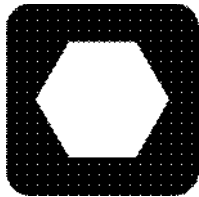


# **RT90 Powershift**

## **Parts Manual**



# ***Ditch Witch®***


## **RT90 Powershift**

ISSUE NO. 04PL-06/11

For Replacement Copy Order **P/N 053-494**

This manual contains information concerning the following models:  
**RT90 Powershift Tractor**

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# FOREWORD

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

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

## **Keep the following in mind when ordering ProTech replacement parts:**

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

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

# WARRANTY

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DW WARRANTY Policy  
July, 2005

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

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

### **EXCLUSIONS FROM PRODUCT WARRANTY**

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

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

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

Defects will be determined by an inspection within thirty (30) days of the date of failure of the product or part by CMW or its authorized dealer. CMW will provide the location of its inspection facilities or 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.

# CONTENTS

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## Decals

Decal Location - RT90 .....	8
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## Engine Components

Cold Start Kit .....	22
John Deere Engine .....	14
John Deere Engine Service .....	16
Muffler/Air Filter .....	18
Radiator/Split Cooler .....	20

## Power Train

Axle - Axle Housing - Rigid .....	52
Axle - Axle Housing - steerable .....	40
Axle - Bevel Gear / Pinion Set .....	34
Axle - Diff Lock - steerable / Rigid .....	42
Axle - Differential - Rigid .....	44
Axle - Differential - Steerable .....	46
Axle - Double Joint - steerable .....	36
Axle - Potentiometer - Steerable .....	50
Axle - Reduction Gears - Rigid .....	56
Axle - Swivel Housing / Steering Cylinder .....	38
Axle - Wheel Hub - Rigid .....	54
Axle - Wheel Hub / Reduction Gear .....	48
Brake Caliper - Powershift .....	62
Brake Caliper - Service .....	64
Differential .....	30
Heavy Duty Brake Kit .....	72
Park Brake .....	70
Powershift Drive Line .....	58
Powershift Transmission .....	26
Service Brake System - Begins .....	66
Service Brake System - Ends .....	68
Tilt Frame Differential Mount .....	32
Tire/Wheel (38x18-20 E10TL) .....	60
Transfer Case .....	28

## Frame Components

4-Post ROPS - Begins .....	114
4-Post ROPS - Ends .....	112
Air Conditioning Kit .....	122
Backfill Blade Assembly .....	110
Battery Hold Down - Ends .....	94
Battery Installation - Begins .....	96
Cab Heater .....	120
Cab Kit .....	116
Canopy & Light Kit .....	124
Counterweight/Grille .....	86
Engine Enclosure .....	76
Fenders and Covers .....	78
Front Counterweight .....	88
Fuel Tank .....	98
Hydraulic Reservoir - Begins .....	104
Hydraulic Reservoir - Ends .....	102
Seat Platform .....	106
Seat Swivel & Base .....	108
Sound Blankets .....	126

Tilt Steering .....	90
Trench Depth Meter Module .....	82
Trench Depth Meter/Odometer Mount .....	84

## Control Components

Backfill Blade Controls .....	140
Backfill Blade Cylinder Guard .....	148
Foot Throttle .....	136
Ground Speed Direction Hand Control .....	130
Hand Throttle - Begins .....	134
Hand Throttle - Ends .....	132
Hydrostatic Pump Linkage - Begins .....	144
Hydrostatic Pump Linkage - Ends .....	146
Powershift Lever .....	138
Rear Steer Control .....	142

## Hydraulics

Auxiliary Drive Lubrication .....	160
Auxiliary Hudraulics .....	158
Backfill Blade Hydraulics .....	164
Backfill Blade Valve .....	166
Frame Tilt Hydraulics .....	172
Ground Drive Motor Hydraulics .....	162
Hydraulic Control Valve - 3-spool .....	176
Hydraulic Cylinder (2"x1.25"x8") .....	178
Hydraulic Cylinder (2"x1"x3.38") .....	182
Hydraulic Cylinder (3"x1.75"x8") .....	180
Hydraulic Diagram .....	152
Hydraulic Filter .....	154
No Frame Tilt/No Rear Steer Option .....	174
Power Steering Valve Hydraulics .....	168
Powershift Manifold Hydraulics .....	156
Rear Steer Hydraulics .....	170

## Electrical

Electric Diagram - A/C .....	222
Electric Diagram - Coordinated Steer .....	208
Electric Diagram - Coordinated Steer .....	212
Electric Diagram - Frame Tilt .....	216
Electric Diagram - Light Kit .....	218
Electric Diagram - Powershift .....	194
Electric Diagram - Rear Steer Electrical Sch. Add. ..	204
Electric Diagram - Rear Steer/Frame Tilt .....	214
Electric Diagram - RT70M/H RT90M/H RT115 .....	202
Electric Diagram - Transmission .....	200
Electric Diagram - Wiper/Washer .....	220
Electric Schematic .....	186

