

NOTICE

The information contained is for **DEALER REFERENCE PURPOSES ONLY**.
MANUALS ARE MODEL AND SERIAL NUMBER SPECIFIC.

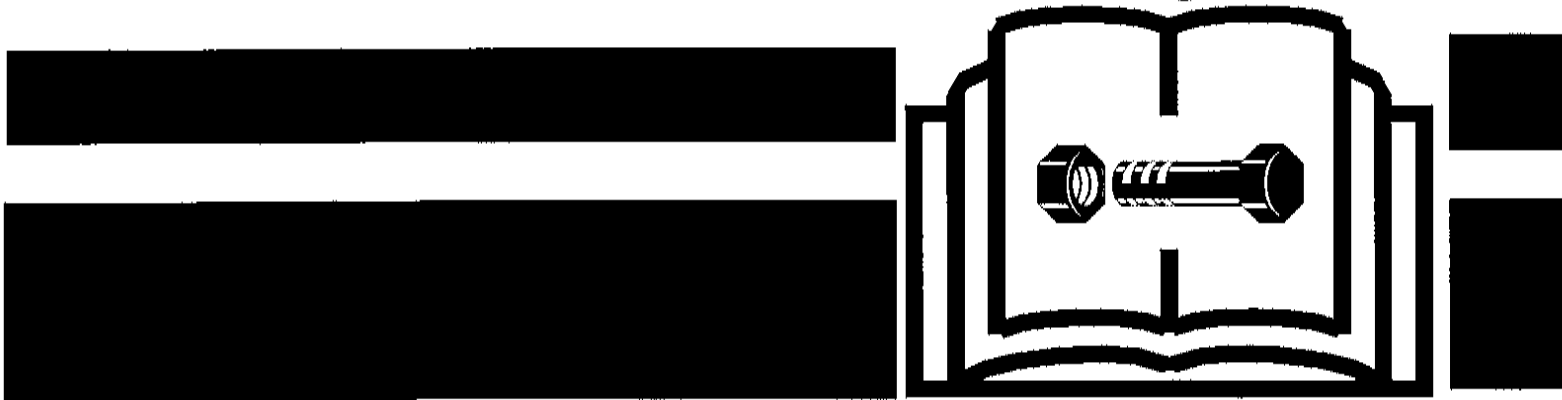
If additional printed manuals are required for your shop/office location, order by part number through the factory's Parts Center.

If a retail customer needs replacement manual(s) for a specific unit, contact the factory's Customer Data Center at: 800-829-0051 or
customerdata@vermeermfg.com

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Vermeer

*D40X40/Navtec
Navigator*



Parts Manual

PMJN98-1
SERIAL NO. 101-
ORDER NO. 105400-P95

INTRODUCTION

HOW TO USE THE MANUAL

This manual contains illustrations and parts lists of components and assemblies which make up the machine. Each page consists of the name of the assembly or component, a figure number, reference numbers, part numbers, part names, and the quantities of the parts used.

Assembly or component name helps identify the illustration and parts list for each figure. This name also helps locate the general area of the machine where the assembly or component can be located.

Figure numbers are used to identify each assembly or component and to group these assemblies or components into major categories.

Reference numbers shown in a column refers to the numbered parts in the illustration. This ties the part in the illustration to the part number and description in the parts list.

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Part numbers are used to identify individual parts or part assemblies.

Part descriptions provide the name of the part, plus additional information such as dimensional specifications and what parts are grouped together to form part assemblies, which helps you identify the part(s).

Quantities listed for each figure are only for that assembly or component and not the total used per machine.

Parts are listed by part number in numerical order in the back portion of the manual. After each part number is a list of references where the part is used in the manual.

This parts manual is not intended to be a complete guide for machine service or repairs. Contact your Vermeer dealer for any of your service or technical requirements.

ORDERING PARTS

Parts for repair or replacement are available through our network of authorized dealers located throughout the world.

Use only authorized Vermeer parts for repair or replacement. Always give the serial number

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and model number of the machine for which parts are being ordered. When ordering parts for component(s), which are not manufactured by Vermeer Manufacturing, also give the serial number of that component(s). Order all parts by part number, part name, and quantity needed.

UPDATING AND REORDERING MANUALS

The parts lists, illustrations, and specifications in this manual are based on the latest information available at time of publication. Your machine may have product improvements and options not yet contained in this manual.

Vermeer Manufacturing Company reserves the right to make changes at any time without notice or obligation to you.

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Your dealer will receive notice of these changes and can assist you with accurate parts identification when ordering.

A copy of this manual is supplied with each machine. Additional copies are available through your dealer. When ordering additional manuals, use the reorder number listed on the front cover and the quantity needed.

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2411 Highway 102
Pella, Iowa 50219-0200

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PARTS LISTS TABLE OF CONTENTS

Revised August 2000 due to
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FRAME ASSEMBLIES - SECTION 1

Cylinder Components - 3 1/2" x 4 3/4" Grease (Fig. "1-23")	Page 1-23
Decal Assembly - International (Fig. "1-2")	Page 1-2
Decal Location Assembly (Fig. "1-3")	Page 1-3
Decal Location Assembly (Fig. "1-4")	Page 1-4
Decal Assembly - Domestic (Fig. "1-1")	Page 1-1
Drill Rod Position Indicator Assembly (Fig. "1-18")	Page 1-18
Drive Chuck Assembly (Fig. "1-19")	Page 1-19
Front Roller Assembly (Fig. "1-12")	Page 1-12
Heat Shield Assembly (Fig. "1-17")	Page 1-17
Hydraulic Motor Components (Fig. "1-22")	Page 1-22
Hydraulic Motor Components (Fig. "1-21")	Page 1-21
Main Frame Assembly (Fig. "1-5")	Page 1-5
Outrigger Assembly (SN101-193) (Fig. "1-16")	Page 1-16
*Outrigger Assembly (SN194-) (Fig. "1-16A")	Page 1-16A
Planetary Gearbox Components (Fig. "1-24")	Page 1-24
R.O.P.S. Assembly (Fig. "1-10")	Page 1-10
Rack Frame Assembly (Fig. "1-11")	Page 1-11
Rear Chain Tightener Assembly (Fig. "1-14")	Page 1-14
Rotation Gearbox Assembly (Fig. "1-15")	Page 1-15
Rotation Gearbox Components (Fig. "1-20")	Page 1-20
Thrust Cylinder Roller Assembly (Fig. "1-13")	Page 1-13
Track Planetary Assembly (Fig. "1-9")	Page 1-9
Track End Roller Assembly (Fig. "1-8")	Page 1-8
Track Chain Assembly (Fig. "1-7")	Page 1-7
Track Tightener, Roller & Chain Assembly (Fig. "1-6")	Page 1-6
Water Swivel Components (Fig. "1-25")	Page 1-25

ENGINE ASSEMBLIES - SECTION 2

Air Cleaner Assembly (Fig. "2-9")	Page 2-9
Air Cleaner Components (Fig. "2-12")	Page 2-12
Engine Components (Fig. "2-2")	Page 2-2
Engine Base Assembly (Fig. "2-4")	Page 2-4
Engine Components (Fig. "2-1")	Page 2-1
Ether Starting System Assembly (Fig. "2-14")	Page 2-14
Front & Top Engine Shield Assembly (Fig. "2-5")	Page 2-5
Fuel Tank Assembly (Fig. "2-11")	Page 2-11
Muffler Assembly (Fig. "2-10")	Page 2-10
Pump Drive Assembly (Fig. "2-3")	Page 2-3
Radiator Assembly (Fig. "2-8")	Page 2-8
Side Engine Shields Assembly (Fig. "2-6")	Page 2-6
Sight Gauge Components (Fig. "2-13")	Page 2-13
Sound Package Assembly (Fig. "2-7")	Page 2-7

HYDRAULIC ASSEMBLIES - SECTION 3

Anti-Drift Cartridge Components (Fig. "3-40")	Page 3-40
Control Valve Assembly - 7 Spool (Fig. "3-17")	Page 3-17
Control Valve Components (Fig. "3-35")	Page 3-35
Floating Gearbox Cylinder Assembly (Fig. "3-28")	Page 3-28

PARTS LISTS TABLE OF CONTENTS (CONT.)

Revised July 1999 due to
addition of figure to manual.
Added figure marked with *.

HYDRAULIC ASSEMBLIES - SECTION 3 (CONT.)

Gearbox Lock Valve Assembly (Fig. "3-23")	Page 3-23
Hose Carrier/Bulkhead Assembly (Fig. "3-32")	Page 3-32
Hose Carrier Components (Fig. "3-55")	Page 3-55
Hot Oil Shuttle Assembly (Fig. "3-18")	Page 3-18
Hydraulic Components Location Diagram - Water Pump System (Fig. "3-5")	Page 3-5
Hydraulic Components Location Diagram - Thrust/Pullback System (Fig. "3-4")	Page 3-4
Hydraulic Cylinder Components - 3" x 40" (Fig. "3-46")	Page 3-46
Hydraulic Cylinder Components - 3" x 12" (Fig. "3-47")	Page 3-47
Hydraulic Cylinder Components - 4 1/2" x 12" (Fig. "3-48")	Page 3-48
Hydraulic Cylinder Components - 5" x 96" (Fig. "3-49")	Page 3-49
Hydraulic Cylinder Components - 1" x 3 1/2" (Fig. "3-50")	Page 3-50
Hydraulic Cylinder Components - Dual (Fig. "3-52")	Page 3-52
Hydraulic Filter Components (Fig. "3-54")	Page 3-54
Hydraulic Pump Assembly (Left Track/Rotation) (Fig. "3-8")	Page 3-8
Hydraulic Pump Assembly (Right Track/Thrust-Pullback) (Fig. "3-9")	Page 3-9
Hydraulic Pump Assembly - Water/Implement (Fig. "3-10")	Page 3-10
Hydraulic Components Location Diagram - Rotation System (Fig. "3-3")	Page 3-3
Hydraulic Components Location Diagram - Ground Drive System (Fig. "3-2")	Page 3-2
Hydraulic Components Location Diagram - Implement System (Fig. "3-1")	Page 3-1
Load Check Plug Components (Fig. "3-36")	Page 3-36
Loop Flush Valve Assembly (Fig. "3-21")	Page 3-21
No Relief Plug Components (Fig. "3-38")	Page 3-38
Oil Filter Components (Fig. "3-53")	Page 3-53
Oil Tank Assembly (Fig. "3-6")	Page 3-6
Oil Cooler Assembly (Fig. "3-29")	Page 3-29
Oil Tank Plumbing Assembly (Fig. "3-7")	Page 3-7
Oil Filter Assembly (Fig. "3-31")	Page 3-31
Outrigger Cylinder Assembly (Fig. "3-24")	Page 3-24
Pressure Limiter Valve Components (Fig. "3-43")	Page 3-43
Proportional Valve Assembly (Fig. "3-22")	Page 3-22
Proportional Valve Components (Fig. "3-45")	Page 3-45
Rack Lift Cylinder Assembly (Fig. "3-25")	Page 3-25
RC Port Relief Components (Fig. "3-39")	Page 3-39
Return Manifold Assembly (Fig. "3-30")	Page 3-30
Rotation Drive Motor Hydraulics Assembly (Fig. "3-13")	Page 3-13
Selector Valve Assembly (Left) (Fig. "3-15")	Page 3-15
Selector Valve Assembly (Right) (Fig. "3-16")	Page 3-16
Shuttle Valve Components (Fig. "3-41")	Page 3-41
*Shuttle Valve Components - 3 Speed (Fig. "3-44")	Page 3-44
Solenoid Selector Valve Components (Fig. "3-33")	Page 3-33
Solenoid Selector Valve Components (Fig. "3-34")	Page 3-34
Solenoid Valve Assembly (Track) (Fig. "3-19")	Page 3-19
Solenoid Valve Components (Fig. "3-42")	Page 3-42
Solenoid Valve Components (Fig. "3-51")	Page 3-51
Standard Spool Positioner Components (Fig. "3-37")	Page 3-37
Thrust Cylinder Assembly (Fig. "3-26")	Page 3-26
Torque Limiter Valve Assembly (Fig. "3-20")	Page 3-20

PARTS LISTS TABLE OF CONTENTS (CONT.)

Revised August 2000 due to
addition of figures to manual.
Added figures marked with *.

HYDRAULIC ASSEMBLIES - SECTION 3 (CONT.)

Thrust Cylinder Assembly (Fig. "3-26")	Page 3-26
Thrust Limiter Valve Components - Rockfire (Fig. "3-58")	Page 3-58
Torque Limiter Valve Assembly (Fig. "3-20")	Page 3-20
Track Drive Motor Assembly (Left) (Fig. "3-11")	Page 3-11
Track Drive Motor Assembly (Right) (Fig. "3-12")	Page 3-12
Water Pump On/Off Cylinder Assembly (Fig. "3-27")	Page 3-27
Water Pump Drive Motor Assembly (Fig. "3-14")	Page 3-14

CONTROL/ELECTRICAL ASSEMBLIES - SECTION 4

Battery Assembly (Fig. "4-9")	Page 4-9
Control Handle Components (Fig. "4-13")	Page 4-13
Control Panel Assembly (Fig. "4-3")	Page 4-3
Engine Electrical Panel/Harness Assembly (Fig. "4-8")	Page 4-8
Literature Box Assembly (Fig. "4-5")	Page 4-5
Remote Locator Holder Assembly (Fig. "4-11")	Page 4-11
Rops Control Panel (Continued) (Fig. "4-2")	Page 4-2
Rops Control Panel Assembly (Fig. "4-1")	Page 4-1
Seat Assembly (Fig. "4-4")	Page 4-4
Seat Actuator Assembly (Fig. "4-6")	Page 4-6
Throttle Solenoid Assembly (SN101-189) (Fig. "4-7")	Page 4-7
*Throttle Solenoid Assembly (SN190-) (Fig. "4-7A")	Page 4-7A
Vandal Shield Assembly (Fig. "4-10")	Page 4-10
Work Light Assembly (Fig. "4-12")	Page 4-12

GROUND/SAFETY ASSEMBLIES - SECTION 5

Ground Stake/Voltage Stake Assembly (Fig. "5-1")	Page 5-1
Safety Features - Gloves, Boots, Cones (Fig. "5-2")	Page 5-2

WATER ASSEMBLIES - SECTION 6

Anti-Freeze System (Fig. "6-3")	Page 6-3
Ball Valve Components (Fig. "6-12")	Page 6-12
Drill Fluid (Fig. "6-7")	Page 6-7
Platform Assembly (SN101-193) (Fig. "6-5")	Page 6-5
*Platform Assembly (SN194-) (Fig. "6-5A")	Page 6-5A
Suction Stabilizer Tank Assembly (Fig. "6-2")	Page 6-2
Wand Assembly (SN101-193)(Fig. "6-6")	Page 6-6
*Wand Assembly (SN194-)(Fig. "6-6A")	Page 6-6A
Water Line Assembly (Fig. "6-4")	Page 6-4
Water Pressure Manifold Components (Fig. "6-13")	Page 6-13
Water Pump Assembly - Aplex (SN101-193) (Fig. "6-1")	Page 6-1
*Water Pump Assembly - Aplex (SN194-) (Fig. "6-1A")	Page 6-1A
Water Pump Assembly - FMC (SN101-193) (Fig. "6-8")	Page 6-8
*Water Pump Assembly - FMC (SN194-) (Fig. "6-8A")	Page 6-8A
Water Pump Components (Aplex) (Crankshaft) (Fig. "6-15")	Page 6-15
Water Pump Components (Aplex) (Fluid End) (Fig. "6-16")	Page 6-16

PARTS LISTS TABLE OF CONTENTS (CONT.)

Revised August 2000 due to
addition of figures to manual.
Added figure marked with *.

WATER ASSEMBLIES - SECTION 6 (CONT.)

Water Pump Components (Aplex) (Plunger) (Fig. "6-18")	Page 6-18
Water Pump Components (Aplex) (Power Frame) (Fig. "6-14")	Page 6-14
Water Pump Components (Aplex) (Special Tools) (Fig. "6-19")	Page 6-19
Water Pump Components (Aplex) (Suction/Discharge Valves) (Fig. "6-17")	Page 6-17
Water Pump Components (FMC) (Power End) (Fig. "6-9")	Page 6-9
Water Pump Components (FMC) (Fluid End) (Fig. "6-10")	Page 6-10
Water Pump Outlet Components (Fig. "6-11")	Page 6-11

WISE CLAMP ASSEMBLIES - SECTION 7

Carriage Assembly - Rear Vise (Fig. "7-2")	Page 7-2
Clamp Cylinder Assembly (Front) (Fig. "7-4")	Page 7-4
Clamp Cylinder Assembly (Rear) (Fig. "7-5")	Page 7-5
Hydraulic Components Location Diagram - Open Top Pipe Vise (Fig. "7-1")	Page 7-1
Hydraulic Cylinder Components - 2 1/2" x 5" (Fig. "7-10")	Page 7-10
Hydraulic Cylinder Components - " x 2" (Fig. "7-11")	Page 7-11
Hydraulic Cylinder Components - 1 1/2" x 6" (Fig. "7-12")	Page 7-12
*Hydraulic Cylinder Components - 4" X 2.25" X 2 (Fig. "7-13")	Page 7-13
Rotation Carriage Cylinder Assembly (Fig. "7-6")	Page 7-6
Solenoid Valve Assembly - Pipe Vise (Fig. "7-3")	Page 7-3
Solenoid Valve Components (Fig. "7-9")	Page 7-9
Vise Slide Cylinder Assembly (Fig. "7-7")	Page 7-7
Zap Alert Assembly (Fig. "7-8")	Page 7-8

ROD LOADER ASSEMBLIES - SECTION 8

Bulkhead Assembly (Fig. "8-4")	Page 8-4
Control Valve Assembly - Rod Loader Plumbing (Fig. "8-5")	Page 8-5
Hydraulic Components Location Diagram - Rod Loader (Fig. "8-1")	Page 8-1
Hydraulic Cylinder Components - 2" x 5" (Fig. "8-10")	Page 8-10
Hydraulic Cylinder Components - 3" x 7 1/2" (Fig. "8-11")	Page 8-11
Hydraulic Cylinder Components - 1 1/2" x 14 1/2" (Fig. "8-12")	Page 8-12
Rod Box Assembly (Fig. "8-3")	Page 8-3
Rod Box Assembly (300") (Fig. "8-9")	Page 8-9
Rod Loader Frame Assembly (Fig. "8-2")	Page 8-2
Rod Eject Cylinder Assembly (Fig. "8-6")	Page 8-6
Rod Rotation Cylinder Assembly (Fig. "8-7")	Page 8-7
Rod Postion Cylinder Assembly (Fig. "8-8")	Page 8-8

TUBING TONGS ASSEMBLIES - SECTION 9

Hydraulic Cylinder Components - 2" x 15" (Fig. "9-3")	Page 9-3
Tubing Tong Components (Fig. "9-2")	Page 9-2
Tubing Tong Assembly (Fig. "9-1")	Page 9-1

PARTS LISTS TABLE OF CONTENTS (CONT.)

Revised August 2000 due to
addition of figures to manual.
Added figure marked with *.

PNEUMATIC STAKEDOWN ASSEMBLIES - SECTION 10

Mist Oiler Assembly (Fig. "10-2")	Page 10-2
Stake/Drive Assembly (Fig. "10-1")	Page 10-1
Stake Driving Mole Components (Fig. "10-3")	Page 10-3

STATIONARY STAKEDOWN ASSEMBLIES - SECTION 11

Diverter Valve Assembly (Fig. "11-3")	Page 11-3
Diverter Valve Components (Fig. "11-6")	Page 11-6
Hydraulic Components Location Diagram - Stationary Stake Down (Fig. "11-1")	Page 11-1
Hydraulic Cylinder Components - 1 1/2" X 24" w/ TEE (Fig. "11-5")	Page 11-5
*Hydraulic Cylinder Components - 1 1/2" x 24" (Fig. "11-7")	Page 11-7
Hydraulic Motor Components (Fig. "11-4")	Page 11-4
Stationary Stake Down Assembly (Fig. "11-2")	Page 11-2

LOCATION DIGITRAK ASSEMBLIES - SECTION 12

Cable Sonde Accessory Assembly (Fig. "12-5")	Page 12-5
Data Logger, Mark III - Digitrak (Fig. "12-4")	Page 12-4
Location Package, Mark III - Digitrak (w/ Remote Display) Domestic (Fig. "12-2")	Page 12-2
Location Package, Mark III - Digitrak (W/ Remote Display) International (Fig. "12-3")	Page 12-3
Location Package, Mark III - Digitrak - Domestic and International (Fig. "12-1")	Page 12-1
Slip Ring Components (Fig. "12-6")	Page 12-6

LOCATION SPOT D TEC ASSEMBLIES - SECTION 13

Location Package, Spot D Tek II.2 Utility (Fig. "13-1")	Page 13-1
Location Package, Spot D Tek II.2, III & IIIA (Fig. "13-2")	Page 13-2
Location Package, Spot D Tek Mole Mapping System (Fig. "13-3")	Page 13-3
Spot-D-Tek II.2 Directional Probe (Repairable) Components (Fig. "13-4")	Page 13-4
Spot-D-Tek II.2 Deep Sonde (Repairable) Components (Fig. "13-5")	Page 13-5

SURGE STEER (NAVTEC) ASSEMBLIES - SECTION 14

Control Panel Assembly - Navtec (Fig. "14-3")	Page 14-3
Microprocessor Assembly (Fig. "14-2")	Page 14-2
Transducer/Speed Sensor Assembly (Fig. "14-1")	Page 14-1

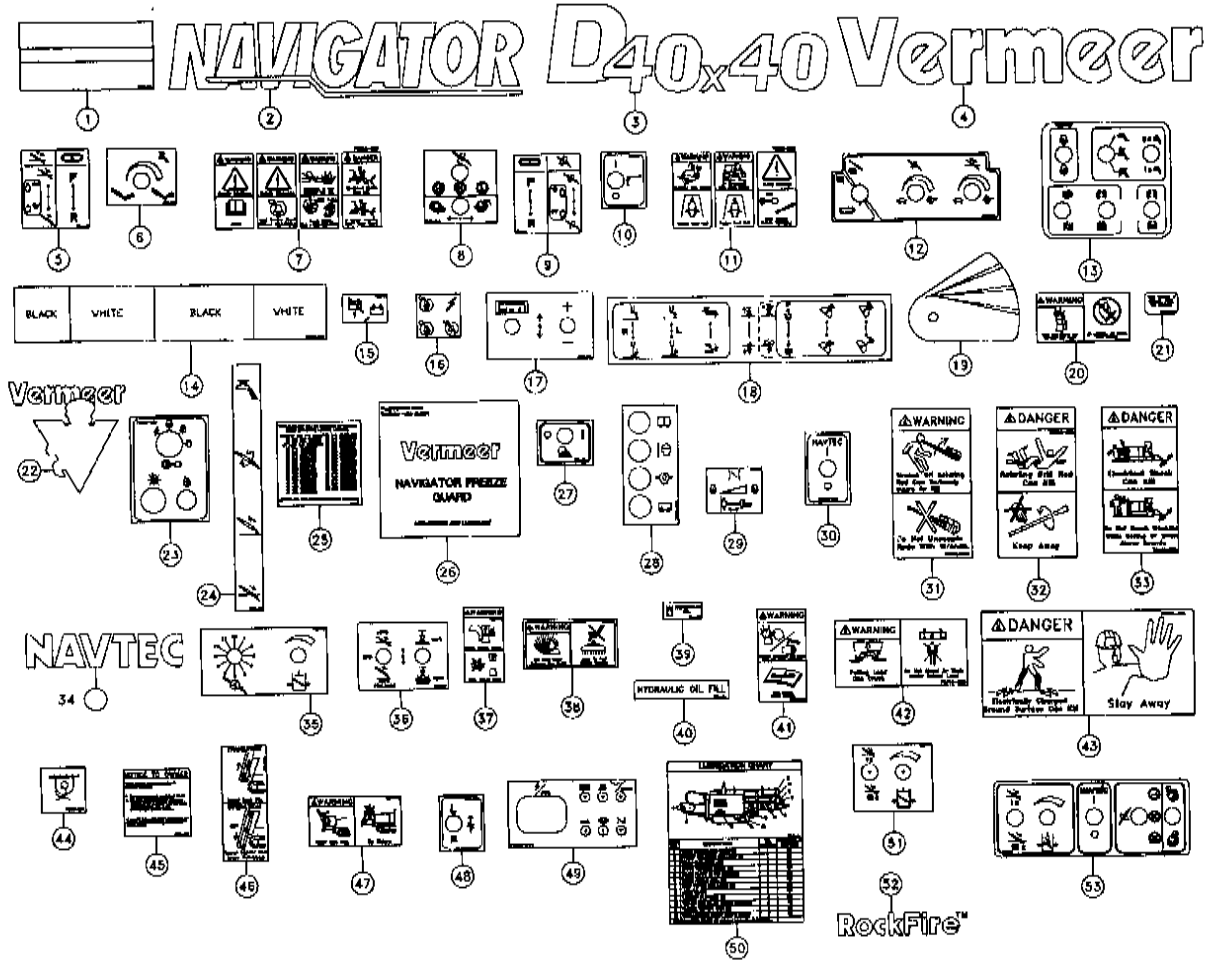
DRILL HEAD ASSEMBLY - SECTION 15

Rock Drilling Head Assembly (Fig. "15-1")	Page 15-1
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DECAL ASSEMBLY - DOMESTIC

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Figure 1-1



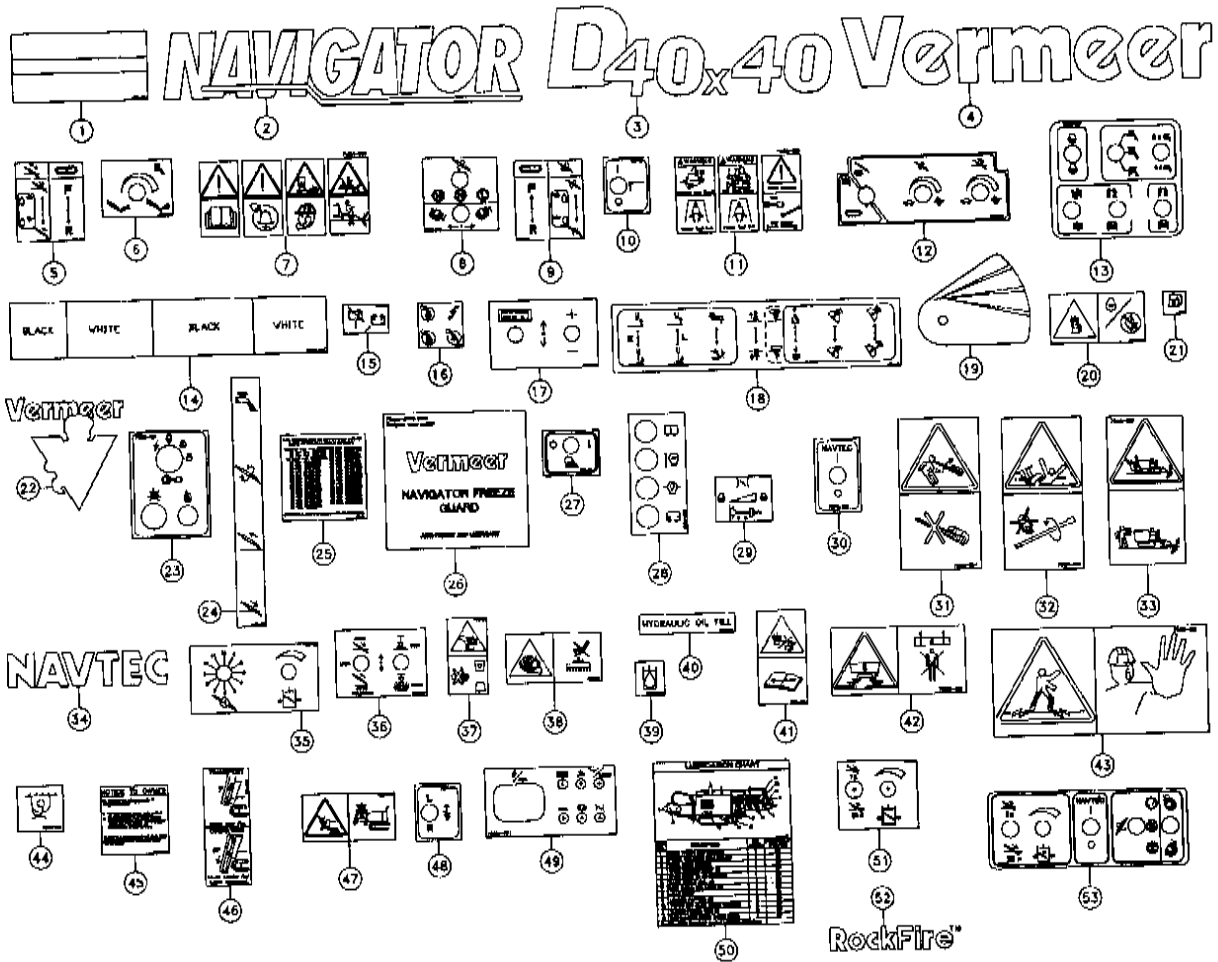
REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
1-1	1	70000-775 DECAL 3"VERMEER STRIPE	21'	1-1	29	700IA-473 DECAL-THROTTLE (UG)	1
1-1	2	70000-614 DECAL-MODEL NAVIGATOR (BIG)	2	1-1	30	7000A-875 DECAL NAVTECH-ON/OFF (SN101-192)	1
		70000-615 DECAL-MODEL NAVIGATOR (SMALL)	1	1-1	31	7000A-394 DECAL - WARNING	1
1-1	3	7000A-883 DECAL-MODEL D40X40	2	1-1	32	7000A-393 DECAL - DANGER	1
1-1	4	2326-619 DECAL- VERMEER 3 X 15	1	1-1	33	7000A-392 DECAL - DANGER	5
		2328-595 DECAL VERMEER- 4 1/2 X 24	1	1-1	34	7000A-745 DECAL-NAVTEC	2
1-1	5	700IA-268 DECAL-DRILL FORCE RT (UND)	1	1-1	35	700IA-509 DECAL-STEER	1
1-1	6	700IA-262 DECAL - FLUID PRESSURE (UG)	1	1-1	36	7000A-510 DECAL-AUTO/MANUAL SWITCH	1
1-1	7	7000A-395 DECAL - WARNING	1	1-1	37	7000A-864 DECAL-WARNING DOMESTIC	2
1-1	8	700IA-808 DECAL-SEAT/DRILL COMBO (SN101-192)	1	1-1	38	2326-315 DECAL-WARNING	1
1-1	9	700IA-269 DECAL-DRILL ROTATION LT (UND)	1	1-1	39	2326-756 DECAL-HYDRAULIC OIL	1
1-1	10	700IA-807 DECAL-WASHWAND	1	1-1	40	7000A-814 DECAL-HYDRAULIC OIL FILLER	1
1-1	11	7000A-325 DECAL-WARNING	1	1-1	41	70000-044 DECAL-WARNING(AT/UND)	1
1-1	12	700IA-270 DECAL-SPEED VARIATION (UND)	1	1-1	42	70000-563 DECAL-WARNING (UND)	2
1-1	13	700IA-267 DECAL - ROD VISES (UG)	1	1-1	43	70000-530 DECAL-DANGER	4
1-1	14	700IA-997 DECAL-GEARBOX POSITION	1	1-1	44	70000-834 DECAL-TIE DOWN POINT	6
1-1	15	700IA-477 DECAL_BATTERY SWITCH (UG)	1	1-1	45	2326-940 DECAL-NOTICE TO OWNERS	1
1-1	16	700IA-260 DECAL-TEST (UND)	1	1-1	46	7000A-858 DECAL-TRANSPORT LOCK	1
1-1	17	7000A-508 DECAL-DISPLAY	1	1-1	47	7000A-863 DECAL-WARNING	1
1-1	18	700IA-401 DECAL -CONTROL BANK	1	1-1	48	700IA-966 DECAL-STAKE LEFT-RIGHT	1
1-1	19	700IA-624 DECAL-LOADER POSITION	1	1-1	49	700IA-771 DECAL-BREAKER LIGHTS	1
1-1	20	2326-324 DECAL-WARNING/REFUEL	1	1-1	50	7000B-182 DECAL-LUBE CHART	1
1-1	21	70000-098 DECAL-DIESEL (AT/UND)	1	1-1	51	700IB-226 DECAL-THRUST (SN176-192)	1
1-1	22	70000-939 DECAL-15' VERMEER LOGO	1	1-1	52	7000B-202 DECAL-ROCKFIRE (SN176-)	1
1-1	23	700IB-001 DECAL- IGNITION	1	1-1	53	*700IB-365 DECAL-WRAPPER RIGHT (REPLACES REF. 8, 30, 51) (SN19-3)	1
1-1	24	700IA-265 DECAL - INSTRUMENTS (UG)	1				
1-1	25	7000B-119 DECAL - PATENT	1				
1-1	26	7000A-027 DECAL-NAVIGATOR FREEZE GUARD	1		901228-093	DECAL ASSY.-D40X40 (DOMESTIC)	
1-1	27	700IA-804 DECAL-WORK LIGHT	1			(INC. ALL ITEMS IN FIGURE)	
1-1	28	700IA-266 DECAL - CONTROL PANEL (UG)	1				

(PAGE 1-2) D40X40/NAVTEC NAVIGATOR

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DECAL ASSEMBLY - INTERNATIONAL

Figure 1-2

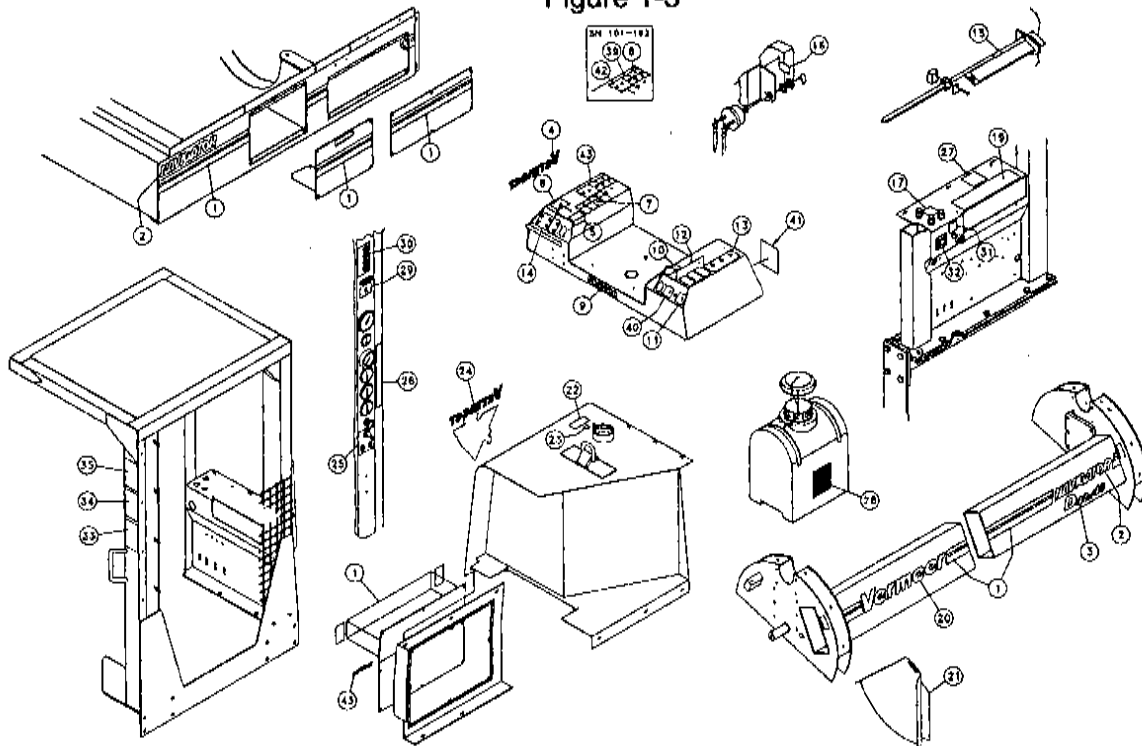


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
1-2	1	70000-775 DECAL 3"VERMEER STRIPE	21'	1-2	28	700IA-266 DECAL - CONTROL PANEL (UG)	1
1-2	2	70000-614 DECAL-MODEL NAVIGATOR (BIG)	2	1-2	29	700IA-473 DECAL-THROTTLE (UG)	1
		70000-615 DECAL-MODEL NAVIGATOR (SMALL)	1	1-2	30	7000A-975 DECAL NAVTECH-ON/OFF (SN101-192)	1
1-2	3	7000A-883 DECAL-MODEL D40X40	2	1-2	31	700IA-394 DECAL - WARNING	1
1-2	4	2326-619 DECAL- VERMEER 3 X 15	1	1-2	32	700IA-393 DECAL - DANGER	1
		2328-595 DECAL VERMEER- 4 1/2 X 24	1	1-2	33	700IA-392 DECAL - DANGER	5
1-2	5	700IA-268 DECAL-DRILL FORCE RT (UND)	1	1-2	34	7000A-745 DECAL-NAVTEC	2
1-2	6	700IA-262 DECAL - FLUID PRESSURE (UG)	1	1-2	35	700IA-509 DECAL-STEER	1
1-2	7	700IA-395 DECAL-WARNING	1	1-2	36	7000A-510 DECAL-AUTO/MANUAL SWITCH	1
1-2	8	700IA-808 DECAL-SEAT/DRILL COMBO (SN101-192)	1	1-2	37	700IA-864 DECAL-WARNING INTERNATIONAL	2
1-2	9	700IA-269 DECAL-DRILL ROTATION LT (UND)	1	1-2	38	2326I-315 DECAL-WARNING	1
1-2	10	700IA-807 DECAL-WASHWAND	1	1-2	39	2326I-756 DECAL-HYDRAULIC FLUID	1
1-2	11	700IA-325 DECAL-WARNING INTERNATIONAL	1	1-2	40	7000A-814 DECAL-HYDRAULIC OIL FILLER	1
1-2	12	700IA-270 DECAL-SPEED VARIATION (UND)	1	1-2	41	7000I-044 DECAL-WARNING	1
1-2	13	700IA-267 DECAL - ROD VISES (UG)	1	1-2	42	7000I-563 DECAL-WARNING (UND)	2
1-2	14	700IA-997 DECAL-GEARBOX POSITION	1	1-2	43	7000I-530 DECAL-DANGER	4
1-2	15	700IA-477 DECAL_BATTERY SWITCH (UG)	1	1-2	44	70000-834 DECAL-TIE DOWN POINT	6
1-2	16	700IA-260 DECAL-TEST (UND)	1	1-2	45	2326-940 DECAL-NOTICE TO OWNERS	1
1-2	17	7000A-508 DECAL-DISPLAY	1	1-2	46	7000A-858 DECAL-TRANSPORT LOCK	1
1-2	18	700IA-401 DECAL -CONTROL BANK	1	1-2	47	700IA-863 DECAL-WARNING	1
1-2	19	700IA-624 DECAL-LOADER POSITION	1	1-2	48	700IA-966 DECAL-STAKE LEFT-RIGHT	1
1-2	20	2326I-324 DECAL-WARNING	1	1-2	49	700IA-771 DECAL-BREAKER LIGHTS	1
1-2	21	7000I-098 DECAL-DIESEL FUEL	1	1-2	50	7000B-182 DECAL-LUBE CHART	1
1-2	22	70000-939 DECAL-15" VERMEER LOGO	1	1-2	51	700IB-226 DECAL-THRUST (SN176-192)	1
1-2	23	700IB-001 DECAL- IGNITION	1	1-2	52	7000B-202 DECAL-ROCKFIRE (SN176-)	1
1-2	24	700IA-265 DECAL - INSTRUMENTS (UG)	1	1-2	53	*700IB-365 DECAL-WRAPPER-RIGHT (REPLACES REF. 8, 30, 51) (SN193-)	1
1-2	25	7000B-119 DECAL-PATENT	1				
1-2	26	7000A-027 DECAL-NAVIGATOR FREEZE GUARD	1				
1-2	27	700IA-804 DECAL-WORK LIGHT	1				
					901228-094	DECAL ASSY.,D40X40 (INTERNATIONAL) (INC. ALL ITEMS IN FIGURE)	

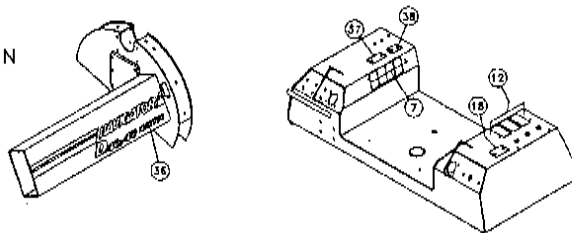
Revised August 2000 due to update of decals. Added part marked with *.

DECAL LOCATION ASSEMBLY

Figure 1-3



NAVTEC OPTION

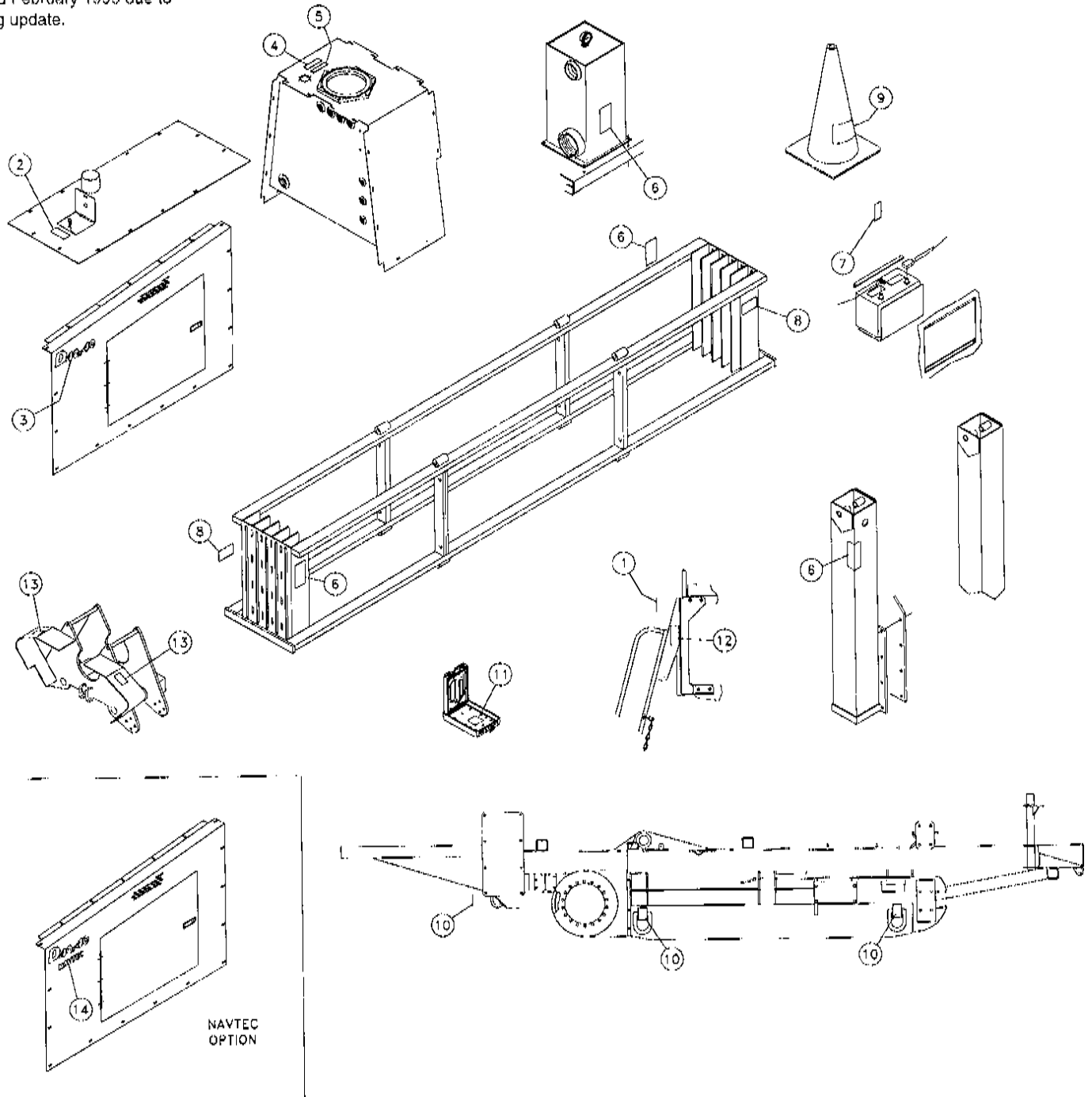


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
1-3	1	70000-775 DECAL 3"VERMEER STRIPE	21	1-3	23	70000-098 DECAL-DIESEL (AT/UND)	1
1-3	2	70000-614 DECAL-MODEL NAVIGATOR (BIG)	2	1-3	24	70000-939 DECAL-15" VERMEER LOGO	1
1-3	3	7000A-883 DECAL-MODEL D40X40	1	1-3	25	700IB-001 DECAL- IGNITION	1
1-3	4	2326-619 DECAL- VERMEER 3 X 15	1	1-3	26	700IA-265 DECAL - INSTRUMENTS (UG)	1
1-3	5	700IA-268 DECAL-DRILL FORCE RT (UND)	1	1-3	27	7000B-119 DECAL- PATENT	1
1-3	6	700IA-262 DECAL - FLUID PRESSURE (UG)	1	1-3	28	7000A-027 DECAL-NAVIGATOR FREEZE GUARD	1
1-3	7	7000A-395 DECAL - WARNING	1	1-3	29	700IA-804 DECAL-WORK LIGHT	1
		700IA-395 DECAL-WARNING	1	1-3	30	700IA-266 DECAL - CONTROL PANEL (UG)	1
1-3	8	700IA-808 DECAL-SEAT/DRILL COMBO (SN101-192)	1	1-3	31	700IA-473 DECAL-THROTTLE (UG)	1
1-3	9	70000-615 DECAL-MODEL NAVIGATOR (SMALL)	1	1-3	32	700IA-771 DECAL-BREAKER LIGHTS	1
1-3	10	700IA-269 DECAL-DRILL ROTATION LT (UND)	1	1-3	33	7000A-394 DECAL - WARNING	1
1-3	11	700IA-807 DECAL-WASHWAND	1	1-3	34	700IA-394 DECAL - WARNING	1
1-3	12	7000A-325 DECAL-WARNING	1	1-3	34	7000A-393 DECAL - DANGER	1
		700IA-325 DECAL-WARNING INTERNATIONAL	1			700IA-393 DECAL - DANGER	1
1-3	13	700IA-270 DECAL-SPEED VARIATION (UND)	1	1-3	35	7000A-392 DECAL - DANGER	1
1-3	14	700IA-267 DECAL - ROD VISES (UG)	1			700IA-392 DECAL - DANGER	1
1-3	15	700IA-490 DECAL-INDICATOR 2 7/8-3 1/2ROD	1	1-3	36	7000A-745 DECAL-NAVTEC	1
1-3	16	700IA-477 DECAL_BATTERY SWITCH (UG)	1	1-3	37	700IA-509 DECAL-STEER	1
1-3	17	700IA-260 DECAL-TEST (UND)	1	1-3	38	7000A-510 DECAL-AUTO/MANUAL SWITCH	1
1-3	18	7000A-508 DECAL-DISPLAY	1	1-3	39	7000A-975 DECAL NAVTECH-ON/OFF (SN101-192)	1
1-3	19	700IA-401 DECAL -CONTROL BANK	1	1-3	40	700IA-966 DECAL-STAKE LEFT-RIGHT	1
1-3	20	2326-595 DECAL VERMEER- 4 1/2 X 24	1	1-3	41	7000B-182 DECAL-LUBE CHART	1
1-3	21	700IA-624 DECAL-LOADER POSITION	1	1-3	42	700IB-226 DECAL-THRUST (SN176-192)	1
1-3	22	2326-324 DECAL-WARNING/REFUEL	1	1-3	43	7000B-202 DECAL-ROCKFIRE (SN176-)	1
		2326I-324 DECAL-WARNING	1			*700IB-365 DECAL-WRAPPER-RIGHT (REPLACES REF. 8, 39, 42) (SN193-)	1

DECAL LOCATION ASSEMBLY

Figure 1-4

Revised February 1999 due to drawing update.

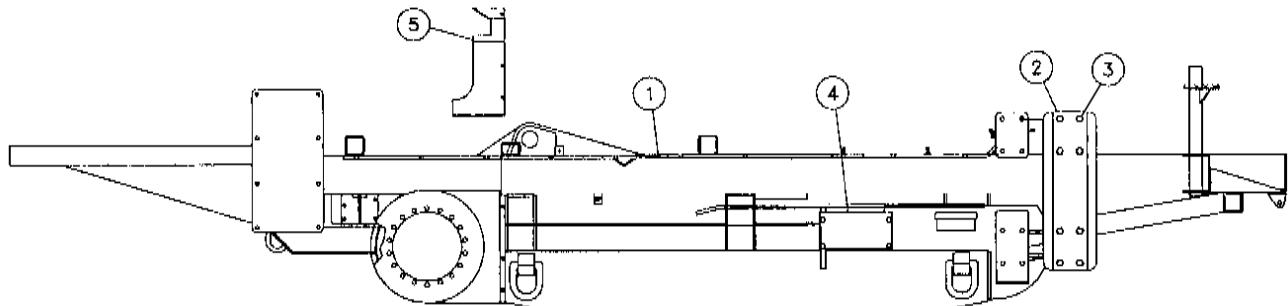


REF. NO.	PART NO.	DESCRIPTION	QTY	REF. NO.	PART NO.	DESCRIPTION	QTY
1-4	1	7000A-863 DECAL-WARNING (AT)	1		7000I-044	DECAL-WARNING	1
		700IA-863 DECAL-WARNING (INT.)	1	1-4	8	70000-563 DECAL-WARNING (UND)	2
1-4	2	2326-315 DECAL-WARNING	1		7000I-563	DECAL-WARNING (UND)	2
		2326I-315 DECAL-WARNING	1	1-4	9	7000I-530 DECAL-DANGER	4
1-4	3	7000A-883 DECAL-MODEL D40X40	1	1-4	10	70000-834 DECAL-TIE DOWN POINT	6
1-4	4	2326-756 DECAL-HYDRAULIC OIL	1	1-4	11	2326-940 DECAL-NOTICE TO OWNERS	1
		2326I-756 DECAL-HYDRAULIC FLUID	1	1-4	12	7000A-858 DECAL-TRANSPORT LOCK	1
1-4	5	7000A-814 DECAL-HYDRAULIC OIL FILLER	1	1-4	13	7000A-864 DECAL-WARNING DOMESTIC	2
1-4	6	7000A-392 DECAL - DANGER	4		700IA-864	DECAL-WARNING INTERNATIONAL	2
		700IA-392 DECAL - DANGER	4	1-4	14	7000A-745 DECAL-NAVTEC	1
1-4	7	70000-044 DECAL-WARNING(AT/UND)	1				

MAIN FRAME ASSEMBLY

Figure 1-5

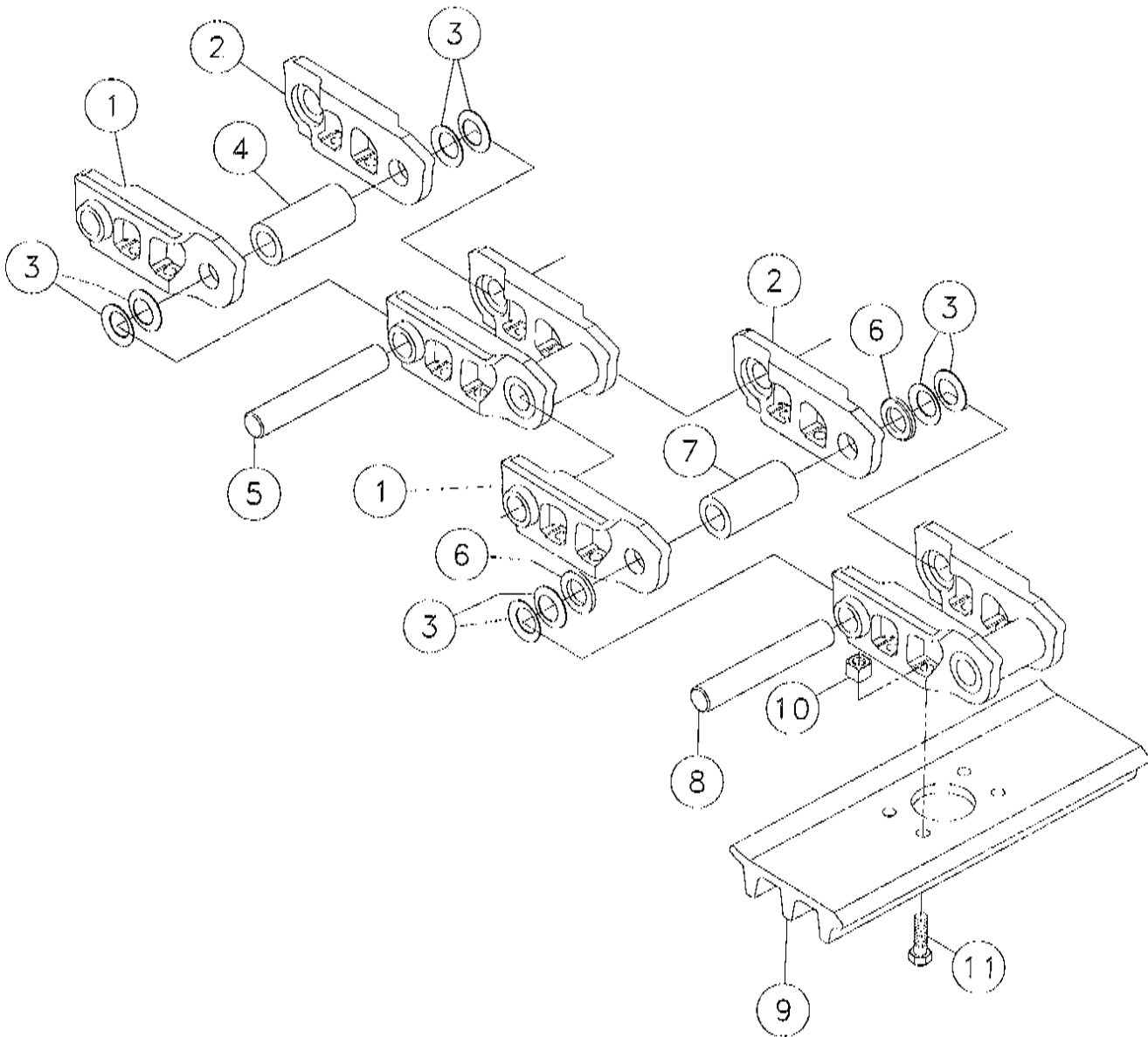
Revised August 2000 due to
update in illustration.



REF. NO.	PART NO.	DESCRIPTION	QTY.
1-5	1	241653-001 FRAME-MAIN	1
1-5	2	277785-001 PLATE-ROPS SUPPORT	1
1-5	3	238220-001 BOLT-5/8-11X1 3/4 GR8 HEX ZYC	8
		235715-001 WASHER-5/8 SAE HARD ZINC PLT	16
		250513-001 NUT-5/8-NC GR8 TOP LOCK Y/ZINC	8
1-5	4	902157-001 TRACK TIGHTENER SHIELD	2
		235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	8
		235713-001 WASHER-3/8 SAE HARD ZINC PLTD	8
1-5	5	902162-001 SPROCKET SHIELD (LEFT)	1
		902162-002 SPROCKET SHIELD (RIGHT)	1
		485-025 WASHER-1/2 FLAT-HARDENED-ZINC	6
		235737-001 BOLT-1/2-13X1 1/4 GR8 ZINC PLT	6

TRACK CHAIN ASSEMBLY

Figure 1-7

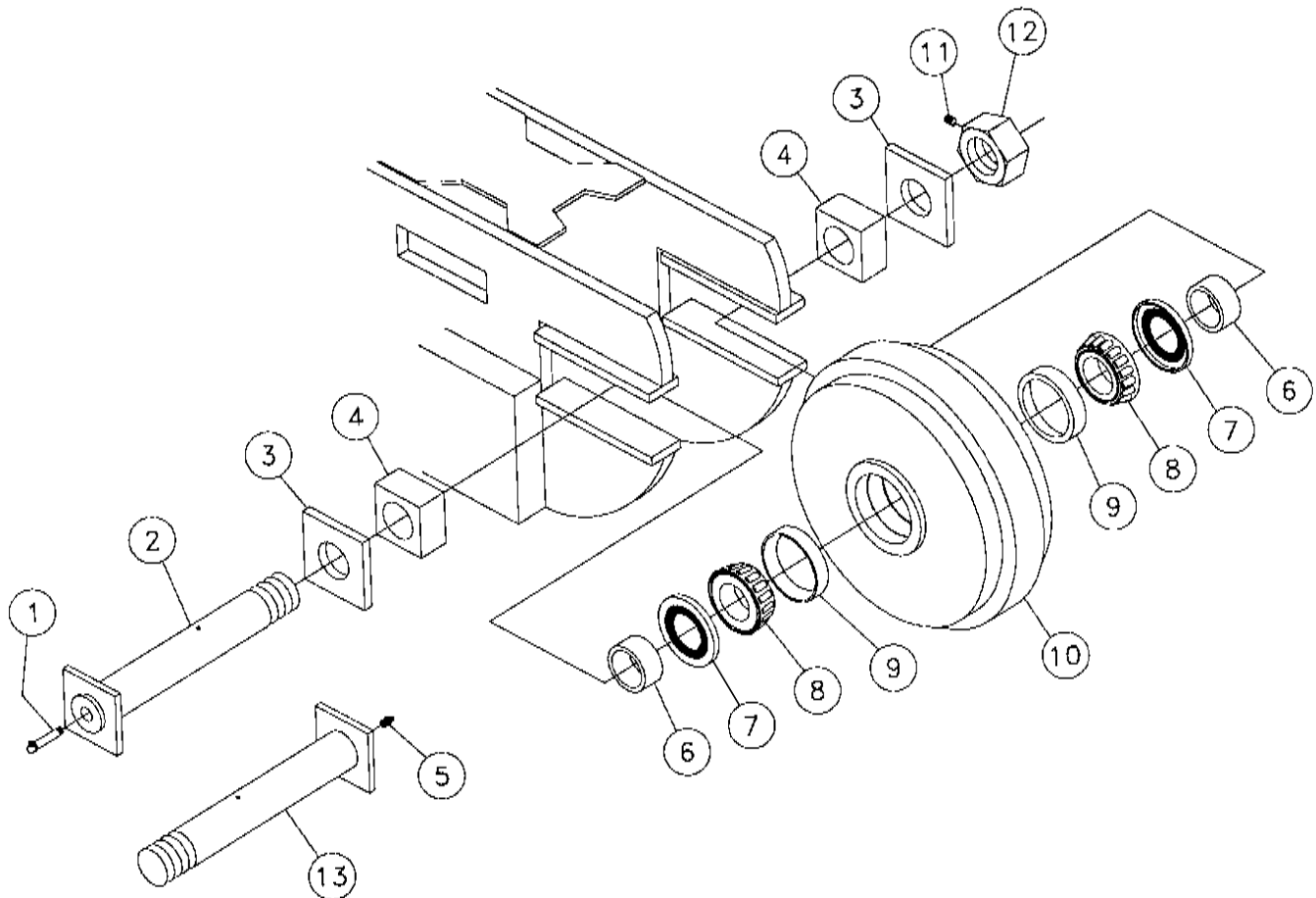


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1-7	1	901767-005 LINK-R.H.	39
1-7	2	901767-007 LINK-L.H.	39
1-7	3	901766-015 WASHER 6S3146	156
1-7	4	901767-009 BUSHING	38
1-7	5	901767-011 PIN	38
1-7	6	901766-011 SPACER 6S3145	2
1-7	7	901766-017 BUSHING 6S3179	1
1-7	8	901766-013 PIN-MASTER 8L5560	1
1-7	9	901767-003 GROUSER-18" TRIPLE 6ZXXXX	39
1-7	10	26384-001 NUT-IN 1319A 9/16-18 SQ.HD.	156
1-7	11	12698-001 BOLT-9/16-18X2 TRACK PAD	156
	901767-001	CHAIN-TRACK (INC. ALL ITEMS IN THIS FIGURE)	

TRACK END ROLLER ASSEMBLY

Figure 1-8

Revised August 2000 due to update in parts list. Added part marked with *.

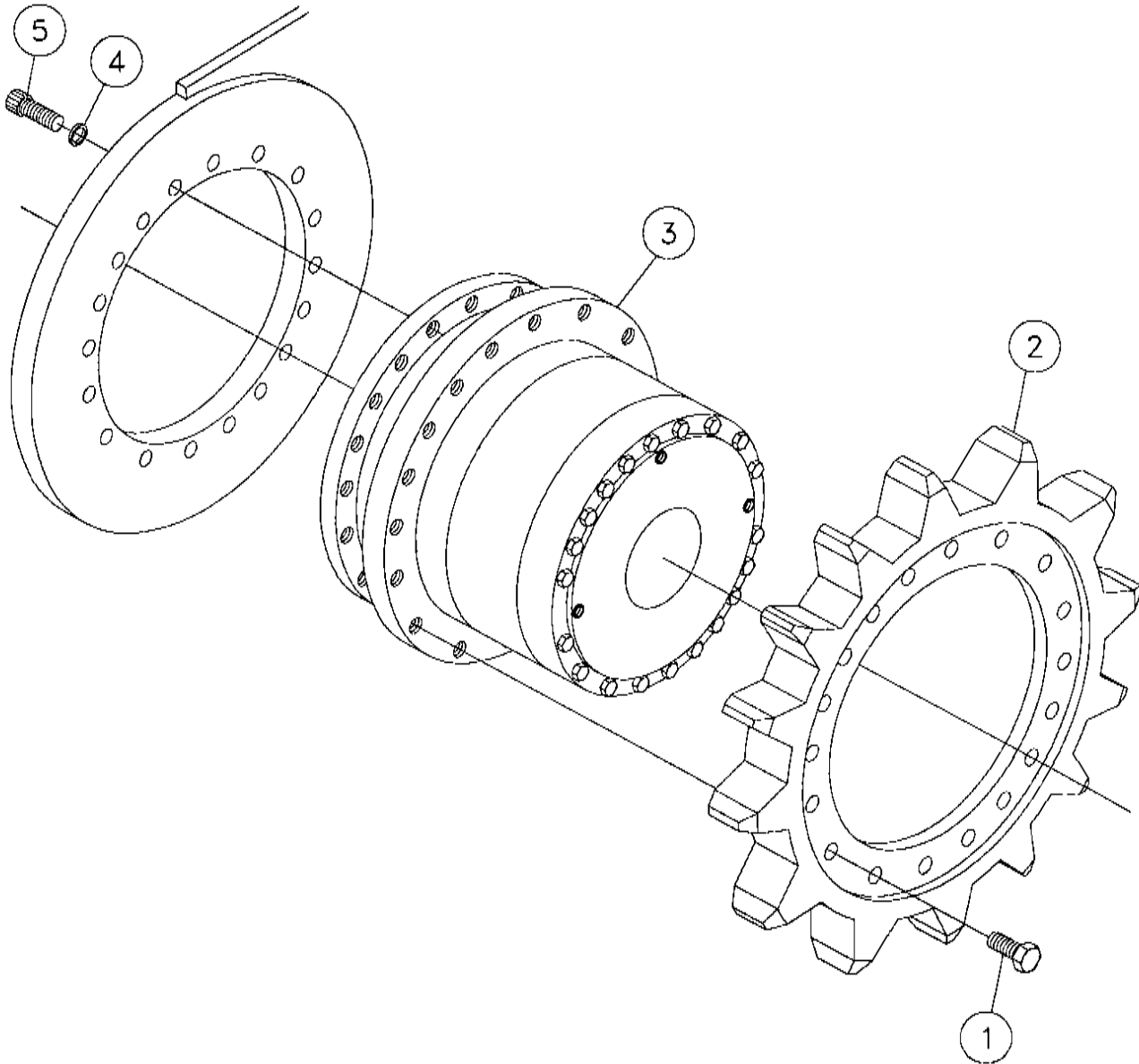


REF. NO.	PART NO.	DESCRIPTION	QTY.
1-8	1	593-001 ZERK-1/8" 90 DEG GRSE 1 13/16	1
1-8	2	902770-005 BOLT ASSY.-END IDLER ROLLER (INC. REF. 1)	1
1-8	3	903257-001 SPACER-IDLER ROLLER BOLT	4
1-8	4	903256-001 BLOCK-IDLER ROLLER BOLT (SN101-182)	4
	*285770-001	BLOCK-IDLER ROLLER BOLT (SN183-)	1
1-8	5	586-001 ZERK-1/8 NPT ST GREASE	1
1-8	6	280532-001 SPACER-IDLER ROLLER (REPLACES 6706-001)	4
1-8	7	3967-001 SEAL	4
1-8	8	1716-011 TIMKEN CONE 2"	4
1-8	9	1715-011 TIMKEN CUP 2"	4
1-8	10	217479-003 ROLLER-TRACK END IDLER (INC. TWO OF REF. 9)	2
1-8	11	530-001 SSS-3/8-16X1/2	2
1-8	12	6702-003 NUT ASSY-END IDLER ROLLER	2
1-8	13	902770-003 BOLT ASSY-END IDLER ROLLER (INC. REF. 5)	1

TRACK PLANETARY ASSEMBLY

Figure 1-9

Revised August 2000 due to update
in parts list. Changed part marked with *.

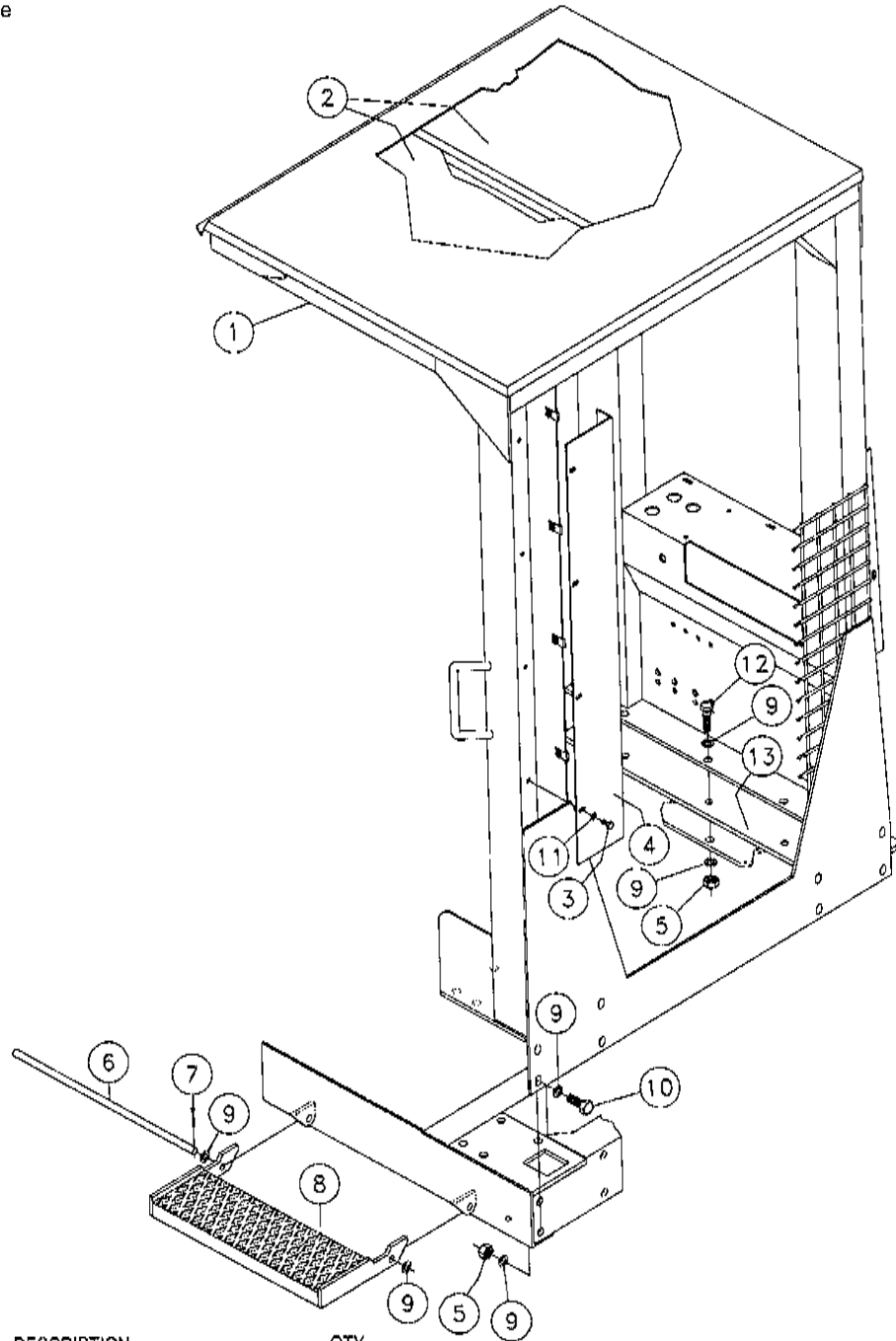


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1-9	1	249884-001 BOLT-M16X40 HHCS 10.9 DIN 933 ZN	36
1-9	2	*285757-001 SPROCKET-19T TRACK FIC72750 (REPLACES 901997-001)	2
1-9	3	214045-001 PLANETARY-CT18 FAIRFIELD	2
1-9	4	249889-001 WASHER-M16 8.8 LOCK ZINC	36
1-9	5	249885-001 BOLT-M16X45 12.9 SOC HD C/S ZN	36

R.O.P.S. ASSEMBLY

Figure 1-10

Revised July 1999 due to update in illustration.

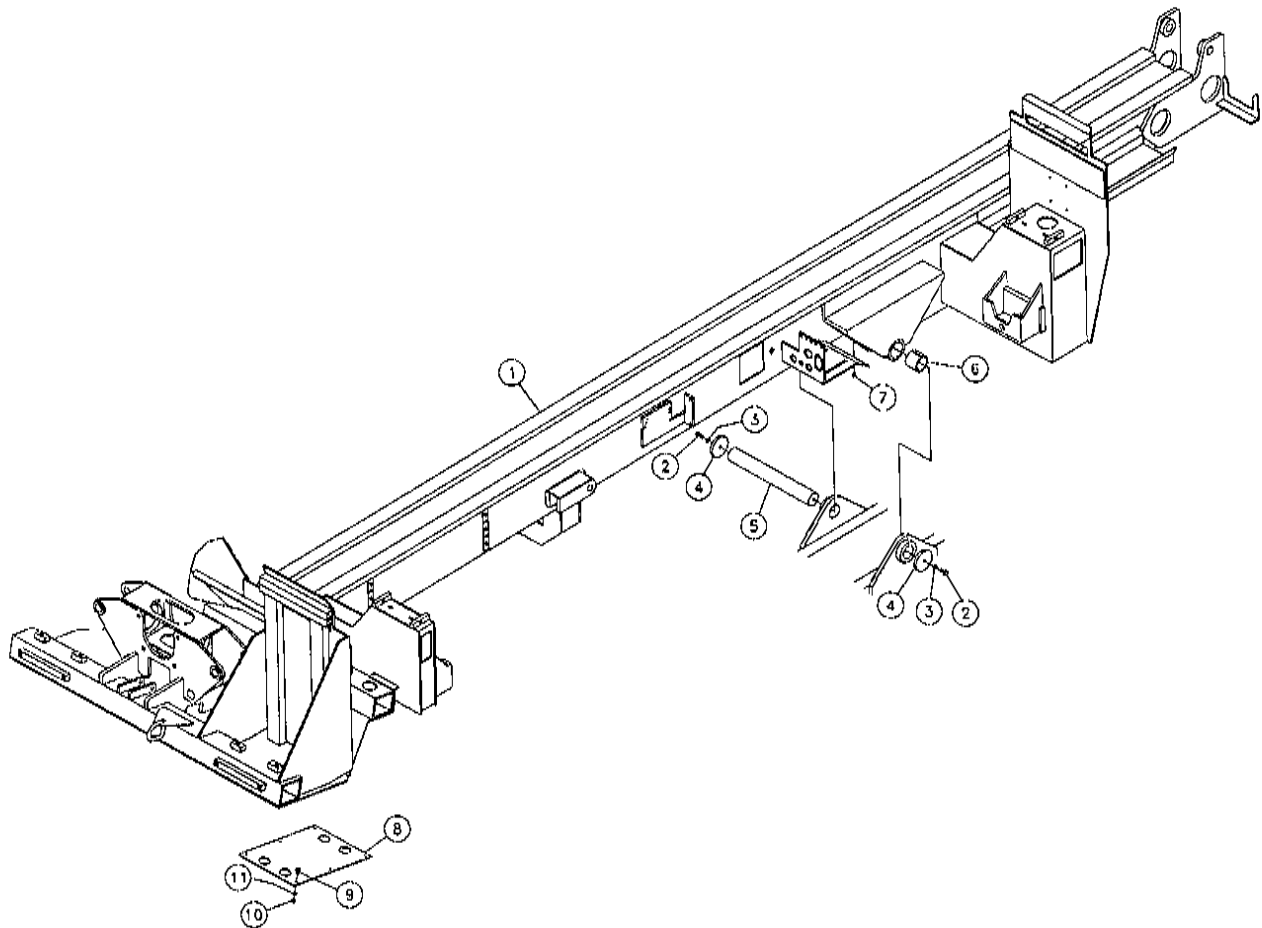


REF. NO.	PART NO.	DESCRIPTION	QTY.
1-10	1	275433-001 CAGE-ROPS	1
1-10	2	227871-001 FOAM - ROPS LINER	2
1-10	3	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	8
1-10	4	224369-001 PLATE-GAUGE COVER	1
1-10	5	241065-001 NUT-5/8 UNC GR8 HEX ZINC	22
1-10	6	234318-001 ROD-STEP PIN	1
1-10	7	510-011 COTTER PIN-1/8" X 1 1/2"	2
1-10	8	234316-001 STEP	1
1-10	9	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	46
1-10	10	236220-001 BOLT-5/8-11X1 3/4 GR8 HEX ZYC	12
1-10	11	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	8
1-10	12	238245-001 BOLT-5/8-11X2 1/4" GR 8 HEX	10
1-10	13	277782-001 PLATE-ROPS SPACER	1

RACK FRAME ASSEMBLY

Figure 1-11

Revised September 1999 due to
update in illustration.

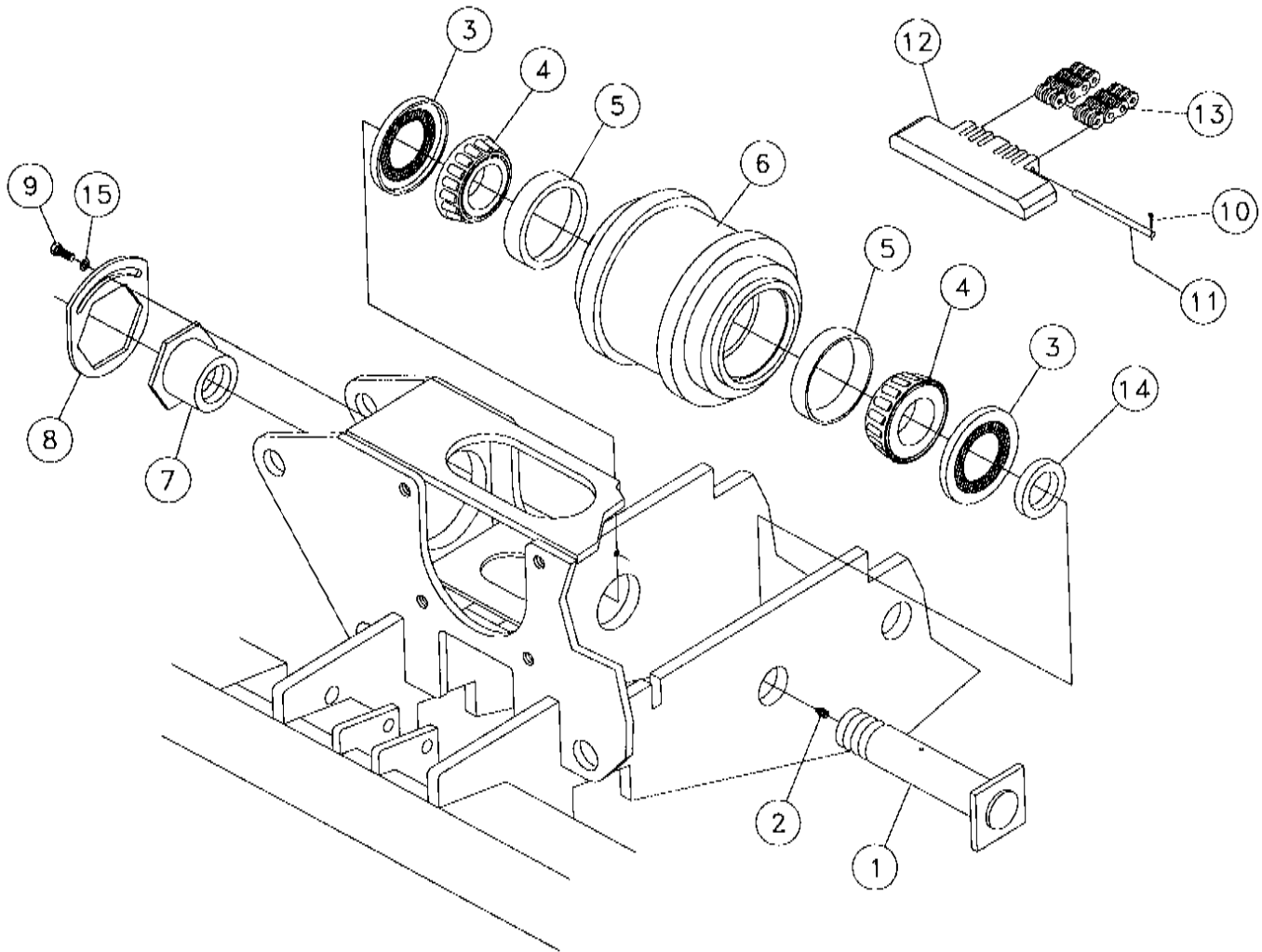


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1-11	1	249771-001 MAIN FRAME-RACK 15'	1
1-11	2	235737-001 BOLT-1/2-13X1 1/4 GR8 ZINC PLT	2
1-11	3	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	2
1-11	4	38884-001 *PIVOT ROD SLUG	2
1-11	5	216620-001 PIN-RACK PIVOT	1
1-11	6	1835-099 BSHG-STL.3 X 2 1/2-2 1/2	2
1-11	7	590-001 ZERK-1/8" NPT 90 DEG GREASE	1
1-11	8	227929-001 COVER-BASE PLATE	1
1-11	9	375-010 BOLT-3/8"-16X1"GD#5 CARRIAGE	6
1-11	10	4536-001 NUT - 3/8-16 FLG. WHIZ LOCK	6
1-11	11	235725-001 NUT-3/8-16 GR 8 HEX ZINC	6
1-11	12	235713-001 WASHER-3/8 SAE HARD ZINC	6

FRONT ROLLER ASSEMBLY

Figure 1-12

Revised August 2000 due to update in parts list. Changed part marked with *.

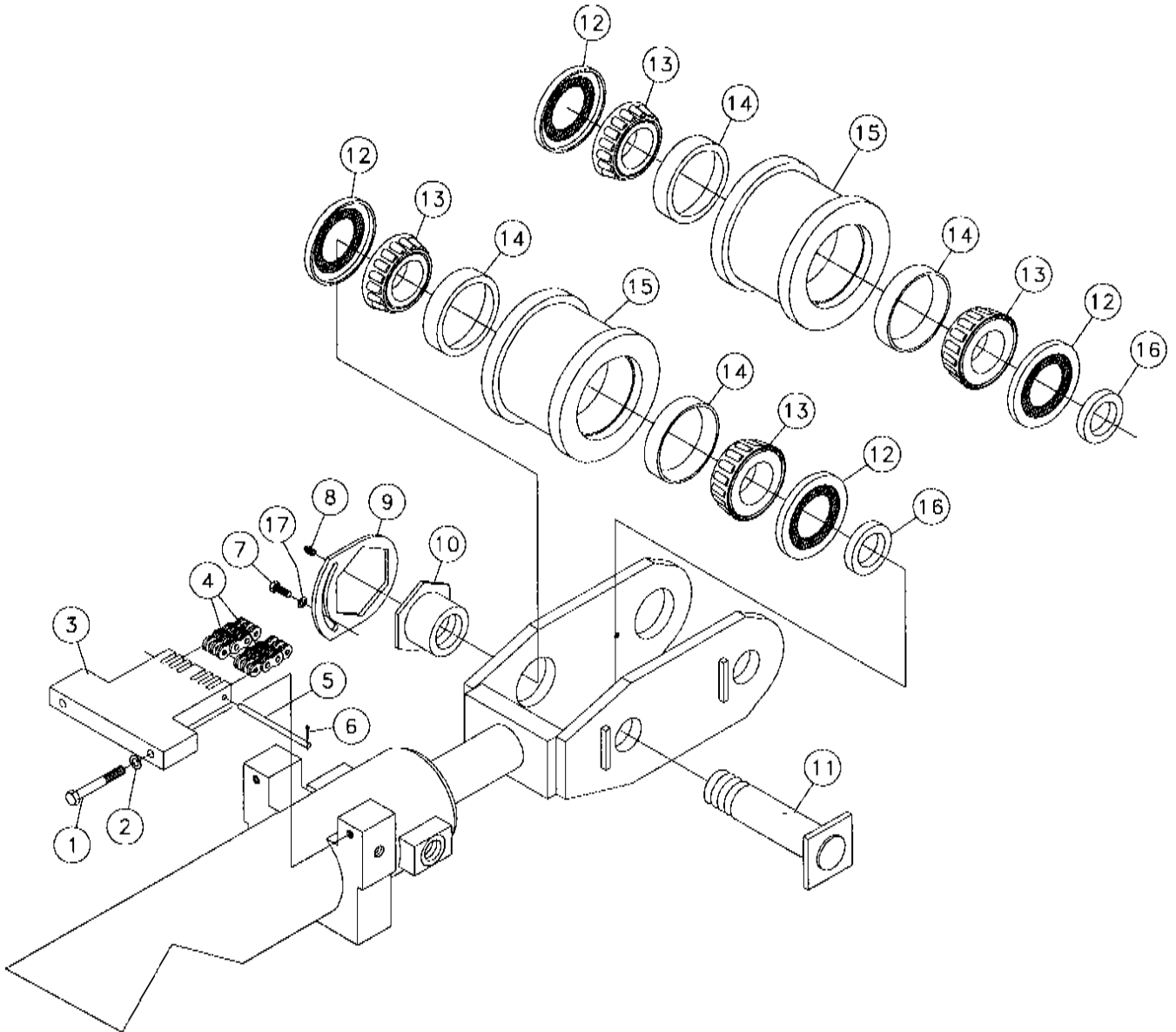


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1-12	1	216712-003 PIN ASSY-FRONT ROLLER (INC. REF. 2)	1
1-12	2	586-001 ZERK-1/8" ST NPT GREASE	1
1-12	3	224299-001 SEAL-C/R 31353	2
1-12	4	1716-153 TIMKEN CONE-2 1/8"	2
1-12	5	1715-091 TIMKEN CUP-2 1/8"	2
1-12	6	239482-001 FRONT CHAIN ROLLER ASSY	1
1-12	7	216596-001 NUT-IDLER PIN	1
1-12	8	224265-001 PLATE-NUT LOCK	1
1-12	9	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	1
1-12	10	510-005 COTTER PIN-3/32" X 3/4"	2
1-12	11	216742-001 PIN-2BL8XX LEAF CHAIN	1
1-12	12	239289-001 ANCHOR-THRUST CHAIN	1
1-12	13	*283591-001 CHAIN-LEAF 2-233 PITCHES MATCHED	1
	98422-001	LINK-BL866 CONNECTOR	0
1-12	14	224250-001 SPACER-SHEAVE	1
1-12	15	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	1

THRUST CYLINDER ROLLER ASSEMBLY

Figure 1-13

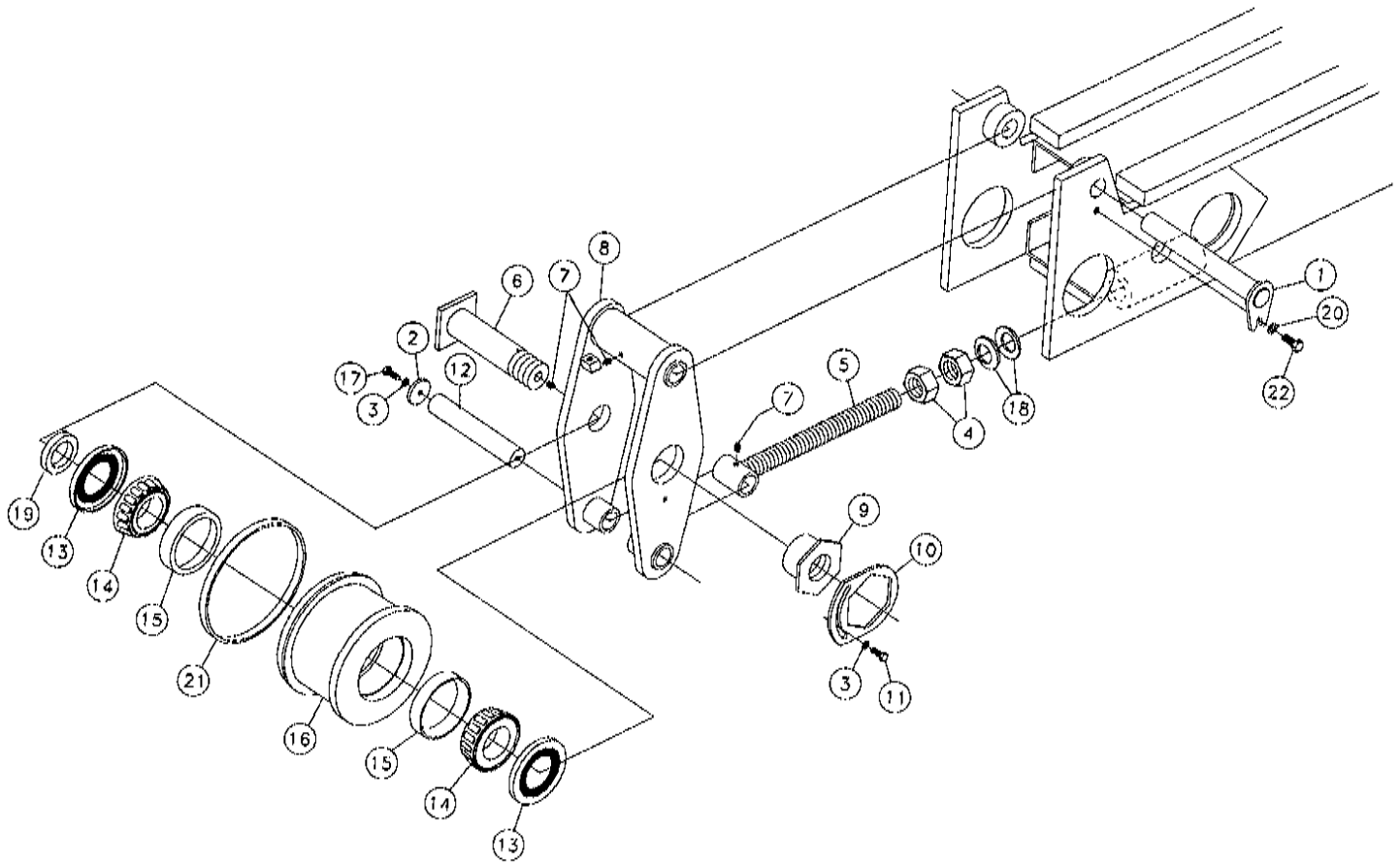
Revised August 2000 due to update in parts list. Changed part marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
1-13	1	238213-001 BOLT-1/2-13X3 3/4 GR8 HEX ZYC	2	1-13	10	216596-001 NUT-IDLER PIN	2
1-13	2	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	2	1-13	11	216713-003 PIN ASSY-REAR ROLLER (INC. REF. 8)	2
1-13	3	216658-001 CLEVIS-2BL866	1	1-13	12	224299-001 SEAL-C/R 31353	4
1-13	4	*283592-001 CHAIN-LEAF 2-363 PITCHES MATCHED	1	1-13	13	1716-153 TIMKEN CONE-2 1/8"	4
		98422-001 LINK-BL866 CONNECTOR	2	1-13	14	1715-091 TIMKEN CUP-2 1/8"	4
1-13	5	216742-001 PIN-2BL8XX LEAF CHAIN	1	1-13	15	239483-001 CHAIN ROLLER ASSY (T/P CYL)	
1-13	6	510-005 COTTER PIN-3/32" X 3/4"	2			(INC. TWO OF REF. 14)	1
1-13	7	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	2	1-13	16	224250-001 SPACER-SHEAVE	2
1-13	8	586-001 ZERK-1/8" ST NPT GREASE	2	1-13	17	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	2
1-13	9	224265-001 PLATE-NUT LOCK	2				

REAR CHAIN TIGHTENER ASSEMBLY

Figure 1-14

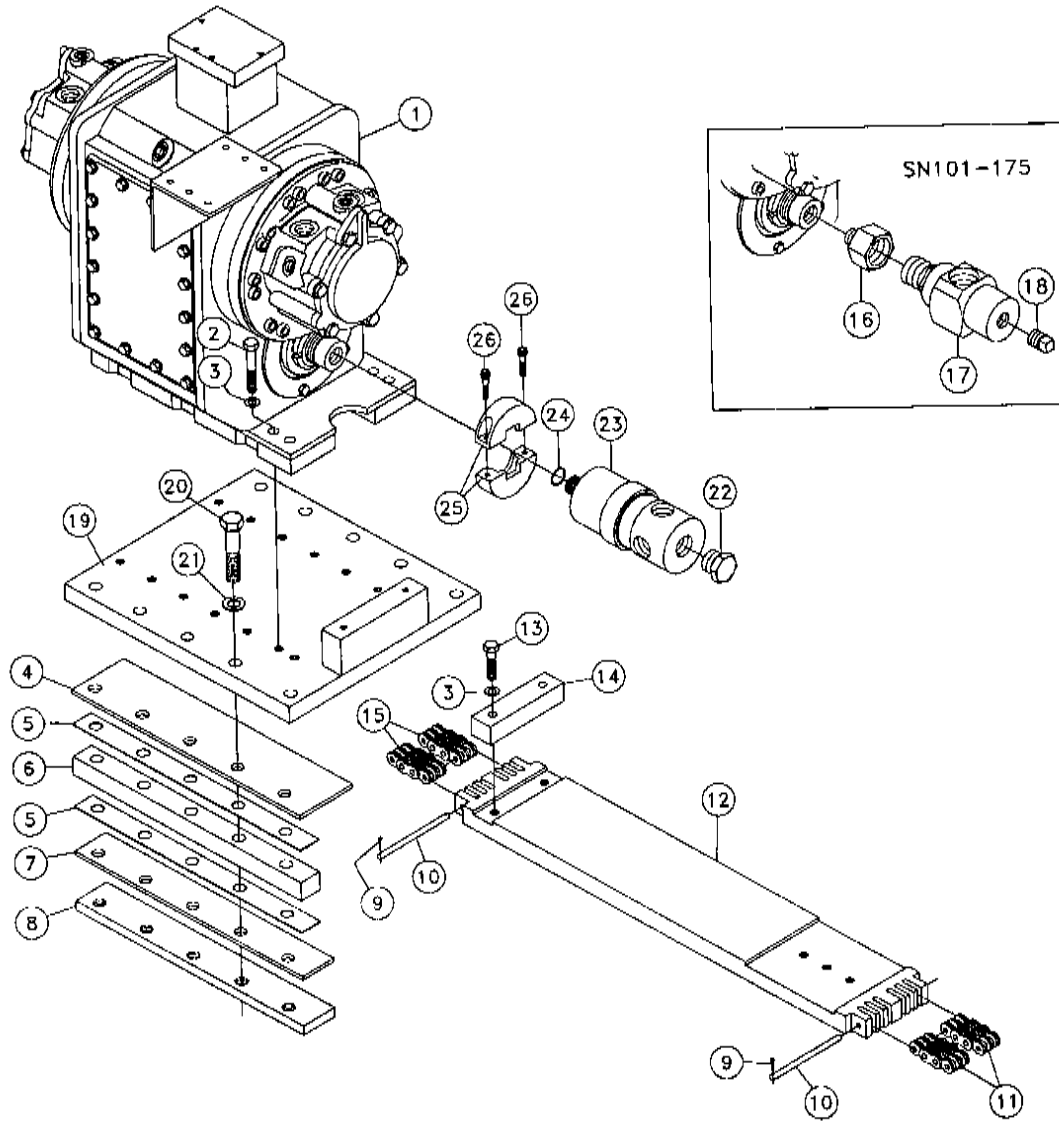


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
1-14	1	227918-001	PIN-ROLLER FRAME PIVOT	1	1-14	11	235727-001	BOLT-3/8-16X1 GR8 HEX ZINC PLT	1
1-14	2	19150-001	SLUG-2 DIA.-1/4"	2	1-14	12	216723-001	PIN-REAR IDLER FRAME	1
1-14	3	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	3	1-14	13	224299-001	SEAL-C/R 31353	2
1-14	4	234436-001	NUT-1 1/2"-4 ACME	2	1-14	14	1716-153	TIMKEN CONE-2 1/8"	2
1-14	5	234434-003	TIGHTENER ASSY-CHAIN (INC. ONE OF REF. 7)	1	1-14	15	1715-091	TIMKEN CUP-2 1/8"	2
1-14	6	216713-003	PIN ASSY-REAR ROLLER (INC. ONE OF REF. 7)	1	1-14	16	216591-003	ROLLER ASSEMBLY (INC. REF. 15 & 23)	1
1-14	7	586-001	ZERK-1/8" ST NPT GREASE	3	1-14	17	235736-001	BOLT-3/8-16X1 1/4 ZINC PLTD	2
1-14	8	216720-003	FRAME ASSY-REAR CHAIN IDLER (INC. ONE OF REF. 7)	1	1-14	18	234452-001	WASHER-BELLEVILLE2.500DX1.53ID	18
1-14	9	216596-001	NUT-IDLER PIN	1	1-14	19	224250-001	SPACER-SHEAVE	1
1-14	10	224265-001	PLATE-NUT LOCK	1	1-14	20	485-025	WASHER-1/2 FLAT-HARDENED-ZINC	1
					1-14	21	234816-001	121 PULSE RING	1
					1-14	22	235737-001	BOLT-1/2-13X1 1/4 GR8 ZINC PLT	1

Revised August 2000 due to update in illustration & parts list. Changed parts marked with *.

ROTATION GEARBOX ASSEMBLY

Figure 1-15

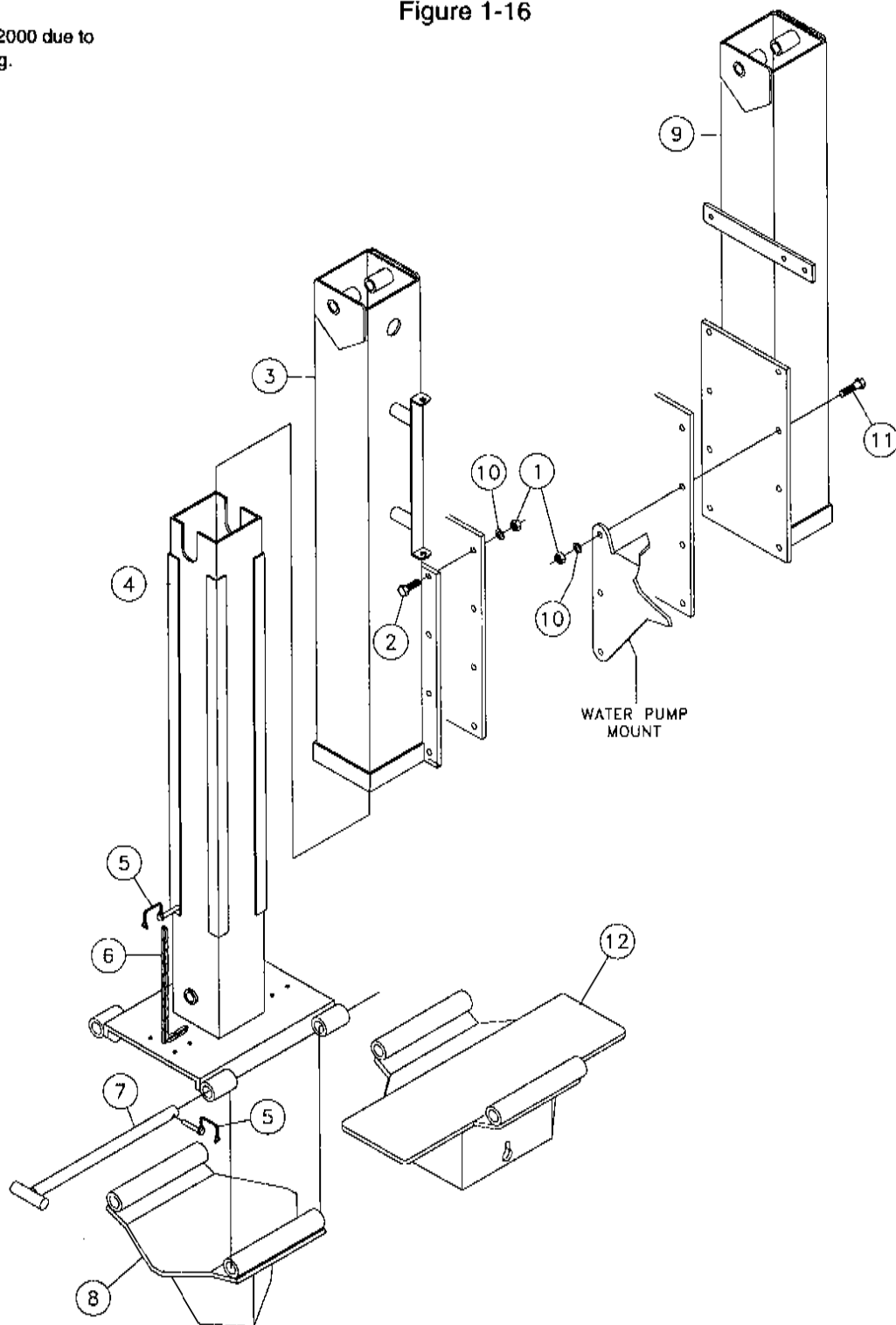


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
1-15	1	250571-001 ROTATION GEARBOX ASSEMBLY (INC. REF. 1-8 & 19-21) (BREAKDOWN FIG. 1-20)	1				
1-15	2	*235718-001 BOLT-1/2-13 X 2 GR8 HX Y/Z PLT (REPLACES 250573-001)	14	1-15	16	98422-001 LINK-BL866 CONNECTOR 244476-001 FITTING-12 MORING X 1 1/2 NPTF (SN101-175)	1
1-15	3	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	16	1-15	17	277834-001 SWIVEL-200 GPM WATER W/BRG (SN101-175) (BREAKDOWN FIG. 1-25)	1
1-15	4	216667-001 WEARSTRIP (PLASTIC)	2	1-15	18	732-009 PLUG-3/4" PIPE BLACK STEEL (SN101-175)	1
1-15	5	216749-001 SHIM-GEAR BOX SLIDE	4	1-15	19	244391-001 PLATE-GEARBOX ADAPTER	1
1-15	6	216747-001 SPACER-GEARBOX SLIDE	2	1-15	20	*238881-001 BOLT-3/4-10X4 HHCS GR 8 ZY (REPLACES 250572-001)	10
1-15	7	216547-001 WEARSTRIP (PLASTIC)	2	1-15	21	235717-001 WASHER-3/4 SAE HARD ZINC PLTD	10
1-15	8	216748-001 BAR-SLIDE	2	1-15	22	81214-001 PLUG-16M (SN176-)	1
1-15	9	510-005 COTTER PIN-3/32" X 3/4"	4	1-15	23	250117-001 SWIVEL-TD-4-12-16-16 (SN176-)	1
1-15	10	216742-001 PIN-2BL8XX LEAF CHAIN	2	1-15	24	250117-003 REPAIR KIT-SWIVEL	1
1-15	11	*283592-001 CHAIN-LEAF 2-363 PITCHES MATCHED	1	1-15	25	3211-043 O-RING-#119 (SN176-)	1
		98422-001 LINK-BL866 CONNECTOR		1-15	26	283521-001 BUSHING-2 HALVES SWIVEL LOCK (SN176-)	1
1-15	12	234499-001 DOGBONE-CYLINDER STYLE	1				
1-15	13	279269-001 BOLT-1/2-20X2 1/2 GR8 HEX ZINC	2				
1-15	14	224277-001 STOP-DOGBONE	1				
1-15	15	*283591-001 CHAIN-LEAF 2-23 PITCHES MATCHED	1				
						242906-001 CAPSCREW-5/16-18X1.50 SK HD ZNC (SN176-)	2

OUTRIGGER ASSEMBLY (SN101-193)

Figure 1-16

Revised August 2000 due to update in heading.

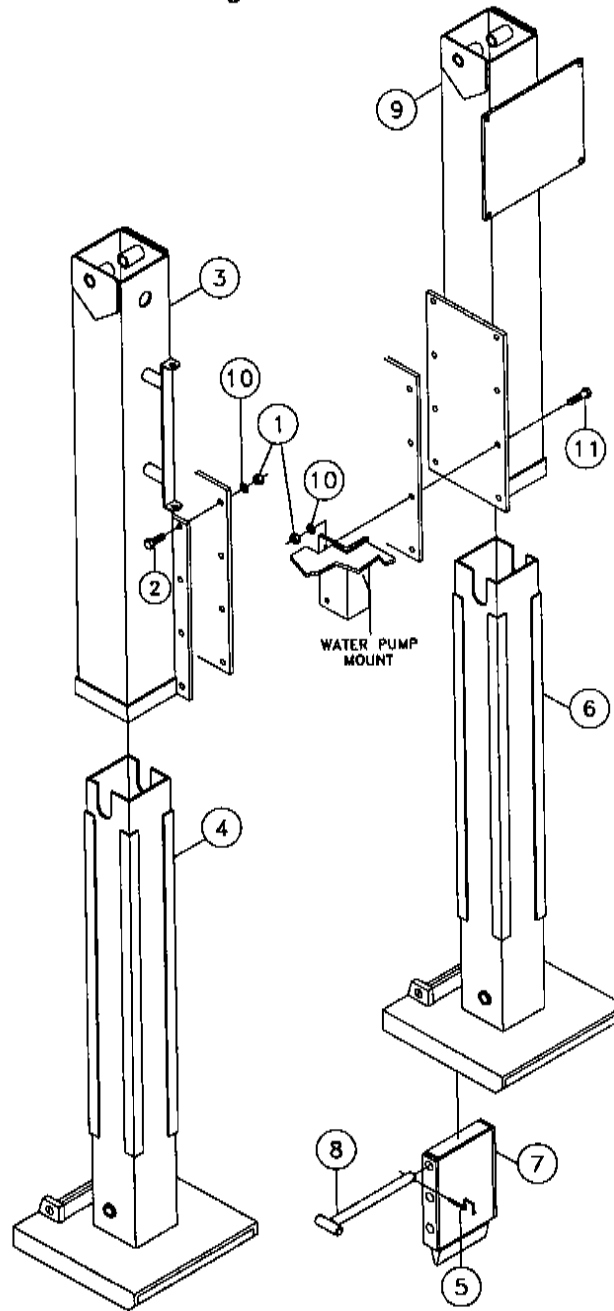


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
1-16	1	238221-001	NUT-5/8-11 GR8 NC Y/ZINC	16	1-16	7	227791-001	PIN-OUTRIGGER SHOVEL	4
1-16	2	250607-001	BOLT-5/8-11X2 GR8 HEX Y/ZINC	13	1-16	8	224340-001	STAKE-REAR	2
1-16	3	239469-001	OUTRIGGER-OUTSIDE TUBE (LEFT)	1	1-16	9	239458-001	OUTRIGGER-OUTSIDE TUBE (RIGHT)	1
1-16	4	224331-001	OUTRIGGER TUBE-INSIDE	2	1-16	10	235715-001	WASHER-5/8 SAE HARD ZINC PLTD	16
1-16	5	2108-001	LYNCH PIN - 1/4 X 2	6	1-16	11	238245-001	BOLT 5/8"-11 X 2 1/4" GR8 HEX	3
1-16	6	239284-001	CHAIN - 1/4" PC 18 LINKS	2	1-16	12	239257-001	STAKE-LARGE OUTRIGGER	2

OUTRIGGER ASSEMBLY (SN194-)

Figure 1-16A

Revised August 2000 due to addition of figure to manual.



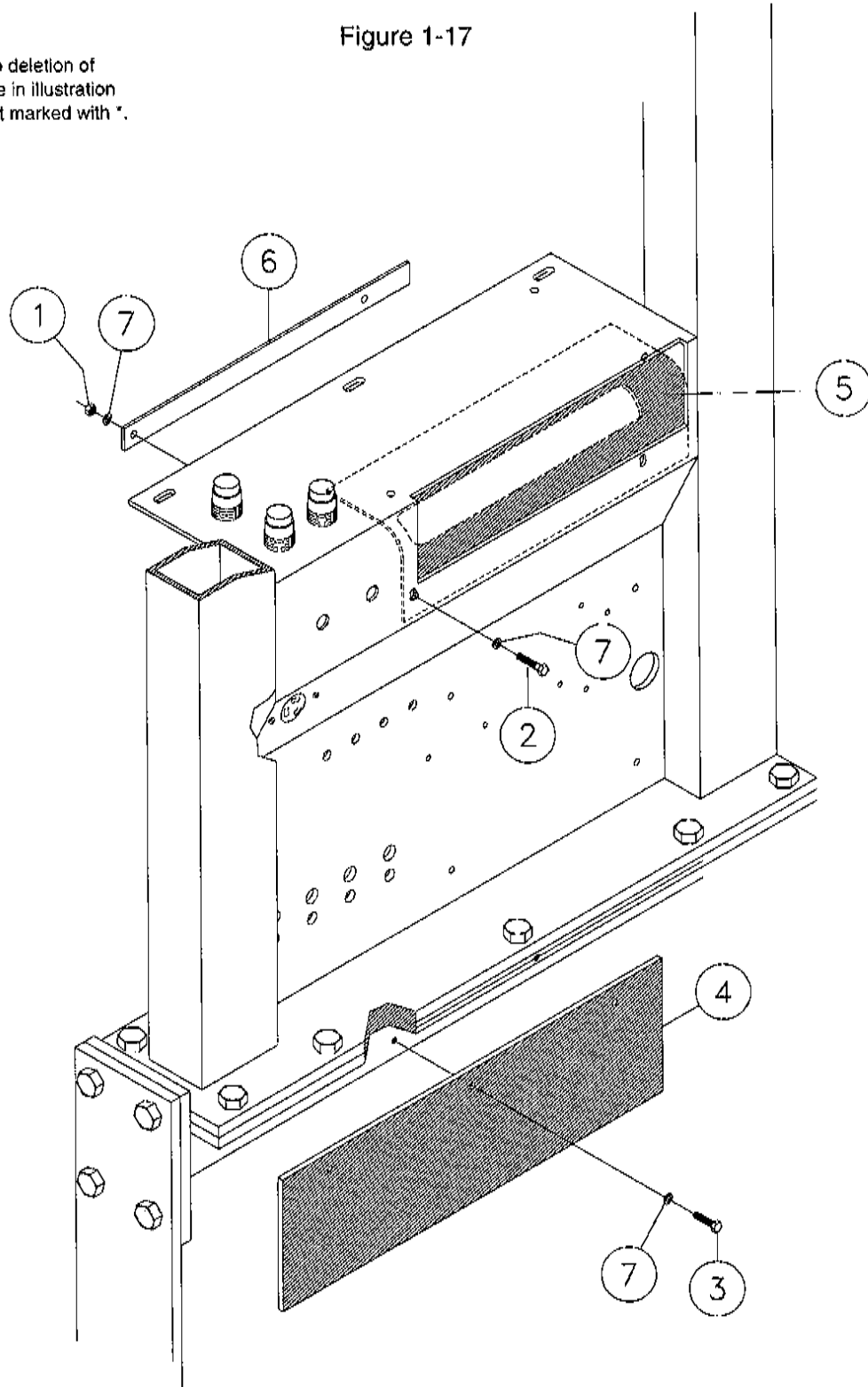
REF. NO.	PART NO.	DESCRIPTION	QTY.
1-16A	1	NUT-5/8-11 GR. 8 NC Y-ZINC	16
1-16A	2	BOLT-5/8"-11X2 GR 8 HEX ZINC	14
1-16A	3	OUTRIGGER-OUTSIDE TUBE (LEFT)	1
1-16A	4	OUTRIGGER-TUBE INSIDE LEFT	1
1-16A	5	2108-001 LYNCH PIN-1/4X2	2
1-16A	6	283569-001 OUTRIGGER TUBE-INSIDE RIGHT	1
1-16A	7	283549-001 KNIFE-OUTRIGGER	2
1-16A	8	283558-001 PIN-OUTRIGGER KNIFE	2
1-16A	9	287007-001 OUTRIGGER-OUTSIDE TUBE (RIGHT)	1
1-16A	10	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	16
1-16A	11	238245-001 BOLT-5/8"-11X2 1/4 GR 8 HEX	2

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HEAT SHIELD ASSEMBLY

Figure 1-17

Revised July 1999 due to deletion of flap mount plate & update in illustration & parts list. Changed part marked with *.

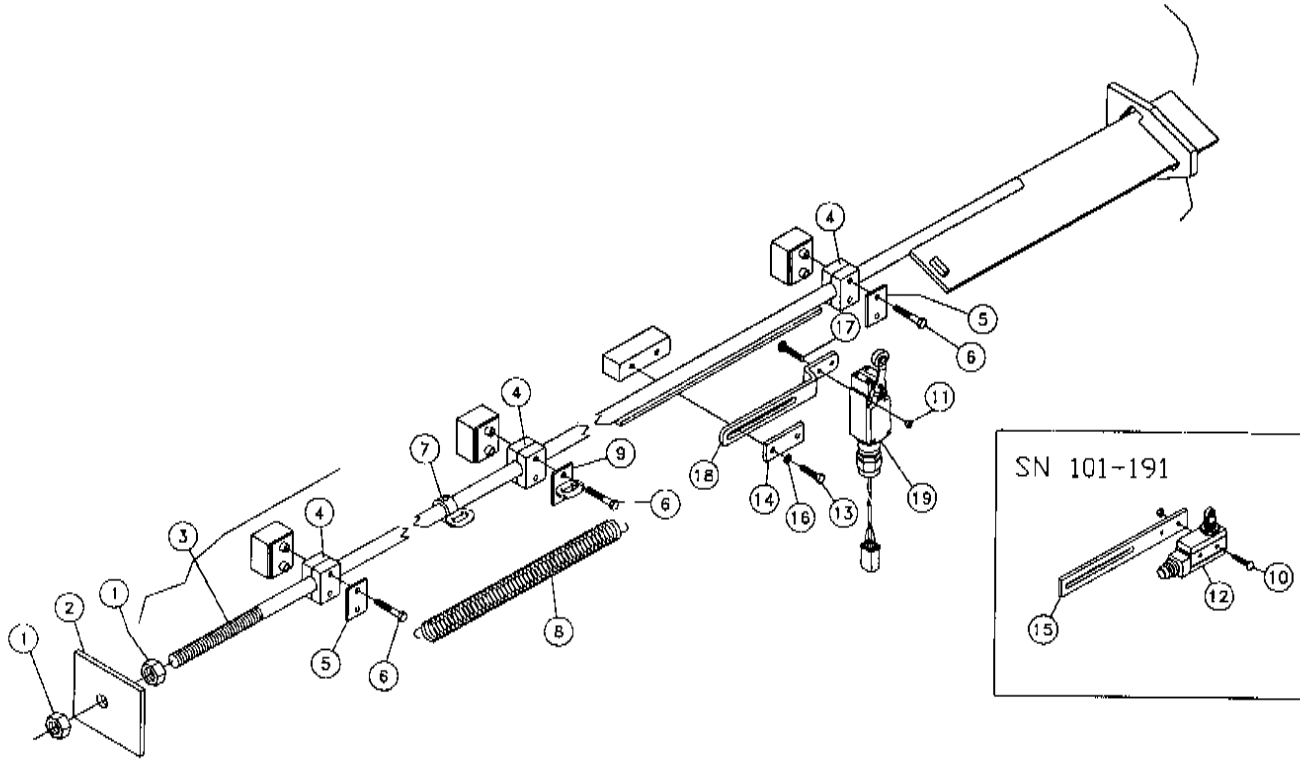


REF. NO.	PART NO.	DESCRIPTION	QTY.
1-17	1	235732-001 NUT-1/4-20 GR8 ZINC PLTD	2
1-17	2	250008-001 BOLT 1/4-20 X 1 1/4 ZINC PL	5
1-17	3	*235735-001 BOLT-1/4-20X1 GR 8 HEX ZN PLTD	3
1-17	4	234278-001 MUD FLAP - TRACK	1
1-17	5	234279-001 COVER - RUBBER VALVE	1
1-17	6	234280-001 MOUNT-HEAT COVER	1
1-17	7	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	7

DRILL ROD POSITION INDICATOR ASSEMBLY

Figure 1-18

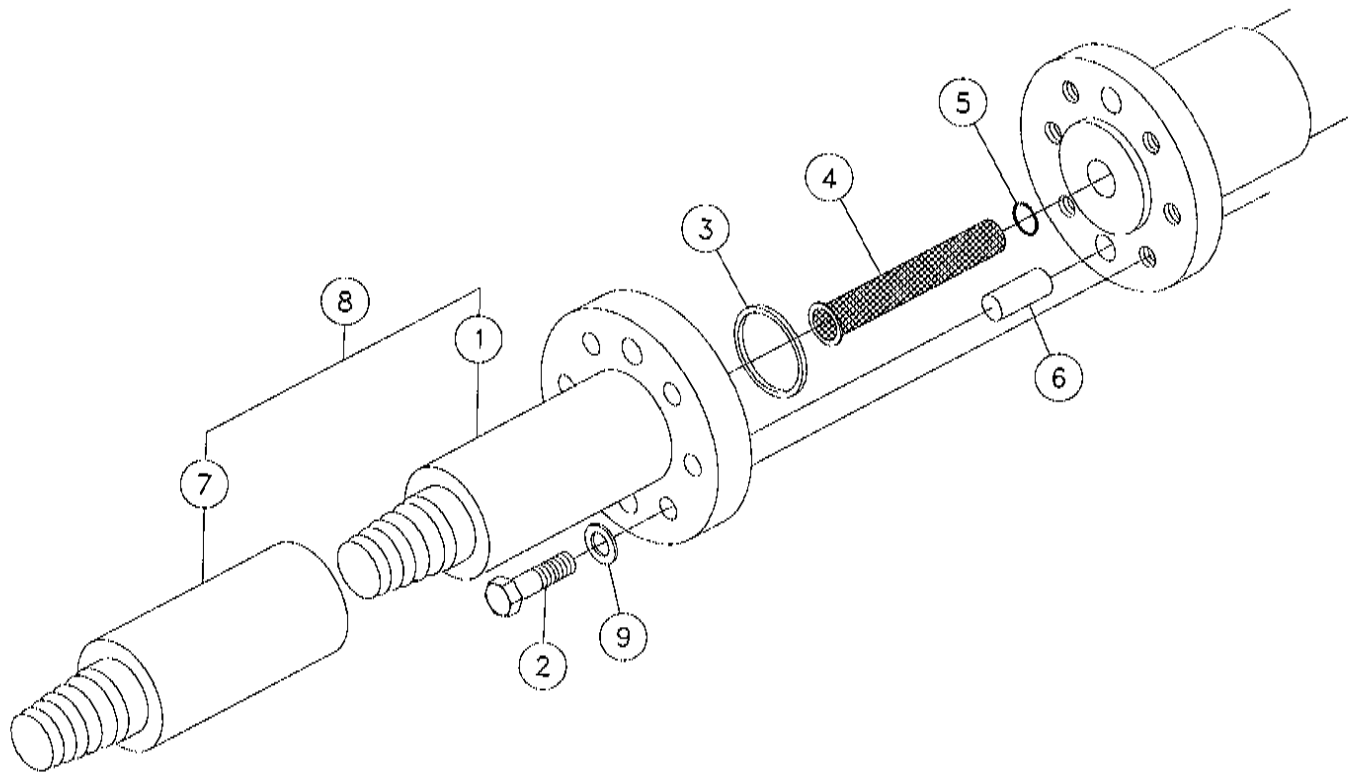
Revised August 2000 due to update
in illustration & parts list. Changed/
added parts marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.
1-18	1	250513-001 NUT-5/8-NC GR8 TOP LOCK Y/ZINC	2
1-18	2	227968-001 SLUG-DRILL ROD INDICATOR	1
1-18	3	227962-001 INDICATOR-DRILL ROD	1
1-18	4	*279817-001 CLAMP-HOSE 2180 PP	3
1-18	5	903135-005 PLATE-COVER COP-2	2
1-18	6	238210-001 BOLT-1/4-20X1 1/2*GRADE#8 HEX Y/Z	6
1-18	7	227979-001 MOUNT-ROD INDICATOR SPRING	1
1-18	8	1789-001 SPRING-1 1/8ODX15/16ID X15 EXT	1
1-18	9	227978-001 MOUNT-ROD INDICATOR SPRING	1
1-18	10	10530-012 SCREW-8-32X1 1/4 RDHDSLOT MACH (SN101-191)	2
1-18	11	399-001 NUT-8-32 HEX	2
1-18	12	223967-001 SWITCH-OMRON ENCLOSED LIMIT (SN101-191)	1
1-18	13	235735-001 BOLT-1/4-20X1 GR8 HEX ZNC PLTD	2
1-18	14	234420-001 COVER-SWITCH MOUNT	1
1-18	15	234418-001 MOUNT-SWITCH (SN101-191)	1
1-18	16	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	2
1-18	17	*144654-001 SCREW-#8-32X1 1/2 STOVE (SN192-)	2
1-18	18	*283555-001 MOUNT-SWITCH (SN192-)	1
1-18	19	*276467-001 SWITCH-NO/NC LEVER/ROLLER (SN192-)	1

DRIVE CHUCK ASSEMBLY

Figure 1-19

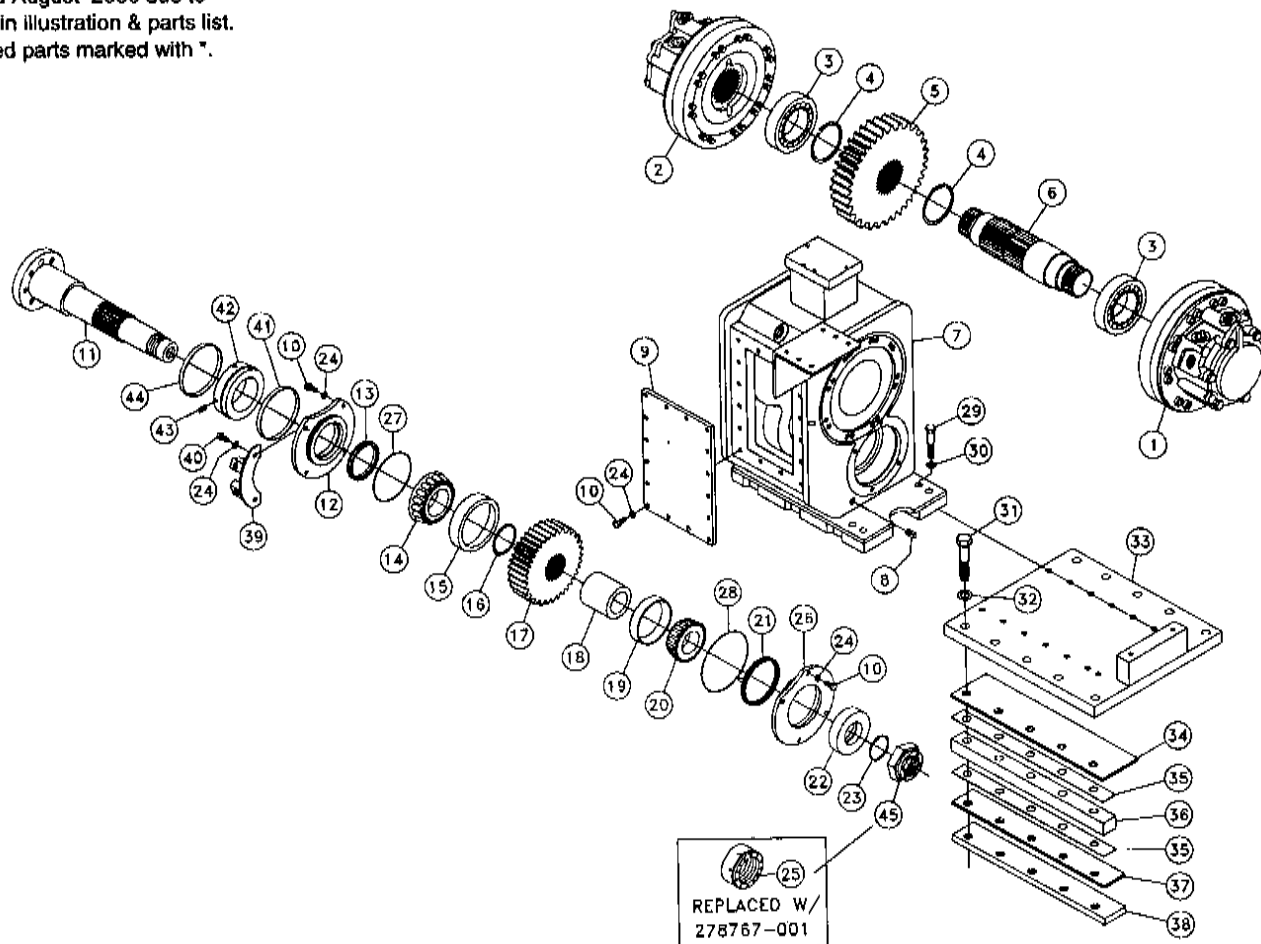


REF. NO.	PART NO.	DESCRIPTION	QTY.
1-19	1	230806-001 DRIVE CHUCK 2 5/8 OD	1
1-19	2	240334-001 BOLT-1/2-13X1 3/4 GR8 ZINC PLT	6
1-19	3	72897-001 O RING-SQ. #24 FLANGE	1
1-19	4	905011-001 SCREEN	1
		905012-001 SCREEN	1
1-19	5	904508-001 WASHER-BLACK RUBBER	1
1-19	6	70096-001 PIN-DOWEL 5/8DIA. 1 1/2	2
1-19	7	244492-001 SUB--2 3/8 VERMEER THREAD LONG	1
1-19	8	244493-001 ASSEMBLY-2 5/8 OD DRIVE CHUCK	1
1-19	9	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	6

ROTATION GEARBOX COMPONENTS

Figure 1-20

Revised August 2000 due to update in illustration & parts list. Changed parts marked with *.

