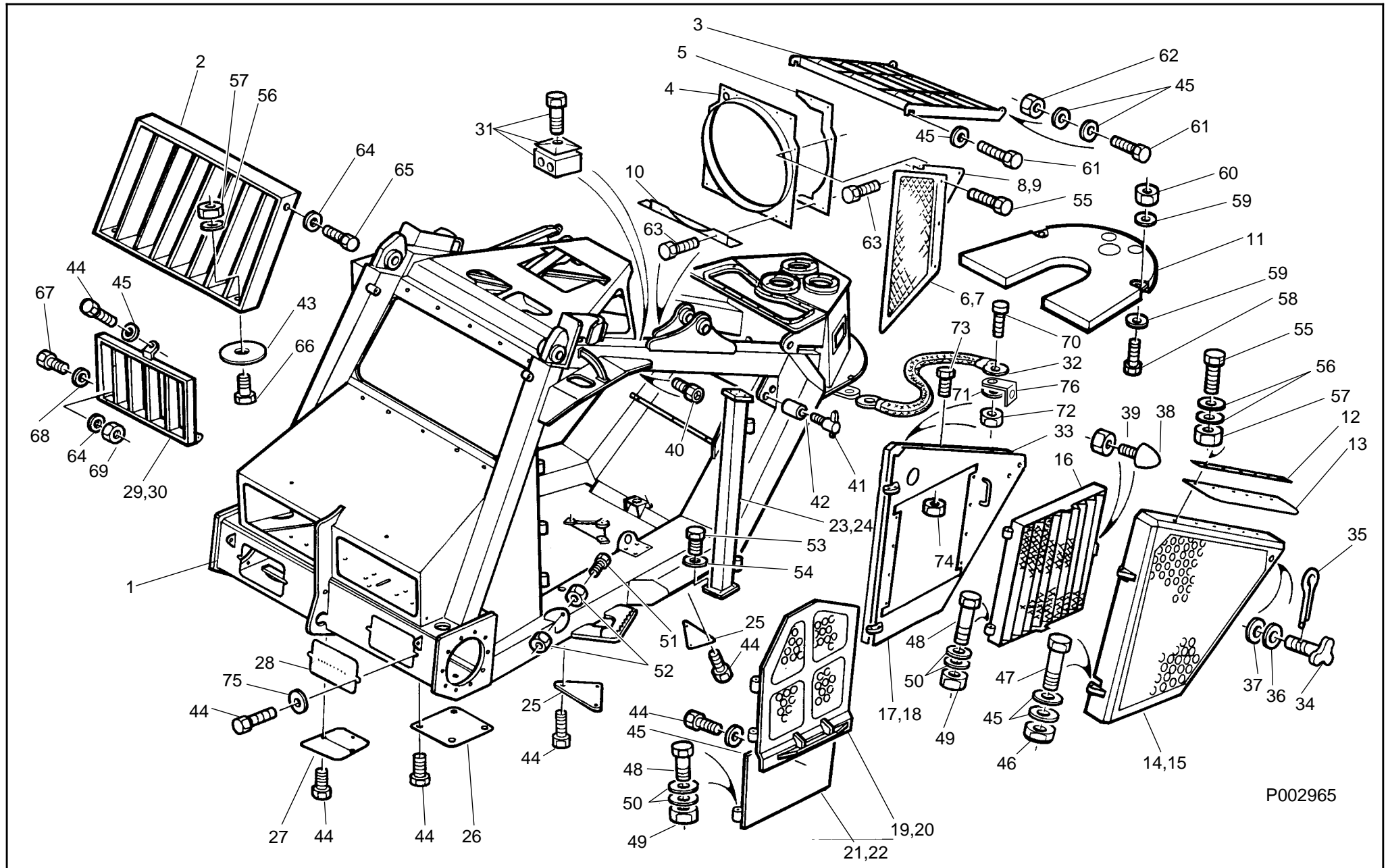


**FRAME AND BODY (WHEELED)**

| ITEM | PART NUMBER | QTY | DESCRIPTION      | REMARKS |
|------|-------------|-----|------------------|---------|
| 1    | 183700      | 1   | FRAME, Wheeled   |         |
| 2    | 172484      | 1   | GUARD            |         |
| 3    | 173297      | 1   | SCREEN           |         |
| 4    | 173100      | 1   | SHROUD, Fan      |         |
| 5    | 174296      | 2   | SPACER           |         |
| 6    | 174455      | 1   | GUARD, LHS       |         |
| 7    | 174476      | 1   | GUARD, RHS       |         |
| 8    | 173098      | 1   | SHROUD, RHS      |         |
| 9    | 173099      | 1   | SHROUD, LHS      |         |
| 10   | 173097      | 1   | SHROUD, Lower    |         |
| 11   | 172733      | 1   | COUNTERWEIGHT    |         |
| 12   | 173897      | 2   | CLAMP            |         |
| 13   | 190750      | 2   | FLAP, Rubber     |         |
| 14   | 182121      | 1   | DOOR, LHS        |         |
| 15   | 182122      | 1   | DOOR, RHS        |         |
| 16   | 173294      | 2   | SCREEN           |         |
| 17   | 173295      | 1   | SCREEN, RHS      |         |
| 18   | 173296      | 1   | SCREEN, LHS      |         |
| 19   | 182105      | 1   | DOOR, Upper, LHS |         |
| 20   | 182106      | 1   | DOOR, Upper, RHS |         |
| 21   | 182109      | 1   | DOOR, Lower, LHS |         |
| 22   | 182110      | 1   | DOOR, Lower, RHS |         |
| 23   | 182741      | 1   | POST, LHS        |         |
| 24   | 182742      | 1   | POST, RHS        |         |
| 25   | 170920      | 2   | COVER            |         |
| 26   | 174315      | 1   | COVER            |         |
| 27   | 174310      | 1   | COVER            |         |
| 28   | 174708      | 2   | PLATE, Cover     |         |
| 29   | 172480      | 1   | GUARD, LHS       |         |
| 30   | 172479      | 1   | GUARD, RHS       |         |
| 31   | 203352      | 2   | K-CLAMP          |         |
| 32   | 201758      | 2   | ROPE, Wire       |         |
| 33   | 190655      | 2   | SEAL, Stripe     |         |
| 34   | 181372      | 2   | HANDLE, Rosy     |         |
| 35   | 100018      | 2   | PIN, Split       |         |

# FRAME AND BODY (WHEELED)

**BELL**



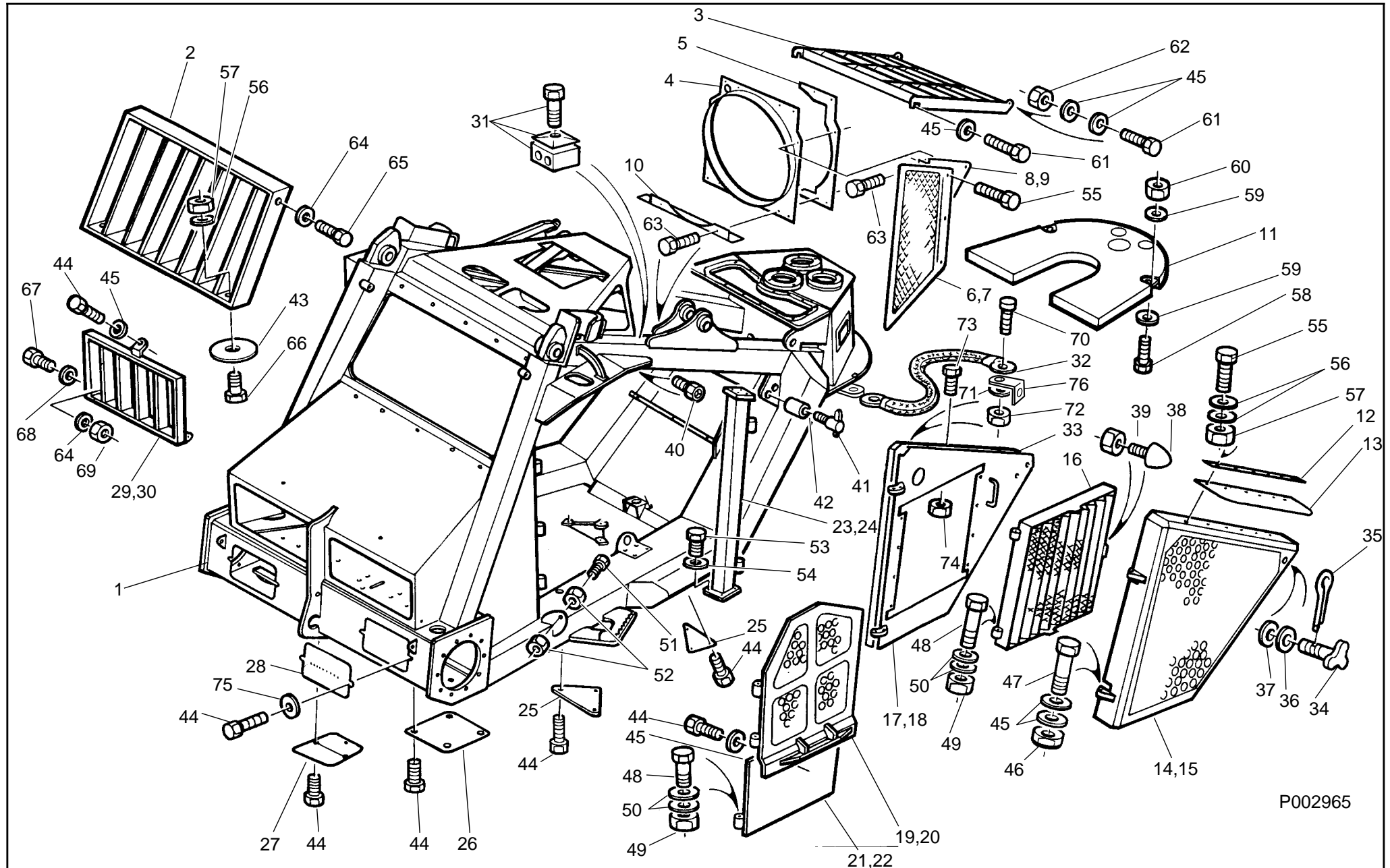
P002965

**FRAME AND BODY (WHEELED)**

| ITEM | PART NUMBER | QTY | DESCRIPTION            | REMARKS |
|------|-------------|-----|------------------------|---------|
| 36   | 101328      | 2   | WASHER                 |         |
| 37   | 100532      | 2   | WASHER, Hardened       |         |
| 38   | 200305      | 2   | STOPPER, Rubber, Door  |         |
| 39   | 100312      | 2   | NUT, Nyloc             |         |
| 40   | 210160      | 1   | GLASS, Sight           |         |
| 41   | 201409      | 2   | FASTENER, Anti-loose   |         |
| 42   | 166331      | 2   | BOSS                   |         |
| 43   | 190498      | 2   | WASHER, Rubber         |         |
| 44   | 100125      | 22  | SCREW, Hex. Head       |         |
| 45   | 100010      | 20  | WASHER, Flat           |         |
| 46   | 100320      | 4   | NUT, Cleavelock        |         |
| 47   | 100173      | 4   | BOLT, Hex. Head        |         |
| 48   | 100203      | 10  | BOLT, Hex. Head        |         |
| 49   | 100314      | 10  | NUT, Nyloc             |         |
| 50   | 100370      | 20  | WASHER, Hardened       |         |
| 51   | 100438      | 2   | SCREW, Hex. Head       |         |
| 52   | 100293      | 4   | NUT, Hexagonal         |         |
| 53   | 100121      | 16  | BOLT, Hex. Head        |         |
| 54   | 100549      | 16  | WASHER, Flat, Hardened |         |
| 55   | 100702      | 20  | BOLT, Hex. Head        |         |
| 56   | 100064      | 26  | WASHER, Flat           |         |
| 57   | 100314      | 14  | NUT, Nyloc             |         |
| 58   | 100172      | 2   | BOLT, Hex. Head        |         |
| 59   | 172044      | 4   | WASHER                 |         |
| 60   | 100325      | 2   | NUT, Nyloc             |         |
| 61   | 100379      | 4   | SCREW, Hex. Head       |         |
| 62   | 100415      | 2   | NUT, Nyloc             |         |
| 63   | 100111      | 10  | SCREW, Hex. Head       |         |
| 64   | 100278      | 6   | WASHER, Flat           |         |
| 65   | 100160      | 2   | BOLT, Hex. Head        |         |
| 66   | 100804      | 2   | SCREW, Cap             |         |
| 67   | 100157      | 4   | SCREW, Hex. Head       |         |
| 68   | 100145      | 4   | BOLT, Hex. Head        |         |
| 69   | 100323      | 4   | NUT, Nyloc             |         |
| 70   | 100703      | 4   | BOLT, Hex. Head        |         |

