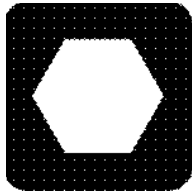


JT1720

Parts Manual



Ditch Witch®

JT1720

ISSUE NO. 09PL-6/12

For Replacement Copy Order **P/N 053-484**

This product is covered by one or more of the following patents:

US B1 4,858,704; 4,953,638; 5,148,880; 5,242,026; 5,341,887; 5,490,569; 5,684,466; 5,713,423, 5,794,719; 5,880,680; 5,941,322; 6,085,852; 6,109,371; 6,179,065; 6,216,803; 6,250,403; 6,250,404; 6,290,606; 6,311,790; 6,411,094; 6,543,551; 6,550,547; 6,672,409; 6,739,413; 6,776,246; 6,808,210; 6,827,158; RE37,450; RE37,923; RE37,975; RE38,418

AU 689,533; 706,544; 718,034, 755,862

CA 2,156,398

FR 674,093

DE 694 17 019; 695 29 634; 297 01 406

EP 0683845; 0674093; 0817901; 0846841

GB 2,209,239; 2,312,006; EP674,093; EP846,841

JP 3,458,247

Other U.S. and foreign patents pending

This manual contains information concerning the following models:
JT1720 Directional Drilling System

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Ditch Witch, Ditch Witch, CMW, AutoCrowd, Modularmatic, Jet Trac, Roto Witch, Subsite, Fluid Miser, Perma-Soil, Power Pipe, Super Witch, Super Witch II, Pierce Arrow, The Underground, and The Underground Authority Worldwide are registered trademarks of The Charles Machine Works, Inc.

FOREWORD

This manual contains illustrated parts lists to help you select quality Ditch Witch® replacement parts for your Ditch Witch equipment. Using other replacement parts will lessen the productivity of your equipment.

- Descriptions and specifications in this book were current at publication. However, the Charles Machine Works, Inc. reserves the right to improve equipment, so this manual might not reflect the most current improvements.
- Part numbers enclosed in a box or marked as “obsolete” in the remarks column are no longer available from The Charles Machine Works, Inc. Your local Ditch Witch dealer may be able to locate the part for you.
- Footnotes provide more information to help you identify parts shown in the manual.
- Assembly instructions referenced in footnotes are available through your local Ditch Witch dealer.
- Instructions on recommended equipment use and maintenance are in the Operator’s Manual that was shipped with your equipment.

Keep the following in mind when ordering Ditch Witch replacement parts:

- ◆ Specify parts you need by part number and description, not by illustration reference numbers.
- ◆ Have equipment model and serial number on hand to help ensure you get the right parts for your machine whether it’s old or new.

Thank you for buying and using Ditch Witch equipment and replacement parts.

WARRANTY

DW WARRANTY Policy
July, 2005

POLICY 1: DITCH WITCH® EQUIPMENT AND REPLACEMENT PARTS LIMITED WARRANTY POLICY

Subject to the limitation and exclusions herein, free replacement parts will be provided at any authorized Ditch Witch dealership for any Ditch Witch equipment or parts manufactured by The Charles Machine Works, Inc. (CMW) that fail due to a defect in material or workmanship within one (1) year of first commercial use (Exception: 2 years for all SK500 Attachments). Free labor will be provided at any authorized Ditch Witch dealership for installation of parts under this warranty during the first year following "initial commercial" use of the serial numbered Ditch Witch equipment on which it is installed. The customer is responsible for transporting their equipment to an authorized Ditch Witch dealership for all warranty work.

EXCLUSIONS FROM PRODUCT WARRANTY

- All incidental or consequential damages.
- All defects, damages, or injuries caused by misuse, abuse, improper installation, alteration, neglect, or uses other than those for which products were intended.
- All defects, damages, or injuries caused by improper training, operation, or servicing of products in a manner inconsistent with manufacturer's recommendations.
- All engines and engine accessories (these are covered by original manufacturer's warranty).
- Tires, belts, and other parts which are subject to another manufacturer's warranty. (Such warranty will be available to purchaser.)
- ALL IMPLIED WARRANTIES NOT EXPRESSLY STATED HEREIN, INCLUDING ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY.

IF THE PRODUCTS ARE PURCHASED FOR COMMERCIAL PURPOSES, AS DEFINED BY THE UNIFORM COMMERCIAL CODE, THEN THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE HEREOF AND THERE ARE NO IMPLIED WARRANTIES OF ANY KIND WHICH EXTEND TO A COMMERCIAL BUYER. ALL OTHER PROVISIONS OF THIS LIMITED WARRANTY APPLY INCLUDING THE DUTIES IMPOSED.

Ditch Witch products have been tested to deliver acceptable performance in most conditions. This does not imply they will deliver acceptable performance in all conditions. Therefore, to assure suitability, products should be operated under anticipated working conditions prior to purchase.

Defects will be determined by an inspection within thirty (30) days of the date of failure of the product or part by CMW or its authorized dealer. CMW will provide the location of its inspection facilities or its nearest authorized dealer upon inquiry. CMW reserves the right to supply remanufactured replacement parts under this warranty as it deems appropriate.

Extended warranties are available upon request from your local Ditch Witch dealer or CMW.

Some states do not allow exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. Further, some states do not allow exclusion of or limitation of how long an implied warranty lasts, so the above limitation may not apply. This limited warranty gives product owner specific legal rights and the product owner may also have other rights which vary from state to state.

For information regarding this limited warranty, contact CMW's Product Support Department, P.O. Box 66, Perry, OK 73077-0066, or contact your local Ditch Witch dealer.

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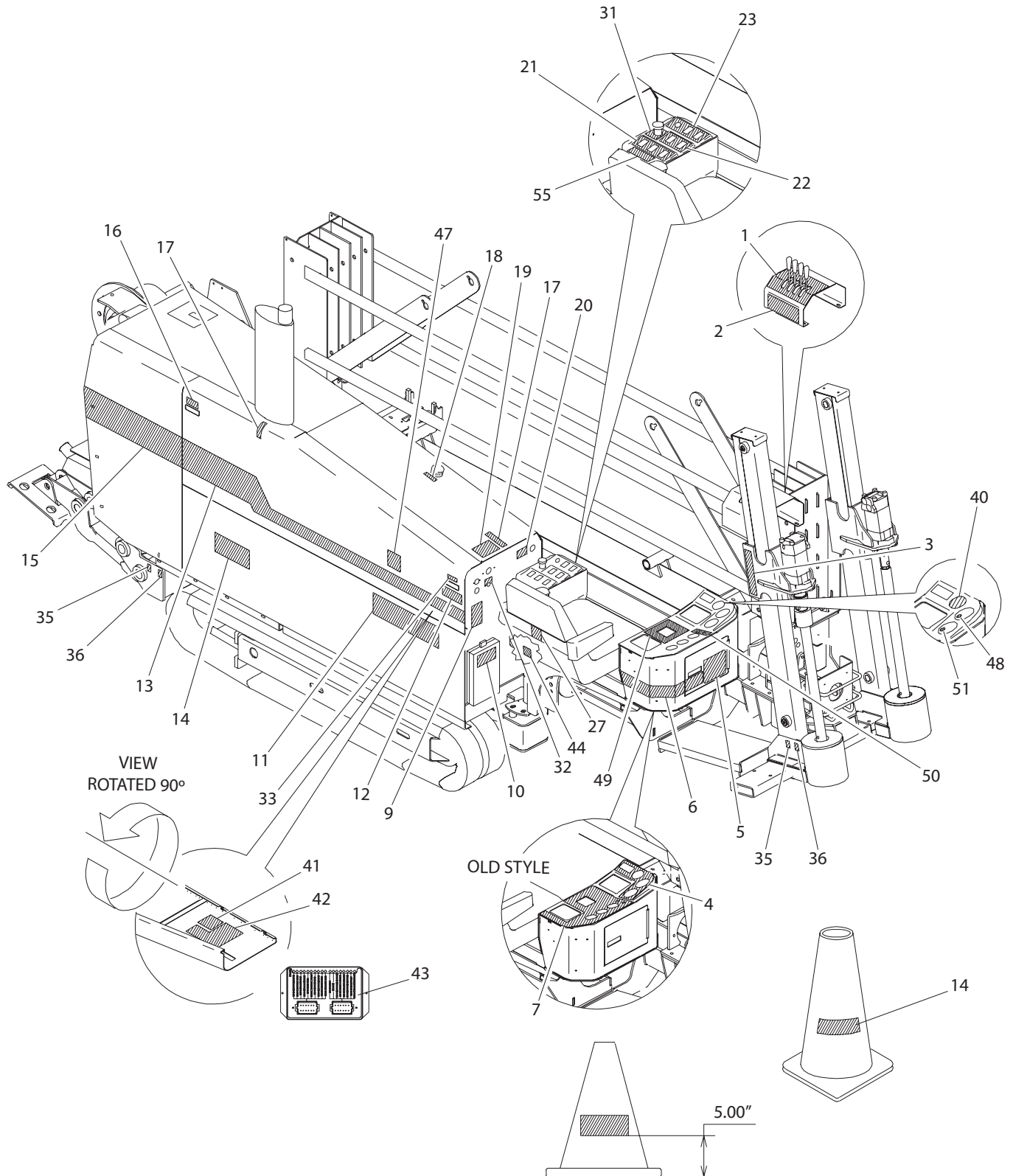
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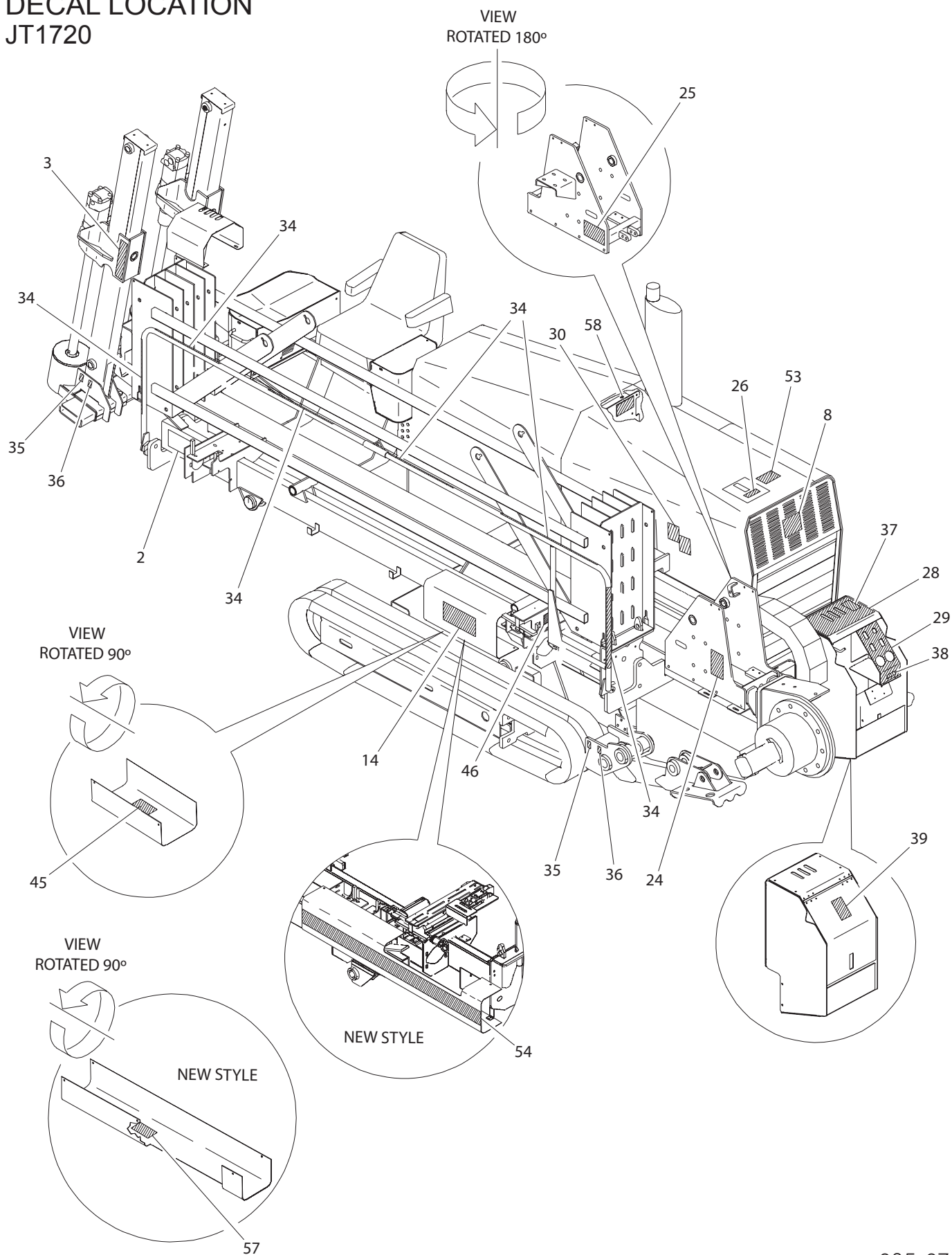
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DECALS

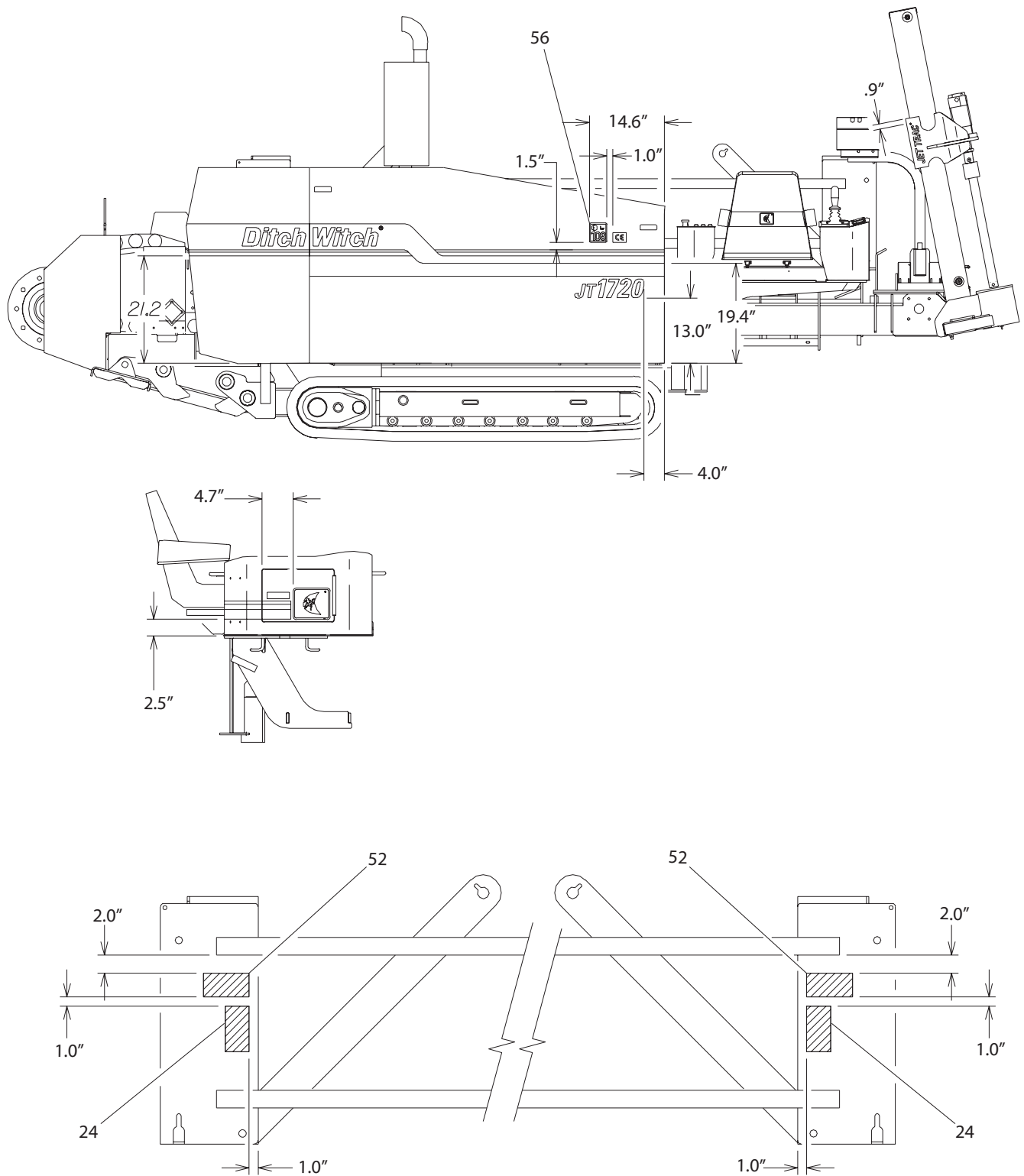
DECAL LOCATION JT1720



DECAL LOCATION JT1720



DECAL LOCATION JT1720



DECAL LOCATION

JT1720

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-749		DECAL KIT - JT1720	
1	274-809	1	ANCHOR DRIVER CONTROL	
2	275-197	2	DANGER ROTATING SHAFT	
3	274-885	2	JET TRAC LOGOTYPE	
4	274-892	1	RIGHT GAUGE PANEL	ENDS WITH S/N 2R2804
5	275-307	1	DITCH WITCH EMBLEM	
6	274-877	AR	GRAPHIC STRIPE	USE 24"
7	274-891	1	RIGHT CONTROL PANEL	ENDS WITH S/N 2R2804
8	275-449	1	DITCH WITCH EMBLEM PLAQUE	
9	274-780	1	JET TRAC PATENT (S)	
10	275-048	1	IMPORTANT SAFETY RULES	
11	274-886	1	JT1720 MODEL-ID	
12	275-033	1	NOTICE ELECTRICAL SYSTEM	
13	274-431	1	WITCH GRAPHIC STRIPE	
14	274-049	10	DANGER ELECTROCUTION	8 PER TRAFFIC CONES
15	274-883	1	DITCH GRAPHIC STRIPE	
16	275-400	1	NOTICE OIL LEVEL	
17	275-355	2	CAUTION HOT PARTS	
18	275-120	1	RESERVOIR (THF)	
	274-672	1	ENVIRO HYDRAULIC RESERVOIR	SEE FOOTNOTE 1
19	274-050	1	WARNING JOBSITE HAZARD	
20	274-198	1	NOTICE OIL LEVEL	
21	274-864	1	BACK SWITCH PANEL	
22	274-863	1	CENTER SWITCH PANEL	
23	274-862	1	FRONT SWITCH PANEL	
24	275-184	9	WARNING MOVING PARTS	4 PER PIPE BOX
25	275-341	1	WARNING SLIDING PARTS	
26	275-149	1	COOLANT	
27	275-450	1	LOGO PLACARD	
28	274-849	1	SETUP CONTROL PANEL	
29	274-851	1	INSTRUMENT PANEL	
30	274-909	2	AUTOMATION REFLECTOR PANEL	SEE FOOTNOTE 2
31	274-890	1	PULLBACK SPEED CONTROL	
32	274-375	1	MASTER DISCONNECT SWITCH	
33	275-203	1	BATTERY	
34	275-230	6	WARNING STRIPE (11.75" X 18")	
35	274-318	4	TIE DOWN LOCATION	
36	274-442	4	LIFT LOCATION	
37	274-724	1	ONE CALL NOTIFICATION	
38	275-148	1	FUEL TANK (DIESEL)	
39	275-383	1	NOTICE SLOPE PARKING	
40	274-888	1	FLUID PRESSURE GAUGE (900 PSI)	25 GPM MUD PUMP OPTION
	274-889	1	FLUID PRESSURE GAUGE (1250 PSI)	18 GPM MUD PUMP OPTION
41	274-919	1	HYD TEST PORT	
42	274-917	1	RELAY PANEL	
43	274-920	1	AUTOMATION CONTROLLER	
44	274-935	1	HYD HOSE CONNECTION	
45	274-918	1	SOLENOID VALVE	ENDS WITH S/N 2S4073
46	274-946	1	ROW SELECTOR PANEL	
47	274-921	1	CONSOLE	SEE FOOTNOTE 3
48	274-993	1	THRUST GAUGE OVERLAY	BEGINS WITH S/N 2R2805

FOOTNOTES

1. NOT PART OF KIT. SEE 256-030 ENVIRONMENTAL HYDRAULIC OIL.
2. NOT PART OF KIT. USED ON MACHINES WITH PHOTO-ELECTRIC EYES.
3. NOT PART OF KIT. EUROPEAN UNITS ONLY

DECAL LOCATION

JT1720

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
49	274-990	1	RIGHT CONSOLE PANEL	BEGINS WITH S/N 2R2805
50	274-991	1	REMOTE START/STOP	BEGINS WITH S/N 2R2805
51	274-992	1	ROTATION GAUGE OVERLAY	BEGINS WITH S/N 2R2805
52	275-326	8	WARNING CRUSHING WEIGHT	4 PER PIPE BOX
53	273-138	1	NOTICE COOLANT	
54	273-081	1	LEFT GRAPHIC STRIPE	BEGINS WITH S/N 2S4116
55	273-106	1	LUBRICATOR	BEGINS WITH S/N 2S4116
56	274-291	1	SOUND POWER RATING (101 dBA)	SEE FOOTNOTE 3
57	273-143	1	SOLENOID VALVE	BEGINS WITH S/N 2S4116
58	273-146	1	NOTICE ADD COOLANT	

FOOTNOTES

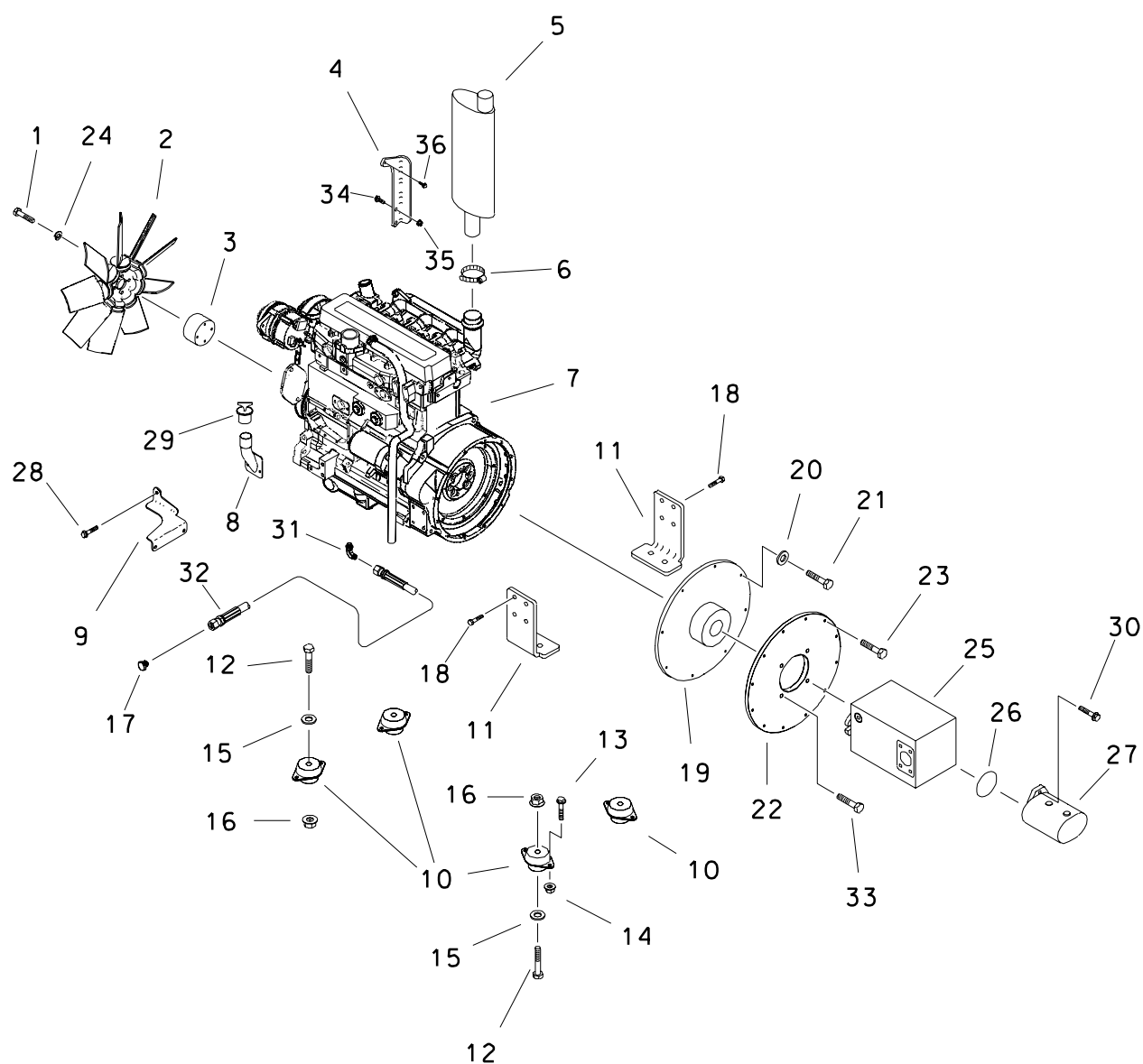
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2. NOT PART OF KIT. USED ON MACHINES WITH PHOTO-ELECTRIC EYES.
3. NOT PART OF KIT. EUROPEAN UNITS ONLY

NOTES:

[illegible]

ENGINE COMPONENTS

ENGINE



ENGINE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-602	4	BOLT (M8-1.25 X 80mm)	
2.	194-821	1	COOLING FAN	THICK EDGE OF BLADE TOWARD ENGINE
3.	184-404	1	COOLING FAN SPACER	
4.	348-724	1	ALTERNATOR BRACKET	
5.	196-355	1	MUFFLER	ENDS WITH S/N 2R1386
	196-362	1	MUFFLER	BEGINS WITH S/N 2R1387
6.	196-195	1	LOWER CLAMP (HEADER PIPE)	
7.	194-820	1	ENGINE - JOHN DEERE DIESEL	
	194-815	-	OIL FILTER ELEMENT	
	194-816	-	FUEL FILTER ELEMENT	
	194-493	-	PRIMARY FILTER SEDIMENT BOWL	
	195-897	-	STARTER	
	217-450	-	ALTERNATOR	
	194-823	-	THERMOSTAT	
	165-883	-	GASKET (THERMOSTAT)	
	171-013	-	BELT	
	171-113	-	ALTERNATOR SHEAVE	
	506-035	-	VOLTAGE REGULATOR	
	194-831	-	DIPSTICK	
	194-832	-	WATER PUMP	
	194-432	-	WATER PUMP (CAST IRON)	
	194-433	-	WATER PUMP INSERT PLATE KIT	
	168-617	-	GASKET (WATER PUMP)	
8.	348-825	1	OIL FILLER	
9.	348-899	1	THROTTLE BRACKET	
10.	116-488	4	ISOLATION MOUNT	
11.	348-502	2	SUPPORT PLATE	
12.	106-342	4	SCREW (M16-2.00 X 90mm)	
13.	106-383	8	FLG LK SCREW (M10-1.5 X 30mm)	
14.	106-387	8	FLG LOCKNUT (M10-1.50)	
15.	106-398	4	WASHER (M16, HARDENED)	
16.	106-545	4	LOCKNUT (M16-2.00, PRV TRQ, 10.9)	
17.	154-093	1	PLUG (08J)	
18.	107-010	8	FLG LK SCREW (M12-1.75 X 30mm)	
19.	194-731	1	FLYWHEEL COUPLING	TORQUE TO 61 FT-LB
20.	106-396	8	WASHER (M10, HARDENED)	
21.	107-242	8	BOLT (3/8-NC X 1-1/2", NLK)	TORQUE TO 30 FT-LB
22.	160-901	1	PUMP PLATE	
23.	106-993	12	FLG LK SCREW (M10-1.50 X 35mm)	
24.	105-091	4	LOCK WASHER (5/16")	
25.	158-493	1	HYDRAULIC PUMP	
26.	157-041	1	O-RING (152 D70)	
27.	158-478	1	HYDRAULIC PUMP	

FOOTNOTES

ENGINE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
28.	106-999	1	FLG LK SCREW (M10-1.50 X 20mm)	
29.	194-800	1	CAP (1.5", OIL FILLER)	
30.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
31.	154-467	1	CONNECTOR (M18-1.50-08J90)	
32.	154-576	1	HOSE (08JFX-22.5"-2000)	
33.	106-632	4	FLG LK SCREW (M12-1.75 X35mm, SER)	
34.	106-383	2	FLG LK SCREW (M10-1.50 X 30mm)	
35.	106-266	2	FLG NUT (M10-1.50)	
36.	106-381	1	FLG LK SCREW (M8-1.25 X 25mm)	

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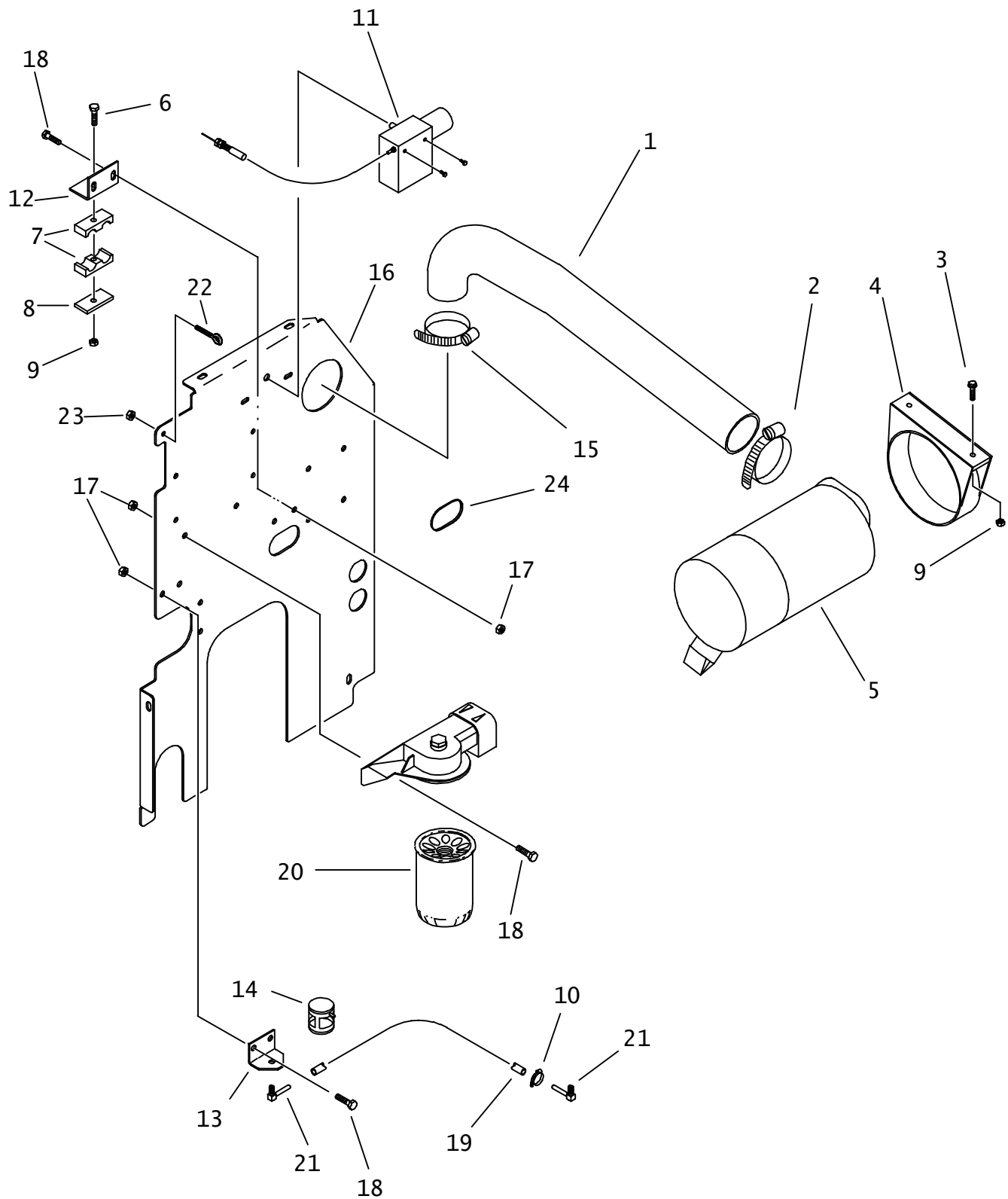
	217-736	1	OIL PRESSURE SWITCH	
	215-113	1	OIL PRESSURE SENDER	
	215-183	1	SENDER, OIL PRESSURE HD	
	217-550	1	WATER TEMPERATURE SENDER	
	217-575	1	HIGH TEMPERATURE SWITCH	

FOOTNOTES

NOTES:

1. REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.
2. REFERENCES 34, 35, AND 36 ARE SERVICE PARTS ONLY

AIR FILTER SYSTEM



AIR FILTER SYSTEM

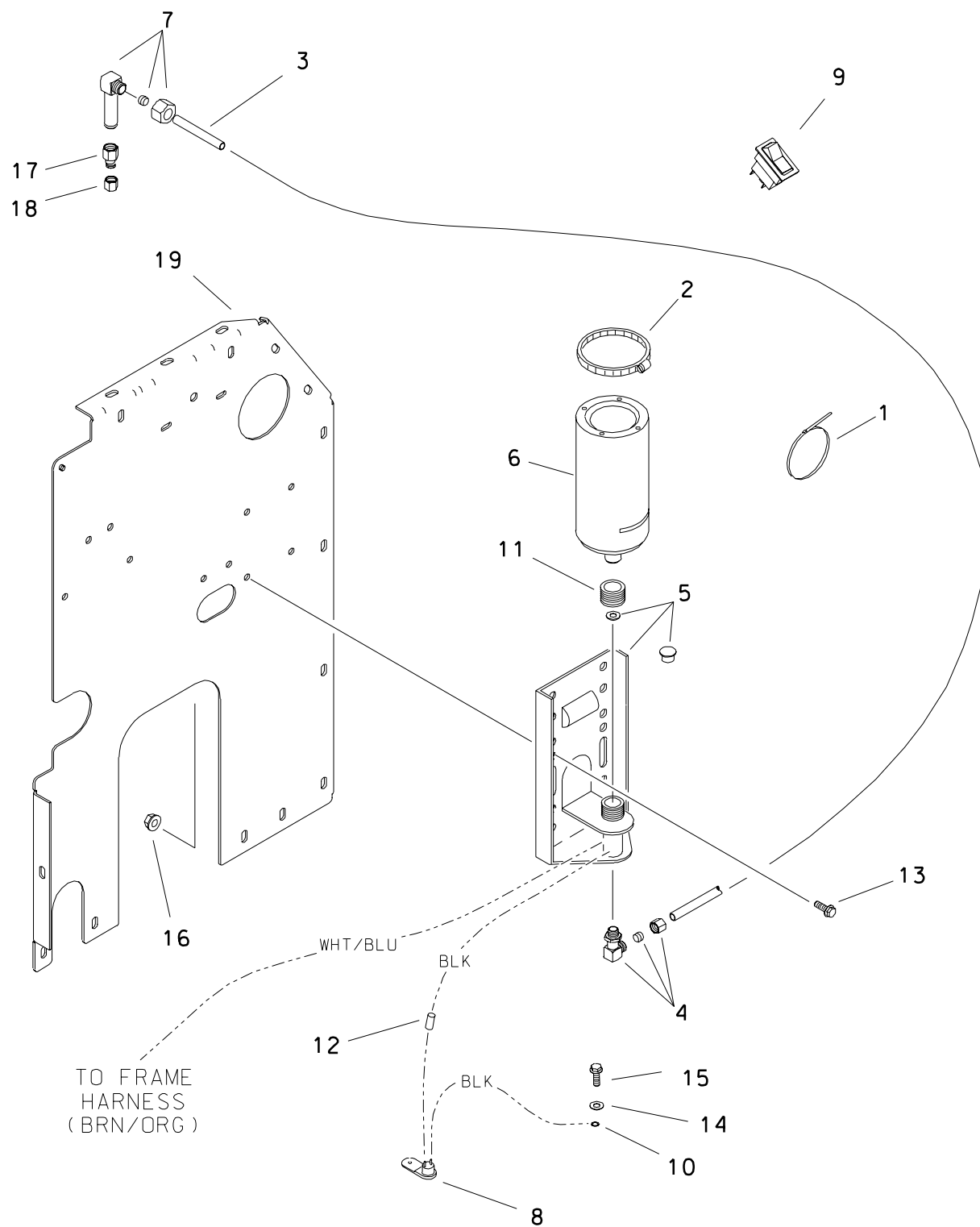
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	116-797	1	AIR INTAKE HOSE	
2.	110-169	1	WORM CLAMP (2.812" TO 3.750")	
3.	106-163	2	FLG SCREW (M8-1.25 X 30MM)	
4.	362-926	1	MOUNTING CLAMP (7.170")	
5.	197-762	1	AIR FILTER	
	197-763	-	PRIMARY ELEMENT	
	197-764	-	SECONDARY ELEMENT	
6.	107-194	1	FLG SCREW (M8-1.25 X 50MM)	
7.	110-195	2	BOLT-ON CLAMP (3/4", PER HALF)	
8.	305-256	1	BACKUP SPACER	
9.	107-096	2	LOCKNUT (M8-1.25, NLK)	
10.	110-249	2	WORM CLAMP (1/4" TO 5/8")	
11.	215-231	1	LINEAR ACTUATOR	
	105-603	1	CABLE PIVOT	
	105-530	1	COTTER PIN (1/16" X 3/4")	
	196-331	1	CABLE (LINEAR ACTUATOR)	
12.	348-830	1	HOSE SUPPORT PLATE	
13.	348-846	1	RESTRICTION INDICATOR SUPPORT	
14.	194-788	1	RESTRICTION INDICATOR (25"H2O)	
15.	110-134	1	WORM CLAMP (2.062" TO 2.750")	
16.	348-637	1	FIREWALL	
17.	105-894	6	LOCKNUT (M10-1.50, PRV TRQ. 10.9)	
18.	106-382	6	FLG LK SCREW (M10-1.50 X 20MM)	
19.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 24"
20.	194-815	-	OIL FILTER ELEMENT	
21.	155-241	2	S/O COUPLER (02N-05H90)	
22.	105-204	1	EYE BOLT (1/4-NC X 1-1/2")	
23.	105-078	1	NUT (1/4-NC)	
24.	115-704	1	BULK EDGE (1/4", SOLD PER 1")	USE 1 @ 9"

NOT SHOWN:

FOOTNOTES:

NOTE:

COLD START



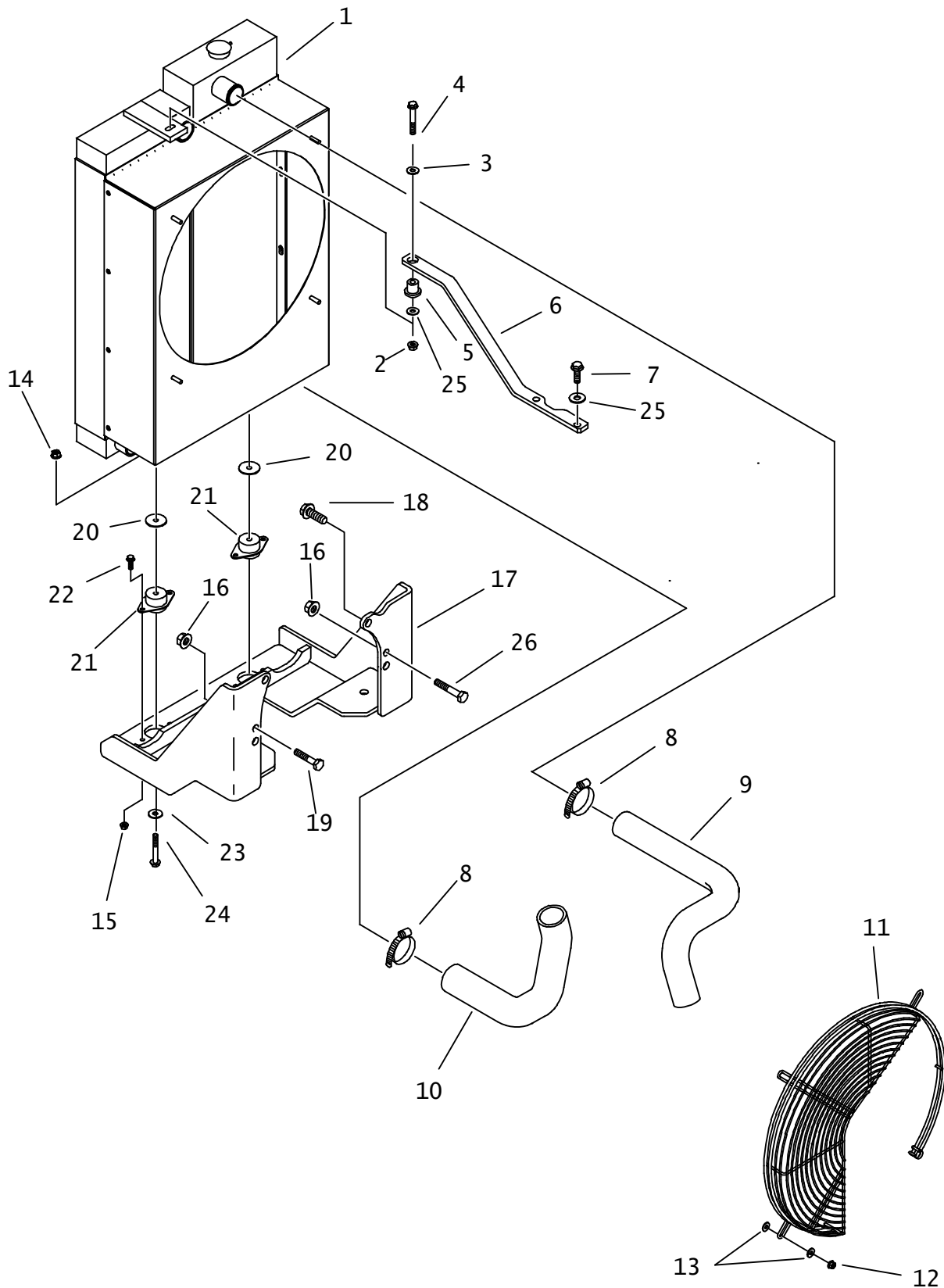
COLD START

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-796		COLD START CONVERSION KIT	INCL REF NO.'S 1-5 & 7-18; SEE FOOTNOTE 1
1.	110-248	3	CABLE TIE (1/16" TO 1-1/4")	
2.	110-367	1	WORM CLAMP (3-1/4" TO 4-1/8")	
3.	156-018	AR	BULK TUBING (1/8", SOLD PER 1")	USE 1 @ 1025mm (40")
4.	156-272	1	TUBE CONNECTOR (O2N-O2T90, DRF)	INCL FERRULE AND NUT
	156-204		FERRULE (O2T)	
	156-205		COMPRESSION NUT (O2T)	
5.	195-841	1	VALVE/CANISTER BRACKET	
	110-252		CAPLUG (3/4")	
	195-844		GASKET	
6.	195-842	1	ETHER CANISTER	SEE FOOTNOTE 2
7.	195-843	1	INJECTOR NOZZLE	INCL FERRULE AND NUT
	156-204		FERRULE (O2T)	
	156-205		COMPRESSION NUT (O2T)	
8.	215-073	1	SENSOR SWITCH	
9.	217-917	1	ROCKER SWITCH (OFF-ON, DPDT)	
10.	215-590	1	RING TERMINAL (.375")	
11.	115-365	1	GROMMET (2-1/8", SOLD PER 1")	
12.	215-478	1	BUTT CONNECTOR (14GA - 16GA)	
13.	106-380	2	FLG LK SCREW (M8-1.25 X 16MM)	
14.	105-072	1	LOCK WASHER (3/8")	
15.	105-181	1	BOLT (3/8-NC X 1/2")	
16.	106-386	2	FLG LOCKNUT (M8-1.25)	
17.	155-253	1	CONNECTOR (O6S-O2NF)	
18.	155-171	1	REDUCER (10S-O6SF)	
19.	348-637	-	FIREWALL	

FOOTNOTES

1. REFER TO INSTALLATION INSTRUCTIONS.
2. NOT PART OF KIT; NEED TO ORDER SEPARATELY.

RADIATOR



RADIATOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-834	1	RADIATOR/OIL COOLER	
	110-927	-	RADIATOR CAP	
2.	106-387	1	FLG LOCKNUT (M10-1.50)	
3.	105-059	1	WASHER (7/16")	
4.	106-142	1	SCREW (M10-1.50 X 65MM)	
5.	116-727	1	SHOCK MOUNT	
6.	348-748	1	RADIATOR BRACKET	
7.	107-010	2	FLG LK SCREW (M12-1.75 X 30MM)	USE LOCTITE 242 OR EQUIVALENT
8.	110-134	4	WORM CLAMP (2.062" TO 2.750")	
9.	116-792	1	UPPER RADIATOR HOSE	
10.	116-771	1	LOWER RADIATOR HOSE	
11.	362-925	1	FAN GUARD	
12.	107-096	4	LOCKNUT (M8-1.25 , NYLOK)	
13.	106-389	8	WASHER (M8)	
14.	105-894	2	LOCKNUT (M10-1.50, PRVLG TORQ)	
15.	106-386	4	FLG LOCKNUT (M8-1.25)	
16.	105-994	2	FLG LOCKNUT (5/8-NC)	
17.	348-503	1	FRONT ENGINE MOUNT	
18.	105-998	4	SCREW (M16-2.00 X 40MM)	
19.	105-462	1	BOLT (5/8-NC X 2-1/4")	
20.	105-071	2	WASHER (1/2")	
21.	116-539	2	ISOLATOR	
22.	106-992	4	FLG LK SCREW (M8-1.25 X 25MM)	
23.	106-396	2	WASHER (M10, HARDENED)	
24.	106-642	2	SCREW (M10-1.50 X 65MM)	
25.	106-397	2	WASHER (M12, HARDENED)	
26.	105-943	1	BOLT (5/8-NC X 2-3/4")	

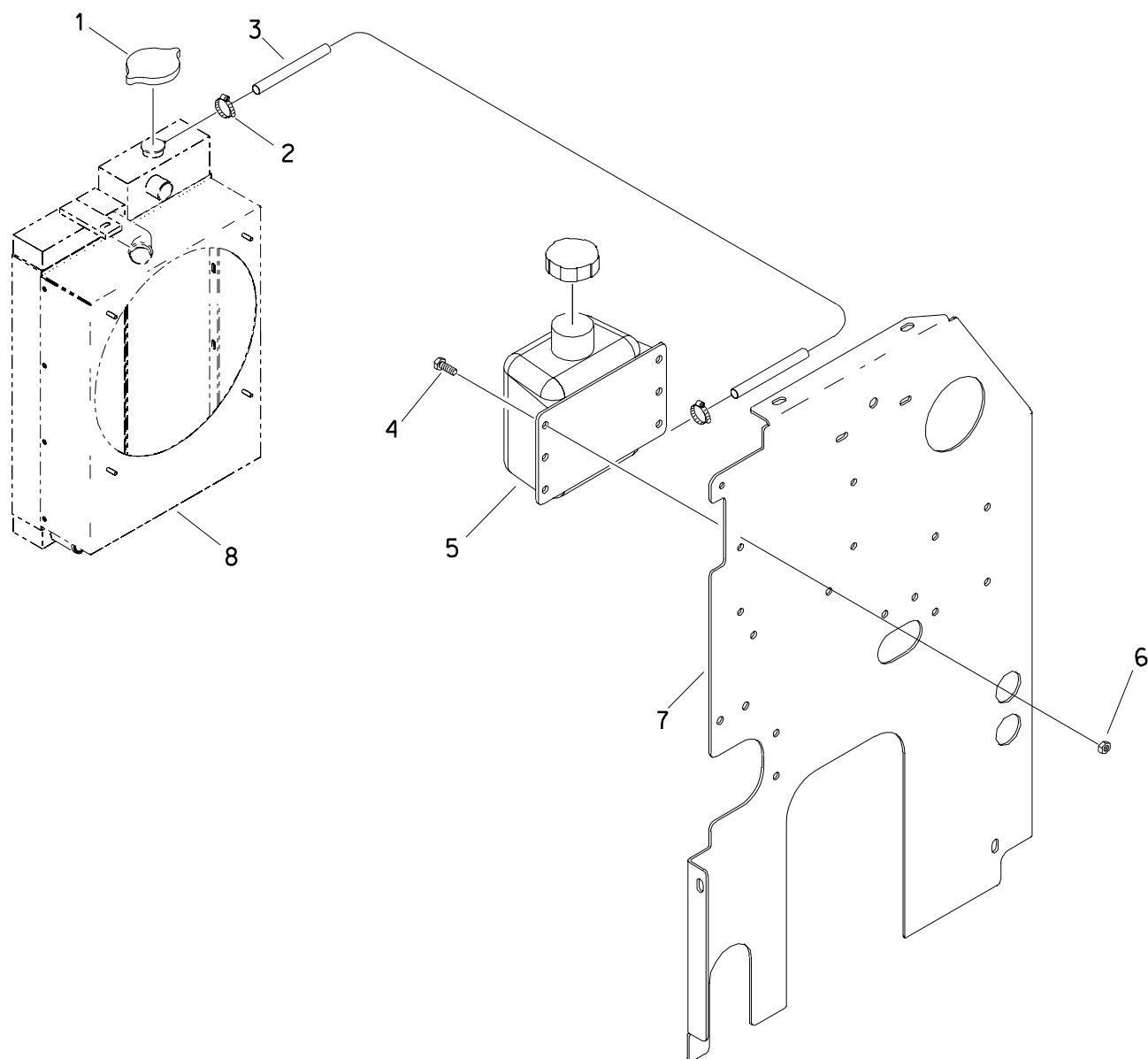
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FOOTNOTES:

NOTE:

OVERFLOW TANK

JT1720



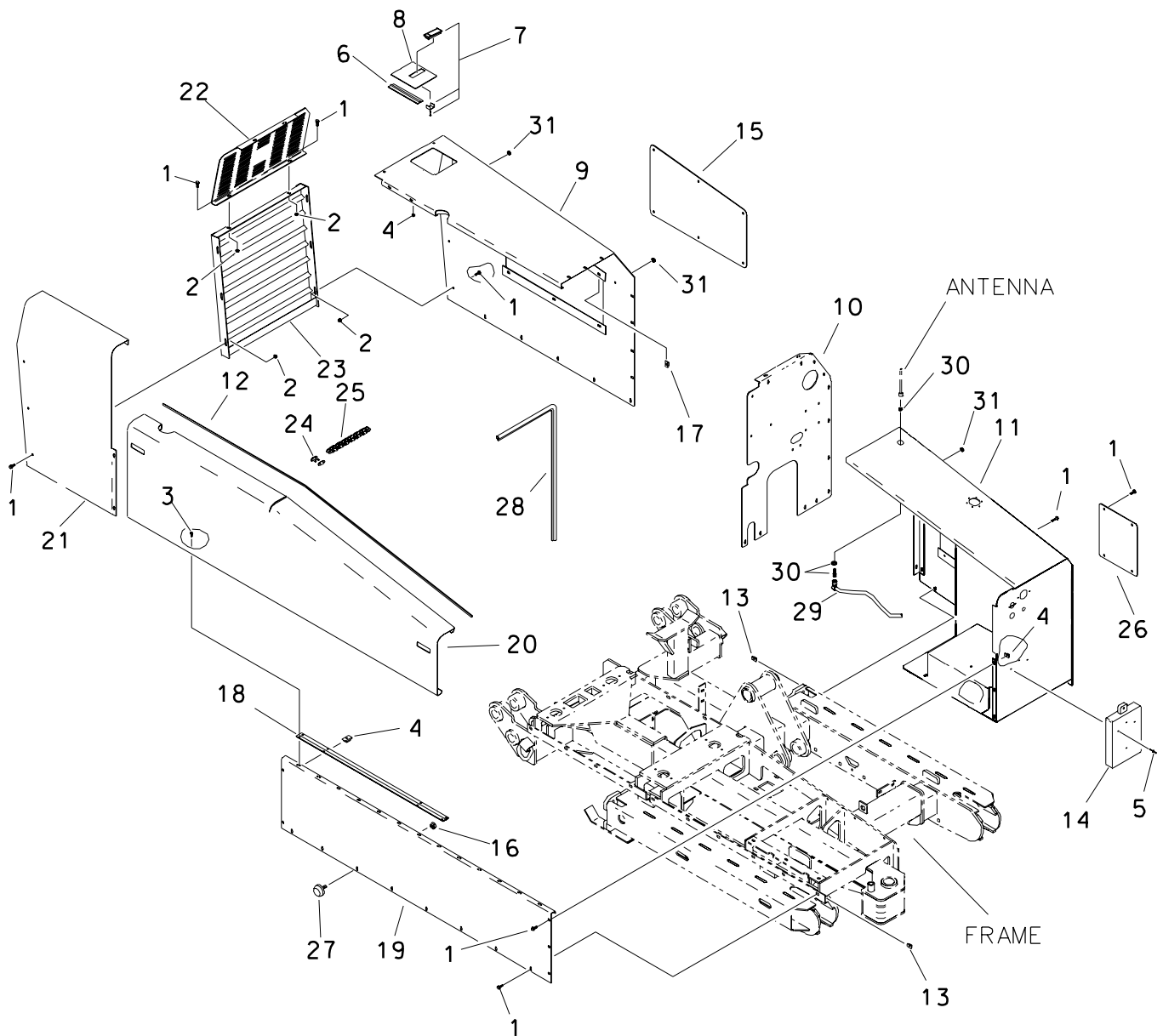
OVERFLOW TANK

JT1720

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	599-239	-	OVERFLOW TANK KIT FOR JT1720	INCL REF NO.'S 1 THRU 6
1.	111-084	1	RADIATOR CAP (16PSI)	
2.	110-249	2	WORM CLAMP (1/4" TO 5/8 ")	
3.	115-381	AR	BULK HOSE (1/4", SOLD PER 1")	USE 1 @ 65"
4.	106-083	4	SCREW (M8-1.25 X 20MM)	
5.	364-531	1	OVERFLOW TANK (3 QT)	
6.	106-386	4	FLG LOCKNUT (M8-1.25)	
7.	348-637	-	FIREWALL	
8.	306-834	-	RADIATOR/OIL COOLER	

FOOTNOTES

ENGINE HOOD & COVERS



ENGINE HOOD & COVERS

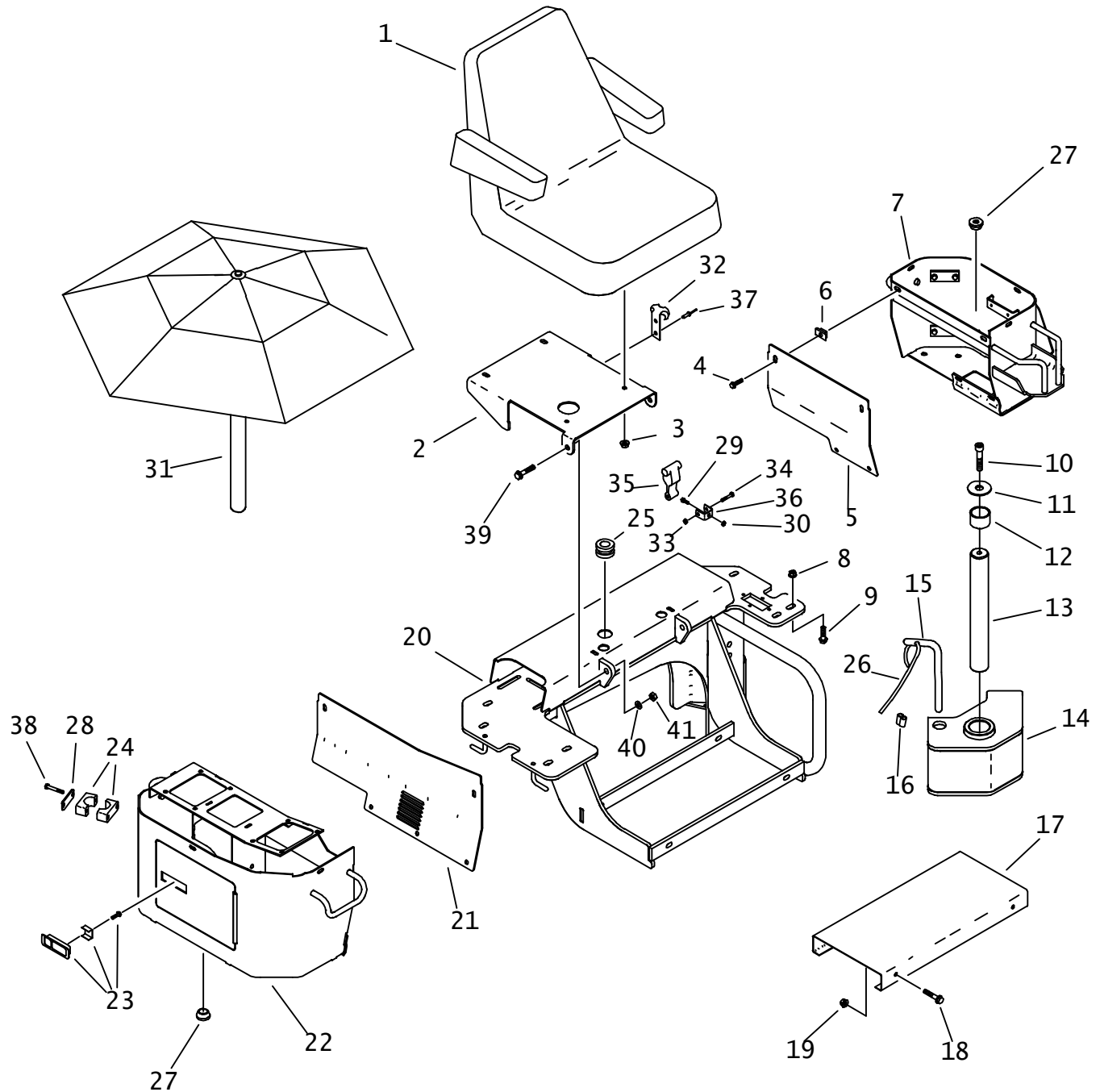
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-992	44	FLG LK SCREW (M8-1.25 X 25mm)	
2.	106-386	6	FLG LOCKNUT (M8-1.25)	
3.	106-083	14	SCREW (M8-1.25 X 20MM)	
4.	106-551	31	CLIP NUT (M8-1.25)	
5.	110-560	4	POP RIVET (3/16" X 1/2", ALUM)	
6.	110-580	-	HINGE (6")	WELD-ON
7.	117-558	3	ADJUST LEVER LATCH (LOCKING)	
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
	110-757	3	LEVER LATCH	ADJUSTABLE, LOCKING
8.	344-629	-	DOOR PANEL	WELD-ON
9.	348-640	1	HOOD	ENDS WITH S/N 2R1177
	348-938	1	HOOD	BEGINS WITH S/N 2R1178
10.	348-637	-	FIREWALL	
11.	348-621	-	HYD RESERVOIR	
12.	116-724	AR	BULK SEAL (3/32", SOLD PER 1')	USE 1 @ 68"
13.	107-287	9	CLIP NUT (M10-1.50)	
14.	250-622	1	MANUAL COMPARTMENT	
15.	348-661	1	ACCESS PANEL	
16.	105-003	2	FLG LOCKNUT (5/16-NC)	
17.	107-135	10	CLIP NUT (M8-1.25)	
18.	111-014	1	HINGE (71")	
19.	348-632	1	LOWER RIGHT PANEL	
20.	348-629	1	DOOR	ENDS WITH S/N 2R1177
	348-673	1	DOOR	BEGINS WITH S/N 2R1178
21.	348-643	1	RIGHT HOOD SUPPORT	
22.	348-954	1	UPPER GRILLE	
23.	348-666	1	LOWER GRILLE	
24.	111-032	2	REPAIR LINK (1/8" X 1-1/8")	
25.	111-024	AR	BULK CHAIN (#2)	USE 25"
26.	348-660	1	ACCESS PANEL	
27.	116-525	2	BUMPER	
28.	116-421	AR	BULK EDGE (1/8", SOLD PER 1')	USE 1 @ 48"
29.	211-072	1	CABLE	
30.	211-055	1	ANTENNA BULKHEAD CONNECTOR	
31.	153-366	6	BUTTON PLUG (BPF-1/4)	

FOOTNOTES

NOTES:

OPERATOR'S STATION

SEAT MOUNT

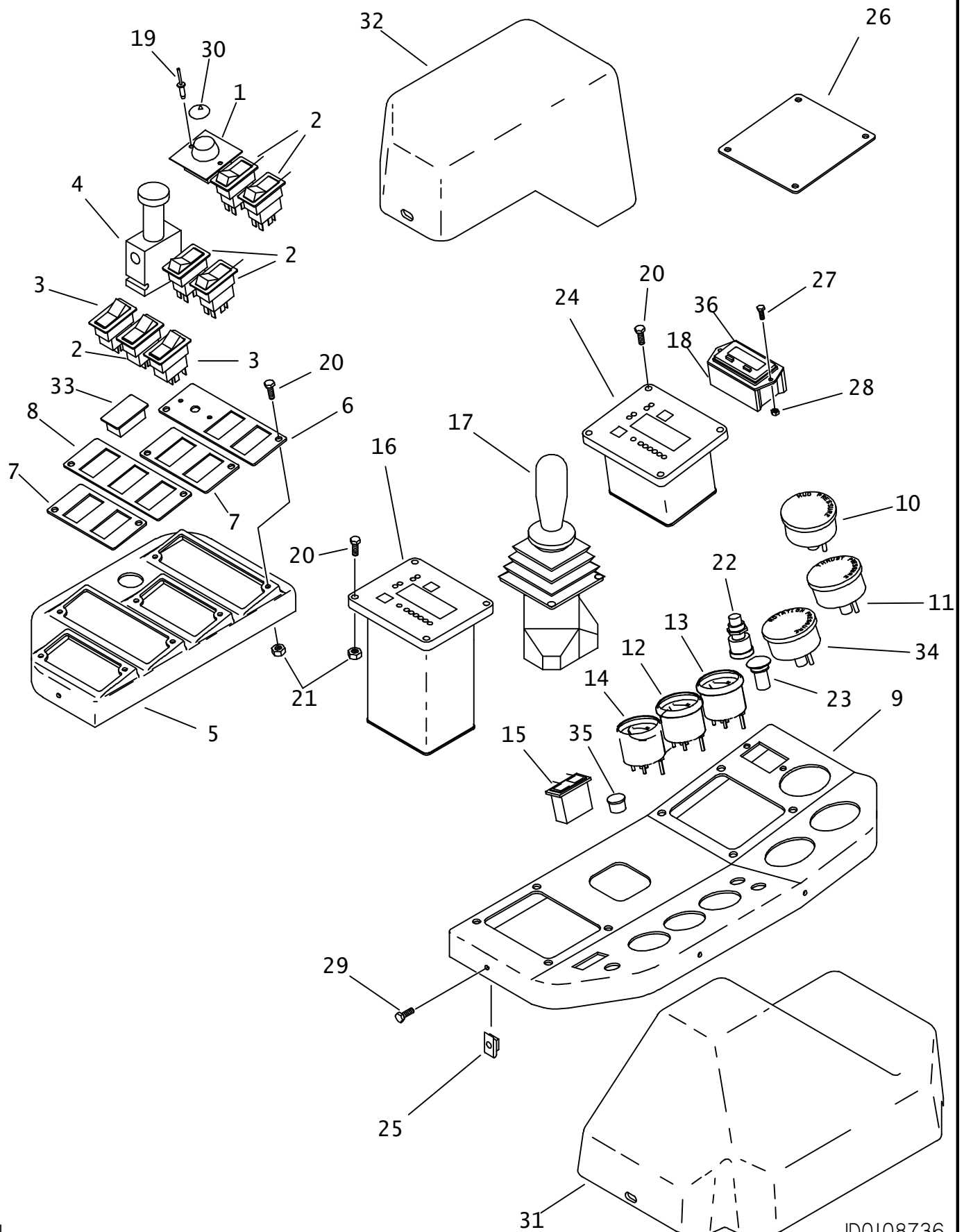


SEAT MOUNT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-402	1	SEAT ARM REST	INCL SEAT SWITCH (ON/OFF)
	217-935	-	SEAT SWITCH (ON/OFF)	
2.	348-721	1	SEAT PLATE	
3.	105-003	8	FLG LOCKNUT (5/16-NC)	
4.	107-095	9	FLG SCREW (M8-1.25 X 16MM)	
5.	348-694	1	LEFT COVER	
6.	106-551	9	CLIP NUT (M8-1.25)	
7.	348-685	1	LEFT CONSOLE	
8.	105-833	8	FLG LOCKNUT (1/2-NC)	
9.	106-413	8	CARRIAGE BOLT (1/2-NC X 1")	
10.	107-206	2	SCREW (M12-1.75 X 35MM)	
11.	105-057	2	WASHER (9/16")	
12.	125-739	4	COMPOSITION BUSHING (1.756")	
13.	179-240	1	PIN	
14.	348-600	-	TRACK FRAME	JT1720
	343-555	-	CENTER FRAME	JT2720
15.	179-244	1	PIN	
16.	350-275	2	ALUMINUM SLEEVE (1/16")	
17.	348-695	1	FLOOR TREAD	
18.	106-992	4	FLG LK SCREW (M8-1.25 X 25MM)	
19.	106-386	4	FLG LOCKNUT (M8-1.25)	
20.	348-711	1	SEAT MOUNT	
21.	348-693	1	RIGHT COVER	
22.	348-684	1	RIGHT CONSOLE	
23.	117-558	1	ADJUST LEVER LATCH (LOCKING)	
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
	<u>110-757</u>	1	LEVER LATCH (ADJUST, LOCKING)	INCL KEYS
	110-596	-	KEY (PAIR)	
24.	111-026	2	BOLT-ON CLAMP (1-1/4", PAIR)	
25.	115-355	1	GROMMET (1-3/8")	
26.	110-981	AR	BULK CABLE (1/16",SOLD PER 1')	USE 1 @ 12"
27.	115-069	2	GROMMET (3/4")	
28.	322-362	2	BACKUP SPACER	
29.	105-806	1	SCREW (M8-1.25 X 25MM)	
30.	107-096	1	LOCKNUT (M8-1.25, NLK)	
31.	344-0001	1	UMBRELLA (6.5')	
	500-1962	-	UMBRELLA POLE (16")	
32.	110-223	1	LATCH BRACKET	
33.	106-237	1	LOCKNUT (M6-1.00,PRV TRQ,NLK)	
34.	106-093	1	SCREW (M6-1.00 X 45MM)	
35.	110-222	1	HOOD LATCH	
36.	110-224	1	ANCHOR BRACKET	
37.	110-253	2	POP RIVET (3/16" X 1/2")	
38.	105-297	4	BOLT (1/4-NC X 3-1/4")	
39.	106-739	2	SHLD BLT (M12 X 20MM,M10-1.50)	
40.	106-391	2	WASHER (M12)	
41.	106-758	2	LOCKNUT (M10-1.50)	

FOOTNOTES:

OPERATORS STATION GAUGES



OPERATORS STATION GAUGES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-940	1	FLUID FLOW POTENTIOMETER	
	217-209	1	POTENTIOMETER POD	
	116-849	1	POTENTIOMETER KNOB	INCL REF NO 30
2.	217-911	5	ROCKER SWITCH (ON-OFF-ON (SPDT)	
3.	217-916	2	ROCKER SWITCH (ON-OFF-ON (DPDT)	
4.	159-450	1	HYD VALVE (PRESSURE REDUCING)	
	190-860	1	SEAL REPAIR KIT	(VITON)
5.	121-014	1	LEFT CONSOLE COVER	
6.	362-931	1	SWITCH PANEL	
7.	362-930	2	SWITCH PANEL	
8.	362-929	1	SWITCH PANEL	
9.	121-013	1	RIGHT CONSOLE COVER	
10.	191-047	1	PRESSURE GAUGE (3000PSI)	USED ON JT1720
	217-579	1	PRESSURE GAUGE (6000PSI)	USED ON JT2720
11.	217-552	1	PRESSURE GAUGE (6000PSI)	
12.	215-131	1	OIL PRESSURE GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	OPTION
13.	217-531	1	WATER TEMPERATURE GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	OPTION
14.	215-133	1	FUEL GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	OPTION
15.	217-020	1	PILOT LIGHT	
	217-027	1	INSERT (RED) HYD OIL HI TEMP	
	217-036	1	INSERT (YELLOW) HYD OIL PSI	
	217-074	2	LENS REFLECTOR	
	217-046		BULB (12V DC)	
16.	214-429	1	CONTROL MODULE	
	197-431		REBUILT CONTROL MODULE	
	217-232	1	CONTROL MODULE	EL STR SYS
	197-232		REBUILT CONTROL MODULE	
17.	516-086	1	HYD CONTROL VALVE (DIRECTIONAL) W/HANDLE	
	190-876	-	SEAL REPAIR KIT (PUSH PIN SET)	
	499-108	-	PUSH BUTTON	FOR USE WITH 516-086
	499-109	-	3 POSITION SWITCH	FOR USE WITH 516-086
	500-1539	-	VALVE	
	300-6747	-	HANDLE ASSEMBLY	
18.	217-221	1	FLOW METER DISPLAY	
19.	110-560	2	POP RIVET (3/16" X ", ALUM)	
20.	106-640	16	SCREW (M6-1.00 X 20MM, BUT SOC)	
21.	106-237	22	LOCKNUT (M6-1.00, PRV TRQ, NLK)	
22.	306-607	1	HORN BUTTON	
	306-608	1	BUTTON COVER	
23.	217-206	1	BUTTON SWITCH (SPST)	INCL ANTENNA (LOCATED ON HOOD)
	214-103	1	2-WAY MALE CONNECTOR	
24.	N/A	1	SUBSITE 90D	FOR UNITS WITHOUT 90D ANTENNA
25.	106-574	6	CLIP NUT (M6-1.00)	
26.	348-896	1	COVER PLATE	

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FOOTNOTES:

NOTES:

OPERATORS STATION GAUGES

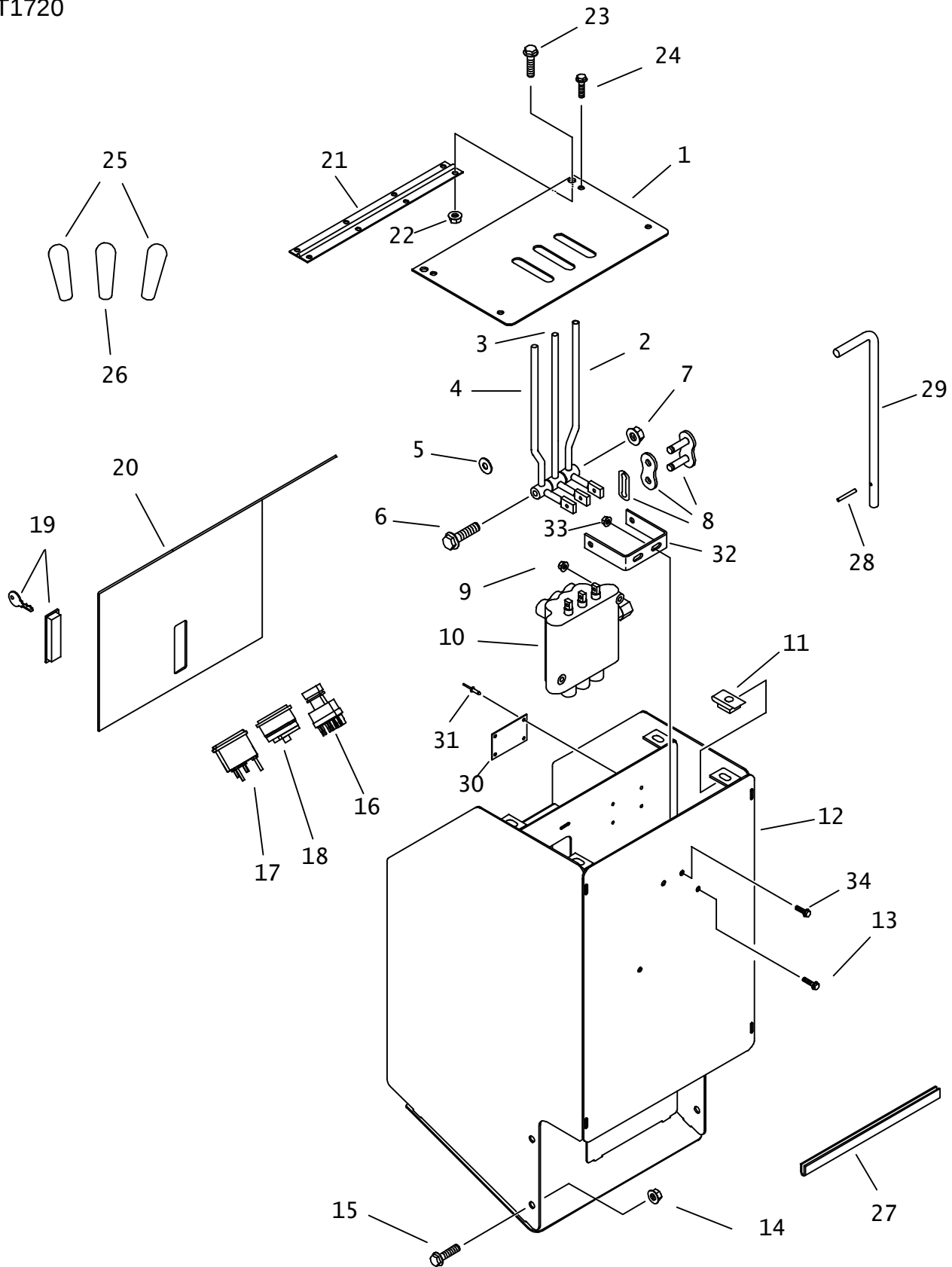
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
27.	105-810	2	BOLT (#10-24 X 1/2", SOC)	
28.	106-048	2	LOCKNUT (#10-24)	
29.	107-312	6	SCREW (M6-1.00 X 25MM, BUT SOC)	
30.	274-940	1	INDICATOR DECAL	
31.	348-960	1	RIGHT CONSOLE COVER	BEGINS WITH S/N 2R3048
32.	348-961	1	LEFT CONSOLE COVER	BEGINS WITH S/N 2R3048
33.	110-962	2	FILLER PLUG	
34.	217-079	1	PRESSURE GAUGE (10000PSI)	USED ON JT2720
	217-552	1	PRESSURE GAUGE (6000PSI)	USED ON JT1720
35.	111-030	1	PLUG (1/2" DOUBLE D)	
36.	319-412	1	FLOW METER WEATHER COVER	

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FOOTNOTES:

NOTES:

REAR CONSOLE JT1720



REAR CONSOLE

JT1720

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-582	1	LEVER PANEL	
2.	348-821	1	LEFT CONTROL LEVER	
3.	348-822	1	CONTROL LEVER	
4.	348-823	1	RIGHT CONTROL LEVER	
5.	106-395	4	WASHER (M8, HARDENED)	
6.	106-128	1	BOLT (M8-1.25 X 110MM)	
7.	106-561	1	LOCKNUT (M8-1.25, PRV TRQ, 10.9)	
8.	130-101	3	CONNECTOR LINK (#50)	
9.	106-385	2	FLG LOCKNUT (M6-1.00)	
10.	516-093	-	HYD CONTROL VALVE	ENDS WITH S/N
	153-589	1	HYD CONTROL VALVE	BEGINS WITH S/N
	191-359		SEAL REPAIR KIT	
11.	106-551	4	CLIP NUT (M8-1.25)	
12.	348-585	1	REAR CONSOLE	
13.	106-093	2	SCREW (M6-1.00 X 45MM)	
14.	106-387	4	FLG LOCKNUT (M10-1.50)	
15.	106-383	4	FLG LK SCREW (M10-1.50 X 30MM)	
16.	214-852	1	IGNITION SWITCH	
	214-961		KEY, PAIR	
	214-962		SWITCH MOUNTING NUT	
17.	215-128	1	HOUR METER	
18.	215-129	1	VOLT METER	
	215-415	-	NITE-LIGHT KIT (12V DC)	
19.	117-558	1	ADJUST LEVER LATCH (LOCKING)	
	214-961		KEY, PAIR	
	217-309		LOCK PLUG 4/LATCH	
	110-757	1	LEVER LATCH (ADJUST, LOCKING)	
20.	348-583	1	CONSOLE DOOR	
21.	110-218	1	STEP HINGE	
22.	105-832	4	FLG LOCKNUT (1/4-NC)	
23.	105-836	4	FLG LK BOLT (1/4-NC X 1/2")	
24.	106-380	4	FLG LK SCREW (M8-1.25 X 16MM)	
25.	110-442	2	HANDLE (3/8-NC, GREEN)	
26.	110-439	1	HANDLE (3/8-NC, BLACK)	
27.	115-671	AR	BULK EDGE (1/16", SOLD PER 1")	USE 1 @ 13"
28.	105-524	1	ROLL PIN (1/8" X 3/4")	
29.	348-928	1	PROP ROD	
30.	250-603	1	S/N TAG	
31.	106-282	4	DRIVE RIVET (1/8" X 1/2")	
32.	348-824	1	LEVER BRACKET	
33.	105-832	2	FLG LOCKNUT (1/4-NC)	
34.	105-836	2	FLG LOCK BOLT (1/4-NC X 1/2")	

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FOOTNOTES:

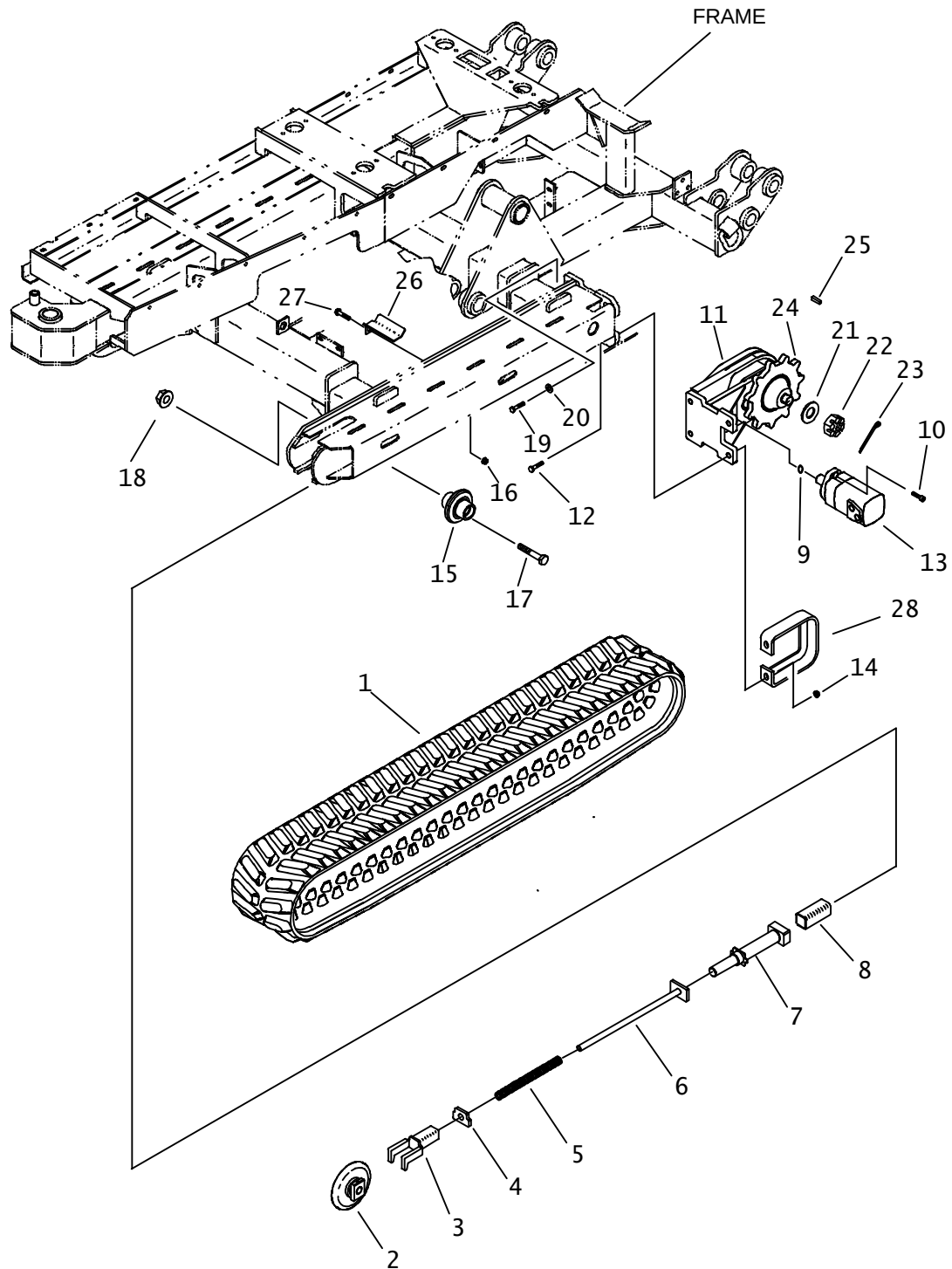
NOTE:

NOTES:

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TRACK FRAME

TRACK GROUP



TRACK GROUP

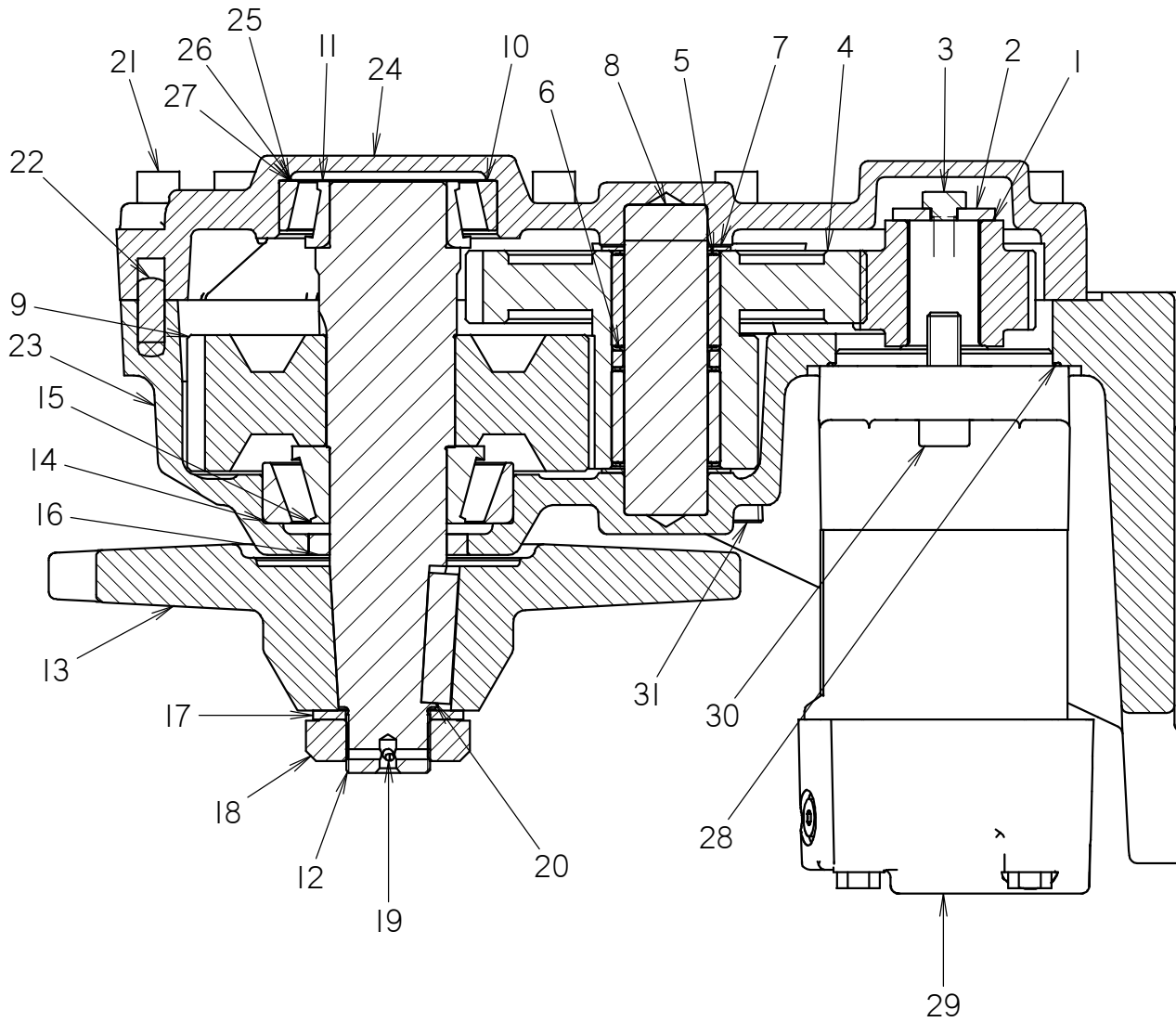
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-512	2	RUBBER TRACK	OBSOLETE
	315-175	2	GROUND DRIVE TRACK	
2.	170-336	2	FRONT IDLER ROLLER	
3.	353-403	2	YOKE	
4.	353-482	2	SPRING PLATE	
5.	117-122	2	COMPRESSION SPRING	
6.	353-402	2	SPACER TUBE	
7.	151-161	2	GREASE CYLINDER	
8.	353-473	2	STOP TUBE	
9.	157-099	2	O-RING (042 D70)	
10.	106-204	4	BOLT (1/2-NC X 1-1/2", SOC)	TORQUE TO 100 FT-LB
11.	166-172	2	GEARBOX (5.44:1)	GROUND DRIVE
12.	106-341	4	SCREW (M16-2.00 X 70MM)	TORQUE TO 159 FT-LB
13.	155-581	2	HYD MOTOR	
	500-347		SEAL REPAIR KIT	
14.	106-355	4	FLG NUT (M16-2.00, 10.9)	
15.	170-335	14	IDLER ROLLER	
16.	106-387	2	FLG LOCKNUT (M10-1.50)	
17.	107-118	14	SCREW (M16-2.00 X 160MM)	
18.	106-442	14	FLG LOCKNUT (M16-2.00, PRV TRQ)	
19.	106-340	4	SCREW (M16-2.00 x 50MM)	
20.	106-392	4	WASHER (M16)	
21.	105-1352	2	WASHER (1.265)	
22.	105-917	2	CASTLE NUT (1-1/4-NF)	TORQUE TO 525-675 FT-LB
23.	105-501	2	COTTER PIN (1/8" X 2")	
24.	174-008	2	SPROCKET (11T)	ENDS WITH S/N
	140-1084	2	SPROCKET (11T)	BEGINS WITH S/N
25.	166-857	2	KEY (.437" X 1.950")	
26.	348-962	2	HOSE PROTECTOR	
27.	106-383	2	FLG LK SCREW (M10-1.50 X 30MM)	
28.	324-456	2	TRACK SUPPORT	

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FOOTNOTES:

NOTE:

GEARBOX GROUND DRIVE



GEARBOX GROUND DRIVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-172		GEARBOX (5.44:1)	INCLUDES REF. NO'S 1-12, 14-16, 21-31
1	168-052	1	INPUT PINION	
2	105-069	1	WASHER (1.406")	
3	105-024	1	LK BOLT (3/8-NC X 3/4", NLK)	TORQUE TO 45 FT-LBS
4	168-051	1	CLUSTER GEAR	
5	126-185	2	BEARING CAGE (1.50 WD)	
6	182-220	1	SPACER	
7	126-017	2	BEARING RACE (1.25")	
8	179-235	1	PIN	
9	168-053	1	OUTPUT GEAR	
10	125-270	1	TAPERED RACE (3.265")	
11	125-269	1	TAPERED BEARING (1.75")	
12	160-449	1	SHAFT	
13	140-1084	1	11 TOOTH SPROCKET	SUPERSEDES 174-008
14	125-326	1	TAPERED RACE (3.75")	
15	125-327	1	TAPERED BEARING (1.750")	
16	155-881	1	INTERNAL SEAL (1.750")	
17	105-1352	1	WASHER (1.265)	
18	105-917	1	CASTLE NUT (1-1/4-NF)	TORQUE TO 525-675 FT-LBS
19	105-501	1	COTTER PIN (1.25" X 2.0")	
20	166-857	1	KEY (.437" X 1.95")	
21	106-857	14	SCREW (M10-1.50 X 55MM, SOC)	TORQUE TO 45 FT-LBS
22	106-866	1	DOWEL PIN (M10 X 30MM)	
23	348-749	1	HOUSING (MACHINED)	
24	348-254	1	CAST COVER, MACHINED	
25	165-800	1	SHIM (.002")	AS REQUIRED
26	165-801	1	SHIM (.003")	AS REQUIRED
27	165-802	1	SHIM (.007")	AS REQUIRED
28	157-099	1	O-RING (O42 D70)	
29	155-581	1	HYD MOTOR	
30	106-204	2	BOLT (1/2 - NC X 1.50", SOC)	USE LOCTITE 271 OR EQUIVALENT, TORQUE TO 100 FT-LBS
31	115-025	4	PLUG (O8N, SQ FM, MAG)	

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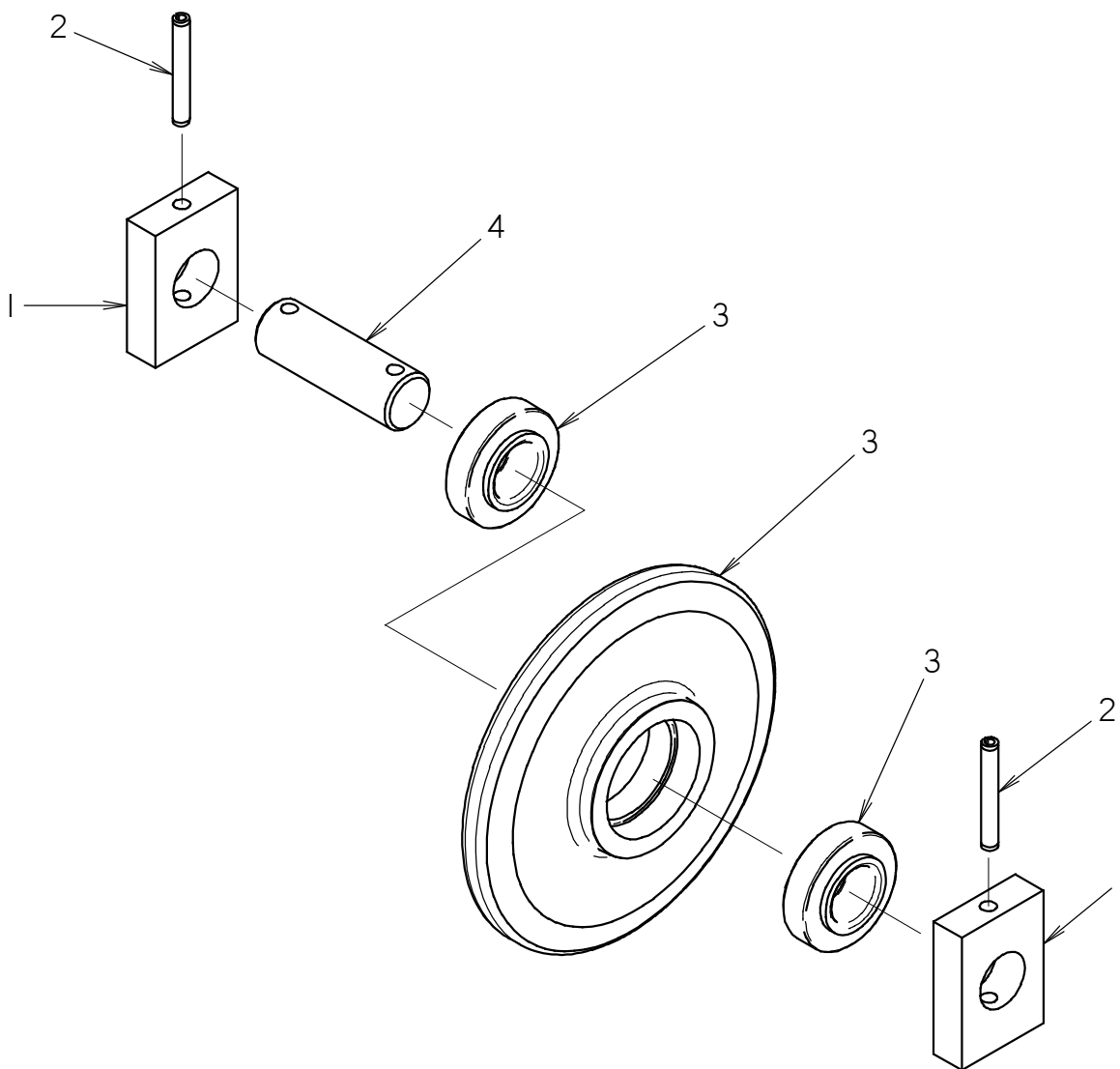
FOOTNOTES:

NOTE:

FRONT IDLER

ENDS WITH S/N: CMWSK350P60000600
ENDS WITH S/N: CMWSK650A60000427

ENDS WITH S/N: CMWSK500H60000254
ENDS WITH S/N: CMWXT850C60000125



FRONT IDLER

ENDS WITH S/N: CMWSK350P60000600

ENDS WITH S/N: CMWSK650A60000427

ENDS WITH S/N: CMWSK500H60000254

ENDS WITH S/N: CMWXT850C60000125

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	170-336	-	FRONT IDLER ROLLER	INCLUDES REF NO.'S 1-4
1	353-477	2	BLOCK, PUSH	OBSOLETE, SEE FOOTNOTE 2
2	105-561	2	ROLL PIN (3/8" X 2-3/4")	
3	170-342	1	IDLER ROLLER SUB	SEE FOOTNOTE 1
4	167-307	1	SHAFT, IDLER	

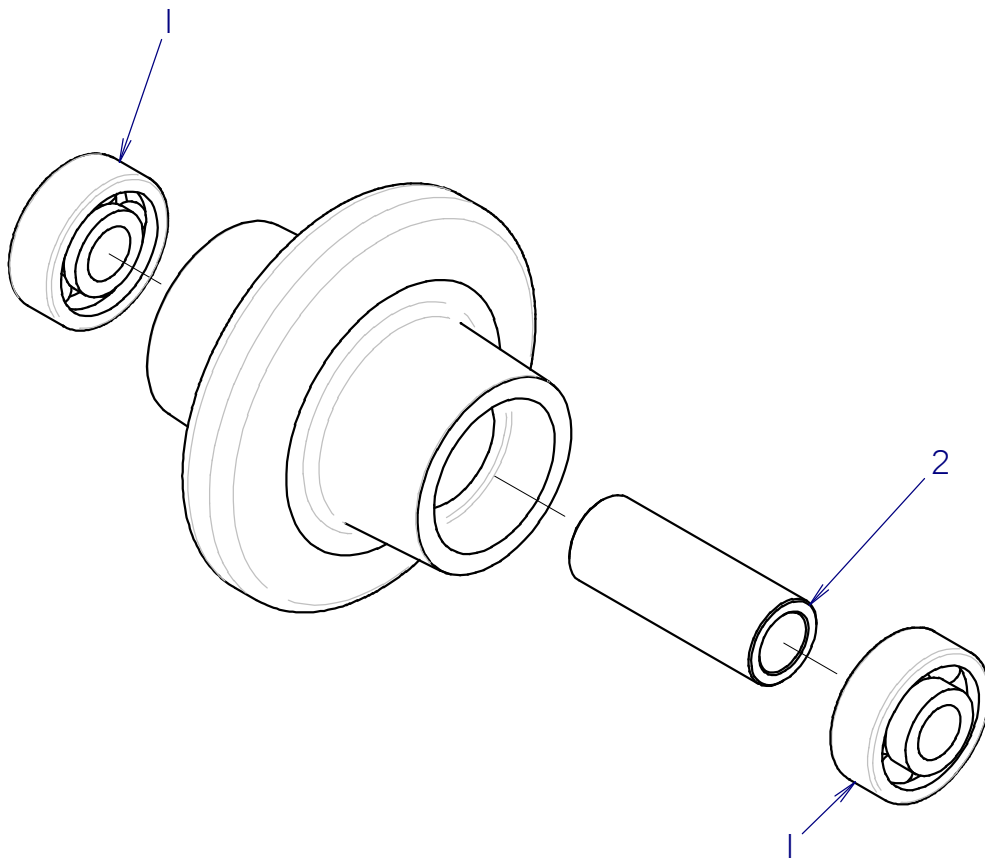
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FOOTNOTES:

1. FOR REPLACEMENT BEARINGS, USE PART NUMBER 125-005.
2. SEE PARTS PAGE FRONT IDLER" ID0253424 FOR CURRENT PRODUCTION COMPONENTS.

NOTE:

IDLER ROLLER



IDLER ROLLER

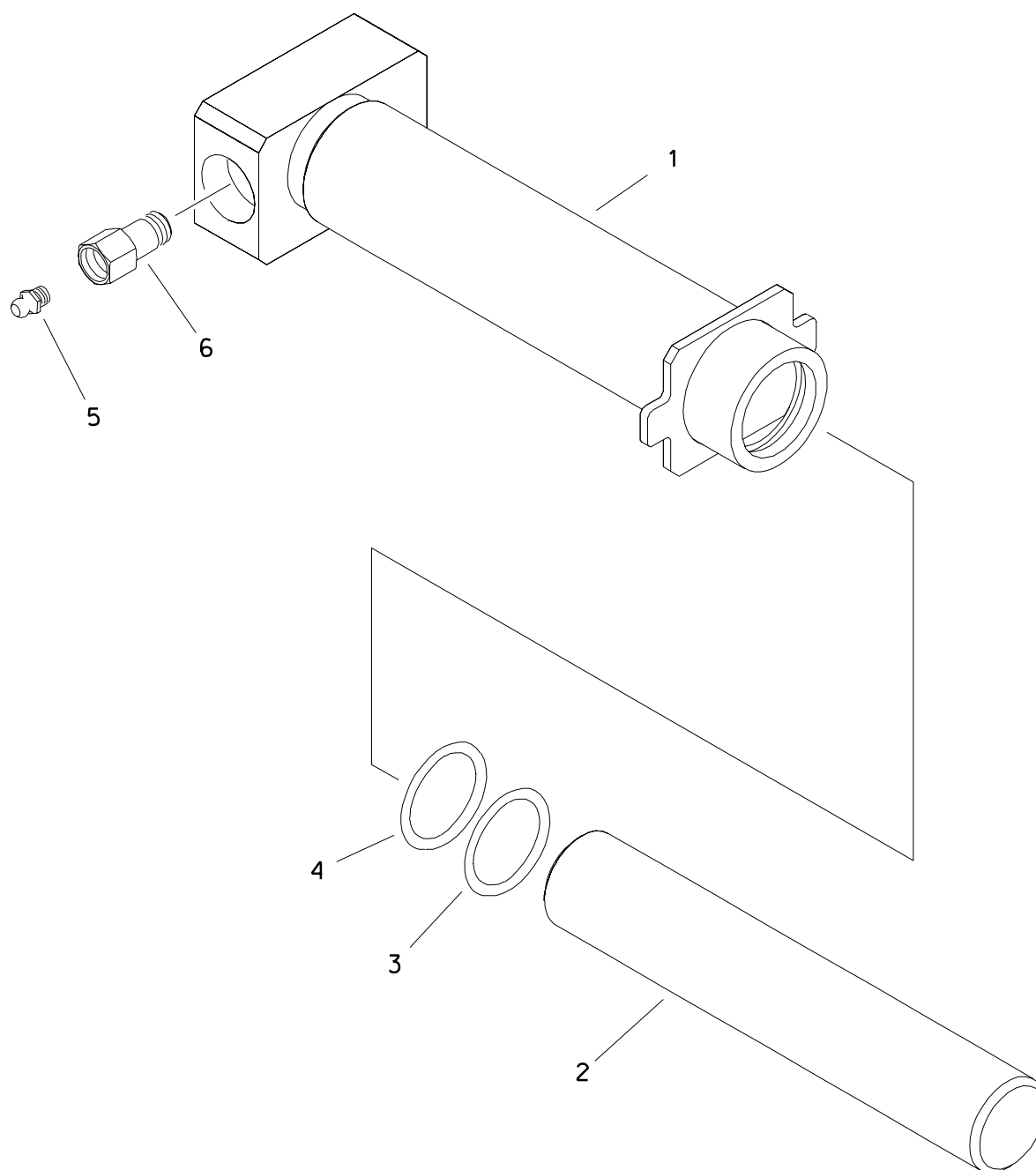
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	170-335	-	IDLER ROLLER	INCLUDES REF NO:S 1, 2
1	125-124	2	BALL BEARING (6311)	
2	353-487	1	SPACER TUBE	

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FOOTNOTES:

NOTE:

GREASE CYLINDER

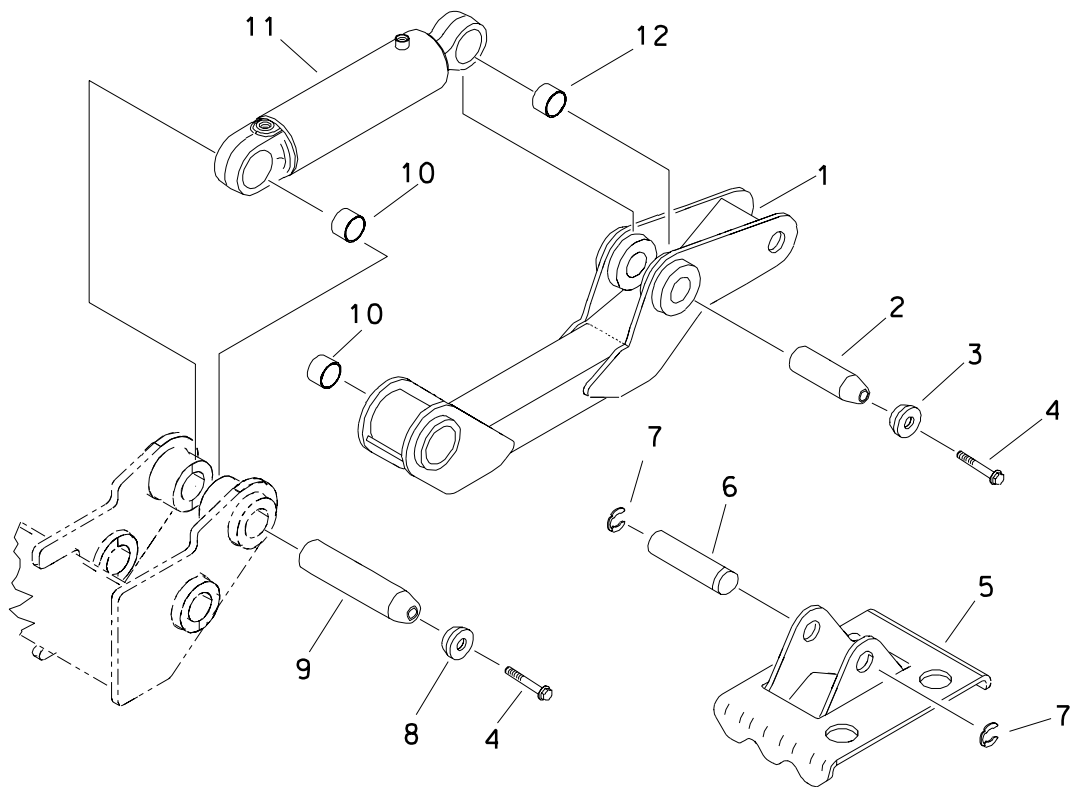


GREASE CYLINDER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-161		GREASE CYLINDER	INCL REF NO.'S 1 - 4
1.	353-404	1	GREASE CYLINDER	
2.	153-501	1	CYLINDER ROD	
3.	155-732	1	BACKUP RING (224 D90)	
4.	155-704	1	O-RING (224 D70)	
5.	115-019	1	ZERK (Q2N)	
6.	159-093	1	RELIEF VALVE (5/8-NF, Q2N)	

FOOTNOTES

STABILIZER

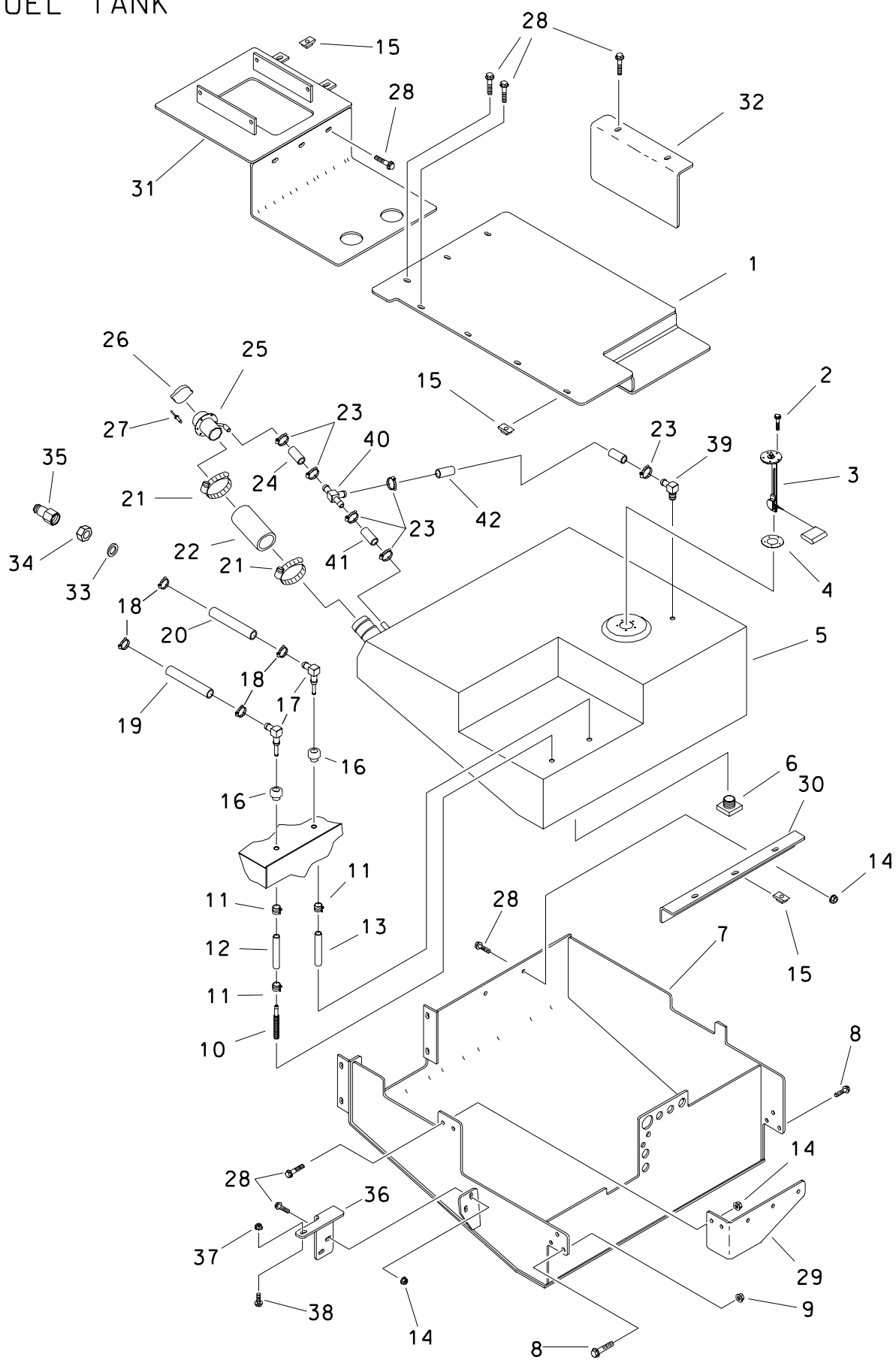


STABILIZER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-540	2	STABILIZER ARM	
2.	356-710	2	TAPERED PIN (38.1MM X 124MM)	
3.	181-974	2	TAPERED INSERT (1.5")	
4.	106-470	6	FLG SCREW (M16-2.00 X 40MM)	
5.	357-019	2	STABILIZER PAD	
6.	183-862	2	PAD PIN	
7.	115-483	4	KLIP RING (1-1/4")	
8.	181-975	4	TAPERED INSERT (1.75")	
9.	179-242	4	TAPERED PIN (44.45MM X 196MM)	
10.	125-773	6	COMPOSITION BUSHING (1.75")	
11.	151-179	2	CYL (3" X 1.5" X 5")	
12.	125-772	2	COMPOSITION BUSHING (1.5")	

FOOTNOTES

FUEL TANK



FUEL TANK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-580	1	LEFT FUEL TANK COVER	
2.	105-214	5	FLG SCREW (#10-24 X 1/2")	
3.	217-568	1	FUEL SENDER	
4.	165-704	1	GASKET	
5.	348-827	1	FUEL TANK	
6.	115-153	1	PLUG (O4N, SQ)	
7.	348-547	1	FUEL TANK HOLDER	
8.	106-632	6	FLG LK SCREW (M12-1.75 X 35mm, SER)	
9.	106-709	6	FLG LOCKNUT (M12-1.75)	
10.	156-268	1	FUEL STRAINER (O4H)	
11.	110-563	3	SPRING CLAMP (3/8")	
12.	118-096	AR	BULK FUEL TUBING (1/4", PER FT)	USE 1 @ 3.15"
13.	118-096	AR	BULK FUEL TUBING (1/4", PER FT)	USE 1 @ 1.18"
14.	106-387	9	FLG LOCKNUT (M10-1.50)	
15.	106-558	7	CLIP NUT (M10-1.50)	
16.	116-325	2	GROMMET (.362")	
17.	156-269	2	S/O COUPLER (O4H-O5H90)	
18.	110-528	4	SNAP-ON CLAMP (.531" TO .593")	
19.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 60"
20.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 73"
21.	110-134	2	WORM CLAMP (2.06" TO 2.75")	
22.	116-818	1	FUEL HOSE (2" X 12.9")	
23.	110-217	6	WORM CLAMP (7/16" TO 1")	
24.	116-322	AR	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 9"
25.	364-080	1	FILLER NECK	
	364-659	1	FILLER NECK	
26.	110-010	1	FUEL CAP (1-1/2")	
27.	110-253	6	POP RIVET (3/16" X 1/2")	
28.	106-383	16	FLG LK SCREW (M10-1.5 X 30mm)	
29.	348-599	1	SIDE MOUNT BRACKET	
30.	348-598	1	REAR MOUNT BRACKET	
31.	348-850	1	RIGHT FUEL TANK COVER	
32.	348-596	1	SIDE PLATE	
33.	156-276	1	FERRULE (O5T)	
34.	156-277	1	COMPRESSION NUT (O5T)	
35.	156-275	1	TUBE CONNECTOR (O4H-O5T)	
36.	348-657	1	BRACKET	
37.	106-386	1	FLG LOCKNUT (M8-1.25)	
38.	106-381	1	FLG LK SCREW (M8-1.25 X 25mm)	
39.	156-108	1	S/O COUPLER (O8N-O8H90)	
40.	156-729	1	S/O TEE (O8H-O8H-O8H)	
41.	116-322	AR	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 3"
42.	116-322	AR	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 36"

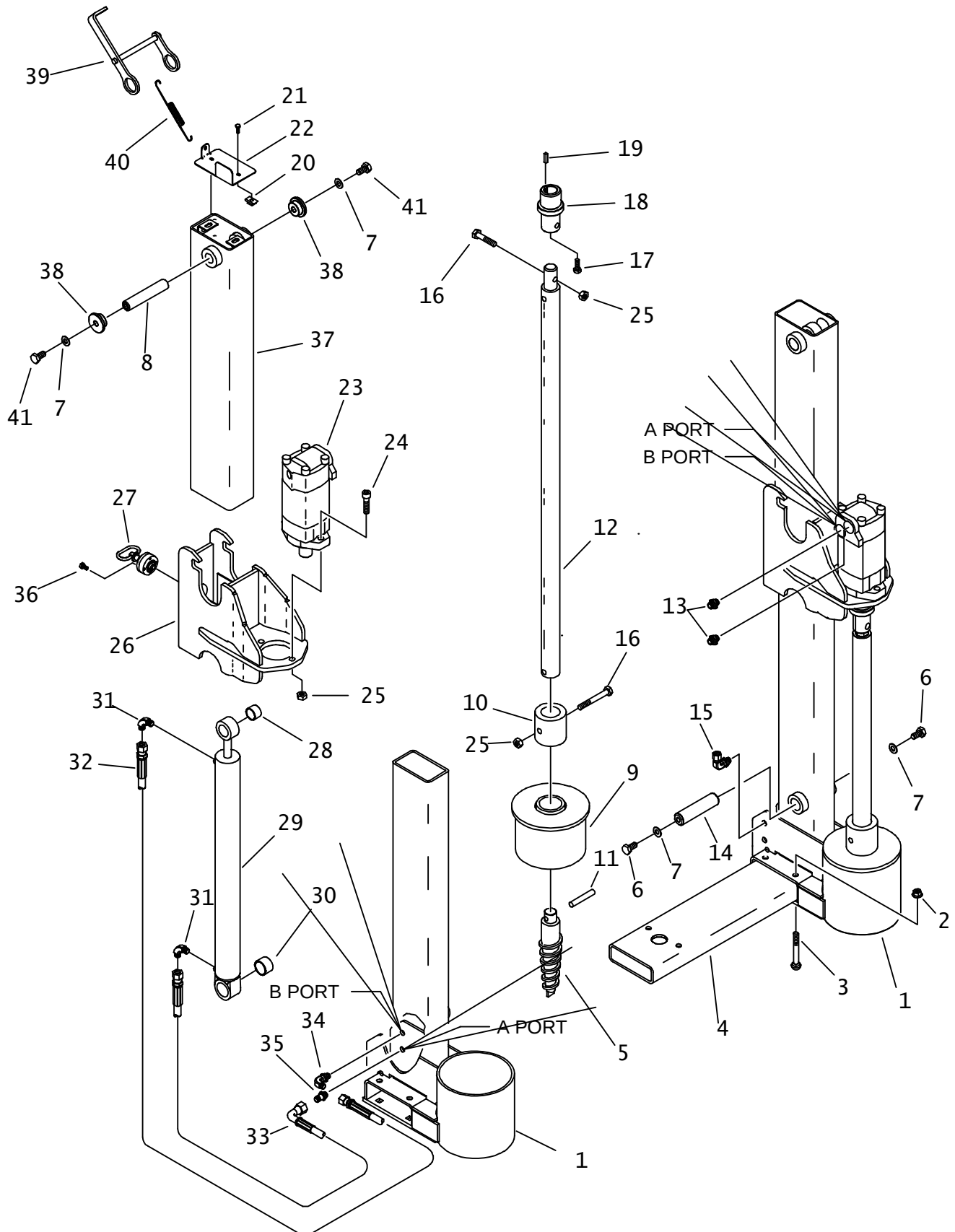
FOOTNOTES

NOTES:

ANCHOR SYSTEMS

AUTO-ANCHOR SYSTEM

ENDS WITH S/N:



AUTO-ANCHOR SYSTEM

ENDS WITH S/N:

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-315	2	ANCHOR PLATE	
2.	105-833	4	FLG LOCKNUT (1/2-NC)	
3.	105-256	4	CARRIAGE BOLT (1/2-NC X 3-1/2")	
4.	348-550	-	DRILL FRAME	
5.	347-125	2	AUGER (150MM)	ENDS WITH S/N_____
	310-119	2	150MM AUG WELD	BEGINS WITH S/N_____, SEE FOOTNOTE 1
	347-128	2	AUGER (100MM)	ENDS WITH S/N_____
	310-120	2	100MM AUG WELD	BEGINS WITH S/N_____, SEE FOOTNOTE 1
	347-806	2	ANCHOR SHAFT BIT	ENDS WITH S/N_____
	310-118	2	ANCHOR SHAFT BIT	BEGINS WITH S/N_____, SEE FOOTNOTE 1
6.	105-828	4	FLG LK BOLT (1/2-NC X 3/4")	
7.	105-884	8	WASHER (.531")	
8.	179-228	2	CYL PIN (1")	
9.	350-290	2	CENTERING CAP	
	305-643	2	CENTERING CAP	OLD STYLE
10.	354-451	2	STOP TUBE	NEW STYLE
	348-965	2	STOP TUBE	OLD STYLE
11.	106-799	2	ROLL PIN (M12 X 45MM)	NEW STYLE, SEE FOOTNOTE 3
	107-331	2	ROLL PIN	ENDS WITH S/N_____
12.	348-963	2	ANCHOR SHAFT	BEGINS WITH S/N_____, SEE FOOTNOTE 1
	178-598	2	BAR, ANCHOR SHAFT	
13.	154-369	-	CONNECTOR (060-10S)	
14.	179-227	2	CYL PIN (1.25")	
15.	154-255	2	UNION (040-040FX90)	
16.	107-308	4	SCREW (M12-1.75 X 75MM)	
17.	105-052	2	BOLT (3/8-NC X 1-1/4")	
18.	350-289	2	ANCHOR DRIVER	
19.	165-909	2	KEY (5/16" X 1-1/8")	
20.	106-574	4	CLIP NUT (M6-1.00)	
21.	106-379	4	FLG LK SCREW (M6-1.00 X 20MM)	
22.	350-375	2	COVER	
23.	158-700	2	HYD MOTOR	
	500-347		SEAL REPAIR KIT	
	166-278	-	SHAFT/ASSEMBLY BEARING	
	500-658	-	SEAL REPAIR KIT	
24.	106-707	4	SCREW (M12-1.75 X 45MM, SOC)	
25.	106-685	8	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	

NOT SHOWN:

FOOTNOTES:

1. IF REPLACING ITEM 5 OR 12 WITH NEW STYLE, THE OTHER MUST ALSO BE REPLACED.
2. 105-762 AND 106-685 MOUNTING HARDWARE OPTIONAL IN PLACE OF ROLL PIN

NOTE:

1. REFER TO O-RING CHART (800-301) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS.

AUTO-ANCHOR SYSTEM

ENDS WITH S/N:

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
26.	350-282	2	ANCHOR MOTOR MOUNT	
27.	347-888	2	SPRING LOADED PIN	
28.	125-770	2	COMPOSITION BUSHING (1")	
29.	151-096	2	CYL (2" X 1" X 24")	
30.	125-771	2	COMPOSITION BUSHING (1.25")	
31.	154-252	4	CONNECTOR (04S-04090)	
32.	515-011	2	HOSE (040FX90-32"-3000)	
33.	515-085	2	HOSE (040FX90-8.5"-3000)	
34.	154-355	4	BK CONNECTOR (040-04090BK)	
35.	154-275	4	BK CONNECTOR (040-040BK)	
36.	106-796	4	SCREW (M4-.70 X 30MM)	
37.	350-301	2	CYL SLIDE TUBE	
38.	348-333	4	BUSHING	
39.	348-331	2	LEVER	REFER TO 052-283 FOR PROPER INSTALLATION
40.	115-601	2	EXTENSION SPRING (4.062")	
41.	105-831	4	FLG LK BOLT (1/2-NC X 1-1/2")	

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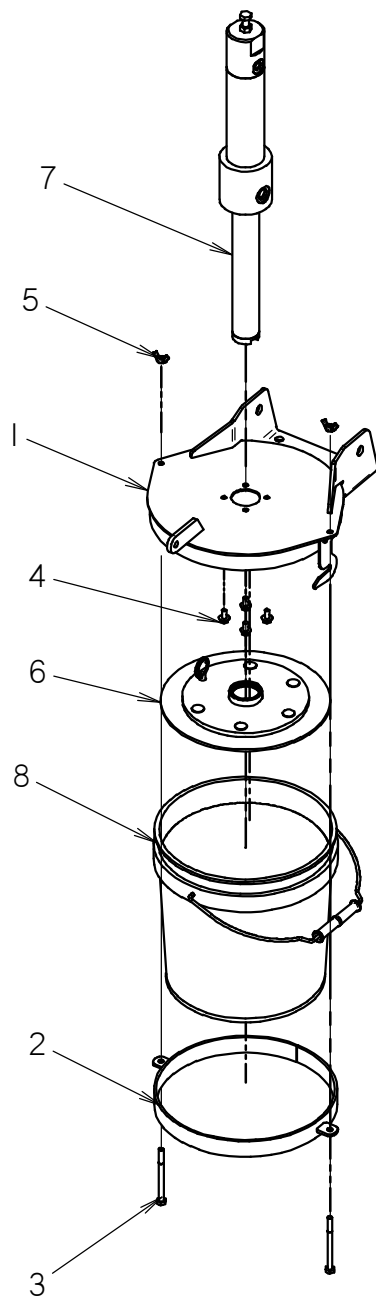
FOOTNOTES:

NOTE:

NOTES:

LUBRICATOR SYSTEMS

AUTO-LUBER ASSEMBLY



AUTO-LUBER ASSEMBLY

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	350-400	1	COVER WELDMENT	
2	350-399	1	BASE	
3	105-297	2	BOLT (1/4-NC X 3-1/4")	
4	106-378	4	FLG LK SCREW (M6-1.00 X 12MM)	
5	195-339	2	WING NUT (1/4-NC)	
6	350-1932	1	TOOL JOINT LUBE FOLLOWER	
7	350-398	1	GREASE PUMP PARTS	
8	259-858	1	TOOL JNT LUBE, STD SPRY 2 GAL	
	256-031	-	TOOL JNT LUBE, SUMR SPRY 2 GAL	