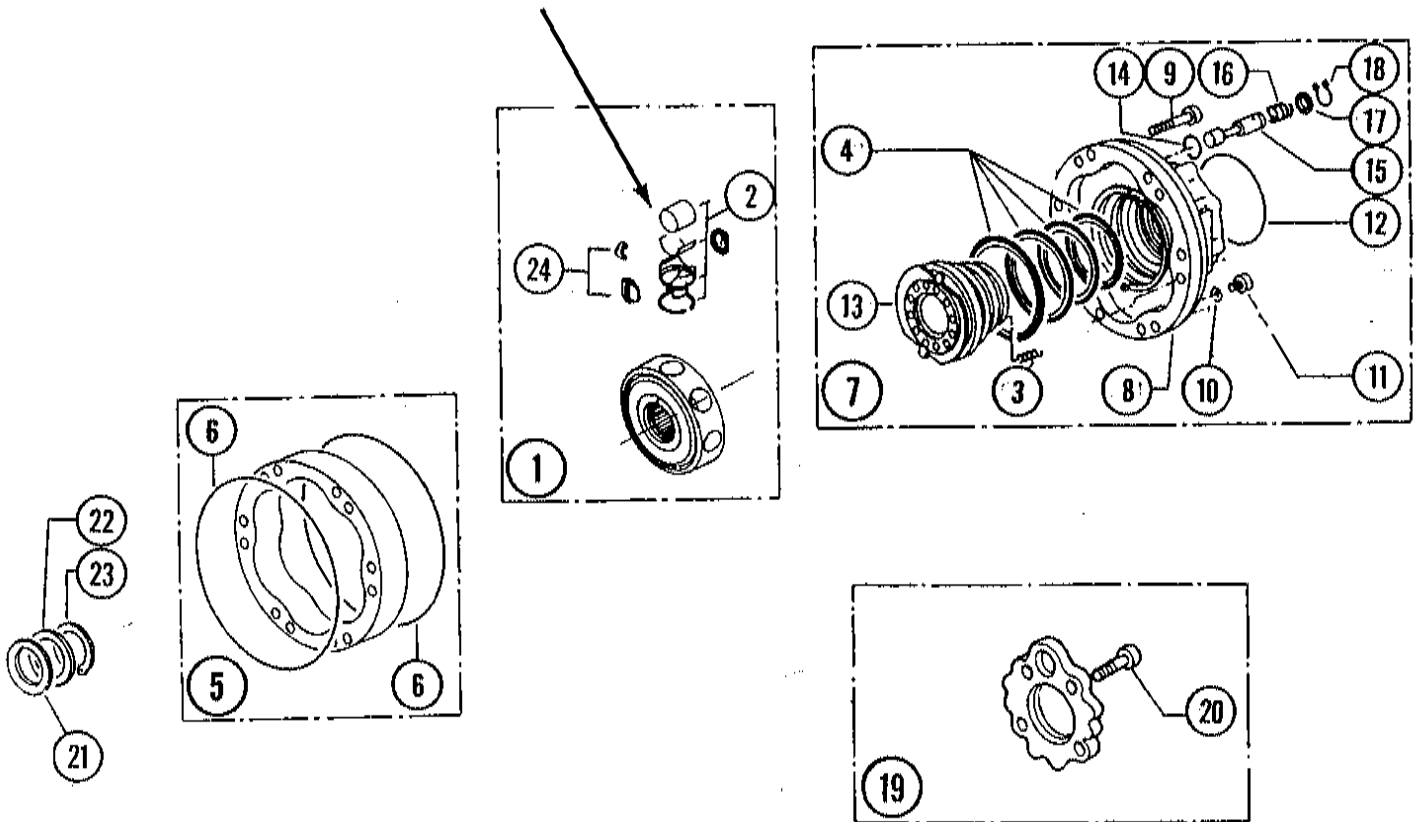


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
1-20	1	235790-001	MOTOR-38.2CID W/O BRAKE D PREF	1	1-20	26	228131-001	GLAND-REAR SEAL	1
1-20	2	235791-001	MOTOR-38.2CID W/O BRAKE G PREF	1	1-20	27	228181-001	O-RING	1
1-20	3	1706-007	BRG.-22215 LB/C3 75MM SPH.ROL.	2	1-20	28	228180-001	O-RING	1
1-20	4	224896-325	SNAP RING-3 1/4" EXTERNAL	2	1-20	29	*235718-001	BOLT-1/2-13 X 2 GR8 HX ZINC PLT (REPLACES 250573-001)	14
1-20	5	220488-001	GEAR-37 TOOTH	1	1-20	30	485-025	WASHER-1/2 FLAT-HARDENED-ZINC	14
1-20	6	220493-001	SHAFT-TOP MOTOR	1	1-20	31	*238881-001	BOLT-3/4-10X4 HHCS GR 8 ZY (REPLACES 250572-001)	10
1-20	7	251125-001	GEARBOX	1	1-20	32	235717-001	WASHER-3/4 SAE HARD ZINC PLTD	10
1-20	8	735-003	1/2" COUNTERSUNK PIPE PLUG (SN101-173)	1	1-20	33	244391-001	PLATE-GEARBOX ADAPTER	1
		*283523-001	PLUG-3/8" NPT HEX MAGNETIC (SN174-)	1	1-20	34	216667-001	WEARSTRIP (PLASTIC)	2
1-20	9	220487-001	PLATE-LID	1	1-20	35	216749-001	SHIM-GEAR BOX SLIDE	4
1-20	10	235726-001	BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	22	1-20	36	216747-001	SPACER-GEARBOX SLIDE	2
1-20	11	243031-001	SHAFT-GEARBOX ROTATION	1	1-20	37	216547-001	WEARSTRIP (PLASTIC)	2
1-20	12	228158-001	GLAND-FRONT SEAL	1	1-20	38	216748-001	BAR-SLIDE	2
1-20	13	235788-001	SEAL-3 1/8" HIGH PRESSURE	1	1-20	39	244354-001	MOUNT-NAVTECH PPU	1
1-20	14	4771-061	BRG. CONE	1	1-20	40	235727-001	BOLT-3/8-16X1 GR8 HEX ZINC PLT	2
1-20	15	1715-013	TIMKEN CUP-2 1/2"	1	1-20	41	234814-001	60 PULSE RING	1
1-20	16	224896-250	SNAP RING-2 1/2" EXTERNAL	1	1-20	42	244353-001	COLLAR-PULSE RING	1
1-20	17	220489-001	GEAR-26 TOOTH	1	1-20	43	526-003	SSS-3/8-16X3/4	2
1-20	18	228223-001	TUBE-GEAR SPACER	1	1-20	44	234815-001	2 PULSE RING	1
1-20	19	1715-085	CUP-BEARING	1	1-20	45	278767-001	NUT-50X18-4000# LOCK (SN156-)	1
1-20	20	1716-099	CONE-2 1/8" BRG.	1					
1-20	21	235787-001	SEAL-4" HIGH PRESSURE	1					
1-20	22	215350-001	SLEEVE-SEAL	1					
1-20	23	214202-001	O-RING	1					
1-20	24	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	24					
1-20	25	244483-001	NUT-50X18-4000# LOCK (SN101-155)	1					
							250571-001	ROTATION GEARBOX ASSEMBLY (COMPLETE) (INC. ALL ITEMS IN THIS FIGURE)	

HYDRAULIC MOTOR COMPONENTS

Figure 1-21

THERE IS THE POSSIBILITY OF HAVING TWO SIZES OF PISTONS IN A MOTOR. NORMALLY CL "0" IS USED. THERE IS NO MARKING ON THE PISTON OR CYLINDER BLOCK. THERE IS THE POSSIBILITY OF HAVING CL "1" WHICH IS 1mm OVER SIZE. THERE WILL BE A "1" STAMPED ON THE PISTON AND A CORRESPONDING "1" STAMPED ON THE CYLINDER BLOCK IN THE AREA OF THE EFFECTED CYLINDER BORE.

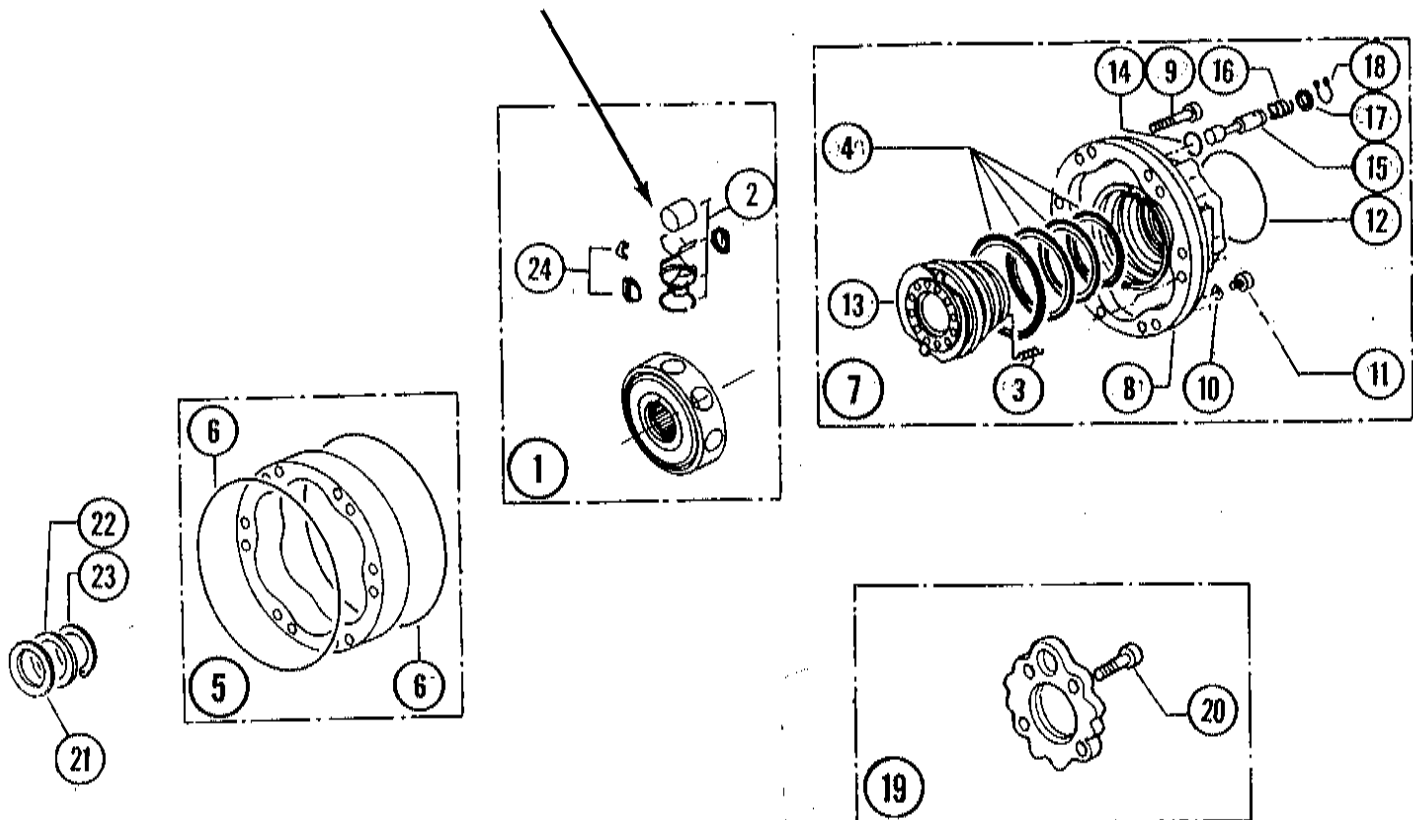


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
1-21	1	224897-003	CYLINDER BLOCK	1	1-21	14	235790-011	O-RING	1
1-21	2	208148-001	PISTON CL.1	A/R	1-21	15	235790-013	VALVE SPOOL	1
		224897-005	PISTON CL "0"	A/R	1-21	16	235790-015	SPRING	1
1-21	3	84550-029	SPRING	8	1-21	17	235790-017	WASHER	1
1-21	4	208157-001	VALVE SEAL RING KIT	1	1-21	18	235790-019	SNAP RING	1
1-21	5	208151-001	CAM RING	1	1-21	19	235790-021	BACK PLATE	1
1-21	6	208152-001	O-RING	2	1-21	20	235790-023	BOLT	6
1-21	7	235790-003	VALVING COVER ASSEMBLY	1	1-21	21	208163-001	SHIM	1
1-21	8	235790-005	VALVING COVER	1	1-21	22	208164-001	WASHER	1
1-21	9	235790-007	SCREW	16	1-21	23	224897-015	SNAP RING	1
1-21	10	64078-025	WASHER	2	1-21	24	224897-017	REPAIR KIT-PISTON	1
1-21	11	64078-027	SCREW-BLEEDING	2					
1-21	12	83651-025	O-RING-2.62X145.72	1			224897-001	MOTOR-SINGLE SPEED (COMPLETE)	
1-21	13	235790-009	VALVING	1				(INC. ALL ITEMS IN THIS FIGURE)	

HYDRAULIC MOTOR COMPONENTS

Figure 1-22

THERE IS THE POSSIBILITY OF HAVING TWO SIZES OF PISTONS IN A MOTOR. NORMALLY CL "0" IS USED. THERE IS NO MARKING ON THE PISTON OR CYLINDER BLOCK. THERE IS THE POSSIBILITY OF HAVING CL "1" WHICH IS 1mm OVER SIZE. THERE WILL BE A "1" STAMPED ON THE PISTON AND A CORRESPONDING "1" STAMPED ON THE CYLINDER BLOCK IN THE AREA OF THE EFFECTED CYLINDER BORE.

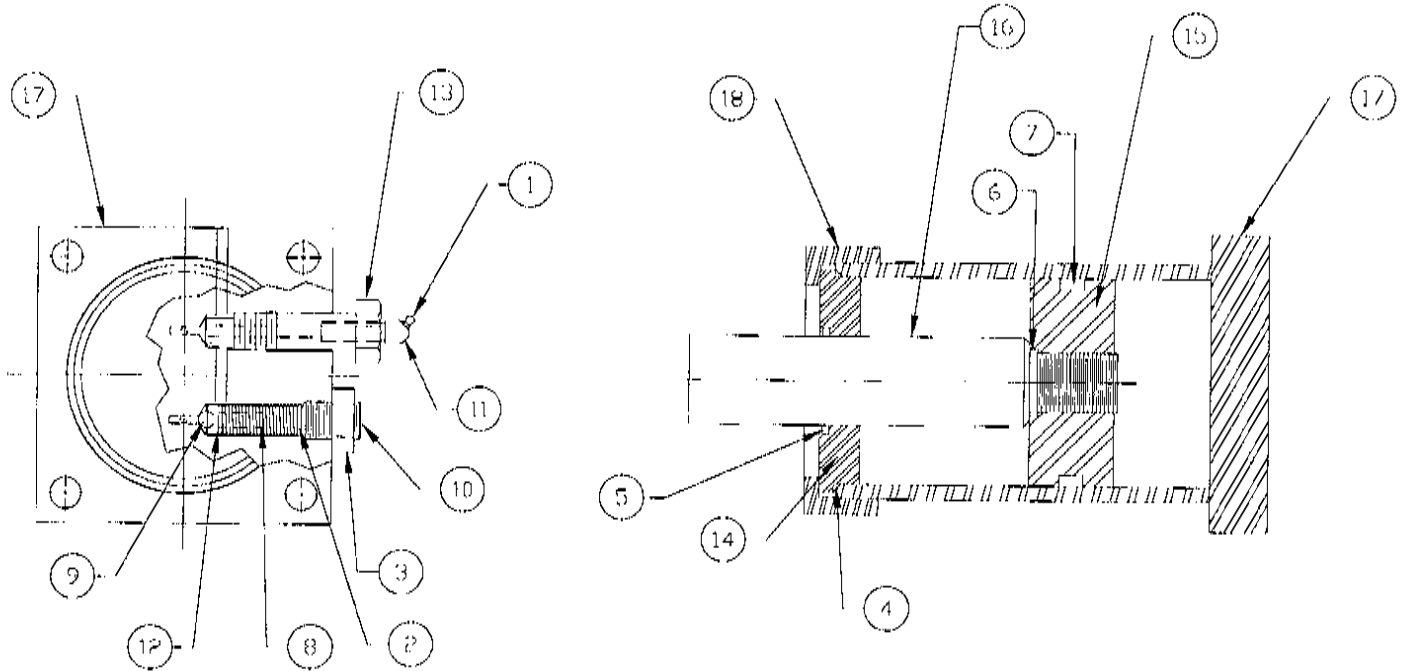


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
1-22	1	224897-003	CYLINDER BLOCK	1	1-22	14	235790-011	O-RING	1
1-22	2	208148-001	PISTON CL.1	A/R	1-22	15	235790-013	VALVE SPOOL	1
		224897-005	PISTON CL "0"	A/R	1-22	16	235790-015	SPRING	1
1-22	3	84550-029	SPRING	8	1-22	17	235790-017	WASHER	1
1-22	4	208157-001	VALVE SEAL RING KIT	1	1-22	18	235790-019	SNAP RING	1
1-22	5	208151-001	CAM RING	1	1-22	19	235790-021	BACK PLATE	1
1-22	6	208152-001	O-RING	2	1-22	20	235790-023	BOLT	6
1-22	7	235790-003	VALVING COVER ASSEMBLY	1	1-22	21	208163-001	SHIM	1
1-22	8	235790-005	VALVING COVER	1	1-22	22	208164-001	WASHER	1
1-22	9	235790-007	SCREW	16	1-22	23	224897-015	SNAP RING	1
1-22	10	64078-025	WASHER	2	1-22	24	224897-017	REPAIR KIT-PISTON	1
1-22	11	64078-027	SCREW-BLEEDING	2					
1-22	12	83651-025	O-RING-2.62X145.72	1					
1-22	13	235790-009	VALVING	1					
							235790-001	MOTOR-HYD. (COMPLETE)	
								(INC. ALL ITEMS IN THIS FIGURE)	

CYLINDER COMPONENTS - 3 1/2" X 4 3/4" GREASE

Figure 1-23

Revised February 1999 due to update of drawing & parts list.



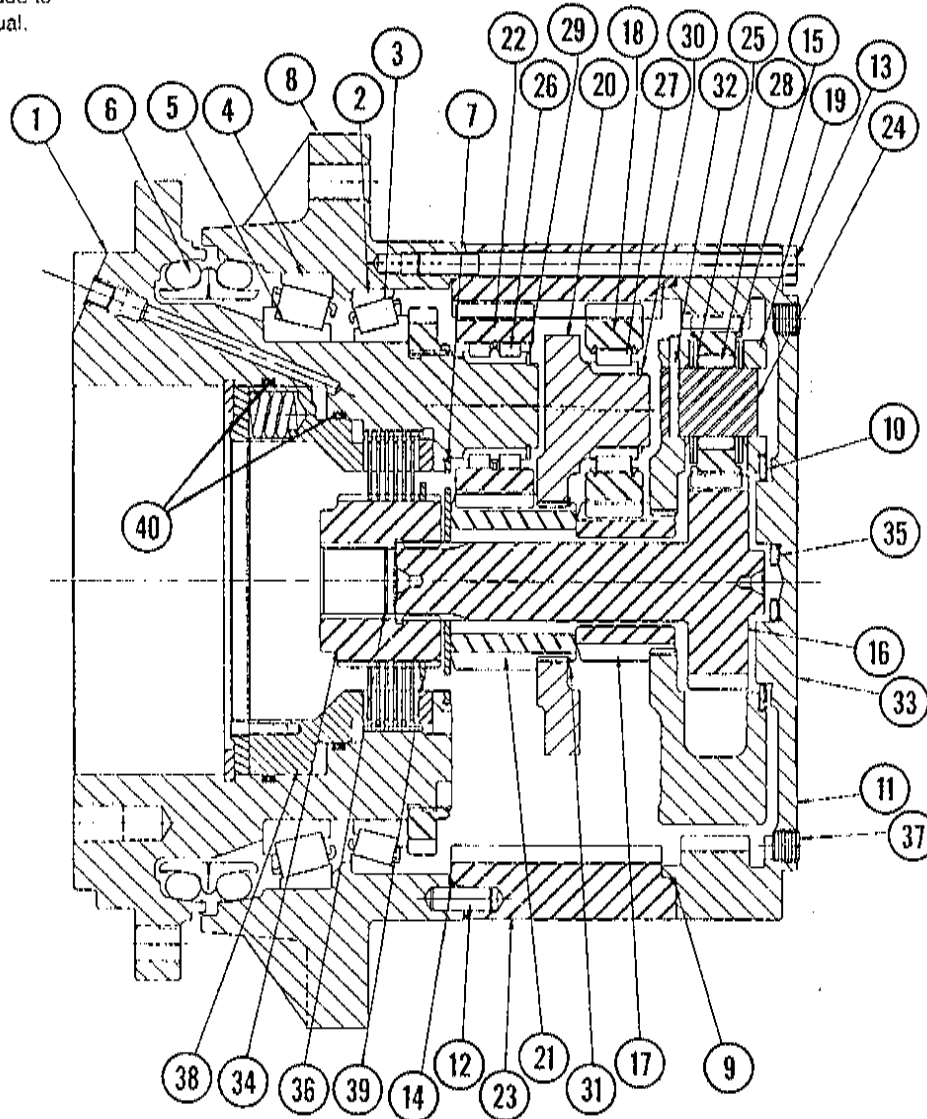
REF. NO.	PART NO.	DESCRIPTION	QTY.
1-23	1	88978-001 ZERK-1/8 NPT STR. 1 FAK PROOF	1
1-23	2	15694-001 WASHER-#6M FLAT	1
1-23	3	429-001 NUT-5/8 NC HEX JAM	1
1-23	4	4350-001 O-RING	1
1-23	5	57300-001 WIPER	1
1-23	6	3211-043 O-RING	1
1-23	7	58138-010 UNI-RING	1
1-23	8	3115-027 SPRING	1
1-23	9	3113-009 BALL-STEEL 5/16	1
1-23	10	15164-001 SSS-5/8-11X1 DOGPOINT/LOCKPATC	1
1-23	11	88979-001 STREET ELBOW-1/8 NPT	1
1-23	12	68581-001 SUPPORT-BALL BEARING	1
1-23	13	68580-003 BOLT ASSY-GREASE	1
1-23	14	68579-001 GLAND	1
1-23	15	68578-001 PISTON	1
1-23	16	68577-001 ROD	1
1-23	17	68574-001 BODY	1
1-23	18	68573-001 CAP	1

231104-001 CYLINDER-TRACK RELIEF (INC. ALL ITEMS IN THIS FIGURE)
 68582-001 REPAIR KIT (INC. REF. 4-7)

PLANETARY GEARBOX COMPONENTS

Figure 1-24

Revised February 1999 due to addition of figure to manual.

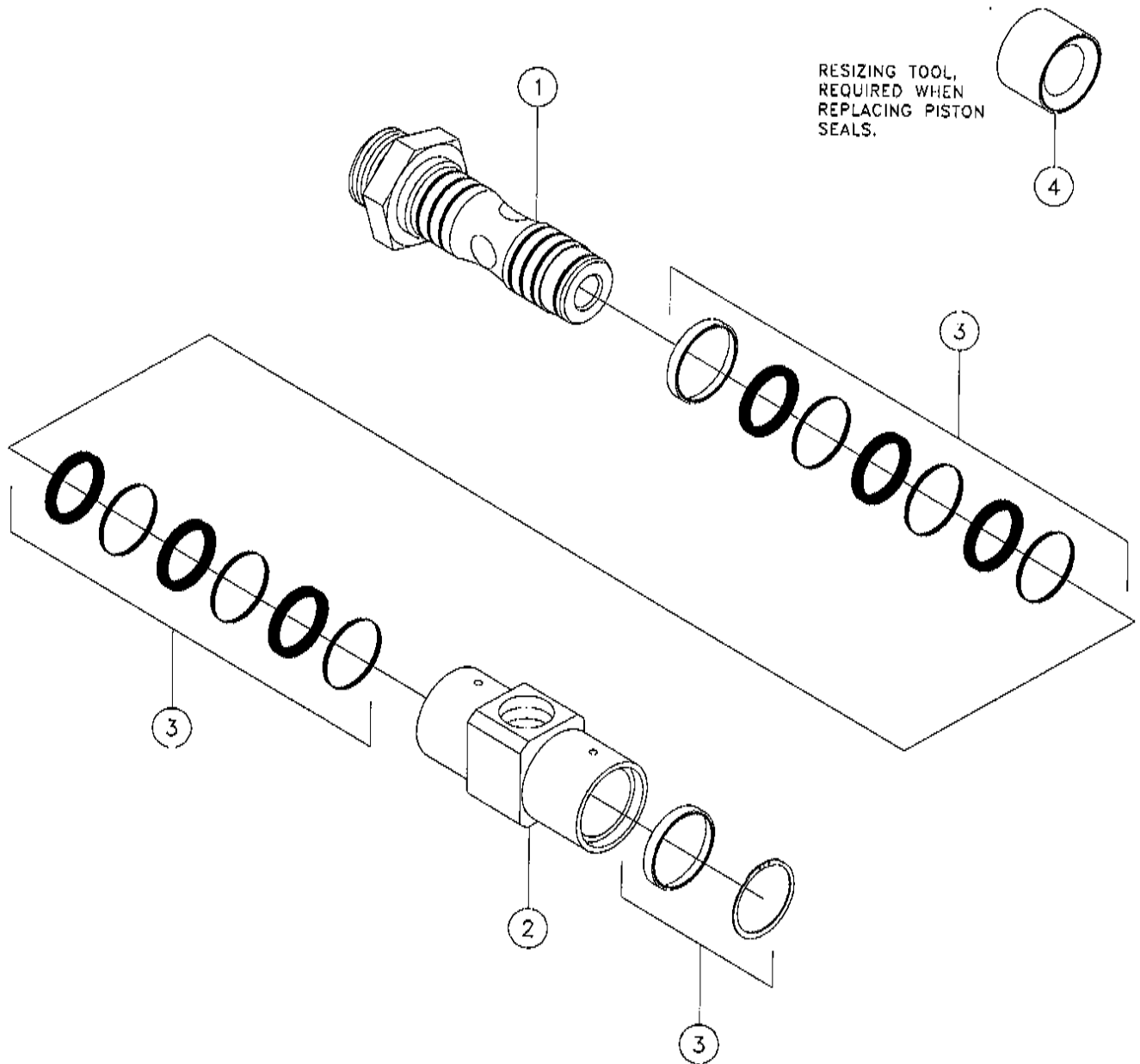


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
1-24	1	214045-003	SPINDLE	1	1-24	22	214045-043	SET	1
1-24	2	214045-005	CUP-TAPERED BEARING	1	1-24	23	214045-045	GEAR-RING	1
1-24	3	214045-007	CONE-TAPERED BEARING	1	1-24	24	214045-047	SHAFT-PLANET	3
1-24	4	214045-009	CUP-TAPERED BEARING	1	1-24	25	114280-043	WASHER-THRUST	12
1-24	5	214045-011	CONE-TAPERED BEARING	1	1-24	26	214045-049	BEARING-CYLINDER ROLLER	5
1-24	6	214045-013	SEAL-FACE	1	1-24	27	214045-051	BEARING-CYLINDER ROLLER	3
1-24	7	214045-015	SPACER-THRUST	1	1-24	28	214045-053	BEARING-NEEDLE	57
1-24	8	214045-017	HOUSING	1	1-24	29	114280-035	RET. RING-EXT.	5
1-24	9	214045-019	O-RING	1	1-24	30	214045-055	RETAIN RING-EXTERNAL	3
1-24	10	214045-021	WASHER-THRUST	1	1-24	31	214045-057	RETAINING RING-EXTERNAL	1
1-24	11	901555-055	PLATE-ID #901202	1	1-24	32	114280-037	PIN-ROLL	3
1-24	12	214045-023	PIN-DOWEL	2	1-24	33	214045-059	PLATE-COVER	1
1-24	13	214045-025	BOLT-HEX.375-16X6.0 GR8	20	1-24	34	214045-061	COUPLING	1
1-24	14	214045-027	O-RING	1	1-24	35	214045-063	WASHER-THRUST	1
1-24	15	214045-029	GEAR-PLANET	3	1-24	36	214045-065	RETAINING RING-INTERNAL	1
1-24	16	214045-031	GEAR-SUN	1	1-24	37	118586 033	PLUG-PIPE (.250-18)	3
1-24	17	214045-033	GEAR-SUN	1	1-24	38	214045-067	BRAKE-INPUT	1
1-24	18	214045-035	GEAR-PLANET	3	1-24	39	214045-069	RETAINING RING-EXTERNAL	1
1-24	19	214045-037	CARRIER	1					
1-24	20	214045-039	CARRIER	1			214045-001	PLANETARY-GEARBOX (COMPLETE)	
1-24	21	214045-041	GEAR-SUN	1				(INC. ALL ITEMS IN THIS FIGURE)	

WATER SWIVEL COMPONENTS

Figure 1-25

Revised July 1999 due to addition of figure to manual.

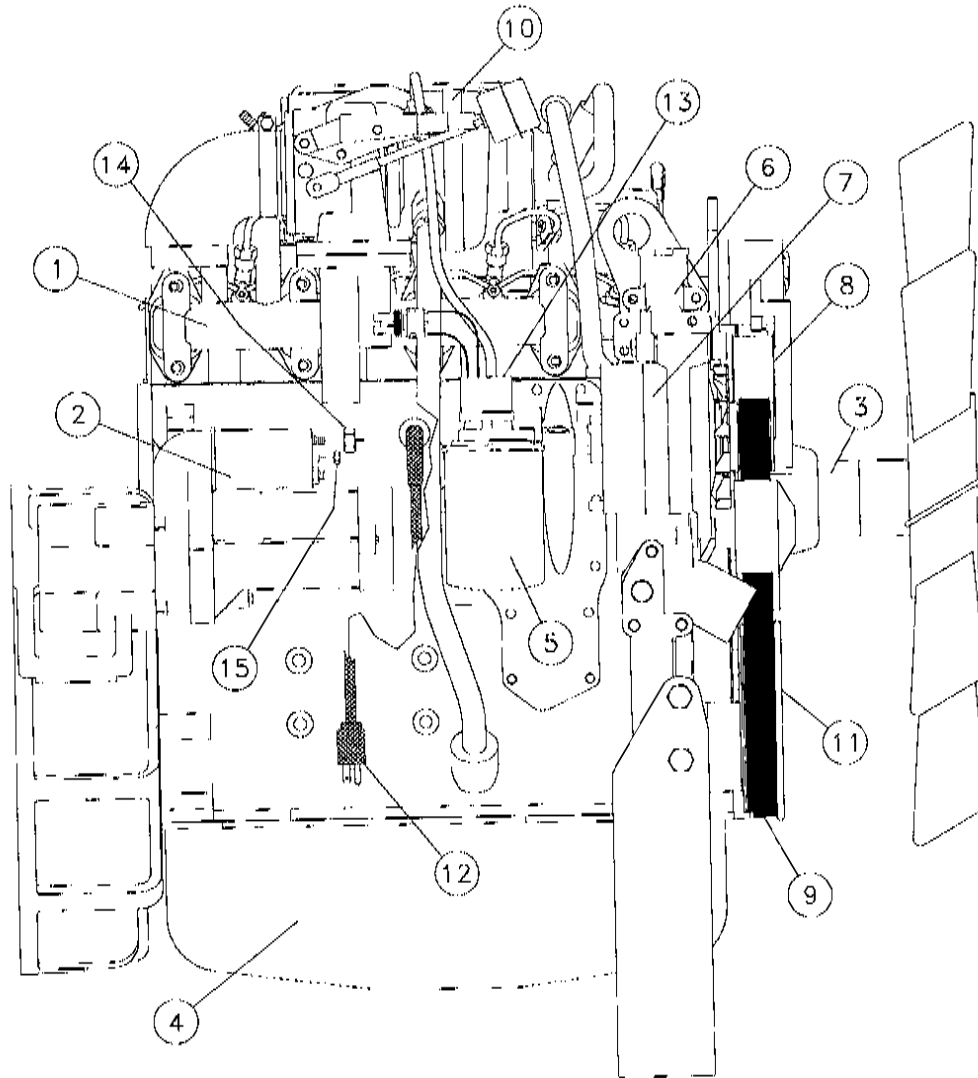


REF. NO.	PART NO.	DESCRIPTION	QTY.
1-25	1	NSS STEM	1
1-25	2	NSS BODY	1
1-25	3	277834-003 SEAL KIT-SEALS AND SNAP RING	
		277834-005 SEAL KIT-SEALS, SNAP RING AND BRG.	
1-25	4	277834-007 RESIZING TOOL	
	277834-001	SWIVEL-200 GPM WATER (INC. ITEMS 1 THROUGH 3)	

ENGINE COMPONENTS

Figure 2-1

Revised February 1999 due to change of fan belt. Changed part marked with *.



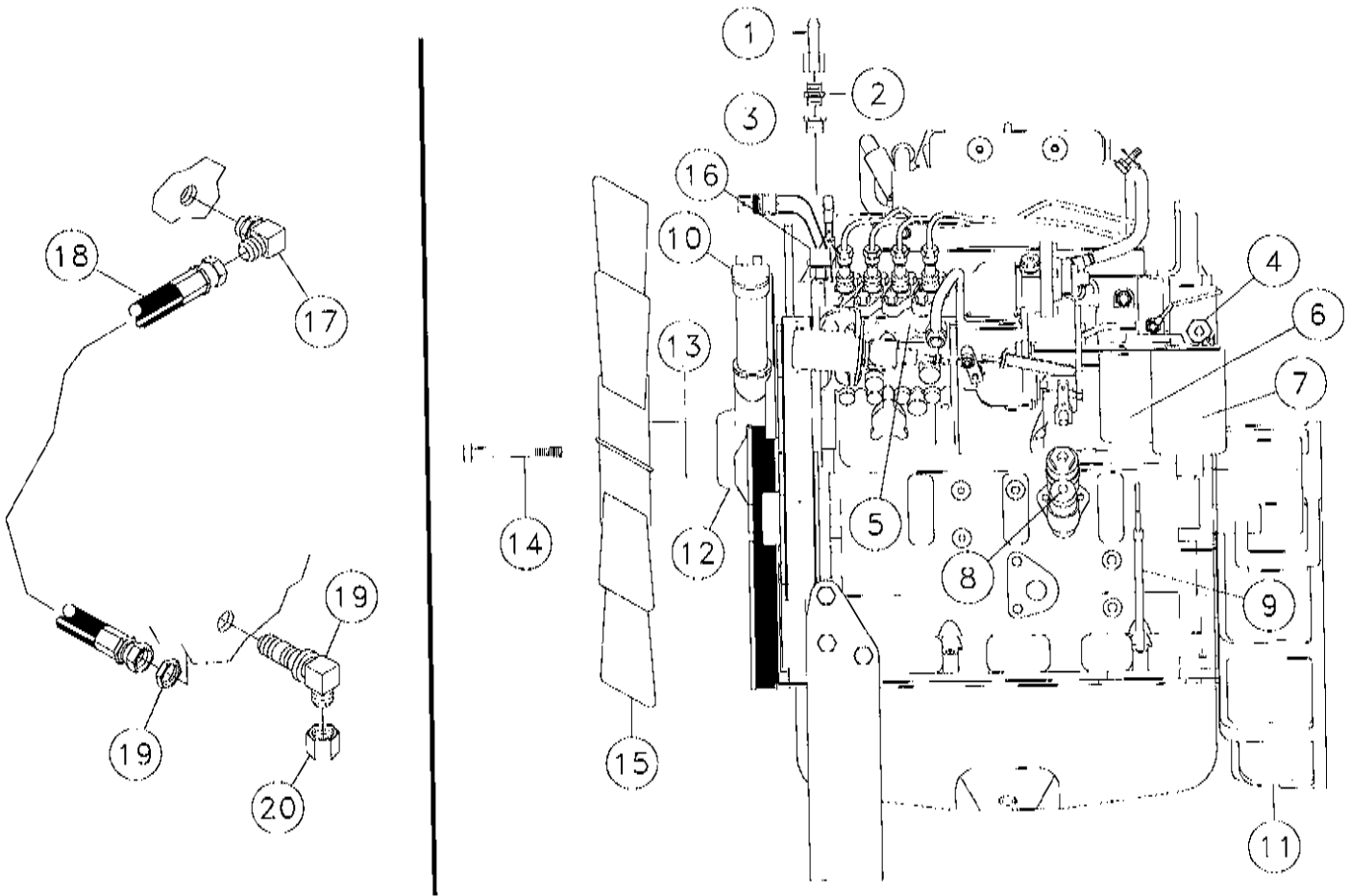
REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
2-1	1	220162-003 ● MANIFOLD-EXHAUST	1		220681-021 ● ALTERNATOR MOUNTING BOLT-UPPER	1	
		220681-027 ● EXHAUST MANIFOLD BOLT	8		220681-023 ● ALTERNATOR MOUNTING BOLT-LOWER	2	
		234218-003 ● GASKET-EXHAUST MANIFOLD	4	2-1	8	234218-005 ● TENSIONER-BELT	1
2-1	2	103000-001 ● STARTER	1	2-1	9	*240826-001 ● BELT	1
		220681-025 ● STARTER MOUNTING BOLT	2	2-1	10	234218-009 ● TURBO	1
2-1	3	220162-009 ● WATER PUMP	1	2-1	11	234218-011 ● GASKET-TURBO	1
		220681-031 ● SEAL-RECTANGULAR RING	1	2-1	11	107606-001 ● PULLEY-CRANKSHAFT	1
2-1	4	224558-009 ● OIL PUMP	1		103011-001 ● BOLT-CRANKSHAFT PULLEY	4	
2-1	5	104071-001 ● FILTER-OIL	1	2-1	12	104067-001 ● HEATER-ENGINE	1
2-1	6	104073-001 ● THERMOSTAT	1		104068-001 ● CABLE-ENGINE HEATER	1	
		104074-001 ● GASKET-THERMOSTAT	1	2-1	13	98678-001 SWITCH-PRESSURE SIN POLE 9 PSI	1
2-1	7	220171-001 ALTERNATOR-MODIFIED 42 AMP	1	2-1	14	61656-001 NUT-10MX1.50 PITCH 934 DIN	1
		5902-001 ALTERNATOR FAN	1	2-1	15	61655-001 NUT-5M X .80 PITCH 934 DIN	1
		220162-039 ● SHEAVE-ALTERNATOR	1				
	220681-019 ● ALTERNATOR BRACKET-LOWER	1					
	220681-017 ● ALTERNATOR BRACKET-UPPER	1					

● ITEMS WARRANTED BY AUTHORIZED CUMMINS DEALER

ENGINE COMPONENTS

Figure 2-2

Revised February 1999 due to update of fan pulley. Changed part marked with *.

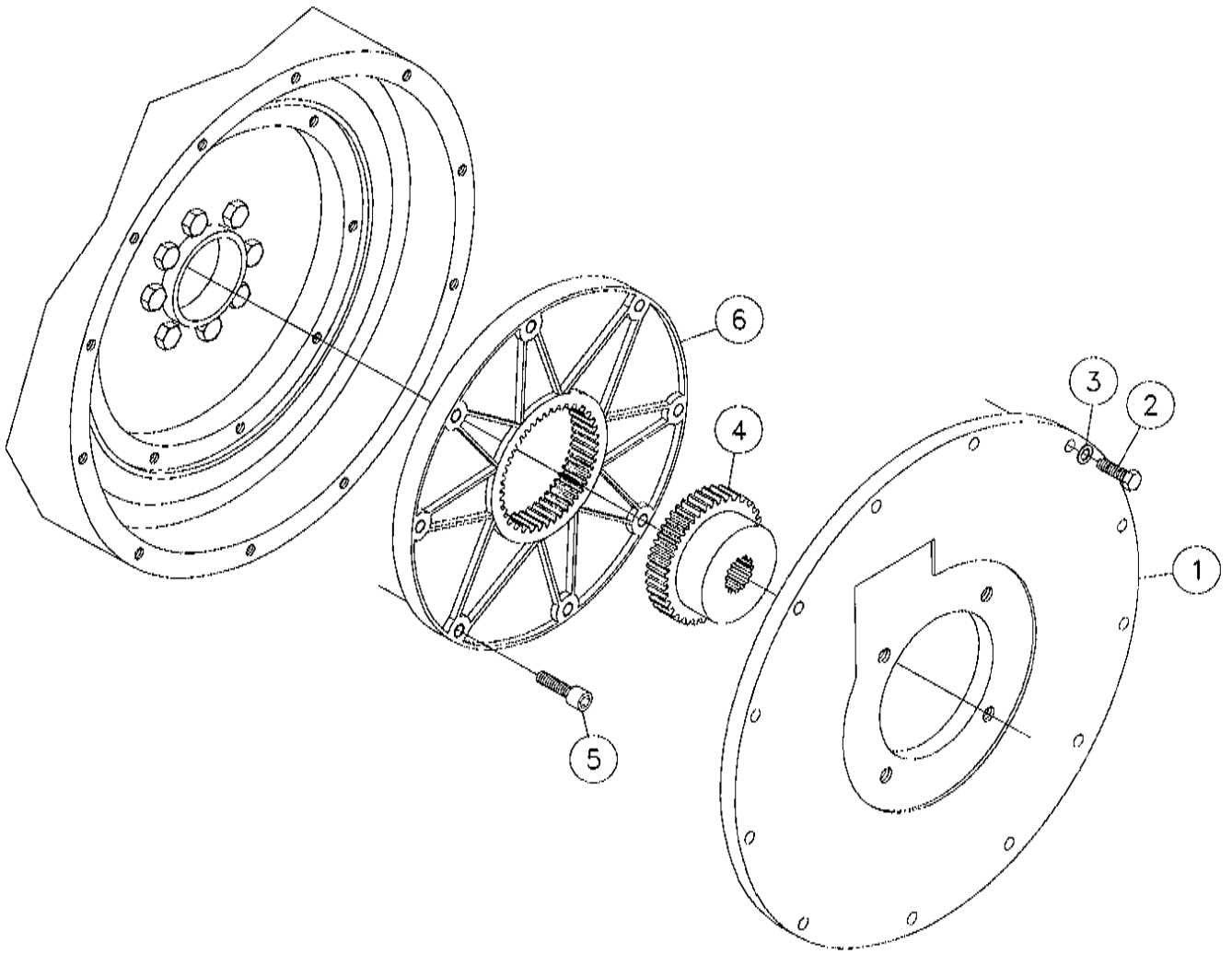


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
2-2	1	103007-001	1	2-2	11	104063-001	1
2-2	2	103006-001	1	2-2	12	103027-001	8
2-2	3	103005-001	1	2-2	13	*103019-001	1
2-2	4	11981-001	1	2-2	13	234218-027	1
2-2	5	234218-013	1	2-2	13	234218-029	1
		234218-015	1	2-2	14	64111-001	4
		234218-017	1	2-2	15	??4953-001	1
2-2	6	220162-025	1	??	16	227965-001	1
2-2	7	??0162-023	1	2-2	17	100351-001	1
2-2	8	234218-019	1	2-2	18	53842-281	1
		220681-013	1	2-2	19	77735-001	1
2-2	9	234218-021	1	2-2	20	78062-001	1
		234218-023	1				
2-2	10	102996-001	1				

◆ ITEMS WARRANTED BY AUTHORIZED CUMMINS DEALER

PUMP DRIVE ASSEMBLY

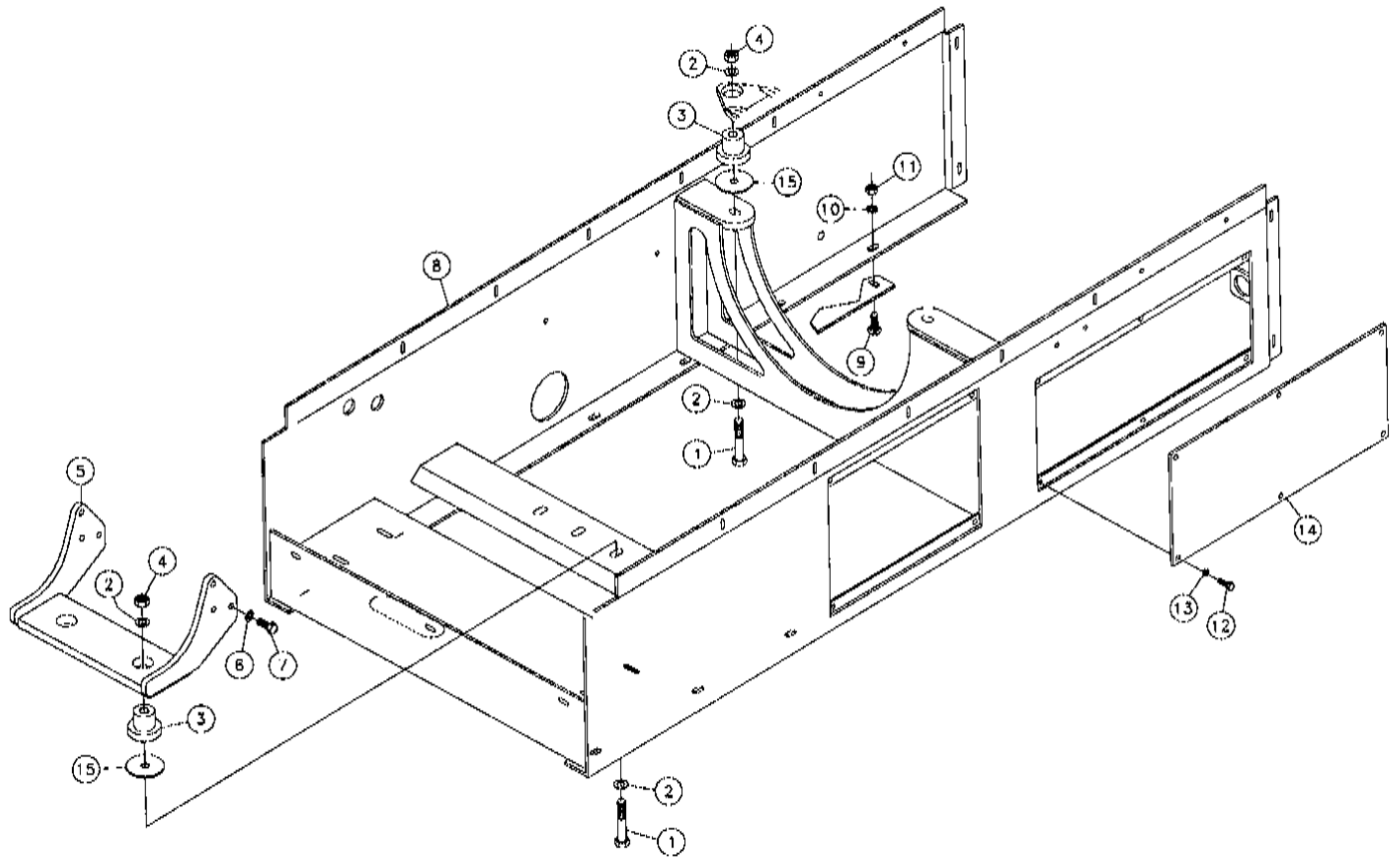
Figure 2-3



REF. NO.	PART NO.	DESCRIPTION	QTY.
2-3	1	249786-001 PLATE-PUMP MOUNT	1
2-3	2	250518-001 BOLT-10MM X 35 MM GR.8 Y/ZINC	12
2-3	3	250519-001 10MM HARD WASHER Y/ZINC	12
2-3	4	224297-001 HUB-FLE65 SERIES 23T SPLINE	1
2-3	5	4478-014 CAPSCREW-3/8-16X1 1/2 SOCHD G8	8
2-3	6	220075-001 FLANGE-65 FLE-PA 10'FLYWHEEL	1

ENGINE BASE ASSEMBLY

Figure 2-4

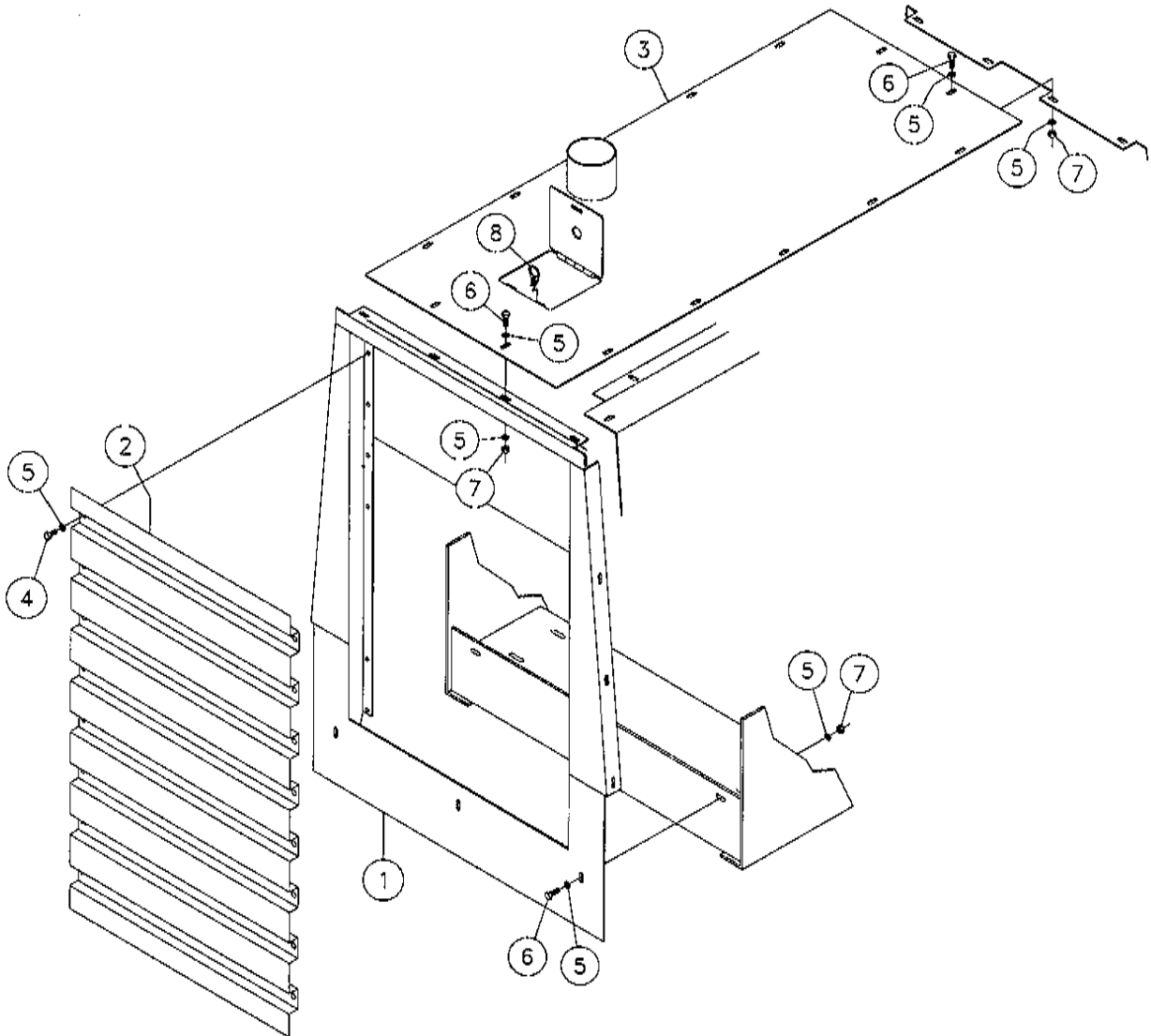


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
2-4	1	238208-001 BOLT-5/8-11X3 1/2 GR8 HEX ZYC	4
2-4	2	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	8
2-4	3	220165-001 MOUNT-M500-50-NR RUBBER	4
2-4	4	250513-001 NUT-5/8-NC GR8 TOP LOCK Y/ZINC	4
2-4	5	234238-001 MOUNT-FRONT ENGINE	1
2-4	6	238249-001 12 MM HARD WASHER Y/ZINC	6
2-4	7	250516-001 BOLT-12M X 35M GR.8 Y/ZINC	6
2-4	8	244369-001 BASE-ENGINE	1
2-4	9	377-012 BOLT-1/2-13X1 1/4'GD#5CARRIAGE	14
2-4	10	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	14
2-4	11	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	14
2-4	12	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	6
2-4	13	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	6
2-4	14	244371-001 PLATE-ENGINE ACCESS COVER	1
2-4	15	220203-001 SLUG-ENGINE MOUNT	4

FRONT & TOP ENGINE SHIELD ASSEMBLY

Figure 2-5

Revised July 1999 due to update
in illustration & parts list.

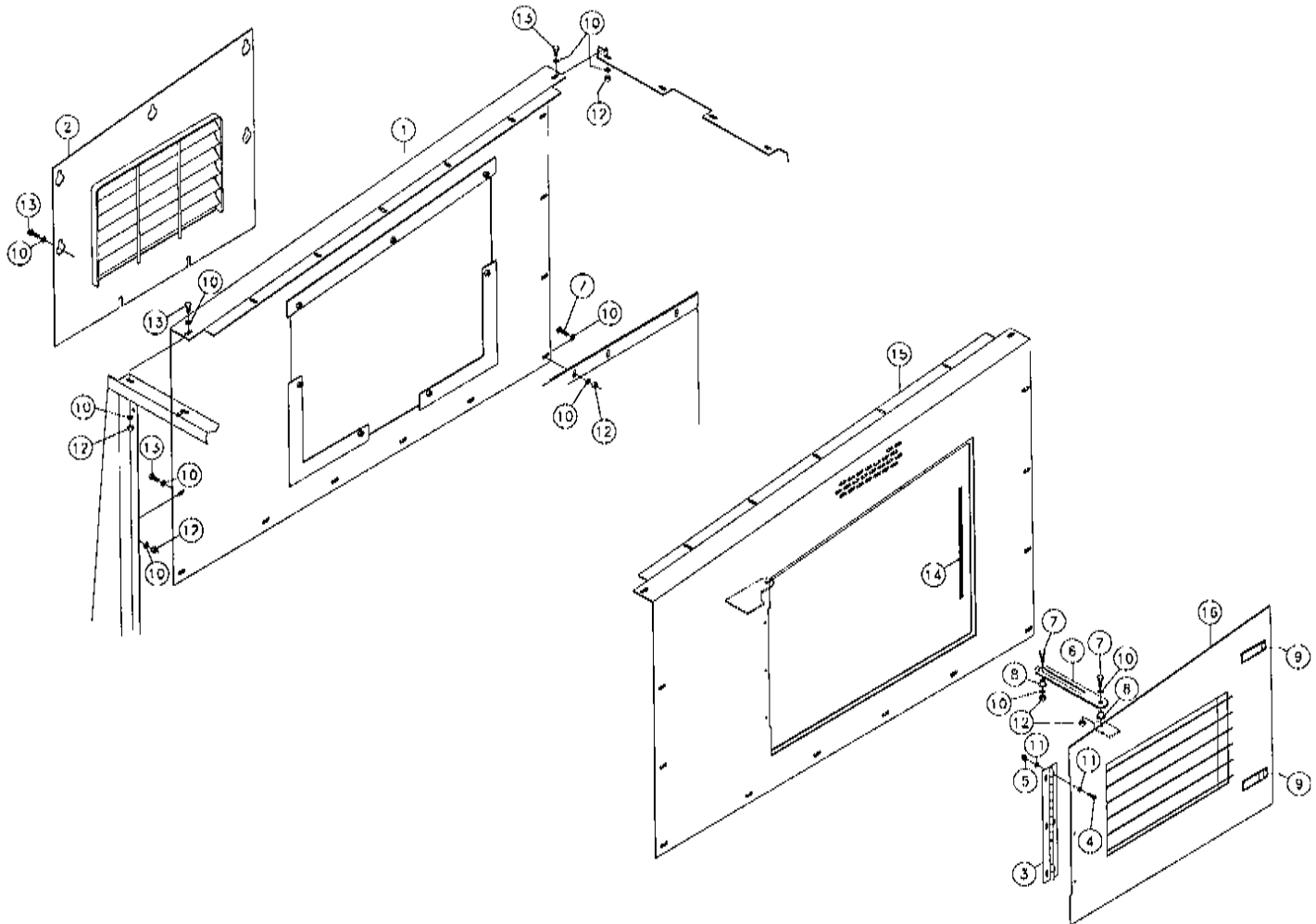


REF. NO.	PART NO.	DESCRIPTION	QTY.
2-5	1	235283-001 GRILLE-FRONT	1
2-5	2	235287-001 SCREEN-RADIATOR	1
2-5	3	251358-001 SHIELD-ENGINE TOP	1
2-5	4	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	16
2-5	5	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	50
2-5	6	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	17
2-5	7	235725-001 NUT-3/8-16 GR8 ZINC PLTD	17
2-5	8	86113-001 FASTENER-1/4 TURN	1

SIDE ENGINE SHIELDS ASSEMBLY

Figure 2-6

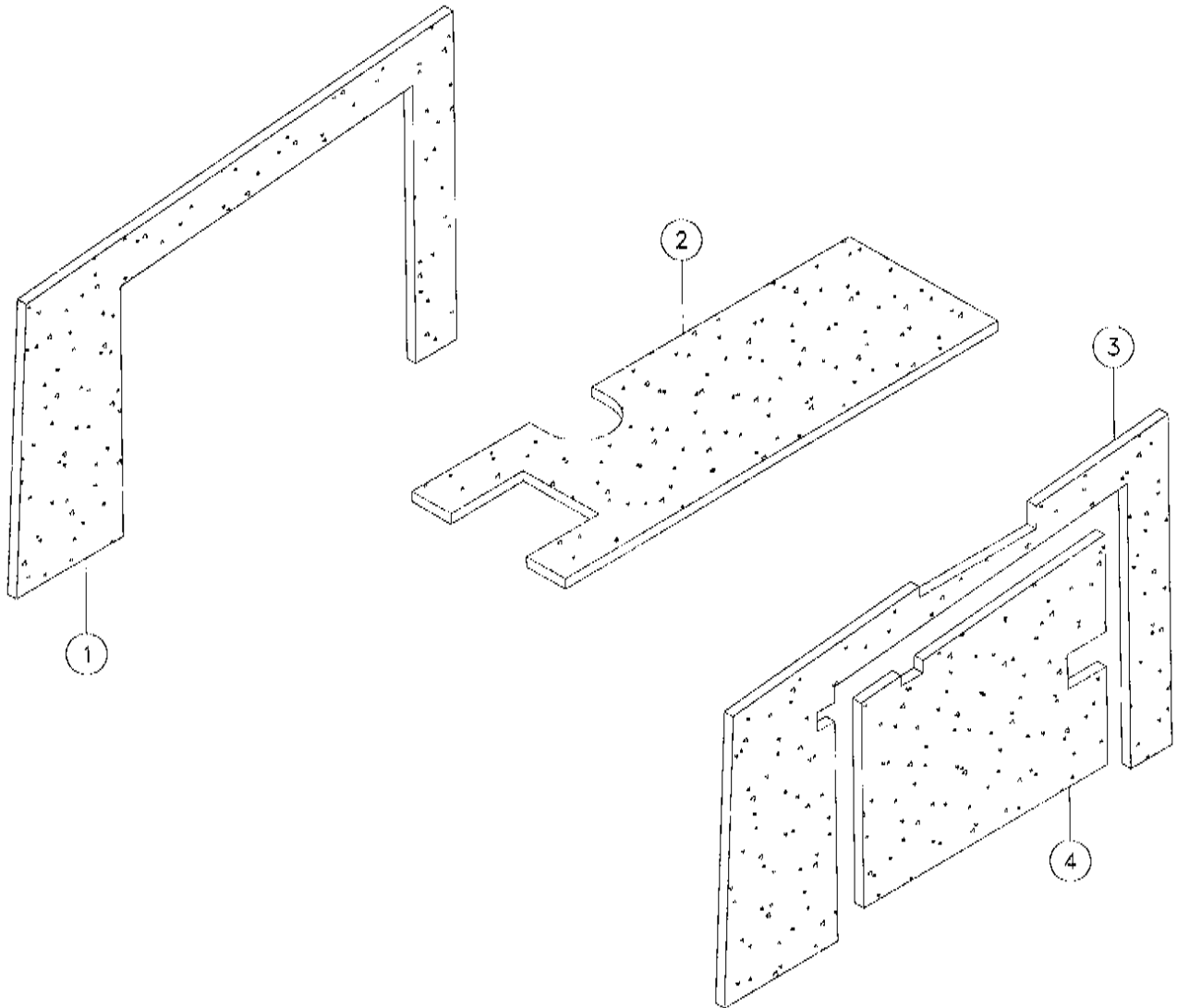
Revised February 1999 due to update of engine shield door & latch qty. Changed parts marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.	
2-6	1	251360-001	SHIELD-RIGHT SIDE ENGINE	1	2-6	9	*110479-001 LATCH-SEALED LEVER (INC. KEY)	2
2-6	2	251362-001	DOOR-RIGHT ENGINE	1		*97874-003	KEYS	2
2-6	3	225282-001	HINGE-DOOR	1	2-6	10	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	56
2-6	4	235734-001	BOLT-1/4-20X3/4 GR8 ZINC PLTD	6	2-6	11	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	12
2-6	5	235716-001	WASHER-1/4 SAE HARD ZINC PLTD	6	2-6	12	235725-001 NUT-3/8-16 GR8 ZINC PLTD	28
		235732-001	NUT-1/4-20 GR8 ZINC PLTD	6	2-6	13	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZINCPLT	19
2-6	6	234152-001	STAY-SHIELD DOOR	1	2-6	14	98436-001 SEAL-SELF ADHESIVE 1/16X1/2 (SPECIFY LENGTH)	A/R
2-6	7	235727-001	BOLT-3/8-16X1 GR8 HEX ZINC PLT	14	2-6	15	251359-001 SHIELD-LEFT SIDE ENGINE	1
2-6	8	96424-001	BOSS-HINGE	2	2-6	16	251361-001 DOOR-LEFT ENGINE SHIELD	1

SOUND PACKAGE ASSEMBLY

Figure 2-7

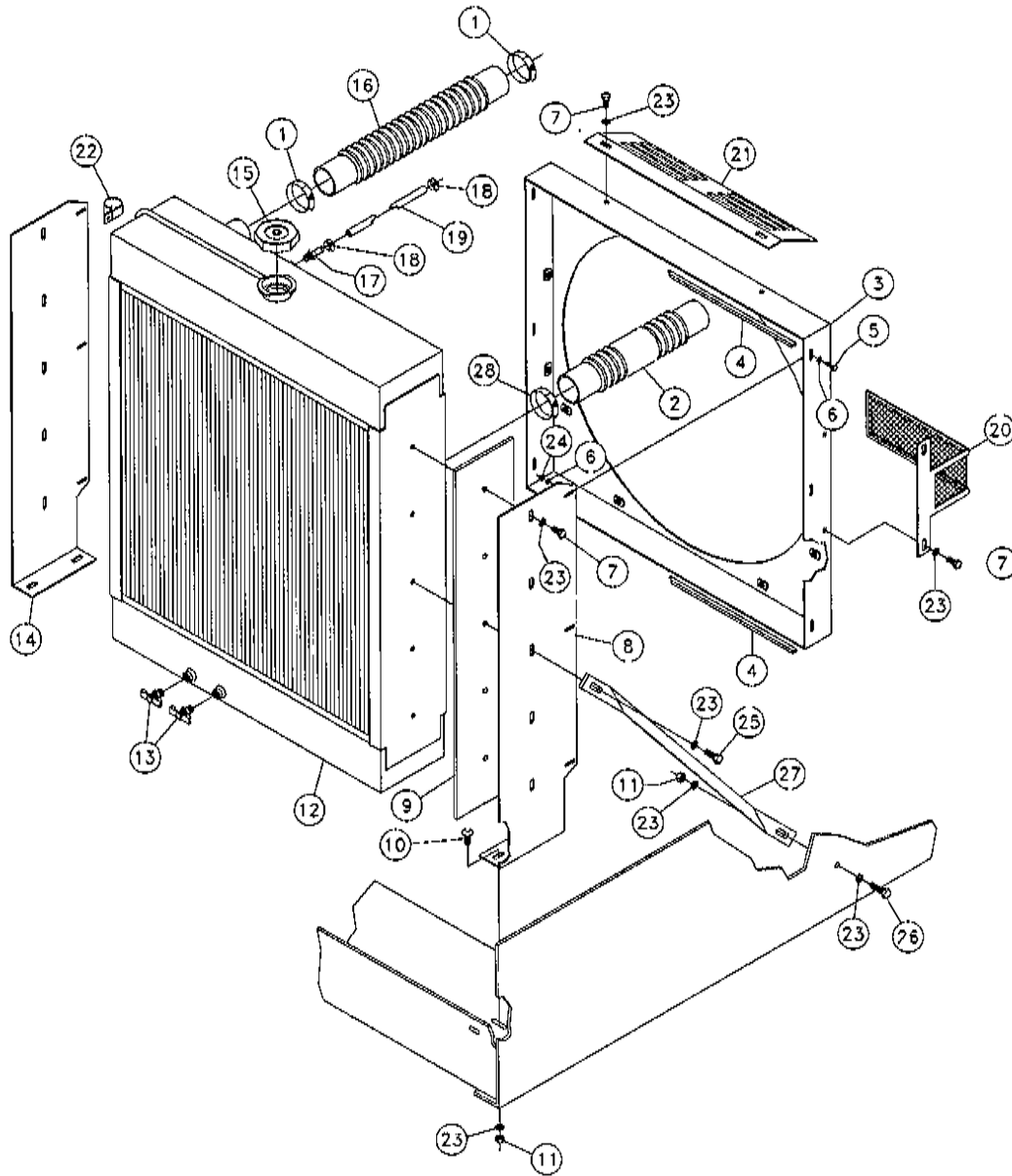


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
2-7	1	251067-001 FOAM - RIGHT SHIELD	1
2-7	2	251066-001 FOAM - TOP SHIELD	1
2-7	3	251069-001 FOAM-LEFT SHIELD	1
2-7	4	251068-001 FOAM - LEFT DOOR	1

RADIATOR ASSEMBLY

Figure 2-8

Revised July 1999 due to change in hose clamps. Added part marked with *.

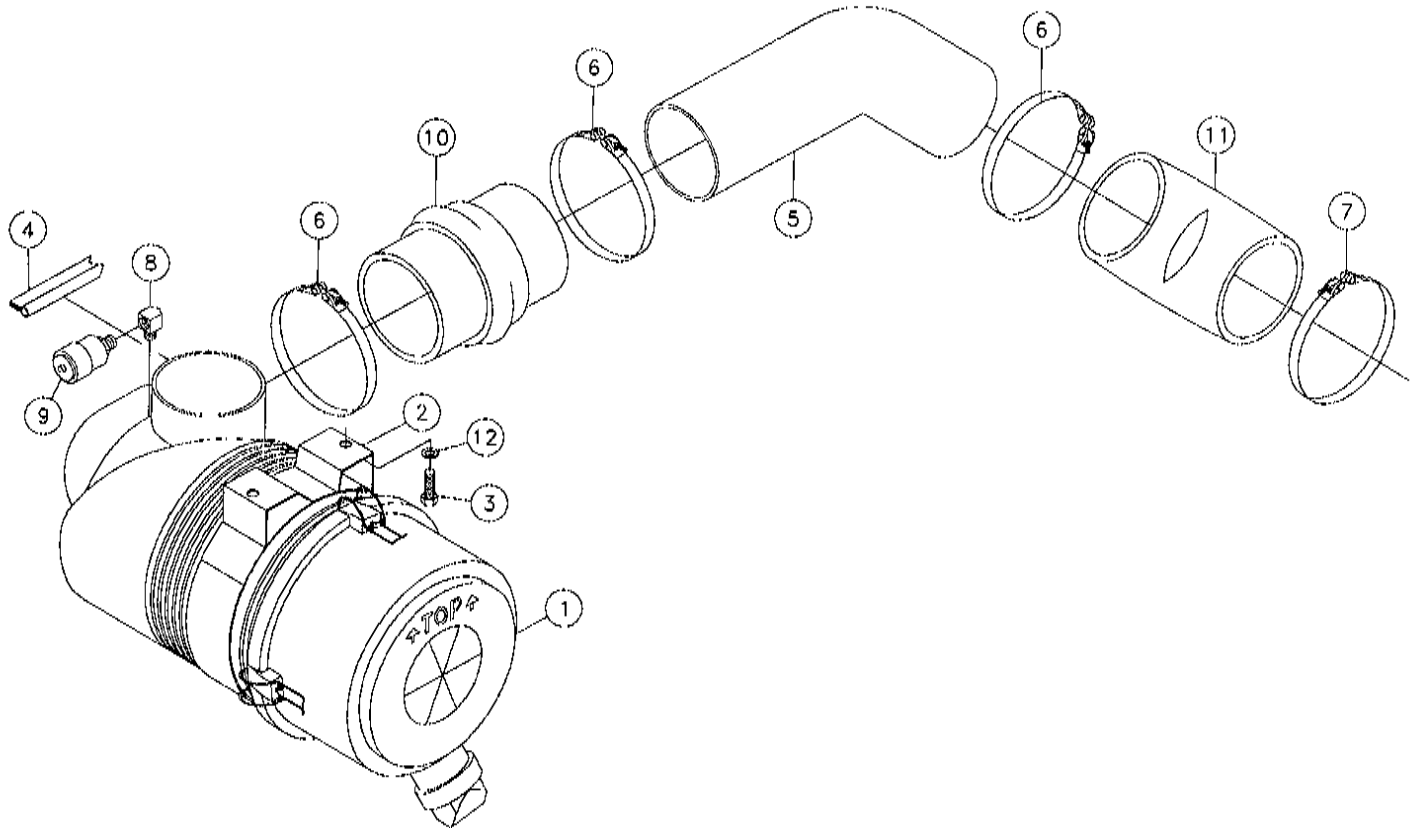


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
2-8	1	1580-011 HOSE CLAMP - 2"	4	2-8	15	68125-001 CAP-RADIATOR TR102 (7 PSI)	1
2-8	2	246430-001 HOSE - 2 1/4 X 19 FLEX	1	2-8	16	224849-001 HOSE-1 3/4ID X 19" COOLANT	1
2-8	3	251394-001 SHROUD-FAN	1	2-8	17	102118-001 FITTING-1/4NPT X 3/8 HOSE BARB	1
2-8	4	97456-001 SEAL-BULB EDGE 1/8" STYLE (SPECIFY LENGTH)	2	2-8	18	1580-001 HOSE CLAMP - 3/8"	2
2-8	5	235734-001 BOLT-1/4-20X3/4 GR8 ZINC PLTD	6	2-8	19	57706-001 HOSE-3/8" 200PSI 1 PLY BLACK (SPECIFY LENGTH)	1
2-8	6	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	12	2-8	20	251401-001 GUARD-FAN	2
2-8	7	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	11	2-8	21	251400-001 SHIELD-FAN	1
2-8	8	238601-001 PLATE-RADIATOR MOUNTING	1	2-8	22	2595-001 HOSE CLAMP - TS7FR 1/2"	2
2-8	9	238640-001 FOAM - RADIATOR	2	2-8	23	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	18
2-8	10	375-010 BOLT-3/8"-16X1"GD#5 CARRIAGE	4	2-8	24	235732-001 NUT-1/4-20 GR8 ZINC PLTD	6
2-8	11	235725-001 NUT-3/8-16 GR8 ZINC PLTD	5	2-8	25	235727-001 BOLT-3/8-16X1" GR 8 HEX ZINC	1
2-8	12	238636-001 RADIATOR-(13-6272611-3)	1	2-8	26	235736-001 BOLT-3/8-16X1 1/4" GR 8 HEX ZINC	1
2-8	13	225532-005 DRAIN COCK-1/4"	2	2-8	27	251407-001 SUPPORT-RADIATOR	1
2-8	14	238600-001 PLATE-RADIATOR MOUNTING	1	2-8	28	*1580-013 HOSE-CLAMP 2 1/2"	2

AIR CLEANER ASSEMBLY

Figure 2-9

Revised February 1999 due to update in parts list. Changed part marked with *.

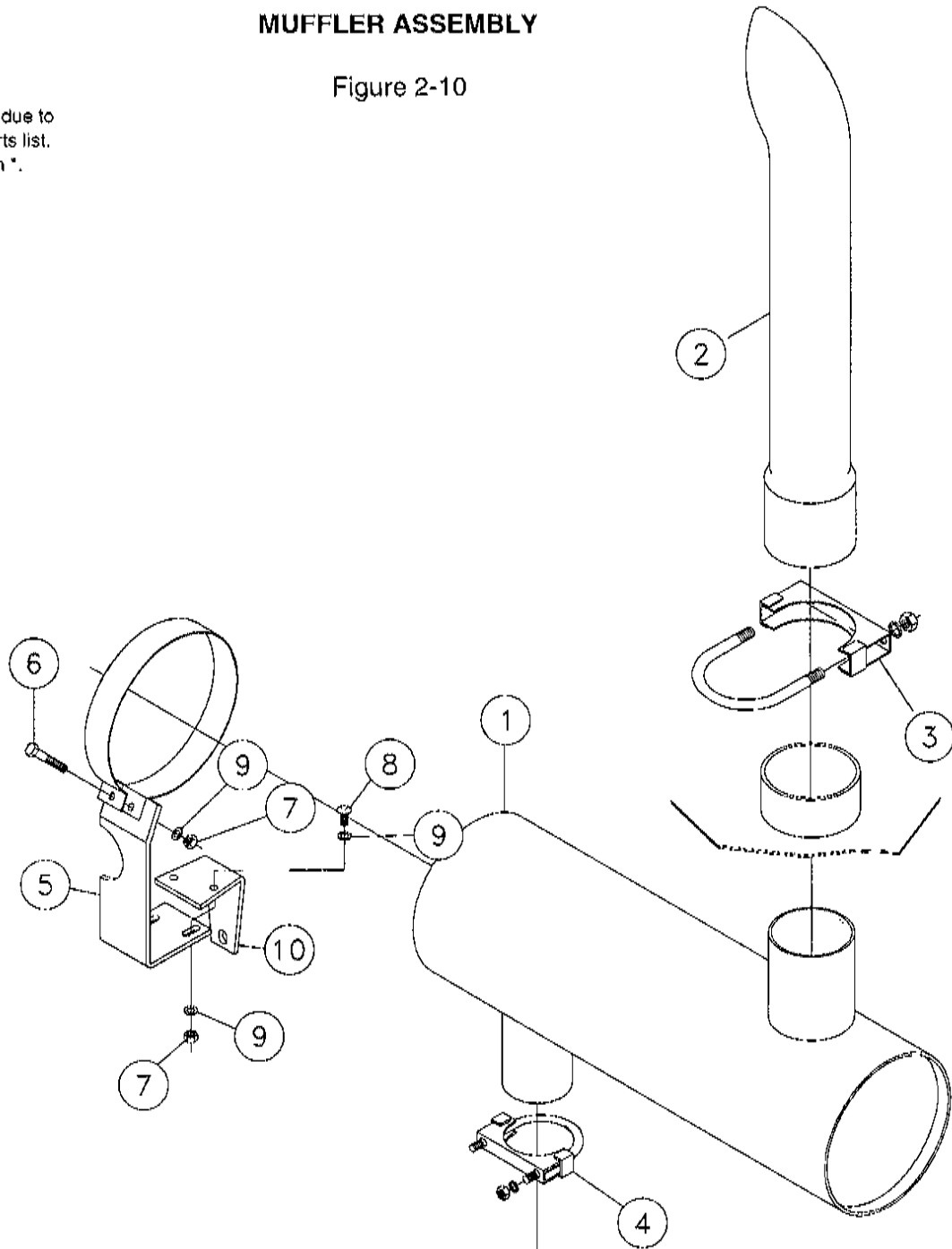


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
2-9	1	224847-001 AIR CLEANER (BREAKDOWN FIG. 2-12)	1
2-9	2	220167-001 CLAMP-AIR CLEANER H00-2023	1
2-9	3	235742-001 BOLT-5/16-18X3/4 GR8 ZINC PLTD	?
2-9	4	97456-001 SEAL-BULB EDGE 1/8" STYLE (SPECIFY LENGTH)	A/R
2-9	5	238728-001 TUBE-AIR INTAKE	1
2-9	6	100488-001 CLAMP-AIR CLEANER T-BOLT 4"	3
2-9	7	96072-001 CLAMP-3 1/2" T-BOLT	1
2-9	8	4017-001 FITTING-3400X2 WTHR-HD	1
2-9	9	2165-001 INDICATOR - RAX00-2352	1
2-9	10	238732-001 ADAPTER-3 1/2" ST HOSE HUMP	1
2-9	11	106640-001 ELBOW-3"X3.5" 90 DEG. RUBBER	1
2-9	12	235714-001 WASHER-5/16 SAE HARD ZINC PLTD	2

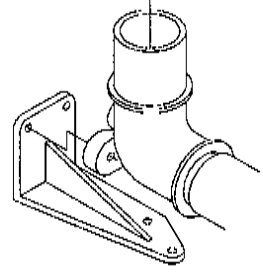
MUFFLER ASSEMBLY

Figure 2-10

Revised September 1999 due to update in illustration & parts list. Changed part marked with *.



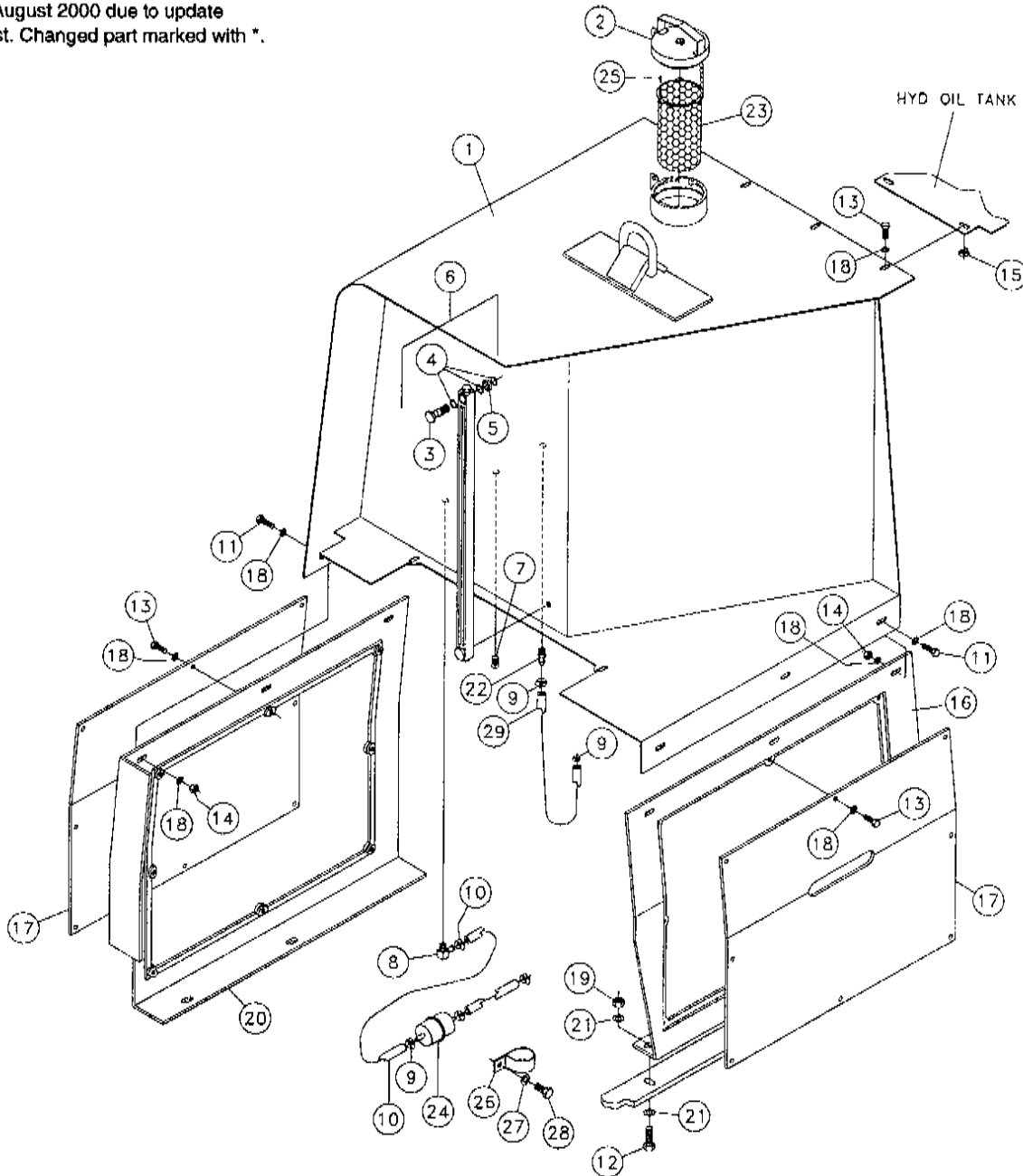
REF. NO.	PART NO.	DESCRIPTION	QTY.
2-10	1	224846-001 MUFFLER-EXHAUST	1
2-10	2	214087-001 STACK-4"EXHAUST	1
2-10	3	2609-017 CLAMP-MUFFLER 4"	1
2-10	4	2609-011 MUFFLER CLAMP - 3"	1
2-10	5	238696-001 BRACKET-MUFFLER SUPPORT	1
2-10	6	250529-001 BOLT 3/8-16X2 1/2"GR.8 HEX	1
2-10	7	235725-001 NUT-3/8-16 GR8 ZINC PLTD	3
2-10	8	*375-010 BOLT-3/8-16X1 GR 5 CARRIAGE	2
2-10	9	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	6
2-10	10	225425-001 BAR-MUFFLER SUPPORT	1



FUEL TANK ASSEMBLY

Figure 2-11

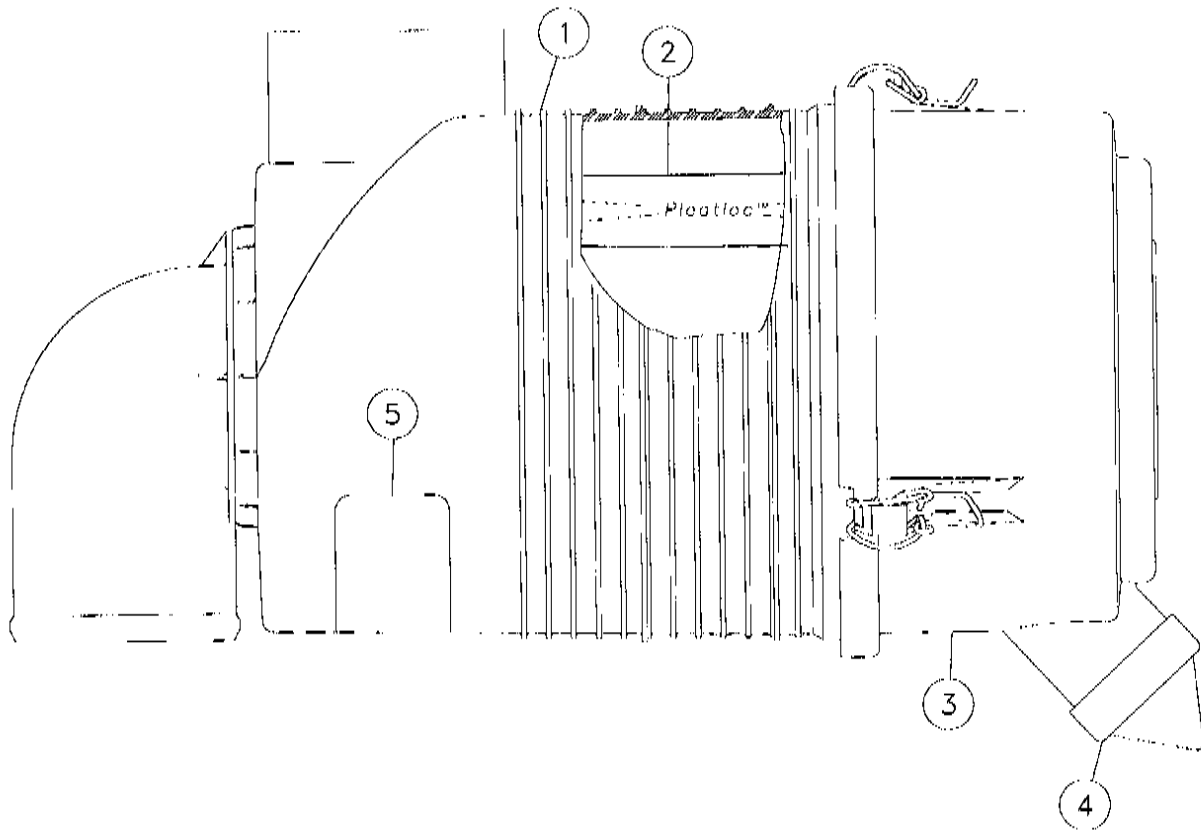
Revised August 2000 due to update in parts list. Changed part marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
2-11	1	*227841-003 TANK-FUEL	1	2-11	16	227859-001 MOUNT-ENGINE BAY DOOR	1
2-11	2	224985-001 CAP-VENTED FUEL TANK	1	2-11	17	227759-001 LID-ENGINE BAY	2
2-11	3	234349-003 BOLT-12M (SIGHT GAUGE)	2	2-11	18	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	32
2-11	4	227757-003 O-RING	6	2-11	19	235731-001 NUT-1/2-13 GR8 ZINC PLTD	4
2-11	5	227757-005 SPACER	2	2-11	20	227861-001 EXTENSION-ENGINE BOX	1
2-11	6	234349-001 GAUGE-23" SIGHT (BREAKDOWN FIG. 2-13)	1	2-11	21	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	4
2-11	7	732-007 1/2" PIPE PLUG BLACK STEEL	1	2-11	22	78171-001 FITTING-1/8MNPTX5/16BARB STR.	1
2-11	8	11384-001 FITTING-1557 WTHR-HD	1	2-11	23	99998-001 STRAINER-6" .030 STEEL	1
2-11	9	1578-001 HOSE CLAMP - 1/4"	4	2-11	24	102995-001 STRAINER	1
2-11	10	620-029 HOSE-5/16 FUEL LINE-50"	1	2-11	25	66695-001 SCREW-MACH. 6-32 X 3/8" MACHI	3
2-11	11	235723-001 BOLT-3/8-16X1 1/2 GR8 ZINC PLT	6	2-11	26	230965-001 CLAMP-1 3/4" W/17/32 HOLE	1
2-11	12	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	4	2-11	27	238249-001 12 MM HARD WASHER Y/ZINC	1
2-11	13	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	20	2-11	28	250501-001 BOLT 12MM X 25MM GR10.9 HEX Y/	1
2-11	14	235725-001 NUT-3/8-16 GR8 ZINC PLTD	6	2-11	29	620-105 FUEL LINE HOSE 5/16 X 62.00	1
2-11	15	415-001 NUT-3/8 NC HEX NUT CLIP	4				

AIR CLEANER COMPONENTS

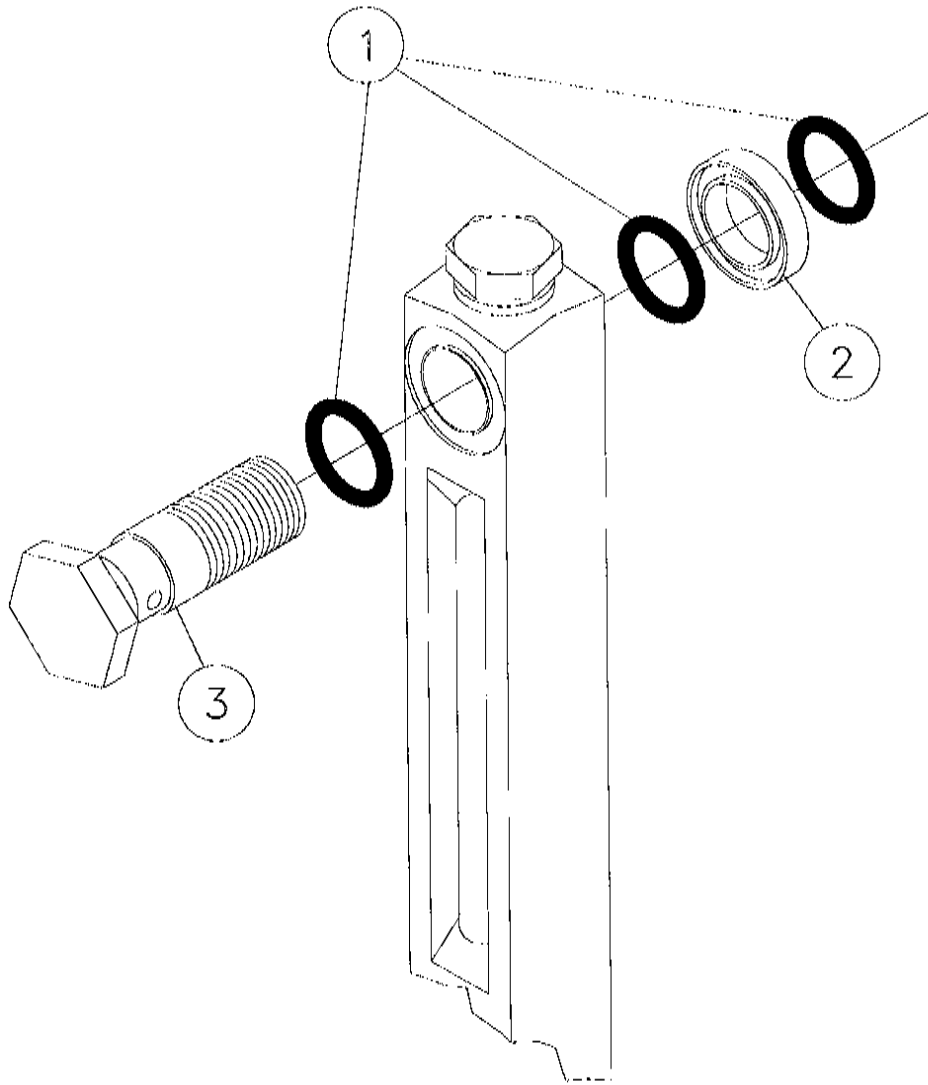
Figure 2-12



<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
2-12	1	224847-003 BODY ASSEMBLY	1
2-12	2	220166-005 ELEMENT ASSEMBLY	1
2-12	3	220166-007 COVER ASSEMBLY	1
2-12	4	220166-009 VALVE	1
2-12	5	224847-005 DECAL-INSTRUCTION	1
	224847-001	AIR CLEANER (INC. REF. 1-5)	

SIGHT GAUGE COMPONENTS

Figure 2-13

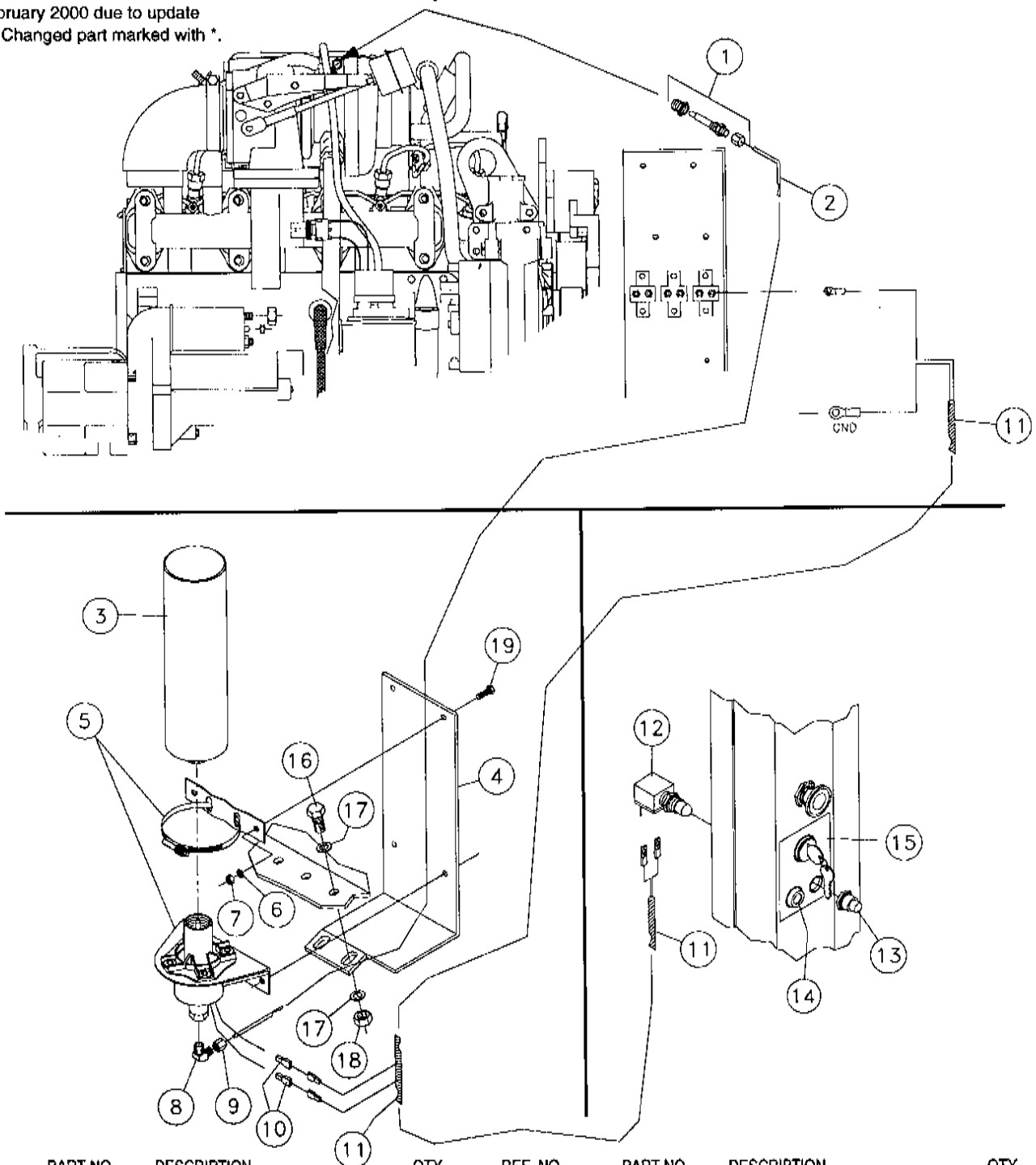


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
2-13 1	227757-003	O-RING	6
2-13 2	227757-005	SPACER	2
2-13 3	234349-003	BOLT-12M (SIGHT GAUGE)	2
	234349-001	GAUGE-23" SIGHT (INC. GAUGE & 1-3)	

ETHER STARTING SYSTEM ASSEMBLY

Figure 2-14

Revised February 2000 due to update in parts list. Changed part marked with *.

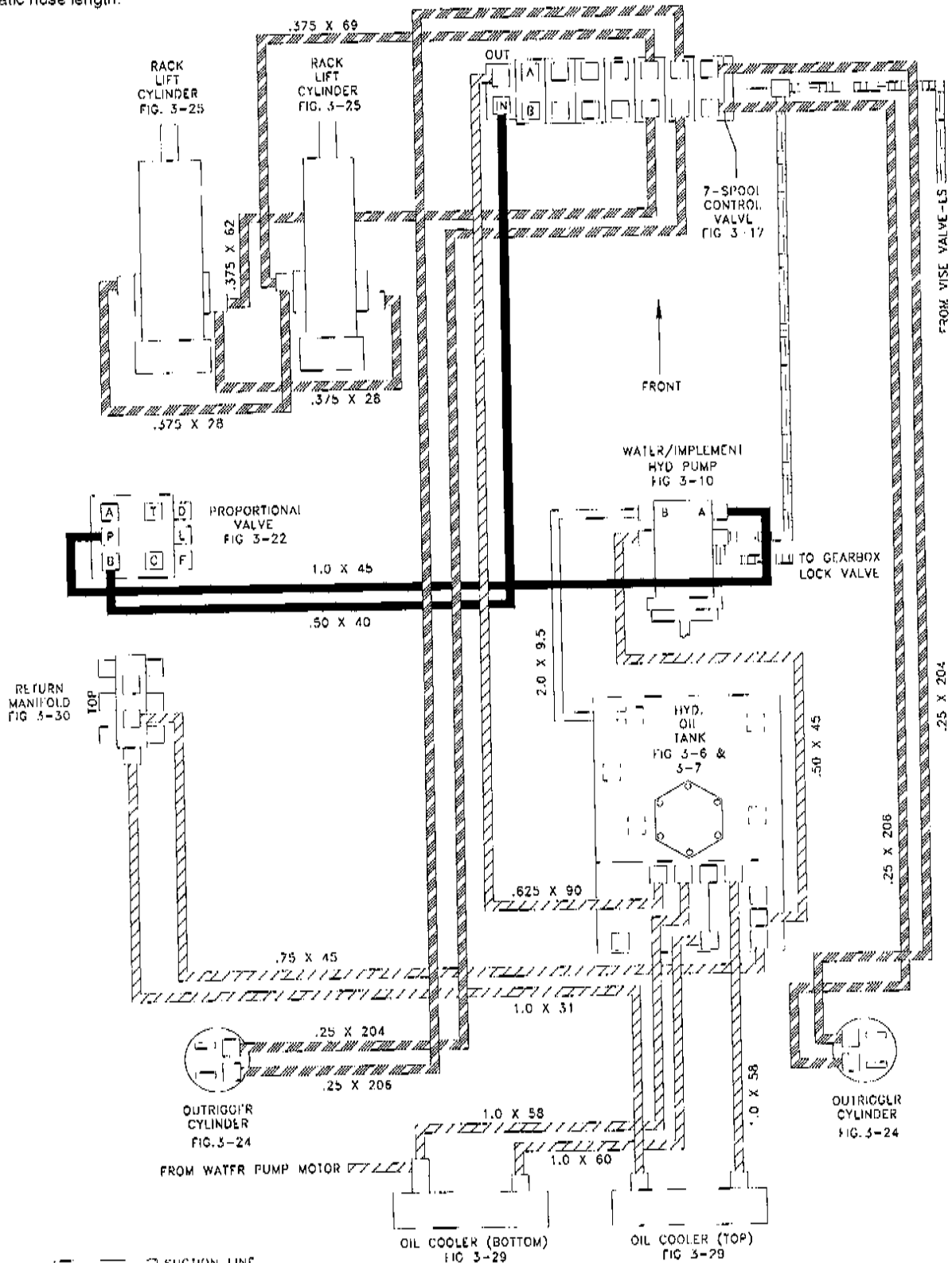


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
2-14	1	223972-001	1	2-14	12	66816-001	1
2-14	2	202831-001	1	2-14	13	90622-001	1
2-14	3	223973-001	1	2-14	14	86581-001	1
2-14	4	276513-001	1	2-14	15	700IB-001	1
2-14	5	250606-001	1	2-14	16	250539-001	2
2-14	6	235716-001	4	2-14	17	250540-001	4
2-14	7	*248198-001	4	2-14	18	250509-001	2
2-14	8	125406-003	1	2-14	19	235734-001	4
2-14	9	125406-005	1				
2-14	10	18988-001	1			NSS	NOT SOLD SEPARATELY
2-14	11	NSS	1				

HYDRAULIC COMPONENTS LOCATION DIAGRAM - IMPLEMENT SYSTEM

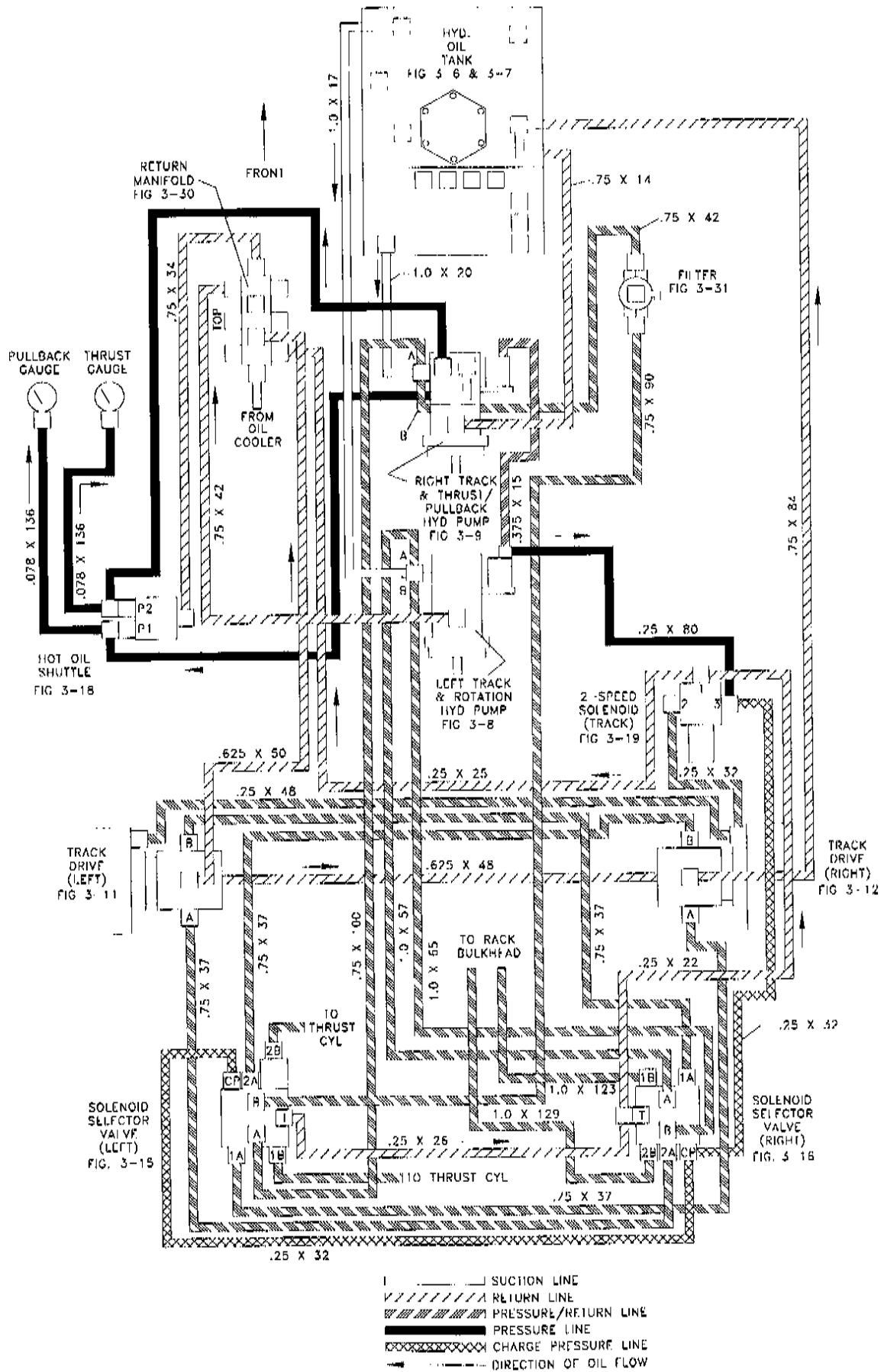
Figure 3-1

Revised February 1999 due to update of schematic hose length.



HYDRAULIC COMPONENTS LOCATION DIAGRAM - GROUND DRIVE SYSTEM

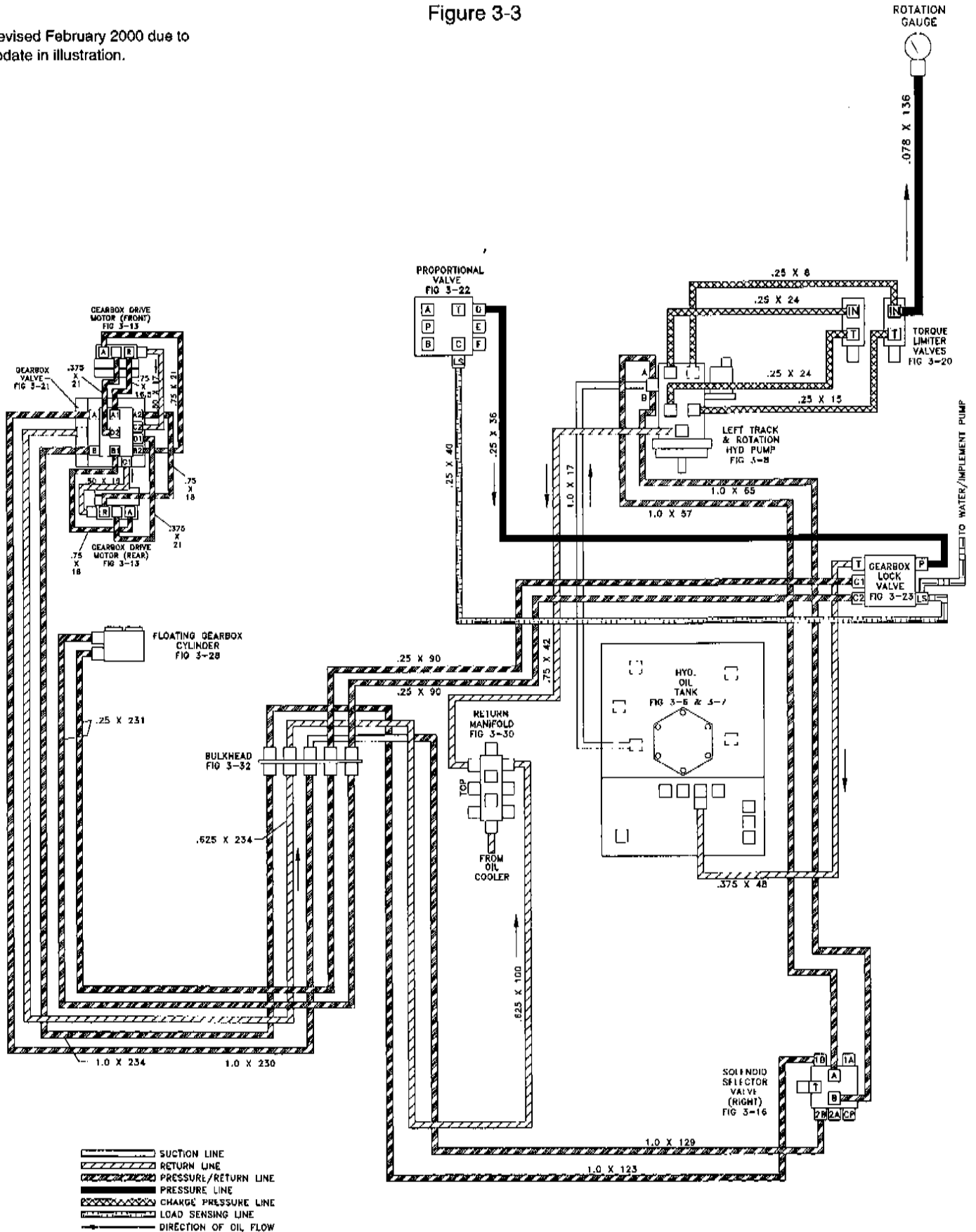
Figure 3-2



HYDRAULIC COMPONENTS LOCATION DIAGRAM - ROTATION SYSTEM

Figure 3-3

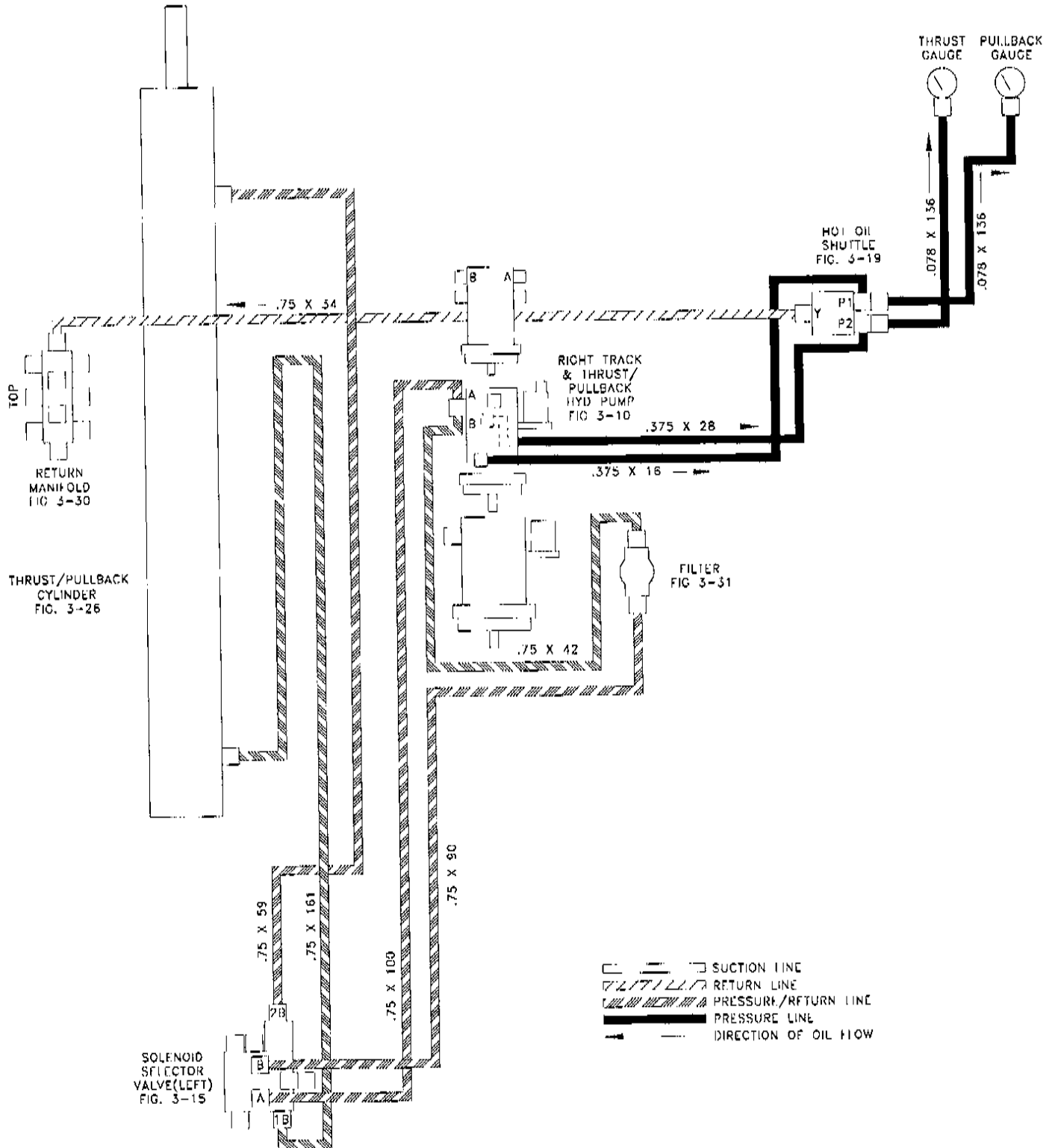
Revised February 2000 due to update in illustration.



