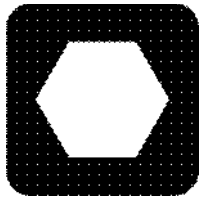


# JT920L

## Parts Manual



# ***Ditch Witch***<sup>®</sup>

## **JT920L**

ISSUE NO. 09PL-07/11

For Replacement Copy Order **P/N 053-487**

**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:  
**JT920L Directional Drilling System**

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

ID0134903



# 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 it's 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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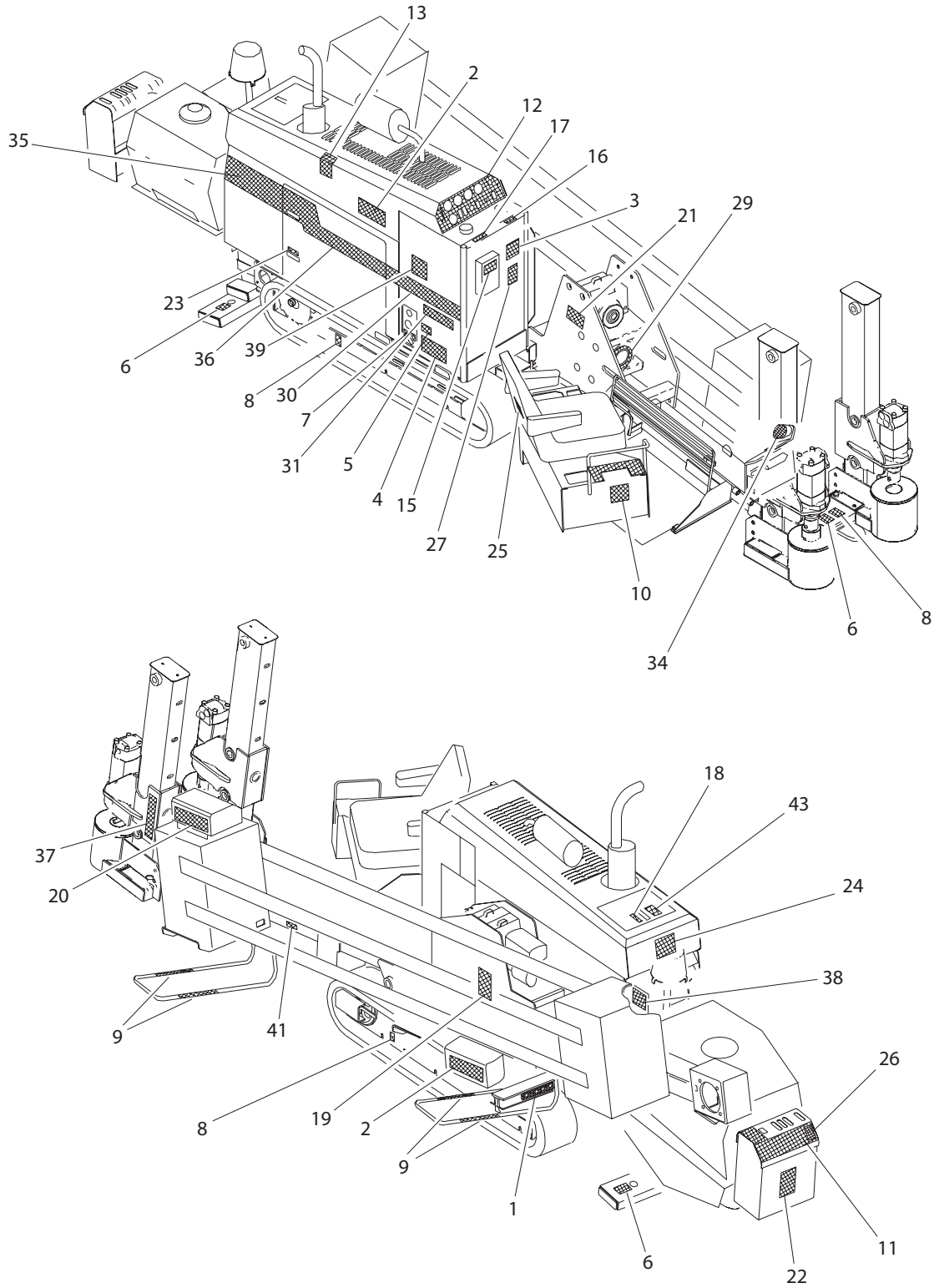
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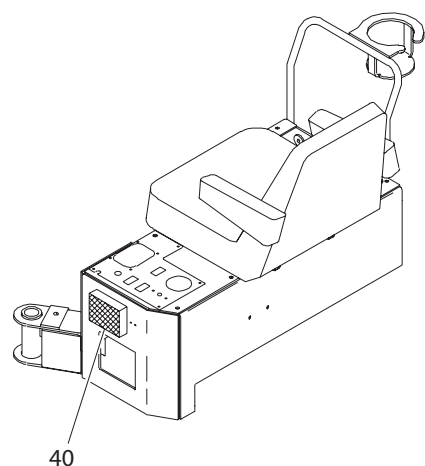
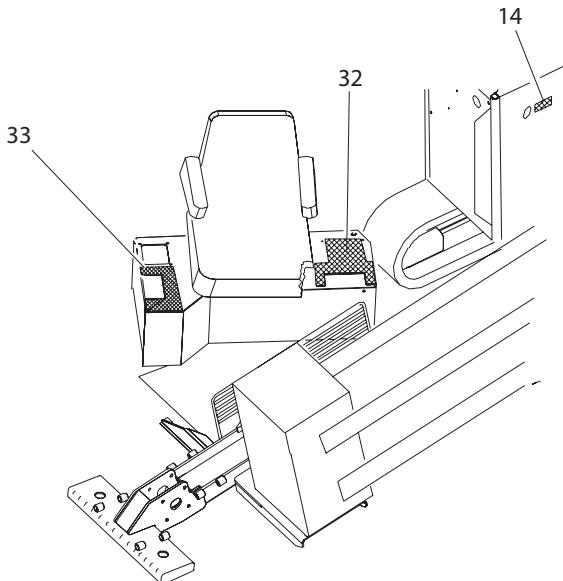
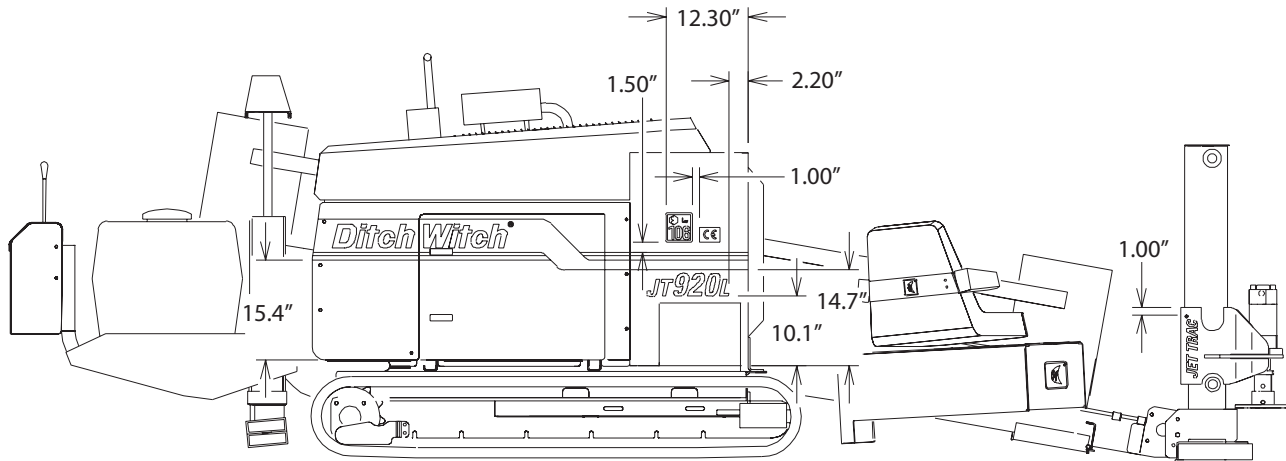
# DECALS



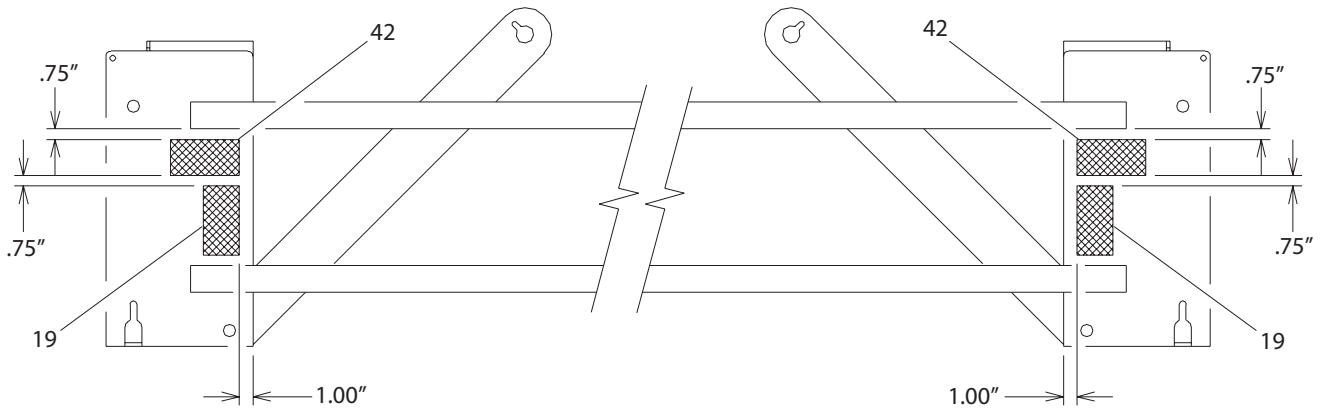
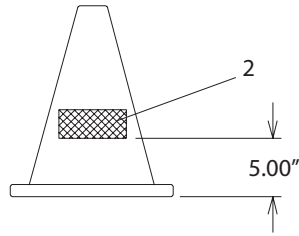
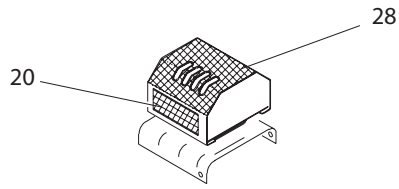
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# DECAL LOCATION JT920L



# DECAL LOCATION JT920L



# DECAL LOCATION

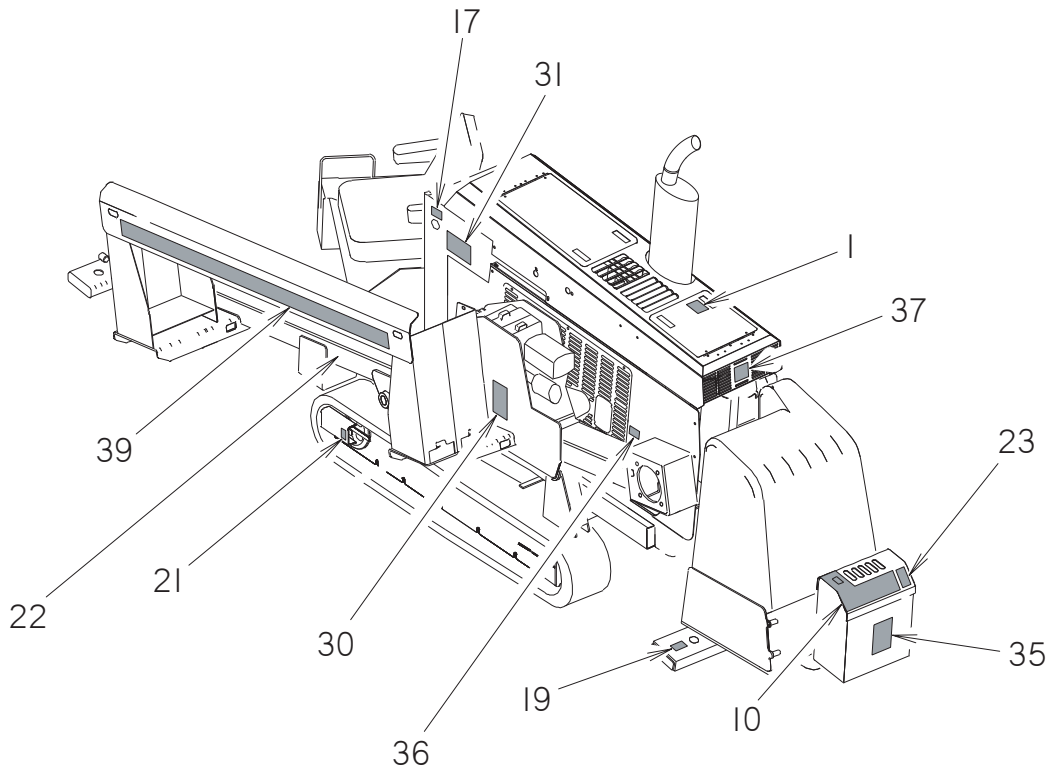
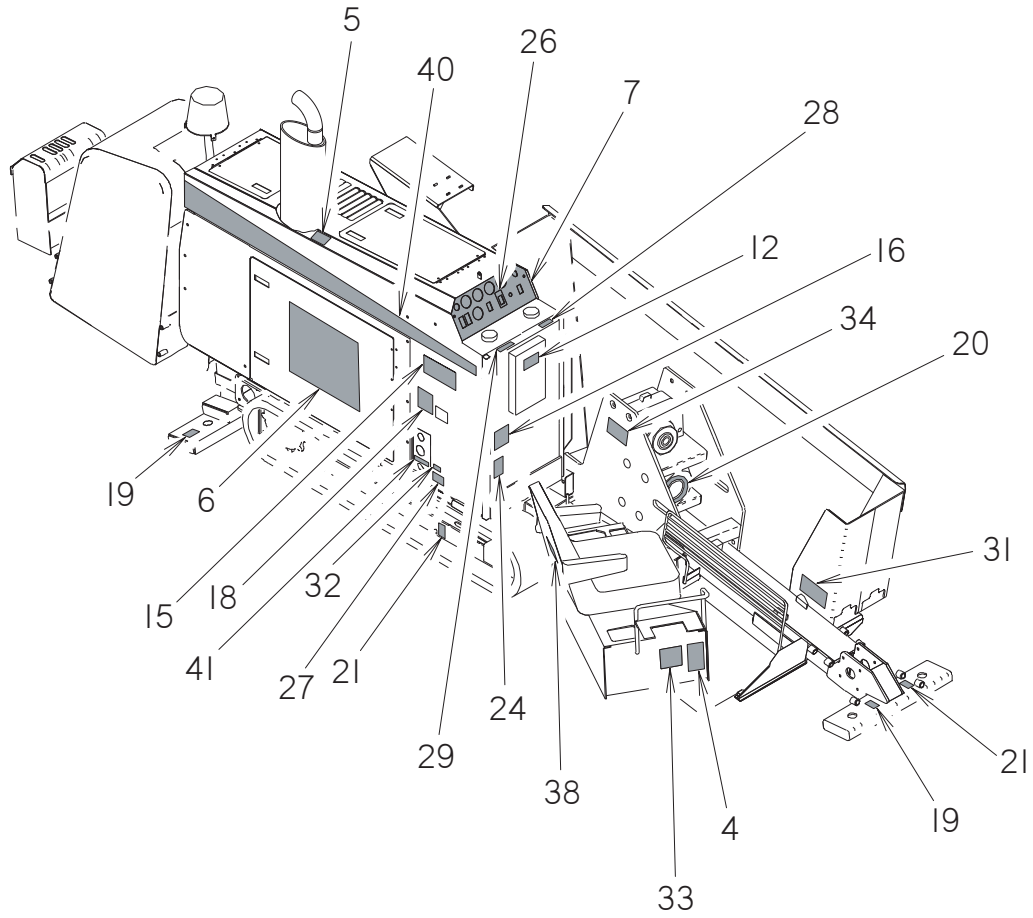
## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-920		DECAL KIT - JT920L	
1	274-912	1	ROW SELECTOR	
2	274-049	10	DANGER ELECTROCUTION	8 REQ'D FOR TRAFFIC CONES
3	274-050	1	WARNING JOBSITE HAZARD	
4	275-033	1	NOTICE ELECTRICAL SYSTEM	
5	273-203	1	BATTERY	
6	274-318	3	TIE DOWN LOCATION	
7	274-375	1	MASTER DISCONNECT SWITCH	
8	274-442	3	LIFT LOCATION	
9	275-230	4	WARNING STRIPE (1.75" X 18")	
10	275-306	1	DITCH WITCH EMBLEM	
11	274-910	1	SET-UP CONTROL PANEL	
12	700-706	1	INSTRUMENT PANEL	
13	275-355	1	CAUTION HOT PARTS	
14	274-198	1	NOTICE OIL LEVEL	
15	275-048	1	IMPORTANT SAFETY RULES	
16	275-120	1	RESERVOIR (THF)	
17	275-148	1	FUEL TANK (DIESEL)	
18	275-149	1	COOLANT	
19	275-184	5	WARNING MOVING PARTS	
20	275-197	2	DANGER ROTATING SHAFT	
21	275-341	1	WARNING SLIDING PARTS	
22	275-383	1	NOTICE SLOPE PARKING	
23	275-400	1	NOTICE OIL LEVEL	
24	275-449	1	DITCH WITCH LOGO PLACARD	
25	275-450	1	LOGO PLACARD	
26	274-724	1	ONE CALL NOTIFICATION	"NO DIG"
27	274-780	1	JET TRAC PATENT (S)	
28	274-809	1	ANCHOR DRIVER CONTROL PANEL	OPTION
29	274-415	1	ROTATION MARKER	
30	274-877	AR	GRAPHIC STRIPE	USE 1 @ 24"
31	274-878	1	MODEL IDENTIFIER JT920L	
32	274-879	1	LEFT CONSOLE PANEL	
33	274-880	1	RIGHT CONSOLE PANEL	
34	274-881	1	FLUID PRESSURE SCALE 1500 PSI	
35	274-883	1	DITCH GRAPHIC STRIPE	
36	274-884	1	WITCH GRAPHIC STRIPE	
37	274-885	2	JET TRAC LOGO TYPE	
38	274-909	1	AUTOMATION REFLECTIVE PANEL	
39	274-291	1	SOUND POWER RATING (106 dBa)	SEE FOOTNOTE 1
40	274-920	1	AUTOMATION CONTROLLER	
41	274-711	1	HYD OIL DRAIN	
42	275-326	4	WARNING CRUSHING WEIGHT	
43	273-138	1	NOTICE COOLANT	

### FOOTNOTES

1. NOT PART OF KIT. FOR EUROPEAN UNITS ONLY.

# DECAL LOCATION JT920 T2



# DECAL LOCATION

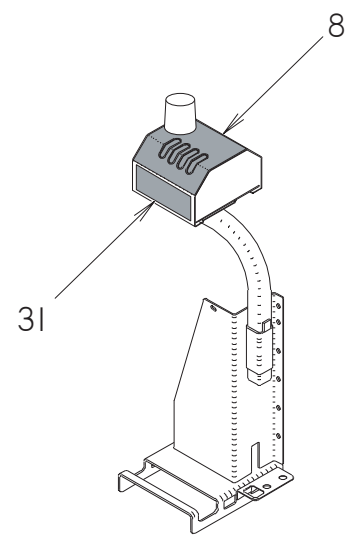
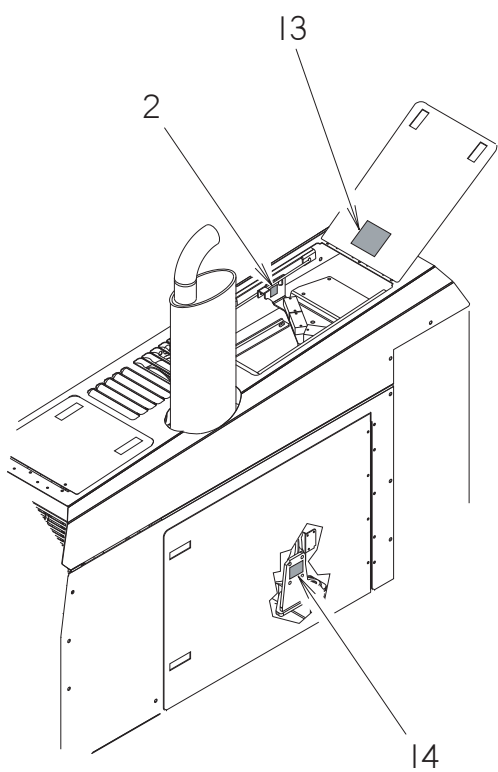
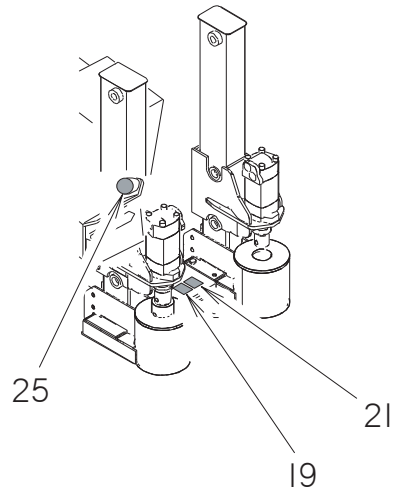
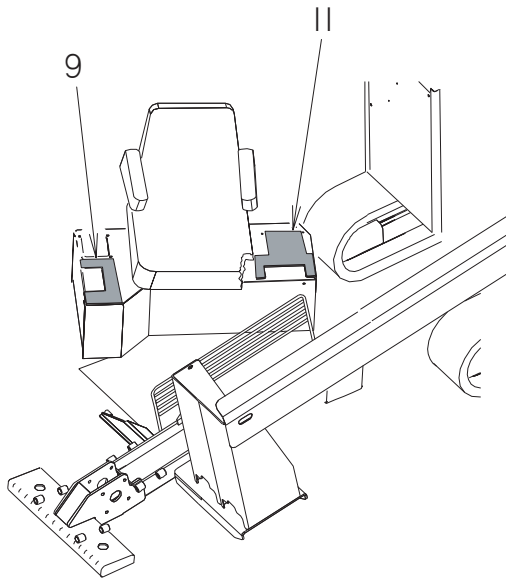
## JT920 T2

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-970		DECAL KIT - JT920 T2	
1	273-138	1	NOTICE COOLANT	
2	273-198	1	TRACKER CONTROL	SEE FOOT NOTE 1
3	273-267	1	DITCH WITCH BATTERY	SEE FOOT NOTE 2
4	273-278	1	DANGER WRENCH	
5	273-423	1	CAUTION HOT PARTS	
6	273-434	1	DITCH WITCH	
7	273-557	1	INSTRUMENT PANEL	
8	273-558	1	ANCHOR DRIVER CONTROL PANEL	
9	273-559	1	RIGHT CONSOLE PANEL	
10	273-560	1	SET UP CONTROL PANEL	
11	273-561	1	LEFT CONSOLE PANEL	
12	273-562	1	NOTICE READ MANUAL	
13	273-563	1	ELECTRICAL CENTER	
14	273-564	1	PRIMARY POWER/GLOW PLUG	
15	274-049	1	DANGER ELECTROCUTION	
16	274-050	1	WARNING JOBSITE HAZARD	
17	274-198	1	NOTICE OIL LEVEL	
18	274-291	1	SOUND POWER 10	SEE FOOT NOTE 1
19	274-318	3	TIE DOWN LOCATION	
20	274-415	1	ROTATION MARKER	
21	274-442	3	LIFT LOCATION	
22	274-711	1	HYD OIL DRAIN	
23	274-724	1	ONE CALL NOTIFICATION	
24	274-780	1	JET TRAC PATENT(S)	
25	274-881	1	FLUID PRESSURE SCALE 1500 PSI	
26	274-947	1	AUTO BORE OVERRIDE PANEL	APPLY DECAL OVER THROTTLE
27	275-033	1	NOTICE ELECTRICAL SYSTEM	
28	275-120	1	RESERVOIR (THF)	
29	275-148	1	FUEL TANK (DIESEL)	
30	275-184	1	WARNING MOVING PARTS	
31	275-197	3	DANGER ROTATING SHAFT	
32	275-203	1	BATTERY	
33	275-306	1	DITCH WITCH EMBLEM	
34	275-341	1	WARNING SLIDING PARTS	
35	275-383	1	NOTICE SLOPE PARKING	
36	275-400	1	NOTICE OIL LEVEL	
37	275-449	1	DITCH WITCH LOGO PLACARD	
38	275-450	1	LOGO PLACARD	
39	700-210	1	JT920 MODEL ID/PIPE BOX	
40	700-211	1	JT920 MODEL ID W/ STRIPE	
41	700-212	1	MASTER DISCONNECT SWITCH	

### FOOTNOTES

1. NOT PART OF KIT.
2. LOCATE DECAL ON BATTERY SO THAT DECAL IS VISIBLE WHEN VIEWING BATTERY.

# DECAL LOCATION JT920 T2



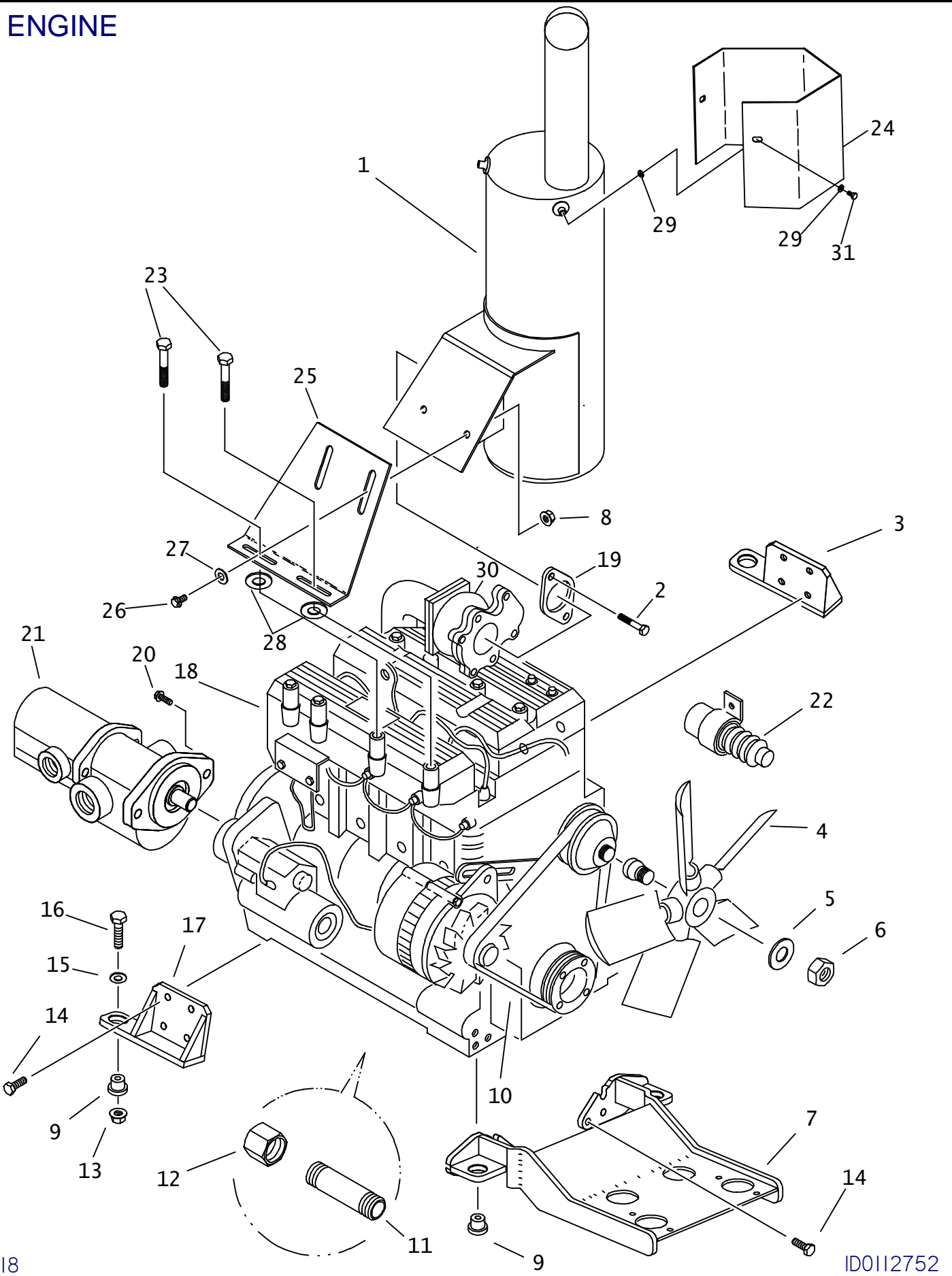






# **ENGINE COMPONENTS**

# ENGINE



# ENGINE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	196-307	1	MUFFLER	
2.	105-274	2	SCREW (M10-1.5 X 20mm)	
3.	353-684	1	LEFT REAR ENGINE MOUNT	
4.	196-252	1	COOLING FAN	
5.	105-444	1	WASHER (1-1/4")	SEE FOOTNOTE 1
6.	194-408	1	FAN NUT	
7.	353-745	1	FRONT ENGINE MOUNT	
8.	105-845	2	FLG LOCKNUT (3/8-NC)	
9.	317-032	4	GROMMET (1-1/8", T-MOUNT)	
10.	170-099	1	FAN BELT	
11.	115-161	1	NIPPLE (08N, 3-1/2")	
12.	514-106	1	CAP (08NF)	
13.	105-833	4	FLG LOCKNUT (1/2-NC)	
14.	105-245	14	SCREW (M10-1.50 X 25mm)	
15.	105-088	4	WASHER (9/16")	
16.	105-002	4	BOLT (1/2-NC X 2-1/4")	
17.	353-670	1	RIGHT REAR ENGINE MOUNT	
18.	194-417	1	ENGINE - LISTER PETTER DIESEL	SEE "NOT SHOWN" BELOW
19.	165-771	1	EXHAUST FLANGE GASKET	
20.	105-826	2	FLG LK BOLT (3/8-NC X 1")	
21.	158-420	1	HYDRAULIC PUMP	
	500-461	-	SEAL REPAIR KIT	
22.	217-862	1	FUEL SOLENOID	
	194-428	1	SOLENOID MOUNT BRACKET	
23.	106-945	2	SCREW (M6-1.00 X 100mm)	
24.	344-572	1	MUFFLER GUARD	
25.	363-684	1	MUFFLER BRACKET	
26.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
27.	105-117	2	WASHER (5/16")	
28.	355-608	2	SPACER	
29.	106-076	6	WASHER (1/4")	

NOT SHOWN:

FOOTNOTES:

- 105-444 USED ONLY WITH 194-408 (FAN NUT) WITHOUT COUNTERBORE IN IT

## ENGINE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
30.	499-297	1	TURBOCHARGER, LPWT4	
	153-290	1	GASKET, TURBO OUTLET FLANGE	
	153-291	1	GASKET, TURBO DRAIN PIPE	
	153-292	1	SEAL, TURBO OIL PIPE	
31.	106-234	3	SCREWS (M6-1.00 X 12mm)	

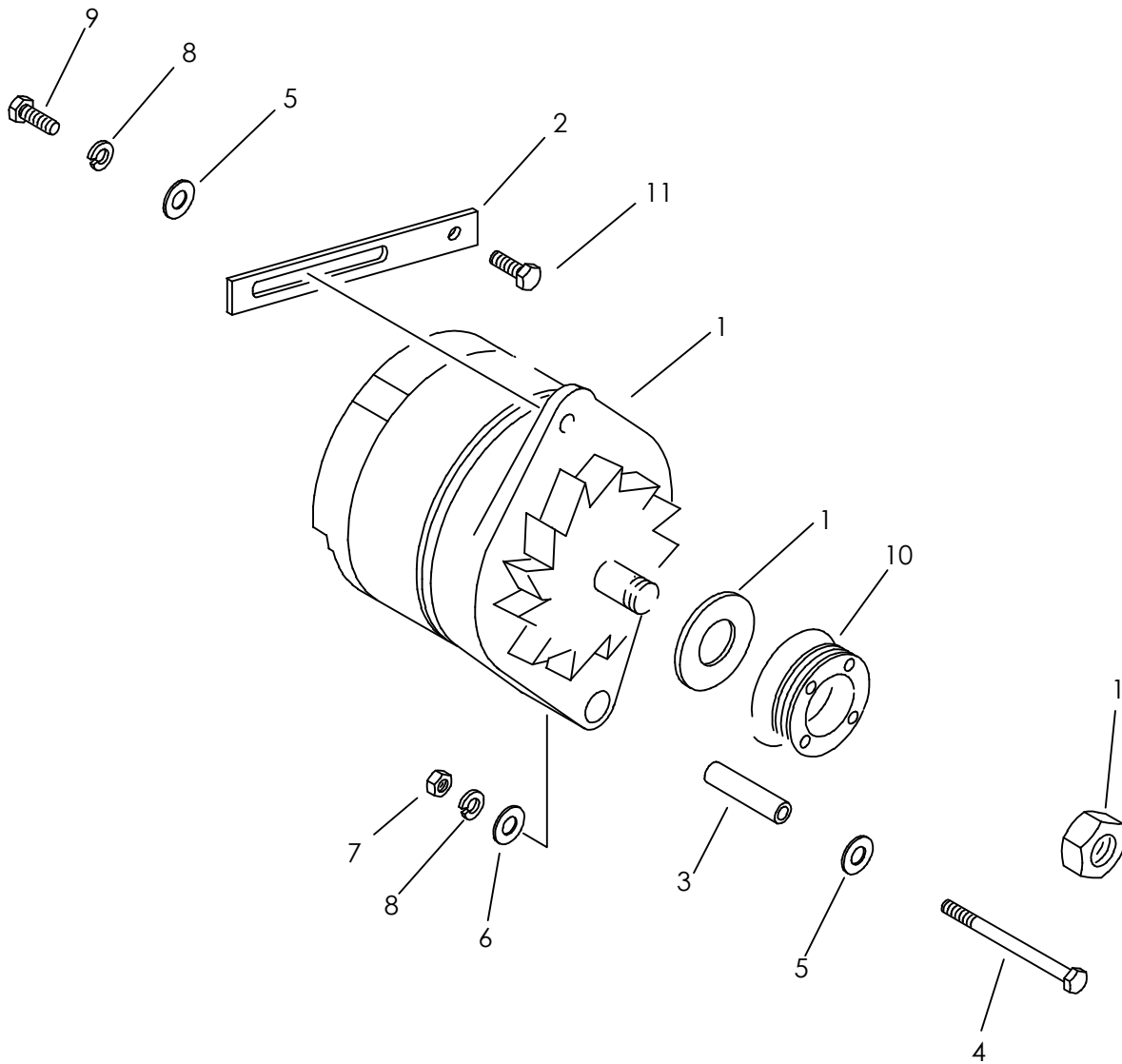
### NOT SHOWN:

194-401	-	DIPSTICK
217-721	-	OIL PRESSURE SWITCH
217-910	-	HEATER ELEMENT
194-406	-	FUEL LIFT PUMP
165-877	-	FUEL LIFT PUMP GASKET
165-772	-	THERMOSTAT HOUSING GASKET
194-404	-	THERMOSTAT
194-407	-	STARTER
217-565	-	TEMPERATURE SENDER 100 - 280 F
194-420	-	FUEL FILTER ELEMENT
159-141	-	OIL FILTER ELEMENT
194-423	-	FLYWHEEL END DRIVE MEMBER
194-424	-	FLYWHEEL END SAE B ADAPTER PLATE
194-425	-	SPLINE HUB (13 TOOTH)
194-427	-	JT920 FLYWHEEL PUMP ADAPTER KIT
-	-	(INCLUDES 194-423,194-424,
-	-	194-425 W/ MOUNTING HARDWARE)
194-428	-	SOLENOID MOUNT BRACKET
149-923	-	WATER PUMP JT920
166-601	-	WATER PUMP GASKET
166-602	-	WATER PUMP GASKET

### FOOTNOTES:



## ALTERNATOR



# ALTERNATOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	215-159	1	ALTERNATOR (12V, 61 AMP)	TORQUE NUT TO 50 FT-LBS. OBSOLETE
	190-1244	1	ALTERNATOR KIT	INCLUDES WIRING UPGRADE
2.	363-359	1	ADJUSTING STRAP	
3.	184-334	1	SPACER (2")	
4.	106-588	1	BOLT (5/16-NC X 4", GD8)	
5.	105-117	2	WASHER (5/16")	
6.	105-095	1	WASHER (1/4")	
7.	105-089	1	LOCKNUT (5/16-NC)	
8.	105-091	2	LOCK WASHER (5/16")	
9.	106-083	1	SCREW (M8-1.25 X 20MM)	
10.	194-419	1	ALTERNATOR SHEAVE (4-GROOVE)	
11.	107-194	1	FLG SCREW (M8-1.25 X 50MM)	

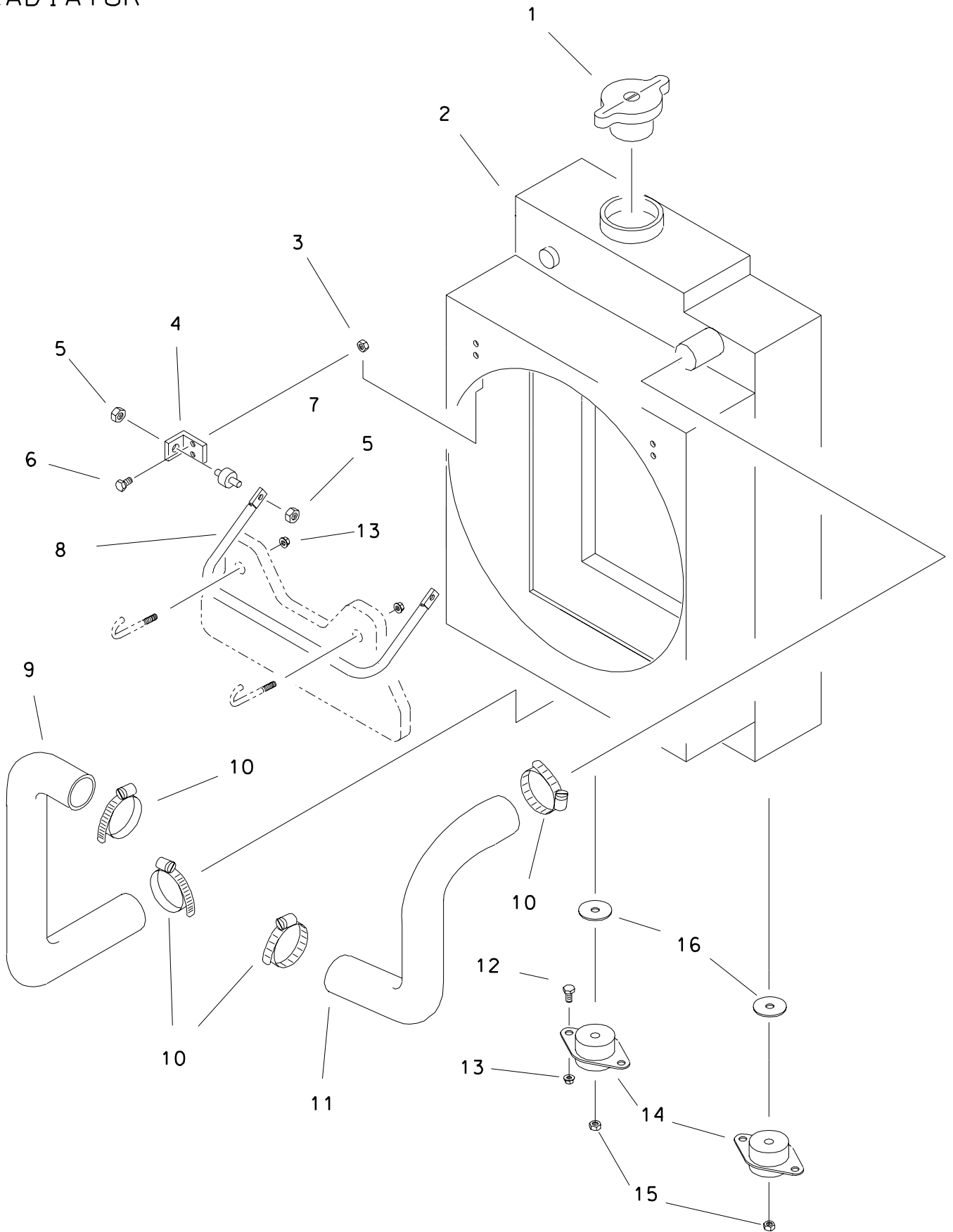
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FOOTNOTES:

NOTE:



# RADIATOR

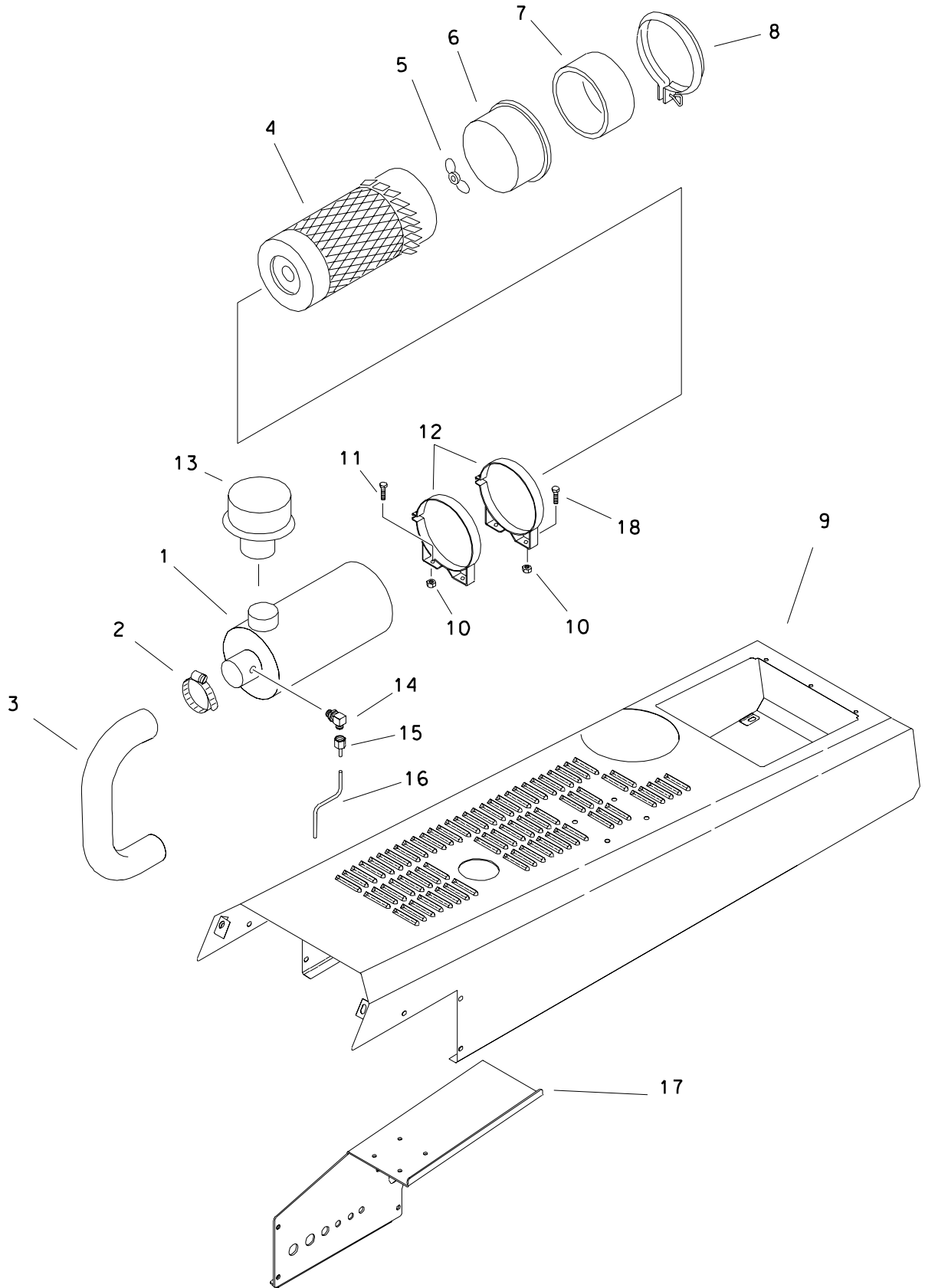


# RADIATOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	159-137	1	RADIATOR CAP (2.23", 13PSI)	
2.	360-383	1	OIL COOLER AND RADIATOR	
-	306-829	-	OIL COOLER	
-	306-830	-	RADIATOR	
3.	106-385	4	FLG LOCKNUT (M6-1.00)	
4.	363-506	2	RADIATOR STAY BRACKET	
5.	105-078	4	NUT (1/4-NC)	
6.	106-161	4	FLG LOCK SCREW (M6-1.00 X 20mm)	
7.	116-540	2	SHEAR MOUNT	
8.	353-746	1	RADIATOR STAY	
9.	116-543	1	LOWER COOLANT HOSE	
10.	110-133	4	WORM CLAMP (1.062" TO 1.937")	
11.	116-542	1	UPPER COOLANT HOSE	
12.	106-083	4	SCREW (M8-1.25 X 20mm)	
13.	106-386	6	FLG LOCKNUT (M8-1.25)	
14.	116-539	2	ISOLATOR	
15.	105-845	2	FLG LOCKNUT (3/8-NC)	
16.	105-071	2	WASHER (1/2")	

FOOTNOTES

# AIR FILTER SYSTEM

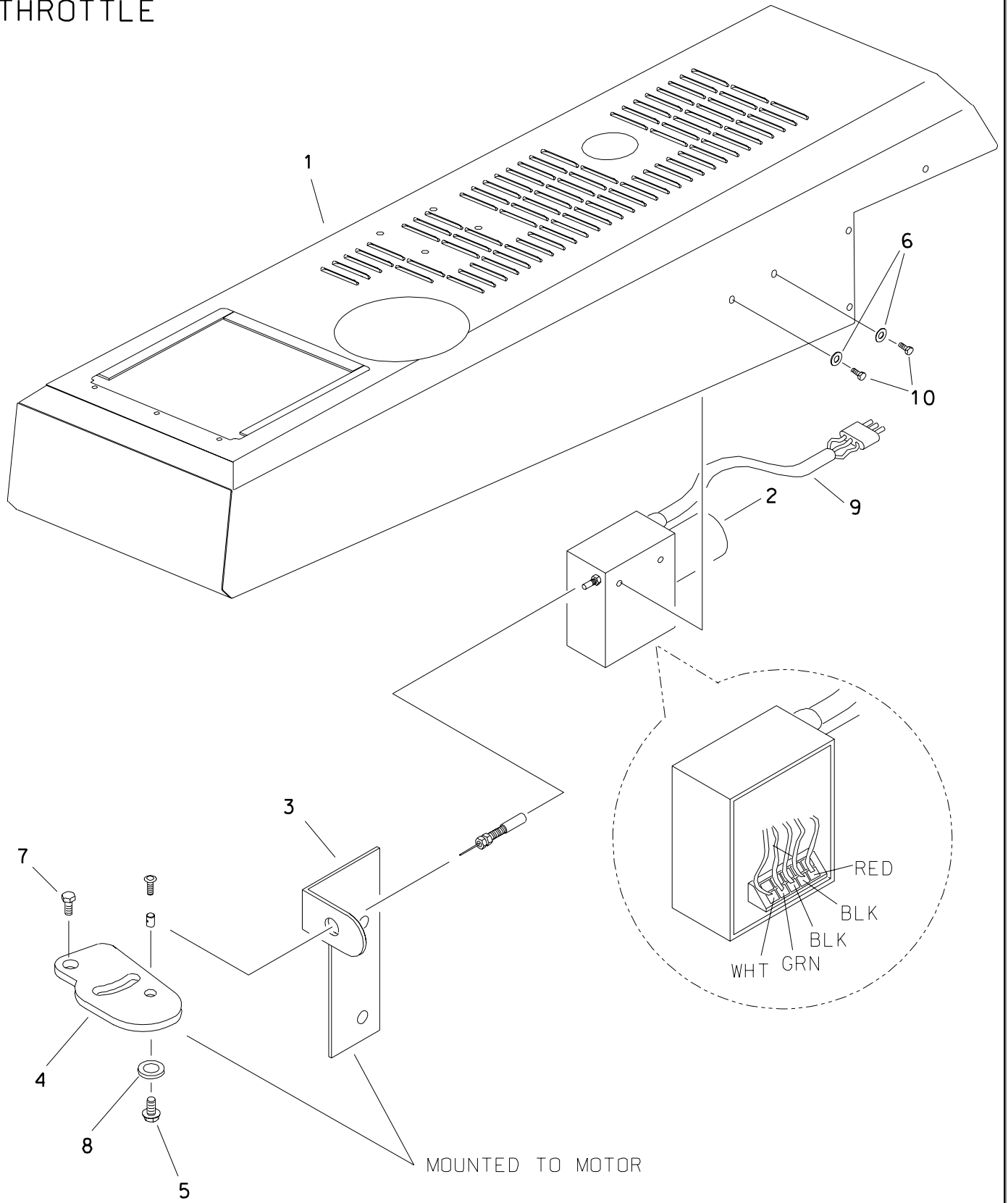


# AIR FILTER SYSTEM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-812	1	AIR FILTER	INCL REF NO.'S 4 - 8
2.	110-311	2	WORM CLAMP (1-5/16" - 3-1/4")	
3.	116-685	1	AIR INTAKE HOSE	
4.	195-817	-	ELEMENT (PRIMARY)	
5.	195-815	-	WING NUT (7/16-NF)	
6.	195-641	-	BAFFLE	
7.	195-824	-	BOTTOM CUP	
8.	195-642	-	V-BAND CLAMP (6-1/2")	
9.	346-810	-	HOOD	
10.	106-386	4	FLG LOCKNUT (M8-1.25)	
11.	106-380	3	FLG LK SCREW (M8-1.25 X 16MM)	
12.	195-656	2	MOUNTING CLAMP (6-1/2")	
13.	195-692	1	STACK CAP (2-1/2")	
14.	156-228	1	ELBDW(O2NF-O2NF90)	
15.	155-150	1	S/O COUPLER (O2N-O2H)	
16.	116-192	AR	BULK HOSE (7/64", SOLD PER 1")	USE 1@ 26"
17.	346-812	-	HOSE TRACK STAND	
18.	106-381	1	FLG LK SCREW (M8-1.25 X 25MM)	

FOOTNOTES

# THROTTLE



# THROTTLE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	346-810	1	HOOD	
2.	215-231	1	LINEAR ACTUATOR	
	196-331		LINEAR CABLE	
	196-058		CABLE SWIVEL (.081")	
3.	363-627	1	CABLE SUPPORT	
4.	365-415	1	THROTTLE LINKAGE	
5.	107-046	1	BOLT (#8-32 X .375" SLT)	
6.	106-076	2	WASHER (1/4")	
7.	105-860	1	BOLT (M6-1.00 X 10MM)	
8.	106-205	1	WASHER (.191")	
9.	214-299	1	ACTUATOR PIGTAIL	
10.	105-174	2	BOLT (1/4-NC X 1/2")	

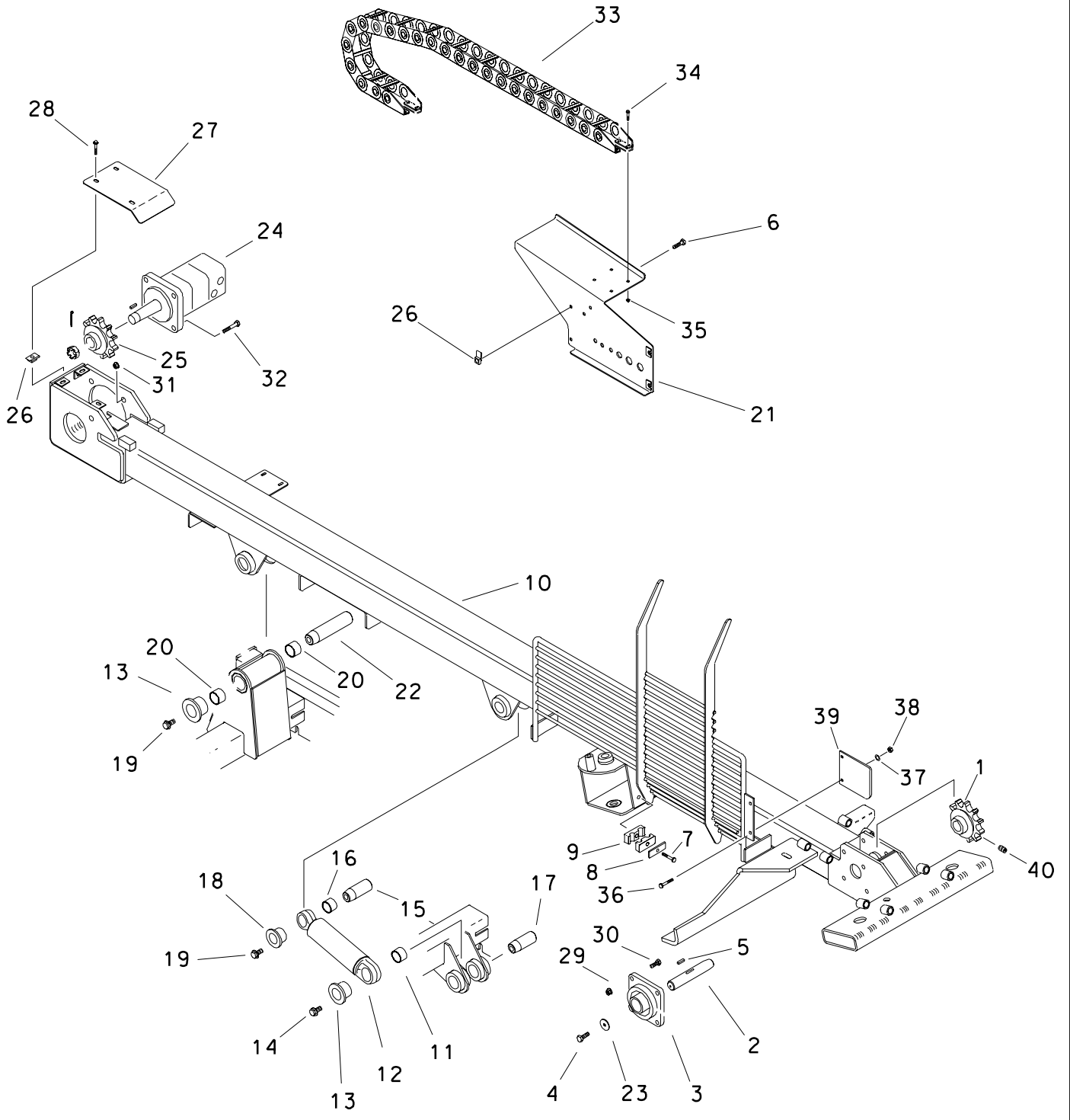
FOOTNOTES



# **FRAME COMPONENTS**



# DRILL FRAME 10'

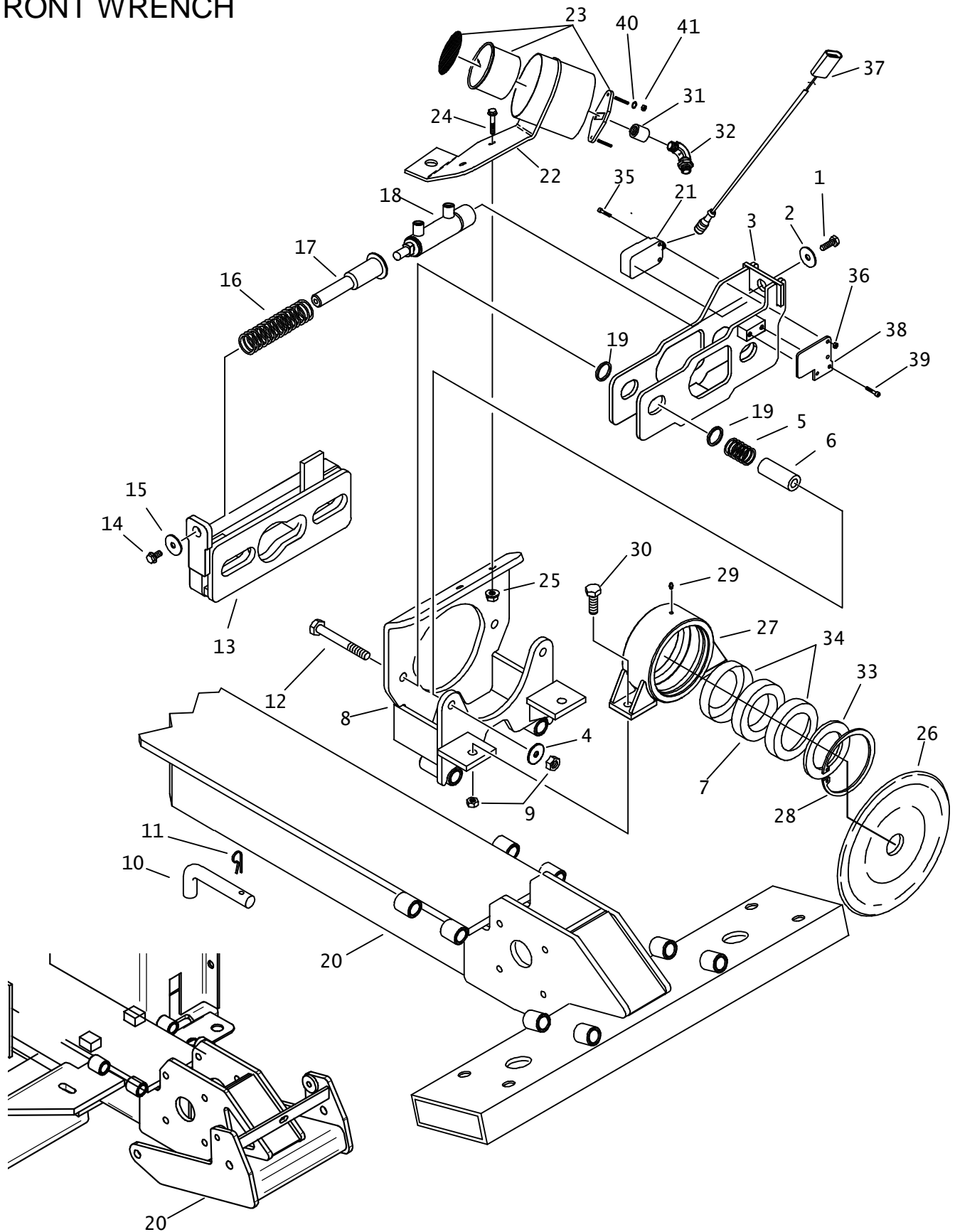


## DRILL FRAME 10'

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	175-645	1	SPROCKET (100B11)	ENDS WITH S/N -----
	306-478	1	SPROCKET (120/9T)	BEGINS WITH S/N -----
2.	183-843	1	ROLLER PIN	
3.	125-614	2	FLG BEARING (1-5/8")	
4.	106-079	1	SCREW (M10-1.50 X 30MM)	
5.	165-963	1	KEY (3/8" X 1-1/8")	
6.	106-992	1	FLG LOCK SCREW (M8-1.25 X 25MM)	
7.	105-883	1	FLG LK BOLT (3/8-NC X 2")	
8.	305-256	1	BACK-UP SPACER	
9.	110-270	2	BOLT-ON CLAMP (9/16", HALF)	
10.	346-800	1	10' DRILL FRAME	
11.	125-773	1	COMPOSITION BUSHING (1.75")	
12.	151-054	1	CYL (3" X 1.5" X 4")	
13.	181-975	1	TAPERED INSERT (1.75")	
14.	105-998	2	SCREW (M16-2 X 40MM)	
15.	179-078	1	TAPERED PIN (1.5" X 4.44")	
16.	125-772	1	COMPOSITION BUSHING (1.5")	
17.	179-037	1	TAPERED PIN (1.75" X 5.2")	
18.	181-974	1	TAPERED INSERT (1.5")	
19.	105-969	2	FLG BOLT (5/8-NC X 1-1/2", GD8)	
20.	125-438	2	COMPOSITION BUSHING (1.75")	
21.	346-812	1	HOSE TRACK STAND	
22.	178-190	1	TPRD PIN (1.75' X 8')	
23.	105-223	1	WASHER (3/8")	
24.	158-908	1	HYD MOTOR	THRUST, 8600#
	190-728		SEAL REPAIR KIT	
	106-067		CASTLE NUT (1-1/2-NF)	TORQUE 475 N-M (350 FT-LBS)
	166-829		KEY (9/16" X 2")	
	105-501		COTTER PIN (1/8" X 2")	
25.	175-545	1	THRUST SPROCKET (110B11)	ENDS WITH S/N -----
	174-018	1	SPROCKET (120B9)	BEGINS WITH S/N -----
26.	106-551	4	CLIP NUT (M8-1.25)	
27.	353-138	1	COVER PLATE	
28.	106-381	3	FLG LK SCREW (M8-1.25 X 25MM)	
29.	106-685	8	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
30.	106-333	8	SCREW (M12-1.75 X 40MM)	
31.	105-357	4	LOCKNUT (5/8-NC)	
32.	105-462	4	BOLT (5/8-NC X 2-1/4")	
33.	346-052	1	HOSE TRACK	
	308-812		REPAIR SECTION (4" X 16")	
	308-813		4" FLAT ALUM. BAR	
	359-944		EASY-OUT BAR (1/2" X 4.000")	
	359-945		ALUMINUM BAR (1/2" X 4.000")	
	305-589		MOUNTING BRACKET (LH)	
	305-590		MOUNTING BRACKET (RH)	
34.	105-823	8	FLG LK BOLT (5/16-NC X 3/4")	
35.	105-003	8	FLG LOCKNUT (5/16-NC)	
36.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
37.	105-059	2	WASHER (7/16")	
38.	105-834	2	FLG LOCKNUT (3/8-NC)	
39.	116-431	1	OUTBOARD SPOILS FLAP	
40.	105-708	1	SET SCREW (3/8-NC X 3/8", NLK)	

EQQTNOTES:

# FRONT WRENCH



# FRONT WRENCH

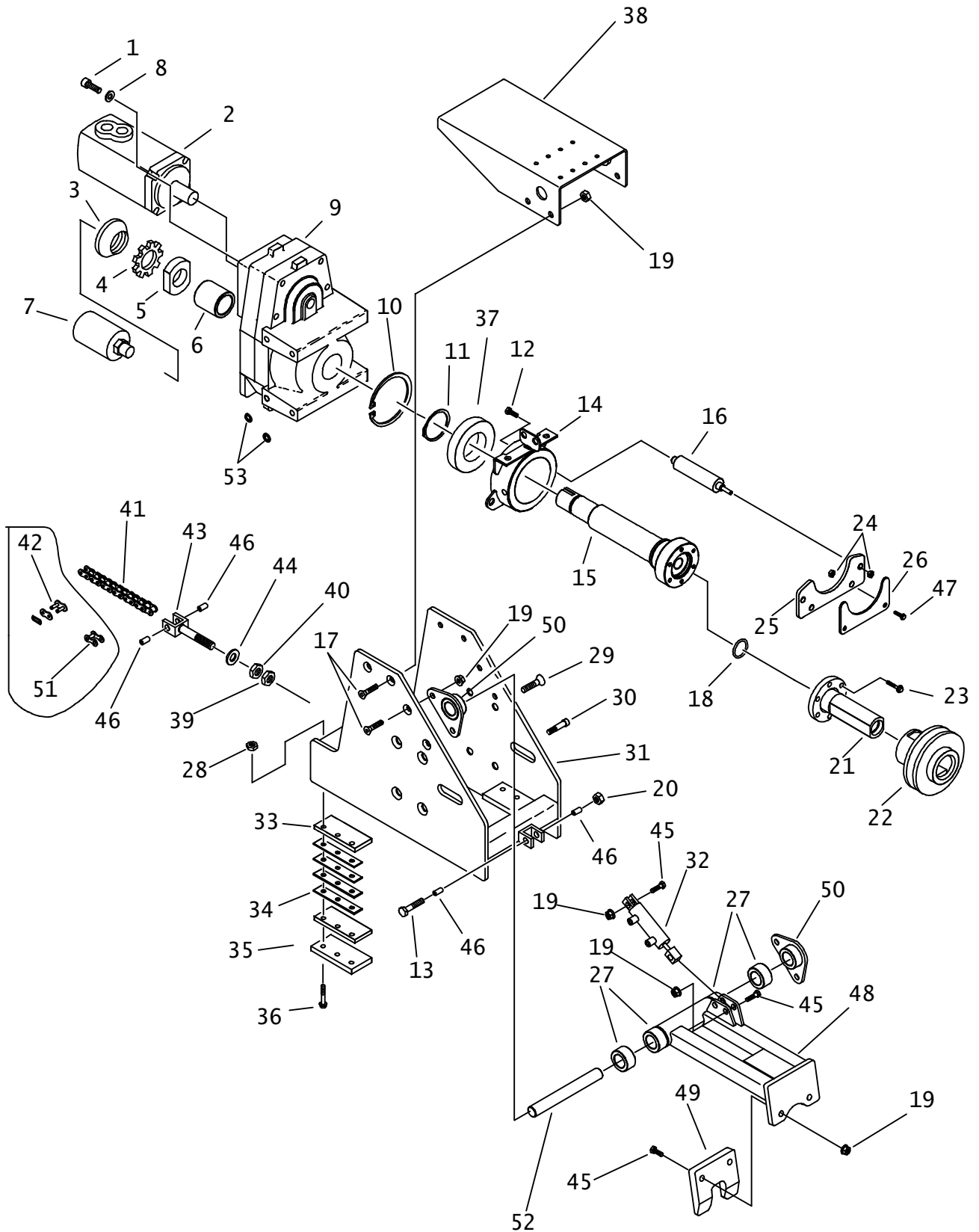
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-806	1	FLG LK SCREW (M12-1.75 X 25mm)	
2.	106-397	1	WASHER (M12, HARDENED)	
3.	307-806	1	SLIDE PLATE	
4.	105-059	2	WASHER (7/16")	
5.	117-017	2	COMPRESSION SPRING	
6.	183-966	2	BUSHING (.530" X 1" X 3.6")	
7.	307-884	1	PIPE GUIDE BEARING	
8.	301-973	1	FRONT WRENCH SUPPORT	
9.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
10.	183-818	4	PIN (19mm X 220mm)	
11.	110-033	4	CLIP PIN (1/8" X 1/2")	
12.	106-618	2	SCREW (M12-1.75 X 130mm)	
13.	305-678	1	WRENCH PLATE	
14.	106-380	1	FLG LK SCREW (M8-1.25 X 16mm)	
15.	106-260	1	WASHER (3/8")	
16.	117-052	1	COMPRESSION SPRING	
17.	184-945	1	SPRING GUIDE	
18.	150-725	1	CYLINDER (1" X 2.5") STROKE THRD	
19.	110-078	4	MACHINERY BUSHING (1",14 GA)	
20.	346-800	-	10" DRILL FRAME	USED ON JT920L
	309-585	-	WELDMENT, JT920 DRILL FRAME	USED ON JT920.
	325-629	-	WELDMENT, JT920 DRILL FRAME	USED ON JT921, JT921S, JT921P & JT92SP
21.	214-692	1	PROXIMITY SWITCH	
22.	346-726	1	GAUGE MOUNT ASS'Y	
23.	191-047	1	GAUGE KIT	OBSOLETE
24.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
25.	105-834	2	FLG LOCKNUT (3/8-NC)	
26.	149-578	1	ROD WIPER	
27.	307-665	1	PIPE GUIDE	
28.	115-505	1	INTERNAL SNAP RING (5.118")	
29.	115-001	1	ZERK (02N)	
30.	106-333	2	SCREW (M12-1.75 X 40mm)	
31.	115-170	1	COLLAR (04NF)	
32.	154-482	1	CONNECTOR (04N-04090)	
33.	107-453	1	RETAINER RING	
34.	305-866	2	GUIDE BEARING	
35.	106-427	2	SCREW (M5-0.80 X 22MM, SOC)	
36.	106-850	2	LOCKNUT (M5-0.80)	
37.	214-691	1	STRAIGHT JUMPER HARNESS	
38.	308-946	1	SHEET, WRENCH MOUNT BOLT-ON MNT	
39.	106-428	2	SCREW (M5-0.80 X 14MM, SOC)	
40.	106-205	1	WASHER (.191")	
41.	106-138	1	NUT (M5-0.80)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# CARRIAGE



# CARRIAGE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	107-044	4	BOLT (M12-1.75 X 40mm, SOC)	USE 242 LOCTITE THREAD LOCKER
2.	158-881	1	HYD MOTOR	USE 518 LOCTITE FLANGE SEALANT
	500-641		MOUNTING FLANGE	
	500-711		SEAL REPAIR KIT - REAR	
	500-758		SEAL REPAIR KIT SHAFT	
3.	185-067	1	THRUST LOCKNUT(1.767-NF-18)	
4.	185-074	1	TANG LOCK WASHER (1.792")	
5.	106-865	1	NUT (3.25")	
6.	184-749	1	SPACER	
7.	153-242	1	WATER SWIVEL	
8.	106-397	4	WASHER (M12, HARDENED)	
9.	166-113	1	GEARBOX (1.78:1, ROTATION)	1.78:1 ROTATION DRIVE
10.	115-534	1	INTERNAL SNAP RING (5.485")	
11.	118-033	1	EXTERNAL SNAP RING (2.5")	
12.	106-806	2	FLG LK SCREW (M12-1.75X25mm)	
13.	107-035	2	BOLT (7/16-NC X 3",GD8)	
14.	343-192	1	BEARING HOUSING	
15.	347-605	1	SLIDING SPINDLE SHAFT	
16.	150-724	2	CYL (1" X 2")	
17.	106-660	8	SCREW (M12-1.75 X 30mm, SOC)	
18.	157-019	1	O-RING (139 D90)	
19.	106-685	14	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
20.	105-151	2	LOCKNUT (7/16-NC)	
21.	301-891	1	SAVER SUB (1.41-6 FM DS)	
22.	353-763	1	WRENCH COLLAR	
23.	106-081	6	SCREW (M10-1.5 X 35mm, 12.9)	USE 242 LOCTITE TORQUE TO 55 FT. LBS
24.	106-031	4	LOCKNUT (M12-1.75, NLK)	
25.	344-574	1	PUSH PLATE	
26.	344-761	2	WEAR PAD	
27.	125-770	4	COMPOSITION BUSHING (1")	
28.	105-894	12	LOCKNUT (M10-1.50,PRV TRQ,10.9)	
29.	107-045	8	SCREW (M16-2.0 X 35mm, 10.9)	
30.	107-043	2	SHLD BOLT (M12 X 35mm, M10-1.5)	
31.	306-489	1	WELDMENT, JT920L CARRIAGE 120P	
32.	150-723	1	CYL (1" X 2")	
33.	343-046	8	SLIDE	
34.	343-047	16	SPACER	
35.	343-038	4	CLAMP PLATE	
36.	106-332	12	SCREW (M10-1.5 X 70mm)	
37.	125-117	1	BALL BEARING (1.5")	
38.	346-738	1	LOWER HOSE TRACK MOUNT	

NOT SHOWN:

FOOTNOTES:

NOTE:

# CARRIAGE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
39.	105-338	1	LOCKNUT (3/4-NC)	
40.	105-351	1	HEX NUT (3/4-NC)	
41.	130-526	1	ROLLER CHAIN (#120, 215P)	THIS ITEM IS USED ON JT920L ONLY
	129-006	1	ROLLER CHAIN #120 171P	
42.	130-524	2	CONNECTOR LINK (#120H) (REX)	
43.	343-053	1	CHAIN ADJUSTER	
44.	105-384	2	WASHER (3/4")	
45.	106-334	4	SCREW (M12-1.75 X 50mm)	
46.	343-058	4	BUSHING	
47.	105-273	2	SCREW (M12-1.75 X 30mm)	
48.	346-730	1	BACK AUX WRENCH	
49.	346-729	1	BACKUP WRENCH	
50.	346-737	2	AUXILIARY WRENCH MOUNT	
51.	130-530	1	OFFSET LINK (#120H)	
52.	346-763	1	PIN	
53.	110-095	AR	MACHINERY BUSHING (3/4" X 18GA)	

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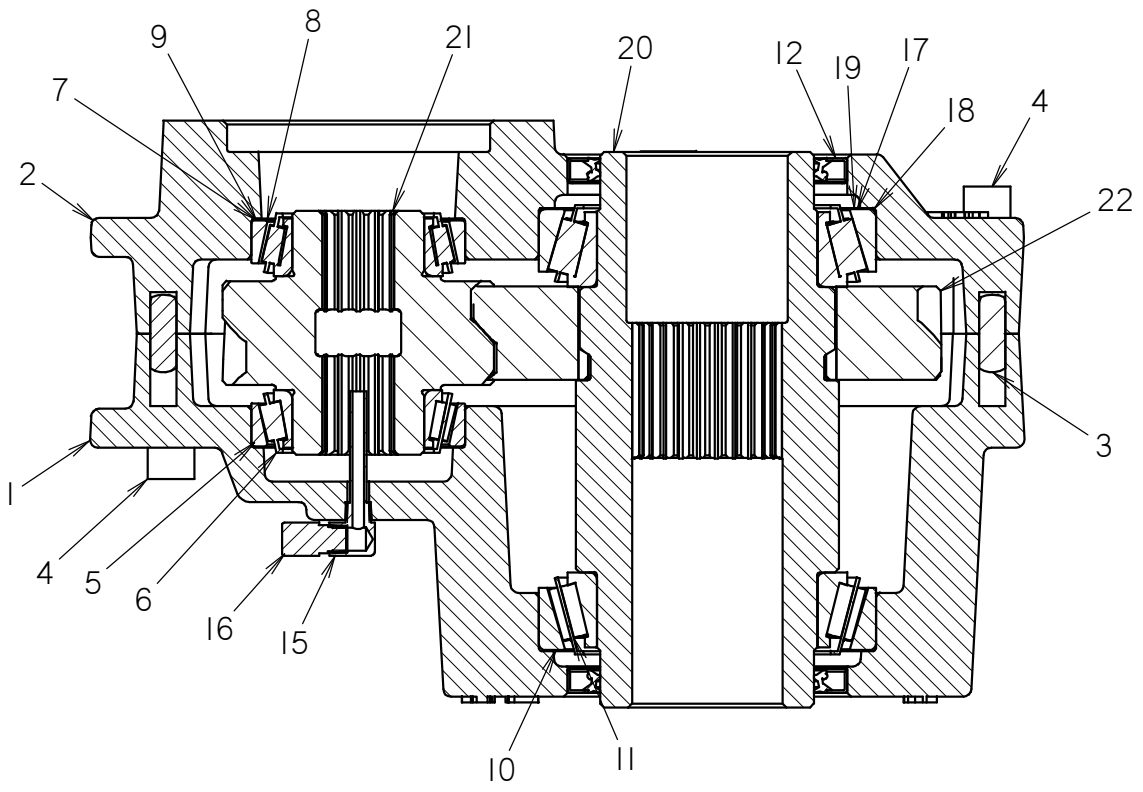
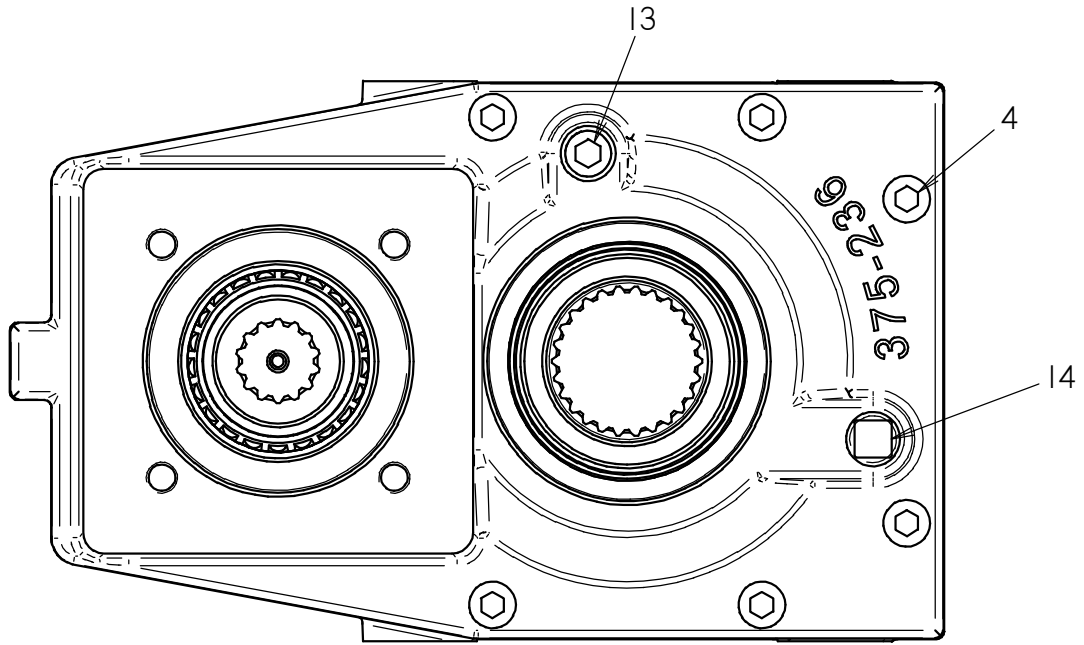
FOOTNOTES:

NOTE:





# ROTATION GEARBOX



# ROTATION GEARBOX

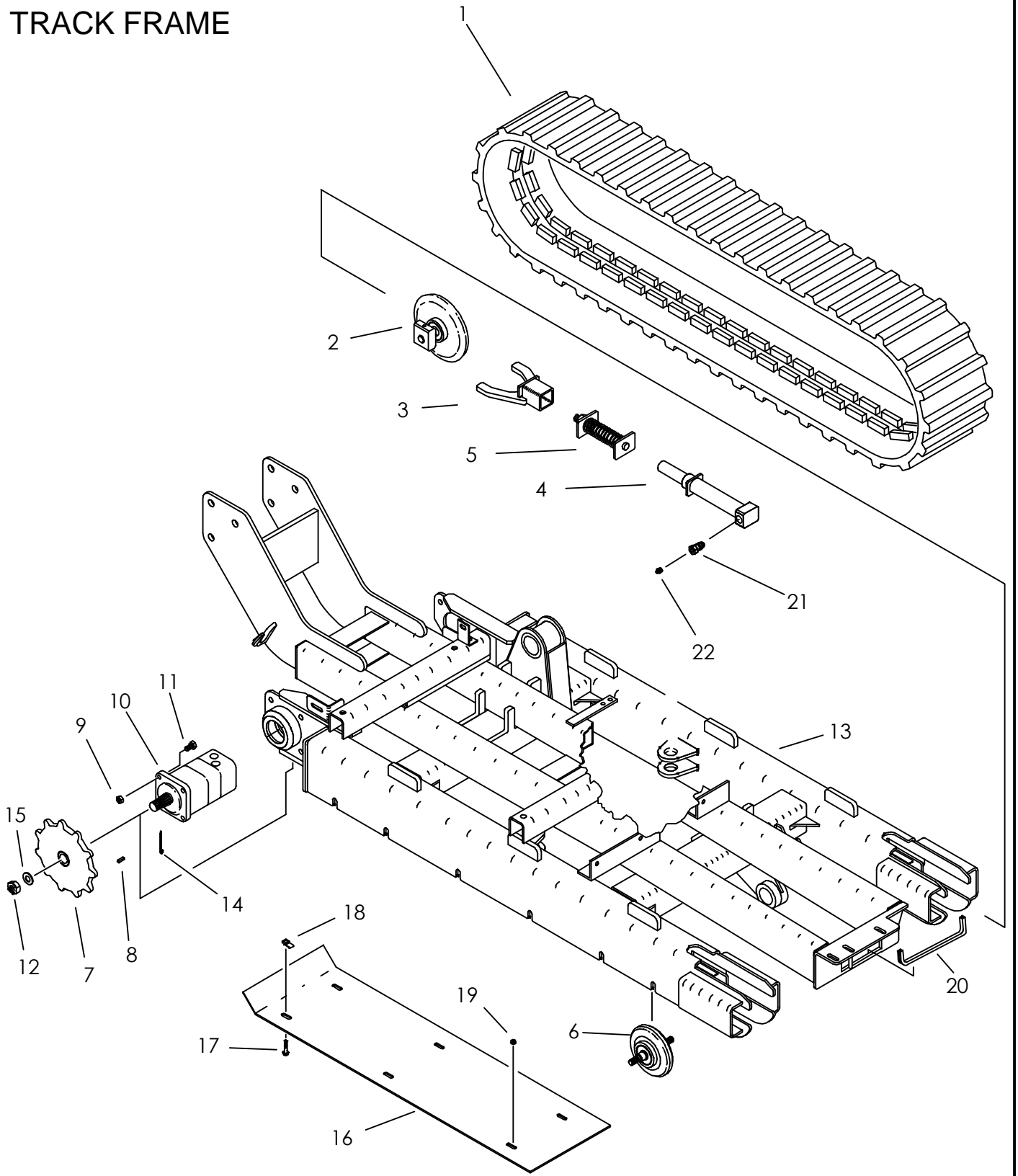
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-113		GEAR BOX (1.78:1, ROTATION)	
1	162-002	1	GEARBOX HOUSING	
2	162-001	1	COVER "B"	
3	106-866	2	DOWEL PIN (M10 X 30MM)	
4	106-771	10	SCREW (M12-1.75 X 60MM, SOC)	
5	126-099	2	TAPERED RACE (3.25")	
6	126-100	2	BEARING CONE	
7	165-800	5	SHIM (.002")	
8	165-801	5	SHIM (.003")	
9	165-802	5	SHIM (.007")	
10	126-076	2	TAPERED RACE (5.118")	
11	126-075	2	TAPERED BEARING (3.346")	
12	155-869	2	INTERNAL SEAL (3.250")	
13	115-165	1	PLUG (O8N, SOC)	
14	115-211	1	PLUG (O8N, SQ, MAG)	
15	514-123	1	PICKUP TUBE (O2N-O2NF90-2")	
16	159-003	1	AIR VENT (O2N)	
17	165-828	5	SHIM	
18	165-829	5	SHIM	
19	165-830	5	SHIM	
20	162-003	1	OUTPUT SHAFT	
21	165-187	1	INPUT PINION	
22	165-188	1	OUTPUT GEAR	

NOT SHOWN:

FOOTNOTES:

NOTE:

# TRACK FRAME



# TRACK FRAME

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	353-784	2	RUBBER TRACK (230MM, 56P, 72MM)	
2.	347-019	2	IDLER	
3.	356-272	2	YOKE	
4.	356-273	2	GREASE CYLINDER	
5.	356-271	2	SPRING	
6.	355-972	12	ROLLER	
7.	302-917	2	MOTOR SPROCKET	
8.	166-846		WOODRUFF KEY (5/16" X 1")	
9.	105-065	8	LOCKNUT (1/2-NC)	
10.	158-826	2	HYDRAULIC MOTOR	INCL REF NO.'S 8 & 12
	500-510		SEAL REPAIR KIT	
	157-701		SHAFT SEAL	
11.	106-197	8	BOLT (1/2-NC X 2-1/2", GD8)	
12.	107-034		CASTLE NUT (1-20 NF)	TORQUE TO 250-350 FT-LBS
13.	346-062	1	TRACK FRAME	
14.	105-518	2	COTTER PIN (1/8" X 1-1/2")	
15.	106-488	2	WASHER (M24, HARDENED)	
16.	344-577	1	SKID PLATE	
17.	106-381	6	FLG LK SREW (M8-1.25 X 25MM)	
18.	106-551	4	CLIP NUT (M8-1.25)	
19.	106-386	2	FLG LOCKNUT (M8-1.25)	
20.	115-704	AR	BULK EDGE (1/4", SOLD PER 1")	USE 1 @ 13"
21.	159-093	2	RELIEF VALVE (5/8-NF 02N)	
22.	115-019	2	ZERK 02N	

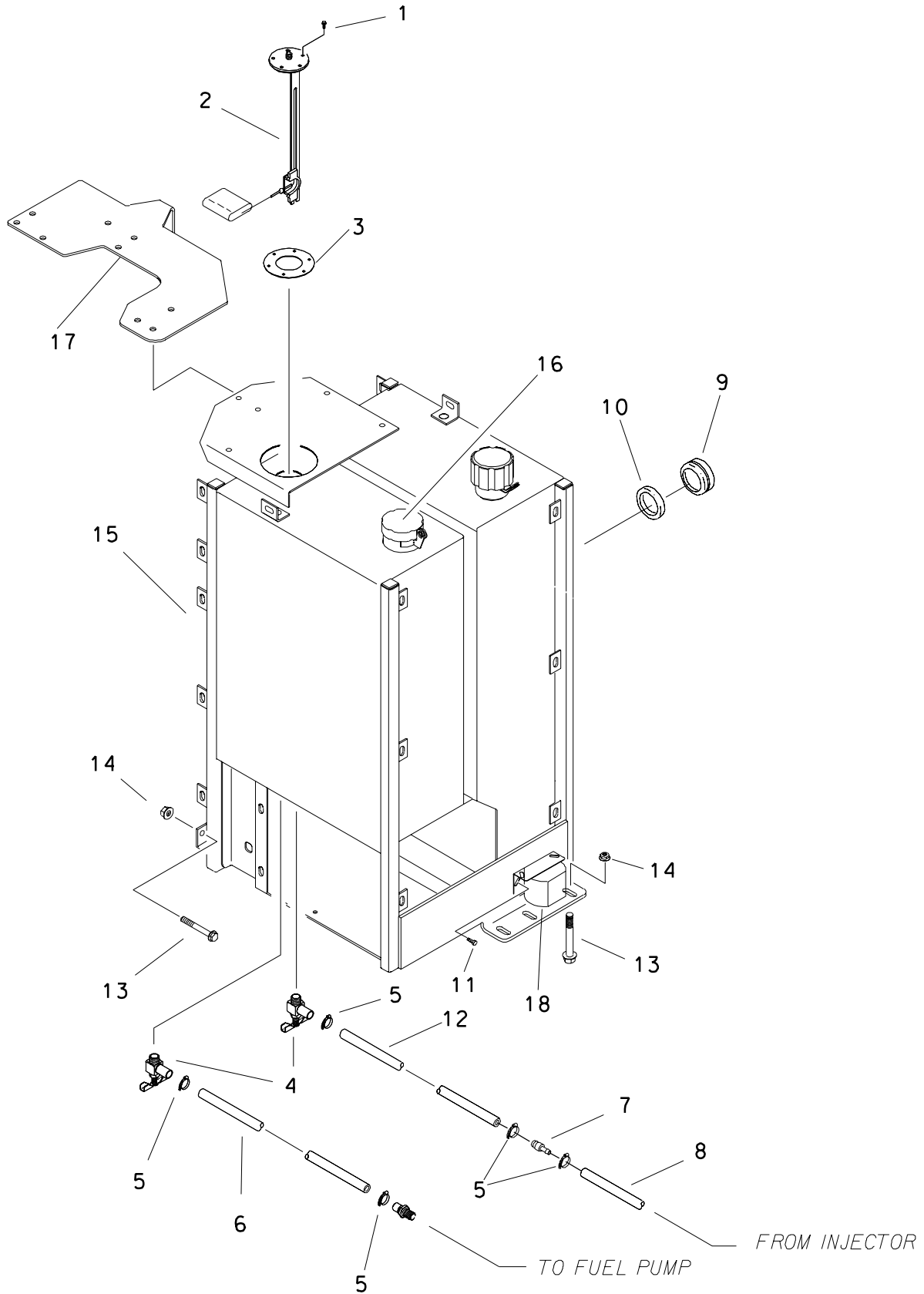
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FOOTNOTES:

NOTE:

# FUEL TANK

## JT920L



# FUEL TANK

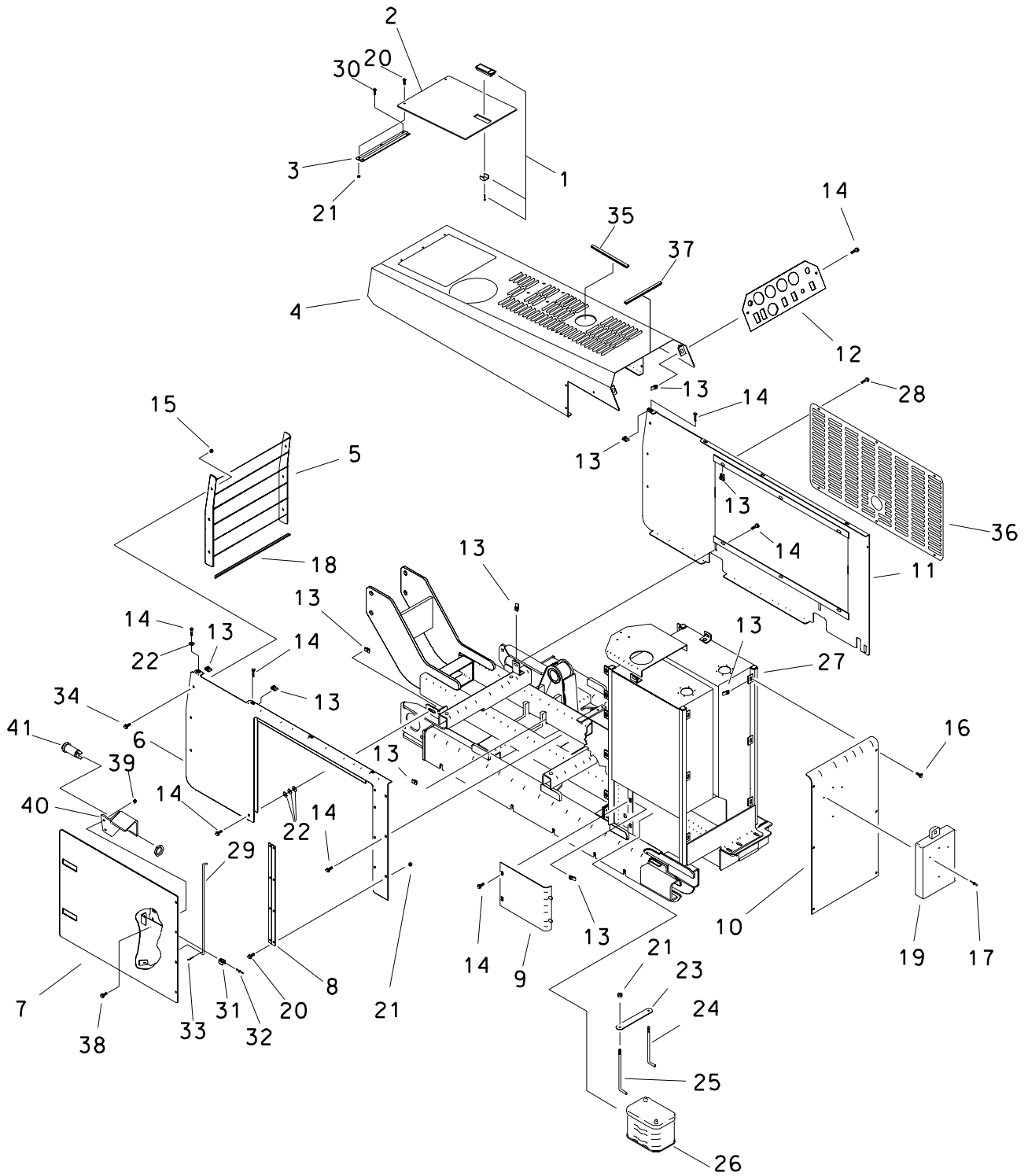
## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-214	5	FLG SCREW (#10-24 X 1/2")	
2.	217-549	1	FUEL SENDER	
3.	165-704	1	GASKET	
4.	156-239	2	S/O SHUT-OFF (02N-05H90)	
5.	110-249	5	WORM CLAMP (1/4" TO 5/8")	
6.	116-108	AR	BULK HOSE (5/16", SOLD PER 1')	USE 1@ 24"
7.	156-253	1	S/O COUPLER (03H-05H)	
8.	116-624	AR	BULK HOSE (5/32", SOLD PER 1' )	USE 1@ 32"
9.	116-218	1	SIGHT GLASS (2")	SEE FOOTNOTE 1
	360-849		REFLECTOR	
10.	115-320	1	GROMMET (1-1/2")	
11.	107-095	2	FLG SCREW (M8-1.25 X 16MM)	
12.	116-108	AR	BULK HOSE (5/16", SOLD PER 1')	USE 1@ 3"
13.	106-381	6	FLG LK SCREW (M8-1.25 X 25mm)	
14.	103-386	6	FLG LOCKNUT (M8-1.25)	
15.	350-503	1	MOBILING STATION	
16.	111-004	1	FUEL FILLER NECK	
	111-065		FUEL CAP LOCKING, VENTED	
17.	346-817	1	SOLENOID MOUNT	
18.	306-602	1	BACKUP ALARM	
	216-026	AR	FLEX GUARD (.250")	USE 1 @ 36"

**FOOTNOTES**

1. REFER TO SPECIAL TOOL DIAGRAM 052-524 FOR PROPER INSTALLATION.

# COVERS AND GUARDS



## COVERS AND GUARDS

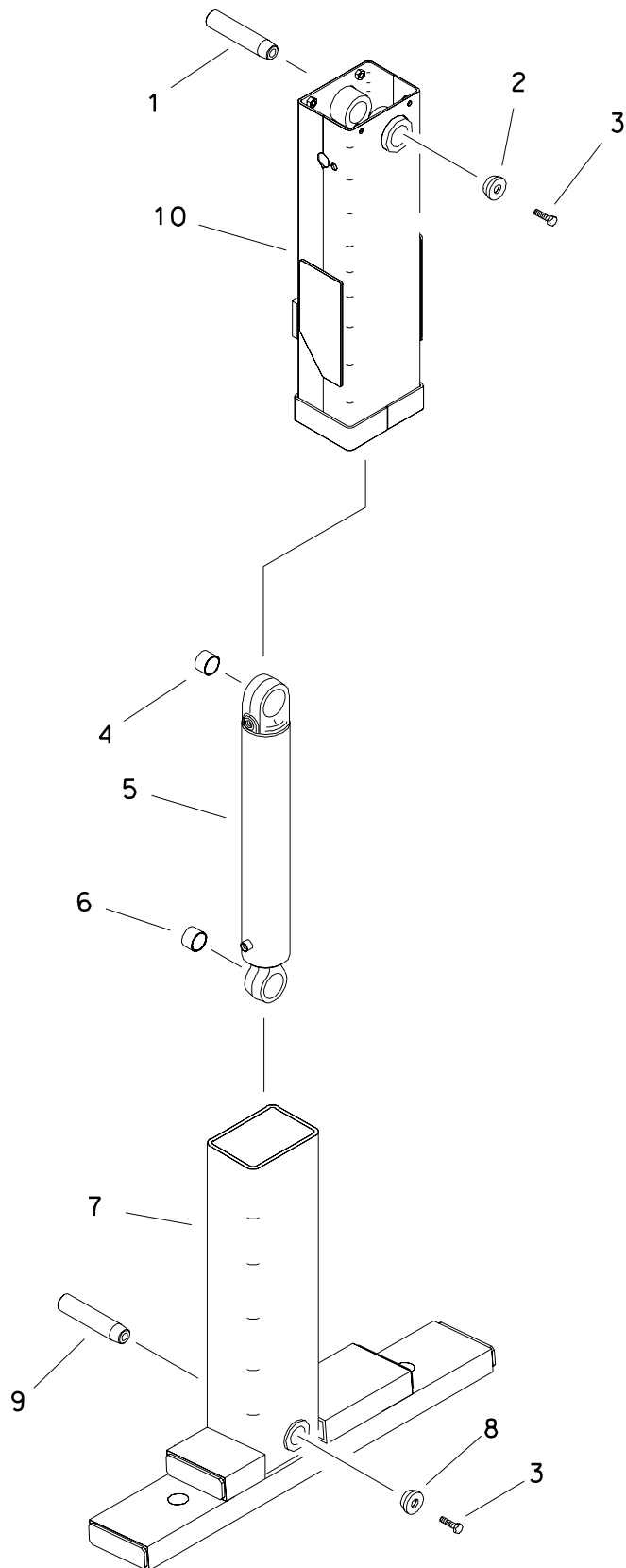
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-558	3	ADJUST LEVER LATCH (LOCKING)	BEGINS WITH S/N 2W0907.
	214-961		KEY, PAIR (BASE CODE)	
	217-309		LOCK PLUG 4/LATCH (BASE CODE)	
	110-757	3	LEVER LATCH (ADJUST LOCKING)	
	110-596		KEYS (PAIR)	
2.	344-721	1	RADIATOR ACCESS DOOR	
3.	110-794	1	HINGE (11.39")	
4.	346-810		HOOD	
5.	353-613	1	LOUVER	
6.	353-295	1	COVER PANEL	
7.	353-342	1	ACCESS DOOR	
8.	110-582	1	HINGE (20.5")	
9.	353-154	1	BATTERY COVER	
10.	353-305	1	TANK COVER	
11.	353-346		COVER PANEL (LEFT)	ENDS WITH S/N 2T5015. SEE FOOTNOTE 1
	310-610	1	COVER PANEL- LEFT	BEGINS WITH S/N 2T5016
12.	344-736	1	INSTRUMENT PANEL	
13.	106-551	38	CLIP NUT (M8-1.25)	
14.	106-992	24	FLG LK SCREW (M8-1.25 X 25MM)	
15.	106-386	6	FLG LOCKNUT (M8-1.25)	
16.	107-095	6	FLG SCREW (M8-1.25 X 16MM)	
17.	110-560	4	POP RIVET (3/16" X 1/2", ALUM)	
18.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1@ 17.5"
19.	250-622	1	MANUAL COMPARTMENT	
20.	105-836	13	FLG LOCK BOLT (1/4-NC X 1/2")	
21.	105-832	16	FLG LOCKNUT (1/4-NC)	
22.	105-117	8	WASHER (5/16")	
23.	353-709	1	BATTERY HOLDER	
24.	184-723	1	BATTERY BAR	
25.	183-934	1	BATTERY BOLT	
26.	215-244	1	BATTERY	
27.	350-503		MOBILING STATION	
28.	106-162	6	FLG SCREW (M8-1.25 X 20MM)	
29.	354-670	1	PROP ROD	
30.	105-820	1	FLG LOCK BOLT (1/4-NC X 3/4")	
31.	353-173	1	CLIP	
32.	106-862	1	POP RIVET (1/8" X . . .")	
33.	105-512	1	COTTER PIN (3/32" X 3/4")	
34.	106-380	6	FLG LK SCREW (M8-1.25 X 16MM)	
35.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 11.2"
36.	310-608	1	ACCESS PANEL	BEGINS WITH S/N 2T5016
37.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 29"
38.	106-987	2	FLANGE BOLT (M6-1.00 X 16MM)	
39.	106-385	2	FLANGE NUT (M6-1.00)	
40.	320-910	2	KEY SWITCH BRACKET	
41.	214-908	2	ON-OFF KEY SWITCH	BEGINS WITH S/N.....

## FOOTNOTES

- FOR REPLACEMENT OF COVER PANEL ON EARLY UNITS, ORDER KIT 599-256.



## REAR STABILIZER

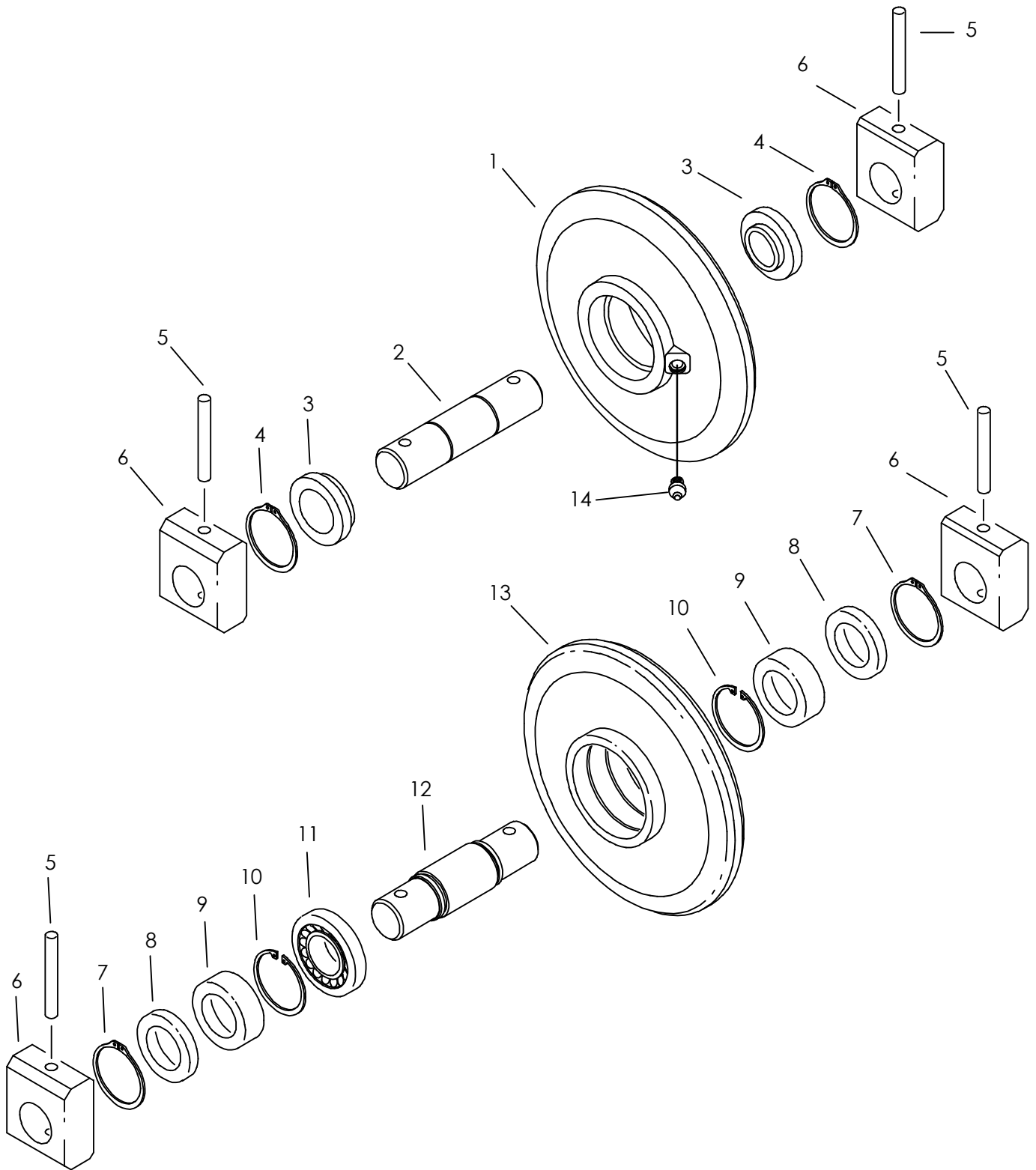


# REAR STABILIZER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	179-052	1	TAPERED PIN (1.75" X 6.6")	
2.	181-975	1	TAPERED INSERT (1.75")	
3.	105-969	2	FLG BOLT (5/8-NC X 1-1/2", GD 8)	
4.	125-773	1	COMPOSITION BUSHING (1.75")	
5.	151-147	1	CYL (3" X 1.5" X 20") 32"	
6.	125-772	1	COMPOSITION BUSHING (1.5")	
7.	353-291	1	STABILIZER BASE	
8.	181-974	1	TAPERED INSERT (1.5")	
9.	179-033	1	TAPERED PIN (1.5" X 5.4")	
10.	353-290	1	UPPER STABILIZER TUB - WET	

FOOTNOTES

# IDLER



# IDLER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	347-019	1	IDLER	SEE FOOTNOTES 1 & 3
2.	167-340	1	IDLER SHAFT	
3.	125-550	2	BALL BEARING (1.378") GREASABLE	
4.	115-465	2	EXTERNAL SNAP RING (1.375")	
5.	105-561	2	ROLL PIN (3/8" X 2-3/4")	
6.	347-023	2	PUSH BLOCK	
7.	118-021	2	EXTERNAL SNAP RING (1.500")	
8.	110-478	2	MACHINERY BUSHING (1.585")	
9.	157-650	2	INTERNAL SEAL (1.574")	
10.	115-464	2	INT SNAP RING (3.149")	
11.	125-107	1	BALL BEARING (1.574")	
12.	347-024	1	IDLER SHAFT	
13.	375-277	1	IDLER	SEE FOOTNOTE 2
14.	115-001	1	ZERK (02N)	

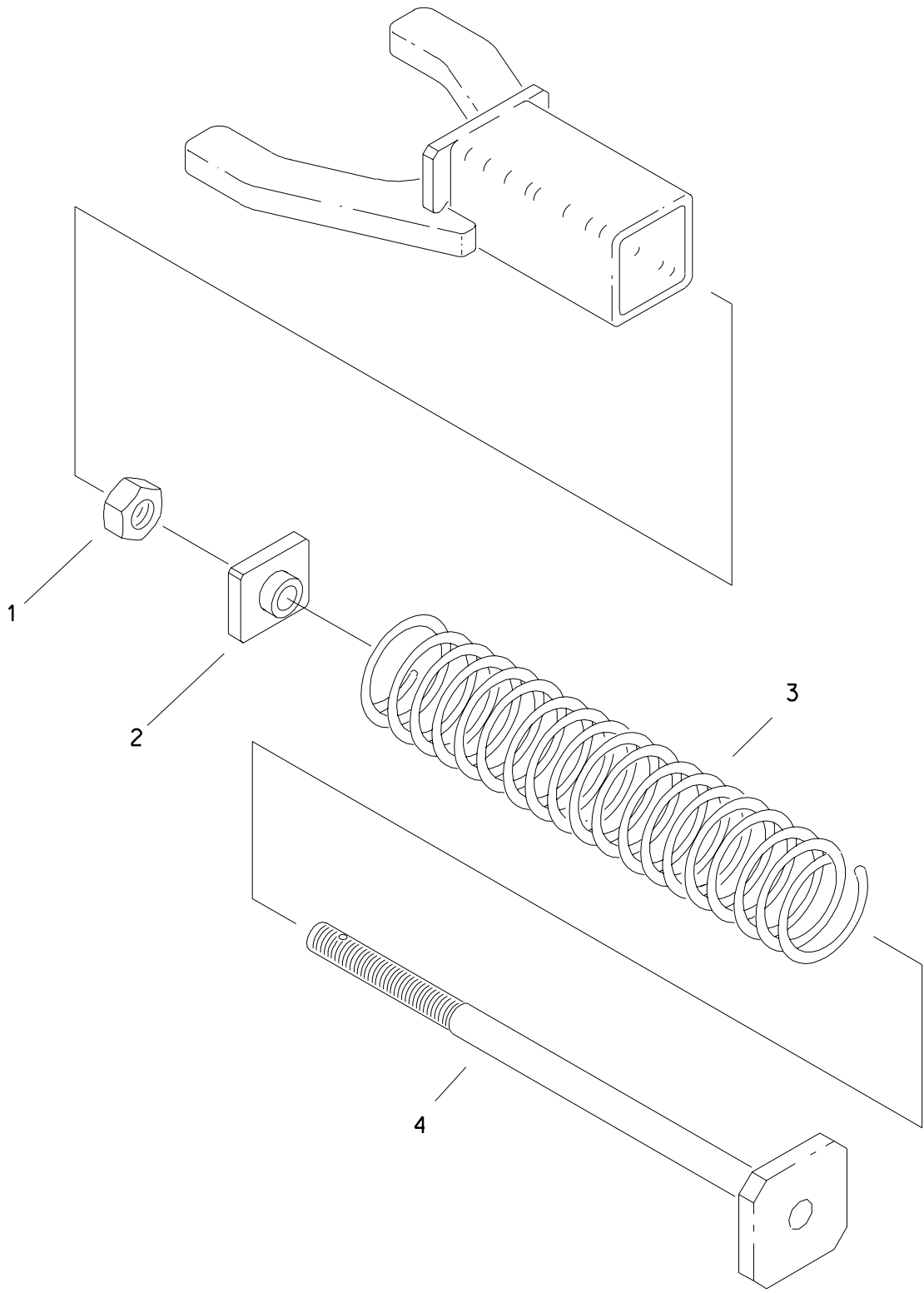
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FOOTNOTES:

**NOTE:**

1. REF NO'S 1 - 6 & 14, NEW STYLE (DOUBLE BEARING)
2. REF NO'S 5 - 13 OLD STYLE (SINGLE BEARING)
3. AFTER ASSEMBLY, ADD GREASE TO IDLER.

# TENSION SPRING

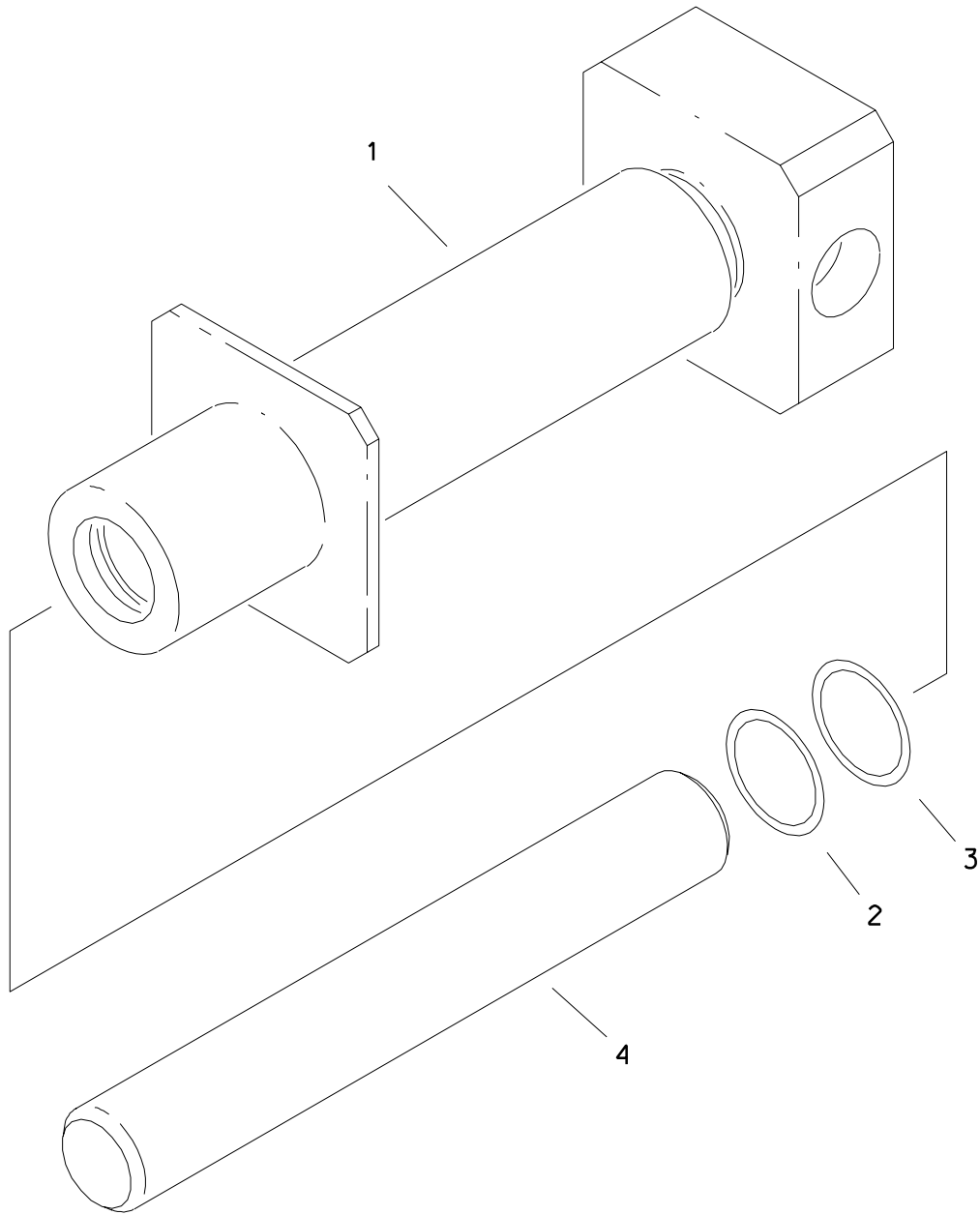


# TENSION SPRING

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	356-271		SPRING	INCL REF NO.'S 1 THRU 4
1.	106-851	1	LOCKNUT (M18-2.5)	
2.	347-035	1	END PLATE	
3.	117-057	1	TRACK SPRING	
4.	347-034	1	SHAFT	

FOOTNOTES

# GREASE CYLINDER



# GREASE CYLINDER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	356-273		GREASE CYLINDER	INCL REF NO.'S 1 THRU 4
1.	347-038	1	GREASE CYLINDER	
2.	155-712	1	BACKUP RING (222 D90)	
3.	157-078	1	O-RING (222 D70)	
4.	347-039	1	GREASE CYLINDER ROD	

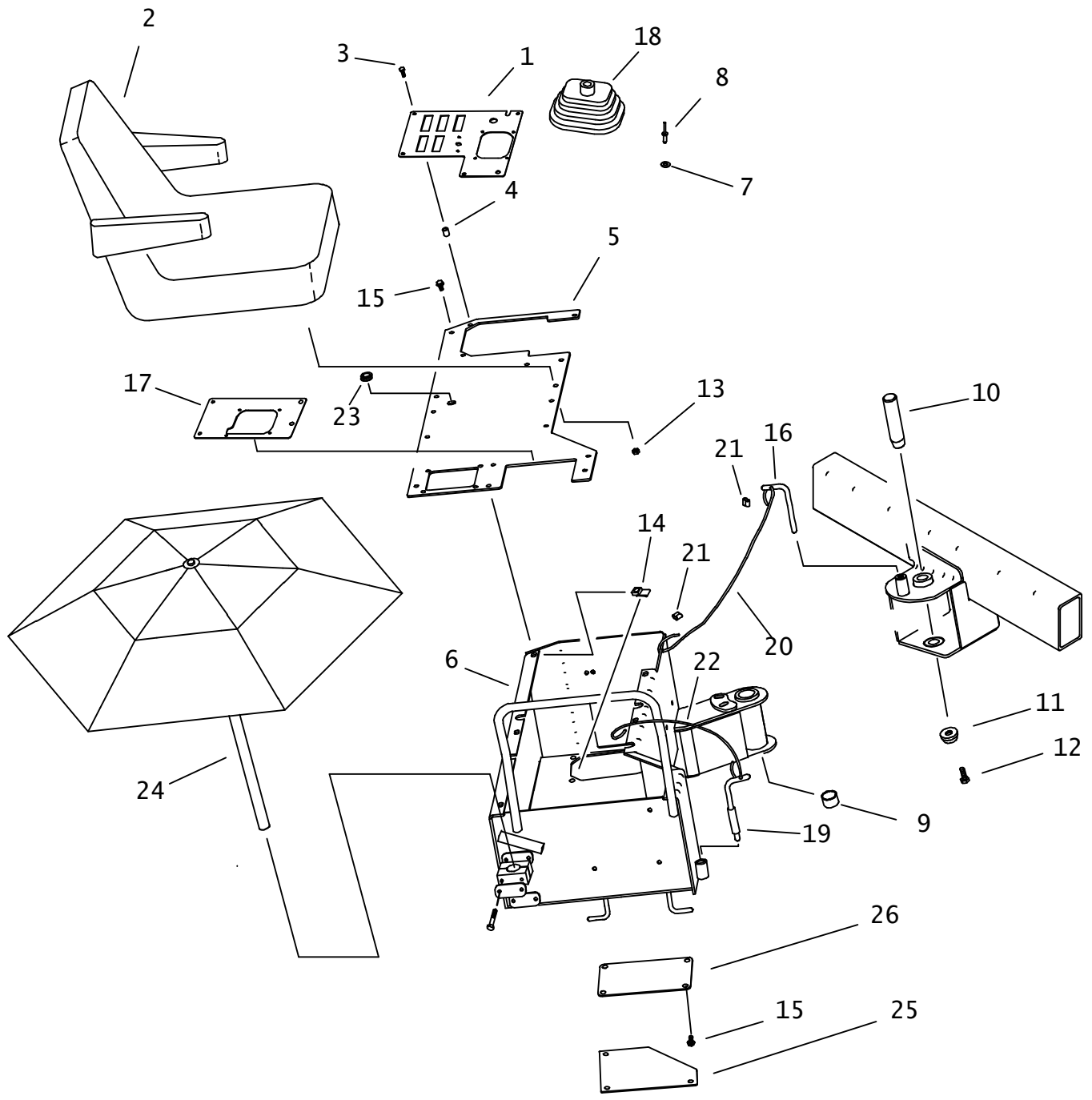
FOOTNOTES





# **OPERATOR'S STATION**

# SEAT MOUNT



## SEAT MOUNT

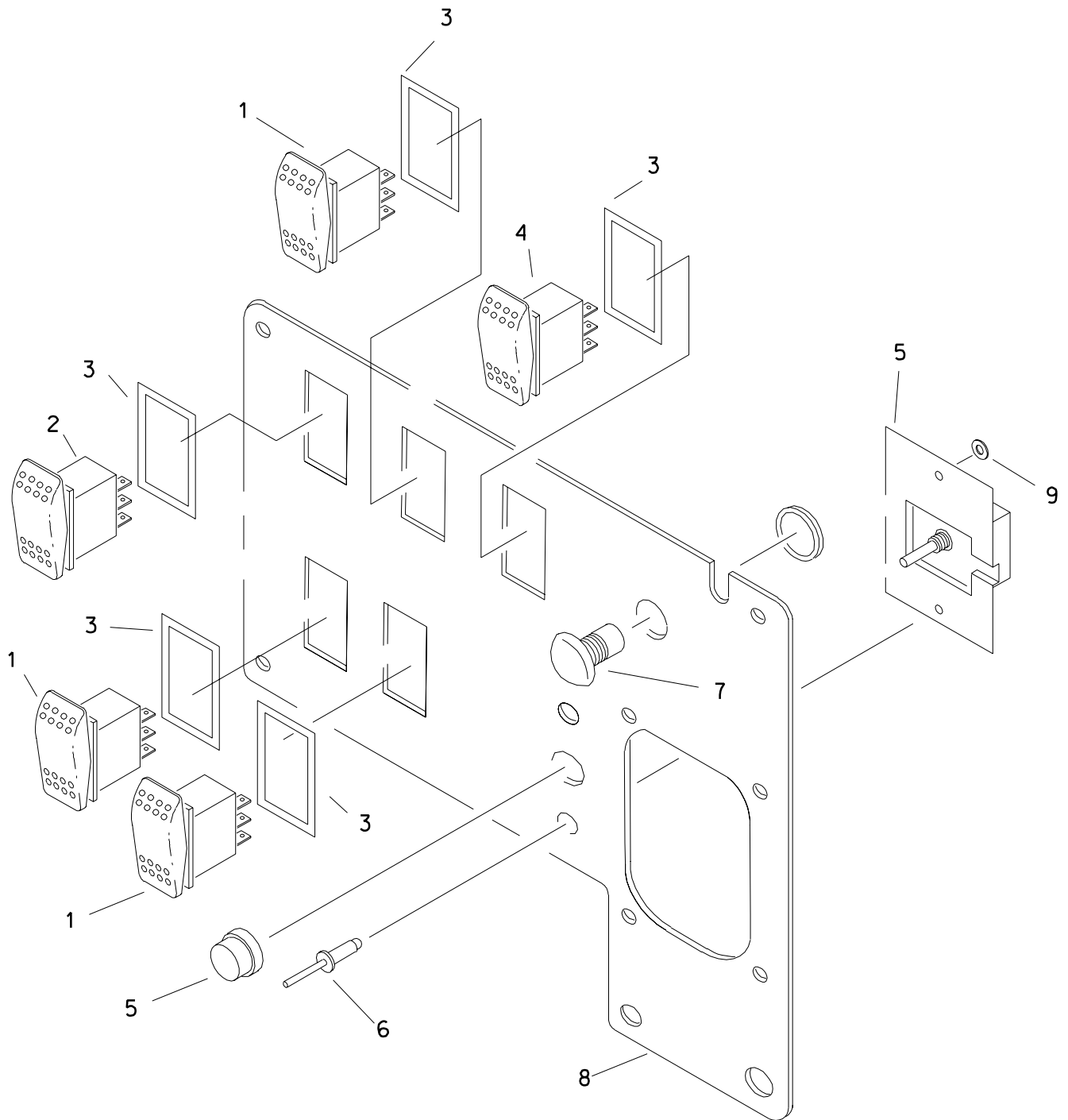
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	346-725	1	COVER PLATE	
2.	117-402	1	SEAT/ARM REST	
	217-935	1	SEAT SWITCH	
	215-939	1	SEAT SWITCH HARNESS	
	216-026	AR	FLEX GUARD (.250")	USE 1 @ 36"
3.	106-640	10	SCREW (M6-1 X 20mm, BUT SOC)	
4.	106-670	10	NUTSERT (M6-1.00)	
5.	353-626	1	TOP PLATE	
6.	353-617	1	SEAT PIVOT	
7.	106-205	8	WASHER (3/16")	
8.	110-560	8	POP RIVET (3/16" X 1/2", ALUM))	
9.	125-800	2	COMPOSITION BUSHING (1")	
10.	184-609	1	PIN (25.4MM X 190MM)	
11.	181-981	1	TAPERED INSERT (1")	
12.	106-079	1	SCREW (M10-1.50 X 30mm)	
13.	105-003	4	FLG LOCKNUT (5/16-NC)	
14.	106-551	13	CLIP NUT (M8-1.25)	
15.	106-162	13	FLG SCREW (M8-1.25 X 20mm)	
16.	184-806	1	SEAT LATCH PIN (1/2" X 5.8")	
17.	353-242	1	TOP PLATE	
18.	353-243	2	SHIFTER BOOT (RUBBER)	
19.	178-145	1	PIN	BEGINS WITH SERIAL #
	184-702	-	PIN	ENDS WITH SERIAL #
20.	110-981	AR	BULK CABLE (1/16", SOLD PER 1")	USE 1 @ 10"
21.	350-275	4	ALUMINUM SLEEVE (1/16")	
22.	110-981	AR	BULK CABLE (1/16", SOLD PER 1")	USE 1 @ 12"
23.	115-349	1	GROMMET (1/2")	
24.	344-0001	1	UMBRELLA (6.5')	
	500-1962	-	UMBRELLA POLE (16")	
25.	307-984	1	ACCESS PANEL	
26.	337-479	1	COVER PLATE	

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FOOTNOTES:

NOTE:

# OPERATORS STATION GAUGES

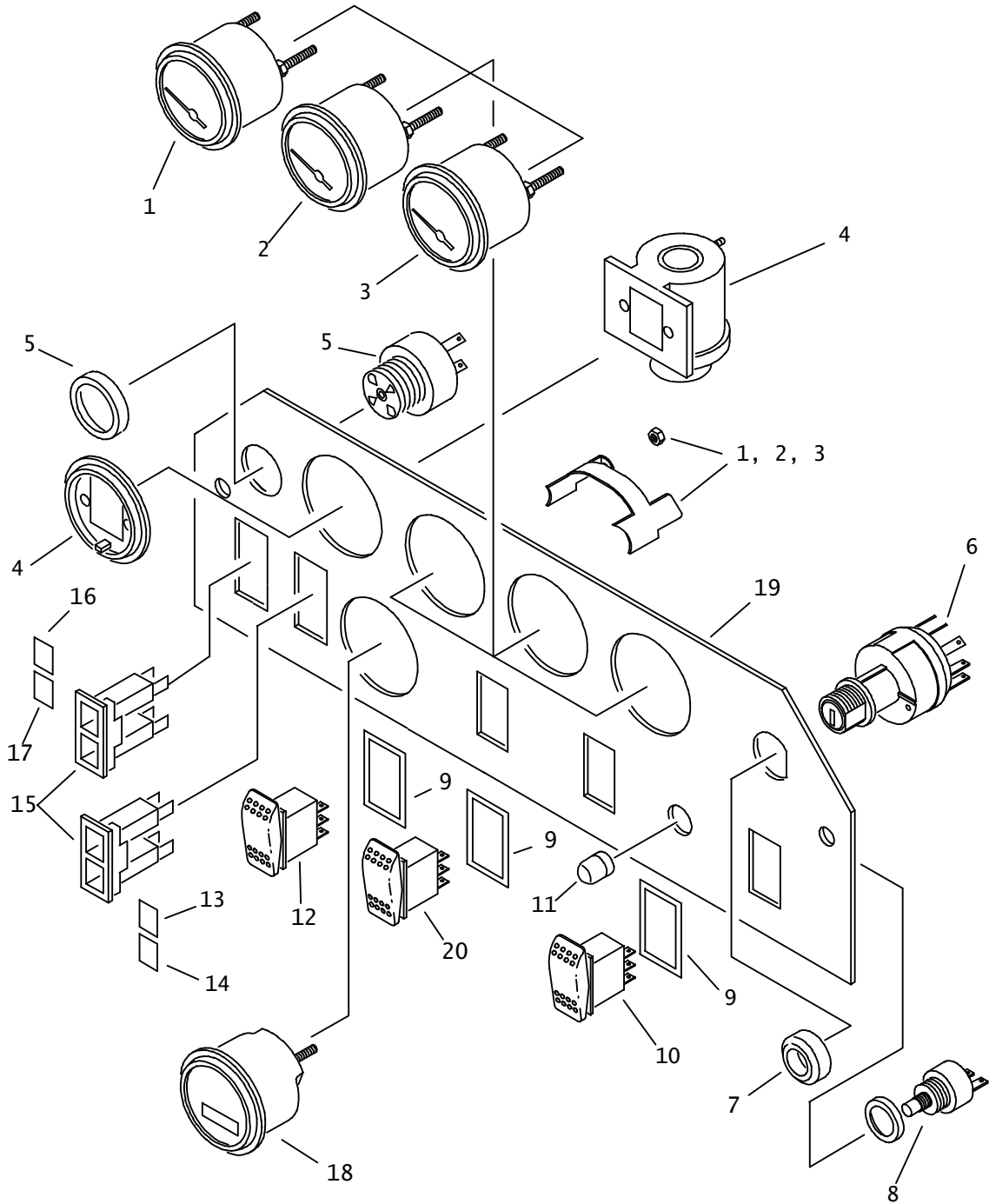


# OPERATORS STATION GAUGES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-764	3	ROCKER SWITCH (SPDT)	
2.	217-854	1	SWITCH	
3.	165-817	5	SWITCH GASKET	
4.	217-762	1	ROCKER SWITCH (SPDT)	
5.	217-940	1	FLUID FLOW POTENTIOMETER	
	110-641	1	KNOB (1/8", BLK)	
6.	110-560	2	POP RIVET (3/16" X 1/2", ALUM)	
7.	217-724	1	BUTTON SWITCH (SPST)	
8.	346-725	-	COVER PLATE	
9.	106-205	2	WASHER (.191")	

FOOTNOTES

# CONSOLE GAUGES JT920L



# CONSOLE GAUGES

## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	215-133	1	FUEL GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	
2.	215-129	1	VOLT METER	
	215-415		NITE-LIGHT KIT (12V DC)	
3.	217-512	1	WATER TEMPERATURE GAUGE	
	215-415		NITE-LIGHT KIT (12V DC)	
4.	215-149	1	RESTRICTION INDICATOR (15"H2O)	
5.	306-603	1	AUDIO ALARM	
6.	214-852	1	IGNITION SWITCH	INCL KEYS & NUT
	214-961		KEY, PAIR	
7.	214-962		SWITCH MOUNTING NUT	
8.	306-607	1	HORN BUTTON	
9.	165-817	3	SWITCH GASKET	
10.	217-789	1	ROCKER SWITCH	
11.	306-608	1	BUTTON COVER	
12.	217-762	1	ROCKER SWITCH (SPDT)	
13.	217-036	1	INSERT (YEL) - HYD OIL PSI	
14.	217-028	1	INSERT (BLK)- BLANK	
15.	217-020	2	PILOT LIGHT	
	217-046	1	BULB (12V DC)	
16.	217-027	1	INSERT (RED)- HYD OIL HI TEMP	
17.	217-021	1	INSERT (RED) - ENG OIL PSI	
18.	215-128	1	HOUR METER	
19.	344-736	-	INSTRUMENT PANEL	
20.	217-764	1	ROCKER SWITCH (SPDT)	

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FOOTNOTES:

NOTE:

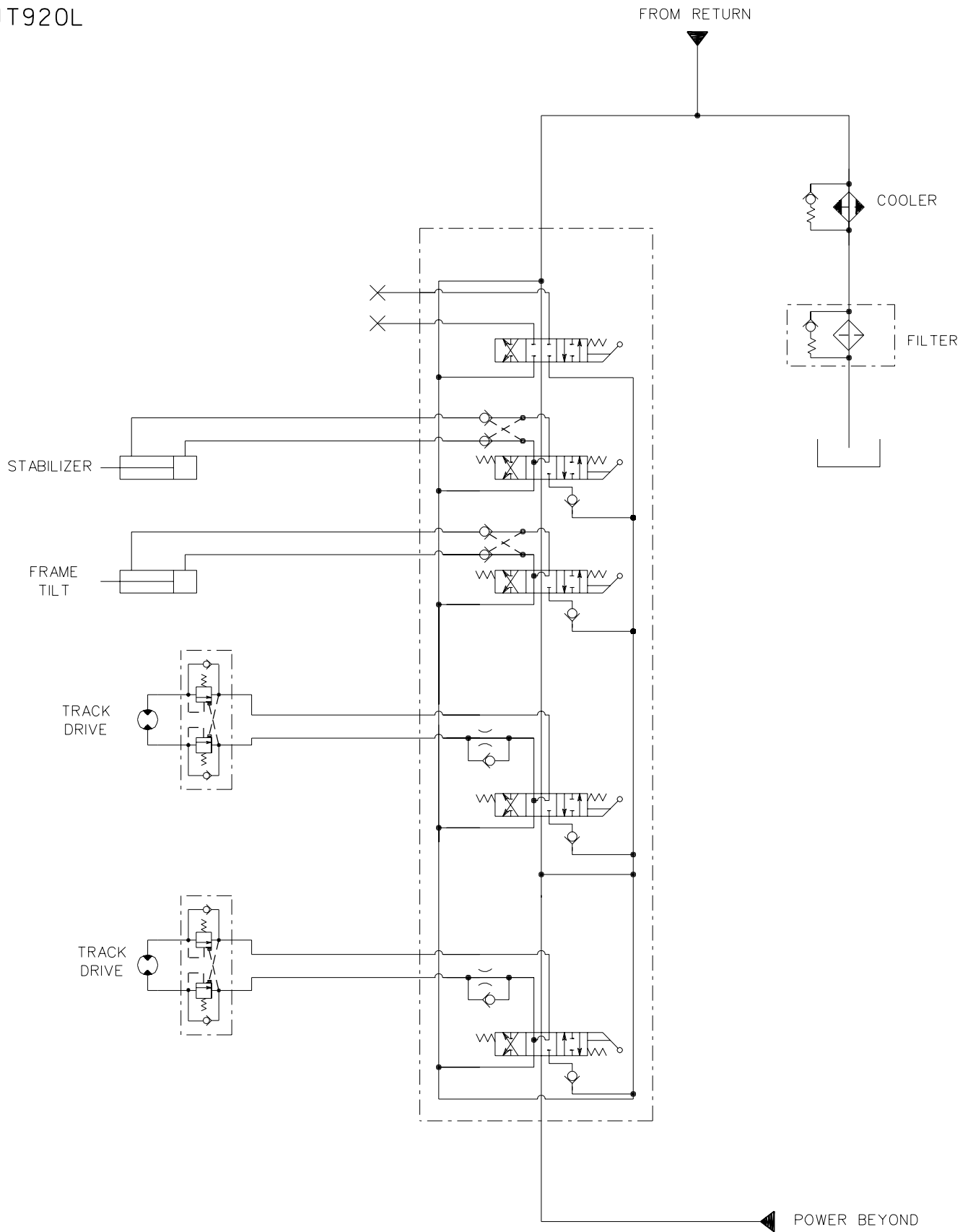




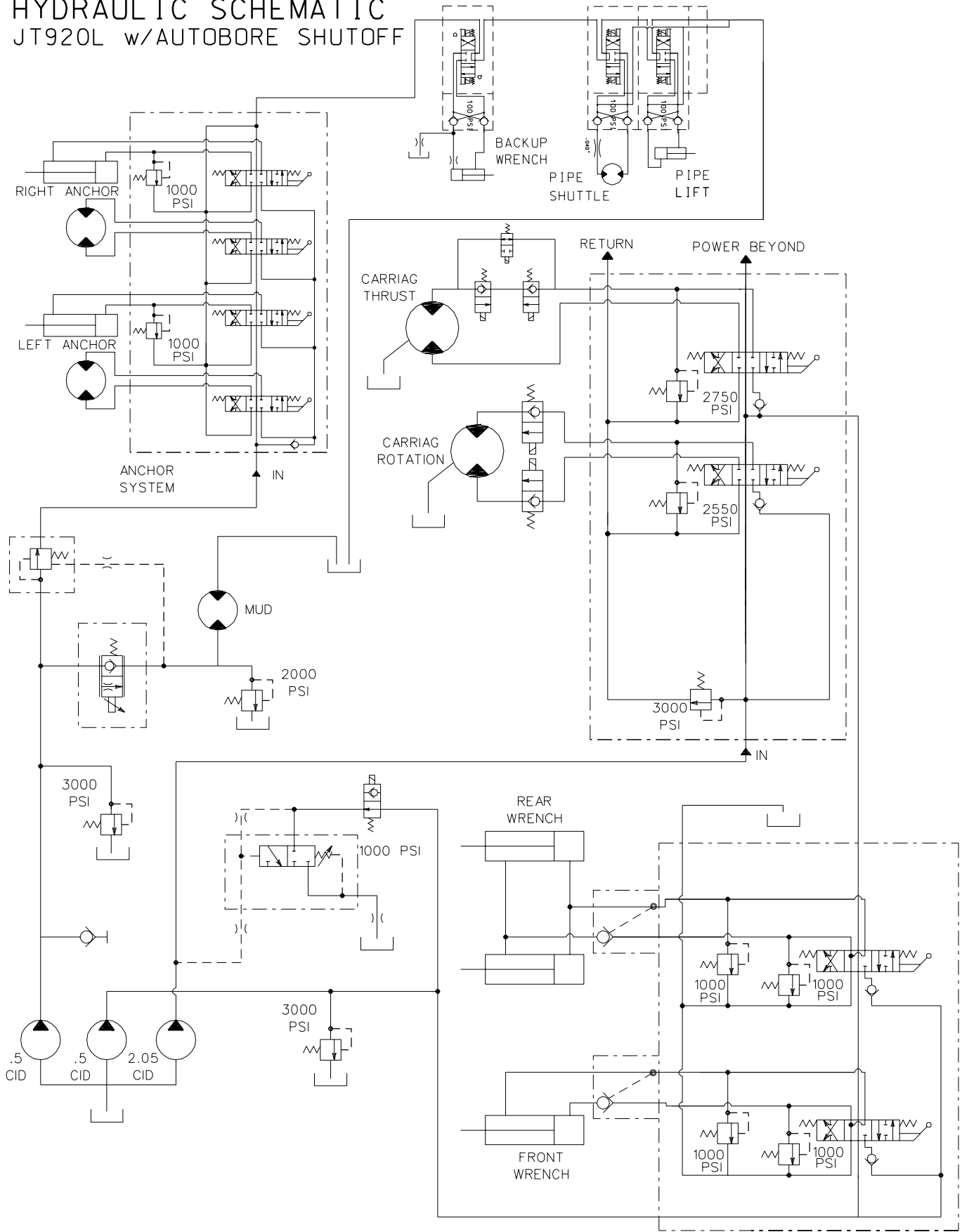
# HYDRAULICS

# HYDRAULIC SCHEMATIC

## JT920L

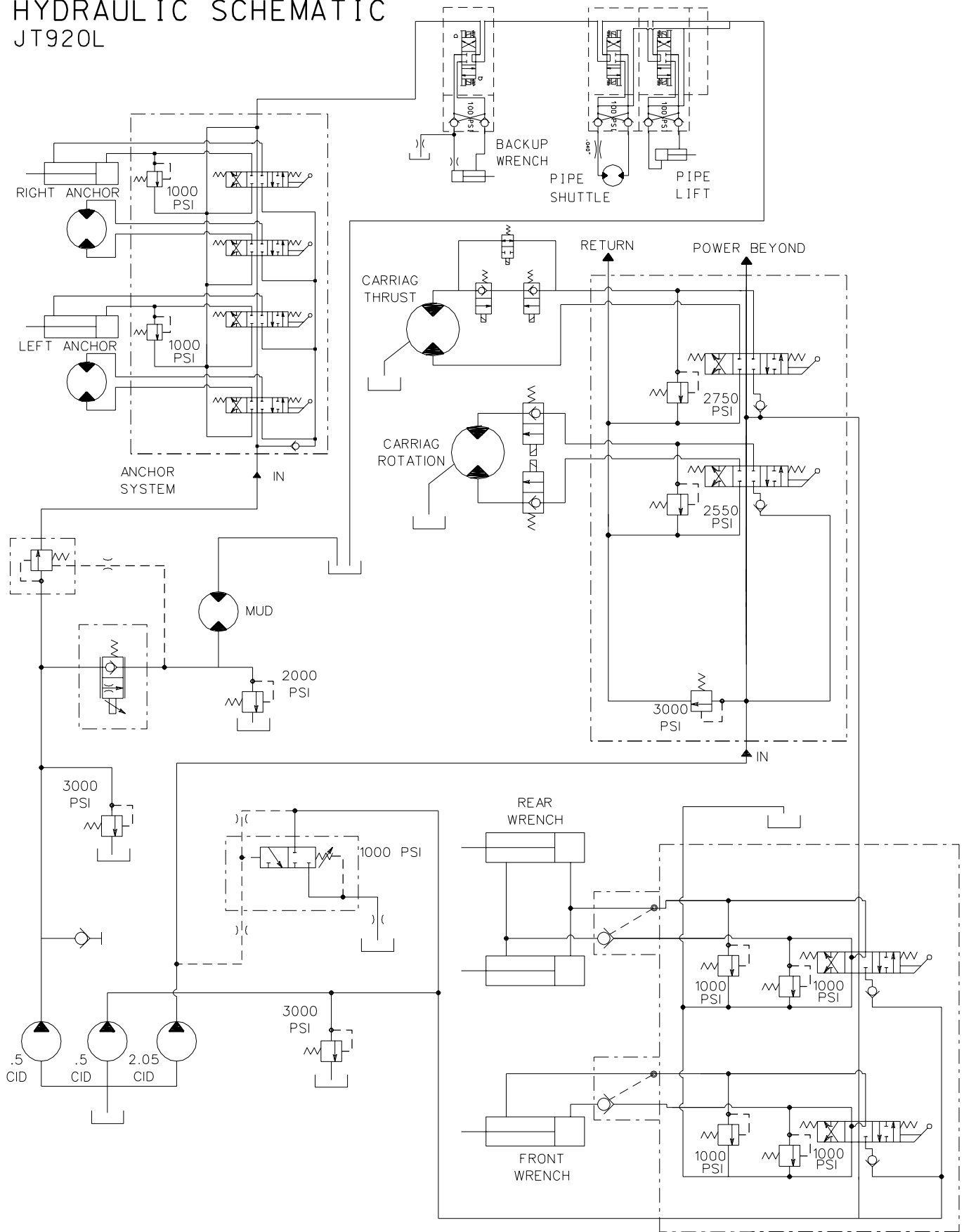


# HYDRAULIC SCHEMATIC JT920L w/AUTOBORE SHUTOFF



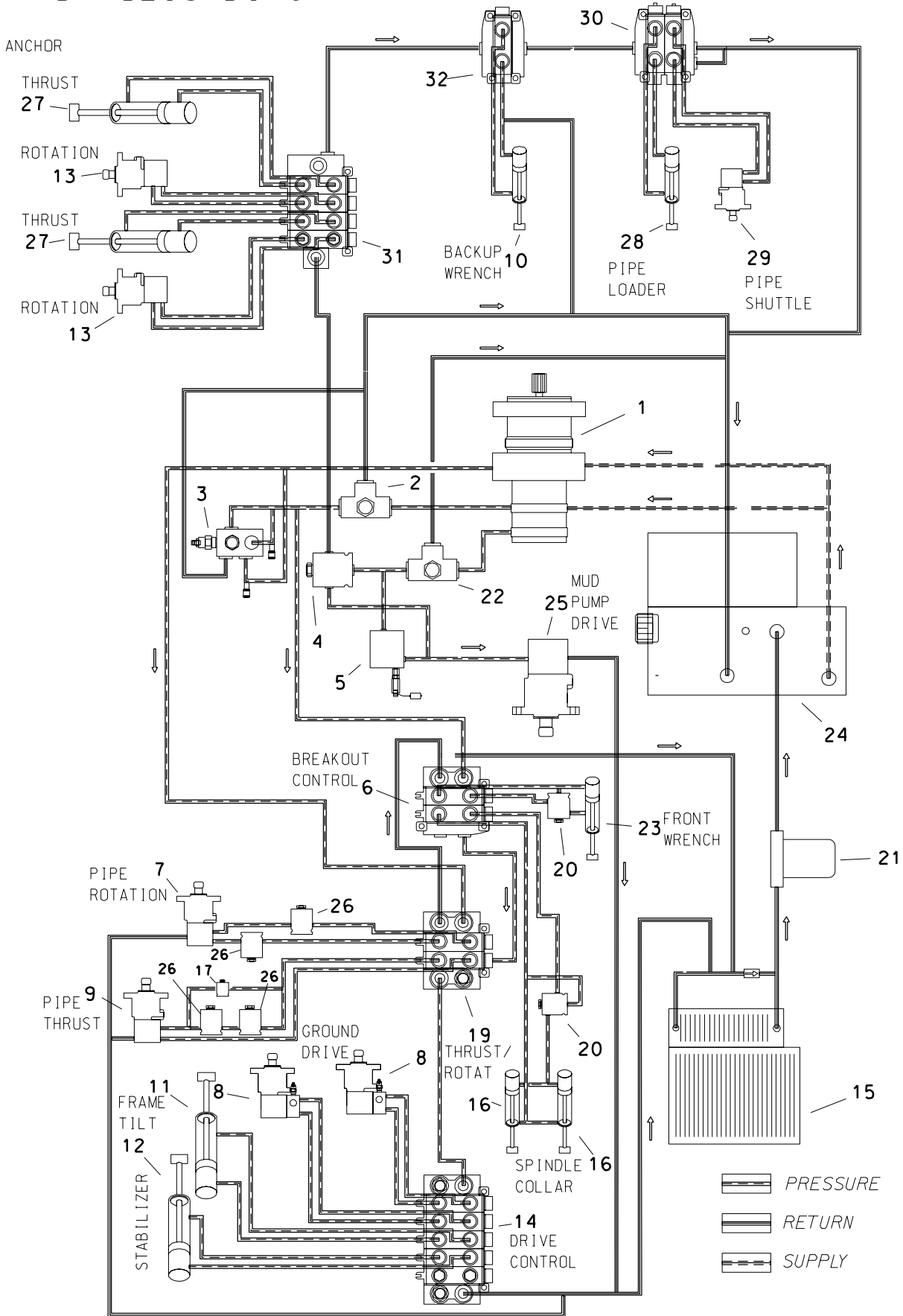
# HYDRAULIC SCHEMATIC




## JT920L





# HYDRAULIC DIAGRAM



 PRESSURE  
 RETURN  
 SUPPLY

## HYDRAULIC DIAGRAM

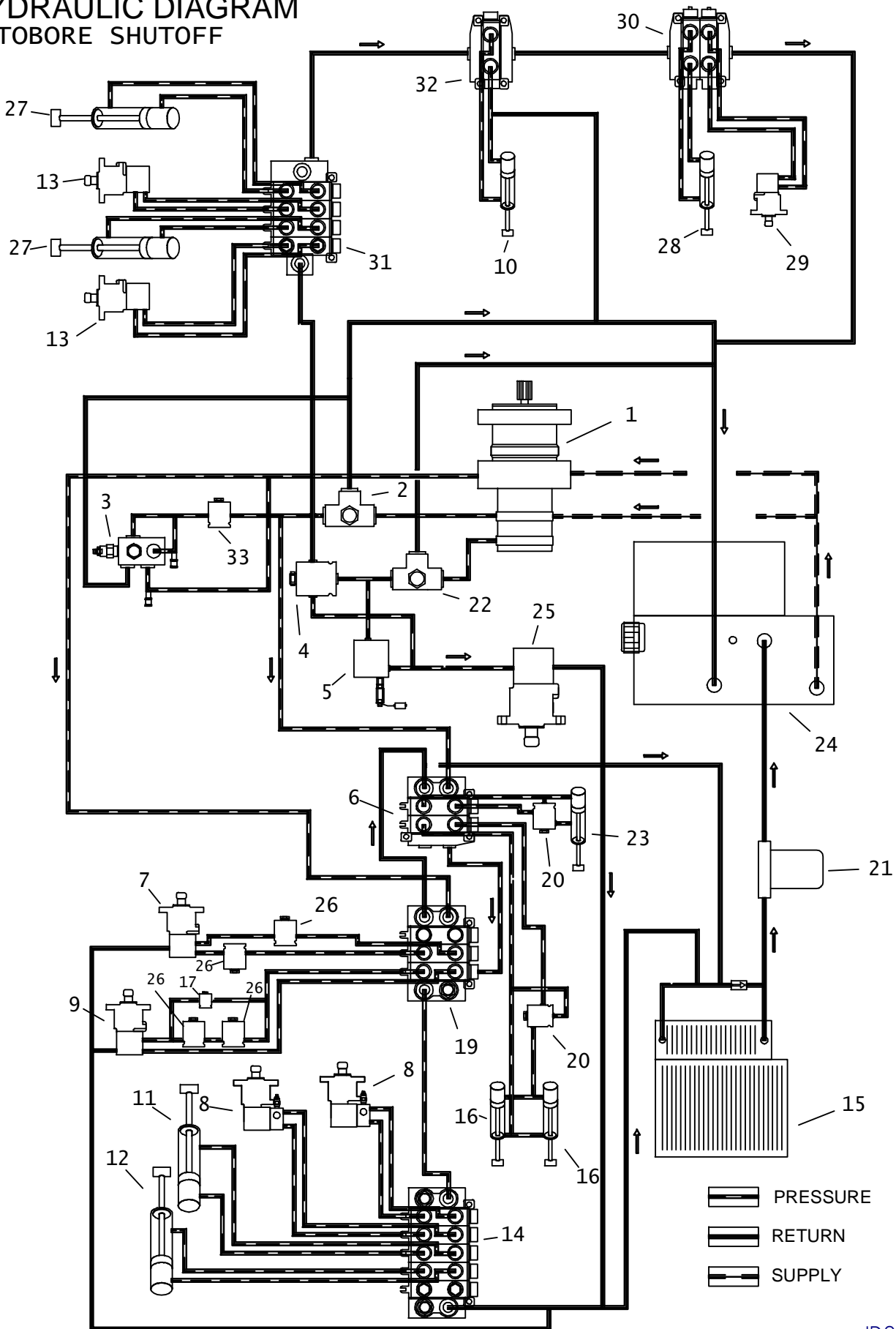
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-420	-	HYD PUMP	
2.	158-601	-	HYD RELIEF VALVE (3000PSI)	
3.	158-814	-	CONTROL VALVE	
4.	158-687	-	PRIORITY VALVE	
5.	157-784	-	HYD FLOW VALVE	
6.	516-027	-	HYD CONTROL VALVE (2-SPOOL)	
7.	158-881	-	HYD MOTOR	
8.	158-826	-	HYD MOTOR	
9.	158-908	-	HYD MOTOR	THRUST
10.	159-464	-	HYD CYL (1")	
	150-723	-	CYL, 1"BOREX2"STROKE W/EYE	
11.	151-054	-	CYL (3" X 1.5" X 4")	DRILLFRAME TILT
12.	151-147	-	CYL (3" X 1.5" X 32")	STABILIZER
13.	158-700	-	HYD. MOTOR	
14.	158-937	-	HYD CONTROL VALVE (2-SPOOL)	
15.	360-383	-	OIL COOLER & RADIATOR	
	306-829	-	OIL COOLER	
	306-830	-	RADIATOR	
16.	151-152	-	CYL (1.5" X .437" X 2")	
	150-724	-	CYL, 1"BOREX2"STROKE THRD	
17.	158-661	-	HYD CONTROL VALVE	
	158-627	-	SOLENOID VALVE	
18.	158-815	-	FLOW DIVIDER	
19.	516-028	-	HYD CONTROL VALVE (2-SPOOL)	ENDS WITH S/N2T3861, SEE FOOTNOTE 1
	516-124	-	HYD CONTROL VALVE	BEGINS WITH S/N2T3862, SEE FOOTNOTE 2
20.	155-259	-	CHECK VALVE	
21.	159-081	-	HYD OIL FILTER (20SF-20SF)	
	159-079	-	FILTER ELEMENT	
	217-760	-	INDICATOR SWITCH	
22.	155-622	-	HYD RELIEF VALVE (2000 PSI)	
23.	151-153	-	CYL (1" X 2.5")	
	150-725	-	CYL, 1"BOREX2.5"STROKE THRD	
24.	350-503	-	MOBILING STATION	
25.	158-488	-	GEAR MOTOR (3.0 CUI/REV)	
26.	516-029	-	HYD SOLENOID VALVE	
	155-724	-	O-RING (217 D70)	
27.	151-096	-	CYL (2" X 1" X 24")	
28.	151-028	-	CYL (2.5" X 1.25" X 4")	
29.	158-735	-	HYD MOTOR	
30.	516-096	-	HYD SOLENOID VALVE (2-SPOOL)	ENDS WITH SN2T2242
	149-263	-	HYDRAULIC VALVE W/P.O. VENT	BEGINS WITH SN2T2243
31.	158-944	-	HYD CONTROL VALVE	
32.	516-098	-	SOLENOID VALVE (SINGLE)	

## FOOTNOTES

- REFER TO INSTRUCTIONS 050-435 FOR PROPER INSTALLATION
- TO UPGRADE PRIOR UNITS REFER TO SERVICE BULLETIN 052-489.



# HYDRAULIC DIAGRAM AUTOBORE SHUTOFF



# HYDRAULIC DIAGRAM

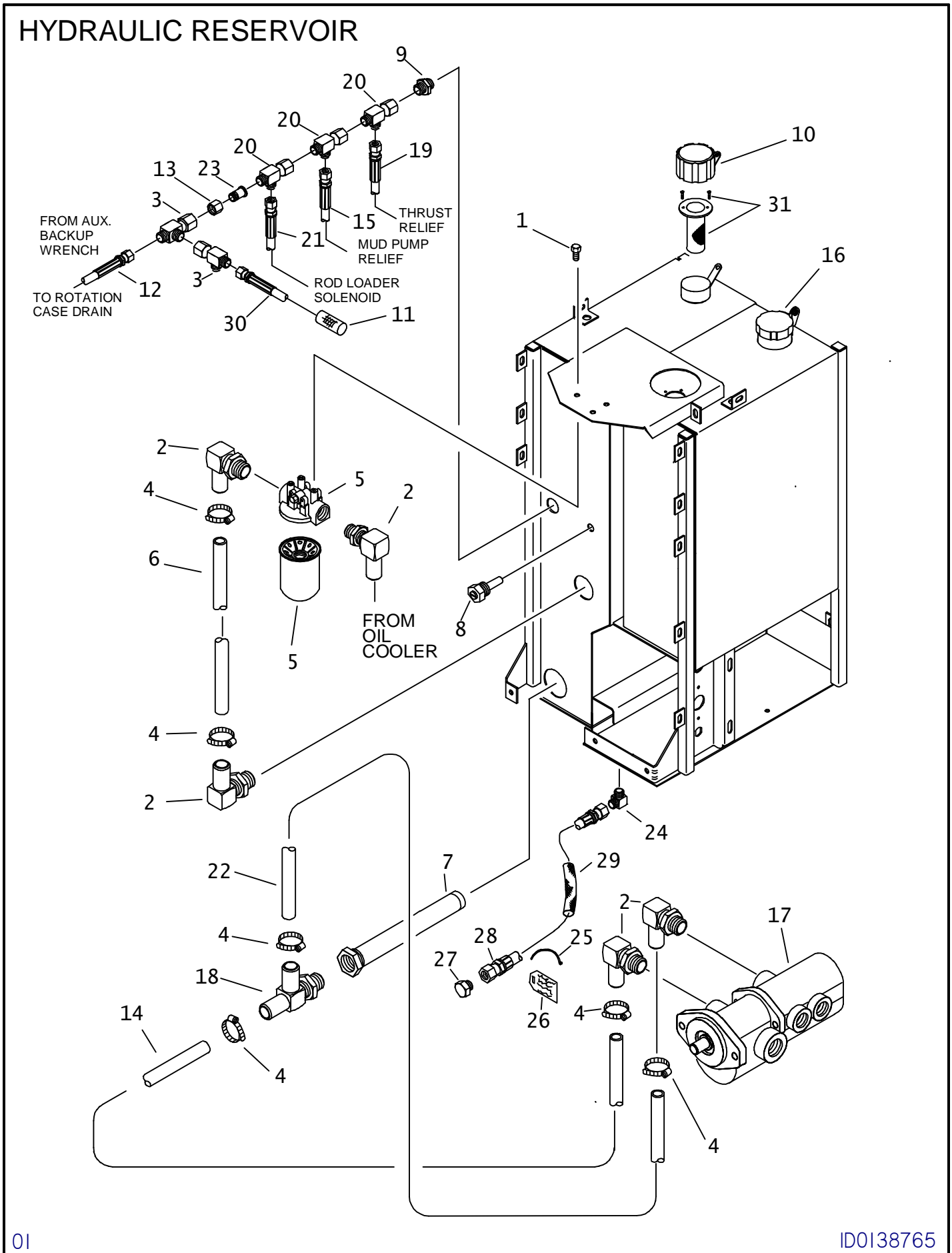
## AUTOBORE SHUTOFF

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-420	-	HYD PUMP	
2.	158-601	-	HYD RELIEF VALVE (3000PSI)	
3.	158-814	-	CONTROL VALVE	
4.	158-687	-	PRIORITY VALVE	
5.	157-784	-	HYD FLOW VALVE	
6.	516-027	-	HYD CONTROL VALVE (2-SPOOL)	
7.	158-881	-	HYD MOTOR	
8.	158-826	-	HYD MOTOR	
9.	158-908	-	HYD MOTOR	
10.	159-464	-	HYD CYL (1")	
	150-723	-	CYL (1" X 2")	DRILL FRAME TILT
11.	151-054	-	CYL (3" X 1.5" X 4")	STABILIZER
12.	151-147	-	CYL (3" X 1.5" X 20"-32")	
13.	158-700	-	HYD MOTOR	
	166-278	1	SHAFT	
14.	158-937	-	HYD CONTROL VALVE (_-SPOOL)	
15.	360-383	-	RADIATOR/OIL COOLER	
	306-829	-	OIL COOLER	
	306-830	-	RADIATOR	
16.	151-152	-	CYL (1.5" X .437" X 2")	
	150-724	-	CYL (1" X 2")	
17.	158-661	-	HYD CONTROL VALVE	
18.	158-815	-	FLOW DIVIDER	
19.	516-028	-	HYD CONTROL VALVE (_-SPOOL)	
20.	155-259	-	CHECK VALVE	
21.	159-081	-	HYD OIL FILTER (20SF-20SF)	
	159-079	-	OIL FILTER ELEMENT (1-1/2"-UNF)	
22.	155-622	-	HYD RELIEF VALVE (2000PSI)	
23.	151-153	-	CYL (1" X 2.5")	
	150-725	-	CYL (1" X 2.5")	
24.	350-503	-	MOBILING STATION	
25.	158-488	-	GEAR MOTOR (3.0 CUI/REV)	
26.	516-029	-	HYD SOLENOID VALVE	
27.	151-096	-	CYL (2" X 1" X 24")	
28.	151-028	-	CYL (2.5" X 1.25" X 4")	
29.	158-735	-	HYD MOTOR	
30.	149-263	-	HYDRAULIC VALVE W/P.O. VENT	
31.	158-944	-	HYD CONTROL VALVE	
32.	516-027	-	HYD CONTROL VALVE (4-SPOOL)	
33.	158-569	-	SOLENOID DIVERSION VALVE	

FOOTNOTES:

NOTE:

# HYDRAULIC RESERVOIR



# HYDRAULIC RESERVOIR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-826	3	FLG LK BOLT (3/8-NC X 1")	
2.	155-168	5	S/O COUPLER (20S-20H90)	
3.	154-265	2	UN RUN TEE (040FX-040-040)	
4.	110-133	6	WORM CLAMP (1-1/16" TO 1-15/16")	
5.	159-081	-	HYD OIL FILTER (20SF-20SF)	
	159-079	-	FILTER ELEMENT (1-1/2-UNF)	
6.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1@ 19.5"
7.	110-336	1	STRAINER (24S-20SF)	
8.	215-148	-	TEMPERATURE SWITCH	
	214-819	1	TEMPERATURE SWITCH	
9.	154-233	1	CONNECTOR (08S-080)	
10.	110-996	1	FILLER BREATHER CAP	LOCKABLE, ENDS WITH S/N, SEE FOOTNOTE 1
	165-626		FILLER NECK GASKET	ENDS WITH S/N
	153-766	1	LOCKING CAP (VENTED)	
	364-569	-	FILLER NECK	BEGINS WITH S/N
11.	115-715	1	ABRASIONS SLEEVE (2.07" X 42")	
12.	154-783	1	HOSE (040FX-24"-3000)	
13.	154-272	1	REDUCER NUT (080F)	
14.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 10"
15.	154-942	1	HOSE (080FX90S-13"-3000)	
16.	350-503	-	MOBILING STATION	
17.	158-420	-	HYDRAULIC PUMP	
18.	155-279	1	S/O RUN TEE (20S-20H-20H)	
19.	154-673	1	HOSE (080FX-14"-3000)	
20.	154-266	3	UN RUN TEE (080FX-080-080)	
21.	515-303	1	HOSE (080FX90-58"-3000)	
22.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 6 1/4"
23.	154-248	1	REDUCER STEM (040)	
24.	154-342	1	CONNECTOR (06N-06090)	
25.	110-030	1	CABLE TIE (1/16" TO 4")	
26.	274-711	1	HYD OIL DRAIN	
27.	154-330	1	PLUG (060)	
28.	154-722	1	HOSE (060FX-32"-3000)	
29.	117-676	1	ABRASION SLEEVE (1.00" X 30")	
30.	515-030	1	HOSE (040FX90S-64"-3000)	
31.	153-900	1	STRAINER	
	105-189	2	SCREW (#6-32 X 1/2")	

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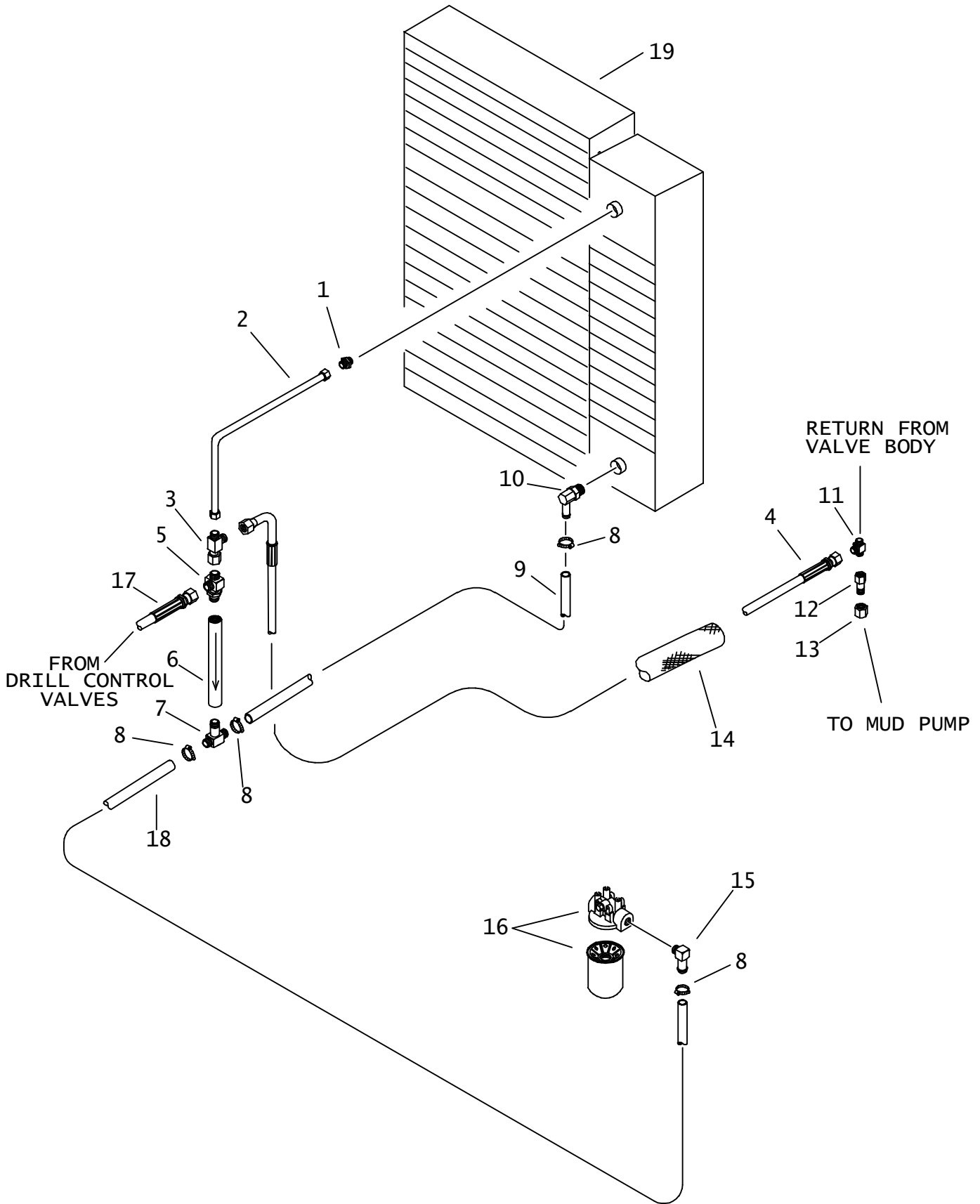
#### FOOTNOTES:

- I. WHEN ORDERING, MUST ORDER I05-214 (QTY=6) FLG SCREW ( #10-24 X 1/2" . SLT).  
I05-214 ALSO USED WITH NON-LOCKABLE FILLER I10-008.

#### NOTE:

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

# OIL COOLER HYDRAULICS



# OIL COOLER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-269	1	CONNECTOR (12S-120)	
2.	156-563	1	HYD LINE (120FX-31.0")	
3.	154-368	1	UNION RUN TEE (120FX-120-120)	
4.	515-242	1	HOSE (120FX90-95"-3000)	
5.	154-292	1	RUN TEE (12S-120-120)	
6.	155-245	1	CHECK VALVE (12SF-12SF)	
7.	514-043	1	S/O BR TEE (12S-20H-20H)	
8.	110-133	4	WORM CLAMP (1-1/6" TO 1-15/16")	
9.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 17"
10.	514-027	1	S/O COUPLER (12S-20H90)	
11.	154-368	1	UNION RUN TEE (120FX-120-120)	
12.	154-249	1	REDUCER STEM (080)	
13.	154-271	1	REDUCER NUT (120F)	
14.	115-924	1	ABRASION SLEEVE (1.59" X 88")	
15.	155-168	1	S/O COUPLER (20S-20H90)	
16.	159-081	1	HYD OIL FILTER (20SF-20SF)	
	159-079		FILTER ELEMENT (1-1/2-UNF)	
	217-765		INDICATOR SWITCH	
17.	515-218	1	HOSE (120FX90-80"-3000)	
18.	116-587	AR	BULK HOSE (1-1/4", SOLD PER 1")	USE 1 @ 65"
19.	360-383	-	OIL COOLER & RADIATOR	

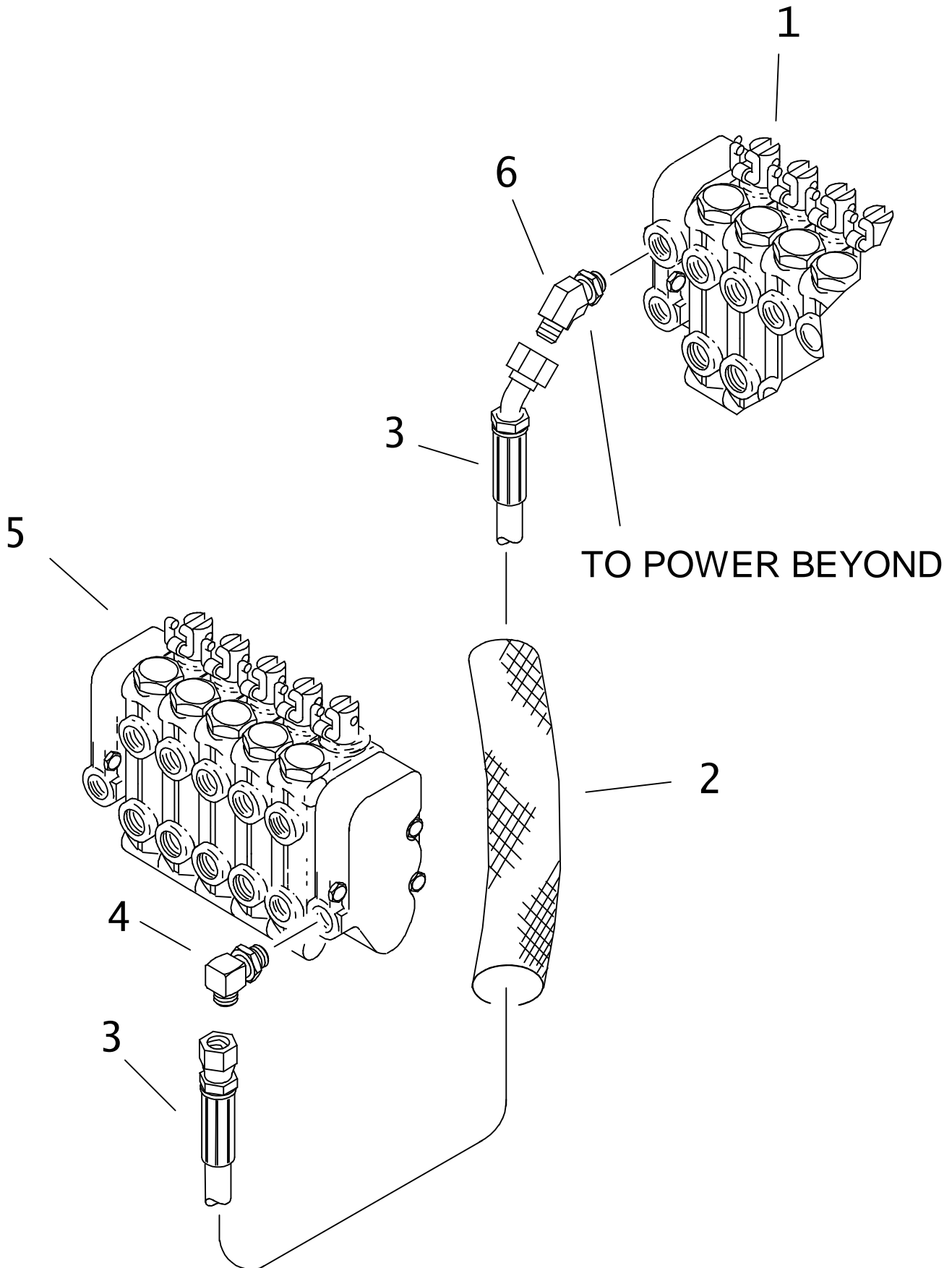
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FOOTNOTES:

NOTE:

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

# DRIVE CONTROL SUPPLY HYDRAULICS



# DRIVE CONTROL SUPPLY HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-028	-	HYDRAULIC CONTROL VALVE (4-SPOOL)	
2.	115-961	1	ABRASION SLEEVE (2.07" X 200")	
3.	515-513	1	HOSE (120FX45-195"-3000)	
4.	154-273	1	CONNECTOR (10S-12090)	
5.	158-937	-	HYDRAULIC CONTROL VALVE (5-SPOOL)	
6.	154-251	1	CONNECTOR (12S-12045)	

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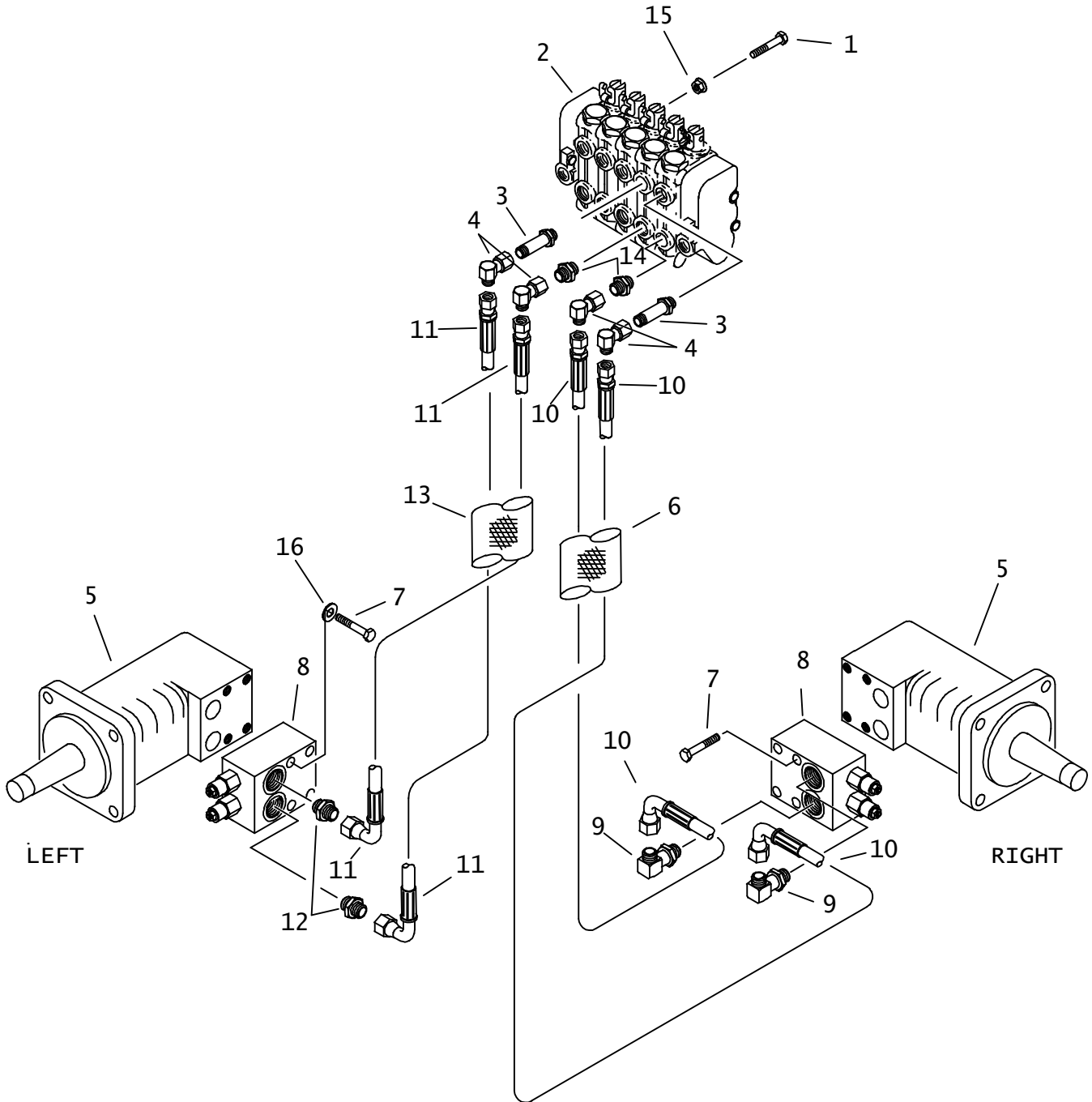
FOOTNOTES:

NOTE:

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



# GROUND DRIVE HYDRAULICS



# GROUND DRIVE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-827	3	FLG LK BOLT (3/8-NC X 1-1/4")	
2.	158-937	-	HYDRAULIC CONTROL VALVE (5-SPOOL)	
3.	154-438	2	CONNECTOR (08S-080, LG)	
4.	154-256	4	UNION (080-080FX90)	
5.	158-826	-	HYDRAULIC MOTOR	
	500-510	1	SEAL REPAIR KIT	
	500-1576		ASSEMBLY BOLT	
	500-1577		SERVICE HOUSING	
	107-034	1	CASTLE NUT (1-20 NEF)	
	166-846	1	WOODRUFF KEY (5/16" X 1")	
	155-756	1	O-RING (112 D90, URETHANE)	
	499-433		COUPLING SHAFT	
	499-434		OUTER SHAFT BEARING	
	157-701		SHAFT SEAL	
6.	115-963	1	ABRASION SLEEVE (1.59" X 75")	
7.	105-178	8	BOLT (5/16-NC X 2-1/2",GD8)	
8.	159-489	2	COUNTERBALANCE MANIFOLD	
	499-084	4	COUNTERBALANCE CARTRIDGE KIT	
9.	154-322	2	CONNECTOR (080-10S90)	
10.	515-241	2	HOSE (080FX90L-82"-3000)	
11.	515-243	2	HOSE (080FX90-66"-3000)	
12.	154-279	2	CONNECTOR (080-10S)	
13.	115-938	1	ABRASION SLEEVE (1.59" X 66")	
14.	154-233	2	CONNECTOR (08S-080)	
15.	105-845	3	FLG LOCKNUT (3/8-NC)	
16.	105-095	8	WASHER (1/4")	

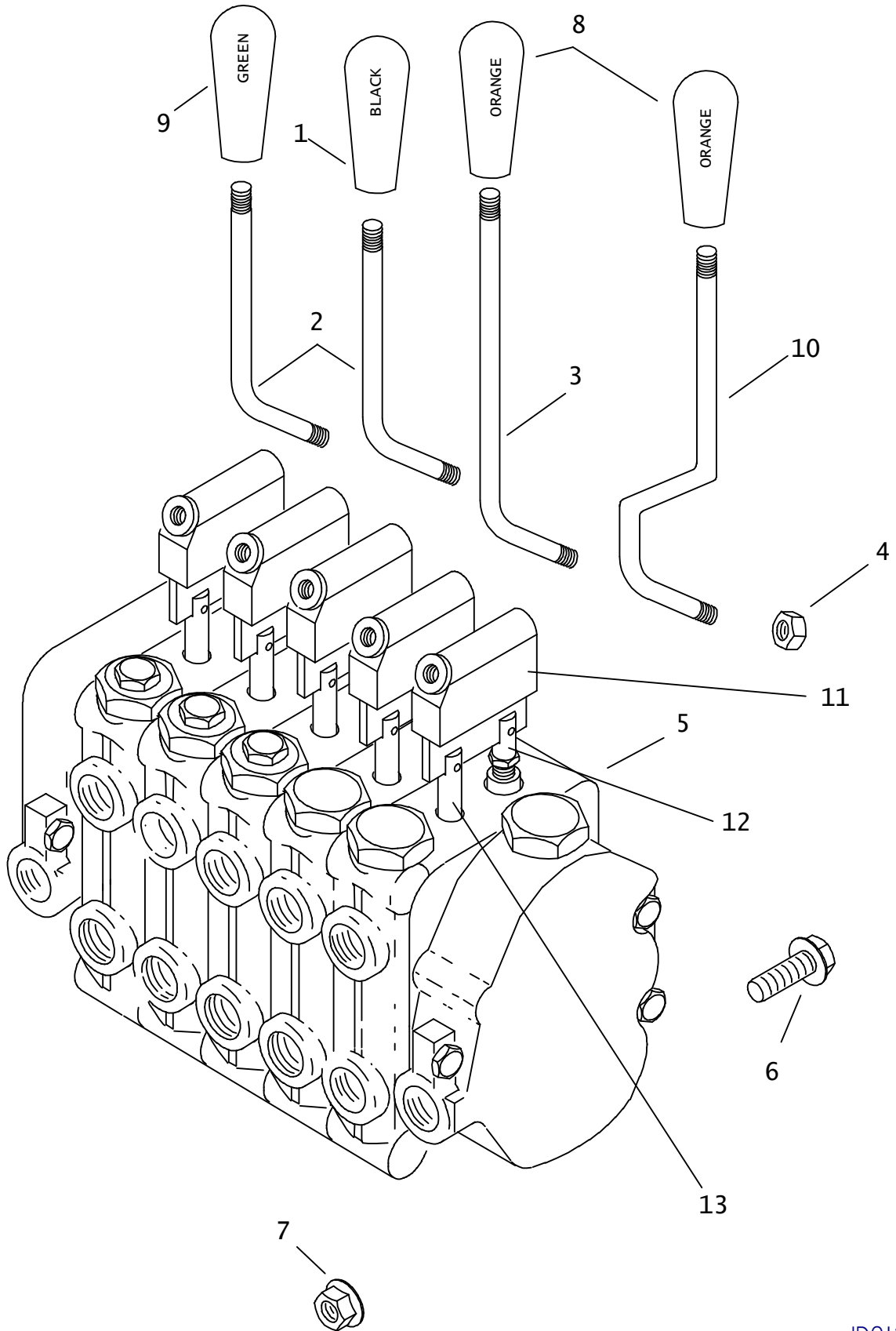
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FOOTNOTES:

NOTE:

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

# DRIVE CONTROL VALVE & LEVERS



# DRIVE CONTROL VALVE & LEVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-531	1	HANDLE (1/2-NC, BLACK)	
2.	353-140	2	CONTROL LEVER	
3.	353-141	1	CONTROL LEVER	
4.	105-044	4	JAM NUT (1/2-NC)	
5.	158-937	1	HYD CONTROL VALVE (_-SPOOL)	
	499-333		VALVE SECTION (GROUND DRIVE)	
	500-562		SPOOL END CAP	
	500-563		SPRING CENTERING KIT	
	499-333		VALVE SECTION (GROUND DRIVE)	
	500-558		VALVE SECTION (#_)	
	500-559		VALVE SECTION (#_)	
6.	105-827	3	FLG LK BOLT (3/8-NC X 1-1/4")	
7.	105-845	3	FLG LOCKNUT (3/8-NC)	
8.	110-465	2	KNOB (1/2-NC, ORANGE)	
9.	110-530	1	HANDLE (1/2-NC, GREEN)	
10.	353-311	1	CONTROL LEVER	
11.	191-159		CONTROL LEVER BRACKET	
12.	500-512		LEVER PIVOT (CLEVIS)	
13.	500-877		SPOOL CLEVIS (YOKE)	

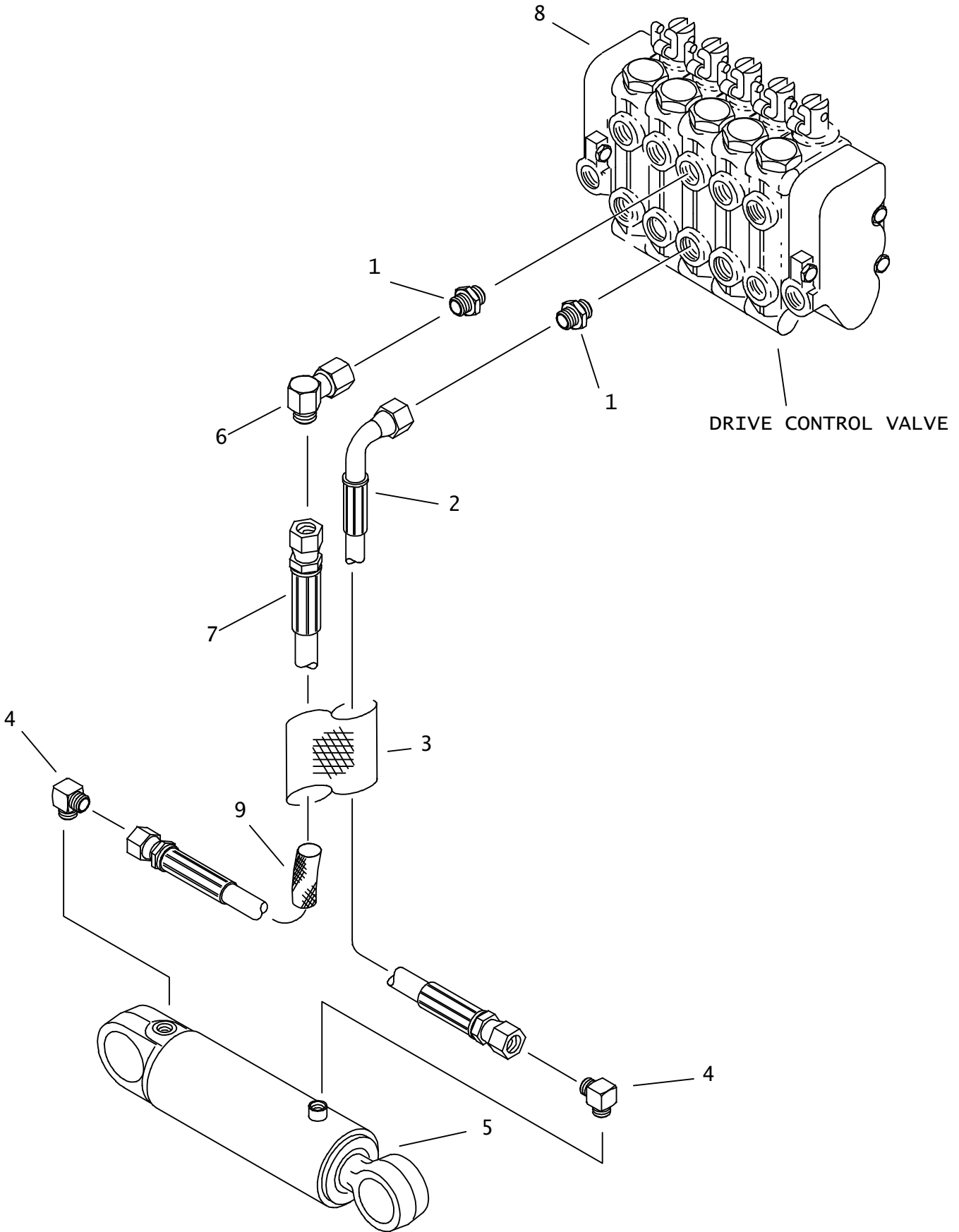
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500-877	5	SPOOL CLEVIS (YOKE)
500-512	5	LEVER PIVOT (CLEVIS)

FOOTNOTES:

NOTE:

# FRAME TILT HYDRAULICS



# FRAME TILT HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-261	2	CONNECTOR (040-08S)	
2.	515-239	1	HOSE (040FX90-116"-3000)	
3.	116-633	1	ABRASION SLEEVE (1.59" X 115")	
4.	154-226	2	CONNECTOR (040-06S90)	
5.	151-054	1	CYL (3" X 1.5" X 4")	
6.	154-255	1	UNION (040-040FX90)	
7.	154-742	1	HOSE (040FX-130"-3000)	
8.	158-937	-	HYDRAULIC CONTROL VALVE (5-SPOOL)	
9.	117-194	1	ABRASION SLEEVE (1.00" X 16")	

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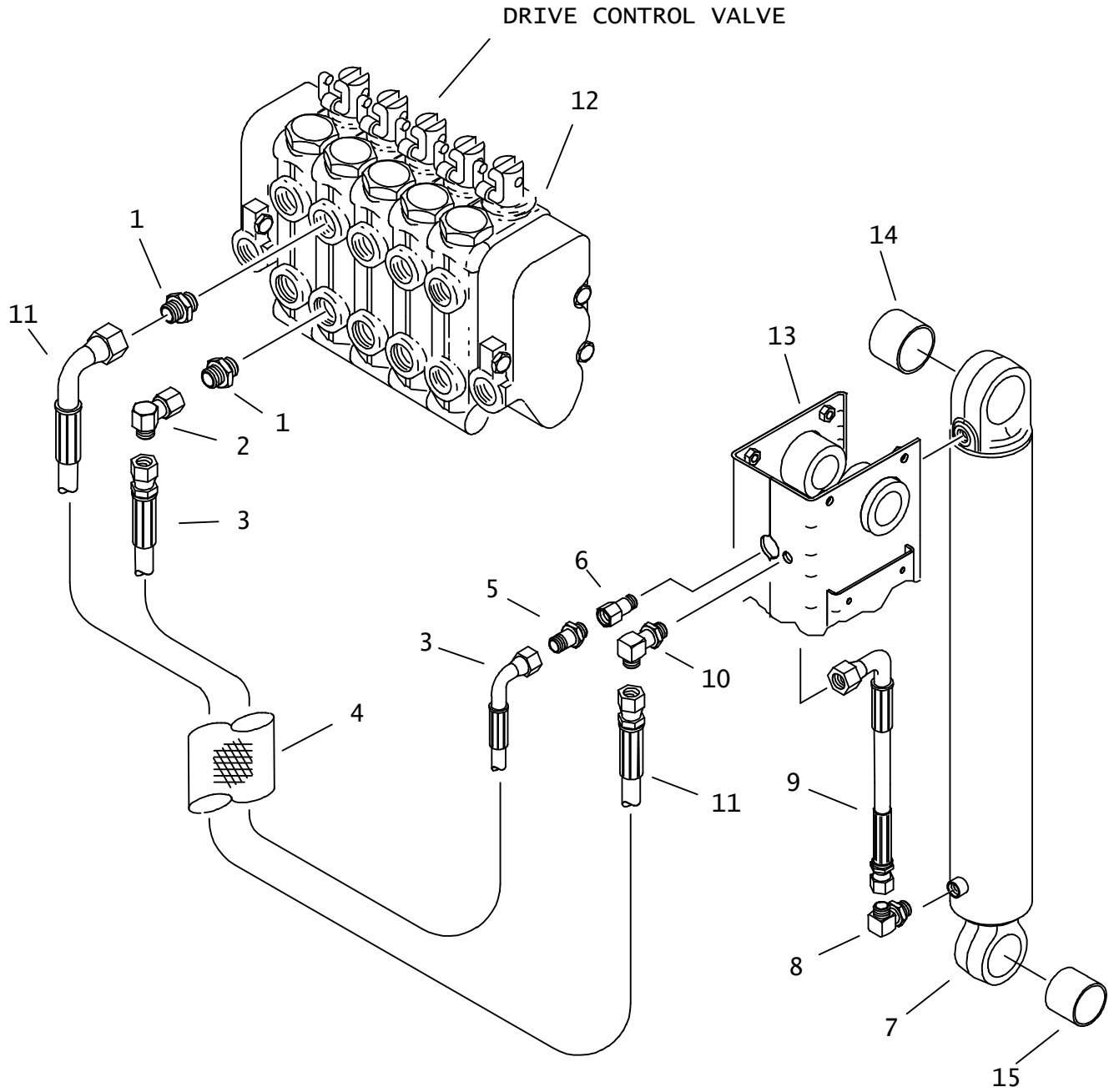
FOOTNOTES:

NOTE:

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

# STABILIZER HYDRAULICS

## JT920L



# STABILIZER HYDRAULICS

## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-261	2	CONNECTOR (040-08S)	
2.	154-255	1	UNION (040-040FX90)	
3.	515-240	1	HOSE (040FX90-72"-3000)	
4.	115-935	1	ABRASION SLEEVE (1.75" X 70")	
5.	154-403	1	CONNECTOR (04S-040, XL)	
6.	155-254	1	REDUCER (06S-04SF)	
7.	151-147	1	CYL (3" X 1.5" X 20") 32"	
8.	154-226	1	CONNECTOR (040-06S90)	
9.	154-743	1	HOSE (040FX90-23"-3000)	
10.	154-355	1	BK CONNECTOR (040-04090BK)	
11.	515-074	1	HOSE (040FX90-77"-3000)	
12.	158-937	-	HYDRAULIC CONTROL VALVE (_-SPOOL)	
13.	353-290	-	UPPER STABILIZER TUBE-WET	
14.	125-773	1	COMPOSITION BUSHING (1.75")	
15.	125-772	1	COMPOSITION BUSHING (1.5")	

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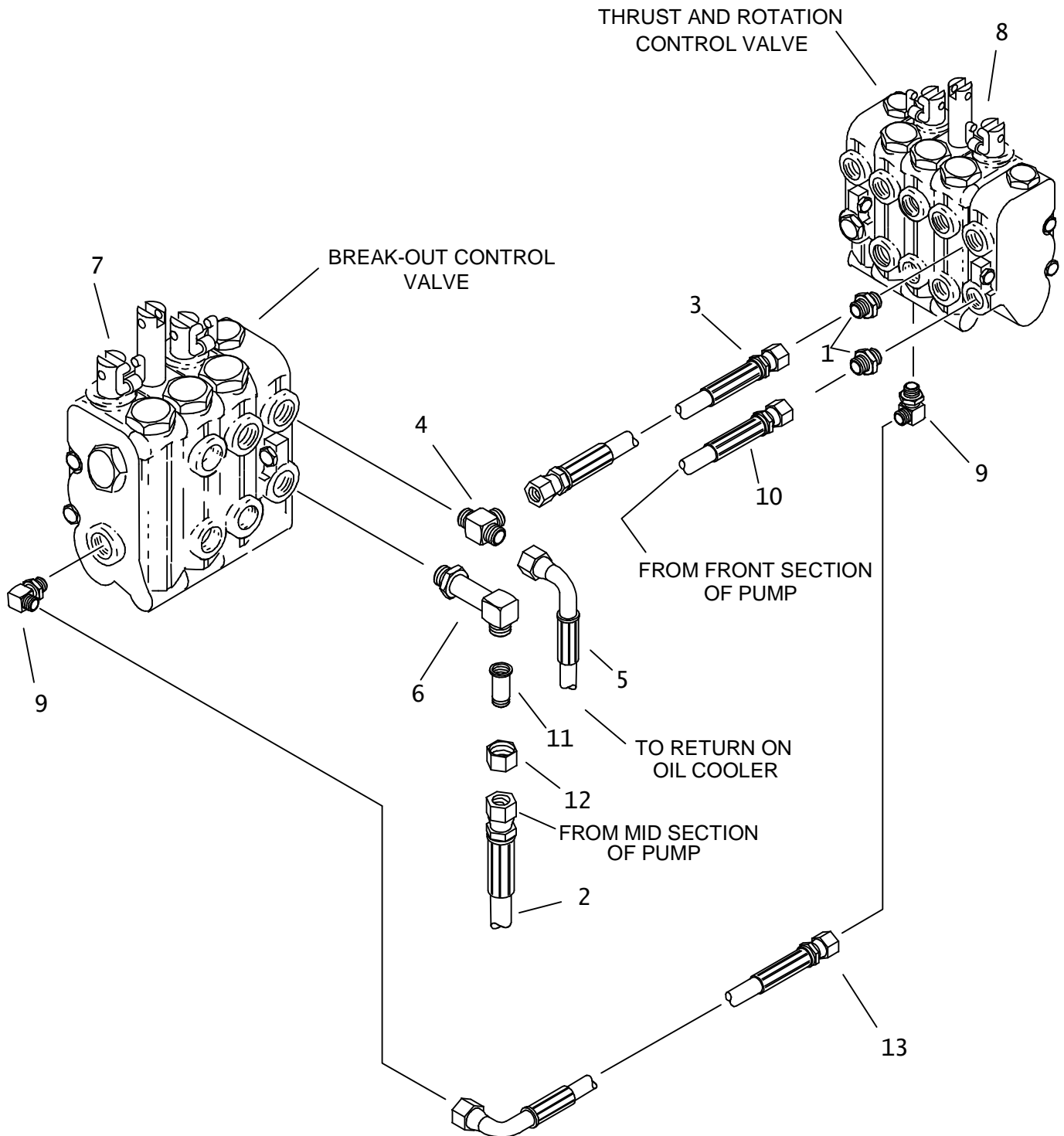
FOOTNOTES:

NOTE:

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



# SUPPLY HYDRAULICS



# SUPPLY HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-269	2	CONNECTOR (12S-120)	
2.	154-907	1	HOSE (08FX90-32"-3000)	
3.	515-213	1	HOSE (120FX-20"-3000)	
4.	154-292	1	RUN TEE (12S-120-120)	
5.	515-218	1	HOSE (120FX90-80"-3000)	
6.	154-338	1	CONNECTOR (12S-12090, XL)	
7.	516-027	-	HYDRAULIC CONTROL VALVE (2-SPOOL)	
8.	516-028	-	HYDRAULIC CONTROL VALVE (2-SPOOL)	
9.	154-322	2	CONNECTOR (080-10590)	
10.	154-957	1	HOSE (120FX90-92"-3000)	
11.	154-249	1	REDUCER STEM (080)	
12.	154-271	1	REDUCER NUT (120F)	
13.	154-902	1	HOSE (080FX90S-66"-3000)	

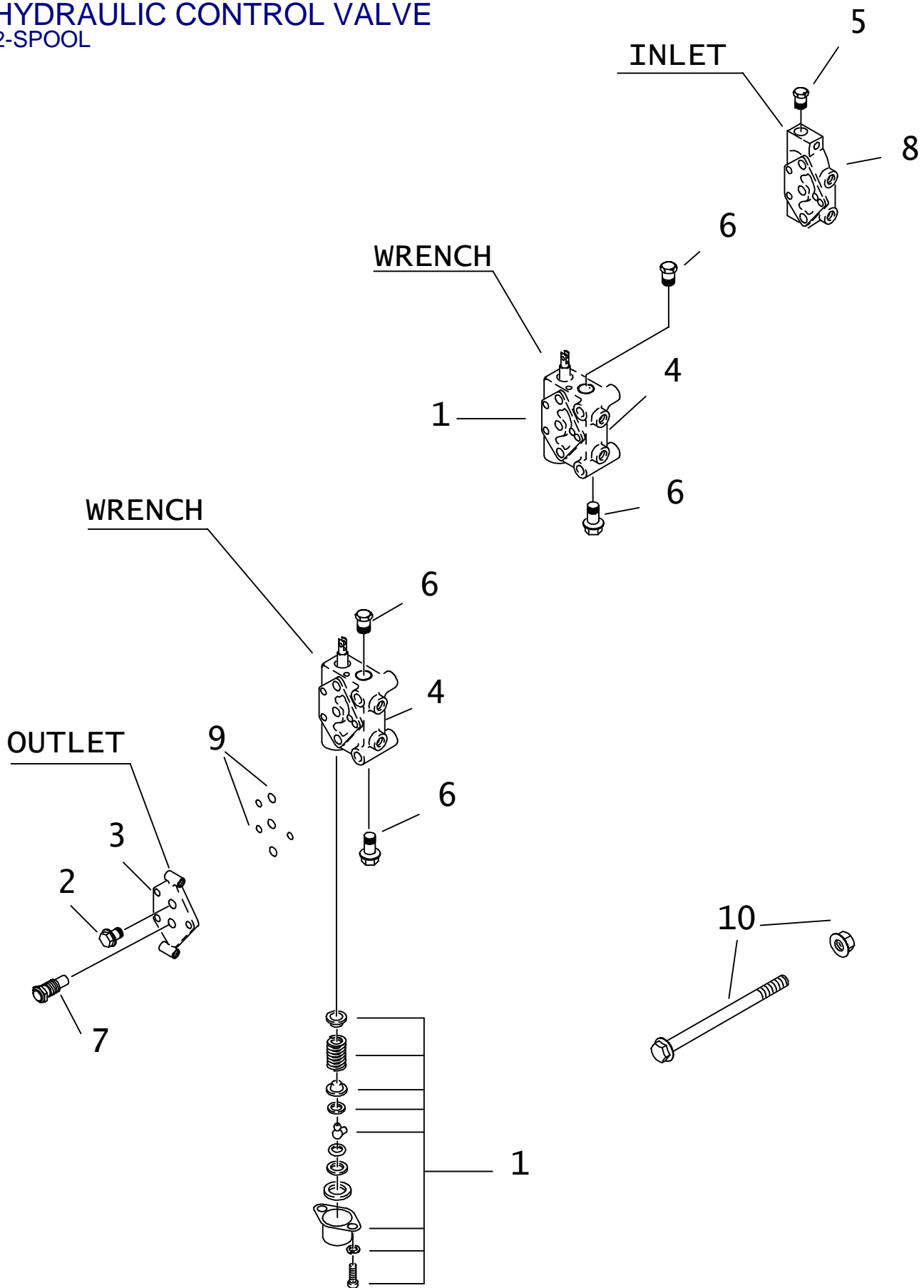
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FOOTNOTES:

NOTE:

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

# HYDRAULIC CONTROL VALVE 2-SPOOL



## HYDRAULIC CONTROL VALVE 2-SPOOL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	516-027		HYD CONTROL VALVE (2-SPOOL)	INCL REF NO'S 1 THRU 10
1.	500-592	2	STANDARD SPOOL POSITIONER KIT	
2.	500-302	1	PLUG (12S, SOC)	
	155-709		O-RING (912 D90)	
3.	500-951	1	OUTLET COVER	INCL REF NO'S 2, 7 & 9
4.	500-948	2	VALVE SECTION (#_)	
	500-587	2	SPOOL SEAL REPAIR KIT	
	500-949	2	SECTION SERVICE REPAIR KIT	INCL REF NO 9
5.	500-580	1	NR MAIN RELIEF PLUG KIT	
	500-581	1	SEAL REPAIR KIT	
6.	500-962	4	RC RELIEF CARTRIDGE (500PSI)	
	500-585		SEAL REPAIR KIT	
	500-950	1	RELIEF CARTRIDGE SEAL REPAIR KIT	
7.	500-952	1	POWER BEYOND SLEEVE KIT	
8.	N/A		INLET COVER	
9.	500-588	3	SECTIONAL O-RING REPAIR KIT	
10.	500-582	3	TIE-BOLT KIT (2-SECTION)	SEE FOOTNOTE 1
	<u>500-418</u>		BOLT (3/8-NC X 6")	
	105-053		NUT (3/8-NC)	

## NOT SHOWN:

499-179 CLEVIS ADAPTER

## FOOTNOTES:

- I. TORQUE TO 32 FT LBS; INCL'S 3 BOLTS & 3 NUTS.