**Continued**

# CONTENTS

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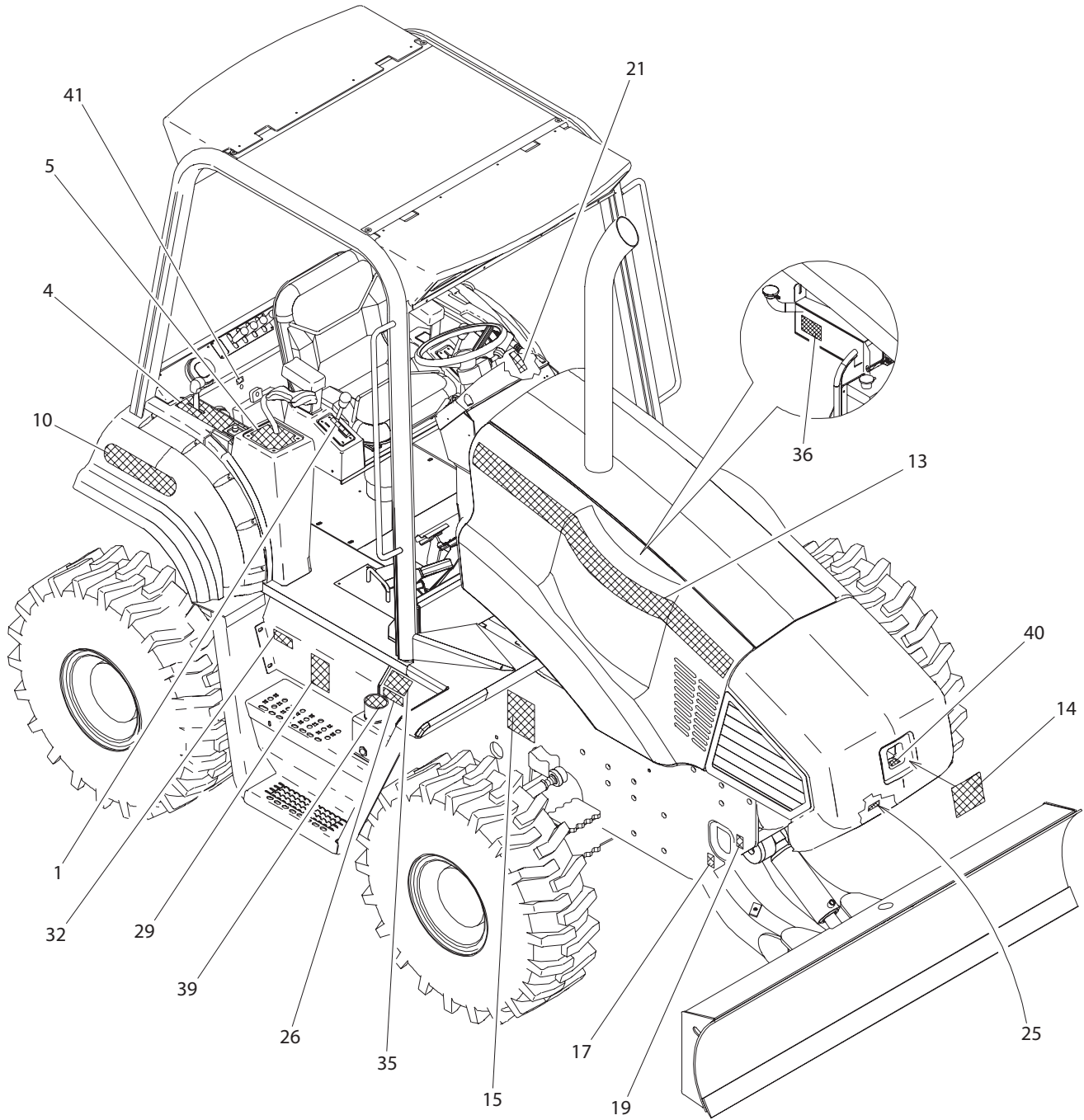
## Miscellaneous

Bolt/Nut Torque Chart .....	226
Filters .....	230
Optional Kits .....	230
Parts Manual Change Request .....	231
Related Publications.....	230
Replacement O-Ring Chart.....	229
Warranty Registration .....	234