HYDRAULIC COMPONENTS LOCATION DIAGRAM - THRUST/PULLBACK SYSTEM

Figure 3-4

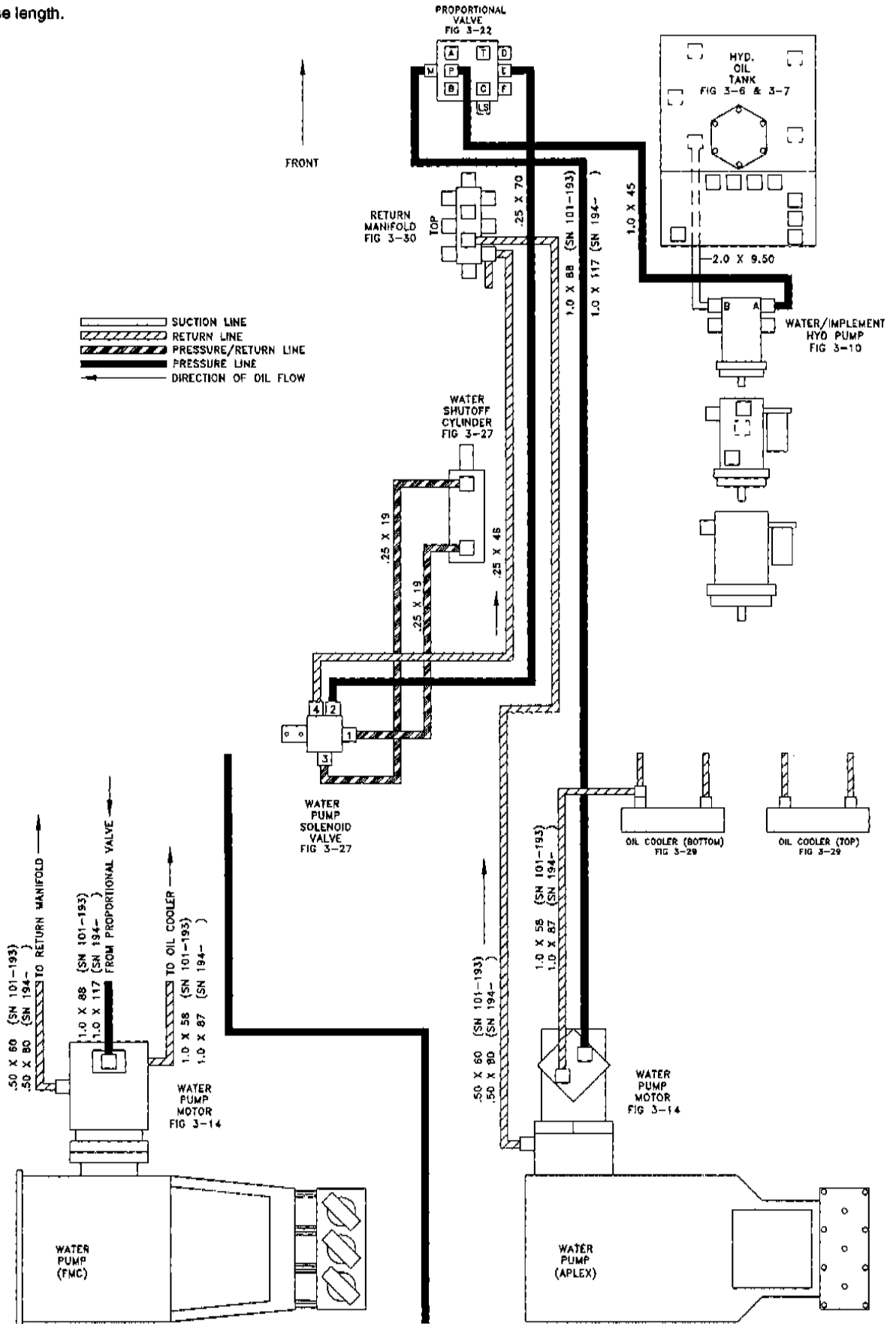
Revised February 1999 due to addition of drawing to figure.



HYDRAULIC COMPONENTS LOCATION DIAGRAM - WATER PUMP SYSTEM

Figure 3-5

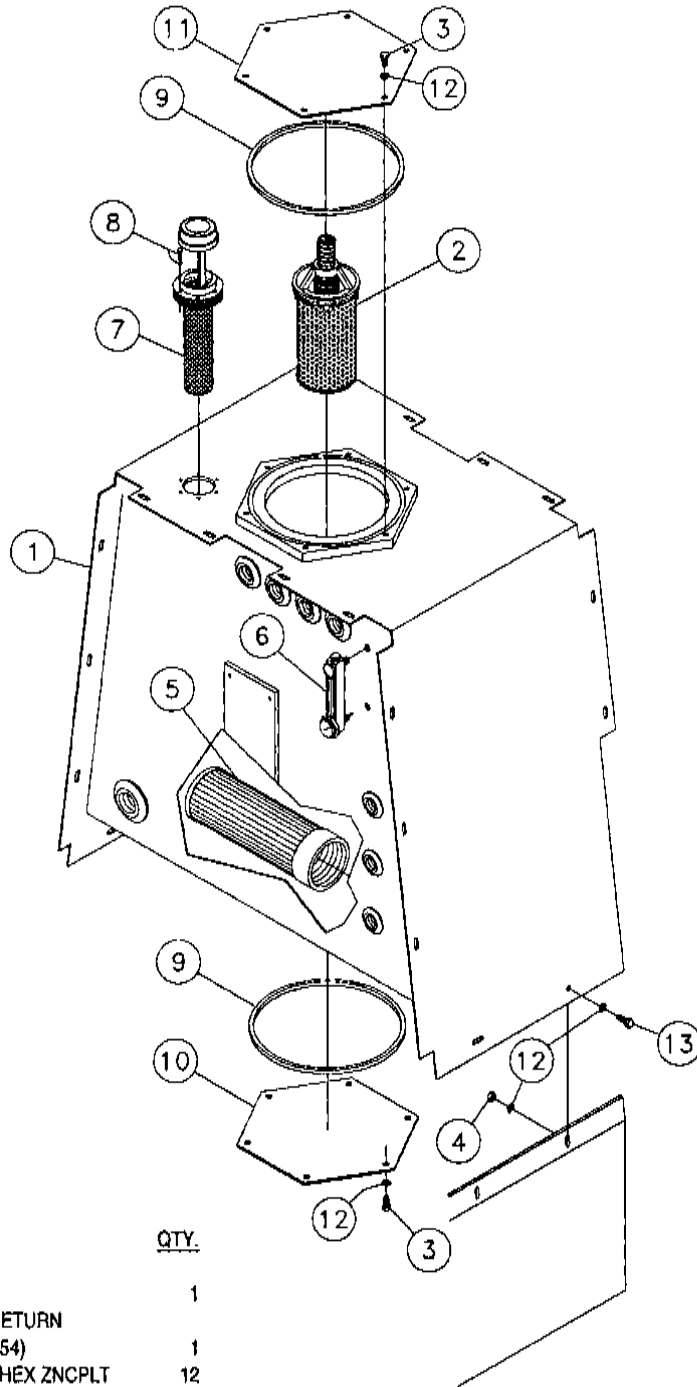
Revised August 2000 due to update in hose length.



OIL TANK ASSEMBLY

Figure 3-6

Revised August 2000 due to update in illustration & parts list. Changed parts marked with *.

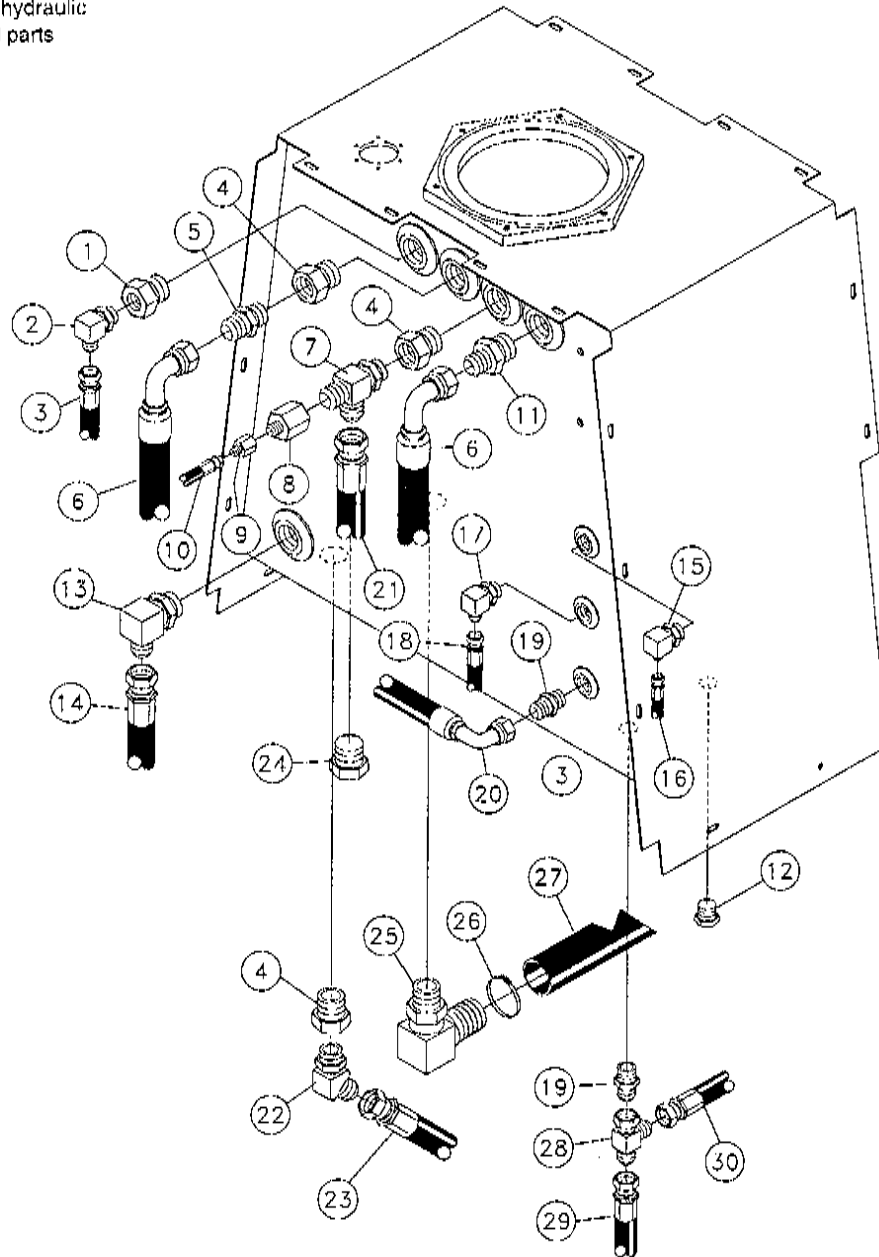


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-6	1	*238534-003 TANK-OIL	1
3-6	2	244486-001 FILTER-HYDRAULIC RETURN (BREAKDOWN FIG. 3-54)	1
3-6	3	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	12
3-6	4	235725-001 NUT-3/8-16 GR8 ZINC PLTD	4
3-6	5	98681-001 FILTER-TANK 3 NPT OUTLET PORT	1
3-6	6	81590-001 GAUGE-SIGHT	1
3-6	7	235808-001 CAP-FILLER/BREATHER W/O RELIEF	1
3-6	8	1802-006 BOLT-10-24 X 3/4 RND HD STOVE	6
	480-001	WASHER-3/16 S/T LOCK	6
3-6	9	78544-001 O-RING	2
3-6	10	*96291-001 PLATE-CLEANOUT PORT	2
3-6	11	225358-001 LID-FILTER	1
3-6	12	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	20
3-6	13	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	4

OIL TANK PLUMBING ASSEMBLY

Figure 3-7

Revised February 1999 due to hydraulic hose & fitting update. Changed parts marked with *.

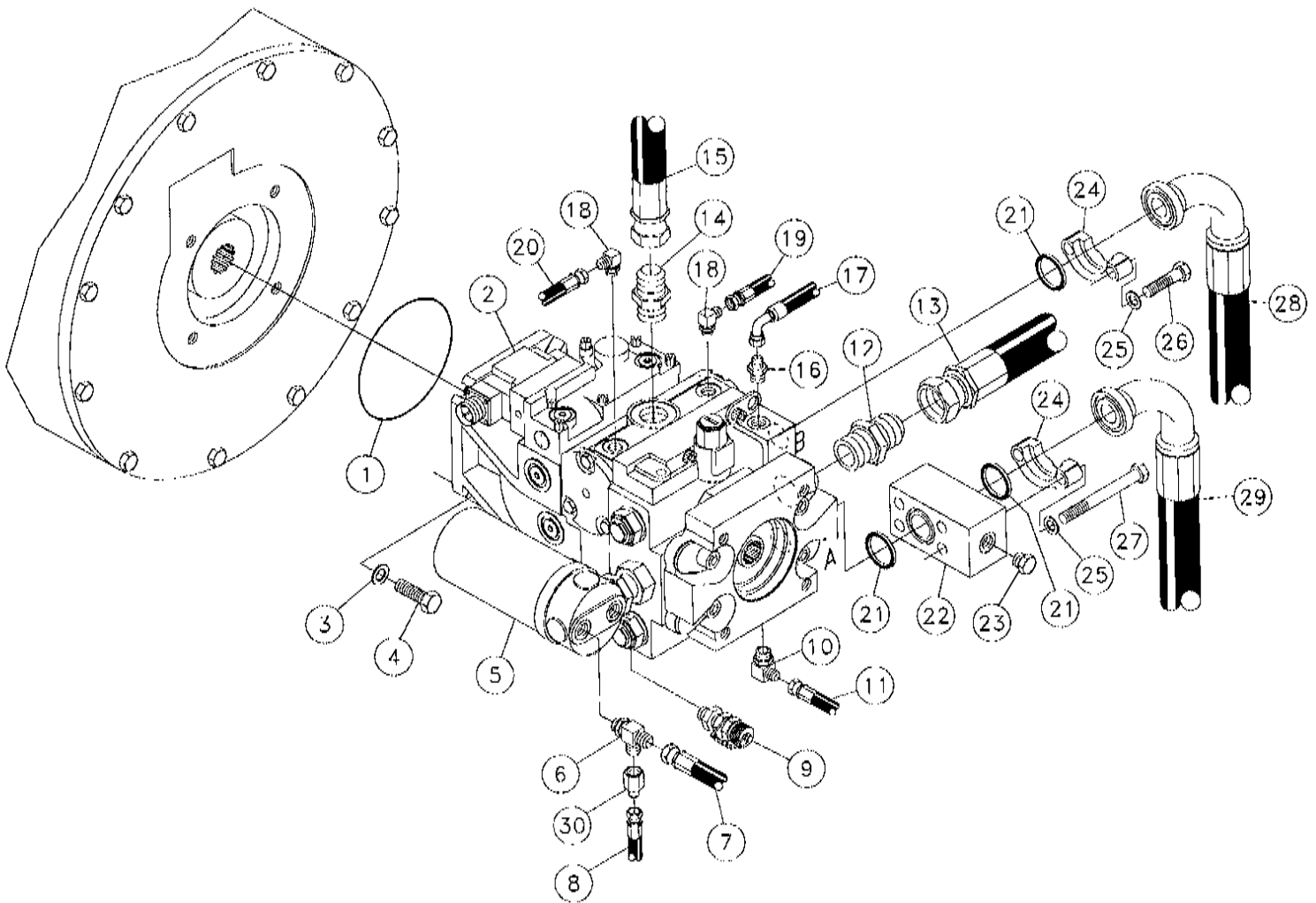


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-7	1	86669-001	2	3-7	16	57940-467	1
3-7	2	70029-001	1	3-7	17	57949-001	1
3-7	3	53842-089	1	3-7	18	251015-001	1
3-7	4	79498-001	2	3-7	19	244464-001	2
3-7	5	*246431-001	1	3-7	20	251013-001	1
3-7	6	*246427-001	2	3-7	21	53846-019	1
3-7	7	94565-001	1	3-7	22	53835-001	1
3-7	8	81581-001	1	3-7	23	53846-223	1
3-7	9	61500-001	1	3-7	24	61704-001	1
3-7	10	57940-747	1	3-7	25	244475-001	1
3-7	11	85657-001	1	3-7	26	224938-001	1
3-7	12	*67570-001	1	3-7	27	244057-001	1
3-7	13	85661-001	1	3-7	28	59417-001	1
3-7	14	53846-001	1	3-7	29	53845-007	1
3-7	15	102115-001	1	3-7	30	53845-389	1

HYDRAULIC PUMP ASSEMBLY (LEFT TRACK/ROTATION)

Figure 3-8

Revised February 1999 due to change in bolt length. Changed part marked with *.

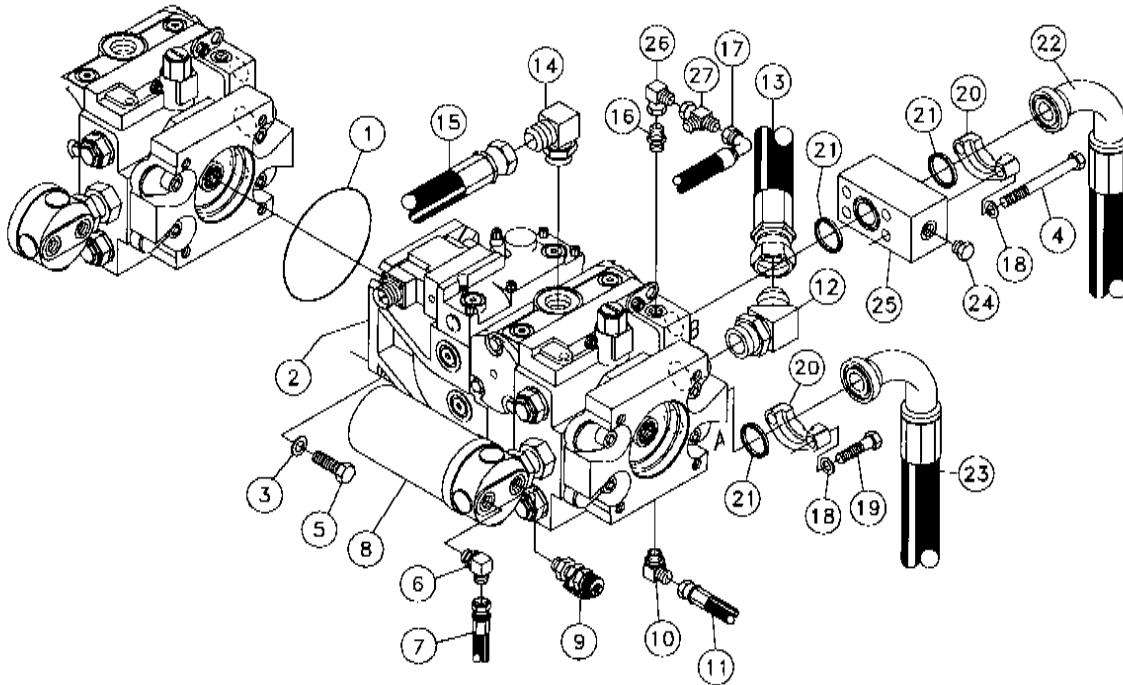


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
3-8	1	85642-163	O-RING	1	3-8	16	57968-001	6M O-RING 4M JIC STRAIGHT	1
3-8	2	251034-001	PUMP-90 SERIES 55 CC EDC	1	3-8	17	251008-001	HOSE-1/4 X24 4FSJIC ST/90 6000	1
3-8	3	485-025	WASHER-1/2 FLAT-HARDENED-ZINC	4	3-8	18	59423-001	FIT-4M JICX4M ADJ.90 DFG.ELBOW	2
3-8	4	235721-001	BOLT-1/2-13X1 1/2 GR8 ZINC PLT	4	3-8	19	251009-001	HOSE-1/4 X 24 4 FSJIC 6000	1
3-8	5	81902-001	FILTER-OIL	1	3-8	20	251010-001	HOSE-1/4 X 15 4 FSJIC 6000	1
3-8	6	68774-001	FITTING-6MX6M JIC (RUN)X6M JIC	1	3-8	21	72895-001	O RING-SQ. #16 FLANGE	3
3-8	7	251016-001	HOSE-3/8 X 15 6 FSJIC 3000	1	3-8	22	234780-001	BLOCK-CODE 6P	1
3-8	8	53843-237	HOSE-1/4X80 4FS JIC 3000 PSI	1	3-8	23	83635-001	PLUG-#6 JIC MALE	1
3-8	9	72056-001	COUPLER-DIAG. TCM-20 9/16NF	1	3-8	24	67745-001	SPLIT FLANGE HALF CODE 62/16	4
3-8	10	57950-001	FITTING-6M X 4 JIC 90 DEG.	1	3-8	25	250540-001	WASHER-7/16 HARDENED FLAT Y/	8
3-8	11	251011-001	HOSE 1/4 X 8 4 FSJIC 6000	1	3-8	26	250507-001	BOLT 7/16-14 X 1 3/4 GR8 HEX Y	4
3-8	12	60907-001	FITTING-16M JICX16M STR ADAPT	1	3-8	27	*246438-001	BOLT-7/16-14X3 3/4 GR 8 HEX ZINC	4
3-8	13	53846-001	HOSE-1X20 16FS JIC (100R4)	1	3-8	28	251053-001	HOSE-1X65 16/62/90 16FSJICG000	1
3-8	14	53828-001	#12M O-RING-#12M JIC ST.	1	3-8	29	251052-001	HOSE-1X57 16/62/90 16FSJICG000	1
3-8	15	53845-083	HOSE-3/4X42 12FS JIC (100R4)	1	3-8	30	59928-001	6F JICX4M JIC ST REDUCER	1

HYDRAULIC PUMP ASSEMBLY (RIGHT TRACK/THRUST-PULLBACK)

Figure 3-9

Revised February 2000 due to update in illustration & parts list. Added parts marked with *.

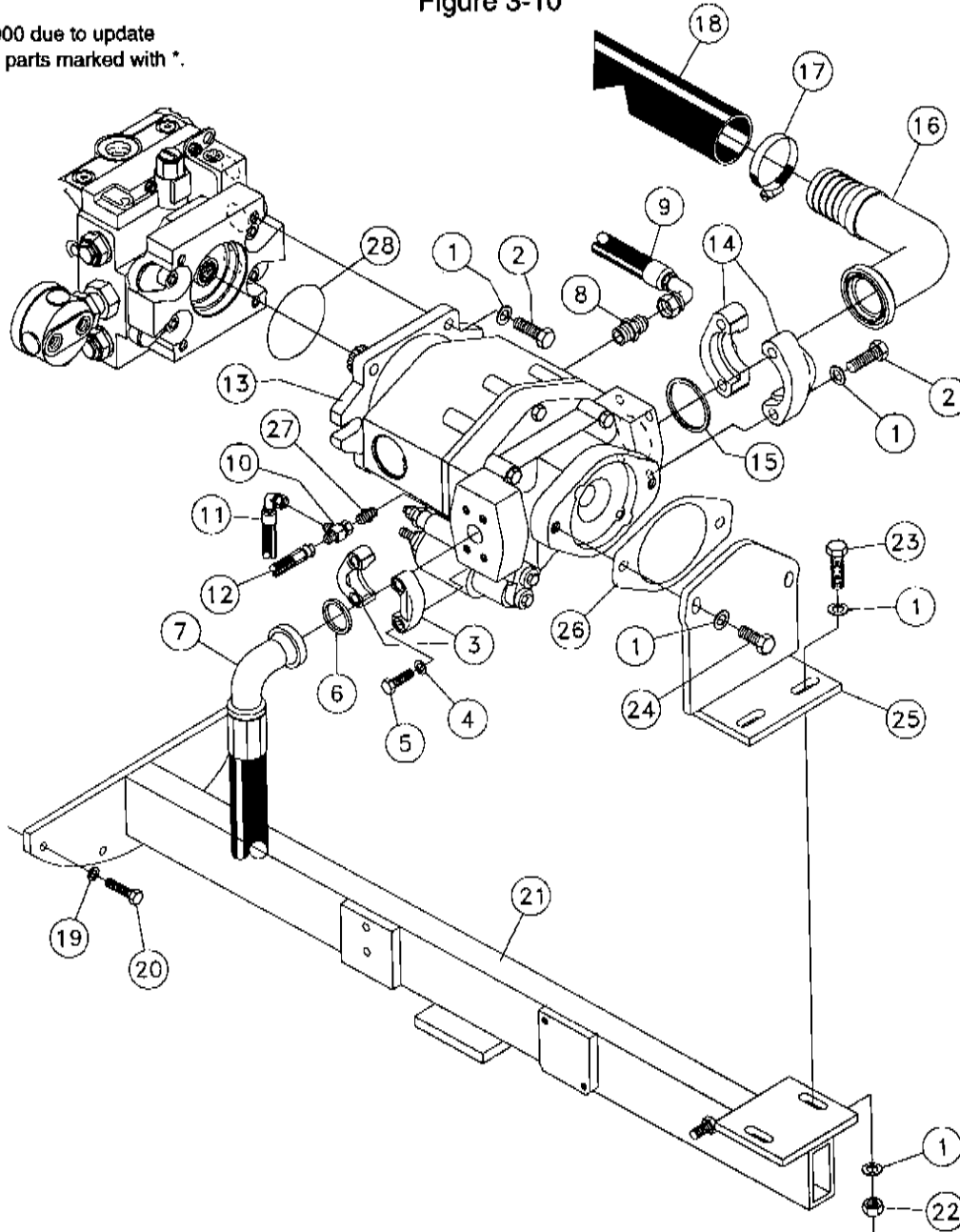


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-9	1	85642-163 O-RING	1	3-9	15	53845-389 HOSE-3/4X14 12FS JIC 300 PSI	1
3-9	2	251035-001 PUMP-90 SERIES 55CC EDC	1	3-9	16	65565-001 FITTING-6M X 6M JIC ST.	1
3-9	3	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	4	3-9	17	57940-501 HOSE-3/8X28 6FS JIC ST/6FSJIC90	1
3-9	4	246438-001 BOLT-7/16-14X3 3/4" GR 8 HEX ZINC	4	3-9	18	250540-001 WASHER-7/16 HARDENED FLAT Y/	8
3-9	5	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	4	3-9	19	250507-001 BOLT 7/16-14 X 1 3/4"GR8 HEX Y	4
3-9	6	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	1	3-9	20	67745-001 SPLIT FLANGE HALF CODE 62/16	4
3-9	7	251016-001 HOSE-3/8 X 15 6 FJSJIC 3000	1	3-9	21	72895-001 O RING-SQ. #16 FLANGE	3
3-9	8	81902-001 FILTER-OIL	1	3-9	22	53845-791 HOSE 3/4X42 12JIC16/62/90 5000	1
3-9	9	72056-001 COUPLER-DIAG. TCM-20 9/16NF	1	3-9	23	250618-001 HOSE-3/4X100 12FSJICST16/62/90	1
3-9	10	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	1	3-9	24	83635-001 PLUG-#6 JIC MALE	1
3-9	11	57940-375 HOSE-3/8X16 6FS JIC SAE-100R2	1	3-9	25	234780-001 BLOCK-CODE 62	1
3-9	12	53835-001 #16M O-RING-#16M JIC 45 DEG.	1	3-9	26	*60851-001 FITTING-6M JIC X 6FS JIC 90 EL (SN176-)	1
3-9	13	53846-223 HOSE-1X17 16FS JIC 250 PSI	1	3-9	27	*59427-001 TEE-6M JIC BCH 6FS JIC 6M JIC (SN176-)	1
3-9	14	59410-001 12M JICX12M ADJ. 90 DEG.ELBOW	1				

HYDRAULIC PUMP ASSEMBLY - WATER/IMPLEMENT

Figure 3-10

Revised August 2000 due to update in parts list. Added parts marked with *.

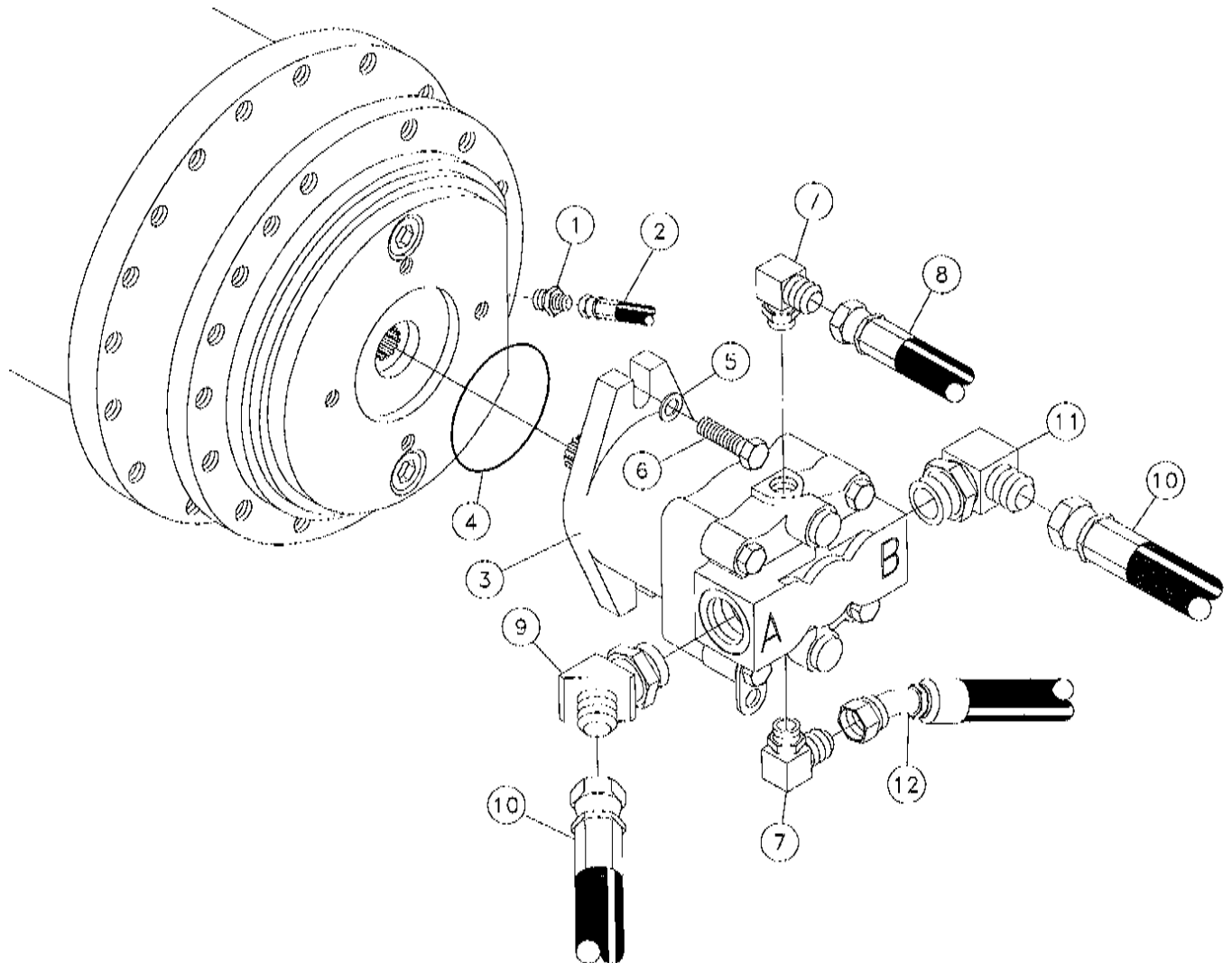


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-10	1	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	8	3-10	14	73114-001 FITTING-CODE 61,#32 FLANGE	2
3-10	2	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	8	3-10	15	72898-001 O RING-SQ. #32 FLANGE	1
3-10	3	249155-001 FLANGE-SPLIT (HALF) CODE 61/16	2	3-10	16	244477-001 FITTING-2" CODE61X2" HOSE BD90	1
3-10	4	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	4	3-10	17	224938-001 CLAMP-2" T-BOLT	1
3-10	5	235736-001 BOLT-3/8-16X1 1/4 ZINC PLTD	4	3-10	18	244057-001 HOSE-2" ID X 9.5"	1
3-10	6	72895-001 O RING-SQ. #16 FLANGE	1	3-10	19	240061-001 WASHER-10MM HARDENED FLAT ZNC	4
3-10	7	251014-001 HOSE-1 X 45 16 FSJIC ST/16/61/	1	3-10	20	250574-001 BOLT-10M X 50M 10.9 HEX Y/ZINC	4
3-10	8	53824-001 FITTING-#8M O-RING-#8M JIC ST.	1	3-10	21	224430-001 SUPPORT-PUMP	1
3-10	9	251015-001 HOSE-1/2 X 45 8 FSJIC ST/90	1	3-10	22	235731-001 NUT-1/2-13 GR8 ZINC PLTD	2
3-10	10	60248-001 TEE-4M JIC X 4M JIC X 4FS JIC	1	3-10	23	240334-001 BOLT-1/2-13X1 3/4 GR8 ZINC PLT	2
3-10	11	53843-659 HOSE-1/4X35 4FS JIC 3000 PSI	1	3-10	24	235737-001 BOLT-1/2-13X1 1/4 GR8 ZINC PLT	2
3-10	12	53843-145 HOSE-1/4X30 4FS JIC (100R2)	1	3-10	25	249805-001 SUPPORT-PUMP	1
3-10	13	240860-001 PUMP-PFC 4.21 CID LS	1	3-10	26	103032-001 GASKET	1
	*240860-007	COMPENSATOR-PRESSURE FLOW		3-10	27	60908-001 FITTING-4M X 4M JIC ST ADAPT	1
	*240860-005	SEAL KIT-PUMP/COMPENSATOR		3-10	28	85642-163 O-RING	1

TRACK DRIVE MOTOR ASSEMBLY (LEFT)

Figure 3-11

Revised February 1999 due to bolt length change. Changed part marked with *.

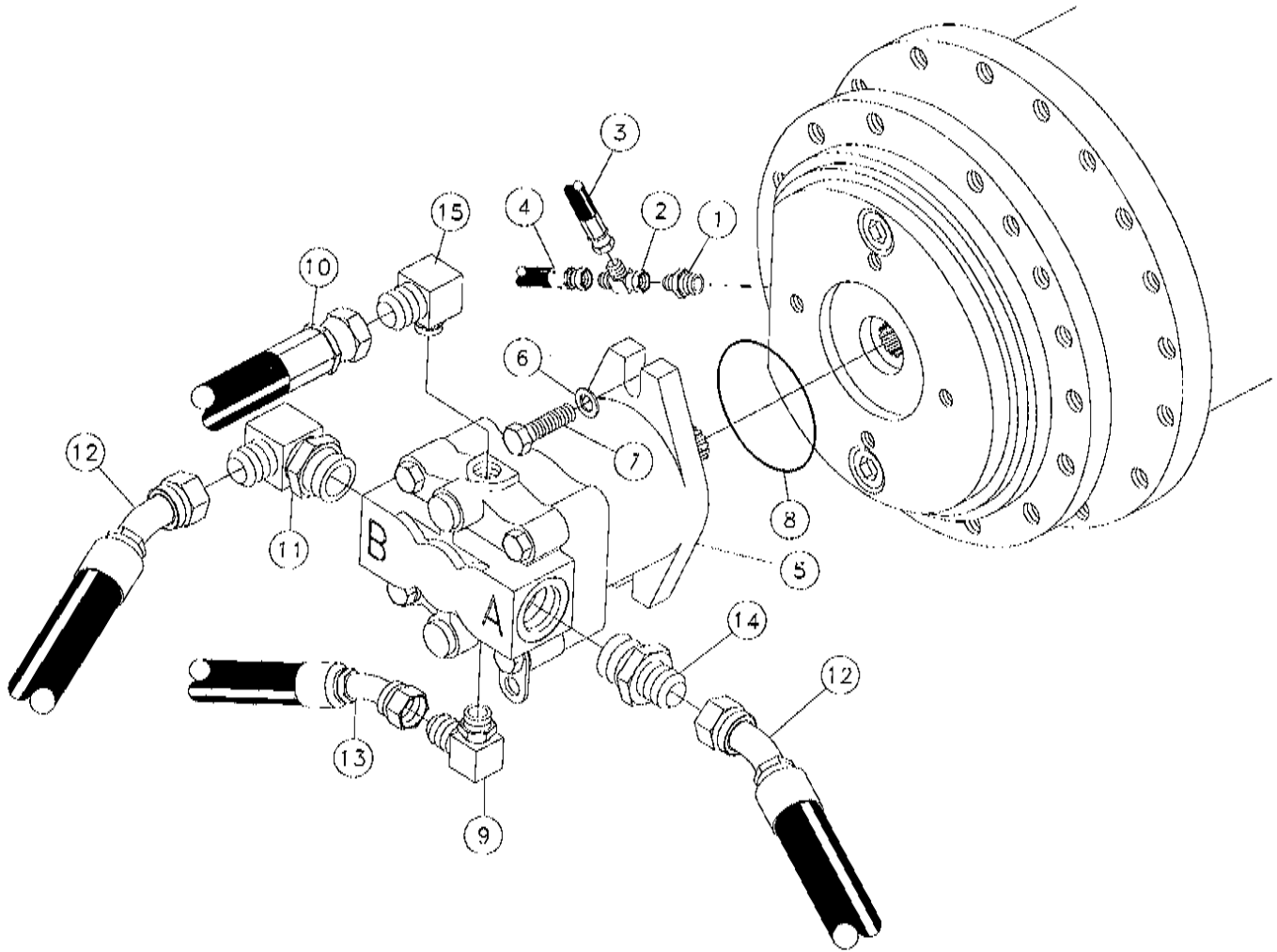


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-11	1	103058-001 FITTING-M12X1.5X4M JIC STH.	1
3-11	2	53843-709 HOSE-1/4X48 4FS JIC 3000 PSI	1
3-11	3	200873-001 MOTOR-MDT46	1
3-11	4	903382-001 O-RING	1
3-11	5	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	2
3-11	6	*235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	2
3-11	7	53823-001 #8M O-RING-#10M JIC 90 DEG.	2
3-11	8	53842-047 HOSE-5/8X50 10FS JIC (100H2)	1
3-11	9	81212-001 FITTING-16MX12M JIC 45 ELBOW	1
3-11	10	53845-615 HOSE-3/4X37 12FSJICST/45D5000#	2
3-11	11	78057-001 FITTING-16MX12M JIC 90 DEG	1
3-11	12	232127-025 HOSE-5/8X48 10FSJIC45/10FSJIC45	1

TRACK DRIVE MOTOR ASSEMBLY (RIGHT)

Figure 3-12

Revised February 1999 due to bolt length change. Changed part marked with *.

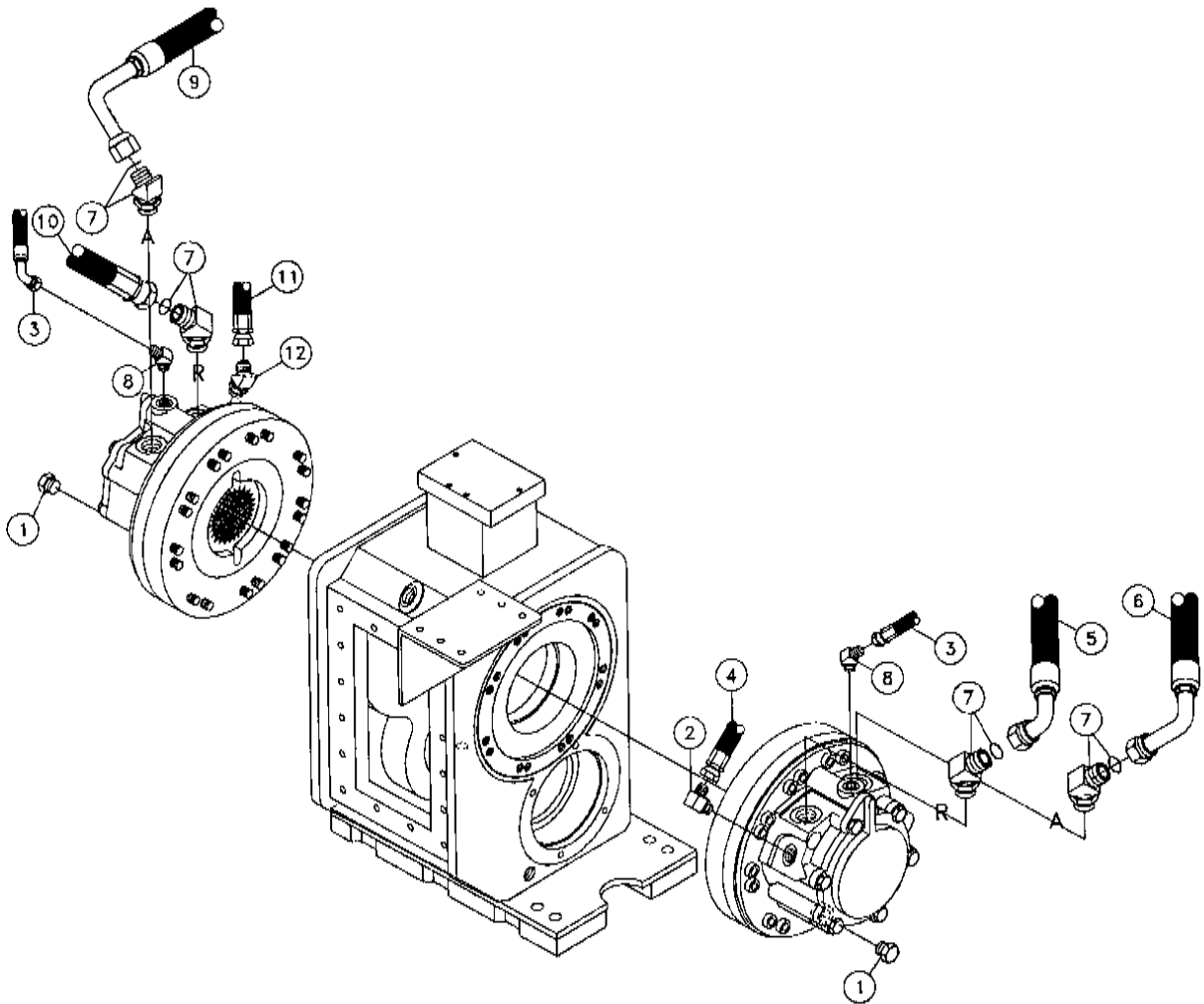


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-12	1	103058-001 FITTING-M12X1.5X4M JIC STR.	1
3-12	2	60248-001 TEE-4M JICX4M JICX4FS JIC	1
3-12	3	53843-253 HOSE-1/4X32 4FS JIC 2750 PSI	1
3-12	4	53843-709 HOSE-1/4X48 4FS JIC 3000 PSI	1
3-12	5	200873-001 MOTOR-MDT46	1
3-12	6	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	2
3-12	7	*235721-001 BOLT-1/2-13X1 1/2 GR8 HEX ZINC	2
3-12	8	903382-001 O-RING AS-155	1
3-12	9	53823-001 #8M O-RING-#10M JIC 90 DEG.	1
3-12	10	53845-007 HOSE-3/4X84 12FS JIC (100R4)	1
3-12	11	78057-001 FITTING-16MX12M JIC 90 DEG	1
3-12	12	53845-615 HOSE-3/4X37 12FS JICST/45D5000#	2
3-12	13	232127-025 HOSE-5/8X48 10FS JIC45/10F-SJC45	1
3-12	14	70008-001 FITTING-16M X 12M JIC STR.	1
3-12	15	59411-001 12M JICX8M ADJ. 90 DEG. ELBOW	1

ROTATION DRIVE MOTOR HYDRAULICS ASSEMBLY

Figure 3-13

Revised August 2000 due to update in illustration.

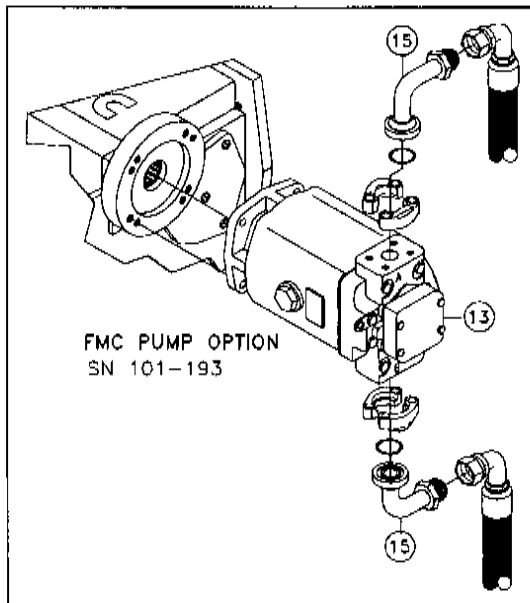
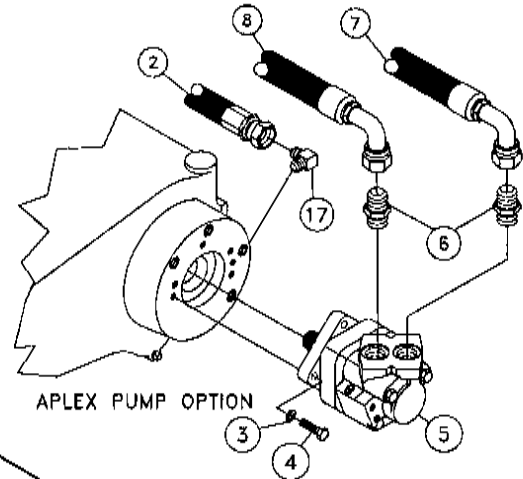


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-13	1	56218-001 PLUG-#8M	2
3-13	2	53837-001 FITTING-8M O-RING X 8M JIC 90 DEG	1
3-13	3	279794-001 HOSE-3/8X21 10FS JIC ST/90 M3K	2
3-13	4	279793-001 HOSE-1/2X19 8FS JIC ST/ST M3CK	1
3-13	5	279789-001 HOSE-3/4X18 12FFORX 90S/90L G6K	1
3-13	6	279790-001 HOSE-3/4X18 12FFORX 90L/90L G6K	1
3-13	7	279782-001 FITTING-FLTF-45D-12MORSX12M	4
3-13	8	65563-001 FITTING-6M O-RING X 6M JIC 45 DEG	2
3-13	9	279791-001 HOSE-3/4X21 12FFORX 90L/90/ G6K	1
3-13	10	279788-001 HOSE-3/4X16.25 12FFORX 90S/ST G6K	1
3-13	11	279792-001 HOSE-1/2X17 8FS JIC ST/90	1
3-13	12	53834-001 #8M O-RING #8M JIC 45 DEG	1

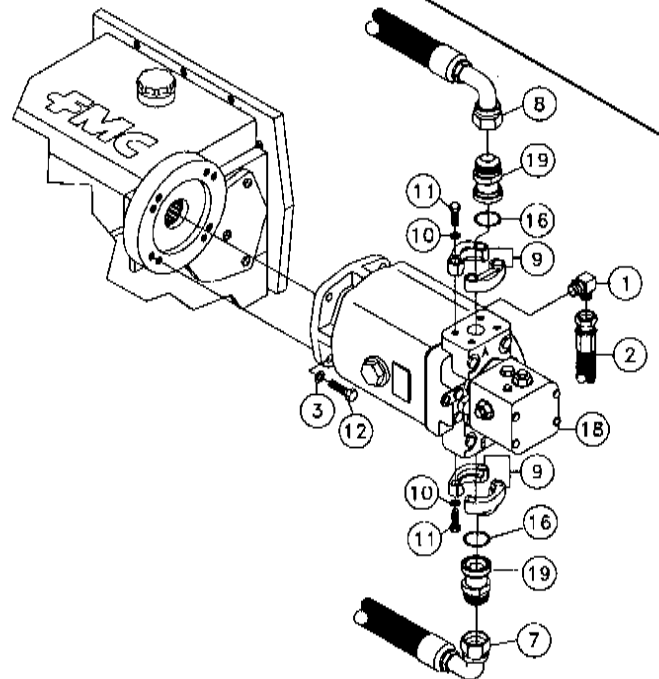
WATER PUMP DRIVE MOTOR ASSEMBLY

Figure 3-14

Revised August 2000 due to update in illustration & parts list. Added parts marked with *.



FMC PUMP OPTION

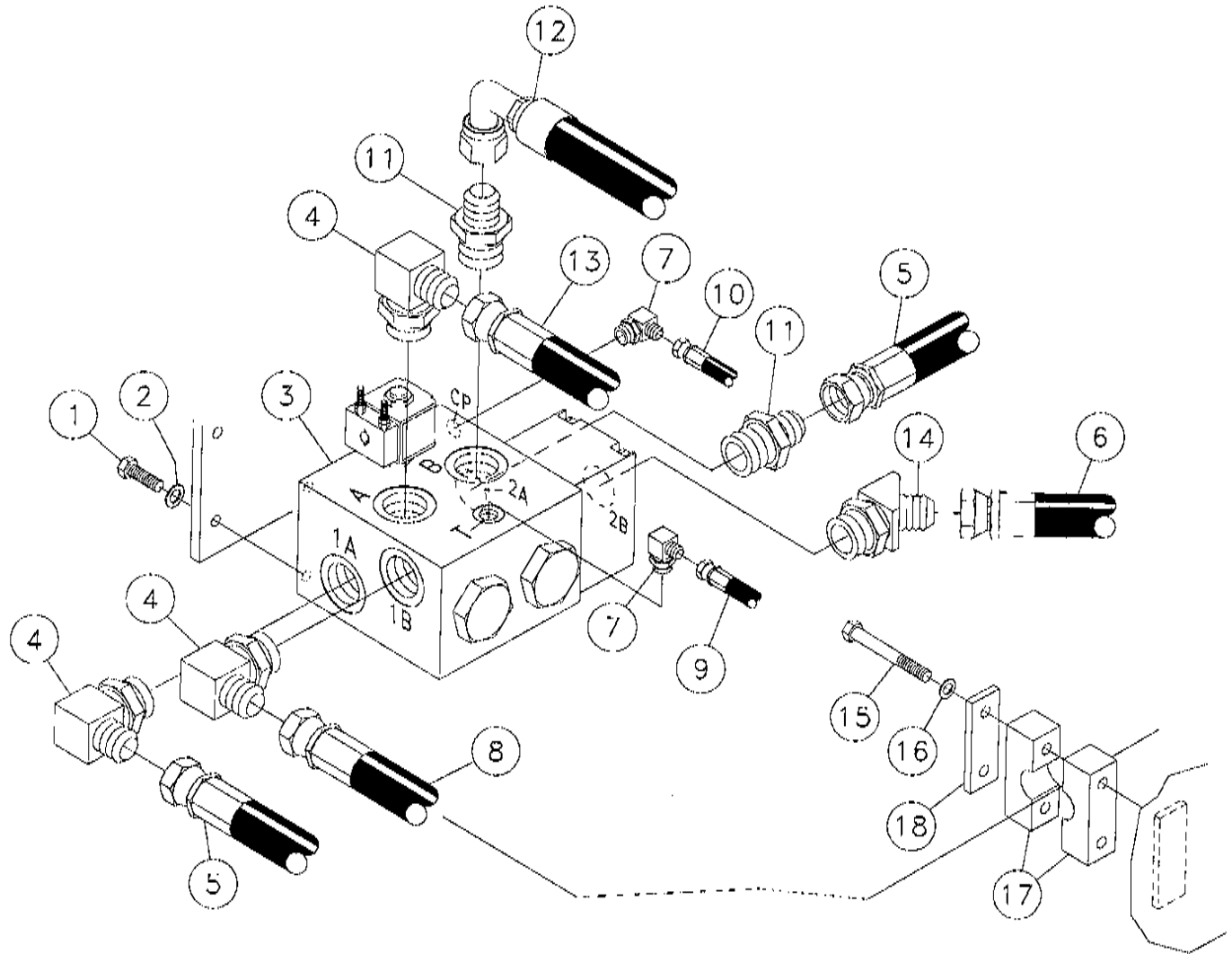


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
3-14	1	57949-001	12M X 8M JIC 90 DEG.	1	3-14	9	249155-001	FLANGE-SPLIT (HALF) CODE 61/16	4
3-14	2	53844-131	HOSE-1/2X60 8FS JIC (100R1) (SN101-193)	1	3-14	10	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	8
		*53844-127	HOSE-1/2X80 8FS JIC (100R1) (SN194-)	1	3-14	11	235736-001	BOLT-3/8-16X1 1/4 ZINC PLTD	8
3-14	3	485-025	WASHER-1/2 FLAT-HARDENED-ZINC	8	3-14	12	235721-001	BOLT-1/2-13X1 1/2 GR8 ZINC PLT	4
3-14	4	240334-001	BOLT-1/2-13X1 3/4 GR8 ZINC PLT	4	3-14	13	276518-001	MOTOR - 6.4 CI FMC WATER PUMP (SN101-193)	1
3-14	5	244461-001	MOTOR-6000 SERIES 19 CID	1	3-14	14	72895-001	O RING-SQ. #16 FLANGE	2
3-14	6	60907-001	FITTING-16M JIC X 16M STR ADAPT	2	3-14	15	249051-001	FITTING-SPLIT FLANGE 16 90 DEG (SN101-193)	2
3-14	7	246427-001	HOSE-1X58 16FS JIC ST/90 100R4 (SN101-193)	1	3-14	16	72895-001	O-RING SQ #16 FLANGE	2
		*287084-001	HOSE-1X87 16FS JIC ST/90 2000 PSI (SN194-)	1	3-14	17	53832-001	1/2" PIPE - #8M JIC 90 DEG.	1
3-14	8	251093-001	HOSE-1X88 16 FSIJIC ST/90 3000 (SN101-193)	1	3-14	18	*283615-001	MOTOR-HYD. 6.4 AXIAL PISTON THD HPRV (SN194-)	1
		*287083-001	HOSE-1X117 16FS JIC ST/90 3000 PSI (SN194-)	1	3-14	19	*287089-001	ADAPTER-CODE 61 SPLIT FLANGE 16 ST (SN194-)	2

SELECTOR VALVE ASSEMBLY (LEFT)

Figure 3-15

Revised February 1999 due to update of control valve & addition of breakdown to manual. Changed part marked with *.

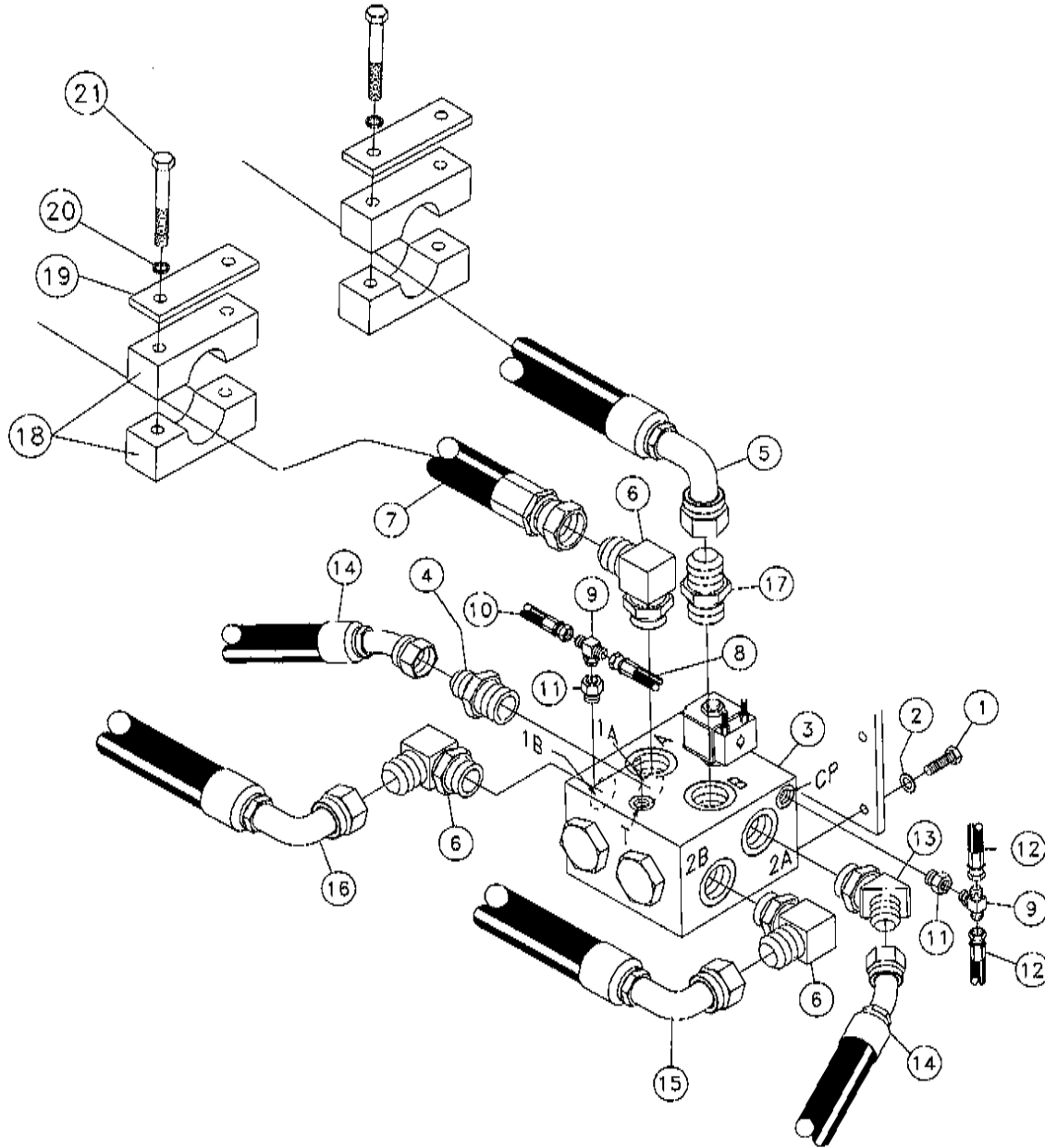


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-15	1	250539-001 BOLT-7/16-14 X 1 GR8 HEX Y/ZI	4	3-15	10	53843-253 HOSE-1/4X32 4FS JIC 2750 PSI	1
3-15	2	250540-001 WASHER-7/16 HARDENED FLAT Y/	4	3-15	11	70008-001 FITTING-16M X 12M JIC STR.	2
3-15	3	*251061-001 VALVE-SOLENOID SELECT W/CHECK (BREAKDOWN FIG. 3-33)	1	3-15	12	251051-001 HOSE-3/4X90 12FSJIC ST/90 5000	1
3-15	4	78057-001 FITTING-16MX12M JIC 90 DEG	3	3-15	13	250618-001 HOSE-3/4X100 12FSJICST16/62/90	1
3-15	5	53845-615 HOSE-3/4X37 12FSJICST/45D5000#	2	3-15	14	81212-001 FITTING-16MX12M JIC 45 ELBOW	1
3-15	6	53845-773 HOSE-3/4X59 12FSJICST/90 5000#	1	3-15	15	235743-001 BOLT-3/8-16X3 GR8 HEX ZNC PLTD	2
3-15	7	600118-001 FITTING-6MORINGX4MJIC90PARKER	2	3-15	16	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	2
3-15	8	53845-779 HOSE-3/4X161 12FSJICST/90 5000	1	3-15	17	217034-003 CLAMP HALF-PLASTIC 1 1/4" ID	2
3-15	9	53843-239 HOSE-1/4X26 4FS JIC 3000 PSI	1	3-15	18	71220-007 PLATE-HOSE CLAMP TOP	1

SELECTOR VALVE ASSEMBLY (RIGHT)

Figure 3-16

Revised July 1999 due to addition of hose clamps. Added parts marked with *.

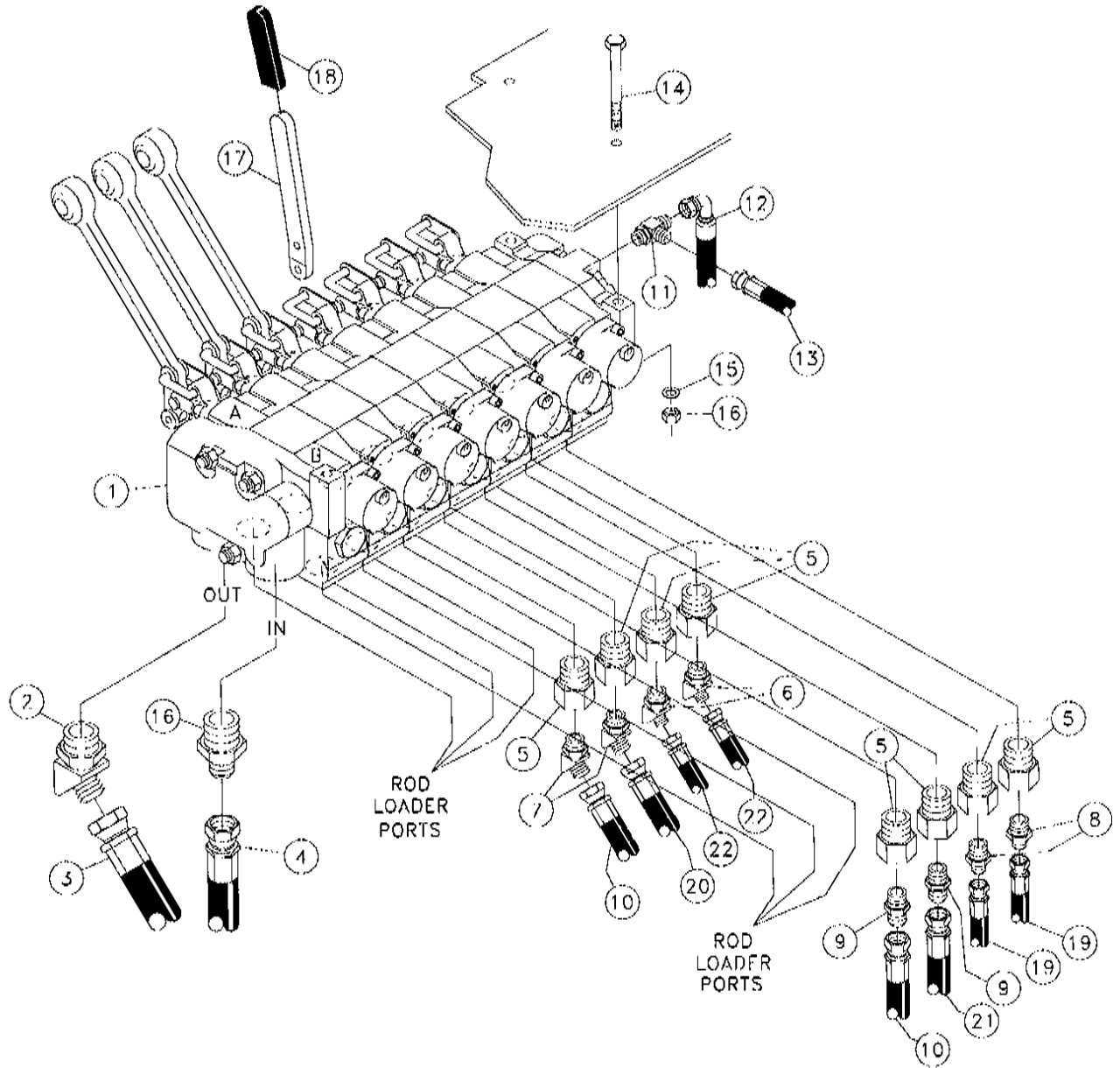


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-16	1	250539-001 BOLT-7/16-14 X 1 GR8 HEX Y/ZI	4	3-16	11	67291-001 6MX4F SOLID REDUCER	2
3-16	2	250540-001 WASHER-7/16 HARDENED FLAT Y/	4	3-16	12	53843-253 HOSE-1/4X32 4FS JIC 2750 PSI	2
3-16	3	251062-001 VALVE-SOLENOID SELECTOR (BREAKDOWN FIG. 3-34)	1	3-16	13	81212-001 FITTING-16MX12M JIC 45 ELBOW	1
3-16	4	70008-001 FITTING-16M X 12M JIC STR.	1	3-16	14	53845-615 HOSE-3/4X37 12FSJICST/45D5000#	2
3-16	5	251053-001 HOSE-1X65 16/62/90 16FSJICG000	1	3-16	15	244478-001 HOSE-1X129 16FSJICST/90 6000	1
3-16	6	61703-001 16M X 16M JIC 90	3	3-16	16	244473-001 HOSE-1X123 16FSJICST/90 6000	1
3-16	7	251052-001 HOSE-1X57 16/62/90 16FSJICG000	1	3-16	17	60907-001 FITTING-16M JICX16M STR ADAPT	1
3-16	8	53843-239 HOSE-1/4X26 4FS JIC 3000 PSI	1	3-16	18	*71220-005 CLAMP-PLASTIC INSIDE (PAIR)	2
3-16	9	81343-001 4M (BCH)X4M JICX4M JIC TEE	2	3-16	19	*71220-007 PLATE-HOSE CLAMP TOP	2
3-16	10	53843-057 HOSE-1/4X22 4FS JIC (100R1)	1	3-16	20	*235713-001 WASHER-3/8 SAE HARD ZINC PLTD	4
				3-16	21	*235743-001 BOLT-3/8-16X3 GR 8 HEX ZINC PLTD	4

CONTROL VALVE ASSEMBLY - 7 SPOOL

Figure 3-17

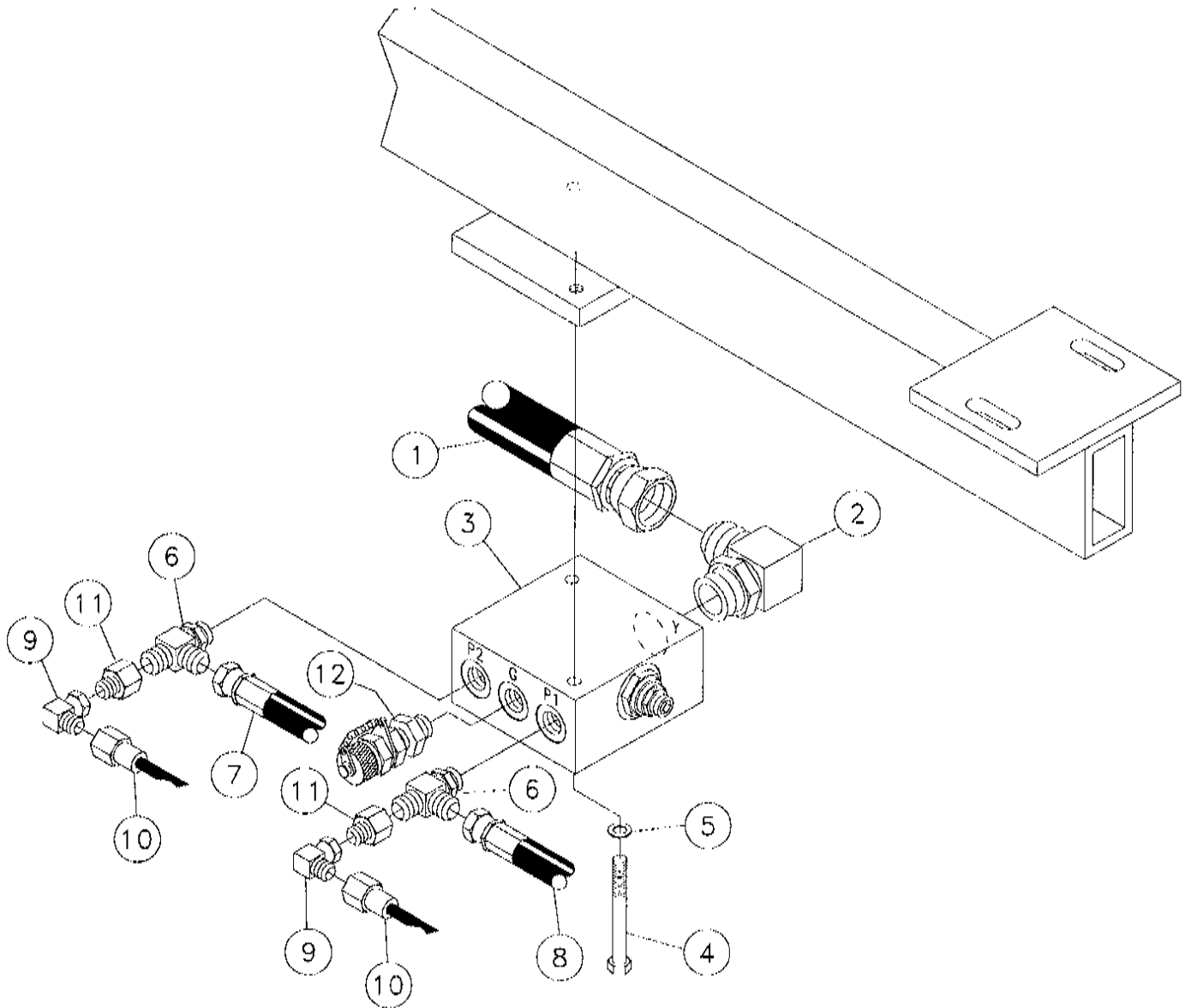
Revised February 1999 due to update of hose length & addition of breakdown note. Changed part marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-17	1	244728-001	1	3-17	12	53843-691	1
3-17	2	88659-001	1	3-17	13	53843-145	1
3-17	3	53842-089	1	3-17	14	238212-001	3
3-17	4	*53844-151	1	3-17	15	235714-001	3
3-17	5	57967-001	8	3-17	16	235741-001	3
3-17	6	82931-001	2	3-17	17	234364-001	4
3-17	7	65563-001	2	3-17	18	201482-001	1
3-17	8	57968-001	2	3-17	19	53843-539	2
3-17	9	65565-001	2	3-17	20	57940-865	1
3-17	10	57940-451	2	3-17	21	57940-663	1
3-17	11	81342-001	1	3-17	22	53843-721	2

HOT OIL SHUTTLE ASSEMBLY

Figure 3-18

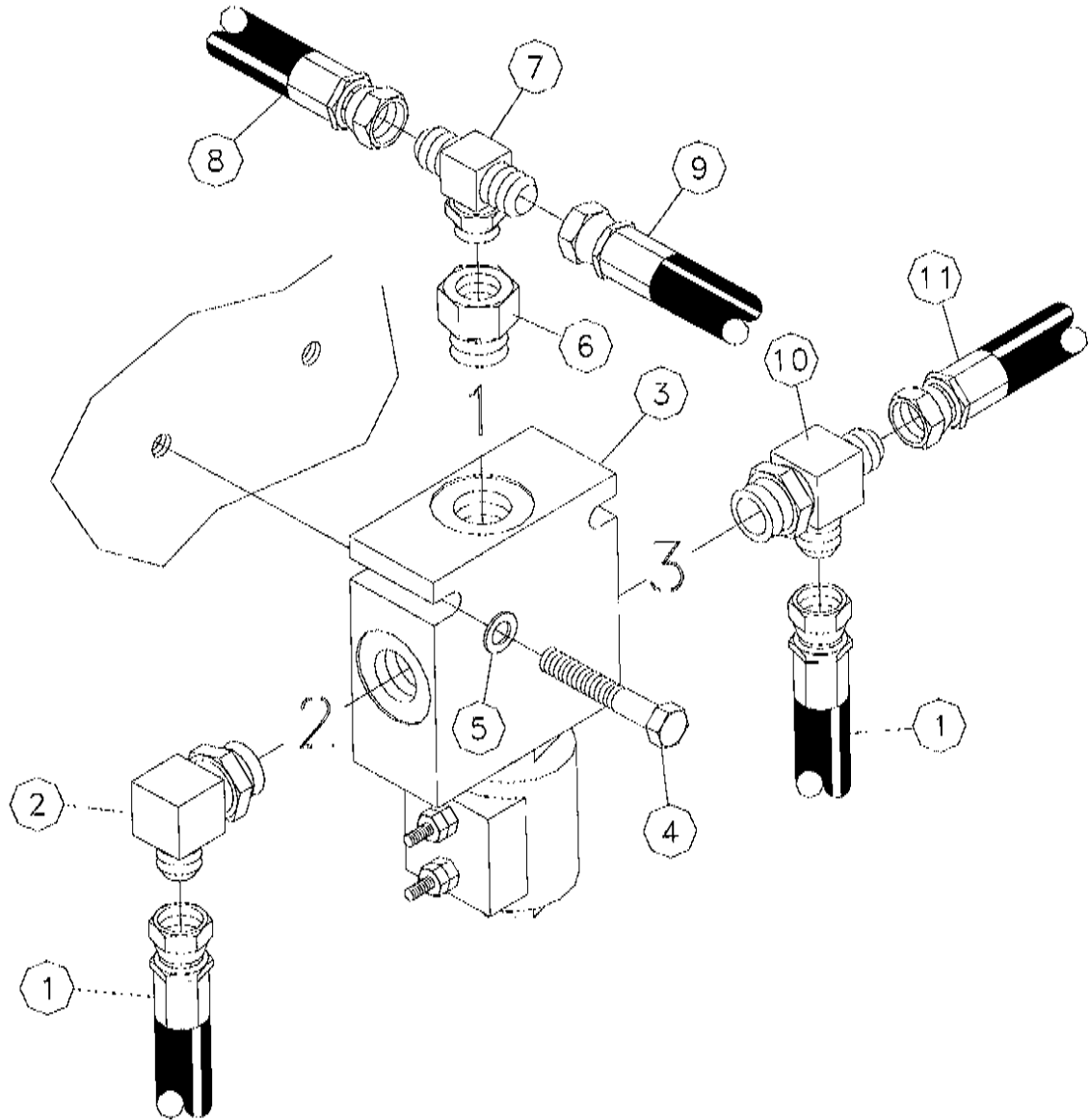


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-18	1	53845-041 HOSE-3/4X34 12FS JIC (100R2)	1
3-18	2	59410-001 12M JICX12M ADJ. 90 DEG. ELBOW	1
3-18	3	902012-001 VALVE-SHUTTLE	1
3-18	4	250502-001 BOLT 5/16-18 X 2 3/4" QH8 HEX Y	3
3-18	5	235714-001 WASHER-5/16 SAE HARD ZINC PLTD	3
3-18	6	68774-001 FITTING-6MX6M JIC (RUN)X6M JIC	2
3-18	7	57940-501 HOSE-3/8X28 6FS JIC ST/6FSJC90	1
3-18	8	57940-375 HOSE-3/8X16 6FS JIC SAE-100R2	1
3-18	9	53658-001 FITTING-4M JICX4 FS JIC 90 DEG	2
3-18	10	244520-001 HOSE-.078X136 4FS JIC ST	2
3-18	11	59928-001 6F JICX4M JIC ST REDUCER	2
3-18	12	72056-001 COUPLER-DIAG. TCM-20 9/16NF	1

SOLENOID VALVE ASSEMBLY (TRACK)

Figure 3-19

Revised February 1999 due to update of control valve & addition of breakdown note. Changed part marked with *.

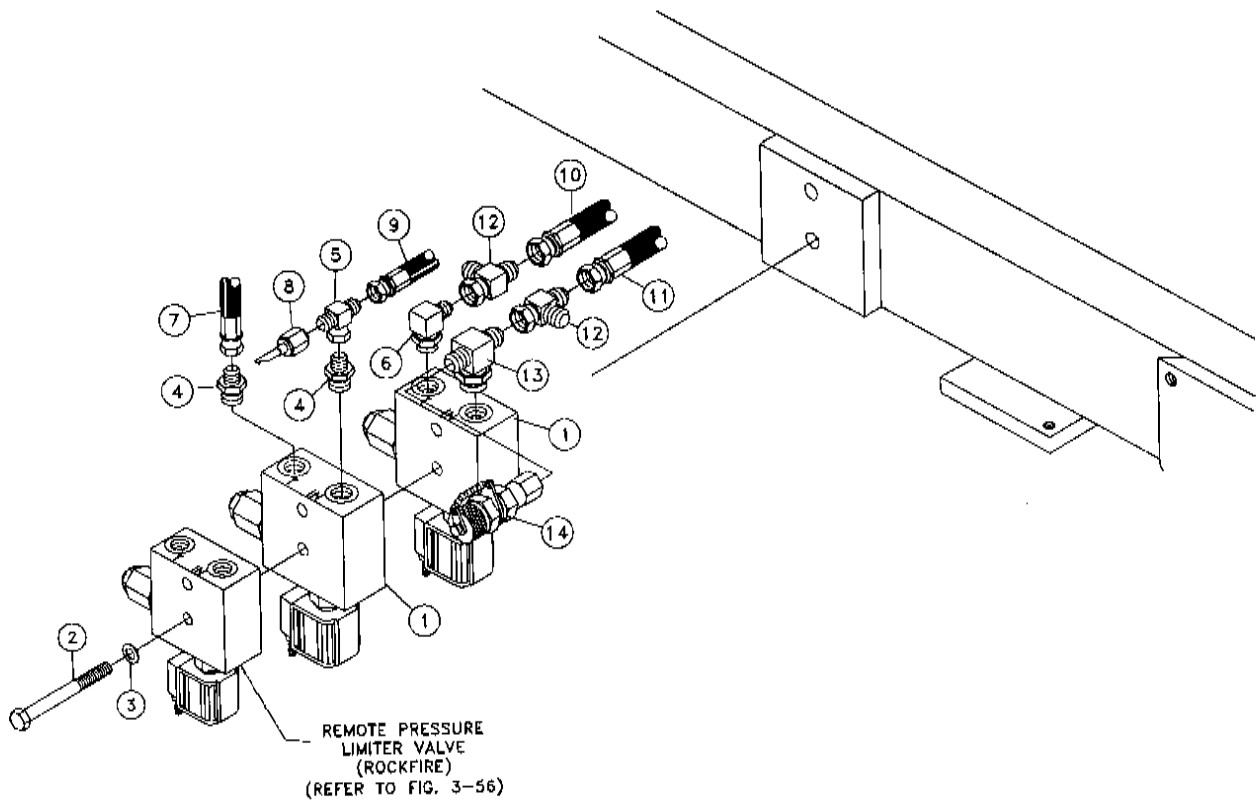


REF. NO.	PART NO.	DESCRIPTION	QTY
3-19	1	53843-253 HOSE-1/4X32 4FS JIC 2750 PSI	2
3-19	2	600118-001 FITTING-6MORINGX4MJIC90PARKER	1
3-19	3	*244491-001 VALVE-2 POS. 3 WAY (BREAKDOWN FIG. 3-42)	1
3-19	4	238210-001 BOLT-1/4-20X1 1/2 GR8 HEX ZYC	2
3-19	5	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	2
3-19	6	67291-001 6MX4F SOLID REDUCER	1
3-19	7	81343-001 4M (BCH)X4M JICX4M JIC TEE	1
3-19	8	53843-325 HOSE-1/4X25 4FS JIC 3000 PSI	1
3-19	9	53843-057 HOSE-1/4X22 4FS JIC (100R1)	1
3-19	10	82930-001 FIT-6MX4M JICX4M JIC (BCH) TEE	1
3-19	11	53843-237 HOSE-1/4X80 4FS JIC 3000 PSI	1

TORQUE LIMITER VALVE ASSEMBLY

Figure 3-20

Revised August 2000 due to update in illustration.

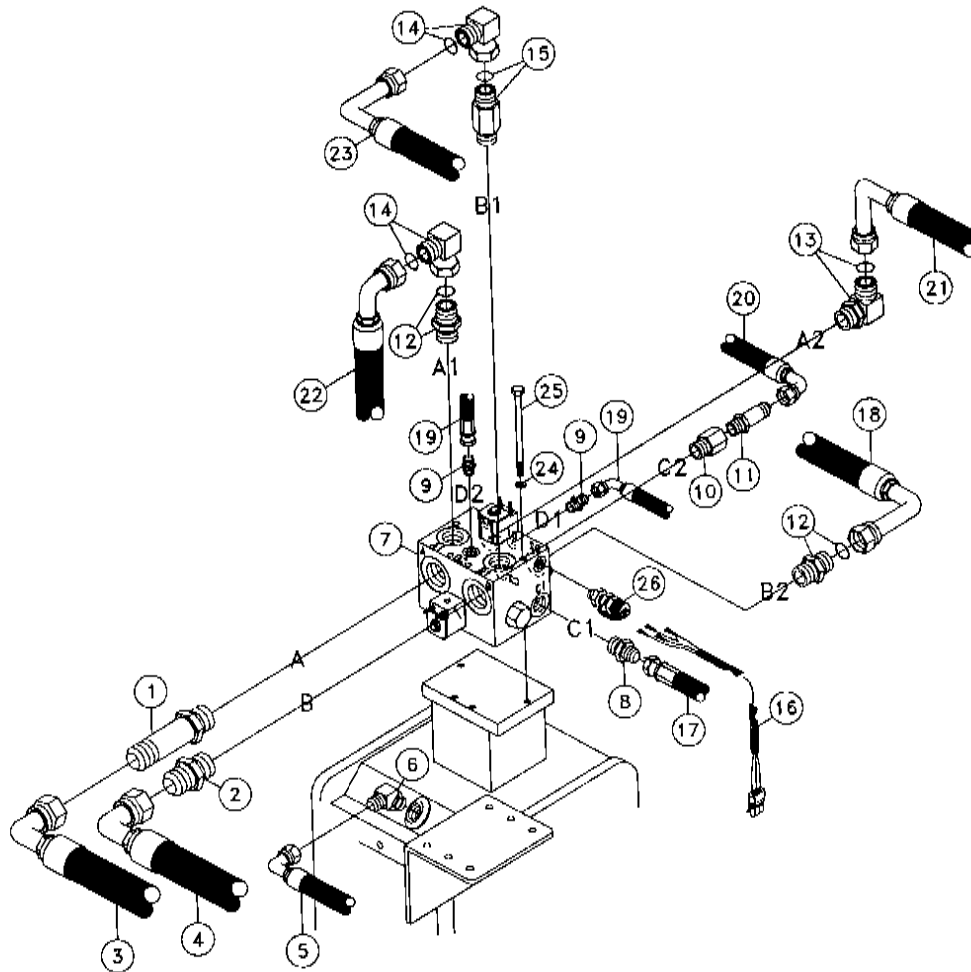


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-20	1	251063-001 VALVE-REMOTE PRESSURE LIMITER (BREAKDOWN FIG. 3-43)	2
3-20	2	16114-034 BOLT-3/8-16X3 1/2 HEX HD. GR8 (SN101-175)	2
	275231-001	BOLT-3/8-16X5 GR 8 HEX ZINC PL (SN176-)	2
3-20	3	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	2
3-20	4	57968-001 6M O-RING 4M JIC STRAIGHT	2
3-20	5	66996-001 TEE-4FS JIC BCHX4M JICX4M JIC	1
3-20	6	600118-001 FITTING-6MORINGX4MJIC90PARKER	1
3-20	7	251010-001 HOSE-1/4 X 15 4 FSJIC 6000	1
3-20	8	244520-001 HOSE-.078X138 4FS JIC ST	1
3-20	9	251011-001 HOSE-1/4 X 8 4 FSJIC 6000	1
3-20	10	251009-001 HOSE-1/4 X 24 4 FSJIC 6000	1
3-20	11	251008-001 HOSE-1/4 X24 4FSJIC ST/90 6000	1
3-20	12	60248-001 TEE-4M JIC X 4M JIC X 4FS JIC (SN176-)	2
3-20	13	66996-001 TEE-4FS X BCH X 4M JIC X 4M JIC	1
3-20	14	83015-001 FITTING-4F JIC DIAGNOSTIC	1

LOOP FLUSH VALVE ASSEMBLY

Figure 3-21

Revised August 2000 due to update
in parts list. Changed part marked with *.

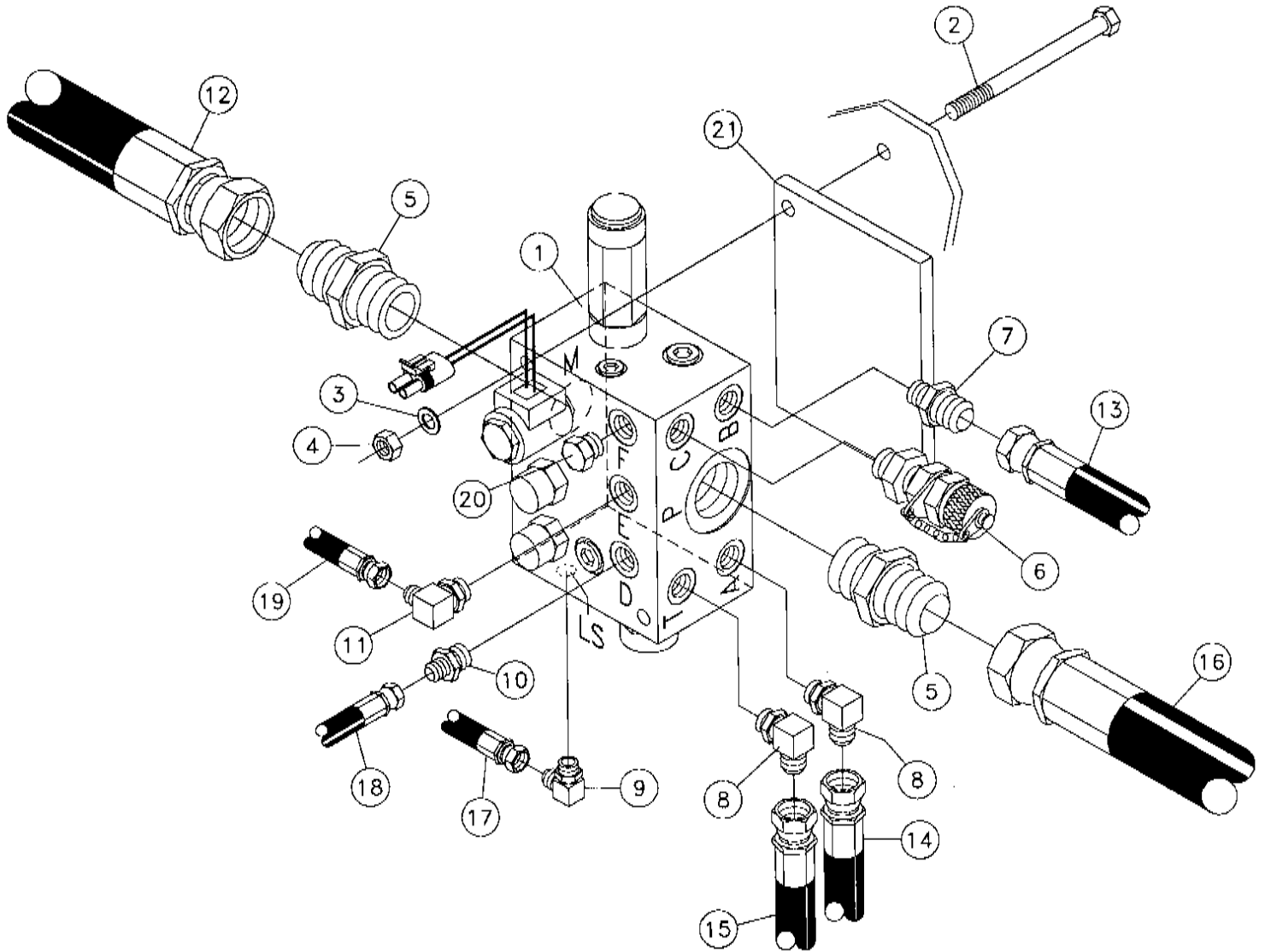


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
3-21	1	94161-001	FITTING-16M JIC X 16M O-RING LONG	1	3-21	13	279787-001	FITTING-FLTF 90D 12MORS X 12M	1
3-21	2	60907-001	FITTING-16M JIC X 16M STR ADAPT	1	3-21	14	72423-001	FITTING-FLTF 90 D 12FORS X 12M	2
3-21	3	244472-001	HOSE-1X230 16FS JIC ST/90 6000	1	3-21	15	279786-001	FITTING-FLTF L 12MORS X 12M	1
3-21	4	53846-465	HOSE-1X234 16FS JIC ST.90 D 6000#	1	3-21	16	251374-001	HARNES-3 SPEED WIRE	1
3-21	5	251092-001	HOSE-5/8X234 10FS JIC ST/90 3000	1	3-21	17	279793-001	HOSE-1/2X19 8FS JIC ST/ST M3K	1
3-21	6	68287-001	FITTING-8M X 10M JIC 45	1	3-21	18	279791-001	HOSE-3/4X21 12FFORX 90L/90'G6K	1
3-21	7	277838-001	VALVE-3 SPEED SHUTTLE (BREAKDOWN FIG. 3-44)	1	3-21	19	279794-001	HOSE-3/8X21 10FS JIC ST/90 M3K	2
3-21	8	53826-001	#10M O-RING #8M JIC ST.	1	3-21	20	279792-001	HOSE-1/2X17 8FS JIC ST/90	1
3-21	9	65565-001	FITTING-6M O-RING X 6M JIC ST.	1	3-21	21	279789-001	HOSE-3/4X18 12FFORX 90S/90L G6K	1
3-21	10	60930-001	10M X 8F ST SOLID REDUCER	1	3-21	22	279788-001	HOSE-3/4X16.25 12FFORX 90S/ST G6K	1
3-21	11	100850-001	FITTING-8M X 8M JIC LONG STR.	1	3-21	23	279790-001	HOSE-3/4X18 12FFORX 90L/90L G6K	1
3-21	12	*114392-001	FITTING-12MOR X 12MOR FF ST (REPLACES 279784-001)	2	3-21	24	253714-001	WASHER-5/16 SAE HARD ZINC PLTD	4
					3-21	25	248069-001	BOLT-5/16-18X5 GR 8 ZINC PLTD	4
					3-21	26	72056-001	COUPLER-DIAG. TCM-20 9/16 NF (SN167-)	1

PROPORTIONAL VALVE ASSEMBLY

Figure 3-22

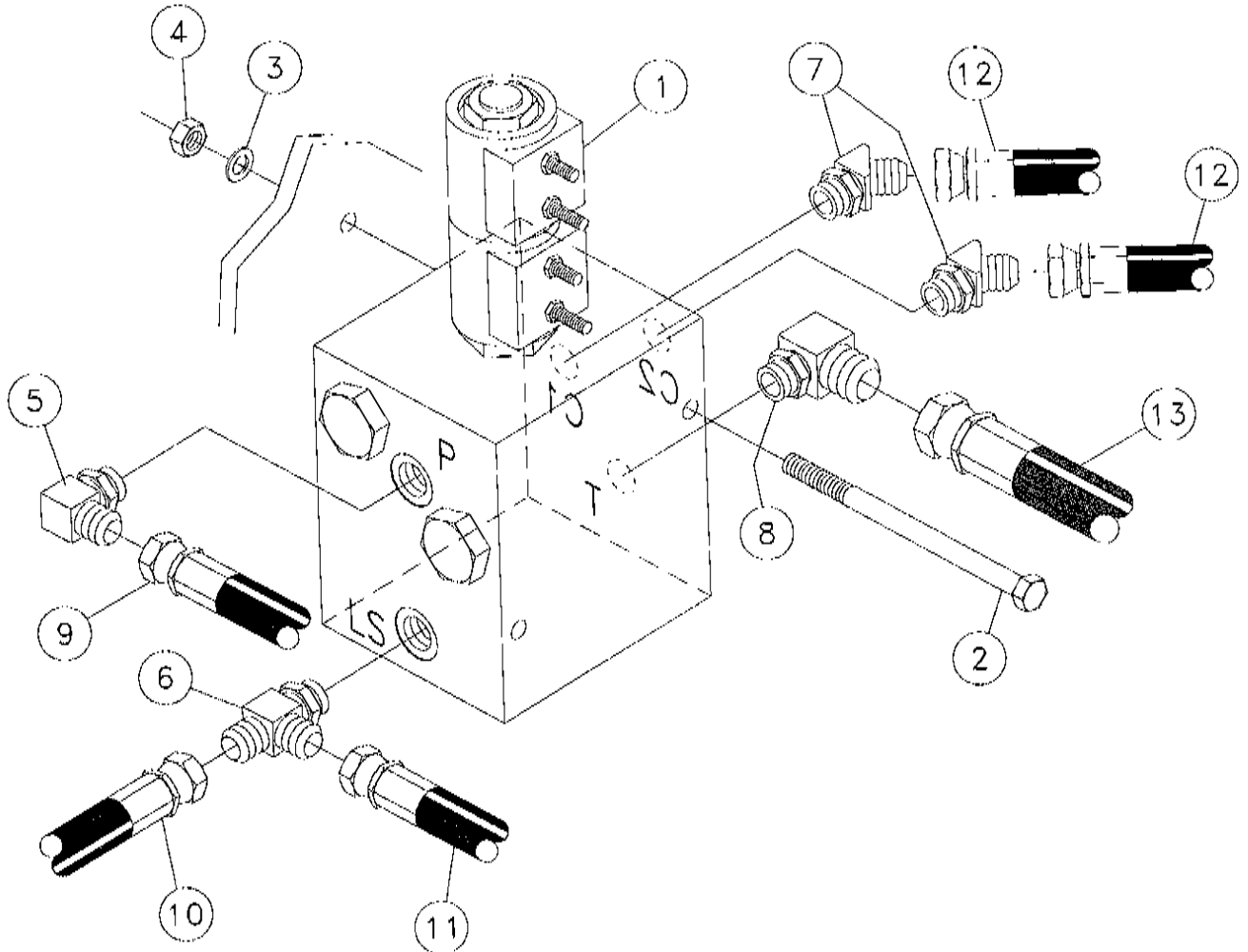
Revised August 2000 due to update in parts list. Added part marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-22	1	246435-001 VALVE-WATER CONTROL (BREAKDOWN FIG. 3-45)	1	3-22	12	251093-001 HOSE-1X88 16 FSJIC ST/90 3000 (SN101-193)	1
3-22	2	238246-001 BOLT-3/8-16 X 4 1/2" GR8 HEX Y/ZI	2		*287083-001	HOSE-1X117 16FS JIC ST/90 3000 PSI (SN194-)	1
3-22	3	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	2	3-22	13	53844-151 HOSE-1/2X40 8FS JIC 3000 PSI	1
3-22	4	235725-001 NUT-3/8-16 GR8 ZINC PLTD	2	3-22	14	57940-289 HOSE-3/8X50 6FS JIC 3000 PSI	1
3-22	5	60907-001 FITTING-16M JICX16M STR ADAPT	2	3-22	15	57940-467 HOSE-3/8X60 6FS JIC 3000 PSI	1
3-22	6	72056-001 COUPLER-DIAG. TCM-20 9/16NF	1	3-22	16	251014-001 HOSE-1 X 45 16 FSJIC ST/16/61/	1
3-22	7	86235-001 6M ORING X 8M JIC STR.	1	3-22	17	53843-031 HOSE-1/4X40 4FS JIC (100R1)	1
3-22	8	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	2	3-22	18	53843-003 HOSE-1/4X36 4FS JIC (100R1)	1
3-22	9	59423-001 FIT-4M JICX4M ADJ.90 DEG.ELBOW	1	3-22	19	53843-689 HOSE-1/4X70 4FS JIC 3000 PSI	1
3-22	10	57968-001 6M O-RING 4M JIC STRAIGHT	1	3-22	20	5553-001 PLUG-#6M	1
3-22	11	57950-001 FITTING-6M X 4 JIC 90 DEG.	1	3-22	21	251065-001 PLATE-VALVE SPACER	1

GEARBOX LOCK VALVE ASSEMBLY

Figure 3-23

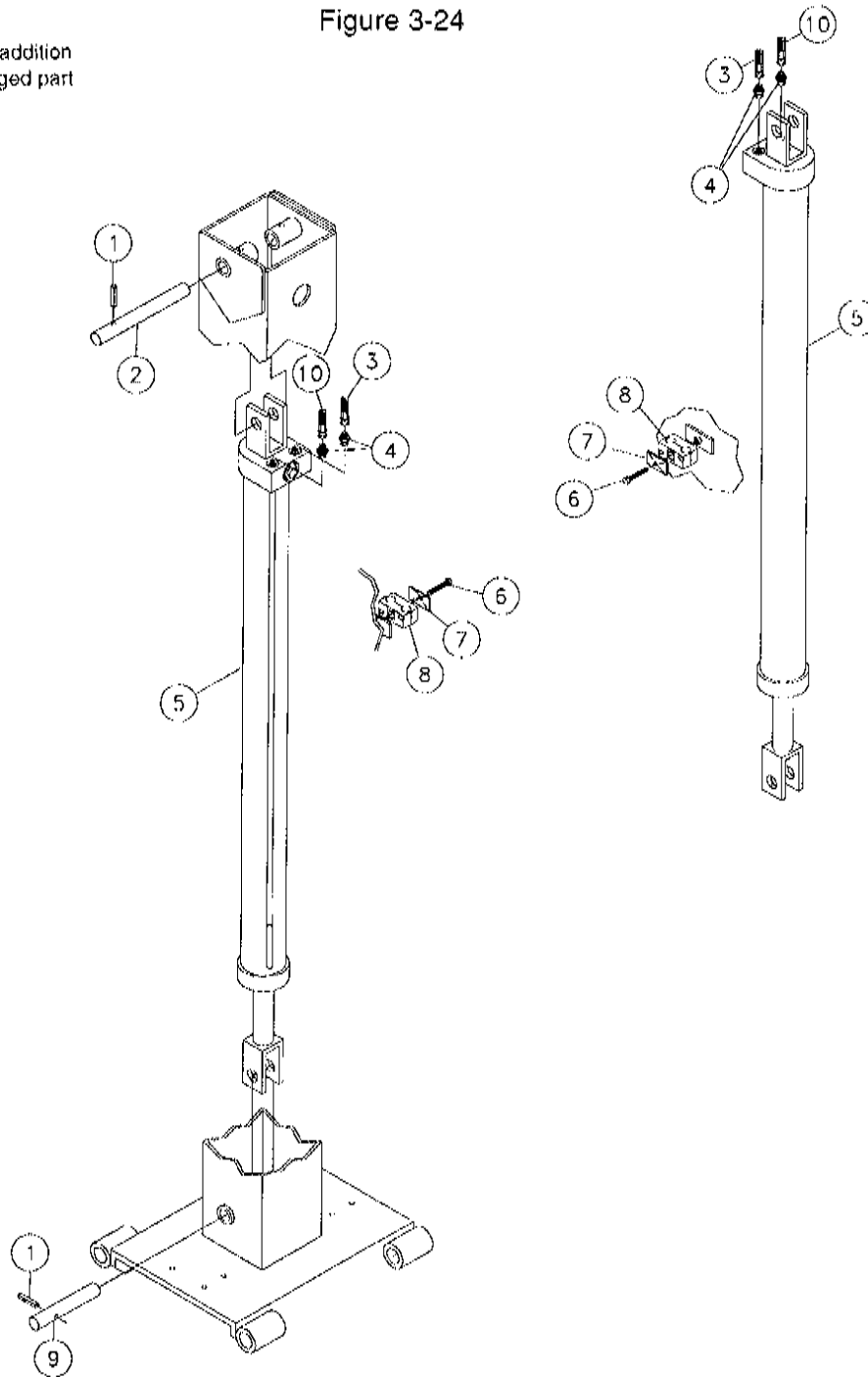


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-23	1	244480-001 VALVE-3 POS. 4 WAY	1
3-23	2	238243-001 BOLT 1/4"-20 X 1" GR8 HEX 1/2	2
3-23	3	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	2
3-23	4	235732-001 NUT-1/4-20 GR8 ZINC PLTD	2
3-23	5	59423-001 FIT-4M JICX4M ADJ.90 DEG. ELBOW	1
3-23	6	81342-001 4MX4M JIC(BCH)X4M JIC TEE	1
3-23	7	58295-001 FITTING-4M OR X 4M JIC 45 DEG.	2
3-23	8	60906-001 4MX6M JIC 90 DEG ELBOW	1
3-23	9	53843-003 HOSE-1/4X36 4FS JIC (100R1)	1
3-23	10	53843-031 HOSE-1/4X40 4FS JIC (100R1)	1
3-23	11	53843-659 HOSE-1/4X35 4FS JIC 3000 PSI	1
3-23	12	53843-257 HOSE-1/4X80 4FS JIC 3000 PSI	2
3-23	13	57940-747 HOSE-3/8X48 6FS JIC 3000 PSI	1

OUTRIGGER CYLINDER ASSEMBLY

Figure 3-24

Revised February 1999 due to addition of breakdown to manual. Changed part marked with *.

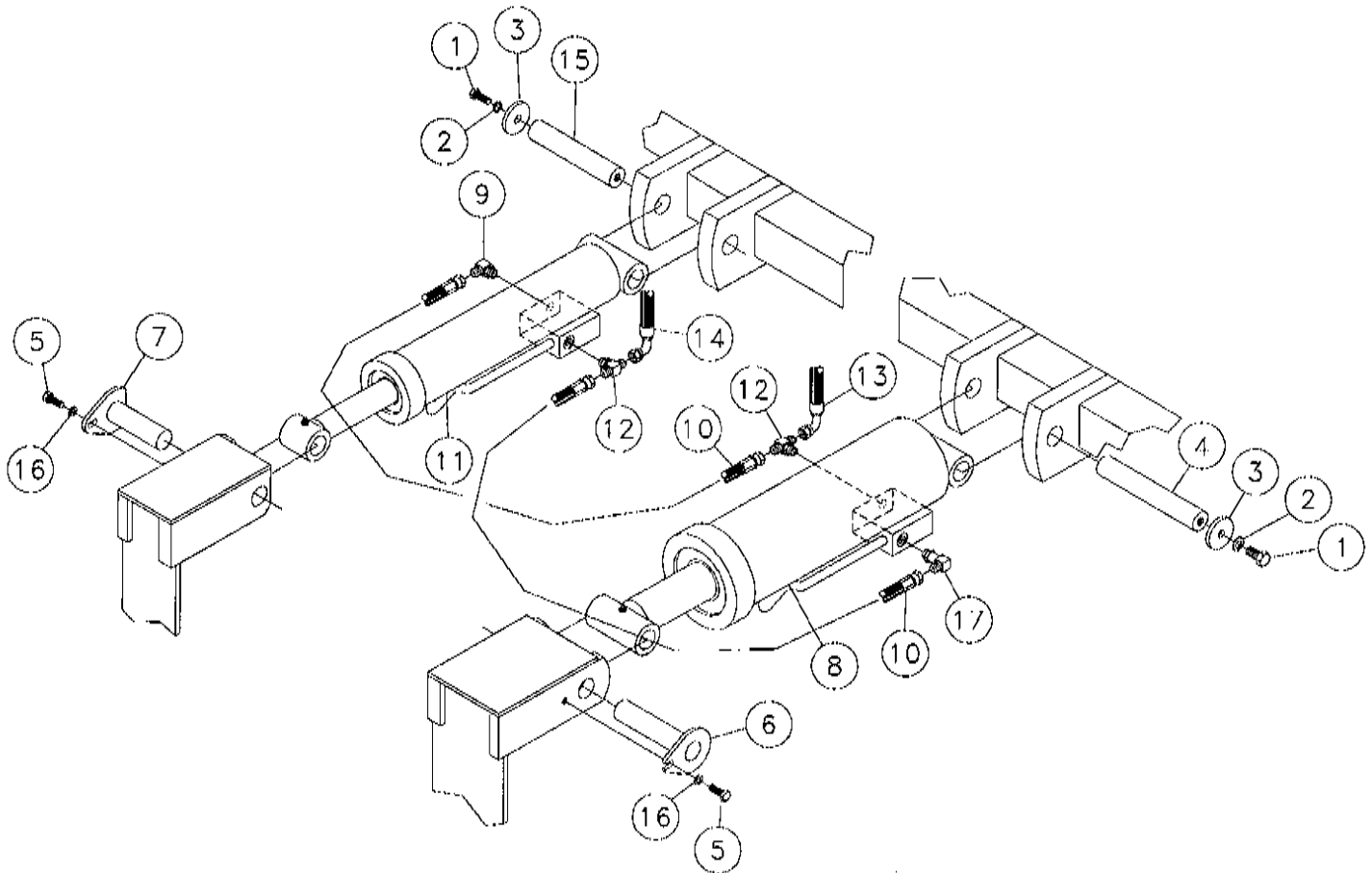


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-24	1	1788-033 PIN-EXP.3/8X2 1/4	4
3-24	2	216681-001 PIN-OUTRIGGER CYLINDER	2
3-24	3	53643-539 HOSE-1/4X204 4FS JIC 2750 PSI	2
3-24	4	57968-001 6M O-RING 4M JIC STRAIGHT	4
3-24	5	*224278-001 CYL 3"X40" W/ CB VALVE (BREAKDOWN FIG. 3-46)	2
3-24	6	351-012 BOLT-5/16"-18X1 1/4"GR5 HEX	4
3-24	7	67846-003 PLATE-TWIN COVER	4
3-24	8	900035-005 CLAMP-3/8"DOUBLE HOSE	4
3-24	9	216682-001 PIN-OUTRIGGER CYLINDER	2
3-24	10	53843-721 HOSE-1/4X206 4FSJICST 3000PSI	2

RACK LIFT CYLINDER ASSEMBLY

Figure 3-25

Revised July 1999 due to update
in parts list. Changed part marked with *.

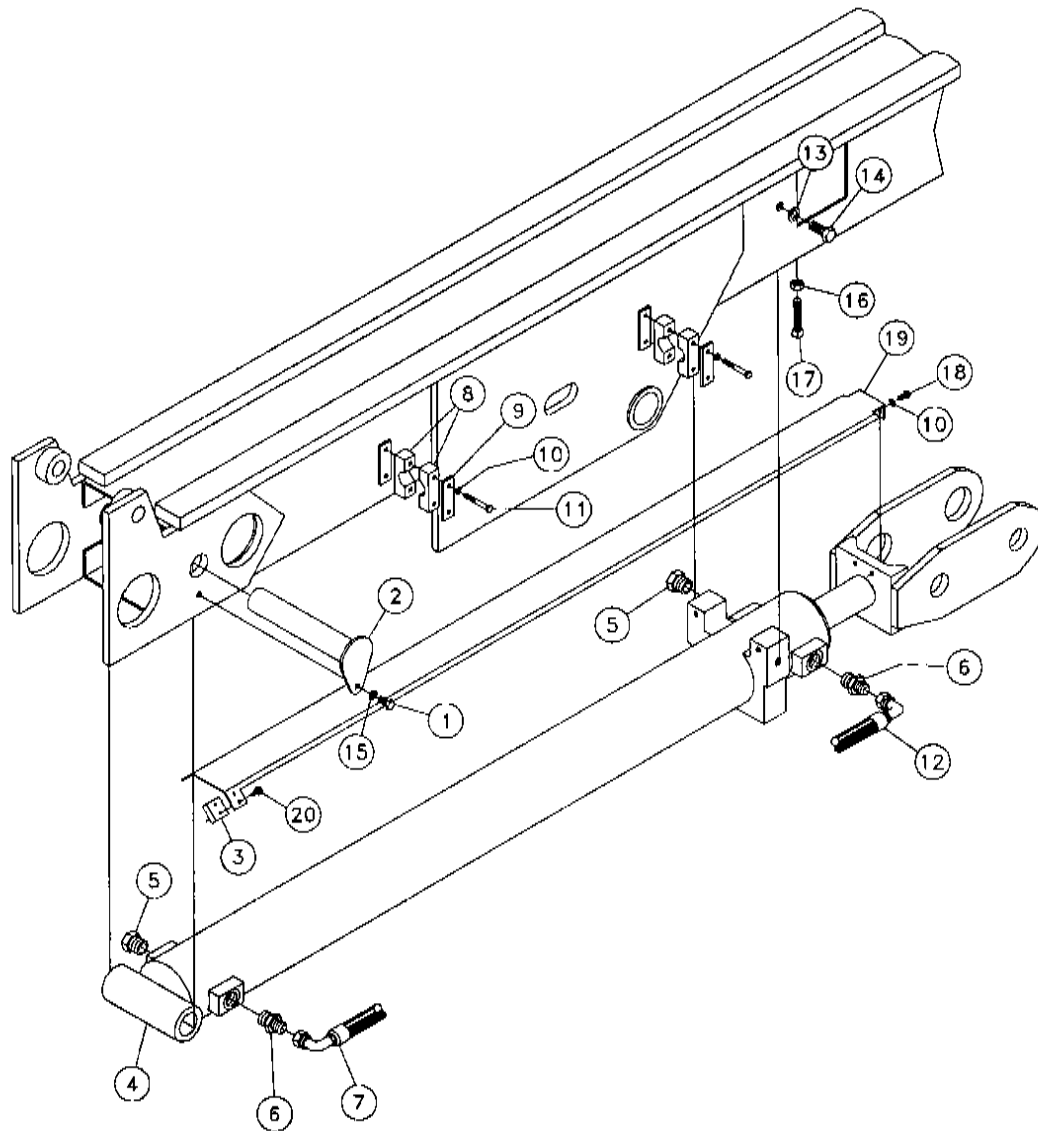


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-25	1	235729-001 BOLT-1/2-13X1 GR8 HEX ZINC PLT	4
3-25	2	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	4
3-25	3	18150-001 SLUG-2 DIA.-1/4"	4
3-25	4	216722-001 PIN-RACK PIVOT CYLINDER	1
3-25	5	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	2
3-25	6	227854-001 PIN-LEFT RACK CYLINDER	1
3-25	7	227852-001 PIN-RIGHT RACK CYLINDER	1
3-25	8	*216695-001 CYLINDER-4 1/2"X12" (BREAKDOWN FIG. 3-48)	1
3-25	9	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	1
3-25	10	68209-023 HOSE-3/8X28 6FS JIC (M2T)	2
3-25	11	224445-001 CYLINDER-3X12 HYD. (BREAKDOWN FIG. 3-47)	1
3-25	12	68787-001 FITTING-6M (BCH)X6M JICX6M JIC	2
3-25	13	57940-663 HOSE-3/8X62 6FSJICST/90 3000#	1
3-25	14	57940-665 HOSE-3/8X69 6FSJICST/90 3000#	1
3-25	15	216724-001 PIN-RACK PIVOT CYLINDER	1
3-25	16	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	2
3-25	17	65570-001 6M X 6M JIC 90 DEGREE LONG	1

THRUST CYLINDER ASSEMBLY

Figure 3-26

Revised August 2000 due to update in parts list. Changed part marked with *.

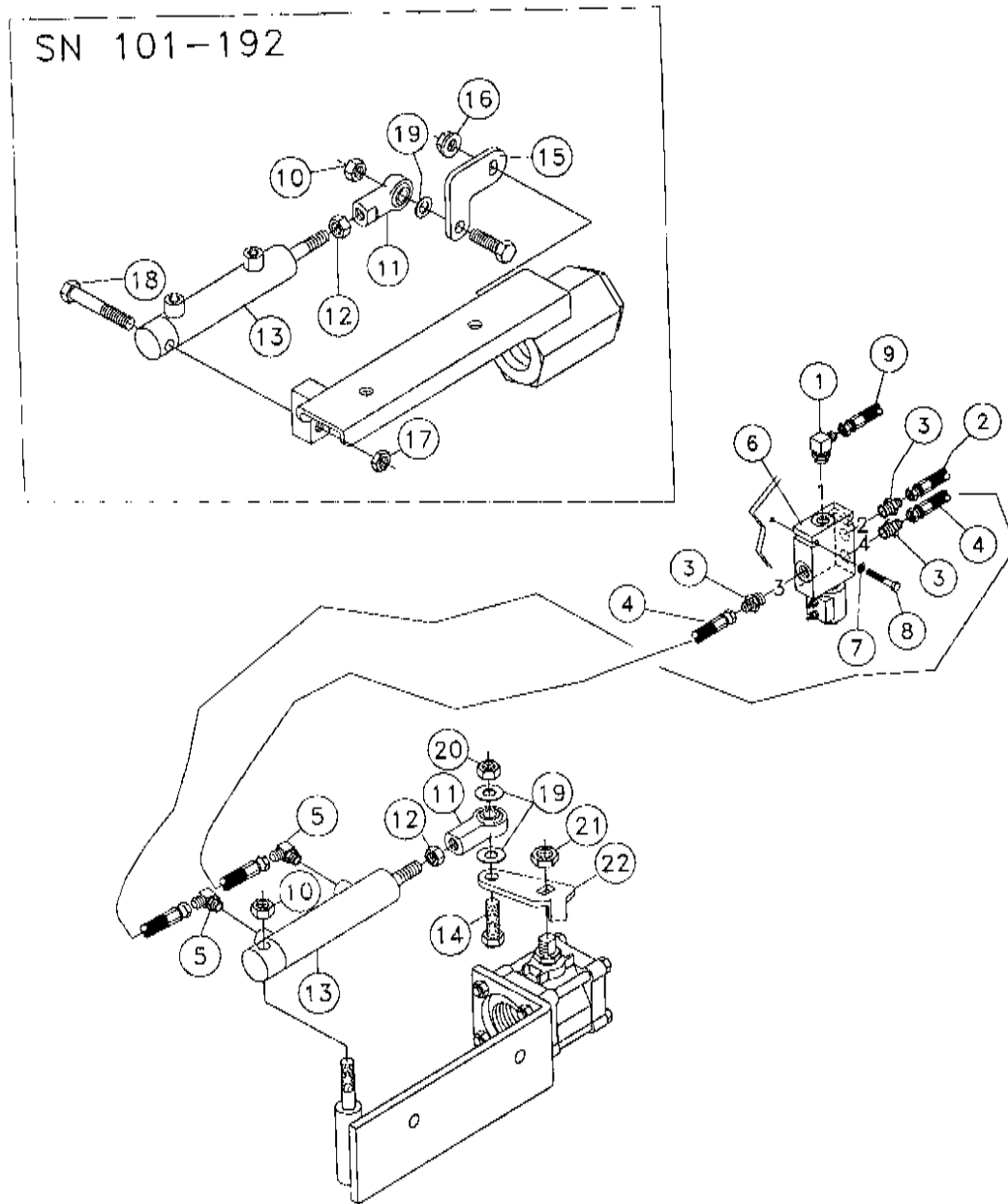


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.	
3-26	1	235729-001	BOLT-1/2-13X1 GR8 HEX ZINC PLT	1	3-26	11	250640-001 BOLT-3/8-16X2 3/4" GR 8 HEX ZINC	6
3-26	2	224268-001	PIN-THRUST CYLINDER	1	3-26	12	53845-773 HOSE-3/4X59 12FSJICST/90 5000#	1
3-26	3	227986-001	WEARSTRIP-CYLINDER GUARD	2	3-26	13	235717-001 WASHER-3/4 SAE HARD ZINC PLTD	2
3-26	4	224478-001	CYLINDER-5X96 (BREAKDOWN FIG. 3-49)	1	3-26	14	243905-001 BOLT - 3/4-10X1 3/4 GR8 HEX ZP	2
3-26	5	83638-001	PLUG-#16 JIC MALE	2	3-26	15	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	1
3-26	6	70008-001	FITTING-16M X 12M JIC STR.	2	3-26	16	429-001 NUT-5/8 NC HEX JAM	2
3-26	7	53845-779	HOSE-3/4X161 12FSJICST/90 5000	1	3-26	17	601697-030 SQ HSS-5/8-11X3 ZINC PLT	2
3-26	8	217034-003	CLAMP HALF-PLASTIC 1 1/4" ID	6	3-26	18	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	2
3-26	9	71220-007	PLATE-HOSE CLAMP TOP	3	3-26	19	227985-001 GUARD-CYLINDER	1
3-26	10	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	8	3-26	20	*283873-001 BOLT-1/4-20X1/2 SL HWH T/K2P	1

WATER PUMP ON/OFF CYLINDER ASSEMBLY

Figure 3-27

Revised August 2000 due to update in illustration & parts list. Added parts marked with *.

