

# ***Ditch Witch***<sup>®</sup>

## **JT7020/JT8020 Mach 1**

ISSUE NO. 12PL-07/11

For Replacement Copy Order **P/N 053-074**

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

**US** 4,953,638; 5,148,880; 5,242,026; 5,341,887; 5,490,569; 5,684,466; 5,713,423, 5,740,703; 5,758,553; 5,794,719; 5,880,680; 5,941,322; 6,085,852C1; 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; 6,761,231; 6,776,246; 6,808,210; 6,827,158; 6,848,506; 6,871,712; 6,896,077; 7,000,710; 7,011,166; 7,013,990; 7,018,164; 7,025,152; 7,038,454; 7,111,693; 7,150,331; RE37,450; RE37,923; RE37,975; RE38,418

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

**CA** 2,156,398; 2,217,899

**FR** 674,093

**DE** 694 17 019; 695 29 634; 697 28 716;

**EP** 0927892; 1466068


**GB** 2,312,006; 2,418,553; EP674,093; EP817,901; EP846,841; EP927,892

**JP** 3,458,247

**Other U.S. and foreign patents pending**

This manual contains information concerning the following models:  
**JT7020 & JT8020 Mach 1 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.

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# FOREWORD

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

- ◆ Part numbers enclosed in a box 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 and Tech Bits articles referenced in footnotes are available through your local Ditch Witch dealer.
- ◆ Description 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.
- ◆ 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 ProTech 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 ProTech replacement parts.**

# WARRANTY

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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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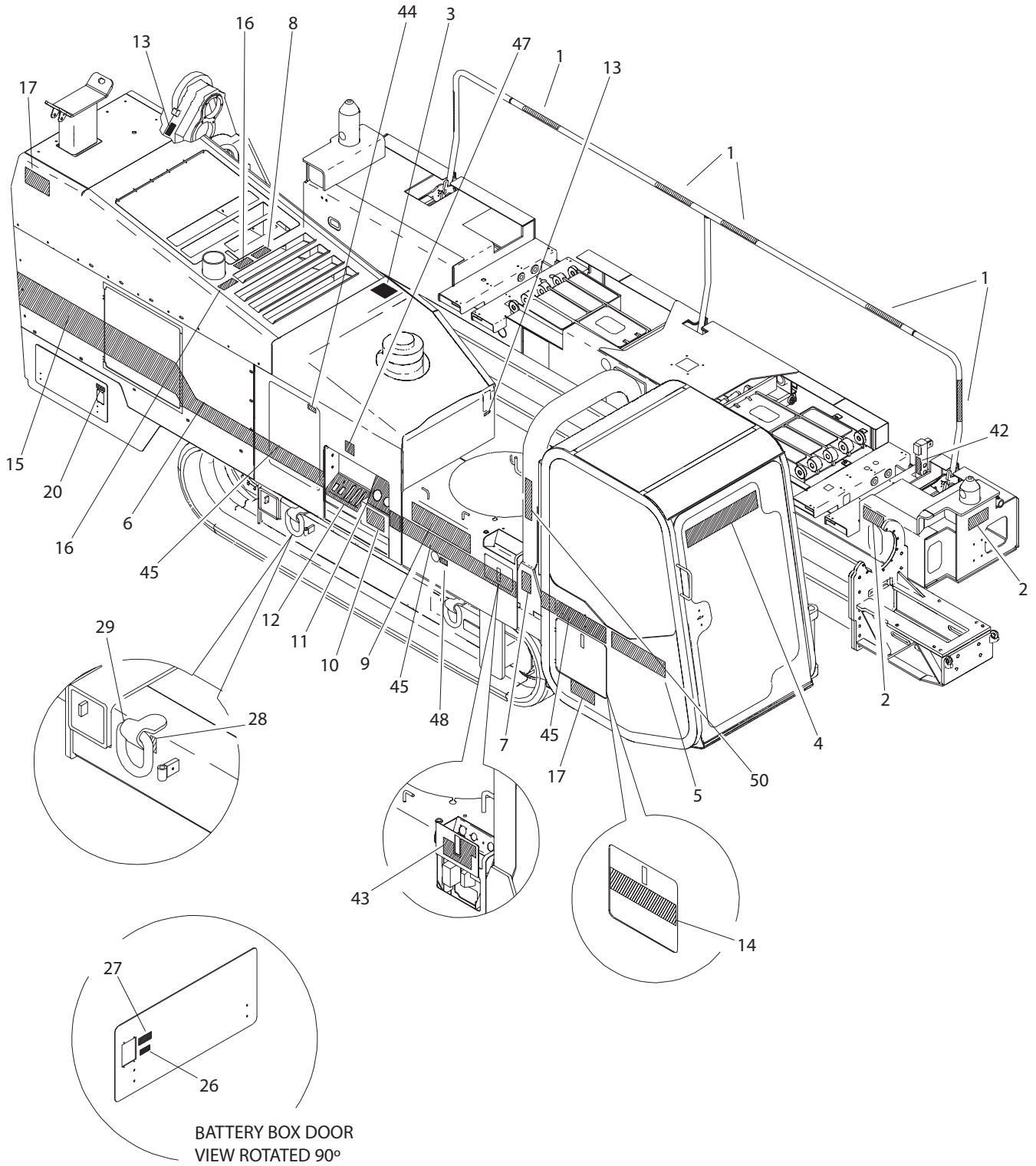
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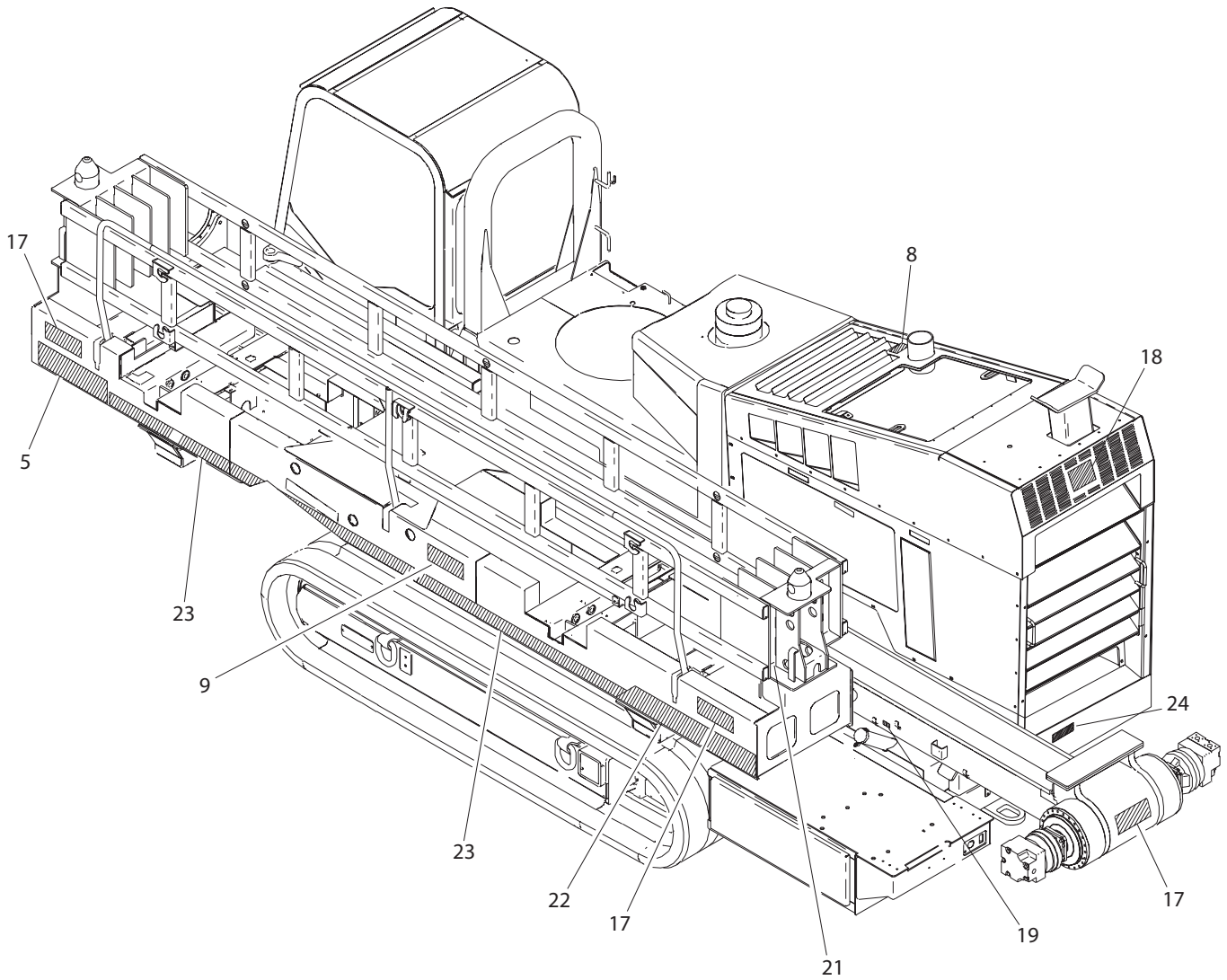


# DECALS

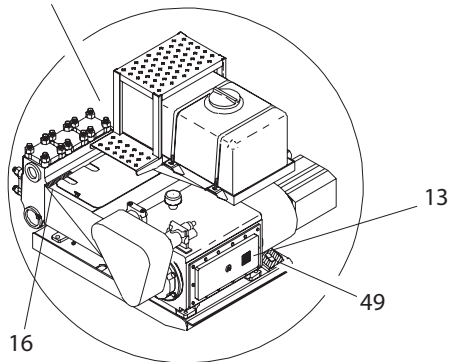
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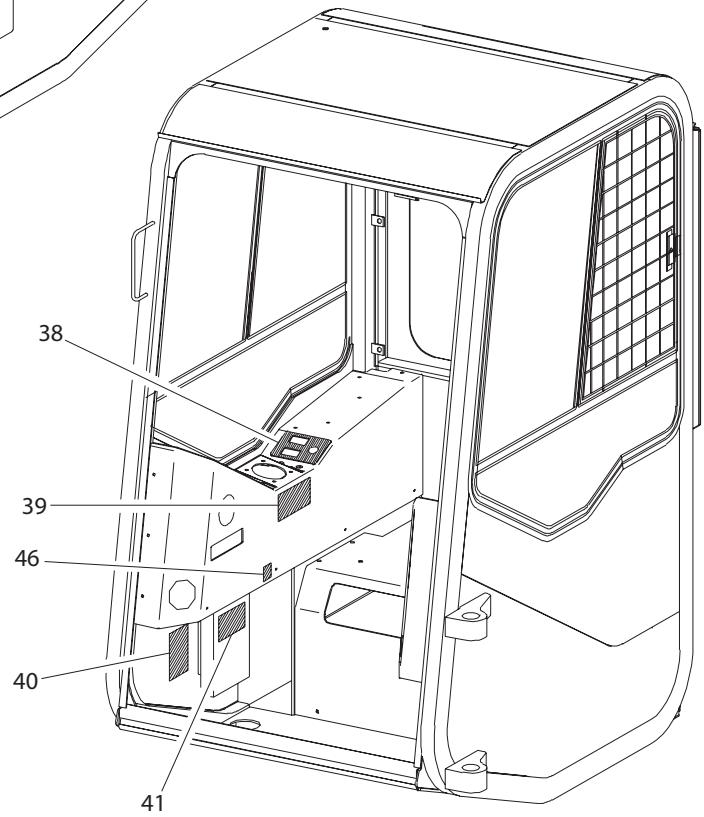
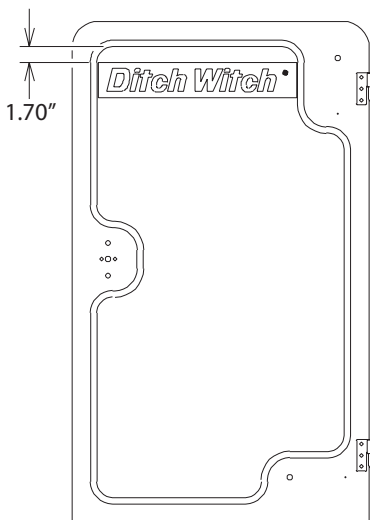
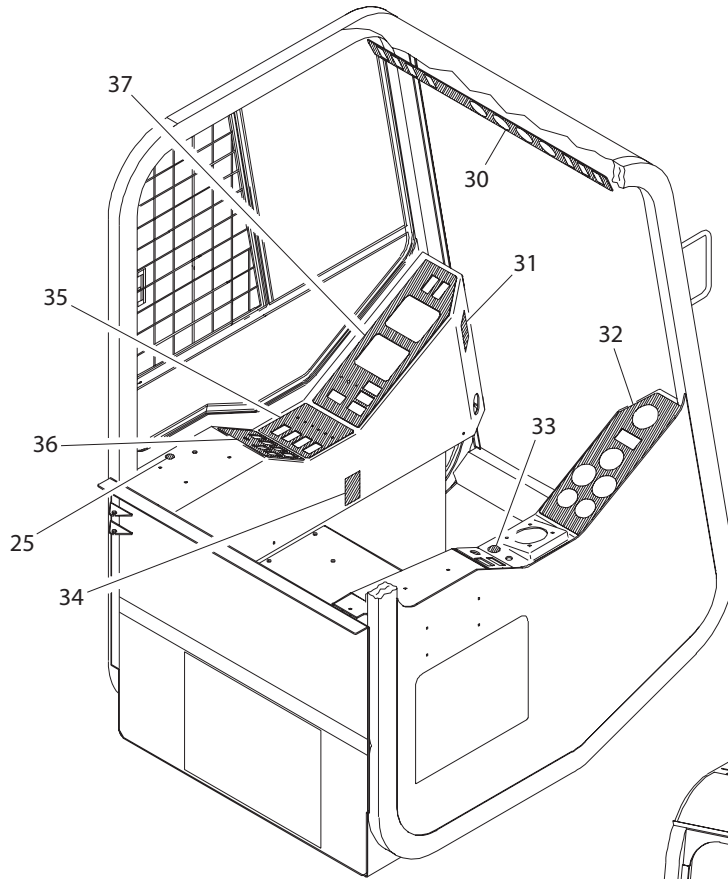
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**JT70M1 (ENDS WITH S/N 2V2567)**



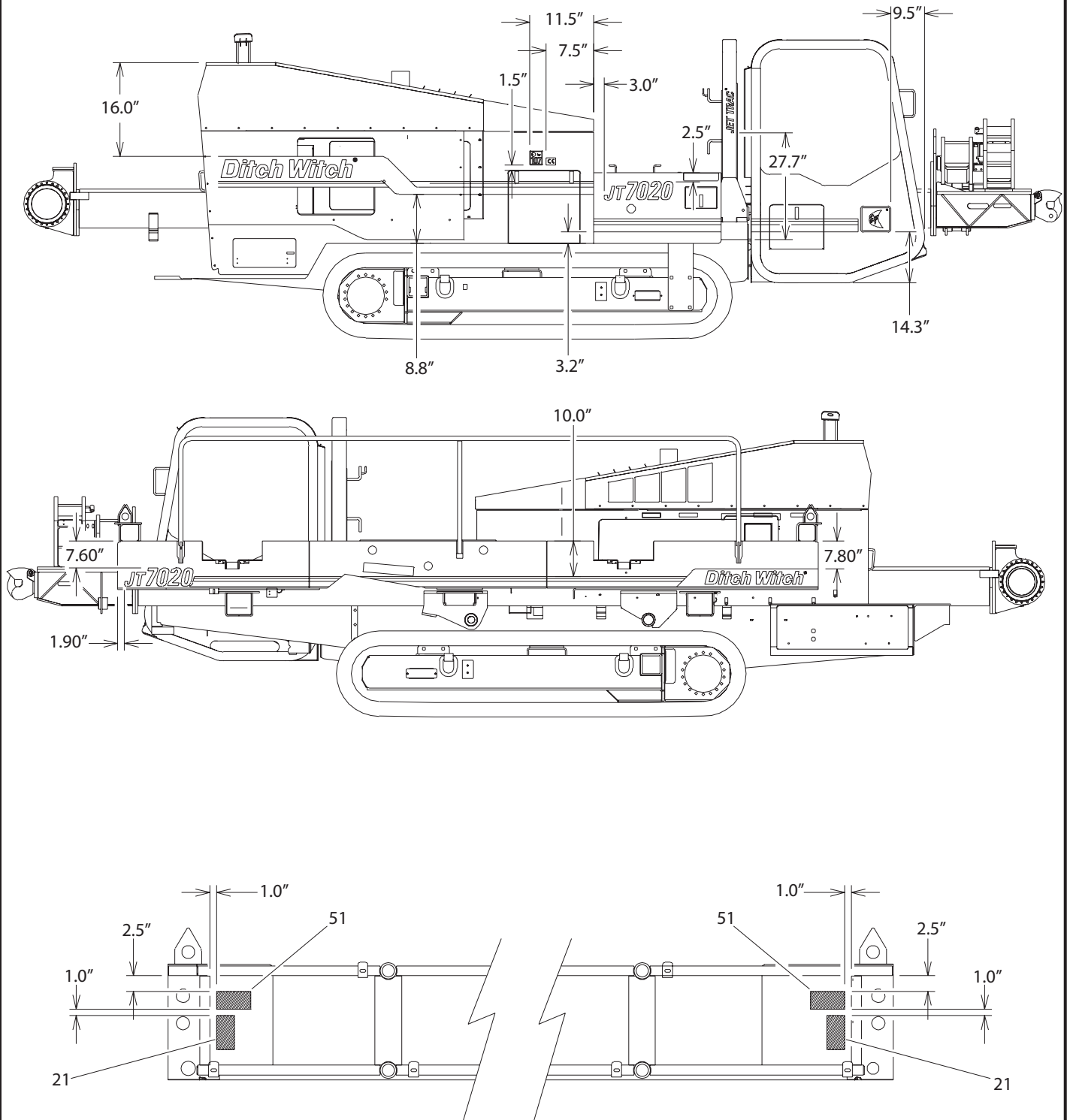
200 GPM MUD PUMP



# DECAL LOCATION JT70M1 (ENDS WITH S/N 2V2567)



# DECAL LOCATION JT70M1 (ENDS WITH S/N 2V2567)



## DECAL LOCATION

### JT70M1 (ENDS WITH S/N 2V2567)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-839		DECAL KIT - JT7020 MI	
1	275-230	6	DANGER STRIPE (1.75" X 18")	
2	275-197	2	DANGER ROTATING SHAFT	
3	275-120	1	RESERVOIR (THF)	
4	274-997	1	SEE-THRU LOGOTYPE	
5	273-156	2	MACH I IDENTIFIER	
6	273-155	1	RIGHT GRAPHIC STRIPE	
7	274-204	1	CRUSHING FORCE HAZARD ALERT	
8	273-138	1	NOTICE COOLANT	
9	274-871	2	JT7020 MODEL IDENTIFIER	
10	274-050	1	WARNING JOBSITE HAZARD	
11	700-029	1	GAUGE PANEL	
12	700-027	1	THROTTLE-LIGHTS-STABILIZERS	
13	275-023	3	OIL LEVEL	
14	273-154	1	ELECTRICAL PANEL	
15	274-872	1	DITCH WITCH GRAPHIC STRIPE	
16	275-149	2	COOLANT	
17	274-049	13	DANGER ELECTROCUTION	SEE FOOTNOTE 1
18	274-854	1	LOGO PLACARD	
19	275-148	1	FUEL TANK (DIESEL)	
20	275-203	1	BATTERY	
21	275-184	32	WARNING MOVING PARTS	4 PER PIPE BOX
22	274-876	1	DITCH WITCH GRAPHIC STRIPE	
23	274-877	AR	GRAPHIC STRIPE (SOLD PER INCH)	USE 138"
24	274-375	1	MASTER DISCONNECT SWITCH	
25	274-857	1	CAB SWING LOCK/UNLOCK	
26	275-419	1	WARNING NO FLAME	
27	275-033	1	NOTICE ELECTRICAL SYSTEM	
28	274-442	4	LIFT LOCATION	
29	274-318	4	TIE DOWN LOCATION	
30	700-023	1	TOP INSTRUMENT PANEL	
31	274-724	1	ONE CALL NOTIFICATION	
32	273-150	1	RIGHT INSTRUMENT PANEL	
33	275-222	1	ENGINE STOP	
34	274-852	1	CLIMATE CONTROL	
35	700-026	1	PIPE-MOBILE-WRENCHES	
36	700-025	1	PIPE-HORN-THROTTLE	
37	700-022	1	LEFT INSTRUMENT PANEL	
38	700-024	1	IGNITION-COLD START	
39	700-028	1	JOYSTICK CONTROL	
40	274-780	1	JET TRAC PATENT (S)	
41	275-048	1	IMPORTANT SAFETY RULES	
42	274-831	1	PIPE ROW INDICATOR	

#### FOOTNOTES

1. USE 8 FOR TRAFFIC CONES.
2. APPLY AROUND BACK OF OPERATOR'S STATION.
3. NOT PART OF KIT. FOR EUROPEAN UNITS ONLY.
4. LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.

## DECAL LOCATION JT70M1 (ENDS WITH S/N 2V2567)

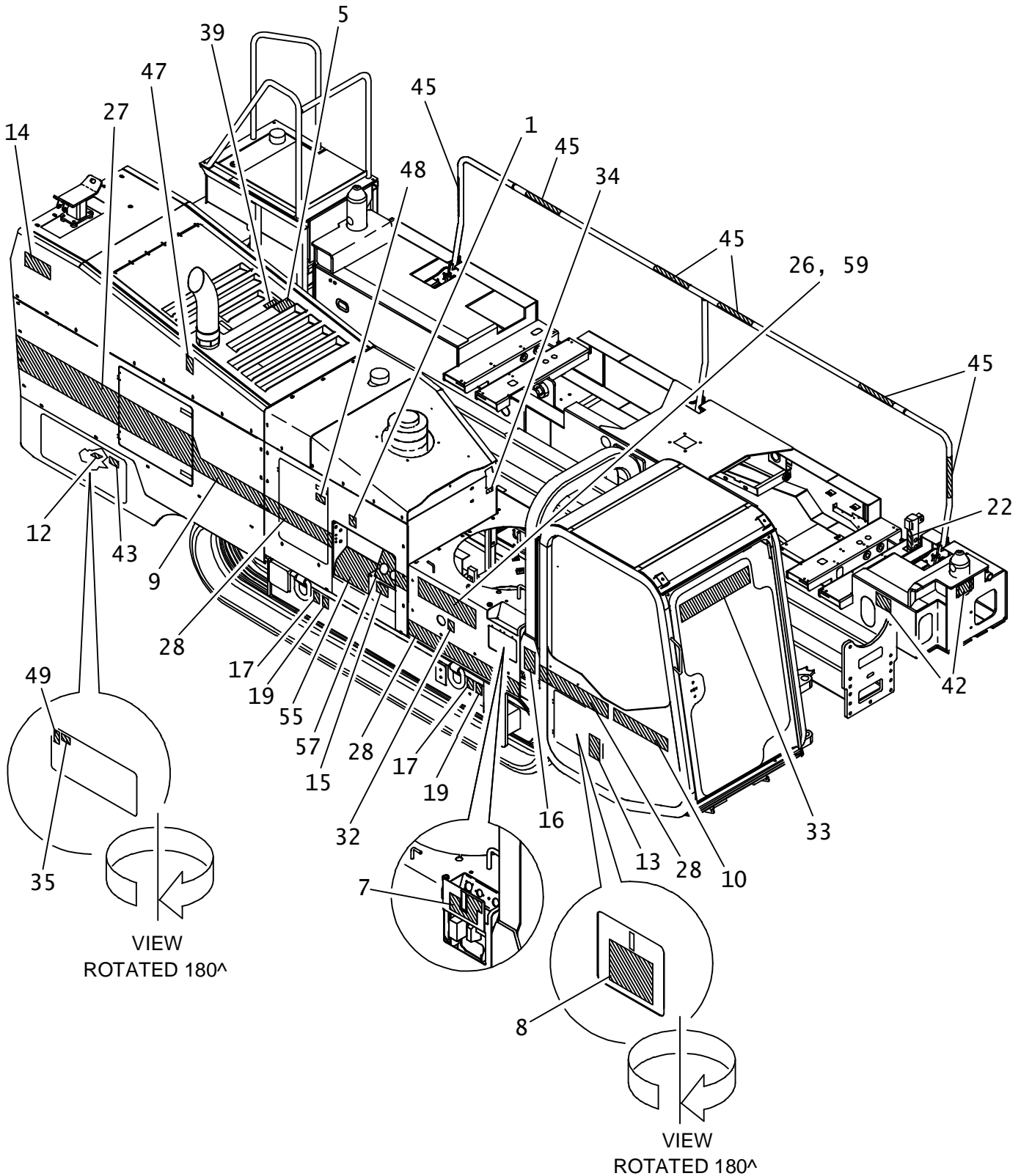
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
43	273-153	1	JT7020 MI FUSE PANEL	
44	275-400	1	NOTICE OIL LEVEL	
45	274-874	AR	GRAPHIC STRIPE (SOLD PER INCH)	USE 157"; SEE FOOTNOTE 2
46	274-923	1	POWER POINT	
47	273-016	1	SOUND POWER II (110 dBA)	SEE FOOTNOTE 3
48	274-933	1	LUBRICATION	
49	274-859	1	WASH WAND	
50	274-875	1	JET TRAC LOGOTYPE	
51	275-326	32	WARNING CRUSHING WEIGHT	4 PER PIPE BOX
52	273-267	1	BATTERY	SEE FOOTNOTE 4

### FOOTNOTES

1. USE 8 FOR TRAFFIC CONES.
2. APPLY AROUND BACK OF OPERATOR'S STATION.
3. NOT PART OF KIT. FOR EUROPEAN UNITS ONLY.
4. LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.

# DECAL LOCATION

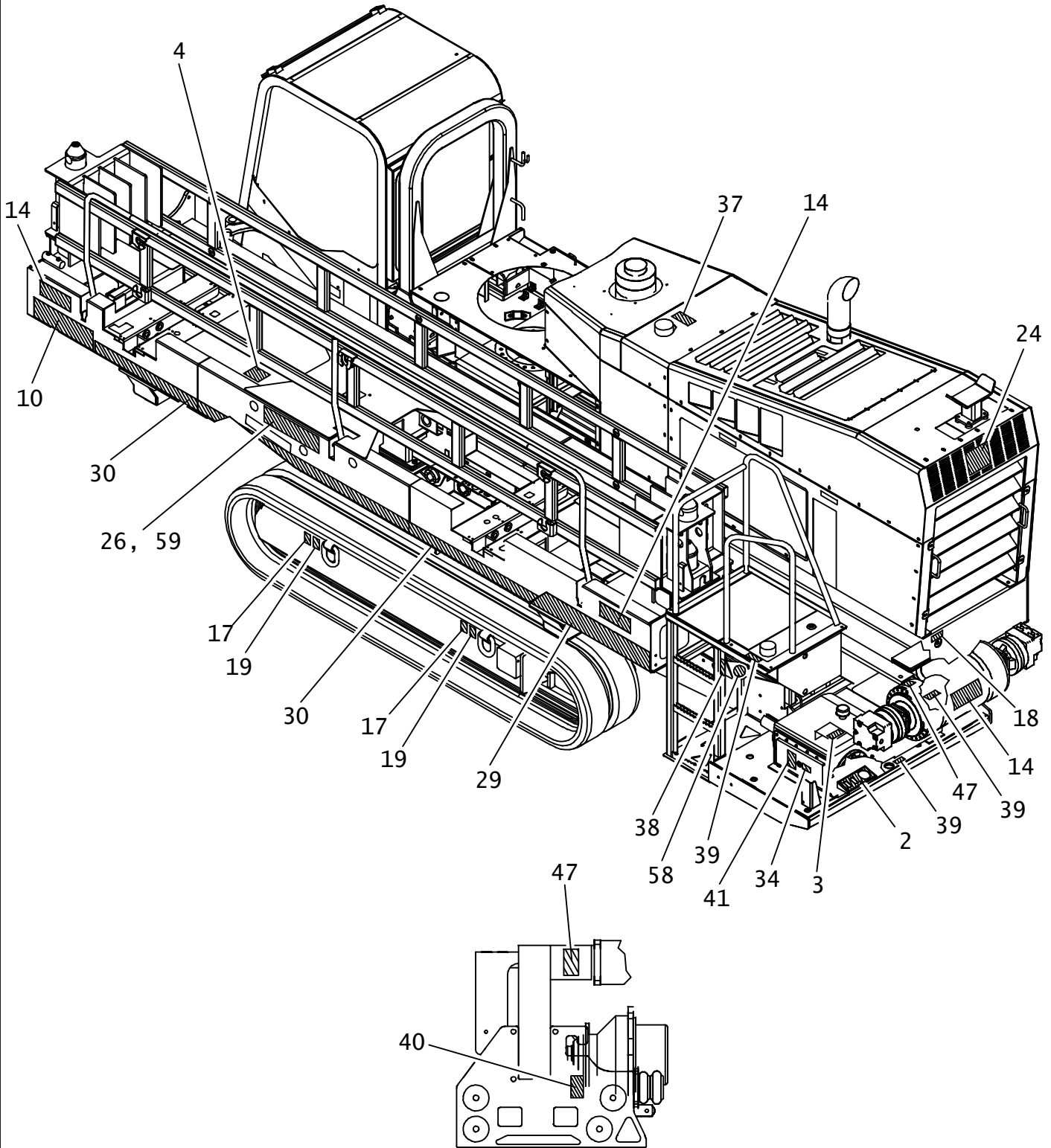
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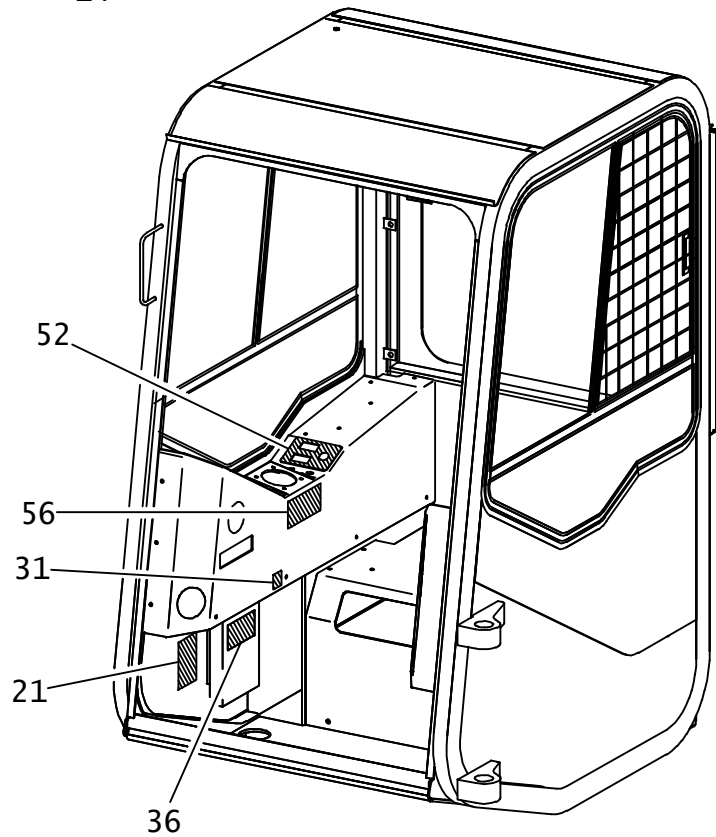
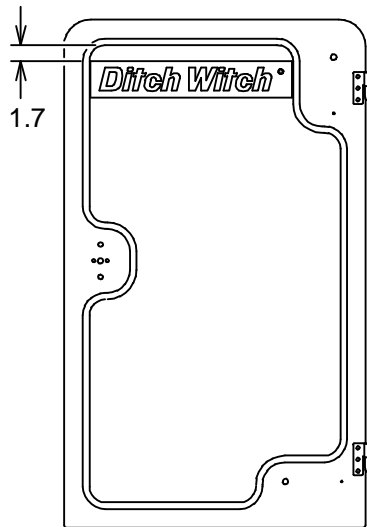
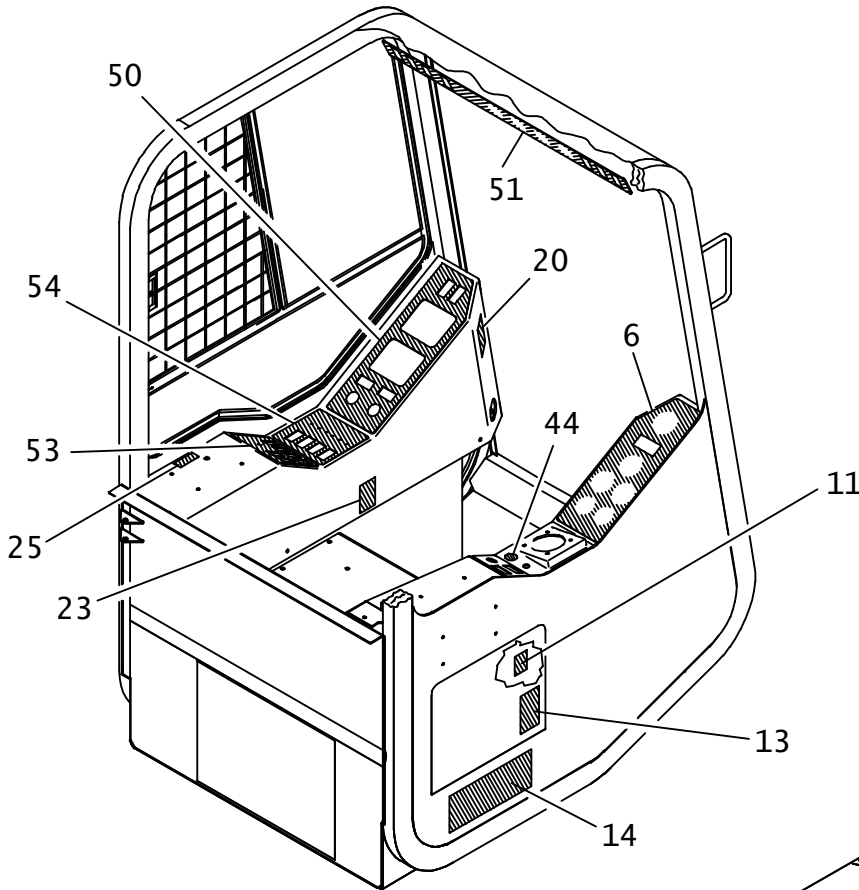
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BEGINS WITH S/N: 2W0856



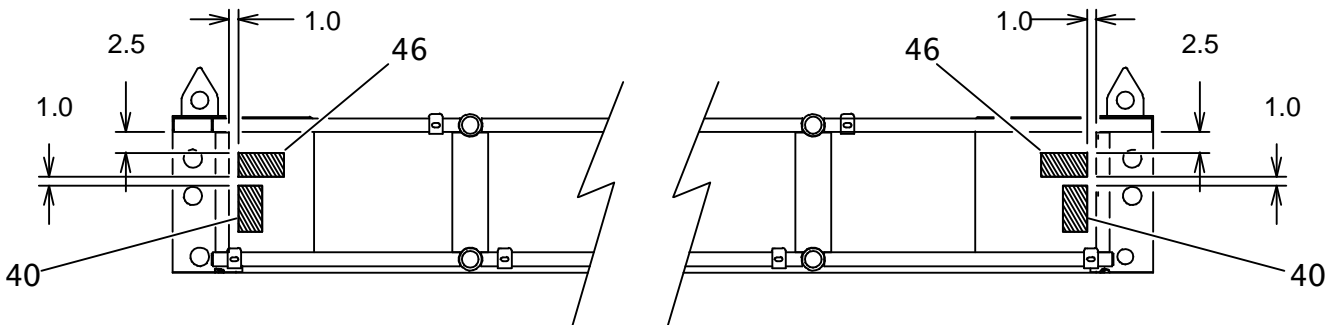
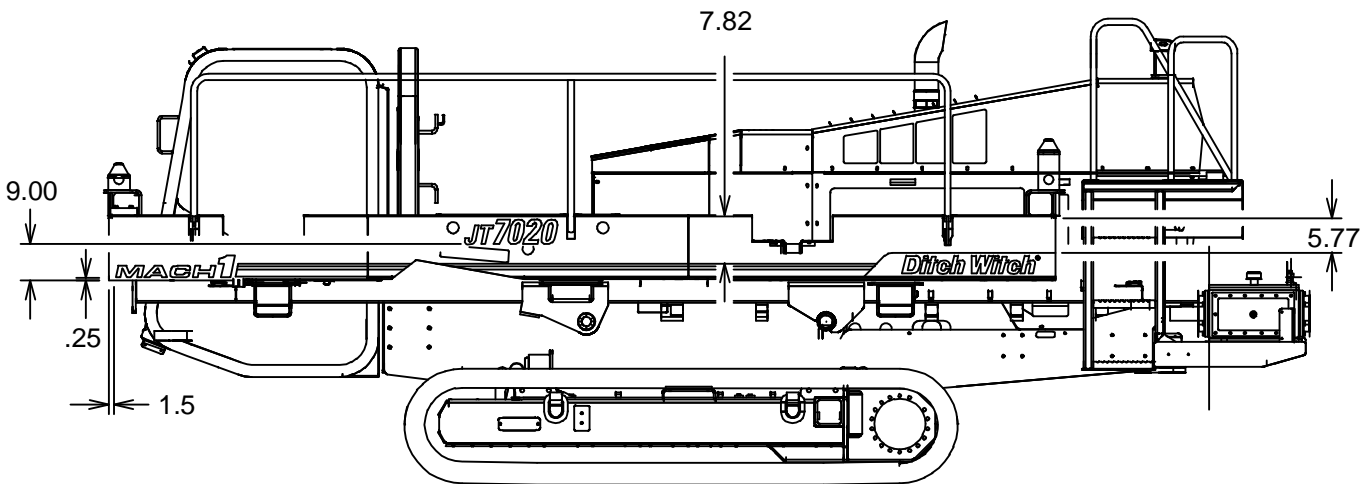
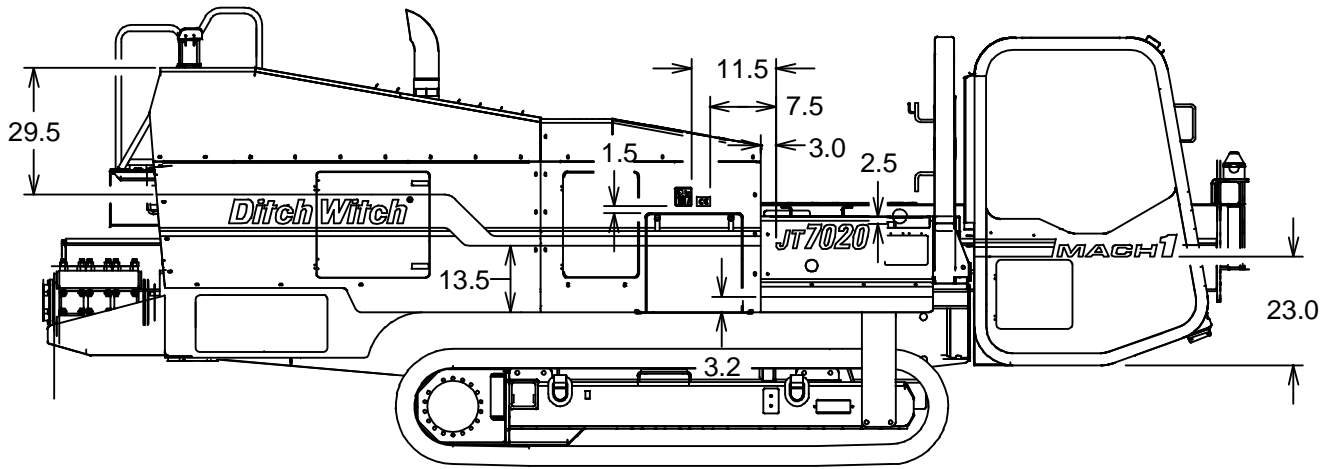
# DECAL LOCATION

BEGINS WITH S/N: 2W0856



# DECAL LOCATION

BEGINS WITH S/N: 2W0856



## DECAL LOCATION

BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-889		DECAL KIT - JT7020M1	
	275-980		DECAL KIT - JT8020M1	
1.	273-016	1	SOUND POWER 11	SEE FOOTNOTE 2
2.	273-117	1	WORKLIGHTS/WASH WAND	
3.	273-128	1	NO STEP	
4.	273-129	1	JT70M1 SOLENOID VALVE	
5.	273-138	1	NOTICE COOLANT	
6.	273-150	1	RIGHT INSTRUMENT PANEL	
7.	273-153	1	JT7020 M1 FUSE PANEL	
8.	273-154	1	JT7020 M1 ELEC. PANEL	
9.	273-155	1	RIGHT GRAPHIC STRIPE	
10.	273-156	2	MACH 1 IDENTIFIER	
11.	273-198	1	TRACKER CONTROL	
12.	273-267	1	DITCH WITCH BATTERY	SEE FOOTNOTE 3
13.	273-278	1	DANGER WRENCH	
14.	274-049	5	DANGER ELECTROCUTION	
15.	274-050	1	WARNING JOBSITE HAZARD	
16.	274-204	1	CRUSHING FORCE HAZARD ALERT	
17.	274-318	4	TIE DOWN LOCATION	
18.	274-375	1	MASTER DISCONNECT SWITCH	
19.	274-442	4	LIFT LOCATION	
20.	274-724	1	ONE CALL NOTIFICATION	
21.	274-780	1	JET TRAC PATENT(S)	
22.	274-831	1	PIPE ROW INDICATOR	
23.	274-852	1	CLIMATE CONTROL	
24.	274-854	1	LOGO PLACARD	
25.	274-857	1	CAB SWING LOCK/UNLOCK	
26.	274-871	2	JT7020 MODEL IDENTIFIER	
27.	274-872	1	DITCH WITCH GRAPHIC STRIPE	
28.	274-874	1	GRAPHIC STRIPE (SOLD PER INCH)	USE 157"; SEE FOOTNOTE 1
29.	274-876	1	DITCH WITCH GRAPHIC STRIPE	
30.	274-877	1	GRAPHIC STRIPE (SOLD PER INCH)	USE 138"
31.	274-923	1	POWER POINT	
32.	274-933	1	LUBRICATION	
33.	274-997	1	SEE-THRU LOGOTYPE	
34.	275-023	2	OIL LEVEL	
35.	275-033	1	NOTICE ELECTRICAL SYSYTEM	
36.	275-048	1	IMPORTANT SAFETY RULES	
37.	275-120	1	RESERVOIR (THF)	
38.	275-148	1	FUEL TANK (DIESEL)	
39.	275-149	4	COOLANT	
40.	275-184	33	WARNING MOVING PARTS	4 PER PIPE BOX

### FOOTNOTES

1. APPLY AROUND BACK OF OPERATOR STATION.
2. NOT PART OF KIT, FOR EUROPEAN UNITS ONLY.
3. LOCATE DECAL ON BATTERY SO THAT IT IS VISIBLE WHEN VIEWING BATTERY.

NOTE:

## DECAL LOCATION

BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
41.	275-185	1	WARNING SINGLE OPERATOR	
42.	275-197	2	DANGER ROTATING SHAFT	
43.	275-203	1	BATTERY	
44.	275-222	1	ENGINE STOP	
45.	275-230	6	DANGER STRIPE 1.75" X 18"	
46.	275-326	32	WARNING CRUSHING WEIGHT	4 PER PIPE BOX
47.	275-355	3	CAUTION HOT PARTS	
48.	275-400	1	NOTICE OIL LEVEL	
49.	275-419	1	WARNING NO FLAME	
50.	700-022	1	LEFT INSTRUMENT PANEL	
51.	700-023	1	TOP INSTRUMENT PANEL	
52.	700-024	1	IGNITION-COLD START	
53.	700-025	1	PIPE-HORN-THROTTLE	
54.	700-026	1	PIPE-MOBILE-WRENCHES	
55.	700-027	1	THROTTLE-LIGHTS-STABILIZERS	
56.	700-028	1	JOYSTICK CONTROL	
57.	700-029	1	GAUGE PANEL	
58.	700-062	1	DIESEL FUEL CAP	
59.	700-231	2	JT8020 MODEL IDENTIFIER	BEGINS WITH S/N:

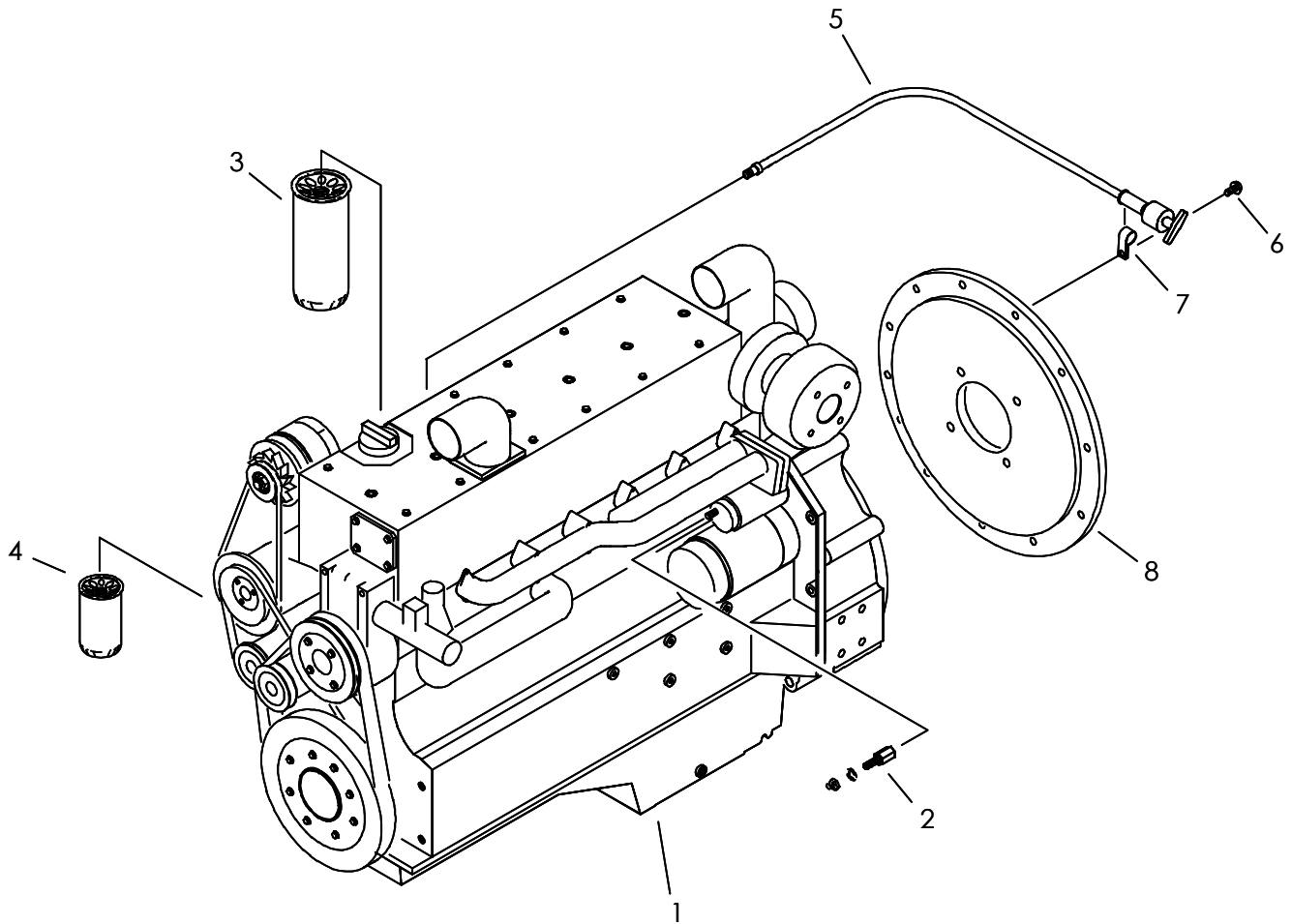
FOOTNOTES

NOTE:

<b>NOTES:</b>

# **ENGINE COMPONENTS**

# ENGINE





# ENGINE

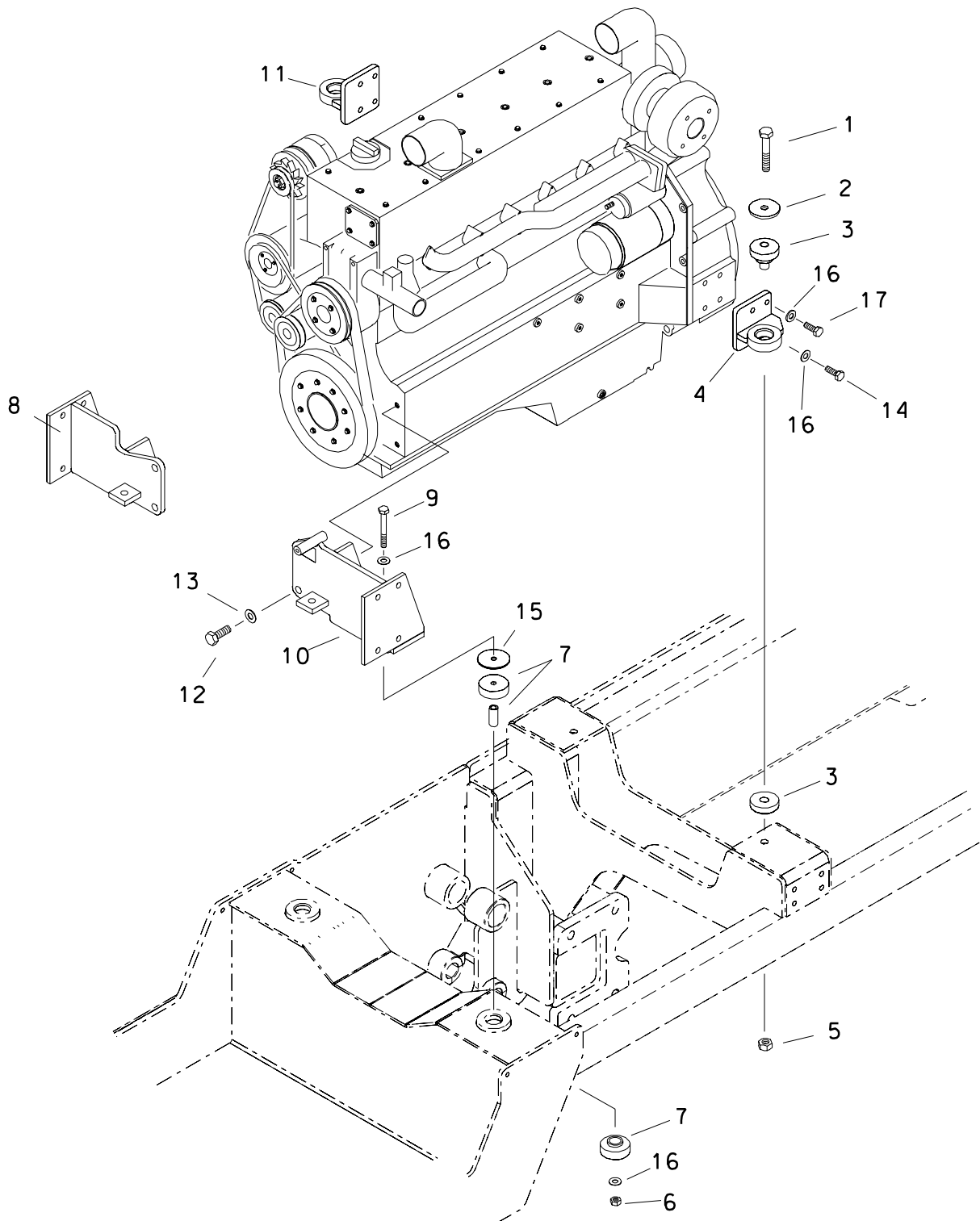
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-086	1	ENGINE - DEUTZ DIESEL TIER 1	OBSOLETE, INCL REF NO'S 3 & 4
	194-372	1	ENGINE - DEUTZ DIESEL TIER 2	OBSOLETE, INCL REF NO'S 3 & 4
	159-435	-	FUEL PRE-FILTER ELEMENT	
	153-272	-	GASKET, THERMOSTAT	
	170-363	-	BELT, ALTERNATOR	
	170-364	-	BELT, WATER PUMP	
	170-377	-	JOINED FAN BELT	
	194-833	-	STARTER, ENGINE	
	194-203	-	WATER PUMP	
	215-283	-	THERMOSTAT	
	194-836	-	FUEL LIFT PUMP	
	194-837	-	CHECK VALVE, FUEL GALLEY	
	194-838	-	GASKET, EXHAUST MANIFOLD	
	194-839	-	GASKET, EXHAUST FLANGE	
	194-840	-	RUBBER MANIFOLD	194-086 ENGINE - TIER 1
	194-568	-	RUBBER MANIFOLD	194-372 ENGINE - TIER 2
	215-284	-	ALTERNATOR	
	214-636	-	OIL PRESSURE SENDER	
	214-637	-	TEMPERATURE SWITCH	
	054-119	-	DEUTZ 1013 OPERATION MANUAL	
2.	159-448	1	ADAPTER	
3.	159-332	1	OIL FILTER ELEMENT (SPIN-ON)	
4.	159-334	1	FUEL FILTER ELEMENT - CARTRIDGE	
5.	194-792	1	FLUID LEVEL INDICATOR	
6.	106-383	-	FLG LK SCREW (M10-1.50 X 30MM)	USE LOCTITE 242 OR EQUIVALENT
7.	110-333	1	BOLT-ON CLAMP (1")	
8.	349-001	-	FLYWHEEL HOUSING COVER	

NOT SHOWN:

FOOTNOTES:

NOTE:

## ENGINE MOUNT

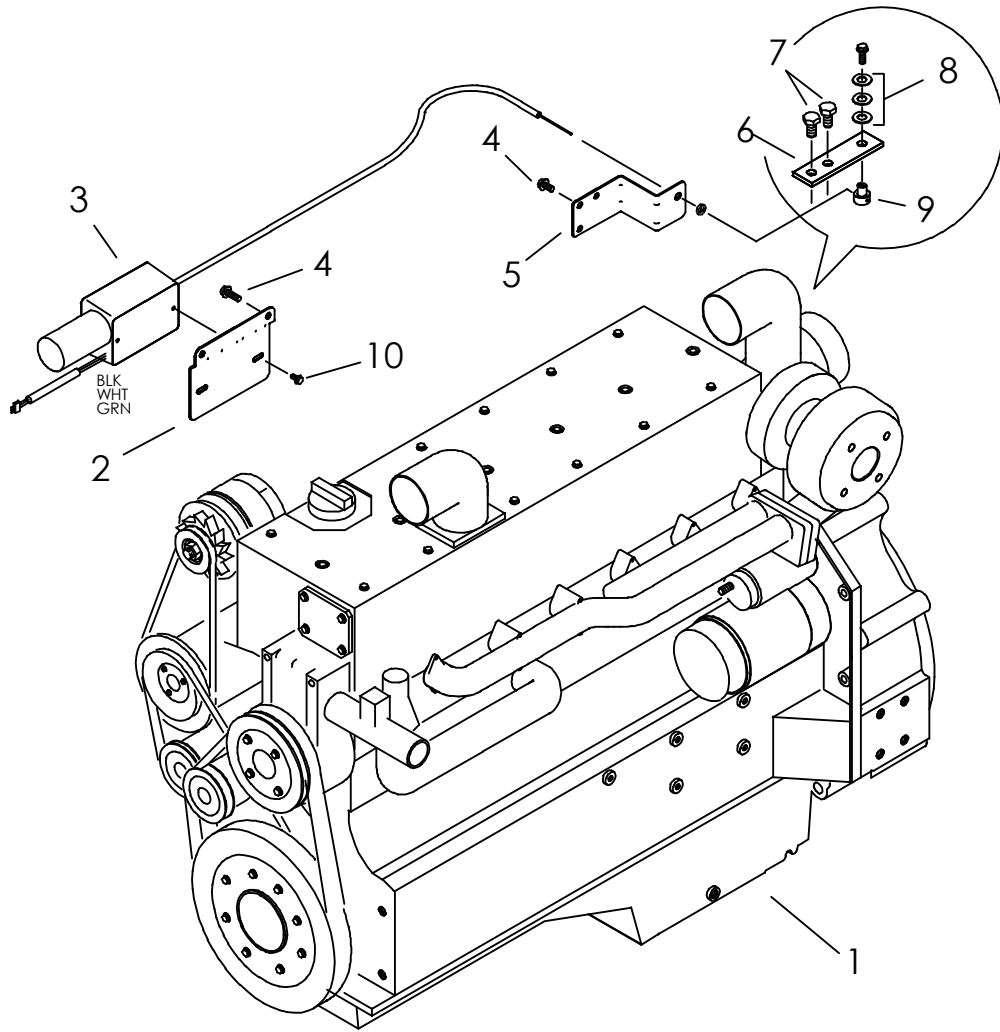


# ENGINE MOUNT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	107-144	2	SCREW (M16-2.00 X 100mm)	
2.	105-964	2	WASHER (.656")	
3.	116-691	2	SHOCK MOUNT (REAR)	
4.	349-078	1	LEFT REAR ENGINE MOUNT	
5.	106-545	2	LOCKNUT (M16-2.0,PRV TRQ,10.9)	
6.	106-685	2	LOCKNUT (M12-1.75, PRV TRQ,10.9)	
7.	116-690	2	SHOCK MOUNT (FRONT)	
8.	308-694	1	RIGHT FRONT ENGINE MOUNT	
9.	106-336	2	SCREW (M12-1.75 X 90mm)	
10.	308-693	1	LEFT FRONT ENGINE MOUNT	
11.	349-077	1	RIGHT REAR ENGINE MOUNT	
12.	105-998	4	SCREW (M16-2.00 X 40mm)	TORQUE TO 140 FT LBS; USE LOCTITE 242 OR EQUIVALENT
13.	106-398	4	WASHER (M16, HARDENED)	
14.	105-273	4	SCREW (M12-1.75 X 30mm)	TORQUE TO 60 FT LBS; USE LOCTITE 242 OR EQUIVALENT
15.	178-072	2	WASHER	
16.	106-397	12	WASHER (M12, HARDENED)	
17.	106-333	4	SCREW (M12-1.75 X 40MM, 8.8)	TORQUE TO 60 FT LBS; USE LOCTITE 242 OR EQUIVALENT

FOOTNOTES

# THROTTLE



# THROTTLE

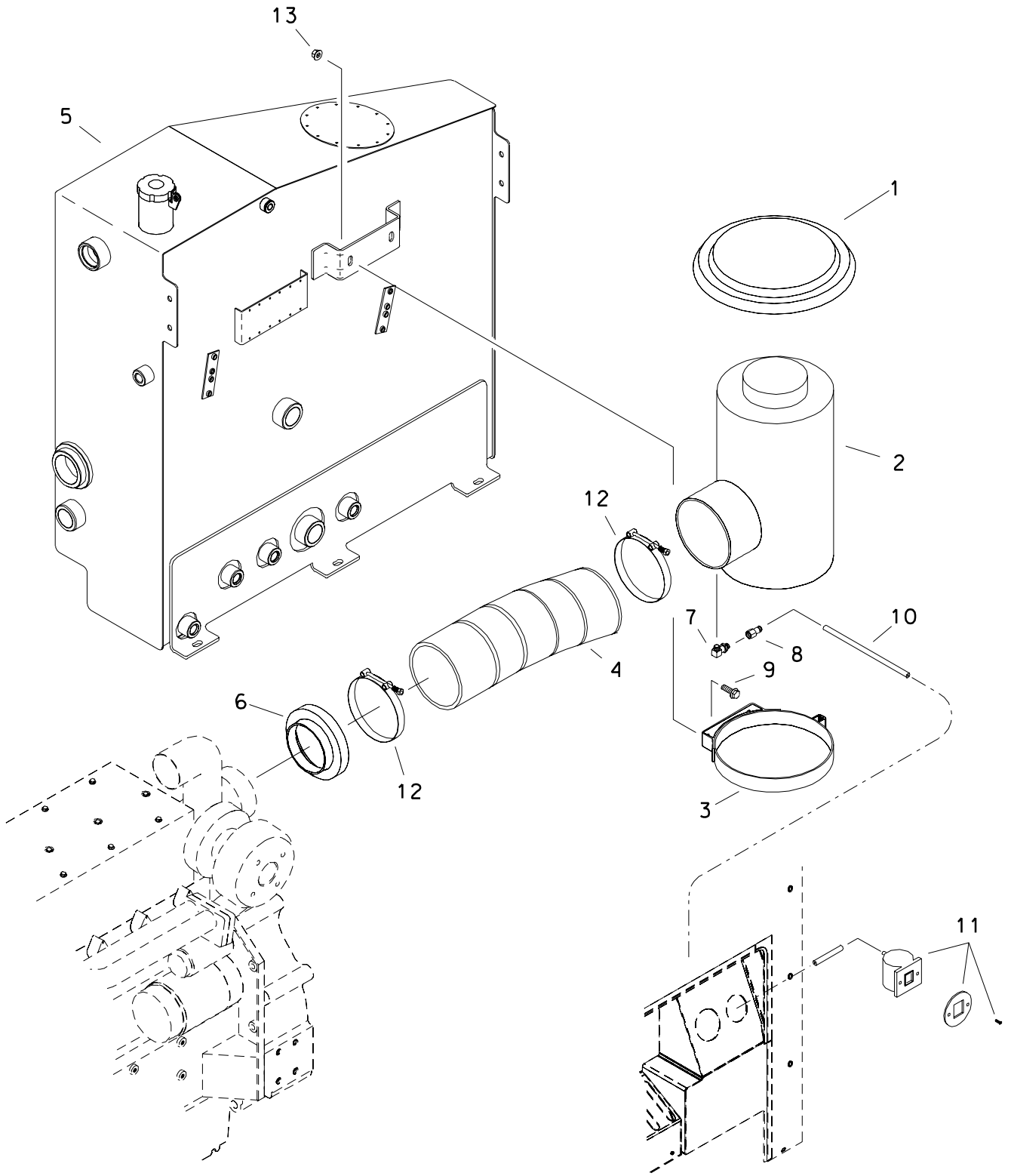
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-086	-	ENGINE, DEUTZ	OBSOLETE
	194-372	-	ENGINE - DEUTZ DIESEL T2	OBSOLETE
2.	349-012	1	MOUNT PLATE	
3.	215-231	1	LINEAR ACTUATOR	
	214-299	-	ACTUATOR PIGTAIL	
4.	106-380	5	FLG LK SCREW (M8-1.25 X 16MM)	
5.	349-014	1	CABLE MOUNT	
6.	349-826	1	SWIVEL ARM	
7.	106-378	2	FLG LK SCREW (M6-1.00 X 12MM)	
8.	106-388	3	WASHER (M6)	
9.	196-058	1	CABLE SWIVEL (.081")	
10.	105-836	2	FLG LOCK BOLT (1/4-NC X 1/2")	

NOT SHOWN:

FOOTNOTES:

NOTE:

# AIR FILTER SYSTEM

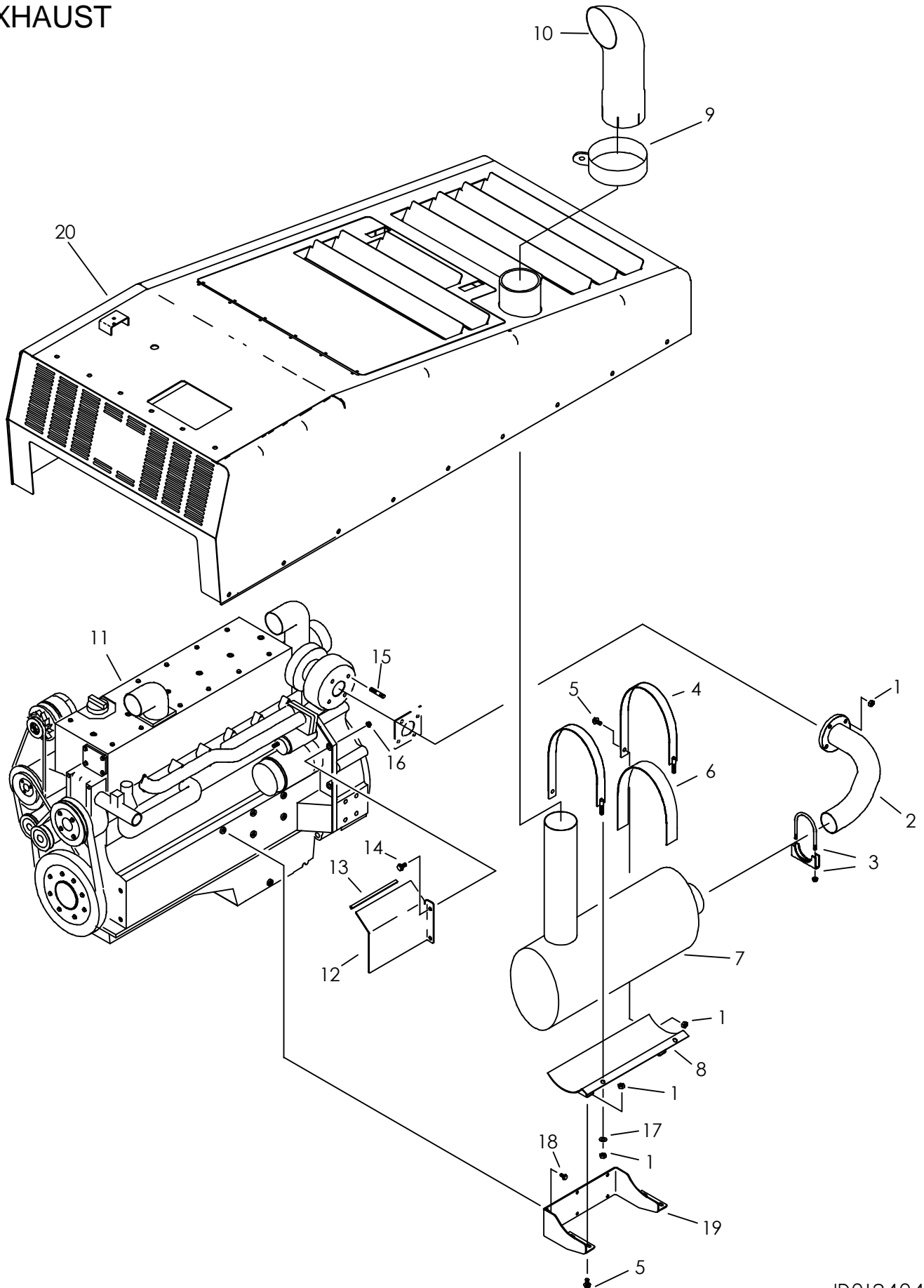


# AIR FILTER SYSTEM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	196-317	1	STACK CAP (5")	
2.	195-448	1	AIR FILTER	
	194-822		AIR FILTER ELEMENT	
3.	195-705	1	MOUNTING CLAMP (9.000")	
4.	116-695	1	AIR INTAKE HOSE	AIR CLEANER TO TURBO
5.	370-403	1	HYDRAULIC RESERVOIR	
6.	349-009	1	SLEEVE	
7.	156-228	1	ELBOW (02NF-02NF90)	
8.	155-150	1	S/O COUPLER (02N-02H)	
9.	106-382	2	FLG LK SCREW (M10-1.50 X 20mm)	
10.	116-192	AR	BULK HOSE (7/64", SOLD PER 1")	USE 1 @ 40"
11.	215-150	1	RESTRICTION INDICATOR (20", H2O)	
12.	110-986	2	T-BOLT CLAMP (6" - 6.24")	
13.	106-387	2	FLG LOCKNUT (M10-1.50)	

FOOTNOTES

# EXHAUST





# EXHAUST

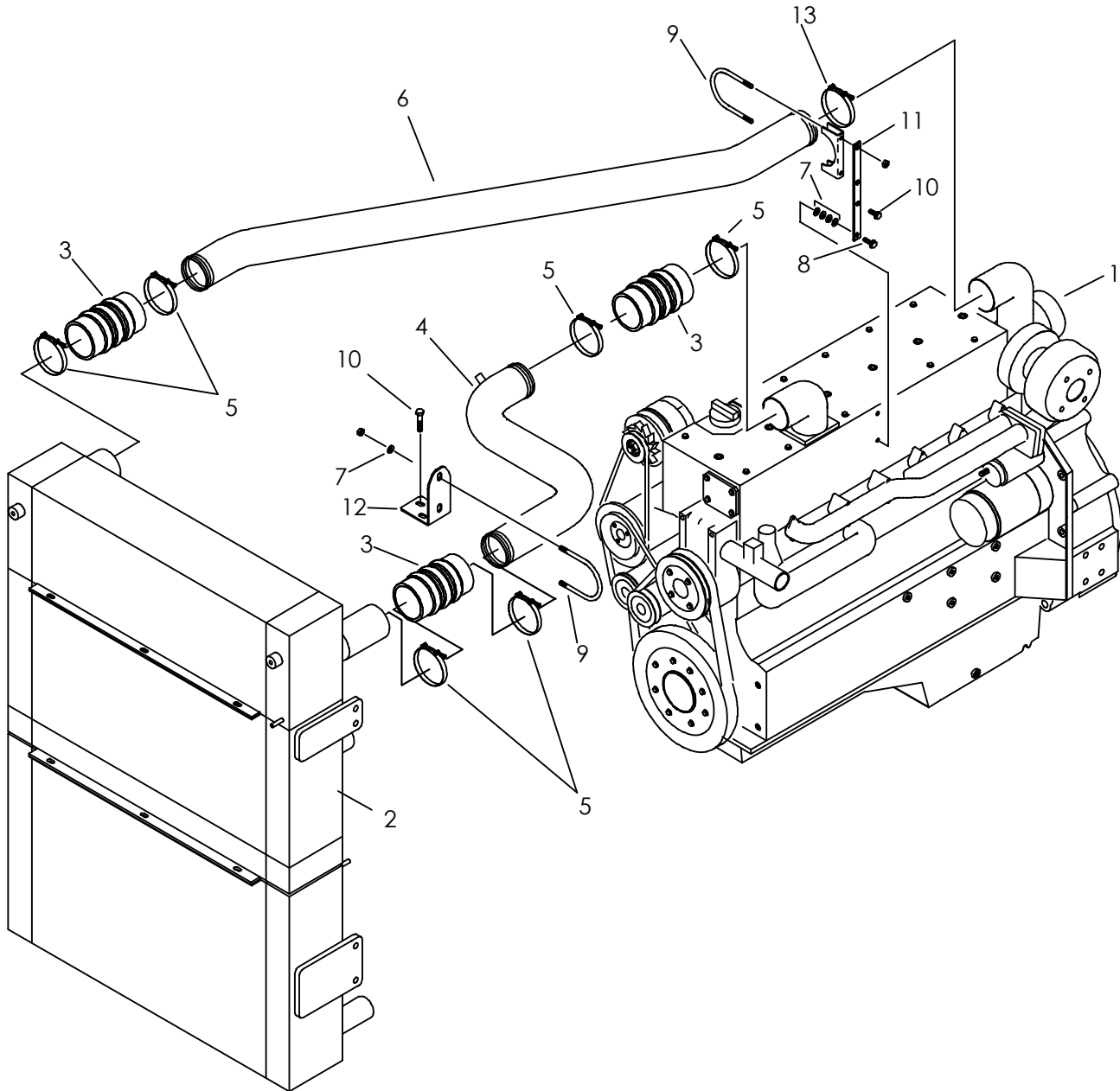
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-894	12	LOCKNUT(M10-1.50, PRV TRQ,10.9)	
2.	349-080	1	EXHAUST TUBE	
3.	196-341	1	MUFFLER CLAMP (2-3/4")	
4.	349-895	2	MUFFLER STRAP	
5.	105-274	6	SCREW (M10-1.5 X 20MM)	
6.	115-834	AR	EXHAUST WRAP (2", SOLD PER FT)	USE 2 @ 36"
7.	194-153	1	MUFFLER	
8.	349-082	1	MUFFLER MOUNT	
9.	194-202	1	EXHAUST CLAMP (5-1/2")	
10.	194-152	1	EXHAUST	
11.	194-086	-	ENGINE, DEUTZ	OBSOLETE
	194-372	-	ENGINE - DEUTZ DIESEL T2	OBSOLETE
12.	349-011	1	HEAT SHIELD	
13.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 9"
14.	106-163	2	FLG SCREW (M8-1.25 X 30MM)	
15.	106-139	4	STUD BOLT (M10-1.5 X 42MM)	
16.	106-386	2	FLG LOCKNUT (M8-1.25)	
17.	106-390	4	WASHER (M10)	
18.	106-380	5	FLG LK SCREW (M8-1.25 X 16MM)	
19.	370-318	1	MOUNT PLATE	
20.	308-463	-	HOOD	

NOT SHOWN:

FOOTNOTES:

NOTE:

# CHARGE AIR COOLER



# CHARGE AIR COOLER

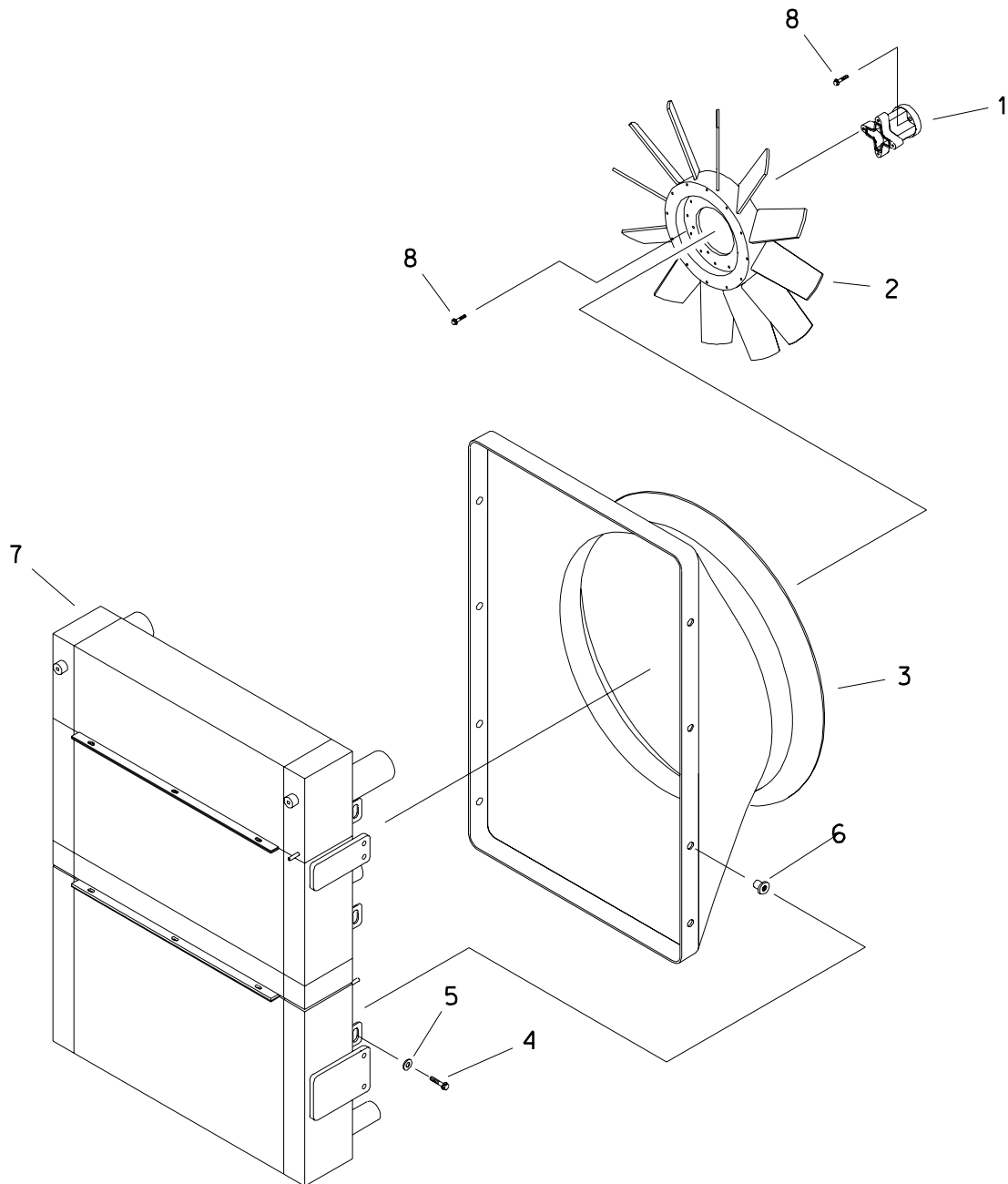
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-086	-	ENGINE, DEUTZ	OBSOLETE
	194-372	-	ENGINE - DEUTZ DIESEL T2	OBSOLETE
2.	194-143	-	RADIATOR	
3.	116-703	4	CHARGE AIR COOLER HOSE	
4.	149-924	1	CHARGE AIR TUBE (-48)	COOLER TO INTAKE
5.	110-959	6	T-BOLT CLAMP (3")	
6.	194-872	1	CHARGE AIR TUBE (-48)	TURBO TO COOLER
7.	106-389	6	WASHER (M8)	
8.	106-381	1	FLG LK SCREW (M8-1.25 X 25MM)	
9.	196-010	2	U-BOLT CLAMP (3")	
10.	106-380	3	FLG LK SCREW (M8-1.25 X 16MM)	
11.	349-896	1	CLAMP BAR	
12.	323-230	1	BRACKET	
13.	118-421	1	T-BOLT CLAMP (3.31"-3.55")	

NOT SHOWN:

FOOTNOTES:

NOTE:

## FAN DRIVE

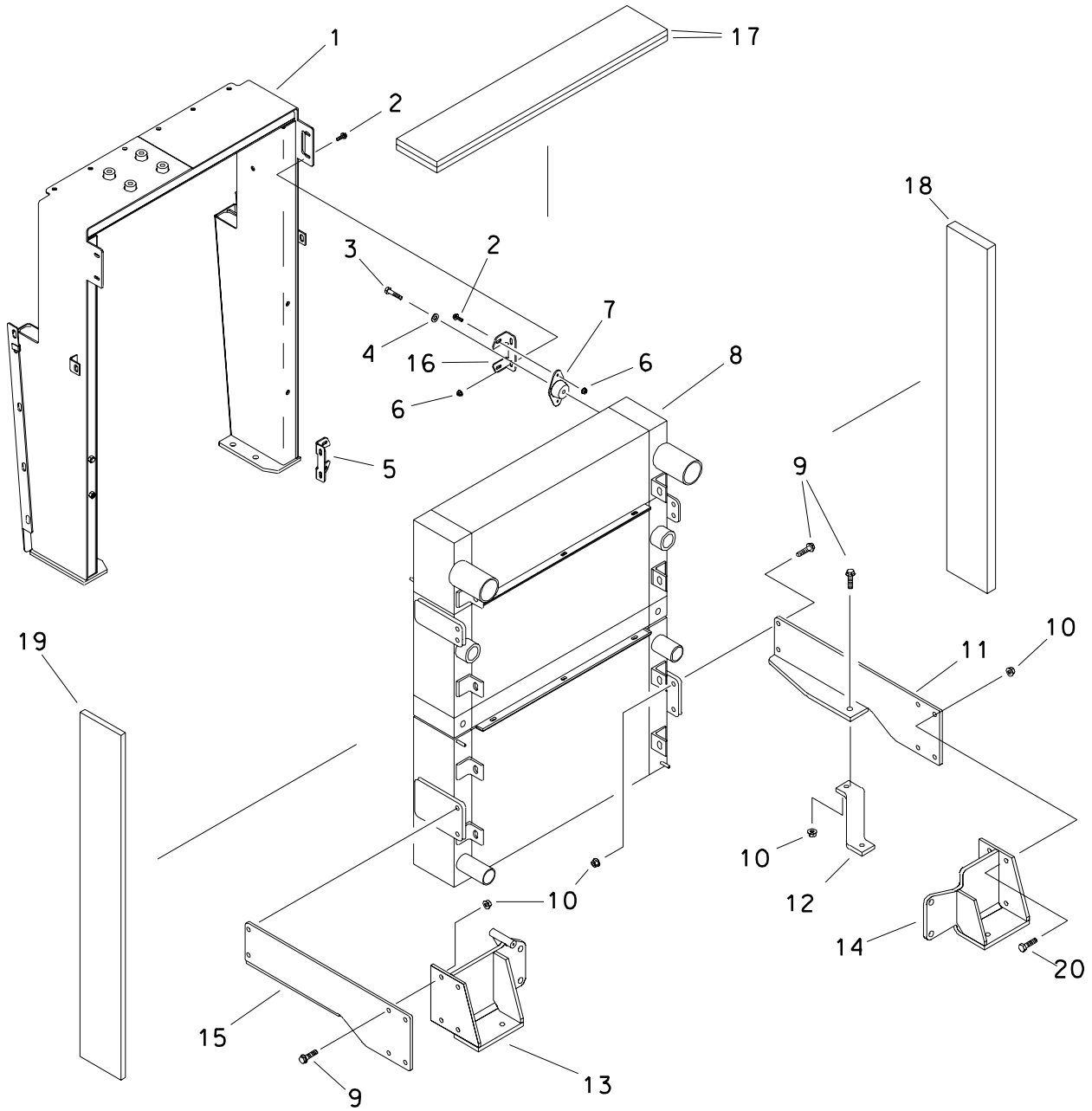


# FAN DRIVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-193	1	FAN ADAPTER	
2.	194-117	1	FAN (27")	
3.	362-962	1	FAN SHROUD	
4.	105-874	8	FLG LK BOLT (3/8-NC X 1-1/2")	
5.	105-118	8	WASHER (3/8")	
6.	107-493	8	WELLNUT (3/8"-16)	
7.	194-143	1	RADIATOR	
8.	106-163	8	FLG SCREW (M8-1.25 X 30MM)	USE 242 LOCTITE OR EQUIVALANT, TORQUE TO 16 FT LBS

FOOTNOTES

## RADIATOR MOUNTING

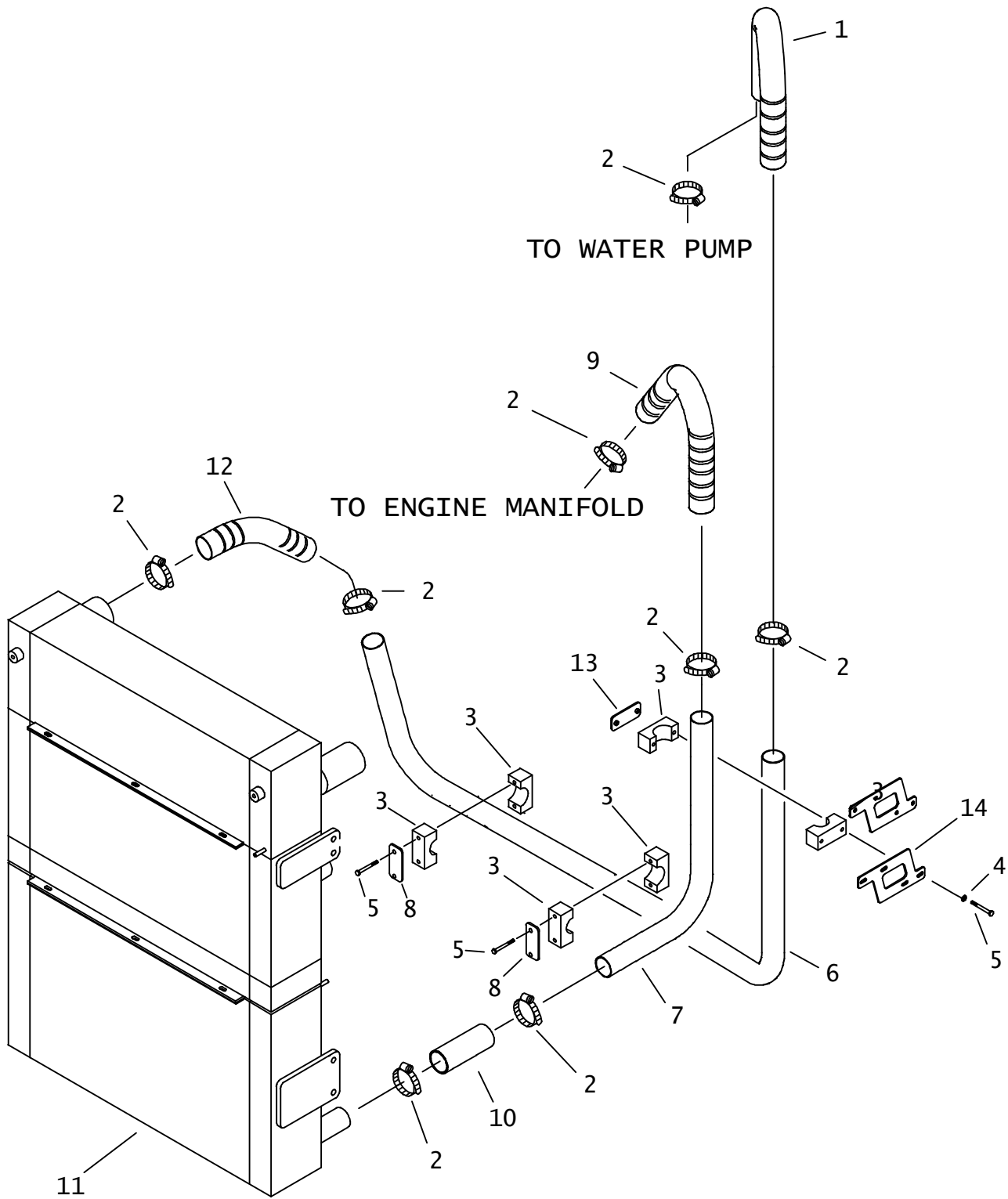


# RADIATOR MOUNTING

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	308-440	-	GRILLE	
2.	106-162	8	FLG SCREW (M8-1.25 X 20mm)	
3.	105-996	2	SCREW (M10-1.50 X 45mm)	
4.	105-118	2	WASHER (3/8")	
5.	308-632	1	MOUNTING BRACKET	
6.	106-386	8	FLG LOCKNUT (M8-1.25)	
7.	116-683	2	SHOCK MOUNT	
8.	194-143	-	RADIATOR	
9.	107-004	12	FLG LK SCREW (M12-1.75 X 45mm)	
10.	106-709	12	FLG LOCKNUT (M12-1.75)	
11.	308-947	1	RADIATOR MOUNT	
12.	308-701	2	MOUNT ARM	
13.	308-693	-	LEFT FRONT ENGINE MOUNT	
14.	308-694	-	RIGHT FRONT ENGINE MOUNT	
15.	308-692	1	RADIATOR MOUNT	
16.	309-500	1	MOUNTING BRACKET	
17.	117-309	2	INSULATION	
18.	117-310	1	INSULATION	
19.	117-311	1	INSULATION	
20.	106-477	4	SCREW (M12-1.75 X 45MM, 10.9)	

FOOTNOTES

# RADIATOR PLUMBING





# RADIATOR PLUMBING

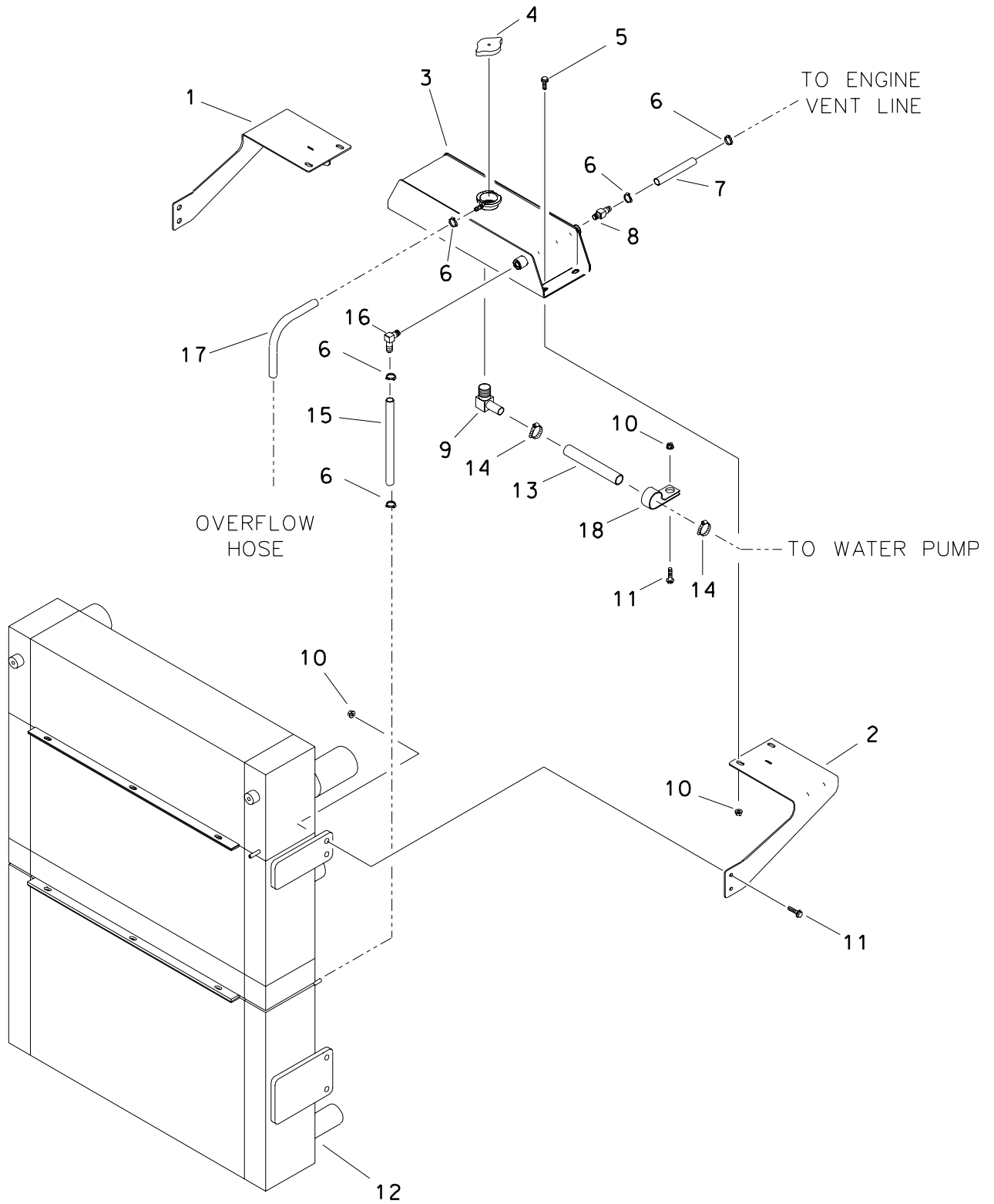
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	116-755	1	COOLANT HOSE	
2.	110-134	8	WORM CLAMP (2.062" TO 2.750")	
3.	110-970	3	CLAMP (2.00") PAIR	
4.	105-095	2	WASHER (1/4")	
5.	106-967	6	BOLT (1/4-NC X 2-3/4", SIL BRZ)	
6.	194-155	1	UPPER RADIATOR TUBE (-32)	
7.	194-154	1	LOWER RADIATOR TUBE (-32)	
8.	110-973	2	COVER PLATE	
9.	117-317	-	COOLANT HOSE	
10.	116-827	1	COOLANT HOSE	
11.	194-143	-	RADIATOR	
12.	116-754	-	COOLANT HOSE	
13.	110-972	1	WELD PLATE	
14.	308-702	1	CLAMP MOUNT	

NOT SHOWN:

FOOTNOTES:

NOTE:

## EXPANSION TANK

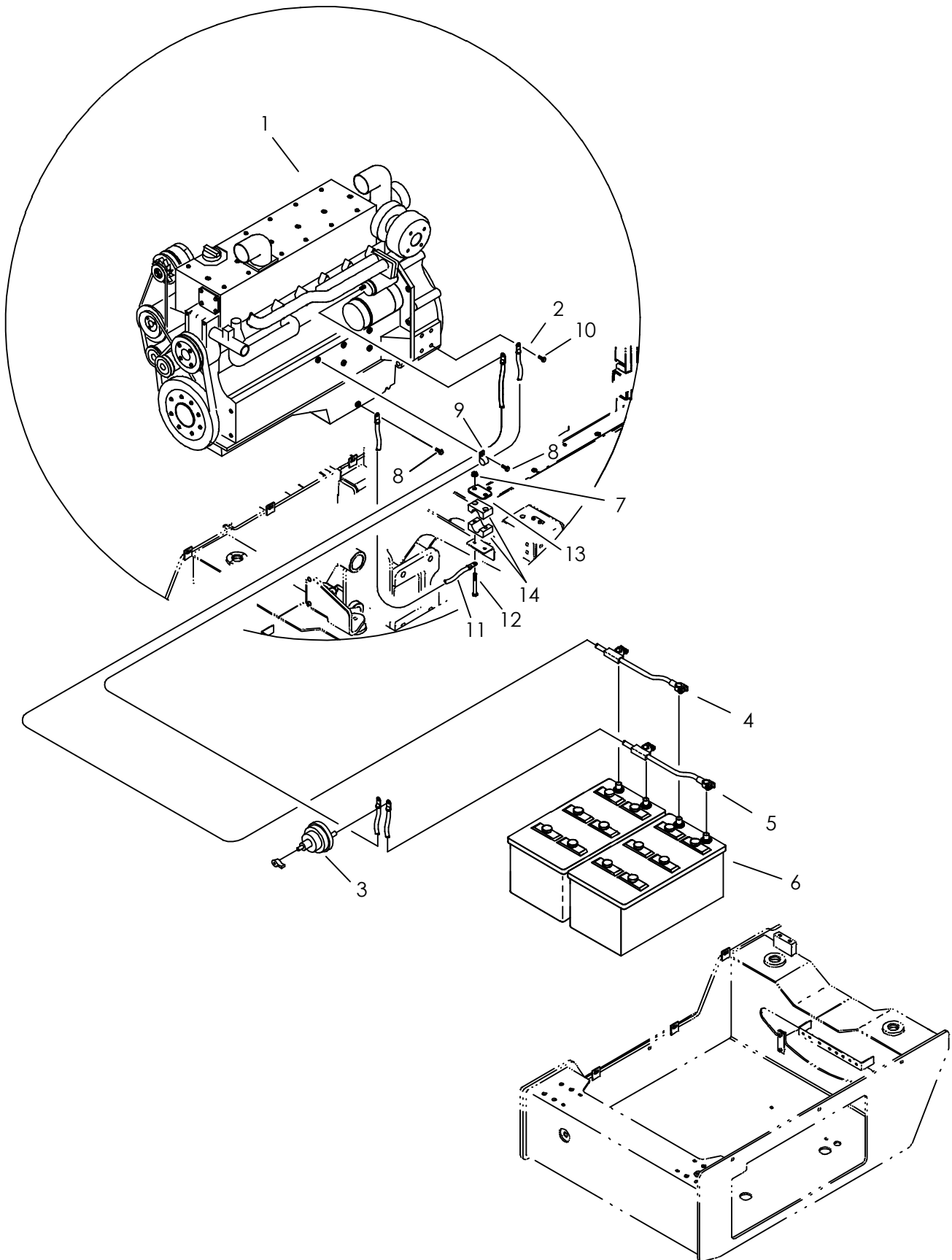


# EXPANSION TANK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	308-710	1	TANK MOUNT (RIGHT)	
2.	308-709	1	TANK MOUNT (LEFT)	
3.	364-530	1	EXPANSION TANK	
4.	110-898	1	RADIATOR CAP (14 PSI)	
5.	106-162	4	FLG SCREW (M8-1.25 X 20mm)	
6.	110-249	5	WORM CLAMP (1/4" TO 5/8")	
7.	115-381	AR	BULK HOSE (1/4", SOLD PER 1')	USE 1 @ 20"
8.	155-093	1	S/O COUPLER (04N-04H)	
9.	153-151	1	S/O COUPLER (12N-12H90)	
10.	106-386	9	FLG LOCKNUT (M8-1.25)	
11.	106-163	5	FLG SCREW (M8-1.25 X 30mm)	
12.	194-143	-	RADIATOR	
13.	116-751	AR	BULK HOSE (3/4", SOLD PER 1')	USE 1 @ 42"
14.	110-026	2	WORM CLAMP (1/2" TO 1-1/4")	
15.	116-108	AR	BULK HOSE (5/16", SOLD PER 1')	USE 1 @ 27"
16.	155-164	1	S/O COUPLER (04N-05H90)	
17.	116-108	AR	BULK HOSE (5/16", SOLD PER 1')	USE 1 @ 67"
18.	110-333	1	BOLT-ON CLAMP (1")	

FOOTNOTES

## BATTERY AND POWER CABLES



# BATTERY AND POWER CABLES

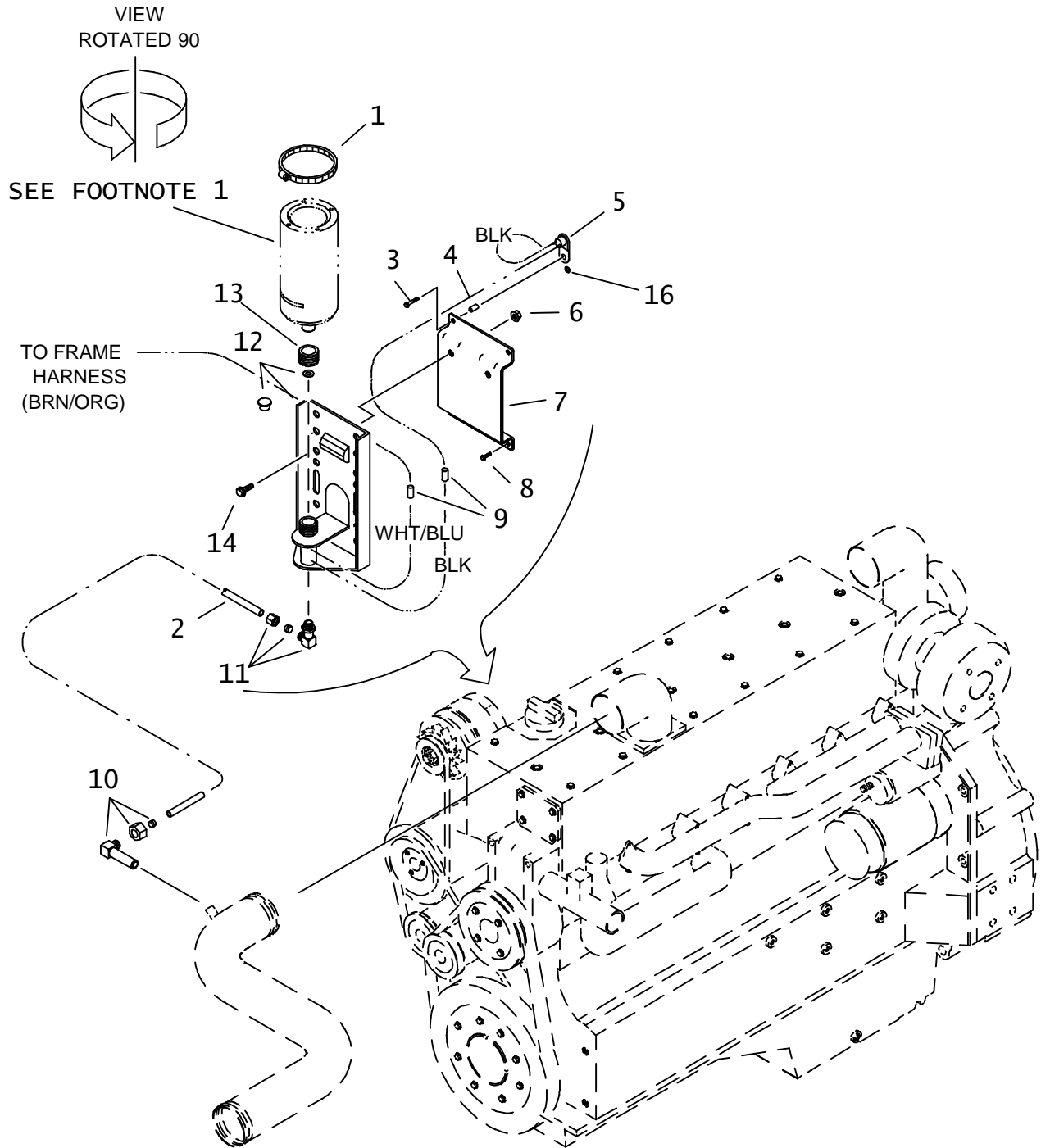
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-086	-	ENGINE, DEUTZ	OBSOLETE
	194-372	-	ENGINE - DEUTZ DIESEL T2	OBSOLETE
2.	215-234	1	BATTERY CABLE (4/0 X 127", BLK)	
3.	217-819	-	BATTERY DISCONNECT SWITCH	
4.	215-236	1	BAT CBL (4GA, 157.8", RED, DUAL)	
5.	214-752	1	NEGATIVE BATTERY CABLE	
6.	215-282	-	BATTERY	
7.	105-832	-	FLG LOCKNUT (1/4-NC)	
8.	106-380	2	FLG LK SCREW (M8-1.25 X 16MM)	
9.	110-333	1	BOLT-ON CLAMP (1")	
10.	106-806	1	FLG LK SCREW (M12-1.75 X 25MM)	
11.	215-304	1	BAT CABLE (4 GA X 13", BLK)	
12.	107-196	-	BOLT (1/4-NC X 3")	
13.	322-362	-	BACKUP SPACER	
14.	110-852	-	BLT-ON CLP (1.2", SOLD PER SET)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# COLD START



# COLD START

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-367	1	CLAMP (3-1/4" TO 4-1/8")	
2.	156-018	AR	BULK TUBING (1/8", SOLD PER 1")	
3.	106-200	2	FLG LK SCREW (M8-1.25 X 45mm)	
4.	181-652	2	SPACER	
5.	215-073	1	SENSOR SWITCH	
6.	106-387	2	FLG LOCKNUT (M10-1.50)	
7.	349-775	1	BRACKET	
8.	106-162	2	FLG SCREW (M8-1.25 X 20mm)	
9.	215-478	2	BUTT CONNECTOR (14-16 GA)	
10.	195-843	1	INJECTOR NOZZLE	INCL FERRULE AND NUT
	156-204		FERRULE (02T)	
	156-205		COMPRESSION NUT (02T)	
11.	156-272	1	TUBE CONNECTOR (02N-02T90, ORF)	INCL FERRULE AND NUT
	156-204		FERRULE (02T)	
	156-205		COMPRESSION NUT (02T)	
12.	195-841	1	VALVE/CANISTER BRACKET	
	110-252		CAPLUG (3/4")	
	195-844		GASKET	
13.	115-365	1	GROMMET (2-1/8" SOLD PER 1")	
14.	106-382	2	FLG LK SCREW (M10-1.50 X 20mm)	
15.	156-018	AR	BULK TUBING (1/8",SOLD PER 1")	USE 1 @ 50"
16.	215-590	1	RING TERMINAL (3/8")	

#### NOT SHOWN:

217-136	1	ICON (WHT) ON-START
217-137	1	ICON (WHT) OFF-STOP
217-156	1	DIFFUSION LENS (GREEN)
217-158	1	DIFFUSION LENS (WHITE)
217-924	1	ROCKER SWITCH (DPDT) OFF-(ON)
217-925	1	ROCKER SWITCH (ACTUATOR)

#### FOOTNOTES:

- I. USE OF 8 OZ. ETHER CANISTER IS REQUIRED. COMES WITH SEALS AND FOAM.

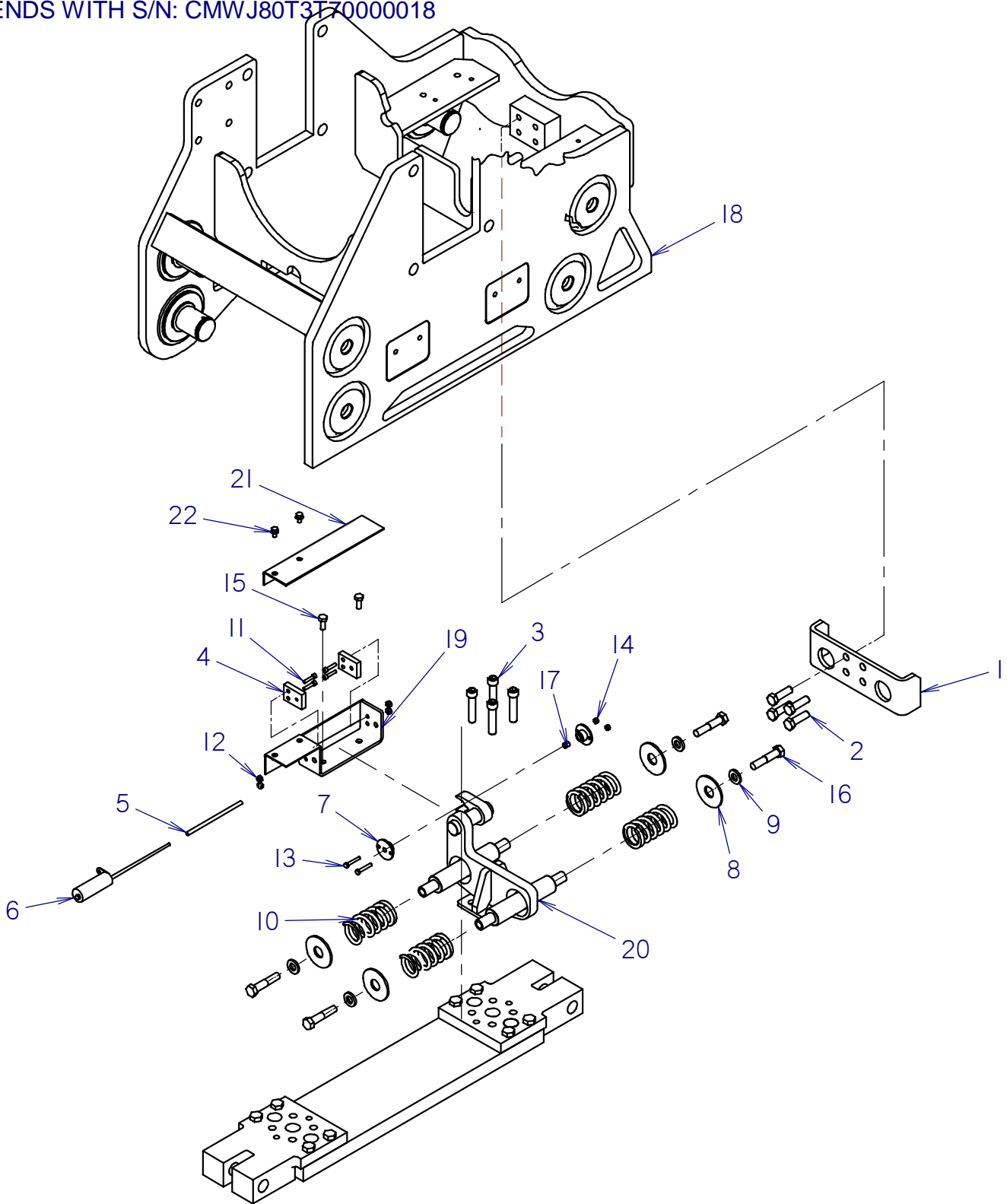
NOTE:





# **FRAME COMPONENTS**

**ASSISTED MAKEUP**  
BEGINS WITH S/N: 2Z0237  
ENDS WITH S/N: CMWJ80T3T70000018



**ASSISTED MAKEUP**  
**BEGINS WITH S/N: 2Z0237**  
**ENDS WITH S/N: CMWJ80T3T70000018**

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	327-582	1	SPRING PLATE	
2	106-547	4	SCREW (M12-1.75 X 40MM,10.9)	
3	107-602	4	SCREW (M12-1.75 X 55MM, SOC)	
4	327-484	2	TUBING MOUNT	
5	318-616	1	SENSOR TUBE	
6	222-125	1	POSITION SENSOR (4")	
7	327-468	2	MAGNET MOUNT	
8	108-198	4	SPRING WASHER	
9	106-397	4	WASHER (M12, HARDENED)	
10	118-405	4	COMPRESSION SPRING	
11	105-810	4	BOLT (#10-24 X 7/8", SOC)	
12	106-048	4	LOCKNUT (#10-24)	
13	106-733	2	SCREW (M5-0.80 X 30MM)	
14	106-850	2	LOCKNUT (M5-0.80)	
15	106-083	2	SCREW (M8-1.25 X 20MM)	
16	106-594	4	SCREW (M12-1.75 X 60MM)	USE LOCTITE 242 OR EQUIVALENT
17	222-171	1	POSITION SENSOR MAGNET	
18	305-704	1	CARRIAGE	
19	327-485	1	SENSOR MOUNT	
20	327-472	1	SPRING MOUNT	
21	327-927	1	COVER	
22	106-224	2	FLG SCREW (M6-1.00 X 10MM)	

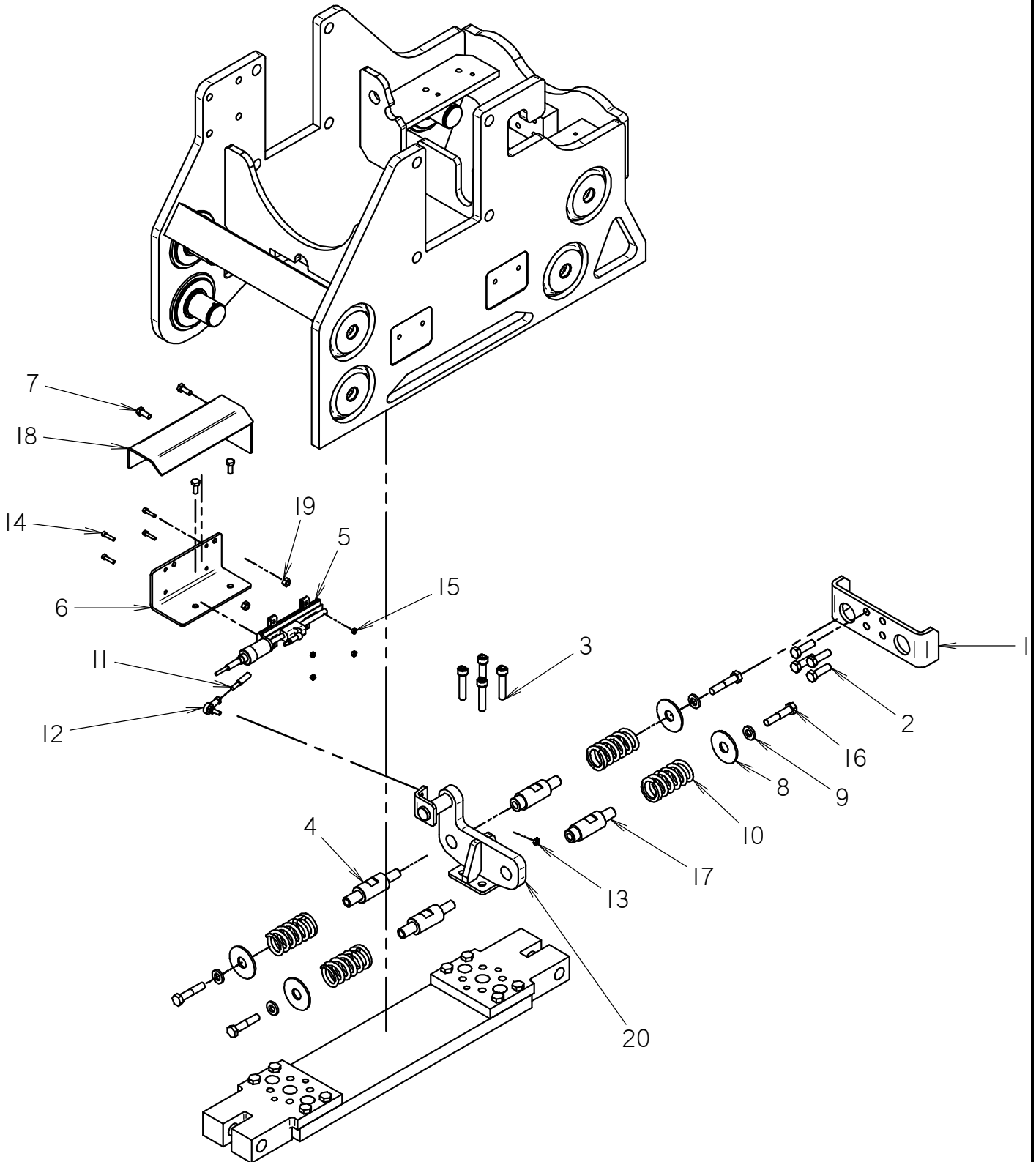
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FOOTNOTES:

NOTE:

# ASSISTED MAKEUP

BEGINS WITH S/N: CMWJ80T3T70000019



# ASSISTED MAKEUP

BEGINS WITH S/N: CMWJ80T3T70000019

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	327-582	1	SPRING PLATE	
2	106-547	4	SCREW (M12-1.75 X 40MM,10.9)	
3	107-602	4	SCREW (M12-1.75 X 55MM, SOC)	
4	300-3890	2	SPRING BAR	
5	215-1002	1	POSITION SENSOR	SEE FOOTNOTE 1
6	300-3894	1	SUPPORT PLATE	
7	106-083	4	SCREW (M8-1.25 X 20MM)	
8	108-198	4	SPRING WASHER	
9	106-397	4	WASHER (M12, HARDENED)	
10	118-405	4	COMPRESSION SPRING	
11	300-3956	1	LINKAGE ROD	
12	110-774	1	BALL JOINT (1/4"-NF)	
13	105-085	1	LOCKNUT (1/4"-NC)	
14	106-427	4	SCREW (M5-0.80 X 22MM, SOC)	
15	106-850	4	LOCKNUT (M5-0.80)	
16	106-594	4	SCREW (M12-1.75 X 60MM)	
17	300-3891	2	SPRING BAR	
18	300-3944	1	COVER	
19	106-078	2	NUT (M8-1.25)	
20	300-3954	1	SPRING MOUNT	

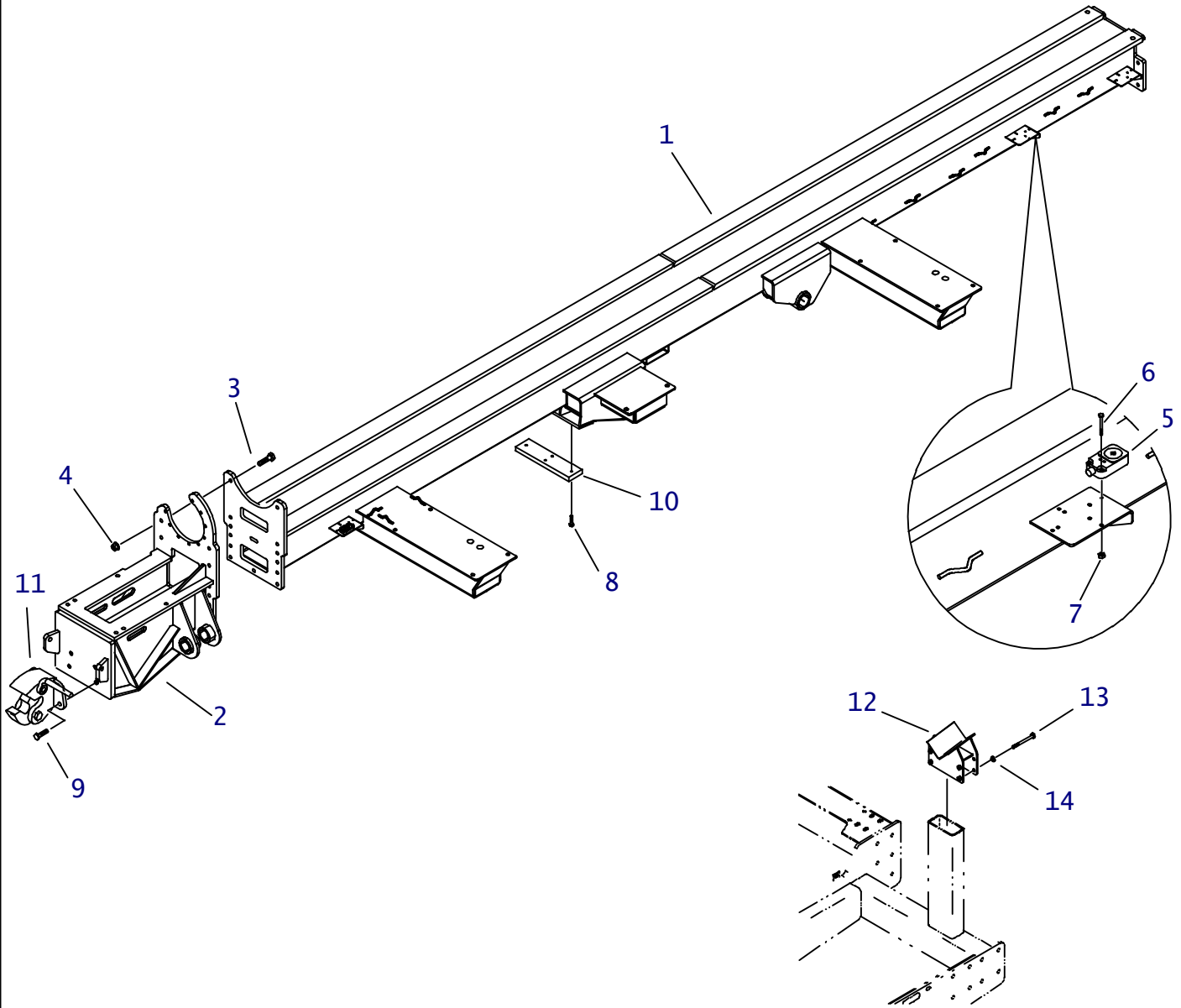
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FOOTNOTES:

1. 215-1617 MAGNETIC SLIDER

NOTE:

# DRILL FRAME



## DRILL FRAME

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-714	1	DRILL FRAME	SEE FOOTNOTE 2
2.	349-675	1	FRONT FRAME	ENDS WITH S/N: 2V2567
	314-557	1	FRONT FRAME	BEGINS WITH S/N: 2W0856
3.	106-074	15	SCREW (M16-2.0 X 60MM)	
4.	106-442	15	FLG LOCKNUT (M16-2.00, PRV TRQ)	TORQUE TO 140 FT LBS (190Nm)
5.	215-1175	3	PROXIMITY SWITCH	
6.	106-427	6	SCREW (M5-0.80 X 22MM, SOC)	
7.	106-850	6	LOCKNUT (M5-0.80)	
8.	105-271	4	SCREW (M10-1.5 X 40MM)	USE LOCTITE 242 OR EQUIVALENT, SEE FOOTNOTE 1
9.	106-098	4	FLG BOLT (3/4-NC X 2", GD8)	USE LOCTITE 242 OR EQUIVALENT
10.	370-364	1	STOP PAD	SEE FOOTNOTE 1
11.	206-076	1	COUPLING	
12.	320-442	1	STOW MOUNT	BEGINS WITH S/N: 2W0856
13.	106-564	4	SCREW (M10-1.50 X 100MM)	BEGINS WITH S/N: 2W0856
14.	106-396	4	WASHER (M10, HARDENED)	BEGINS WITH S/N: 2W0856

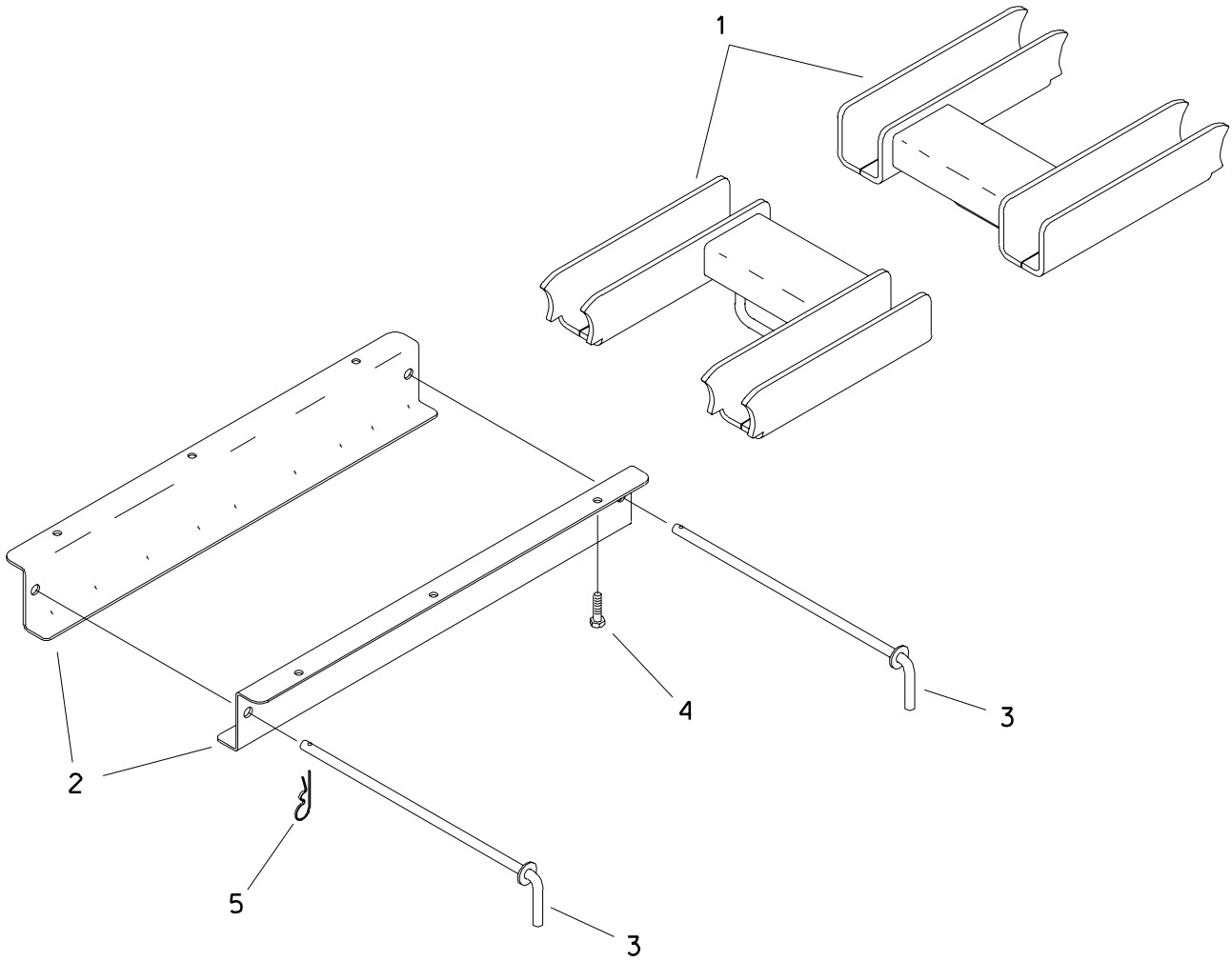
NOT SHOWN:

### FOOTNOTES:

1. BEGINS WITH S/N: 2W0856, USED ON STEEL TRACK MODELS ONLY ON UNITS PRIOR TO S/N: 2W0856
2. WHEN USING DRILL FRAME ON UNITS PRIOR TO S/N: 2W0856 IT WILL BE NECESSARY TO REPLACE 320-588 WITH 349-875

NOTE:

# CYLINDER LOCKS



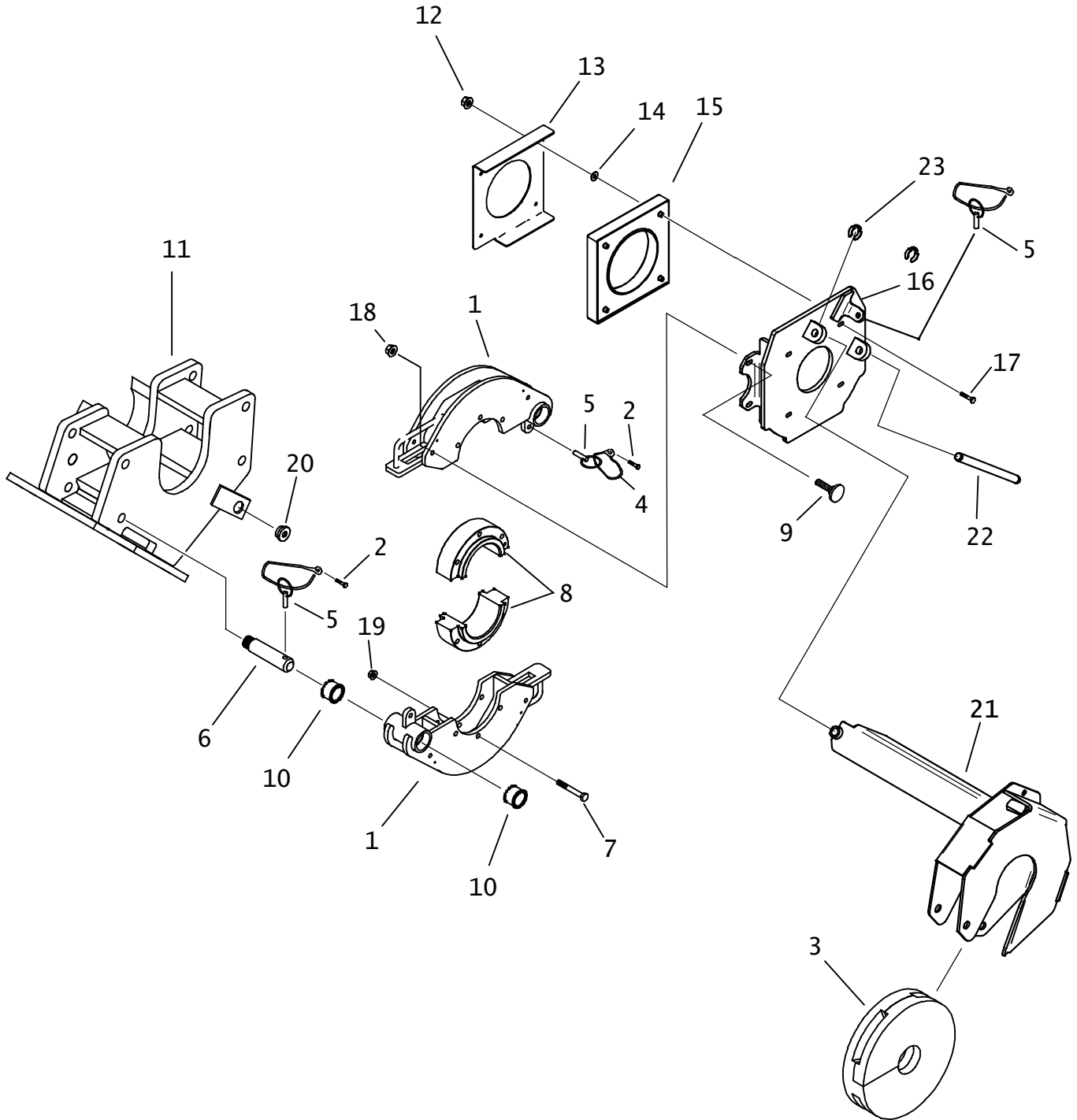


# CYLINDER LOCKS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	370-376	2	CYLINDER LOCK	
2.	370-408	2	FORMED PLATE	
3.	370-410	2	PIN	
4.	106-383	6	FLG LK SCREW (M10-1.5 X 30MM)	
5.	110-033	2	HAIR CLIP PIN (1/8" X 1/2")	

FOOTNOTES

# PIPE GUIDE



# PIPE GUIDE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	370-061	2	TOP GUIDE HALF	
2.	105-184	4	SCREW (#10-24 X .75", SELF-TAP)	
3.	157-196	1	ROD WIPER	
4.	110-710	4	LANYARD (3/64" X 6")	
5.	110-228	5	LYNCH PIN (7/16" X 2")	
6.	370-075	2	GUIDE PIN	
7.	106-584	6	SCREW (M12-1.75 X 100MM)	
8.	370-440	1	SPLIT GUIDE	
9.	107-566	4	CARRIAGE BOLT (3/8-NC X 1.50")	
10.	125-760	4	COMPOSITION BUSHING (1.5")	
11.	370-276	-	STATIONARY CLAMP	
12.	105-003	4	FLG LOCKNUT (5/16-NC)	
13.	306-995	1	BACK COVER PLATE	
14.	116-283	4	WASHER (.531", RUBBER)	
15.	211-084	1	CURRENT TRANSFORMER	
16.	300-9812	-	STRIKE BOX MOUNT	
17.	107-311	4	CARRIAGE BOLT (5/16-NC X 3")	
18.	105-834	4	FLG LOCKNUT (3/8-NC)	
19.	106-354	6	FLANGE NUT (M12-1.75)	
20.	116-203	1	GROMMET (9/16")	
21.	314-732	1	WIPER MOUNT	
22.	178-863	1	PIVOT PIN	
23.	115-503	2	KLIP RING	

#### NOT SHOWN:

211-042 VOLTAGE LIMITER CABLE

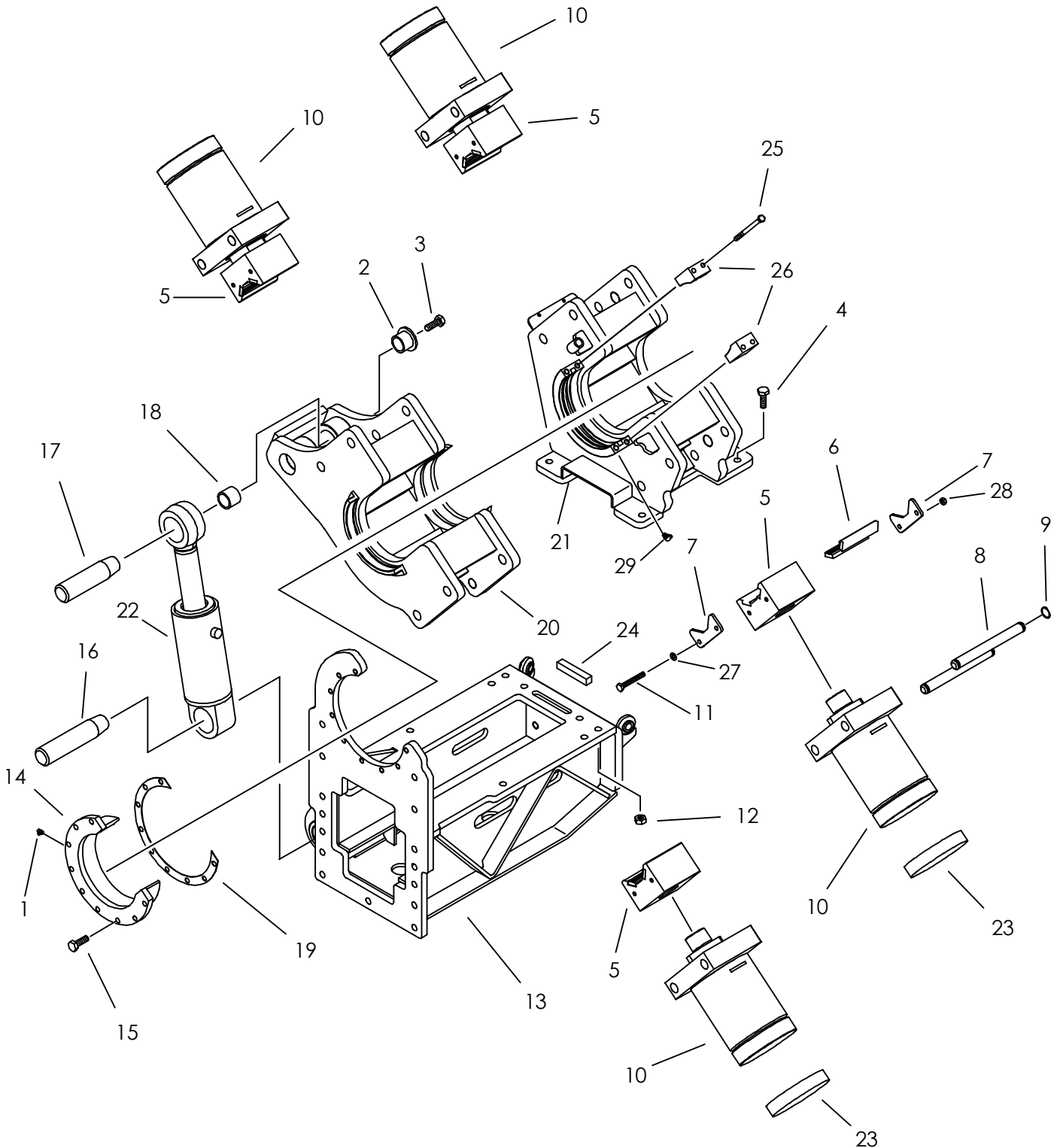
214-542 CURRENT COIL CABLE

#### FOOTNOTES:

#### NOTE:

# FRONT WRENCHES

BEGINS WITH S/N CMWJT100LB0000037, CMWAT100LA0000005



# FRONT WRENCHES

BEGINS WITH S/N CMWJT100LB0000037, CMWAT100LA0000005

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-003	1	ZERK (1/4-NF, STR)	
2.	184-031	2	TAPERED INSERT (2.25")	
3.	106-345	2	SCREW (M20-2.50 X 50MM)	
4.	106-666	8	SCREW (M16-2.0 X 65MM, 10.9)	USE LOCKTITE 680, TORQUE TO 200 FT-LBS
5.	349-958	-	JAW BLOCK	SEE FOOTNOTE 1
	319-910	4	JAW BLOCK	SEE FOOTNOTE 1
6.	349-884	8	GRIPPER INSERT	SEE FOOTNOTE 1
	319-856	8	GRIPPER INSERT	JT100, SEE FOOTNOTE 1
	375-0002	8	GRIPPER INSERT	AT100
7.	370-028	8	INSERT RETAINER	JT100
	301-1166	8	INSERT RETAINER (AT)	AT100
8.	349-190	8	PIN	
9.	115-499	16	KLIP RING (1.000")	
10.	151-176	4	CYL (6.00" X 4.00" X 3.00")	
11.	106-639	8	SCREW (M10-1.50 X 160MM)	SEE FOOTNOTE 2
12.	106-442	6	FLG LOCKNUT (M16-2.0 PRV TRQ)	
13.	349-675	-	FRONT FRAME	
	314-557	-	FRONT FRAME	
	300-5342	-	FRONT FRAME	
14.	370-135	1	RETAINING RING	
15.	106-333	9	SCREW (M12-1.75 X 40MM, 8.8)	
16.	179-183	1	TAPERED PIN (57.15MM X 195MM)	
17.	179-016	1	TAPERED PIN (57.15MM X 215MM)	
18.	125-781	2	COMPOSITION BUSHING (2.259")	
19.	349-192	AR	SHIM (5.03 ID, 12.12 OD)	
20.	370-275	1	ROTATION CLAMP	
21.	370-276	1	STATIONARY CLAMP	
22.	151-158	1	CYL (4" X 2.25" X 6")	
23.	116-879	2	RUBBER CUSHION	
24.	166-815	1	KEY (3/4" X 4")	
25.	106-645	4	SCREW (M12-1.75 X 110MM, 10.9)	TORQUE TO 80 FT-LBS
26.	370-281	2	CAP	
27.	106-415	8	WASHER (.406")	
28.	106-758	8	LOCKNUT (M10-1.5)	
29.	115-005	1	ZERK (1/4-NF, 90)	

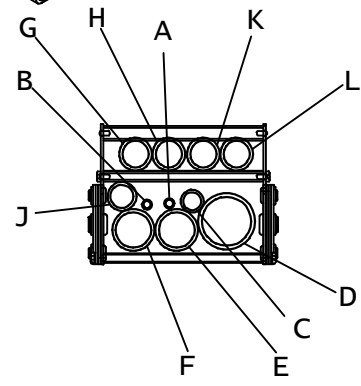
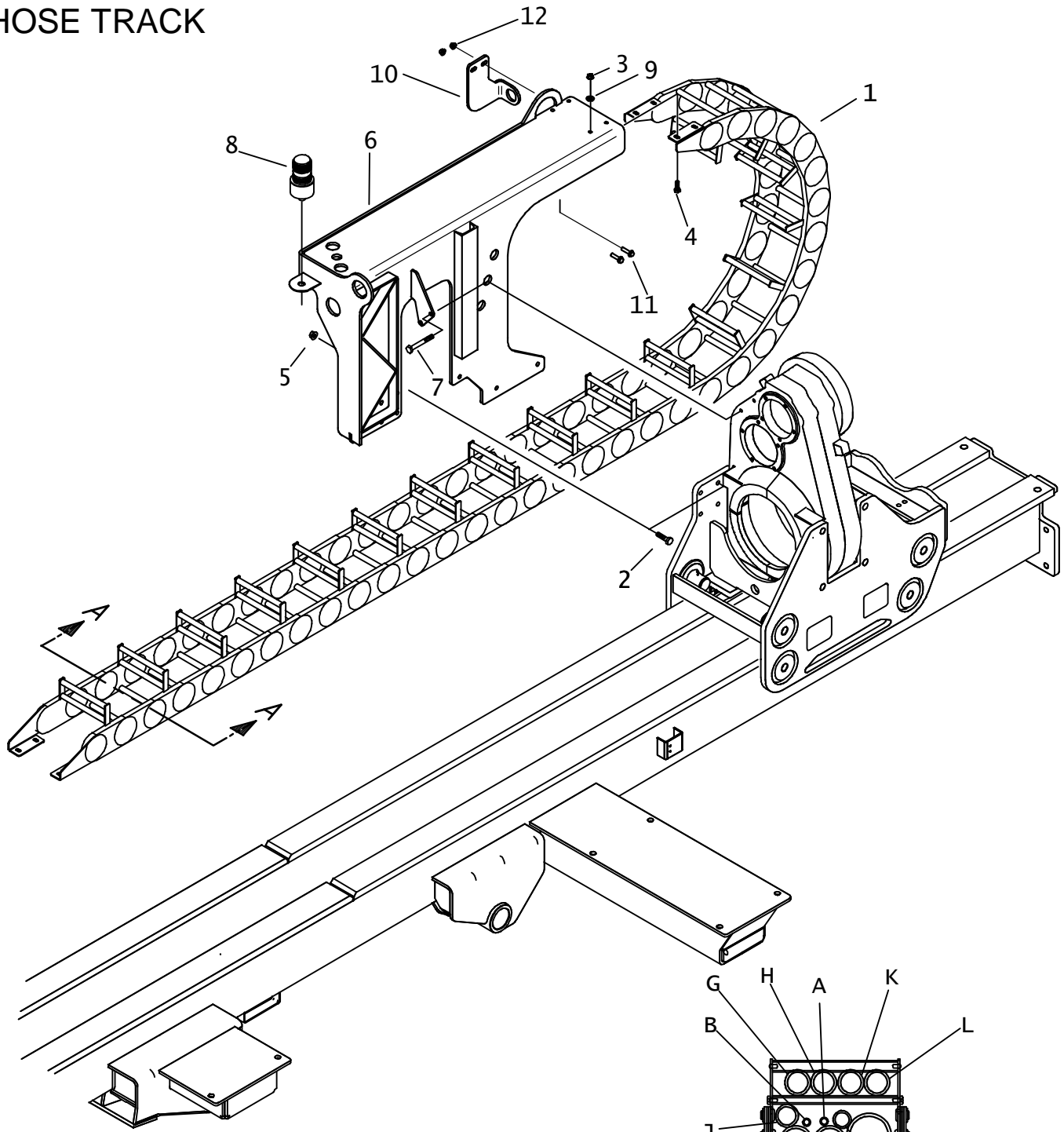
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#### FOOTNOTES:

- 319-856 IS INTERCHANGABLE WITH 349-958 & 319-910 JAW BLOCKS.  
349-884 MAY BE USED WITH 319-910 BY ADDING CHAMFERS TO CLEAR DOVETAIL RADIUS IN JAWBLOCK.
- 349-958 REQUIRES REF. 11 106-079 QTY. 4 PER JAW BLOCK.

NOTE:

# HOSE TRACK



VIEW A-A

- A - CARRIAGE MANIFOLD "P"
- B - CARRIAGE MANIFOLD "T"
- C - ROTATION CASE DRAIN
- D - DRILL FLUID HOSE
- E - ROTATION
- F - ROTATION
- G - INNER ROTATION
- H - INNER ROTATION
- J - WIRE HARNESS
- K - THRUST
- L - THRUST

# HOSE TRACK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	300-5385	1	HOSE CARRIER	SEE NOT SHOWN FOR SERVICE PARTS
2.	106-477	7	SCREW (M12-1.75 X 45MM,10.9)	
3.	105-047	7	FLG LOCKNUT (3/8-NC)	
4.	105-249	4	CARRIAGE BOLT (3/8-NC X 1-1/4")	
5.	106-709	7	FLG LK NUT (M12-1.75)	
6.	300-5454	1	CABLE TRAY BRACKET	
7.	106-336	-	SCREW (M12-1.75 X 90MM)	
8.	214-697	1	STROBE LIGHT (12V, DC, GREEN)	OBSOLETE
	217-297	1	STROBE LIGHT GREEN MED PROFILE	
	217-303	-	REPLACEMENT LENS (GREEN)	
	214-991	-	REPLACEMENT FLASH TUBE	
	217-301	-	BRUSH GUARD	
	214-104	2	PACKARD MALE TERMINAL	
	157-645	2	WEATHER-PAC SEAL (2.80MM)	
	214-103	1	2-WAY MALE CONNECTOR	
9.	105-118	7	WASHER (3/8)	
10.	300-9431	1	BRACKET	AT UNITS ONLY
11.	106-383	2	FLG LK SCREW (M10-1.50 X 40MM)	AT UNITS ONLY
12.	106-387	2	FLG LOCKNUT (M10-1.50)	AT UNITS ONLY

NOT SHOWN:

190-1677

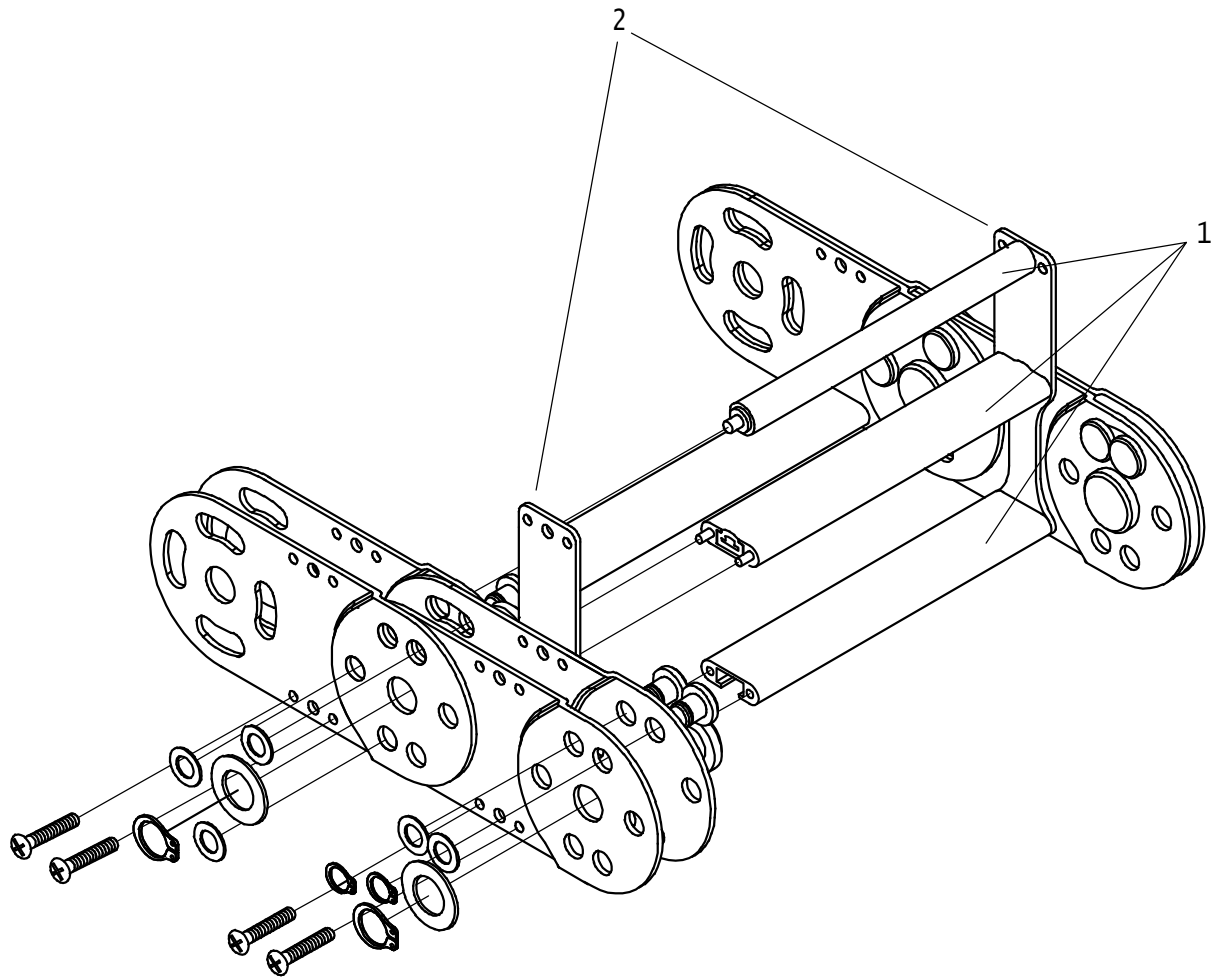
MOUNTING BRACKET KIT

SERVICE PART KIT FOR 300-5385 HOSE CARRIER

FOOTNOTES:

NOTE:

# HOSE TRACK REPAIR SECTION





## HOSE TRACK REPAIR SECTION

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	500-1495	1	4 LINK REPAIR SECTION	SEE FOOTNOTE 1
1.	191-204	-	BAR KIT	SCREWS INCLUDED
2.	191-205	-	WINDOW EXTENDER KIT	SCREWS INCLUDED

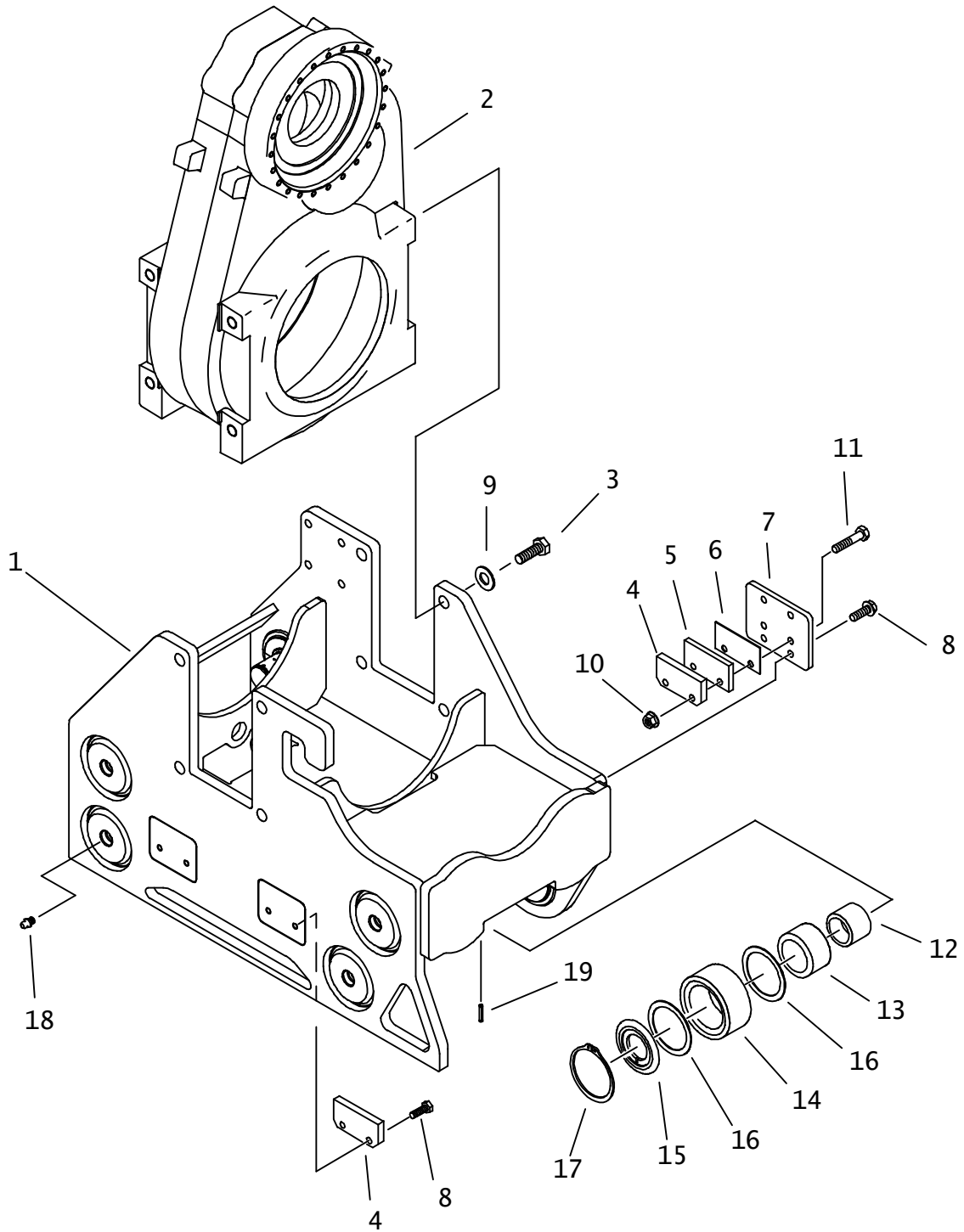
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FOOTNOTES:

- I. FOR USE WITH LRC-415 STYLE TRACK (STAMPED ON SIDE OF TRACK).  
L415D REPLACEMENT LINKS NO LONGER AVAILABLE.