## NOTE:



# HYDRAULIC CONTROL VALVE (3-SPOOL) ENDS WITH S/N \_\_\_\_\_

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	516-028		HYD CONTROL VALVE (3-SPOOL)	INCL REF NO'S. 1 THRU 16
	500-588	4	SECTIONAL O-RING REPAIR KIT	
1.	500-592	3	STANDARD SPOOL POSITIONER KIT	
2.	500-302	2	PLUG (12S, SOC)	
	155-709		O-RING (912 D90)	
3.	500-961	1	OUTLET COVER	INCL REF NO'S. 2, 14 & 15
4.	500-960	1	VALVE SECTION (#)	
	500-949		SECTION SERVICE REPAIR KIT	INCL REF NO 14
5.	500-959	1	VALVE SECTION (#)	
	500-949		SECTION SERVICE REPAIR KIT	INCL REF NO 14
6.	500-958	1	VALVE SECTION (#)	
	500-949		SECTION SERVICE REPAIR KIT	INCL REF NO 14
7.	500-956	1	WH RELIEF CARTRIDGE (3000PSI)	
	500-957		SEAL REPAIR KIT	
8.	500-321	2	LOAD CHECK PLUG KIT	
	500-585		SEAL REPAIR KIT	
9.	500-638	2	RC RELIEF CARTRIDGE (1500PSI)	
	500-585		SEAL REPAIR KIT	
10.	500-587	6	SPOOL SEAL REPAIR KIT	
11.	499-402	1	PORT RELIEF CARTRIDGE 2750 ADJ	
	500-585	1	SEAL REPAIR KIT	
12.	499-406	1	PORT RELIEF CARTRIDGE 2550 ADJ	
	500-585	1	SEAL REPAIR KIT	
13.	N/A	1	INLET COVER	
14.	500-588	4	SECTIONAL O-RING REPAIR KIT	
15.	155-074	1	PLUG (08S, SOC, FM)	
	155-706		O-RING (908 D90)	
16.	500-744	3	TIE-BOLT KIT (3-SECTION)	SEE FOOTNOTE 1
	500-301		BOLT (3/8-NC X 8")	
	105-053		NUT (3/8-NC)	

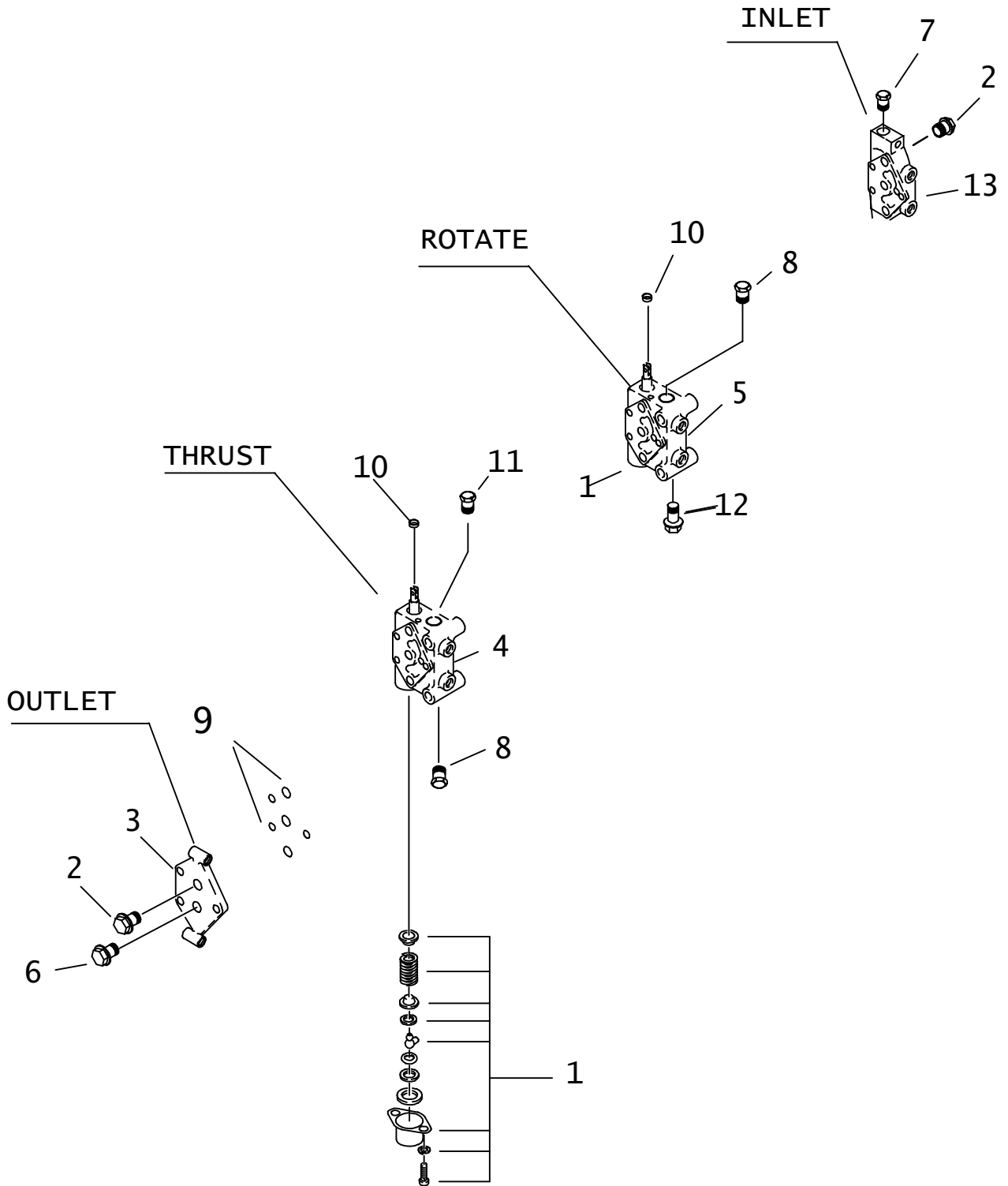
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FOOTNOTES:

- I. TORQUE TO 32 FT LBS. INCLS 3 BOLTS & 3 NUTS

NOTE:

# HYDRAULIC CONTROL VALVE (2-SPOOL)



## HYDRAULIC CONTROL VALVE (2-SPOOL)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	516-124		HYD CONTROL VALVE (2-SPOOL)	INCL REF NO'S. 1 THRU 16
	500-588	4	SECTIONAL O-RING REPAIR KIT	
1.	500-592	2	STANDARD SPOOL POSITIONER KIT	
2.	500-302	2	PLUG (12S, SOC)	
	155-709		O-RING (912 D90)	
3.	500-961	1	OUTLET COVER	INCL REF NO'S. 2, 14 & 15
4.	500-960	1	VALVE SECTION (#)	
	500-949		SECTION SERVICE REPAIR KIT	INCL REF NO 14
5.	500-959	1	VALVE SECTION (#)	
	500-949		SECTION SERVICE REPAIR KIT	INCL REF NO 14
6.	155-074	1	PLUG (08S, SOC, FM)	
	155-706		O-RING (908 D90)	
7.	500-956	1	WH RELIEF CARTRIDGE (3000PSI)	
	500-957		SEAL REPAIR KIT	
8.	500-321	2	LOAD CHECK PLUG KIT	
	500-585		SEAL REPAIR KIT	
9.	500-588	4	SECTIONAL O-RING REPAIR KIT	
10.	500-587	4	SPOOL SEAL REPAIR KIT	
11.	499-402	1	PORT RELIEF CARTRIDGE 2750 ADJ	F/N 2
	500-585	1	SEAL REPAIR KIT	
12.	499-406	1	PORT RELIEF CARTRIDGE 2550 ADJ	F/N 3
	500-585	1	SEAL REPAIR KIT	
13.	N/A	1	INLET COVER	

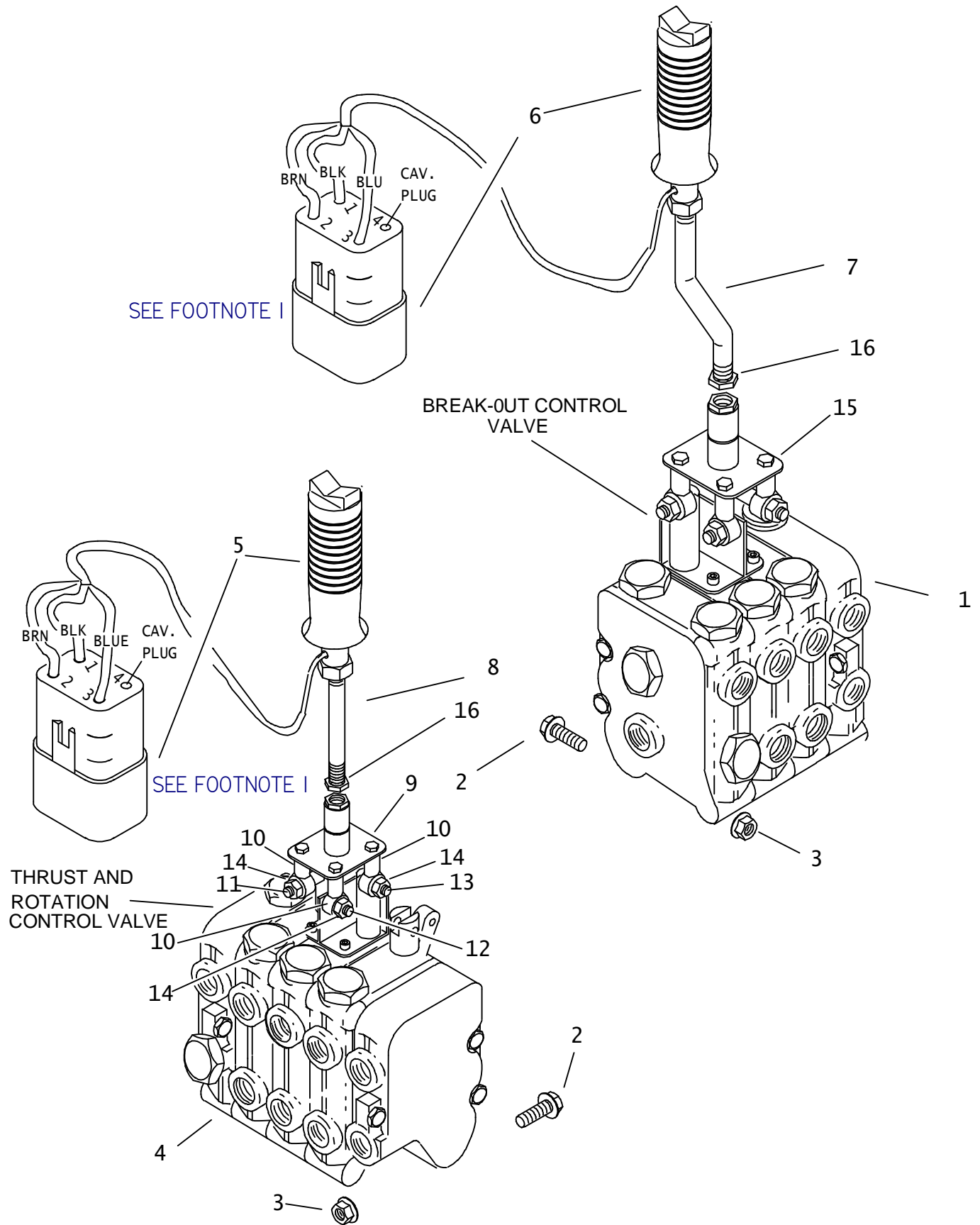
### FOOTNOTES

1. TORQUE TO 32 FT LBS: INCLS 3 BOLTS & 3 NUTS
2. SET AT 2750 PSI - ADJUSTABLE FROM 2550 TO 2750 PSI
3. SET AT 2550 PSI - ADJUSTABLE FROM 2550 TO 2750 PSI

NOTE:



# CONTROL VALVE/LEVERS



# CONTROL VALVE/LEVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-027	1	HYDRAULIC CONTROL VALVE (2-SPOOL)	
2.	106-206	6	SCREW (M10-1.5 X 90)	
3.	107-096	6	LOCKNUT (M8-1.25, NLK)	
4.	516-028	1	HYDRAULIC CONTROL VALVE (3-SPOOL)	
5.	214-466	1	JOYSTICK (ON-OFF-(ON))	
	501-822	-	JOYSTICK (ON-OFF-(ON))	
	217-946		MICRO SWITCH (JOYSTICK)	
	214-133	-	TERMINAL PIN (DEUTSCH)	
	217-202	-	CAVITY PLUG-DEUTSCH	
	217-203	-	4-WAY MALE LOCK-DEUTSCH	
	217-204	-	4-WAY MALE CONN. (DEUTSCH)	
	308-646	-	ROCKER BOOT (RUBBER)	
6.	214-467	1	JOYSTICK (ON-OFF-ON)	
	501-823	-	JOYSTICK (ON-OFF-(ON))	
	217-946		MICRO SWITCH (JOYSTICK)	
	214-133	-	TERMINAL PIN (DEUTSCH)	
	217-202	-	CAVITY PLUG-DEUTSCH	
	217-203	-	4-WAY MALE LOCK-DEUTSCH	
	308-646	-	ROCKER BOOT (RUBBER)	
7.	185-146	1	JOYSTICK LEVER (OFFSET)	
8.	185-145	1	JOYSTICK LEVER (STRAIGHT)	
9.	500-965	1	L.H. JOYSTICK 'TOWER'	
10.	110-575	6	ROD END (5/16-NF,FM)	
11.	499-018	2	"SLIDE" BOLT ROD END	
12.	499-019	2	SCREW ROD END	
13.	499-020	2	STUD (ROD END)	
14.	105-213	6	NUT (5/16-NF)	
15.	217-271	1	R.H. JOYSTICK "TOWER"	
16.	105-044	2	JAM NUT (1/2-NC)	

NOT SHOWN:

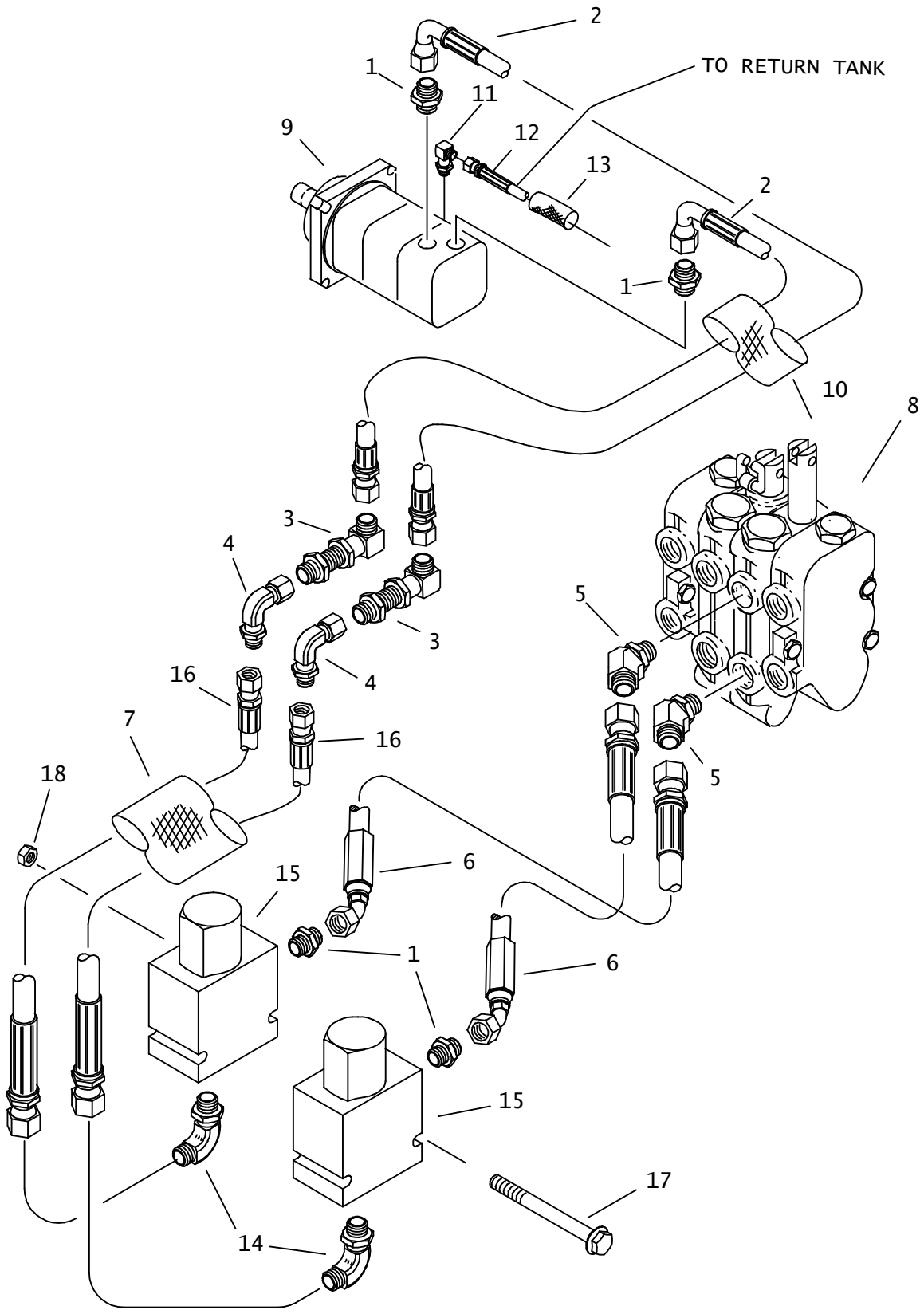
FOOTNOTES:

I. SUPPLIER CHANGE WIRE COLOR ON JOYSTICK. RED IS NOW BLUE, GREY IS NOW BLACK AND YELLOW IS NOW BROWN.

NOTE:

# CARRIAGE ROTATION HYDRAULICS

## JT920L



# CARRIAGE ROTATION HYDRAULICS

## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-308	2	CONNECTOR (12S-100)	
2.	515-432	2	HOSE (100FX90S-154"-3000)	
3.	154-291	2	BK CONNECTOR (100-10090BK)	
4.	154-315	2	UNION (100-100FX90)	
5.	154-399	2	CONNECTOR (10S-10045)	
6.	515-048	2	HOSE (100FX45-18"-3000)	
7.	117-683	1	ABRASION SLEEVE (2.38" X 84")	
8.	516-124	-	HYD CONTROL VALVE 2 SECTION	
9.	158-881	-	HYDRAULIC MOTOR	
	500-758	-	SHAFT SEAL REPAIR KIT	
	500-711	-	SEAL REPAIR KIT - REAR	
10.	117-843	1	ABRASION SLEEVE (2.38" X 164")	
11.	154-252	1	CONNECTOR (04S-04090)	
12.	515-161	-	HOSE (040FX-160"-3000)	
13.	117-841	1	ABRASION SLEEVE (1.00" X 164")	
14.	154-300	2	CONNECTOR (100-12S90)	
15.	516-029	2	HYD SOLENOID VALVE	
	149-496	-	STEEL MANIFOLD BLOCK	
	155-724	-	O-RING (217 D70)	
	149-495	2	ASS'Y, HYD SOLENOID VALVE	
	217-941		SOLENOID COIL	
	500-620		SEAL REPAIR KIT	
16.	515-670	2	HOSE (100FX90-85"-3000)	
17.	106-160	2	FLG LK SCREW (M8-1.25 X 120MM)	
18.	107-096	2	LOCKNUT (M8-1.25, NLK)	

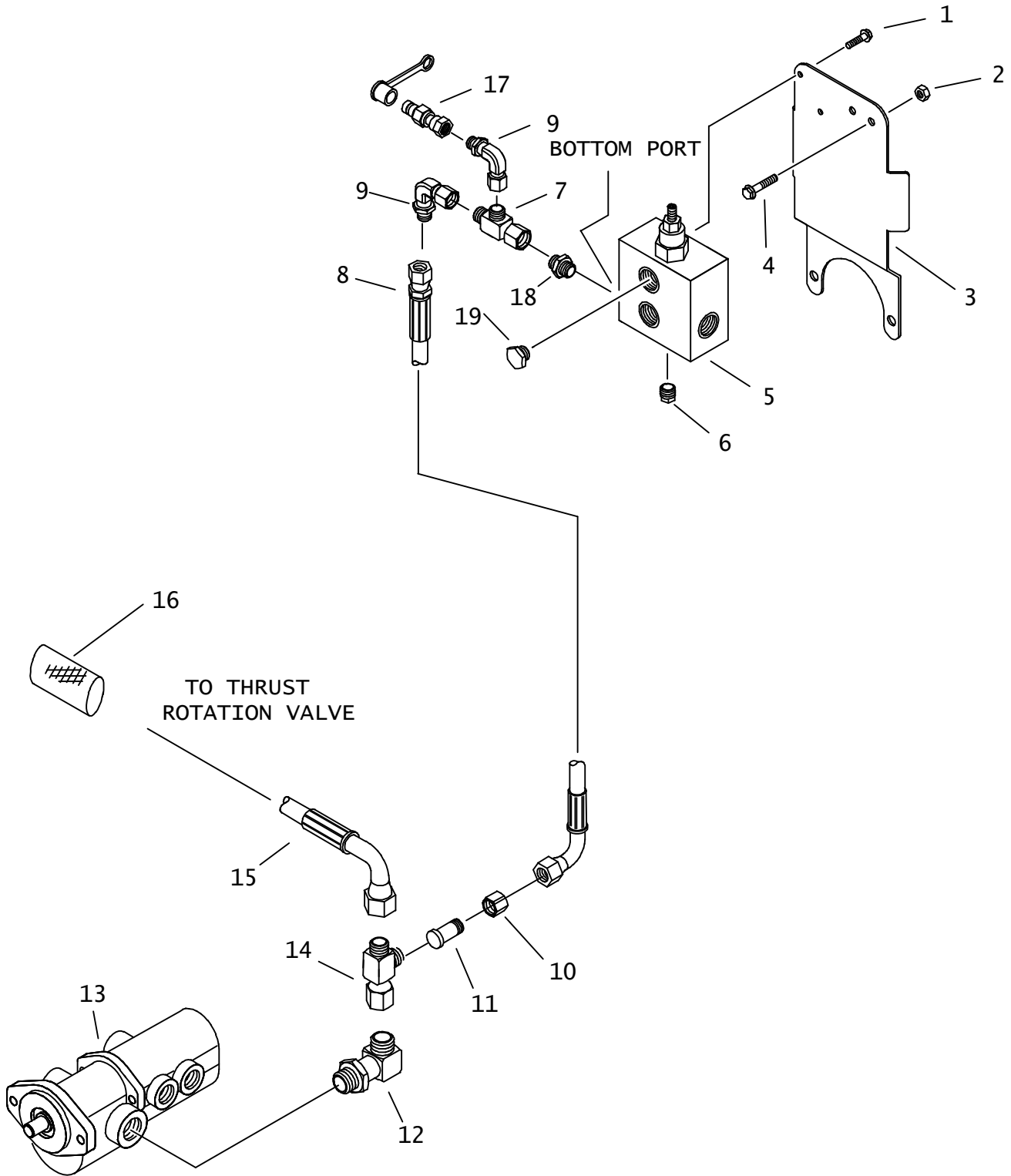
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FOOTNOTES:

NOTE:

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

# ROTATION HYDRAULICS



# ROTATION HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	501-153	2	FLG LK BOLT (3/8-NC X 5/8")	
2.	105-832	2	FLG LOCKNUT (1/4-NC)	
3.	344-726	2	SUPPORT PLATE	
4.	105-836	2	FLG LOCK BOLT (1/4-NC X .500")	
5.	158-814	1	CONTROL VALVE	
	190-643		SEAL KIT	
	500-906		CONTROL VALVE CARTRIDGE	
6.	115-153	1	PLUG (04N, SQ)	
7.	154-344	1	UNION RUN TEE (060FX-060-060)	
8.	515-583	1	HOSE (060FX90-12"-3000)	
9.	154-228	2	UNION (060-060FX90)	
10.	154-271	1	REDUCER NUT (120F)	
11.	154-459	1	REDUCER STEM (060)	
12.	154-270	1	CONNECTOR (12S-12090)	
13.	158-420	-	HYDRAULIC PUMP	
14.	154-368	1	UNION RUN TEE (120FX-120-120)	
15.	154-957	1	HOSE (120-12090-92"-3000)	
16.	117-764	1	ABRASION SLEEVE (1.59" X 90")	
17.	159-157	1	QDC ADAPTER (02-060F)	
	159-148	1	DUST CAP (1/8")	
18.	156-067	1	CONNECTOR (06S-060, ORF)	
19.	155-130	1	PLUG (06S)	

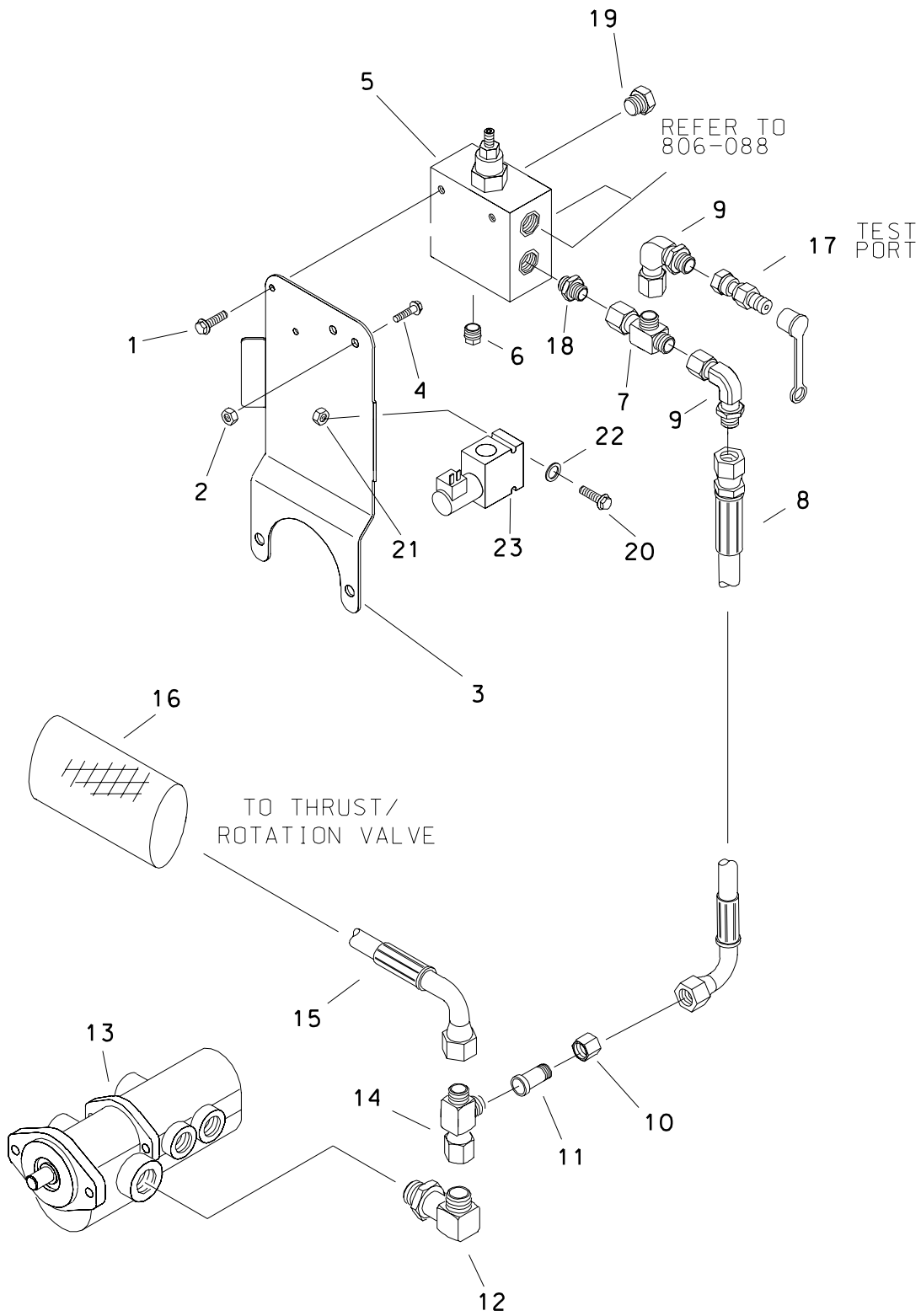
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FOOTNOTES:

NOTE:

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

# ROTATION HYDRAULICS WITH AUTOBORE SELECT



# ROTATION HYDRAULICS WITH AUTOBORE SELECT

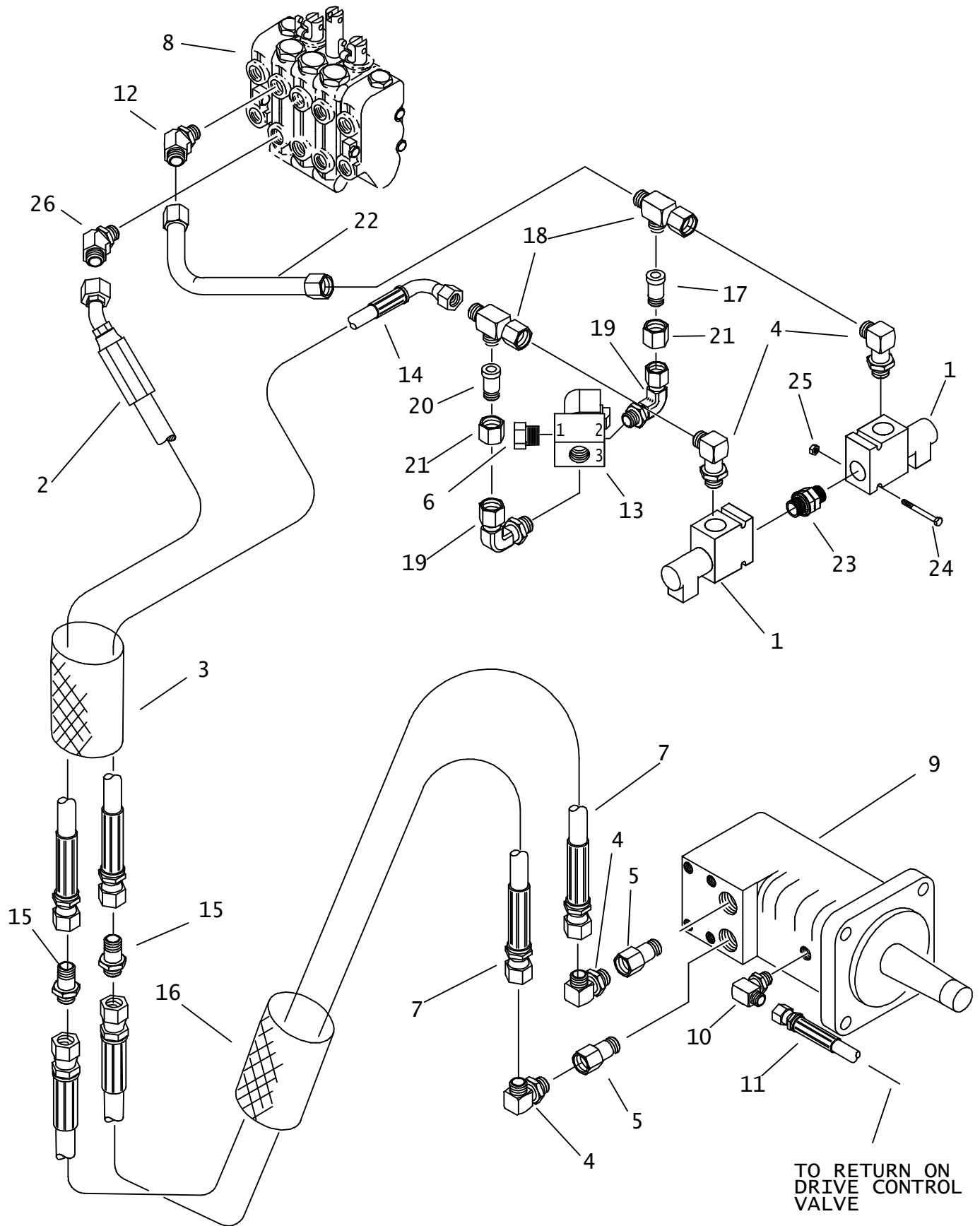
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	501-153	2	FLG LK BOLT (3/8-NC X 5/8")	
2.	105-832	2	FLG LOCKNUT (1/4-NC)	
3.	344-726	2	SUPPORT PLATE	
4.	105-836	2	FLG LOCK BOLT (1/4-NC X .500")	
5.	158-814	1	CONTROL VALVE	
	190-643		SEAL REPAIR KIT	
	500-906		CONTROL VALVE CARTRIDGE	
6.	115-153	1	PLUG (O4N, SQ)	
7.	154-344	1	UNION RUN TEE (O6DFX-O6O-O6O)	
8.	515-583	1	HOSE (O6DFX90-12"-3000)	
9.	154-228	2	UNION (O6O-O6DFX90)	
10.	154-271	1	REDUCER NUT (12OF)	
11.	154-459	1	REDUCER STEM (O6O)	
12.	154-270	1	CONNECTOR (12S-12O9O)	
13.	158-420		HYDRAULIC PUMP	
14.	154-368	1	UNION RUN TEE (12DFX-12O-12O)	
15.	154-957	1	HOSE (12DFX90-92"-3000)	
16.	117-764	1	ABRASION SLEEVE (1.59" X 90")	
17.	159-157	1	QDC ADAPTER (O2-O6OF)	
	159-148	1	DUST CAP (1/8")	
18.	156-067	1	CONNECTOR (O6S-O6O, ORF)	
19.	155-130	1	PLUG (O6S)	
20.	106-093	2	SCREW (M6-1.00 X 45MM)	
21.	106-237	2	NUT (M6-1.00, PRV TRQ, NLK)	
22.	106-288	2	STUDBOLT (1/4-NC X 3/3", GD8)	
23.	158-569		SOLENOID DIVERSION VALVE	

## FOOTNOTES

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



# CARRIAGE THRUST HYDRAULICS



# CARRIAGE THRUST HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-029	2	HYD SOLENOID VALVE	
	149-495	2	ASS'Y, HYD SOLENOID VALVE	
	149-496	-	STEEL MANIFOLD BLOCK	
	155-724	-	O-RING (217 D70)	
	217-941	-	SOLENOID COIL	
	500-620	-	SEAL REPAIR KIT	
2.	515-216	1	HOSE (100FX45-132"-3000)	
3.	115-751	1	ABRASION SLEEVE (2.38" X 120")	
4.	154-300	4	CONNECTOR (100-12S90)	
5.	155-222	2	REDUCER (16S-12SF)	
6.	155-130	1	PLUG (06S)	
7.	154-699	2	HOSE (100FX-36"-2750)	
8.	516-124	-	HYD CONTROL VALVE 2 SECTION	
9.	158-908	-	HYD MOTOR (THRUST, 8600#)	THRUST
	190-728	1	SEAL REPAIR KIT	
10.	154-226	1	CONNECTOR (040-06S90)	
11.	154-702	1	HOSE (040FX-30"-3000)	
12.	154-399	1	CONNECTOR (10S-10045)	
13.	158-627	1	SOLENOID VALVE	PORT 1 PLUGGED
	217-770	-	SOLENOID COIL	BEGINS WITH S/N 2T3862
	500-756	-	SEAL REPAIR KIT	
	158-636	-	SOLENOID VALVE CARTRIDGE	
14.	515-273	1	HOSE (100FX90S-124"-3000)	
15.	154-309	2	BK CONNECTOR (100-100BK)	
16.	115-925	1	ABRASION SLEEVE (2.38" X 40")	
17.	516-105	1	REDUCER STEM (060, ORF)	
18.	154-488	2	UNION RUN TEE (100FX-100-100)	
19.	154-343	2	UNION (06S-060FX90)	
20.	154-451	2	REDUCER STEM (060)	
21.	154-310	2	REDUCER NUT (100F)	
22.	156-928	1	HYD LINE (-10)	
23.	155-152	1	CONNECTOR (12S-12S)	
24.	105-190	4	BOLT (5/16-NC X 2-3/4")	
25.	105-003	4	FLG LOCKNUT (5/16-NC)	
26.	154-301	1	CONNECTOR (10S-100)	

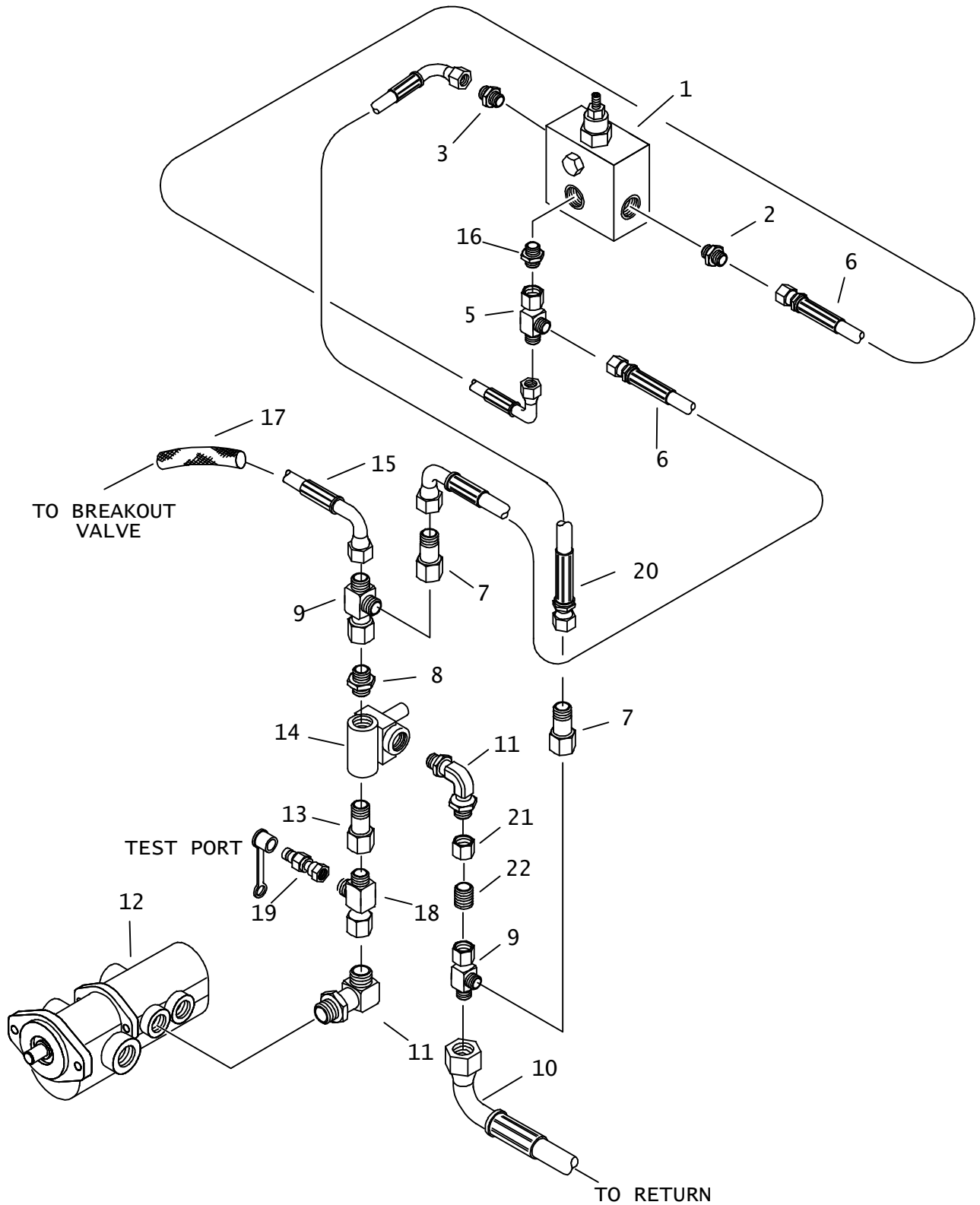
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FOOTNOTES:

NOTE:

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

# THRUST HYDRAULICS



# THRUST HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-643		SEAL REPAIR KIT	
	500-906		CONTROL VALVE CARTRIDGE	
2.	156-066	1	CONNECTOR (06S-060, ORF)	
3.	156-065	1	CONNECTOR (06S-060, ORF)	
4.	159-157	1	QDC ADAPTER (02-060F)	
	159-148	1	DUST CAP (1/8")	
5.	154-344	1	UNION RUN TEE (060FX-060-060)	
6.	154-737	1	HOSE (060FX90-17"-3000)	
7.	154-262	2	REDUCER (060-080F)	
8.	154-279	1	CONNECTOR (080-10S)	
9.	154-266	2	UNION RUN TEE (080FX-080-080)	
10.	154-942	1	HOSE (080FX90S-13"-3000)	
11.	154-298	2	CONNECTOR (10S-10090)	
12.	158-420	1	HYDRAULIC PUMP	
13.	514-079	1	UNION (10S-100FX)	ENDS WITH S/N 2V0437
14.	158-601	1	HYD RELIEF VALVE (3000PSI)	
	158-553		WH RELIEF CARTRIDGE (3000PSI)	BEGINS WITH S/N 2V0438
	153-675	1	ADJ HYD RELIEF VALVE 3000PSI	
	153-219		WH-A RELIEF CARTRIDGE	
15.	154-971	1	HOSE (080FX90-78"-3000)	
16.	154-221	1	CONNECTOR (06S-060)	
17.	117-713	1	ABRASION SLEEVE (1.00" X 76")	
18.	154-488	1	UN RUN TEE (100FX-100-100)	
19.	159-159	1	QDC ADAPTER (02-100FX)	
	159-148	1	DUST CAP (1/8")	
20.	515-583	1	HOSE (060FX90-12"-3000)	
21.	154-310	1	REDUCER NUT (100F)	
22.	154-312	1	REDUCER STEM (080)	

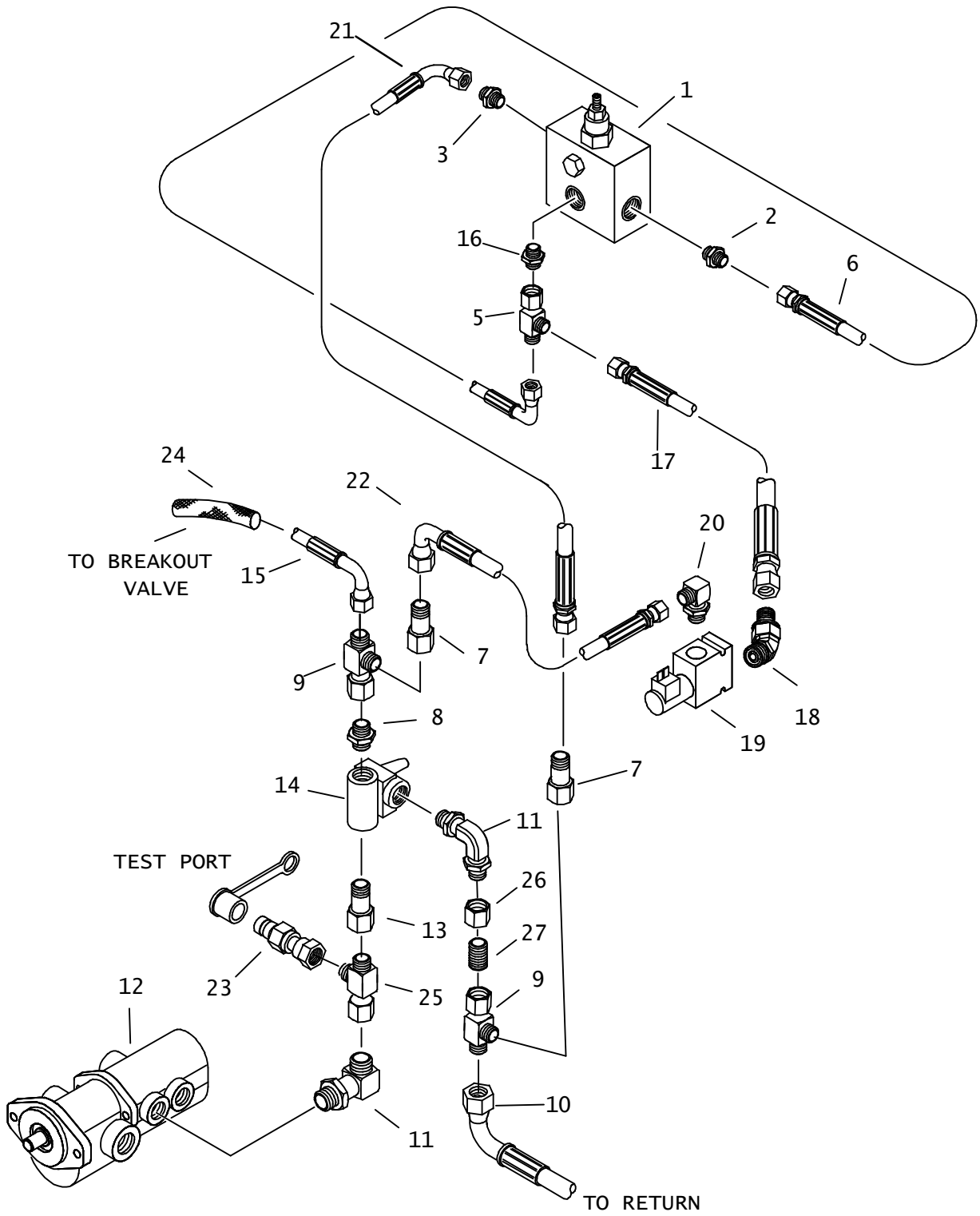
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FOOTNOTES:

NOTE:

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

# THRUST HYDRAULICS WITH AUTOBORE SELECT



## THRUST HYDRAULICS WITH AUTOBORE SELECT

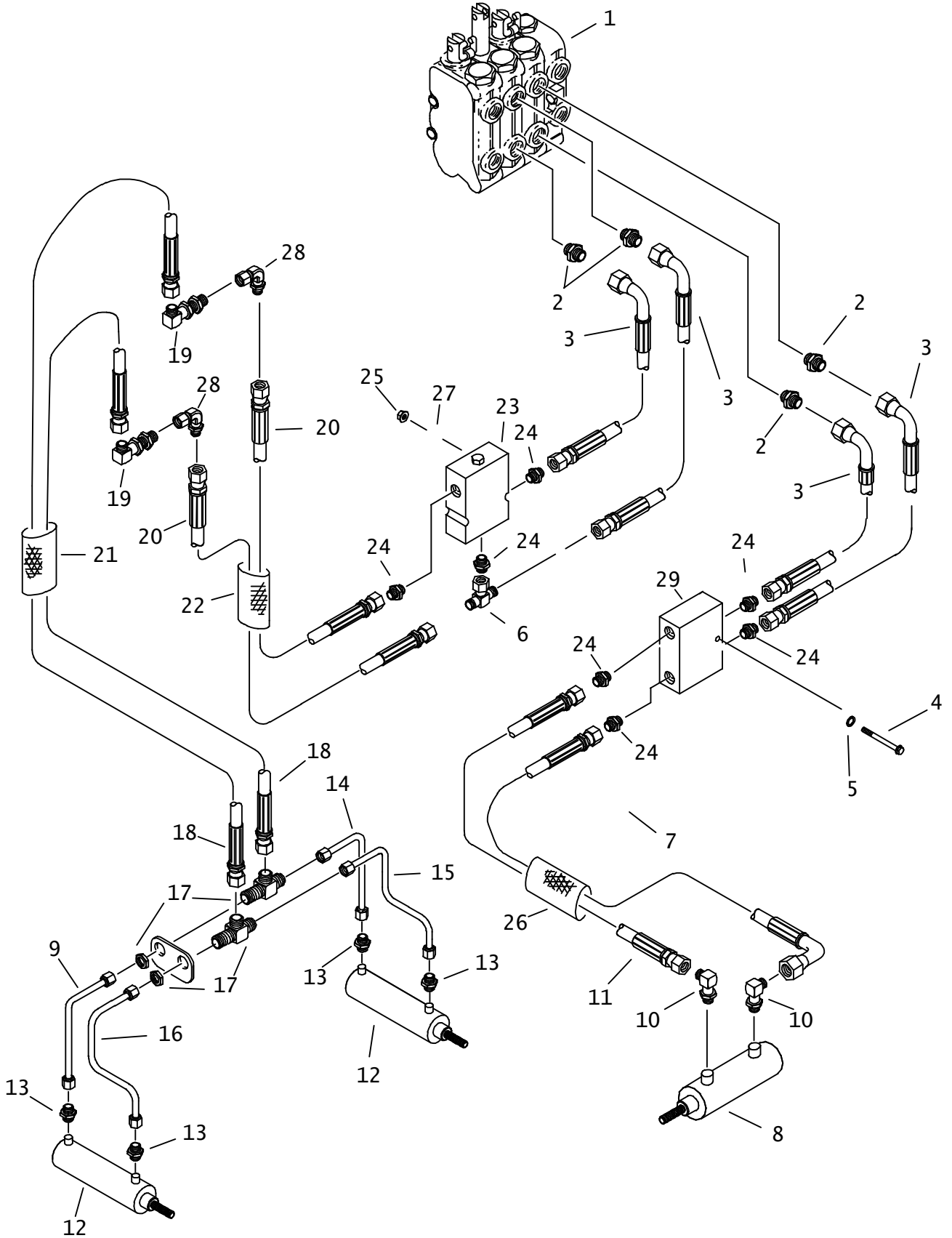
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-814	-	CONTROL VALVE	
2.	156-066	1	CONNECTOR (06S-060, ORF)	
3.	156-065	1	CONNECTOR (06S-060, ORF)	
4.	159-157	1	QDC ADAPTER (02-060F)	
	159-148	1	DUST CAP (1/8")	
5.	154-344	2	UNION RUN TEE (060FX-060-060)	
6.	154-737	1	HOSE (060FX90-17"-3000)	
7.	154-262	2	REDUCER (060-080F)	
8.	154-279	1	CONNECTOR (080-10S)	
9.	154-266	2	UNION RUN TEE (080FX-080-080)	
10.	154-942	1	HOSE (080FX90S-13"-3000)	
11.	154-298	2	CONNECTOR (10S-10090)	
12.	158-420	1	HYDRAULIC PUMP	
13.	514-079	1	UNION (10S-100FX)	
14.	153-675	1	ADJ HYD RELIEF VALVE 3000PSI	BEGINS WITH S/N 2V0571
	153-219	-	WH-A RELIEF CARTRIDGE	
15.	154-971	1	HOSE (080FX90-78"-3000)	
16.	154-221	1	CONNECTOR (06S-060)	
17.	154-731	1	HOSE (060FX-17"-3000)	
18.	154-225	1	CONNECTOR (060-08S45)	
19.	158-569	1	SOLENOID DIVERSION VALVE	
20.	154-227	1	CONNECTOR (060-08S90)	
21.	515-583	1	HOSE (060FX90-12"-3000)	
22.	515-377	1	HOSE (060FX90-9"-3000)	
23.	159-159	1	QDC ADAPTER (02-100FX)	
	159-148	1	DUST CAP (1/8")	
24.	117-713	1	ABRASION SLEEVE (1.00" x 76")	
25.	154-488	1	UN RUN TEE (100FX-100-100)	
26.	154-310	3	REDUCER NUT (100F)	
27.	154-312	3	REDUCER STEM (080)	

### FOOTNOTES

### NOTE:

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

# BREAKOUT HYDRAULICS



# BREAKOUT HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-027	-	HYDRAULIC CONTROL VALVE (2-SPOOL)	
2.	154-261	4	CONNECTOR (040-08S)	
3.	154-727	4	HOSE OFX90-30"-3000)	
4.	105-843	2	SCREW (M6-1.00 X 80MM)	
5.	106-076	2	WASHER (1/4")	
6.	154-379	1	UN BRANCH TEE (040FX-040-040)	
7.	515-189	1	HOSE (040FX90L-88"-3000)	
8.	<u>151-153</u>	1	CYL (1" X 2.5")	
	150-725	1	CYL (1"x2.5")	
9.	156-860	1	HYD LINE (040FX-42.2")	
10.	154-252	2	CONNECTOR (04S-04090)	
11.	154-725	1	HOSE (040FX-90"-3000)	
12.	<u>151-152</u>	-	CYL (1.5" X .437" X 2.0")	
	150-724	-	CYL (1"x 2")	
13.	154-278	4	CONNECTOR (04S-040)	
14.	156-861	1	HYD LINE (040FX-42.2")	
15.	156-862	1	HYD LINE (040FX-72.7)	
16.	156-863	1	HYD LINE (04FX-72.7")	
17.	154-424	-	BK RUN TEE (040-040-040BK)	
18.	154-950	2	HOSE (040FX-150"-3000)	
19.	154-355	2	BK CONNECTOR (040-04090BK)	
20.	154-694	2	HOSE (040FX- 98"-3000)	
21.	116-640	1	ABRASION SLEEVE (1.59" X 150")	
22.	115-902	1	ABRASION SLEEVE (1.59" X 100")	
23.	155-259	2	CHECK VALVE	
24.	154-220	7	CONNECTOR (040-06S)	
25.	106-353	2	FLG NUT (M6-1.00)	
26.	115-817	1	ABRASION SLEEVE (1.59" X 84")	
27.	338-101	1	CLAMP STRAP	
28.	154-255	2	UNION (040-040FX90)	
29.	155-623	1	DOUBLE LOCKOUT VALVE	

NOT SHOWN:

FOOTNOTES:

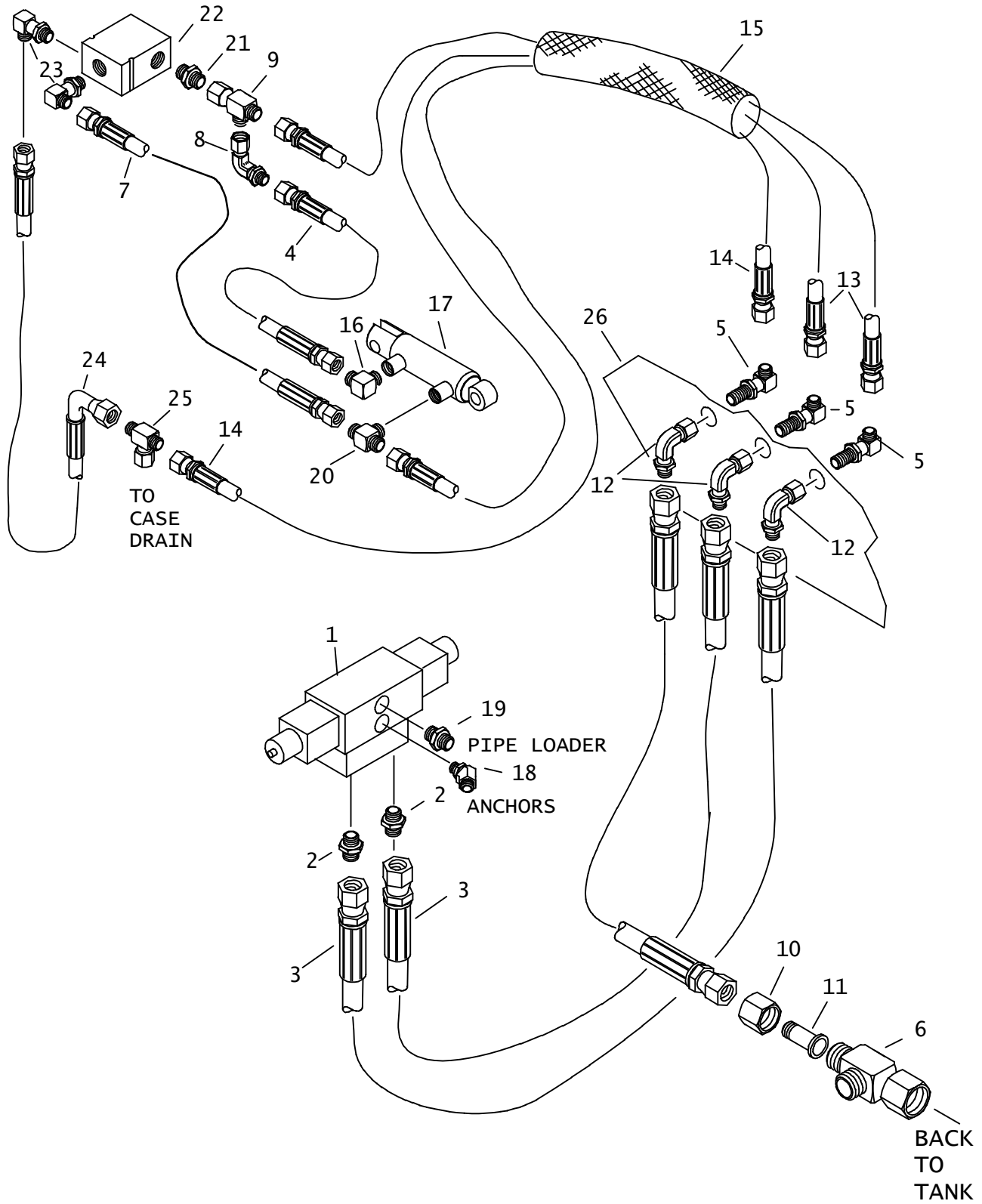
NOTE:

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



# AUXILIARY BACKUP WRENCH HYDRAULICS

ENDS WITH S/N 2R0581



# AUXILIARY BACKUP WRENCH HYDRAULICS

## ENDS WITH S/N 2R0581

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	516-098	1	SOLENOID VALVE (SINGLE)	
	157-208		O-RING (012 D70 .366X.506X.070)	
	157-209		O-RING (012 D90 .390X.488X.049)	
	157-210		O-RING (018 D70), STACKING KIT	
	157-212		O-RING (008 D90 .644X.818X.087)	
	159-505		SOLENOID TUBE	
	217-948		COIL, 12VDC	
2	154-220	2	CONNECTOR (040-06S)	
3	154-783	3	HOSE (040FX-24"-3000)	
4.	154-719	1	HOSE (040FX-10"-3000)	
5.	154-355	3	BK CONNECTOR (04090BK)	
6.	154-266	1	UN RUN TEE (080FX-080-080)	
7.	154-701	1	HOSE (040FX-14"-3000)	
8.	154-255	1	UNION (040-040FX90)	
9.	154-265	1	UNION RUN TEE (040FX-040-040)	
10.	154-272	1	REDUCER NUT (080F)	
11.	154-248	1	REDUCER STEM (040)	
12.	154-255	3	UNION (040-040FX90)	
13.	154-950	2	HOSE (040FX-150"-3000)	
14.	515-161	1	HOSE (040FX-160"-3000)	
15.	116-640	1	ABRASION SLEEVE (1.59" X 150")	
16.	154-405	1	CONNECTOR (08S-120)	
17.	159-464	1	CYL (1")	
18.	154-283	1	CONNECTOR (06S-08045)	
19.	154-246	1	CONNECTOR (06S-080)	
20.	154-293	1	BRANCH TEE (04S-040-040)	
21.	154-385	1	CONNECTOR (040-06S,ORF)	
22.	155-259	1	CHECK VALVE	
23.	154-226	2	CONNECTOR (040-06S90)	
24.	154-857	1	HOSE (040FX90-19"-3000)	
25.	154-379	1	UN BRANCH TEE (040FX-040-040)	
26.	346-812	-	HOSE TRACK STAND	

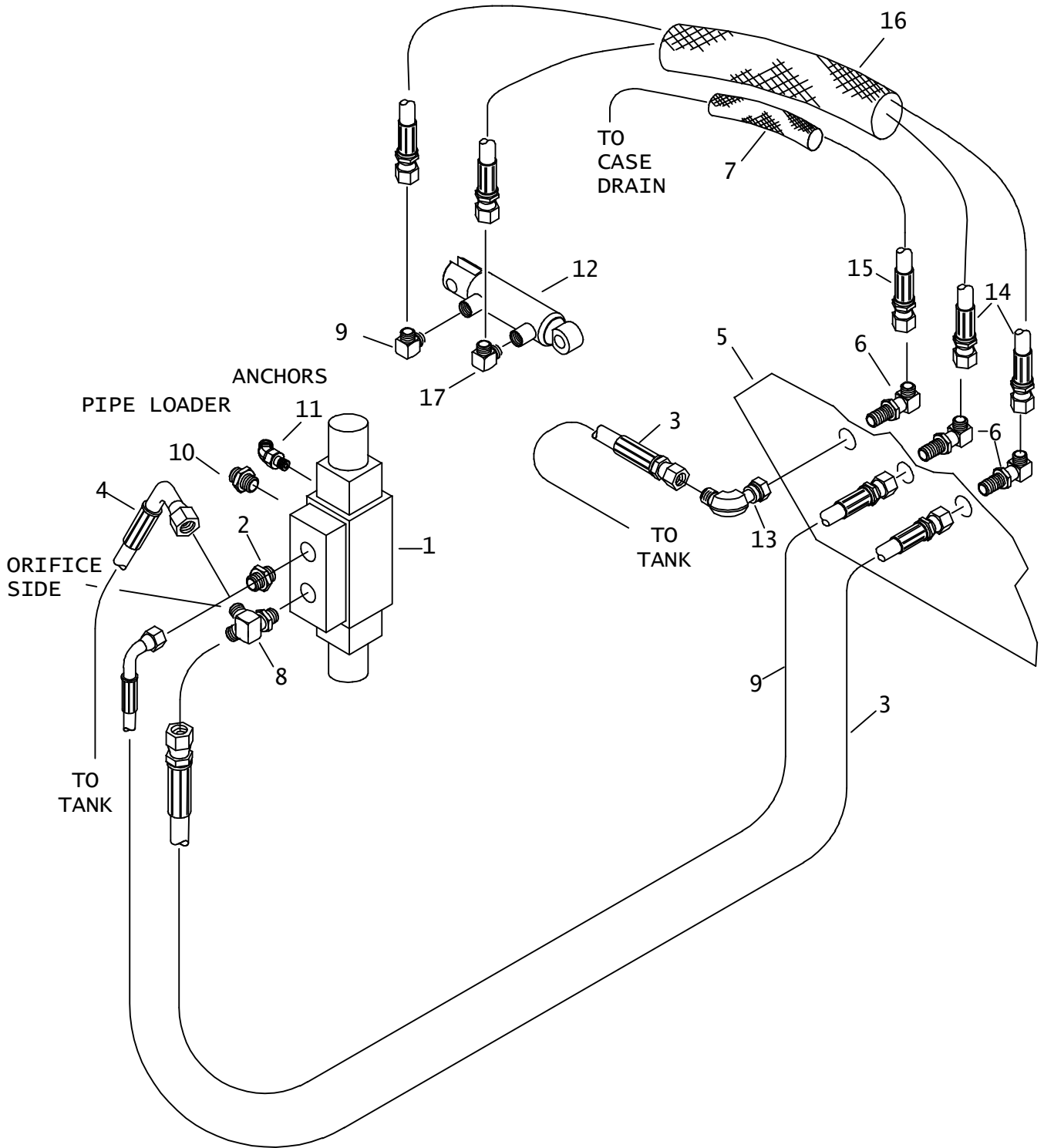
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FOOTNOTES:

NOTE:

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

# AUXILIARY BACKUP WRENCH HYDRAULICS



## AUXILIARY BACKUP WRENCH HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	516-098	1	SOLENOID VALVE (SINGLE)	
	157-208		O-RING (012 D70)	
	157-209		O-RING (012 D90)	
	157-210		O-RING (018 D70)	
	157-212		O-RING (008 D90)	
	159-505		SOLENOID TUBE	
	217-948		COIL, 12VDC	
2.	154-220	1	CONNECTOR (040-06S)	
3.	154-715	1	HOSE (040FX90S-18"-3000)	
4.	515-041	1	HOSE (040FX90-20"-3000)	
5.	322-612	-	HOSE TRACK STAND	
6.	154-355	3	BK CONNECTOR (040-04090BK)	
7.	117-841	1	ABRASION SLEEVE (1.00" X 164")	
8.	514-431	1	BRANCH TEE (06S-040-040, ORF)	
9.	154-401	1	CONNECTOR (040FX-16"-3000)	
10.	154-246	1	CONNECTOR (06S-080)	
11.	154-283	1	CONNECTOR (06S-08045)	
12.	150-723	1	CYL (1" x 2") W/EYE	
13.	154-255	1	UNION (040-040FX90)	
14.	154-950	2	HOSE (040FX-150"-3000)	
15.	515-161	1	HOSE (040FX-160"-3000)	
16.	117-741	1	ABRASION SLEEVE (1.59" X 145")	
17.	154-252	2	CONNECTOR (04S-04090)	

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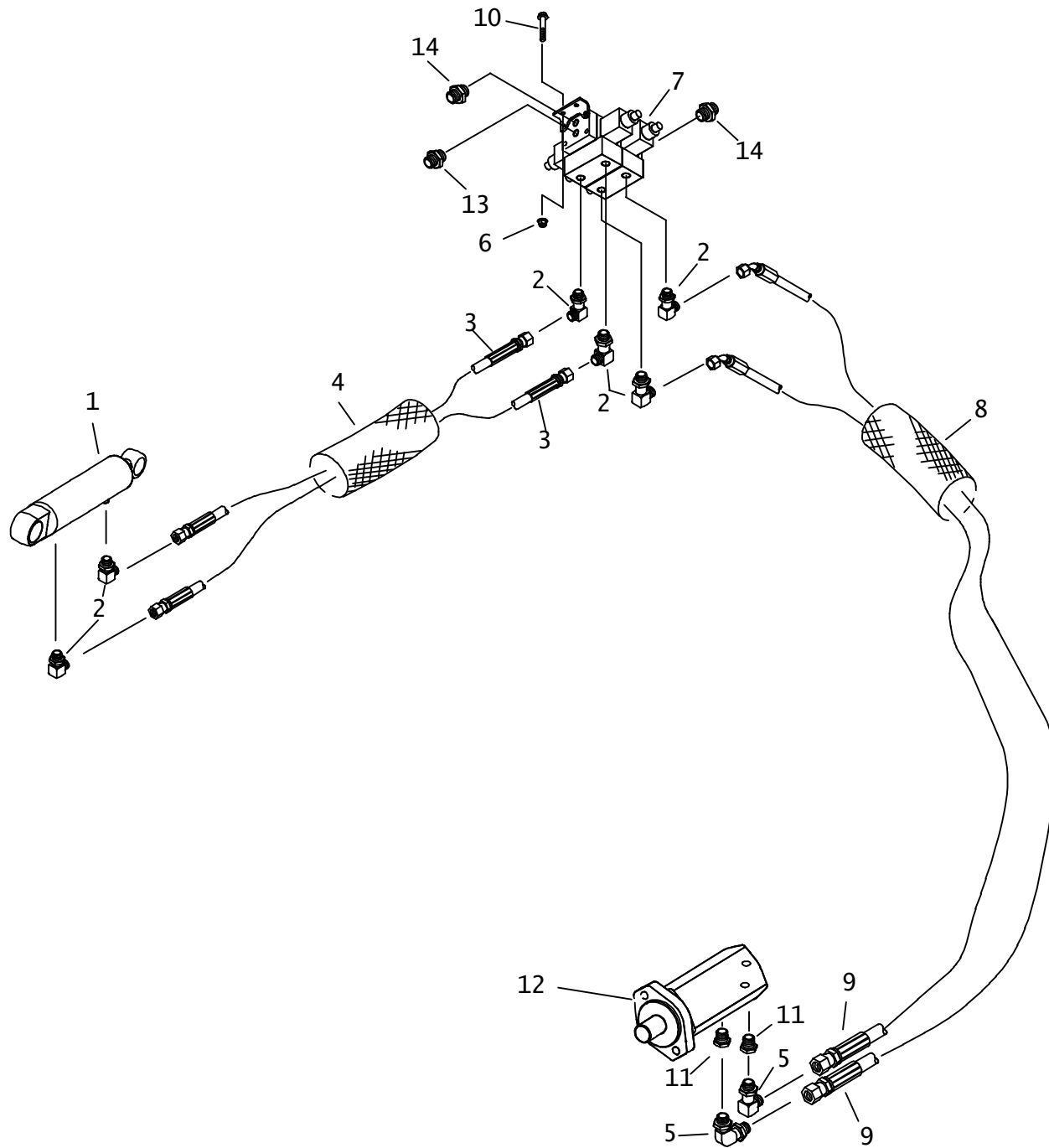
FOOTNOTES:

- I. THIS SYSTEM BEGINS WITH S/N 2R0582.