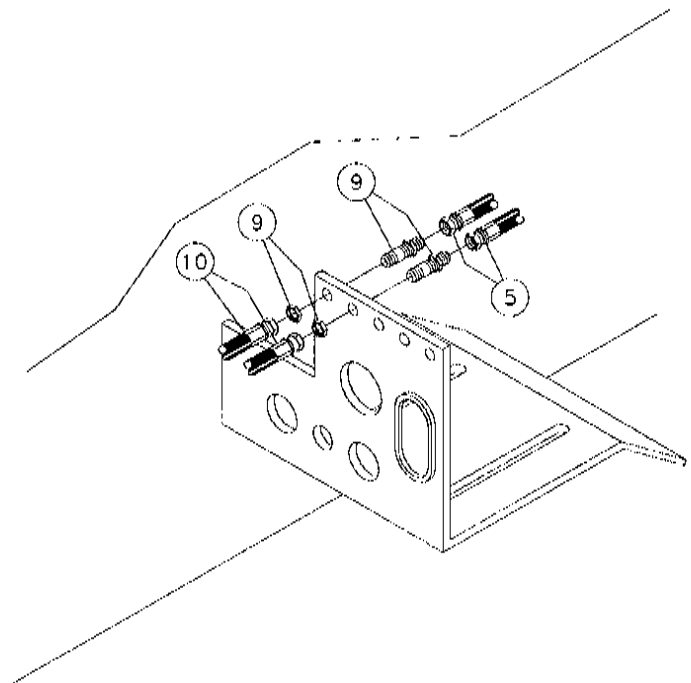
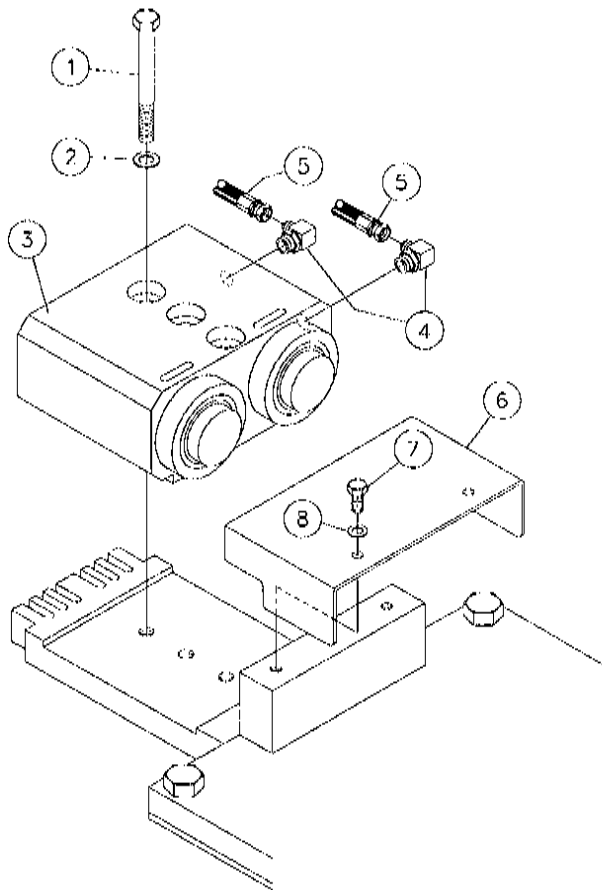


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
3-27	1	600118-001 FITTING-6MORINGX4MJIC90PARKER	1	3-27	13	234359-001 CYLINDER-1X3 1/2 (VRM-0596-05)	1
3-27	2	53843-689 HOSE-1/4X70 4FS JIC 3000 PSI	1			(BREAKDOWN FIG. 3-50)	
3-27	3	57968-001 6M O-RING 4M JIC STRAIGHT	3	3-27	14	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	1
3-27	4	53843-251 HOSE-1/4X19 4FS JIC 2750 PSI	2	3-27	15	244692-001 LINKAGE-BALL VALVE (SN101-192)	1
3-27	5	59423-001 FIT-4M JICX4M ADJ.90 DEG.ELBOW	2	3-27	16	234421-003 NUT-7/16-20NF FLANGE WHIZ (SN101-192)	1
3-27	6	244725-001 VALVE-2 POS 4 WAY (BREAKDOWN FIG. 3-51)	1	3-27	17	235722-001 NUT-1/2-13 GR 8 JAM ZINC PLTD (SN101-192)	1
3-27	7	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	2	3-27	18	235724-001 BOLT-1/2-13 X 3 GR 8 HEX ZINC PLTD (SN101-192)	1
3-27	8	250624-001 BOLT-1/4-20X1 3/4 GR8 HEX ZYC	2				
3-27	9	53843-395 HOSE-1/4X45 4FSJICST-4FSJIC 90	1	3-27	19	*485-025 WASHER-1/2 FLAT HARDENED ZINC	2
3-27	10	250512-001 NUT-1/2-NC GR8 TOP LOCK Y/ZINC	1	3-27	20	*423-001 NUT-1/2 NC SLTL UTB (SN193-)	1
3-27	11	224291-001 BALL JOINT-1/2-20 FEMALE THDS.	1	3-27	21	*250514-001 NUT-5/8 NC JAM Y/ZINC (SN193-)	1
3-27	12	250525-001 NUT 1/2-20 NF HEX Y/ZINC	1	3-27	22	*278224-001 LOWER BALE VALVE (SN193-)	1

FLOATING GEARBOX CYLINDER ASSEMBLY

Figure 3-28

Revised February 1999 due to change to NF bolts & addition of breakdown to manual. Changed parts marked with *.

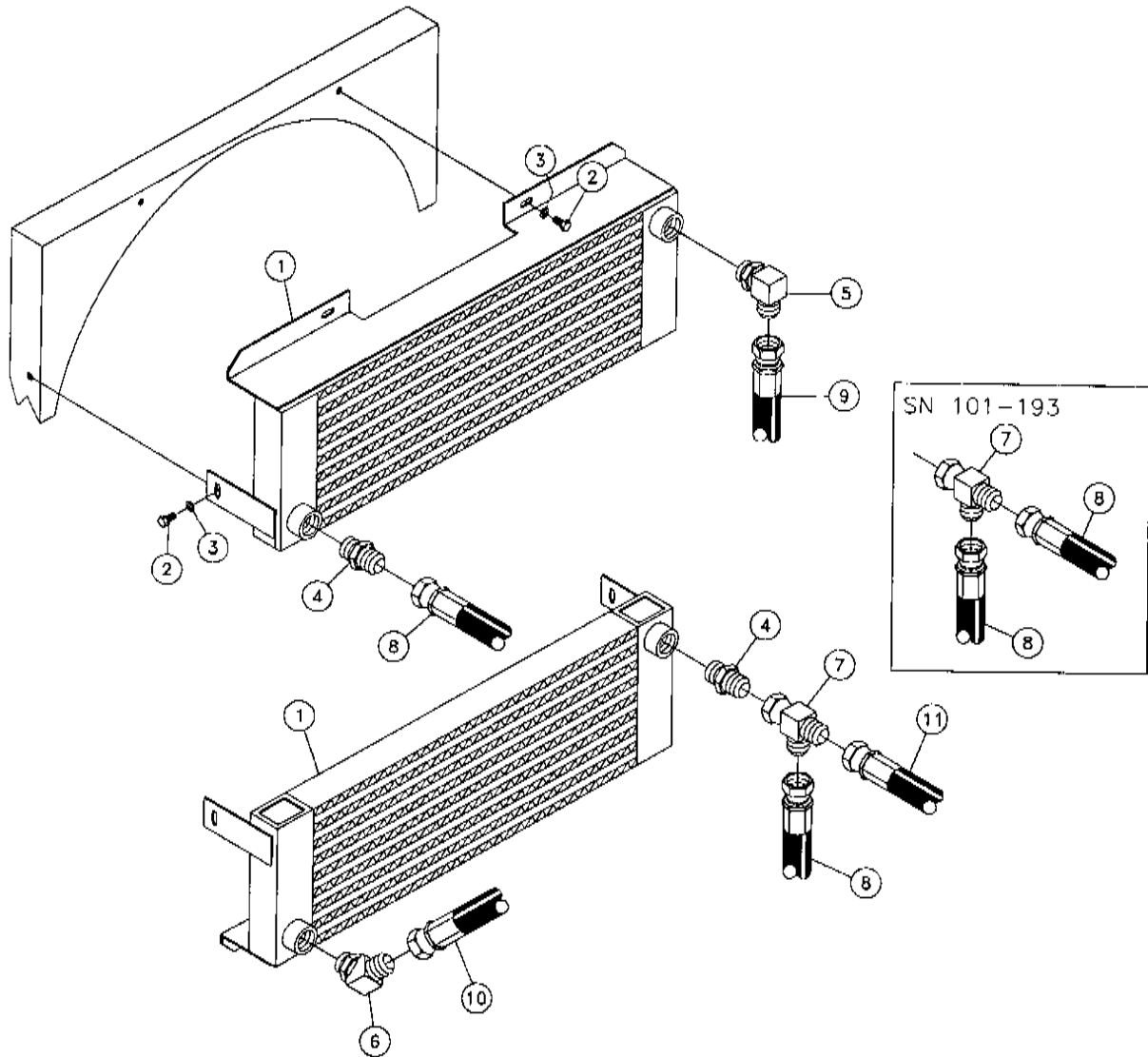


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-28	1	*276526-001 BOLT-1/2-20 X4 1/2 GR8 HEX Y/Z	3
3-28	2	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	3
3-28	3	*234498-001 CYLINDER-DUAL 3X2 ROD -2 (BREAKDOWN FIG. 3-52)	1
3-28	4	57950-001 FITTING-6M X 4 JIC 90 DEG.	2
3-28	5	53843-615 HOSF-1/4X231 4FS JIC 3000 PSI	2
3-28	6	244531-001 SHIELD-CYLINDER	1
3-28	7	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	2
3-28	8	235713-001 WASHER-3/8 SAF HARD ZINC PLTD	2
3-28	9	65564-001 FITTING - 4M JIC BULKHEAD ST.	2
3-28	10	53843-257 HOSF-1/4X90 4FS JIC 3000 PSI	2

OIL COOLER ASSEMBLY

Figure 3-29

Revised August 2000 due to update in illustration & parts list. Added parts marked with *.

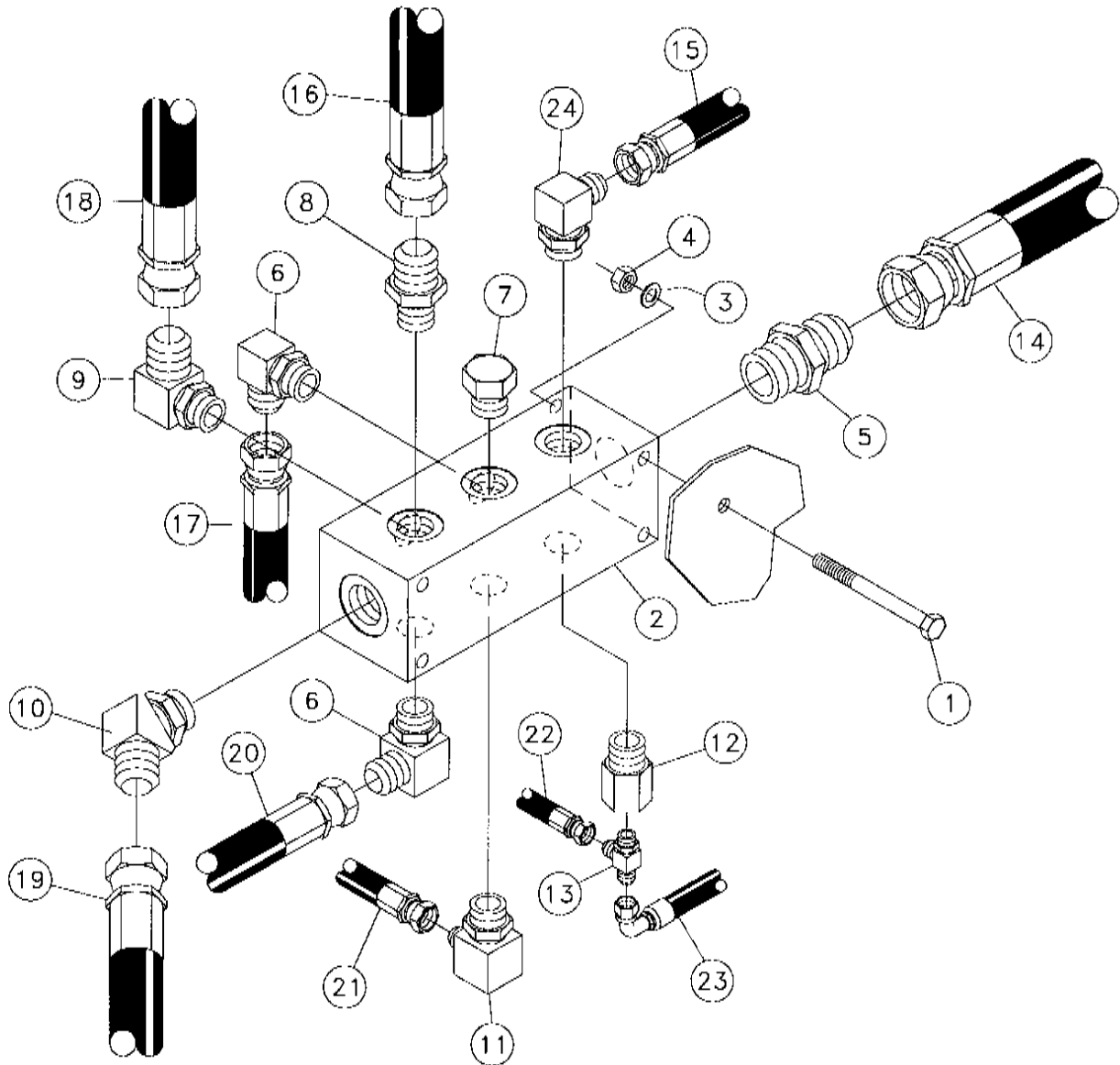


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-29	1	246429-001 COOLER - OIL	2
3-29	2	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	8
3-29	3	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	8
3-29	4	60907-001 FITTING-16M JICX16M STR ADAPT	2
3-29	5	61703-001 16M X 16M JIC 90	1
3-29	6	53835-001 #16M O-RING-#16M JIC 45 DEG.	1
3-29	7	77155-001 FITTING-16M JICX16FS JIC RUN T	1
3-29	8	246427-001 HOSE-1X58 16 FSJIC ST/90 100R4 (SN101-193)	3
	*246427-001	HOSE-1X58 16FS JIC ST/90 100R4 (SN194-)	2
3-29	9	53846-079 HOSE-1X31 16FS JIC (100R1)	1
3-29	10	53846-019 HOSE-1X60 16FS JIC (100R4)	1
3-29	11	*287084-001 HOSE-1X87 16FS JIC ST/90 200 PSI (SN194-)	1

RETURN MANIFOLD ASSEMBLY

Figure 3-30

Revised August 2000 due to update in parts list. Added parts marked with *.

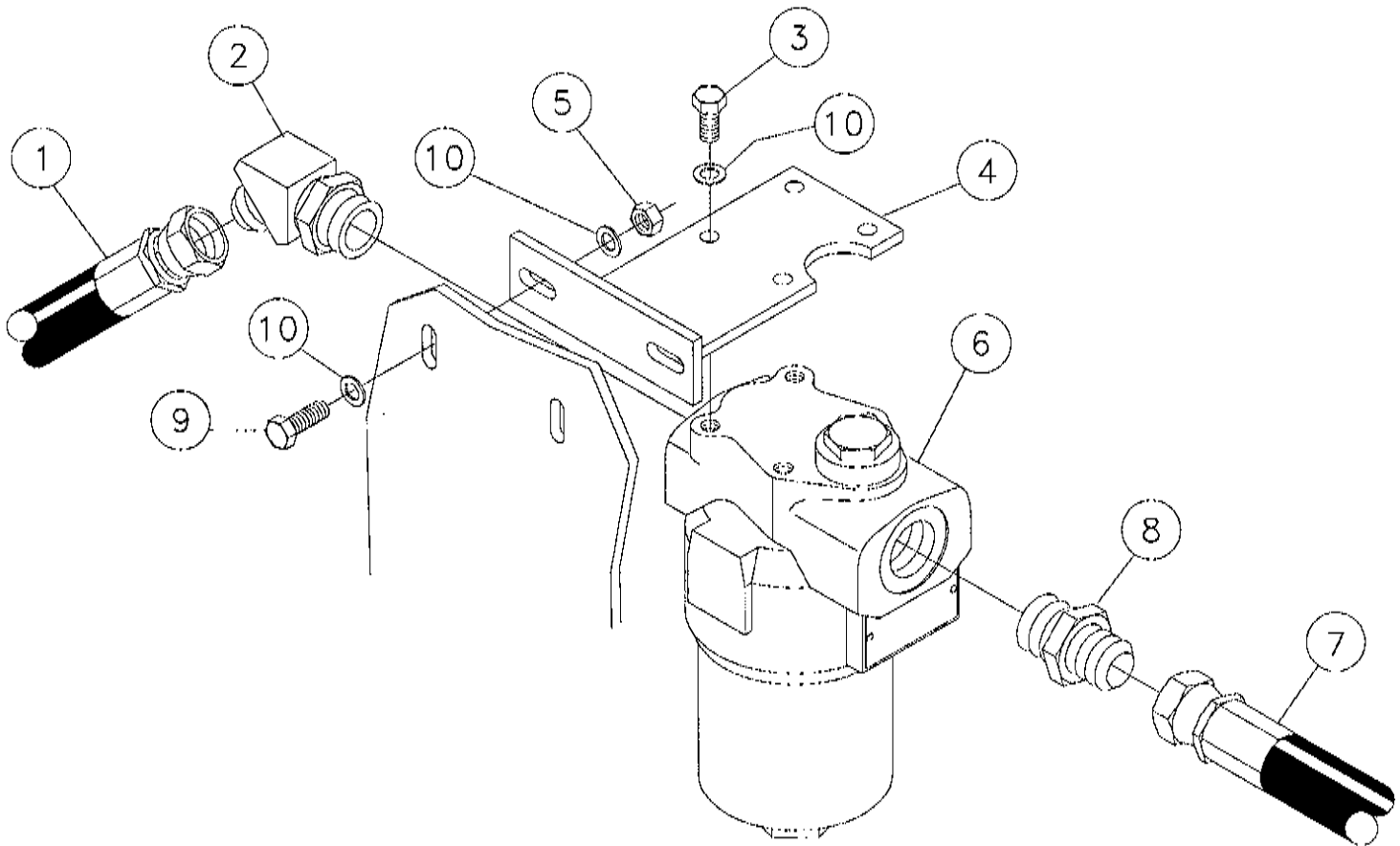


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.	
3-30	1	250583-001	3/8-16X3 3/4 GR8 HEX BOLT PLTD	4	3-30	13	81342-001 4MX4M JIC(BCH)X4M JIC TEE	1
3-30	2	239445-001	MANIFOLD-RETURN	1	3-30	14	53846-079 HOSE-1X31 16FS JIC (100R1)	1
3-30	3	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	4	3-30	15	53844-131 HOSE-1/2X60 8FS JIC (100R1) (SN101-193)	1
3-30	4	235725-001	NUT-3/8-16 GR8 ZINC PLTD	4	3-30	16	*53844-127 HOSE-1/2X80 8FS JIC (100R1) (SN194-)	1
3-30	5	60907-001	FITTING-16M JICX16M STR ADAPT	1	3-30	17	53845-083 HOSE-3/4X42 12FS JIC (100R4)	1
3-30	6	53829-001	#10M O-RING-#10M JIC 90 DEG.	2	3-30	18	53842-047 HOSE-5/8X50 10FS JIC (100R2)	1
3-30	7	4235-001	10 M PLUG	1	3-30	19	251013-001 HOSE-3/4X45 12FSJIC ST/90 3000	1
3-30	8	60910-001	10MX12M JIC ST.ADAPTER	1	3-30	20	53845-041 HOSE-3/4X34 12FS JIC (100R2)	1
3-30	9	53871-001	#10M O-RING X 12M JIC 90	1	3-30	21	53842-021 HOSE-5/8X100 10FS JIC (100R2)	1
3-30	10	60718-001	12M JICX12M ADJ.45 DEG.EL	1	3-30	22	57940-057 HOSE-3/8X90 6FS JIC (100R1)	1
3-30	11	59401-001	6M JICX10M ADJ. 90 DEG.ELBOW	1	3-30	23	53843-325 HOSE-1/4X25 4FS JIC 3000 PSI	1
3-30	12	108484-001	FITTING-4FX10M STR. ADAPTER	1	3-30	24	53843-395 HOSE-1/4X45 4FSJICST-4FSJIC 90	1
					3-30	24	59407-001 8M JICX10M ADJ. 90 DEG.ELBOW	1

OIL FILTER ASSEMBLY

Figure 3-31

Revised February 1999 due to update of filter & hydraulic fittings. Changed parts marked with *.

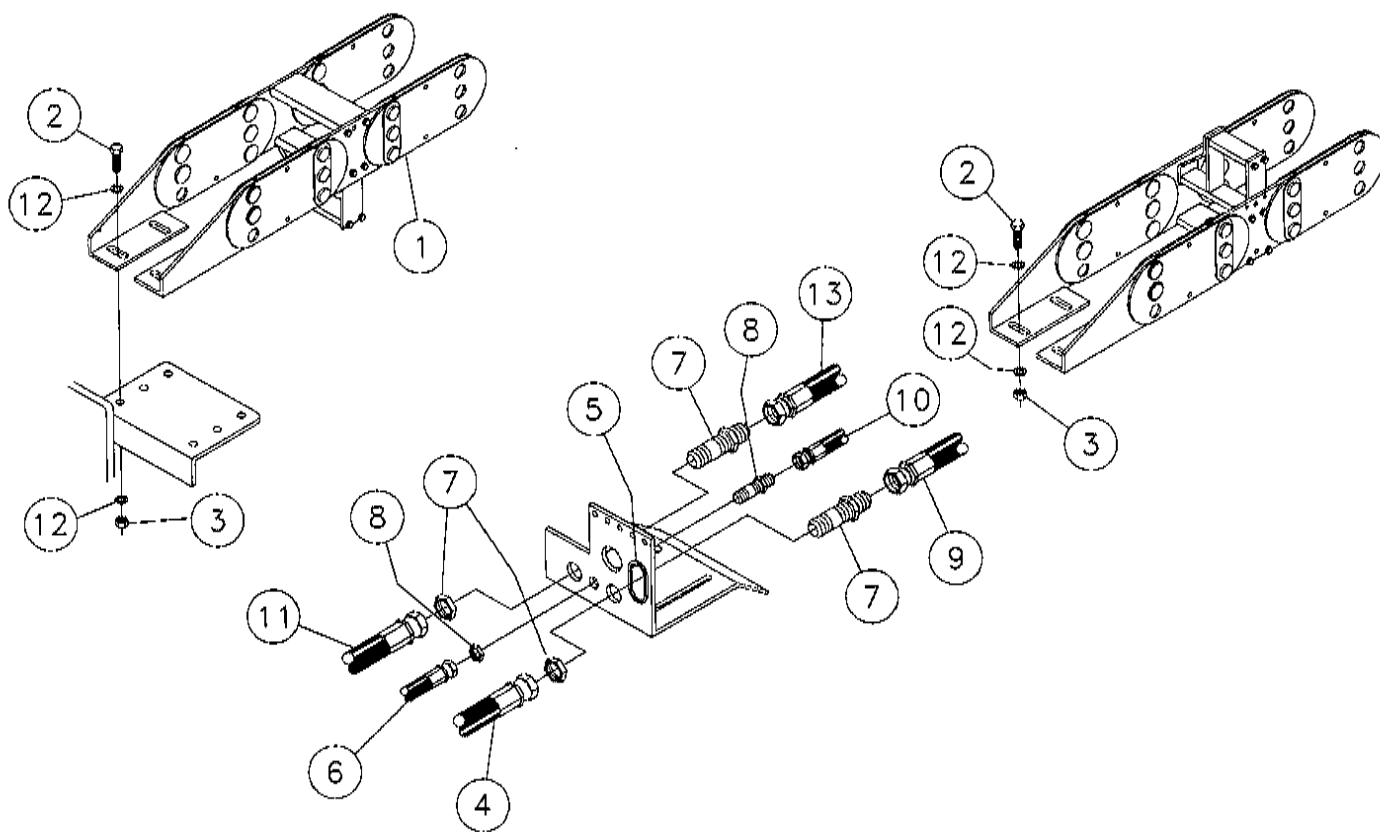


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-31	1	HOSE-3/4X90 12FSJIC ST/90 5000	1
3-31	2	*81212-001 FITTING-16M X 12M JIC 45 EL	1
3-31	3	235726-001 BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	4
3-31	4	224404-001 MOUNT-FILTER	1
3-31	5	235725-001 NUT-3/8-16 GR8 ZINC PLTD	2
3-31	6	*244560-001 FILTER-HIGH PRESSURE (BREAKDOWN FIG. 3-53)	1
3-31	7	53845-791 HOSE 3/4X42 12JIC16/62/90 5000	1
3-31	8	*70008-001 FITTING-16MX12M JIC ST ADAPT	1
3-31	9	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	2
3-31	10	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	8

HOSE CARRIER/BULKHEAD ASSEMBLY

Figure 3-32

Revised July 1999 due to update to new hose carrier. Changed parts marked with *.

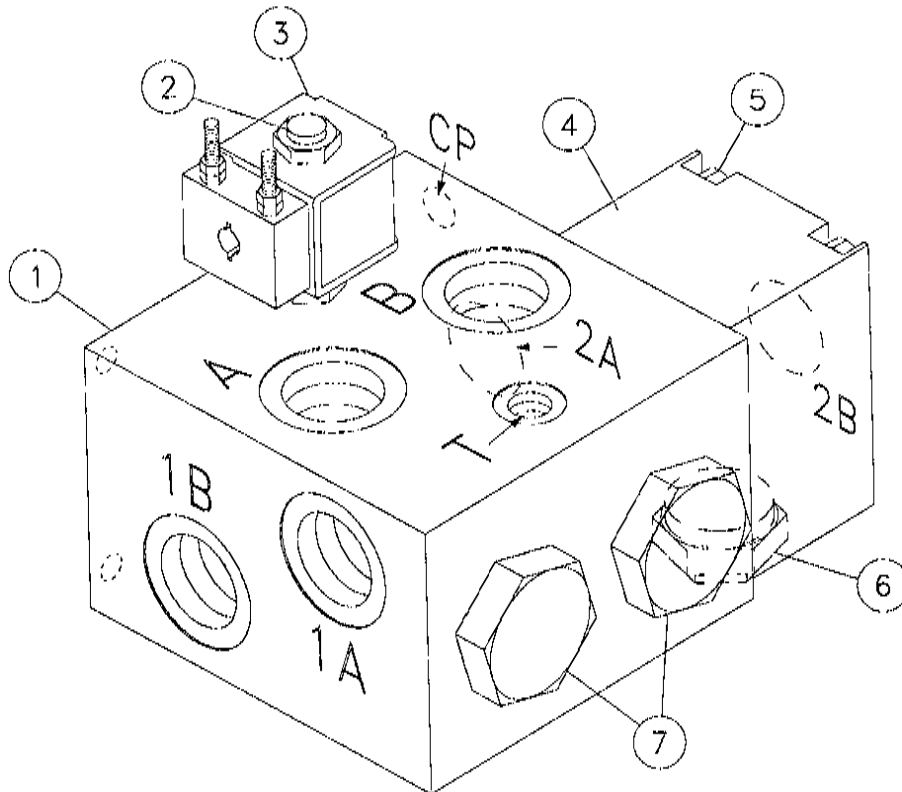


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-32	1	*278101-001 CARRIER-15.0 X 5.0 HOSE (BREAKDOWN FIG. 3-55)	1
3-32	2	235736-001 BOLT-3/8-16X1 1/4 ZINC PLTD	8
3-32	3	235725-001 NUT-3/8-16 GR8 ZINC PLTD	8
3-32	4	244473-001 HOSE-1X123 16FSJICST/90 6000	1
3-32	5	1865-055 GROMMET-1 1/2 IDX1 3/4 OD 1/4G	1
3-32	6	*53842-021 HOSE-5/8X100 10FS JIC (100R2)	1
3-32	7	81698-001 FITTING-16MJIC BULKHEAD STR.	2
3-32	8	77734-001 FITTING-10M JIC BULKHEAD STR.	1
3-32	9	53846-465 HOSE-1X234 16FS JIC ST/90 6000	1
3-32	10	51092-001 HOSE-5/8X234 10FSJICST/90 3000	1
3-32	11	244478-001 HOSE-1X129 16FSJICST/90 6000	1
3-32	12	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	16
3-32	13	244472-001 HOSE-1X230 16FSJICST/90D6000#	1

SOLENOID SELECTOR VALVE COMPONENTS

Figure 3-33

Revised February 1999 due to addition of figure to manual.

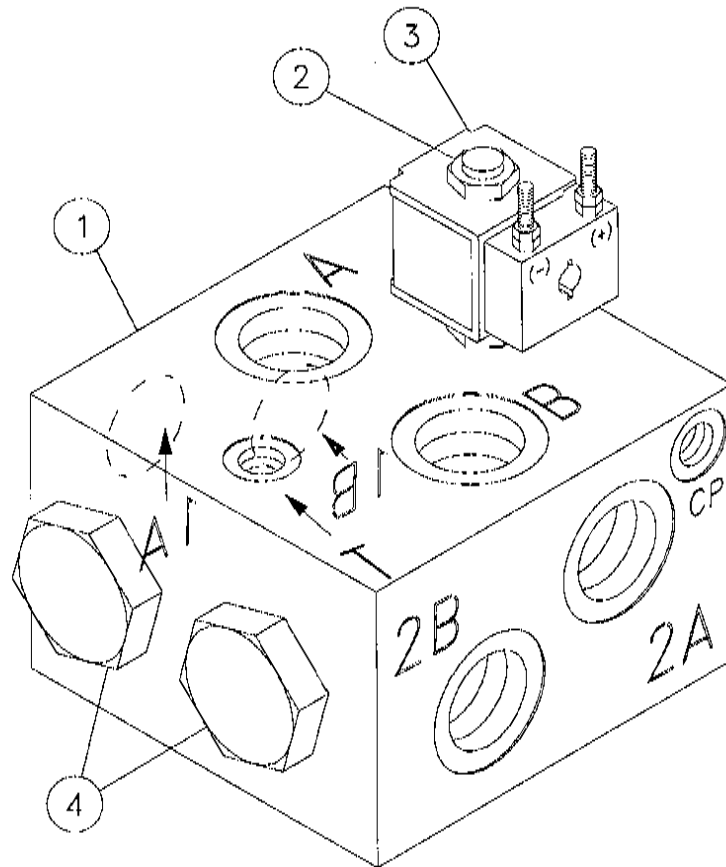


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-33	1	224292-003 BODY	1
3-33	2	207418-007 SOLENOID VALVE	1
3-33	3	251061-003 SOLENOID VALVE COIL - 2 POST	1
3-33	4	224292-005 BODY	1
3-33	5	4478-024 3/8-16X2 1/2 SOCK HD.	4
3-33	6	224292-007 CHECK VALVE	1
		231770-001 SEAL KIT	0
3-33	7	224292-009 DIVERTER VALVE	2
		231771-001 SEAL KIT	0
	251061-001	VALVE-SOLENOID SELECT (INC. REF. 1-7)	

SOLENOID SELECTOR VALVE COMPONENTS

Figure 3-34

Revised February 1999 due to addition of figure to manual.

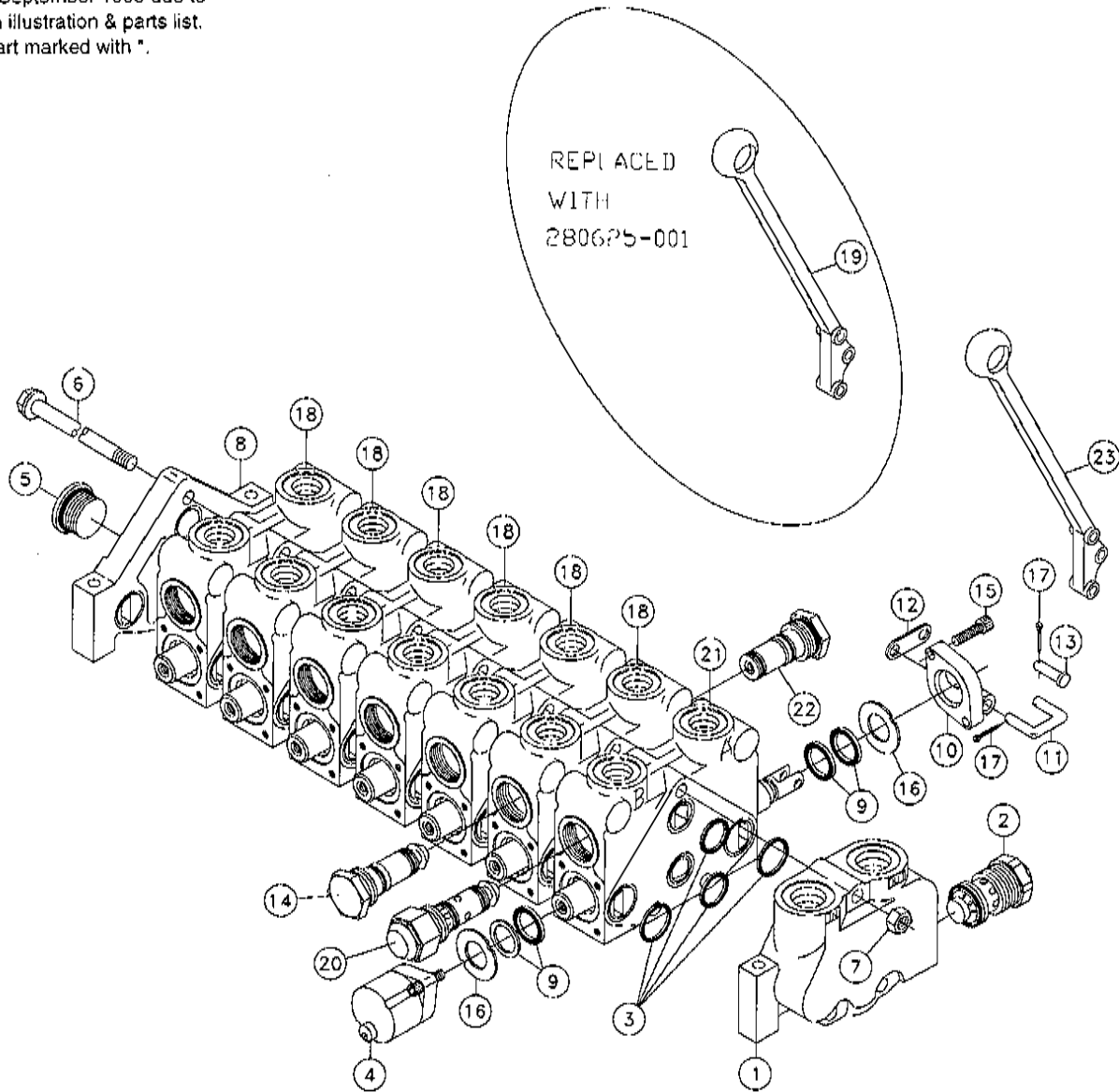


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-34	1	224292-003 BODY	1
3-34	2	207418-007 SOLENOID VALVE	1
		20748-009 REPAIR KIT-SOLENOID VALVE	
3-34	3	251061-003 SOLENOID VALVE COIL - 2 POST	1
3-34	4	224292-009 DIVERTER VALVE	2
		231771-001 SPAL KIT	
	251062-001	VALVE - SOLENOID SELECTOR (INC. REF. 1-4)	

CONTROL VALVE COMPONENTS

Figure 3-35

Revised September 1999 due to update in illustration & parts list. Added part marked with *.

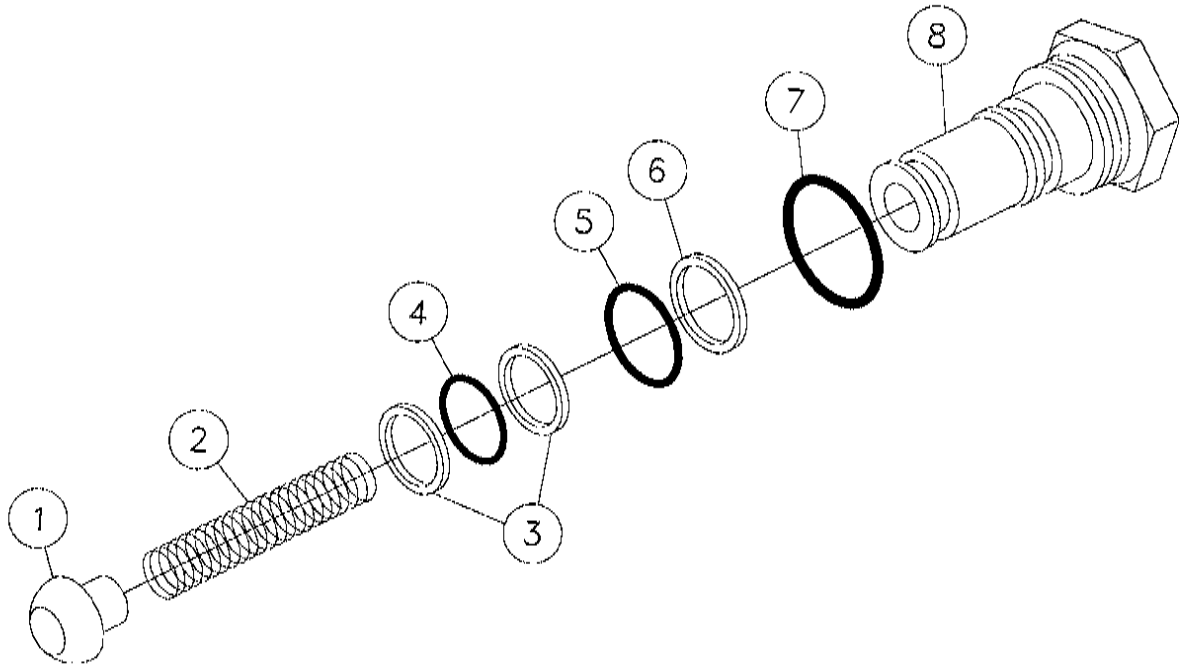


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
3-35	1	*228113-003	LEFT COVER PLATE COMP (INC. REF. 2)	1	3-35	16	3147-081	RETAIN-PLT WASH	14
3-35	2	*228113-005	WH MAIN RELIEF (3500 PSI) (BREAKDOWN FIG. 3-38)	1	3-35	17	510-035	PIN-3/32 X 1/2 COTTER	21
3-35	3	3147-079	REPAIR KIT-CP VALVE	8	3-35	18	244519-003	BODY ASSY-CENTER SECTION (INC. ONE OF REF. 3, 4, 9-13, 14 & 22, TWO OF REF. 15 & 16 & THREE OF REF. 17)	6
3-35	4	6149-005	POSITIONER-STD. (BREAKDOWN FIG. 3-37)	7	3-35	19	3147-039	HANDLE - CP VALVE (REPLACED BY 280625-001)	3
3-35	5	98108-011	PLUG-1 15/16-12 UNF SOCKHD	1	3-35	20	89275-007	RC PORT RELIEF (BREAKDOWN FIG. 3-39)	1
3-35	6	3152-013	SEAL-O-RING	1	3-35	21	244519-005	BODY ASSY-CENTER SECTION (INC. ONE OF REF. 3, 4, 9-13, 20 & 22, TWO OF REF. 15 & 16 & THREE OF REF. 17)	1
3-35	7	68386-001	STUD KIT- 7 SPOOL (INC. REF. 7)	1	3-35	22	238196-001	CARTRIDGE-ANTI-DRIFT (BREAKDOWN FIG. 3-40)	7
3-35	8	446-001	NUT-3/8 NF HEX	3	3-35	23	*280625-001	HANDLE W/ZINC PLATE & BLACK PLASTIC COAT	
3-35	9	219120-011	RIGHT COVER PLATE (INC. ONE OF REF. 3 & 5)	1			244728-001	VALVE-7 SECT L.S. V20 L.S. (INC. ALL ITEMS IN FIGURE)	
3-35	10	3147-077	REPAIR KIT	7					
3-35	11	3147-029	BRACKET	7					
3-35	12	4333-003	LINK	7					
3-35	13	4333-005	PLATE-LINK	7					
3-35	14	2110-003	PIN-CLEVIS 1/4X7/8 - 47/64 UL	7					
3-35	15	3147-035	PLUG-LOAD CHECK STEEL (BREAKDOWN FIG. 3-36)	6					
3-35	16	79704-001	SCREW-1/4-20X7/8 SOC HD SELFLK	14					

LOAD CHECK PLUG COMPONENTS

Figure 3-36

Revised February 1999 due to addition of figure to manual.

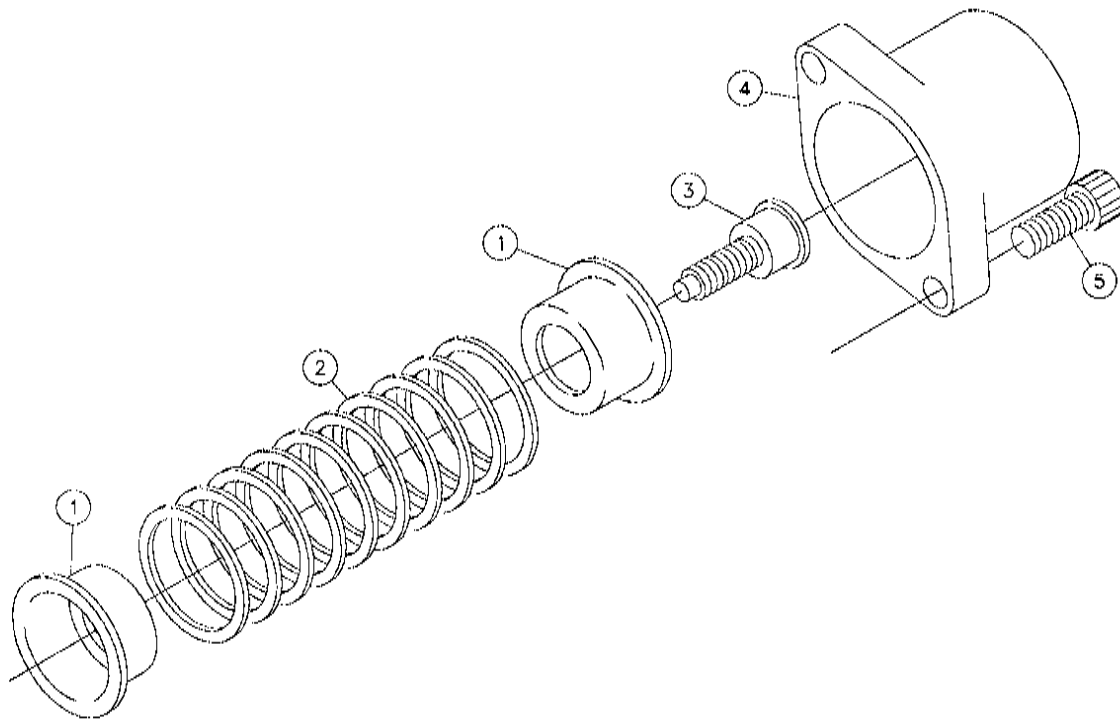


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-36	1	3128-009 POPPET-CHECK	1
3-36	2	3147-041 SPRING-CHECK	1
3-36	3	NSS WASHER-BACKUP (INNER)	2
3-36	4	NSS O-RING	1
3-36	5	NSS O-RING (OUTER)	1
3-36	6	NSS WASHER-BACKUP (OUTER)	1
3-36	7	NSS O-RING	1
3-36	8	3147-043 PLUG-LIFT CHECK	1
	3147-035	PLUG-LOAD CHECK STEEL (INC. REF. 1-8)	
	3147-037	REPAIR KIT (INC. REF. 3-7)	

STANDARD SPOOL POSITIONER COMPONENTS

Figure 3-37

Revised February 1999 due to addition of figure to manual.

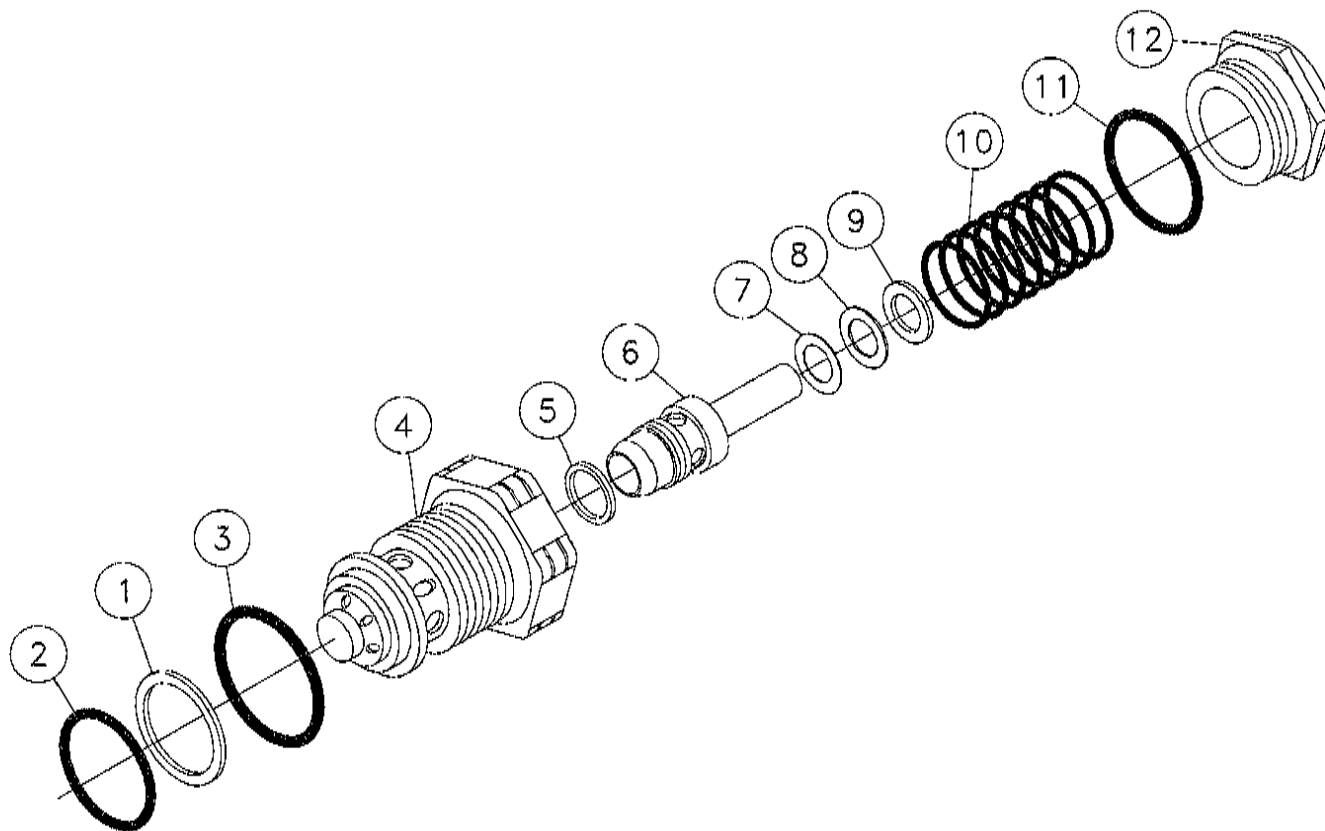


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-37	1	3149-005 COLLAR-SPRING GRESN 1809-001	2
3-37	2	6149-057 SPRING-RETURN 7433-001	1
3-37	3	3149-013 COLLAR-SPOOL	1
3-37	4	6149-043 BONNET	1
3-37	5	/9704-001 SCREW-1/4-20X7/8 SOC HD SELF LK	2
		6149-005 POSITIONER-STD. (INC. REF. 1-7)	

WH MAIN RELIEF COMPONENTS

Figure 3-38

Revised July 1999 due to addition of pressure relief. Figure is new



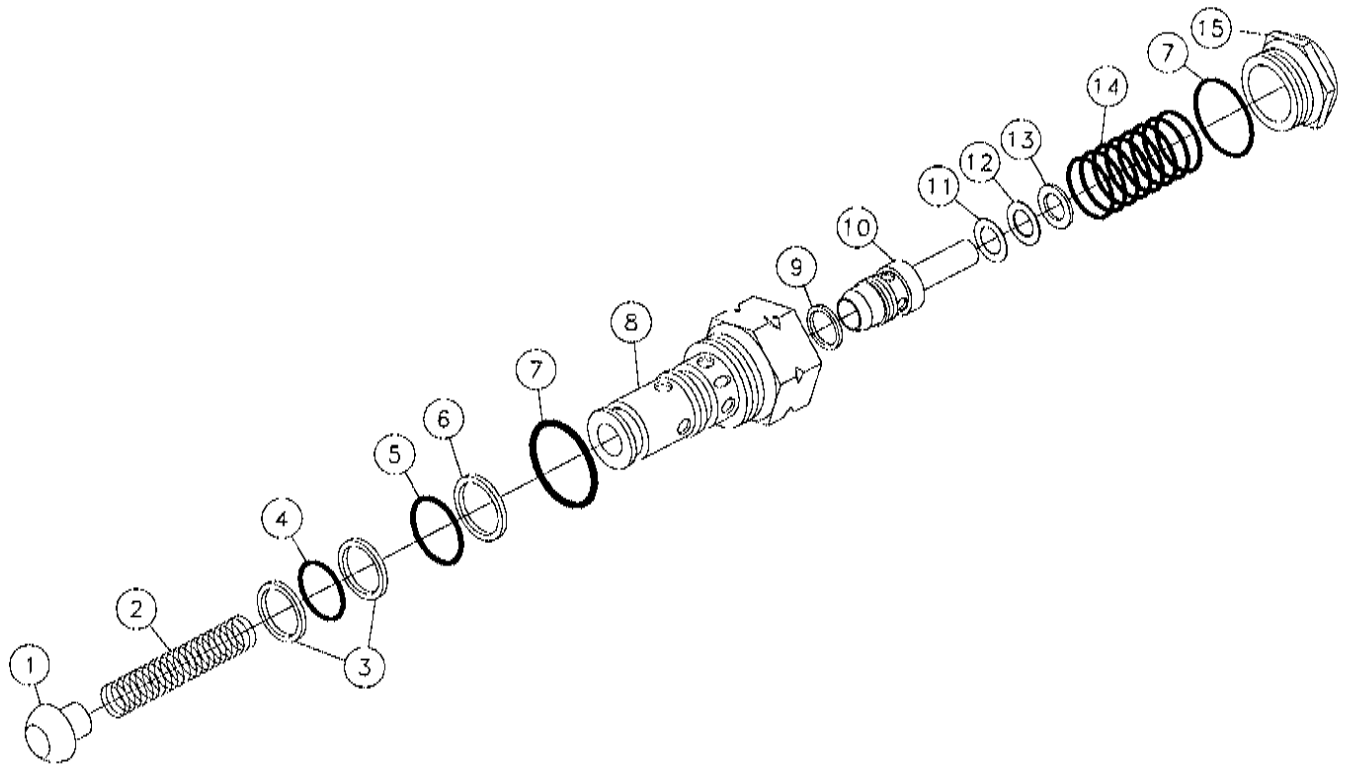
REF. NO.	PART NO.	DESCRIPTION	QTY.
3-38	1	NSS RING-BACKUP	1
3-38	2	NSS SEAL-O-RING	1
3-38	3	NSS SEAL-O-RING	1
3-38	4	15844-009 BODY-WH RELIEF	1
3-38	5	NSS RING-PISTON	1
3-38	6	NSS POPPET	1
3-38	7	208-019 SHIM-.010	A/R
3-38	8	208-017 SHIM-.020	A/R
3-38	9	208-015 SHIM-.040	A/R
3-38	10	228113-007 SPRING (3000-3500 PSI)	1
3-38	11	NSS SEAL-O-RING	1
3-38	12	3147-027 CAP	1

3147-011 SERVICE KIT (INC. REF. 5 & 6)
 15844-007 REPAIR KIT (INC. REF. 1, 3 & 11)
 228113-005 WH MAIN RELIEF (3500 PSI) (INC. REF. 1-12)

RC PORT RELIEF COMPONENTS

Figure 3-39

Revised February 1999 due to addition of figure to manual.

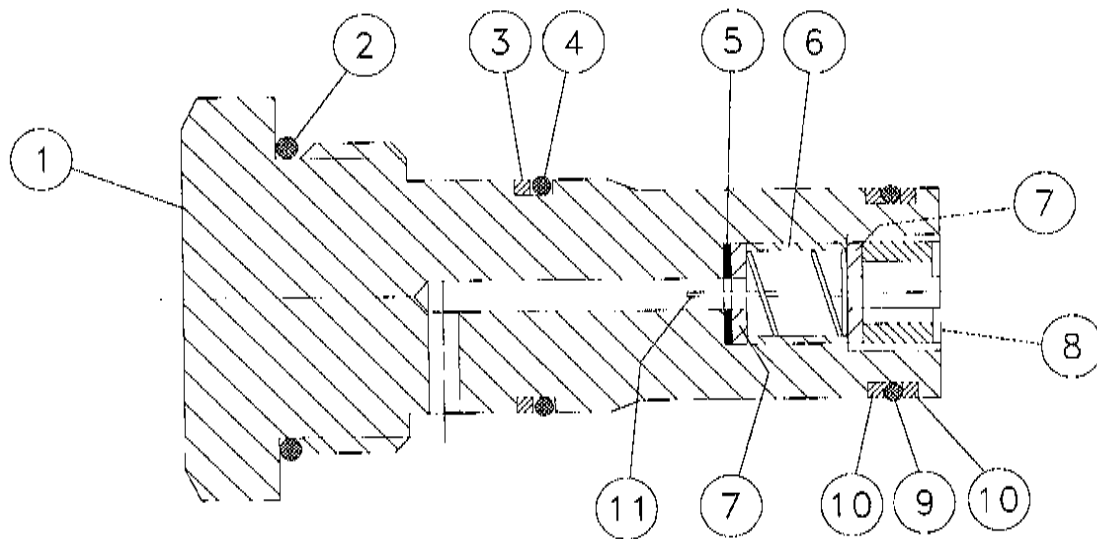


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-39	1	3128-009 POPPET-CHECK	1
3-39	2	3147-041 SPRING-CHECK	1
3-39	3	NSS WASHER BACKUP	2
3-39	4	NSS O-RING	1
3-39	5	NSS O-RING	1
3-39	6	NSS WASHER-BACKUP	1
3-39	7	NSS O-RING	2
3-39	8	3159-007 BODY-RELIEF	1
3-39	11	208-019 SHIM - .010	A/R
3-39	12	208-017 SHIM - .020	A/R
3-39	13	208-015 SHIM - .040	A/R
3-39	14	3147 023 SPRING-YELLOW	1
3-39		86323-005 SPRING-SS 2000-3000 PSI	1
3-39	15	3147-027 CAP	1
		3147-011 SERVICE KIT (INC. REF. 9 & 10)	
		3159-005 REPAIR KIT (INC. REF. 3-7)	
		89275-007 RC PORT RELIEF (INC. ALL ITEMS IN THIS FIGURE)	
		NSS NOT SOLD SEPARATELY	

ANTI-DRIFT CARTRIDGE COMPONENTS

Figure 3-40

Revised February 1999 due to addition of figure to manual.

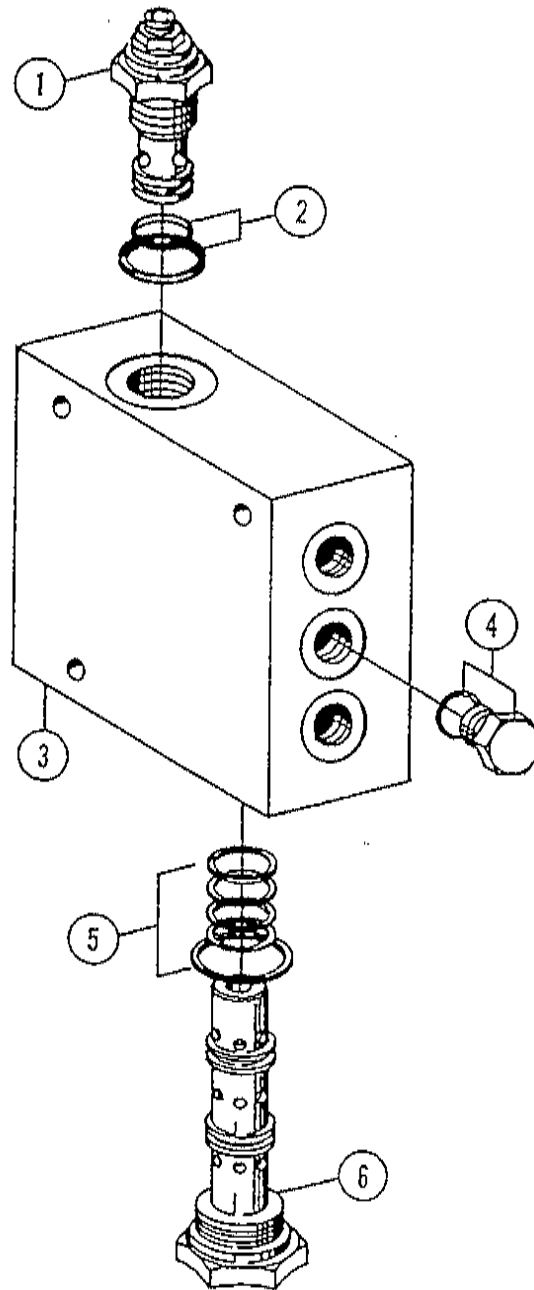


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-40	1	238196-003 PLUG-BLEED OFF	1
3-40	2	NSS SFAL-O-RING	1
3-40	3	NSS RING-BACKUP	1
3-40	4	NSS SEAL-O-RING	1
3-40	5	238196-005 WASHER-BLEED OFF	1
3-40	6	238196-007 SPACER	1
3-40	7	238196-009 WASHER-BACK UP	2
3-40	8	238196-011 SCREW-LOCKING	1
3-40	9	NSS SEAL-O-RING	1
3-40	10	NSS RING-BACKUP-CUT	2
3-40	11	238196-013 SPRING	1
	238196-001	CARTRIDGE-ANTI-DRIFT (INC. ALL ITEMS IN FIGURE)	
	3147-037	REPAIR KIT (INC. REF. 2-4, 9 & 10)	

SHUTTLE VALVE COMPONENTS

Figure 3-41

Revised February 1999 due to addition of figure to manual.

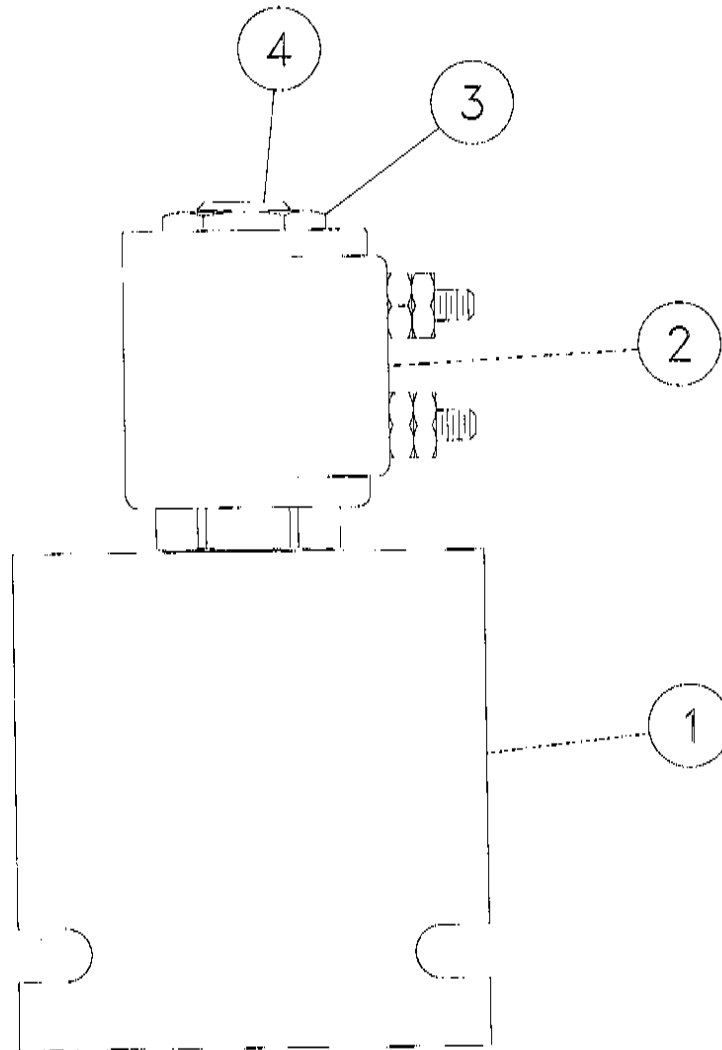


REF. NO.	PART NO.	DESCRIPTION	QTY.
3-41	1	902012-003 VALVE-RELIEF	1
3-41	2	202731-001 REPAIR KIT-RELIEF VALVE	1
3-41	3	902012-005 BODY-VALVE	1
3-41	4	901562-015 PLUG-9/16"-18 UNF	1
3-41	5	204954-001 REPAIR KIT-SHUTTLE VALVE	1
3-41	6	901562-011 VALVE-SHUTTLE	1
	902012-001	VALVE-SHUTTLE (INC. ALL ITEMS IN THIS FIGURE)	

SOLENOID VALVE COMPONENTS

Figure 3-42

Revised February 1999 due to addition of figure to manual.

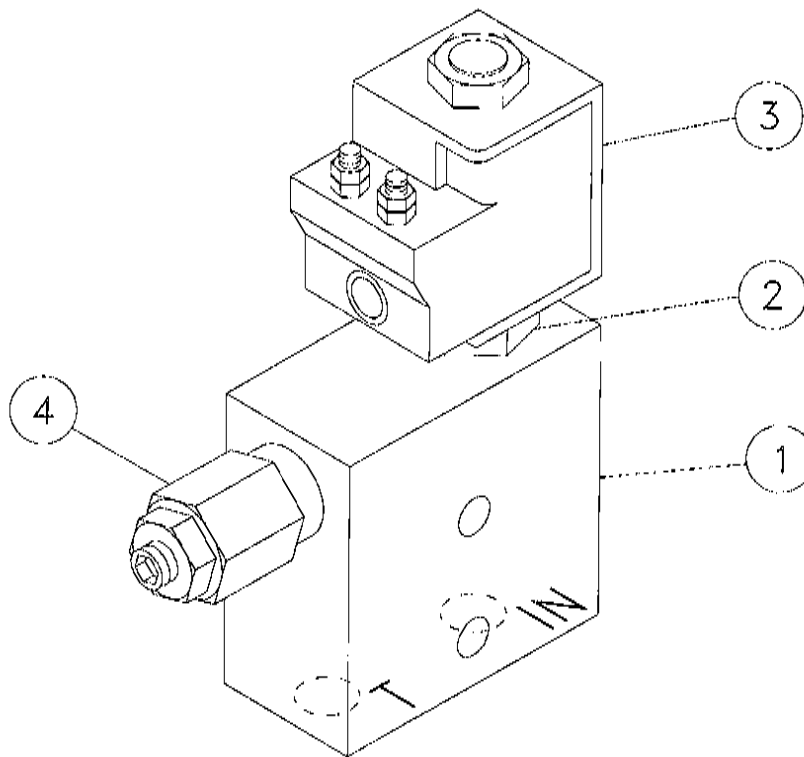


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-42	1	239443-003 BODY-VALVE	1
3-42	2	244725-005 COIL	1
3-42	3	244725-007 NUT - COIL	1
3-42	4	228124-017 CARTRIDGE-SOLENOID	1
		110467-003 SEAL KIT	1
	244491-001	VALVE-2 POS. 3 WAY (INC. ALL ITEMS IN THIS FIGURE)	

PRESSURE LIMITER VALVE COMPONENTS

Figure 3-43

Revised February 1999 due to addition of figure to manual.

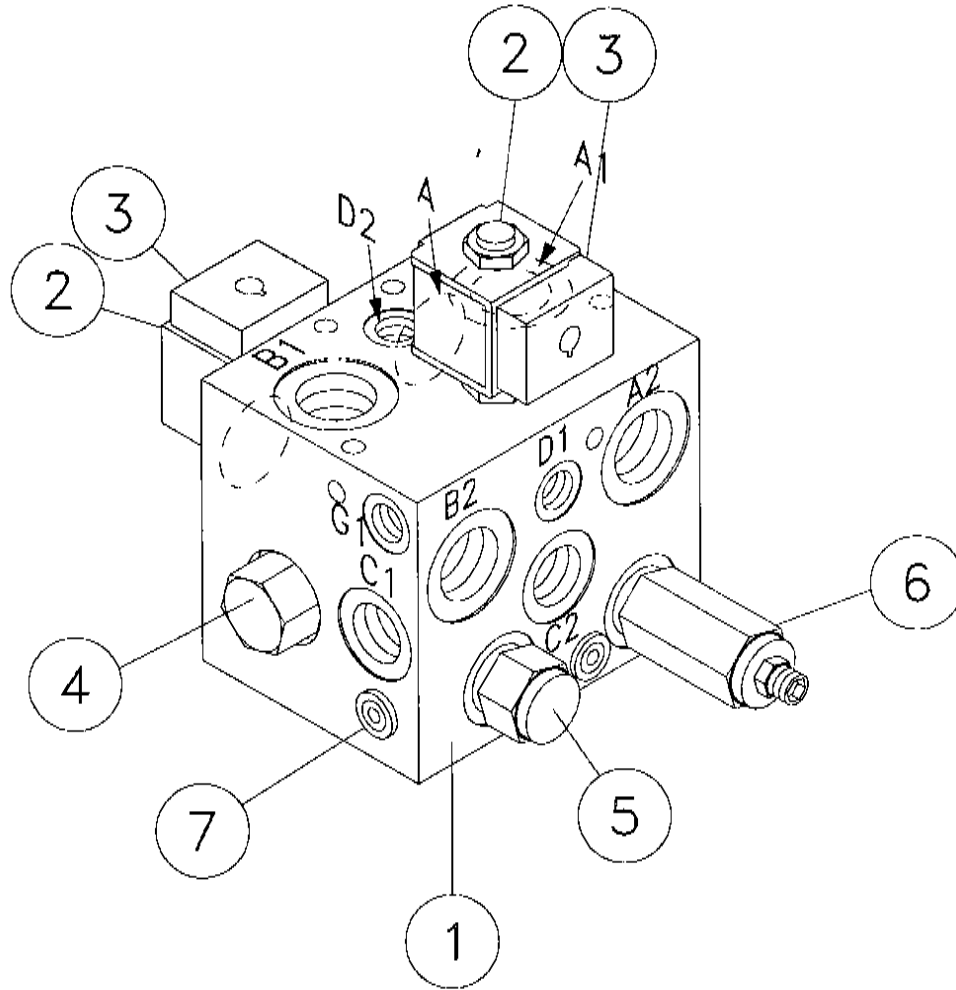


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-43	1	228114-003 BODY-MANIFOLD	1
3-43	2	228114-005 CARTRIDGE	1
		228114-007 SEAL KIT	1
3-43	3	251063-003 COIL	1
3-43	4	228114-011 VALVE RELIEF	1
		85647-025 REPAIR KIT	1
	251063-001	VALVE-REMOTE PRESSURE LIMITER (INC. ALL ITEMS IN THIS FIGURE)	

SHUTTLE VALVE COMPONENTS - 3 SPEED

Figure 3-44

Revised February 2000 due to update in illustration.

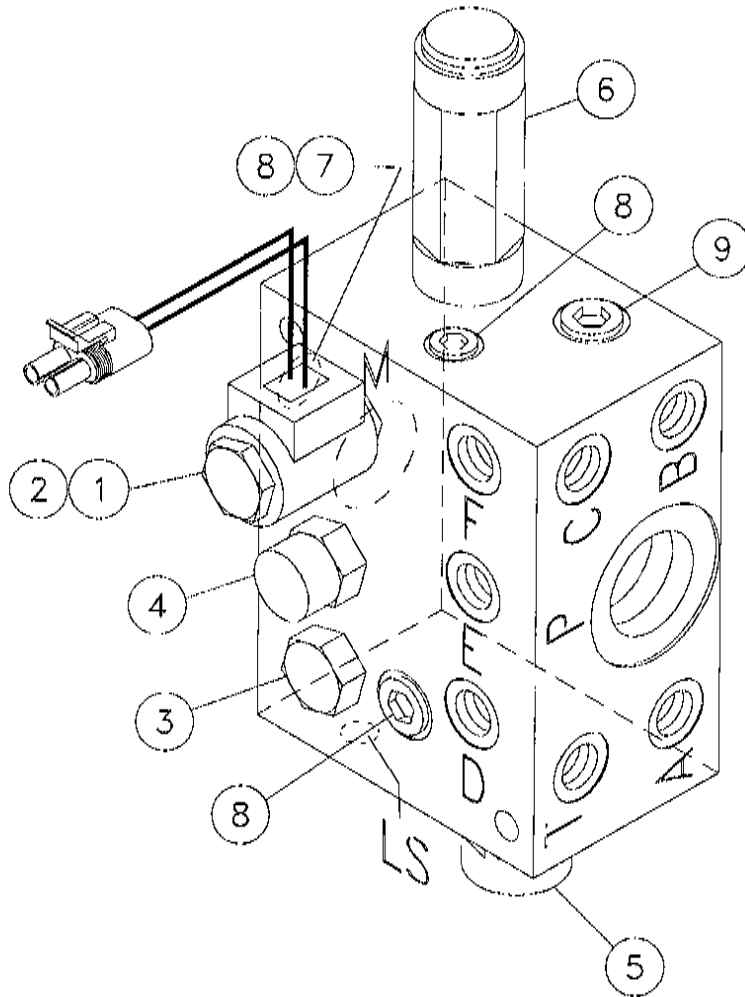


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-44	1	NSS VALVE BODY	1
3-44	2	224476-005 CARTRIDGE VALVE	2
3-44	3	251061-003 SOLENOID VALVE COIL-2 POST 207418-009 REPAIR KIT-SOLENOID VALVE	2
3-44	4	277838-003 SHUTTLE VALVE 277838-005 REPAIR KIT-SHUTTLE VALVE	1
3-44	5	277838-007 PRESSURE FLOW CONTROL VALVE 277838-009 REPAIR KIT-PRESSURE FLOW CONTROL VALVE	1
3-44	6	277838-011 RELIEF VALVE 277838-013 REPAIR KIT-RELIEF VALVE	1
3-44	7	277838-015 #2 EPCO PLUG	6
	277838-001	VALVE-3 SPEED SHUTTLE (INC. ALL ITEMS IN THIS FIGURE)	

VALVE COMPONENTS - PROPORTIONAL

Figure 3-45

Revised February 1999 due to addition of figure to manual.

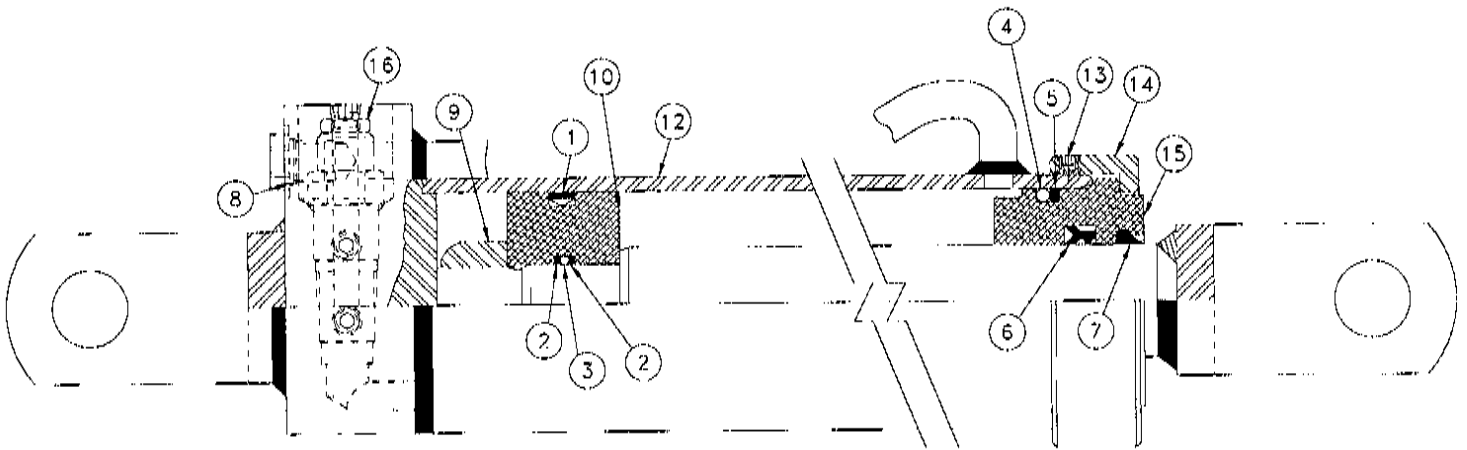


REF. NO.	PART NO.	DESCRIPTION	QTY.	
3-45	1	246435-003	VALVE-PROPORTIONAL REDCNG/HLVN	1
		224858-005	SEAL KIT	1
3-45	2	246435-005	COIL	1
3-45	3	500659-003	VALVE CHECK, CARTRIDGE	1
		228128-009	SEAL KIT	1
3-45	4	246435-007	REGULATOR-PRESSURE COMPENSATED	1
		246435-009	SEAL KIT	1
3-45	5	246435-011	SPOOL - PILOTED Z-WAY	1
		228124-005	SEAL KIT	1
3-45	6	246435-013	VALVE-PRESSURE REDCNG/RELIEVIG	1
		236316-005	SEAL KIT	1
3-45	7	246435-015	PLUG - ORIFICE	1
3-45	8	240324-011	PLUG-SAE	4
		240324-013	SEAL KIT	1
3-45	9	500659-021	SAE PLUG	1
		228128-015	SEAL KIT	1
	246435-001	VALVE - WATER CONTROL (INC. ALL ITEMS IN THIS FIGURE)		

HYDRAULIC CYLINDER COMPONENTS - 3" X 40"

Figure 3-46

Revised February 1999 due to addition of figure to manual.

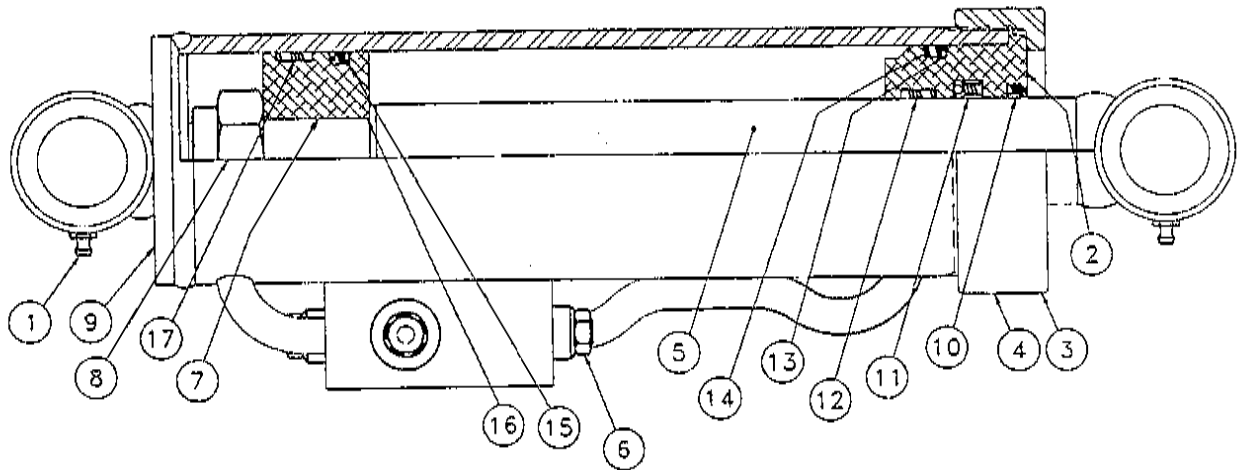


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-46	1	200780-001 UNI-RING	1
3-46	2	208331-001 RING-BACK UP	2
3-46	3	208332-001 O-RING	1
3-46	4	218021-011 O-RING	1
3-46	5	209057-001 WASHER-BACK UP	1
3-46	6	209058-001 U CUP-DOUBLE LIP	1
3-46	7	200808-001 WIPER	1
3-46	8	223998-003 O-RING	2
3-46	9	218496-007 LOCK NUT	1
3-46	10	209060-001 PISTON	1
3-46	11	224278-003 BARREL ASSEMBLY	1
3-46	12	224278-005 ROD ASSEMBLY	1
3-46	13	219125-011 NT SH SFT SCREW	1
3-46	14	218496-013 THREADED CAP	1
3-46	15	207403-005 CAP HEAD-THREAD	1
3-46	16	202529-001 VALVE CART. - CNTR BALANCE	1
	58035-007	REPAIR KIT	1
	224278-001	CYL 3"X40" W/ CH VALVE (INC. REF. 1-16)	
	207403-009	SEAL KIT (INC. REF. 1-7)	

HYDRAULIC CYLINDER COMPONENTS - 3" X 12"

Figure 3-47

Revised February 1999 due to addition of figure to manual.

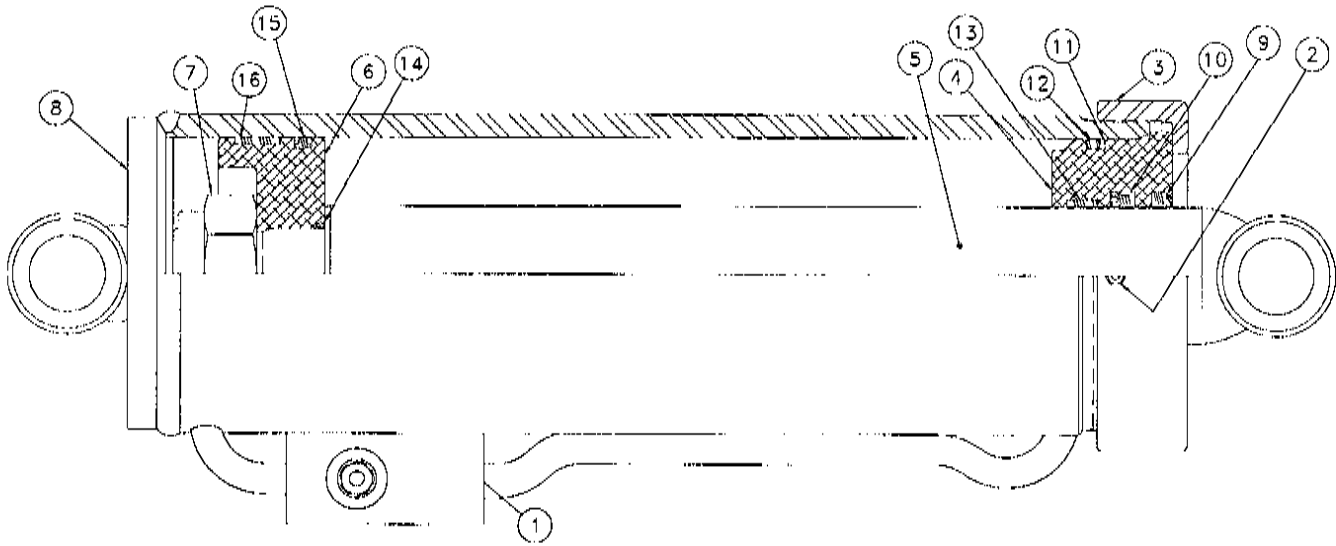


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-47	1	224445-007 GREASE FITTING	2
3-47	2	224445-009 HEAD GLAND	1
3-47	3	99859-005 SCREW-LG SET .313-18 X .25	1
3-47	4	224445-011 HEAD GLAND CAP	1
3-47	5	224445-003 ROD WELDMENT	1
3-47	6	94488-033 VALVE-CHECK	2
3-47	7	224445-013 PISTON	1
3-47	8	110188-007 LOCKNUT-1.125-12	1
3-47	9	224445-005 TUBE WELDMENT	1
3-47	10	99541-019 ROD WIPER	1
3-47	11	99541-015 POLYPACK	1
3-47	12	224445-015 WEAR BAND	1
3-47	13	215657-023 BACKUP RING	1
3-47	14	215657-019 O-RING	1
3-47	15	221729-007 T-SEAL	1
3-47	16	110188-013 O-RING	1
3-47	17	215657-009 WEAR BAND	1
	224445-001	CYLINDER-3X12 HYD. COMPLETE (INC. REF. 1-17)	
	224445-017	SEAL KIT (INC. REF. 10-17)	

HYDRAULIC CYLINDER COMPONENTS - 4 1/2" X 12"

Figure 3-48

Revised February 1999 due to addition of figure to manual.

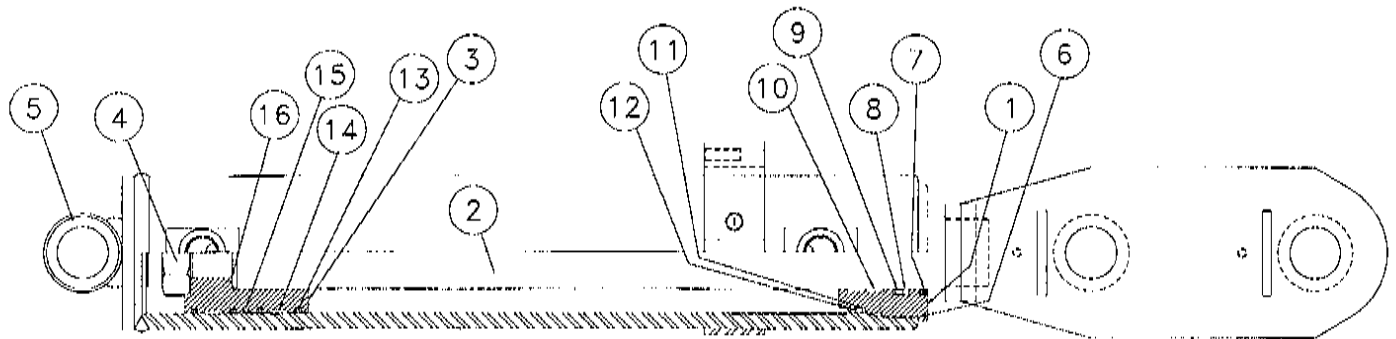


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-48	1	216695-007 P.O. CHECK VALVE	2
3-48	2	99859-005 SCREW-LG SET .313-18 X .25	1
3-48	3	216695-009 HEAD GLAND CAP	1
3-48	4	216695-011 HEAD GLAND	1
3-48	5	216695-003 ROD WELDMENT	1
3-48	6	216695-013 PISTON	1
3-48	7	85777-031 NUT-1 1/2" 12 LOCK	1
3-48	8	216695-005 TUBE WELDMENT	1
3-48	9	215799-015 ROD WIPER	1
3-48	10	215799-013 POLYPAK	1
3-48	11	212568-019 BACKUP RING	1
3-48	12	212568-017 O-RING	1
3-48	13	215799-011 WEAR BAND	1
3-48	14	85923-023 O-RING	1
3-48	15	216695-015 T-SEAL	1
3-48	16	212568-009 WEAR BAND	1
	216695-001	CYLINDER-4 1/2"X12" COMPLETE (INC. REF. 1-16)	
	216695-017	SEAL KIT (INC. REF 9-16)	

HYDRAULIC CYLINDER COMPONENTS - 5" X 96" W/ 3" ROD

Figure 3-49

Revised February 1999 due to addition of figure to manual.

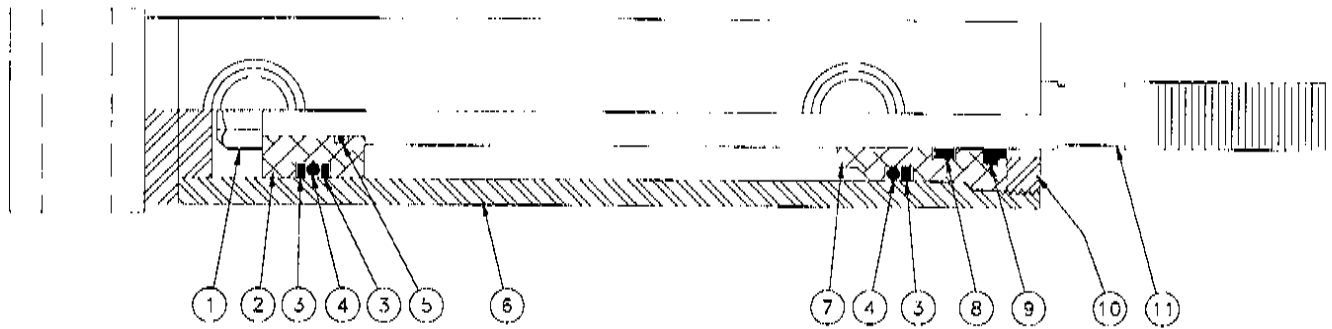


REF. NO	PART NO.	DESCRIPTION	QTY.
3-49	1	224478-027 HEAD GLAND	1
3-49	2	224478-003 ROD WELDMENT	1
3-49	3	224478-007 PISTON	1
3-49	4	114215-007 LOCKNUT-2"-12	1
3-49	5	224478-005 TUBE WELDMENT	1
3-49	6	224478-009 O-RING	1
3-49	7	224478-011 CANNED ROD WIPER	1
3-49	8	224478-013 MODULAR BACKUP	1
3-49	9	224478-015 POLY PAK	1
3-49	10	224478-017 WEAR BAND	2
3-49	11	89540-011 WASHER-BACKUP	1
3-49	12	85777-019 O-RING	1
3-49	13	224478-019 CAST IRON RING	4
3-49	14	85777-029 WEARBAND	2
3-49	15	224478-021 PSP SFAL.	1
3-49	16	224478-023 O-RING	1
	224478-001	CYLINDER-5X96 COMPLETE (INC. REF. 1-16)	
	224478-025	SEAL KIT (INC. REF. 6-16)	

HYDRAULIC CYLINDER COMPONENTS - 1" X 3 1/2"

Figure 3-50

Revised February 1999 due to addition of figure to manual.

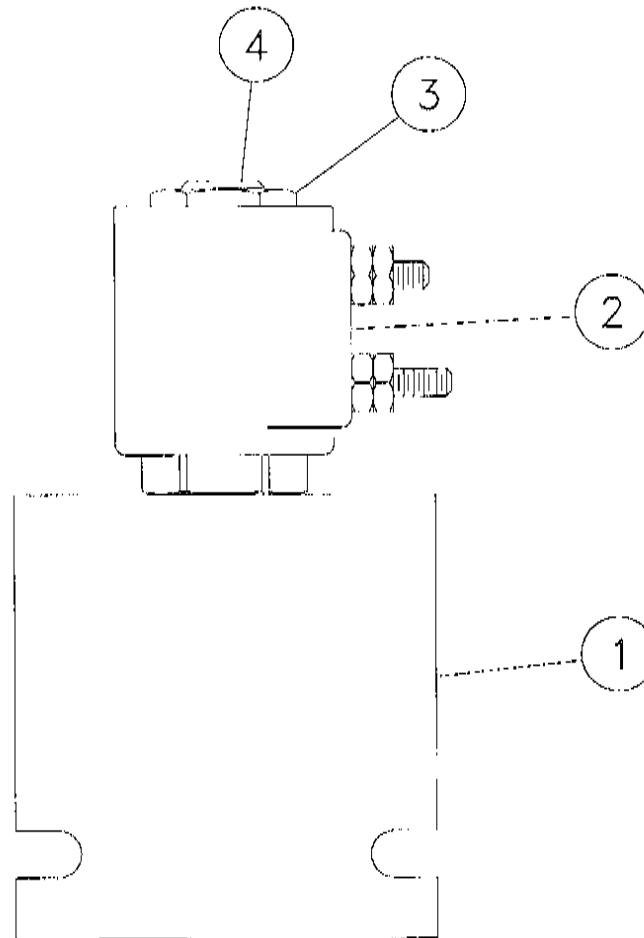


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-50	1	234359-003 NUT	1
3-50	2	234359-005 PISTON	1
3-50	3	68094-057 WASHER-RACK-UP	3
3-50	4	68094-055 O-RING	1
3-50	5	1749-025 SEAL-O RING 15007 (90D)	1
3-50	6	234359-017 BARREL (W/CLEVIS AND PORTS)	1
3-50	7	234359-007 HEAD	1
3-50	8	234359-009 SEAL-ROD	1
3-50	9	234359-011 SEAL-DUST	1
3-50	10	234359-013 COLLAR	1
3-50	11	234359-015 SHAFT	1
	234359-019	REPAIR KIT (INC. REF. 3, 4, 5, 8 & 9)	
	234359-001	CYLINDER-1X3 1/2 (INC. REF. 1-11)	

SOLENOID VALVE COMPONENTS

Figure 3-51

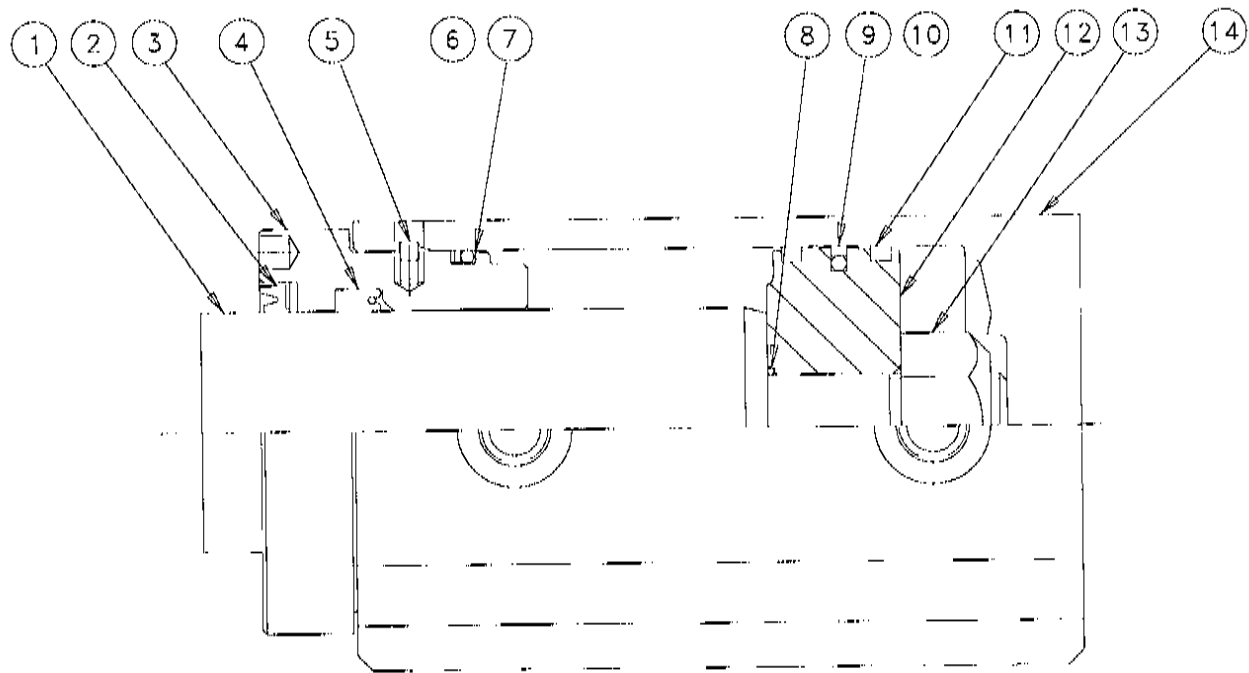
Revised February 1999 due to addition of figure to manual.



REF. NO.	PART NO.	DESCRIPTION	QTY.
3-51	1	244725-003 BODY - VALVE	1
3-51	2	244726-005 COIL	1
3-51	3	244725-007 NUT - COIL	1
3-51	4	244725-009 CARTRIDGE - SOLENOID	1
		244725-011 SEAL KIT	1
	244725-001	VALVE-2 POS 4 WAY (INC. ALL ITEMS IN THIS FIGURE)	

HYDRAULIC CYLINDER COMPONENTS - DUAL

Figure 3-52



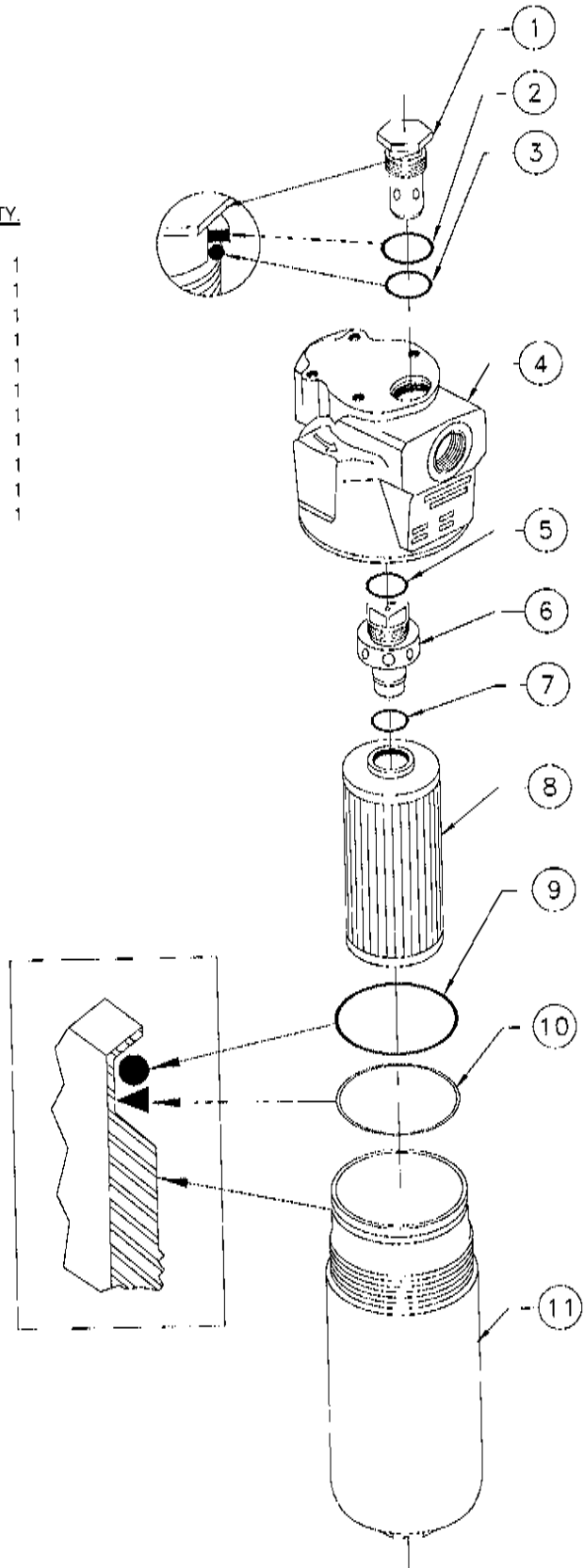
<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-52	1	234498-003 SHAFT	2
3-52	2	234498-005 WIPER	2
3-52	3	234498-007 HEAD	2
3-52	4	234498-009 U-CUP	2
3-52	5	234498-011 RETAINER WIRE	2
3-52	6	234498-013 BACK-UP WASHER	2
3-52	7	234498-015 O-RING	2
3-52	8	234498-017 O-RING	2
3-52	9	234498-019 PISTON SFBI	2
3-52	10	234498-021 O-RING	2
3-52	11	234498-023 WEAR RING	4
3-52	12	234498-025 PISTON	2
3-52	13	234498-027 LOCKNUT	2
3-52	14	234498-029 CASE	1
	234498-031	SEAL KIT (INC. REF. 2, 4-11)	
	234498-001	CYLINDER-DUAL HYD. (INC. REF. 1-14)	

OIL FILTER COMPONENTS

Figure 3-53

Revised February 1999 due to addition of figure to manual.

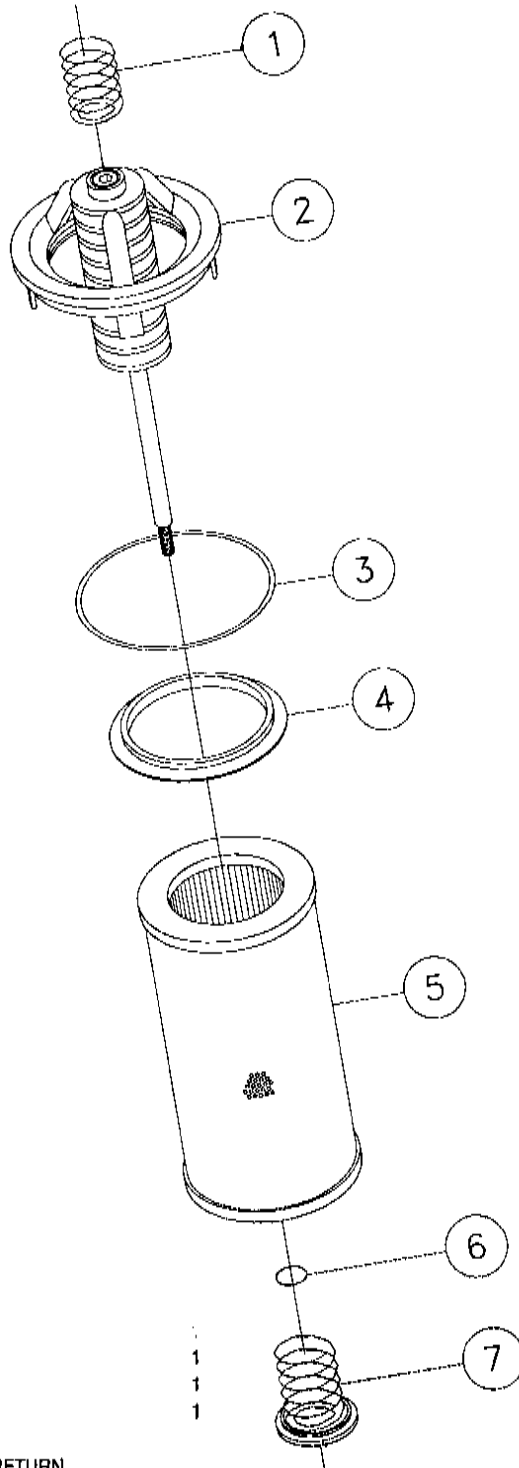
REF. NO.	PART NO.	DESCRIPTION	QTY.
3-53	1	244560-003 VALVE - BY-PASS	1
3-53	2	244560-005 RING - BY-PASS BACKUP	1
3-53	3	75353-003 SEAL-HEAD/BY-PASS HOUSING	1
3-53	4	244560-007 HEAD	1
3-53	5	75353-013 SEAL-HEAD/MANIFOLD	1
3-53	6	244560-009 VALVE - REVERSE FLOW	1
3-53	7	244560-011 SEAL - ELEMENT TO ADAPTER	1
3-53	8	244560-013 ELEMENT FILTER	1
3-53	9	244560-015 SEAL - HEAD/BOWL	1
3-53	10	224400-005 RING-HEAD TO BOWL	1
3-53	11	244560-017 BOWL	1
	244560-001	FILTER-HIGH PRESSURE (INC. ALL ITEMS IN THIS FIGURE)	



HYDRAULIC FILTER COMPONENTS

Figure 3-54

Revised February 2000 due to update
in parts list. Changed parts marked with *.



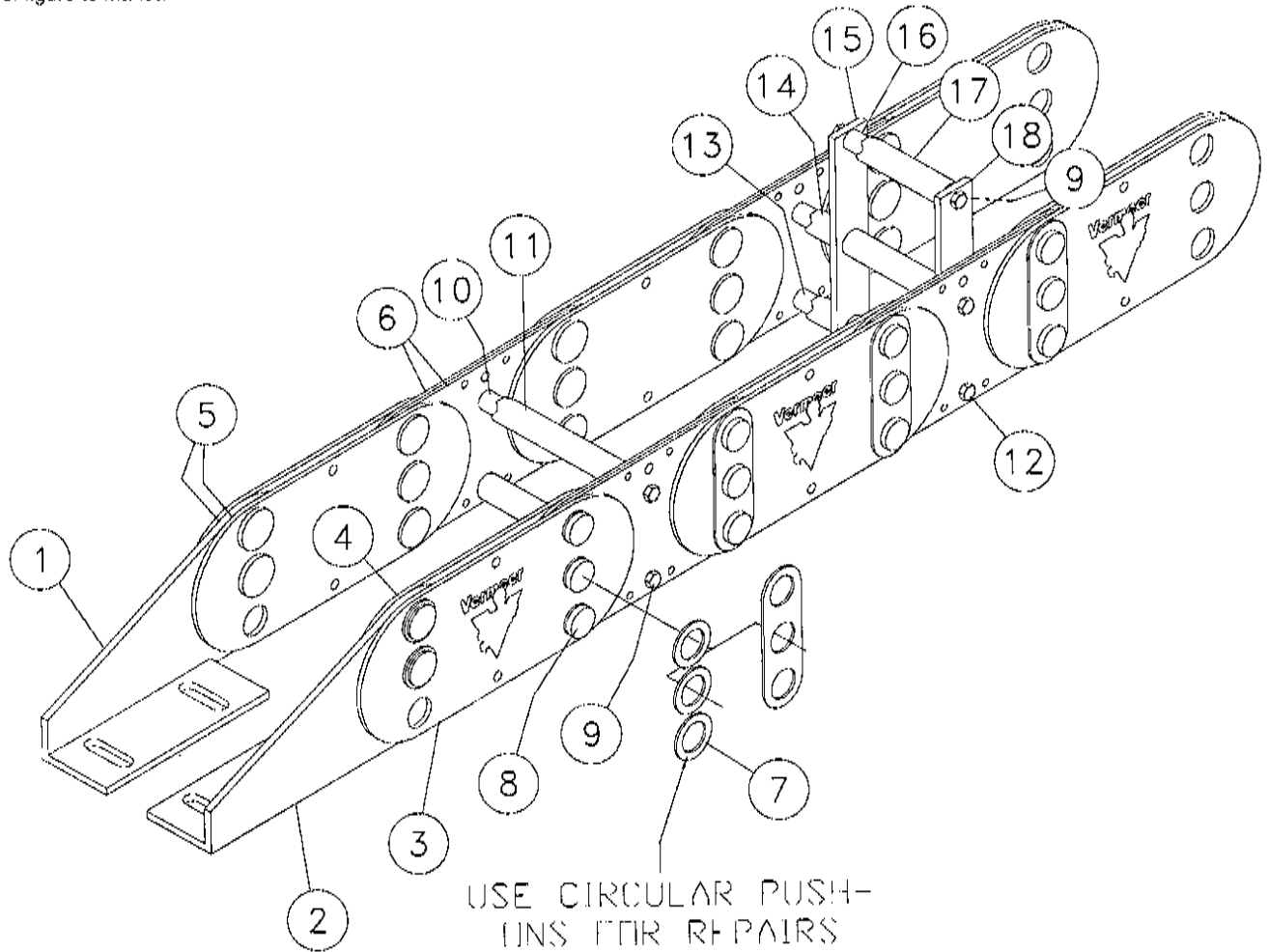
REF. NO.	PART NO.	DESCRIPTION
3-54	1	89671-005 SPRING
3-54	2	*244486-005 INSERT ASSEMBLY
3-54	3	89671-007 SEAL
3-54	4	89671-011 BYPASS GASKET
3-54	5	*244486-003 FILTER ELEMENT
3-54	6	89671-013 ELEMENT-O-RING
3-54	7	89671-015 BYPASS ASSEMBLY

*244486-001 FILTER-HYDRAULIC RETURN
(INC. ALL ITEMS IN THIS FIGURE)

HOSE CARRIER COMPONENTS

Figure 3-55

Revised February 1999 due to addition of figure to manual.

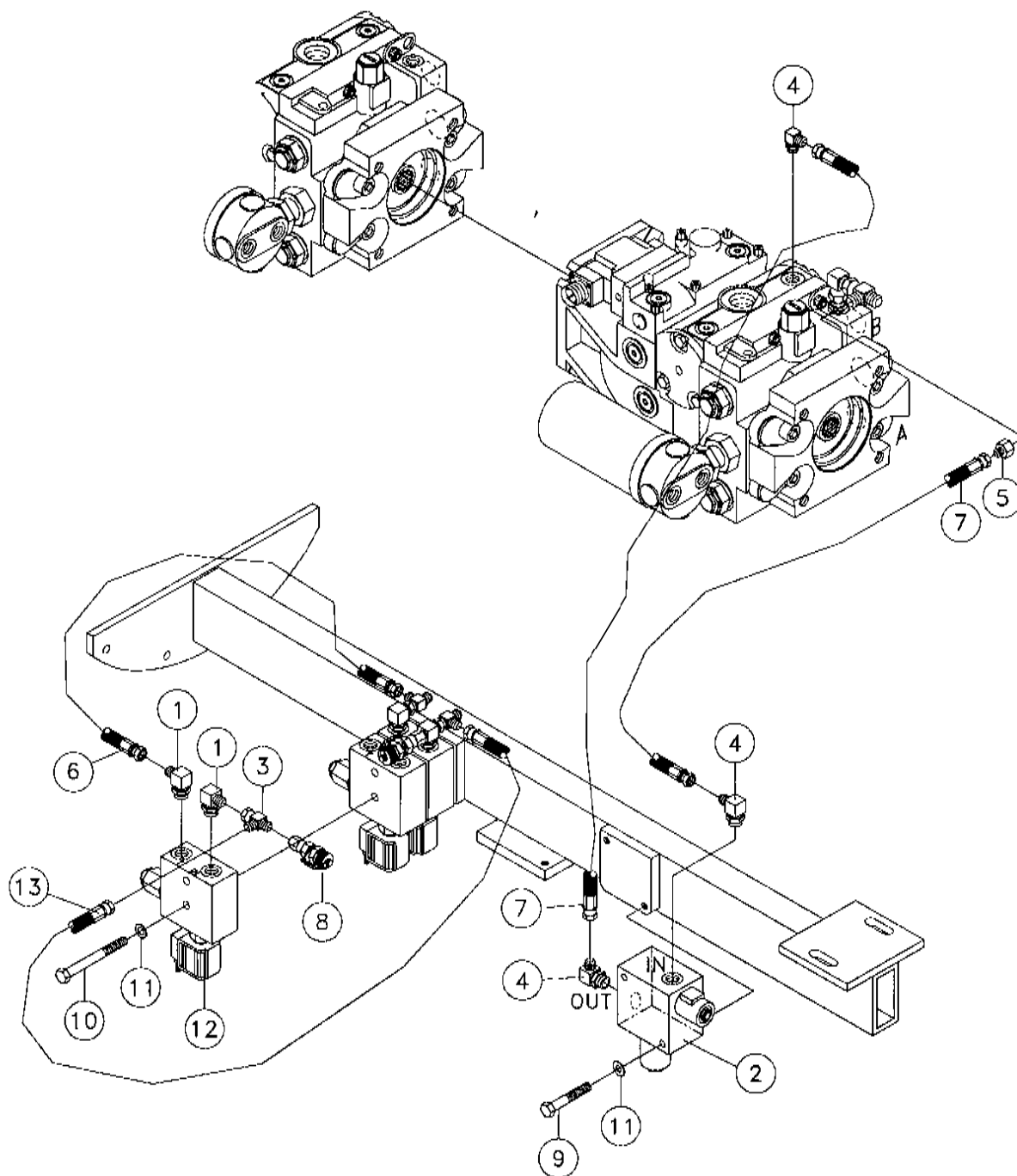


REF. NO.	PART NO.	DESCRIPTION	QTY.	
3-55	1	234256-003	PT45E MOUNTING BRACKET ASSY (L)	2
3-55	2	234256-005	PT45F MOUNTING BRACKET ASSY(R)	2
3-55	3	234256-007	PT45F OUTER LINK W/VERMEERLOGO	44
3-55	4	234256-009	PT45F OUTER LINK	44
3-55	5	234256-011	PT45E ANTI-FRICTION DISC	176
3-55	6	234256-013	PT45E INNER LINK 15.0R VERMEER	84
3-55	7	234256-015	PT45E CIRCULAR PUSH-ON	252
3-55	8	234256-017	PT45E HINGE PIN-PUSH ON FASTNR	252
3-55	9	234256-019	BOLT-WHIZ LOCK .250-20 X .620	84
3-55	10	234256-021	CARRIER ROD PT35E/45E 5.288	2
3-55	11	234256-023	NYLON SLEEVE PT35E/45E 5.163	2
3-55	12	234256-025	BOLT-WHIZ LOCK .250-20X.88	42
3-55	13	234256-027	PT35E/45E CARRIER ROD 5.098	21
3-55	14	234256-029	PT35E/45E NYLON SLEEVE 1.829	42
3-55	15	234256-031	CARRIER PLATE WELDMENT	21
3-55	16	234256-033	PT35E/45E CARRIER ROD 2.954	21
3-55	17	234256-035	PT35E/45E NYLON SLEEVE 2.829	63
3-55	18	234256-037	CARRIER SIDE PLATE	21
	234256-001	CARRIER KIT (COMPLETE) (INC. ALL ITEMS LISTED) IN THIS FIGURE)		
	234256-039	HOSE CARRIER (INC. ONE OF REF. 15 & 18, TWO OF REF. 9 & 14, THREE OF REF. 17 & FOUR OF REF. 12)		

ROCKFIRE VALVE ASSEMBLY - SN176-

Figure 3-56

Revised February 2000 due to addition of figure to manual.

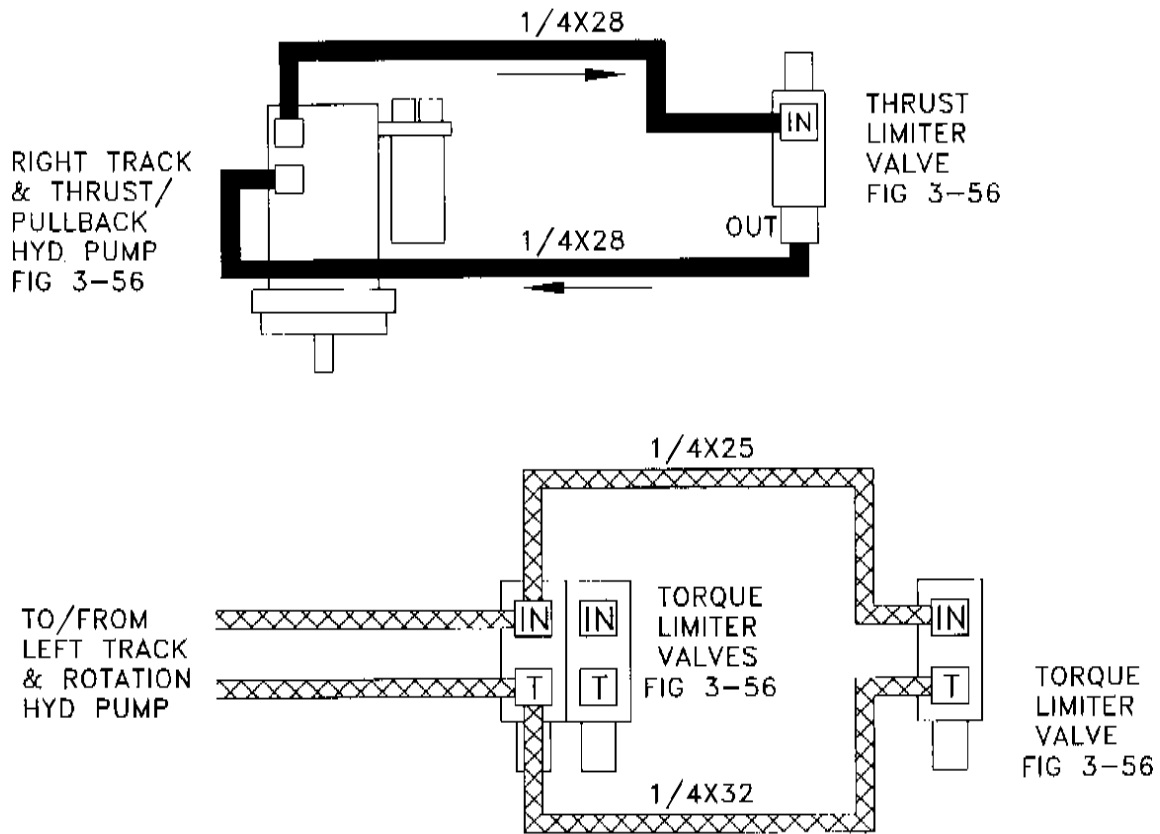


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
3-56	1	57950-001	FITTING-6M X 4JIC 90 DEG	2	3-56	8	83015-001	FITTING-4F JIC DIAGNOSTIC	1
3-56	2	250131-001	VALVE-THRUST LIMITER (BREAKDOWN FIG. 3-58)	1	3-56	9	244147-001	BOLT-5/16-18X2 1/4 GR 8 ZINC PL	2
3-56	3	60248-001	TEE-4M JIC X 4M JIC X 4FS JIC	1	3-56	10	275231-001	BOLT-3/8-16X5 GR 8 HEX ZINC PLT	2
3-56	4	59423-001	FIT-4M JIC X 4M ADJ. 90 DEG ELBOW	3	3-56	11	235714-001	WASHER-5/16 SAE HARD ZINC PLTD	4
3-56	5	59928-001	6F JIC X 4M JIC ST REDUCER	1	3-56	12	250120-001	VALVE-REMOTE PRESS. LIMITER (BREAKDOWN FIG. 3-59)	1
3-56	6	23843-559	HOSE-1/4X32 4FS JIC 3000 PSI	1	3-56	13	53843-325	HOSE-1/4X25 4FS JIC 3000 PSI	1
3-56	7	53843-181	HOSE-1/4X28 4FS JIC 3000 PSI	2					

HYDRAULIC COMPONENTS LOCATION DIAGRAM - ROCKFIRE

Figure 3-57

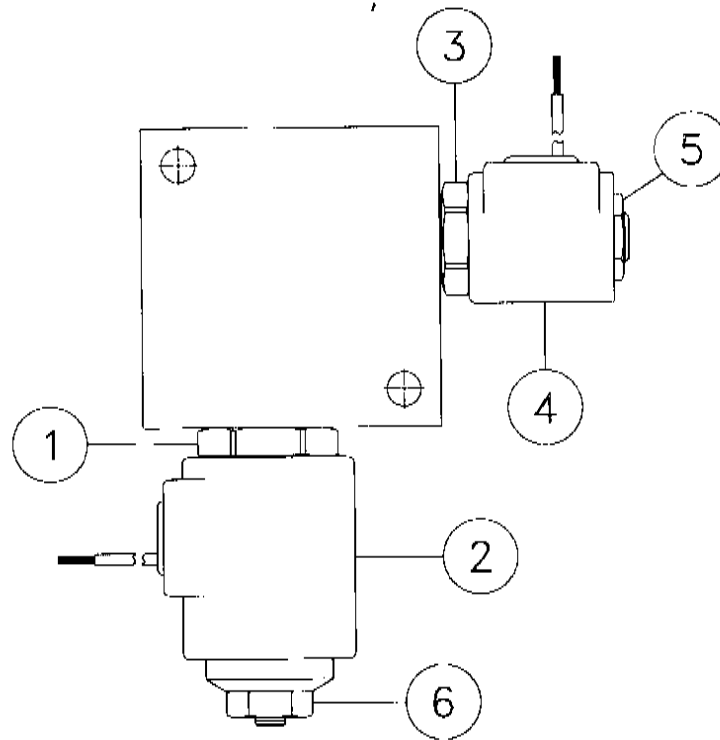
Revised February 2000 due to addition of figure to manual.



THRUST LIMITER VALVE COMPONENTS - ROCKFIRE

Figure 3-58

Revised February 2000 due to addition of figure to manual.

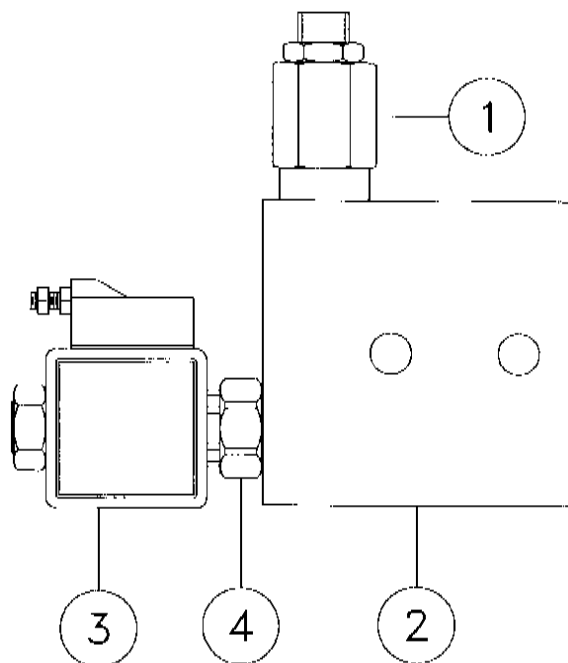


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-58	1	2501310-003 CARTRIDGE-RELIEF W/ PILOTED SPOOL	1
		151954-001 SEAL KIT	1
3-58	2	251112-005 COIL-10 DL 12V/SPL	1
3-58	3	250131-005 CARTRIDGE-2 WAY NCHP	1
		278950-003 SEAL KIT	1
3-58	4	251117-009 COIL-#8	1
3-58	5	244725-007 NUT-COIL	1
3-58	6	250131-007 NUT-COIL	1
	250131-001	VALVE-THRUST LIMITER (INC. ALL ITEMS IN FIGURE)	

PRESSURE LIMITER VALVE COMPONENTS - ROCKFIRE

Figure 3-59

Revised February 2000 due to
addition of figure to manual.