NOTE:

# CARRIAGE



# CARRIAGE

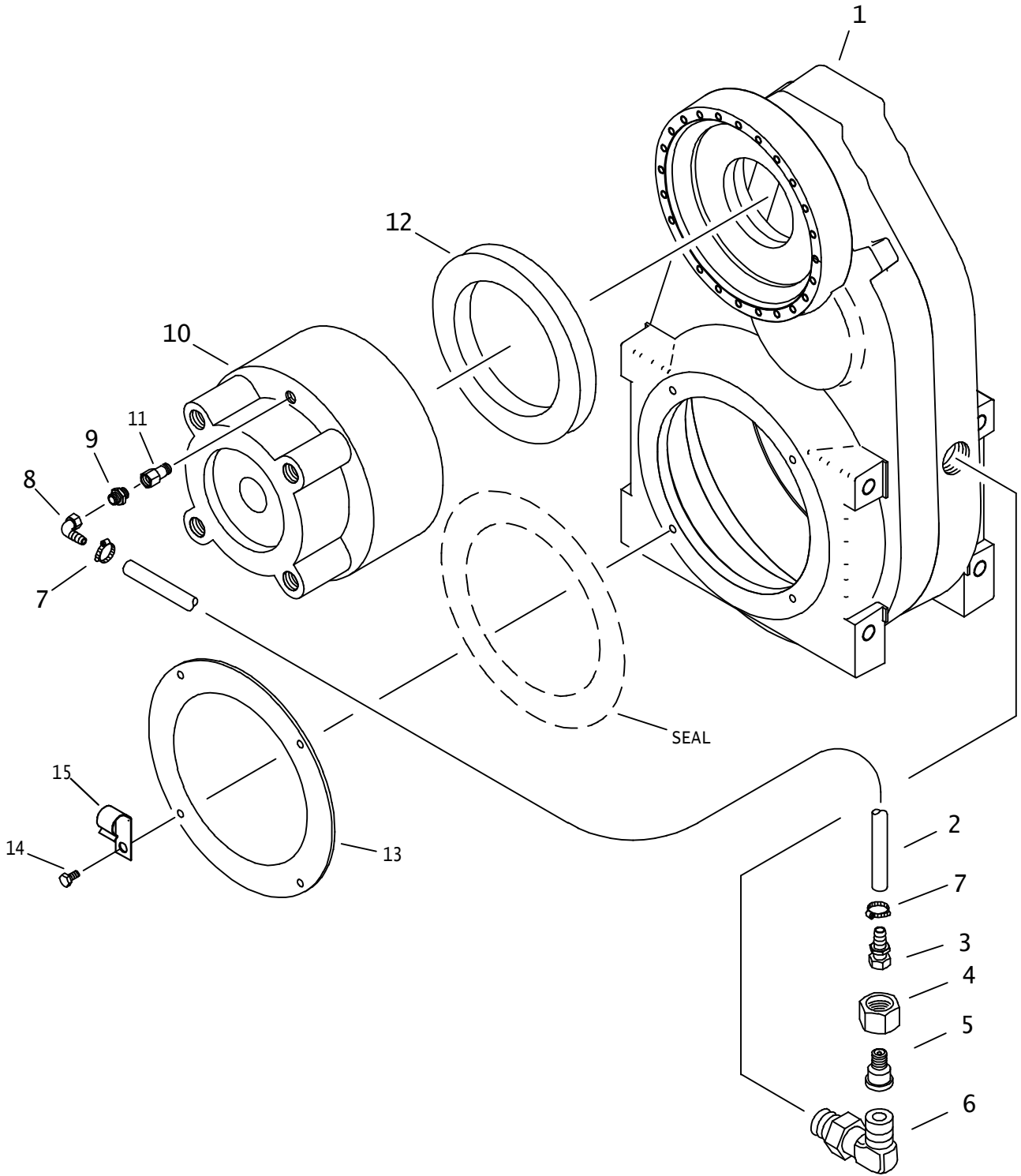
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-704	1	CARRIAGE	
2.	166-230	-	DRIVE GEARBOX - ROTATION	
3.	106-075	8	SCREW (M20-2.5 X 60mm, 10.9)	USE 277 LOCTITE AND TORQUE TO 400 FT. LBS
4.	349-573	4	CENTERING PAD	
5.	349-575	2	CLAMP PLATE	
6.	349-572	AR	SHIM	
7.	349-574	2	BOLT BLOCK	
8.	107-001	12	FLG LK SCREW (M10-1.50 X 25mm)	
9.	106-949	8	WASHER (3/4", HARDENED)	
10.	105-894	4	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	
11.	106-331	4	SCREW (M10-1.50 X 50mm)	
12.	125-246	8	NEEDLE RACE (1.750")	USE LOCTITE 680 OR EQUIVALENT
13.	126-155	8	NEEDLE BEARING	
14.	349-551	8	ROLLER SHELL	
15.	349-552	8	RETAINER	
16.	110-926	16	THRUST WASHER (3")	
17.	115-060	8	EXTERNAL SNAP RING (1.750")	
18.	115-001	8	ZERK (02N)	
19.	105-533	8	ROLL PIN (5/32" X 7/8")	

NOT SHOWN:

FOOTNOTES:

NOTE:

# CARRIAGE SIGHT TUBE



## CARRIAGE SIGHT TUBE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	166-230	-	DRIVE GEARBOX - ROTATION	
2.	117-902	AR	BULK TUBING (1/4, SOLD PER 1')	USE 1 @ 22"
3.	514-427	1	S/O COUPLER (040F-04H)	
4.	154-310	1	REDUCER NUT (100F)	
5.	154-311	1	REDUCER STEM (040)	
6.	154-300	1	CONNECTOR (100-12S90)	
7.	110-249	2	WORM CLAMP (1/4" TO 5/8")	
8.	152-113	1	S/O COUPLER (040F-04H90)	
9.	154-339	1	CONNECTOR (04N-040)	
10.	166-141	-	PLNTRY GEARBOX - ROTATION	
11.	115-106	1	REDUCER (06N-04NF)	
12.	349-396	1	SPACER	
13.	310-418	2	RETAINING PLATE	
14.	107-519	8	SCREW (M8-1.25 X 12MM)	USE LOCTITE 277 OR EQUIVALENT
15.	110-492	1	J-CLIP (.343)	

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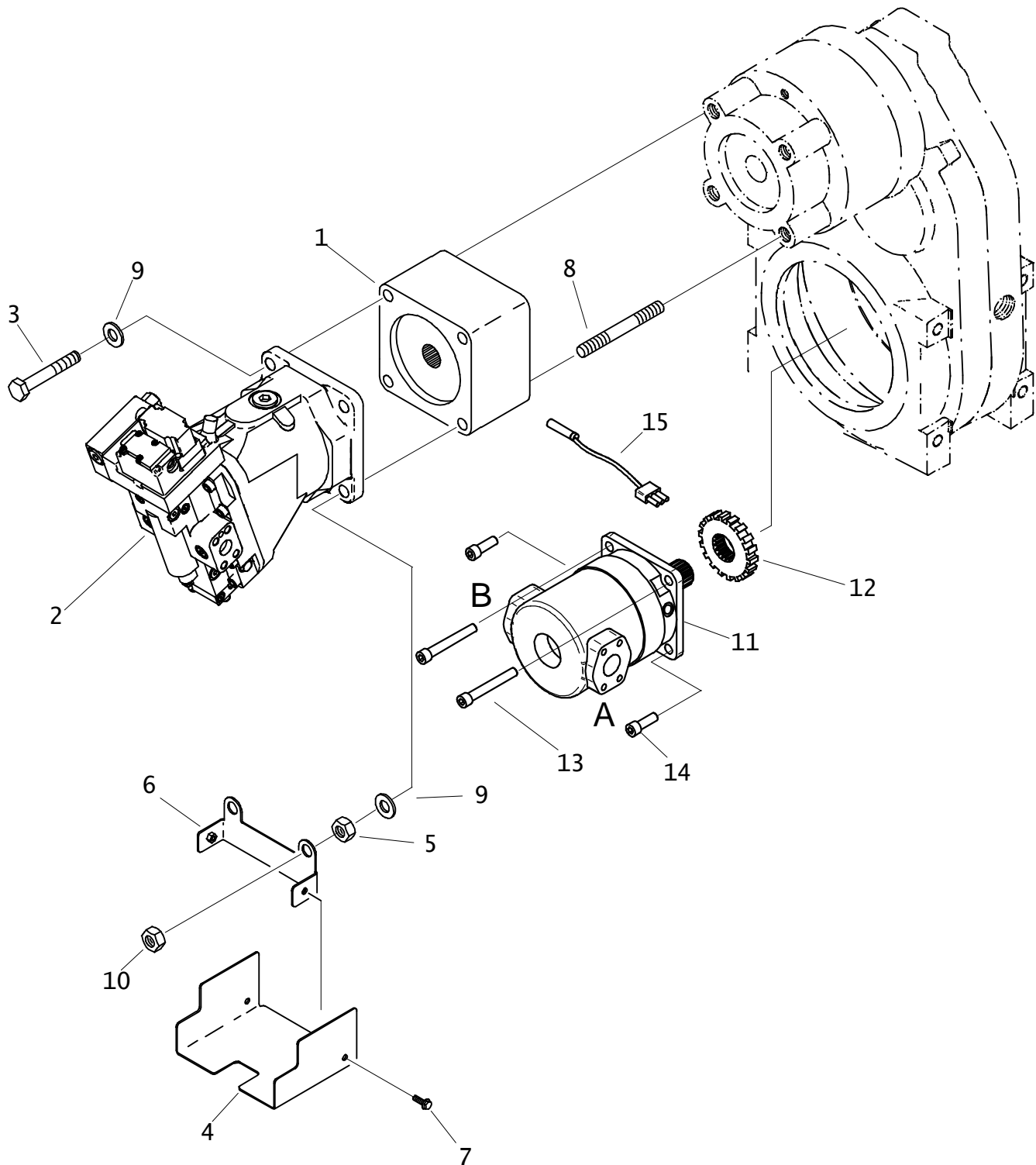
FOOTNOTES:

NOTE

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

NOTE:

## SPINDLE BRAKE



# SPINDLE BRAKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	160-458	1	MODULAR BRAKE	
	191-123		O-RING KIT	
	500-1578		LIP SEAL	
	191-124		STACK SERVICE KIT	
	191-125		GASKET KIT	
2.	149-397	-	HYD MOTOR (PISTON)	
3.	105-464	2	BOLT (3/4-NC X 7", GD8)	USE LOCTITE 277 OR EQUIVALENT
4.	307-832	1	FORMED PLATE	
5.	105-953	2	LOCKNUT (3/4-NC)	
6.	307-833	1	BRACKET	
7.	106-162	2	FLG SCREW (M8-1.25 X 20MM)	
8.	107-458	2	TIE BOLT	USE LOCTITE 277 OR EQUIVALENT
9.	106-949	4	WASHER (3/4", HARDENED)	
10.	105-310	2	JAM NUT (3/4-NC)	
11.	153-612	1	HYDRAULIC MOTOR	AT ONLY
12.	160-432	1	SPEED SENSOR RING	AT ONLY
13.	105-1351	2	SCREW (M12-1.75 X 120 SOC 12.9 ZP)	AT ONLY
14.	106-797	2	SCREW (M12-1.75 X 35mm, SOC	AT ONLY
15.	215-1472	1	PROXIMITY SWITCH 12MM WP	AT ONLY - REFER TO F/N 1

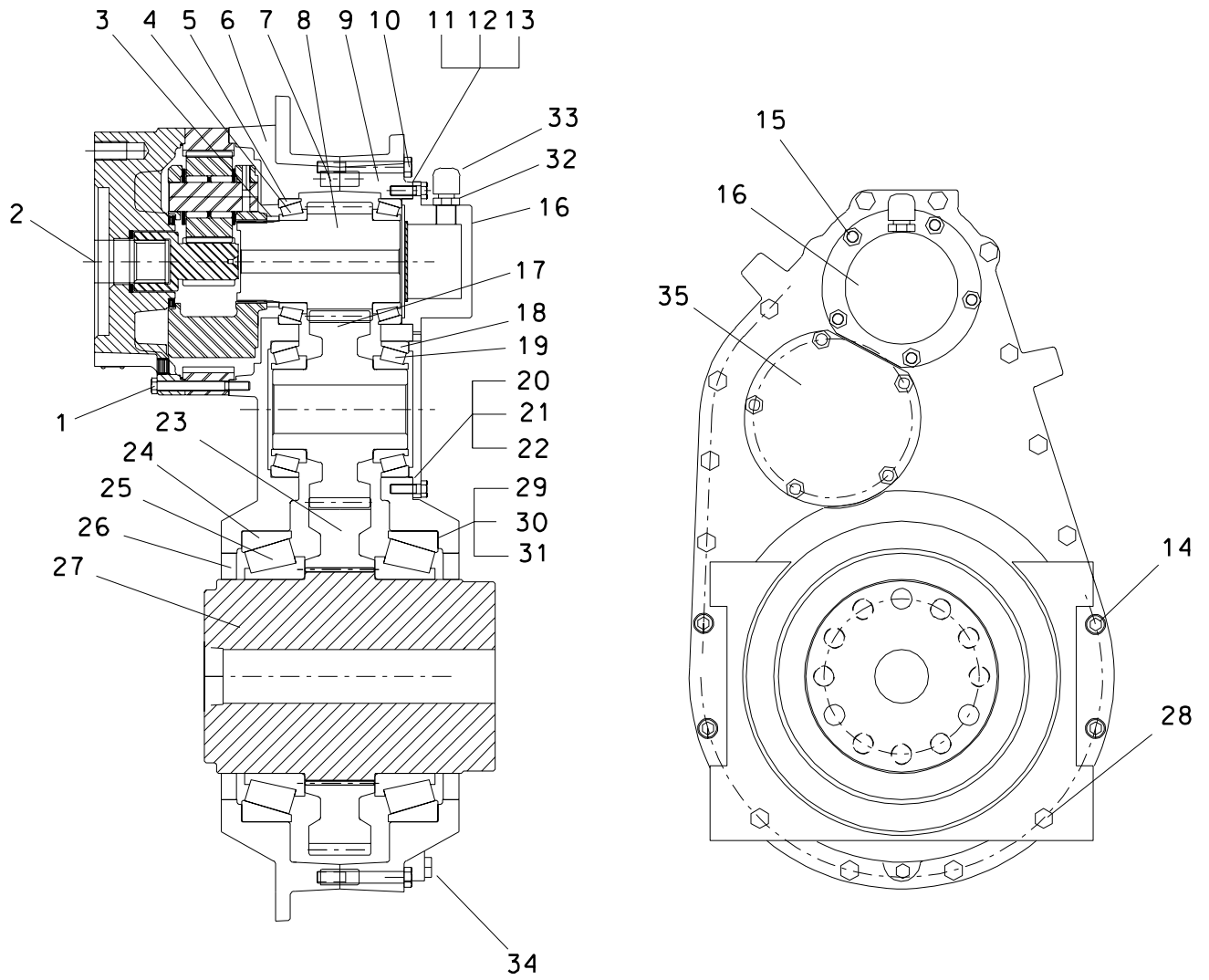
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FOOTNOTES:

1. PROXIMITY SWITCH 215-1472 SUPERCEDES PROXIMITY SWITCH 214-913.

NOTE:

## DRIVE GEARBOX - ROTATION





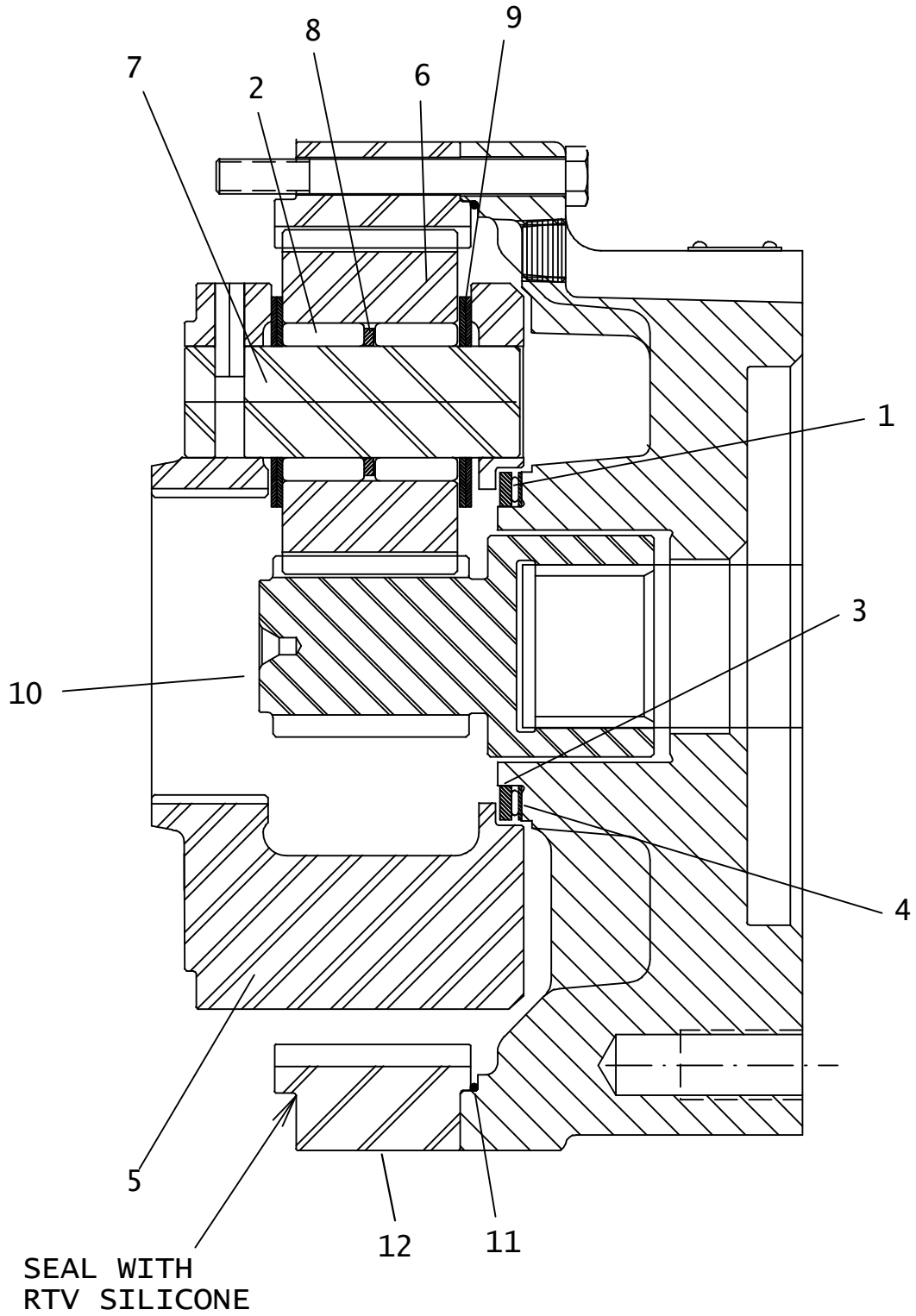
## DRIVE GEARBOX - ROTATION

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-230		DRIVE GEARBOX - ROTATION	
	197-091		REBUILT 166-230 DRIVE GEARBOX	
1.	105-258	20	BOLT (3/8-NC X 3-3/4")	
2.	166-141	1	PLANETARY GEARBOX - ROTATION	
3.	349-396	1	SPACER	
4.	126-075	2	TAPERED BEARING (3.346")	
5.	126-076	2	TAPERED RACE (5.118")	
6.	349-408	1	HOUSING	
7.	500-818	5	DOWEL PIN (16MM X 40MM)	
8.	168-033	1	INPUT PINION	
9.	349-409	1	COVER	
10.	106-336	13	SCREW (M12-1.75 X 90MM)	
11.	165-859	AR	SHIM (.050MM, RED)	
12.	165-860	AR	SHIM (.076MM, GREEN)	
13.	165-861	AR	SHIM (.191MM, TRANSPARENT WHT)	
14.	106-117	4	SCREW (M12-1.75 X 80MM)	
15.	105-245	10	SCREW (M10-1.50 X 25MM)	
16.	350-392	1	UPPER CAP	
17.	168-032	1	INTERMEDIATE GEAR	
18.	126-157	2	TAPERED RACE (130MM)	
19.	126-156	2	TAPERED BEARING (80MM)	
20.	165-862	AR	SHIM (.050MM)	
21.	165-863	AR	SHIM (.076MM)	
22.	165-864	AR	SHIM (.191MM)	
23.	168-031	1	OUTPUT GEAR	
24.	126-159	2	TAPERED RACE (300MM)	
25.	126-158	2	TAPERED BEARING (200MM)	
26.	157-706	2	SEAL (7.875")	
27.	166-229	1	OUTPUT SHAFT	
28.	106-855	2	SCREW (M12-1.75 X 140MM)	
29.	165-865	AR	SHIM (.051MM)	
30.	165-866	AR	SHIM (.178MM)	
31.	165-867	AR	SHIM (.508MM)	
32.	115-133	1	REDUCER (12N-02NF)	
33.	159-003	1	AIR VENT (02N)	
34.	155-074	1	PLUG (08S, SOC, FM)	
35.	349-411	1	LOWER CAP	

FOOTNOTES

NOTE

# PLANETARY GEARBOX - ROTATION



# PLANETARY GEARBOX - ROTATION

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-141		PLANETARY GEARBOX - ROTATION	
1.	126-182	1	THRUST BEARING	
2.	126-183	108	NEEDLE BEARING	
3.	501-845	1	THRUST WASHER	
4.	501-846	1	THRUST WASHER	
5.	501-847	1	CARRIER	
6.	501-848	3	PLANET GEAR	
7.	501-850	3	PLANET SHAFT	
8.	501-851	3	THRUST WASHER	
9.	501-852	12	THRUST WASHER	
10.	501-853	1	SUN GEAR	
11.	157-203	2	O-RING	
12.	501-849	1	RING GEAR	

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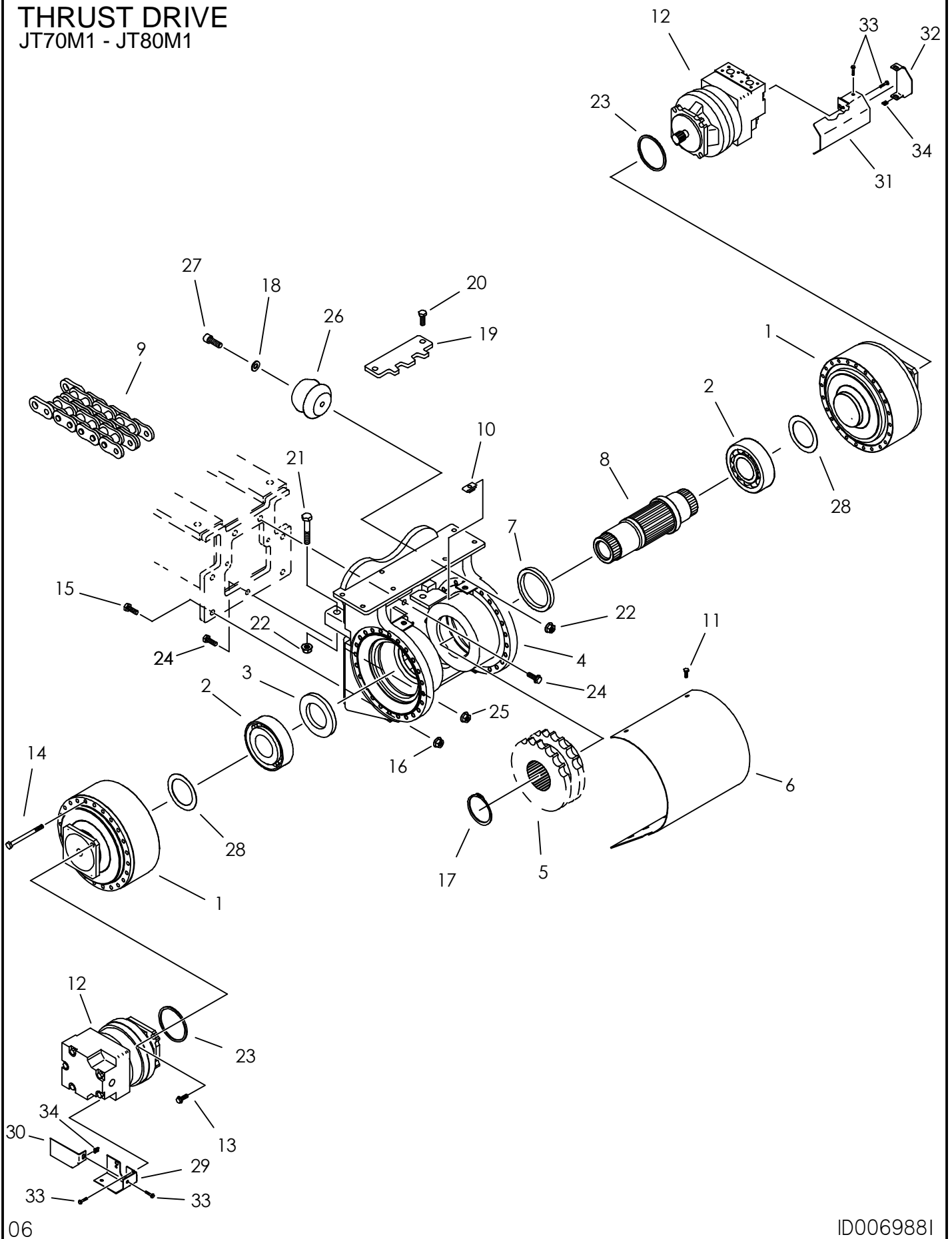
FOOTNOTES:

DRIVE ROLL PIN INTO PLANET SHAFT, THEN PRESS OUT SHAFT TO REMOVE.. REMOVE ROLL PIN FROM SHAFT ONCE THE SHAFT IS OUT.

NOTE:

# THRUST DRIVE

JT70M1 - JT80M1

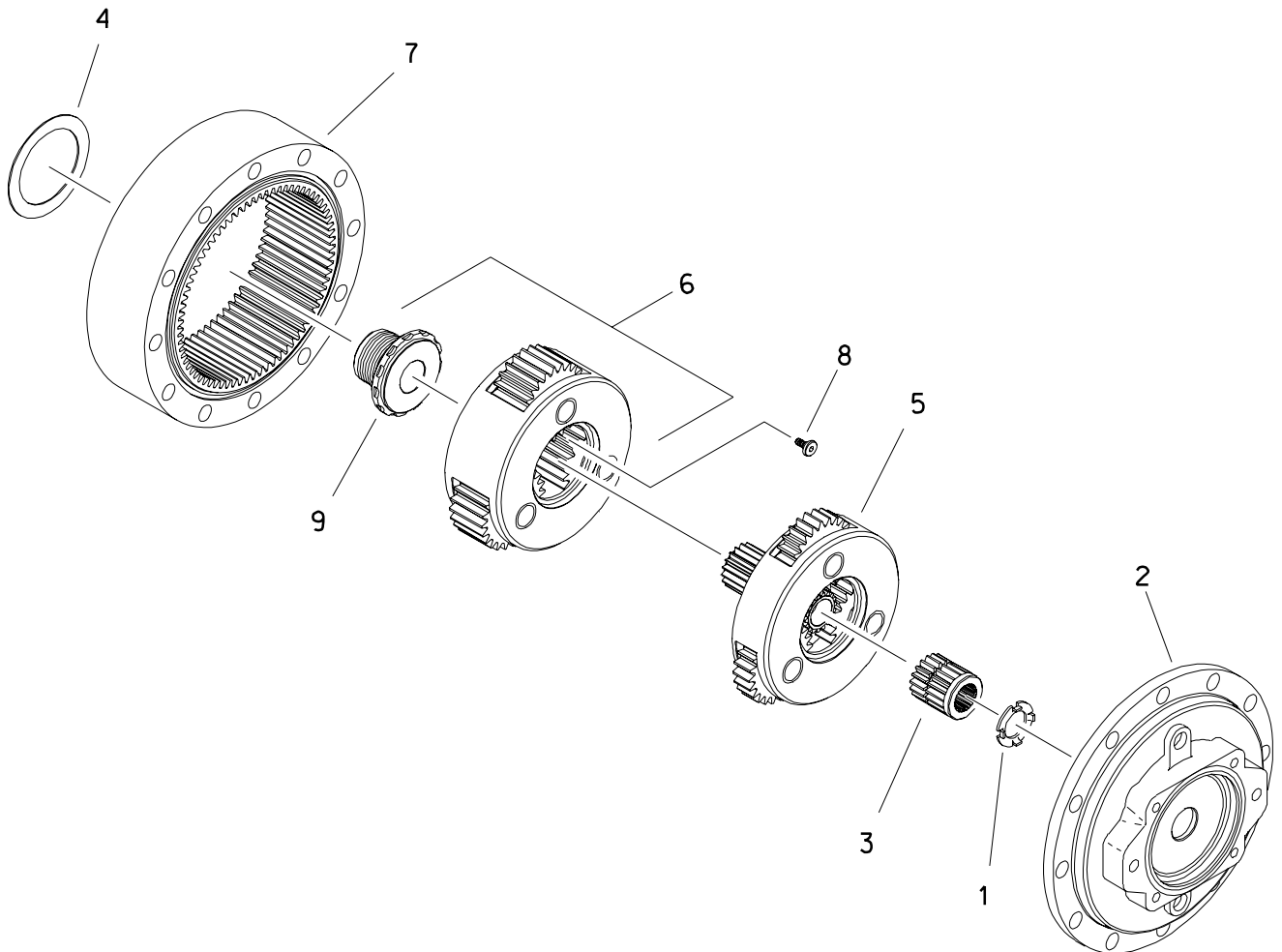


# THRUST DRIVE

## JT70M1 - JT80M1

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	165-559	-	THRUST GEARBOX	INCL REF 1 - 9,11,12,15,18,20,21 & 29
1.	166-178	2	THRUST PLANETARY GEARBOX	
	N/A	2	BEARING RETENTION NUT	USE SERVICE TOOL 301-575
	499-893	2	THRUST WASHER (1.031")	TANGED WASHER INSIDE COVER
2.	125-1023	2	BEARING SET	
3.	157-790	1	SEAL (3.75" X 5")	
4.	370-218	1	THRUST DRIVE HOUSING (24-BOLT)	
5.	175-746	1	SPROCKET (D160B13)	
6.	349-382	1	COVER	
7.	157-710	1	INTERNAL SEAL (4.75")	
8.	167-337	1	THRUST SHAFT	
9.	130-332	1	ROLLER CHAIN (#160-2, 265P)	THRUST
	130-713	-	CONNECTOR LINK(#160-2)	
	179-250	-	CONNECTOR PIN (#160-2)	
	370-245	-	SPECIAL HEAVY DUTY CLEVIS	
	129-012	-	CLEVIS PLATE LINK	
10.	106-558	2	CLIP NUT (M10-1.5)	
11.	106-724	6	FLG SCREW (M10-1.50 X 25mm)	TORQUE TO 97 FT LBS (131 NM)
12.	158-905	2	HYD MOTOR (THRUST)	
	165-893	1	END CAP GASKET	
	126-196	2	CRADLE BEARING	
	499-083	1	VALVE PLATE	
	157-199	1	O-RING (171 D75)	
	126-020	1	BALL BEARING (1.369")	
	157-740	1	LIP SEAL	
	217-408	-	SOLENOID VALVE (12V)	
	165-894	1	GASKET FRONT COVER	
	157-200	1	O-RING (153 D75)	
	190-765	-	SEAL REPAIR KIT	
13.	106-499	8	FLG BOLT (1/2-NC X 1-1/2", GD8)	
14.	107-298	48	SCREW (M14-2.00 X 160mm)	
15.	106-616	4	SCREW (M16-2.00 X 55mm, 10.9)	
16.	106-355	5	FLG NUT (M16-2.00, 10.9)	
17.	115-453	1	EXTERNAL SNAP RING (4")	
18.	106-393	2	WASHER (M20)	
19.	370-050	1	CHAIN RETAINER	
20.	105-998	2	SCREW (M16-2.00 X 40mm)	
21.	106-663	2	SCREW (M20-2.50 X 110mm, 10.9)	
22.	106-356	4	FLG NUT (M20-2.50, 10.9)	
23.	157-084	2	O-RING (159 D70)	
24.	106-666	3	SCREW (M16-2 X 65mm, 10.9)	
25.	106-442	1	FLG LOCKNUT (M16-2.00, PRV TRQ)	
26.	116-769	2	BUMPER	
27.	107-275	2	SCREW (M20-2.50 X 55mm)	
28.	499-174	-	SHIM (3.55")	
29.	306-396	1	COVER MOUNT	
30.	306-399	1	FORMED MOUNT	
31.	306-400	1	COVER MOUNT	
32.	306-403	1	FORMED COVER	
33.	106-162	8	FLG SCREW (M8-1.25 X 20MM)	
34.	106-551	4	CLIP NUT (M8-1.25)	
NOT SHOWN:	259-461	1	PICKUP ALIGNMENT TOOL	

## THRUST PLANETARY GEARBOX

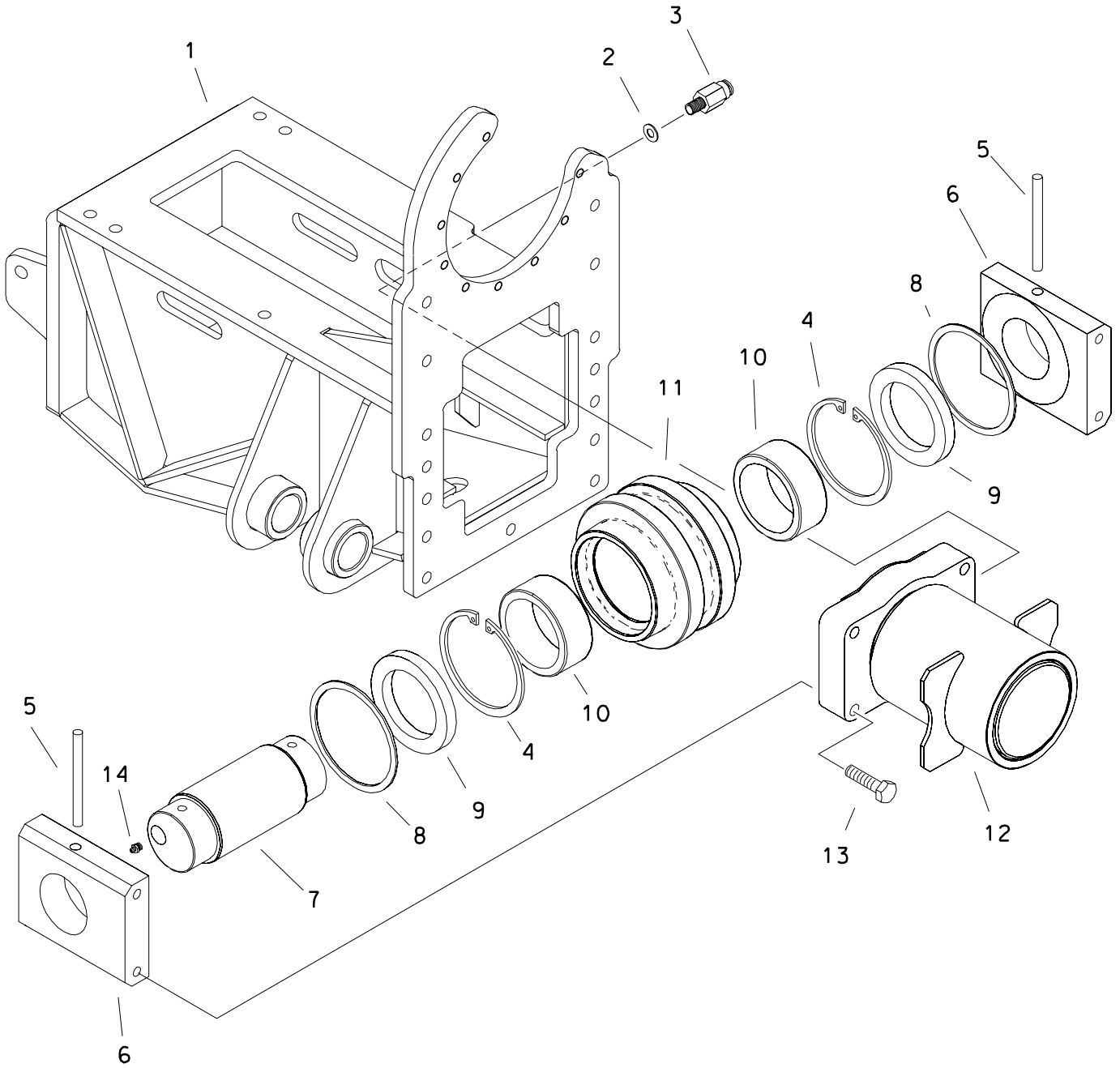


# THRUST PLANETARY GEARBOX

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-178	1	THRUST PLANETARY GEARBOX	
1.	499-893	1	THRUST WASHER (1.031")	
2.	165-589	1	PLANETARY GEARBOX COVER	
3.	165-590	1	PRIMARY SUN GEAR	
4.	499-174	1	SHIM (3.55")	
5.	165-592	1	PRIMARY CARRIER	
6.	165-593	1	SECONDARY CARRIER	
7.	165-594	1	RING GEAR	
8.	107-362	1	LOCK SCREW (.312" X .500")	
9.	121-026	1	NUT LOCK	USE SERVICE TOOL #301-575 ON NUT

FOOTNOTES

# THRUST CHAIN IDLER/ADJUSTMENT





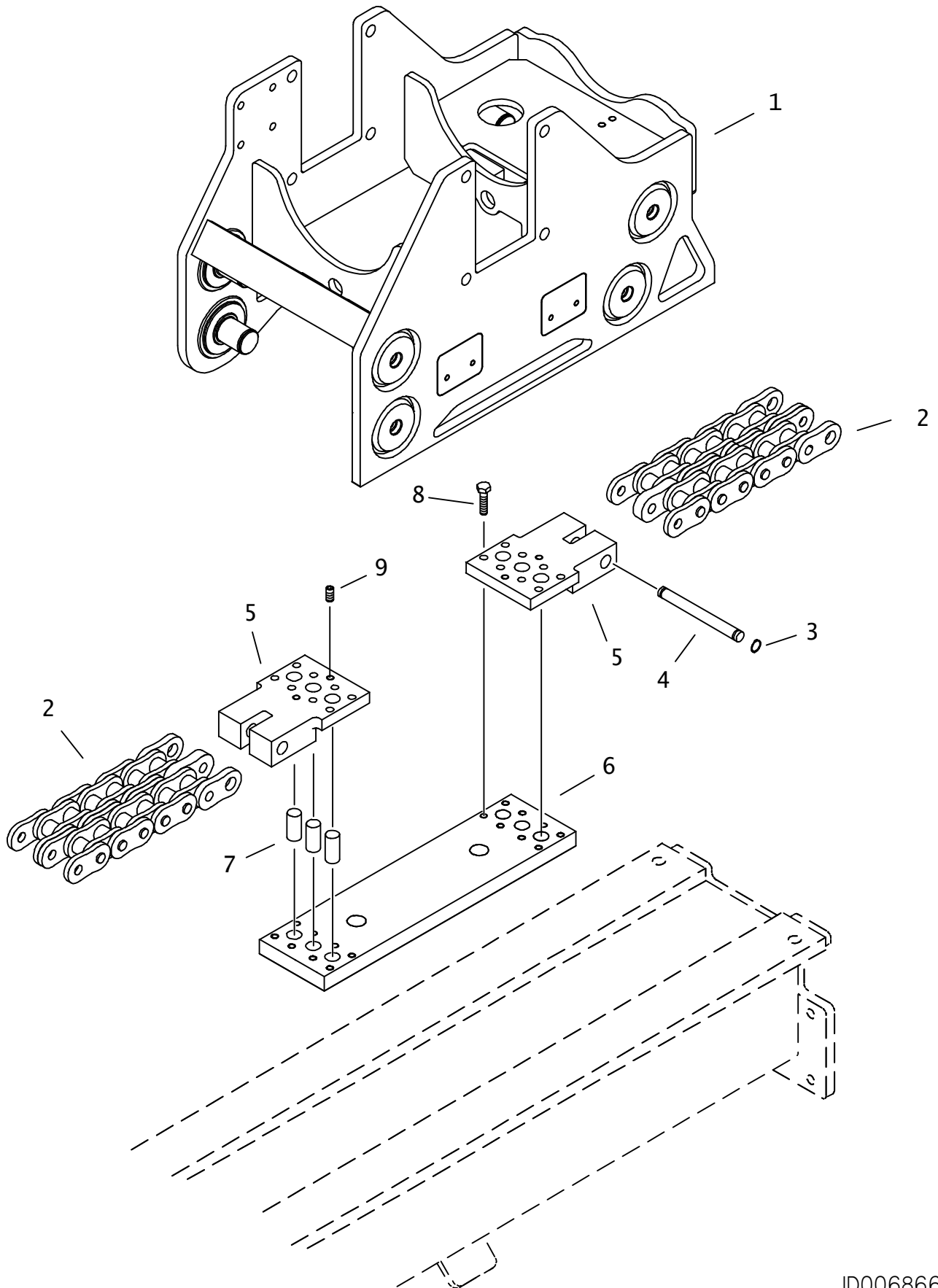
# THRUST CHAIN IDLER/ADJUSTMENT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-675	-	FRONT FRAME	ENDS WITH S/N: 2V2567
	314-557	-	FRONT FRAME	BEGINS WITH S/N: 2W0856
2.	115-023	1	SEAL WASHER (M17)	
3.	115-022	1	VALVE ZERK (M16-1.50)	
4.	115-534	2	INTERNAL SNAP RING (5.000")	
5.	105-578	2	ROLL PIN (M12 X 160MM)	
6.	349-385	2	MOUNT BLOCK	
7.	167-310	1	IDLER SHAFT	
8.	110-938	2	THRUST WASHER (3.996", DELRIN)	
9.	157-171	2	EXTERNAL SEAL (4.000")	
10.	126-173	2	NEEDLE BEARING (4.000")	
11.	370-216	1	IDLER	
12.	349-391	1	ADJUSTMENT CYLINDER	
13.	106-341	4	SCREW (M16-2.0 X 70MM)	USE LOCTITE 242 OR EQUIVALENT
14.	115-013	2	ZERK (1/4-NF, STR)	

FOOTNOTES

NOTE

# CHAIN CONNECTOR



# CHAIN CONNECTOR

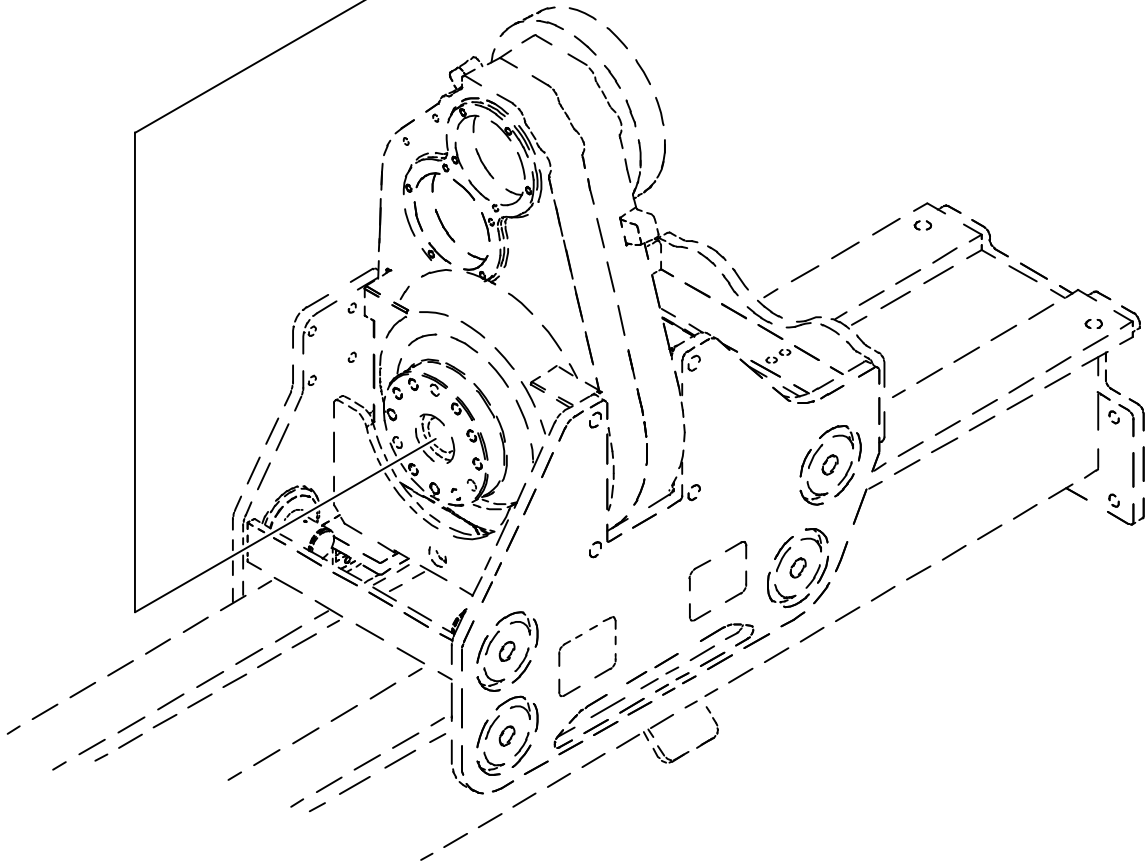
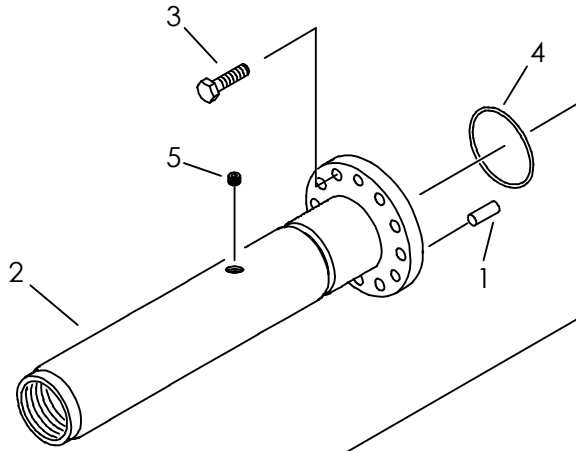
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-704	-	CARRIAGE	
2.	130-332	1	ROLLER CHAIN (#160-2, 265P)	INCL REF NO.'S 3, 4 & 5
	129-003	-	3 LINK REPAIR SECTION (2.000P)	
	130-713	-	CONNECTOR LINK (#160-2)	
3.	118-053	4	EXTERNAL SNAP RING (.875")	
4.	179-250	2	CHAIN CONNECTOR PIN (#160-2)	
5.	370-245	2	SPECIAL HEAVY DUTY CLEVIS	
6.	349-557	1	CHAIN CONNECTOR (#160-2)	
7.	105-587	6	DOWEL PIN (1" X 2")	
8.	106-477	16	SCREW (M12-1.75 X 45MM, 10.9)	
9.	107-303	4	SET SCREW (M12-1.75 X 20MM)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# SAVER SUB



# SAVER SUB

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	500-818	3	DOWEL PIN (16mm X 40mm)	
2.	400-1132	1	SAVER SUB 10,000T	SUPERSEDES 370-179
3.	106-244	9	SCREW (M16-2 X 60mm)	USE LOCTITE 242 OR EQUIVALENT
4.	155-701	1	O-RING (345 D70)	
5.	115-158	1	PLUG (06N, SQ)	

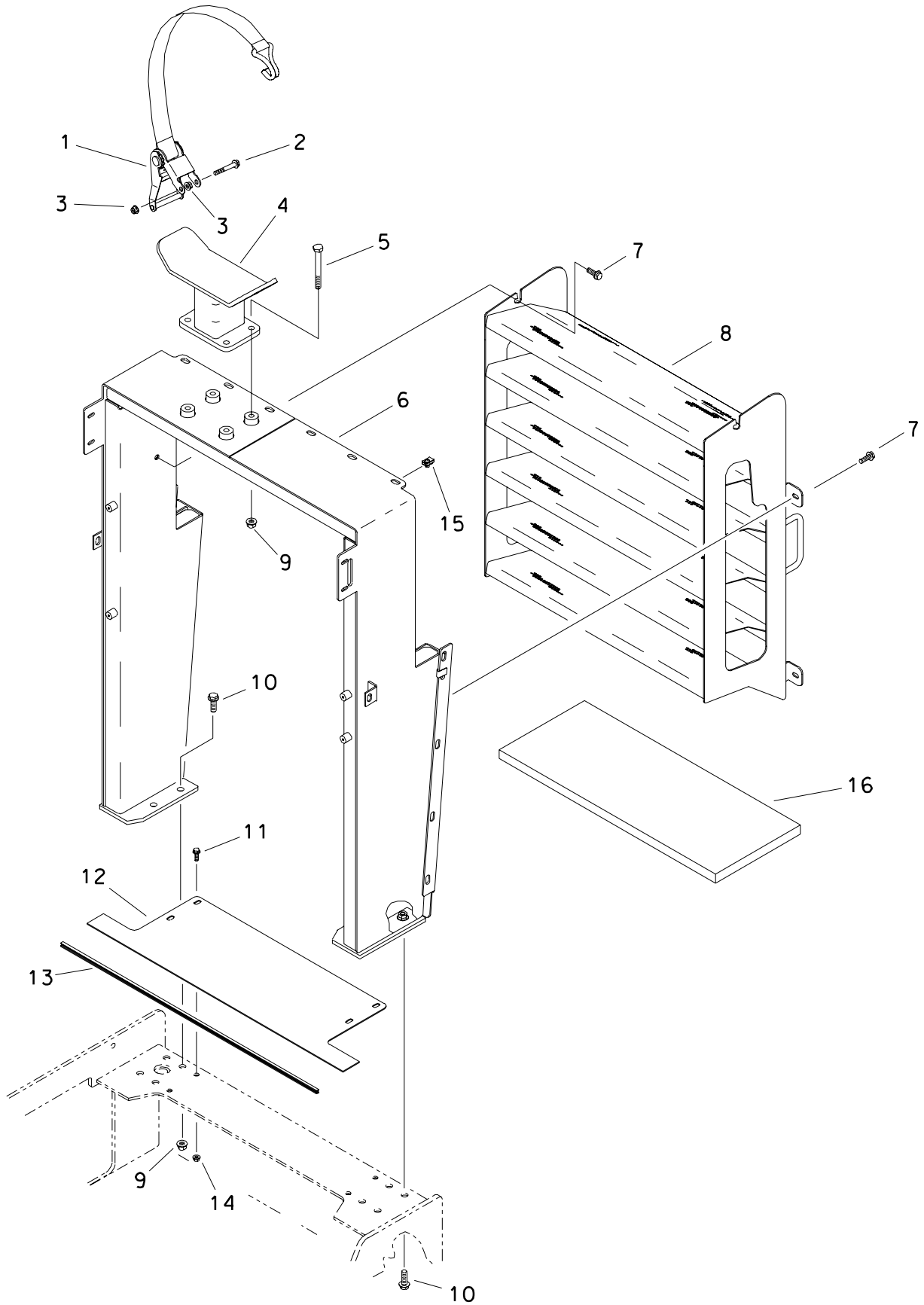
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368-164      THREAD PROTECT PLUG 3.27-4

FOOTNOTES:

NOTE:

## GRILLE

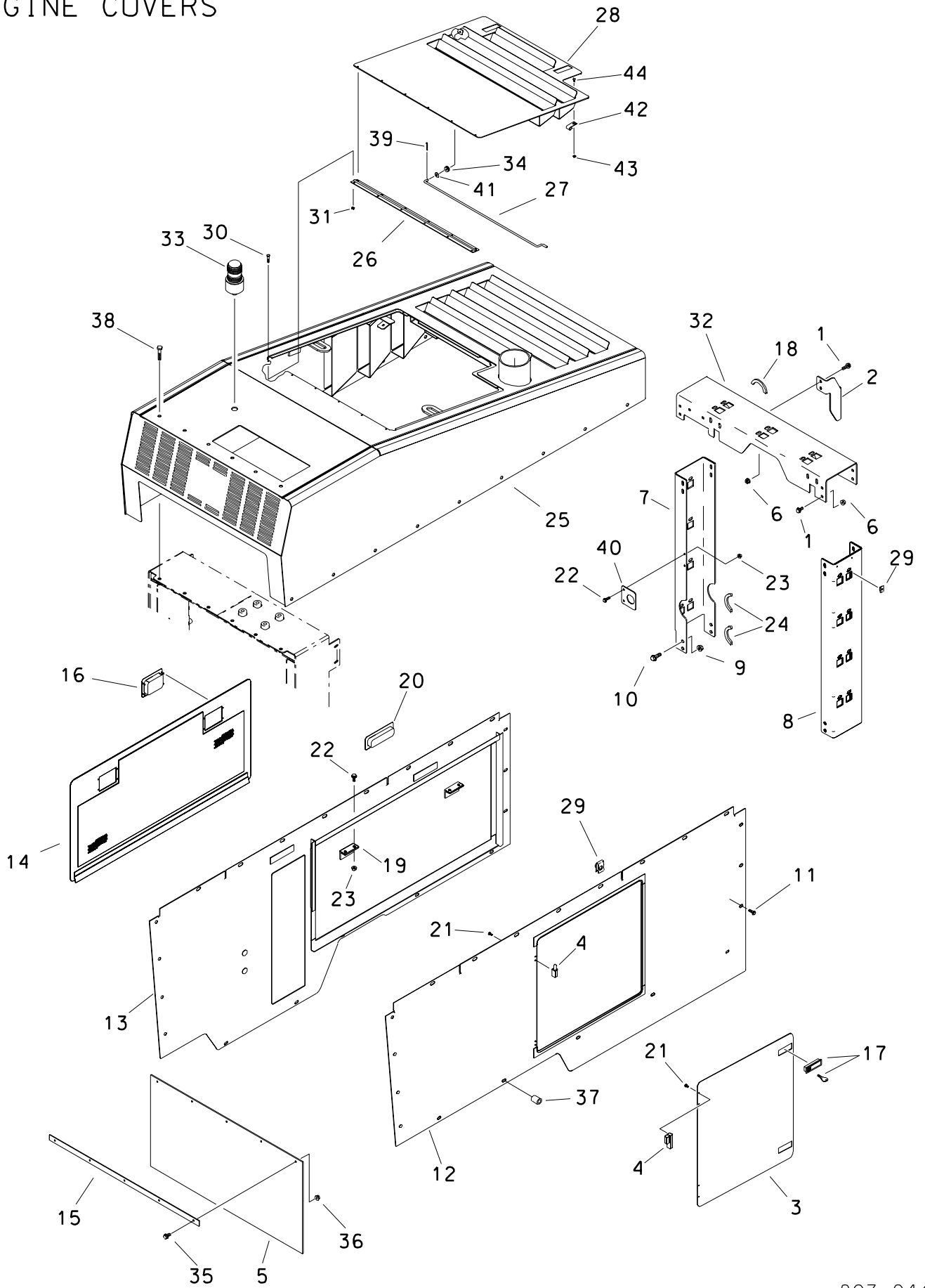


# GRILLE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	111-015	1	LOAD BINDER	
2.	106-700	1	SCREW (M12-1.75 X 80MM)	
3.	106-685	2	LOCKNUT(M12-1.75,PRV TRQ,10.9)	
4.	308-618	1	CRANE REST	
5.	106-337	4	SCREW (M12-1.75 X 110mm)	
6.	308-440	1	GRILLE	
7.	106-724	6	FLG SCREW (M10-1.50 X 25mm)	
8.	306-642	1	GRILLE INSERT	
9.	106-709	8	FLG LK NUT (M12-1.75)	
10.	107-004	8	FLG LK SCREW (M12-1.75 X 45mm)	
11.	106-991	4	FLG LK SCREW (M8-1.25 X 20mm)	ENDS WITH S/N: 2V2567
	106-724	4	FLG SCREW (M10-1.50 X 25MM)	BEGINS WITH S/N: 2W0856
12.	309-222	1	COVER PLATE	
13.	116-421	AR	BULK EDGE (1/8", SOLD PER 1')	USE 1 @ 33"
14.	106-386	4	FLG LK NUT (M8-1.25)	ENDS WITH S/N: 2V2567
15.	106-558	6	CLIP NUT (M10-1.50)	
16.	116-948	6	NOISE BARRIER	

FOOTNOTES

# ENGINE COVERS





## ENGINE COVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-382	14	FLG LK SCREW (M10-1.5 X 20MM)	
2.	349-693	1	REAR TANK BRACKET	
3.	308-715	1	DOOR	
4.	111-002	2	LIFT-OFF HINGE (OFF-SET)	
5.	370-109	1	DEFLECTOR FLAP	ENDS WITH S/N: 2V2567
	117-544	1	DEFLECTOR FLAP	BEGINS WITH S/N: 2W0856
6.	106-387	14	FLG LOCKNUT (M10-1.50)	
7.	349-690	1	FORMED COLUMN	
8.	349-691	1	FORMED COLUMN	
9.	106-709	8	FLG LK NUT (M12-1.75)	
10.	106-469	8	FLG SCREW (M12-1.75 X 30MM)	
11.	106-991	45	FLG LK SCREW (M8-1.25 X 20MM)	
12.	370-483	1	RIGHT SIDE COVER	ENDS WITH S/N: 2V2567
	316-814	1	RIGHT SIDE COVER	BEGINS WITH S/N: 2W0856
13.	370-481	1	LEFT SIDE COVER	
14.	349-705	1	ACCESS DOOR	
15.	370-108	1	CLAMP BAR	
16.	110-514	2	LOCKING LATCH (ADJUSTABLE)	
	110-596		KEYS (PAIR)	
17.	110-757	4	LEVER LATCH (ADJUST, LOCKING)	INCL KEY
	110-596		KEY (PAIR)	
	117-558	4	ADJUST LEVER LATCH (LOCKING)	INCL KEY
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
18.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 6"
19.	349-807	2	DOOR STOP	
20.	110-699	2	PULL (1.210" X 5.190", BLACK)	
21.	106-228	8	SCREW (M5-0.80 X 10MM)	
22.	106-162	6	FLG SCREW (M8-1.25 X 20MM)	
23.	106-386	6	FLG LOCK NUT (M8-1.25)	
24.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 2 @ 6"
25.	308-463	1	HOOD	
26.	107-552	1	HINGE	
27.	309-157	1	PRDP ROD	
28.	309-156	1	TOP DOOR	
29.	106-551	45	CLIP NUT (M8-1.25)	
30.	106-234	12	SCREW (M6-1.00 X 12MM)	
31.	106-385	12	FLG LOCKNUT (M6-1.00)	
32.	308-598	1	FORMED CROSSMEMBER	

FOOTNOTES

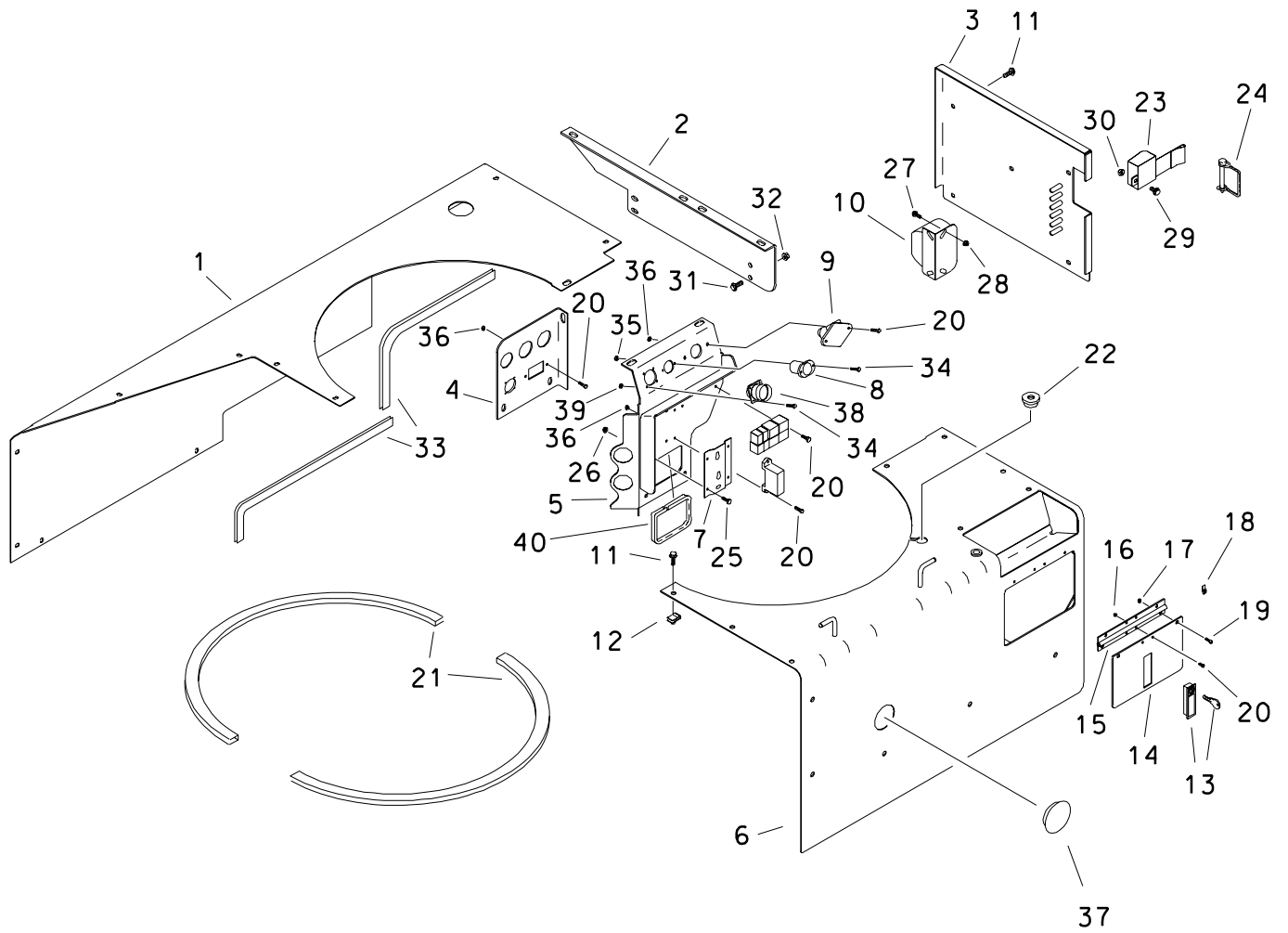
# ENGINE COVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
33.	214-722	1	STROBE LIGHT (AMBER)	
	217-870	-	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)	
	214-104	2	PACKARD MALE TERMINAL	
	214-103	1	2-WAY MALE CONNECTOR	
34.	106-076	1	WASHER (1/4")	
35.	106-162	5	FLG SCREW (M8-1.25 X 20MM)	
36.	106-386	5	FLG LOCKNUT (M8-1.25)	
37.	106-565	3	NUTSERT (M8-1.25)	
38.	107-001	6	FLG LK SCREW (M10-1.50 X 25MM)	
39.	105-523	1	COTTER PIN (.125" X .750")	
40.	310-560	1	HARNESS PLATE	
41.	117-456	1	GROMMET	
42.	110-492	1	J-CLIP (.343")	
43.	106-561	1	LOCKNUT (M8-1.25, PRV TRQ, 10.9)	
44.	107-519	1	SCREW (M8-1.25 X 12MM)	

FOOTNOTES



## FRONT COVERS

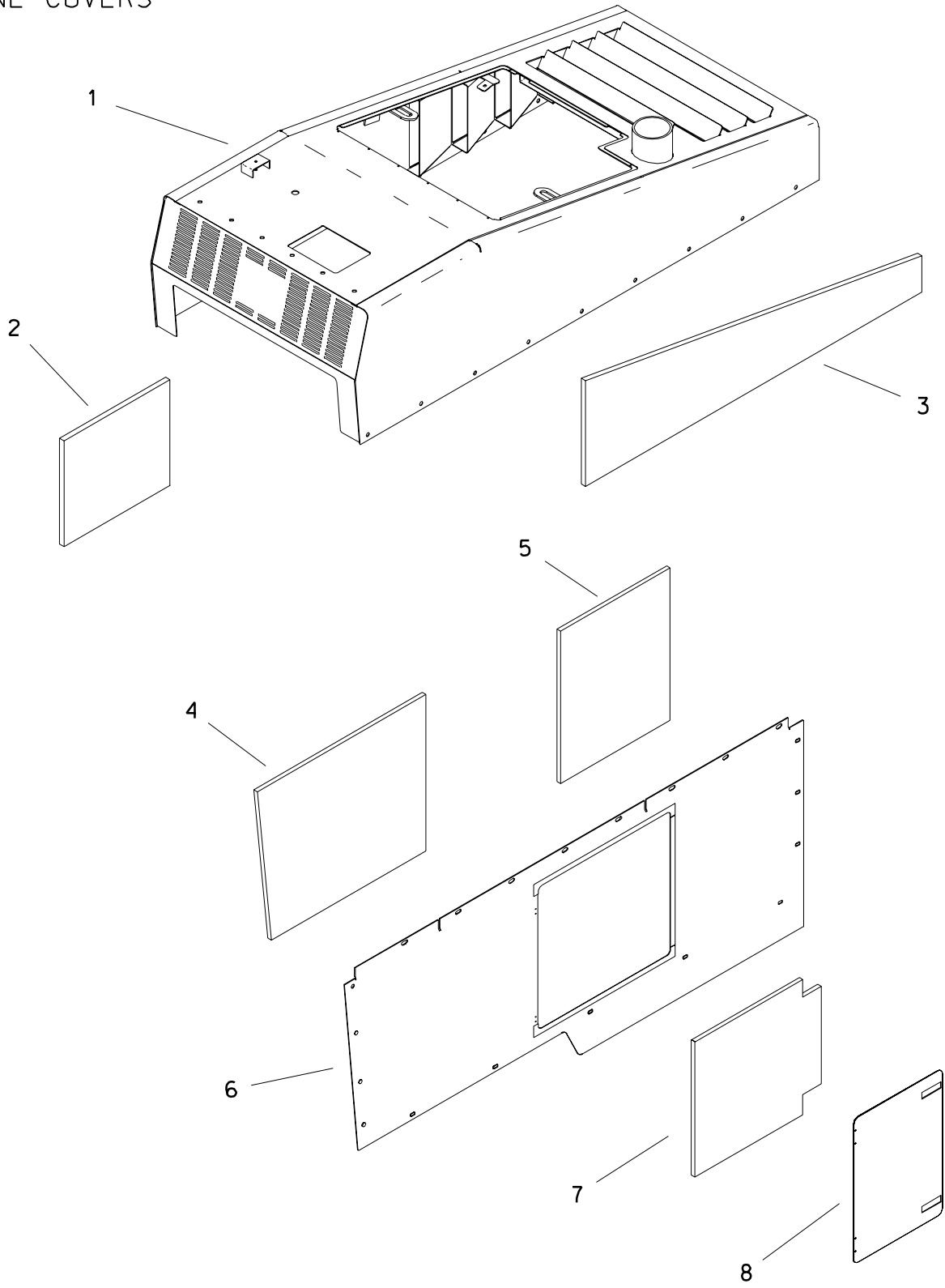


## FRONT COVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-798	1	LEFT COVER	USE WITH HOIST OPTION
	370-458	1	LEFT COVER	USE W/OUT HOIST OPTION
2.	349-830	1	TOP COVER MOUNT	
3.	349-828	1	COVER PLATE	
4.	307-554	1	BULKHEAD PLATE	
5.	301-745	1	CONNECTOR/FUSE PANEL	
6.	349-833	1	RIGHT COVER	ENDS WITH S/N: 2V2567, USE WITH HOIST OPTION
	316-815	1	RIGHT COVER	BEGINS WITH S/N: 2W0856, USE WITH HOIST OPTION
	370-460	1	RIGHT COVER	ENDS WITH S/N: 2V2567, USE W/OUT HOIST OPTION
	320-699	1	RIGHT COVER	BEGINS WITH S/N: 2W0856, USE W/OUT HOIST OPTION
7.	353-135	1	FUSE PLATE ADAPTER	
8.	214-301	1	ACCESSORY SOCKET	
9.	217-017	1	CONNECTOR (4-WAY, FM)	
10.	306-602	1	ALARM	
11.	106-991	33	FLG LK SCREW (M8-1.25 X 20MM)	
12.	106-551	33	CLIP NUT (M8-1.25)	
13.	110-757	1	LEVER LATCH (ADJUST, LOCKING)	INCL KEYS
	110-596		KEY (PAIR)	
	117-558	1	ADJUST LEVER LATCH (LOCKING)	
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
14.	348-299	1	ACCESS PANEL	
15.	111-047	1	HINGE (214MM)	
16.	106-138	4	NUT (M5-0.80)	
17.	106-385	4	LOCKNUT (M6-1.00)	
18.	110-524	1	SPRING RETAINER	
19.	106-640	4	SCREW (M6-1.00 X 20MM, BUT SOC)	
20.	106-542	10	SCREW (M5-0.80 X 16MM, PAN PLPS)	
21.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 2 @ 40", USED ONLY WITH HOIST OPTION
22.	116-768	1	GROMMET (1/4")	
23.	171-008	1	RETRACTABLE BELT (ORANGE)	
24.	110-032	1	SNAPPER PIN (5/16" X 2-1/2")	
25.	106-234	4	SCREW (M6-1.00 X 12MM)	
26.	106-385	4	FLG LOCKNUT (M6-1.00)	
27.	106-162	2	FLG SCREW (M8-1.25 X 20MM)	
28.	106-386	2	FLG LOCKNUT (M8-1.25)	
29.	106-469	1	FLG SCREW (M12-1.75 X 30MM)	
30.	106-685	1	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
31.	106-382	4	FLG LK SCREW (M10-1.50 X 20MM)	
32.	106-387	4	FLG LOCKNUT (M10-1.50)	
33.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 44"
34.	106-058	2	BOLT (#6-32 X 1-1/8", RD SLT)	
35.	105-215	6	NUT (#6-32)	
36.	106-850	6	LOCKNUT (M5-0.80)	
37.	110-982	1	DOME PLUG (2.5")	
38.	214-468	-	RECEPTACLE (19 PIN)	
39.	105-215	1	NUT (#6-32)	
40.	115-686	AR	BULK EDGE (5/32", SOLD/ 1")	USE 1 @ 18"

## FOOTNOTES

# SOUND INSULATION ENGINE COVERS



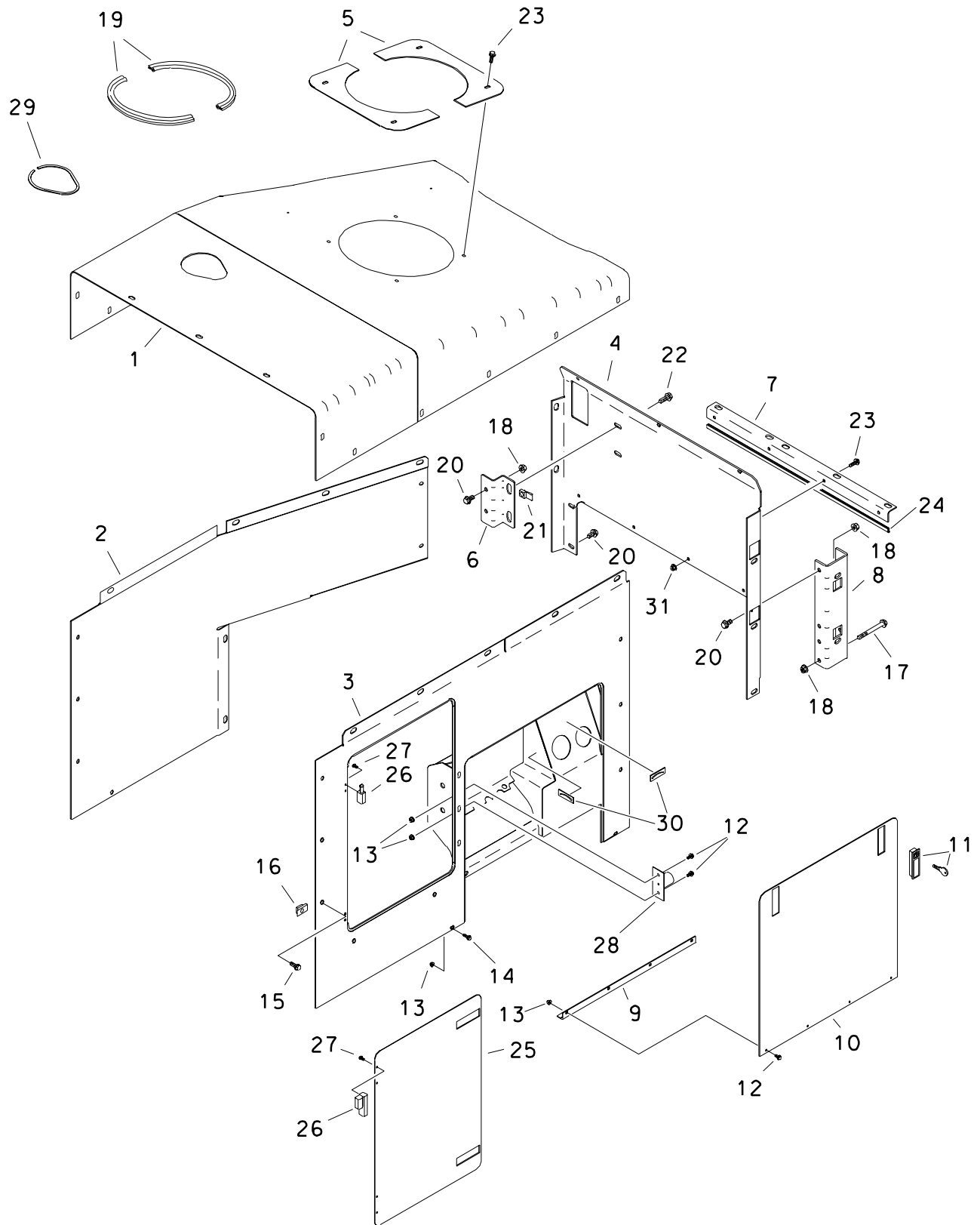
# SOUND INSULATION ENGINE COVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	308-463	-	HOOD	
2.	117-366	1	SOUND INSULATION	
3.	117-362	1	SOUND INSULATION	
4.	117-363	1	SOUND INSULATION	
5.	117-365	1	SOUND INSULATION	
6.	370-483	1	RIGHT SIDE COVER	ENDS WITH S/N: 2V2567
	316-814	1	RIGHT SIDE COVER	BEGINS WITH S/N: 2W0856
7.	117-364	-	SOUND INSULATION	
8.	308-715	-	DOOR	

FOOTNOTES

## COVERS

HYD RESERVOIR AND PUMPS  
ENDS WITH S/N: 2V2567





## COVERS

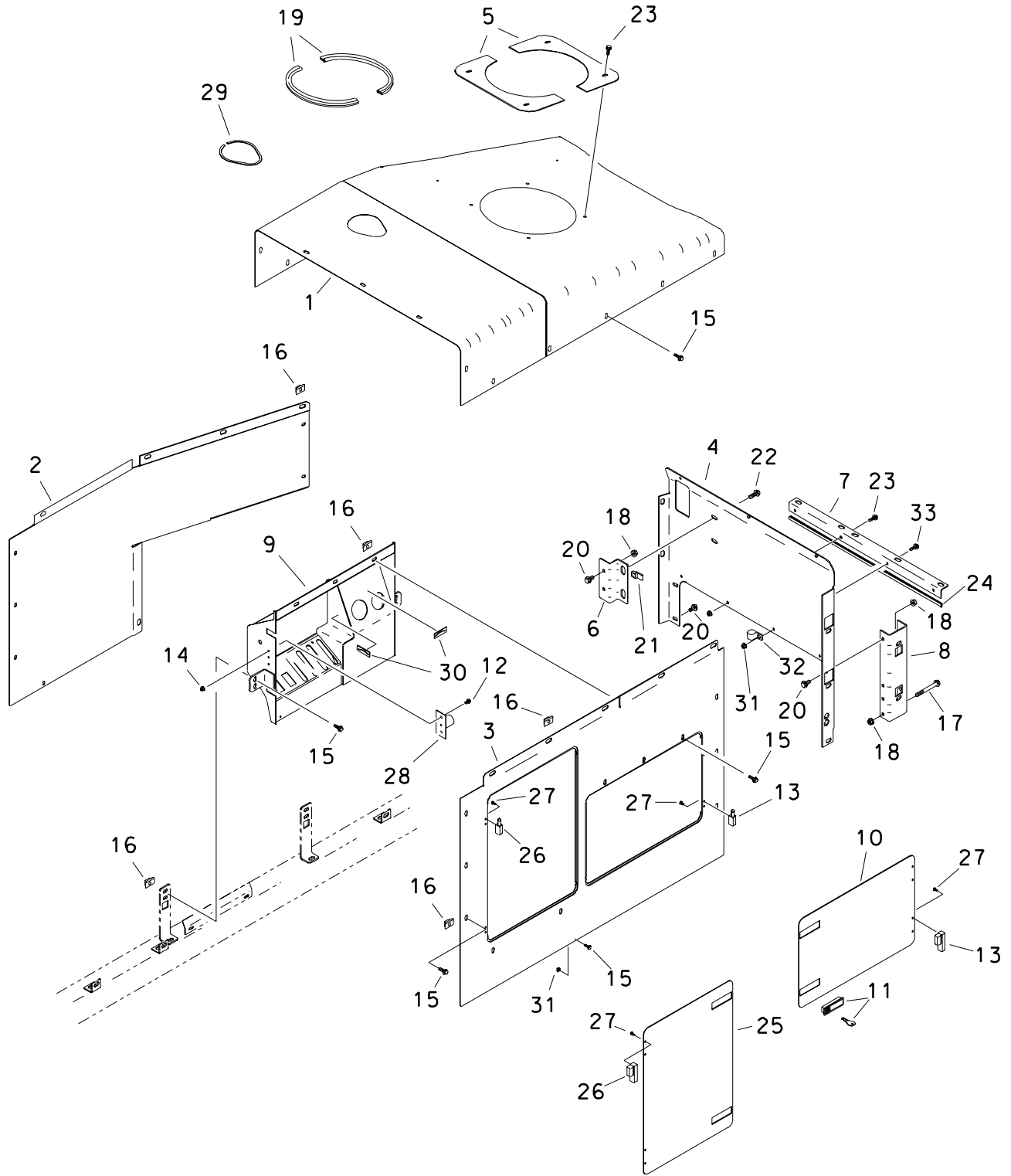
HYD RESERVOIR AND PUMPS  
ENDS WITH S/N: 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	370-406	1	FRONT HOOD	
	349-737	1	FRONT HOOD	
2.	349-794	1	FRONT LEFT SIDE PLATE	
3.	349-756	1	FRONT RIGHT SIDE	
4.	349-793	1	END PLATE	
5.	349-810	2	COVER PLATE	
6.	349-795	1	FRONT TANK BRACKET	
7.	349-806	1	BRACKET	
8.	349-796	1	CHANNEL	
9.	110-980	1	HINGE	
10.	349-755	1	DODR	
11.	117-558	4	ADJUST LEVER LATCH (LOCKING)	
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
	110-757	4	LEVER LATCH (ADJUST, LOCKING)	INCL KEYS
	110-596	4	KEY (PAIR)	
12.	106-378	10	FLG LK SCREW (M6-1.0 X 12MM)	
13.	106-385	12	FLG LOCKNUT (M6-1.00)	
14.	106-379	2	FLG LK SCREW (M6-1.0 X 20MM)	
15.	106-991	31	FLG LK SCREW (M8-1.25 X 20MM)	
16.	106-551	31	CLIP NUT (M8-1.25)	
17.	106-206	2	SCREW (M10-1.50 X 90MM)	
18.	106-387	6	FLG LOCKNUT (M10-1.5)	
19.	116-421	AR	BULK EDGE (1/8", SOLD PER 1')	USE 2 @ 15-1/4"
20.	106-382	6	FLG LK SCREW (M10-1.50 X 20MM)	
21.	106-558	2	CLIP NUT (M10-1.5)	
22.	106-383	2	FLG LK SCREW (M10-1.50 X 30MM)	
23.	106-162	8	FLG SCREW (M8-1.25 X 20MM)	
24.	115-704	AR	BULK EDGE (1/4", SOLD PER 1")	USE 1 @ 23-3/4"
25.	349-398	1	DQDR	
26.	111-002	2	LIFT-OFF HINGE (OFF-SET)	
27.	106-228	8	SCREW (M5-.8 X 10MM)	
28.	215-412	1	LICENSE PLATE LAMP	
29.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 15"
30.	110-208	2	LEVEL INDICATOR	
31.	106-386	4	FLG LOCKNUT (M8-1.25)	

## FOOTNOTES

# COVERS

HYD RESERVOIR AND PUMPS  
BEGINS WITH S/N: 2W0856



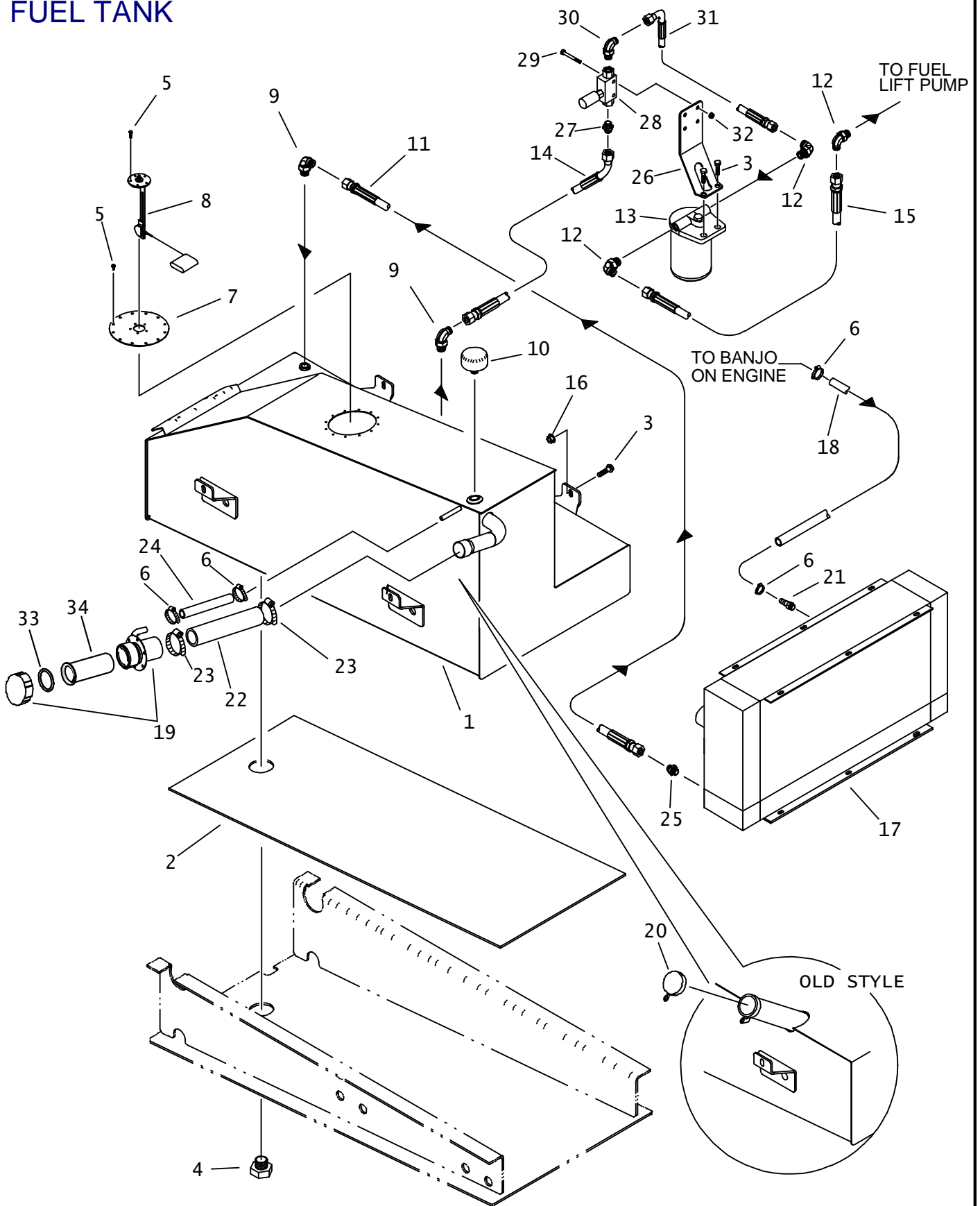
## COVERS

HYD RESERVOIR AND PUMPS  
 BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	370-406	1	FRONT HOOD	
2.	349-794	1	FRONT LEFT SIDE PLATE	
3.	310-564	1	FRONT RIGHT SIDE PANEL	
4.	349-793	1	END PLATE	
5.	349-810	2	COVER PLATE	
6.	349-795	1	FRONT TANK BRACKET	
7.	349-806	1	BRACKET	
8.	349-796	1	CHANNEL	
9.	310-678	1	VALVE COVER	
10.	310-689	1	ACCESS DOOR	
11.	110-757	4	LEVER LATCH (ADJUST, LOCKING)	INCL KEYS
	110-596	4	KEYS (PAIR)	
	117-558	4	ADJUST LEVER LATCH (LOCKING)	
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
12.	106-378	2	FLG LK SCREW (M6-1.00 X 12MM)	
13.	105-617	2	LIFT-OFF HINGE (OFF-SET)	
14.	106-385	2	FLG LOCKNUT (M6-1.00)	
15.	106-991	40	FLG LK SCREW (M8-1.25 X 20MM)	
16.	106-551	38	CLIP NUT (M8-1.25)	
17.	106-206	2	SCREW (M10-1.50 X 90MM)	
18.	106-387	6	FLG LOCKNUT (M10-1.50)	
19.	116-421	AR	BULK EDGE (1/8", SOLD PER 1')	USE 2 @ 15-1/4"
20.	106-382	6	FLG LK SCREW (M10-1.50 X 20MM)	
21.	106-558	2	CLIP NUT (M10-1.50)	
22.	106-383	2	FLG LK SCREW (M10-1.50 X 30MM)	
23.	106-162	7	FLG SCREW (M8-1.25 X 20MM, GD 8)	
24.	115-704	AR	BULK EDGE (1/4", SOLD PER 1')	USE 1 @ 23-3/4"
25.	349-398	1	DOOR	
26.	111-002	2	LIFT-OFF HINGE (OFF-SET)	
27.	106-228	16	SCREW (M5-0.80 X 10MM)	
28.	215-412	1	LICENSE PLATE LAMP	
29.	115-686	AR	BULK EDGE (5/32", SOLD PER 1')	USE 1 @ 15"
30.	110-208	2	LEVEL INDICATOR	
31.	106-386	4	FLG LOCKNUT (M8-1.25)	
32.	110-333	1	BOLT ON CLAMP (1")	
33.	106-381	1	FLG. LK. SCREW (M8-1.25 X 25MM)	

## FOOTNOTES

# FUEL TANK



# FUEL TANK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	364-542	1	FUEL TANK	ENDS WITH S/N: 2V2567
	315-402	1	FUEL TANK	BEGINS WITH S/N: 2W0856
2.	309-160	1	TANK PAD	
3.	106-632	6	FLG LK SCREW (M12-1.75 X 35MM, SER)	
4.	115-152	1	PLUG (12N, SQ FM)	
5.	105-214	16	FLG SCREW (#10-24 X 1/2")	
6.	110-217	4	WORM CLAMP (7/16" TO 1")	
7.	349-887	1	COVER PLATE	SEE FOOTNOTE 1
8.	217-564	1	FUEL SENDER	ENDS WITH S/N: 2V2567
	214-871	1	FUEL SENDER	BEGINS WITH S/N: 2W0856, SEE FOOTNOTE 1
9.	154-352	2	CONNECTOR (08N-08090)	
10.	159-446	1	BREATHER VENT	
11.	153-303	1	HOSE (080FX-65"-3000)	
12.	159-594	3	ELBOW (M16-1.50-080)	
13.	159-465	-	FUEL PRE-FILTER	
	159-435	-	FUEL PRE-FILTER ELEMENT	
	157-934	-	SEAL RING (-240)	
14.	149-222	1	HOSE (080FX45-42"-4000)	
15.	154-674	1	HOSE (080FX-24"-3000)	
16.	106-709	4	FLG NUT (M12-1.75)	
17.	194-019	-	FUEL COOLER	
18.	116-322	AR	BULK HOSE (1/2", SOLD PER 1')	USE 1 @ 94"
19.	364-661	1	FILLER NECK	BEGINS WITH S/N: 2W0856
	153-760	1	CAP	
20.	111-046	1	LOCKING CAP (NON-VENTED)	ENDS WITH S/N: 2V2567
21.	149-989	1	S/O COUPLER (08S-08H)	
22.	117-625	-	FUEL HOSE	USE 1 @ 24", ENDS WITH S/N: CMWJ80T2J60000029
	116-952	1	FUEL HOSE	BEGINS WITH S/N: CMWJ80T2J60000030
23.	110-134	2	WORM CLAMP (2.06"-2.75")	
24.	116-322	AR	BULK HOSE (1/2", SOLD PER 1')	USE 1 @ 35"
25.	154-233	1	CONNECTOR (08S-080)	
26.	323-213	1	PUMP MOUNT	
27.	159-623	1	CONNECTOR (M18-1.5-080)	
28.	194-247	1	FUEL PRIMER PUMP	
29.	105-198	2	BOLT (1/4-NC X 1-3/4")	
30.	159-595	1	ELBOW (M18-1.50-080)	
31.	159-767	1	HOSE (080FX90S-9.5"-3000)	
32.	105-832	2	FLG LOCKNUT (1/4-NC)	
33.	155-708	1	O-RING (218 D70)	
34.	364-663	1	FILLER NECK SCREEN	

NOT SHOWN:

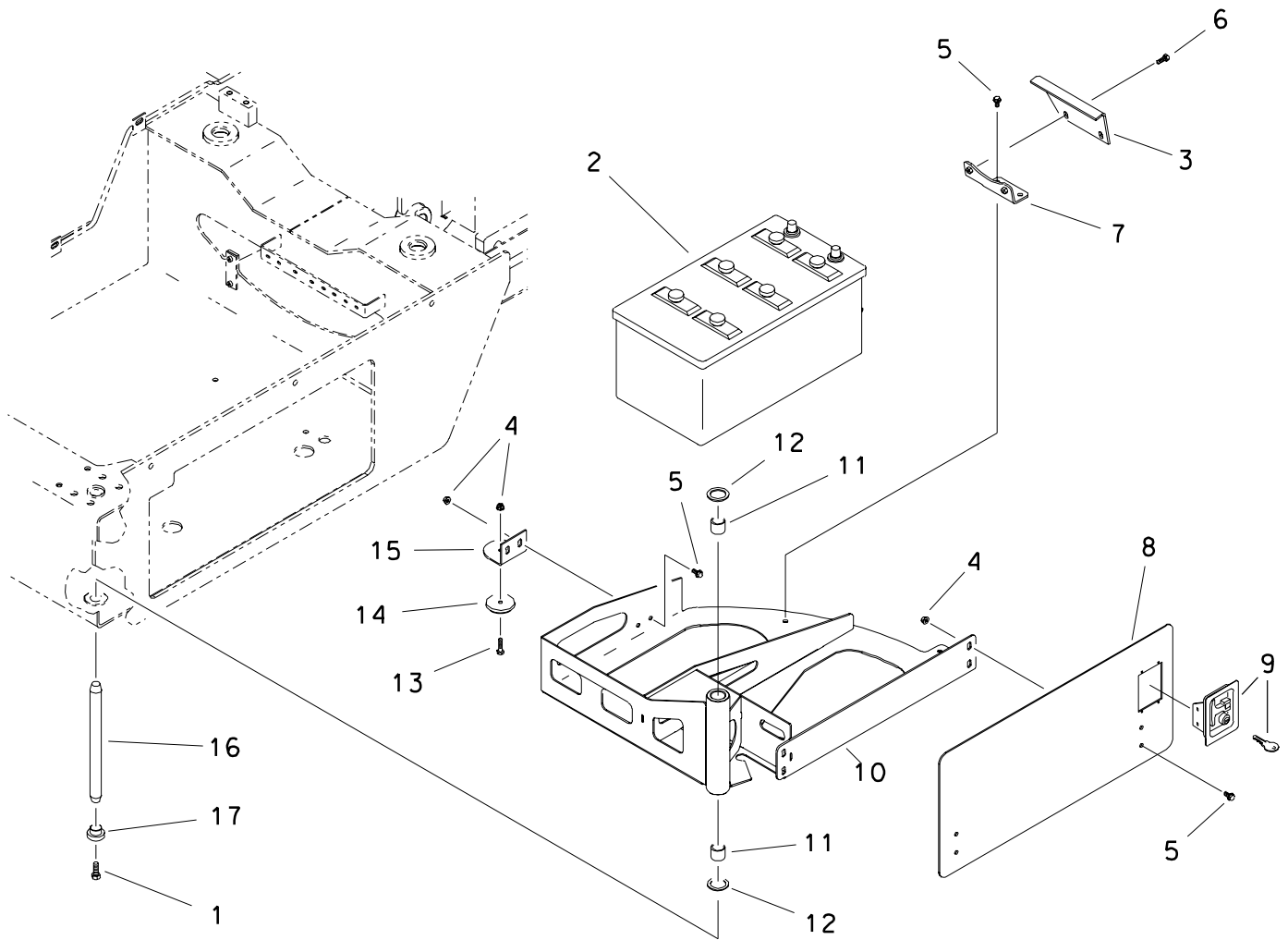
#### FOOTNOTES:

1. USE LOCTITE AVIATION SEALANT OR EQUIVALENT

#### NOTE:

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

# BATTERY BOX

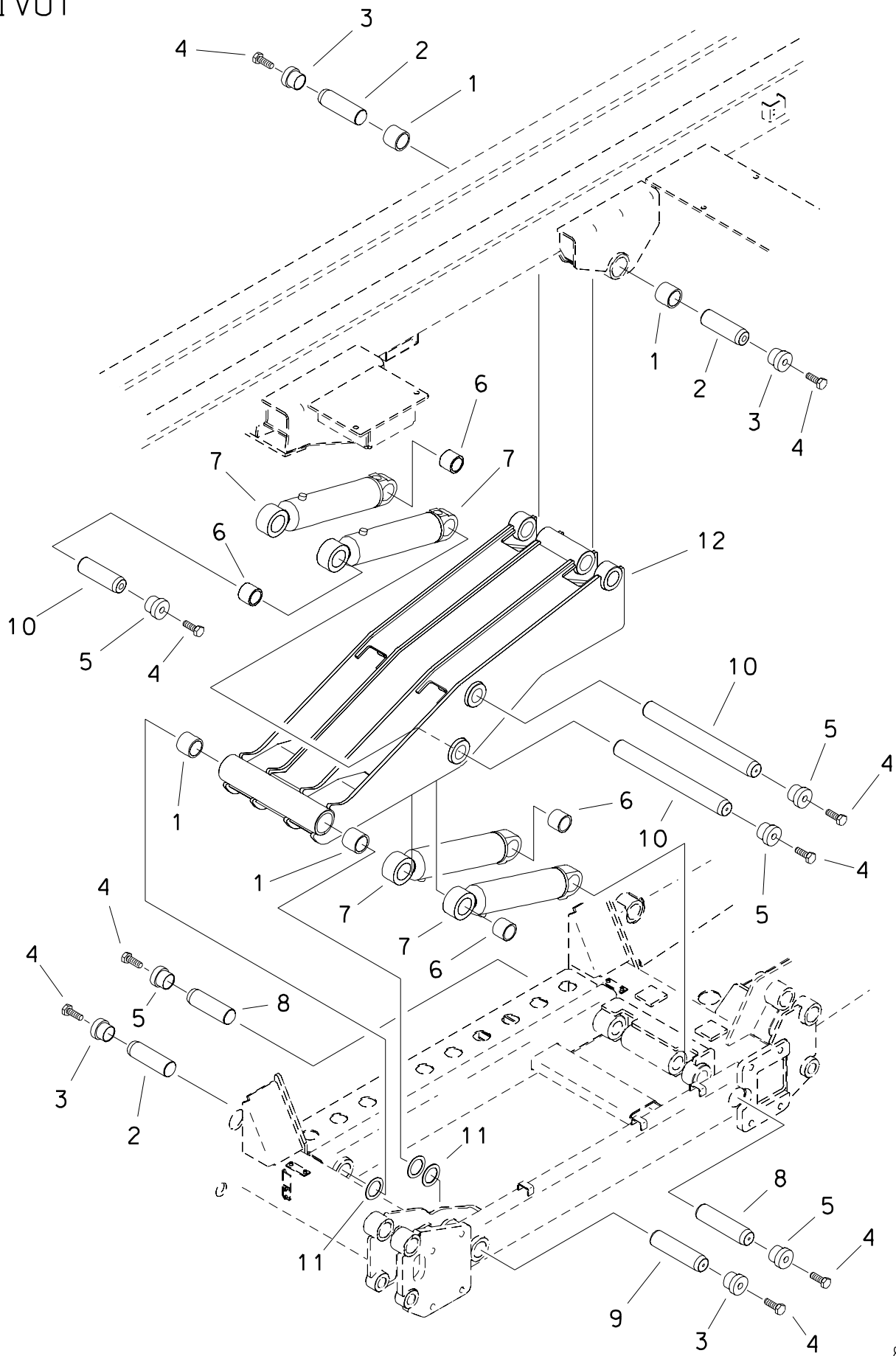


# BATTERY BOX

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-245	1	SCREW (M10-1.50 X 25MM)	
2.	215-282	2	BATTERY	
3.	308-761	2	HOLD DOWN	
4.	106-386	7	FLG LOCKNUT (M8-1.25)	
5.	106-380	8	FLG LK SCREW (M8-1.25 X 16MM)	
6.	106-162	4	FLG SCREW (M8-1.25 X 20MM)	
7.	308-753	2	BRACKET	
8.	308-763	1	DOOR	
9.	110-514	1	LOCKING LATCH (ADJUSTABLE)	INCL. KEY
	110-596	-	KEY (PAIR)	
10.	308-752	1	BATTERY SWING BOX	
11.	125-770	2	COMPOSITION BUSHING (1")	
12.	110-084	AR	BRASS BUSHING (1-5/32")	
13.	107-187	1	SCREW (M8-1.25 X 35MM)	
14.	308-764	1	SLIDE RING	
15.	308-769	1	SLIDE BRACKET	
16.	178-533	1	TAPERED PIN (25.4MM X 312MM)	
17.	181-981	1	TAPERED INSERT (1")	

FOOTNOTES

# PIVOT



D



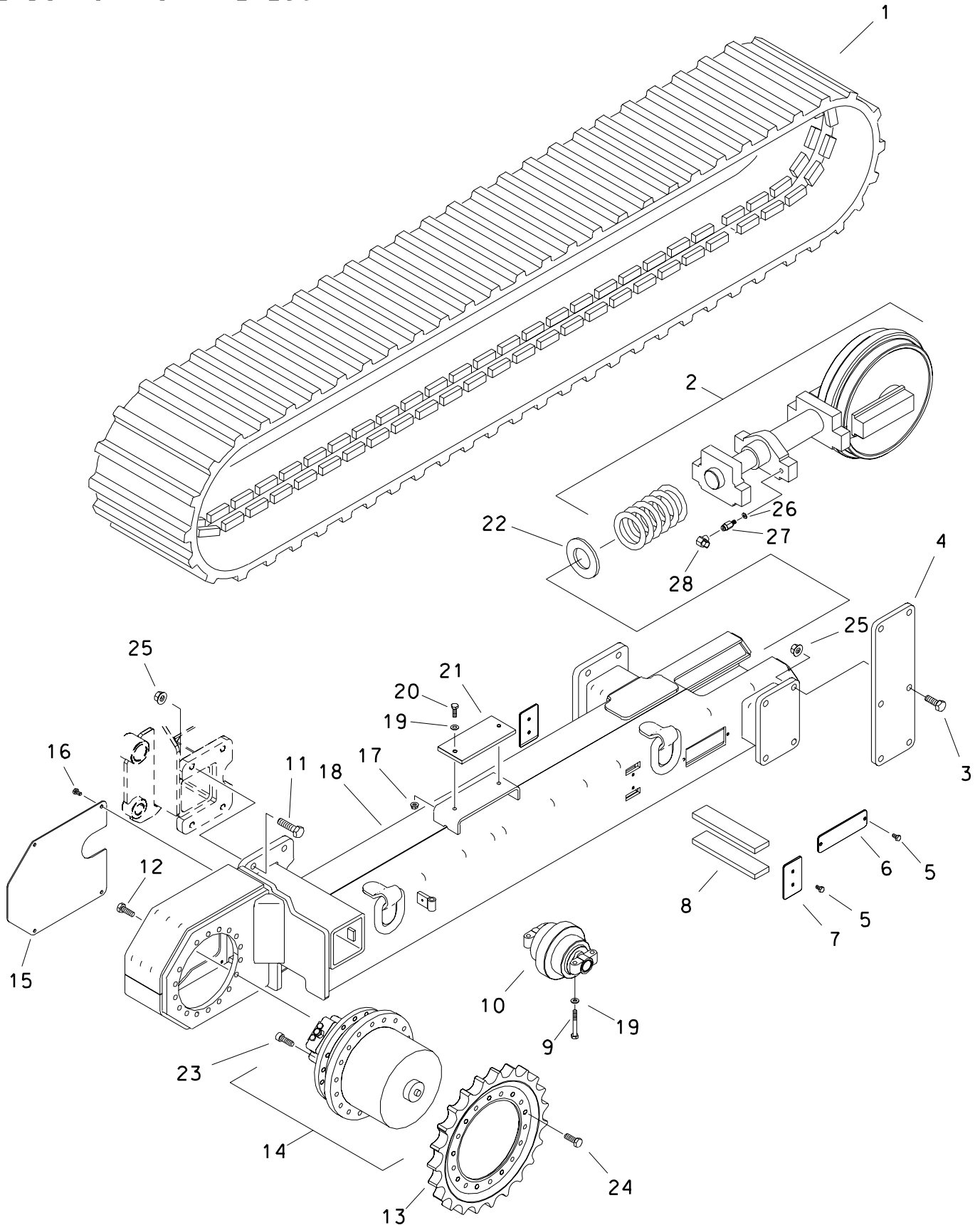
# PIVOT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	125-781	4	COMPOSITION BUSHING (2.259")	
2.	183-837	3	TAPERED PIN (57.15mm X 180mm)	
3.	184-031	4	TAPERED INSERT (2.25")	
4.	106-345	9	SCREW (M20-2.50 X 50mm)	USE LOCKTITE WITH 242 OR EQUIVALENT
5.	184-064	5	TAPERED INSERT (2")	
6.	125-754	8	COMPOSITION BUSHING (2")	
7.	151-047	4	CYL (3.5" X 2.0" X 12.0")	
8.	183-919	2	TAPERED PIN (50.8mm X 190mm)	
9.	183-838	1	TAPERED PIN (57.1mm X 250mm)	
10.	179-177	3	TAPERED PIN (50.8mm X 460mm)	
11.	110-211	AR	MACHINERY BUSHING (2.25")	
12.	349-350	1	PIVOT	

FOOTNOTES

# TRACK GROUP ( RUBBER )

ENDS WITH S/N: 2V2567



## TRACK GROUP (RUBBER)

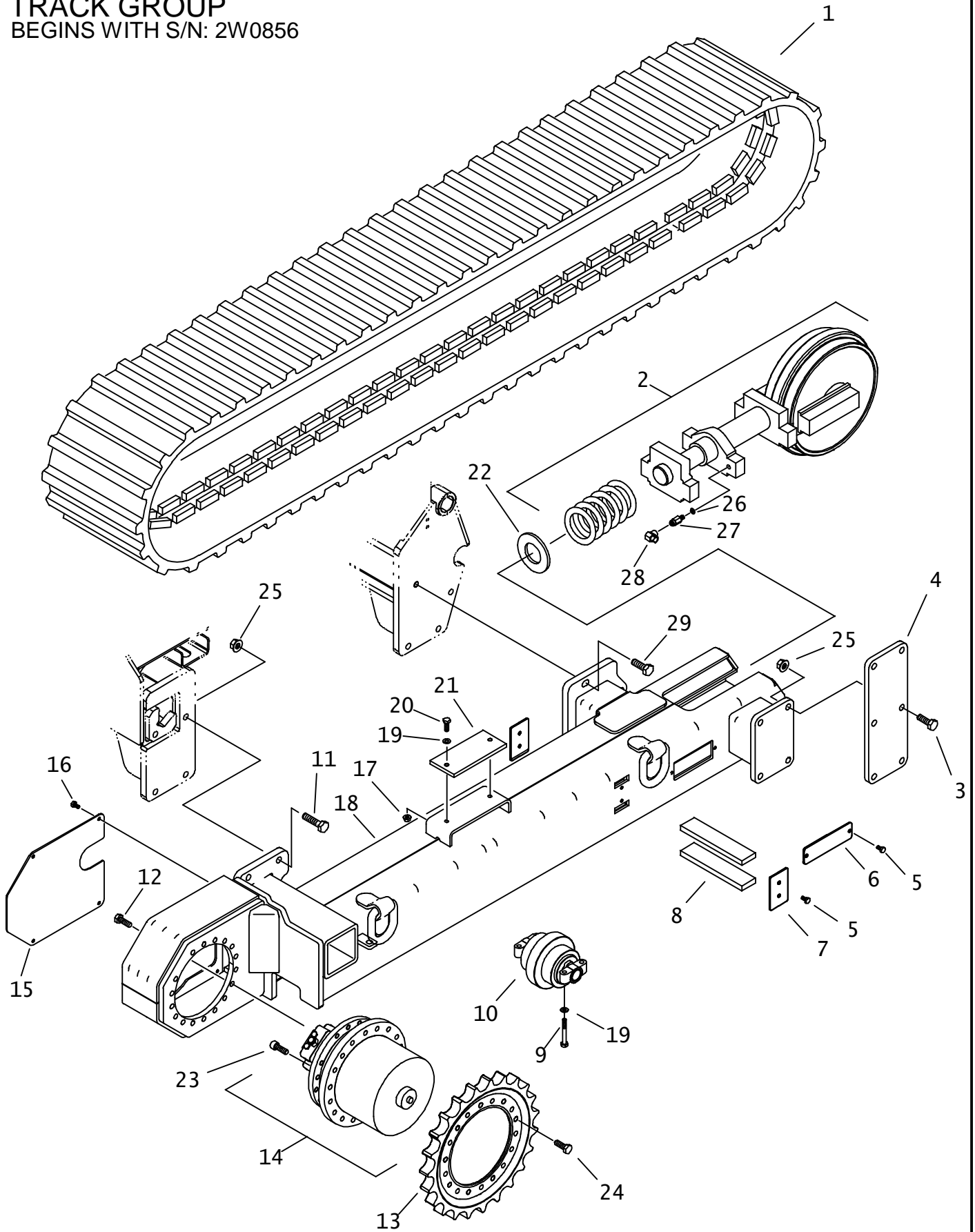
ENDS WITH S/N: 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-004	2	RUBBER TRACK (450MM, 88P, 71MM)	
2.	349-006	2	IDLER	
3.	106-075	6	SCREW (M20-2.50 X 60MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT
4.	349-171	1	SUPPORT BAR	ENDS WITH S/N: 2V2567
	315-984	1	SUPPORT PLATE	BEGINS WITH S/N: 2W0856
5.	106-382	12	FLG LK SCREW (M10-1.5 X 20MM)	
6.	349-330	2	COVER	
7.	349-324	4	COVER	
8.	349-325	4	RECOIL STOP BAR	USE LOCTITE 242 OR EQUIVALENT
9.	106-335	56	SCREW (M12-1.75 X 70MM)	
10.	129-004	14	TRACK ROLLER	
11.	107-127	16	SCREW (M20-2.50 X 80MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT
12.	105-998	34	SCREW (M16-2.00 X 40MM)	USE LOCTITE 242 OR EQUIVALENT
13.	175-736	2	SPROCKET (5.303"A23)	GROUND DRIVE
14.	166-162	2	GEARBOX & DRIVE PLANETARY	GROUND DRIVE
	166-139	1	GROUND DRIVE PLANETARY	
	159-910	1	HYDRAULIC MOTOR	
15.	349-336	2	COVER	
16.	106-654	8	FLG LK SCREW (M10-1.50 X 16MM)	
17.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
18.	349-300	1	RIGHT ROLLER FRAME	ENDS WITH S/N: 2V2567
	315-883	1	RIGHT ROLLER FRAME	BEGINS WITH S/N: 2W0856
	349-301	1	LEFT ROLLER FRAME	ENDS WITH S/N: 2V2567
	315-882	1	LEFT ROLLER FRAME	BEGINS WITH S/N: 2W0856
19.	106-397	60	WASHER (M12, HARDENED)	
20.	106-333	4	SCREW (M12-1.75 X 40MM, 8.8)	
21.	349-314	2	SLIDE PAD	
22.	370-382	2	SPACER RING	SEE FOOTNOTE 1
23.	107-116	4	SCREW (M16-2.00 X 35MM)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
24.	106-340	36	SCREW (M16-2.00 X 50MM)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
25.	106-356	22	FLG NUT (M20-2.50 10.9)	
26.	115-023	2	SEAL WASHER (M17)	
27.	115-022	2	VALVE ZERK (M16-1.50)	
28.	115-258	1	COUPLER (O2NF, BUT)	

## FOOTNOTES

# TRACK GROUP

BEGINS WITH S/N: 2W0856



## TRACK GROUP

BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-004	2	RUBBER TRACK (450MM, 88P, 71MM)	
2.	349-006	2	IDLER	
3.	106-075	6	SCREW (M20-2.50 X 60MM, 10.9)	
4.	315-984	1	SUPPORT PLATE	
5.	106-382	12	FLG LK SCREW (M10-1.5 X 20MM)	
6.	349-330	2	COVER	
7.	349-324	4	COVER	
8.	349-325	4	RECOIL STOP BAR	
9.	106-335	56	SCREW (M12-1.75 X 70MM)	USE LOCTITE 242 OR EQUIVALENT
10.	129-004	14	TRACK ROLLER	
11.	107-127	13	SCREW (M20-2.50 X 80MM, 10.9)	USE LOCTITE 242 OR EQUIVALENT
12.	105-998	34	SCREW (M16-2.00 X 40MM)	USE LOCTITE 242 OR EQUIVALENT
13.	175-736	2	SPROCKET (5.303" A23)	GROUND DRIVE
14.	166-162	2	GEARBOX & DRIVE PLANETARY	OBSOLETE, ENDS WITH S/N:CMWJT100HA0000023
	160-1173	2	GEARBOX & DRIVE PLANETARY	BEGINS WITH S/N:CMWJT100EA0000024
	166-139	1	GROUND DRIVE PLANETARY	OBSOLETE, ENDS WITH S/N:CMWJT100HA0000023
	160-1172	1	GROUND DRIVE PLANETARY	BEGINS WITH S/N:CMWJT100EA0000024
	159-910	1	HYDRAULIC MOTOR	
15.	349-336	2	COVER	
16.	106-654	8	FLG LK SCREW (M10-1.50 X 16MM)	
17.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
18.	315-883	1	RIGHT ROLLER FRAME	
	315-882	1	LEFT ROLLER FRAME	
19.	106-397	60	WASHER (M12, HARDENED)	
20.	106-333	4	SCREW (M12-1.75 X 40MM, 8.8)	
21.	349-314	2	SLIDE PAD	
22.	370-382	2	SPACER RING	SEE FOOTNOTE 1
23.	107-116	4	SCREW (M16-2.00 X 35MM)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
24.	106-340	36	SCREW (M16-2.00 X 50MM)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
25.	106-356	19	FLG NUT (M20-2.50 10.9)	
26.	115-023	2	SEAL WASHER (M17)	
27.	115-022	2	VALVE ZERK (M16-1.50)	
28.	115-258	1	COUPLER (O2NF, BUT)	
29.	106-607	3	SCREW (M20-2.50 X 50MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT

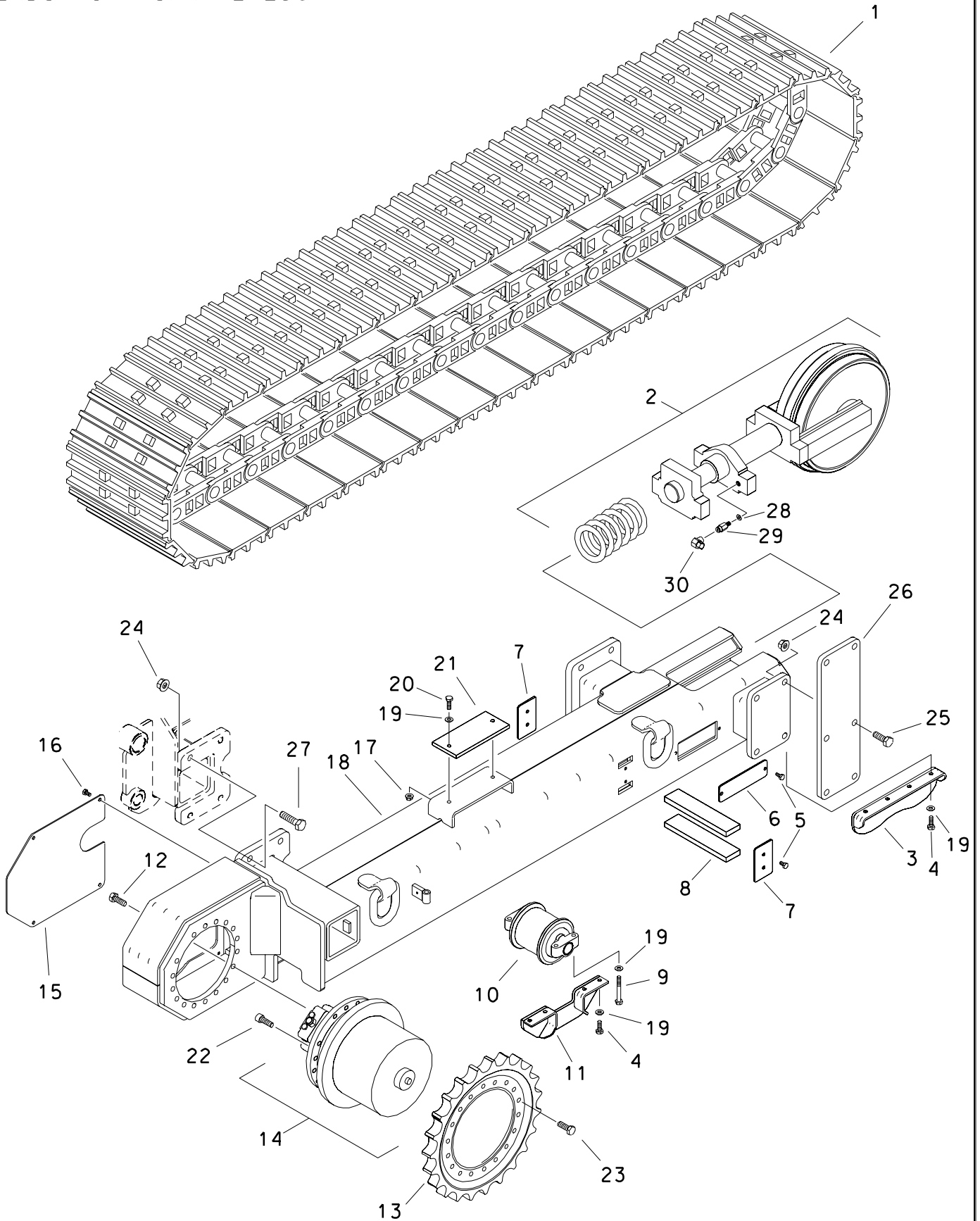
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FOOTNOTES:

1. DO NOT INSTALL SPACER RINGS WITH IDLER UNITS HAVING .375" SPACER BARS.

NOTE:

TRACK GROUP (STEEL)  
 ENDS WITH S/N: 2V2567



# TRACK GROUP (STEEL)

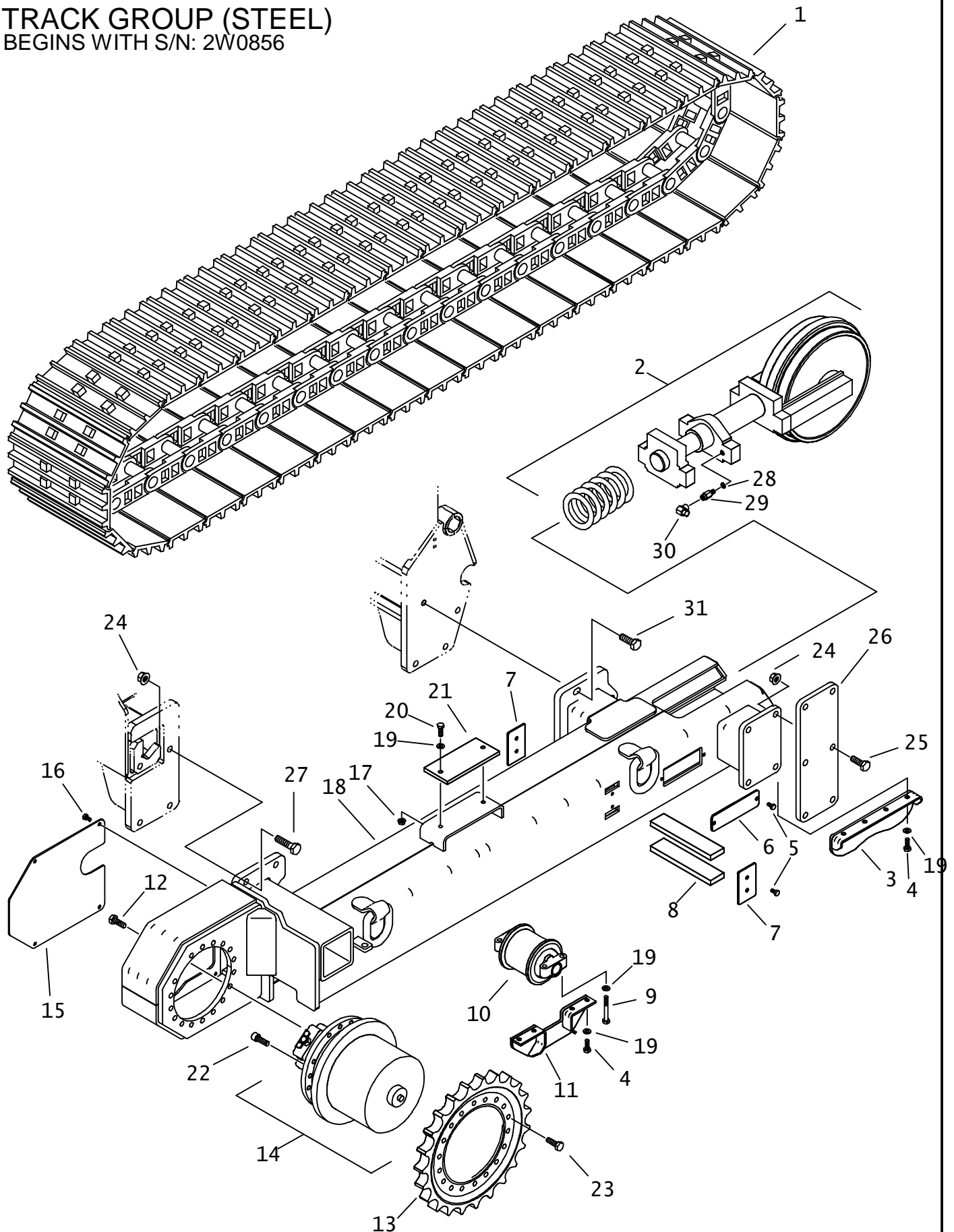
ENDS WITH S/N: 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-003	2	STEEL TRACK (450MM, 88P, 71MM)	
	370-501	44	TRACK LINK (RH)	
	370-502	44	TRACK LINK (LH)	
	370-503	86	TRACK BUSHING	
	370-504	2	TRACK MASTER BUSHING	
	370-505	86	TRACK PIN	
	370-506	2	TRACK MASTER PIN	
	370-507	176	TRACK SPACER	
2.	349-006	2	IDLER	
3.	349-341	4	FRONT GUARD	
4	105-273	32	SCREW (M12-1.75 X 30MM)	
5.	106-382	12	FLG LK SCREW (M10-1.5 X 20MM)	
6.	349-330	2	COVER	
7.	349-324	4	COVER	
8.	349-333	4	RECOIL STOP BAR	
9.	106-335	56	SCREW (M12-1.75 X 70MM)	USE LOCTITE 242 OR EQUIVALENT
10.	349-002	14	TRACK ROLLER	
11.	349-337	4	MIDDLE GUARD	
12.	105-998	34	SCREW (M16-2.00 X 40MM)	USE LOCTITE 242 OR EQUIVALENT
13.	142-083	2	SPROCKET (5.515" A21)	
14.	166-162	2	GEARBOX & DRIVE PLANETARY	
	166-139	1	GROUND DRIVE PLANETARY	
	159-910	1	HYDRAULIC MOTOR	
15.	349-336	2	COVER	
16.	106-654	8	FLG LK SCREW (M10-1.50 X 16MM)	
17.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
18.	349-300	1	RIGHT ROLLER FRAME	ENDS WITH S/N: 2V2567
	315-883	1	RIGHT ROLLER FRAME	BEGINS WITH S/N: 2W0856
	349-301	1	LEFT ROLLER FRAME	ENDS WITH S/N: 2V2567
	315-882	1	LEFT ROLLER FRAME	BEGINS WITH S/N: 2W0856
19.	106-397	92	WASHER (M12, HARDENED)	
20.	106-333	4	SCREW (M12-1.75 X 40MM, 8.8)	USE LOCTITE 242 OR EQUIVALENT
21.	349-314	2	SLIDE PAD	
22.	106-478	4	SCREW (M16-2.00 X 40MM, 10.9)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT
23.	106-340	36	SCREW (M16-2.00 X 50MM)	
24.	106-356	22	FLG NUT (M20-2.50, 10.9)	
25.	106-075	6	SCREW (M20-2.50 X 60MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT
26.	349-171	1	SUPPORT BAR	ENDS WITH S/N: 2V2567
	315-984	1	SUPPORT PLATE	BEGINS WITH S/N: 2W0856
27.	107-127	16	SCREW (M20-2.50 X 80MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT
28.	115-023	1	SEAL WASHER (M17)	
29.	115-022	1	VALVE ZERK (M16-1.50)	
30.	115-258	1	COUPLER (O2NF, BUT)	

## FOOTNOTES

# TRACK GROUP (STEEL)

BEGINS WITH S/N: 2W0856





## TRACK GROUP (STEEL)

BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-003	2	STEEL TRACK (450MM, 88P, 71MM)	
	370-501	44	TRACK LINK (RH)	
	370-502	44	TRACK LINK (LH)	
	370-503	86	TRACK BUSHING	
	370-504	2	TRACK MASTER BUSHING	
	370-505	86	TRACK PIN	
	370-506	2	TRACK MASTER PIN	
	370-507	176	TRACK SPACER	
2.	349-006	2	IDLER	
3.	349-341	4	FRONT GUARD	
4.	105-273	32	SCREW (M12-1.75 X 30MM)	
5.	106-382	12	FLG LK SCREW (M10-1.5 X 20MM)	
6.	349-330	2	COVER	
7.	349-324	4	COVER	
8.	349-333	4	RECOIL STOP BAR	
9.	106-335	56	SCREW (M12-1.75 X 70MM)	USE LOCTITE 242 OR EQUIVALENT
10.	349-002	14	TRACK ROLLER	
11.	349-337	4	MIDDLE GUARD	
12.	105-998	34	SCREW (M16-2.00 X 40MM)	USE LOCTITE 242 OR EQUIVALENT
13.	142-083	2	SPROCKET (5.515" A21)	
14.	166-162	2	GEARBOX & DRIVE PLANETARY	ENDS WITH S/N:CMWJT100HA0000023
	160-1173	2	GEARBOX & DRIVE PLANETARY	BEGINS WITH S/N:CMWJT100EA0000024
	166-139	1	GROUND DRIVE PLANETARY	ENDS WITH S/N:CMWJT100HA0000023
	160-1172	1	GROUND DRIVE PLANETARY	BEGINS WITH S/N:CMWJT100EA0000024
	159-910	1	HYDRAULIC MOTOR	
15.	349-336	2	COVER	
16.	106-654	8	FLG LK SCREW (M10-1.50 X 16MM)	
17.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
18.	315-883	1	RIGHT ROLLER FRAME	
	315-882	1	LEFT ROLLER FRAME	
19.	106-397	92	WASHER (M12, HARDENED)	
20.	106-333	4	SCREW (M12-1.75 X 40MM, 8.8)	USE LOCTITE 242 OR EQUIVALENT
21.	349-314	2	SLIDE PAD	
22.	106-478	4	SCREW (M16-2.00 X 40MM, 10.9)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT
23.	106-340	36	SCREW (M16-2.00 X 50MM)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT
24.	106-356	19	FLG NUT (M20-2.50, 10.9)	
25.	106-075	6	SCREW (M20-2.50 X 60MM, 10.9)	
26.	315-984	1	SUPPORT PLATE	
27.	107-127	13	SCREW (M20-2.50 X 80MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT
28.	115-023	1	SEAL WASHER (M17)	
29.	115-022	1	VALVE ZERK (M16-1.50)	
30.	115-258	1	COUPLER (02NF, BUT)	
31.	106-607	3	SCREW (M20-2.50 X 50MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT

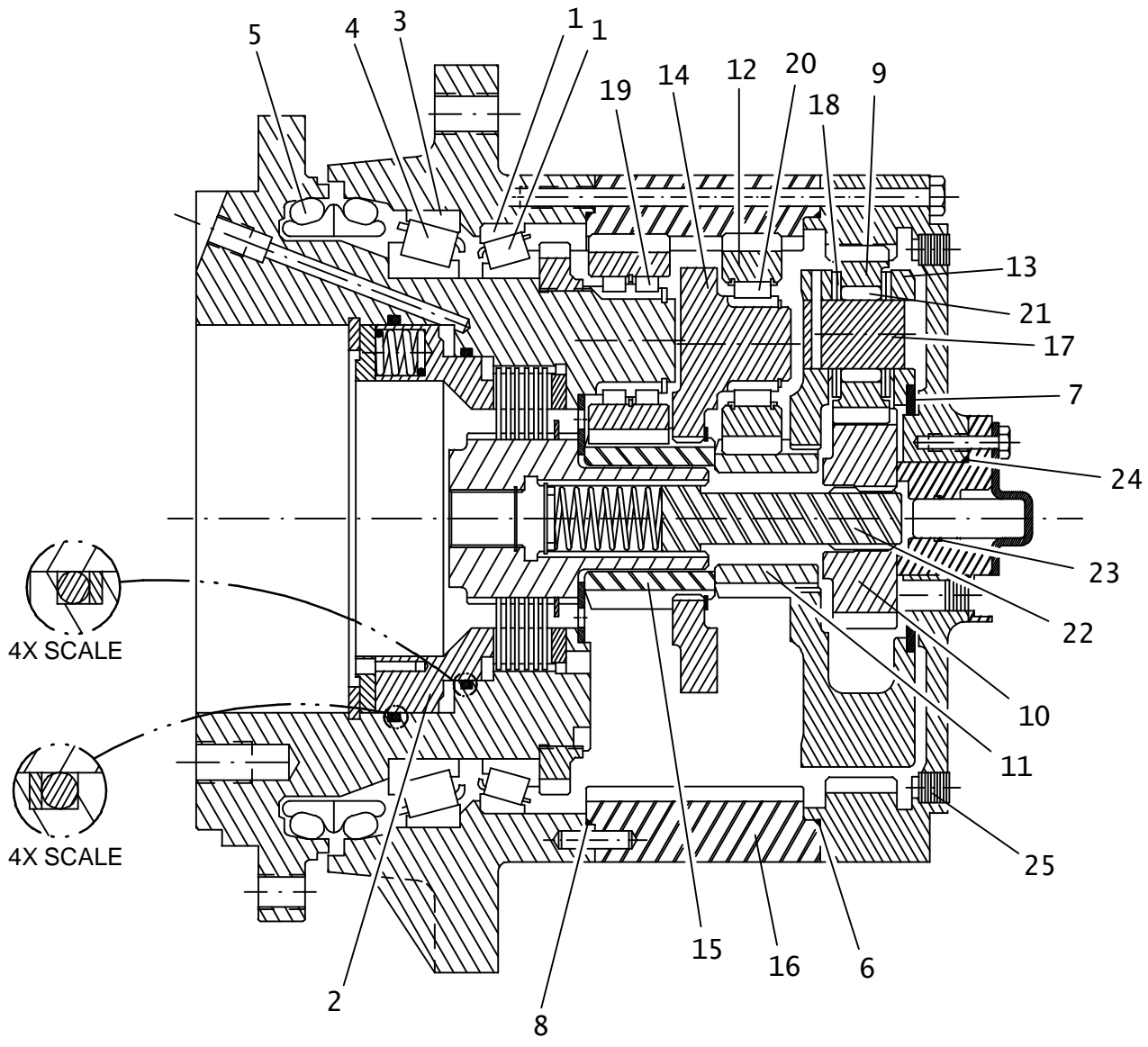
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FOOTNOTES:

NOTE:

# GROUND DRIVE PLANETARY GEARBOX

ENDS WITH S/N:CMWJT100HA0000023



# GROUND DRIVE PLANETARY GEARBOX

ENDS WITH S/N:CMWJT100HA0000023

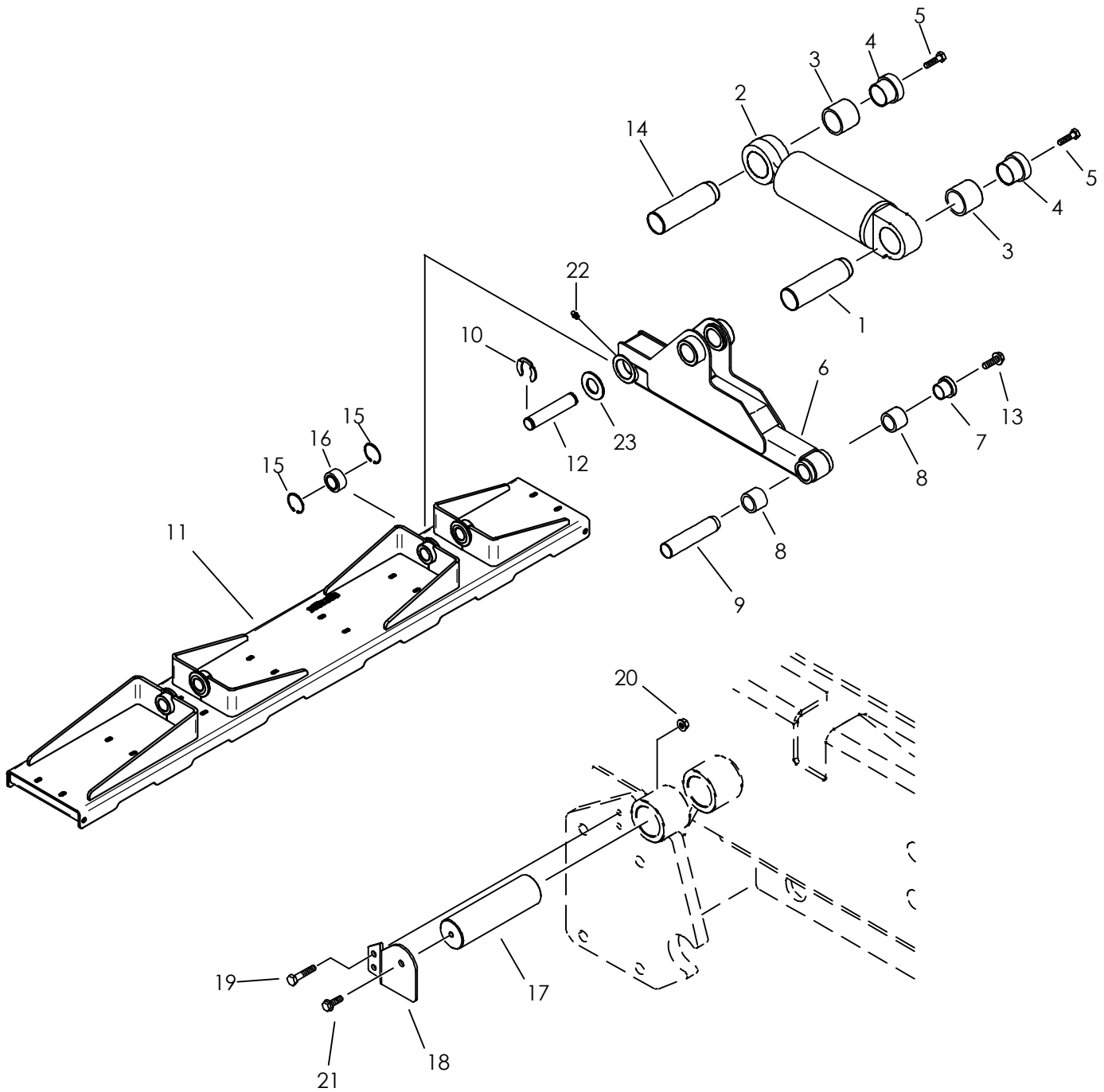
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	500-1571	1	BEARING	SUPERSEDES 125-191 TAPERED RACE AND 125-186 TAPERED BEARING.
2.	160-508	1	BRAKE, INPUT (PLANETARY CT-26)	
3.	125-192	1	TAPERED RACE	
4.	125-187	1	TAPERED BEARING	
5.	149-403	1	FACE SEAL	
6.	157-203	1	O-RING	
7.	105-771	1	THRUST WASHER	
8.	149-405	1	O-RING (-178)	
9.	230-006	3	PLANET GEAR	
10.	230-007	1	SUN GEAR	
11.	230-008	1	SUN GEAR (63,69,95, 110:1)	
12.	230-009	3	PLANET GEAR (2ND STG. 110:1)	
13.	166-215	1	CARRIER ( 1ST STG 63:1 )	
14.	166-216	1	CARRIER (CT18 63,69,95,110:1)	
15.	230-010	1	SUN GEAR	
16.	230-011	1	RING GEAR	
17.	166-213	3	PLANET SHAFT	
18.	105-772	12	THRUST WASHER	
19.	125-188	5	CYL ROLLER BEARING	
20.	125-189	3	CYL ROLLER BEARING	
21.	125-190	57	NEEDLE BEARING	
22.	166-214	1	INPUT SHAFT	
23.	149-406	1	O-RING (-112)	
24.	149-407	1	O-RING(-131)	
25.	115-153	3	PLUG (04N, SQ)	

NOT SHOWN:

FOOTNOTES:

NOTE:

## STABILIZERS



# STABILIZERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	179-183	3	TAPERED PIN (57.1mm X 195mm)	
2.	151-095	4	CYL (4" X 2.25" X 8")	SEE FOOTNOTE 1
3.	125-781	8	COMPOSITION BUSHING (2.259")	
4.	184-031	7	TAPERED INSERT (2.25")	
5.	106-345	7	SCREW (M20-2.5 X 50mm)	
6.	349-511	3	STABILIZER	
	349-516	1	FRONT RIGHT STABILIZER	
7.	181-974	4	TAPERED INSERT (1.5")	
8.	125-772	8	COMPOSITION BUSHING (1.5")	
9.	179-241	4	TAPERED PIN (1.500" X 7.20")	
10.	115-511	8	KLIP RING (1-1/2")	
11.	309-307	1	FRONT STABILIZER PAD	SUPERCEDED BY 301-5015, SEE FOOTNOTE 2
	301-5015	1	FRONT STABILIZER PAD	SEE FOOTNOTE 2
	309-308	1	BACK STABILIZER PAD	
12.	349-956	2	PAD PIN	USED WITH BACK STABILIZER PAD AND FRONT STABILIZER PAD, 309-307
	301-2336	2	LONG PAD PIN	USE WITH FRONT STABILIZER PAD 301-5015, SEE FOOTNOTE 2
13.	105-970	4	FLG BOLT (5/8-NC X 1-3/4, GD8)	
14.	179-101	4	TAPERED PIN (57.1mm X 155mm)	
15.	115-509	8	INTERNAL SNAP RING (2.440")	
16.	125-131	4	SPHERICAL BEARING (1.500" ID)	
17.	370-040	1	PIN	
18.	370-039	1	RETAINER PLATE	
19.	106-995	2	FLG LK SCREW (M10-1.50 X 45mm)	
20.	106-387	2	FLG LOCKNUT (M10-1.50)	
21.	107-001	1	FLG LK SCREW (M10-1.50 X 25mm)	
22.	115-001	4	ZERK (02N)	
23.	106-509	2	WASHER (1-1/2", HARDENED)	USE WITH FRONT STABILIZER PAD 301-5015, SEE FOOTNOTE 2

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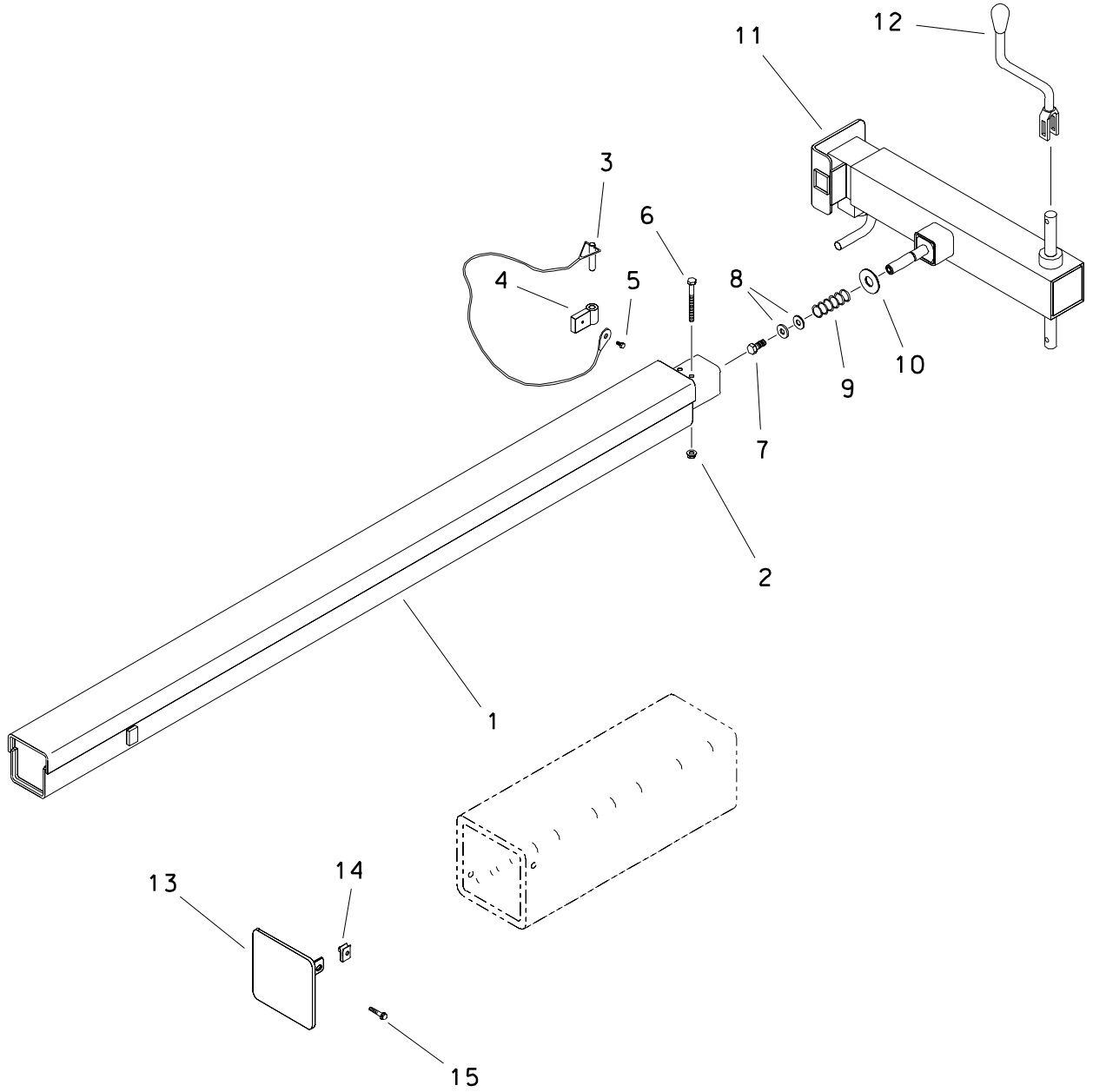
#### FOOTNOTES:

1. PORTS GO UP ON REAR CYLINDERS, DOWN ON FRONT CYLINDERS.
2. BEGINS WITH S/N CMWJT100\_-----

NOTE:

# AUXILIARY STABILIZER

ENDS WITH S/N: 2V2567



# AUXILIARY STABILIZER

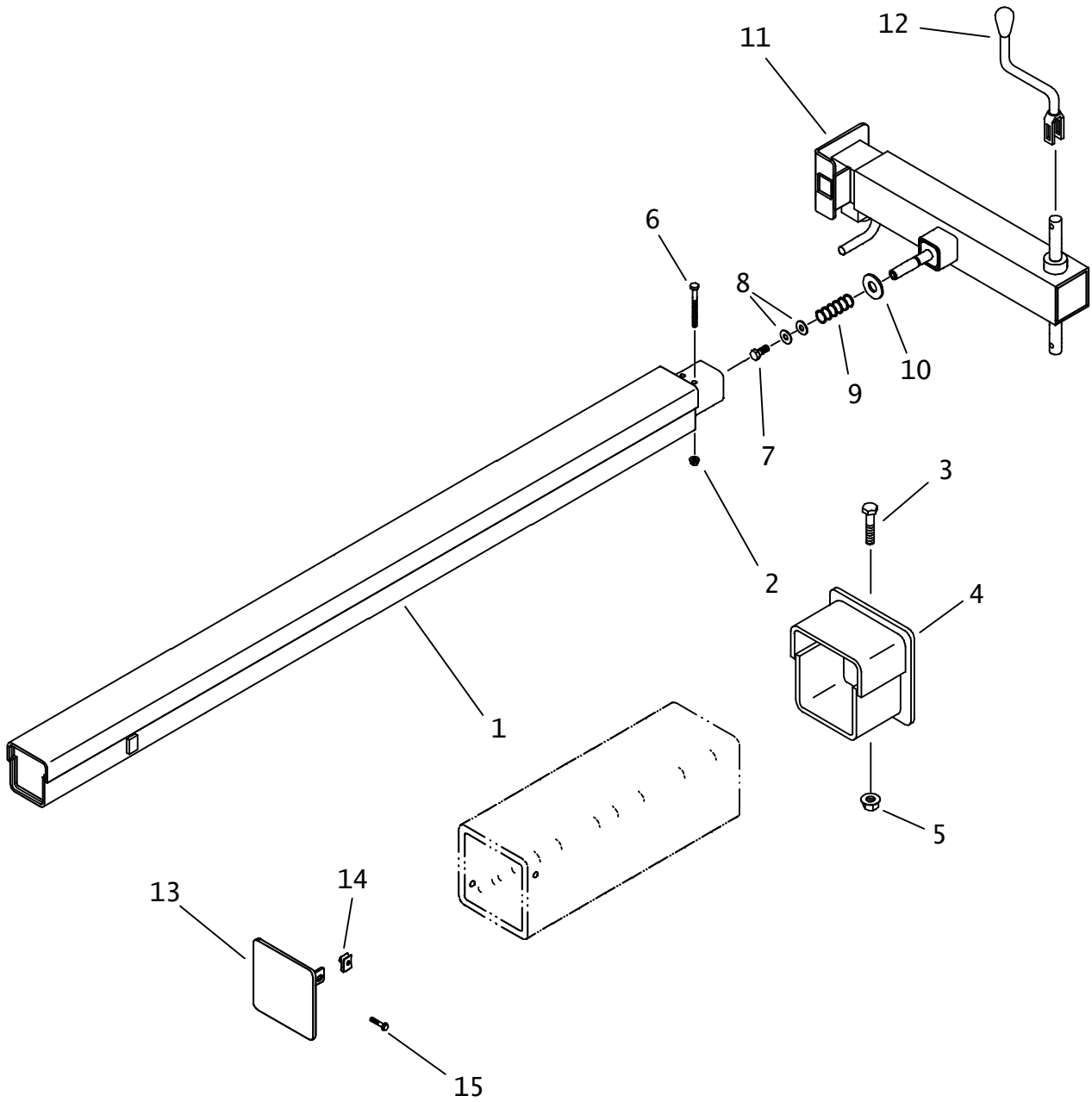
ENDS WITH S/N: 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	309-309	1	STABILIZER SLIDE ARM	
2.	105-047	2	LOCKNUT (3/8-NC)	
3.	110-824	1	ADJUSTMENT PIN (1/2" X 2-1/2")	
4.	349-300	-	RIGHT ROLLER FRAME	
5.	105-836	1	FLG LK BOLT (1/4-NC X 1/2")	
6.	105-022	2	BOLT (3/8-NC X 4")	
7.	105-045	1	LK BOLT (1/2-NC X 1-1/4", NLK)	
8.	105-059	2	WASHER (7/16")	
9.	115-591	1	COMPRESSION SPRING	
10.	105-439	1	WASHER (7/8")	
11.	349-520	1	JACK	
12.	206-351	1	JACK CRANK	INCL MOUNTING HARDWARE
13.	349-878	1	CAP	
14.	106-551	2	CLIP NUT (M8-1.25)	
15.	106-989	2	FLG LK SCREW (M8-1.25 X 35mm)	

FOOTNOTES

# AUXILIARY STABILIZER

BEGINS WITH S/N: 2W0856





## AUXILIARY STABILIZER

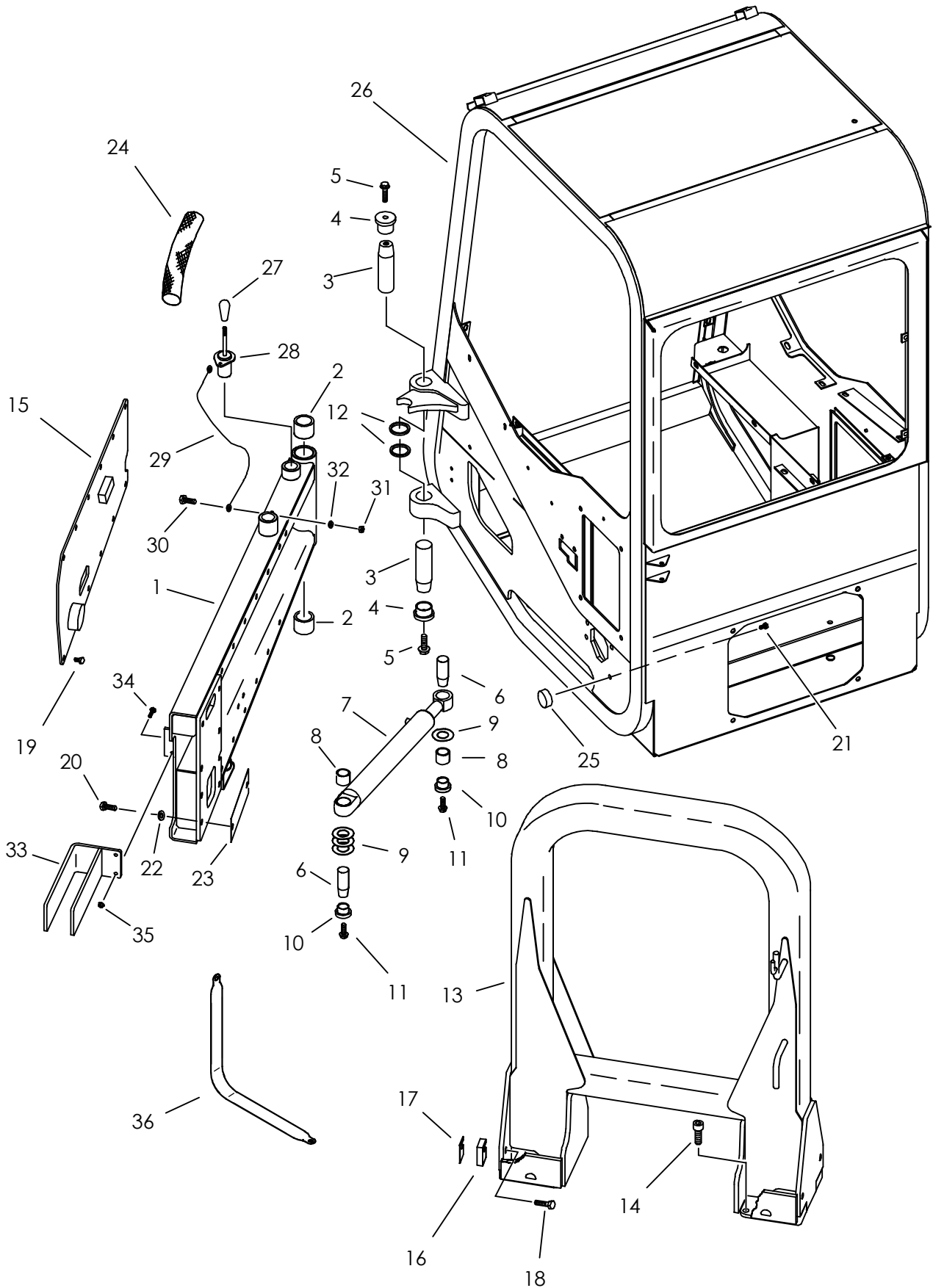
BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	315-940	1	STABILIZER ARM	
2.	105-047	2	LOCKNUT (3/8-NC)	
3.	106-098	1	FLG BOLT (3/4-NC X 2", GD8)	
4.	310-723	1	PLUG	
5.	105-340	1	FLG LOCKNUT (3/4-NC)	
6.	105-022	2	BOLT (3/8-NC X 4")	
7.	105-045	1	LK BOLT (1/2-NC X 1-1/4", NLK)	
8.	105-059	3	WASHER (7/16")	
9.	115-591	1	COMPRESSION SPRING	
10.	105-439	1	WASHER (7/8")	
11.	349-520	1	JACK	
12.	206-351	1	JACK CRANK	INCL MOUNTING HARDWARE
13.	349-878	1	CAP	
14.	106-551	2	CLIP NUT (M8-1.25)	
15.	106-989	2	FLG LK SCREW (M8-1.25 X 35MM)	

FOOTNOTES

NOTE:

# CAB ARM AND ROPS



# CAB ARM AND ROPS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-172	1	CAB SUPPORT ARM	
2.	125-773	2	COMPOSITION BUSHING (1.75")	
3.	183-957	2	TAPERED PIN (1.75 X 4.33)	
4.	181-975	2	TAPERED INSERT (1.75")	
5.	106-470	2	FLG SCREW (M16-2.0 X 40MM)	
6.	183-765	2	TAPERED PIN (31.7MM X 110MM)	
7.	151-182	1	CYL (2" X 1.25" X 14.25")	
8.	125-771	2	COMPOSITION BUSHING (1.25")	
9.	180-118	4	BRASS BUSHING (1.25")	
10.	181-982	2	TAPERED INSERT (1.25")	
11.	106-469	2	FLG SCREW (M12-1.75 X 30MM)	
12.	501-125	2	MACHINERY BUSHING (1.784")	
13.	349-022	1	ROPS	
14.	107-275	12	SCREW (M20-2.5 X 55MM, SOC)	USE 277 LOCTITE OR EQUIVALENT:TORQUE TO 310 FT LBS
15.	349-487	1	COVER PLATE	ENDS WITH S/N: 2V2567
	320-293	1	COVER	BEGINS WITH S/N: 2W0856
16.	349-485	2	SPACER	
17.	349-486	AR	SHIM	
18.	106-341	2	SCREW (M16-2.0 X 70MM)	USE 277 LOCTITE OR EQUIVALENT
19.	106-559	13	SCREW (M12-1.75 X 25MM)	
20.	106-340	6	SCREW (M16-2.0 X 50MM)	
21.	106-654	1	FLG LK SCREW (M10-1.5 X 16MM)	
22.	106-398	6	WASHER (M16, HARDENED)	
23.	349-397	3	SHIM	SEE FOOTNOTE 1
24.	117-789	1	HOSE BAG (4" X 36")	
25.	116-788	1	BUFFER	
26.	307-683	1	CAB FRAME	
	599-296	-	CAB SPACER KIT	SEE FOOTNOTE 2
27.	110-375	1	KNOB (1/2-NC, YELLOW)	
28.	370-392	1	LOCKOUT PIN	
29.	110-239	1	LANYARD CABLE (13.5")	
30.	106-542	2	SCREW (M5-0.80 X 16MM, PAN PLPS)	
31.	106-850	2	LOCKNUT (M5-0.80)	
32.	106-388	2	WASHER (M6)	
33.	310-383	1	FORK BRACKET	
34.	106-163	2	FLG SCREW (M8-1.25 X 30MM)	
35.	106-386	2	FLG LOCKNUT (M8-1.25)	
36.	215-1019	1	BATTERY GROUND STRAP	

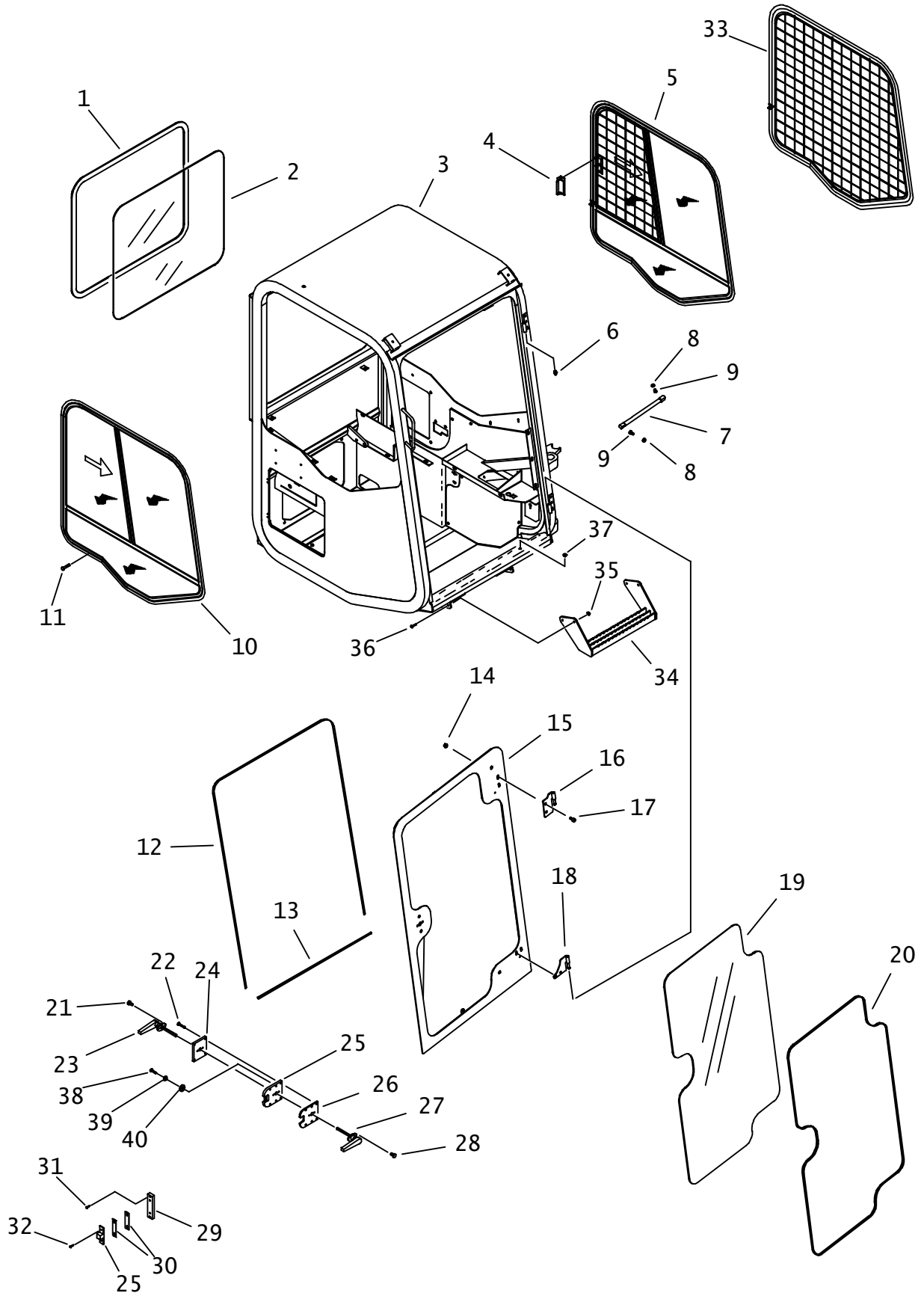
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FOOTNOTES:

1. USE 2 SHIMS IN TOP HOLES; 1 SHIM IN MIDDLE HOLES
2. THIS KIT IS REQUIRED WHEN INSTALLING CAB FRAME ON UNITS PRIOR TO S/N 2W0856

NOTE:

# CAB DOOR/WINDOWS



# CAB DOOR/WINDOWS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	116-722	AR	LOCKING GASKET (SOLD PER 1')	USE 1 @ 115"
2.	349-421	1	REAR WINDOW	
3.	307-683	-	CAB FRAME	
4.	370-420	1	LATCH	
5.	349-419	1	LEFT WINDOW	
6.	115-001	2	ZERK (02N)	
7.	111-016	2	STRUT	
8.	105-003	3	FLG LOCKNUT (5/16-NC)	
9.	110-655	4	BALL SCREW (5/16-NC X 1/2")	
10.	349-418	1	RIGHT WINDOW	
11.	106-640	18	SCREW (M6-1.00 X 20MM, BUT SOC)	
12.	117-306	1	RUBBER SEAL	USE 1 @ 141"
13.	116-848	AR	BULK EDGE (SOLD BY INCH)	USE 1 @ 33"
14.	106-387	4	FLG LOCKNUT (M10-1.50MM)	
15.	308-975	1	DOOR FRAME	
16.	308-823	1	HINGE	
17.	107-537	4	BOLT (M10-1.50 X 20MM, BUT SOC)	
18.	308-822	1	HINGE	
19.	370-418	1	FRONT WINDSHIELD	
20.	116-722	AR	LOCKING GASKET (SOLD PER 1')	USE 1 @ 161"
21.	107-327	2	SCREW (#10-24 X 1/2", CSK PHLPS)	
22.	106-925	6	BOLT (1/4-NC X 1-1/2", BUT SOC)	
23.	111-062	1	HANDLE	
24.	370-434	1	LOCK PLATE	
25.	111-061	1	LATCH	
26.	370-435	1	LOCK PLATE	
27.	149-133	1	LEVER HANDLE	
28.	106-408	2	BOLT (#10-24 X 1-1/4", SOC, GD8)	
29.	370-429	1	SPACER BAR	
30.	370-438	AR	SHIM	
31.	106-848	2	FLG SCREW (M6-1.00 X 25MM)	
32.	106-161	2	FLG SCREW (M6-1.00 X 20MM)	
33.	349-420	1	WINDOW	
34.	315-557	1	STEP	BEGINS WITH S/N: 2w0856
35.	106-386	4	FLG LOCKNUT (M8-1.25)	
36.	106-163	4	FLG SCREW (M8-1.25 X 30MM)	
37.	106-038	1	NUTSERT (5/16-NC)	
38.	107-296	2	BOLT (1/4-NC X 1-3/4", SOC)	
39.	105-284	2	WASHER (3/16")	
40.	107-936	2	WASHER (1/4" ID X 1" OD)	

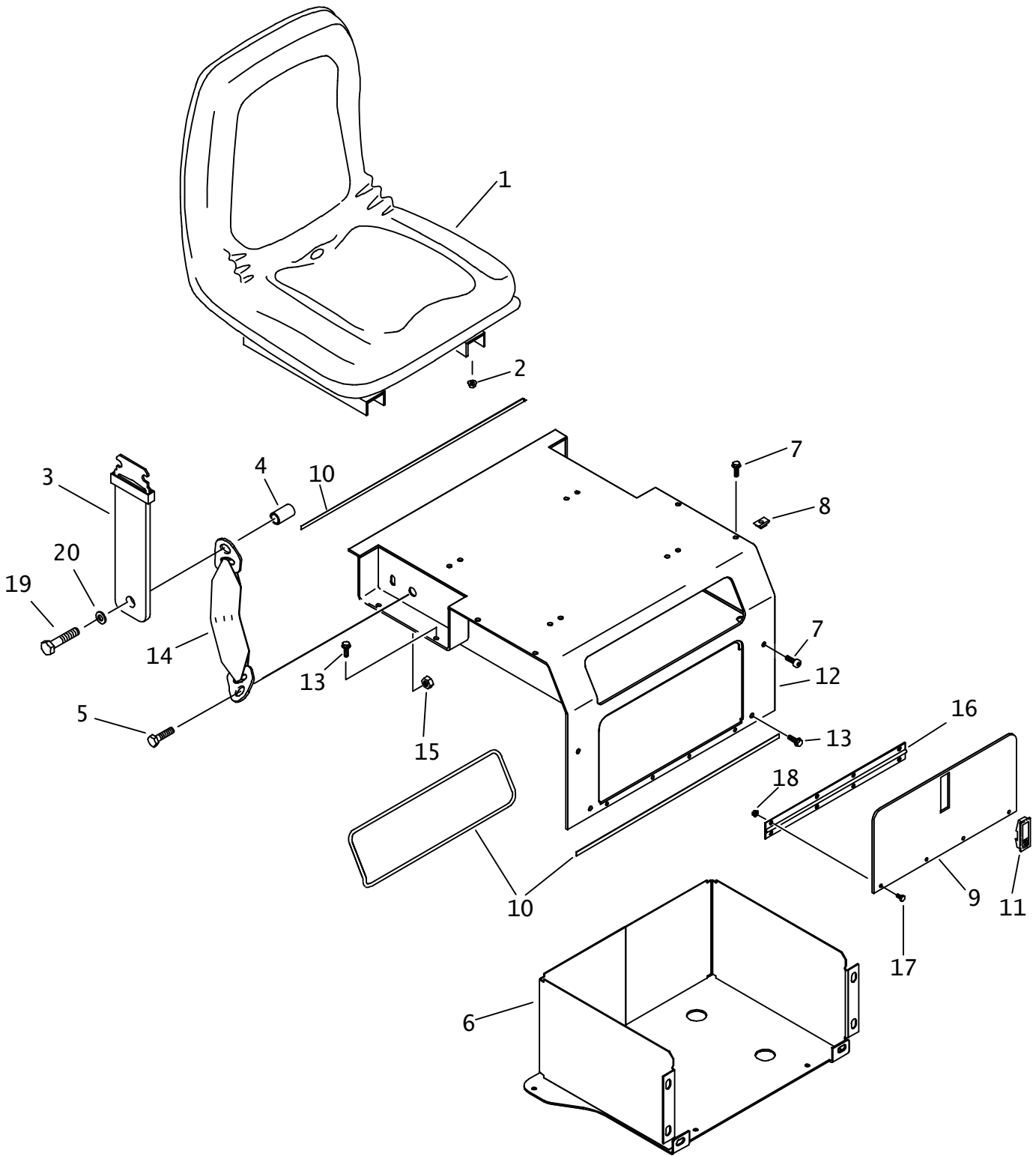
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FOOTNOTES:

KEY IS SHORTENED ON ITEM #23 TO 20mm  
KEY IS SHORTENED ON ITEM #27 TO 40mm

NOTE:

# SEAT MOUNT WITHOUT HEAT/AIR



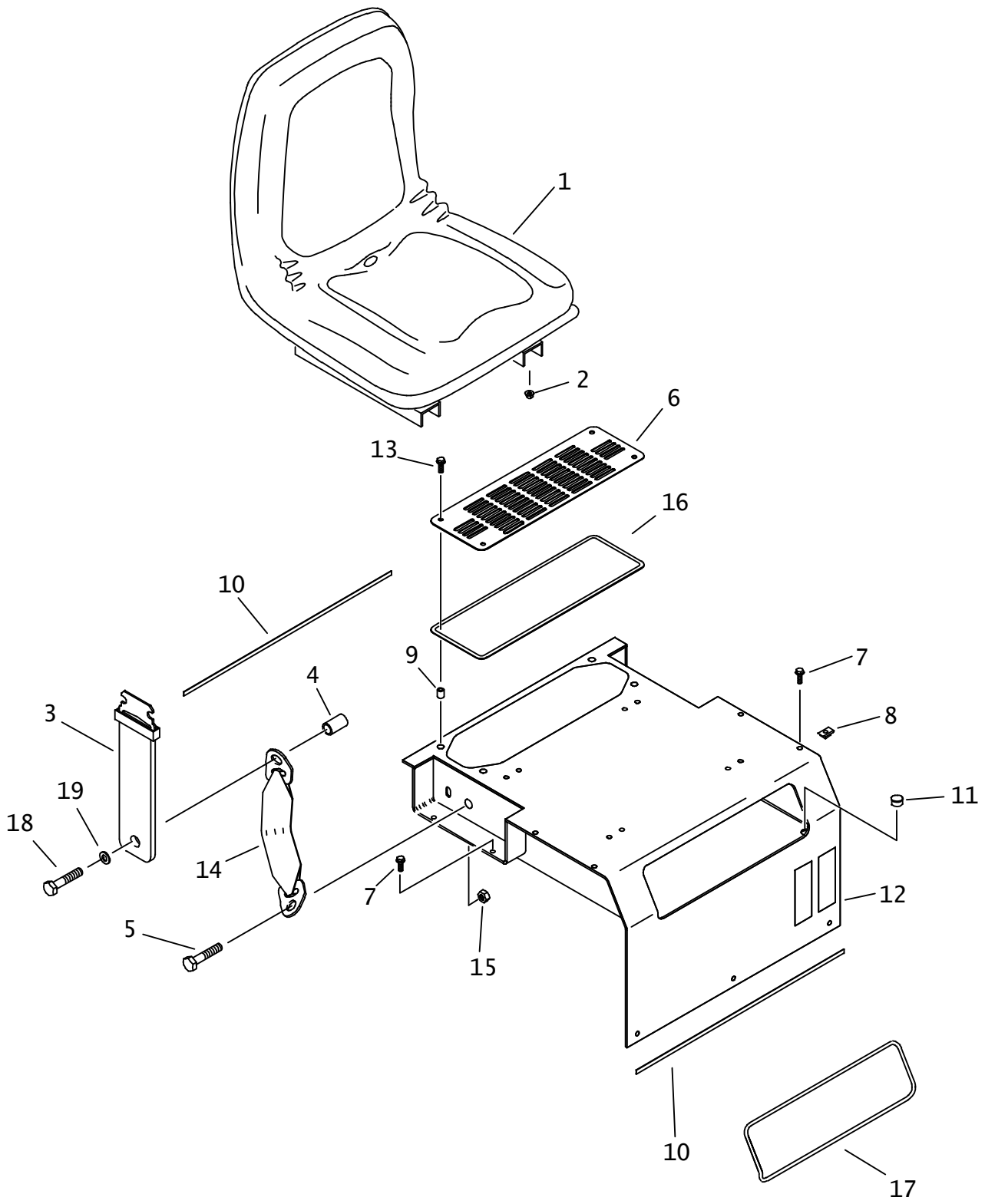
## SEAT MOUNT WITHOUT HEAT/AIR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	<u>117-100</u>	1	SEAT	ENDS WITH S/N 2Z0237
	117-631	1	SEAT ASSY	BEGINS WITH S/N 2Z0658
2.	105-003	4	FLG LOCKNUT (5/16-NC)	
3.	<u>171-011</u>	1	SEAT BELT SET	ENDS WITH S/N 2Z0237
	118-271	1	SEAT BELT	BEGINS WITH S/N 2Z0658
4.	184-252	2	BUSHING (.562" X 1" X .590")	
5.	105-247	2	SCREW (M12-1.75 X 35MM)	
6.	370-128	1	LOWER COMPARTMENT	
7.	106-381	8	FLG LK SCREW (M8-1.25 X 25MM)	
8.	106-551	12	CLIP NUT (M8-1.25)	USE 2 @ 23"; 1 @ 40"
9.	370-130	1	COMPARTMENT DOOR	
10.	116-723	AR	BULK EDGE (3/32", SOLD PER 1')	
	256-665	AR	ADHESIVE	
11.	117-558	1	ADJUST LEVER LATCH (LOCKING)	
	<u>214-961</u>		KEY, PAIR (BASE CODE)	INCL KEY
	217-309		LOCK PLUG 4/ LATCH (BASE CODE)	
	110-757	1	LEVER LATCH (ADJUST, LOCKING)	
	110-596		KEY (PAIR)	
12.	370-126	1	SEAT MOUNT	
13.	106-162	6	FLG SCREW (M8-1.25 X 20mm)	
14.	115-430	2	SEAT BELT TETHER	
15.	106-685	2	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
16.	110-430	1	HINGE (14-5/8")	
17.	106-234	8	SCREW (M6-1.0 X 12mm)	
18.	106-385	8	FLG LOCKNUT (M6-1.00)	
19.	106-477	2	SCREW (M12-1.75 X 45MM, 10.9)	
20.	106-397	2	WASHER (M12, HARDENED)	

FOOTNOTES

NOTE:

# SEAT MOUNT WITH HEAT/AIR





# SEAT MOUNT WITH HEAT/AIR

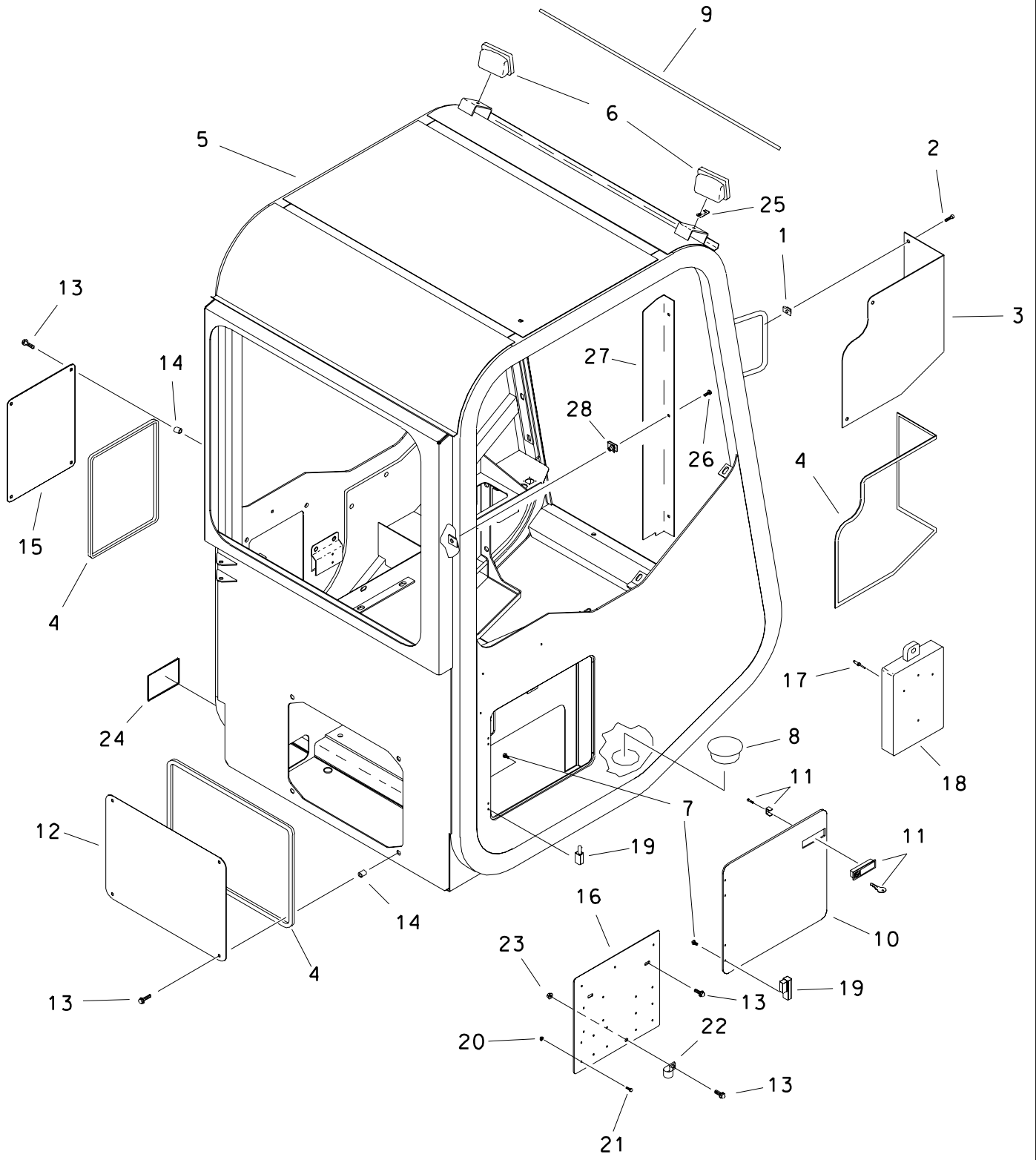
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	<u>117-100</u>	1	SEAT	ENDS WITH S/N 2Z0237
	117-631	1	SEAT ASSY	BEGINS WITH S/N 2Z0658
2.	105-003	4	FLG LOCKNUT (5/16-NC)	
3.	<u>171-011</u>	1	SEAT BELT SET	ENDS WITH S/N 2Z0237
	118-271	1	SEAT BELT	BEGINS WITH S/N 2Z0658
4.	184-252	2	BUSHING (.562" X 1" X .590")	
5.	105-247	2	SCREW (M12-1.75 X 35MM)	
6.	349-746	1	VENT PLATE	
7.	106-334	8	SCREW (M8-1.25 X 25MM, BUT SOC)	
8.	106-551	10	CLIP NUT (M8-1.25)	
9.	105-633	4	NUTSERT (M8X1.25) 3.8-7.9" THK	
10.	116-723	AR	BULK EDGE (3/32", SOLD PER 1')	USE 2 @ 23"
	256-665	AR	ADHESIVE	
11.	110-653	2	PLUG (3/4")	
12.	349-464	1	SEAT MOUNT	
13.	106-162	4	FLG SCREW (M8-1.25 X 20mm)	
14.	115-430	2	SEAT BELT TETHER	
15.	106-685	2	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
16.	116-724	AR	BULK SEAL (3/32", SOLD PER 1')	USE 1 @ 44"
17.	116-723	AR	BULK EDGE (3/32", SOLD PER 1')	USE 1 @ 40"
18.	106-477	2	SCREW (M12-1.75 X 45MM, 10.9)	
19.	106-397	2	WASHER (M12, HARDENED)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# CAB COVERS



## CAB COVERS

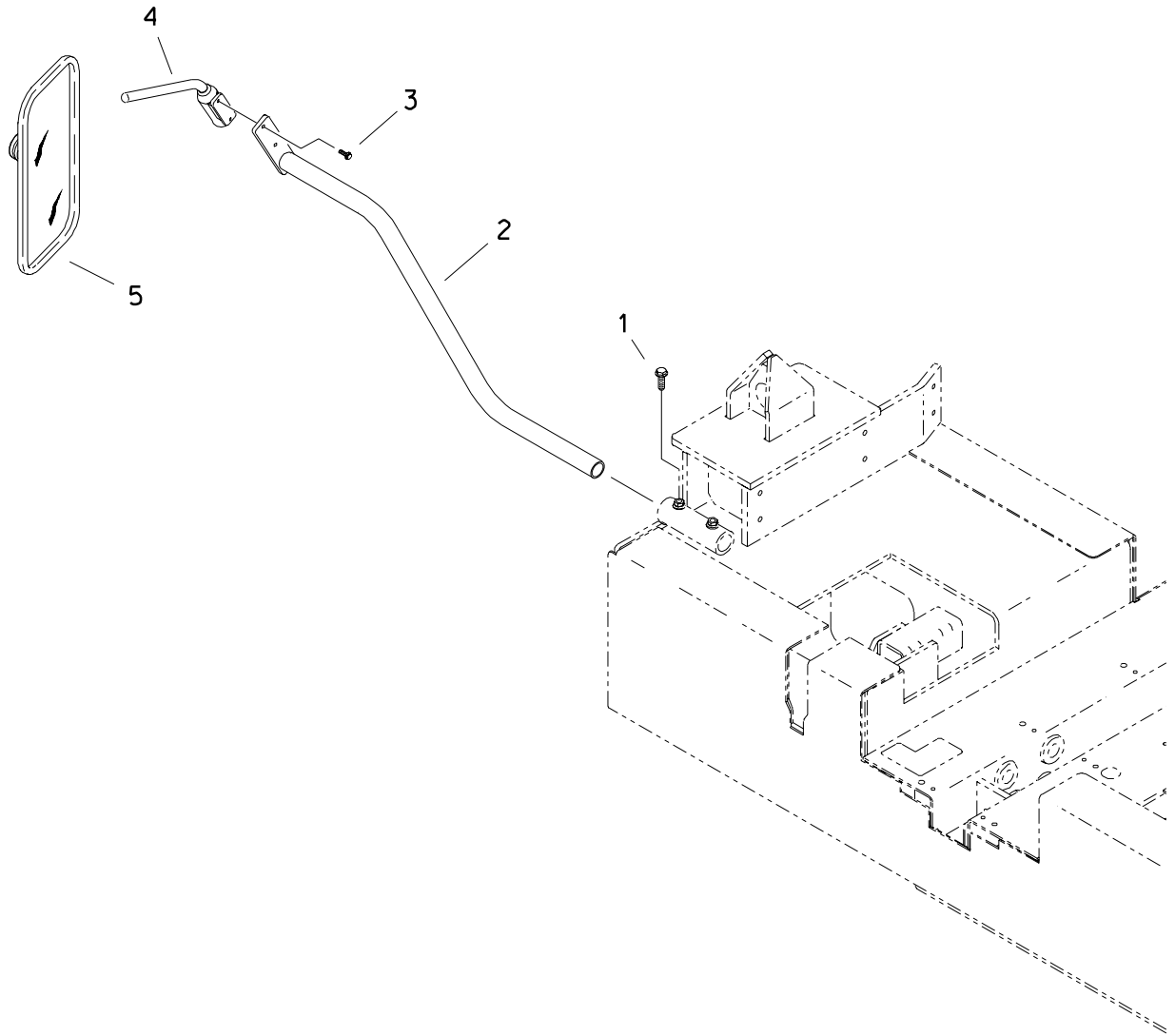
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-551	4	CLIP NUT (M8-1.25)	
2.	107-334	4	SCREW (M8-1.25 X 25MM, BUT SOC)	
3.	349-479	1	LOWER COVER	
4.	116-724	2	BULK SEAL (3/32", SOLD PER 1')	USE 2 @ 63", USE 1 @ 46 1/2"
5.	307-683	-	CAB FRAME	
6.	217-057	2	WORKING LIGHT - CLEAR	
7.	106-228	2	SCREW (M5-0.80 X 10MM)	
8.	110-947	1	DOME PLUG (3")	
9.	115-671	1	BULK EDGE (1/16", SOLD PER 1')	USE 1 @ 36"
10.	349-477	1	ACCESS DOOR	
11.	117-558	1	ADJUST LEVER LATCH (LOCKING)	
	214-961	-	KEY, PAIR (BASE CODE)	
	217-309	-	LOCK PLUG 4/LATCH (BASE CODE)	
	110-757	1	LEVER LATCH (ADJUSTABLE LOCKING)	INCL KEY
	110-596	-	KEY (PAIR)	
12.	349-745	1	ACCESS COVER	
13.	106-162	11	FLG SCREW (M8-1.25 X 20MM)	
14.	105-633	4	NUTSERT (M8-1.25) 3.8-7.9" THK	
15.	349-475	1	ACCESS COVER	
16.	307-540	1	RELAY PANEL	
17.	110-560	3	POP RIVET (3/16" X 1/2", ALUM)	
18.	250-622	1	MANUAL COMPARTMENT	
19.	111-002	2	LIFT-OFF HINGE (OFF-SET)	
20.	106-850	29	LOCKNUT (M5-0.80)	
21.	106-542	29	SCREW (M5-0.80 X 16MM, PAN PLPS)	
22.	110-226	1	BOLT-ON CLAMP (1")	
23.	106-386	1	FLG LOCKNUT (M8-1.25)	
24.	115-686	1	BULK EDGE (5/32", SOLD PER 1')	USE 1 @ 17 1/2"
25.	211-041	2	CONNECTOR CLIP	
26.	106-640	3	SCREW (M6-1.00 X 20MM, BUT SOC)	
27.	349-478	1	CABLE COVER	
28.	106-574	3	CLIP NUT (M6-1.00)	

## NOT SHOWN:

116-737	1	FLOOR MAT	
115-318	AR	BULK NON-SKID (6", SOLD PER 1')	USE 1 @ 30"

## FOOTNOTES

# REAR VIEW MIRROR LEFT SIDE

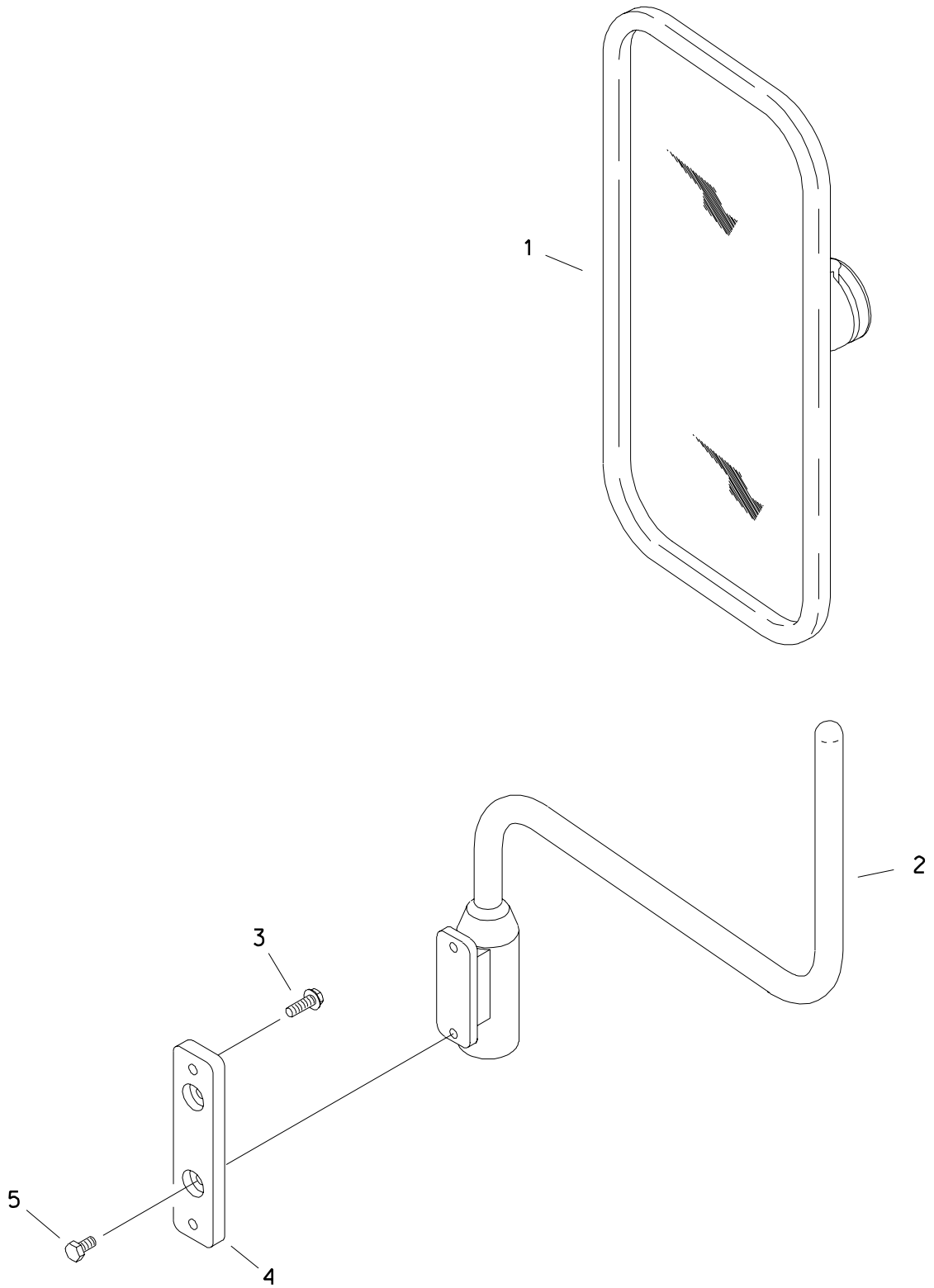


# REAR VIEW MIRROR LEFT SIDE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-245	2	SCREW (M10-1.50 X 25MM)	
2.	370-399	1	ADJUSTMENT ARM	
3.	106-161	2	FLG SCREW (M6-1.00 X 20MM)	
4.	116-851	1	MIRROR ARM	
5.	214-426	1	CONVEX MIRROR	

FOOTNOTES

REAR VIEW MIRROR  
RIGHT SIDE

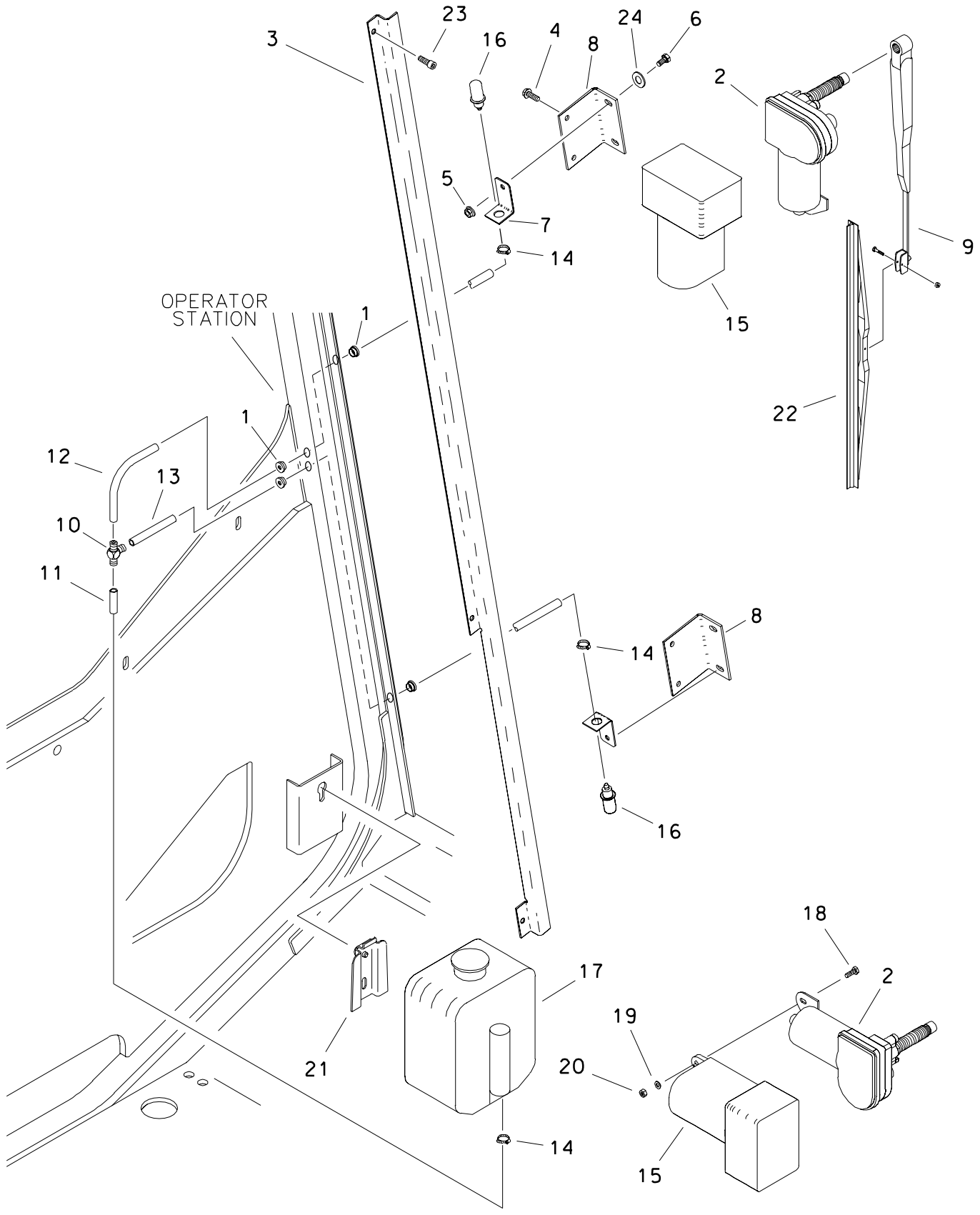


# REAR VIEW MIRROR RIGHT SIDE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-426	1	CONVEX MIRROR	
2.	116-874	1	MIRROR ARM	
3.	106-541	2	FLG SCREW (M6-1.00 X 20MM)	
4.	370-445	1	MOUNT PLATE	
5.	106-378	2	FLG LK SCREW (M6-1.00 X 12MM)	

FOOTNOTES

# WINDSHIELD WIPERS/WASHER





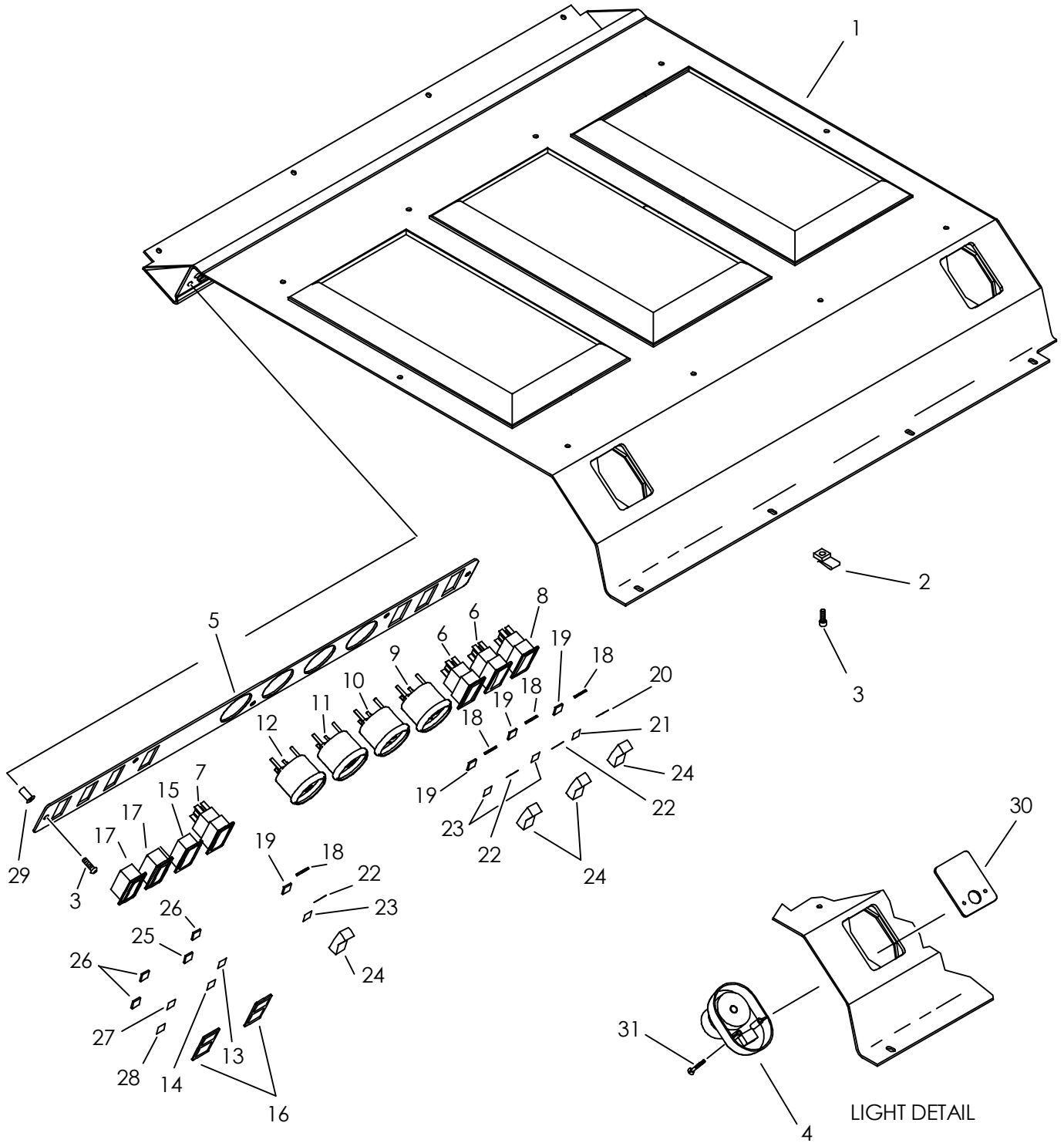
## WINDSHIELD WIPERS/WASHER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-349	4	GROMMET (1/2")	
2.	502-063	2	WIPER MOTOR (100 DEG)	
3.	349-957	1	CABLE COVER	
4.	106-541	4	FLG SCREW (M6-1.00 X 20mm)	
5.	106-385	2	FLG LOCKNUT (M6-1.00)	
6.	106-234	2	SCREW (M6-1 X 12mm)	
7.	349-959	2	NOZZLE BRACKET	
8.	349-960	2	COVER PLATE	
9.	111-058	2	WIPER ARM	
10.	514-380	1	S/D TEE (04H-04H-04H)	
11.	116-770	AR	BULK HOSE (3/32", SOLD PER 1")	USE 1 @ 29"
12.	116-770	AR	BULK HOSE (3/32", SOLD PER 1")	USE 1 @ 25"
13.	116-770	AR	BULK HOSE (3/32", SOLD PER 1")	USE 1 @ 15"
14.	110-249	3	WORM CLAMP (1/4" TO 5/8")	
15.	116-862	2	COVER	
16.	149-122	2	WASHER NOZZLE	
17.	344-115	1	WINDSHIELD WASHER TANK	SEE FOOTNOTE 1
	190-053		POLY-PATCH TANK REPAIR KIT	
18.	106-542	2	SCREW (M5-0.80 X 16mm, PAN PLPS)	
19.	105-284	2	WASHER (3/16")	
20.	106-850	2	LOCKNUT (M5-0.80)	
21.	370-430	1	TANK BRACKET	
22.	111-059	2	WIPER BLADE	
23.	106-640	3	SCREW (M6-1.00 X 20mm, BUT SOC)	
24.	106-389	2	WASHER (M8)	

## FOOTNOTES

- CAP CANNOT BE PURCHASED SEPARATELY.

# TOP LINING/PANEL



# TOP LINING/PANEL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-412	1	TOP LINING	
2.	106-574	18	CLIP NUT (M6-1.00)	
3.	107-312	23	SCREW (M6-1.00 X 25MM, BUT SOC)	
4.	217-113	2	DIRECTIONAL LIGHT	OBSOLETE
	213-214	2	DIRECTIONAL LIGHT	
5.	349-461	1	TOP INSTRUMENT PANEL	WINDSHIELD WIPER/WASHER
6.	217-919	2	ROCKER SW (DPDT) ON-ON-(ON)	WORK LIGHTS
7.	217-918	1	ROCKER SW {DPDT} ON-ON	CAB SWING
8.	217-921	1	ROCKER SW (SPDT) {ON}-OFF-{ON}	
9.	215-129	1	VOLT METER	
	215-415		NITE LIGHT KIT (12V DC)	
10.	215-133	1	FUEL GAUGE	
	215-415		NITE LIGHT KIT (12V DC)	
11.	217-554	1	ENGINE OIL PRESSURE GAUGE	
	215-415		NITE LIGHT KIT (12V DC)	
12.	217-556	1	ENGINE WATER TEMPERATURE GAUGE	
	215-415		NITE LIGHT KIT (12V DC)	
13.	217-143	1	ICON (WHT) HYD OIL TEMP	
14.	217-142	1	ICON (WHT) HYD OIL FILTER	OBSOLETE
15.	110-962	1	FILLER PLUG	PIPE LOADER/AUTO
16.	217-133	2	INDICATOR LENS FRAME	
17.	217-132	2	INDICATOR LIGHT	
18.	217-156	4	DIFFUSION LENS (GREEN)	
19.	217-158	4	DIFFUSION LENS (WHITE)	
20.	217-149	1	ICON (WHT) OPERATOR SEAT- IN	
21.	217-148	1	ICON (WHT) OPERATOR SEAT- OUT	
22.	217-136	4	ICON (WHT) ON-START	
23.	217-137	3	ICON (WHT) OFF-STOP	
24.	217-925	4	ROCKER SWITCH (ACTUATOR)	
25.	217-154	1	DIFFUSION LENS (AMBER)	
26.	217-157	3	DIFFUSION LENS (RED)	
27.	217-141	1	ICON (WHT) ENGINE COOLANT TEMP	
28.	217-140	1	ICON (WHT) ENG OIL PSI	
29.	105-643	5	WELLNUT (M6-1.00 X 16MM LG)	
30.	323-892	2	ADAPTER PLATE	
31.	108-105	4	SCREW (M4-0.7 X 40MM, CSK, BLK)	

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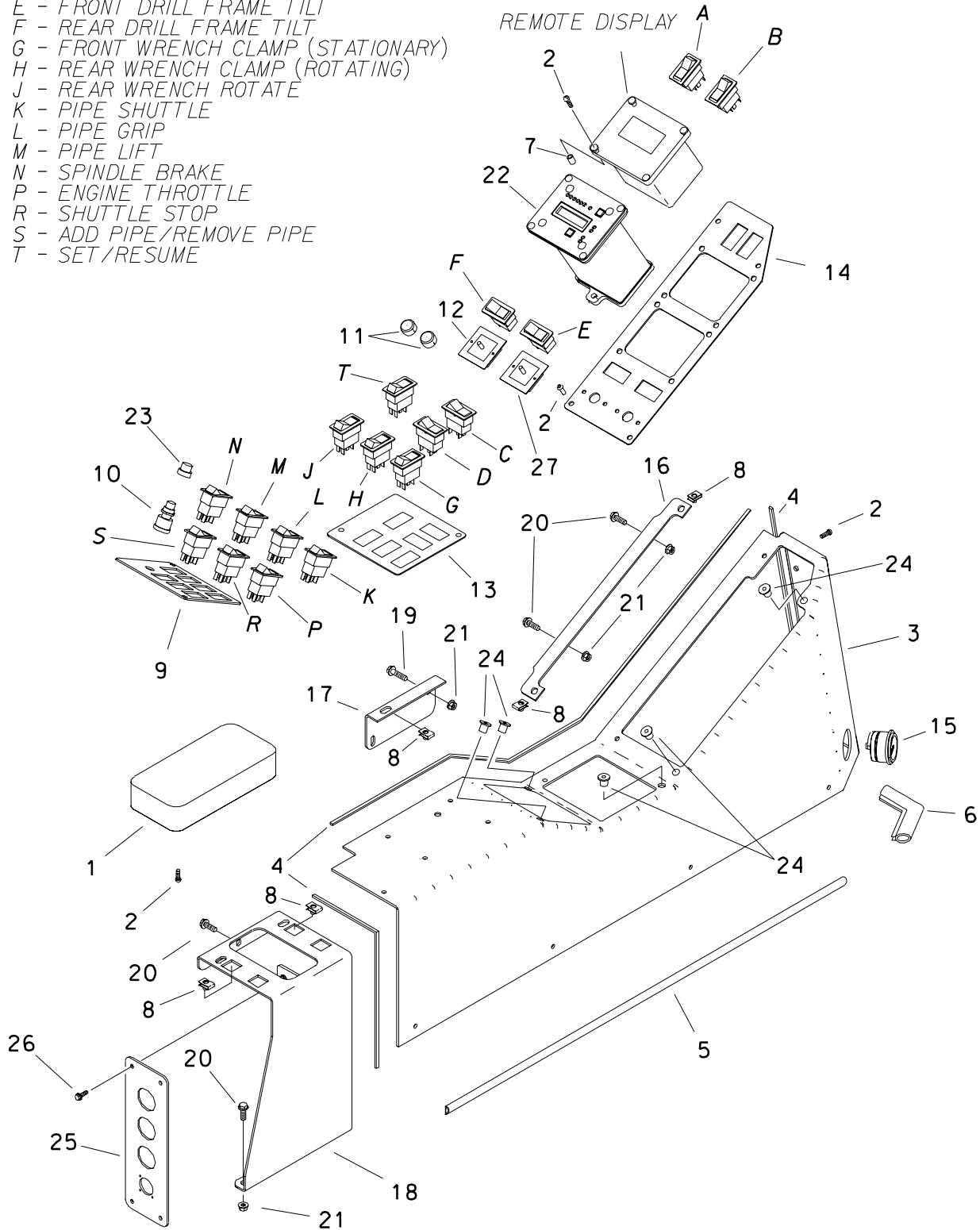
FOOTNOTES:

NOTE:

# LEFT CONSOLE

— SWITCH LEGEND —

- A - HEAT/AIR FAN SPEED
- B - HEAT/AIR ON/OFF
- C - MOBILE BORE
- D - LUBRICATOR
- E - FRONT DRILL FRAME TILT
- F - REAR DRILL FRAME TILT
- G - FRONT WRENCH CLAMP (STATIONARY)
- H - REAR WRENCH CLAMP (ROTATING)
- J - REAR WRENCH ROTATE
- K - PIPE SHUTTLE
- L - PIPE GRIP
- M - PIPE LIFT
- N - SPINDLE BRAKE
- P - ENGINE THROTTLE
- R - SHUTTLE STOP
- S - ADD PIPE/REMOVE PIPE
- T - SET/RESUME

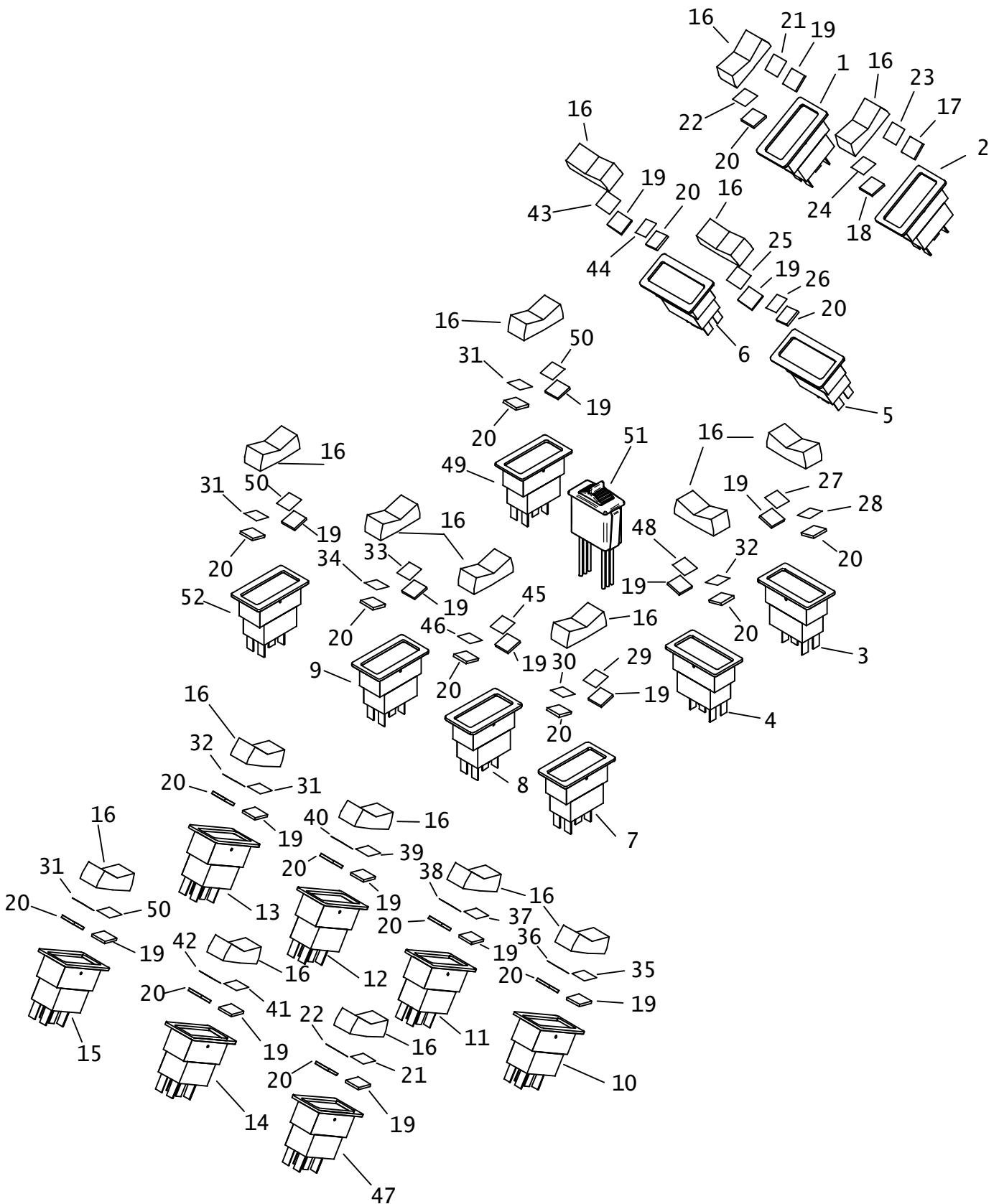


## LEFT CONSOLE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-406	1	ARM REST PAD	
2.	107-312	28	SCREW (M6-1.00 X 25MM, BUT SOC)	
3.	349-414	1	LEFT CONSOLE	
4.	116-723	AR	BULK EDGE (3/32", SOLD PER 1')	USE 1 @ 78.7"
	256-665	AR	ADHESIVE	
5.	116-724	AR	BULK SEAL (3/32", SOLD PER 1')	USE 1 @ 41.7"
6.	116-421	AR	BULK EDGE (1/8", SOLD PER 1')	USE 1 @ 7.9"
7.	105-630	8	NUTSERT (M6X1.0).70-4.20THK	
8.	106-574	14	CLIP NUT (M6-1.00)	
9.	303-931	1	LEFT REAR PANEL	
10.	306-607	1	HORN BUTTON	
11.	116-849	-	POTENTIOMETER KNOB	
12.	214-566	1	POTENTIOMETER	ROTATION; INCLUDES REF NO. 11
13.	303-930	1	LEFT CENTER PANEL	
14.	303-932	1	LEFT INSTRUMENT PANEL	
15.	215-128	1	HOOR METER	
16.	349-446	1	LEFT CONSOLE MOUNT	
17.	349-404	1	LEFT CONSOLE CENTER MOUNT	
18.	370-412	1	LEFT REAR MOUNT	
19.	106-163	4	FLG SCREW (M8-1.25 X 30MM)	
20.	106-162	3	FLG SCREW (M8-1.25 X 20MM, GD8)	
21.	106-386	7	FLG LOCKNUT (M8-1.25)	
22.	217-241	1	ESID MODULE	
	197-232	1	REBUILT 217-232 ESID MODULE	
23.	306-608	1	BUTTON COVER	
24.	105-643	5	WELLNUT (M6-1.00 X 16MM LG)	
25.	370-414	1	CONNECTOR PANEL	
26.	106-379	4	FLG LK SCREW (M6-1.00 X 20MM)	
27.	214-566	1	POTENTIOMETER	DRILLING FLUID; INCLUDES REF NO. 11

FOOTNOTES

# LEFT CONSOLE SWITCHES



## LEFT CONSOLE SWITCHES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-922	1	ROCKER SW (SPDT) ON-ON-ON	HEAT/AIR FAN SPEED
2.	217-923	1	ROCKER SW (DPDT) ON-OFF-ON	HEAT/AIR ON/OFF
3.	217-923	1	ROCKER SW (DPDT) ON-OFF-ON	MOBILE BORE
4.	217-924	1	ROCKER SW (DPDT) OFF-{ON}	LUBRICATOR
5.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	FRONT DRILL FRAME TILT
6.	<u>217-921</u>	1	ROCKER SW (SPDT) (ON)-OFF-(ON)	REAR DRILL FRAME TILT
	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	FRONT WRENCH CLAMP
	<u>217-921</u>	1	ROCKER SW (SPDT) (ON)-OFF-(ON)	REAR WRENCH CLAMP
7.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	REAR WRENCH ROTATE
8.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	PIPE SHUTTLE
9.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	PIPE GRIP
10.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	PIPE LIFT
11.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	SPINDLE BRAKE
12.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	SHUTTLE STOP
13.	217-918	1	ROCKER SW {DPDT} ON-ON	ADD PIPE/REMOVE PIPE
14.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	
	<u>217-921</u>	1	ROCKER SW (SPDT) (ON)-OFF-(ON)	
15.	217-922	1	ROCKER SW (SPDT) ON-ON-ON	
16.	217-925	17	ROCKER SWITCH (ACTUATOR)	
17.	217-157	1	DIFFUSION LENS (RED)	
18.	217-155	1	DIFFUSION LENS (BLUE)	
19.	217-156	16	DIFFUSION LENS (GREEN)	
20.	217-158	15	DIFFUSION LENS (WHITE)	
21.	217-138	2	ICON (WHT) FAST	
22.	217-139	2	ICON (WHT) SLOW	
23.	217-144	1	ICON (WHT) INTERIOR HEAT	
24.	217-145	1	ICON (WHT) AIR CONDITION	
25.	217-167	1	ICON (WHT) FRAME EXTEND-FRONT	
26.	217-168	1	ICON (WHT) FRAME RETRACT-FRONT	
27.	217-147	1	ICON (WHT) DRILL HEAD	
28.	217-146	1	ICON (WHT) BORING - GND DRIVE	
29.	217-171	1	ICON (WHT) FRONT CLAMP - OPEN	
30.	217-172	1	ICON (WHT) FRONT CLAMP - CLOSE	
31.	217-136	5	ICON (WHT) ON-START	
32.	217-137	3	ICON (WHT) OFF-STOP	
33.	217-176	1	ICON (WHT) REAR CLAMP-ROTATE CCW	
34.	217-175	1	ICON (WHT) REAR CLAMP-ROTATE CW	
35.	217-179	1	ICON (WHT) SHUTTLE-RETRACT	

FOOTNOTES:

NOTE:

## LEFT CONSOLE SWITCHES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
36.	217-153	1	ICON (WHT) LOADER-SHUTTLE	
37.	217-178	1	ICON (WHT) PIPE GRIP - CLOSE	
38.	217-177	1	ICON (WHT) PIPE GRIP - OPEN	
39.	217-181	1	ICON (WHT) PIPE LIFT-LOWER	
40.	217-180	1	ICON (WHT) PIPE LIFT-RAISE	
41.	217-150	1	ICON (WHT) LOADER-ROW-OUT	
42.	217-151	1	ICON (WHT) LOADER-ROW-IN	
43.	217-170	1	ICON (WHT) FRAME-RETRACT REAR	
44.	217-169	1	ICON (WHT) FRAME-EXTEND REAR	
45.	217-173	1	ICON (WHT) REAR CLAMP-OPEN	
46.	217-174	1	ICON (WHT) REAR CLAMP-CLOSE	
47.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	THROTTLE
48.	217-192	1	ICON (WHT) AUTO LUBRICATION	
49.	217-922	1	ROCKER SW (DPDT) (ON-ON)	SET/RESUME
	<u>217-921</u>	1	ROCKER SW (SPDT) (ON)-OFF-(ON)	
50.	700-035	3	ICON, INCREASE/POSTIVE	
51.	215-1016	1	ROTATION DITHER SW	AT ONLY
52.	217-922	1	ROCKER SW (SPDT) ON-ON	AT ONLY

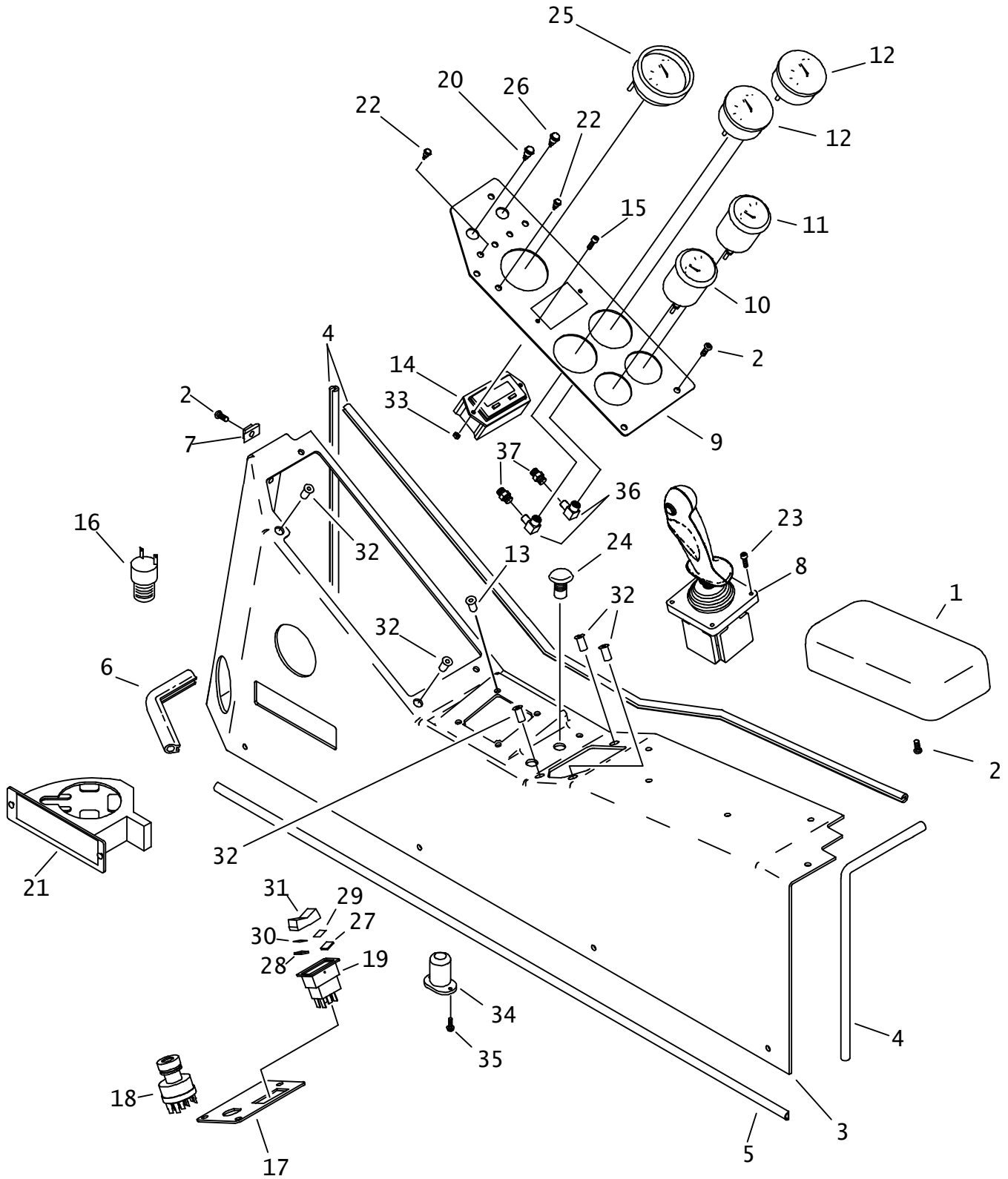
FOOTNOTES:

NOTE:





# RIGHT CONSOLE



# RIGHT CONSOLE

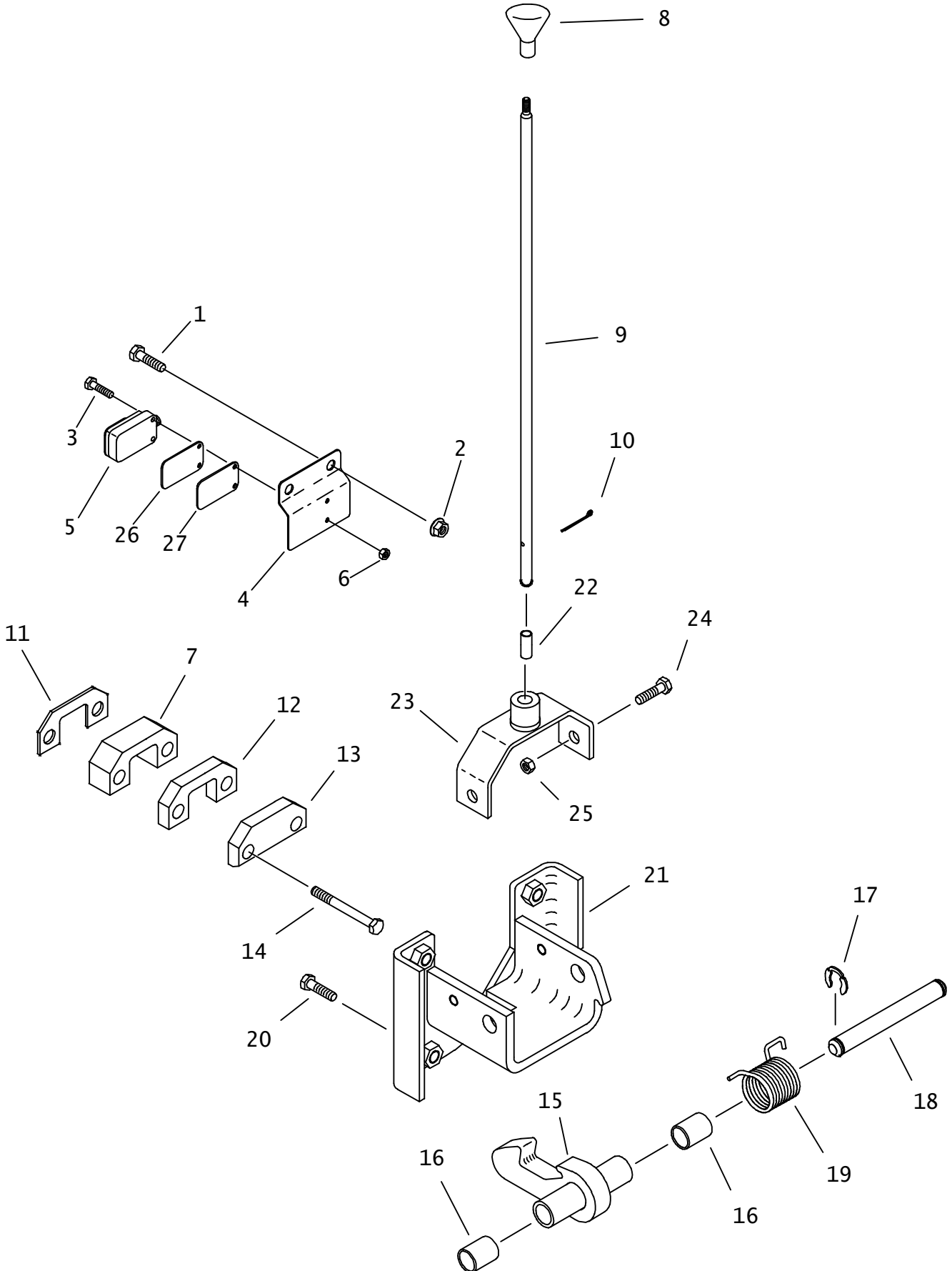
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-406	1	ARM REST PAD	
2.	107-312	20	SCREW (M6-1.00X25MM, BUT SOC)	
3.	306-914	1	RIGHT CONSOLE	
4.	116-723	AR	BULK EDGE (3/32", SOLD PER 1')	USE 1 @ 79"
5.	116-724	AR	BULK SEAL (3/32", SOLD PER 1')	USE 1 @ 42"
6.	116-421	AR	BULK EDGE (1/8", SOLD PER 1')	USE 1 @ 8"
7.	106-574	13	CLIP NUT (M6-1.00)	
8.	214-565	1	DUAL AXIS HALL EFFECT JOYSTICK	
	197-104		REBULIT 214-565 JOYSTICK	
9.	303-933	1	RIGHT INSTRUMENT PANEL	
10.	211-070	1	TACHOMETER (3000 RPM)	ENGINE
11.	211-053	1	TACHOMETER (250RPM)	SPINDLE
12.	217-079	2	PRESSURE GAUGE (10000 PSI)	
13.	107-358	4	WELLNUT (M4-0.7)	
14.	217-221	1	FLOW METER DISPLAY	
15.	105-649	2	BOLT (#10-32 X .75", BUT)	
16.	306-603	1	AUDIO ALARM	
17.	303-934	1	RIGHT REAR PANEL	
18.	214-852	1	IGNITION SWITCH	BEGINS WITH S/N
	214-961		KEY, PAIT (BASE CODE)	
	214-962		SWITCH MOUNTING NUT	
	214-963		LOCK PLUG W/1 KEY (BASE CODE)	
	217-768	1	IGNITION SWITCH	ENDS WITH S/N INCLUDE KEY AND NUT
	106-521	1	BEZEL NUT (1-NS)	
	217-769	1	KEY (PAIR)	
19.	217-924	1	ROCKER SWITCH (DPDT) OFF-{ON}	COLD START
20.	217-071	1	RED PILOT LIGHT	
21.	349-416	1	CUP HOLDER	
22.	214-701	5	STATUS LIGHT	ENGINE STOP
23.	107-414	4	SCREW (M4-0.70 X 30MM BUT SOC)	
24.	217-206	1	BUTTON SWITCH (SPST)	
25.	217-543	1	PRESSURE GAUGE(3000 PSI)	
26.	214-840	1	GREEN LED (12V DC)	
27.	217-156	1	DIFFUSION LENS (GREEN)	
28.	217-158	1	DIFFUSION LENS (WHITE)	
29.	217-136	1	ICON (WHT) ON-START	
30.	217-137	1	ICON (WHT) OFF-STOP	
31.	217-925	1	ROCKER SWITCH (ACTUATOR)	
32.	105-643	5	WELLNUT (M6-1.00)	
33.	106-850	2	LOCKNUT (M5-0.80)	
34.	214-301	1	ACCESSORY SOCKET	
35.	106-058	2	BOLT (#6-32 X 1-1/8", RD SLT)	
36.	514-355	2	CONNECTOR (04NF-04NF90)	
37.	154-020	2	CONNECTOR (04N-04J)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# CAB LOCK



# CAB LOCK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-162	2	FLG SCREW (M8-1.25 X 20MM)	
2.	106-386	2	FLG LOCKNUT (M8-1.25)	
3.	106-427	2	SCREW (M5-0.80 X 22MM, SOC)	
4.	307-724	1	BRACKET	
5.	215-1175	1	PROXIMITY SWITCH	
6.	106-850	2	LOCKNUT (M5-0.80)	
7.	179-445	1	LATCH SPACER	BEGINS WITH S/N: 2W0856
8.	110-071	1	KNOB (1/4-NC, BLACK)	
9.	349-900	1	ROD	
10.	105-523	1	COTTER PIN (.125" X .750")	
11.	349-955	AR	SHIM	
12.	349-954	AR	SPACER	
13.	349-953	1	LATCH PLATE	
14.	106-700	2	SCREW (M12-1.75 X 80MM)	ENDS WITH S/N: 2V2567
	106-337	2	SCREW (M12-1.75 X 110MM)	BEGINS WITH S/N: 2W0856
15.	349-945	1	LATCH	
16.	125-403	2	BRONZE BUSHING (.625")	
17.	115-780	2	KLIP RING (.625")	
18.	349-948	1	PIN	
19.	117-054	1	TORSION SPRING	
20.	105-273	4	SCREW (M12-1.75 X 30MM)	
21.	349-942	1	LATCH MOUNT	
22.	125-436	1	BRONZE BUSHING (.376")	
23.	349-951	1	ROD GUIDE	
24.	105-245	2	SCREW (M10-1.50 X 25MM)	
25.	105-894	2	LOCKNUT (M10-1.50, PRV TRQ,10.9)	
26.	107-450	AR	SHIM (.075")	SEE FOOTNOTE 1
27.	107-451	AR	SHIM (.135")	SEE FOOTNOTE 1

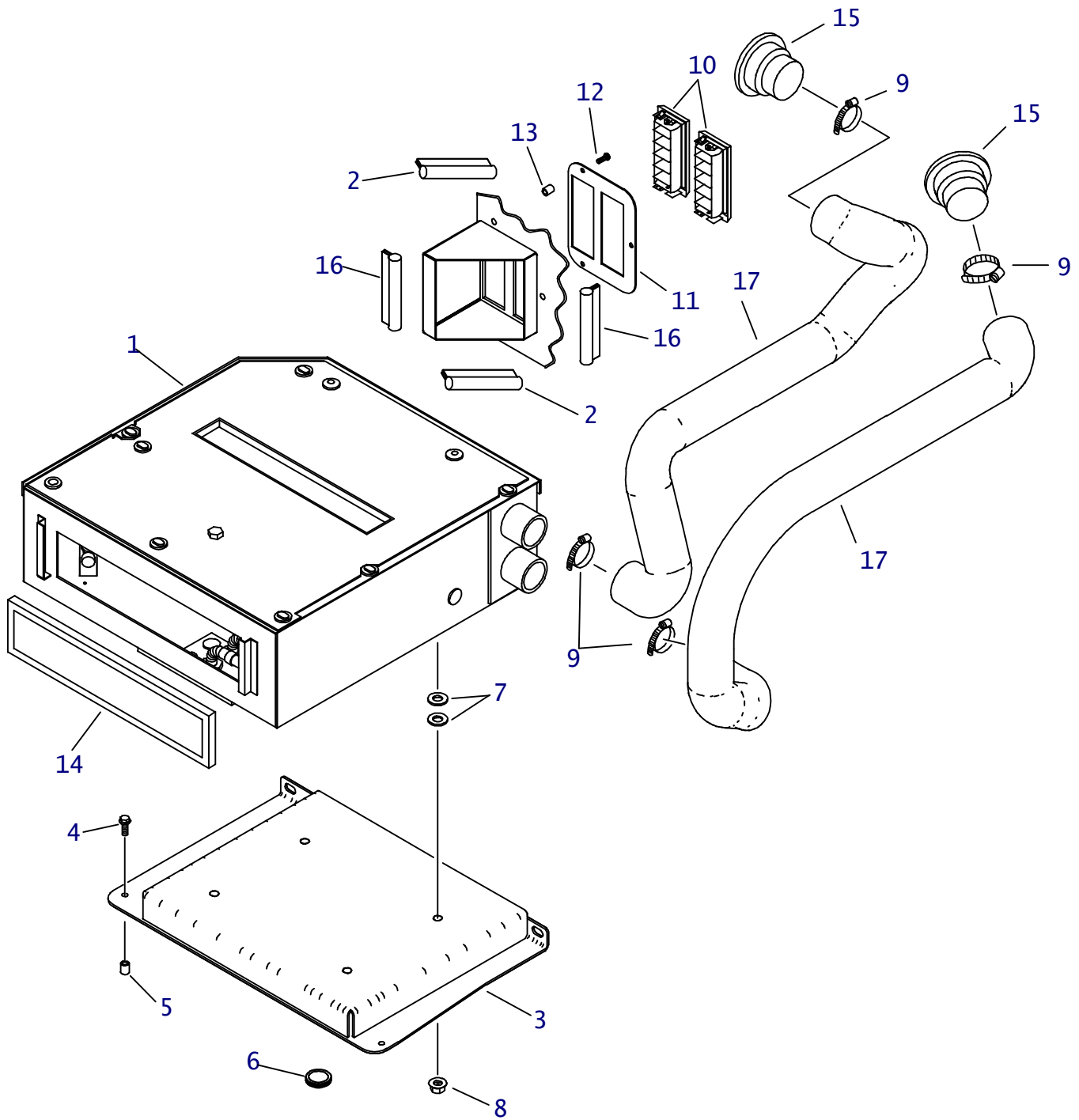
NOT SHOWN:

FOOTNOTES:

1. SHIMS ARE OPTIONAL

NOTE:

# CAB HEAT/AIR



# CAB HEAT/AIR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	500-1385	1	HEAT/AIR SYSTEM	
2.	116-421 AR		BULK EDGE (1/8", SOLD PER 1')	USE 2 @ 5"
3.	349-471	1	HEAT/AIR MOUNT	
4.	106-162	4	FLG SCREW (M8-1.25 X 20mm)	
5.	105-633	4	NUTSERT (M8X1.25) 3.8-7.9" THK	
6.	116-689	2	GROMMET	
7.	106-397	8	WASHER (M12, HARDENED)	
8.	105-833	4	FLG LOCKNUT (1/2-NC)	
9.	110-134	4	WORM CLAMP (2.062" TO 2.75")	
10.	502-064	2	RECTANGULAR LOUVER	
11.	349-894	1	LOUVER PLATE	
12.	106-640	3	SCREW (M6-1.0 X 20mm, BUT SOC)	
13.	105-631	3	NUTSERT (M6X1.0) 4.20-6.60THK	
14.	502-066	1	FOAM FILTER (1/2" X 4" X 17")	
15.	502-065	2	ROUND LOUVER	
	502-067	2	HOSE ADAPTER	
16.	116-421 AR		BULK EDGE (1/8", SOLD PER 1')	USE 2 @ 5.50"
17.	500-1383	1	HOSE KIT	

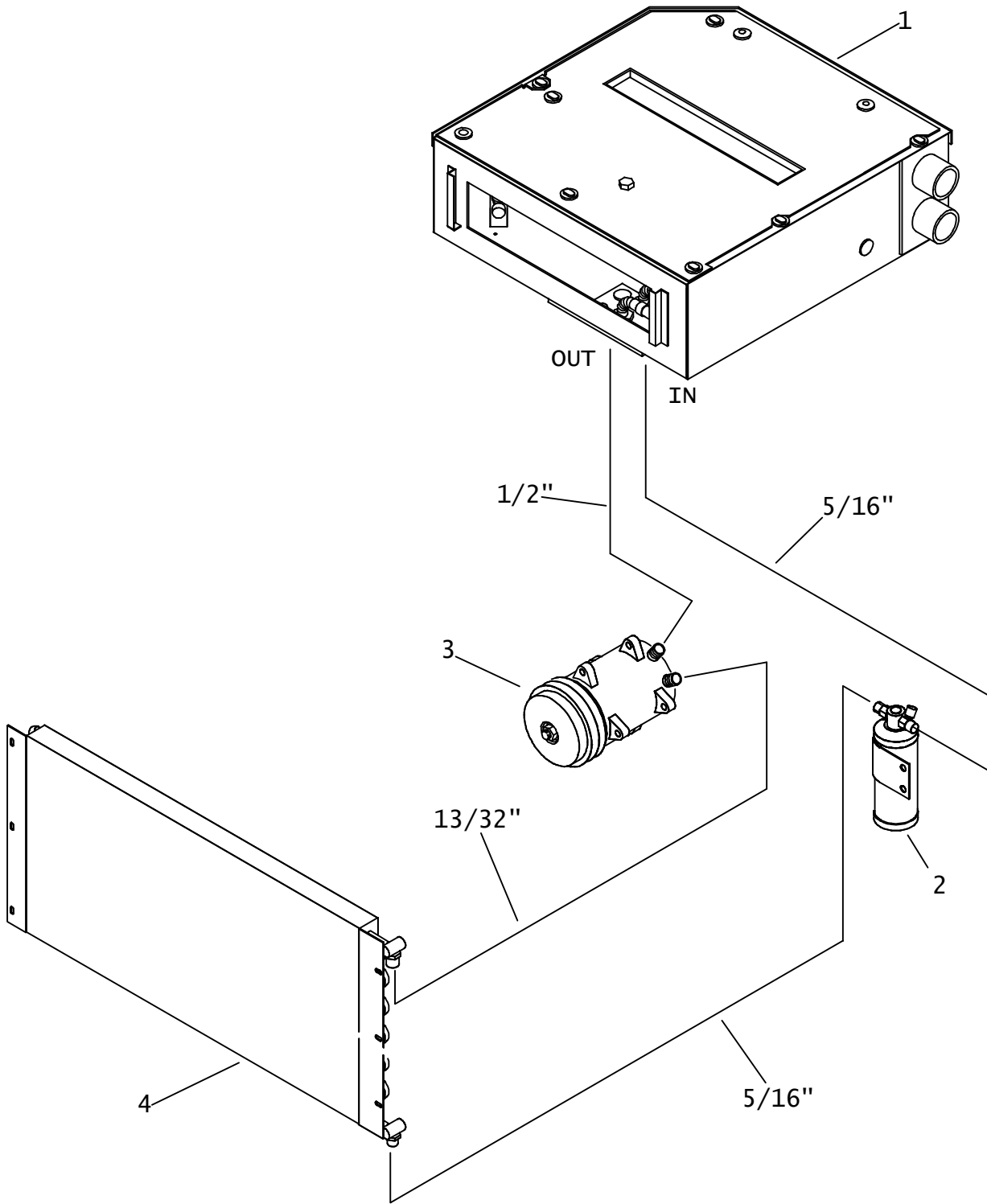
NOT SHOWN:

499-210	1	EXPANSION VALVE
499-205	1	DRIER
499-211	1	COMPRESSOR
500-1382	1	CONDENSER
500-1286	1	HOSE, AC

FOOTNOTES:

NOTE:

# HEAT/AIR DIAGRAM





# HEAT/AIR DIAGRAM

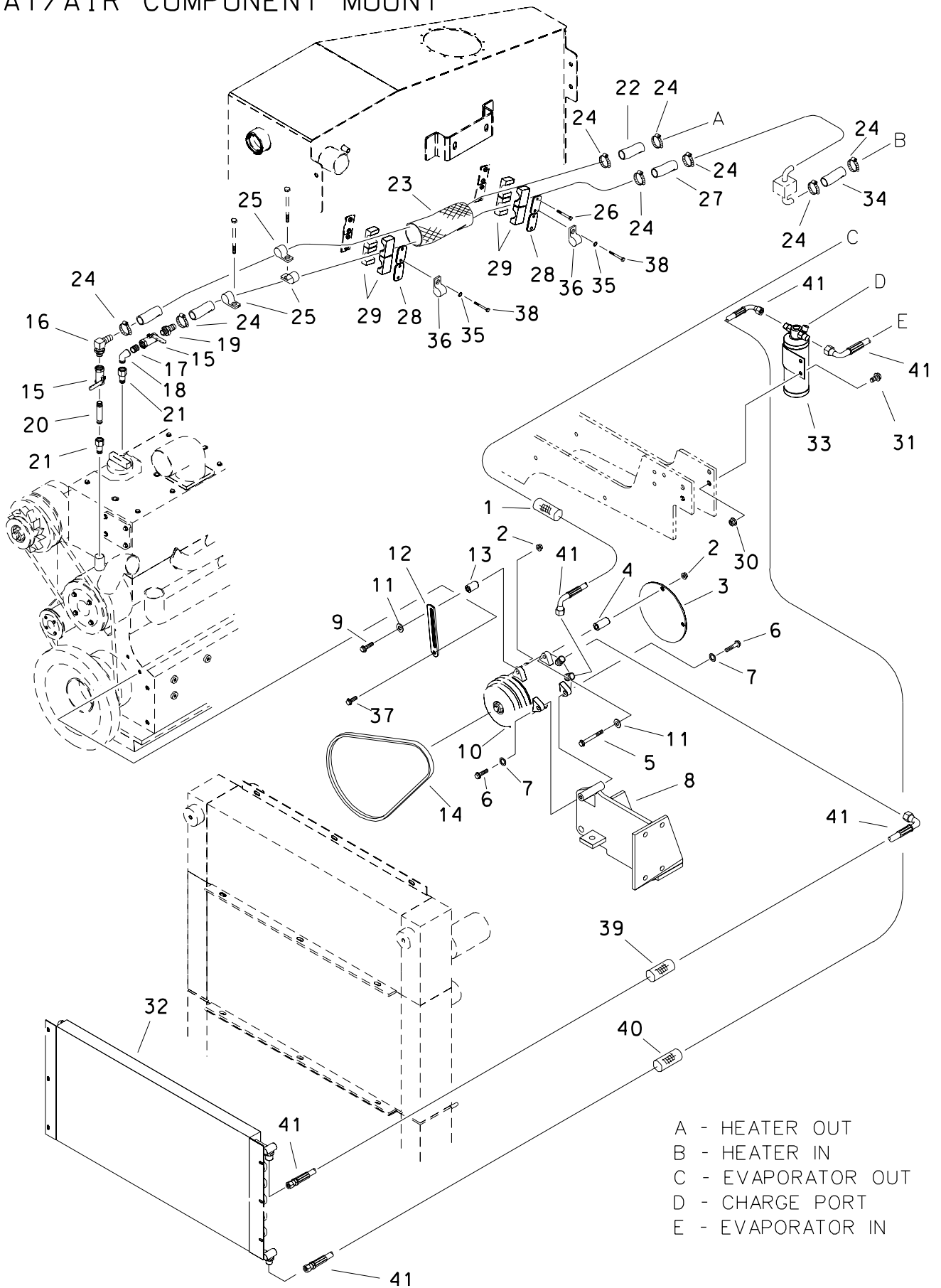
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	500-1385	-	HEAT/AIR SYSTEM	
	499-210	-	EXPANSION VALVE	
2.	499-205	-	DRYER	
3.	499-211	-	COMPRESSOR	
4.	500-1382	-	CONDENSER COIL	

NOT SHOWN:

FOOTNOTES:

NOTE:  
TORQUE FITTINGS TO THE FOLLOWING SPECIFICATIONS  
-6 HOSES: 11-13 FT-LBS  
-8 HOSES: 15-20 FT-LBS  
-10 HOSES: 21-27 FT-LBS

# HEAT/AIR COMPONENT MOUNT



## HEAT/AIR COMPONENT MOUNT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-719	1	ABRASION SLEEVE (1.75" X 36")	
2.	106-386	9	FLG LOCKNUT (M8-1.25)	
3.	349-815	1	HEAT SHIELD	
4.	349-816	2	SPACER	
5.	106-330	2	SCREW (M8-1.25 X 70MM)	
6.	106-755	2	SCREW (M10-1.50 X 30MM, SOC)	
7.	106-390	2	WASHER (M10)	
8.	308-693	1	FRONT ENGINE MOUNT (LEFT)	
9.	106-329	1	SCREW (M8-1.25 X 50MM)	
10.	215-220	1	A/C COMPRESSOR	USE ON 7020'S AND B MODELS ONLY
	499-211	-	A/C COMPRESSOR	USE ON MACH 1'S ONLY
11.	106-389	3	WASHER (M8)	
12.	349-743	1	ADJUSTING BAR	
13.	178-573	1	SPACER	
14.	171-007	1	COMPRESSOR BELT	
15.	158-579	2	SHUT-OFF (08NF-08NF)	
16.	514-285	1	S/D COUPLER (08N-10H90)	
17.	115-122	1	NIPPLE (08N-1-1/2")	
18.	115-115	1	STREET ELBOW (08N-08NF90)	
19.	514-140	1	S/D COUPLER (08N-10H)	
20.	115-162	1	NIPPLE (08N-4")	
21.	514-335	2	REDUCER (M26-1.50-08NF)	SEE FOOTNOTE 1
22.	116-750	AR	BULK HOSE (5/8", SOLD PER 1')	USE 1 @ 250"
23.	117-610	1	ABRASION SLEEVE (1.75" X 138")	
24.	110-026	8	WORM CLAMP (1/2" TO 1-1/4")	
25.	110-226	3	BOLT-ON CLAMP (1")	
26.	105-818	6	BOLT (1/4-NC X 1-1/2")	
27.	116-750	AR	BULK HOSE (5/8", SOLD PER 1')	USE 1 @ 205"
28.	322-289	4	BACKUP (BOLT-ON)	
29.	111-007	4	BOLT-ON CLAMP (7/8", SET)	
30.	105-834	5	FLG LOCKNUT (3/8-NC)	
31.	106-162	3	FLG SCREW (M8-1.25 X 20MM)	
32.	215-221	-	AIR CONDENSER	USE ON 7020'S AND B MODELS ONLY
	499-213	-	CONDENSER COIL	USE ON MACH 1'S ONLY
33.	215-222	1	A/C DRYER	USE ON 7020'S AND B MODELS ONLY
	499-205	-	RECEIVER DRIER	USE ON MACH 1'S ONLY
34.	116-750	AR	BULK HOSE (5/8", SOLD PER 1')	USE 1 @ 38"
35.	105-095	2	WASHER (1/4")	
36.	110-333	2	BOLT-ON CLAMP (1")	
37.	106-162	1	FLG SCREW (M8-1.25 X 20MM)	
38.	105-198	2	BOLT (1/4-NC X 1-3/4")	
39.	117-392	1	ABRASION SLEEVE (1.25" X 60")	
40.	117-718	1	ABRASION SLEEVE (1" X 36")	
41.	499-558	-	A/C HOSE KIT (R134)	USE ON MACH 1'S ONLY

## FOOTNOTES

1. REMOVE 2 PLUGS FROM ENGINE. REINSTALL WASHERS FROM THE PLUGS BEFORE INSTALLING REDUCERS.

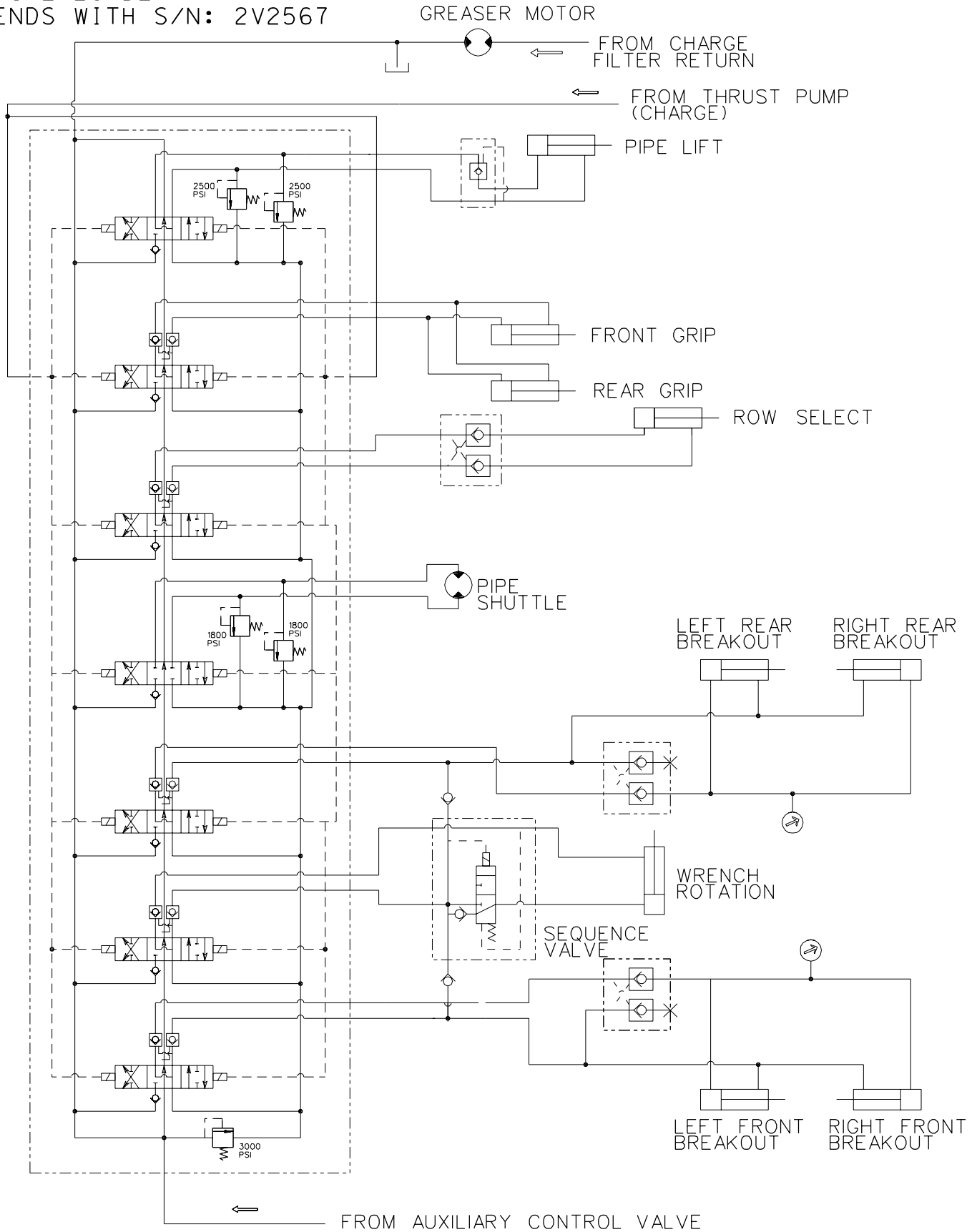
**NOTES:**


# HYDRAULICS

# HYDRAULIC SCHEMATIC

## PIPE LOADER

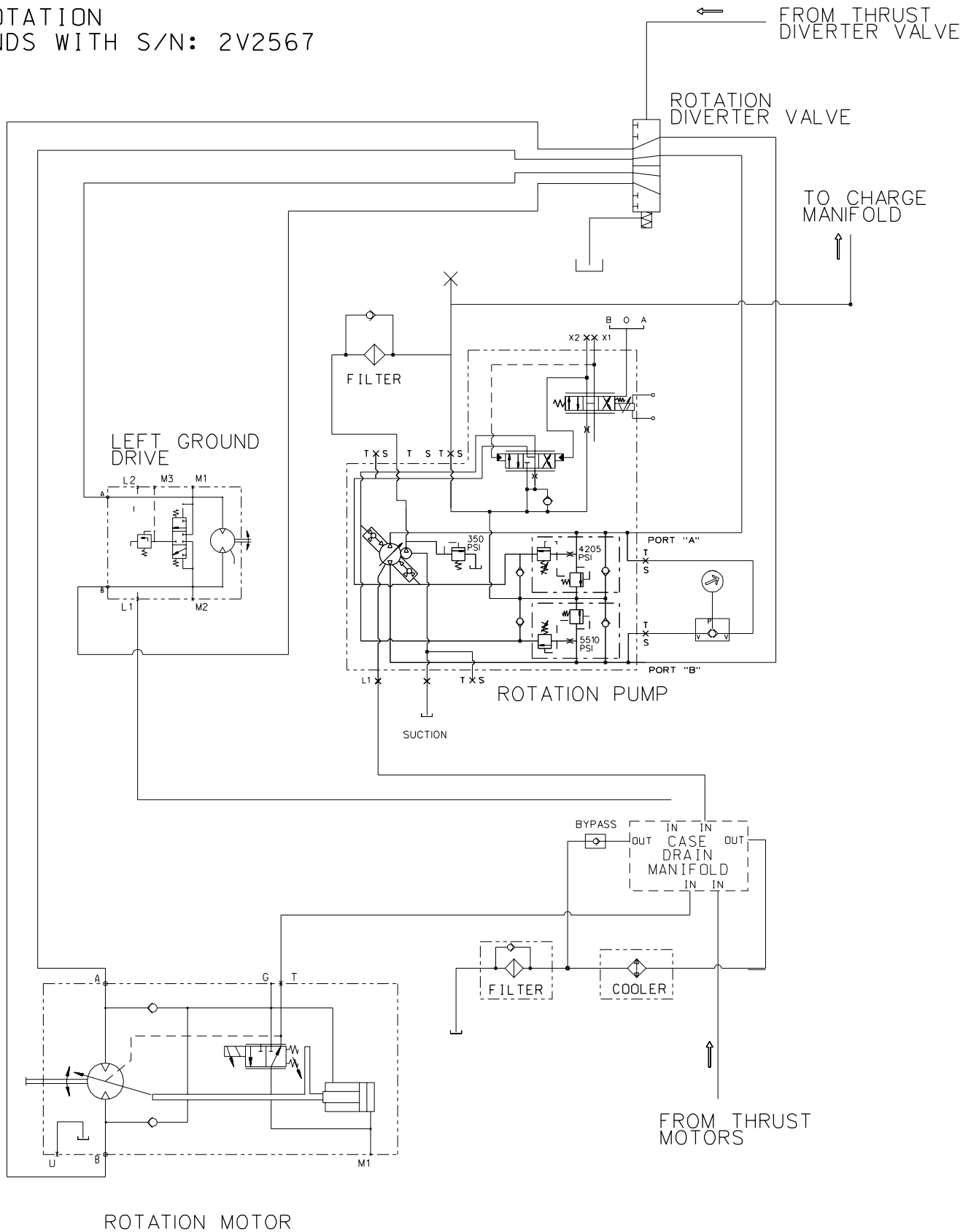
ENDS WITH S/N: 2V2567



# HYDRAULIC SCHEMATIC

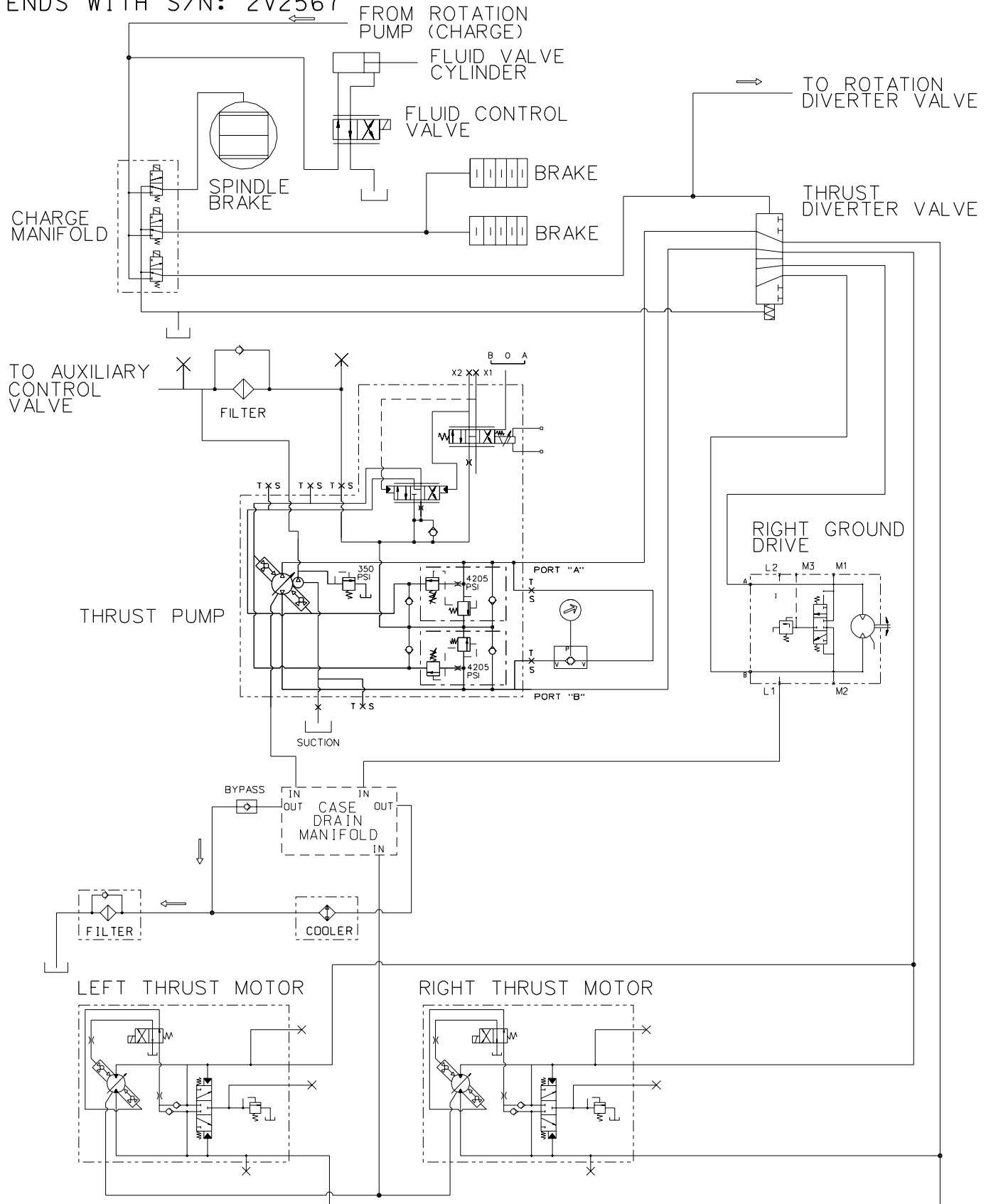
ROTATION

ENDS WITH S/N: 2V2567



# HYDRAULIC SCHEMATIC

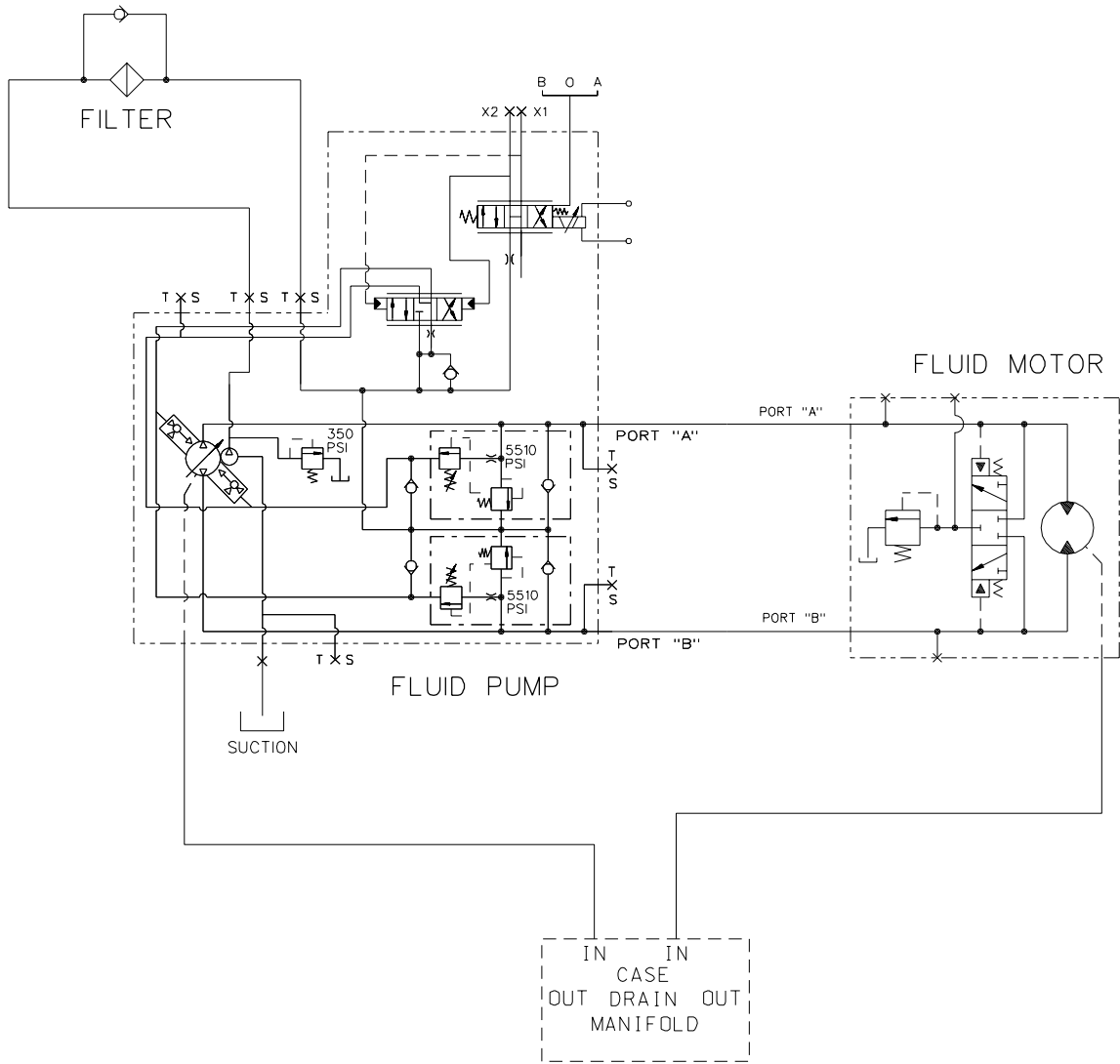
THRUST  
ENDS WITH S/N: 2V2567





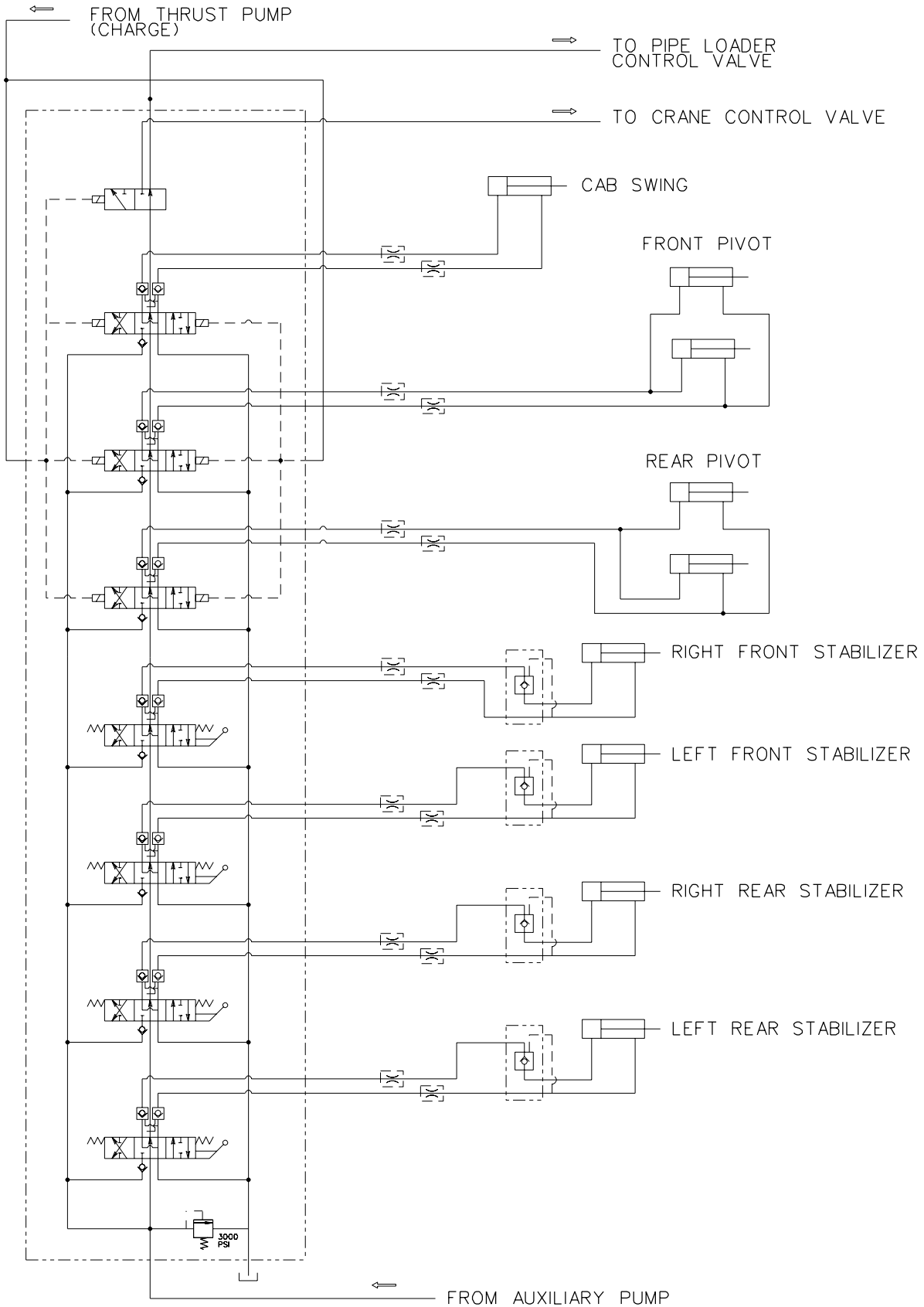
# HYDRAULIC SCHEMATIC

MUD  
ENDS WITH S/N: 2V2567



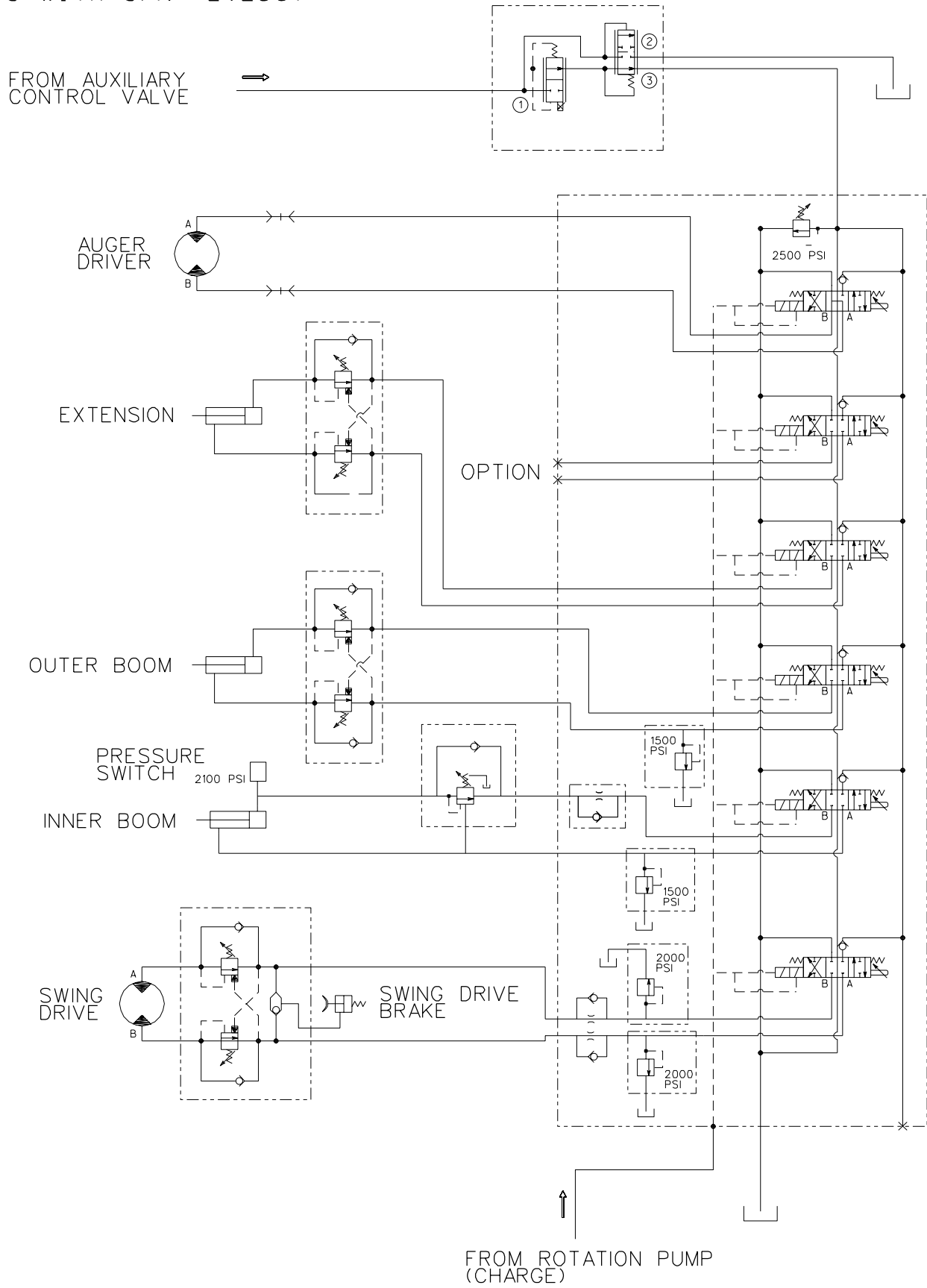
# HYDRAULIC SCHEMATIC

AUXILIARY  
ENDS WITH S/N: 2V2567



# HYDRAULIC SCHEMATIC

HOIST  
ENDS WITH S/N: 2V2567



# HYDRAULIC SCHEMATIC

ENDS WITH S/N: 2V2567

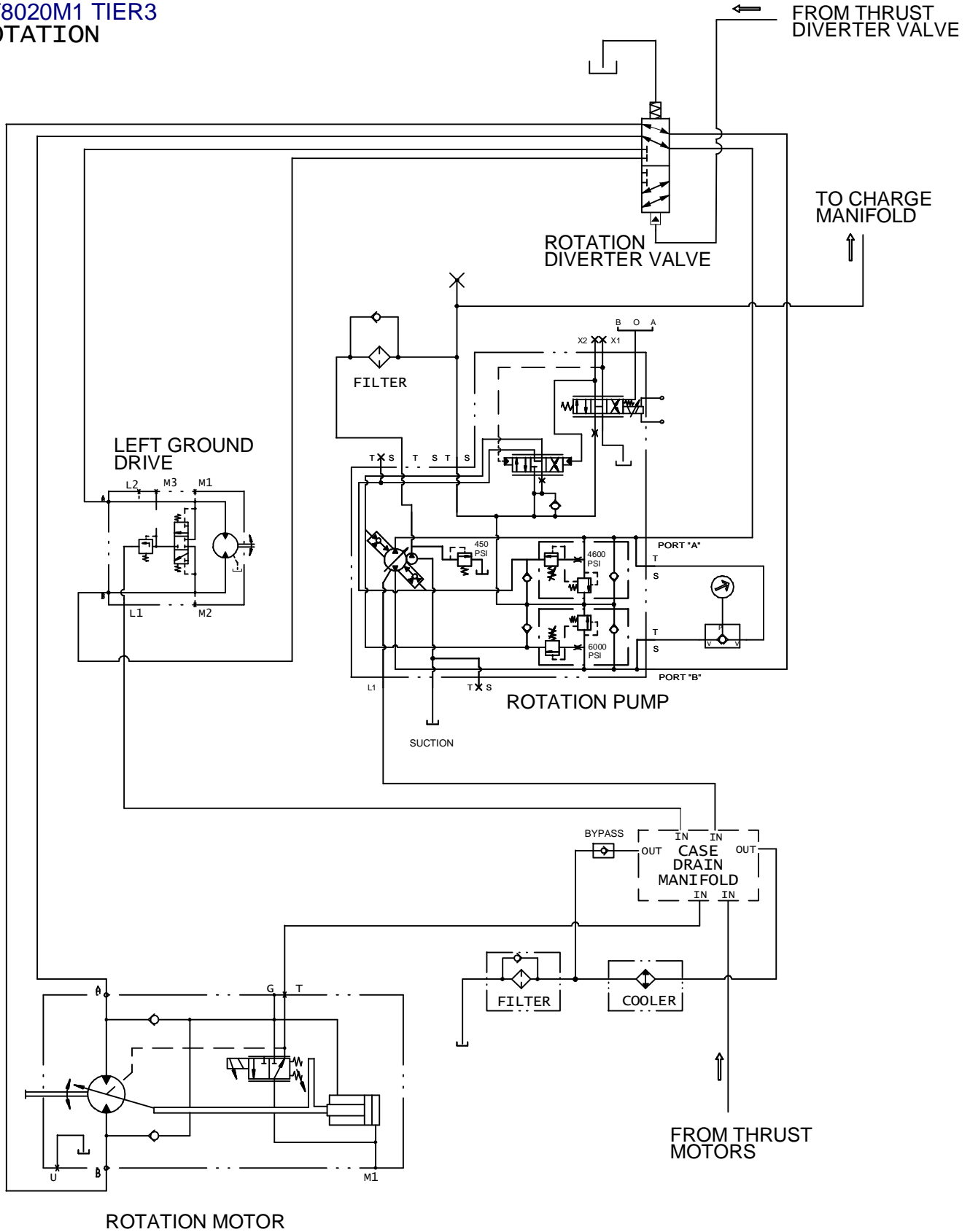
## SPECIFICATIONS

ENGINE		PUMP			MOTOR	
MFG (NO LOAD)	RPM	TYPE	GPM	DISPLACEMENT	TYPE	DISPLACEMENT
DEUTZ BF6M1013ECP	2300	ROTATION	79.0	7.93 C.I.	ROTATION	9.76 C.I.
		THRUST	61.0	6.10 C.I.	THRUST	6.10 C.I.
		FLUID	36.0	4.57 C.I.	GROUND DRIVE	3.35 C.I.
		AUXILIARY	20.0	1.78 C.I.	FLUID	4.57 C.I.
					SHUTTLE	24.0 C.I.
					AUGER DRIVE	24.0 C.I.
					GREASER	1.02 C.I.



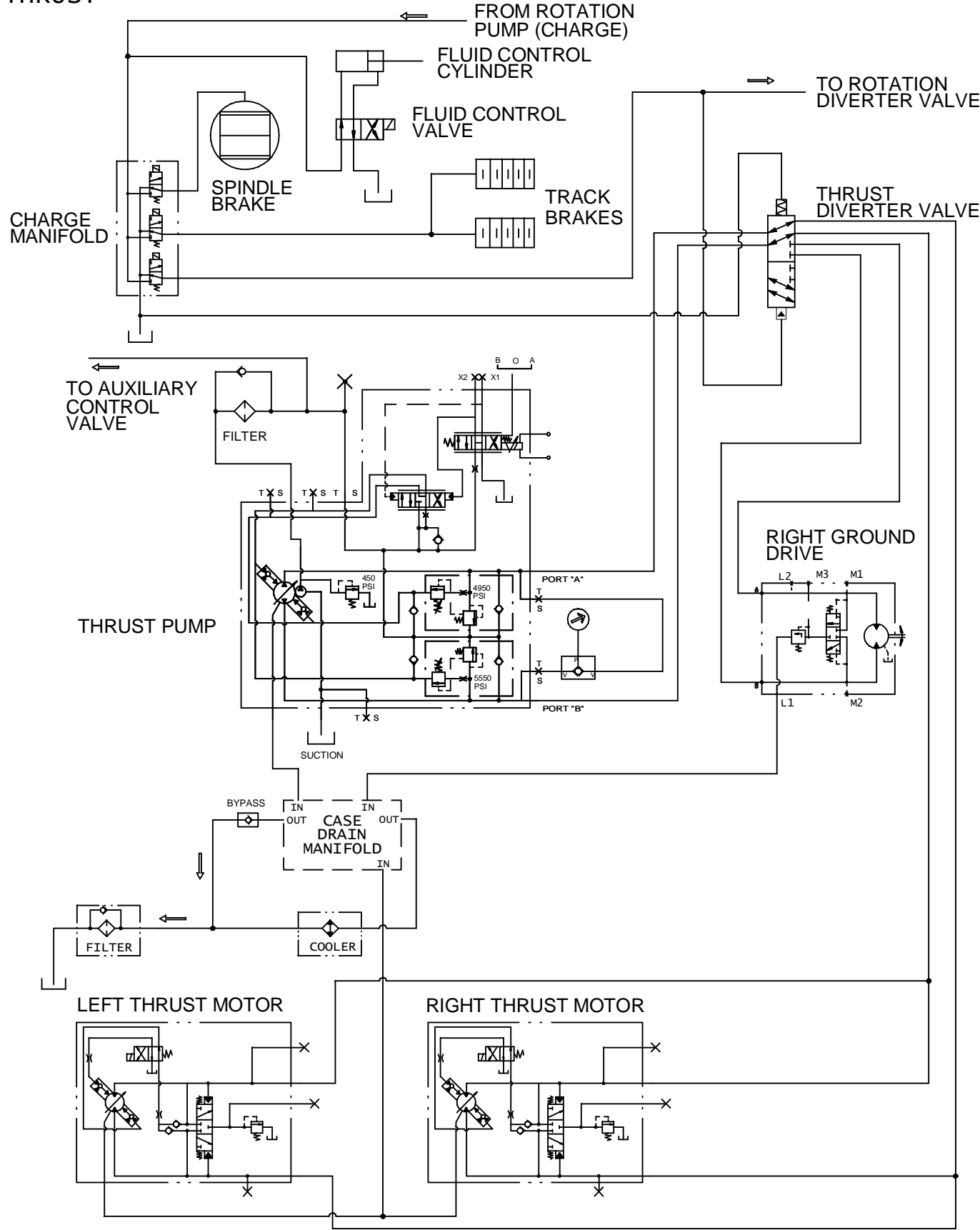
# HYDRAULIC SCHEMATIC

JT8020M1 TIER3  
ROTATION



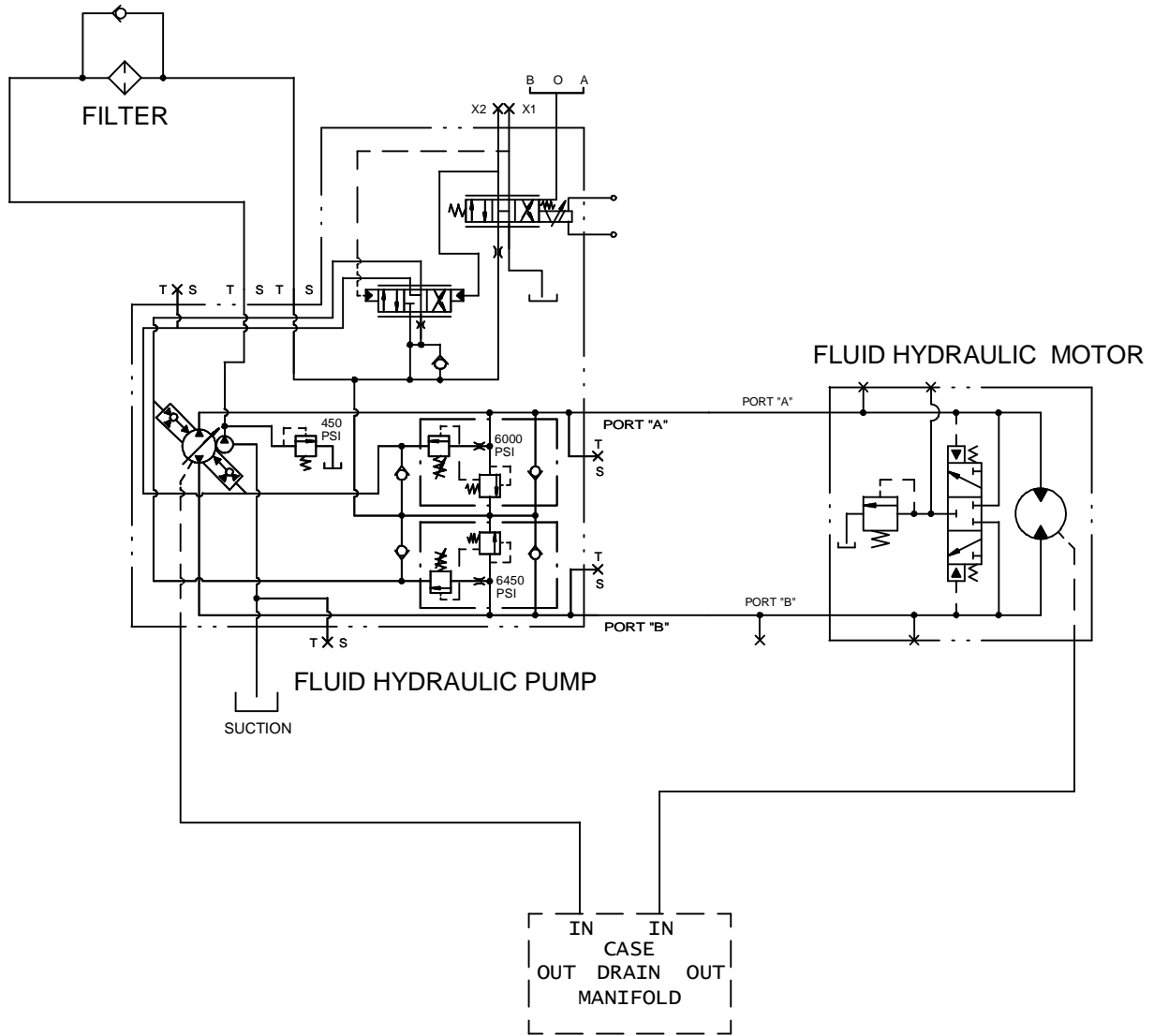
# HYDRAULIC SCHEMATIC

JT8020M1 TIER3  
THRUST



# HYDRAULIC SCHEMATIC

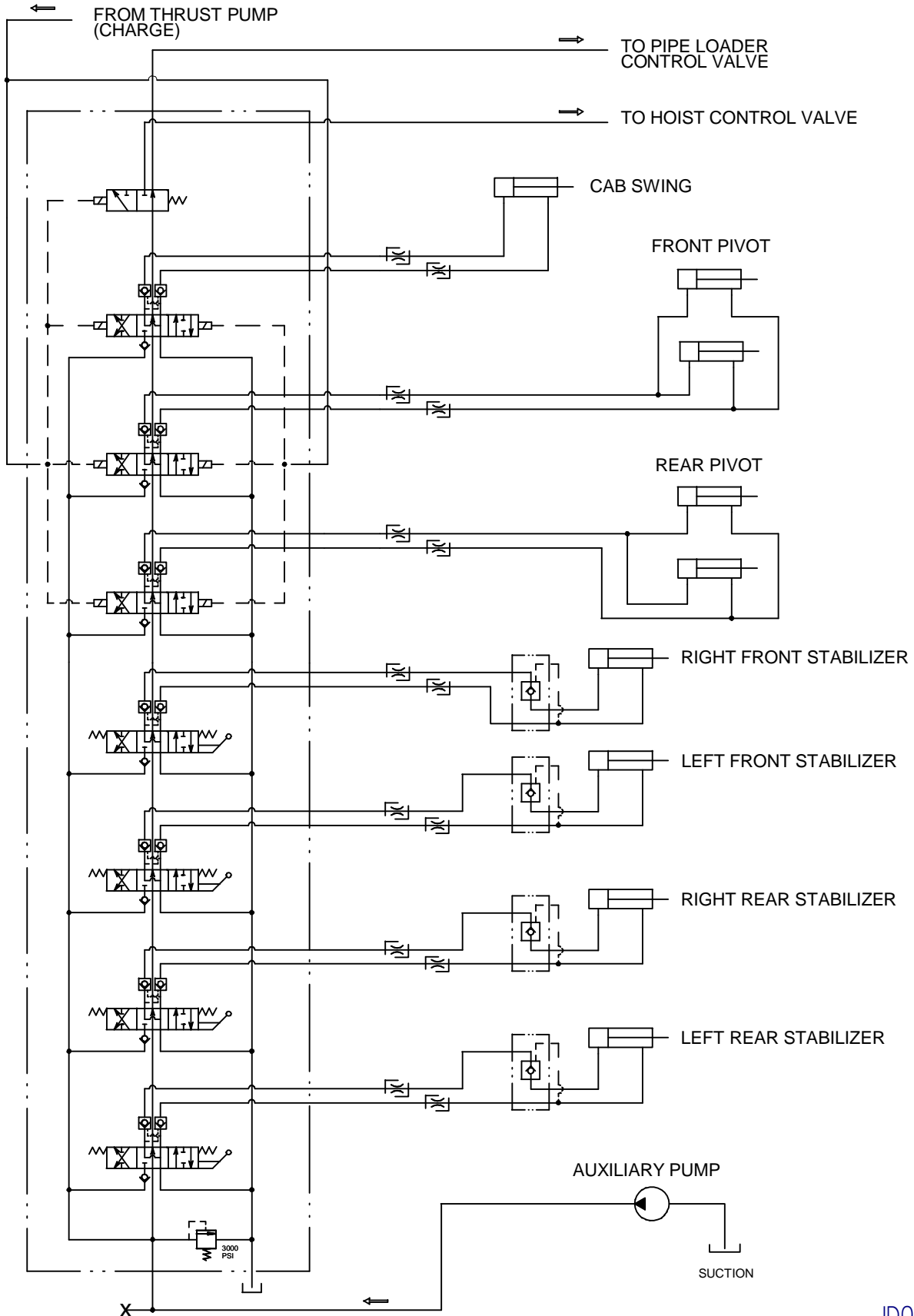
JT8020M1 TIER3  
FLUID





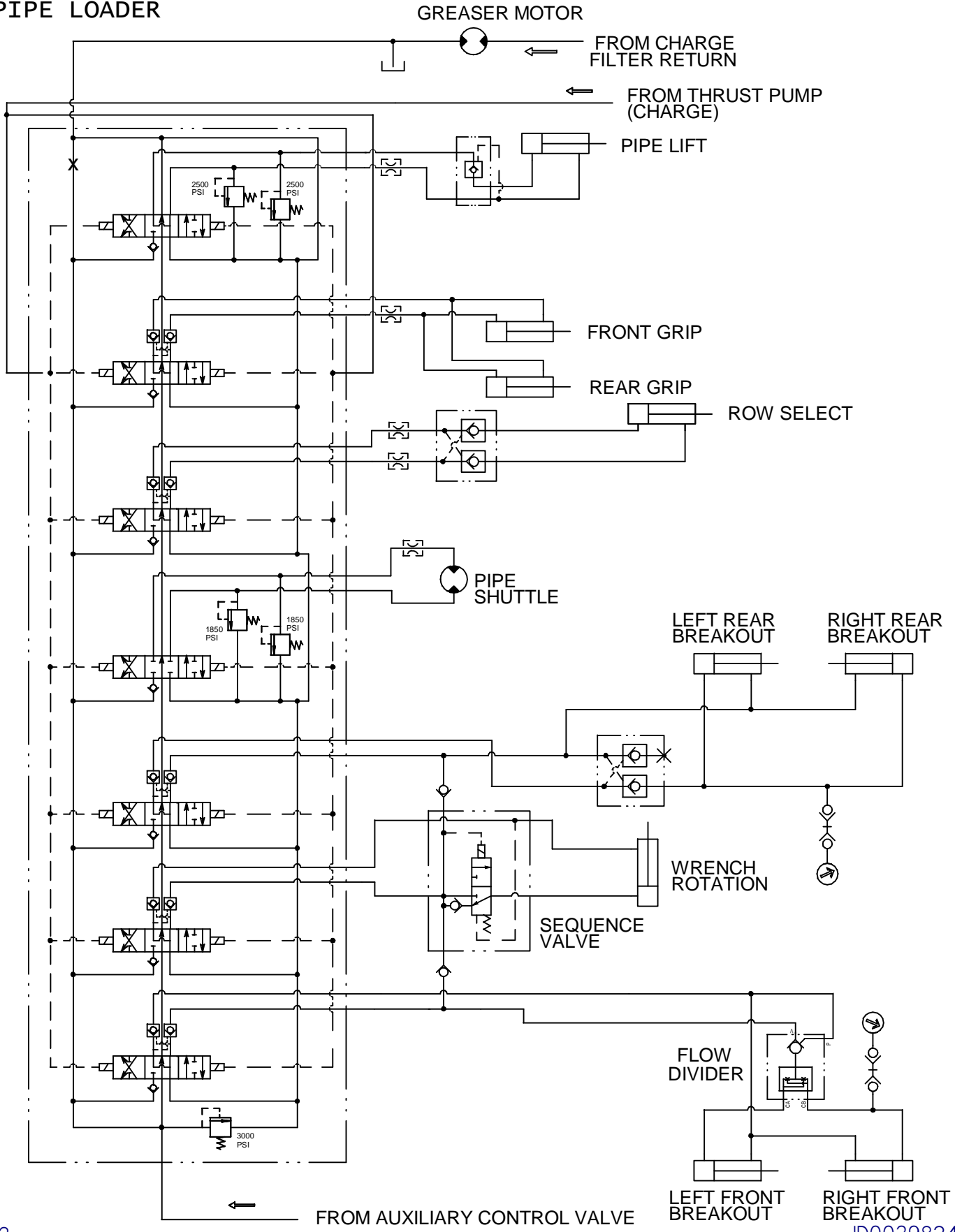
# HYDRAULIC SCHEMATIC

JT8020M1 TIER3  
AUXILIARY



# HYDRAULIC SCHEMATIC

JT8020M1 TIER3  
PIPE LOADER

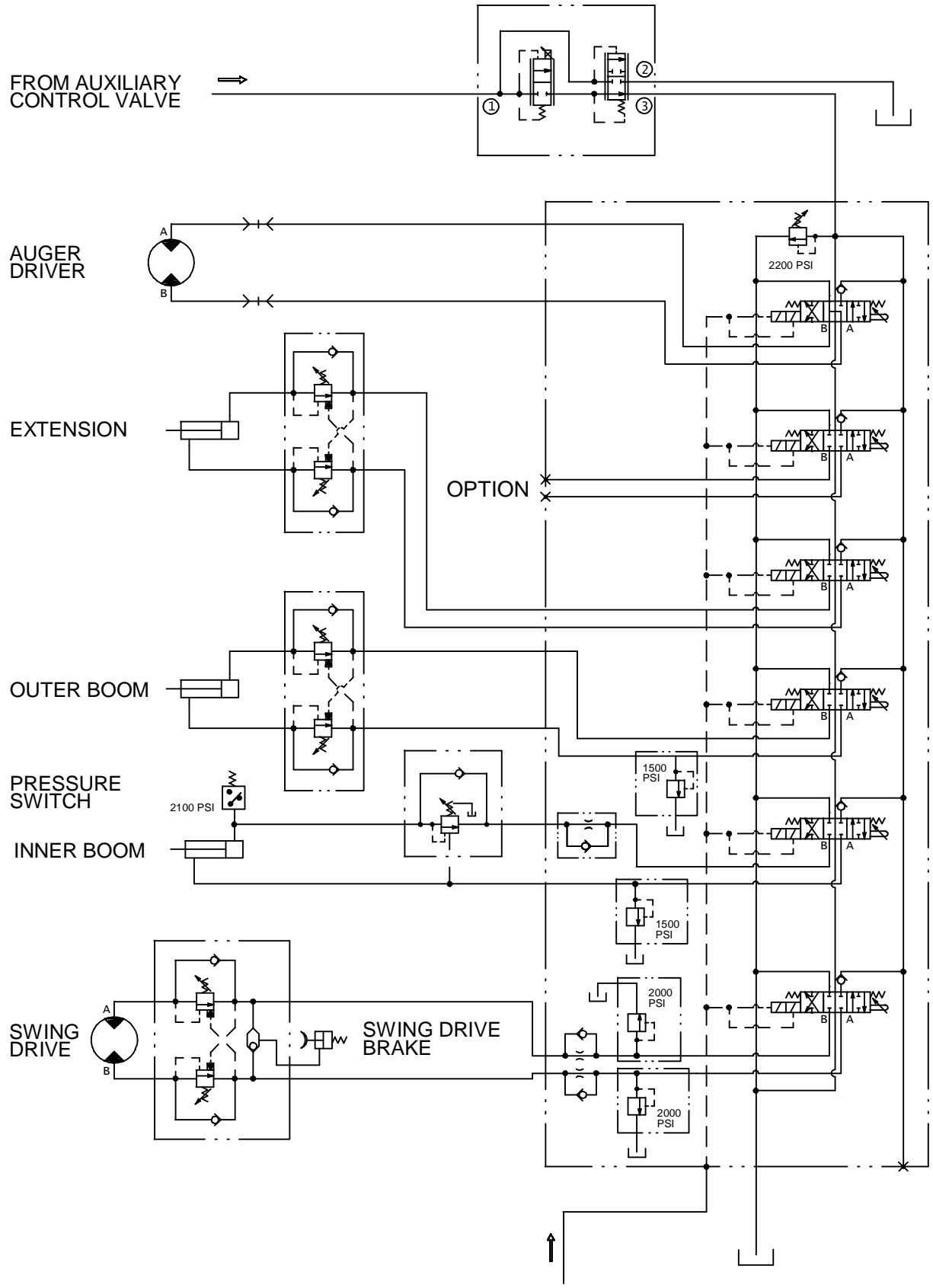


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ID0039824

# HYDRAULIC SCHEMATIC

JT8020M1 TIER3  
HOIST



FROM ROTATION PUMP  
(CHARGE)

# HYDRAULIC SCHEMATIC

## JT8020M1 TIER3

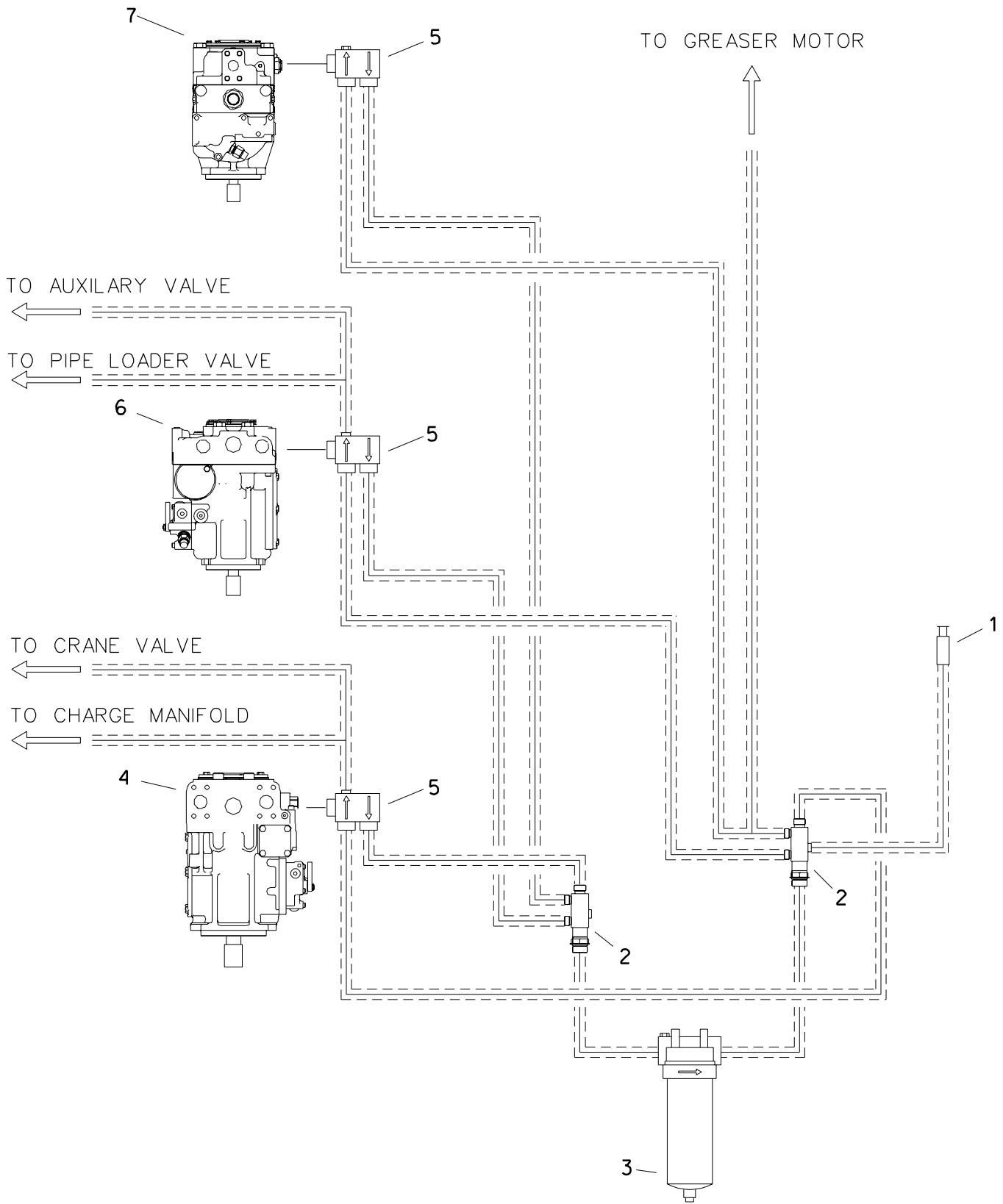
### SPECIFICATIONS

ENGINE	PUMP			MOTOR	
NO LOAD RPM	TYPE	GPM	DISPLACEMENT	TYPE	DISPLACEMENT
2400	ROTATION	79.0	7.93 C.I.	ROTATION	9.76 C.I.
	THRUST	61.0	6.10 C.I.	THRUST	6.10 C.I.
	MUD	36.0	4.57 C.I.	GROUND DRIVE	3.35 C.I.
	AUXILIARY	20.0	1.78 C.I.	FLUID	4.57 C.I.
				SHUTTLE	24.0 C.I.
				AUGER DRIVE	24.0 C.I.
				GREASER	1.02 C.I.



# HYDRAULIC DIAGRAM

CHARGE HYDRAULICS  
ENDS WITH S/N: 2V2567



# HYDRAULIC DIAGRAM

## CHARGE HYDRAULICS

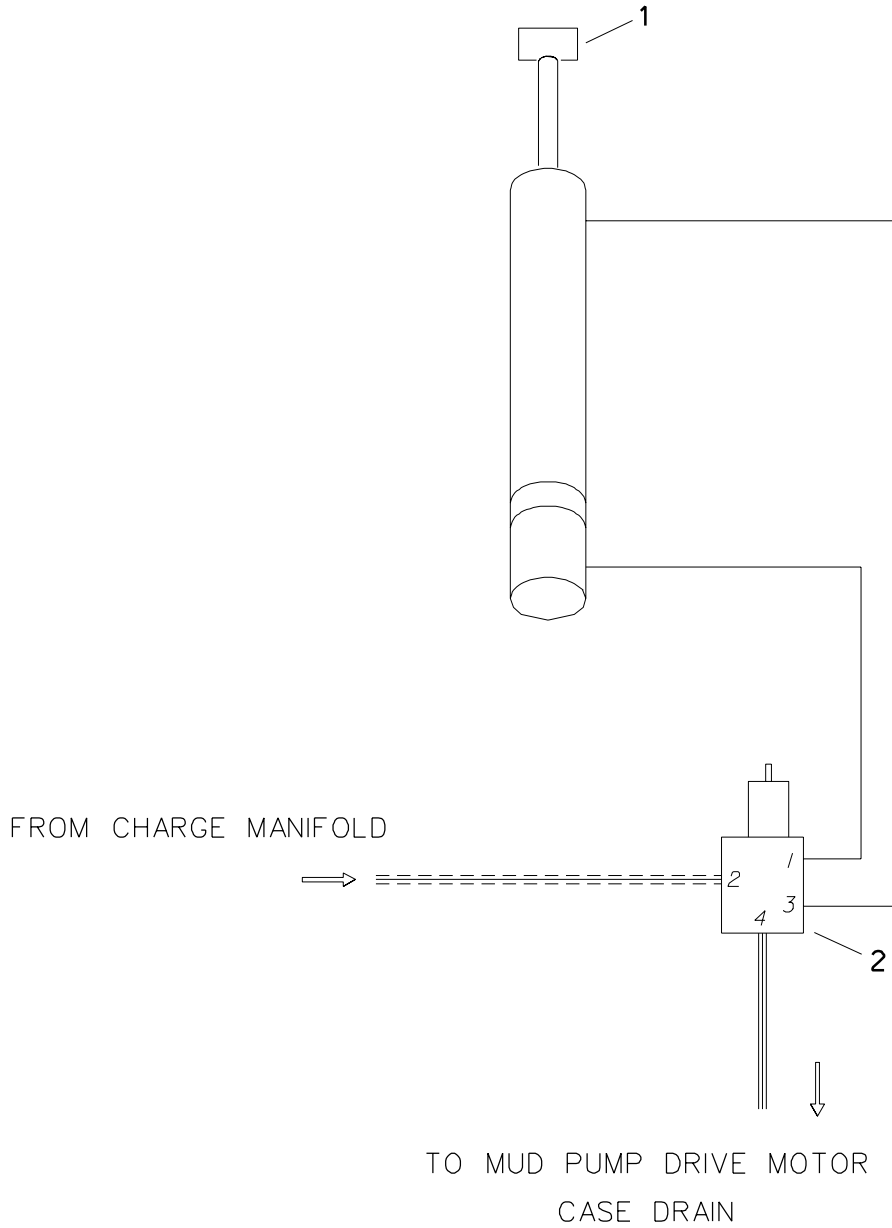
ENDS WITH S/N: 2V2567






REF

NO.	DESCRIPTION	REMARKS
1.	TEST PORT	
2.	CONNECTOR	
3.	CHARGE OIL FILTER	
4.	ROTATION PUMP	
5.	REMOTE FILTRATION HEAD	
6.	THRUST PUMP	
7.	FLUID PUMP	

FOOTNOTES

HYDRAULIC DIAGRAM  
FLUID CONTROL VALVE  
ENDS WITH S/N: 2V2567



-  PRESSURE
-  RETURN/SUPPLY
-  INACTIVE
-  CONTROL
-  CHARGE



# HYDRAULIC DIAGRAM FLUID CONTROL VALVE ENDS WITH S/N: 2V2567

REF

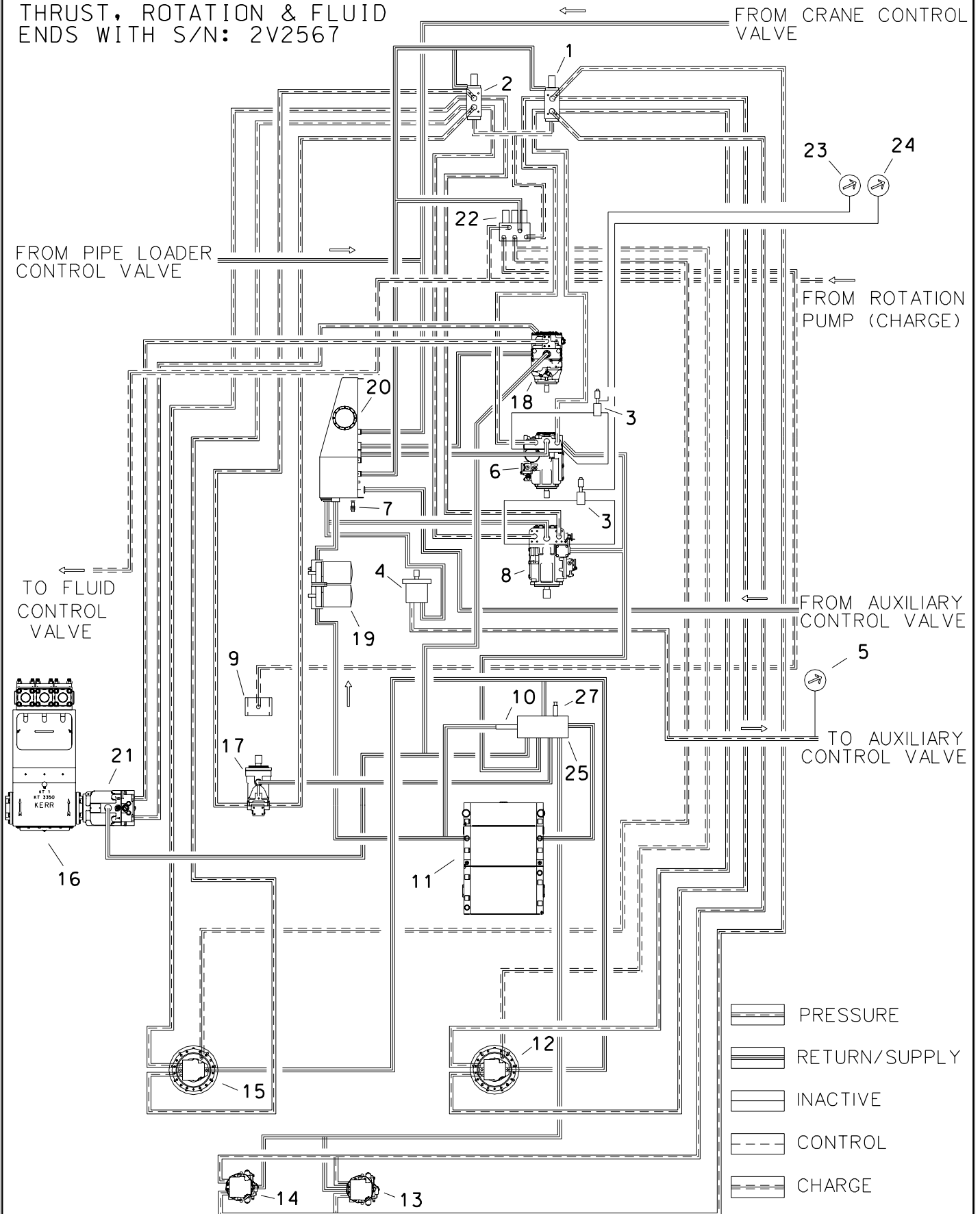
NO.	DESCRIPTION	REMARKS
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- 1. HYDRUALIC BALL VALVE CYLINDER
- 2. CONTROL VALVE

FOOTNOTES

# HYDRAULIC DIAGRAM

THRUST, ROTATION & FLUID ENDS WITH S/N: 2V2567



# HYDRAULIC DIAGRAM

## THRUST, ROTATION & FLUID

### ENDS WITH S/N: 2V2567

REF NO.	DESCRIPTION	REMARKS
1.	THRUST SELECTOR VALVE	
2.	ROTATION SELECTOR VALVE	
3.	SHUTTLE VALVE	
4.	AUXILIARY PUMP	
5.	AUXILIARY PRESSURE GAUGE	
6.	THRUST PUMP	
7.	HYD TEMPERTURE SENDER	
8.	ROTATION PUMP	
9.	SPINDLE BRAKE	
10.	BYPASS VALVE	
11.	OIL COOLER	
12.	RIGHT GROUND DRIVE MOTOR	
13.	RIGHT THRUST MOTOR	
14.	LEFT THRUST MOTOR	
15.	LEFT GROUND DRIVE MOTOR	
16.	FLUID PUMP	
17.	ROTATION MOTOR	
18.	FLUID SYSTEM HYD PUMP	
19.	OIL FILTERS	
20.	OIL RESERVIOR	
21.	FLUID PUMP DRIVE MOTOR	
22.	CHARGE MANIFOLD	
23.	THRUST GAUGE	
24.	ROTATION GAUGE	
25.	CASE DRAIN MANIFOLD	

FOOTNOTES

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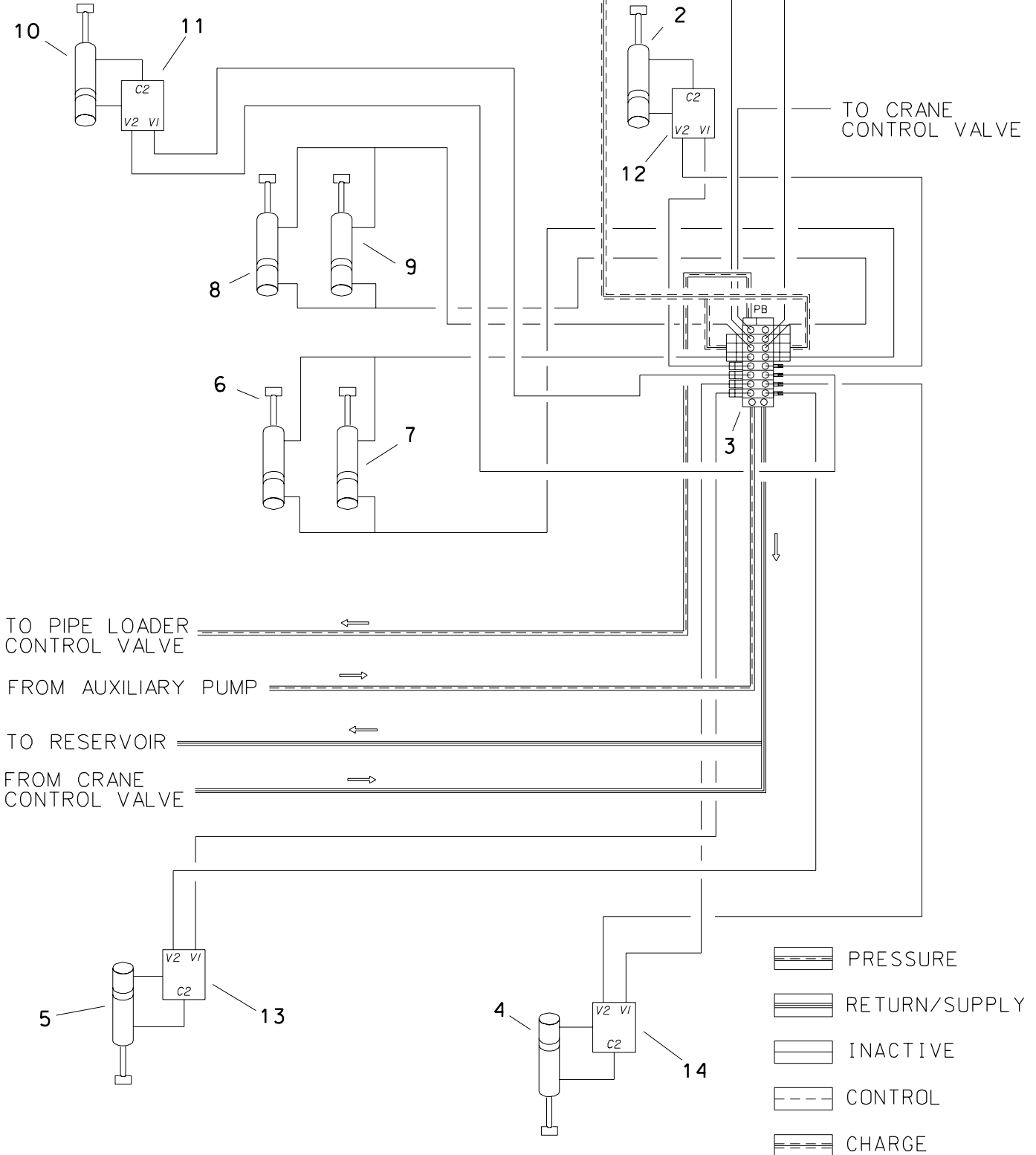
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# HYDRAULIC DIAGRAM AUXILIARY FUNCTIONS ENDS WITH S/N: 2V2567

FROM THRUST PUMP  
(CHARGE)

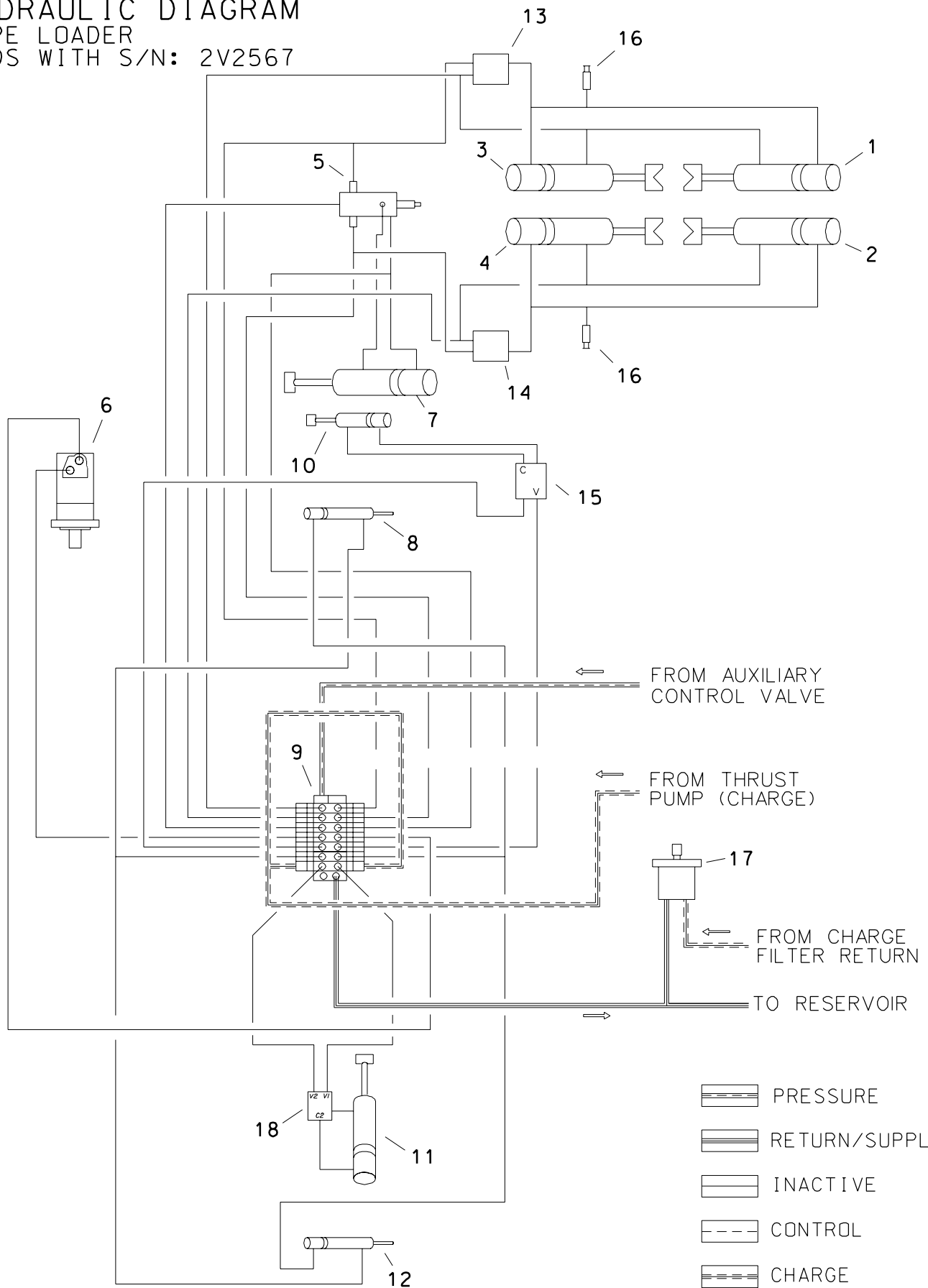


HYDRAULIC DIAGRAM  
AUXILIARY FUNCTIONS  
ENDS WITH S/N: 2V2567

REF NO.	DESCRIPTION	REMARKS
1.	CAB SWING CYLINDER	
2.	RIGHT FRONT STABILIZER CYLINDER	
3.	AUXILIARY CONTROL VALVE	
4.	RIGHT REAR STABILIZER CYLINDER	
5.	LEFT REAR STABILIZER CYLINDER	
6.	LEFT REAR PIVOT CYLINDER	
7.	RIGHT REAR PIVOT CYLINDER	
8.	LEFT FRONT PIVOT CYLINDER	
9.	RIGHT FRONT PIVOT CYLINDER	
10.	LEFT FRONT STABILIZER CYLINDER	
11.	LEFT FRONT STABILIZER CYLINDER LOCKOUT	
12.	RIGHT FRONT STABILIZER CYLINDER LOCKOUT	
13.	LEFT REAR STABILIZER CYLINDER LOCKOUT	
14.	RIGHT REAR STABILIZER CYLINDER LOCKOUT	

FOOTNOTES

HYDRAULIC DIAGRAM  
 PIPE LOADER  
 ENDS WITH S/N: 2V2567



# HYDRAULIC DIAGRAM

PIPE LOADER  
ENDS WITH S/N: 2V2567

REF NO.	DESCRIPTION	REMARKS
1.	RIGHT FRONT BREAKOUT WRENCH CYLINDER	
2.	RIGHT REAR BREAKOUT WRENCH CYLINDER	
3.	LEFT FRONT BREAKOUT WRENCH CYLINDER	
4.	LEFT REAR BREAKOUT WRENCH CYLINDER	
5.	SEQUENCING VALVE	
6.	PIPE SHUTTLE DRIVE MOTOR	
7.	BREAKOUT WRENCH ROTATION CYLINDER	
8.	FRONT PIPE LOADER GRIP CYLINDER	
9.	PIPE LOADER CONTROL VALVE	
10.	ROW SELECT CYLINDER	
11.	PIPE LIFT CYLINDER	
12.	REAR PIPE LOADER GRIP CYLINDER	
13.	PILOT OPERATED CHECK FRONT WRENCH CYLINDER	
14.	PILOT OPERATED CHECK REAR WRENCH CYLINDER	
15.	PILOT OPERATED CHECK ROW SELECT CYLINDER	
16.	TEST PORT	
17.	GREASER MOTOR	
18.	PIPE LIFT CYLINDER LOCKOUT	

FOOTNOTES

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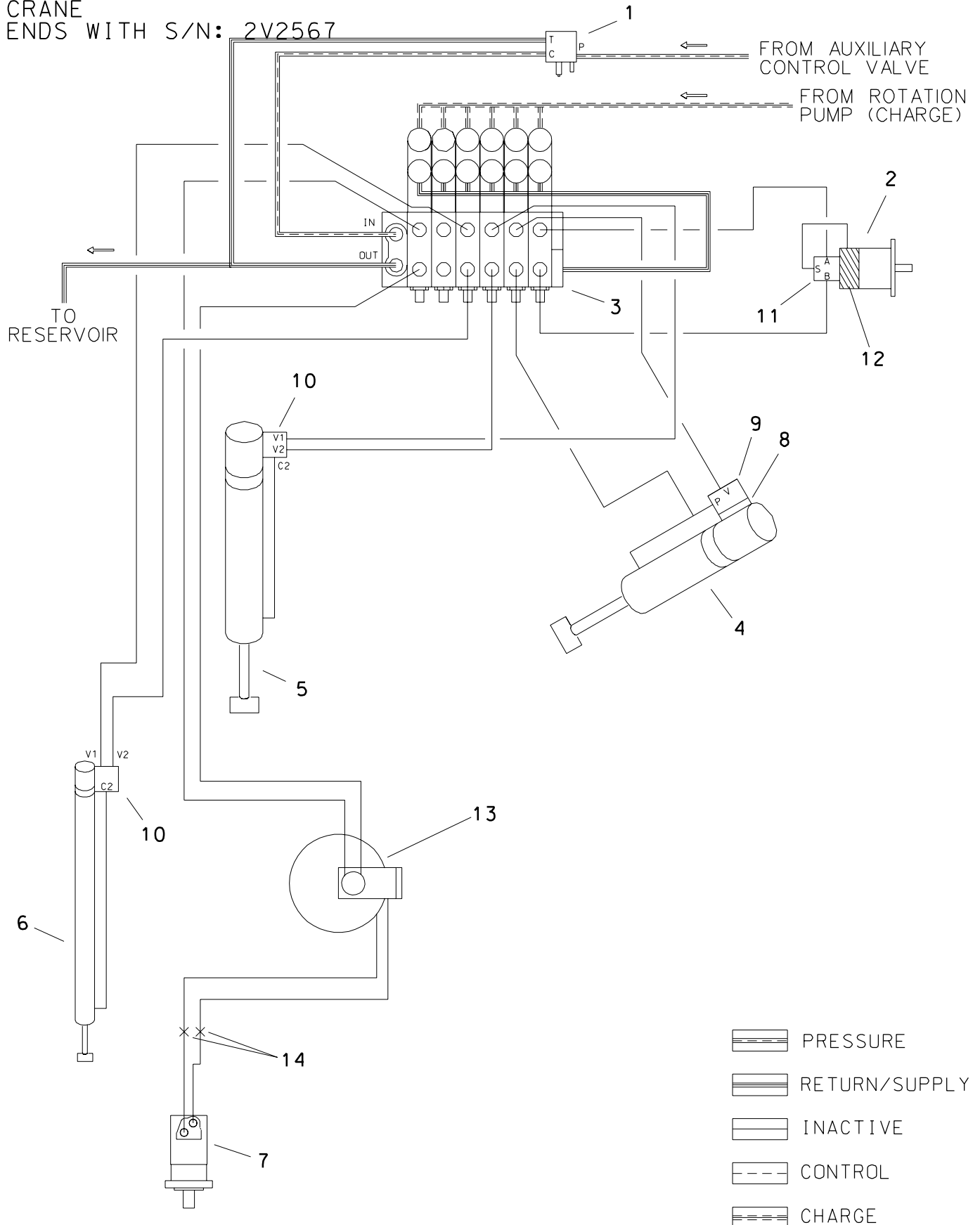


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# HYDRAULIC DIAGRAM

CRANE

ENDS WITH S/N: 2V2567





# HYDRAULIC DIAGRAM

CRANE

ENDS WITH S/N: 2V2567

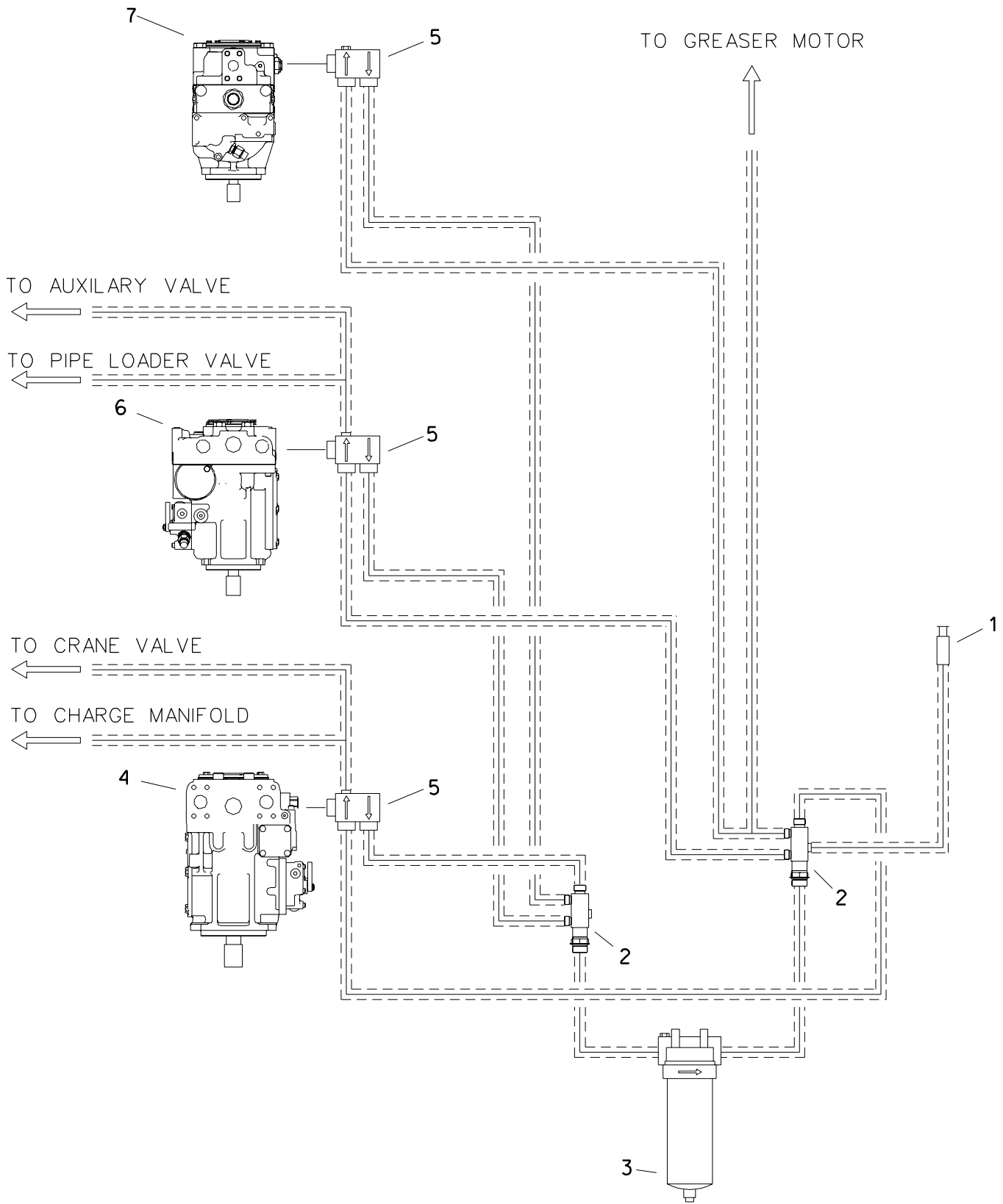
REF

NO.	DESCRIPTION	REMARKS
1.	PROPORTIONING VALVE	
2.	SWING DRIVE	
3.	CRANE CONTROL VALVE	
4.	INNER BOOM CYLINDER	
5.	OUTER BOOM CYLINDER	
6.	EXTENSION CYLINDER	
7.	AUGER DRIVER MOTOR	
8.	MANIFOLD SENSE VALVE	
9.	COUNTERBALANCE VALVE	
10.	COUNTERBALANCE VALVE	
11.	SWING DRIVE MOTOR W/ COUNTERBALANCE VALVE	
12.	SWING DRIVE BRAKE	
13.	HOSE REEL	
14.	QUICK DISCONNECT COUPLINGS	