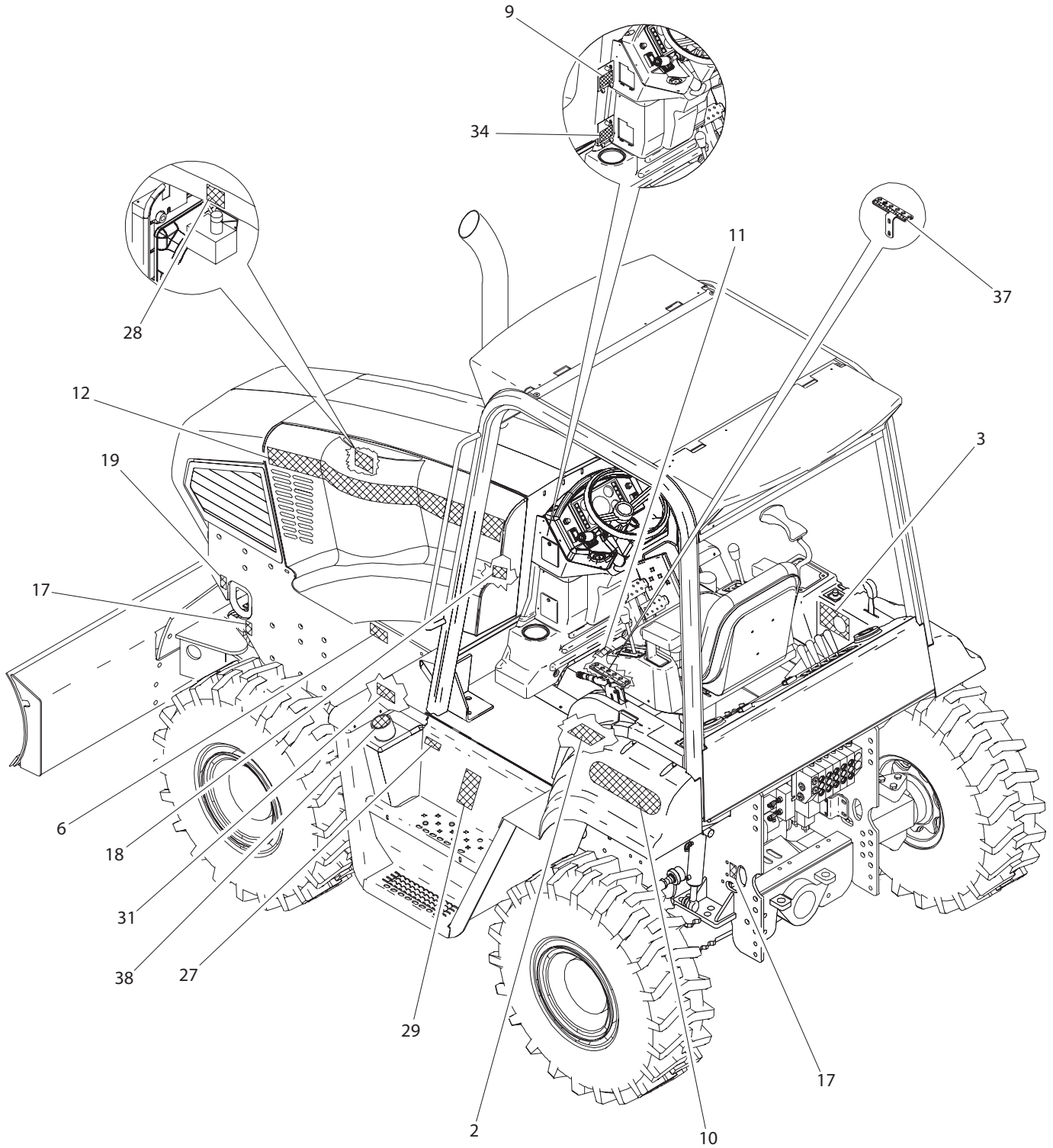
# DECALS



# DECAL LOCATION RT90

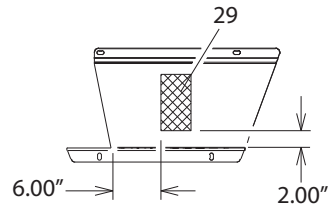
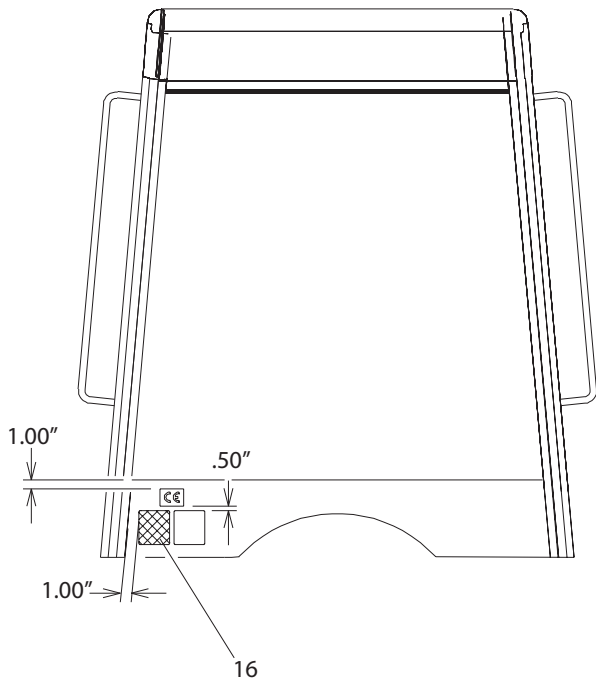
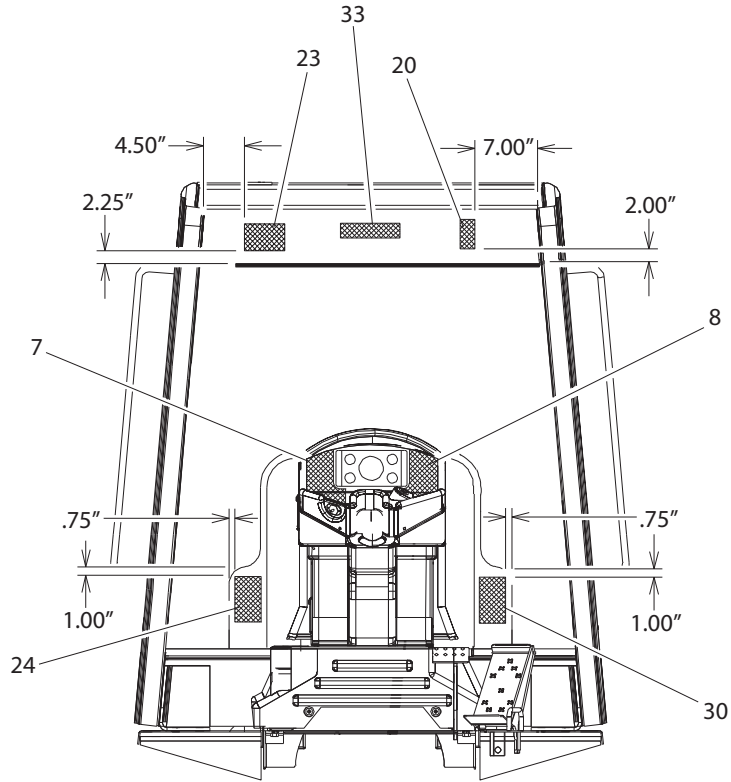


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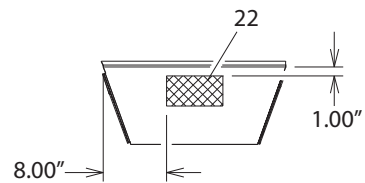
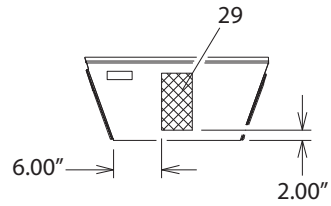


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# DECAL LOCATION RT90



BATTERY DOOR



BATTERY DOOR  
ROTATED 180°

# DECAL LOCATION

## RT90

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-836		DECAL KIT - RT90H	
	275-881		DECAL KIT - RT90M	
1	273-092	1	GROUND DRIVE CONTROL	
2	273-263	1	1 AND 2 SHIFT	RT90H
	273-213	1	MOBILE-WORK	RT90M
3	273-094	1	AXLE LOCK / AUXILIARY	
4	273-095	1	STEER / TILT / THROTTLE	
5	273-100	1	BFB FUNCTIONS	
6	275-400	1	NOTICE OIL LEVEL	
7	273-102	1	REEL CARRIER / COLD START	RT90H
	273-262	1	REEL CARRIER / COLD START	RT90M
8	273-103	1	HORN / ROTOWITCH / IGNITION	
9	273-104	1	FUSE PANEL	
10	273-108	2	DITCH WITCH-ID	
11	273-109	1	TEST PORTS	RT90H
12	273-126	1	LEFT RT90 MODEL IDENTIFIER	
13	273-127	1	RIGHT RT90 MODEL IDENTIFIER	
14	273-246	1	RIGID LOGO PLACARD	
15	273-196	1	LUBRICATION CHART	
16	274-291	1	SOUND POWER 10	SEE FOOTNOTE 1
17	274-318	4	TIE DOWN LOCATION	
18	274-375	1	MASTER DISCONNECT SWITCH	
19	274-442	2	LIFT LOCATION	
20	274-724	1	ONE CALL NOTIFICATION	
21	275-361	1	PARKING BRAKE	
22	275-033	1	NOTICE ELECTRICAL SYSTEM	
23	275-048	1	IMPORTANT SAFETY RULES	
24	275-070	1	WARNING RUNAWAY	
25	700-064	1	POWER BEYOND / RETURN / PRESSURE	
26	275-120	1	RESERVOIR (THF)	
27	275-148	1	FUEL TANK (DIESEL)	
28	273-138	1	NOTICE COOLANT	
29	275-185	2	WARNING SINGLE OPERATOR	
30	275-303	1	WARNING ROLLOVER	
31	275-497	1	OIL DRAIN-ID	
32	275-203	1	BATTERY	
33	273-197	1	OVERHEAD CONSOLE	SEE FOOTNOTE 2
34	273-239	1	RELAY PANEL	
35	274-198	1	NOTICE OIL LEVEL	
37	273-252	1	TEST PORTS	RT90H
38	700-062	1	DIESEL FUEL CAP	
39	700-063	1	HYDRAULIC OIL CAP	
40	273-292	1	FRAME NOSE CASTING WEIGHT	
41	273-458	1	EDT	SEE FOOTNOTE 1