# FRAME AND BODY (WHEELED)

**BELL**

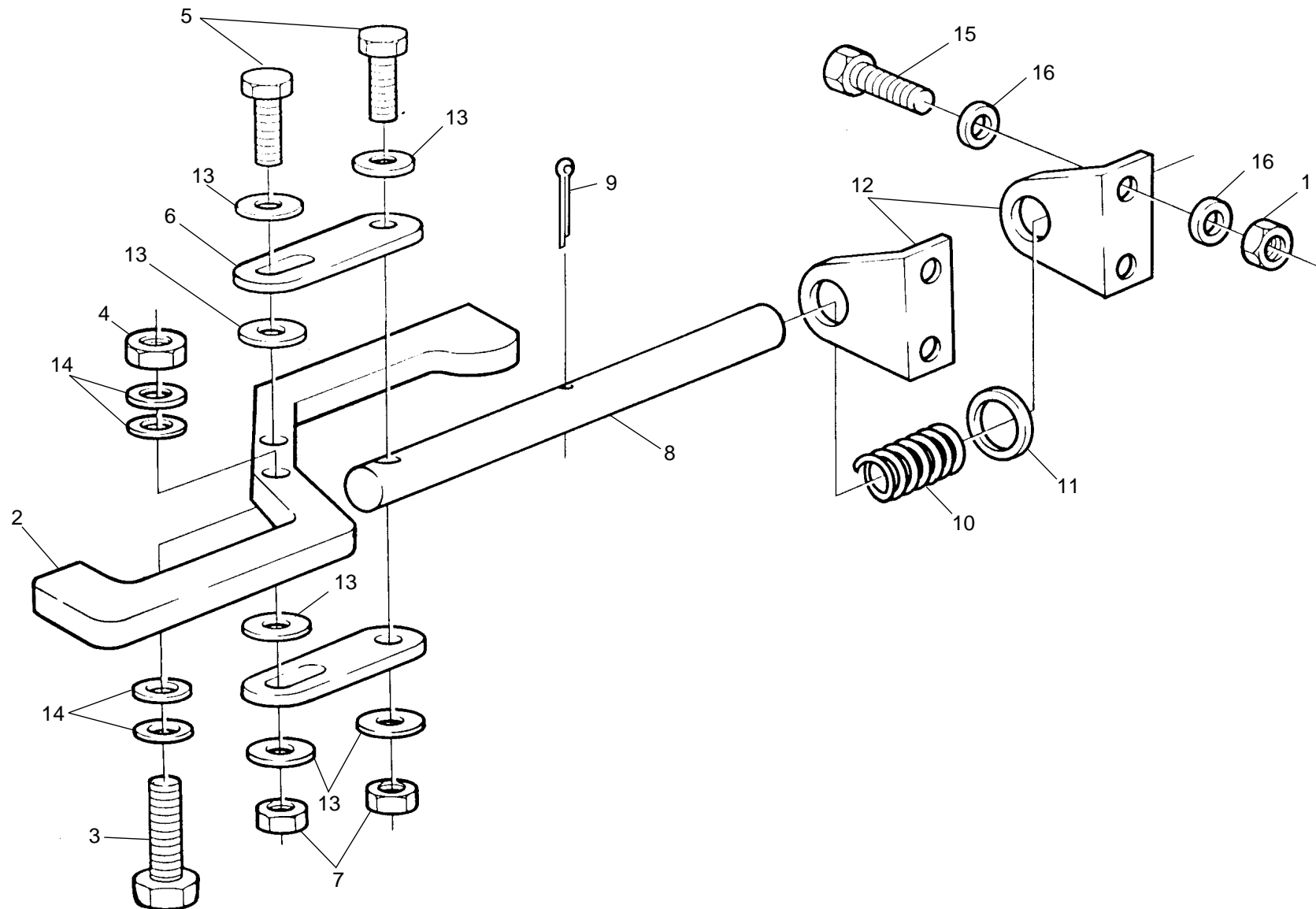


P002965

**5-10**

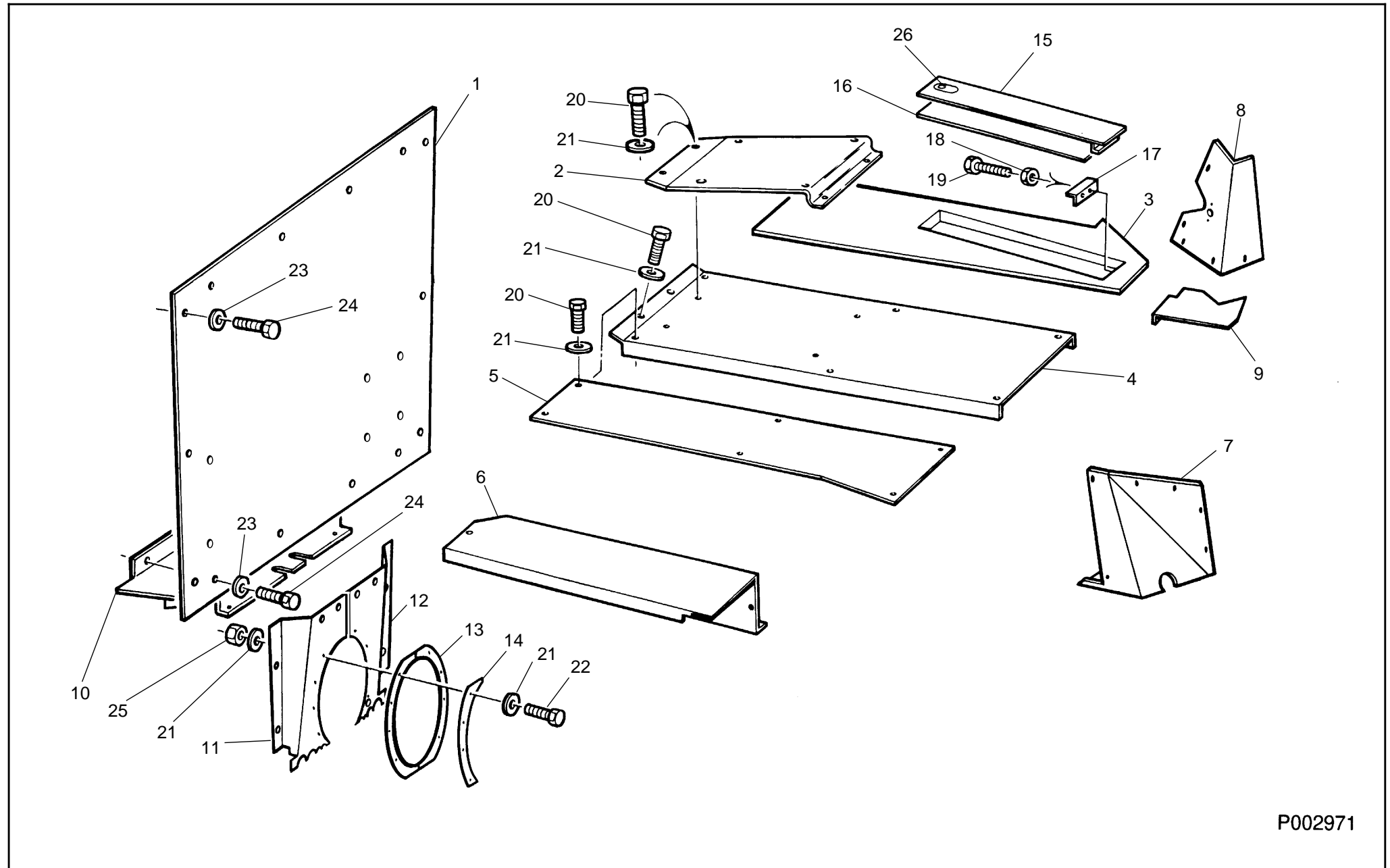
# DOOR HANDLE ASSEMBLY

**BELL**



P002327

**5-12**

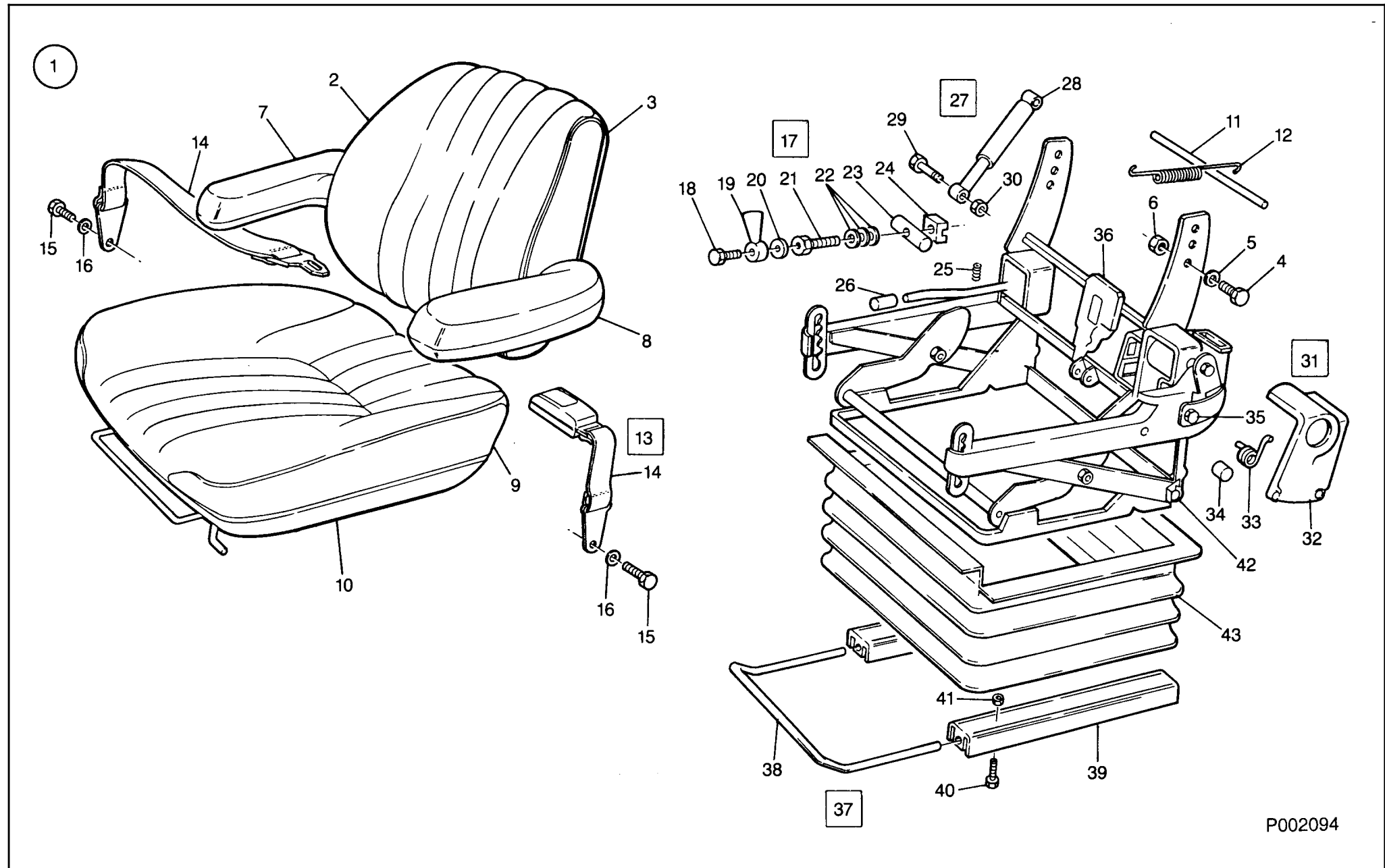


P002971

## CAB PANEL ASSEMBLY

# BELL

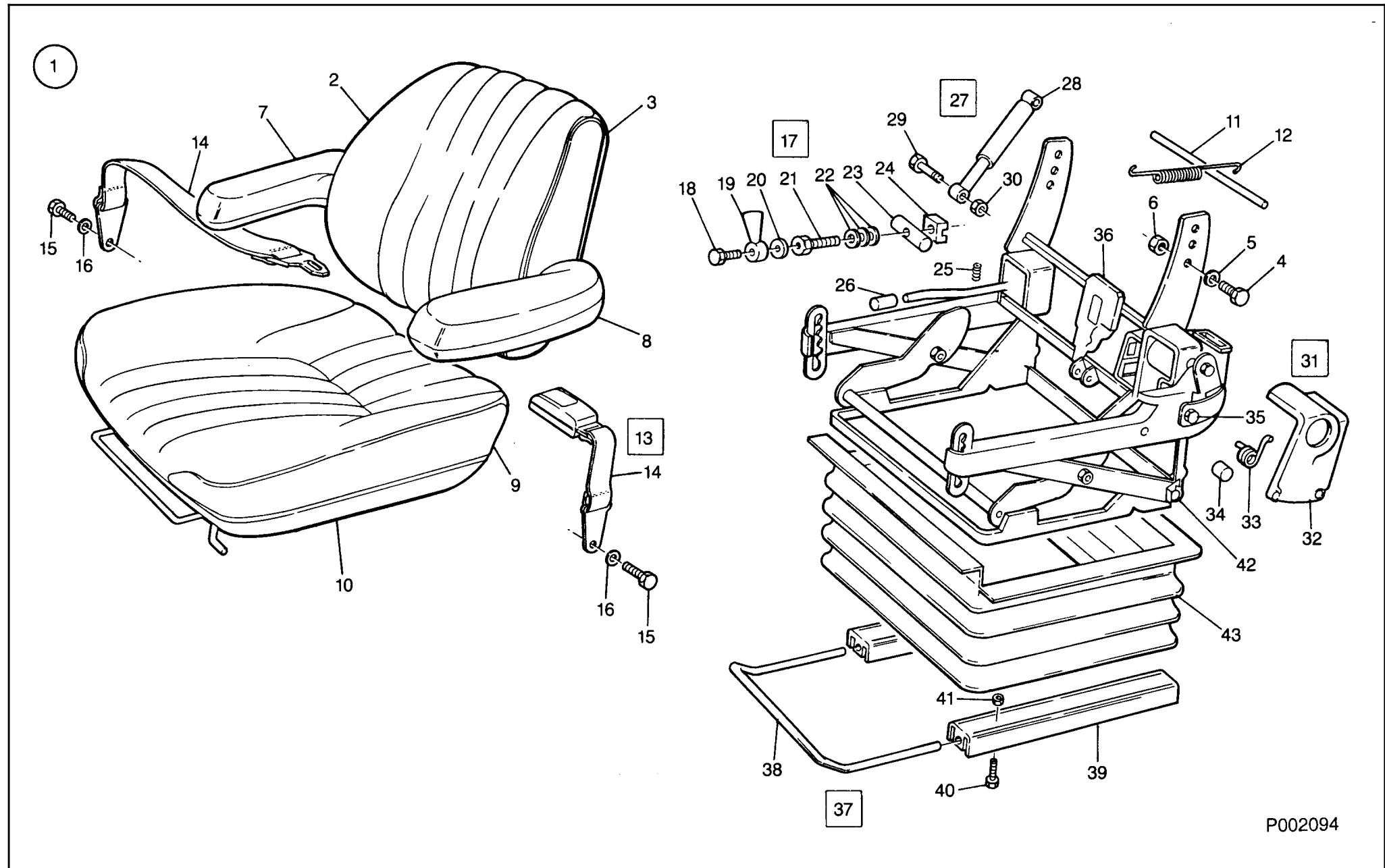
[illegible]