FOOTNOTES

# HYDRAULIC DIAGRAM

CHARGE HYDRAULICS  
BEGINS WITH S/N: 2W0856



# HYDRAULIC DIAGRAM

CHARGE HYDRAULICS

BEGINS WITH S/N: 2W0856

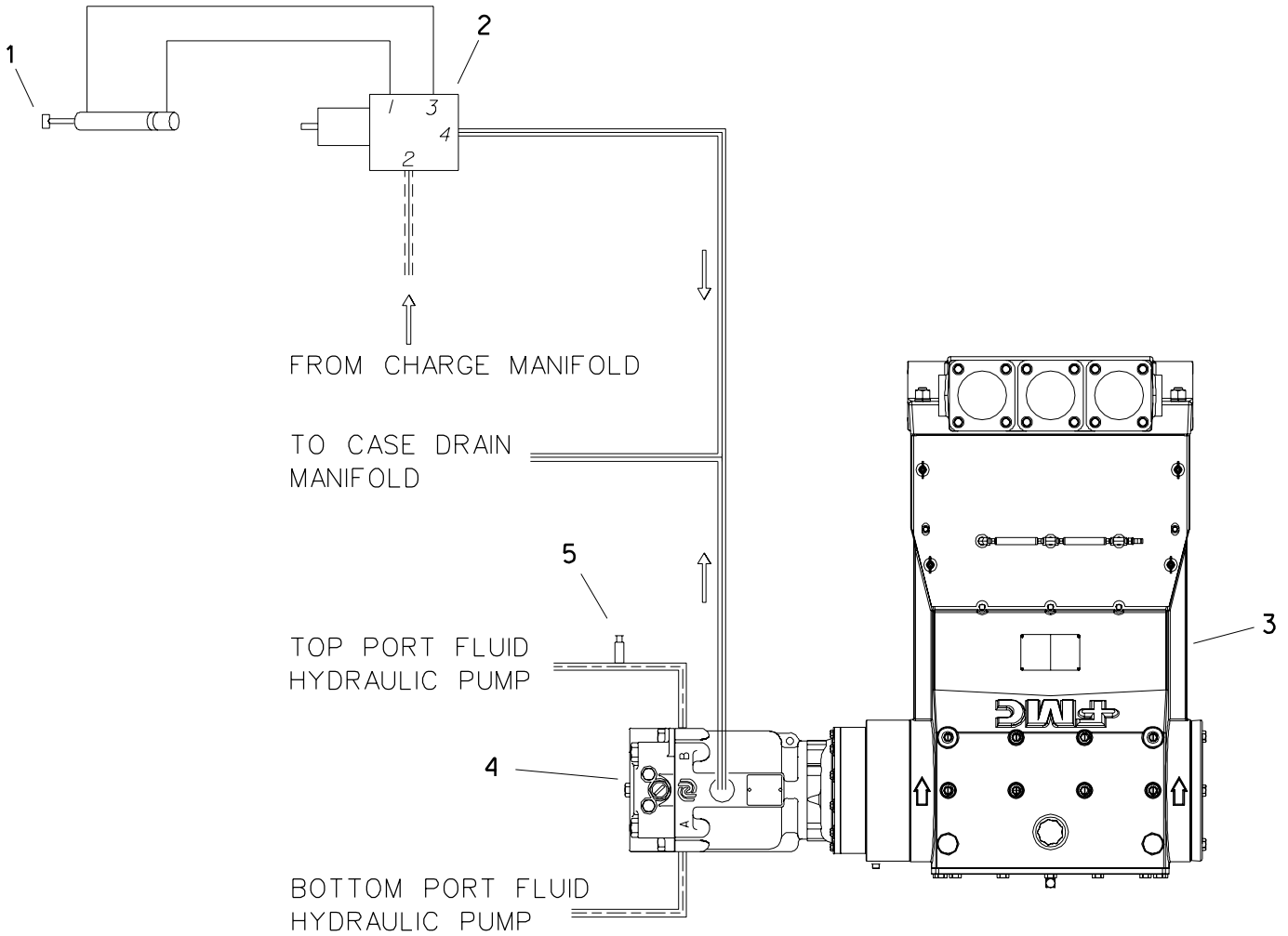
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



NO.	DESCRIPTION	REMARKS
1.	TEST PORT	
2.	CONNECTOR	
3.	CHARGE OIL FILTER	
4.	ROTATION PUMP	
5.	REMOTE FILTRATION HEAD	
6.	THRUST PUMP	
7.	FLUID PUMP	

FOOTNOTES

# HYDRAULIC DIAGRAM

FLUID  
 BEGINS WITH S/N: 2W0856



-  PRESSURE
-  RETURN/SUPPLY
-  INACTIVE
-  CONTROL
-  CHARGE

# HYDRAULIC DIAGRAM

FLUID

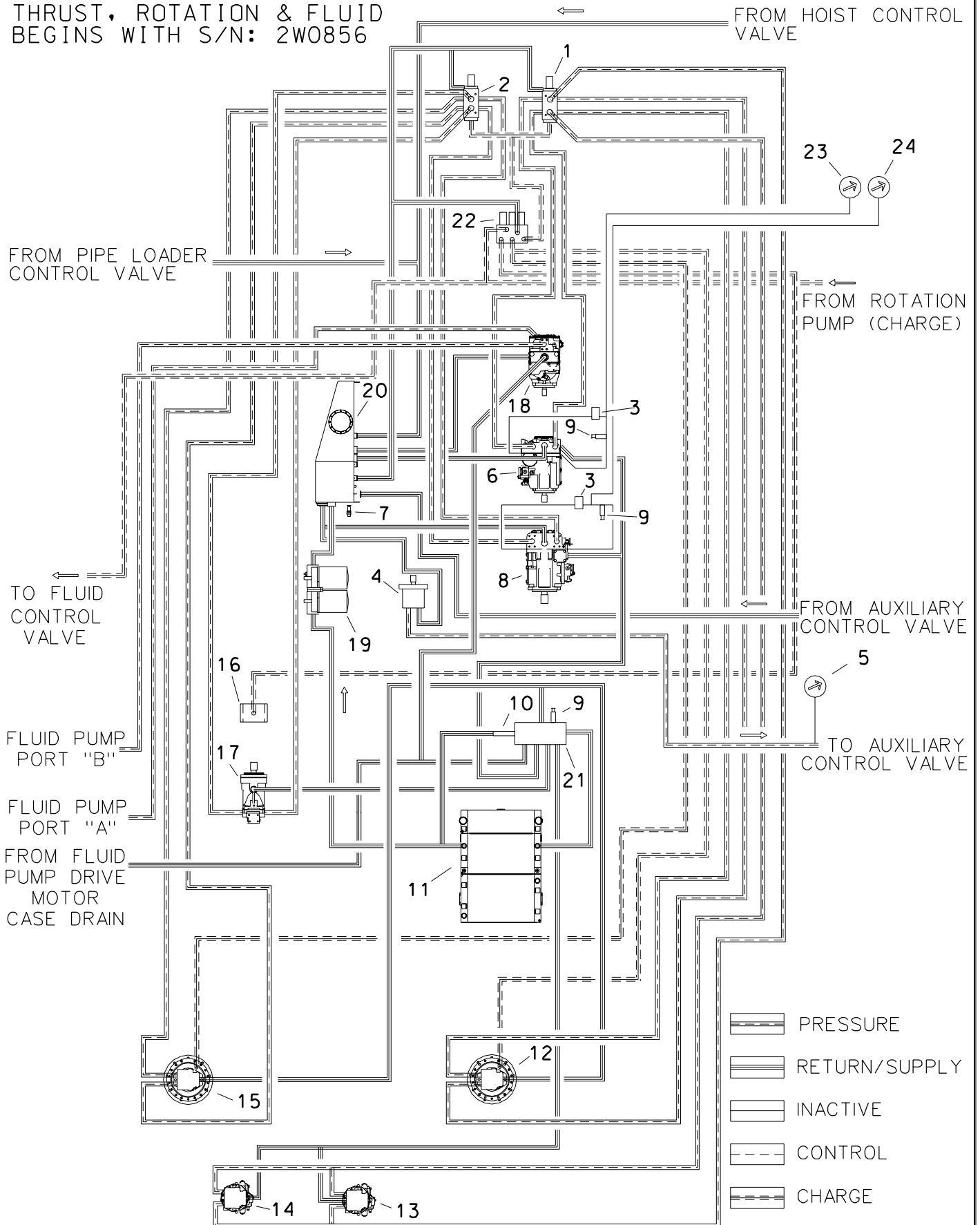
BEGINS WITH S/N: 2W0856

REF

NO.	DESCRIPTION	REMARKS
1.	HYDRUALIC BALL VALVE CYLINDER	
2.	CONTROL VALVE	
3.	FLUID PUMP	
4.	FLUID PUMP DRIVE MOTOR	
5.	TEST PORT	

FOOTNOTES

**HYDRAULIC DIAGRAM**  
 THRUST, ROTATION & FLUID  
 BEGINS WITH S/N: 2W0856



**HYDRAULIC DIAGRAM**  
**THRUST, ROTATION & FLUID**  
**BEGINS WITH S/N: 2W0856**

REF NO.	DESCRIPTION	REMARKS
1.	THRUST SELECTOR VALVE	
2.	ROTATION SELECTOR VALVE	
3.	SHUTTLE VALVE	
4.	AUXILIARY PUMP	
5.	AUXILIARY PRESSURE GAUGE	
6.	THRUST PUMP	
7.	HYD TEMPERTURE SENDER	
8.	ROTATION PUMP	
9.	TEST PORT	
10.	BYPASS VALVE	
11.	OIL COOLER	
12.	RIGHT GROUND DRIVE MOTOR	
13.	RIGHT THRUST MOTOR	
14.	LEFT THRUST MOTOR	
15.	LEFT GROUND DRIVE MOTOR	
16.	SPINDLE BRAKE	
17.	ROTATION MOTOR	
18.	FLUID SYSTEM HYD PUMP	
19.	OIL FILTERS	
20.	OIL RESERVIOR	
21.	CASE DRAIN MANIFOLD	
22.	CHARGE MANIFOLD	
23.	THRUST GAUGE	
24.	ROTATION GAUGE	

FOOTNOTES

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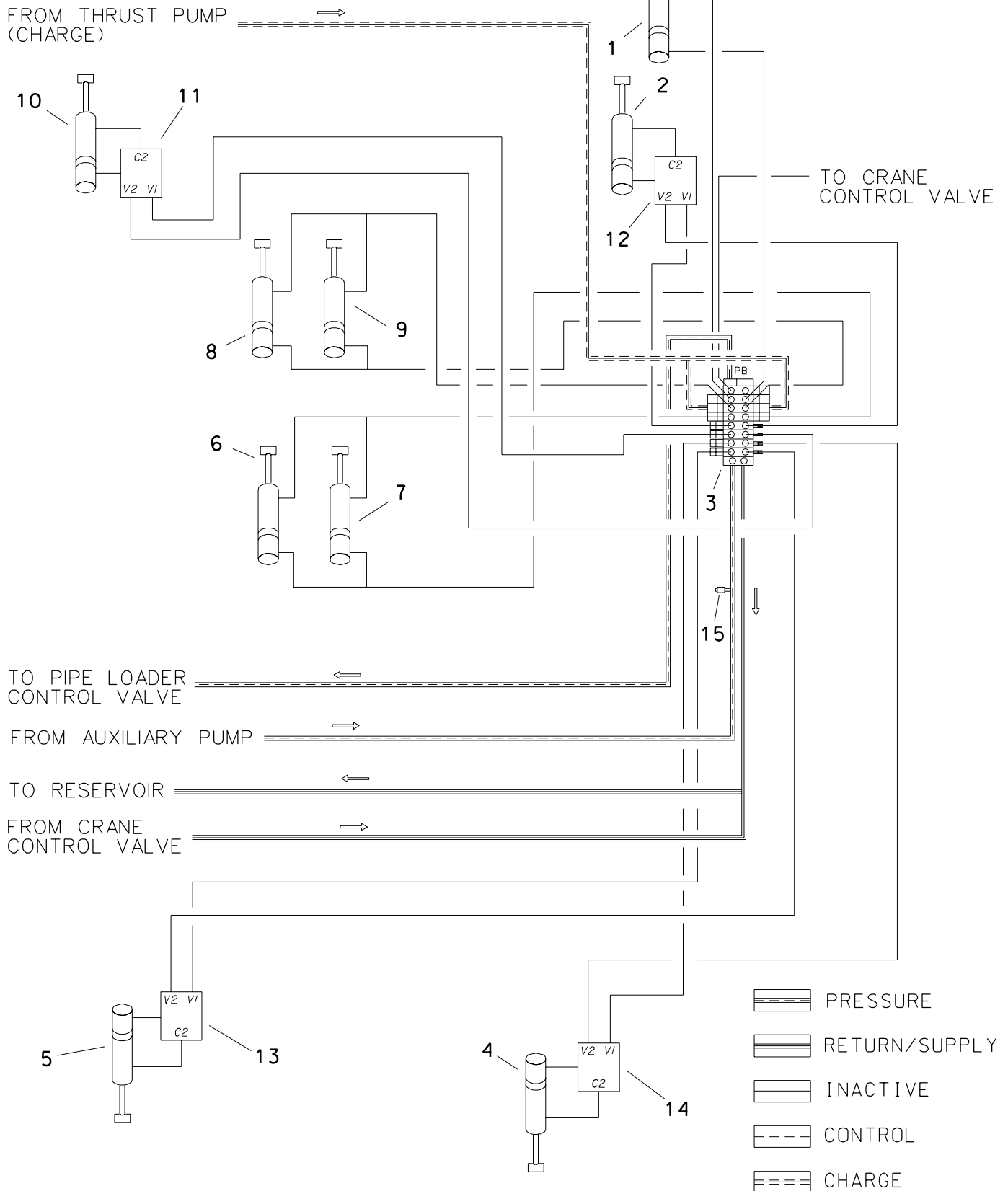
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HYDRAULIC DIAGRAM  
 AUXILIARY FUNCTIONS  
 BEGINS WITH S/N: 2W0856





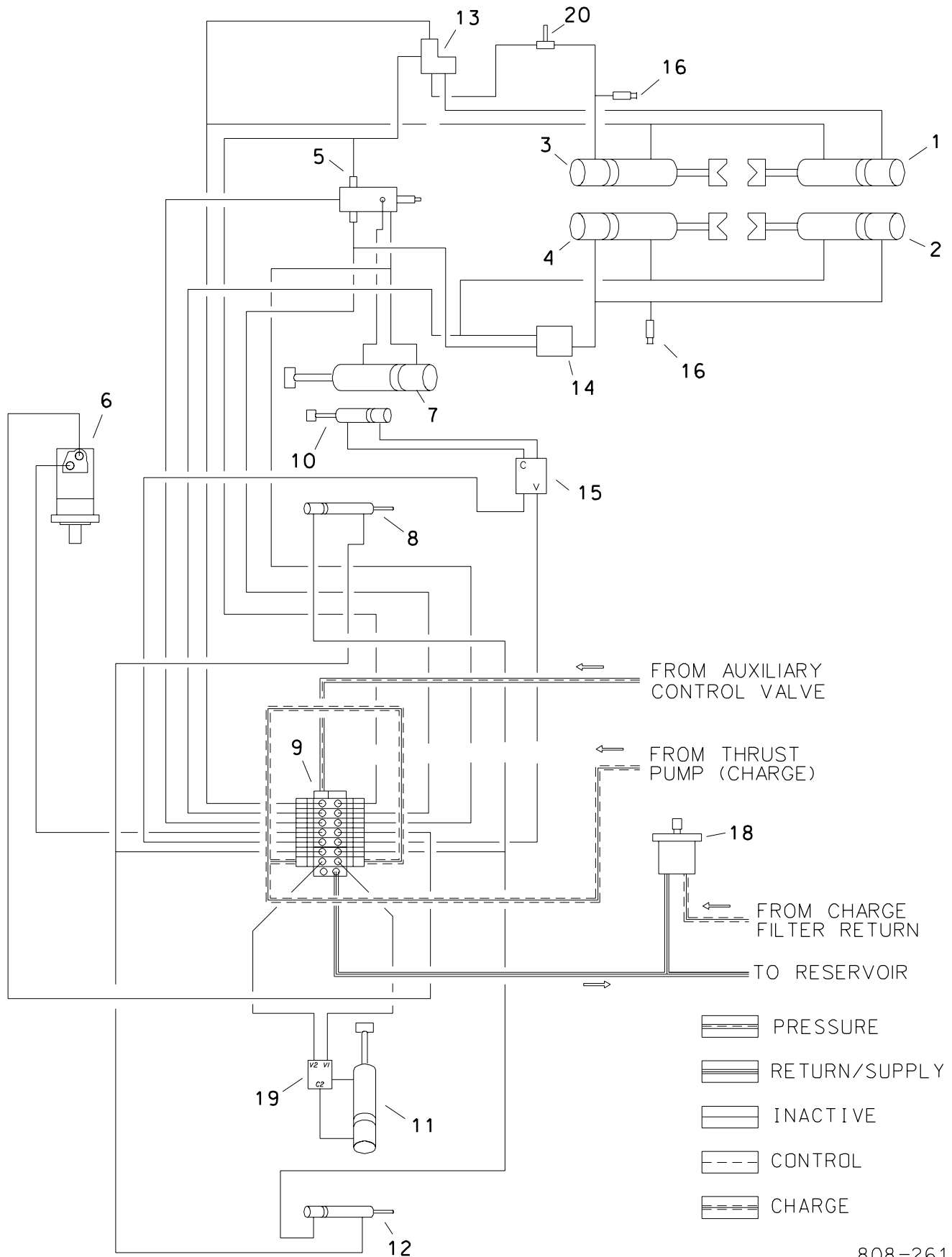
# HYDRAULIC DIAGRAM AUXILIARY FUNCTIONS BEGINS WITH S/N: 2W0856

REF NO.	DESCRIPTION	REMARKS
1.	CAB SWING CYLINDER	
2.	RIGHT FRONT STABILIZER CYLINDER	
3.	AUXILIARY CONTROL VALVE	
4.	RIGHT REAR STABILIZER CYLINDER	
5.	LEFT REAR STABILIZER CYLINDER	
6.	LEFT REAR PIVOT CYLINDER	
7.	RIGHT REAR PIVOT CYLINDER	
8.	LEFT FRONT PIVOT CYLINDER	
9.	RIGHT FRONT PIVOT CYLINDER	
10.	LEFT FRONT STABILIZER CYLINDER	
11.	LEFT FRONT STABILIZER CYLINDER LOCKOUT	
12.	RIGHT FRONT STABILIZER CYLINDER LOCKOUT	
13.	LEFT REAR STABILIZER CYLINDER LOCKOUT	
14.	RIGHT REAR STABILIZER CYLINDER LOCKOUT	
15.	TEST PORT	

FOOTNOTES

# HYDRAULIC DIAGRAM

PIPE LOADER  
BEGINS WITH S/N: 2W0856



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# HYDRAULIC DIAGRAM

## PIPE LOADER

BEGINS WITH S/N: 2W0856

REF NO.	DESCRIPTION	REMARKS
1.	RIGHT FRONT BREAKOUT WRENCH CYLINDER	
2.	RIGHT REAR BREAKOUT WRENCH CYLINDER	
3.	LEFT FRONT BREAKOUT WRENCH CYLINDER	
4.	LEFT REAR BREAKOUT WRENCH CYLINDER	
5.	SEQUENCING VALVE	
6.	PIPE SHUTTLE DRIVE MOTOR	
7.	BREAKOUT WRENCH ROTATION CYLINDER	
8.	FRONT PIPE LOADER GRIP CYLINDER	
9.	PIPE LOADER CONTROL VALVE	
10.	ROW SELECT CYLINDER	
11.	PIPE LIFT CYLINDER	
12.	REAR PIPE LOADER GRIP CYLINDER	
13.	FLOW DIVIDER	
14.	PILOT OPERATED CHECK REAR WRENCH CYLINDER	
15.	PILOT OPERATED CHECK ROW SELECT CYLINDER	
16.	TEST PORT	
17.	PRESSURE TRANSDUCER	
18.	GREASER MOTOR	
19.	PIPE LIFT CYLINDER LOCKOUT	
20.	PRESSURE SWITCH	

FOOTNOTES

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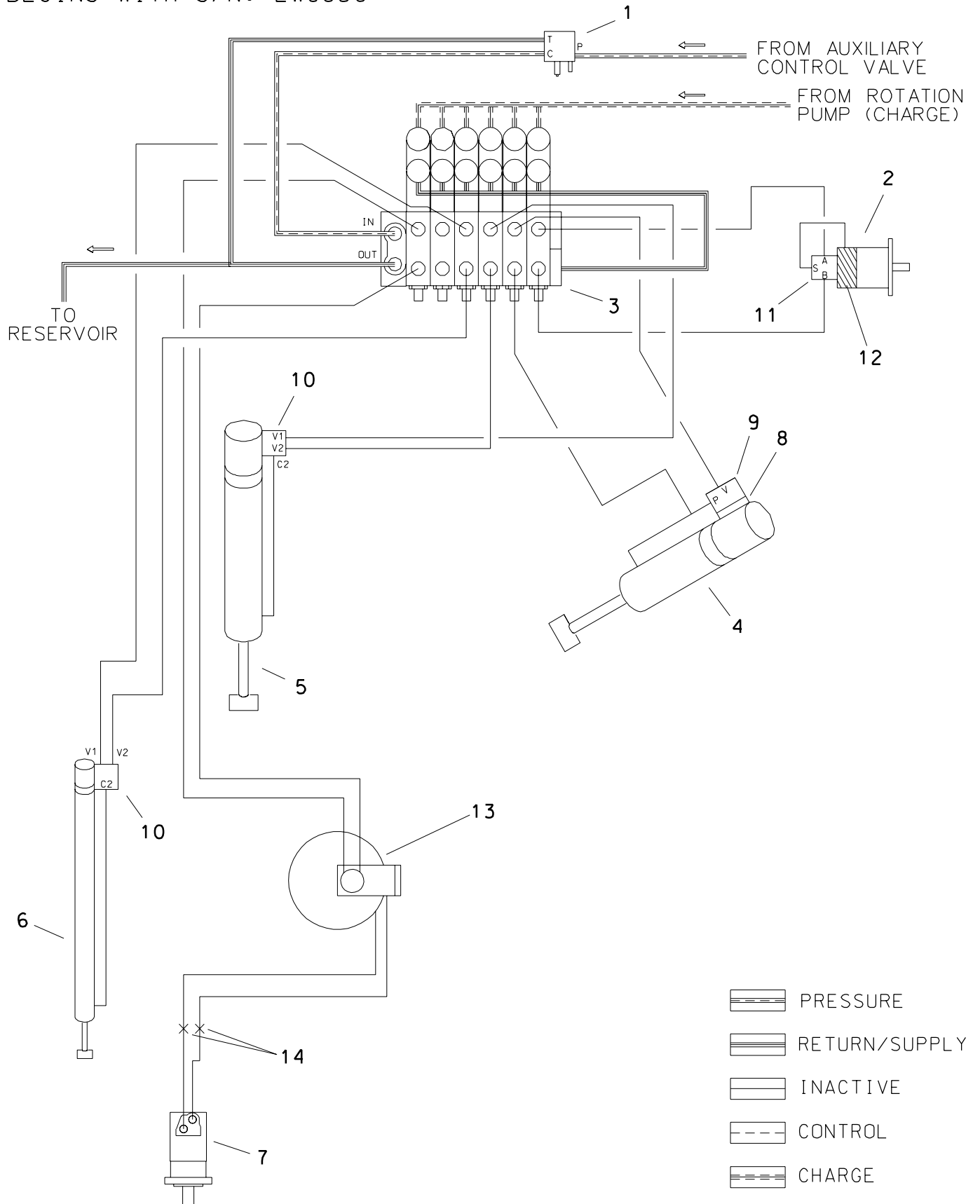
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# HYDRAULIC DIAGRAM

HOIST  
BEGINS WITH S/N: 2W0856



# HYDRAULIC DIAGRAM

HOIST

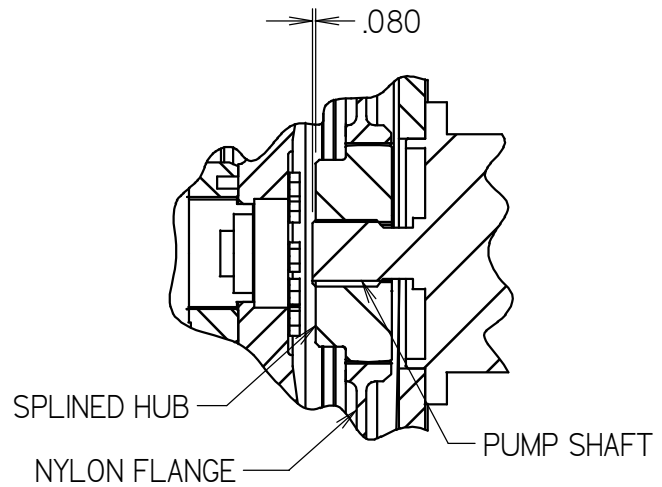
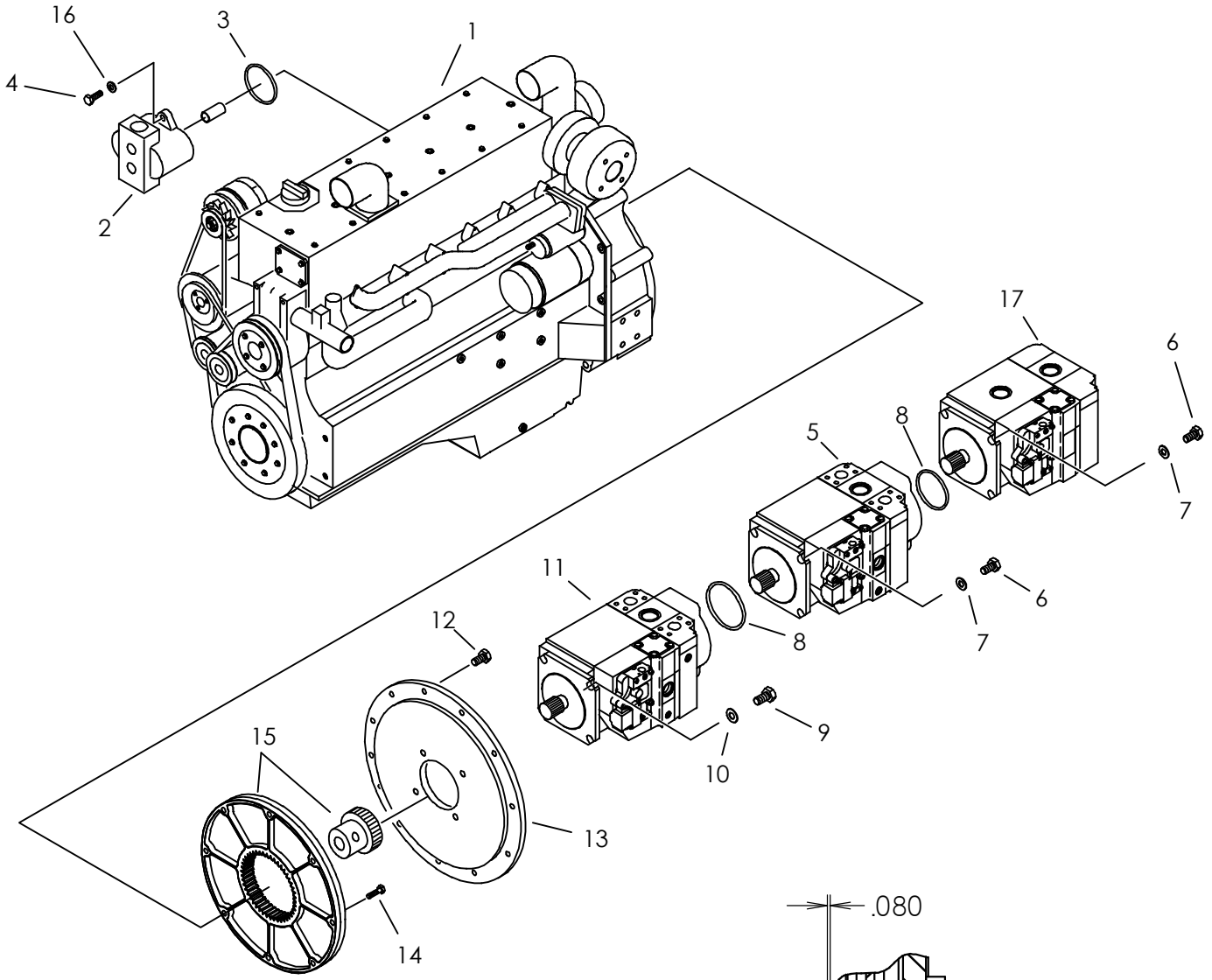
BEGINS WITH S/N: 2W0856

REF

NO.	DESCRIPTION	REMARKS
1.	PROPORTIONING VALVE	
2.	SWING DRIVE	
3.	HOIST CONTROL VALVE	
4.	INNER BOOM CYLINDER	
5.	OUTER BOOM CYLINDER	
6.	EXTENSION CYLINDER	
7.	AUGER DRIVER MOTOR	
8.	MANIFOLD SENSE VALVE	
9.	COUNTERBALANCE VALVE	
10.	COUNTERBALANCE VALVE	
11.	SWING DRIVE MOTOR W/ COUNTERBALANCE VALVE	
12.	SWING DRIVE BRAKE	
13.	HOSE REEL	
14.	QUICK DISCONNECT COUPLINGS	

FOOTNOTES

# PUMP MOUNTING



# PUMP MOUNTING

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-086	-	ENGINE, DEUTZ	OBSOLETE, INCL REF NO. 3
	194-372	-	ENGINE - DEUTZ DIESEL T2	OBSOLETE, INCL REF NO. 3
2.	158-490	1	HYDRAULIC PUMP	
3.	499-955	-	O-RING (ID 3.95, OD 4.25)	AUX PUMP MOUNTING
4.	106-333	2	SCREW (M12-1.75 X 40MM, 8.8)	USE LOCTITE 242 OR EQUIVALENT
5.	149-902	1	HYDRAULIC PUMP (100 CC)	
	190-764		SEAL REPAIR KIT	
6.	105-858	8	BOLT (1/2-NC X 1-1/4")	USE LOCTITE 242 OR EQUIVALENT
7.	106-743	8	WASHER (.531, HARDENED)	
8.	157-183	2	O-RING (O48 D70)	
9.	105-319	4	BOLT (3/4-NC X 1-1/2")	USE LOCTITE 242 OR EQUIVALENT
10.	106-949	4	WASHER (3/4", HARDENED)	
11.	149-901	1	HYDRAULIC PUMP (130 CC)	
	190-763		SEAL REPAIR KIT	
12.	106-383	12	FLG LK SCREW (M10-1.50 X 30MM)	USE LOCTITE 242 OR EQUIVALENT
13.	349-001	1	FLYWHEEL HOUSING COVER	
14.	105-876	8	SCREW (M10-1.50 X 35MM)	USE LOCTITE 242 OR EQUIVALENT; TORQUE TO 32 FT LBS
15.	194-777	1	FLYWHEEL COUPLING	OBSOLETE, SEE FOOTNOTE 1
16.	106-397	2	WASHER (M12, HARDENED)	
17.	149-903	1	HYDRAULIC PUMP (75 CC)	

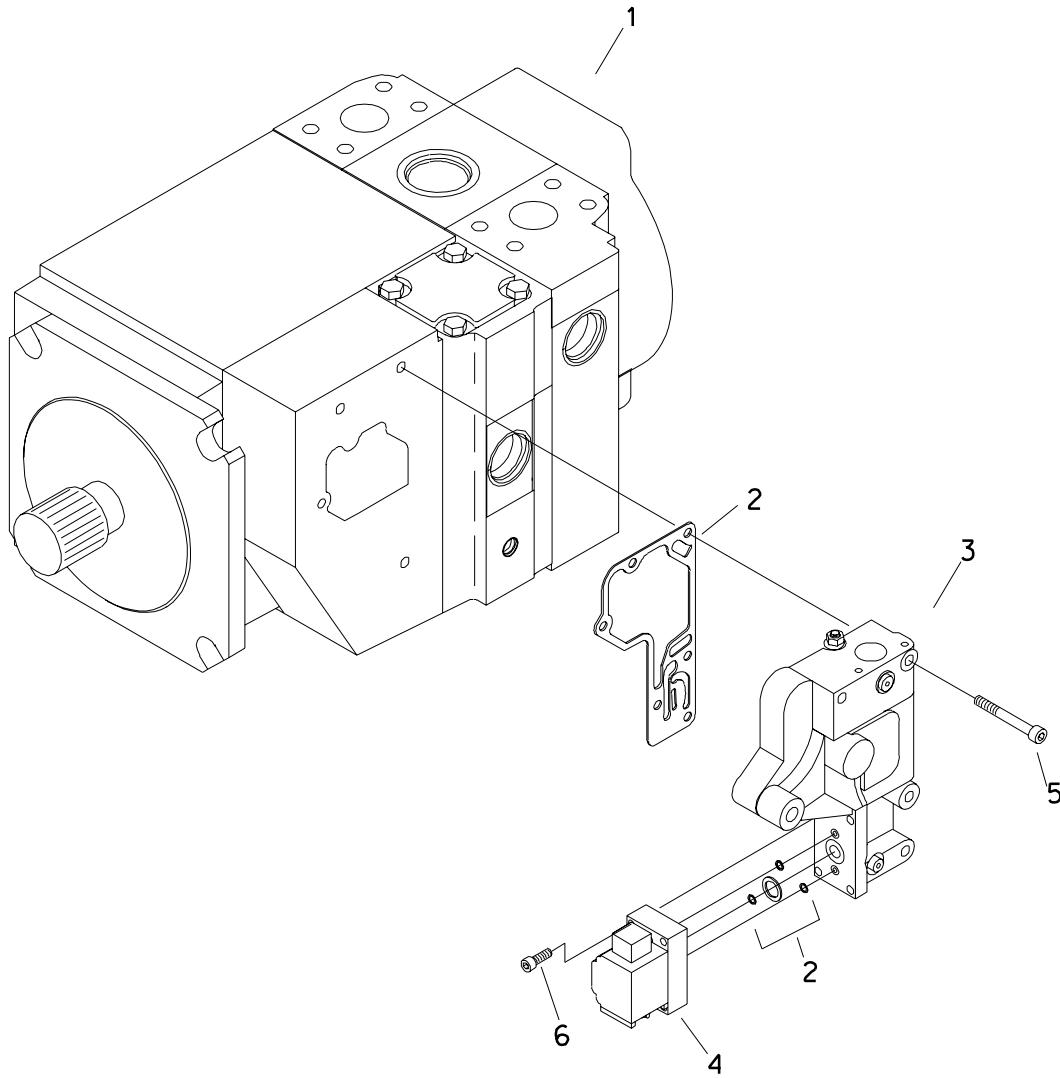
NOT SHOWN:

FOOTNOTES:

1. REPLACE WITH FLYWHEEL COUPLING 195-1685. FLAT SIDE OF NYLON FLANGE GOES TOWARD FLYWHEEL. HUB FACE SHOULD MEASURE .080 INCHES FROM END OF PUMP SHAFT, SEE SKETCH. USE LOCTITE 242 OR EQUIVALENT & TORQUE TO 200 FT LBS.

NOTE:

# ROTATION PUMP CONTROL



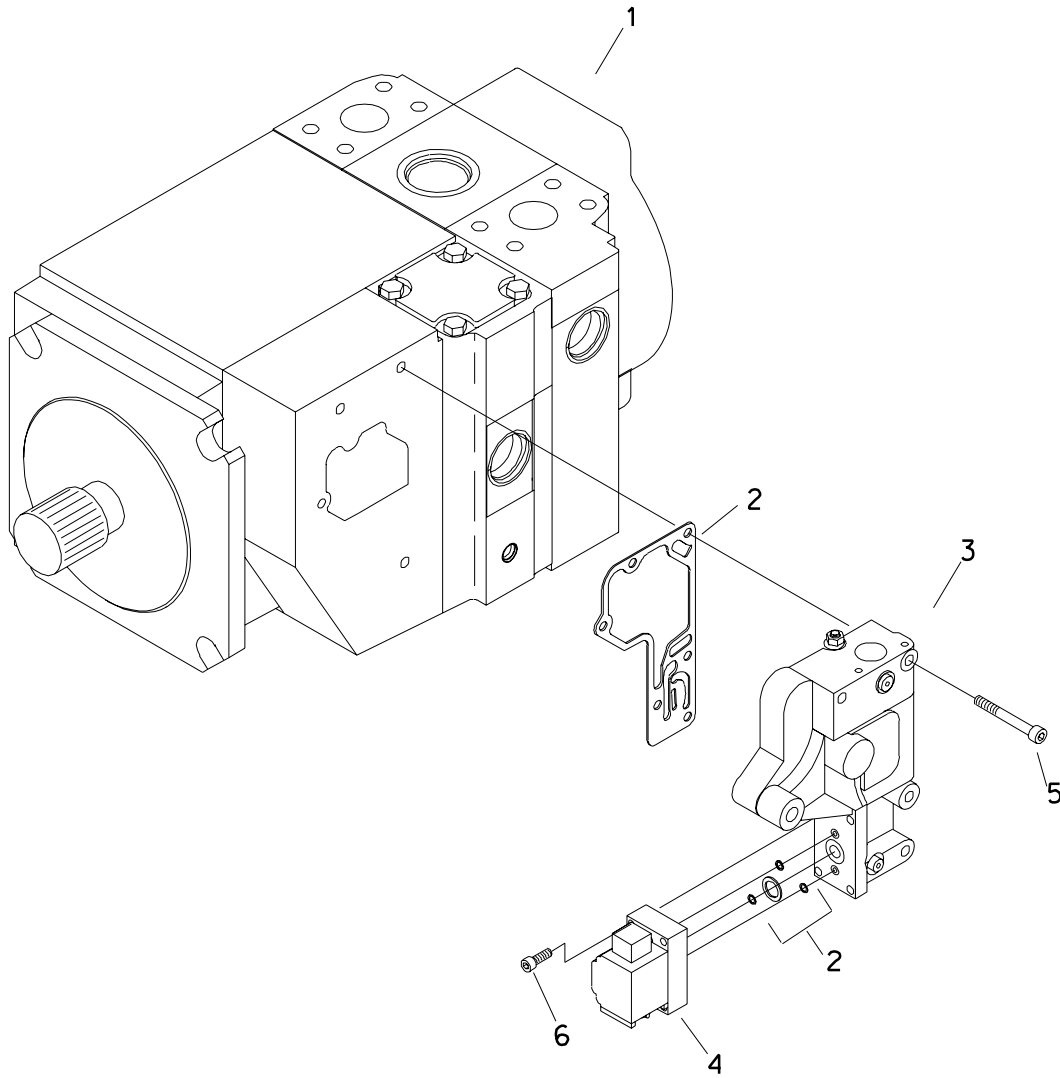


# ROTATION PUMP CONTROL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-901	-	HYDRAULIC PUMP (130 CC)	
	499-175	-	MULTIFUNCTION VALVE	
2.	190-981	1	EDC KIT 75/100/130CC	
3.	149-545	1	EDC CONTROLLER F/130CC	
4.	149-546	1	PILOT VALVE	
5.	107-402	4	SCREW (M6-1.00 X 50MM, SOC)	
6.	106-428	4	SCREW (M5-0.80X14MM, SOC)	

FOOTNOTES

## THRUST PUMP CONTROL

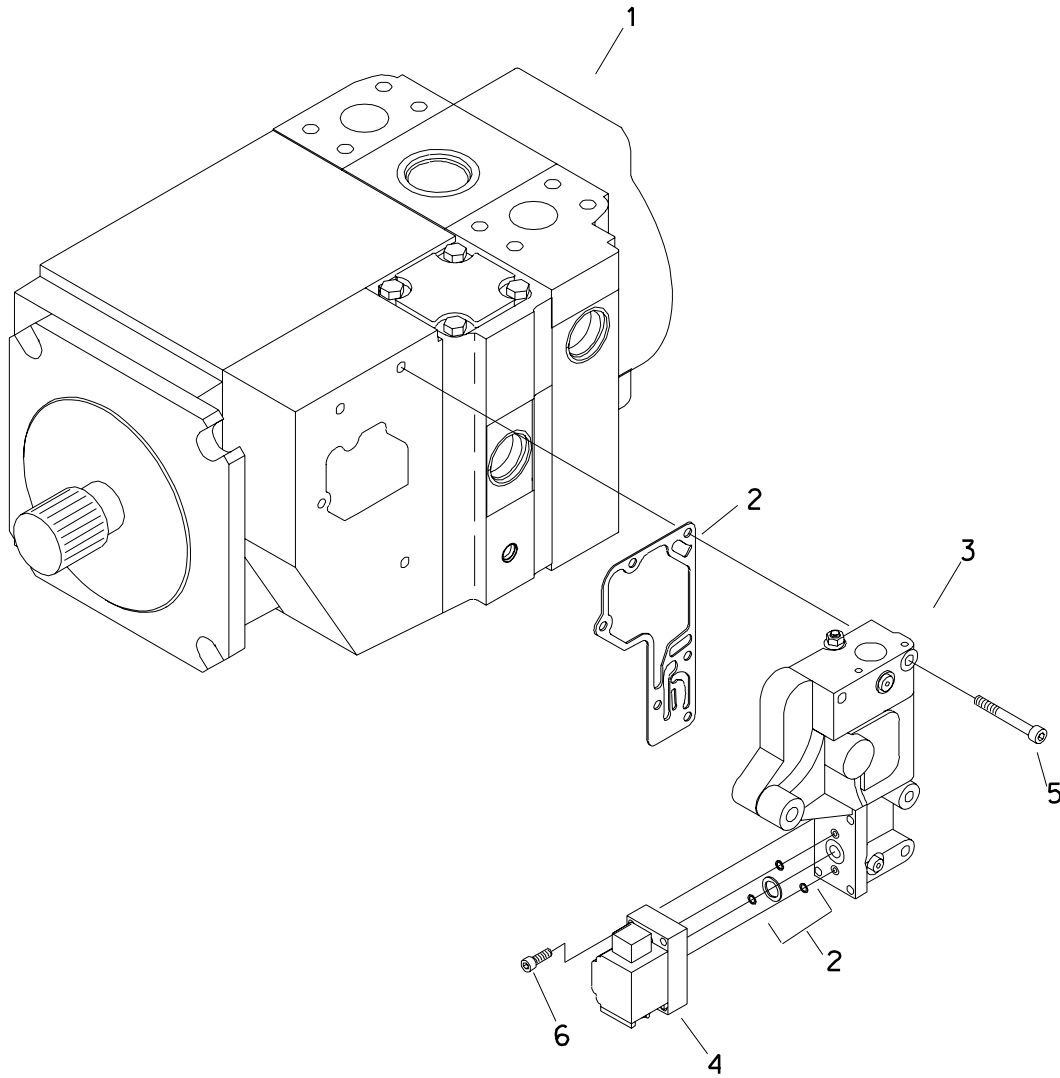


# THRUST PUMP CONTROL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-902	-	HYDRAULIC PUMP (100 CC)	
	500-764	-	MULTIFUNCTION VALVE	
2.	190-981	1	EDC KIT 75/100/130CC	
3.	149-544	1	EDC CONTROLLER F/100CC	
4.	149-546	1	PILOT VALVE	
5.	107-402	4	SCREW (M6-1.00 X 50MM, SOC)	
6.	106-428	4	SCREW (M5-0.80X14MM, SOC)	

FOOTNOTES

# FLUID PUMP CONTROL

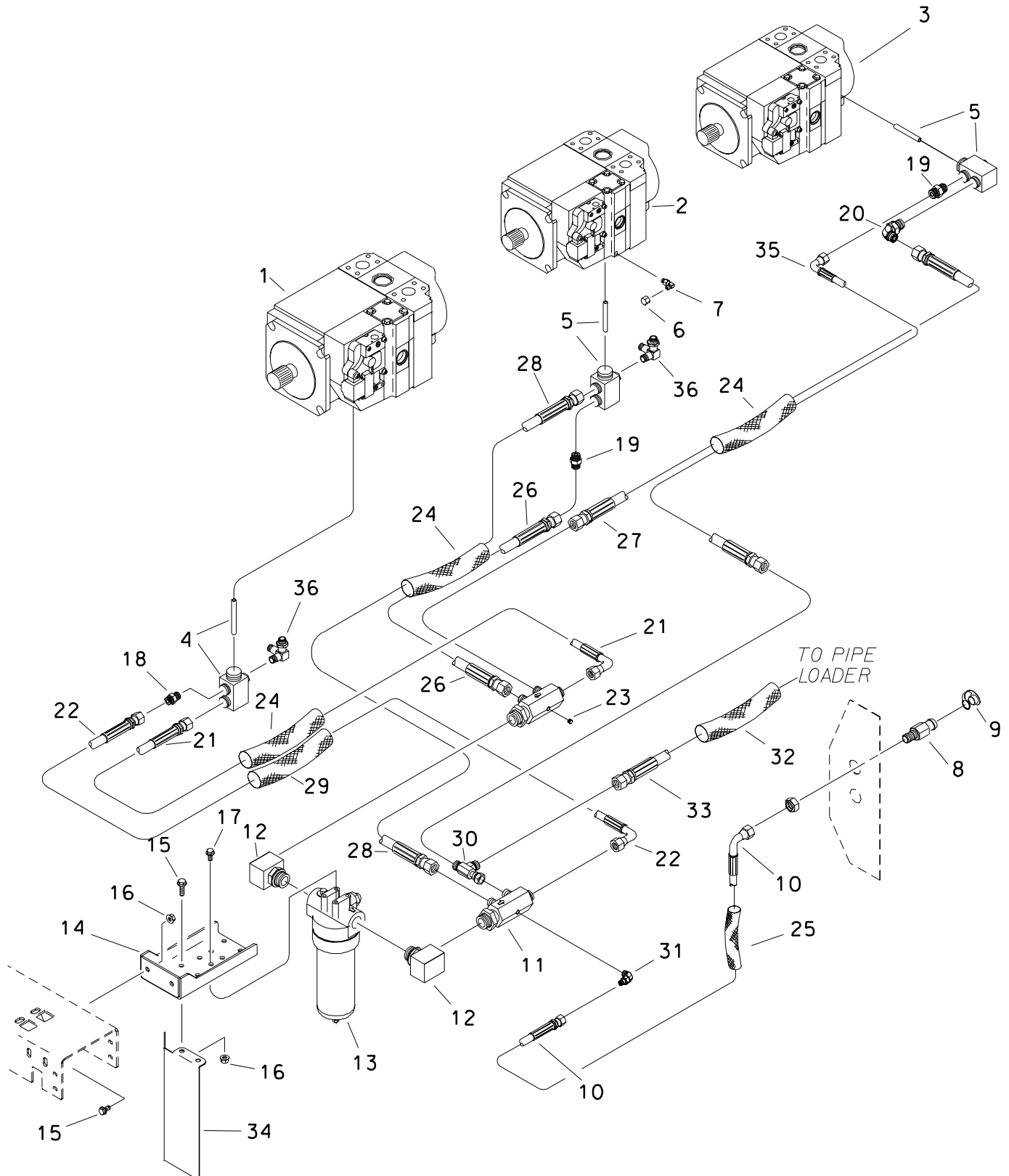


# FLUID PUMP CONTROL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-903	-	HYDRAULIC PUMP (75 CC)	
	500-764	-	MULTIFUNCTION VALVE	
	190-806	-	SEAL KIT	
2.	190-981	1	EDC KIT 75/100/130CC	
3.	159-533	1	EDC CONTROLLER F/75CC	
4.	149-546	1	PILOT VALVE	
5.	107-402	4	SCREW (M6-1.00 X 50MM, SOC)	
6.	106-428	4	SCREW (M5-0.80X14MM, SOC)	

FOOTNOTES

## CHARGE FILTER HYDRAULICS



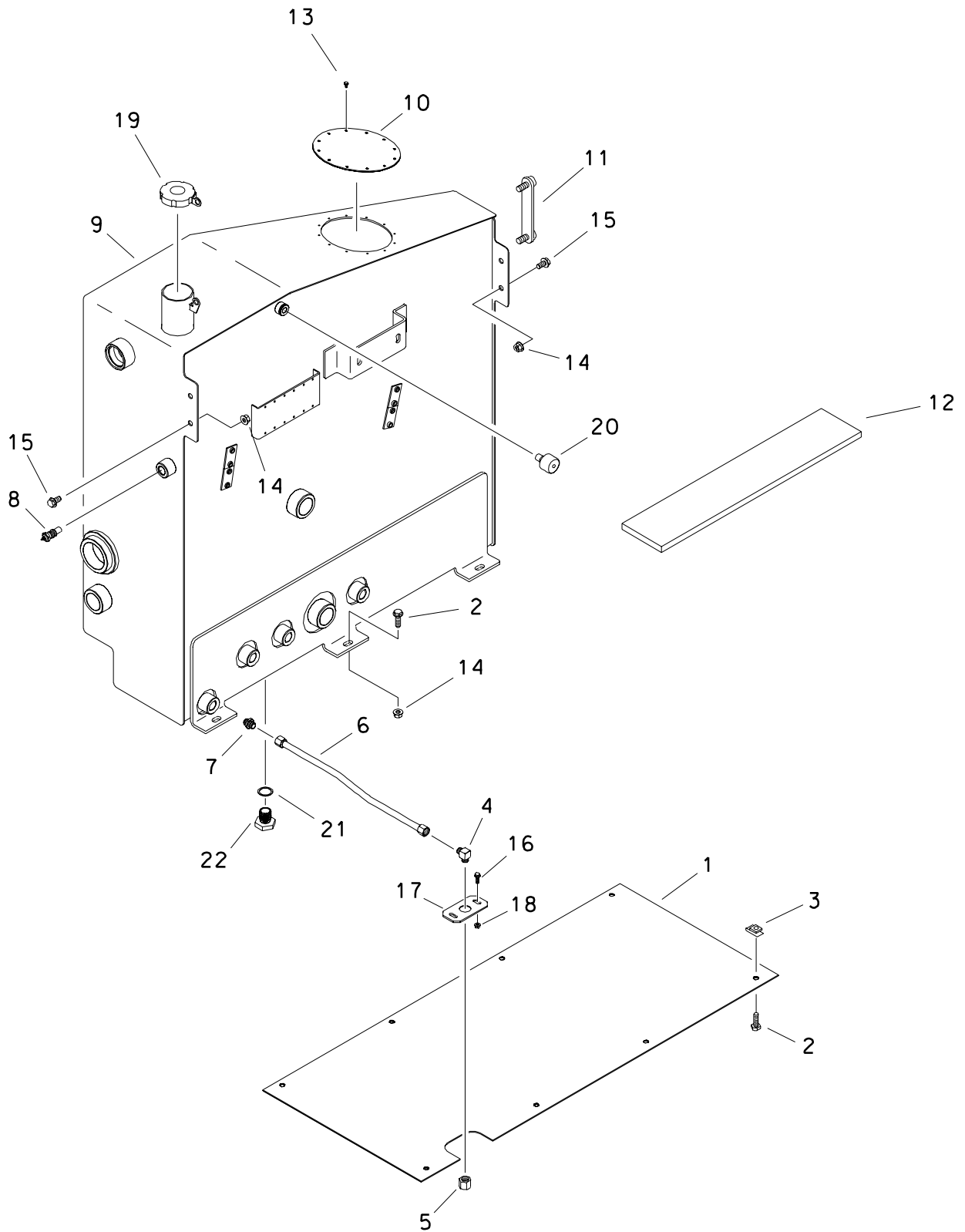
## CHARGE FILTER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-901	-	HYDRAULIC PUMP (130 CC)	INCL REF NO 16
2.	149-902	-	HYDRAULIC PUMP (100 CC)	INCL REF NO 17
3.	149-903	-	HYDRAULIC PUMP (75 CC)	
4.	149-846	-	REMOTE FILTRATION KIT (130)	
5.	149-845	-	REMOTE FILTRATION KIT (75/100)	
6.	154-296	1	CAP (040F)	
7.	154-226	1	CONNECTOR (040-06S90)	
8.	155-260	1	BK QDC ADAPTER (02-040BK)	
9.	159-148	1	DUST CAP (1/8")	
10.	154-802	1	HOSE (040FX90-26"-3000)	
11.	149-367	2	CONNECTOR 16S-100-080-080-04SF	
12.	149-837	2	CONNECTOR (16S-16SF90)	
13.	149-353	1	HYD CHARGE FILTER	
	153-375	-	HYDRAULIC FILTER ELEMENT	
14.	349-734	1	FILTER BRACKET	
15.	106-724	4	FLG SCREW (M10-1.50 X 25MM)	
16.	106-387	4	FLG LOCKNUT (M10-1.5)	
17.	105-825	4	FLG LK BOLT (3/8-NC X 3/4")	
18.	154-301	2	CONNECTOR (10S-100)	
19.	154-279	3	CONNECTOR (080-10S)	
20.	154-322	1	CONNECTOR (080-10S90)	
21.	154-895	1	HOSE (100FX90-44"-2750)	
22.	154-938	1	HOSE (100FX90-48"-3000)	
23.	155-125	1	PLUG (04S)	
24.	117-656	3	ABRASION SLEEVE (1.59" X 45")	
25.	117-684	1	ABRASION SLEEVE (1.00" X 26")	
26.	155-493	1	HOSE (080FX-60"-3000)	
27.	515-366	1	HOSE (080FX-52"-3000)	
28.	154-680	1	HOSE (080FX-74"-3000).	
29.	115-903	1	ABRASION SLEEVE (1.59" X 50")	
30.	154-266	1	UN RUN TEE (080FX-080-080)	
31.	154-252	1	CONNECTOR (04S-04090)	
32.	117-674	1	ABRASION SLEEVE (1.59" X 122")	
33.	515-701	1	HOSE (080FX90-122"-3000)	
34.	307-557	1	FORMED PLATE	
35.	154-884	1	HOSE (080FX90-60"-3000)	
36.	154-230	2	BRANCH TEE (06S-040-040)	

## FOOTNOTES

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

## HYDRAULIC RESERVOIR





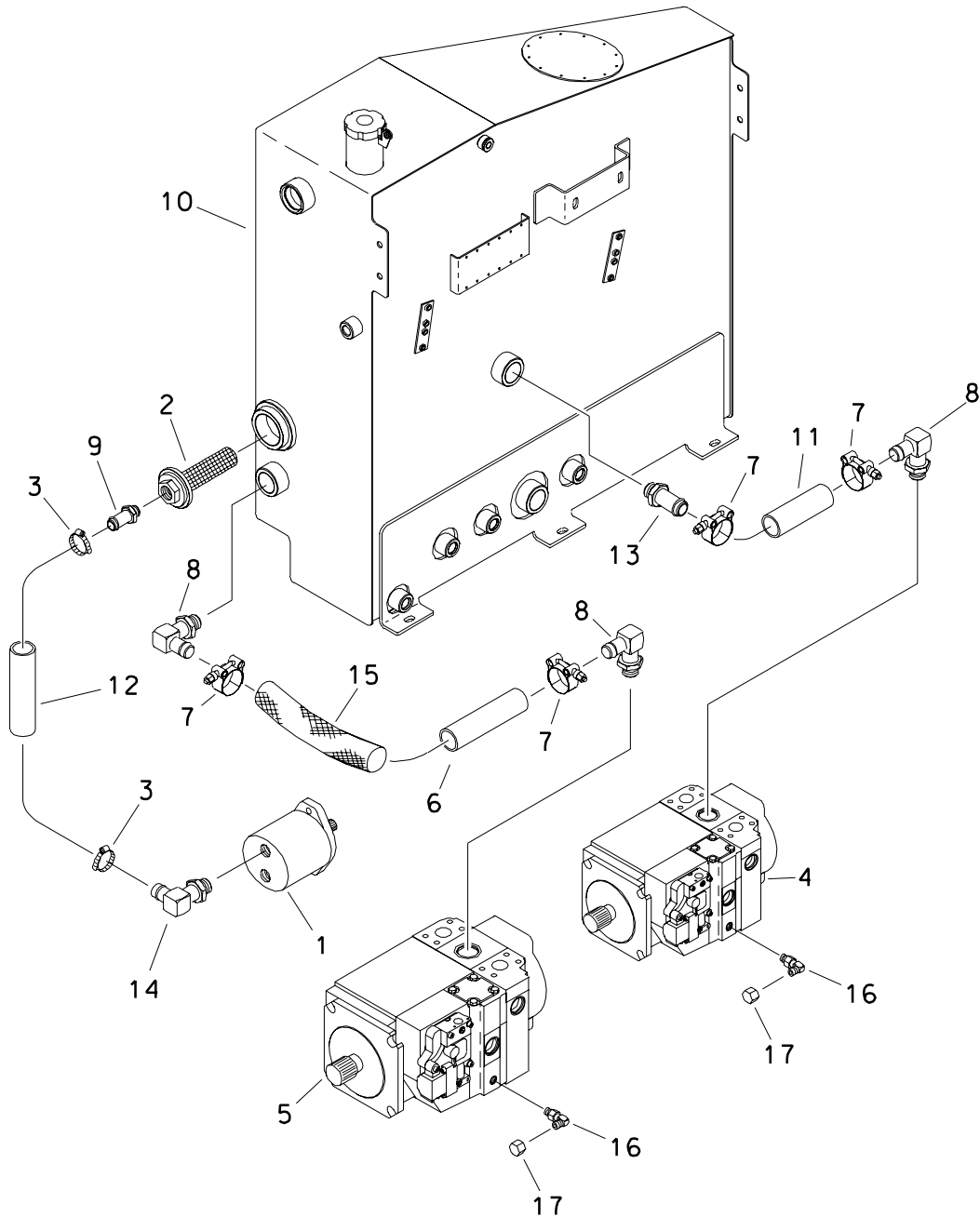
## HYDRAULIC RESERVOIR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	370-314	1	BOTTOM COVER	
2.	106-724	11	FLG SCREW (M10-1.5 X 25MM)	
3.	106-558	8	CLIP NUT (M10-1.5)	
4.	154-291	1	BK CONNECTOR (100-10090BK)	
5.	154-324	1	CAP (100F)	
6.	156-848	1	HYD LINE (100FX)	
7.	154-301	1	CONNECTOR (10S-100)	
8.	214-819	1	TEMPERATURE SWITCH	
9.	370-403	1	HYD RESERVOIR	
10.	349-090	1	LID	USE LOCTITE AVIATION SEALANT OR EQUIVALENT
11.	364-171	1	SIGHT GAUGE	
12.	349-098	1	HYD TANK PAD	SEE FOOTNOTE 1
13.	105-214	12	FLG SCREW (#10-24 X .5")	
14.	106-387	7	FLG LOCKNUT (M10-1.50)	
15.	106-382	4	FLG LK SCREW (M10-1.50 X 20MM)	
16.	106-379	2	FLG LK SCREW (M6-1.00 X 20MM)	
17.	370-305	1	MOUNT BAR	
18.	106-385	2	FLG LOCKNUT (M6-1.00)	
19.	111-046	1	LOCKING CAP (NON-VENTED)	
20.	111-021	1	BREATHER CAP (TANK)	
21.	105-776	1	WASHER (1.010" BRS)	
22.	149-398	1	DRAIN PLUG (1-UNF, .375 ORF)	

## FOOTNOTES

1. APPLY ADHESIVE (P/N 256-665) TO BOTTOM OF PAD BEFORE INSTALLING ON MAIN FRAME.

## PUMP HYDRAULICS



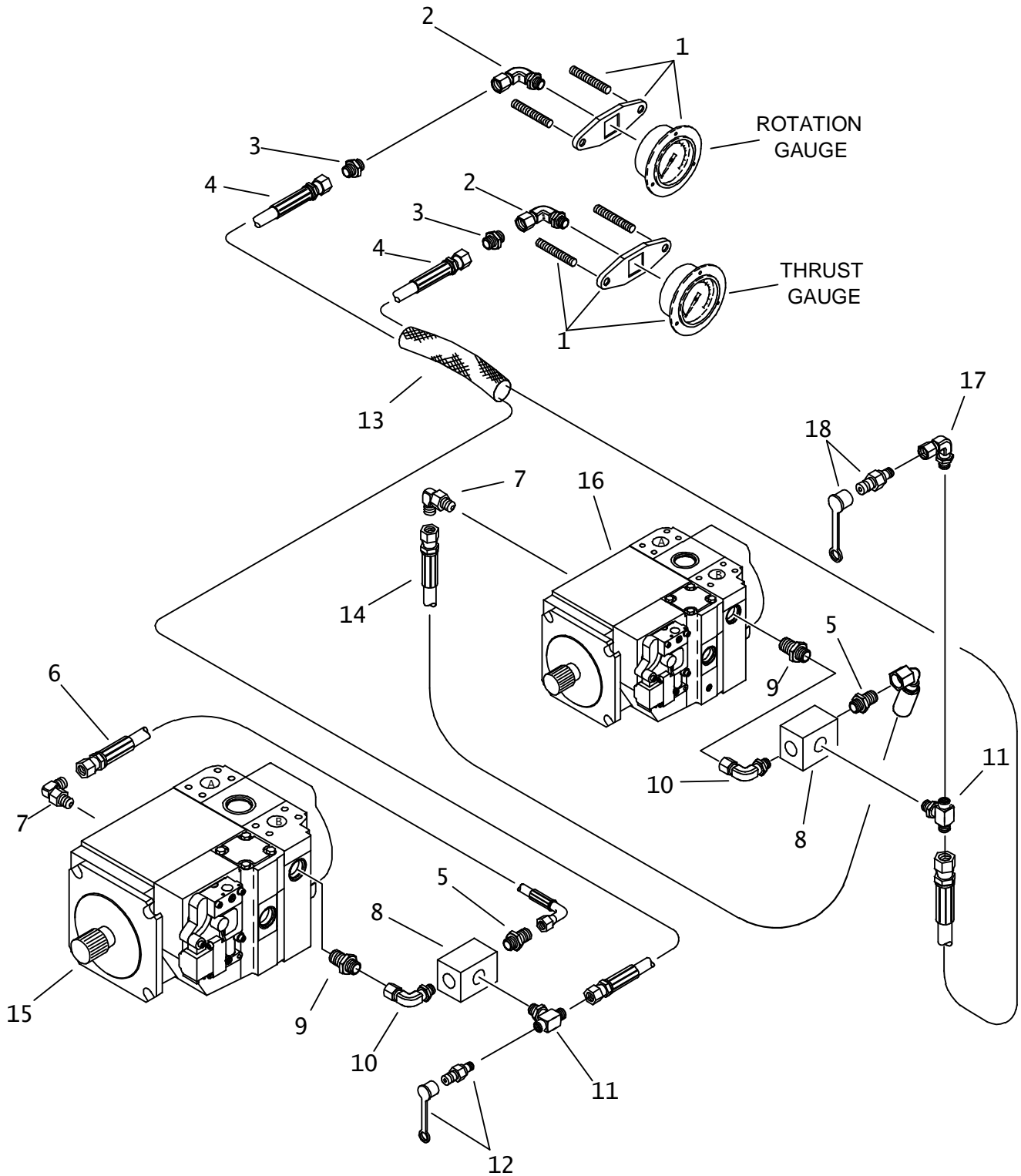
## PUMP HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-490	1	HYDRAULIC PUMP	
	500-747		SEAL REPAIR KIT	
2.	159-432	1	TANK FILTER SCREEN	
3.	110-353	2	WORM CLAMP (3/4" TO 1-1/2")	
4.	149-902	-	HYDRAULIC PUMP (100 CC)	
	190-764		SEAL REPAIR KIT	
5.	149-901	-	HYDRAULIC PUMP (130 CC)	
	190-763		SEAL REPAIR KIT	
6.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 23.5"
7.	111-028	4	T-BOLT CLAMP (1-3/4" TO 2")	
8.	514-136	3	S/O COUPLER (20S-24H90)	
9.	154-476	1	S/O COUPLER (20S-16H)	
10.	370-403	-	HYDRAULIC RESERVOIR	
11.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 13"
12.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 23"
13.	155-148	1	S/O COUPLER (20S-24H)	
14.	155-195	1	S/O COUPLER (20S-16H90)	
15.	115-680	1	ABRASION SLEEVE (2.07" X 21")	
16.	154-226	2	CONNECTOR (040-06S90)	
17.	154-296	2	CAP (040F)	

## FOOTNOTES

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

# HYDROSTATIC GAUGE HYDRAULICS



# HYDROSTATIC GAUGE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-079	2	PRESSURE GAUGE (10,000PSI)	
	499-202		GAUGE CLAMP & STUDS	
2.	514-355	2	CONNECTOR (04NF-04NF90)	
3.	154-020	2	CONNECTOR (04N-04J)	
4.	155-490	2	HOSE (04JFX-306"-6000)	
5.	154-220	2	CONNECTOR (04O-06S)	
6.	515-304	1	HOSE (040FX90S-15"-5000)	
7.	154-226	2	CONNECTOR (04O-06S90)	
8.	159-475	2	SHUTTLE VALVE	
9.	154-221	2	CONNECTOR (06S-06O)	
10.	154-343	2	UNION (06S-06OFX90)	
11.	149-043	2	BK BR TEE (06S-04J-04SF)	
12.	159-154	1	QDC ADAPTER (02-04S)	BEGINS WITH S/N: 2W0856
13.	116-840	1	ABRASION SLEEVE (1.00" X 306")	
14.	515-305	1	HOSE (040FX90-21"-5000)	
15.	149-901	-	HYDRAULIC PUMP (130 CC)	
16.	149-902	-	HYDRAULIC PUMP (100 CC)	
17.	154-252	1	CONNECTOR (04S-04O90)	BEGINS WITH S/N: 2W0856
18.	159-156	1	QDC ADAPTER (02-04OF)	BEGINS WITH S/N: 2W0856

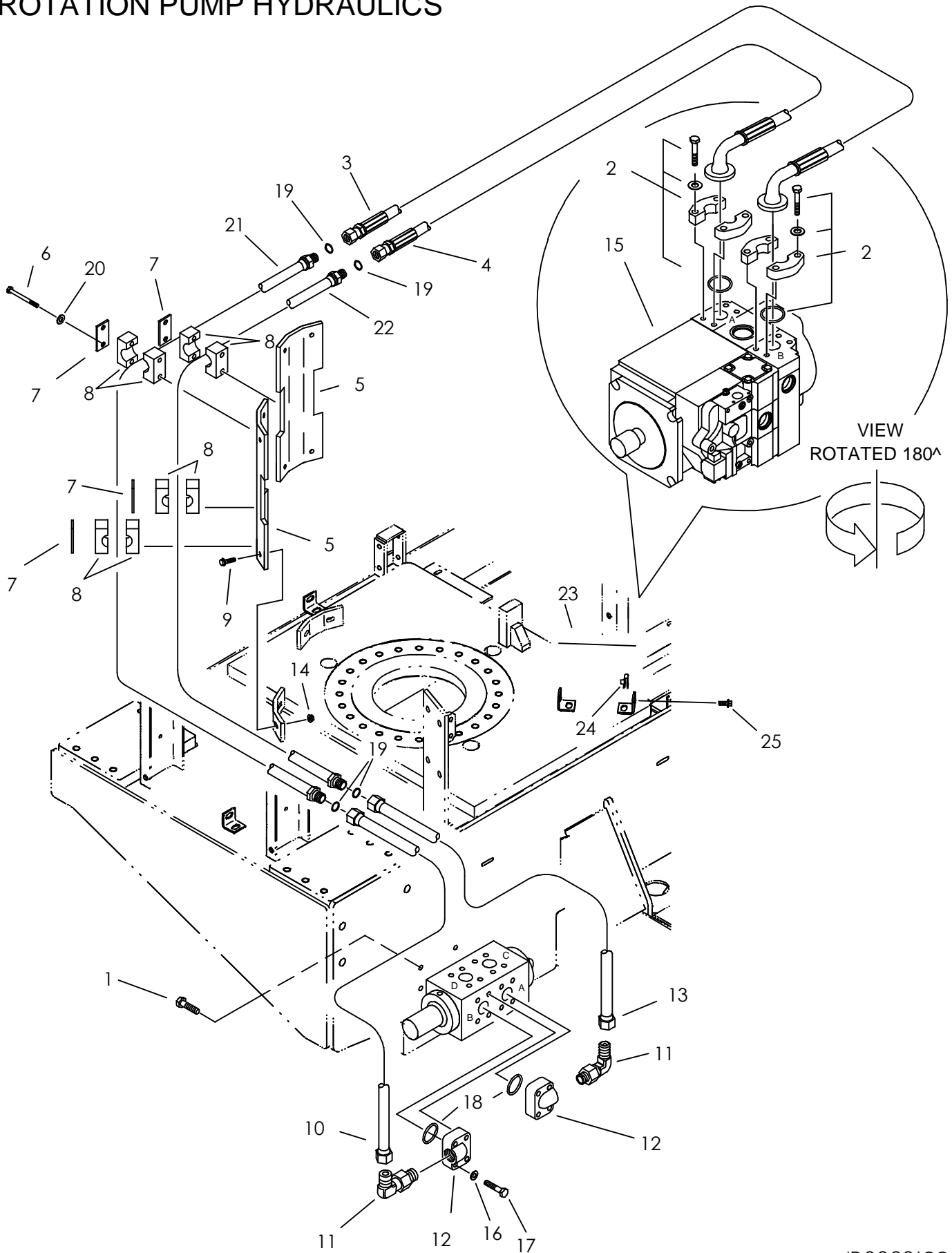
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FOOTNOTES:

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

NOTE:

# ROTATION PUMP HYDRAULICS



# ROTATION PUMP HYDRAULICS

REF PART NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-829	4	FLG LK BOLT (1/2-NC X 1")	
2.	159-436	2	SPLIT FLANGE (20SF, SET)	
	105-066	4	BOLT (1/2-NC X 1-3/4")	TORQUE TO 45 FT/LBS
	105-070	4	LOCK WASHER (1/2")	
	157-078	1	O-RING (222 D90)	
3.	515-565	1	HOSE (20OFX-20FLH90-43"-6000)	
4.	515-566	1	HOSE (20OFX-20FLH90-45"-6000)	
5.	349-851	2	MOUNT CLAMP	
6.	105-224	8	BOLT (1/4-NC X 2-1/2")	
7.	322-362	4	BACKUP SPACER	
8.	110-852	4	BLT-ON CLP (1.25", SOLD PER SET)	
9.	106-724	4	FLG SCREW (M10-1.50 X 25MM)	
10.	156-137	-	HYD LINE (-20)	ENDS WITH S/N: 2V2567
	153-569	1	HYD LINE (-20)	BEGINS WITH S/N: 2W0856
11.	514-095	2	CONNECTOR (20S-20O90)	
12.	514-333	2	HEAD FLANGE (20FL-16SF)	
13.	156-136	-	HYD LINE (-20)	ENDS WITH S/N: 2V2567
	153-571	1	HYD LINE (-20)	BEGINS WITH S/N: 2W0856
14.	106-387	4	FLG LOCKNUT (M10-1.50)	
15.	149-901	-	HYDRAULIC PUMP (130CC)	
16.	105-070	8	LOCK WASHER (1/2")	
17.	105-067	8	BOLT (1/2-NC X 2-3/4")	TORQUE TO 45 FT/LBS
18.	157-078	2	O-RING (222 D90)	
19.	157-129	4	O-RING (025 D90)	
20.	106-388	8	WASHER (M6)	
21.	156-137	-	HYD LINE (-20)	ENDS WITH S/N: 2V2567
	153-568	1	HYD LINE (-20)	BEGINS WITH S/N: 2W0856
22.	156-136	-	HYD LINE (-20)	ENDS WITH S/N: 2V2567
	153-570	1	HYD LINE (-20)	BEGINS WITH S/N: 2W0856
23.	349-853	1	RETAINER BAR	
24.	106-551	2	CLIP NUT(M8-1.25)	
25.	106-991	2	FLG LK SCREW (M8-1.25 X 20MM)	

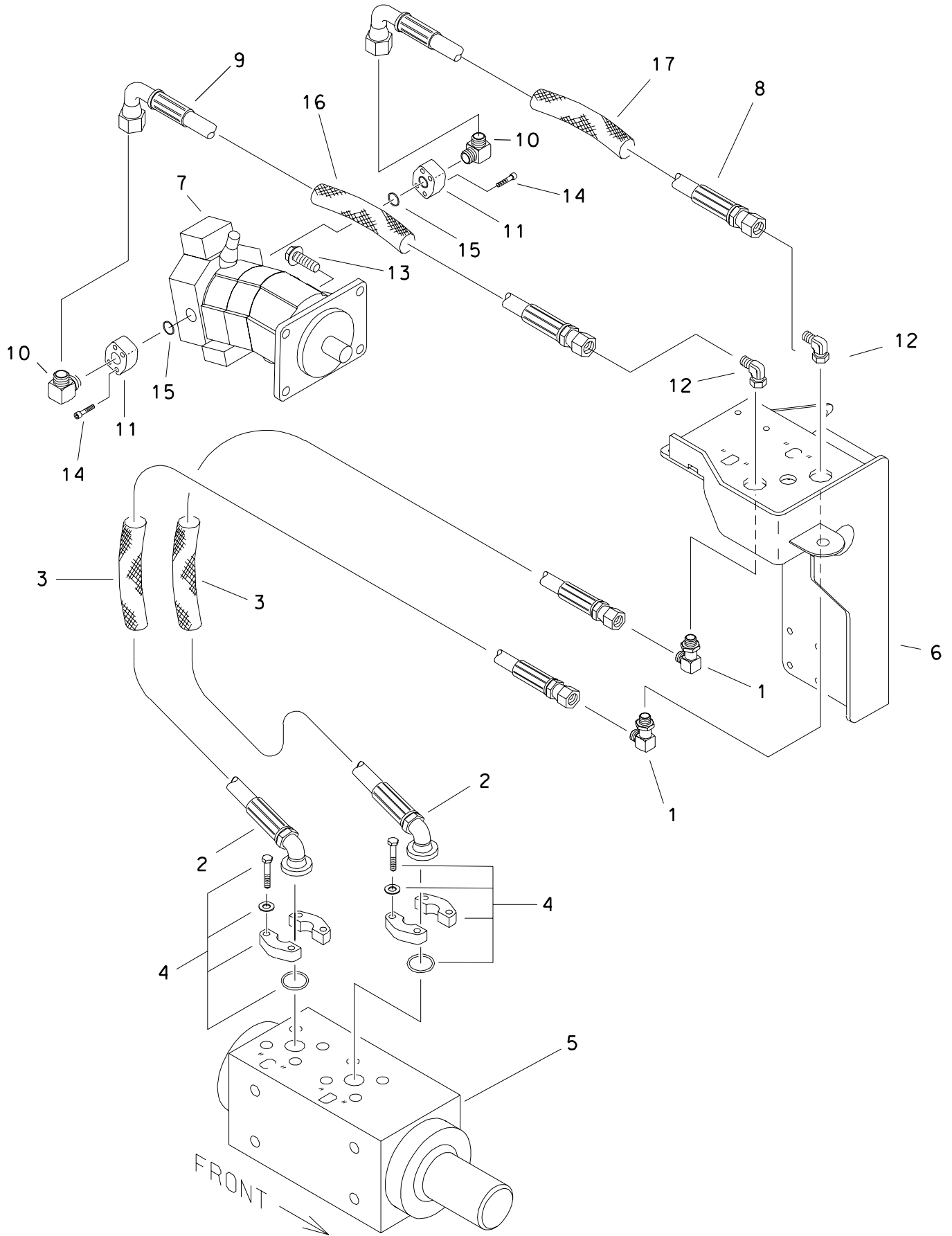
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FOOTNOTES:

**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.	514-178	2	BK CONNECTOR (200-20090BK)	
2.	153-120	2	HOSE (200FX-20FL45-230"-6000)	
3.	115-962	2	ABRASION SLEEVE (2.54" X 255")	
4.	159-436	2	SPLIT FLANGE (20SF, SOLD PER SET)	
	105-066	8	BOLT (1/2-NC X 1-3/4")	
	157-078	2	O-RING (222 D90)	
	105-070	8	LOCK WASHER (.500")	
5.	516-033	-	SELECTOR VALVE DIVERTER	
6.	309-179	-	CABLE TRAY BRACKET	
7.	149-397	-	HYD MOTOR (PISTON)	
	191-212	-	SEAL REPAIR KIT	
	217-745	-	CONTROL SOLENOID	
8.	149-479	1	HOSE (200FX90S-45"-6000)	
9.	149-481	1	HOSE (200FX90S-40"-6000)	
10.	514-244	2	CONNECTOR (16S-20090)	
11.	149-995	2	HEAD FLANGE (20HFL-16SF)	
12.	514-422	2	CONNECTOR (200-200FX90)	
13.	106-098	4	FLG BOLT (3/4-NC X 2", GD8)	
14.	106-204	8	BOLT (1/2-NC X 1-1/2", SOC)	
15.	157-078	2	O-RING (222 D90)	
16.	115-925	1	ABRASION SLEEVE (2.38" X 40")	
17.	117-651	1	ABRASION SLEEVE (2.38" X 45")	

## NOT SHOWN:

214-337	1	ROTATION CABLE	SEE FOOTNOTE 1; PRIOR TO MACH I UNITS
115-447	1	ABRASION SLEEVE (1.59" X 120")	SEE FOOTNOTE 1; PRIOR TO MACH I UNITS
117-655	1	ABRASION SLEEVE (1.59" X 38")	SEE FOOTNOTE 1; PRIOR TO MACH I UNITS
214-630	1	SPINDLE HARNESS	MACH I UNITS
117-327	1	ABRASION SLEEVE (1.59" X 231")	MACH I UNITS

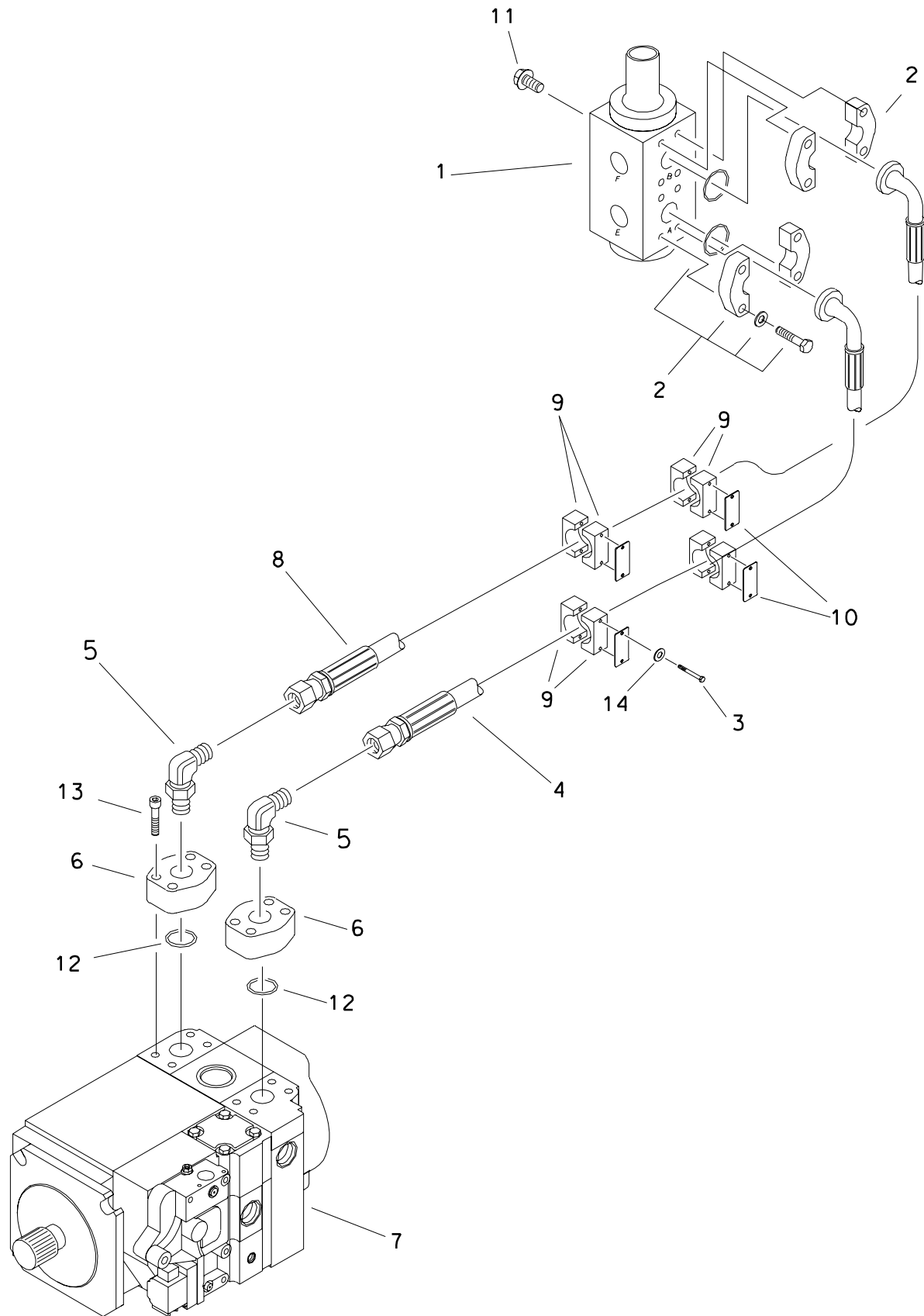
## FOOTNOTES

1. 115-447 AND 117-655 ARE USED ON THE ROTATION CABLE (214-337). 115-447 IS USED ON THE FRONT END AND 117-655 ON THE BACK END.

## NOTE

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

## THRUST PUMP HYDRAULICS



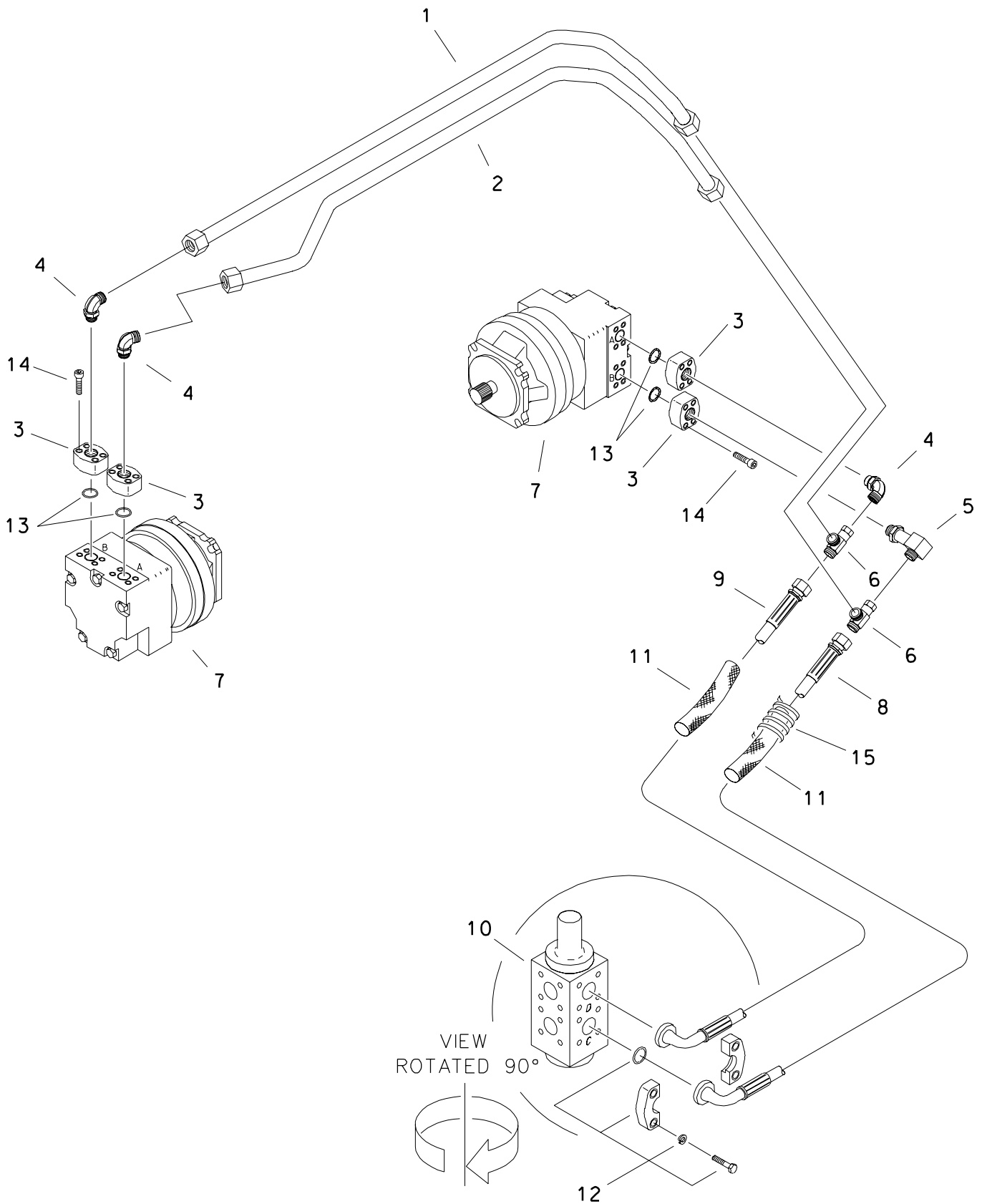
## THRUST PUMP HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-033	1	SELECTOR VALVE DIVERTER	
2.	159-436	2	SPLIT FLANGE (20SF, SET)	
	105-066	4	BOLT (1/2-NC X 1-3/4")	
	105-070	4	LOCK WASHER (1/2")	
	157-078	1	O-RING (222 D90)	
3.	105-224	8	BOLT (1/4-NC X 2-1/2")	
4.	515-564	1	HOSE (160FX-20FL90-68"-6000)	ENDS WITH S/N: 2Y0040
	157-998	1	HOSE (160FX-20FLS90-68"-6000)	BEGINS WITH S/N: 2Y0470
5.	154-287	2	CONNECTOR (16S-16090)	
6.	514-245	2	HEAD FLANGE (16HFL-16SF)	
7.	149-902	-	HYDRAULIC PUMP (100CC)	
8.	515-563	1	HOSE (160FX-20FL90-71"-6000)	ENDS WITH S/N: 2Y0040
	159-926	1	HOSE (160FX-20FLS90-71"-6000)	BEGINS WITH S/N: 2Y0470
9.	111-008	4	BOLT-ON CLAMP (1.5", SOLD PER SET)	
10.	322-362	4	BACKUP SPACER	
11.	105-829	4	FLG LK BOLT (1/2-NC X 1")	
12.	157-029	2	O-RING (219 D90)	
13.	105-918	8	BOLT (7/16-NC X 1-1/2", SDC)	
14.	106-388	8	WASHER (M6)	

## FOOTNOTES

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

## THRUST MOTOR HYDRAULICS



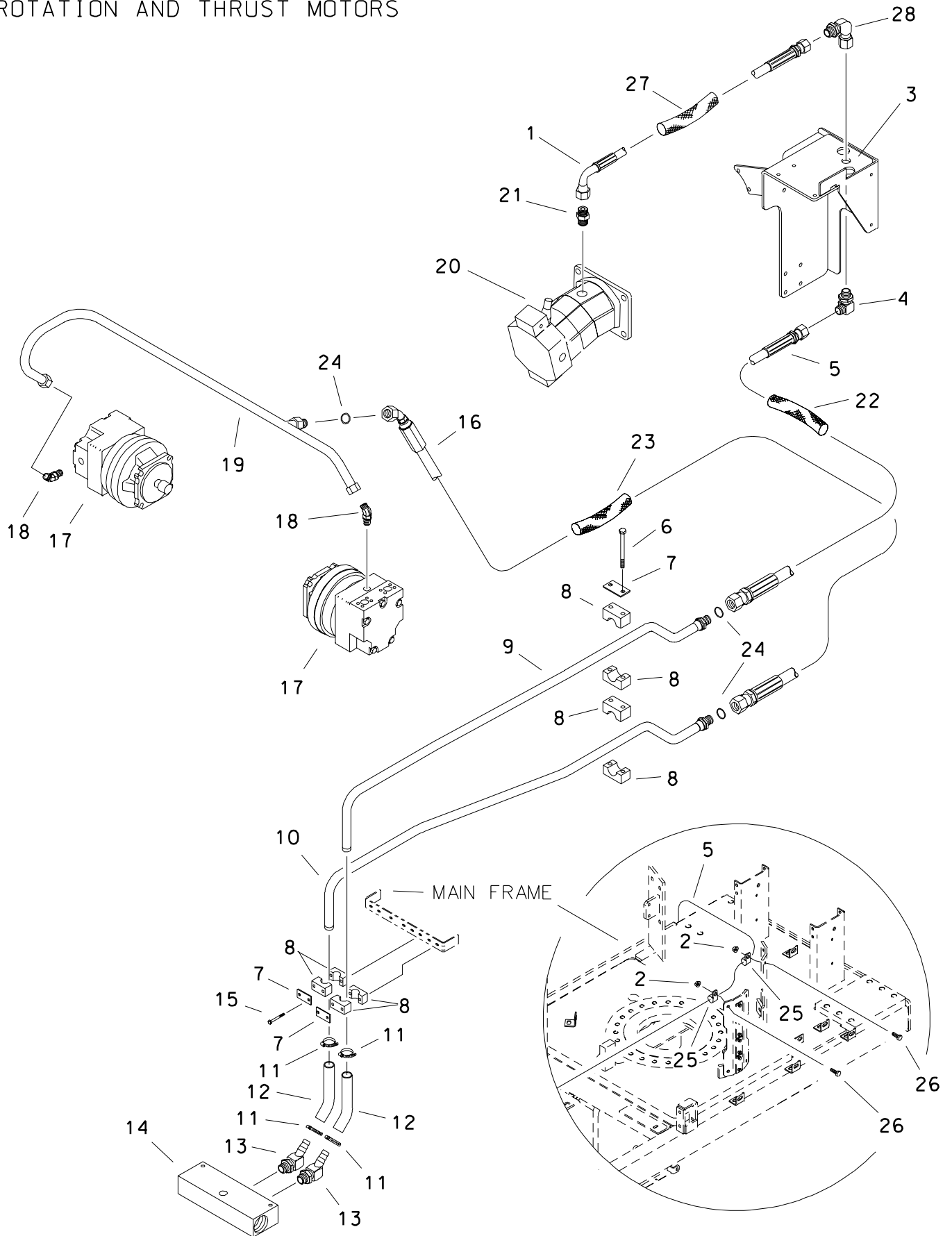
## THRUST MOTOR HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	156-298	1	HYD LINE (-16)	
2.	156-297	1	HYD LINE (-16)	
3.	514-245	4	HD FLANGE (16HFL-16SF)	
4.	154-287	3	CONNECTOR (16S-16090)	
5.	154-289	1	CONNECTOR (16S-16090, XL)	
6.	154-409	2	UNION RUN TEE (160FX-160-160)	
7.	158-905	-	HYD MOTOR - THRUST	
	190-765		SEAL REPAIR KIT	
	217-408	1	SOLENOID VALVE (12V)	
	126-195	1	ROLLER BEARING	
	126-196	2	CRADLE BEARING	
	165-893	1	END CAP GASKET	
	165-894	1	GASKET, FRONT COVER	
	157-199	1	O-RING (171 D75)	
	157-200	1	O-RING (153 D75)	
	157-740	1	LIP SEAL	
	499-083	1	VALVE PLATE	
8.	515-567	-	HOSE (160FX-20FLH90L-208"-6000)	
9.	153-117	-	HOSE (160FX-20FLH90L-212"-6000)	
10.	516-033	-	SELECTOR VALVE DIVERTER	
11.	117-329	2	ABRASION SLEEVE (2.07" X 212")	
12.	159-436	4	SPLIT FLANGE (20SF, SET)	
	105-066	8	BOLT (1/2-NC X 1-3/4")	
	105-070	8	LOCK WASHER (1/2")	
	157-078	2	O-RING (222 D90)	
13.	157-029	4	O-RING (219 D90)	
14.	105-918	16	BOLT (7/16-NC X 1-1/2", SOC)	
15.	110-930	1	SPIRAL WRAP (1.5", SOLD PER FT)	USE 1 @ 12"

## FOOTNOTES

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

# CASE DRAIN HYDRAULICS ROTATION AND THRUST MOTORS



# CASE DRAIN HYDRAULICS

## ROTATION AND THRUST MOTORS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-867	1	HOSE (120FX90-36"-2250)	
2.	106-387	2	FLG LOCKNUT (M10-1.50)	
3.	309-179	-	CABLE TRAY BRACKET	
4.	156-482	1	BK CONNECTOR (120-12090BK)	
5.	153-119	1	HOSE (120FX-316"-3000)	
6.	107-196	2	BOLT (1/4-NC X 3")	
7.	322-289	3	BACKUP (BOLT-ON)	
8.	110-573	4	BOLT-ON CLAMP (1", SOLD PER SET)	
9.	156-134	1	HYD LINE (-16)	
10.	156-135	1	HYD LINE (-16)	
11.	111-011	4	WORM CLAMP (1" TO 1-3/4")	
12.	116-094	AR	BULK HOSE (1", SOLD PER 1")	USE 2 @ 9.5"
13.	155-230	2	S/O COUPLER (16S-16H45)	
14.	159-414	-	CASE DRAIN MANIFOLD	
15.	105-106	4	BOLT (1/4-NC X 2")	
16.	153-118	1	HOSE (120FX45-291"-3000)	
17.	158-905	2	HYD MOTOR - (THRUST)	
	190-765	-	SEAL REPAIR KIT	
	217-408	-	SOLENOID VALVE (12V)	
	165-893	1	END CAP GASKET	
	126-196	2	CRADLE BEARING	
	499-083	1	VALVE PLATE	
	157-199	1	O-RING (171 D75)	
	126-020	1	BALL BEARING (1.369")	
	157-740	1	LIP SEAL	
	165-894	1	GASKET, FRONT COVER	
	157-200	1	O-RING (153 D75)	
	217-408	1	SOLENOID VALVE (12V)	
18.	154-371	2	CONNECTOR (12S-16045)	
19.	156-299	1	HYD LINE (-16)	
20.	149-397	-	HYD MOTOR (PISTON)	
	191-212	-	SEAL REPAIR KIT	
	217-745	-	CONTROL SOLENOID	
21.	154-269	1	CONNECTOR (12S-120)	
22.	117-331	-	ABRASION SLEEVE (1.75" X 314")	USE W/O HOSE SOCK
	117-610	1	ABRASION SLEEVE (1.75" X 138")	USE WITH HOSE SOCK
23.	117-330	1	ABRASION SLEEVE (1.75" X 289")	
24.	157-017	3	O-RING (O18 D90)	
25.	110-332	2	BOLT-ON CLAMP (1-5/8")	
26.	107-001	2	FLG LK SCREW (M10-1.50 X 25mm)	
27.	117-655	1	ABRASION SLEEVE (1.59" X 38")	
28.	154-457	1	UNION (120-120FX90)	

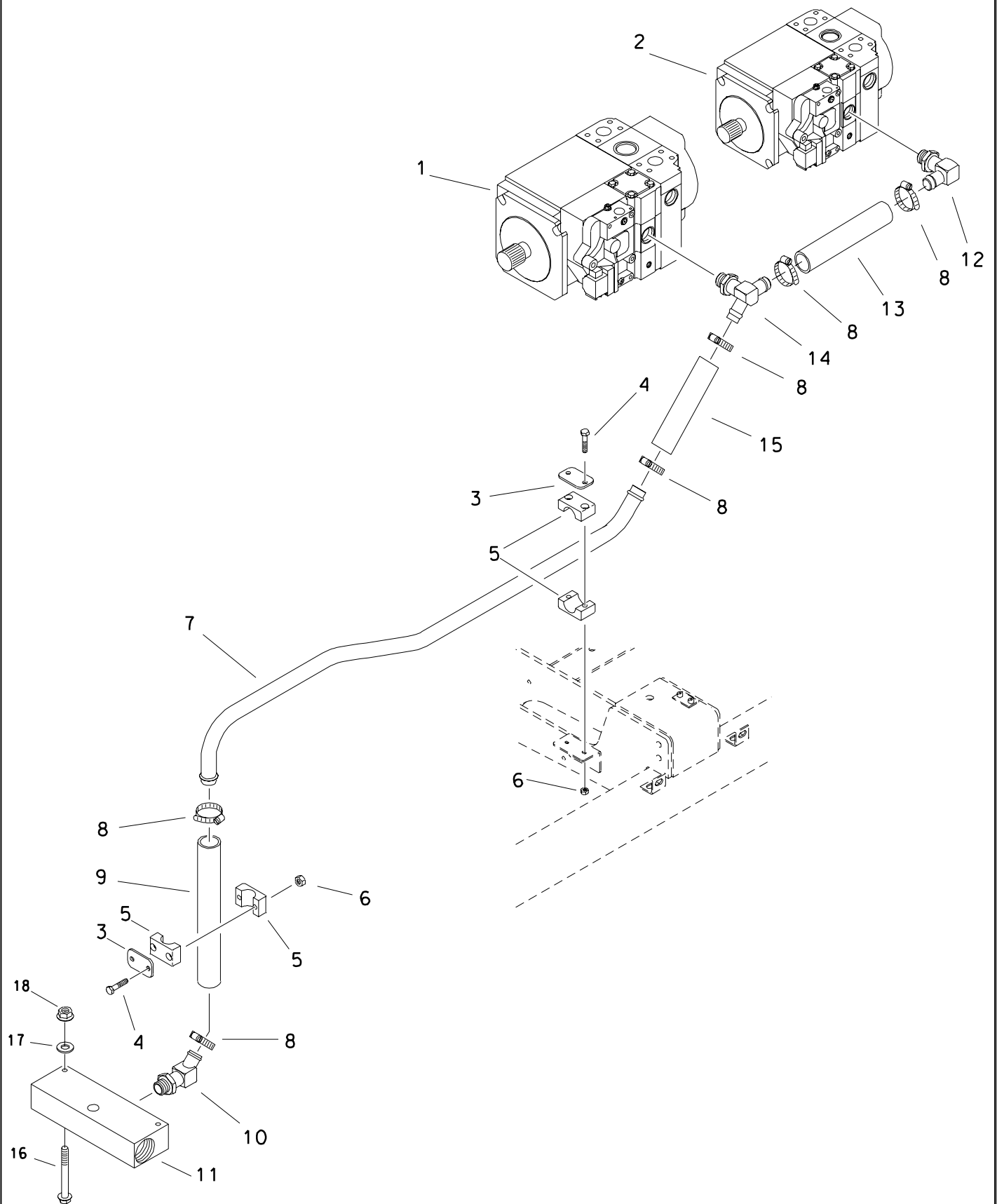
### FOOTNOTES

### NOTE

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

# CASE DRAIN HYDRAULICS

## ROTATION AND THRUST PUMPS



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# CASE DRAIN HYDRAULICS

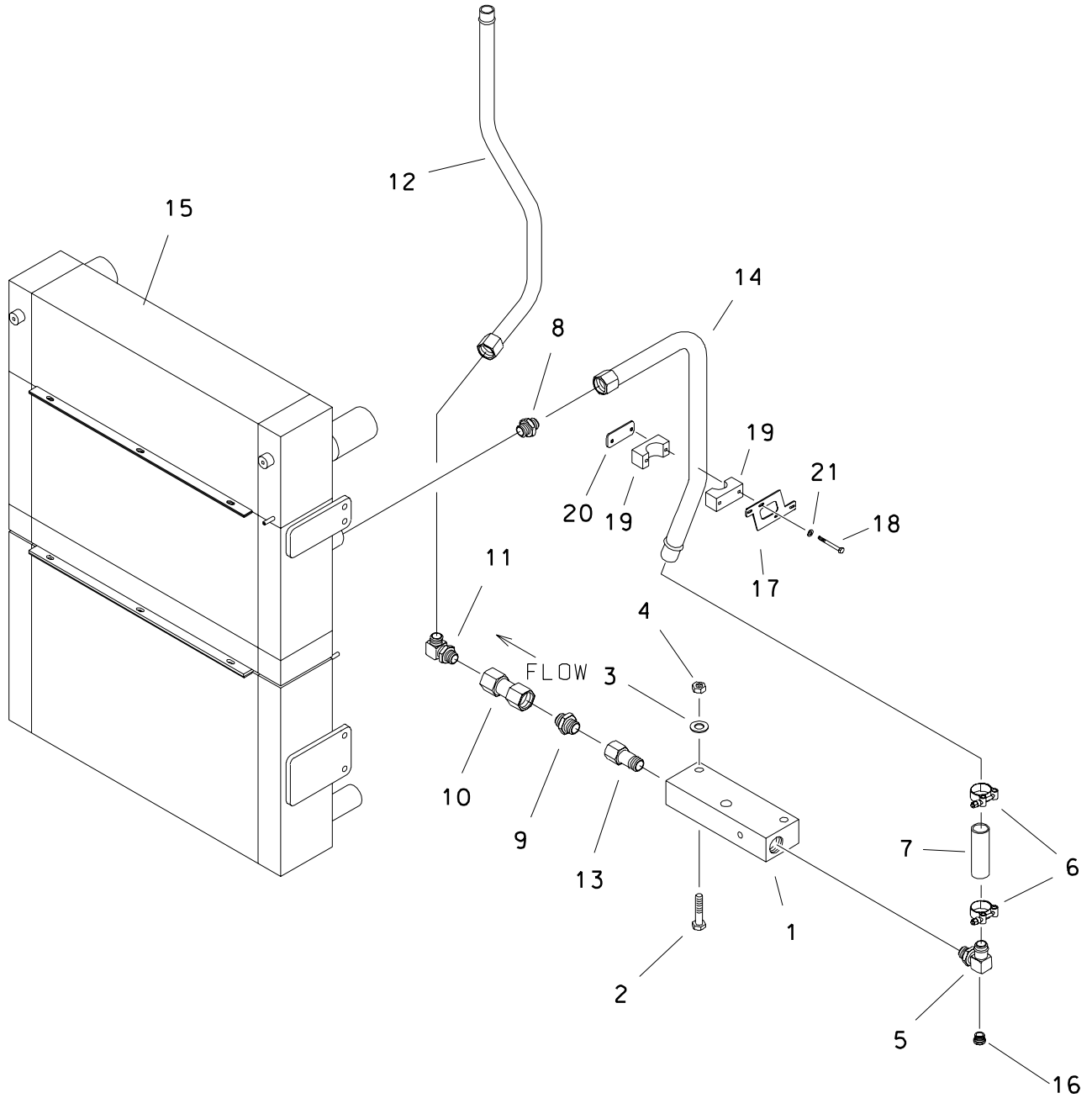
## ROTATION AND THRUST PUMPS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-901	1	HYDRAULIC PUMP (130 CC)	
	190-763		SEAL REPAIR KIT	
2.	149-902	1	HYDRAULIC PUMP (100 CC)	
	190-764		SEAL REPAIR KIT	
3.	322-362	2	BACKUP SPACER	
4.	107-196	4	BOLT (1/4-NC X 3")	
5.	110-852	2	BLT-ON CLP (1.2", SOLD PER SET)	
6.	105-832	4	FLG LOCKNUT (1/4-NC)	
7.	156-133	1	HYD LINE (-20)	
8.	111-011	6	WORM CLAMP (1" TO 1-3/4")	
9.	115-373	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 9.5"
10.	115-281	1	S/D COUPLER (16S-20H45)	
11.	159-414	-	CASE DRAIN MANIFOLD	
12.	514-027	1	S/D COUPLER (12S-20H90)	
13.	115-373	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 15"
14.	514-360	1	S/D BR TEE (16S-20H-20H)	
15.	115-373	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 8"
16.	106-206	2	SCREW (M10-1.50 X 90MM)	
17.	106-390	2	WASHER (M10)	
18.	105-894	2	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	

### FOOTNOTES

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

## OIL COOLER HYDRAULICS



## OIL COOLER HYDRAULICS

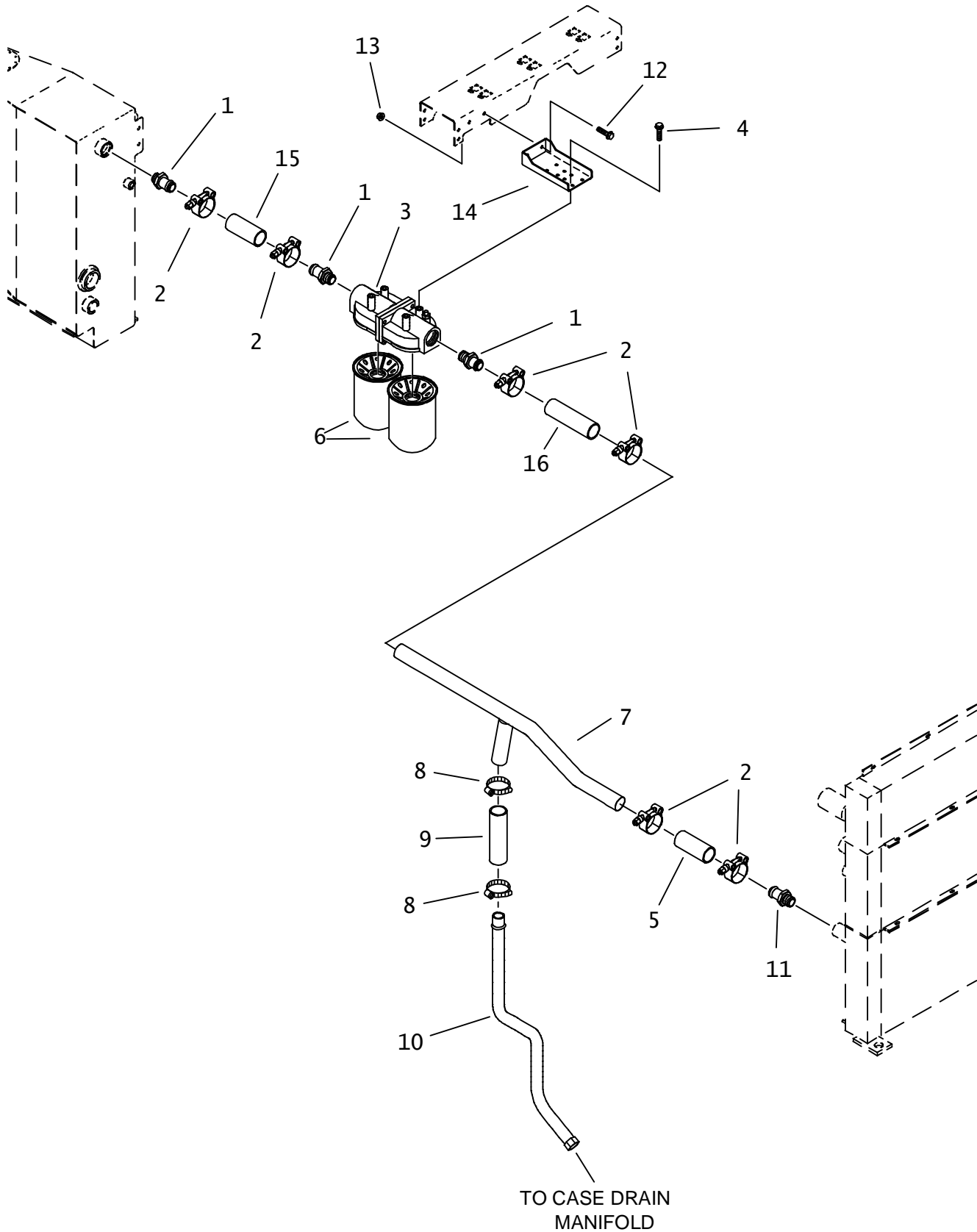
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	159-414	1	CASE DRAIN MANIFOLD	
2.	106-206	2	SCREW (M10-1.50 X 90MM)	
3.	106-390	2	WASHER (M10)	
4.	105-894	2	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	
5.	514-429	1	S/O COUPLER (20S-24H90-04S)	
6.	111-028	2	T-BOLT CLAMP (1-3/4" TO 2")	
7.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 20"
8.	514-354	1	CONNECTOR (20S-240)	
9.	514-131	1	CONNECTOR (16S-16S)	
10.	158-693	1	FLOW CHECK (16SF-16SF)	
11.	156-895	1	CONNECTOR (16S-20090)	
12.	156-131	-	HYD LINE (-20)	
13.	514-353	1	REDUCER (20S-16SF)	
14.	149-942	1	HYD LINE (-24)	
15.	194-132	1	RADIATOR	
16.	154-383	1	PLUG (04S)	
17.	308-702	-	CLAMP MOUNT	
18.	105-224	2	BOLT (1/4-NC X 2-1/2")	
19.	111-008	1	BLT-ON CLAMP (1.5", SOLD PER SET)	
20.	322-363	1	WELD PLATE	
21.	105-095	2	WASHER (1/4")	

## FOOTNOTES

## NOTE

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

# COOLER OUTLET HYDRAULICS



TO CASE DRAIN  
MANIFOLD

## COOLER OUTLET HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	514-138	3	S/O COUPLER (24S-24H)	
2.	111-028	6	T-BOLT CLAMP (1-3/4" TO 2")	
3.	159-411	1	FILTER HEAD (20SF-20SF)	
	168-616	1	FILTER HEAD GASKET	
4.	105-825	4	FLG LK BOLT (3/8-NC X .75")	
5.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 6"
6.	159-079	2	FILTER ELEMENT (1-1/2-UNF)	
	149-840	2	FILTER ELEMENT (1-1/2-UNF)	SUPERSEDED
	153-791	2	FILTER ELEMENT (1-1/2-UNF)	SEE FOOTNOTE 1
7.	149-954	1	HYD LINE (24H)	
8.	111-011	2	WORM CLAMP (1" - 1-3/4")	
9.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 12.5"
10.	156-131	1	HYD LINE (-20)	
11.	155-148	1	S/O COUPLER (20S-24H)	
12.	106-724	2	FLG SCREW (M10-1.50 X 25MM)	
13.	106-387	2	FLG NUT (M10-1.50)	
14.	349-734	1	FILTER BRACKET	
15.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 9"
16.	116-588	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 11"

NOT SHOWN:

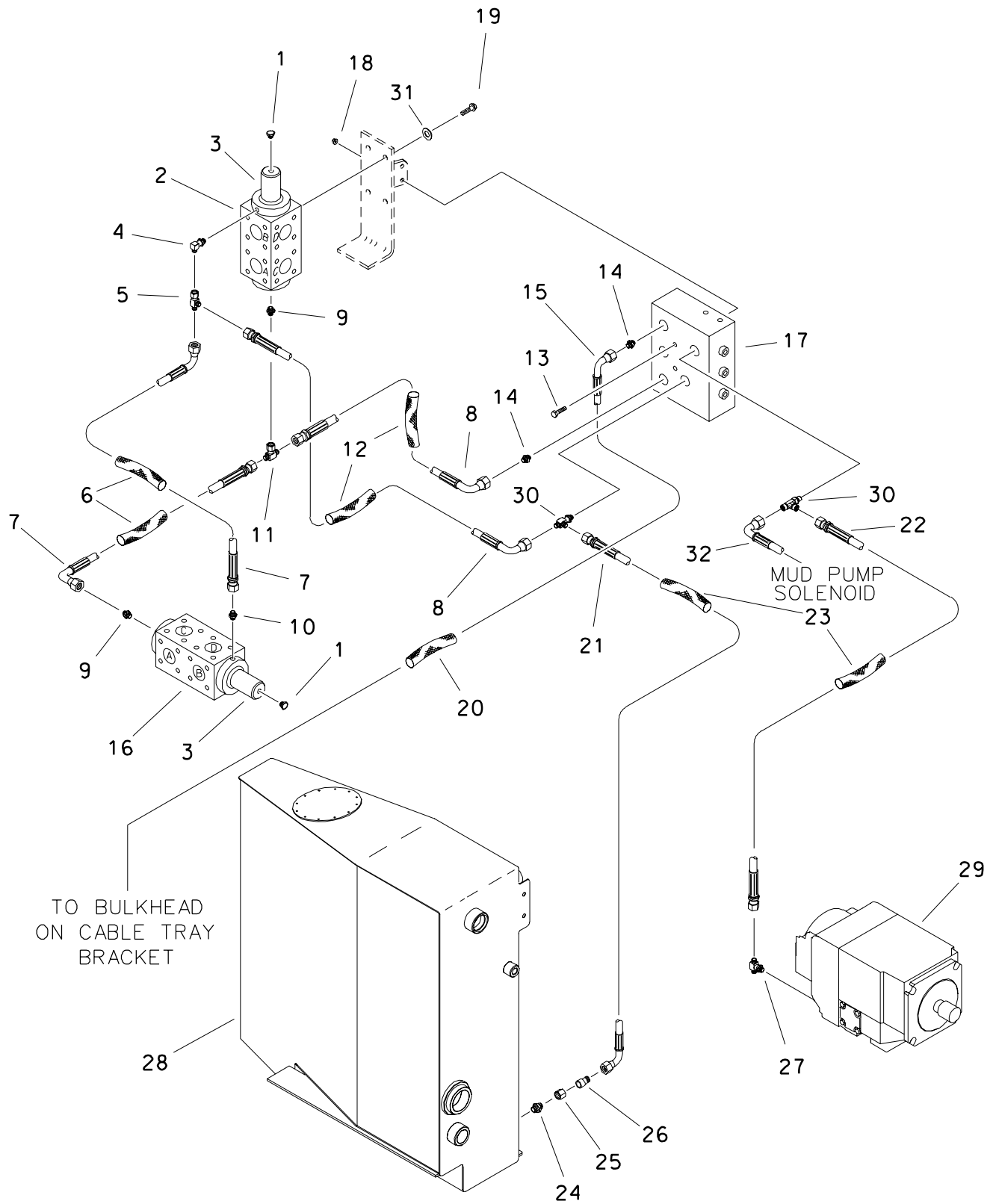
FOOTNOTES:

1. USE 159-079 ELEMENT FOR NORMAL MAINTENCE. USE 153-791 ELEMENT AFTER HOSE OR COMPONENT REPLACEMENT.

NOTE:

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

## PILOT VALVE HYDRAULICS



## PILOT VALVE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-153	2	PLUG (04N, SQ)	
2.	516-033	1	SELECTOR VALVE DIVERTER	
3.	159-426	-	SPRING OFFSET KIT	
4.	154-482	1	CONNECTOR (04N-04090)	
5.	154-265	1	UNION RUN TEE (040FX-040-040)	
6.	117-676	2	ABRASION SLEEVE (1" X 30")	
7.	154-727	2	HYD HOSE (040FX90-30"-3000)	
8.	515-041	2	HYD HOSE (040FX90-20"-3000)	
9.	514-005	2	CONNECTOR (040-06N)	
10.	154-339	1	CONNECTOR (04N-040)	
11.	154-379	1	UN BR TEE (040FX-040-040)	
12.	117-672	2	ABRASION SLEEVE (1" X 20")	
13.	105-839	2	SCREW (M10-1.50 X 55MM)	
14.	154-278	2	CONNECTOR (04S-040)	
15.	153-115	1	HOSE (040FX90S-231"-3000)	
16.	516-033	1	SELECTOR VALVE DIVERTER	SEE FOOTNOTE #1
17.	159-194	1	CHARGE MANIFOLD	
18.	106-387	2	FLG LOCKNUT (M10-1.50)	
19.	105-829	8	FLG LK BOLT (1/2-NC X 1")	
20.	117-327	-	ABRASION SLEEVE (1.59" X 231")	USE W/O HOSE SOCK
	117-702	1	ABRASION SLEEVE (1.00" X 68")	USE WITH HOSE SOCK
21.	154-964	1	HYD HOSE (040FX90-70"-3000)	
22.	154-670	1	HYD HOSE (040FX-70"-3000)	
23.	117-702	2	ABRASION SLEEVE (1" X 68")	
24.	154-279	1	CONNECTOR (080-10S)	
25.	154-272	1	REDUCER NUT (080F)	
26.	154-248	1	REDUCER STEM (040)	
27.	154-230	1	BRANCH TEE (06S-040-040)	
28.	370-403	-	HYDRAULIC RESERVOIR	
29.	149-901	1	HYDRAULIC PUMP (130 CC)	
30.	154-316	2	RUN TEE (04S-040-040)	
31.	106-397	4	WASHER (M12, HARDENED)	
32.	154-981	-	HOSE (040FX90S-205"-3000)	ENDS WITH S/N: 2V2567
	149-482	-	HOSE (040FX90S-217"-3000)	BEGINS WITH S/N: 2W0856

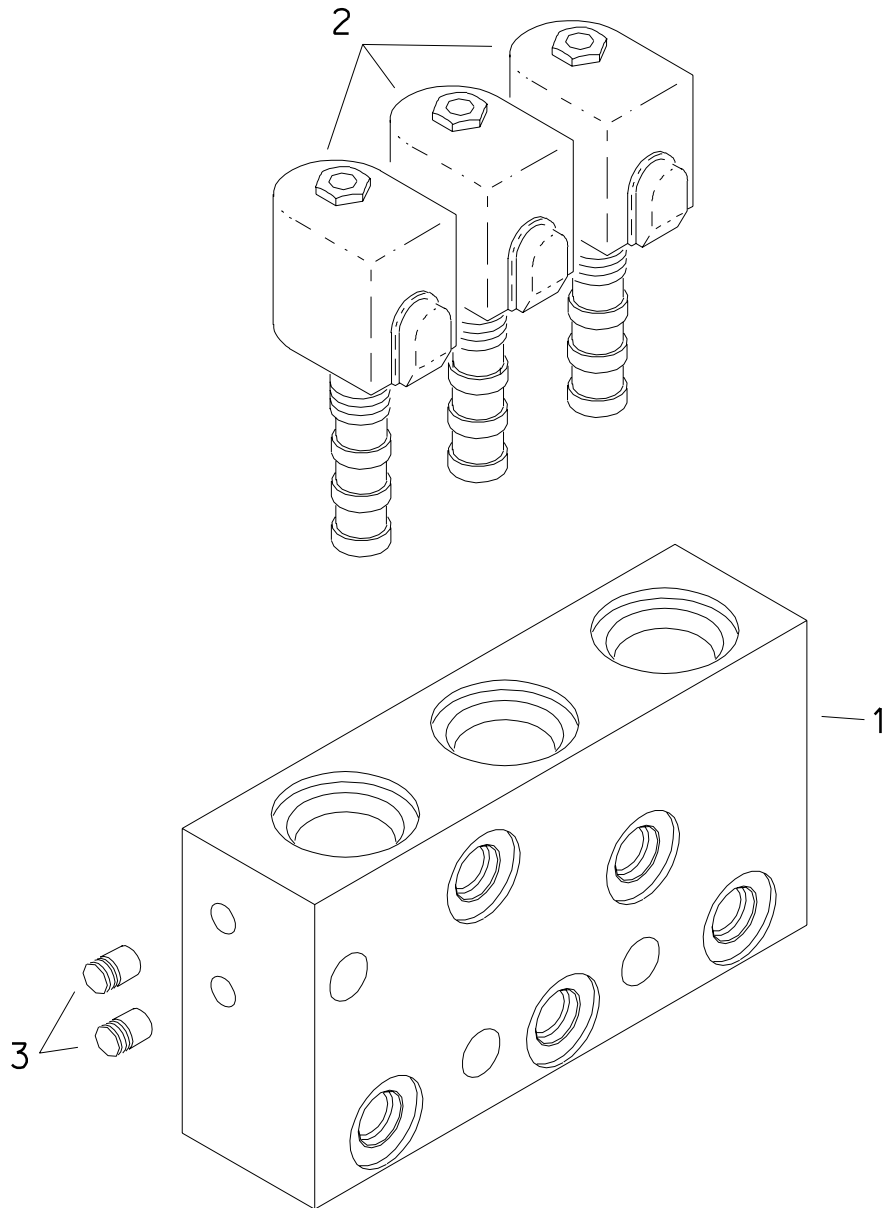
## FOOTNOTES

1. ROTATE "D" TO BE IN LINE WITH FITTING

## NOTE

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

## CHARGE MANIFOLD



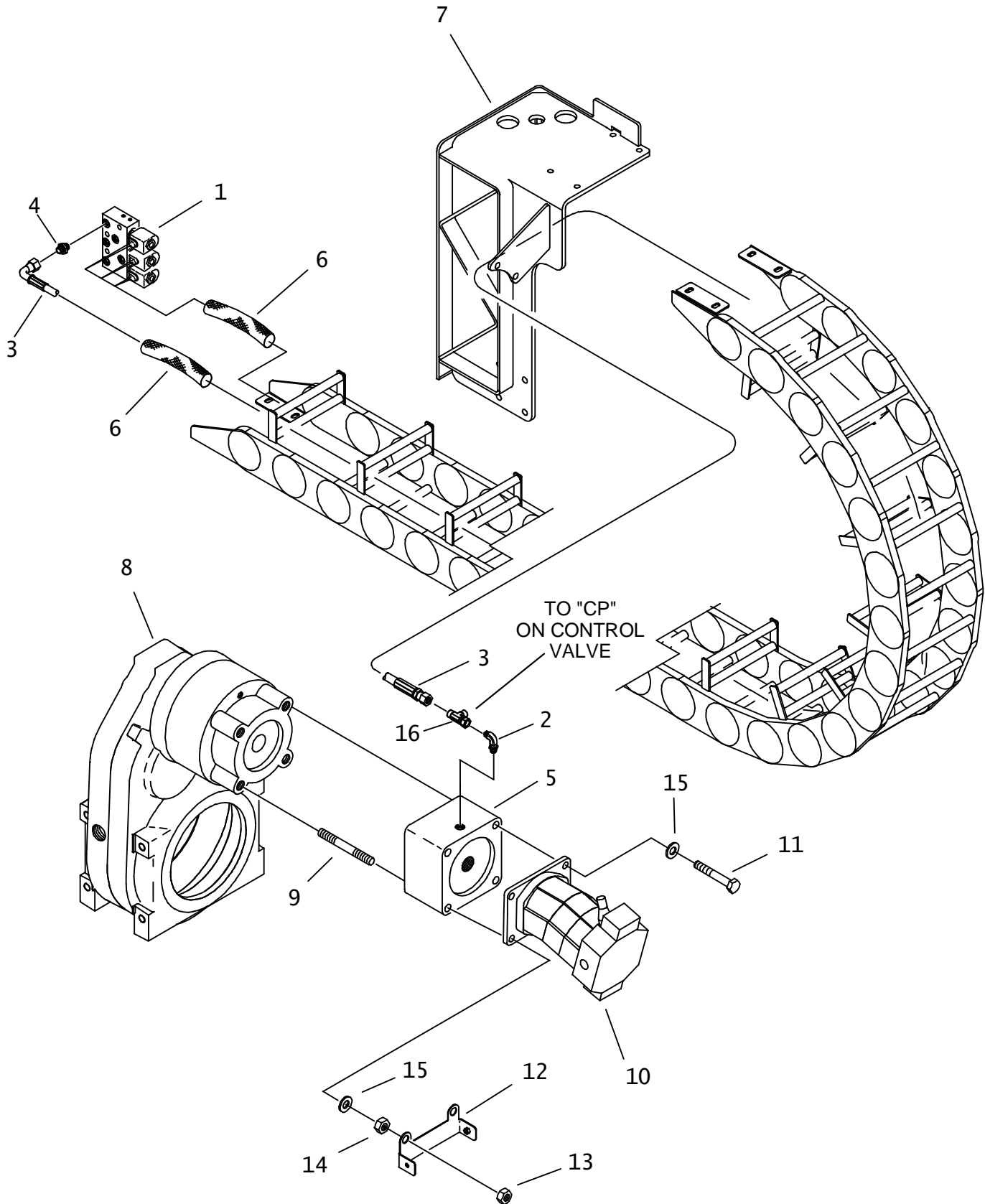


# CHARGE MANIFOLD

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	159-194		CHARGE MANIFOLD	INCL REF NO.'S 1 THRU 3
1.	159-149	1	MANIFOLD BLOCK	
2.	158-636	3	SOLENOID VALVE CARTRIDGE	TORQUE TO 30 FT LBS
	500-756		SEAL REPAIR KIT	
	217-770		SOLENOID COIL	
3.	110-264	4	EXPANDER PLUG (.275")	

FOOTNOTES

# SPINDLE BRAKE HYDRAULICS



# SPINDLE BRAKE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	159-194	-	CHARGE MANIFOLD	
2.	154-252	1	CONNECTOR (04S-04090)	
3.	153-115	1	HOSE (040FX90S-231"-3000)	
4.	154-278	1	CONNECTOR (04S-040)	
5.	160-458	-	MODULAR BRAKE	
6.	117-327	2	ABRASION SLEEVE (1.59" X 231")	
7.	300-5454	-	CABLE TRAY BRACKET	
8.	166-230	-	DRIVE GEARBOX - ROTATION	
	166-634	-	GEARBOX W/PLANETARY	
9.	107-458	2	TIE BOLT	USE LOCTITE 277 OR EQUIVALENT
10.	149-397	-	HYD MOTOR (PISTON)	
	191-212	-	SEAL REPAIR KIT	
	217-745	-	CONTROL SOLENOID	
11.	105-464	2	BOLT (3/4-NC X 7", GD8)	USE LOCTITE 277 OR EQUIVALENT
12.	307-833	-	BRACKET WELDMENT	
13.	105-310	2	JAM NUT (3/4-NC)	
14.	105-953	2	LOCKNUT (3/4-NC)	
15.	106-949	4	WASHER (3/4", HARDENED)	
16.	154-265	1	UNION TEE (040FX-040-040)	SEE FOOTNOTE 1

NOT SHOWN:

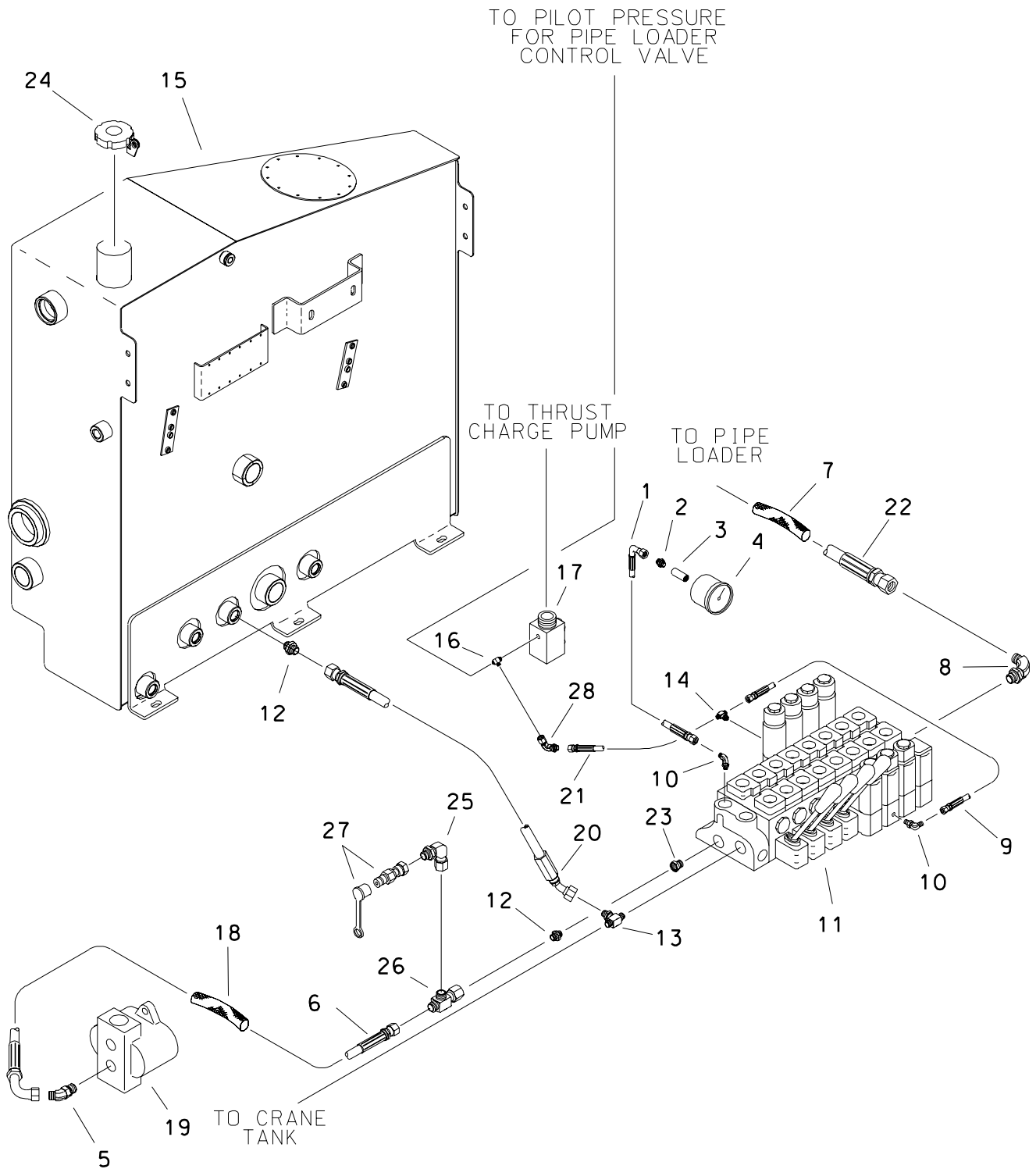
FOOTNOTES:

- I. BEGINS WITH S/N: CMWJ80T3K80000039  
 ENDS WITH S/N: CMWJ80T3A90000078

NOTE:

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

## AUXILIARY VALVE HYDRAULICS



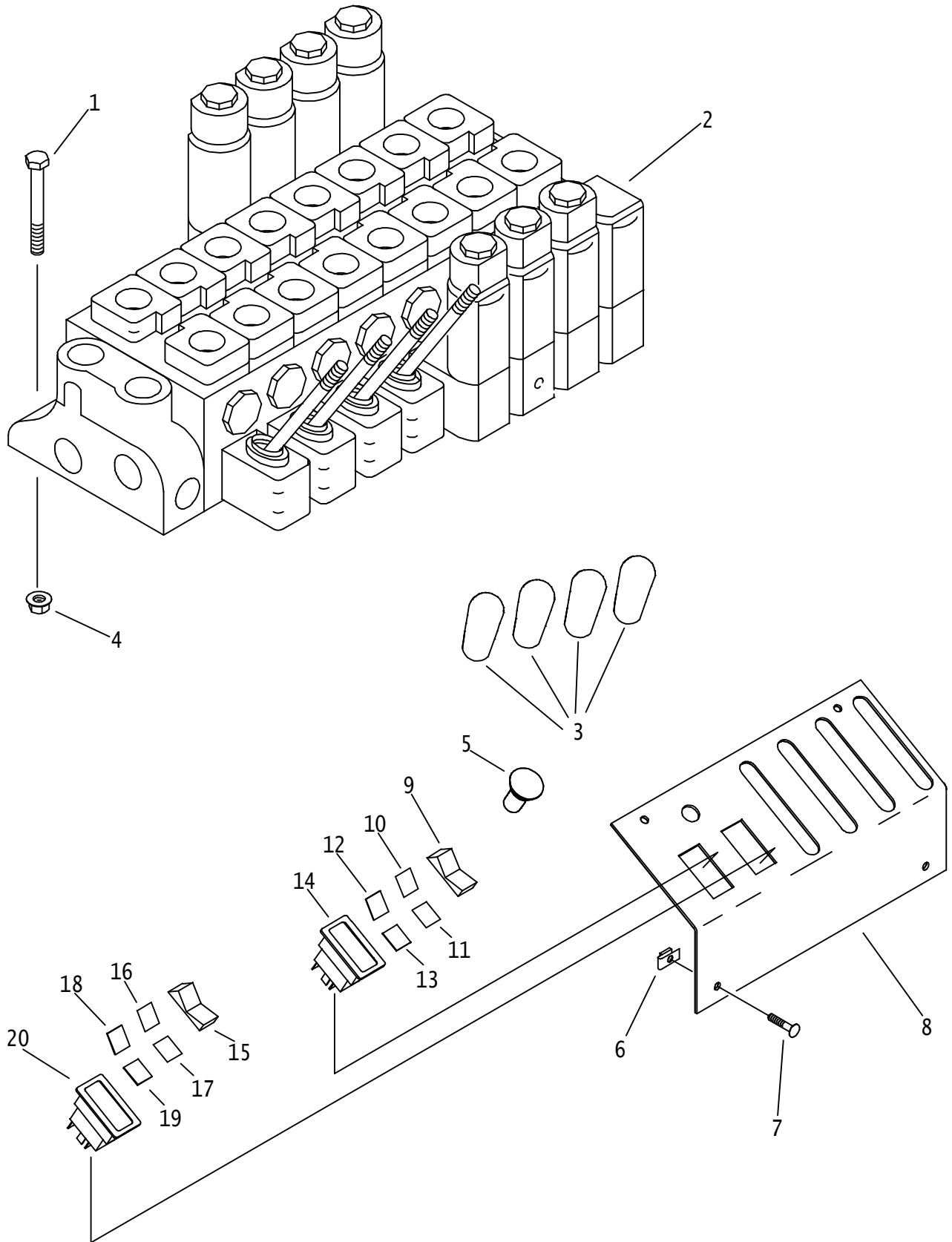
## AUXILIARY VALVE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	515-304	1	HOSE (040FX90S-15"-5000)	
2.	154-339	1	CONNECTOR (04N-040)	
3.	115-170	1	COLLAR (04NF)	
4.	217-552	1	PRESSURE GAUGE (6000 PSI)	
5.	154-470	1	CONNECTOR (100-12S45)	
6.	515-368	1	HOSE (100FX90-68"-3000)	
7.	117-312	1	ABRASION SLEEVE (1.59" X 80")	
8.	154-298	1	CONNECTOR (10S-10090)	
9.	515-735	1	HOSE (040FX-22"-3000)	
10.	154-252	2	CONNECTOR (04S-04090)	
11.	153-215	-	HYDRAULIC VALVE	
12.	154-301	2	CONNECTOR (10S-100)	
13.	154-370	1	RUN TEE (12S-100-100)	
14.	154-293	1	BRANCH TEE (04S-040-040)	
15.	370-403	-	HYDRAULIC RESERVOIR	
16.	154-230	1	BRANCH TEE (06S-040-040)	
17.	149-845	-	REMOTE FILTRATION KIT (75/100)	
18.	115-938	1	ABRASION SLEEVE (1.59" X 66")	
19.	158-490	-	HYD PUMP	
20.	515-604	1	HOSE (100FX45-20"-3000)	
21.	155-484	1	HOSE (040FX-16"-3000)	
22.	154-986	1	HOSE (100FX90-80"-3000)	
23.	510-017	1	REDUCER (12S-10SF)	
24.	111-046	-	LOCKING CAP (NON-VENTED)	
25.	154-315	1	CONNECTOR (100-100FX90)	BEGINS WITH S/N: 2W0856
26.	154-488	1	UN RUN TEE (100FX-100-100)	BEGINS WITH S/N: 2W0856
27.	159-159	1	ODC ADAPTER (02-100FX)	BEGINS WITH S/N: 2W0856
28.	154-255	1	UNION (040-040FX90)	

## FOOTNOTES

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

# AUXILIARY VALVE



# AUXILIARY VALVE

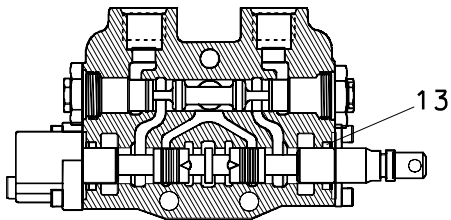
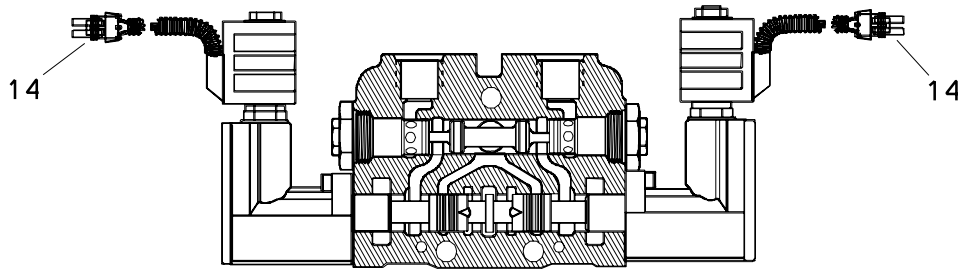
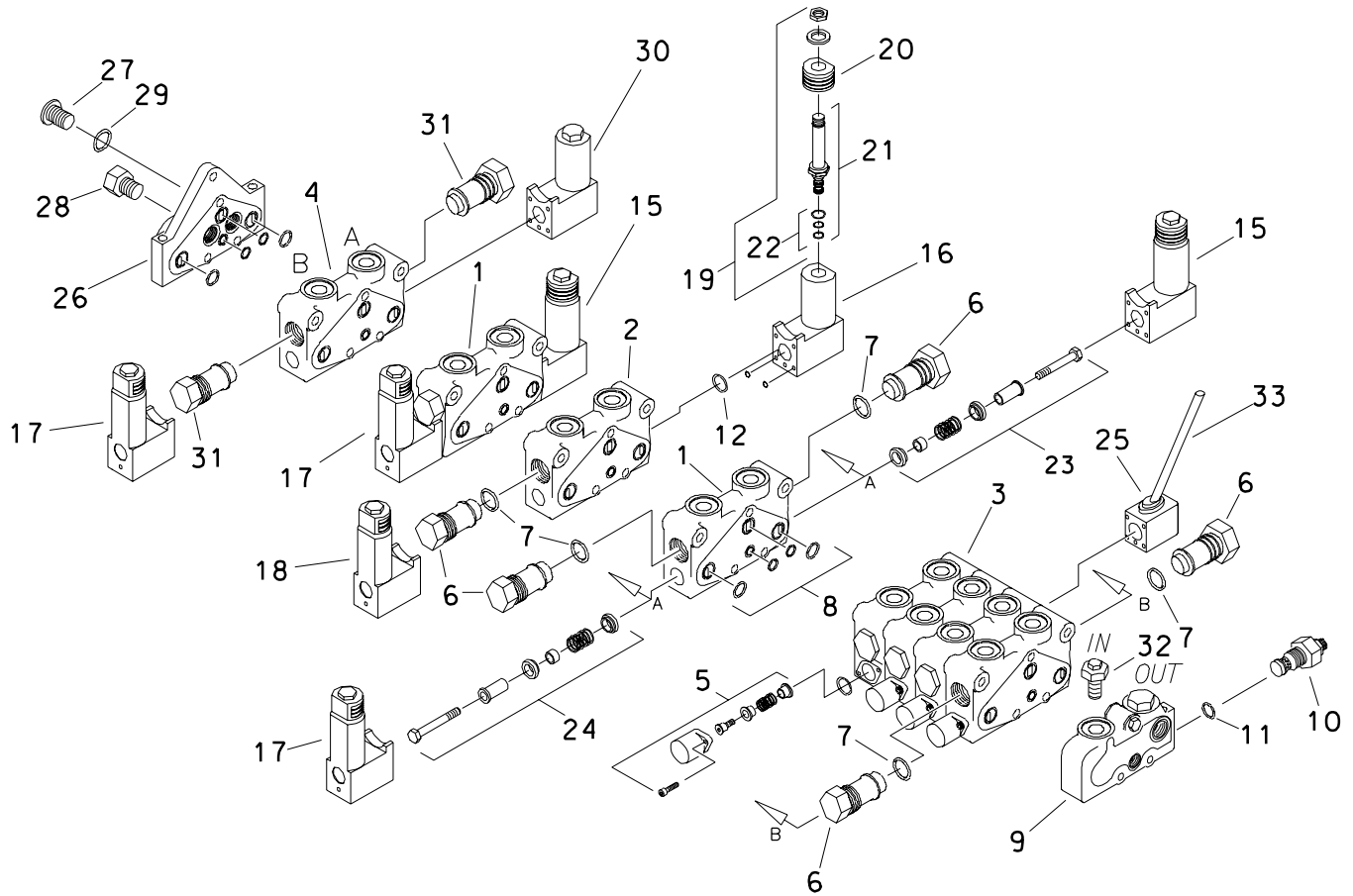
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-330	2	SCREW (M8-1.25 X 70MM)	
2.	153-215	1	HYDRAULIC VALVE	BEFORE SN. CMWJT100JA0000015
	150-2730	1	HYDRAULIC VALVE	AFTER SN. CMWJT100CA0000016
3.	110-283	4	KNOB (3/8-NC, BLACK)	
4.	106-386	3	FLG LOCKNUT (M8-1.25)	
5.	217-206	1	BUTTON SWITCH (SPST)	
6.	106-574	4	CLIP NUT (M6-1.00)	
7.	106-640	4	SCREW (M6-1.00 X 20MM, BUT SOC)	
8.	349-752	1	VALVE COVER	
9.	217-925	1	ROCKER SWITCH (ACTUATOR)	
10.	217-138	1	ICON (WHT) FAST	
11.	217-139	1	ICON (WHT) SLOW	
12.	217-156	1	DIFFUSION LENS (GREEN)	
13.	217-158	1	DIFFUSION LENS (WHITE)	
14.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	THROTTLE
15.	217-925	1	ROCKER SWITCH (ACTUATOR)	
16.	217-136	1	ICON (WHT) ON-START	
17.	217-137	1	ICON (WHT) OFF-STOP	
18.	217-156	1	DIFFUSION LENS (GREEN)	
19.	217-158	1	DIFFUSION LENS (WHITE)	
20.	217-918	1	ROCKER SW (DPDT) ON-ON	WORK LIGHTS

NOT SHOWN:

FOOTNOTES:

NOTE:

# HYDRAULIC CONTROL VALVE AUXILIARY



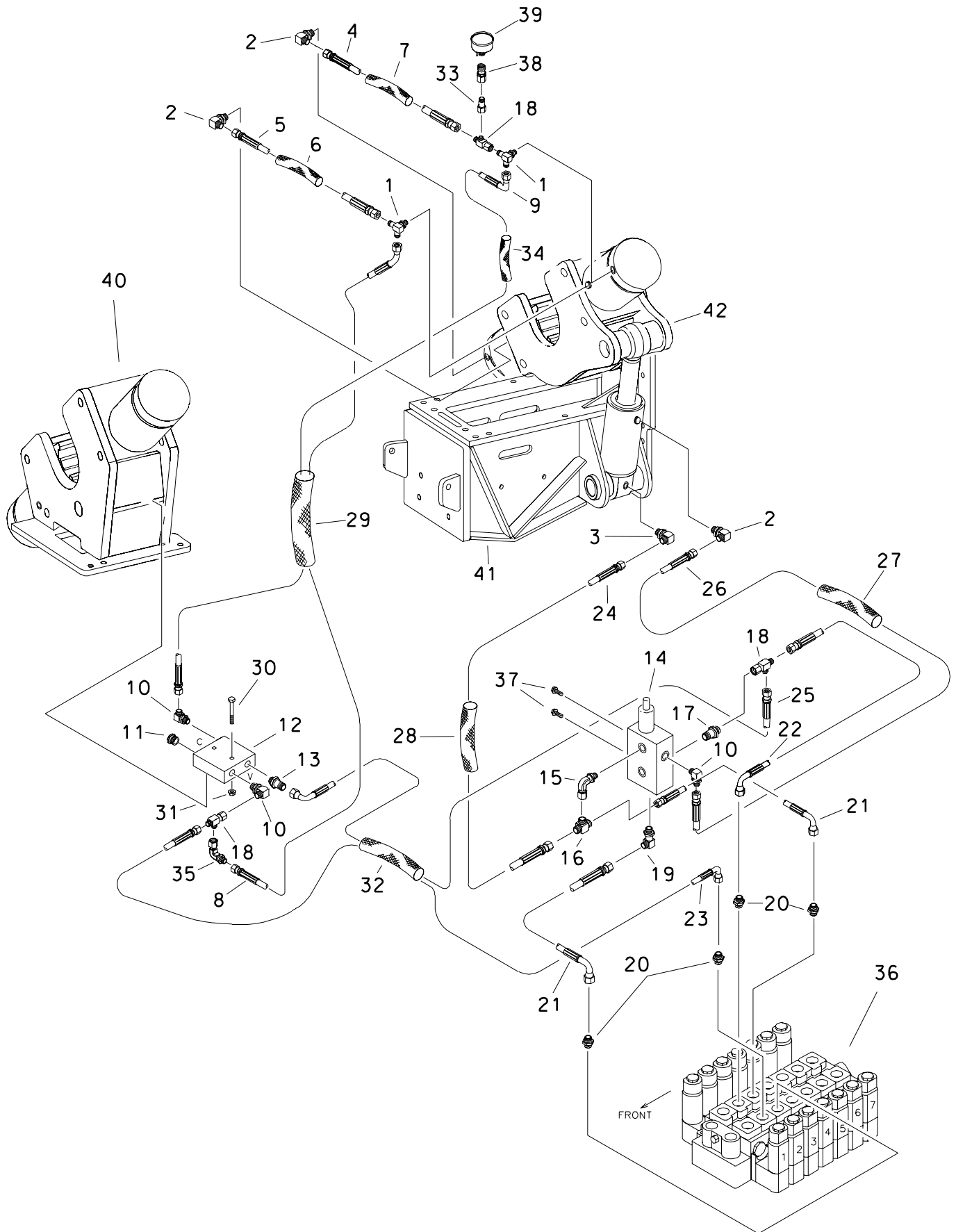


# HYDRAULIC CONTROL VALVE AUXILIARY

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	153-215		HYD CONTROL VALVE 8 SPOOL	
1.	499-145	2	VALVE SECTION	
2.	499-146	1	VALVE SECTION	
3.	499-291	4	VALVE SECTION	
4.	499-296	1	VALVE SECTION	
5.	500-592	4	STANDARD SPOOL POSITIONER KIT	
6.	499-029	14	LOCK OUT CARTRIDGE	
7.	499-030	-	LOCK OUT CARTRIDGE SEAL KIT	
8.	500-588	8	SECTIONAL O-RING REPAIR KIT	
9.	500-296	1	INLET COVER	
10.	500-956	1	WH RELIEF CARTRIDGE (3000 PSI)	
11.	500-581	-	SEAL REPAIR KIT	
12.	499-150	-	BONNET SEAL KIT	
13.	500-587	-	SPOOL SEAL REPAIR KIT	
14.	499-151	-	COIL CONNECTOR KIT	
15.	499-156	2	SOLENOID ACTUATOR	
16.	499-157	1	SOLENOID ACTUATOR	
17.	499-158	2	SOLENOID ACTUATOR	
18.	499-159	1	SOLENOID ACTUATOR	
19.	217-949	-	SOLENOID CARTRIDGE KIT	
20.	217-950	-	SOLENOID COIL KIT (W/CONN)	
21.	499-152	-	CARTRIDGE TUBE KIT	
22.	499-153	-	CARTRIDGE SEAL KIT	
23.	499-154	3	SPRING	
24.	499-155	3	SPRING	
25.	159-319	-	RUBBER DUST BOOT	
26.	499-293	1	OUTLET COVER	
27.	500-302	1	PLUG (12S, SOC)	
28.	499-160	-	POWER BEYOND SLEEVE KIT	
29.	499-055	-	SLEEVE SEAL KIT	
30.	499-294	1	SOLENOID ACTUATOR	
31.	500-587	2	SPOOL SEAL REPAIR KIT	
32.	499-295	1	PLUG	
33.	499-292	4	ENCLOSED HANDLE	

FOOTNOTES

# ROTATING CLAMP HYDRAULICS



# ROTATING CLAMP HYDRAULICS

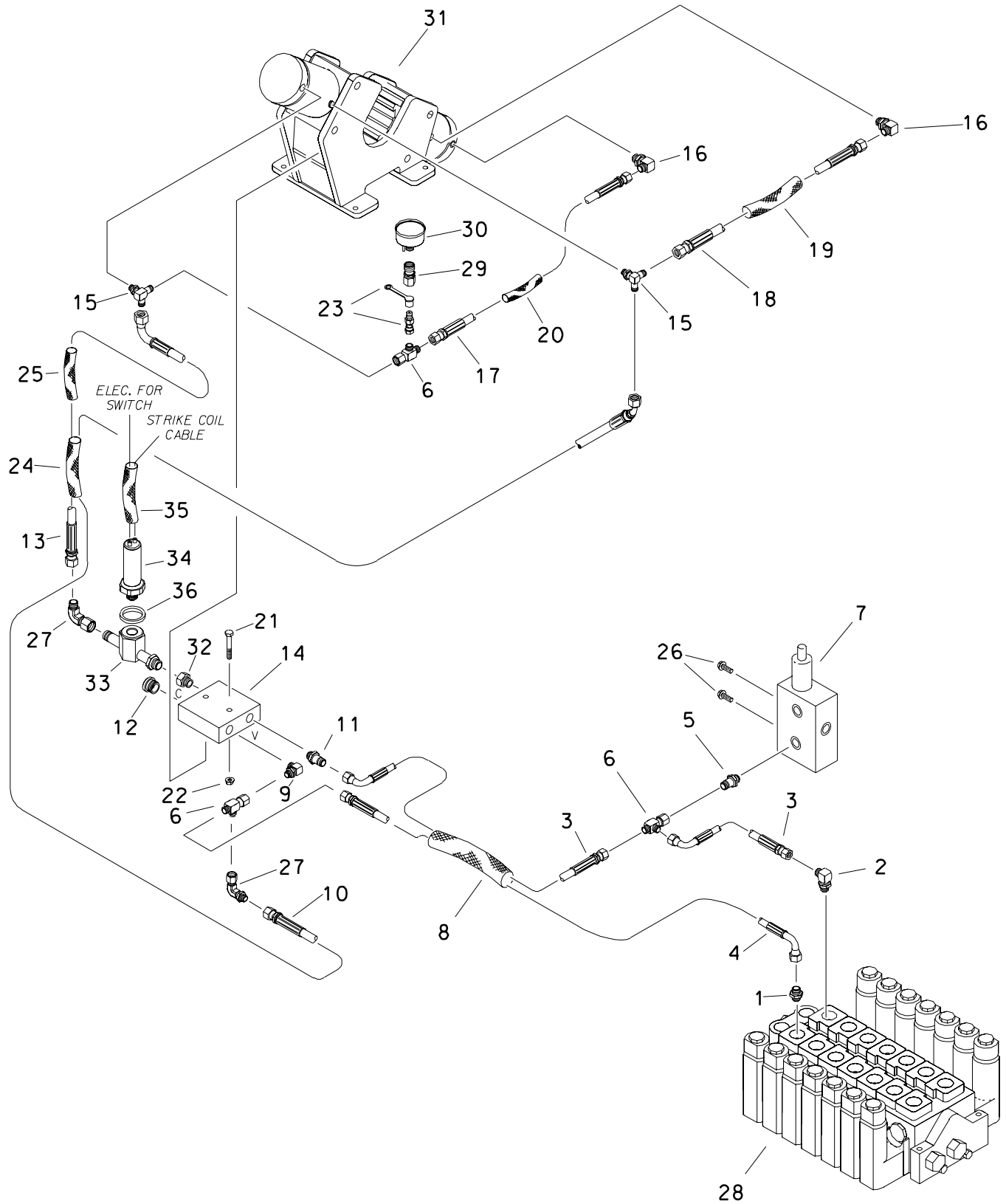
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	514-051	2	BRANCH TEE (08S-060-060)	
2.	154-227	3	CONNECTOR (060-08S90)	
3.	154-225	1	CONNECTOR (060-08S45)	
4.	515-637	1	HOSE (060FX-38"-4000)	
5.	515-638	1	HOSE (060FX-26"-4000)	
6.	117-684	1	ABRASION SLEEVE (1" X 26")	
7.	117-718	1	ABRASION SLEEVE (1" X 36")	
8.	515-635	1	HOSE (060FX45-22"-4000)	
9.	515-636	1	HOSE (060FX90S-28"-4000)	
10.	154-342	3	CONNECTOR (06S-06090)	
11.	155-130	1	PLUG (06S)	
12.	155-623	1	DOUBLE LOCKOUT VALVE	
13.	154-221	1	CONNECTOR (06S-060)	
14.	159-279	1	SEQUENCE VALVE	
15.	154-460	1	CONNECTOR (06S-06SF90)	
16.	154-346	1	BRANCH TEE (06S-060-060)	
17.	158-813	1	FLOW CHECK VALVE (06S-060)	
18.	154-344	3	UN RUN TEE (060FX-060-060)	
19.	149-039	1	CONNECTOR (04N-06090)	
20.	154-369	4	CONNECTOR (060-10S)	
21.	515-632	2	HOSE (060FX90-40"-4000)	
22.	515-630	1	HOSE (060FX90-33"-4000)	
23.	515-629	1	HOSE (060FX90-75"-4000)	
24.	515-634	1	HOSE (060FX-20"-4000)	
25.	515-631	1	HOSE (060FX90-47"-4000)	
26.	515-627	1	HOSE (060FX-13"-4000)	
27.	117-671	1	ABRASION SLEEVE (1" X 12")	
28.	117-672	1	ABRASION SLEEVE (1.00" X 20")	
29.	117-675	1	ABRASION SLEEVE (1.75" X 24")	
30.	502-651	2	SCREW (M6-1.00 X 35MM)	
31.	106-385	2	FLG LOCKNUT (M6-1.00)	
32.	115-737	1	ABRASION SLEEVE (1.59" X 40")	
33.	159-157	1	QDC ADAPTER (02-060F)	
34.	117-670	1	ABRASION SLEEVE (1.00" X 10")	
35.	154-228	1	UNION (060-060FX90)	
36.	153-252	-	HYD CONTROL VALVE (7-SPOOL)	
37.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
38.	159-146	1	QDC BODY (02-04NF)	
39.	215-116	1	PRESSURE GAUGE (5000 PSI)	
40.	370-276	-	STATIONARY CLAMP	
41.	349-675	-	FRONT FRAME	ENDS WITH S/N: 2V2567
	314-557	-	FRONT FRAME	BEGINS WITH S/N: 2W0856
42.	370-275	-	ROTATION CLAMP	

## FOOTNOTES

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

# STATIONARY CLAMP HYDRAULICS

ENDS WITH S/N: 2V2118



# STATIONARY CLAMP HYDRAULICS

ENDS WITH S/N: 2V2118

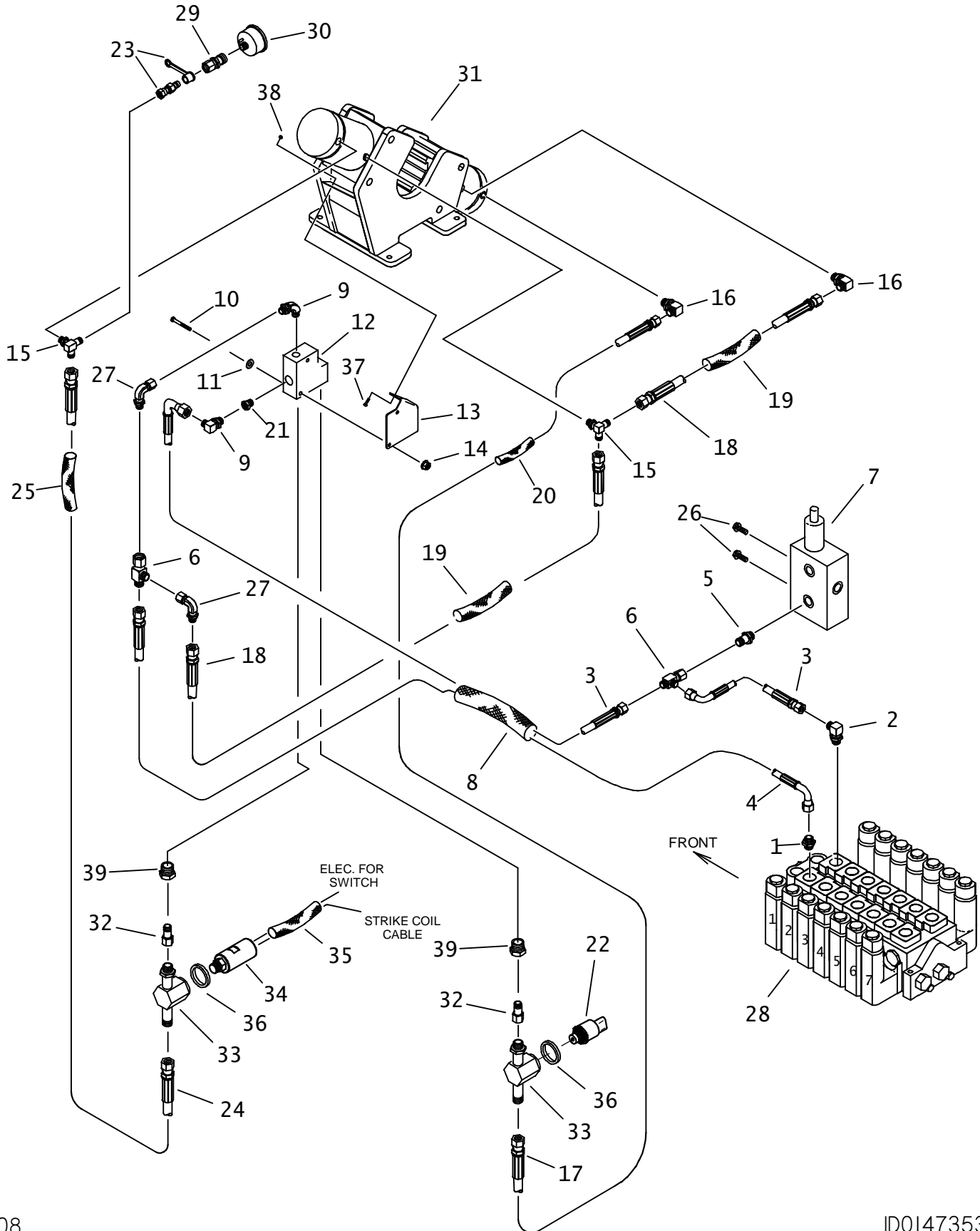
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-369	1	CONNECTOR (060-10S)	
2.	154-421	1	CONNECTOR (060-10S90)	
3.	515-633	2	HOSE (060FX90-38"-4000)	
4.	515-629	1	HOSE (060FX90-75"-4000)	
5.	158-813	1	FLOW CHECK VALVE (06S-060)	
6.	154-344	3	UN RUN TEE (060FX-060-060)	
7.	159-279	-	SEQUENCE VALVE	
8.	115-737	1	ABRASION SLEEVE (1.59" X 40")	
9.	154-342	1	CONNECTOR (06S-06090)	
10.	515-635	1	HOSE (060FX45-22"-4000)	
11.	154-221	1	CONNECTOR (06S-060)	
12.	155-130	1	PLUG (06S)	
13.	515-636	1	HOSE (060FX90-28"-4000)	
14.	155-623	1	DOUBLE LOCKOUT VALVE	
15.	514-051	2	BRANCH TEE (08S-060-060)	
16.	154-227	2	CONNECTOR (060-08S90)	
17.	515-637	1	HOSE (060FX-38"-4000)	
18.	515-638	1	HOSE (060FX-26"-4000)	
19.	117-684	1	ABRASION SLEEVE (1" X 26")	
20.	117-718	1	ABRASION SLEEVE (1" X 36")	
21.	502-651	2	SCREW (M6-1.00 X 35MM)	
22.	106-385	2	FLG LOCKNUT (M6-1.00)	
23.	159-157	1	QDC ADAPTER (02-060F)	
	159-148	-	DUST CAP (1/8")	
24.	117-675	1	ABRASION SLEEVE (1.75" X 24")	
25.	117-670	1	ABRASION SLEEVE (1" X 10")	
26.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
27.	154-228	2	UNION (060-060FX90)	
28.	153-252	-	HYD CONTROL VALVE (7-SPOOL)	
29.	159-146	1	QDC BODY (02-04NF)	
30.	215-116	1	PRESSURE GAUGE (5000PSI)	
31.	370-276	-	STATIONARY CLAMP	
32.	155-254	1	REDUCER (06S-04SF)	
33.	149-843	1	TEE (04S-06SF-060)	
34.	214-696	1	PRESSURE SWITCH (1850PSI)	
35.	117-679	1	ABRASION SLEEVE (1.59" X 32")	
36.	155-705	1	O-RING (906 D90)	