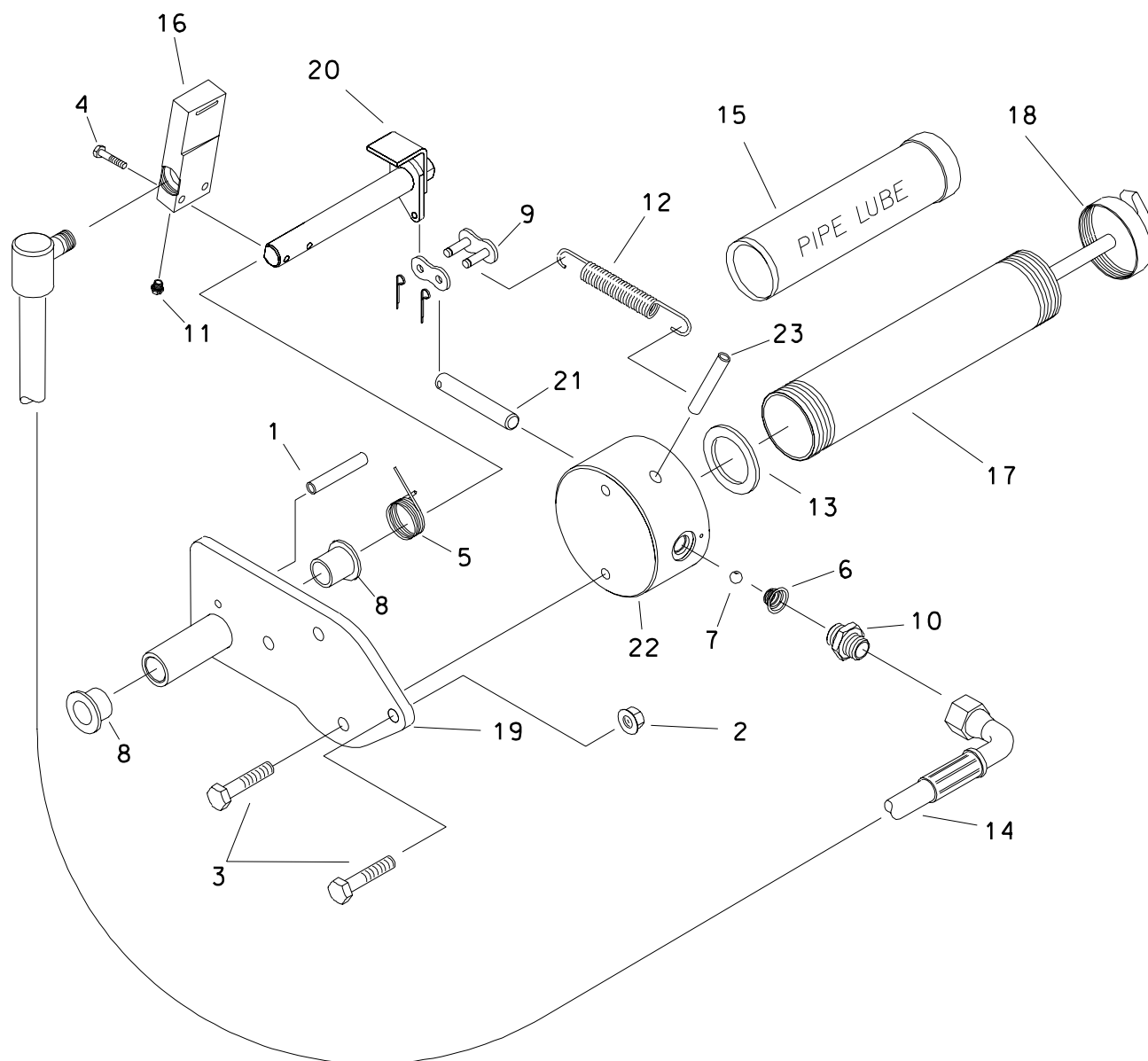
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FOOTNOTES:

NOTE:

THREAD LUBRICATOR

ENDS WITH S/N 2S4079



THREAD LUBRICATOR

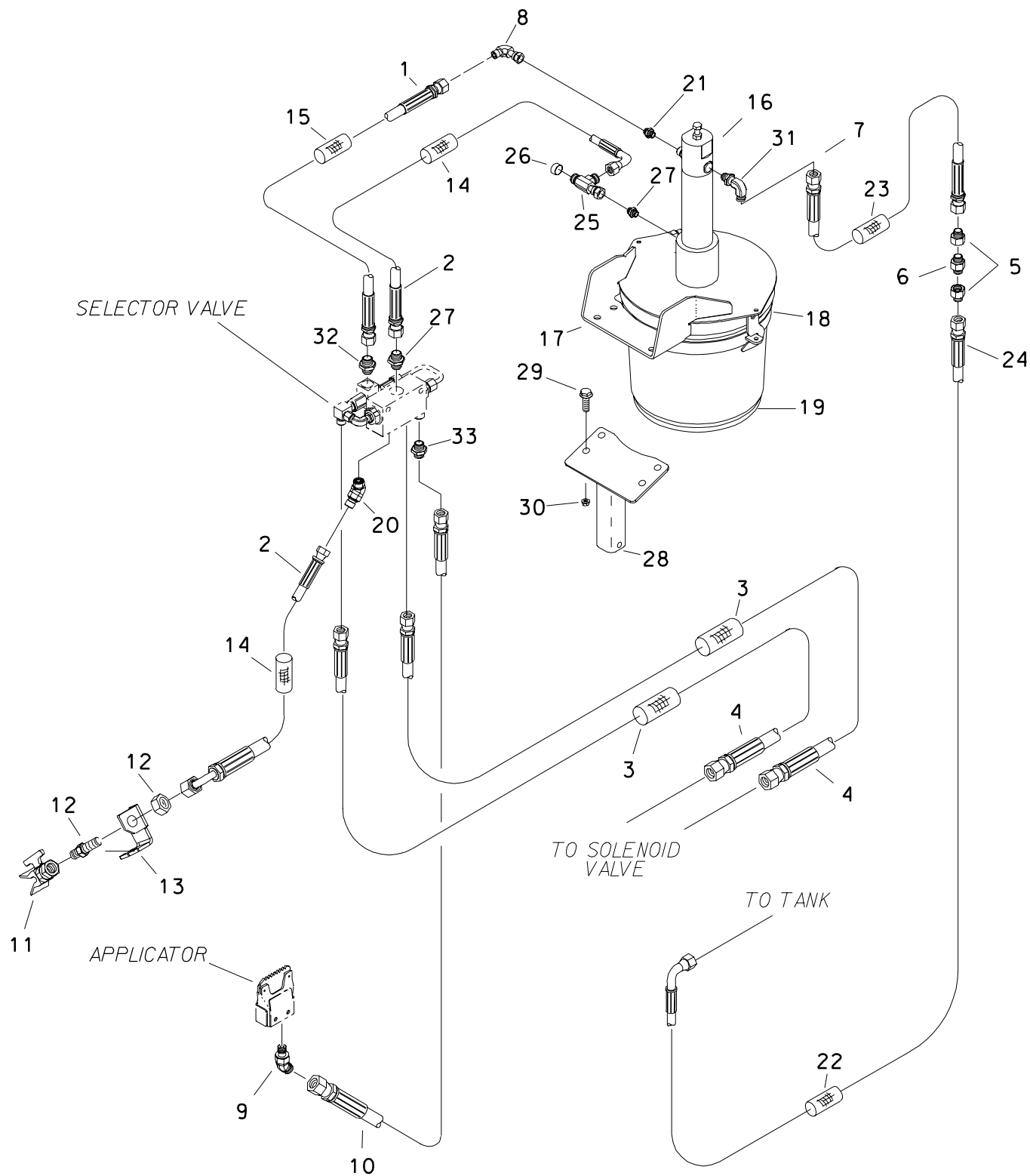
ENDS WITH S/N 2S4079

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-778		LUBRICATOR KIT	INCL REF NO'S 1 THRU 23
1.	105-510	1	ROLL PIN (1/4" X 1-1/2")	
2.	106-387	2	FLG LOCKNUT (M10-1.50)	
3.	106-383	4	FLG LK SCREW (M10-1.50 X 30mm)	
4.	106-554	2	SCREW (M6-1.00 X 30mm, SOC)	
5.	117-141	1	TORSION SPRING	
6.	117-162	1	COMPRESSION SPRING (.438")	
7.	125-136	1	DETENT BALL (.187", CHROME)	
8.	125-806	2	BUSHING (.750", NYLINER)	
9.	130-331	1	CONNECTOR LINK (1-1/4")	
10.	154-221	1	CONNECTOR (06S-060)	
11.	154-383	1	PLUG (04S)	
12.	117-186	1	EXTENSION SPRING (3.625")	
13.	157-716	1	GREASE SEAL	
14.	159-458	1	HOSE (060FX90/90-31"-3000)	
15.	256-663	AR	GREASE (14 OZ CARTRIDGE)	
	256-026	AR	GREASE (14 OZ CART, ARTIC GD)	
16.	359-859	1	GREASE APPLICATOR	
17.	359-869	1	GREASE BARREL	
18.	359-871	1	PLUNGER	
19.	350-436	1	LUBER BASE	
20.	350-437	1	PUMP SHAFT	
21.	359-924	1	PLUNGER	
22.	359-925	1	LUBER BASE	SEE FOOTNOTE 1
23.	105-521	1	ROLL PIN (1/4" X 1")	

FOOTNOTES

1. COAT ITEM 21 WITH COPPER TOOL JOINT COMPOUND (256-633 OR EQUIV.) AS LUBRICANT.

JT1720 AUTO-LUBER HYDRAULICS



JT1720 AUTO-LUBER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-682	1	HOSE (040FX-17"-3000)	
2.	515-538	2	HOSE (060FX90S-15"-3000)	
3.	117-195	2	ABRASION SLEEVE (1.00" X 125")	
4.	154-916	2	HOSE (040FX90-120"-3000)	
5.	154-373	2	REDUCER (040-060F)	
6.	149-871	1	FLOW CHECK VALVE (060-060)	
7.	154-719	1	HOSE (040FX-10"-3000)	
8.	154-252	1	CONNECTOR (04S-04090)	
9.	514-414	1	CONNECTOR (04S-06045)	
10.	154-655	1	HOSE (060FX-160"-3000)	
11.	149-399	1	SPRAY NOZZLE	
12.	514-163	1	BK CONNECTOR (060-060BK)	
13.	308-644	1	NOZZLE BRACKET	
14.	117-608	2	ABRASION SLEEVE (1.00" X 15")	
15.	117-194	1	ABRASION SLEEVE (1.00" X 16")	
16.	350-398	-	GREASE PUMP	
17.	350-400	-	COVER	
18.	350-399	-	BASE	
19.	259-858	-	TOOL JNT LUBE, STD SPRY 2 GAL	
	256-031	-	TOOL JNT LUBE, SUMR SPRY 2 GAL	
20.	154-224	1	CONNECTOR (06S-06045)	SEE FOOTNOTE D
21.	154-278	1	CONNECTOR (04S-040)	
22.	117-170	1	ABRASION SLEEVE (1.00" X 197")	
23.	117-670	1	ABRASION SLEEVE (1.00" X 10")	
24.	515-384	1	HOSE (040FX90-190"-3000)	
25.	154-344	1	UN RUN TEE (060FX-060-060)	
26.	154-326	1	CAP (060F)	
27.	154-221	2	CONNECTOR (06S-060)	SEE FOOTNOTE A
28.	305-834	1	HOLDER ASSEMBLY	
29.	106-383	4	FLG LK SCREW (M10-1.50 X 30MM)	
30.	106-387	4	FLG LOCKNUT (M10-1.50)	
31.	154-401	1	CONNECTOR (04S-04090, DRF)	
32.	514-133	1	CONNECTOR (040-06S)	SEE FOOTNOTE B
33.	514-165	1	CONNECTOR (06S-060, DRF .078")	SEE FOOTNOTE C

FOOTNOTES

- A. GREASE IN FROM PUMP
 B. HYDRAULIC OIL OUT TO LUBE PUMP
 C. TO REAR APPLICATOR
 D. TO SPRAY NOZZLE

NOTE

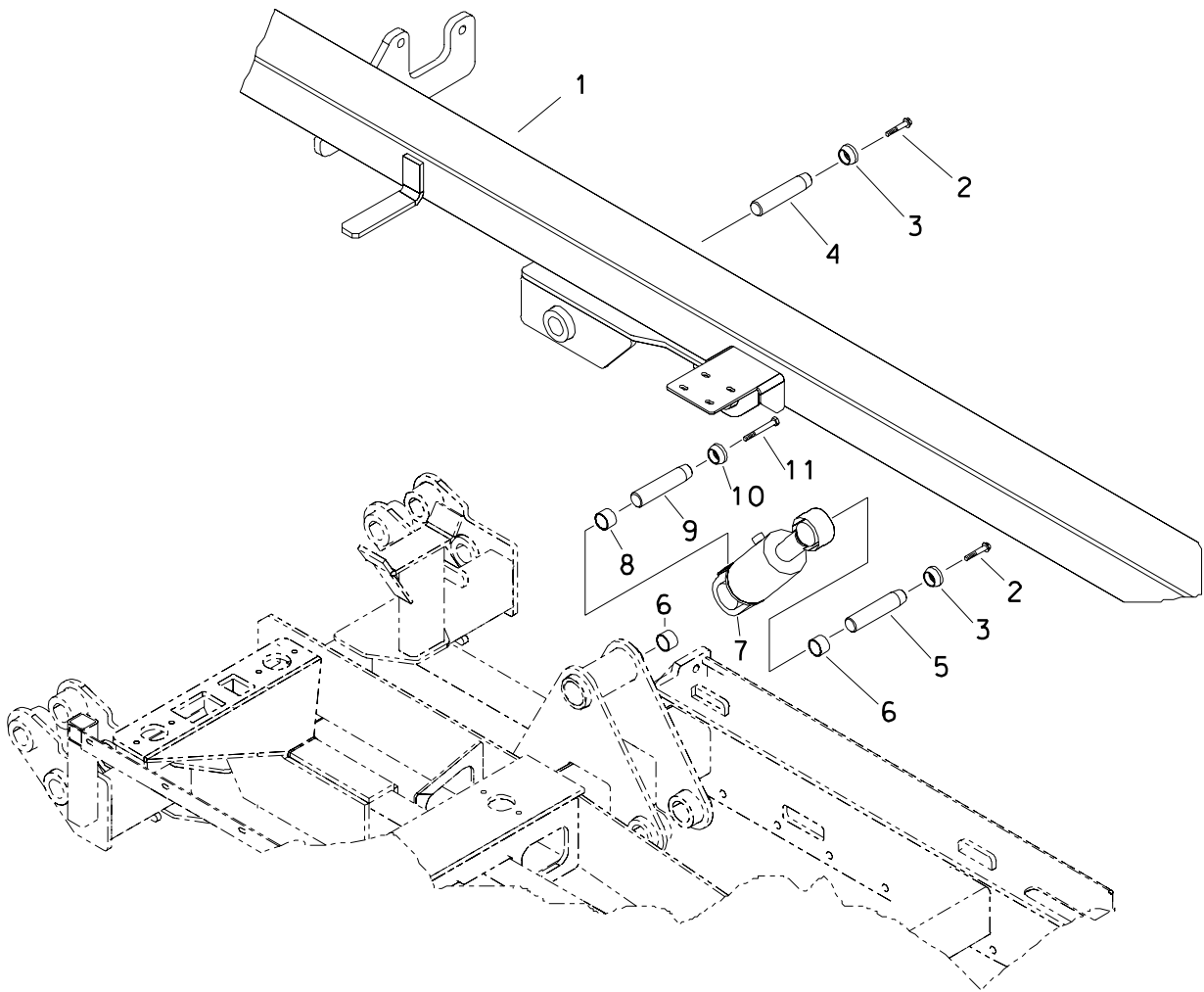
REFER TO O-RING CHART (800-301) ON BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

NOTES:

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DRILL FRAME

DRILL FRAME PIVOT



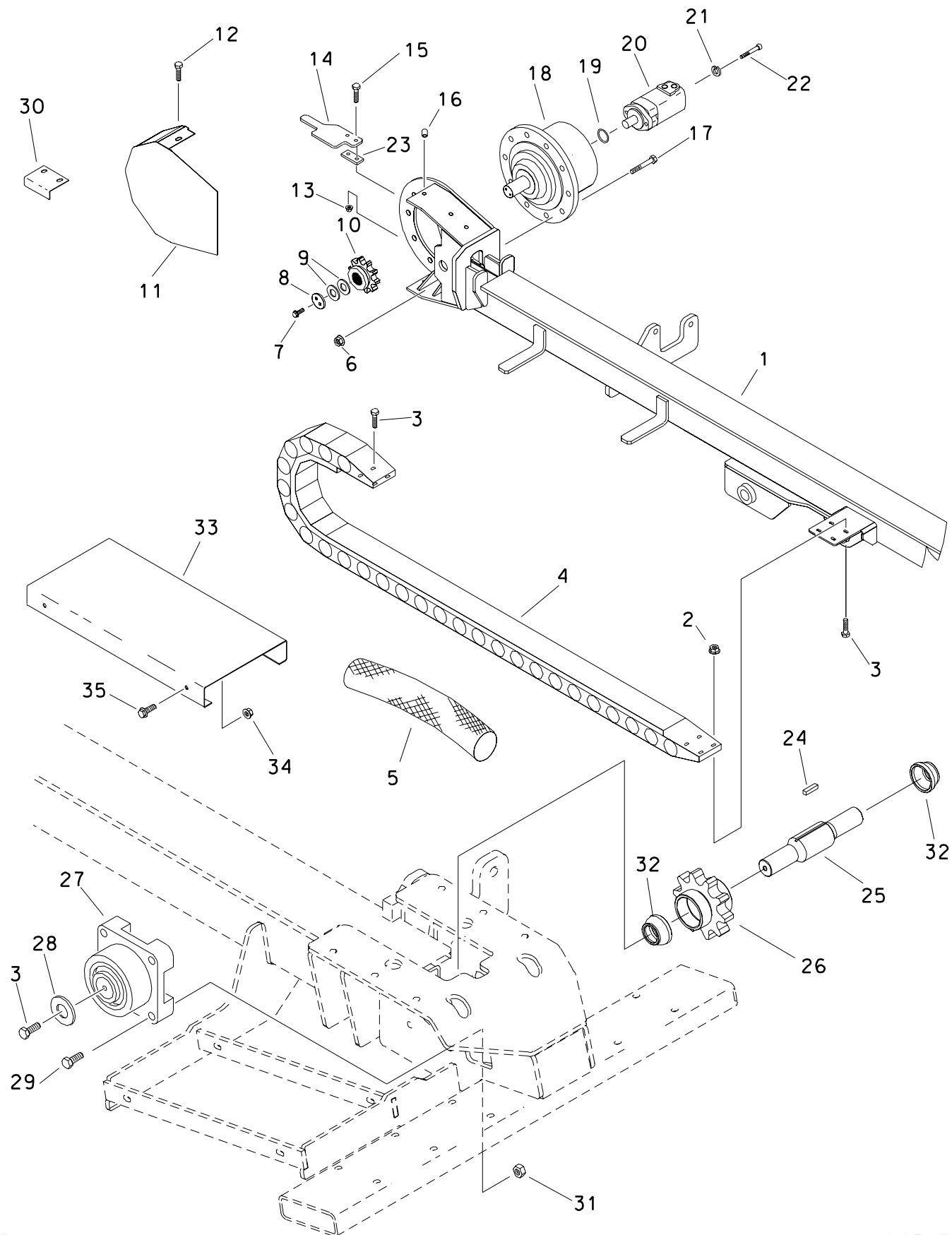
DRILL FRAME PIVOT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-550	-	DRILL FRAME	
2.	106-470	2	FLG SCREW (M16-2.00 X 40MM)	
3.	181-975	2	TAPERED INSERT (1.75")	
4.	179-239	1	TAPERED PIN (44.45MM X 288MM)	
5.	183-917	1	TAPERED PIN (44.45MM X 146MM)	
6.	125-773	3	COMPOSITION BUSHING (1.75")	
7.	151-089	1	CYL (3.5" X 1.75" X 3")	
8.	125-754	1	COMPOSITION BUSHING (2")	
9.	183-919	1	TAPERED PIN (50.8MM X 184MM)	
10.	184-064	1	TAPERED INSERT (2")	
11.	106-344	1	SCREW (M20-2.50 X 40MM)	

FOOTNOTES

DRILL FRAME

OLD S/N ENDS WITH 2S4073



DRILL FRAME

OLD S/N ENDS WITH 2S4073

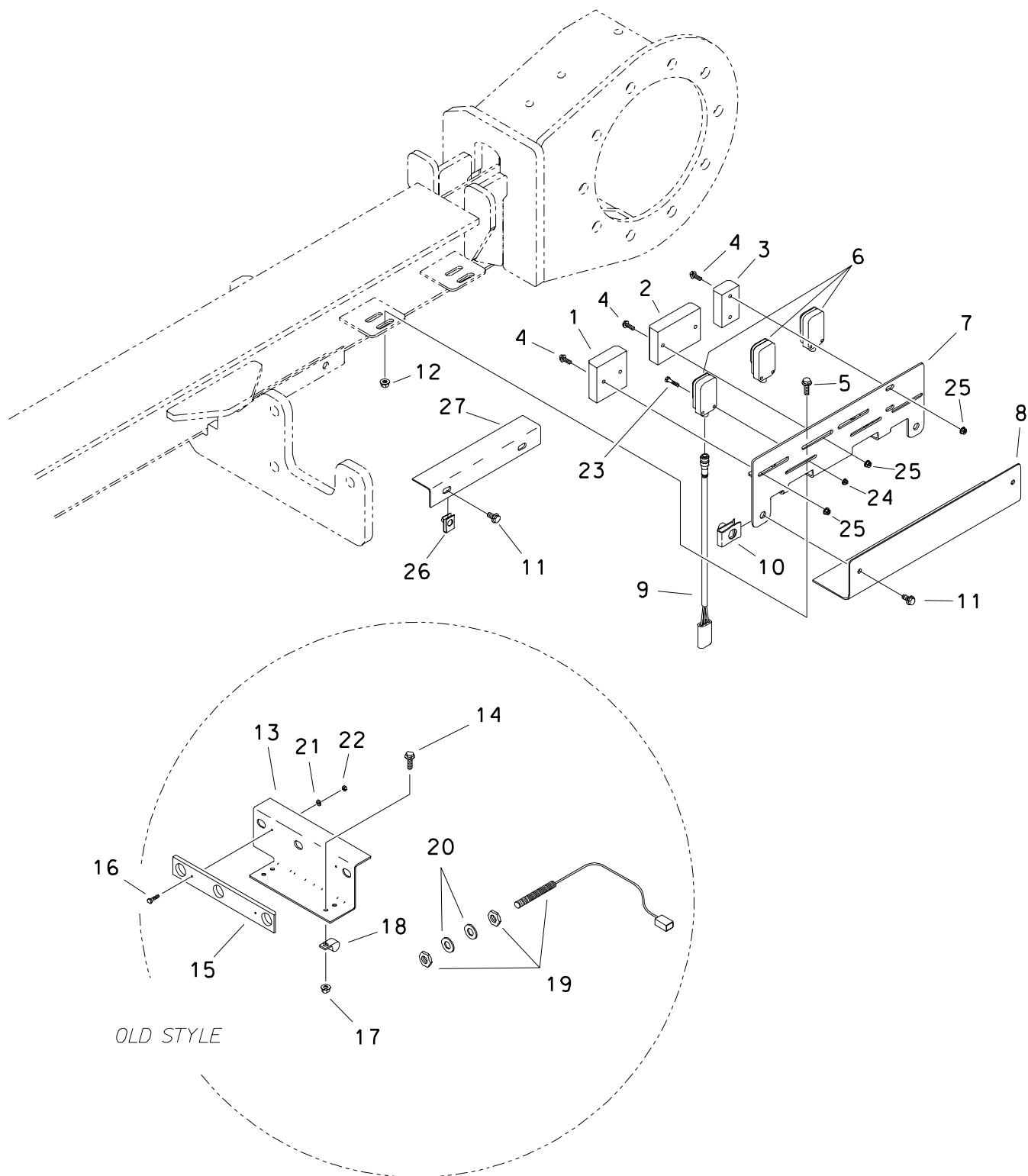
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-550	1	DRILL FRAME	
2.	106-387	8	FLG LOCKNUT (M10-1.50)	
3.	105-245	10	SCREW (M10-1.50 X 25MM)	
4.	348-510	1	HOSE TRACK (3.630" X 104")	
	305-589	-	MOUNTING BRACKET (LH)	
	305-590	-	MOUNTING BRACKET (RH)	
	305-591	-	ALUMINUM BAR (1/2" X 3.63")	
	305-592	-	ALUMINUM BAR (1/2" X 3.84")	
	305-594	-	WINDOW EXTENDER	
	348-974	-	EASY-OUT BAR (3-5/8")	
	306-523	-	REPAIR SECTION (4-LINK)	
5.	348-511	1	HOSE BAG (3.630" X 104")	
6.	106-356	10	FLG NUT (M20-2.50, 10.9)	USE LOCTITE 242
7.	105-825	2	FLG LK BOLT (3/8-NC X 3/4")	
8.	358-315	1	WASHER (1/2" X 2-1/2")	
9.	110-168	2	MACHINERY BUSHING (2")	
10.	175-745	1	SPROCKET (120B10T)	
11.	348-572	1	PLANETARY COVER	
12.	106-382	6	FLG LK SCREW (M10-1.50 X 20MM)	
13.	106-709	2	FLG LOCKNUT (M12-1.75)	
14.	348-513	1	CHAIN GUIDE	
15.	106-333	2	SCREW (M12-1.75 X 40MM)	
16.	106-550	6	NUTSERT (M10-1.50)	
17.	106-075	10	SCREW (M20-2.50 X 60MM, 10.9)	TORQUE TO 400 FT-LBS
18.	166-098	-	GEAR BOX (7.07:1, THRUST)	ENDS WITH S/N
	166-185	-	GEAR BOX (7.07:1, THRUST)	ENDS WITH S/N 2S0690
	166-199	1	PLANETARY GEAR BOX	BEGINS WITH S/N 2S0691
19.	157-099	1	O-RING (O42 D70)	
20.	155-582	1	HYDRAULIC MOTOR (14 SPLINE)	
21.	105-070	2	LOCK WASHER (1/2")	
22.	106-204	2	BOLT (1/2-NC X 1.50", ALN)	TORQUE TO 130 FT-LBS
23.	348-931	1	SPACER	
24.	165-933	1	KEY (1/4" X 3/4")	
25.	183-898	-	PIN (1.625" X 12.283")	ENDS WITH S/N 2S2059
	166-206	1	SHAFT	BEGINS WITH S/N 2S2060
26.	175-744	-	SPROCKET (120A10T)	ENDS WITH S/N 2S2059
	303-773	1	SPROCKET	BEGINS WITH S/N 2S2060
27.	125-600	-	FLANGE BEARING (1.625")	ENDS WITH S/N 2S2059
	125-178	2	FLANGE BEARING (1.75)	BEGINS WITH S/N 2S2060
28.	105-223	2	WASHER (3/8")	
29.	106-594	8	SCREW (M12-1.75 X 60MM)	
30.	348-839	2	COVER BRACKET	
31.	106-031	8	LOCKNUT (M12-1.75, NLK, 8.8)	
32.	348-897	-	SPACER	ENDS WITH S/N 2S2059
	178-242	2	SHAFT SPACER	BEGINS WITH S/N 2S2060
33.	348-695	1	FLOOR TREAD	
34.	106-386	7	FLG LOCKNUT (M8-1.25)	
35.	106-381	1	FLG LK SCREW (M8-1.25 X 25MM)	

FOOTNOTES

1. REF NO'S 25, 26, 27 & 32 ARE INCLUDED IN LIMITED TERM KIT 599-187

DRILL FRAME SENSORS

NEW S/N BEGINS WITH 2S4116



DRILL FRAME SENSORS

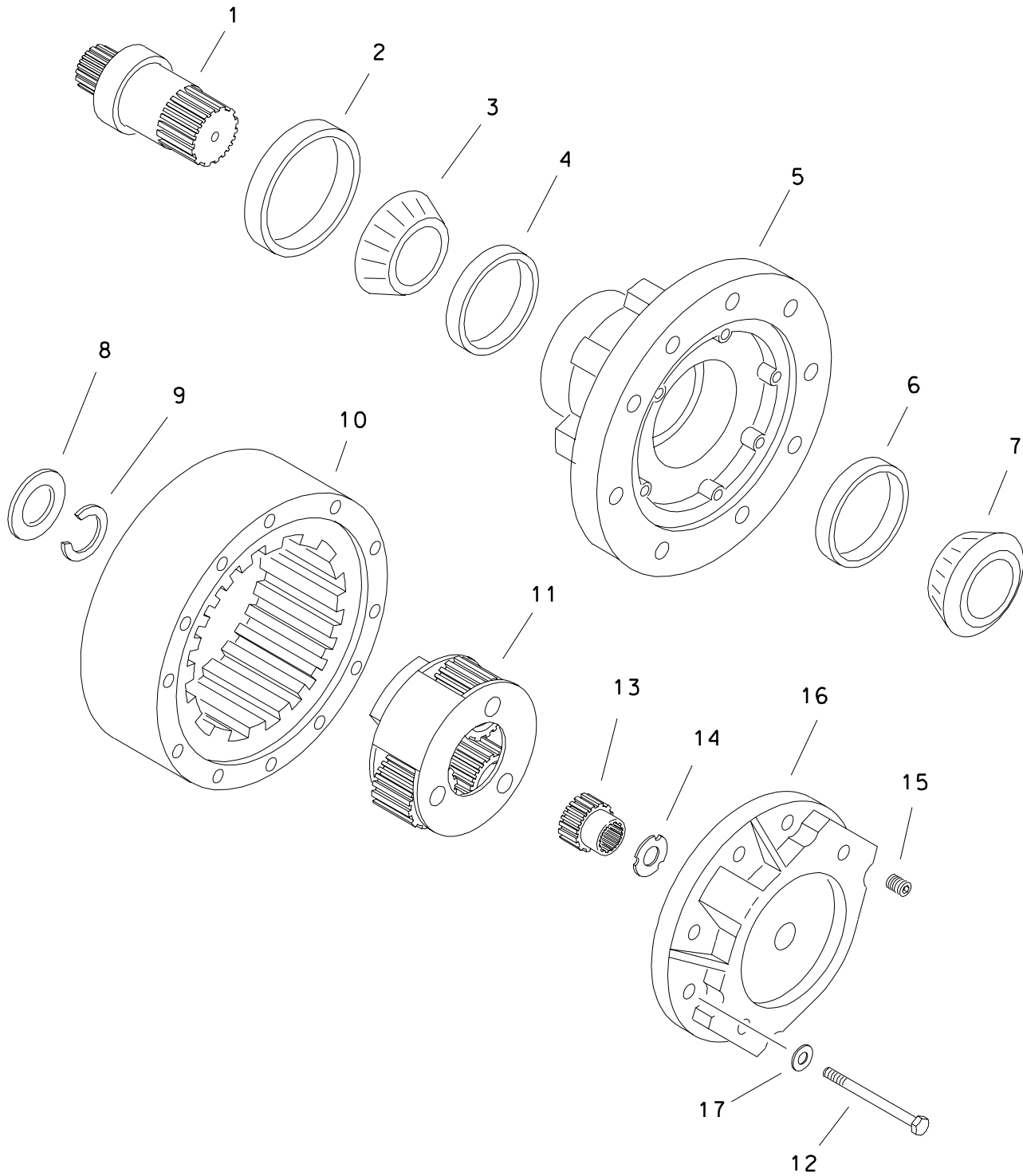
NEW S/N BEGINS WITH 2S4116

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	307-327	1	PROX SWITCH SLIDE PAD	
2.	307-328	1	CENTER SWITCH SLIDE PAD	
3.	306-646	1	POLYETHYLENE WEAR PAD	
4.	106-848	6	FLG SCREW (M6-1.00 X 25MM)	
5.	106-381	4	FLG LK SCREW (M8-1.25 X 25MM)	
6.	214-692	3	PROXIMITY SWITCH	
7.	307-324	1	PROX SWITCH MOUNT PLATE	
8.	307-323	1	WIRE COVER	
9.	214-691	3	STRAIGHT JUMPER HARNESS	
10.	107-135	2	CLIP NUT M8-1.25	
11.	106-380	4	FLG LK SCREW (M8-1.25 X 16MM)	
12.	106-386	4	FLG LOCKNUT (M8-1.25)	
13.	348-893	1	SWITCH BRACKET	SEE FOOTNOTE 1
14.	106-381	8	FLG LK SCREW (M8-1.25 X 25MM)	SEE FOOTNOTE 1
15.	117-797	1	WEAR GUARD	SEE FOOTNOTE 1
16.	106-058	2	BOLT (#6-32 X 1-1/8", RD SLT)	SEE FOOTNOTE 1
17.	106-386	8	FLG LOCKNUT (M8-1.25)	SEE FOOTNOTE 1
18.	110-126	2	BOLT-ON CLAMP (1/2")	SEE FOOTNOTE 1
19.	217-939	3	PROXIMITY SWITCH	SEE FOOTNOTE 1
	107-332	2	JAM NUT (PROXIMITY SWITCH)	SEE FOOTNOTE 1
20.	105-498	6	CAM WASHER (3/4")	SEE FOOTNOTE 1
21.	106-040	2	EXT STAR WASHER (#6)	SEE FOOTNOTE 1
22.	105-215	2	NUT (#6-32)	SEE FOOTNOTE 1
23.	106-426	6	SCREW (M5-0.80 X 25MM, SOC)	
24.	106-850	6	LOCKNUT (M5-0.80)	
25.	106-385	6	FLG LOCKNUT (M6-1.00)	
26.	105-633	2	NUTSERT (M8-1.25) 3.8-7.9" THK	
27.	307-325	1	CHANNEL COVER	

FOOTNOTES

1. ENDS WITH S/N 2S4073

PLANETARY GEAR BOX – THRUST



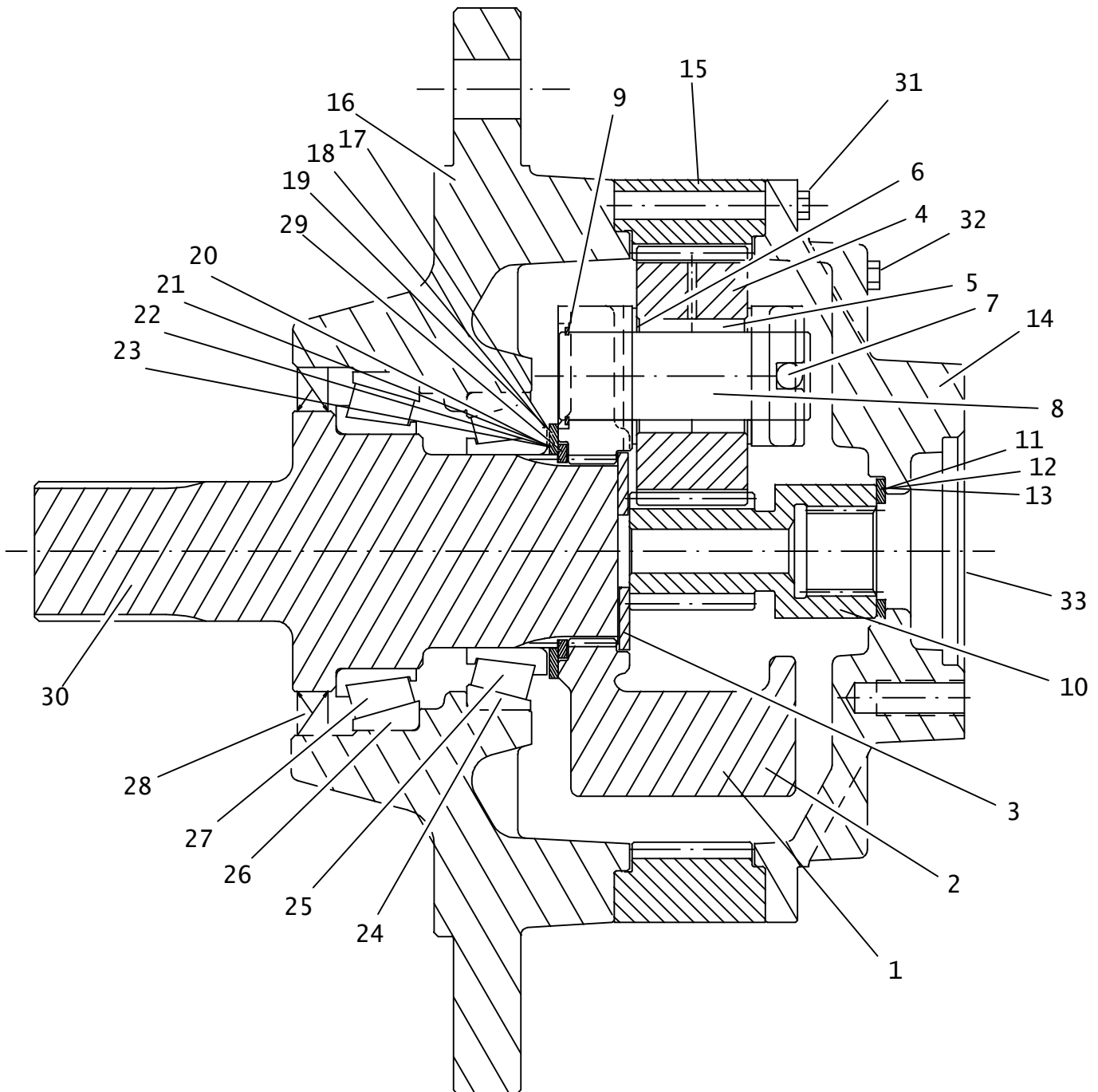
PLANETARY GEAR BOX – THRUST

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-098		PLANETARY GEAR BOX	INCL REF NO'S 1 THRU 17
1.	501-779	1	OUTPUT SHAFT	
2.	157-613	1	INTERNAL SEAL	
3.	126-075	1	BEARING	
4.	126-076	1	BEARING RACE	
5.	501-780	1	GEAR BOX HUB	
6.	125-156	1	BEARING CUP	
7.	125-155	1	BEARING (TAPERED ROLLER)	
8.	501-743	1	THRUST WASHER	
9.	501-754	1	SNAP RING KIT	SEE FOOTNOTE 1
10.	501-781	1	RING GEAR	
11.	501-741	1	SECONDARY CARRIER	
12.	105-288	12	BOLT (3/8-NC X 5-1/2")	
13.	501-782	1	PRIMARY SUN GEAR	
14.	501-630	1	THRUST WASHER	
15.	115-165	2	PLUG (O8N, ALN)	
16.	501-783	1	GEAR BOX COVER	
17.	105-072	12	LOCK WASHER (3/8")	

FOOTNOTES

1. SELECT SNAP RING THICKNESS THAT WILL FIT INTO THE GAP.

PLANETARY GEAR BOX



PLANETARY GEAR BOX

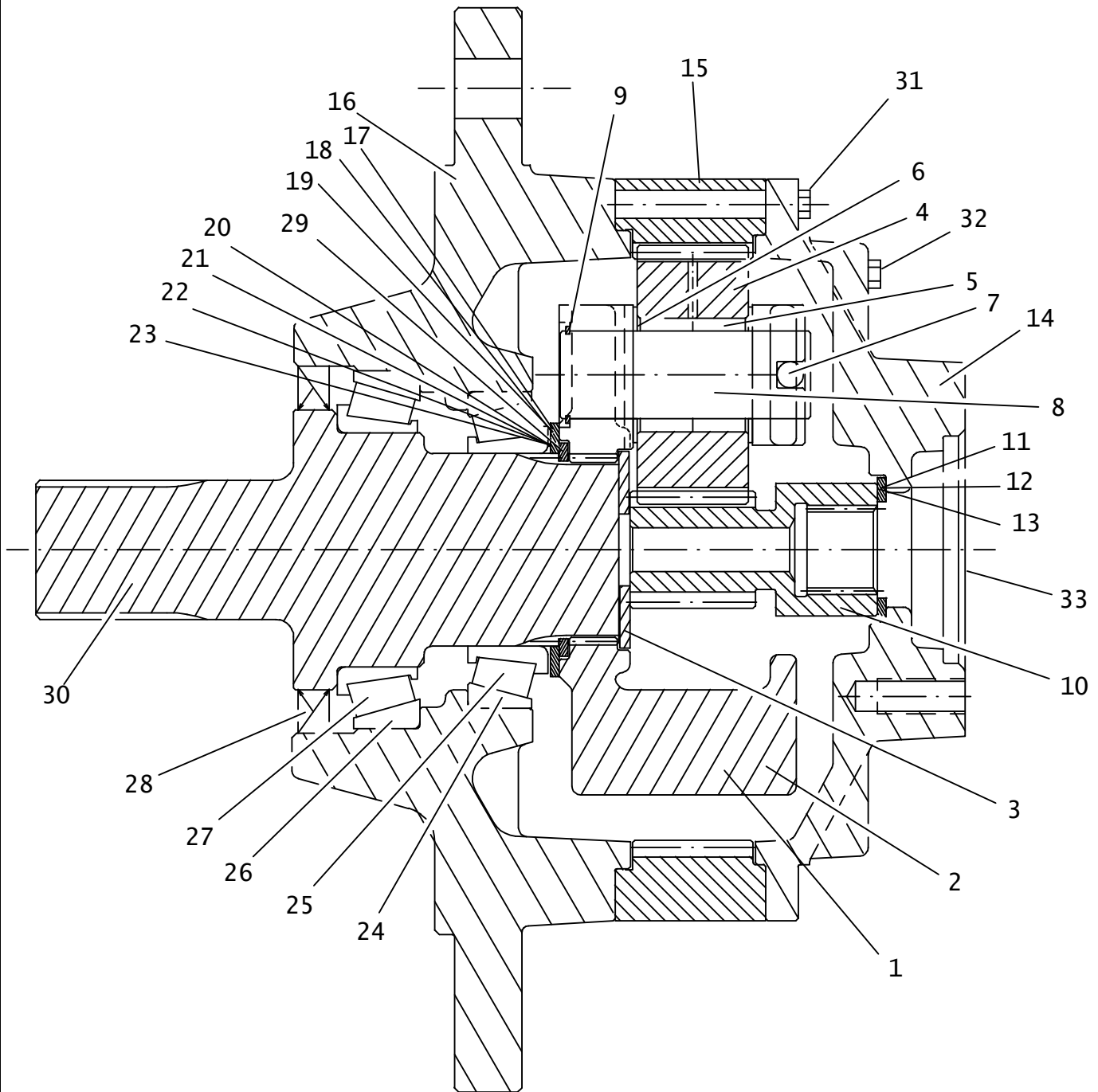
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-185	-	PLANETARY GEAR BOX	INCL. REF. NO'S 1, 10-33
1.	165-558	1	CARRIER PARTS ASS'Y	INCL. REF. NO'S 2-9
2.	164-001	1	PLANETARY CARRIER	
3.	105-644	1	THRUST WASHER	
4.	165-548	3	PLANET GEAR	
5.	125-157	6	NEEDLE BEARING (1.250")	
6.	126-017	3	BEARING RACE (1.250")	
7.	501-599	3	DETENT BALL (.375")	
8.	185-183	3	PLANET PIN	
9.	118-057	3	EXT SNAP RING (1.250")	
10.	165-549	1	SUN GEAR	
11.	125-384	1	BEARING RACE (1.375")	
12.	126-059	1	BEARING RACE (1.375")	
13.	126-010	1	BEARING RACE (1.375")	
14.	165-551	1	BACK COVER	
15.	165-547	1	RING GEAR	
16.	164-167	1	OUTPUT HOUSING	
17.	105-645	1	THRUST WASHER (2.750")	
18.	105-646	1	THRUST WASHER (2.750")	
19.	105-647	1	THRUST WASHER (2.750")	
20.	166-190	1	SHIM (.002")	
21.	166-188	1	SHIM (.076")	
22.	166-186	1	SHIM (.178")	
23.	166-189	1	SHIM (.020")	
24.	125-156	1	BEARING CUP	
25.	125-155	1	TAPERED ROLLER BEARING	
26.	126-076	1	TAPERED RACE (5.118")	
27.	126-075	1	TAPERED BEARING (3.346")	
28.	116-859	1	INTERNAL SEAL	
29.	118-056	1	EXTERNAL SNAP RING (2.756")	
30.	165-550	1	SHAFT	
31.	107-324	12	SCREW (3/8-16UNC X 3.500")	
32.	115-211	2	PLUG (08N, SQ, MAG)	
33.	115-153	1	PLUG (04N, SQ)	

NOT SHOWN:

FOOTNOTES:

NOTE:

PLANETARY GEAR BOX



PLANETARY GEAR BOX

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-199	-	PLANETARY GEAR BOX	INCL REF NO'S 1, 10 - 33
1.	166-581	1	CARRIER PARTS ASS'Y	INCL REF NO'S 2 - 9
2.	164-001	1	PLANETARY CARRIER	
3.	105-644	1	THRUST WASHER	
4.	165-579	3	PLANET GEAR	
5.	125-157	6	NEEDLE BEARING (1.250")	
6.	126-017	3	BEARING RACE (1.250")	
7.	501-599	3	DETENT BALL (.375")	
8.	185-183	3	PLANET PIN	
9.	118-057	3	EXT SNAP RING (1.250")	
10.	165-578	1	SUN GEAR	
11.	125-384	1	BEARING RACE (1.375")	
12.	126-059	1	BEARING RACE (1.375")	
13.	126-010	1	BEARING RACE (1.375")	
14.	165-551	1	BACK COVER	
15.	165-580	1	RING GEAR	
16.	164-167	1	OUTPUT HOUSING	
17.	105-645	1	THRUST WASHER (2.750")	
18.	105-646	1	THRUST WASHER (2.750")	
19.	105-647	1	THRUST WASHER (2.750")	
20.	166-190	1	SHIM (.002")	
21.	166-188	1	SHIM (.003")	
22.	166-186	1	SHIM (.007")	
23.	166-189	1	SHIM (.020")	
24.	125-156	1	BEARING CUP	
25.	125-155	1	TAPERED ROLLER BEARING	
26.	126-076	1	TAPERED RACE (5.118")	
27.	126-075	1	TAPERED BEARING (3.346")	
28.	116-859	1	INTERNAL SEAL	
29.	118-056	1	EXTERNAL SNAP RING (2.756")	
30.	165-550	1	SHAFT	
31.	107-324	12	SCREW (3/8-16UNC X 3.500")	
32.	115-211	2	PLUG (08N, SQ, MAG)	
33.	115-153	1	PLUG (04N)	

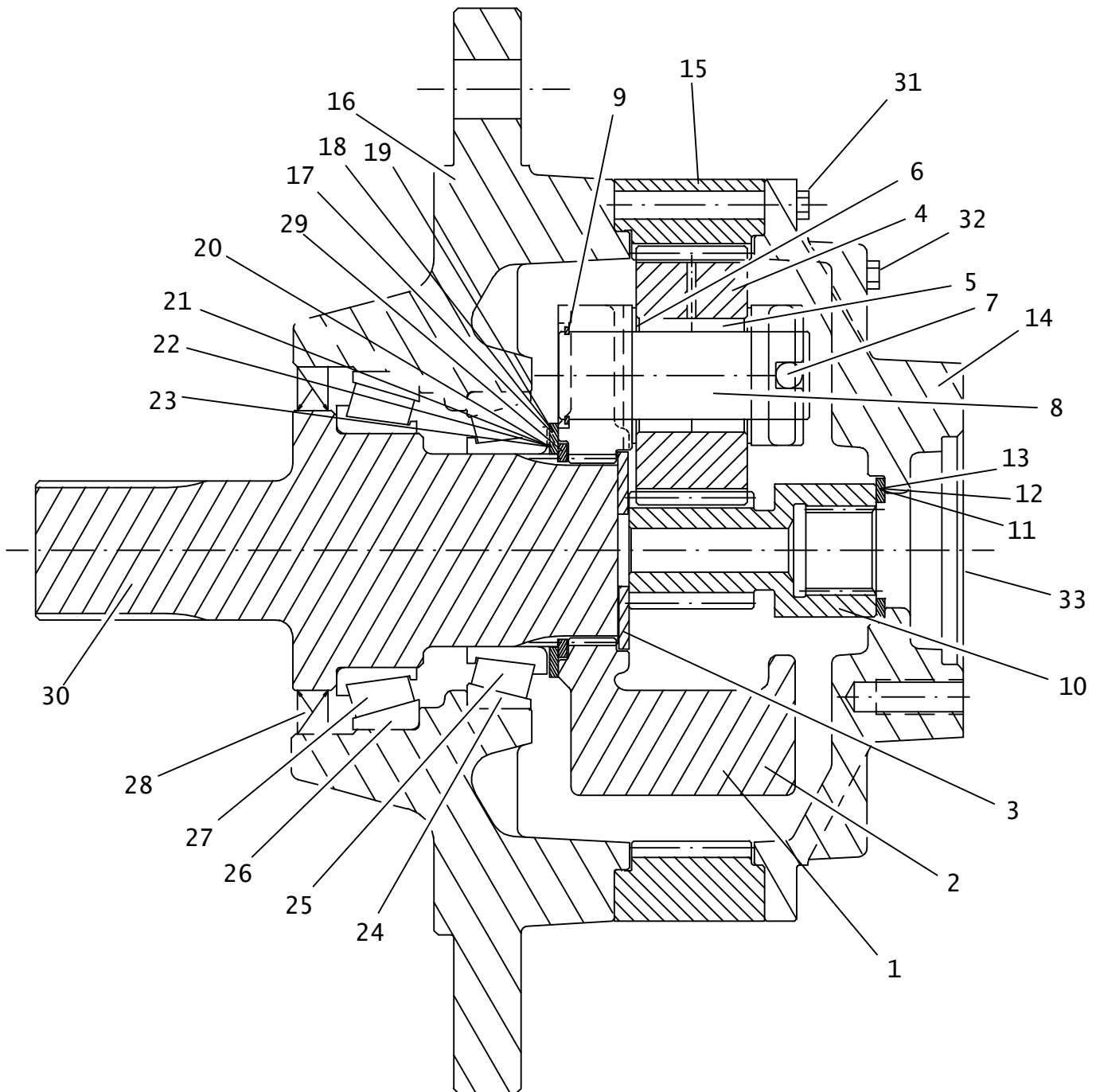
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FOOTNOTES:

NOTE:

PLANETARY GEAR BOX

BEGINS WITH S/N 2T2864



PLANETARY GEAR BOX

BEGINS WITH S/N 2T2864

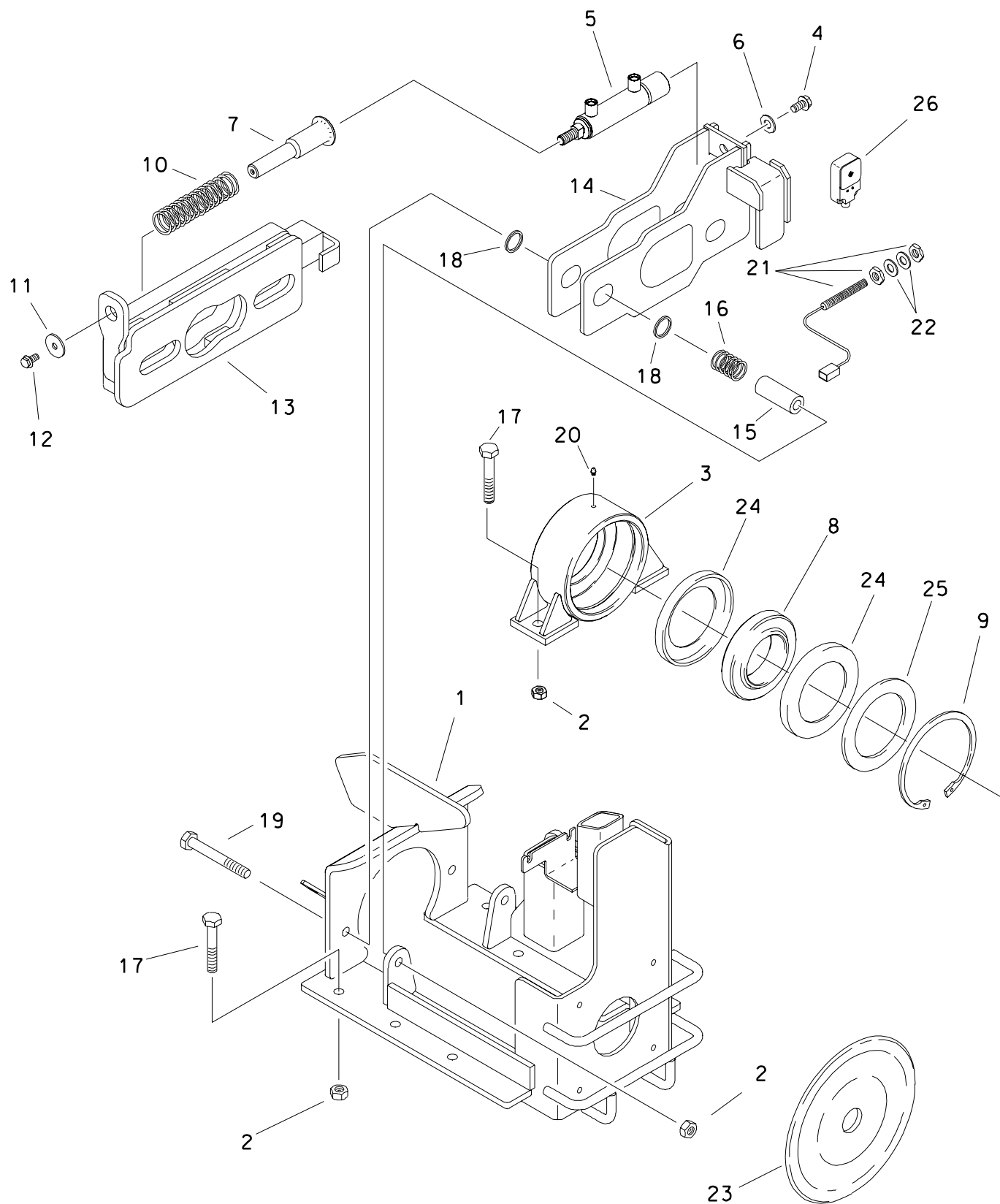
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-314	-	PLANETARY GEAR BOX	INCL REF NO'S 1, 10 - 33
1.	165-581	1	CARRIER	INCL REF NO'S 2 - 9
2.	164-001	1	PLANETARY CARRIER	
3.	105-644	1	THRUST WASHER	
4.	165-579	3	PLANET GEAR	
5.	125-157	6	NEEDLE BEARING (1.250")	
6.	126-017	3	BEARING RACE (1.250")	
7.	501-599	3	DETENT BALL (.375")	
8.	185-183	3	PLANET PIN	
9.	118-057	3	EXT SNAP RING (1.250")	
10.	165-578	1	SUN GEAR	
11.	125-384	1	BEARING RACE (1.375")	
12.	126-059	1	BEARING RACE (1.375")	
13.	126-010	1	BEARING RACE (1.375")	
14.	165-551	1	BACK COVER	
15.	165-580	1	RING GEAR	
16.	164-011	1	OUTPUT HOUSING	
17.	105-645	1	THRUST WASHER (2.750")	
18.	105-646	1	THRUST WASHER (2.750")	
19.	107-508	1	THRUST RACE (2.750")	
20.	166-190	1	SHIM (.002")	
21.	166-188	1	SHIM (.003")	
22.	166-186	1	SHIM (.007")	
23.	166-189	1	SHIM (.020")	
24.	125-156	1	BEARING CUP	
25.	125-155	1	TAPERED ROLLER BEARING	
26.	126-076	1	TAPERED RACE (5.118")	
27.	126-075	1	TAPERED BEARING (3.346")	
28.	116-859	1	INTERNAL SEAL	
29.	118-056	1	EXTERNAL SNAP RING (2.756")	
30.	165-550	1	SHAFT	
31.	107-324	12	SCREW (3/8-16UNC X 3.500")	
32.	115-211	2	PLUG (08N, SQ, MAG)	
33.	115-153	1	PLUG (04N)	

NOT SHOWN:

FOOTNOTES:

NOTE:

FRONT WRENCH

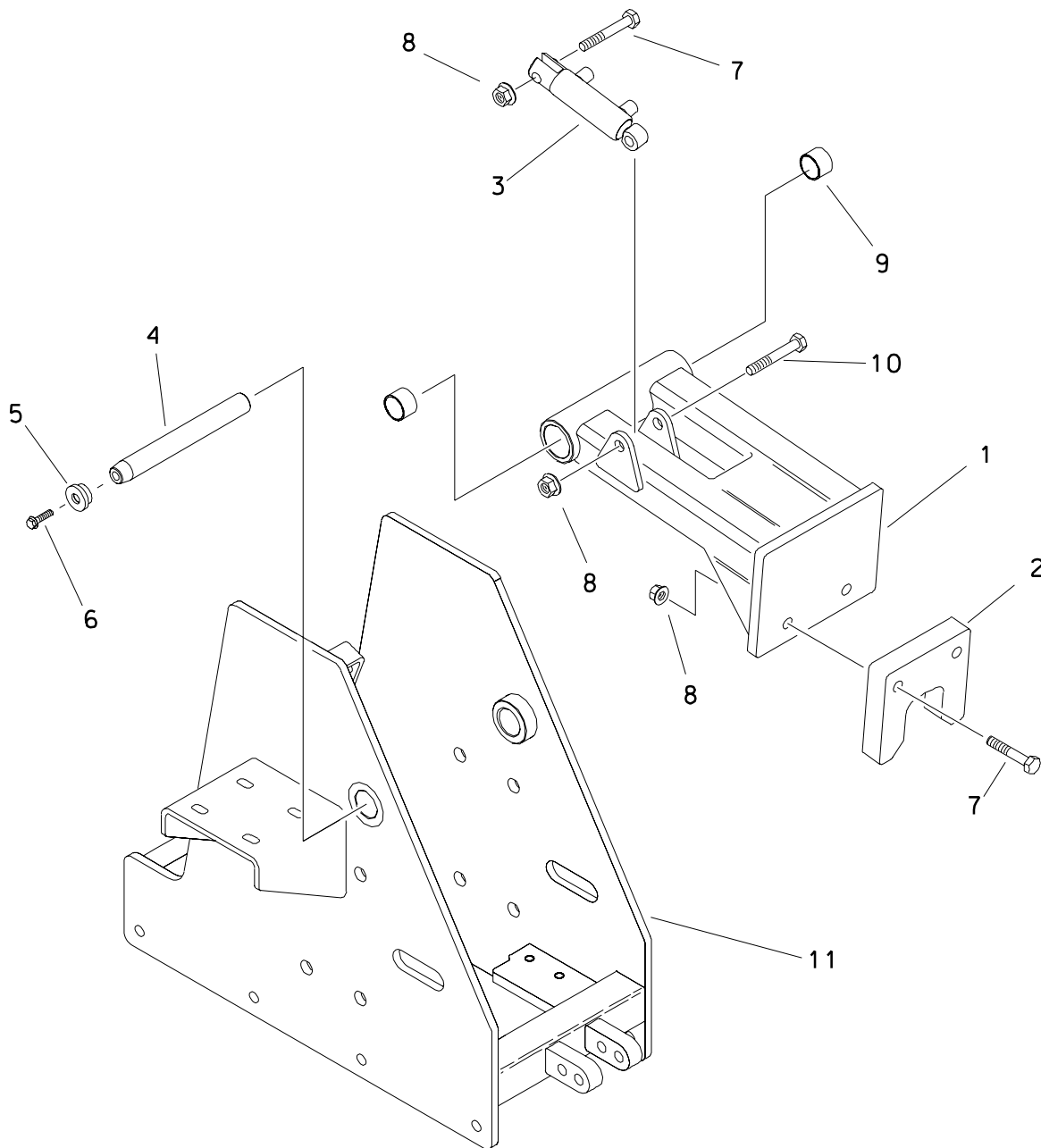


FRONT WRENCH

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-835	1	WRENCH MOUNT WELDMENT	BEGINS WITH 2S4116
	348-740	-	WRENCH MOUNT	ENDS WITH 2S4073
2.	106-685	10	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
3.	307-665	1	PIPE GUIDE	BEGINS WITH 2S4116
	348-735	-	BEARING HOUSING	ENDS WITH 2S4073
4.	106-806	1	FLG LK SCREW (M12-1.75 X 25MM)	
5.	151-153	1	CYL (1" X 2.5")	
	150-725	1	CYL, 1" BORE X 2.5" STROKE THRD	
6.	106-397	1	WASHER (M12, HARDENED)	
7.	184-945	1	SPRING GUIDE	
8.	307-884	1	PIPE GUIDE BEARING	BEGINS WITH 2S4116
	125-099	-	BALL BEARING (2.756")	ENDS WITH 2S4073
9.	115-505	1	INTERNAL SNAP RING (5.118")	BEGINS WITH 2S4116
	115-534	-	INTERNAL SNAP RING (5")	ENDS WITH 2S4073
10.	117-052	1	COMPRESSION SPRING	
11.	106-260	1	WASHER (3/8")	
12.	107-095	1	FLG SCREW (M8-1.25 X 16MM)	
13.	307-367	1	WRENCH PLATE WELDMENT	BEGINS WITH 2S4116
	348-916	-	WRENCH PLATE	ENDS WITH 2R2144
	348-971	-	WRENCH PLATE	ENDS WITH 2S4073
14.	307-368	1	SLIDE PLATE ASSEMBLY	BEGINS WITH 2S4116
	348-921	-	SLIDE PLATE	ENDS WITH 2R2144
	348-970	-	SLIDE PLATE	ENDS WITH 2S4073
15.	183-966	2	BUSHING (.530" X 1" X 3.6")	
16.	117-017	2	COMPRESSION SPRING	
17.	105-247	8	SCREW (M12-1.75 X 35MM)	
18.	110-078	4	MACHINERY BUSHING (1", 14GA)	
19.	106-618	2	SCREW (M12-1.75 X 130MM)	
20.	115-001	1	ZERK (O2N)	
21.	217-939	-	PROXIMITY SWITCH	INCL JAM NUT ENDS WITH 2S4073
	107-332	-	JAM NUT	ENDS WITH 2S4073
22.	105-498	-	CAM WASHER (3/4")	ENDS WITH 2S4073
23.	116-485	1	ROD WIPER (1.750")	
24.	305-866	2	GUIDE BEARING	BEGINS WITH 2S4116
25.	107-453	1	RETAINER RING	BEGINS WITH 2S4116
26.	214-692	1	PROXIMITY SWITCH	BEGINS WITH 2S4116