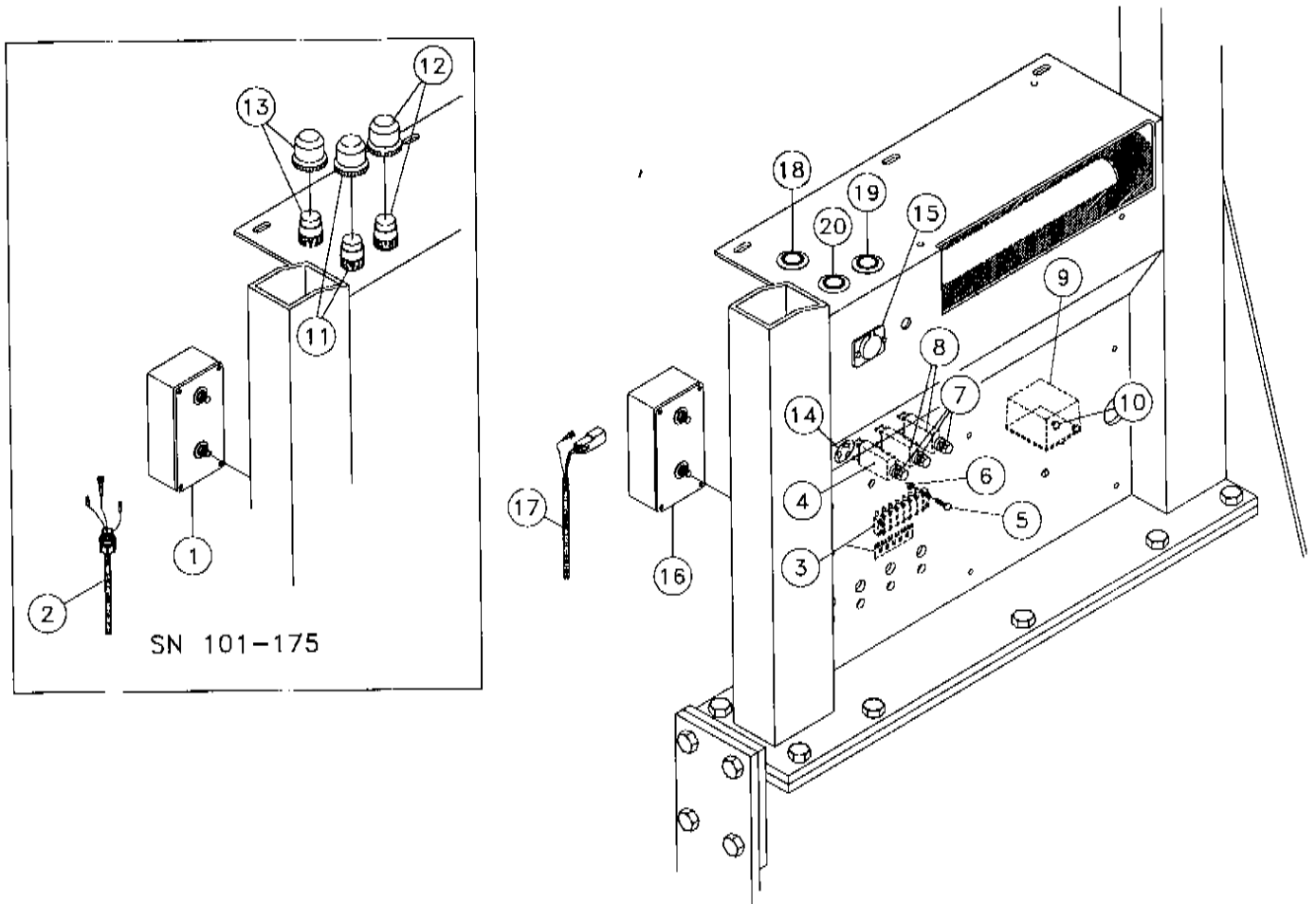


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
3-59	1	250120-003 VALVE-RELIEF	1
		122618-001 SEAL-KIT SOLENOID VALVE	1
3-59	2	NSS BODY-VALVE	1
3-59	3	251063-003 COIL	1
3-59	4	250120-005 VALVE-SOLENOID	1
		228114-007 SEAL KIT	1
	250120-001	VALVE-PRESSURE LIMITER (INC. ALL ITEMS IN FIGURE)	

ROPS CONTROL PANEL ASSEMBLY

Figure 4-1

Revised February 2000 due to update in illustration & parts list. Added parts marked with *.

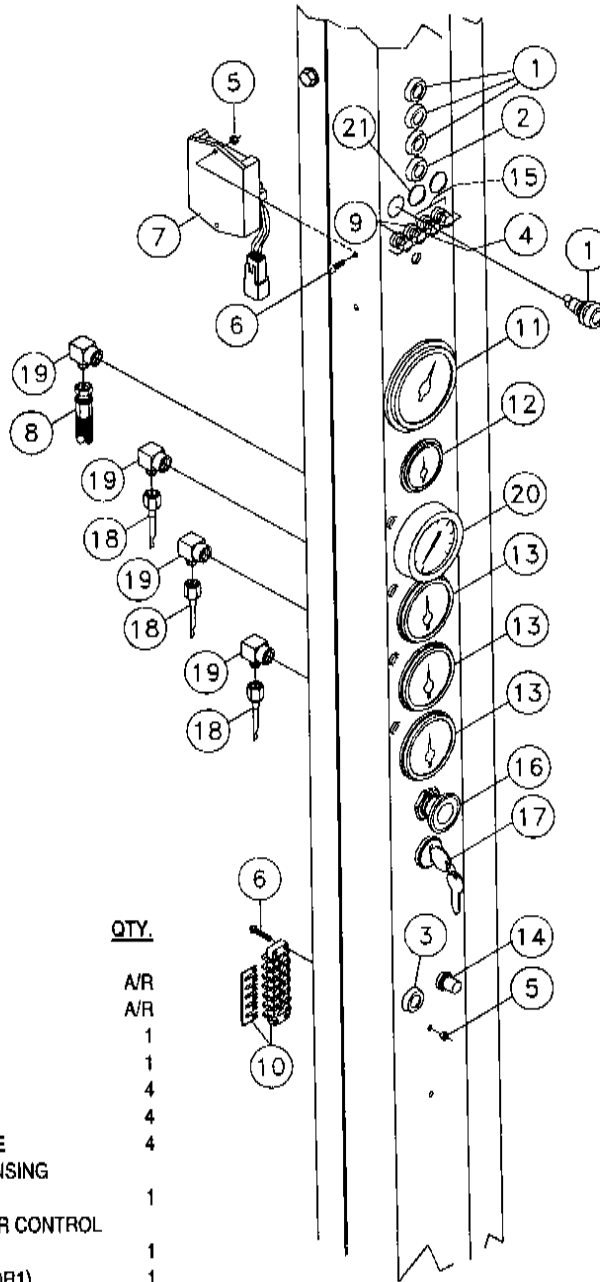


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
4-1	1	217231-001 ZAP ALERT-CURRENT SENSE (SN101-175)	1	4-1	13	226209-001 BUTTON ASSY-CURRENT TEST (SN101-175)	1
4-1	2	224922-001 COIL-CURRENT(W/17'COAX CABLE) (SN101-175)	1			215993-001 BOOT-GREEN RUBBER	1
4-1	3	251991-001 TERMINAL - 6 POLE W/ JUMPER	1			904423-001 CONTACT BLOCK	1
4-1	4	72082-001 BREAKER-45-70-514-DD 22 AMP	1			215992-001 BUTTON-GREEN FLUSH CONTACT	1
4-1	5	1802-010 BOLT - 3/16" X 1" NC STOVE	2	4-1	14	904346-001 BUZZER	1
4-1	6	400-001 NUT-3/16 NC HEX	2			905001-001 BOLT-8-32 X 2 STOVE	2
4-1	7	89597-001 COVER-BREAKER SWITCH	3			904995-001 WASHER-8 INTERNAL STAR	2
4-1	8	78107-001 BREAKER-10 AMP	2			399-001 NUT-8-32 HEX	2
4-1	9	98937-001 SWITCH-MURPHY 12V/30 SEALED	1	4-1	15	236473-001 OUTLET-12 V STAINLESS	1
4-1	10	1802-006 BOLT-10-24 X 3/4 RND HD STOVE	2			57200-001 SCREW-#8-32X1/2 RND.HD.MACH.	2
4-1	11	215991-001 STRIKE ALERT TEST BUTTON ASSY (SN101-175)	1			69759-001 LOCK NUT-#8-32 NYLON INSERT PL	2
		215993-001 BOOT-GREEN RUBBER	1	4-1	16	*281523-001 ZAP ALERT-CURRENT SENSE (SN176-)	1
		215994-001 BLOCK-N.O. CONTACT	1	4-1	17	*276856-001 COIL-CURRENT W/ 17' COAX CABLE (SN176-)	1
		215992-001 BUTTON-GREEN FLUSH CONTACT	1	4-1	18	*277697-001 SWITCH-PUSH BUTTON ZAP ALERT CURRENT TEST (SN176-)	1
4-1	12	215995-001 STRIKE ALERT RESET BUTTON ASSY (SN101-175)	1	4-1	19	*277695-001 SWITCH-PUSH BUTTON ZAP ALERT RESET (SN176-)	1
		215996-001 BUTTON-BLACK EXTENDED CONTACT	1	4-1	20	*277696-001 SWITCH-PUSH BUTTON ZAP ALERT VOLTAGE TEST (SN176-)	1
		215997-001 BOOT-BLACK RUBBER	1				
		215998-001 BLOCK-N.C. CONTACT	1				

ROPS CONTROL PANEL (CONTINUED)

Figure 4-2

Revised August 2000 due to update in illustration & parts list. Changed parts marked with *.

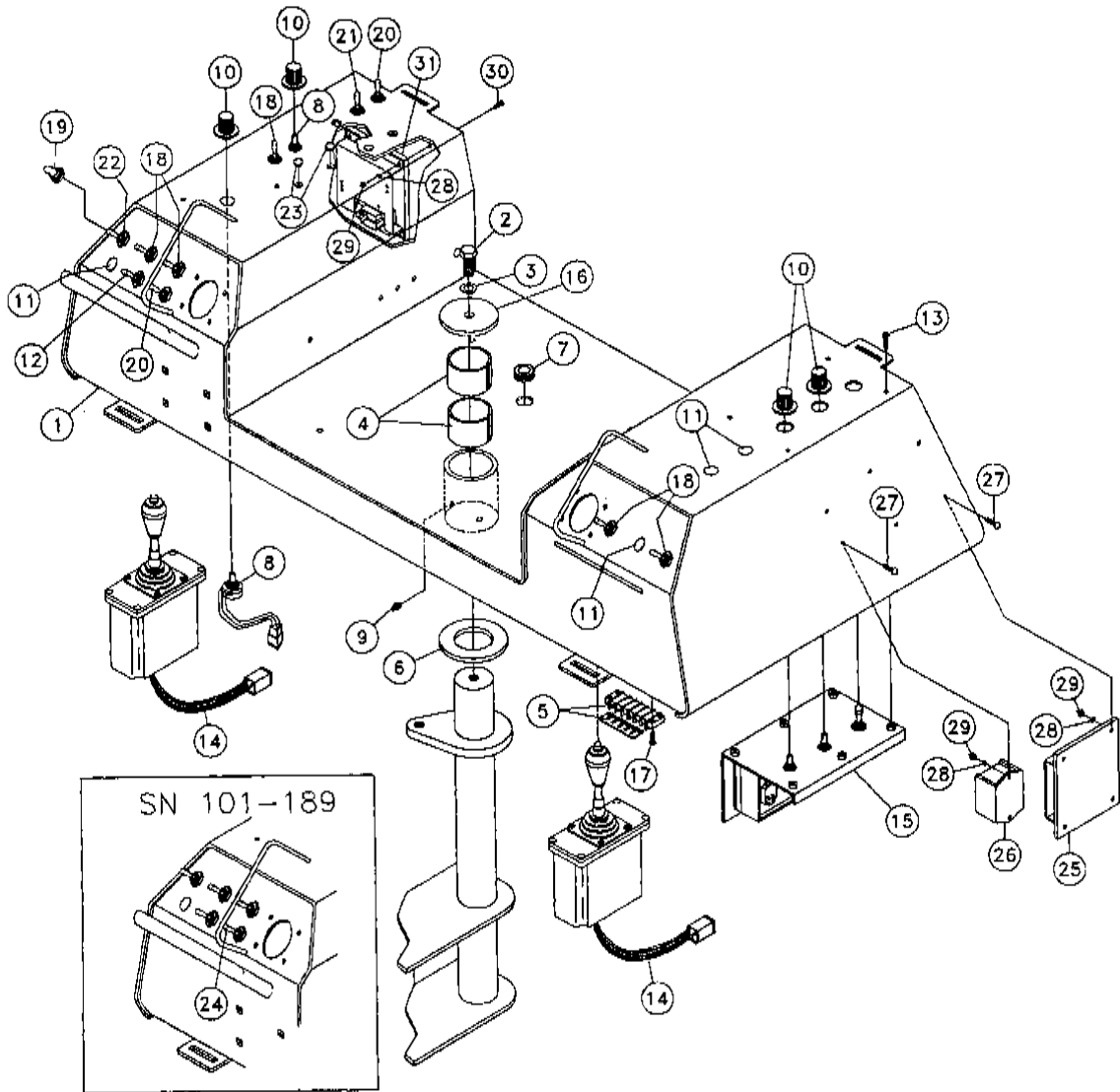


REF. NO.	PART NO.	DESCRIPTION	QTY.
4-2	1	*27148-001 LIGHT-RED WARNING 70889-001 BULB. #112-1418	A/R A/R
4-2	2	81374-001 LIGHT-GREEN WARNING	1
4-2	3	86581-001 LIGHT-WARNING (AMBER)	1
4-2	4	89597-001 COVER-BREAKER SWITCH	4
4-2	5	400-001 NUT-3/16 NC HEX	4
4-2	6	1802-010 BOLT - 3/16" X 1" NC STOVE	4
4-2	7	231248-001 RELAY-LOW VOLTAGE SENSING (SN101-175)	1
	251672-001	ELECTRONIC MODULE-DSR CONTROL (SN176-)	1
4-2	8	53843-133 HOSE-1/4X230 4FS JIC (100R1)	1
4-2	9	78107-001 BREAKER-10 AMP	2
4-2	10	251991-001 TERMINAL-6 POLE W/ JUMPER	1
4-2	11	98933-001 GAUGE-TACHOMETER 0-3000 RPM	1
4-2	12	201793-001 GAUGE-WATER TEMP	1
4-2	13	77964-001 GAUGE-CO-1015.5-CBMUTNV	3
4-2	14	66816-001 SWITCH ASSY	1
4-2	15	72079-001 BREAKER-5 AMP	2
4-2	16	86575-001 OPERATOR-PUSH/PULL W/O BUTTON	1
	904563-001	E-STOP LENS	1
	904423-001	CONTACT BLOCK	1
4-2	17	63579-001 SWITCH-1219 GENERAL	1
	66462-001	KEY- NG- 100/1219 GENERAL	1
4-2	18	244520-001 HOSE-.078X136 4FS JIC ST	3
4-2	19	81665-001 FITTING-1/4FX4M JIC 90 DEG.	4
4-2	20	234343-001 GAUGE-PRESSURE 0-2000 PSI W/GASKET	1
4-2	21	*97389-009 PLUG-3/4" BLACK DOME	A/R

Revised August 2000 due to update in illustration & parts list. Changed part marked with *.

CONTROL PANEL ASSEMBLY

Figure 4-3

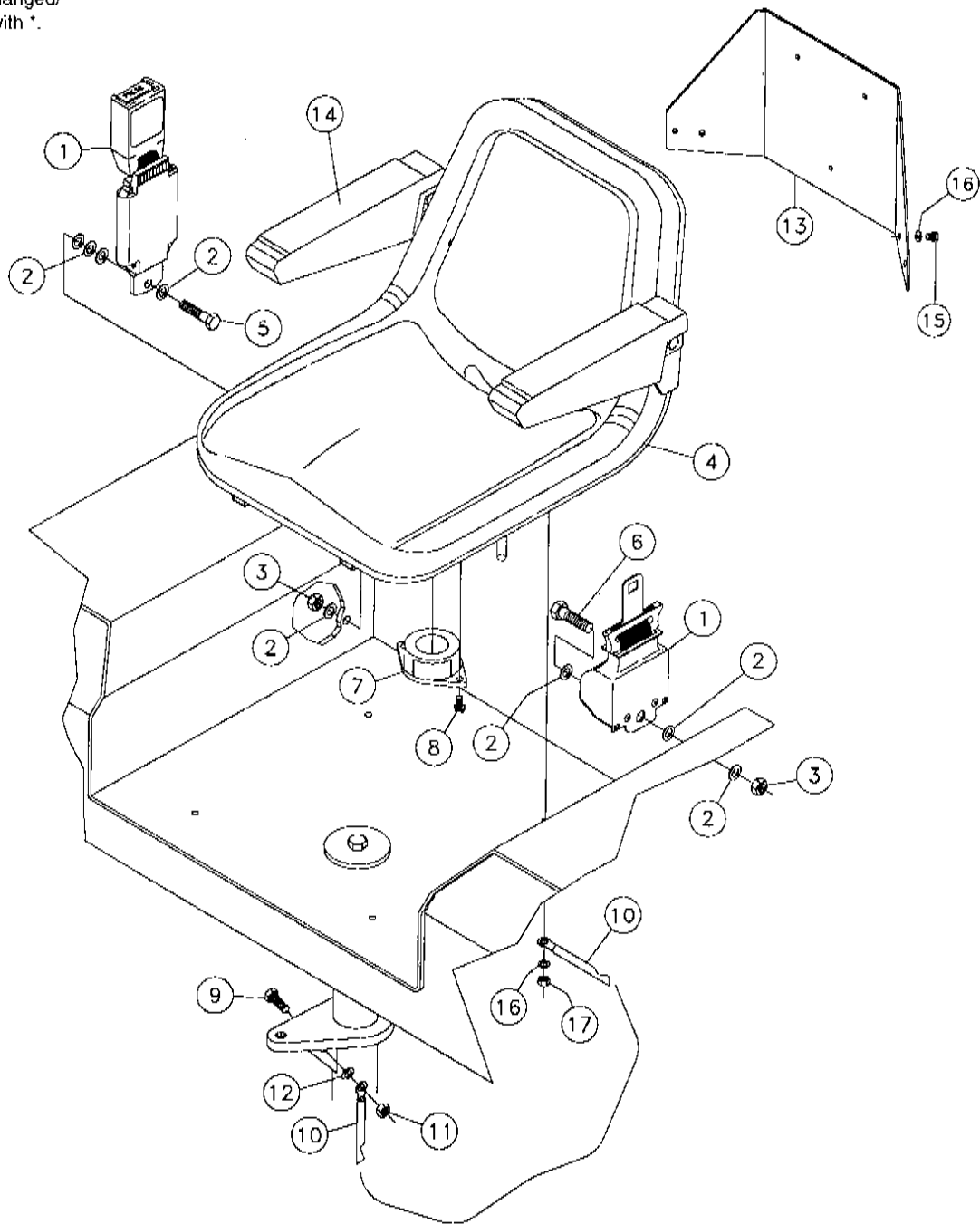


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
4-3	1	216741-003 OPERATORS STATION ASSY (INC. REF. 4 & 9)	1	4-3	16	53276-001 WASHER-JACKSHAFT END	1
4-3	2	235729-001 BOLT-1/2-13X1 GR8 HEX ZINC PLT	1	4-3	17	1802-006 BOLT-10-24 X 3/4 RND HD STOVE	2
4-3	3	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	1	4-3	18	67292-001 SWITCH-TOGGLE 8500K9 SEALED (SN101-175 QTY WAS 1)	5
4-3	4	85790-003 BUSHING-SPRING 2 1/4X2 X 1 1/2	2	4-3	19	5537-001 COVER-TOGGLE SWITCH	11
4-3	5	251991-001 TERMINAL-6 POLE W/ JUMPER	1	4-3	20	*78104-001 SWITCH-DPOT MOMENTARY	2
4-3	6	215200-001 WASHER-THRUST	1	4-3	21	86579-001 SWITCH-4 POLE ON-ON-ON	1
4-3	7	1865-015 GROMMET-BLACK/5/8ID-3/16 GR.	1	4-3	22	248035-001 SWITCH-TOGGLE ON/ON 4 POLE	2
4-3	8	244485-001 POTENTIOMETER-10K W/PLUG (SN101-175 QTY WAS 1)	2	4-3	23	79942-001 PLUG-15/32 BUTTON	2
4-3	9	598-001 ZERK-1/4" NF ST GREASE	1	4-3	24	903389-001 SWITCH-TOGGLE #8510K1 (SN101-189)	1
4-3	10	78114-001 CONTROL KNOB #409D2K1	4	4-3	25	251043-001 CONTROLLER-PWM VALVE DRIVER	1
4-3	11	97389-007 PLUG-9/16"BLACK DOME	4	4-3	26	231385-001 TIMER-5 SECOND DELAY	1
4-3	12	210082-001 SWITCH-3 POSITION TOGGLE	1	4-3	27	1802-010 BOLT - 3/16" X 1" NC STOVE	6
4-3	13	103202-001 SCREW-1/4-20X1/2 STH MACHINE	6	4-3	28	480-001 WASHER-3/16 S/T LOCK	10
4-3	14	234876-001 HANDLE-CONTROL (BRKDNW FIG. 4-13)	2	4-3	29	400-001 NUT-3/16 NC HEX	10
4-3	15	277806-001 BOX-DRILL/TRANSPORT	1	4-3	30	1802-010 BOLT-3/16X1 NC STOVE (SN176-)	4
				4-3	31	251043-001 CONTROLLER-PWM VALVE DRIVE (SN176-)	1

SEAT ASSEMBLY

Figure 4-4

Revised February 1999 due to hardware updates. Changed/added parts marked with *.

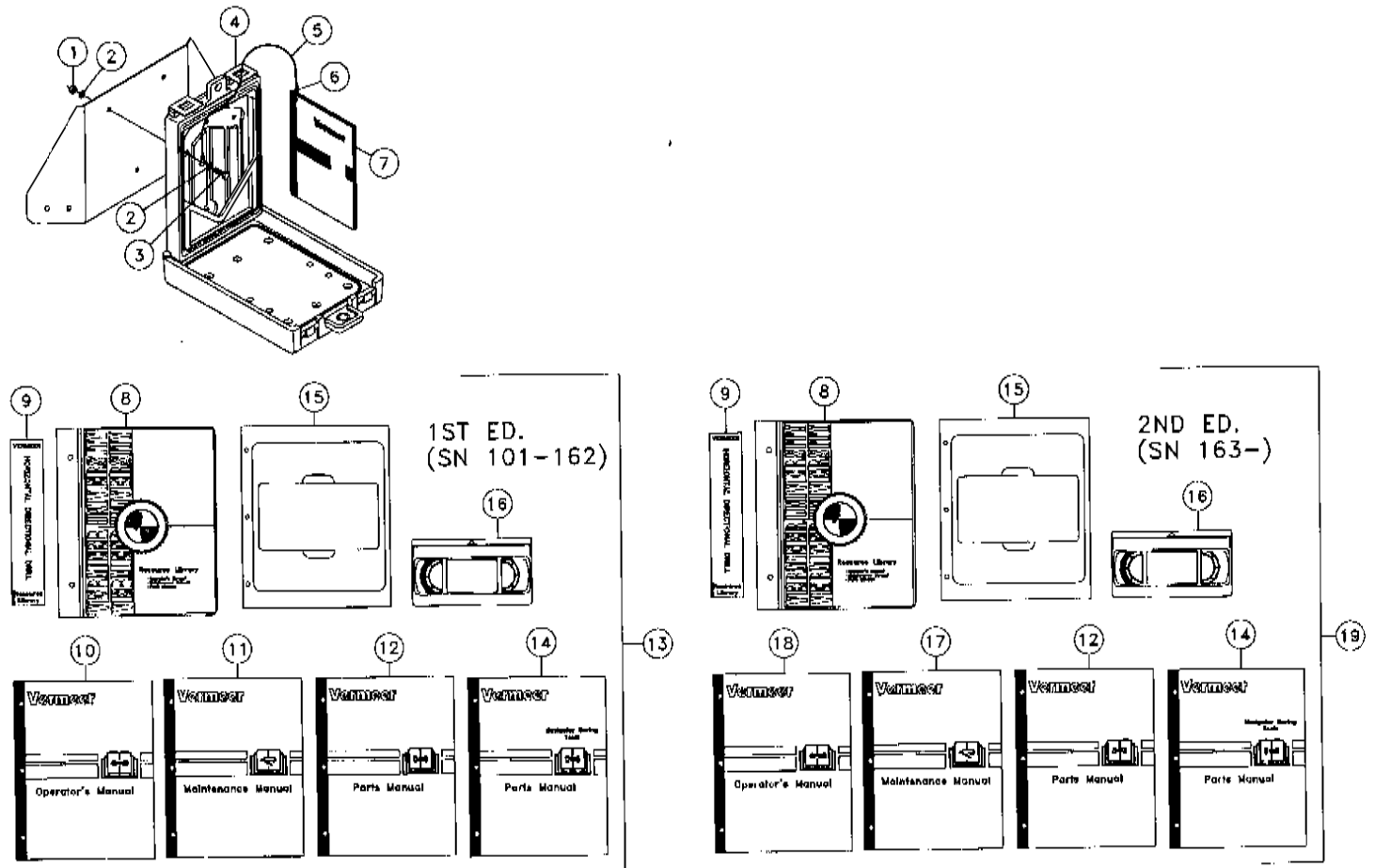


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.	
4-4	1	203254-001	2*SEAT BELT F08015	1	4-4	10	219380-001 STRAP-GROUND 4 GA.X12" E-E	1
4-4	2	*250540-001	WASHER-7/16 HARDENED FLAT Y/I	8	4-4	11	235725-001 NUT-3/8-16 GR8 ZINC PLTD	1
4-4	3	250509-001	NUT-7/16-NC GR8 TOP LOCK Y/ZI	2	4-4	12	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	1
4-4	4	219186-001	SEAT (DOES NOT INC. ARM REST KIT)	1	4-4	13	235683-001 MOUNT-MANUAL BOX	1
4-4	5	*250507-001	BOLT-7/16-14X1 3/4" GR 8 HEX Z/P	1	4-4	14	220238-001 KIT-ARM REST (OPT.) (INC. MOUNTING HARDWARE)	1
4-4	6	*250584-001	7/16-14X1 1/4 GR5 HEX BOLT PL	1	4-4	15	235740-001 BOLT-5X16-18X1/2 GR8 ZINC PLT	4
4-4	7	219186-003	SWITCH-SAFETY	1	4-4	16	*235714-001 WASHER-5/16 SAE HARD ZINC PLTD	8
4-4	8	4474-004	5/16-18X1/2 FLG WHIZ BOLT	2	4-4	17	*235741-001 NUT-5/16"-18 GR 8 Z/P	4
4-4	9	235727-001	BOLT-3/8-16X1 GR8 HEX ZINC PLT	1				

Revised February 2000 due to update in illustration & parts list. Changed/added parts marked with *.

LITERATURE BOX ASSEMBLY

Figure 4-5

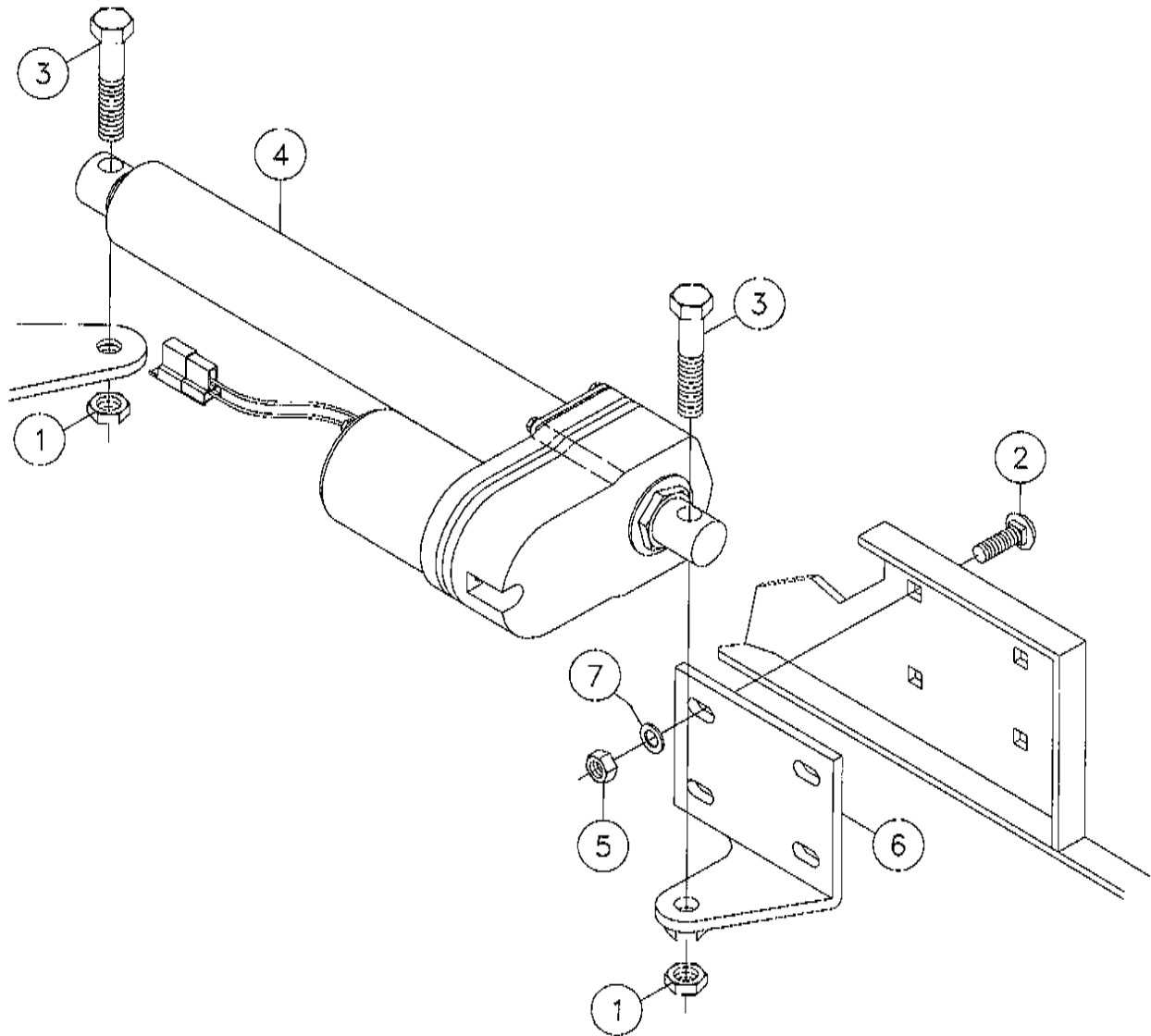


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
4-5	1	235732-001	NUT-1/4-20 GR8 ZINC PLTD	3	4-5	11	105400-P94 D40X40 NAVIGATOR MM 1ST ED
4-5	2	235716-001	WASHER-1/4 SAE HARD ZINC PLTD	6			(SN101-162)
4-5	3	235734-001	BOLT-1/4-20X3/4 GR8 ZINC PLTD	3	4-5	12	105400-P95 PM-D40X40 1ST
4-5	4	142410-001	CASE-6"X9"X1" OPERATOR MANUAL	1	4-5	13	*280544-001 D40X40 RESOURCE LIBRARY ASSEMBLY
4-5	5	142954-001	CABLE-.068DIA,NYLON CT.-36.00	1			(INC. REF. 8-12 & 14-16)
4-5	6	142423-001	CRIMP-CABLE (FOR.068DIA.CABLE)	2	4-5	14	*105400-M37 NAVIGATOR BORING TOOLS PM
4-5	7	250586-001	MANUAL ASSY-D40X40 OM MINI 1ST	1	4-5	15	*144145-001 VHS HOLDER
			(INC. REF. 5 & 6) (SN101-162)	1	4-5	16	*251803-001 VIDEO-FIRESTICK DRILL STEM
			*284512-001 ASSY.-OM MINI D40X40 (EN) 2 ND (SN163-)	1	4-5	17	*105400-R84 MM-D40X40 (EN) 2 ND (SN163-)
4-5	8	144144-001	NOTE BOOK BINDER 2"-3"	1	4-5	18	*105400-R82 OM-D40X40 (EN) 2 ND (SN163-)
4-5	9	7000B-222	DECAL RESOURCE LIB HORIZONTAL	1	4-5	19	*283809-001 D40X40 RESOURCE LIBRARY (SN163-)
			DIRECTIONAL DRILL	1			(INC. REF. 8,9,12,14 & 15-18)
4-5	10	105400-P92	D40X40 NAVIGATOR OM 1ST ED	1			
			(SN101-162)				

SEAT ACTUATOR ASSEMBLY

Figure 4-6

Revised July 1999 due to update
in illustration.

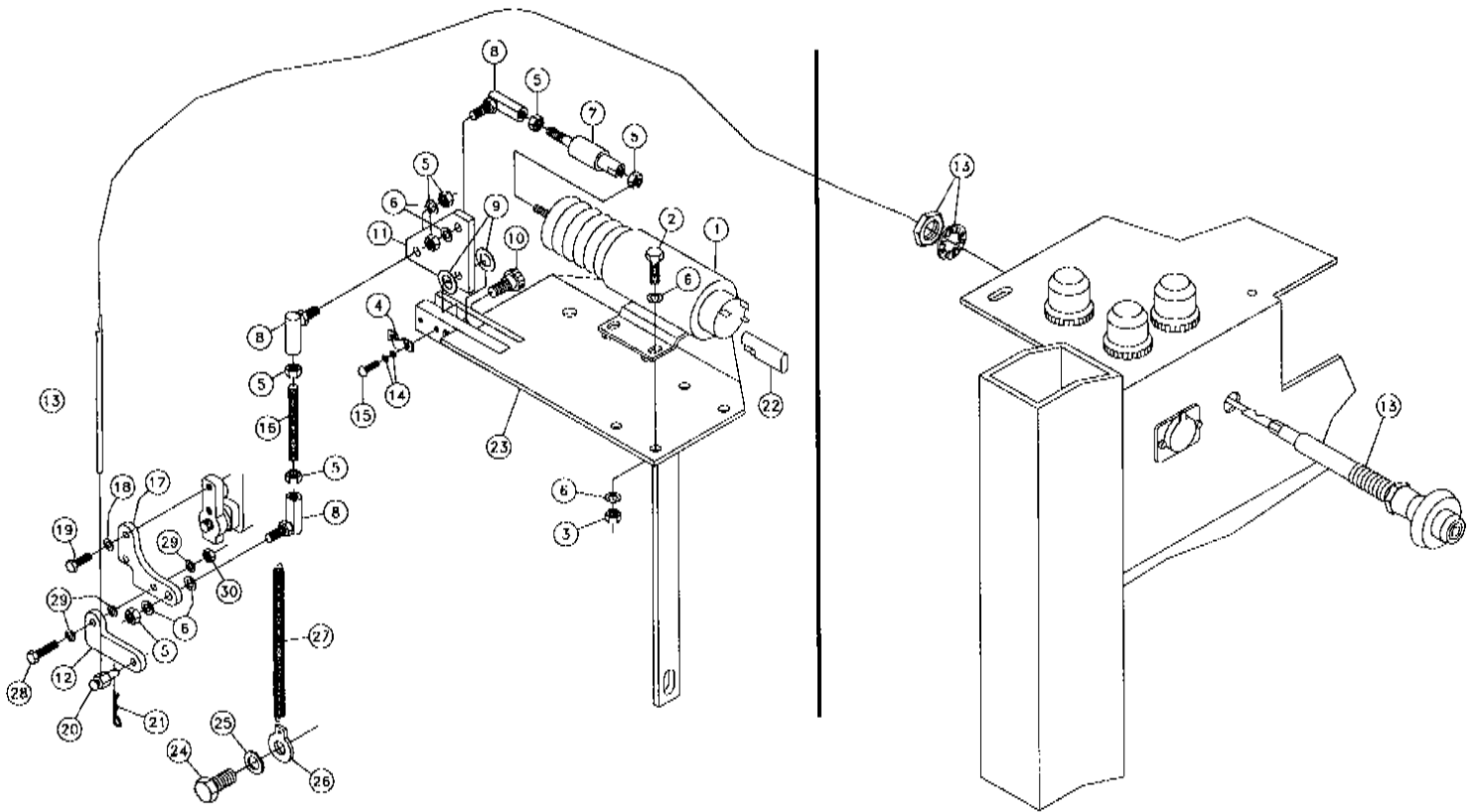


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
4-6	1	235722-001 NUT-1/2-13 GR8 JAM ZINC PLTD	2
4-6	2	375-010 BOLT-3/8"-16X1"GD#5 CARRIAGE	4
4-6	3	250573-001 BOLT-1/2-13 X 2 1/2 GR8 HX Y/Z	2
4-6	4	52864-001 ACTUATOR-D12-10A5-06	1
		52864-003 MOTOR-12V DC	1
		52864-005 SEALING KIT	1
		52864-007 INTERMEDIATE GEAR-10:1	1
		52864-009 CLUTCH	1
4-6	5	235725-001 NUT-3/8-16 GR8 ZINC PLTD	4
4-6	6	235256-001 MOUNT-SWING CYLINDER	1
4-6	7	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	4

THROTTLE SOLENOID ASSEMBLY (SN101-189)

Figure 4-7

Revised August 2000 due to update in heading.

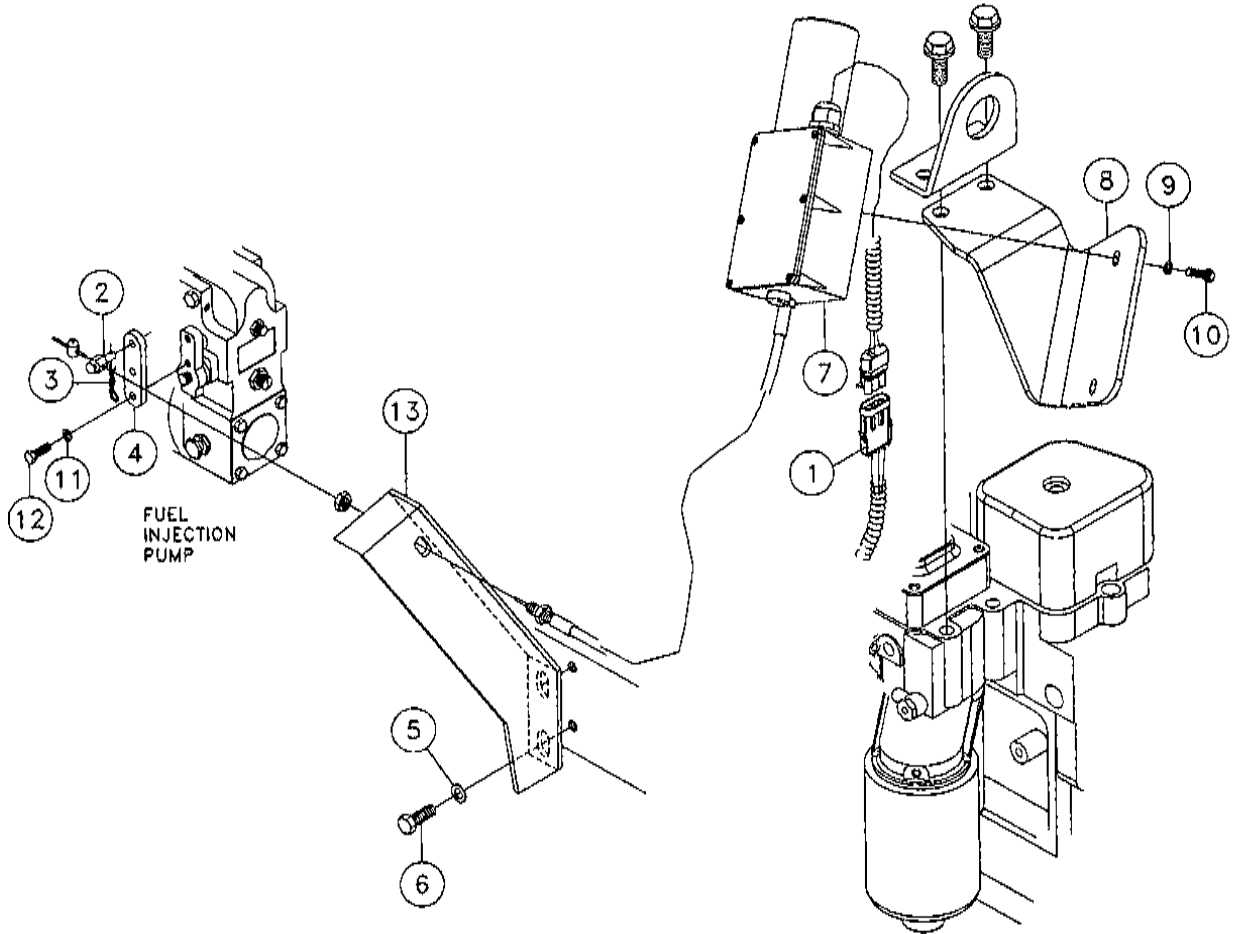


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
4-7	1	904548-001 SOLENOID-#2370	1	4-7	16	238704-001 ROD-THROTTLE LINKAGE	1
4-7	2	248031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL	4	4-7	17	250636-001 BAR - MOUNT THROTTLE LINKAGE	1
4-7	3	235741-001 NUT-5/16-18 GR8 ZINC PLTD	4	4-7	18	250511-001 6 MM HARD WASHER Y/ZINC	2
4-7	4	249810-001 CLAMP-A044476	1	4-7	19	243776-001 BOLT-6M X 15M GR8 HEX MET ZINC	2
4-7	5	445-001 NUT-5/16 NF HEX	7	4-7	20	2809-001 PIVOT AQ47641	1
4-7	6	235714-001 WASHER-5/16 SAE HARD ZINC PLTD	12	4-7	21	1794-007 HAIR PIN COTTER - .080 WIRE	1
4-7	7	214242-001 SWIVEL-5/16 SOLENOID SPRING	1	4-7	22	904562-001 RECTIFIER	1
4-7	8	4153-001 BALL JOINT - 5/16 SUPERIOR	3	4-7	23	238691-001 MOUNT-THROTTLE SOLENOID	1
4-7	9	4542-005 WSHR-7/8OD X1/2ID X18 GA MB	2	4-7	24	250501-001 BOLT 12MM X 25MM GR10.9 HEX Y/	1
4-7	10	238717-001 SCREW-1/2X5/8 SOC HD SHOULDER	1	4-7	25	238249-001 12 MM HARD WASHER Y/ZINC	1
4-7	11	238690-001 PLATE-THROTTLE LINKAGE PIVT OS	1	4-7	26	230960-001 PLATE-WASHER TAB OS	1
4-7	12	250635-001 BAR - LINKAGE CABLE THROTTLE	1	4-7	27	1789-007 SPRING - EXT. #106 4 1/2" OA	1
4-7	13	228761-001 CABLE 84" CONTROL	1	4-7	28	235735-001 BOLT-1/4-20X1 GR8 HEX ZNC PLTD	1
4-7	14	480-001 WASHER-3/16 S/T LOCK	4	4-7	29	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	3
4-7	15	1802-006 BOLT-10-24 X 3/4 RND HD STOVE	2	4-7	30	248198-001 NUT-1/4 -20GR8 TOP LOCK ZINC	1

THROTTLE SOLENOID ASSEMBLY (SN190-)

Figure 4-7A

Revised August 2000 due to addition of figure to manual.



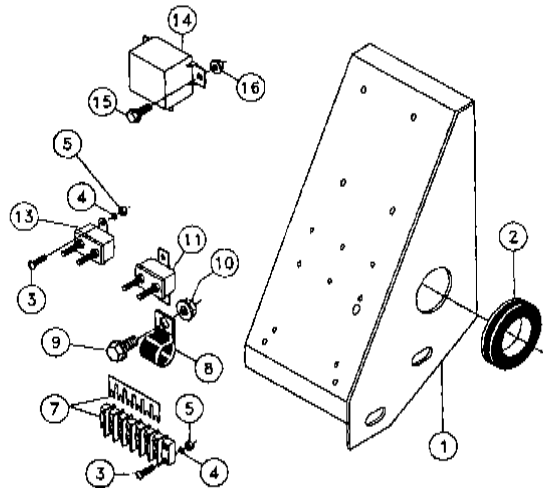
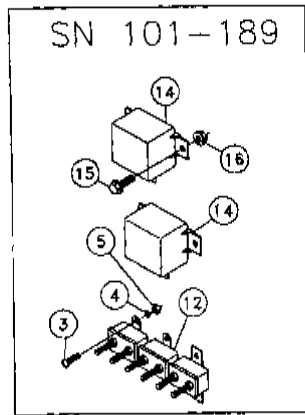
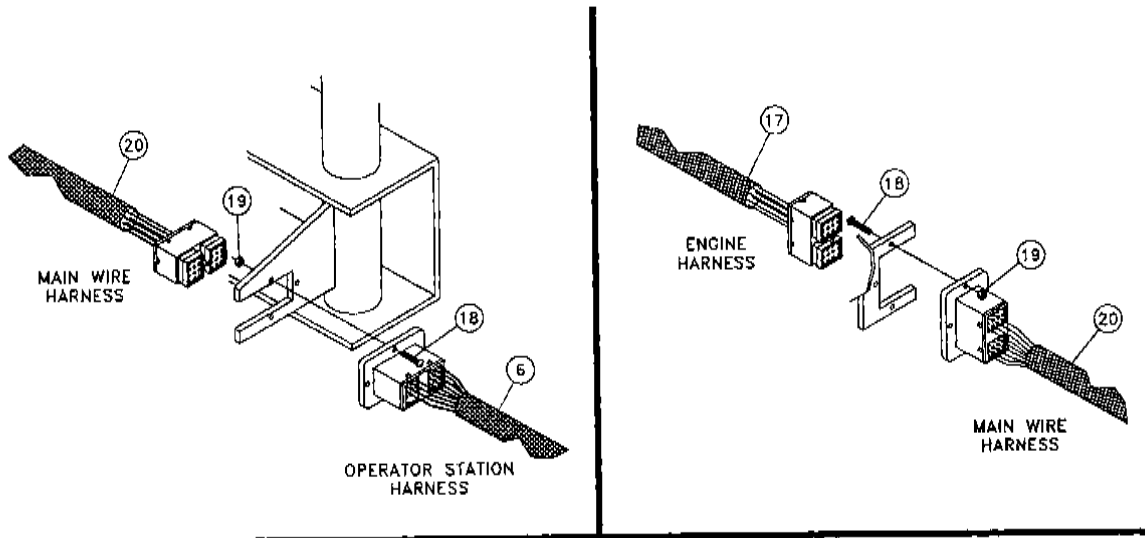
<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
4-7A	1	283594-001 HARNESS-ADDCO THROTTLE KIT	1
4-7A	2	2809-001 PIVOT	1
4-7A	3	1794-007 HAIR PIN COTTER-.080 WIRE	1
4-7A	4	251205-001 BAR-THROTTLE ARM	1
4-7A	5	238249-001 12MM HARD WASHER Y/ZINC	2
4-7A	6	250516-001 BOLT-12M X 35M GR 8 Y/ZINC	2
4-7A	7	278758-001 SOLENOID-THROTTLE	1
4-7A	8	283595-001 PLATE-THROTTLE ACTUATOR	1
4-7A	9	235716-001 WASHER-1/4 SAE HARD ZINC PLTD	2
4-7A	10	235734-001 BOLT-1/4-20X3/4 GR8 ZINC PLTD	2
4-7A	11	250511-001 6MM HARD WASHER Y/ZINC	2
4-7A	12	243776-001 BOLT-6M X 15M HEX METRIC 2INL	2
4-7A	13	283585-001 BRACKET-CABLE MOUNT	1

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ENGINE ELECTRICAL PANEL/HARNESS ASSEMBLY

Figure 4-8

Revised August 2000 due to update in illustration & part list. Changed parts marked with *.

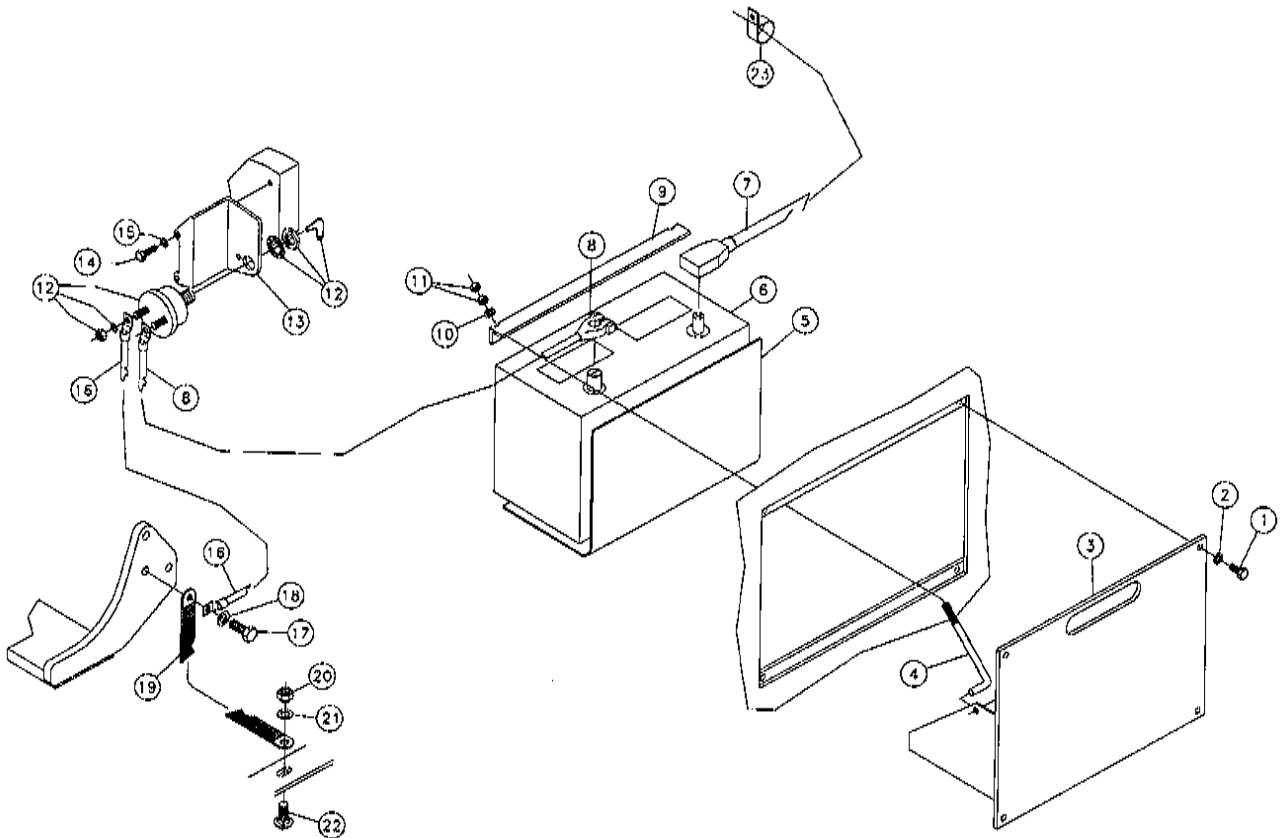


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
4-8	1	238646-001	PANEL-ELECTRICAL	1	4-8	12	64075-001	BREAKER-RAMCO 121A30A3M01 (SN101-189)	1
4-8	2	902402-001	GROMMET-1 1/2"RUBBER	1	4-8	13	21285-001	BREAKER-RAMCO 12A15A0 15AMP	1
4-8	3	*1802-006	BOLT-10-24 X 3/4 RND HD STOVE	6	4-8	14	*86217-001	RELAY-BOSCH SPST 75 AMP SEALED (SN101-189)	1
4-8	4	*480-001	WASHER-3/16 S/T LOCK	6	4-8	15	*4473-006	BOLT-1/4-20X3/4 FLG WHIZ	2
4-8	5	*400-001	NUT-3/16 NC HEX	6	4-8	16	*405-001	NUT-1/4 NC FLG WHIZ LOCK	2
4-8	6	251373-001	HARNESS-OP STATION WIRE	1	4-8	17	251376-001	HARNESS - ENGINE WIRE	1
4-8	7	251991-001	TERMINAL-6 POLE W/ JUMPER	1	4-8	18	10530-012	SCREW-8-32X1 1/4 RDHDSLOT MACH	6
4-8	8	2595-001	HOSE CLAMP - TS7FR 1/2"	1	4-8	19	69759-001	LOCK NUT-#8-32 NYLON INSERT PL	6
4-8	9	4475-006	BOLT-3/8-16X3/4 FLG WHIZ	1	4-8	20	251375-001	HARNESS - MAIN WIRE (SN101-175)	1
4-8	10	4536-001	NUT - 3/8-16 FLG. WHIZ LOCK	1			276865-001	HARNESS-D40X40 MAIN WIRE (SN176-)	1
4-8	11	86582-001	BREAKER-40A TYPE 1 W/METALCASE	1					

BATTERY ASSEMBLY

Figure 4-9

Revised July 1999 due to update of switch & battery door.

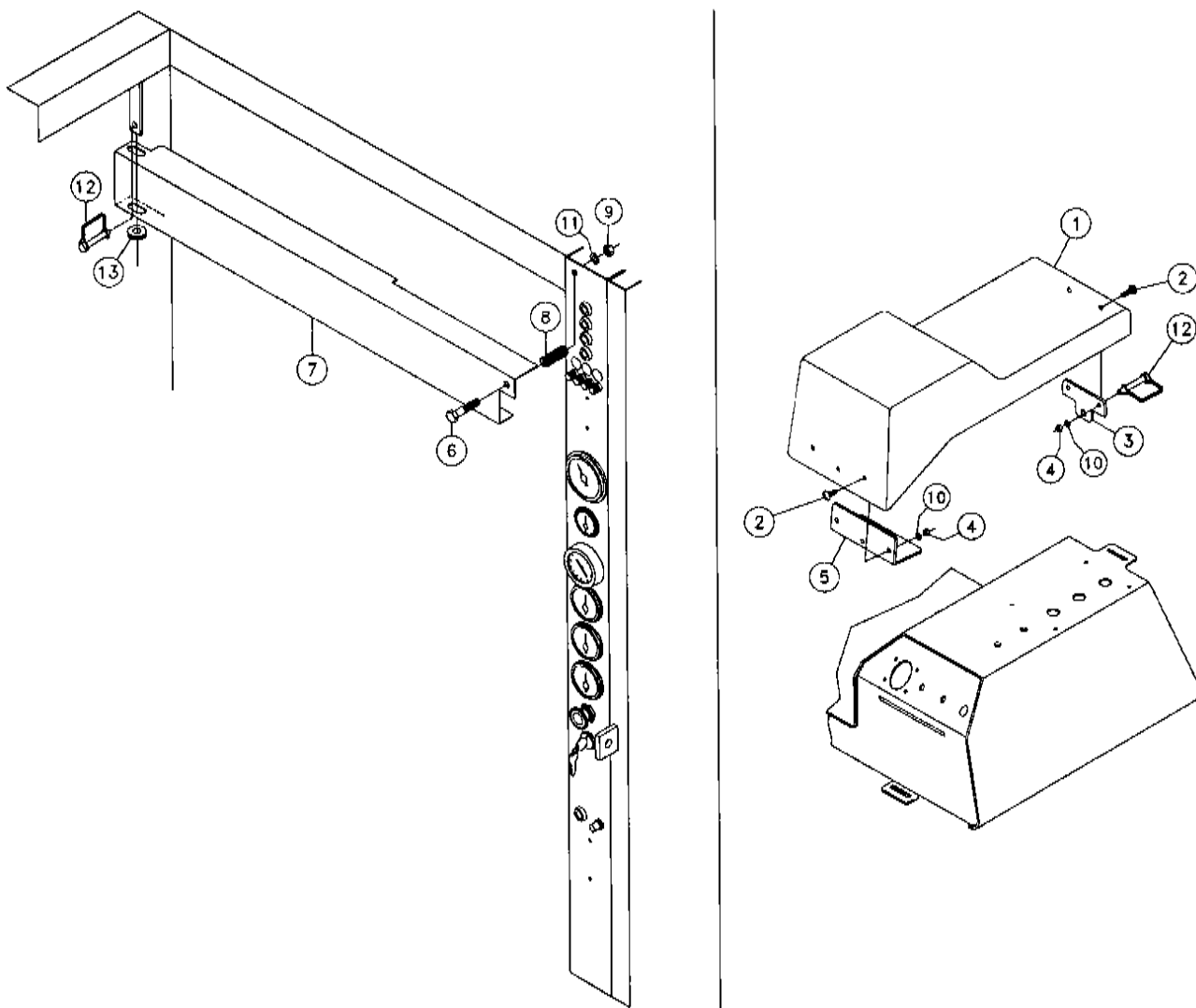


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
4-9	1	235726-001	BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	4	4-9	13	251404-001	MOUNT-SWITCH	1
4-9	2	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	4	4-9	14	119512-001	BOLT-M8 X 1.25-25MM HEX HEAD	2
4-9	3	238589-001	DOOR-BATTERY ACCESS	1	4-9	15	250517-001	8MM HARD WASHER Y/ZINC	2
4-9	4	240880-001	BOLT-BATTERY ANCHOR	2	4-9	16	228400-001	CABLE-BATT. 2/0 GA.X15"E-E BLK	1
4-9	5	903884-001	PAD-BATTERY	1	4-9	17	250516-001	BOLT-12M X 35M GR.8 Y/ZINC	1
4-9	6	N/A	BATTERY	1	4-9	18	238249-001	12 MM HARD WASHER Y/ZINC	1
4-9	7	245015-001	BATT CABLE-2/10 3/8 9OD 48P-ER	1	4-9	19	218260-001	STRAP-4GA.X18"E-E BRAIDED GRND	1
4-9	8	244900-001	BATT.CABLE 2/0 X 15.0 N-E BLACK	1	4-9	20	75382-001	NUT-1/2-UNC GRADE 8 SLTL	1
4-9	9	214360-001	HOLDDOWN-BATTERY	1	4-9	21	485-025	WASHER-1/2 FLAT-HARDENED-ZINC	1
4-9	10	235714-001	WASHER-5/16 SAE HARD ZINC PLTD	2	4-9	22	377-014	BOLT-1/2-13X1 1/2"GD#5CARRIAGE	1
4-9	11	235741-001	NUT-5/16-18 GR8 ZINC PLTD	4	4-9	23	2595-007	HOSE CLAMP - TS7J 3/4"	1
4-9	12	904365-001	DISCONNECT SWITCH (INC. KEY)	1					

VANDAL SHIELD ASSEMBLY

Figure 4-10

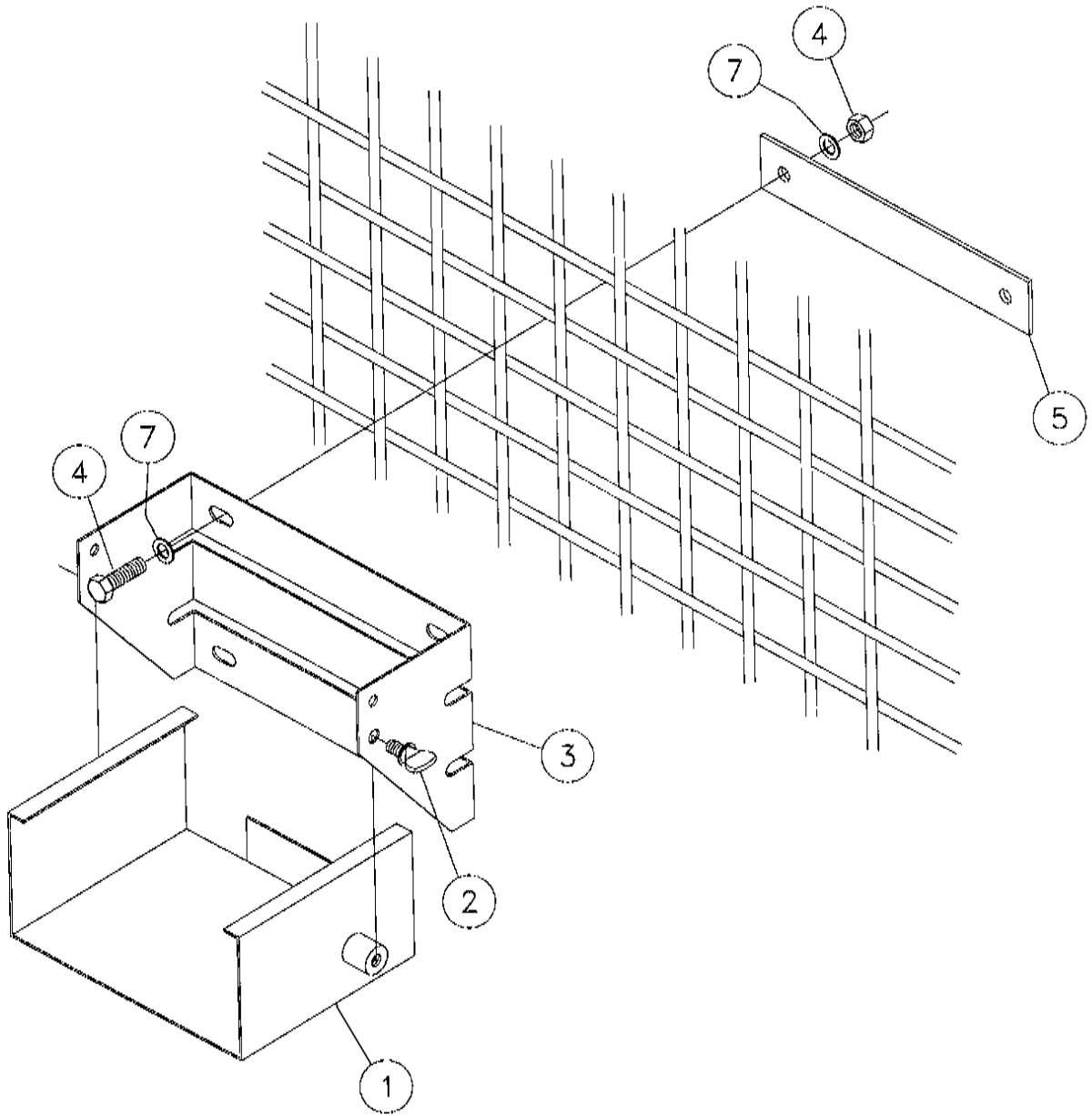
Revised August 2000 due to update in illustration.



REF. NO.	PART NO.	DESCRIPTION	QTY.
4-10	1	234393-001 VANDAL SHIELD-OPERATOR SEAT	2
4-10	2	20666-001 BOLT-5/16-18X3/4 GR5 TRUSS HD	10
4-10	3	234394-001 PLATE-SHIELD CLIP	2
4-10	4	235741-001 NUT-5/16-18 GR8 ZINC PLTD	10
4-10	5	234395-001 PLATE-SHIELD CLIP	2
4-10	6	235744-001 BOLT-1/2-13X2 3/4 GR8 ZNC PLTD	1
4-10	7	234408-001 VANDAL SHIELD-ROPS POST	1
4-10	8	1803-019 SPRING - COMP. #48 2 1/2" OA	1
4-10	9	235731-001 NUT-1/2-13 GR8 ZINC PLTD	1
4-10	10	235714-001 WASHER-5/16 SAE HARD ZINC PLTD	10
4-10	11	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	1
4-10	12	2108-001 LYNCH PIN-1/4X2"	3
4-10	13	902402-001 GROMMET-1 1/2" RUBBER	1

REMOTE LOCATOR HOLDER ASSEMBLY

Figure 4-11

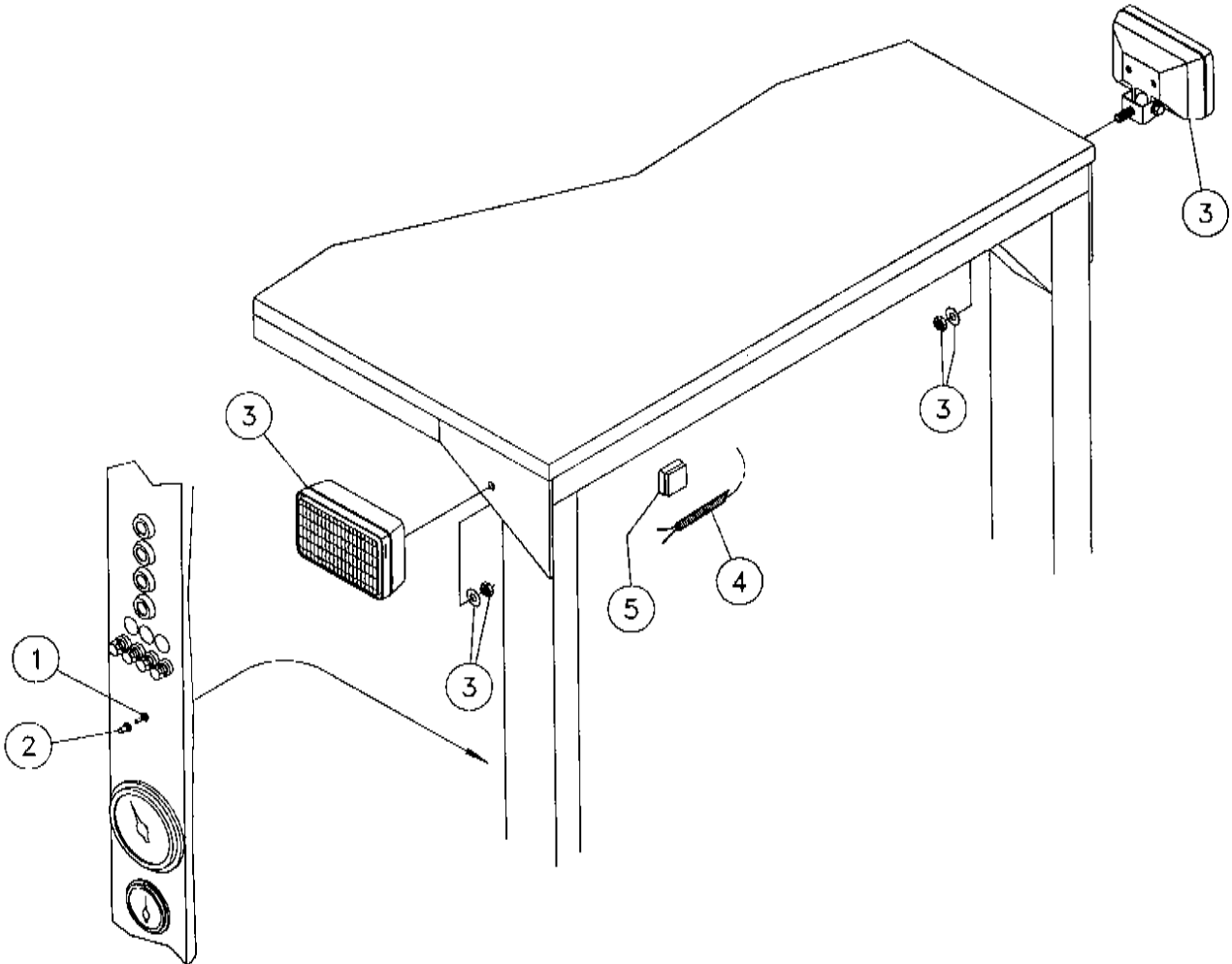


REF. NO.	PART NO.	DESCRIPTION	QTY.
4-11	1	234369-001 HOLDER-REMOTE LOCATOR RECEIVER	1
4-11	2	234475-001 BOLT-5/16-18 X 1/2 THUMB SCREW	2
4-11	3	234368-001 PLATE-REMOTE BRACKET	1
4-11	4	235736-001 BOLT-3/8-16X1 1/4 ZINC PLTD	4
4-11	5	234377-001 PLATE-REMOTE HOLDER BACK	2
4-11	6	235725-001 NUT-3/8-16 GR8 ZINC PLTD	4
4-11	7	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	8

WORK LIGHT ASSEMBLY

Figure 4-12

Revised August 2000 due to update in illustration.

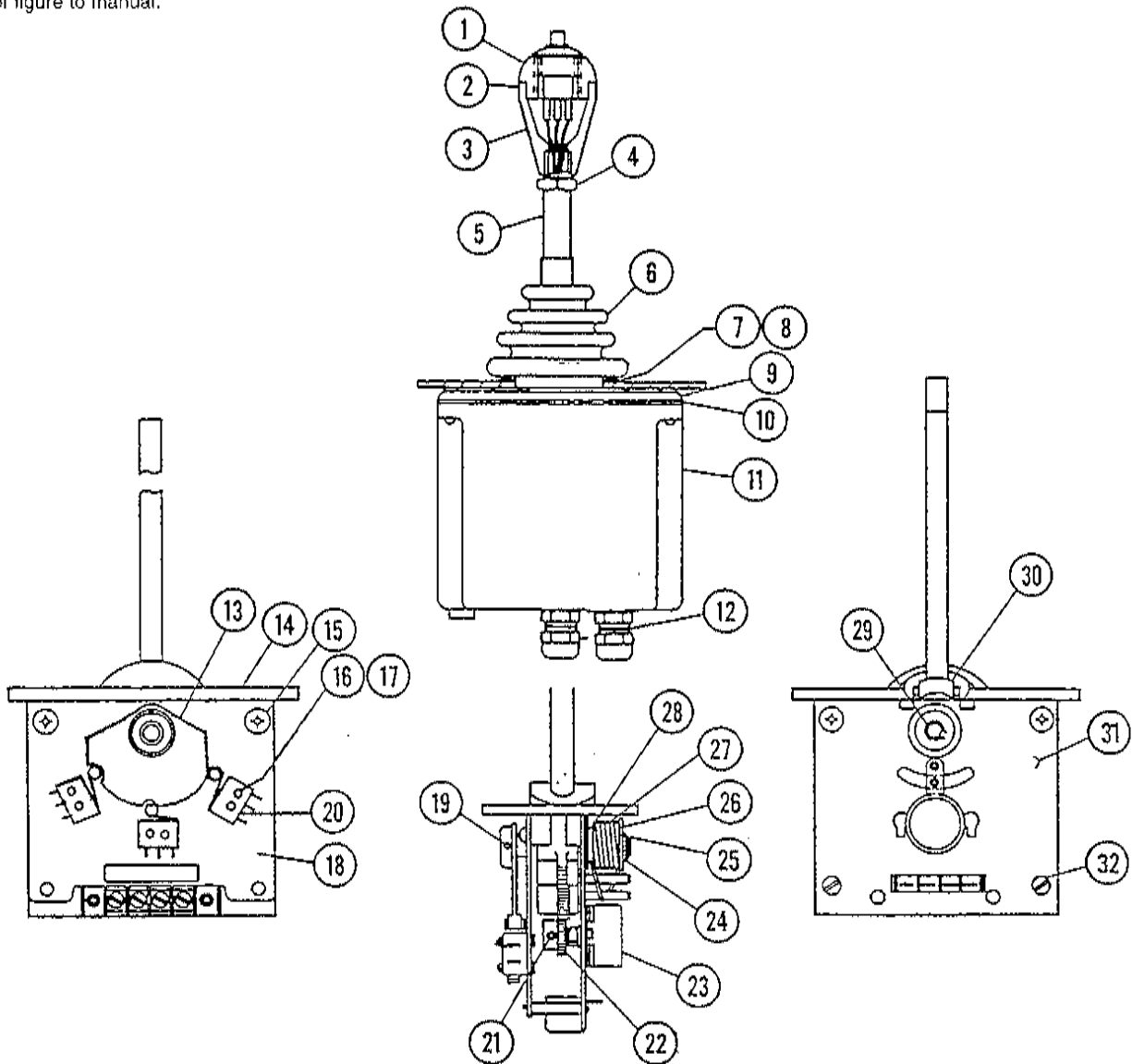


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
4-12	1	67292-001 SWITCH-TOGGLE 8500K9 SEALED	1
4-12	2	5537-001 COVER-TOGGLE SWITCH	1
4-12	3	215861-001 LIGHT-3 X 5 FLOOD	2
4-12	4	244772-001 HARNESS-LIGHT	1
4-12	5	28950-001 CLIP-ADHES.LATCHING LC5-A-C8	4

CONTROL HANDLE COMPONENTS

Figure 4-13

Revised February 1999 due to addition of figure to manual.

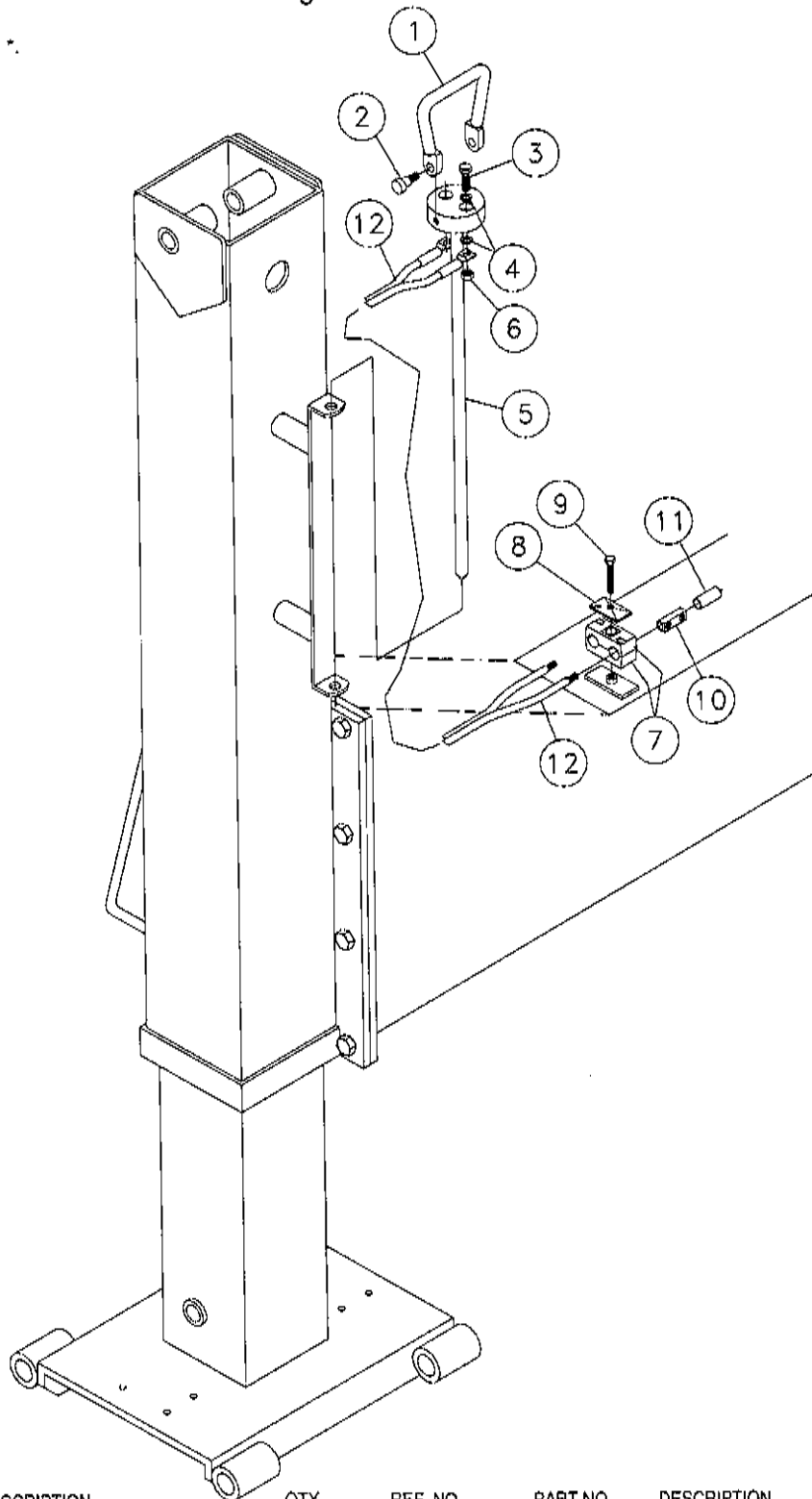


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
4-13	1	224294-003	1	4-13	18	234876-005	1
4-13	2	224294-005	2	4-13	19	204734-011	1
4-13	3	224294-007	1	4-13	20	234876-007	3
4-13	4	413-001	1	4-13	21	103733-003	1
4-13	5	224294-031	1	4-13	22	96070-011	1
4-13	6	119701-009	1	4-13	23	234876-009	1
4-13	7	67708-001	4	4-13	24	224294-015	1
4-13	8	67707-001	4	4-13	25	224294-017	1
4-13	9	67712-001	4	4-13	26	224294-019	1
4-13	10	67723-001	1	4-13	27	96070-005	1
4-13	11	67724-001	1	4-13	28	224294-021	1
4-13	12	69892-005	2	4-13	29	224294-023	1
4-13	13	224294-009	1	4-13	30	224294-025	1
4-13	14	119701-007	1	4-13	31	224294-027	1
4-13	15	103733-005	2	4-13	32	224294-029	2
4-13	16	234876-003	6				
4-13	17	89807-005	3				
		89807-007	3				
						234876-001	1
						(INC. ALL ITEMS IN THIS FIGURE)	

VOLTAGE STAKE ASSEMBLY

Figure 5-1

Revised July 1999 due to update in parts list. Changed part marked with *.

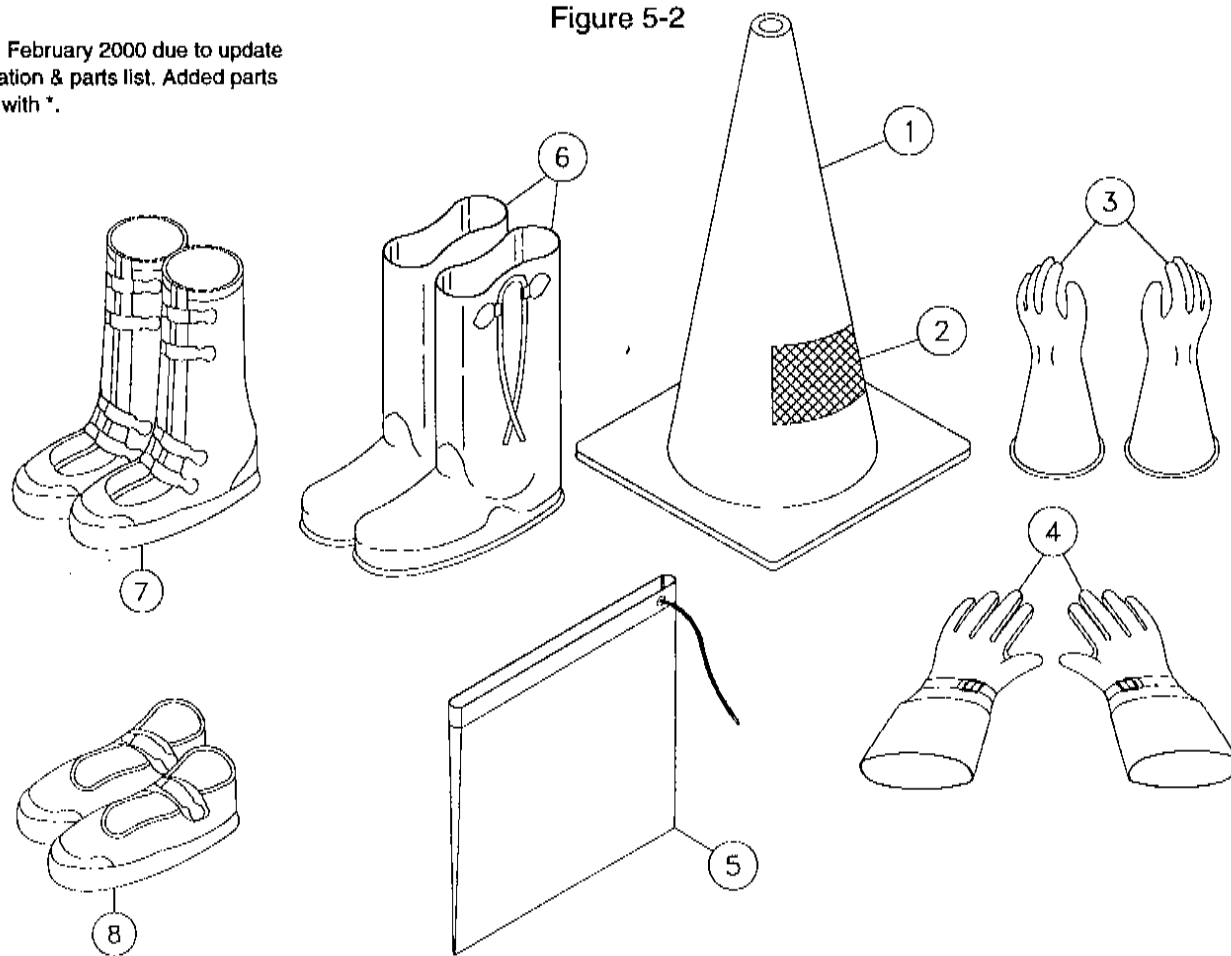


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
5-1	1	234164-001	HANDLE-VOLTAGE STAKE	1	5-1	8	67846-003	PLATE-TWIN COVER	1
5-1	2	240056-001	SCREW-1/2-13X1/2 NCSOC HD ZNC	2	5-1	9	248031-001	BOLT-5/16-18X1 1/4 GR8 ZINC PL	1
5-1	3	235736-001	BOLT-3/8-16X1 1/4 ZINC PLTD	2	5-1	10	904355-001	CONNECTOR	2
5-1	4	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	4	5-1	11	208065-001	SHRINK TUBE-3/4ID COMMERCL GRD (SPECIFY LENGTH)	2
5-1	5	234167-001	STAKE-VOLTAGE	1	5-1	12	217967-001	CORD ASSY - VOLTAGE STAKE (INC. REF. 1, 2, 3, 4, 5, 6, 11 & 12)	1
5-1	6	235725-001	NUT-3/8-16 GR8 ZINC PLTD	2					
5-1	7	900035-003	DOUBLE HOSE CLAMP PLATE 3/8	2					

SAFETY FEATURES - GLOVES, BOOTS, CONES

Revised February 2000 due to update in illustration & parts list. Added parts marked with *.

Figure 5-2

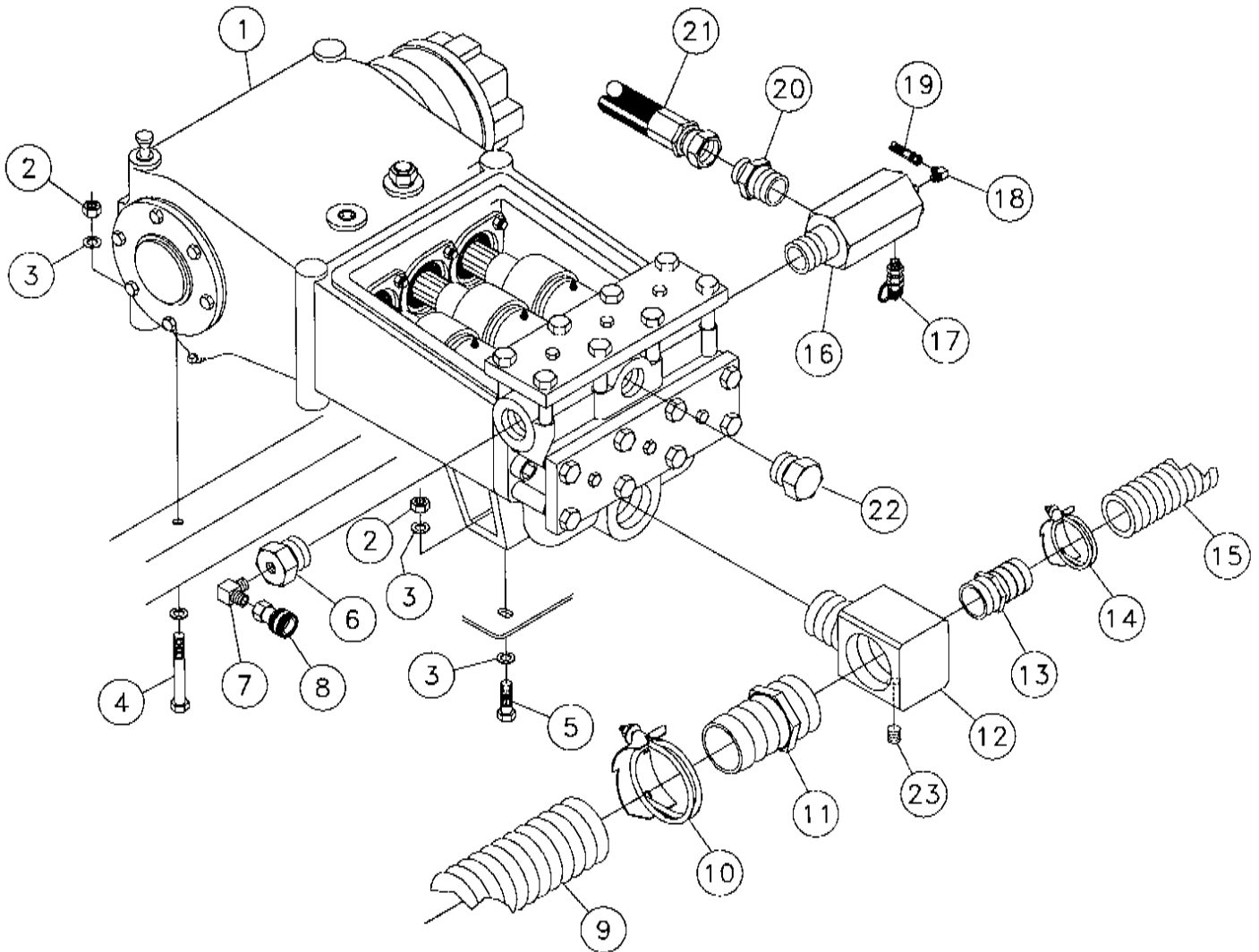


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
5-2	1	904541-001 CONES-ORANGE PVC	4	5-2	5	210784-001 BAG-GLOVE	1
5-2	2	70000-530 DECAL-DANGER	4	5-2	6	210780-009 BOOTS-SIZE 9 OVER-THE-SHOE	1 pair
		70001-530 DECAL-DANGER (INTERNATIONAL)	4			210780-001 BOOTS-SIZE 10 OVER-THE-SHOE	1 pair
5-2	3	210782-001 GLOVES-SIZE 9 RUBBER INSULATE	1 pair			210780-003 BOOTS-SIZE 11 OVER-THE-SHOE	1 pair
		210782-005 GLOVES-SIZE 9 1/2 RUBBER INSUL	1 pair			210780-005 BOOTS-SIZE 12 OVER-THE-SHOE	1 pair
		210782-003 GLOVES-SIZE 10 RUBBER INSULATE	1 pair			210780-007 BOOTS-SIZE 13 OVER-THE-SHOE	1 pair
		210782-007 GLOVE-SIZE 11 RUBBER INSULATED	1 pair			210780-011 BOOTS-SIZE 14 OVER-THE-SHOE	1 pair
		210782-009 GLOVE-SIZE 12 RUBBER INSULATED	1 pair			210780-013 BOOTS-SIZE 15 OVER-THE-SHOE	1 pair
		210783-001 GLOVES-SIZE 9 LEATHER PROTECT	1 pair			210780-015 BOOTS-SIZE 16 OVER-THE-SHOE	1 pair
5-2	4	210783-005 GLOVES SIZE 9 1/2 LEATHER PROT	1 pair	5-2	7	*279118-001 BOOT-4 BUCKLE SIZE 9	1 pair
		210783-003 GLOVES-SIZE 10 LEATHER PROTECT	1 pair			*279118-002 BOOT-4 BUCKLE SIZE 10	1 pair
		210783-007 GLOVE-SIZE 11 LEATHER PROTECT	1 pair			*279118-003 BOOT-4 BUCKLE SIZE 11	1 pair
		210783-009 GLOVE-SIZE 12 LEATHER PROTECT	1 pair			*279118-004 BOOT-4 BUCKLE SIZE 12	1 pair
		210781-001 GLOVE KIT-SIZE 9 (INC. 1 PAIR OF RUBBER GLOVES, 1 PAIR OF LEATHER GLOVES & 1 GLOVE BAG REF. 5)	1			*279118-005 BOOT-4 BUCKLE SIZE 13	1 pair
		224979-001 GLOVE KIT-SIZE 9 1/2 (INC. 1 PAIR OF GLOVES, 1 PAIR OF LEATHER GLOVES & 1 GLOVE BAG REF. 5)	1	5-2	8	*279118-006 BOOT-4 BUCKLE SIZE 14	1 pair
		210785-001 GLOVE KIT-SIZE 10 (INC. 1 PAIR OF RUBBER GLOVES, 1 PAIR OF LEATHER GLOVES & 1 GLOVE BAG REF. 5)	1			*279118-007 BOOT-4 BUCKLE SIZE 15	1 pair
		224990-001 GLOVE KIT-SIZE 11 (INC. 1 PAIR OF RUBBER GLOVES, 1 PAIR OF LEATHER GLOVES & 1 GLOVE BAG REF. 5)	1			*279118-008 BOOT-4 BUCKLE SIZE 16	1 pair
		224991-001 GLOVE KIT-SIZE 12 (INC. 1 PAIR OF RUBBER GLOVES, 1 PAIR OF LEATHER GLOVES & 1 GLOVE BAG REF. 5)	1			*279119-001 BOOT-ANKLE RUBBER SIZE 9	1 pair
						*279119-002 BOOT-ANKLE RUBBER SIZE 10	1 pair
						*279119-003 BOOT-ANKLE RUBBER SIZE 11	1 pair
						*279119-004 BOOT-ANKLE RUBBER SIZE 12	1 pair
						*279119-005 BOOT-ANKLE RUBBER SIZE 13	1 pair
						*279119-006 BOOT-ANKLE RUBBER SIZE 14	1 pair
						*279119-007 BOOT-ANKLE RUBBER SIZE 15	1 pair
						*279119-008 BOOT-ANKLE RUBBER SIZE 16	1 pair

WATER PUMP ASSEMBLY (SN101-193)

Figure 6-1

Revised August 2000 due to update in heading.

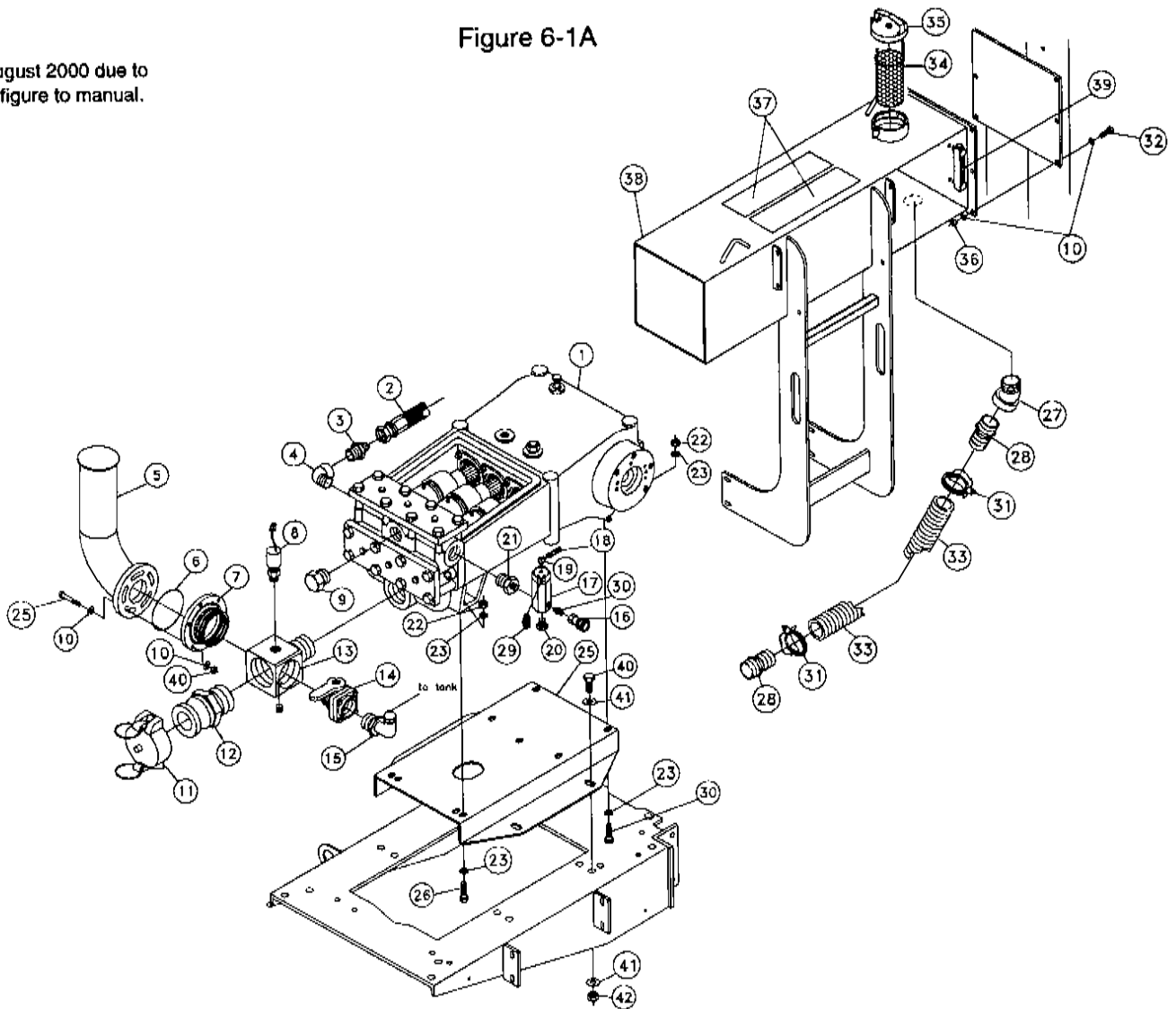


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-1	1	244460-001 PUMP-SC65 2.25 TRIPLEX PLUNGER (BREAKDOWN FIG. 6-14 thru 6-19)	1	6-1	13	215426-001 HOSE BARB-2X2 MPT (POLY)	1
6-1	2	250513-001 NUT-5/8-NC GR8 TOP LOCK Y/ZINC	4	6-1	14	238064-001 CLAMP-2" POWERLOCK HOSE	1
6-1	3	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	8	6-1	15	278116-001 HOSE-2" HD SUCTION 45°	1
6-1	4	250542-001 5/8-11X4 3/4 GR.8 HEX BOLT	2	6-1	16	239494-001 WATER PUMP OUTLET ASSY-SC65 (BREAKDOWN FIG. 6-11)	1
6-1	5	238245-001 BOLT 5/8"-11 X 2 1/4" GR8 HEX	2	6-1	17	75493-001 COUPLER-MALE TCM20-7/16"UNF-V	1
6-1	6	730-040 HEX BUSHING-1 1/2X1/2	1	6-1	18	59423-001 FIT-4M JICX4M ADJ.90 DEG.ELBOW	1
6-1	7	904831-001 FITTING 1/2MNPT X 1/2MNPT 90	1	6-1	19	53843-133 HOSE-1/4X230 4FS JIC (100R1)	1
6-1	8	227235-001 COUPLER-1/2"NPT QUICK(FEMALE)	1	6-1	20	71251-001 FITTING-1 1/4M NPT X 20M JIC ST	1
6-1	9	278114-001 HOSE-3" X 61"	1	6-1	21	250566-001 HOSE-1 1/4X92 20 FSJIC ST3000	1
6-1	10	234491-001 CLAMP-3" POWERLOCK HOSE	1	6-1	22	732-015 1 1/2" PIPE PLUG BLACK STEEL	1
6-1	11	215462-001 HOSE BARB-3X3 NPT MALE (POLY)	1	6-1	23	735-003 1/2" COUNTERSUNK PIPE PLUG	1
6-1	12	244466-001 FITTING-SC-65 PUMP INLET	1				

WATER PUMP ASSEMBLY - APLEX (SN194-)

Figure 6-1A

Revised August 2000 due to addition of figure to manual.



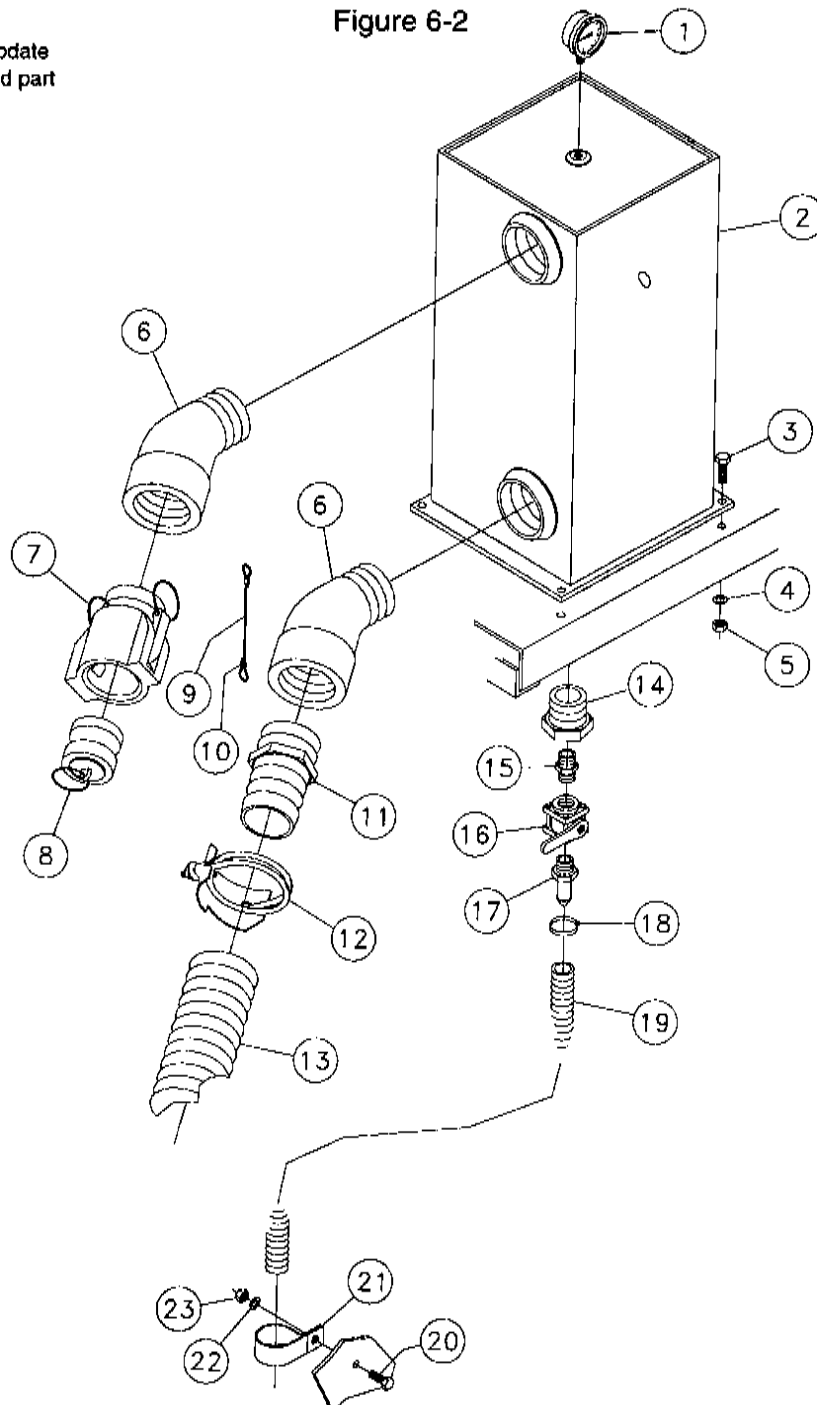
REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-1A	1	244460-001 PUMP-SC65 2.25 TRIPLEX PLUNGER (BREAKDOWN FIG. 6-14 THRU 6-19)	1	6-1A	21	120886-001 FITTING-PIPE COUPLING NPT	1
6-1A	2	239496-001 HOSE-1 1/2 X 92 24FS00 JIC ST/ST	1	6-1A	22	250513-001 NUT-5/8NC GR 8 TOP LOCK Y/ZINC	4
6-1A	3	94569-001 FITTING-1 1/2 M NPT X 24 M JIC STR.	1	6-1A	23	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	8
6-1A	4	287086-001 ELBOW-1.5" 90 DEG BLK ST (1500 PSI)	1	6-1A	24	240334-001 BOLT-1/2-13X1 3/4 GR 8 ZINC PLT	5
6-1A	5	287073-001 TUBE-SUCTION STABILIZER (SC-65)	1	6-1A	25	287063-001 PLATE-PUMP SUPPORT	1
6-1A	6	228181-001 O-RING-#243 70D BUNA-N	1	6-1A	26	238245-001 BOLT-5/8"-11ZX2 1/4" GR 8 HEX	4
6-1A	7	287054-001 FLANGE-WATER PUMP 2 1/2" INLET	1	6-1A	27	224939-001 ELBOW-2" 45 DEG STREET POLY	1
6-1A	8	287069-001 SWITCH-SEALED 10 PSI PRESSURE	1	6-1A	28	215426-001 HOSE BARB-2X2 MPT (POLY)	2
6-1A	9	732-015 1 1/2" PIPE PLUG BLACK STEEL	1	6-1A	29	75493-001 COUPLER-MALE TECM20-7/16" UNF-V	1
6-1A	10	485-025 WASHER-1/2" FLAT HARDENED ZINC	14	6-1A	30	707-003 1/2" NPT HEX NIPPLE	1
6-1A	11	215429-001 CAP-3" CAM LOCK	1	6-1A	31	238064-001 CLAMP-2" POWERLOCK HOSE	2
6-1A	12	215427-001 MALE ADAPTER 3" MPT (POLY)	1	6-1A	32	235721-001 BOLT-1/2"-13X1 1/2" GR 8 ZINC PLT	6
6-1A	13	287071-001 FITTING-SC-65 PUMP INLET	1	6-1A	33	278116-001 HOSE-2" HD SUCTION 45"	1
6-1A	14	236045-001 VALVE-2" FPT X 2" MPT POLY BALL (BREAKDOWN FIG. 6-12)	1	6-1A	34	99998-001 STRAINER-6" .030 STEEL	1
6-1A	15	287092-001 HOSE BARB-2X2 MPT 90 DEG (POLY)	1	6-1A	35	224985-001 CAP-VENTED FUEL TANK	1
6-1A	16	227235-001 COUPLER-1/2" NPT QUICK (FEMALE)	1	6-1A	36	75382-001 NUT-1/2 UNC GR 8 SLTL	5
6-1A	17	250611-001 WATER PRESSURE MANIFOLD ASSY. (BREAKDOWN FIG. 6-13)	1	6-1A	37	5776-001 TAPE-SAFETY WALK 4 WIDE	2.5
6-1A	18	53843-607 HOSE-1/4X258 4FS JIC 3000 PSI	1	6-1A	38	287003-001 TANK-WP ANTI-FREEZE	1
6-1A	19	59423-001 FIT-4M JIC X 4M ADJ. 90 DEG. ELBOW	1	6-1A	39	81590-001 GAUGE-SIGHT	1
6-1A	20	732-009 PLUG-3/4" PIPE PLUG STEEL	1	6-1A	40	243905-001 BOLT-3/4-10X1 3/4 GR 8 HEX ZP	4
				6-1A	41	235717-001 WASHER-3/4 FLAT HARDENED YELLOW ZINC	8
				6-1A	42	235739-001 NUT-3/4-10 GR 8 ZINC PLTD	4

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SUCTION STABILIZER TANK ASSEMBLY (SN101-193)

Figure 6-2

Revised August 2000 due to update in heading & parts list. Changed part marked with *.

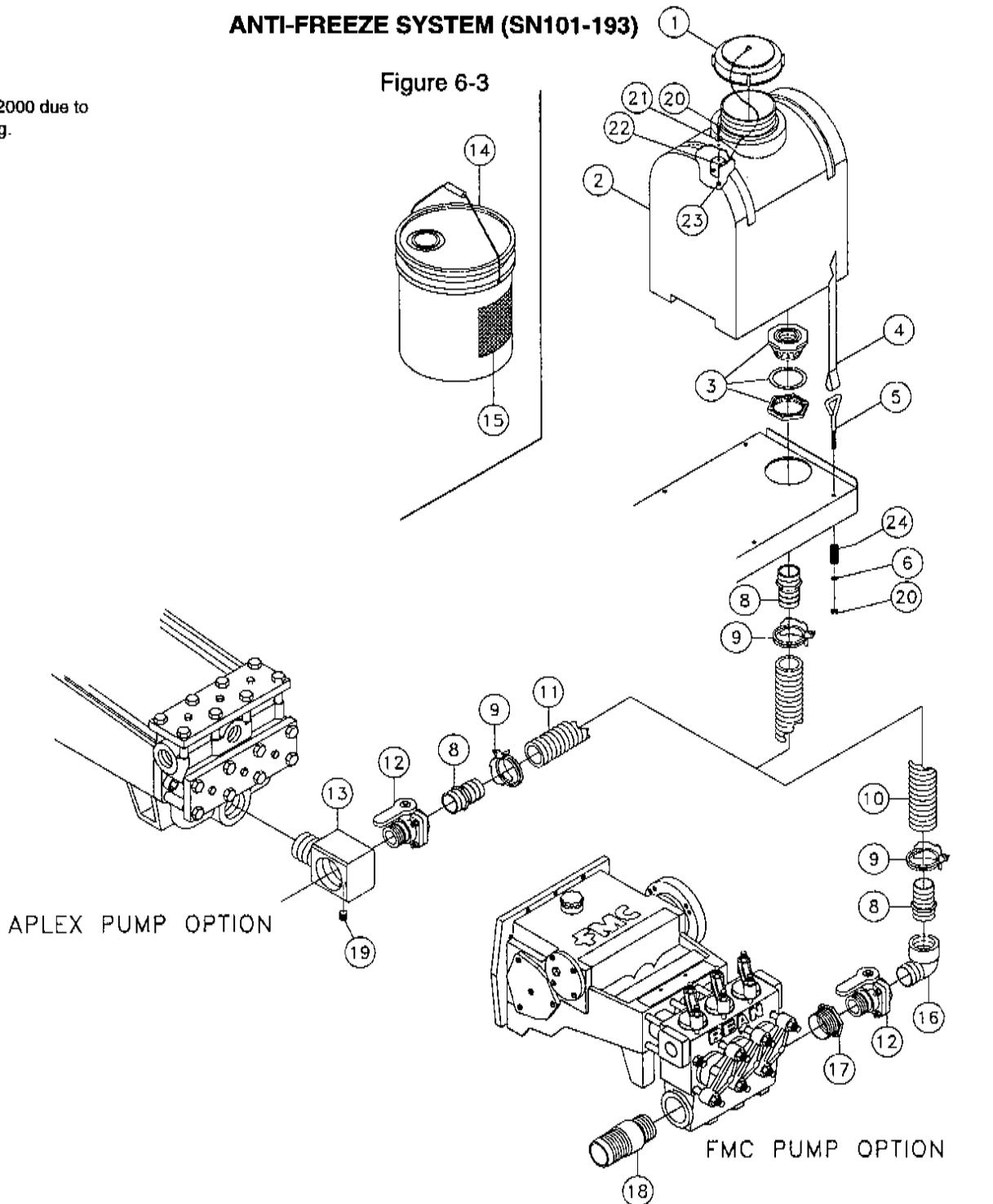


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-2	1	234473-001 GAUGE-30 HG-0-100 PSI	1	6-2	13	278114-001 HOSE-3" X 61"	1
6-2	2	244470-001 TANK-SUCTION STABILIZER	1	6-2	14	225838-001 BUSHING-2X3/4 NPT REDUCER POLY	1
6-2	3	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	4	6-2	15	231049-001 NIPPLE-3/4" NPT SHORT (POLY)	1
6-2	4	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	4	6-2	16	225847-001 VALVE-3/4"FPT BALL (POLY)	1
6-2	5	250512-001 NUT-1/2-NC GR8 TOP LOCK Y/ZINC	4	6-2	17	905437-001 FITTING-3/4X1 BARB ST.NYLON	1
6-2	6	238079-001 ELBOW 3" 45 DEG STR POLY	2	6-2	18	1580-003 HOSE CLAMP - 3/4"	1
6-2	7	*238080-001 COUPLER-3" FEMALE MNPT (POLY)	1	6-2	19	905429-007 HOSE 1"X 54" PVC SUCTION	1
6-2	8	234480-001 PLUG-3" CAM LOCK (POLY)	1	6-2	20	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	1
6-2	9	1830-059 NYLON COATED CABLE-3/32-10.00	1	6-2	21	204721-001 HOSE CLAMP-CCV2913 1 3/4"	1
6-2	10	1838-001 CONNECTOR-WIRE (ETC)	2	6-2	22	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	1
6-2	11	215462-001 HOSE BARB-3X3 NPT MALE (POLY)	1	6-2	23	235725-001 NUT-3/8-16 GR8 ZINC PLTD	1
6-2	12	234491-001 CLAMP-3" POWERLOCK HOSE	1				

ANTI-FREEZE SYSTEM (SN101-193)

Figure 6-3

Revised August 2000 due to update in heading.

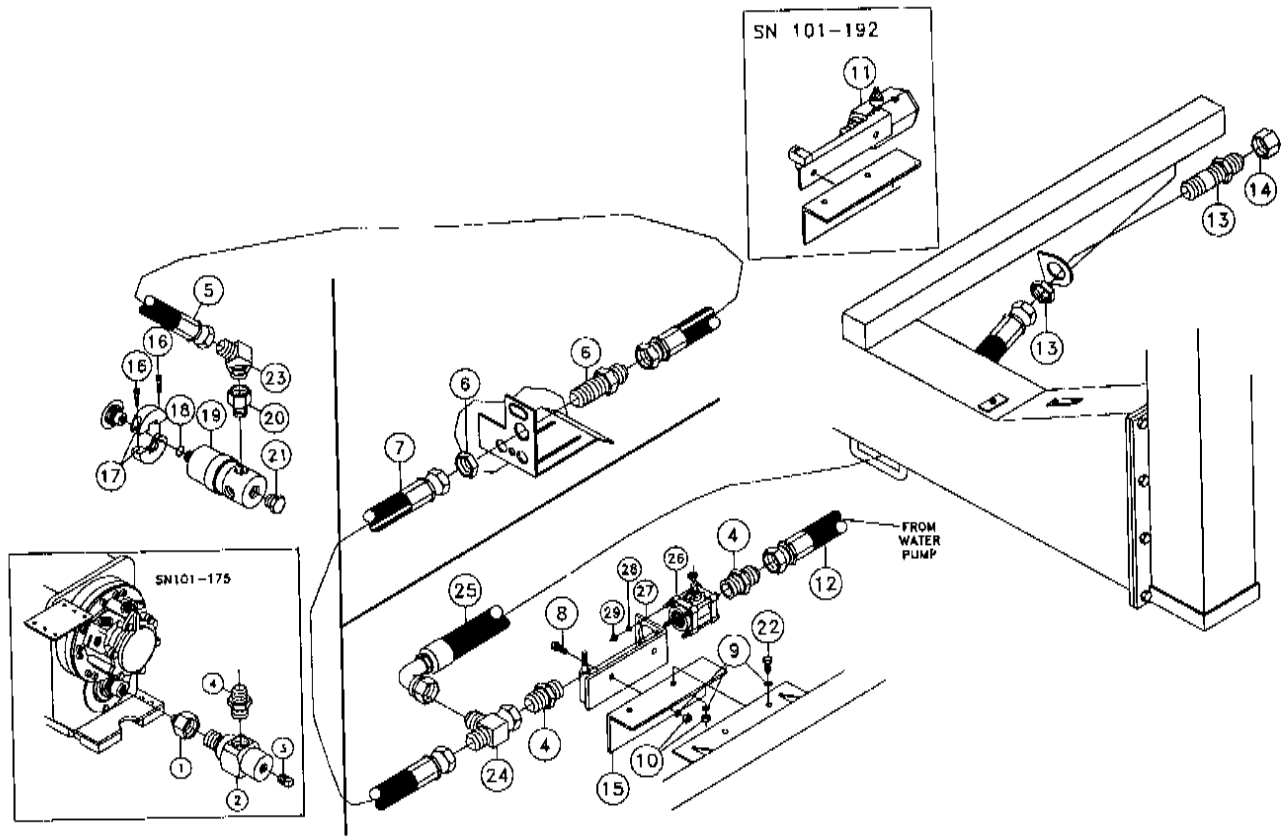


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-3	1	236466-003 LID-TANK W/STRING	1	6-3	14	210779-001 5 GAL NAVIGATOR FREEZE GUARD (SHWN)1	1
6-3	2	239477-001 TANK-ANTIFREEZE	1	6-3	15	210779-005 55 GAL NAVIGATOR FREEZE GUARD	1
6-3	3	904062-007 2" BUNG	1	6-3	16	70000-675 DECAL-NAVIGATOR FREEZE GUARD	1
6-3	4	220639-001 STRAP-NYLON 1 X 34 (BLK)	2	6-3	17	7000A-027 DECAL-NAVIGATOR FREEZE GUARD	1
6-3	5	903862-001 BOLT-WATER TANK HOLD DOWN	4	6-3	18	214088-001 ELBOW-90 DEG 2" POLY STREET	1
6-3	6	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	4	6-3	19	276522-001 FITTING -2 1/2 - 2 NPT BSHG	1
6-3	7	250508-001 NUT-3/8-16 GR8 TOP LOCK Y/ZINC	4	6-3	20	276519-001 FITTING - 2 1/2" INLET	1
6-3	8	215426-001 HOSE BARB-2X2 MPT (POLY)	2	6-3	21	735-003 1/2 COUNTERSUNK PIPE PLUG	1
6-3	9	238064-001 CLAMP-2" POWERLOCK HOSE	2	6-3	22	235734-001 BOLT-1/4-20X3/4 GR 8 ZINC PLTD	1
6-3	10	278115-001 HOSE - 2" HD SUCTION	1	6-3	23	236406-005 WASHER-1/4" SEAL	1
6-3	11	278116-001 HOSE-2" HD SUCTION 45"	1	6-3	24	236466-007 CLIP	1
6-3	12	236045-001 VALVE-2" FPTX2" MPT POLY BALL	1	6-3	23	235732-001 NUT-1/4-20 GR 8 ZIN PLTD	1
6-3	13	244466-001 FITTING-SC-65 PUMP INLET	1	6-3	24	*1803-019 SPRING-COMP. #48 2 1/2 OA	2

WATER LINE ASSEMBLY

Figure 6-4

Revised August 2000 due to update in illustration & parts list. Added parts marked with *.

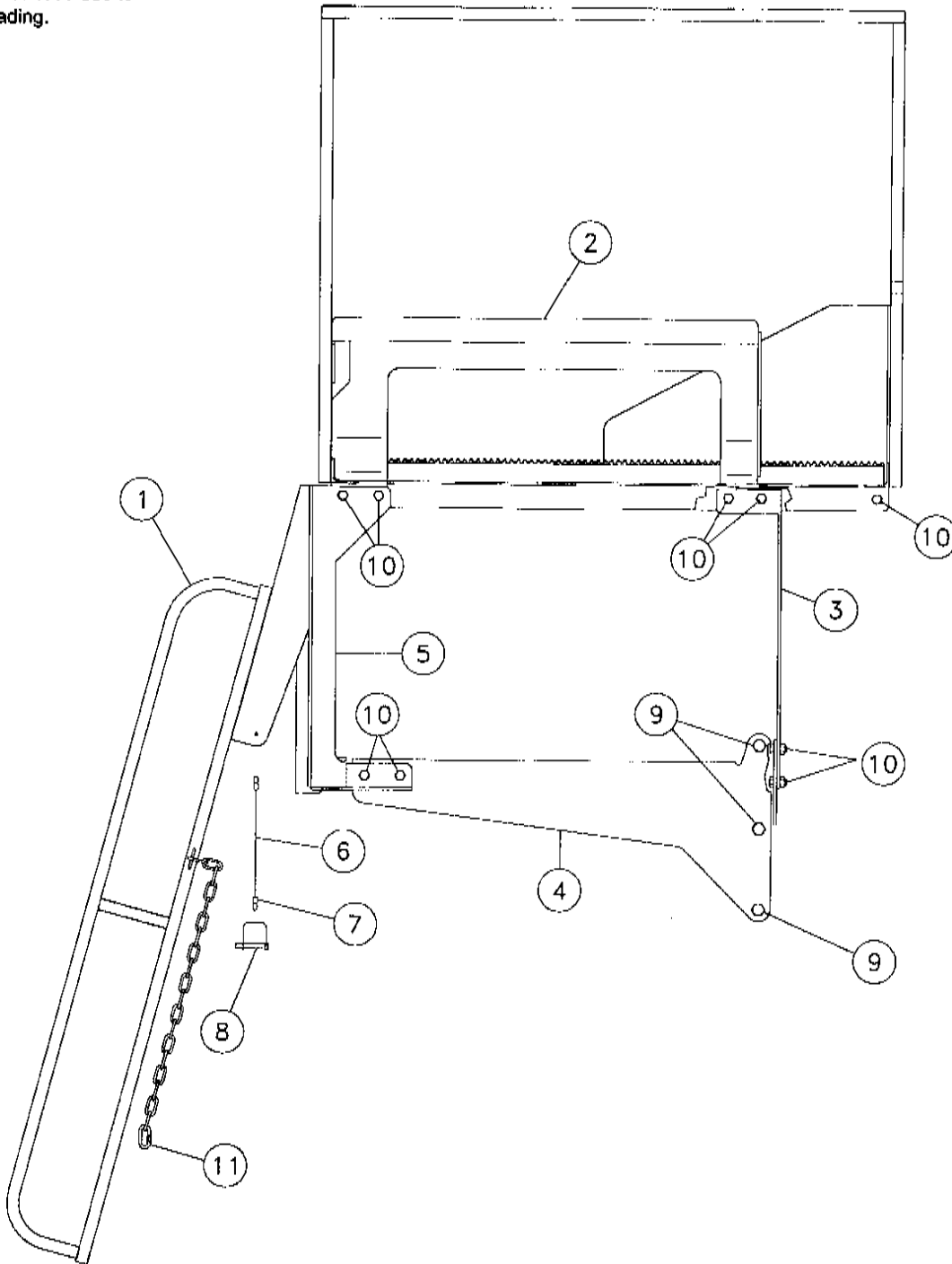


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
6-4	1	244476-001	FITTING-12 MORING X 1 1/2 NPTF (SN101-175)	1	6-4	13	244517-001	FITTING-24M JIC BULKHEAD ST (SN176-)	1
6-4	2	277834-001	SWIVEL-200 GPM WATER W/BRG. (BREAKDOWN FIG. 1-25) (SN101-175)	1	6-4	14	86315-001	FITTING-CAP NUT-24F JIC (SN176-)	1
6-4	3	732-009	PLUG-3/4" PIPE BLACK STEEL	1	6-4	15	284508-001	BRACKET-BALL VALVE OFFSET	1
6-4	4	244484-001	FITT.-1 1/2MNPTX20MJIC ST. (SN101-192)	2	6-4	16	242906-001	CAPSCREW-5/16-18X1.50 SKHD (SN176-)	2
6-4	5	251058-001	HOSE-1 1/4X223 20 F5JIC ST3000 (SN101-193)	1	6-4	17	283521-001	BUSHING-2 HALVES SWIVEL LOCK (SN176-)	1
6-4	6	*239497-001	HOSE-1 1/2X224 24FS JIC ST/ST (SN194-)	1	6-4	18	3211-043	O-RING #119 (SN176-)	1
6-4	6	100875-001	FITTING-20M JIC BULKHEAD STR. (SN101-193)	1	6-4	19	250117-001	SWIVEL-TD-4-12-16-16 (SN176-)	1
6-4	7	*244517-001	FITTING-24M JIC BULKHEAD ST (SN194-)	1	6-4	20	250117-003	REPAIR KIT-SWIVEL	1
6-4	7	250565-001	HOSE-1 1/4 X65 20 FSJIC ST 30	1	6-4	21	284522-001	FITTING-ADAPT 16M OR-20FOR (SN176-)	1
6-4	7	*239495-001	HOSE-1 1/2X65 24FS JIC ST/ST (SN194-)	1	6-4	22	81214-001	PLUG-16M (SN176-)	1
6-4	8	235721-001	BOLT-1/2-13X1 1/2 GR8 ZINC PLT	2	6-4	23	235737-001	BOLT-1/2-13X1 1/4 GR 8 ZINC PLT	2
6-4	9	485-025	WASHER-1/2 FLAT-HARDENED-ZINC	6	6-4	24	81703-001	FITTING-20M X 20M JIC 45 DEG EL (SN176-)	1
6-4	10	235731-001	NUT-1/2-13 GR8 ZINC PLTD	4	6-4	25	603103001	FITTING-SW NUT RUN T 1 5/8-12 (SN176-)	1
6-4	11	244693-001	VALVE-DRILL FLUID SHUT-OFF (SN101-192)	1	6-4	26	284513-001	HOSE-1 1/4X72 24FS JIC/ST 20FS JIC 3000 (SN176-)	1
6-4	12	250566-001	HOSE-1 1/4X92 20 FSJIC ST3000 (SN101-193)	1	6-4	27	*287053-001	VALVE-1 1/2 STEEL BALL 2200 PSI (SN193-)	1
6-4	12	*239496-001	HOSE-1 1/2X92 24FS JIC ST/ST (SN194-)	1	6-4	28	*278225-001	BREAKDOWN FIG. 6-20)	1
					6-4	29	*278225-001	SUPPORT-BALL VALVE (SN193-)	1
					6-4	28	*235713-001	WASHER-3/8 SAE HARD ZINC PLT (ISN193-)	1
					6-4	29	*250508-001	NUT-3/8-16 GR 8 TOP LOCK Y/ZINC (SN193-)	1

PLATFORM ASSEMBLY (SN101-193)

Figure 6-5

Revised August 2000 due to update in heading.