## FOOTNOTES

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

# STATIONARY CLAMP HYDRAULICS

ENDS WITH CMW S/N: CMWJT100L9000001



# STATIONARY CLAMP HYDRAULICS

ENDS WITH CMW S/N: CMWJT100L90000001

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-369	1	CONNECTOR (060-10S)	
2.	154-421	1	CONNECTOR (060-10S90)	
3.	515-633	2	HOSE (060FX90-38"-4000)	
4.	515-629	1	HOSE (060FX90-75"-4000)	
5.	158-813	1	FLOW CHECK VALVE (06S-060)	
6.	154-344	2	UN RUN TEE (060FX-060-060)	
7.	159-279	-	SEQUENCE VALVE	
8.	115-737	1	ABRASION SLEEVE (1.59" X 40")	
9.	154-342	2	CONNECTOR (06S-06090)	
10.	106-332	2	SCREW (M10-1.50 X 70MM)	
11.	106-390	2	WASHER (M10)	
12.	149-791	1	HYDRAULIC CONTROL VALVE	USE SERVICE PARTS: 500-2041 SEAL KIT & 500-2042 SEAL
13.	313-946	1	MOUNT BRACKET	
14.	105-894	2	LOCKNUT(M10-1.50, PRV TRQ,10.9)	
15.	514-051	2	BRANCH TEE (08S-060-060)	
16.	154-227	2	CONNECTOR (060-08S90)	
17.	515-637	1	HOSE (060FX-38"-4000)	
18.	515-638	2	HOSE (060FX-26"-4000)	
19.	117-684	2	ABRASION SLEEVE (1" X 26")	
20.	117-718	1	ABRASION SLEEVE (1" X 36")	
21.	155-171	1	REDUCER (10S-06SF)	
22.	215-1489	1	PRESSURE SWITCH (2850PSI)	
23.	159-157	1	QDC ADAPTER (02-060F)	
	159-148		DUST CAP (1/8")	
24.	154-755	1	HOSE (060FX-34"-3000)	
25.	117-412	1	ABRASION SLEEVE (1.00" X 34")	
26.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
27.	154-228	2	UNION (060-060FX90)	
28.	150-2731	1	HYD CONTROL VALVE (8-SECTION)	BEGINS WITH S/N
	153-252	1	HYD CONTROL VALVE (7-SPOOL)	ENDS WITH S/N
29.	159-146	1	QDC BODY (02-04NF)	
30.	215-116	1	PRESSURE GAUGE (5000PSI)	
31.	370-276	-	STATIONARY CLAMP	
32.	155-254	2	REDUCER (06S-04SF)	
33.	149-843	2	TEE (04S-06SF-060)	
34.	215-1204	1	PRESSURE SWITCH (1850PSI)	
35.	117-679	1	ABRASION SLEEVE (1.59" X 32")	
36.	155-705	1	O-RING (906 D90)	
37.	106-231	2	SCREW (M6-1.00 X 16MM)	
38.	106-385	2	FLG LOCKNUT (M6-1.00)	
39.	155-163	2	REDUCER (08S-06SF)	

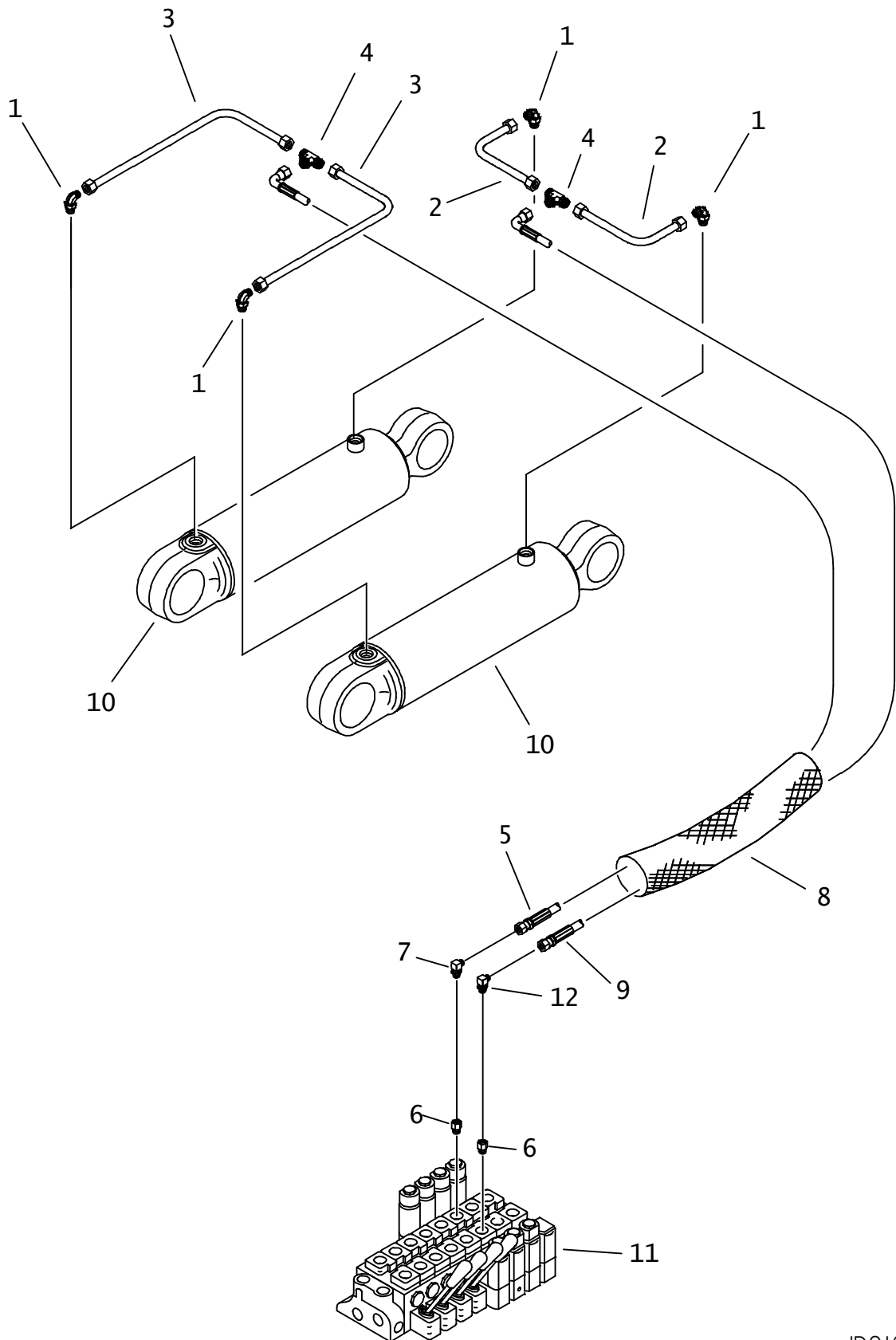
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FOOTNOTES:

NOTE:

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

# PIVOT FRONT LIFT HYDRAULICS





## PIVOT FRONT LINE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-227	4	CONNECTOR (060-08S90)	
2.	156-156	2	HYD LINE (-06)	
3.	156-157	2	HYD LINE (-06)	
4.	154-437	2	TEE (060-060-060)	
5.	153-121	1	HOSE (060FX90S-74"-3000)	
6.	155-171	2	REDUCER (10S-06SF)	
7.	514-436	1	CONNECTOR (06S-06090, ORF)	FOR "AT" APPLICATION, QUANTITY IS 2
8.	117-761	1	ABRASION SLEEVE (1.59" X 70")	
9.	153-122	1	HOSE (060FX90S-77"-3000)	
10.	151-047	-	CYL (3.5" X 2" X 12")	
11.	153-215	-	HYDRAULIC VALVE	BEFORE SN. CMWJT100JA0000015
	150-2730	-	HYDRAULIC VALVE	AFTER SN. CMWJT100CA0000016
12.	514-437	1	CONNECTOR (06S-06045, ORF)	JT ONLY, USE REF #7 FOR "AT"

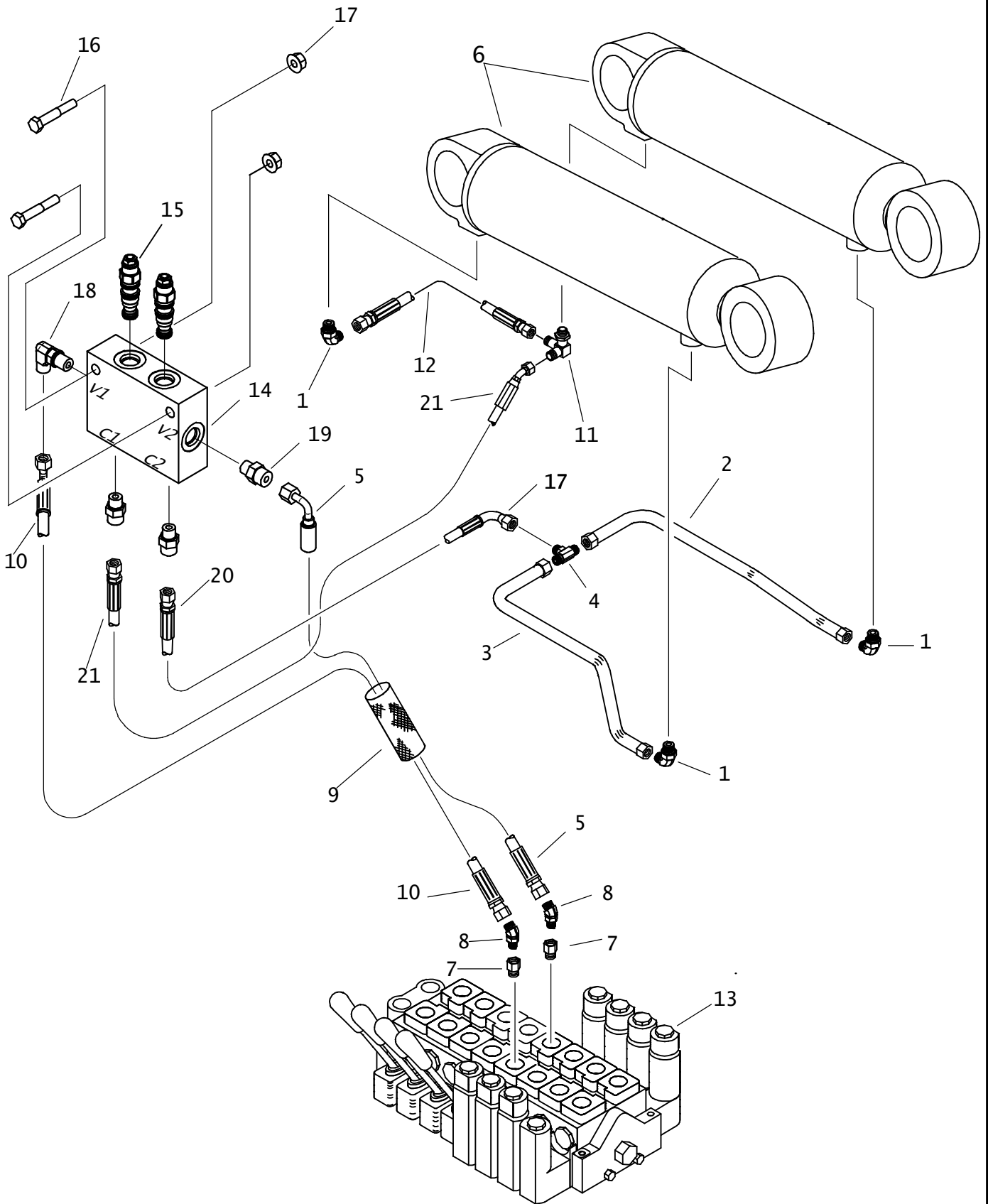
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FOOTNOTES:

NOTE:

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

# PIVOT REAR LIFT HYDRAULICS (RACK & PINION)



## PIVOT REAR LIFT HYDRAULICS (RACK & PINION)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-227	3	CONNECTOR (060-08S90)	
2.	156-158	1	HYD LINE (060FX)	
3.	156-159	1	HYD LINE (-06)	
4.	154-437	1	TEE (060-060-060)	
5.	515-411	1	HOSE (060FX90-118"-3000)	
6.	151-047	-	CYL (3.5" X 2" X 12")	
7.	155-171	2	REDUCER (10S-06SF)	
8.	514-437	2	CONNECTOR (06S-06045,ORF)	
9.	117-674	1	ABRASION SLEEVE (1.59" X 122")	
10.	515-351	1	HOSE (060FX45S-114"-3000)	
11.	514-051	1	BRANCH TEE (08S-060-060)	
12.	515-354	1	HOSE (060FX-10.5"-3000)	
13.	153-215	1	HYDRAULIC VALVE	BEFORE SN. CMWJT100JA0000015
	150-2730	1	HYDRAULIC VALVE	AFTER SN. CMWJT100CA0000016
14.	150-2722	1	COUNTER BALANCE VALVE	
15.	500-478	2	COUNTER BALANCE CARTRIDGE	
16.	106-329	2	SCREW (M8-1.25 X 50MM)	
17.	106-386	2	FLG LOCKNUT (M8-1.25)	
18.	154-342	1	CONNECTOR (06S-06090)	
19.	154-221	3	CONNECTOR (06S-060)	
20.	154-929	1	HOSE (060FX90-19"-3000)	
21.	515-538	1	HOSE (060FX90S-15"-3000)	

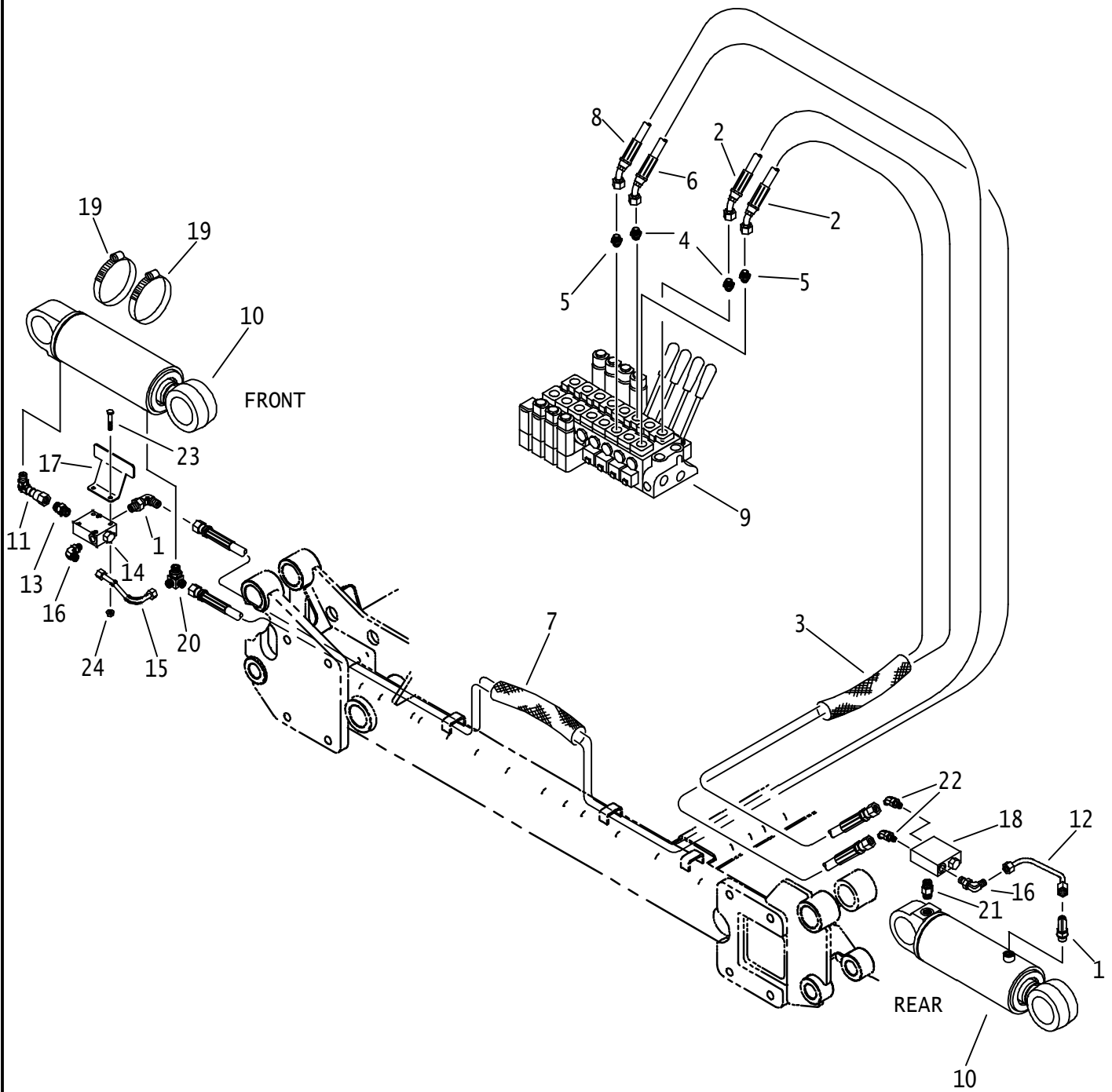
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FOOTNOTES:

NOTE:

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

# LEFT STABILIZER HYDRAULICS



# LEFT STABILIZER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-227	2	CONNECTOR (060-08S90)	
2.	515-410	2	HOSE (060FX45-118"-3000)	
3.	117-674	1	ABRASION SLEEVE (1.59" X 122")	
4.	154-369	2	CONNECTOR (060-10S)	
5.	514-352	2	CONNECTOR (060-10S, ORF)	
6.	515-559	1	HOSE (060FX45-153"-3000)	
7.	117-771	1	ABRASION SLEEVE (1.59" X 155")	
8.	515-558	1	HOSE (060FX45-165"-3000)	
9.	153-215	1	HYD CONTROL VALVE 8 SPOOL	BEFORE SN. CMWJT100JA0000015
	150-2730	1	HYD CONTROL VALVE 8 SPOOL	AFTER SN. CMWJT100CA0000016
10.	151-095	1	CYL (4" X 2.25" X 8")	
11.	154-418	1	UNION (08S-080FX90)	
12.	149-090	1	HYD LINE (-06)	
13.	154-233	1	CONNECTOR (08S-080)	
14.	159-487	1	CHECK VALVE	
15.	149-091	1	HYD LINE (-06)	
16.	154-342	2	CONNECTOR (06S-06090)	
17.	370-363	1	CLAMP BRACKET	
18.	159-482	1	CHECK VALVE	
19.	110-391	2	WORM CLAMP (4-3/4" TO 5-5/8")	
20.	514-051	1	BRANCH TEE (08S-060-060)	
21.	154-466	1	CONNECTOR (08S-08S)	
22.	154-224	2	CONNECTOR (06S-06045)	
23.	106-932	2	SCREW (M8-1.25 X 45MM)	
24.	106-386	2	FLG LOCKNUT (M8-1.25)	

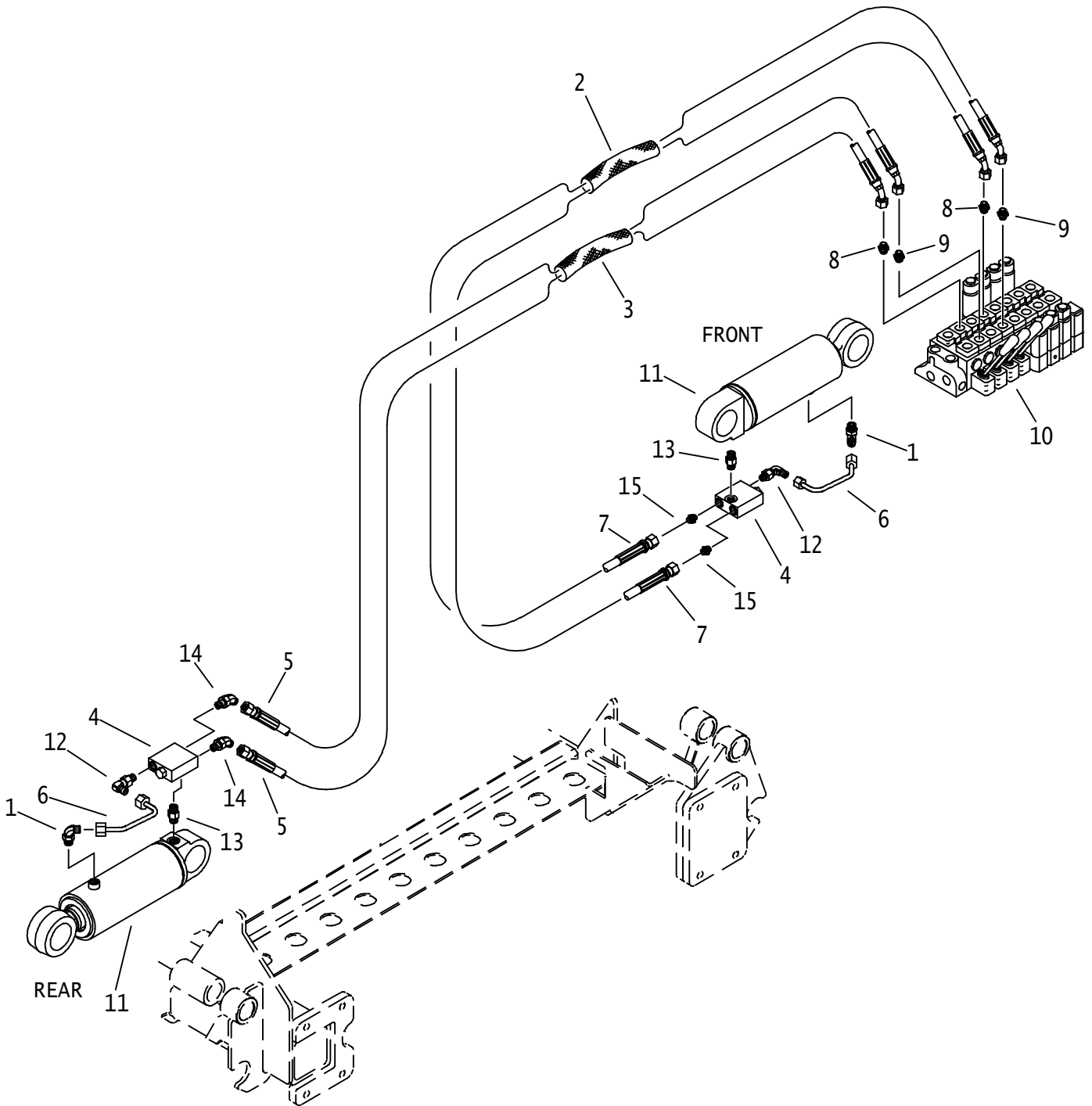
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FOOTNOTES:

NOTE:

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

# RIGHT STABILIZER HYDRAULICS



## RIGHT STABILIZER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-227	2	CONNECTOR (060-08S90)	
2.	116-633	1	ABRASION SLEEVE (1.59" X 115")	
3.	115-938	1	ABRASION SLEEVE (1.59" X 66")	
4.	159-482	2	CHECK VALVE	
5.	154-969	2	HOSE (060FX45-58"-3000)	
6.	149-090	2	HYD LINE (-06)	
7.	515-560	2	HOSE (060FX45-106"-3000)	
8.	514-352	2	CONNECTOR (060-10S ORF)	
9.	154-369	2	CONNECTOR (060-10S)	
10.	153-215	1	HYD CONTROL VALVE 8 SPOOL	JT
	150-2730	1	HYD CONTROL VALVE 8 SPOOL	AT
11.	151-095	1	CYL (4" X 2.25 X 8")	
12.	154-342	2	CONNECTOR (06S-06090)	
13.	154-466	2	CONNECTOR (08S-08S)	
14.	154-224	2	CONNECTOR (06S-06045)	
15.	154-221	1	CONNECTOR (06S-060)	

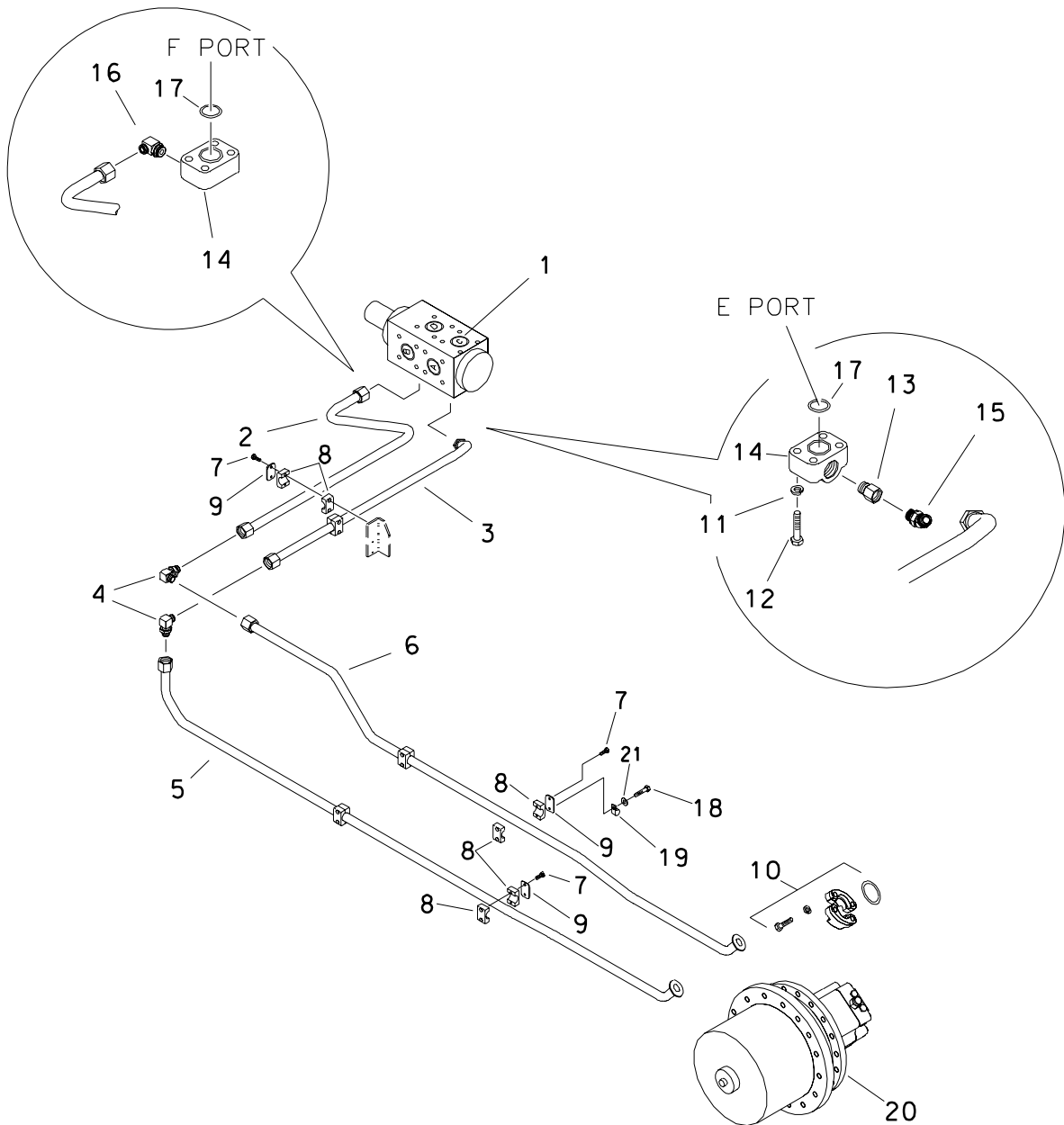
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FOOTNOTES:

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

# LEFT GROUND DRIVE HYDRAULICS

ENDS WITH S/N: 2V2567





# LEFT GROUND DRIVE HYDRAULICS

ENDS WITH S/N: 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-033	-	SELECTOR VALVE DIVERTER	
2.	153-107	1	HYD LINE (-16)	
3.	153-108	1	HYD LINE (-16)	
4.	514-009	2	CONNECTOR (160-16090)	
5.	156-154	1	HYD LINE (160FX-16FL)	
6.	156-155	1	HYD LINE (160FX-16FL)	
7.	105-818	8	BOLT (1/4-NC X 1-1/2")	
8.	110-573	6	BOLT-ON CLAMP (1", SOLD PER SET)	
9.	322-289	6	BACKUP (BOLT-ON)	
10.	159-077	2	SPLIT FLANGE (16SFL)	
	157-029	2	O-RING (219 D90)	
	105-156	8	BOLT (3/8-NC X 1-1/2")	
	105-072	8	LOCK WASHER (3/8")	
11.	105-070	8	LOCK WASHER (1/2")	
12.	105-067	8	BOLT (1/2-NC X 2-3/4")	
13.	514-353	1	REDUCER (20S-16SF)	
14.	514-333	2	HEAD FLANGE (20FL-16SF)	
15.	154-388	1	CONNECTOR (16S-16045)	
16.	514-196	1	CONNECTOR (160-20S90)	
17.	157-078	2	O-RING (222 D90)	
18.	105-198	2	BOLT (1/4-NC X 1-3/4")	
19.	110-373	2	BOLT-ON CLAMP (13/16")	
20.	166-162	1	GEARBOX & DRIVE PLANETARY	
21.	105-095	2	WASHER (1/4")	

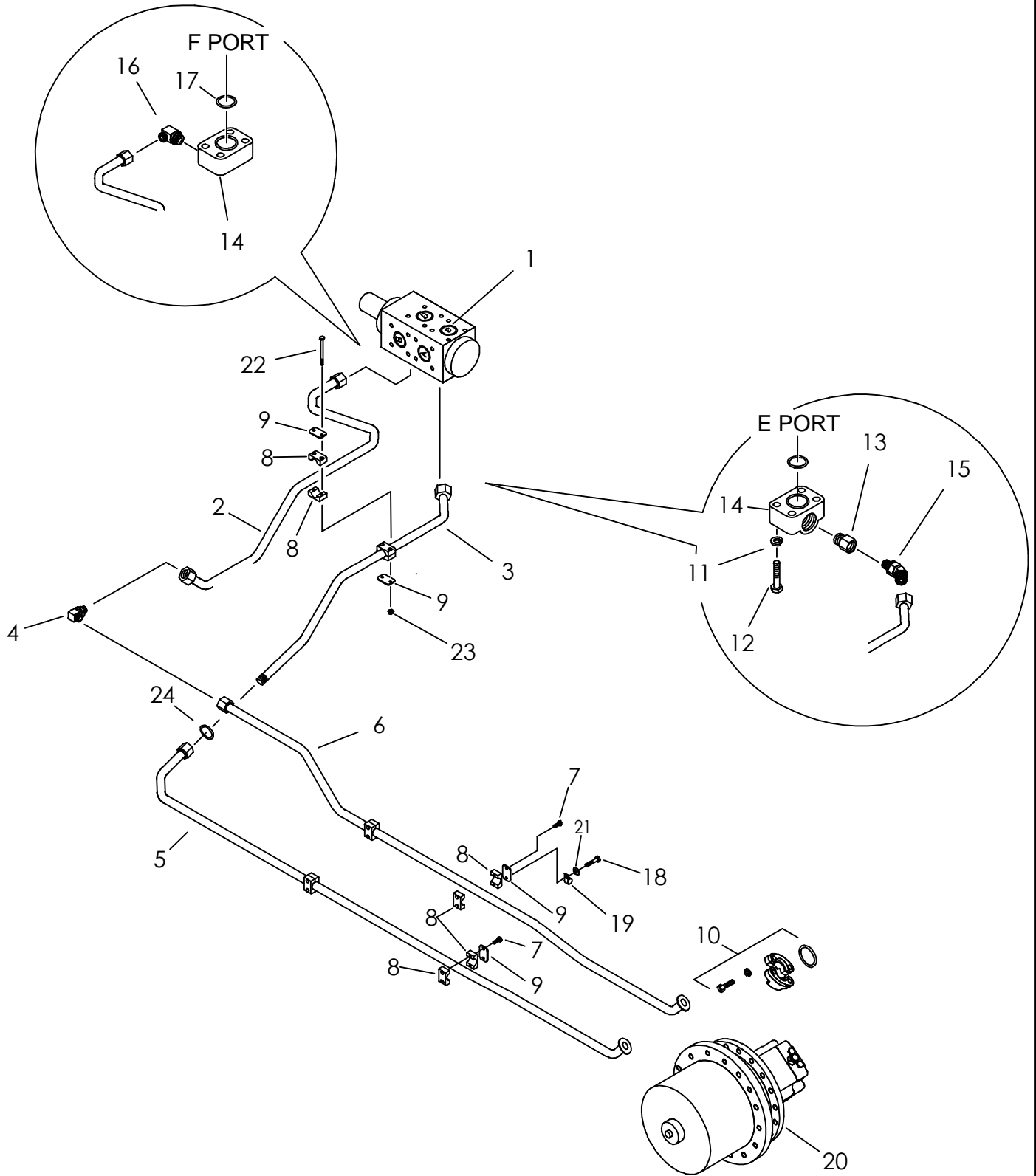
## FOOTNOTES

## NOTE

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

# LEFT GROUND DRIVE HYDRAULICS

BEGINS WITH S/N 2W0856



## LEFT GROUND DRIVE HYDRAULICS BEGINS WITH S/N 2W0856

REF PART NO. NUMBER	QTY	DESCRIPTION	REMARKS
1.		516-033 - SELECTOR VALVE DIVERTER	
2.	1	153-819 HYD LINE (-16)	
3.	1	153-817 HYD LINE (16O-16OFX)	
4.	1	514-009 CONNECTOR (16O-16O90)	
5.	1	153-818 HYD LINE (16OFX-16FL)	
6.	1	156-155 HYD LINE (16OFX-16FL)	
7.	4	105-818 BOLT (1/4-NC X 1-1/2")	
8.	6	110-573 BOLT-ON CLAMP (1",SOLD PER SET)	
9.	6	322-289 BACKUP (BOLT-ON)	
10.	2	159-077 SPLIT FLANGE (16SFL)	
	2	157-029 O-RING (219 D90)	
	8	105-156 BOLT (3/8-NC X 1-1/2")	TORQUE TO 45 FT/LBS
	8	105-072 LOCK WASHER (3/8")	
11.	8	105-070 LOCK WASHER (1/2")	
12.	8	105-067 BOLT (1/2-NC X 2-3/4")	TORQUE TO 45 FT/LBS
13.	1	514-353 REDUCER (20S-16SF)	
14.	2	514-333 HEAD FLANGE (20FL-16SF)	
15.	1	154-388 CONNECTOR (16S-16O45)	
16.	1	514-196 CONNECTOR (16O-20S90)	
17.	2	157-078 O-RING (222 D90)	
18.	2	105-198 BOLT (1/4-NC X 1-3/4")	
19.	2	110-373 BOLT-ON CLAMP (13/16")	
20.	1	166-162 GEARBOX & GROUND DRIVE PLANETARY	
21.	2	105-095 WASHER (1/4")	
22.	2	105-870 BOLT (1/4-NC X 3-1/2")	
23.	2	105-832 FLG LOCKNUT (1/4-NC)	
24.	1	155-714 O-RING (021-D90)	

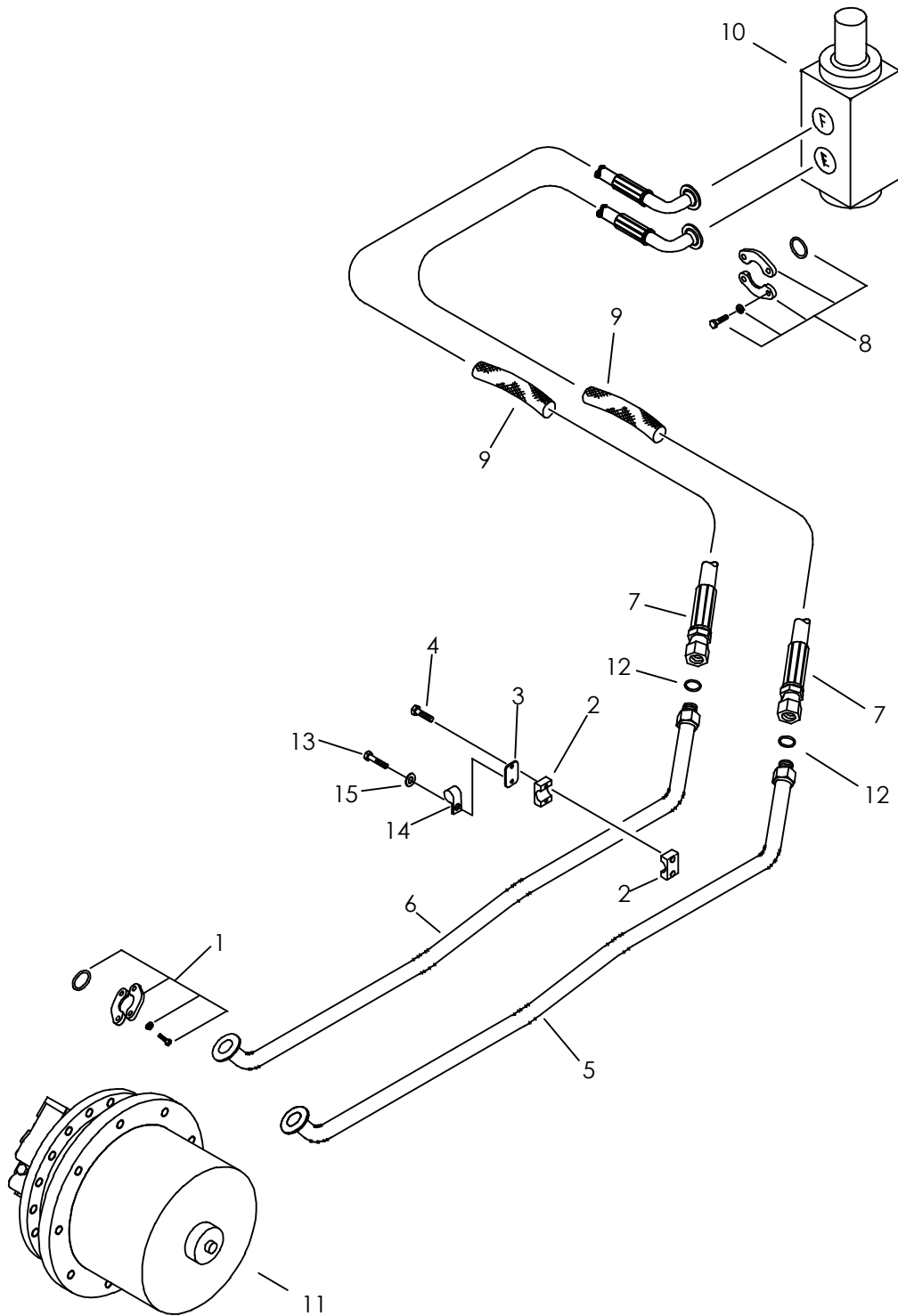
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FOOTNOTES:

NOTE:

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

# RIGHT GROUND DRIVE HUDRAULICS



# RIGHT GROUND DRIVE HUDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	159-077	2	SPLIT FLANGE (16SFL)	
	157-029	2	O-RING (219 D90)	
	105-156	8	BOLT (3/8-NC X 1-1/2")	
	105-072	8	LOCK WASHER (3/8")	
2.	110-573	2	BOLT-ON CLAMP (1", SOLD PER SET)	
3.	322-289	2	BACKUP (BOLT-ON)	
4.	105-818	3	BOLT (1/4-NC X 1-1/2")	
5.	156-152	1	HYD LINE (-16)	
6.	156-153	1	HYD LINE (-16)	
7.	515-575	2	HOSE (160FX-20FL90-62"-6000)	ENDS WITH S/N: 2V2567
	157-998	2	HOSE (160FX-20FL90-68"-6000)	BEGINS WITH S/N: 2W0856
8.	159-436	2	SPLIT FLANGE (20SF, SET)	
	157-078	1	O-RING (222 D90)	
	105-070	4	LOCK WASHER (1/2")	
	105-066	4	BOLT (1/2-NC X 1-3/4")	TORQUE TO 45 FT. LB.
9.	117-179	2	ABRASION SLEEVE (2.07" X 62")	ENDS WITH S/N: 2V2567
	117-292	2	ABRASION SLEEVE (2.07" X 70")	BEGINS WITH S/N: 2W0856
10.	516-033	-	SELECTOR VALVE DIVERTER	
11.	166-162	-	GEARBOX AND GRND DRIVE PLANETARY	
12.	155-714	2	O-RING (021 D90)	
13.	105-198	1	BOLT (1/4-NC X 1-3/4")	
14.	110-373	1	BOLT-ON CLAMP (13/16")	
15.	105-095	1	WASHER (1/4")	

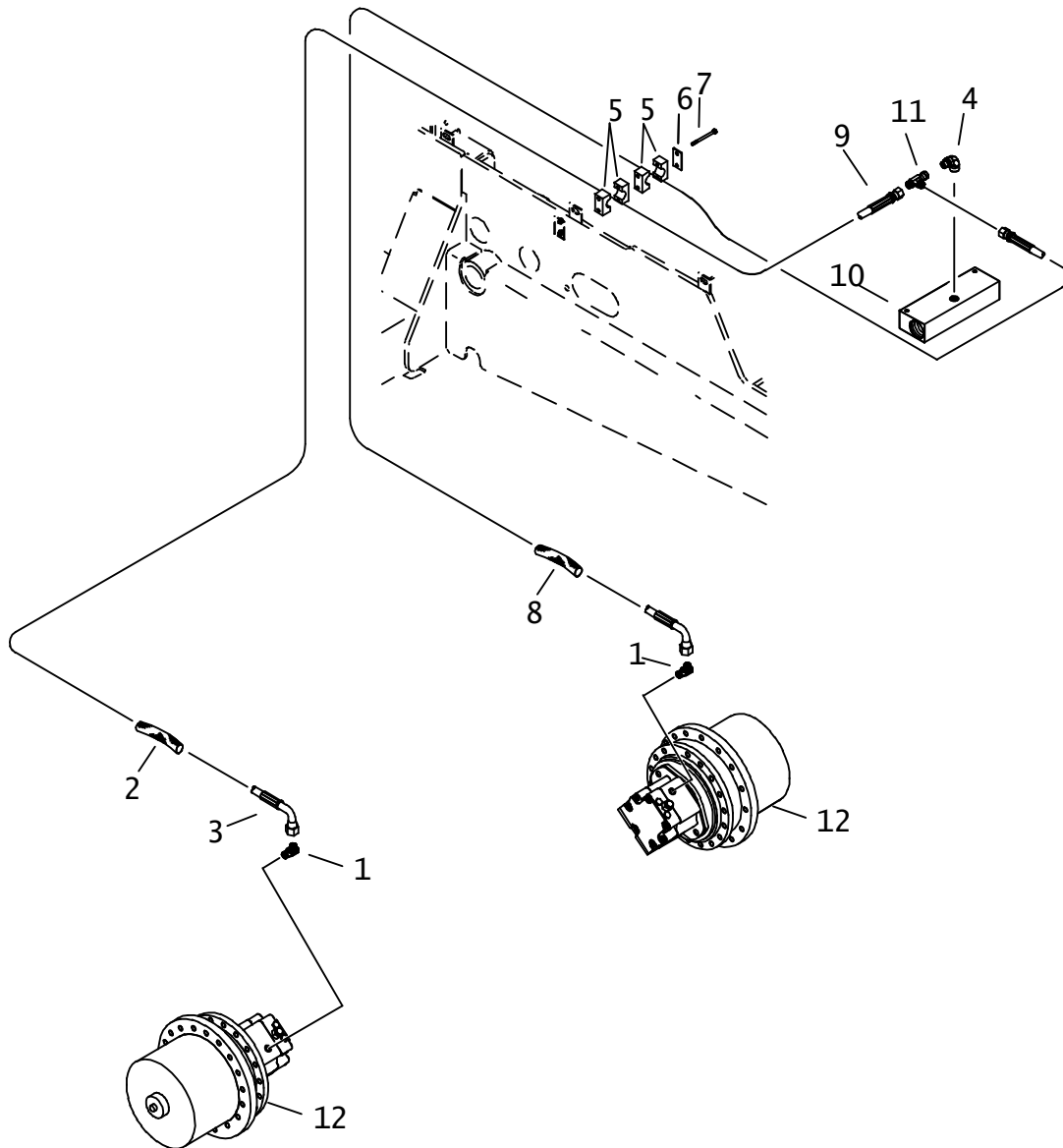
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FOOTNOTES:

NOTE:

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

## CASE DRAIN (GROUND DRIVE)



## CASE DRAIN (GROUND DRIVE)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-264	2	CONNECTOR (080-10S45)	
2.	117-619	1	ABRASION SLEEVE (1.59" X 135")	
3.	153-116	1	HOSE (080FX90S-188"-3000)	
4.	154-253	1	CONNECTOR (06S-08090)	
5.	111-007	2	BOLT-ON CLAMP (7/8", SOLD PER SET)	
6.	322-289	1	BACKUP (BOLT-ON)	
7.	106-967	2	BOLT (1/4-NC X 2-3/4" SIL BRZ)	
8.	117-764	1	ABRASION SLEEVE (1.59" X 90")	
9.	515-572	1	HOSE (080FX90S-134"-3000)	
10.	159-414	-	CASE DRAIN MANIFOLD	
11.	154-266	1	UNION RUN TEE (080FX-080-080)	
12.	166-162	-	GEARBOX AND DRIVE PLANETARY	

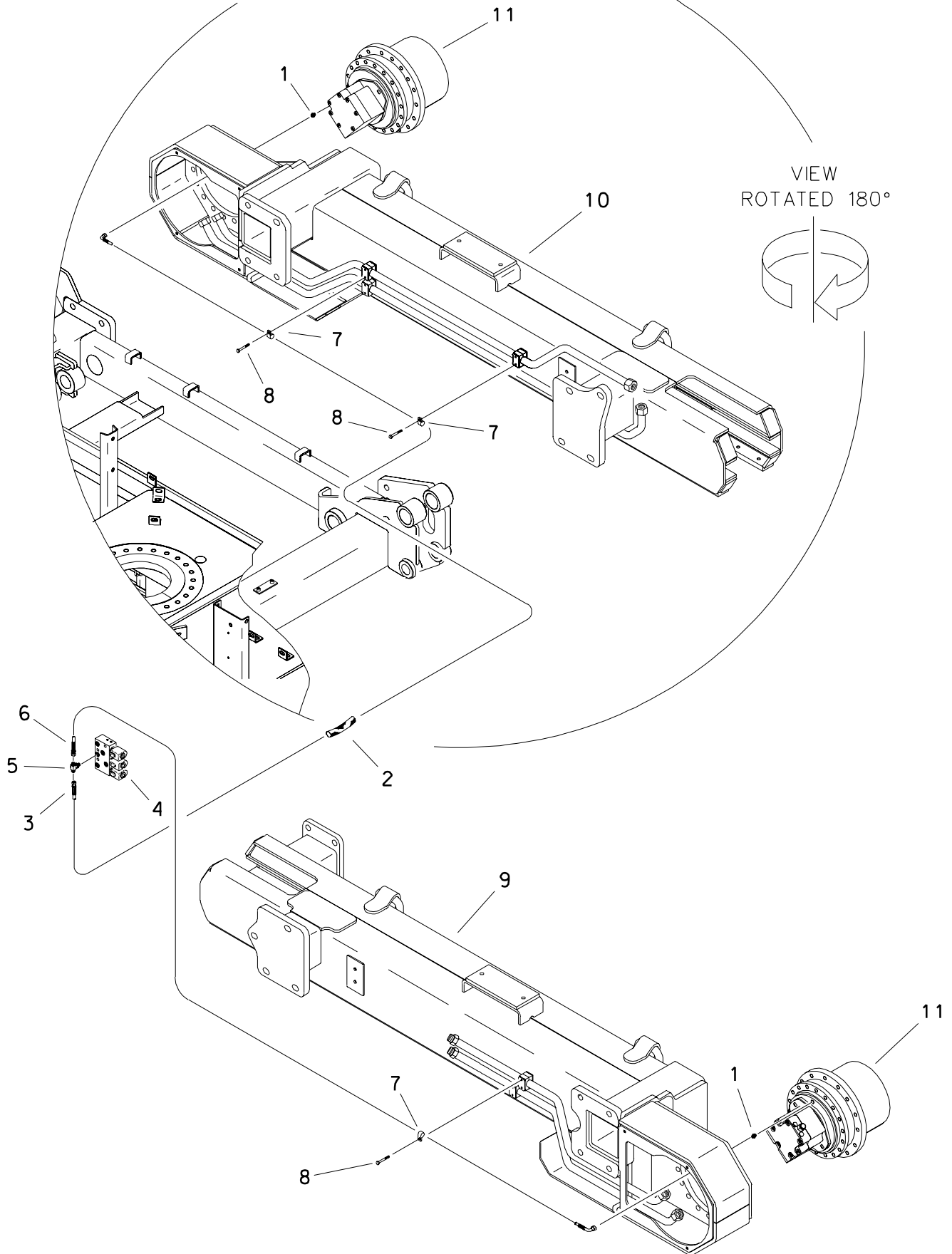
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FOOTNOTES:

NOTE:

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

## PARK BRAKE HYDRAULICS





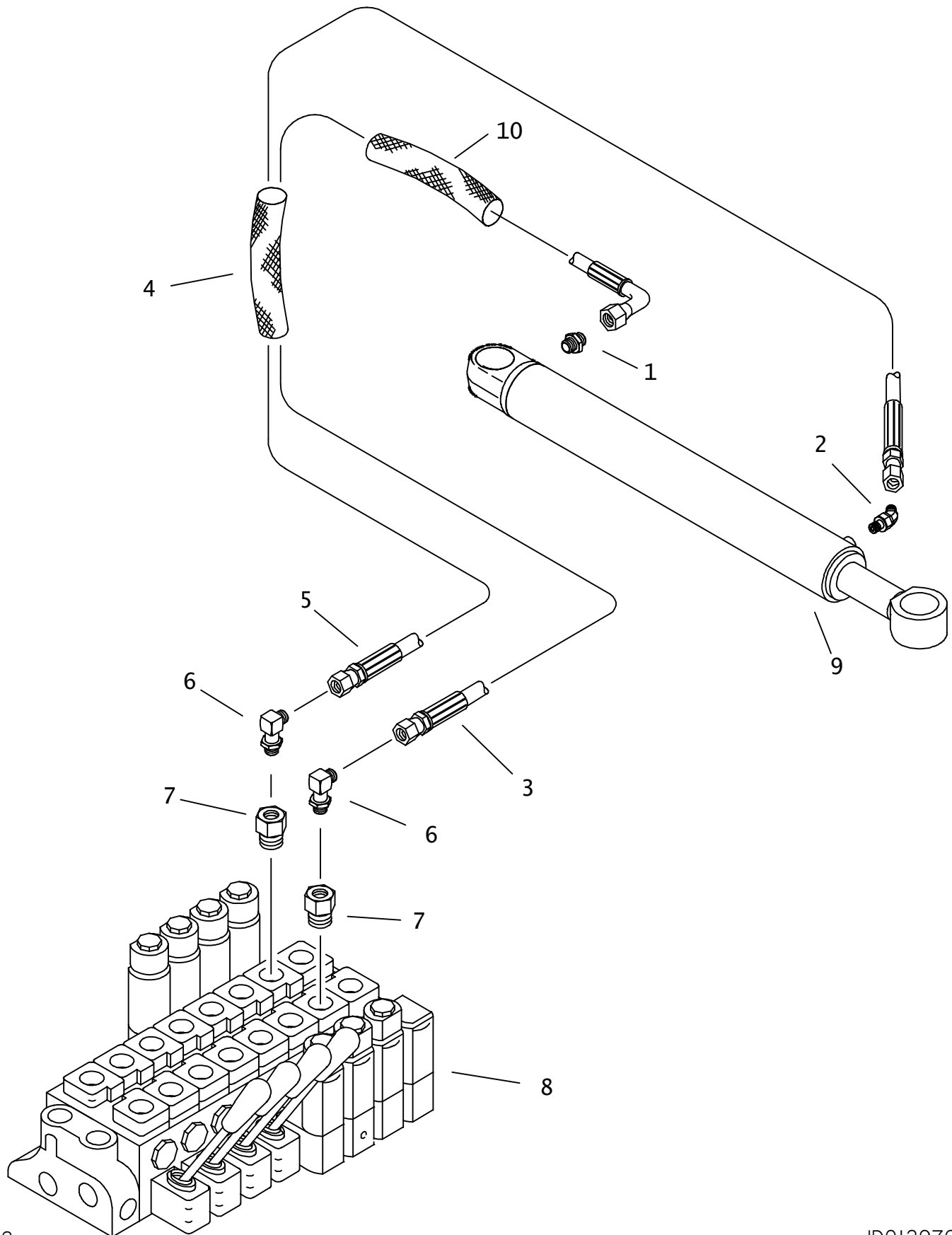
# PARK BRAKE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	514-301	2	CONNECTOR (040-M12-1.50)	
2.	117-673	1	ABRASION SLEEVE (1" X 150")	
3.	515-571	1	HOSE (04DFX90S-170"-3000)	
4.	159-194	-	CHARGE MANIFOLD	
5.	154-293	1	BRANCH TEE (04S-040-040)	
6.	515-277	1	HOSE (04DFX90S-128"-3000)	
7.	110-373	3	BOLT-ON CLAMP (13/16")	
8.	105-106	3	BOLT (1/4-NC X 2")	
9.	349-300	-	RIGHT ROLLER FRAME	ENDS WITH S/N: 2V2567
	315-883	-	RIGHT ROLLER FRAME	BEGINS WITH S/N: 2W0856
10.	349-301	-	LEFT ROLLER FRAME	ENDS WITH S/N: 2V2567
	315-882	-	LEFT ROLLER FRAME	BEGINS WITH S/N: 2W0856
11.	166-162	-	GEARBOX AND GRND DRIVE PLANETARY	

FOOTNOTES

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

# CAB SWING HYDRAULICS



# CAB SWING HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-278	1	CONNECTOR (04S-040)	
2.	154-263	1	CONNECTOR (04S-04045)	
3.	515-277	1	HOSE (040FX90-128"-3000)	
4.	116-633	1	ABRASION SLEEVE (1.59" X 115")	
5.	515-098	1	HOSE (040FX-110"-3000)	
6.	154-364	2	CONNECTOR (040-06S90, ORF)	
7.	155-171	2	REDUCER (10S-06SF)	
8.	153-215	-	HYDRAULIC VALVE	BEFORE SN. CMWJT100JA0000015
	150-2730	-	HYDRAULIC VALVE	AFTER SN. CMWJT100CA0000016
9.	151-182	-	CYL (2.0" X 1.25" X 14.250")	
10.	117-611	1	ABRASION SLEEVE (1.00" X 22")	

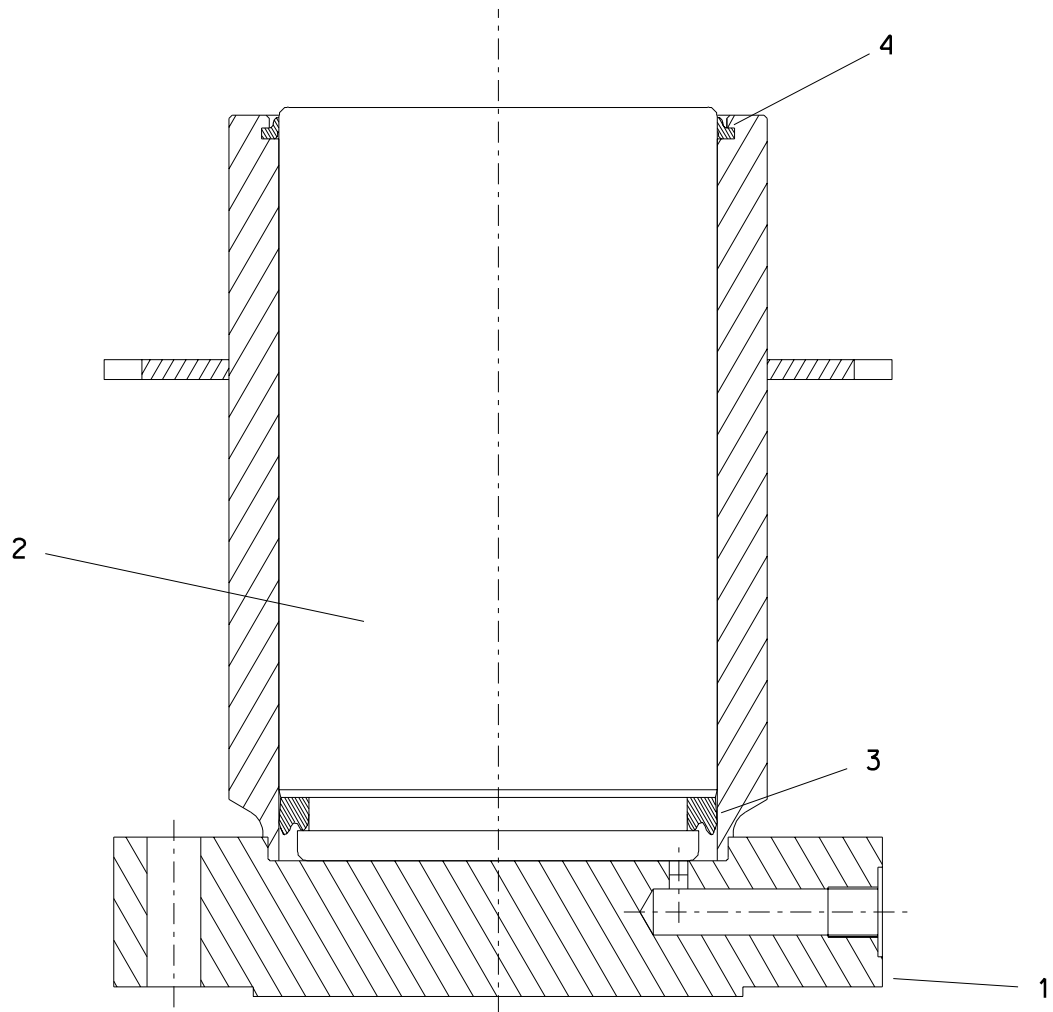
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FOOTNOTES:

NOTE:

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

## ADJUSTMENT CYLINDER

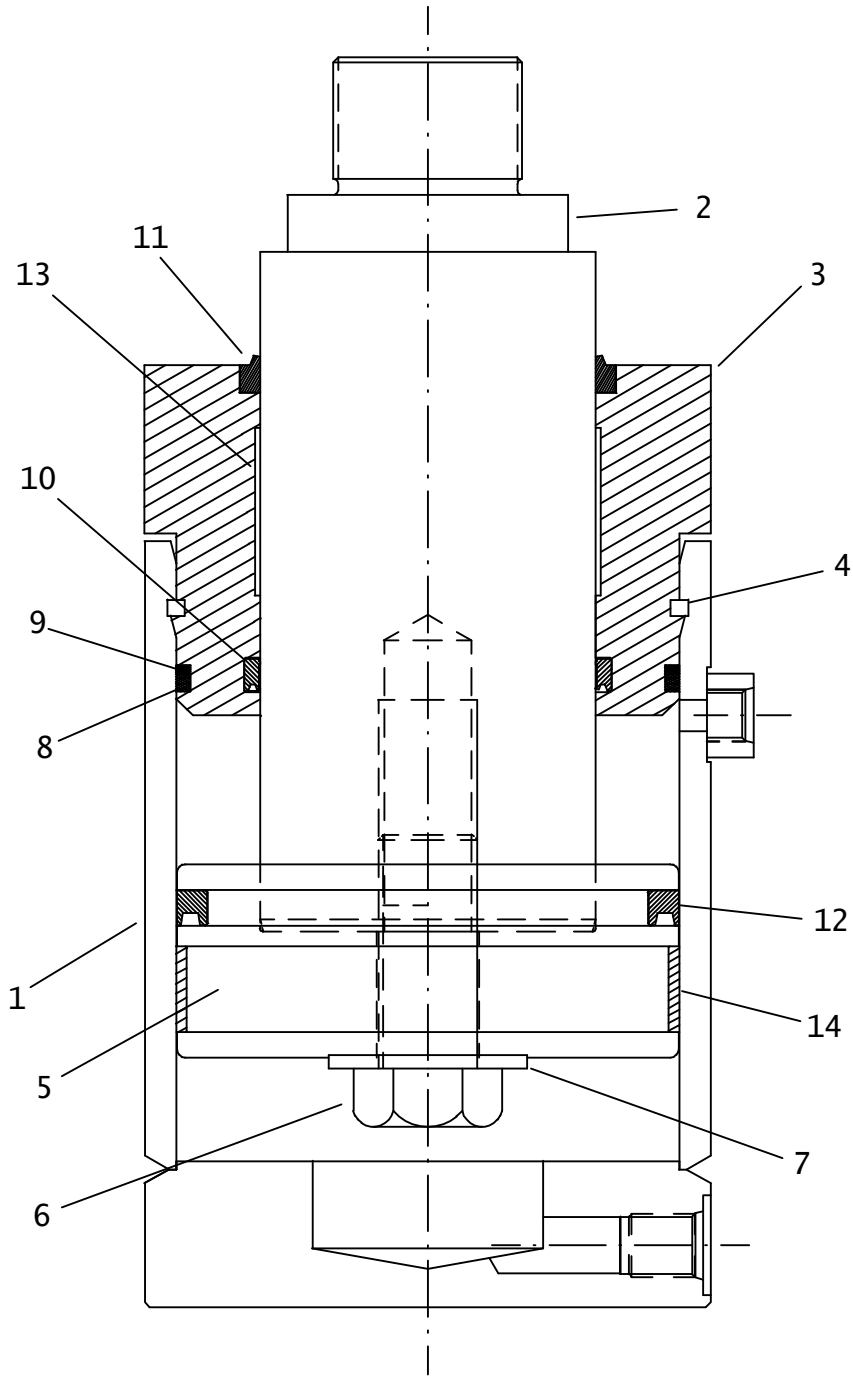


# ADJUSTMENT CYLINDER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	349-391	-	ADJUSTMENT CYLINDER	INCL REF NO.'S 1 - 4
1.	349-388	1	CYL BARREL	
2.	349-386	1	CYL RAM	
3.	157-172	1	PISTON SEAL	
4.	157-173	1	ROD WIPER SEAL (5.5")	

FOOTNOTES

# HYDRAULIC CYLINDER 6" X 4" X 3"



# HYDRAULIC CYLINDER

## 6" X 4" X 3"

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-176		CYL (6.00" X 4.00" X 3.00")	INCL REF NO.'S 1 - 14
	190-774		SEAL REPAIR KIT	INCL REF NO.'S 6, 8 - 14,
1.	152-615	1	BARREL	
2.	150-681	1	CYLINDER ROD	
3.	151-175	1	CYL GLAND	
4.	150-707	1	LOCK RING	
5.	149-319	1	PISTON (6")	
6.	105-1074	1	SCREW (M30-1.50 X 90MM,10.9)	SEE FOOTNOTE # 1
7.	106-780	1	WASHER (M30)	
8.	157-082	1	O-RING (358 D90)	
9.	157-083	1	BACKUP RING (358 D90)	
10.	157-729	1	U-SEAL	
11.	157-648	1	PISTON SEAL (4")	
12.	157-186	1	PISTON SEAL 6.00"	
13.	125-851	1	WEAR RING	
14.	125-850	1	WEAR RING	

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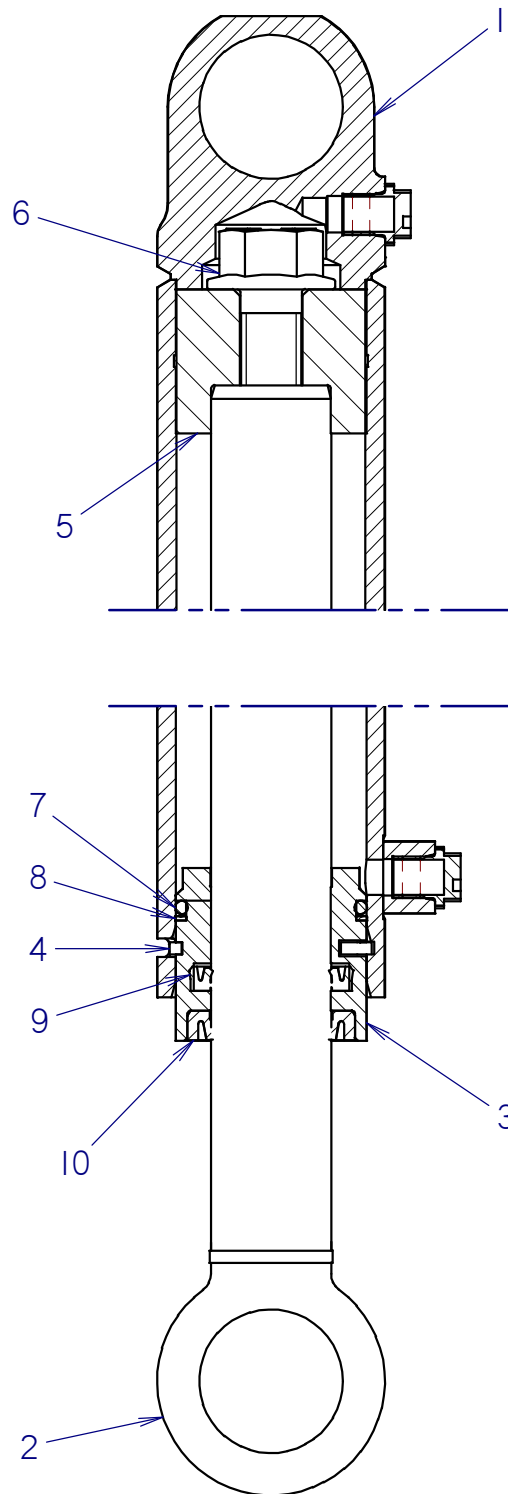
FOOTNOTES:

I. CLEAN AND DRY THREADS. APPLY RED LOCTITE (RC 271 OR 277). TORQUE TO 1300 FT/LBS.

NOTE:

# HYDRAULIC CYLINDER (2.0 X 1.25 X 14.25)

2" X 1.25" X 14.25"





# HYDRAULIC CYLINDER (2.0 X 1.25 X 14.25)

## 2" X 1.25" X 14.25"

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-182	-	CYL (2.0 X 1.25 X 14.25)	INCL REF NO'S 1 THRU 10, SEE FOOTNOTE 1
1	152-069	1	CYLINDER BARREL (2.0 X	
2	150-448	1	CYLINDER ROD (1.25 X 16.0)	
3	150-770	1	CYLINDER HEAD (2.0 X 1.25)	
4	150-778	1	LOCK RING (2.0)	
5	150-771	1	CYLINDER PISTON (2.0 X 1.25)	INCL MOLDED-ON WEAR RING
6	106-097	1	FLG BOLT (5/8-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	157-541	1	U-SEAL (1.250")	
10	157-538	1	WIPER SEAL (1.250")	

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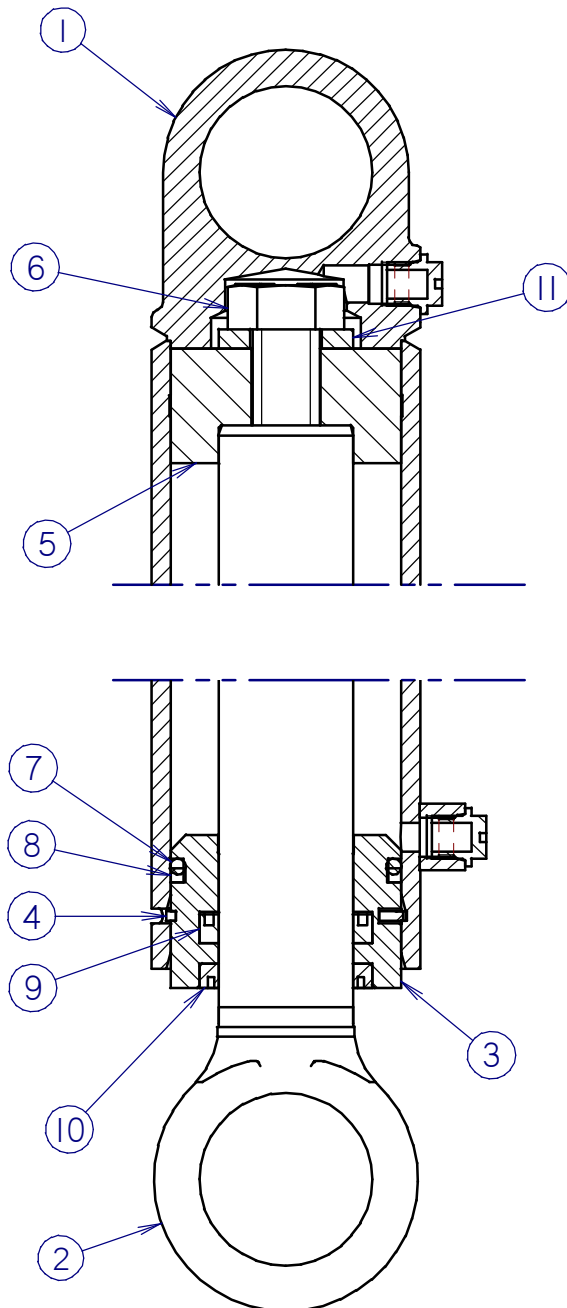
FOOTNOTES:

1. SEAL KIT P/N: 190-169
2. APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 180-200 FT-LBS

NOTE:

259-100	U-SEAL INSTALLER (1"-4.99")
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 (3.0" X 1.75")



## HYDRAULIC CYLINDERS (3.0" X 1.75")

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	149-683	-	CYL (3.0 X 1.75 X 3.0)	SEE FOOTNOTES 1 & 2
1	150-299	1	CYLINDER BARREL (3.0 X 3.0)	
2	150-446	1	CYLINDER ROD (1.75 X 3.0)	
	149-684	-	CYL (3.0 X 1.75 X 4.0)	SEE FOOTNOTES 1 & 2
1	152-004	1	CYLINDER BARREL (3.0 X 4.0)	
2	153-015	1	CYLINDER ROD (1.75 X 4.0)	
	149-685	-	CYL (3.0 X 1.75 X 5.0)	SEE FOOTNOTES 1 & 2
1	152-068	1	CYLINDER BARREL (3.0 X 5.0)	
2	150-432	1	CYLINDER ROD (1.75 X 5.0)	
	151-058	-	CYL (3.0 X 1.75 X 6.0)	SEE FOOTNOTES 1 & 2
1	152-008	1	CYLINDER BARREL (3.0 X 6.0)	
2	150-428	1	CYLINDER ROD (1.75 X 6.0)	
	151-070	-	CYL (3.0 X 1.75 X 8.0)	SEE FOOTNOTES 1 & 2
1	152-014	1	CYLINDER BARREL (3.0 X 8.0)	
2	150-436	1	CYLINDER ROD (1.75 X 8.0)	
	149-686	-	CYL (3.0 X 1.75 X 10.0)	SEE FOOTNOTES 1 & 2
1	150-284	1	CYLINDER BARREL (3.0 X 10.0)	
2	149-732	1	CYLINDER ROD (1.75 X 10.0)	
	151-042	-	CYL (3.0 X 1.75 X 12.0)	SEE FOOTNOTES 1 & 2
1	150-293	1	CYLINDER BARREL (3.0 X 12.0)	
2	150-425	1	CYLINDER ROD (1.75 X 12.0)	
	151-083	-	CYL (3.0 X 1.75 X 16.0)	SEE FOOTNOTES 1 & 2
1	150-288	1	CYLINDER BARREL (3.0 X 16.0)	
2	153-004	1	CYLINDER ROD (1.75 X 16.0)	
	151-122	-	CYL (3.0 X 1.75 X 20.0)	SEE FOOTNOTES 1 & 2
1	150-667	1	CYLINDER BARREL (3.0 X 20.0)	
2	153-020	1	CYLINDER ROD (1.75 X 20.0)	
	149-687	-	CYL (3.0 X 1.75 X 24.0)	SEE FOOTNOTES 1 & 2
1	149-763	1	CYLINDER BARREL (3.0 X 24.0)	
2	149-733	1	CYLINDER ROD (1.75 X 24.0)	
	149-688	-	CYL (3.0 X 1.75 X 30.0)	SEE FOOTNOTES 1 & 2
1	149-764	1	CYLINDER BARREL (3.0 X 30.0)	
2	149-734	1	CYLINDER ROD (1.75 X 30.0)	
3	150-763	1	CYLINDER HEAD (3.0 X 1.75)	
4	150-911	1	LOCK RING (3.0)	
5	150-765	1	CYLINDER PISTON (3.0 X 1.75)	INCL. MOLDED-ON WEAR RING
6	106-122	1	BOLT (7/8-NC X 2-1/4", GD8)	SEE FOOTNOTE 3
7	155-734	1	O-RING (334 D90)	
8	155-733	1	BACKUP RING (334 D90)	
9	157-550	1	U-SEAL (1.750")	
10	157-549	1	WIPER SEAL (1.750")	
11	105-363	1	WASHER (7/8")	

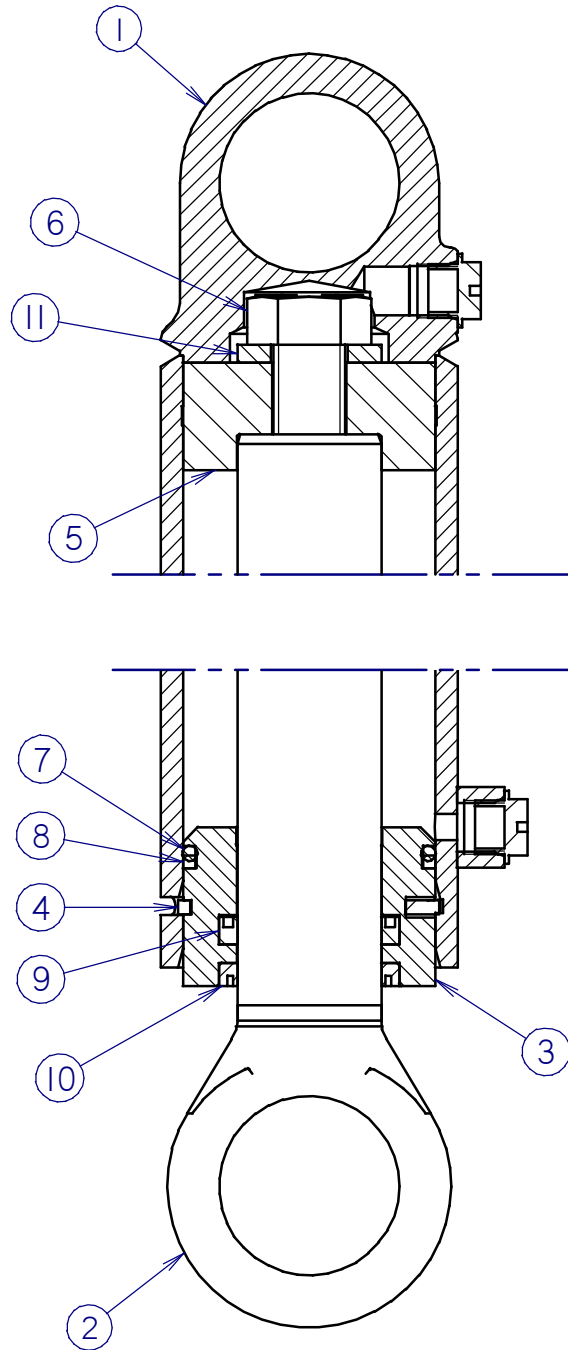
### FOOTNOTES

- REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF. #3 THRU #11 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
- SEAL REPAIR KIT P/N: 190-172
- APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 410-460 FT-LBS

### NOT SHOWN:

- 259-040 U-SEAL INSTALLER (1.5" - UPI)
- 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

## HYDRAULIC CYLINDERS (3.5" X 2.0")



## HYDRAULIC CYLINDERS (3.5" X 2.0")

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-123	-	CYL (3.5 X 2.0 X 4.0)	SEE FOOTNOTES 1 & 2
1	152-037	1	CYLINDER BARREL (3.5 X 4.0)	
2	153-021	1	CYLINDER ROD (2.00 X 4.0)	
	151-178	-	CYL (3.5 X 2.0 X 5.0)	SEE FOOTNOTES 1 & 2
1	150-300	1	CYLINDER BARREL (3.5 X 5.0)	
2	150-440	1	CYLINDER ROD (2.00 X 5.0)	
	149-692	-	CYL (3.5 X 2.0 X 5.0)	SEE FOOTNOTES 1 & 2
1	150-296	1	CYLINDER BARREL (3.5 X 6.0)	
2	149-735	1	CYLINDER ROD (2.00 X 6.0)	
	149-693	-	CYL (3.5 X 2.0 X 8.0)	SEE FOOTNOTES 1 & 2
1	152-006	1	CYLINDER BARREL (3.5 X 8.0)	
2	149-736	1	CYLINDER ROD (2.00 X 8.0)	
	151-116	-	CYL (3.5 X 2.0 X 10.0)	SEE FOOTNOTES 1 & 2
1	152-040	1	CYLINDER BARREL (3.5 X 10.0)	
2	153-016	1	CYLINDER ROD (2.00 X 10.0)	
	151-047	-	CYL (3.5 X 2.0 X 12.0)	SEE FOOTNOTES 1 & 2
1	150-297	1	CYLINDER BARREL (3.5 X 12.0)	
2	150-429	1	CYLINDER ROD (2.00 X 12.0)	
	149-694	-	CYL (3.5 X 2.0 X 16.0)	SEE FOOTNOTE 1 & 2
1	149-737	1	CYLINDER ROD (2.00 X 16.0)	
2	149-805	1	CYLINDER BARREL (3.5 X 16.0)	
	149-695	-	CYL (3.5 X 2.0 X 20.0)	SEE FOOTNOTES 1 & 2
1	149-765	1	CYLINDER BARREL (3.5 X 20.0)	
2	149-738	1	CYLINDER ROD (2.00 X 20.0)	
	149-696	-	CYL (3.5 X 2.0 X 24.0)	SEE FOOTNOTES 1 & 2
1	149-766	1	CYLINDER BARREL (3.5 X 24.0)	
2	149-739	1	CYLINDER ROD (2.00 X 24.0)	
	149-697	-	CYL (3.5 X 2.0 X 30.0)	SEE FOOTNOTES 1 & 2
1	149-767	1	CYLINDER BARREL (3.5 X 30.0)	
2	149-740	1	CYLINDER ROD (2.00 X 30.0)	
3	150-759	1	CYLINDER HEAD (3.5 x 2.00)	
4	149-302	1	LOCK RING (3.5)	
5	150-992	1	CYLINDER PISTON (3.5 X 2.00)	INCL. MOLDED-ON WEAR RING
6	106-145	1	BOLT (1-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	157-559	1	U-SEAL (2.000")	
10	157-558	1	WIPER SEAL (2.000")	
11	106-144	1	WASHER (1")	

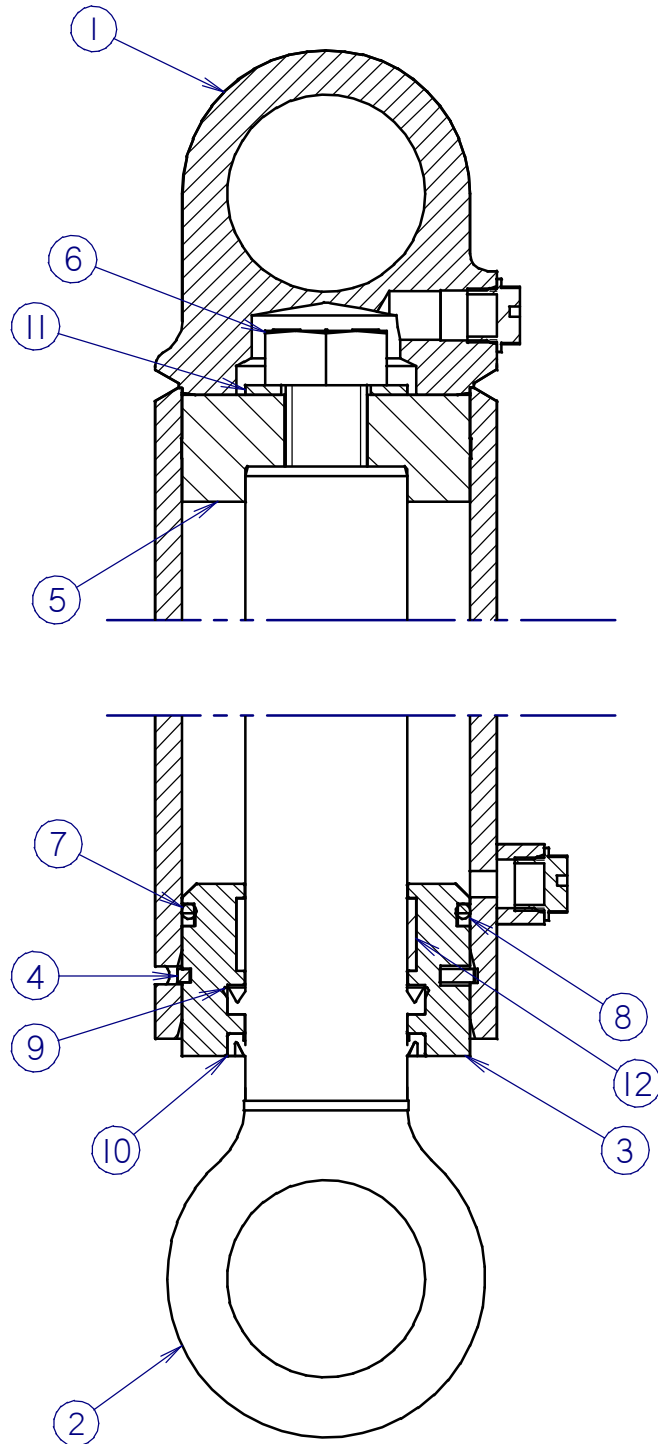
### FOOTNOTES

- REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF. #3 THRU #11 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
- SEAL REPAIR KIT P/N: 190-175
- APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 630-700 FT-LBS

### NOT SHOWN:

- 259-040 U-SEAL INSTALLER (1.5" - UPI)
- 259-239 WIPER/SEAL INSTALLER (2")
- 259-244 PISTON SEAL INSTALLER (3.5")
- 259-245 PISTON INSTALLER (3.5")
- 259-188 CYL HEAD SPANNER - TWO PIN

## HYDRAULIC CYLINDERS (4.0" X 2.25")



## HYDRAULIC CYLINDERS (4.0" X 2.25")

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	149-705	-	CYL (4.0 X 2.25 X 4.0)	SEE FOOTNOTES 1 & 2
1	149-768	1	CYLINDER BARREL (4.0 X 4.0)	
2	149-741	1	CYLINDER ROD (2.25 X 4.0)	
	151-132	-	CYL (4.0 X 2.25 X 5.0)	SEE FOOTNOTES 1 & 2
1	152-012	1	CYLINDER BARREL (4.0 X 5.0)	
2	153-023	1	CYLINDER ROD (2.25 X 5.0)	
	151-158	-	CYL (4.0 X 2.25 X 6.0)	SEE FOOTNOTES 1 & 2
1	152-062	1	CYLINDER BARREL (4.0 X 6.0)	
2	153-036	1	CYLINDER ROD (2.25 X 6.0)	
	151-095	-	CYL (4.0 X 2.25 X 8.0)	SEE FOOTNOTES 1 & 2
1	152-030	1	CYLINDER BARREL (4.0 X 8.0)	
2	153-008	1	CYLINDER ROD (2.25 X 8.0)	
	149-706	-	CYL (4.0 X 2.25 X 10.0)	SEE FOOTNOTES 1 & 2
1	149-769	1	CYLINDER BARREL (4.0 X 10.0)	
2	149-742	1	CYLINDER ROD (2.25 X 10.0)	
	151-048	-	CYL (4.0 X 2.25 X 12.0)	SEE FOOTNOTES 1 & 2
1	150-298	1	CYLINDER BARREL (4.0 X 12.0)	
2	150-430	1	CYLINDER ROD (2.25 X 12.0)	
	151-059	-	CYL (4.0 X 2.25 X 16.0)	SEE FOOTNOTES 1 & 2
1	152-007	1	CYLINDER BARREL (4.0 X 16.0)	
2	150-470	1	CYLINDER ROD (2.25 X 16.0)	
	149-707	-	CYL (4.0 X 2.25 X 20.0)	SEE FOOTNOTES 1 & 2
1	149-770	1	CYLINDER BARREL (4.0 X 20.0)	
2	149-801	1	CYLINDER ROD (2.25 X 20.0)	
	151-162	-	CYL (4.0 X 2.25 X 24.0)	SEE FOOTNOTES 1 & 2
1	152-063	1	CYLINDER BARREL (4.0 X 24.0)	
2	153-037	1	CYLINDER ROD (2.25 X 24.0)	
	149-708	-	CYL (4.0 X 2.25 X 30.0)	SEE FOOTNOTES 1 & 2
1	149-771	1	CYLINDER BARREL (4.0 X 30.0)	
2	149-743	1	CYLINDER ROD (2.25 X 30.0)	
	149-709	-	CYL (4.0 X 2.25 X 30.0)	SEE FOOTNOTES 1 & 2
1	149-772	1	CYLINDER BARREL (4.0 X 36.0)	
2	149-744	1	CYLINDER ROD (2.25 X 36.0)	
3	150-757	1	CYLINDER HEAD (4.0 X 2.25)	
4	149-303	1	LOCK RING (4.0)	
5	150-993	1	CYLINDER PISTON (4.0 X 2.25)	
6	106-146	1	BOLT (1-1/8-NC X 2-1/2", GD8)	SEE FOOTNOTE 3
7	157-035	1	O-RING (342 D90)	
8	157-036	1	BACKUP RING (342 D90)	
9	157-526	1	U-SEAL (2.250")	
10	157-527	1	WIPER SEAL (2.250")	
11	106-147	1	WASHER (1-1/8")	
12	149-318	1	WEAR RING	

### FOOTNOTES

- REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF. #3 THRU #12 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
- SEAL REPAIR KIT P/N: 190-177
- APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 770-850 FT-LBS

### NOT SHOWN:

- 259-040 U-SEAL INSTALLER (1.5" - UPI)
- 259-240 WIPER/SEAL INSTALLER (2.25")
- 259-246 PISTON SEAL INSTALLER (4")
- 259-247 PISTON INSTALLER (4")
- 259-188 CYL HEAD SPANNER - TWO PIN

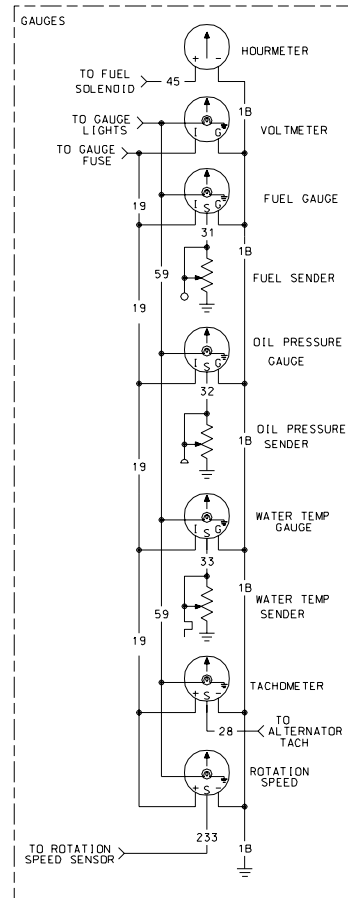
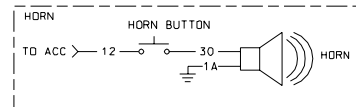
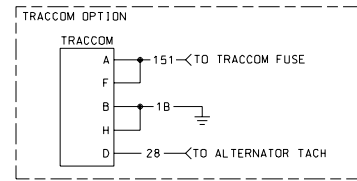
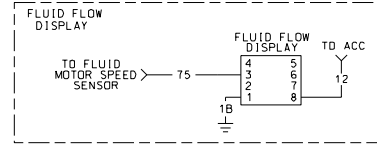
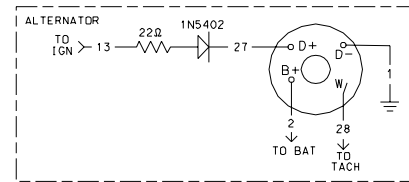
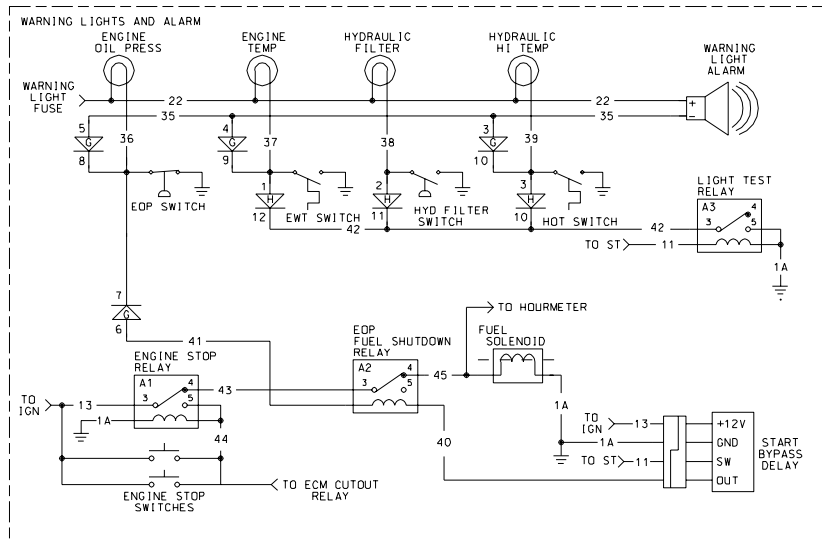
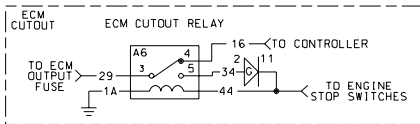
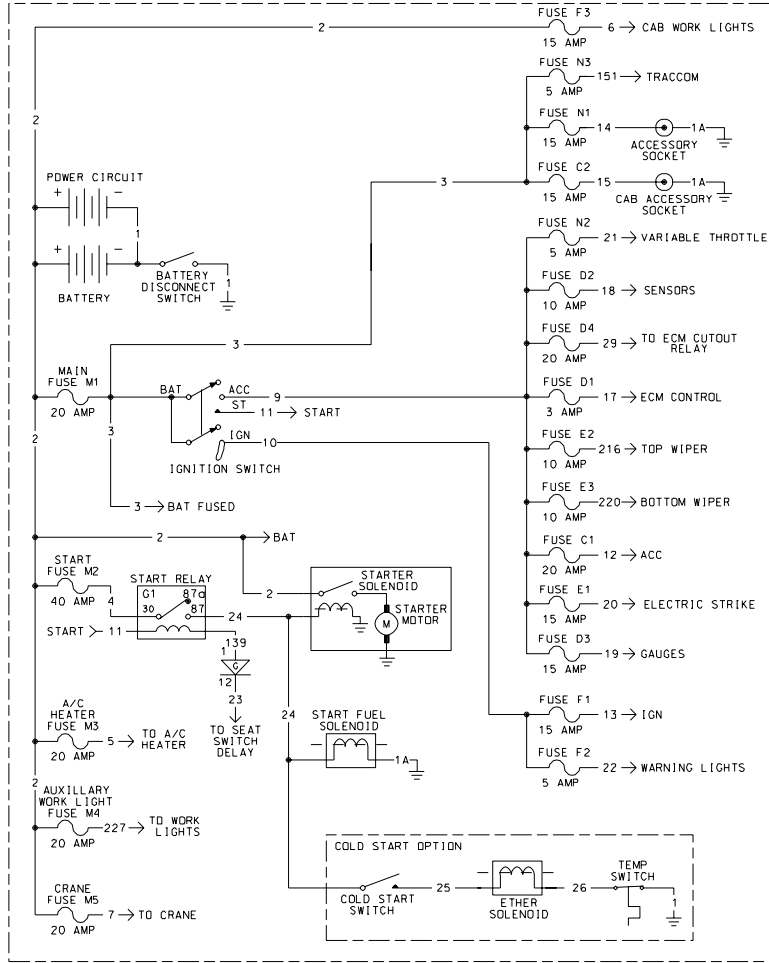




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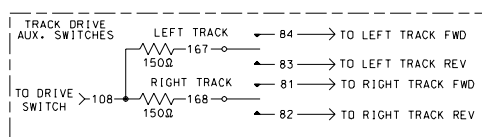
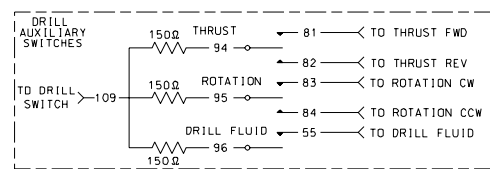
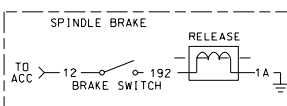
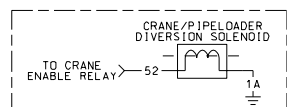
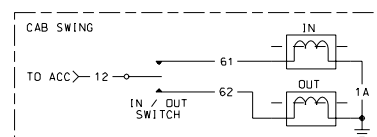
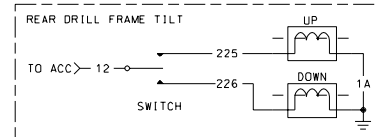
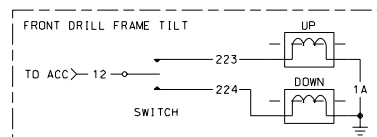
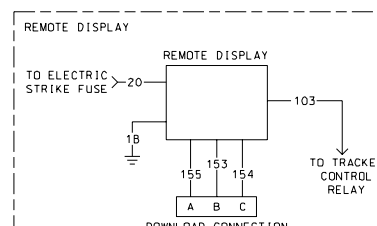
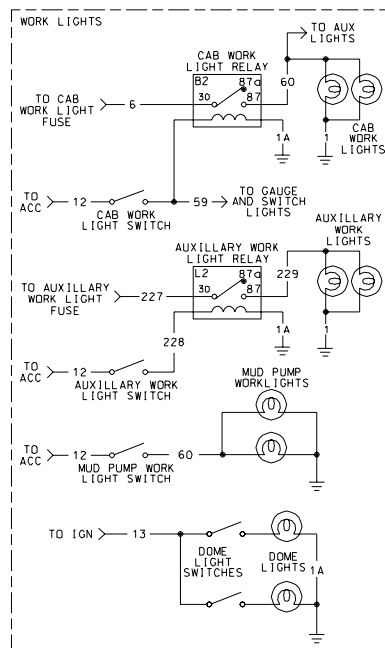
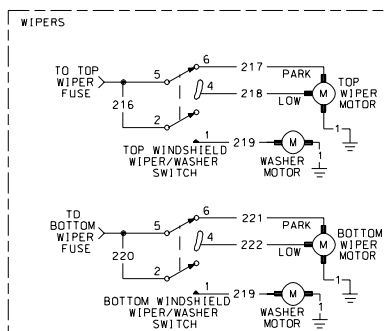
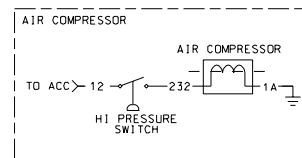
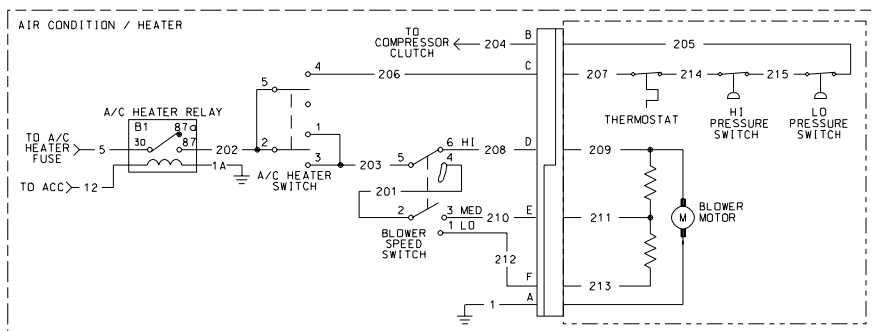
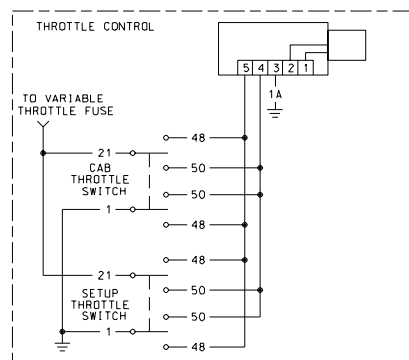
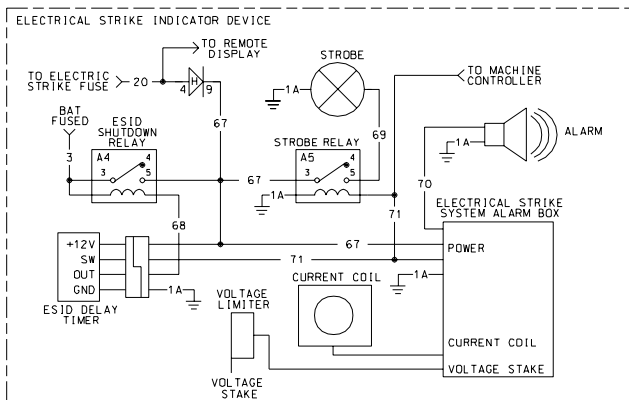
# ELECTRICAL SCHEMATIC

## JT7020M1

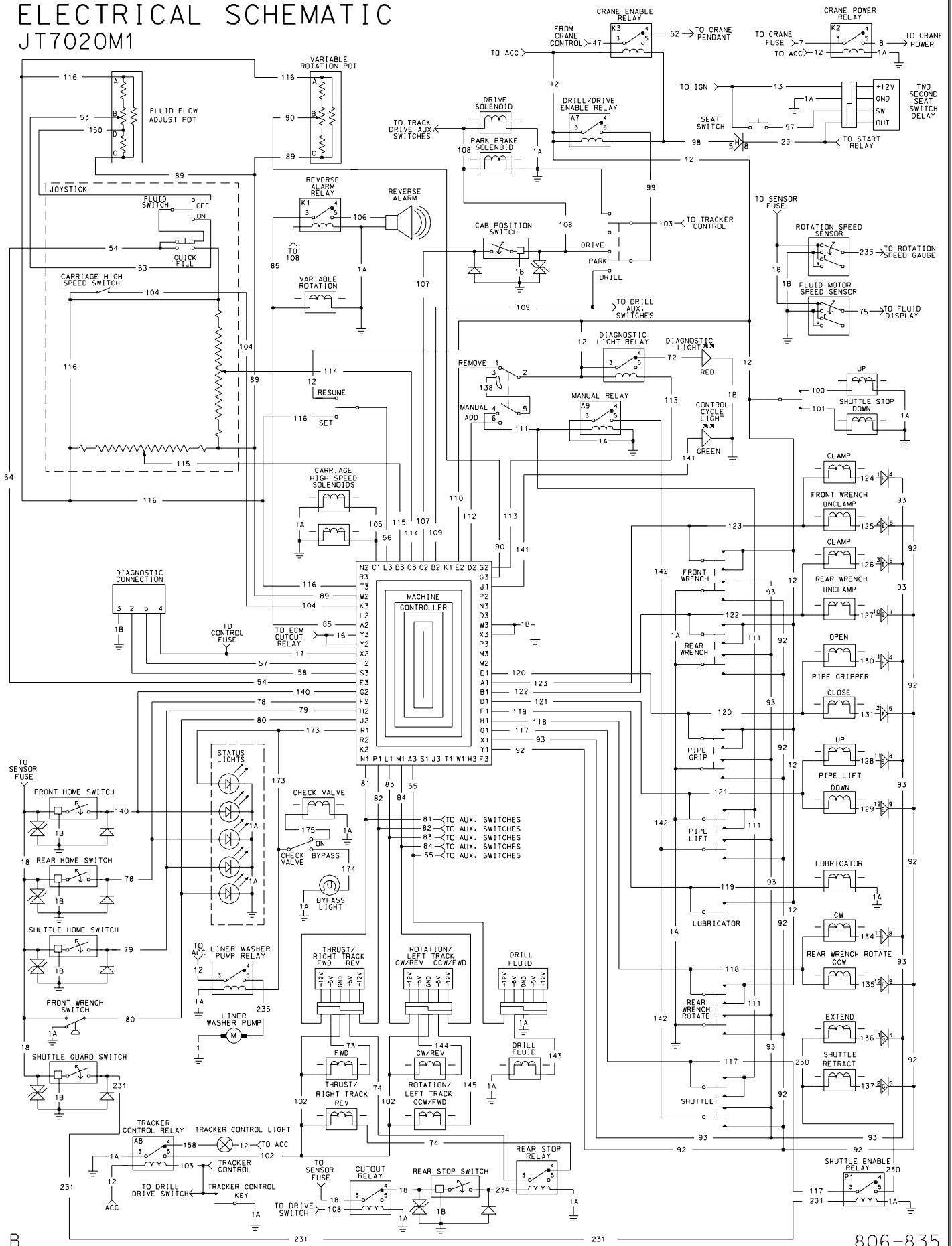


# ELECTRICAL SCHEMATIC

## JT7020M1



# ELECTRICAL SCHEMATIC JT7020M1



## ELECTRICAL SCHEMATIC

JT7020M1

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
1.	BLK	SYSTEM GROUND & HIGH LOAD GROUND	
1A.	BLK/RED	MEDIUM LOAD GROUND	
1B.	BLK/BLU	LOW LOAD GROUND	
2.	RED	BATTERY POSITIVE TO FUSE BLOCK	
3.	RED	FUSED BATTERY POWER	
4.	RED/BLK	START FUSE TO START RELAY	
5.	GRA	A/C HEATER FUSE TO RELAY	
6.	BLU	WORK LIGHT FUSE TO RELAY	
7.	BRN	CRANE FUSE TO CRANE	
8.	BLU	CRANE POWER RELAY TO CRANE	
9.	ORG	IGNITION SWITCH ACCESSORY CIRCUIT	
10.	ORG/BLU	IGNITION SWITCH IGNITION CIRCUIT	
11.	WHT/BLK	IGNITION SWITCH START CIRCUIT	
12.	ORG	FUSED ACCESSORY CIRCUIT	
13.	ORG/GRN	FUSED IGNITION CIRCUIT	
14.	RED/WHT	ACCESSORY SOCKET CIRCUIT	
15.	ORG/YEL	CAB ACCESSORY SOCKET CIRCUIT	
16.	RED/GRN	ECM CUTOFF RELAY TO MACHINE CONTROLLER	
17.	RED/BLU	MACHINE CONTROLLER CONTROL FUSE CIRCUIT	
18.	RED/BLK	SENSOR/SWITCH FUSE CIRCUIT	
19.	ORG/BRN	GAUGE CIRCUIT	
20.	RED/YEL	ELECTRIC STRIKE CIRCUIT	
21.	RED/ORG	VARIABLE THROTTLE CIRCUIT	
22.	GRA/ORG	WARNING LIGHT CIRCUIT	
23.	WHT/RED	START RELAY TO SEAT SWITCH DIODE	
24.	PUR	START RELAY TO STARTER, START FUEL SOLENOID & COLD START OPTION	
25.	BRN/ORG	COLD START SWITCH TO ETHER SOLENOID	
26.	BLK	ETHER SOLENOID TO TEMP SWITCH	
27.	ORG/BLU	RESISTOR - DIODE TO ALTERNATOR EXCITER CONNECTION	
28.	YEL	ALTERNATOR CONNECTOR SPLICE TO TACHOMETER	
29.	RED/BRN	ECM OUTPUT FUSE TO ECM CUTOFF RELAY	
30.	TAN/BLU	HORN BUTTON TO HORN	
31.	BRN	FUEL SENDER TO FUEL GAUGE	
32.	BLU	OIL PRESSURE SENDER TO OIL PRESSURE GAUGE	
33.	GRN	WATER TEMP SENDER TO WATER TEMP GAUGE	
34.	GRN/RED	ECM CUTOFF RELAY TO DIODE	
35.	BLU/RED	WARNING LIGHT ALARM (NEG) TO DIODES	
36.	WHT/BLU	ENGINE OIL PRESSURE SWITCH TO LIGHT & DIODES	
37.	WHT/GRN	ENGINE WATER TEMP SWITCH TO LIGHT & DIODES	
38.	GRA/YEL	HYDRAULIC FILTER SWITCH TO LIGHT & DIODES	
39.	GRA/BLK	HYDRAULIC OIL TEMP SWITCH TO LIGHT & DIODES	
40.	GRN	START BYPASS DELAY TIMER TO EOP FUEL SHUTDOWN RELAY	
41.	GRA	EOP FUEL SHUTDOWN RELAY TO DIODE	
42.	BLK/ORG	LIGHT TEST RELAY TO DIODES	
43.	BLU	ENGINE STOP RELAY TO EOP FUEL SHUTDOWN RELAY	
44.	YEL/RED	ENGINE STOP SWITCH TO ENGINE STOP RELAY, ECM CUTOFF RELAY, & DIODE	
45.	ORG/BLK	EOP FUEL SHUTDOWN RELAY TO FUEL SOLENOID AND HOURMETER	
46.		NOT USED	
47.	TAN	CRANE CONTROL TO CRANE ENABLE RELAY	
48.	PUR/ORG	THROTTLE SWITCH TO LINEAR ACTUATOR	
49.		NOT USED	
50.	BLU/ORG	THROTTLE SWITCH TO LINEAR ACTUATOR	
51.		NOT USED	
52.	GRA	CRANE ENABLE RELAY TO CRANE PENDANT	
53.	BLK/YEL	FLUID FLOW ADJUST POT TO FLUID SWITCH "ON"	
54.	BLK/WHT	MACHINE CONTROLLER TO ON-OFF FLUID SWITCH & QUICK-FILL SWITCH	
55.	WHT/BLK	MACHINE CONTROLLER TO DRILL FLUID VOLTAGE TRANSLATOR	

## ELECTRICAL SCHEMATIC

JT7020M1

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
56.	TAN/WHT	MACHINE CONTROLLER TO SET/RESUME SWITCH	
57.	PNK/BLU	MACHINE CONTROLLER TO DIAGNOSTICS CONNECTION "5"	
58.	PNK/WHT	MACHINE CONTROLLER TO DIAGNOSTICS CONNECTION "2"	
59.	TAN/RED	WORK LIGHT SWITCH TO RELAY & GAUGE LIGHTS	
60.	YEL	WORK LIGHT RELAY TO WORK LIGHTS & AUX LIGHT CONNECTION	
61.	YEL/BLK	CAB SWING IN/OUT SWITCH TO IN SOLENOID	
62.	PUR/BLK	CAB SWING IN/OUT SWITCH TO OUT SOLENOID	
63.		NOT USED	
64.		NOT USED	
65.		NOT USED	
66.		NOT USED	
67.	ORG/RED	DIODE CATHODE TO DELAY TIMER, ESID, STROBE RELAY, & ESID SHUTDOWN RELAY	
68.	TAN/BLK	DELAY TIMER TO SHUTDOWN RELAY	
69.	WHT/YEL	STROBE RELAY TO STROBE	
70.	BRN	ESID TO LOCAL ESID ALARM	
71.	WHT/PUR	ESID TO ESID DELAY TIMER, STROBE RELAY, & MACHINE CONTROLLER	
72.	PNK/BLK	DIAGNOSTIC LIGHT RELAY TO DIAGNOSTIC LIGHT	
73.	BRN/ORG	THRUST FORWARD/RIGHT TRACK FORWARD VOLTAGE TRANSLATOR TO SOLENOID	
74.	BRN/YEL	THRUST REVERSE/RIGHT TRACK REVERSE VOLTAGE TRANSLATOR TO SOLENOID	
75.	WHT/BRN	FLUID MOTOR SPEED SENSOR TO FLUID FLOW DISPLAY	
76.		NOT USED	
77.		NOT USED	
78.	GRA/WHT	REAR HOME POSITION SWITCH TO MACHINE CONTROLLER & LED	
79.	WHT/RED	SHUTTLE SWITCH TO MACHINE CONTROLLER & LED	
80.	WHT	FRONT WRENCH SWITCH TO MACHINE CONTROLLER & LED	
81.	BLU/ORG	MACHINE CONTROLLER TO THRUST FORWARD/RIGHT TRACK FORWARD VOLTAGE TRANSLATOR	
82.	BLU/YEL	MACHINE CONTROLLER TO THRUST REVERSE/RIGHT TRACK REVERSE VOLTAGE TRANSLATOR	
83.	GRA/ORG	MACHINE CONTROLLER TO ROTATION CW/LEFT TRACK REVERSE VOLTAGE TRANSLATOR	
84.	GRA/YEL	MACHINE CONTROLLER TO ROTATION CCW/LEFT TRACK FORWARD VOLTAGE TRANSLATOR	
85.	PUR/GRN	MACHINE CONTROLLER TO VARIABLE ROTATION SOLENOID & REVERSE ALARM RELAY	
86.		NOT USED	
87.		NOT USED	
88.		NOT USED	
89.	YEL/BLK	MACHINE CONTROLLER TO GROUND FOR JOYSTICK AND POTENTIOMETERS	
90.	WHT/GRN	VARIABLE ROTATION POT TO MACHINE CONTROLLER	
91.		NOT USED	
92.	GRN/BLK	MACHINE CONTROLLER TO PIPELOADER FUNCTION SWITCHES AND DIODES	
93.	BLU/BLK	MACHINE CONTROLLER TO PIPELOADER FUNCTION SWITCHES AND DIODES	
94.	WHT/ORG	RESISTOR TO THRUST AUXILIARY SWITCH	
95.	WHT/RED	RESISTOR TO ROTATION AUXILIARY SWITCH	
96.	WHT/BLU	RESISTOR TO DRILL FLUID AUXILIARY SWITCH	
97.	BLU/YEL	SEAT SWITCH TO TWO SECOND DELAY TIMER	
98.	RED/WHT	DIODE ANODE TO CRANE ENABLE AND DRILL/DRIVE ENABLE RELAYS	
99.	ORG/WHT	DRILL/DRIVE ENABLE RELAY TO DRIVE/PARK/DRILL SWITCH	
100.	PUR/WHT	SHUTTLE STOP SWITCH TO UP SOLENOID	
101.	BLU/WHT	SHUTTLE STOP SWITCH TO DOWN SOLENOID	
102.	WHT/GRN	TRACKER CONTROL RELAY TO ROTATION AND THRUST SOLENOIDS AND TRANSLATORS	
103.	TAN/RED	TRACKER CONTROL RELAY TO REMOTE DISPLAY, TRACKER CONTROL KEY, & DRIVE SWITCH	
104.	PUR/RED	CARRIAGE HIGH SPEED SWITCH TO MACHINE CONTROLLER	
105.	PUR/ORG	MACHINE CONTROLLER TO CARRIAGE HIGH SPEED SOLENOIDS	
106.	BLU/ORG	REVERSE WARNING ALARM RELAY TO REVERSE WARNING ALARM	
107.	YEL/GRN	CAB POSITION SWITCH TO MACHINE CONTROLLER	
108.	GRA	DRIVE/PARK/DRILL SWITCH TO CAB POSITION SWITCH, DRIVE SOLENOIDS, REVERSE ALARM RELAY, & TRACK DRIVE RESISTORS	
109.	YEL/PUR	DRILL/PARK/DRIVE SWITCH TO MACHINE CONTROLLER & DRILL RESISTORS	
110.	BRN/ORG	REMOVE/MANUAL/ADD SWITCH TO MACHINE CONTROLLER	
111.	WHT/ORG	REMOVE/MANUAL/ADD SWITCH TO PIPELOADER FUNCTION SWITCHES & MANUAL RELAY	

## ELECTRICAL SCHEMATIC

JT7020M1

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
112.	BRN/YEL	REMOVE/MANUAL/ADD SWITCH TO MACHINE CONTROLLER	
113.	TAN/BLK	MACHINE CONTROLLER TO DIAGNOSTIC LIGHT RELAY	
114.	GRA/GRN	JOYSTICK Y-AXIS OUTPUT TO MACHINE CONTROLLER	
115.	TAN/GRN	JOYSTICK X-AXIS OUTPUT TO MACHINE CONTROLLER	
116.	BLU/GRN	5 VOLT OUTPUT FROM MACHINE CONTROLLER	
117.	TAN	MACHINE CONTROLLER TO SHUTTLE SWITCH AND SHUTTLE ENABLE RELAY	
118.	PUR	MACHINE CONTROLLER TO REAR WRENCH ROTATE SWITCH AND SOLENOIDS	
119.	GRA	MACHINE CONTROLLER TO LUBRICATOR SWITCH AND SOLENOID	
120.	GRN	MACHINE CONTROLLER TO PIPE GRIP SWITCH AND SOLENOIDS	
121.	BLU	MACHINE CONTROLLER TO PIPE LIFT SWITCH AND SOLENOIDS	
122.	YEL	MACHINE CONTROLLER TO REAR WRENCH SWITCH AND SOLENOIDS	
123.	BRN	MACHINE CONTROLLER TO FRONT WRENCH SWITCH AND SOLENOIDS	
124.	BRN/ORG	FRONT WRENCH CLAMP SOLENOID TO DIODE ANODE	
125.	BRN/GRN	FRONT WRENCH UNCLAMP SOLENOID TO DIODE ANODE	
126.	YEL/RED	REAR WRENCH CLAMP SOLENOID TO DIODE ANODE	
127.	YEL/BLU	REAR WRENCH UNCLAMP SOLENOID TO DIODE ANODE	
128.	BLU/GRN	PIPE LIFT UP SOLENOID TO DIODE ANODE	
129.	BLU/YEL	PIPE LIFT DOWN SOLENOID TO DIODE ANODE	
130.	GRN/BLU	PIPE GRIPPER OPEN SOLENOID TO DIODE ANODE	
131.	GRN/ORG	PIPE GRIPPER CLOSE SOLENOID TO DIODE ANODE	
132.	- - -	NOT USED	
133.	- - -	NOT USED	
134.	PUR/GRN	REAR WRENCH ROTATE CW SOLENOID TO DIODE ANODE	
135.	PUR/YEL	REAR WRENCH ROTATE CCW SOLENOID TO DIODE ANODE	
136.	TAN/GRN	SHUTTLE EXTEND SOLENOID TO DIODE ANODE	
137.	TAN/WHT	SHUTTLE RETRACT SOLENOID TO DIODE ANODE	
138.	WHT	JUMPER ON REMOVE/MANUAL/ADD SWITCH	
139.	WHT/ORG	START RELAY TO DIODE ANODE	
140.	TAN/RED	FRONT HOME SWITCH TO MACHINE CONTROLLER & LED	
141.	PNK	MACHINE CONTROLLER TO CONTROL CYCLE LIGHT	
142.	WHT/RED	MANUAL RELAY TO MANUAL PIPELOADER SWITCHES	
143.	BLK/WHT	DRILL FLUID VOLTAGE TRANSLATOR TO DRILL FLUID SOLENOID	
144.	PUR/ORG	ROTATION CW/LEFT TRACK REVERSE VOLTAGE TRANSLATOR TO SOLENOID	
145.	PUR/YEL	ROTATION CCW/LEFT TRACK FORWARD VOLTAGE TRANSLATOR TO SOLENOID	
146.	- - -	NOT USED	
147.	- - -	NOT USED	
148.	- - -	NOT USED	
149.	- - -	NOT USED	
150.	YEL	FLUID POT 0.5V TO FLUID SWITCH "OFF"	
151.	BLU/RED	TRACKOM FUSE CIRCUIT	
152.	- - -	NOT USED	
153.	WHT	REMOTE DISPLAY TO DOWNLOAD CONNECTION "B"	
154.	YEL	REMOTE DISPLAY TO DOWNLOAD CONNECTION "C"	
155.	BLK	REMOTE DISPLAY TO DOWNLOAD CONNECTION "A"	
156.	- - -	NOT USED	
157.	- - -	NOT USED	
158.	GRA/PUR	TRACKER CONTROL RELAY TO TRACKER CONTROL LIGHT	
159.	- - -	NOT USED	
160.	- - -	NOT USED	
161.	- - -	NOT USED	
162.	- - -	NOT USED	
163.	- - -	NOT USED	
164.	- - -	NOT USED	
165.	- - -	NOT USED	
166.	- - -	NOT USED	
167.	BLU/WHT	RESISTOR TO LEFT TRACK AUXILARY SWITCH	
168.	GRN/WHT	RESISTOR TO RIGHT TRACK AUXILARY SWITCH	

## ELECTRICAL SCHEMATIC

JT7020M1

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
169.		NOT USED	
170.		NOT USED	
171.		NOT USED	
172.		NOT USED	
173.	BRN/WHT	CONTROLLER TO CHECK VALVE SWITCH AND MUD PUMP "ON" LED	
174.	GRN/RED	CHECK VALVE SWITCH TO BYPASS LIGHT	
175.	GRN/YEL	CHECK VALVE SWITCH TO CHECK VALVE SOLENOID	
176.		NOT USED	
177.		NOT USED	
178.		NOT USED	
179.		NOT USED	
180.		NOT USED	
181.		NOT USED	
182.		NOT USED	
183.		NOT USED	
184.		NOT USED	
185.		NOT USED	
186.		NOT USED	
187.		NOT USED	
188.		NOT USED	
189.		NOT USED	
190.		NOT USED	
191.		NOT USED	
192.	PUR/WHT	SPINDLE BRAKE SWITCH TO SPINDLE BRAKE RELEASE SOLENOID	
193.		NOT USED	
194.		NOT USED	
195.		NOT USED	
196.		NOT USED	
197.		NOT USED	
198.		NOT USED	
199.		NOT USED	
200.		NOT USED	
201.	WHT	JUMPER ON BLOWER SPEED SWITCH	
202.	BLU/BLK	A/C HEATER RELAY TO A/C HEATER SWITCH	
203.	GRN/BLK	A/C HEATER SWITCH TO BLOWER SPEED SWITCH	
204.	LT. GRN	A/C HEATER UNIT CONNECTION TO COMPRESSOR CLUTCH	
205.	LT. GRN	LOW PRESSURE SWITCH TO A/C HEATER UNIT CONNECTION	
206.	GRA/GRN	A/C HEATER SWITCH TO A/C HEATER UNIT CONNECTION	
207.	DRK GRN	A/C HEATER UNIT CONNECTION TO THERMOSTAT	
208.	WHT/ORG	BLOWER SPEED SWITCH "HI" TO UNIT CONNECTION	
209.	ORG	A/C HEATER UNIT CONNECTION TO BLOWER SPEED MOTOR "HI"	
210.	WHT/PUR	BLOWER SPEED SWITCH "MED" TO A/C HEATER UNIT CONNECTION	
211.	LT. BLU	A/C HEATER UNIT CONNECTION TO "MED" RESISTOR	
212.	WHT/YEL	BLOWER SPEED SWITCH "LOW" TO A/C HEATER UNIT CONNECTION	
213.	YEL	A/C HEATER UNIT CONNECTION TO RESISTOR "LOW"	
214.		A/C HEATER THERMOSTAT TO HI PRESSURE SWITCH	
215.		A/C HEATER HI PRESSURE SWITCH TO LOW PRESSURE SWITCH	
216.	GRA/RED	TOP WIPER FUSE TO SWITCH	
217.	GRA/BLU	TOP WIPER SWITCH TO "PARK" ON TOP WIPER MOTOR	
218.	GRA/GRN	TOP WIPER SWITCH TO "LOW" ON TOP WIPER MOTOR	
219.	GRA/ORG	TOP AND BOTTOM WIPER SWITCHES TO WINDSHIELD WASHER MOTOR	
220.	PUR/ORG	BOTTOM WIPER FUSE TO SWITCH	
221.	PUR/YEL	BOTTOM WIPER SWITCH TO "PARK" ON BOTTOM WIPER MOTOR	
222.	PUR/GRN	BOTTOM WIPER SWITCH TO "LOW" ON BOTTOM WIPER MOTOR	
223.	GRA/BLU	FRONT DRILL FRAME TILT SWITCH TO UP SOLENOID	
224.	GRA/BLK	FRONT DRILL FRAME SWITCH TO DOWN SOLENOID	
225.	WHT/BLU	REAR DRILL FRAME TILT SWITCH TO UP SOLENOID	

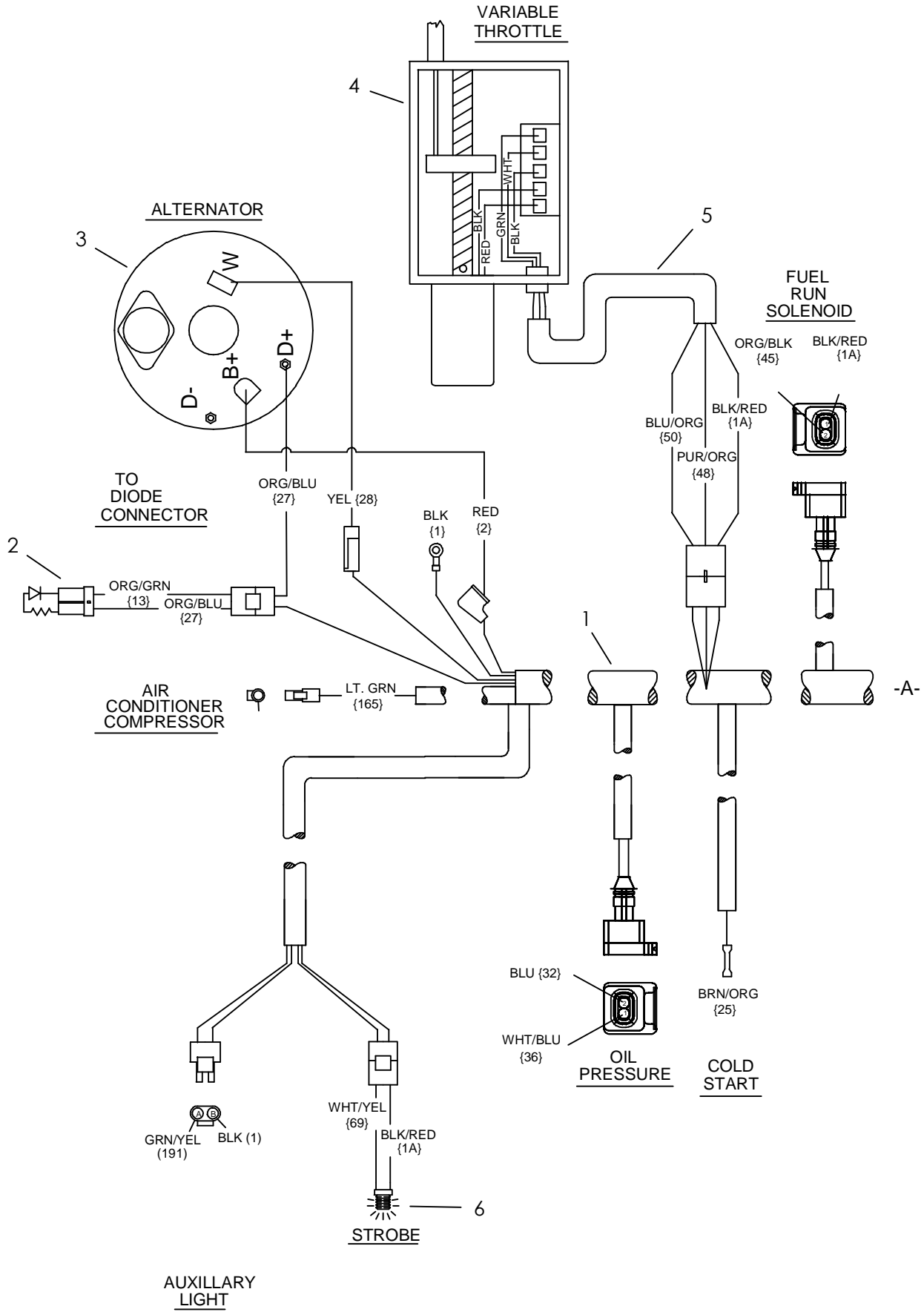


# ELECTRICAL SCHEMATIC

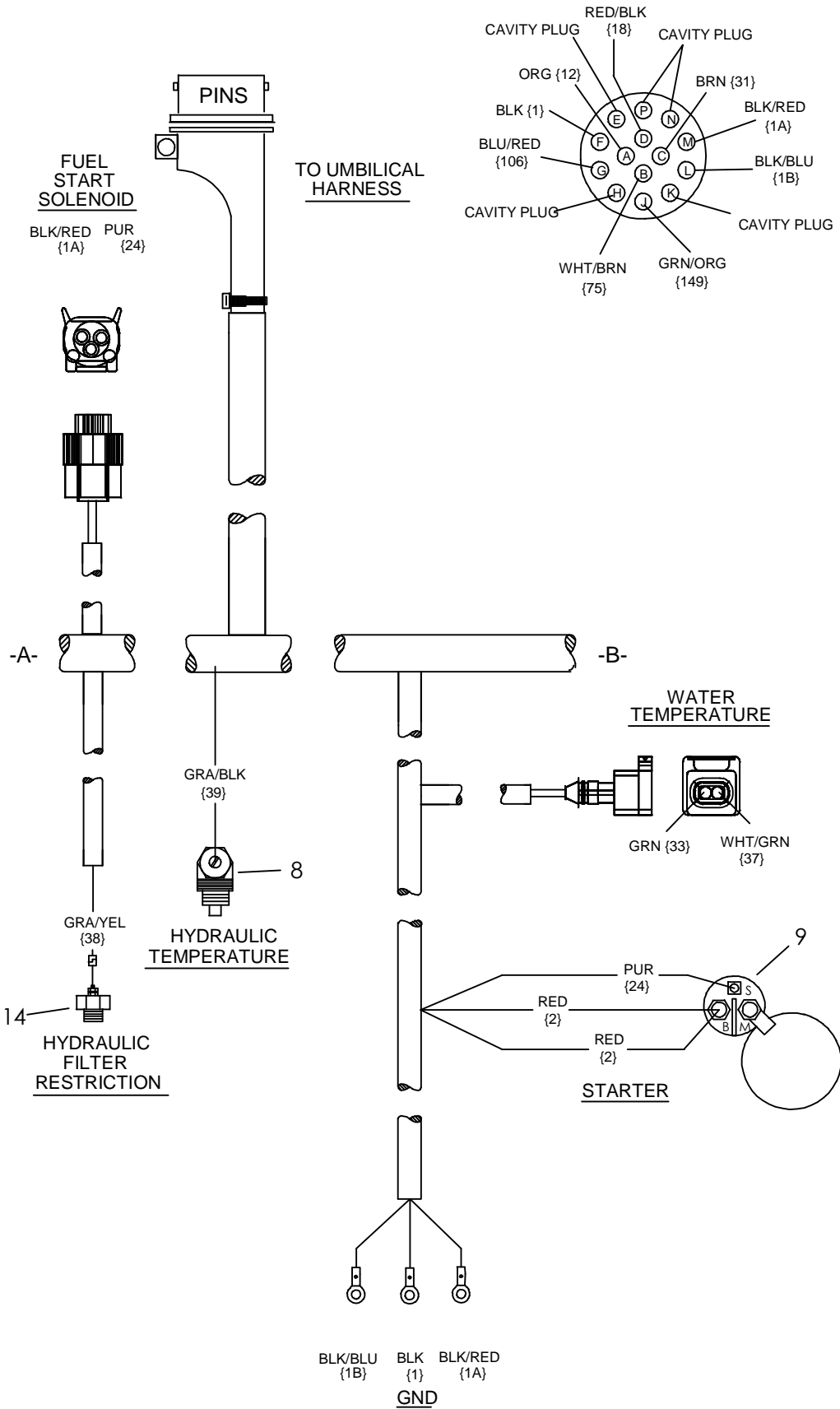
JT7020M1

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
226.	WHT/BLK	REAR DRILL FRAME TILT SWITCH TO DOWN SOLENOID	
227.	GRN	AUXILLARY WORK LIGHT FUSE TO AUXILLARY WORK LIGHT RELAY	
228.	GRN/WHT	AUXILLARY WORK LIGHT SWITCH TO AUXILLARY WORK LIGHT RELAY	
229.	GRN/YEL	AUXILLARY WORK LIGHT RELAY TO AUXILLARY WORK LIGHT CONNECTION	
230.	TAN/ORG	SHUTTLE ENABLE RELAY TO SHUTTLE SOLENOIDS	
231.	RED/WHT	SHUTTLE GUARD SWITCH TO SHUTTLE ENABLE RELAY	
232.	BRN/GRN	HI PRESSURE SWITCH TO AIR COMPRESSOR SOLENOID	
233.	TAN/WHT	ROTATION SPEED SENSOR TO ROTATION SPEED GAUGE	
234.	WHT	REAR STOP SWITCH TO REAR STOP RELAY	
235.	ORG/BRN	LINER WASHER RELAY TO LINER WASHER PUMP	

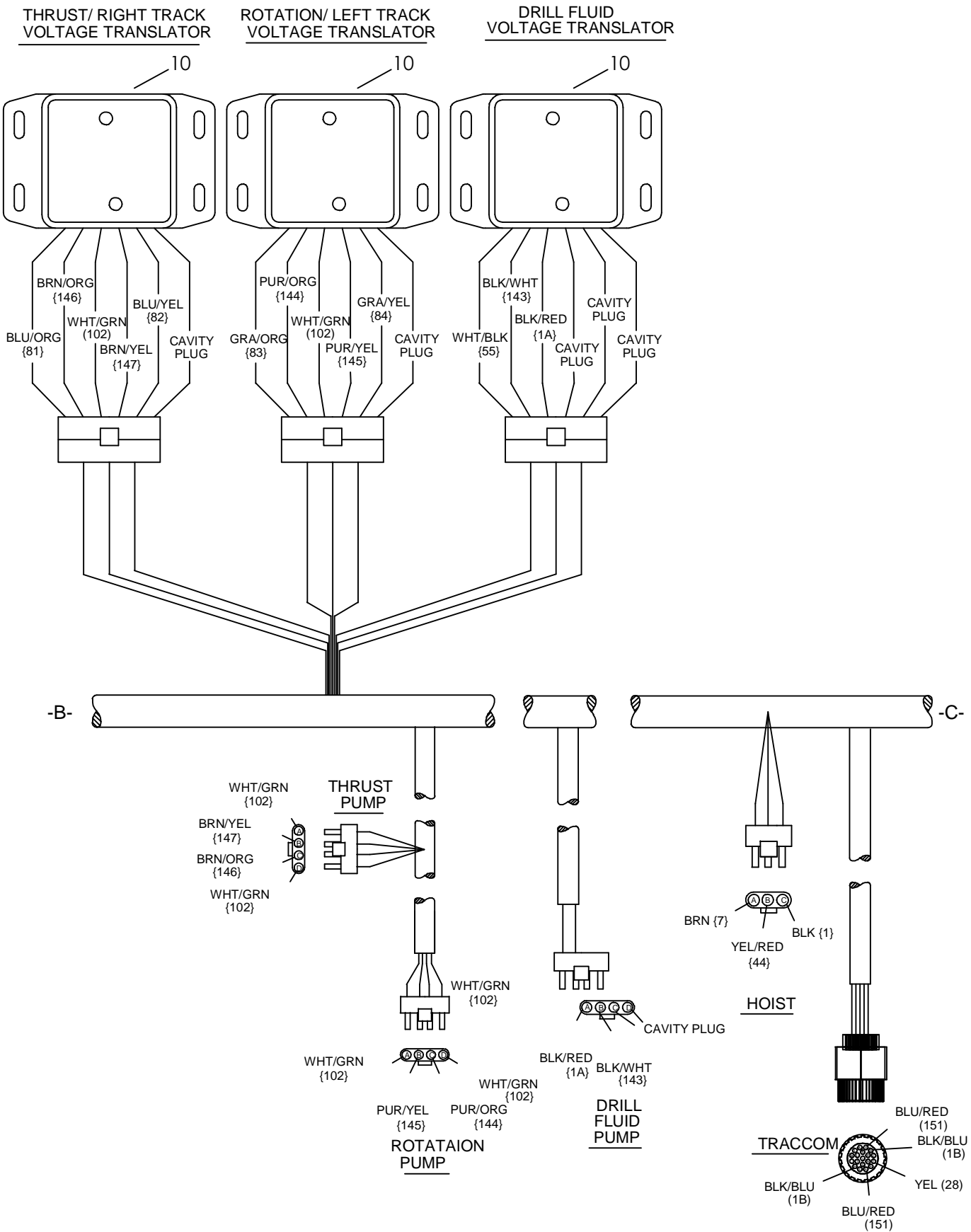
# FRAME/ENGINE HARNESS



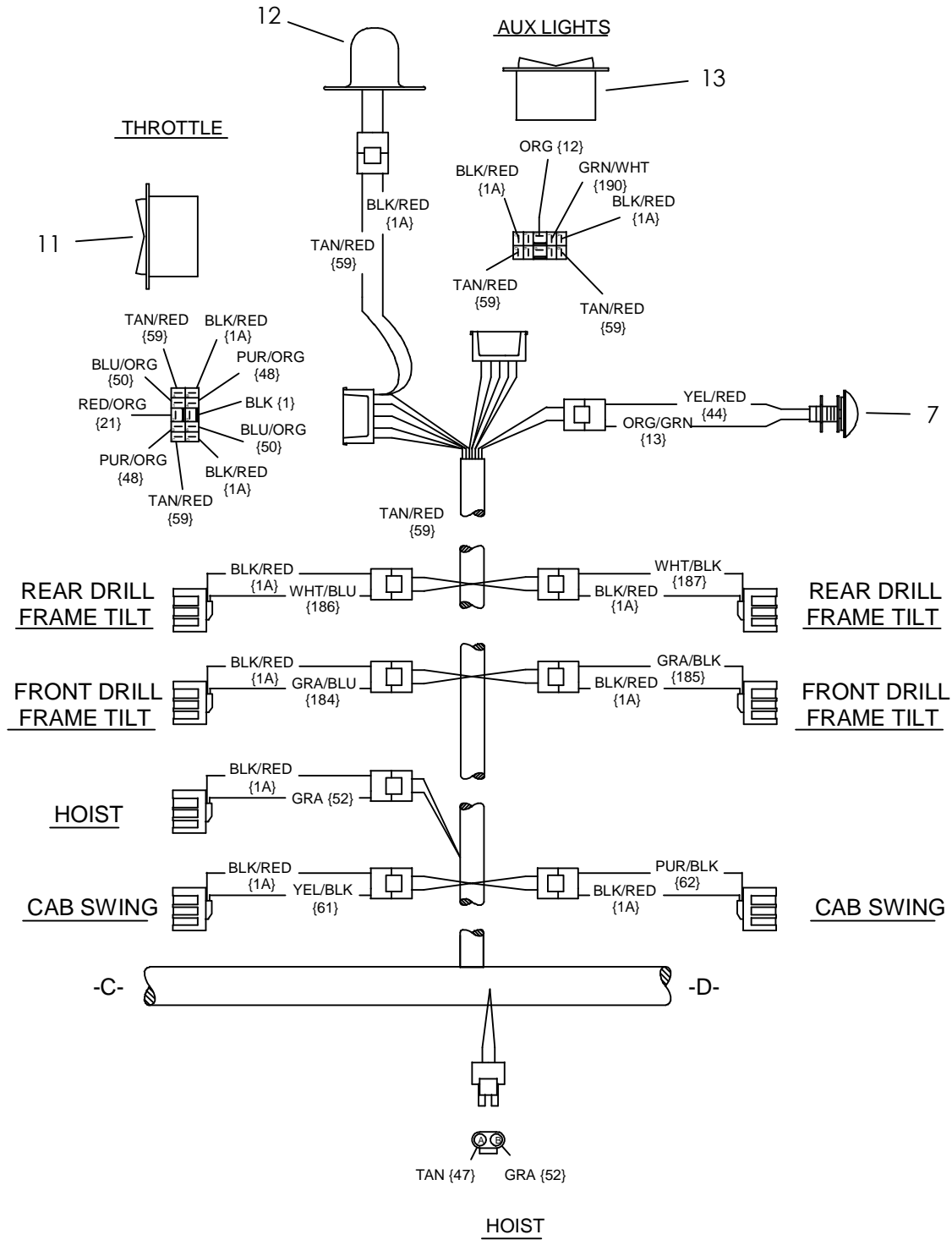
# FRAME/ENGINE HARNESS



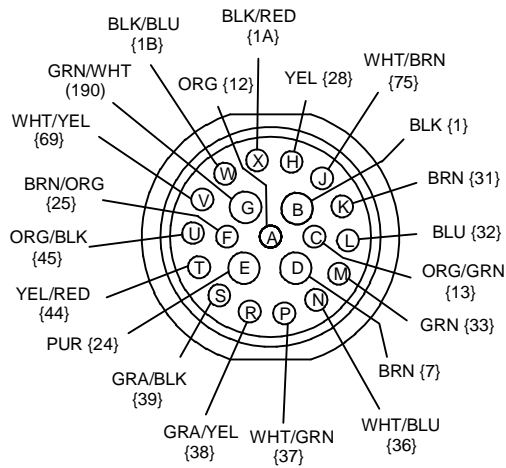
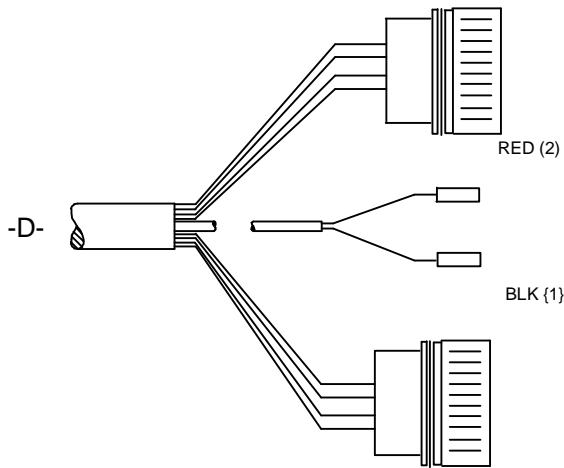
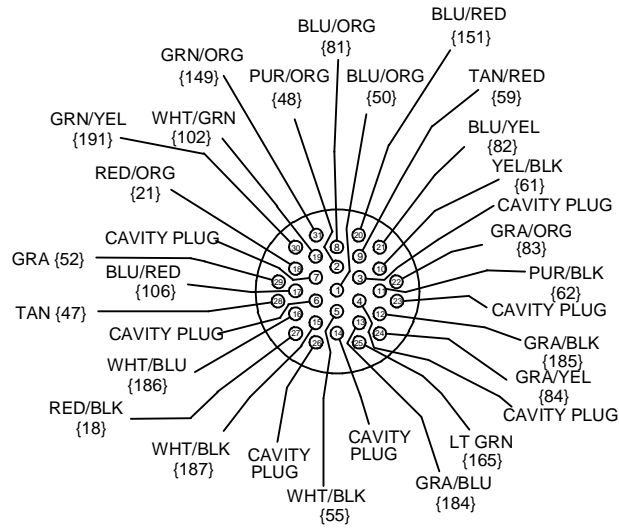
# FRAME/ENGINE HARNESS



# FRAME/ENGINE HARNESS



# FRAME/ENGINE HARNESS



## FRAME/ENGINE HARNESS

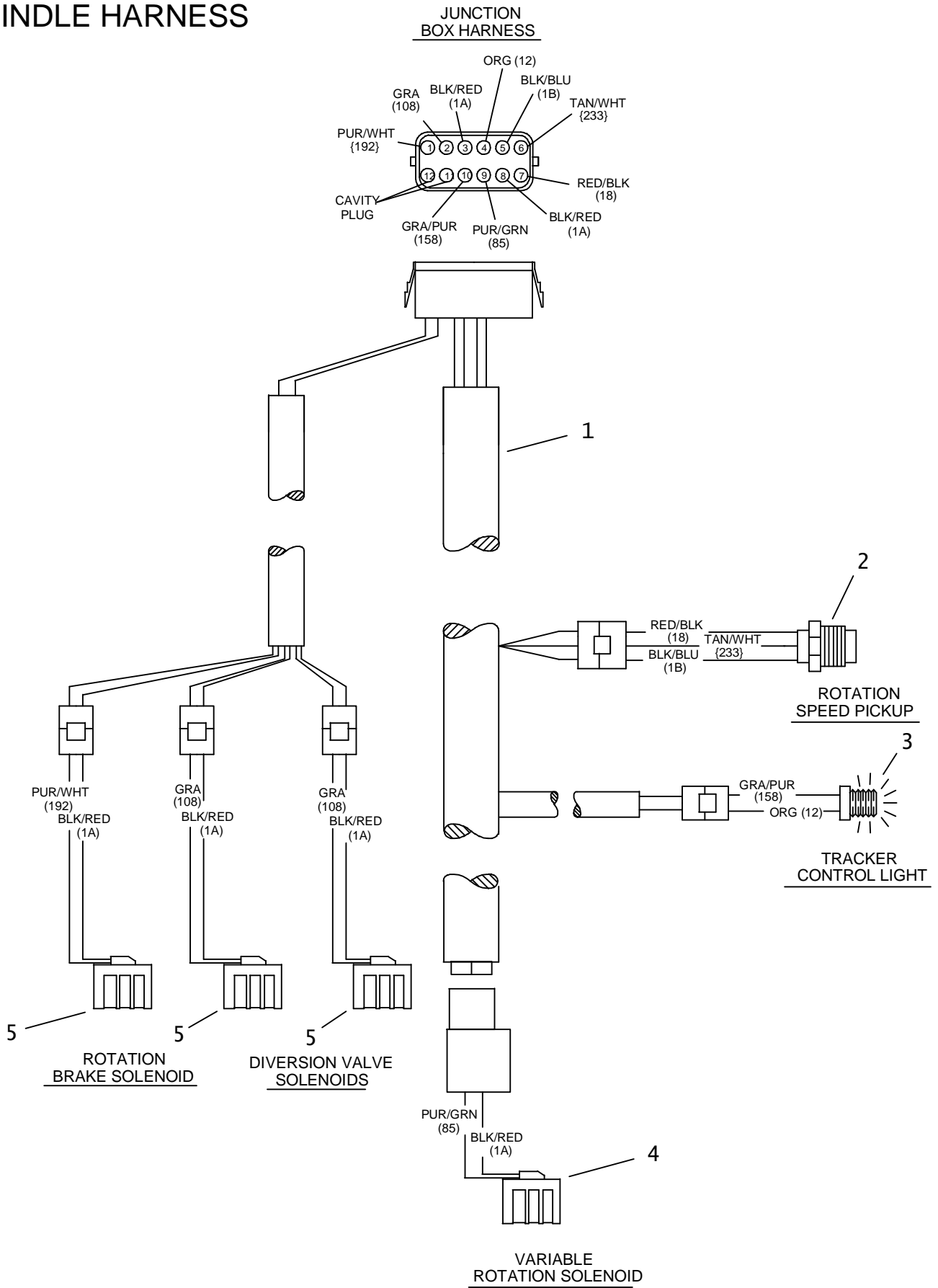
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-634	1	FRAME/ENGINE HARNESS	
2.	214-256	1	DIODE CONNECTOR	
3.	215-284	1	ALTERNATOR	
4.	215-231	1	LINEAR ACTUATOR	
	196-331	1	CABLE (LINEAR ACTUATOR)	
	501-358	-	ROLL PIN (3/32" X 3/4")	
5.	214-299	1	ACTUATOR PIGTAIL	
6.	214-722	1	STROBE LIGHT (AMBER)	
	217-870	-	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	
7.	217-724	1	BUTTON SWITCH (SPST)	
	214-943	1	BUTTON SWITCH (SPST)	
8.	214-819	1	TEMPERATURE SWITCH	
9.	194-833	1	STARTER, ENGINE	
10.	211-017	3	12V-5V VOLTAGE CONVERTOR	
11.	217-228	1	ROCKER SW (DPDT) {ON}-OFF-{ON}	
12.	215-412	1	LICENSE PLATE LAMP	
13.	217-918	1	ROCKER SW (DPDT) ON-ON	
14.	216-067	-	D.C. INDICATOR SENSOR	

NOT SHOWN:

FOOTNOTES:

NOTE:

# SPINDLE HARNESS





# SPINDLE HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-630	1	SPINDLE HARNESS	
2.	214-668	1	SPEED SENSOR	SEE FOOTNOTE I
3.	<u>214-697</u>	1	STROBE LIGHT (12V, DC, GREEN)	
	217-297	1	STROBE LIGHT GREEN MED PROFILE	
	214-103	1	(2-WAY) MALE CONNECTOR	
	214-991	-	REPLACEMENT FLASH TUBE	
	157-645	2	WEATHER-PAC SEAL (2.80MM)	
	214-104	2	PACKARD MALE TERMINAL	
4.	217-745	1	CONTROL SOLENOID	
5.	217-770	3	SOLENOID COIL	

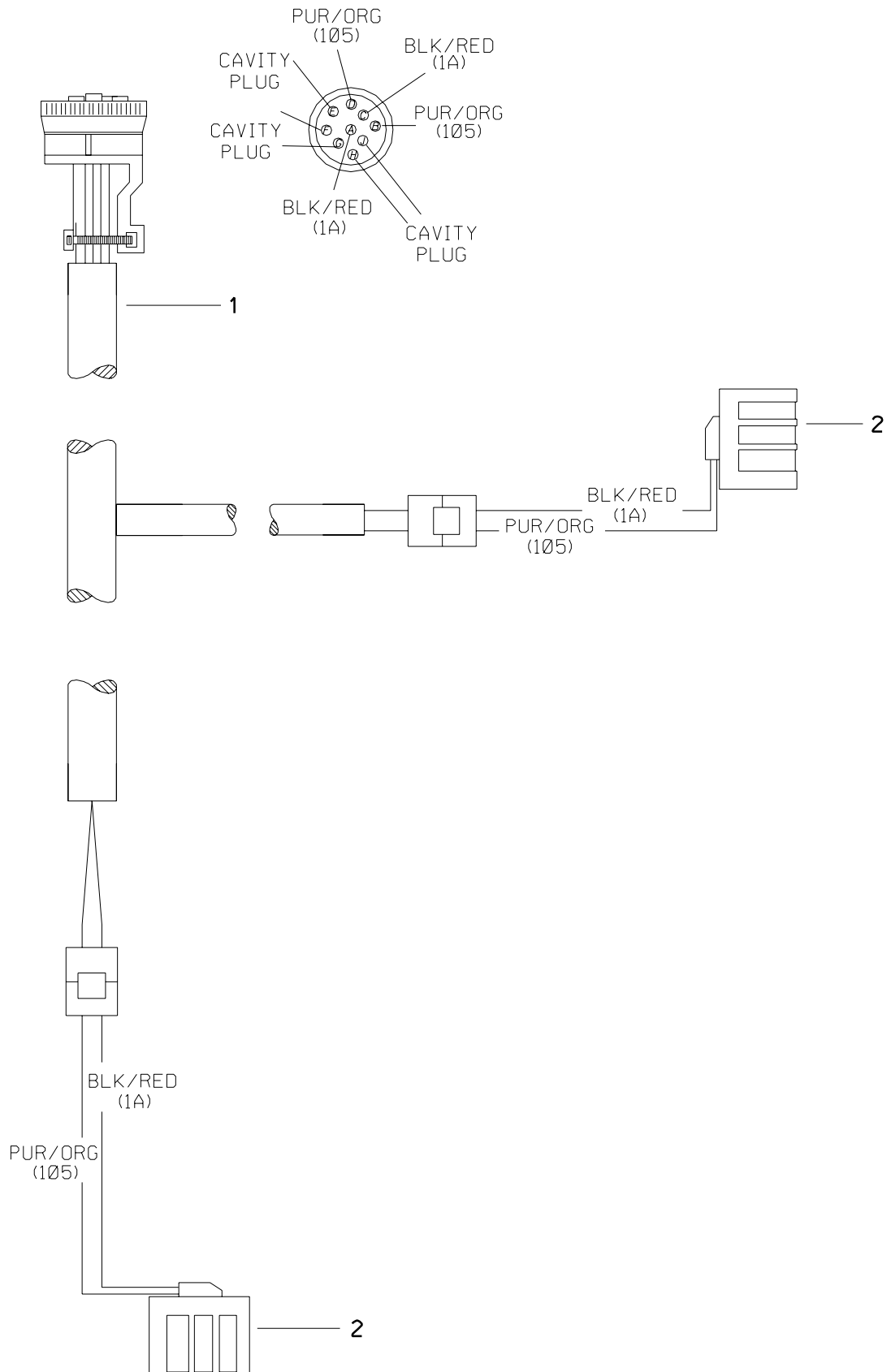
NOT SHOWN:

#### FOOTNOTES:

- I. USE 215-1004, 215-1433 & 215-1196 ON THE FOLLOWING S/N'S:  
 BEGINS WITH S/N: CMWJ80T3K80000039  
 ENDS WITH S/N:

NOTE:

# THRUST HARNESS



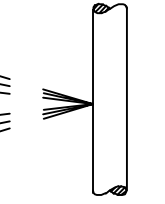
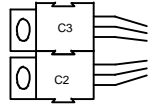
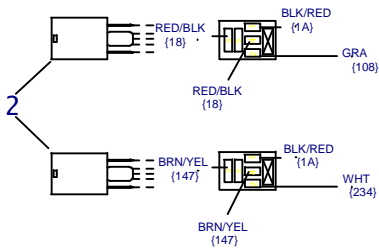
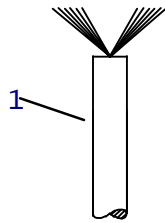
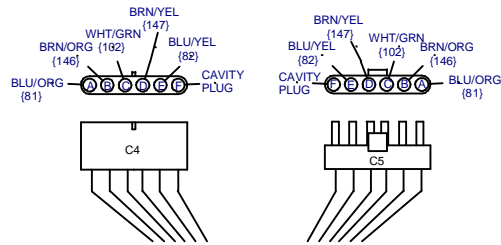
# THRUST HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-629	1	THRUST HARNESS	
2.	217-408	2	SOLENOID VALVE (12V)	

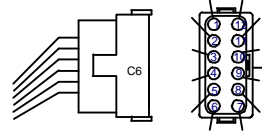
FOOTNOTES

# ELECTRICAL DIAGRAM REAR STOP HARNESS

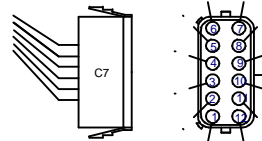
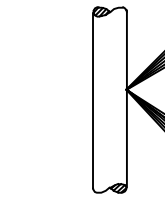
TO FRAME/  
ENG HARNESS      TO  
TRANSLATOR



TO ROTATION  
CABLE

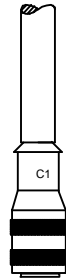


PIN #	PIN #	PIN #	
1	PUR/WHT (192)	7	RED/BLK (18)
2	GRA (108)	8	BLK/RED (1A)
3	BLK/RED (1A)	9	PUR/GRN (85)
4	ORG (12)	10	GRA/PUR (158)
5	BLK/BLU (1B)	11	CAVITY PLUG
6	TAN/WHT (233)	12	CAVITY PLUG

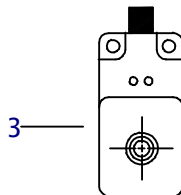
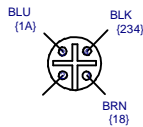


PIN #	PIN #	PIN #	
1	PUR/WHT (192)	7	RED/BLK (18)
2	GRA (108)	8	BLK/RED (1A)
3	BLK/RED (1A)	9	PUR/GRN (85)
4	ORG (12)	10	GRA/PUR (158)
5	BLK/BLU (1B)	11	CAVITY PLUG
6	TAN/WHT (233)	12	CAVITY PLUG

TO  
JUNCTION BOX



TO PROX.  
SWITCH



# ELECTRICAL DIAGRAM

## REAR STOP HARNESS

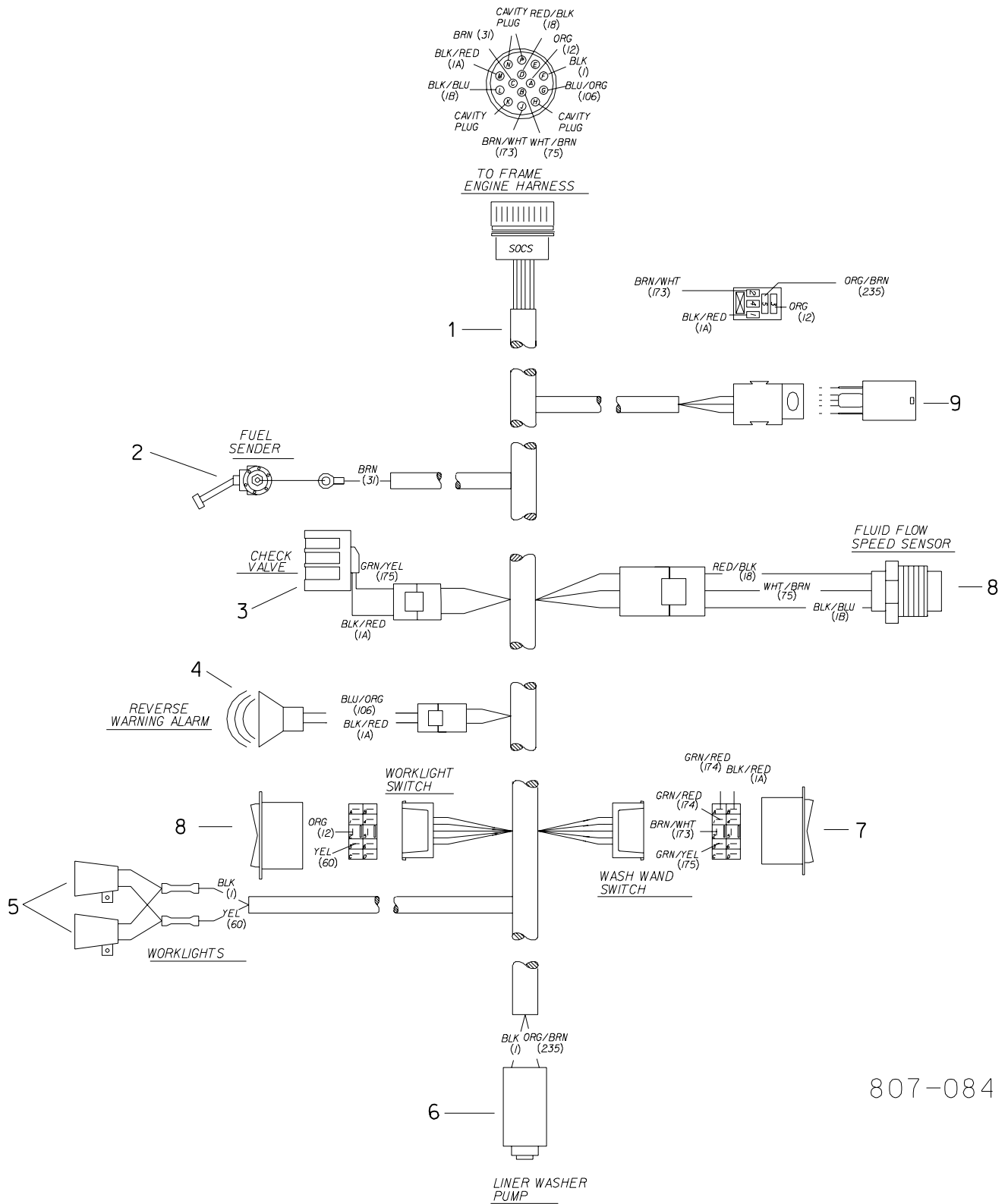
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	213-058	1	REAR STOP HARNESS	
2.	217-710	2	MICRO RELAY (SPDT)	
3.	215-1175	1	PROXIMITY SWITCH	