FOOTNOTES

BACKUP WRENCH



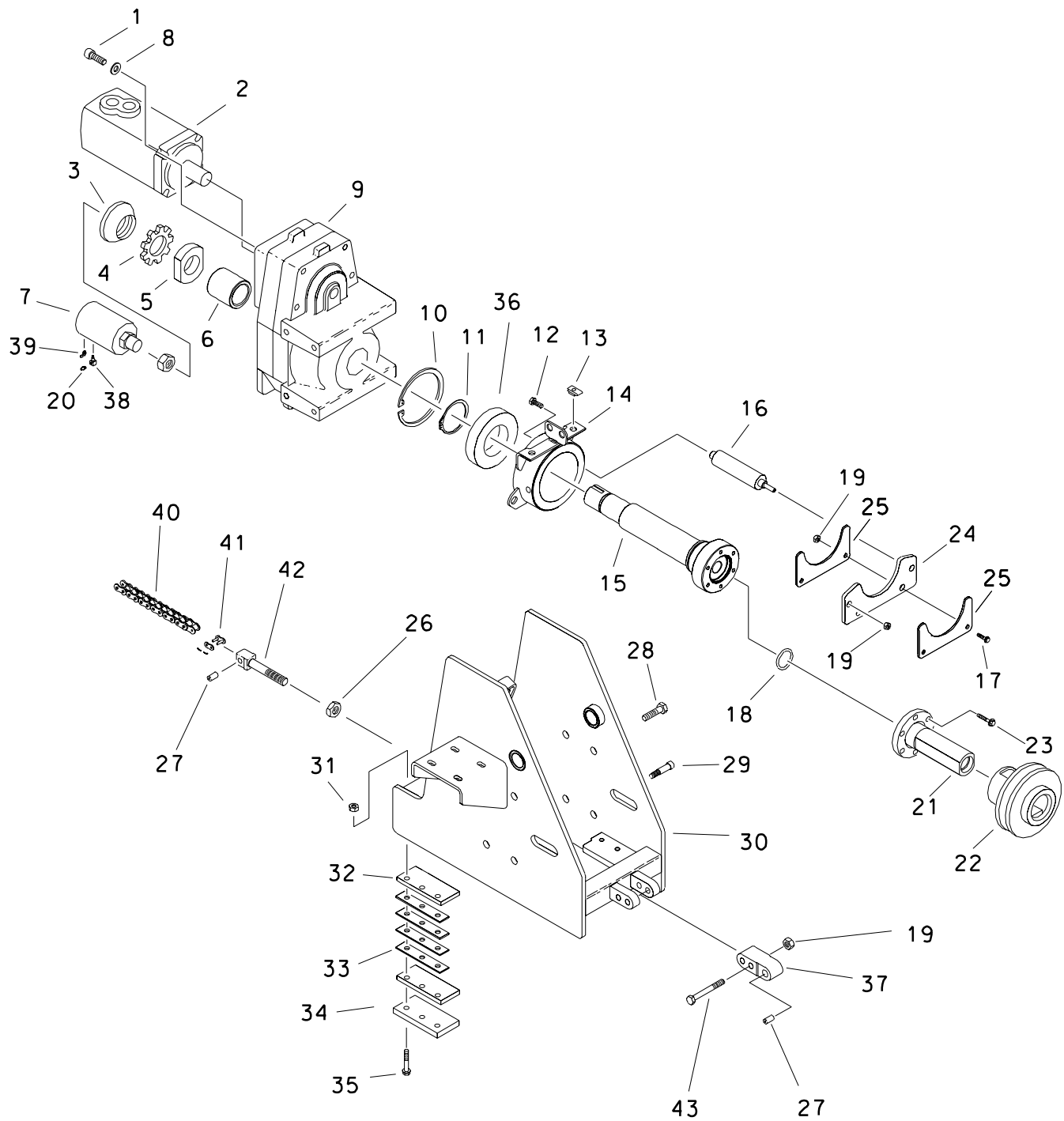
BACKUP WRENCH

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-700	1	BACKUP WRENCH MOUNT	
2.	348-701	1	BACKUP WRENCH	
3.	159-464	1	CYLINDER (1")	
	150-723	1	CYL, 1" BORE X 2" STROKE W/EYE	
4.	178-075	1	TAPERED PIN (1.25" X 9.449")	
5.	181-982	1	TAPERED INSERT (1.25")	
6.	106-806	1	FLG LK SCREW (M12-1.75 X 25MM)	
7.	106-659	3	SCREW (M12-1.75 X 55MM, 8.8)	
8.	106-031	4	LOCKNUT (M12-1.75, NLK)	
9.	125-771	2	COMPOSITION BUSHING (1.25")	
10.	106-700	1	SCREW (M12-1.75 X 80MM)	
11.	348-698	-	CARRIAGE	

FOOTNOTES

CARRIAGE

ENDS WITH S/N 2S4073



CARRIAGE

ENDS WITH S/N 2S4073

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-707	4	SCREW (M12-1.75 X 45MM, SOC)	
2.	158-945	1	HYD MOTOR	
3.	185-067	1	THRUST LOCKNUT (1.767-NF-18)	
4.	185-074	1	TANG LOCK WASHER (1.792")	
5.	106-865	1	NUT (3.25")	
6.	184-749	1	SPACER	
7.	159-240	1	WATER SWIVEL	
	500-837		REBUILD KIT	
	500-836		PACKING/SEAL KIT	
8.	106-397	4	WASHER (M12, HARDENED)	
9.	166-116	1	GEAR BOX (1.78:1, ROTATION)	
10.	115-534	1	INTERNAL SNAP RING (5.485")	
11.	118-033	1	EXTERNAL SNAP RING	
12.	106-806	2	FLG LK SCREW (M12-1.75 X 25mm)	
13.	106-551	2	CLIP NUT (M8-1.25)	
14.	343-192	1	BEARING HOUSING	
15.	347-605	1	SLIDING SPINDLE SHAFT	
16.	151-152	2	CYL (1.5" X .437" X 2")	
	150-724	2	CYL (1" X 2")	
17.	105-273	2	SCREW (M12-1.75 X 30mm)	
18.	157-019	1	O-RING (139 D90)	
19.	106-031	6	LOCKNUT (M12-1.75, NLK)	
20.	118-119	1	ZERK (1/8 NPT-27)	
21.	348-677	1	SAVER SUB	
	301-892	1	SAVER SUB (1.81-6 FM DS)	SEE FOOTNOTE 1
22.	348-675	1	WRENCH COLLAR	
23.	106-081	6	SCREW (M10-1.5 X 35mm, 12.9)	USE 242 LOCTITE TORQUE TO 55FT LBS
24.	344-574	1	PUSH PLATE	
25.	344-761	2	WEAR PAD	
26.	105-367	1	LOCKNUT (1-NC)	
27.	130-522	2	ROLLER BUSHING (#120)	
28.	105-998	8	SCREW (M16-2.00 X 40mm)	
29.	107-043	2	SHLD BOLT (M12 X 35mm, M10-1.50)	
30.	348-698	1	CARRIAGE	
31.	105-894	12	LOCKNUT (M10-1.5, PRV TRQ, 10.9)	
32.	343-046	8	SLIDE	
33.	343-047	16	SPACER	
34.	343-038	4	CLAMP PLATE	
35.	106-332	12	SCREW (M10-1.50 X 70MM)	
36.	125-117	1	BALL BEARING (1.125")	
37.	348-678	1	THRUST CHAIN CONNECTOR	
38.	514-278	1	LUBE ELBOW (1/4-NF-02NF90)	
39.	118-120	1	ZERK (1/4-28, 90)	
40.	130-535	1	ROLLER CHAIN (#120H, 225P)	
41.	130-538	2	CONNECTOR LINK (#120H)(JEFFREY)	
42.	355-809	1	CHAIN ADJUSTER	
43.	106-336	2	SCREW (M12-1.75 X 90mm)	

FOOTNOTES

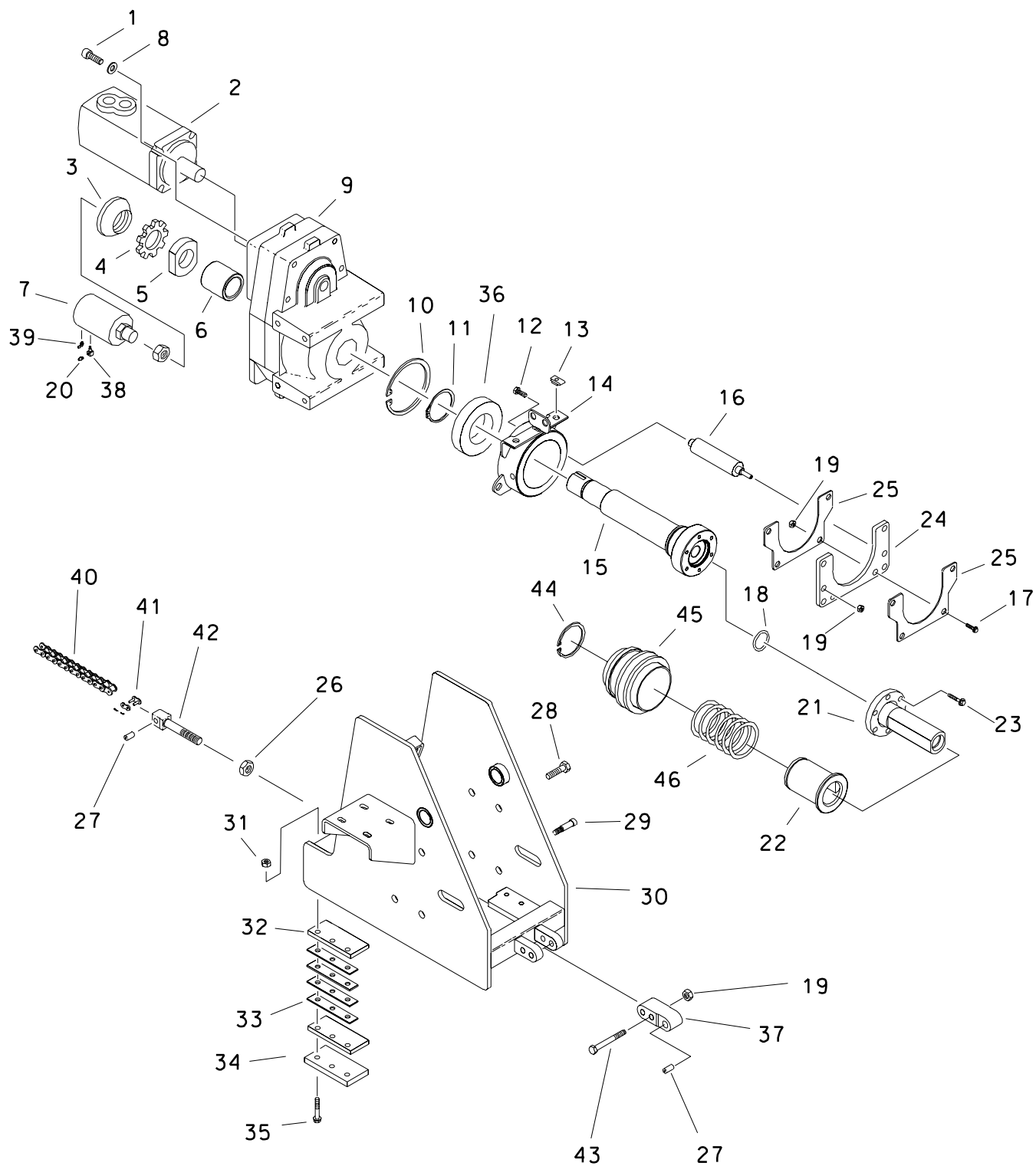
1. USE FOR ALL REPLACEMENTS.

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

CARRIAGE

BEGINS WITH S/N 2S4116



CARRIAGE

BEGINS WITH S/N 2S4116

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-707	4	SCREW (M12-1.75 X 45mm, ALN)	
2.	158-945	1	HYD MOTOR	
3.	185-067	1	THRUST LOCKNUT (1.767-NF-18	
4.	185-074	1	TANG LOCK WASHER (1.792")	
5.	106-865	1	NUT (3.25")	
6.	184-749	1	SPACER	
7.	159-240	1	WATER SWIVEL	
	500-837		REBUILD KIT	
	500-836		PACKING/SEAL KIT	
8.	106-397	4	WASHER (M12, HARDENED)	
9.	166-116	1	GEAR BOX (1.78:1, ROTATION)	
10.	115-534	1	INTERNAL SNAP RING (5.485")	
11.	118-033	1	EXTERNAL SNAP RING (2.5")	
12.	106-806	2	FLG LK SCREW (M12-1.75 X 25mm)	
13.	106-551	2	CLIP NUT (M8-1.25)	
14.	343-192	1	BEARING HOUSING	
15.	347-605	1	SLIDING SPINDLE SHAFT	
16.	151-152	2	CYL (1.5" X .437" X 2")	
	150-724	2	CLY (1" X 2")	
17.	105-273	4	SCREW (M12-1.75 X 30mm)	
18.	157-019	1	O-RING (139 D90)	
19.	106-031	8	LOCKNUT (M12-1.75, NLK)	
20.	118-119	1	ZERK (1/8 NPT-27)	
21.	301-892	1	SAVER SUB (1.81-6 FM_DS)	SEE FOOTNOTE 1
22.	149-274	1	WRENCH COLLAR	
23.	106-081	6	SCREW (M10-1.5 X 35mm, 12.9)	USE 609 LOCTITE
24.	303-806	1	PUSH PLATE	
25.	303-802	2	WEAR PAD	
26.	105-367	1	LOCKNUT (1-NC)	
27.	130-522	2	ROLLER BUSHING (#120)	
28.	105-998	8	SCREW (M16-2.00 X 40mm)	
29.	107-043	2	SHLD BOLT (M12 X 35mm, M10-1.50)	
30.	348-698	1	CARRIAGE	
31.	105-894	12	LOCKNUT (M10-1.5, PRV TRQ, 10.9)	
32.	343-046	8	SLIDE	
33.	343-047	16	SPACER	
34.	343-038	4	CLAMP PLATE	
35.	106-332	12	SCREW (M10-1.50 X 70MM)	
36.	125-117	1	BALL BEARING (1.125")	
37.	348-678	1	THRUST CHAIN CONNECTOR	
38.	514-278	1	LUBE ELBOW (1/4-NF-02NF90)	
39.	118-120	1	ZERK (1/4-28, 90)	
40.	130-535	1	ROLLER CHAIN (#120H, 225P)	

FOOTNOTES

1. USE FOR ALL REPLACEMENTS.

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

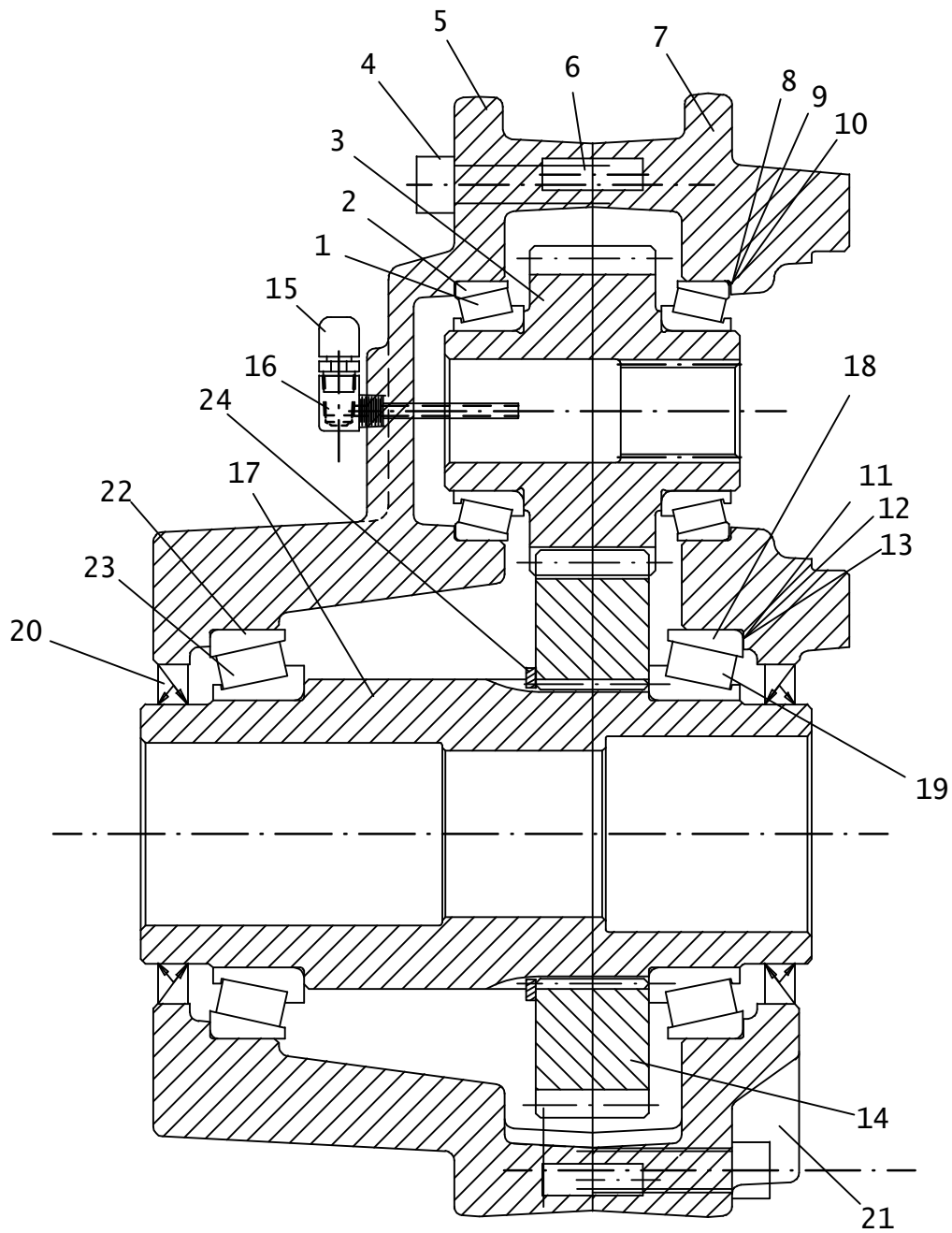
CARRIAGE

BEGINS WITH S/N 2S4116

REF	PART				
NO.	NUMBER	QTY	DESCRIPTION	REMARKS	
41.	130-538	2	CONNECTOR LINK (#120H)(JEFFREY)		
42.	355-809	1	CHAIN ADJUSTER		
43.	106-336	2	SCREW (M12-1.75 X 90mm)		
44.	115-529	1	EXTERNAL SNAP RING (3.543")		
45.	303-805	1	SLEEVE WELDMENT		
46.	117-246	1	COMPRESSION SPRING		

FOOTNOTES

ROTATION GEARBOX



ROTATION GEARBOX

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-116		GEARBOX (1.78:1 ROTATION)	INCL REF NO.'S 1 - 24
1.	126-100	2	TAPERED BEARING (2")	
2.	126-099	2	TAPERED RACE (3.25")	
3.	168-046	1	INPUT PINION	
4.	106-771	10	SCREW (M12-1.75 X 60MM, SOC)	
5.	162-027	1	GEARBOX HOUSING	
6.	106-866	2	DOWEL PIN (M10 X 30MM)	
7.	162-004	1	GEARBOX COVER	
8.	165-800	5	SHIM (.002")	
9.	165-801	5	SHIM (.003")	
10.	165-802	5	SHIM (.007")	
11.	165-829	5	SHIM (.002")	
12.	165-830	5	SHIM (.003")	
13.	165-828	5	SHIM (.007")	
14.	160-1102	1	OUTPUT GEAR	
15.	159-003	1	AIR VENT (02N)	
16.	514-123	1	PICKUP TUBE (02N-02NF90-2")	
17.	162-026	1	OUTPUT SHAFT	
18.	126-076	1	TAPERED RACE (5.118")	
19.	126-075	1	TAPERED BEARING (3.346")	
20.	155-869	2	INTERNAL SEAL (3.250")	
21.	115-211	2	PLUG (08N,SQ, MAG)	
22.	126-157	1	TAPERED RACE (130MM)	
23.	126-156	1	TAPERED BEARING (80MM)	
24.	115-896	1	EXTERNAL SNAP RING (3.875")	

NOT SHOWN:

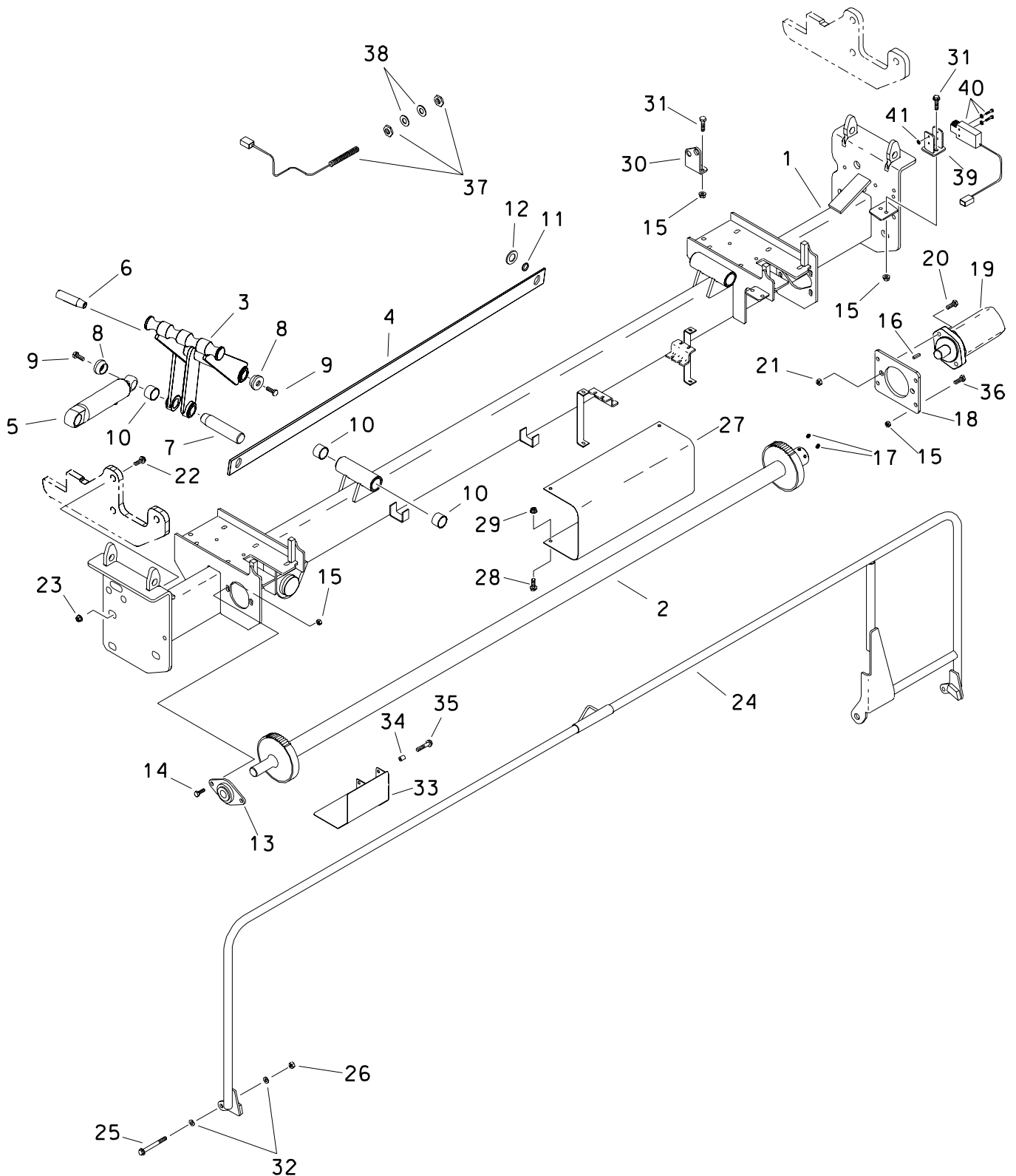
FOOTNOTES:

NOTE:

PIPE LOADER SYSTEMS

PIPE LOADER MOUNT

ENDS WITH S/N 2S4073



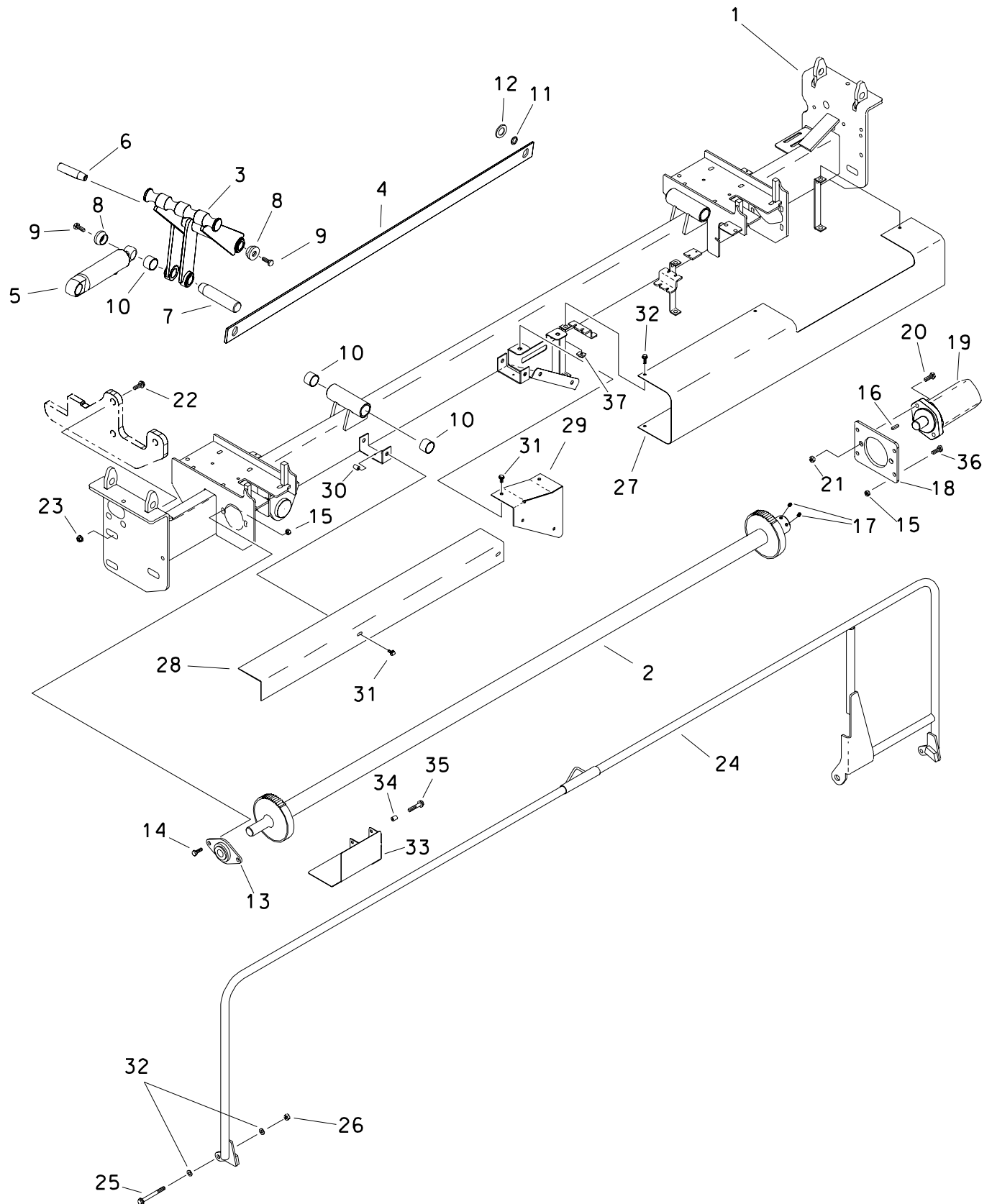
PIPE LOADER MOUNT

ENDS WITH S/N 2S4073

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-788	1	PIPE LOADER FRAME	
2.	167-335	1	PINION SHAFT	
3.	359-722	2	LIFT ARM	
4.	359-736	1	LIFT LINK	
	348-955	1	LIFT LINK	
5.	151-028	1	CYL (2.5" X 1.25" X 4")	
6.	179-147	2	TAPERED PIN (31.7MM X 200MM)	
7.	183-613	2	TAPERED PIN (1.250" X 3.5")	
8.	181-982	4	TAPERED INSERT (1.250")	
9.	106-632	4	FLG LK SCREW (M12-1.75 X 35MM)	
10.	125-771	6	COMPOSITION BUSHING (1.25")	
11.	125-846	2	COMPOSITION BUSHING (1.255")	
12.	110-056	6	MACHINERY BUSHING (1.25")	
13.	125-605	1	FLANGE BEARING (1.25")	
14.	106-383	2	FLG LK SCREW (M10-1.50 X 30MM)	
15.	106-387	10	FLG LOCKNUT (M10-1.50)	
16.	165-916	1	KEY (5/16" X 1-3/4")	
17.	106-638	2	SET SCREW (M10-1.50 X 12MM)	
18.	348-787	1	MOTOR MOUNT	
19.	158-735	1	HYDRAULIC MOTOR	
	500-347		SEAL REPAIR KIT	
20.	106-333	2	SCREW (M12-1.75 X 40MM)	
21.	106-685	2	LOCKNUT (M12-1.75, PRV TRQ,10.9)	
22.	106-831	6	FLG SCREW (M20-2.50 X 60MM,10.9)	
23.	106-356	6	FLG NUT (M20-2.50, 10.9)	
24.	348-901	1	SHUTTLE GUARD	
25.	106-739	2	SHLD BLT (M12 X 20MM, M10-1.50)	
26.	105-894	2	LOCKNUT (M10-1.50, PRV TRQ,10.9)	
27.	348-860	1	COVER	
28.	106-988	4	FLG LK SCREW (M6-1.00 X 20MM)	
29.	106-538	4	LOCKNUT (M6-1.0, PRV TRQ,10.9)	
30.	348-895	1	MOUNT BRACKET	
31.	107-001	4	FLG LK SCREW (M10-1.50 X 25MM)	
32.	106-391	4	WASHER (M12)	
33.	348-923	2	GEAR COVER	
34.	106-670	4	NUTSERT (M6-1.00)	
35.	106-378	4	FLG LK BOLT (M6-1.00 X 12MM)	
36.	107-002	4	FLG LK BOLT (M10-1.50 X 30MM)	
37.	217-939	2	PROXIMITY SWITCH	INCL JAM NUT
	107-332	2	JAM NUT	
38.	105-498	4	CAM WASHER (3/4")	
39.	348-891	1	MOUNT BRACKET	
40.	214-504	2	PHOTO-ELECTRIC SENSOR	
41.	105-737	4	WASHER (.157")	

PIPE LOADER MOUNT

STARTS WITH S/N 2S4116

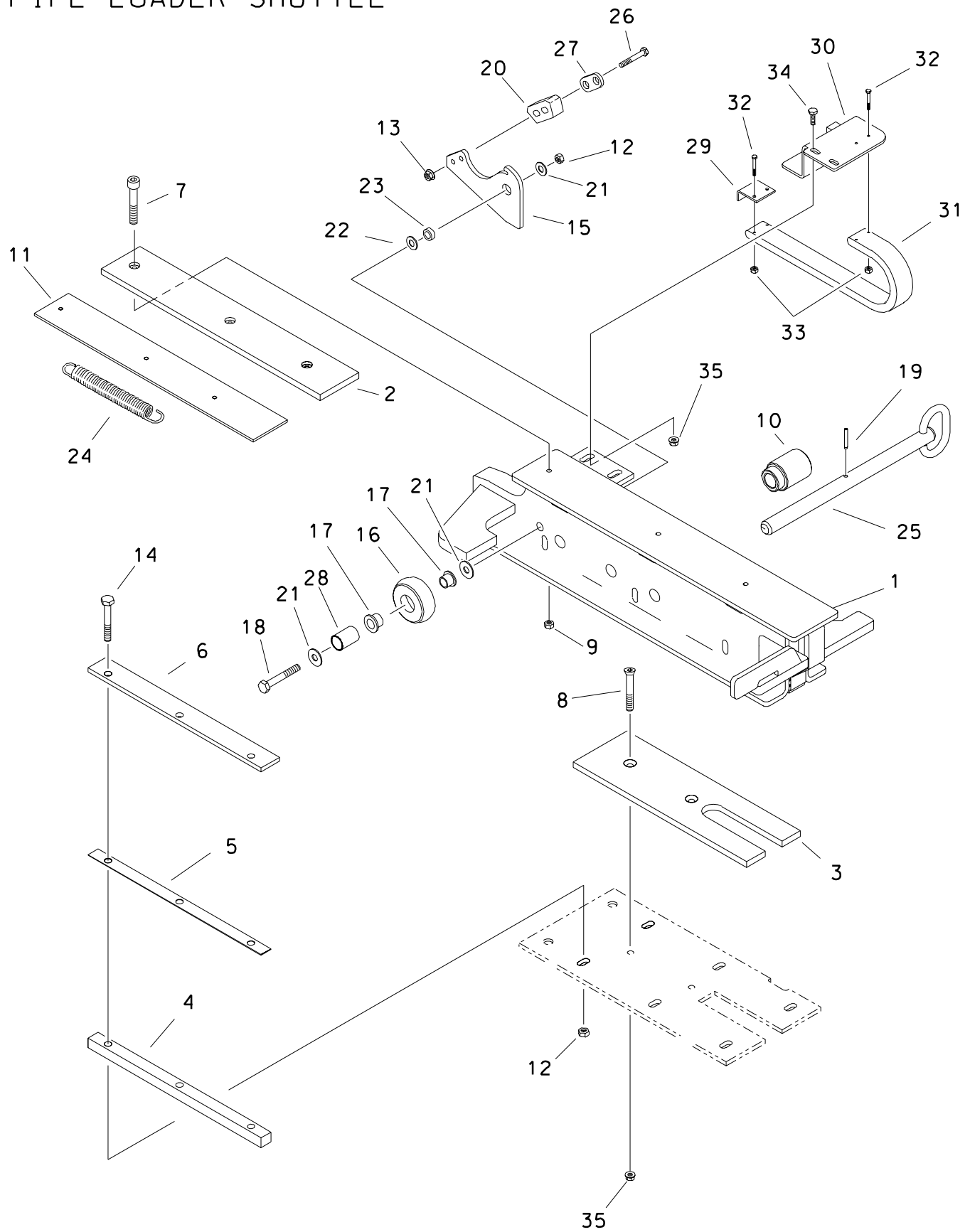


PIPE LOADER MOUNT

STARTS WITH S/N 2S4116

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	307-451	1	FRAME WELDMENT	
2.	167-335	1	PINION SHAFT	
3.	359-722	2	LIFT ARM	
4.	348-955	1	LIFT LINK	
5.	151-028	1	CYL (2.5" X 1.25" X 4")	
6.	179-147	2	TAPERED PIN (31.7MM X 200MM)	
7.	183-613	2	TAPERED PIN (1.250" X 3.5")	
8.	181-982	4	TAPERED INSERT (1.250")	
9.	106-632	4	FLG LK SCREW (M12-1.75 X 35MM)	
10.	125-771	6	COMPOSITION BUSHING (1.25")	
11.	125-846	2	COMPOSITION BUSHING (1.255")	
12.	110-056	AR	MACHINERY BUSHING (1.25")	
13.	125-605	1	FLANGE BEARING (1.25")	
14.	106-383	2	FLG LK SCREW (M10-1.50 X 30MM)	
15.	106-387	10	FLG LOCKNUT (M10-1.50)	
16.	165-916	1	KEY (5/16" X 1-3/4")	
17.	106-638	2	SET SCREW (M10-1.50 X 12MM)	
18.	348-787	1	MOTOR MOUNT	
19.	158-735	1	HYDRAULIC MOTOR	
	500-347		SEAL REPAIR KIT	
20.	106-333	2	SCREW (M12-1.75 X 40MM)	
21.	106-685	2	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
22.	106-831	6	FLG SCREW (M20-2.50 X 60MM, 10.9)	
23.	106-356	6	FLG NUT (M20-2.50, 10.9)	
24.	348-901	1	SHUTTLE GUARD	
25.	106-739	2	SHLD BLT (M12 X 20MM, M10-1.50)	
26.	105-894	2	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	
27.	307-824	1	VALVE COVER	
28.	307-385	1	HOSE COVER	
29.	306-541	1	HOSE COVER	
30.	105-632	6	NUTSERT (M8X1.25, .70-3.80THK)	
31.	106-380	6	FLG LK SCREW (M8-1.25 X 16MM)	
32.	106-381	6	FLG LK SCREW (M8-1.25 X 25MM)	
33.	348-923	2	GEAR COVER	
34.	106-670	4	NUTSERT (M6-1.00)	
35.	106-378	4	FLG LK BOLT (M6-1.00 X 12MM)	
36.	107-002	4	FLG LK BOLT (M10-1.50 X 30MM)	
37.	106-551	6	CLIP NUT (M8-1.25)	

PIPE LOADER SHUTTLE



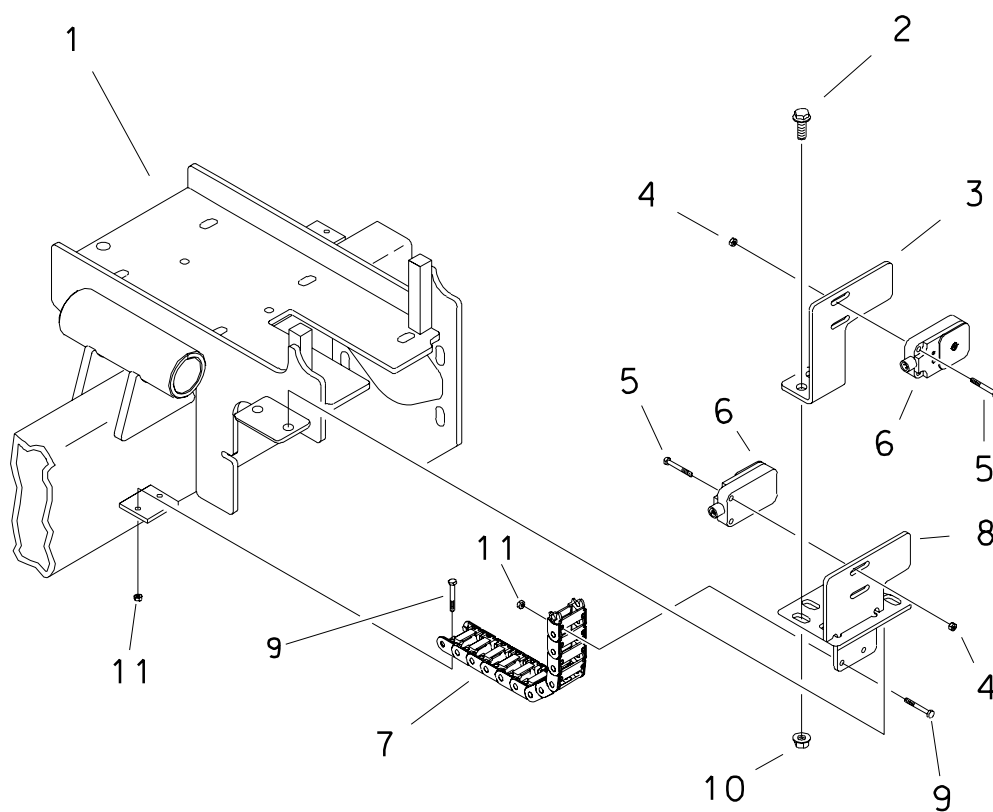
PIPE LOADER SHUTTLE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-760	2	SHUTTLE	ENDS WITH S/N 2S4073
	307-753	2	SHUTTLE WELDMENT	BEGINS WITH S/N 2S4116
2.	117-790	2	WEAR STRIP	
3.	117-791	2	BEARING PLATE	
4.	348-776	4	SPACER BAR	
5.	348-775	4	SHIM	
6.	348-774	4	RETAINER BAR	
7.	106-640	6	SCREW (M6-1.00 X 20MM, BUT SOC)	
8.	106-916	4	SCREW (M8-1.25 X 25MM, ALN)	SEE FOOTNOTE 1
9.	106-237	6	LOCKNUT (M6-1.00, PRV TRQ, NLK)	SEE FOOTNOTE 1
10.	178-096	1	BUSHING	
11.	348-956	2	SHIM	ENDS WITH S/N
12.	105-894	14	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	
13.	106-561	4	LOCKNUT (M8-1.25, PRV TRQ, 10.9)	
14.	105-271	12	SCREW (M10-1.50 X 40MM, 8.8)	
15.	348-870	2	LATCH	
16.	170-340	2	ROLLER	
17.	348-778	4	BUSHING	
18.	106-564	2	SCREW (M10-1.50 X 100MM)	
19.	115-545	1	EXTERNAL SNAP RING (.75")	
	105-525	1	ROLL PIN (3/16" X 1-1/4")	
20.	163-207	2	PIPE GRIPPER	
21.	105-118	6	WASHER (3/8")	
22.	105-886	2	WASHER (3/8")	
23.	184-888	2	SPACER	
24.	116-709	2	EXTENSION SPRING	
25.	185-154	1	PULL PIN (3/4" X 7")	ENDS WITH S/N 2S4073
	107-449	1	PULL PIN (3/4" X 7-1/2")	BEGINS WITH S/N 2S4116
26.	106-267	4	SCREW (M8-1.25 X 35MM)	SEE FOOTNOTE 1
27.	306-706	2	WASHER PLATE	
28.	178-076	2	BUSHING	
29.	307-911	2	COVER	BEGINS WITH S/N 2S4116
30.	307-714	2	SWITCH BRACKET	BEGINS WITH S/N 2S4116
31.	211-048	2	CABLE CARRIER	BEGINS WITH S/N 2S4116
32.	106-796	8	SCREW (M4-0.70 X 30MM)	BEGINS WITH S/N 2S4116
33.	106-557	8	NUT (M4-.70)	BEGINS WITH S/N 2S4116
34.	106-381	4	FLG LK SCREW (M8-1.25 X 25MM)	BEGINS WITH S/N 2S4116
35.	106-386	8	FLG LOCKNUT (M8-1.25)	BEGINS WITH S/N 2S4116

FOOTNOTES

1. TIGHTEN PLASTIC DOWN WITH BOLTS, DO NOT DEFORM PLASTIC.

SHUTTLE SENSORS

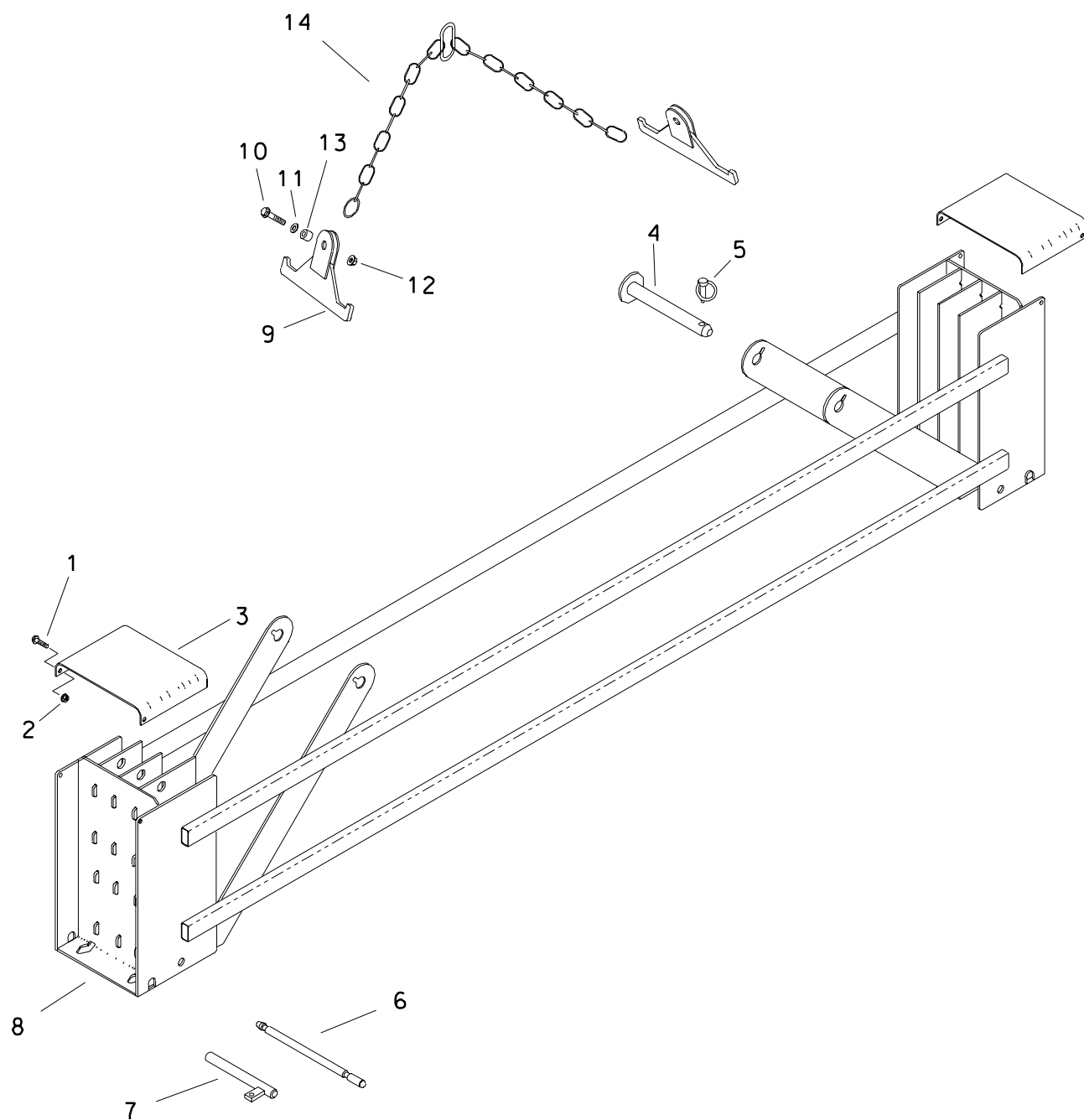


SHUTTLE SENSORS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	307-451	-	FRAME WELDMENT	
2.	106-162	2	FLG SCREW (M8-1.25 X 20MM)	
3.	307-707	1	INSIDE PROX MOUNT PLATE	
4.	106-048	4	LOCKNUT (#10-24)	
5.	106-408	4	BOLT (#10-24 X 1-1/4",SOC,GD8)	
6.	214-692	2	PROXIMITY SWITCH	
7.	211-049	2	CABLE CARRIER	
8.	307-706	1	PROX MOUNT BRACKET	
9.	106-796	8	SCREW (M4-0.70 X 30MM)	
10.	106-386	2	FLG LOCKNUT (M8-1.25)	
11.	106-557	8	NUT (M4-.70)	

FOOTNOTES

PIPE BOX



PIPE BOX

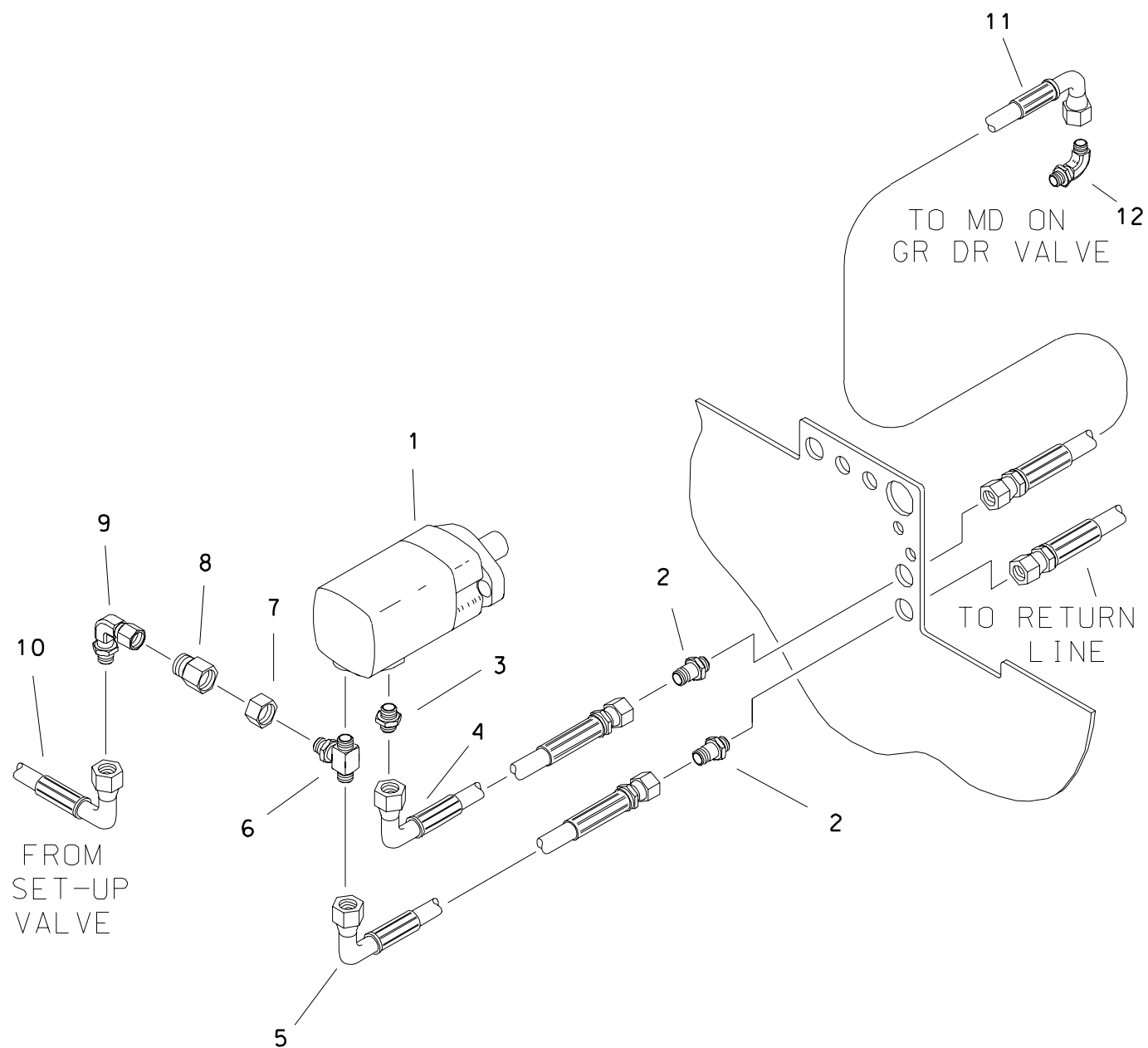
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	348-800	-	PIPE BOX	INCL REF NO.'S 1 - 8
	101-006	-	PIPE BOX SLING	INCL REF NO.'S 9 - 14
1.	105-274	4	SCREW (M10-1.50 X 20MM)	
2.	105-894	4	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	
3.	359-706	2	PIPE BOX COVER	
4.	359-610	2	PIPE BOX PIN	
5.	110-228	2	LYNCH PIN (7/16" X 2")	
6.	359-707	2	PIN	
7.	359-735	2	RETAINER PIN	
8.	348-840	1	PIPE LOADER BOX	
9.	359-770	2	LIFT PLATE	
10.	106-470	2	FLG SCREW (M16-2.00 X 40MM)	
11.	106-398	2	WASHER (M16, HARDENED)	
12.	106-077	2	NUT (M16-2.00, 10.9)	
13.	184-906	2	CHAIN ANCHOR BOSS	
14.	110-703	1	SLING CHAIN	

FOOTNOTES

NOTES:

FLUID SYSTEMS

MUD PUMP HYDRAULICS



MUD PUMP HYDRAULICS

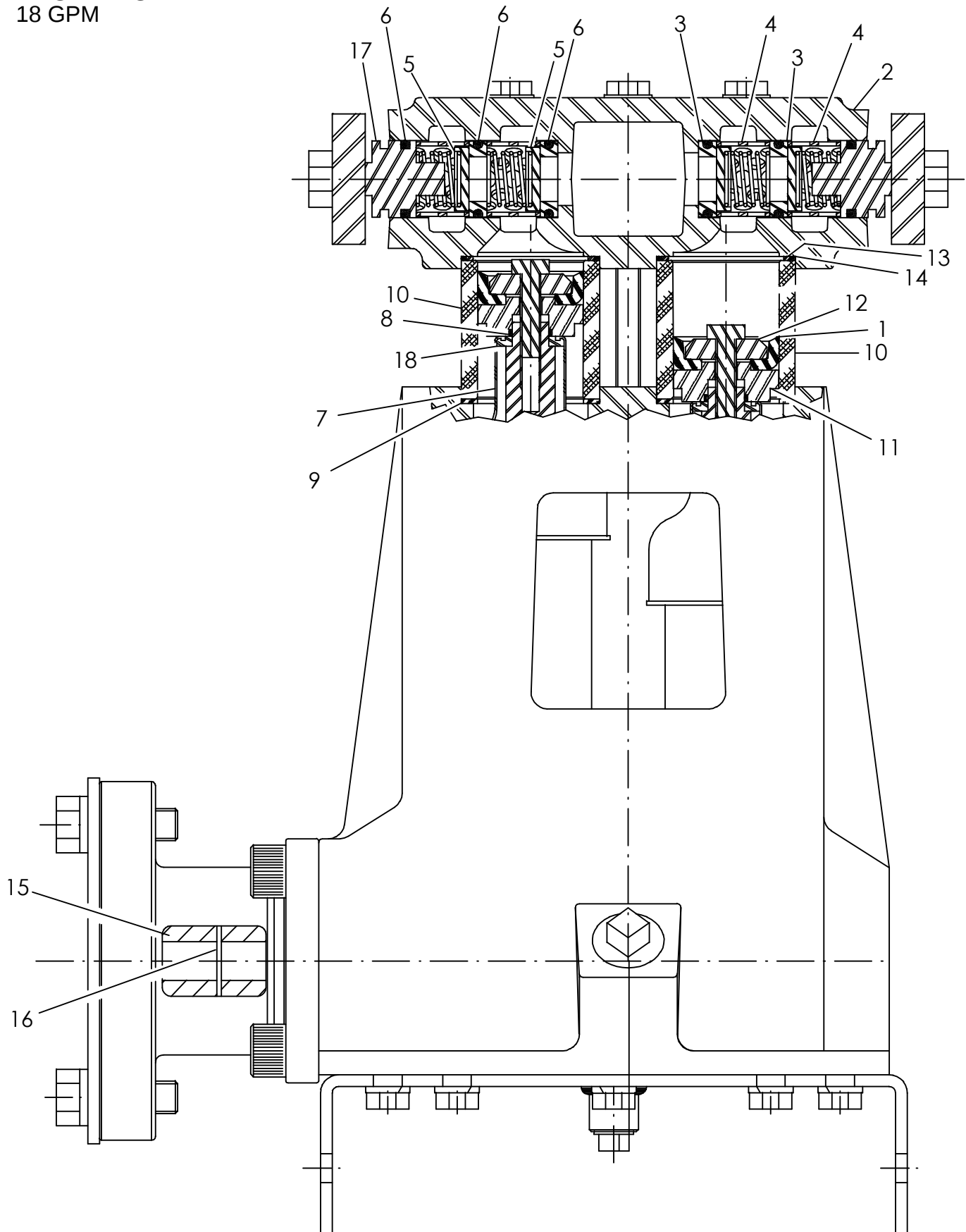
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-948	-	HYDRAULIC MOTOR	
2.	154-309	2	BK CONNECTOR (100-100BK)	
3.	514-105	1	CONNECTOR (10S-100)	
4.	515-644	1	HOSE (100FX90-31"-3000)	
5.	154-932	1	HOSE (100FX90-34"-3000)	
6.	154-317	1	RUN TEE (10S-100-100)	
7.	154-310	1	REDUCER NUT (100F)	
8.	154-312	1	REDUCER STEM (080)	
9.	154-256	1	UNION (080-080FX90)	
10.	515-224	-	HOSE (080FX90-21"-3000)	
11.	515-454	1	HOSE (100FX90L-20"-3000)	
12.	154-300	1	CONNECTOR (100-12S90)	

FOOTNOTES

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

FLUID PUMP 18 GPM



FLUID PUMP

18 GPM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	516-072	-	MUD PUMP	OBSOLETE
	149-978		DRILLING FLUID PUMP	
	197-173		REBUILT 516-072 MUD PUMP	OBSOLETE
	197-066		REBUILT 149-978 FLUID PUMP	
	191-023	1	VALVE REPAIR KIT	INCLUDES REF NO'S 3-6
	191-034	1	PACKING REPAIR KIT	INCLUDES REF NO'S 1, 8, 9, 13 & 14
1.	499-057	4	CUP (1-3/8" HSN)	OBSOLETE, SEE FOOTNOTE 1
2.	499-043	1	FLUID CYLINDER	
3.	500-901	8	VALVE SEAT	OBSOLETE, SEE FOOTNOTE 2
4.	499-044	8	CAGE	OBSOLETE, SEE FOOTNOTE 2
5.	500-902	8	DISC & SPRING	OBSOLETE, SEE FOOTNOTE 2
6.	157-157	12	O-RING (213 D90)	OBSOLETE, SEE FOOTNOTE 2
7.	499-045	4	UMBRELLA SEAL	
8.	157-158	4	O-RING (015 D90)	OBSOLETE, SEE FOOTNOTE 1
9.	165-845	4	CYLINDER GASKET	OBSOLETE, SEE FOOTNOTE 1
10.	499-058	4	CYLINDER, CERAMIC (1-3/8")	
11.	499-059	4	PACKING HOLDER	
12.	499-060	4	PACKING WASHER	
13.	499-048	4	SEAL RING	OBSOLETE, SEE FOOTNOTE 1
14.	157-159	4	O-RING (033 D90)	
15.	499-066	1	COUPLING (PUMP TO DRIVE MOTOR)	
16.	499-067	1	RETAINER RING	USED ON EARLIER MODELS
	500-2012	1	SPRING PIN 3/32" X 1.5"	
17.	499-086	4	VALVE COVER	
18.	499-087	4	WASHER	

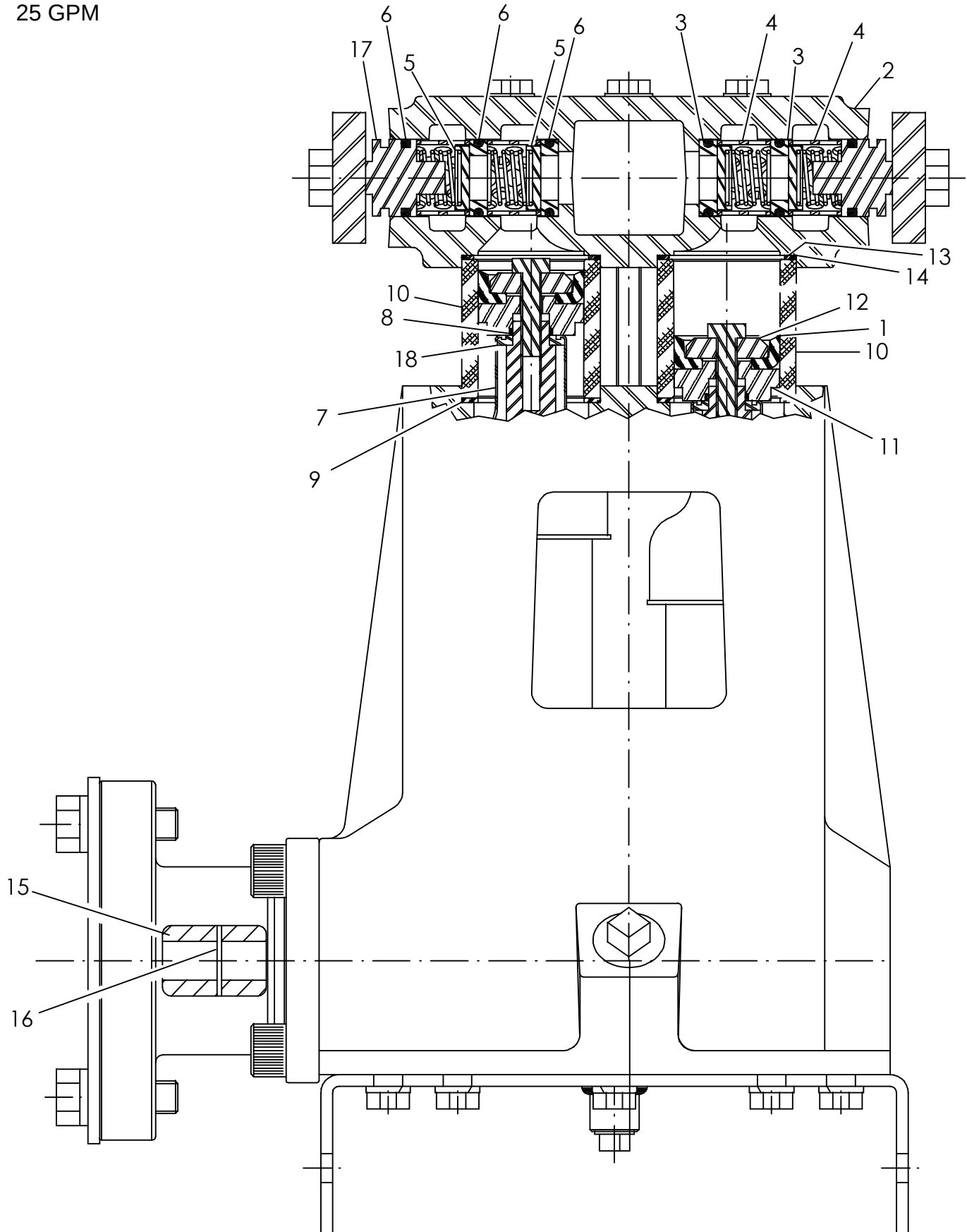
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FOOTNOTES:

1. THESE SERVICE PARTS REPLACED BY PACKING REPAIR KIT 191-022
2. THESE SERVICE PARTS REPLACED BY PACKING REPAIR KIT 191-034

NOTE:

FLUID PUMP 25 GPM



FLUID PUMP

25 GPM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	158-479	-	MUD PUMP	OBSOLETE, SEE FOOTNOTE 3
	149-977		DRILLING FLUID PUMP	SEE FOOTNOTE 4
	197-174		REBUILT 158-479 MUD PUMP	OBSOLETE
	197-065		REBUILT 149-977 MUD PUMP	
	191-022	1	PACKING REPAIR KIT	INCLUDES REF NO.'S 1, 8, 9, 13 & 14
	191-023	1	VALVE REPAIR KIT	INCLUDES REF NO.'S 3-6
1.	500-900	4	CUP (1-5/8" HSN)	OBSOLETE
2.	499-043	1	FLUID CYLINDER	
3.	500-901	8	VALVE SEAT	OBSOLETE, SEE FOOTNOTE 2
4.	499-044	8	CAGE	OBSOLETE, SEE FOOTNOTE 2
5.	500-902	8	DISC & SPRING	OBSOLETE, SEE FOOTNOTE 2
6.	157-157	12	O-RING (213 D90)	OBSOLETE, SEE FOOTNOTE 2
7.	499-045	4	UMBRELLA SEAL	
8.	157-158	4	O-RING (015 D90)	OBSOLETE, SEE FOOTNOTE 1
9.	165-845	4	CYLINDER GASKET	OBSOLETE, SEE FOOTNOTE 1
10.	500-903	4	CYLINDER, CERAMIC	
11.	499-046	4	PACKING HOLDER	
12.	499-047	4	WASHER	
13.	499-048	4	SEAL RING	OBSOLETE, SEE FOOTNOTE 1
14.	157-159	4	O-RING (033 D90)	
15.	499-066	1	COUPLING (PUMP TO DRIVE MOTOR)	
16.	499-067	1	RETAINER RING	USED ON EARLIER MODELS
	500-2012	1	SPRING PIN 3/32" X 1.5"	
17.	499-086	4	VALVE COVER	
18.	499-087	4	WASHER	

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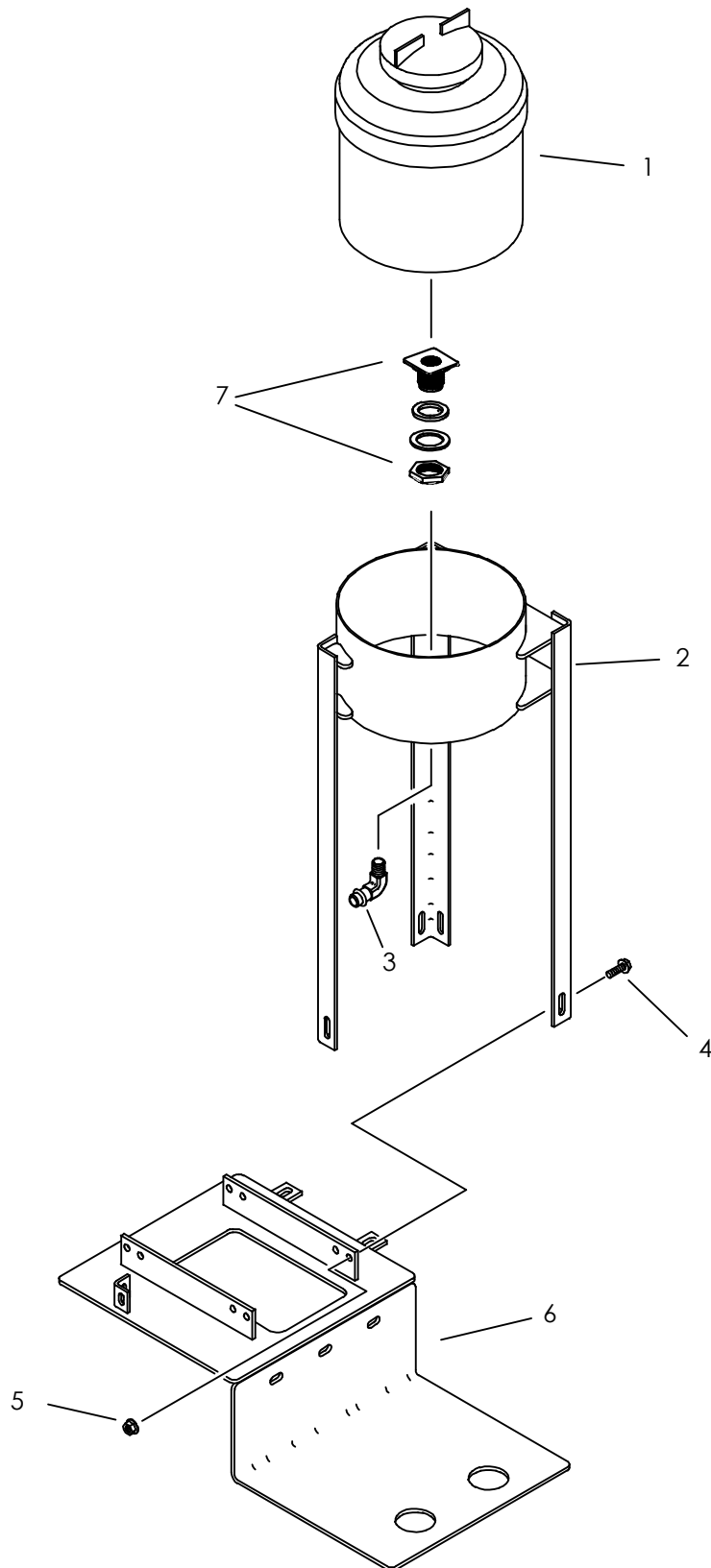
157-751	4	CRANKSHAFT SEAL
499-125	-	PLUNGER ROD OIL SEAL

FOOTNOTES:

1. THESE SERVICE PARTS REPLACED BY PACKING REPAIR KIT 191-022
2. THESE SERVICE PARTS REPLACED BY VALVE REPAIR KIT 191-023
3. ENDS WITH S/N 2T2167 (JT1720), 2T2244 (JT920L)
4. BEGINS WITH S/N 2T2168 (JT1720), 2T2245 (JT920L)

NOTE:

ANTIFREEZE TANK



ANTIFREEZE TANK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-834		ANTIFREEZE CONVERSION KIT	INCL REF NO'S 1 - 7; SEE FOOTNOTE 1
1.	364-325	1	ANTIFREEZE TANK (3 GAL)	SEE FOOTNOTE 2
2.	348-668	1	TANK MOUNT	
3.	514-433	1	S/O COUPLER (12N-12HB90)	
4.	106-992	3	FLG LK SCREW (M8-1.25 X 25MM)	
5.	106-386	3	FLG LOCKNUT (M8-1.25)	
6.	348-850	-	RIGHT FUEL TANK COVER	
7.	500-1289	1	BK CONNECTOR (12NF, POLY)	

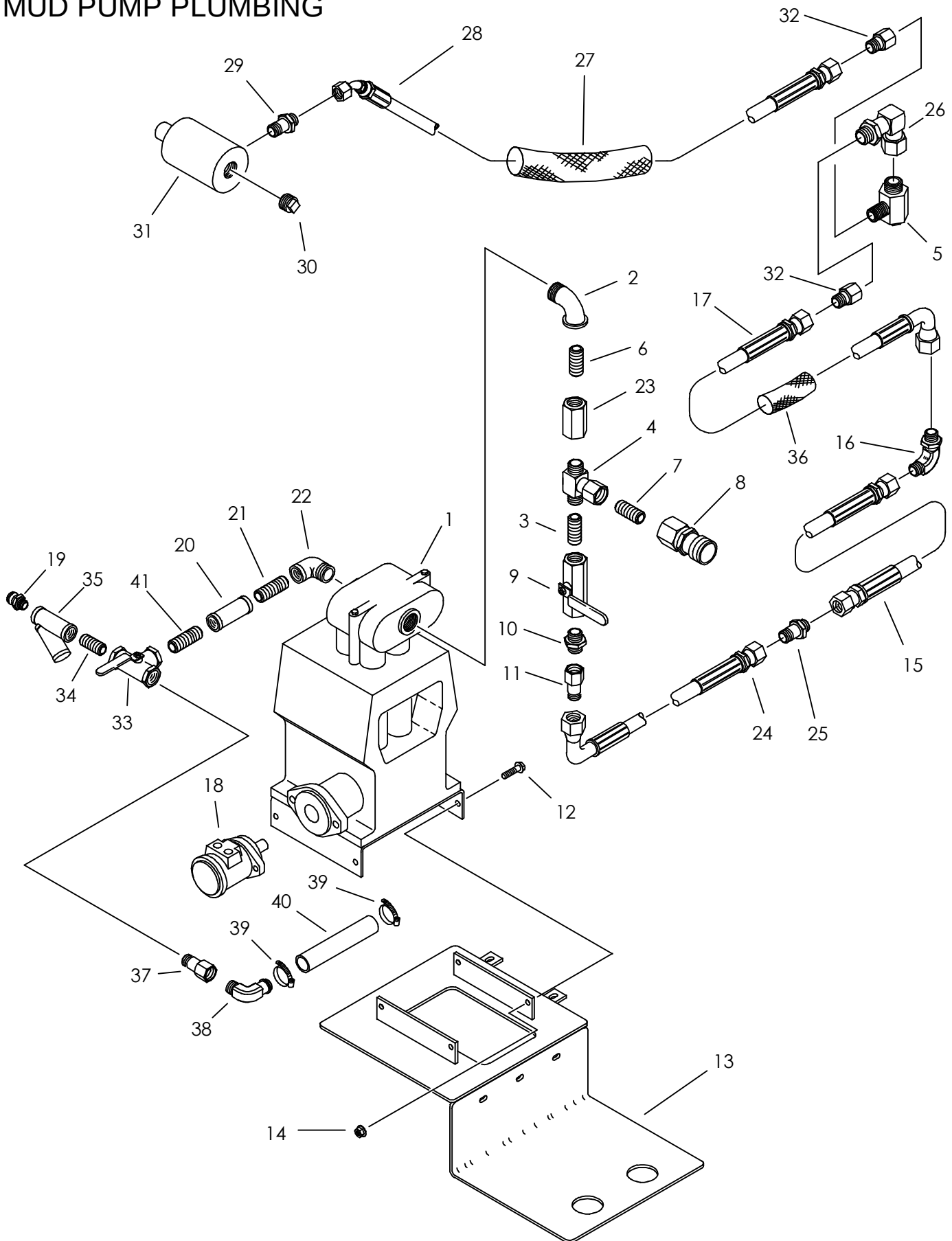
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363-535 3 SPRING TAB

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FOOTNOTES:
1. REFER TO INSTRUCTIONS 051-186
2. INCLUDES REFERENCE NO. 7

NOTE:

MUD PUMP PLUMBING



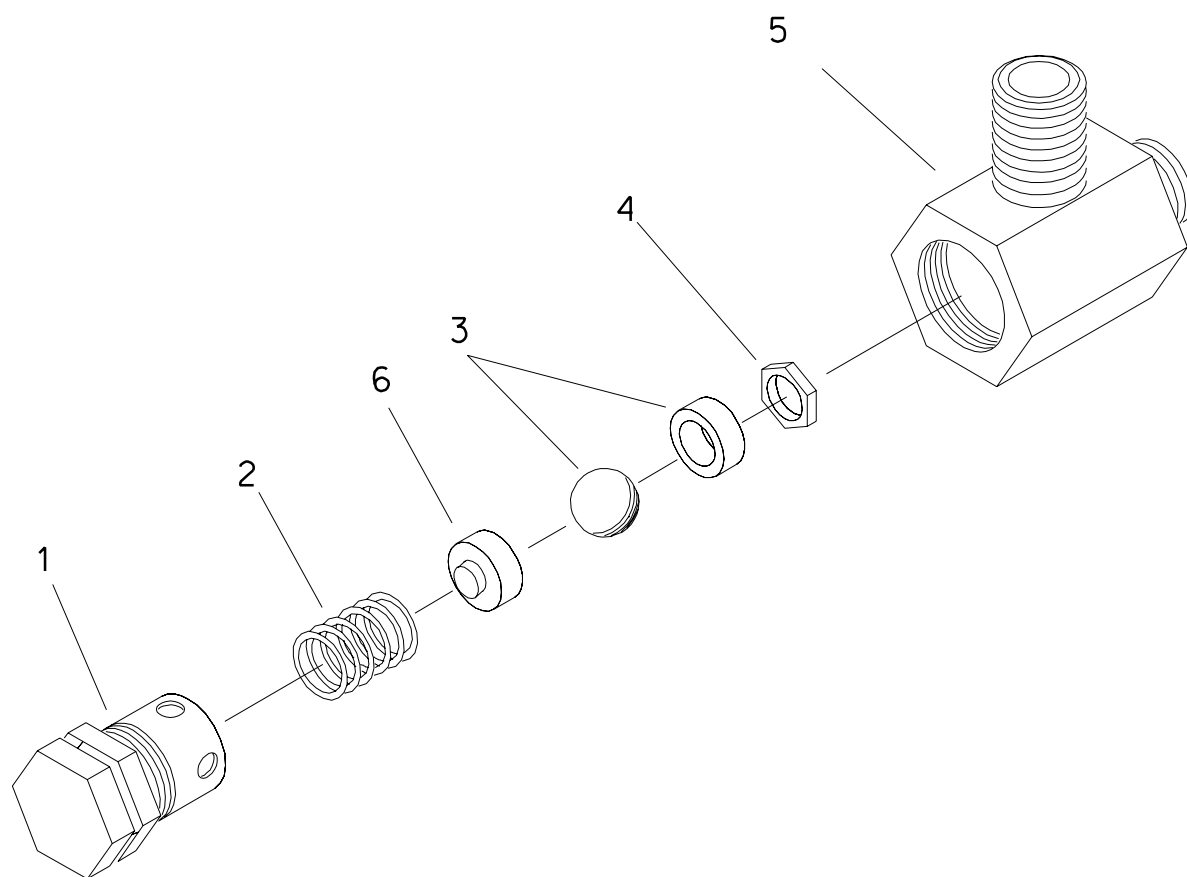
MUD PUMP PLUMBING

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-072	1	MUD PUMP	18 GPM OPTION
	197-173		REBUILT 516-072	
	158-479	1	MUD PUMP	25 GPM OPTION
	197-174		REBUILT 158-479	
	191-022	1	PACKING REPAIR KIT	
	191-023	1	VALVE REPAIR KIT	
2.	115-120	1	STREET ELBOW (12N-12NF90)	
3.	115-163	1	ALL THREAD (12N)	
4.	155-084	1	SERVICE TEE (12N-12NF-12NF)	
5.	159-287	1	CHECK VALVE (90 DEG, 70PSI)	BEGINS WITH S/N 2R2482
6.	114-021	1	NIPPLE (12N-3.5")	
7.	156-956	1	CONNECTOR (08S-12N)	
8.	159-088	1	QDC BODY (08-08SF)	
	155-936	1	DUST PLUG (1/2" - 3/4")	
9.	120-073	1	SHUT-OFF (12NF-12NF)	
10.	154-351	1	CONNECTOR (12N-120)	
11.	154-441	1	REDUCER (100-120F)	
12.	106-382	4	FLG LK SCREW (M10-1.50 X 20MM)	
13.	348-850	-	RIGHT FUEL TANK COVER	
14.	106-387	4	FLG LOCKNUT (M10-1.50)	
15.	154-917	1	HOSE (100FX-62"-2750)	
16.	154-291	1	BK CONNECTOR (100-10090BK)	
17.	515-168	1	HOSE (100FX90S-120"-3000)	
18.	158-948	1	HYDRAULIC MOTOR	
19.	155-204	1	FHC ADAPTER (20-24N)	
20.	514-124	1	SWEDGE COLLAR (24NF-20NF, 4.5")	
21.	115-179	1	NIPPLE (20N-6")	
22.	115-132	1	STREET ELBOW (20N-20NF90)	
23.	115-168	1	COLLAR (12NF)	
24.	515-625	1	HOSE (100FX90-38"-3000)	
25.	154-309	1	BK CONNECTOR (100-100BK)	
26.	154-457	2	UNION (120-120FX90)	BEGINS WITH S/N 2R2482
27.	117-706	1	ABRASION SLEEVE (1.59" X 17")	
28.	515-749	1	HOSE (100FX45-15"-3000)	
29.	514-415	1	CONNECTOR (100-12N)	
30.	115-165	1	PLUG (08N, ALN)	
31.	159-240	1	WATER SWIVEL	
32.	154-441	2	REDUCER (100-120F)	BEGINS WITH S/N 2R2482
33.	120-076	1	3 WAY VALVE (24NF-24NF-24NF)	
34.	115-040	1	NIPPLE (24N-3")	
35.	159-476	1	Y-STRAINER (1-1/2")	
	159-503	1	SCREEN, Y-STRAINER (12 MESH)	
	500-2080	1	O-RING	USED ON Y STRAINER CAP
36.	117-281	1	ABRASION SLEEVE (1.25" X 122")	
37.	115-271	1	REDUCER (24N-12NF)	
38.	514-433	1	S/O COUPLER (12N-12HSB90)	
39.	110-353	2	WORM CLAMP (3/4" TO 1-1/2")	
40.	116-636	AR	BULK HOSE (3/4", SOLD PER 1")	USE 1 @ 13"
41.	115-263	1	ALL THREAD (24N)	

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

CHECK VALVE

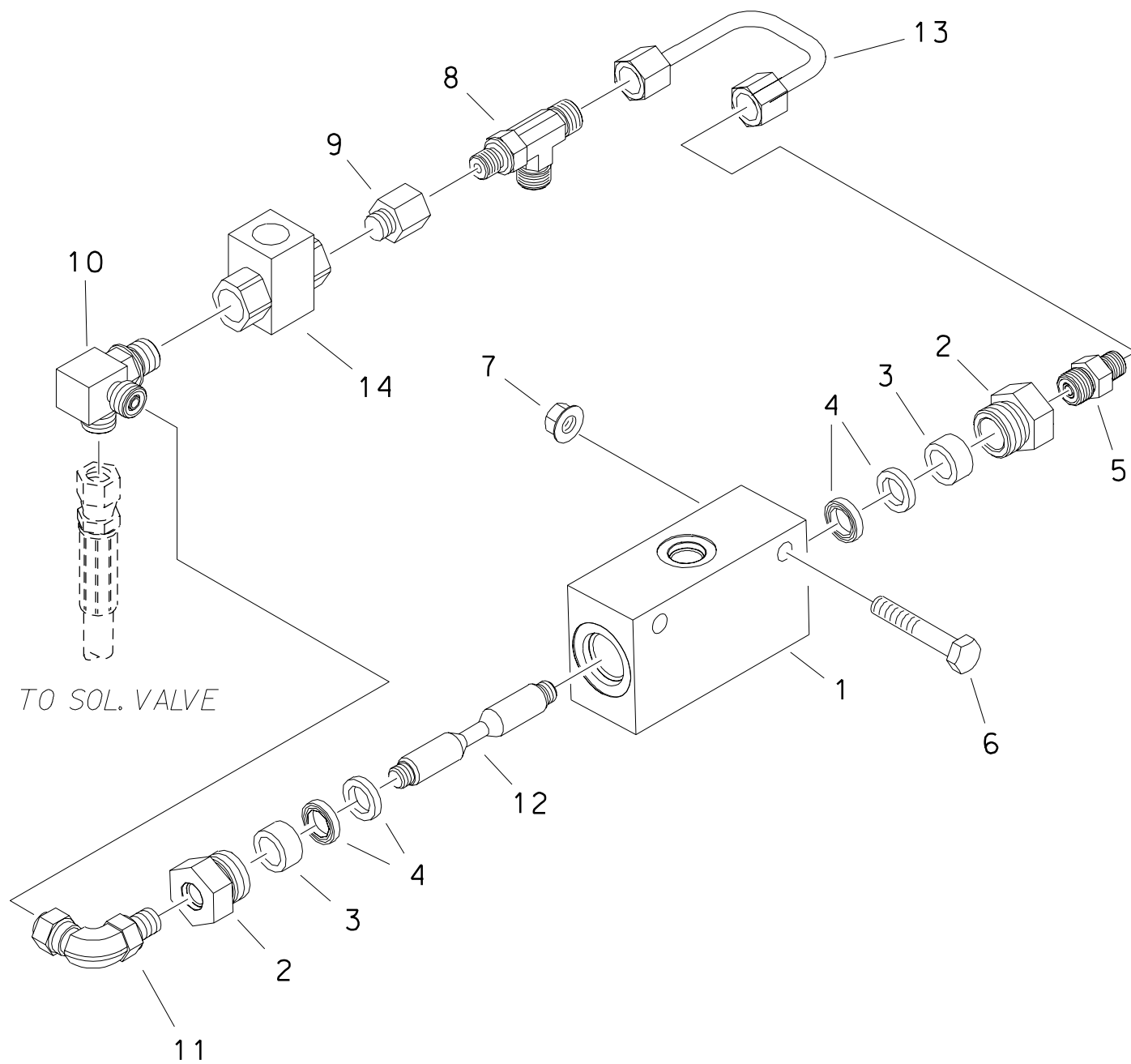


CHECK VALVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	159-287	-	CHECK VALVE (90 DEG, 70PSI)	INCL REF NO'S 1 - 5
1.	159-325	1	CAGE ASSEMBLY	
2.	117-303	1	COMPRESSION SPRING	
3.	159-310	1	BALL & SEAT	
4.	159-327	1	SHIM	
5.	159-328	1	BODY	
6.	308-765	1	SPRING GUIDE	

FOOTNOTES

SELECTOR VALVE



SELECTOR VALVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	101-085		GREASER VALVE KIT	INCL. REF. 1-4 & 12
1.	343-291	1	VALVE BODY	
2.	149-152	2	REDUCER (10S-04SF)	
3.	343-292	2	SPACER	
4.	116-880	4	SEAL (POLY PAK)	
5.	154-278	1	CONNECTOR (04S-040)	
6.	106-329	2	SCREW (M8-1.25 X 50MM)	
7.	106-386	2	FLG LOCKNUT (M8-1.25)	
8.	154-316	1	RUN TEE (04S-040-040)	
9.	155-254	1	REDUCER (06S-04SF)	
10.	154-230	1	BRANCH TEE (06S-040-040)	
11.	514-257	1	UNION (04S-040FX90)	
12.	350-690	1	VALVE SPOOL	
13.	149-519	1	HYD LINE	
14.	158-600	1	HYD SHUTTLE VALVE	

FOOTNOTES

NOTE:

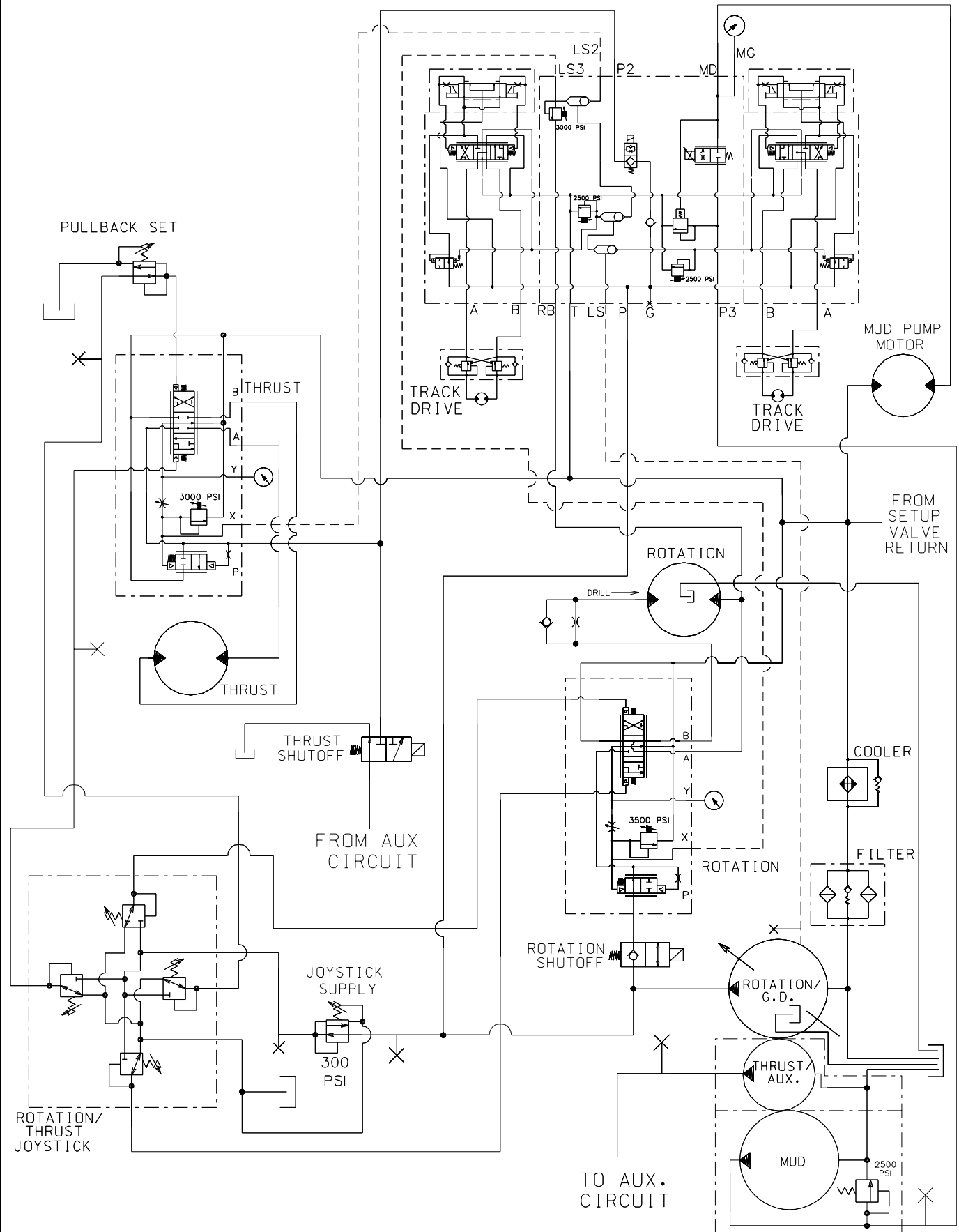
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

NOTES:

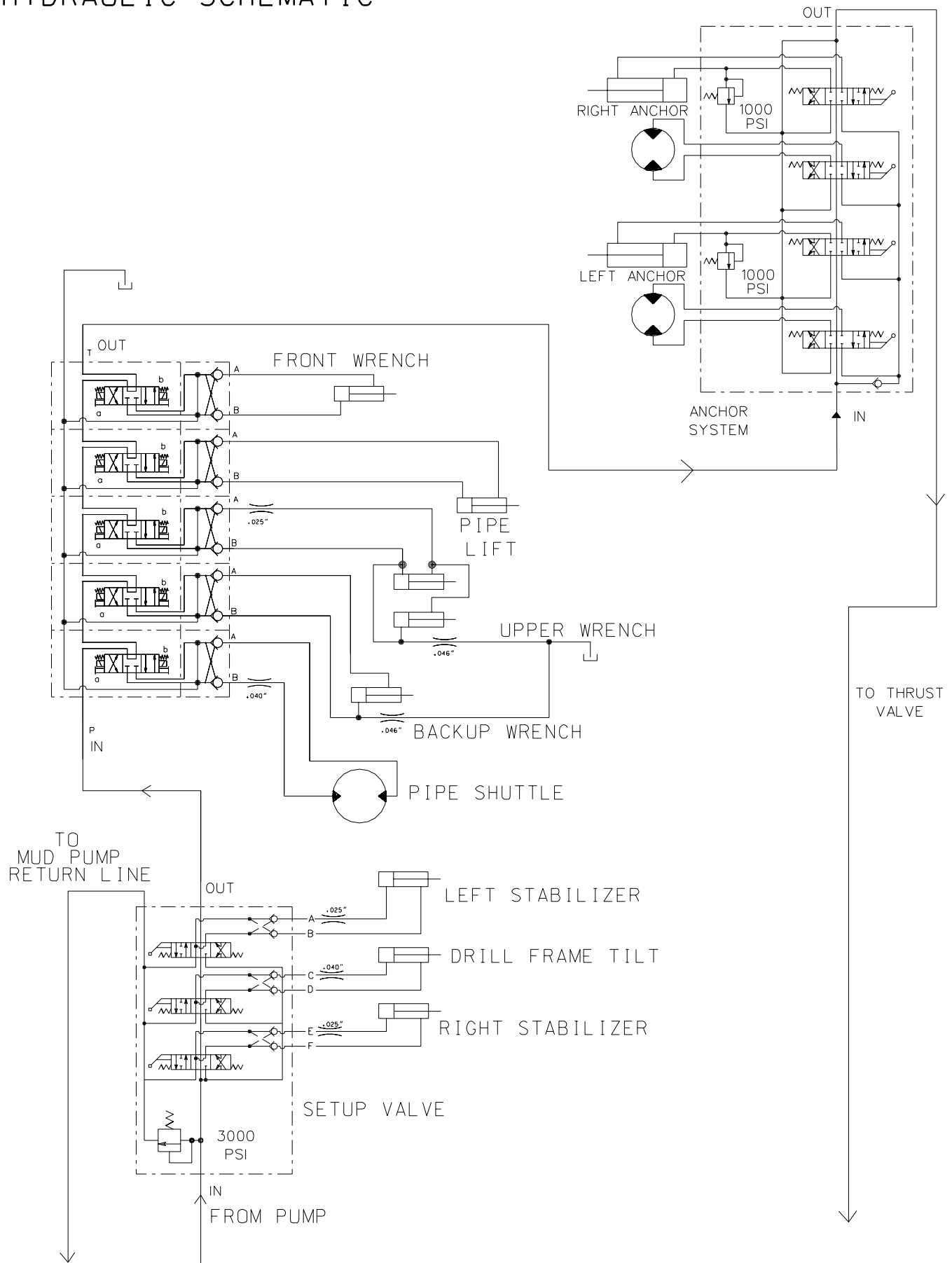
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HYDRAULICS

HYDRAULIC SCHEMATIC



HYDRAULIC SCHEMATIC



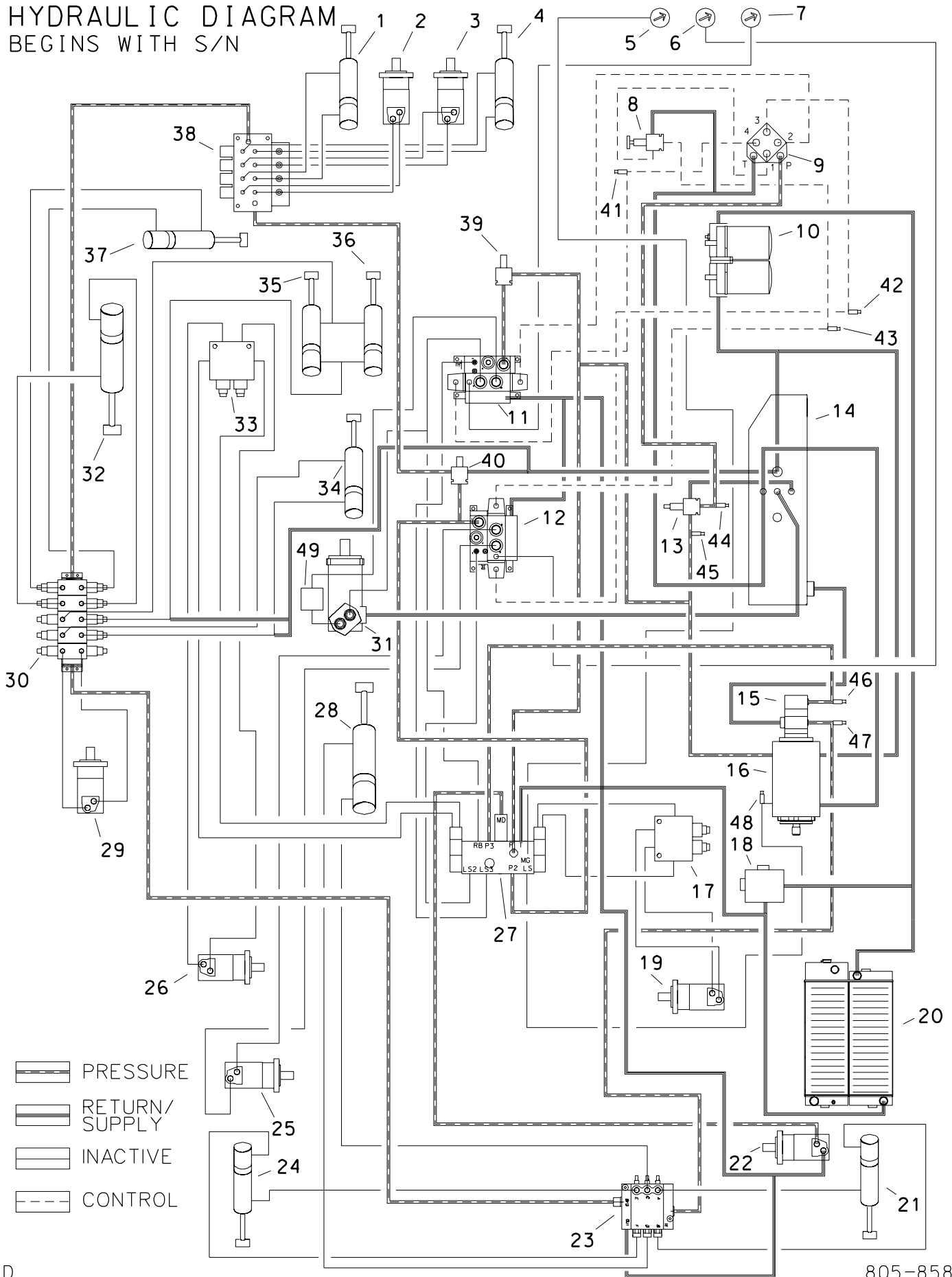
HYDRAULIC SCHEMATIC

SPECIFICATIONS

ENGINE		PUMP			MOTOR	
MFG (NO LOAD)	RPM	TYPE	GPM	DISPLACEMENT	TYPE	DISPLACEMENT
DEERE 4045D	2500	ROTATION	45	4.52	ROTATION	30.0
		THRUST	7	.66	THRUST	14.9
		MUD	12	1.20	GROUND DRIVE	11.9
					MUD	4.0
					SHUTTLE	11.9
					ANCHOR	24.0

HYDRAULIC DIAGRAM

BEGINS WITH S/N

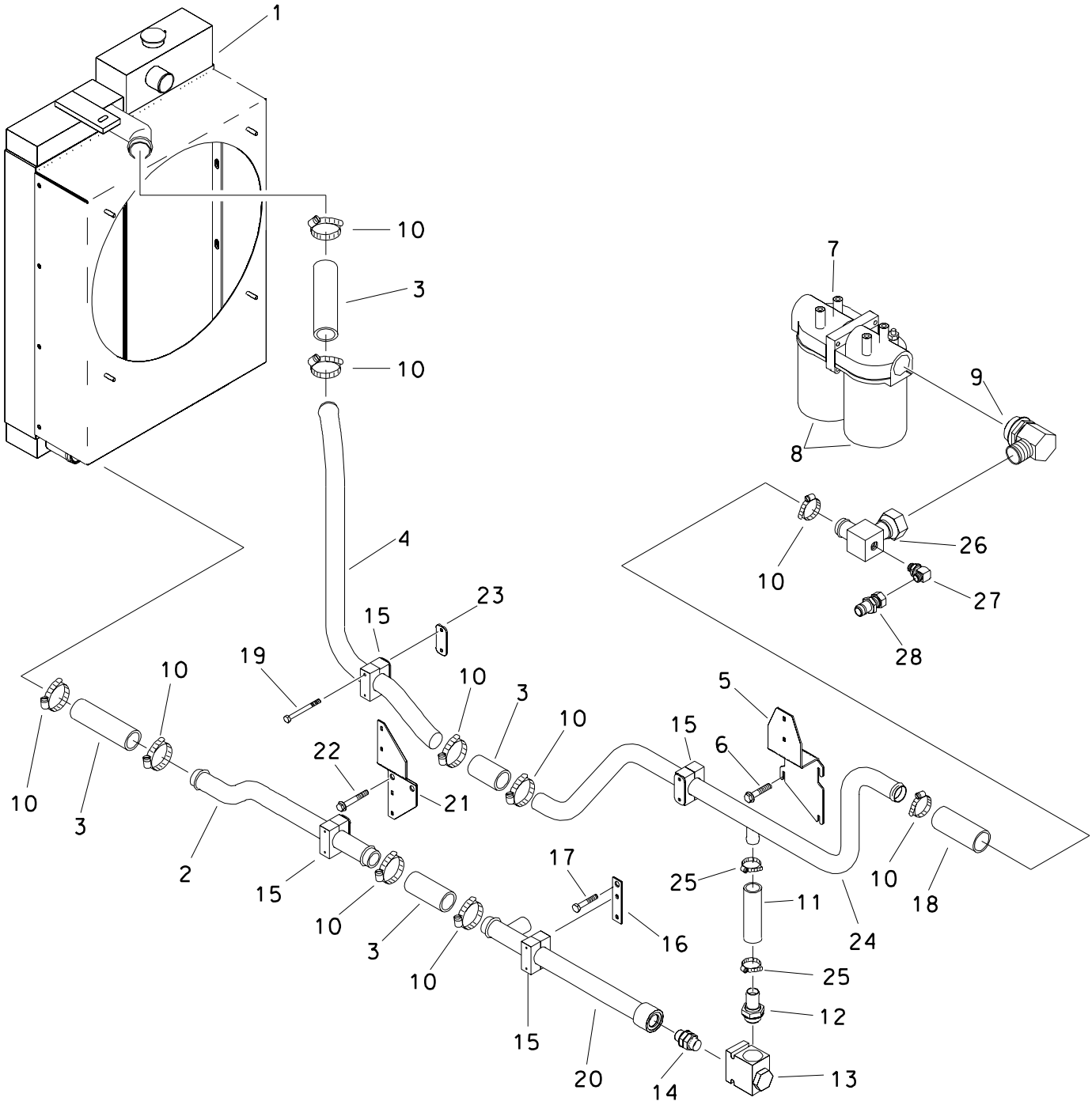


HYDRAULIC DIAGRAM BEGINS WITH S/N

REF NO.	DESCRIPTION	REMARKS
1.	LEFT ANCHOR CYLINDER	
2.	LEFT ANCHOR MOTOR	
3.	RIGHT ANCHOR MOTOR	
4.	RIGHT ANCHOR CYLINDER	
5.	MUD GAUGE	
6.	THRUST GAUGE	
7.	ROTATION GAUGE	
8.	PULLBACK SET VALVE	
9.	ROTATION/THRUST JOYSTICK	
10.	HYD FILTER	
11.	ROTATION VALVE	
12.	THRUST VALVE	
13.	JOYSTICK SUPPLY VALVE	
14.	HYD RESERVOIR	
15.	THRUST/AUX/MUD PUMP	
16.	ROTATION/GROUND DRIVE PUMP	
17.	RIGHT GROUND DRIVE COUNTERBALANCE VALVE	
18.	COOLER BYPASS VALVE	
19.	RIGHT GROUND DRIVE MOTOR	
20.	RADIATOR/OIL COOLER	
21.	RIGHT STABILIZER CYLINDER	
22.	MUD PUMP MOTOR	
23.	SETUP VALVE	
24.	LEFT STABILIZER CYLINDER	
25.	THRUST MOTOR	
26.	LEFT GROUND DRIVE MOTOR	
27.	GROUND DRIVE/MUD VALVE	
28.	TILT CYLINDER	
29.	SHUTTLE MOTOR	
30.	WRENCH/PIPE LOADER VALVE	
31.	ROTATION MOTOR	
32.	LIFT CYLINDER	
33.	LEFT GROUND DRIVE COUNTERBALANCE VALVE	
34.	BACKUP WRENCH CYLINDER	
35.	LEFT UPPER WRENCH CYLINDER	
36.	RIGHT UPPER WRENCH CYLINDER	
37.	FRONT WRENCH CYLINDER	
38.	ANCHOR VALVE	
39.	ROTATION SHUTOFF VALVE	
40.	THRUST SHUTOFF VALVE	
41.	ROTATION CONTROL TESTPORT	
42.	THRUST CONTROL TESTPORT	
43.	PULLBACK CONTROL TESTPORT	
44.	JOYSTICK SUPPLY TESTPORT	
45.	LOAD SENSE PRESSURE TESTPORT	
46.	MUD TESTPORT	
47.	THRUST AND AUXILIARY TESTPORT	
48.	LOAD SENSE SIGNAL TESTPORT	
49.	ORIFICED CHECK VALVE	

FOOTNOTES

HYDRAULIC OIL COOLER



HYDRAULIC OIL COOLER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-834	1	RADIATOR/ OIL COOLER	
2.	156-990	1	COOLER INLET LINE	BEGINS WITH S/N
3.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 4 @ 6"
4.	156-197	1	COOLER RETURN LINE	
5.	348-816	1	HOSE CLAMP SUPPORT	
6.	106-988	3	FLG LK SCREW (M6-1.00 X 20MM)	
7.	159-411		FILTER HEAD (20SF-20SF)	
	168-616	1	FILTER HEAD GASKET	
8.	159-079	2	FILTER ELEMENT (1-1/2-UNF)	SEE FOOTNOTE 1
	149-840	2	FILTER ELEMENT (1-1/2-UNF)	
9.	156-995	1	CONNECTOR (24S-24090)	
10.	111-028	10	T-BOLT CLAMP (1.75" TO 2.00")	
11.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 10"
12.	514-042	1	S/D COUPLER (12S-20H)	
13.	159-253	1	FLOW CHECK VALVE	
14.	155-152	1	CONNECTOR (12S-12S)	
15.	111-008	4	BOLT-ON CLAMP (1-1/2", SET)	
16.	348-817	1	HOSE CLAMP SUPPORT	
17.	106-596	1	SCREW (M14-2.00 X 30MM, EPOXY LK)	
18.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 10 1/2"
19.	105-224	8	BOLT (1/4-NC X 2-1/2")	BEGINS WITH S/N
20.	156-989	1	COOLER INLET LINE	
21.	348-815	1	HOSE CLAMP SUPPORT	
22.	107-010	2	FLG LK SCREW (M12-1.75 X 30MM)	
23.	322-363	4	WELD PLATE	
24.	156-195	1	COOLER RETURN LINE	
25.	110-250	2	WORM CLAMP (1-1/4" TO 2-1/8")	
26.	156-994	1	CONNECTOR (24OF-24H90)	
27.	154-342	1	CONNECTOR (06S-06090)	
28.	159-157	1	QDC ADAPTER (02-060F)	

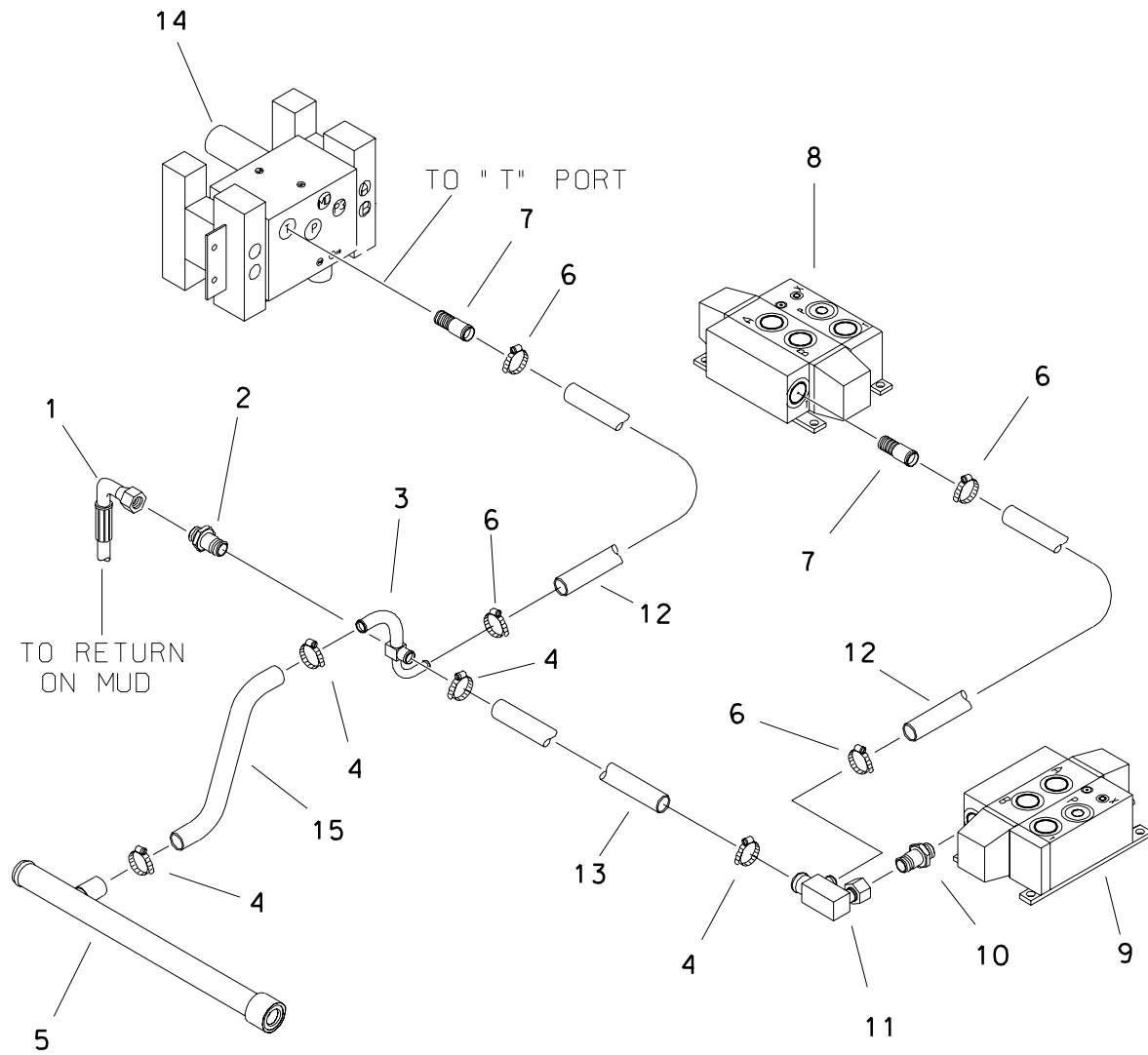
FOOTNOTES

1. USE 159-079 ELEMENT FOR NORMAL MAINTENANCE. USE 149-840 ELEMENT AFTER HOSE OR COMPONENT REPAIR OR REPLACEMENT.

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

RETURN HYDRAULICS



RETURN HYDRAULICS

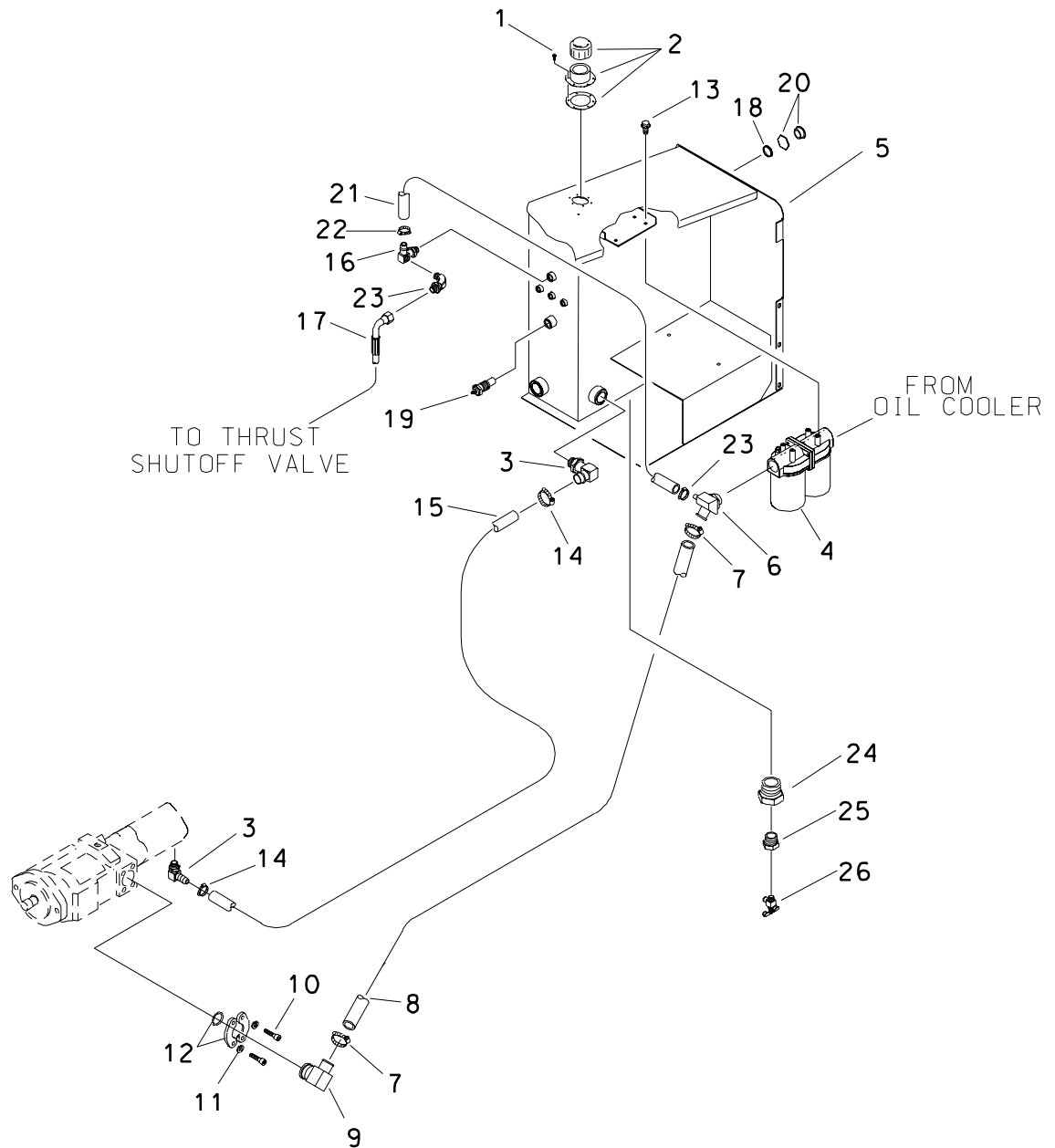
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	515-129	1	HOSE (100FX90-30"-3000)	
2.	154-301	1	CONNECTOR (10S-100)	
3.	514-407	1	S/O BR TEE (10SF-16H-24H-24H)	
4.	111-028	4	T-BOLT CLAMP (1.75" - 2.00")	
5.	156-989	-	COOLER INLET LINE	
6.	111-027	4	T-BOLT CLAMP (1.25" - 1.50")	
7.	514-088	2	S/O COUPLER (16S-16H)	
8.	516-085	-	HYD CONTROL VALVE	THRUST
9.	516-081	-	HYD CONTROL VALVE	ROTATION
10.	154-398	1	CONNECTOR (16S-160, 4.140", XLG)	
11.	514-406	1	S/O COUPLER (16SF-24H90-16H)	
12.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 2 @ 11"
13.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 27"
14.	516-080	-	HYD CONTROL VALVE	GROUND DRIVE
15.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 12"

FOOTNOTES

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

FILTER & RESERVOIR HYDRAULICS



FILTER & RESERVOIR HYDRAULICS

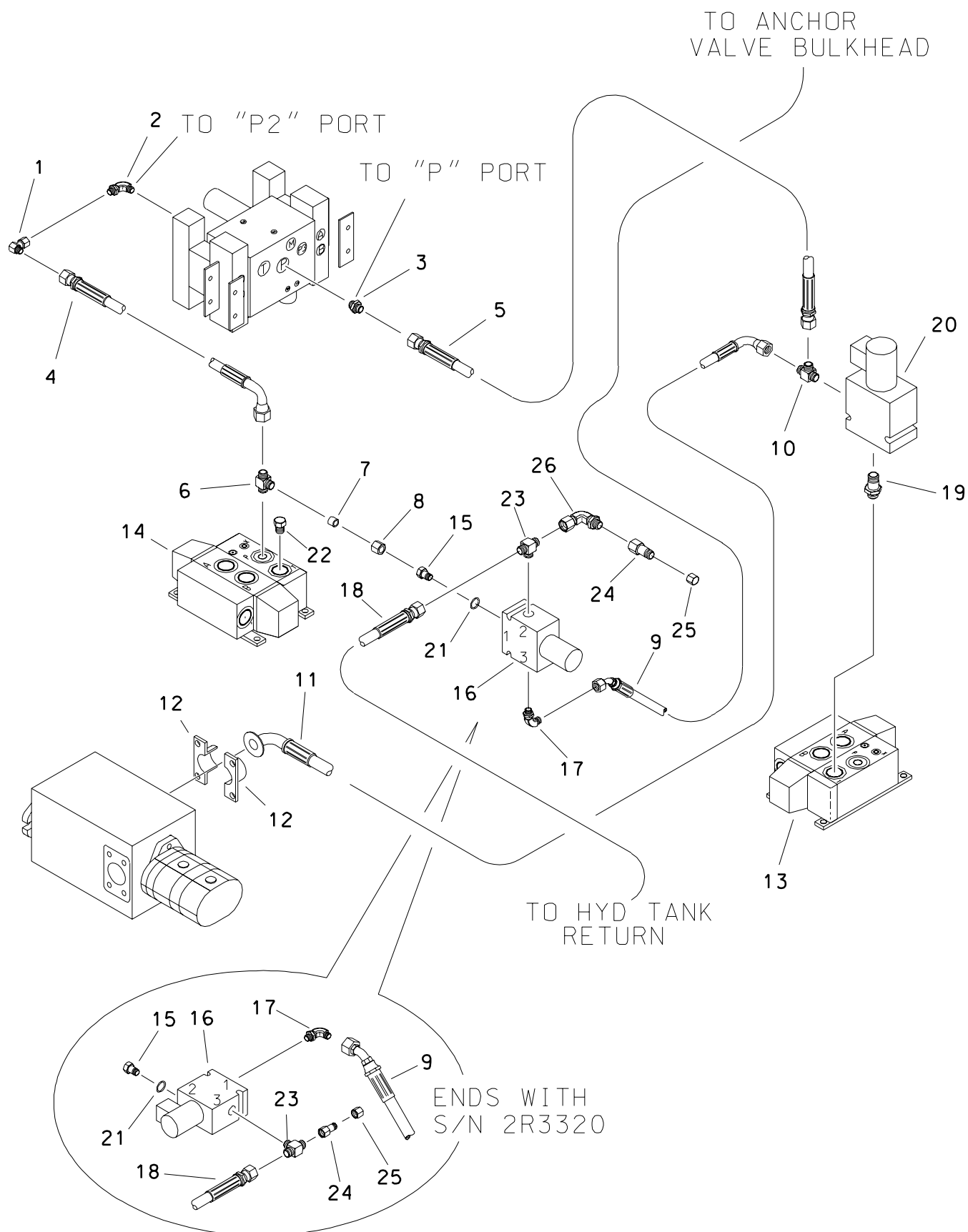
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-214	6	FLG BOLT (#10-24 X 1/2")	
2.	110-996	1	FILLER BREATHER CAP (1/8")	LOCKABLE
3.	155-168	2	S/O COUPLER (20S-20H90)	
4.	159-411	1	FILTER HEAD (20SF-20SF)	
	168-616	1	FILTER HEAD GASKET	
	159-079	2	FILTER ELEMENT (1-1/2-UNF)	
	217-765		INDICATOR SWITCH (SENDER)	
5.	348-621	1	HYD RESERVOIR	
6.	514-398	1	S/O COUPLER (20S-32H90-12H)	
7.	110-815	2	T-BOLT CLAMP (2.25" TO 2.56")	
8.	116-817	AR	BULK HOSE (2", SOLD PER 1")	USE 1 @ 24"
9.	514-399	1	S/O COUPLER (32F-32H90)	
10.	106-204	4	BOLT (1/2-NC X 1-1/2", ALN)	
11.	105-070	4	LOCK WASHER (1/2")	
12.	514-104	2	SPLIT FLANGE (32SF)	
	500-031	1	O-RING (228 D90)	
13.	501-153	4	FLG LK BOLT (3/8-NC X 5/8")	
14.	110-250	2	WORM CLAMP (1-1/4" TO 2-1/8")	
15.	116-587	1	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 8.5"
16.	155-198	1	S/O COUPLER (12S-12H90-06SF)	
17.	515-025	-	HOSE (08QFX90-40"-3000)	
18.	115-320	1	GROMMET (1-1/2")	
19.	215-148	1	TEMPERATURE SWITCH	
20.	116-218	1	SIGHT GLASS (2")	INCL REFLECTOR
	360-849		REFLECTOR	
21.	115-374	1	BULK HOSE (3/4", SOLD PER 1")	USE 1 @ 11"
22.	110-353	2	WORM CLAMP (3/4" TO 1-1/2")	
23.	154-253	1	CONNECTOR (06S-08090)	
24.	115-290	1	REDUCER (32N-12NF)	
25.	115-150	1	REDUCER (12N-04NF)	
26.	110-141	1	DRAIN VALVE (04N)	

FOOTNOTE

NOTES

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

THRUST/ROTATION HYDRAULICS



THRUST/ROTATION HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-290	1	UNION (160-160FX90)	
2.	154-287	1	CONNECTOR (16S-16090)	
3.	154-281	1	CONNECTOR (16S-160)	
4.	515-624	1	HOSE (160FX90-28"-3000)	
5.	515-280	1	HOSE (160FX-36"-3000)	
6.	154-359	1	RUN TEE (16S-160-160)	
7.	154-341	1	REDUCER STEM (080)	
8.	154-340	1	REDUCER NUT (160F)	
9.	515-059	1	HOSE (080FX45-94"-3000)	
10.	514-403	1	RUN TEE (160-160-160-06S)	
11.	515-676	1	HOSE (160F90-16090/165-19"-3000)	
12.	155-947	2	SPLIT FLANGE (16SF, PAIR)	
	105-052	4	BOLT (3/8-NC X 1-1/4")	
	105-072	4	LOCK WASHER (3/8")	
	157-029	1	O-RING (219 D90)	
13.	516-081	1	HYD CONTROL VALVE	ROTATION
	191-112		COMPENSATOR SECTION SEAL KIT	
	191-113		SPOOL SECTION SEAL KIT	
	191-114		RETURN SECTION SEAL KIT	
	499-304		ADJUSTABLE RELIEF	
	499-632		STROKE CONTROL KIT	
	501-876		VALVE SPOOL	
14.	516-085	1	HYD CONTROL VALVE	THRUST
	191-112		COMPENSATOR SECTION SEAL KIT	
	191-113		SPOOL SECTION SEAL KIT	
	191-114		RETURN SECTION SEAL KIT	
	499-304		ADJUSTABLE RELIEF	
	499-632		STROKE CONTROL KIT	
	501-877		VALVE SPOOL	
15.	156-732	1	CONNECTOR (08J-080)	
16.	156-963	1	HYD SOLENOID VALVE	THRUST SHUTOFF, SEE FOOTNOTE 1
	499-303		SOLENOID COIL	
17.	154-235	1	CONNECTOR (08S-08090)	
18.	515-025	1	HOSE (080FX90-40"-3000)	
19.	514-011	1	CONNECTOR (16S-16S)	
20.	516-100	1	HYD VALVE	ROTATION SHUTOFF; ENDS WITH S/N 2R3320
	516-123	1	HYD VALVE	BEGINS WITH S/N 2R3321
	499-303		SOLENOID COIL	
	501-873		REPLACEMENT HYD. CARTRIDGE	
21.	155-706	1	O-RING (908 D90)	
22.	155-184	1	PLUG (16S)	
23.	154-337	1	BRANCH TEE (08S-080-080)	
24.	154-248	1	REDUCER (040-080F)	
25.	154-272	1	REDUCER NUT (080F)	
26.	154-256	1	UNION (080-080FX90)	