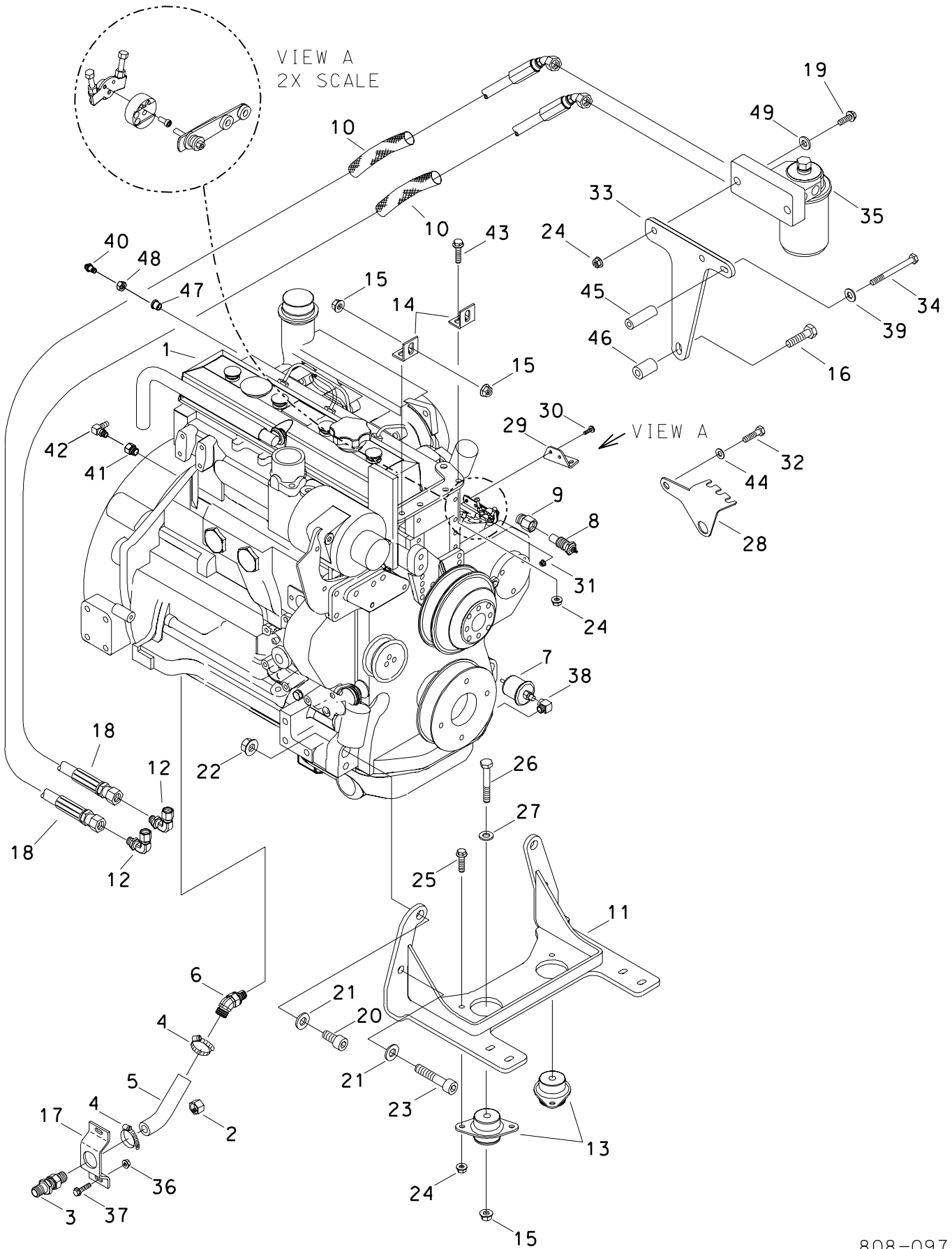
### FOOTNOTES

1. NOT PART OF KIT.
2. 273-197 NOT PART OF KIT. PROVIDED IN CANOPY AND LIGHT KIT 600-382.

<b>NOTES:</b>

# **ENGINE COMPONENTS**

# JOHN DEERE ENGINE

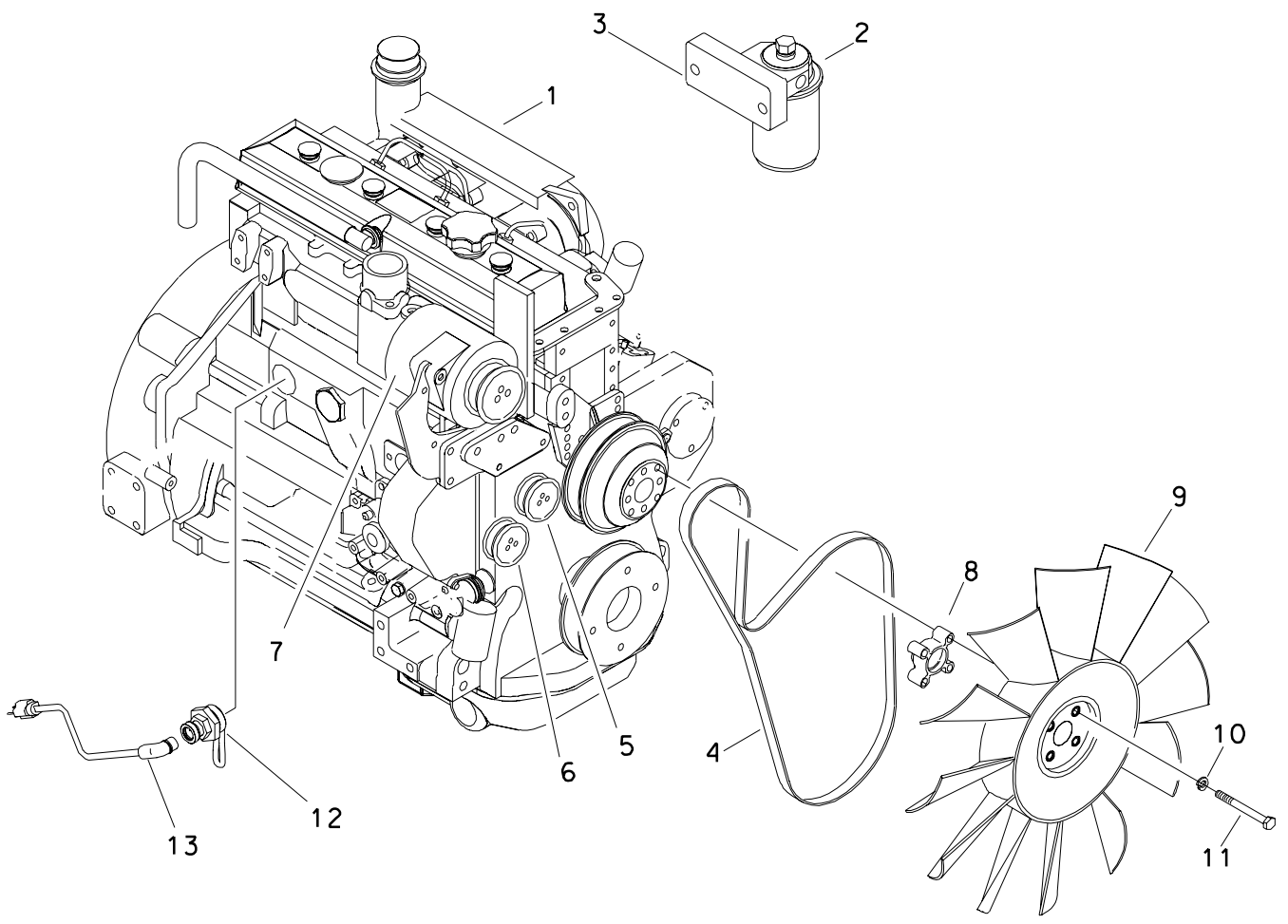


## JOHN DEERE ENGINE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-208	1	ENGINE - DEERE DIESEL	
2.	154-324	1	CAP (100F)	
3.	149-624	1	BK S/O COUPLER (100-10H)	
4.	110-217	2	WORM CLAMP (7/16" TO 1")	
5.	116-044	AR	BULK HOSE (5/8", SOLD PER 1")	USE 1@ 5.75"
6.	153-160	1	S/O COUPER (18M-10H45)	
7.	215-183	1	SENDER, OIL PRESSURE HD	
8.	217-565	1	TEMPERATURE SENDER 100 - 280 F	
9.	217-247	1	WATER TEMPERATURE ADAPTER	
10.	117-214	2	ABRASION SLEEVE (1.25" X 40")	
11.	337-369	1	FRONT ENGINE BRACKET	
12.	154-315	2	UNION (100-100FX90)	
13.	116-946	2	ENGINE SHOCK MOUNT	POSITION METAL FACE TO FRAME BOTTOM
14.	307-553	2	MOUNT TAB	
15.	106-709	6	FLG LOCKNUT (M12-1.75)	
16.	106-527	1	SCREW (M14-2.00 X 50mm)	
17.	310-599	1	MOUNT	
18.	515-456	2	HOSE (100FX45-38"-3000)	
19.	107-002	2	FLG LK SCREW (M10-1.50 X 30mm)	
20.	106-643	2	SCREW (M16-2.00 X 25mm, SDC)	