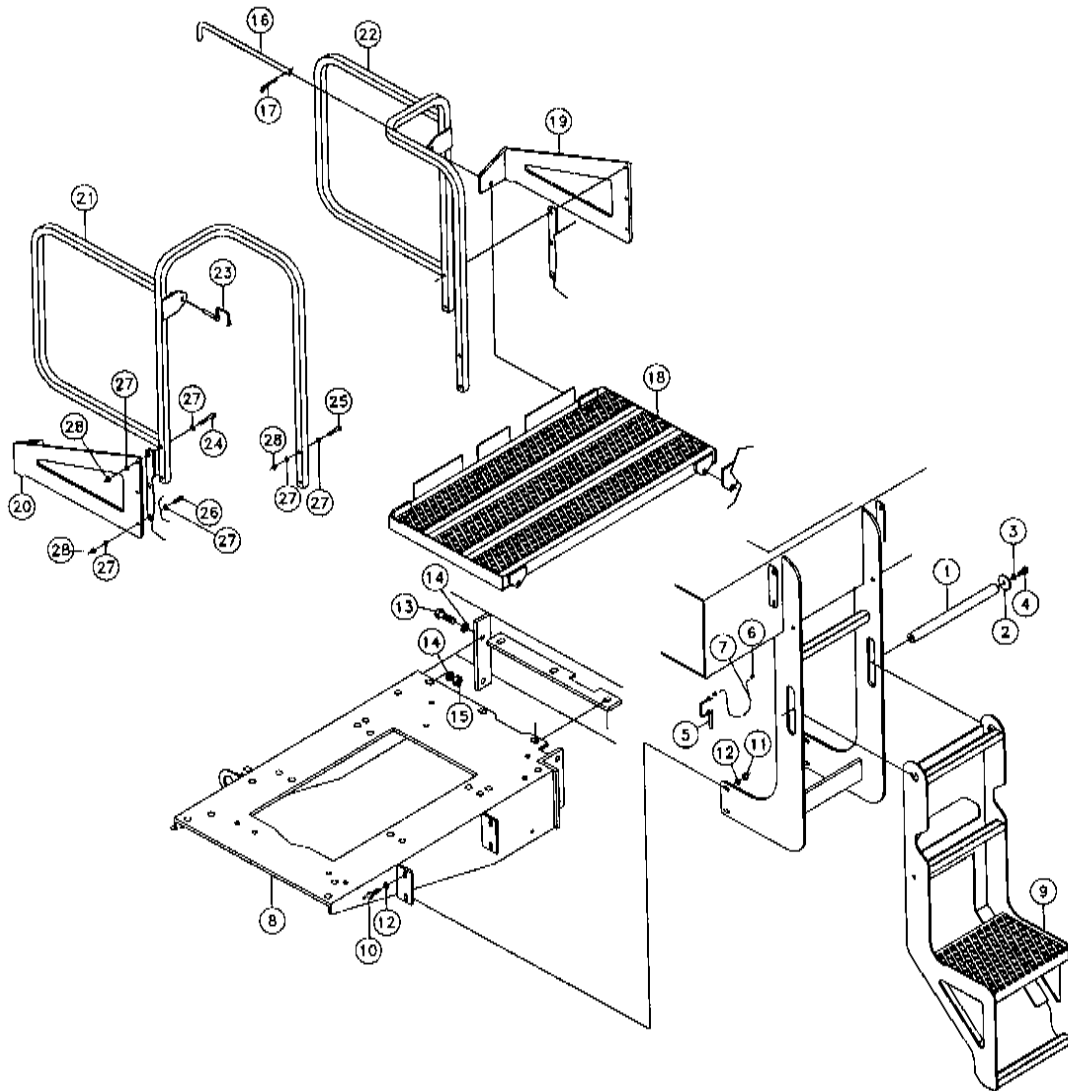


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-5	1	239348-001 LADDER	1	6-5	9	238245-001 BOLT 5/8"-11 X 2 1/4" GR8 HEX	3
6-5	2	275344-001 PLATFORM-WATER PUMP	1			238221-001 NUT-5/8-11 GR8 NC Y/ZINC	3
6-5	3	276529-001 PLATE-PLATFORM SUPPORT	1			235715-001 WASHER-5/8 SAE HARD ZINC PLTD	3
6-5	4	239374-001 MOUNT-WATER PUMP	1	6-5	10	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	12
6-5	5	239358-001 MOUNT-PLATFORM	1			485-025 WASHER-1/2 FLAT-HARDENED-ZINC	12
6-5	6	1830-059 NYLON COATED CABLE-3/32-10.00	2			235731-001 NUT-1/2-13 GR8 ZINC PLTD	12
6-5	7	1838-001 CONNECTOR-WIRE (ETC)	4	6-5	11	901062-001 CHAIN LINK 3/16 X 2 THD	1
6-5	8	2109-003 PIN LOCKING - 3/8 X 2 1/4	2				

PLATFORM ASSEMBLY (SN194-)

Figure 6-5A

Revised August 2000 due to addition of figure to manual.



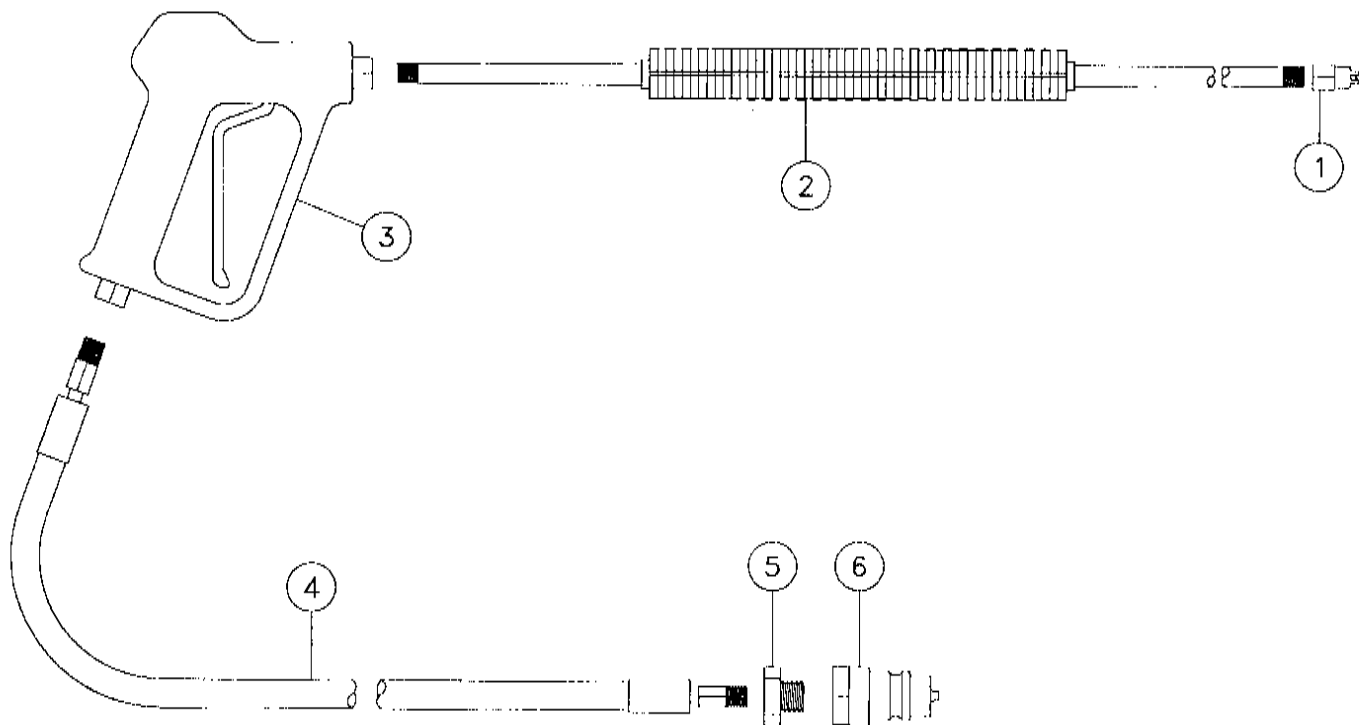
REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
6-5A	1	277816-001	BAR-STEP PIVOT	1	6-5A	15	235739-001	NUT-3/4-10 GR 8 ZINC PLTD	5
6-5A	2	18150-001	WASHER-2 OD X 13/32 ID 1/4	2	6-5A	16	287068-001	PIN-PLATFORM PIVOT	2
6-5A	3	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	10	6-5A	17	1794-003	HAIR PIN COTTER.148 WIRE	2
6-5A	4	235727-001	BOLT-3/8-16X1 GR 8 HEX ZINC PLT	2	6-5A	18	287065-001	PLATFORM-ACCESS	1
6-5A	5	2109-003	PIN-LOCKING 3/8X2 1/4	2	6-5A	19	287066-001	PLATE-PLATFORM SUPPORT (FRONT)	1
6-5A	6	1838-001	CONNECTOR-WIRE (ETC)	4	6-5A	20	287067-001	PLATE-PLATFORM SUPPORT (REAR)	1
6-5A	7	1830-059	NYLON-COATED CABLE 3/32-10.00	2	6-5A	21	278103-001	HANDRAIL-LEFT PLATFORM	1
6-5A	8	278249-001	PLATFORM-WATER PUMP	1	6-5A	22	278104-001	HANDRAIL-RIGHT PLATFORM	1
6-5A	9	287038-001	LADDER-TANK	1	6-5A	23	2109-001	PIN38-20 LP 3/8 X 2 1/4	1
6-5A	10	235721-001	BOLT-1/2-13X1 1/2 GR 8 ZINC PLT	4	6-5A	24	250504-001	BOLT-3/8-16X2 1/4 GR 8 HEX Y	4
6-5A	11	235731-001	NUT-1/2-13 GR 8 ZINC PLT	4	6-5A	25	235720-001	BOLT-3/8-16X1 3/4 GR 8 ZINC PLT	4
6-5A	12	485-025	WASHER-1/2 FLAT HARDENED ZINC	8	6-5A	26	235736-001	BOLT-3/8-16X1 1/4 ZINC PLTD	2
6-5A	13	243921-001	BOLT-3/4-10 X 2 1/4 GR 8 ZP	5	6-5A	27	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	20
6-5A	14	235717-001	WASHER-3/4 FLAT HARDENED Y/ZINC	10	6-5A	28	235725-001	NUT-3/8-16 GR 8 ZINC PLTD	10

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WAND ASSEMBLY (SN101-193)

Figure 6-6

Revised August 2000 due to update in heading.

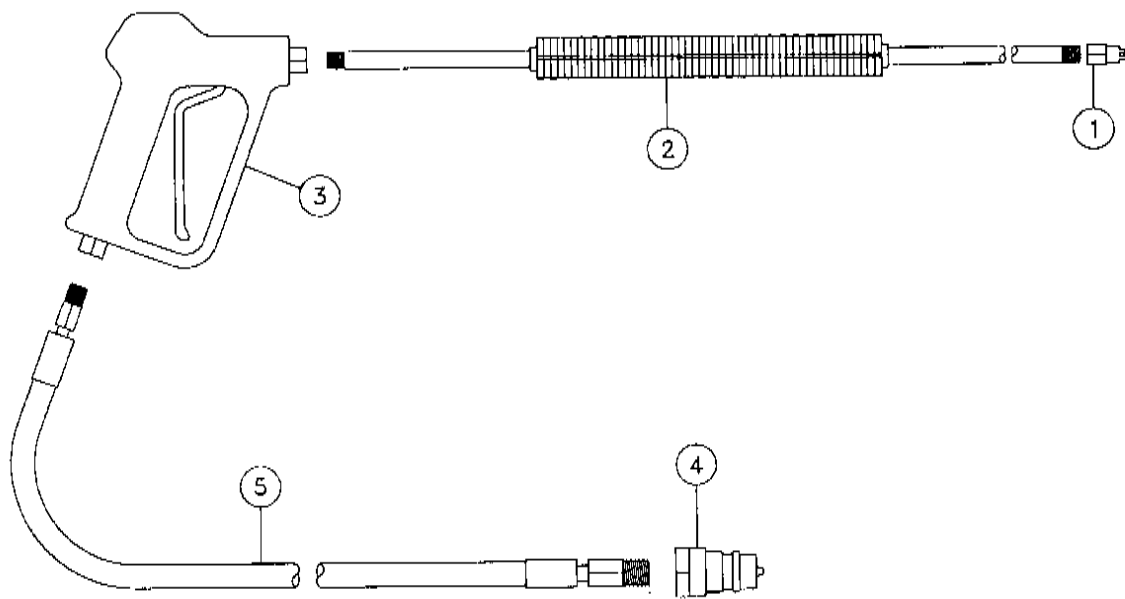


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-6	1	904576-001 SPRAY NOZZLE	1
6-6	2	904577-001 MOLDED LANCE	1
6-6	3	904578-001 GUN HANDLE	1
6-6	4	282761-001 HOSE-3/8X500 3/8 MS NPT 1/2M NPT	1
6-6	5	730-003 1/2" X 1/4" HEX BUSHING STEEL	1
6-6	6	227236-001 COUPLER-1/2" NPT QUICK(MALE)	1
	227891-001	WASH WAND ASSY (INC. ALL ITEMS IN FIG. 6-6)	

WAND ASSEMBLY (SN194-)

Figure 6-6A

Revised August 2000 due to addition of figure to manual.

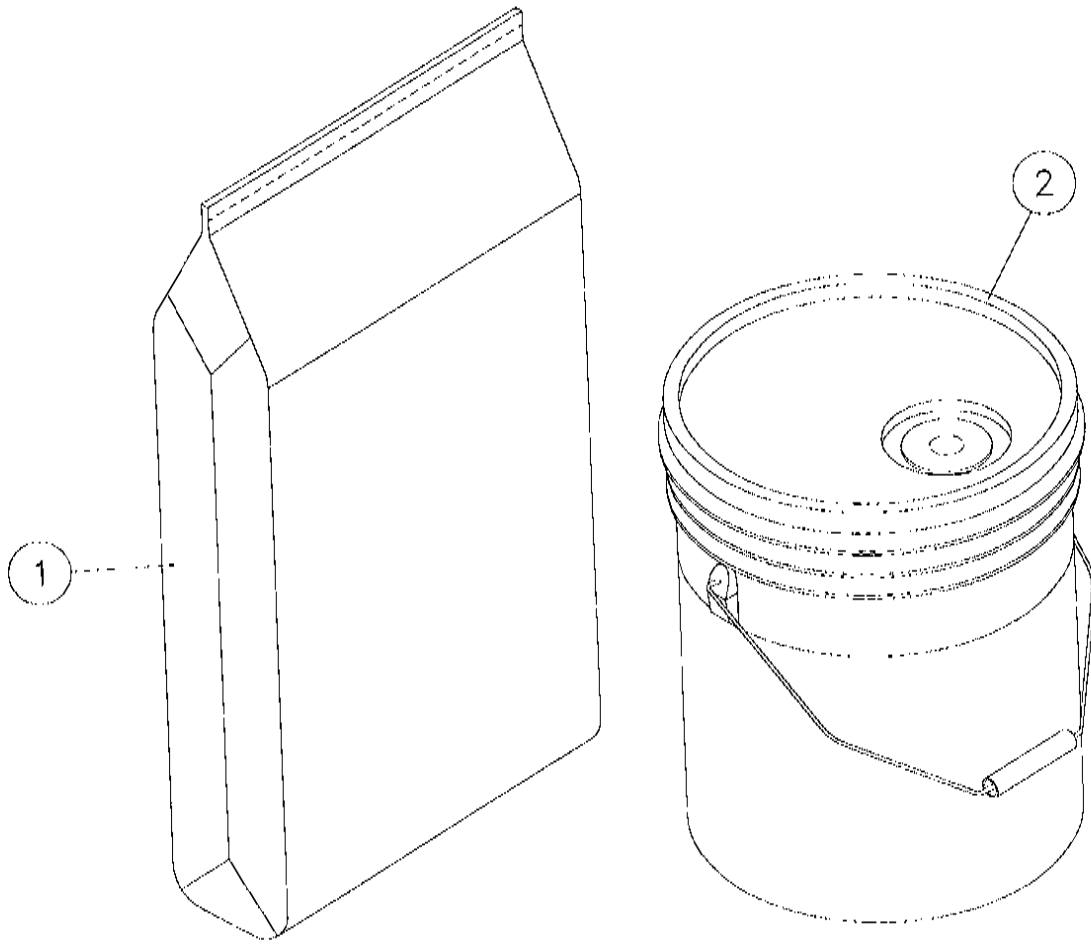


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-6A	1	904576-001 SPRAY NOZZLE	1
6-6A	2	904577-001 MOLDED LANCE	1
6-6A	3	904578-001 GUN HANDLE	1
6-6A	4	227236-001 COUPLER-1/2" NPT QUICK (MALE)	1
6-6A	5	282761-001 HOSE-3/8X500 3/8" MNPT 100R2	1
	240264-001	WAND ASSEMBLY (INC. ALL ITEMS IN FIGURE)	

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DRILL FLUID

Figure 6-7

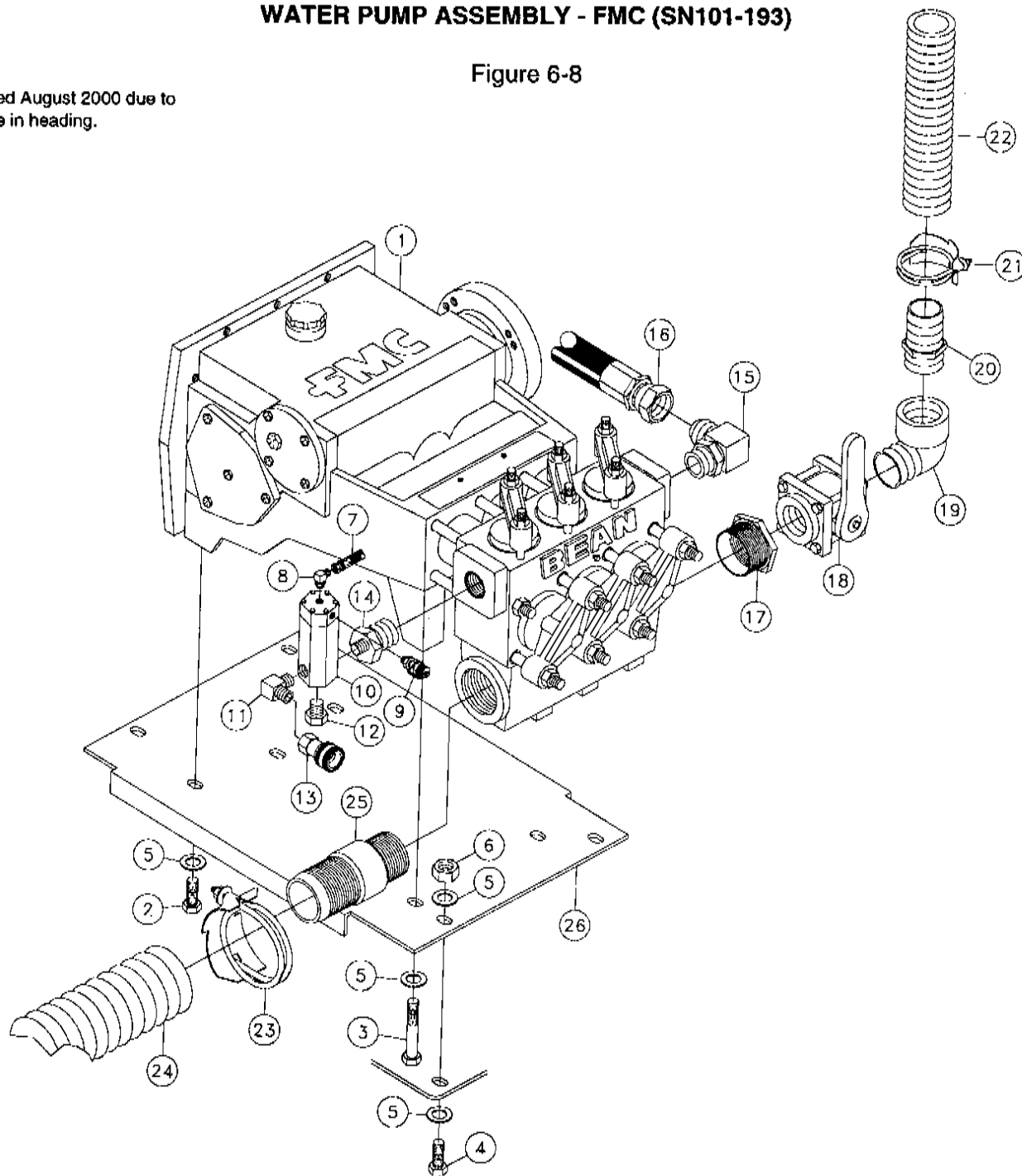


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-7	1	904882-001 50LBS BAG QUICK GELL BENTONITE	1
		123596-001 BORE-GEL (50 LB BAG)	1
6-7	2	905216-001 POLYMER	1
		123595-001 EZ-MUD - 5 GALLON	1

WATER PUMP ASSEMBLY - FMC (SN101-193)

Figure 6-8

Revised August 2000 due to update in heading.

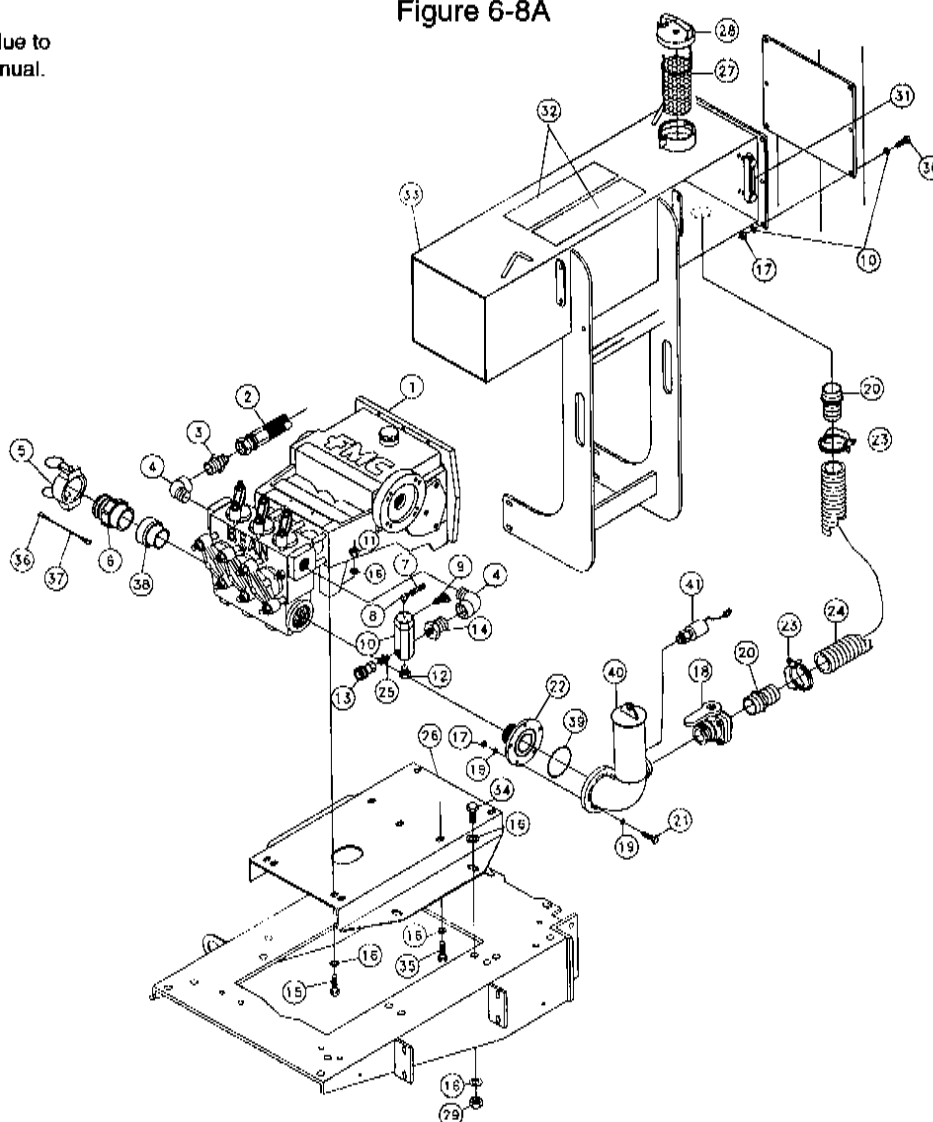


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-8	1	276521-001 PUMP - 75 GPM (BREAKDOWN FIG. 6-9, 6-10)	1	6-8	13	227235-001 COUPLER-1/2"NPT QUICK(FEMALE)	1
6-8	2	235730-001 BOLT-5/8-11X1 1/4 GR8 ZINC PLT	3	6-8	14	120886-001 FITTING-PIPE COUPLING NPT	1
6-8	3	250542-001 BOLT 5/8"-11 X 4 3/4" GR8 HEX	2	6-8	15	65561-001 1 1/4M X 20M JIC 90	1
6-8	4	238220-001 BOLT-5/8-11X1 3/4 GR8 HEX ZYC	4	6-8	16	250566-001 HOSE-1 1/4X92 20 FSJIC ST3000	1
6-8	5	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	13	6-8	17	276522-001 FITTING -2 1/2 - 2 NPT BSHG	1
6-8	6	238221-001 NUT-5/8-11 GR8 NC Y/Z	4	6-8	18	236045-001 VALVE-2"FPTX2"MPT POLY BALL	1
6-8	7	53843-133 HOSE-1/4X230 4FS JIC (100R1)	1	6-8	19	214088-001 ELBOW-90 DEG 2" POLY STREET	1
6-8	8	59423-001 FIT-4M JICX4M ADJ.90 DEG.ELBOW	1	6-8	20	215426-001 HOSE BARB-2X2 MPT (POLY)	1
6-8	9	75493-001 COUPLER-MALE TCM20-7/16"UNF-V	1	6-8	21	238064-001 CLAMP-2" POWERLOCK HOSE	1
6-8	10	250611-001 WATER PRESSURE MANIFOLD ASS'Y (BREAKDOWN FIG. 6-13)	1	6-8	22	278115-001 HOSE - 2" HD SUCTION 29"	1
6-8	11	904831-001 FITTING 1/2MNPT X 1/2MNPT 90	1	6-8	23	234491-001 CLAMP-3" POWERLOCK HOSE	1
6-8	12	732-009 PLUG-3/4" PIPE BLACK STEEL	1	6-8	24	278114-001 HOSE-3" X 61"	1
				6-8	25	276519-001 FITTING - 2 1/2" INLET	1
				6-8	26	276517-001 PLATE - FMC WATER PUMP MOUNT	1

WATER PUMP ASSEMBLY - FMC (SN194-)

Figure 6-8A

Revised August 2000 due to addition of figure to manual.



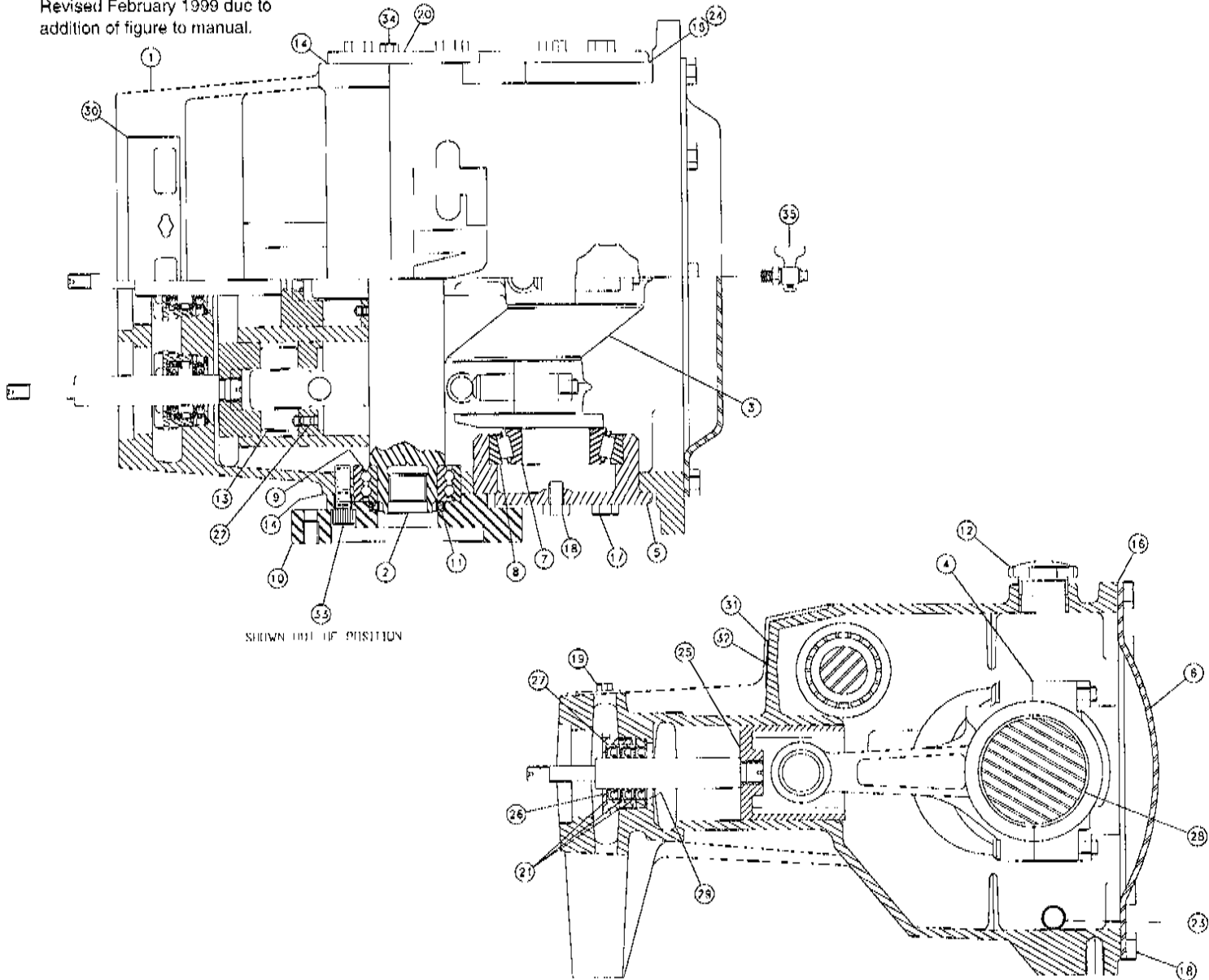
REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-8A	1	276521-001 PUMP-75 GPM TRIPLEX PISTON (BREAKDOWN FIG. 6-9, 6-10)	1	6-8A	20	215426-001 HOSE BARB-2X2 MPT (POLY)	1
6-8A	2	239496-001 HOSE-1 1/2X92 24FS JIC ST/ST	1	6-8A	21	240334-001 BOLT-1/2-13X1 3/4 GR 8 ZINC PLT	5
6-8A	3	98671-001 FITTING-1 1/4M NPT X 24M JIC STR.	1	6-8A	22	287054-001 FLANGE-WATER PUMP 2 1/2" INLET	1
6-8A	4	287093-001 ELBOW-1.25" 90 DEG BLK ST (1500 PSI)	2	6-8A	23	238064-001 CLAMP-2" POWERLOCK HOSE	2
6-8A	5	215429-001 CAP-3" CAM LOCK	1	6-8A	24	278116-001 HOSE-2" HD SUCTION 45'	1
6-8A	6	215427-001 MALE ADAPTER-3" MPT (POLY)	1	6-8A	25	707-003 1/2" NPT HEX NIPPLE	1
6-8A	7	53843-607 HOSE-1/4X258 4FS JIC 3000 PSI	1	6-8A	26	287063-001 PLATE-PUMP SUPPORT	1
6-8A	8	59423-001 FIT-4M JIC X 4M ADJ 90 DEG ELBOW	1	6-8A	27	99998-001 STRAINER-6" .030 STEEL	1
6-8A	9	75493-001 COUPLER-MALE TCM20-7/16" UNF-V	1	6-8A	28	224985-001 CAP-VENTED FUEL TANK	1
6-8A	10	250611-001 WATER PRESSURE MANIFOLD ASSY. (BREAKDOWN FIG. 6-13)	1	6-8A	29	235739-001 NUT-3/4-10 GR 8 ZINC PLTD	4
6-8A	11	250513-001 NUT-5/8 NC GR 8 TOP LOCK Y/ZINC	5	6-8A	30	235721-001 BOLT-1/2-13X1 1/2 GR 8 ZINC PLT	6
6-8A	12	732-009 PLUG-3/4" PIPE BLACK STEEL	1	6-8A	31	81590-001 GAUGE-SIGHT	1
6-8A	13	227235-001 COUPLER-1/2" NPT QUICK (FEMALE)	1	6-8A	32	5776-001 TAPE-SAFETY WALK 4 WIDE	2.5
6-8A	14	120886-001 FITTING-PIPE COUPLING NPT	1	6-8A	33	287003-001 TANK-WP ANTI-FREEZE	1
6-8A	15	230728-001 BOLT-5/8-11X1 3/4 GR 8 PLATED	2	6-8A	34	243905-001 BOLT-3/4-10 X 1 3/4 Gr 8 HEX ZP	4
6-8A	16	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	13	6-8A	35	235730-001 BOLT-5/8-11X1 1/4 GR 8 ZINC PLT	3
6-8A	17	75382-001 NUT-1/2-UNC GRADE 8 SLTL	11	6-8A	36	1838-001 CONNECTOR-WIRE (ETC)	2
6-8A	18	236045-001 VALVE-2" FPTX2" MPT POLY BALL (BREAKDOWN FIG. 6-12)	1	6-8A	37	1830-059 NYLON COATED CABLE-3/32-10.00	1
6-8A	19	485-025 WASHER-1/2 FLAT HARDENED ZINC	5	6-8A	38	287076-001 FITTING-WATER PUMP INLET	1
				6-8A	39	228181-001 O-RING-#243 70D BUNA-N	1
				6-8A	40	287072-001 TUBE-SUCTION STABILIZER (FMC)	1
				6-8A	41	287069-001 SWITCH-SEALED 10 PSI PRESSURE	1

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WATER PUMP COMPONENTS (POWER END)

Figure 6-9

Revised February 1999 due to addition of figure to manual.

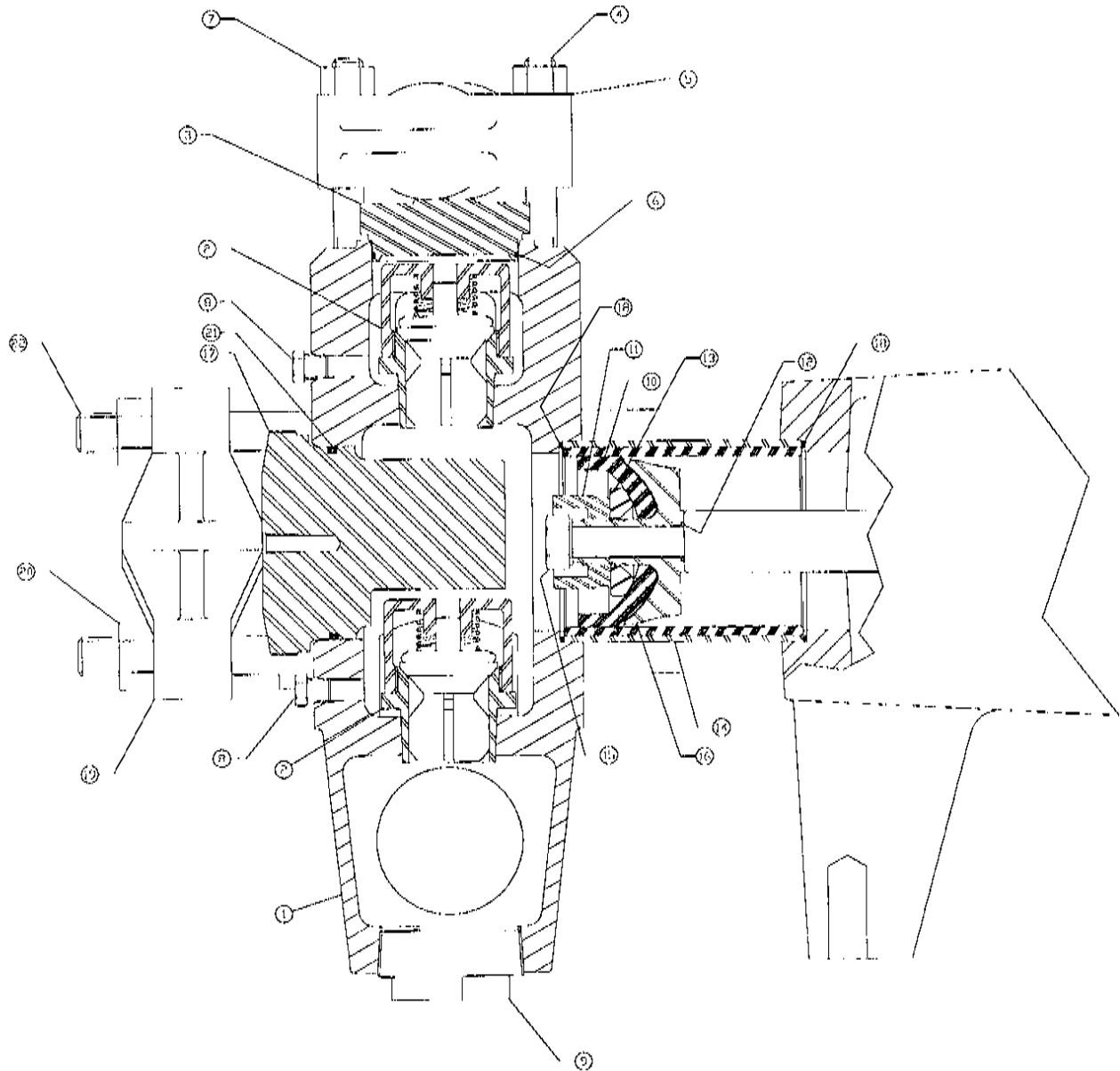


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
6-9	1	276521-003	POWER FRAME	1	6-9	20	276521-041	PINION BEARING CAP - CLOSED	1
6-9	2	276521-005	PINION SHAFT	1	6-9	21	276521-043	OIL SFAL - PLUNGER ROD	9
6-9	3	276521-007	ECCENTRIC GEAR ASSEMBLY	1	6-9	22	276521-045	SET CREW-5/16-18X5/16 LG SOCH	6
6-9	4	276521-009	CONNECTING ROD ASSEMBLY	3	6-9	23	276521-047	PLUG -1/2" PIPE, MAG	2
6-9	5	276521-011	ECCENTRIC BEARING CAP	2	6-9	24	276521-049	SHIM	6
6-9	6	276521-013	BACKCOVER	1	6-9	25	276521-051	CROSSHEAD ASSEMBLY	3
6-9	7	276521-015	BEARING CONE - 2 1/4 ID	2	6-9	26	276521-053	PACKING NUT	3
6-9	8	276521-017	BEARING CUP - 4.437 OD	2	6-9	27	276521-055	SEAL HOLDER	3
6-9	9	276521-019	BALL BEARING - 1.968 ID DBL ROW	2	6-9	28	276521-057	BEARING - CONNECTING ROD	6
6-9	10	276521-021	MOTOR MOUNTING ADAPTER	1	6-9	29	276521-059	GASKET - SEAL HOLDER	3
6-9	11	276521-023	OIL SEAL - PINION SHAFT	1	6-9	30	276521-061	INSPECTION PLATE	1
6-9	12	276521-025	OIL CAP	1	6-9	31	229367-043	NAME PLATE	1
6-9	13	276521-027	WRIST PIN	3	6-9	32	218416-029	SCREW #4 X 3/16	2
6-9	14	276521-029	GASKET - PINION SHAFT	2	6-9	33	276521-063	CAP SCREW-1/2-13X1 1/2 SOC HI	4
6-9	15	276521-031	GASKET - BEARING CAP	2	6-9	34	276521-065	CAP SCREW-5/8-18X3/8 HEX HI	1
6-9	16	276521-033	GASKET - BACKCOVER	1	6-9	35	276521-067	OIL LEVEL PETCOCK	1
6-9	17	276521-035	CAP - SCREW-1/2-13X1 1/4 LG HE	9					
6-9	18	276521-037	CAP SCREW-1/2-13X 3/4 LG HEX H	16					
6-9	19	276521-039	CAP SCREW-1/4-20X 1/2 LG HEX H	2					
						276521-001	PUMP - 75 GPM TRIPLX PISTON (INC. ALL ITEMS IN FIG. 6-9 & 6-10)		

WATER PUMP COMPONENTS (FLUID END)

Figure 6-10

Revised February 1999 due to addition of figure to manual.

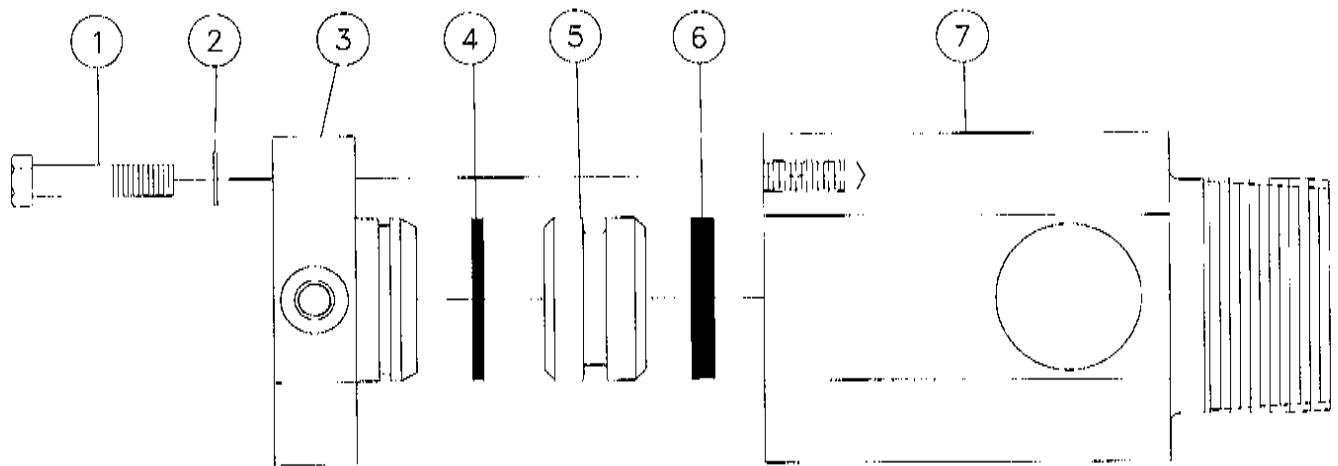


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
6-10	1	276521-069	FLUID CYLINDER	1	6-10	15	228460-023	HEX NUT-SPECIAL BRASS	3
6-10	2	276521-071	VALVE ASSEMBLIES	6	6-10	16	276521-093	CUP HOLDER	3
6-10	3	276521-073	VALVE COVER -F / AR VALVES	3	6-10	17	276521-085	CYLINDER COVER -F / AR VALVES	3
6-10	4	276521-075	STUD-1/2 13 UNC-ZA X 4" LG	6	6-10	18	276521-097	GASKET - CYLINDER	6
6-10	5	276521-077	VALVE COVER CLAMP	3	6-10	19	276521-099	CYLINDER HEAD CLAMP	3
6-10	6	276521-079	O-RING - 2 3/8 OD X 1/16 NOM	3	6-10	20	276521-101	HEX NUT - 5/8-11	8
6-10	7	276521-081	HEX NUT - 1/2-13	6	6-10	21	276521-103	O-RING -3 1/8" OD X 1/8"	3
6-10	8	276521-083	PLUG - 1/8" PIPE	4	6-10	22	276521-105	STUD-5/8-11 UNC-2A X 12 1/4 LG	6
6-10	9	276521-085	PLUG - 2 PIPE	3					
6-10	10	276521-087	CUP - HSN	3			276521-107	VALVE KIT (INC. THREE EACH OF REF. 6 & 21 & SIX OF REF. 2)	
6-10	11	240141-011	PISTON NUT	3			276521-109	PACKING KIT (INC. THREE EACH OF REF. 10, 12 & 21 & SIX OF REF. 18)	
6-10	12	228460-029	O-RING	3					
6-10	13	276521-089	WASHER	3					
6-10	14	276521-091	CYLINDER - 2 3/4" ID	3					

WATER PUMP OUTLET COMPONENTS

Figure 6-11

Revised February 1999 due to addition of figure to manual.

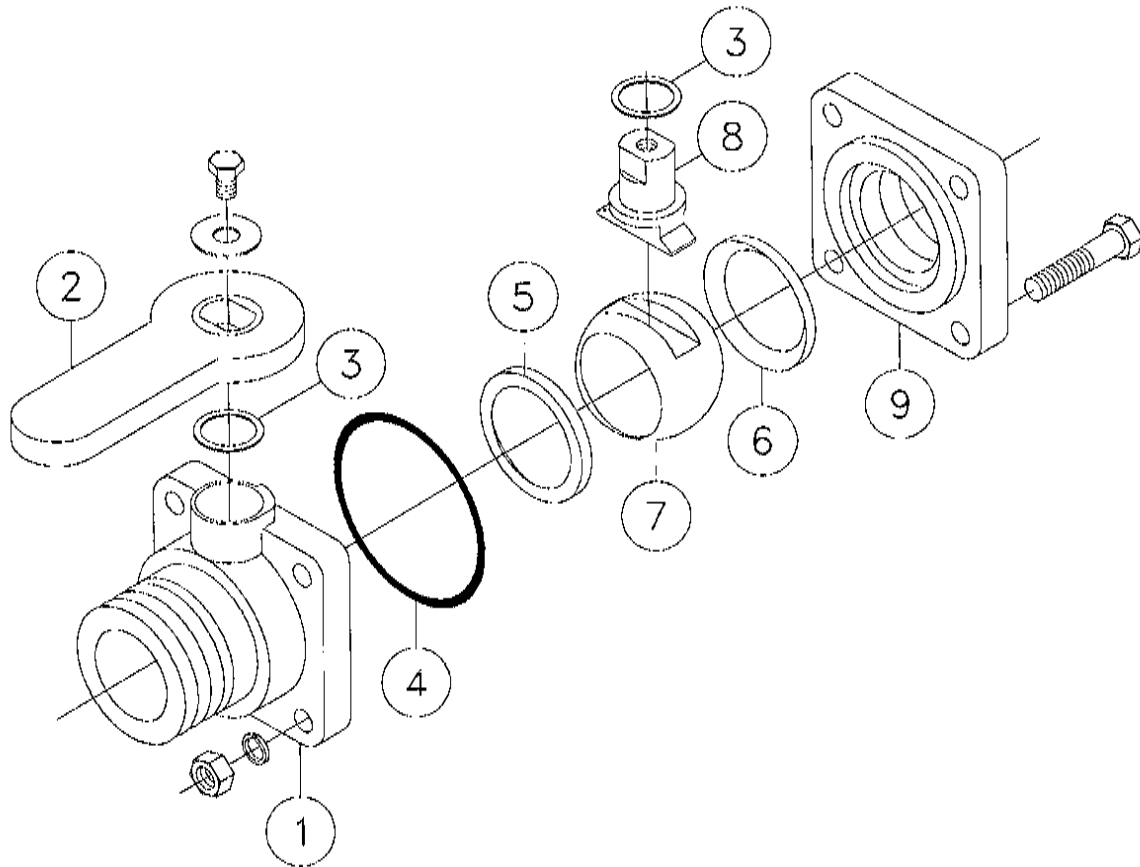


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-11	1	235723-001 BOLT-3/8-16X1 1/2 GR8 ZINC PLT	6
6-11	2	235713 001 WASHER-3/8 SAE HARD ZINC PLTD	6
6-11	3	239253-001 ENDCAP-SC65 OUTLET FITTING	1
6-11	4	51163-001 O-RING	1
6-11	5	239252 001 PISTON-SC65 OUTLET FITTING	1
6-11	6	51181-001 O-RING	1
6 11	7	239251-001 FITTING-APLEX SC65 OUTLET	1
	239494-001	WATER PUMP OUTLET ASSY-SC65 (INC. ALL ITEMS IN THIS FIGURE)	

BALL VALVE COMPONENTS - 2" M & F

Figure 6-12

Revised February 1999 due to
addition of figure to manual.

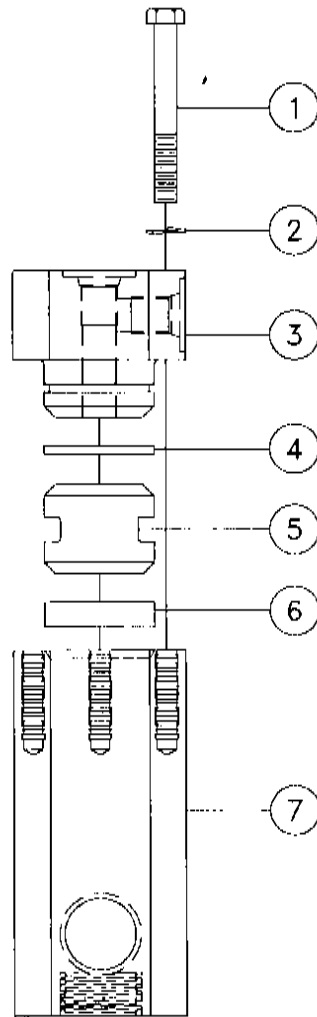


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-12	1	236045-003 BODY-2" MNPT	1
6-12	2	236045-005 HANDLE-SHORT	1
6-12	3	224942-011 THRUST WASHER	2
6-12	4	236045-007 GASKET-BODY	1
6-12	5	236045-009 SEAT	1
6-12	6	236045-011 SEAT	1
6-12	7	236045 013 BALL	1
6-12	8	236045-015 STEM	1
6-12	9	224942-013 END PLATE	1
	236045-001	VALVE-2" FPTX2" MPT POLY BALL (INC. ALL ITEMS IN THIS FIGURE)	

WATER PRESSURE MANIFOLD COMPONENTS

Figure 6-13

Revised February 2000 due to addition of figure to manual.

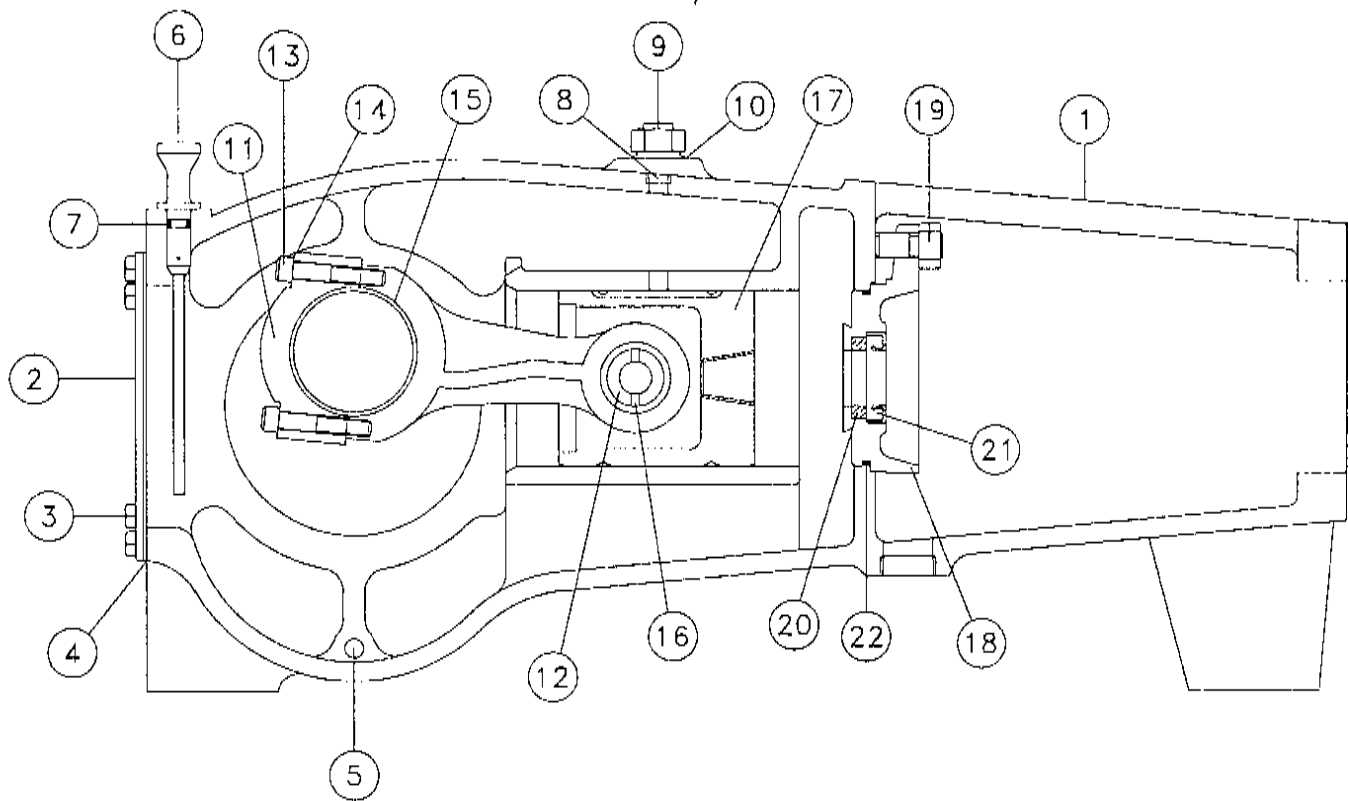


REF. NO.	PART NO.	DESCRIPTION	QTY.
6-13	1	250531-001 BOLT-1/4-20X2 GR 8 HEX Y/ZINC	6
6-13	2	480-003 WASHER-1/4 S/T LOCK	6
6-13	3	238138-001 ENDCAP-MANIFOLD OUTLET FITTING	1
6-13	4	234818-001 O-RING-1.254 OD X 1.114ID-.070	1
6-13	5	238139-001 PISTON INSERT-MANIFOLD	1
6-13	6	250612-001 O-RING	1
6-13	7	238137-001 FITTING-WATER MANIFOLD PRESSURE	1
	250611-001	MANIFOLD ASSEMBLY-WATER PRESSURE (INC. ALL ITEMS IN THIS FIGURE)	

WATER PUMP COMPONENTS (SC65) - POWER FRAME

Figure 6-14

Revised February 2000 due to addition of figure to manual.

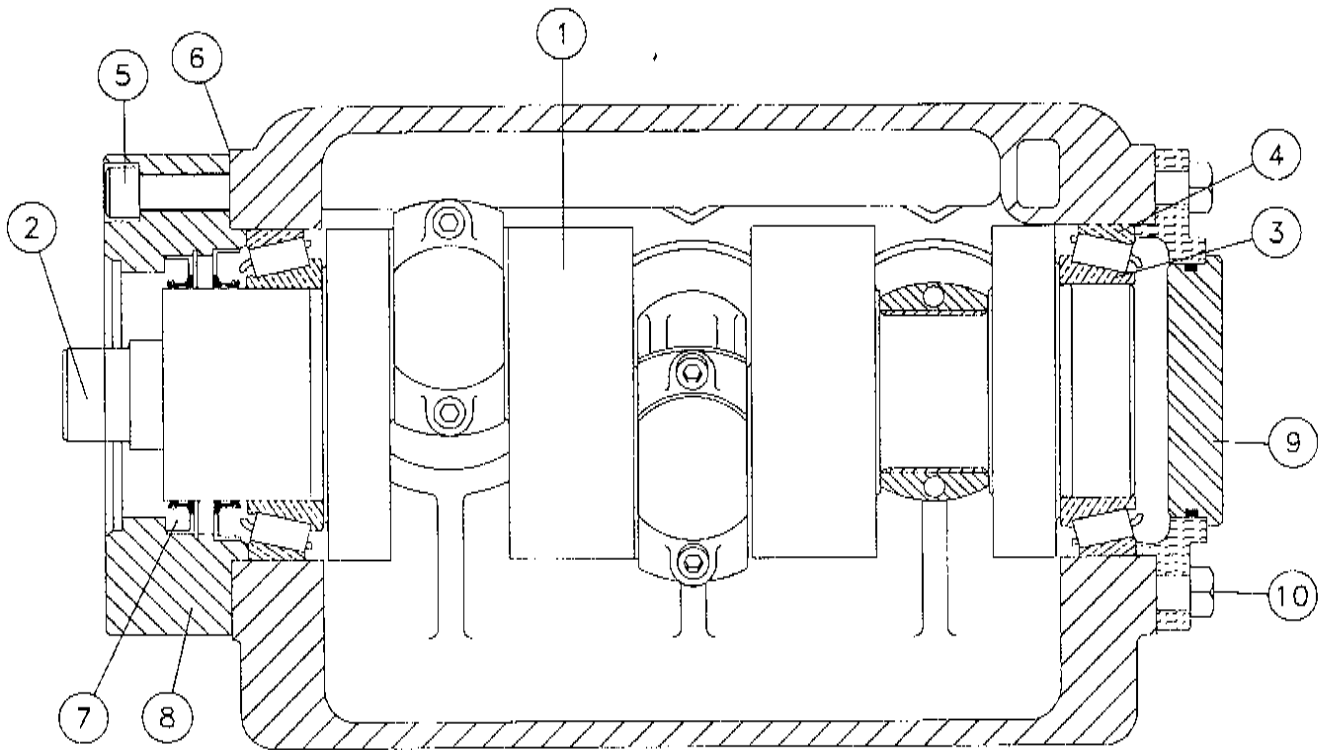


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
6-14	1	224408-075	POWER FRAME	1	6-14	12	224408-087	WRIST PIN BUSHING	3
6-14	2	224408-077	CRANKCASE COVER	1	6-14	13	4478-024	3/8-16X2 1/2 SOCKET HEAD	6
6-14	3	220741-009	3/8-16X5/8 HHCS	8	6-14	14	480-007	WASHER-3/8 S/T LOCK	6
6-14	4	224408-079	GASKET-CRANKCASE COVER	1	6-14	15	224408-089	CRANK PIN BEARING HALF	6
6-14	5	732-005	3/8" PIPE PLUG BLACK STEEL	2	6-14	16	224408-091	WRIST PIN	3
6-14	6	224408-081	OIL LEVEL DIPSTICK	1	6-14	17	224408-093	CROSSHEAD	3
6-14	7	224408-083	O-RING	1	6-14	18	224408-095	WIPER BOX	3
6-14	8	239383-009	PLUG-1/4 NPT SOCKET HEAD PLUG	3	6-14	19	224408-097	HEX HEAD CAP SCREW 1/2X1 1/2	6
6-14	9	220741-009	BREATHER-CRANKCASE 3/4M NPT	1	6-14	20	224408-099	POLYPAK RING	3
6-14	10	735-001	3/4" COUNTERSUNK PIPE PLUG	1	6-14	21	224408-101	OIL SEAL-WIPER BOX	3
6-14	11	224408-005	CONNECTING ROD ASSEMBLY (INC. REF. 11-14)	3	6-14	22	224408-103	O-RING-WIPER BOX	3

WATER PUMP COMPONENTS (SC65) - CRANKSHAFT

Figure 6-15

Revised February 2000 due to addition of figure to manual.

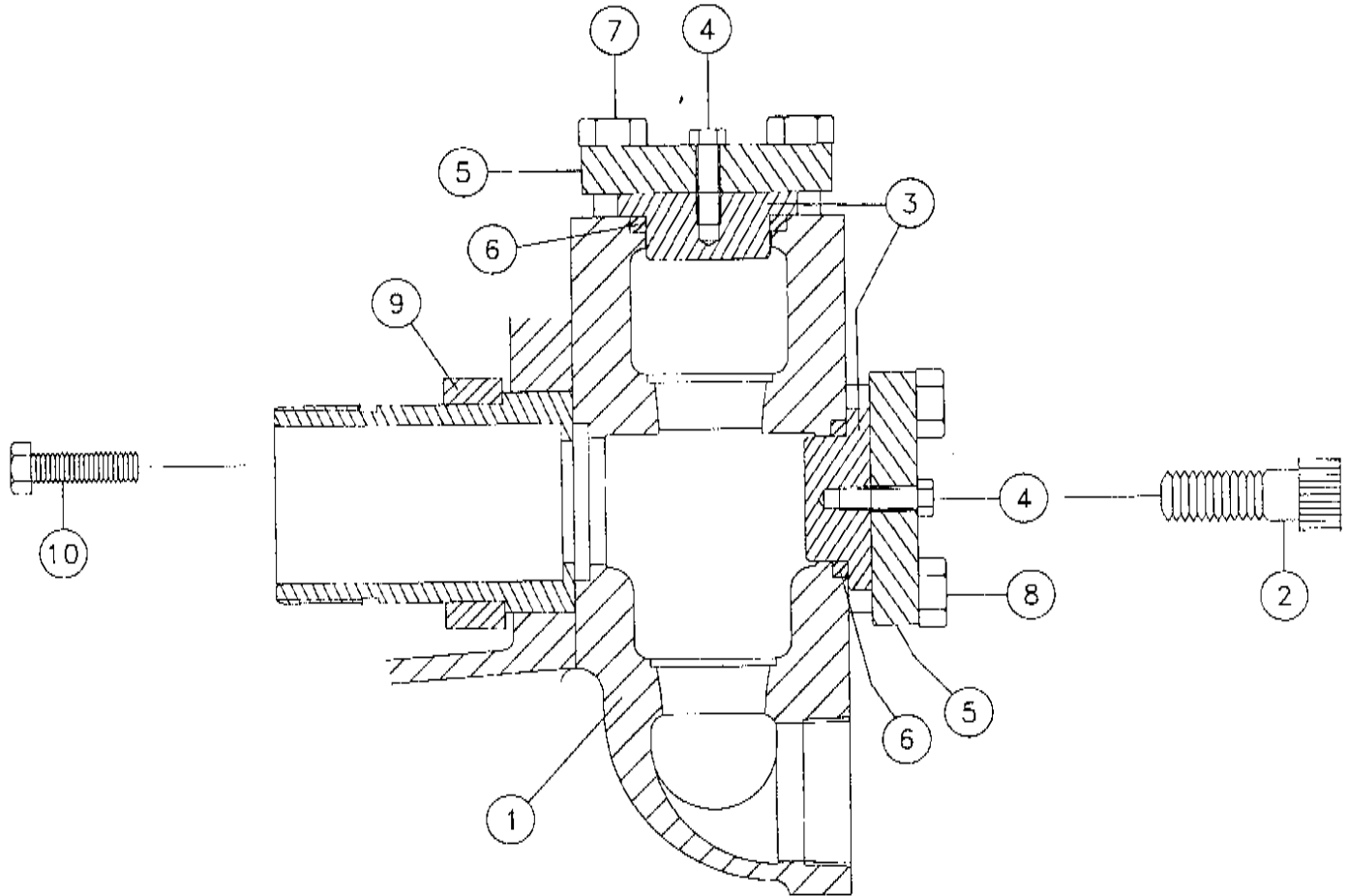


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-15	1	244460-009 CRANKSHAFT	1
6-15	2	244460-011 SPLINE ADAPTER	1
6-15	3	234309-005 BEARING CONE	2
6-15	4	234309-007 BEARING CUP	2
6-15	5	244460-035 SOCKET HD CAP SCREW 1/2 NC X 3 1/4	6
6-15	6	244460-013 SHIM SET	1
6-15	7	228098-025 OIL SEAL	2
6-15	8	244460-015 BEARING RETAINER & MOTOR ADAPTER	1
6-15	9	234309-009 BLIND BEARING CUP	1
6-15	10	224408-097 HEX HEAD CAP SCREW 1/2X1 1/2	6

WATER PUMP COMPONENTS (SC65) - FLUID END

Figure 6-16

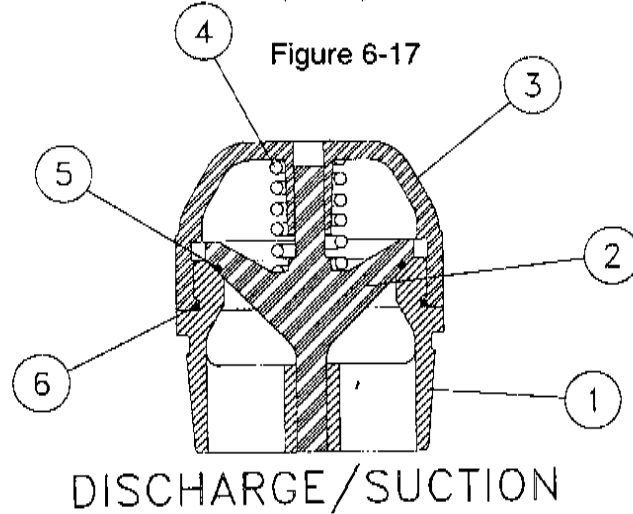
Revised February 2000 due to addition of figure to manual.



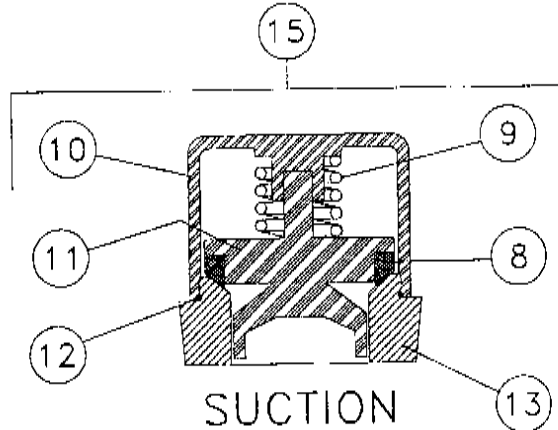
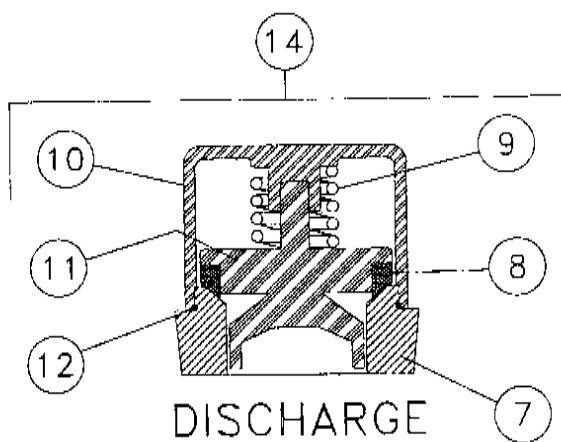
<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-16	1	224408-105 FLUID END-DUCTILE IRON	1
6-16	2	224408-107 SOCKET HD CAPSCREW 7/8X2 3/4	2
6-16	3	224408-109 VALVE-COVER & CYL. HEAD PLUG	6
6-16	4	235737-001 BOLT-1/2-13X2 1/4 GR 8 ZINC PLT	6
6-16	5	244460-017 VALVE COVER & CYL. HEAD PLUG RETAINER	2
6-16	6	224408-131 SEAL-STUFFING BOX (RUBBER)	6
6-16	7	238242-001 BOLT-3/4"-10X3" GR 8 HEX Y/Z	8
6-16	8	244460-019 BOLT-3/4"-10X9" GR 5 HEX HD	8
6-16	9	224408-115 RETAINER-STUFFING BOX	1
6-16	10	238245-001 BOLT-5/8"-11X2 1/4 GR 8 HEX	2

WATER PUMP COMPONENTS (SC65) - SUCTION/DISCHARGE VALVES

Revised February 2000 due to addition of figure to manual.



DUAL STEM GUIDED VALVE (OLD STYLE)



ABRASIVE RESISTANT VALVES

REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
6-17	1	224408-117 VALVE SEAT-HARDENED SS	1	6-17	15	244460-005 VALVE ASSY.-ABRASIVE RESISTANT (SUCTION) (INC. REF. 8-13)	3
6-17	2	224408-119 DOUBLE STEM VALVE	1				
6-17	3	224408-123 GUIDE CAGE (SS)	1				
6-17	4	220741-081 VALVE SPRING-1 9/16 FREE LENGTH	1				
6-17	5	224408-121 O-RING (POLY) SIZE 028	1				
6-17	6	224408-125 O-RING (RUBBER) SIZE 032	1				
6-17	7	244460-021 VALVE SEAT-DISCHARGE	1				
6-17	8	244460-023 POLYURETHANE INSERT	1				
6-17	9	244460-025 VALVE SPRING	1				
6-17	10	244460-027 GUIDE CAGE	1				
6-17	11	244460-029 VALVE BODY	1				
6-17	12	244460-031 O-RING	1				
6-17	13	244460-033 VALVE SEAT-SUCTION	1				
6-17	14	244460-007 VALVE ASSY.-ABRASIVE RESISTANT (DISCHARGE) (INC. REF. 7-12)	3				

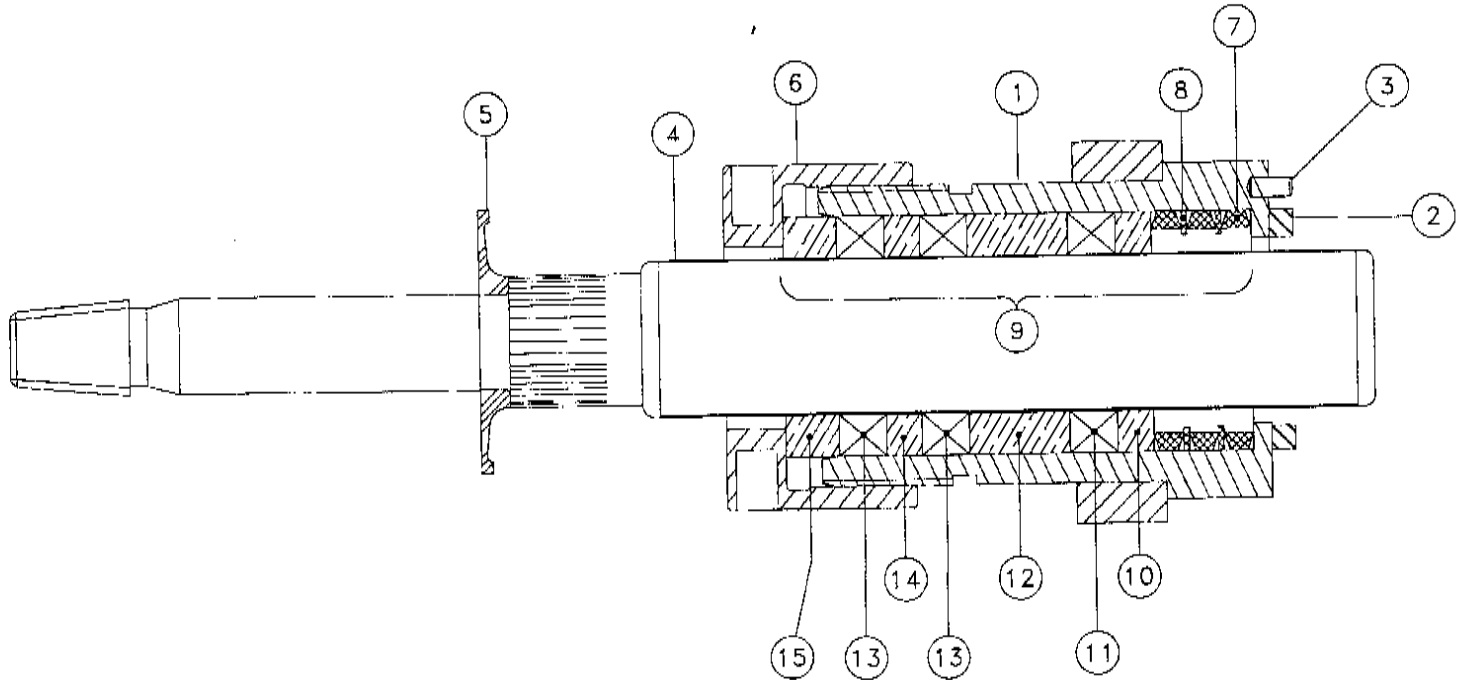
NOTE: DUAL STEM GUIDED VALVES WERE REPLACED BY ABRASIVE RESISTANT VALVES ON WATER PUMPS W/ MEYERS/APLEX SERIAL NO. 0608 AND ABOVE.

NOTE: DUAL STEM GUIDED VALVE ASSEMBLIES ARE INTERCHANGEABLE W/ ABRASIVE RESISTANT VALVE ASSEMBLIES. FOR WATER PUMPS W/ SERIAL NO. 0607 AND BELOW: USE ONLY "SUCTION"-STYLE ABRASIVE RESISTANT VALVES AS REPLACEMENTS FOR DUAL STEM STYLE VALVES IN BOTH THE SUCTION & DISCHARGE SIDES OF THE PUMP.

WATER PUMP COMPONENTS (SC65) - PLUNGER ASSEMBLY

Figure 6-18

Revised February 2000 due to addition of figure to manual.

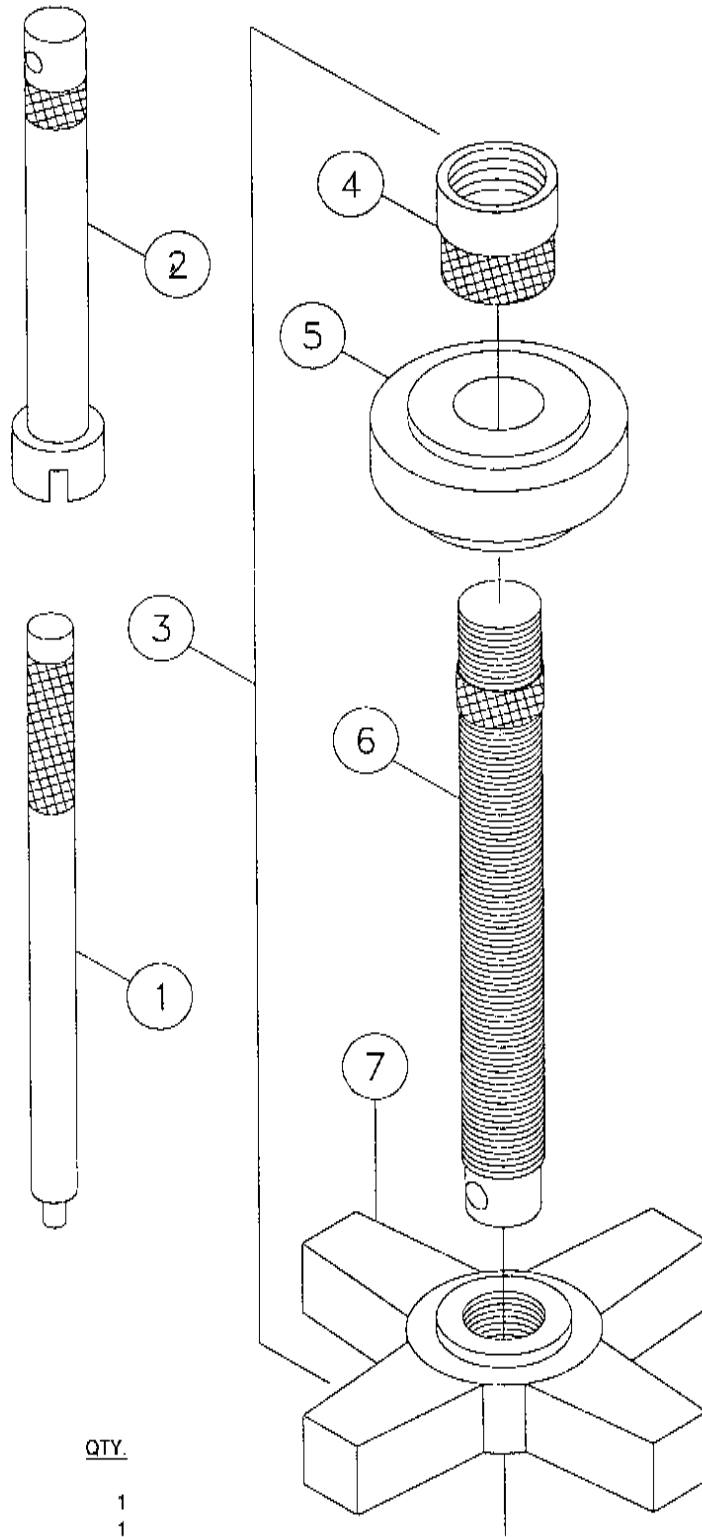


REF. NO.	PART NO.	DESCRIPTION	QTY.
6-18	1	224408-129 STUFFING BOX-PLUNGER	3
6-18	2	224408-131 SEAL-STUFFING BOX (RUBBER)	3
6-18	3	239383-041 ROLL PIN-1/4X5/8	3
6-18	4	224408-135 PLUNGER02 1/4" DIA	3
6-18	5	224408-133 BAFFLE PLATE-RUBBER	3
6-18	6	224408-127 GLAND-PLUNGER	3
6-18	7	224408-159 ELASTOMER SPRING	9
6-18	8	224408-161 SPRING SPACER	
6-18	9	224408-137 PACKING ASSY.-HI/LO (INC. REF. 10-15)	3
		244460-035 PACKING SET (PACKING ONLY)	
		(INC. REF. 11 & 13)	3
6-18	10	224408-157 SPRING ADAPTER-BRONZE	3
6-18	11	224408-143 STYLE 140 PACKING	3
6-18	12	224408-151 SPACER-BRONZE	3
6-18	13	224408-141 STYLE 141 PACKING	6
6-18	14	224408-155 SPACER-BRONZE	3
6-18	15	224408-153 GLAND RING-BRONZE	3

WATER PUMP COMPONENTS (SC65) - SPECIAL TOOLS

Figure 6-19

Revised February 2000 due to addition of figure to manual.

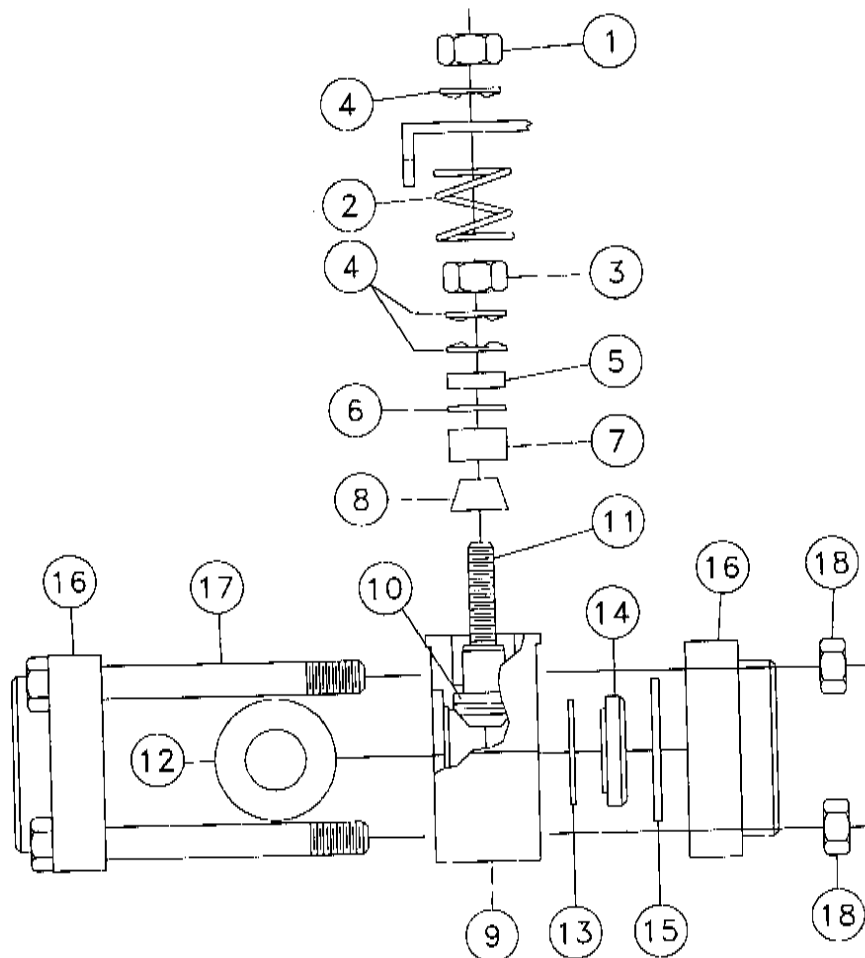


REF. NO.	PART NO.	DESCRIPTION	QTY.
6-19	1	224726-001 WRENCH-GLAND	1
6-19	2	224727-001 WRENCH-CASE	1
6-19	3	224408-163 SEAT PULLER COMPLETE (INC. REF. 4-7)	1
6-19	4	224408-165 PULLER HEAD	1
6-19	5	224891-001 BRIDGE	1
6-19	6	224892-001 STEM PULLER	1
6-19	7	224893-001 WING NUT	1

WATER SHUT-OFF VALVE COMPONENTS

Figure 6-20

Revised August 2000 due to addition of figure to manual.

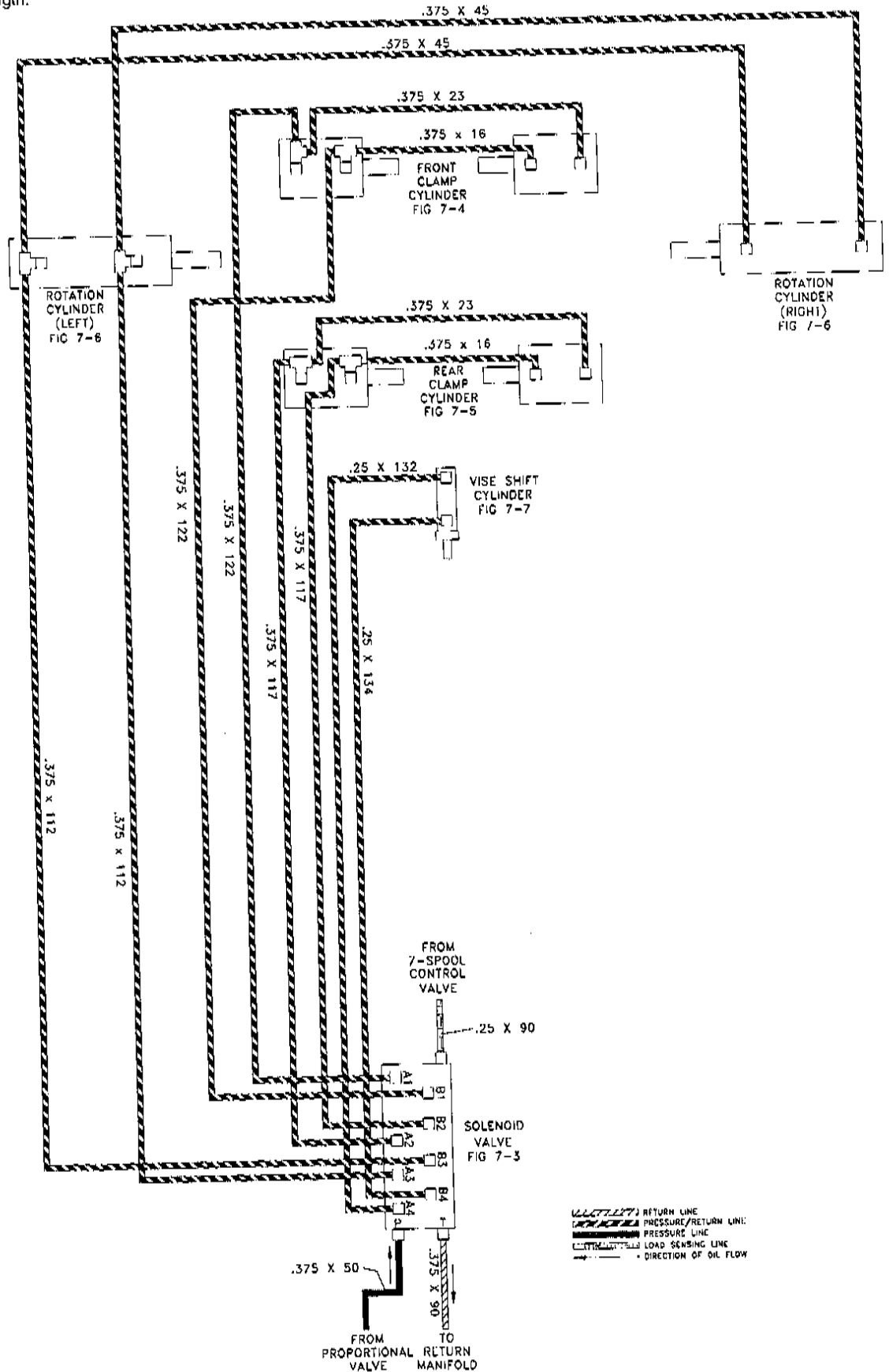


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
6-20	1	287053-002 STEM NUT	1
6-20	2	287053-003 GROUNDING SPRING	1
6-20	3	287053-004 NUT-STEM	1
6-20	4	287053-005 STEM SPRING	3
6-20	5	287053-006 GLAND	1
6-20	6	287053-007 PACKING SUPPORT	1
6-20	7	287053-008 TOP PACKING	1
6-20	8	287053-009 BOTTOM PACKING	1
6-20	9	287053-010 BODY CENTER	1
6-20	10	287053-011 BEARING-STEM	2
6-20	11	287053-012 STEM	1
6-20	12	287053-013 BALL	1
6-20	13	287053-014 SUPPORT RING	2
6-20	14	287053-015 SEAT/SEAT SPRING	2
6-20	15	287053-016 O-RING	2
6-20	16	287053-017 FLANGE	2
6-20	17	287053-018 BODY STUD	4
6-20	18	287053-019 BODY NUT	8
	287053-001	VALVE-1 1/2" BALL (2200 PSI) (INC. ALL ITEMS IN FIGURE)	
	287053-020	KIT-MAINTENANCE (INC. REF. 4-8, 10&14-15)	

HYDRAULIC COMPONENTS LOCATION DIAGRAM - OPEN TOP PIPE VISE

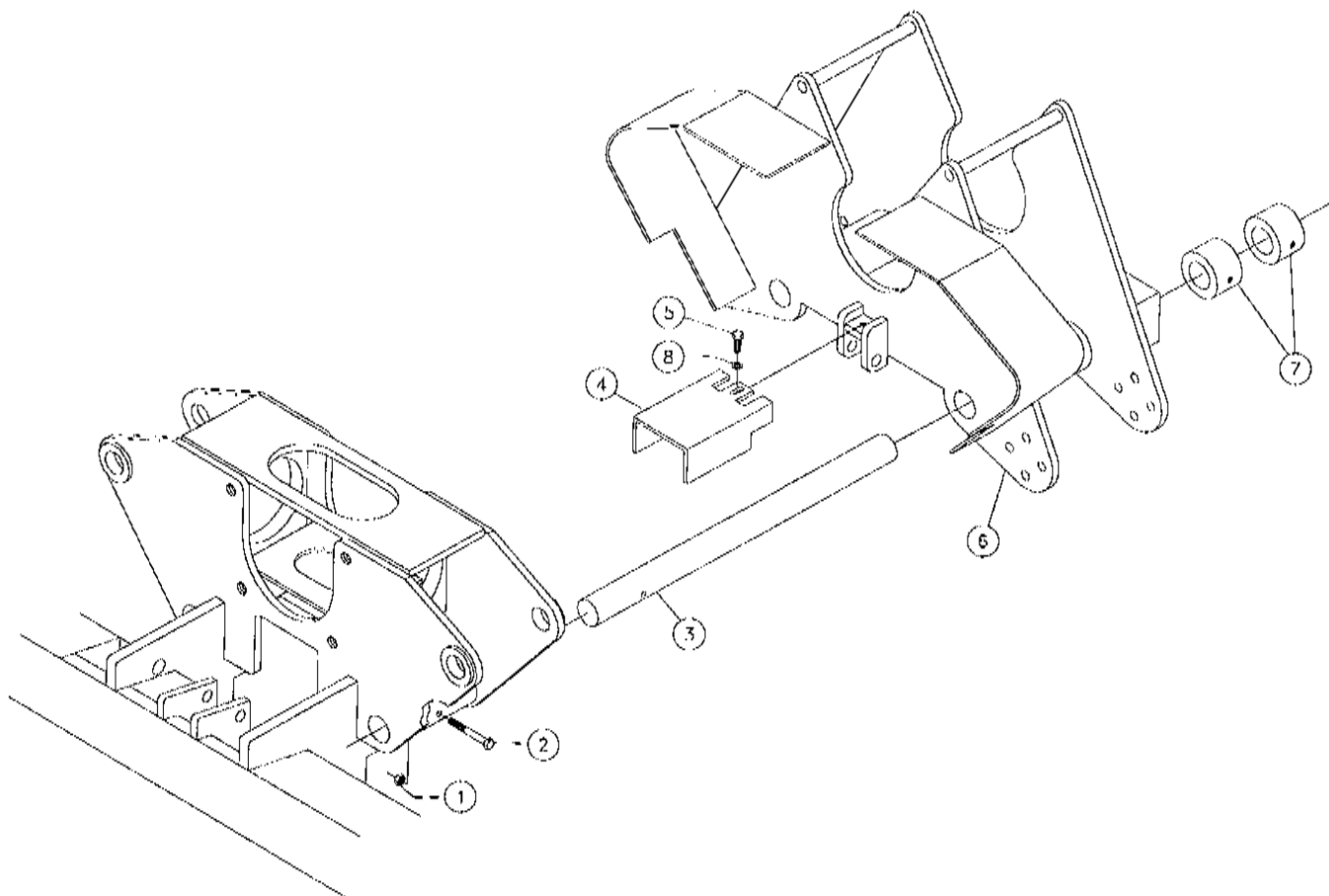
Figure 7-1

Revised July 1999 due to change in hose length.



CARRIAGE ASSEMBLY - REAR VISE

Figure 7-2

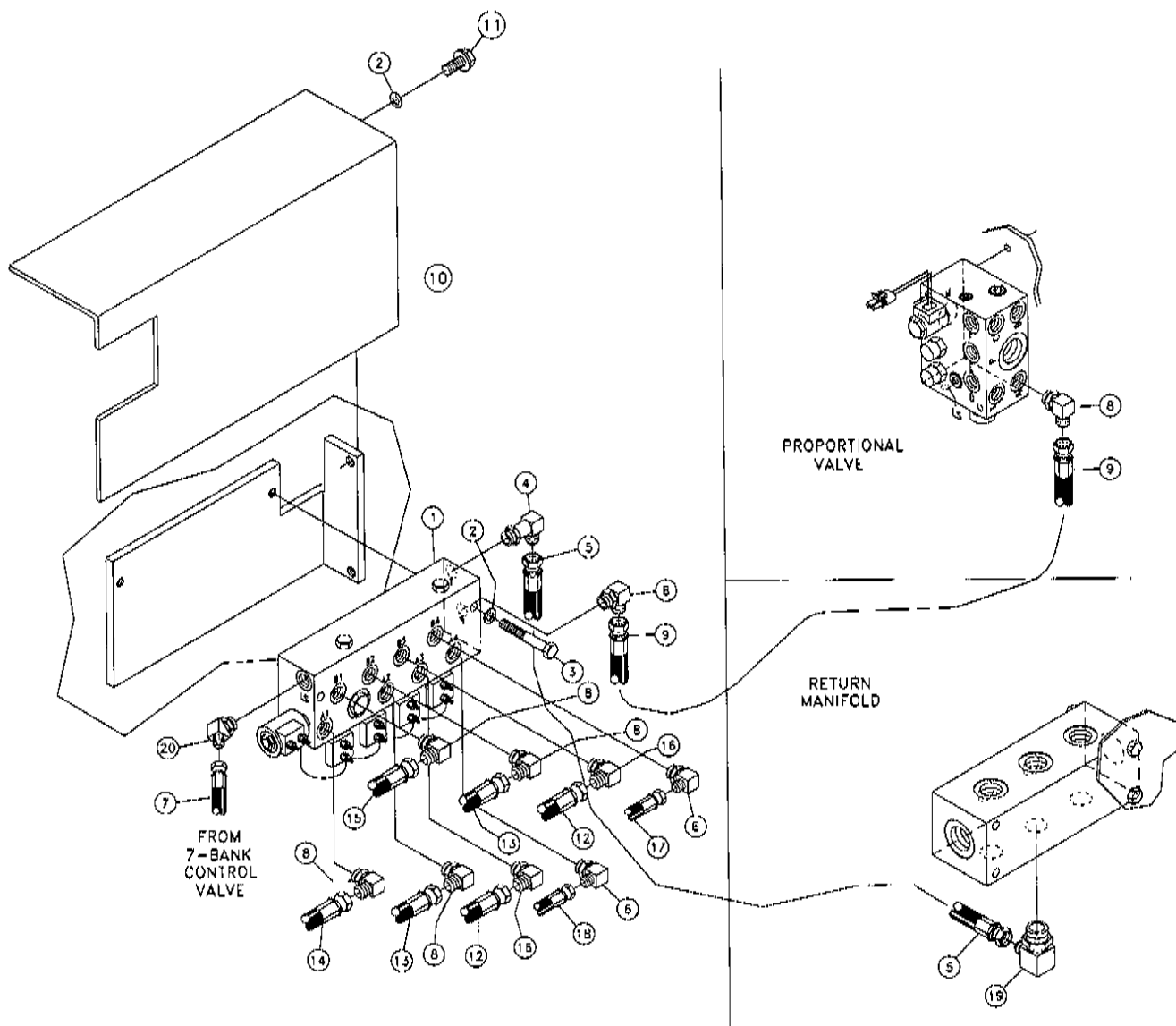


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
7-2	1	240333-001 NUT-5/16-18 GR8 TL ZINC PLTD	2
7-2	2	238212-001 BOLT-5/16-18 X 3" GR8 HEX YZI	2
7-2	3	234299-001 PIN-VISE SLIDE	2
7-2	4	234412-001 SHIELD-CYLINDER	1
7-2	5	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	1
7-2	6	249751-001 CARRIAGE-REAR VISE	1
7-2	7	239462-001 SPACER-VISE SLIDE	4
7-2	8	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	1

SOLENOID VALVE ASSEMBLY - PIPE VISE

Figure 7-3

Revised July 1999 due to update in illustration.

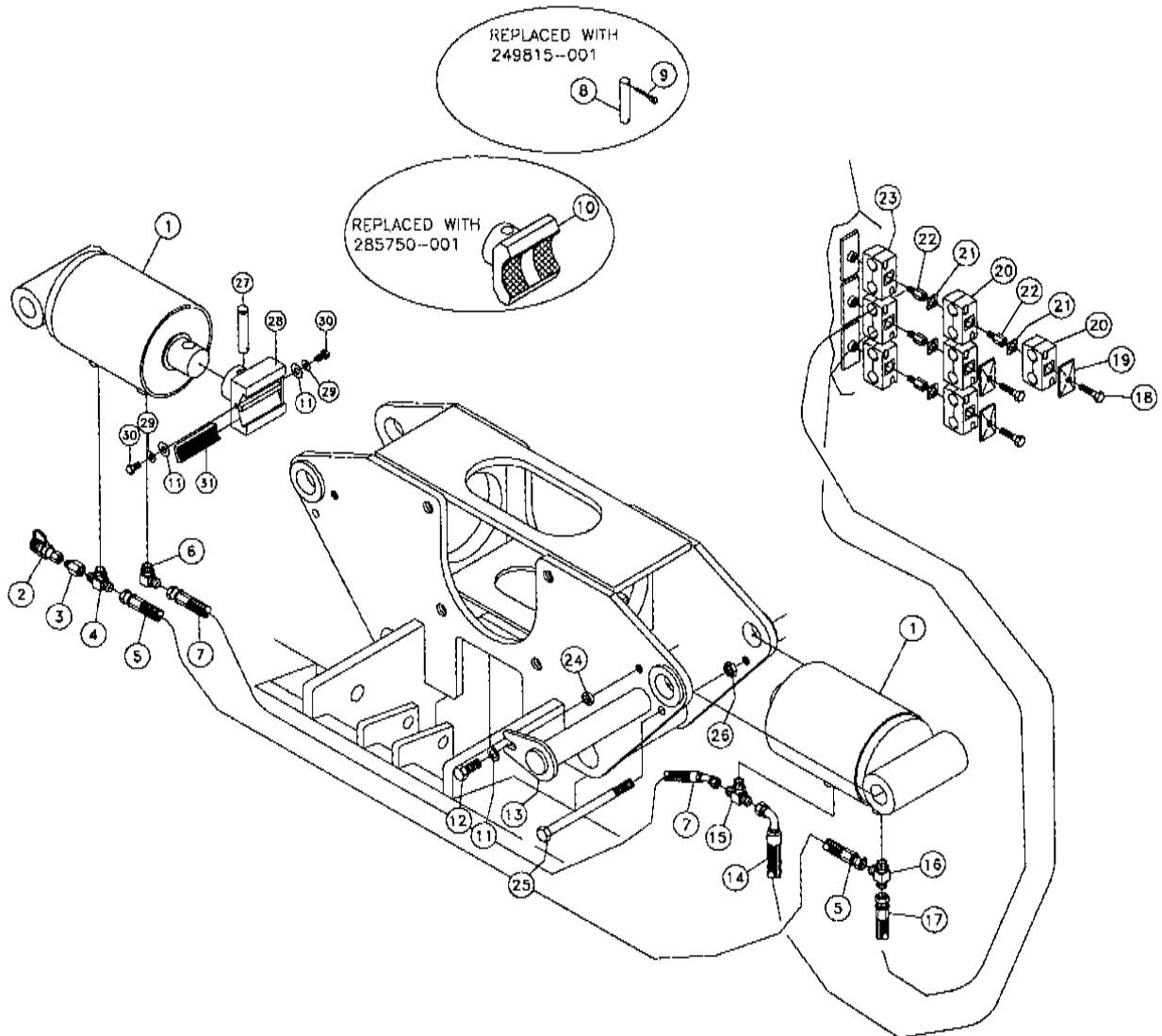


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
7-3	1	244462-001	VALVE-4 BANK (BREAKDOWN FIG. 7-9)	1	7-3	11	235726-001	BOLT-3/8-16X3/4 GR8 HEX ZNCPLT	2
7-3	2	235713-001	WASHER-3/8 SAE HARD ZINC PLTD	4	7-3	12	57940-167	HOSE-3/8X112 6FS JIC (100R1)	2
7-3	3	250529-001	BOLT 3/8-16X2 1/2"GR.8 HEX	2	7-3	13	57940-485	HOSE-3/8X117 6FS JIC 3500 PSI	2
7-3	4	65570-001	6M X 6M JIC 90 DEGREE LONG	1	7-3	14	57940-547	HOSE-3/8X122 6 FS 3000 PSI	1
7-3	5	57940-057	HOSE-3/8X90 6FS JIC (100R1)	1	7-3	15	239314-001	HOSE-3/8X122 6FSJIC 90/ST	1
7-3	6	600118-001	FITTING-6MORINGX4MJIC90PARKER	2	7-3	16	122606-001	FITTING-6MX6M JIC90 DEG/W RSTS	2
7-3	7	53843-691	HOSE-1/4X90 4FSJIC-4FSJIC 90	1	7-3	17	53843-215	HOSE-1/4X134 4FS JIC 3000 PSI	1
7-3	8	59426-001	FITTING-6M JICX6M ADJ 90 ELBOW	5	7-3	18	53843-201	HOSE-1/4X132 4FS JIC 3000 PSI	1
7-3	9	57940-289	HOSE-3/8X50 6FS JIC 3000 PSI	1	7-3	19	59401-001	6M JICX10M ADJ. 90 DEG.ELBOW	1
7-3	10	244599-001	SHIELD-VISE VALVE	1	7-3	20	57950-001	FITTING-6M X 4 JIC 90 DEG.	1

CLAMP CYLINDER ASSEMBLY (FRONT)

Figure 7-4

Revised August 2000 due to update in parts list. Added part marked with *.

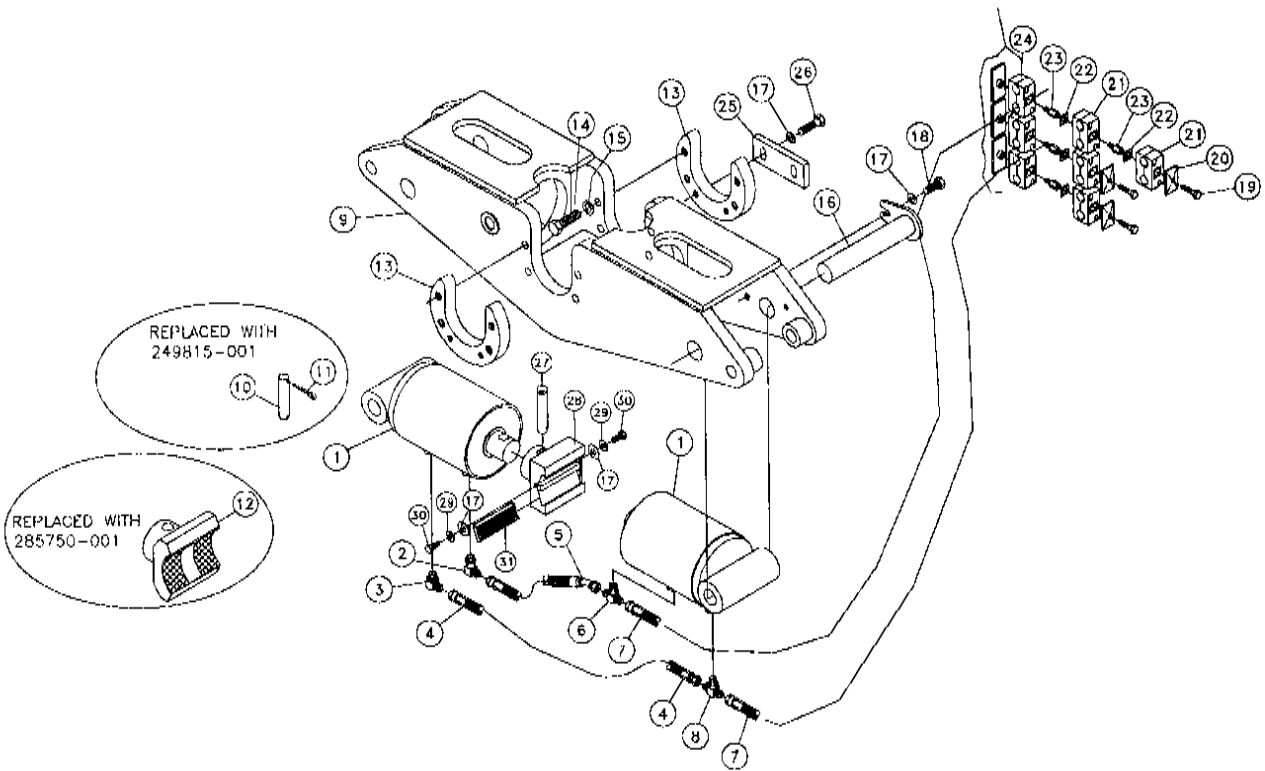


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
7-4	1	244286-001 CYLINDER -4X2 (BREAKDOWN FIG. 7-11) (SN101-191)	2	7-4	15	122605-001 FITTING-6M JIC BCH TEE W/ RSTS	1
		*283582-001 CYLINDER-HYD. 4" BORE X 2.25" ROD X 2" ST (SN192-) (BRKDNW FIG. 7-12)	2	7-4	16	68774-001 FITTING-6MX6M JIC (RUN)X6M JIC	1
7-4	2	83015-001 FITTING-4F JIC DIAGNOSTIC	1	7-4	17	57940-547 HOSE-3/8X122 6 FS 3000 PSI	1
7-4	3	59928-001 6F JICX4M JIC ST REDUCER	1	7-4	18	248031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL	6
7-4	4	68787-001 FITTING-6M (BCH)X6M JICX6M JIC	1	7-4	19	67846-003 PLATE-TWIN COVER	6
7-4	5	57940-553 HOSE-3/8X23 6FS JIC 3000 PSI	1	7-4	20	67846-005 CLAMP-TWIN	8
7-4	6	251044-001 FITTING-6MX6M JIC90 R.062	1	7-4	21	231758-001 WASHER-SAFETY(1/2" HEX ID)	8
7-4	7	251059-001 HOSE-3/8X16 6FS JIC ST/45 3000	1	7-4	22	231757-001 BOLT-CLAMP STACKING 5/16THREAD	8
7-4	8	216447-001 PIN-JAW (REPLACED W/249815-001)	2	7-4	23	900035-005 CLAMP-3/8"DOUBLE HOSE	6
7-4	9	510-021 COTTER PIN-3/16" X 1"	4	7-4	24	1081-001 TUBE-1"ODX9/16"ID-7/16	2
7-4	10	240754-001 JAW-2 5/8 OD CURVED (REPLACED W/285750-001)	2	7-4	25	251046-001 BOLT-1/2-13X6 3/4 GR8 HEX ZINC	2
7-4	11	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	6	7-4	26	235722-001 NUT-1/2-13 GR8 JAM ZINC PLTD	2
7-4	12	235721-001 BOLT-1/2-13X1 1/2 GR8 ZINC PLT	2	7-4	27	249815-001 PIN-11/16X2.61 LOCK BALL	2
7-4	13	244496-001 PIN-FRONT VISE CYLINDER	2	7-4	28	278220-001 HOLDER-1 3/4 RAM, GRIP 2 5/8 UPSET	2
7-4	14	239314-001 HOSE-3/8X122 6FSJIC 90/ST	1	7-4	29	235713-001 WASHER-3/8 SAE HARD ZINC PLATED	4
				7-4	30	235726-001 BOLT-3/8-16X3/4 GR 8 HEX ZINC PLTD	4
				7-4	31	278223-001 GRIP-VISE (2 5/8 UPSET)	8

CLAMP CYLINDER ASSEMBLY (REAR)

Figure 7-5

Revised August 2000 due to update
in illustration & parts list. Added part
marked with *.

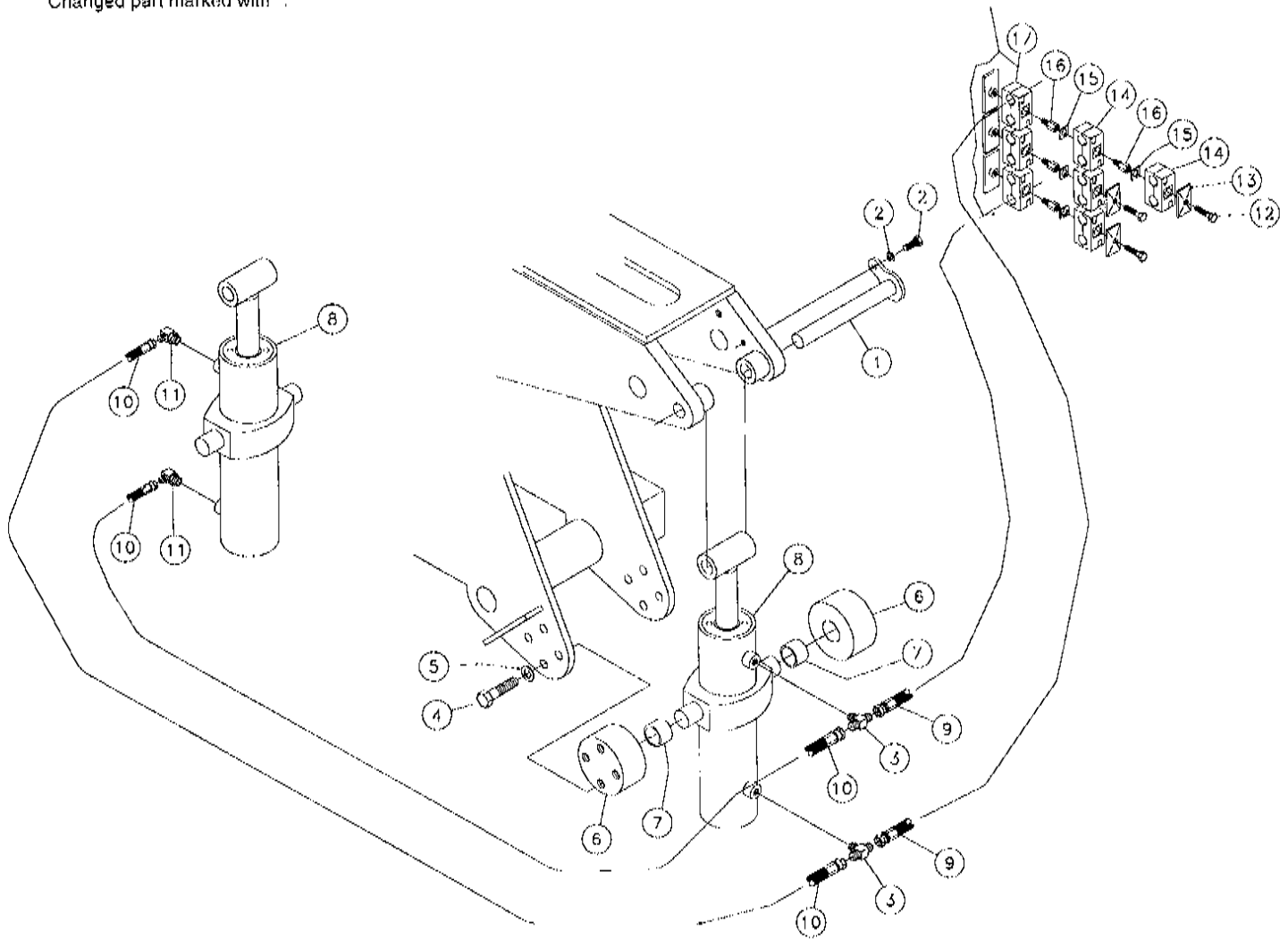


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
7-5	1	244286-001 CYLINDER -4X2 (BREAKDOWN FIG. 7-11) (SN101-191)	2	7-5	15	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	8
		*283582-001 CYLINDER-HYD. 4" BORE X 2.25" ROD X 2" ST. (SN19-2) (BRKDNW FIG. 7-12)	2	7-5	16	244498-001 PIN-REAR VISE CYLINDER	2
7-5	2	251044-001 FITTING-6M X 6M JIC 90 R.062	1	7-5	17	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	8
7-5	3	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	1	7-5	18	235737-001 BOLT-1/2-13X1 1/4 GR8 ZINC PLT	2
7-5	4	57940-553 HOSE-3/8X23 6FS JIC 3000 PSI	1	7-5	19	248031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL	6
7-5	5	251059-001 HOSE-3/8X16 6FSJIC ST/45 3000	1	7-5	20	67846-003 PLATE-TWIN COVER	6
7-5	6	122605-001 FITTING-6M JIC BCH TEE W/ RSTS	1	7-5	21	67846-005 CLAMP-TWIN	8
7-5	7	57940-485 HOSE-3/8X117 6FS JIC 3500 PSI	2	7-5	22	231758-001 WASHER-SAFETY(1/2" HEX ID)	8
7-5	8	68787-001 FITTING-6M (BCH)X6M JICX6M JIC	1	7-5	23	231757-001 BOLT-CLAMP STACKING 5/16THREAD	8
7-5	9	249752-001 CRADLE-VISE	1	7-5	24	900035-005 CLAMP-3/8" DOUBLE HOSE	6
7-5	10	216447-001 PIN-JAW (REPLACED WITH 249815-001)	2	7-5	25	276525-001 PLATE-WEAR	1
7-5	11	510-021 COTTER PIN-3/16" X 1"	4	7-5	26	240334-001 BOLT-1/2"-13X1 3/4" GR 8 HEX Y/ZINC	2
7-5	12	240754-001 JAW-2 5/8 OD CURVED (REPLACED W/285750-001)	2	7-5	27	249815-001 PIN-11/16X2.61 LOCK BALL	2
7-5	13	276524-001 PLATE-VISE INSERT	2	7-5	28	278220-001 HOLDER-1 3/4 RAM, GRIP 2 5/8 UPSET	2
7-5	14	238245-001 BOLT 5/8"-11 X 2 1/4" GR8 HEX	8	7-5	29	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	4
				7-5	30	235726-001 BOLT-3/8-16X3/4 GR 8 HEX ZINC PLTD	4
				7-5	31	278223-001 GRIP VISE (2 5/8 UPSET)	8

ROTATION CARRIAGE CYLINDER ASSEMBLY

Figure 7-6

Revised February 1999 due to addition of breakdown to manual. Changed part marked with *.