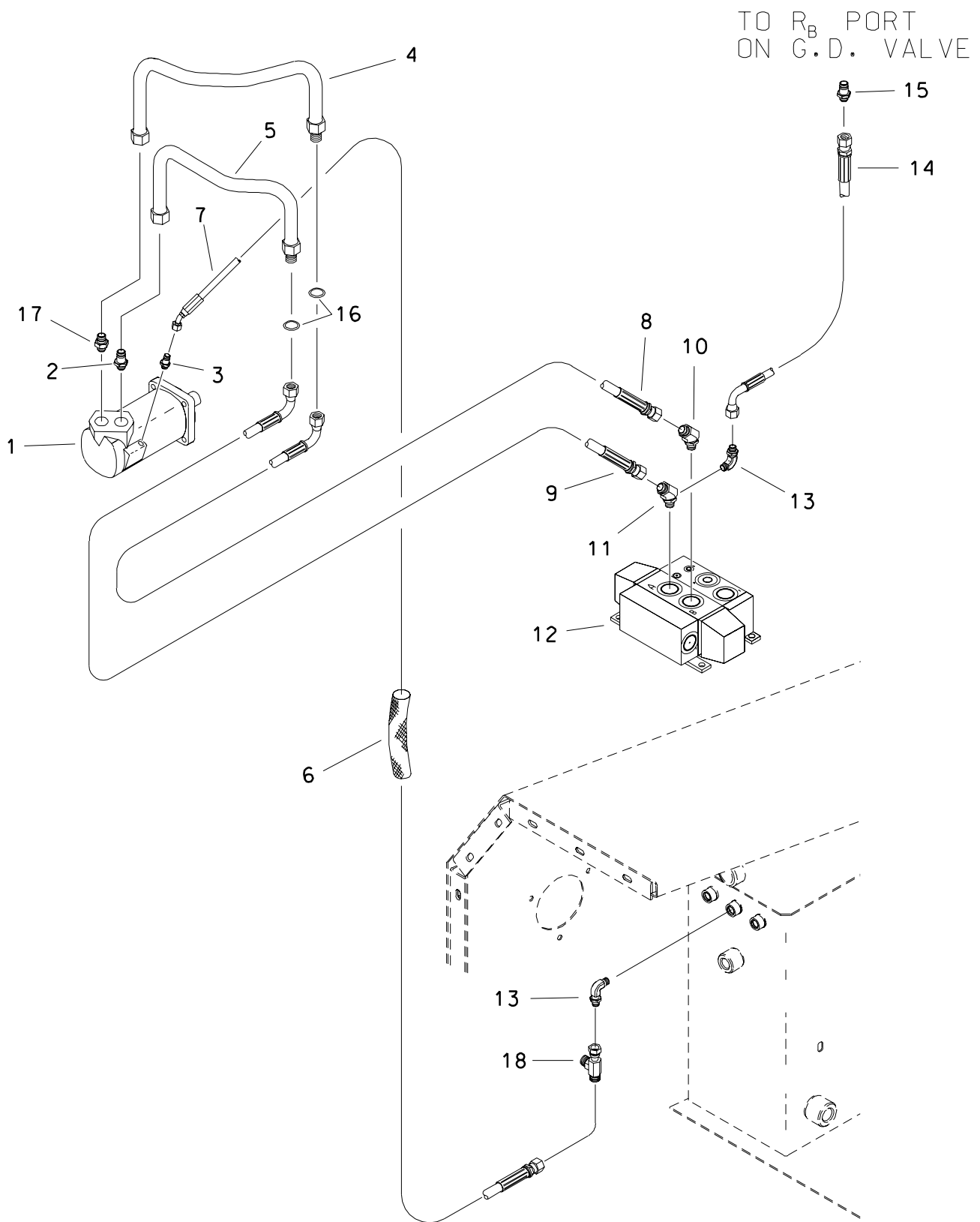
FOOTNOTES

1. BEGINS WITH S/N 2R2470, NOTE PLUMBING CHANGE ON NEW P/N.

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

ROTATION MOTOR HYDRAULICS



ROTATION MOTOR HYDRAULICS

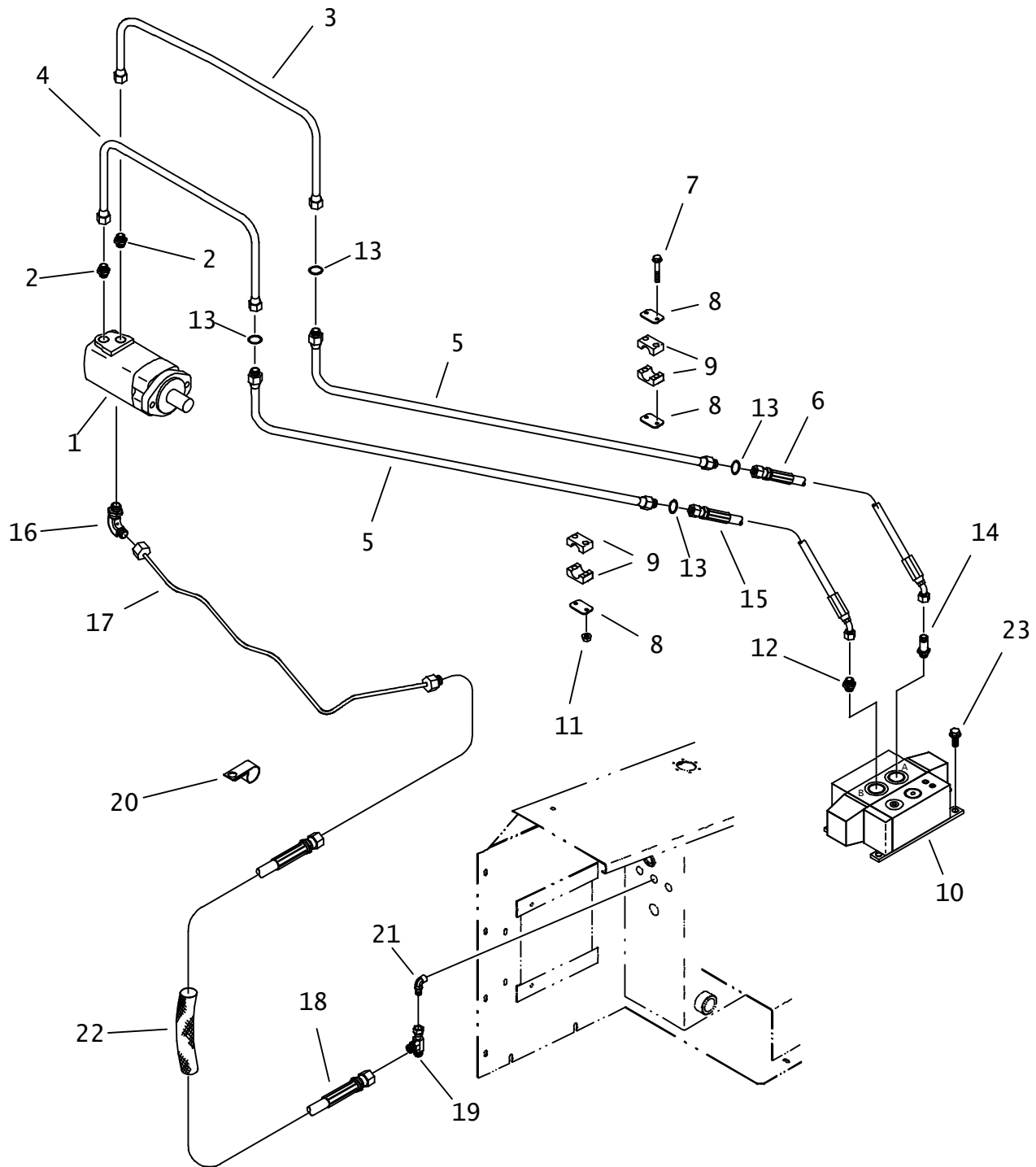
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-945	-	HYDRAULIC MOTOR	
2.	154-281	1	CONNECTOR (16S-160)	
3.	154-411	1	CONNECTOR (04S-060)	
4.	156-191	1	OUTSIDE ROTATION LINE	
5.	156-190	1	INSIDE ROTATION LINE	
6.	117-673	1	ABRASION SLEEVE (1.00" X 150")	
7.	515-558	1	HOSE (06DFX45-165"-3000)	
8.	515-648	1	HOSE (16DFX90-113.5"-3000)	
9.	515-647	1	HOSE (16DFX90-115"-3000)	
10.	154-388	1	CONNECTOR (16S-16045)	
11.	514-410	1	CONNECTOR (16S-16045-06SF)	
12.	516-081	-	HYDRAULIC CONTROL VALVE	ROTATION
13.	154-342	2	CONNECTOR (06S-06090)	
14.	515-176	1	HOSE (06DFX90-38"-3000)	
15.	154-411	1	CONNECTOR (04S-060)	
16.	155-714	2	O-RING (021 D90)	
17.	156-988	1	CHECK VALVE	BEGINS WITH S/N 2R3323
18.	154-344	-	UN RUN TEE (06DFX-060-060)	

FOOTNOTES

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

THRUST MOTOR HYDRAULICS



THRUST MOTOR HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	155-582	-	HYDRAULIC MOTOR (14 SPLINE)	
2.	154-301	2	CONNECTOR (10S-100)	
3.	156-932	1	INSIDE THRUST LINE	
4.	156-931	1	OUTSIDE THRUST LINE	
5.	156-200	2	THRUST LINE	
6.	515-650	1	HOSE (160FX45-23"-3000)	
7.	106-945	4	SCREW (M6-1.00 X 100MM)	
8.	322-289	6	BACKUP PLATE	
9.	110-573	4	BOLT-ON CLAMP (1", SOLD PER SET)	
10.	516-085	-	HYD CONTROL VALVE	
11.	106-385	4	FLG LOCKNUT (M6-1.00)	
12.	154-398	1	CONNECTOR (16S-160, XLG)	
13.	155-714	4	O-RING (021 D90)	
14.	154-281	1	CONNECTOR (16S-160)	
15.	515-677	1	HOSE (160FX45S-25"-3000)	
16.	514-049	1	CONNECTOR (04S-06090)	
17.	149-876	1	HYDRAULIC LINE	
18.	515-411	1	HOSE (060FX90-118"-3000)	
19.	154-344	1	UN RUN TEE (060FX-060-060)	
20.	110-126	1	BOLT-ON CLAMP (1/2")	
21.	154-342	-	CONNECTOR (06S-06090)	
22.	117-281	1	ABRASION SLEEVE (1.25" X 122")	
23.	105-826	4	FLG LK BOLT (3/8-NC X 1")	

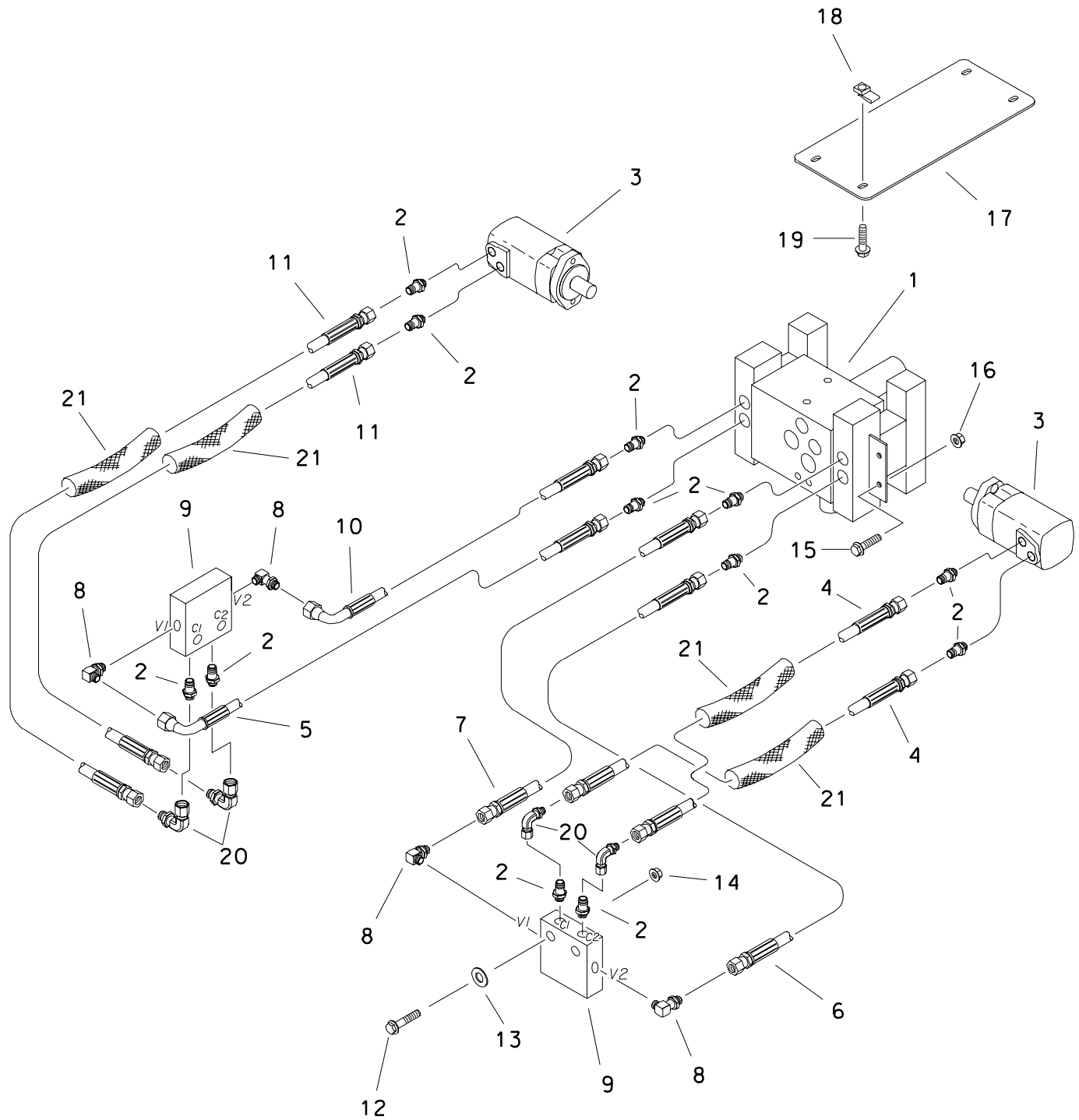
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FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

GROUND DRIVE HYDRAULICS



GROUND DRIVE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-080	1	HYD CONTROL VALVE	
2.	154-279	12	CONNECTOR (080-10S)	
3.	155-581	-	HYD MOTOR	
4.	154-745	2	HOSE (080FX-50"-3000)	
5.	515-003	1	HOSE (080FX90-31"-3000)	
6.	154-812	1	HOSE (080FX-42"-3000)	
7.	154-675	1	HOSE (080FX-40"-3000)	
8.	154-322	4	CONNECTOR (080-10S90)	
9.	158-821	2	COUNTERBALANCE VALVE	
	500-471	2	RELIEF CARTRIDGE	
10.	515-197	1	HOSE (080FX90-23"-3000)	
11.	154-759	2	HOSE (080FX-36"-3000)	
12.	106-570	4	SCREW (M8-1.25 X 60MM)	
13.	105-095	4	WASHER (1/4")	
14.	106-561	4	LOCKNUT (M8-1.25, PRV TRQ, 10.9)	
15.	105-245	4	SCREW (M10-1.50 X 25MM)	
16.	105-894	4	LOCKNUT (M10-1.50, PRV TRQ)	
17.	348-900	1	VALVE COVER PLATE	
18.	106-551	4	CLIP NUT (M8-1.25)	
19.	106-381	4	FLG LK SCREW (M8-1.25 X 25MM)	
20.	154-256	4	UNION (080-080FX90)	
21.	115-813	1	ABRASION SLEEVE (1.39" X 36")	

FOOTNOTES

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

PRESSURE REDUCING VALVE

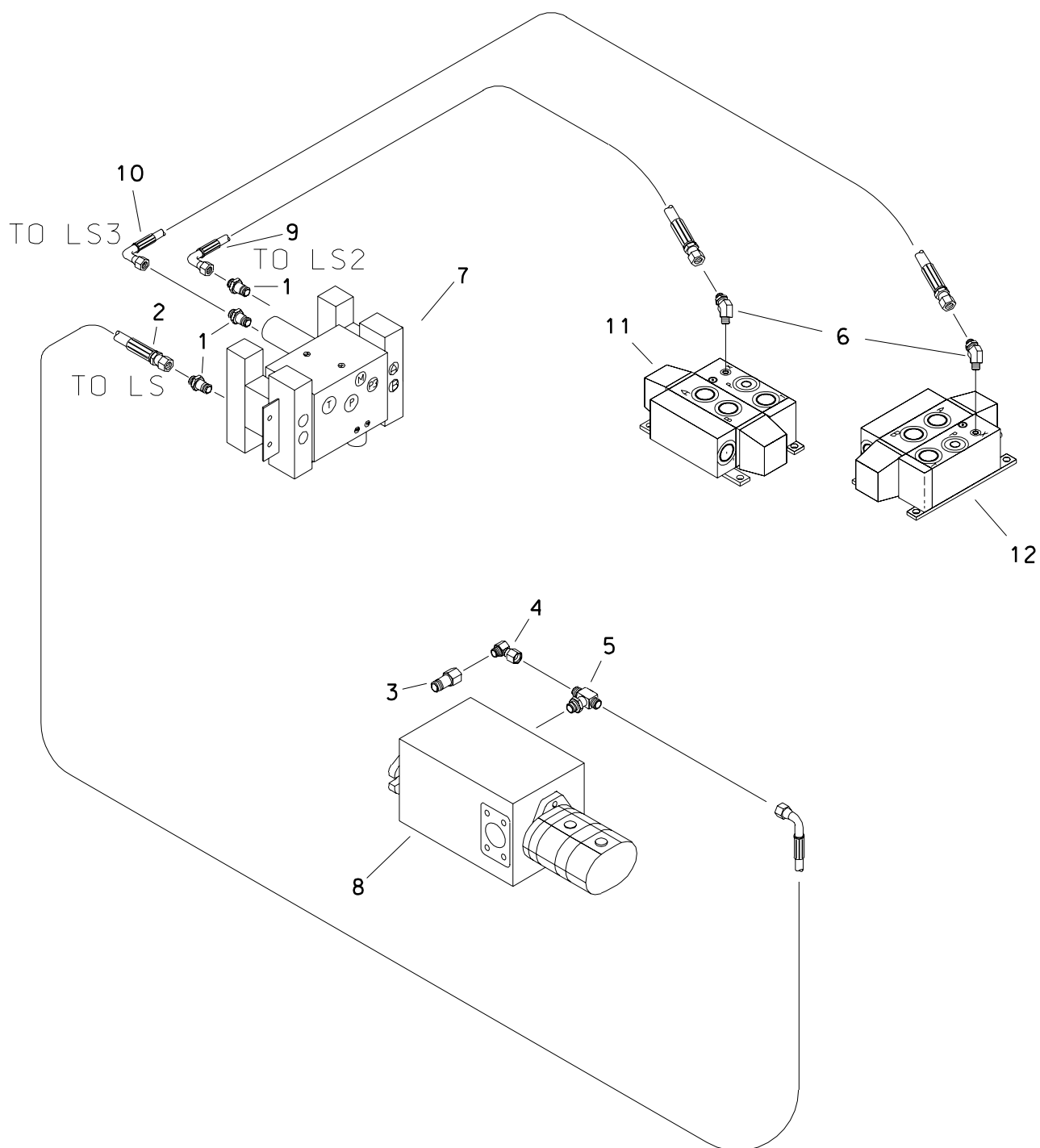
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-308	1	CONNECTOR (100-12S)	
2.	515-221	1	HOSE (060FX90-28"-3000)	
3.	515-176	1	HOSE (060FX90-38"-3000)	
4.	516-080	-	HYD CONTROL VALVE	GROUND DRIVE
5.	117-676	2	ABRASION SLEEVE (1.00" X 30")	
6.	159-157	2	QDC ADAPTER (02-060FX)	
	159-148	2	DUST CAP (1/8")	
7.	154-222	1	CONNECTOR (060-08S)	
8.	348-621	-	HYD RESERVOIR	
9.	158-493	-	HYDRAULIC PUMP	
10.	158-478	-	HYDRAULIC PUMP	
11.	155-168	2	S/O COUPLER (20S-20H90)	
12.	110-250	2	WORM CLAMP (1-1/4" TO 2-1/8")	
13.	155-193	1	REDUCER (10S-08SF)	
14.	154-299	1	RUN TEE (08S-080-080)	
15.	159-158	1	QDC ADAPTER (02-080FX)	
	159-148	2	DUST CAP (1/8")	
16.	116-587	AR	BULK HOSE (1-1/4", SGLD PER 1')	USE 1 @ 8"
17.	515-068	1	HOSE (080FX45-76"-3000)	
18.	159-159	1	QDC ADAPTER (02-100FX)	
	159-148	2	DUST CAP (1/8")	
19.	515-645	1	HOSE (100FX45-54"-3000)	
20.	154-317	1	RUN TEE (10S-100-100)	
21.	155-153	1	CONNECTOR (06S-06S)	
22.	154-897	1	HOSE (060FX90-62"-3000)	
23.	154-345	3	RUN TEE (06S-060-060)	
24.	154-798	1	HOSE (060FX-62"-3000)	
25.	154-228	1	UNION (060-060FX90)	
26.	516-039	1	HYD CONTROL VALVE	
	190-860	-	SEAL REPAIR KIT (VITON)	
27.	154-344	1	UN RUN TEE (060FX-060-060)	
28.	154-373	1	REDUCER (040-060F)	
29.	154-705	1	HOSE (040FX90-60"-3000)	
30.	154-265	1	UN RUN TEE (040FX-040-040)	

FOOTNOTES

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

LOAD SENSE HYDRAULICS



LOAD SENSE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-411	3	CONNECTOR (04S-060)	
2.	154-897	1	HOSE (060FX90-62"-3000)	
3.	159-157	1	QDC ADAPTER (02-060F)	
	159-148	1	DUST CAP (1/8")	
4.	154-228	1	UNION (060-060FX90)	
5.	154-346	1	BRANCH TEE (06S-060-060)	
6.	514-414	2	CONNECTOR (04S-06045)	
7.	516-080	-	HYD CONTROL VALVE	GROUND DRIVE
8.	158-493	-	HYDRAULIC PUMP	
9.	154-738	1	HOSE (060FX90-34"-3000)	
10.	515-626	1	HOSE (060FX90L-54"-3000)	
11.	516-085	-	HYD CONTROL VALVE	THRUST
	191-112	-	COMPENSATOR SECTION SEAL KIT	
	191-113	-	SPOOL SECTION SEAL KIT	
	191-114	-	RETURN SECTION SEAL KIT	
	499-304	-	ADJUSTABLE RELIEF	
12.	516-081	-	HYD CONTROL VALVE	ROTATION
	191-112	-	COMPENSATOR SECTION SEAL KIT	
	191-113	-	SPOOL SECTION SEAL KIT	
	191-114	-	RETURN SECTION SEAL KIT	
	499-304	-	ADJUSTABLE RELIEF	

FOOTNOTES

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.



OPERATOR STATION HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-552	-	PRESSURE GAUGE (6000PSI)	USE 567 LOCTITE
	499-202		GAUGE CLAMP & STUDS	BEGINS WITH S/N _____
2.	191-047	1	GAUGE KIT	USED ON JT1720, USE 567 LOCTITE
	499-202		GAUGE CLAMP & STUDS	BEGINS WITH S/N _____
	191-048	1	GAUGE KIT	USED ON JT2720
3.	514-418	3	ELBOW (04NF-04NF45F)	5000 PSI
4.	154-339	3	CONNECTOR (04N-040)	USE 567 LOCTITE
5.	515-257	1	HOSE (040FX90-54"-3000)	
6.	106-093	2	SCREW (M6-1.00 X 45mm)	
7.	348-723	1	SUPPORT BAR	
8.	515-451	2	HOSE (060FX90-48"-3000)	
9.	154-342	1	CONNECTOR (06S-06090)	
10.	159-450	1	HYD CONTROL VALVE	PRESSURE REDUCING
	190-860	-	SEAL REPAIR KIT (VITON)	
11.	154-226	1	CONNECTOR (040-06S90)	
12.	154-669	1	HOSE (040FX-50"-3000)	
13.	515-667	1	HOSE (040FX90-54"-5000)	
14.	515-437	1	HOSE (040FX90-21"-3000)	
15.	515-657	1	HOSE (060FX90L-23"-3000)	
16.	154-224	2	CONNECTOR (06S-06045)	
17.	154-250	5	CONNECTOR (040-06S45)	
18.	516-086	1	HYD CONTROL VALVE W/HANDLE	DIRECTIONAL
	190-876	-	SEAL REPAIR KIT	PUSH PIN SET
	499-108	-	PUSH BUTTON	FOR USE WITH 516-086
	499-109	-	3 POSITION SWITCH	FOR USE WITH 516-086
	500-1539	-	VALVE	
	300-6747	-	HANDLE ASSEMBLY	
19.	106-528	4	SCREW (M6-1.00 X 20mm, SOC)	
20.	106-237	4	LOCKNUT (M6-1.00, PRV TRQ NLK)	
21.	154-900	1	HOSE (040FX90-62"-3000)	
22.	154-706	3	HOSE (040FX90S-40"-3000)	
23.	154-285	7	BK CONNECTOR (040-04045BK)	
24.	154-425	2	BK CONNECTOR (060-06045BK)	
25.	348-711	-	SEAT MOUNT	
26.	154-344	1	UN RUN TEE (060FX-060-060)	
27.	217-079	-	PRESSURE GAUGE (10000 PSI)	USED ON JT2720, USE 567 LOCTITE
	499-202		GAUGE CLAMP & STUDS	BEGINS WITH S/N _____

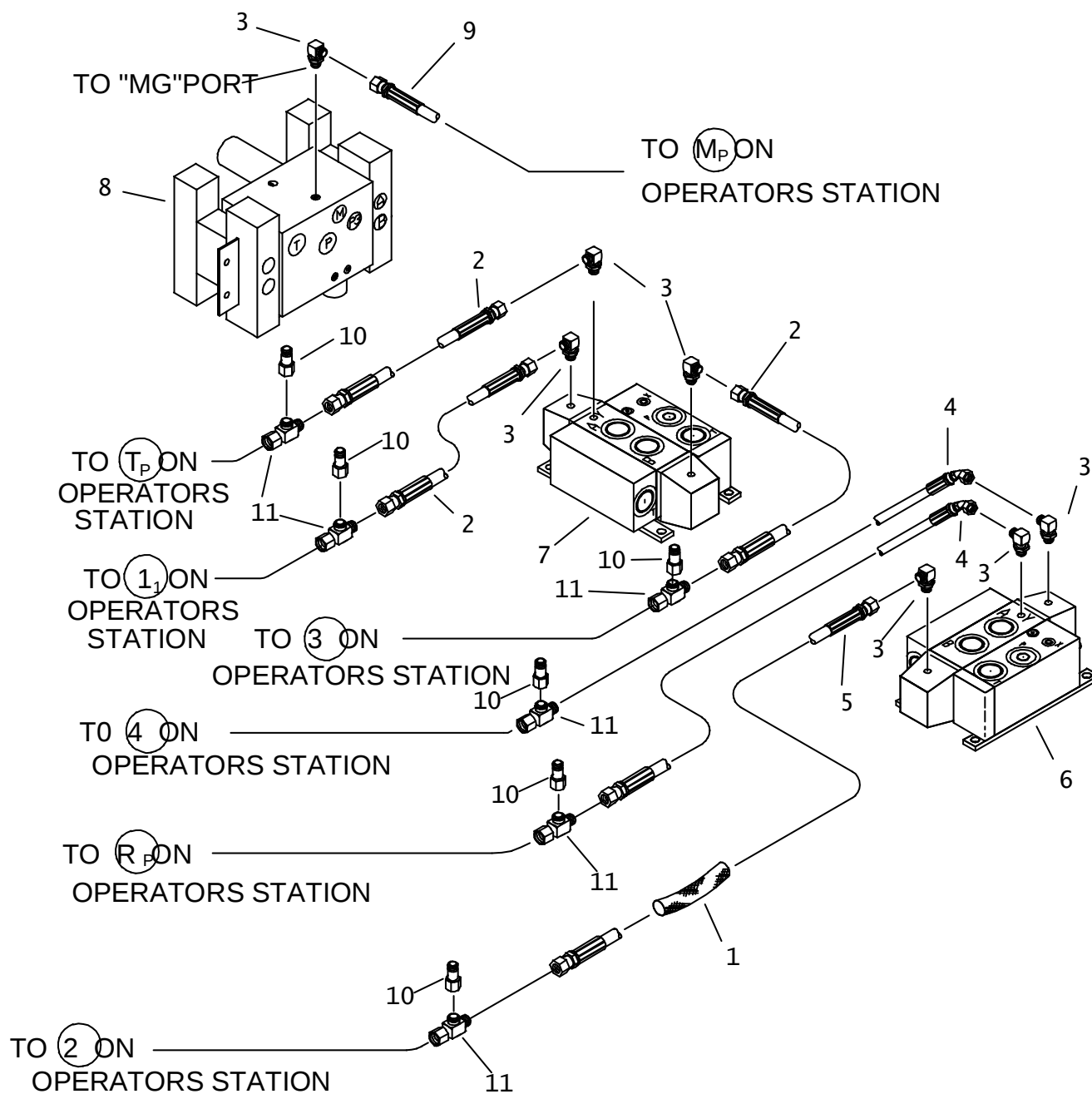
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FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

THRUST/ROTATION PILOT LINES



THRUST/ROTATION PILOT LINES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-676	7	ABRASION SLEEVE (1.00" X 30")	
2.	515-440	3	HOSE (040FX-64"-3000)	
3.	154-252	7	CONNECTOR (04S-04090)	
4.	154-692	2	HOSE (040FX-54"-3000)	
5.	154-859	1	HOSE (040FX-46"-3000)	
6.	516-081	-	HYD CONTROL VALVE	ROTATION
7.	516-085	-	HYD CONTROL VALVE	THRUST
8.	516-080	-	HYD CONTROL VALVE	GROUND DRIVE
9.	154-704	1	HOSE (040FX45-86"-3000)	
10.	159-156	6	QDC ADAPTER (02-040F)	
	159-148	6	DUST CAP (1/8")	
11.	154-265	6	UN RUN TEE (040FX-040-040)	

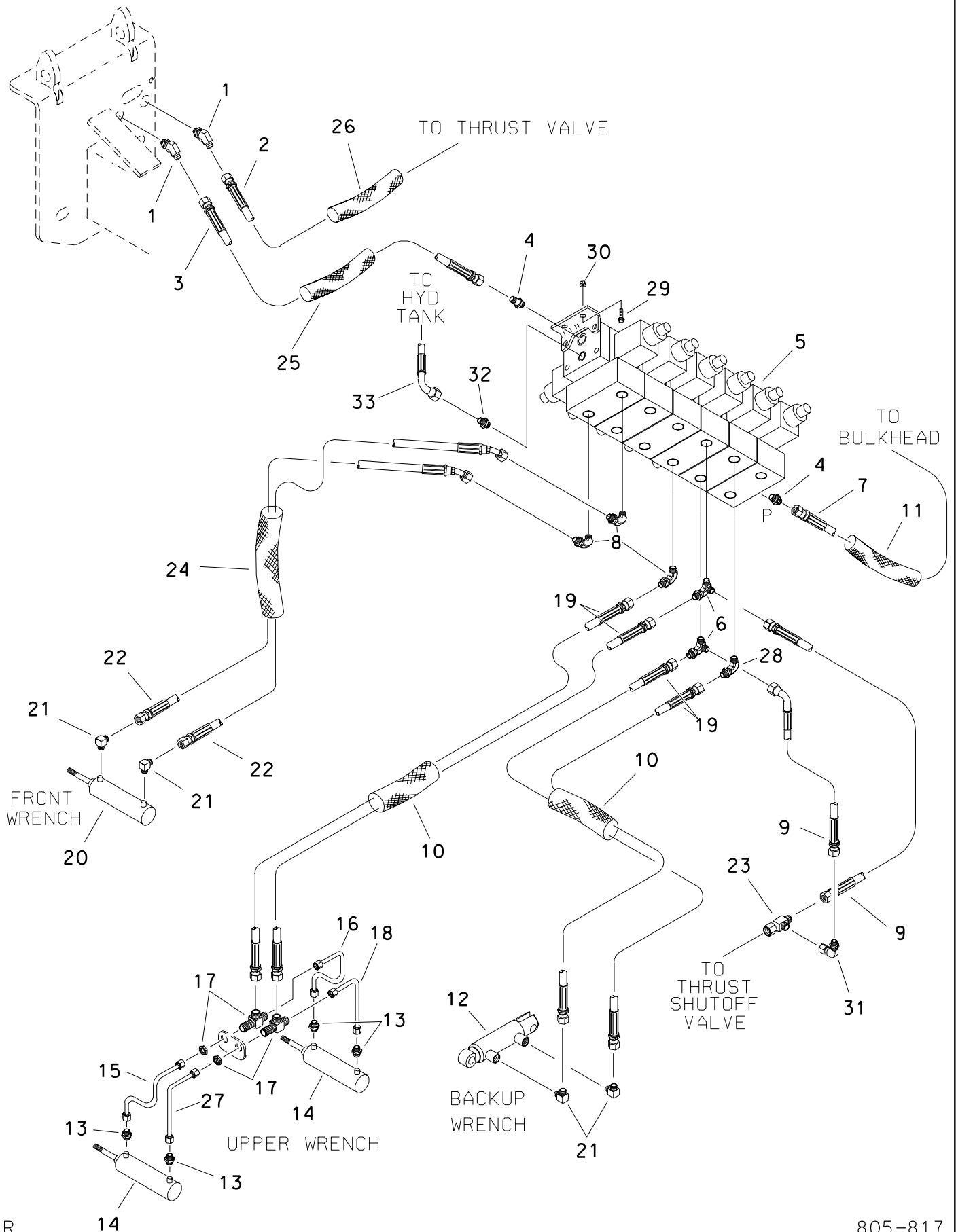
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FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS

WRENCH HYDRAULICS



WRENCH HYDRAULICS

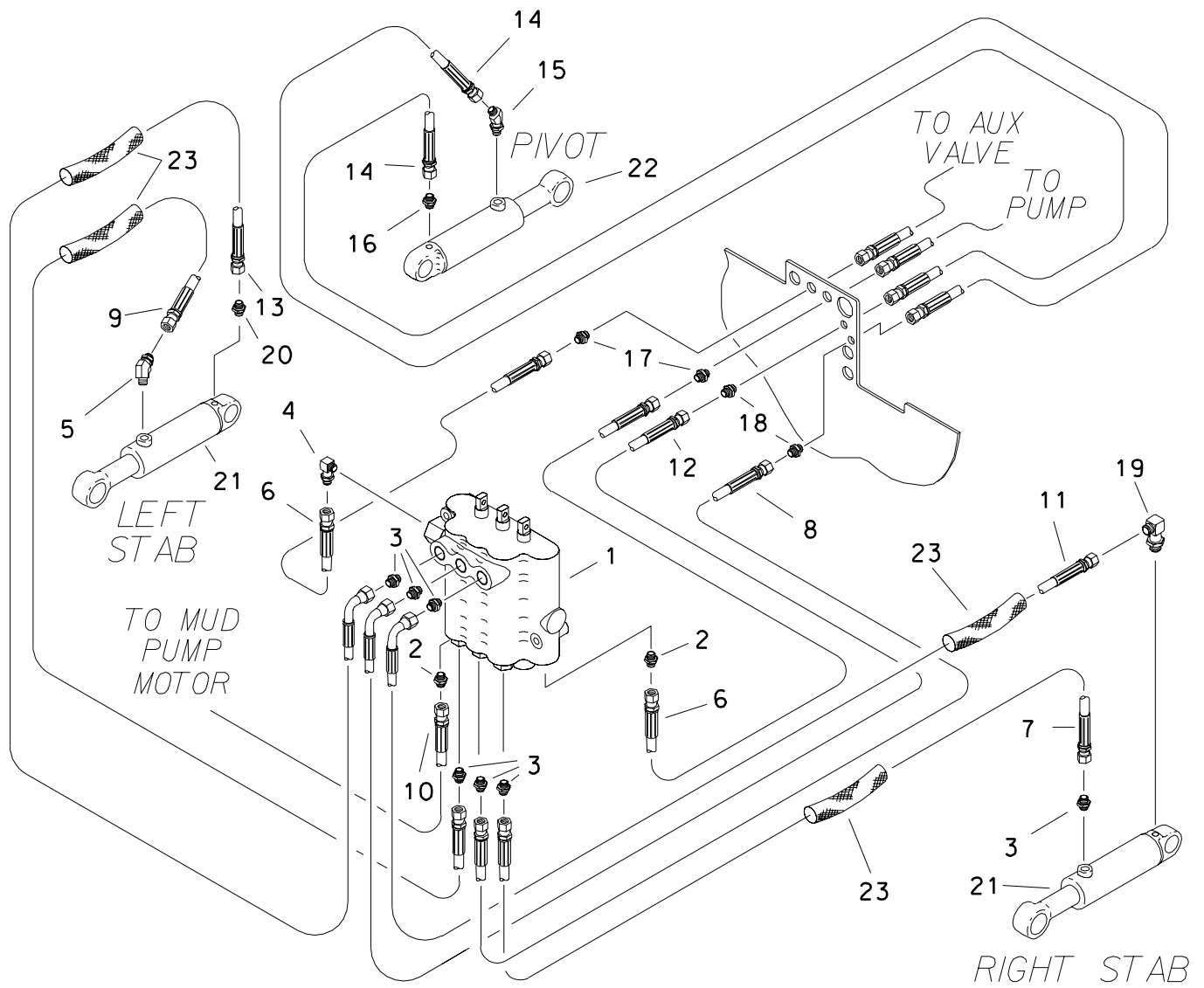
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-393	2	BK CONNECTOR (080-08045BK)	
2.	515-059	-	HOSE (080FX45-94"-3000)	
3.	515-684	1	HOSE (080FX-82"-3000)	
4.	154-246	2	CONNECTOR (06S-080)	
5.	516-122	-	HYDRAULIC CONTROL VALVE	
6.	514-431	2	BRANCH TEE (06S-040-040, ORF)	
7.	154-812	1	HOSE (080FX-42"-3000)	
8.	154-226	3	CONNECTOR (040-06S90)	
9.	154-727	2	HOSE (040FX90-30"-3000)	
10.	116-642	2	ABRASION SLEEVE (1.25" X 140")	
11.	115-737	1	ABRASION SLEEVE (1.59" X 40")	
12.	159-464	-	HYD CYL (1")	
	150-723	-	CYL, 1"BOREX2"STROKE W/EYE	
13.	154-278	4	CONNECTOR (04S-040)	
14.	151-152	-	CYL (1.5" X .437" X 2")	
	150-724	-	CYL, 1"BOREX2"STROKE THRD	
15.	156-862	1	HYD LINE (040FX)	
16.	156-863	1	HYD LINE (040FX)	
17.	154-424	2	BK RUN TEE (040-040-040BK)	
18.	156-860	1	HYD LINE (040FX)	
19.	515-161	4	HOSE (040FX-160"-3000)	
20.	151-153	-	CYL (1" X 2.5")	
	150-725	-	CYL, 1"BOREX2.5"STROKE THRD	
21.	154-252	4	CONNECTOR (04S-04090)	
22.	515-057	2	HOSE (040FX45-102"-3000)	
23.	154-265	1	UNION RUN TEE (040FX-040-040)	
24.	115-902	1	ABRASION SLEEVE (1.59" X 100")	
25.	115-817	1	ABRASION SLEEVE (1.59" X 84")	
26.	115-924	1	ABRASION SLEEVE (1.59" X 88")	
27.	156-861	1	HYD LINE (040FX)	
28.	514-417	1	CONNECTOR (040-06S90, ORF)	
29.	106-988	4	FLG LK SCREW (M6-1.00 X 20MM)	
30.	106-237	4	LOCKNUT (M6-1.00, PRV TRQ, NLK)	
31.	154-255	1	UNION (040-040FX90)	
32.	154-220	1	CONNECTOR (040-06S)	
33.	154-705	-	HOSE (040FX90-60"-3000)	

FOOTNOTES

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

SET-UP HYDRAULICS



SET-UP HYDRAULICS

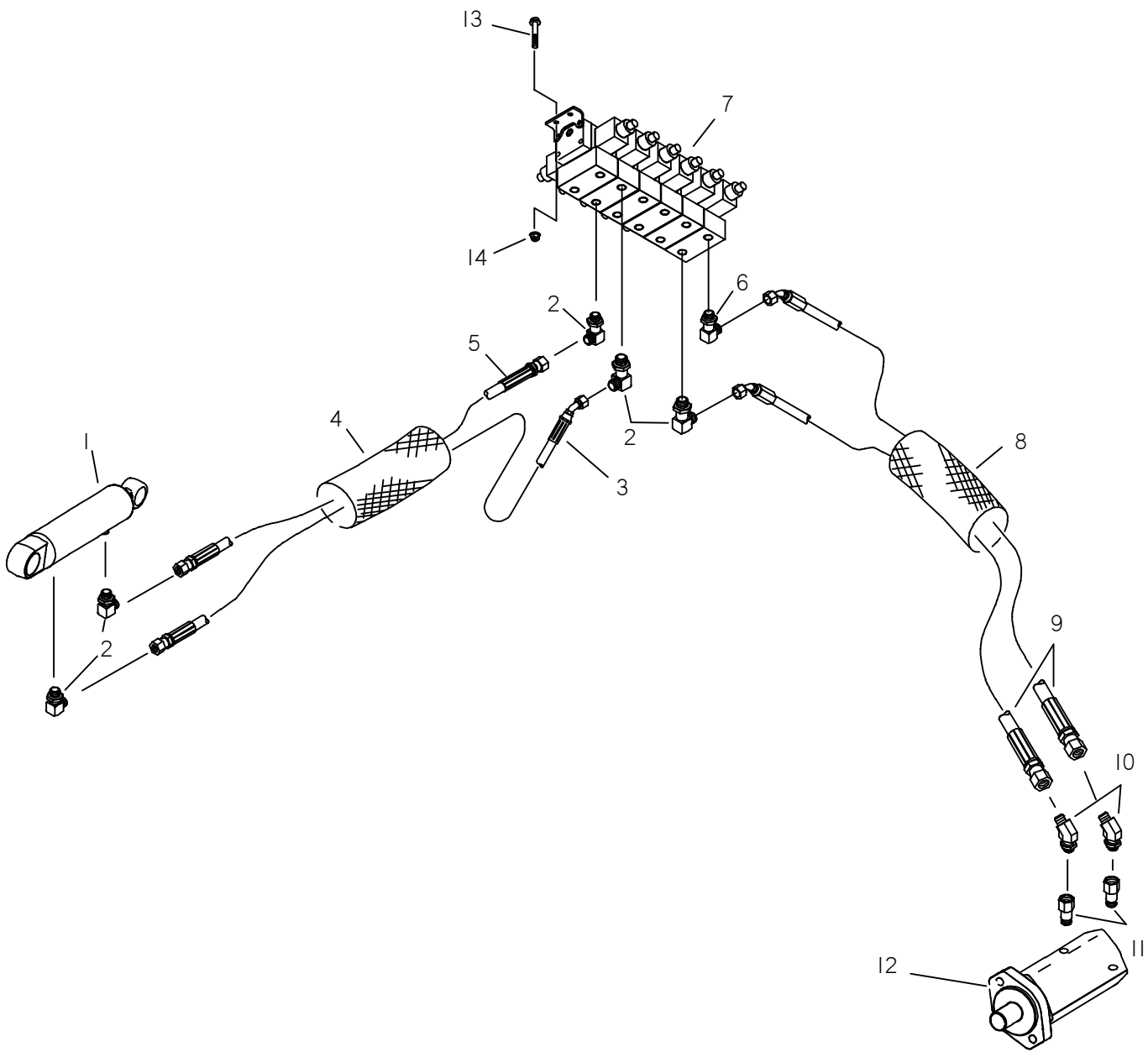
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	<u>516-093</u>	-	HYDRAULIC CONTROL VALVE	ENDS WITH S/N
	153-589	1	HYD CONTROL VALVE	BEGINS WITH S/N
2.	<u>154-233</u>	2	<u>CONNECTOR (08S-080)</u>	- - - - -
3.	<u>154-220</u>	7	<u>CONNECTOR (040-06S)</u>	- - - - -
4.	<u>154-235</u>	1	<u>CONNECTOR (08S-08090)</u>	- - - - -
5.	<u>154-250</u>	1	<u>CONNECTOR (040-06S45)</u>	- - - - -
6.	<u>154-675</u>	2	<u>HOSE (080FX-40"-3000)</u>	- - - - -
7.	<u>154-911</u>	1	<u>HOSE (040FX-36"-3000)</u>	- - - - -
8.	<u>154-653</u>	1	<u>HOSE (040FX-40"-3000)</u>	- - - - -
9.	<u>154-692</u>	1	<u>HOSE (040FX-54"-3000)</u>	- - - - -
10.	<u>515-224</u>	1	<u>HOSE (080FX90-21"-3000)</u>	- - - - -
11.	<u>515-093</u>	1	<u>HOSE (040FX90-42"-3000)</u>	- - - - -
12.	<u>154-729</u>	1	<u>HOSE (040FX90-44"-3000)</u>	- - - - -
13.	<u>154-705</u>	1	<u>HOSE (040FX90-60"-3000)</u>	- - - - -
14.	<u>515-013</u>	2	<u>HOSE (040FX-42"-3000)</u>	- - - - -
15.	<u>154-223</u>	1	<u>CONNECTOR (040-08S45)</u>	- - - - -
16.	<u>514-017</u>	1	<u>CONNECTOR (040-08S, DRF)</u>	- - - - -
17.	<u>154-390</u>	2	<u>BK CONNECTOR (080-080BK)</u>	- - - - -
18.	<u>154-275</u>	2	<u>BK CONNECTOR (040-040BK)</u>	- - - - -
19.	<u>514-417</u>	1	<u>CONNECTOR (040-06S90, DRF)</u>	- - - - -
20.	<u>514-074</u>	1	<u>CONNECTOR (06S-040, DRF)</u>	- - - - -
21.	<u>151-179</u>	-	<u>CYL (3" X 1.5" X 5")</u>	- - - - -
22.	<u>151-089</u>	-	<u>CYL (3.5" X 1.75" X 3")</u>	- - - - -
23.	<u>117-676</u>	4	<u>ABRASION SLEEVE (1.00" X 30")</u>	- - - - -

FOOTNOTES

NOTE

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

PIPE LOADER HYDRAULICS



PIPE LOADER HYDRAULICS

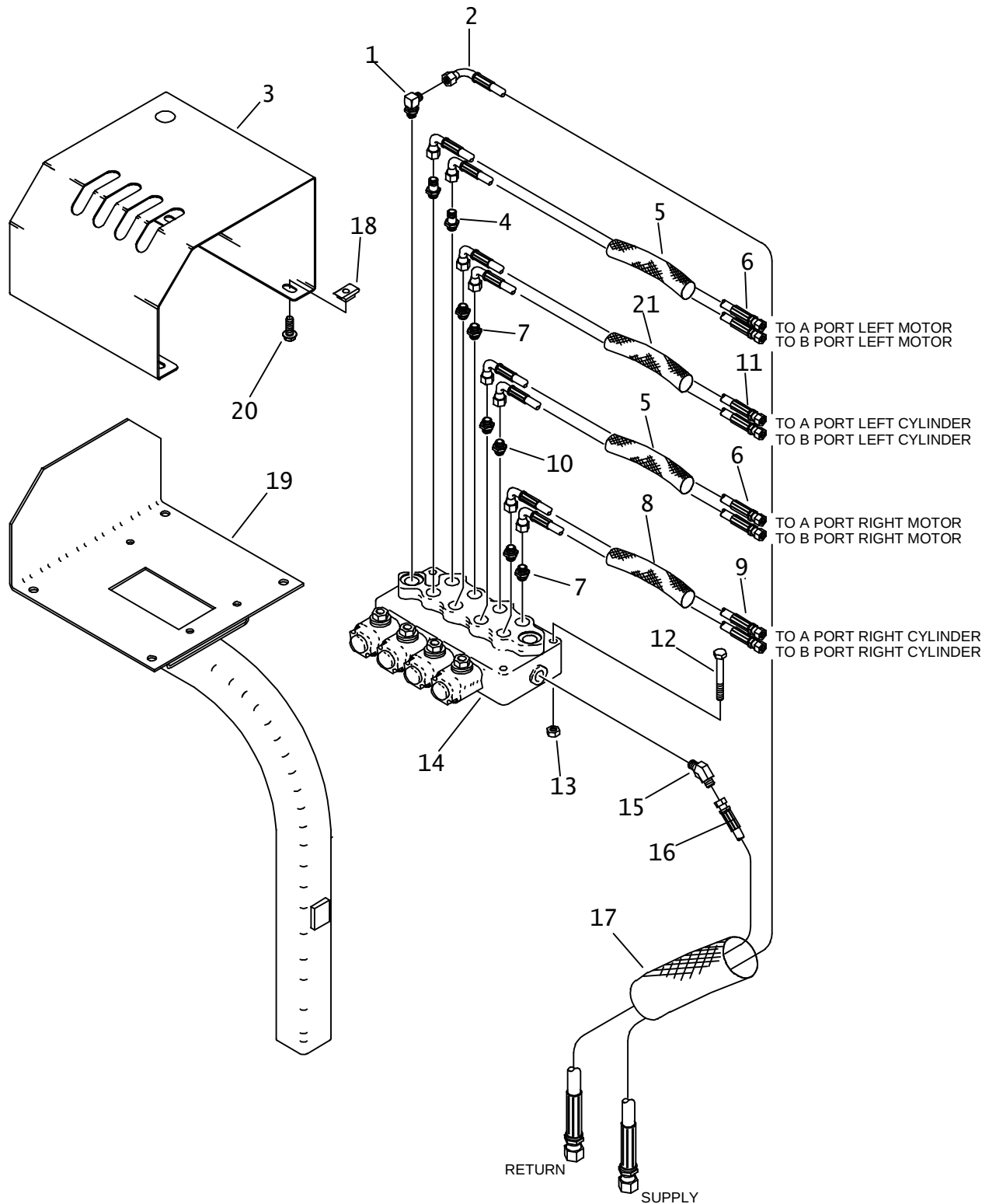
REF	PART				
NO.	NUMBER	QTY	DESCRIPTION		REMARKS
1.	151-028	1	CYL (2.5" X 1.25" X 4")		
2.	154-226	5	CONNECTOR (040-06S90)		
3.	515-121	1	HOSE (040FX45-56"-3000)		
4.	115-903	1	ABRASION SLEEVE (1.59" X 50")		
5.	154-669	1	HOSE (040FX-50"-3000)		
6.	154-364	1	CONNECTOR (040-06S90, ORF)		
7.	156-981	-	HYDRAULIC VALVE		
	516-122	1	HYD CONTROL VALVE		
	149-608	-	VALVE SECTION		
	149-614	-	VALVE SECTION		
	149-615	-	PO CHECK W/ AUX PORT		
	149-616	-	CAP NUT		
	157-212	-	O-RING		
	159-505	-	SOLENOID TUBE		
	190-997	-	STACKING KIT		
	190-998	-	SEAL REPAIR KIT		
	190-999	-	SEAL REPAIR KIT		
	214-435	-	SOLENOID COIL		
8.	115-754	1	ABRASION SLEEVE (1.59" X 30")		
9.	515-019	2	HOSE (040FX45-34"-3000)		
10.	154-263	2	CONNECTOR (04S-04045)		
11.	155-181	2	REDUCER (10S-04SF)		
12.	158-735	1	HYDRAULIC MOTOR		
13.	106-988	4	FLG LK SCREW (M6-1.00 X 20MM)		
14.	106-538	4	LOCKNUT (M6-1.0,PRV TRQ,10.9)		

NOT SHOWN:

FOOTNOTES:

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

ANCHOR CONTROL HYDRAULICS



ANCHOR CONTROL HYDRAULICS

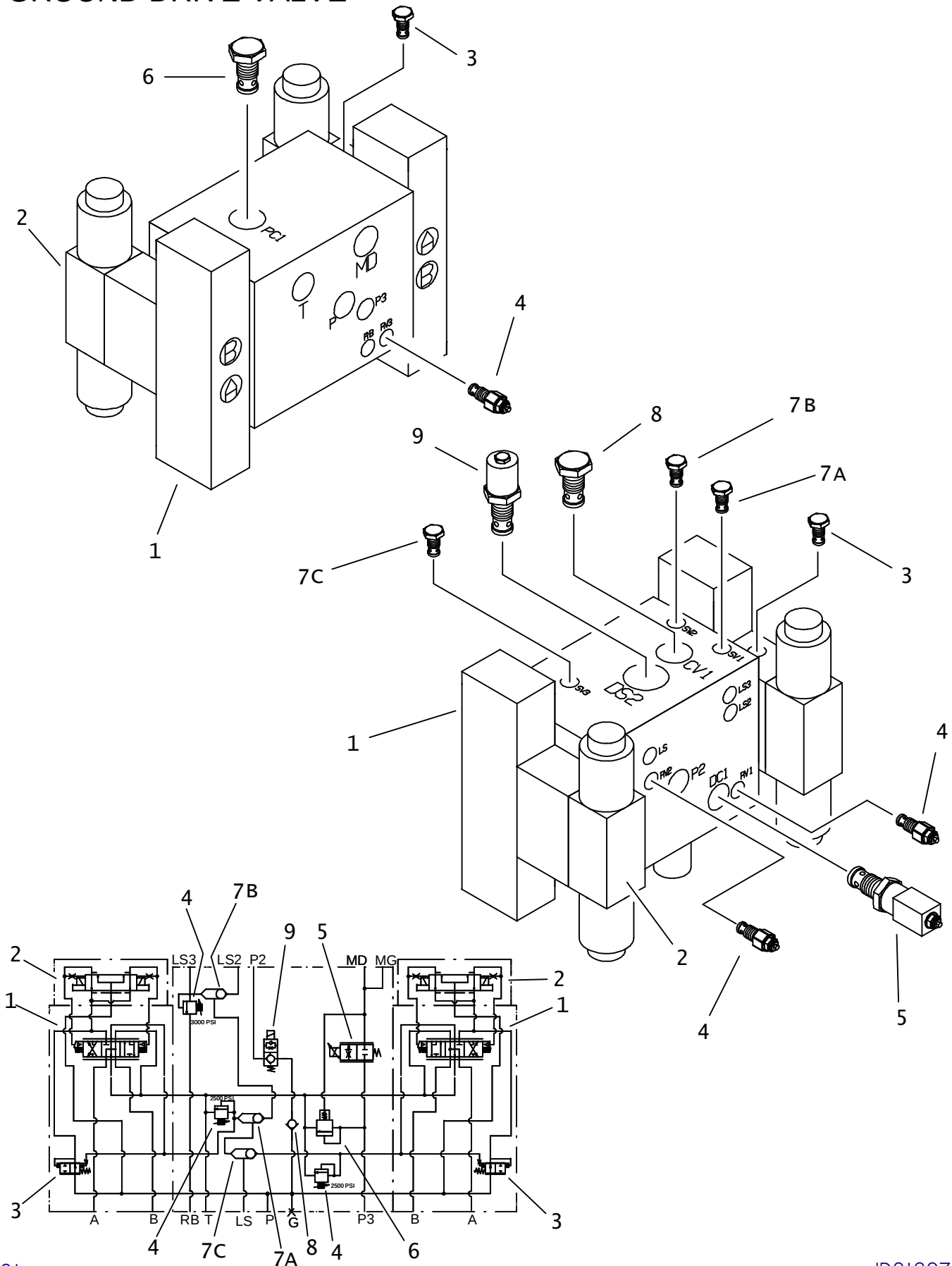
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-235	1	CONNECTOR (08S-08090)	
2.	154-884	1	HOSE (080FX90-60"-3000)	
3.	<u>350-470</u>	1	COVER	
	310-337	1	COVER	
4.	156-174	2	CONNECTOR (06S-060)	
5.	117-686	2	ABRASION SLEEVE (1.75" X 43")	
6.	515-015	4	HOSE (060FX90-44"-3000)	
7.	154-220	4	CONNECTOR (040-06S)	
8.	117-761	1	ABRASION SLEEVE (1.59" X 70")	
9.	154-964	2	HOSE (040FX90-70"-3000)	
10.	154-221	2	CONNECTOR (06S-060)	
11.	149-064	2	HOSE (040FX90L-54"-3000)	
12.	106-570	3	SCREW (M8-1.25 X 60MM)	
13.	106-386	3	FLG LOCKNUT (M8-1.25)	
14.	158-944	1	HYD CONTROL VALVE	
	190-641	-	SEAL REPAIR KIT	
	365-414	-	VP RELIEF	
15.	154-284	1	CONNECTOR (08S-08045)	
16.	515-366	1	HOSE (080FX-52"-3000)	
17.	117-696	1	ABRASION SLEEVE (2.38" X 48")	
18.	106-551	4	CLIP NUT (M8-1.25)	
19.	348-744	1	VALVE SUPPORT	
20.	106-991	4	FLG LK SCREW (M8-1.25 X 20MM)	
21.	117-707	1	ABRASION SLEEVE (1.59" X 56")	

NOT SHOWN:

FOOTNOTES:

NOTE:
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

GROUND DRIVE VALVE



GROUND DRIVE VALVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	516-080	-	HYD CONTROL VALVE	GROUND DRIVE
1.	501-866	2	HYD FLOW CONTROL VALVE	GROUND DRIVE
	191-099	2	SEAL REPAIR KIT	
2.	501-867	2	PILOT PRESSURE CONTROL VALVE	GROUND DRIVE
	191-100	2	SEAL REPAIR KIT	
	499-301	4	SOLENOID TUBE ASSEMBLY	
	214-434	4	SOLENOID COIL (SMALL)	
3.	N/A	2	GROUND DRIVE SECTION COMPENSATOR	
4.	501-869	3	RELIEF VALVE	GROUND DRIVE, CLOCKWISE ROTATION
	191-101	3	SEAL REPAIR KIT	
5.	501-870	1	HYD CONTROL VALVE	MUD
	191-102	1	SEAL REPAIR KIT	
	217-897	1	SOLENOID COIL (LARGE)	
6.	501-871	1	HYD COMPENSATOR VALVE	MUD
	191-103	1	SEAL REPAIR KIT	
7.	501-872	1	SHUTTLE VALVE	
	191-104	1	SEAL REPAIR KIT	
8.	501-874	1	HYD CHECK VALVE	THRUST
	191-102	1	SEAL REPAIR KIT	
9.	501-873	1	HYD CONTROL VALVE	HIGH SPEED THRUST
	191-105	1	SEAL REPAIR KIT	
	214-432	1	SOLENOID COIL	

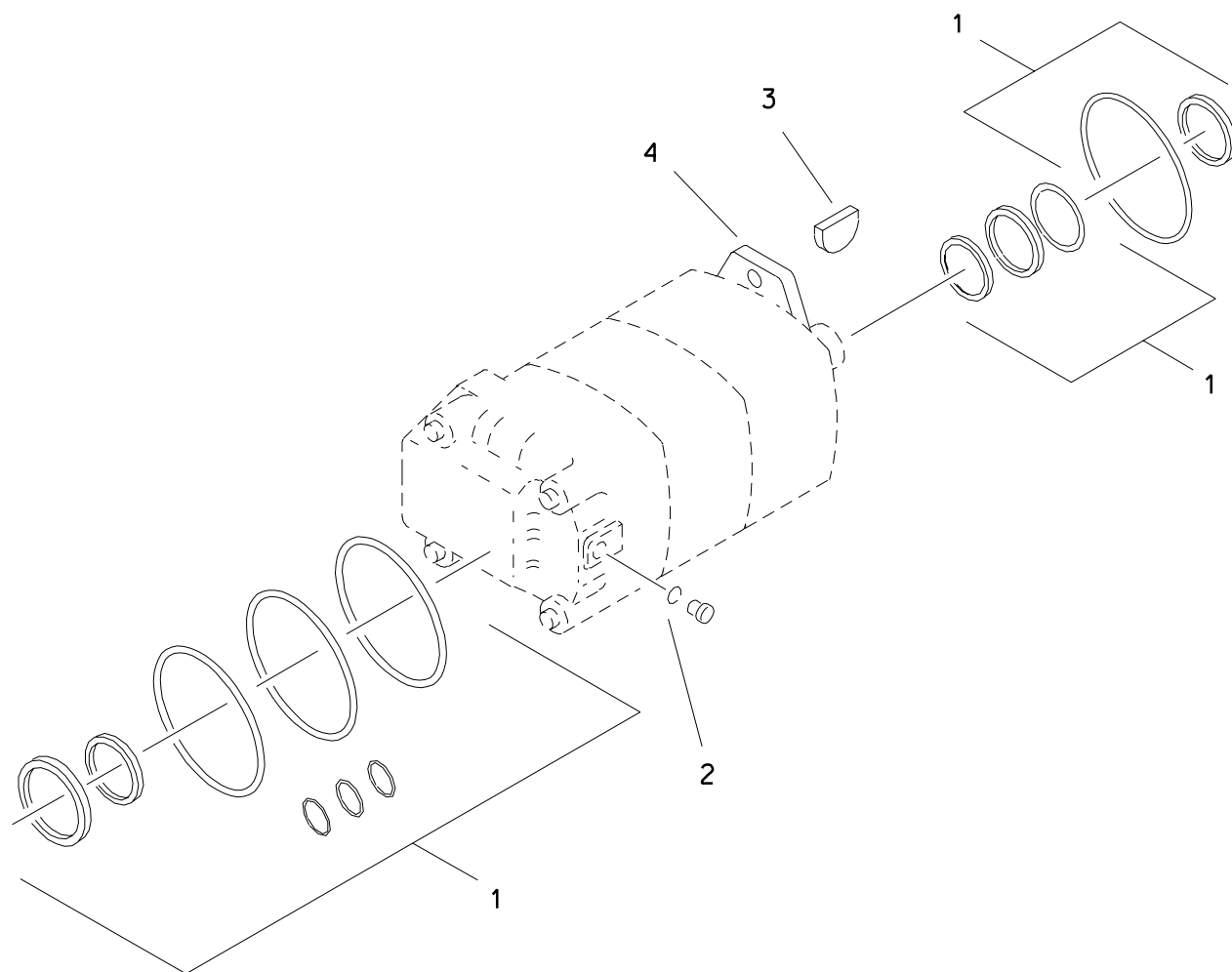
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FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