21.	106-398	4	WASHER (M16, HARDENED)	
22.	106-442	2	FLG LOCKNUT (M16-2.00, PRV TRQ)	
23.	107-723	2	SCREW (M16-2.00 X 70mm, SDC)	
24.	106-266	8	FLG NUT (M10-1.5)	
25.	107-001	4	FLG LK SCREW (M10-1.50 X 25mm)	
26.	106-336	2	SCREW (M12-1.75 X 90mm)	
27.	105-475	2	WASHER (1/2")	
28.	307-068	1	CABLE BRACKET	
29.	307-069	1	LEVER BRACKET	
30.	106-640	2	SCREW (M6-1.00 X 20mm, BUT SOC)	
31.	106-385	2	FLG LOCKNUT (M6-1.00)	
32.	106-118	1	SCREW (M14-2.0 X 25mm)	
33.	315-534	1	FILTER MOUNT	
34.	106-124	1	SCREW (M10-1.50 X 110mm)	
35.	194-815	-	OIL FILTER ELEMENT	
36.	106-386	2	FLG LOCKNUT (M8-1.25)	
37.	106-989	2	FLG LK SCREW (M8-1.25 X 35mm)	
38.	156-241	1	STREET ELBOW (02N-02NF90)	
39.	106-396	1	WASHER (M10, HARDENED)	
40.	156-275	1	TUBE CONNECTOR (04H-05T)	
41.	114-033	1	REDUCER (M10-1.0-02NF)	
42.	155-241	1	S/O COUPLER (02N-05H90)	
43.	106-383	2	FLG LK SCREW (M10-1.50 X 30mm)	
44.	105-990	1	LOCK WASHER (9/16")	
45.	178-358	1	SLEEVE	
46.	184-427	1	BOSS	
47.	156-276	1	FERRULE (05T)	
48.	156-277	1	COMPRESSION NUT (05T)	
49.	106-598	1	WASHER (9/16", HARDENED)	