NOTE:

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

# PIPE LOADER HYDRAULICS



# PIPE LOADER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	151-028	1	CYL (2.5" X 1.25" X 4")	
2.	154-226	6	CONNECTOR (040-06S90)	
3.	154-670	2	HOSE (040FX-70"-3000)	
4.	116-634	1	ABRASION SLEEVE (1.59" X 65")	
5.	154-449	2	CONNECTOR (040-06S90, ORF)	
6.	106-385	4	FLG LOCKNUT (M6-1.0)	
7.	<u>516-096</u>	1	HYD SOLENOID VALVE (2-SPOOL)	ENDS WITH S/N2T2242
	149-263	1	HYDRAULIC VALVE W/P.O. VENT	BEGINS WITH S/N2T2243
	157-208		O-RING (012 D70)	
	157-209		O-RING (012 D90)	
	157-210		O-RING (018 D70)	
	157-211		O-RING (013 D70)	
	159-505		SOLENOID TUBE	
	217-948		COIL, 12VDC	
8.	117-656	1	ABRASION SLEEVE (1.59" X 45")	
9.	154-693	2	HOSE (040FX45-44"-3000)	
10.	106-379	4	FLG LK SCREW (M6-1.00 X 20MM)	
11.	155-171	2	REDUCER (10S-06SF)	
12.	158-735	1	HYDRAULIC MOTOR	
	500-347	-	SEAL REPAIR KIT	
13.	154-220	1	CONNECTOR (040-06S)	BEGINS WITH S/N_____
14.	154-246	2	CONNECTOR (06S-080)	

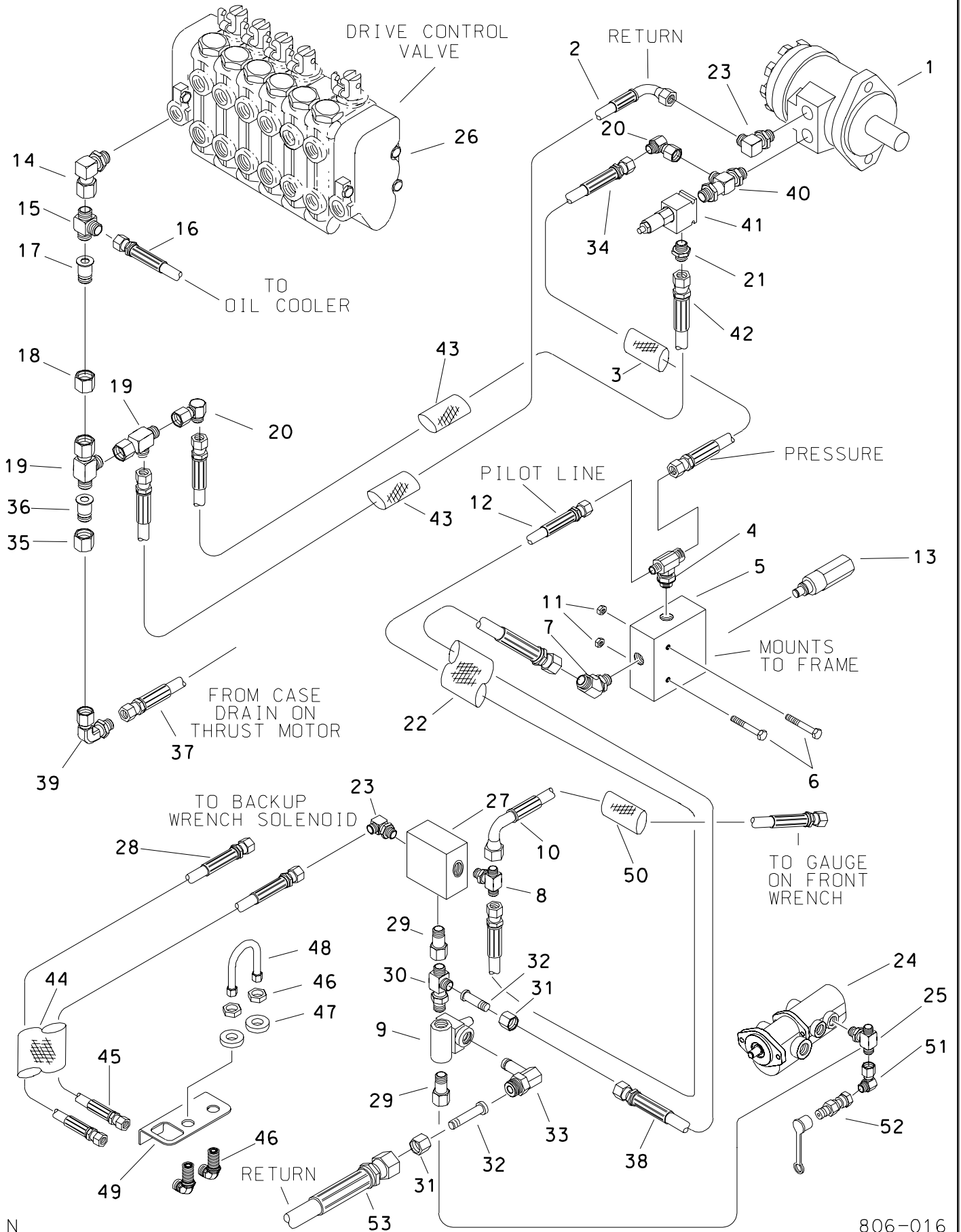
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FOOTNOTES:

NOTE:

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

# MUD MOTOR HYDRAULICS



## MUD MOTOR HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-488	-	GEAR MOTOR (3.0 CUI/REV)	
2.	515-438	1	HOSE (080FX90L-23"-3000)	
3.	117-679	1	ABRASION SLEEVE (1.59" X 32")	
4.	156-973	1	BRANCH TEE (080-040-10S)	
5.	157-784	1	PROPORTIONAL HYD FLOW VALVE	
	217-864	-	COIL (12V)	
6.	106-602	2	SCREW (M8-1.25 X 80mm)	
7.	154-264	1	CONNECTOR (080-10S45)	
8.	154-252	1	CONNECTOR (04S-04090)	ENDS WITH 2/N 2S3704
	154-293	1	BRANCH TEE (04S-040-040)	BEGINS WITH S/N 2S3705
9.	158-601	1	HYD RELIEF VALVE (3000PSI)	ENDS WITH S/N 2V0437
	158-553	-	WH RELIEF CARTRIDGE (3000PSI)	
	153-675	1	ADJ HYD RELIEF VALVE 3000 PSI	BEGINS WITH S/N 2V0438
	153-219	-	WH-A RELIEF CARTRIDGE	
10.	154-968	1	HOSE (040FX90-122"-3000)	
11.	106-386	2	FLG LOCKNUT (M8-1.25)	
12.	515-170	1	HOSE (040FX-86"-3000))	
13.	217-864	1	COIL (12V)	
14.	154-273	1	CONNECTOR (10S-12090)	
15.	154-368	1	UNION RUN TEE (120FX-120-120)	
16.	515-242	1	HOSE (120FX90-95"-3000)	
17.	154-249	1	REDUCER STEM (080)	
18.	154-271	1	REDUCER NUT (120F)	
19.	154-266	2	UNION RUN TEE (080FX-080-080)	
20.	154-256	2	UNION (080-080FX90)	
21.	154-233	1	CONNECTOR (08S-080)	
22.	115-963	1	ABRASION SLEEVE (1.59" X 75")	
23.	154-322	1	CONNECTOR (080-10S90)	
24.	158-420	1	HYDRAULIC PUMP	
	158-424	-	FRONT PUMP	
	158-429	-	HYD PUMP	
25.	154-318	1	BRANCH TEE (10S-100-100)	
26.	158-937	-	HYD CONTROL VALVE (-SPOOL)	
27.	158-687	1	PRIORITY VALVE	
	190-760	-	SEAL REPAIR KIT	
28.	154-778	1	HOSE (080FX-120"-3000)	
29.	514-079	2	UNION (10S-100FX)	
30.	154-317	1	RUN TEE (10S-100-100)	
31.	154-310	2	REDUCER NUT (100F)	
32.	154-312	2	REDUCER STEM (080)	
33.	154-288	1	CONNECTOR (10S-10090, XL)	
34.	154-708	1	HOSE (080FX-34"-3000)	
35.	154-272	1	REDUCER NUT (080F)	
36.	154-248	1	REDUCER STEM (040)	
37.	154-702	1	HOSE (040FX-30"-3000)	
38.	154-669	1	HOSE (040FX-50"-3000)	
39.	154-255	1	UNION (040-040FX90)	
40.	514-378	1	BR TEE (080-10S-08S)	
41.	158-842	1	RELIEF VALVE (2000PSI)	
	500-756	-	SEAL REPAIR KIT	
	500-832	-	RELIEF VALVE CARTRIDGE	
42.	515-224	1	HOSE (080FX90-21"-3000)	
43.	115-811	2	ABRASION SLEEVE (1.59" X 20")	
44.	115-924	1	ABRASION SLEEVE (1.59" X 88")	
45.	154-662	1	HOSE (080FX-98"-3000)	
46.	154-393	2	BK CONNECTOR (080-08045BK)	
47.	105-460	2	WASHER (13/16")	



# MUD MOTOR HYDRAULICS

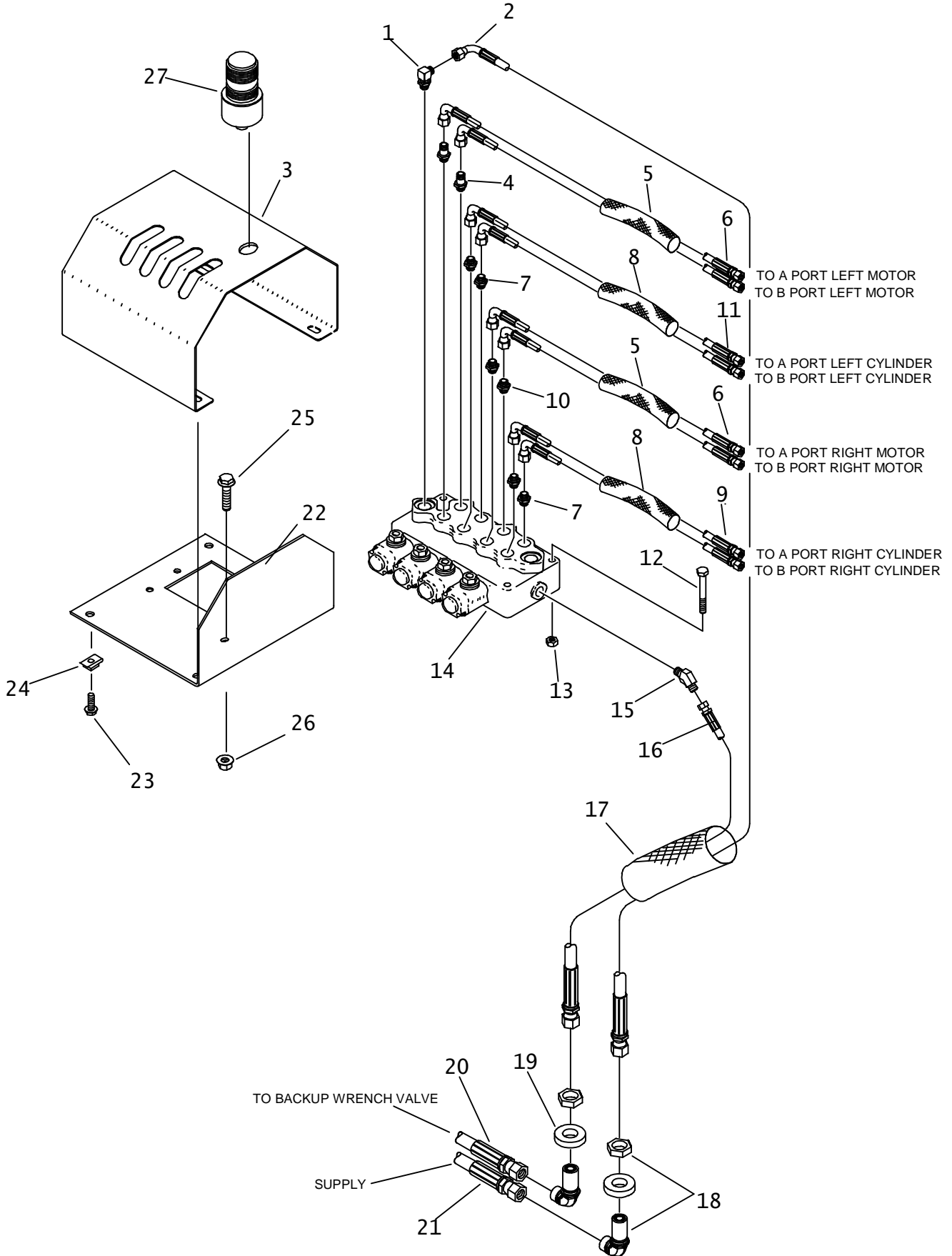
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
48.	156-500	1	HYD LINE (-08)	
49.	346-702	-	PIPE LOADER FRAME	
50.	117-713	1	ABRASION SLEEVE (1.00" X 76")	
51.	154-315	1	UNION (100-100FX90)	
52.	159-159	1	ODC ADAPTER (02-100FX)	
53.	154-828	1	HOSE (080FX-17"-3000)	

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

FOOTNOTES



# ANCHOR CONTROL HYDRAULICS



# ANCHOR CONTROL HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-235	1	CONNECTOR (08S-08090)	
2.	154-716	1	HOSE (080FX90-48"-3000)	
3.	350-470	1	COVER	
4.	156-174	2	CONNECTOR (06S-060)	
5.	117-686	2	ABRASION SLEEVE (1.75" X 43")	
6.	515-015	4	HOSE (060FX90M-44"-3000)	
7.	154-220	4	CONNECTOR (040-06S)	
8.	117-761	2	ABRASION SLEEVE (1.59" X 70")	
9.	515-174	2	HOSE (040FX90-74"-3000)	
10.	154-221	2	CONNECTOR (06S-060)	
11.	154-883	2	HOSE (040FX90L-66"-3000)	
12.	106-570	3	SCREW (M8-1.25 X 60MM)	
13.	106-386	3	FLG LOCKNUT (M8-1.25)	
14.	158-944	1	HYD CONTROL VALVE	
	499-443		VP RELIEF	
	190-641	-	SEAL REPAIR KIT	
	500-908	-	LEVER (M8-1.25, BLACK)	
15.	154-284	1	CONNECTOR (08S-08045)	
16.	155-492	1	HOSE (080FX-39"-3000)	
17.	115-925	1	ABRASION SLEEVE (2.38" X 40")	
18.	154-396	2	BK CONNECTOR (080-08090BK)	
19.	105-460	2	WASHER (13/16")	
20.	154-778	-	HOSE (080FX-120"-3000)	
21.	154-662	-	HOSE (080FX-98"-3000)	
22.	346-760	1	VALVE MOUNT	
23.	106-991	4	FLG LK SCREW (M8-1.25 X 20MM)	
24.	106-551	4	CLIP NUT (M8-1.25)	
25.	106-382	4	FLG LK SCREW (M10-1.50 X 20MM)	
26.	106-387	4	FLG LOCKNUT (M10-1.50)	
27.	217-297	1	STROBE LIGHT-GREEN MEDIUM	BEGINS WITH S/N _____

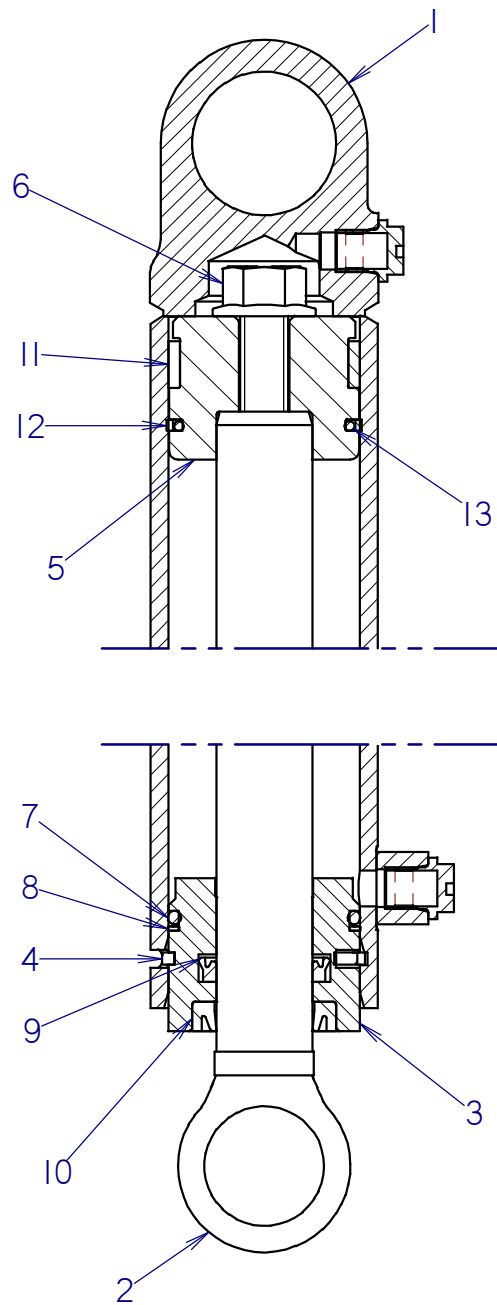
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FOOTNOTES:

NOTE:

REFER TO O-RING CHART (800-3010) IN BACK OF THE BOOK FOR REPLACEMENT OF O-RINGS.

## HYDRAULIC CYLINDER (2.0 X 1.0 X 24.0)



## HYDRAULIC CYLINDER (2.0 X 1.0 X 24.0)

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

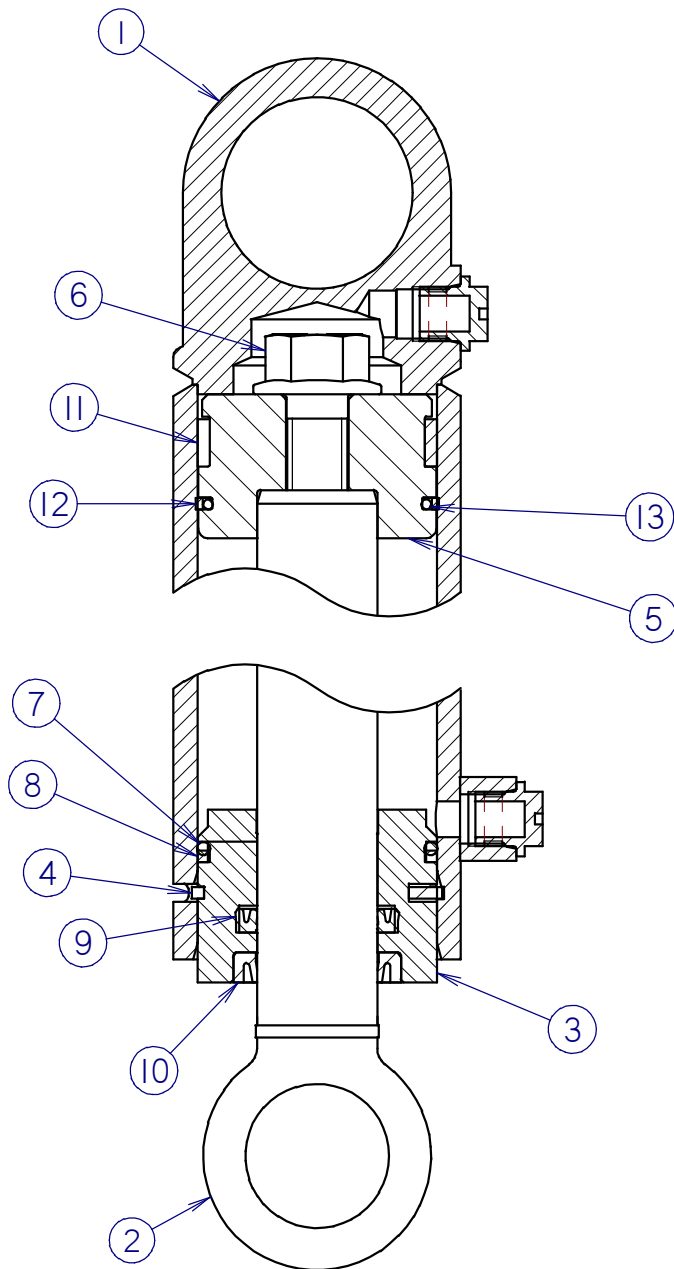
### FOOTNOTES

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

### NOT SHOWN:

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

## HYDRAULIC CYLINDERS (2.5" X 1.25")



## HYDRAULIC CYLINDERS (2.5" X 1.25")

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

**NOT SHOWN:**

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

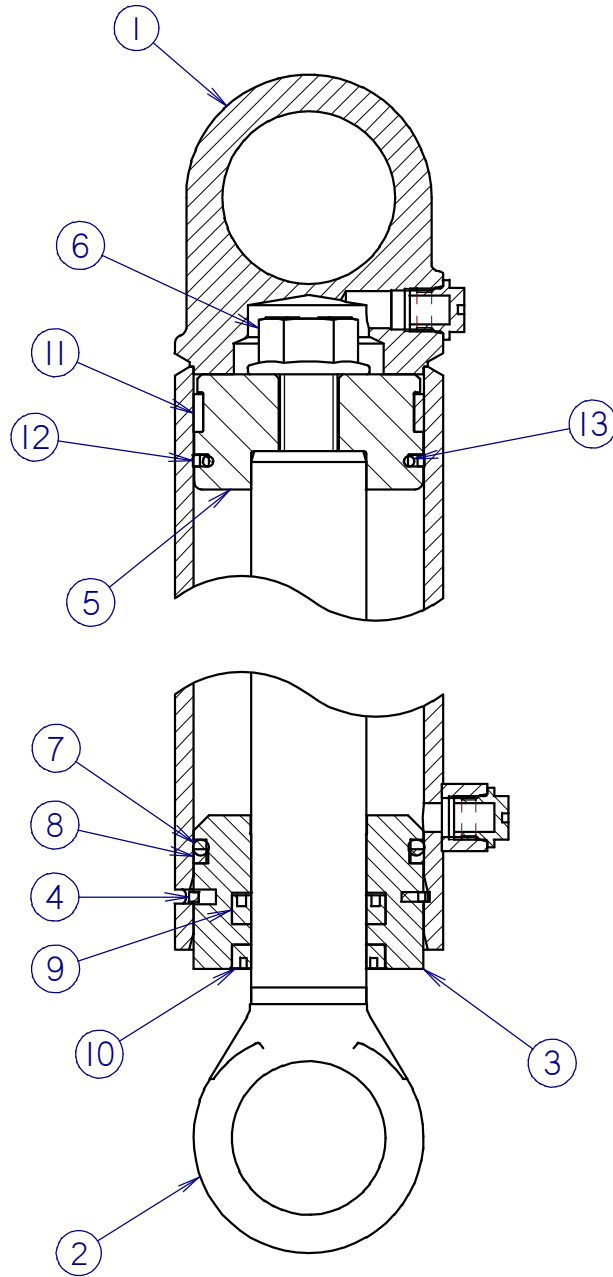
**FOOTNOTES:**

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

**NOTE:**



# HYDRAULIC CYLINDERS (3.0" X 1.5")



## HYDRAULIC CYLINDERS (3.0" X 1.5")

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

**NOT SHOWN:**

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

**FOOTNOTES:**

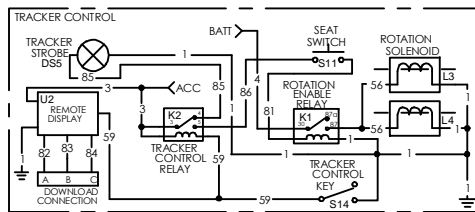
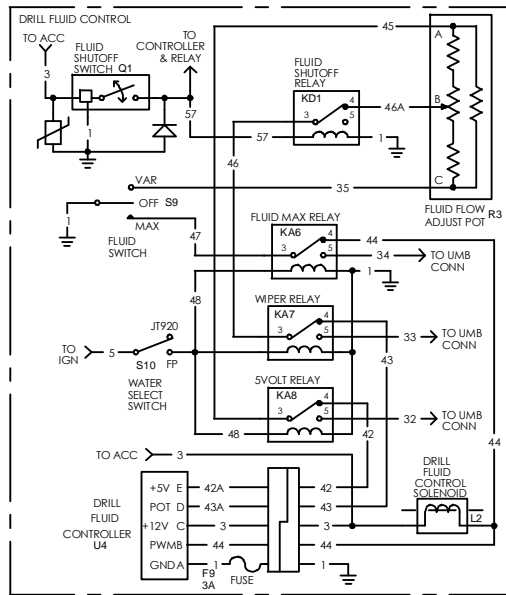
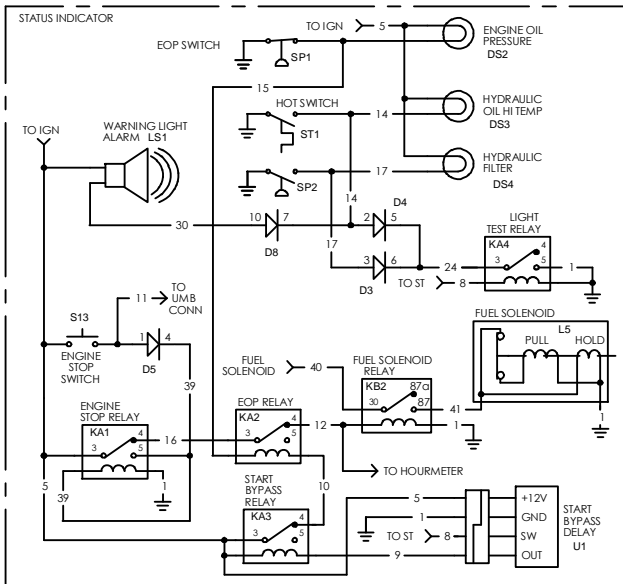
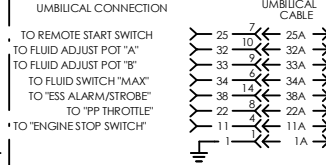
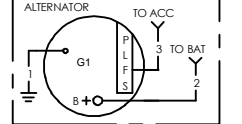
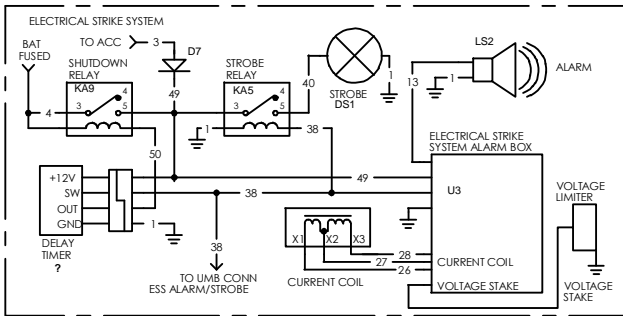
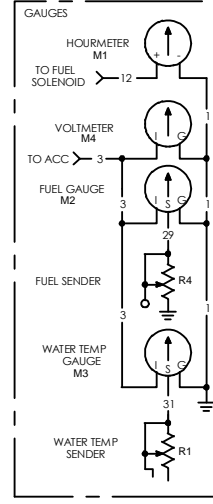
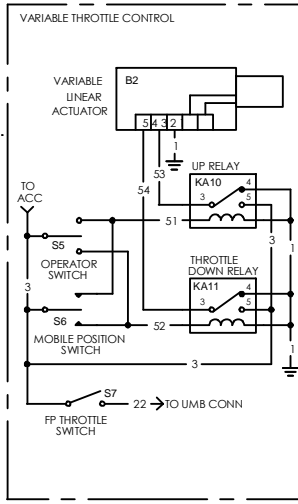
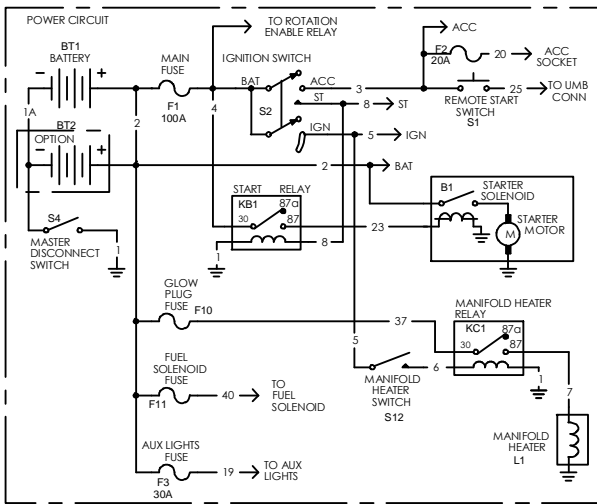
- REF. #1 & #2 ARE SPECIFIC TO EACH CYLINDER, REF. #3 THRU #13 ARE COMMON FOR ALL THE ABOVE LISTED CYLINDERS.
- SEAL REPAIR KIT P/N: 190-167
- APPLY LOCTITE 277 OR EQUIVALENT, TORQUE TO 290-325 FT-LBS

**NOTE:**



# **ELECTRICAL**

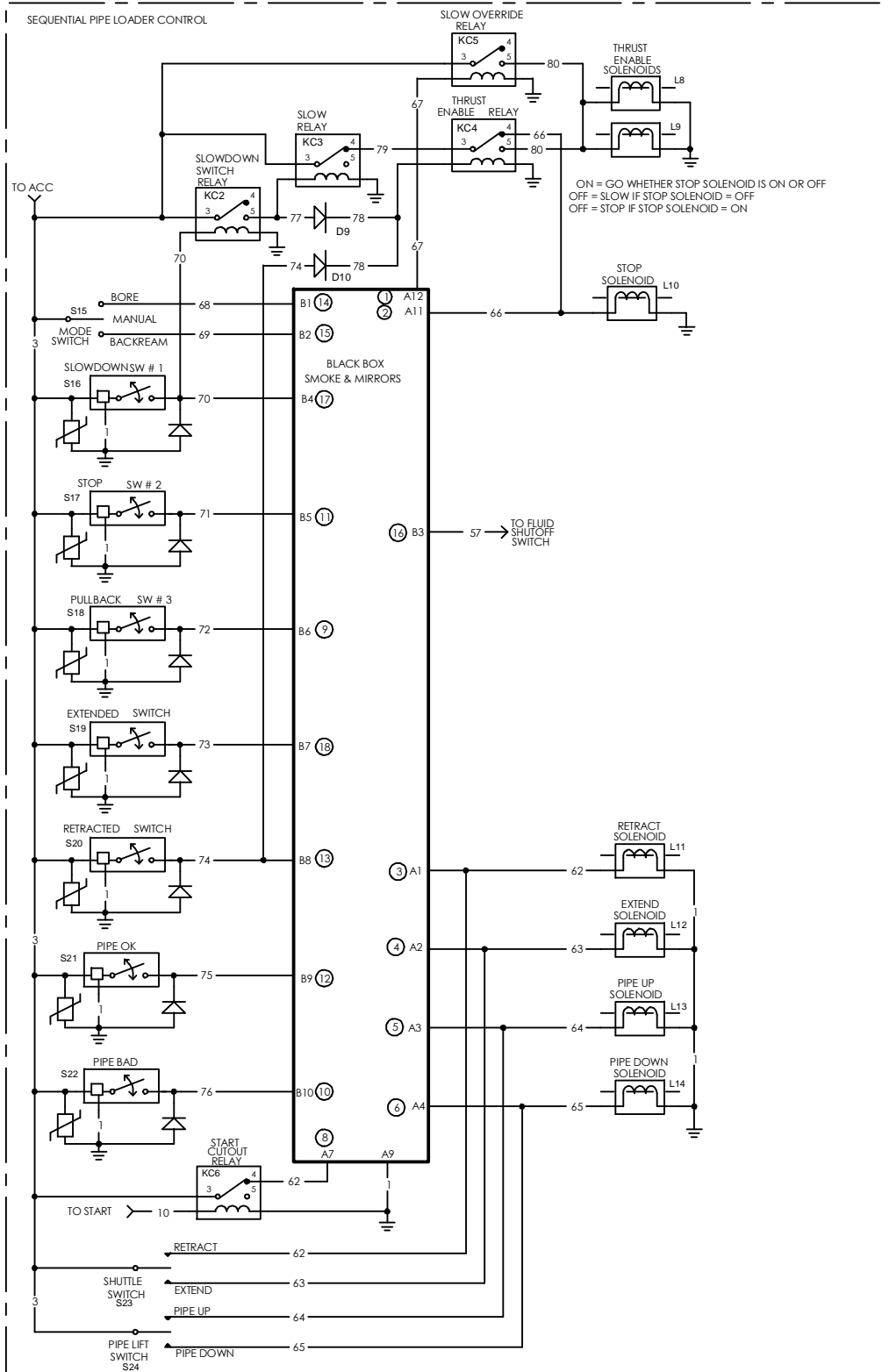
# ELECTRICAL SCHEMATIC JT921 w/OUT AUTOBORE SHUTOFF



# ELECTRICAL SCHEMATIC

## JT921 w/OUT AUTOBORE SHUTOFF

### W/OUT AUTOBORE SHUTOFF



# ELECTRICAL SCHEMATIC

## JT921 w/OUT AUTOBORE SHUTOFF

<b>COMPONENT DESCRIPTIONS</b>			
<b>Ref. #</b>	<b>Part No.</b>	<b>Component</b>	<b>Notes</b>
B1		STARTER	INCLUDES SOLENOID
B2	215-231	VARIABLE LINEAR ACTUATOR	CMW# 215-231
BT1	213-104	BATTERY	12V,875CCA
BT2		BATTERY	
D3		DIODE	
D4		DIODE	
D5		DIODE	
D7		DIODE	ESID
D8		DIODE	STATUS INDICATOR
D9		DIODE	SEQ.PIPE LOADER CONTROL
D10		DIODE	SEQ.PIPE LOADER CONTROL
DS1	217-296	ESID STROBE	AMBER
DS2		ENGINE OIL PRESSURE	
DS3		HYDRAULIC OIL HI TEMPERTURE	
DS4		HYDRAULIC FILTER	
DS5	217-297	TRACKER CONTROLLER STROBE	GREEN
F1	211-311	PRIMARY FUSE	100A
F2		ACC SOCKET	20A
F3	211-295	AUX LIGHTS FUSE	30A
F9	211-289	DRILL FLUID CONTROLLER FUSE	3A
F10		FUEL SOLENOID FUSE	?
F11		AUX LIGHTS FUSE	?
G1	215-189	ALTERNATOR	12V, 60A
K1	211-298	ROTATION ENABLE RELAY	
K2	211-296	TRACKER CONTROL RELAY	
KA1	211-296	ENGINE STOP RELAY	
KA2	211-296	EOP RELAY	
KA3		START BYPASS RELAY	
KA4	211-297	LIGHT TEST RELAY	
KA5		STROBE RELAY	
KA6	211-296	FLUID MAX RELAY	
KA7	211-296	WIPER RELAY	
KA8	211-296	5V RELAY	
KA9		SHUTDOWN RELAY	
KA10	211-296	UP RELAY	
KA11	211-296	THROTTLE DOWN RELAY	
KB1	211-298	STARTER RELAY	
KB2		FUEL SOLENOID RELAY	
KC1		MANIFOLD HEATER RELAY	
KC2		SLOWDOWN SWITCH RELAY	
KC3		SLOW RELAY	
KC4		THRUST ENABLE RELAY	
KC5		SLOW OVERRIDE RELAY	
KC6		START COUTOUT RELAY	
KD1	211-296	FLUID SHUTOFF RELAY	

# ELECTRICAL SCHEMATIC

## JT921 w/OUT AUTOBORE SHUTOFF

COMPONENT DESCRIPTIONS			
L2		DRILL FLUID CONTROL SOLENOID	
L3		ROTATION SOLENOID	
L4		ROTATION SOLENOID	
L5		FUEL SOLENOID	
L8		THRUST ENABLE SOLENOID	
L9		THRUST ENABLE SOLENOID	
L10		STOP SOLENOID	
L11		RETRACT SOLENOID	
L12		EXTEND SOLENOID	
L13		PIPE UP SOLENOID	
L14		PIPE DOWN SOLENOID	
LS1		WARNING LIGHT ALARM	
LS2	306-602	ESID ALARM	
M1	215-128	HOURLMETER	
M2	215-133	FUEL GAUGE	
M3		WATER TEMP GAUGE	
M4		VOLT METER	
Q1		FLUID SHUTOFF SWITCH	
R1		ENGINE WATER TEMPERTURE SENDER	
R3	217-940	FLUID FLOW ADJUST POTENTIONMETER	
R4	217-549	FUEL LEVEL SENDER	
S1		REMOTE START SWITCH	
S2	214-852	IGNITION SWITCH	
S4	217-849	MASTER DISCONNECT SWITCH	
S5	214-647	OPERATOR SWITCH	
S6		MOBILE POSITION SWITCH	
S7	217-762	FP THROTTLE SWITCH	
S9	214-467	FLUID SWITCH	
S10		WATER SELECT SWITCH	
S11	217-935	SEAT SWITCH (OPERATOR PRESENCE)	WITH 215-939 HARNESS
S12		MANIFOLD HEATER SWITCH	
S13		ENGINE STOP SWITCH	
S14		TRACKER CONTROL KEY	
S15		MODE SWITCH	
S16		SLOWDOWN SWITCH #1	
S17		STOP SWITCH #2	
S18		PULLBACK SWITCH #3	
S19		EXTENDED SWITCH	
S20		RETRACTED SWITCH	
S21		PIPE OK SWITCH	
S22		PIPW BAD SWITCH	
S23		SHUTTLE SWITCH, EXTEND/RETRACT	
S24		PIPE LIFT SWITCH, PIPE UP/PIPE DOWN	
SP1		EOP SWITCH	SP1/217-721 OIL PRESSURE SWITCH
SP2	see notes	HYD. FILTER SWITCH	component of 157-458
ST1	214-854	HOT SWITCH	
U1	217-937	START BYPASS DELAY	
U2	SUBSITE	REMOTE DISPLAY	
U3	220-1024	ESID MODULE	
U4		DRILL FLUID CONTROLLER	



# ELECTRICAL SCHEMATIC

## JT921 w/OUT AUTOBORE SHUTOFF

CIRCUIT DESCRIPTIONS		
Circuit Number	Wire Color	Function
1	blk	System Ground
1A	blk	Umbilical Cable Ground
1B		
2	red	Battery Circuit
2A		
3	org	Accessory Circuit
4	red	Battery Circuit (Fused)
5	org/blu	Ignition Circuit
6	brn/org	Cold Start Switch to Cold Start Relay
7	brn/yel	Cold Start Relay to Manifold Heater
8	wht/blk	Ignition Switch Start to Start Relay
9	wht/org	Start Bypass Delay to Start Bypass Relay
10	wht/red	Starter Bypass Relay to EOP Fuel Shutoff Relay
11	yel/red	Engine Stop Switch Circuit to Umbilical Conn.
11A	tan	Umbilical Cable Engine Stop Switch Circuit
12	org/blk	EOP Relay to Fuel Solenoid & Hourmeter
13	wht/grn	E.S.I.D to Local Alarm
14	wht/blk	Hyd. Oil Temp. Switch to Light & Diode Block
15	wht/blu	Engine Oil Pressure Switch to Light & EOP Relay
16	blu	Jumper from Engine Stop Relay to EOP Relay
17	gra	Hyd. Filter Light Circuit
18		
19	gra	Aux. light Fuse to Aux. Light Socket
20	org/wht	Fuse to Accessory Socket
21		
22	yel/blk	Fluid Pac Throttle Switch to Umbilical Conn.
23	wht/blk	Start Relay to Start Solenoid
24	blk/yel	Diode Cathodes to Light test Relay
25	red/blk	Remote Start Switch to umbilical Conn.
26	wht	E.S.I.D. to Current Coil X 1
27	blk	E.S.I.D. to Current Coil X 2
28	red	E.S.I.D. to Current Coil X 3
29	brn	Fuel sender to Gauge
30	tan/blu	Warning Light Alarm to Diode
31	grn	Water Temp. sender to Gauge
32	gra/blu	5 volt Relay to Umbilical Conn.
32A	blu	Umbilical Cable Fluid Flow Adjust POT (5V) Circuit
33	gra/grn	Output Relay to Umbilical Conn.
33A	grn	Umbilical Cable Fluid flow Adjust POT Wiper Circuit
34	blu/wht	Max Relay to Umbilical Conn.
34A	red	Umbilical Cable Fluid Switch "MAX" circuit
35	blk/yel	Fluid Switch to Fluid POT
36	wht	Strobe Relay to Strobe
37	red/wht	Glow Plug Fuse to Glow Plug Relay
38	wht/pur	E.S.I.D. to Strobe Relay and Umbilical Cable
38A	gra	Umbilical Cable E.S.I.D. Strobe Circuit
39	yel/red	Diode Cathode to Engine Stop Relay (Latch Circuit)
40	brn/org	Fuel Solenoid Fuse to Relay
41	brn	Fuel Solenoid Relay to Fuel Solenoid

# ELECTRICAL SCHEMATIC

## JT921 w/OUT AUTOBORE SHUTOFF

### CIRCUIT DESCRIPTIONS

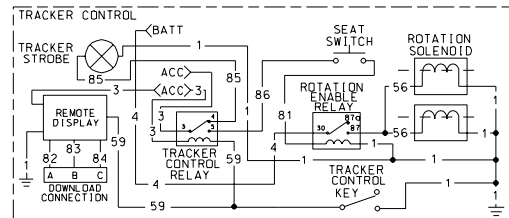
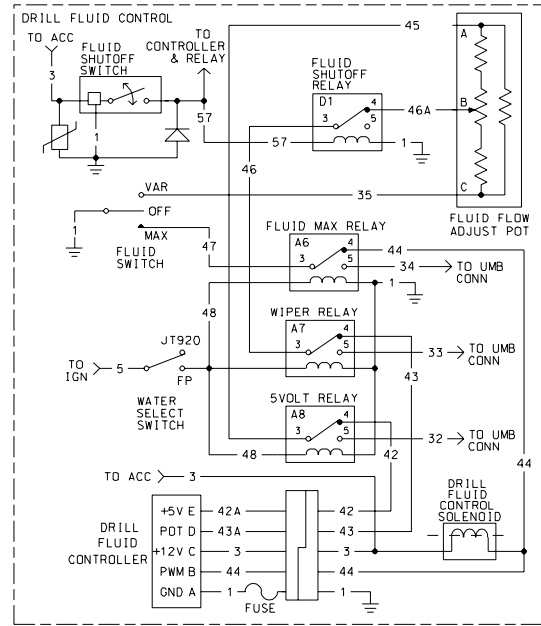
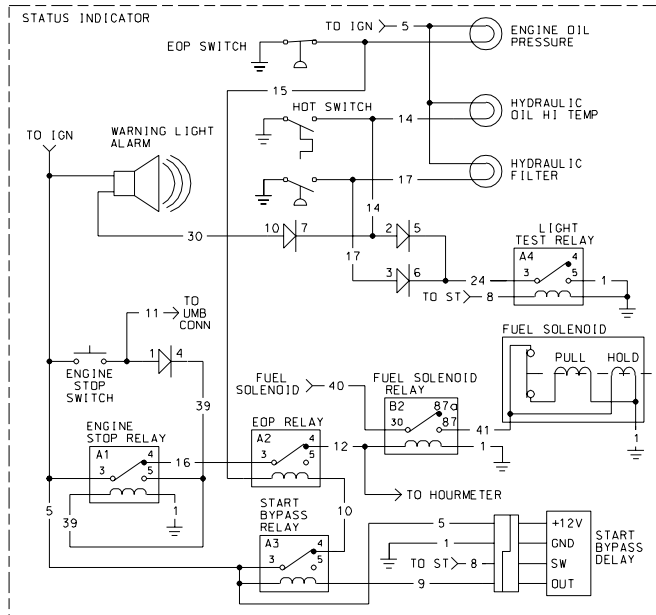
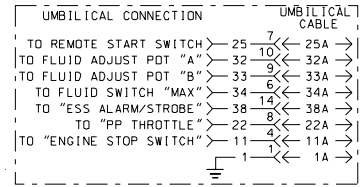
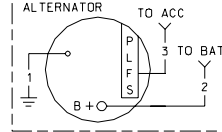
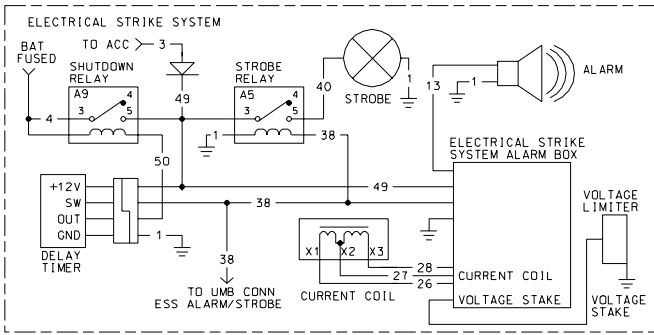
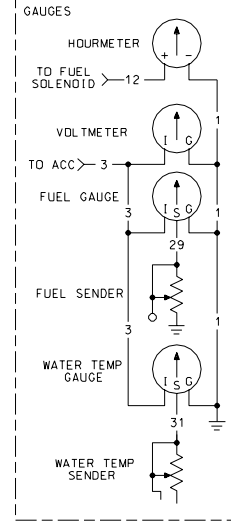
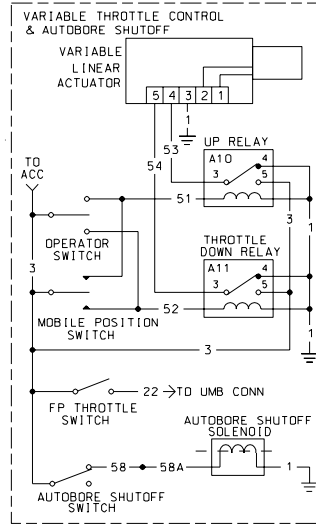
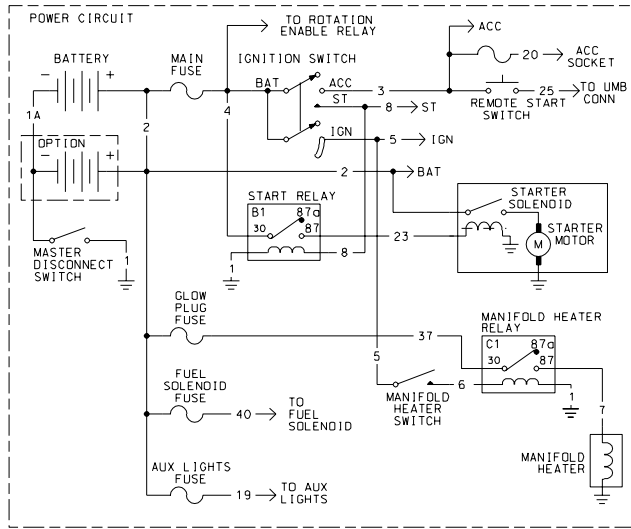
Circuit Number	Wire Color	Function
42	tan/blu	Fluid Controller 5v Out to 5volt Relay
42A	blu	Fluid Controller 5v
43	tan/gm	Fluid Controller POT Out to Wiper Relay
43A	gm	Fluid Controller POT
44	blk/wht	Fluid Controller PWM Out to Valve Ground & MAX Relay
45	blu	Fluid Flow Adjust POT (5v) to 5volt Relay
46	gm	Fluid Shutoff Relay to Wiper Relay
46A	gm/blk	Fluid Flow Adjust POT Wiper to Fluid Shutoff Relay
47	blk/wht	Fluid Switch MAX to MAX Relay
48	yel/blu	Selector Switch to MAX Wiper and 5volt Relays
49	org/red	Diode cathode to Delay Timer & E.S.I.D.
50	tan/blk	Delay Timer to Shutdown Relay
51	yel/blk	Throttle Switch to Throttle Up Relay
52	yel/brn	Throttle Switch to Throttle Down Relay
53	gra/wht	throttle Up Relay to Linear Actuator
54	gra/org	throttle Down Relay to Linear Actuator
56	gra/red	Rotation Enable Relay to Remote Dump Solenoids
57	wht	Fluid Shutoff Relay to Fluid Switch
59	tan/red	Remote Enable Relay to Remote Display & Remote Enable Key
60	tan/gm	Backup Wrench Switch to Engage Solenoid
61	yel/gm	Backup Wrench Switch to Disengage Solenoid
62	blu/yel	Shuttle switch to Retract Solenoid & Controller
63	gra/yel	Shuttle switch to Extend Solenoid & Controller
64	pur/yel	Pipe Lift Switch to Pipe Up Solenoid & Controller
65	wht/yel	Pipe Lift Switch to Pipe Down Solenoid & Controller
66	tan/blk	Controller to Stop solenoid & thrust Enable Relay
67	gra/blk	Controller to Slow Override Relay
68	gm/blu	Node Switch to Controller (Bore)
69	gra/blu	Mode Switch to Controller (Backream)
70	blu/wht	Carrage SW#1 to Controller Diode & Carriage GO Relay
71	gra/wht	Carrage SW#2 to Controller
72	tha/wht	Carrage SW#3 to Controller
73	gm/red	Extended Switch to Controller
74	wht/red	Retracted Switch to Controller Diode & Fluid Enable Relay
75	pur/org	Pipe OK Switch to Controller
76	brn/org	Pipe BAD Switch to Controller
77	wht/blu	Slowdown Switch Relay to Diode & Slow Relay
78	red/wht	Diodes to Thrust Enable Relay
79	yel	Slow Relay to Thrust Enable Relay
80	gm	Thrust Enable Relay & Slow Override Relay to Thrust Enable Solenoids
81	gra/gm	Seat Switch to Rotation enable Relay
82	blk	Remote Display to Download Connection "A"
83	wht	Remote Display to Download Connection "B"
84	yel	Remote Display to Download Connection "C"
85	gra/pur	Tracker Control Relay to Tracker Control Strobe Light
86	tan/red	Tracker Control Relay to Seat Switch

**ELECTRICAL SCHEMATIC**  
JT921 w/OUT AUTOBORE SHUTOFF**WIRING HARNESES**

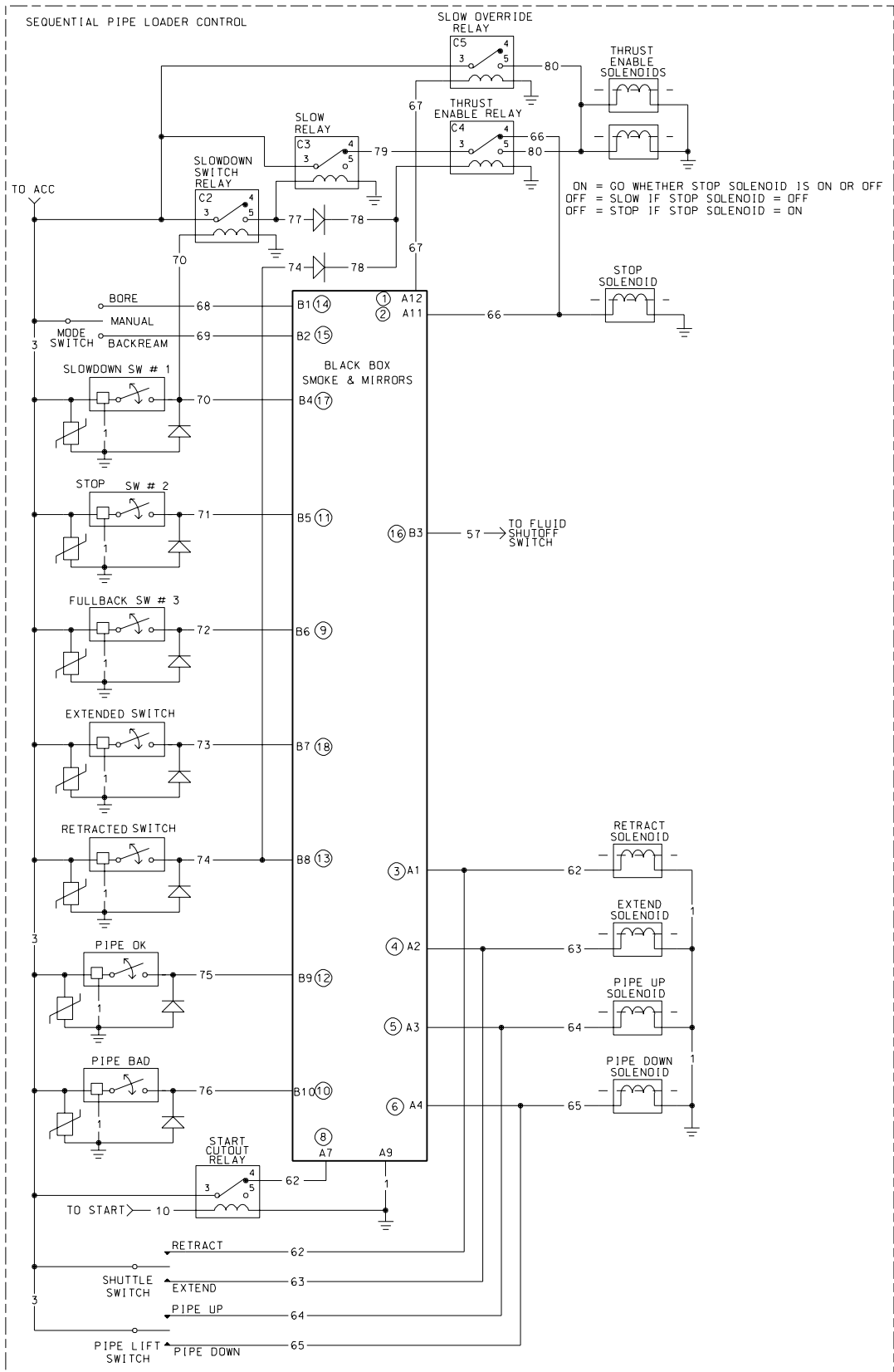
<b>Ref. No.</b>	<b>Part No.</b>	<b>Quantity</b>	<b>Description</b>
1	215-1177	1	JT922 ENGINE FRAME HARNESS
2	215-1178	1	JT922 DRILL FRAME HARNESS
3	215-1164	1	DUAL ELEMENT COLD START HARNESS
4	215-310	1	BATTERY CABLE (RED)
5	215-1029	1	BATTERY CABLE (BLACK)
6	215-1035	1	BATTERY CABLE (BLACK)
7	213-002	1	BATTERY CABLE (BLACK)
8	215-333	1	BATTERY CABLE (RED)
9	215-1566	1	HOME SWITCH HARNESS



# ELECTRICAL SCHEMATIC JT920L w/AUTOBORE SHUTOFF



# ELECTRICAL SCHEMATIC JT920L w/AUTOBORE SHUTOFF



# ELECTRICAL SCHEMATIC JT920L w/AUTOBORE SHUTOFF

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
1	BLK	SYSTEM GROUND	
1A	BLK	UMBILICAL CABLE GROUND	
- 2	- RED -	- BATTERY CIRCUIT -	- - - - -
3	ORG	ACCESSORY CIRCUIT	
4	RED	BATTERY CIRCUIT (FUSED)	
- 5	- ORG/BLU -	- IGNITION CIRCUIT -	- - - - -
6	BRN/ORG	COLD START SWITCH TO COLD START RELAY	
7	BRN/YEL	COLD START RELAY TO MANIFOLD HEATER	
- 8	- WHT/BLK -	- IGNITION SWITCH START TO START RELAY -	- - - - -
9	WHT/ORG	START BYPASS DELAY TO START BYPASS RELAY	
10	WHT/RED	START BYPASS RELAY TO EOP FUEL SHUTOFF RELAY	
- 11	- YEL/RED -	- ENGINE STOP SWITCH CIRCUIT TO UMBILICAL CONN. -	- - - - -
11A	TAN	UMBILICAL CABLE ENGINE STOP SWITCH CIRCUIT	
12	ORG/BLK	EOP RELAY TO FUEL SOLENOID & HOUR METER	
- 13	- WHT/GRN -	- ELEC STR SYSTEM BOX TO LOCAL ALARM -	- - - - -
14	WHT/BLK	HYD OIL TEMP SWITCH TO LIGHT & DIODE BLOCK	
15	WHT/BLU	ENGINE OIL PRESSURE SWITCH TO LIGHT & EOP RELAY	
- 16	- BLU -	- JUMPER FROM ENGINE STOP RELAY TO EOP RELAY -	- - - - -
17	GRA	HYDRAULIC FILTER LIGHT CIRCUIT	
18			
- 19	- GRA -	- AUX. LIGHT FUSE TO AUX. LIGHT SOCKET -	- - - - -
20	ORG/WHT	FUSE TO ACCESSORY SOCKET	
21			
- 22	- YEL/BLK -	- FLUID PAC THROTTLE SWITCH TO UMB CONNECTION -	- - - - -
22A	YEL	UMBILICAL CABLE THROTTLE SWITCH CIRCUIT	
23	WHT/BLK	START RELAY TO START SOLENOID	
- 24	- BLK/YEL -	- DIODE CATHODES TO LIGHT TEST RELAY -	- - - - -
25	RED/BLK	REMOTE START SWITCH TO UMBILICAL CONNECTOR	
25A	ORG	UMBILICAL CABLE REMOTES START SWITCH CIRCUIT	
- 26	- WHT -	- ELEC STR SYSTEM BOX TO CURRENT COIL X1 -	- - - - -
27	BLK	ELEC STR SYSTEM BOX TO CURRENT COIL X2	
28	RED	ELEC STR SYSTEM BOX TO CURRENT COIL X3	
- 29	- BRN -	- FUEL SENDER TO GAUGE -	- - - - -
30	TAN/BLU	WARNING LIGHT ALARM TO DIODE	
31	GRN	WATER TEMP SENDER TO GAUGE	
- 32	- GRA/BLU -	- 5VOLI RELAY TO UMBILICAL CONNECTOR -	- - - - -
32A	BLU	UMBILICAL CABLE FLUID FLOW ADJUST POT (5V) CIRCUIT	
33	GRA/GRN	OUTPUT RELAY TO UMBILICAL CONNECTOR	
- 33A	- GRN -	- UMBILICAL CABLE FLUID FLOW ADJUST POT WIPER CIRCUIT -	- - - - -
34	BLU/WHT	MAX RELAY TO UMBILICAL CONNECTOR	
34A	RED	UMBILICAL CABLE FLUID SWITCH "MAX" CIRCUIT	
- 35	- BLK/YEL -	- FLUID SWITCH TO FLUID POT -	- - - - -
36	WHT	STROBE RELAY TO STROBE	
37	RED/WHT	GLOW PLUG FUSE TO GLOW PLUG RELAY	
- 38	- WHT/PUR -	- ELEC STR SYSTEM TO STROBE RELAY AND UMBILICAL CABLE -	- - - - -
38A	GRA	UMBILICAL CABLE ELEC STR SYSTEM STROBE CIRCUIT	
39	YEL/RED	DIODE CATHODE TO ENGINE STOP RELAY (LATCH CIRCUIT)	
- 40	- BRN/ORG -	- FUEL SOLENOID FUSE TO RELAY -	- - - - -