P002094

**SEAT ASSEMBLY**

| ITEM | PART NUMBER | QTY | DESCRIPTION            | REMARKS |
|------|-------------|-----|------------------------|---------|
| 1    | 290371      | 1   | SEAT ASSEMBLY          |         |
| 2    | 224767      | 1   | KIT, Back Cushion Assy |         |
| 3    | 224768      | 1   | KIT, Back Pan Assy     |         |
| 4    | NSI         | 2   | SCREW, Set, Hex        |         |
| 5    | NSI         | 2   | WASHER                 |         |
| 6    | NSI         | 2   | NUT                    |         |
| 7    | 224769      | 1   | KIT, RH Armset         |         |
| 8    | 224770      | 1   | KIT, LH Armset         |         |
| 9    | 224771      | 1   | KIT, Seat Cushion Assy |         |
| 10   | 224772      | 1   | KIT, Seat Pan Assy     |         |
| 11   | NSI         | 1   | PIN                    |         |
| 12   | NSI         | 2   | SPRING                 |         |
| 13   | 224782      | 1   | KIT, Seat Belt         |         |
| 14   | 205151      | 1   | BELT, Seat             |         |
| 15   | NSI         | 2   | SCREW, Set, Hex        |         |
| 16   | NSI         | 2   | WASHER                 |         |
| 17   | 224773      | 1   | KIT,Weight Adjust      |         |
| 18   | NSI         | 1   | SCREW, Set, Hex        |         |
| 19   | NSI         | 1   | HANDLE                 |         |
| 20   | NSI         | 1   | SPACER                 |         |
| 21   | NSI         | 1   | SCREW, Set, Hex        |         |
| 22   | NSI         | 3   | WASHER                 |         |
| 23   | NSI         | 1   | PIN                    |         |
| 24   | NSI         | 1   | BLOCK                  |         |
| 25   | NSI         | 1   | SPRING                 |         |
| 26   | NSI         | 1   | COVER                  |         |
| 27   | 224774      | 2   | KIT, Damper Assy       |         |
| 28   | NSI         | 2   | SHOCK ABSORBER         |         |
| 29   | NSI         | 4   | SCREW, Set, Hex        |         |
| 30   | NSI         | 4   | NUT                    |         |
| 31   | 224775      | 1   | KIT, Recliner          |         |
| 32   | NSI         | 1   | COVER                  |         |
| 33   | NSI         | 1   | SPRING                 |         |
| 34   | NSI         | 1   | SPACER                 |         |
| 35   | NSI         | 2   | SCREW, Set, Hex        |         |