NOT SHOWN:

FOOTNOTES:

NOTE:

# ELECTRICAL DIAGRAM UMBILICAL HARNESS



807-084

# ELECTRICAL DIAGRAM

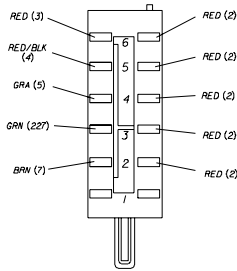
## UMBILICAL HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	213-059	1	UMBILICAL HARNESS	BEGINS WITH S/N: 2W0856
	214-704	1	UMBILICAL HARNESS	ENDS WITH S/N: 2V2567
2.	217-564	1	FUEL SENDER	
3.	214-491	1	COIL, (12V)	
4.	306-602	1	BACKUP ALARM	
5.	217-057	2	WORKING LIGHT - CLEAR	
6.	153-738	1	LINER WASH PUMP	
7.	217-918	2	ROCKER SW (DPDT) ON-ON	
8.	214-509	-	PULSE PICKUP	
9.	217-710	1	MICRO RELAY (SPDT)	

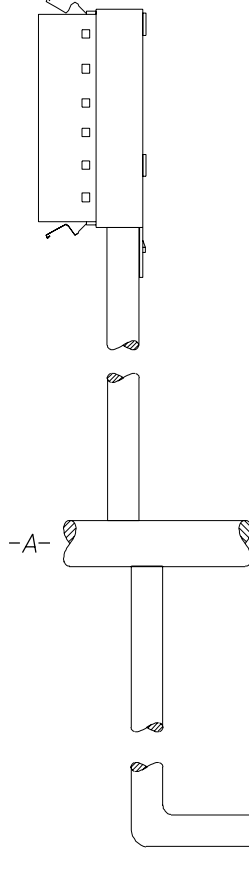
FOOTNOTES

# JUNCTION BOX HARNESS

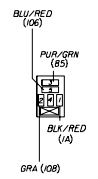
- FUSE SIZES
- 5 — MAIN (20A)
  - 6 — START (40A)
  - 5 — A/C HEATER (20A)
  - 5 — WORK LIGHT (20A)
  - 5 — HOIST (20A)
  - 5 — SPARE (20A)



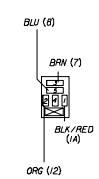
FUSE BLOCK



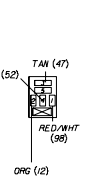
REVERSE ALARM RELAY



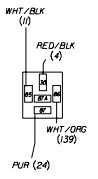
HOIST POWER RELAY



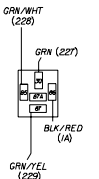
HOIST ENABLE RELAY



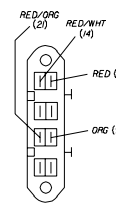
START RELAY



AUXILIARY LIGHT RELAY

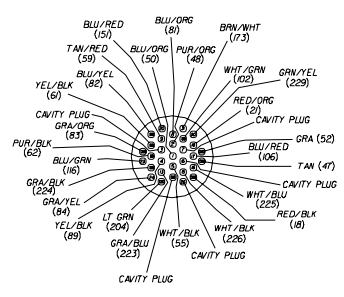


ACCESSORY FUSEBLOCK



- FUSE SIZES
- 9 — ACC. SOCKET (5A)
  - 10 — TRACCOM (5A)
  - 10 — VARIABLE THROTTLE (5A)
  - 10 — SPARE (5A)

TO ENGINE / FRAME HARNESS



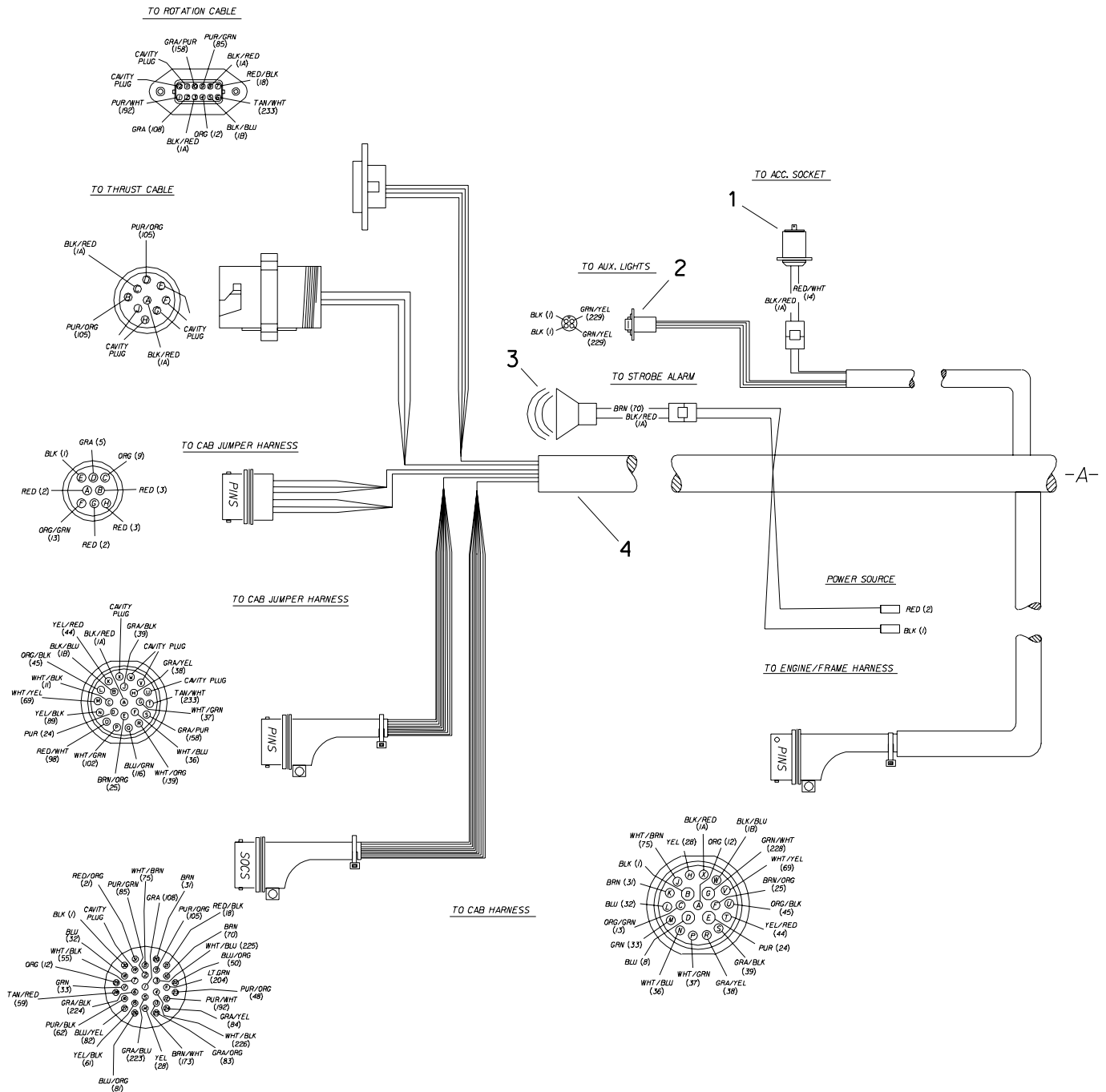


# JUNCTION BOX HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-301	1	ACCESSORY SOCKET	
2.	217-017	1	CONNECTOR (4-WAY, FM)	
3.	306-602	1	BACKUP ALARM	
4.	214-528	1	JUNCTION BOX HARNESS	
5.	217-805	5	FUSE (MAXI, 20 AMP)	
6.	217-791	1	FUSE (MAXI, 40 AMP)	
7.	217-710	3	MICRO RELAY (SPDT)	
8.	217-826	2	MINI RELAY (SPDT)	
9.	217-811	1	FUSE (ATC, 15 AMP)	
10.	217-809	3	FUSE (ATC, 5 AMP)	

FOOTNOTES

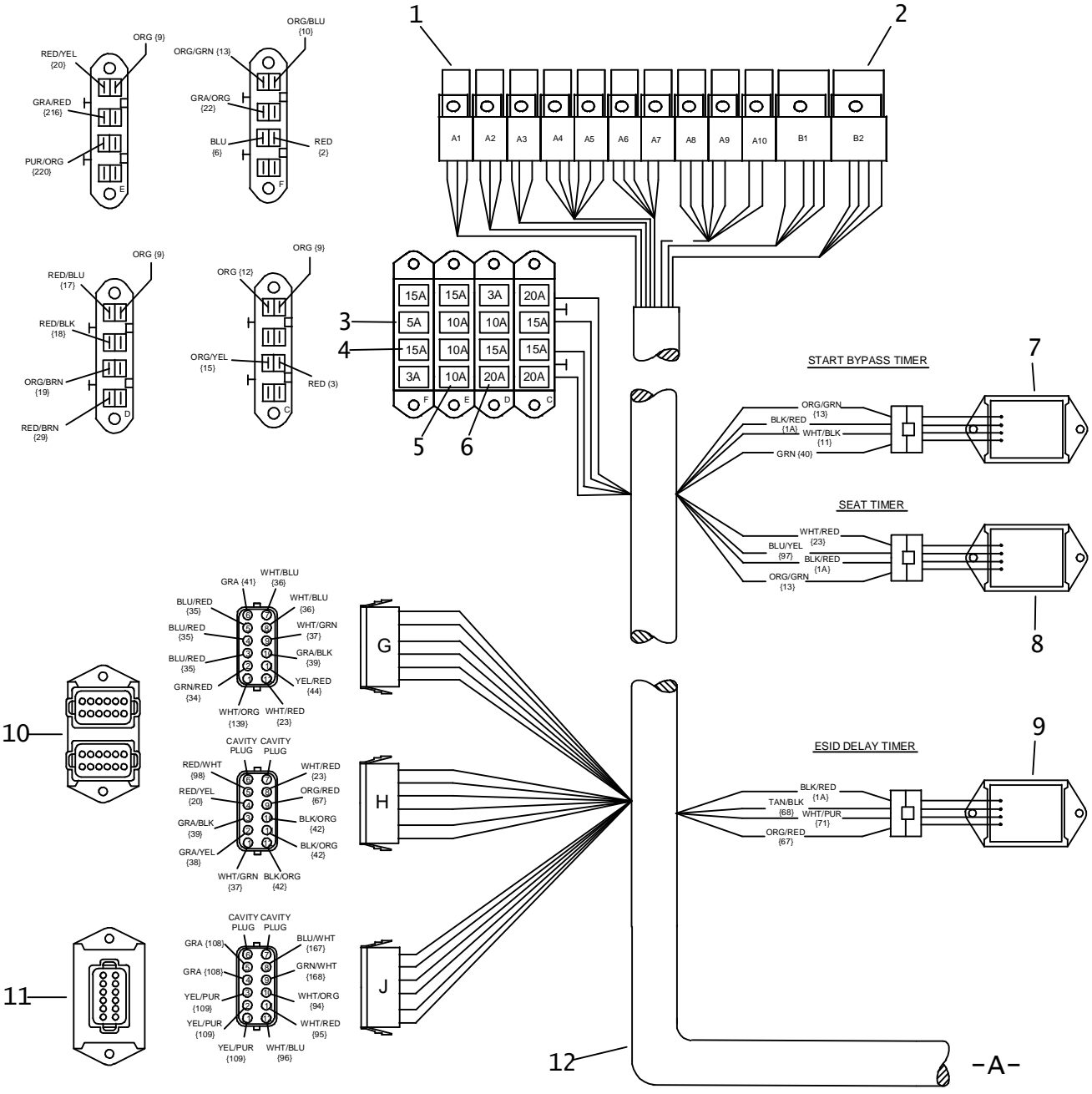
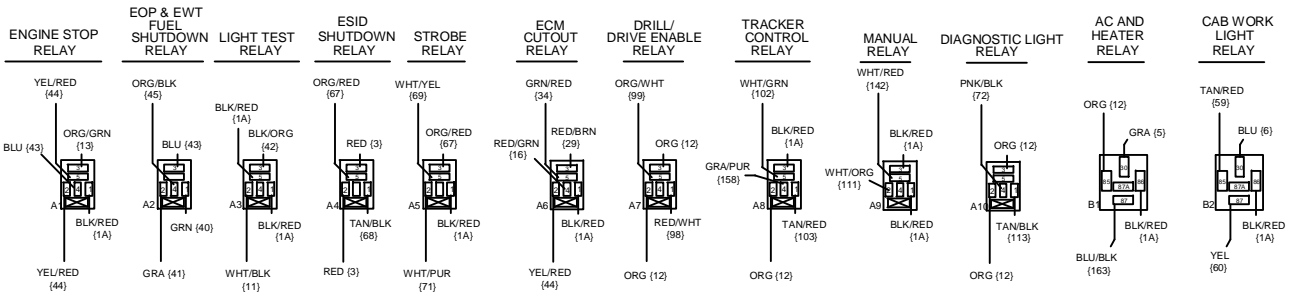
# JUNCTION BOX HARNESS





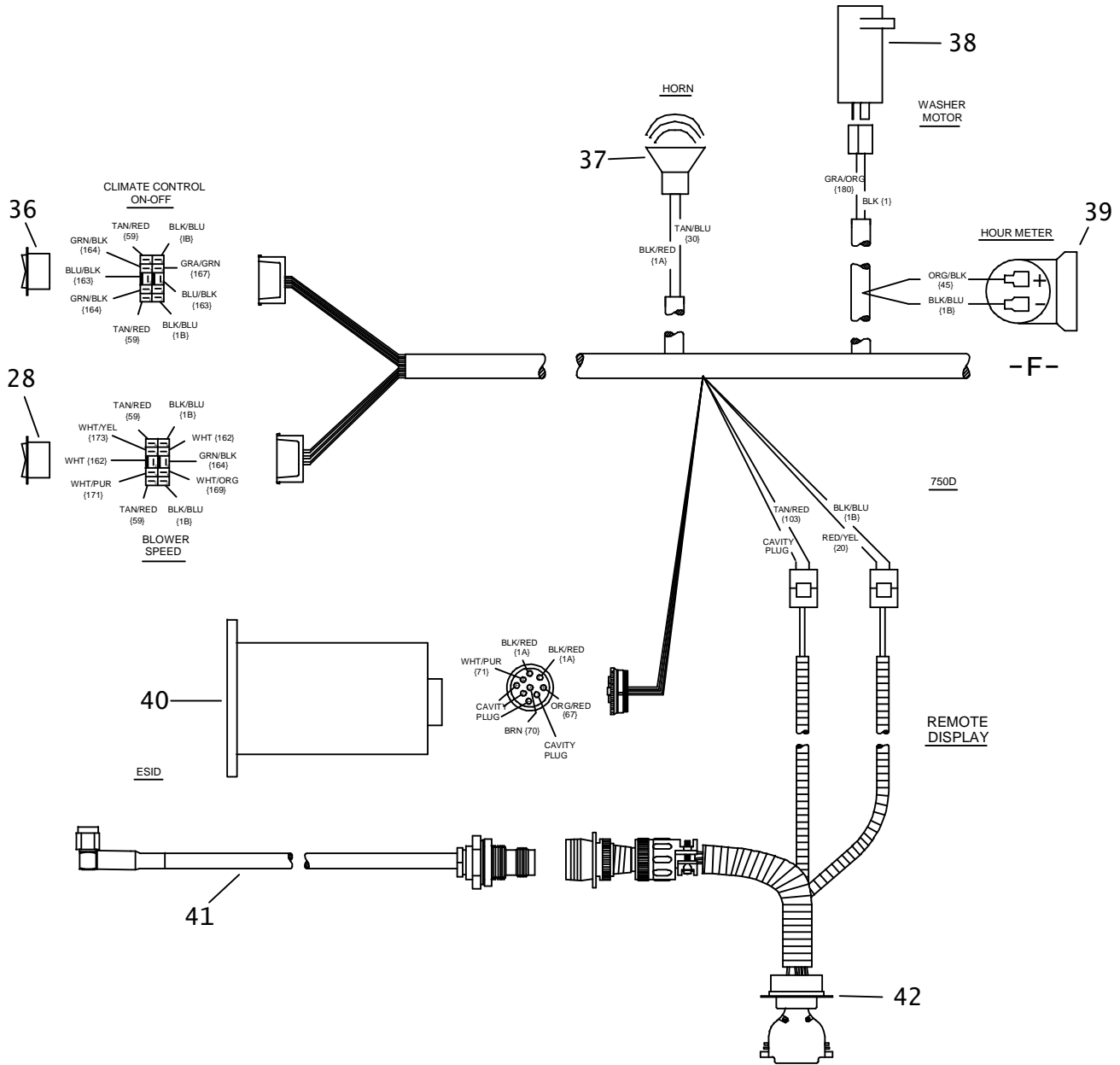
# CAB HARNESS

## JT70M1\_JT80M1

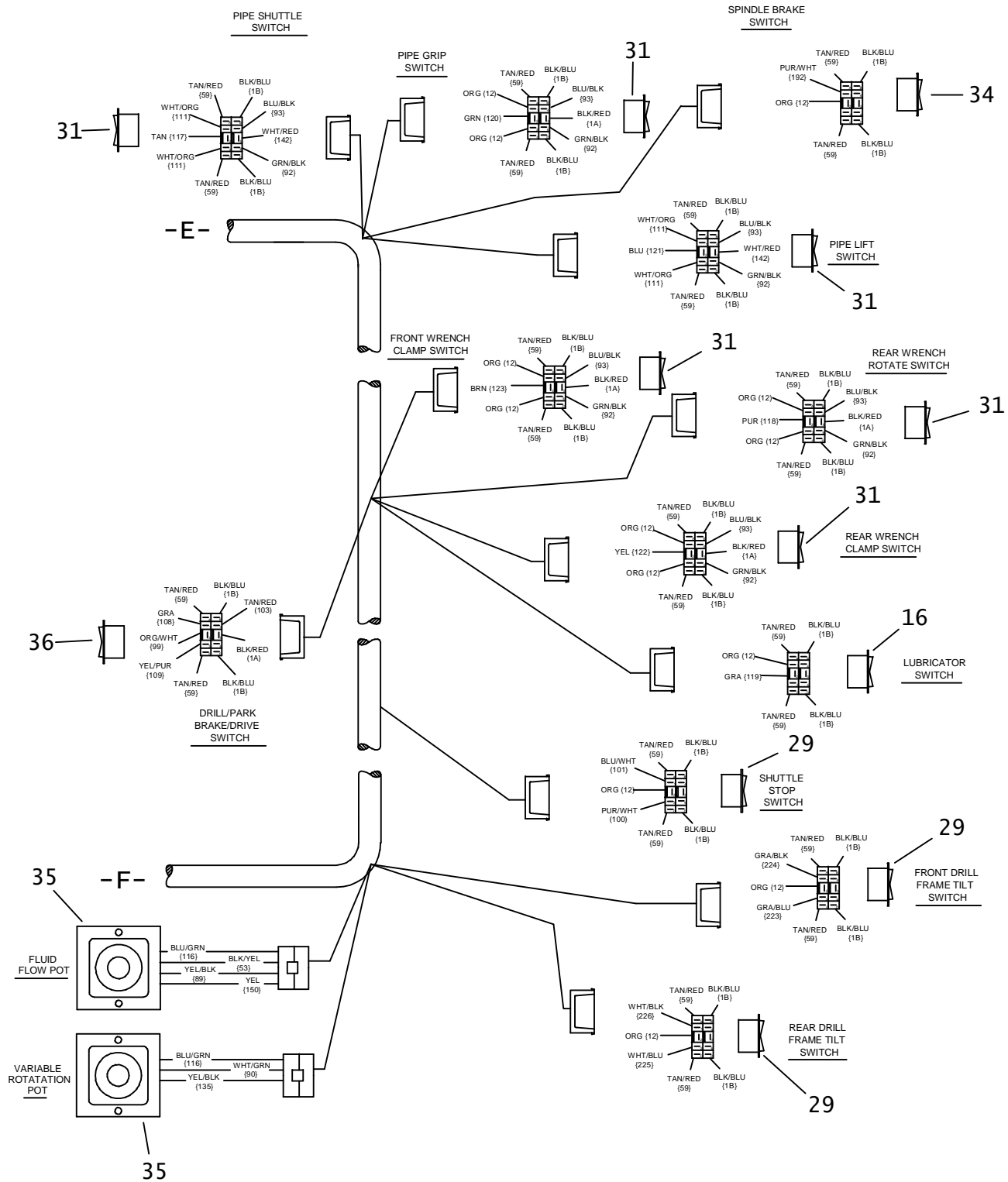


# CAB HARNESS

JT70M1\_JT80M1

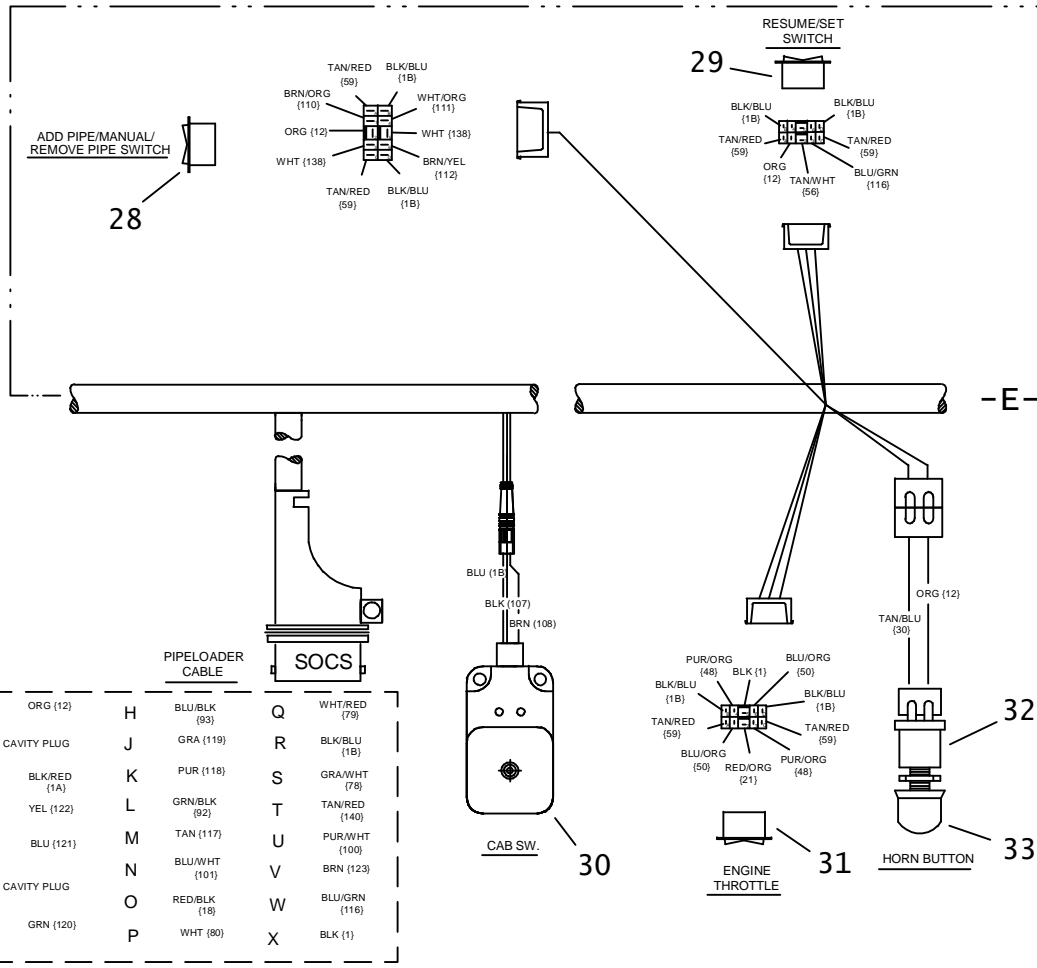
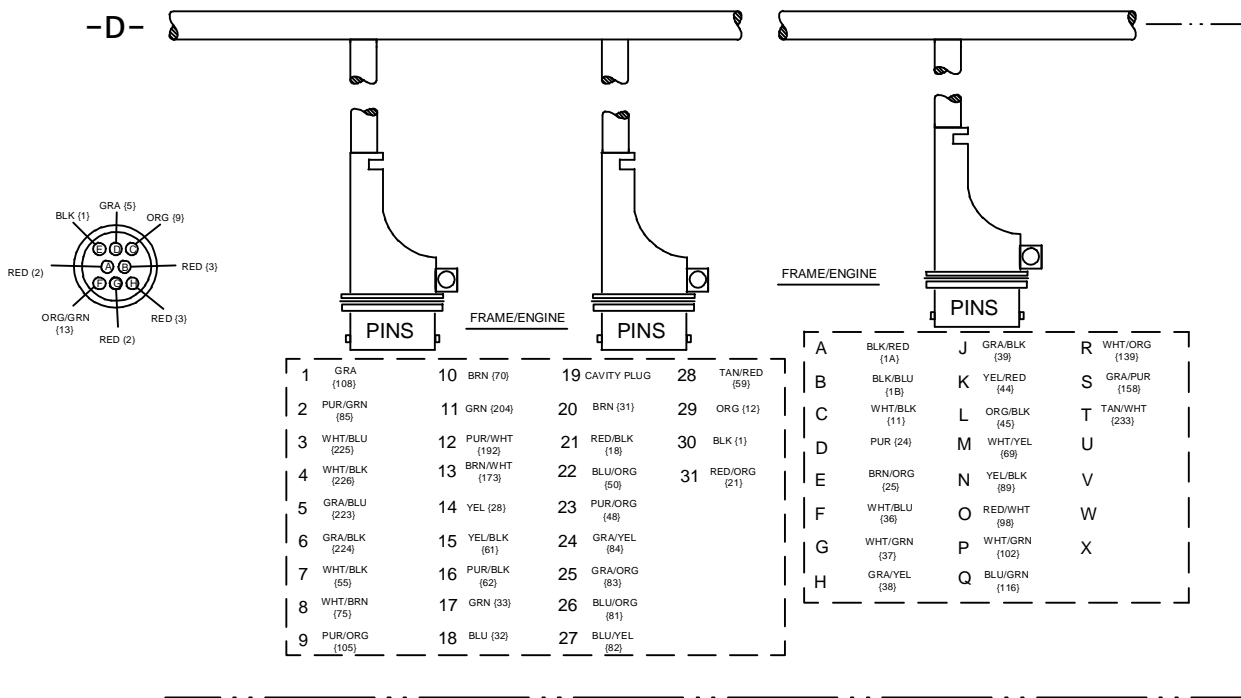


# CAB HARNESS JT70M1\_JT80M1

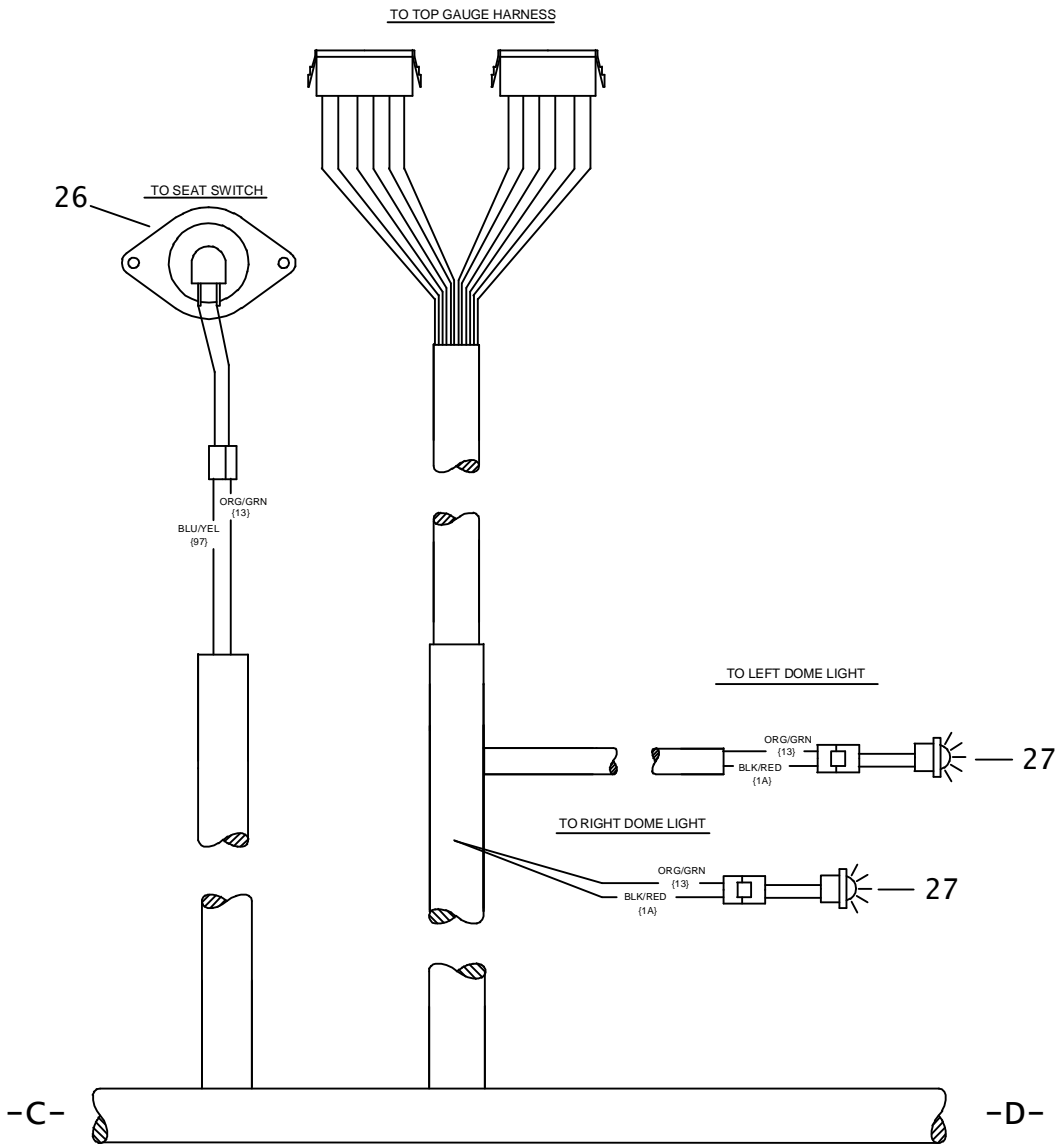
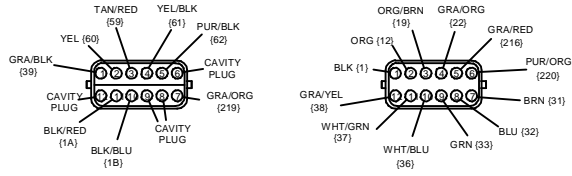


# CAB HARNESS

## JT70M1\_JT80M1

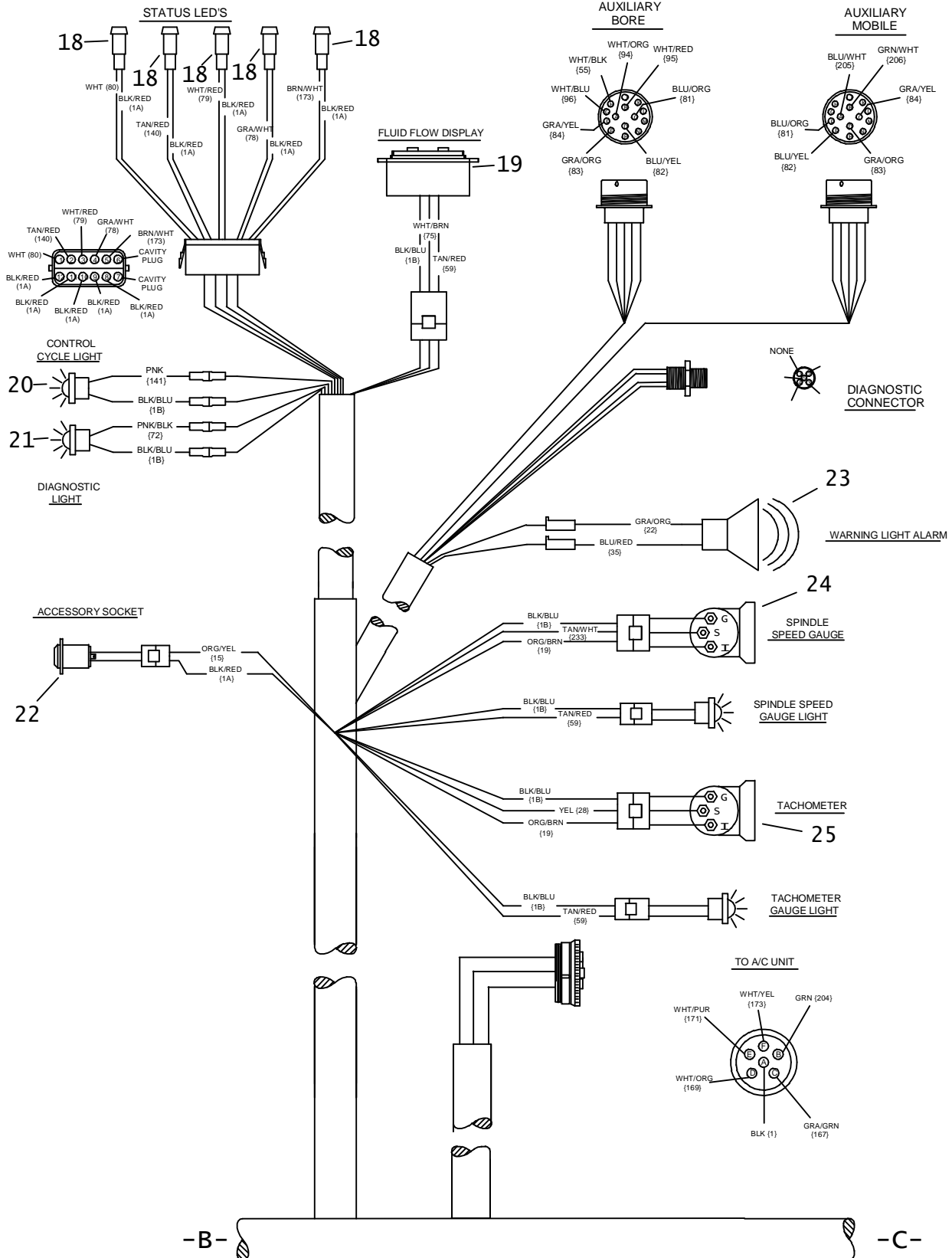


# CAB HARNESS JT70M1\_JT80M1





# CAB HARNESS JT70M1\_JT80M1

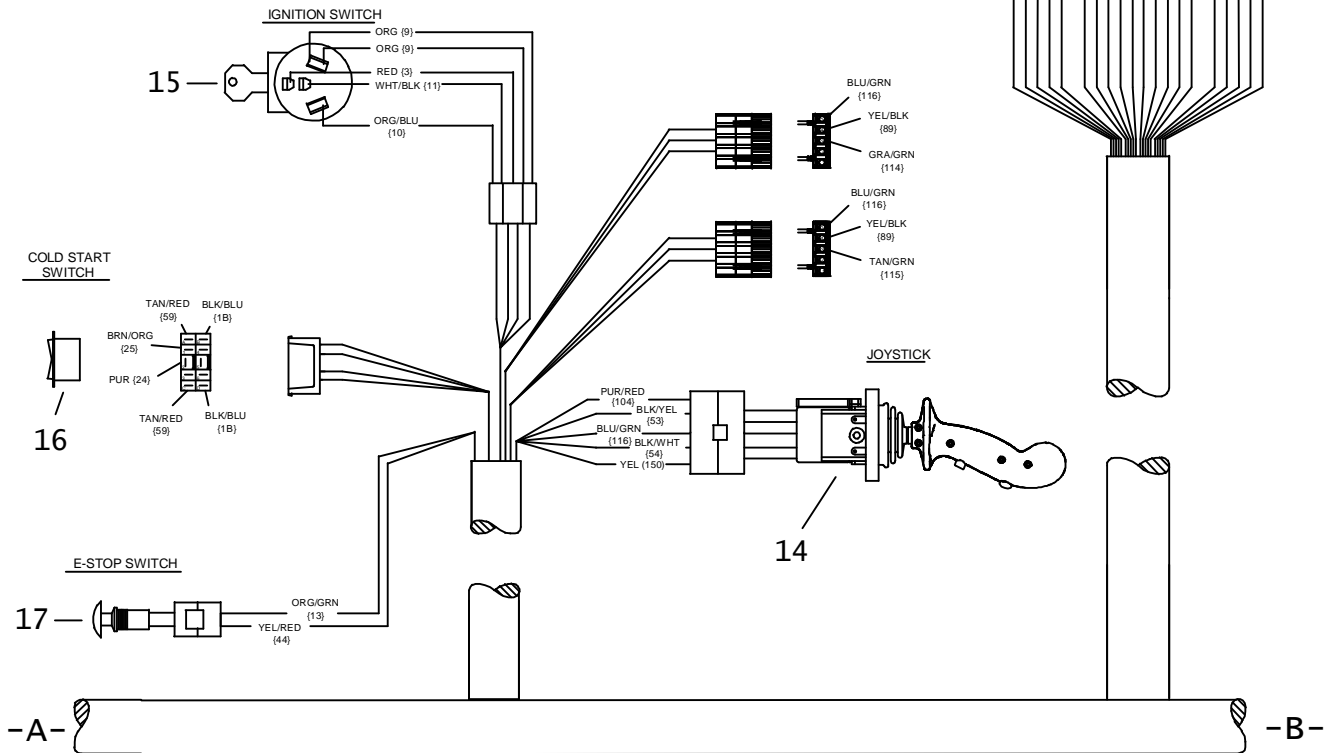
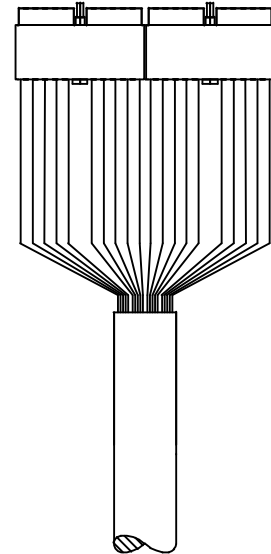
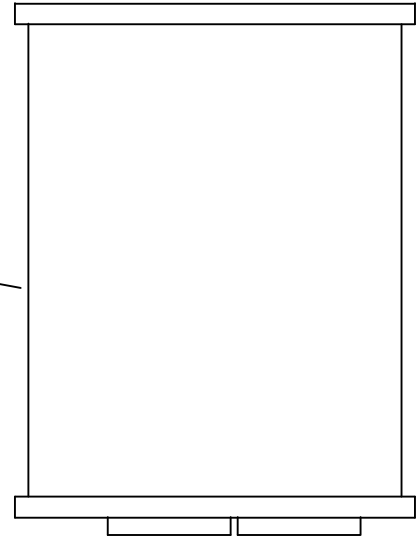


# CAB HARNESS JT70M1\_JT80M1

3		2		1	
A	WHT/BLK (55)	A	PUR/GRN (85)	A	BRN (123)
B	TAN/GRN (115)	B	YEL/PUR (109)	B	YEL (122)
C	GRA/GRN (114)	C	YEL/GRN (107)	C	PUR/ORG (105)
D	CAVITY PLUG	D	BRN/YEL (112)	D	BLU (121)
E	BLK/WHT (54)	E	BRN/ORG (110)	E	GRN (120)
F	CAVITY PLUG	F	GRAMWHT (78)	F	GRA (119)
G	WHT/GRN (90)	G	TAN/RED (140)	G	TAN (117)
H	CAVITY PLUG	H	WHT/RED (79)	H	PUR (118)
J	CAVITY PLUG	J	WHT (80)	J	PNK (141)
K	PUR/RED (104)	K	CAVITY PLUG	K	CAVITY PLUG
L	TAN/WHT (56)	L	CAVITY PLUG	L	GRA/ORG (83)
M	CAVITY PLUG	M	CAVITY PLUG	M	GRN/YEL (84)
N	WHT/PUR (71)	N	CAVITY PLUG	N	BLU/ORG (81)
P	CAVITY PLUG	P	CAVITY PLUG	P	BLU/YEL (82)
R	CAVITY PLUG	R	CAVITY PLUG	R	BRN/WHT (173)
S	PNK/WHT (58)	S	TAN/BLK (113)	S	CAVITY PLUG
T	BLU/GRN (116)	T	PNK/BLU (57)	T	CAVITY PLUG
W	BLK/BLU (18)	W	YEL/BLK (89)	W	CAVITY PLUG
X	BLK/BLU (18)	X	RED/BLU (17)	X	BLU/BLK (93)
Y	RED/GRN (16)	Y	RED/GRN (16)	Y	GRN/BLK (92)

TO MACHINE CONTROLLER

13



# CAB HARNESS

## JT70M1\_JT80M1

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-710	10	MICRO RELAY (SPDT)	
2.	217-826	2	MINI RELAY	
3.	217-809	1	FUSE (ATC, 5 AMP)	
4.	217-811	6	FUSE (ATC, 15 AMP)	
5.	217-810	4	FUSE (ATC, 10 AMP)	
6.	217-812	3	FUSE (ATC, 20 AMP)	
7.	217-937	1	START BYPASS DELAY TIMER	
8.	217-184	1	DELAY TIMER (2-SECOND)	
9.	214-502	1	DELAY TIMER	
10.	211-026	1	DIODE PACK (DEUTSCH)	
11.	211-035	1	BORE/MOBILE RESISTOR PACK	
12.	214-532	1	CAB HARNESS	
13.	216-059	1	CONTROL MODULE	USED WITH JT70M1
	220-1023	1	JT CONTROL 2	USED WITH JT80M1
14.	215-1224	1	DUAL AXIS JOYSTICK	
	197-104		REBUILT 214-565 JOYSTICK	
15.	214-852	1	IGNITION SWITCH	
	214-961		KEY, PAIR	
	214-962		SWITCH MOUNTING NUT	
16.	217-924	2	ROCKER SW (DPDT) OFF-{ON}	
17.	214-943	1	BUTTON SWITCH (SPST)	
18.	214-701	5	STATUS LIGHT	
19.	217-221	1	FLOW METER DISPLAY	
20.	214-840	1	GREEN LED (12V DC)	
21.	217-563	1	RED PILOT LIGHT	
22.	214-301	1	ACCESSORY SOCKET	
23.	306-603	1	AUDIO ALARM	
24.	211-053	1	TACHOMETER (250 RPM)	
25.	217-562	1	TACHOMETER (3000 RPM)	
26.	217-750	1	SEAT SWITCH	
27.	217-113	2	DIRECTIONAL LIGHT	
28.	217-922	1	ROCKER SW (SPDT) ON-ON-ON	
29.	217-228	4	ROCKER SW (DPDT) {ON}-OFF-{ON}	
	217-921	4	ROCKER SW (SPDT) (ON)-OFF-(ON)	
30.	215-1175	1	PROXIMITY SWITCH	
31.	217-228	7	ROCKER SW (DPDT) {ON}-OFF-{ON}	
32.	306-607	1	HORN BUTTON	
33.	306-608	1	BUTTON COVER	
34.	217-918	1	ROCKER SW (DPDT) ON-ON	
35.	214-566	2	POTENTIOMETER	
36.	217-923	2	ROCKER SW (DPDT) ON-OFF-ON	
37.	192-006	1	HIGH FREQUENCY HORN	
	306-609	1	HIGH FREQUENCY HORN	OBSOLETE
38.	344-115	1	WINDSHIELD WASHER TANK	
39.	215-128	1	HOUR METER	
40.	217-241	1	ESID MODULE	
41.	214-414	1	RIG RF CABLE 4270MM	
42.	214-415	1	90D MODULE TO RIG CABLE	

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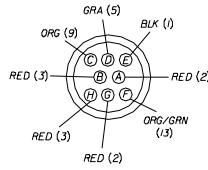
FOOTNOTES:

NOTE:

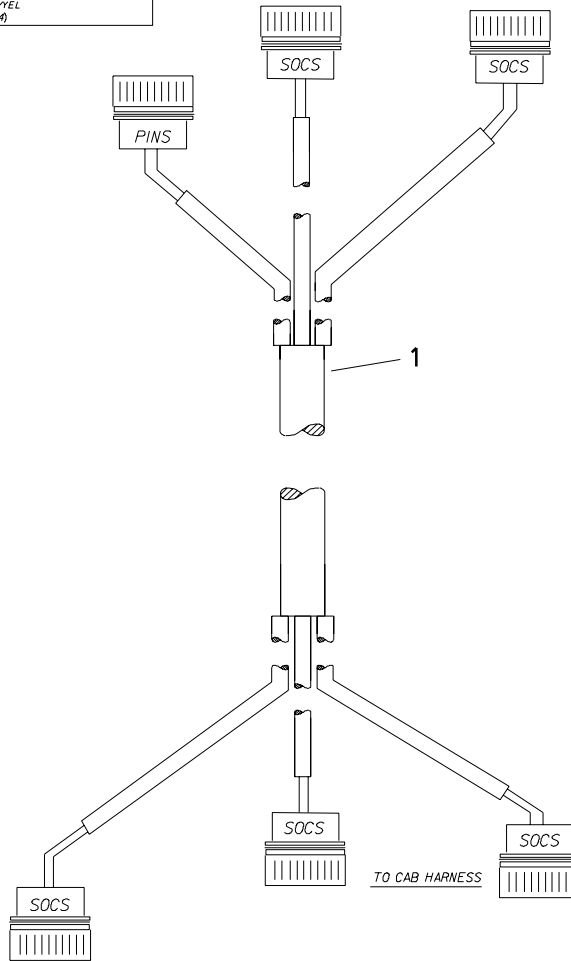
# CAB/JUNCTION BOX JUMPER

1	GRA (108)	9	PUR/ORG (105)	17	GRN (33)	25	GRA/ORG (83)
2	PUR/GRN (85)	10	BRN (70)	18	BLU (32)	26	BLU/ORG (81)
3	WHT/BLU (225)	11	GRN (204)	19	CAVITY PLUG	27	BLU/YEL (82)
4	WHT/BLK (226)	12	PUR/WHT (192)	20	BRN (31)	28	TAN/RED (59)
5	GRA/BLU (223)	13	BRN/WHT (173)	21	RED/BLK (18)	29	ORG (12)
6	GRA/BLK (224)	14	YEL (28)	22	BLU/ORG (50)	30	BLK (1)
7	WHT/BLK (55)	15	YEL/BLK (6)	23	PUR/ORG (48)	31	RED/ORG (2)
8	WHT/BRN (75)	16	PUR/BLK (62)	24	GRA/YEL (84)		

TO JUNCTION BOX HARNESS

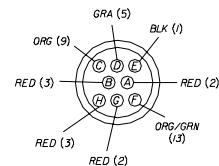


A	BLK/RED (1A)	J	GRA/BLK (39)	R	WHT/ORG (139)
B	BLK/BLU (1B)	K	YEL/RED (44)	S	GRA/PUR (158)
C	WHT/BLK (1)	L	ORG/BLK (45)	T	TAN/WHT (233)
D	PUR (24)	M	WHT/YEL (69)	U	CAVITY PLUG
E	BRN/ORG (25)	N	YEL/BLK (89)	V	CAVITY PLUG
F	WHT/BLU (36)	O	RED/WHT (96)	W	CAVITY PLUG
G	WHT/GRN (37)	P	WHT/GRN (102)	X	CAVITY PLUG
H	GRA/YEL (38)	Q	BLU/GRN (116)		



1	GRA (108)	9	PUR/ORG (105)	17	GRN (33)	25	GRA/ORG (83)
2	PUR/GRN (85)	10	BRN (70)	18	BLU (32)	26	BLU/ORG (81)
3	WHT/BLU (225)	11	GRN (204)	19	CAVITY PLUG	27	BLU/YEL (82)
4	WHT/BLK (226)	12	PUR/WHT (192)	20	BRN (31)	28	TAN/RED (59)
5	GRA/BLU (223)	13	BRN/WHT (173)	21	RED/BLK (18)	29	ORG (12)
6	GRA/BLK (224)	14	YEL (28)	22	BLU/ORG (50)	30	BLK (1)
7	WHT/BLK (55)	15	YEL/BLK (6)	23	PUR/ORG (48)	31	RED/ORG (2)
8	WHT/BRN (75)	16	PUR/BLK (62)	24	GRA/YEL (84)		

A	BLK/RED (1A)	J	GRA/BLK (39)	R	WHT/ORG (139)
B	BLK/BLU (1B)	K	YEL/RED (44)	S	GRA/PUR (158)
C	WHT/BLK (1)	L	ORG/BLK (45)	T	TAN/WHT (233)
D	PUR (24)	M	WHT/YEL (69)	U	CAVITY PLUG
E	BRN/ORG (25)	N	YEL/BLK (89)	V	CAVITY PLUG
F	WHT/BLU (36)	O	RED/WHT (96)	W	CAVITY PLUG
G	WHT/GRN (37)	P	WHT/GRN (102)	X	CAVITY PLUG
H	GRA/YEL (38)	Q	BLU/GRN (116)		

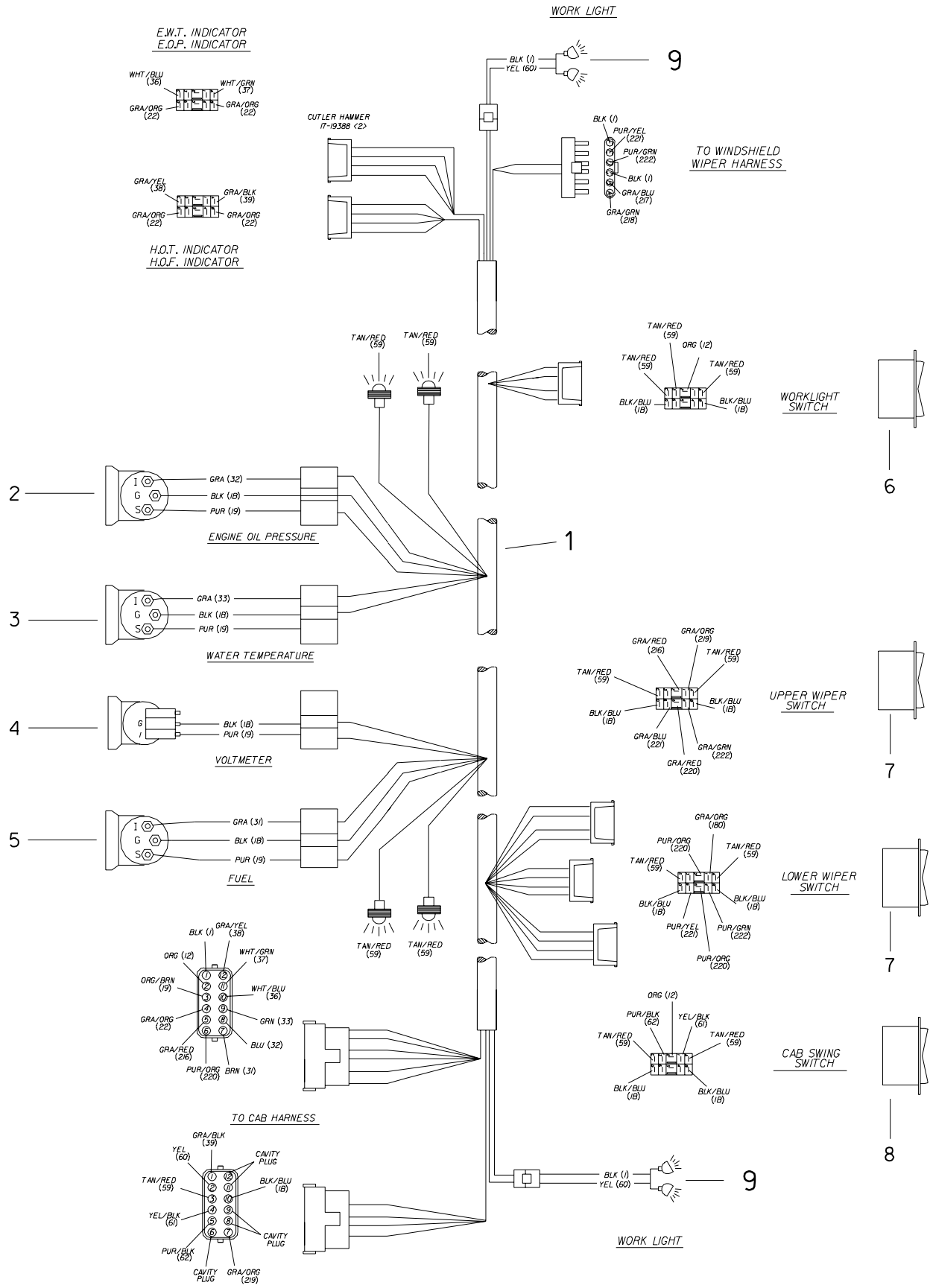


# CAB/JUNCTION BOX JUMPER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-534	1	CAB/JUNCTION BOX JUMPER	

FOOTNOTES

# TOP GAUGE HARNESS

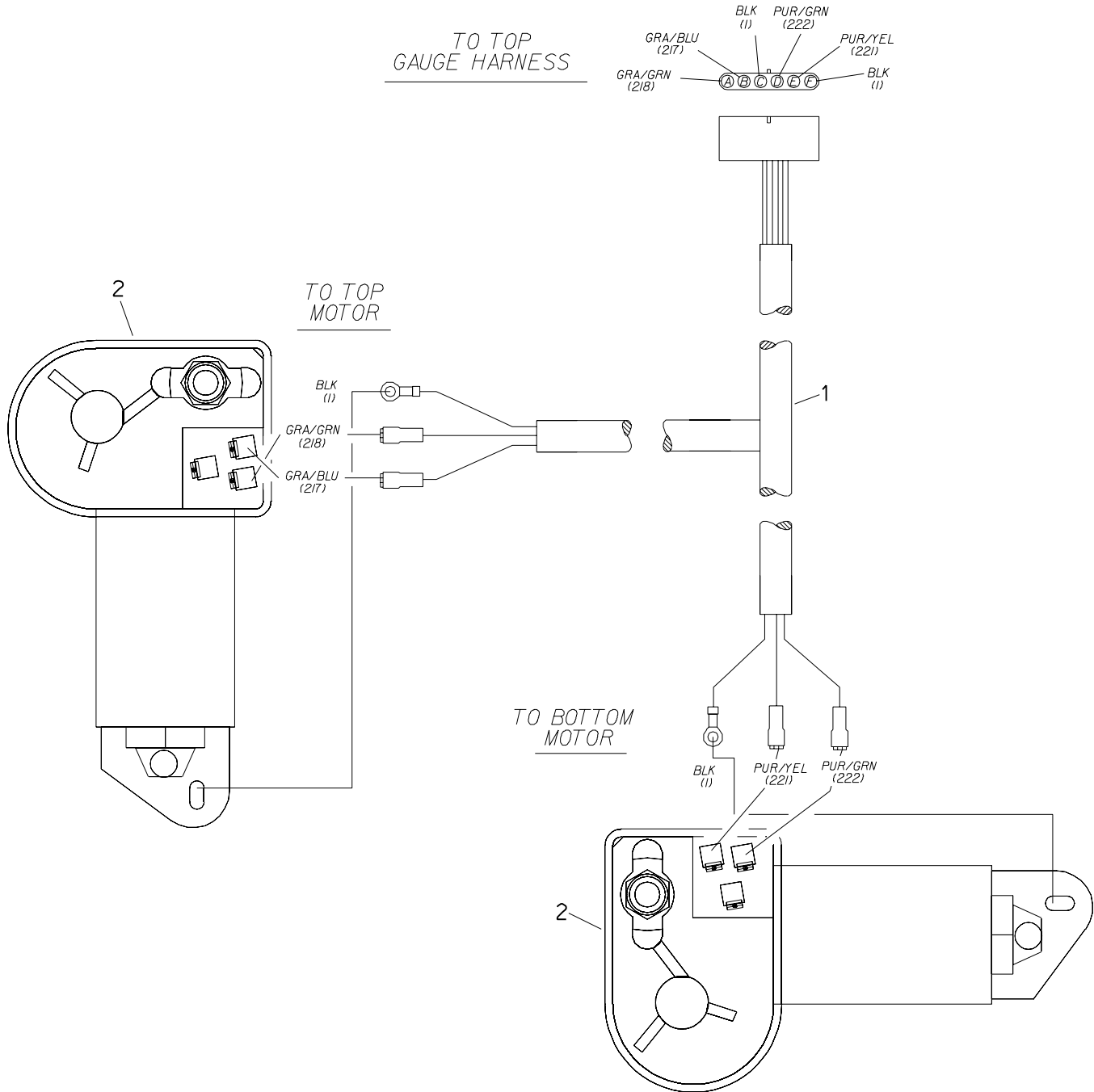


# TOP GAUGE HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-601	1	TOP GAUGE HARNESS	
2.	217-554	1	ENGINE OIL PRESSURE GAUGE	
	215-415	-	NITE-LIGHT KIT (12V DC)	
3.	217-556	1	ENGINE WATER TEMPERATURE GAUGE	
	215-415	-	NITE-LIGHT KIT (12V DC)	
4.	215-129	1	VOLT METER	
	215-415	-	NITE-LIGHT KIT (12V DC)	
5.	215-133	1	FUEL GAUGE	
	215-415	-	NITE-LIGHT KIT (12V DC)	
6.	217-918	1	ROCKER SWITCH (DPDT) ON-ON	
7.	217-919	2	ROCKER SWITCH (DPDT) ON-ON-(ON	
8.	217-228	1	ROCKER SWITCH (DPDT) ON-OFF-(ON	
	217-921	1	ROCKER SWITCH (SPDT) ON-OFF (ON	
9.	217-057	2	WORKING LIGHT - CLEAR	RECT: MULTI-PURPOSE

FOOTNOTES

# WINDSHIELD WIPER HARNESS



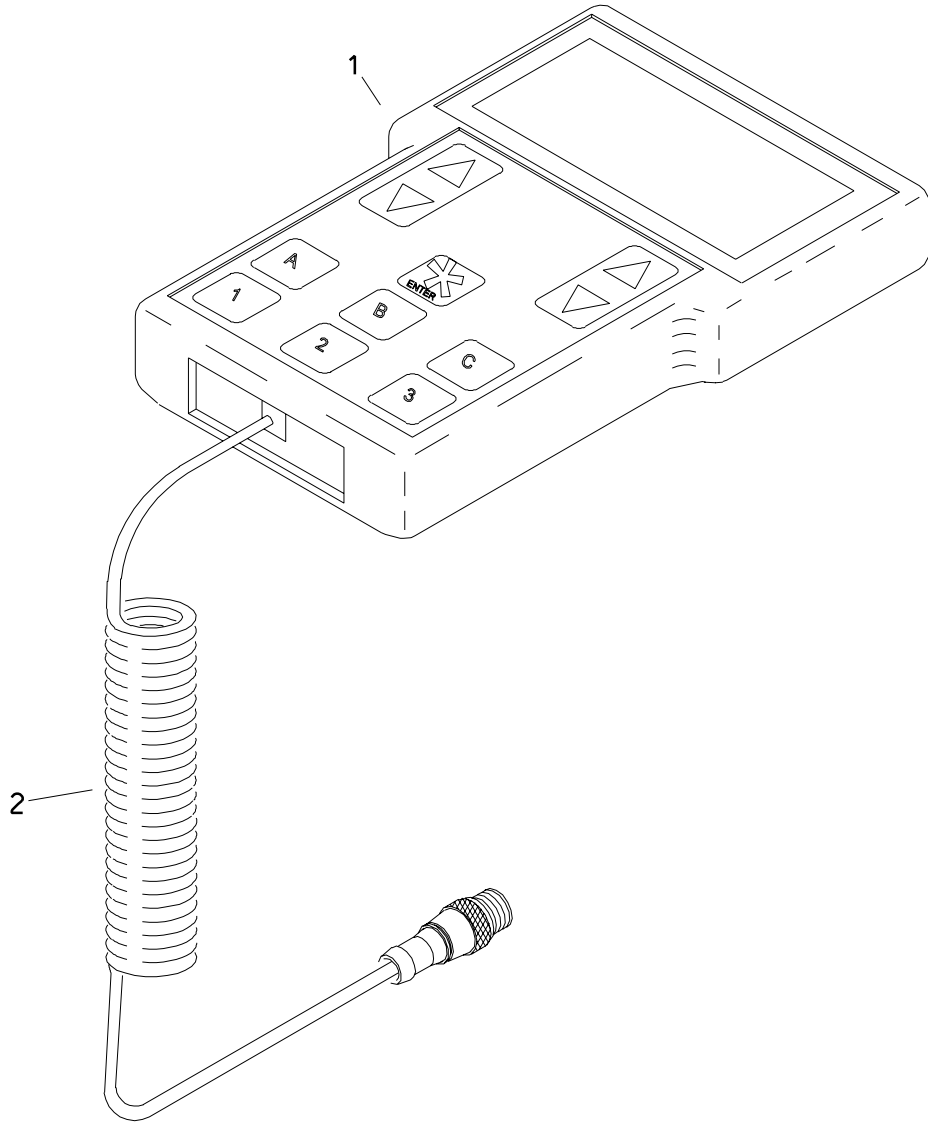


# WINDSHIELD WIPER HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-406	1	WINDSHIELD HARNESS	
2.	502-063	2	WIPER MOTOR (100 DEG)	

FOOTNOTES

# ELECTRICAL DIAGNOSTIC TERMINAL



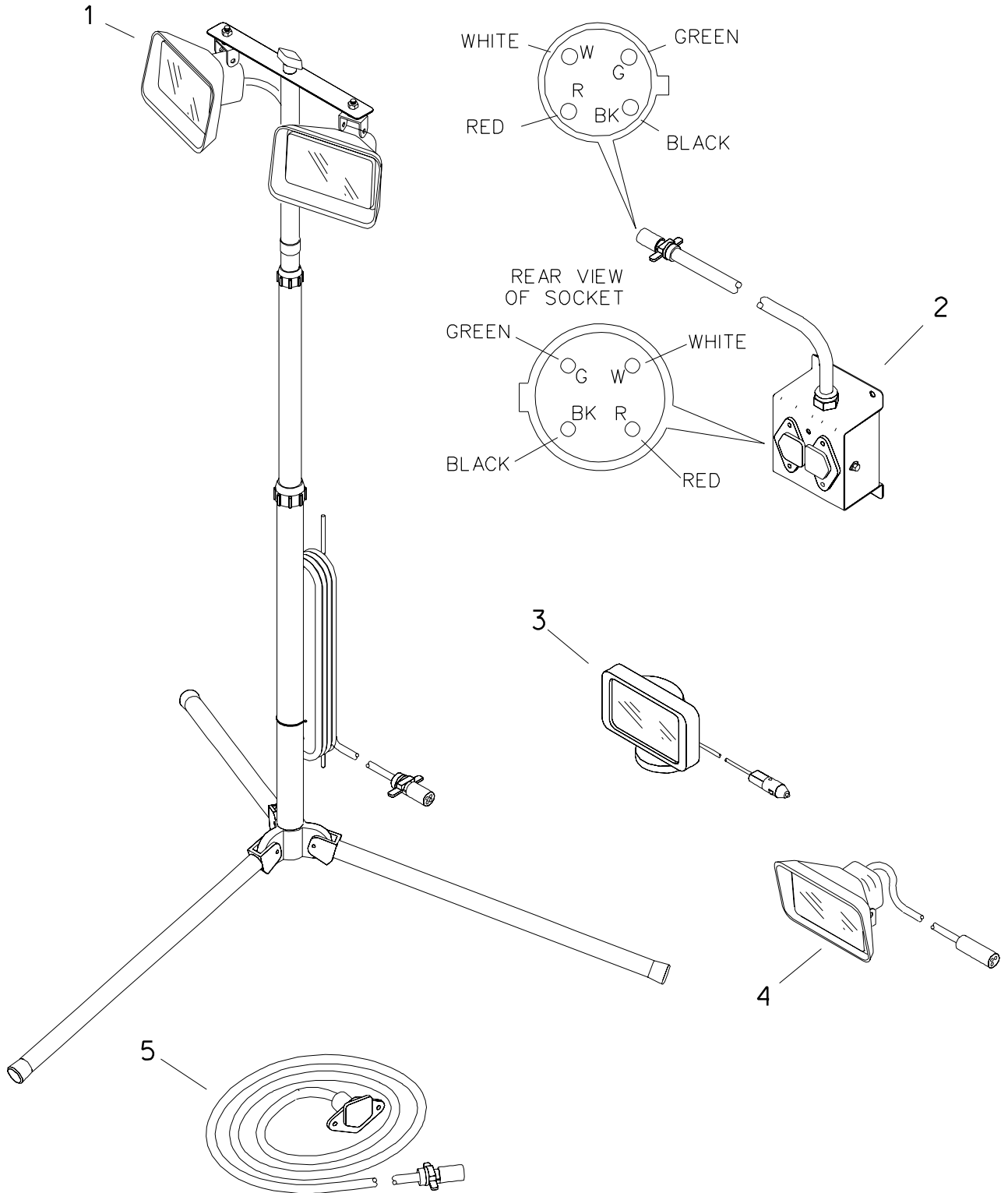
## ELECTRICAL DIAGNOSTIC TERMINAL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-471	1	ELECT. DIAG. TERM. (12VTL)	HAND HELD; SEE FOOTNOTE 1
2.	214-472	-	REPLACEMENT CORD	

## FOOTNOTES

1. SEE INSTRUCTIONS 051-161 FOR INFORMATION ON USAGE

# WORKING LIGHT

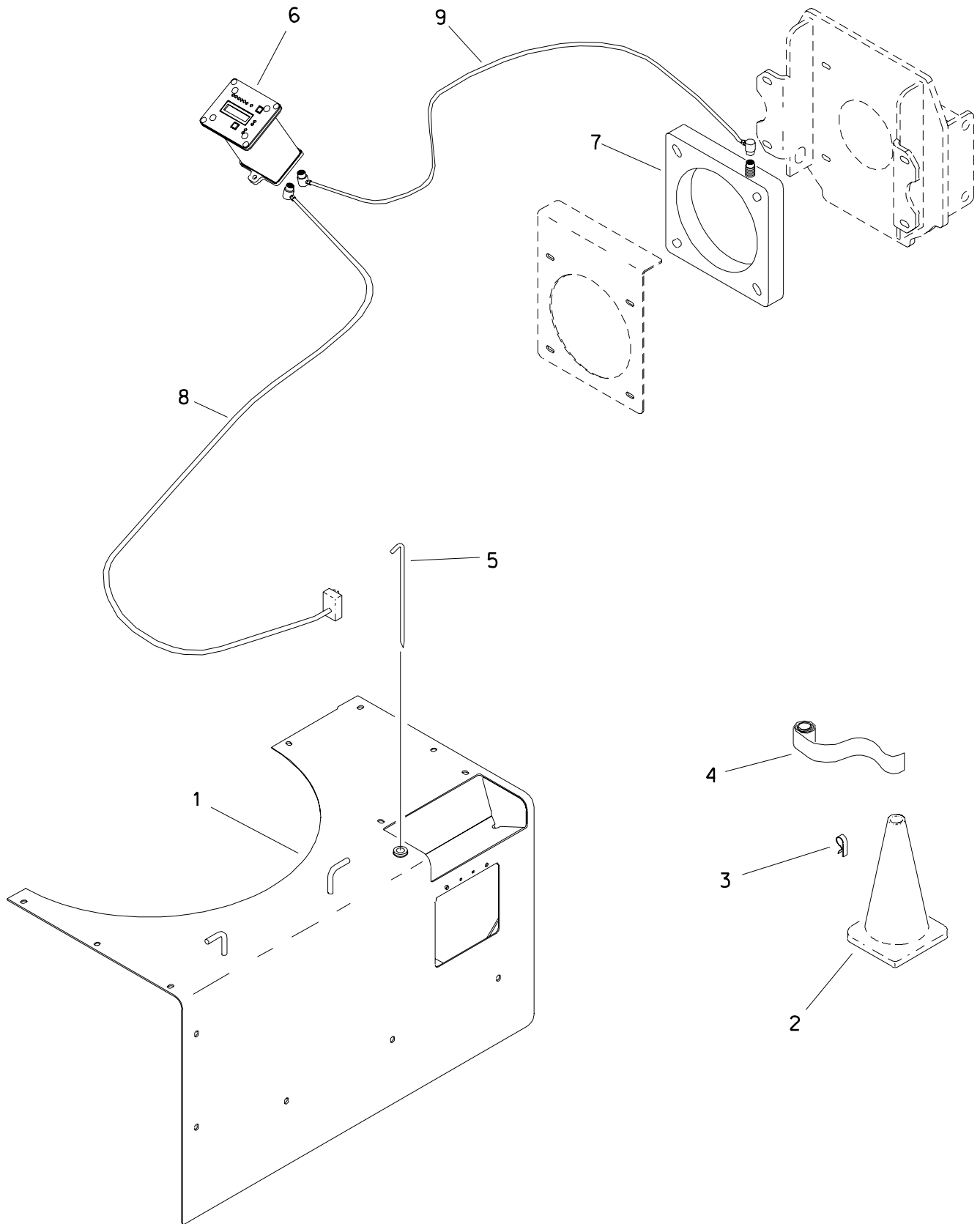


## WORKING LIGHT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	190-663	1	WORKING LIGHT CONVERSION KIT	INCL TRIPOD
	217-084	-	TRIPOD	
	217-094	1	DUAL LIGHT CABLE	
	217-080	2	WORKING LAMP (12V DC)	RECTANGULAR, MULTI-PURPOSE
	214-228	2	LIQUID-TIGHT FITTING	
	106-176	2	CONDUIT LOCKNUT (Ø8N)	
	110-373	1	BOLT-ON CLAMP (13/16")	
	106-162	1	FLG SCREW (M8-1.25 X 20mm)	
	106-386	1	FLG LOCKNUT (M8-1.25)	
	347-832	1	BRACKET (LIGHT KIT)	
	110-030	1	CABLE TIE (1/16" TO 4")	
	110-259	1	BOLT-ON CLAMP (.625")	
2.	190-664	1	LIGHT BOX KIT	
	347-833	1	LIGHT JUNCTION BOX	
	347-836	1	BACK PLATE	JUNCTION BOX
	214-229	1	LIGHT HARNESS	
	217-040	3	CONNECTOR (4-WAY, FM)	
	217-039	1	INDICATOR LIGHT (RED)	
	106-379	10	FLG LK SCREW (M6-1.00 X 20mm)	
	106-106	6	NUT (M6-1.00)	
	106-754	4	WELD NUT (M10-1.50)	
3.	217-098	1	WORK LAMP {12V DC, MAGNETIC}	
4.	190-665	1	LIGHT KIT (SINGLE)	
	217-080	1	WORKING LAMP (12V DC)	RECTANGULAR, MULTI-PURPOSE
	217-092	1	SINGLE LIGHT CABLE	
	214-228	1	LIQUID-TIGHT FITTING	
	106-176	1	CONDUIT LOCKNUT (Ø8N)	
5.	217-095	1	EXTENSION CABLE (15 M)	50 FT
	217-096	1	EXTENSION CABLE (30M {100'})	

FOOTNOTES

# ELECTRICAL STRIKE SYSTEM



# ELECTRICAL STRIKE SYSTEM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-833	-	RIGHT COVER	ENDS WITH S/N: 2V2567
	316-815	-	RIGHT COVER	BEGINS WITH S/N: 2W0856
2.	259-210	-	TRAFFIC CONE - ORANGE	
3.	259-234	-	CONE CLIP	USED WITH REF NO.'S 2 & 4
4.	260-223	-	BARRIER TAPE (3" X 1000')	
5.	215-799	1	VOLTAGE STAKE	
6.	217-241	-	ESID MODULE NEW (T)	
7.	216-063	-	CURRENT TRANSFORMER	
8.	211-042	-	VOLTAGE LIMITOR CABLE	
9.	214-542	-	CURRENT COIL CABLE	

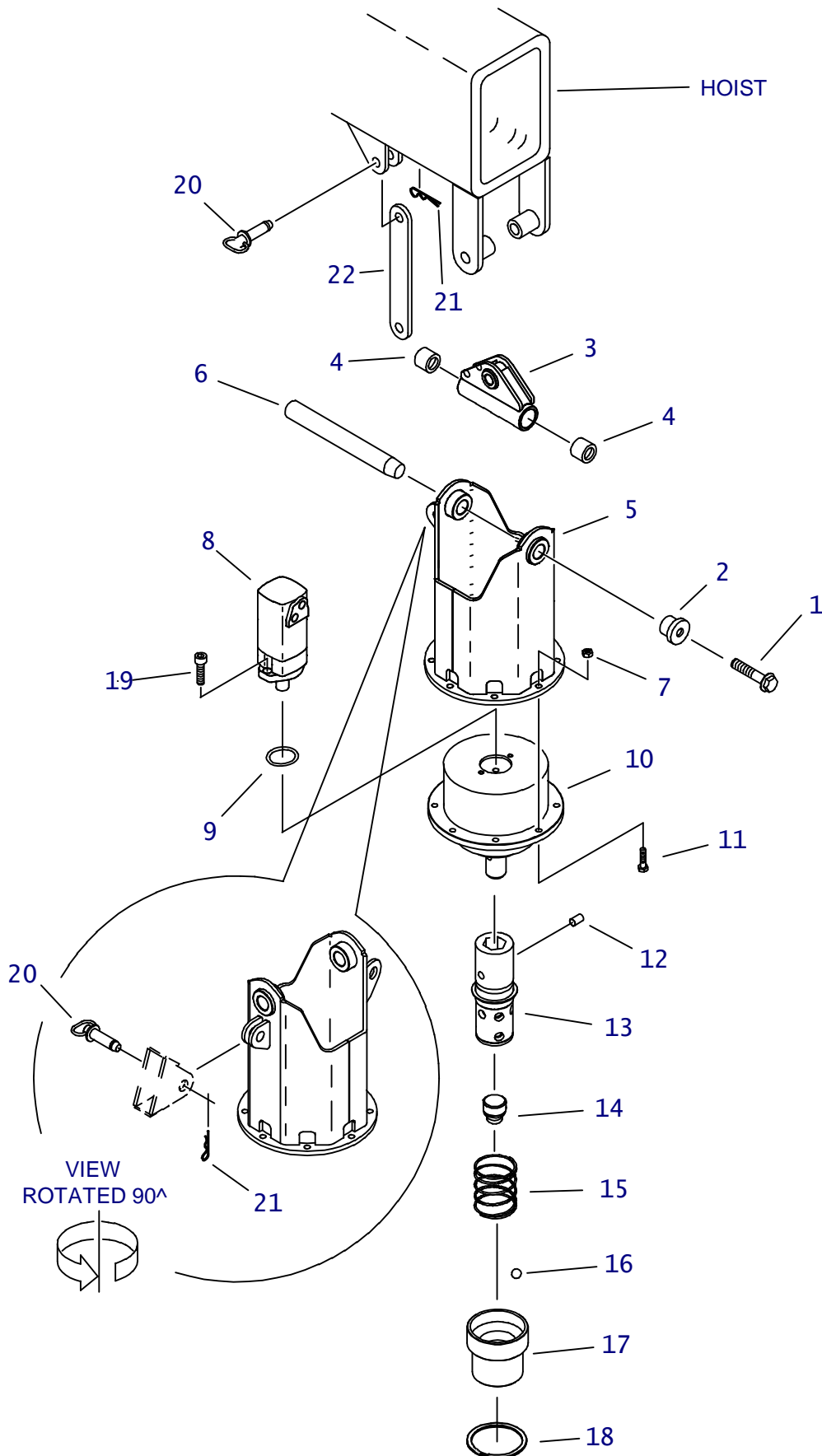
FOOTNOTES





# **ANCHOR COMPONENTS**

# AUGER DRIVE



# AUGER DRIVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	370-072		ANCHOR DRIVER PARTS	
1.	106-470	1	FLG SCREW (M16-2.00 X 40mm)	
2.	181-974	1	TAPERED INSERT (1.5")	
3.	349-840	1	COUPLING	
4.	125-772	2	COMPOSITION BUSHING (1.5")	
5.	349-839	1	AUGER DRIVER	
6.	179-209	1	TAPERED PIN (38.1mm X 320mm)	
7.	106-526	8	NUT (M14- 2.0, 10.9)	
8.	158-753	1	THRUST DRIVE MOTOR	
	500-658		SEAL REPAIR KIT	
9.	157-099	1	O-RING (042 D70)	
10.	166-161	1	AUGER DRIVE GEARBOX	
11.	106-527	8	SCREW (M14-2.00 X 50mm)	
12.	105-585	2	ROLL PIN (.750" X 1.250")	
13.	309-977	1	ANCHOR DRIVER	USES SIX BALLS (REF 16) TO RETAIN STOP (REF 14) FOOT NOTE 2
	303-643	1	ANCHOR DRIVER	USED THREE BALLS (REF 16) TO RETAIN STOP (REF 14)
14.	370-054	1	WEIGHT/STOP	
15.	117-160	1	COMPRESSION SPRING	
16.	125-150	9	DETENT BALL (.875")	
17.	178-591	1	LOCK COLLAR	
18.	116-761	1	SPIRAL RETAINING RING	FOOT NOTE 1
19.	106-204	2	BOLT (1/2-NC X 1-1/2", SOC)	USE 242 LOCTITE OR EQUIVALENT
20.	183-328	2	PULL PIN (1.000" X 2.750")	
21.	110-128	2	SPRING CLIP PIN (5/32" X 1")	
22.	307-671	1	STOW BAR	

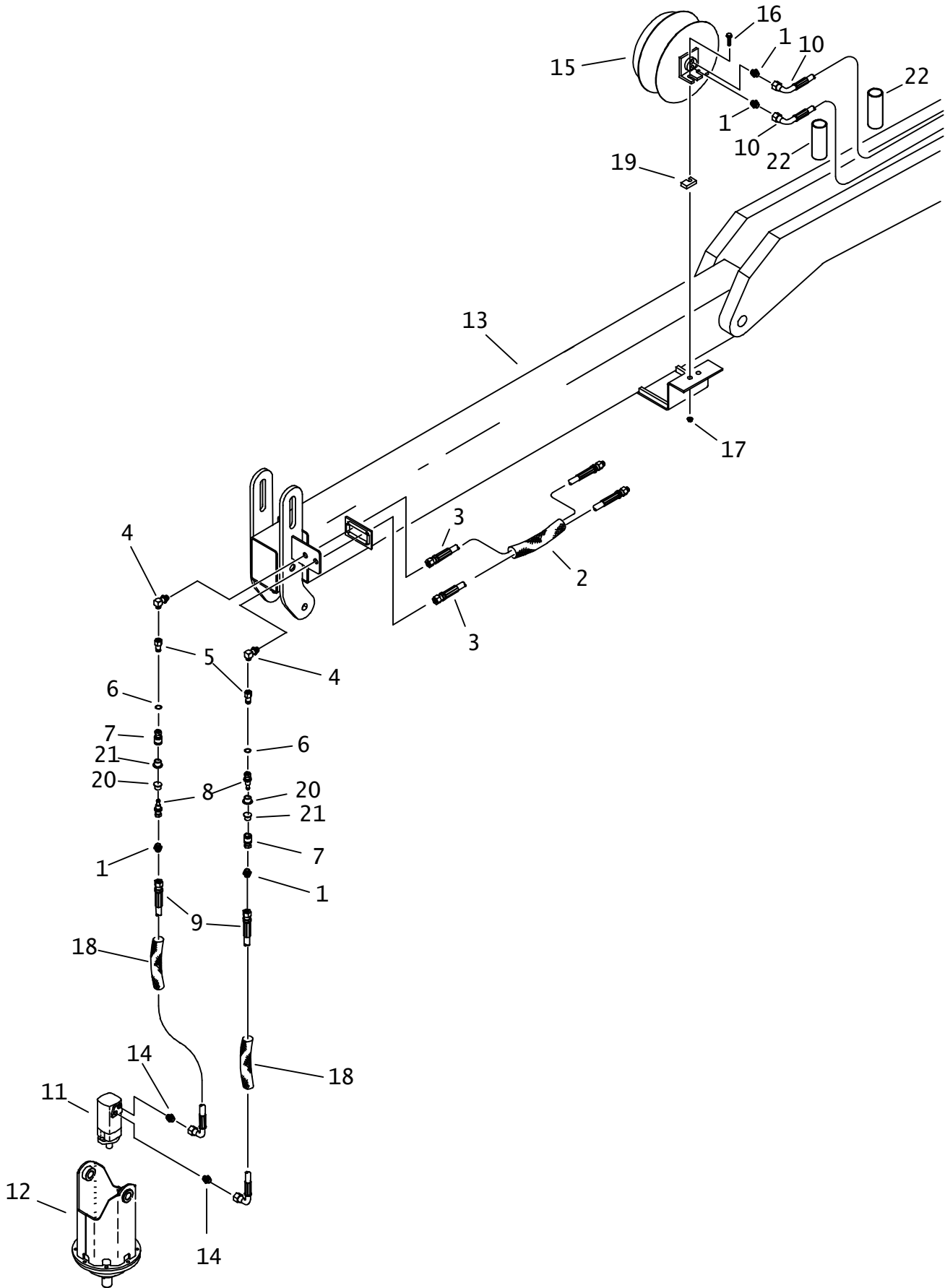
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FOOTNOTES:

1. USE WHEN INSTALLING UPDATED 309-977
2. UPDATED VERSION NECKED-DOWN FOR THICKER 116-761

NOTE:

# ANCHOR DRIVER HYDRAULICS



## ANCHOR DRIVER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-233	4	CONNECTOR (08S-080)	
2.	117-741	1	ABRASION SLEEVE (1.59" X 145")	
3.	515-754	2	HOSE (080FX-080 -170"-3000)	
4.	154-396	2	BK CONNECTOR (080-08090BK)	
5.	156-732	2	CONNECTOR (08J-080)	
6.	155-706	2	O-RING (908 D90)	
7.	155-989	2	QDC BODY (08-08SF)	
8.	155-990	2	QDC ADAPTER (08-08SF)	
9.	154-830	2	HOSE (080FX90-18"- 3000)	
10.	515-642	2	HOSE (080FX90-176"-3000)	
11.	158-753	-	THRUST DRIVE MOTOR	
12.	349-839	-	AUGER DRIVER	
13.	306-936	-	HOIST/CRANE	
14.	154-279	2	CONNECTOR (080-10S)	
15.	159-419	1	DUAL HOSE REEL	
16.	105-885	2	FLG LK BOLT (1/2-NC X 2")	
17.	105-833	2	FLG LOCKNUT (1/2-NC)	
18.	117-622	1	ABRASION SLEEVE (1.25" X 20")	
19.	349-485	2	SPACER	
20.	155-935	2	DUST CAP (1/2" - 3/4")	
21.	155-936	2	DUST PLUG (1/2" - 3/4")	
22.	117-721	2	ABRASION SLEEVE (1.59" X 172")	

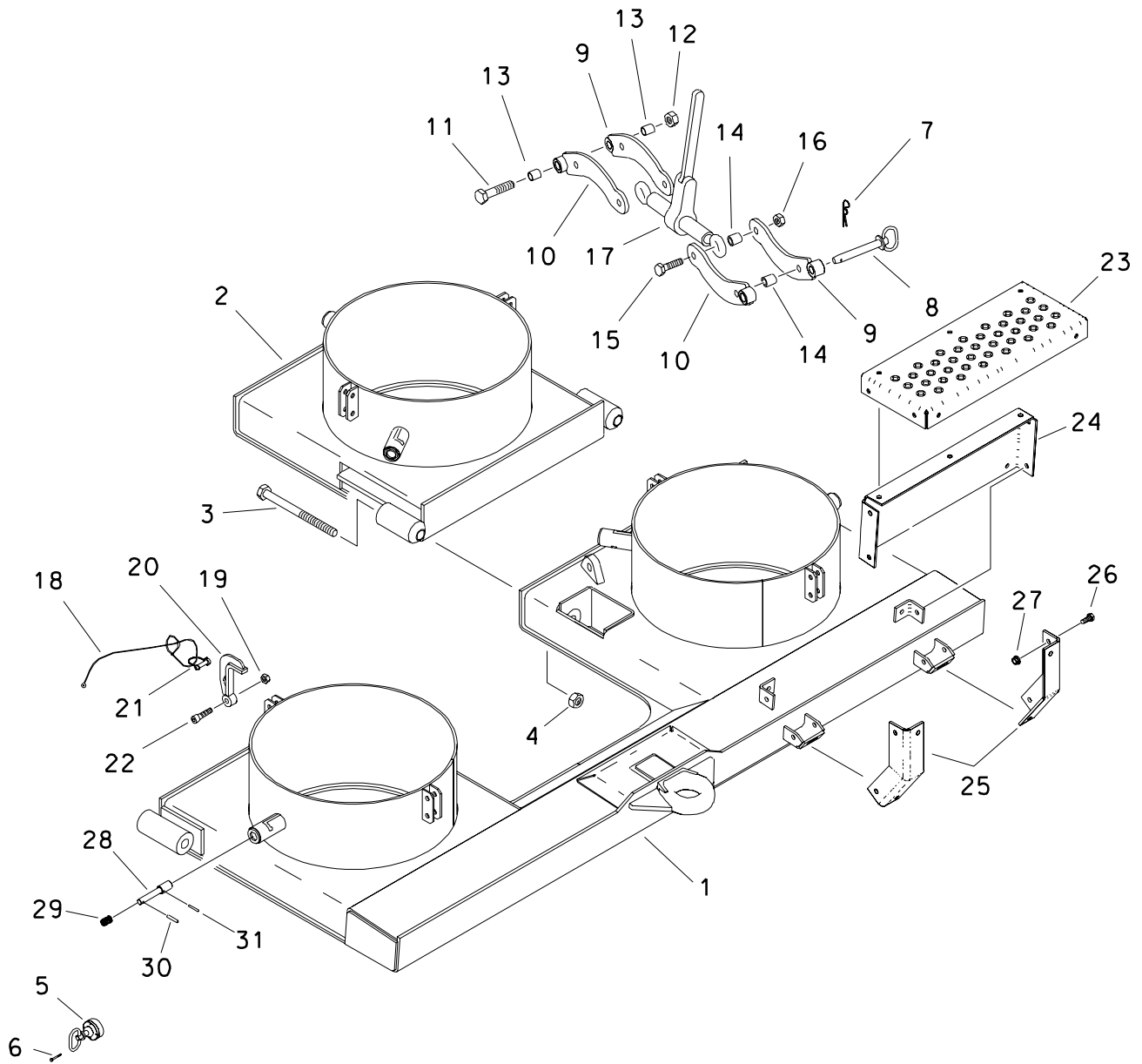
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FOOTNOTES:

NOTE:

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

## ANCHORING PLATES

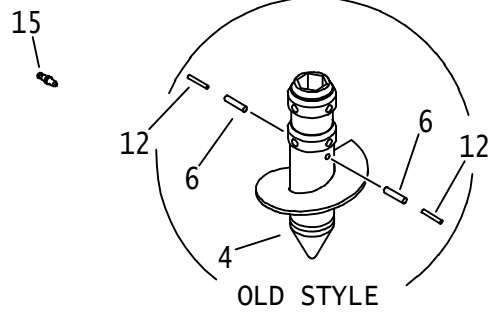
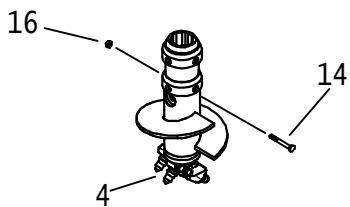
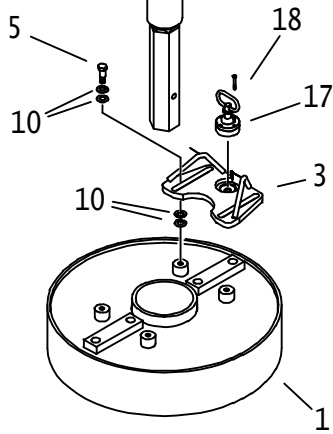
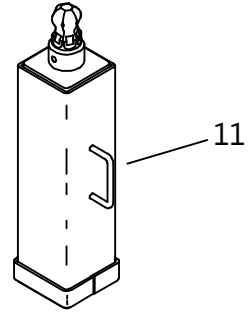
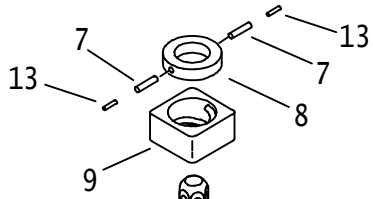


# ANCHORING PLATES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	370-080	1	ANCHOR PLATE	
	370-522	1	ANCHOR PLATE	
2.	370-520	2	SINGLE ANCHOR	OPTIONAL
3.	105-934	4	BOLT (7/8-NC X 1 1/2")	
4.	105-985	4	FLG NUT (7/8-NC)	
5.	347-888	6	SPRING LOADED PIN	
6.	106-796	12	SCREW (M4-.70 X 30mm)	
7.	110-128	2	SPRING CLIP PIN (5/32" X 1")	
8.	183-110	2	PULL PIN (3/4" X 4-1/2")	
9.	370-219	4	RIGHT ARM BAR	
10.	370-203	4	LEFT ARM BAR	
11.	105-365	2	BOLT (3/4-NC X 4")	
12.	105-372	2	LOCKNUT (3/4-NC)	
13.	125-424	4	BRONZE BUSHING (.759")	
14.	370-189	8	SPACER	
15.	107-197	8	SCREW (M16-2.00 X 80mm, 10.9)	
16.	106-545	8	LOCKNUT (M16-2.00)	
17.	111-017	2	LOAD BINDER	
18.	110-710	4	LANYARD (6")	
19.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ)	
20.	370-230	4	CAP RETAINER	
21.	110-368	4	SNAPPER PIN (3/8" X 1-1/2")	
22.	106-707	4	SCREW (M12-1.75 X 45mm, ALN)	
23.	370-267	1	STEP PLATE	
24.	370-269	1	FRONT PLATE	
25.	370-268	2	STEP LEG	
26.	105-245	17	SCREW (M10-1.50 X 25mm)	
27.	106-387	17	FLG LOCKNUT (M10-1.50)	
28.	184-535	4	LOCK PIN	
29.	115-560	4	COMPRESSION SPRING	
30.	105-561	4	ROLL PIN (3/8" X 2-3/4")	
31.	105-503	4	ROLL PIN (1/4" X 2")	

FOOTNOTES

# ANCHOR SHAFT





# ANCHOR SHAFT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	370-190	2	AUGER CAP	
2.	166-200	2	SHAFT	
3.	370-196	4	LATCH	
	370-111	AR	AUGER (240MM)	
	370-110	-	AUGER (380MM)	
	370-112	-	AUGER (480MM)	
4.	301-0249	AR	ROCK ANCHOR (9.5")	SEE FOOTNOTE 6
	301-0250	AR	ROCK ANCHOR (7.5")	SEE FOOTNOTE 6
	300-9589	AR	ROCK ANCHOR	
5.	106-739	8	SHLD BLT (M12 X 20MM, M10-1.50)	
6.	105-575	-	ROLL PIN (1/2" X 1-1/4")	
7.	105-548	4	ROLL PIN (1/2" X 2-1/4")	USE 277 LOCTITE OR EQUIVALENT
	105-609	4	ROLL PIN (5/8" X 2-1/4")	
8.	370-106	2	LOCK COLLAR (3.031")	SEE FOOTNOTE 1
	370-320	2	LOCK COLLAR	SEE FOOTNOTE 2
9.	370-244	2	ANCHOR NUT (CAST)	SEE FOOTNOTE 1
10.	105-058	AR	BELLVILLE WASHER (1/2")	SEE FOOTNOTE 2
11.	370-120	1	NUT DRIVER	
12.	105-547	-	ROLL PIN (5/16" X 1-1/4")	
13.	105-529	4	ROLL PIN (5/16" X 1-1/2")	SEE FOOTNOTE 1
	105-520	2	ROLL PIN (3/8" X 1-1/4")	SEE FOOTNOTE 2
14.	106-342	2	SCREW (M16-2.00 X 90MM)	SEE FOOTNOTE 1 & 2
15.	136-101	AR	INSERT BIT	SEE FOOTNOTE 4
	131-259	AR	INSERT BIT	
16.	106-545	2	LOCKNUT (M16-2.0, PRV TRQ, 10.9)	SEE FOOTNOTE 2 & 3
17.	347-888	2	SPRING LOADED PIN	
18.	106-796	4	SCREW (M4-.70 X 30MM)	

NOT SHOWN:

FOOTNOTES:

1. USE WITH 370-102 AUGER SHAFT
2. USE WITH 166-200 AUGER SHAFT
3. USE REF. NO. 27 WITH M12 BOLT
4. USE WITH 370-443 ROCK ANCHOR & 370-453 ROCK ANCHOR.
5. USE WITH 300-9589 ROCK ANCHOR
6. INCLUDES BIT 136-102. BITS 136-100 & 136-101 ALSO FIT.

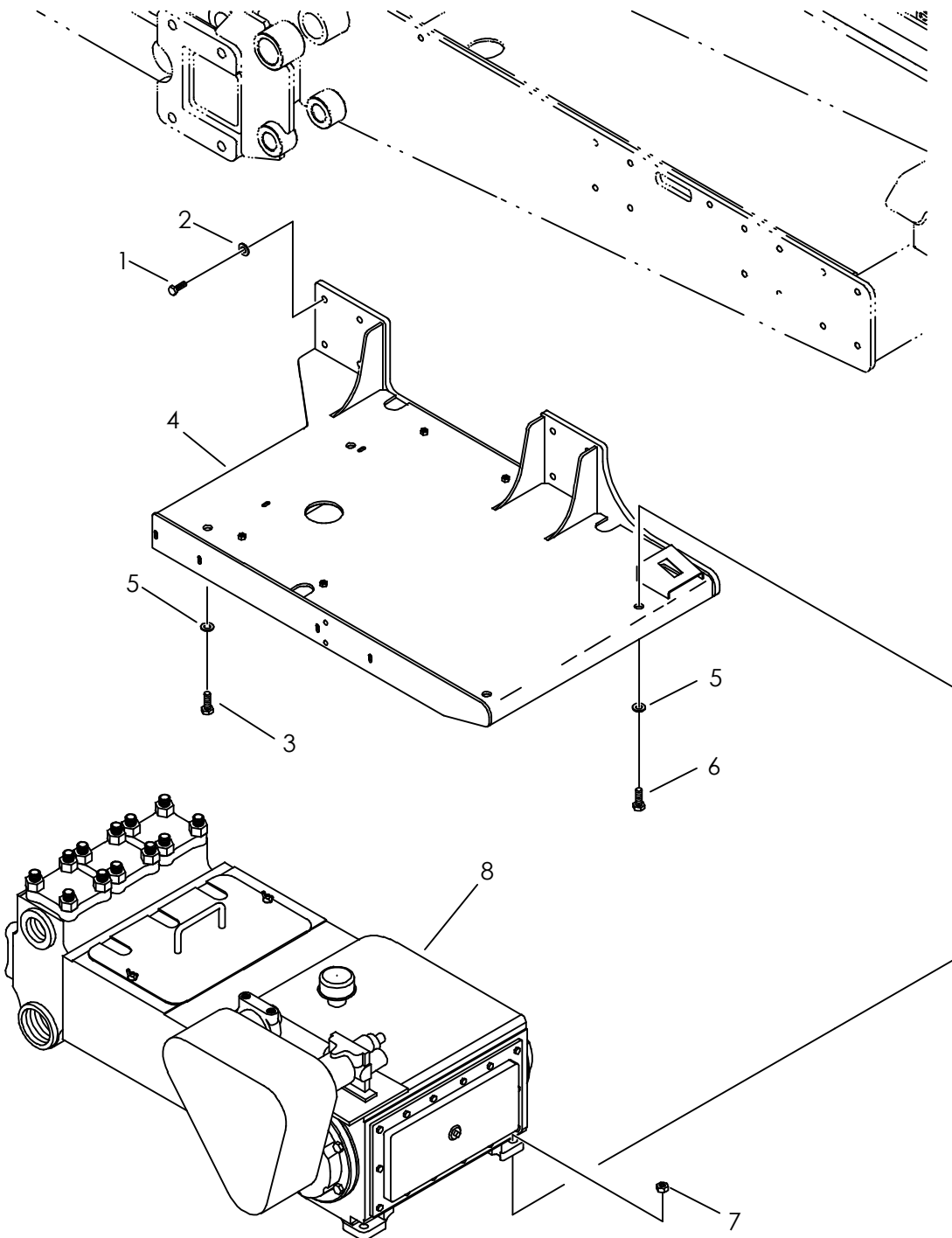
NOTE:



# **FLUID SYSTEMS**

# MUD PUMP MOUNTING

ENDS WITH S/N 2V2567



## MUD PUMP MOUNTING ENDS WITH S/N 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-477	8	SCREW (M12-1.75 X 45MM, 10.9)	
2.	106-743	8	WASHER (.531", HARDENED)	
3.	106-074	2	SCREW (M16-2.00 X 60mm)	
4.	307-427	1	MUD PUMP MOUNT	
5.	106-398	4	WASHER (M16, HARDENED)	
6.	106-340	2	SCREW (M16-2.00 X 50MM)	
7.	106-545	4	LOCKNUT (M16-2.0, PRV TRQ,10.9)	
8.	149-796	1	FLUID PUMP (200 GPM)	SEE FOOTNOTE #1 FOR TOOLS
	197-089	-	REBUILT 149-796 FLUID PUMP	
	150-728	-	LINER; (CERAMIC 3.5")	
	153-056	-	LINER GASKET	
	191-050	-	3.5" PISTON CUP KIT	
	194-167	-	WATER PUMP	
	308-954	-	3.5" PISTON ASSEMBLY	
	191-147	3	4" PISTON CUP KIT	
	499-319	3	4" LINER (CHROME)	
	499-320	3	4" PISTON W/CUP	
	499-321	3	PISTON EXTENSION ROD	
	499-322	3	PONY/PISTON ROD CLAMP	
	499-323	3	PONY ROD	
	499-324	3	4" PISTON/LINER	
	153-939	12	PONY ROD SEAL	
	170-375	1	WATER PUMP BELT (37")	
	170-376	1	WATER PUMP SHEAVE	
	499-282	3	DISCHARGE VALVE	
	499-283	3	SUCTION VALVE	
	499-284	3	PONY ROD PACKING CLAMP	
	499-285	3	WATER PUMP BELT (41")	
	499-286	3	PONY ROD GLAND GASKET	
	499-428	3	SPLASH GUARD	
	500-2081	-	ABR RESISTANT VALVE INSERT, DISCHARGE	
	500-2082	-	ABR RESISTANT VALVE INSERT, SUCTION	

NOT SHOWN:

FOOTNOTES:

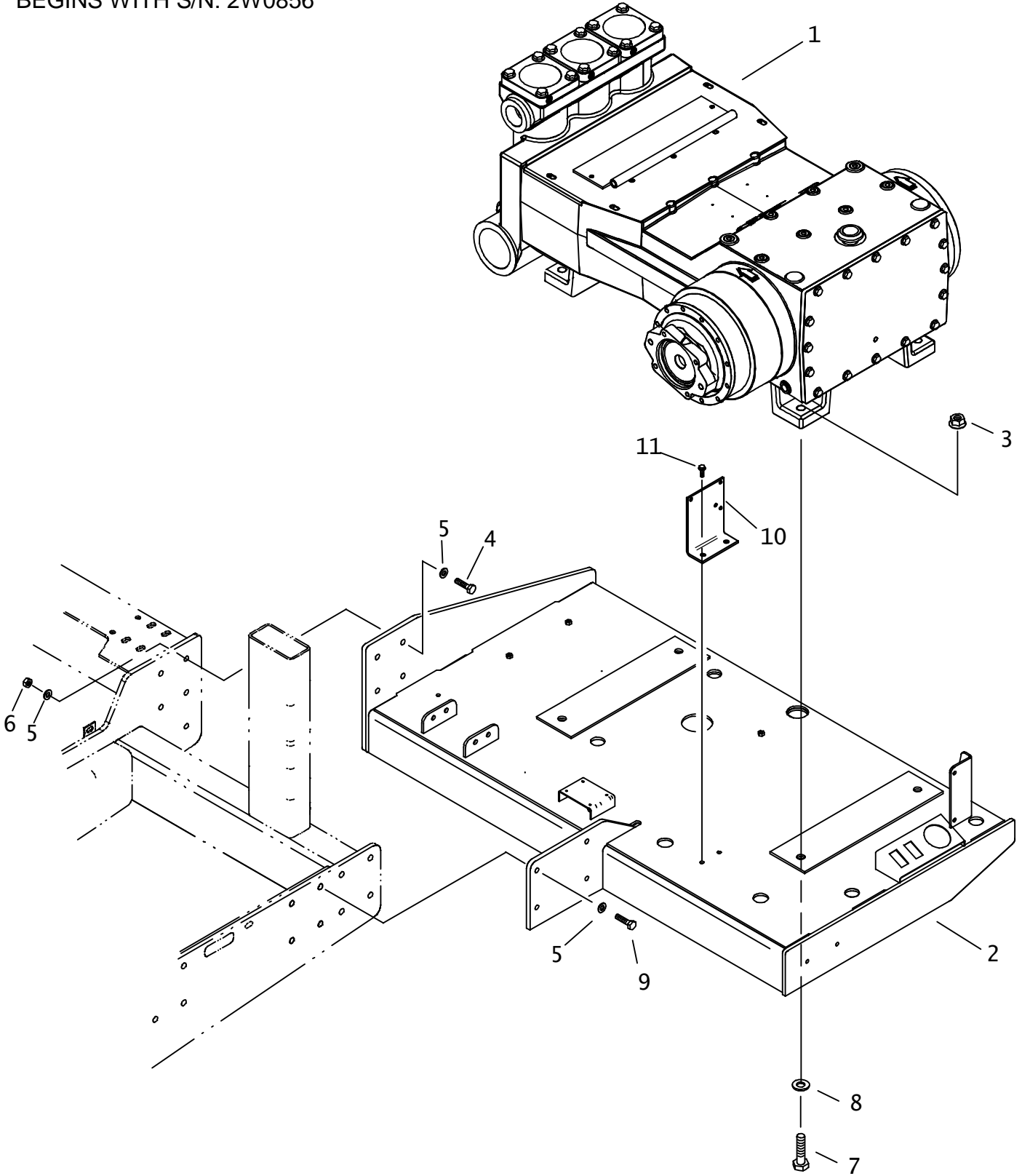
1. TOOLS AVAILABLE:

- 258-051 PUMP SERVICE TOOL
- 259-476 PONY ROD INSTALLATION WRENCH
- 259-477 PONY ROD SEAL INSTALLATION TOOL

NOTE:

# FLUID PUMP MOUNTING (JT)

BEGINS WITH S/N: 2W0856



# FLUID PUMP MOUNTING (JT)

BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-776	1	FLUID PUMP	
2.	310-997	1	FLUID PUMP MOUNT	
3.	106-356	4	FLG NUT (M20-2.5, 10.9)	
4.	106-477	6	SCREW (M12-1.75 X 45MM, 10.9)	USE 277 LOCTITE OR EQUIVALANT
5.	106-397	16	WASHER (M12, HARDENED)	
6.	106-685	6	LOCKNUT(M12-1.75,PRV TRQ,10.9)	
7.	107-127	4	SCREW (M20-2.50 X 80MM, 10.9)	USE 277 LOCTITE OR EQUIVALANT
8.	106-399	4	WASHER (M20, HARDENED)	
9.	107-748	4	SCREW (M12-1.75 X 50MM, 10.9)	USE 277 LOCTITE OR EQUIVALANT
10.	313-219	1	MOUNT BRACKET	
11.	106-162	2	FLG SCREW (M8-1.25 X 20MM)	

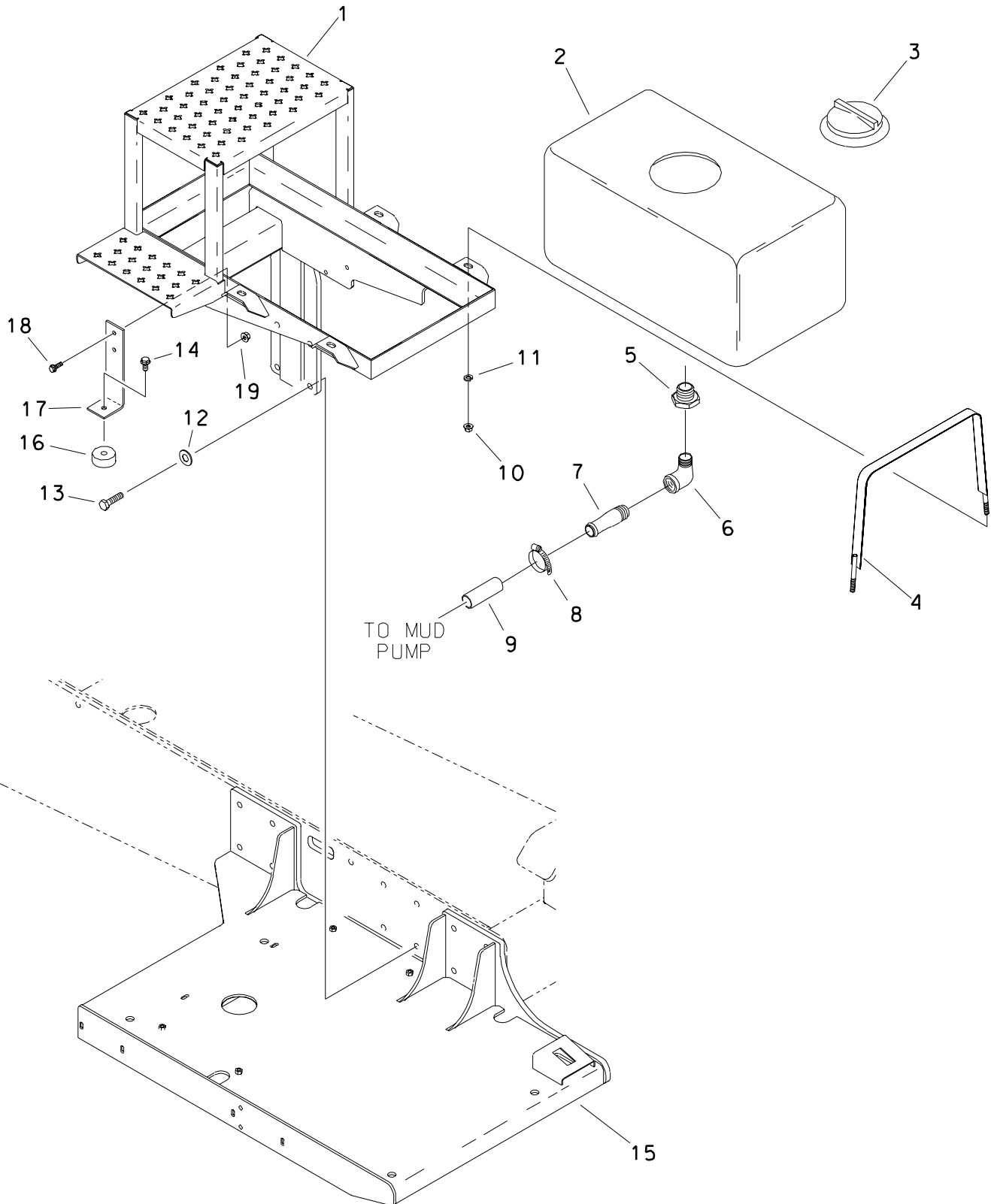
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FOOTNOTES:

NOTE:

# ANTIFREEZE TANK

ENDS WITH S/N 2V2567





# ANTIFREEZE TANK

ENDS WITH S/N 2V2567

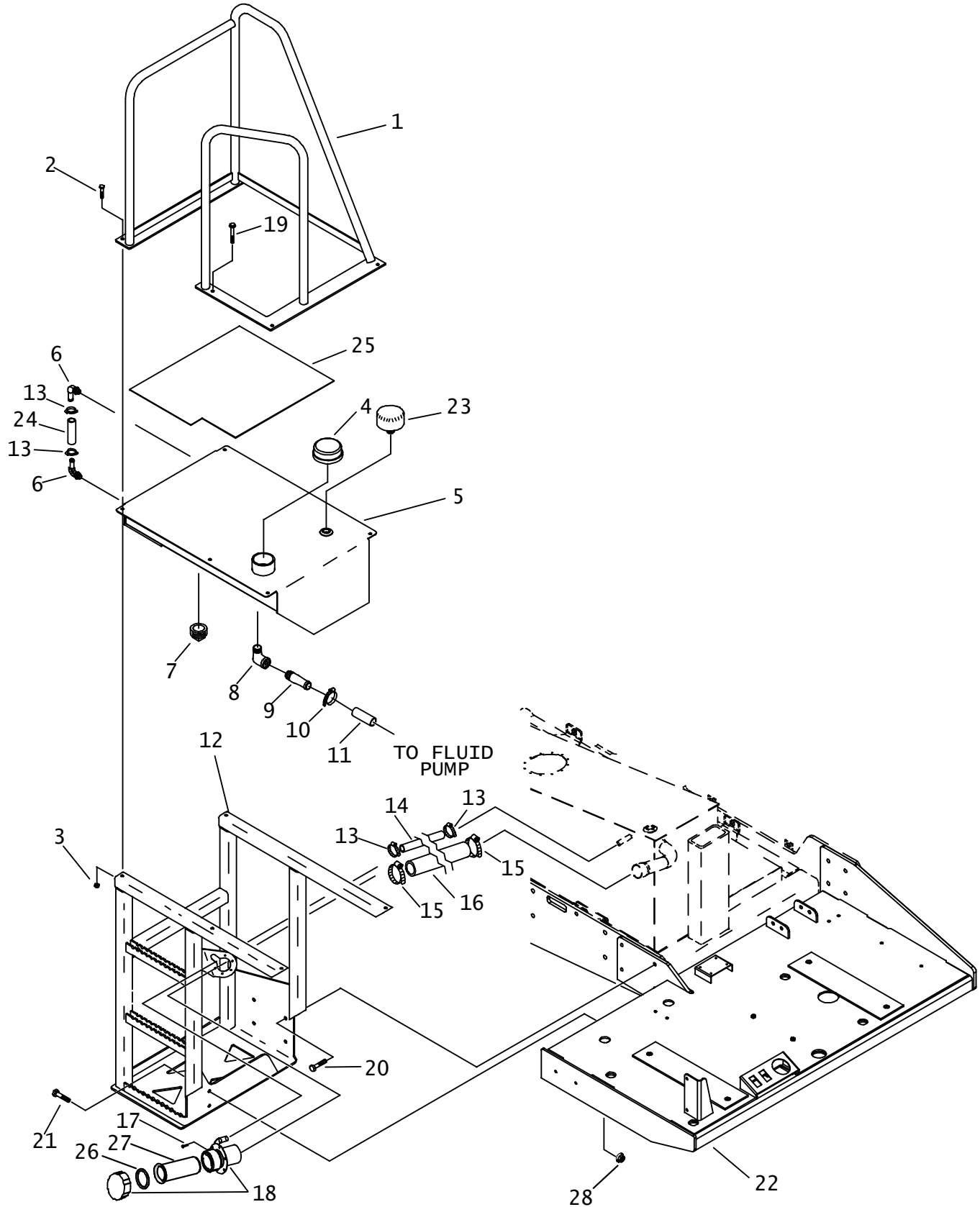
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	307-436	1	ANTI-FREEZE TANK MOUNT	
2.	364-412	1	STORAGE TANK (20 GALLON)	
	190-053		POLY-PATCH TANK REPAIR KIT	
	155-235	1	BK CONNECTOR (24NF-24NF, NYL)	
3.	110-707	1	TANK CAP (96NF)	
4.	338-087	2	STRAP	
5.	514-152	1	REDUCER (24N-20NF)	
6.	115-132	1	STREET ELBOW (20N-20NF90)	
7.	156-940	1	S/O COUPLER (20N-20H)	
8.	111-011	1	WORM CLAMP (1" TO 1-3/4")	
9.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 25"
10.	105-814	4	FLG LOCKNUT (3/8-NC)	
11.	105-118	4	WASHER (3/8")	
12.	106-743	4	WASHER (.531", HARDENED)	
13.	106-477	4	SCREW (M12-1.75 X 45MM, 10.9)	
14.	106-654	1	FLG LK SCREW (M10-1.50 X 16MM)	
15.	307-427	-	MUD PUMP MOUNT	
16.	116-788	1	BUFFER	
17.	309-411	1	SUPPORT LEG	
18.	106-162	2	FLG SCREW (M8-1.25 X 20MM)	
19.	106-386	2	FLG LOCKNUT (M8-1.25)	

FOOTNOTES

**ANTIFREEZE TANK**

BEGINS WITH S/N: 2W0856

ENDS WITH S/N: CMWJ80T2J60000029



**ANTIFREEZE TANK**  
**BEGINS WITH S/N: 2W0856**  
**ENDS WITH S/N: CMWJ80T2J60000029**

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	314-777	1	HANDRAIL FRAME	
2.	106-724	4	FLG BOLT (M10-1.50 X 25MM)	
3.	107-661	5	FLG NUT (M10-1.50, PRV TRQ)	
4.	153-763	1	PIPE CAP (-48NF)	
5.	314-778	1	ANTIFREEZE TANK	
6.	156-108	2	S/O COUPLER (08N-08H90)	
7.	114-008	1	PLUG (32N, SQ, GALV)	
8.	115-132	1	STREET ELBOW (20N-20NF90)	
9.	156-940	1	S/O COUPLER (20N-20H)	
10.	111-011	1	WORM CLAMP (1" TO 1-3/4")	
11.	116-587	-	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 24"
12.	314-779	1	PLATFORM FRAME	
13.	110-217	4	WORM CLAMP (7/16" TO 1")	
14.	116-322	-	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 31"
15.	110-134	2	WORM CLAMP (2.06"-2.75")	
16.	117-625	-	FUEL HOSE	
17.	105-214	5	FLG SCREW (#10-24 X 1/2")	
18.	364-661	-	FILLER NECK	
	153-760	-	CAP	
19.	106-998	1	FLG LK SCREW (M10-1.50 X 70MM)	
20.	107-748	4	SCREW (M12-1.75 X 50MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT
21.	106-496	2	FLG BOLT (M12-1.75 X 35MM)	
22.	310-997	1	FLUID PUMP MOUNT	
23.	159-446	1	BREATHER VENT	
24.	118-432	1	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 9"
25.	325-147	1	TANK PAD	
26.	155-708	1	O-RING (218 D70)	
27.	364-663	1	FILLER NECK SCREEN	
28.	106-709	2	FLG LK NUT (M12-1.75)	

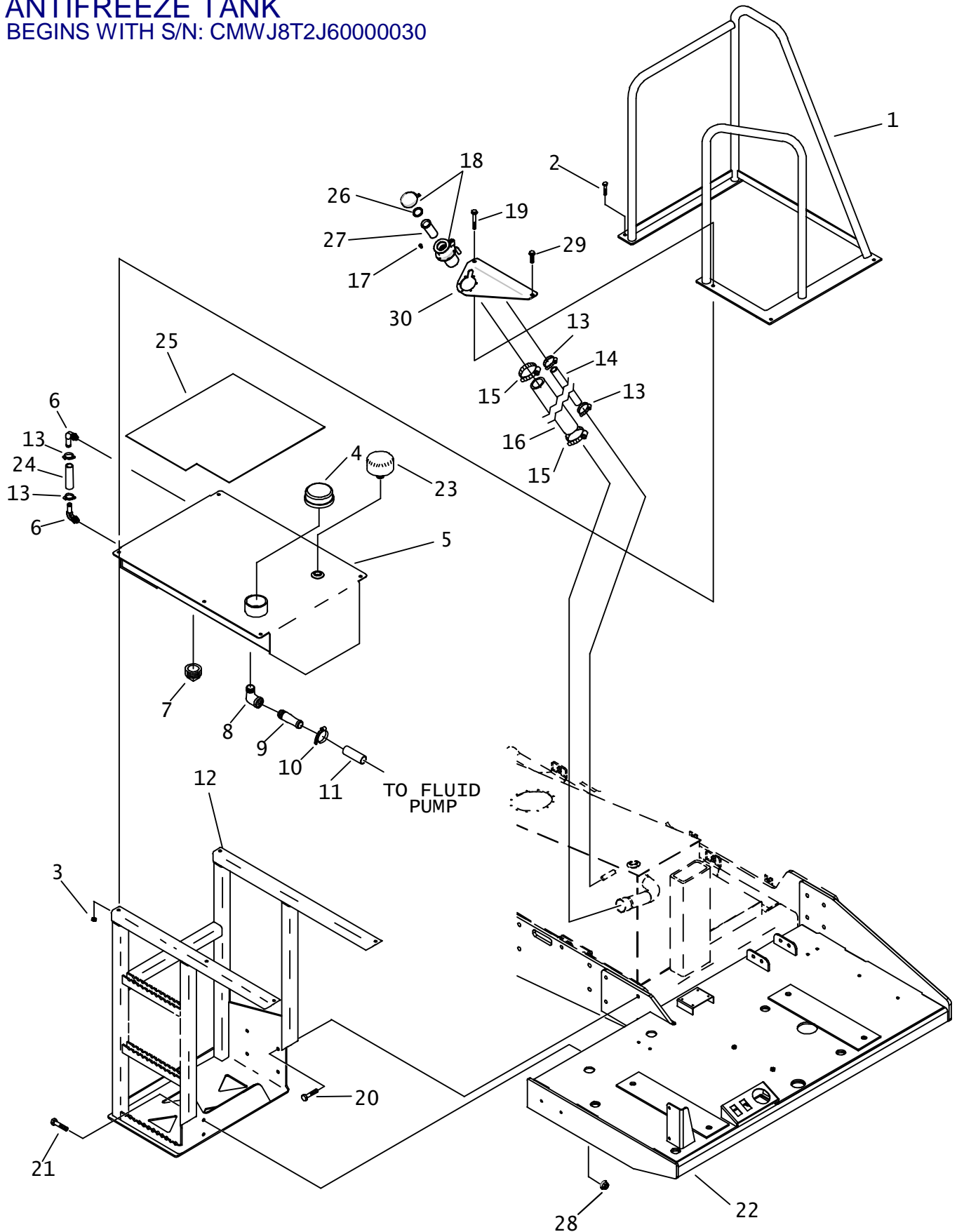
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FOOTNOTES:

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

# ANTIFREEZE TANK

BEGINS WITH S/N: CMWJ8T2J60000030



## ANTIFREEZE TANK

BEGINS WITH S/N: CMWJ8T2J60000030

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	314-777	1	HANDRAIL FRAME	
2.	106-724	3	FLG BOLT (M10-1.50 X 25MM)	
3.	107-661	5	FLG NUT (M10-1.50, PRV TRQ)	
4.	153-763	1	PIPE CAP (-48NF)	
5.	314-778	1	ANTIFREEZE TANK	
6.	156-108	2	S/O COUPLER (08N-08H90)	
7.	114-008	1	PLUG (32N, SQ, GALV)	
8.	115-132	1	STREET ELBOW (20N-20NF90)	
9.	156-940	1	S/O COUPLER (20N-20H)	
10.	111-011	1	WORM CLAMP (1" TO 1-3/4")	
11.	116-587	-	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 24"
12.	314-779	1	PLATFORM FRAME	
13.	110-217	4	WORM CLAMP (7/16" TO 1")	
14.	116-322	-	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 35"
15.	110-134	2	WORM CLAMP (2.06"-2.75")	
16.	116-952	-	FUEL HOSE	
17.	105-214	5	FLG SCREW (#10-24 X 1/2")	
18.	364-661	-	FILLER NECK	
	153-760	-	CAP	
19.	106-617	1	SCREW (M10-1.50 X 80MM)	
20.	107-748	4	SCREW (M12-1.75 X 50MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT
21.	106-496	2	FLG BOLT (M12-1.75 X 35MM)	
22.	310-997	1	FLUID PUMP MOUNT	
23.	159-446	1	BREATHER VENT	
24.	118-432	1	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 9"
25.	325-147	1	TANK PAD	
26.	155-708	1	O-RING (218 D70)	
27.	364-663	1	FILLER NECK SCREEN	
28.	106-709	2	FLG LK NUT (M12-1.75)	
29.	105-876	1	BOLT (M10-1.50 X 35MM)	
30.	300-1273	1	FILL NECK BRACKET	

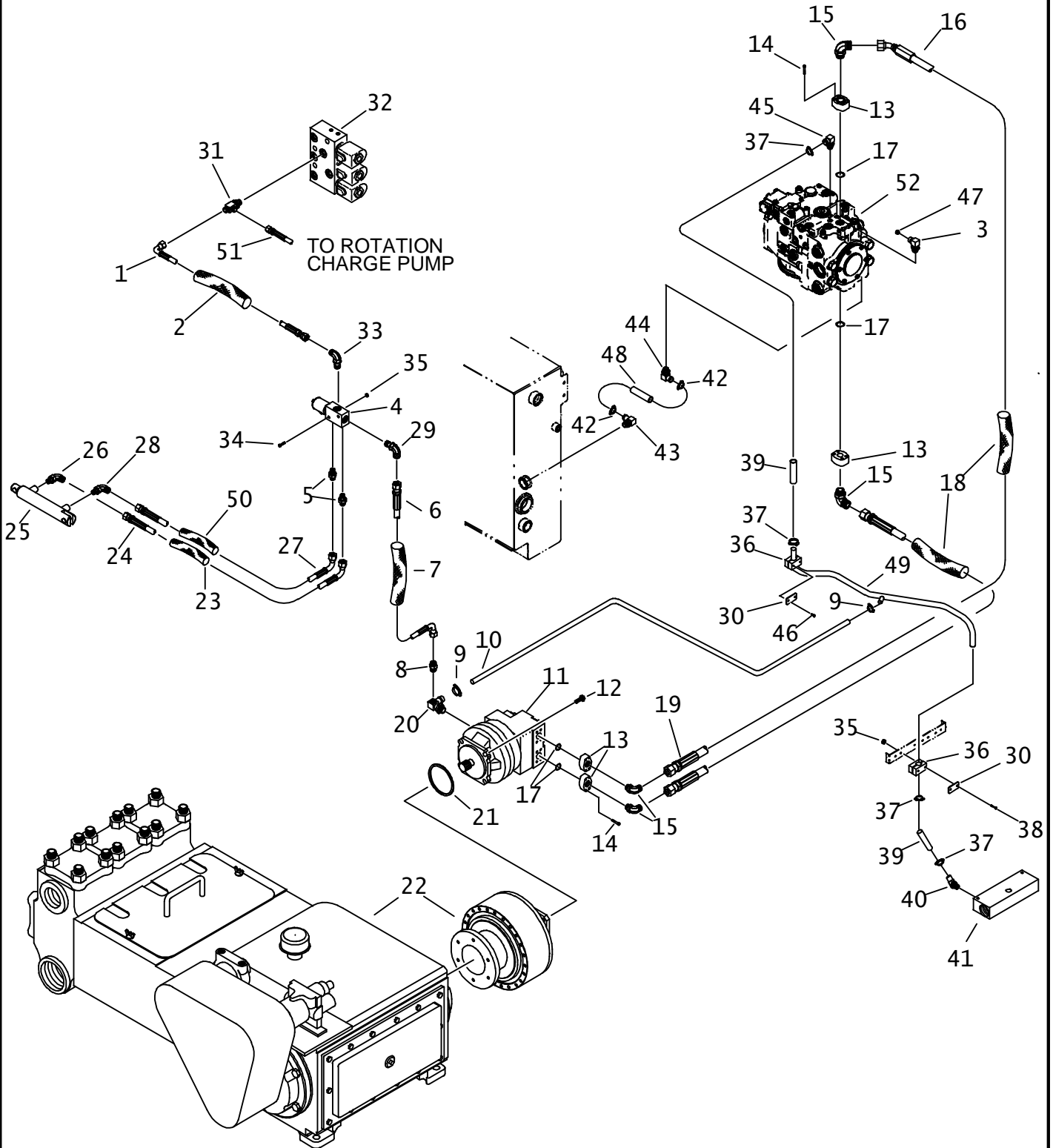
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FOOTNOTES:

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

# FLUID PUMP HYDRAULICS

ENDS WITH S/N 2V2567



# FLUID PUMP HYDRAULICS

## ENDS WITH S/N 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-981	1	HOSE (040FX90S-205"-3000)	
2.	117-170	1	ABRASION SLEEVE (1.00" X 197")	
3.	154-226	2	CONNECTOR (040-06S90)	
4.	149-550	-	SOLENOID CONTROL VALVE	
	214-491	-	COIL (12V)	
5.	154-220	2	CONNECTOR (040-06S)	
6.	154-929	1	HOSE (060FX90-19"-3000)	
7.	117-328	1	ABRASION SLEEVE (1.00" X 18")	
8.	154-221	1	CONNECTOR (06S-060)	
9.	110-026	2	WORM CLAMP (1/2" TO 1-1/4")	
10.	116-636	AR	BULK HOSE (3/4", SOLD PER 1')	USE 1 @ 85"
11.	153-437	1	HYDRAULIC MOTOR	
12.	106-499	4	FLG BOLT (1/2-NC X 1-1/2",GD8)	
13.	514-245	4	HEAD FLANGE (16HFL-16SF)	
14.	105-918	16	BOLT (7/16-NC X 1-1/2", SOC)	
15.	154-287	4	CONNECTOR (16S-16090)	
16.	153-128	1	HOSE (160FX45-174"-6000)	
17.	157-029	4	O-RING (219 D90)	
18.	117-334	2	ABRASION SLEEVE (2.38" X 174")	
19.	153-129	1	HOSE (160FX-174"-6000)	
20.	155-198	1	S/O COUPLER (12S-12H90-06SF)	
21.	157-201	1	O-RING (049 D70)	
22.	149-796	-	FLUID PUMP	SEE NOT SHOWN FOR SERVICE PARTS.
23.	117-672	1	ABRASION SLEEVE (1.00" X 20")	
24.	515-307	1	HOSE (040FX90-19"-5000)	
25.	151-211	-	CYL (1.25" X .50" X 4.00")	
26.	154-252	1	CONNECTOR (04S-04090)	
27.	154-802	1	HOSE (040FX90-26"-3000)	
28.	154-401	1	CONNECTOR (04S-04090, ORF)	
29.	154-342	1	CONNECTOR (06S-06090)	
30.	322-289	2	BACKUP (BOLT -ON)	
31.	154-316	-	RUN TEE (04S-040-040)	
32.	159-194	-	CHARGE MANIFOLD	
33.	154-226	1	CONNECTOR (040-06S90)	
34.	105-198	2	BOLT (1/4-NC X 1-3/4")	
35.	105-832	2	FLG LOCKNUT (1/4-NC)	

## NOT SHOWN:

500-2081	ABRASIVE RESISTANT VALVE INSERT, DISCHARGE
500-2082	ABRASIVE RESISTANT VALVE INSERT, SUCTION

## FOOTNOTES:

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

## NOTE:

## FLUID PUMP HYDRAULICS

### ENDS WITH S/N 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
36.	110-573	4	BOLT-ON CLAMP (1",SOLD PER SET)	
37.	110-353	4	WORM CLAMP (3/4" TO 1-1/2")	
38.	105-106	2	BOLT (1/4-NC X 2")	
39.	116-094	AR	BULK HOSE (1", SOLD PER 1")	USE 1 @ 57", 1 @ 9.5"
40.	155-230	1	S/O COUPLER (16S-16H45)	
41.	159-414	1	CASE DRAIN MANIFOLD	
42.	110-133	2	WORM CLMP (1-1/16" TO 1-15/16")	
43.	155-168	1	S/O COUPLER (20S-20H90)	
44.	155-149	1	S/O COUPLER (16S-20H90)	
45.	155-146	1	S/O COUPLER (12S-16H90)	
46.	105-818	1	BOLT (1/4-NC X 1-1/2")	
47.	154-296	1	CAP (040F)	
48.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 22"
49.	156-132	1	HYD LINE (-16)	
50.	117-684	1	ABRASION SLEEVE (1.00" X 26")	
51.	154-670	-	HOSE (040FX-70"-3000)	
52.	149-903	-	HYDRAULIC PUMP (75 CC)	

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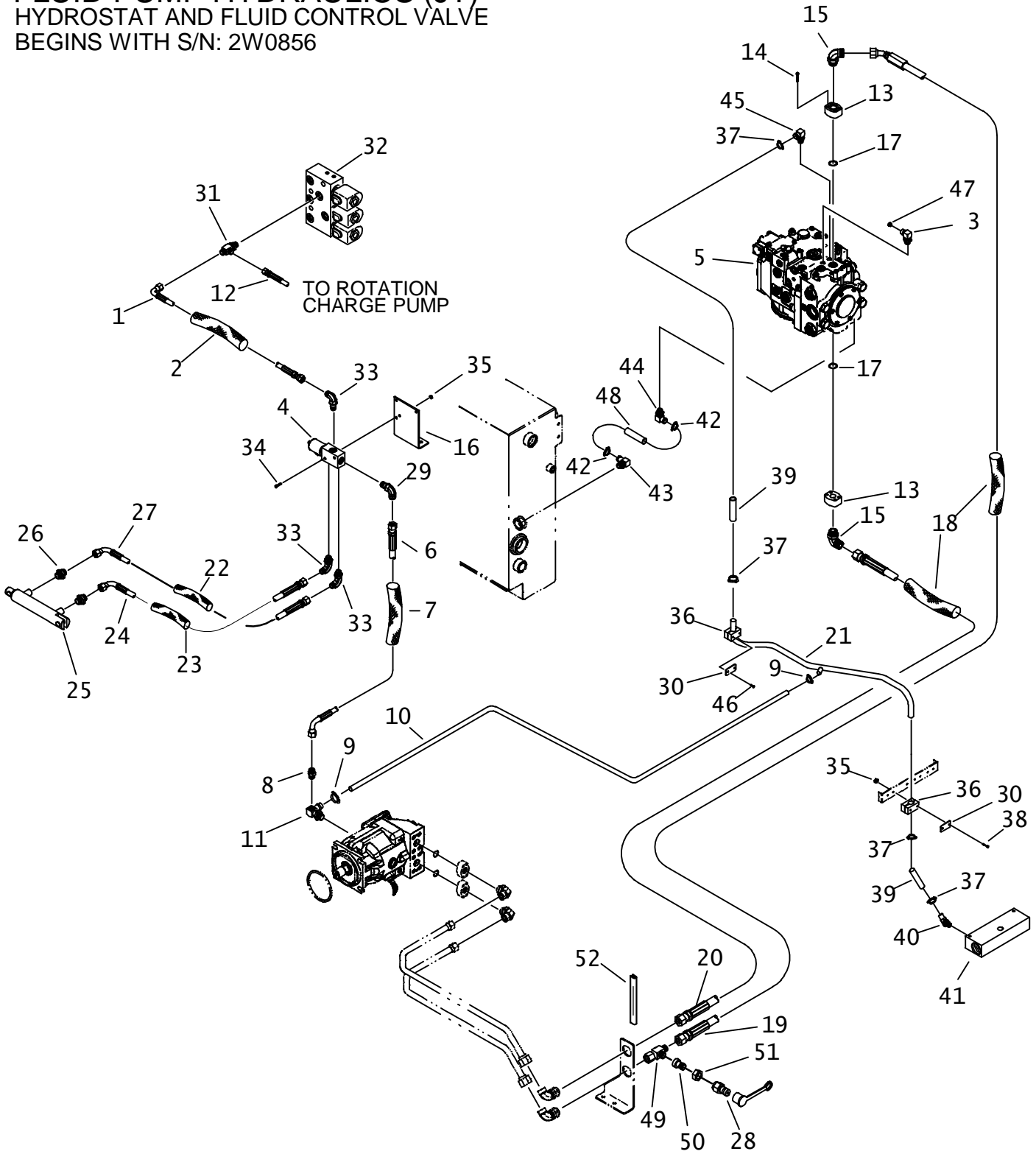
FOOTNOTES:

NOTE:





**FLUID PUMP HYDRAULICS (JT)**  
**HYDROSTAT AND FLUID CONTROL VALVE**  
 BEGINS WITH S/N: 2W0856



**FLUID PUMP HYDRAULICS (JT)**  
**HYDROSTAT AND FLUID CONTROL VALVE**  
**BEGINS WITH S/N: 2W0856**

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-482	1	HOSE (040FX90S-217"-3000)	
2.	117-988	1	ABRASION SLEEVE (1.00" X 216")	
3.	154-226	2	CONNECTOR (040-06S90)	
4.	158-805	1	HYD CONTROL VALVE (4-WAY,2POS)	SEE FOOTNOTE 1
5.	149-903	-	HYDRAULIC PUMP (75 CC)	
6.	515-188	1	HOSE (060FX90S-23"-3000)	
7.	117-611	1	ABRASION SLEEVE (1.00" X 22")	
8.	154-221	1	CONNECTOR (06S-060)	
9.	110-026	2	WORM CLAMP (1/2" TO 1-1/4")	
10.	116-636	AR	BULK HOSE (3/4", SOLD PER 1')	USE 1 @ 120"
11.	155-198	1	S/O COUPLER (12S-12H90-06SF)	
12.	154-670	-	HOSE (040FX-70"-3000)	
13.	514-245	2	HEAD FLANGE (16HFL-16SF)	
14.	105-918	8	BOLT (7/16-NC X 1-1/2", SOC)	
15.	154-287	4	CONNECTOR (16S-16090)	
16.	313-219	-	MOUNT BRACKET	
17.	157-029	2	O-RING (219 D90)	
18.	118-077	2	ABRASION SLEEVE (2.38" X 155")	
19.	157-421	1	HOSE (160FX45-155"-6000)	
20.	153-916	1	HOSE (160FX-155"-6000)	
21.	156-132	1	HYD LINE (-16)	
22.	117-613	1	ABRASION SLEEVE (1.00" X 64")	
23.	117-693	1	ABRASION SLEEVE (1.00" X 60")	
24.	154-705	1	HOSE (040FX90-60"-3000)	
25.	151-211	-	CYL (1.25" X .50" X 4.00")	
26.	154-278	2	CONNECTOR (04S-040)	
27.	515-030	1	HOSE (040FX90S-64"-3000)	
28.	159-159	1	QDC ADAPTER (02-100FX)	
29.	154-342	1	CONNECTOR (06S-06090)	
30.	322-289	2	BACKUP (BOLT -ON)	
31.	154-316	-	RUN TEE (04S-040-040)	
32.	159-194	-	CHARGE MANIFOLD	
33.	154-226	3	CONNECTOR (040-06S90)	
34.	105-106	2	BOLT (1/4-NC X 2")	
35.	105-832	4	FLG LOCKNUT (1/4-NC)	
36.	110-573	4	BOLT-ON CLAMP (1",SOLD PER SET)	
37.	111-011	4	WORM CLAMP (1" TO 1-3/4")	
38.	105-106	2	BOLT (1/4-NC X 2")	
39.	116-094	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 57", 1 @ 9.5"
40.	155-230	1	S/O COUPLER (16S-16H45)	
41.	159-414	1	CASE DRAIN MANIFOLD	
42.	110-133	2	WORM CLMP (1-1/16" TO 1-15/16")	
43.	155-168	1	S/O COUPLER (20S-20H90)	
44.	155-149	1	S/O COUPLER (16S-20H90)	
45.	155-146	1	S/O COUPLER (12S-16H90)	
46.	105-818	1	BOLT (1/4-NC X 1-1/2")	
47.	154-296	1	CAP (040F)	
48.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 22"
49.	154-409	1	UNION RUN TEE (160FX-160-160)	
50.	154-442	1	REDUCER STEM (100)	
51.	154-340	1	REDUCER NUT (160F)	
52.	115-686	AR	BULK EDGING (5/32", SOLD PER 1')	USE 1 @ 8"

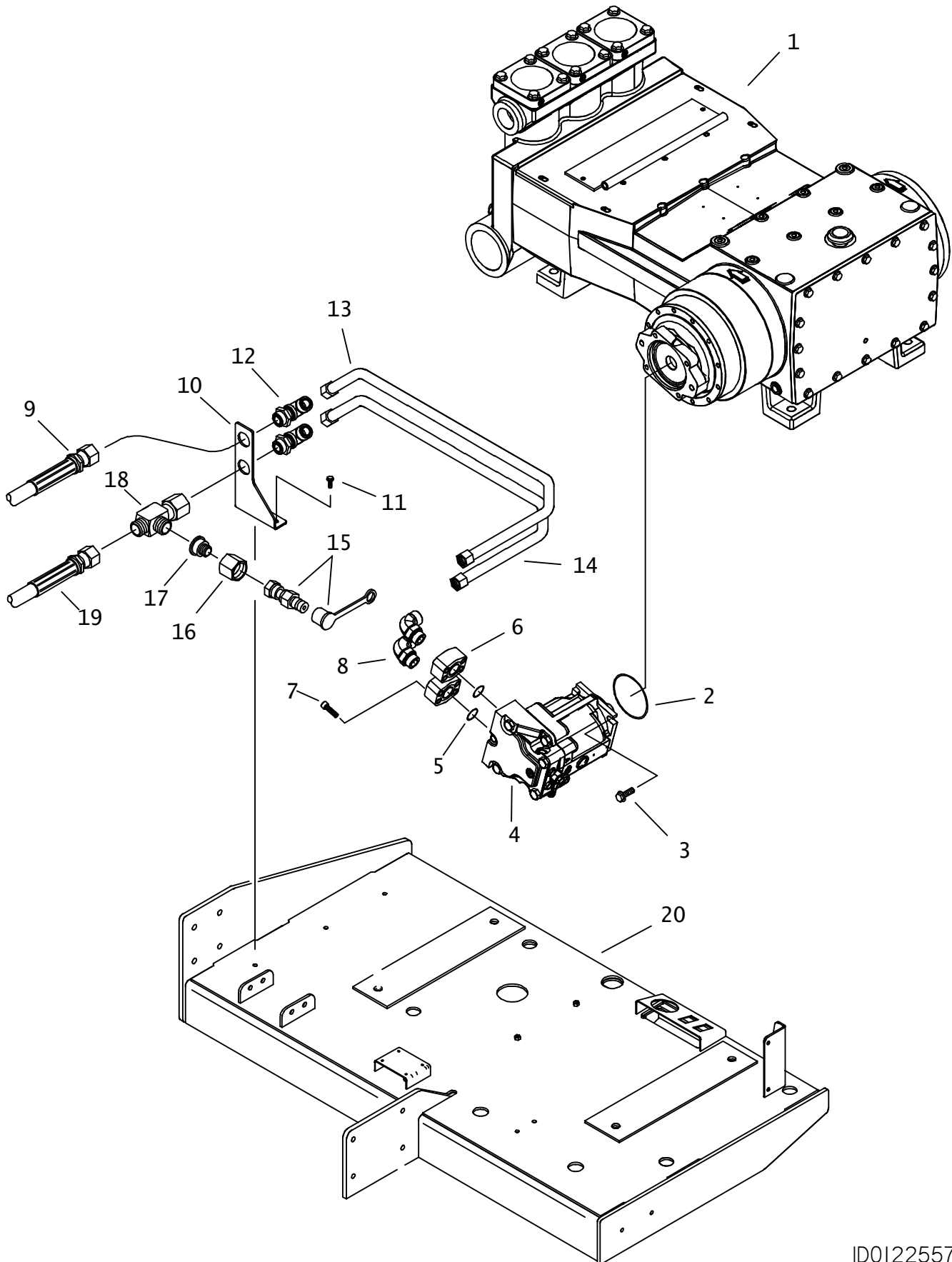
NOTES:

FOOTNOTES:

1. PORT 1 BARREL, PORT 2 INLET, PORT 3 ROD, PORT 4 RETURN  
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

# FLUID PUMP HYDRAULICS (JT)

BEGINS WITH S/N: 2W0856



# FLUID PUMP HYDRAULICS (JT)

BEGINS WITH S/N: 2W0856

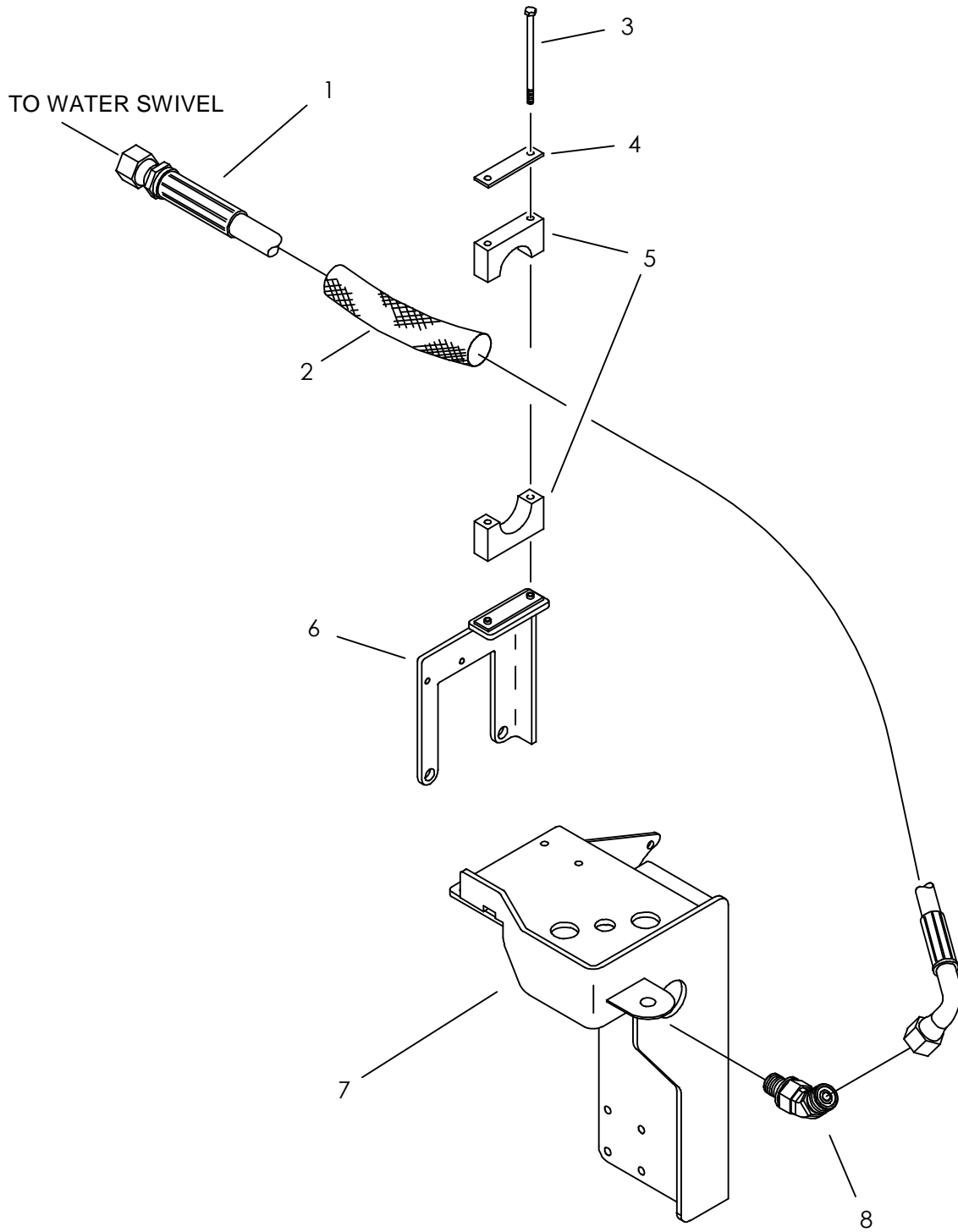
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-776	-	FLUID PUMP	
2.	157-201	1	O-RING (049 D70)	
3.	106-499	4	FLG BOLT (1/2-NC X 1-1/2",GD8)	
4.	149-822	1	HYDRAULIC MOTOR	
5.	157-029	2	O-RING (219 D90)	
6.	514-245	2	HEAD FLANGE (16HFL-16SF)	
7.	105-918	8	BOLT (7/16-NC X 1-1/2", SOC)	
8.	154-287	2	CONNECTOR (16S-16090)	
9.	153-916	-	HOSE (160FX-155"-6000)	
10.	315-770	1	BULKHEAD PLATE	
11.	106-162	2	FLG SCREW (M8-1.25 X 20MM, GD 8)	
12.	154-419	2	BK CONNECTOR (160-16090BK)	
13.	153-824	1	HYD LINE (-16) M1432	
14.	153-825	1	HYD LINE (-16) M1432	
15.	159-159	1	QDC ADAPTER (02-100FX)	
16.	154-340	1	REDUCER NUT (160F)	
17.	154-442	1	REDUCER STEM (100)	
18.	154-409	1	UNION RUN TEE (160FX-160-160)	
19.	157-421	-	HOSE (160FX45-155"-6000)	
20.	310-997	-	FLUID PUMP MOUNT	

NOT SHOWN:

FOOTNOTES:

NOTE:

# FLUID SUPPLY (SWIVEL)



## FLUID SUPPLY (SWIVEL)

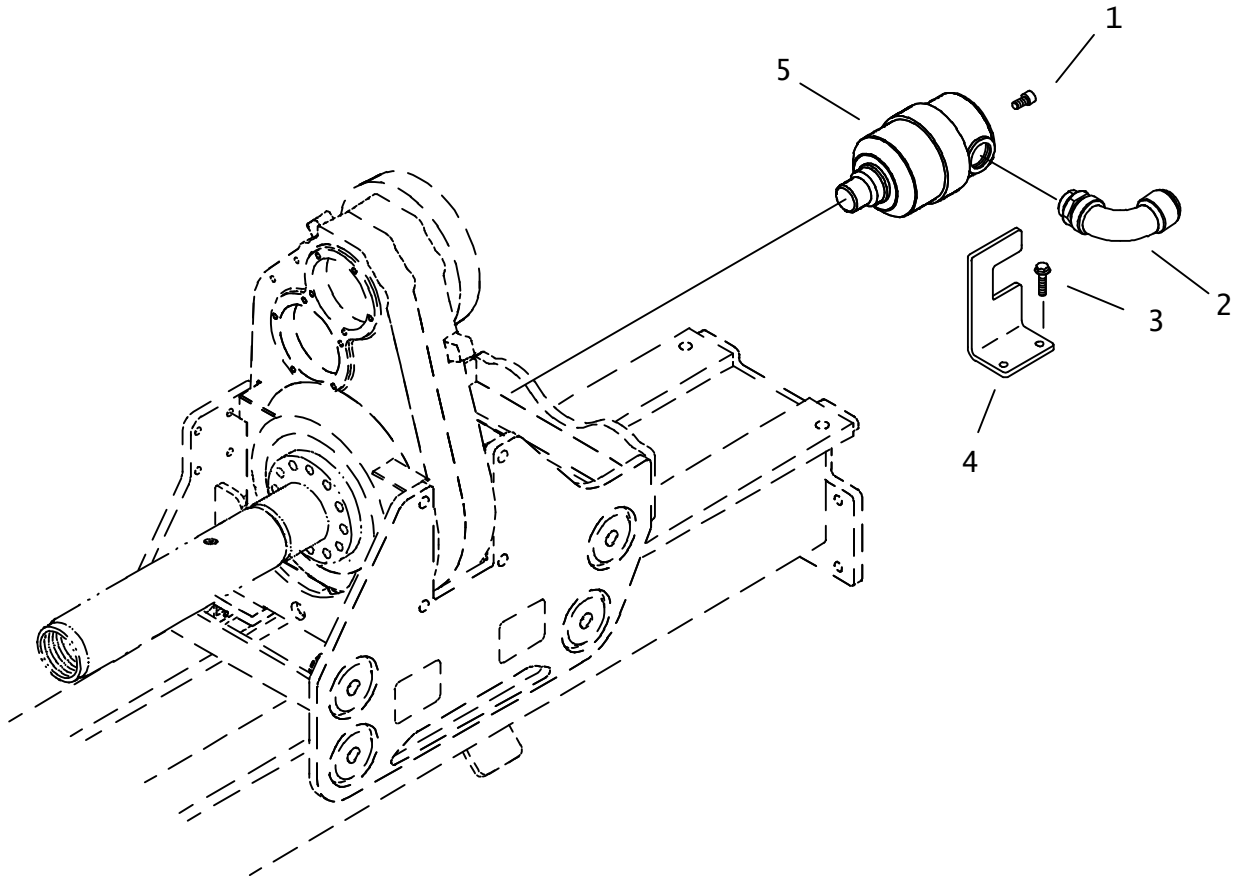
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-240	1	HOSE (32JFX90S-90"-1300)	
2.	117-375	1	ABRASION SLEEVE (3.66" X 35")	
3.	107-443	2	SCREW (7/16-NC X 4")	
4.	307-532	1	COVER PLATE	
5.	310-994	1	CLAMP HALVES (SET OF 2)	
6.	310-852	1	REAR STRAP	
7.	309-179	-	CABLE TRAY BRACKET	
8.	153-207	1	BULKHEAD FITTING	USE 680 LOCTITE OR EQUIVALENT ON NUT

NOT SHOWN:

FOOTNOTES:

NOTE:

**FLUID SUPPLY**  
WATER SWIVEL  
BEGINS WITH S/N: 2W0856





**FLUID SUPPLY****WATER SWIVEL****BEGINS WITH S/N: 2W0856**

REF	PART			
NO.	NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-165	1	PLUG (08N, SOC)	
2.	153-150	1	CONNECTOR (24S-32J90)	
3.	106-559	2	SCREW (M12-1.75 X 25MM)	
4.	309-881	1	SWIVEL TORQUE BRACKET	
5.	149-592	1	WATER SWIVEL	SEE FOOTNOTE I
	190-821	2	SEAL KIT	

NOT SHOWN:

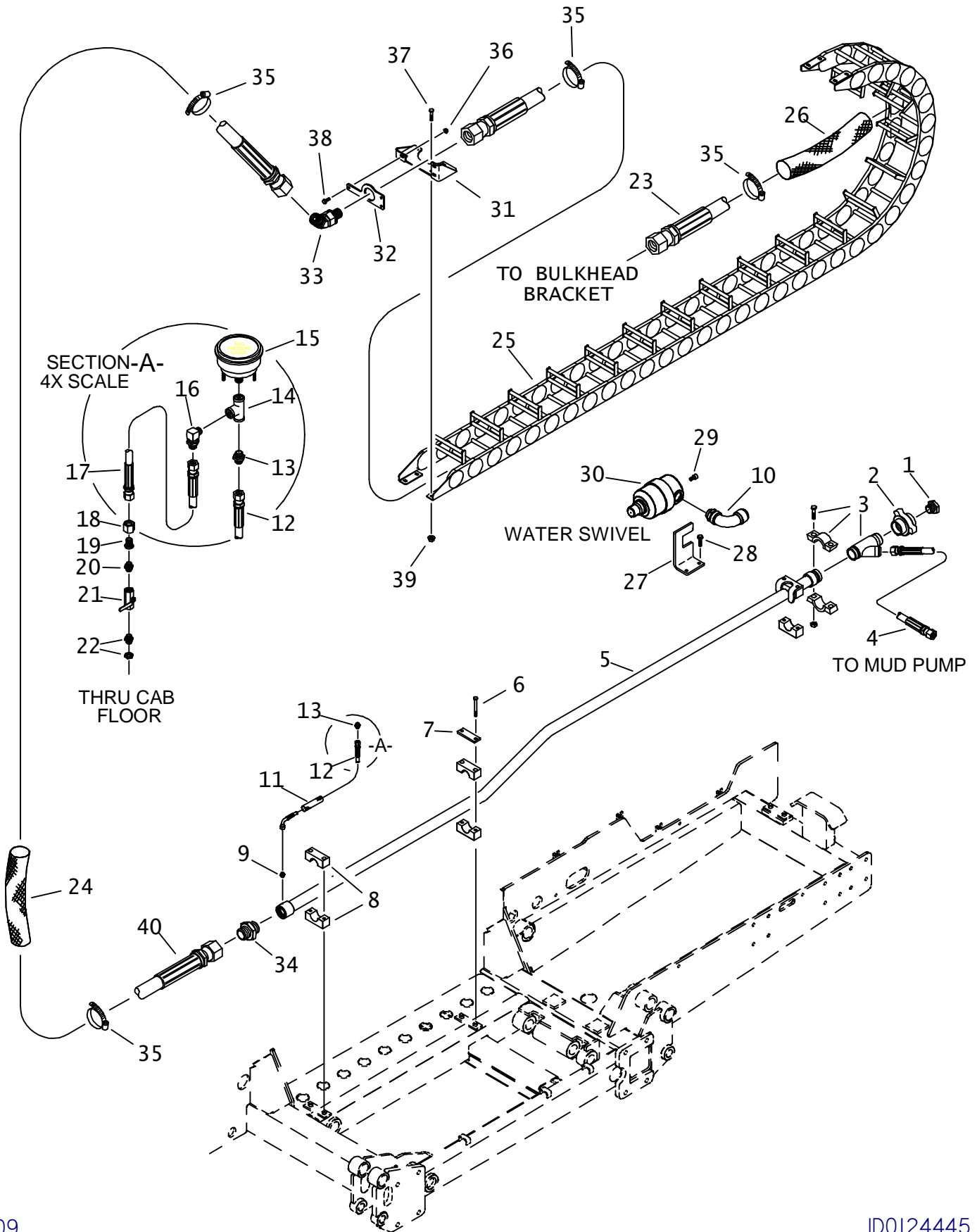
## FOOTNOTES:

I. INSTALL USING NICKLE THREAD SEALING TAPE (I17-555) ON MALE THREADS.

NOTE:

# FLUID SUPPLY

ENDS WITH S/N: 2V2567



## FLUID SUPPLY

### ENDS WITH S/N: 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	114-008	1	PLUG (32N, SQ, GALV)	
2.	149-078	1	HAMMER UNION (32NF)	
3.	153-278	1	Y-CONNECTOR (24J-32N-32V)	
4.	153-132	1	HOSE (24JFX-45"-1700)	
5.	308-348	1	MUD SUPPLY TUBE	
6.	107-443	6	SCREW (7/16-NC X 4")	USE 242 LOCTITE OR EQUIVALANT
7.	307-532	2	COVER PLATE	
8.	307-524	3	BOLT-ON CLAMP (2", PAIR)	
9.	154-339	1	CONNECTOR (04N-040)	
10.	153-150	1	CONNECTOR (24S-32J90)	
11.	117-170	1	ABRASION SLEEVE (1" X 197")	
12.	153-297	1	HOSE (040FX90M-198"-3000)	
13.	154-339	1	CONNECTOR (04N-040)	
14.	115-130	1	TEE (04NF-04NF-04NF)	
15.	217-543	-	PRESSURE GAUGE (3000PSI)	
16.	154-482	1	CONNECTOR (04N-04090)	
17.	515-249	1	HOSE (040FX-26"-3000)	
18.	154-272	1	REDUCER NUT (080F)	
19.	154-248	1	REDUCER STEM (040)	
20.	154-349	1	CONNECTOR (08N-080)	
21.	158-579	1	SHUT-OFF (08NF-08NF)	
22.	149-364	1	BK CONN (08N-080)	
23.	153-146	1	HOSE (32JFX90S-183.5"-1300)	
24.	117-376	1	ABRASION SLEEVE (3.66" X 77")	
25.	309-168	-	HOSE CARRIER	
26.	117-461	1	ABRASION SLEEVE (3.66" X 182")	
27.	309-881	1	SWIVEL TORQUE BRACKET	
28.	106-559	2	SCREW (M12-1.75 X 25MM)	
29.	115-165	1	PLUG (08N, SOC)	
30.	149-592	1	WATER SWIVEL (WIRELINE)	
	190-821	1	SEAL KIT	
31.	310-268	1	BULKHEAD	
32.	310-263	1	BULKHEAD PLATE	
33.	153-207	1	BULKHEAD FITTING	USE 680 LOCTITE OR EQUIVALANT ON NUT
34.	153-334	1	CONNECTOR (24S-32J)	
35.	110-311	4	WORM CLAMP (1-5/16" TO 3-1/4")	
36.	106-387	3	FLG LOCKNUT (M10-1.50)	
37.	107-566	4	CARRIAGE BOLT (3/8-NC X 1.50")	
38.	106-383	3	FLG LK SCREW (M10-1.50 X 30MM)	
39.	105-834	4	FLG LOCKNUT (3/8-NC)	
40.	153-348	1	HOSE (32JFX-77.75"-1300)	