HYDRAULIC MOTOR

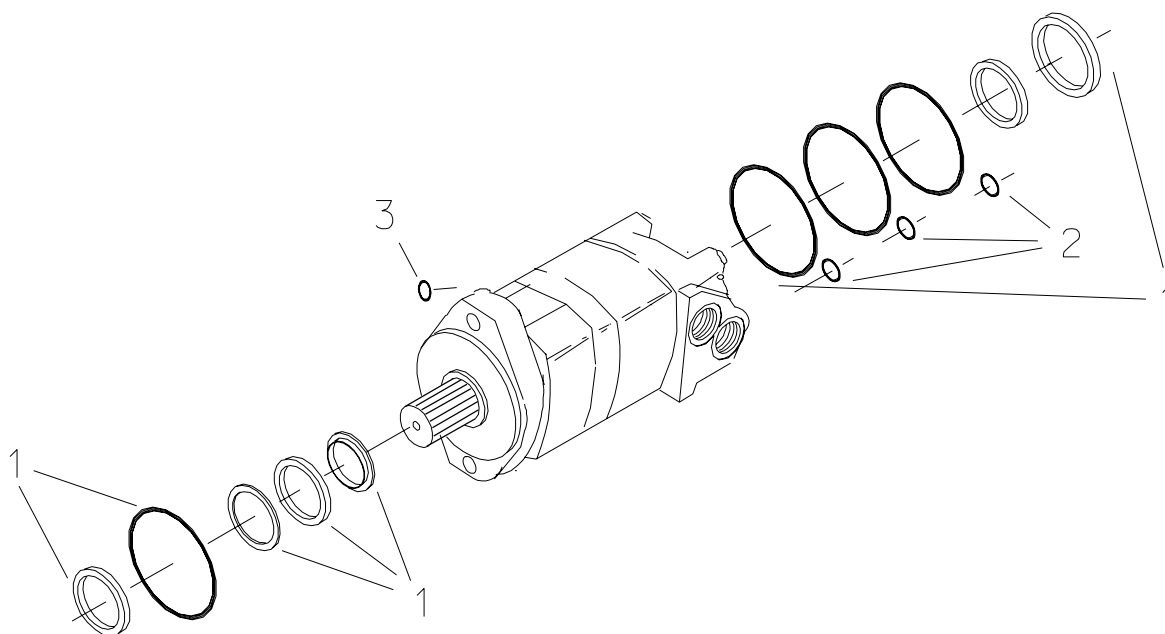


HYDRAULIC MOTOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	158-722		HYDRAULIC MOTOR	INCL REF NO.'S 1 THRU 4
1.	500-658	1	SEAL REPAIR KIT	INCL REF NO.'S 1 AND 3
2.	155-760	1	O-RING (904 D90)	
3.	165-931	1	WOODRUFF KEY (1/4" X 1")	
4.	500-641	1	MOUNT FLANGE	

FOOTNOTES

HYDRAULIC MOTOR

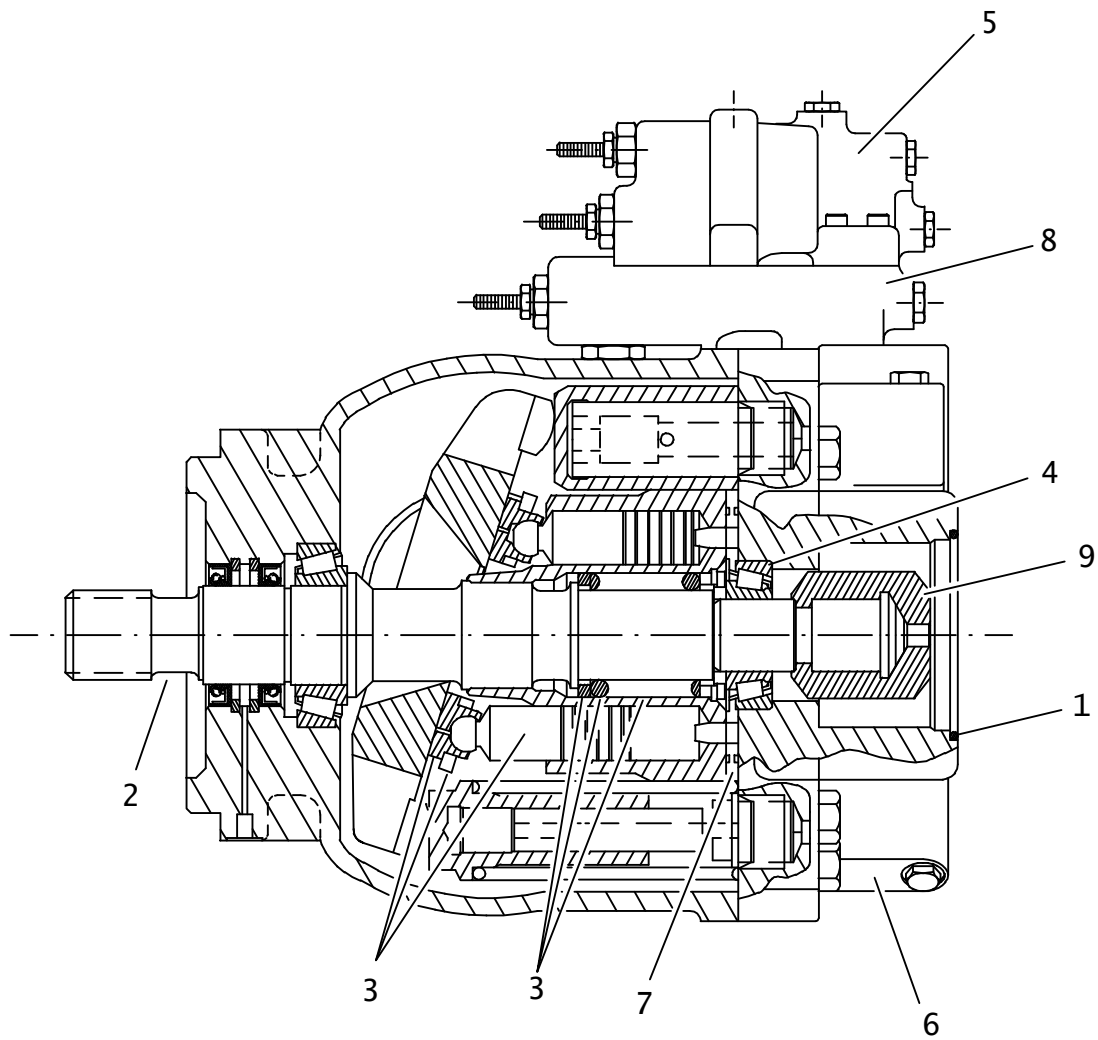


HYDRAULIC MOTOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	155-581		HYDRAULIC MOTOR	INCL REF NO'S 1-3
1.	500-347	1	SEAL REPAIR KIT	
2.	155-771		O-RING (011 D70)	
3.	155-760		O-RING (904 D90)	

FOOTNOTES

LOAD SENSE PUMP



LOAD SENSE PUMP

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	158-477	-	HYDRAULIC PUMP	INCL. REF. NO'S 1 THRU 10
	158-493	-	HYDRAULIC PUMP	INCL. REF. NO'S 1 THRU 7, 9, & 10
1.	157-207	1	O-RING (SAE "A" PAD)	
2.	167-346	1	SHAFT (SPLINED THRU)	
3.	190-868	1	ROTATING GROUP KIT	
4.	190-869	1	BEARING KIT	
5.	499-064	1	LOAD SENSE CONTROL	
6.	499-100	1	VALVE BLOCK (THRU DRIVE)	
7.	499-101	1	VALVE PLATE	
8.	499-102	1	TORQUE CONTROL/LOAD SENSE	
9.	499-103	1	COUPLING (SAE "A")	
10.	190-867	1	SINGLE SHAFT SEAL REPAIR KIT	SEE FOOTNOTE I

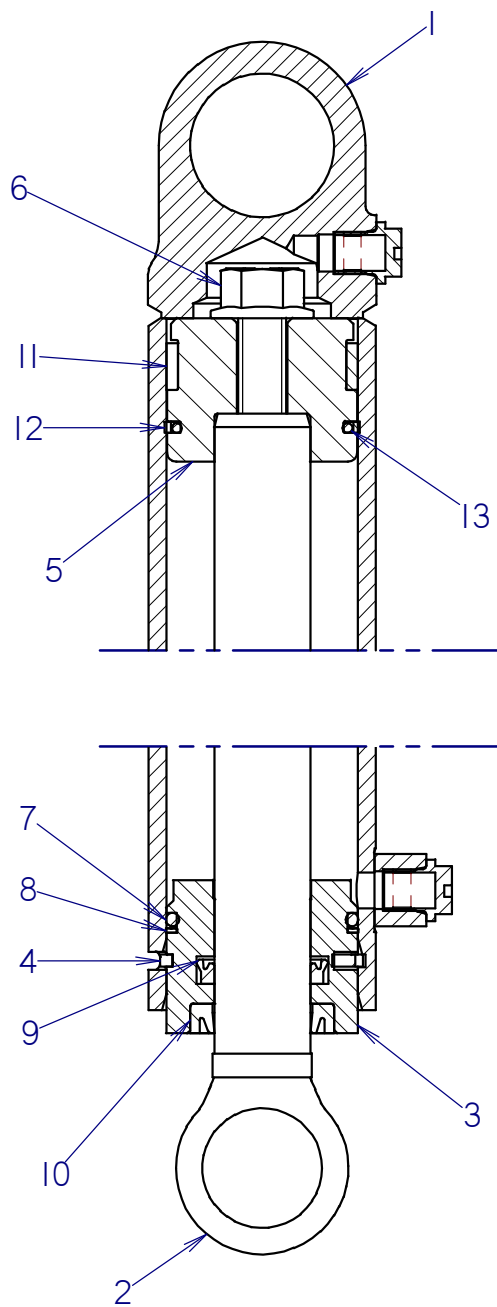
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FOOTNOTES:

I. INCLUDES ALL O-RINGS, GASKETS, & SEALS IN PUMP. NOT SHOWN

NOTE:

HYDRAULIC CYLINDER (2.0 X 1.0 X 24.0)



HYDRAULIC CYLINDER (2.0 X 1.0 X 24.0)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-096	-	CYL (2.0 X 1.0 X 24.0)	INCL. REF NOS 1 THRU 13
1	152-031	1	CYLINDER BARREL (2.0 X 24.0)	
2	153-009	1	ROD ASSEMBLY 1 X 24	
3	150-772	1	CYLINDER HEAD (2.0 X 1.00)	
4	150-778	1	LOCK RING (2.0)	
5	150-775	1	CYLINDER PISTON (2.0 X 1.00)	INCL. MOLDED-ON WEAR RING
6	106-096	1	FLG BOLT (1/2-NC X 1-3/4"GD8)	SEE FOOTNOTE 2
7	157-022	1	O-RING (224 D90)	
8	155-732	1	BACKUP RING (224 D90)	
9	157-540	1	U-SEAL (1.000")	
10	157-537	1	WIPER SEAL (1.000")	
11	125-774	1	WEAR RING	
12	157-534	1	BACKUP RING (131 D90)	
13	157-018	1	O-RING (131 D90)	

FOOTNOTES

1. SEAL KIT P/N: 190-169
2. APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 90-100 FT-LBS (120-135 NM)

NOT SHOWN:

- 259-100 U-SEAL INSTALLER (1" - 1.499")
- 259-236 WIPER INSTALLER (1.25")
- 259-239 WIPER SEAL INSTALLER (2")
- 259-241 PISTON INSTALLER (2")
- 259-188 CYL HEAD SPANNER - TWO PIN



HYDRAULIC CYLINDERS (2.5" X 1.25")

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-101	-	CYL (2.5 X 1.25 X 2.0)	SEE FOOTNOTES 1 & 2
1	152-034	1	CYLINDER BARREL (2.5 X 2.0)	
2	153-012	1	CYLINDER ROD (1.25 X 2.0)	
	151-084	-	CYL (2.5 X 1.25 X 2.5)	SEE FOOTNOTES 1 & 2
1	152-022	1	CYLINDER BARREL (2.5 X 2.5)	
2	153-005	1	CYLINDER ROD (1.25 X 2.5)	
	151-055	-	CYL (2.5 X 1.25 X 3.0)	SEE FOOTNOTES 1 & 2
1	152-005	1	CYLINDER BARREL (2.5 X 3.0)	
2	150-435	1	CYLINDER ROD (1.25 X 3.0)	
	151-028	-	CYL (2.5 X 1.25 X 4.0)	SEE FOOTNOTES 1 & 2
1	150-283	1	CYLINDER BARREL (2.5 X 4.0)	
2	150-415	1	CYLINDER ROD (1.25 X 4.0)	
	149-797	-	CYL (2.5 X 1.25 X 5.0)	SEE FOOTNOTES 1 & 2
1	149-810	1	CYLINDER BARREL (2.5 X 5.0)	
2	150-423	1	CYLINDER ROD (1.25 X 5.0)	
	151-061	-	CYL (2.5 X 1.25 X 6.0)	SEE FOOTNOTES 1 & 2
1	152-010	1	CYLINDER BARREL (2.5 X 6.0)	
2	150-438	1	CYLINDER ROD (1.25 X 6.0)	
	151-045	-	CYL (2.5 X 1.25 X 8.0)	SEE FOOTNOTES 1 & 2
1	150-295	1	CYLINDER BARREL (2.5 X 8.0)	
2	150-427	1	CYLINDER ROD (1.25 X 8.0)	
	149-675	-	CYL (2.5 X 1.25 X 10.0)	SEE FOOTNOTES 1 & 2
1	150-692	1	CYLINDER BARREL (2.5 X 10.0)	
2	149-730	1	CYLINDER ROD (1.25 X 10.0)	
	151-180	-	CYL (2.5 X 1.25 X 12.0)	SEE FOOTNOTES 1 & 2
1	152-015	1	CYLINDER BARREL (2.5 X 12.0)	
2	150-418	1	CYLINDER ROD (1.25 X 12.0)	
3	150-773	1	CYLINDER HEAD (2.5 X 1.25)	
4	150-779	1	LOCK RING (2.5)	
5	150-776	1	CYLINDER PISTON (2.5 X 1.25)	
6	106-097	1	FLG BOLT (5/8-NC X 1-3/4",GD8)	SEE FOOTNOTE 3
7	500-031	1	O-RING (228 D90)	
8	157-021	1	BACKUP RING (228 D90)	
9	157-541	1	U-SEAL (1.250")	
10	157-538	1	WIPER SEAL (1.250")	
11	125-775	1	WEAR RING	
12	157-535	1	BACKUP RING (139 D90)	
13	157-019	1	O-RING (139 D90)	

NOT SHOWN:

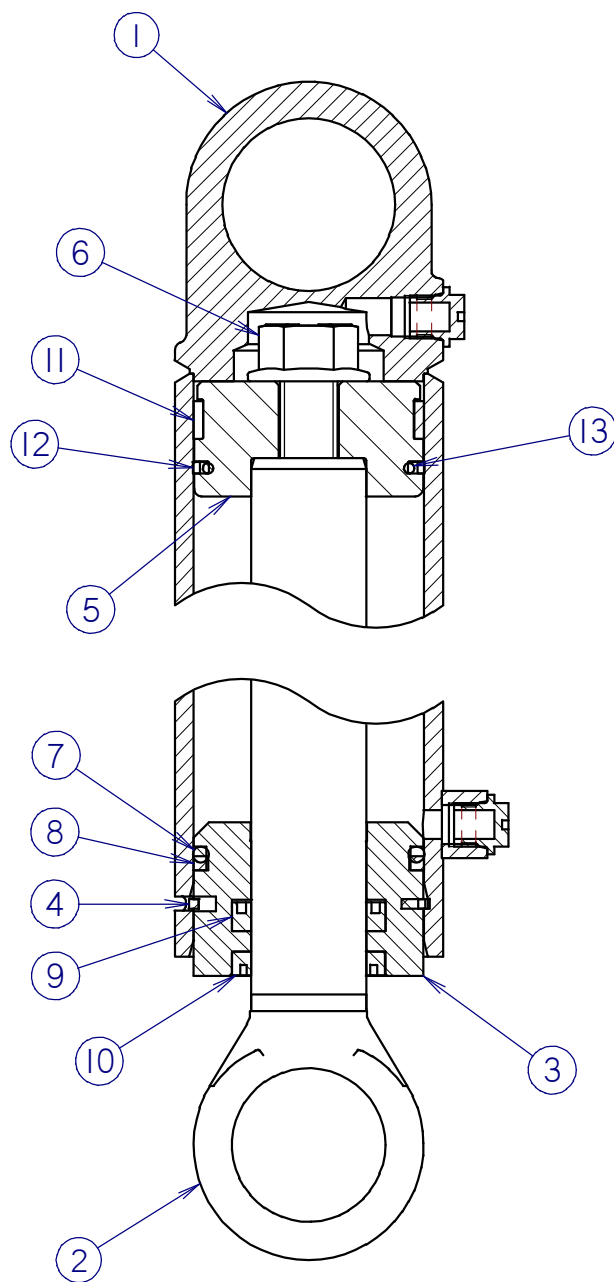
259-100	U-SEAL INSTALLER (1" - 1.499")
259-236	WIPER INSTALLER (1.25")
259-242	PISTON SEAL INSTALLER (2.5")
259-243	PISTON INSTALLER (2.5")
259-188	CYL HEAD SPANNER - TWO PIN

FOOTNOTES:

1. REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF #3 THRU #13 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
2. SEAL REPAIR KIT P/N: 190-166
3. APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 180-200 FT-LBS

NOTE:

HYDRAULIC CYLINDERS (3.0" X 1.5")



HYDRAULIC CYLINDERS (3.0" X 1.5")

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	149-682	-	CYL (3.0 X 1.5 X 2.5)	SEE FOOTNOTES 1 & 2
1	149-804	1	CYLINDER BARREL (3.0 X 2.5)	
2	149-731	1	CYLINDER ROD (1.50 X 2.5)	
	151-049	-	CYL (3.0 X 1.5 X 3.0)	SEE FOOTNOTES 1 & 2
1	150-299	1	CYLINDER BARREL (3.0 X 3.0)	
2	150-431	1	CYLINDER ROD (1.50 X 3.0)	
	151-054	-	CYL (3.0 X 1.5 X 4.0)	SEE FOOTNOTES 1 & 2
1	152-004	1	CYLINDER BARREL (3.0 X 4.0)	
2	150-434	1	CYLINDER ROD (1.50 X 4.0)	
	151-179	-	CYL (3.0 X 1.5 X 5.0)	SEE FOOTNOTES 1 & 2
1	152-068	1	CYLINDER BARREL (3.0 X 5.0)	
2	153-038	1	CYLINDER ROD (1.50 X 5.0)	
	151-086	-	CYL (3.0 X 1.5 X 6.0)	SEE FOOTNOTES 1 & 2
1	152-008	1	CYLINDER BARREL (3.0 X 6.0)	
2	153-003	1	CYLINDER ROD (1.50 X 6.0)	
	151-136	-	CYL (3.0 X 1.5 X 8.0)	SEE FOOTNOTES 1 & 2
1	152-014	1	CYLINDER BARREL (3.0 X 8.0)	
2	153-027	1	CYLINDER ROD (1.50 X 8.0)	
	151-029	-	CYL (3.0 X 1.5 X 10.0)	SEE FOOTNOTES 1 & 2
1	150-284	1	CYLINDER BARREL (3.0 X 10.0)	
2	150-416	1	CYLINDER ROD (1.50 X 10.0)	
	151-043	-	CYL (3.0 X 1.5 X 12.0)	SEE FOOTNOTES 1 & 2
1	150-293	1	CYLINDER BARREL (3.0 X 12.0)	
2	150-426	1	CYLINDER ROD (1.50 X 12.0)	
	151-034	-	CYL (3.0 X 1.5 X 16.0)	SEE FOOTNOTES 1 & 2
1	150-288	1	CYLINDER BARREL (3.0 X 16.0)	
2	150-419	1	CYLINDER ROD (1.50 X 16.0)	
	151-117	-	CYL (3.0 X 1.5 X 20.0)	SEE FOOTNOTES 1 & 2
1	152-054	1	CYLINDER BARREL (3.0 X 20.0)	
2	150-669	1	CYLINDER ROD (1.50 X 20.0)	
3	150-774	1	CYLINDER HEAD (3.0 X 1.50)	
4	150-911	1	LOCK RING (3.0)	
5	150-777	1	CYLINDER PISTON (3.0 X 1.50)	
6	106-098	1	FLG BOLT (3/4-NC X 2", GD8)	SEE FOOTNOTE 3
7	155-734	1	O-RING (334 D90)	
8	155-733	1	BACKUP RING (334 D90)	
9	157-542	1	U-SEAL (1.500")	
10	157-539	1	WIPER SEAL (1.500")	
11	125-776	1	WEAR RING	
12	157-536	1	BACKUP RING (230 D90)	
13	157-020	1	O-RING (230 D90)	

NOT SHOWN:

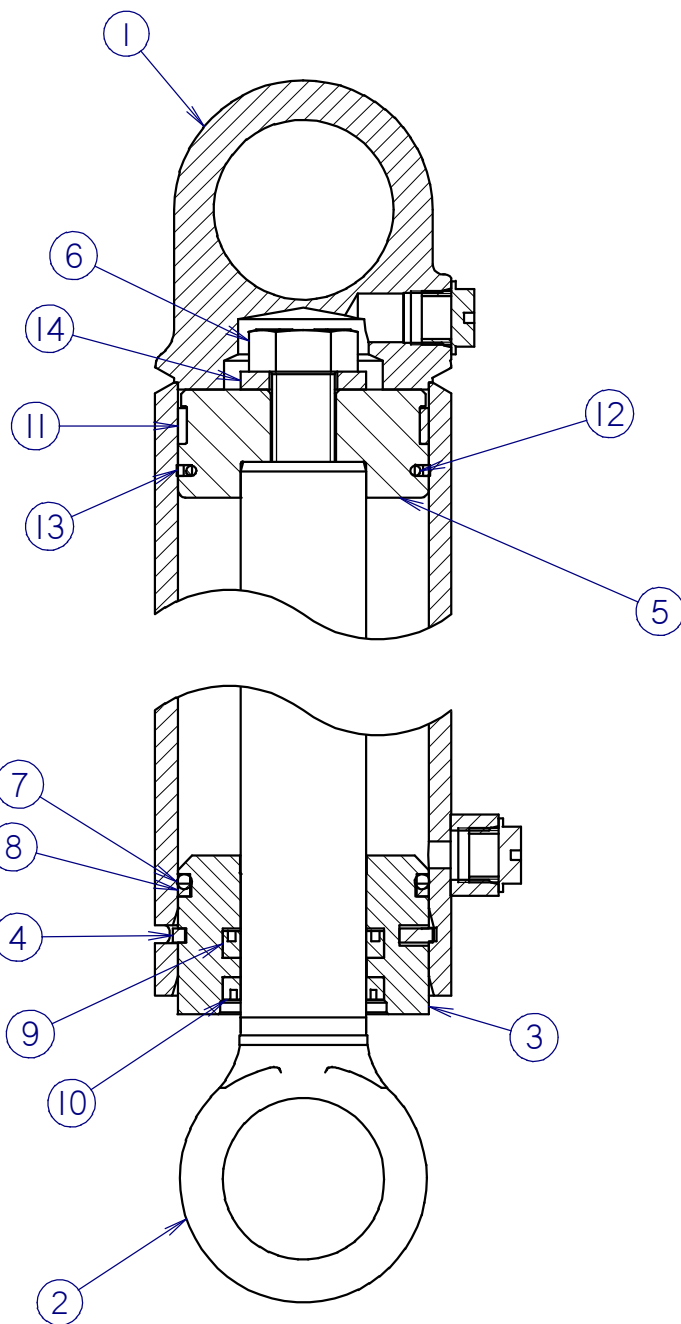
259-040	U-SEAL INSTALLER (1.5" - UP)
259-237	ROD WIPER INSTALLER (1.5")
259-065	PISTON SEAL INSTALLER (3")
259-066	PISTON INSTALLER (3")
259-188	CYL HEAD SPANNER - TWO PIN

FOOTNOTES:

1. REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF. #3 THRU #13 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
2. SEAL REPAIR KIT P/N: 190-167
3. APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 290-325 FT-LBS

NOTE:

HYDRAULIC CYLINDERS (3.5" X 1.75")



HYDRAULIC CYLINDERS (3.5" X 1.75")

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-089	-	CYL (3.5 X 1.75 X 3.0)	SEE FOOTNOTES 1 & 2
1	152-025	1	CYLINDER BARREL (3.5 X 3.0)	
2	150-446	1	CYLINDER ROD (1.75 X 3.0)	
	151-112	-	CYL (3.5 X 1.75 X 4.0)	SEE FOOTNOTES 1 & 2
1	152-037	1	CYLINDER BARREL (3.5 X 4.0)	
2	153-015	1	CYLINDER ROD (1.75 X 4.0)	
	151-050	-	CYL (3.5 X 1.75 X 5.0)	SEE FOOTNOTES 1 & 2
1	150-300	1	CYLINDER BARREL (3.5 X 5.0)	
2	150-432	1	CYLINDER ROD (1.75 X 5.0)	
	151-046	-	CYL (3.5 X 1.75 X 6.0)	SEE FOOTNOTES 1 & 2
1	150-296	1	CYLINDER BARREL (3.5 X 6.0)	
2	150-428	1	CYLINDER ROD (1.75 X 6.0)	
	151-056	-	CYL (3.5 X 1.75 X 8.0)	SEE FOOTNOTES 1 & 2
1	152-006	1	CYLINDER BARREL (3.5 X 8.0)	
2	150-436	1	CYLINDER ROD (1.75 X 8.0)	
	149-689	-	CYL (3.5 X 1.75 X 10.0)	SEE FOOTNOTES 1 & 2
1	152-040	1	CYLINDER BARREL (3.5 X 10.0)	
2	149-732	1	CYLINDER ROD (1.75 X 10.0)	
	151-069	-	CYL (3.5 X 1.75 X 12.0)	SEE FOOTNOTES 1 & 2
1	150-297	1	CYLINDER BARREL (3.5 X 12.0)	
2	150-425	1	CYLINDER ROD (1.75 X 12.0)	
	149-799	-	CYL (3.5 X 1.75 X 16.0)	SEE FOOTNOTES 1 & 2
1	149-805	1	CYLINDER BARREL (3.5 X 16.0)	
2	153-004	1	CYLINDER ROD (1.75 X 16.0)	
	149-690	-	CYL (3.5 X 1.75 X 20.0)	SEE FOOTNOTES 1 & 2
1	149-765	1	CYLINDER BARREL (3.5 X 20.0)	
2	153-020	1	CYLINDER ROD (1.75 X 20.0)	
	149-691	-	CYL (3.5 X 1.75 X 24.0)	SEE FOOTNOTES 1 & 2
1	149-766	1	CYLINDER BARREL (3.5 X 24.0)	
2	149-733	1	CYLINDER ROD (1.75 X 24.0)	
3	150-761	1	CYLINDER HEAD (3.5 x 1.75)	
4	149-302	1	LOCK RING (3.5)	
5	149-301	1	CYLINDER PISTON (3.5 X 1.75)	
6	106-122	1	BOLT (7/8-NC X 2-1/4", GD8)	SEE FOOTNOTE 3
7	157-030	1	O-RING (338 D90)	
8	157-032	1	BACKUP RING (338 D90)	
9	157-550	1	U-SEAL (1.750")	
10	157-549	1	WIPER SEAL (1.750")	
11	125-784	1	WEAR RING	
12	157-031	1	O-RING (234 D90)	
13	157-554	1	BACKUP RING (234 D90)	
14	105-363	1	WASHER (7/8")	

NOT SHOWN:

259-040	U-SEAL INSTALLER (1.5" - UP)
259-238	WIPER INSTALLER (1.75")
259-244	PISTON SEAL INSTALLER (3.5")
259-245	PISTON INSTALLER (3.5")
259-188	CYL HEAD SPANNER - TWO PIN

FOOTNOTES:

1. REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF. #3 THRU #14 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
2. SEAL REPAIR KIT P/N: 190-174
3. APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 410-460 FT-LBS

NOTE:

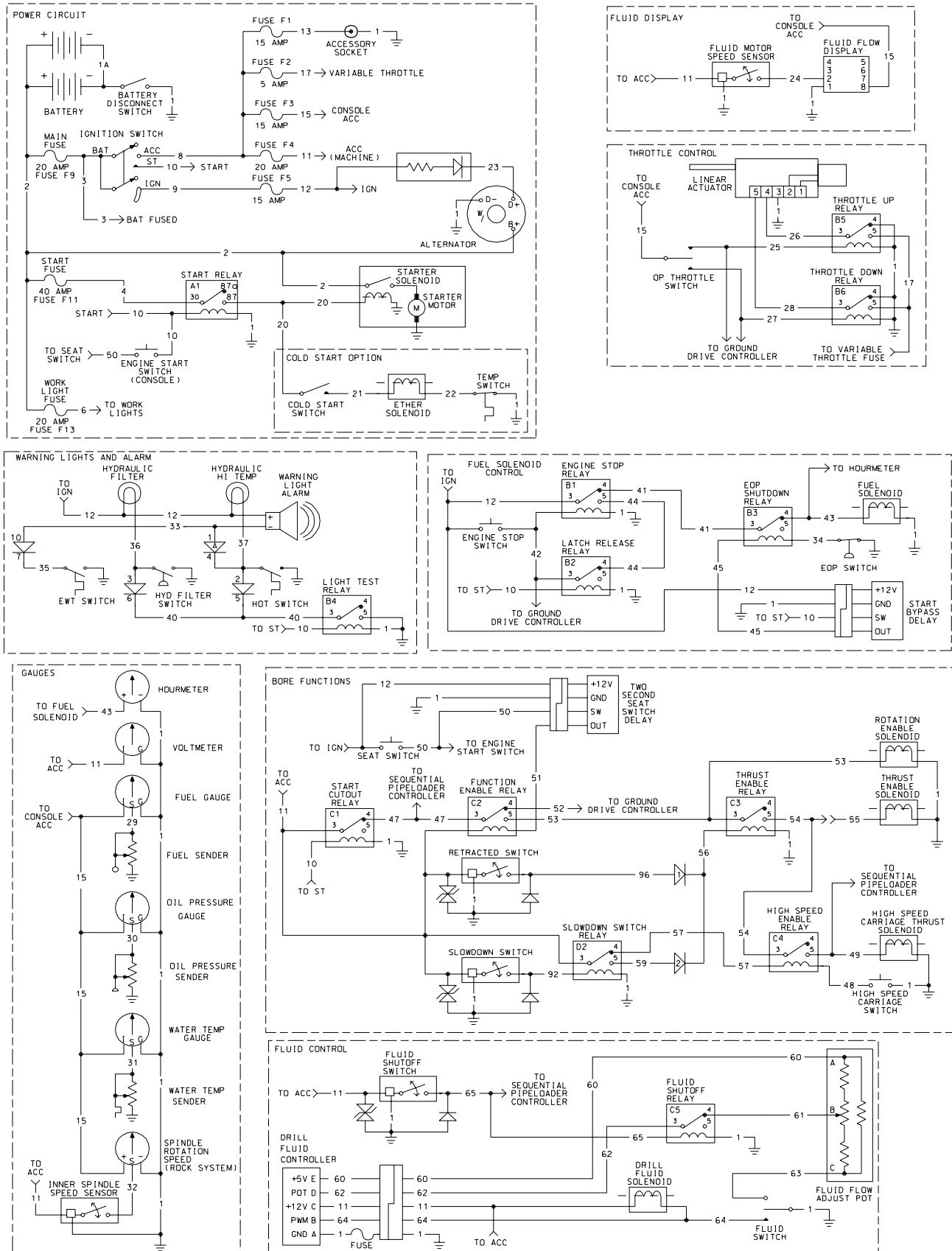
NOTES:

ELECTRICAL

ELECTRICAL SCHEMATIC

JT1720 ENDS WITH S/N 2S4073

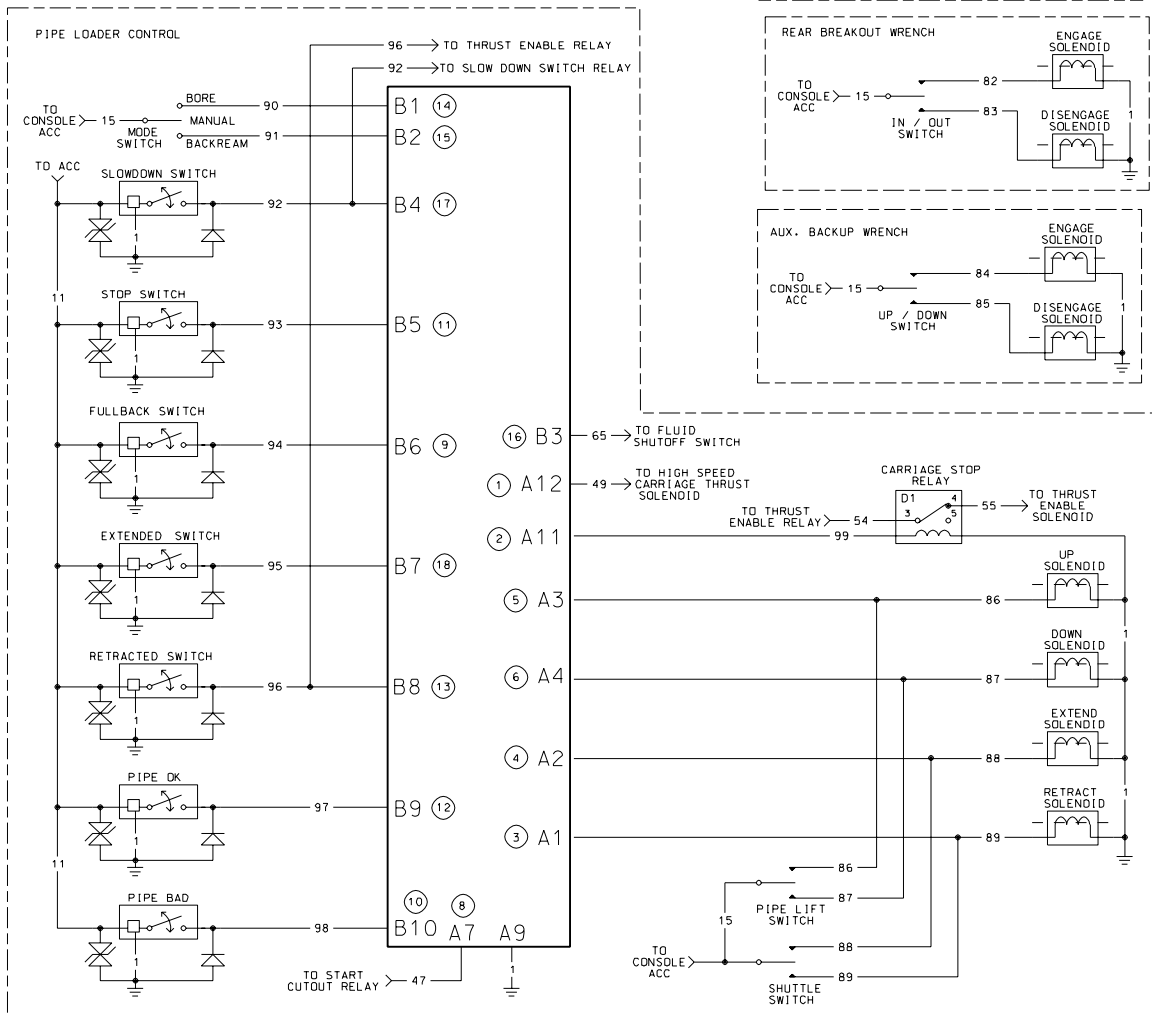
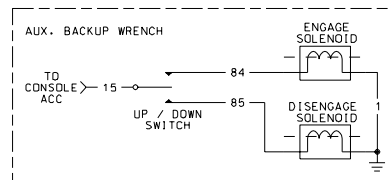
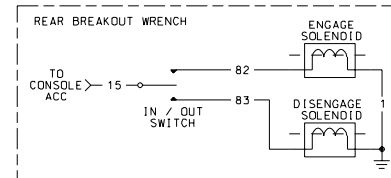
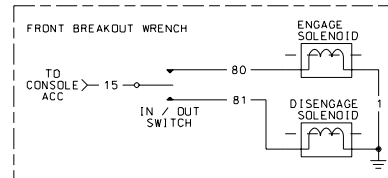
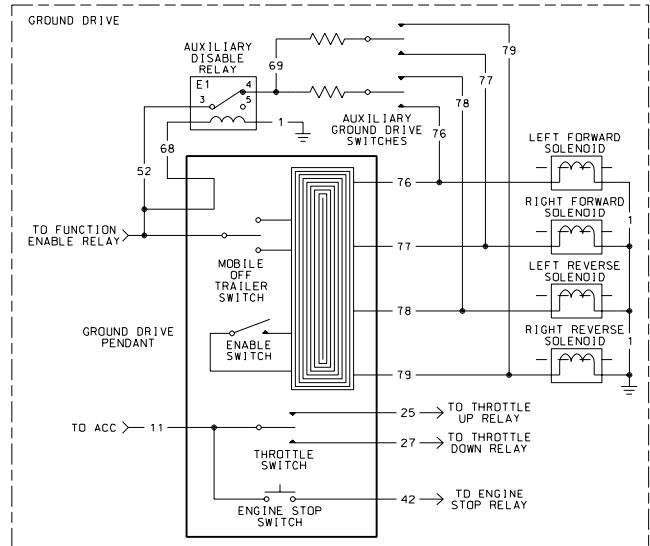
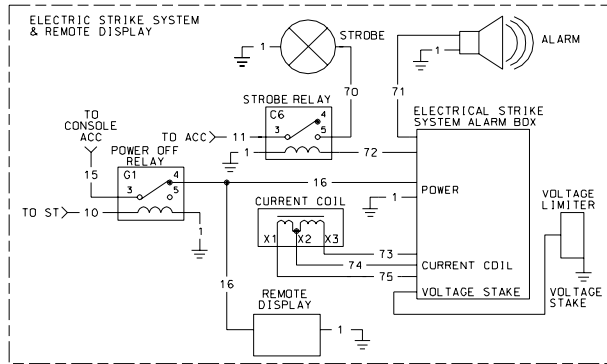
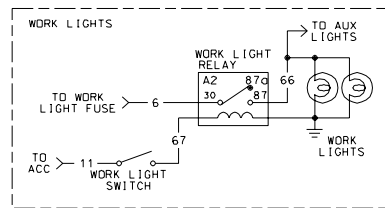
JT2720 ENDS WITH S/N 2S4079



ELECTRICAL SCHEMATIC

JT1720 ENDS WITH S/N 2S4073

JT2720 ENDS WITH S/N 2S4079



ELECTRICAL SCHEMATIC

JT1720 ENDS WITH S/N 2S4073

JT2720 ENDS WITH S/N 2S4079

CKT NO.	WIRE COLOR	FUNCTION
1	BLK	SYSTEM GROUND
1A	BLK	BATTERY NEGATIVE TO BATTERY DISCONNECT SWITCH
2	RED	BATTERY POSITIVE TO FUSE BLOCK
3	RED/BLU	FUSED BATTERY POWER
4	RED/BLK	START FUSE TO START RELAY
5		
6	BLU	WORK LIGHT FUSE TO WORK LIGHT RELAY
7		
8	ORG	IGNITION SWITCH ACCESSORY CIRCUIT
9	ORG/BLU	IGNITION SWITCH IGNITION CIRCUIT
10	WHT/BLK	IGNITION SWITCH START CIRCUIT
11	ORG	FUSED ACCESSORY CIRCUIT
12	ORG/GRN	FUSED IGNITION CIRCUIT
13	ORG/BLU	ACCESSORY SOCKET CIRCUIT
14		
15	ORG/BRN	CONSOLE ACCESSORY CIRCUIT
16	ORG/BLU	ELECTRIC STRIKE CIRCUIT
17	RED/ORG	VARIABLE THROTTLE CIRCUIT
18		
19		
20	PUR	START RELAY TO STARTER, START FUEL SOLENOID & COLD START OPTION
21	BRN/ORG	COLD START SWITCH TO ETHER SOLENOID
22	BLK	ETHER SOLENOID TO TEMP SWITCH
23	ORG/BLU	RESISTOR - DIODE TO ALTERNATOR EXCITER CONNECTION
24	TAN/BLU	FLUID MOTOR SPEED SENSOR TO FLUID FLOW DISPLAY
25	PUR/ORG	THROTTLE SWITCH UP TO THROTTLE UP RELAY
26	WHT/ORG	THROTTLE UP RELAY TO VARIABLE THROTTLE LINEAR ACTUATOR
27	BLU/ORG	THROTTLE SWITCH DOWN TO THROTTLE DOWN RELAY
28	GRN/ORG	THROTTLE DOWN RELAY TO VARIABLE LINEAR ACTUATOR
29	BRN	FUEL SENDER TO FUEL GAUGE
30	BLU	OIL PRESSURE SENDER TO OIL PRESSURE GAUGE
31	GRN	WATER TEMP SENDER TO WATER TEMP GAUGE
32	TAN/WHT	SPINDLE SPEED PICKUP TO SPINDLE SPEED DISPLAY
33	BLU/RED	WARNING LIGHT ALARM (NEG) TO DIODES
34	WHT/BLU	ENGINE OIL PRESSURE SWITCH TO DIODE
35	WHT/GRN	ENGINE WATER TEMP SWITCH TO LIGHT & DIODES
36	GRA/YEL	HYDRAULIC FILTER SWITCH TO LIGHT & DIODES
37	GRA/BLK	HYDRAULIC OIL TEMP SWITCH TO LIGHT & DIODES
38		
39		
40	BLK/ORG	LIGHT TEST RELAY TO DIODES
41	BLU	ENGINE STOP RELAY TO EOP SHUTDOWN RELAY
42	YEL/RED	ENGINE STOP SWITCH TO ENGINE STOP RELAY & GROUND DRIVE CONTROLLER
43	ORG/BLK	EOP SHUTDOWN RELAY TO FUEL SOLENOID AND HOURMETER
44	WHT	ENGINE STOP RELAY TO LATCH RELEASE RELAY
45	WHT/ORG	START BYPASS DELAY MODULE TO START BYPASS RELAY
46		
47	ORG/RED	START CUTOFF RELAY TO FUNCTION ENABLE RELAY & PIPELOADER CONTROLLER
48	PUR/GRN	HIGH SPEED ENABLE RELAY TO HIGH SPEED CARRIAGE SWITCH
49	YEL/BLK	HIGH SPEED ENABLE RELAY TO HIGH SPEED THRUST SOLENOID
50	BLU/YEL	SEAT SWITCH TO TWO SECOND DELAY
51	BLU/WHT	FUNCTION ENABLE RELAY TO TWO SECOND DELAY
52	GRA/RED	FUNCTION ENABLE RELAY TO GROUND DRIVE CONTROLLER
53	GRA/BLU	FUNCTION ENABLE RELAY TO ROTATION ENABLE SOLENOID & THRUST ENABLE RELAY
54	TAN/RED	THRUST ENABLE RELAY TO CARRIAGE STOP RELAY & HIGH SPEED ENABLE RELAY

ELECTRICAL SCHEMATIC

JT1720 ENDS WITH S/N 2S4073

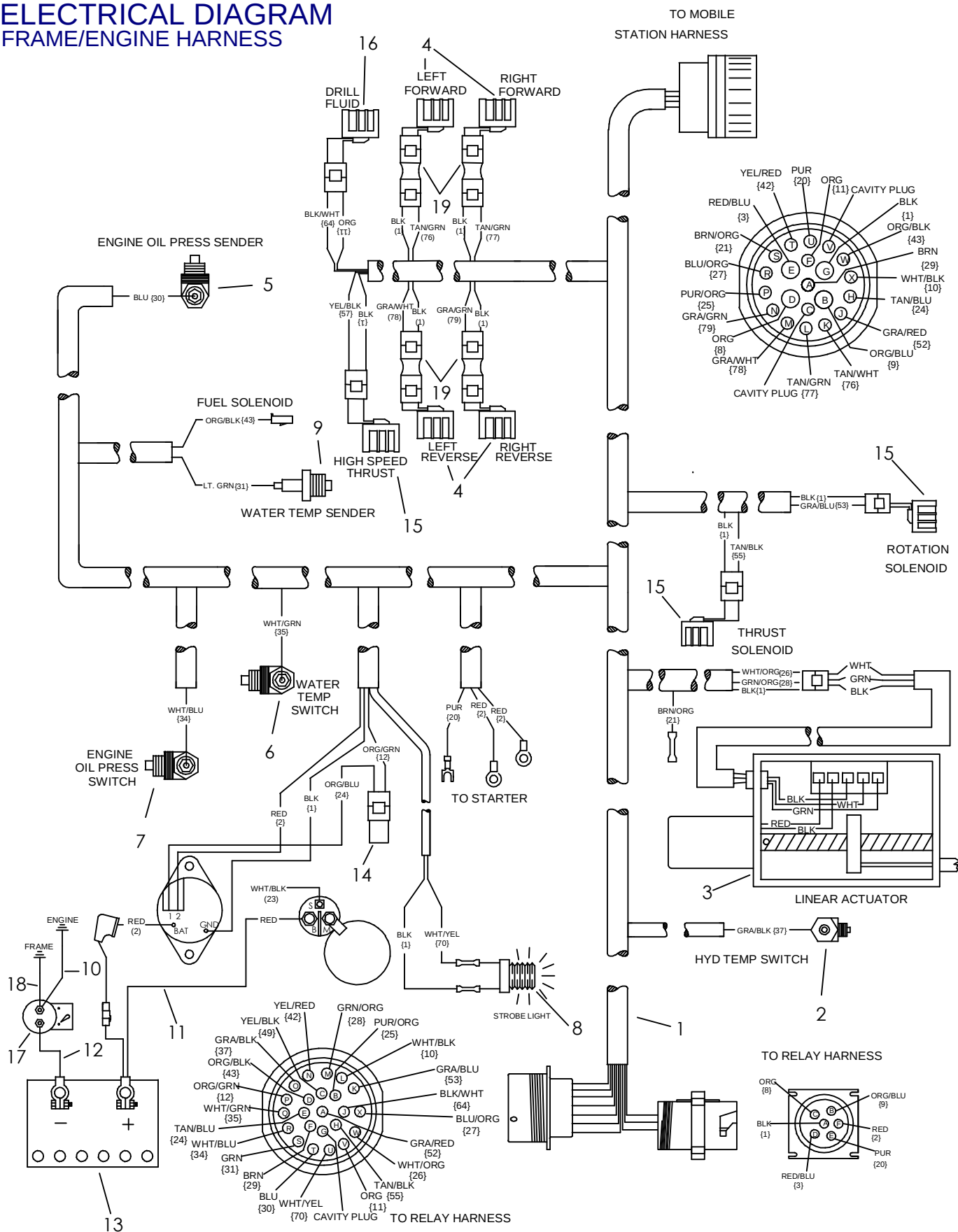
JT2720 ENDS WITH S/N 2S4079

CKT WIRE

NO. COLOR FUNCTION

55	TAN/BLK	CARRIAGE STOP RELAY TO THRUST ENABLE SOLENOID
56	RED/WHT	DIODES TO THRUST ENABLE RELAY
57	BRN/YEL	SLOW-DOWN SWITCH RELAY TO HIGH SPEED ENABLE RELAY
58		
59	BLU/RED	SLOW-DOWN SWITCH RELAY TO DIODE
60	BLU	FLUID FLOW ADJUST POT TO DRILL FLUID CONTROLLER (5V)
61	GRN	FLUID FLOW ADJUST POT TO FLUID SHUT-OFF RELAY
62	GRN	FLUID SHUT-OFF RELAY TO DRILL FLUID CONTROLLER
63	BLK/YEL	FLUID FLOW ADJUST POT TO FLUID SWITCH
64	BLK/WHT	DRILL FLUID SOLENOID TO FLUID SWITCH & DRILL FLUID CONTROLLER
65	WHT	FLUID SHUT-OFF RELAY TO FLUID SHUT-OFF SWITCH & PIPE LOADER CONTROLLER
66	YEL	WORK LIGHT RELAY TO WORK LIGHTS & AUX LIGHT CONNECTION
67	TAN/RED	WORK LIGHT SWITCH TO WORK LIGHT RELAY
68	RED/YEL	GROUND DRIVE CONTROLLER TO MANUAL DISABLE RELAY
69	WHT/ORG	MANUAL DISABLE RELAY TO DIODE CONNECTOR TO AUXILIARY GROUND DRIVE SWITCHES
70	WHT/YEL	STROBE RELAY TO STROBE
71	BRN/YEL	ELECTRIC STRIKE BOX TO LOCAL ALARM
72	WHT/PUR	ELECTRIC STRIKE BOX TO STROBE RELAY
73	RED	ELECTRIC STRIKE BOX TO CURRENT COIL X3
74	BLK	ELECTRIC STRIKE BOX TO CURRENT COIL X2
75	WHT	ELECTRIC STRIKE BOX TO CURRENT COIL X1
76	TAN/WHT	GROUND DRIVE CONTROLLER TO LEFT FORWARD SOLENOID
77	TAN/GRN	GROUND DRIVE CONTROLLER TO RIGHT FORWARD SOLENOID
78	GRA/WHT	GROUND DRIVE CONTROLLER TO LEFT REVERSE SOLENOID
79	GRA/GRN	GROUND DRIVE CONTROLLER TO RIGHT REVERSE SOLENOID
80	GRA/BLU	FRONT BREAK-OUT WRENCH TO ENGAGE SOLENOID
81	BLK/GRN	FRONT BREAK-OUT WRENCH SWITCH TO DISENGAGE SOLENOID
82	PUR/ORG	REAR BREAK-OUT WRENCH SWITCH TO ENGAGE SOLENOID
83	PUR/YEL	REAR BREAK-OUT WRENCH SWITCH TO DISENGAGE SOLENOID
84	TAN/GRN	BACK-UP WRENCH SWITCH TO ENGAGE SOLENOID
85	YEL/GRN	BACK-UP WRENCH SWITCH TO DISENGAGE SOLENOID
86	YEL/BLU	PIPE LIFT SWITCH TO UP SOLENOID
87	YEL/BRN	PIPE LIFT SWITCH TO DOWN SOLENOID
88	GRN/BLU	SHUTTLE SWITCH TO EXTEND SOLENOID
89	GRN/BLK	SHUTTLE SWITCH TO RETRACT SOLENOID
90	GRA/GRN	MODE SWITCH (BORE) TO PIPELOADER CONTROLLER
91	GRA	MODE SWITCH (BACKREAM) TO PIPELOADER CONTROLLER
92	BLU/WHT	SLOW-DOWN SWITCH TO PIPELOADER CONTROLLER & SLOW-DOWN SWITCH RELAY
93	GRA/WHT	STOP SWITCH # 2 TO PIPELOADER CONTROLLER
94	TAN/WHT	FULL BACK SWITCH #3 TO PIPELOADER CONTROLLER
95	GRN/RED	EXTENDED SWITCH TO PIPELOADER CONTROLLER
96	WHT/RED	RETRACTED SWITCH TO DIODE & PIPELOADER CONTROLLER
97	PUR/ORG	PIPE OK SWITCH TO PIPELOADER CONTROLLER
98	BRN/ORG	PIPE BAD SWITCH TO PIPELOADER CONTROLLER
99	GRA/BLK	PIPE LOADER CONTROLLER TO CARRIAGE STOP RELAY

ELECTRICAL DIAGRAM FRAME/ENGINE HARNESS



ELECTRICAL DIAGRAM

FRAME/ENGINE HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-384	1	FRAME/ENGINE HARNESS	
2.	215-148	1	TEMPERATURE SWITCH	
3.	215-231	1	LINEAR ACTUATOR	
	196-331	-	CABLE	
	214-299	-	ACTUATOR PIGTAIL	
	501-358	-	ROLL PIN (3/32" X 3/4")	
4.	214-434	4	SOLENOID COIL	
5.	215-113	1	OIL PRESSURE SWITCH	
	215-183	1	SENDER, OIL PRESSURE HD	
6.	217-575	1	HIGH TEMPERATURE SWITCH	
7.	217-736	1	OIL PRESSURE SWITCH	
8.	217-041	1	STROBE LIGHT	
	217-720	1	BULB (12V DC)	
9.	217-550	1	WATER TEMPERATURE SENDER	
10.	215-359	1	BAT CABLE (2/0 GA X 70", BLK)	
11.	215-331	1	BAT CABLE (2/0 GA X 64", RED)	
12.	215-337	1	BATT CABLE (2/0 GA X 19", BLK)	
13.	215-275	1	BATTERY	
	215-244	1	BATTERY	
14.	214-256	1	DIODE CONNECTOR	
15.	214-432	3	SOLENOID COIL	
16.	217-897	1	SOLENOID COIL	
17.	217-819	1	BAT DISCONNECT SWITCH	
18.	215-305	1	BAT CABLE (4 GA X 30", BLK)	BEGIN WITH S/N
19.	214-505	4	INLINE DIODE CONNECTOR	

NOT SHOWN:

FOOTNOTES:

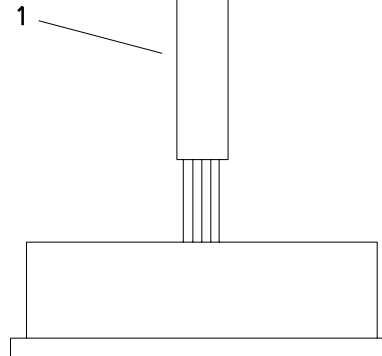
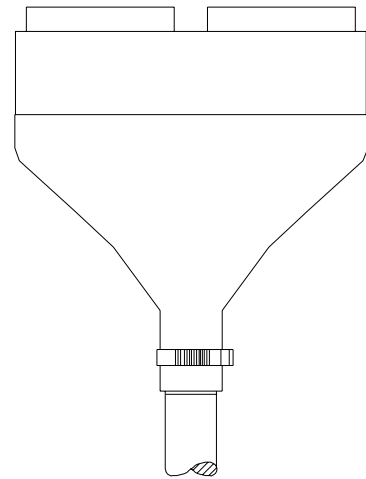
NOTE:



ELECTRICAL DIAGRAM
CONSOLE HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-383	1	CONSOLE HARNESS	INCL REF NO 20
2.	306-607	1	HORN BUTTON	
	306-608	1	BUTTON COVER	
3.	217-531	1	WATER TEMPERATURE GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	
4.	215-133	1	FUEL GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	
5.	217-206	1	BUTTON SWITCH (SPST)	
	214-103	1	2-WAY MALE CONNECTOR	
6.	215-131	1	OIL PRESSURE GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	
7.	217-036	1	INSERT (YELLOW) HYD OIL PSI	
8.	306-602	1	BACKUP ALARM	
9.	217-710	1	MICRO RELAY (SPDT)	
10.	217-911	6	ROCKER (SPDT) (ON)OFF(ON)	
11.	217-916	2	ROCKER SWITCH (DPDT) ON-OFF-ON	
12.	217-940	1	FLUID FLOW POTENTIOMETER	
13.	217-020	1	PILOT LIGHT	
14.	217-027	1	INSERT (RED) HYD OIL HIGH TEMP.	
15.	217-935	-	SEAT SWITCH	
16.	217-221	1	FLOW METER DISPLAY	
17.	214-415	1	90D MODULE TO RIG CABLE	
18.	217-332	1	LARGE FERRITE CLAMP - ON	
19.	190-844	-	EL STR SYS CONNECTOR KIT	

FOOTNOTES



TO RELAY HARNESS

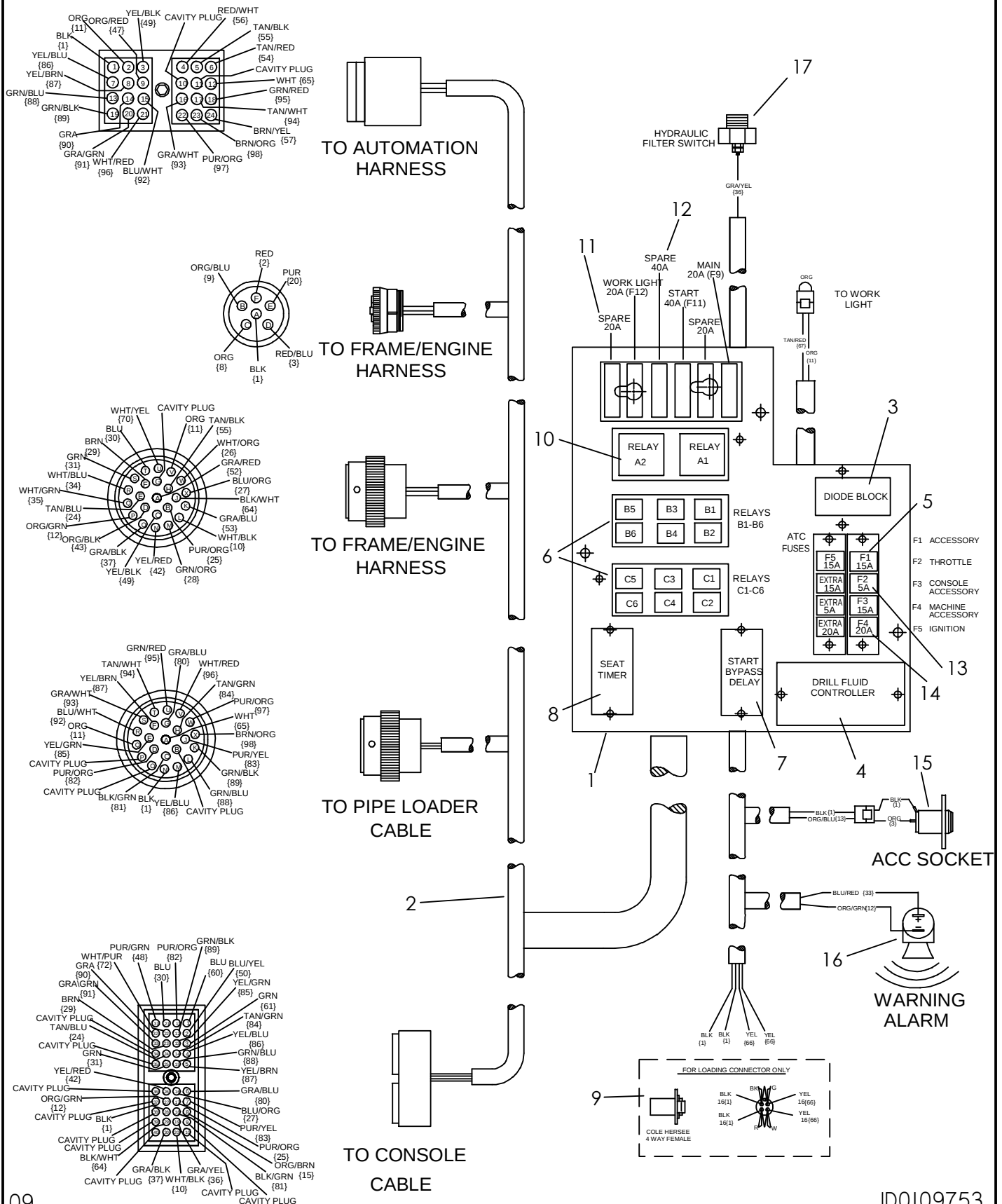
ELECTRICAL DIAGRAM
CONSOLE CABLE

REF	PART				
NO.	NUMBER	QTY	DESCRIPTION	REMARKS	
1.	214-388	1	CONSOLE CABLE		

FOOTNOTES

ELECTRICAL DIAGRAM

RELAY PANEL HARNESS ENDS WITH S/N 2S9999



ID0109753

ELECTRICAL DIAGRAM

RELAY PANEL HARNESS ENDS WITH S/N 2S9999

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-848	1	ELECTRICAL PANEL (RELAY)	
2.	214-385	1	RELAY PANEL HARNESS	
3.	216-521	1	DIODE BLOCK	
4.	215-914	1	DRILL FLUID CONTROLLER	
	215-238	1	FUSE (AGC, 3 AMP)	
5.	217-811	5	FUSE (ATC, 15 AMP)	
6.	217-710	12	MICRO RELAY (SPDT)	
7.	217-937	1	START BY-PASS DELAY TIMER	
8.	217-184	1	DELAY TIMER (2-SECOND)	
9.	217-017	1	CONNECTOR (4-WAY, FM)	
10.	217-826	2	MINI RELAY (SPDT)	
11.	217-805	4	FUSE (MAXI, 20 AMP)	
12.	217-791	2	FUSE (MAXI, 40 AMP)	
13.	217-809	1	FUSE (ATC, 5 AMP)	
14.	217-812	2	FUSE (ATC, 20 AMP)	
15.	214-301	1	ACCESSORY SOCKET	
	106-282	2	DRIVE RIVET (1/8" X 1/2")	
	106-280	2	WASHER (1/8", ALUMINUM)	
16.	306-603	1	AUDIO ALARM	
17.	217-765	1	INDICATOR SWITCH	