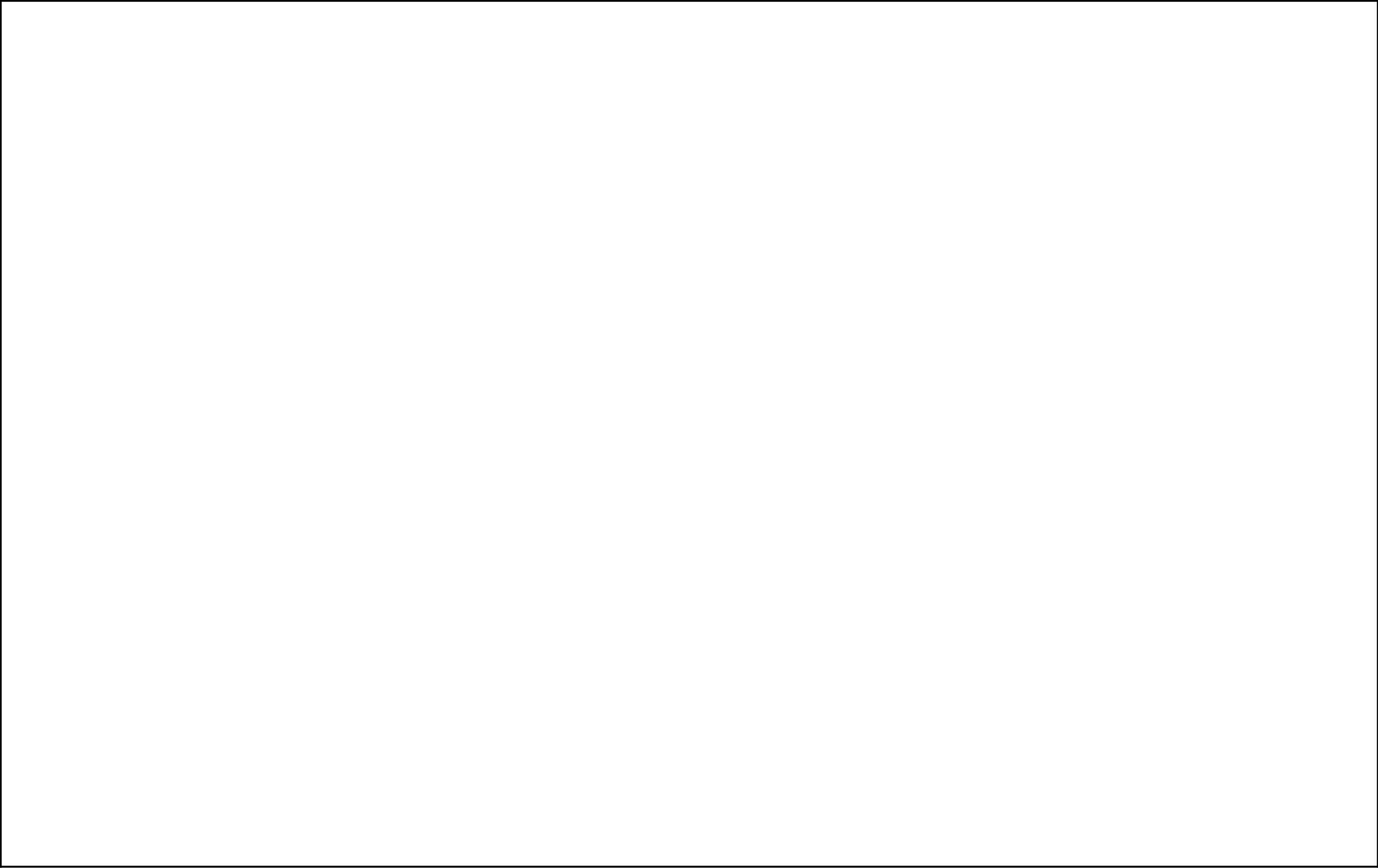


P002094

## SEAT ASSEMBLY

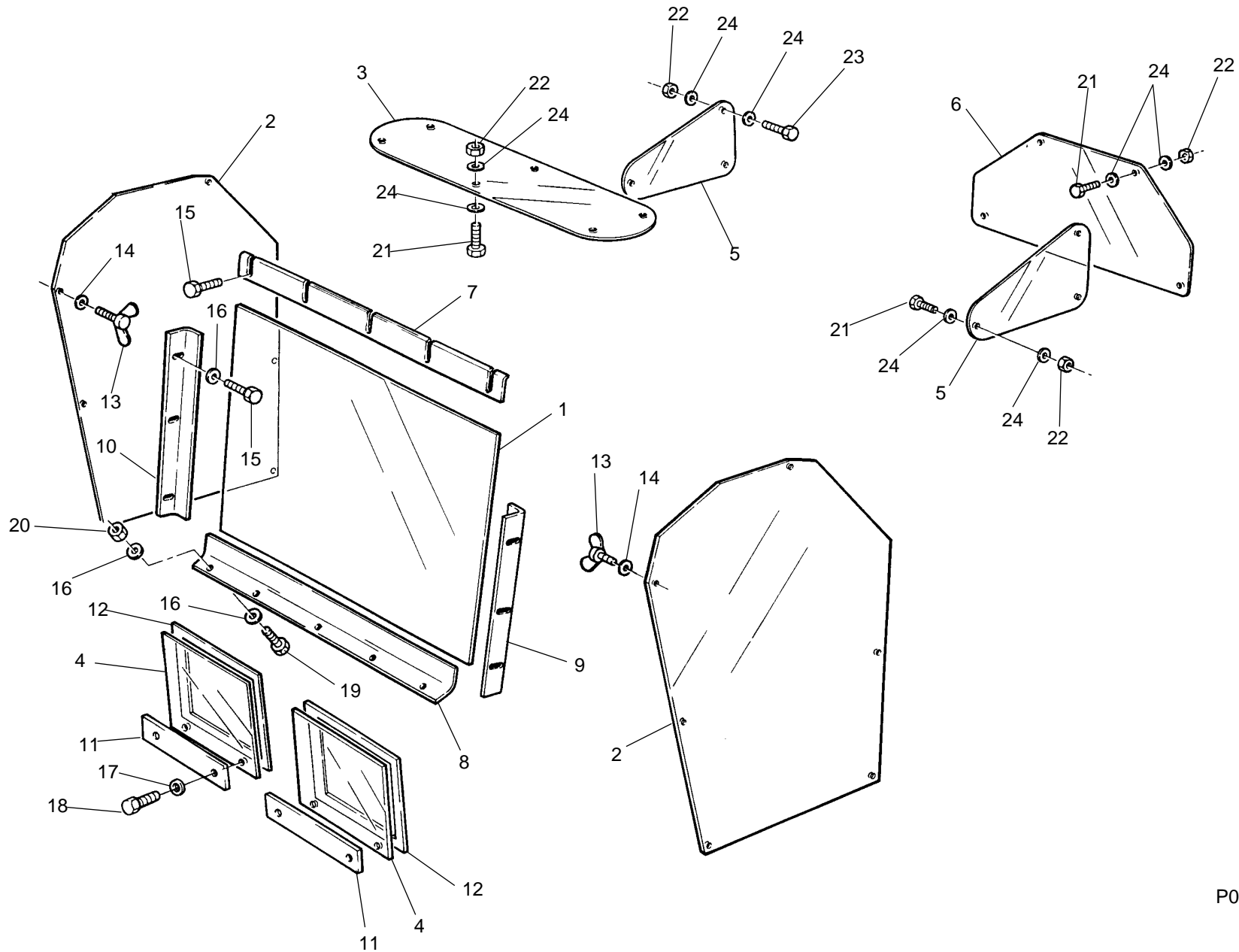
# BELL

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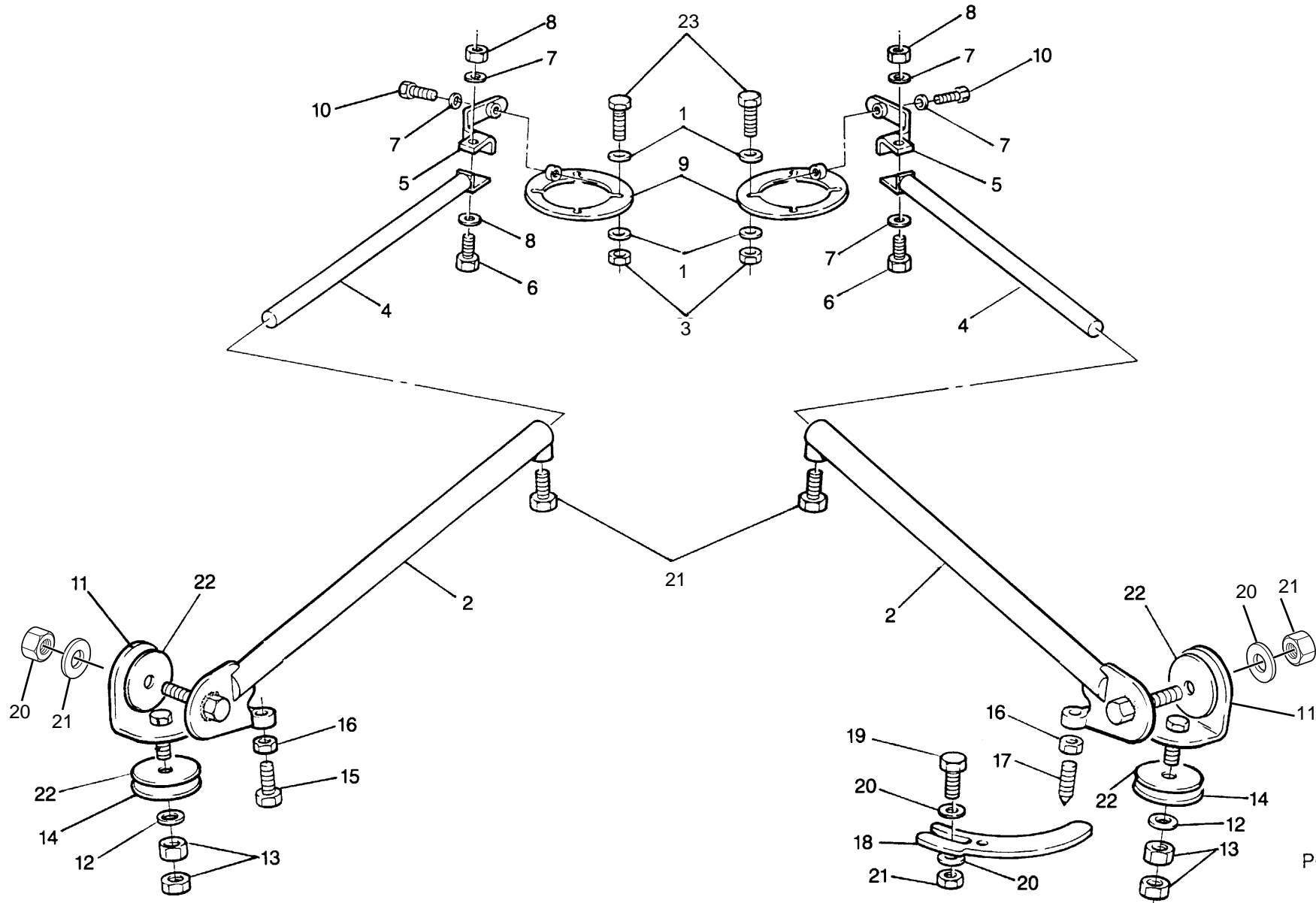
**FIRE EXTINGUISHER UNIT**

| ITEM | PART NUMBER | QTY | DESCRIPTION | REMARKS |
|------|-------------|-----|-------------|---------|
| 1    |             |     |             |         |
| 2    |             |     |             |         |
| 3    |             |     |             |         |
| 4    |             |     |             |         |
| 5    |             |     |             |         |
| 6    |             |     |             |         |
| 7    |             |     |             |         |
| 8    |             |     |             |         |
| 9    |             |     |             |         |
| 10   |             |     |             |         |
| 11   |             |     |             |         |
| 12   |             |     |             |         |
| 13   |             |     |             |         |
| 14   |             |     |             |         |
| 15   |             |     |             |         |
| 16   |             |     |             |         |
| 17   |             |     |             |         |
| 18   |             |     |             |         |
| 19   |             |     |             |         |
| 20   |             |     |             |         |
| 21   |             |     |             |         |
| 22   |             |     |             |         |
| 23   |             |     |             |         |
| 24   |             |     |             |         |
| 25   |             |     |             |         |
| 26   |             |     |             |         |
| 27   |             |     |             |         |
| 28   |             |     |             |         |
| 29   |             |     |             |         |
| 30   |             |     |             |         |
| 31   |             |     |             |         |
| 32   |             |     |             |         |
| 33   |             |     |             |         |
| 34   |             |     |             |         |
| 35   |             |     |             |         |