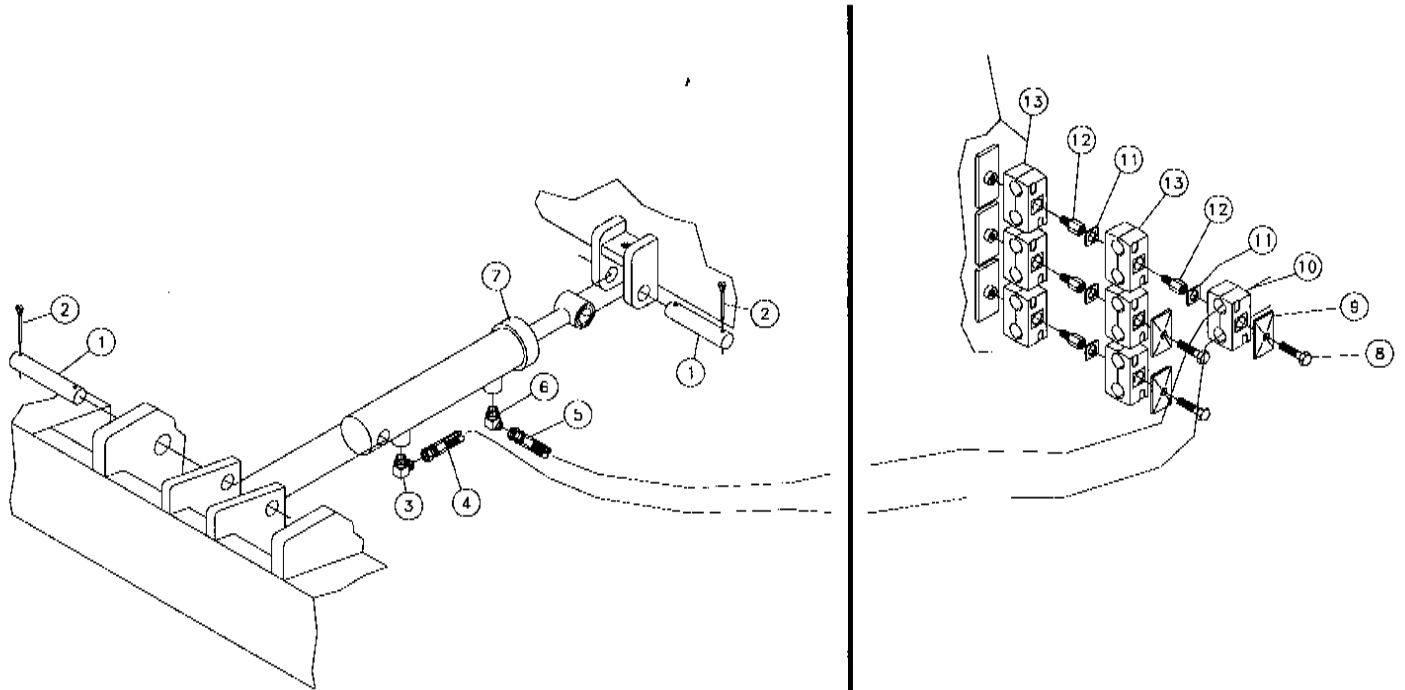


REF. NO.	PART NO.	DESCRIPTION	QTY.
7-6	1	251000-001 PIN VISE ROTATE CYLINDER	2
7-6	2	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	2
7-6	3	68787-001 FITTING-6M (BCH)X6M JICX6M JIC	2
7-6	4	235730-001 BOLT-5/8-11X1 1/4 GR8 ZINC PLT	16
7-6	5	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	16
7-6	6	251005-001 MOUNT TRUNION	4
7-6	7	70070-003 BEARING-COMPOSITE 1 LONG	4
7-6	8	*239275-001 CYLINDER-2 1/2 X 5 TRN MNT (BREAKDOWN FIG. 7-10)	2
7-6	9	57940-167 HOSE-3/8X112 6FS JIC (100R1)	2
7-6	10	57940-589 HOSE-3/8X45 6FS JIC 3000PSI	2
7-6	11	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	2
7-6	12	248031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL	6
7-6	13	67846-003 PLATE-TWIN COVER	6
7-6	14	67846-005 CLAMP-TWIN	6
7-6	15	231758-001 WASHER-SAFETY(1/2" HEX ID)	8
7-6	16	231757-001 BOLT-CLAMP STACKING 5/16THREAD	8
7-6	17	900035-005 CLAMP-3/8"DOUBLE HOSE	6

WISE SLIDE CYLINDER ASSEMBLY

Figure 7-7

Revised February 2000 due to addition of breakdown to manual. Updated part marked with *.

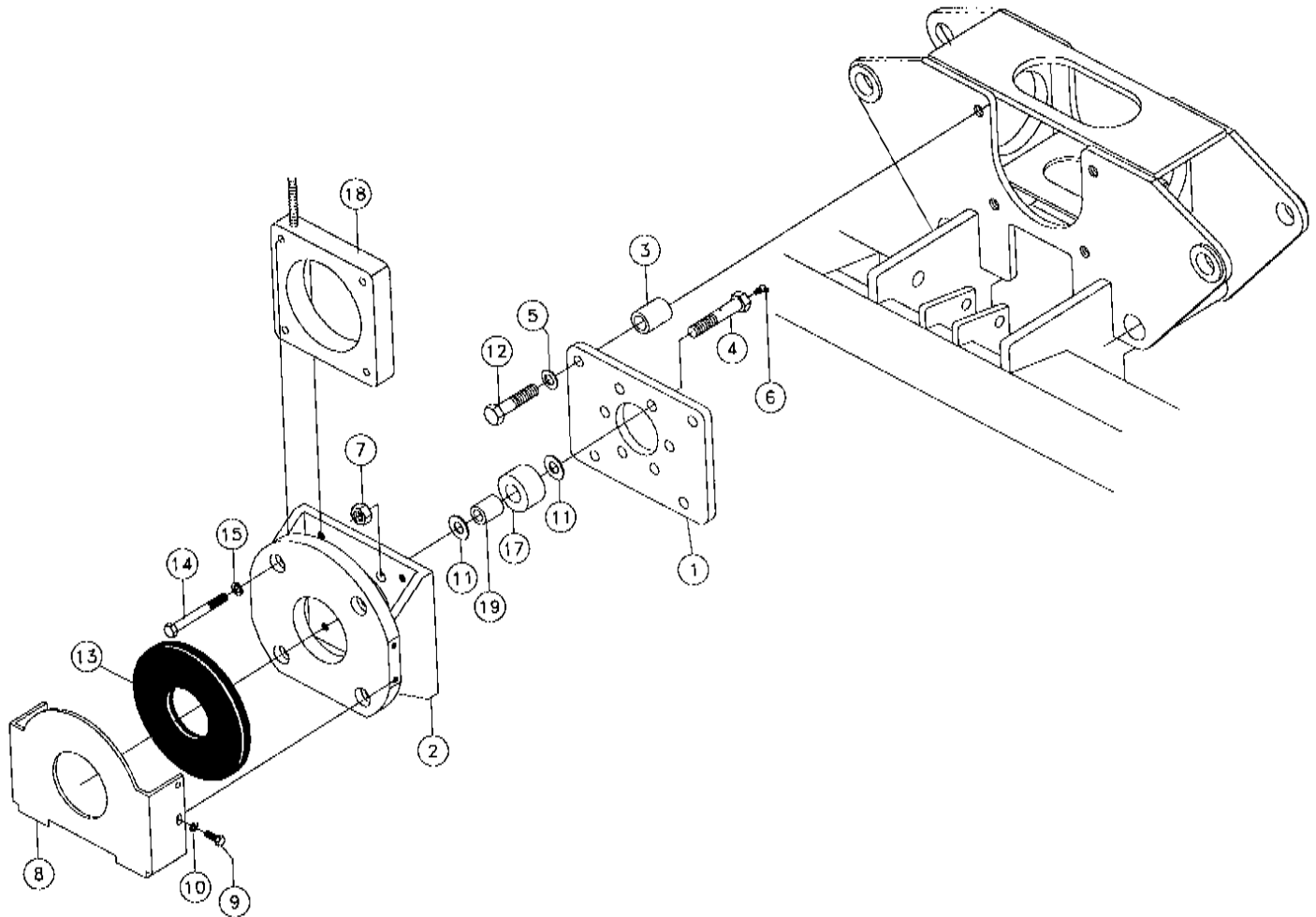


REF. NO.	PART NO.	DESCRIPTION	QTY.
7-7	1	239313-001 PIN-CYLINDER	2
7-7	2	510-017 COTTER PIN-5/32" X 1 1/2"	4
7-7	3	68821-001 FIT-4M JICX4M ADJ.90 W/ RESTRICTOR	1
7-7	4	53843-201 HOSE-1/4X132 4FS JIC 3000 PSI	1
7-7	5	53843-215 HOSE-1/4X134 4FS JIC 3000 PSI	1
7-7	6	58295-001 FITTING-4M OR X 4M JIC 45 DEG.	1
7-7	7	*223998-001 CYLINDER- 1 1/2 X 6 (BREAKDOWN FIG. 7-12)	1
7-7	8	248031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL	6
7-7	9	67846-003 PLATE-TWIN COVER	6
7-7	10	67846-005 CLAMP-TWIN	8
7-7	11	231758-001 WASHER-SAFETY(1/2" HEX ID)	8
7-7	12	231757-001 BOLT-CLAMP STACKING 5/16THREAD	8
7-7	13	900035-005 CLAMP-3/8"DOUBLE HOSE	6

ZAP ALERT ASSEMBLY

Figure 7-8

Revised August 2000 due to update
in parts list. Changed part marked with *.

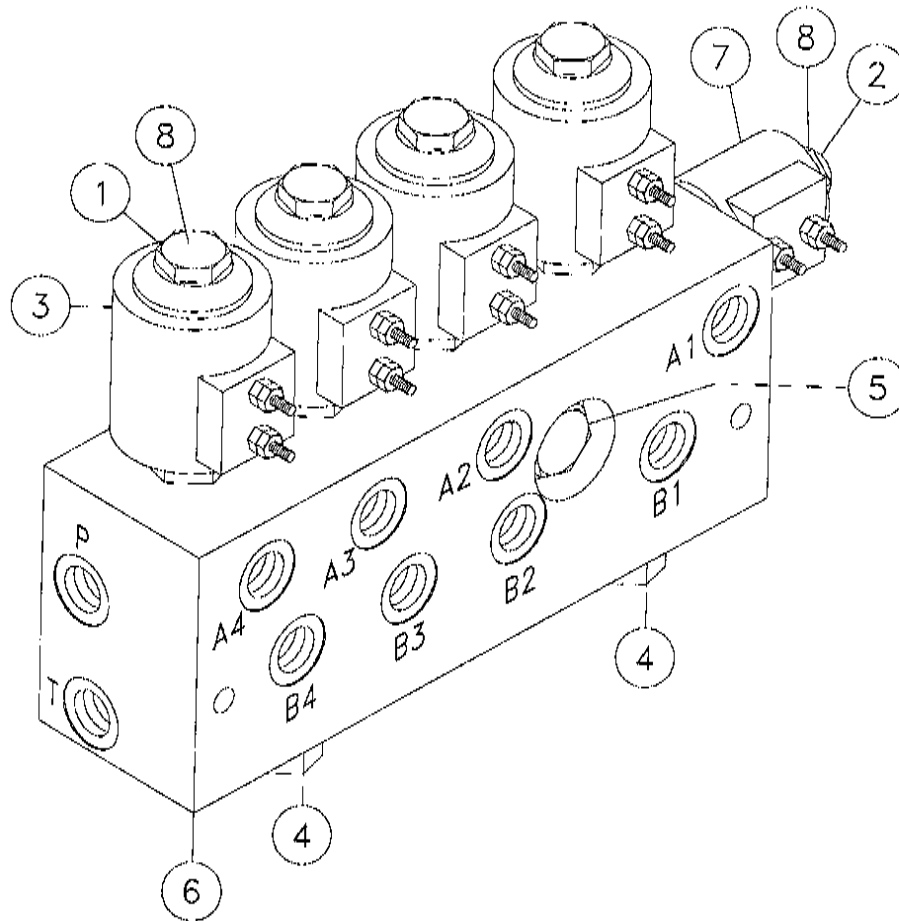


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
7-8	1	244394-001 MOUNT-WIPER HOLDER	1	7-8	11	485-017 WASHER-3/4 FLAT	4
7-8	2	249795-001 HOLDER-ROD WIPER	1	7-8	12	250610-001 BOLT-3/4-10X3 1/2 GR8 HX Y/ZNC	4
7-8	3	*280536-001 TUBE-LINKAGE-SHAFT CLAMP (REPLACES 1906-005)	4	7-8	13	235924-001 WIPER-2 3/8 OD ROD	1
7-8	4	234426-003 BOLT ASSEMBLY-ROLLER MOUNT (INC. REF. 6)	6	7-8	14	250568-001 BOLT-1/2-13 X4 1/2 GR8 HEX Y/Z	4
7-8	5	235717-001 WASHER-3/4 SAE HARD ZINC PLTD	4	7-8	15	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	4
7-8	6	597-001 ZERK-1/4" NF 90 DEG GREASE	6	7-8	16	485-017 WASHER-3/4 FLAT	12
7-8	7	250510-001 NUT 3/4 NC GR8 SLTL Y/ZINC	6	7-8	17	244679-001 ROLLER-GUIDE	6
7-8	8	234462-001 STOP-WIPER	1	7-8	18	224922-001 COIL-CURRENT(W/17'COAX CABLE) (SN101-175)	1
7-8	9	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	4		276856-001 COIL-CURRENT W/ 17' COAX CABLE (SN176-)	1	
7-8	10	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	4	7-8	19	244678-001 BUSHING GUIDE ROLLER	6

SOLENOID VALVE COMPONENTS

Figure 7-9

Revised February 1999 due to addition of figure to manual.

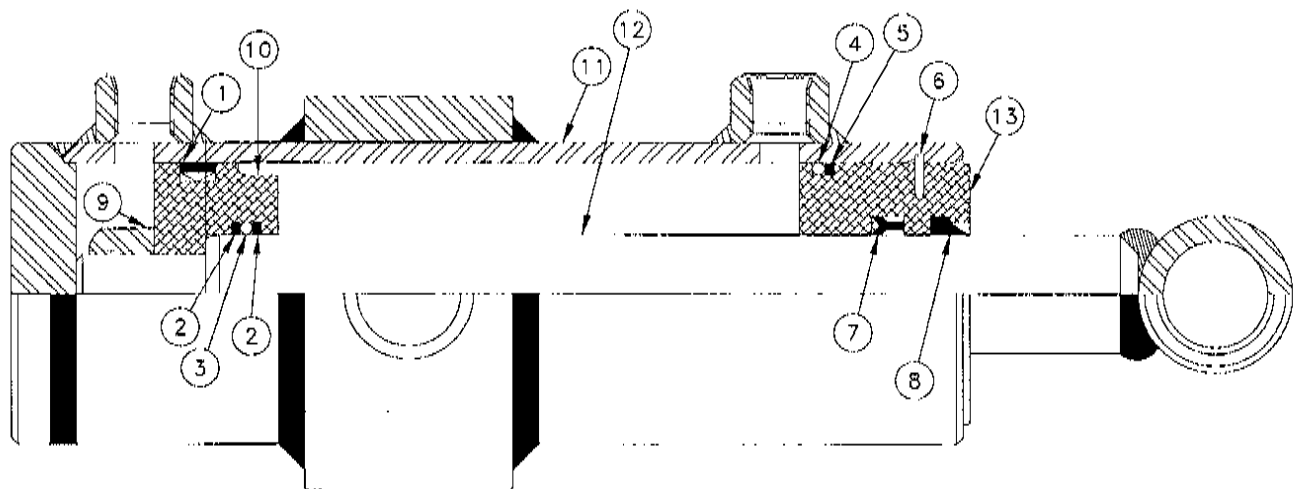


REF. NO.	PART NO.	DESCRIPTION	QTY.
7-9	1	228128-003 CARTRIDGE SOLENOID (INC. SEAL KIT & NUT REF. 8)	3
		206271-007 REPAIR KIT	3
7-9	2	228128-006 CARTRIDGE SOLENOID (INC. SEAL KIT & NUT REF. 8)	1
		228128-009 SEAL KIT	1
7-9	3	206271-005 COIL-12V DUAL POST	3
7-9	4	228128-013 SENSE CHECK	2
		228128-015 SEAL KIT	2
7-9	5	228128-017 CHECK VALVE	1
		228128-009 SEAL KIT	1
7-9	6	NSS BODY-VALVE	1
7-9	7	228128-007 COIL	1
7-9	8	224886-007 NUT	4
	244462-001	VALVE-4 BANK (INC. ALL ITEMS IN THIS FIGURE)	
	NSS	NOT SOLD SEPARATELY	

HYDRAULIC CYLINDER COMPONENTS - 2 1/2" X 5"

Figure 7-10

Revised February 1999 due to addition of figure to manual.

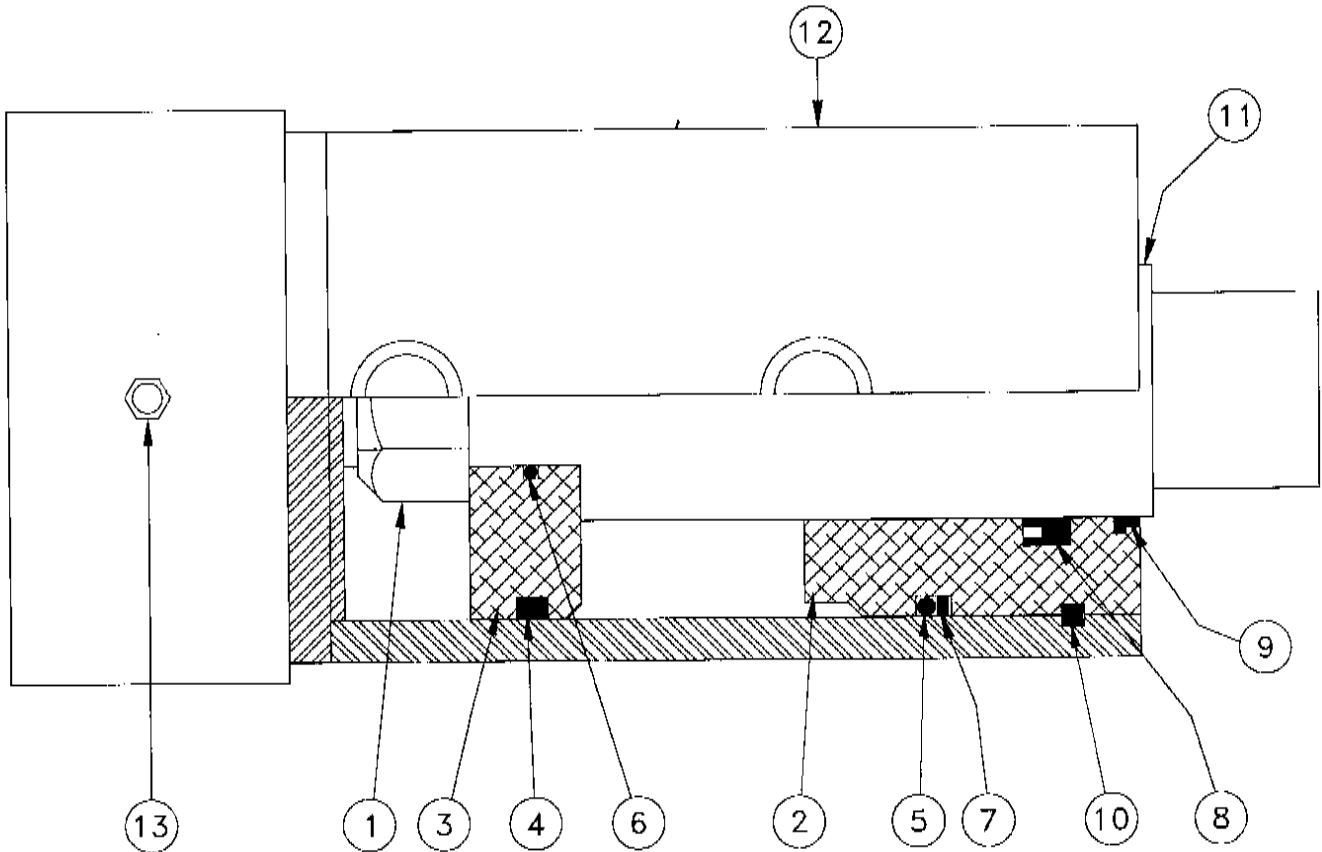


REF. NO.	PART NO.	DESCRIPTION	QTY.
7-10	1	200769-001 UNI-RING	1
7-10	2	222440-007 BACK-UP RING	2
7-10	3	221256-013 O-RING	1
7-10	4	221766-017 O-RING	1
7-10	5	200841-001 BACKUP WASHER	1
7-10	6	222440-009 INTERNAL SNAP RING	1
7-10	7	205002-001 1 1/8" LOADED U-CUP	1
7-10	8	221256-015 ROD WIPER	1
7-10	9	95631-011 LOCK NUT	1
7-10	10	104628-009 PISTON	1
7-10	11	222440-003 BARREL ASSY	1
7-10	12	239275-003 ROD ASSEMBLY	1
7-10	13	200777-001 GLAND	1
	239275-001	CYLINDER-2 1/2 X 5 TRN MNT (INC. REF. 1-13)	
	222440-011	SEAL KIT	

HYDRAULIC CYLINDER COMPONENTS - 4" X 2"

Figure 7-11

Revised February 2000 due to addition of figure to manual.

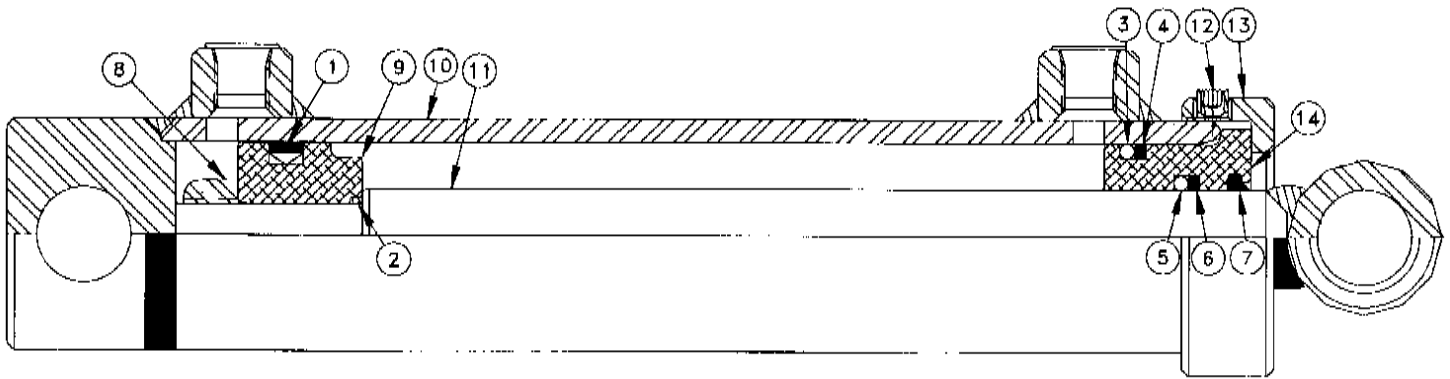


REF. NO.	PART NO.	DESCRIPTION	QTY.
7-11	1	244286-003 NUT	1
7-11	2	244286-005 HEAD	1
7-11	3	244286-007 PISTON	1
7-11	4	244286-009 PSP-SEAL	1
7-11	5	244286-01 O-RING	1
7-11	6	244286-013 O-RING	1
7-11	7	244286-015 BACKUP	1
7-11	8	244286-017 ROD SEAL	1
7-11	9	244286-019 DUST SEAL	1
7-11	10	244286-021 RETAINING RING	1
7-11	11	244286-023 SHAFT-CYLINDER	1
7-11	12	244286-025 BARREL-CYLINDER	1
7-11	13	598-001 ZERK-1/4-28 NF ST GREASE	1
	244286-001	CYLINDER-HYD 4" X 2" (INC. ALL ITEMS IN THIS FIGURE)	
	244286-027	SEAL KIT (INC. REF. 4-9)	

HYDRAULIC CYLINDER COMPONENTS - 1 1/2" X 6"

Figure 7-12

Revised February 2000 due to addition of figure to manual.

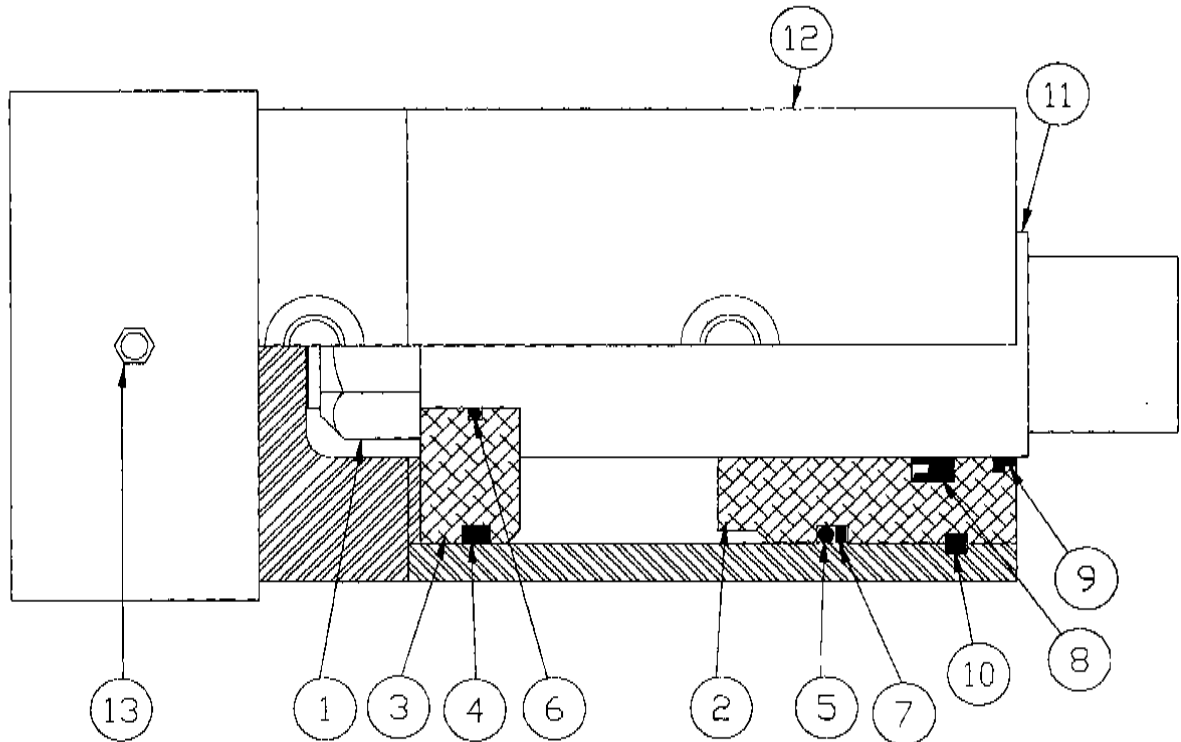


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
7-12	1	202721-001 UNI-RING	1
7-12	2	223998-003 O-RING	1
7-12	3	202727-001 O-RING	1
7-12	4	202726-001 WASHER-BACK-UP	1
7-12	5	223998-005 O-RING	1
7-12	6	223998-007 BACK-UP RING	1
7-12	7	202724-001 WIPER-ROD	1
7-12	8	202722-001 LOCKNUT	1
7-12	9	202720-001 PISTON	1
7-12	10	223998-009 BARREL ASSEMBLY	1
7-12	11	223998-011 ROD ASSEMBLY	1
7-12	12	223998-013 SET SCREW	1
7-12	13	223998-015 THREAD CAP	1
7-12	14	223998-017 THREAD CAP HEAD	1
	223998-019	SEAL KIT (INC. REF. 1-7)	
	223998-001	CYLINDER- 1 1/2 X 6 (INC. REF. 1-14)	

HYDRAULIC CYLINDER COMPONENTS - 4" X 2.25" X 2

Figure 7-13

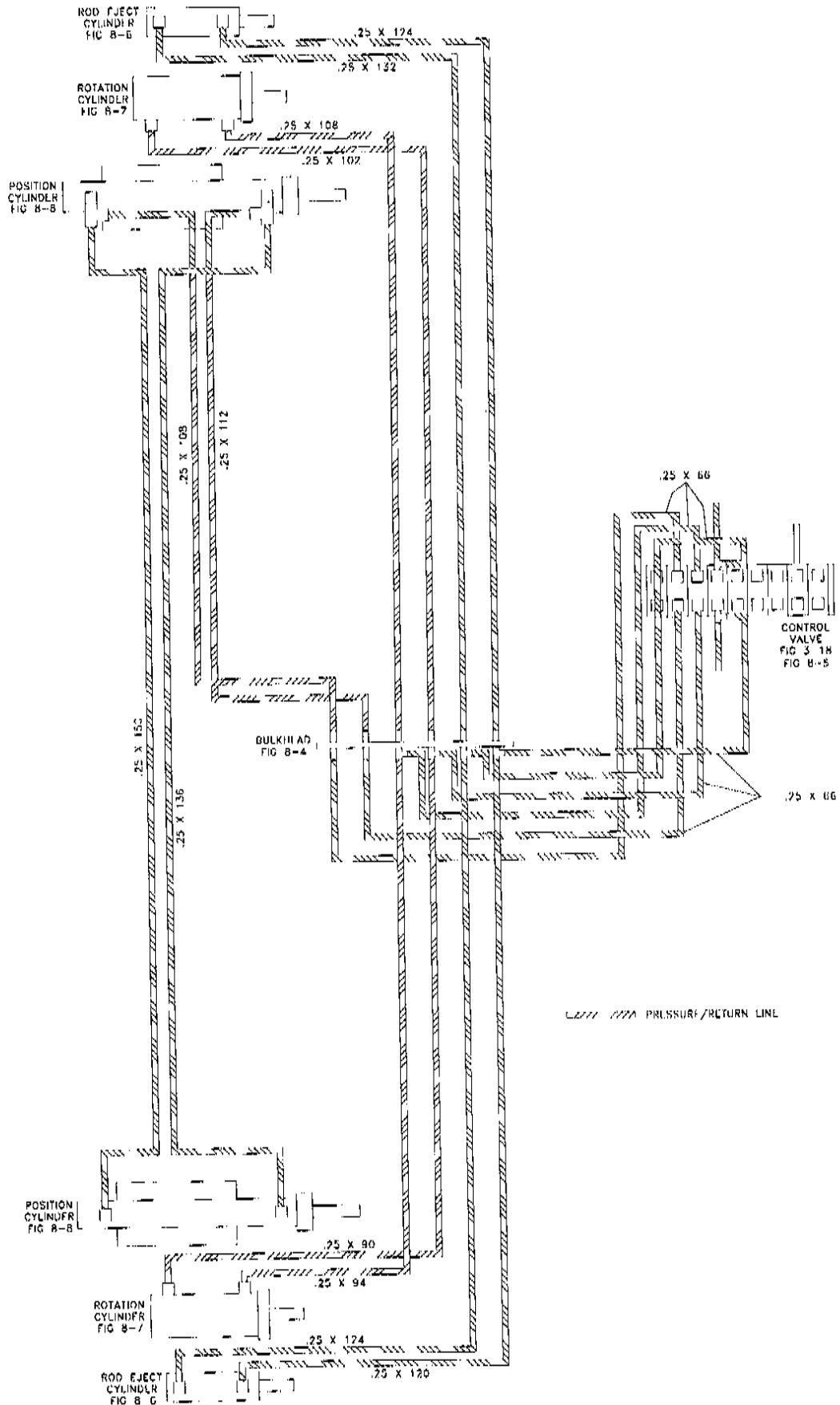
Revised August 2000 due to addition of figure to manual.



REF. NO.	PART NO.	DESCRIPTION	QTY.
7-13	1	244286-003 NUT	1
7-13	2	244286-005 HEAD	1
7-13	3	244286-007 PISTON	1
7-13	4	244286-009 PSP-SEAL	1
7-13	5	244286-011 O-RING	1
7-13	6	244286-013 O-RING	1
7-13	7	244286-015 BACKUP	1
7-13	8	244286-017 ROD SEAL	1
7-13	9	244286-019 DUST SEAL	1
7-13	10	244286-021 RETAINING RING	1
7-13	11	244286-023 SHAFT-CYLINDER	1
7-13	12	244286-025 BARREL-CYLINDER	1
7-13	13	598-001 ZERK-1/4-28 NF ST GREASE	1
	283582-001	CYLINDER-4" BORE X 2.25" ROD X 2" ST (INC. ALL ITEMS IN THIS FIGURE)	
	244286-027	SEAL KIT (INC. REF. 4-9)	

HYDRAULIC COMPONENTS LOCATION DIAGRAM - ROD LOADER

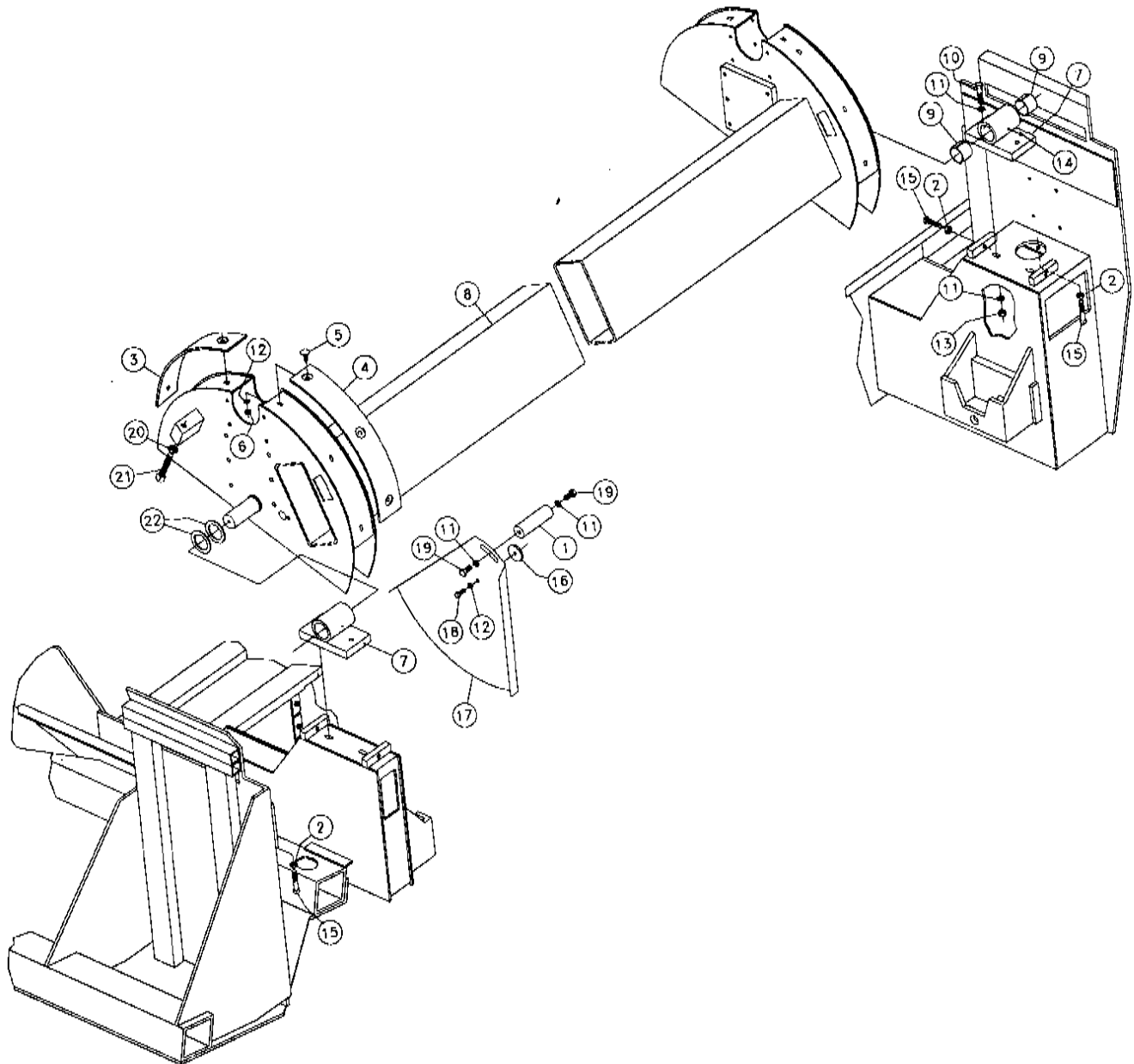
Figure 8-1



ROD LOADER FRAME ASSEMBLY

Figure 8-2

Revised February 2000 due to update in parts list. Changed part marked with *.

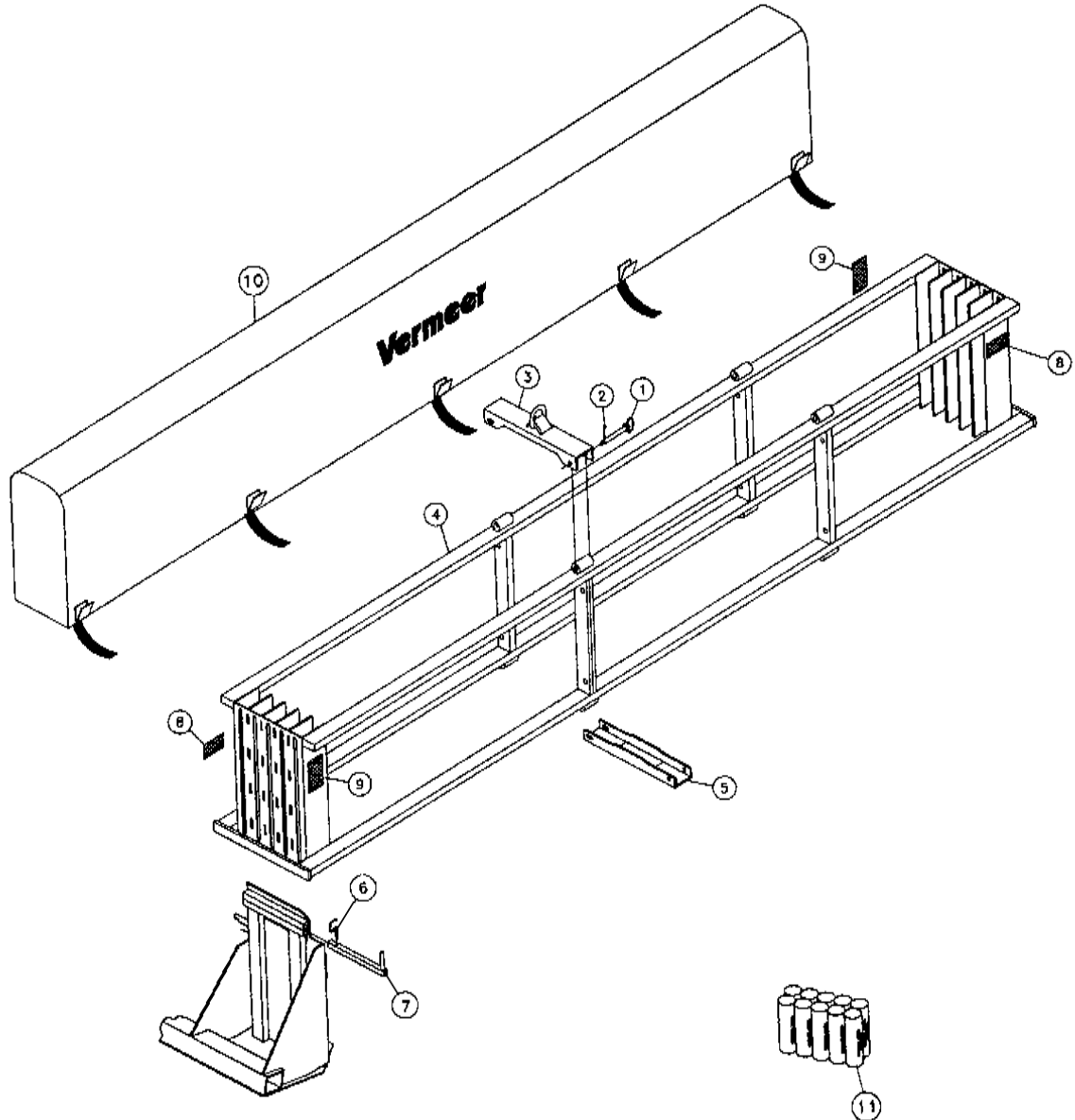


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.	
8-2	1	234252-001	SPACER-LOADER INDICATOR	1	8-2	12	*235713-001 WASHER-3/8 SAE HARD ZINC PLTD	13
8-2	2	235722-001	NUT-1/2-13 GR8 JAM ZINC PLTD	6	8-2	13	235731-001 NUT-1/2-13 GR8 ZINC PLTD	4
8-2	3	227901-001	WEAR BAR - ROD LOADER	2	8-2	14	598-001 ZERK-1/4" NF ST GREASE	2
8-2	4	227900-001	WEAR BAR-ROD LOADER	2	8-2	15	601698-024 SQ HSS 1/2-13X2 1/2 ZNC PLT	6
8-2	5	601699-012	3/8-16X1 1/4 ELEVATOR BOLT ZNC	10	8-2	16	18150-001 SLUG-2 DIA.-1/4"	1
8-2	6	235725-001	NUT-3/8-16 GR8 ZINC PLTD	10	8-2	17	227995-001 INDICATOR-ROD LOADER	1
8-2	7	227845-001	LOADER PIVOT ASSY (INC. TWO OF REF. 9 & ONE OF REF. 14)	2	8-2	18	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLT	1
8-2	8	227899-001	LOADER-ROD	1	8-2	19	235729-001 BOLT-1/2-13X1 GR8 HEX ZINC PLT	2
8-2	9	1835-033	BSHG.-STL.-2 X 1 3/4 X 1 1/2	4	8-2	20	250514-001 NUT-5/8-NC JAM Y/ZINC	2
8-2	10	250573-001	BOLT-1/2-13 X 2 1/2 GR8 HX Y/Z	4	8-2	21	601697-030 SQ HSS-5/8-11X3 ZINC PLT	2
8-2	11	485-025	WASHER-1/2 FLAT-HARDENED-ZINC	10	8-2	22	505909-001 WASHER-2 1/2" X 1 3/4" X 14 GA MB	2

ROD BOX ASSEMBLY

Figure 8-3

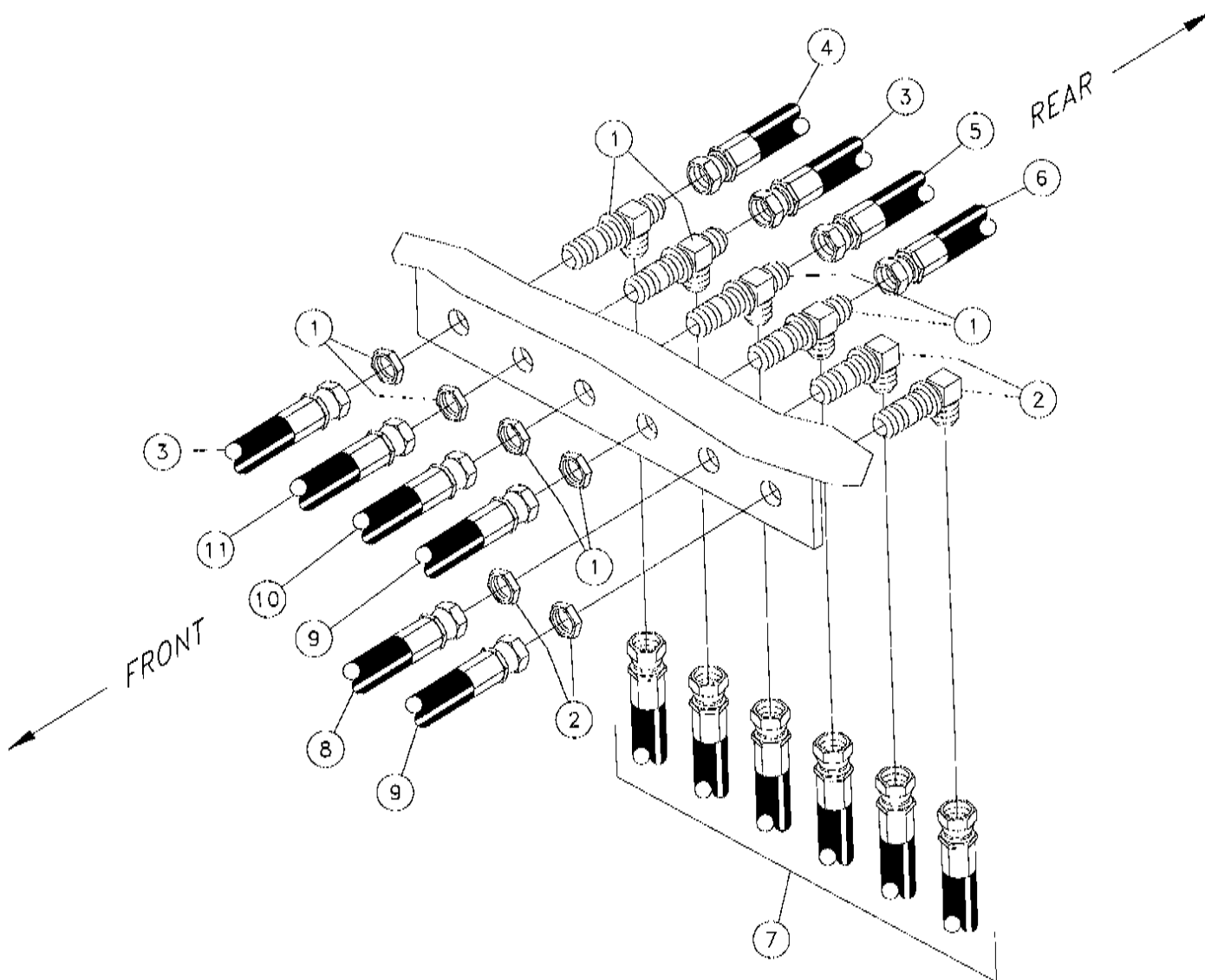
Revised August 2000 due to update in illustration & parts list. Added parts marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
8-3	1	2107-007 PIN-HITCH 3/4 X 6	8	8-3	7	227906-001 PIN ROD BOX	2
8-3	2	1794-009 HAIR PIN COTTER - .148 WIRE	8	8-3	8	70000-563 DECAL-WARNING (UND)	2
8-3	3	227885-001 2 7/8" ROD BOX TOP	2		70001-563 DECAL-WARNING (UND)	2	
8-3	4	244380-003 BOX ASSY.-.750' (2 3/8" ROD) ROD (INC. TWO OF REF. 8 & 9)	1	8-3	9	7001A-392 DECAL - DANGER	2
		244380-005 BOX ASSY.-.750' (2 3/8" ROD) ROD (INT) (INC. TWO OF REF. 8 & 9)	1	8-3	10	7000A-392 DECAL - DANGER	2
8-3	5	224479-001 PLATE-ROD BOX BOTTOM	2	8-3	11	280651-001 COVER-D40 TALL ROD BOX	1
8-3	6	2108-001 LYNCH PIN - 1/4 X 2	2			*275927-982 THREAD CMPND-PLUSCO 135-4/10 PACK	1
						*275928-982 THREAD CMPND-PLUSCO 135-4/10 PACK	1

BULKHEAD ASSEMBLY

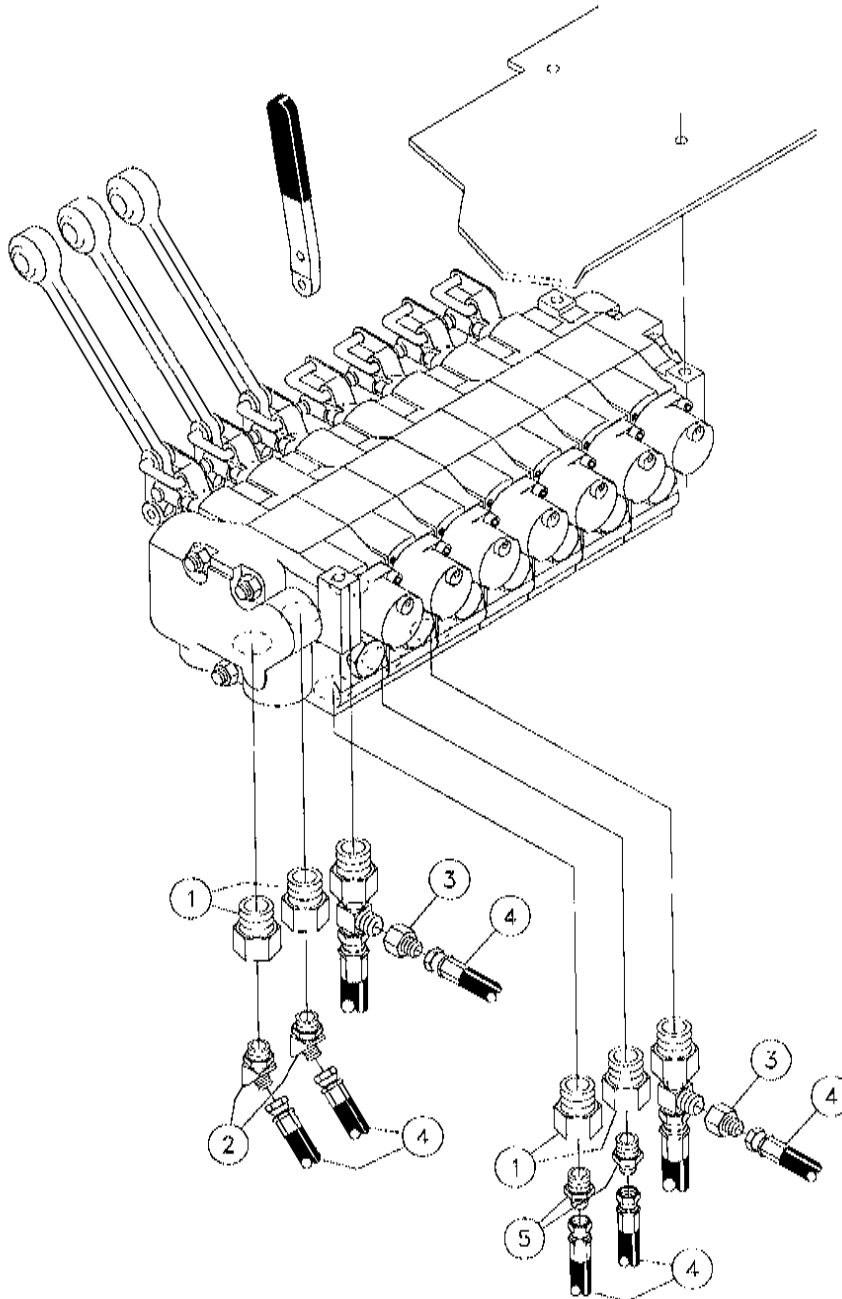
Figure 8-4



<u>REF. NO.</u>	<u>1</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
8-4	1	88545-001	FITTING-4M JIC BLKHD RUN TEE	4
8-4	2	61497-001	FITTING-4M JIC BULKHEAD 90DEG.	2
8-4	3	53843-061	HOSE-1/4X124 4FS JIC (100R1)	2
8-4	4	53843-205	HOSE-1/4X120 4FS JIC 3000 PSI	1
8-4	5	53843-257	HOSE-1/4X90 4FS JIC 3000 PSI	1
8-4	6	53843-163	HOSE-1/4X94 4FS JIC (100R1)	1
8-4	7	53843-231	HOSE-1/4X66 4FS JIC 3000 PSI	6
8-4	8	53843-573	HOSE-1/4 X 112 4FS IC 3000 PSI	1
8-4	9	53843-233	HOSE-1/4X108 4FS JIC 3000 PSI	2
8-4	10	53843-039	HOSE-1/4X102 4FS JIC(100R1)	1
8-4	11	53843-201	HOSE-1/4X132 4FS JIC 3000 PSI	1

CONTROL VALVE ASSEMBLY - ROD LOADER PLUMBING

Figure 8-5

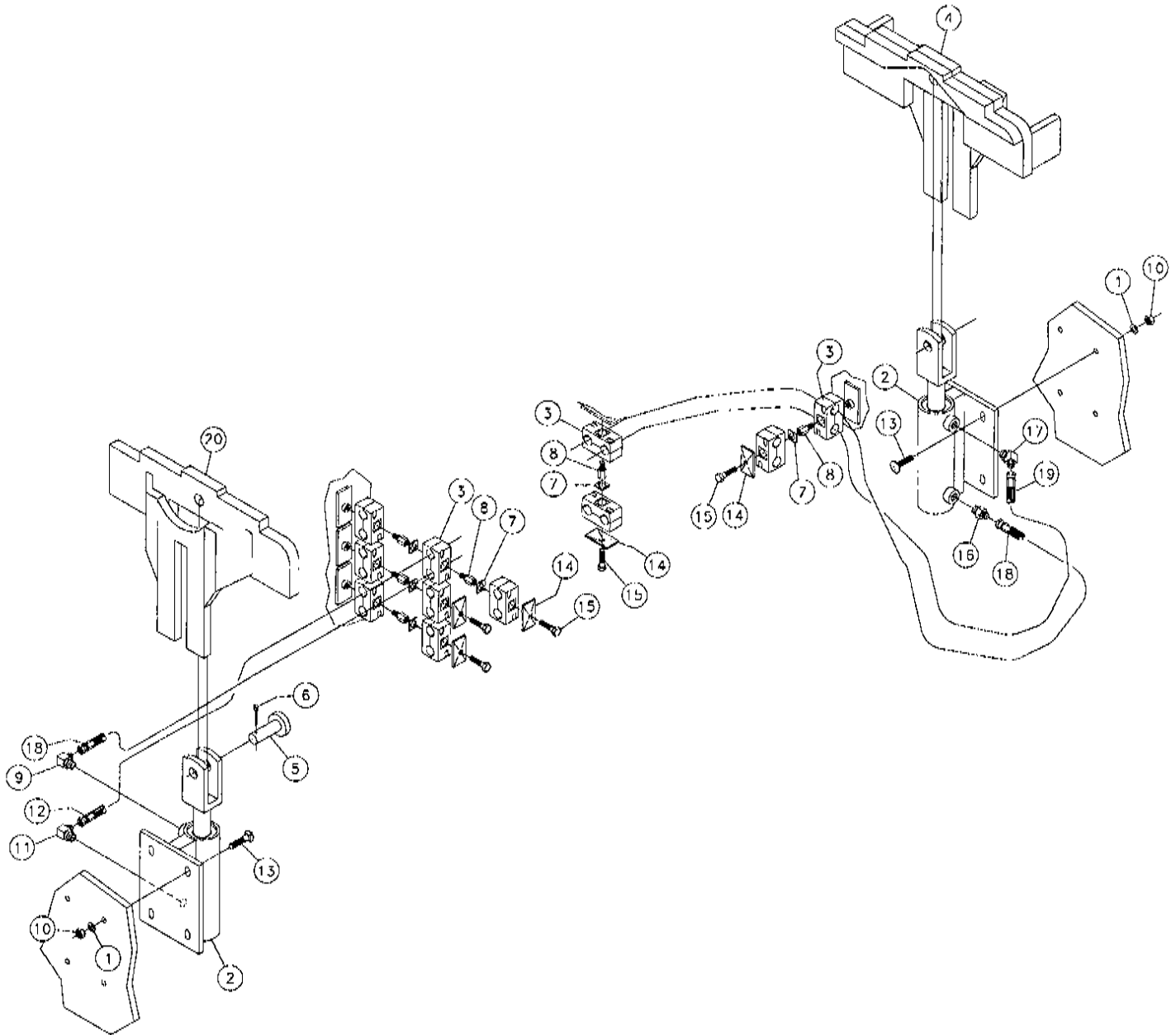


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
8-5	1	57967-001 10M-6F O-RING BUSHING	4
8-5	2	82931-001 FITTING-6MX4M JIC 45DEG.ELBOW	2
8-5	3	59928-001 6F JICX4M JIC ST REDUCER	2
8-5	4	53843-231 HOSE-1/4X66 4FS JIC 3000 PSI	6
8-5	5	57968-001 6M O-RING 4M JIC STRAIGHT	2

ROD EJECT CYLINDER ASSEMBLY

Figure 8-6

Revised February 1999 due to updates to pusher rods & addition of breakdown to manual. Changed/added parts marked with *.

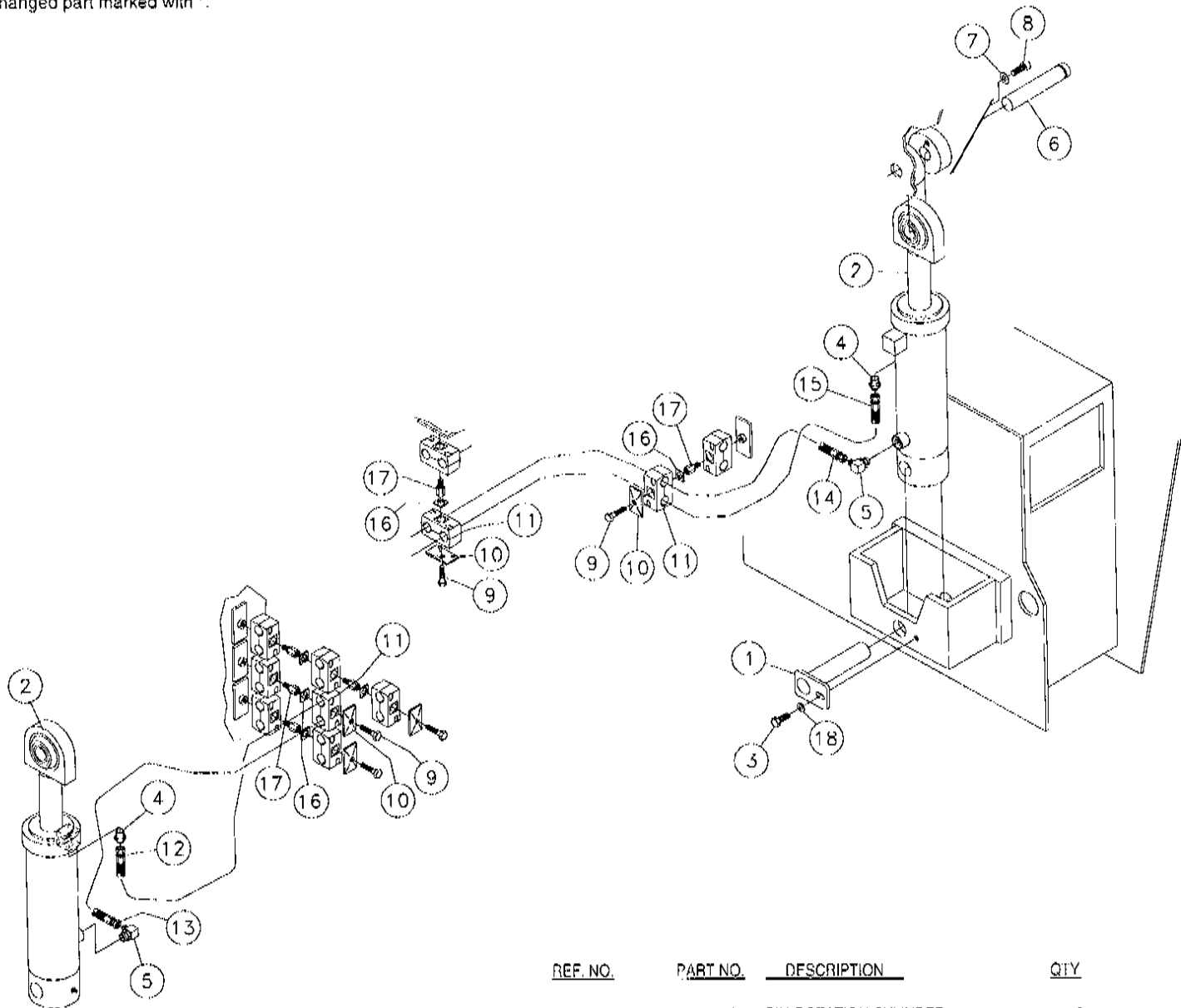


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
8-6	1	235713-001 WASH-EH-3/8 SAE HARD ZINC PLTD	8	8-6	11	131008-001 FITTING-4MJICX6MORING 90D.062R	1
8-6	2	224394-001 CYLINDER-2X5 (BREAKDOWN FIG. 8-10)	2	8-6	12	53843-201 HOSE-1/4X132 4FS JIC 3000 PSI	1
8-6	3	67846-005 CLAMP-TWIN	4	8-6	13	375-014 BOLT-3/8-16X1 1/2"GD#5CARRIAGE	8
8-6	4	*246287-001 PUSHER-ROD	1	8-6	14	67846-003 PLATE-TWIN COVER	4
8-6	5	222815-001 PIN-STEER CYLINDER	2	8-6	15	248031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL.	4
8-6	6	510-047 PIN - 3/16 X 1 1/4 COTTER	2	8-6	16	57968-001 6M O-RING 4M JIC STRAIGHT	1
8-6	7	231758-001 WASHER-SAFETY(1/2" HEX ID)	4	8-6	17	82931-001 FITTING-6MX4M JIC 45DEG.ELBOW	1
8-6	8	231757-001 BOLT-T-CLAMP STACKING 5/16THREAD	4	8-6	18	53843-061 HOSE 1/4X124 4FS JIC (100R1)	2
8-6	9	600118-001 FITTING-6MORINGX4MJIC90PARKER	1	8-6	19	53843-205 HOSE-1/4X120 4FS JIC 3000 PSI	1
8-6	10	235725-001 NUT-3/8-16 GR8 ZINC PLTD	8	8-6	20	*276511-001 PUSHER-ROD	1

ROD ROTATION CYLINDER ASSEMBLY

Figure 8-7

Revised February 1999 due to addition of breakdown to manual. Changed part marked with *.

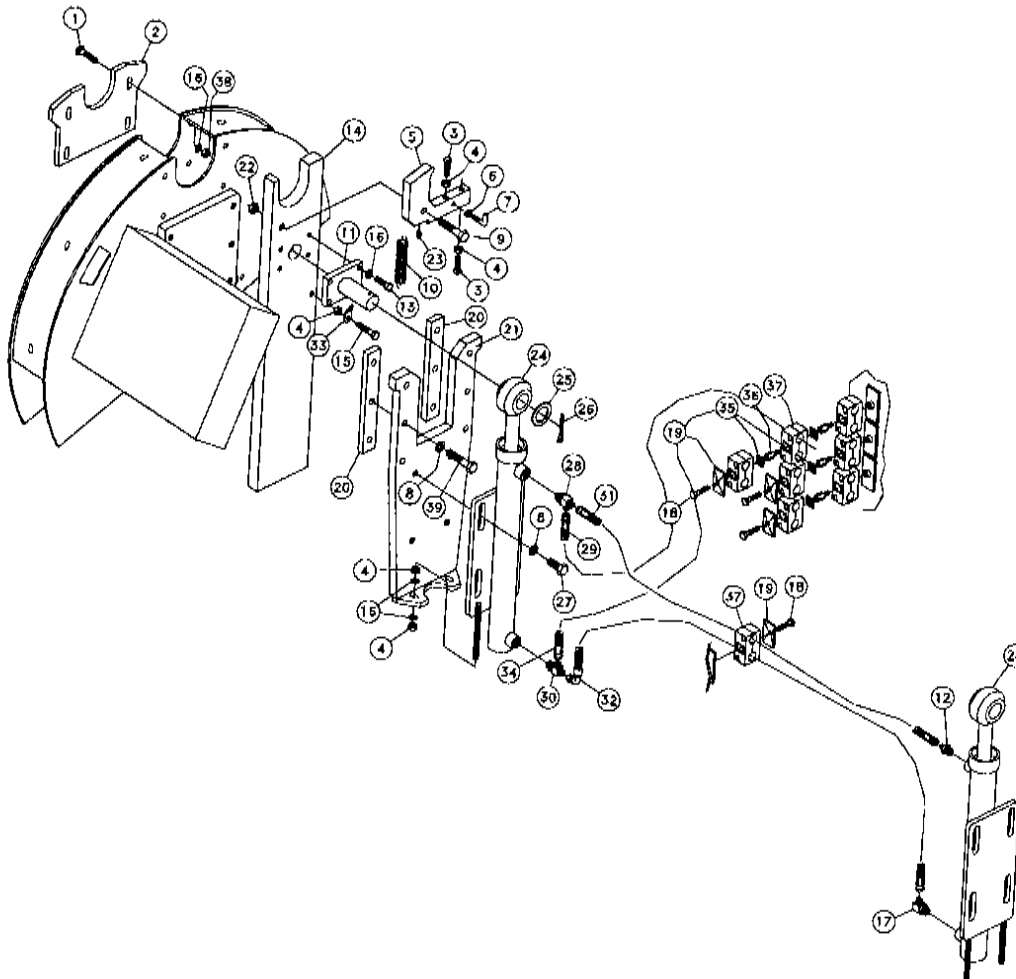


REF. NO.	PART NO.	DESCRIPTION	QTY
8-7	1	227880-001 PIN-ROTATION CYLINDER	2
8-7	2	*227814-001 CYLINDER-3 X 7 1/2 (BREAKDOWN FIG. 8-11)	2
8-7	3	235727-001 BOLT-3/8-16X1 GR8 HEX ZINC PLI	2
8-7	4	57968-001 6M O-RING 4M JIC STRAIGHT	2
8-7	5	600118-001 FITTING-6MORINGX4M.IIC90PARKER	2
8-7	6	227902-001 PIN-ROTATE CYLINDER	2
8-7	7	485-007 WASHER-3/8 FLAT	2
8-7	8	601696-010 SOCKET HD CAP SCREW 3/8-16X1 Z	2
8-7	9	248031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL	3
8-7	10	67846-003 PLATE-TWIN COVER	3
8-7	11	67846-005 CLAMP-TWIN	3
8-7	12	53843-233 HOSE-1/4X108 4FS JIC 3000 PSI	1
8-7	13	53843-039 HOSE-1/4X102 4FS JIC(100R1)	1
8-7	14	53843-257 HOSE-1/4X90 4FS JIC 3000 PSI	1
8-7	15	53843-163 HOSE-1/4X94 4FS JIC (100H1)	1
8-7	16	231758-001 WASHER-SAFETY(1/2" HEX ID)	3
8-7	17	231757-001 BOLT-CLAMP STACKING 5/16THREAD	3
8-7	18	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	2

ROD POSITION CYLINDER ASSEMBLY

Revised August 2000 due to update in parts list. Changed part marked with *.

Figure 8-8

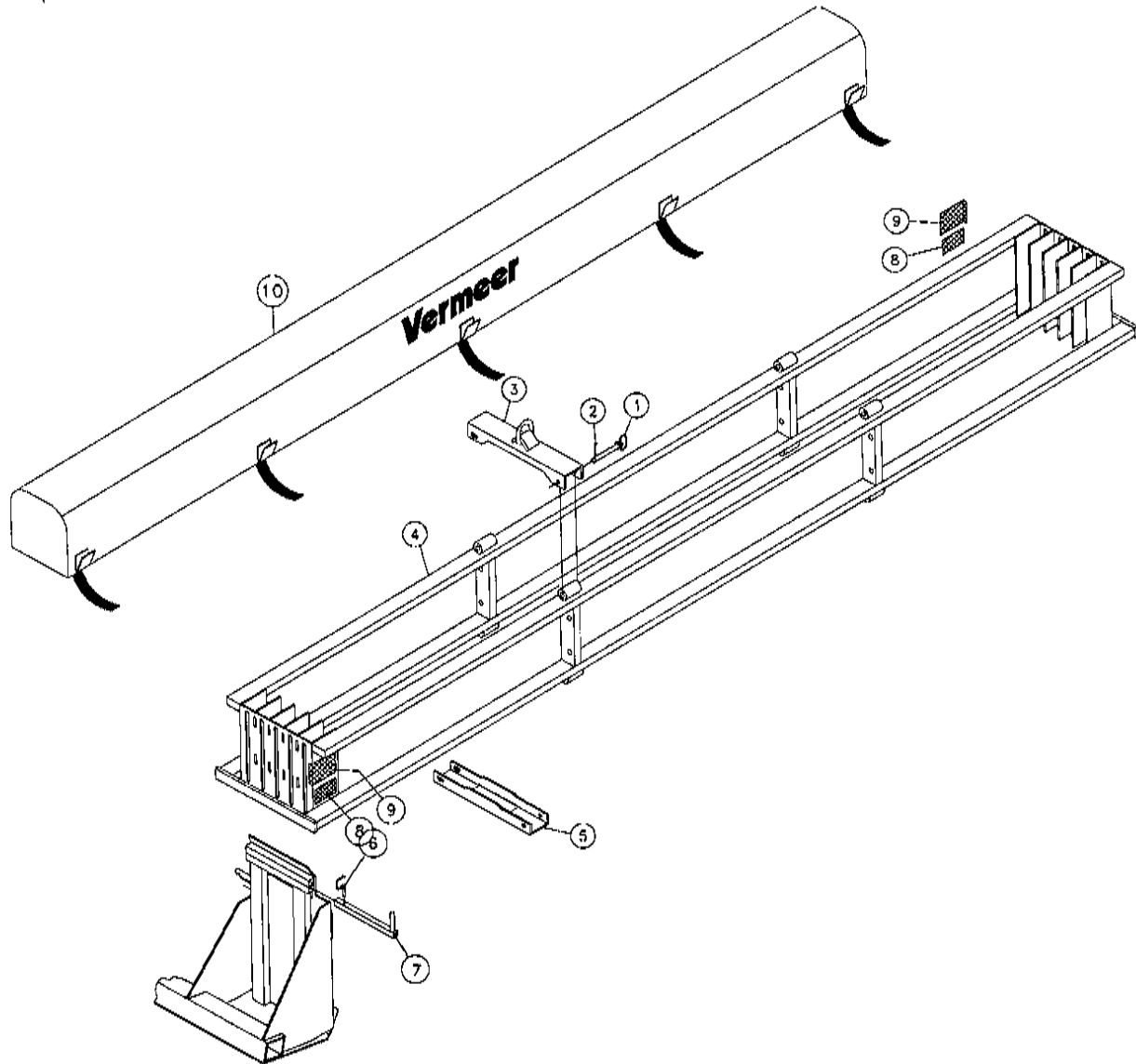


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
8-8	1	375-014 BOLT-3/8-16X1 1/2"GD#5CARRIAGE	8	8-8	21	227863-001 MOUNT-POSITION CYLINDER	2
8-8	2	246432-001 PLATE-LOADER INSERT	2	8-8	22	235722-001 NUT-1/2-13 GR8 JAM ZINC PLTD	2
8-8	3	249877-001 SQ HSS-3/8-16X2	4	8-8	23	598-001 ZERK-1/4" NF ST GREASE	2
8-8	4	250576-001 NUT-3/8 NC HEX JAM WY-ZINC	14	8-8	24	227815-001 CYLINDER 1 1/2 X 14 1/2 (BREAKDOWN FIG. 8-12)	2
8-8	5	224327-001 PLATE-2 3/8 ROD FLIPPER (2 3/8" DRILL ROD)	2	8-8	25	249878-001 WASHER-1 7/8X1 1/4X14 GA M.B.	2
8-8	6	407-001 NUT-5/16 NC HEX JAM	2	8-8	26	510-025 COTTER PIN-3/16" X 2"	2
8-8	7	227847-001 HOOK-FLIPPER SPRING	2	8-8	27	235737-001 BOLT-1/2-13X1 1/4 GR8 ZINC PLT	8
8-8	8	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	20	8-8	28	82930-001 FIT-6MX4M JICX4M JIC (BCH) TEE	1
8-8	9	*124631-026 BOLT-1/4-20X2 3/4 GR 8 HEX ZINC	2	8-8	29	53843-573 HOSE-1/4 X 112 4FS IC 3000 PSI	1
8-8	10	1789-013 SPRING-EXT. #76 4" OA	2	8-8	30	131007-001 FIT-4MJIC6MORX4MJIC TEE R.062	1
8-8	11	227752-001 MOUNT-LOADER CYLINDER	2	8-8	31	53843-717 HOSE-1/4X136 4FS JIC ST 5000#	1
8-8	12	57968-001 6M O-RING 4M JIC STRAIGHT	1	8-8	32	53843-729 HOSE-1/4X150 4FSJICST/90D 3000	1
8-8	13	235736-001 BOLT-3/8-16X1 1/4 GR 8 HEX ZINC	8	8-8	33	239421-001 PLATE-SPRING HOOK	2
8-8	14	224325-001 ARM-2 3/8 ROD	2	8-8	34	53843-233 HOSE-1/4X108 4FS JIC 3000 PSI	1
8-8	15	235720-001 BOLT-3/8-16X1 3/4 6R8 ZINC PLT	2	8-8	35	231758-001 WASHER-SAFETY(1/2" HEX ID)	2
8-8	16	235713-001 WASHER-3/8 SAE HARD ZINC PLTD	16	8-8	36	231757-001 BOLT-CLAMP STACKING 5/16THREAD	2
8-8	17	600118-001 FITTING-6MORINGX4MJIC90PARKER	1	8-8	37	67846-005 CLAMP-TWIN	6
8-8	18	246031-001 BOLT-5/16-18X1 1/4 GR8 ZINC PL	11	8-8	38	235725-001 NUT-3/8"-16 GR 8 HEZ Y/ZINC	8
8-8	19	67846-003 PLATE-TWIN COVER	6	8-8	39	250573-001 BOLT-1/2-13X2 1/2 GR 8 HEZ Y/Z	12
8-8	20	224361-001 SPACER-ROD ARM	4				

ROD BOX ASSEMBLY (300')

Figure 8-9

Revised September 1999 due to
update in illustration & parts list.
Added part marked with *.

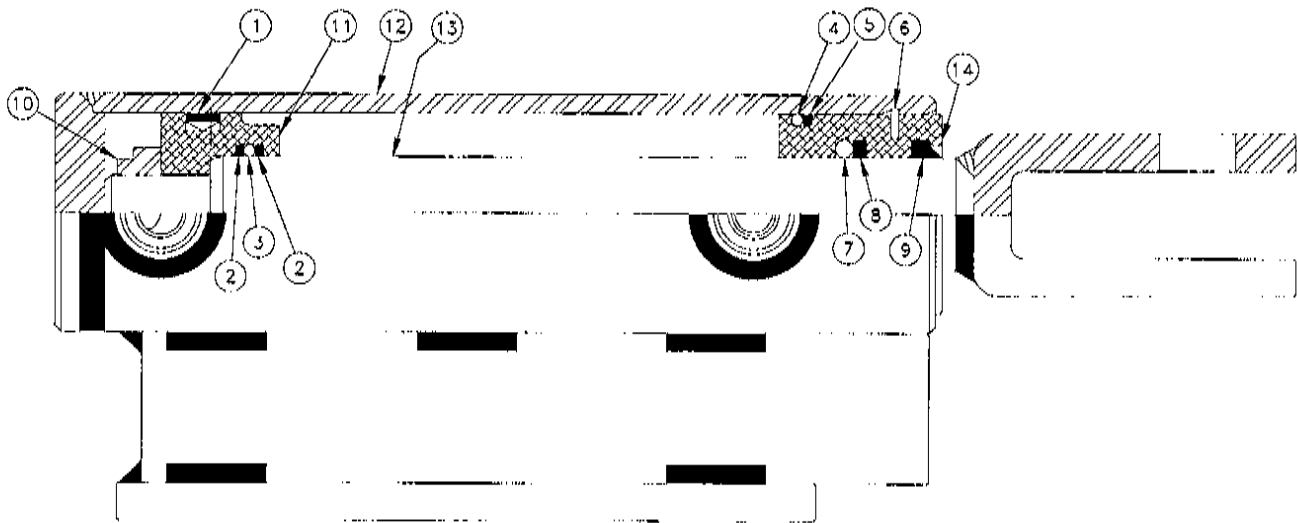


REF. NO.	PART NO.	DESCRIPTION	QTY.
8-9	1	2107-007 PIN-HITCH 3/4 X 6	8
8-9	2	1794-003 HAIR PIN COTTER - .148 WIRE	8
8-9	3	227885-001 2 7/8" ROD BOX TOP	2
8-9	4	250602-001 ROD BOX ASSY-2.375 ROD (15') (INC. TWO OF REF. 8 & 9)	1
		250602-003 BOX ASSY-RPD (300') 2.375" ROD (15') (INT.) (INC. TWO OF REF. 8 & 9)	1
8-9	5	224479-001 PLATE-ROD BOX BOTTOM	2
8-9	6	2108-001 LYNCH PIN - 1/4 X 2	2
8-9	7	227906-001 PIN ROD BOX	2
8-9	8	70000-563 DECAL-WARNING (UND)	2
		70001-563 DECAL-WARNING (UND)	2
8-9	9	7000A-576 DECAL-DANGER	2
		700IA-576 DECAL-DANGER	2
8-9	10	*280650-001 COVER-D40 SHORT ROD BOX	1

HYDRAULIC CYLINDER COMPONENTS - 2" X 5"

Figure 8-10

Revised February 1999 due to addition of figure to manual.

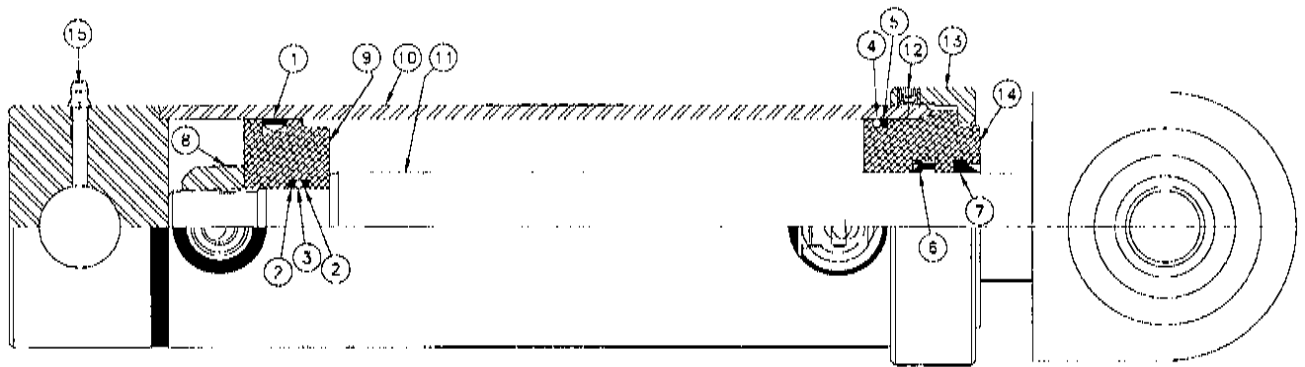


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
8-10	1	200833-001 UNIRING	1
8-10	2	222440-007 BACK-UP RING	2
8-10	3	221256-013 O-RING	1
8-10	4	51172-001 O-RING	1
8-10	5	200834-001 BACKUP WASHER	1
8-10	6	224394-007 SNAP RING	1
8-10	7	200771-001 O-RING	1
8-10	8	224394-009 BACK-UP RING	1
8-10	9	221256-015 ROD WIPER	1
8-10	10	224394-011 THIN LOCKNUT	1
8-10	11	218008-009 PISTON	1
8-10	12	224394-003 BARREL ASSY	1
8-10	13	224394-005 ROD ASSY	1
8-10	14	200831-001 GLAND	1
	224394-001	CYLINDER-2X5 (INC. REF. 1-14)	
	224394-013	SEAL KIT-2 X 5 CYLINDER (INC. REF. 1-9)	

HYDRAULIC CYLINDER COMPONENTS - 3" X 7 1/2"

Figure 8-11

Revised February 1999 due to addition of figure to manual.



REF. NO.	PART NO.	DESCRIPTION	QTY.
8-11	1	200780-001 UNI-RING	1
8-11	2	208331-001 RING-BACK UP	2
8-11	3	208332-001 O-RING	1
8-11	4	200809-001 O-RING	1
8-11	5	200778-001 WASHER-BACKUP	1
8-11	6	204315-001 1 1/2" LOADED U-CUP	1
8-11	7	200808-001 WIPE R	1
8-11	8	218496-007 LOCK NUT	1
8-11	9	227814-007 PISTON	1
8-11	10	227814-003 BARREL ASSY	1
8-11	11	227814-005 ROD ASSY	1
8-11	12	219125-011 NT SH SET SCHEW	1
8-11	13	218496-013 THREADED CAP	1
8-11	14	89315-007 GLAND-CYLINDER	1
8-11	15	598-001 ZERK-1/4" NF ST GREASE	1
	227814-001	CYLINDER-3 X 7 1/2 (INC. REF. 1-15)	
	227814-009	SEAL KIT-3X7 1/2 CYLINDER (INC. REF. 1-7)	

HYDRAULIC CYLINDER COMPONENTS - 1 1/2" X 14 1/2"

Figure 8-12

Revised February 1999 due to addition of figure to manual.

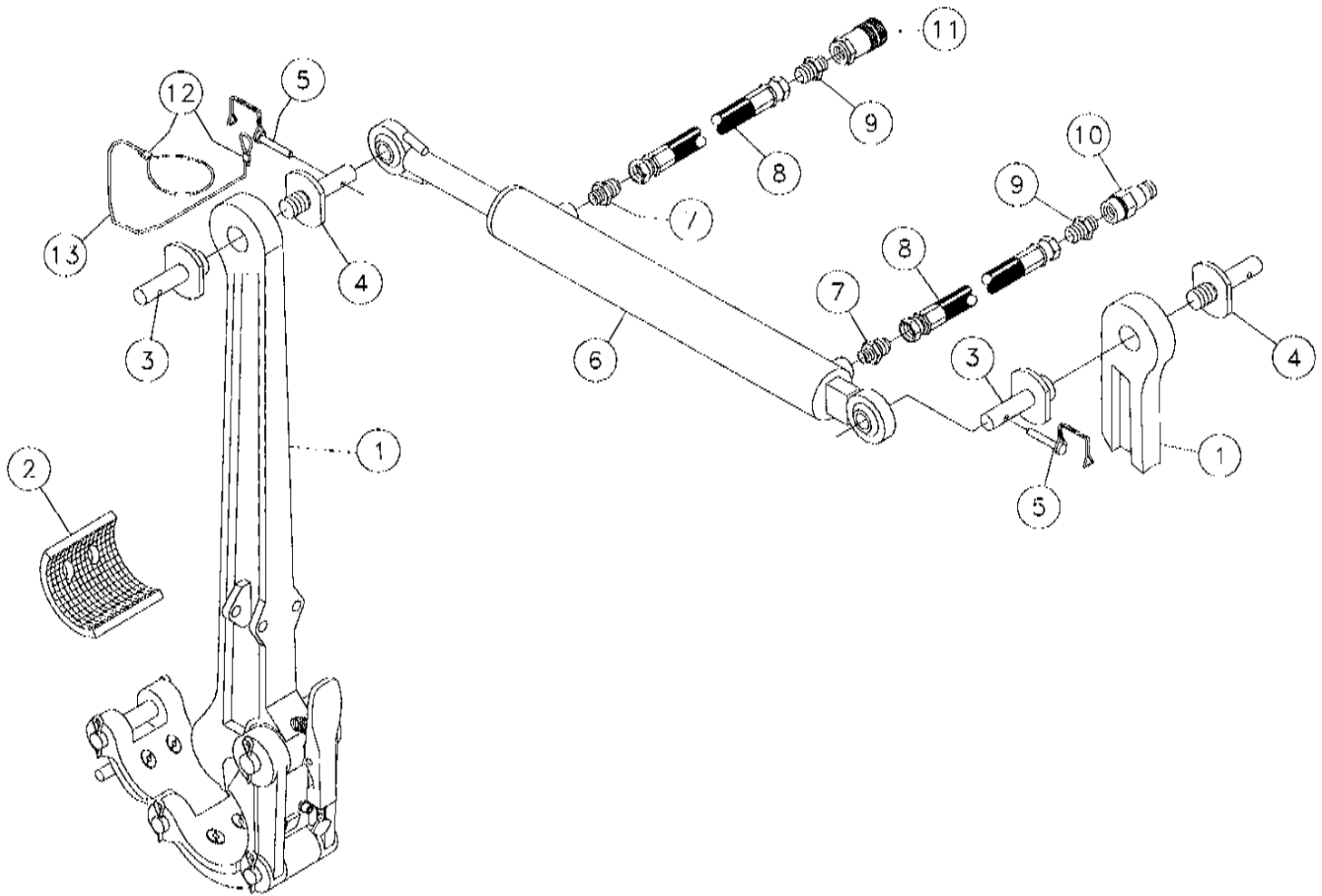


REF. NO.	PART NO.	DESCRIPTION	QTY.
8-12	1	227815-007 TEFLON PISTON RING	1
8-12	2	227815-009 O-RING	1
8-12	3	227815-011 BACK-UP RING	2
8-12	4	227815-013 O-RING	1
8-12	5	202727-001 O-RING	1
8-12	6	119510-005 BACK-UP RING	1
8-12	7	208178-001 O-RING	1
8-12	8	208177-001 WASHER-BACKUP	1
8-12	9	227815-021 ROD WIPEP	1
8-12	10	202722-001 LOCKNUT	1
8-12	11	227815-015 PISTON	1
8-12	12	227815-003 BARREL ASSY	1
8-12	13	227815-005 ROD ASSY	1
8-12	14	219125-011 NT SH SET SCREW	1
8-12	15	215170-019 CAP-THREADED	1
8-12	16	215170-017 ROD ASSEMBLY	1
	227815-001	CYLINDER 1 1/2 X 14 1/2 (INC. REF. 1-16)	
	227815-019	SEAL KIT-1 1/2X14 1/2 CYLINDER (INC. REF. 1-9)	

TUBING TONG ASSEMBLY

Figure 9-1

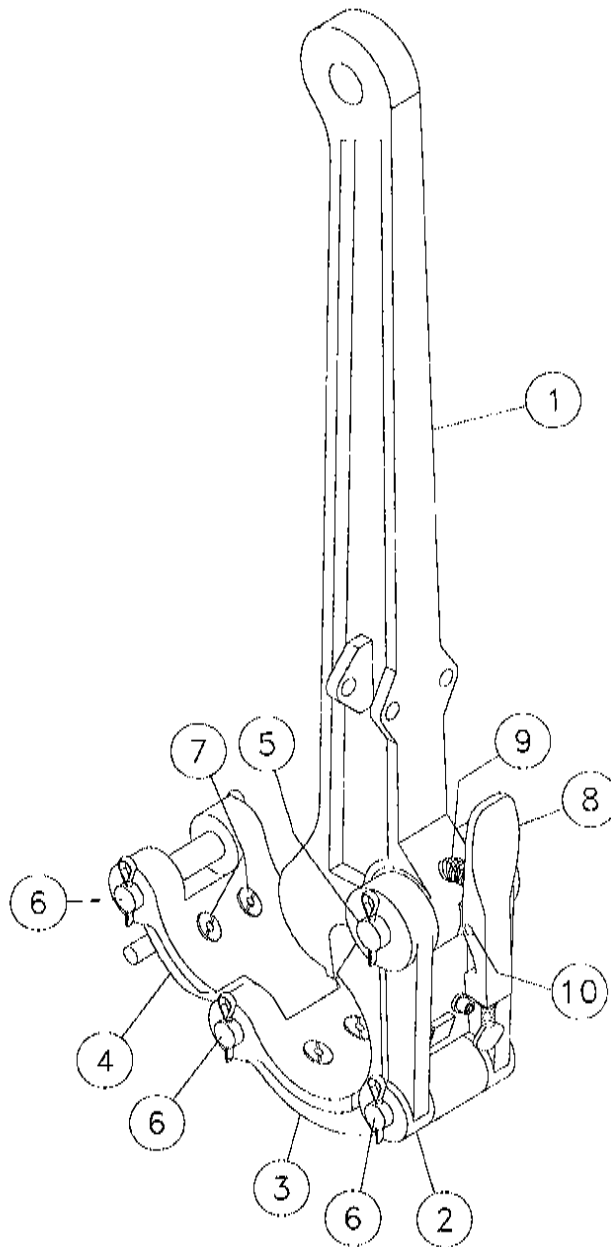
Revised February 1999 due to parts list update. Changed part marked with *.



REF. NO.	PART NO.	DESCRIPTION	QTY.		
			2 3/8"	2 7/8"	3 1/2"
9-1	1	230970-001 TONG-K30 LIGHT WEIGHT TUBING			
9-1	2	235870-001 K-30 2 5/8 DIES (3/SET)	1		
		230972-001 DIES-3 1/4" TUBING TONG(3/SET)		1	
		230974-001 DIES-3 5/8" TUBING TONG(3/SET)			1
9-1	3	234967-001 PIN-FEMALE CYLINDER	2	2	2
9-1	4	234966-001 PIN-MALE CYLINDER	2	2	2
9-1	5	2108-001 LYNCH PIN - 1/4 X 2	2	2	2
9-1	6	*230977-001 CYLINDER-2"X15" (BREAKDOWN FIG. 9-3)			
9-1	7	86235-001 6M ORING X 8M JIC STR.	2	2	2
9-1	8	53844-167 HOSE-1/2X240 8FS JIC 3000 PSI	2	2	2
9-1	9	68634-001 FITTING-3/8MX8M JIC (STR)	2	2	2
9-1	10	221503-001 COUPLER-3/8 NPT QUICK (MALE)	1	1	1
9-1	11	221504-001 COUPLER-3/8 NPT QUICK (FEMALE)	1	1	1
9-1	12	1838 001 CONNECTOR-WIRE (ETC)	4	4	4
9-1	13	240546-001 CABLE-3/32 NYLON-18.00	2	2	2

TUBING TONG COMPONENTS

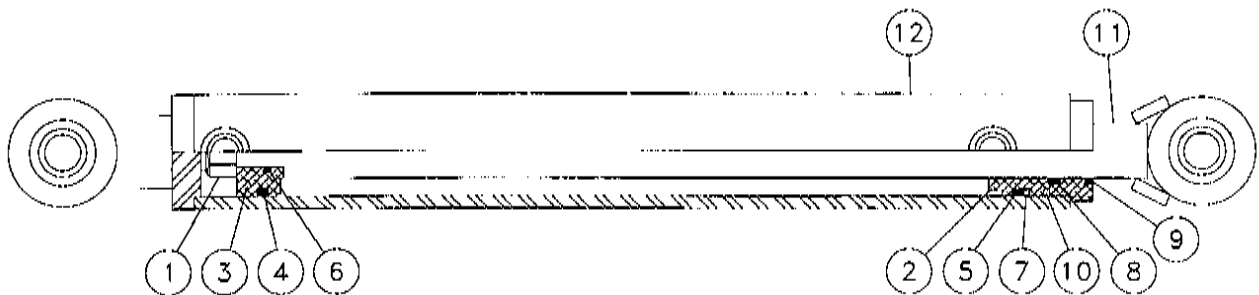
Figure 9-2



<u>REF. NO.</u>		<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
9-2	1	230970-003	TONG HANDLE	1
9-2	2	230970-005	HANDLE JAW	1
9-2	3	230970-007	CENTER JAW	1
9-2	4	230970-009	LATCH JAW	1
9-2	5	230970-011	HANDLE PIN	1
9-2	6	230970-013	JAW PIN	3
9-2	7	230970-015	BUSHING AND SCREW	6
9-2	8	230970-017	ADJUSTABLE TONG LATCH	1
9-2	9	230970-019	LATCH SPRING	1
9-2	10	230970-021	LATCH RIVET	1
		230970-001	TONG-K30 LIGHT WEIGHT TUBING (COMPLETE) (INC. REF. 1-10)	

HYDRAULIC CYLINDER COMPONENTS - 2" X 15"

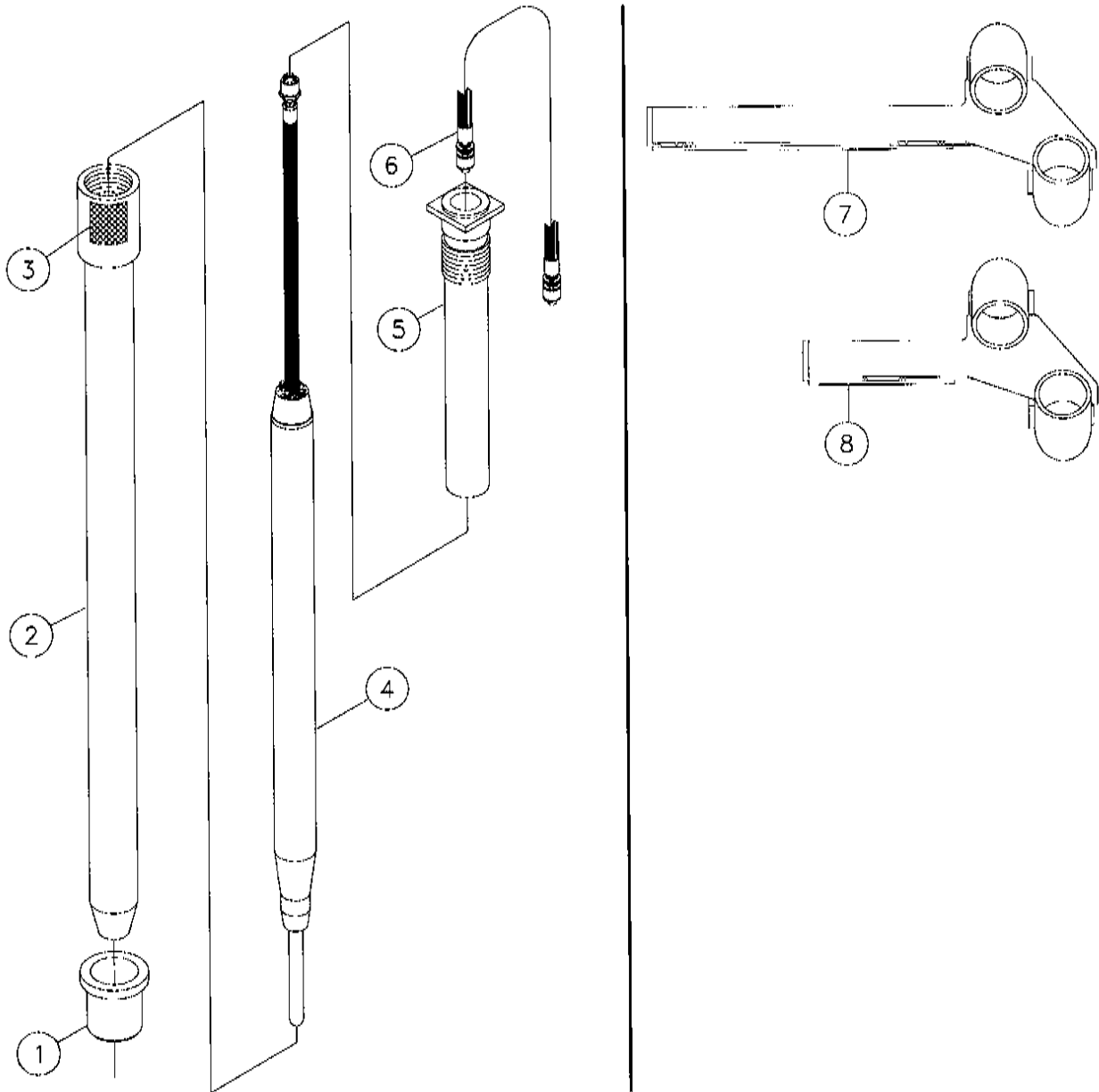
Figure 9-3



REF. NO.	PART NO.	DESCRIPTION	QTY.
9-3	1	230977-003 NUT	1
9-3	2	230977-005 HEAD	1
9-3	3	230977-007 PISTON	1
9-3	4	230977-009 PSP-SEAL	1
9-3	5	51181-001 O-RING #326	1
9-3	6	792-029 O-RING	1
9-3	7	230977-011 BACK-UP	1
9-3	8	230977-013 ROD SEAL	1
9-3	9	230977-015 DUST SEAL	1
9-3	10	230977-017 RETAINING RING1	1
9-3	11	230977-019 SHAFT (W/CLEVIS)	1
9-3	12	230977-021 BARREL (W/CLEVIS AND PORTS)	1
	230977-023	REPAIR KIT (INC. REF. 4-10)	
	230977-001	CYLINDER-2"X15" (INC. REF. 1-12)	

STAKE/DRIVER ASSEMBLY

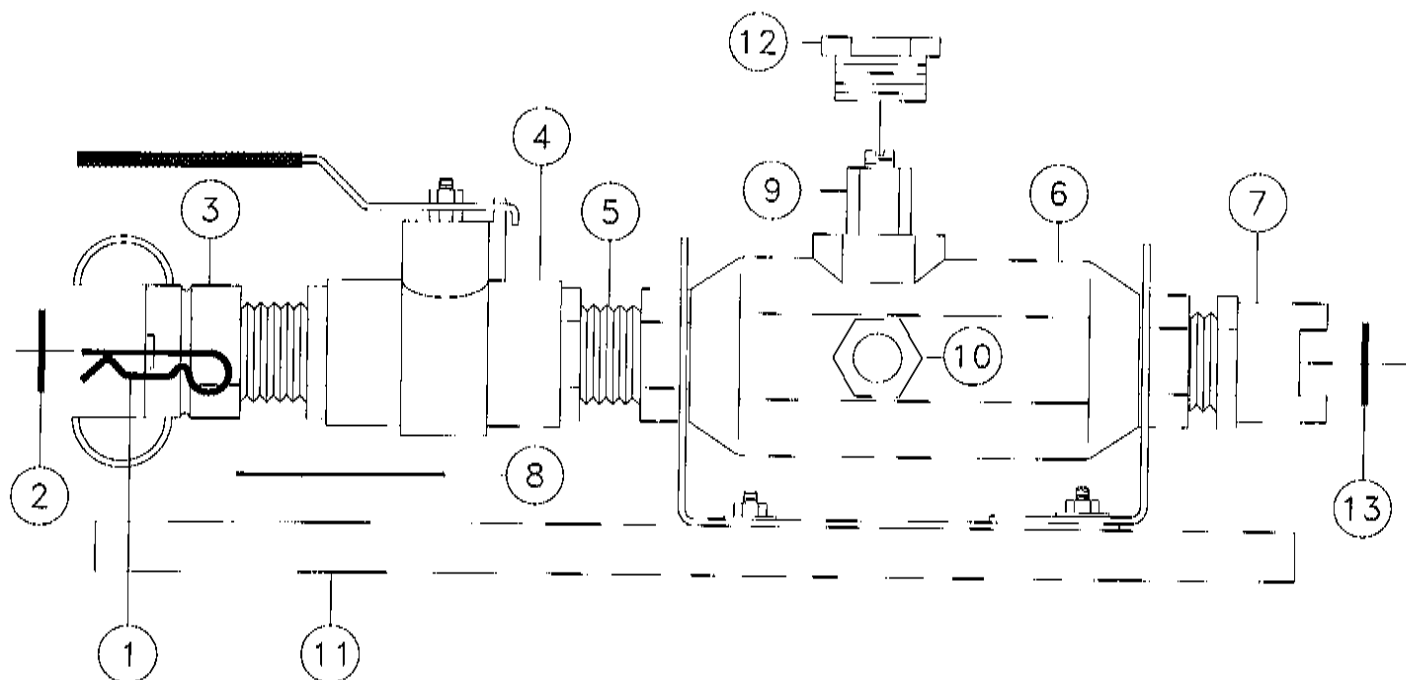
Figure 10-1



REF. NO.	PART NO.	DESCRIPTION	QTY.
10-1	1	231898-001 STAKE SLEEVE	4
10-1	2	231897-001 STAKE	4
10-1	4	231900-001 STAKE DRIVING MOLE	1
10-1	5	231899-001 EXTRACTION SLEEVE	1
10-1	6	208267-001 50'HOSE W/COUPLINGS	A/R
10-1	7	231202-001 MOUNT-LONG PNEAMATIC STAKE	1
10-1	8	231200-001 MOUNT-PNEUMATIC STAKE	1

MIST OILER ASSEMBLY

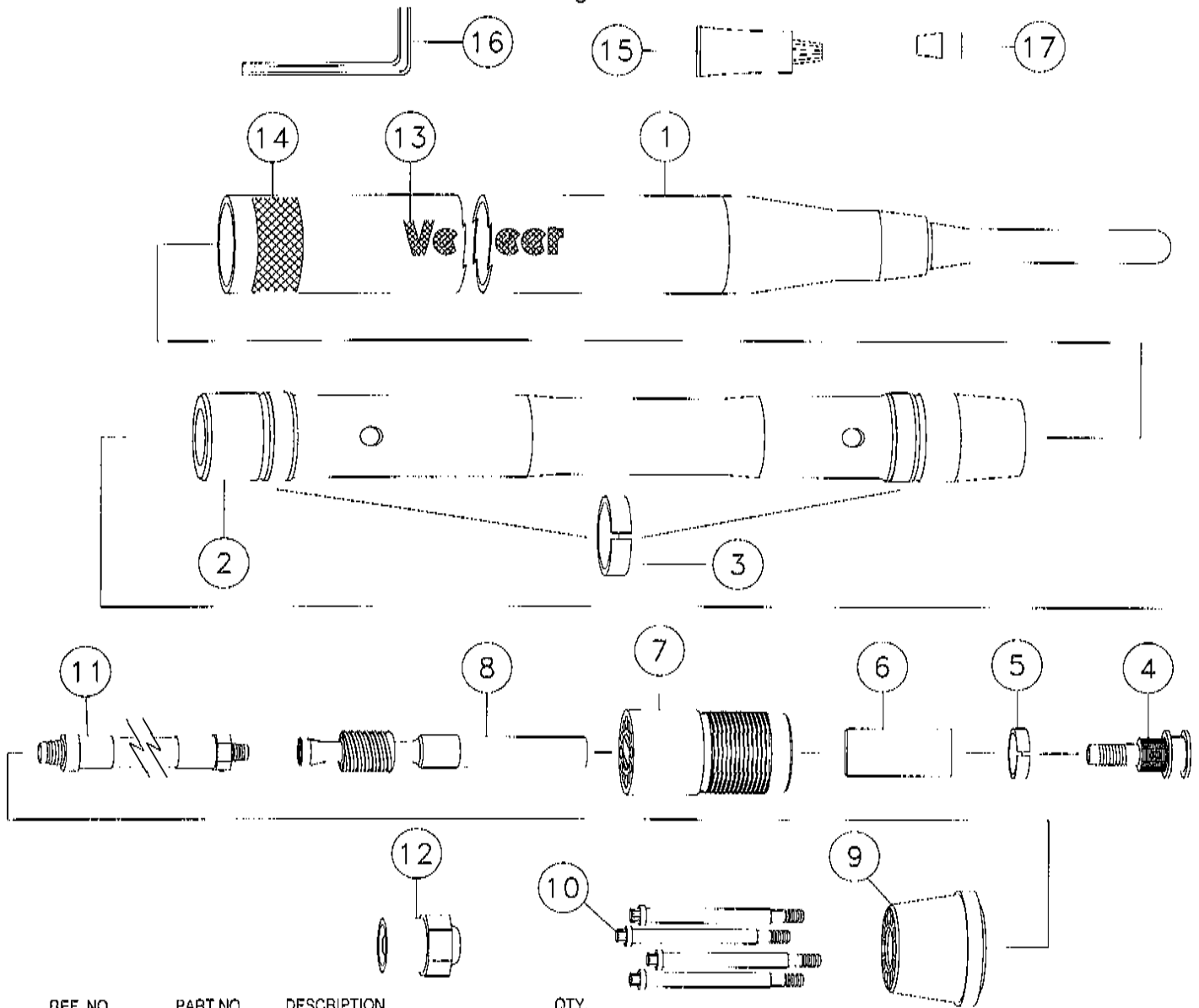
Figure 10-2



REF. NO.	PART NO.	DESCRIPTION	QTY.
10-2	1	205154-007 SAFETY CLIP	1
10-2	2	205154-005 FITTING GASKET	1
10-2	3	205154-003 CLAW FITTING-MALE	1
10-2	4	3379-001 VALVE - 3/4" BALL - #101R NPT	1
10-2	5	736-007 3/4" CLOSE NIPPLE BLACK STEEL	1
10-2	6	208566-001 MIST OILER W/PRESSURE RELIEF (INC. REF. 1-13)	1
		211713-001 OILER ASSY-EUROPEAN STANDARD	1
10-2	7	205154-011 PNEUMATIC FITTING	1
10-2	8	70000-685 DECAL-WARNING	1
10-2	9	208567-001 OILER VALVE W/O-RING	1
10-2	10	208569-001 SIGHT WINDOW W/O-RING	2
10-2	11	208570-001 WOODEN BASE W/BRACKETS	1
10-2	12	208599-001 MANUAL RELIEVING SAFETY CAP AY	1
10-2	13	208566-003 RUBBER GASKET	1

STAKE DRIVING MOLE COMPONENTS

Figure 10-3

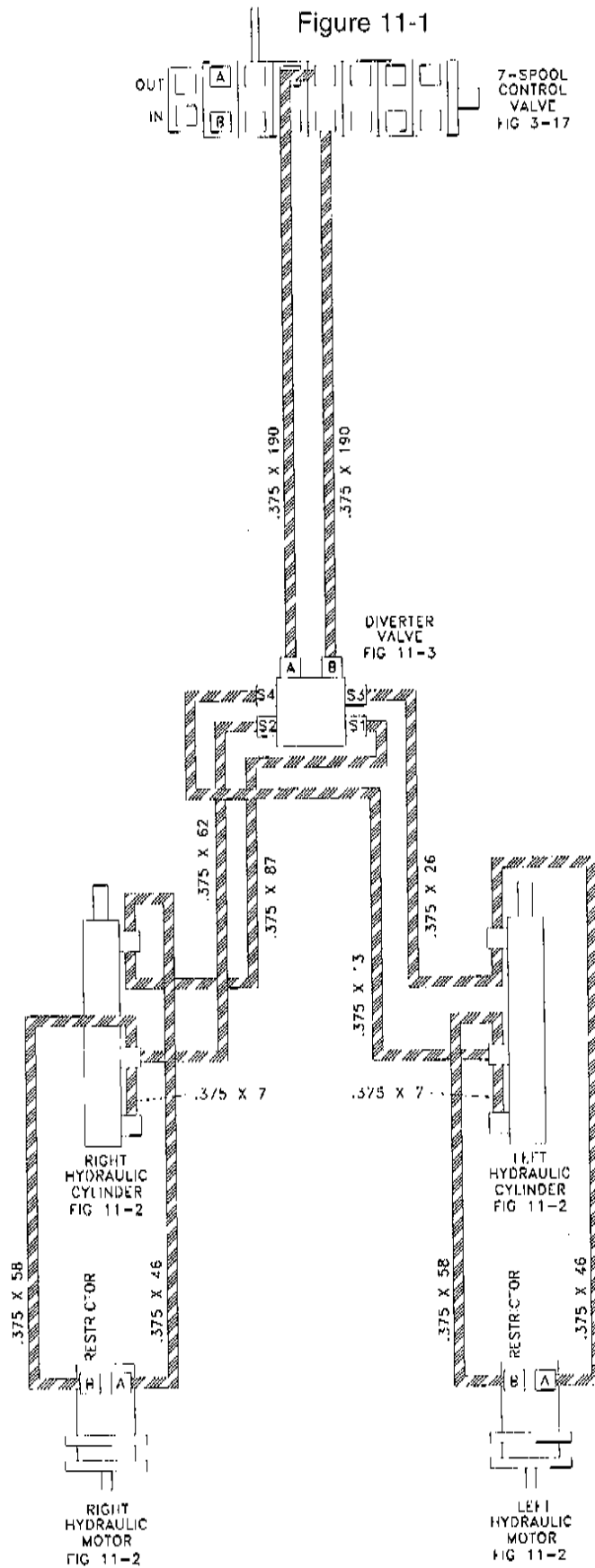


REF. NO.	PART NO.	DESCRIPTION	QTY.
10-3	1	231902-001 BODY W/LONG FRONT ANVIL	1
		215399-001 WEAR FACE ASSEMBLY	1
10-3	2	204933-005 STRIKER ET30204	1
10-3	3	204933-007 STRIKER RING ET30210	2
10-3	4	221594-001 VALVE RETAINER	1
10-3	5	204933-011 VALVE RING ET30211	1
10-3	6	221593-001 VALVE	1
10-3	7	204933-015 REAR ANVIL ET30205	1
10-3	8	207042-001 VALVE END SERVICEABLE WHIP	1
10-3	9	231901-001 TAILCONE-MODIFIED	1
10-3	10	204933-021 TAIL BOLT ET30221	4
10-3	11	231903-001 EXTRA LONG SERVICE WHIP HOSE	1
10-3	12	204933-023 PNEUMATIC FITTING ET30214	1
10-3	13	70000-340 DECAL-RED VERMEER	2
10-3	14	70000-944 DECAL-WARNING UND MOLES	1
10-3	15	209225-001 NEVERSEEZ 1 OZ.	1
10-3	16	207368-001 7/16"LONG ARM HEX KEY	1
10-3	17	207369-001 SOCKET-3/8 12 POINT	1

231900-001 STAKE DRIVING MOLE (INC. REF. 1-17)

HYDRAULIC COMPONENTS LOCATION DIAGRAM - STATIONARY STAKE DOWN

Revised February 1999 due to addition of drawing to figure.

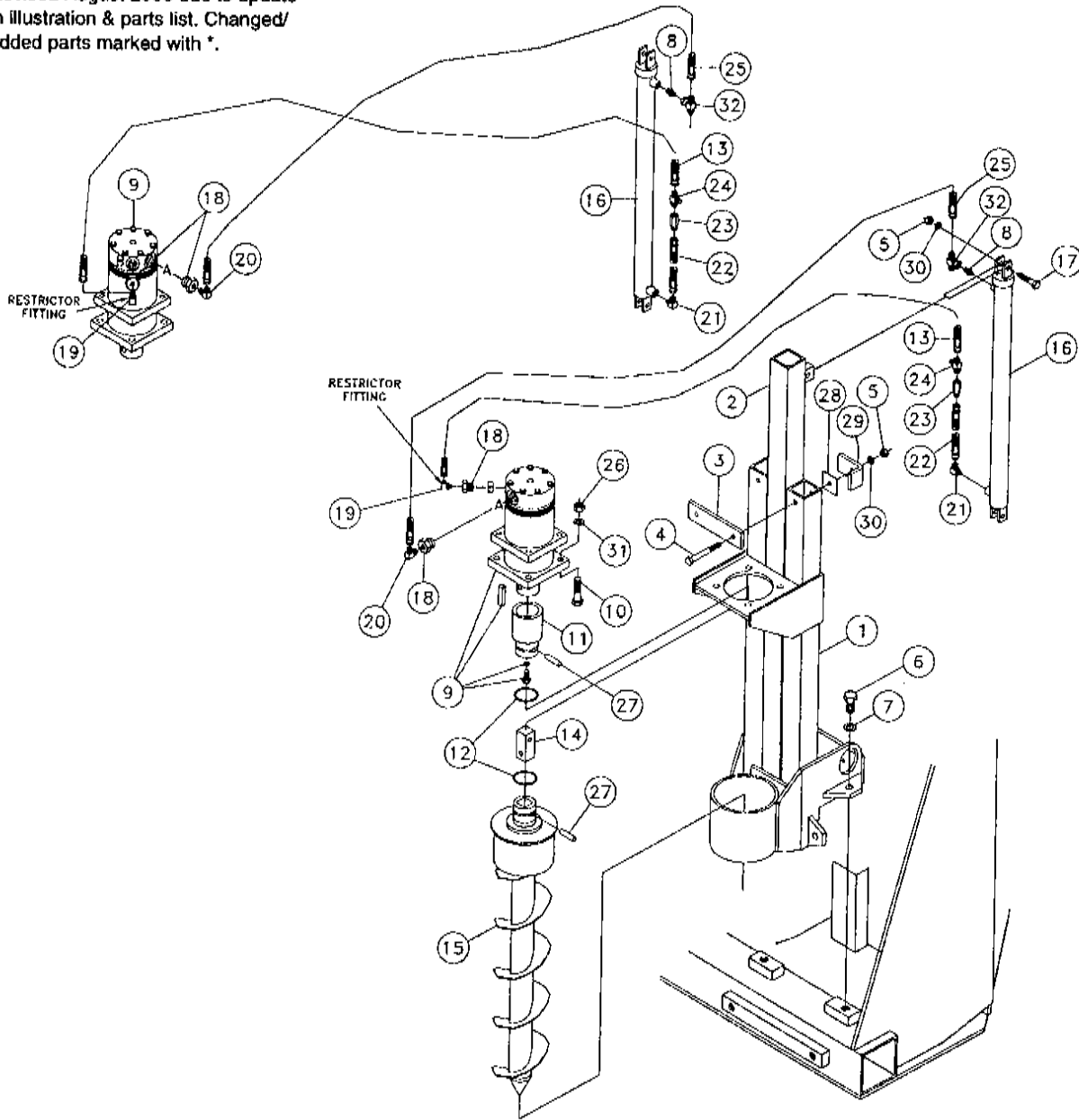


/// PRESSURE/RETURN LINE

STATIONARY STAKEDOWN ASSEMBLY

Figure 11-2

Revised August 2000 due to update in illustration & parts list. Changed/added parts marked with *.

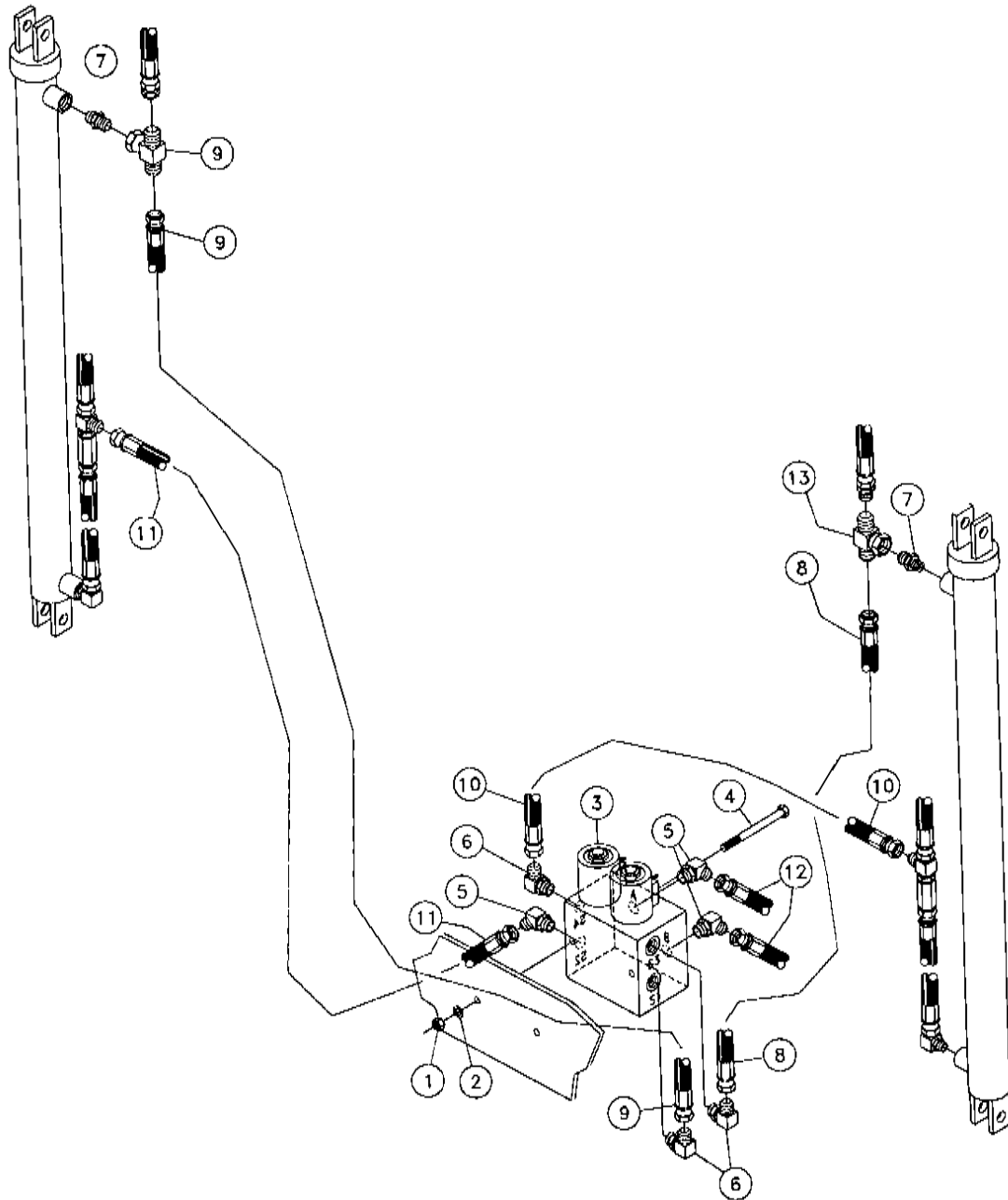


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
11-2	1	249867-001 TOWER-STAKEDOWN (LEFT) (SHOWN)	1	11-2	17	235718-001 BOLT-1/2-13X2 GR8 HEX ZINC PLT	4
11-2	2	235916-001 TOWER-STAKEDOWN (RIGHT)	1	11-2	18	117452-001 FITTING-12M ORINGX6F ORING STR	4
11-2	3	232482-001 BAR-REINFORCEMENT	2	11-2	19	122606-001 FITTING-6MX6M JIC90 DEG W/ RSTS	2
11-2	4	238244-001 BOLT 1/2"-13 X 4"GR8 HEX Y/ZIN	4	11-2	20	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	2
11-2	5	250512-001 NUT-1/2-NC GR8 TOP LOCK Y/ZINC	8	11-2	21	60906-001 4MX6M JIC 90 DEG ELBOW	2
11-2	6	250643-001 BOLT-3/4-10 X1 1/4 GR 8 Y/ZINC	8	11-2	22	57940-699 HOSE-3/8X7 6FSJICST 3000 PSI	2
11-2	7	235717-001 WASHER-3/4 SAE HARD ZINC PLTD	4	11-2	23	245057-001 VALVE-3/8 REV FREE FLW W/.030C	2
11-2	8	65569-001 4M X 6M JIC ST.	2	11-2	24	68774-001 FITTING-6MX6M JIC (RUN)X6M JIC	2
11-2	9	236219-001 HYD MOTOR-66CI	2	11-2	25	57940-293 HOSE-3/8 X 46 6FS JIC 3000 PSI	2
11-2	10	238245-001 BOLT 5/8"-11 X 2 1/4" GR8 HEX	8	11-2	26	250513-001 NUT-5/8-NC GR8 TOP LOCK Y/ZINC	8
11-2	11	236205-001 HUB-STAKE DRIVE	2	11-2	27	236200-001 PIN-STAKE KEEPER	4
11-2	12	236229-001 O-RING - 329	4	11-2	28	236233-001 PLATE-SPACER	4
11-2	13	57940-715 HOSE-3/8X58 6FSJICST 3000#	2	11-2	29	236232-001 BAR-GUIDE	4
11-2	14	236230-001 BAR-STAKE DRIVE	2	11-2	30	485-025 WASHER-1/2 FLAT-HARDENED-ZINC	8
11-2	15	232484-001 STAKE-6" FLIGHT	2	11-2	31	235715-001 WASHER-5/8 SAE HARD ZINC PLTD	8
11-2	16	*232422-001 CYLINDER-1 1/2 X 24 (BREAKDOWN FIG. 11-7) (REPLACES 245060-001)	2	11-2	32	*60852-001 6M JIC X 6FS JIC SWV. NUT BTEE	2

Revised August 2000 due to update in illustration & parts list. Added part marked with *.