NOT SHOWN:

FOOTNOTES:

NOTE:



ELECTRICAL DIAGRAM

RELAY PANEL HARNESS BEGINS WITH S/N: 2T0001

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-848	1	ELECTRICAL PANEL (RELAY)	
2.	214-500	1	RELAY PANEL HARNESS	
3.	216-521	1	DIODE BLOCK	
4.	215-914	1	DRILL FLUID CONTROLLER	
	215-238	1	FUSE (AGC, 3 AMP)	
5.	217-811	5	FUSE (ATC, 15 AMP)	
6.	217-710	12	MICRO RELAY (SPDT)	
7.	217-937	1	START BY-PASS DELAY TIMER	
8.	217-184	1	DELAY TIMER (2-SECOND)	
9.	217-017	1	CONNECTOR (4-WAY, FM)	
10.	217-826	2	MINI RELAY (SPDT)	
11.	217-805	4	FUSE (MAXI, 20 AMP)	
12.	217-791	2	FUSE (MAXI, 40 AMP)	
13.	217-809	1	FUSE (ATC, 5 AMP)	
14.	217-812	2	FUSE (ATC, 20 AMP)	
15.	214-301	1	ACCESSORY SOCKET	
	106-282	2	DRIVE RIVET (1/8" X 1/2")	
	106-280	2	WASHER (1/8", ALUM)	
16.	306-603	1	AUDIO ALARM	
17.	217-765	1	INDICATOR SWITCH	

NOT SHOWN:

FOOTNOTES:

NOTE:



ELECTRICAL DIAGRAM

MOBILE STATION HARNESS

JT1720

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-386	1	MOBILE STATION HARNESS	
2.	217-568	1	FUEL SENDER	
3.	215-128	1	HOUR METER	
4.	215-129	1	VOLT METER	
5.	217-917	1	ROCKER SWITCH (DPDT) OFF-(ON)	
	215-415	1	NITE-LIGHT (12V DC)	
6.	214-852	1	IGNITION SWITCH	
	214-961		KEY, PAIR	
	214-962		SWITCH MOUNTING NUT	
7.	214-010	1	SPEED SENSOR	USED WITH 214-377
8.	214-465	1	COILED CABLE (15')	
	190-896		CABLE CONN REPLCMNT KIT (FM)	
	190-897		CABLE CONN REPLCMNT KIT (M)	WITH CORD
9.	190-1551	1	GROUND DRIVE CONTROL	WITH CORD
	<u>214-496</u>	1	GROUND DRIVE CONTROL	WITH CORD
	197-074	1	REBUILT GRD DRV CONTROL	WITH CORD
	<u>214-559</u>	1	GROUND DRIVE CONTROL	WITHOUT CORD
	<u>214-377</u>	1	GROUND DRIVE CONTROL	
10.	214-442	1	GROUND DRIVE HARNESS	
11.	217-911	2	ROCKER SWITCH (SPDT) (ON)-OFF-(ON)	
12.	217-710	1	MICRO RELAY (SPDT)	
13.	214-443	1	RESISTOR CONNECTOR	

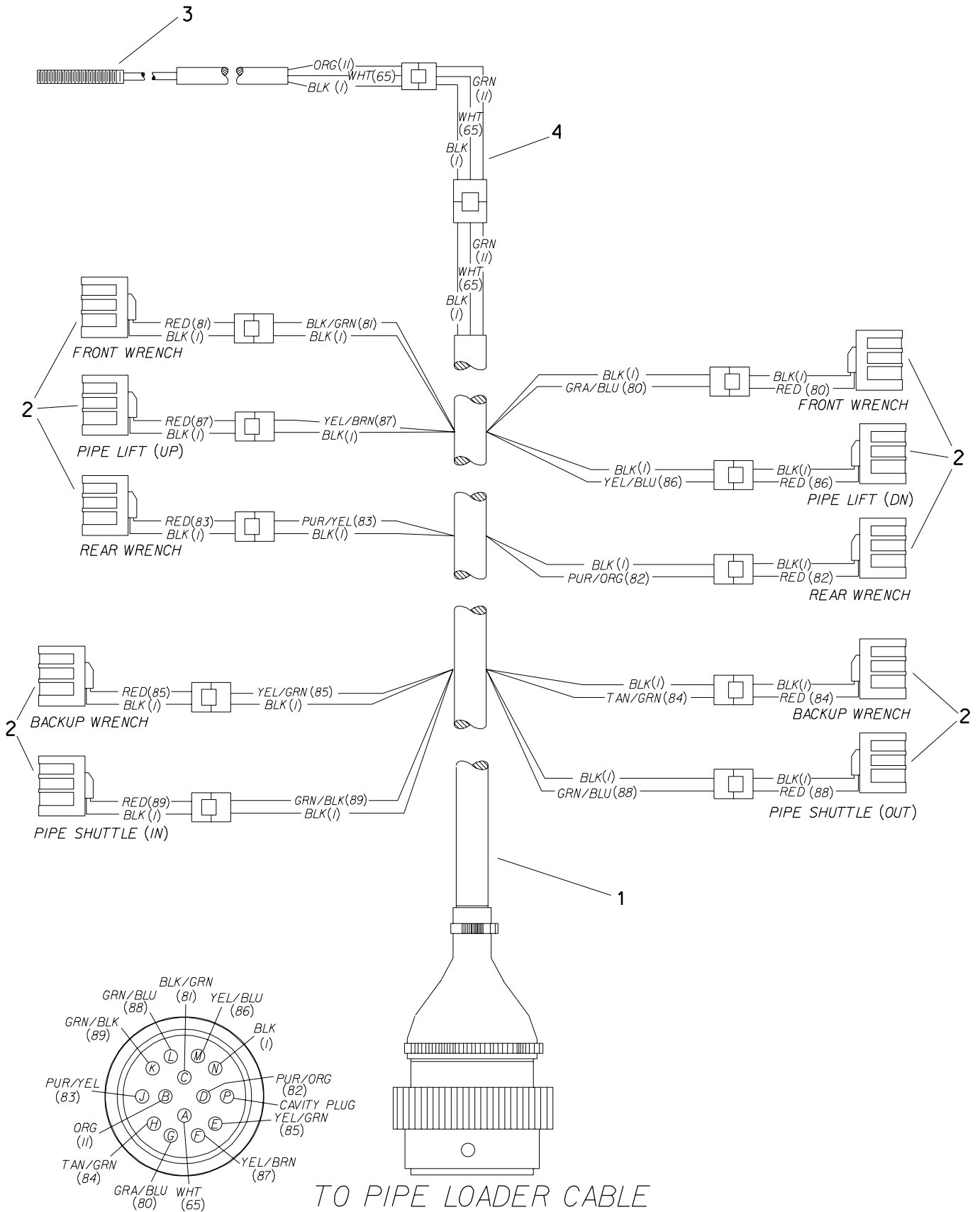
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FOOTNOTES:

NOTE:

ELECTRICAL DIAGRAM

PIPE LOADER HARNESS

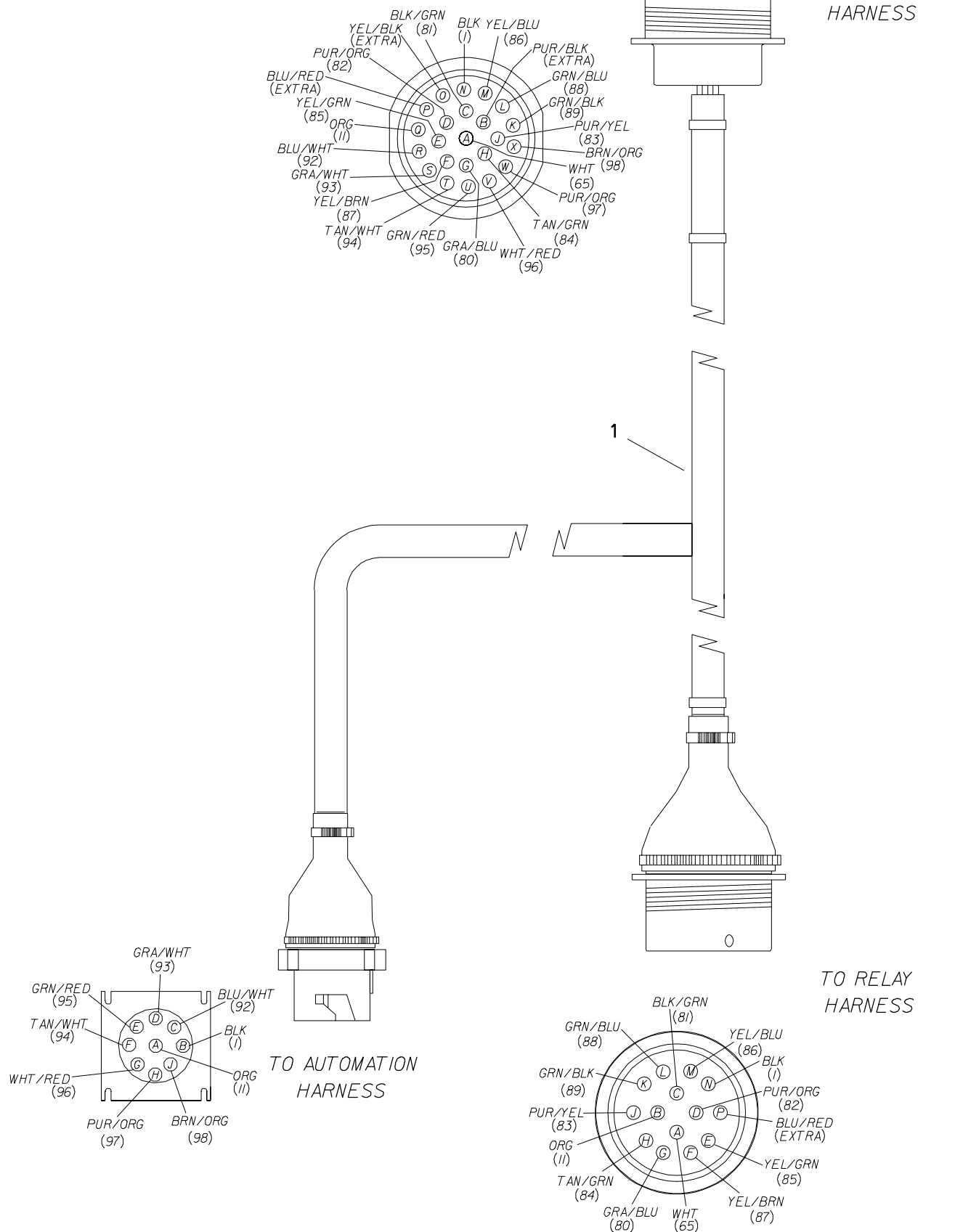


ELECTRICAL DIAGRAM
PIPE LOADER HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-387	1	PIPE LOADER HARNESS	
2.	214-435	10	SOLENOID COIL (12V)	
3.	217-939	1	PRDXIMITY SWITCH	INCL JAM NUT
	107-332	-	JAM NUT	
4.	214-438	1	FLUID SHUT-OFF CABLE	

FOOTNOTES

ELECTRICAL DIAGRAM PIPE LOADER JUMPER CABLE



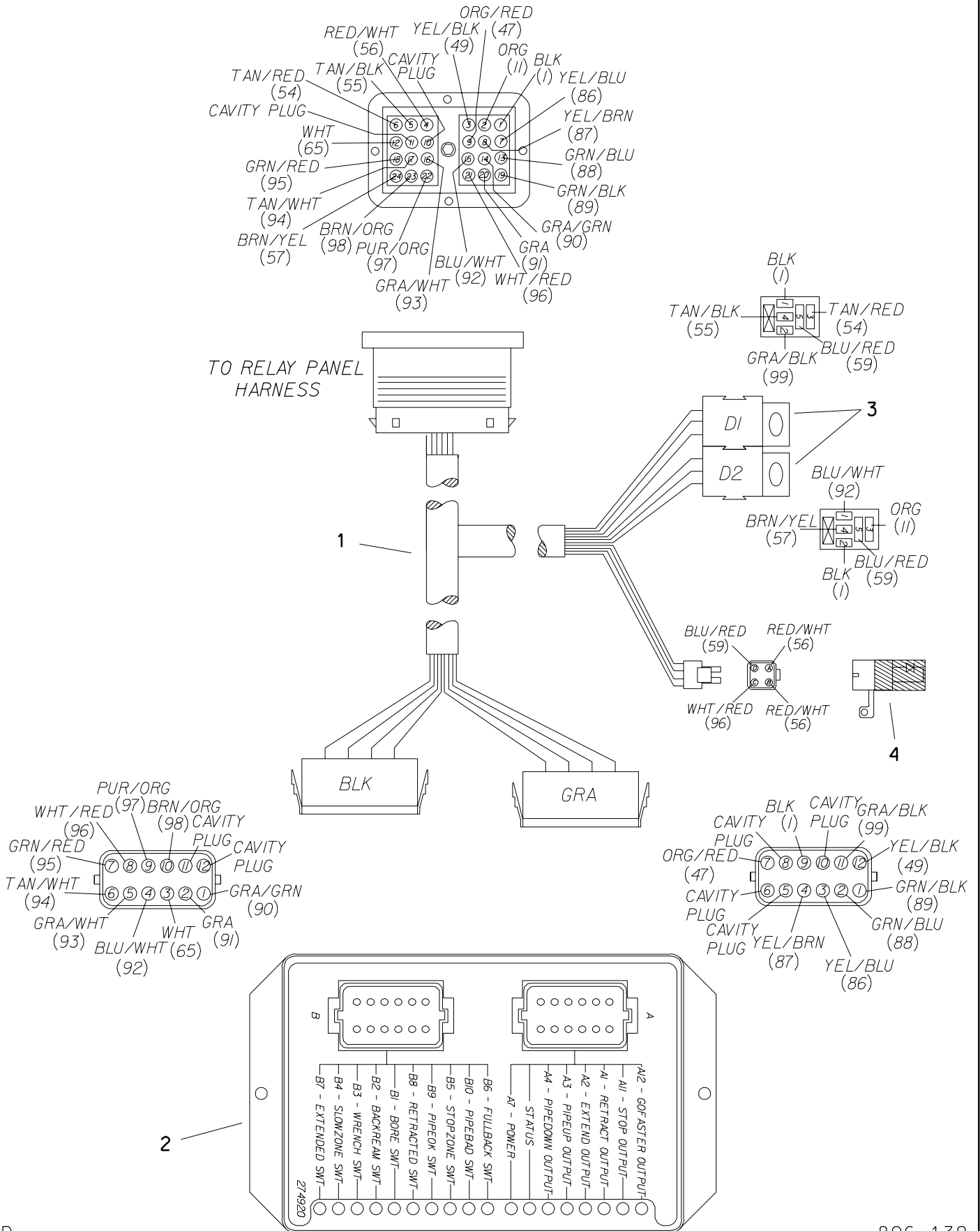
ELECTRICAL DIAGRAM
PIPE LOADER JUMPER CABLE

REF	PART				
NO.	NUMBER	QTY	DESCRIPTION	REMARKS	
1.	214-389	1	PIPE LOADER JUMPER CABLE		

FOOTNOTES

ELECTRICAL DIAGRAM

AUTOMATION HARNESS ENDS WITH S/N 2S4079



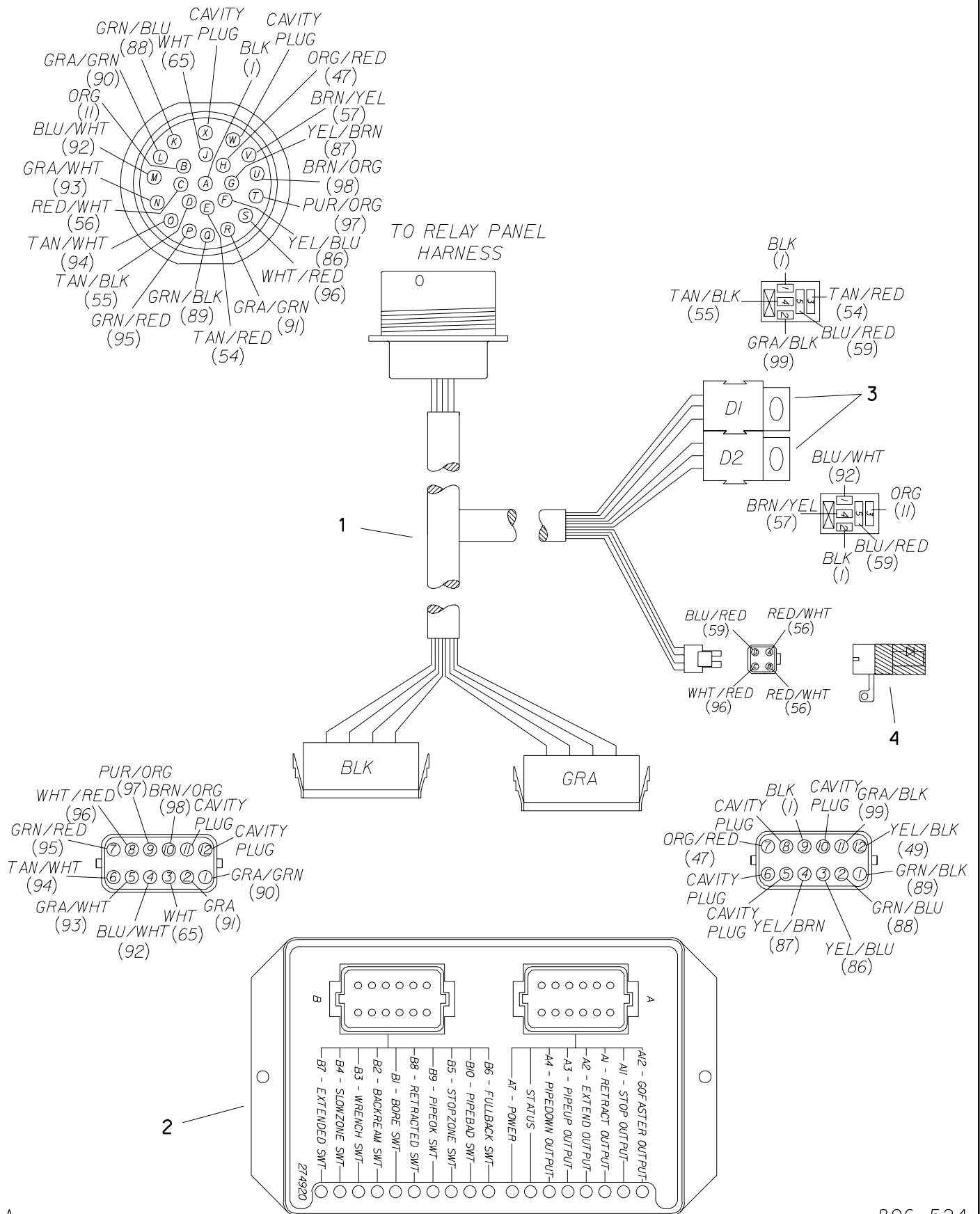
ELECTRICAL DIAGRAM
AUTOMATION HARNESS ENDS WITH S/N 2S4079

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-447	1	AUTOMATION HARNESS	
2.	217-186	1	SEQ PIPE LOADER CONTROLLER	
3.	217-710	2	MICRO RELAY (SPDT)	
4.	214-449	1	DIODE CONNECTOR	

FOOTNOTES

ELECTRICAL DIAGRAM

AUTOMATION HARNESS BEGINS WITH S/N

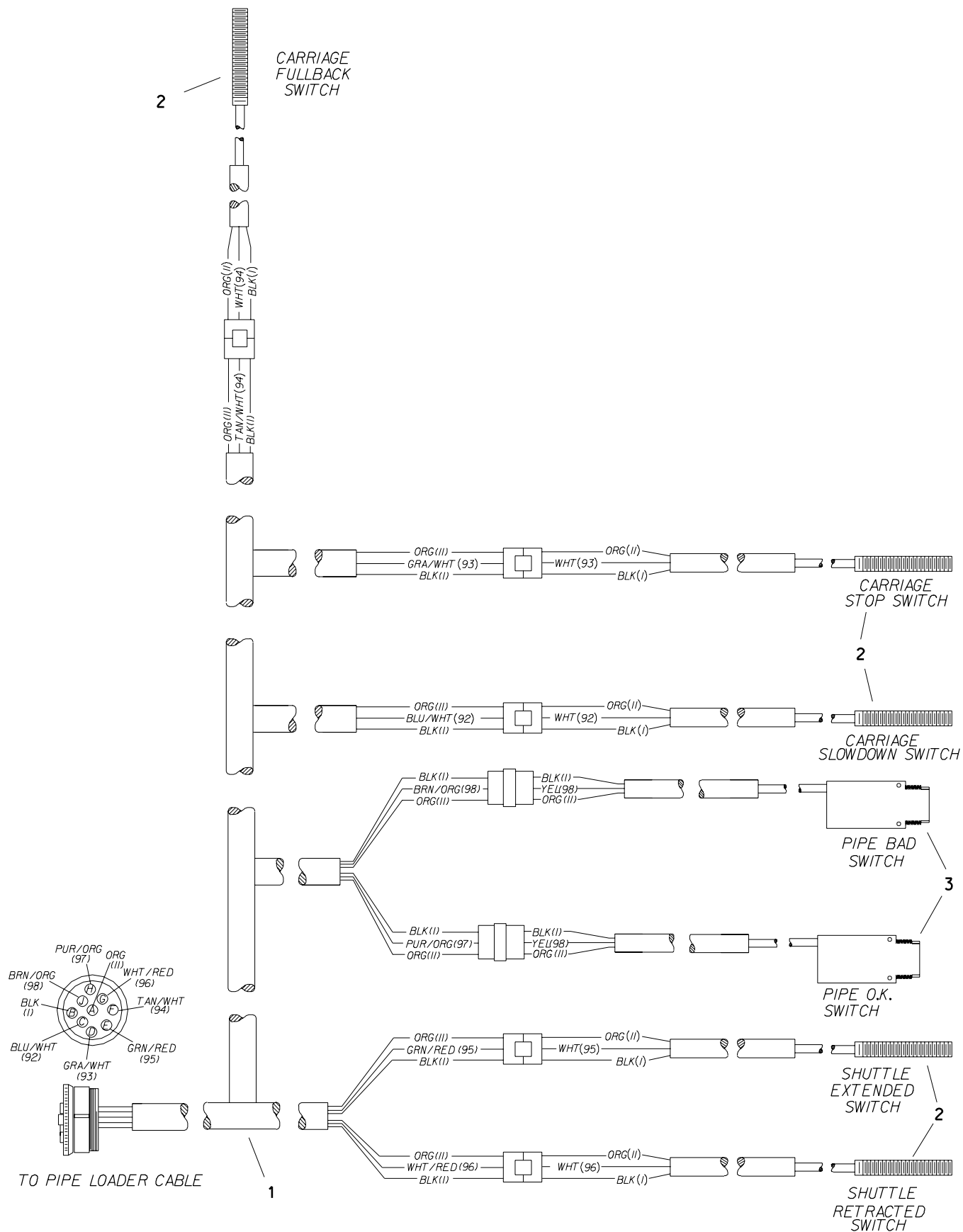


ELECTRICAL DIAGRAM
AUTOMATION HARNESS BEGINS WITH S/N

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-501	1	AUTOMATION HARNESS	
2.	217-186	1	SEQ PIPE LOADER CONTROLLER	
3.	217-710	2	MICRO RELAY (SPDT)	
4.	214-449	1	DIODE CONNECTOR	

FOOTNOTES

ELECTRICAL DIAGRAM SWITCH HARNESS (PIPE LOADER)

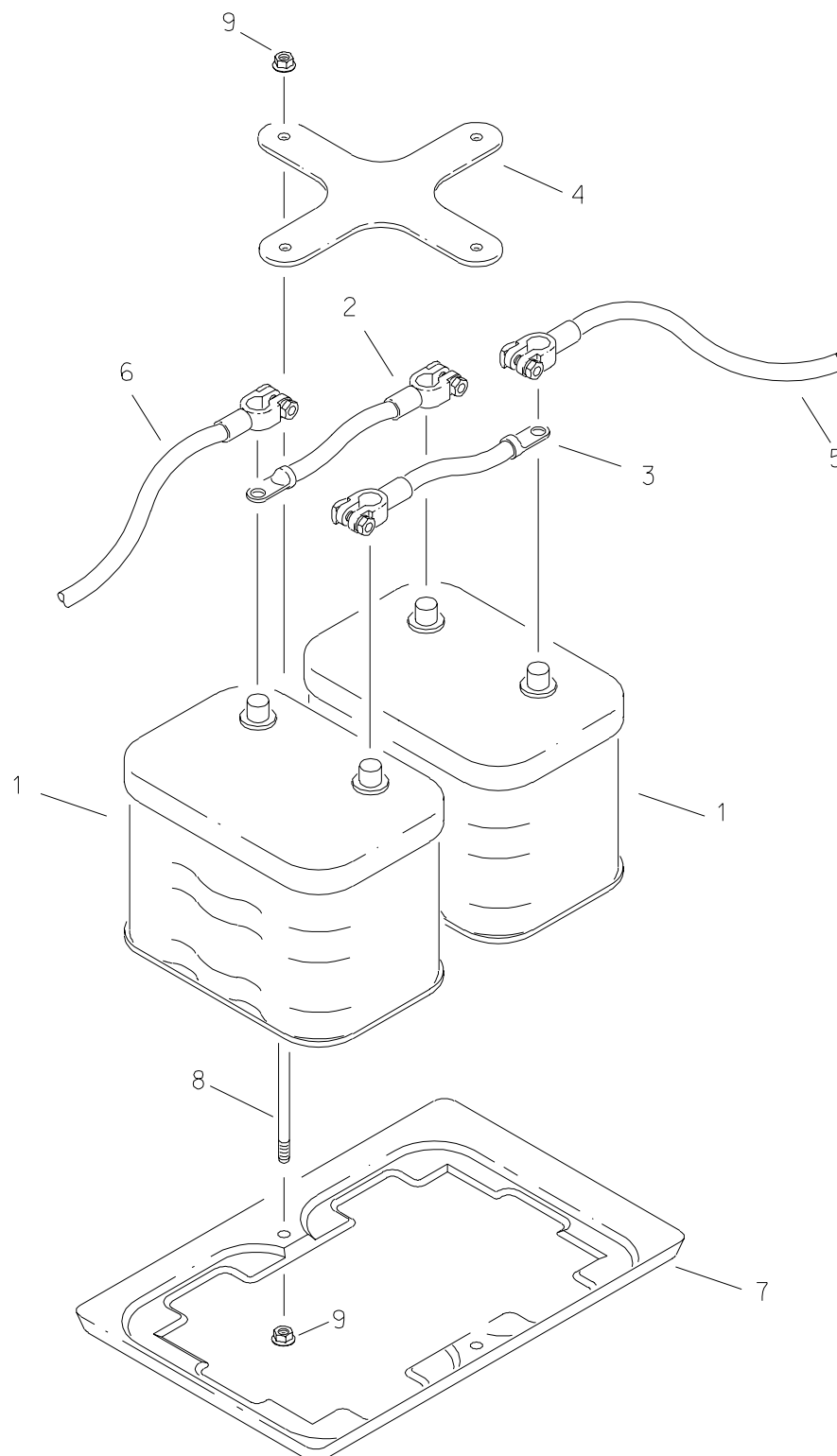


ELECTRICAL DIAGRAM
SWITCH HARNESS (PIPE LOADER)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-428	1	SWITCH HARNESS	
2.	217-939	5	PROXIMITY SWITCH	INCL JAM NUT
	107-332	2	JAM NUT	
3.	214-504	2	PHOTO-ELECTRIC SENSOR	

FOOTNOTES

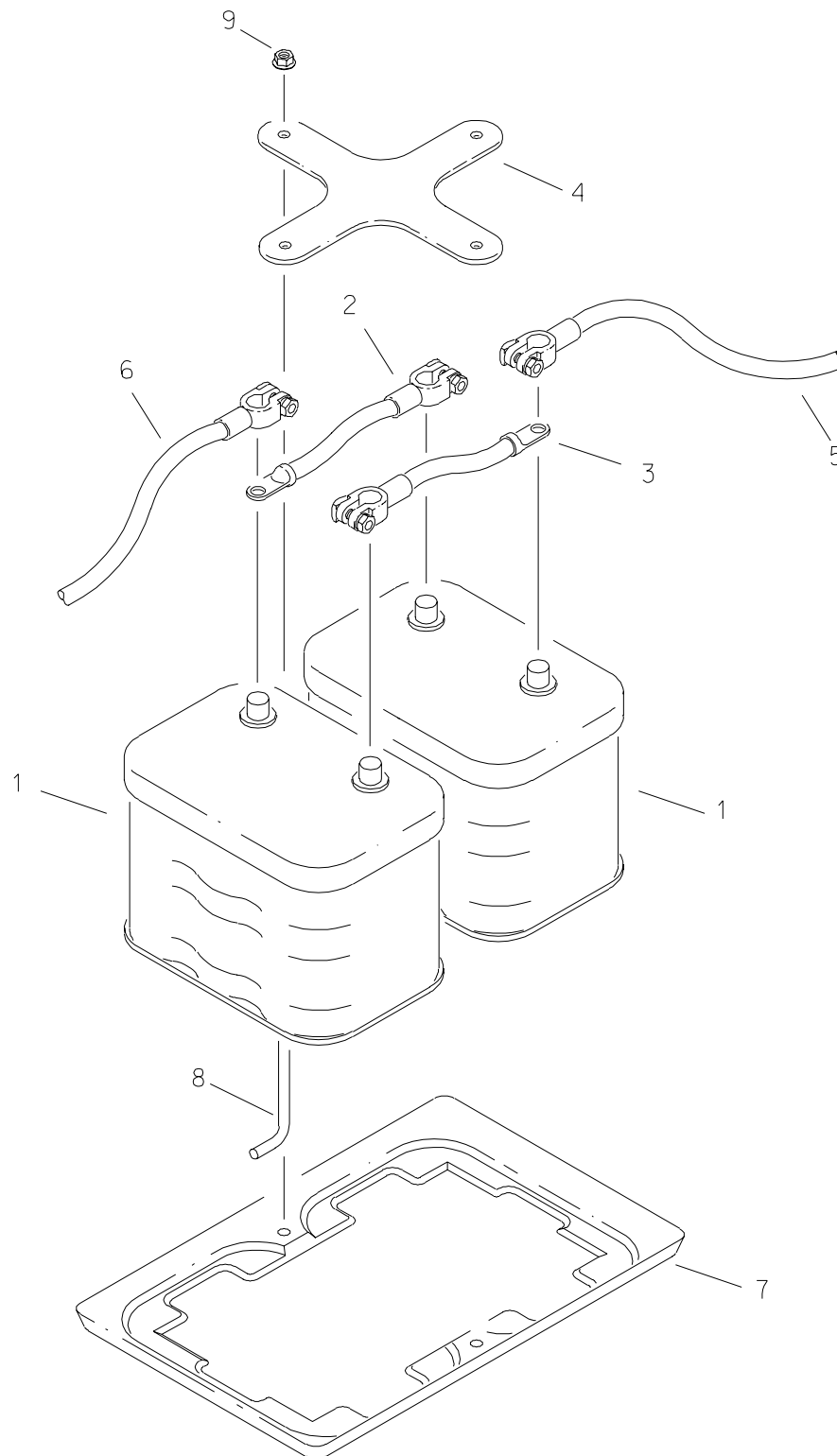
DUAL BATTERY KIT



REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-539		DUAL BATTERY CONVERSION KIT	INCL REF NO'S 1 THRU 4, 8 & 9; FOOTNOTE 1
1.	215-275	1	BATTERY	
-	215-244	1	BATTERY	SEE FOOTNOTE 2
-	273-267	1	BATTERY WARRANTY DECAL	
2.	215-350	1	BATTERY CABLE (2GA X 8", BLK)	
3.	215-349	1	BATTERY CABLE (2GA X 8", RED)	
4.	356-490	1	BATTERY PLATE	
5.	215-317	-	BATTERY CABLE (2/0GA X 54", RED)	
6.	215-359	-	BATTERY CABLE (2/0GA X 70", BLK)	
7.	362-784	-	BATTERY TRAY	
8.	356-491	4	TIE-DOWN ROD (1/4-NC X 9.3")	
9.	105-832	4	FLG LOCKNUT (1/4-NC)	

1. REFER TO INSTRUCTION DIAGRAM 051-251 FOR INSTALLATION PROCEDURE.
2. LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.

DUAL BATTERY



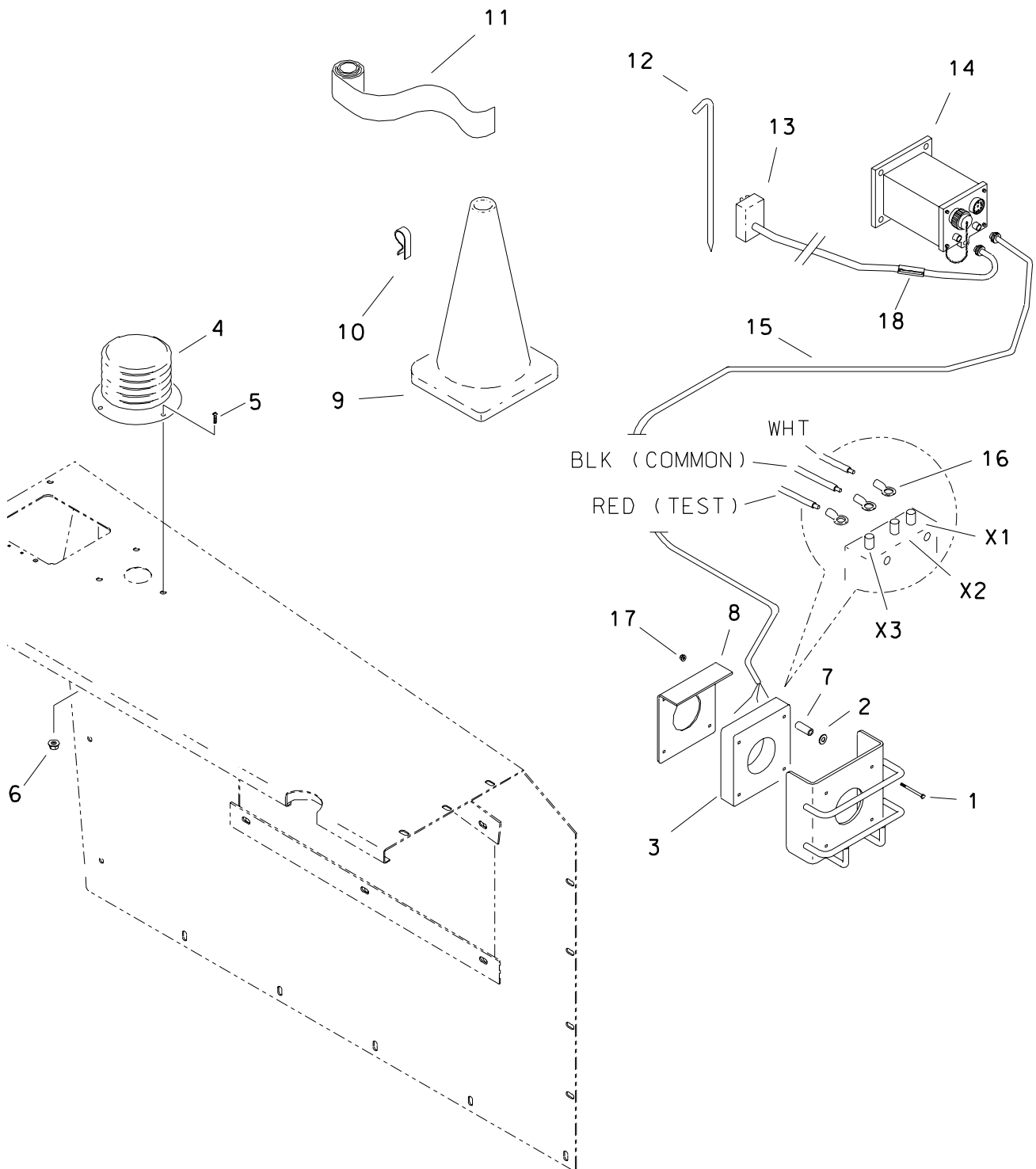
DUAL BATTERY

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-539		DUAL BATTERY CONVERSION KIT	INCL REF NO.'S 1 THRU 4, 8 & 9 & FOOTNOTE 1
1.	215-275	1	BATTERY	ONE (1) PER BASIC UNIT
	215-244	1	BATTERY	
	273-267	1	BATTERY WARRANTY DECAL	SEE FOOTNOTE 2
2.	215-350	1	BATTERY CABLE (2GA X 8", BLK)	
3.	215-349	1	BATTERY CABLE (2GA X 8", RED)	
4.	356-490	1	BATTERY PLATE	
5.	215-331	-	BATTERY CABLE (2/0GA X 64", RED)	
6.	215-359	-	BATTERY CABLE (2/0GA X 70", BLK)	
7.	362-784	-	BATTERY TRAY	
8.	183-934	2	TIE-DOWN ROD	
9.	105-832	2	FLG LOCKNUT (1/4-NC)	

FOOTNOTES

- REFER TO INSTRUCTIONS 051-251.
- LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.

ELECTRICAL STRIKE SYSTEM ENDS WITH S/N 2T3899



ELECTRICAL STRIKE SYSTEM

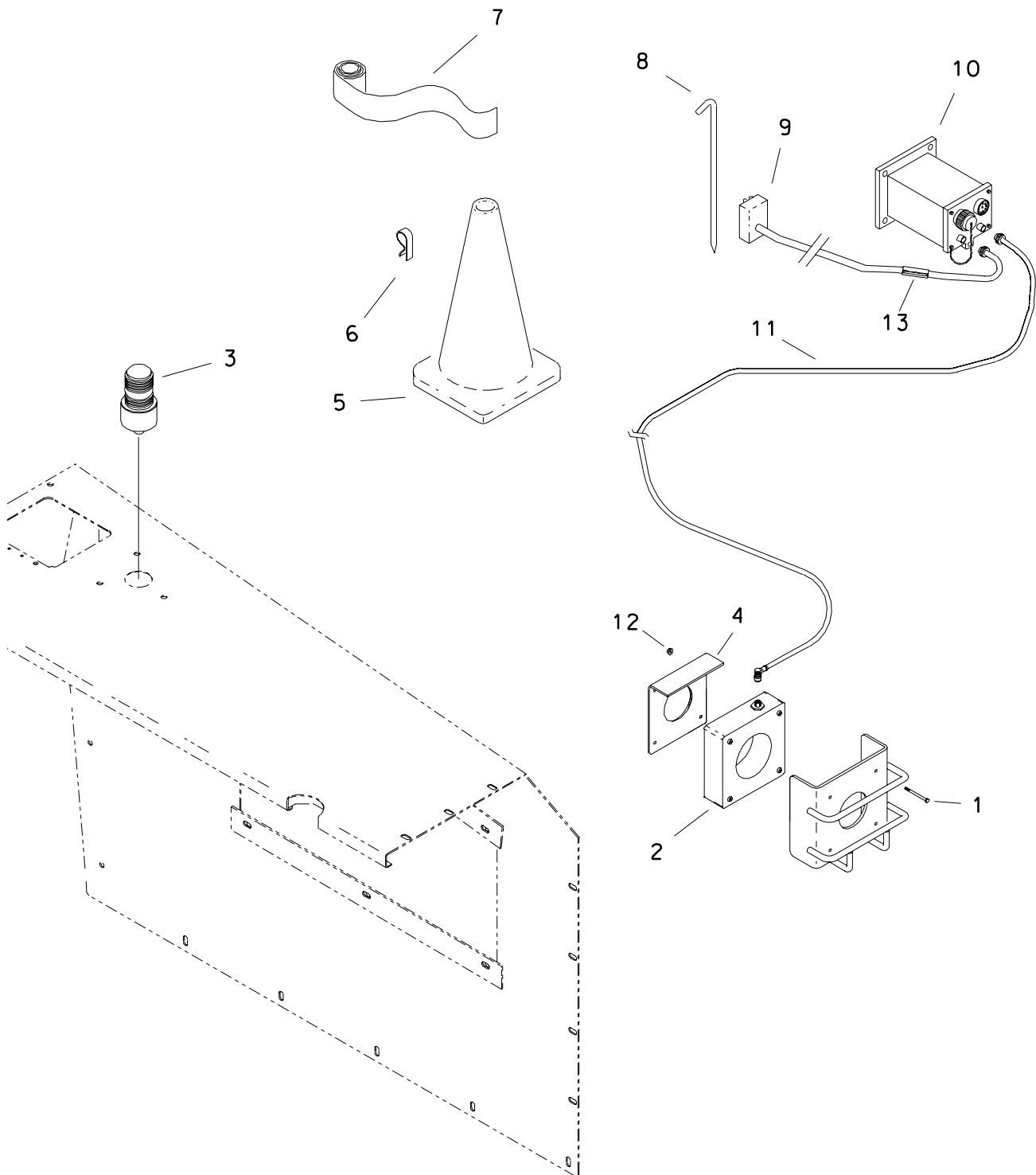
ENDS WITH S/N 2T3899

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-843	4	SCREW (M6-1.00 X 80MM)	
2.	116-283	4	RUBBER WASHER (.531")	
3.	216-023	1	CURRENT TRANSFORMER	SEE FOOTNOTE 1.
	216-064	1	CURRENT TRANSFORMER	
	211-083	1	CURRENT TRANSFORMER	
4.	217-041	1	STROBE LIGHT	INCL BULB & LENS
	217-720	1	BULB (12C DC)	
	217-124		LENS - AMBER	
5.	105-185	3	SCREW (#10-24 X 1/2", RD SLT)	
6.	106-048	3	LOCKNUT (#10-24)	
7.	116-376	4	SPACER	
8.	362-623	1	COIL COVER (BACK)	
9.	259-210	8	TRAFFIC CONE - ORANGE	
10.	259-234	8	CONE CLIP	
11.	260-223	1	BARRIER TAPE (1000', YELLOW)	
12.	215-799	1	VOLTAGE STAKE	
13.	216-032	1	VOLT LIMITER	
14.	214-429	-	CONTROL MODULE	
	217-232	-	CONTROL MODULE	
	197-431	-	CONTROL MODULE (REBUILT)	
	197-232	-	REBUILT CONTROL MODULE	
15.	214-421	1	EL STR SYSTM CABLE (8.8M)	
	214-550	1	EL STR SYSTM CABLE	
16.	215-476	3	RING TERMINAL (#10)	
17.	106-385	4	FLG LOCKNUT (M6-1.00)	
18.	217-331	1	SMALL FERRITE CLAMP-ON	

FOOTNOTES

1. REF 3 OBSOLETE. 216-023 REPLACED WITH 101-150.

ELECTRICAL STRIKE SYSTEM BEGINS WITH S/N: 2T3900



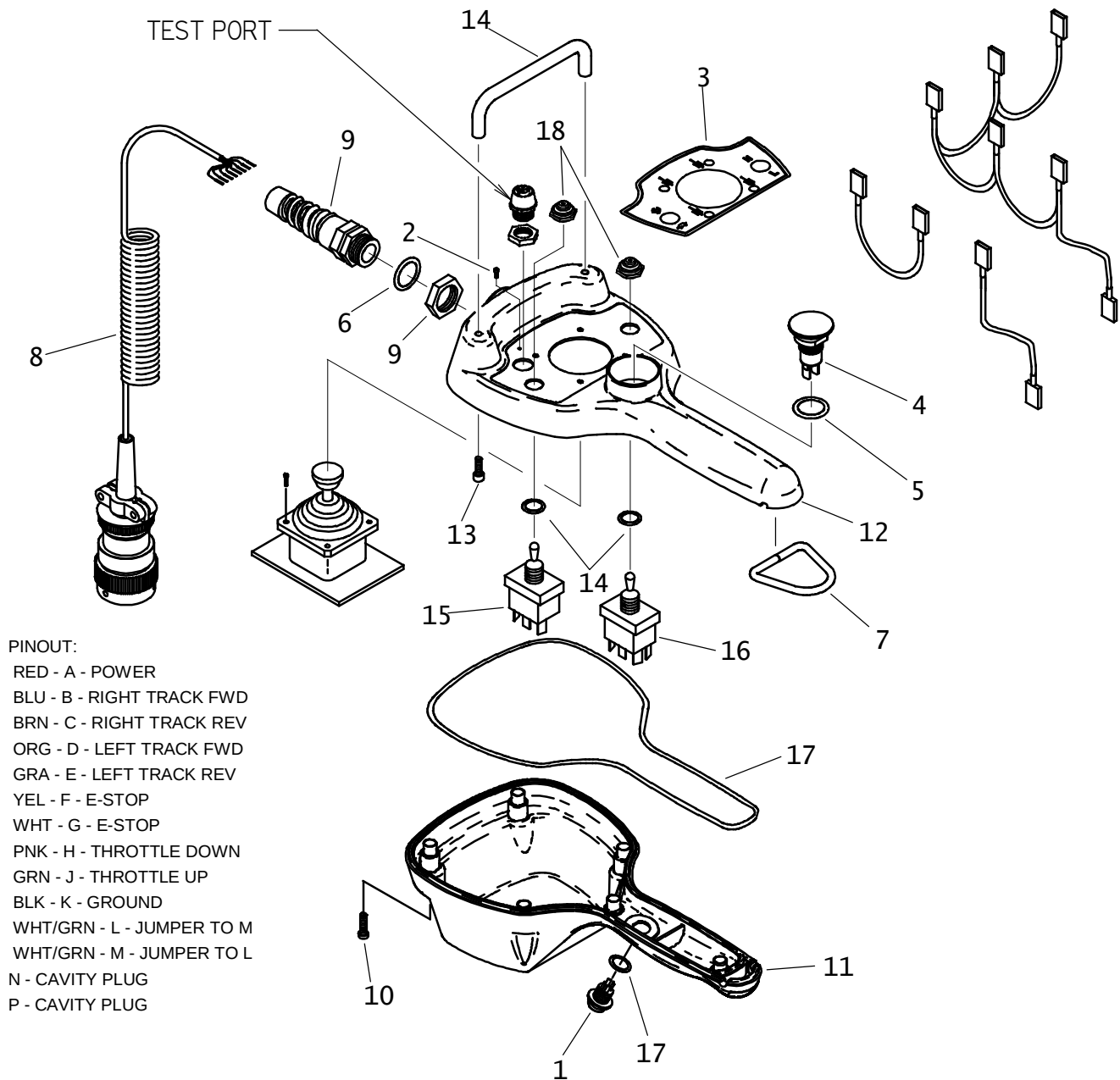
ELECTRICAL STRIKE SYSTEM

BEGINS WITH S/N: 2T3900

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-602	4	SCREW (M8-1.25 X 80MM)	
2.	216-064	1	CURRENT TRANSFORMER	
	211-083	1	CURRENT TRANSFORMER	
3.	214-722	1	STROBE LIGHT	INCL LOCKNUT
	217-870	1	STROBE LIGHT BULB	
	217-296	1	STROBE LIGHT AMBER MED PROFILE	
	214-991	-	REPLACEMENT FLASH TUBE	
	217-302	-	REPLACEMENT LENS (AMBER)	
	217-301	-	BRUSH GUARD	
	157-645	2	WEATHER-PAC SEAL (2.80MM)	
	214-103	1	2-WAY MALE CONNECTOR	
	214-104	2	PACKARD MALE TERMINAL	
4.	309-758	1	COVER	
5.	259-210	1	TRAFFIC CONE - ORANGE	
6.	259-234	8	CONE CLIP	
7.	260-223	1	BARRIER TAPE (1000', YELLOW)	
8.	215-799	1	VOLTAGE STAKE	
9.	211-042	1	VOLTAGE LIMITER CABLE	
10.	217-241	1	ESID MODULE	
11.	214-550	1	MOLDED CURRENT COIL CABLE	
12.	106-386	4	FLG LOCKNUT (M8-1.25)	
13.	217-331	1	SMALL FERRITE CLAMP-ON	

FOOTNOTES

GROUND DRIVE CONTROL



GROUND DRIVE CONTROL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-614	1	PUSH BUTTON SWITCH (SPST) OFF-(ON)	
2.	106-790	1	SCREW	
3.	214-998	1	DECAL	
4.	214-615	1	KILL SWITCH	
5.	157-040	1	O-RING	
6.	157-017	1	O-RING	
7.	105-775	1	D-RING	
8.	211-024	1	COILED CORD-FEMALE	
9.	211-021	1	STRAIN RELIEF	
10.	106-876	6	SCREW	
11.	214-497	1	LOWER HOUSING	
12.	214-498	1	UPPER HOUSING	
13.	116-933	1	HANDLE	
	106-894	2	SCREW (#8-32 X 1" PLPS SS)	SEE FOOTNOTE 1
14.	157-039	2	O-RING	
15.	217-896	1	TOGGLE SWITCH	
16.	214-570	1	TOGGLE SWITCH (DPDT) ON-OFF-ON	
17.	116-549	AR	ROPE GASKET (USE 27")	
18.	214-728	2	TOGGLE SWITCH HALF BOOT (SEAL)	

NOT SHOWN:

FOOTNOTES:

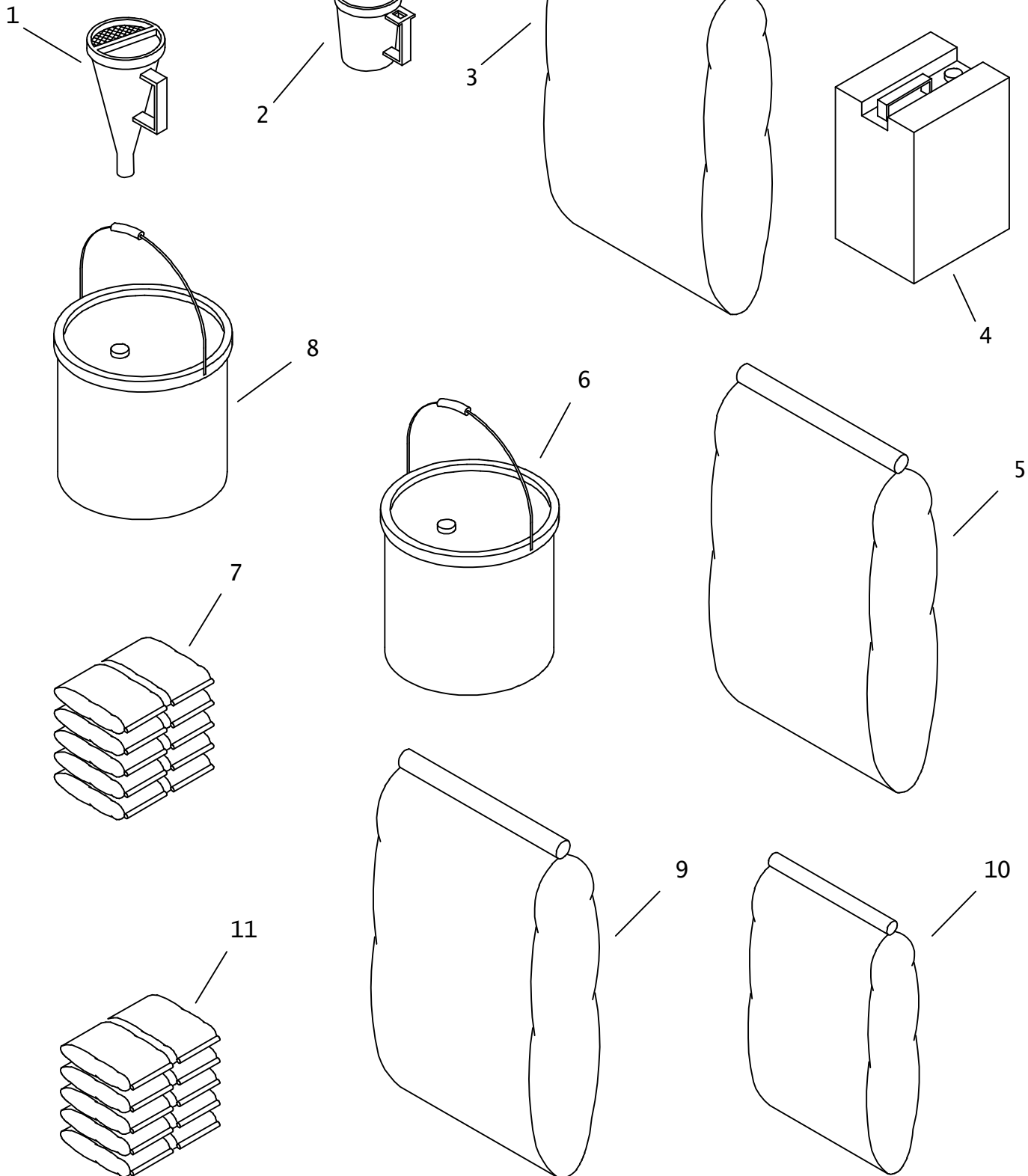
1. APPLY THREAD LOCKING COMPOUND TO BOTH HANDLE SCREWS.

NOTE:

NOTES:

ACCESSORIES

FLUID MIXING ACCESSORIES



FLUID MIXING ACCESSORIES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	259-195	1	VISCOSITY FUNNEL	
2.	259-196	1	VISCOSITY CUP	
3.	259-804	AR	BENTONITE, QUIK-GEL (50 LB)	
4.	259-805	AR	LIQUID POLYMER, EZ-MUD (5 GAL)	
5.	259-807	AR	BENTONITE, BORE-GEL (50 LB)	
6.	259-808	AR	VISCOSIFIER, LIQUI-TROL (5 GAL)	
7.	259-809	AR	POWDER POLYMER, QUIK-TROL (20 LB)	
8.	259-810	AR	WET AGENT, CON-DET (5 GAL)	
9.	259-821	AR	'PAC-R' FILTRATION CONTROL	
10.	259-822	AR	'BARAZAN D+' VISCOSIFIER	
11.	259-832	AR	'NO SAG' (20# BOX/10-2#BAGS)	

NOT SHOWN:

191-158	1	DRILLING FLUID TEST KIT
259-487	1	SHEAROMETER

FOOTNOTES:

NOTE:

NOTES:

MISCELLANEOUS

SAE Bolt and Nut Torque Value Chart

Grade 5: UNC or UNF Thread

Size	Hex nut, or bolt tapped into hex nut, or d&t hole		Hex top deformed locknut		Flange nut, locknut, or bolt tapped into flange nut or d&t* hole	
	ft•lb	N•m	ft•lb	N•m	ft•lb	N•m
1/4	12	16	8	11	20	27
5/16	25	34	15	20	45	60
3/8	40	54	25	34	75	100
7/16	65	90	40	55	125	170
1/2	100	135	60	80	190	260
9/16	150	200	90	125	270	370
5/8	200	270	120	165	370	500
3/4	350	475	210	285	650	880
7/8	560	760	340	460	1250	1425
1	840	1140	500	680	1580	2145
1-1/8	1030	1400	320	840	1950	3645
1-1/4	1460	1980	880	1195	2760	3475

Grade 8: UNC or UNF Thread

Size	Hex nut, or bolt tapped into hex nut, or d&t hole		Hex top deformed locknut		Flange nut, locknut, or bolt tapped into flange nut or d&t* hole	
	ft•lb	N•m	ft•lb	N•m	ft•lb	N•m
1/4	14	19	10	14	24	33
5/16	30	40	18	25	50	70
3/8	55	73	35	50	90	125
7/16	85	115	50	70	140	190
1/2	130	175	80	110	220	300
9/16	190	260	110	150	310	420
5/8	260	355	160	245	430	585
3/4	450	610	270	365	750	1015
7/8	730	990	440	600	1210	1640
1	1090	1480	650	880	1320	2465
1-1/8	1550	2100	930	1260	2580	3500
1-1/4	2180	2955	1310	1780	3640	4935

*drilled and tapped

Metric Bolt and Cap Screw Torque Values

Size	Class 4.8				Class 8.8 and 9.8				Class 10.9				Class 12.9			
	Lubricated		Dry		Lubricated		Dry		Lubricated		Dry		Lubricated		Dry	
	N•m	ft•lb	N•m	ft•lb	N•m	ft•lb	N•m	ft•lb	N•m	ft•lb	N•m	ft•lb	N•m	ft•lb	N•m	ft•lb
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	225	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1600	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

Do not use these values if a different torque value or tightening procedure is given for specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class fasteners.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to strength of original.

Make sure fastener threads are clean and that the threads are properly started. This will prevent them from cross threading or galling when tightened.

Tighten plastic insert or crimped type steel locknuts to approximately 50% of dry torque indicated on chart. Apply torque to the nut - not the bolt head. Tighten toothed or serrated type locknuts to full torque value.

LUBRICATED means coated with lubricant. DRY means plain or zinc plated without any type of lubricant.

Hydraulic Cylinder Bolt Torque Chart

Bolt Size (inch)	Bolt Part No.	Cylinder Repair Kit Part No.	Torque (ft•lb)	Torque (N•m)
1/2	106-096	190-165	90-100	120-135
5/8	106-097	190-166 & 190-169	180-200	245-270
3/4	106-098	190-167 & 190-170	290-325	395-440
7/8	106-122	190-172 & 190-174	410-640	550-625
1	106-145	190-175 & 190-189	630-700	855-950
1-1/8	106-146	190-177	770-850	1045-1170

As a general rule:

- 1/2-inch bolts are used in cylinders with 1-inch rods
- 5/8-inch bolts are used in cylinders with 1 1/4-inch rods
- 3/4-inch bolts are used in cylinders with 1 1/2-inch rods
- 7/8-inch bolts are used in cylinders with 1 3/4-inch rods
- 1-inch bolts are used in cylinders with 2-inch rods (one with 1 3/4-inch)
- 1-1/8-inch bolts are used in cylinders with 2-1/4-inch rods

IMPORTANT: Do not reuse cylinder piston bolts when rebuilding a hydraulic cylinder. Each cylinder repair kit contains a new bolt. Use it. Lubricate lightly and torque to value shown on chart.

SAE & ORS Hydraulic Fitting Replacement O-Ring Chart

Fraction Size	Dash Size	SAE (Port Seal O-Ring)		ORS (Face Seal O-Ring)	
		Thread Size	O-Ring P/N	Thread Size	O-Ring P/N
1/16	1	NA	NA	NA	NA
1/8	2	5/16 - 24	NA	NA	NA
3/16	3	3/8 - 24	NA	NA	NA
1/4	4	7/16 - 20	155-760	9/16 - 18	157-037
5/16	5	1/2 - 20	NA	NA	NA
3/8	6	9/16 - 18	155-705	11/16 - 16	157-038
1/2	8	3/4 - 16	155-706	13/16 - 16	157-039
5/8	10	7/8 - 14	155-707	1 - 14	157-040
3/4	12	1-1/16 - 12	155-709	1-3/16 - 12	157-017
7/8	14	1-3/16 - 12	155-747	NA	NA
1	16	1-5/16 - 12	155-748	1-7/16 - 12	155-714
1-1/4	20	1-5/8 - 12	155-702	1-11/16 - 12	NA
1-1/2	24	1-7/8 - 12	157-001	2 - 12	NA
2	32	2-1/2 - 12	NA	NA	NA
2-1/2	40	3 - 12	NA	NA	NA
3	48	3-1/2 - 12	NA	NA	NA

Thread size indicates the diameter of the threaded area in fractions of an inch and number of threads per inch.

NA = not a current CMW part numbered o-ring, or dash size does not occur in current CMW applications

SAE = straight thread fitting that seals by sandwiching a hard o-ring between a shoulder on the male part and an angular surface at the mouth of the female port.

ORS = o-ring face seal; a type of fitting that seals by compressing a hard, captive o-ring between two flat parallel faces, one grooved for the o-ring and the other plain to act as the sealing surface

JT1720

Related Publications

Component	Ass'y	P/N
Model:		
JT1720 Parts Manual		053-484
JT1720 Operators Manual		054-520
JT1720 Repair Guide (Service Manual)		055-515
JT1720 Supplementary Maint Guide - Trenchless		055-485
JT1720 Special Tools Guide		052-901
Engine:		
John Deere Parts Manual - 4045DF150	194-820	053-059
John Deere Operators Manual - 4045DF150		054-049
John Deere Service (Shop) Manual - 4045DF150		054-049

Filters

Engine:		
Air Filter Parts Ass'y		306-835
Element (primary)		197-763
Element (secondary)		197-764
Oil Filter Element (spin-on) - John Deere (4045DF150)		194-815
Fuel Filter Element (spin-on) - John Deere (4045DF150)		194-816
Fuel Strainer (04H)		156-268
Hydraulic:		
Oil Filter Element (1-1/2-UNF, spin-on, Replacement)		159-079
Element (1-1/2-UNF, spin-on, Break-In)		149-840
Water {H2O}:		
Water Strainer (2.250" x 7.0", 12 Mesh) - Y-Strainer		159-503

Optional Kits

O-ring Repair Kit - FLG, ORS & SAE (15 different O-rings)	190-051
O-ring Repair Kit - Field Service (46 different O-rings)	190-052


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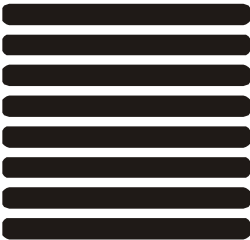
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