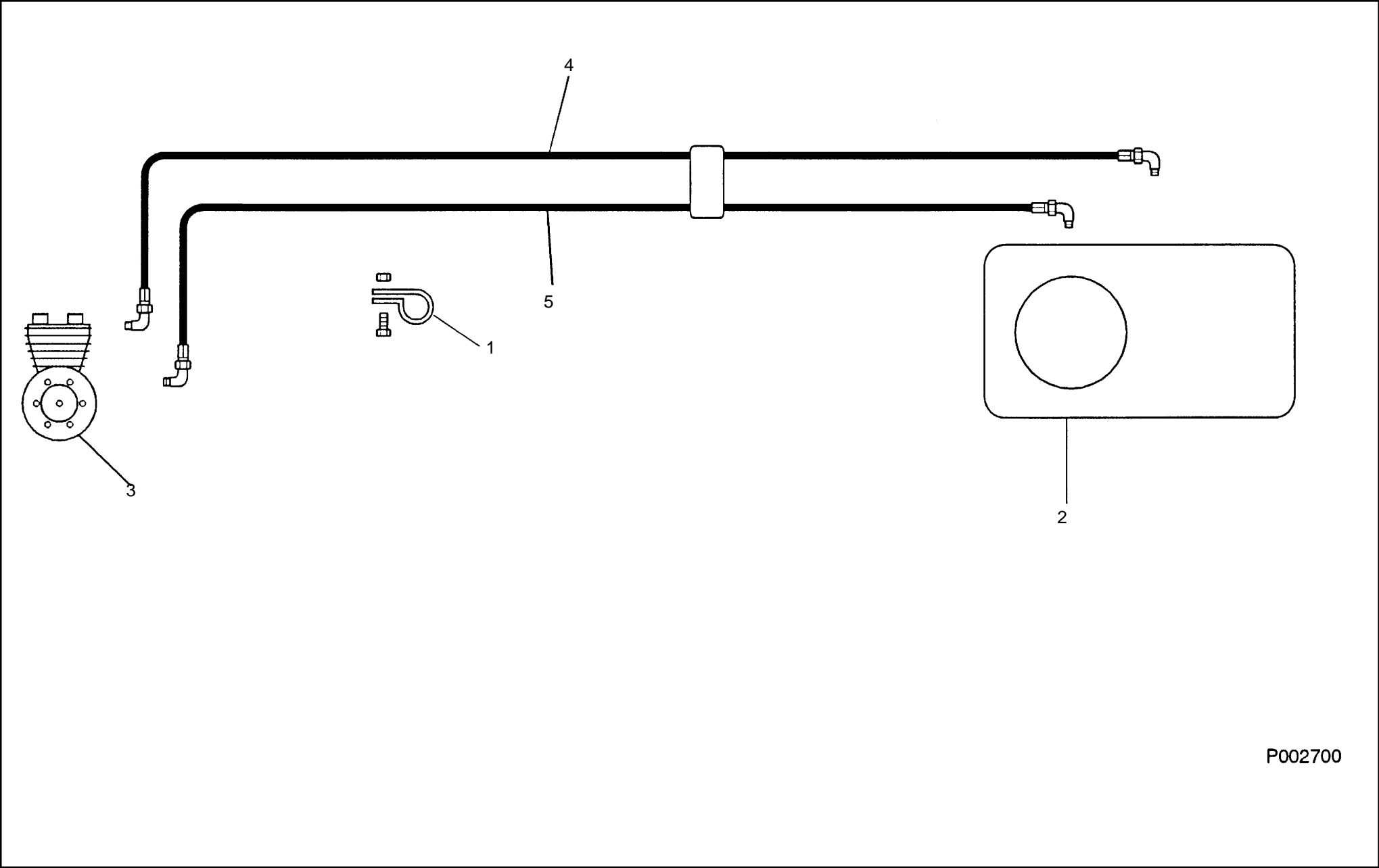
P002133

**5-22**



P002086

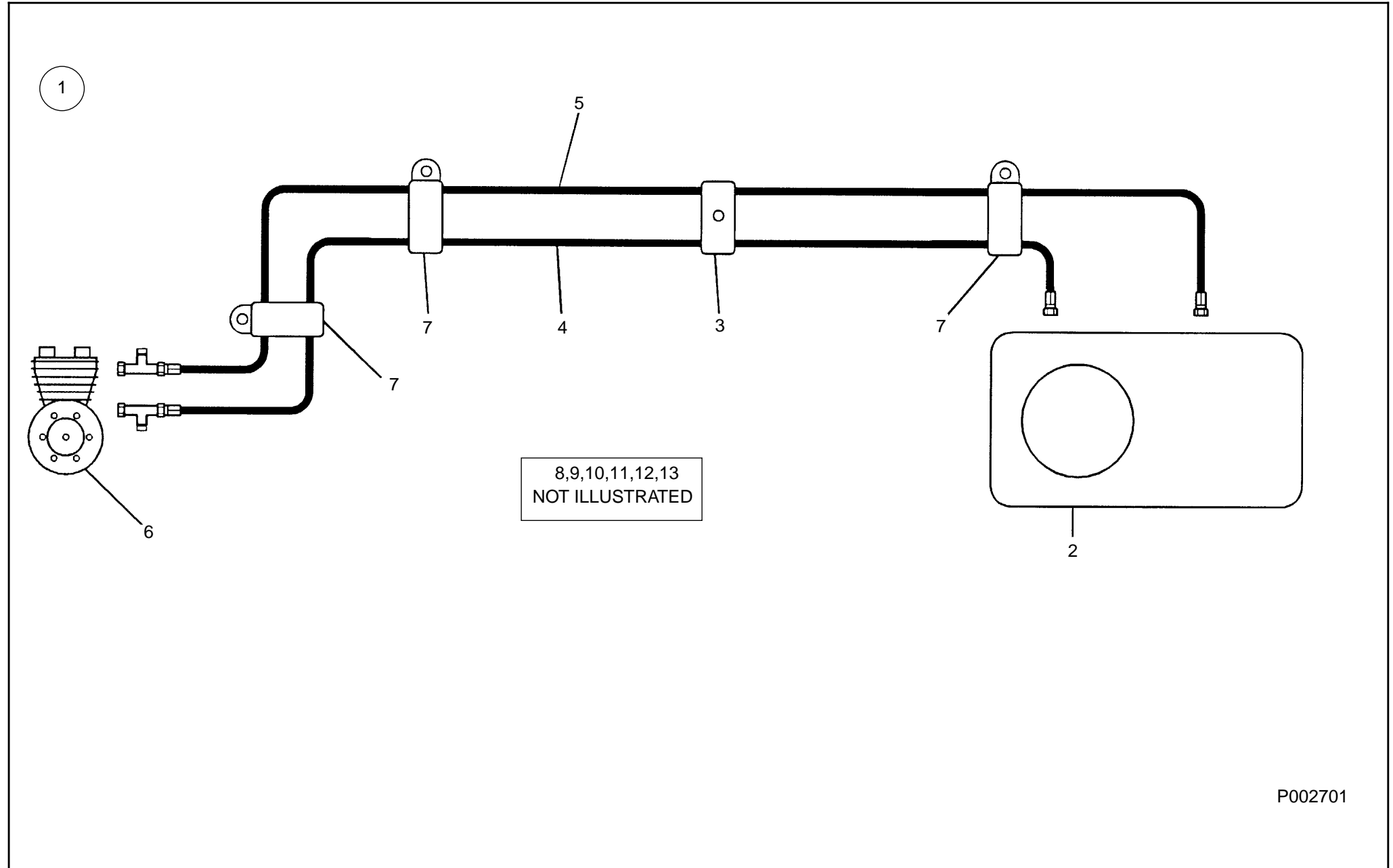
**March 12, 1996**



P002700

## AIR CONDITIONING SYSTEM

**BELL**[illegible]

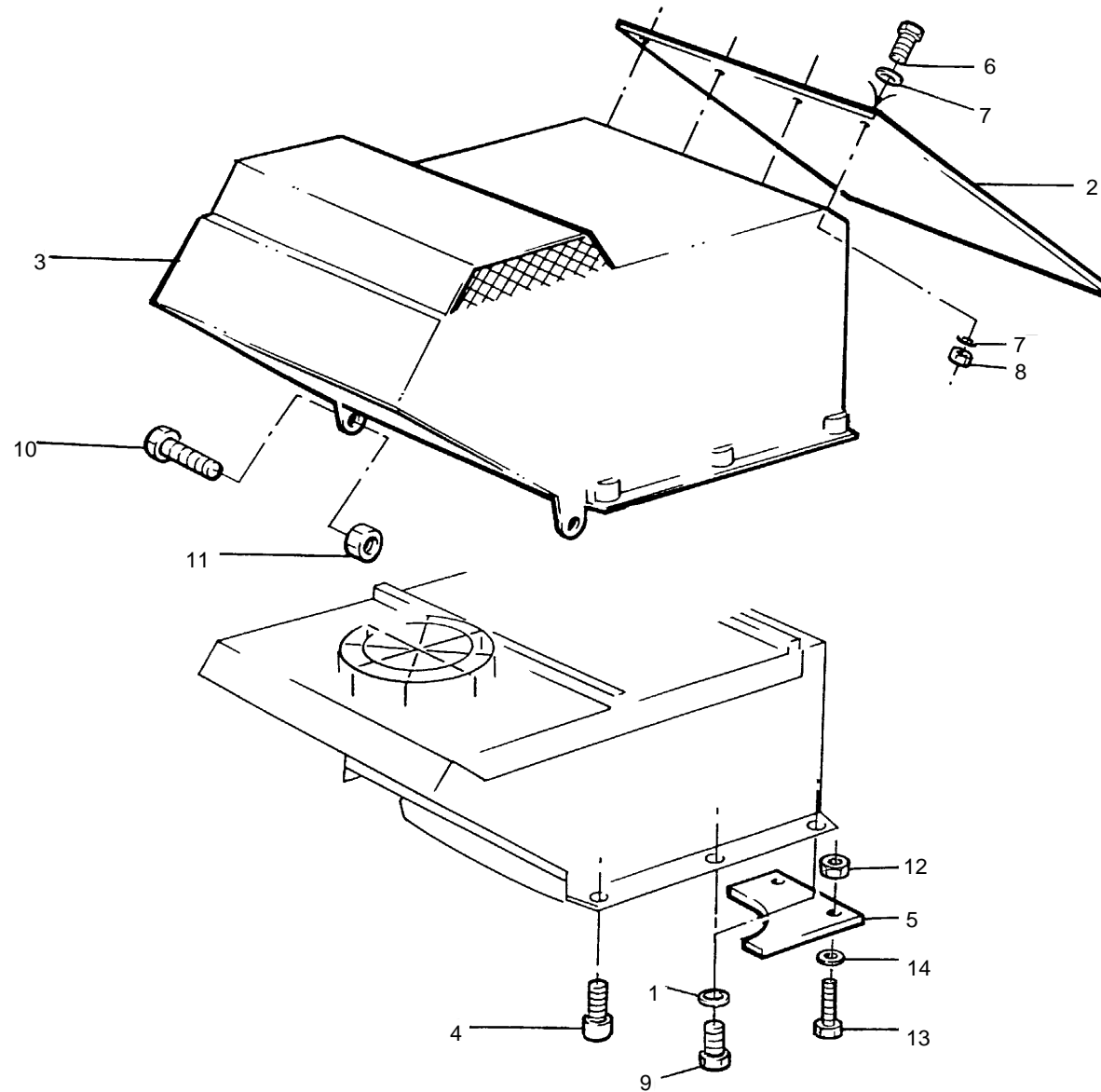


P002701

## AIR CONDITIONER KIT

# BELL

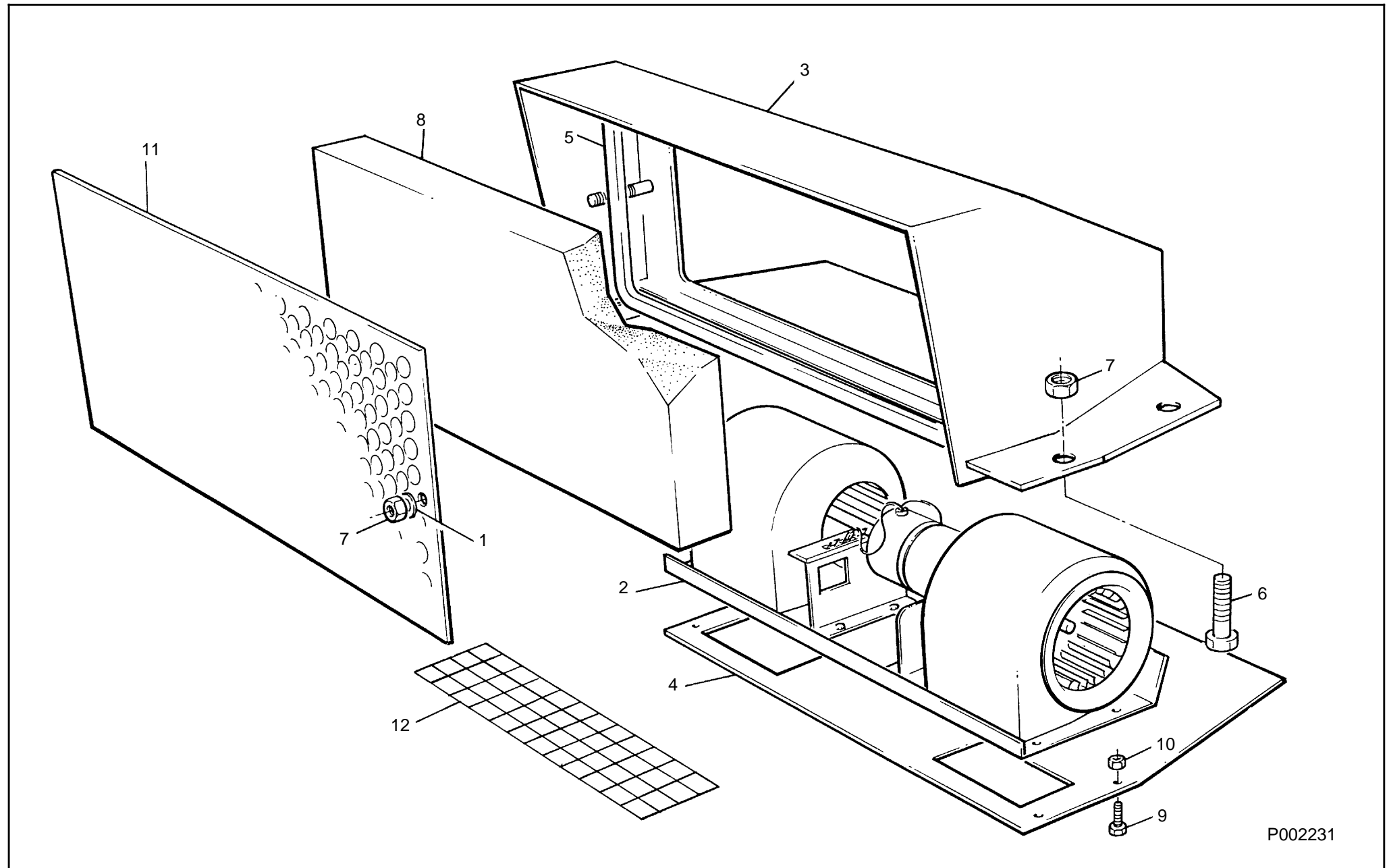
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P002229

# BELL

[illegible]

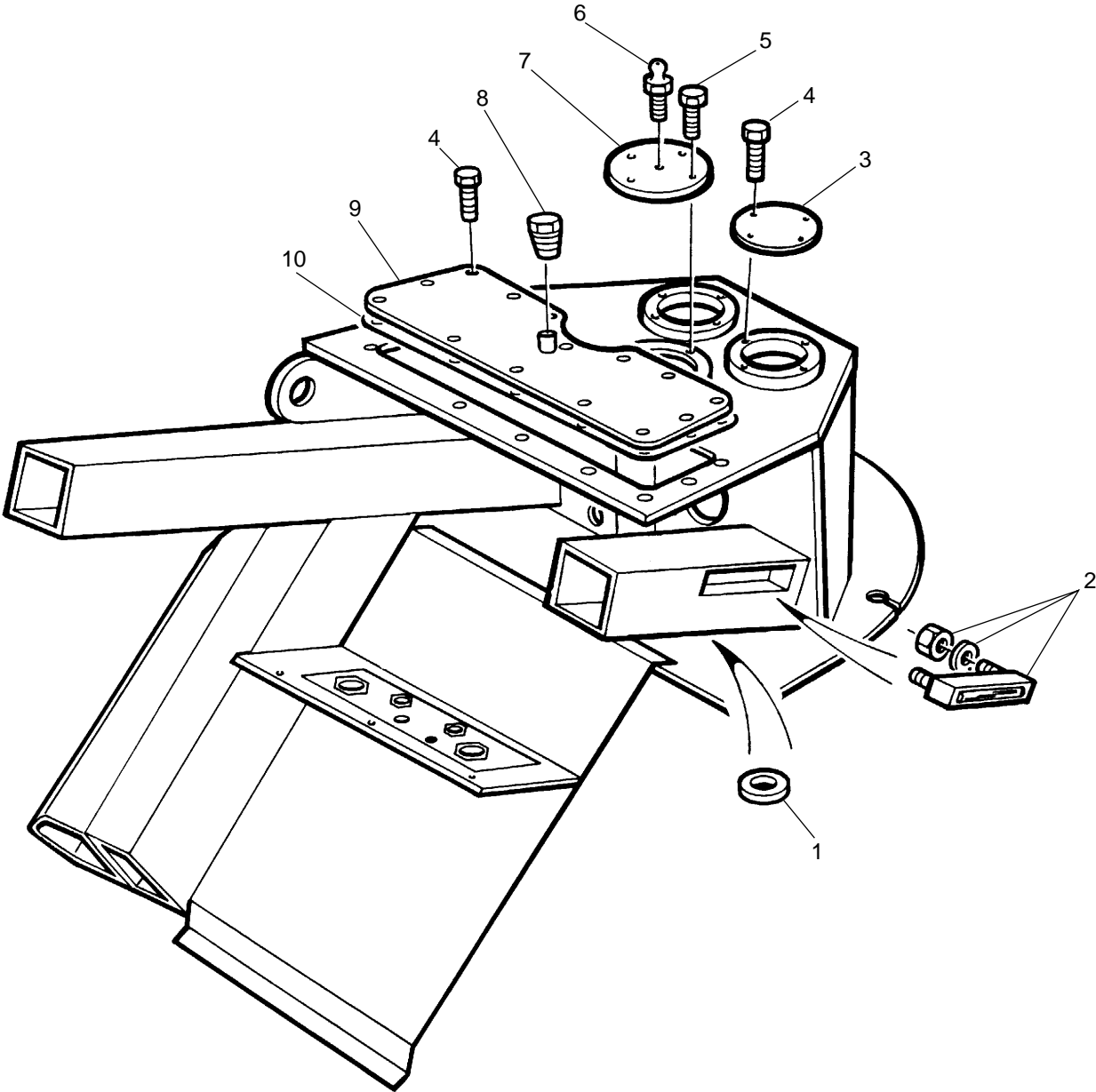


P002231

## BLOWER ASSEMBLY

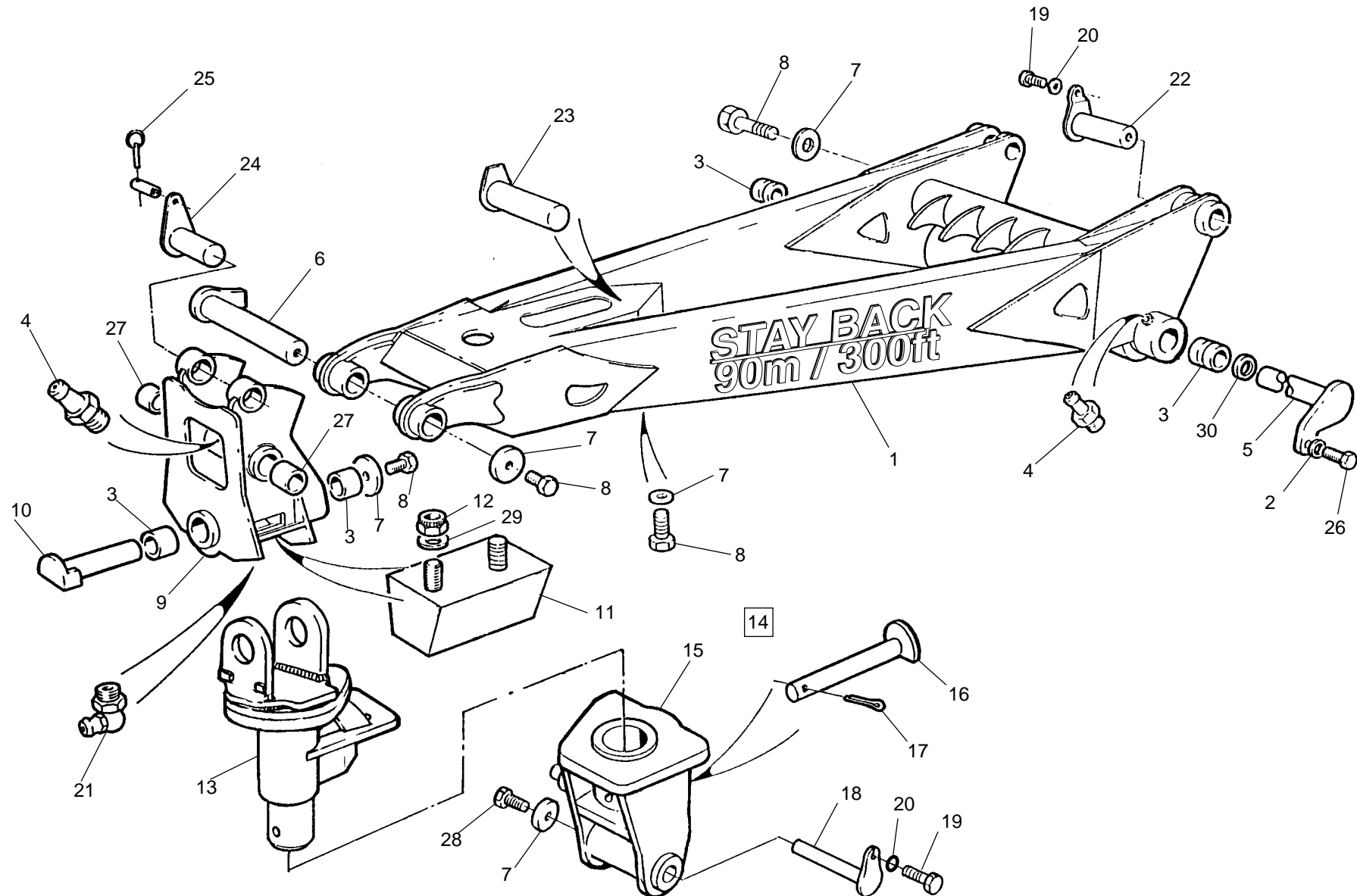
# BELL

[illegible]