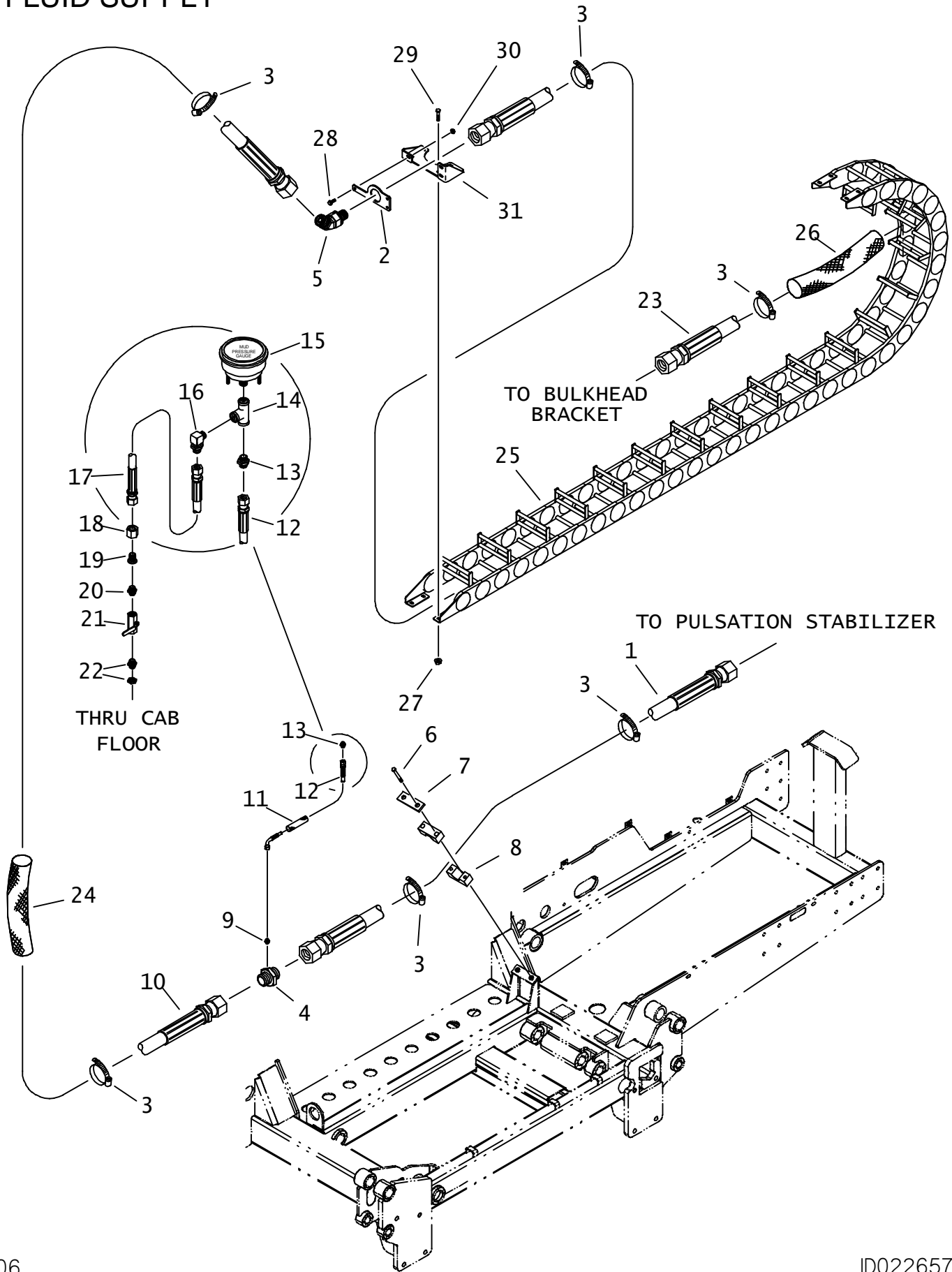
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FOOTNOTES:

NOTE:

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

# FLUID SUPPLY



# FLUID SUPPLY

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-610	1	HOSE (32JFX-84.75"-1300)	JT
	150-2798	1	HOSE (24JFX-24JFX90 157"-1250)	AT
2.	310-263	1	BULKHEAD PLATE	JT
3.	110-311	6	WORM CLAMP (1-5/16" TO 3-1/4")	
4.	150-2711	1	BK CONNECTOR (24S-32J)	JT
	150-2734	1	BK CONNECTOR (24J-32JBK)	AT USE O-RINGS 105-1433 & 105-1434
5.	150-2727	1	BULKHEAD FITTING	USE O-RING 105-1434
6.	107-443	2	SCREW (7/16-NC X 4")	USE LOCTITE 242 OR EQUIVALENT
7.	307-532	1	COVER PLATE	
8.	310-994	1	CLAMP HALVES (2 PER SET)	
9.	154-339	1	CONNECTOR (04N-040)	
10.	153-348	1	HOSE (32JFX-77.75"-1300)	
11.	117-170	1	ABRASION SLEEVE (1" X 197")	
12.	153-297	1	HOSE (040FX90M-198"-3000)	
13.	154-339	1	CONNECTOR (04N-040)	
14.	115-130	1	TEE (04NF-04NF-04NF)	
15.	150-1444	-	PRESSURE GAUGE (2000PSI)	
16.	154-482	1	CONNECTOR (04N-04090)	
17.	515-249	1	HOSE (040FX-26"-3000)	
18.	154-272	1	REDUCER NUT (080F)	
19.	154-248	1	REDUCER STEM (040)	
20.	154-349	1	CONNECTOR (08N-080)	
21.	158-579	1	SHUT-OFF (08NF-08NF)	
22.	149-364	1	BK CONN (08N-080)	
23.	150-2176	1	HOSE (32JFX-288"-1300)	
24.	117-376	1	ABRASION SLEEVE (3.66" X 77")	
25.	300-5385	-	HOSE CARRIER	SEE NOT SHOWN FOR SERVICE PARTS
26.	105-1341	1	ABRASION SLEEVE (3.66" X 286")	
27.	105-834	4	FLG LOCKNUT (3/8-NC)	
28.	106-383	3	FLG LK SCREW (M10-1.50 X 30MM)	
29.	107-566	4	CARRIAGE BOLT (3/8-NC X 1.50")	
30.	106-387	3	FLG LOCKNUT (M10-1.50)	
31.	310-268	1	BULKHEAD	

NOT SHOWN:

190-1677

MOUNTING BRACKET KIT

SERVICE PART KIT FOR 300-5385 HOSE CARRIER

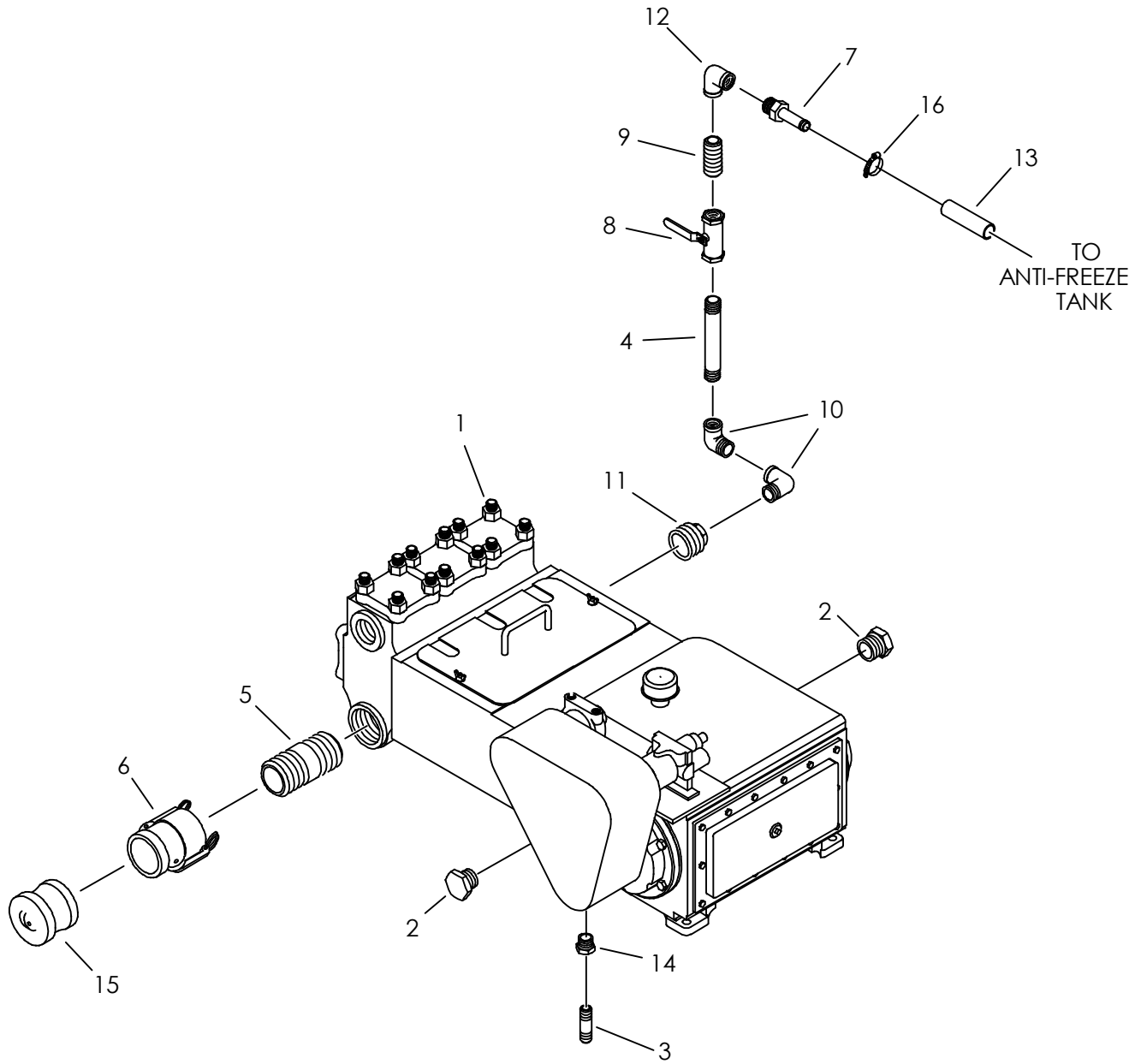
FOOTNOTES:

NOTE:

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

# FLUID PUMP PLUMBING

SUCTION SIDE  
ENDS WITH S/N 2V2567



# FLUID PUMP PLUMBING

## SUCTION SIDE

### ENDS WITH S/N 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-796	-	FLUID PUMP (200 GPM)	SEE NOT SHOWN FOR SERVICE PARTS
	197-089	-	REBUILT 149-796 FLUID PUMP	
2.	114-008	2	PLUG (32N, SQ, GALV)	
3.	115-273	1	NIPPLE (16N-6")	
4.	115-179	1	NIPPLE (20N-6")	
5.	115-299	1	NIPPLE (48N-3")	
6.	153-368	1	FHC BODY (3-1/2" FHC X 3"NPTF)	
7.	156-940	1	S/O COUPLER (20N-20H)	
8.	149-786	1	SHUT-OFF (20NF)	
9.	115-207	1	NIPPLE (20N-2")	
10.	115-132	2	STREET ELBOW (20N-20NF90)	
11.	178-407	1	REDUCER (48N-20NF)	
12.	115-209	1	ELBOW (20NF-20NF90)	
13.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1')	USE 1 @ 24"
14.	115-085	1	REDUCER (32N-16NF)	
15.	153-255	1	FHC PLUG (-56)	
16.	111-011	1	WORM CLAMP (1" TO 1-3/4")	

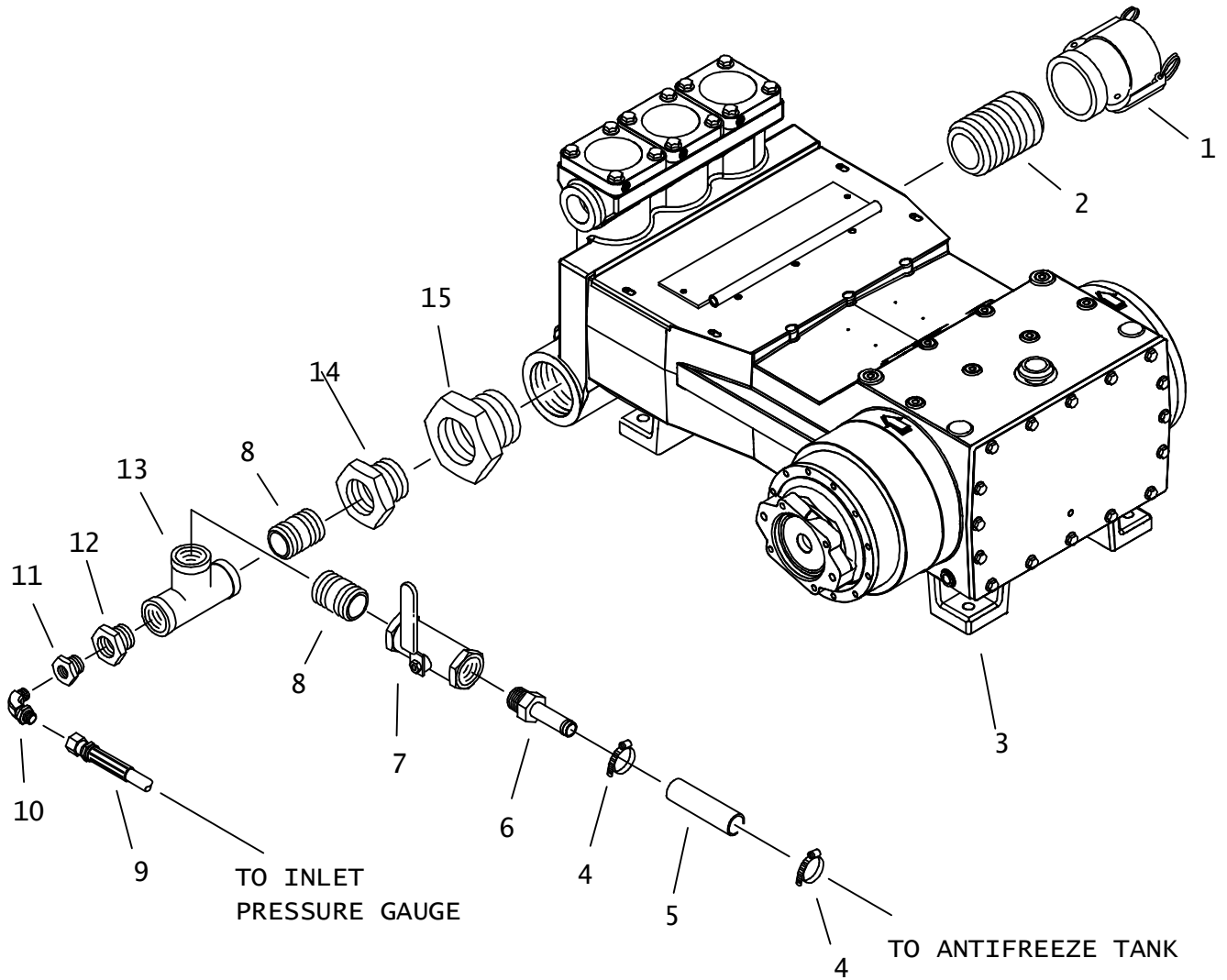
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500-2081 ABRASIVE RESISTANT VALVE INSERT, DISCHARGE  
500-2082 ABRASIVE RESISTANT VALVE INSERT, SUCTION

## FOOTNOTES:

## NOTE:

**FLUID PUMP PLUMBING (JT)**  
**SUCTION SIDE**  
**BEGINS WITH S/N: 2W0856**





# FLUID PUMP PLUMBING (JT)

## SUCTION SIDE

BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	153-914	1	FHC BODY (4-1/2 FHCF X 4" NPTF)	
2.	153-953	1	CLOSE NIPPLE (64N)	
3.	153-776	1	FLUID PUMP	
4.	111-011	2	WORM CLAMP (1" TO 1-3/4")	
5.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1')	
6.	156-940	1	S/O COUPLER (20N-20H)	
7.	149-786	1	SHUT-OFF (20NF)	
8.	115-207	2	NIPPLE (20N-2")	
9.	154-805	-	HOSE (060FX90S-54"-3000)	
10.	154-420	1	CONNECTOR (08N-06090)	
11.	115-276	1	REDUCER (16N-08NF)	
12.	115-236	1	REDUCER (20N-16NF)	
13.	115-264	1	PIPE TEE (20NF)	
14.	178-407	1	REDUCER (48N-20NF)	
15.	115-252	1	REDUCER (64N-48NF)	

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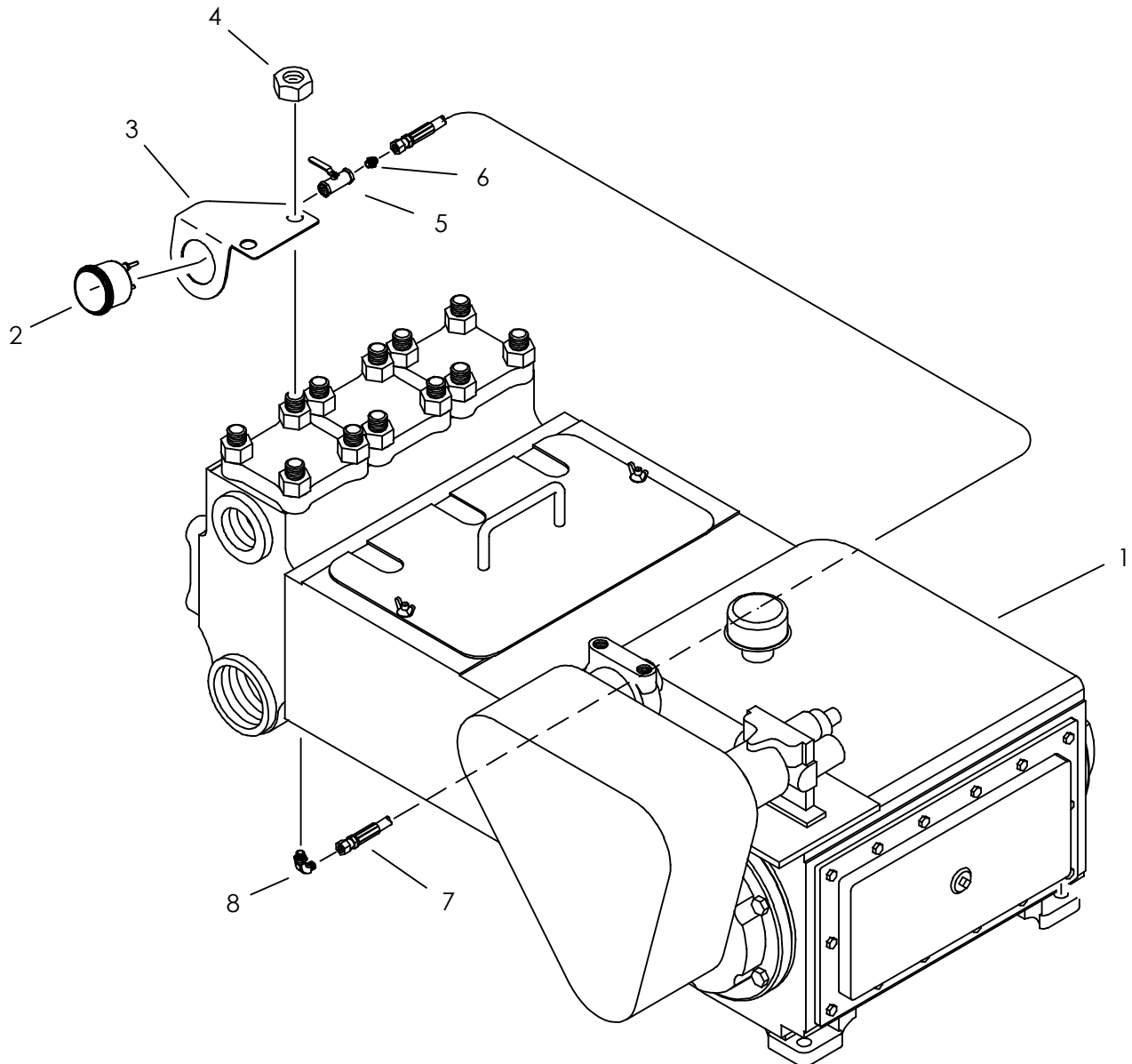
153-915	FHC PLUG (-64)
153-954	REDUCER 4 FHCM-3 FHCF

FOOTNOTES:

NOTE:

# INLET GAUGE PLUMBING

SUCTION SIDE  
ENDS WITH S/N 2V2567



# INLET GAUGE PLUMBING

## SUCTION SIDE

### ENDS WITH S/N 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-796	-	FLUID PUMP	SEE NOT SHOWN FOR SERVICE PARTS.
2.	258-048	1	PRESSURE GAUGE (0-100 PSI)	
3.	310-409	1	FORMED MOUNT	
4.	105-348	2	NUT (7/8-NC)	
5.	120-090	1	SHUT-OFF(04NF-04NF, NONVENTED)	
6.	514-181	1	CONNECTOR (04N-060)	
7.	154-755	1	HOSE (060FX-34"-3000)	
8.	154-420	1	CONNECTOR (08N-06090)	

#### NOT SHOWN:

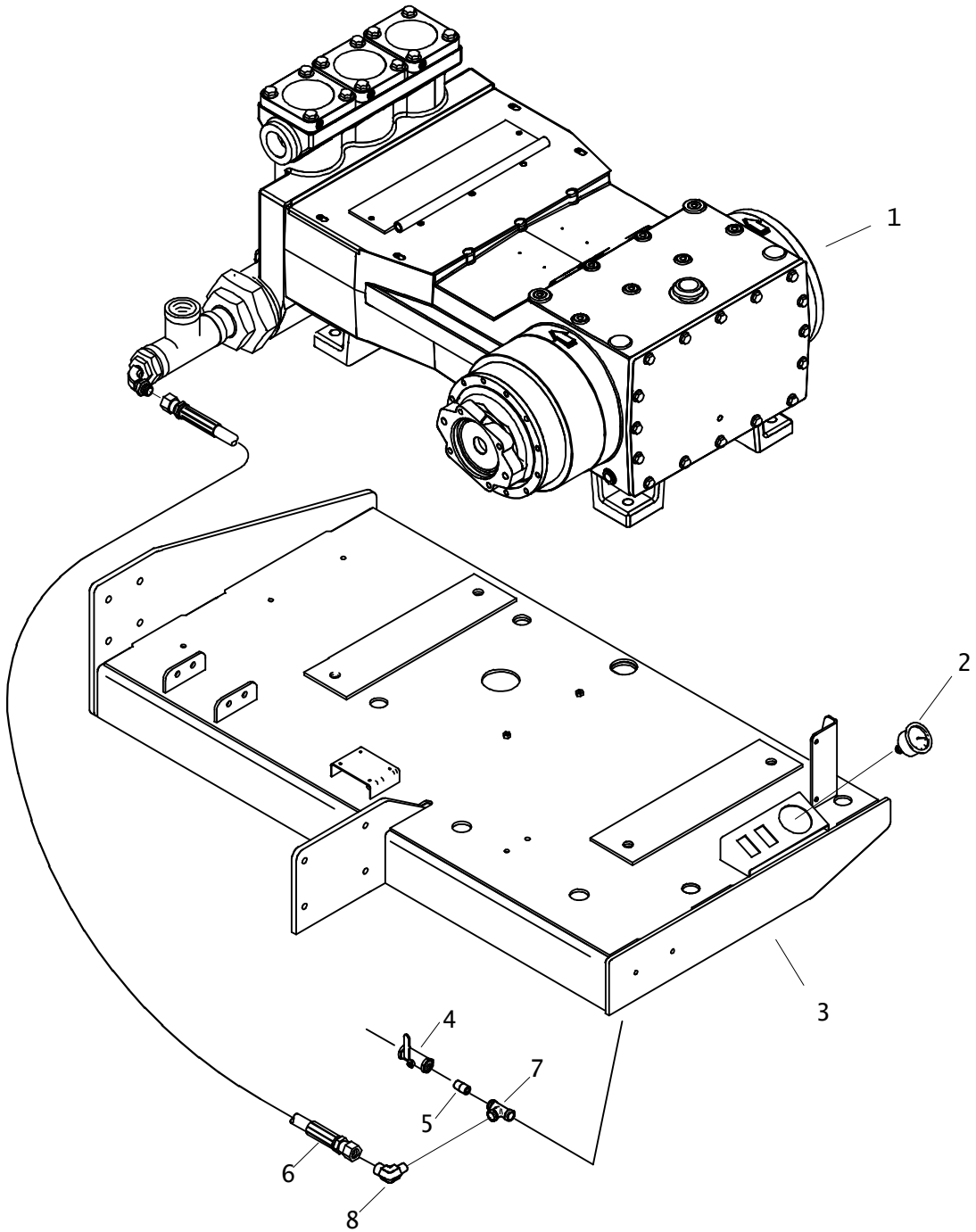
500-2081 ABRASIVE RESISTANT VALVE INSERT, DISCHARGE  
 500-2082 ABRASIVE RESISTANT VALVE INSERT, SUCTION

#### FOOTNOTES:

#### NOTE:

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

**INLET GAUGE PLUMBING (JT)**  
SUCTION SIDE  
BEGINS WITH S/N: 2W0856



# INLET GAUGE PLUMBING (JT)

## SUCTION SIDE

BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	153-776	-	FLUID PUMP	
2.	258-048	1	PRESSURE GAUGE (0-160 PSI)	
3.	310-997	-	FLUID PUMP MOUNT	
4.	120-090	1	SHUT-OFF (04NF-04NF, NONVENTED)	
5.	115-129	1	ALL THREAD (04N) SCH 80	
6.	154-805	1	HOSE (060FX90S-54"-3000)	ENDS WITH S/N: 2Z1021
	149-193	1	HOSE (060FX90-69"-3000-AR)	BEGINS WITH S/N: 2Z1022
7.	115-130	1	TEE (04NF-04NF-04NF)	
8.	149-039	1	CONNECTOR (04N-06090)	

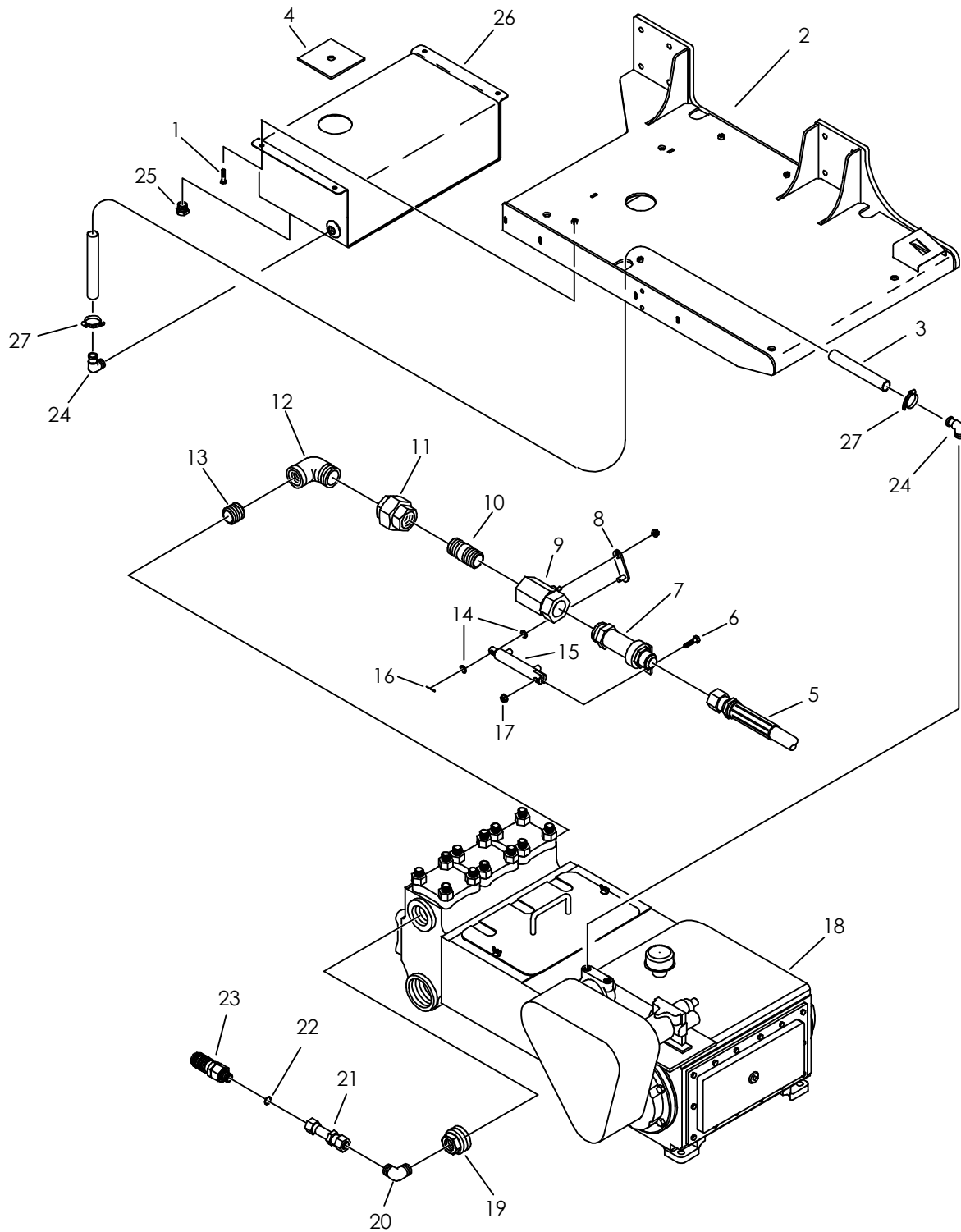
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FOOTNOTES:

NOTE:

# FLUID PUMP PLUMBING

DISCHARGE SIDE  
ENDS WITH S/N 2V2567



# FLUID PUMP PLUMBING

## DISCHARGE SIDE

### ENDS WITH S/N 2V2567

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-162	4	FLG SCREW (M8-1.25 X 20MM)	
2.	307-427	-	MUD PUMP MOUNT	
3.	116-855	AR	BULK TUBE (.625", SOLD PER 1")	USE 1 @ 31"
4.	153-223	1	TANK SEAL	
5.	153-132	1	HOSE (24JFX-45"-1700)	
6.	106-334	1	SCREW (M12-1.75 X 50MM)	
7.	149-646	1	CYLINDER MOUNT (32N-24J)	
8.	306-388	1	VALVE ARM	
9.	149-1001	1	SHUT-OFF (32NF-32NF)	
	191-069	-	BALL VALVE REPAIR KIT	
10.	115-050	1	NIPPLE (32N-6")	
11.	149-785	1	HEX HD UNION (32NF)	
12.	115-052	1	ELBOW (32N-32NF90)	
13.	515-680	1	ALL THREAD (32N-2")	
14.	106-391	2	WASHER (M12)	
15.	151-211	1	CYL (1.25" X .50" X 4.00")	
16.	105-512	1	COTTER PIN (3/32" X 3/4")	
17.	106-685	1	LOCKNUT(M12-1.75, PRV TRQ,10.9)	
18.	149-796	-	FLUID PUMP	SEE NOT SHOWN FOR SERVICE PARTS
19.	115-064	1	REDUCER (32N-12NF)	
20.	154-490	1	CONNECTOR (12N-08090)	
21.	156-732	1	CONNECTOR (08J-080)	
22.	155-706	1	O-RING (908 D90)	
23.	159-088	1	QDC BODY (08-08SF)	
24.	514-285	2	S/O COUPLER (08N-10H90)	
25.	115-112	1	PLUG (08N, SQ)	
26.	307-631	1	LINER WASH TANK	
27.	110-026	2	WORM CLAMP (1/2" TO 1-1/4")	

## NOT SHOWN:

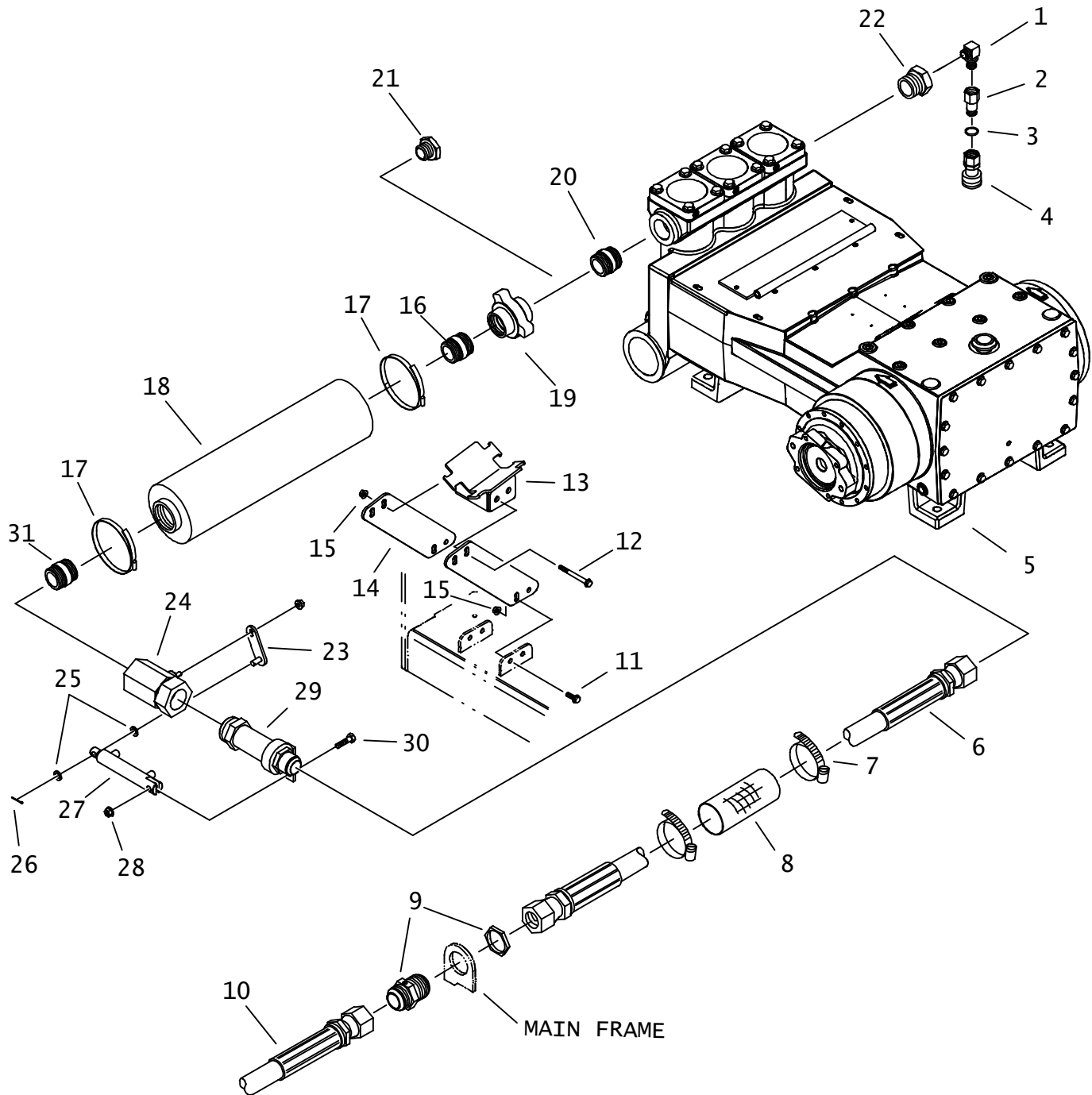
500-2081	ABRASIVE RESISTANT VALVE INSERT, DISCHARGE
500-2082	ABRASIVE RESISTANT VALVE INSERT, SUCTION

## FOOTNOTES:

## NOTE:

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

**FLUID PUMP PLUMBING (JT)**  
**DISCHARGE SIDE / WASH WAND CONNECTION**  
**BEGINS WITH S/N: 2W0856**





**FLUID PUMP PLUMBING (JT)**  
**DISCHARGE SIDE / WASH WAND CONNECTION**  
**BEGINS WITH S/N: 2W0856**

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-490	1	CONNECTOR (12N-08090)	
2.	156-732	1	CONNECTOR (08J-080)	
3.	155-706	1	O-RING (908 D90)	
4.	159-088	1	QDC BODY (08-08SF)	
5.	153-776	-	FLUID PUMP	
6.	153-610	-	FLUID HOSE (32JFX-84.75"-1300)	
7.	110-311	2	WORM CLAMP (1-5/16" TO 3-1/4")	
8.	117-637	-	ABRASION SLEEVE (3.66" X 90")	
9.	150-2711	-	BK CONNECTOR (32J-32JBK)	USE O-RING 105-1434
10.	153-348	-	HOSE (32JFX-77.75"-1300)	
11.	106-164	4	FLG LK SCREW (M10-1.50 X 30MM)	
12.	106-639	2	SCREW (M10-1.50 X 160MM)	
13.	315-146	1	DAMPENER MOUNT	
14.	316-594	2	MOUNT PLATE	
15.	106-387	6	FLG LOCKNUT (M10-1.50)	
16.	515-680	1	NIPPLE (32N-2")	
17.	110-656	2	WORM CLAMP (2-1/2" TO 8-1/2")	
18.	313-485	1	PULSATION DAMPNER (DISCHARGE)	SEE FOOTNOTE 1
19.	149-785	1	HEX HD UNION (32NF)	
20.	153-595	1	CONNECTOR (32N-32N8)	
21.	114-008	1	PLUG (32N, SQ, GALV)	NON ON-BOARD FLUID ONLY
22.	115-064	1	REDUCER (32N-12NF)	
23.	306-388	1	VALVE ARM	
24.	149-1001	1	SHUT-OFF (32NF-32NF)	
	191-069	-	BALL VALVE REPAIR KIT	
25.	106-391	2	WASHER (M12)	
26.	105-512	1	COTTER PIN (3/32" X 3/4")	
27.	151-211	1	CYL (1.25" X .50" X 4.00")	
28.	106-685	1	LOCKNUT(M12-1.75,PRV TRQ,10.9)	USE O-RING 105-1434
29.	150-2733	1	CYLINDER MOUNT (32N-32JBK SPECIAL)	
30.	106-334	1	SCREW (M12-1.75 X 50MM)	
31.	153-952	1	NIPPLE (32N-5") EX HEAVY	

NOT SHOWN:

FOOTNOTES:

1. FOR MAXIMUM PERFORMANCE STABILIZER IS FACTORY INSTALLED WITH NITROGEN (250 PSI). IF SERVICING IN FIELD, COMPRESSED AIR IS ACCEPTABLE.

NOTE:



# LINER WASH PLUMBING

## BEGINS WITH S/N 2W0856

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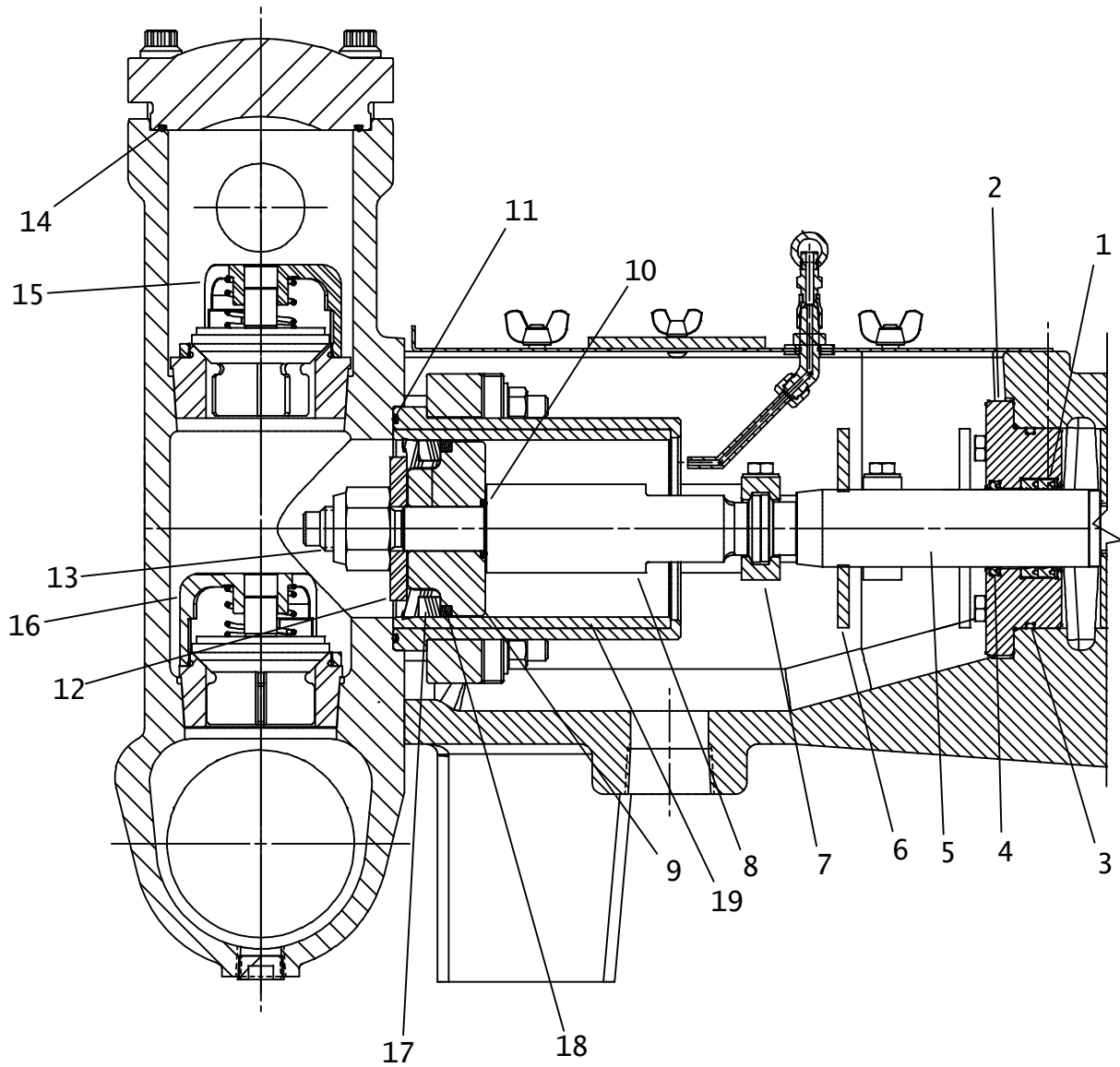
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-828	4	FLG LK BOLT (1/2-NC X 3/4 ")	
2.	318-368	-	PUMP MOUNT	
3.	153-776	1	FLUID PUMP	FMC M1432
4.	514-314	1	REDUCER (24N-16NF)	
5.	110-217	4	WORM CLAMP (7/16" TO 1")	
6.	115-156	1	REDUCER (08N-06NF)	
7.	115-155	1	COLLAR (08NF)	
8.	320-408	1	COVER	
9.	115-273	1	NIPPLE (16N-6")	
10.	310-997	1	FLUID PUMP MOUNT	
11.	115-135	1	REDUCER (08N-04NF)	
12.	514-285	2	S/O COUPLER (08N-10H90)	
13.	115-112	1	PLUG, (08N, SQ)	
14.	313-773	1	LINER WASH TANK	
15.	106-162	4	FLG SCREW (M8-1.25 X 20MM, GD8)	
16.	153-223	1	TANK SEAL	
17.	106-048	4	LOCKNUT (#10-24)	
18.	106-205	4	WASHER (.191")	
19.	106-408	4	BOLT (#10-24 X 1-1/4", SOC, GD8)	
20.	110-249	2	WORM CLAMP (1/4" TO 5/8 ")	
21.	116-881	AR	BULK HOSE (3/8", SOLD PER 1')	USE 1 @ 27"
22.	153-871	2	S/O COUPLER (06N-06H90, BRS)	
23.	153-738	1	LINER WASH PUMP	
24.	156-260	1	STREET ELBOW (06N-06NF90)	
25.	155-112	1	S/O COUPLER (06N-10H)	
26.	116-855	AR	BULK HOSE (.625", SOLD PER 1")	USE 1 @ 8", USE 1 @ 28"
27.	106-743	AR	WASHER (.531", HARDENED)	
28.	110-141	1	DRAIN VALVE (04N)	
29.	514-140	1	COUPLER (08N-10H)	
30.	150-1506	1	CHECK VALVE 1/2", 1.5 PSI	BEGINS WITH S/N: CMWJ80T3C7000012

NOT SHOWN:

FOOTNOTES:

NOTE:

**FLUID PUMP - FMC (JT)**  
FLUID END  
BEGINS WITH S/N: 2W0856



**FLUID PUMP - FMC (JT)****FLUID END****BEGINS WITH S/N: 2W0856**

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	499-450		VALVE KIT (M14)	INCLUDES REF NO. 14, 15 AND 16
	191-214		PISTON / CYL. REPLACEMENT KIT	INCLUDES REF NO. 10, 11, 13, 17, 18 AND 19
	191-215		PISTON REPLACEMENT KIT	INCLUDES REF NO. 10, 11, 17 AND 18
1.	157-275	3	PLUNGER ROD SEAL (U-CUP)	
2.	499-457	3	PLUNGER ROD SEAL HOUSING	
3.	157-302	3	O-RING (2-244)	
4.	157-274	3	PLUNGER ROD SEAL (SCRAPER)	
5.	190-1712	3	CROSSHEAD	
6.	499-458	3	DEFLECTOR SHIELD	
7.	499-455	3	PLUNGER CLAMP	
8.	499-454	3	PISTON ROD	
9.	499-452	3	PISTON HOLDER	
10.	157-069	3	O-RING (215 D90)	
11.	157-269	3	O-RING (-249 D90)	
12.	499-453	3	PISTON RETAINER	
13.	107-794	3	LOCKNUT (1" NC)	REPLACE WITH NEW WHEN REMOVED. TORQUE TO 250 FT LBS.
14.	N/A		O-RING (-245 D70)	
15.	N/A		DISCHARGE VALVE	
16.	N/A		SUCTION VALVE	
17.	N/A		PISTON	
18.	N/A		WEAR RING	
19.	500-1421		CYLINDER SLEEVE	

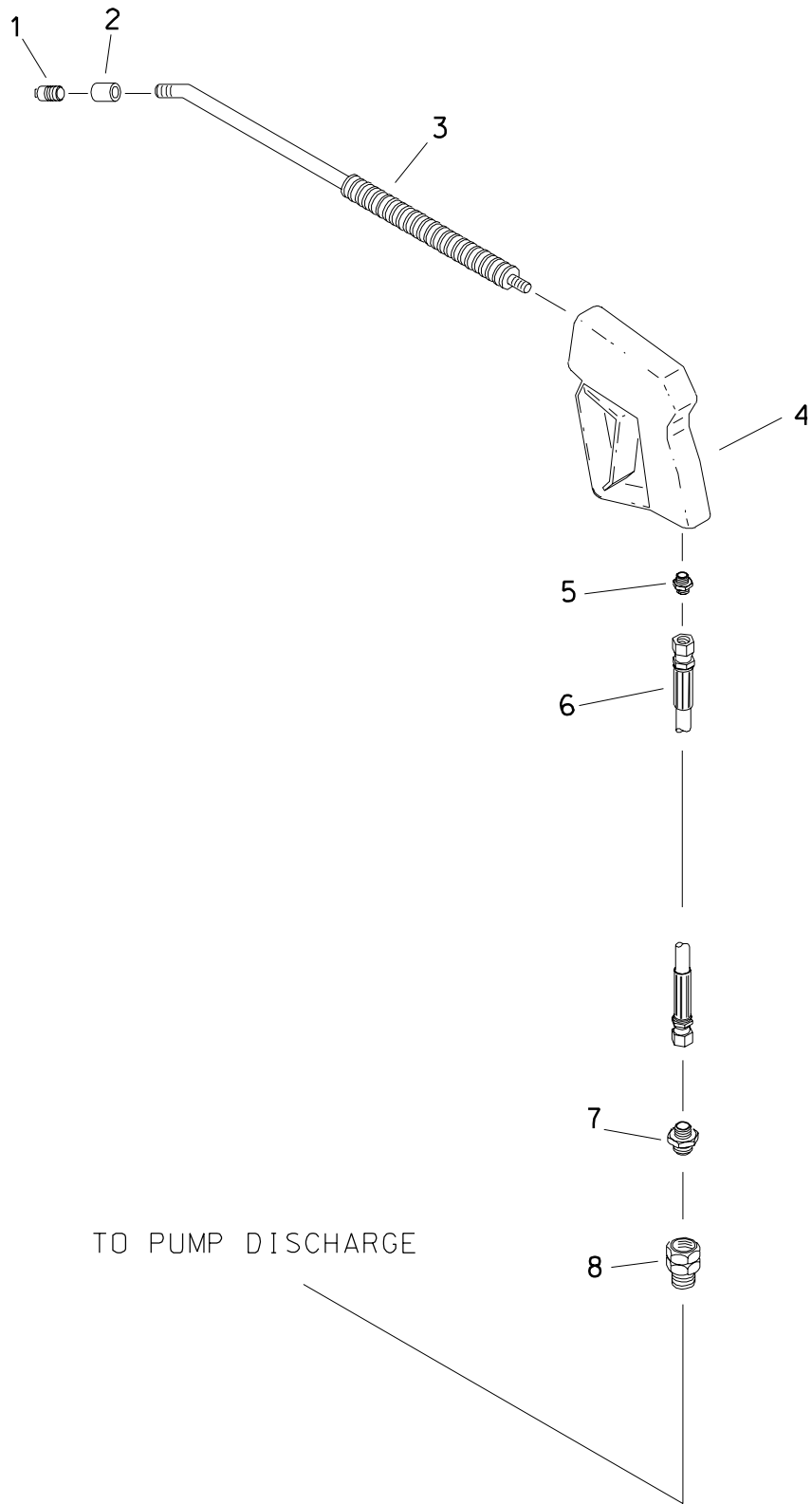
## NOT SHOWN:

157-272	2	OIL SEAL
157-271	1	O-RING (-373 D70)
157-268	1	BACK COVER GASKET
499-451	AR	VALVE PULLER (M14)
499-394	1	SIGHT GAGE

## FOOTNOTES:

## NOTE:

# WASH WAND



TO PUMP DISCHARGE

# WASH WAND

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	155-242	1	NOZZLE (04N, DRF.047", TC)	
2.	115-170	1	COLLAR (04NF)	
3.	259-353	1	WASH WAND (04N-36")	
4.	259-197	1	SPRAY GUN	
	190-179	1	SEAL REPAIR KIT	RHINO
	190-938	1	SPRAY GUN, REPAIR KIT	CHAPPELL
5.	514-141	1	CONNECTOR (06N-080)	
6.	154-753	1	HOSE (080FX-600"-3000)	
7.	154-233	1	CONNECTOR (08S-080)	
8.	159-089	1	QDC ADAPTER (08-08SF)	

FOOTNOTES

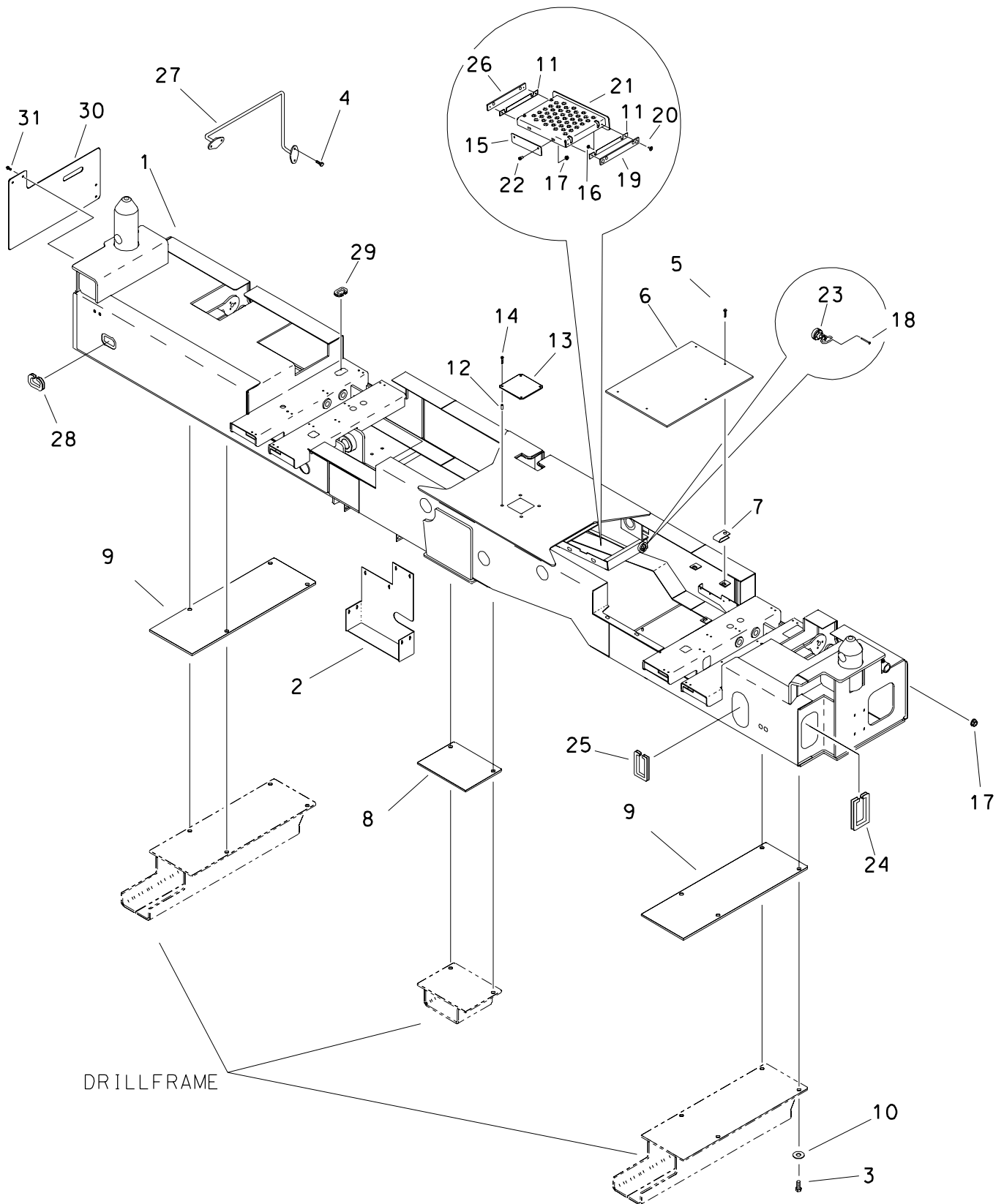
NOTE:  
REFER TO O-RING CHART (800-301) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.





# **PIPE LOADER SYSTEMS**

## PIPE LOADER (MOUNT)

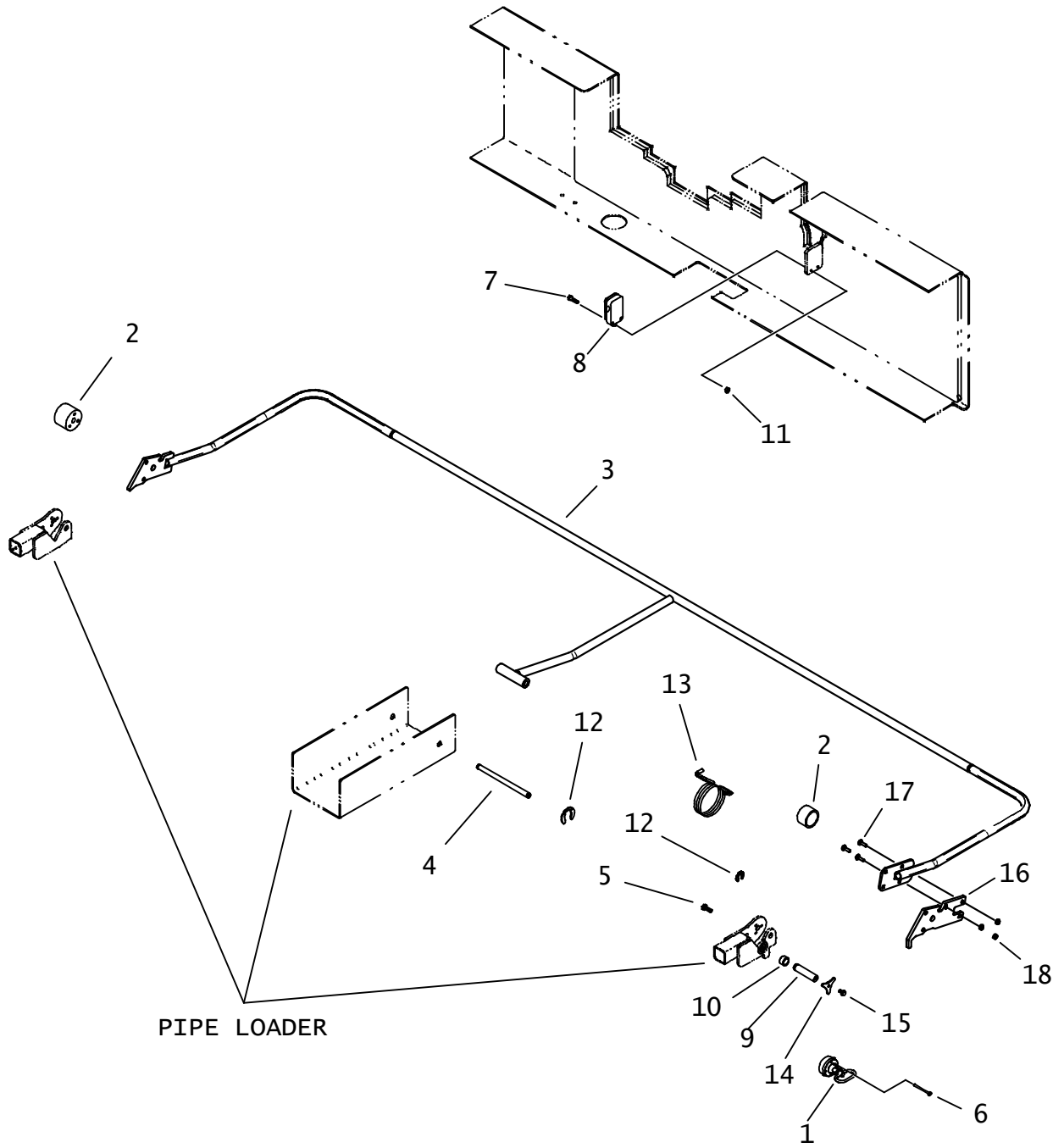


## PIPE LOADER (MOUNT)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-697	1	PIPE LOADER	
2.	370-369	1	COVER	
3.	106-340	10	SCREW (M16-2.0 X 50mm)	USE LOCTITE 277 OR EQUIVALENT
4.	106-383	4	FLG LK SCREW (M10-1.50 X 30mm)	ENDS WITH S/N: 2V2567
5.	106-162	13	FLG SCREW (M8-1.25 X 20mm)	
6.	370-133	1	COVER PLATE	
7.	106-551	13	CLIP NUT (M8-1.25)	
8.	370-148	AR	TOP FLG PLATE	
	370-165	AR	CENTER SHIM PLATE	
9.	370-163	AR	SPACER PLATE	
	370-164	AR	SHIM PLATE	
10.	106-398	10	WASHER (M16, HARDENED)	
11.	370-325	AR	SHIM (.065")	
12.	105-633	1	NUTSERT (M8-1.25) 3.80-7.9" THK	
13.	370-079	1	COVER PLATE	
14.	107-032	4	SCREW (M8-1.25 X 20mm, BUT SOC)	
15.	370-242	1	STOP PLATE	
16.	106-353	4	FLG NUT (M6-1.00)	
17.	106-386	8	FLG LOCKNUT (M8-1.25)	
18.	106-796	2	SCREW (M4-.70 X 30mm)	
19.	370-243	1	SLIDE BAR	
20.	107-170	4	BOLT (M6-1.00 X 20mm)	
21.	370-231	1	STEP	
22.	106-380	2	FLG LK SCREW (M8-1.25 X 16mm)	
23.	347-888	1	SPRING LOADED PIN	
24.	116-259	AR	BULK EDGE (1/2", SOLD PER FT)	USE 1 @ 18"
25.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 22"
26.	370-241	1	CROSS BAR	
27.	307-820	1	HANDRAIL	ENDS WITH S/N: 2V2567
28.	115-686	1	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 9"
29.	116-259	1	BULK EDGE (1/2", SOLD PER FT)	USE 1 @ 9"
30.	324-358	1	COVER	
31.	106-724	1	FLG LK SCREW (M10-1.50 X 25mm)	

## FOOTNOTES

# GUARD RAIL



# GUARD RAIL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	347-888	1	SPRING LOADED PIN	
2.	348-098	2	SPRING TUBE	
3.	300-6264	1	GUARD RAIL	SEE FOOTNOTE 1
4.	348-068	1	SUPPORT PIN	
5.	106-381	6	FLG LK SCREW (M8-1.25 X 25MM)	
6.	106-796	2	SCREW (M4-0.70 X 30MM)	
7.	106-427	2	SCREW (M5-0.80 X 22MM, SOC)	
8.	215-1175	1	PROXIMITY SWITCH	
9.	370-334	2	PIN	
10.	125-731	2	COMPOSITION BUSHING (.750")	USE LOCTITE 680 OR EQUIVALENT
11.	106-850	2	LOCKNUT (M5-0.80)	
12.	115-503	4	KLIP RING (.750")	
13.	117-121	2	TORSION SPRING	
14.	370-335	2	HEAD PLATE	
15.	106-378	2	FLG LK SCREW (M6-1.00 X 12MM)	USE LOCTITE 242 OR EQUIVALENT
16.	300-6259	1	TUBE END PLATE	
17.	105-249	3	CARRIAGE BOLT (3/8-NC X 1-1/4")	
18.	105-834	3	FLG LOCKNUT (3/8-NC)	

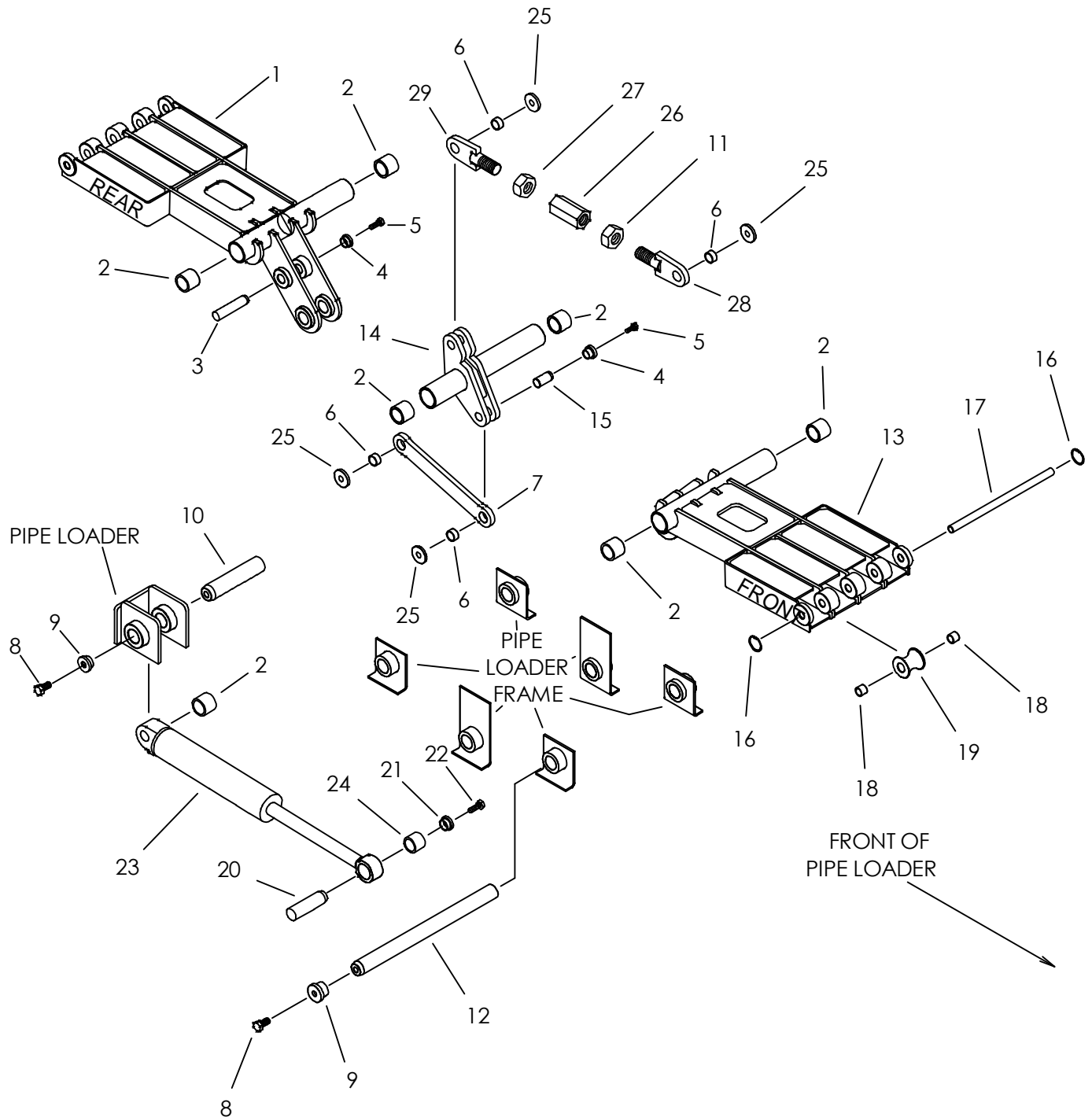
NOT SHOWN:

FOOTNOTES:

I. 307-789 GUARD RAIL (BEFORE S/N CMWJT100PA0000027) IS NO LONGER AVAILABLE. REPLACE WITH 300-6264 AND REF. NO'S 16, 17 AND 18.

NOTE:

**PIPE LOADER LIFT ARMS**  
 ENDS WITH S/N: CMWJT100PA0000027



# PIPE LOADER LIFT ARMS

ENDS WITH S/N: CMWJT100PA0000027

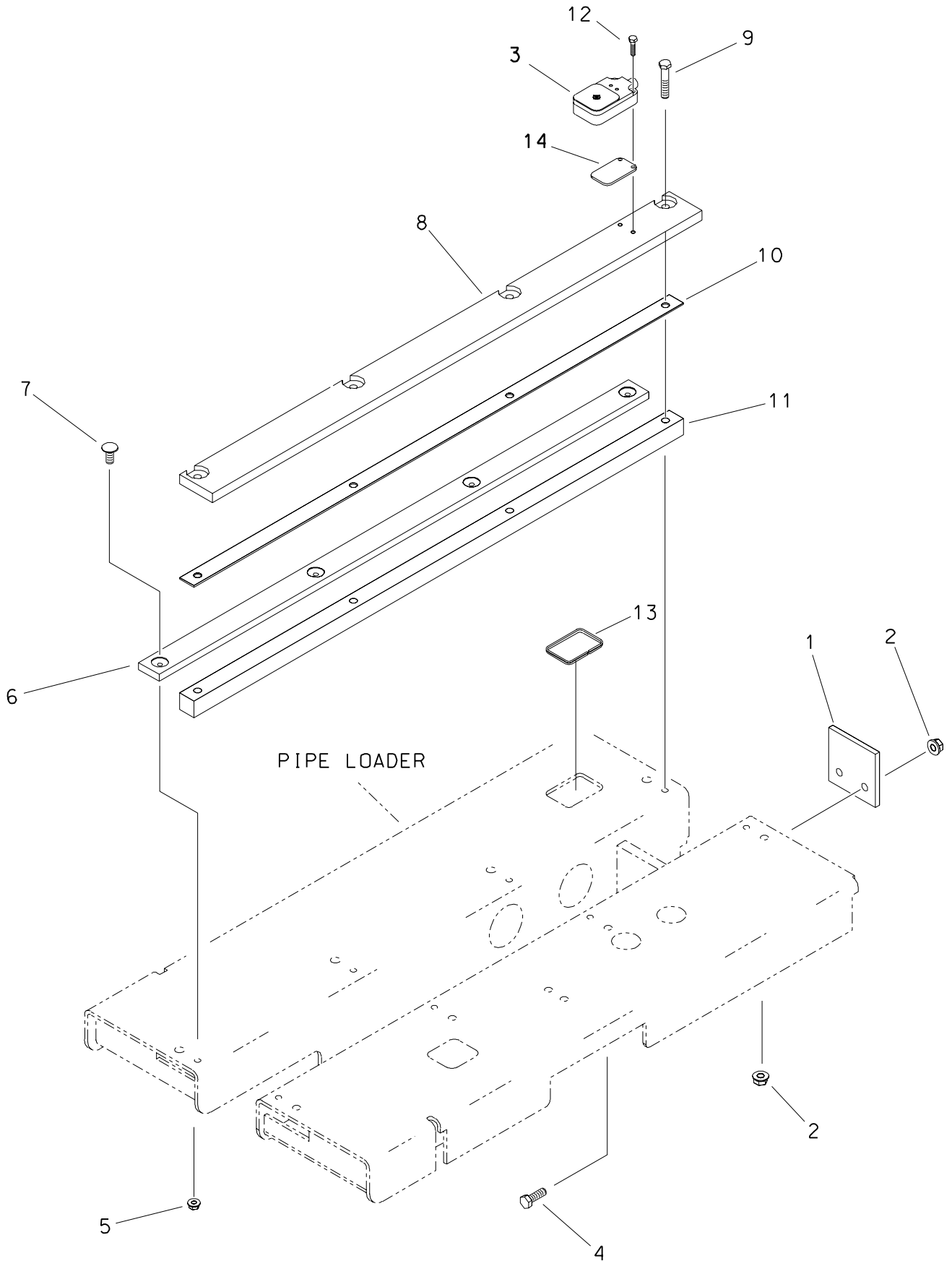
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-967	1	LIFT ARM	
2.	125-754	7	COMPOSITION BUSHING (2")	
3.	179-042	2	TAPERED PIN (31.75MM X 144MM)	
4.	181-982	4	TAPERED INSERT (1.25")	
5.	105-247	2	SCREW (M12-1.75 X 35MM)	USE LOCTITE 242 OR EQUIVALENT
6.	125-143	4	BRONZE BUSHING (1.250")	
7.	349-965	1	LINKAGE ARM	
8.	106-344	4	SCREW (M20-2.5 X 40MM)	USE LOCTITE 242 OR EQUIVALENT
9.	184-064	4	TAPERED INSERT (2")	
10.	179-236	1	TAPERED PIN (50.8MM X 200MM)	
11.	105-604	1	JAM NUT (1-1/2 NF-12, LH THD)	
12.	179-168	3	TAPERED PIN (50.8MM X 655MM)	
13.	349-237	1	LIFT ARM	
14.	349-962	1	CENTER LINKAGE	
15.	179-232	2	TAPERED PIN (31.75MM X 65MM)	
16.	118-047	4	INTERNAL SNAP RING (1.000")	
17.	349-240	2	LIFT BAR	
18.	125-770	16	COMPOSITION BUSHING (1")	
19.	349-766	8	ROLLER	
20.	183-878	1	TAPERED PIN (44.4MM X 135MM)	
21.	181-975	1	TAPERED INSERT (1.75")	
22.	106-470	1	FLG SCREW (M16-2.0 X 40MM)	USE LOCTITE 242 OR EQUIVALENT
23.	151-085	1	CYL (3.5" X 1.75" X 16")	
24.	125-773	1	COMPOSITION BUSHING (1.75")	
25.	110-056	AR	MACHINERY BUSHING (1.25")	
26.	370-303	1	ADJUSTMENT BAR	
27.	105-377	1	JAM NUT (1-1/2-NF)	
28.	370-298	1	FRONT LINK	
29.	370-301	1	BACK LINK	

NOT SHOWN:

FOOTNOTES:

NOTE:

# PIPE LOADER (SHUTTLE MOUNT)





## PIPE LOADER (SHUTTLE MOUNT)

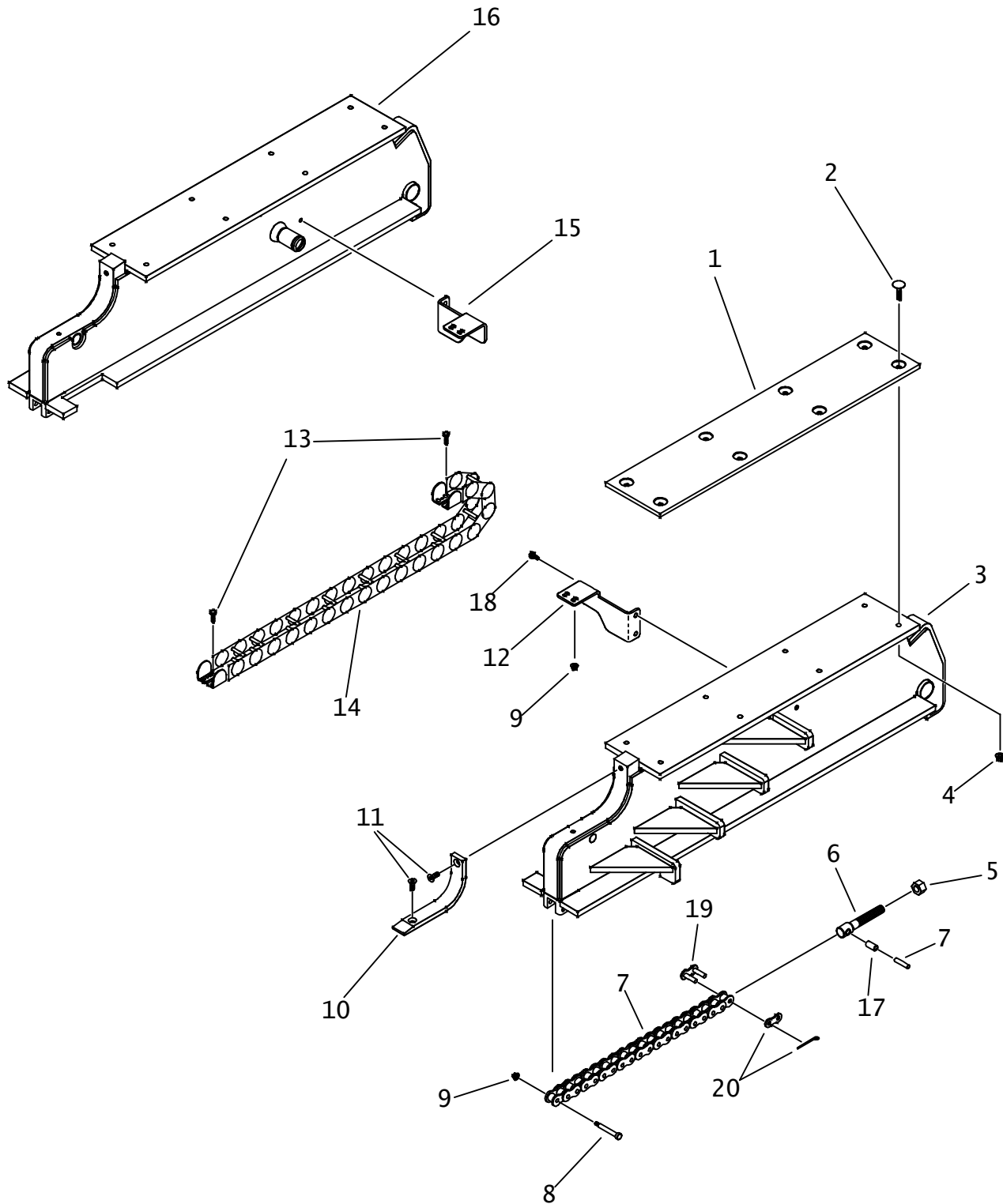
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	348-064	2	SHIM	
2.	106-386	20	FLG LOCKNUT (M8-1.25)	
3.	214-692	1	PROXIMITY SWITCH	
4.	106-163	4	FLG SCREW (M8-1.25 X 30MM)	
5.	106-353	16	FLG NUT (M6-1.00)	
6.	349-297	4	BOTTOM SLIDE BAR	
7.	107-170	16	SCREW (M6-1.00 X 20MM)	
8.	305-804	1	RETAINER BAR	
	305-810	3	RETAINER BAR	
9.	106-329	16	SCREW (M8-1.25 X 50MM)	
10.	348-065	4	OUTER SHIM	
11.	349-278	4	BAR	
12.	106-427	2	SCREW (M5-0.80 X 22MM, SOC)	
13.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 9". SEE FOOTNOTE 1.
14.	107-451	AR	SHIM (.135")	

## FOOTNOTES

1. USE 116-325 GROMMET (.362") ON OLDER MODELS AS REQUIRED

# PIPE LOADER SHUTTLES

ENDS WITH S/N: CMWJT100PA0000027



# PIPE LOADER SHUTTLES

ENDS WITH S/N: CMWJT100PA0000027

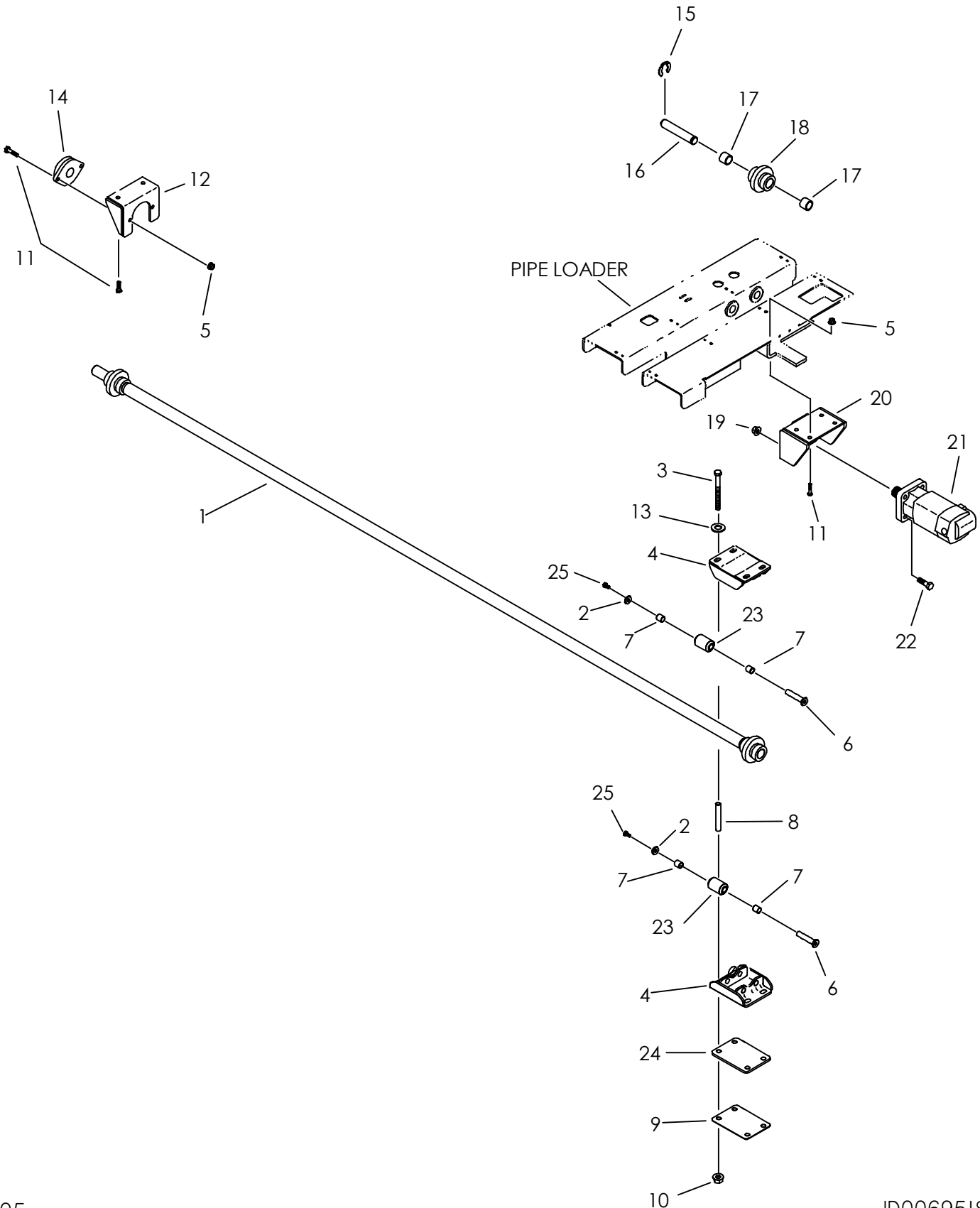
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-296	2	TOP SLIDE BAR	
2.	107-187	16	SCREW (M8-1.25 x 35mm)	
3.	306-898	1	FRONT SHUTTLE	
4.	106-386	16	FLG LOCKNUT (M8-1.25)	
5.	105-357	2	LOCKNUT (5/8-NC)	
6.	356-205	2	CHAIN ADJUSTER (#80)	
7.	130-330	2	ROLLER CHAIN (#80, 58P)	INCL REF NO'S 19 AND 20
8.	107-160	2	SHLDR BOLT (M8 X 50MM, M6-1.00)	
9.	106-353	10	FLG NUT (M6-1.00)	USE 242 LOCTITE OR EQUIVALENT
10.	348-036	2	WEAR PAD	
11.	106-943	4	SCREW (M8-1.25 x 16mm, CSK SLT)	
12.	349-978	1	TRACK BRACKET	
13.	106-379	8	FLG LK SCREW (M6-1.00 x 20mm)	
14.	349-068	2	HOSE TRACK (34.4")	
15.	349-980	1	TRACK BRACKET	
16.	306-897	1	BACK SHUTTLE	
17.	130-300	2	ROLLER BUSHING (#80)	
18.	106-381	4	FLG LK SCREW (M8-1.25 x 25mm)	
19.	130-304	-	CONNECTOR LINK (#80)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# PIPE LOADER (SHUTTLE DRIVE)



## PIPE LOADER (SHUTTLE DRIVE)

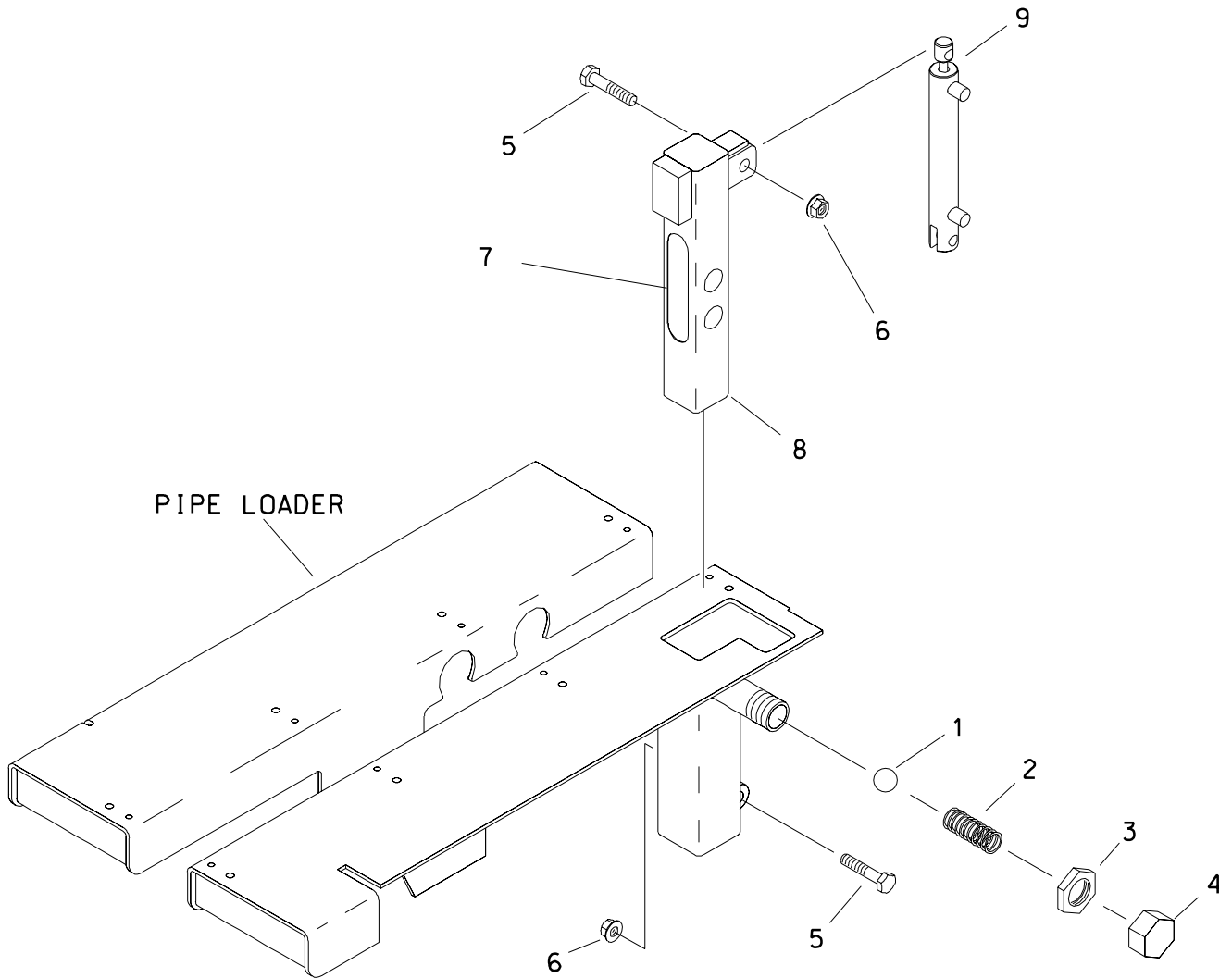
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-228	1	SHAFT	
2.	105-264	8	WASHER (3/8")	
3.	106-620	8	SCREW (M12-1.75 X 150MM)	
4.	348-053	4	SHAFT SUPPORT	
5.	106-387	8	FLG LOCKNUT (M10-1.50)	
6.	370-518	8	PIN	
7.	125-403	16	BRONZE BUSHING (.625")	
8.	370-036	8	SPACER	
9.	348-067	AR	SUPPORT SHIM	
10.	106-354	6	FLG NUT (M12-1.75)	
11.	106-383	8	FLG LK SCREW (M10-1.50 x 30MM)	
12.	348-062	1	BEARING MOUNT	
13.	106-391	8	WASHER (M12)	
14.	125-605	1	FLANGE BEARING (1.25", 2-BLT)	
15.	115-499	8	KLIP RING (1.000")	
16.	183-912	4	PIN	
17.	125-770	8	COMPOSITION BUSHING (1")	
18.	175-529	4	IDLER SPROCKET (80B9)	
19.	106-198	4	FLG LOCKNUT (1/2-NC, GD8)	
20.	348-060	1	MOTOR MOUNT	
21.	158-952	1	HYD MOTOR (SHUTTLE)	SEE FOOTNOTE 1
22.	105-066	4	BOLT (1/2-NC X 1.75")	
23.	370-361	8	ROLLER	
24.	370-360	AR	SPACER PLATE	
25.	105-274	8	SCREW (M10-1.50 X 20MM)	USE LOCTITE 242 OR EQUIVALENT

NOT SHOWN:

FOOTNOTES:  
1. SEAL REPAIR KIT 500-658

NOTE:

## PIPE LOADER (SHUTTLE STOP)



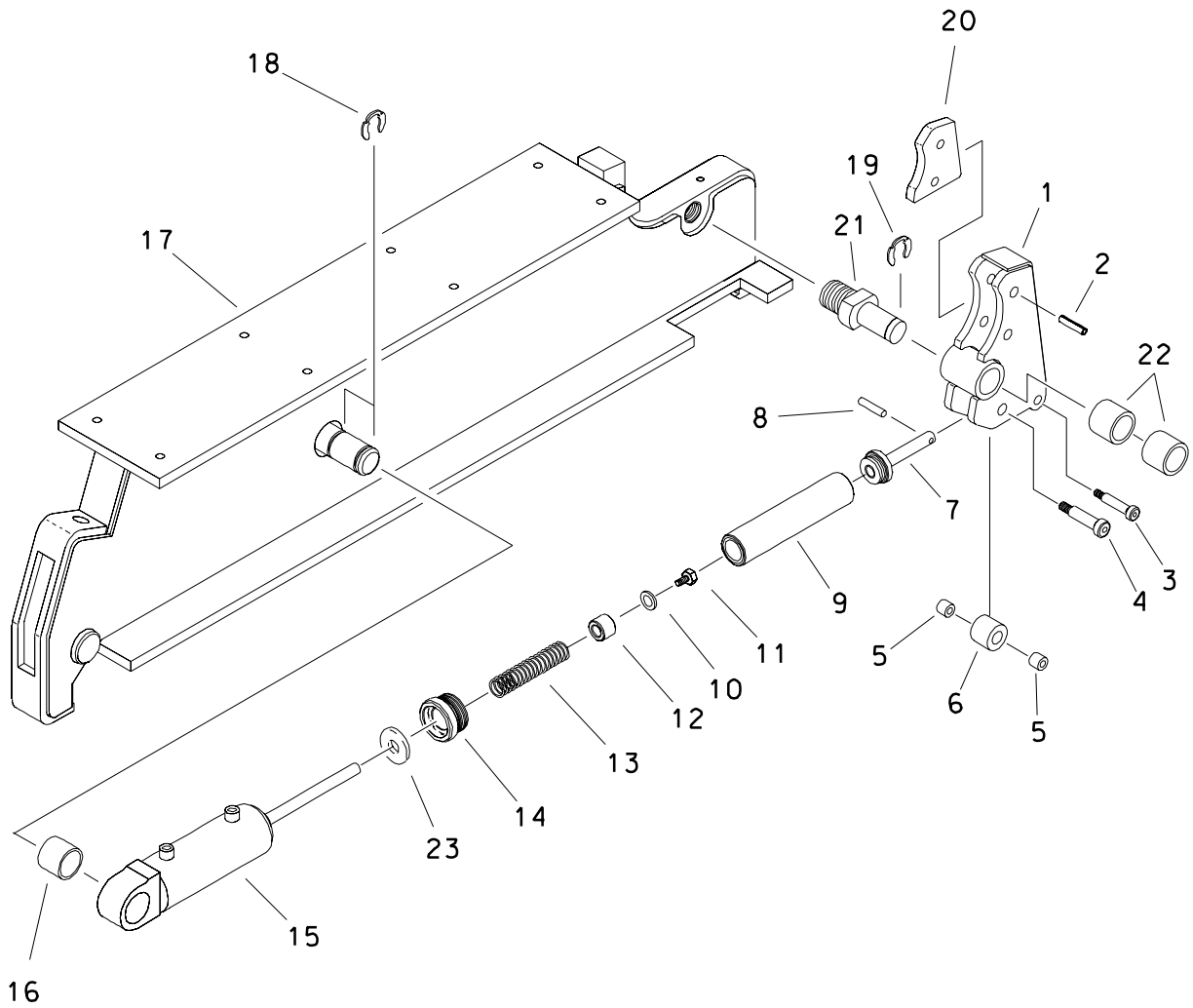
# PIPE LOADER (SHUTTLE STOP)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	125-121	1	DETENT BALL (1.000", CHROME)	
2.	117-115	1	COMPRESSION SPRING	
3.	107-108	1	JAM NUT (1-5/16")	
4.	370-263	1	CAP	
5.	106-334	2	SCREW (M12-1.75 X 50MM)	
6.	106-685	2	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
7.	274-831	1	PIPE ROW INDICATOR	
8.	349-258	1	ROW SELECT TUBE	
9.	150-726	-	CYL (1.0" X 6.0")	

FOOTNOTES

# PIPE LOADER (GRIPPER)

ENDS WITH S/N: 2V2567





## PIPE LOADER (GRIPPER)

ENDS WITH S/N: 2V2567

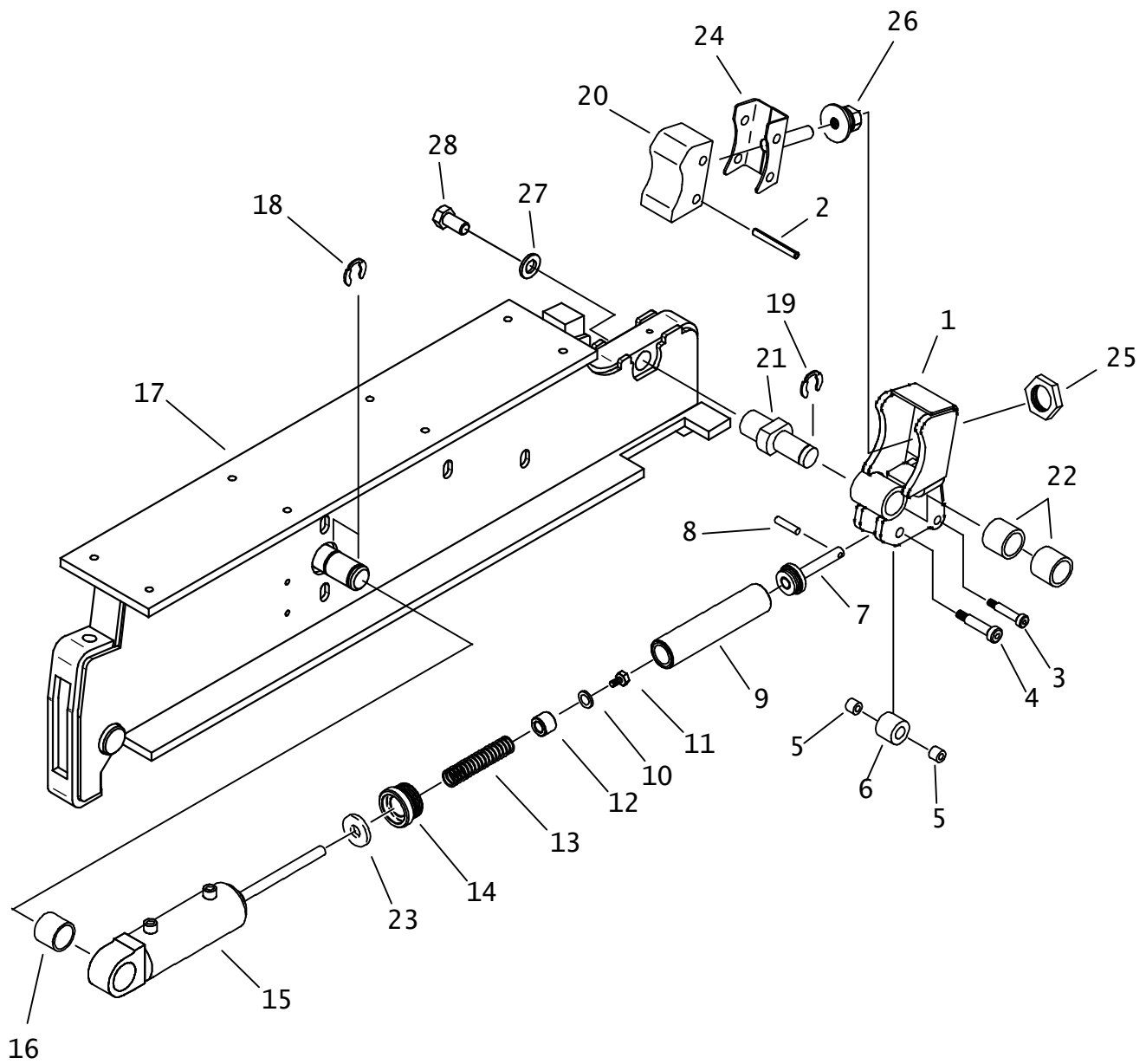
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-970	1	REAR GRIPPER	
	308-939	1	REAR GRIPPER	
	349-233	1	FRONT GRIPPER	
	308-938	1	FRONT GRIPPER	
	101-112		ADJUSTABLE GRIPPER KIT	SEE FOOTNOTE 1
2.	106-799	4	ROLL PIN (M12 X 45MM)	
3.	107-223	2	SHLD BOLT (M10 X 35MM, M8-1.25)	
4.	107-043	2	SHLD BLT (M12 X 35MM, M10-1.50)	
5.	125-137	4	BALL BEARING (.375")	
6.	370-154	2	ROLLER	
7.	349-057	2	PLUNGER	
8.	125-430	2	BRONZE BUSHING (.502")	
9.	349-060	2	TUBE	
10.	348-037	2	SPRING WASHER	
11.	105-858	2	BOLT (1/2-NC X 1-1/4")	
12.	349-061	2	SPRING GUIDE	
13.	117-128	2	COMPRESSION SPRING	
14.	351-163	2	CAP	
15.	151-163	-	CYL (2" X 1" X 3")	
16.	125-771	2	COMPOSITION BUSHING (1.25")	
17.	306-897	-	BACK SHUTTLE	
	306-898	1	FRONT SHUTTLE	
18.	115-483	4	KLIP RING (1.250")	
19.	115-499	2	KLIP RING (1.000")	
20.	349-298	4	GRIP PAD	
21.	349-972	2	PIN (1.5" X 4.539")	
22.	125-770	4	COMPOSITION BUSHING (1")	
23.	157-537	2	WIPER SEAL	

## FOOTNOTES

1. THIS KIT INCLUDES FRONT AND REAR GRIPPERS

# PIPE LOADER GRIPPERS

BEGINS WITH S/N 2WO856



# PIPE LOADER GRIPPERS

BEGINS WITH S/N 2WO856

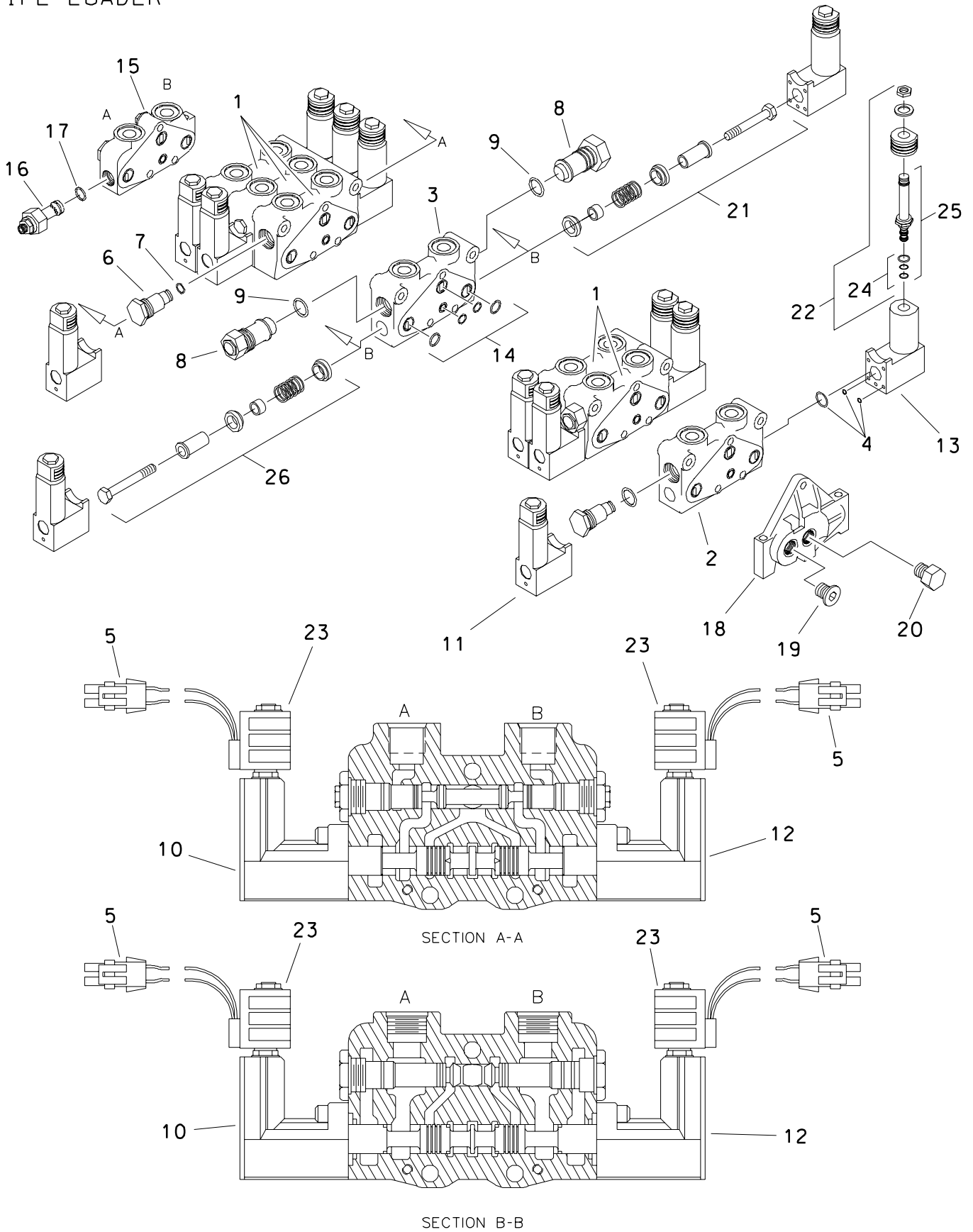
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	308-939	1	FRONT GRIPPER	
	308-938	1	REAR GRIPPER	
2.	107-682	4	ROLL PIN (M12 X 50MM)	
3.	107-223	2	SHLD BOLT (M10 X 35MM,M8-1.25)	USE 242 LOCTITE OR EQUIVALENT
4.	107-043	2	SHLD BLT (M12 X 35MM,M10-1.50)	USE 242 LOCTITE OR EQUIVALENT
5.	125-137	4	BALL BEARING (.375)	
6.	370-154	2	ROLLER	
7.	349-057	2	PLUNGER	
8.	125-430	2	BRONZE BUSHING (.502")	
9.	349-060	2	TUBE	
10.	348-037	2	SPRING WASHER (1.56")	
11.	105-858	2	BOLT (1/2-NC X 1-1/4")	
12.	349-061	2	SPRING GUIDE	
13.	117-128	2	COMPRESSION SPRING	
14.	351-163	2	CAP	
15.	151-163	-	CYL (2" X 1" X 3")	
16.	125-771	2	COMPOSITION BUSHING (1.25")	
17.	306-897	-	BACK SHUTTLE	ENDS WITH S/N: CMWJT100PA0000027
	306-898	-	FRONT SHUTTLE	ENDS WITH S/N: CMWJT100PA0000027
	301-1041	1	BACK SHUTTLE	
	301-1030	1	FRONT SHUTTLE	
18.	115-483	2	KLIP RING (1.250")	
19.	115-499	2	KLIP RING (1.000")	
20.	308-940	2	GRIP PAD	
21.	349-972	-	PIN (1.5" X 4.539")	ENDS WITH S/N: CMWJT100PA0000027
	300-6323	2	PIN (1.5" X 4.5")	
22.	125-770	4	COMPOSITION BUSHING (1")	
23.	157-537	2	WIPER SEAL (1.500")	
24.	308-944	2	GRIP PAD HOLDER	
25.	105-304	2	JAM NUT (1-5/16-NF)	
26.	107-928	2	ADJUSTMENT NUT	
27.	106-398	2	WASHER (M16, HARDENED)	
28.	107-181	2	BOLT (5/8-NC X 1-1/4", GD8)	

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FOOTNOTES:

NOTE:

# CONTROL VALVE PIPE LOADER

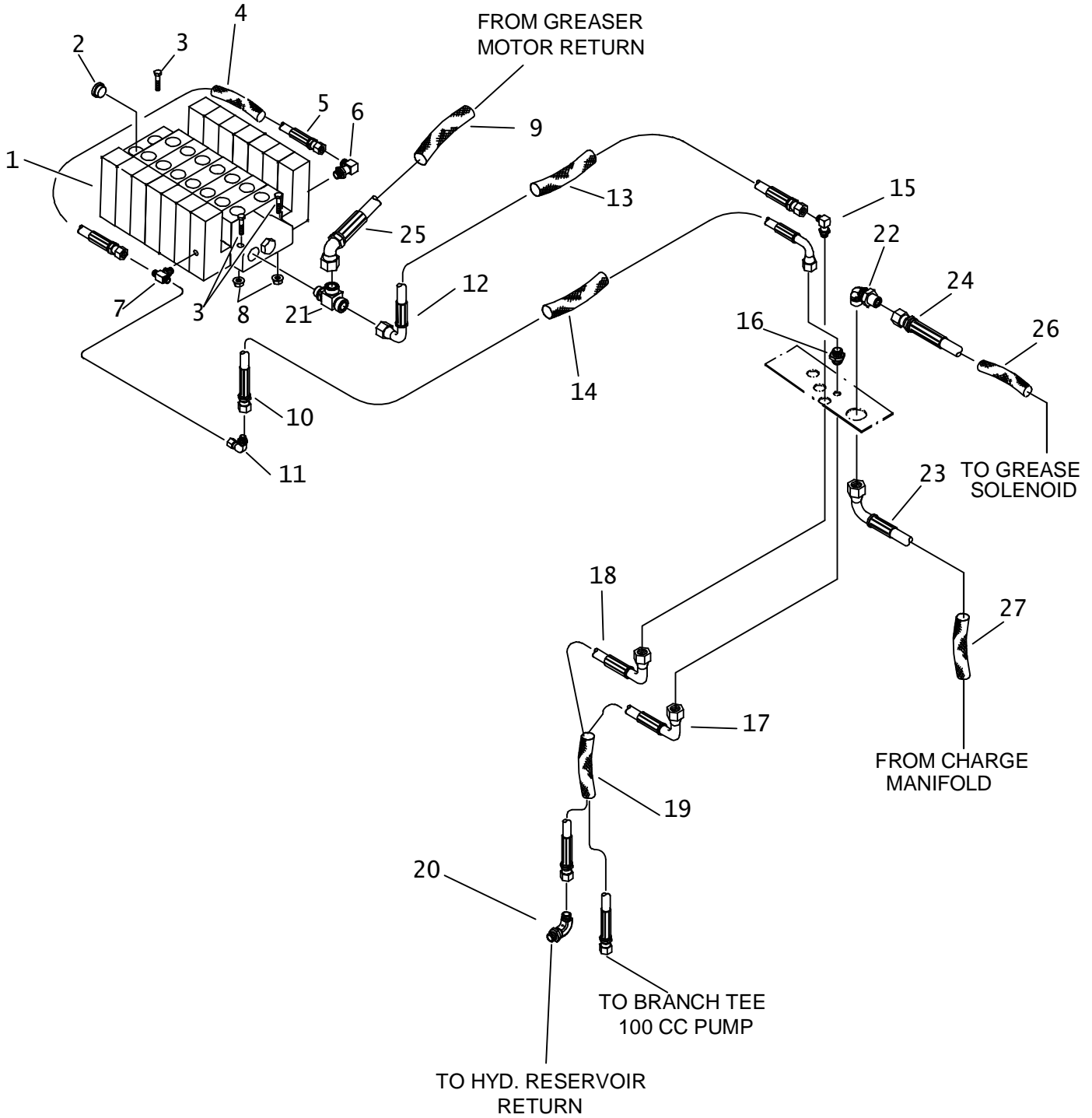


# CONTROL VALVE PIPE LOADER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	153-252		CONTROL VALVE (7-SPOOL)	
1.	499-145	5	VALVE SECTION	
2.	499-146	1	VALVE SECTION	
3.	499-147	1	VALVE SECTION	
4.	499-150	14	BONNET SEAL KIT	
5.	499-151	14	COIL CONNECTOR KIT	
6.	499-029	12	LOCK OUT CARTRIDGE	
7.	499-030	12	LOCK OUT CARTRIDGE SEAL KIT	
8.	500-638	2	RC RELIEF CARTRIDGE (1500 PSI)	
9.	500-950	2	RELIEF CARTRIDGE SEAL KIT	
10.	499-156	6	SOLENOID ACTUATOR	
11.	499-157	1	SOLENOID ACTUATOR	
12.	499-158	6	SOLENOID ACTUATOR	CONTAINS PILOT PORT
13.	499-159	1	SOLENOID ACTUATOR	
14.	500-588	8	SECTIONAL O-RING REPAIR KIT	CONTAINS PILOT PORT
15.	499-144	1	INLET COVER HOUSING	
16.	155-630	1	WH RELIEF CARTRIDGE (2000 PSI)	
17.	500-581	1	SEAL REPAIR KIT	
18.	500-298	1	OUTLET COVER	
19.	500-302	1	PLUG (12S, SOC)	
20.	155-160	1	PLUG (14 SAE, SOC)	
21.	499-155	-	SPRING	
22.	217-949	-	SOLENOID CARTRIDGE KIT	
23.	217-950	-	SOLENOID COIL KIT (W/CONN)	
24.	499-153	-	CARTRIDGE SEAL KIT	
25.	499-152	-	CARTRIDGE TUBE KIT	
26.	499-154	-	SPRING	

FOOTNOTES

# PIPE LOADER VALVE HYDRAULICS



## PIPE LOADER VALVE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-252	1	HYD CONTROL VALVE (7-SPOOL)	INCL. REF. NO. 2
2.	500-302	1	PLUG (12S SOC)	SEE FOOTNOTE 1
3.	105-292	3	SCREW (M8-1.25 X 75MM)	
4.	117-718	1	ABRASION SLEEVE (1" X 36")	
5.	154-911	1	HOSE (040FX-36"-3000 AR)	
6.	154-252	1	CONNECTOR (04S-04090)	
7.	154-293	1	BR TEE (04S-040-040)	
8.	106-386	3	FLG LOCKNUT (M8-1.25)	
9.	117-737	1	ABRASION SLEEVE (1.59" X 140")	
10.	116-804	1	HOSE (040FX90-69"-3000)	
11.	154-255	1	UNION (040-04FX90)	
12.	116-806	1	HOSE (100FX90S-62"-3000)	ENDS WITH SN CMWJT100C90000005
12.	116-805	1	HOSE (100FX90S-58"-3000)	BEGINS WITH SN CMWJT100T90000006
13.	116-634	1	ABRASION SLEEVE (1.59" X 65")	ENDS WITH SN CMWJT100C90000005
13.	115-755	1	ABRASION SLEEVE (1.59" X 60")	BEGINS WITH SN CMWJT100T90000006
14.	117-702	1	ABRASION SLEEVE (1" X 68")	
15.	154-291	1	BK CONNECTOR (100-10090BK)	
16.	154-275	1	BK CONNECTOR (040-040BK)	
17.	153-125	1	HOSE (040FX90L-85"-3000)	
18.	153-126	1	HOSE (100FX90L-82"-3000)	
19.	117-312	1	ABRASION SLEEVE (1.59" X 80")	
20.	154-298	1	CONNECTOR (10S-10090)	
21.	154-370	1	RUN TEE (12S-100-100)	
22.	154-396	1	BK CONNECTOR (080-08090BK)	
23.	515-701	1	HOSE (080FX90-122"-3000)	
24.	515-233	1	HOSE (080FX90S-95"-3000)	
25.	515-616	1	HOSE (100FX90-140"-3000)	
26.	116-787	1	ABRASION SLEEVE (1.59" X 95")	
27.	117-674	1	ABRASION SLEEVE (1.59" X 122")	

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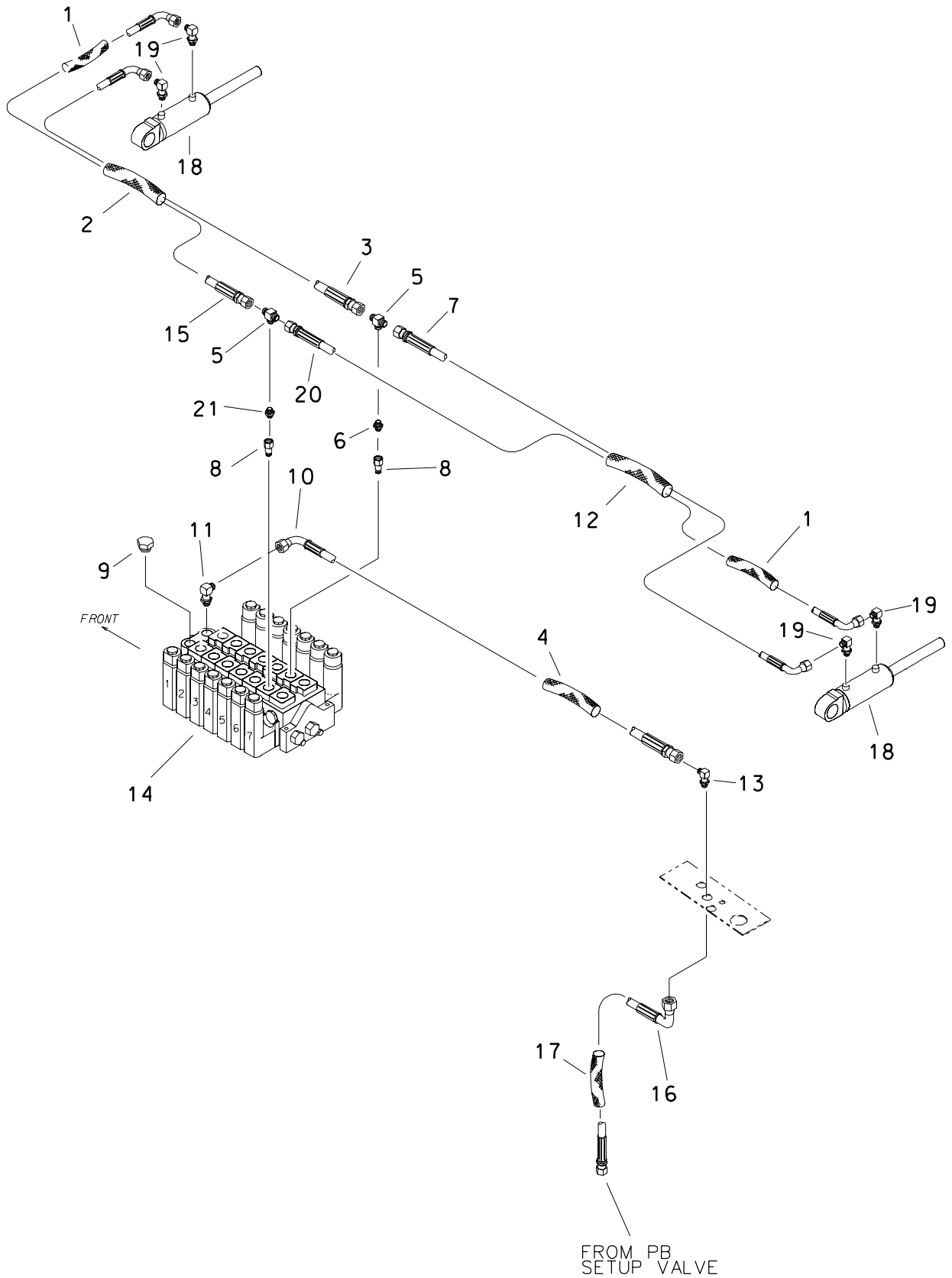
### FOOTNOTES:

I. TAKE EXISTING PLUG OUT OF RETURN PORT AND PLACE IN THE PORT SHOWN.

### NOTE:

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

# PIPE GRIP HYDRAULICS





## PIPE GRIP HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-670	2	ABRASION SLEEVE (1.00" X 10")	
2.	117-761	1	ABRASION SLEEVE (1.59" X 70")	
3.	515-240	1	HOSE (040FX90-72"-3000)	
4.	115-963	1	ABRASION SLEEVE (1.59" X 75")	
5.	154-379	2	UN BR TEE (040FX-040-040)	
6.	514-018	1	CONNECTOR (040-06S, DRF)	
7.	116-809	1	HOSE (040FX90-132"-3000)	
8.	155-171	2	REDUCER (10S-06SF)	
9.	500-302	-	PLUG (12S)	SEE FOOTNOTE 1
10.	116-812	1	HOSE (100FX90-71"-3000)	
11.	154-300	1	CONNECTOR (100-12S90)	
12.	116-632	1	ABRASION SLEEVE (1.59" X 130")	
13.	154-291	1	BK CONNECTOR (100-10D90BK)	
14.	153-252	-	HYD CONTROL VALVE (7-SPOOL)	INCL REF NO. 9
15.	116-810	1	HOSE (040FX90-76"-3000)	
16.	515-273	1	HOSE (100FX90S-124"-3000)	
17.	117-333	1	ABRASION SLEEVE (1.59" X 124")	
18.	151-163	2	HYD CYL (2" X 1" X 3")	
19.	154-252	4	CONNECTOR (04S-04090)	
20.	116-808	1	HOSE (040FX90L-138"-3000)	
21.	154-220	1	CONNECTOR (040-06S)	

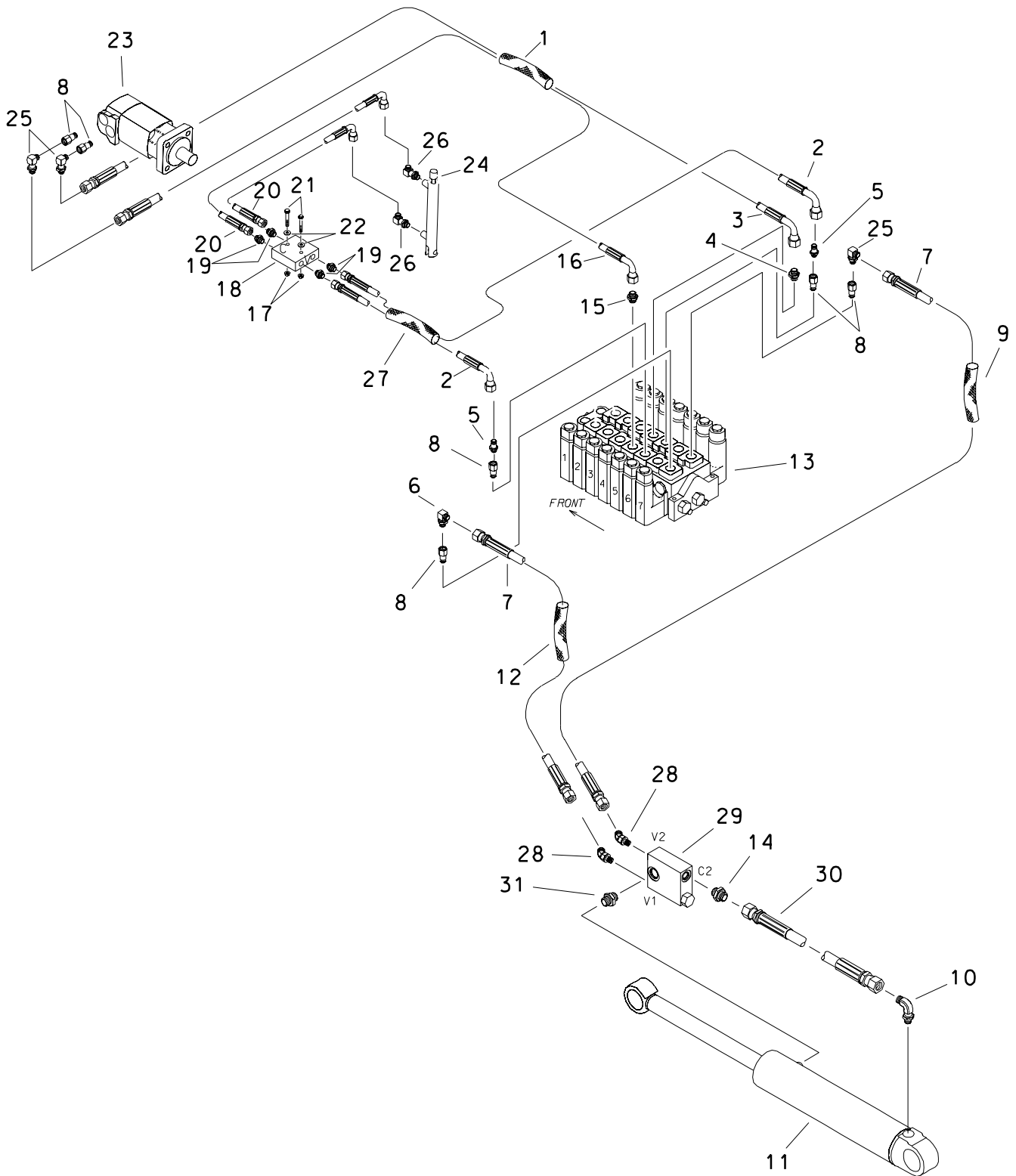
## FOOTNOTES

1. TAKE EXISTING PLUG OUT OF RETURN PORT AND PLACE IN THE PORT SHOWN.

## NOTE

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

# PIPE LIFT AND SHUTTLE HYDRAULICS



# PIPE LIFT AND SHUTTLE HYDRAULICS

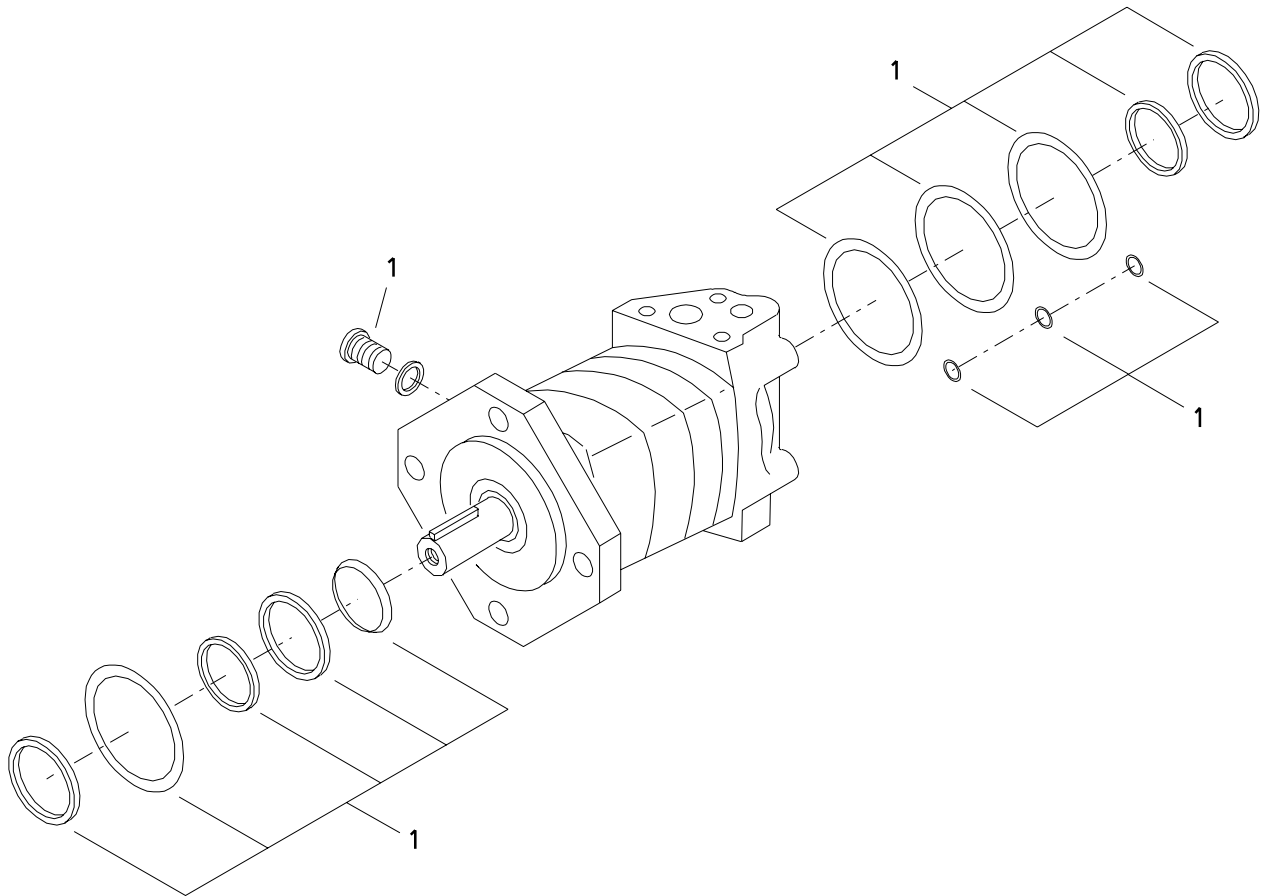
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-737	1	ABRASION SLEEVE (1.59" X 40")	
2.	154-743	2	HOSE (04DFX90S-23"-3000)	
3.	116-811	1	HOSE (06DFX90-40"-3000)	
4.	156-993	1	CONNECTOR (060-10S, DRF)	
5.	514-074	2	CONNECTOR (06S-040, DRF)	
6.	156-193	1	CONNECTOR (06S-06090, DRF)	
7.	154-798	2	HOSE (06DFX-62"-3000)	
8.	155-171	6	REDUCER (10S-06SF)	
9.	117-326	1	ABRASION SLEEVE (1.00" X 58")	
10.	154-227	1	CONNECTOR (060-08S90)	
11.	151-085	1	CYL (3.5" X 1.75" X 16")	
12.	117-613	1	ABRASION SLEEVE (1.00" X 64")	
13.	153-252	1	HYD CONTROL VALVE (7-SPOOL)	
14.	154-221	1	CONNECTOR (06S-060)	
15.	154-369	1	CONNECTOR (060-10S)	
16.	515-015	1	HOSE (06DFX90M-44"-3000)	
17.	105-832	2	FLG LOCKNUT (1/4-NC)	
18.	155-623	1	DOUBLE LOCKOUT VALVE	
19.	154-220	4	CONNECTOR (040-06S)	
20.	515-041	2	HOSE (04DFX90-20"-3000)	
21.	105-106	2	BOLT (1/4-NC X 2")	
22.	105-095	2	WASHER (1/4")	
23.	158-952	1	HYD MOTOR (SHUTTLE)	
24.	150-726	1	CYL (1.0" X 6.0")	
25.	154-342	3	CONNECTOR (06S-06090)	
26.	154-252	2	CONNECTOR (04S-04090)	
27.	117-706	1	ABRASION SLEEVE (1.59" X 17")	
28.	154-224	2	CONNECTOR (06S-06045)	
29.	159-482	1	CHECK VALVE	
30.	154-731	1	HOSE (06DFX-17"-3000)	
31.	154-466	1	CONNECTOR (08S-08S)	

## FOOTNOTES

### NOTE

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

HYDRAULIC MOTOR  
SHUTTLE DRIVE  
SAE MOUNT PORTS



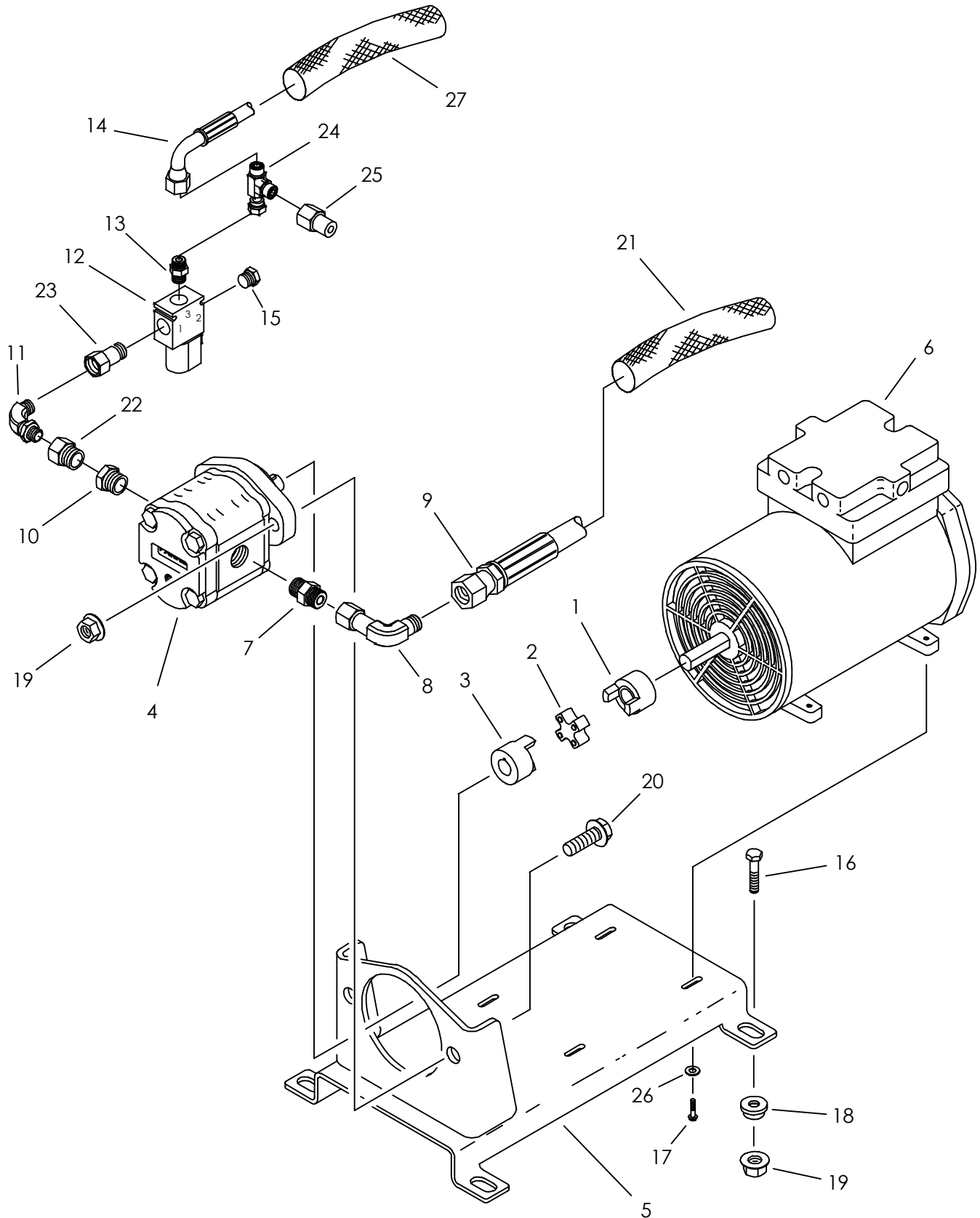
HYDRAULIC MOTOR  
 SHUTTLE DRIVE  
 SAE MOUNT PORTS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	158-952		HYDRAULIC MOTOR (SHUTTLE)	
1.	500-658	1	SEAL REPAIR KIT	
	157-712	1	SHAFT SEAL	

FOOTNOTES

# AIR COMPRESSOR

ENDS WITH S/N:CMWJT100C90000005



# AIR COMPRESSOR

ENDS WITH S/N:CMWJT100C90000005

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	166-317	1	COUPLER 1/2" W/OUT KEYWAY	
2.	166-318	1	SPIDER CENTER L070	
3.	166-319	1	COUPLER 5/8" W/KEYWAY	
4.	158-918	1	HYDRAULIC MOTOR	
	500-966		SEAL KIT	
5.	307-078	1	COMPRESSOR STAND	
6.	120-086	1	AIR COMPRESSOR	OBSOLETE, SUPERCEDED WITH I90-I697 HYD GREASE PUMP KIT
	191-160		SERVICE REPAIR KIT	
	499-330		FILTER ASSEMBLY	
7.	154-308	1	CONNECTOR (100-12S)	
8.	154-315	1	CONNECTOR (100-100FX90)	
9.	515-616	1	HOSE (100FX90-140"-3000)	
10.	510-017	1	REDUCER (12S-10SF)	
11.	154-342	1	CONNECTOR (06S-06090)	
12.	158-627	1	SOLENOID VALVE	SEE FOOTNOTE 1
13.	154-246	1	CONNECTOR (06S-080)	
14.	515-233	1	HOSE (080FX90S-95"-3000)	
15.	155-130	1	PLUG (06S)	
16.	105-271	4	SCREW (M10-1.5 X 40mm)	
17.	106-349	4	SCREW (#8-32 X 3/4", PAN)	
18.	214-658	4	RUBBER ISOLATOR	
19.	106-387	6	FLG LOCKNUT (M10-1.50)	
20.	106-079	2	SCREW (M10-1.50 X 30MM)	
21.	117-737	1	ABRASION SLEEVE (1.59" X 140")	
22.	159-947	1	REDUCER(10S-06SF)	
23.	514-409	1	UNION (06J-060FX)	SEE FOOTNOTE 2
24.	154-266	1	UNION RUN TEE (080FX-080-080)	
25.	159-158	1	QDC ADAPTER (02-080FX)	
26.	106-205	4	WASHER (.191")	
27.	116-787	1	ABRASION SLEEVE (1.59" X 95")	

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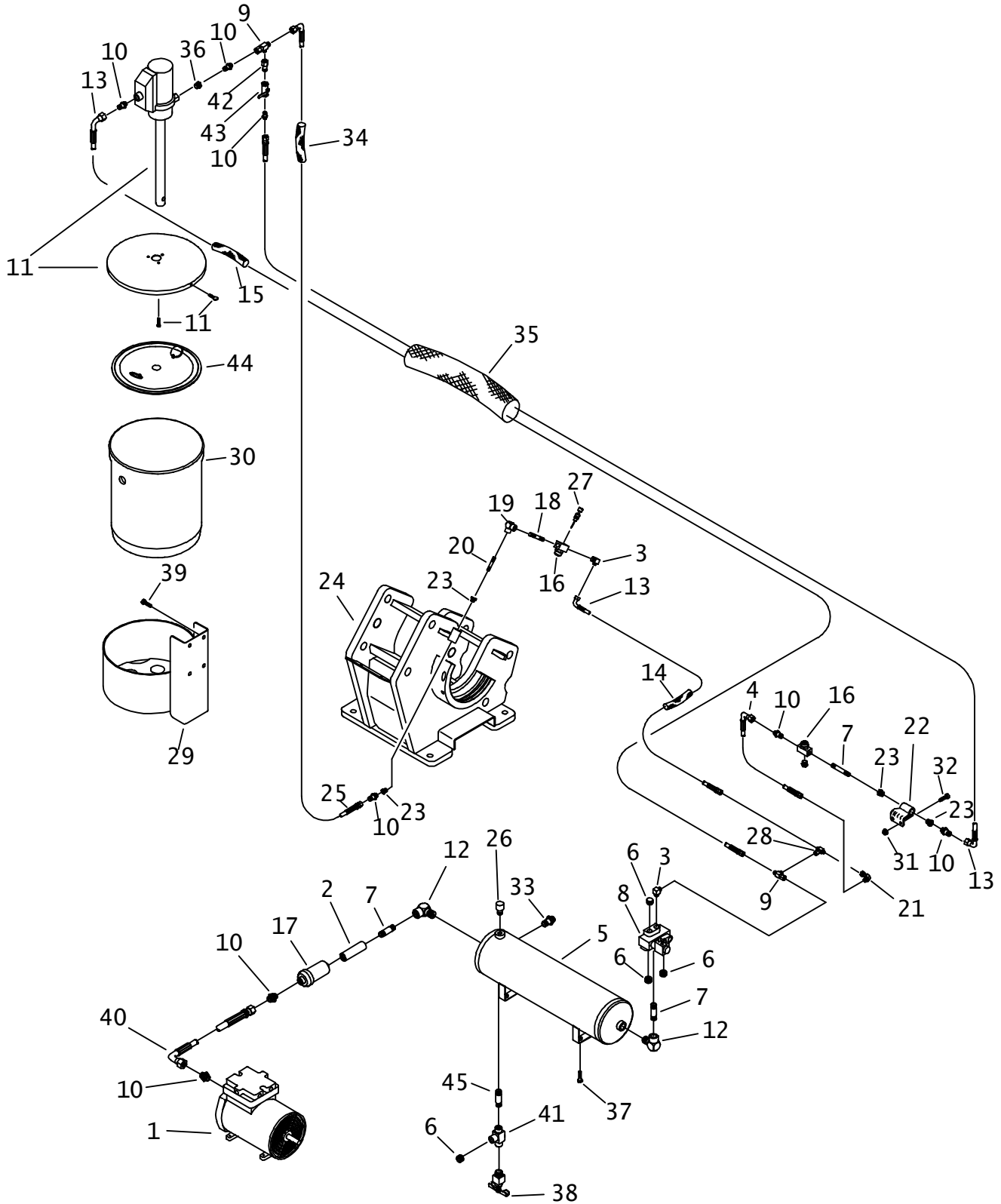
FOOTNOTES:

- #12 VALVE 158-627 (PORT #1 OUTLET, PORT #2 PLUGGED, PORT #3 INLET)
- USE O-RING 155-705 AS NEEDED FOR UNION 514-409

NOTE:

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

**AUTO-GREASER**  
 ENDS WITH CMW S/N:





# AUTO-GREASER

## ENDS WITH CMW S/N:

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	120-086	-	AIR COMPRESSOR	OBSOLETE, SUPERCEDED WITH I90-I697 HYD GREASE PUMP KIT
2.	115-170	1	COLLAR (04NF)	
3.	154-482	2	CONNECTOR (04N-04090)	
4.	154-743	1	HOSE(040FX90S-23"-3000)	
5.	120-089	1	AIR TANK	
6.	115-444	4	PLUG (04N, SOC, SS)	
7.	115-136	3	NIPPLE (04N-4")	
8.	214-417	1	SOLENOID VALVE	SEE FOOTNOTE 1
9.	154-265	2	UN RUN TEE(040FX-040-040)	
10.	154-339	8	CONNECTOR (04N-040)	
11.	156-189	1	GREASE PUMP	
	191-096	1	AIR VALVE KIT	
	191-064	1	PUMP TUBE REPAIR KIT	
12.	155-120	2	STREET ELBOW (04N-04NF90)	
13.	149-068	3	HOSE (04NFX90-230"-3000)	
14.	117-612	1	ABRASION SLEEVE (1.00" X 46")	
15.	117-672	1	ABRASION SLEEVE (1.00" X 20")	
16.	149-056	2	SPRAY NOZZLE	
	159-480	1	AIR CAP,SS	
	159-481	1	FLUID CAP,SS	
	165-890	1	GASKET, PLUG	
	165-891	1	GASKET,FLUID CAP	
17.	120-088	1	INLINE DESICCANT DRYER	HAND TIGHTEN TO LEAK PROOF SEAL
18.	149-071	1	NIPPLE (04N-5")	
19.	115-114	1	ELBOW (04NF-04NF90)	
20.	115-1010	1	NIPPLE (04N-2.0")	
21.	154-255	1	UNION (040-040FX90)	
22.	370-296	1	NOZZLE MOUNT	
23.	115-135	4	REDUCER (08N-04NF)	
24.	370-276	-	STATIONARY CLAMP	
25.	154-963	1	HOSE (040FX45-24"-3000)	
26.	217-243	1	PRESSURE SWITCH	
27.	156-927	1	NEEDLE VALVE	
28.	154-379	1	UN BR TEE (040FX-040-040)	
29.	370-292	1	GREASE BUCKET CONTAINER	
30.	256-025	-	TOOL JNT LUBE, SUMR SPRY 5 GAL	
	256-027	1	TOOL JNT LUBE, STD SPRAY 5 GAL	
31.	106-386	2	FLG LOCKNUT (M8-1.25)	
32.	106-327	2	SCREW (M8-1.25 X 30MM)	
33.	149-812	1	RELIEF VALVE	
34.	117-611	1	ABRASION SLEEVE (1.00" X 22")	
35.	115-737	1	ABRASION SLEEVE (1.59" X 40")	
36.	115-106	1	REDUCER (06N-04NF)	
37.	105-873	4	FLG LK BOLT (5/16-NC X 1")	
38.	110-141	1	DRAIN VALVE (04N)	
39.	106-383	4	FLG LK SCREW (M10-1.50 X 30MM)	
40.	515-744	1	HOSE (040FX90S-28"-3000)	
41.	115-130	1	TEE (04NF-04NF-04NF)	
42.	149-868	1	CONNECTOR (04N-040FX)	
43.	120-090	1	SHUT-OFF (04NF-04NF, NONVENTED)	
44.	499-299	1	GREASE FOLLOWER	
45.	115-1010	1	NIPPLE (04N-2.0")	

## FOOTNOTES:

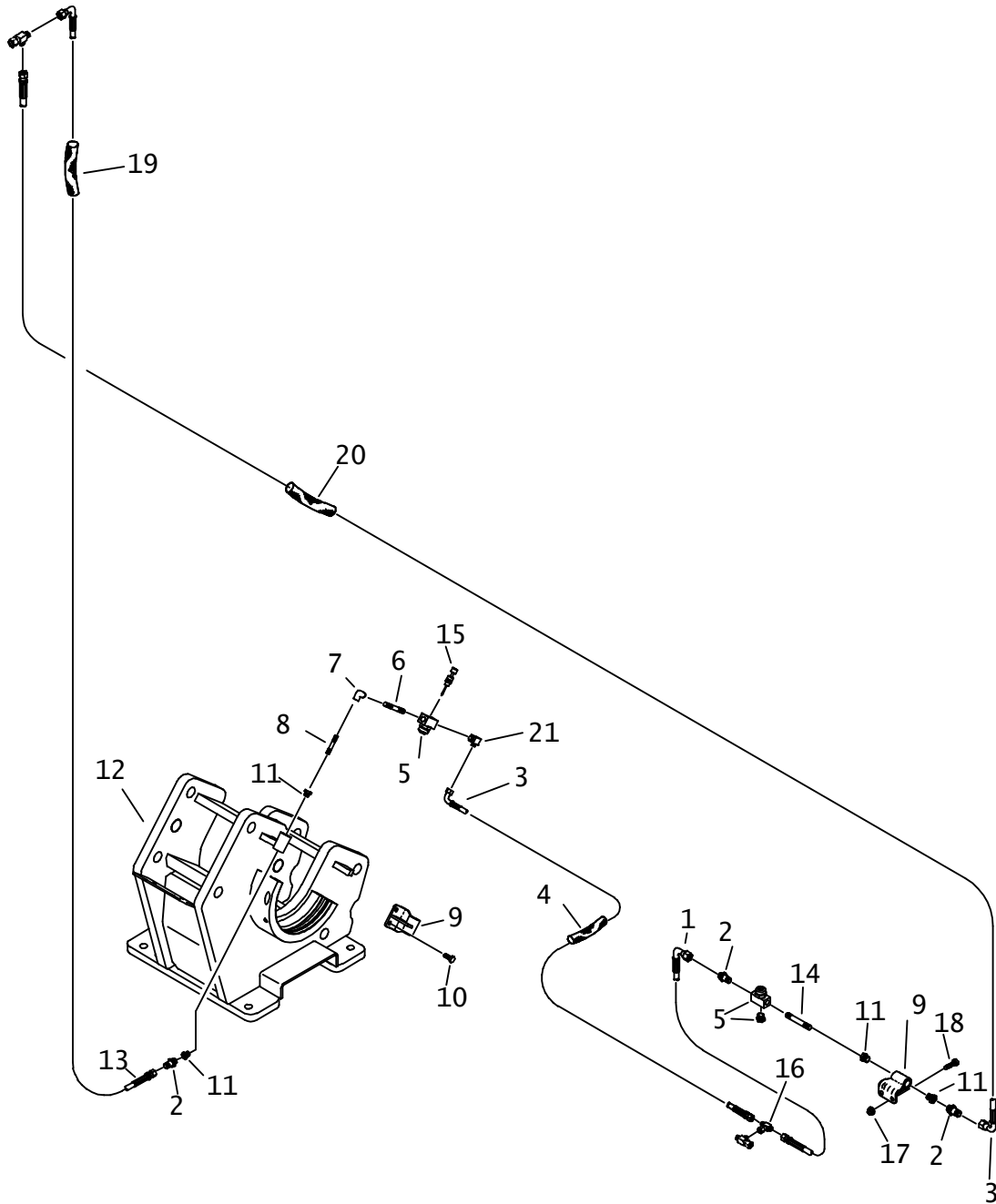
1. PORT 1 INLET, PORT 4 OUTLET, PORT 2, 3, AND 5 ARE PLUGGED

## NOTE:

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

# AUTO-GREASER (NOZZLES)

ENDS WITH CMW S/N:



## AUTO-GREASER (NOZZLES)

ENDS WITH CMW S/N:

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-743	1	HOSE (040FX90-23"-3000)	
2.	154-339	4	CONNECTOR (04N-040)	
3.	149-068	2	HOSE (04NFX90-230"-3000)	
4.	117-612	1	ABRASION SLEEVE (1.00" X 46")	
5.	149-056	2	SPRAY NOZZLE	
	159-480	1	AIR CAP (SS)	
	159-481	1	FLUID CAP (SS)	
	165-890	1	GASKET, PLUG	
	165-891	1	GASKET, FLUID CAP	
6.	149-071	1	NIPPLE (04N-5")	
7.	115-114	1	ELBOW (04NF-04NF90)	
8.	115-1010	1	NIPPLE (04N-2.0")	
9.	370-296	2	NOZZLE MOUNT	FRONT NOZZLE MOUNT USED ON EARLY MODELS ONLY USED ON EARLY UNITS
10.	106-083	-	SCREW (M8-1.25 X 20MM)	
11.	115-135	4	REDUCER (08N-04NF)	
12.	370-276	1	STATIONARY CLAMP	
13.	154-963	1	HOSE (040FX45-24"-3000)	
14.	115-136	1	NIPPLE (04N-4")	
15.	156-927	1	NEEDLE VALVE	
16.	154-379	1	UN BR TEE (040FX-040-040)	
17.	106-386	2	FLG LOCKNUT (M8-1.25)	
18.	106-327	2	SCREW (M8-1.25 X 30MM)	
19.	117-611	1	ABRASION SLEEVE (1.0" X 22")	
20.	115-737	1	ABRASION SLEEVE (1.59" X 40")	
21.	154-482	1	CONNECTOR (04N-04090)	

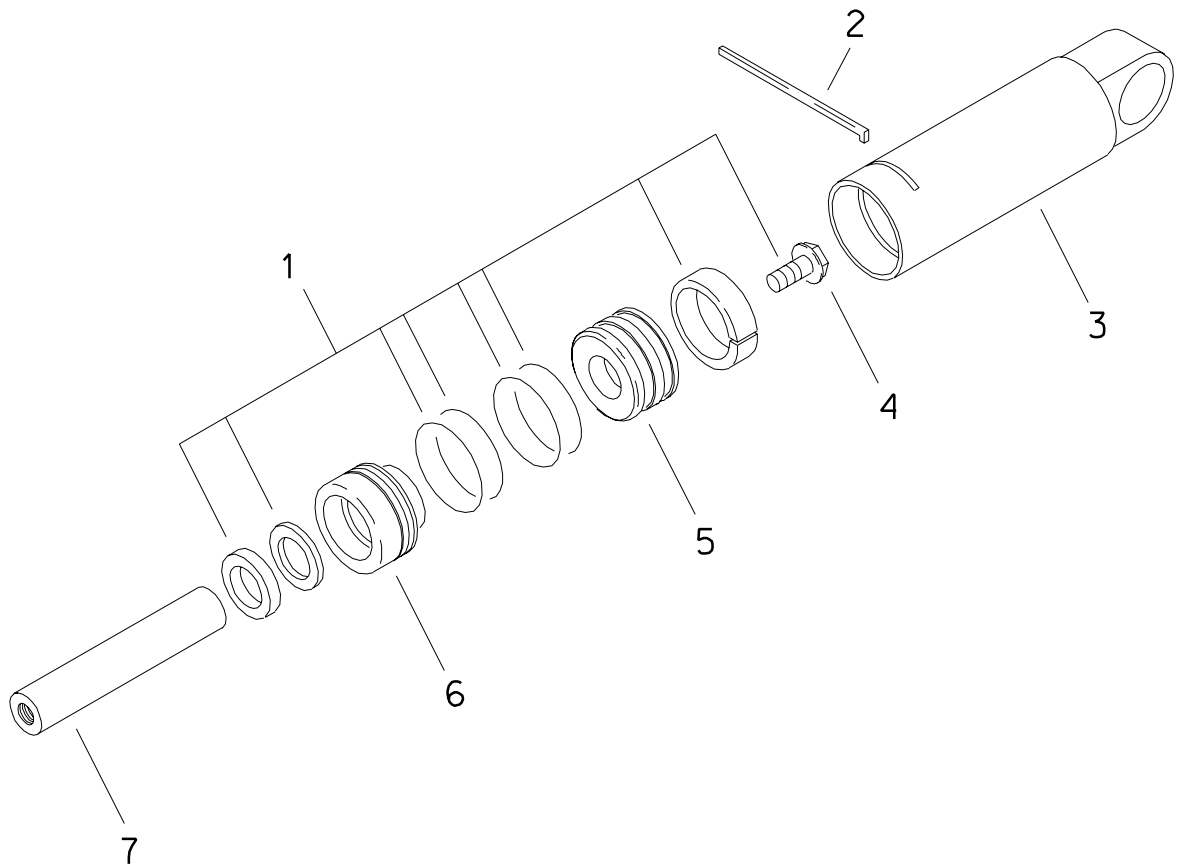
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FOOTNOTES:

NOTE:

# HYDRAULIC CYLINDER

2" X 1" X 3"



## HYDRAULIC CYLINDER

2" X 1" X 3"

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-163		CYL (2" X 1" X 3")	INCL REF NO.'S 1 - 7
1.	190-165	1	SEAL REPAIR KIT (2" X 1")	
2.	150-778	1	LOCK RING (2")	
3.	150-282	1	CYLINDER BARREL (2")	
4.	106-096	1	FLG BOLT (1/2-NC X 1-3/4", GD 8)	SEE FOOTNOTE 1
5.	150-775	1	CYLINDER PISTON (2" X 1")	
6.	150-772	1	CYLINDER HEAD (2" X 1")	
7.	150-676	1	CYLINDER ROD	

## NOT SHOWN:

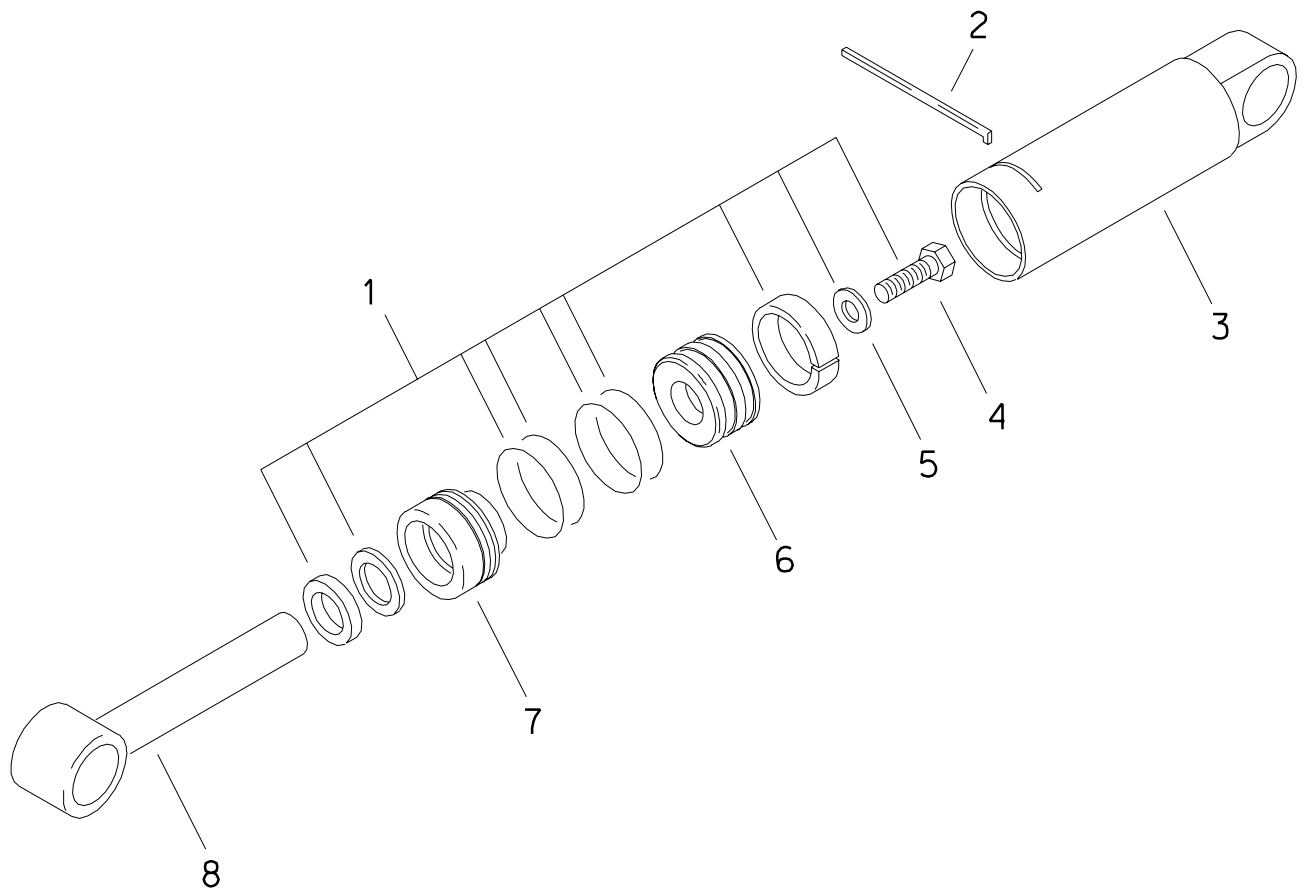
259-100	U-SEAL INSTALLER (1" - 1.499")
259-239	WIPER/SEAL INSTALLER (2")
259-241	PISTON INSTALLER (2")
259-188	CYL HEAD SPANNER - TWO PIN

## FOOTNOTES

1. CLEAN AND DRY THREADS. APPLY RED LOCKTITE (RC271 OR RC272). TORQUE TO 90-100 FT-LBS (120-135 NM).

# HYDRAULIC CYLINDER

3.5" X 1.75" X 16"



# HYDRAULIC CYLINDER

## 3.5" X 1.75" X 16"

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-085		CYL (3.5" X 1.75" X 16")	INCL. REF. NO.'S 1 - 7
1.	190-174	1	SEAL REPAIR KIT (3.5" X 1.75")	INCL. REF. NO.'S 4 & 5
2.	149-302	1	LOCK RING (3.5")	
3.	152-021	1	CYLINDER BARREL	
4.	106-122	1	BOLT (7/8-NC X 2-1/4", GD 8)	SEE FOOTNOTE 1
5.	105-363	1	WASHER (7/8")	
6.	149-301	1	CYL PISTON 3.5" X 1.75"	
7.	150-761	1	CYL HEAD (3.5" X 1.75")	
8.	153-004	1	1.75" ROD ASSEMBLY	

### NOT SHOWN:

	259-040		U-SEAL INSTALLER (1.50" - UP)	
	259-238		WIPER INSTALLER (1.75")	
	259-244		PISTON SEAL INSTALLER (3.50")	
	259-245		PISTON INSTALLER (3.5")	
	259-188		CYL HEAD SPANNER - TWO PIN	

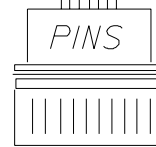
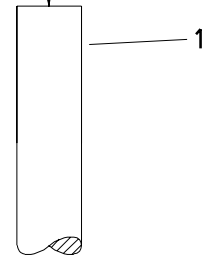
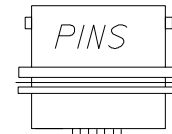
### FOOTNOTES

1-USE LOCTITE 277, TORQUE TO 410-460 FT-LBS (550-625 N.M)

# PIPE LOADER (JUMPER CABLE)

A	ORG (12)	J	GRA (119)	R	BLK/BLU (1B)
B	CAVITY PLUG	K	PUR (118)	S	GRA/WHT (78)
C	BLK/RED (1A)	L	GRN/BLK (92)	T	TAN/RED (140)
D	YEL (122)	M	TAN (117)	U	CAVITY PLUG
E	BLU (121)	N	CAVITY PLUG	V	BRN (123)
F	CAVITY PLUG	O	RED/BLK (18)	W	PUR/WHT (100)
G	GRN (120)	P	WHT (80)	X	BLU/WHT (101)
H	BLU/BLK (93)	Q	WHT/RED (79)		