# JOHN DEERE ENGINE SERVICE



## JOHN DEERE ENGINE SERVICE

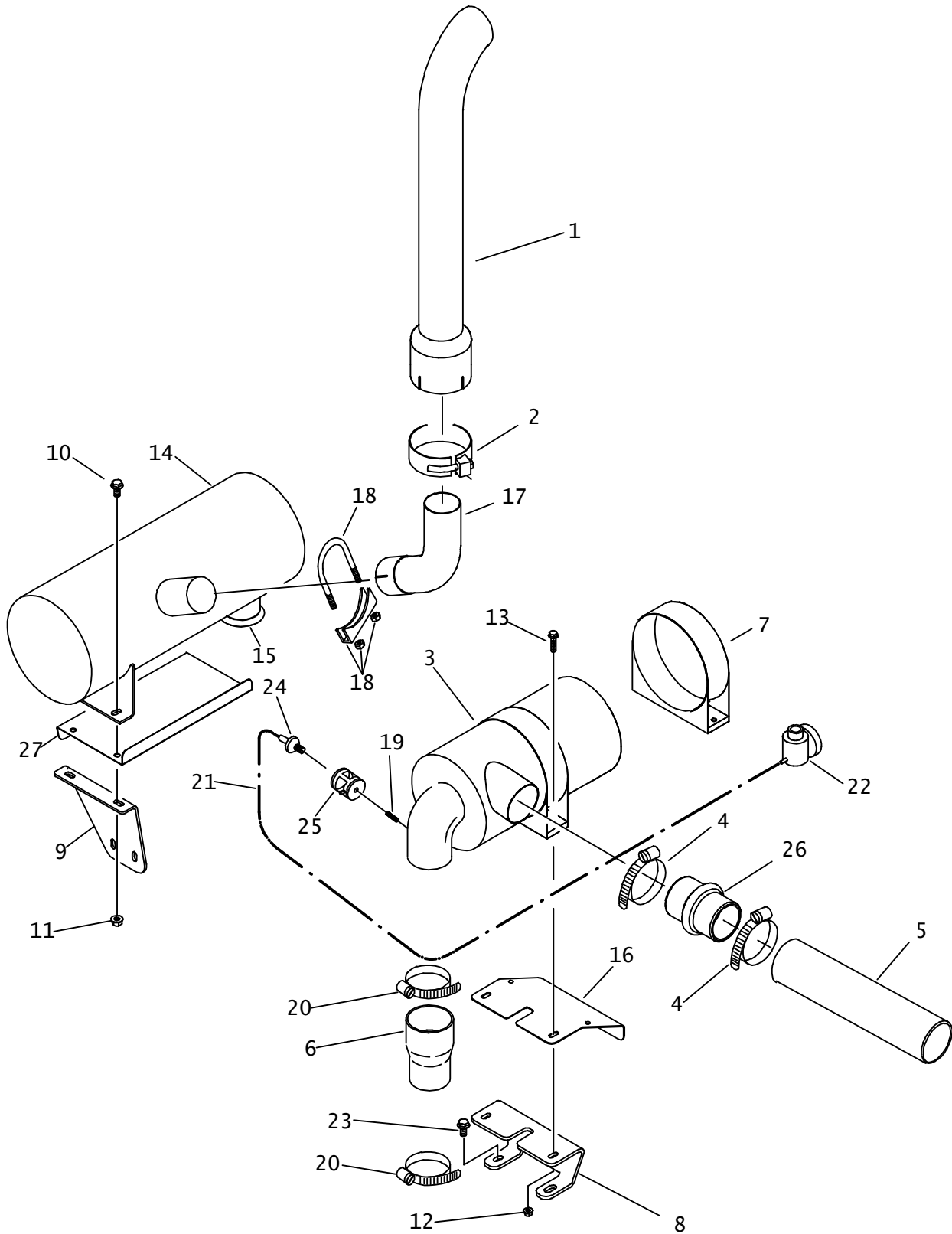
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-208	-	ENGINE - DEERE DIESEL	
2.	194-815	1	OIL FILTER ELEMENT	
3.	153-642	1	FILTER HEAD GASKET	
4.	170-371	1	FAN BELT	
5.	499-318	1	BELT TENSIONER	
6.	170-372	1	IDLER PULLEY	
7.	217-450	1	ALTERNATOR 65 AMP (REMAN)	
8.	194-052	1	FAN SPACER	
9.	194-112	1	FAN (21.80")	
10.	106-090	4	LOCK WASHER (M10)	
11.	106-564	4	SCREW (M10-1.50 X 100mm)	
12.	194-399	1	BLOCK HEATER	OPTION ONLY - REQUIRES 214-980.
13.	214-980	1	CORD ASSEMBLY (110V)	USED ON 194-399

## NOT SHOWN:

054-049	1	DEERE "4045/6068" OP./MAINT. MNL.	
053-059	1	DEERE "4045DF/TF" PARTS MANUAL	
194-253	1	FUEL LIFT PUMP (DEERE)	
194-254	1	STARTER (DEERE)	
153-641	1	STARTER GASKET (DEERE)	
194-256	1	FUEL INJECTION PUMP (194-208)	
194-258	1	INJECTOR NOZZLE (DEERE)	
194-823	1	THERMOSTAT	
165-883	1	GASKET, THERMOSTAT	
194-832	1	WATER PUMP (ALUMINUM)	
194-432	1	WATER PUMP (CAST IRON)	
194-433	1	WATER PUMP INSERT PLATE KIT	
168-617	1	GASKET, WATER PUMP	
194-816	1	FUEL FILTER ELEMENT	
194-493	1	PRIMARY FILTER SEDIMENT BOWL	BEGINS WITH S/N
191-145	1	FUEL FILTER SEAL KIT	
111-124	1	OIL FILLER CAP	
194-831	1	DIPSTICK, ENGINE OIL	
153-642	1	FILTER HEAD GASKET	