## HYDRAULIC TANK

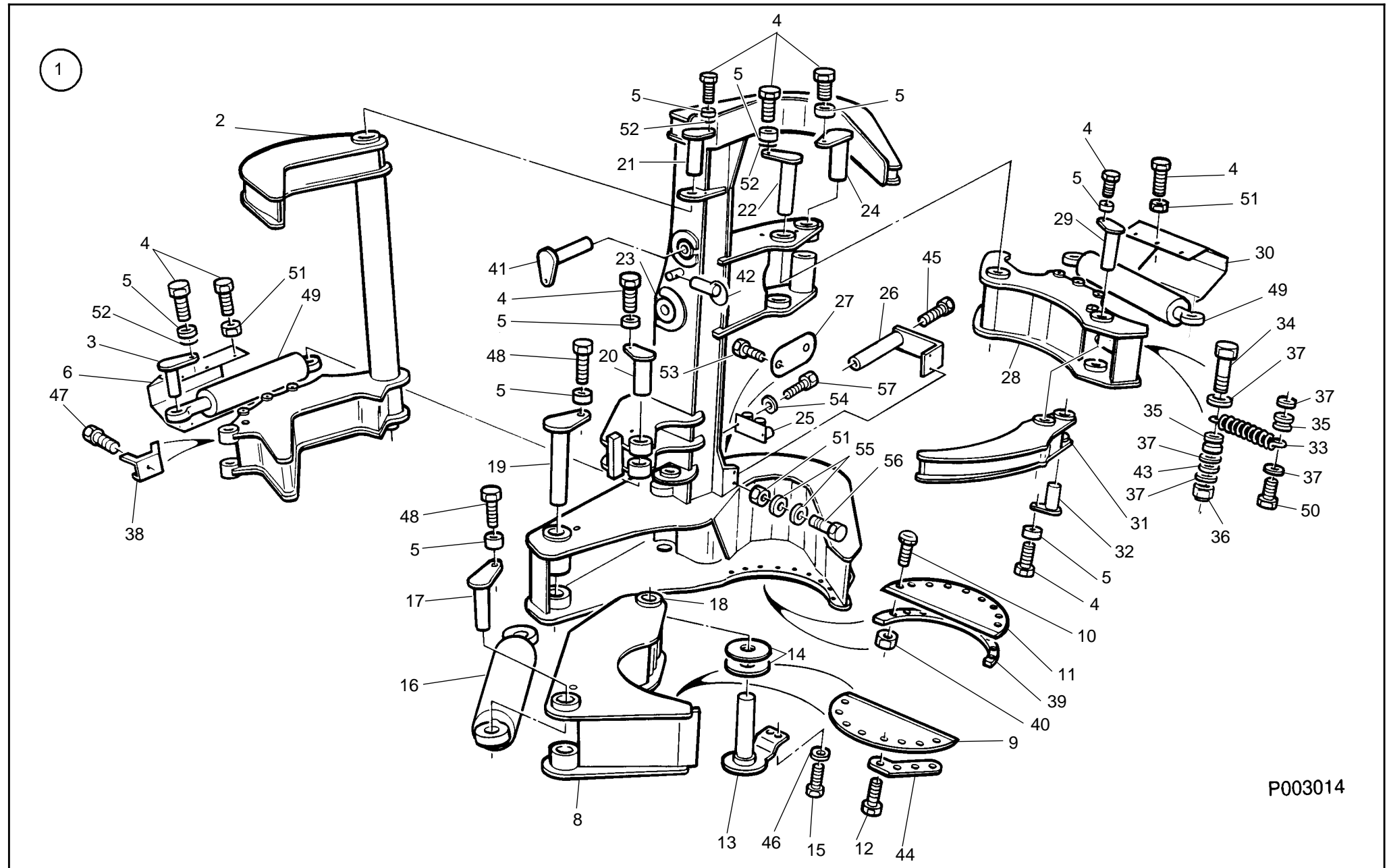
**BELL**[illegible]



P002964

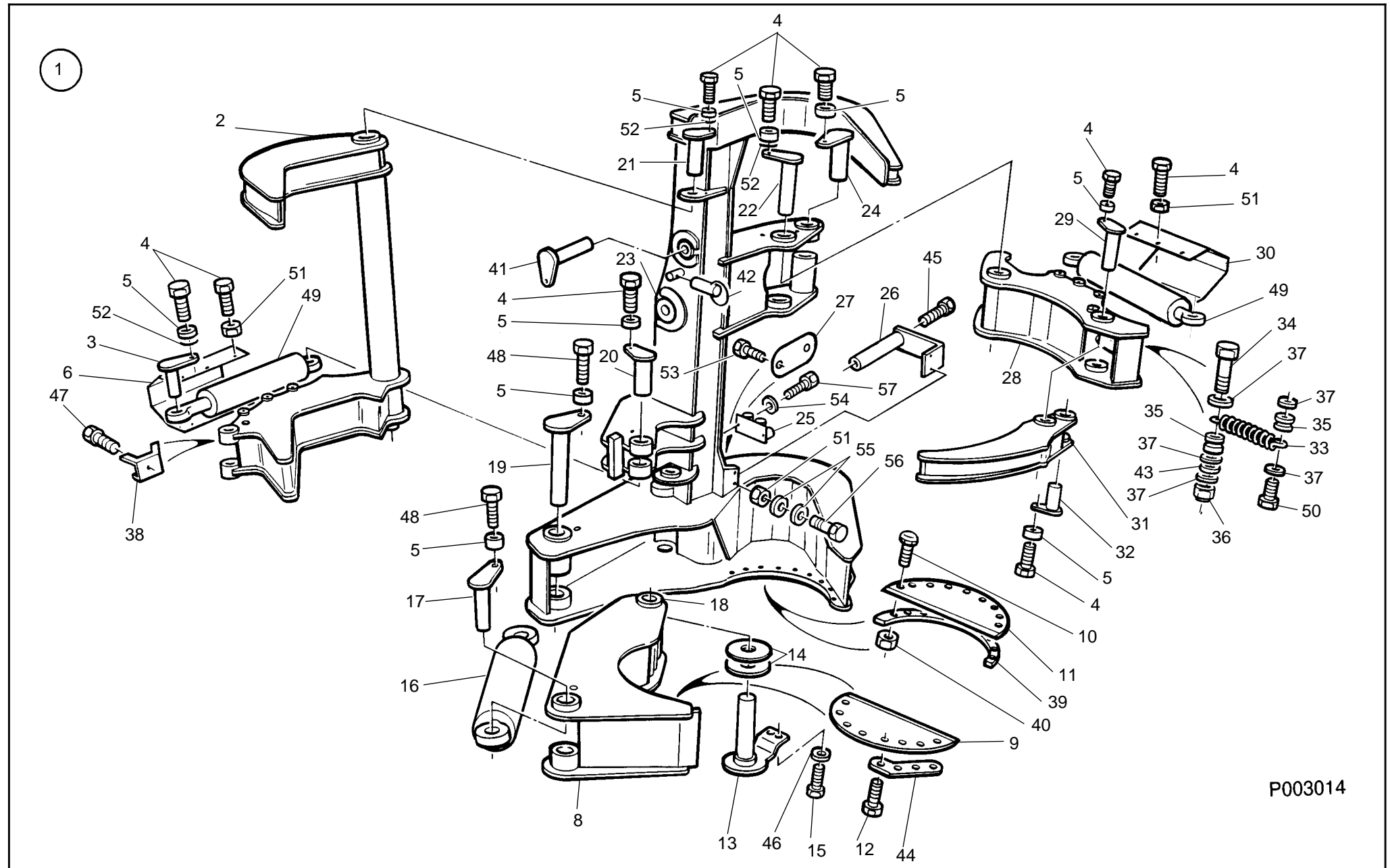
**BOOM, SKIDLINK, PINS AND BUSHES (CONTINUOUS ROTATOR)**

| ITEM | PART NUMBER | QTY | DESCRIPTION             | REMARKS |
|------|-------------|-----|-------------------------|---------|
| 1    | 182074      | 1   | BOOM, Short             |         |
| 2    | 100049      | 1   | WASHER, Spring          |         |
| 3    | 201079      | 6   | BUSH, Vesconite         |         |
| 4    | 200036      | 4   | GREASE NIPPLE           |         |
| 5    | 160412      | 1   | PIN                     |         |
| 6    | 161166      | 1   | PIN, Boom End           |         |
| 7    | 160335      | 4   | WASHER                  |         |
| 8    | 100144      | 4   | SCREW, Hex. Head        |         |
| 9    | 182898      | 1   | SKIDLINK                |         |
| 10   | 160490      | 1   | PIN                     |         |
| 11   | 201036      | 2   | MOUNTING, Rubber        |         |
| 12   | 100316      | 4   | NUT, Nyloc              |         |
| 13   | 290380      | 1   | CONTINUOUS GEAR ROTATOR |         |
| 14   | 261042      | 1   | LINK ASSY               |         |
| 15   | 181189      | 1   | LINK                    |         |
| 16   | 160486      | 1   | PIN                     |         |
| 17   | 100071      | 1   | PIN, Split              |         |
| 18   | 160417      | 1   | PIN                     |         |
| 19   | 100111      | 2   | SCREW, Hex. Head        |         |
| 20   | 100044      | 2   | WASHER, Spring          |         |
| 21   | 200782      | 1   | GREASE NIPPLE           |         |
| 22   | 160411      | 2   | PIN                     |         |
| 23   | 161167      | 1   | PIN                     |         |
| 24   | 160537      | 1   | PIN                     |         |
| 25   | 100071      | 1   | PIN, Split              |         |
| 26   | 100125      | 1   | SCREW, Hex. Head        |         |
| 27   |             | 2   | BUSH                    |         |
| 28   | 100501      | 1   | SCREW, Cap              |         |
| 29   | 100148      | 4   | WASHER, Flat            |         |
| 30   | 161590      | A/R | THRUST, Nylon           |         |
|      |             |     |                         |         |
|      |             |     |                         |         |
|      |             |     |                         |         |
|      |             |     |                         |         |
|      |             |     |                         |         |