TO PIPELOADER



TO CAB HARNESS

A	ORG (12)	J	GRA (119)	R	BLK/BLU (1B)
B	CAVITY PLUG	K	PUR (118)	S	GRA/WHT (78)
C	BLK/RED (1A)	L	GRN/BLK (92)	T	TAN/RED (140)
D	YEL (122)	M	TAN (117)	U	PUR/WHT (100)
E	BLU (121)	N	BLU/WHT (101)	V	BRN (123)
F	CAVITY PLUG	O	RED/BLK (18)	W	
G	GRN (120)	P	WHT (80)	X	
H	BLU/BLK (93)	Q	WHT/RED (79)		

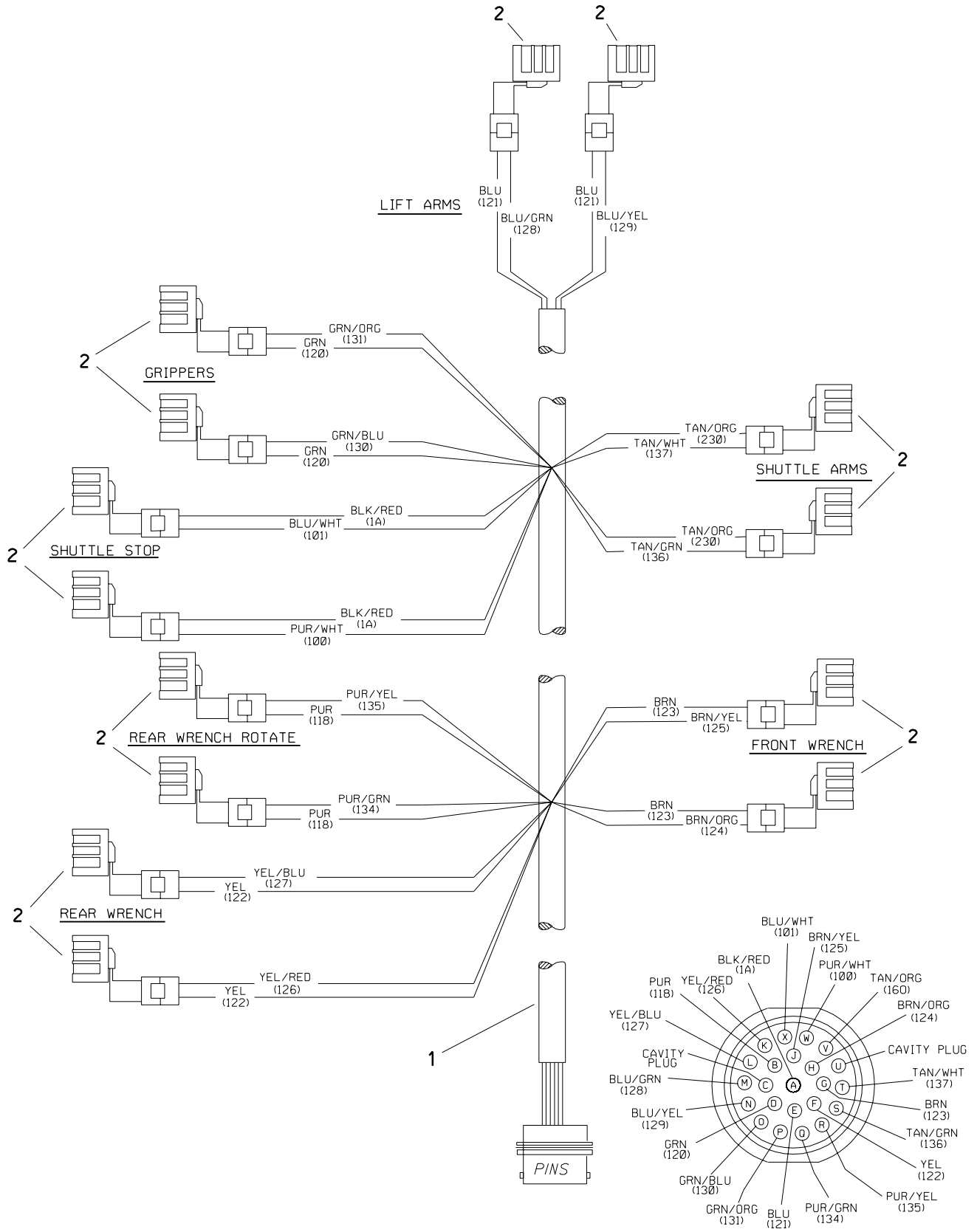


# PIPE LOADER ( JUMPER CABLE )

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-530	1	PIPELOADER JUMPER CABLE	

FOOTNOTES

# PIPE LOADER (VALVE HARNESS)

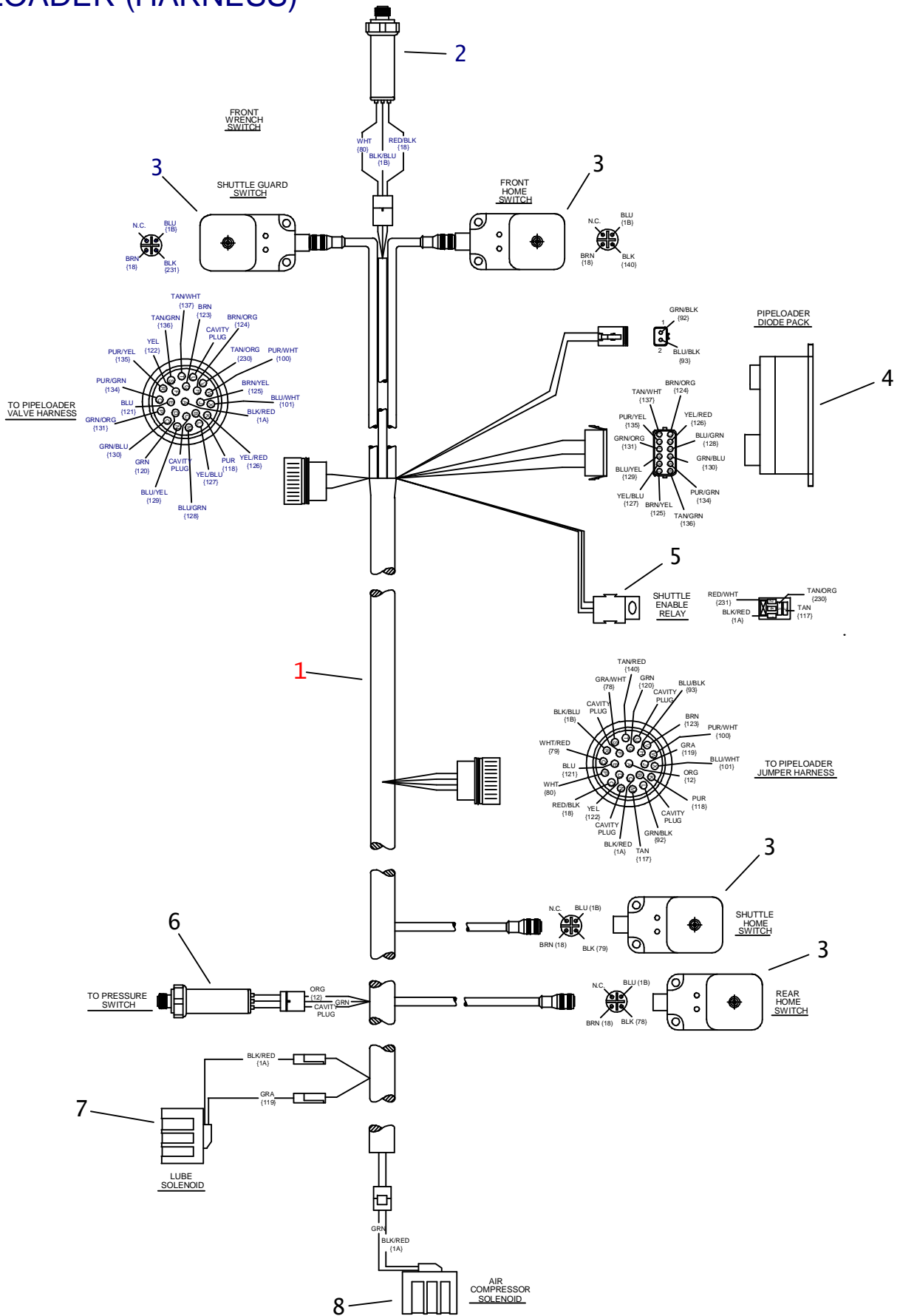


# PIPE LOADER ( VALVE HARNESS )

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-531	1	PIPE LOADER VALVE HARNESS	
2.	N/A	14	SOLENOID COIL	

FOOTNOTES

# PIPE LOADER (HARNESS)



## PIPE LOADER (HARNESS)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-529	-	PIPELOADER HARNESS	
2.	214-696	1	PRESSURE SWITCH (1850PSI)	
3.	215-1175	4	PROXIMITY SWITCH	
4.	211-025	1	IN-LINE DIODE PACK	
5.	217-710	1	MICRO RELAY (SPDT)	
6.	217-243	1	PRESSURE SWITCH	
7.	214-417	1	SOLENOID VALVE	
8.	158-627	1	SOLENOID VALVE	

NOT SHOWN:

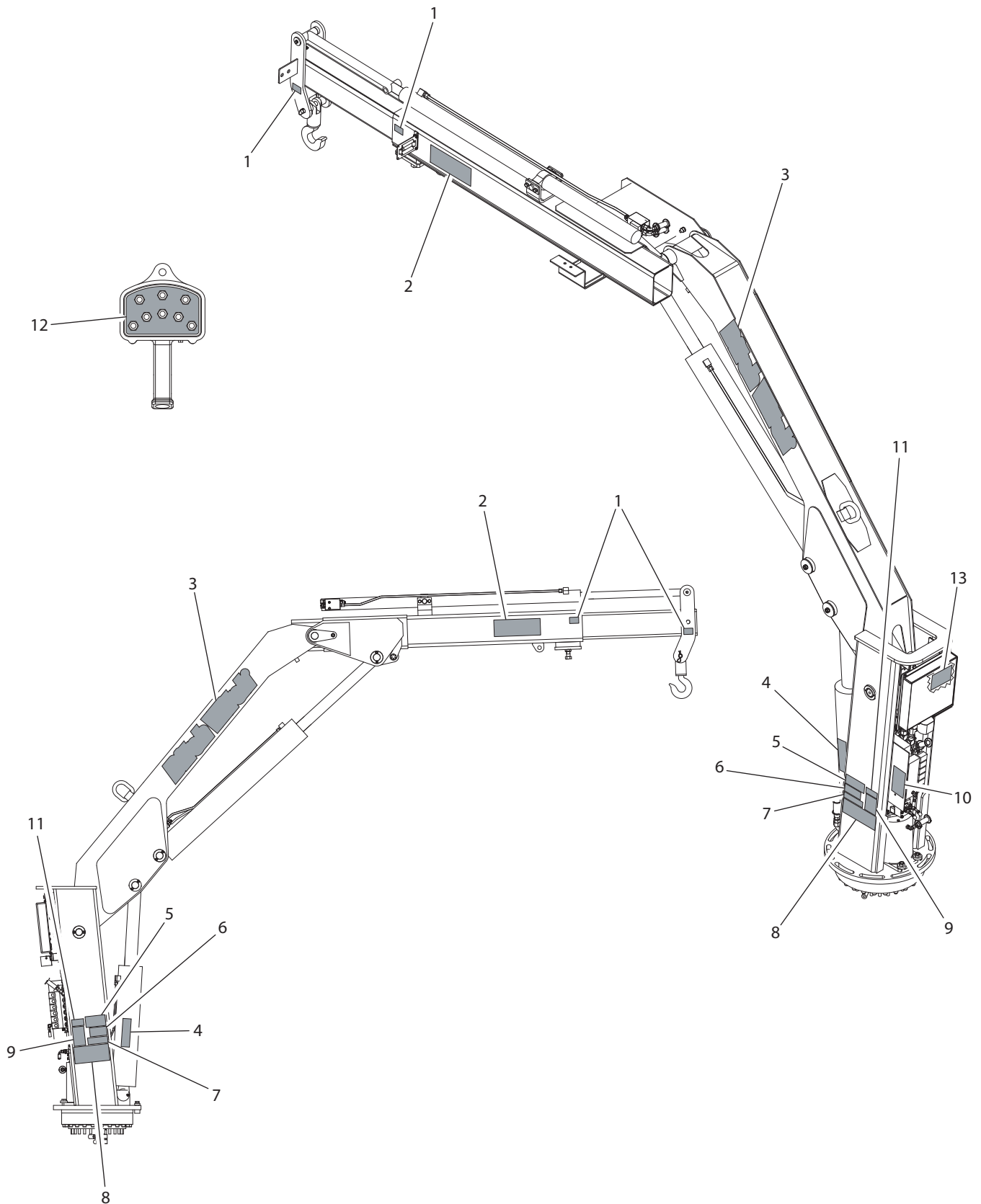
FOOTNOTES:

NOTE:



# **HOIST SYSTEMS**

# DECAL LOCATION CRANE





## DECAL LOCATION CRANE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-792		DECAL KIT - CRANE	
1	274-968	4	STAY CLEAR OF BOOM	
2	274-966	2	ELECTROCUTION HAZARD	
3	274-967	2	DITCH WITCH LOGOTYPE	
4	274-965	2	PINCH POINT	
5	274-960	2	EXTEND OUTRIGGER	
6	275-326	2	WARNING CRUSHING WEIGHT	
7	274-962	2	NEVER RIDE ON HOOK	
8	274-957	2	LOAD CHART	
9	274-959	2	OPERATION INSTRUCTIONS	
10	700-963	1	MANUAL VALVE OPERATION	
11	273-475	2	NOTICE - READ MANUAL	
12	700-958	1	PENDANT CONTROL	
13	273-670	1	TERMINAL BLOCK	

FOOTNOTES



# PEDESTAL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	324-755	1	PEDESTAL	
2	348-285	1	SPACER, OUTER RACE	
3	499-265	1	ROTATION BEARING	
4	325-339	1	SPACER, INNER RACE	
5	108-222	24	WASHER (5/8" HARDENED)	
6	106-398	24	WASHER (M16, HARDENED)	
7	106-983	24	SCREW (M16-2.00 X 150MM, 10.9)	USE LOCTITE 277 OR EQUIVALENT; SEE FOOTNOTE 1
8	108-221	24	BOLT (5/8-NC X 5", SOC, GD8)	USE LOCTITE 277 OR EQUIVALENT, TORQUE TO 180 FT. LB.
9	125-483	2	COMPOSITION BUSHING (2.000")	
10	179-270	1	SLIDE STOP PIN	
11	499-266	1	SLIDE STOP WASHER	
12	105-385	1	LOCK WASHER (5/8")	
13	105-358	1	BOLT (5/8-NC X 1-1/2", GD8)	

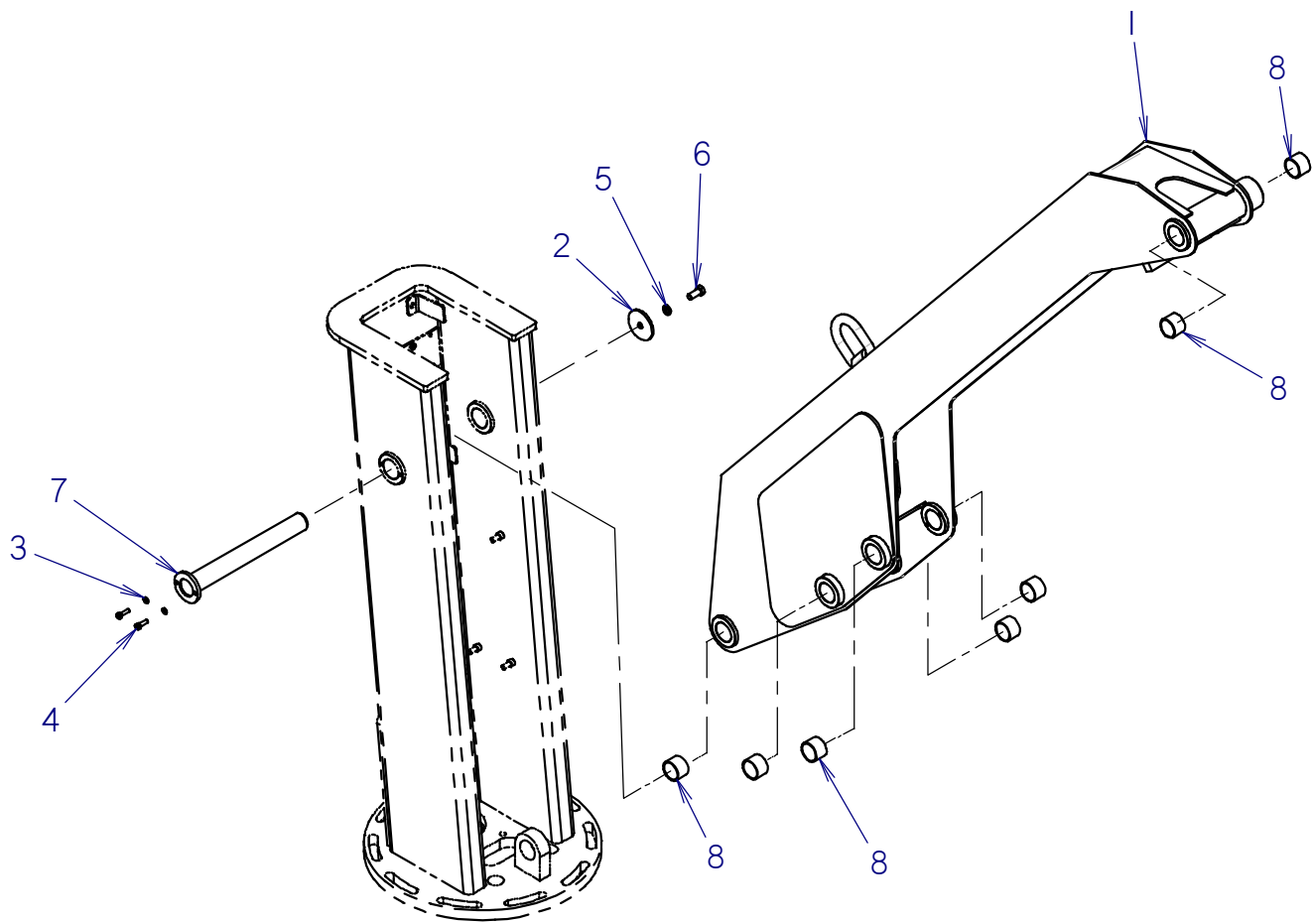
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FOOTNOTES:

- I. TIGHTEN BOLTS THROUGH ACCESS HOLES ON PEDESTAL BASE

NOTE:

## INNER BOOM



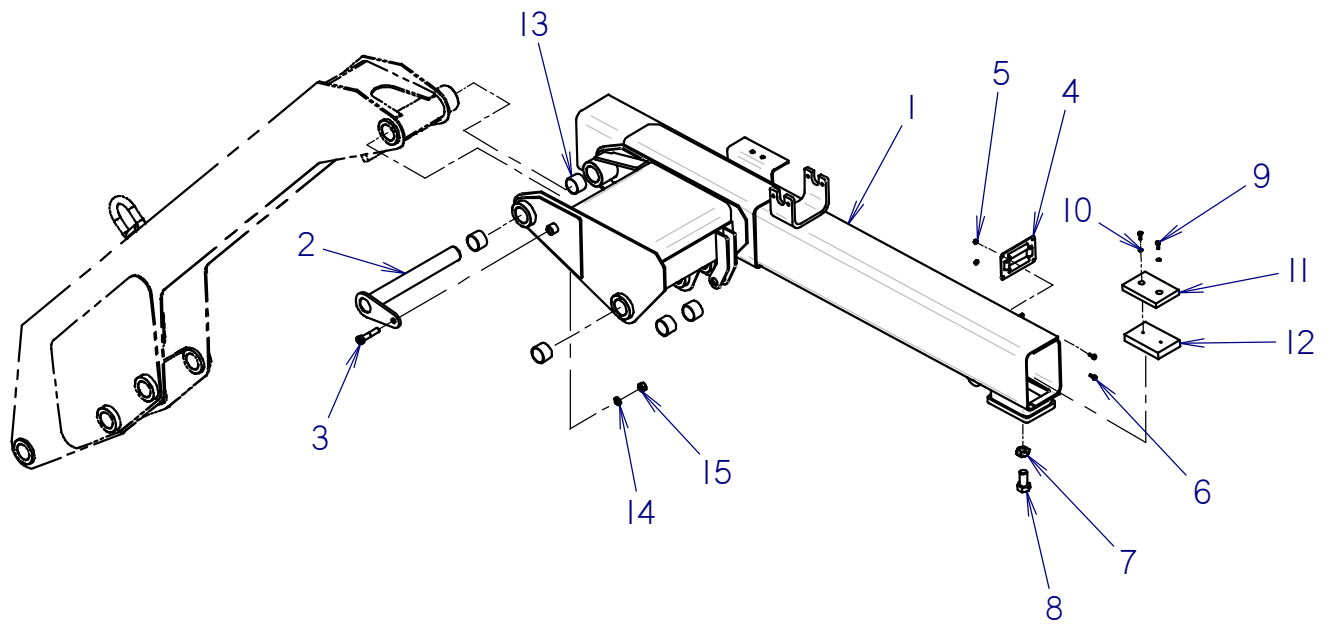
# INNER BOOM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	324-756	1	INNER BOOM	
2	499-235	1	PIN WASHER	
3	105-072	2	LOCK WASHER (3/8")	
4	105-052	2	BOLT (3/8-NC X 1-1/4")	USE LOCTITE 242 OR EQUIVALENT
5	105-385	1	LOCK WASHER (5/8")	
6	105-358	1	BOLT (5/8-NC X 1-1/2", GD8)	USE LOCTITE 242 OR EQUIVALENT
7	179-268	1	PIN	
8	125-483	7	COMPOSITION BUSHING (2.000")	

FOOTNOTES

NOTE:

## OUTER BOOM



# OUTER BOOM

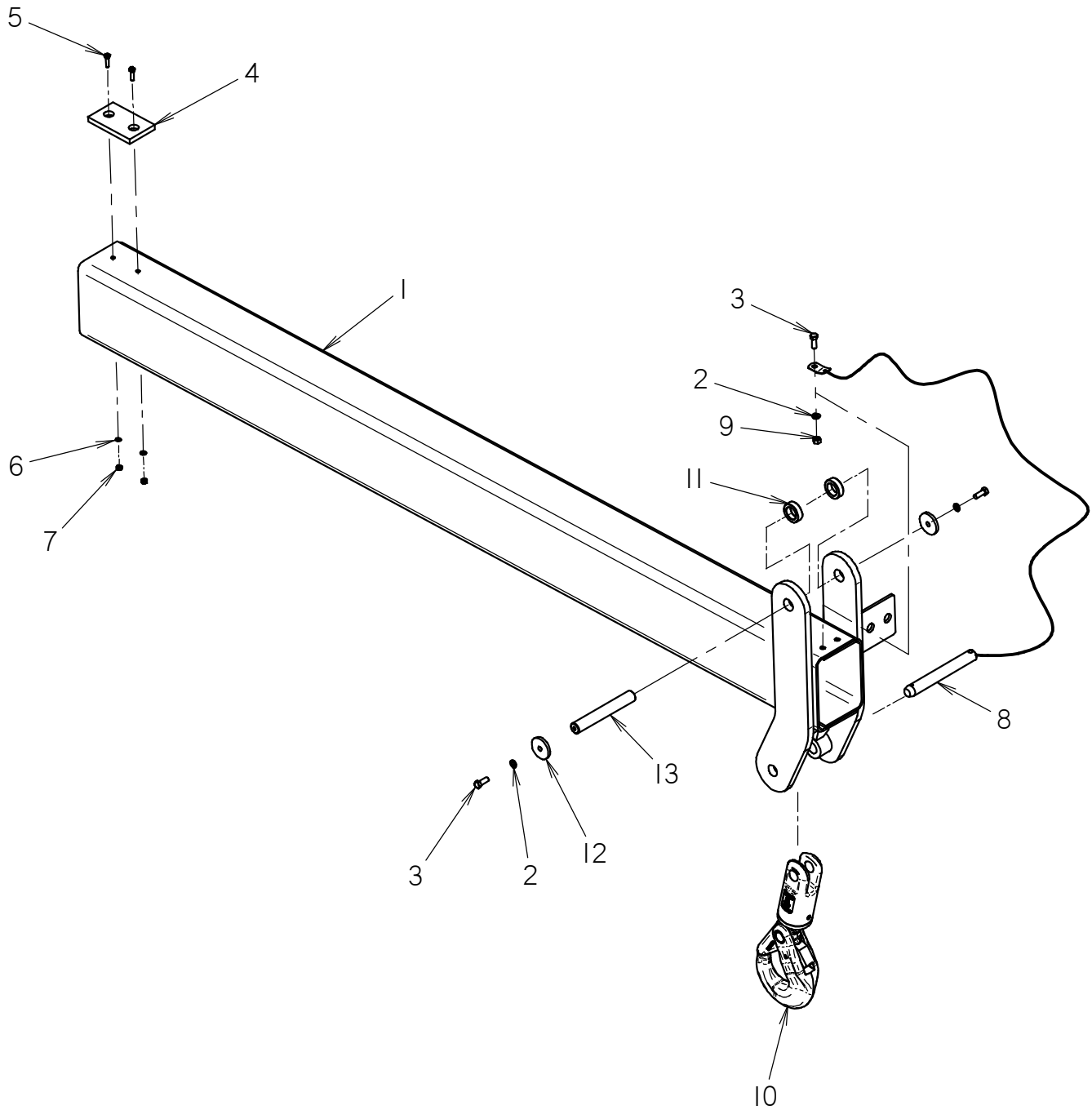
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	324-757	1	OUTER BOOM	
2	179-271	1	PIN	
3	105-376	1	BOLT (5/8-NC X 3", GD8)	
4	370-288	1	HOSE REEL GUIDE	
5	106-385	2	FLG LOCKNUT (M6-1.00)	
6	106-379	2	FLG LK SCREW (M6-1.00 X 20MM)	
7	106-033	1	JAM NUT (11-NC)	
8	106-167	1	BOLT (11-NC X 2") GRADE 5	
9	105-865	2	BOLT (11/4-NC X 3/4", GD8)	
10	105-079	2	LOCK WASHER (11/4)	
11	348-286	1	SLIDE PAD	USE EP GEAR GREASE FOR LUBRICATION
12	499-261	1	SLIDE PAD MOUNT	
13	125-483	5	COMPOSITION BUSHING (2.000")	
14	105-385	1	LOCK WASHER (5/8")	
15	105-357	1	LOCKNUT (5/8-NC)	

NOT SHOWN:

FOOTNOTES:

NOTE:

## EXTENTION BOOM





# EXTENTION BOOM

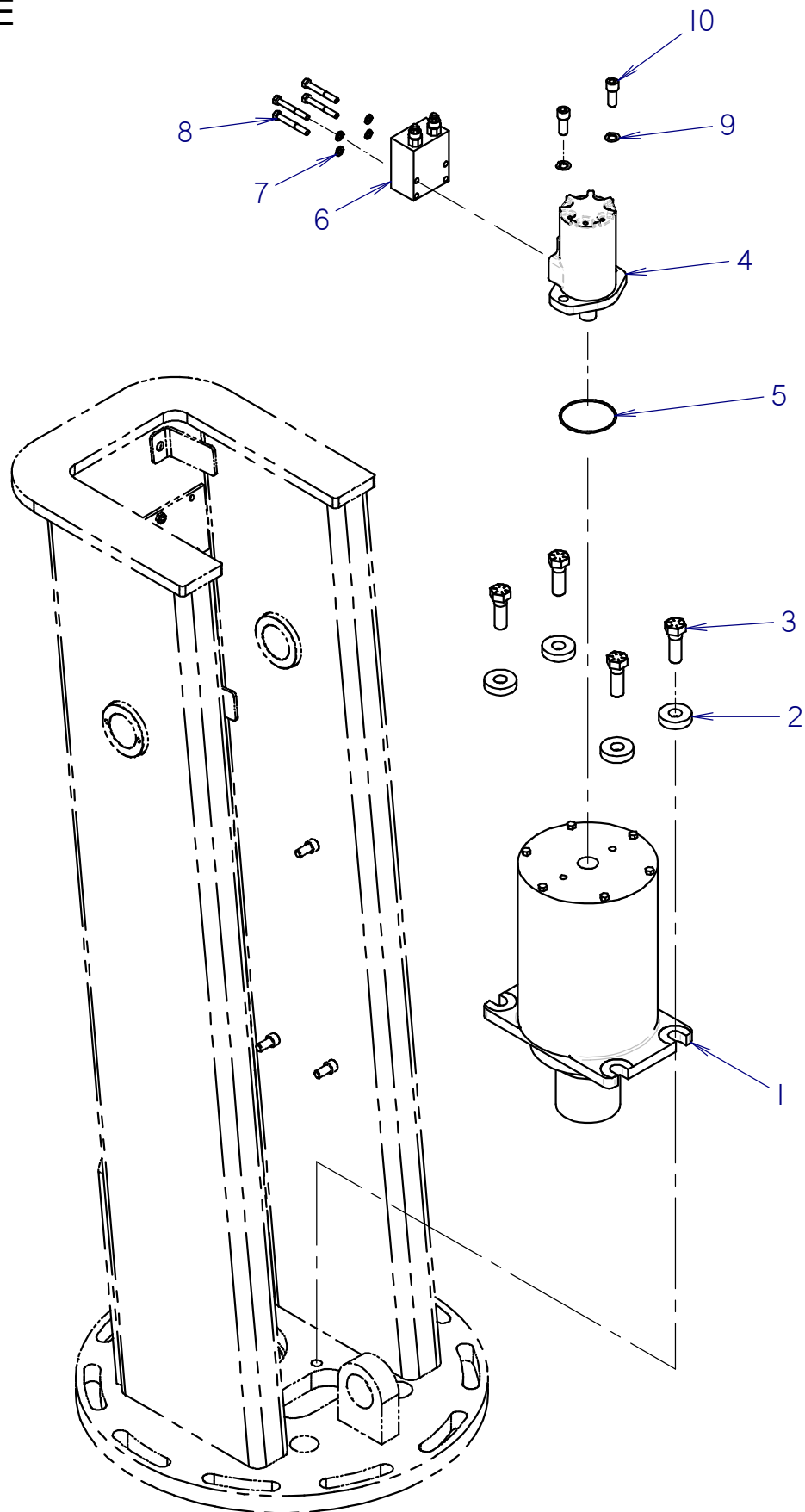
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	324-758	1	EXTENSION BOOM	
2	105-072	3	LOCK WASHER (3/8")	
3	105-031	3	BOLT (3/8-NC X 1")	USE LOCTITE 242 OR EQUIVALENT; TORQUE TO 37 FT-LBS
4	348-287	1	SLIDE PAD	
5	105-197	2	BOLT (1/4-NC X 1")	
6	105-079	2	LOCK WASHER (1/4)	
7	105-078	2	NUT (1/4-NC)	
8	179-274	1	HOOK PIN	
9	105-053	1	NUT (3/8 NC) HEX	
10	105-1569	1	SWIVEL HOOK	
11	181-965	2	SPACER	
12	105-223	2	WASHER (3/8")	
13	499-260	1	PIN	

NOT SHOWN:

FOOTNOTES:

NOTE:

## SWING DRIVE



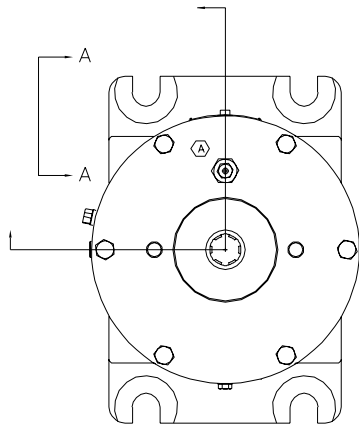
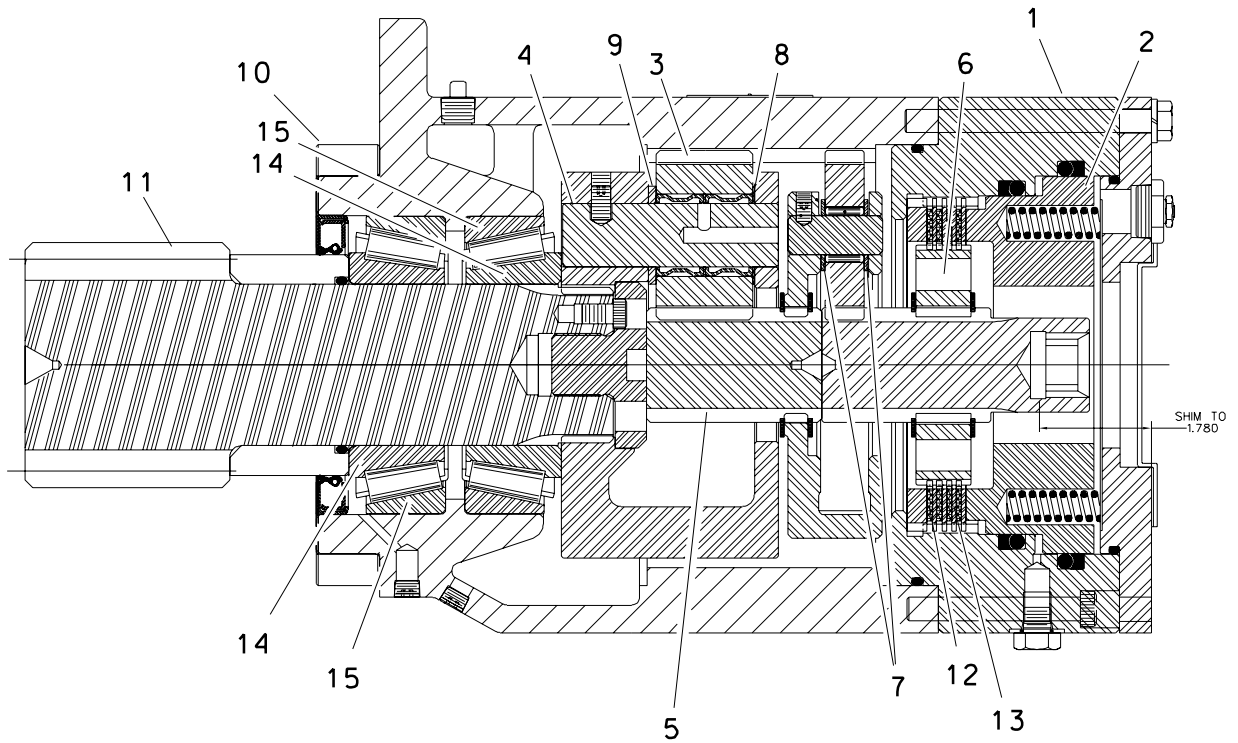
# SWING DRIVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	499-236	1	SWING DRIVE	USE 80W-90 GEAR OIL, 3 QUART CAPACITY
2	370-162	4	WASHER (812, HARDENED)	
3	105-320	4	BOLT (3/4-NC X 2-1/4", GD8)	USE LOCTITE 277 OR EQUIVALENT; TORQUE TO 180 FT-LBS
4	499-238	1	HYDRAULIC MOTOR	
5	157-041	1	O-RING (152 D70)	
6	516-117	1	COUNTERBALANCE VALVE	
7	105-091	4	LOCK WASHER (5/16")	
8	105-178	4	BOLT (5/16-NC X 2-1/2", GD8)	USE LOCTITE 242 OR EQUIVALENT
9	105-070	2	LOCK WASHER (1/2")	
10	105-282	2	BOLT (1/2 - NC X 1.25", SOC)	USE LOCTITE 277 OR EQUIVALENT; TORQUE TO 90 FT-LBS

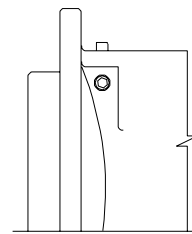
FOOTNOTES

NOTE:

# SWING DRIVE



TOP VIEW  
NOT TO SCALE



VIEW A-A  
NOT TO SCALE

**NOTES:**

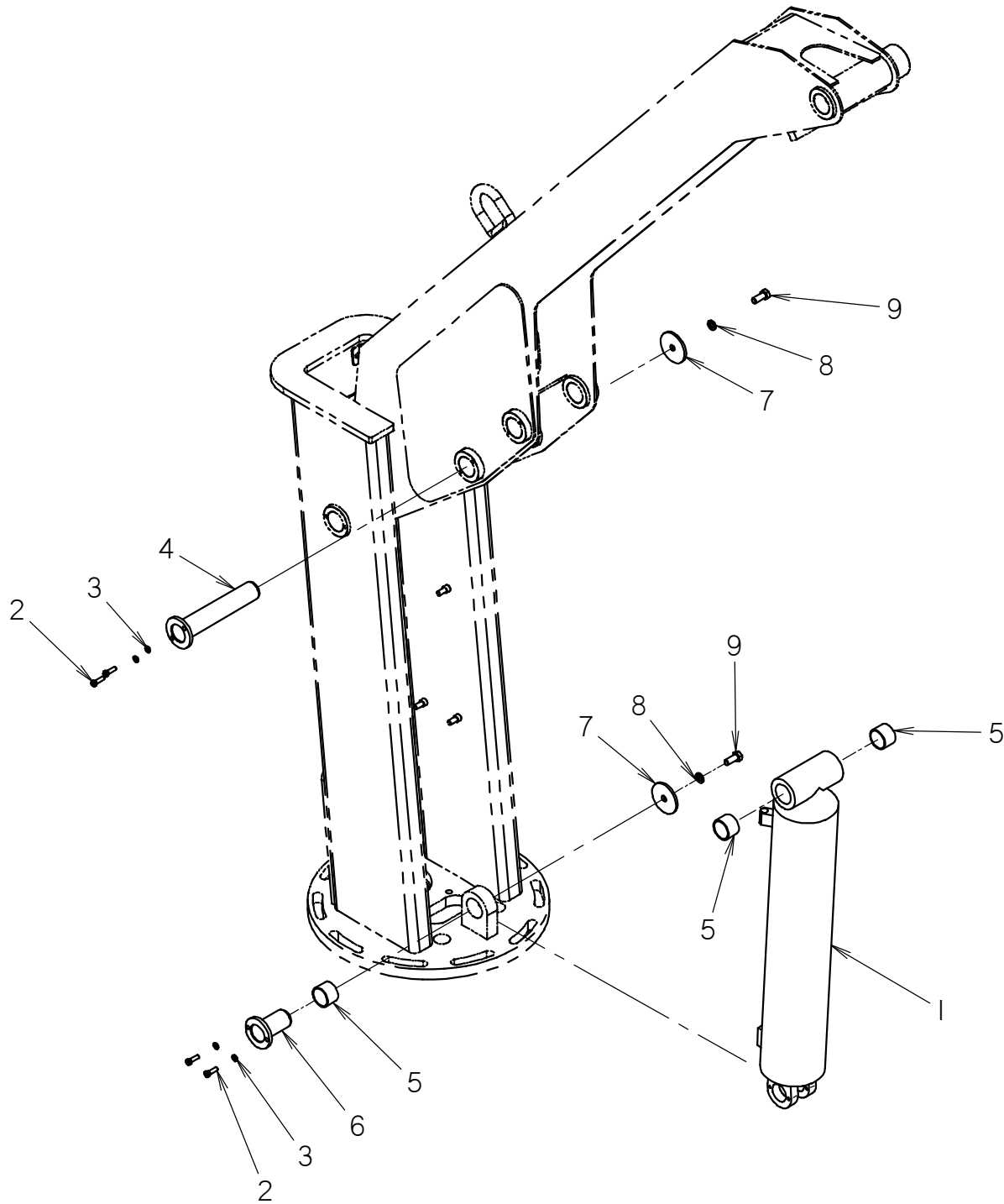
1. PRELOAD THE TIMKEN BEARINGS TO 40-60 IN.-LBS AND LOCK BOLT IN PLACE
2. TORQUE ITEMS \*58 & \*60 TO 39 FT.-LBS.
3. STAKE ITEMS \*62 & \*63
4. AIR TEST FOR LEAKS

# SWING DRIVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	499-236		SWING DRIVE	
1.	499-239	1	BRAKE CYLINDER	
2.	499-240	1	BRAKE PISTON	
3.	499-241	1	PLANET GEAR	
4.	499-242	1	PLANET GEAR SHAFT	
5.	499-243	1	OUTPUT GEAR SHAFT	
6.	499-244	1	BRAKE DRIVER	
7.	499-248	1	THRUST WASHER RACE (.625")	
8.	499-249	-	THRUST WASHER RACE (1.000")	
9.	499-250	-	THRUST WASHER RACE (1.000")	
10.	499-251	1	ECCENTRIC RING	
11.	499-252	1	PINION	
12.	499-253	1	REACTION DISC	
13.	499-254	1	BRAKE DISC	
14.	499-255	1	TAPERED BEARING	
15.	499-256	1	TAPERED RACE	

FOOTNOTES

## LIFT CYLINDER



# LIFT CYLINDER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	151-198	1	LIFT CYLINDER	SEE FOOTNOTE 1
2	105-052	4	BOLT (3/8-NC X 1-1/4")	USE 242 LOCTITE OR EQUIVALENT
3	105-072	4	LOCK WASHER (3/8")	
4	179-269	1	PIN	
5	125-483	3	COMPOSITION BUSHING (2.000")	
6	179-267	1	PIN	USE 242 LOCTITE OR EQUIVALENT
7	499-235	2	PIN WASHER	
8	105-385	2	LOCK WASHER (5/8")	
9	105-358	2	BOLT (5/8-NC X 1-1/2", GD8)	

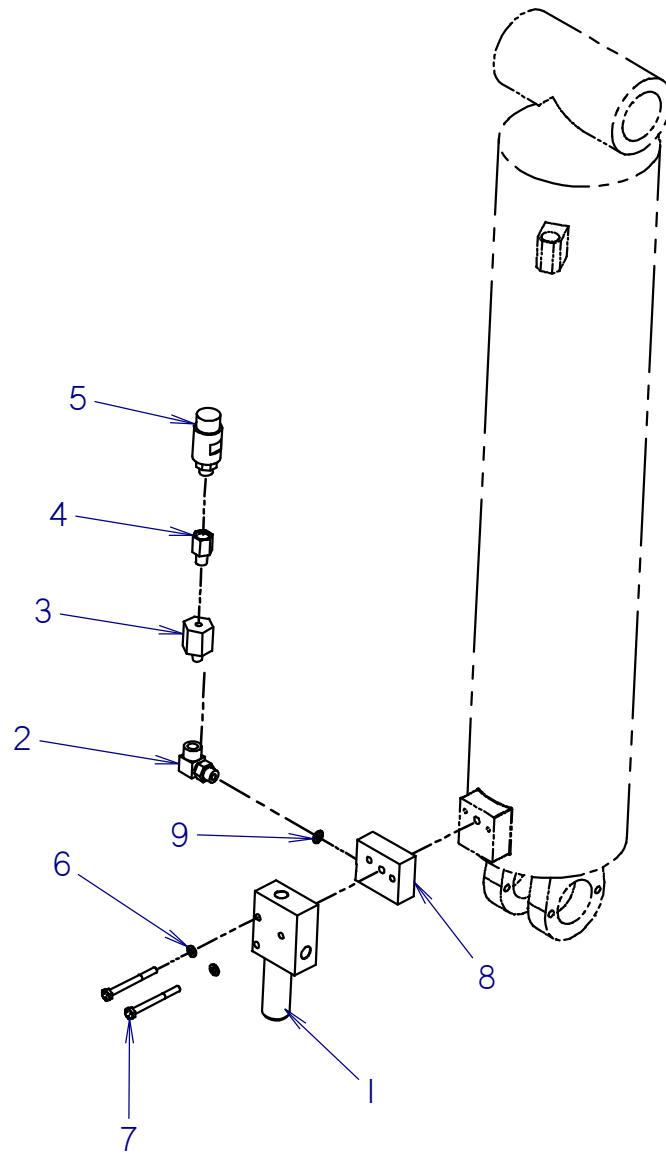
NOT SHOWN:

FOOTNOTES:

1. SEAL KIT 500-2120.

NOTE:

## OVERLOAD





# OVERLOAD

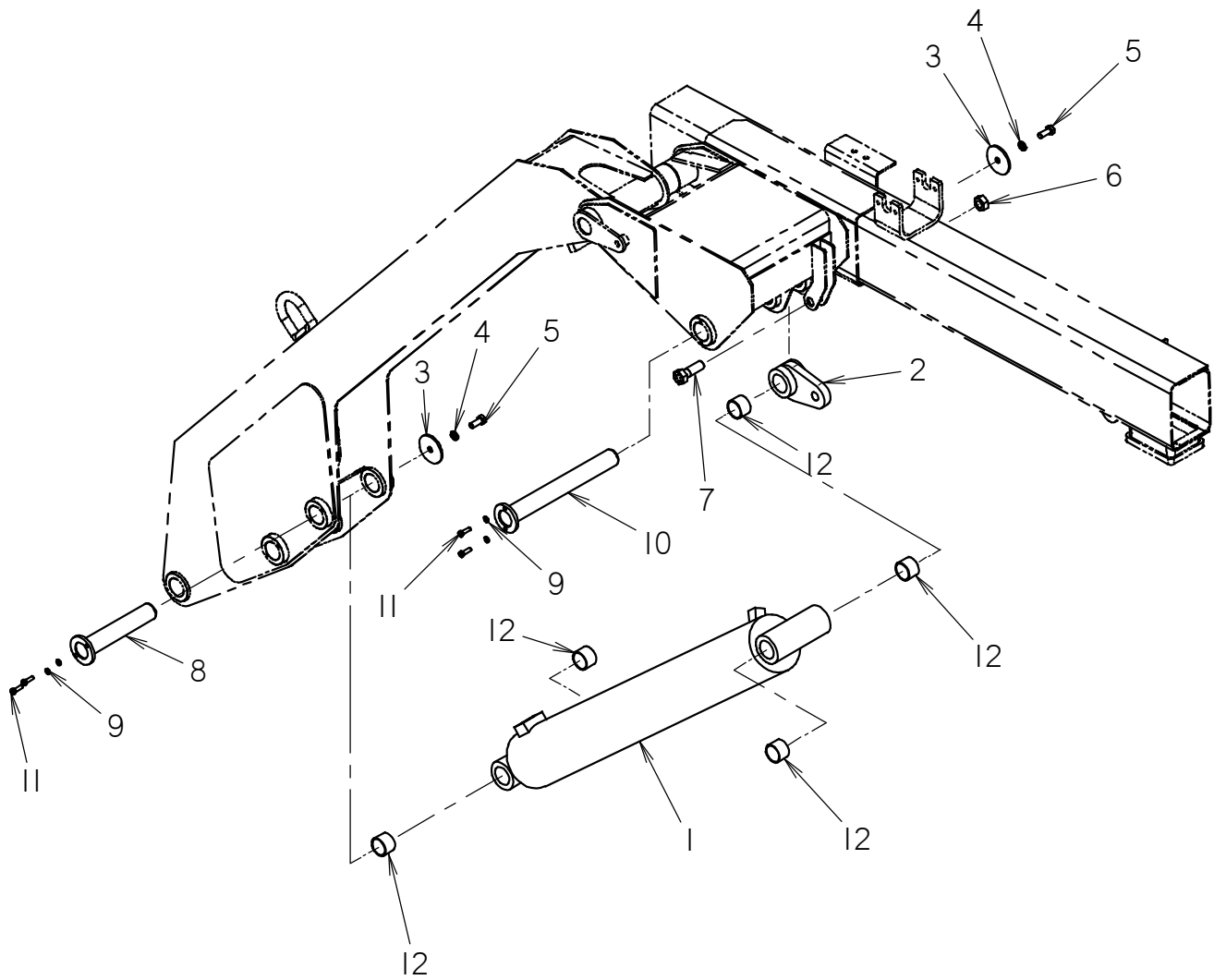
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	516-112	1	COUNTERBALANCE VALVE	
2	153-203	1	ELBOW (060-04N90)	
3	153-202	1	ADJUSTABLE GAUGE SNUBBER	
4	153-264	1	REDUCER (04N-06SF)	
5	213-315	1	PRESSURE SWITCH	
6	105-079	2	LOCK WASHER (1/4)	
7	107-743	2	BOLT (1/4-NC X 2.75, GD5)	
8	516-111	1	SENSE MANIFOLD	
9	158-079	1	ORIFICE DISC (016)	

NOT SHOWN:

FOOTNOTES:

NOTE:

## OUTER BOOM CYLINDER



# OUTER BOOM CYLINDER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	151-197	1	OUTER BOOM CYLINDER	SEE FOOTNOTE I.
2	499-262	1	LIFTING LUG	
3	499-235	2	PIN WASHER	
4	105-385	2	LOCK WASHER (5/8")	
5	105-358	2	BOLT (5/8-NC X 1-1/2", GD8)	USE LOCTITE 242 OR EQUIVALENT
6	105-375	1	NUT (1-NC)	
7	105-373	1	BOLT (1-NC X 3")	
8	179-269	1	PIN	
9	105-072	4	LOCK WASHER (3/8")	
10	179-268	1	PIN	
11	105-052	4	BOLT (3/8-NC X 1-1/4")	USE LOCTITE 242 OR EQUIVALENT
12	125-483	5	COMPOSITION BUSHING (2.000")	

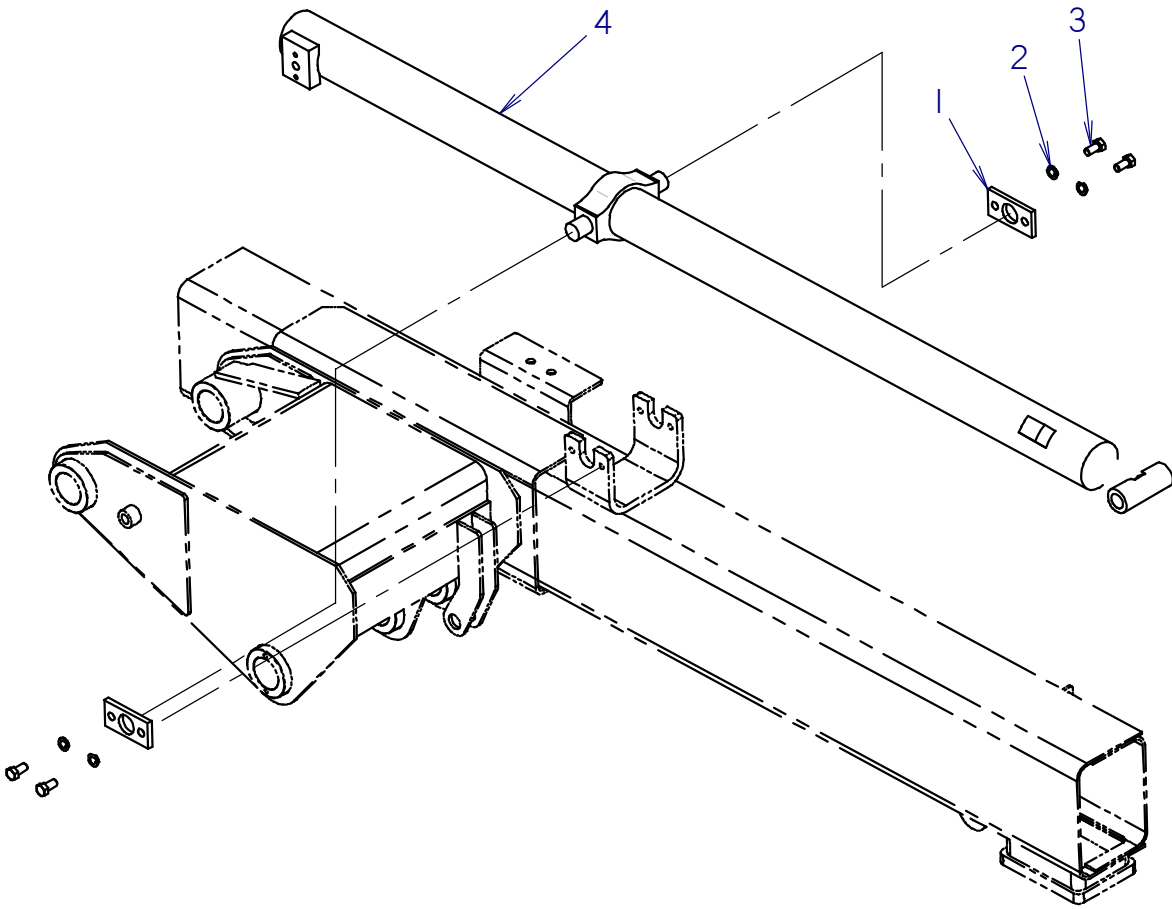
NOT SHOWN:

FOOTNOTES:

I. SEAL KIT 500-2120.

NOTE:

## EXTENSION CYLINDER



## EXTENSION CYLINDER

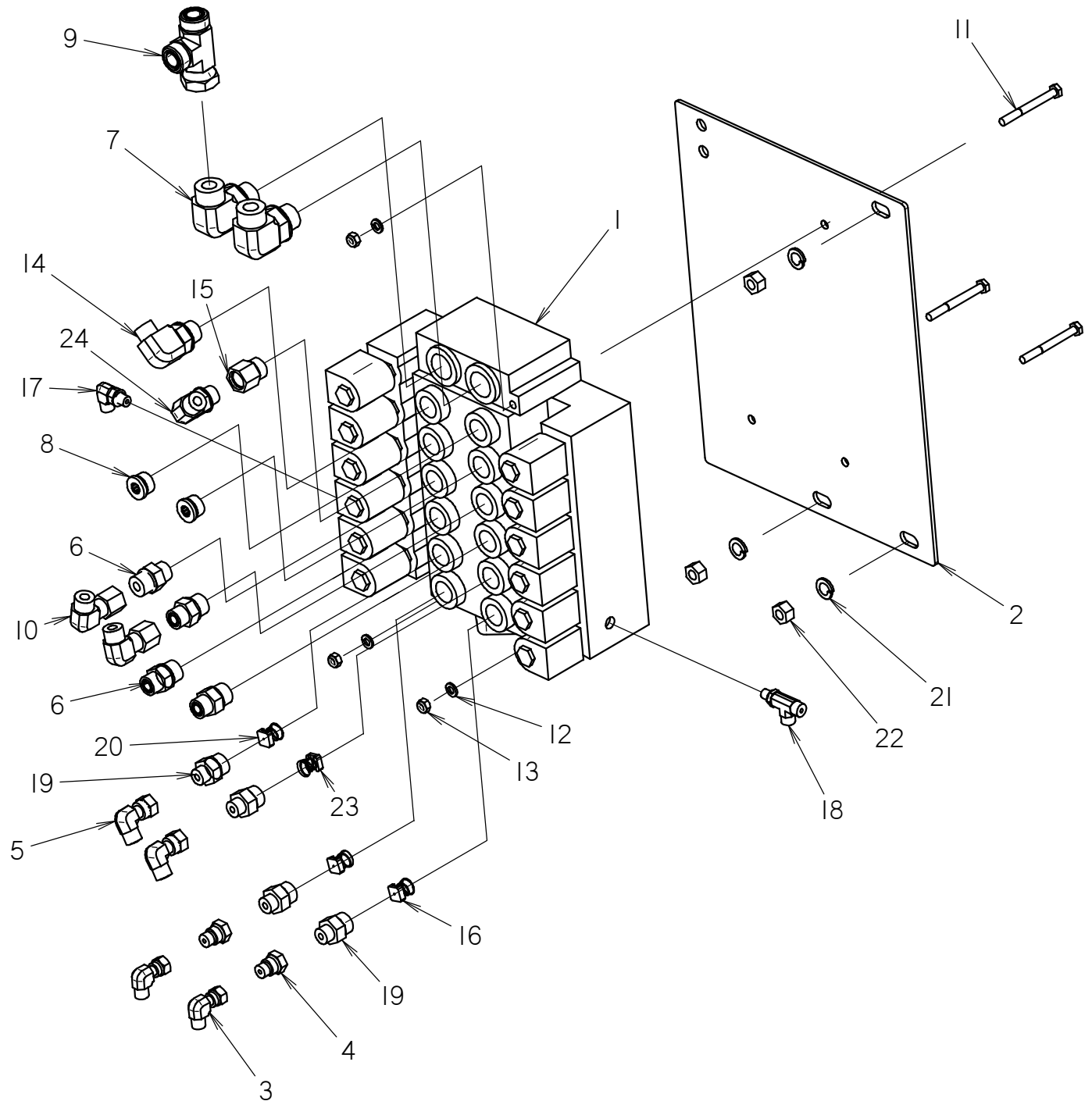
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	348-297	2	TRUNNION CAP	
2	105-070	4	LOCK WASHER (1/2")	
3	105-121	4	BOLT (1/2-NC X 1")	USE LOCTITE 242 OR EQUIVALENT; TORQUE TO 90 FT-LBS
4	499-259	1	EXTENSION BOOM CYLINDER	

NOT SHOWN:

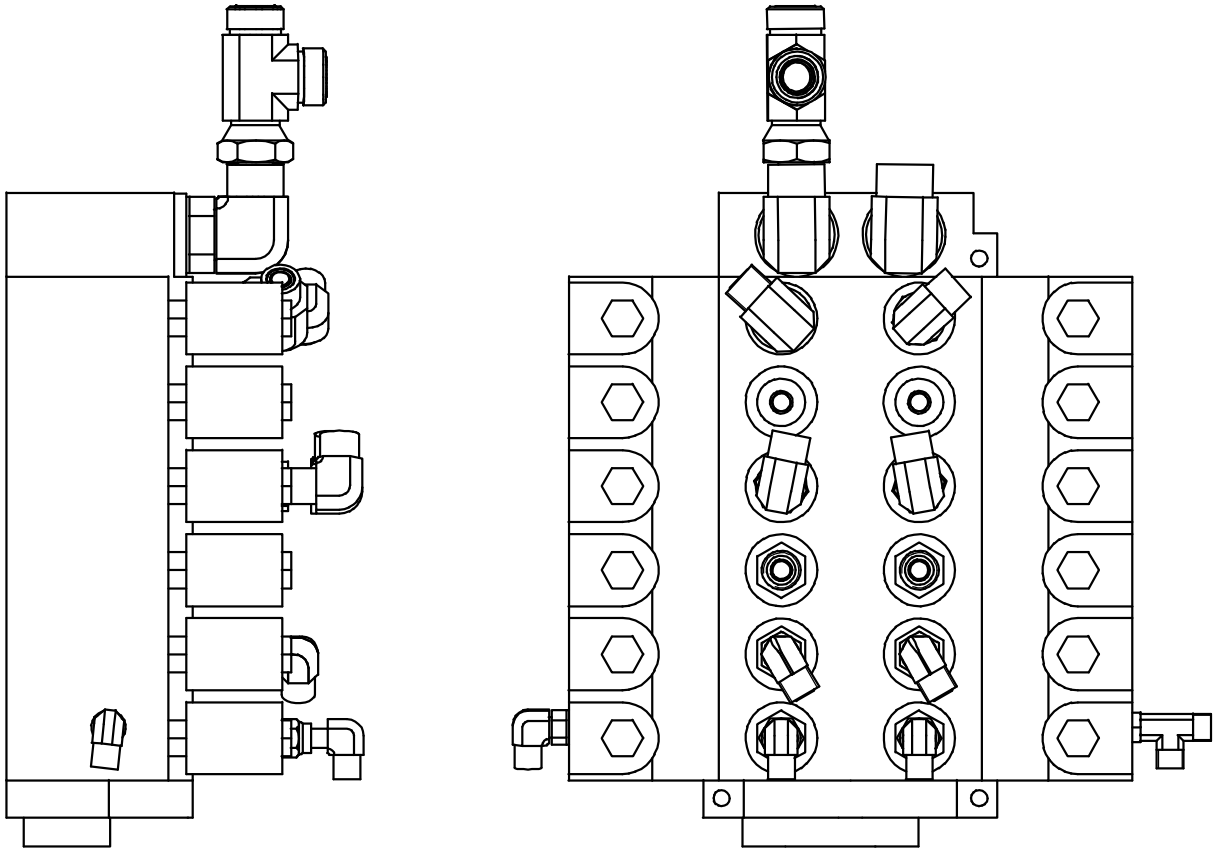
FOOTNOTES:

NOTE:

## CONTROL VALVE



# CONTROL VALVE



# CONTROL VALVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	499-237	1	HYD CONTROL VALVE	SEE NOT SHOWN FOR SERVICE PARTS.
2	370-073	1	VALVE MOUNT	
3	154-255	2	UNION (040-040FX90)	
4	154-373	2	REDUCER (040-060F)	
5	154-228	2	UNION (060-060FX90)	
6	154-279	4	CONNECTOR (080-10S)	
7	154-270	2	CONNECTOR (12S-12090)	
8	500-294	2	PLUG (10S)	
9	154-368	1	UN RUN TEE (120FX-120-120)	
10	154-256	2	UNION (080-080FX90)	
11	105-170	3	BOLT (5/16-NC X 3")	
12	105-091	3	LOCK WASHER (5/16")	
13	105-089	3	LOCKNUT (5/16-NC)	
14	154-322	1	CONNECTOR (080-10S90)	
15	155-193	1	REDUCER (10S-08SF)	
16	158-076	2	FLOW RESTRICTOR (053)	
17	154-252	1	CONNECTOR (04S-04090)	
18	154-316	1	RUN TEE (04S-040-040)	
19	150-1133	4	CONNECTOR (060-10S)	
20	158-282	1	FLOW RESTRICTOR (047)	
21	105-070	3	LOCK WASHER (1/2")	
22	105-021	3	NUT(1/2-NC)	
23	158-283	1	FLOW RESTRICTOR (062)	INSTALL WITH SPRING SIDE UP
24	154-235	1	CONNECTOR (08S-08090)	

**NOT SHOWN:**

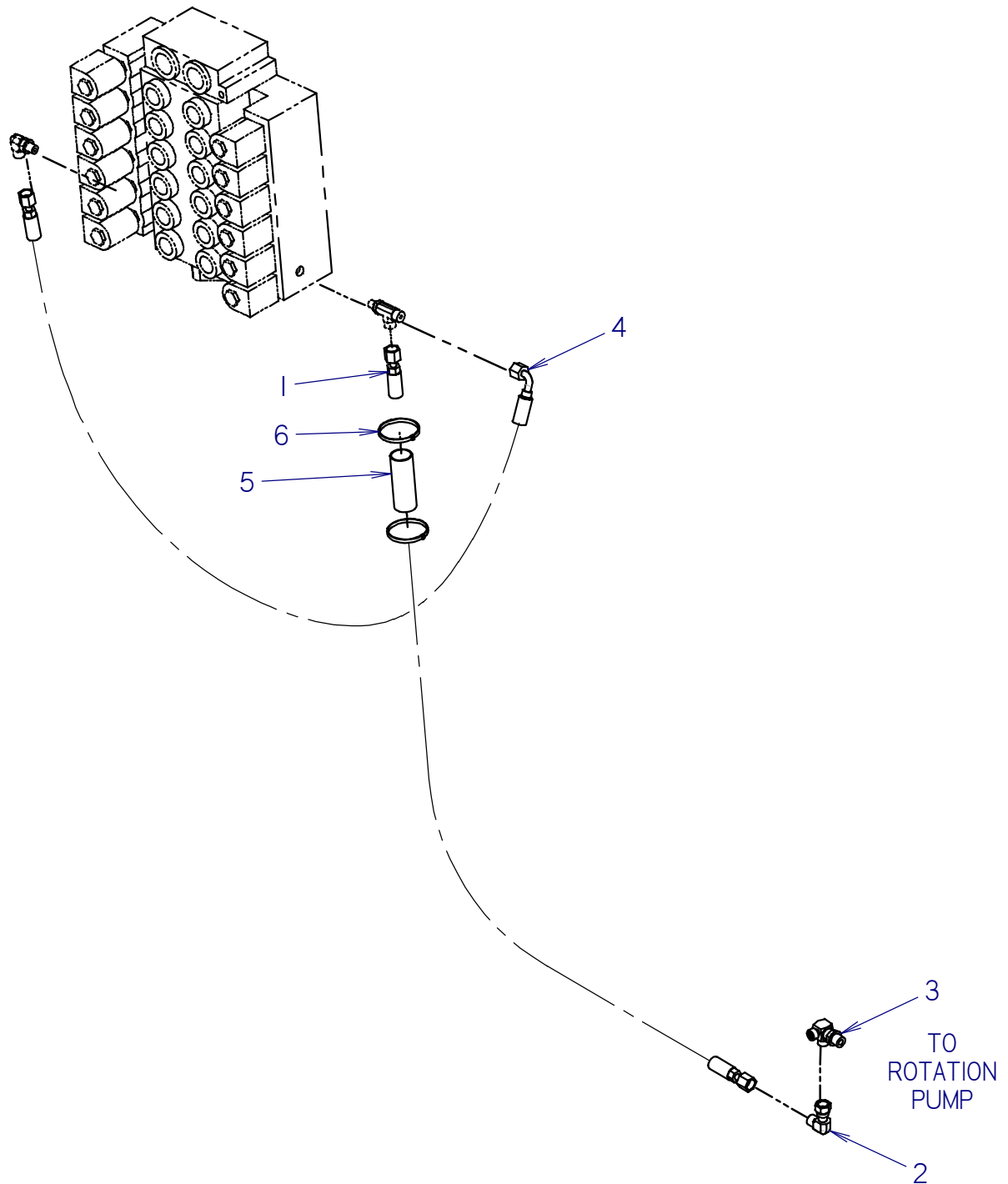
500-2034 SOLENOID ACTUATOR  
 500-2035 SOLENOID ACTUATOR  
 500-2036 SOLENOID ACTUATOR  
 500-2037 COIL KIT  
 500-2038 OUTLET COVER  
 499-150 BONNET SEAL KIT  
 500-581 PLUG SEAL KIT  
 500-2050 RELIEF VALVE

**FOOTNOTES:**
**NOTE:**





# CONTROL VALVE CHARGE HYDRAULICS



# CONTROL VALVE CHARGE HYDRAULICS

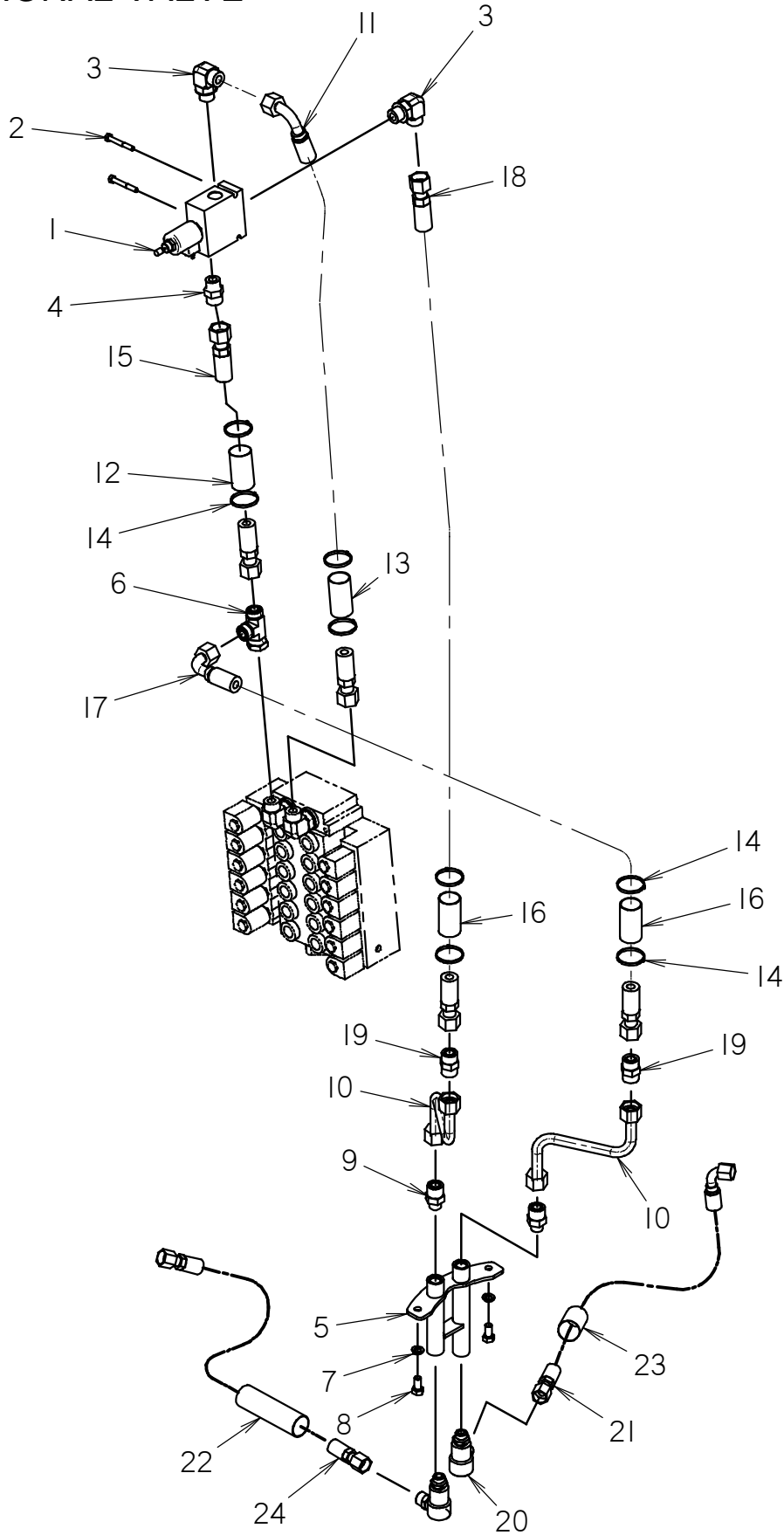
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	515-639	1	HOSE (040FX-140"-3000)	
2	154-255	1	UNION (040-040FX90)	
3	154-230	1	BRANCH TEE (06S-040-040)	INSTALL IN ROTATION PUMP
4	154-743	1	HOSE (040FX90S-23"-3000)	
5	117-203	1	ABRASION SLEEVE (1.00" X 143")	
6	110-030	2	CABLE TIE (1/16" TO 4")	

NOT SHOWN:

FOOTNOTES:

NOTE:

# PROPORTIONAL VALVE



# PROPORTIONAL VALVE

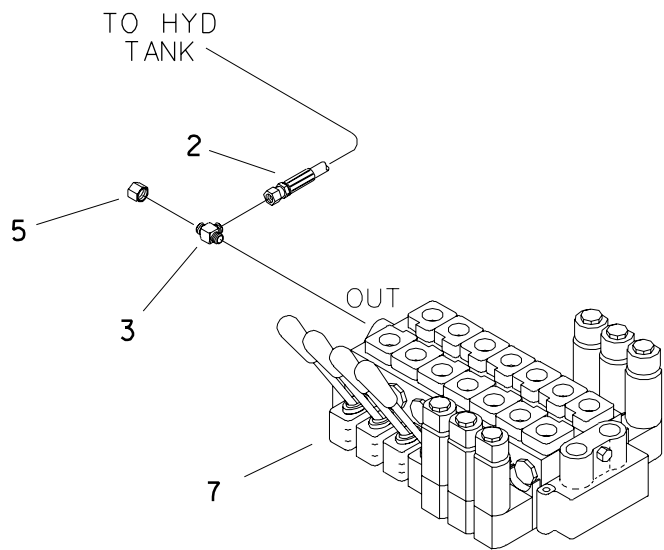
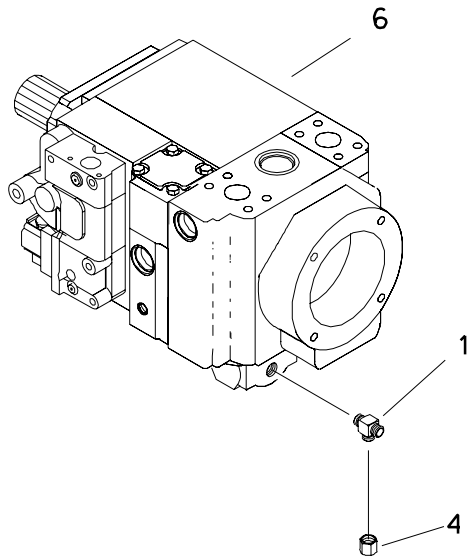
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	499-267	1	PROPORTIONAL VALVE	
2	105-178	2	BOLT (5/16-NC X 2-1/2", GD8)	
3	154-270	2	CONNECTOR (I2S-I2090)	
4	154-269	1	CONNECTOR (I2S-I20)	
5	153-552	1	MANIFOLD	
6	154-368	1	UN RUN TEE (I20FX-I20-I20)	
7	105-070	2	LOCK WASHER (1/2")	
8	105-121	2	BOLT (1/2-NC X 1")	
9	154-247	2	CONNECTOR (I10S-I20)	
10	150-1021	2	HYDRAULIC LINE (-I2)	
11	159-782	1	HOSE (I20FX90S-24"-4000)	
12	115-777	1	ABRASION SLEEVE (1.59" X 15")	
13	115-811	1	ABRASION SLEEVE (1.59" X 20")	
14	110-030	8	CABLE TIE (1/16" TO 4")	
15	150-1032	1	HOSE (I20FX-15"-3000)	
16	117-720	2	ABRASION SLEEVE (1.59" X 48")	
17	150-1033	1	HOSE (I20FX90L-37"-3000)	
18	150-1034	1	HOSE (I20FX-51"-3000)	
19	154-431	2	CONNECTOR (I20-I20)	
20	153-772	2	HYD SWIVEL	
21	515-082	1	HOSE (I100FX90S-60"-3000)	
22	117-204	1	ABRASION SLEEVE (1.59" X 108")	
23	115-755	1	ABRASION SLEEVE (1.59" X 60")	
24	515-202	1	HOSE (I100FX-106"-3000)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# HOIST HYDRAULICS WITHOUT HOIST



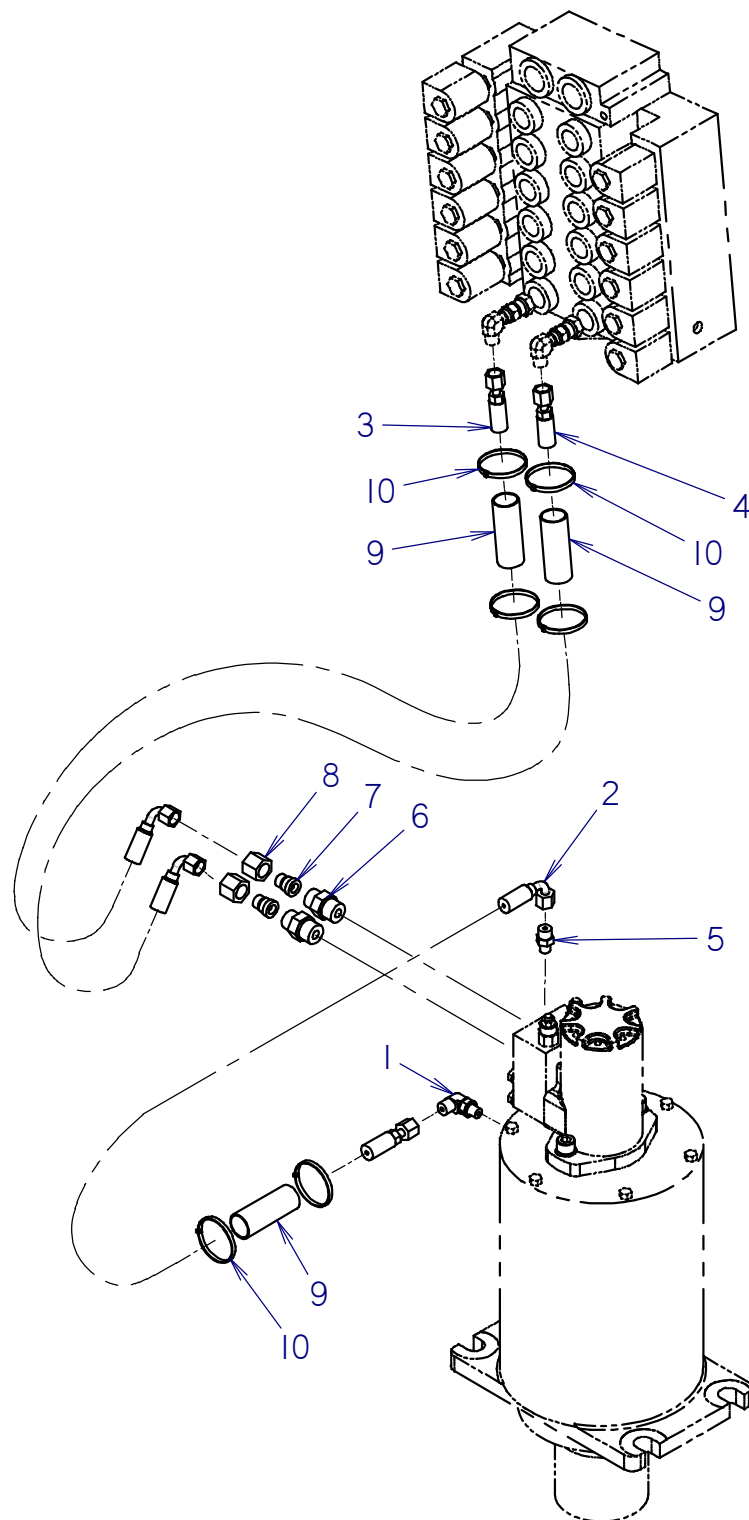
# HOIST HYDRAULICS WITHOUT HOIST

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-230	-	BRANCH TEE (06S-040-040)	
2.	515-259	-	HOSE (100FX45-14"-3000)	
3.	154-370	-	RUN TEE (12S-100-100)	
4.	154-296	1	CAP (040F)	
5.	154-324	1	CAP (100F)	
6.	149-901	-	HYDRAULIC PUMP (130)	
7.	516-049	-	HYD CONTROL VALVE (7-SPOOL)	

FOOTNOTES

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

## SWING DRIVE HYDRAULICS





# SWING DRIVE HYDRAULICS

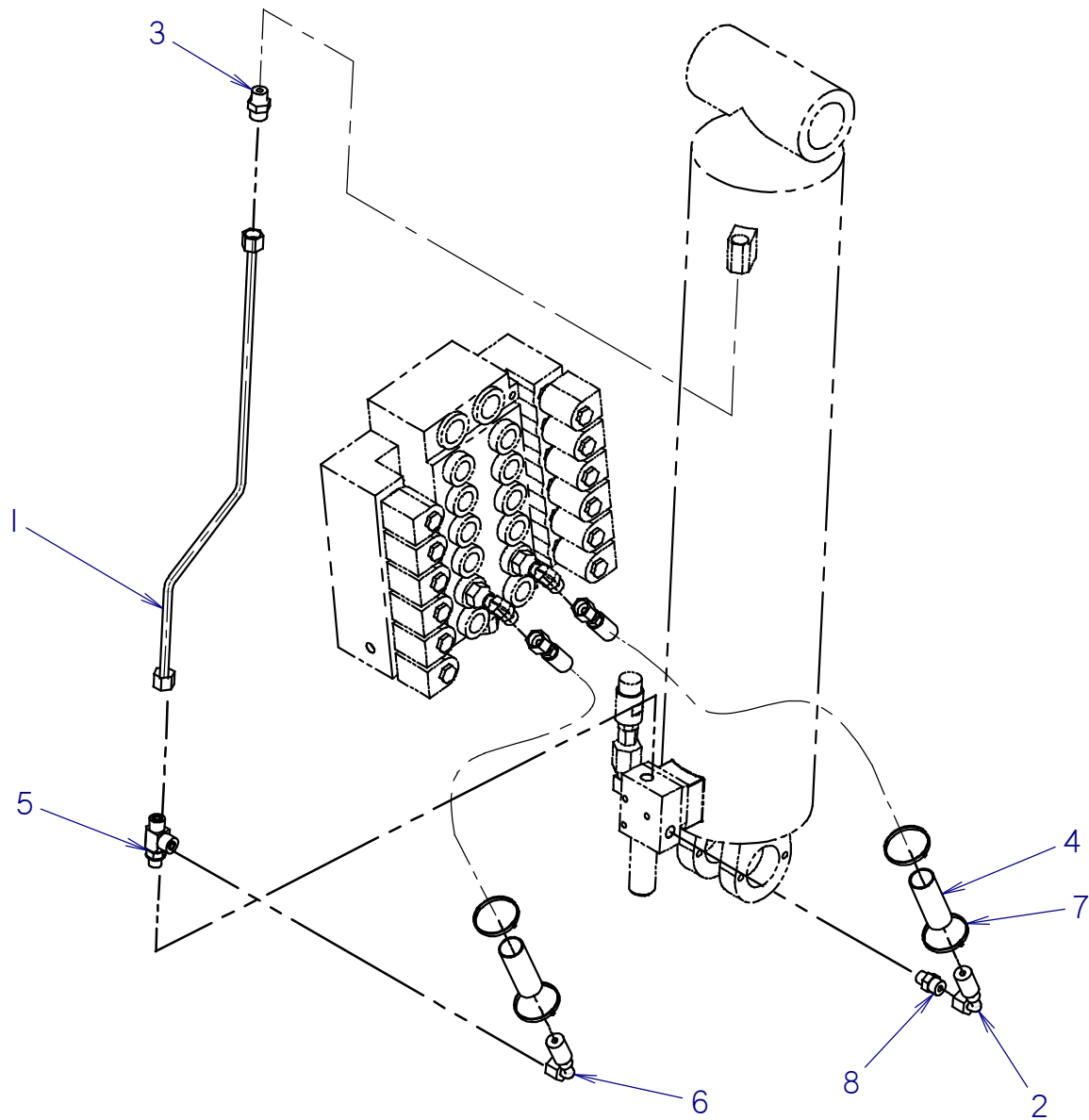
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	154-252	1	CONNECTOR (04S-04090)	
2	150-1029	1	HOSE (040FX90S-16"-6000) - NEW PART	
3	150-1029	1	HOSE (040FX90S-16"-6000) - NEW PART	
4	150-1029	1	HOSE (040FX90S-16"-6000) - NEW PART	
5	154-278	1	CONNECTOR (04S-040)	
6	154-279	2	CONNECTOR (080-10S)	
7	154-248	2	REDUCER STEM (040)	
8	154-272	2	REDUCER NUT (080F)	
9	117-278	3	ABRASION SLEEVE (1.00" X 14")	
10	110-030	6	CABLE TIE (1/16" TO 4")	

NOT SHOWN:

FOOTNOTES:

NOTE:

## LIFT CYLINDER HYDRAULICS



# LIFT CYLINDER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	159-997	1	HYDRAULIC LINE (1-08)	
2	515-188	1	HOSE (060FX90S-23"-3000)	
3	154-222	1	CONNECTOR (060-08S)	
4	117-672	2	ABRASION SLEEVE (1.00" X 20")	
5	154-345	1	RUN TEE (06S-060-060)	
6	515-188	1	HOSE (060FX90S-23"-3000)	
7	110-030	4	CABLE TIE (1/16" TO 4")	
8	154-221	1	CONNECTOR (06S-060)	

NOT SHOWN:

FOOTNOTES:

NOTE:



## EXTENSION CYLINDER HYDRAULICS

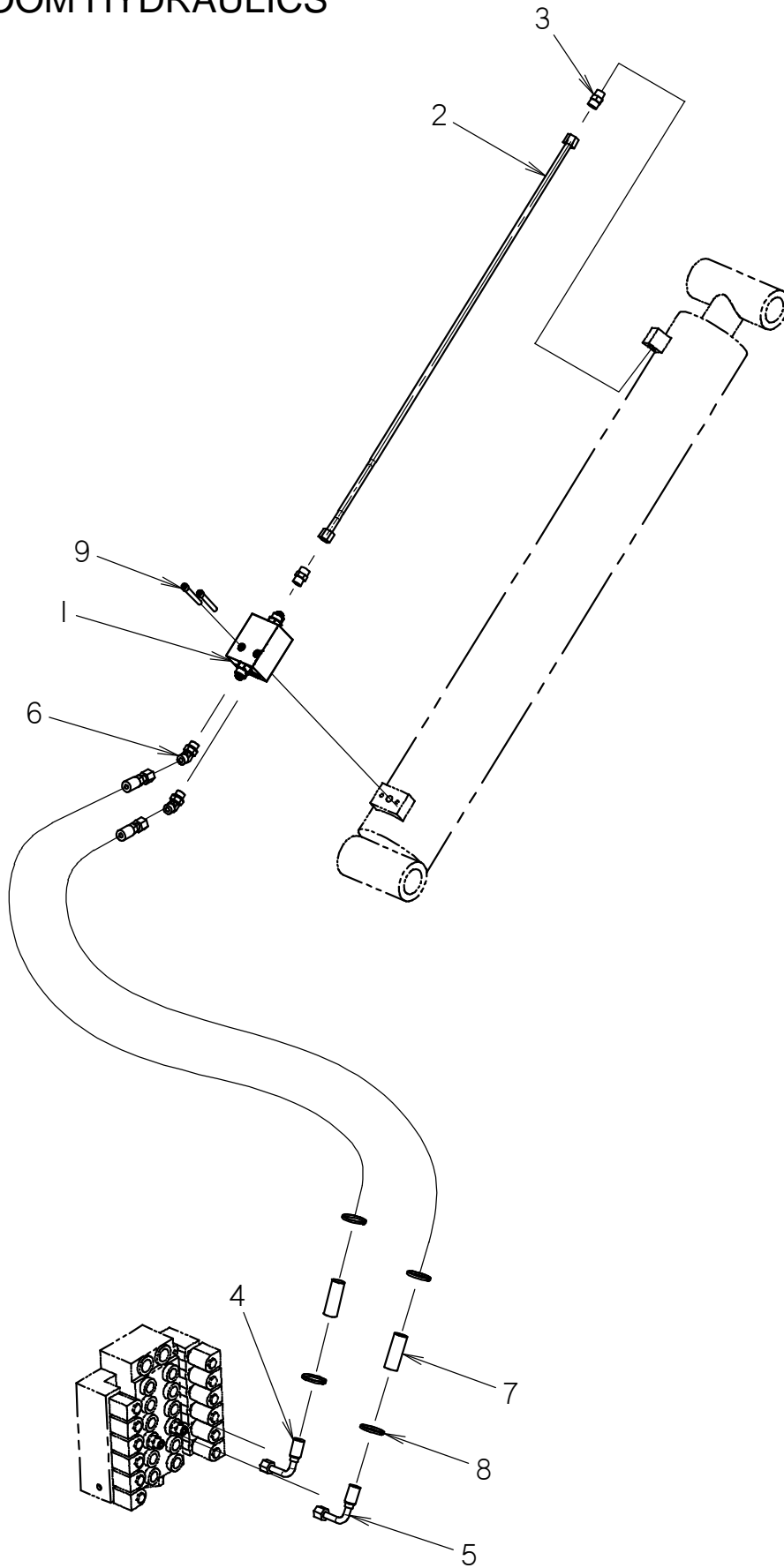
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	154-256	2	UNION (080-080FX90)	
2	516-118	1	COUNTERBALANCE VALVE	
3	159-995	1	HYDRAULIC LINE (1-08)	
4	154-233	4	CONNECTOR (08S-080)	
5	150-1030	1	HOSE (080FX90S-155"-4000)	CONNECT TO V1 PORT ON COUNTERBALANCE VALVE
6	150-1030	1	HOSE (080FX90S-155"-4000)	CONNECT TO V2 PORT ON COUNTERBALANCE VALVE
7	116-640	2	ABRASION SLEEVE (1.59" X 150")	
8	110-030	4	CABLE TIE (1/16" TO 4")	
9	105-1064	2	BOLT (3/8-NC X 2-3/4", SOC)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# OUTER BOOM HYDRAULICS



# OUTER BOOM HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	516-118	1	COUNTERBALANCE VALVE	SEE FOOTNOTE 1
2	159-996	1	HYDRAULIC LINE (-08)	
3	154-233	2	CONNECTOR (08S-080)	
4	159-853	1	HOSE (080FX90L-64"-4000)	
5	159-853	1	HOSE (080FX90L-64"-4000)	
6	154-284	2	CONNECTOR (08S-08045)	
7	117-693	2	ABRASION SLEEVE (1.00" X 60")	
8	110-030	4	CABLE TIE (1/16" TO 4")	
9	105-1064	2	BOLT (3/8-NC X 2-3/4", SOC)	

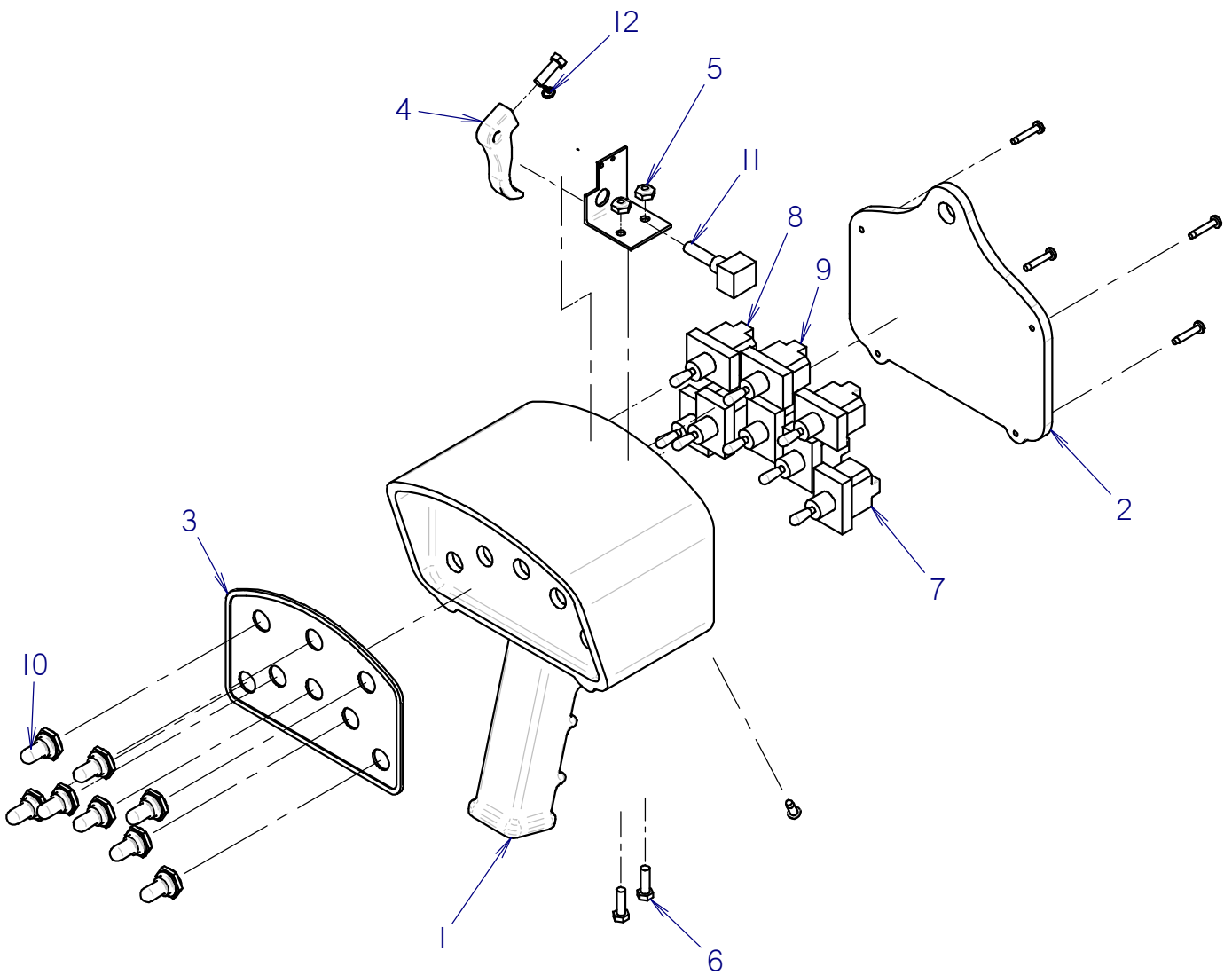
NOT SHOWN:

FOOTNOTES:

1. V1 INSIDE / V2 OUTSIDE

NOTE:

## PENDANT





# PENDANT

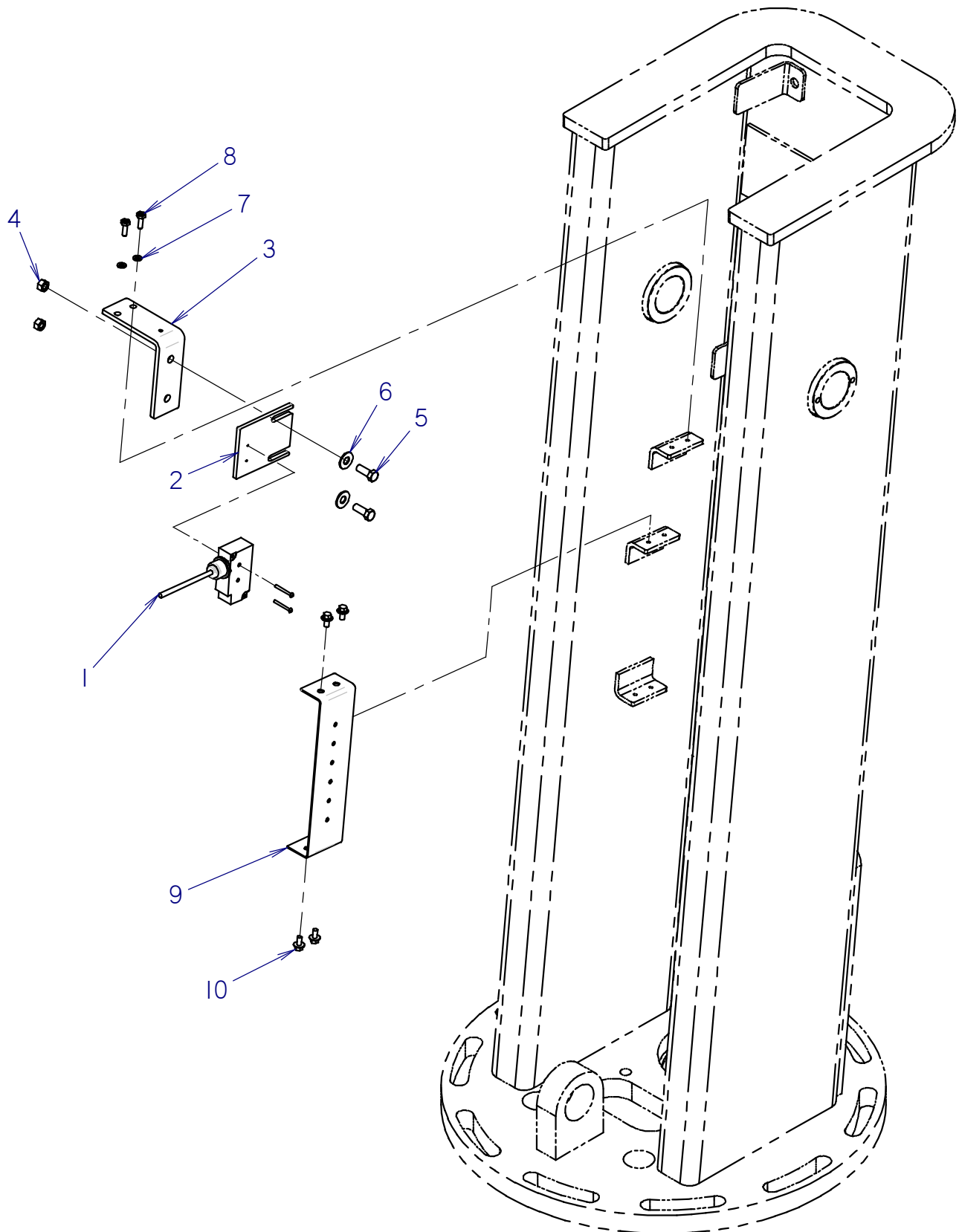
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	164-034	1	CASE PENDANT	
2	325-344	1	PENDANT BACK PLATE	
3	700-958	1	PENDANT - 8 FUNCTION	
4	499-431	1	TRIGGER, PENDANT	
5	106-048	2	LOCKNUT (#10-24)	
6	107-781	3	HEX SCREW (#10-24 X 5/8')	
7	499-271	6	TOGGLE SWITCH (DPDT)	
8	213-386	1	TOGGLE SWITCH (ON/OFF)	
9	213-387	1	TOGGLE SWITCH (SPDT)	
10	499-273	8	TOGGLE BOOT	
11	217-406	1	POTENTIOMETER	
12	117-206	1	EXTENSION SPRING	

NOT SHOWN:

FOOTNOTES:

NOTE:

## LIMIT SWITCH



# LIMIT SWITCH

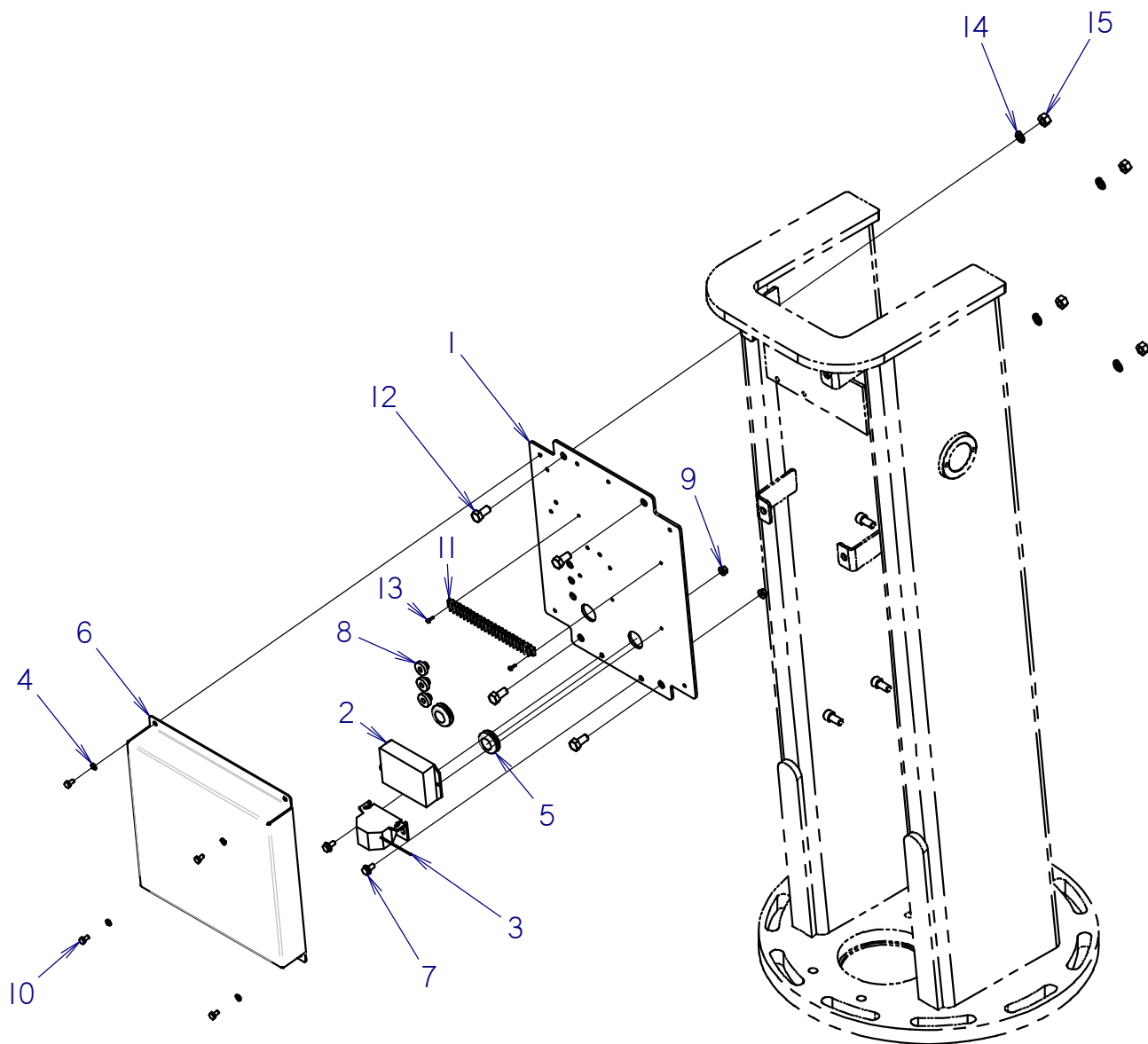
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	213-384	1	LIMIT SWITCH	
2	325-342	1	SWITCH MOUNT	
3	325-341	1	SWITCH MOUNT	
4	105-053	2	NUT (3/8 NC) HEX	
5	105-031	2	BOLT (3/8-NC X 1")	
6	105-118	2	WASHER (3/8")	
7	105-079	2	LOCK WASHER (1/4)	
8	105-865	2	BOLT (1/4-NC X 3/4", GD8)	
9	325-340	1	BRACKET, WEATHER PACK	
10	105-836	4	FLG LK BOLT (1/4-NC X 1/2")	

NOT SHOWN:

FOOTNOTES:

NOTE:

## ELECTRICAL COMPONENTS



# ELECTRICAL COMPONENTS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	349-589	1	PROPORTIONAL MOUNT	
2	213-316	1	PROPORTIONAL AMPLIFIER	
3	214-416	1		
4	105-079	4	LOCK WASHER (1/4)	
5	115-355	2	GROMMET (1-3/8")	
6	329-592	1	COVER	
7	106-380	2	FLG LK SCREW (M8-1.25 X 16MM)	
8	116-325	3	GROMMET (.362")	
9	106-386	2	FLG LOCKNUT (M8-1.25)	
10	105-174	4	BOLT (1/4-NC X 1/2")	
11	213-314	1	TERMINAL BLOCK, 22 STA	
12	105-121	4	BOLT (1/2-NC X 1")	
13	106-367	2	SCREW (#6-32 X 1/2" PLPS SS)	
14	105-070	4	LOCK WASHER (1/2")	
15	105-021	4	NUT(1/2-NC)	

NOT SHOWN:

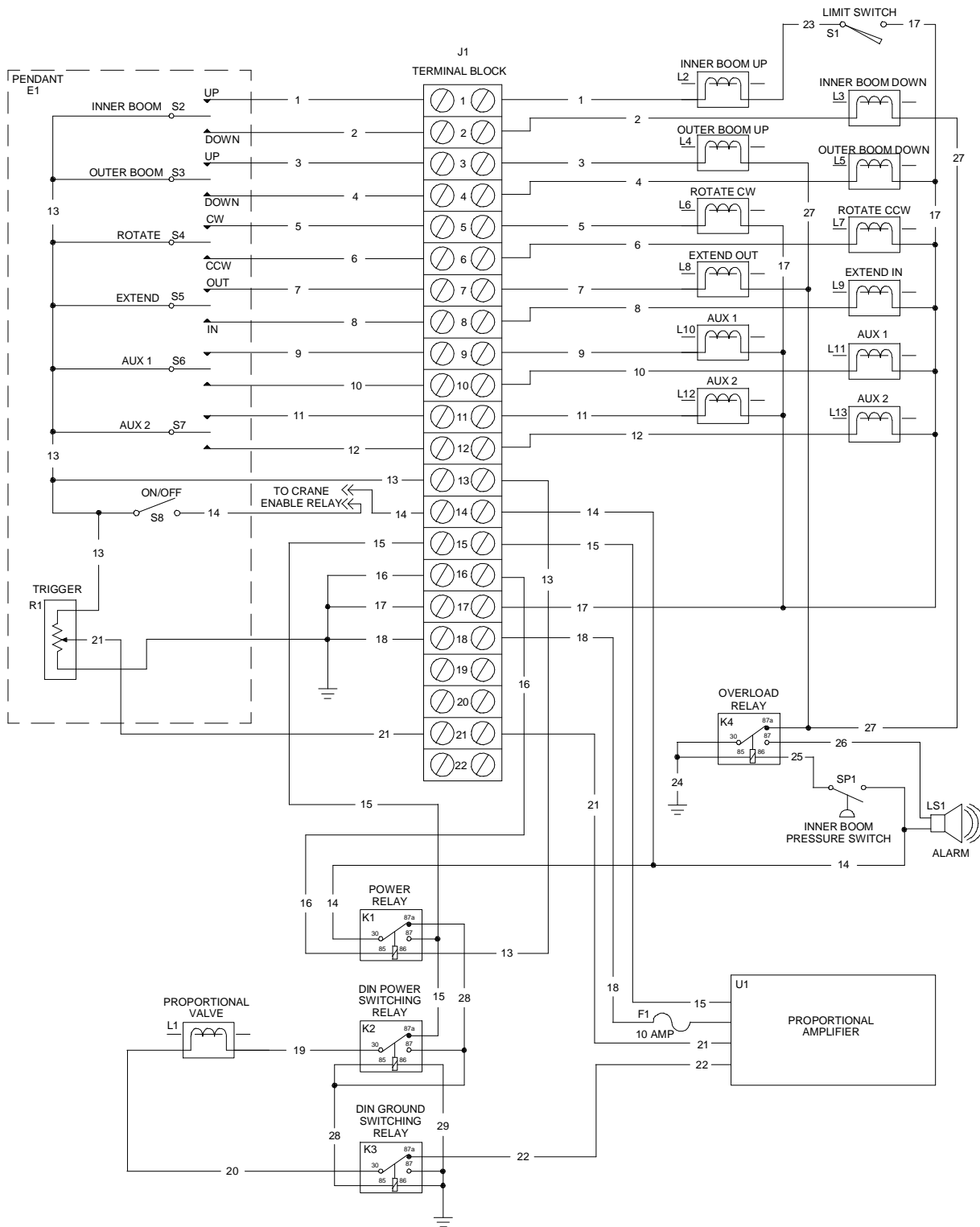
FOOTNOTES:

NOTE:

# ELECTRICAL SCHEMATIC

## HOIST

### JT8020/JT/AT100M1

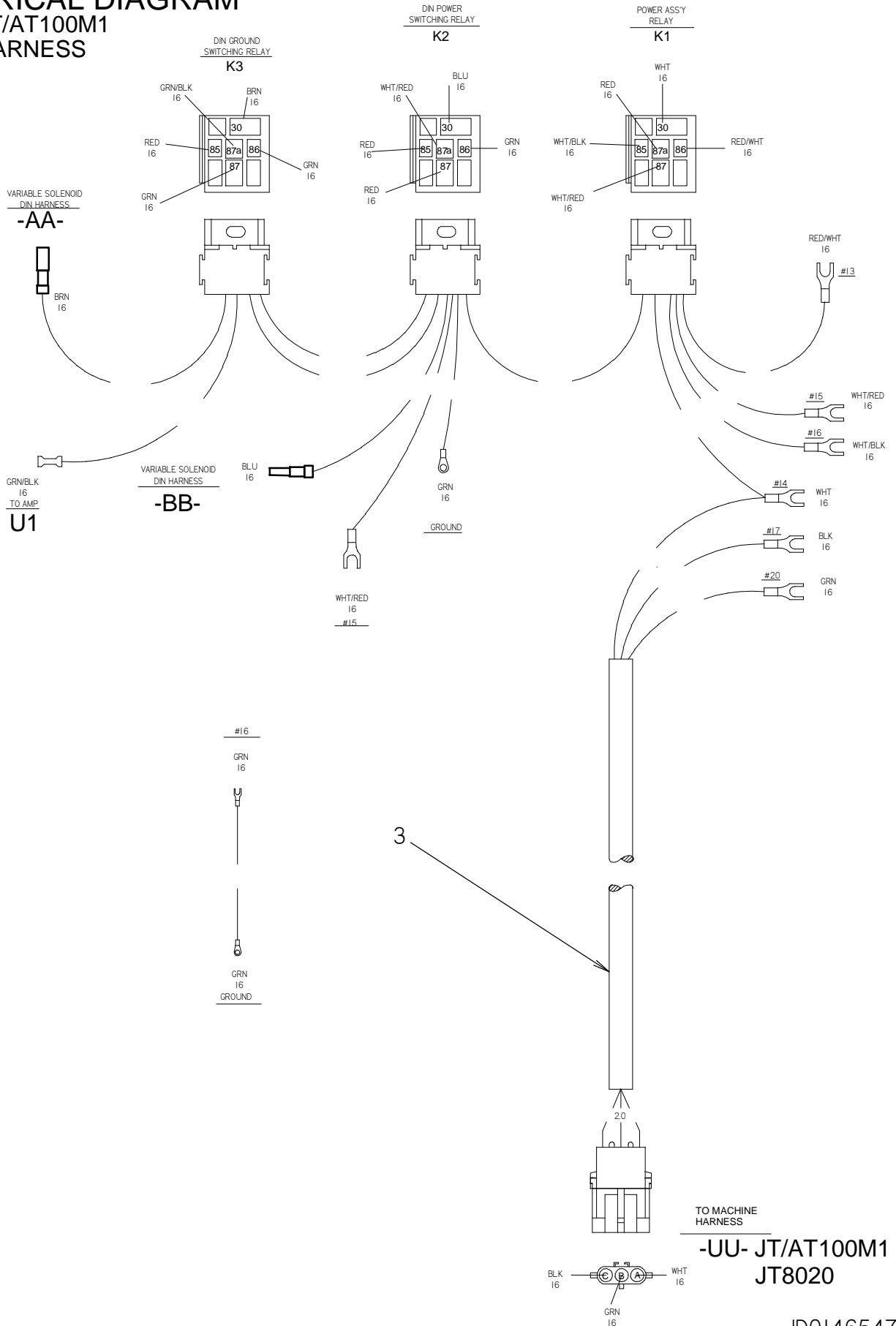




# ELECTRICAL DIAGRAM

## JT8020/JT/AT100M1

### RELAY HARNESS



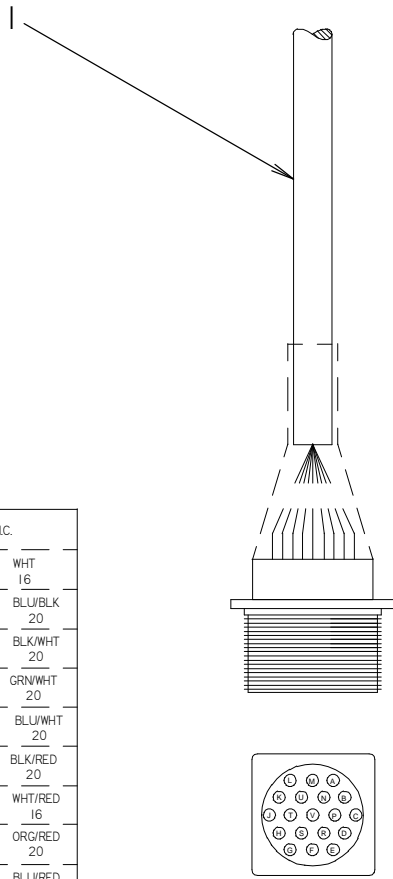
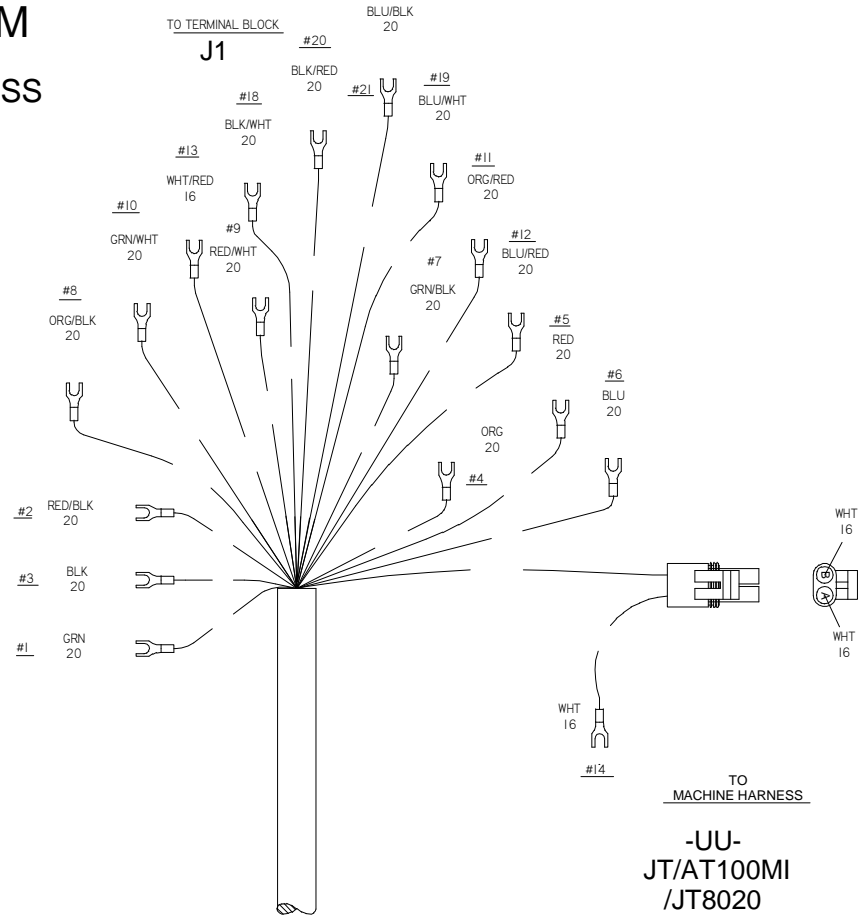




# ELECTRICAL DIAGRAM

## JT8020/JT/AT100M1

### PENDANT TO PANEL HARNESS



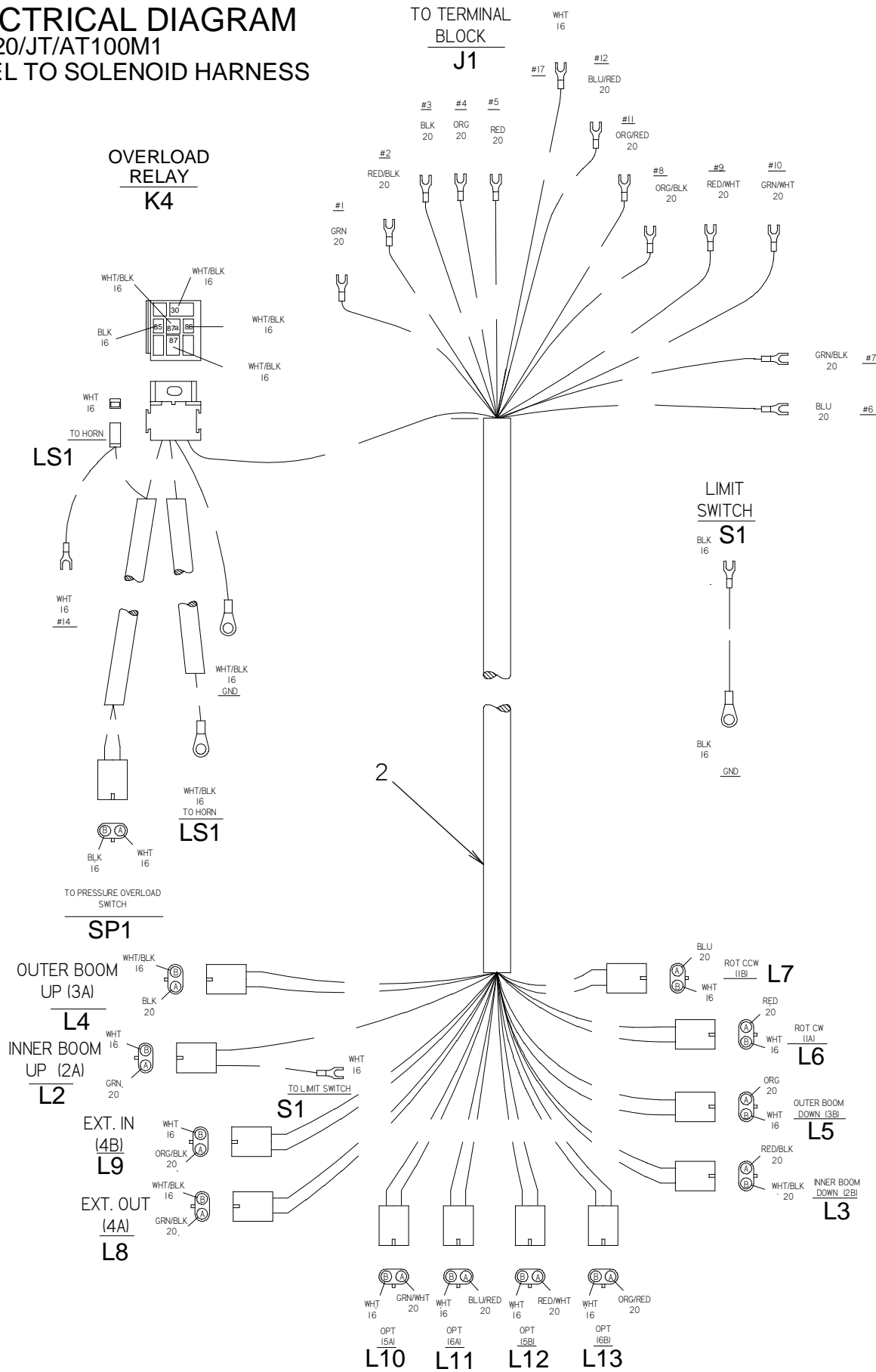
A	RED 20	K	NC.
B	GRN 20	L	WHT 16
C	ORG 20	M	BLU/BLK 20
D	RED/WHT 20	N	BLK/WHT 20
E	BLK 20	P	GRN/WHT 20
F	RED/BLK 20	R	BLU/WHT 20
G	BLU 20	S	BLK/RED 20
H	ORG/BLK 20	T	WHT/RED 16
J	GRN/BLK 20	U	ORG/RED 20
		V	BLU/RED 20



# ELECTRICAL DIAGRAM

## JT8020/JT/AT100M1

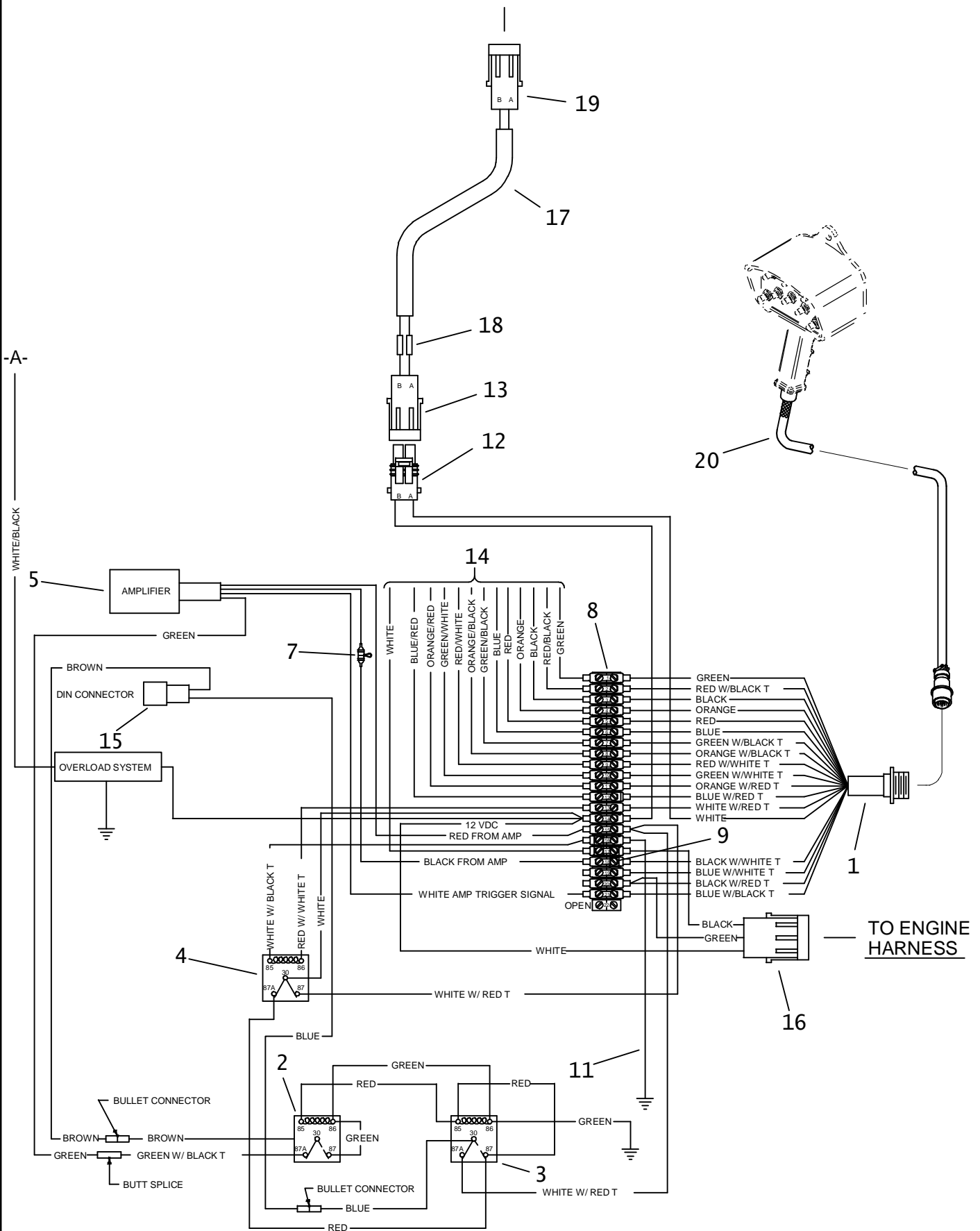
### PANEL TO SOLENOID HARNESS



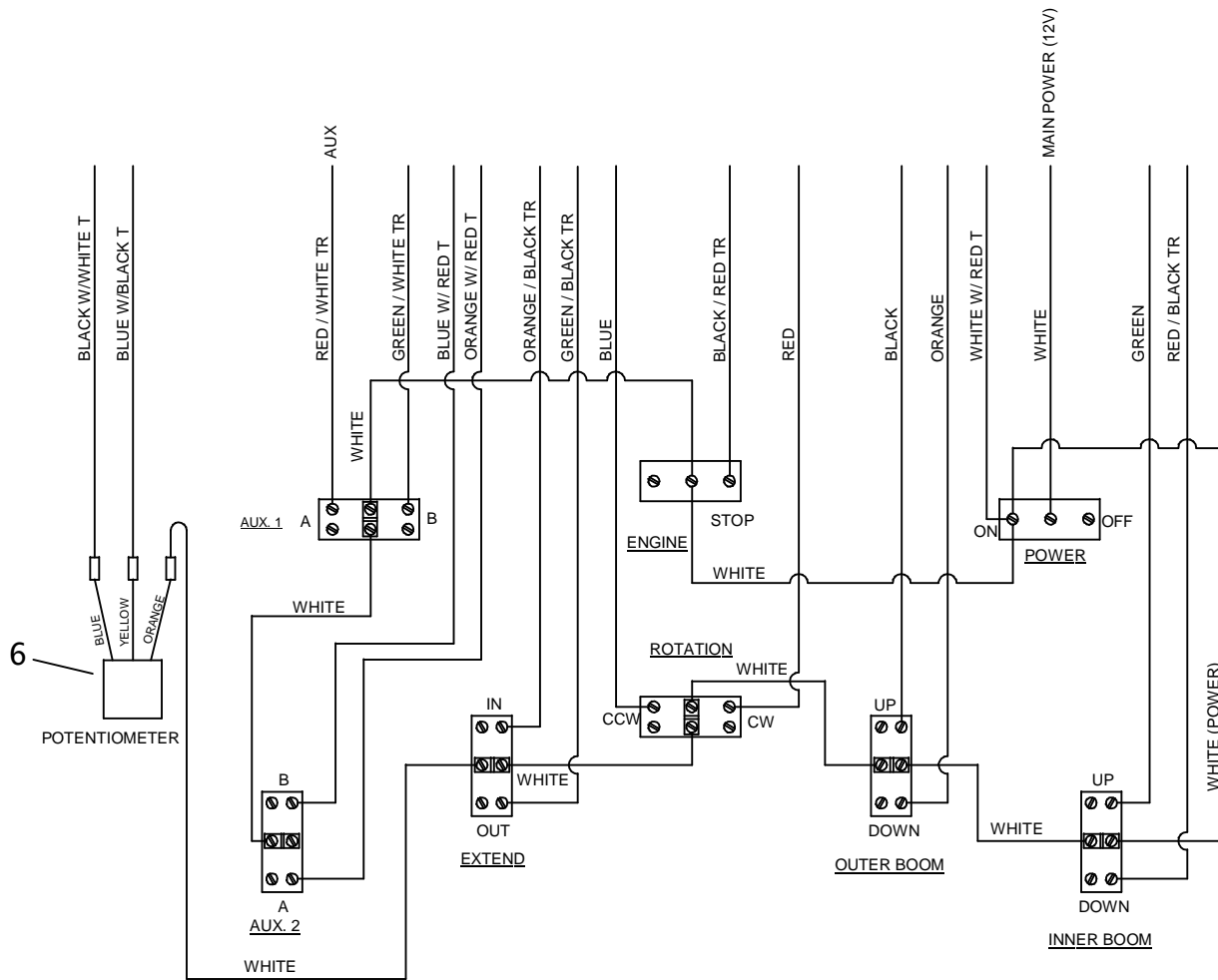


# ELECTRICAL DIAGRAM

TO ENGINE HARNESS



# ELECTRICAL DIAGRAM

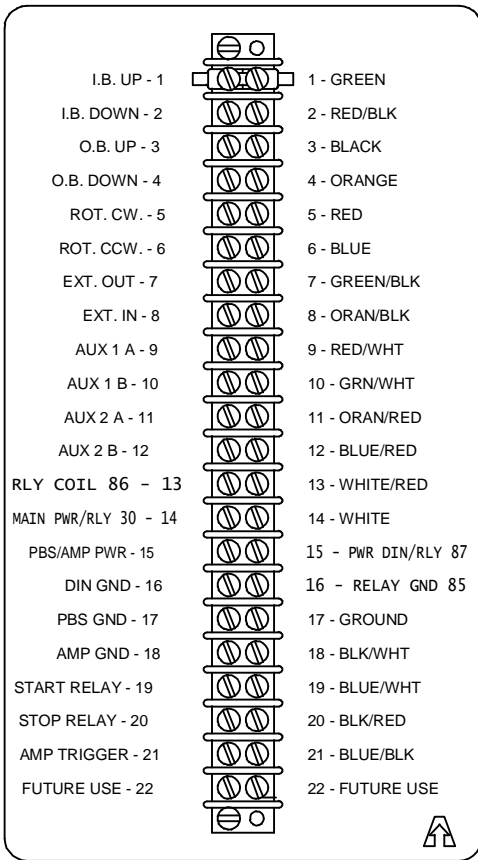


PROPORTIONAL PENDANT

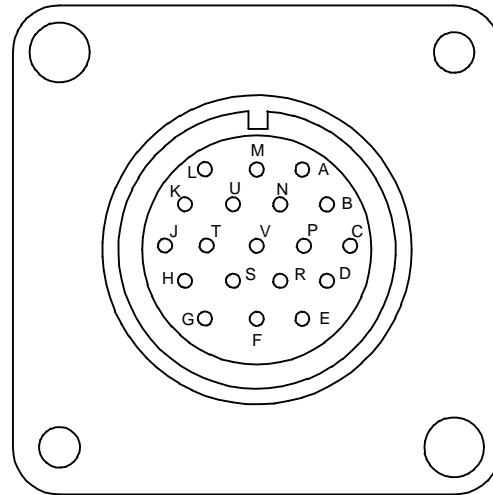




# ELECTRICAL DIAGRAM



22 STATION TERMINAL BLOCK



WIRING GUIDE, RECEPTACLE

- |                    |                   |
|--------------------|-------------------|
| A-RED              | L-WHITE           |
| B-GREEN            | M-BLUE W/BLACK T  |
| C-ORANGE           | N-BLACK W/WHITE T |
| D-RED W/WHITE T    | P-GREEN W/WHITE T |
| E-BLACK            | R-BLUE W/WHITE T  |
| F-RED W/BLACK T    | S-BLACK W/RED T   |
| G-BLUE             | T-WHITE W/RED T   |
| H-ORANGE W/BLACK T | U-ORANGE W/RED T  |
| J-GREEN W/BLACK T  | V-BLUE W/RED T    |
| K-WHITE W/BLACK T  |                   |

# ELECTRICAL DIAGRAM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	213-391	-	RECEPTACLE	
2.	217-826	-	RELAY (GROUND SWITCHING)	
3.	217-826	-	RELAY (POWER SWITCHING)	
4.	217-826	-	RELAY (POWER)	
5.	217-405	-	PROPORTIONAL AMPLIFIER	
6.	217-406	-	POTENTIOMETER	
7.	217-810	-	FUSE (10 AMP)	
8.	213-314	-	TERMINAL BLOCK 22 STATION	
9.	N/A	-	JUMPER	
10.	499-237	-	HYD CONTROL VALVE	
11.	213-393	-	RELAY HARNESS	
12.	214-047	-	WEATHER PACK (2-WAY FEMALE)	
13.	214-103	-	WEATHER PACK (2-WAY MALE)	
14.	213-392	-	WIRING HARNESS (SOLENOIDS)	
15.	213-296	-	DIN CONNECTOR	
16.	215-224	1	3-WAY WP MALE CONNECTOR	
17.	215-734	AR	CABLE (16 GA, 2-CONDUCTOR)	USE 1 @ 12'
18.	215-478	2	BUTT CONNECTOR (14-16 GA)	
19.	214-103	1	2-WAY MALE CONNECTOR	
20.	213-389	1	PENDANT ASSEMBLY	
	213-394	1	PENDANT CABLE	

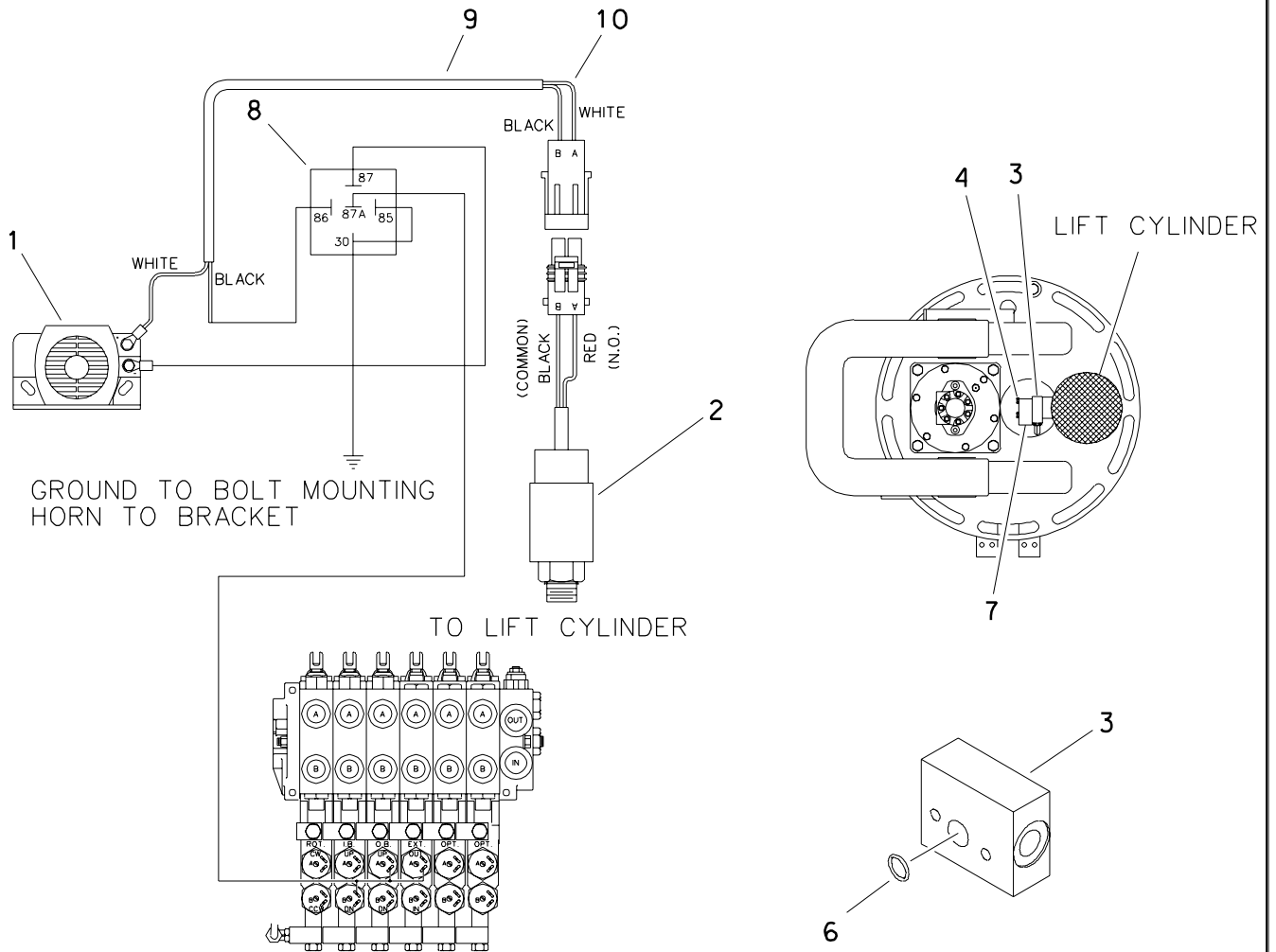
NOT SHOWN:

FOOTNOTES:

NOTE:

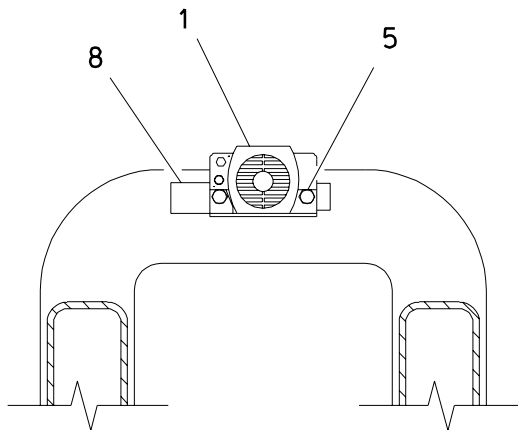


# OVERLOAD ALERT

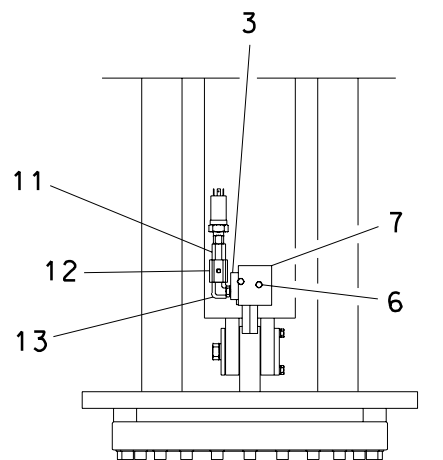


WIRE HARNESS & GROUNDS NOT USED IN OVERLOAD PROTECTION CIRCUIT REMOVED FOR CLARITY.

## WIRING DETAIL



HORN MOUNTING DETAIL  
UNDERSIDE OF TOP OF PEDESTAL



PRESSURE SWITCH DETAIL  
LIFT CYLINDER

# OVERLOAD ALERT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-610	-	HORN ALERT	CRANE
2.	217-943	-	PRESSURE SWITCH	CRANE
3.	516-111	-	VALVE, SENSE	CRANE
4.	105-224	-	BOLT (1/4-NC X 2-1/2")	
5.	105-197	-	BOLT (1/4-NC X 1")	
	105-152	-	NUT (1/4-NF)	
	105-095	-	WASHER (1/4")	
	105-079	-	LOCK WASHER (1/4")	
6.	157-743	-	O-RING SEAL	CRANE
7.	516-112	-	COUNTERBALANCE VALVE	
8.	217-944	-	RELAY, OVERLOAD	CRANE
9.	214-461	-	LODM. (WIRE ASS'Y SLEEVE)	
10.	214-462	-	HORN ALERT WIRE	
11.	153-201	-	ADAPTER	
12.	153-202	-	ADJUSTABLE GAUGE SNUBBER	
13.	153-203	-	ELBOW	

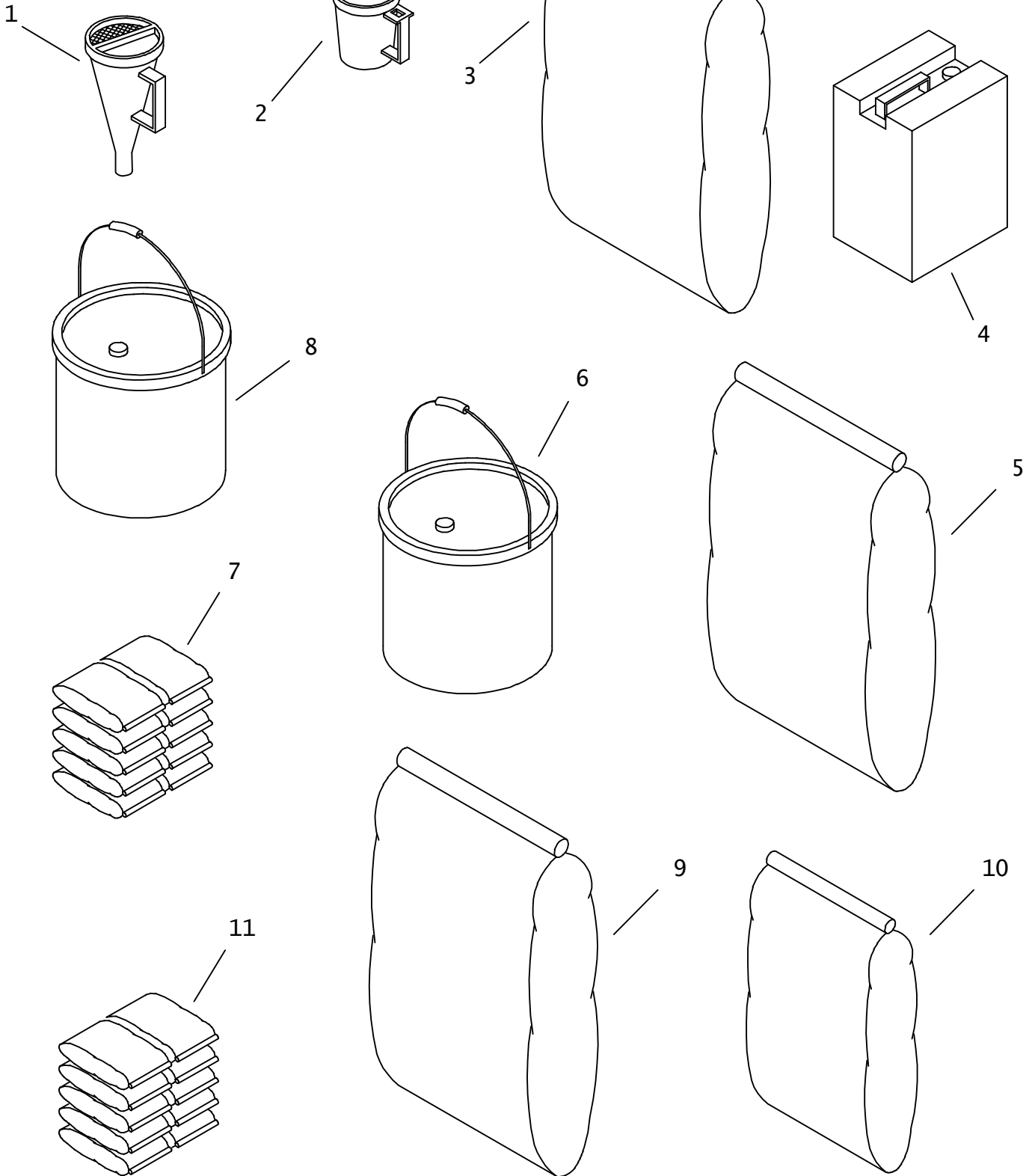
FOOTNOTES

REMOVE METAL TAB FROM HORN COVERING GROUND TO ISOLATE GROUND.



# **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)	

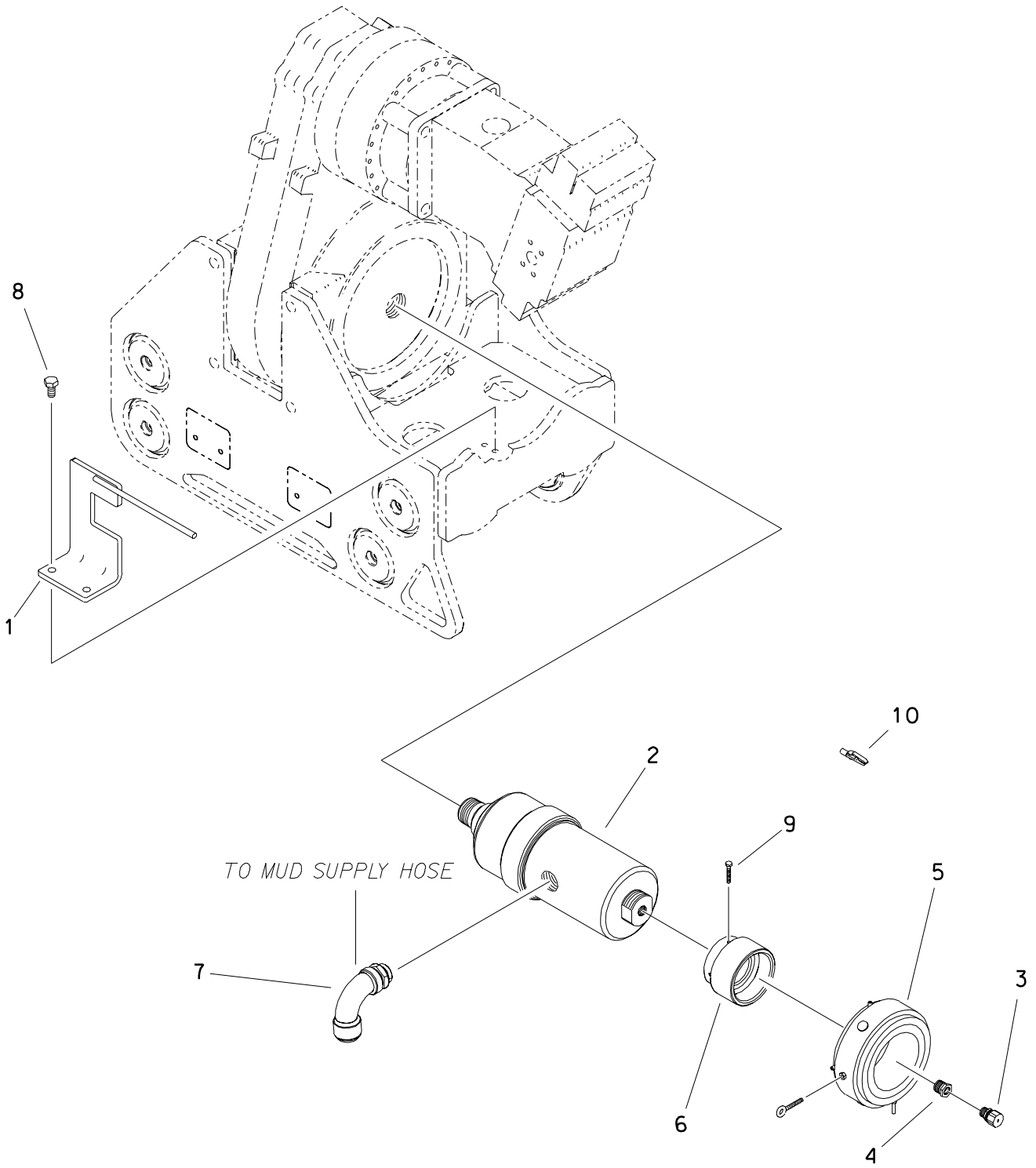
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191-158	1	DRILLING FLUID TEST KIT
259-487	1	SHEAROMETER

FOOTNOTES:

NOTE:

## WIRELINE KIT

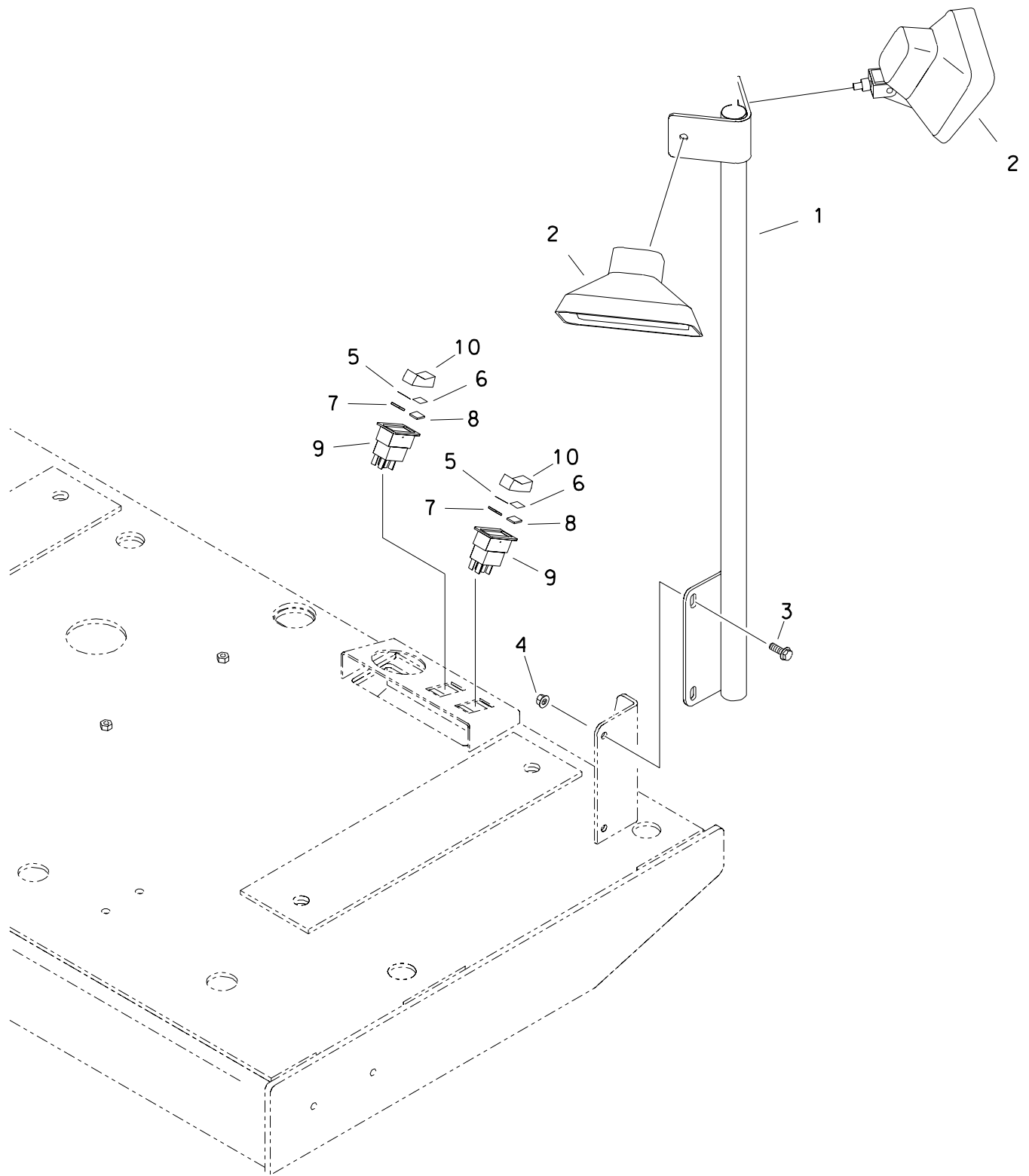


# WIRELINE KIT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	101-059	-	WIRELINE KIT REAR ENTRY	
1.	308-450	1	TORQUE BRACKET	
2.	149-592	1	WATER SWIVEL (WIRELINE)	
	190-821	2	SEAL KIT	
3.	358-855	1	PACK-OFF FITTING (.125 - .187)	
4.	115-156	1	REDUCER (08N-06NF)	
5.	214-548	1	COLLECTOR RING	
6.	350-630	1	COIL MOUNT	
7.	153-150	1	CONNECTOR (24S-32J90)	
8.	106-559	2	SCREW (M12-1.75 X 25mm)	
9.	105-688	3	SCREW (M6-1.00 X 35mm)	
10.	105-693	1	ALLIGATOR CLIP .312" X 2.343"	

FOOTNOTES

WORK LIGHTS  
BEGINS WITH S/N: 2W0856



# WORK LIGHTS

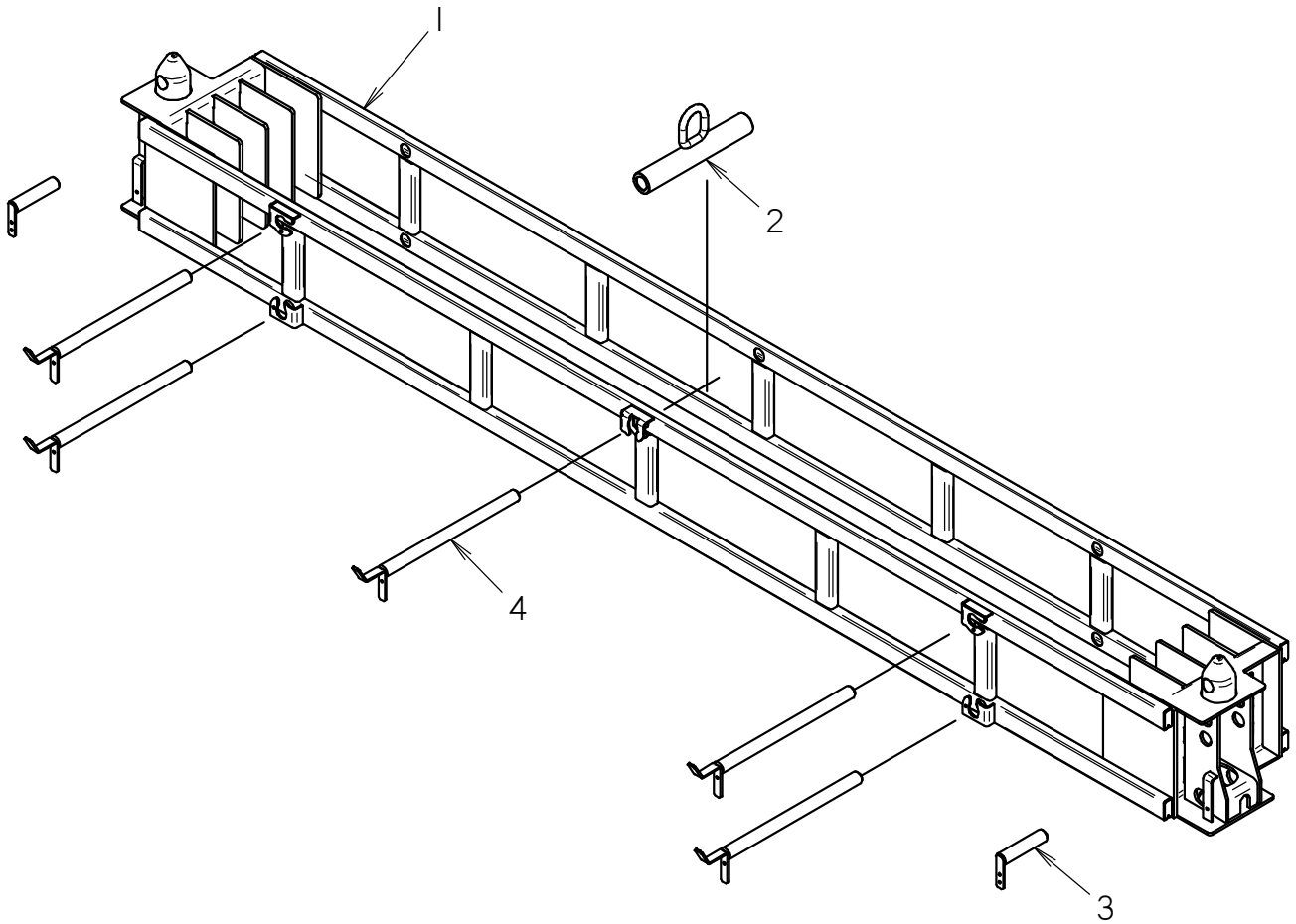
BEGINS WITH S/N: 2W0856

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-924	1	SUPPORT, WORK LIGHT	
2.	217-057	2	WORKING LIGHT - CLEAR	
3.	106-991	2	FLG LK SCREW (M8-1.25 X 20MM)	
4.	106-386	2	FLG LOCKNUT (M8-1.25)	
5.	217-136	2	ICON (WHT) ON-START	
6.	217-137	2	ICON (WHT) OFF-STOP	
7.	217-156	2	DIFFUSION LENS (GREEN)	
8.	217-158	2	DIFFUSION LENS (WHITE)	
9.	217-918	2	ROCKER SW (DPDT) ON-ON	
10.	217-925	2	ROCKER SWITCH (ACTUATOR)	

FOOTNOTES

# PIPE BOX

JT100



# PIPE BOX

## JT100

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	303-941		PIPE BOX ASSY	INCLUDES REF NO.'S 1, 3 & 4
1	369-694	1	PIPE BOX	
2	348-091	1	PIPE BOX LIFT MOUNT	
3	303-943	2	PIN	
4	303-942	5	PIN	

NOT SHOWN:

FOOTNOTES:

NOTE:





# 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

# JT70M1/JT80M1

## Related Publications

Component	Ass'y	P/N
<b>Model:</b>		
JT70M1/JT80M1 ... Parts Manual .....		053-074
JT70M1/JT80M1 ... Operators Manual .....		054-069
JT70M1/JT80M1 ... Repair Guide (Service Manual) .....		055-064
JT70M1/JT80M1 ... Supplementary Maint Guide - Trenchless .....		055-485
JT70M1/JT80M1 ... Special Tools Guide .....		052-901
<b>Engine:</b>		
Deutz T1..... Parts Manual - BF6M1013ECP .....	194-086	N/A
Deutz T2..... Parts Manual - BF6M1013ECP .....	194-372	N/A
Deutz ..... Parts Fiche Set - BF6M1013ECP .....		N/A
Deutz ..... Deutz 1013 Oper Manual - BF6M1013ECP .....		054-119
Deutz ..... Service (Shop) Manual - BF6M1013ECP .....		N/A
Deutz ..... Problem Diagnosis Guide .....		050-555
Deutz ..... Sales & Service Directory .....		050-556

## Filters

<b>Engine:</b>		
Air Filter Parts Ass'y .....		195-448
Element (primary) .....		194-822
Air Stack Cap (5.000") .....		196-317
Oil Filter Element (spin-on) - Deutz .....		159-332
Fuel Filter Element (pre-filter, cartridge) - Deutz .....		159-334
Element (primary, spin-on) - Deutz .....		159-435
<b>Hydraulic:</b>		
Oil Filter Element (cartridge), Pall (HC9104FKS8H) - Charge .....		149-354
Element (1-3/8-UNF, spin-on) .....		159-074
Element (1-1/2-UNF, spin-on, Replacement) .....		159-079
Element (1-1/2-UNF, spin-on, Break-In) .....		149-840
Oil Strainer (2-1/2-UN-20SF) .....		159-432
<b>Water {H2O}:</b>		
Water Strainer (2.250" x 7.0") - Y-Strainer .....		159-239
Strainer (4.000" x 9.0") - Y-Strainer .....		159-490

## 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



# Parts Manual Change Request

(Please print clearly)

Date: \_\_\_\_\_ Dealer No. (required): \_\_\_\_\_

Your Name: \_\_\_\_\_ Position: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

## Publication Information:

Parts Manual No.: \_\_\_\_\_ - \_\_\_\_\_ Model: \_\_\_\_\_

Illustration Part No.:	Manual Page No.:
1. _____ - _____ .....	1. _____
2. _____ - _____ .....	2. _____
3. _____ - _____ .....	3. _____

Nature of Change Request:

- Text
- Graphics
- Missing Information

Describe change requested (if possible, include copy of publication page with changes marked.):

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**Please fax completed form to  
Parts Manual Department (580) 572-3525**

*Thank you for taking the time to submit this request. We will contact you if further information is needed to process your request.*





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If your equipment was purchased through a Ditch Witch dealer, there is no need to read further.

However, if you purchased from any other source, please fill out the form on the reverse side and return it to us.

This will enable you to receive updates on this equipment as well as information on new products of interest.

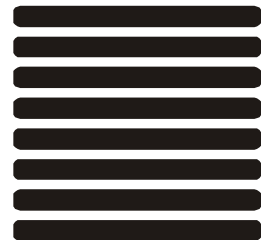
Thanks for using Ditch Witch equipment.

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Model

Serial Number

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Attachments/Accessories

Serial Numbers

---

Attachments/Accessories

Serial Numbers

---

Attachments/Accessories

Serial Numbers

---

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