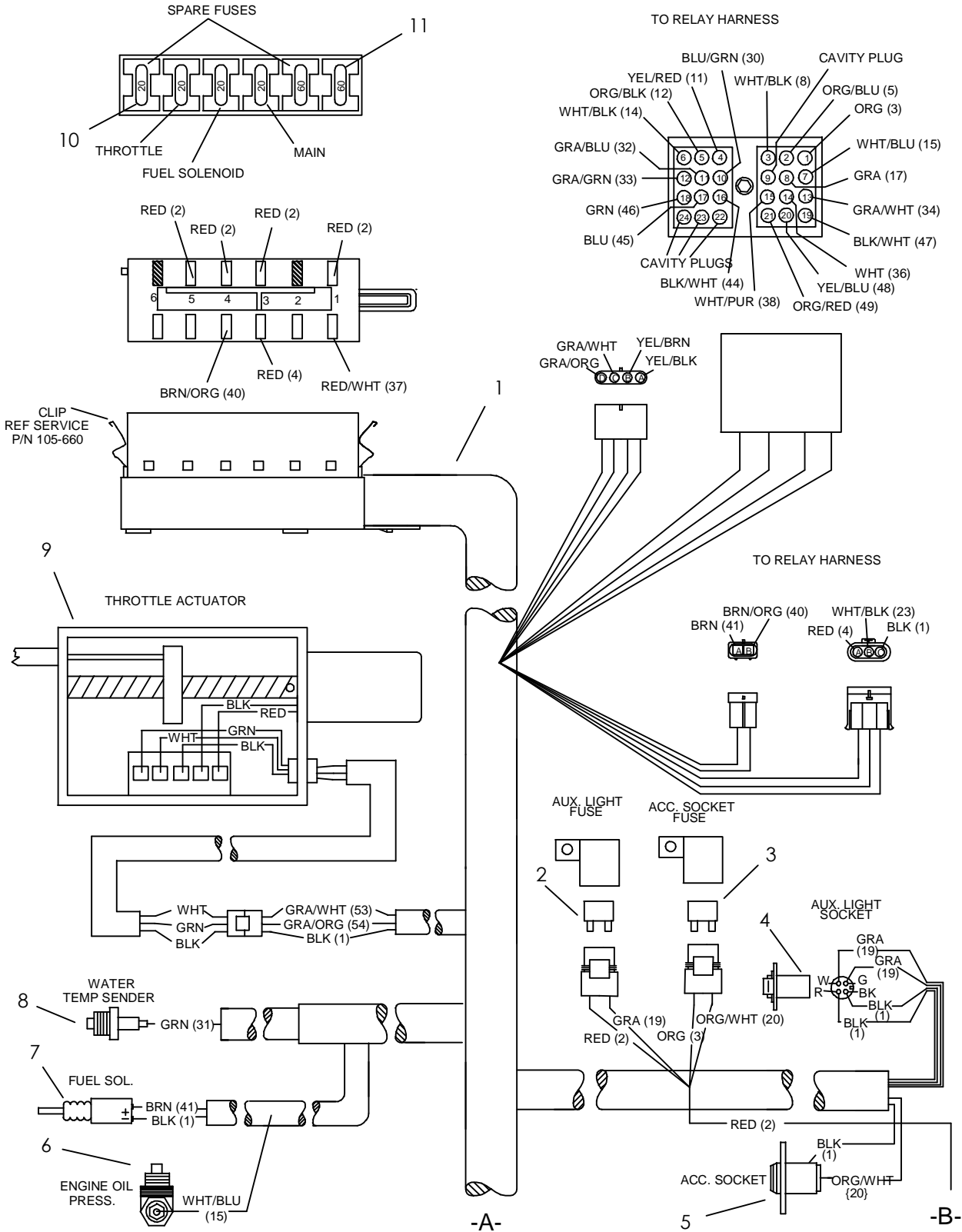
# ELECTRICAL SCHEMATIC

## JT920L w/AUTOBORE SHUTOFF

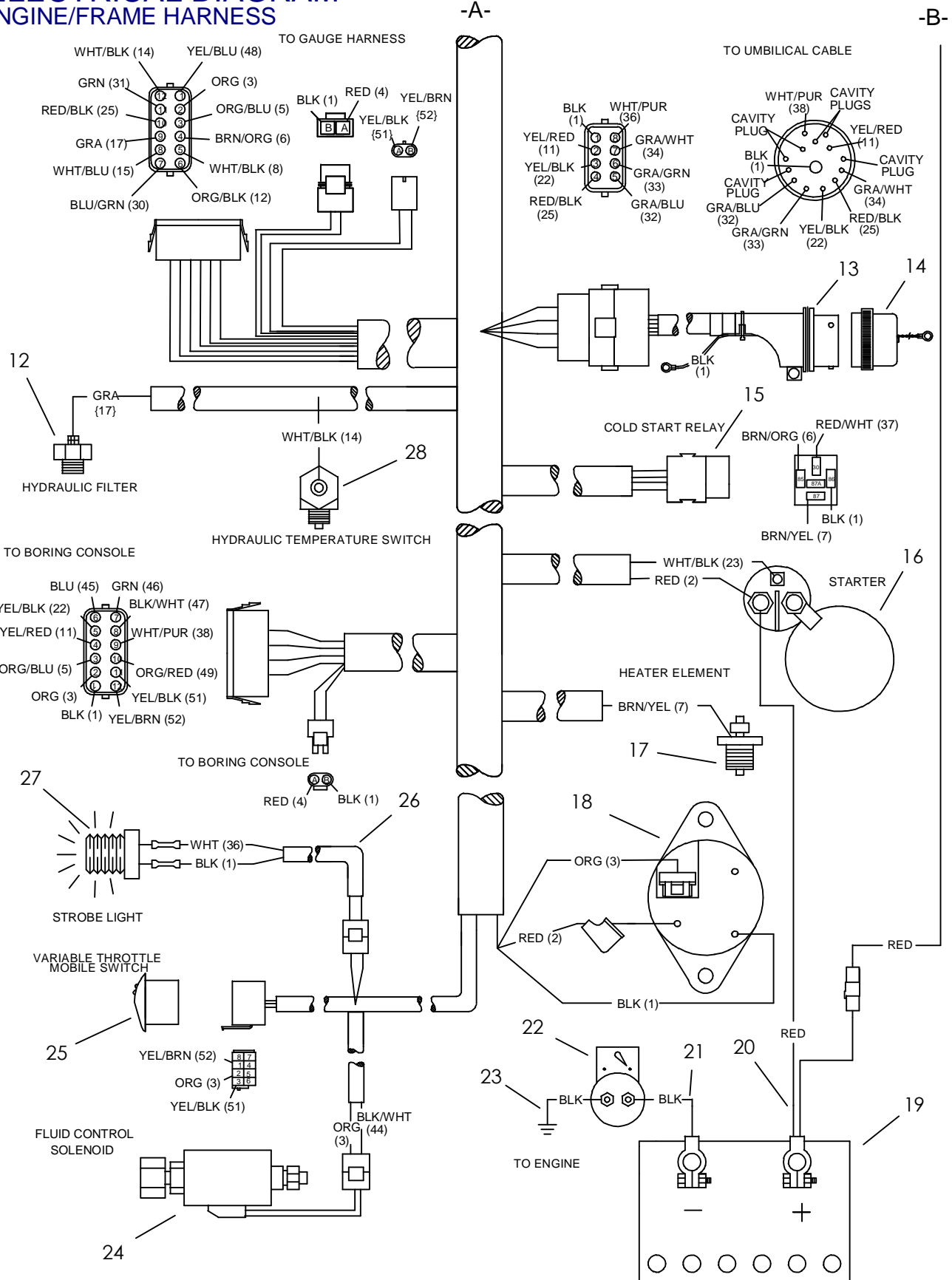
CKT NO.	WIRE COLOR	FUNCTION	REMARKS
41	BRN	FUEL SOLENOID RELAY TO FUEL SOLENOID	
42	TAN/BLU	FLUID CONTROLLER 5V OUT TO 5VOLT RELAY	
42A	BLU	FLUID CONTROLLER 5V	
43	TAN/GRN	FLUID CONTROLLER POT OUT TO WIPER RELAY	
43A	GRN	FLUID CONTROLLER POT	
44	BLK/WHT	FLUID CONTROLLER PWM OUT ID VALVE GROUND & MAX RELAY	
45	BLU	FLUID FLOW ADJUST POT (5V) TO 5VOLT RELAY	
46	GRN	FLUID SHUTOFF RELAY TO WIPER RELAY	
46A	GRN/BLK	FLUID FLOW ADJUST POT WIPER TO FLUID SHUTOFF RELAY	
47	BLK/WHT	FLUID SWITCH MAX TO MAX RELAY	
48	YEL/BLU	SELECTOR SWITCH TO MAX, WIPER AND 5VOLT RELAYS	
49	ORG/RED	DIODE CATHODE TO DELAY TIMER & ELEC STR SYSTEM	
50	TAN/BLK	DELAY TIMER TO SHUTDOWN RELAY	
51	YEL/BLK	THROTTLE SWITCH TO THROTTLE UP RELAY	
52	YEL/BRN	THROTTLE SWITCH TO THROTTLE DOWN RELAY	
53	GRA/WHT	THROTTLE UP RELAY TO LINEAR ACTUATOR	
54	GRA/ORG	THROTTLE DOWN RELAY TO LINEAR ACTUATOR	
55			
56	GRA/RED	ROTATION ENABLE RELAY TO ROTATION DUMP SOLENOIDS	
57	WHT	FLUID SHUTOFF RELAY TO FLUID SHUTOFF SWITCH	
58	YEL/BLK	AUTOBORE SHUTOFF SWITCH TO CONNECTION	
58A	WHT	CONNECTION TO AUTOBORE SHUTOFF SOLENOID	
59	TAN/RED	REMOTE ENABLE RELAY TO REMOTE DISPLAY AND REMOTE ENABLE KEY	
60	TAN/GRN	BACKUP WRENCH SWITCH TO ENGAGE SOLENOID	
61	YEL/GRN	BACKUP WRENCH SWITCH TO DISENGAGE SOLENOID	
62	BLU/YEL	SHUTTLE SWITCH TO RETRACT SOLENOID & CONTROLLER	
63	GRA/YEL	SHUTTLE SWITCH TO EXTEND SOLENOID & CONTROLLER	
64	PUR/YEL	PIPE LIFT SWITCH TO PIPE UP SOLENOID & CONTROLLER	
65	WHT/YEL	PIPE LIFT SWITCH TO PIPE DOWN SOLENOID & CONTROLLER	
66	TAN/BLK	CONTROLLER TO STOP SOLENOID & THRUST ENABLE RELAY	
67	GRA/BLK	CONTROLLER TO SLOW OVERRIDE RELAY	
68	GRN/BLU	MODE SWITCH TO CONTROLLER (BORE)	
69	GRA/BLU	MODE SWITCH TO CONTROLLER (BACKREAM)	
70	BLU/WHT	CARRIAGE SW#1 TO CONTROLLER, DIODE & CARRIAGE GO RELAY	
71	GRA/WHT	CARRIAGE SW#2 TO CONTROLLER	
72	TAN/WHT	CARRIAGE SW#3 TO CONTROLLER	
73	GRN/RED	EXTENDED SWITCH TO CONTROLLER	
74	WHT/RED	RETRACTED SWITCH TO CONTROLLER, DIODE & FLUID ENABLE RELAY	
75	PUR/ORG	PIPE OK SWITCH TO CONTROLLER	
76	BRN/ORG	PIPE BAD SWITCH TO CONTROLLER	
77	WHT/BLU	SLOWDOWN SWITCH RELAY TO DIODE AND SLOW RELAY	
78	RED/WHT	DIODES TO THRUST ENABLE RELAY	
79	YEL	SLOW RELAY TO THRUST ENABLE RELAY	
80	GRN	THRUST ENABLE RELAY & SLOW OVERRIDE RELAY TO THRUST ENABLE SOLENOIDS	
81	GRA/GRN	SEAT SWITCH TO ROTATION ENABLE RELAY	
82	BLK	REMOTE DISPLAY TO DOWNLOAD CONNECTION "A"	
83	WHT	REMOTE DISPLAY TO DOWNLOAD CONNECTION "B"	
84	YEL	REMOTE DISPLAY TO DOWNLOAD CONNECTION "C"	
85	GRA/PUR	TRACKER CONTROL RELAY TO TRACKER CONTROL STROBE LIGHT	
86	TAN/RED	TRACKER CONTROL RELAY TO SEAT SWITCH	



# ELECTRICAL DIAGRAM ENGINE/FRAME HARNESS



# ELECTRICAL DIAGRAM ENGINE/FRAME HARNESS



## ELECTRICAL DIAGRAM ENGINE/FRAME HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-294	1	ENGINE-FRAME HARNESS	
2.	217-813	-	FUSE (ATC, 30 AMP)	
3.	217-812	-	FUSE (ATC, 20 AMP)	
4.	217-017	1	FEMALE CONNECTOR (4-WAY)	
	105-185	2	BOLT (#10-24 X 1/2", RD SLT)	
	106-048	2	LOCKNUT (#10-24)	
5.	214-301	1	ACCESSORY SOCKET	
	106-888	2	SCREW (M4-.70 X 16MM)	
	106-557	2	NUT (M4-.70)	
6.	217-760	1	LOW OIL PRESSURE SWITCH	
7.	217-862	-	FUEL SOLENOID	
8.	217-565	1	TEMPERATURE SENDER 100 - 280 F	
9.	215-231	1	LINEAR ACTUATOR	
	214-299	1	ACTUATOR PIGTAIL	
	196-331	1	CABLE (LINEAR ACTUATOR)	
	501-358	-	ROLL PIN (3/32" X 3/4")	
10.	217-805	-	FUSE (MAXI, 20 AMP)	
11.	217-793	-	FUSE (MAXI, 60 AMP)	

## NOT SHOWN:

110-332	3	BOLT-ON CLAMP (1-5/8")
106-381	1	FLG LK SCREW (M8-1.25 X 25MM)
106-386	1	FLG LOCKNUT (M8-1.25)

NOT SHOWN:

FOOTNOTES:

## NOTE:

ALL CONNECTORS ARE SHOWN WITH REAR VIEWS

# ELECTRICAL DIAGRAM

## ENGINE/FRAME HARNESS

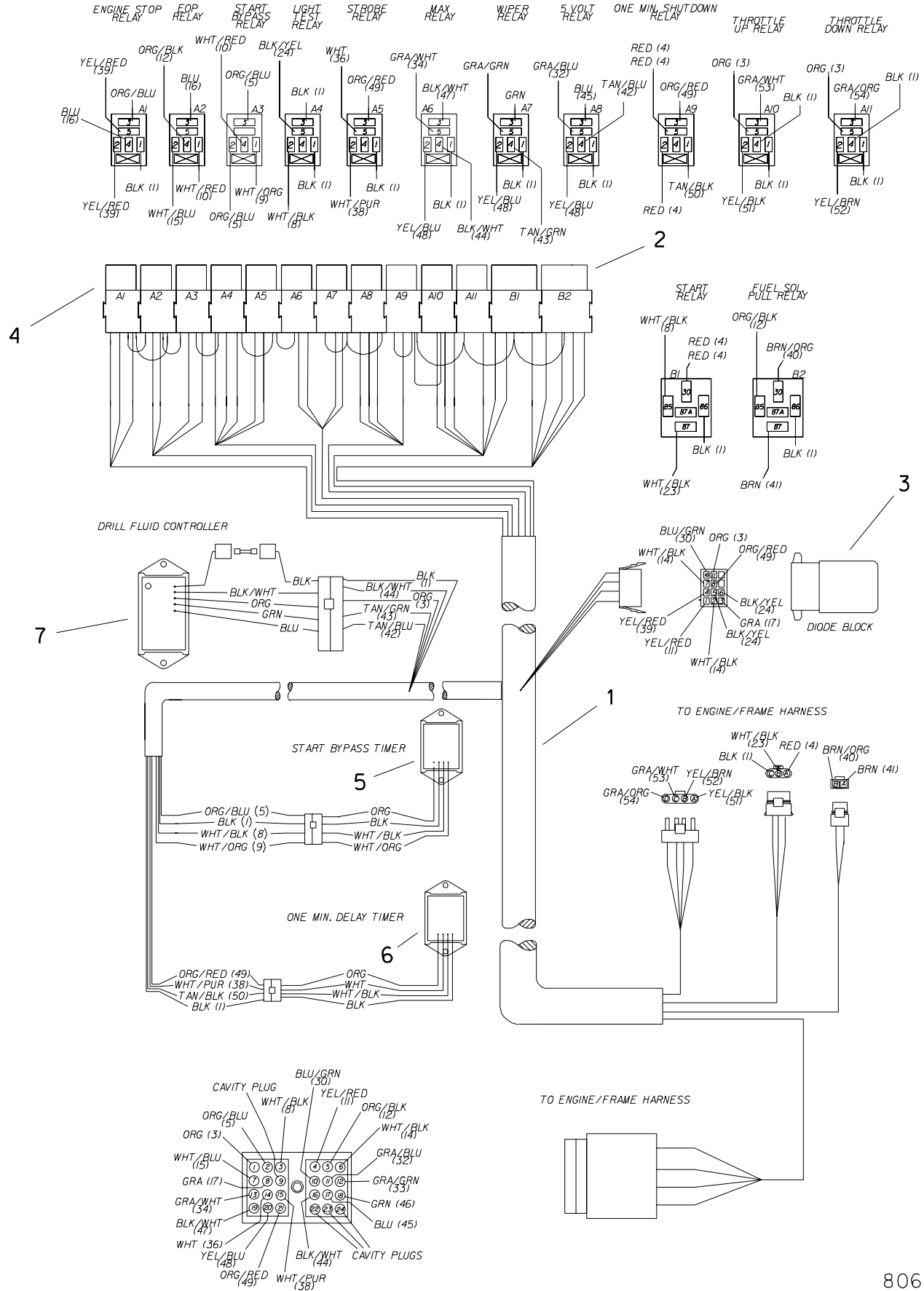
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
12.	217-765	-	INDICATOR SWITCH	
13.	214-172	1	UMBILICAL HARNESS	
	106-216	1	BOLT (3/8-NC X 1", SIL BRZ)	
	106-454	1	LOCKNUT (3/8-NC, SIL BRZ)	
	106-220	1	INT STAR WASHER (3/8", SIL BRZ)	
14.	217-099	-	UMB CONNECTOR DUST CAP (LARGE)	
15.	217-826	1	MINI RELAY (SPDT)	
	105-185	2	BOLT (#10-24 X ", RD SLT)	
	106-048	2	LOCKNUT (#10-24)	
16.	194-407	1	STARTER	
17.	217-910	-	HEATER ELEMENT	
18.	215-159	1	ALTERNATOR (12V, 61 AMP)	
19.	215-275	1	BATTERY	
	215-244	1	BATTERY	
20.	215-370	1	BATTERY CABLE (1/0 GA X 46", RED)	
21.	215-337	1	BATTERY CABLE (2/0 GA X 19", BLK)	
22.	217-819	1	BATTERY DISCONNECT SWITCH	
23.	215-375	1	BATTERY CABLE (1/0 GA X 24", BLK)	
24.	217-864	1	PROPORTIONAL SOLENOID COIL	MOMENTARY ON-OFF-MOMENTARY ON
25.	217-764	1	ROCKER SWITCH (SPDT)	
26.	214-175	1	STROBE PIGTAIL HARNESS	
27.	217-041	1	STROBE LIGHT (12V DC)	
	217-720	1	REPLACEMENT BULB (12V DC)	
	217-310	1	STROBE LIGHT (12V DC)	
	217-311	1	BULB (12V DC)	
	121-055	1	LENS (AMBER)	
28.	215-148	-	TEMPERATURE SWITCH	ENDS WITH S/N
	214-819	1	TEMPERATURE SWITCH	BEGINS WITH S/N

NOT SHOWN:

FOOTNOTES:

NOTE:  
ALL CONNECTORS ARE SHOWN WITH REAR VIEWS

# ELECTRICAL DIAGRAM RELAY HARNESS



# ELECTRICAL DIAGRAM

## RELAY HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-295	1	RELAY HARNESS	
	105-185	3	SCREW (#10-24 X 1/2", SLT)	
	106-048	3	LOCKNUT (#10-24)	
2.	217-826	2	MINI RELAY	
3.	216-521	1	DIODE BLOCK	
4.	217-710	11	MICRO RELAY	
5.	217-804	1	START BYPASS DELAY	SEE FOOTNOTE 1
	106-049	2	SCREW (#10-24 X 3/4", PHLPS)	
	106-048	2	LOCKNUT (#10-24)	
6.	214-430	1	DELAY TIMER	SEE FOOTNOTE 1
7.	215-914	1	DRILL FLUID CONTROLLER	
	105-185	2	SCREW (#10-24 X 1/2", SLT)	
	106-048	2	LOCKNUT (#10-24)	

FOOTNOTES

1. START BYPASS DELAY AND ONE MINUTE TIMER ARE BOLTED TOGETHER

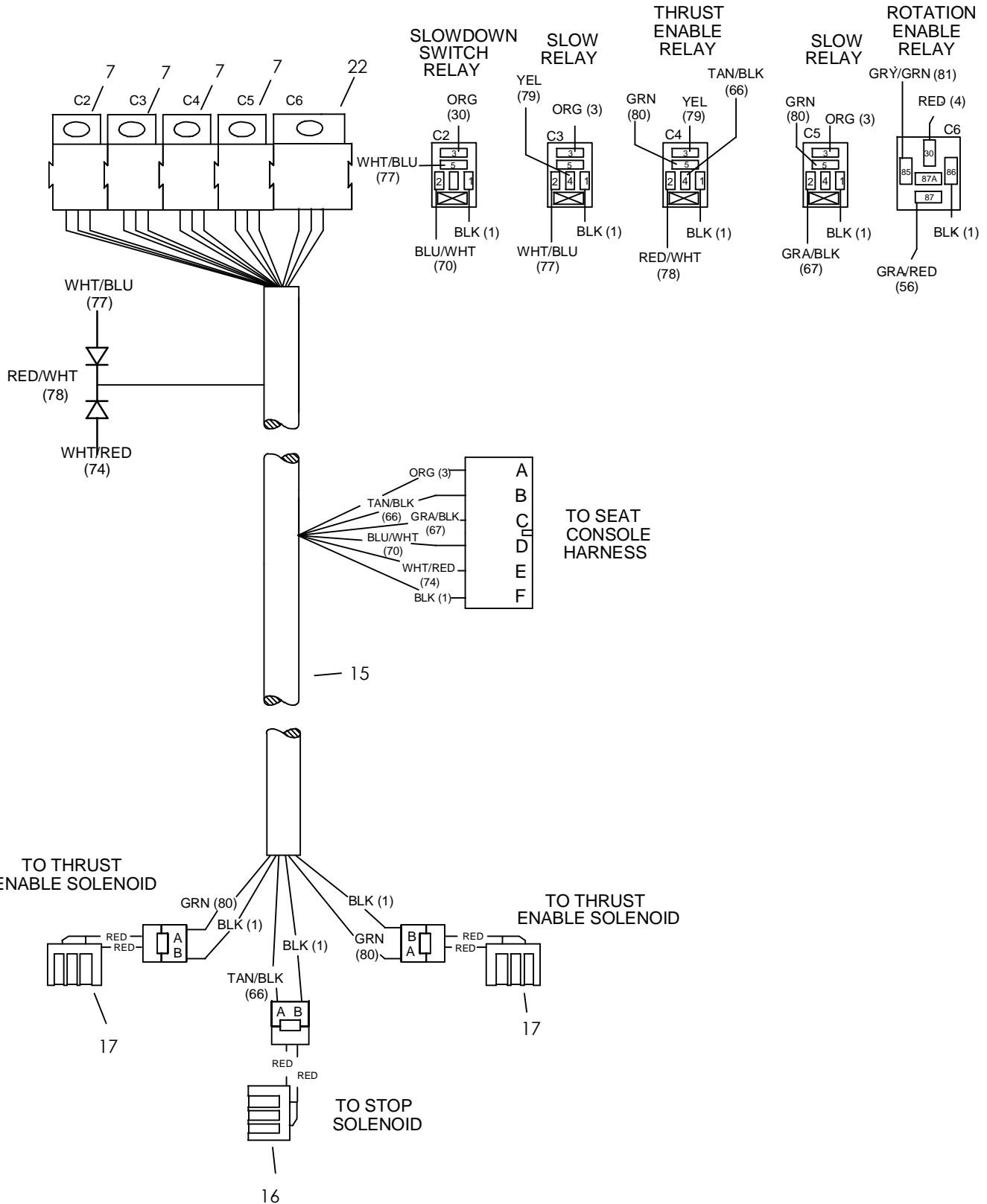
NOTE

ALL CONNECTORS ARE SHOWN WITH REAR VIEWS

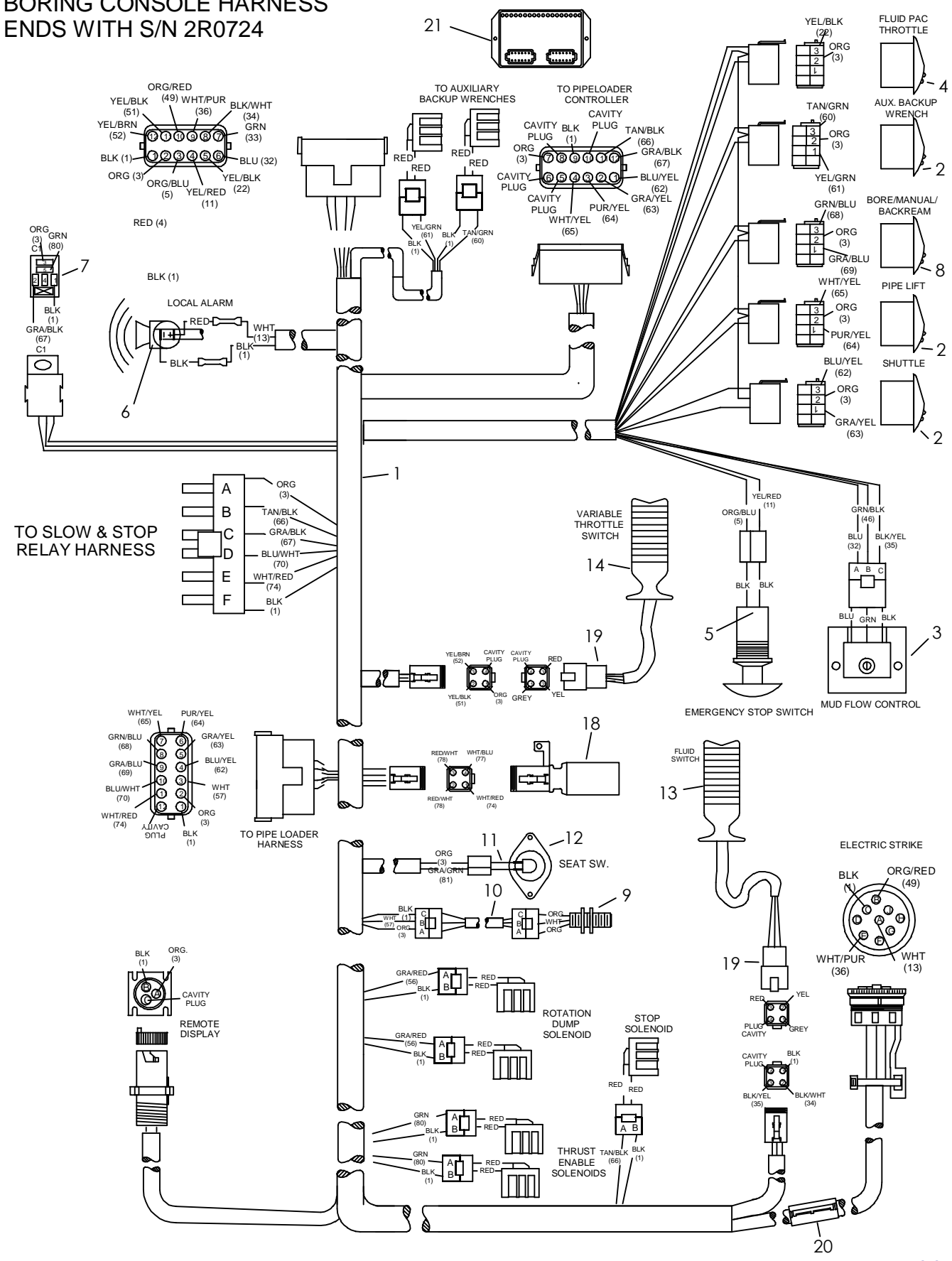
# ELECTRICAL DIAGRAM

## BORING CONSOLE HARNESS

ENDS WITH S/N 2R0724



# ELECTRICAL DIAGRAM BORING CONSOLE HARNESS ENDS WITH S/N 2R0724





# ELECTRICAL DIAGRAM

## BORING CONSOLE HARNESS

### ENDS WITH S/N 2R0724

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-420	1	CONSOLE HARNESS (JT920/JT920L)	
	107-269	4	SCREW (#4-40 X 3/4", PAN)	
	106-277	4	NUT (#4-40, BRASS)	
2.	217-764	3	ROCKER SWITCH (SPDT)	
	165-817	3	SWITCH GASKET	
3.	217-940	1	FLUID FLOW POTENTIOMETER	
	110-560	2	POP RIVET (3/16" X 1/2", ALUM)	
4.	217-762	1	ROCKER SWITCH (SPDT)	
	165-817	1	SWITCH GASKET	
5.	217-724	1	BUTTON SWITCH (SPST)	OBSOLETE
	214-943	1	BUTTON SWITCH (SPST)	
	215-754	1	MC INSULATION (2-TERMINAL)	
6.	306-602	1	ALARM	
	105-827	2	FLG LK BOLT (3/8-NC X 1-1/4")	
	105-845	2	FLG LOCKNUT (3/8-NC)	
7.	217-710	4	MICRO RELAY (SPDT)	
	105-827	2	FLG LK BOLT (3/8-NC X 1-1/4")	
8.	217-854	1	SWITCH	
	165-817	1	SWITCH GASKET	
9.	217-939	1	PROXIMITY SWITCH	
	107-332	2	JAM NUT (PROXIMITY SWITCH)	
10.	214-448	1	MUD SHUT-OFF CABLE	
11.	215-939	1	SEAT SWITCH HARNESS	
12.	217-935	1	SEAT SWITCH	
13.	501-822	1	JOYSTICK (ON-OFF-(ON))	
	214-133		TERMINAL PIN (DEUTSCH)	
	217-202		CAVITY PLUG (DEUTSCH)	
	217-203		4-WAY MALE LOCK (DEUTSCH)	
	217-204		4-WAY MALE CONNECTOR (DEUTSCH)	
	217-946		MICROSWITCH (JOYSWITCH)	
	308-646		JOYSTICK SWITCH BOOT	
14.	501-823	1	JOYSTICK (ON-OFF-(ON))	
	214-133		TERMINAL PIN (DEUTSCH)	
	217-202		CAVITY PLUG (DEUTSCH)	
	217-203		4-WAY MALE LOCK (DEUTSCH)	
	217-946		MICROSWITCH (JOYSTICK)	
	308-646		JOYSTICK SWITCH BOOT	
15.	214-455	1	SLOW AND STOP RELAY HARNESS	
16.	158-661	1	HYD CONTROL VALVE	
	158-627		SOLENOID VALVE	
17.	516-029	2	HYD SOLENOID VALVE	OBSOLETE
	149-495	2	ASS'Y HYD SOLENOID VALVE	
18.	214-449	1	DIODE CONNECTOR	
19.	217-204	2	4-WAY MALE CONNECTOR-DEUTSCH	
	217-203	2	4-WAY MALE LOCK-DEUTSCH	
	214-133	6	TERMINAL PIN (DEUTSCH)	
	217-202	2	CAVITY PLUG-DEUTSCH	
20.	217-332	1	LARGE FERRITE CLAMP-ON	
21.	217-186	-	SEQ PIPE LOADER CONTROLLER	
22.	217-826	1	MINI RELAY	

#### FOOTNOTES

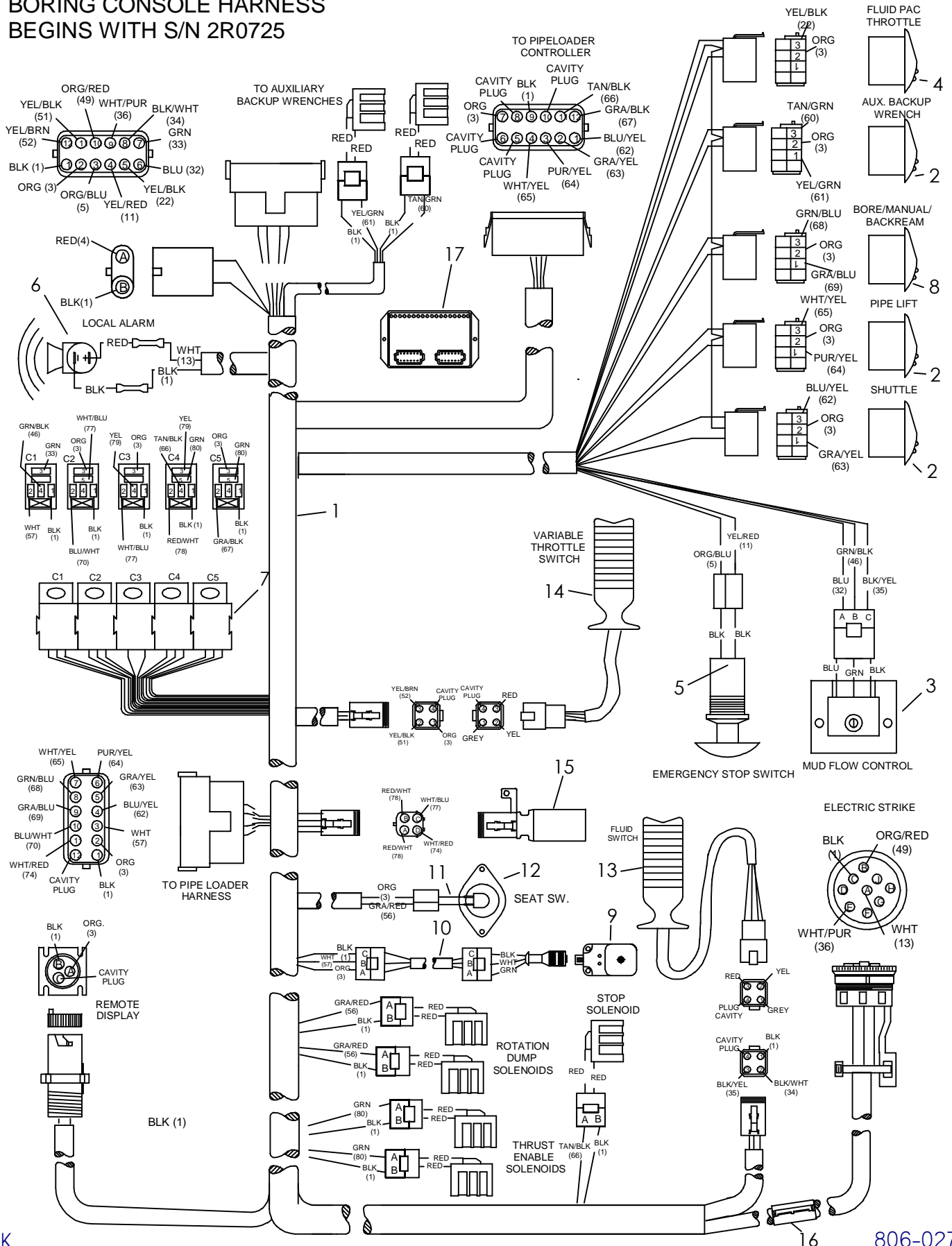
NOTE:



# ELECTRICAL DIAGRAM

## BORING CONSOLE HARNESS

### BEGINS WITH S/N 2R0725



K

806-027

# ELECTRICAL DIAGRAM

## BORING CONSOLE HARNESS

### BEGINS WITH S/N 2R0725

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-420	1	CONSOLE HARNESS (JT920/JT920L)	
	107-269	4	SCREW (#4-40 X 3/4", PAN)	
	106-277	4	NUT (#4-40, BRASS)	
2.	217-764	3	ROCKER SWITCH (SPDT)	
	165-817	3	SWITCH GASKET	
3.	217-940	1	FLUID FLOW POTENTIOMETER	
	110-560	2	POP RIVET (3/16" X 1-1/2", ALUM)	
4.	217-762	1	ROCKER SWITCH (SPDT)	
	165-817	1	SWITCH GASKET	
5.	217-724	1	BUTTON SWITCH (SPDT)	
	214-943	1	BUTTON SWITCH (SPST)	
	215-754	1	MC INSULATION (2-TERMINAL)	
6.	306-602	1	BACKUP ALARM	
	105-827	2	FLG LK BOLT (3/8-NC X 1-1/4")	
	105-845	2	FLG LOCKNUT (3/8-NC)	
7.	217-710	5	MICRO RELAY (SPDT)	
	217-194	5	MICRO RELAY BASE	
	105-827	2	FLG LK BOLT (3/8-NC X 1-1/4")	
8.	217-854	1	SWITCH	
	165-817	1	SWITCH GASKET	
9.	217-939	1	PROXIMITY SWITCH	ENDS WITH S/N
	214-692	-	PROXIMITY SWITCH	BEGINS WITH S/N
	107-332	2	JAM NUT (PROXIMITY SWITCH)	
10.	214-448	1	MUD SHUT-OFF CABLE	
11.	215-939	1	SEAT SWITCH HARNESS	
12.	217-935	1	SEAT SWITCH	
13.	214-466	1	JOYSTICK (ON-OFF-(ON))	
	501-822	-	JOYSTICK (ON-OFF-(ON))	
	214-133	-	TERMINAL PIN (DEUTSCH)	
	217-202	-	CAVITY PLUG-DEUTSCH	
	217-203	-	4-WAY MALE LOCK DEUTSCH	
	217-204	-	4-WAY MALE CONNECTOR - . DEUTSCH	
14.	214-467	1	JOYSTICK (ON-OFF-ON)	
	501-823	-	JOYSTICK (ON-OFF-(ON))	
	214-133	-	TERMINAL PIN (DEUTSCH)	
	217-202	-	CAVITY PLUG-DEUTSCH	
	217-203	-	4 WAY MALE LOCK- DEUTSCH	
15.	214-449	1	DIODE CONNECTOR	
16.	217-332	1	LARGE FERRITE CLAMP-ON	
17.	217-186	-	SEQ PIPE LOADER CONTROLLER	

#### FOOTNOTES

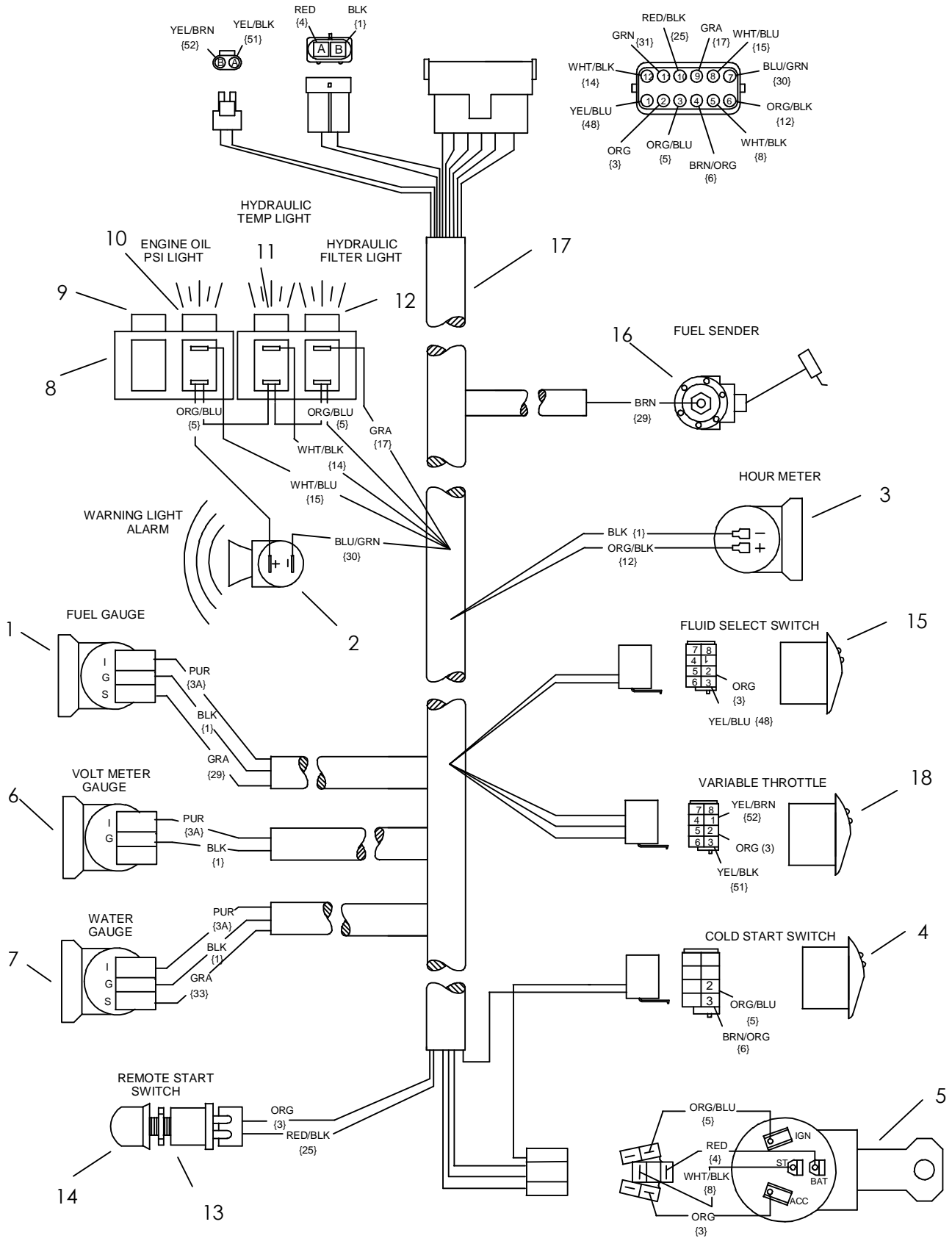
NOTE:

# ELECTRICAL DIAGRAM

## GAUGE HARNESS

### JT920

TO ENGINE/FRAME HARNESS



# ELECTRICAL DIAGRAM

## GAUGE HARNESS

### JT920

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	215-133	1	FUEL GAUGE	
2.	306-603	1	AUDIO ALARM	
3.	215-128	1	HOUR METER	
4.	217-789	1	ROCKER SWITCH	OFF-MOMENTARY ON
	165-817	1	SWITCH GASKET	
5.	214-852	1	IGNITION SWITCH	
	214-961		KEY, PAIR	
	214-962		SWITCH MOUNTING NUT	
6.	215-129	1	VOLT METER	
7.	217-512	1	WATER TEMPERATURE GAUGE	
8.	217-020	2	PILOT LIGHT	
	217-020	1	REPLACEMENT BULB	
9.	217-028	1	INSERT - BLANK (BLK)	
10.	217-021	1	INSERT - ENG OIL PSI (RED)	
11.	217-027	1	INSERT - HYD OIL HI TEMP (RED)	
12.	217-036	1	INSERT - HYD OIL PSI (YEL)	
13.	306-607	1	HORN BUTTON	ON-ON
14.	306-608	1	HORN BUTTON CAP	
15.	217-762	1	ROCKER SWITCH (SEALED)	
	165-817	1	SWITCH GASKET	
16.	217-549	-	FUEL SENDER	MOMENTARY ON-OFF-MOMENTARY ON
17.	214-293	1	GAUGE HARNESS	
18.	217-764	1	ROCKER SWITCH	
	165-817	1	SWITCH GASKET	

NOT SHOWN:

FOOTNOTES:

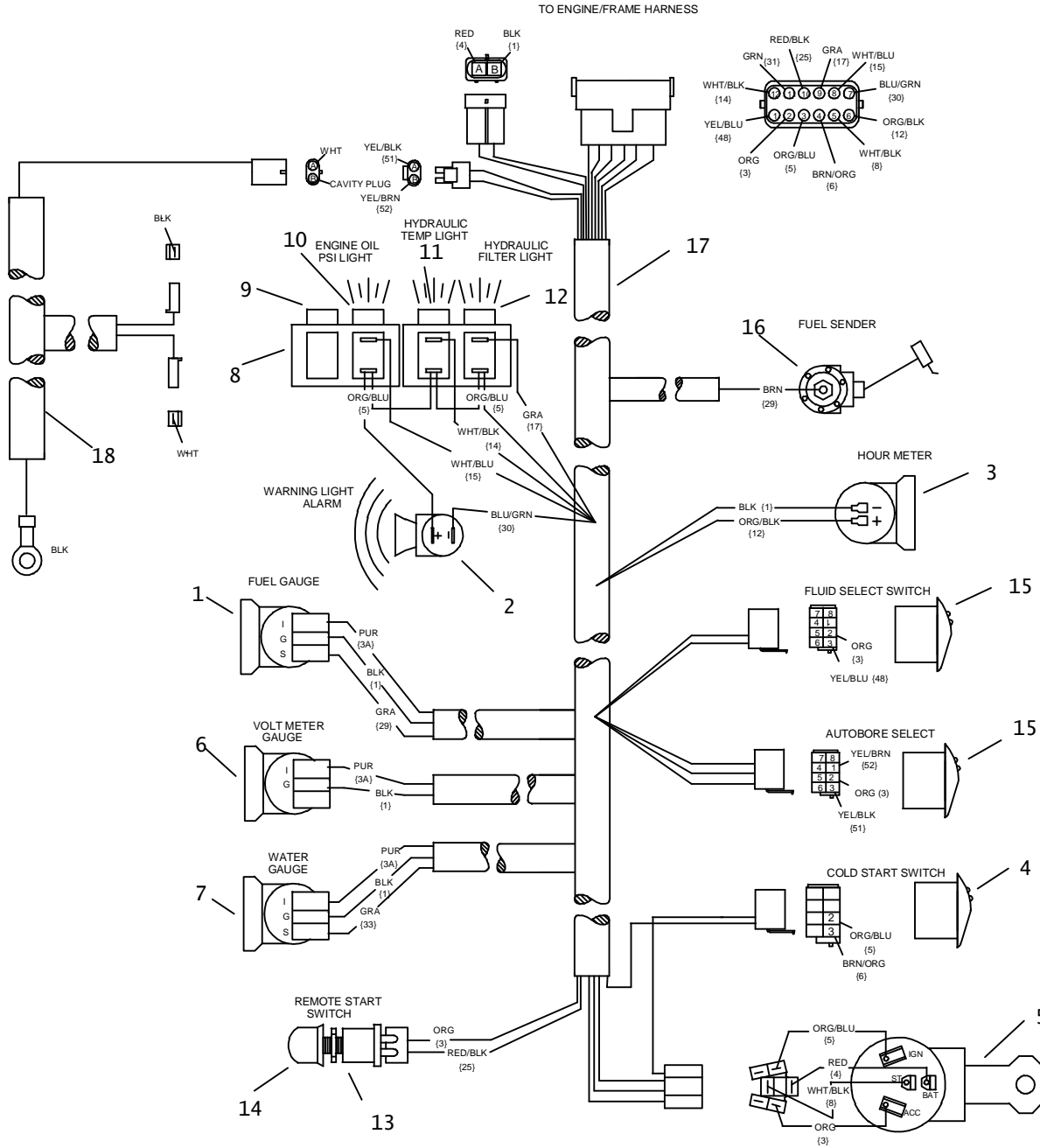
NOTE:

ALL CONNECTORS ARE SHOWN WITH REAR VIEWS

# ELECTRICAL DIAGRAM

## GAUGE HARNESS W/AUTOBORE SELECT

JT920 / JT920C / JT920L / JT921



# ELECTRICAL DIAGRAM

## GAUGE HARNESS W/AUTOBORE SELECT

### JT920 / JT920C / JT920L / JT921

REF PART NO. NUMBER	QTY	DESCRIPTION	REMARKS
1. 215-133	1	FUEL GAUGE	
215-415	1	NITE-LIGHT KIT (12V DC)	
2. 306-603	1	AUDIO ALARM	
3. 215-128	1	HOUR METER	
4. 217-789	1	ROCKER SWITCH	OFF-MOMENTARY ON
165-817	1	SWITCH GASKET	
5. 214-852	1	IGNITION SWITCH	
214-961		KEY, PAIR	
214-962		SWITCH MOUNTING NUT	
6. 215-129	1	VOLT METER	
215-415	1	NITE-LIGHT KIT (12V DC)	
7. 217-512	1	WATER TEMPERATURE GAUGE	
215-415	1	NITE-LIGHT KIT (12V DC)	
8. 217-020	2	PILOT LIGHT	
217-046	1	BULB (12V DC)	
9. 217-028	1	INSERT (BLK) BLANK	
10. 217-021	1	INSERT (RED) ENG OIL PSI	
11. 217-027	1	INSERT (RED) HYD OIL HI TEMP	
12. 217-036	1	INSERT (YEL) HYD OIL PSI	
13. 306-607	1	HORN BUTTON	
14. 306-608	1	BUTTON COVER	
15. 217-762	2	ROCKER SWITCH (SPDT)	ON-ON
165-817	2	SWITCH GASKET	
16. 217-549	-	FUEL SENDER	
17. 214-293	1	GAUGE HARNESS	
18. 214-495	1	AUTO BORE JUMPER	

NOT SHOWN:

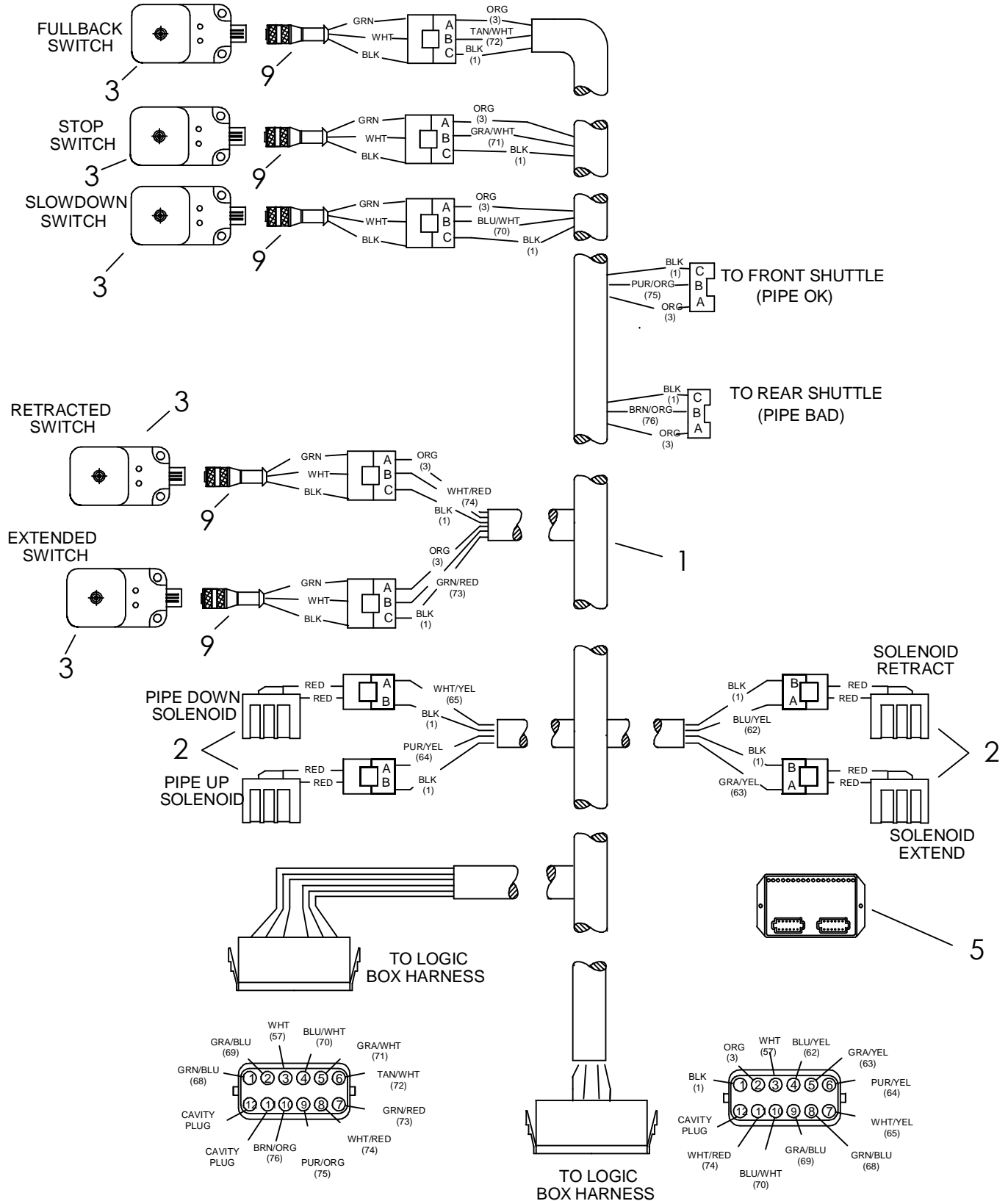
FOOTNOTES:

NOTE:

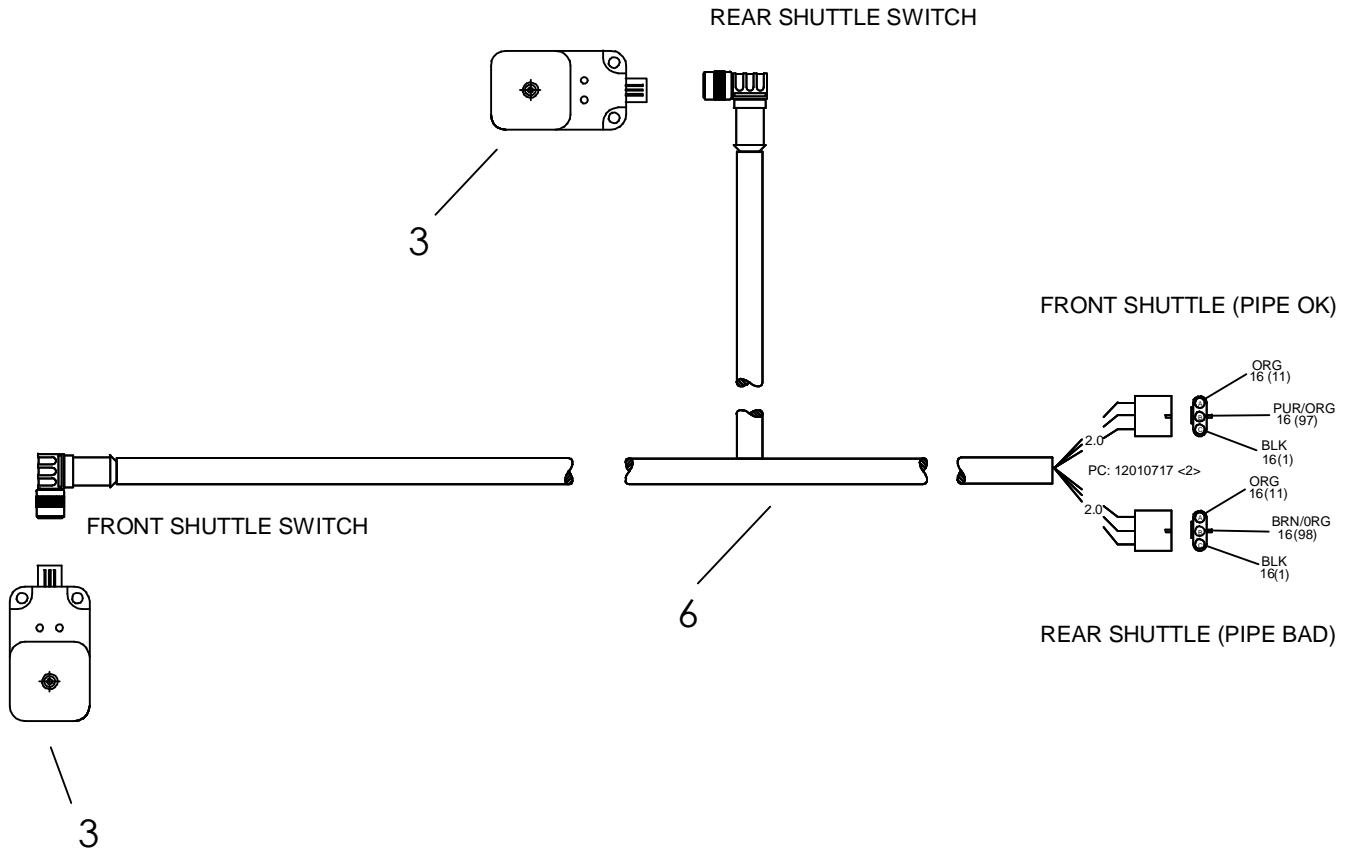
ALL CONNECTORS ARE SHOWN WITH REAR VIEWS



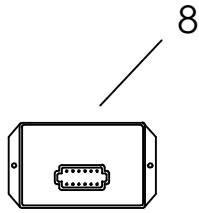
# ELECTRICAL DIAGRAM AUTO LOADER HARNESS



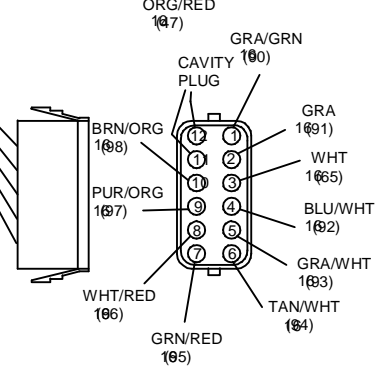
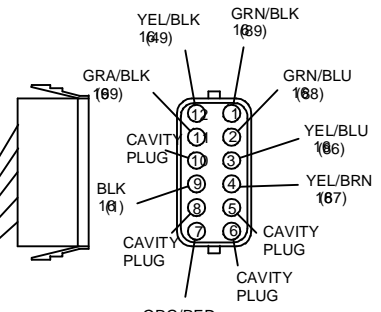
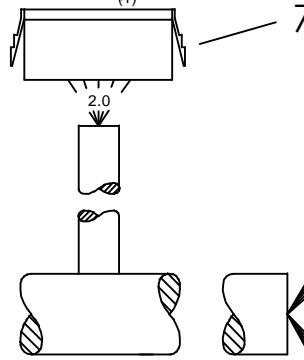
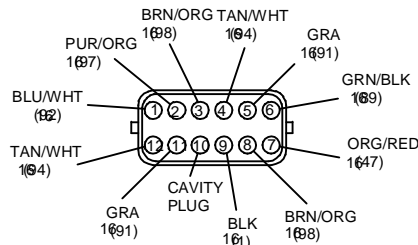
# ELECTRICAL DIAGRAM AUTO LOADER HARNESS



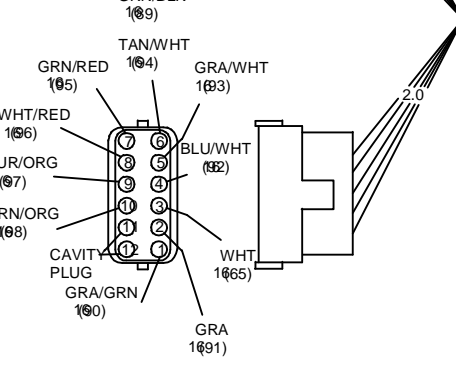
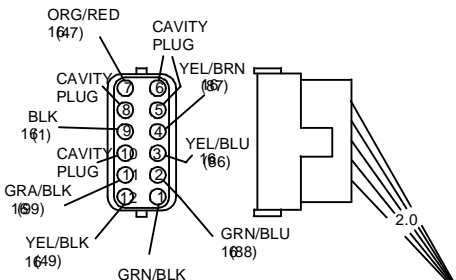
# ELECTRICAL DIAGRAM AUTO LOADER HARNESS



TO LOGIC CONVERTER



TO CONTROLLER



TO LOADER HARNESS

# ELECTRICAL DIAGRAM

## AUTO LOADER HARNESS

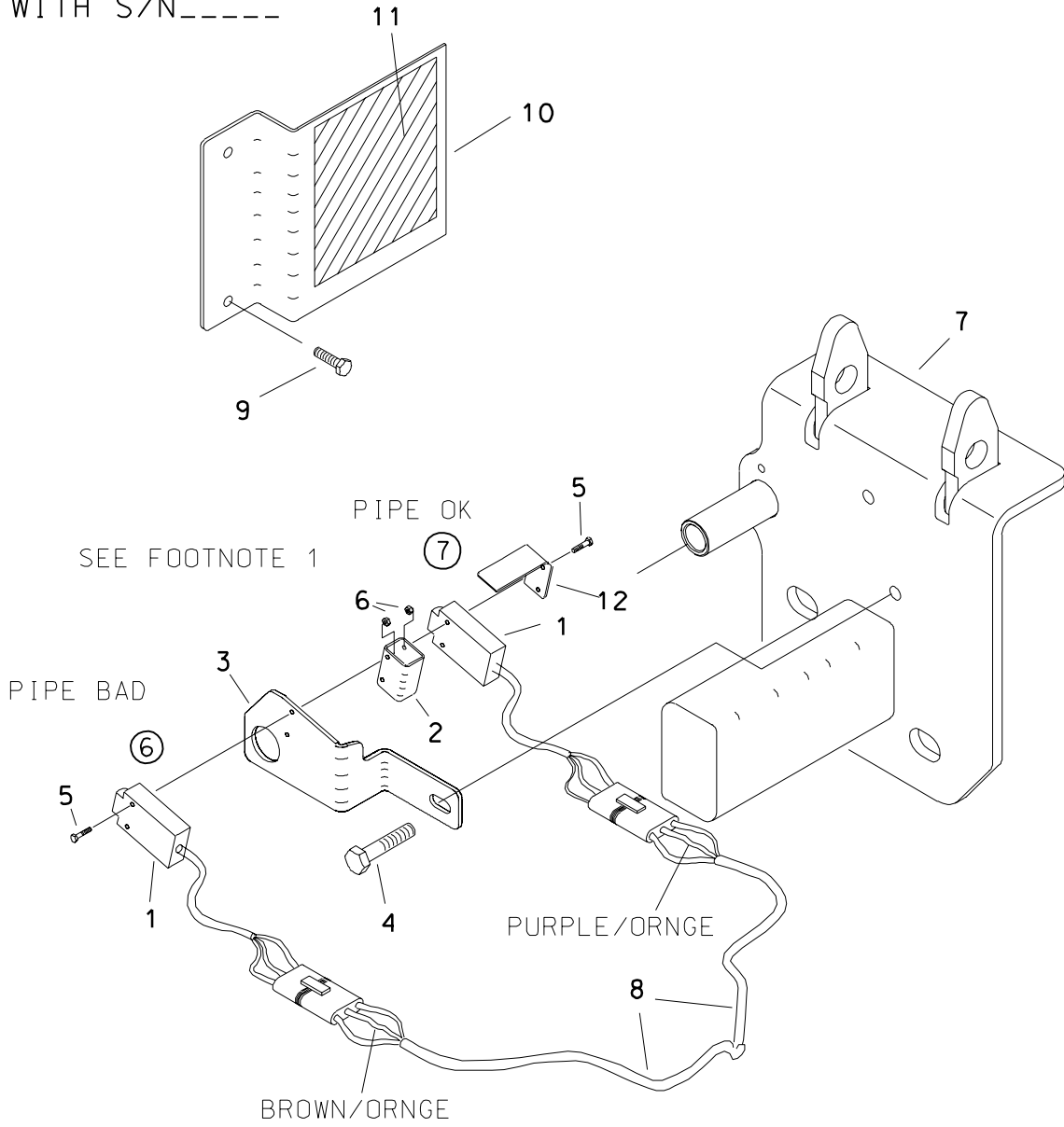
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-418	1	AUTO PIPE LOADER HARNESS	
2.	149-263	-	HYDRAULIC VALVE W/P.O. VENT	
3.	217-939	5	PROXIMITY SWITCH	ENDS WITH S/N
	214-692	-	PROXIMITY SWITCH	BEGINS WITH S/N
4.	214-504	2	PHOTO-ELECTRIC SENSOR	ENDS WITH S/N
5.	217-186	-	SEQ PIPE LOADER CONTROLLER	
6.	214-666	1	PIPE SWITCH HARNESS	BEGINS WITH S/N
7.	214-665	1	LOGIC BOX HARNESS	BEGINS WITH S/N
8.	211-045	1	CONTROLLER ADAPTER	BEGINS WITH S/N
9.	214-691	-	STRAIGHT JUMPER HARNESS	BEGINS WITH S/N