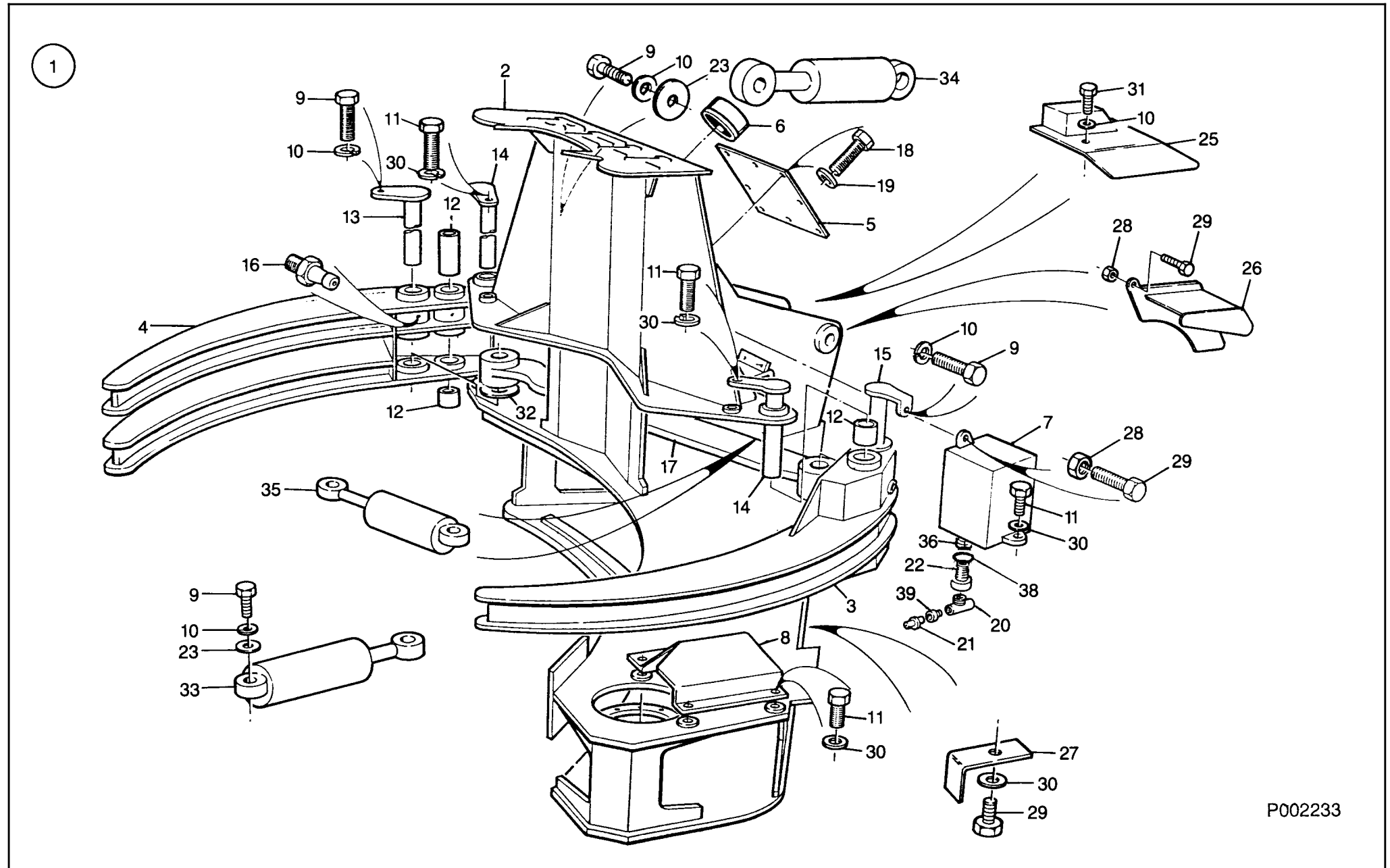


**SHEAR HEAD**

| ITEM | PART NUMBER | QTY | DESCRIPTION          | REMARKS |
|------|-------------|-----|----------------------|---------|
| 1    | 320238      | 1   | SHEAR HEAD (16 INCH) |         |
| 2    | 181436      | 1   | GRAB ASSY            |         |
| 3    | 161355      | 1   | PIN ASSY             |         |
| 4    | 100125      | 19  | SCREW, Hex. Head     |         |
| 5    | 101301      | 9   | WASHER, Flat         |         |
| 6    | 171302      | 1   | GUARD                |         |
| 7    | 181387      | 1   | FRAME, Shear Head    |         |
| 8    | 181456      | 1   | BOX, Knife           |         |
| 9    | 172308      | 1   | BLADE                |         |
| 10   | 190403      | 9   | SCREW, Set, Hex      |         |
| 11   | 172307      | 1   | BLADE                |         |
| 12   | 100901      | 8   | SCREW, Hex. Head     |         |
| 13   | 161365      | 1   | PIN                  |         |
| 14   | 173251      | A/R | SHIM, 16"            |         |
| 15   | 190403      | 2   | SCREW, Set, Hex      |         |
| 16   | 230252      | 1   | CYLINDER, Knife      |         |
| 17   | 161358      | 1   | PIN ASSY             |         |
| 18   | 160297      | 2   | BUSH, Bronze         |         |
| 19   | 161359      | 1   | PIN ASSY             |         |
| 20   | 161367      | 1   | PIN ASSY             |         |
| 21   | 161356      | 1   | PIN ASSY             |         |
| 22   | 161351      | 1   | PIN ASSY             |         |
| 23   | 160779      | 2   | BUSH, Skidlink       |         |
| 24   | 161350      | 1   | PIN ASSY             |         |
| 25   | 182889      | 1   | MANIFOLD             |         |
| 26   | 171915      | 1   | GUARD, Hose, Top     |         |
| 27   | 171914      | 1   | GUARD, Hose, Rear    |         |
| 28   | 181437      | 1   | ARM, Accumulator     |         |
| 29   | 161352      | 1   | PIN ASSY             |         |
| 30   | 171303      | 1   | GUARD                |         |
| 31   | 191473      | 1   | FINGER               |         |
| 32   | 161353      | 1   | PIN                  |         |
| 33   | 202481      | 1   | SPRING, Accumulator  |         |
| 34   | 100145      | 1   | BOLT, Hex. Head      |         |
| 35   | 160763      | 2   | BUSH, Eccentric      |         |

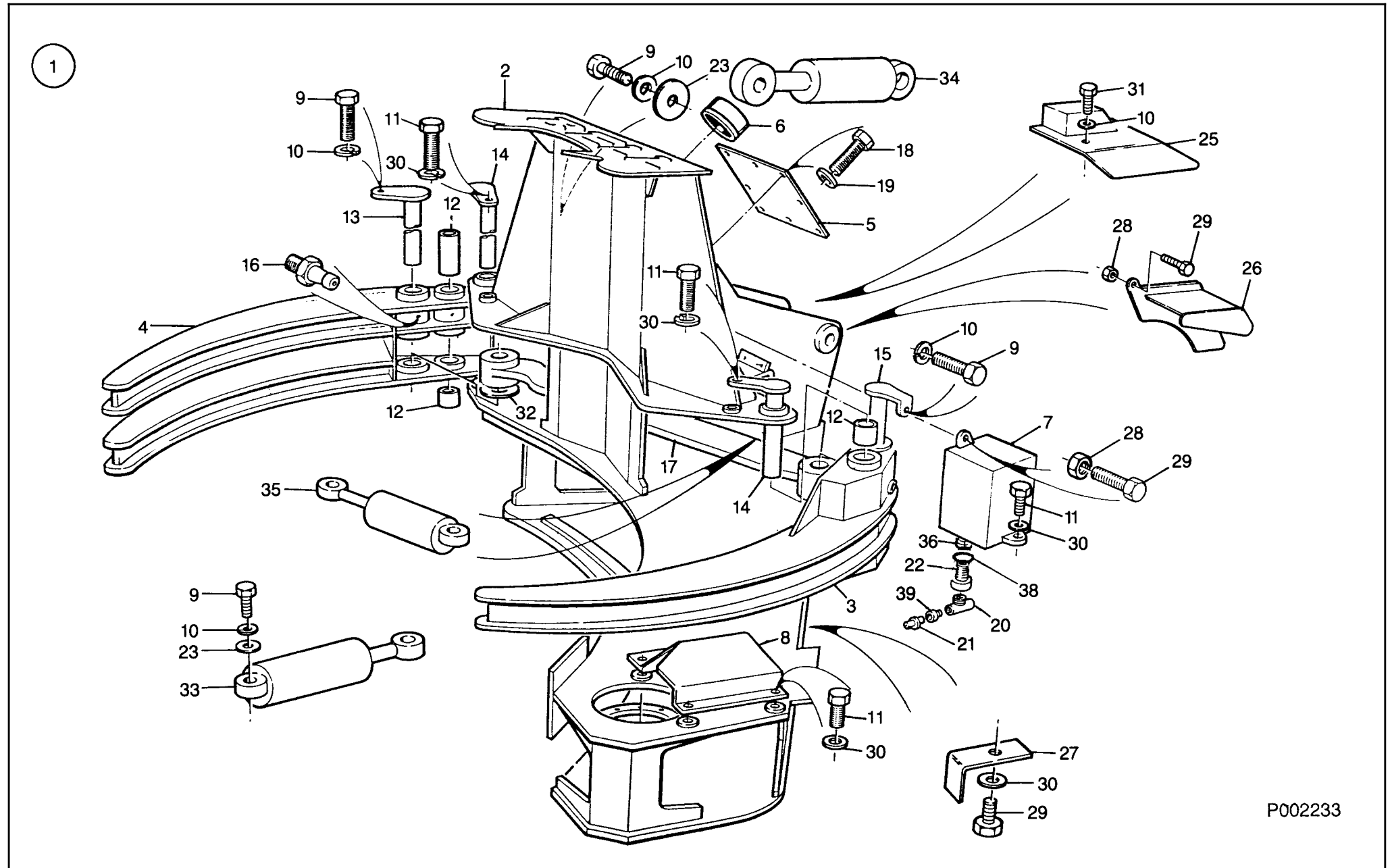


**5-40**



**FELLING HEAD ASSEMBLY**

| ITEM | PART NUMBER | QTY | DESCRIPTION                     | REMARKS         |
|------|-------------|-----|---------------------------------|-----------------|
| 1    | 320553      | 1   | FELLING HEAD ASSEMBLY           |                 |
| 2    | 181480      | 1   | FRAME, Felling Head             |                 |
| 3    | 180556      | 1   | ARM, Grab, Single Tine          |                 |
| 4    | 180557      | 1   | ARM, Grab, Double Tine          |                 |
| 5    | 170488      | 1   | PLATE, Cover, Rear              |                 |
| 6    | 120291      | 1   | CAP                             |                 |
| 7    | 172397      | 1   | RESERVOIR, Air                  |                 |
| 8    | 171919      | 1   | GUARD, Motor, Saw               |                 |
| 9    | 100209      | 8   | SCREW, Hex. Head                |                 |
| 10   | 100044      | 11  | WASHER, Spring                  |                 |
| 11   | 100125      | 7   | SCREW, Hex. Head                |                 |
| 12   | 201079      | 8   | BUSH, Vesconite                 |                 |
| 13   | 160419      | 1   | PIN ASSY, Pivot, Cylinder, Grab | Upto 17.05.94   |
| 13   | 161370      | 1   | PIN ASSY, Pivot, Cylinder, Grab | From 18.05.94   |
| 14   | 161369      | 2   | PIN ASSY, Pivot, Grab           |                 |
| 15   | 160433      | 2   | PIN ASSY, Retaining, Grab       | Upto 17.05.94   |
| 15   | 161370      | 2   | PIN ASSY, Retaining, Grab       | From 17.05.94   |
| 16   | 200036      | 8   | GREASE NIPPLE                   |                 |
| 17   | 180558      | 1   | LINK                            |                 |
| 18   | 100083      | 8   | SCREW, Hex. Head                |                 |
| 19   | 100276      | 8   | WASHER, Copper                  |                 |
| 20   | 120363      | 1   | T PIECE                         |                 |
| 21   | 201223      | 1   | VALVE, Tank                     |                 |
| 22   | 160437      | 1   | FITTING, Oiler                  |                 |
| 23   | 170489      | 4   | WASHER                          |                 |
| 24   | 205141      | 1   | GUARD, Edge                     | Not Illustrated |
| 25   | 172487      | 1   | GUARD, Throttle                 |                 |
| 26   | 172488      | 1   | PLATE, Guard                    |                 |
| 27   | 173806      | 1   | CLAMP, Hose                     |                 |
| 28   | 100415      | 4   | NUT, Nyloc                      |                 |
| 29   | 100365      | 4   | SCREW, Set, Hex                 |                 |
| 30   | 100049      | 8   | WASHER, Spring                  |                 |
| 31   | 100112      | 3   | BOLT, Hex. Head                 |                 |
| 32   | 160192      | 1   | RING, Thrust                    |                 |
| 33   | 230105      | 1   | CYLINDER, Saw Feed              |                 |