DIVERTER VALVE ASSEMBLY

Figure 11-3

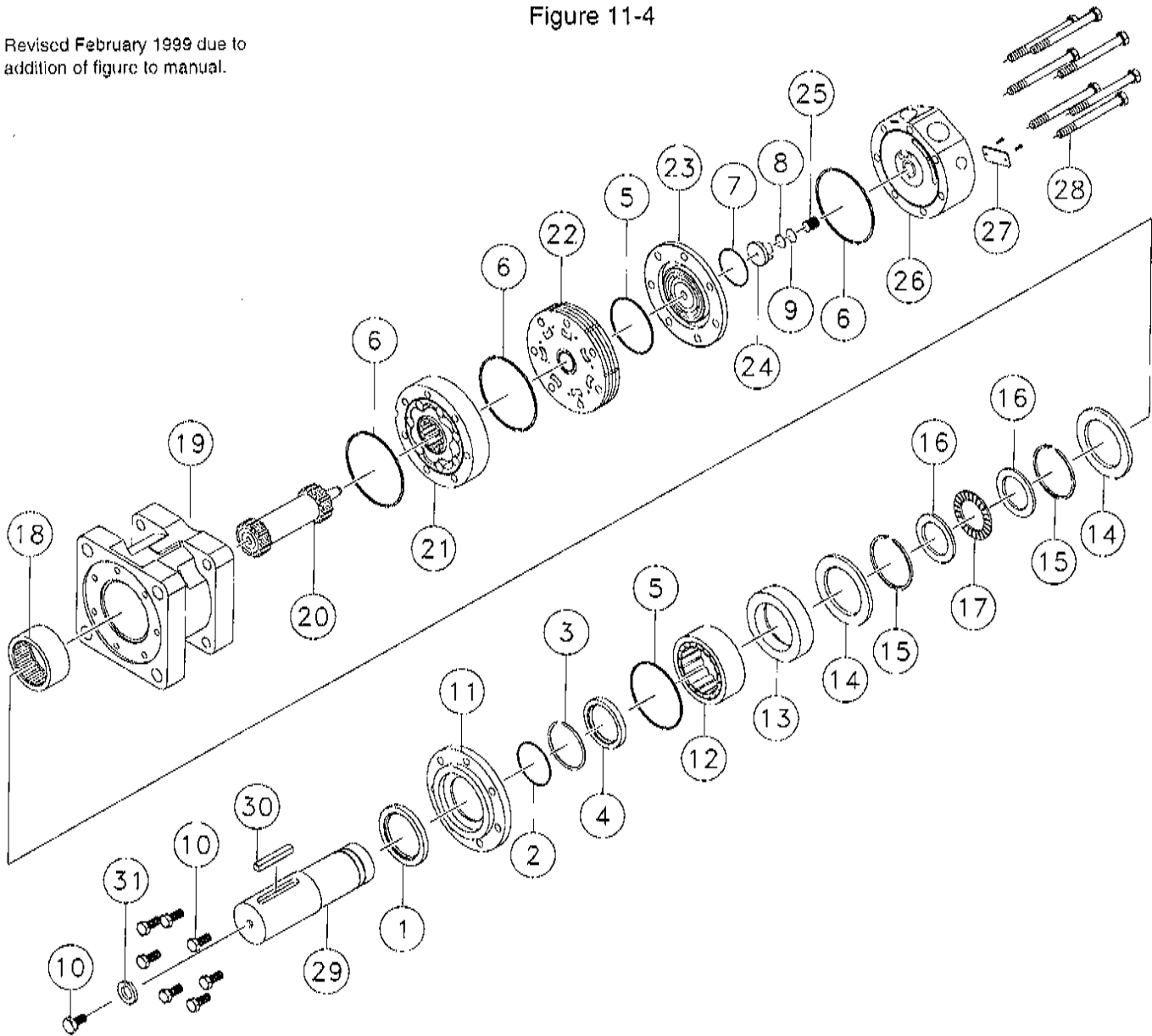


REF. NO.	PART NO.	DESCRIPTION	QTY.
11-3	1	235741-001 NUT-5/16-18 GR8 ZINC PLTD	2
11-3	2	235714-001 WASHER-5/16 SAE HARD ZINC PLTD	2
11-3	3	251072-001 VALVE - DIVERTER (BRKDNW FIG. 11-6)	1
11-3	4	248013-001 BOLT-5/16-18X3 1/2 GD8 ZINC PL	2
11-3	5	65563-001 6M X 6M JIC 45 DEGREE	3
11-3	6	59426-001 FITTING-6M JICX6M ADJ 90 ELBOW	3
11-3	7	65569-001 4M X 6M JIC ST.	2
11-3	8	57940-361 HOSE-3/8X26 6FS JIC 2500 PSI	1
11-3	9	57940-575 HOSE-3/8X87 6FS JIC 3000 PSI	1
11-3	10	251042-001 HOSE-3/8X13 GFS JIC ST 3000	1
11-3	11	57940-513 HOSE-3/8X62 6 FS JIC 3000 PSI	1
11-3	12	57940-451 HOSE-3/8 X 190 6FS JIC 4000PSI	2
11-3	13	*60852-001 6M JIC X 6FS JIC SWV NUT BTEE	2

HYDRAULIC MOTOR COMPONENTS

Figure 11-4

Revised February 1999 due to addition of figure to manual.

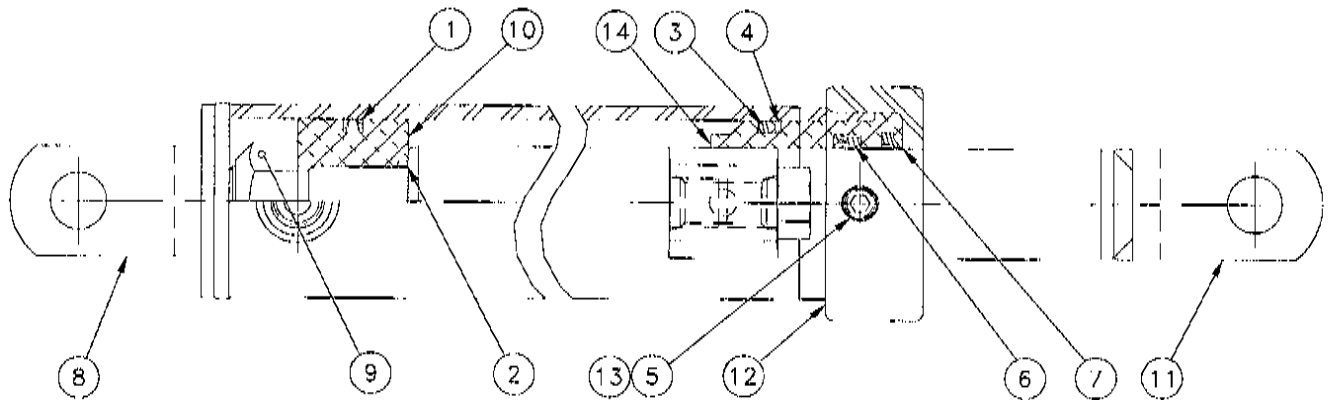


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
11-4	1	NSS SEAL-DUST	1	11-4	19	236219-023 HOUSING	1
11-4	2	NSS SHIM-METAL BACKUP	1	11-4	20	236219-025 DRIVE LINK	1
11-4	3	NSS SEAL TEFLON BACKUP	1	11-4	21	236219-027 ROTOR ASSEMBLY	1
11-4	4	NSS SEAL-SHAFT	1	11-4	22	236219-029 MANIFOLD	1
11-4	5	NSS SEAL-LATHE CUT	2	11-4	23	236219-031 COMMUTATOR ASSEMBLY	1
11-4	6	NSS SEAL-BODY	3	11-4	24	236219-033 PISTON-ENDCOVER	1
11-4	7	NSS SEAL-COMMUTATOR	1	11-4	25	236219-035 SPRING-PISTON	1
11-4	8	NSS SEAL-O-RING	1	11-4	26	236219-037 ENDCOVER (INC. REF. 8, 9, 24 & 25)	1
11-4	9	NSS SEAL-TEFLON BACKUP	1	11-4	27	NSS I.D. TAG ASSEMBLY	1
11-4	10	383-010 BOLT-1/2-20X1 GR.8 HEX HEAD	8	11-4	28	236219-039 BOLT	7
11-4	11	236219-007 RING-PILOT	1	11-4	29	236219-041 SHAFT-ASSEMBLY	1
11-4	12	236219-009 BEARING-2 1/2" ROLLER	1	11-4	30	236219-005 KEY-SHAFT	1
11-4	13	236219-011 SPACER-BEARING	1	11-4	31	480-011 WASHER-1/2 S/T LOCK	1
11-4	14	236219-013 WASHER-RETAINING	2				
11-4	15	236219-015 SNAP RING	2			236219-001 HYD MOTOR (INC. ALL ITEMS IN THIS FIGURE)	
11-4	16	236219-017 WASHER-THRUST	2			236219-003 SEAL KIT-HYD. MOTOR (INC. REF. 1-9)	
11-4	17	236219-019 BEARING-THRUST	1			NSS NOT SOLD SEPARATELY	
11-4	18	236219-021 BEARING-REAR HOUSING	1				

HYDRAULIC CYLINDER COMPONENTS - 1 1/2" X 24" W/ TEE

Figure 11-5

Revised February 1999 due to addition of figure to manual.

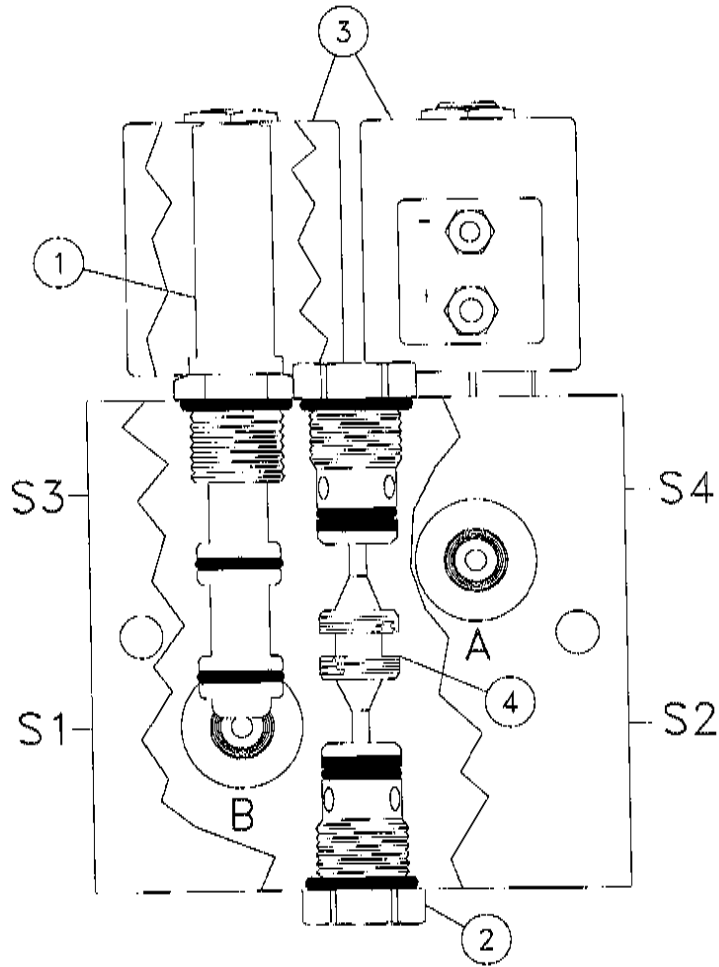


REF. NO.	PART NO.	DESCRIPTION	QTY.
11-5	1	245060-003 PSP "A" SEAL	1
11-5	2	232422-005 O-RING	1
11-5	3	232422-007 O-RING	1
11-5	4	232422-009 BACKUP RING	1
11-5	5	232422-011 LOCKING INSERT	1
11-5	6	232422-013 DOUBLE LIP U-CUP	1
11-5	7	232422-015 ROD WIPER	1
11-5	8	245060-005 TUBE-WELDMENT	1
11-5	9	232422-019 625-18UNF LOCKNUT	1
11-5	10	232422-021 PISTON	1
11-5	11	232422-023 ROD WELDMENT	1
11-5	12	232422-025 HEAD GLAND CAP	1
11-5	13	99859-005 SCREW-LG SET .313-18 X .25	1
11-5	14	232422-027 HEAD GLAND	1
	245060-007	SEAL KIT (INC. REF. 1-7)	
	245060-001	CYLINDER-1 1/2 X 24 W/TEE (INC. ALL ITFMS IN THIS FIGURE)	

DIVERTER VALVE COMPONENTS

Figure 11-6

Revised September 1999 due to update in parts list. Changed parts marked with *.

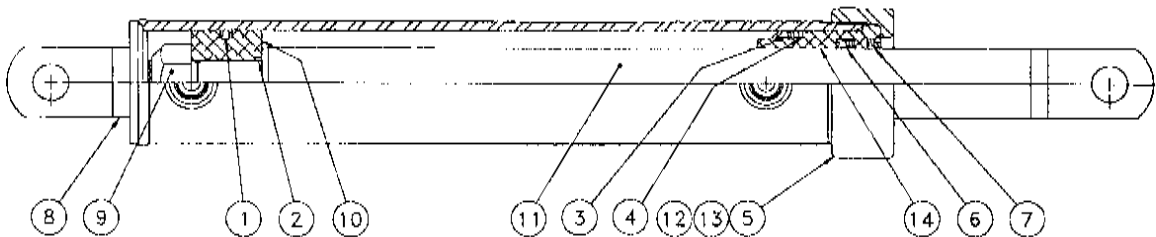


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
11-6	1	251072-003 SOLENOID VALVE	2
		*204097-005 SEAL KIT	
11-6	2	205737-003 CARTRIDGE - CHECK VALVE	2
		*228128-009 SEAL KIT	
11-6	3	240983-001 COIL-10 DV 12 VDC	2
11-6	4	251072-009 PISTON	1
	251072-001	VALVE - DIVERTER (INC. ALL ITEMS IN THIS FIGURE)	

HYDRAULIC CYLINDER COMPONENTS - 1 1/2 X 24"

Figure 11-7

Revised August 2000 due to addition of figure to manual.

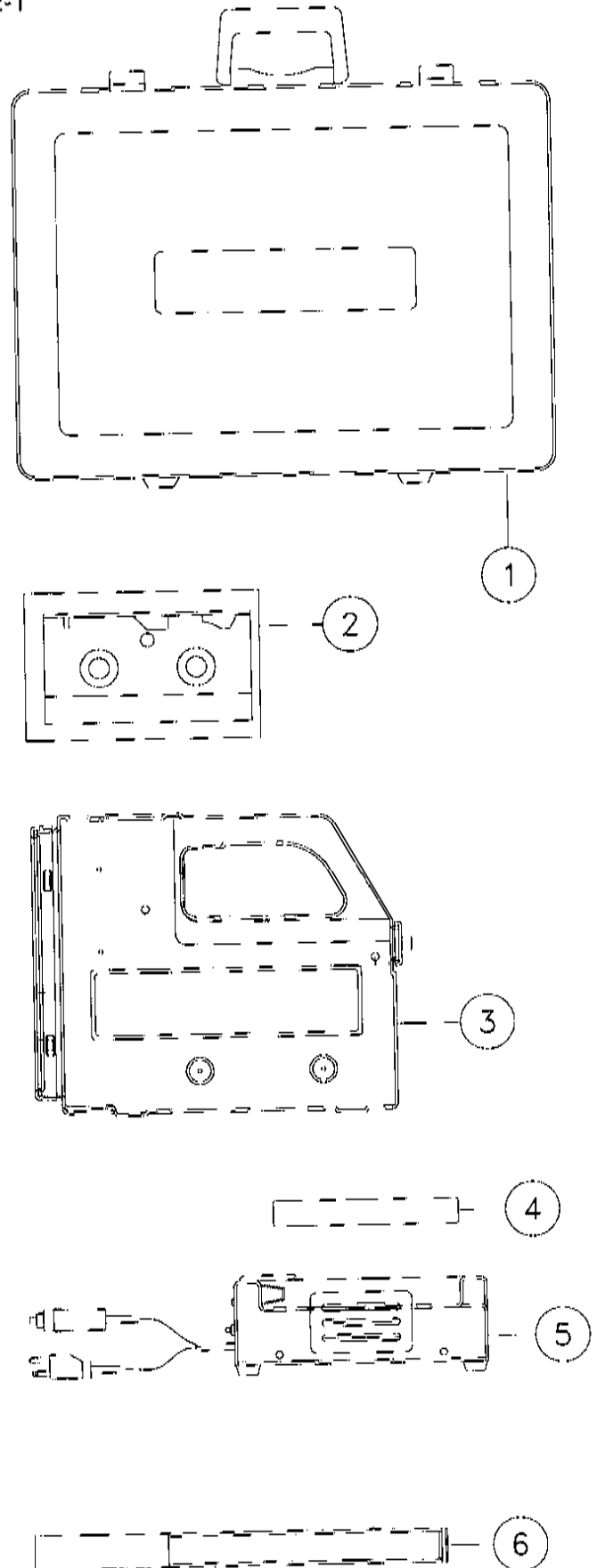


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
11-7	1	232422-003 T-SEAL	1
11-7	2	232422-005 O-RING	1
11-7	3	232422-007 O-RING	1
11-7	4	232422-009 BACKUP RING	1
11-7	5	232422-011 LOCKING INSERT	1
11-7	6	232422-013 DOUBLE LIP U-CUP	1
11-7	7	232422-015 ROD WIPER	1
11-7	8	232422-017 TUBE WELDMENT	1
11-7	9	232422-019 .625 18 UNF LOCKNUT	1
11-7	10	232422-021 PISTON	1
11-7	11	232422-023 ROD WELDMENT	1
11-7	12	232422-025 HEAD GLAND CAP	1
11-7	13	99859-005 SCREW-LG SET .313-18 X .25	1
11-7	14	232422-027 HEAD GLAND	1
	232422-001	CYLINDER-1 1/2 X 24 (INC. REF. 1-14)	
	232422-029	SEAL KIT (INC. REF. 1-7)	

LOCATION PACKAGE, MARK III - DIGITRAK - DOMESTIC AND INTERNATIONAL

Figure 12-1

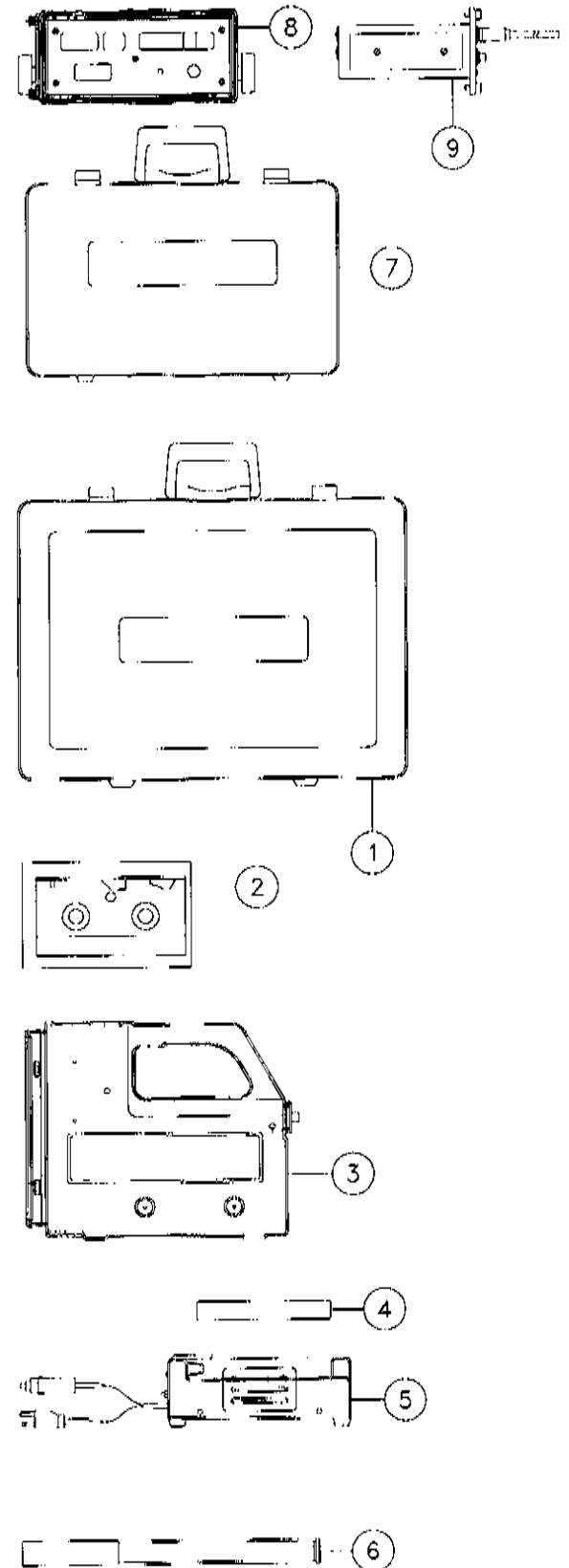
REF. NO.	PART NO.	DESCRIPTION	QTY.
12-1	1	213389-011 DIGITRAK CARRYING CASE	1
12-1	2	231990-001 DIGITRAK OP. MAN. TRAIN VIDEO	1
12-1	3	231991-001 DIGITRAK RECEIVER-ENGLISH/METR	1
12-1	4	213389-009 DIGITRAK BATTERY PACK	2
12-1	5	213389-007 DIGITRAK SMART CHARGER115/230V	1
12-1	6	221806-001 SONDE-15' BLUE	1
		213389-005 SONDE - 30' YELLOW	1
		226196-001 SONDE -50' RED (4 BATT)	1
		221643-001 SONDE-50' RED	1
		213086-001 O-RING #122	3
	231212-001	DIGITRAK STD.LOCATOR (US/CAN) (INC. REF. 5)	



LOCATION PACKAGE, MARK III - DIGITRAK (W/ REMOTE DISPLAY) DOMESTIC

Figure 12-2

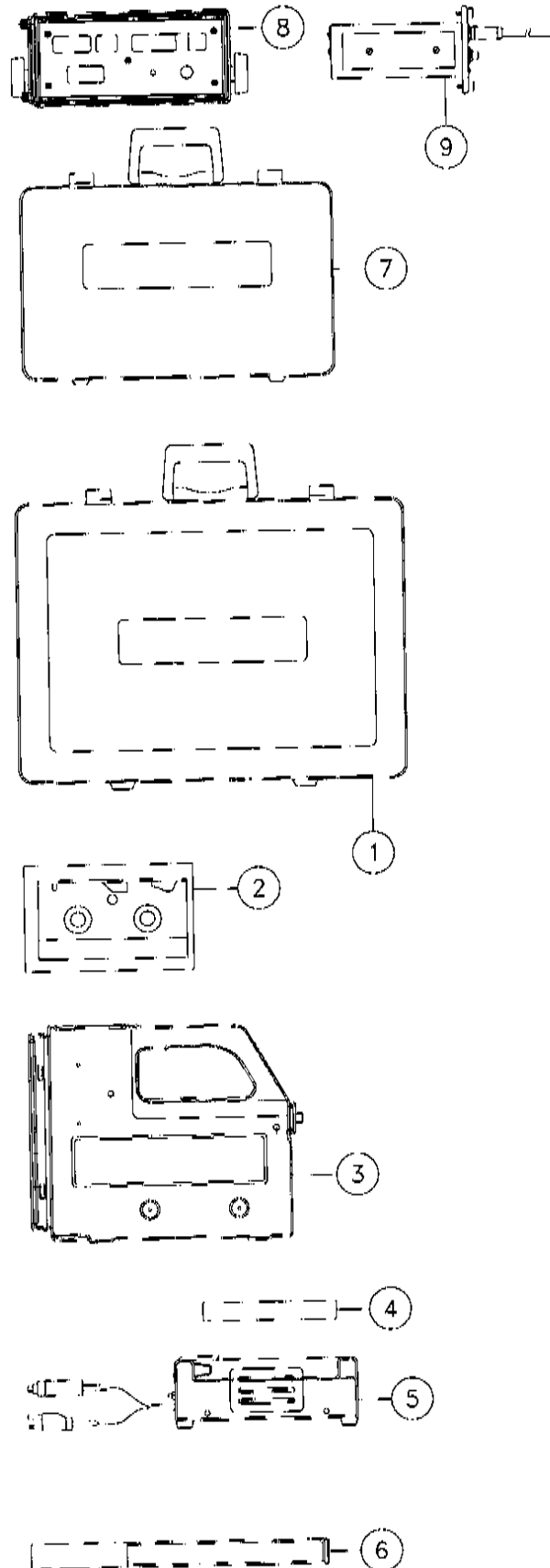
REF. NO.	PAHT NO.	DESCRIPTION	QTY. STD.	CABLE SONDE
12-2	1	213389-011 DIGITRAK CARRYING CASE	1	1
12-2	2	231990-001 DIGITRAK OP. MAN. TRAIN VIDEO	1	1
12-2	3	231992-001 RECEIVER W/REMOTE ENGLISH/METR	1	1
12-2	4	213389-009 DIGITRAK BATTERY PACK	2	-
12-2	5	213389-007 DIGITRAK SMART CHARGER115/230V	1	-
12-2	6	221806-001 SONDE-15' BLUE	1	-
		213389-005 SONDE - 30' YELLOW	1	-
		221643-001 SONDE-50' RED	1	-
		226196-001 SONDE -50' RED (4 BATT)	1	-
		226197-001 SONDE -50' .1P MAGENTA	1	-
		226198-001 SONDE-50' .1P MAGENTA (4 BATT)	1	-
		226199-001 SONDE-100' CABLE GREEN		1
		226200-001 SONDE-100' CABLE .1P GREEN		1
		213086-001 O-RING #122	3	3
12-2	7	221658-001 REMOTE CARRYING CASE	1	1
12-2	8	231993-001 DIGITRAK REMOTE DISPLAY	1	1
		231994-001 REMOTE DISPLY FOR CABLE SONDE	-	1
12-2	9	226195-001 CABLE SONDE POWER SUPPLY	-	1
		231218-001 DCI REMOTE LOCATOR SYS(US/CAN) (INC. REF. 1-5, 7 & 8)		
		231221-001 DCI REM CABLE SONDE SYS(US/CAN) (INC. REF. 1-3 & 7-9)		



LOCATION PACKAGE, MARK III - DIGITRAK (W/REMOTE DISPLAY) INTERNATIONAL

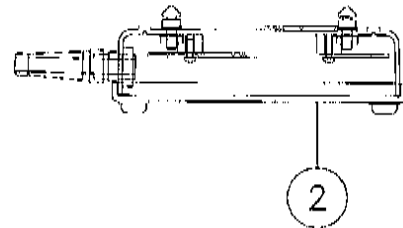
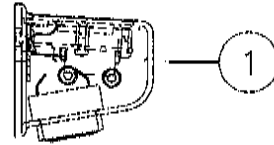
Figure 12-3

REF. NO.	PART NO.	DESCRIPTION	QTY. STD.	CABLE SONDE
12-3	1	213389-011 DIGITRAK CARRYING CASE	1	1
12-3	2	231990-001 DIGITRAK OP. MAN. TRAIN VIDEO	1	1
12-3	3	231995-001 RECEIVER W/REMOTE FUNCTION AU	1	1
		231996-001 RECEIVER W/REMOTE FUNCTION UK	1	1
12-3	4	213389-009 DIGITRAK BATTERY PACK	2	-
12-3	5	213389-007 DIGITRAK SMART CHARGER115/230V	1	-
12-3	6	221806-001 SONDE-15' BLUE	1	-
		213389-005 SONDE - 30' YELLOW	1	-
		221643-001 SONDE-50' RED	1	-
		226196-001 SONDE -50' RED (4 BATT)	1	-
		226197-001 SONDE -50' .1P MAGENTA	1	-
		226198-001 SONDE-50' .1P MAGENTA (4 BATT)	1	-
		226199-001 SONDE-100' CABLE GREEN	-	1
		226200-001 SONDE-100' CABLE .1P GREEN	-	1
		213088-001 O-RING #122	3	3
12-3	7	221658-001 REMOTE CARRYING CASE	1	1
12-3	8	231997-001 REMOTE DISPLAY AU	1	-
		231998-001 REMOTE DISPLY FOR CBLE SOND AU	1	1
		231999-001 REMOTE DISPLAY UK	1	-
		238750-001 REMOTE DISPLY FOR CBLE SOND UK	1	1
12-3	9	226195-001 CABLE SONDE POWER SUPPLY	1	-
		231219-001 DCI REMOTE LOCATOR SYS (AU) (INC REF. 1-5, 7 & 8)		
		231222-001 DCI REM CABLE SONDE SYS (AU) (INC. REF. 1-3 & 7-9)		
		231220-001 DCI REMOTE LOCATOR SYS (UK) (INC. REF. 1-5, 7 & 8)		
		231223-001 DCI REM CABLE SONDE SYS (UK) (INC. REF. 1-3 & 7-9)		

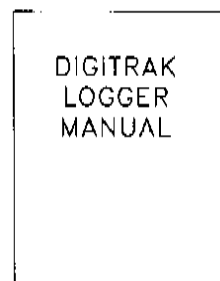
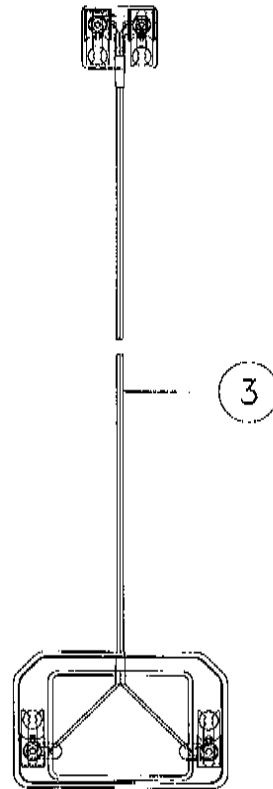


DATA LOGGER, MARK III - DIGITRAK

Figure 12-4



<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
12-4	1	231224-001 DATA LOGGER MODULE	1
12-4	2	231228-001 DATA-LOG/PC INTERFACE	1
12-4	3	238751-001 DATA LOG REAL TIME CABLE	1
12-4	4	238752-001 DIGITRAK LOGGER MANUAL	1

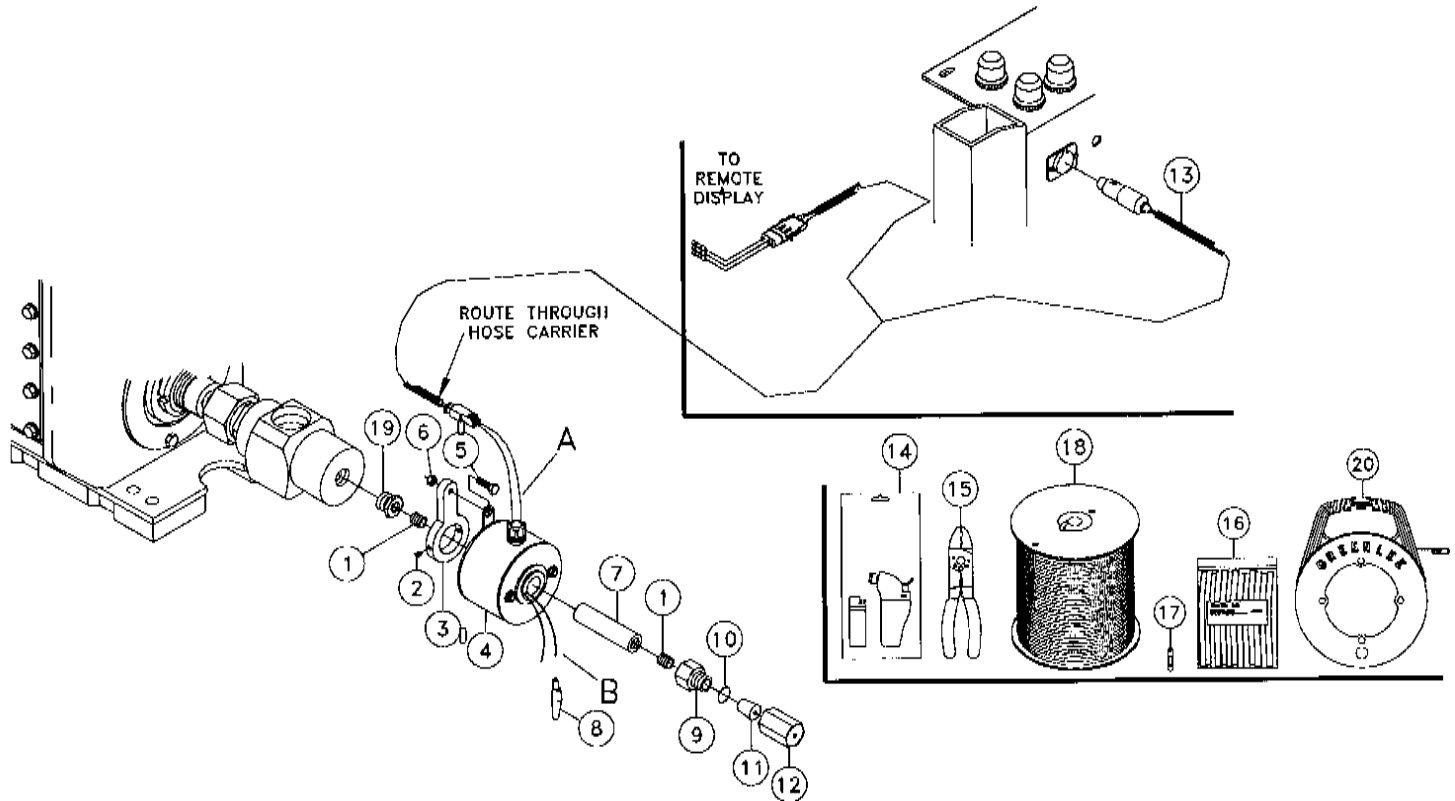


4

CABLE SONDE ACCESSORY ASSEMBLY

Figure 12-5

Revised February 2000 due to update in illustration & parts list. Changed/added parts marked with *.

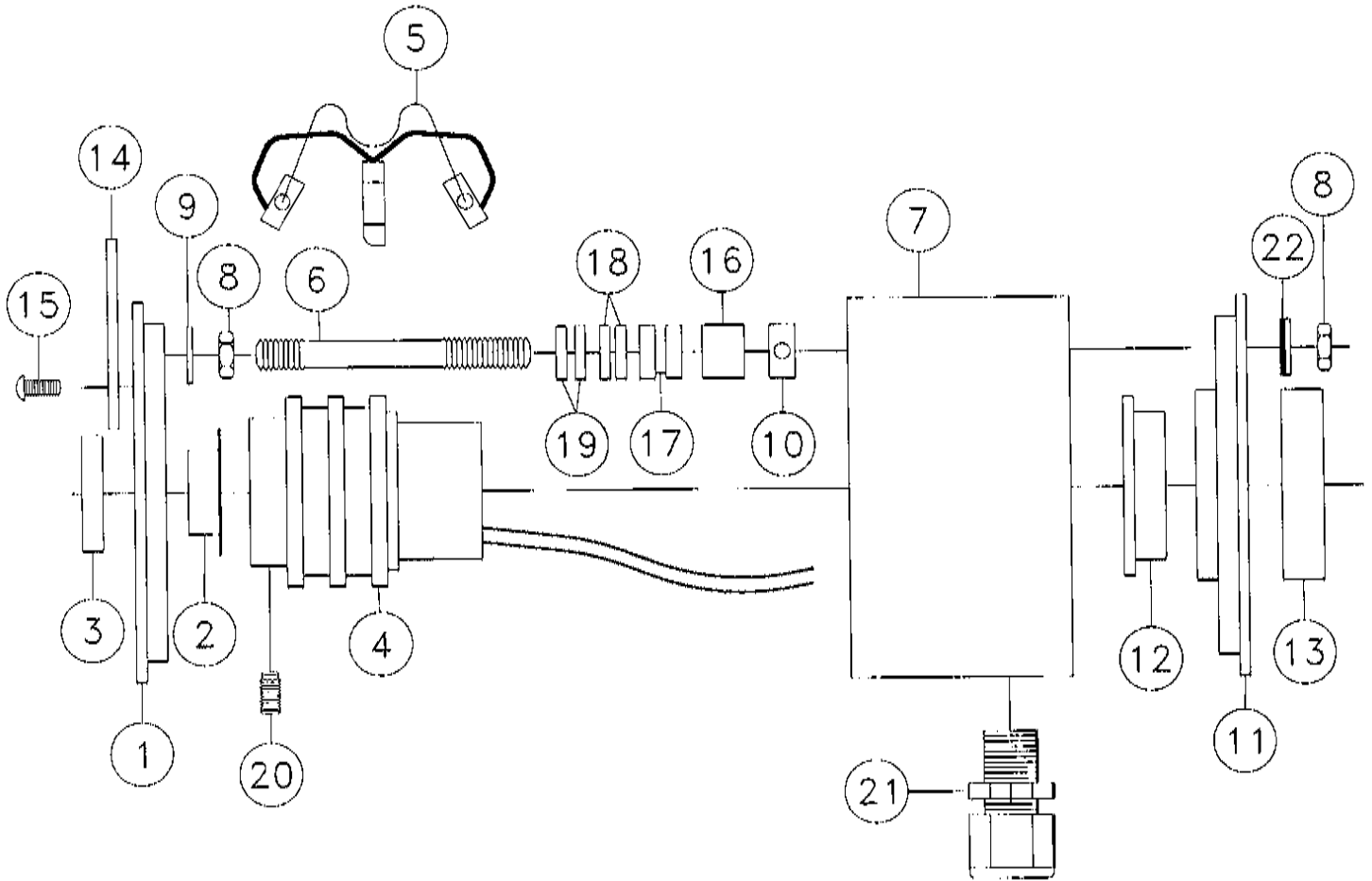


REF. NO.	PART NO.	DESCRIPTION	QTY.
12-5	1	736-003 3/8" CLOSE NIPPLE BLACK STEEL	2
12-5	2	523-001 SSS-1/4-20X3/8	2
12-5	3	234926-001 MOUNT ANTI-ROTATION	1
12-5	4	234929-001 SLIP RING-2 CIRCUIT (BREAKDOWN FIG. 12-6)	1
12-5	5	238209-001 BOLT-5/16-18X1 GR 8 HEX ZINC YC	1
12-5	6	240333-001 NUT-5/16-18 GR 8 TL ZIN PLTD	1
12-5	7	234895-001 SHAFT-SPOOL MOUNT	1
12-5	8	250022-001 CLIP-ALLIGATOR/RED	3
12-5	9	234887-001 BASE-COMPRESSION FITTING	1
12-5	10	792-029 O-RING	1
12-5	11	*234957-001 STOPPER-COMP. FITTING 12GA	3
12-5	12	234888-001 COVER-COMPRESSION FITTING	1
12-5	13	279344-001 WIRE-HARNES D24X40A WIRE LINE	1
12-5	14	234856-010 MICRO-TORCH	1
12-5	15	234857-001 CRIMPER	1
12-5	16	*279380-001 HEAT SHRINK 3/8X6" QTY 20 (REPLACES 279339-001)	5
12-5	17	*279378-001 BUTT CONNECTOR 10X12 GA W/O HEAT SHRINK (REPLACES 234858-001)	100
12-5	18	240529-001 WIRE-10 GA RED 500" (THHN)	1
12-5	19	730-009 3/4X3/8" HEX BUSHING STEEL	1
12-5	20	*279379-001 FISHTAPE-1/8" DIA X 50' W/ WINDER CASE	1
	279337-001	D40X40 CABLE SONDE ACCESSORY KIT (INC. ALL ITEMS IN FIGURE)	

SLIP RING COMPONENTS

Figure 12-6

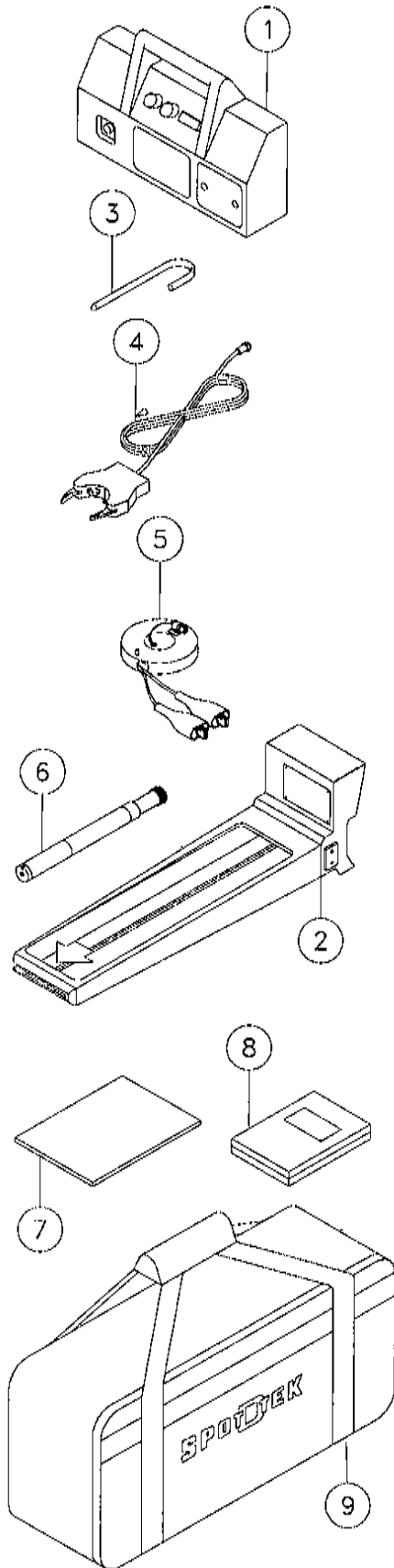
Revised September 1999 due to addition of figure to manual.



REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
12-6	1	234929-003	1	12-6	14	234929-025	1
12-6	2	234929-005	1	12-6	15	57200-001	2
12-6	3	234929-007	1	12-6	16	234929-027	2
12-6	4	234929-009	1	12-6	17	234929-029	2
12-6	5	234929-011	2	12-6	18	234929-031	4
12-6	6	234929-013	2	12-6	19	234929-033	4
12-6	7	234929-015	1	12-6	20	234929-035	2
12-6	8	407-001	4	12-6	21	234929-037	1
12-6	9	485-005	2	12-6	22	234929-039	2
12-6	10	234929-017	2				
12-6	11	234929-019	1			234929-001	1
12-6	12	234929-021	1			SLIP RING - 2 CIRCUIT (INC. ALL ITEMS	
12-6	13	234929-023	1			IN FIGURE)	

LOCATION PACKAGE, SPOT D TEK II.2 UTILITY

Figure 13-1



REF. NO.	PART NO.	DESCRIPTION	QTY.
13-1	1	213900-003 TRANSMITTER FOR SPOT D TEK II	1
		213900-019 SUNSCREEN FOR TRANSMITTER	1
13-1	2	215941-001 RECEIVER II.2	1
13-1	3	213900-013 GROUND STAKE-SPOT D TEK II	1
13-1	4	213900-007 EXTERNAL COIL - SPOT D TEK II	1
13-1	5	213900-015 DIRECT CONNECTION CABLE	1
13-1	6	215942-001 DIR. PROBE II.2 W/ BATTERIES	1
13-1	7	215938-003 OPERATIONAL MANUAL	1
13-1	8	213900-021 VIDEO TAPE	1
13-1	9	213900-009 CASE FOR SPOT D TEK II	1

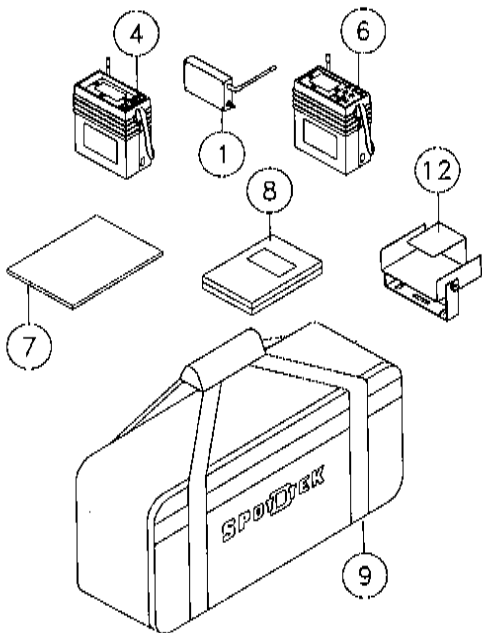
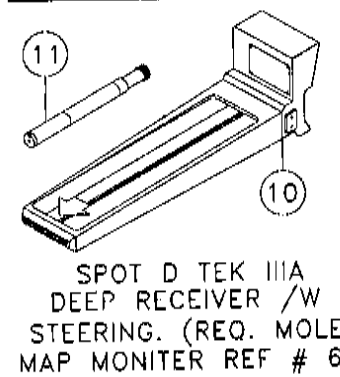
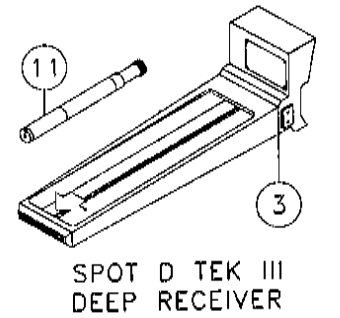
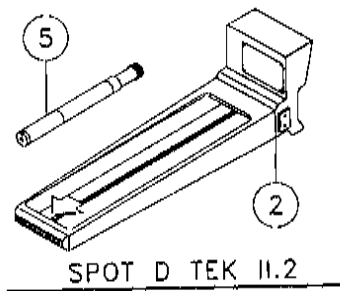
215938-001 SPOT D TEK II.2 UTILITY LOC. PCK
(INC. REF. 1-9)

ACCESSORIES

213900-023 SUNSCREEN-RECEIVER/II.2 MONITOR
213900-025 RAINCOVER-RECEIVER

LOCATION PACKAGE, SPOT D TEK II.2, III & IIIA

Figure 13-2



REF. NO.	PART NO.	DESCRIPTION	QTY.
13-2	1	213902-005 WIRELESS TRANSMITTER	1
13-2	2	215941-001 RECEIVER II.2	1
13-2	3	231197-003 RECEIVER-III	1
13-2	4	215943-001 WIRELESS MONITOR II.2	1
13-2	5	215942-001 DIR. PROBE II.2	1
13-2	6	231109-001 MONITOR - MOLE MAP	1
13-2	7	215938-003 OPERATIONAL MANUAL	1
13-2	8	215940-003 VIDEO TAPE-INSTRUCTIONAL (LOCATING W/ PROBES)	1
13-2	9	213900-009 CASE FOR SPOT D TEK II	1
13-2	10	231111-003 RECEIVER-III	1
13-2	11	231110-001 SPOT-D-TEK DEEP SONDE	1
13-2	12	244935-001 HOLDER ASSY.-REMOTE MONITOR	1

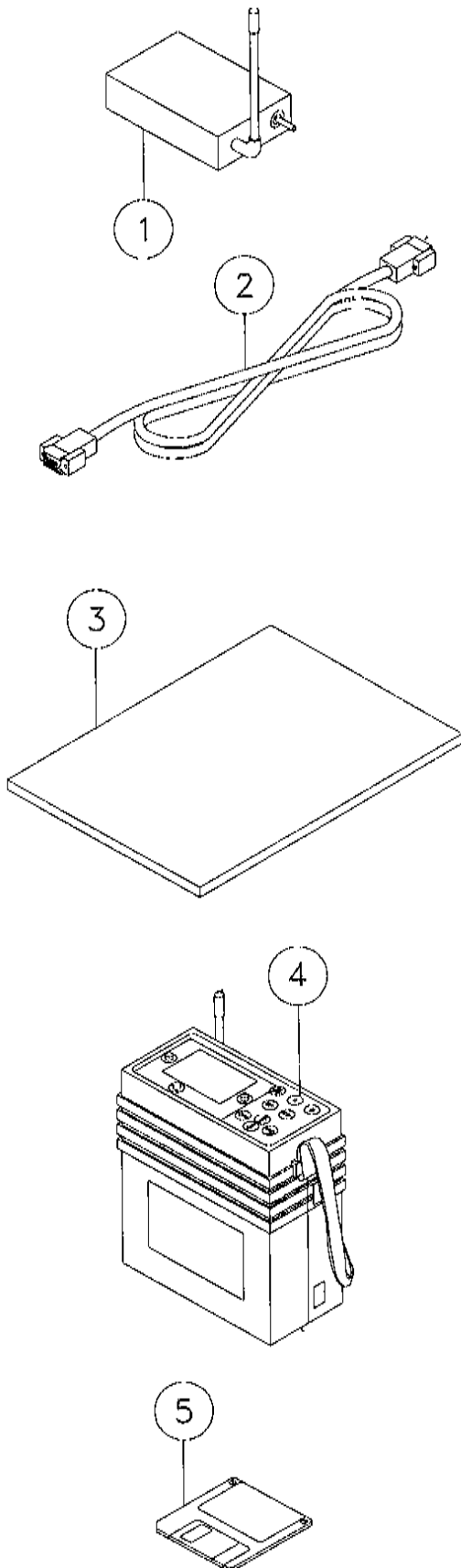
215940-001 SPOTDTEK II.2 REMOTE MON. PKG. (INC. REF. 1 & 4)
 215939-001 SPOTDTEK II.2 DIRECT.BORE PKG. (INC. REF. 2, 5 & 7-9)
 231197-001 SPOT-D-TEK III DEEP RECEIVER (INC. REF. 3 & 7-9)
 231111-001 SPOT-D-TEK IIIA DEEP REC W/REM STEERING FUNCTION (INC. REF. 7-9 & 10)

ACCESSORIES

216871-001 ANTENNA-TRANSMITTER/MONITOR
 213900-023 SUNSCREEN-RECEIVER II.2 MONIT
 213900-025 RAINCOVER-RECEIVER
 213902-011 RAINCOVER-II.2 MONITOR
 238762-001 SUNSCREEN-MOLE MAP MONITOR
 238763-001 RAIN COVER-MOLE MAP MONITOR

LOCATION PACKAGE, SPOT D TEK MOLE MAPPING SYSTEM

Figure 13-3



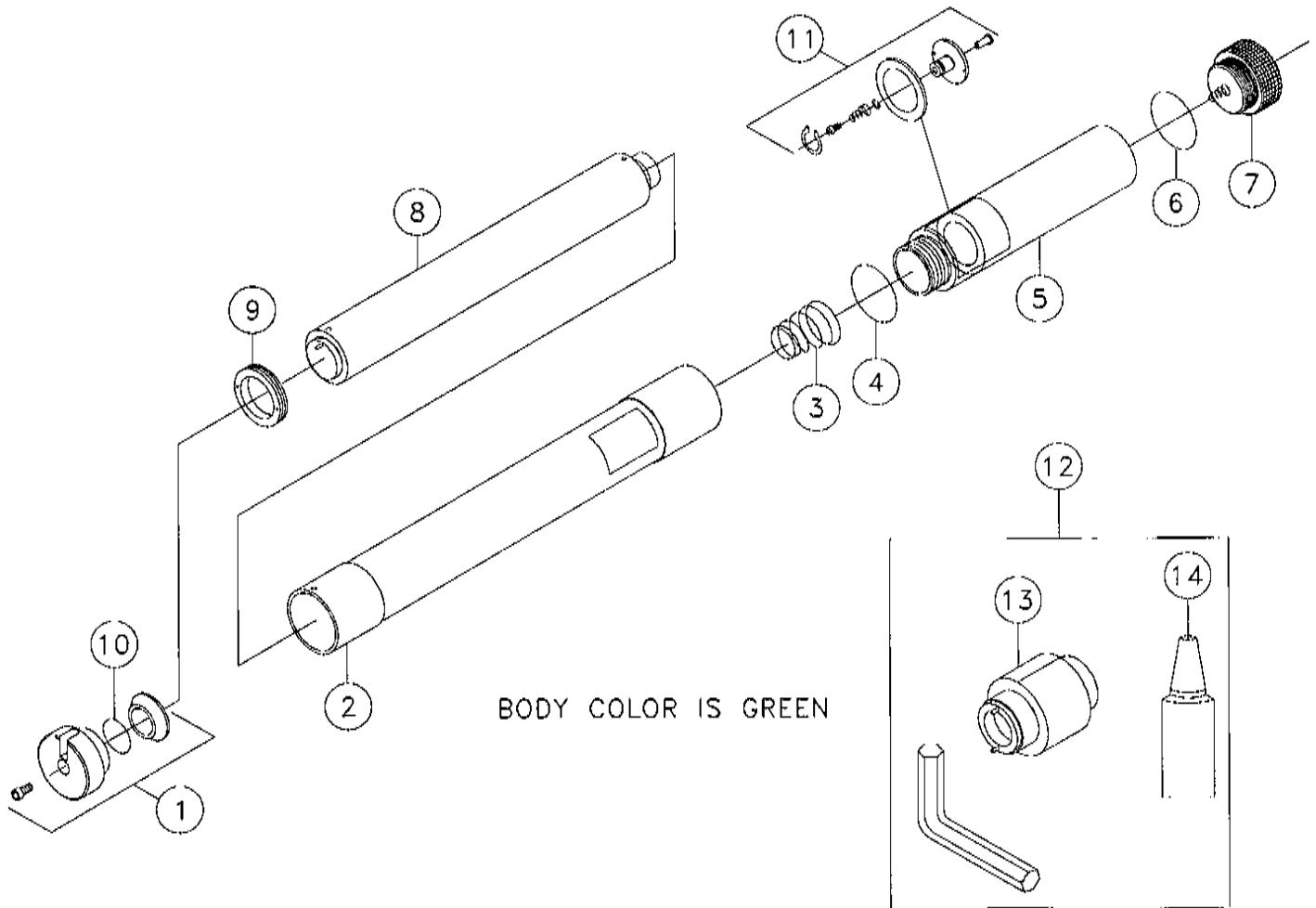
<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
13-3	1	213902-005 WIRELESS TRANSMITTER (INC. REF. 3)	1
13-3	2	231109-005 COMPUTER CORD	1
13-3	3	231109-007 OPERATIONAL MANUAL	1
13-3	4	231109-001 MONITOR-MOLE MAP	1
13-3	5	231109-003 MAPPING SOFTWARE REPLACE DISK	1
		231113-001 MAPPING SYSTEM COMPLETE (INC. REF. 1-5)	

ACCESSORIES

238763-001	RAIN COVER-MOLE MAP MONITOR
238762-001	SUNSCREEN-MOLE MAP MONITOR
216871-001	ANTENNA-TRANSMITTER/MONITOR

SPOT-D-TEK II.2 DIRECTIONAL PROBE (REPAIRABLE) COMPONENTS

Figure 13-4

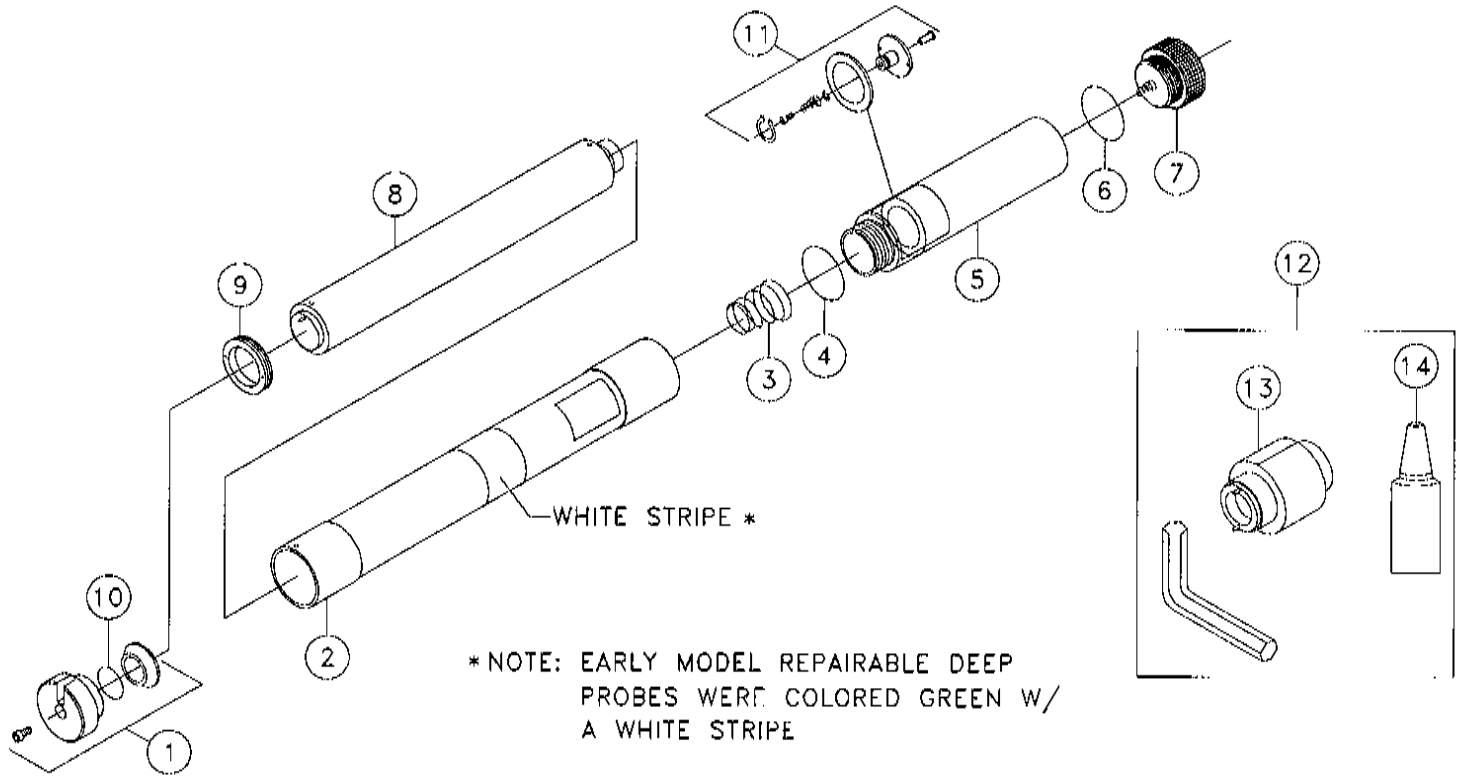


BODY COLOR IS GREEN

REF. NO.	PART NO.	DESCRIPTION	QTY.
13-4	1	215942-003 SLOTTED HEAD ASSEMBLY	1
13-4	2	215942-005 FIBER PROBE BODY 11.2	1
13-4	3	215942-007 SPRING - SUSPENSION	1
13-4	4	215942-009 O-RING	1
13-4	5	215942-011 BATTERY COMPARTMENT ASSEMBLY	1
13-4	6	215942-013 O-RING	1
13-4	7	215942-015 BATTERY CAP ASSEMBLY	1
13-4	8	215942-017 SOLID STATE ELEC. CAPSULE 11.2	1
13-4	9	215942-019 ROUND SET NUT	1
13-4	10	215942-021 O-RING	1
13-4	11	215942-023 BATTERY CONTACT ASSEMBLY	1
13-4	12	215942-025 MAINTENANCE TOOL KIT	1
13-4	13	215942-027 TOOL-CAPSULE LINE-UP	1
13-4	14	215942-029 SEALANT-SILICONE	1
	215942-001	DIR. PROBE II.2 (REPAIRABLE) (INC. ALL ITEMS IN THIS FIGURE)	

SPOT-D-TEK II.2 DEEP SONDE (REPAIRABLE) COMPONENTS

Figure 13-5



* NOTE: EARLY MODEL REPAIRABLE DEEP PROBES WERE COLORED GREEN W/ A WHITE STRIPE

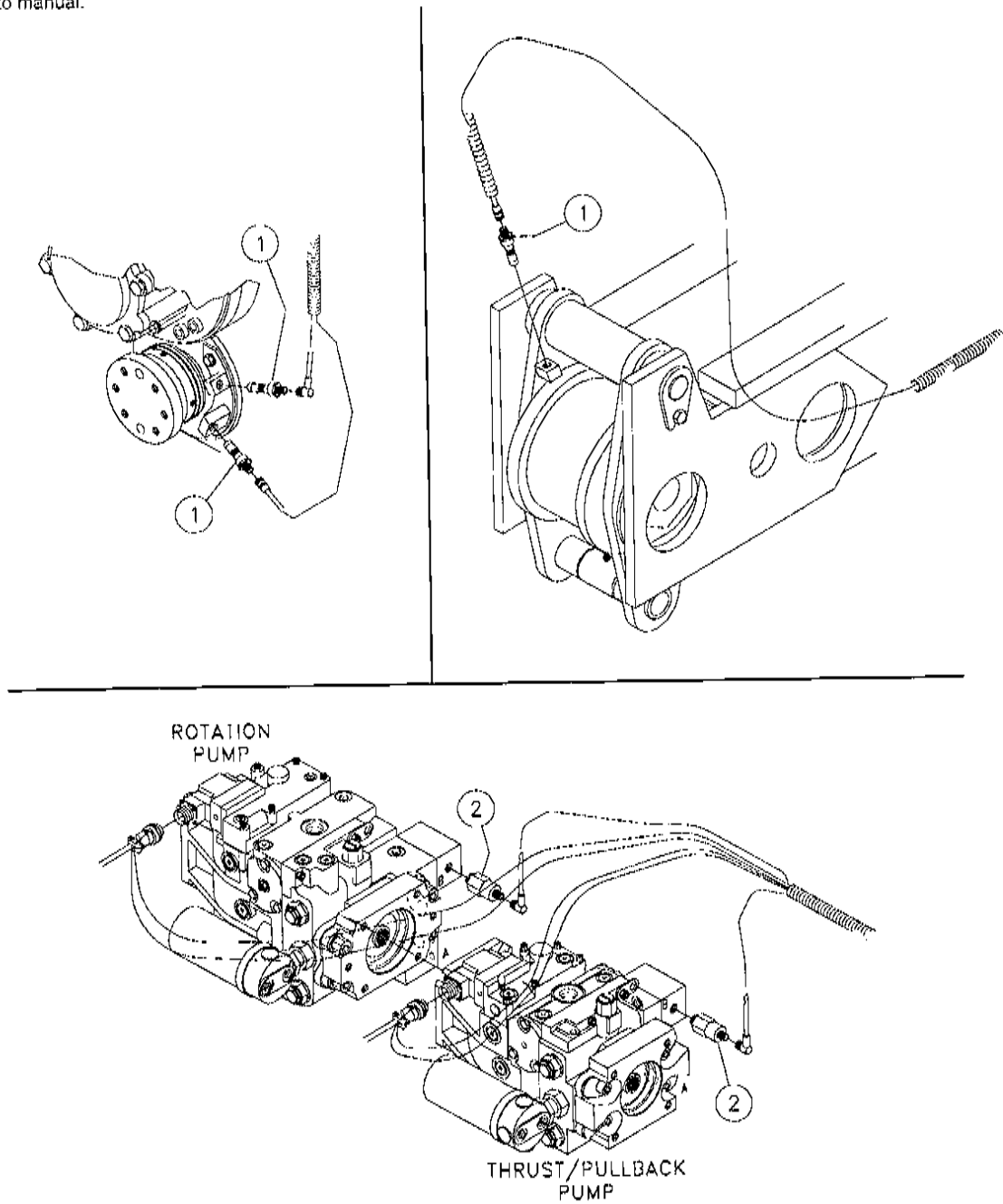
LATER MODEL REPAIRABLE DEEP PROBES ARE COLORED PURPLE W/ NO STRIPE

REF. NO.	PART NO.	DESCRIPTION	QTY.
13-5	1	215942-003 SLOTTED HEAD ASSEMBLY	1
13-5	2	231110-003 FIBER PROBE BODY 11.2 (DEEP)	1
13-5	3	215942-007 SPRING - SUSPENSION	1
13-5	4	215942-009 O-RING	1
13-5	5	215942-011 BATTERY COMPARTMENT ASSEMBLY	1
13-5	6	215942-013 O-RING	1
13-5	7	215942-015 BATTERY CAP ASSEMBLY	1
13-5	8	231110-005 SOLID STATE ELECT CAPSULE 11.2	1
13-5	9	215942-019 ROUND SET NUT	1
13-5	10	215942-021 O-RING	1
13-5	11	215942-023 BATTERY CONTACT ASSEMBLY	1
13-5	12	215942-025 MAINTENANCE TOOL KIT	1
13-5	13	215942-027 TOOL-CAPSULE LINE-UP	1
13-5	14	215942-029 SEALANT-SILICONE	1
	231110-001	SPOT-D-TEK DEEP SONDE (REPAIRABLE) (INC. ALL ITEMS IN THIS FIGURE)	

TRANSDUCER/SPEED SENSOR ASSEMBLY

Figure 14-1

Revised February 1999 due to addition of figure to manual.

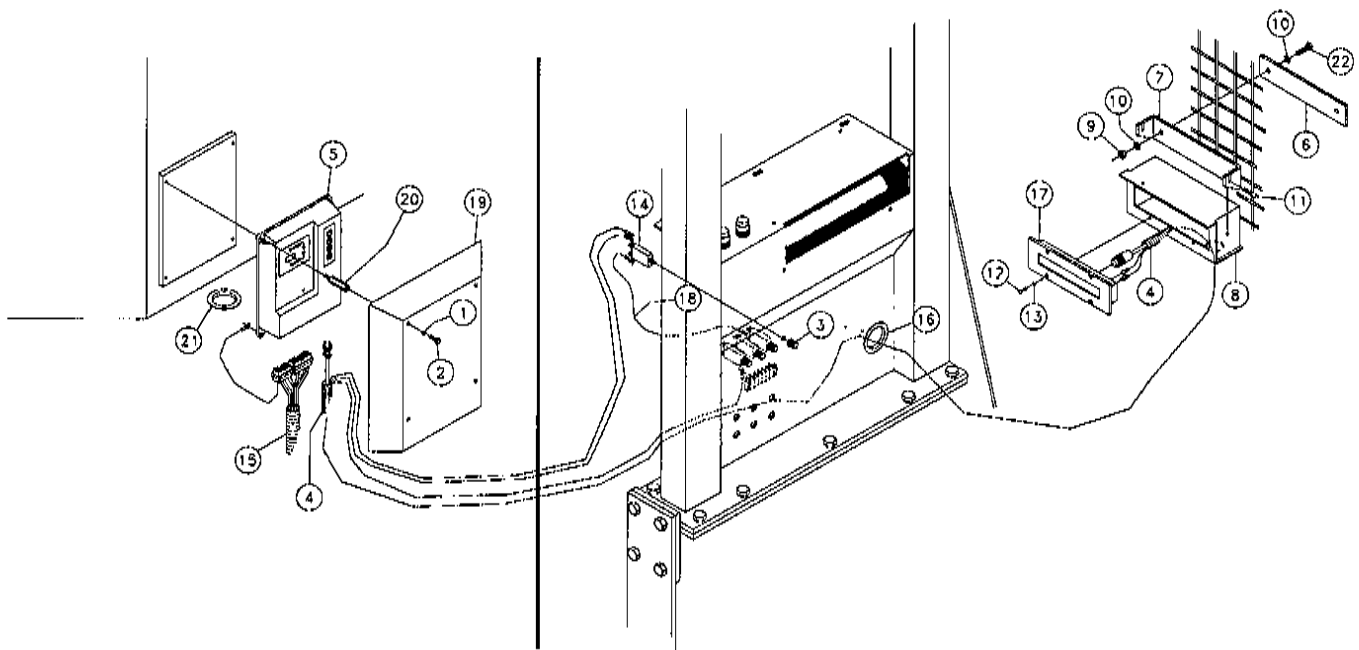


<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
14-1	1	114282-009 SPEED SENSOR	3
14-1	2	234969-001 TRANSDUCER-PRESSURE (0-6000)	2

MICROPROCESSOR ASSEMBLY

Figure 14-2

Revised July 1999 due to update in illustration & parts list. Changed/added parts marked with *.

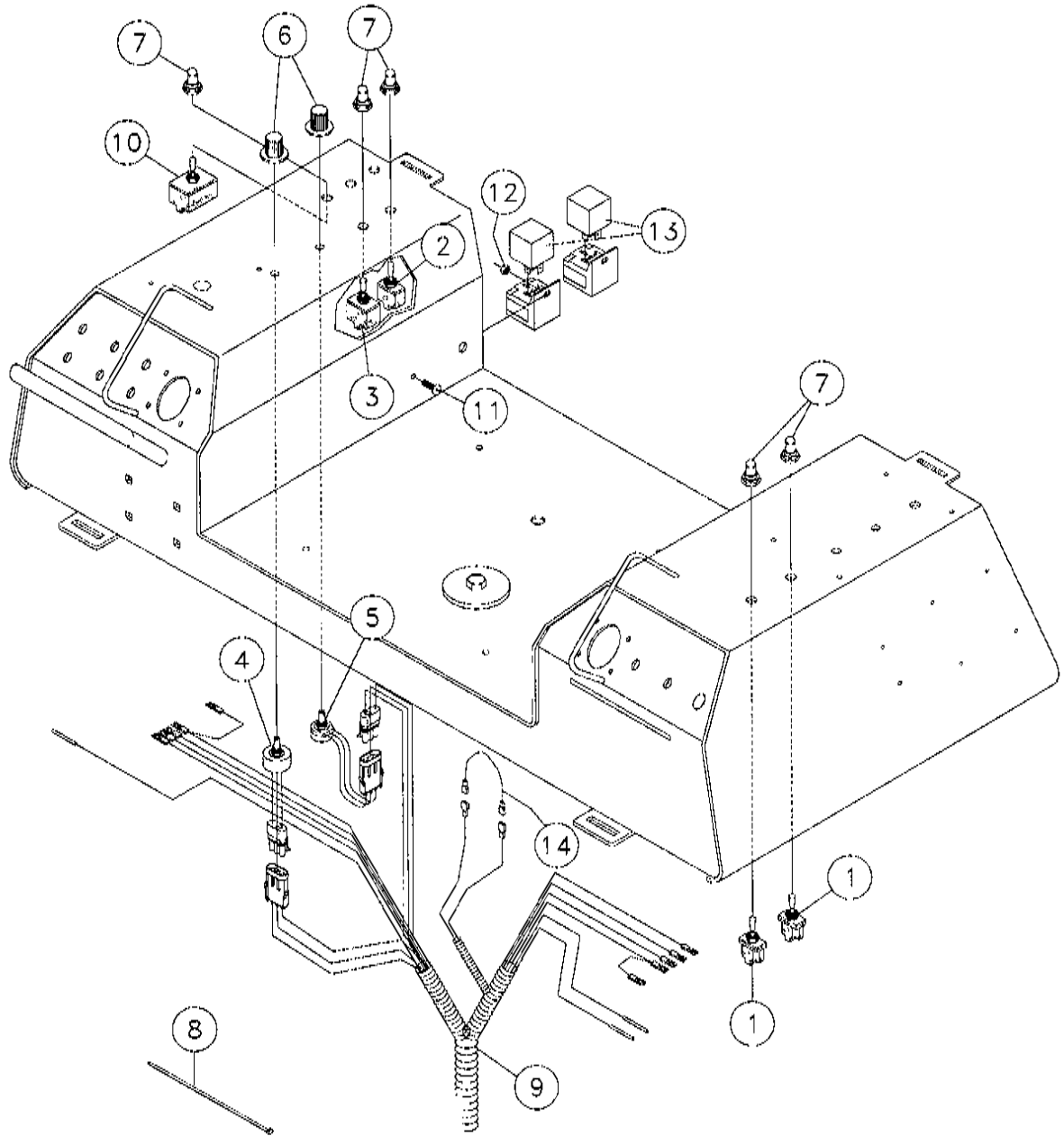


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.		
14-2	1	*235716-001	WASHER-1/4 SAE HARD ZINC PLTD	4	14-2	12	533-004	SCREW-10-24X1/2 RND.HD.SLTMACH	4
14-2	2	*235735-001	BOLT-1/4-20 X 1 GR 8 HEX ZINC PLTD	4	14-2	13	480-001	WASHER-3/16 S/T LOCK	4
14-2	3	89597-001	COVER-BREAKER SWITCH	1	14-2	14	72079-001	BREAKER-5 AMP	1
14-2	4	234869-001	DISPLY HARNESS ASSY	1	14-2	15	244495-001	HARNESS-NAVTECH WIRE	1
14-2	5	234872-001	MICROPROCESSOR ASSEMBLY	1	14-2	16	212522-003	TRIM-1/4" X 10.00	1
14-2	6	234799-001	CLAMP	1	14-2	17	601422-001	DISPLAY- 2"X 24"LCD ADJUSTABLE	1
14-2	7	234756-001	BRACKET-DISPLAY	1	14-2	18	234868-001	JUMPER ASSY-12V SUPPLY	1
14-2	8	234811-001	MOUNT-DISPLAY	1	14-2	19	*244965-001	SHIELD-DC2	1
14-2	9	*235725-001	NUT-3/8-16 GR 8 ZINC PLTD	2	14-2	20	*244964-001	BOLT-STAND OFF	4
14-2	10	*235713-001	WASHER-3/8 SAE HARD ZINC PLTD	4	14-2	21	*1863-001	REIN BOTTOM CENTER	1
14-2	11	120021-001	BOLT-1/4-20 X 3/4 THUMB SCREW	2	14-2	22	*235736-001	BOLT-3/8-16X1 1/4 ZINC PLTD	2

CONTROL PANEL ASSEMBLY - NAVTEC

Figure 14-3

Revised February 1999 due to addition of figure to manual.

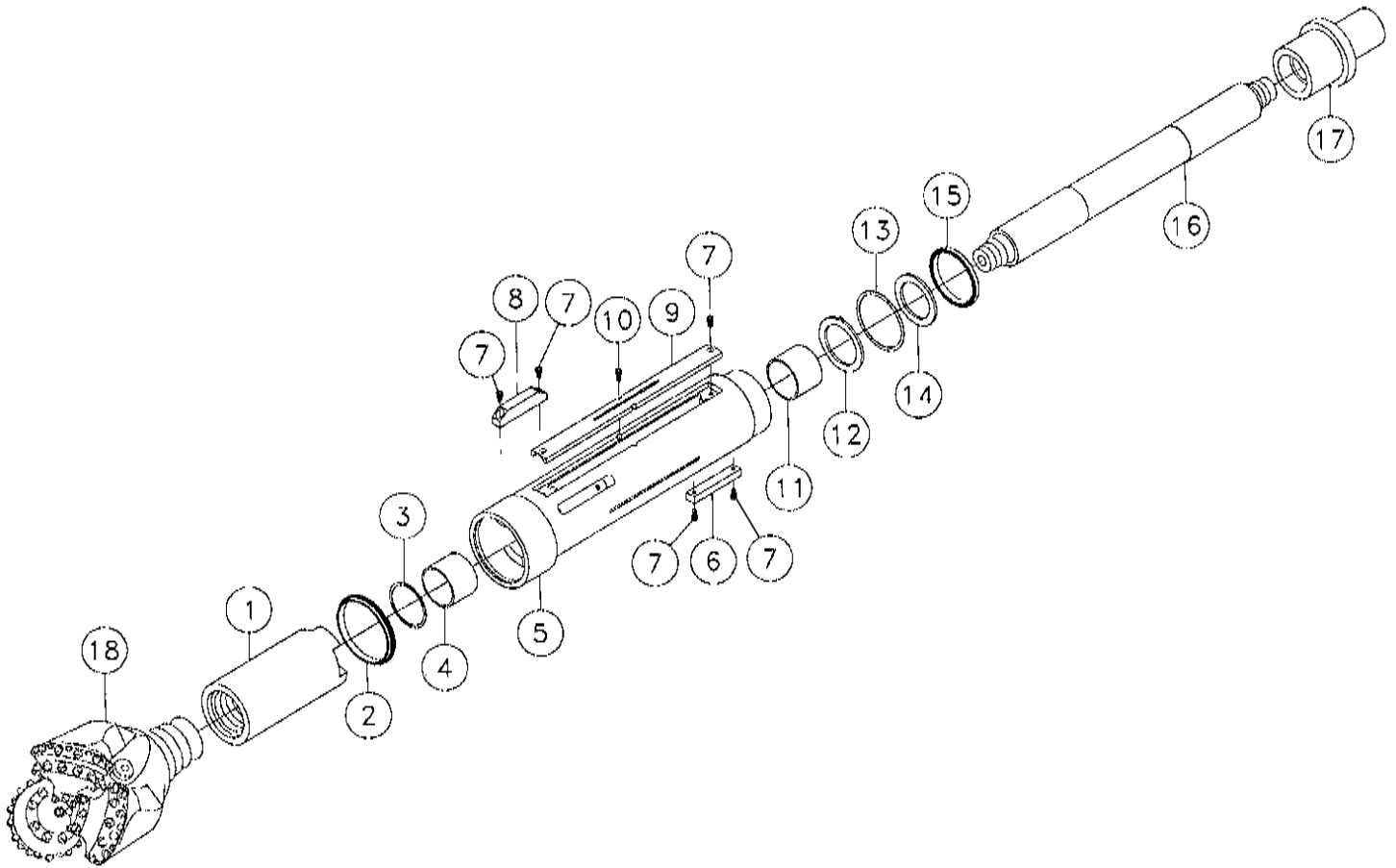


REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
14-3	1	57936-001 SWITCH-8510K2	2		58151-001 STRAP-CABLE TIE-T120R-0 15"	A/R	
14-3	2	67292-001 SWITCH-TOGGLE 8500K9 SEALED	1	14-3	9	244495-001 HARNESS-NAVTECH WIRE	1
14-3	3	67293-001 SWITCH TOGGLE 8511K14 SEALED	1	14-3	10	248035-001 SWITCH-TOGGLE ON/ON 4 POLE	1
14-3	4	234865-001 STEERING POT ASSEMBLY	1	14-3	11	1802-006 BOLT-10-24 X 3/4 RND HD STOVE	1
14-3	5	234866-001 PRESSURE SET POT ASSEMBLY	1	14-3	12	400-001 NUT-3/16 NC HEX	1
14-3	6	78114-001 CONTROL KNOB #409D2K1	2	14-3	13	219137-001 RELAY-BOSCH NO/NC 20/30 AMP	2
14-3	7	5537-001 COVER-TOGGLE SWITCH	5	14-3	14	234867-001 JUMPER ASSEMBLY SEAT	1
14-3	8	59634-001 NYLON TIE 8"	A/R				

ROCK DRILLING HEAD ASSEMBLY

Figure 15-1

Revised February 1999 due to
addition of figure to manual.



REF. NO.	PART NO.	DESCRIPTION	QTY.
15-1	1	235298-001 DRIVE SUB-LOWER	1
15-1	2	240661-001 ROD WIPER - 4 1/2 PARKER	1
15-1	3	240658-001 RETAINING RING-3.125 INTERNAL	1
15-1	4	240637-001 BEARING-ROCK HEAD FRONT	1
15-1	5	240654-001 HOUSING ASSY. (INC. REF. 4 & 11)	1
15-1	6	234943-001 SLIDER-REAR	2
15-1	7	512-006 3/8-16X3/4" SOCKET HEAD BOLT	10
15-1	8	234942-001 SLIDER-FRONT	2
15-1	9	240656-001 LID ASSEMBLY	1
15-1	10	240560-001 BOLT-5/16-18 X 3/8 SOC HD CAP	2
15-1	11	240636-001 BEARING-ROCK HEAD REAR	1
15-1	12	234976-001 THRUST WEAR PLATE	1
15-1	13	240659-001 RETAINING RING-3.875 INTERNAL	1
15-1	14	240639-001 BEARING-THRUST	1
15-1	15	240660-001 ROD WIPER- 3 1/2 PARKER	1
15-1	16	235301-001 DRIVE SHAFT - 2 5/8	1
15-1	17	235296-001 DRIVE SHAFT SUB - UPPER	1
15-1	18	240641-001 TRI CONE BIT-6 1/2" I3 CARBIDE	1

<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>				
1-18	6	350-014	7-4	9	510-021	8-3	1	2107-007	1-3	22	23261-324
3-24	6	351-012	7-5	11	510-021	8-3	6	2108-001	1-2	39	23261-756
2-8	10	375-010	8-8	26	510-025	9-1	5	2108-001	1-4	4	23261-756
4-6	2	375-010	8-6	6	510-047	1-16	5	2108-001	1-7	10	26384-001
1-11	9	375-010	1-8	11	530-001	6-5	8	2109-003	4-1	4	26452-001
8-6	13	375-014	8-8	3	549-020	2-9	9	2165-001	4-2	10	26452-001
8-8	1	375-014	1-8	14	586-001	1-1	38	2326-315	4-3	5	26452-001
2-4	9	377-012	1-12	2	586-001	1-4	2	2326-315	4-8	7	26452-001
4-9	22	377-014	1-13	8	586-001	1-1	20	2326-324	4-1	3	26453-001
4-1	14	399-001	1-14	7	586-001	1-3	22	2326-324	4-2	9	26453-001
1-18	11	399-001	1-11	7	590-001	1-1	4	2326-595	4-3	23	26453-001
4-1	6	400-001	1-8	1	593-001	1-2	4	2326-595	4-8	6	26453-001
4-2	5	400-001	7-8	6	597-001	1-3	20	2326-595	4-2	1	27148-001
4-3	29	400-001	4-3	9	598-001	1-1	4	2326-619	4-12	5	28950-001
4-8	5	400-001	8-2	14	598-001	1-2	4	2326-619	1-11	4	38884-001
4-8	16	405-001	8-8	23	598-001	1-3	4	2326-619	9-3	5	51181-001
8-8	6	407-001	6-6	4	614-027	1-1	39	2326-756	4-6	4	52864-001
4-4	5	408-001	2-11	10	620-029	1-4	4	2326-756	4-6	4	52864-003
2-11	15	415-001	2-11	29	620-105	1-1	45	2326-940	4-6	4	52864-005
1-23	16	429-001	6-1	6	730-040	1-2	45	2326-940	4-6	4	52864-007
3-26	16	429-001	2-11	7	732-007	1-4	11	2326-940	4-6	4	52864-009
4-7	5	445-001	6-4	3	732-009	2-8	22	2595-001	4-3	16	53276-001
3-6	8	480-001	1-15	18	732-009	4-8	8	2595-001	4-3	16	53276-001
4-3	28	480-001	6-1	22	732-015	4-9	23	2595-007	3-26	20	53653-006
4-7	14	480-001	10-2	5	736-007	2-10	4	2609-011	3-18	9	53658-001
4-8	4	480-001	9-3	6	792-029	2-10	3	2609-017	3-11	7	53823-001
8-8	25	483-007	7-4	24	1081-001	4-7	20	2809-001	3-12	9	53823-001
1-8	5	483-019	7-8	3	1096-005	1-23	12	3113-009	3-21	3	53823-001
8-7	7	485-007	2-11	9	1578-001	1-23	13	3115-027	3-10	8	53824-001
7-8	11	485-017	2-8	18	1580-001	1-23	5	3211-043	3-13	7	53824-001
7-8	16	485-017	6-2	18	1580-003	4-9	8	3262-027	3-21	13	53826-001
1-5	5	485-025	2-8	1	1580-011	10-2	4	3379-001	3-8	14	53828-001
1-6	1	485-025	1-20	3	1706-007	1-8	7	3967-001	3-13	2	53828-001
1-6	8	485-025	1-8	9	1715-011	2-9	8	4017-001	3-21	20	53828-001
2-4	10	485-025	1-20	15	1715-013	4-7	8	4153-001	3-31	8	53828-001
3-8	3	485-025	1-20	19	1715-085	3-30	7	4235-001	3-30	6	53829-001
3-9	3	485-025	1-12	5	1715-091	1-23	15	4350-001	3-14	1	53832-001
4-3	3	485-025	1-13	14	1715-091	4-8	15	4473-006	3-7	22	53835-001
4-9	21	485-025	1-14	15	1715-091	4-4	8	4474-004	3-9	12	53835-001
5-1	20	485-025	1-8	8	1716-011	4-8	9	4475-006	3-29	6	53835-001
6-2	4	485-025	1-20	20	1716-099	8-8	13	4475-012	3-13	12	53837-001
6-4	9	485-025	1-12	4	1716-153	2-3	5	4478-014	3-11	8	53842-047
6-5	10	485-025	1-13	13	1716-153	4-8	10	4536-001	3-30	17	53842-047
7-4	11	485-025	1-14	14	1716-153	1-11	10	4536-001	3-7	3	53842-089
7-5	17	485-025	3-24	1	1788-033	4-7	9	4542-005	3-17	3	53842-089
7-8	15	485-025	1-18	8	1789-001	1-20	14	4771-061	2-2	18	53842-281
8-2	11	485-025	4-7	27	1789-007	4-3	19	5537-001	3-30	20	53842-291
8-8	8	485-025	8-8	10	1789-013	4-12	2	5537-001	3-32	6	53842-291
1-11	3	485-025	8-3	2	1794-003	3-22	20	5553-001	3-22	18	53843-003
1-13	2	485-025	4-7	21	1794-007	2-1	7	5902-001	3-23	9	53843-003
1-14	20	485-025	3-6	8	1802-006	1-8	12	6702-003	3-22	17	53843-031
1-15	3	485-025	4-1	10	1802-006	1-8	6	6706-001	3-23	10	53843-031
1-19	9	485-025	4-3	17	1802-006	1-6	6	6716-001	8-4	10	53843-039
1-20	30	485-025	4-7	15	1802-006	4-8	18	10530-012	8-7	13	53843-039
11-2	30	485-025	4-8	3	1802-006	1-18	10	10530-012	3-16	10	53843-057
2-11	21	485-025	4-1	5	1802-010	2-11	8	11384-001	3-19	9	53843-057
3-10	1	485-025	4-2	6	1802-010	2-2	4	11981-001	8-4	3	53843-061
3-11	5	485-025	4-3	27	1802-010	1-7	11	12698-001	8-6	18	53843-061
3-12	6	485-025	4-10	8	1803-019	1-23	14	15164-001	4-2	8	53843-133
3-14	3	485-025	1-6	11	1803-051	1-23	17	15694-001	6-1	19	53843-133
3-25	2	485-025	6-2	9	1830-059	3-20	2	16114-034	3-10	12	53843-145
3-26	15	485-025	6-5	6	1830-059	8-2	16	18150-001	3-17	13	53843-145
3-28	2	485-025	8-2	9	1835-033	1-14	2	18150-001	8-4	6	53843-163
4-10	11	485-025	1-11	6	1835-099	3-25	3	18150-001	8-7	15	53843-163
1-12	10	510-005	6-2	10	1838-001	4-10	2	20666-001	7-3	18	53843-201
1-13	6	510-005	6-5	7	1838-001	4-8	13	21285-001	7-7	4	53843-201
1-15	9	510-005	9-1	12	1838-001	1-2	38	23261-315	8-4	11	53843-201
1-10	7	510-011	4-3	7	1865-015	1-4	2	23261-315	8-6	12	53843-201
7-7	2	510-017	3-32	5	1865-055	1-2	20	23261-324	8-4	4	53843-205

(PAGE 2) D40X40/NAVTEC NAVIGATOR INDEX

<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>				
8-6	19	53843-205	3-7	21	53846-019	7-3	19	59401-001	3-19	6	67291-001
7-3	17	53843-215	3-29	10	53846-019	3-30	11	59401-001	4-3	18	67292-001
7-7	5	53843-215	3-30	14	53846-059	3-30	24	59407-001	4-12	1	67292-001
8-4	7	53843-231	3-29	9	53846-069	3-9	14	59410-001	3-7	31	67570-001
8-5	4	53843-231	3-7	23	53846-223	3-18	2	59410-001	3-8	24	67745-001
8-4	9	53843-233	3-9	13	53846-223	3-21	9	59410-001	3-9	20	67745-001
8-7	12	53843-233	3-7	6	53846-249	3-12	15	59411-001	5-1	16	67846-003
8-8	34	53843-233	3-29	11	53846-249	3-7	28	59417-001	7-4	19	67846-003
3-8	8	53843-237	3-21	1	53846-465	3-8	18	59423-001	7-5	20	67846-003
3-19	11	53843-237	3-32	13	53846-465	6-1	18	59423-001	7-6	13	67846-003
3-15	9	53843-239	3-30	9	53871-001	7-7	3	59423-001	7-7	9	67846-003
3-16	8	53843-239	3-13	1	56218-001	3-22	9	59423-001	8-6	14	67846-003
3-27	4	53843-251	4-1	15	57200-001	3-23	5	59423-001	8-7	10	67846-003
3-12	3	53843-253	1-23	2	57300-001	3-27	5	59423-001	8-8	19	67846-003
3-15	10	53843-253	2-8	19	57706-001	3-9	6	59426-001	3-24	7	67846-003
3-16	12	53843-253	7-3	5	57940-057	3-9	10	59426-001	7-4	20	67846-005
3-19	1	53843-253	3-30	21	57940-057	7-3	8	59426-001	7-5	21	67846-005
8-4	5	53843-257	7-3	12	57940-167	7-5	3	59426-001	7-6	14	67846-005
8-7	14	53843-257	7-6	9	57940-167	7-6	11	59426-001	7-7	10	67846-005
3-23	12	53843-257	7-3	9	57940-289	11-2	20	59426-001	8-6	3	67846-005
3-28	10	53843-257	3-22	14	57940-289	11-3	6	59426-001	8-7	11	67846-005
3-19	8	53843-325	11-2	25	57940-293	3-22	8	59426-001	8-8	37	67846-005
3-30	22	53843-325	11-3	8	57940-361	3-25	9	59426-001	2-8	15	68125-001
3-27	9	53843-395	3-9	11	57940-375	3-8	30	59928-001	3-25	10	68209-023
3-30	23	53843-395	3-18	8	57940-375	7-4	3	59928-001	1-23	1	68573-001
3-17	19	53843-539	11-3	12	57940-451	8-5	3	59928-001	1-23	8	68574-001
3-24	3	53843-539	3-17	10	57940-451	3-18	11	59928-001	1-23	4	68577-001
8-4	8	53843-573	3-7	16	57940-467	3-12	2	60248-001	1-23	6	68578-001
8-8	29	53843-573	3-22	15	57940-467	3-30	10	60718-001	1-23	3	68579-001
3-28	5	53843-615	7-4	5	57940-479	3-31	2	60718-001	1-23	9	68580-003
3-10	11	53843-659	7-5	4	57940-479	11-2	21	60906-001	1-23	11	68581-001
3-23	11	53843-659	7-3	13	57940-485	3-23	8	60906-001	1-23		68582-001
3-22	19	53843-689	7-5	7	57940-485	3-7	5	60907-001	9-1	9	68634-001
3-27	2	53843-689	3-9	17	57940-501	3-8	12	60907-001	3-8	6	68774-001
7-3	7	53843-691	3-18	7	57940-501	3-14	6	60907-001	7-4	16	68774-001
3-17	12	53843-691	11-3	11	57940-513	3-16	17	60907-001	11-2	24	68774-001
3-11	2	53843-709	7-3	14	57940-547	3-21	5	60907-001	3-18	6	68774-001
3-12	4	53843-709	7-4	17	57940-547	3-22	5	60907-001	7-4	4	68787-001
8-8	31	53843-717	11-3	9	57940-575	3-29	4	60907-001	7-5	8	68787-001
3-17	22	53843-721	7-6	10	57940-589	3-30	5	60907-001	7-6	3	68787-001
3-24	10	53843-721	7-4	7	57940-617	3-30	8	60910-001	3-25	12	68787-001
8-8	32	53843-729	3-17	21	57940-663	8-4	2	61497-001	4-1	15	69759-001
3-13	13	53844-061	3-25	13	57940-663	3-7	9	61500-001	4-8	19	69759-001
3-21	15	53844-061	3-17	20	57940-665	3-16	6	61703-001	1-6	10	69908-001
3-14	2	53844-131	3-25	14	57940-665	3-29	5	61703-001	1-1	16	700IA-260
3-30	15	53844-131	11-2	22	57940-699	4-2	17	63579-001	1-2	16	700IA-260
3-17	4	53844-155	11-2	13	57940-715	4-8	12	64075-001	1-3	17	700IA-260
3-22	13	53844-155	3-7	10	57940-747	1-21	10	64078-025	1-1	6	700IA-262
9-1	8	53844-167	3-23	13	57940-747	1-22	10	64078-025	1-2	6	700IA-262
3-7	29	53845-007	3-7	17	57949-001	1-21	11	64078-027	1-3	6	700IA-262
3-12	10	53845-007	3-8	10	57950-001	1-22	11	64078-027	1-1	24	700IA-265
3-18	1	53845-041	7-3	20	57950-001	1-9	4	64109-001	1-2	24	700IA-265
3-30	19	53845-041	3-22	11	57950-001	2-2	14	64111-001	1-3	26	700IA-265
3-8	15	53845-083	3-28	4	57950-001	11-3	5	65563-001	1-1	28	700IA-266
3-30	16	53845-083	8-5	1	57967-001	3-17	7	65563-001	1-2	28	700IA-266
3-7	30	53845-389	3-17	5	57967-001	3-28	9	65564-001	1-3	30	700IA-266
3-9	15	53845-389	3-8	16	57968-001	3-9	16	65565-001	1-1	13	700IA-267
3-11	10	53845-615	8-5	5	57968-001	3-13	4	65565-001	1-2	13	700IA-267
3-12	12	53845-615	8-6	16	57968-001	3-17	9	65565-001	1-3	14	700IA-267
3-15	5	53845-615	8-7	4	57968-001	3-21	21	65565-001	1-1	5	700IA-268
3-16	14	53845-615	8-8	12	57968-001	11-2	8	65569-001	1-2	5	700IA-268
3-15	6	53845-773	3-17	8	57968-001	11-3	7	65569-001	1-3	5	700IA-268
3-26	12	53845-773	3-20	4	57968-001	7-3	4	65570-001	1-1	9	700IA-269
3-15	8	53845-779	3-22	10	57968-001	3-25	17	65570-001	1-2	9	700IA-269
3-26	7	53845-779	3-24	4	57968-001	4-2	17	66462-001	1-3	10	700IA-269
3-9	22	53845-791	3-27	3	57968-001	2-11	25	66695-001	1-1	12	700IA-270
3-31	7	53845-791	1-23	7	58138-001	4-2	14	66816-001	1-2	12	700IA-270
3-7	14	53846-001	7-7	6	58295-001	3-20	5	66996-001	1-3	13	700IA-270
3-8	13	53846-001	3-23	7	58295-001	3-16	11	67291-001	1-2	11	700IA-325

<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>				
1-3	12	700IA-325	1-2	36	7000A-510	4-2	1	70889-001	1-15	15	86104-233
1-2	33	700IA-392	1-3	38	7000A-510	3-15	18	71220-007	1-13	4	86104-363
1-3	35	700IA-392	1-1	25	7000A-741	3-26	9	71220-007	1-15	11	86104-363
1-4	6	700IA-392	1-2	25	7000A-741	3-8	9	72056-001	2-5	8	86113-001
8-3	9	700IA-392	1-3	27	7000A-741	3-9	9	72056-001	4-8	14	86217-001
1-2	32	700IA-393	1-1	34	7000A-745	3-18	12	72056-001	9-1	7	86235-001
1-3	34	700IA-393	1-2	34	7000A-745	3-22	6	72056-001	3-22	7	86235-001
1-2	31	700IA-394	1-3	36	7000A-745	4-2	15	72079-001	4-2	16	86575-001
1-3	33	700IA-394	1-4	14	7000A-745	4-1	16	72082-001	4-3	21	86579-001
1-2	7	700IA-395	1-1	40	7000A-814	3-8	21	72895-001	4-2	3	86581-001
1-3	7	700IA-395	1-2	40	7000A-814	3-9	21	72895-001	4-8	11	86582-001
1-1	18	700IA-401	1-4	5	7000A-814	3-10	6	72895-001	3-7	1	86669-001
1-2	18	700IA-401	1-1	46	7000A-858	1-19	3	72897-001	8-4	1	88545-001
1-3	19	700IA-401	1-2	46	7000A-858	3-10	15	72898-001	3-17	2	88659-001
1-1	29	700IA-473	1-4	12	7000A-858	3-10	14	73114-001	1-23	10	88978-001
1-2	29	700IA-473	1-1	37	7000A-864	4-9	20	75382-001	1-23	18	88979-001
1-3	31	700IA-473	1-4	13	7000A-864	5-1	4	75382-001	4-1	7	89597-001
1-1	15	700IA-477	1-1	3	7000A-883	6-1	17	75493-001	4-2	4	89597-001
1-2	15	700IA-477	1-2	3	7000A-883	3-29	7	77155-001	1-9	1	90393-001
1-3	16	700IA-477	1-3	3	7000A-883	3-32	8	77734-001	3-21	2	94161-001
1-1	14	700IA-490	1-4	3	7000A-883	2-2	19	77735-001	3-7	7	94565-001
1-2	14	700IA-490	1-1	30	7000A-975	4-2	13	77964-001	2-9	7	96072-001
1-3	15	700IA-490	1-2	30	7000A-975	3-11	11	78057-001	3-6	10	96291-001
1-1	35	700IA-509	1-3	39	7000A-975	3-12	11	78057-001	2-6	8	96424-001
1-2	35	700IA-509	1-2	41	7000I-044	3-15	4	78057-001	4-3	11	97389-007
1-3	37	700IA-509	1-4	7	7000I-044	2-2	20	78062-001	2-8	4	97456-001
1-1	19	700IA-624	1-2	21	7000I-098	4-3	20	78104-001	2-9	4	97456-001
1-2	19	700IA-624	1-2	43	7000I-530	4-1	8	78107-001	2-6	9	97874-003
1-3	21	700IA-624	1-4	9	7000I-530	4-2	21	78107-001	1-12	13	98422-001
1-1	49	700IA-771	5-2	2	7000I-530	4-3	10	78114-001	1-13	4	98422-001
1-2	49	700IA-771	1-2	42	7000I-563	2-11	22	78171-001	1-15	11	98422-001
1-3	32	700IA-771	1-4	8	7000I-563	3-6	9	78544-001	1-15	15	98422-001
1-1	27	700IA-804	8-3	8	7000I-563	3-7	4	79498-001	2-6	14	98436-001
1-3	29	700IA-804	1-1	41	70000-044	3-11	9	81212-001	2-1	13	98678-001
1-12	27	700IA-804	1-4	7	70000-044	3-15	14	81212-001	3-6	5	98681-001
1-1	10	700IA-807	1-1	21	70000-098	3-16	13	81212-001	4-2	11	98933-001
1-2	10	700IA-807	1-3	23	70000-098	3-10	10	81342-001	4-1	9	98937-001
1-3	11	700IA-807	10-3	13	70000-340	3-17	11	81342-001	2-11	23	99998-001
1-1	8	700IA-808	1-1	43	70000-530	3-23	6	81342-001	2-2	17	100351-001
1-2	8	700IA-808	5-2	2	70000-530	3-30	13	81342-001	1-9	5	100372-001
1-3	8	700IA-808	11-4	9	70000-530	3-16	9	81343-001	2-9	6	100488-001
1-2	37	700IA-864	1-1	42	70000-563	3-19	7	81343-001	6-4	6	100875-001
1-4	13	700IA-864	1-4	8	70000-563	4-2	2	81374-001	3-7	15	102115-001
1-1	48	700IA-966	8-3	8	70000-563	3-7	8	81581-001	2-8	17	102118-001
1-2	48	700IA-966	1-1	2	70000-614	3-6	6	81590-001	2-11	24	102995-001
1-3	40	700IA-966	1-2	2	70000-614	4-2	19	81665-001	2-2	10	102996-001
1-1	23	700IB-001	1-3	2	70000-614	3-32	7	81698-001	2-1	2	103000-001
1-2	23	700IB-001	1-1	2	70000-615	3-7	24	81704-001	2-2	3	103005-001
1-3	25	700IB-001	1-2	2	70000-615	3-8	5	81902-001	2-2	2	103006-001
1-1	26	7000A-027	1-3	9	70000-615	3-9	8	81902-001	2-2	1	103007-001
1-2	26	7000A-027	6-3	14	70000-675	8-8	28	82930-001	2-1	11	103011-001
1-3	28	7000A-027	10-2	8	70000-685	3-19	10	82930-001	2-2	11	103027-001
6-3	14	7000A-027	1-1	1	70000-775	8-5	2	82931-001	3-11	1	103058-001
1-1	11	7000A-325	1-2	1	70000-775	8-6	17	82931-001	3-12	1	103058-001
1-3	12	7000A-325	1-3	1	70000-775	3-17	6	82931-001	4-3	13	103202-001
1-1	33	7000A-392	1-1	44	70000-834	7-4	2	83015-001	2-2	11	104063-001
1-3	35	7000A-392	1-2	44	70000-834	3-8	23	83635-001	2-1	12	104067-001
1-4	6	7000A-392	1-4	10	70000-834	3-9	24	83635-001	2-1	12	104068-001
8-3	9	7000A-392	1-1	22	70000-939	3-26	5	83638-001	2-1	5	104071-001
1-1	32	7000A-393	1-2	22	70000-939	1-21	12	83651-025	2-1	6	104073-001
1-3	34	7000A-393	1-3	24	70000-939	1-22	12	83651-025	2-1	6	104074-001
1-1	31	7000A-394	10-3	14	70000-944	1-21	3	84550-029	4-5	8	105400-P92
1-3	33	7000A-394	3-12	14	70008-001	1-22	3	84550-029	4-5	9	105400-P94
1-1	7	7000A-395	3-15	11	70008-001	3-8	1	85642-163	4-5	10	105400-P95
1-3	7	7000A-395	3-16	4	70008-001	3-9	1	85642-163	2-9	11	106640-001
1-1	17	7000A-508	3-26	6	70008-001	3-7	11	85657-001	2-1	11	107606-001
1-2	17	7000A-508	3-7	2	70029-001	3-7	13	85661-001	3-30	12	108484-001
1-3	18	7000A-508	7-6	7	70070-003	4-3	4	85790-003	2-6	9	110479-001
1-1	36	7000A-510	1-19	6	70096-001	1-12	13	86104-233	11-2	18	117452-001

(PAGE 4) D40X40/NAVTEC NAVIGATOR INDEX

<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>				
4-9	14	119512-001	5-2	3	210783-001	13-4	6	215942-013	4-4	7	219186-003
7-4	15	122605-001	5-2	4	210783-003	13-5	6	215942-013	4-4	10	219380-001
7-5	6	122605-001	5-2	4	210783-005	13-4	7	215942-015	2-3	6	220075-001
7-3	16	122606-001	5-2	4	210783-007	13-5	7	215942-015	2-1	1	220162-003
7-4	6	122606-001	5-2	4	210783-009	13-4	8	215942-017	2-1	3	220162-009
11-2	19	122606-001	5-2	5	210784-001	13-4	9	215942-019	2-2	7	220162-023
6-7	2	123595-001	5-2	4	210785-001	13-5	9	215942-019	2-2	6	220162-025
6-7	1	123596-001	10-2	6	211713-001	13-4	10	215942-021	2-1	7	220162-039
8-8	30	131007-001	12-1	6	213086-001	13-5	10	215942-021	2-4	3	220165-001
8-6	11	131008-001	12-2	6	213086-001	13-4	11	215942-023	2-12	2	220166-005
4-5	4	142410-001	12-3	6	213086-001	13-5	11	215942-023	2-12	3	220166-007
4-5	6	142423-001	12-1	6	213389-005	13-4	12	215942-025	2-12	4	220166-009
4-5	5	142954-001	12-2	6	213389-005	13-5	12	215942-025	2-9	2	220167-001
3-11	3	200873-001	12-3	6	213389-005	13-4	13	215942-027	2-1	7	220171-001
3-12	5	200873-001	12-1	5	213389-007	13-5	13	215942-027	2-4	15	220203-001
3-17	18	201482-001	12-2	5	213389-007	13-4	14	215942-029	4-4	14	220238-001
4-2	12	201793-001	12-3	5	213389-007	13-5	14	215942-029	1-20	9	220487-001
4-4	1	203254-001	12-1	4	213389-009	13-2	4	215943-001	1-20	5	220488-001
6-2	21	204721-001	12-2	4	213389-009	4-1	11	215991-001	1-20	17	220489-001
10-3	2	204933-005	12-3	4	213389-009	4-1	11	215992-001	1-20	6	220493-001
10-3	3	204933-007	12-1	1	213389-011	4-1	13	215992-001	6-3	4	220639-001
10-3	5	204933-011	12-2	1	213389-011	4-1	11	215993-001	2-2	8	220681-013
10-3	7	204933-015	12-3	1	213389-011	4-1	13	215993-001	2-1	7	220681-017
10-3	10	204933-021	13-1	1	213900-003	4-1	11	215994-001	2-1	7	220681-019
10-3	12	204933-023	13-1	4	213900-007	4-1	12	215995-001	2-1	7	220681-021
10-2	3	205154-003	13-1	9	213900-009	4-1	12	215996-001	2-1	7	220681-023
10-2	2	205154-005	13-2	9	213900-009	4-1	12	215997-001	2-1	2	220681-025
10-2	1	205154-007	13-1	3	213900-013	4-1	12	215998-001	2-1	1	220681-027
10-2	7	205154-011	13-1	5	213900-015	7-4	8	216447-001	2-1	3	220681-031
10-3	8	207042-001	13-1	1	213900-019	7-5	10	216447-001	9-1	10	221503-001
10-3	16	207368-001	13-1	8	213900-021	1-15	7	216547-001	9-1	11	221504-001
10-3	17	207369-001	13-2		213900-023	1-20	37	216547-001	6-6	5	221511-001
5-1	19	208065-001	13-2		213900-025	1-14	16	216591-003	10-3	6	221593-001
1-21	2	208148-001	13-2	1	213902-005	1-12	7	216596-001	10-3	4	221594-001
1-22	2	208148-001	13-3	1	213902-005	1-13	10	216596-001	12-1	6	221643-001
1-21	5	208151-001	13-2		213902-011	1-14	9	216596-001	12-2	6	221643-001
1-22	5	208151-001	1-9	3	214045-001	1-11	5	216620-001	12-3	6	221643-001
1-21	6	208152-001	2-10	2	214087-001	1-13	3	216658-001	12-2	7	221658-001
1-22	6	208152-001	1-20	23	214202-001	1-15	4	216667-001	12-3	7	221658-001
1-21	4	208157-001	4-7	7	214242-001	1-20	34	216667-001	12-1	6	221806-001
1-22	4	208157-001	4-9	9	214360-001	3-24	2	216681-001	12-2	6	221806-001
1-21	21	208163-001	4-3	6	215200-001	3-24	9	216682-001	12-3	6	221806-001
1-22	21	208163-001	1-20	22	215350-001	3-25	8	216695-001	7-5	13	222426-001
1-21	22	208164-001	10-3	1	215399-001	1-12	1	216712-003	8-6	5	222815-001
1-22	22	208164-001	6-1	13	215426-001	1-13	11	216713-003	1-18	12	223987-001
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10-2	13	208566-003	6-2	11	215462-001	3-25	4	216722-001	1-13	16	224250-001
10-2	9	208567-001	4-12	3	215861-001	1-14	12	216723-001	1-14	19	224250-001
10-2	10	208569-001	13-1		215938-001	3-25	15	216724-001	1-12	8	224265-001
10-2	11	208570-001	13-1	7	215938-003	4-3	1	216741-003	1-13	9	224265-001
10-2	12	208599-001	13-2	7	215938-003	1-12	11	216742-001	1-14	10	224265-001
10-3	15	209225-001	13-2		215939-001	1-13	5	216742-001	3-26	2	224268-001
4-3	12	210082-001	13-2		215940-001	1-15	10	216742-001	1-15	14	224277-001
6-3	13	210779-001	13-2	8	215940-003	1-15	6	216747-001	3-24	5	224278-001
6-3	13	210779-005	13-1	2	215941-001	1-20	36	216747-001	3-27	11	224291-001
5-2	6	210780-001	13-2	2	215941-001	1-20	38	216748-001	3-15	3	224292-001
5-2	6	210780-003	13-1	6	215942-001	1-15	5	216749-001	2-3	4	224297-001
5-2	6	210780-005	13-2	5	215942-001	1-20	35	216749-001	1-12	3	224299-001
5-2	6	210780-007	13-4		215942-001	13-2		216871-001	1-13	12	224299-001
5-2	6	210780-009	13-4	1	215942-003	13-3		216871-001	1-14	13	224299-001
5-2	6	210780-011	13-5	1	215942-003	3-15	17	217034-003	3-16	3	224307-001
5-2	6	210780-013	13-4	2	215942-005	3-26	8	217034-003	8-8	14	224325-001
5-2	4	210781-001	13-4	3	215942-007	4-1	1	217231-001	8-8	5	224327-001
5-2	3	210782-001	13-5	3	215942-007	1-8	10	217479-003	1-16	4	224331-001
5-2	3	210782-003	13-4	4	215942-009	5-1	13	217967-001	8-8	2	224334-001
5-2	3	210782-005	13-5	4	215942-009	4-9	19	218260-001	1-16	8	224340-001
5-2	3	210782-007	13-4	5	215942-011	6-3	1	219110-007	1-10	1	224356-001
5-2	3	210782-009	13-5	5	215942-011	4-4	4	219186-001	8-8	20	224361-001

<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>				
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3-31	6	224400-001	8-8	7	227847-001	13-3	2	231109-005	2-1	10	234218-011
3-31	6	224400-003	3-25	7	227852-001	13-3	3	231109-007	2-2	5	234218-013
3-31	6	224400-005	3-25	6	227854-001	13-2	11	231110-001	2-2	5	234218-015
3-31	4	224404-001	2-11	16	227859-001	13-5		231110-001	2-2	5	234218-017
3-10	21	224430-001	2-11	20	227861-001	13-5	2	231110-003	2-2	8	234218-019
3-25	11	224445-001	8-8	21	227863-001	13-5	8	231110-005	2-2	9	234218-021
3-26	4	224478-001	1-10	2	227871-001	13-2		231111-001	2-2	9	234218-023
8-3	5	224479-001	8-7	1	227880-001	13-2	10	231111-003	2-2	12	234218-025
8-3	5	224479-001	8-3	3	227885-001	13-3		231113-001	2-2	13	234218-027
2-1	4	224558-009	8-2	8	227899-001	13-2		231197-001	2-2	13	234218-029
2-10	1	224846-001	8-2	4	227900-001	13-2	3	231197-003	2-4	5	234238-001
2-9	1	224847-001	8-2	3	227901-001	10-1	8	231200-001	8-2	1	234252-001
2-12		224847-001	8-7	6	227902-001	10-1	7	231202-001	3-32	1	234256-001
2-12	1	224847-003	8-3	7	227906-001	12-1		231212-001	1-17	3	234277-001
2-12	5	224847-005	1-14	1	227918-001	12-2		231218-001	1-17	4	234278-001
2-8	16	224849-001	1-11	8	227929-001	12-3		231219-001	1-17	5	234279-001
1-20	16	224896-250	1-18	3	227962-001	12-3		231220-001	1-17	6	234280-001
1-20	4	224896-325	2-2	16	227965-001	12-2		231221-001	7-2	3	234299-001
1-21		224897-001	1-18	2	227968-001	12-3		231222-001	1-10	8	234316-001
1-21	1	224897-003	1-18	9	227978-001	12-3		231223-001	1-10	6	234318-001
1-22	1	224897-003	1-18	7	227979-001	12-4	1	231224-001	4-2	20	234343-001
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1-22	23	224897-015	3-20	1	228114-001	7-4	22	231757-001	2-13	3	234349-003
1-21	24	224897-017	1-20	26	228131-001	7-5	23	231757-001	3-27	13	234359-001
1-22	24	224897-017	1-20	12	228158-001	7-6	16	231757-001	3-27	15	234361-001
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7-8	18	224922-001	1-20	27	228181-001	8-6	8	231757-001	4-11	3	234368-001
3-7	26	224938-001	1-20	18	228223-001	8-7	17	231757-001	4-11	1	234369-001
3-10	17	224938-001	4-9	16	228400-001	8-8	36	231757-001	4-11	5	234377-001
2-2	15	224953-001	1-5	2	228754-001	7-4	21	231758-001	4-10	1	234393-001
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2-11	2	224985-001	1-19	1	230806-001	7-6	15	231758-001	4-10	5	234395-001
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5-2	4	224991-001	2-11	26	230965-001	8-6	7	231758-001	7-2	4	234412-001
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3-6	11	225358-001	9-2		230970-001	8-8	35	231758-001	1-18	14	234420-001
2-10	10	225425-001	9-2	1	230970-003	10-1	2	231897-001	3-27	16	234421-003
2-8	13	225532-005	9-2	2	230970-005	10-1	1	231898-001	6-4	11	234422-001
6-2	14	225838-001	9-2	3	230970-007	10-1	5	231899-001	7-8	4	234426-003
6-2	16	225847-001	9-2	4	230970-009	10-1	4	231900-001	1-14	5	234434-003
12-2	9	226195-001	9-2	5	230970-011	10-3		231900-001	1-14	4	234436-001
12-3	9	226195-001	9-2	6	230970-013	10-3	9	231901-001	1-14	18	234452-001
12-1	6	226196-001	9-2	7	230970-015	10-3	1	231902-001	7-8	8	234462-001
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8-8	11	227752-001	9-3	9	230977-015	3-11	12	232127-025	6-4	2	234978-001
2-11	4	227757-003	9-3	10	230977-017	3-12	13	232127-025	1-15	17	234978-001
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2-11	5	227757-005	9-3	12	230977-021	11-2	15	232484-001	2-5	1	235283-001
2-13	2	227757-005	9-3		230977-023	2-6	6	234152-001	2-5	2	235287-001
2-11	17	227759-001	6-2	15	231049-001	5-1	6	234164-001	4-4	13	235683-001
1-16	7	227791-001	1-6	7	231104-001	5-1	14	234167-001	1-5	4	235713-001
8-7	2	227814-001	1-23		231104-001	2-1	1	234218-003	2-4	13	235713-001
8-8	24	227815-001	13-2	6	231109-001	2-1	8	234218-005	2-5	5	235713-001

(PAGE 6) D40X40/NAVTEC NAVIGATOR INDEX

<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>				
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3-21	7	235714-001	3-6	3	235726-001	2-9	3	235742-001	6-5	9	238221-001
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7-8	5	235717-001	1-14	11	235727-001	1-21	17	235790-017	2-10	5	238696-001
1-15	21	235717-001	2-11	13	235727-001	1-22	17	235790-017	4-7	16	238704-001
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11-2	7	235717-001	3-31	9	235727-001	1-22	18	235790-019	2-9	5	238728-001
3-26	13	235717-001	4-3	2	235729-001	1-21	19	235790-021	2-9	10	238732-001

<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>	<u>FIG. NO.</u>	<u>PART NO.</u>				
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4-7	19	243776-001	4-3	22	248035-001	3-27	8	250624-001	3-19	2	600118-001
3-26	14	243905-001	4-7	30	248198-001	4-7	12	250635-001	3-20	6	600118-001
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3-10	18	244057-001	1-11	1	249771-001	7-6	6	251005-001	3-26	17	601697-030
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2-4	8	244369-001	3-10	25	249805-001	3-8	19	251009-001	5-1	17	900035-005
2-4	14	244371-001	4-7	4	249810-001	3-20	10	251009-001	7-4	23	900035-005
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1-20	33	244391-001	4-7	24	250501-001	3-20	7	251010-001	7-6	17	900035-005
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6-1	1	244460-001	3-18	4	250502-001	3-20	9	251011-001	3-24	8	900035-005
3-14	5	244461-001	3-8	26	250507-001	3-7	12	251012-001	6-5	11	901062-001
7-3	1	244462-001	3-9	19	250507-001	3-29	8	251012-001	1-7	6	901766-011
3-7	19	244464-001	4-4	3	250509-001	3-7	20	251013-001	1-7	8	901766-013
6-1	12	244466-001	7-8	7	250510-001	3-30	18	251013-001	1-7	3	901766-015
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<u>FIG. NO.</u>		<u>PART NO.</u>
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1-7	2	901767-007
1-7	4	901767-009
1-7	5	901767-011
1-6	12	901995-001
1-9	2	901997-001
3-18	3	902012-001
1-6	4	902013-001
1-5	4	902157-001
1-5	5	902162-001
1-5	5	902162-002
4-8	2	902402-001
1-8	13	902770-003
1-8	2	902770-005
1-18	4	903135-003
1-18	5	903135-005
1-8	4	903256-001
1-8	3	903257-001
3-11	4	903382-001
3-12	8	903382-001
4-3	24	903389-001
6-3	5	903862-001
4-9	5	903884-001
6-3	3	904062-007
4-1	14	904346-001
5-1	18	904355-001
4-9	12	904365-001
4-1	13	904423-001
4-2	16	904423-001
1-19	5	904508-001
5-2	1	904541-001
5-1	1	904546-001
4-7	1	904548-001
4-7	22	904562-001
4-2	16	904563-001
6-6	1	904576-001
6-6	2	904577-001
6-6	3	904578-001
5-1	3	904731-001
6-1	7	904831-001
6-7	1	904882-001
4-1	14	904995-001
4-1	14	905001-001
1-19	4	905011-001
1-19	4	905012-001
6-7	2	905216-001
6-2	19	905429-015
6-2	17	905437-001