NOT SHOWN:

FOOTNOTES:

NOTE:

# PHOTO-ELECTRIC EYE JT920L ENDS WITH S/N-----



# PHOTO-ELECTRIC EYE

JT920L

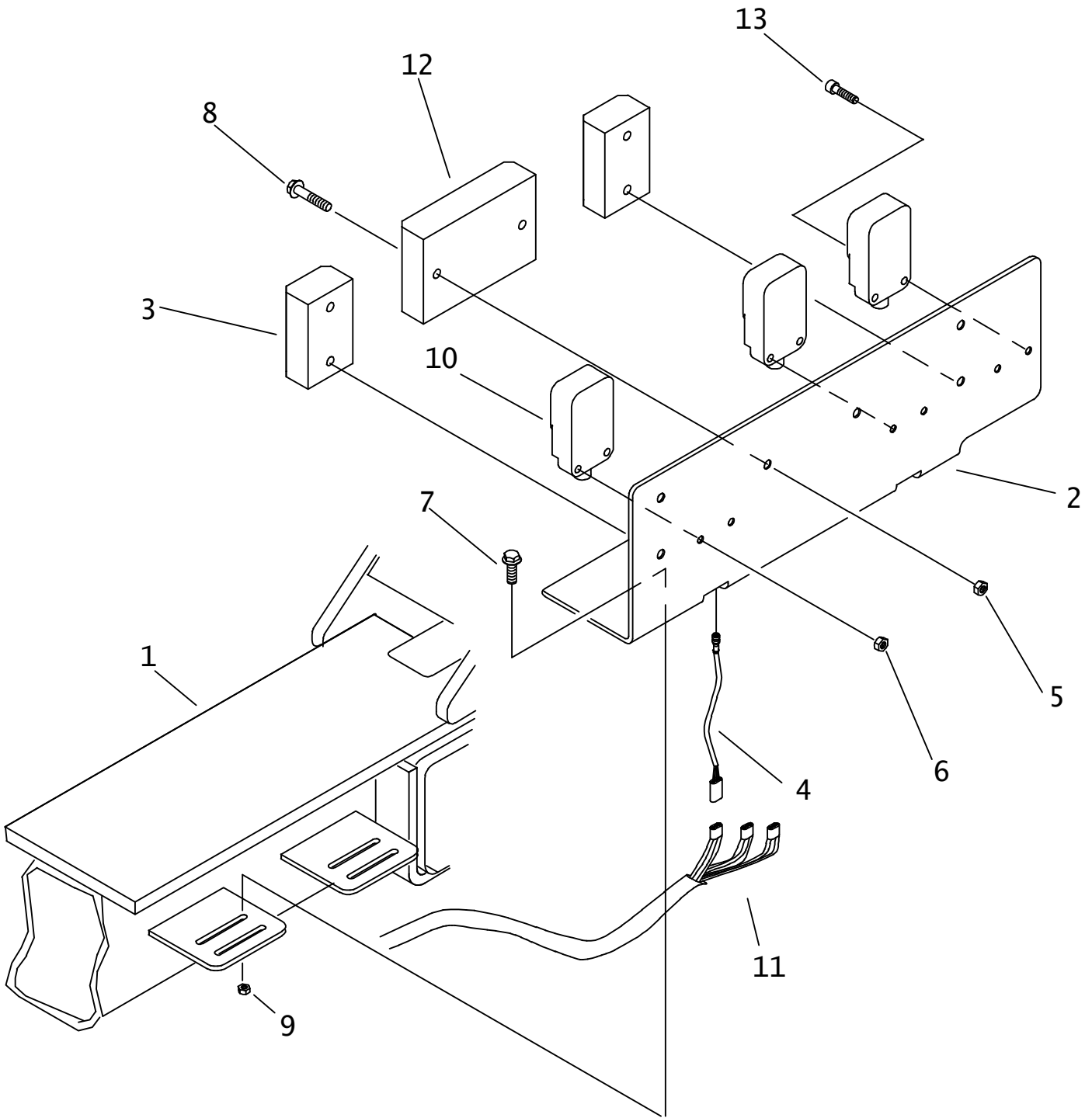
ENDS WITH S/N\_\_\_\_\_

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-504	2	PHOTO-ELECTRIC SENSOR	SEE FOOTNOTE 1
2.	346-065	1	SPACER	
3.	346-064	1	EYE MOUNT BRACKET	
4.	106-383	-	FLG LK SCREW (M10-1.50 X 30MM)	
5.	105-619	4	BOLT (#5-40 X 1.00", SLT)	
6.	105-620	4	LOCKNUT (#5-40, NYLON)	
7.	346-702	-	PIPE LOADER FRAME	
8.	214-418	-	AUTO PIPE LOADER HARNESS	
9.	106-380	-	FLG LK SCREW (M8-1.25 X 16MM)	
10.	346-071	1	BRACKET	
11.	274-909	1	AUTOMATION REFLECTIVE PANEL DECAL	
12.	346-077	1	EYE COVERING	

FOOTNOTES

1. NUMBERS THAT ARE CIRCLED INDICATE THE SEQUENCES OF SWITCH FUNCTION OF AUTOMATION

# PROXIMITY SWITCHES



# PROXIMITY SWITCHES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	346-800	-	10' DRILL FRAME	
	306-422	1	SHEET, JT920L PROX BRACKET	ENDS WITH S/N_____
3.	117-795	1	WEAR GUARD	BEGINS WITH S/N_____
	306-646	2	POLYETHYLENE WEAR PAD	ENDS WITH S/N_____
				BEGINS WITH S/N_____
4.	214-691	3	STRAIGHT JUMPER HARNESS	BEGINS WITH S/N_____
5.	105-215	2	NUT (#6-32)	ENDS WITH S/N_____
	106-385	6	FLG LOCKNUT (M6-1.00)	BEGINS WITH S/N_____
6.	106-850	6	LOCKNUT (M5-0.80)	BEGINS WITH S/N_____
7.	106-379	4	FLG LK SCREW (M6-1.00 X 20MM)	
8.	106-058	2	BOLT (#6-32 X 1-1/8", RD SLT)	ENDS WITH S/N_____
	107-366	6	SCREW (M6-1.00 X 30MM, 8.8)	BEGINS WITH S/N_____
9.	106-385	4	FLG LOCKNUT (M6-1.00)	ENDS WITH S/N_____
10.	217-939	3	PROXIMITY SWITCH	
	107-332	2	JAM NUT (PROXIMITY SWITCH)	ENDS WITH S/N_____
	214-692	3	PROXIMITY SWITCH	
11.	214-418	-	AUTO PIPE LOADER HARNESS	
12.	307-328	1	CENTER SWITCH SLIDE PAD	
13.	106-427	6	SCREW (M5-0.80 X 22MM, SOC)	

NOT SHOWN:

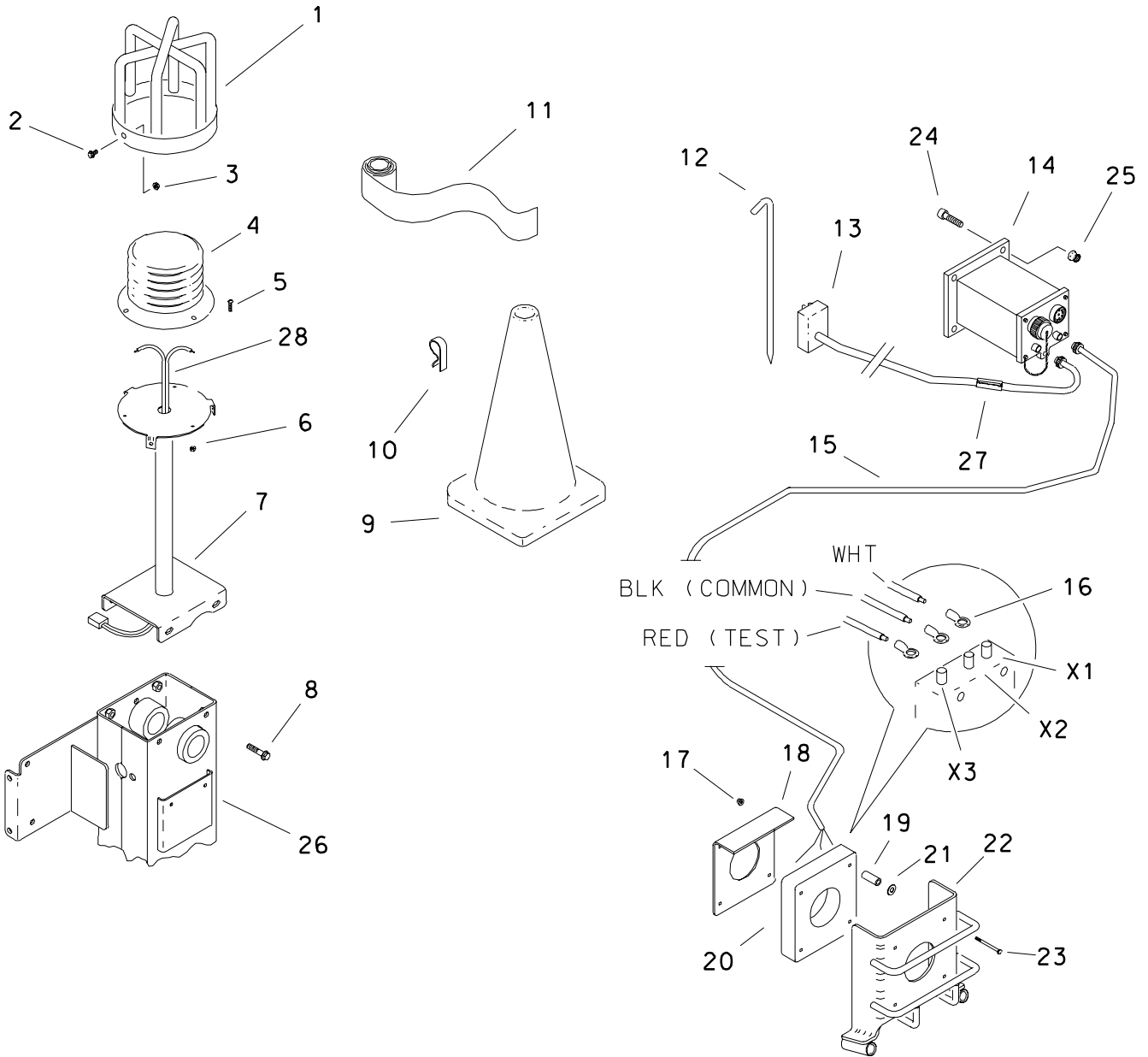
FOOTNOTES:

NOTE:



# ELECTRICAL STRIKE SYSTEM

ENDS WITH S/N\_\_\_\_\_, JT920  
 ENDS WITH S/N\_\_\_\_\_, JT920L



## ELECTRICAL STRIKE SYSTEM

ENDS WITH S/N\_\_\_\_\_, JT920

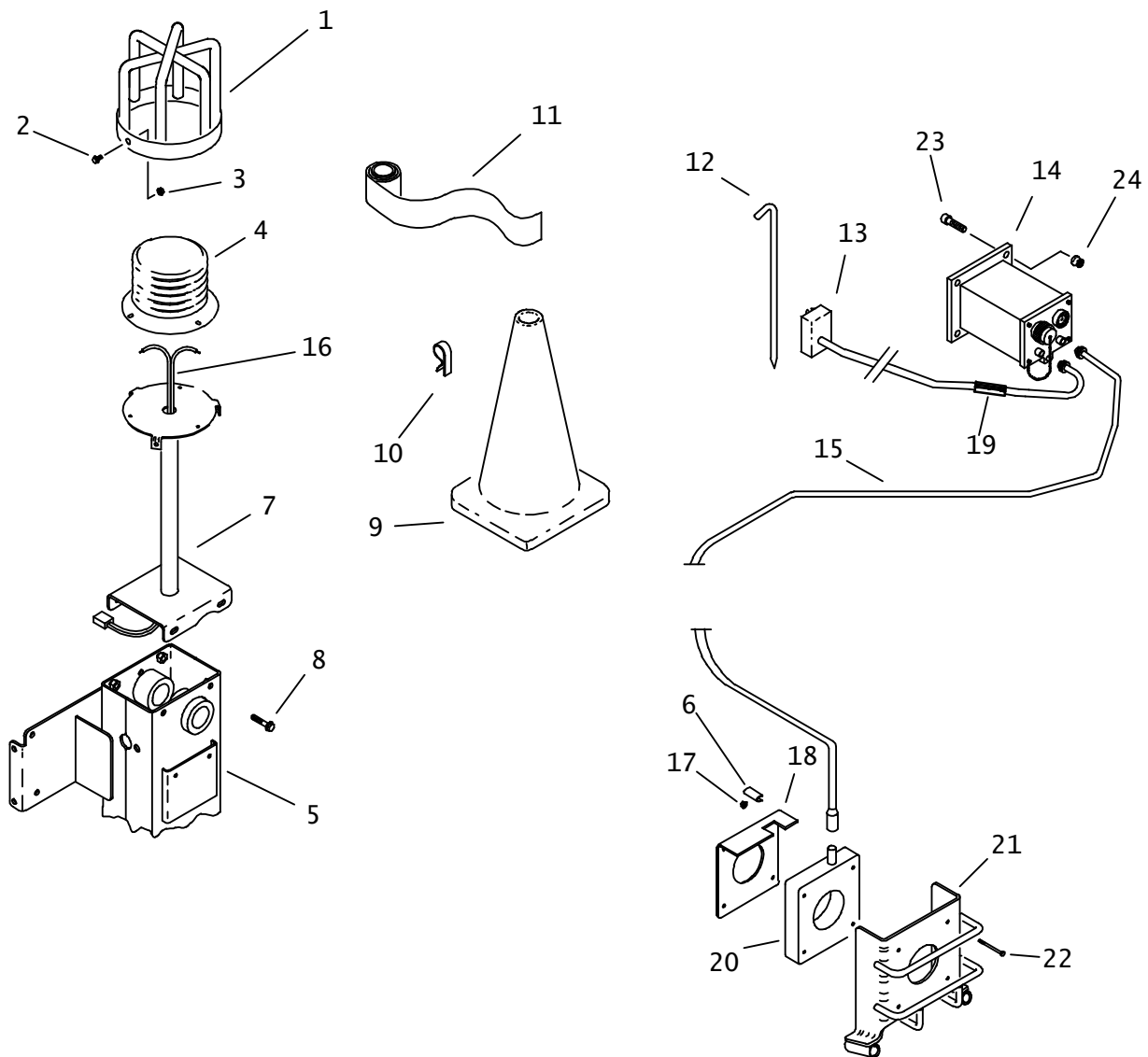
ENDS WITH S/N\_\_\_\_\_, JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	362-620	1	LIGHT COVER	
2.	105-836	3	FLG LK BOLT (1/4-NC X 1/2")	
3.	105-832	3	FLG LOCKNUT (1/4-NC)	
4.	<u>217-041</u>	1	STROBE LIGHT (12V DC)	
	217-720	1	BULB (12V DC)	
	217-310	1	STROBE LIGHT (12V DC)	
	217-311	1	BULB (12V DC)	
	121-055	1	LENS (AMBER)	
5.	105-185	3	BOLT (#10-24 X 1/2", RD SLT)	
6.	106-048	3	LOCKNUT (#10-24)	
7.	363-507	1	LIGHT POST	
8.	105-825	4	FLG LK BOLT (3/8-NC X 3/4")	
9.	<u>259-210</u>	8	TRAFFIC CONE - ORANGE	
10.	<u>259-234</u>	8	CONE CLIP	
11.	<u>260-223</u>	1	BARRIER TAPE (3" X 1000')	
12.	215-799	1	VOLTAGE STAKE	
13.	216-032	1	VOLT LIMITER	
14.	217-232	1	CONTROL MODULE	
15.	214-173	1	EL STR SYSTM CABLE (3.7 MM)	
16.	215-476	3	RING TERMINAL (#10)	
17.	106-353	4	FLG NUT (M6 X 1.0)	
18.	362-623	1	COIL COVER (BACK)	
19.	116-376	4	SPACER	
20.	<u>216-023</u>	1	CURRENT TRANSFORMER	SEE FOOTNOTE 1
21.	116-283	4	WASHER (.531", RUBBER)	
22.	355-478	1	COIL COVER	
23.	105-843	4	SCREW (M6-1.00 X 80MM)	
24.	106-640	4	SCREW (M6-1.00 X 20MM, BUT SOC)	
25.	106-670	4	NUTSERT (M6-1.00)	
26.	353-289	-	UPPER STABILIZER TUBE	W/O WATER TANK
	353-290	-	UPPER STABILIZER TUBE	WITH WATER TANK
27.	217-331	1	SMALL FERRITE CLAMP-ON	
28.	214-175	1	STROBE PIGTAIL HARNESS	

## FOOTNOTES

1. REF 20 OBSOLETE, 216-023 REPLACED WITH 101-143.

## ELECTRICAL STRIKE SYSTEM



# ELECTRICAL STRIKE SYSTEM

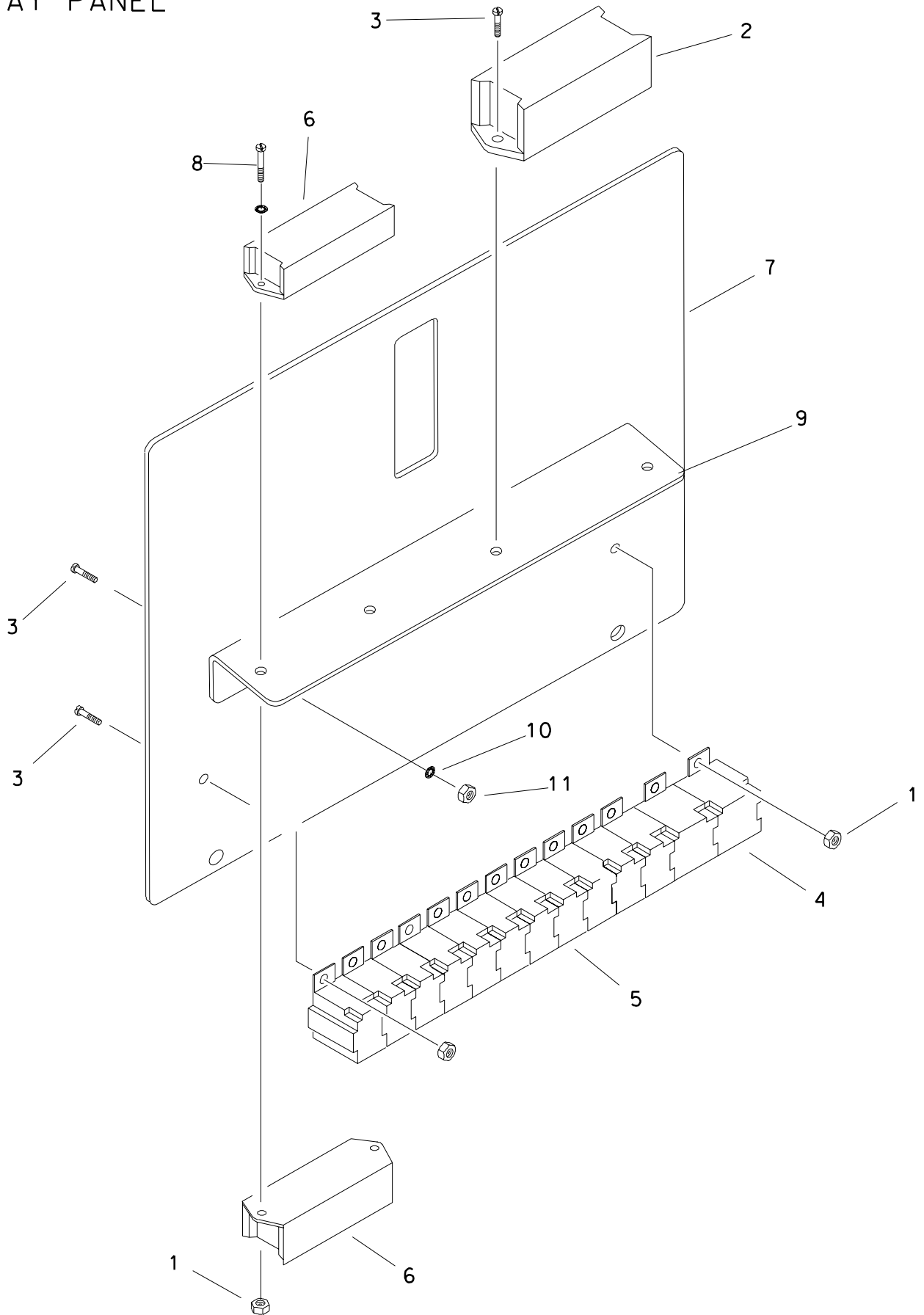
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	362-620	1	LIGHT COVER	
2.	105-836	3	FLG LOCK BOLT (1/4-NC X 1/2")	
3.	105-832	3	FLG LOCKNUT (1/4-NC)	
4.	217-041	1	STROBE LIGHT (12V DC)	OBSOLETE
	217-720	1	BULB (12 V DC)	
	217-310	1	STROBE LIGHT (12V DC)	
	217-311	1	BULB (12V DC)	
	121-055	1	LENS (AMBER)	
5.	353-289	-	UPPER STABILIZER TUBE	OBSOLETE, W/O WATER TANK
	353-290	-	UPPER STABILIZER TUBE - WET	WITH WATER TANK
6.	115-671	-	BULK EDGE (1/16" SOLD PER 1")	
7.	363-507	1	LIGHT POST WELDM'T	
8.	105-825	4	FLG LK BOLT (3/8-NC X 3/4")	
9.	259-210	8	TRAFFIC CONE - ORANGE	OBSOLETE
10.	259-234	8	CONE CLIP	OBSOLETE
11.	260-223	1	BARRIER TAPE (3" X 1000')	OBSOLETE
12.	215-799	1	VOLTAGE STAKE	
13.	216-032	-	VOLT LIMITER (EL STR SYSTM)	SEE FOOTNOTE 2.
	211-042	1	VOLTAGE LIMITER CABLE	SEE FOOTNOTE 1.
14.	217-232	-	CONTROL MODULE	SEE FOOTNOTE 2.
	274-483	1	ESID GRAPHIC OVERLAY	
	274-727	1	"Z" FCC LABEL W/ (CE) MARK	
	217-241	1	ESID MODULE	SEE FOOTNOTE 1.
	197-232	-	ESID MODULE REBUILT	REPLACEMENT FOR 217-232
	197-079	-	ESID MODULE - REBUILT	REBUILT 217-241
15.	214-173	-	ELEC STR SYS CABLE (3.7M)	SEE FOOTNOTE 2.
	214-554	1	CURRENT COIL CABLE	SEE FOOTNOTE 1.
16.	214-175	1	STROBE PIGTAIL HARNESS	
17.	106-386	4	FLG LOCKNUT (M8-1.25)	
18.	305-997	1	BACK COIL COVER	
19.	217-331	1	SMALL FERRITE CLAMP-ON	
20.	216-023	-	CURRENT TRANSFORMER	OBSOLETE, SEE FOOTNOTE 2, & SEE FOOTNOTE 3.
	216-064	1	CURRENT TRANSFORMER	OBSOLETE, SEE FOOTNOTE 1.
	211-083	1	CURRENT TRANSFORMER	SEE FOOTNOTE 1.
21.	355-478	1	COIL COVER	
22.	105-843	4	SCREW (M6-1.00 X 80MM)	
23.	106-640	4	SCREW (M6-1.00 X 20MM, BUT SOC)	
24.	106-670	4	NUTSERT (M6-1.00)	

## FOOTNOTES

1. BEGINS WITH S/N 2T2624 - JT920, & S/N 2T2639 - JT920L.
2. ENDS WITH S/N 2T2623 - JT920, & S/N 2T2638 - JT920L.
3. REF 20 OBSOLETE, 216-023 REPLACED WITH 101-143.

NOTE:

# RELAY PANEL



# RELAY PANEL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-048	8	LOCKNUT (#10-24)	
2.	217-804	1	START BYPASS DELAY	
3.	105-185	4	BOLT (#10-24 X 1/2", RD SLT)	
4.	217-826	2	MINI RELAY (SPDT)	
5.	217-710	11	MICRO RELAY (SPDT)	
6.	214-502	2	DELAY TIMER	
7.	344-721	-	RADIATOR ACCESS DOOR	
8.	105-815	3	BOLT (#10-24 X 1", PAN SLT)	
9.	344-724	1	COMPONENT BAR	
10.	106-056	2	EXT STAR WASHER (#10)	
11.	105-186	2	NUT (#10-24)	

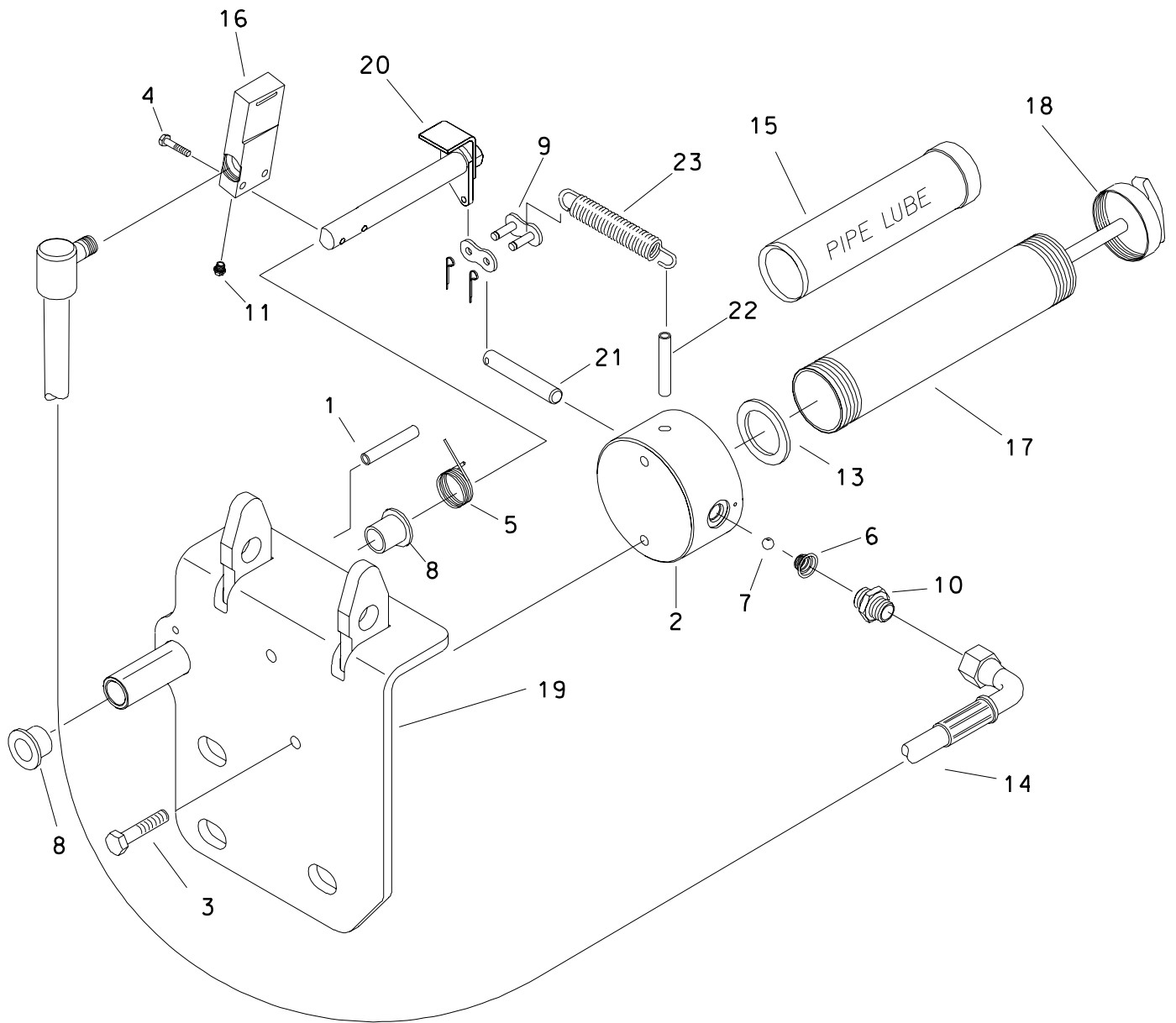
FOOTNOTES



# **LUBRICATOR SYSTEMS**



# THREAD LUBRICATOR JT920L



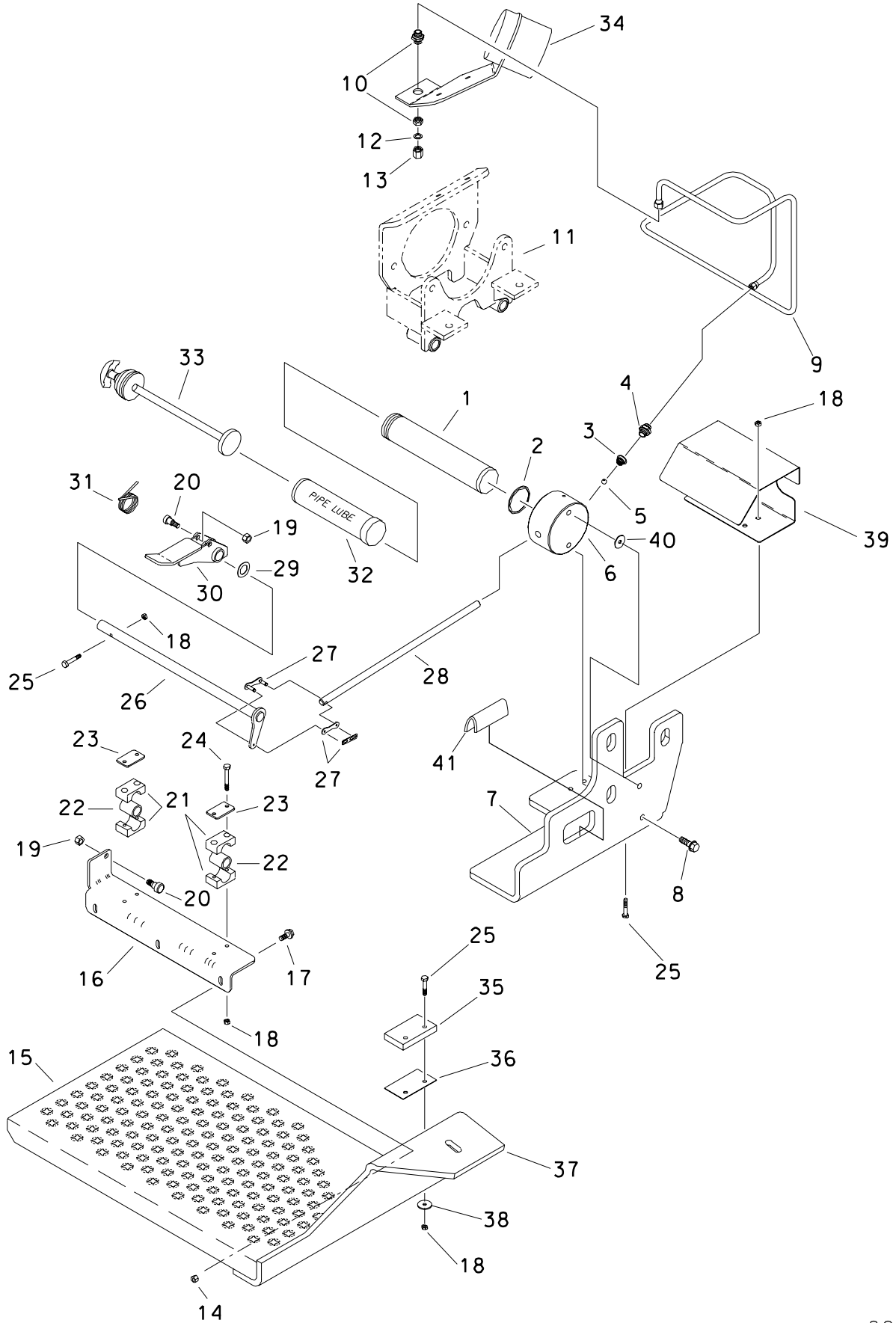
# THREAD LUBRICATOR

## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-778		LUBRICATOR KIT	INCL REF NO'S 1 - 18, 20 - 23
1.	105-510	1	ROLL PIN (1/4" X 1-1/2")	
2.	359-925	1	LUBER BASE	
3.	106-383	4	FLG LK SCREW (M10-1.50 X 30mm)	
4.	106-554	2	SCREW (M6-1.00 X 30mm, SOC)	
5.	117-141	1	TORSION SPRING	
6.	117-162	1	COMPRESSION SPRING (.438")	
7.	125-136	1	DETENT BALL (.187", CHROME)	
8.	125-806	2	BEARING BUSHING (.750" NYLINER)	
9.	130-331	1	CONNECTOR LINK (1-1/4")	
10.	154-221	1	CONNECTOR (06S-060)	
11.	154-383	1	PLUG (04S)	
13.	157-716	1	GREASE SEAL	
14.	159-458	1	HOSE (060FX90-190-31"-3000)	
15.	256-663	AR	GREASE (14 OZ CARTRIDGE)	
16.	359-859	1	GREASE APPLICATOR	
17.	359-869	1	GREASE BARREL	
18.	359-871	1	PLUNGER	
19.	346-702	1	PIPE LOADER FRAME	
20.	350-437	1	PUMP SHAFT	
21.	359-924	1	PLUNGER	
22.	105-521	1	ROLL PIN (1/4" X 1")	
23.	117-186	1	EXTENSION SPRING (30625")	

FOOTNOTES

# FRONT THREAD LUBRICATOR JT920L



# FRONT THREAD LUBRICATOR

## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	359-869	1	GREASE BARREL	
2.	157-716	1	GREASE SEAL	
3.	117-162	1	COMPRESSION SPRING (.438")	
4.	154-221	1	CONNECTOR (06S-060)	
5.	125-136	1	DETENT BALL (.187", CHROME)	
6.	359-925	1	LUBER BASE	
7.	346-806	1	FRONT LOADER MOUNT	
8.	106-383	2	FLG LK SCREW (M10-1.50 X 30mm)	
9.	149-880	1	GREASE LINE (060FX)	
10.	514-163	1	BK CONNECTOR (060-060BK)	
11.	301-973	-	FRONT WRENCH BEARING	
12.	105-890	1	SEAL WASHER (7/16")	
13.	149-221	1	NOZZLE	
14.	106-561	3	LOCKNUT (M8-1.25, PRV TRQ, 10.9)	
15.	350-248	-	STRIKE MAT	
16.	307-411	1	FORMED MOUNT	
17.	106-162	3	FLG SCREW (M8-1.25 X 20mm)	
18.	106-386	11	FLG LOCKNUT (M8-1.25)	
19.	105-047	2	LOCKNUT (3/8-NC)	
20.	106-070	2	SHLD BLT (1/2" X 3/8", 3/8-NC)	
21.	110-573	2	BOLT-ON CLAMP (1", SOLD PER SET)	
22.	125-301	2	COMPOSITION BUSHING (.750")	
23.	322-289	2	BACKUP (BOLT-ON)	
24.	105-106	4	BOLT (1/4-NC X 2")	
25.	106-381	7	FLG LK SCREW (M8-1.25 X 25MM)	
26.	307-482	1	SHAFT	
27.	130-331	1	CONNECTOR LINK (1-1/4")	
28.	307-413	1	PLUNGER	
29.	110-095	1	MACHINERY BUSHING (3/4", 18GA)	
30.	303-371	1	PEDAL	
31.	117-257	1	TORSION SPRING	
32.	256-663	1	GREASE (14 OZ CARTRIDGE)	
33.	359-871	1	PLUNGER	
34.	346-726	-	GAUGE MOUNT	
35.	307-414	1	POLY GUIDE BLOCK	
36.	307-851	1	SHIM (.049")	
37.	350-247	-	RIGHT MTG BRKT (STAKE MAT)	
38.	500-279	1	WASHER (.250")	
39.	307-850	1	MUD COVER	
40.	106-397	2	WASHER (M12, HARDENED)	
41.	116-259	1	BULK EDGE (1/2", SOLD PER 1')	USE 7"

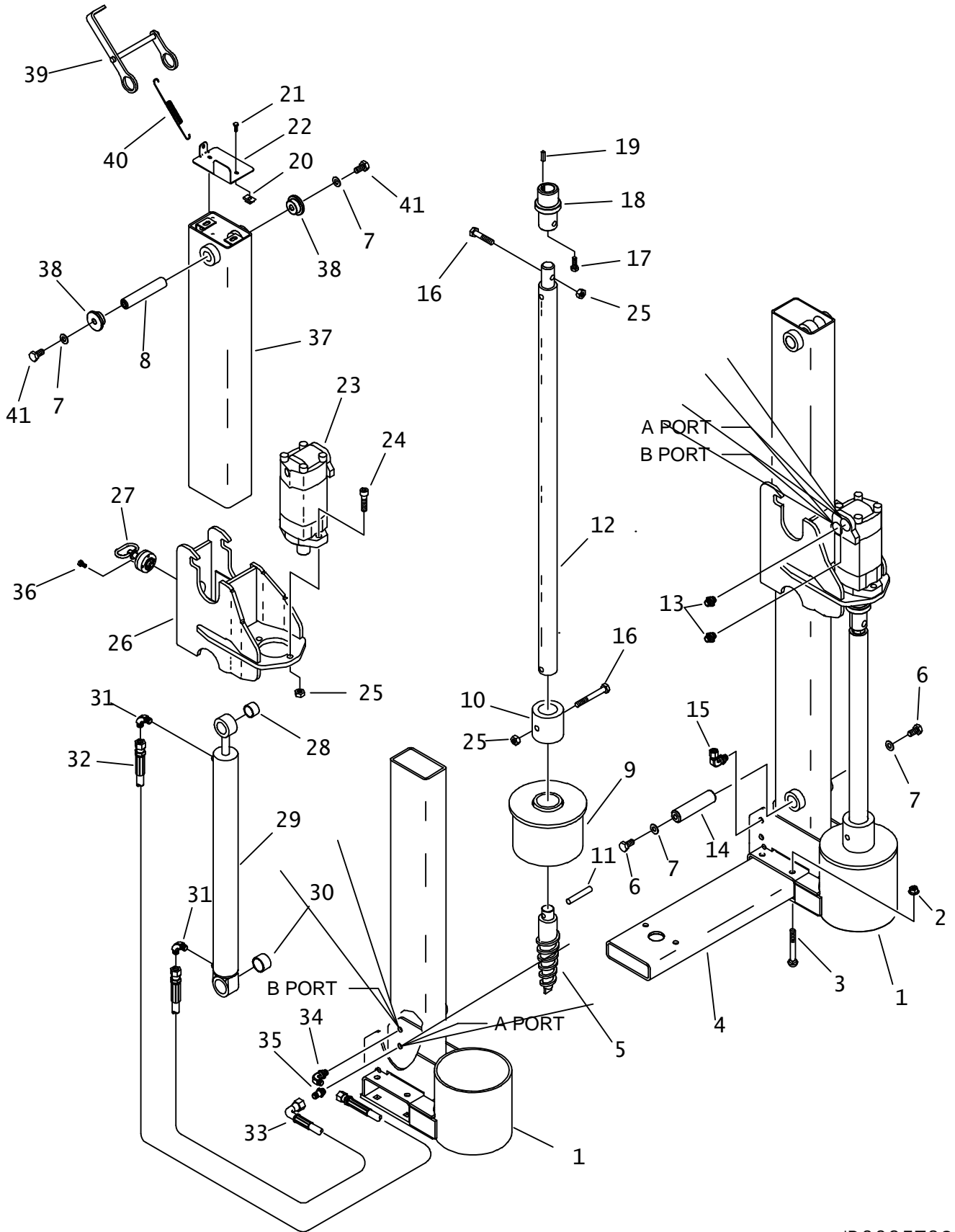
FOOTNOTES



# **ANCHOR SYSTEMS**

# AUTO-ANCHOR SYSTEM

ENDS WITH S/N:



# AUTO-ANCHOR SYSTEM

## ENDS WITH S/N:

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

NOT SHOWN:

### FOOTNOTES:

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

### NOTE:

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



# AUTO-ANCHOR SYSTEM

ENDS WITH S/N:

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

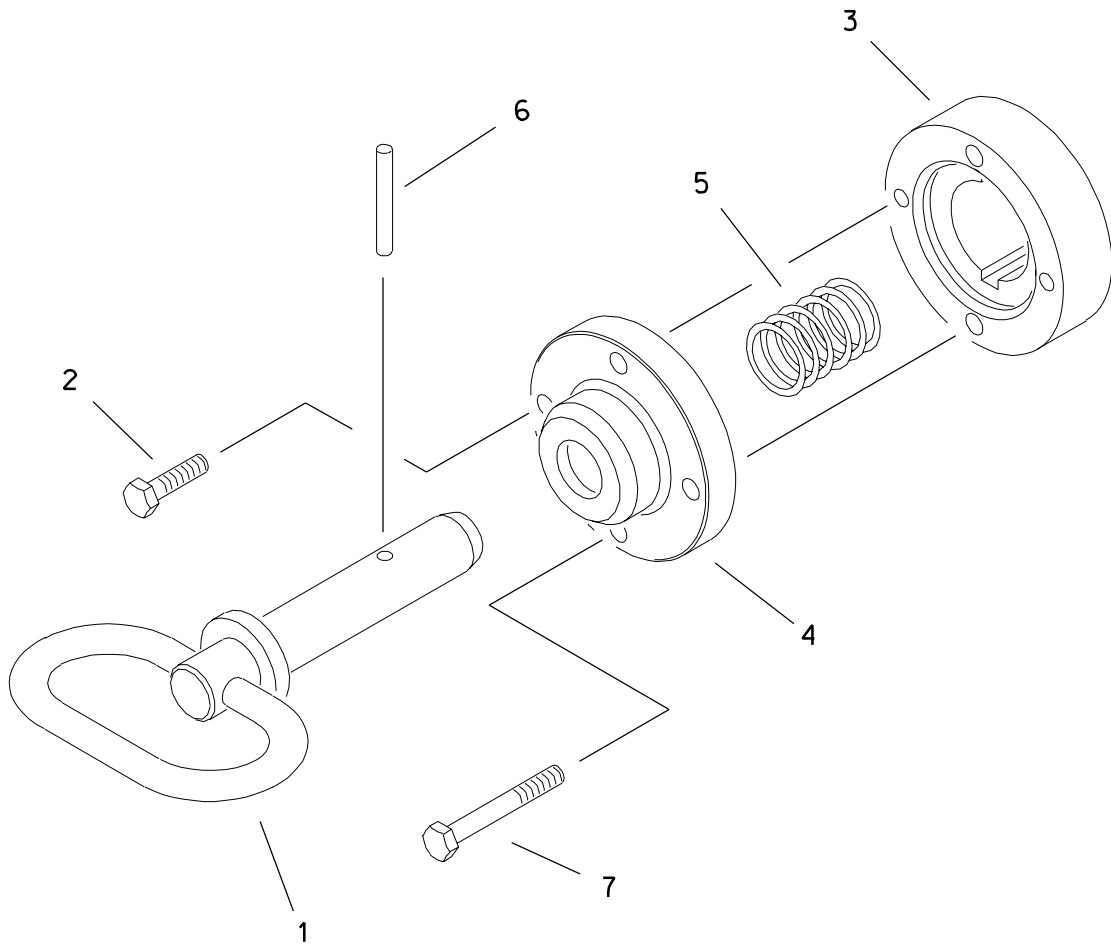
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FOOTNOTES:

NOTE:



# SPRING LOADED PIN



# SPRING LOADED PIN

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	347-888		SPRING LOADED PIN	INCL REF NO'S 1 - 6. SEE FOOTNOTE 1.
1.	110-827	1	PULL PIN (1/2" X 1-1/2")	
2.	106-888	2	SCREW (M4-.70 X 16mm)	
3.	347-103	1	BODY	
4.	347-104	1	COVER	
5.	117-003	1	COMPRESSION SPRING	
6.	105-572	1	ROLL PIN (1/8" X 1")	
7.	106-796	2	SCREW (M4-.70 X 30mm)	

NOT SHOWN:  
 259-383 1 PIN PRY TOOL FOR PRYING LOOSE WEDGED PINS

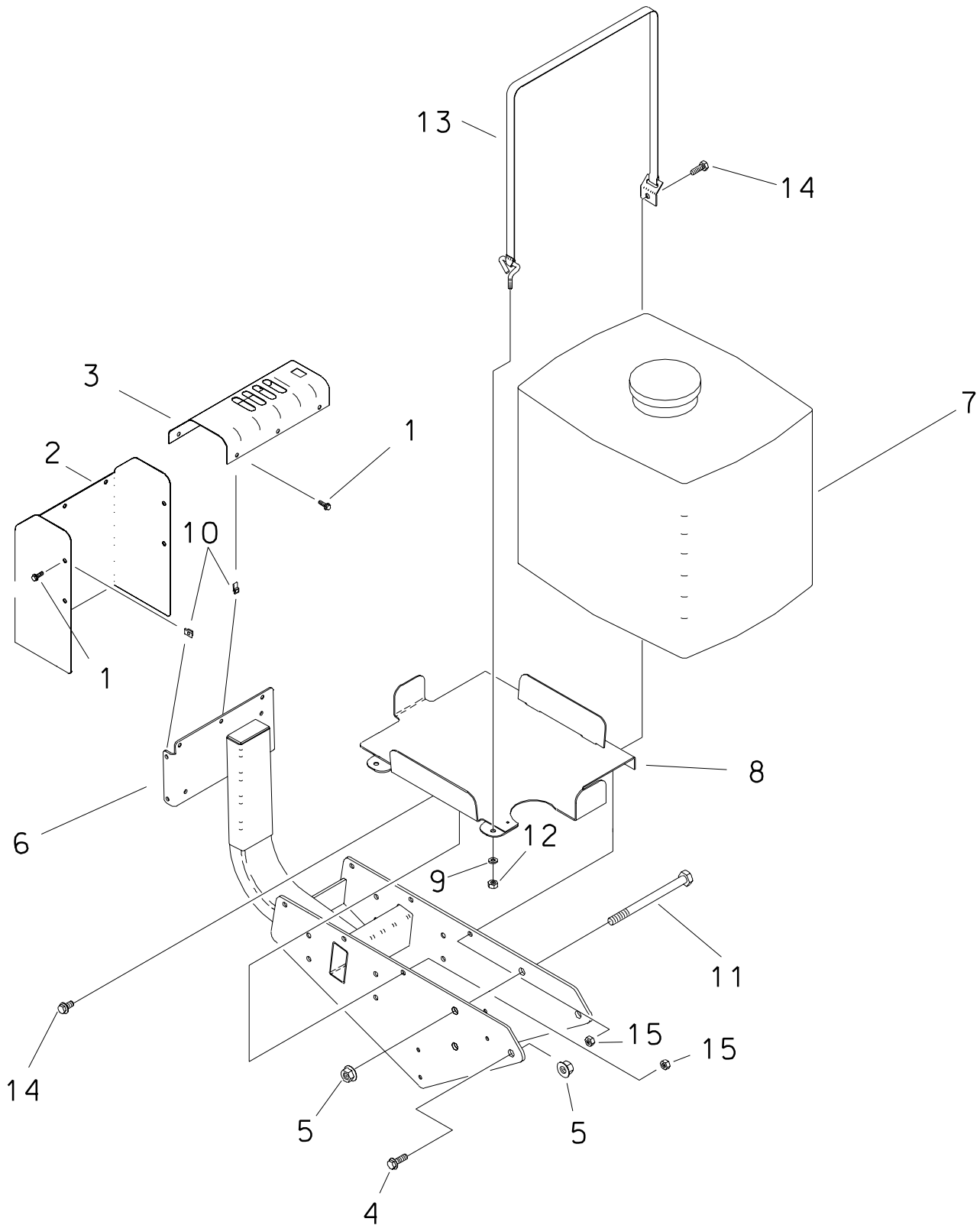
FOOTNOTES

1. A322/A522 ENDS WITH S/N



# **FLUID SYSTEMS**

# TANK SUPPORT



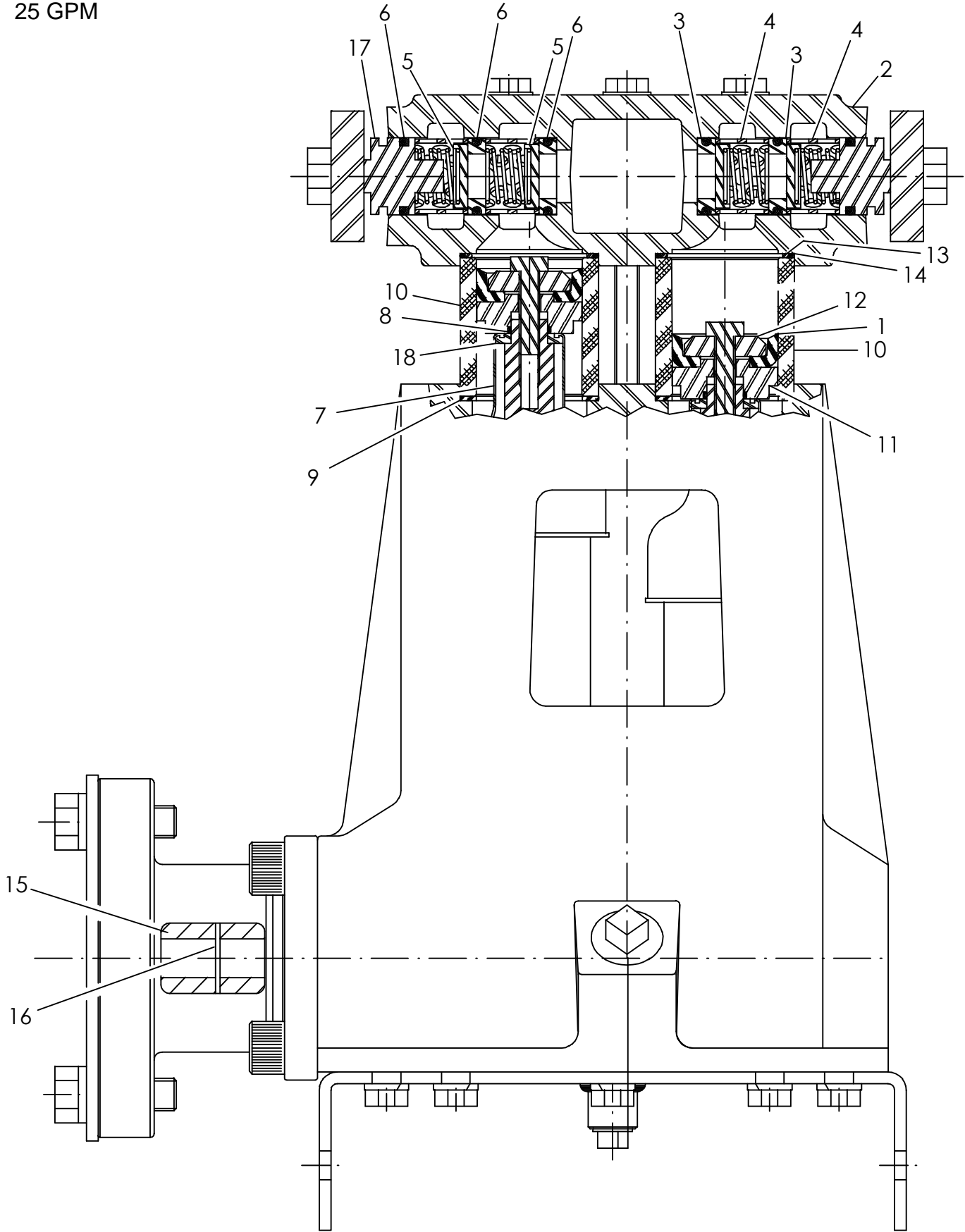
# TANK SUPPORT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-992	8	FLG LK SCREW (M8-1.25 X 25MM)	
2.	353-864	1	VALVE COVER	
3.	346-060	1	VALVE COVER	
4.	106-098	2	FLG BOLT (3/4-NC X 2", GD8)	
5.	105-340	4	FLG LOCKNUT (3/4-NC)	
6.	346-807	1	WATER TANK SUPPORT	
7.	364-499	-	WATER TANK (30 GAL)	
	190-053	-	POLY-PATCH TANK REPAIR KIT	
8.	346-740	1	WATER TANK BASE	
9.	106-390	2	WASHER (M10)	
10.	106-551	12	CLIP NUT (M8-1.25)	
11.	106-188	2	BOLT (3/4-NC X 10")	TORQUE BOLT TO 271 N-M (200FT-LB)
12.	105-287	2	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	
13.	346-724	2	TIE DOWN STRAP	
14.	106-333	10	SCREW (M12-1.75 X 40mm)	
15.	106-685	10	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	

FOOTNOTES



# FLUID PUMP 25 GPM



# FLUID PUMP

## 25 GPM

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

## NOT SHOWN:

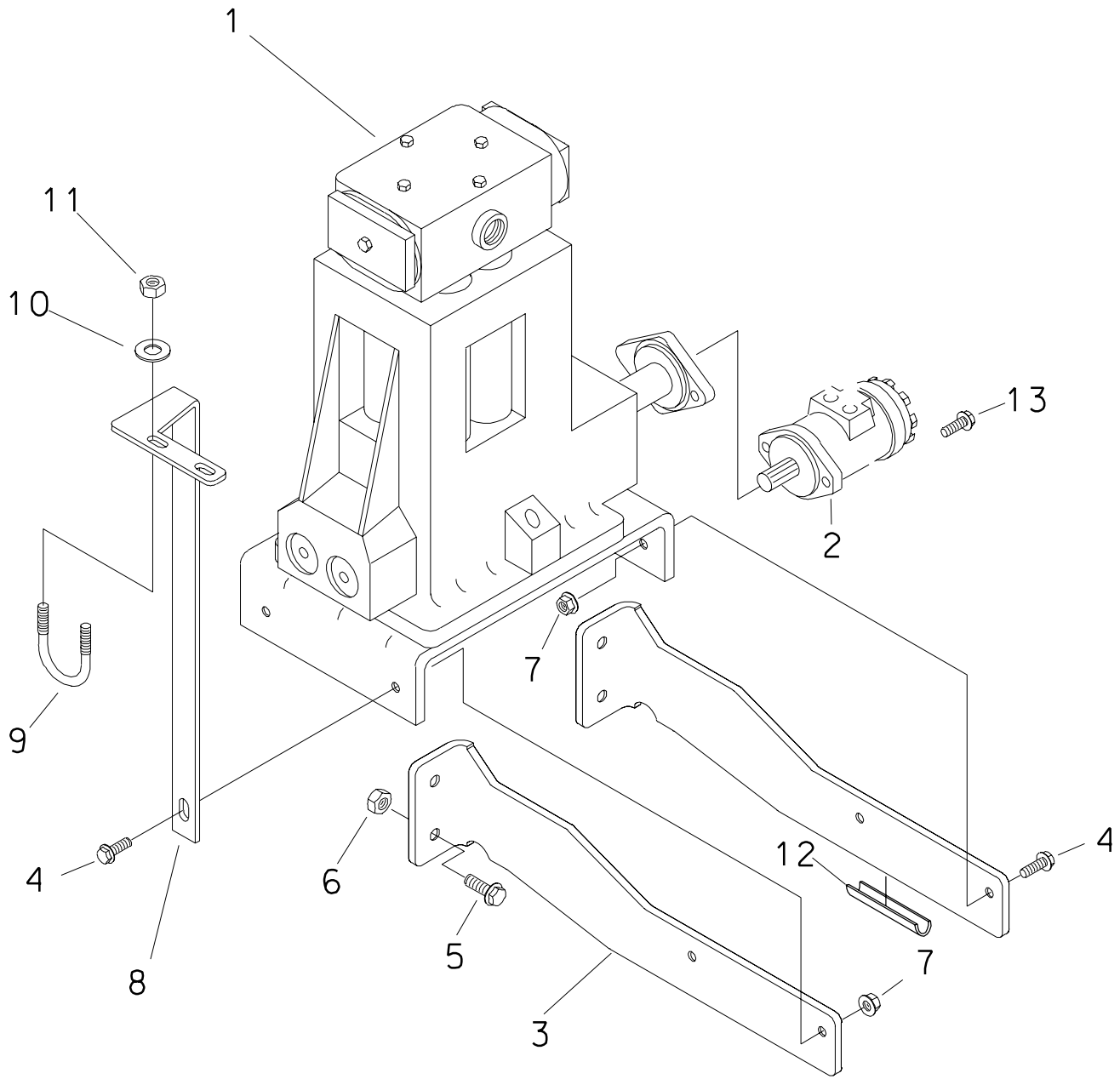
157-751	4	CRANKSHAFT SEAL
499-125	-	PLUNGER ROD OIL SEAL

## FOOTNOTES:

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

## NOTE:

# MUD PUMP MOUNT W/TANK



# MUD PUMP MOUNT W/TANK

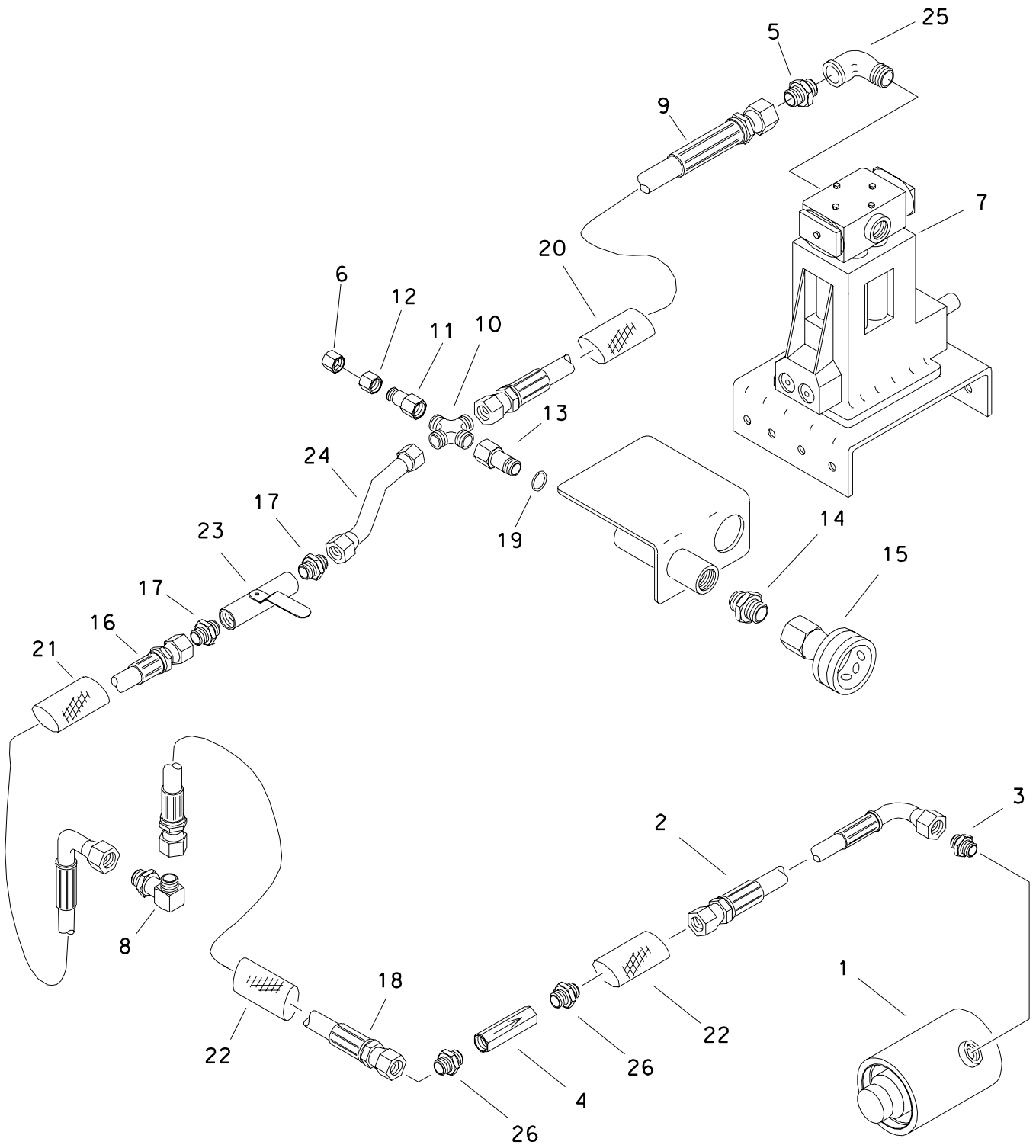
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-977	1	DRILLING FLUID PUMP	
	191-029	AR	SEAL REPAIR KIT	
2.	158-488	1	GEAR MOTOR (3.0 CUI/REV)	
3.	346-821	2	PUMP MOUNT	
4.	106-383	4	FLG LK SCREW (M10-1.50 X 30MM)	
5.	106-333	4	SCREW (M12-1.75 X 40MM)	
6.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ. 10.9)	
7.	106-387	4	FLG LOCKNUT (M10-1.50)	
8.	310-904	1	FILTER SUPPORT BRACKET	SEE FOOTNOTE 1
9.	107-563	1	U BOLT (5/16 NC X 1 3/8)	SEE FOOTNOTE 1
10.	105-226	2	WASHER (5/16")	SEE FOOTNOTE 1
11.	105-089	2	LOCKNUT (5/16 NC)	SEE FOOTNOTE 1
12.	116-259	1	BULK EDGE (1/2", SOLD PER 1')	USE 6"
13.	106-204	2	BOLT (1/2-NC X 1-1/2", SOC)	USE LOCTITE 242, TORQUE 100 FT LBS

FOOTNOTES

1. BEGINS WITH S/N \_\_\_\_\_

# MUD PUMP PLUMBING

ENDS WITH S/N 2S2756



# MUD PUMP PLUMBING

## ENDS WITH S/N 2S2756

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	159-240	-	WATER SWIVEL	
	500-836	-	PACKING/SEAL KIT	
	500-837	-	REBUILD KIT	SEE FOOTNOTE 1
	499-125	-	PLUNGER ROD OIL SEAL	
2.	515-003	1	HOSE (080FX90-31"-3000)	
3.	154-354	1	CONNECTOR (080-12N)	
4.	149-324	1	FLOW CHECK (08NF-08NF/64PSI)	
5.	154-354	1	CONNECTOR (080-12N)	
6.	154-296	1	CAP (040F)	
7.	149-977	-	DRILLING FLUID PUMP	
8.	154-396	1	BK CONNECTOR (080-08090BK)	
9.	154-674	1	HOSE (080FX-24"-3000)	
10.	514-145	1	CROSS (080-080-080-080)	
11.	154-248	2	REDUCER STEM (040)	
12.	154-272	2	REDUCER NUT (080F)	
13.	156-732	1	CONNECTOR (08J-080F)	
14.	154-466	1	CONNECTOR (08S-08S)	
15.	159-088	1	QDC BODY (08-08SF)	
	190-186	-	SEAL REPAIR KIT	
	155-936	1	DUST PLUG (1/2"-3/4")	
16.	154-971	1	HOSE (080FX90-78"-3000)	
17.	154-349	2	CONNECTOR (08N-080)	
18.	515-073	1	HOSE (080FX-127"-3000)	
19.	155-706	1	O-RING (908 D90)	
20.	115-811	1	ABRASION SLEEVE (1.59" X 20")	
21.	117-679	1	ABRASION SLEEVE (1.59" X 32")	
22.	115-754	2	ABRASION SLEEVE (1.59" X 30")	
23.	158-579	1	SHUT-OFF (08NF-08NF)	
	110-538	-	VALVE LEVER	
24.	156-590	1	HYD LINE (080FX-6.3")	
25.	115-120	1	STREET ELBOW (12N-12NF90, 2000PSI)	
26.	154-349	1	CONNECTOR (08N-080)	