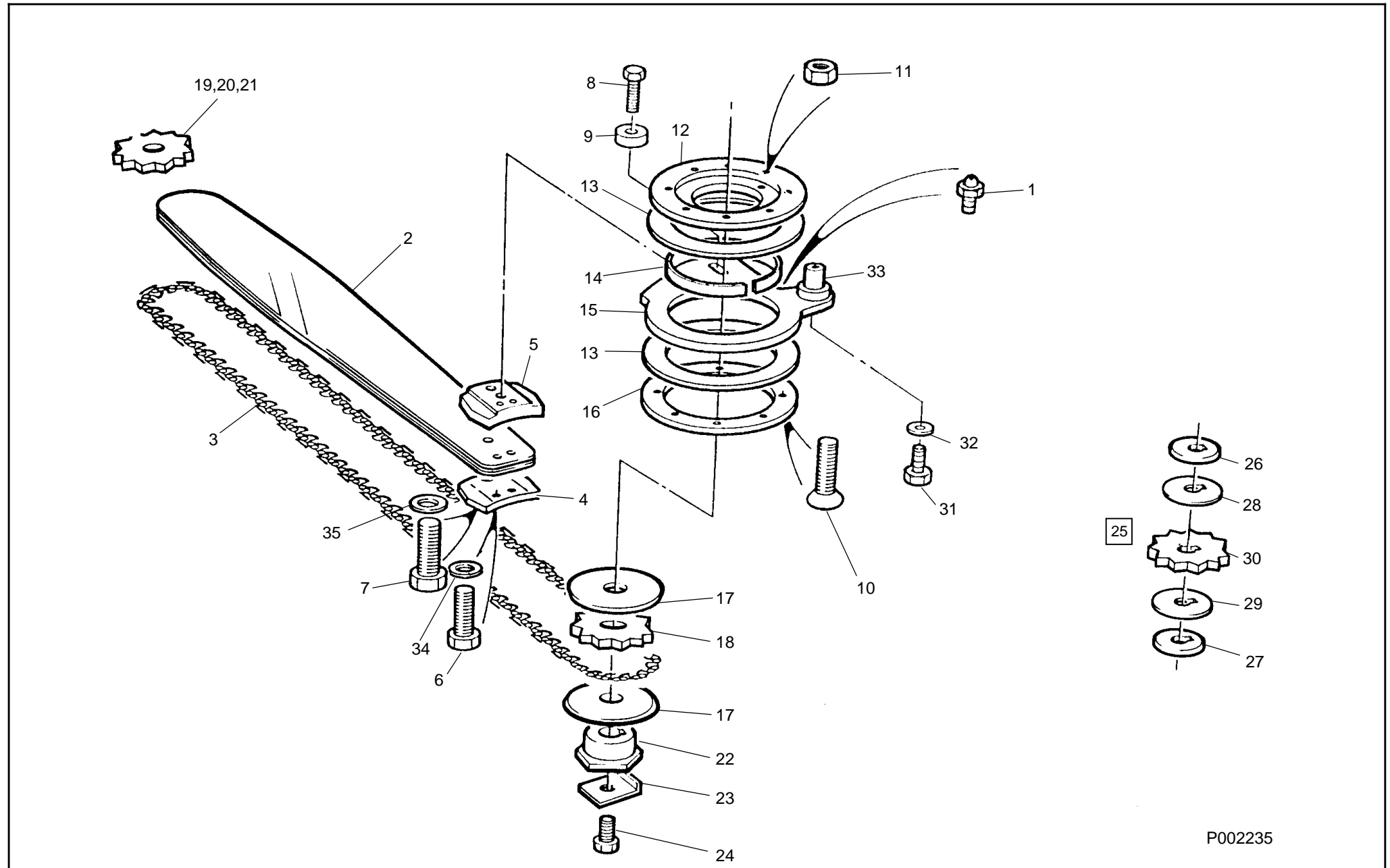


P002233

## FELLING HEAD ASSEMBLY

# BELL

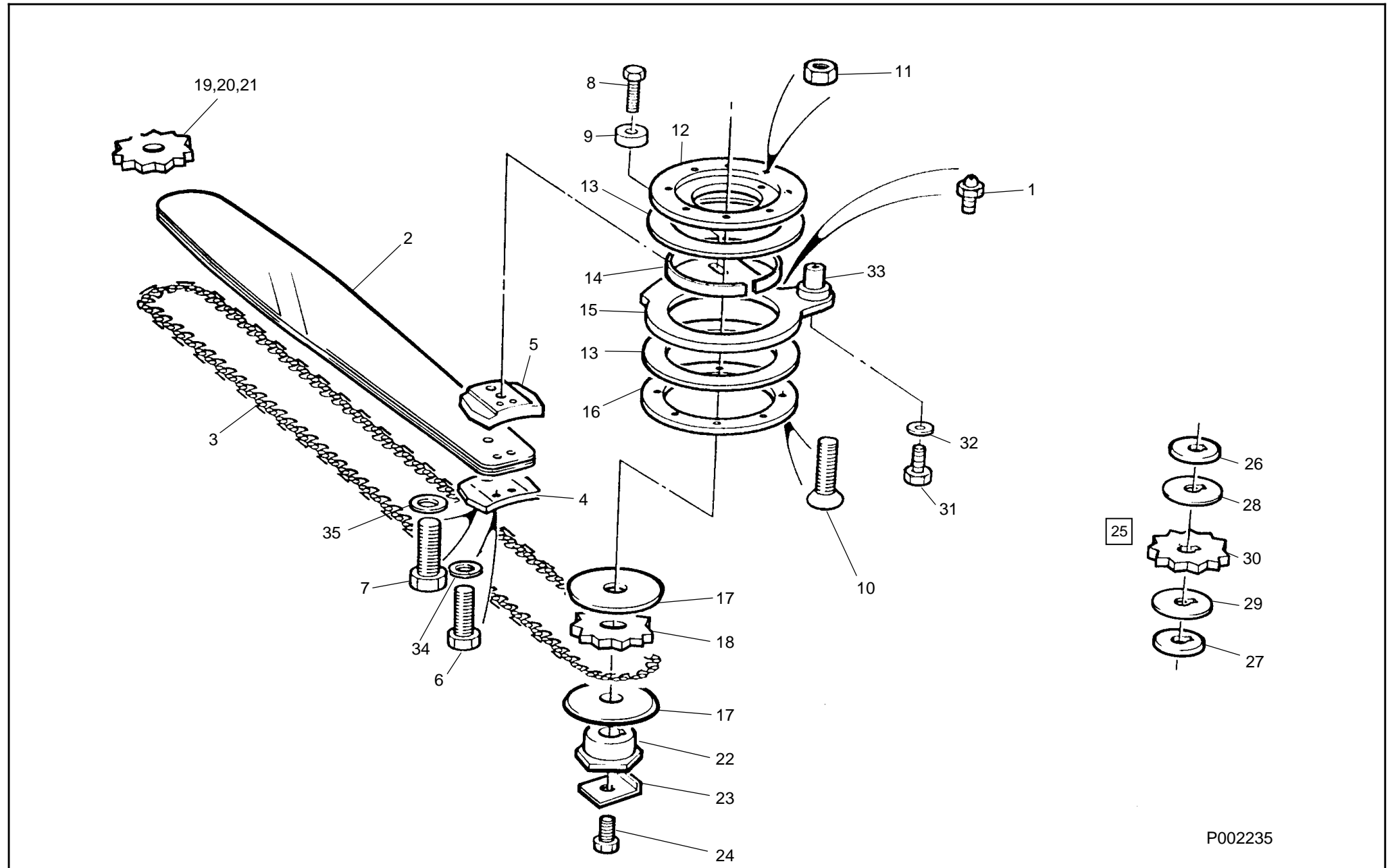
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P002235

**CHAIN SAW ASSEMBLY**

| ITEM | PART NUMBER | QTY | DESCRIPTION                              | REMARKS |
|------|-------------|-----|--|---------|
| 1    | 200036      | 1   | GREASE NIPPLE                            |         |
| 2    | 205169      | 1   | BAR, Guide                               |         |
| 2    | 205228      | 1   | BAR, Guide, Roller Nose, Bell, 24"       |         |
| 2    | 205213      | 1   | BAR, Guide, Hard Nose, Sandvick, 24"     |         |
| 2    | 205244      | 1   | BAR, Guide, Sprocket Nose, Sandvick, 30" |         |
| 2    | 205253      | 1   | BAR, Guide, Hard Nose, Sandvick, 30"     |         |
| 2    | 205245      | 1   | BAR, Guide, Roller Nose, Sandvick, 30"   |         |
| 3    | 190209      | 1   | CHAIN, 93 DL, Skip, Carlton              |         |
| 3    | 195002      | 1   | CHAIN, 105 DL, Skip, Carlton             |         |
| 4    | 160409      | 1   | PLATE, Clamp, Bar, Bottom                |         |
| 5    | 160408      | 1   | PLATE, Clamp, Bar, Top                   |         |
| 6    | 100364      | 2   | SCREW, Hex, Head                         |         |
| 7    | 100365      | 1   | SCREW, Hex Head                          |         |
| 8    | 100128      | 1   | SCREW, Hex Head                          |         |
| 9    | 160425      | 1   | WASHER, Hardened                         |         |
| 10   | 100391      | 8   | SCREW, Cap                               |         |
| 11   | 100314      | 8   | NUT, Nyloc                               |         |
| 12   | 160404      | 1   | PLATE, Mounting, Motor                   |         |
| 13   | 160421      | 2   | WASHER, Nylon                            |         |
| 14   | 160420      | 1   | BUSH, Nylon                              |         |
| 15   | 161689      | 1   | RING, Carrier, Bar                       |         |
| 16   | 160410      | 1   | PLATE, Retainer, Mounting                |         |
| 17   | 170501      | 2   | PLATE, Check, Sprocket, 11 Tooth         |         |
| 18   | 170499      | 1   | SPROCKET, 11 Tooth                       |         |
| 19   | 205009      | 1   | SPROCKET, Nose, Sandvick                 |         |
| 20   | 205008      | 1   | SPROCKET, Nose, Oregon                   |         |
| 21   | 205112      | 1   | SPROCKET, Nose, Bell                     |         |
| 22   | 160406      | 1   | PLATE, Retainer, Sprocket                |         |
| 23   | 170714      | 1   | TAG, Lock                                |         |
| 24   | 100083      | 1   | SCREW, Hex Head                          |         |
| 25   | 205152      | 1   | KIT, Rim Sprocket                        |         |
| 26   |             | 1   | SPACER, 10mm                             |         |
| 27   |             | 1   | SPACER, 8.0mm                            |         |
| 28   |             | A/R | SHIM, 1.0mm                              |         |
| 29   |             | A/R | SHIM, 0.5mm                              |         |



P002235

## CHAIN SAW ASSEMBLY

# BELL

[illegible]

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P/N 201587

P/N 201587

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**P/N 201586**

P002156

## CHANGE FUEL FILTER AT A THOUSAND (1000) SMR

**MAINTENANCE SCHEDULE**

**DAILY**

- ENGINE AIR FILTER 10 SMR
- ENGINE COOLING SYSTEM 10 SMR
- HYDRAULIC RESERVOIR 10 SMR
- ENGINE OIL 10 SMR
- ENGINE FUEL FILTER 1 000 SMR
- ENGINE OIL FILTER 250 SMR
- BOOM PIVOTS 10 SMR
- FUEL WATER TRAP 10 SMR

**WEEKLY**

- FUEL FILTER 1 000 SMR
- ENGINE OIL 250 SMR
- GREASE POINT 50 SMR
- LIFT CYLINDER 10 SMR

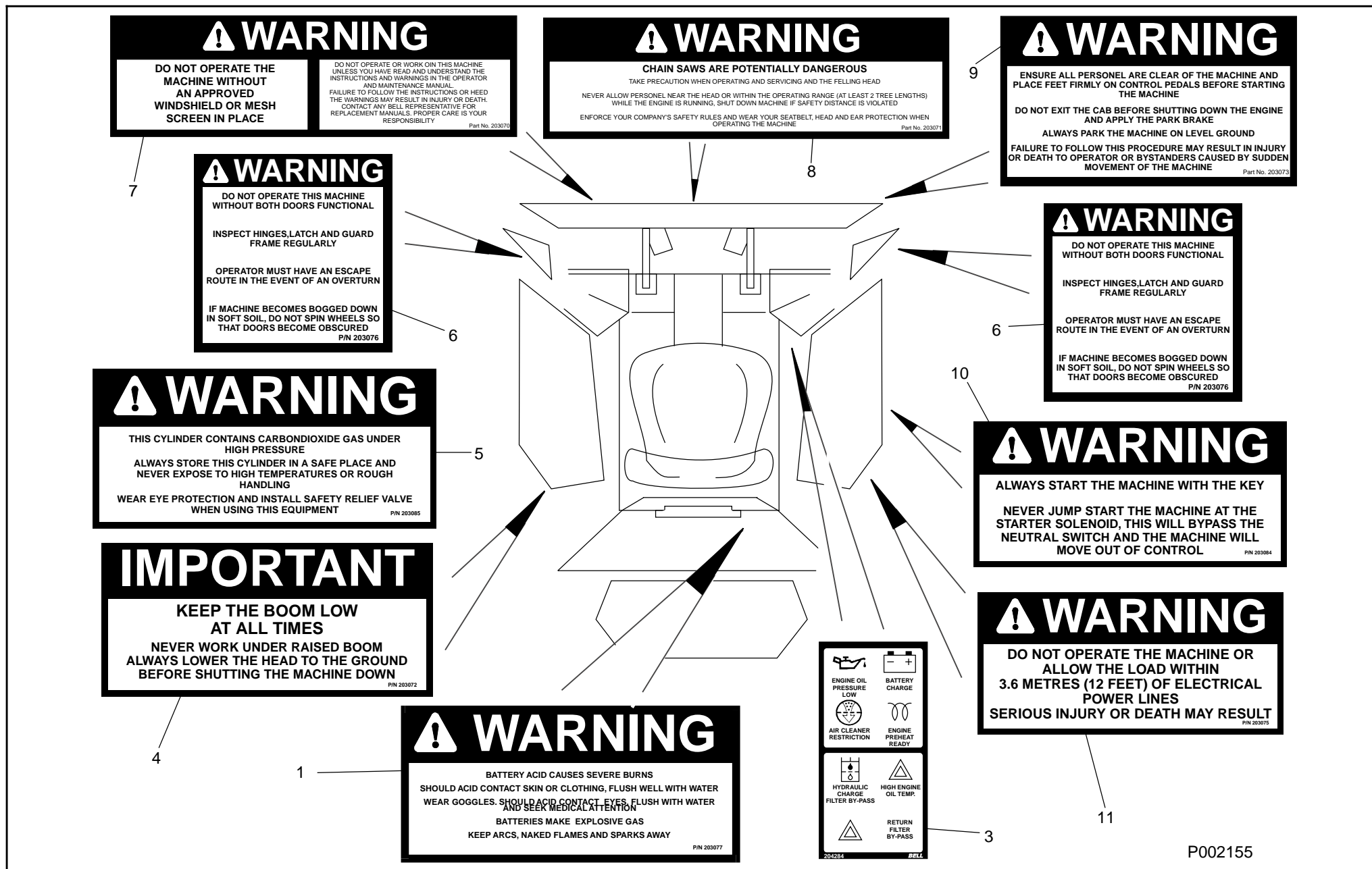
**MONTHLY**

- ENGINE VALVE 1 000 SMR
- ENGINE COOLING SYSTEM 10 SMR
- HYDRAULIC OIL 1 000 SMR
- BOOM PIVOTS 10 SMR
- GREASE POINT 50 SMR

**QUARTERLY**

- TAILWHEEL BEARINGS 2 000 SMR
- FANBELT 10 SMR
- HYDRAULIC OIL 250 SMR
- MAIN PUMP SUPPLY FILTER 250 SMR
- BATTERY 250 SMR
- TYRES 10 SMR
- GREASE POINT 50 SMR

**5-50**



P002155

5-52