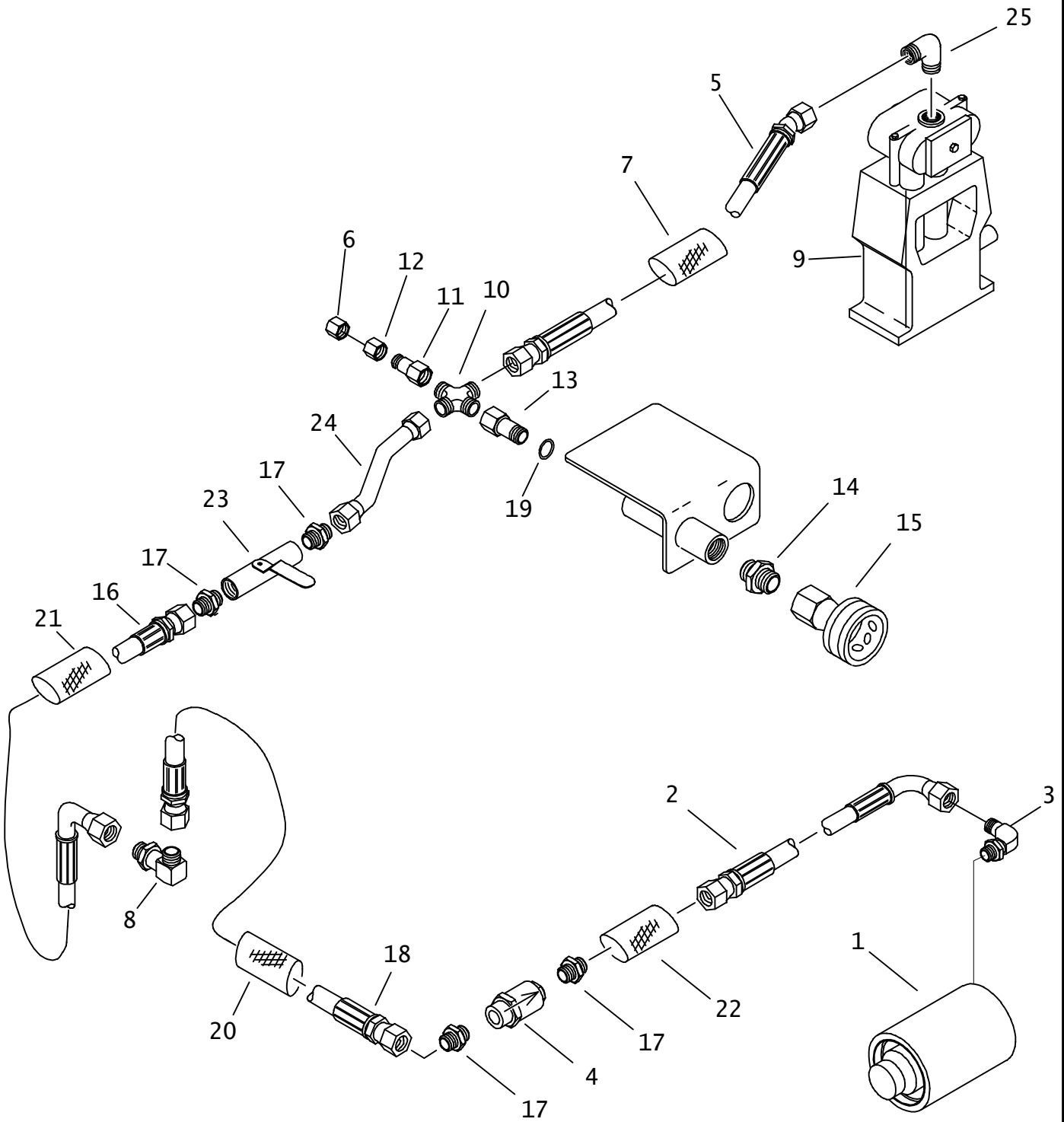
### FOOTNOTES

REFER TO INSTRUCTIONS 051-020 FOR PROPER INSTALLATION

### NOTE

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

# MUD PUMP PLUMBING



## MUD PUMP PLUMBING

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	159-240	-	WATER SWIVEL	OBSOLITE
	153-242	-	WATER SWIVEL	
2.	515-003	1	HOSE (080FX90-31"-3000)	
3.	154-490	AR	CONNECTOR (12N-08090)	
4.	149-324	1	FLOW CHECK (08NF-08NF/64PSI)	
	190-963	-	REPAIR KIT (CHECK VALVE)	
5.	154-747	1	HOSE (080FX45-21"-3000)	USE WITH JT921S
	154-829	1	HOSE (080FX45-19"-3000)	
6.	154-296	1	CAP (040F)	
7.	117-672	1	ABRASION SLEEVE (1.00" X 20")	
8.	154-396	1	BK CONNECTOR (080-08090BK)	
9.	158-465	-1	MUD PUMP	
10.	514-145	1	CROSS (080)	
11.	154-248	2	REDUCER STEM (040)	
12.	154-272	2	REDUCER NUT (080F)	
13.	156-732	1	CONNECTOR (08J-080)	
14.	154-466	1	CONNECTOR (08S-08S)	
15.	159-088	1	QDC BODY (08-08SF)	
	190-186	-	SEAL REPAIR KIT	
	155-936	1	DUST PLUG (1/2"-3/4")	
16.	154-971	1	HOSE (080FX90-78"-3000)	
17.	154-349	4	CONNECTOR (08N-080)	
18.	515-073	1	HOSE (080FX-127"-3000)	
19.	155-706	1	O-RING (908 D90)	
20.	116-632	1	ABRASION SLEEVE (1.59" X 130")	
21.	117-713	1	ABRASION SLEEVE (1.00" X 76")	
22.	115-754	1	ABRASION SLEEVE (1.59" X 30")	
23.	158-579	1	SHUTOFF (08NF-08NF)	
	110-538	-	VALVE LEVER	
24.	156-590	1	HYD LINE (-08)	
25.	154-352	1	CONNECTOR (08N-08090)	

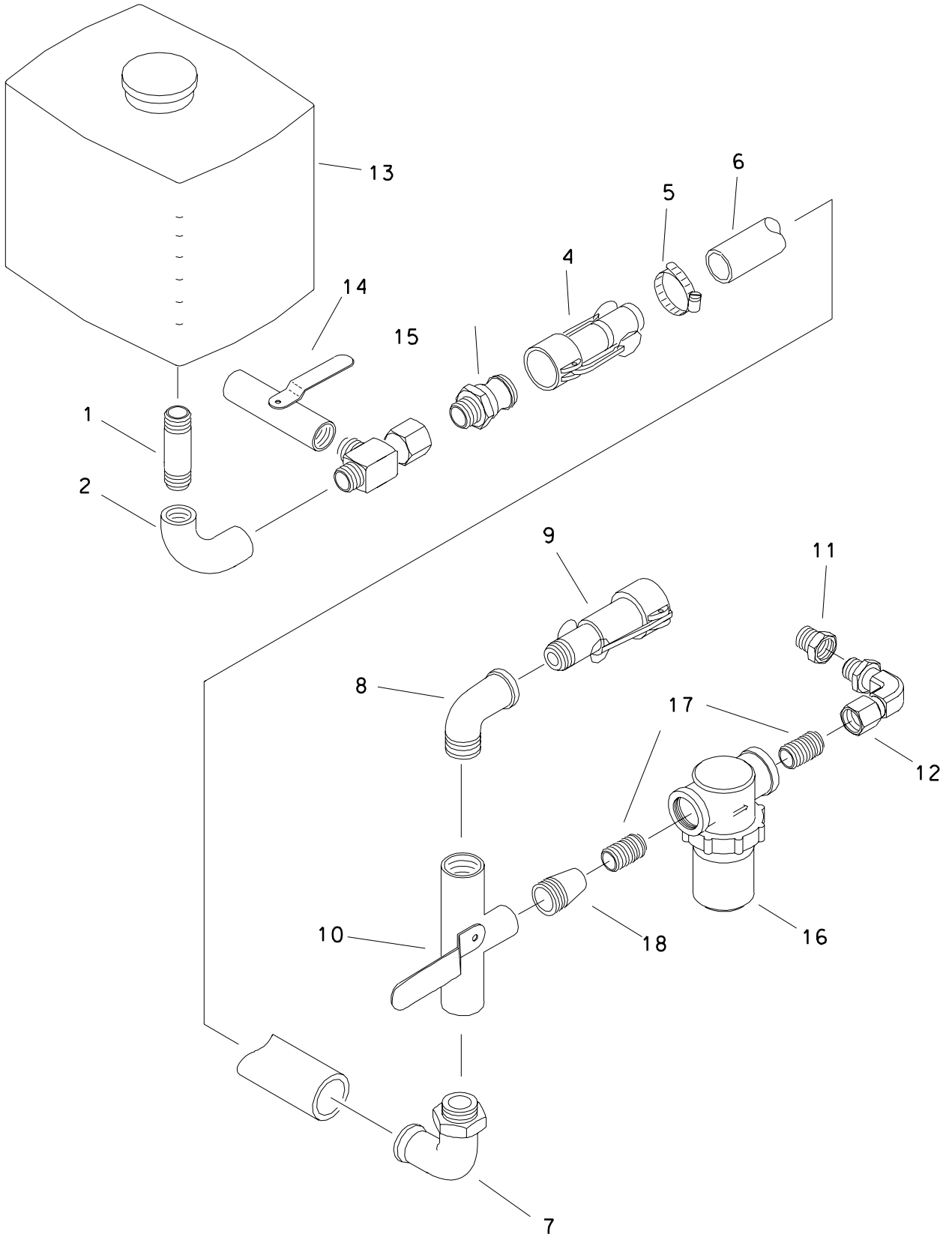
### FOOTNOTES

### NOTE:

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



# MUD TANK PLUMBING



## MUD TANK PLUMBING

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-206	1	NIPPLE (16N-2.5")	
2.	115-208	1	ELBOW (16NF-16NF90)	
3.	155-232	1	FHC ADAPTER (16-16N)	
4.	155-233	1	FHC BODY (16-16H)	
	116-490		SQUARE RING (___ D70)	
5.	110-353	2	WORM CLAMP (3/4" TO 1-1/2")	
6.	116-460	AR	BULK HOSE (1", SOLD PER 1")	USE 1 @ 61.50"
7.	155-137	1	S/O COUPLER (16N-16H90)	
8.	115-440	1	STREET ELBOW (16N-16NF90)	
9.	149-137	1	FHC BODY (16-16N)	
	116-490		SQUARE RING (____ D70)	
10.	149-113	1	3-WAY SHUT-OFF (16NF)	STEEL
11.	115-236	1	REDUCER (20N-16NF)	
	115-260	1	REDUCER (20N-12NF)	
12.	155-116	1	CONNECTOR (12N-12N90)	
	115-120	1	STREET ELBOW (12N-12NF90)	
13.	364-499	1	WATER TANK (30 GAL)	
	364-373		CAP/LID (5")	
	514-400		BK CONNECTOR (16NF-16NFBK, NYL)	
	157-490		BK CONNECTOR (16NF, POLY)	SEE FOOTNOTE 1
	190-053		PLYD-PATCH TANK REPAIR KIT	
14.	158-579	1	SHUT-OFF (08NF-08NF)	
	110-538	-	VALVE LEVER	
15.	514-024	1	BRANCH TEE (08N-16N-16NF)	
16.	153-133	1	STRAINER (12NF)	
	153-198	-	SCREEN (20 MESH)	
17.	115-163	2	ALL THREAD (12N-1.5", SCH40)	
18.	115-151	1	REDUCER (16N-12NF)	

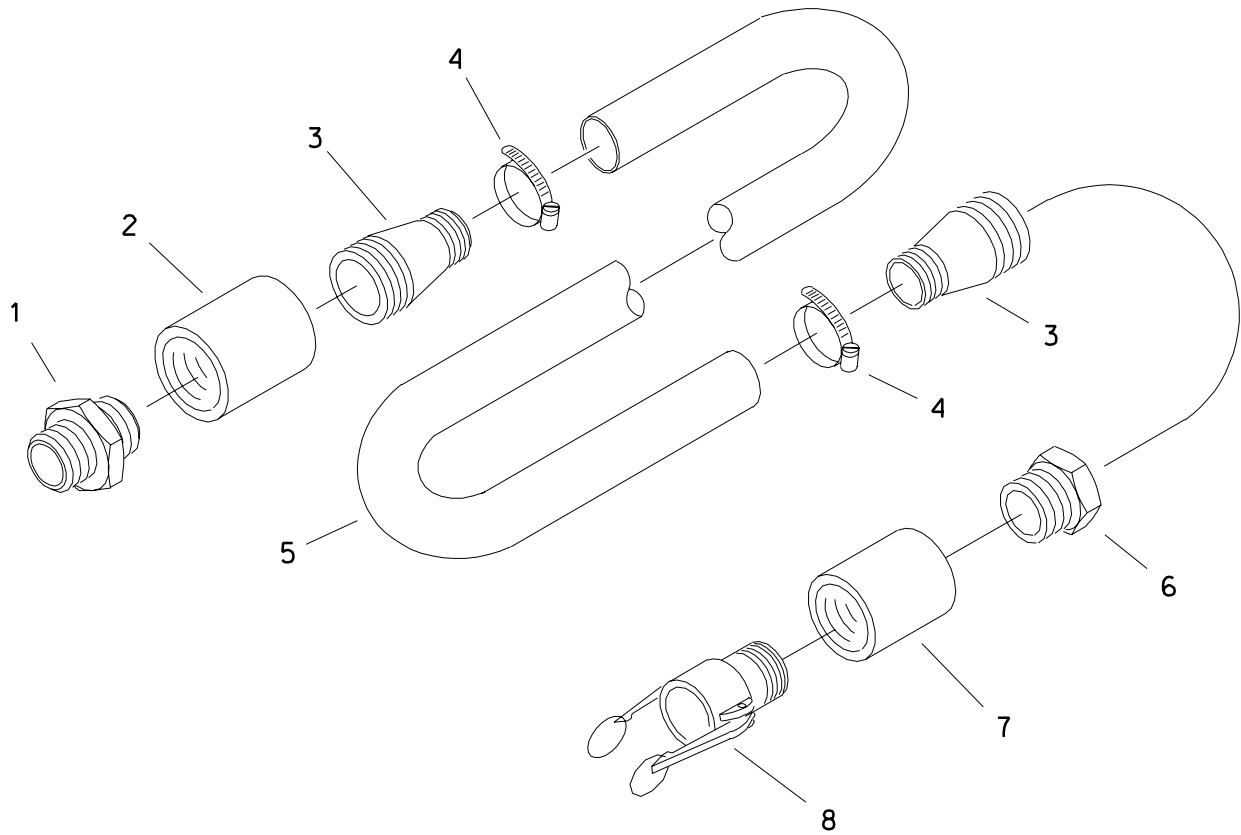
## FOOTNOTES

1. HOLES MAY REQUIRE MODIFICATION FOR NEW FITTINGS.

## NOTE

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

# DRILLING FLUID TRANSFER

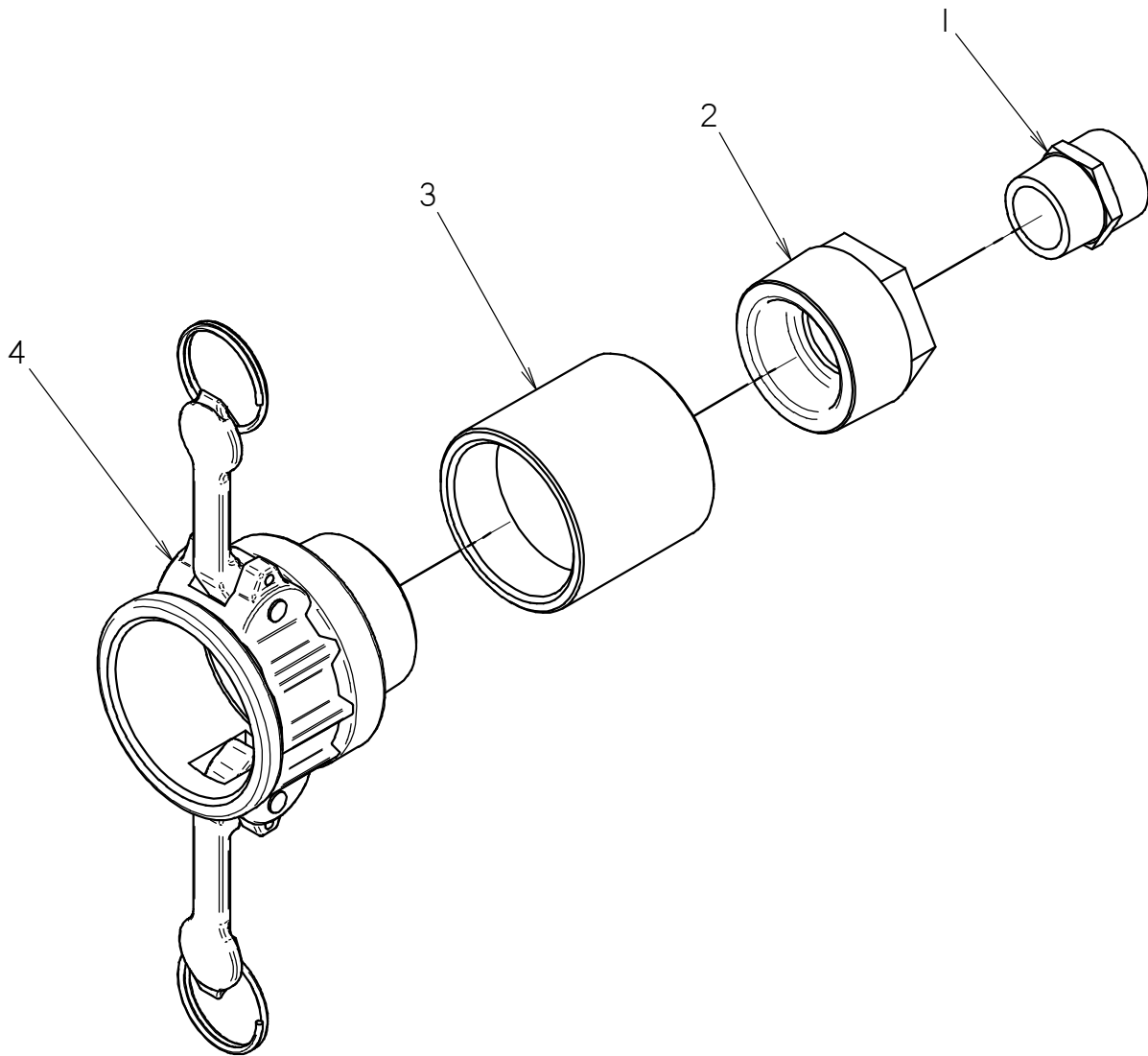


# DRILLING FLUID TRANSFER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	159-890	-	TRANSFER HOSE ASSEMBLY	
1.	155-232	1	FHC ADAPTER (16-16N)	
2.	115-175	1	COLLAR (16NF)	
3.	514-311	2	S/O COUPLER (16N-16H)	
4.	110-353	2	WORM CLAMP (3/4" TO 1-1/2")	
5.	117-451	-	1" SUCTION HOSE (SOLD PER FT)	1 @ 50'
6.	514-314	1	REDUCER (24N-16NF)	
7.	115-134	1	COLLAR (24NF)	
8.	159-500	1	FHC BODY (24-24N)	

FOOTNOTES

# GARDEN HOSE ADAPTER



# GARDEN HOSE ADAPTER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	159-891		GARDEN HOSE ADAPTER	INCL. REF No's 1 - 4
1	114-038	1	NIPPLE (12N-12NH)	
2	115-271	1	REDUCER (24N-12NF)	
3	115-134	1	COLLAR (24NF)	
4	159-500	1	FHC BODY (24-24N)	

NOT SHOWN:

FOOTNOTES:

NOTE:

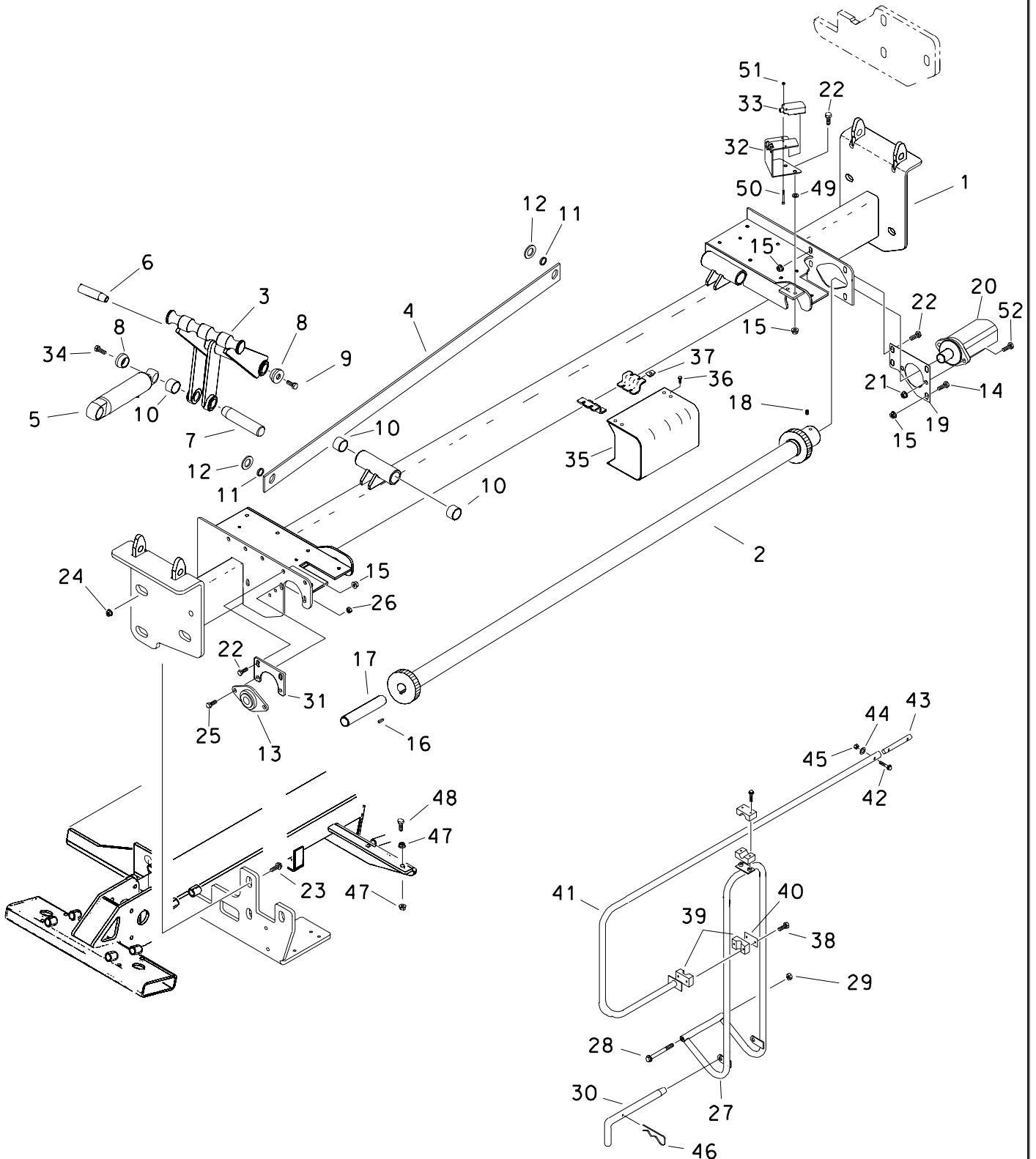


# **PIPE LOADER SYSTEMS**



# PIPE LOADER MOUNT

## JT920L



# PIPE LOADER MOUNT

## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	346-702	1	PIPE LOADER OPTION	SEE FOOTNOTE 1 & 2
2.	167-339	1	PINION SHAFT	SEE FOOTNOTE 1 & 2
3.	346-704	2	LIFT ARM	
4.	348-955	1	LIFT LINK	
5.	151-028	-	CYL (2.5" X 1.25" X 4")	
6.	179-147	2	TAPERED PIN (31.7MM X 200MM)	
7.	183-613	2	TAPERED PIN (1.25" X 3.5")	
8.	181-982	4	TAPERED INSERT (1.250")	
9.	106-632	2	FLG LK SCREW (M12-1.75 X 35mm)	
10.	125-771	6	COMPOSITION BUSHING (1.250")	
11.	125-846	2	COMPOSITION BUSHING (1.255")	
12.	110-056	8	MACHINERY BUSHING (1.250")	
13.	125-605	1	FLANGE BEARING (1.250", 2-BLT)	
14.	105-245	4	SCREW (M10-1.50 X 25MM)	
15.	106-387	8	FLG LOCKNUT (M10-1.50)	
16.	165-916	1	KEY (5/16" X 1-3/4")	
17.	359-745	1	SHAFT	
18.	105-708	2	SET SCREW (3/8 NC X 3/8", NLK)	
19.	346-757	1	MOTOR MOUNT BRACKET	
20.	158-735	1	HYDRAULIC MOTOR	
	500-347	-	SEAL REPAIR KIT	
21.	106-709	2	FLG LOCK NUT (M12-1.75)	
22.	105-245	6	SCREW (M10-1.50 X 25MM)	
23.	106-831	6	FLG SCREW (M20-2.50 X 60MM ,10.9)	
24.	106-356	6	FLG NUT (M20-2.50, 10.9)	
25.	106-994	2	FLG LK SCREW (M10-1.50 X 40MM)	
26.	106-387	2	FLG LOCKNUT (M10-1.50)	
27.	346-066	2	SHUTTLE GUARD	
28.	105-243	2	BOLT (3/8-NC X 8")	
	107-539	2	BOLT, 5/16-18 X 8 HH GD5	
29.	105-089	2	LOCKNUT (5/16-NC)	
30.	346-652	2	PIN	
31.	346-711	1	BEARING SUPPORT PLATE	
32.	348-895	1	MOUNT BRACKET	ENDS WITH S/N_____
	307-738	1	PROX MOUNT FOR ROW SELECT/STOP	BEGINS WITH S/N_____
33.	214-692	2	PROXIMITY SWITCH	BEGINS WITH S/N_____
34.	105-830	2	FLG LK BOLT (1/2-NC X 1-1/4")	
35.	346-045	1	VALVE COVER	
36.	105-820	4	FLG LK BOLT (1/4-NC X 3/4")	
37.	105-897	4	CLIP NUT (1/4-NC)	
38.	105-818	8	BOLT (1/4-NC X 1-1/2")	
39.	110-411	4	BOLT ON CLAMP (3/4", SET)	
40.	322-289	4	BACKUP (BOLT-ON)	
41.	346-068	2	GUARD	
42.	105-856	2	BOLT (1/4-NC X 1-1/4)	
43.	346-653	1	STUD	
44.	106-076	2	WASHER (1/4)	
45.	105-078	2	NUT (1/4-NC)	
46.	110-033	2	HAIR CLIP PIN (1/8" X 1/2")	
47.	105-833	8	FLG LOCKNUT (1/2-NC)	
48.	105-709	4	SET SCREW (1/2-NC X 2.0", SQ)	
49.	106-396	AR	WASHER (10, HARDENED)	

### FOOTNOTES

- SEE 804-768 PIPE LOADER SHUTTLE & 804-769 PIPE LOADER HYDRAULICS FOR ITEMS NOT SHOWN ON THIS PAGE
- WHEN ORDERING FOR UNITS BEFORE S/N 2R0536 USE TWO SHUTTLE SHIMS # 346-638.

# PIPE LOADER MOUNT

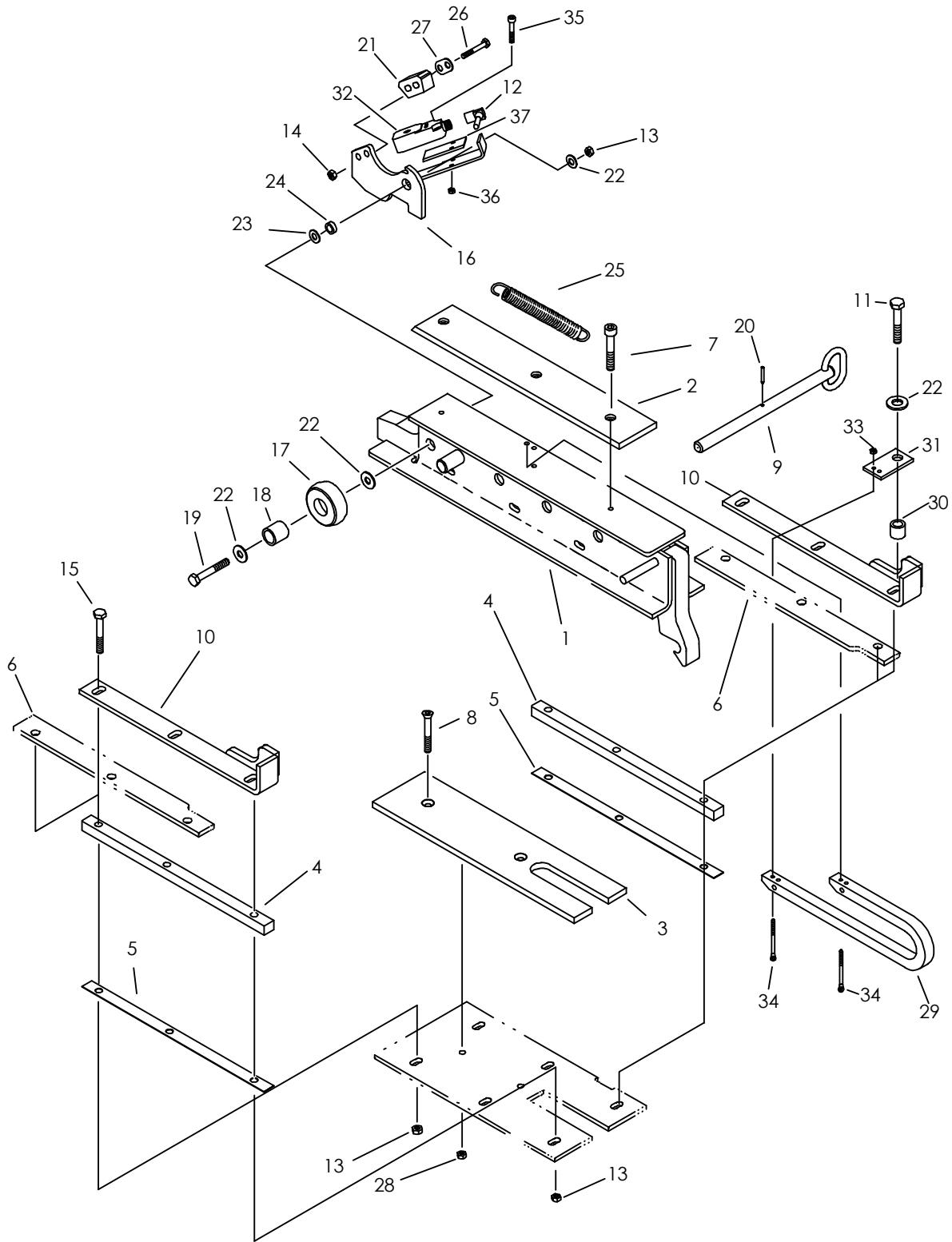
## JT920L

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
50.	106-427	4	SCREW (M5-0.80 X 22MM, SOC)	BEGINS WITH S/N
51.	106-850	4	LOCKNUT (M5-0.80)	BEGINS WITH S/N
52.	106-333	2	SCREW (M12-1.75 X 40MM, 8.8)	

FOOTNOTES



# PIPE LOADER SHUTTLE JT920L



# PIPE LOADER SHUTTLE JT920L

REF PART NO. NUMBER QTY DESCRIPTION	REMARKS
1. 346-703 2 SHUTTLE	SEE FOOTNOTE 1
2. 346-766 2 WEAR STRIP	
3. 346-765 2 BEARING PLATE	
4. 348-776 4 SPACER BAR	
5. 348-775 4 SHIM	
6. 348-774 2 RETAINER BAR	SEE FOOTNOTE 4
7. 106-640 6 SCREW (M6-1.00 X 20MM, BUT SOC)	
8. 106-916 4 SCREW (M8-1.25 X 25MM, SOC)	
9. 185-154 1 PULL PIN (3/4" X 7")	SEE FOOTNOTE 3
10. 359-790 1 FRONT SHUTTLE STOP	SEE FOOTNOTE 2
307-260 2 SHUTTLE STOP	
11. 106-628 2 SCREW (M10-1.50 X 60MM)	SEE FOOTNOTE 2
12. 214-666 2 PIPE SWITCH HARNESS	
13. 105-894 14 LOCKNUT (M10-1.50 PRV TRQ, 10.9)	
14. 106-561 4 LOCKNUT (M8-1.25, PRV TRQ, 10.9)	
15. 105-271 10 SCREW (M10-1.5 X 40 MM)	
16. 346-758 2 LATCH	ENDS WITH S/N 2R1165
107-463 2 SHUTTLE GRIPPER W/ PROX MOUNT	BEGINS WITH S/N 2R1166
17. 359-751 2 GUIDE WHEEL	BEGINS WITH S/N 2R1166
18. 184-887 2 BUSHING	
19. 106-564 2 SCREW (M10-1.50 X 100MM)	
20. 115-545 1 EXTERNAL SNAP RING (.75")	ENDS WITH S/N 2R1165 SEE FOOTNOTE 5
105-525 1 ROLL PIN (3/16" X 1-1/4")	BEGINS WITH S/N 2R1166
21. 163-207 2 PIPE GRIPPER	
22. 105-118 12 WASHER (3/8")	
23. 105-886 2 WASHER (.410")	
24. 184-888 2 SPACER	
25. 116-709 2 EXTENSION SPRING	
26. 106-267 4 SCREW (M8-1.25 X 35MM)	
27. 306-706 2 WASHER PLATE	
28. 106-386 4 FLG LOCKNUT (M8-1.25)	
29. 211-050 2 CABLE GUIDE CHAIN CARRIER	
30. 181-430 2 SPACER	
31. 307-624 2 CABLE TRAY MOUNT	
32. 214-692 2 PROXIMITY SWITCH	
33. 107-473 4 LOCKNUT (M3 X .5)	
34. 107-479 8 SCREW, FLAT HEAD (3MM X 12) ZP	
35. 106-408 4 BOLT (#10-24 X 1-1/4", SOC, GD8)	
36. 106-048 4 LOCKNUT (#10-24)	
37. 107-451 2 SHIM	

NOT SHOWN:

#### FOOTNOTES:

- SEE 805-077 PIPE LOADER MOUNT & 804-769 PIPE LOADER HYDRAULICS FOR ITEMS NOT SHOWN ON THIS PAGE
- PARTS USED ON REAR SHUTTLE ONLY
- TIGHTEN PLASTIC DOWN WITH BOLTS, DO NOT DEFORM PLASTIC
- PARTS USED ON FRONT SHUTTLE ONLY
- OLD STYLE

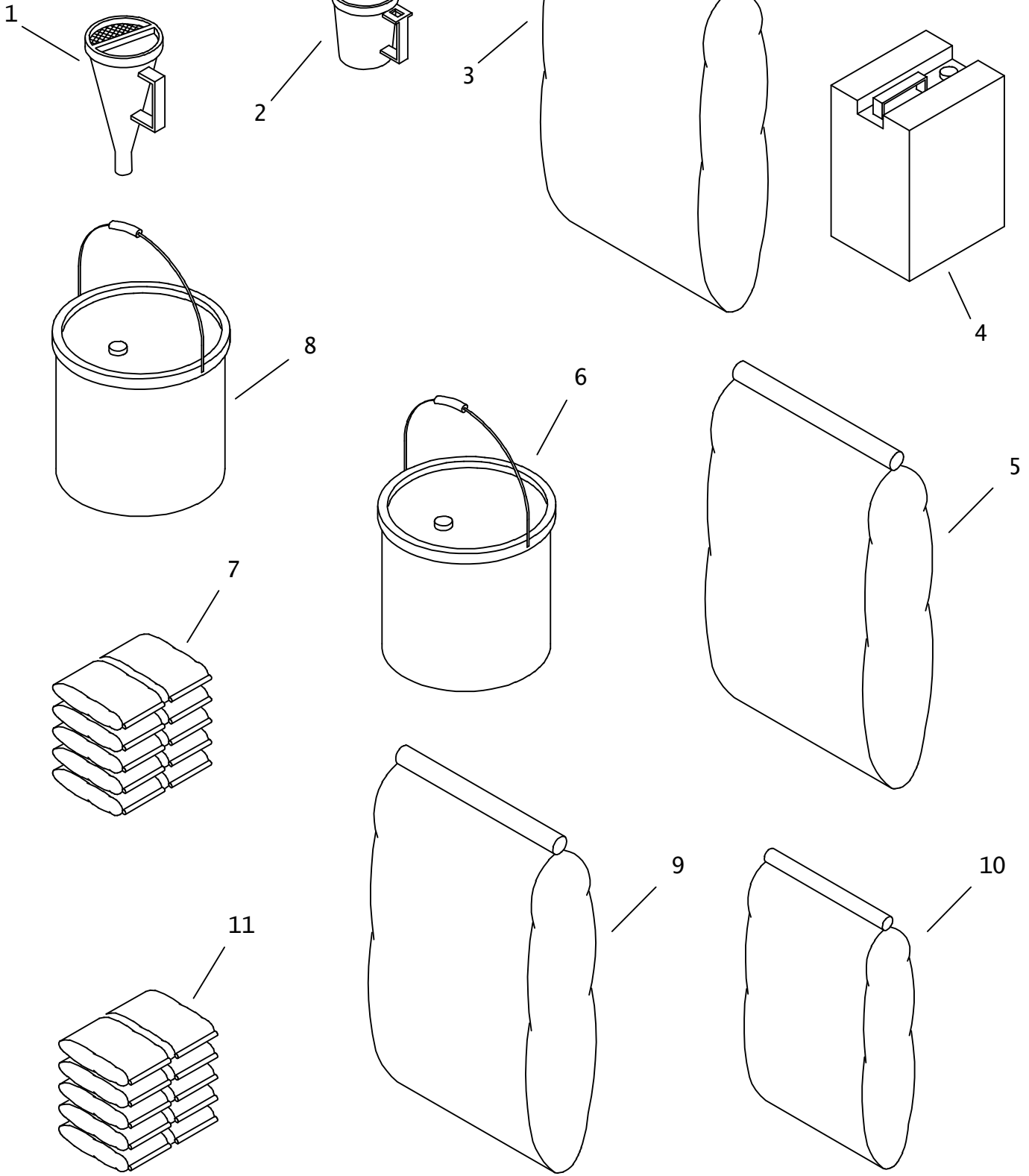
NOTE:



# **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)	

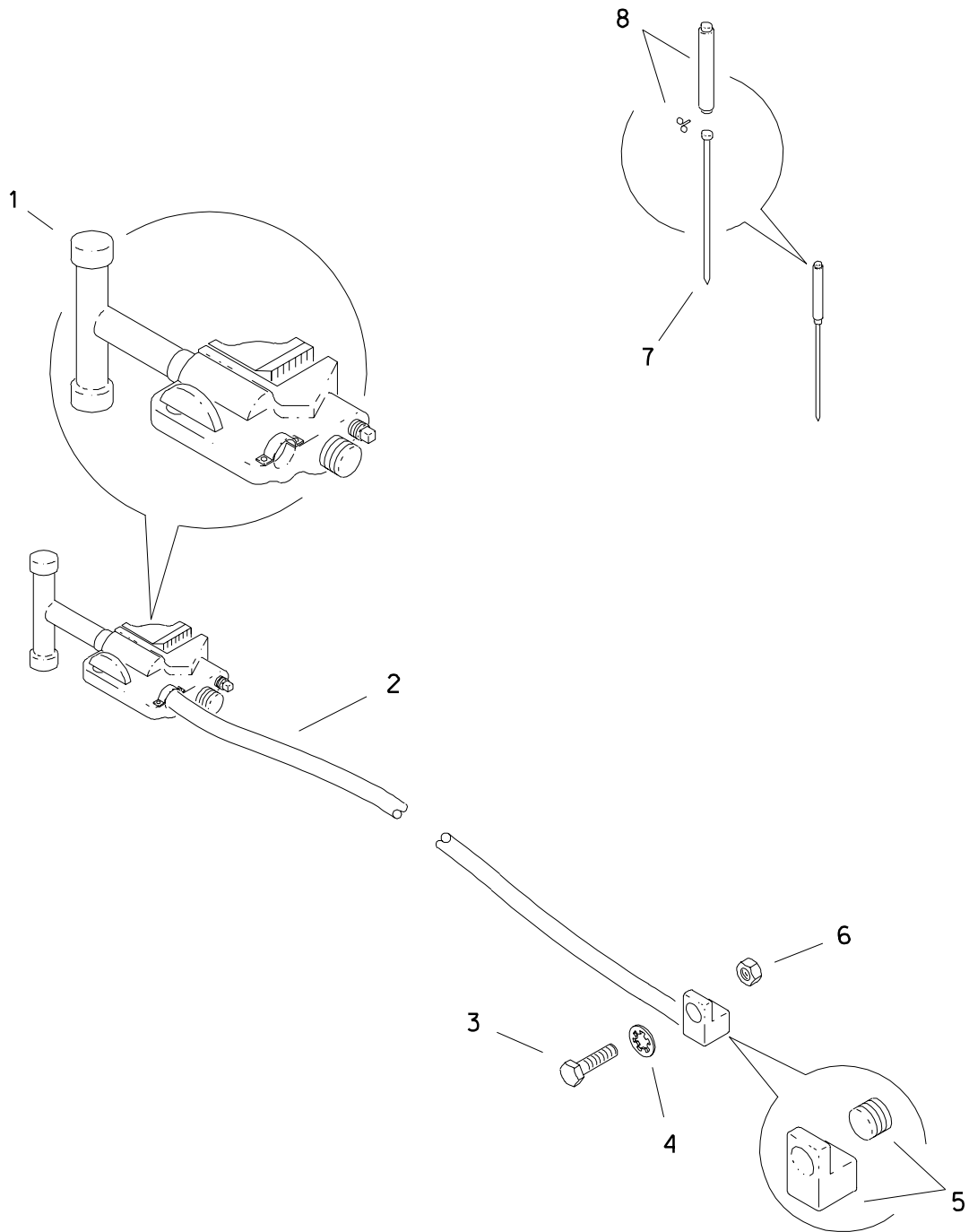
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191-158	1	DRILLING FLUID TEST KIT
259-487	1	SHEAROMETER

FOOTNOTES:

NOTE:

## GROUNDING CABLES

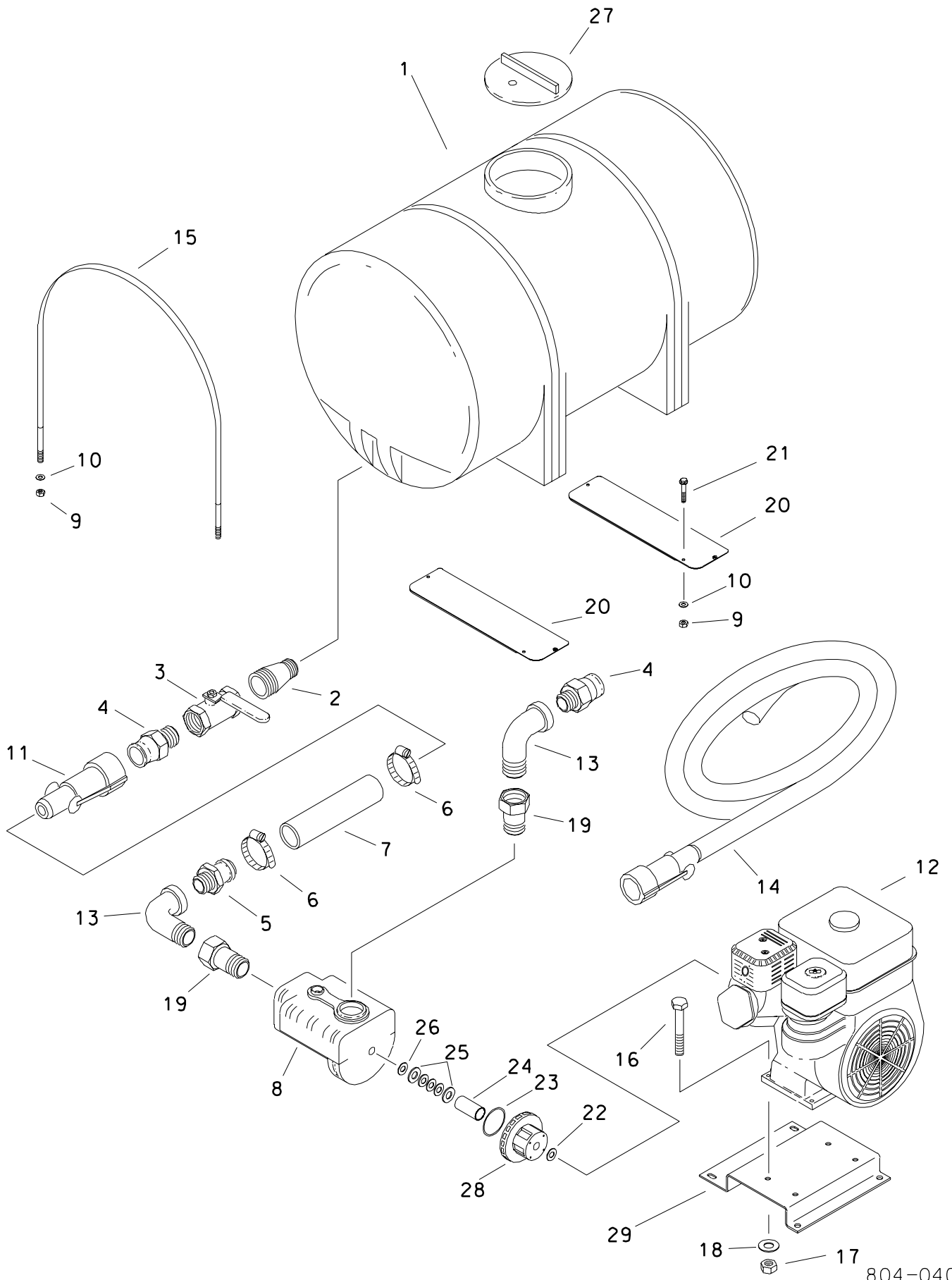


# GROUNDING CABLES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	215-769	1	GROUND CLAMP	
2	215-813	1	GROUND CABLE (1/0 GA X 25')	INCL REF NO.'S 1 AND 5
	215-768	AR	GROUND CABLE (1/0 GA)	USE 25 FT
3	106-462	1	BOLT (3/8-NC X 1-1/4", SIL BRZ)	
4	106-220	1	INT STAR WASHER (3/8", SIL BRZ)	
5	215-773	1	RING LUG TERMINAL (27/64")	
6	106-454	1	LOCKNUT (3/8-NC, SIL BRZ)	
7	215-775	1	GROUND ROD	
8	215-776	1	SLIDE DRIVER	

FOOTNOTES

## WATER TRANSFER SYSTEM

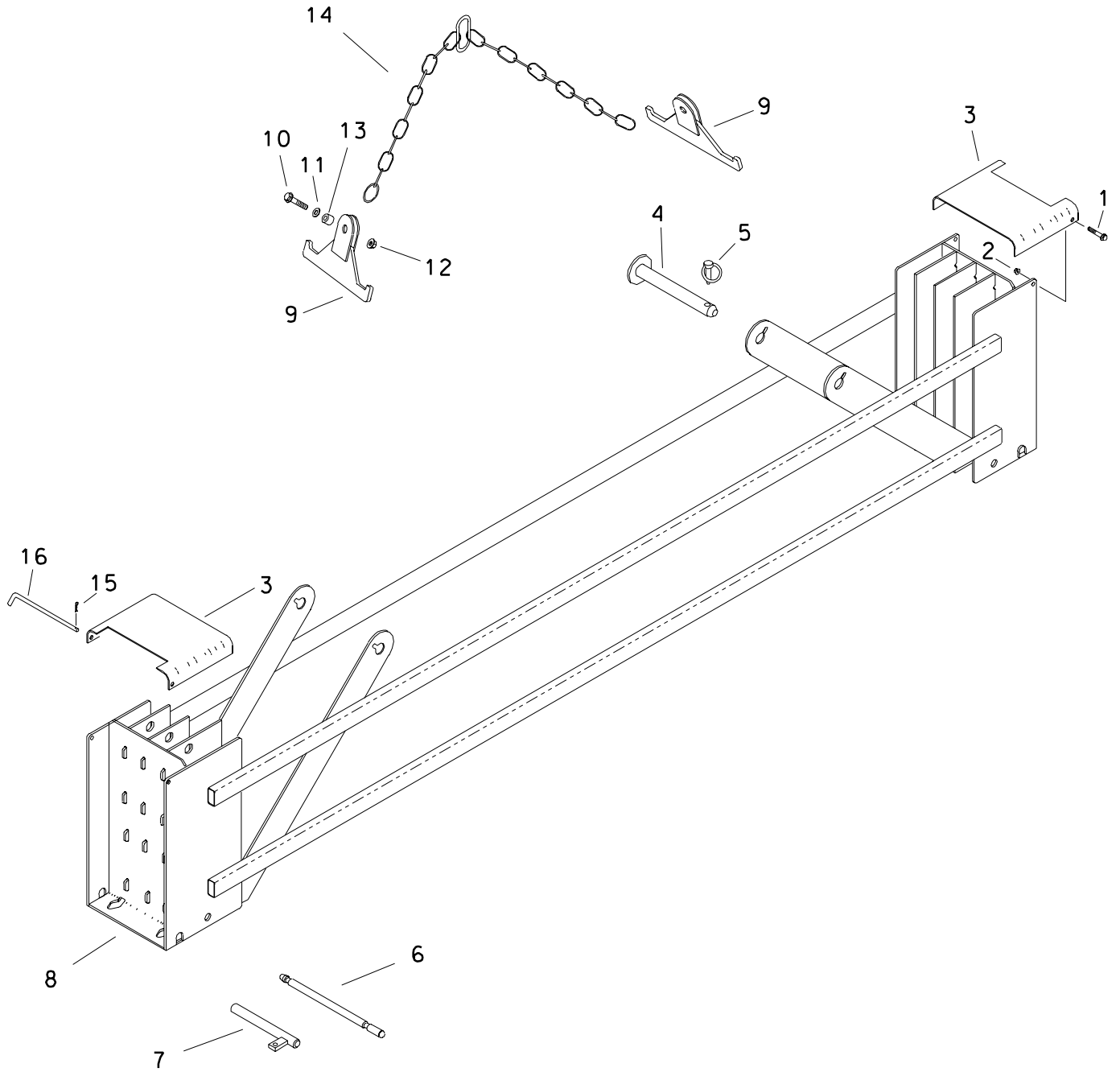


# WATER TRANSFER SYSTEM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	100-956		WATER TRANSFER SYSTEM	
1.	364-314	1	STORAGE TANK (325 GAL)	
	190-053		POLY-PATCH TANK REPAIR KIT	
2.	115-437	1	SWEDGE NIPPLE (32N-24N-6.5")	
3.	120-023	1	SHUT-OFF (24NF-24NF)	
4.	155-204	2	FHC ADAPTER (20-24N)	
5.	155-188	1	SLIP-ON COUPLER (24N-24H)	
6.	110-250	2	WORM CLAMP (1-1/4" TO 2-1/8")	
7.	116-782	AR	BULK HOSE (1-1/2", SOLD PER 1')	USE 1 @ 18"
8.	149-929	1	CENTRIFUGAL PUMP	INCL REF NO.'S 22 - 26
9.	105-065	4	LOCKNUT (1/2-NC)	
10.	105-071	4	WASHER (1/2")	
11.	155-205	1	FHC BODY (20-24H)	
	116-491		SQUARE RING (___ D70)	
12.	195-028	1	ENGINE-HONDA	
13.	115-044	2	STREET ELBOW (24N-24NF90)	
14.	154-440	1	HOSE (20FHC-300"-44)	
15.	365-374	2	TANK STRAP	
16.	105-130	4	BOLT (5/16-NC X 2-1/4")	
17.	105-089	4	LOCKNUT (5/16-NC)	
18.	105-117	4	WASHER (5/16")	
19.	115-087	2	REDUCER (32N-24NF)	
20.	344-901	2	BASE PLATE	
21.	105-067	2	BOLT (1/2-NC X 2-3/4")	
22.	500-860	1	SLINGER	
23.	500-248	1	O-RING (246 D70)	
24.	180-817	1	SLEEVE	
25.	191-017	1	PUMP SEAL KIT	
26.	165-834	1	SHIM (.015", IMPELLER)	
27.	364-434	1	TANK CAP (16", VENTED)	
28.	194-044	1	ENGINE ADAPTER	FOR HONDA & LOMBARDINI 5.5 HP ENGINES
29.	346-350	-	ENGINE MOUNT PLATE	NOT INCLUDED WITH SYSTEM

FOOTNOTES

## PIPE BOX



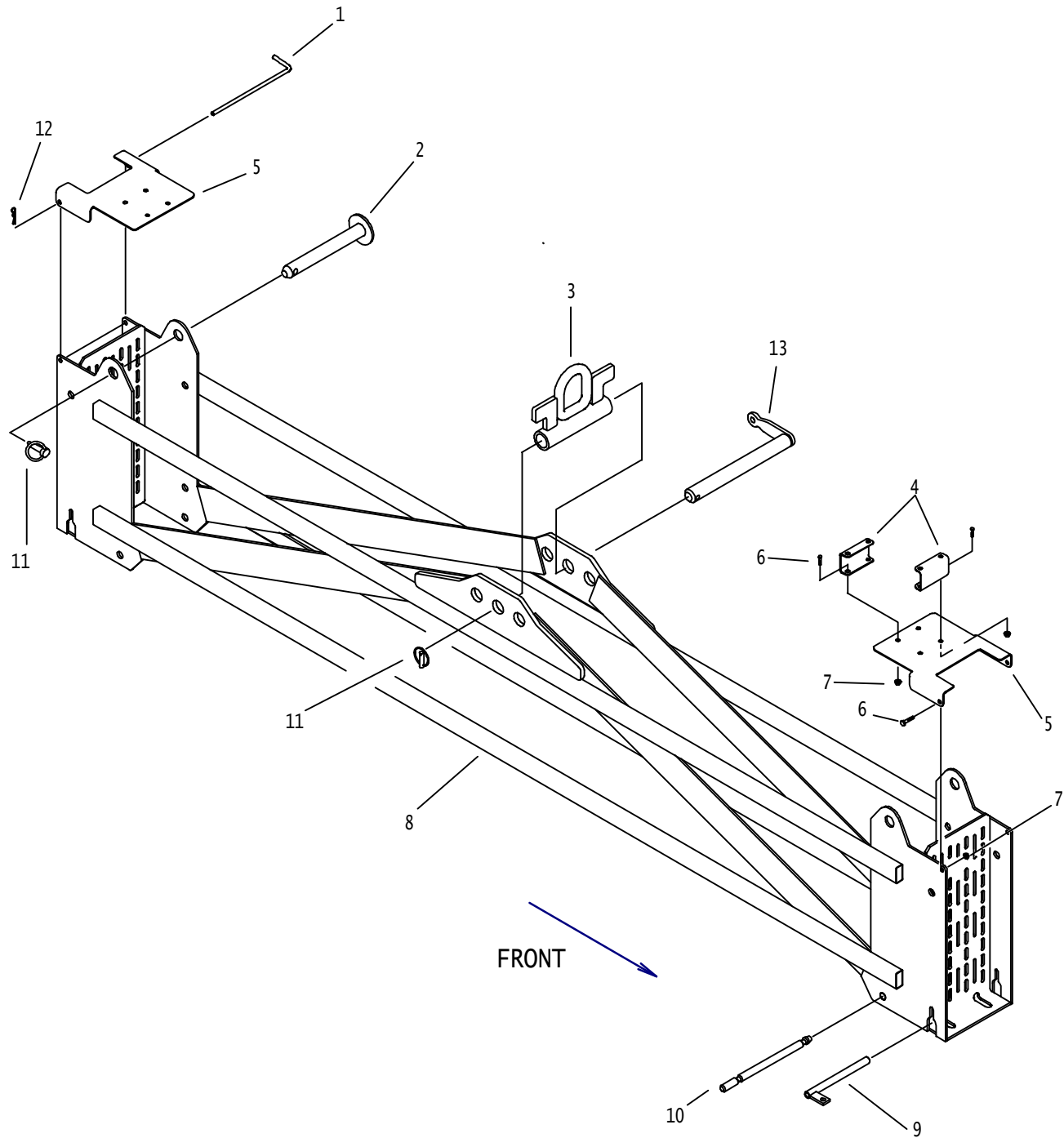
# PIPE BOX

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	346-655	-	PIPE BOX PARTS ASS'Y	INCL REF NO.'S 1 - 8
	101-017	-	PIPE BOX SLING	INCL REF NO.'S 9 - 14
1.	105-274	2	SCREW (M10-1.50 X 20MM)	
2.	105-894	2	LOCKNUT (M10-1.50, PRV TRQ, 10.9)	
3.	346-718	2	PIPE BOX COVER	
4.	359-610	2	PIPE BOX PIN	
5.	110-228	2	LYNCH PIN (7/16" X 2")	
6.	346-710	2	PIN	
7.	346-721	2	BOX RETAINER PIN	
8.	346-705	1	PIPE BOX	
9.	346-719	2	LIFT PLATE	
10.	106-470	2	FLG SCREW (M16-2.00 X 40MM)	
11.	106-398	2	WASHER (M16, HARDENED)	
12.	106-077	2	NUT (M16-2.0, 10.9)	
13.	184-906	2	CHAIN ANCHOR BOSS	
14.	110-703	1	SLING CHAIN	
15.	110-410	1	SAFETY CLIP & LANYARD	
16.	346-061	1	PIPE BOX PIN	

FOOTNOTES



## PIPEBOX - JT920L



## PIPEBOX - JT920L

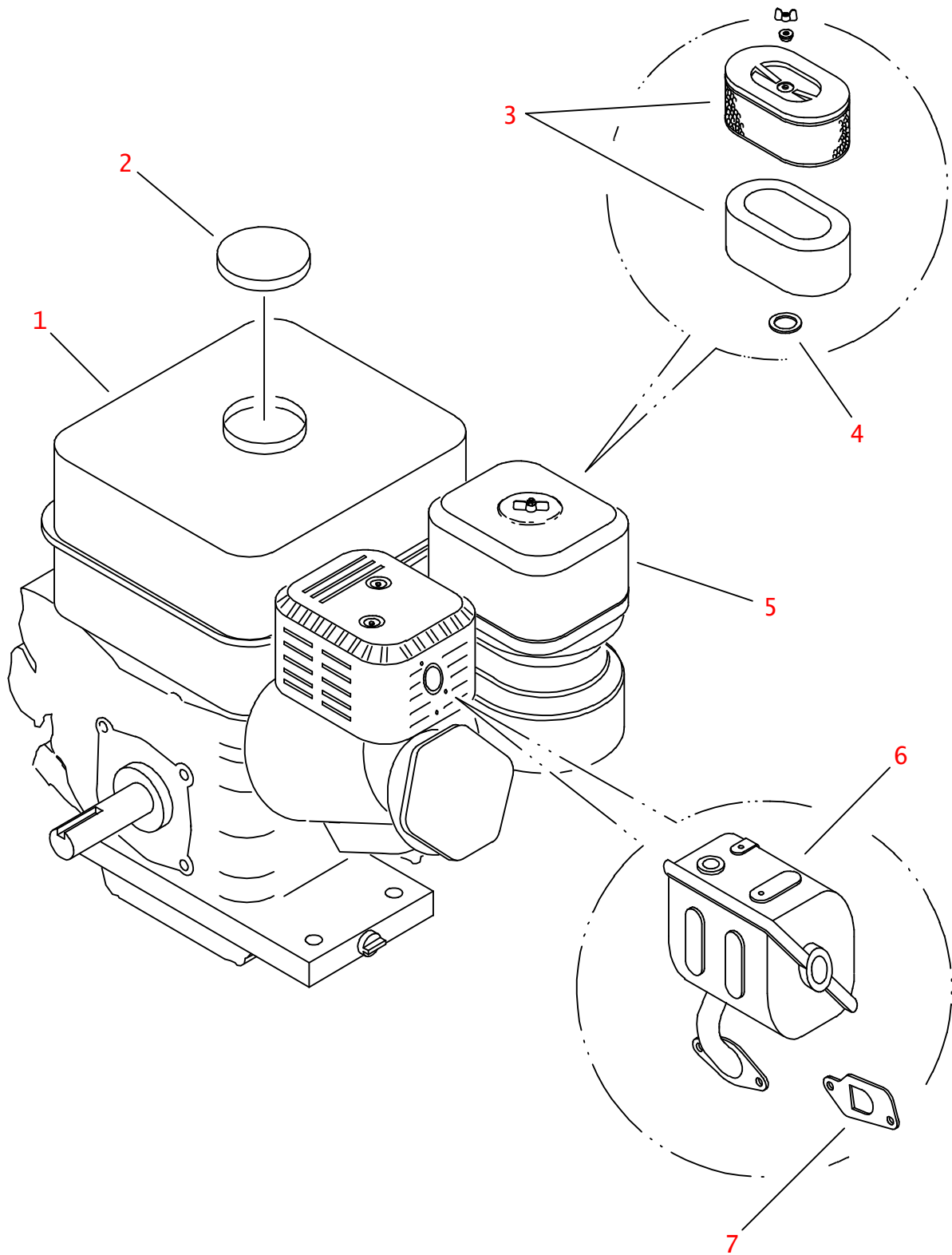
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	315-713		PIPEBOX ASSEMBLY JT920L	
1.	346-061	1	PIPEBOX PIN	
2.	359-610	2	PIPEBOX PIN	
3.	315-682	1	LIFTING EYE	
4.	314-741	2	HYD VALVE MOUNT BRACKET	
5.	346-718	2	PIPEBOX COVER	
6.	105-274	6	SCREW (M10-1.50 X 20 MM)	
7.	105-894	6	LOCKNUT (M10-1.50, PRV TRQ)	
8.	314-743	1	PIPEBOX	
9.	346-721	2	BOX RETAINER PIN	
10.	346-710	2	PIN	
11.	110-228	3	LYNCH PIN (7/16" X 2")	
12.	110-410	1	SAFETY CLIP AND LANYARD	
13.	310-661	1	LIFT PIN	

NOT SHOWN:

FOOTNOTES:

NOTE:

## ENGINE - HONDA



## ENGINE - HONDA

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	194-598	1	ENGINE - HONDA (GX160K1QX)	GASOLINE
	195-028	1	ENGINE - HONDA (GX160K1TX)	GASOLINE
1.	194-010	1	FUEL TANK	
2.	194-009	1	CAP	FUEL TANK
3.	194-001	1	ELEMENT SET (PRIMARY/SECONDARY)	AIR FILTER
4.	194-007	1	GASKET	AIR FILTER
5.	194-003	1	COVER	AIR FILTER
6.	194-004	1	MUFFLER	
7.	194-005	1	GASKET	MUFFLER

### NOT SHOWN:

194-011	1	OIL LEVEL SWITCH
194-002	1	FUEL FILTER (04H-04H, IN-LINE)
194-006	1	RECOIL STARTER
194-008	1	CARBURETOR

### 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

# JT920L

## Related Publications

Component	Ass'y	P/N
<b>Model:</b>		
JT920L ..... Parts Manual .....		053-487
JT920L ..... Operators Manual .....		054-509
JT920L ..... Repair Guide (Service Manual) .....		055-498
JT920L ..... Supplementary Maint Guide - Trenchless .....		055-485
JT920L ..... Special Tools Guide .....		052-901
<b>Engine:</b>		
Lister-Petter ..... Parts Manual - LPWT4 .....	194-417	N/A
Lister-Petter ..... Operators Manual - LPWT4 .....		N/A
Lister-Petter ..... Service (Shop) Manual - LPWT4 .....		N/A
Lister-Petter ..... Service (Shop) Video - LPWT4 .....		N/A
<b>WATER TRANSFER SYSTEM OPTION:</b>		
Honda 5.5hp ..... Parts Manual - GX160K1TX .....	195-028	053-042
Honda 5.5hp ..... Operators Manual - GX160K1TX .....		N/A
Honda 5.5hp ..... Service (Shop) Manual - GX160K1TX .....		N/A

## Filters

<b>Engine:</b>		
Air Filter Parts Ass'y .....		194-812
Element (primary) .....		195-817
Air Stack Cap (2.500") .....		195-692
Oil Filter Element (spin-on) - Lister-Petter .....		159-141
Fuel Filter Element (spin-on) - Lister-Petter .....		194-420
<b>WATER TRANSFER SYSTEM OPTION:</b>		
Air Filter Parts Ass'y - Honda 5.5hp (GX160K1TX) .....		N/A
Element Set (primary, paper) - Honda (GX160K1TX) .....		194-001
(secondary, foam) - Honda (GX160K1TX) .....		194-001
Fuel Filter (04H-04H, in-line) - Honda 5.5hp (GX160K1TX) .....		194-002
<b>Hydraulic:</b>		
Oil Filter Element (1-1/2-UNF, spin-on, Replacement) .....		159-079
Element (1-1/2-UNF, spin-on, Break-In) .....		149-840
Oil Strainer (24S-20SF) .....		110-336
<b>Water {H2O}:</b>		
Water Strainer (1.060" x 5.5") - Beacon Hsg .....		159-301

## Optional Kits

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



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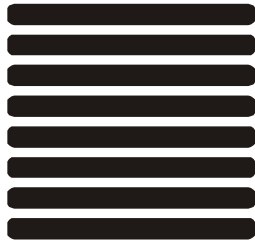
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