## FOOTNOTES

## MUFFLER AND AIR FILTER



## MUFFLER AND AIR FILTER

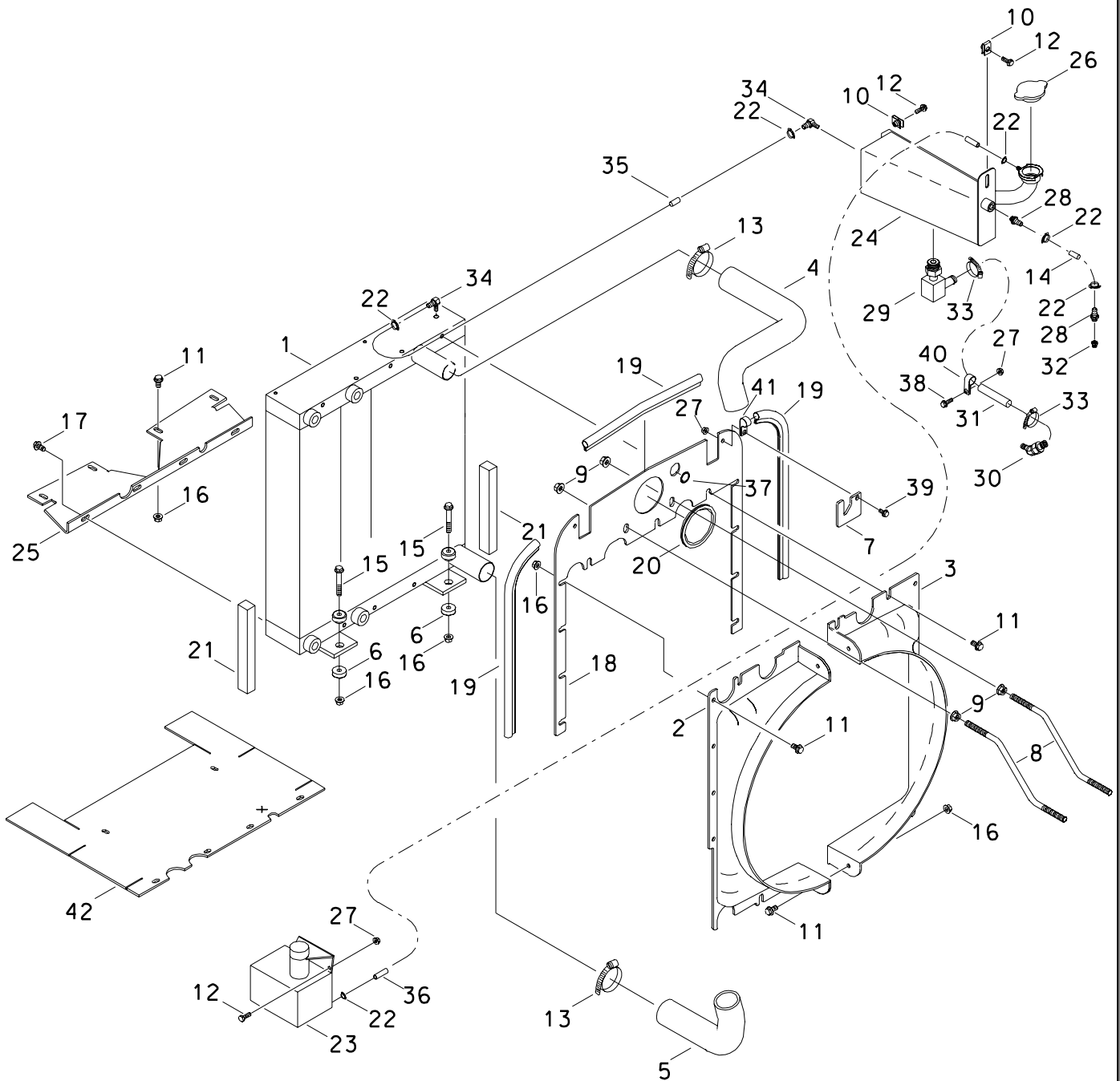
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-140	1	EXHAUST STACK	
2.	194-027	1	MUFFLER CLAMP (4.143")	
3.	197-762	1	AIR FILTER	
	197-763	1	PRIMARY ELEMENT	
	197-764	1	SAFETY ELEMENT	
4.	110-367	2	WORM CLAMP (3.25" TO 4.125")	
5.	116-506	AR	BULK HOSE (3", SOLD PER 1')	ENDS WITH S/N_____.
	179-798	1	AIR INTAKE TUBE	BEGINS WITH S/N_____.
6.	116-951	1	REDUCER (3.00" X 2.50")	
7.	362-926	1	MOUNTING CLAMP (7.170")	
8.	303-749	1	BRACKET	
9.	303-745	1	MUFFLER BRACKET	
10.	106-999	6	FLG LK SCREW (M10-1.50 X 20mm)	
11.	106-266	2	FLG NUT (M10-1.50)	
12.	106-386	2	FLG LOCKNUT (M8-1.25)	
13.	106-163	2	FLG SCREW (M8-1.25 X 30mm)	
14.	120-083	1	MUFFLER	
15.	196-195	1	LOWER CLAMP (HEADER PIPE)	
16.	307-906	1	HEAT SHIELD	
17.	194-225	1	MUFFLER TUBE	
18.	196-341	1	MUFFLER CLAMP (2-3/4")	
19.	115-180	1	ALL THREAD (1/8-NPT)	BEGINS WITH S/N
20.	110-169	2	WORM CLAMP (2.812" TO 3.750")	
21.	116-192	AR	BULK HOSE (7/64", SOLD PER 1")	ENDS WITH S/N_____.
22.	258-067	1	RESTRICTION INDICATOR (25", H20)	BEGINS WITH S/N
23.	105-799	1	FLG LK SCREW (M10-1.50 X 25mm)	
24.	155-150	1	S/O COUPLER (02N-02H)	ENDS WITH S/N_____.
25.	194-788	1	RESTRICTION INDICATOR (25", H20)	BEGINS WITH S/N
26.	118-127	1	AIR CLEANER HOSE	BEGINS WITH S/N
27.	324-665	1	HEAT SHIELD	

NOT SHOWN:

FOOTNOTES:

NOTE:

## RADIATOR/SPLIT COOLER



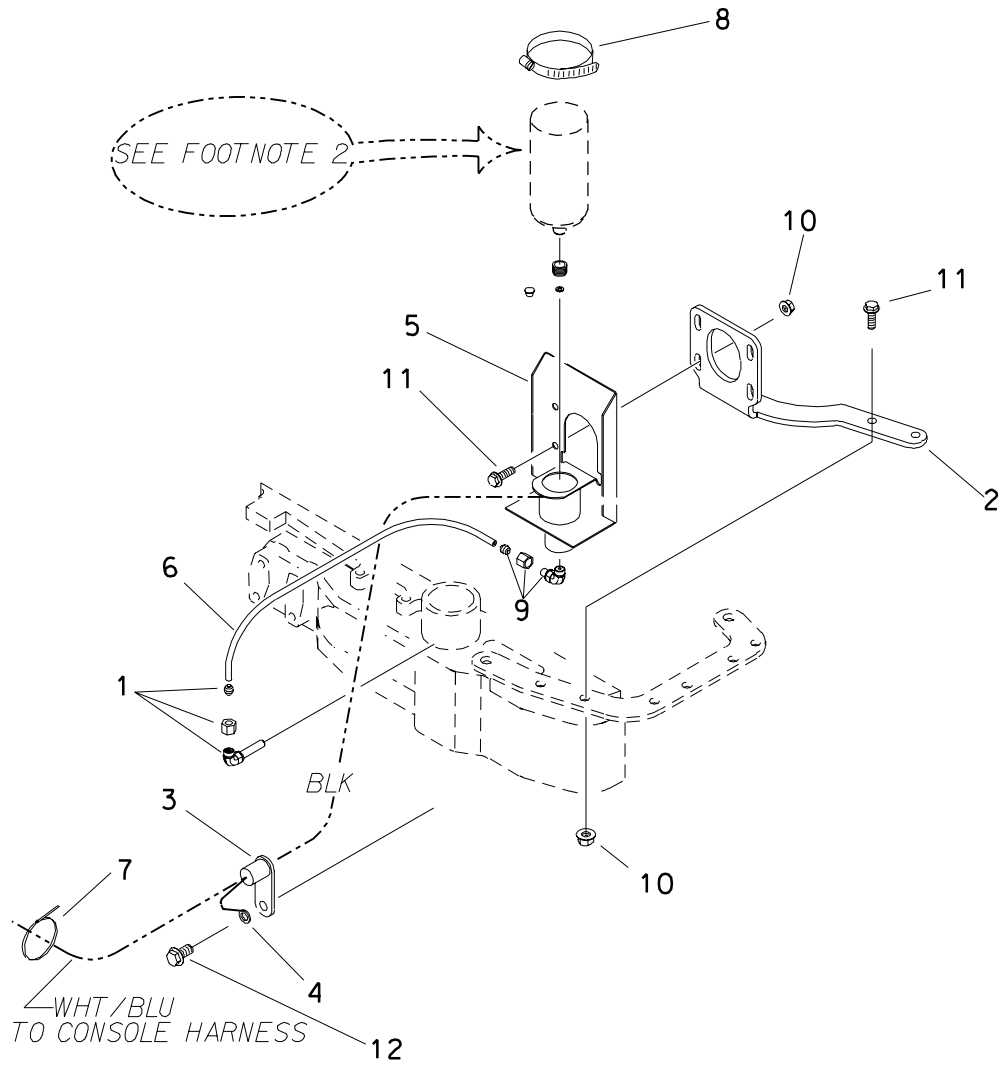
## RADIATOR/SPLIT COOLER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-283	1	RADIATOR/OIL COOLER	
2.	194-115	1	LEFT SIDE FAN SHROUD	
3.	194-114	1	RIGHT SIDE FAN SHROUD	
4.	115-059	1	UPPER COOLANT HOSE	
5.	115-058	1	LOWER COOLANT HOSE	
6.	116-128	2	SHOCK MOUNT	
7.	117-819	2	FLAP	
8.	365-494	2	RADIATOR ROD	
9.	106-709	4	FLG LK NUT (M12-1.75)	
10.	107-135	2	CLIP NUT (M8-1.25)	
11.	107-001	16	FLG LK SCREW (M10-1.50 X 25mm)	
12.	106-992	4	FLG LK SCREW (M8-1.25 X 25mm)	
13.	110-134	4	WORM CLAMP (2.062" TO 2.750")	
14.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 24"
15.	106-998	2	FLG LK SCREW (M10-1.50 X 70mm)	
16.	106-266	16	FLG NUT (M10-1.50)	
17.	106-999	4	FLG LK SCREW (M10-1.50 X 20mm)	
18.	318-619	1	AIR BARRIER	
19.	116-978	AR	BULK EDGE (1/4", SOLD PER 1")	USE 2 @ 27"
20.	115-704	AR	BULK EDGE (1/4", SOLD PER 1")	USE 2 @ 12"
21.	116-107	AR	BULK STRIP (1.2", SOLD PER 1")	USE 1 @ 12"
22.	110-249	6	WORM CLAMP (1/4" TO 5/8")	
23.	364-432	1	COOLANT OVERFLOW RESERVOIR	
24.	364-562	1	PRESSURE TANK	
25.	117-340	1	AIR BARRIER	
26.	111-084	1	RADIATOR CAP (16 PSI)	
27.	106-386	5	FLG LOCKNUT (M8-1.25)	
28.	155-162	2	S/D COUPLER (04N-05H)	
29.	514-285	1	S/D COUPLER (08N-10H90)	
30.	153-160	1	S/D COUPLER (18M-10H45)	SEE FOOTNOTE 1
31.	116-750	AR	BULK HOSE (5/8", SOLD PER 1 FT)	USE 1 @ 24"
32.	115-286	1	REDUCER (08N-1/4-NF)	SEE FOOTNOTE 2
33.	110-217	2	WORM CLAMP (7/16" X 1")	
34.	155-164	2	S/D COUPLER (04N-05H90)	
35.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 12"
36.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 31"
37.	502-046	1	GROMMET (3/4")	
38.	106-162	1	FLG SCREW (M8-1.25 X 20mm)	
39.	106-380	2	FLG LK SCREW (M8-1.25 X 16mm)	
40.	110-333	1	BOLT-ON CLAMP (1")	
41.	110-259	2	BOLT-ON CLAMP (.625")	
42.	117-831	1	AIR BARRIER	

## FOOTNOTES

- CONNECTS INTO ENGINE WATER PUMP
- CONNECTS INTO ENGINE CYLINDER HEAD

# COLD START KIT



# COLD START KIT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-178		COLD START KIT	INCL REF NO.S 1-12
1.	195-843	1	INJECTOR NOZZLE (CLDSTRT)	
	156-204	-	FERRULE (O2T)	
	156-205	-	COMPRESSION NUT (O2T)	
2.	309-191	1	BRACKET	
3.	215-073	1	SENSOR SWITCH	SEE FOOTNOTE 1
4.	215-590	1	RING TERMINAL (.375")	SEE FOOTNOTE 1
5.	306-628	1	VALVE/CANISTER BRACKET	
6.	156-018	AR	BULK TUBING (1/8", SOLD PER 1")	USE 1@ 15"
7.	110-248	2	CABLE TIE (1/16" TO 1-1/4")	
8.	110-169	1	WORM CLAMP (2.812" TO 3.750")	
9.	156-272	1	TUBE CONNECTOR (O2N-O2T90, ORF)	
	156-204		FERRULE (O2T)	
	156-205		COMPRESSION NUT (O2T)	
10.	106-386	6	FLG LK NUT (M8-1.25)	
11.	106-991	6	FLG LK SCREW (M8-1.25 X 20mm)	
12.	106-654	1	FLG LK SCREW (M10-1.50 X 16mm)	

NOT SHOWN:

306-607	1	HORN BUTTON
306-608	1	BUTTON COVER

FOOTNOTES

- REF NO.'S 3 & 4 BOLT ONTO ENGINE WITH ALTERNATOR ELECTRICAL HARNESS.
- USE OF 8 OZ. ETHER CANISTER IS REQUIRED, WHICH WILL COME WITH SEALS AND FOAM.

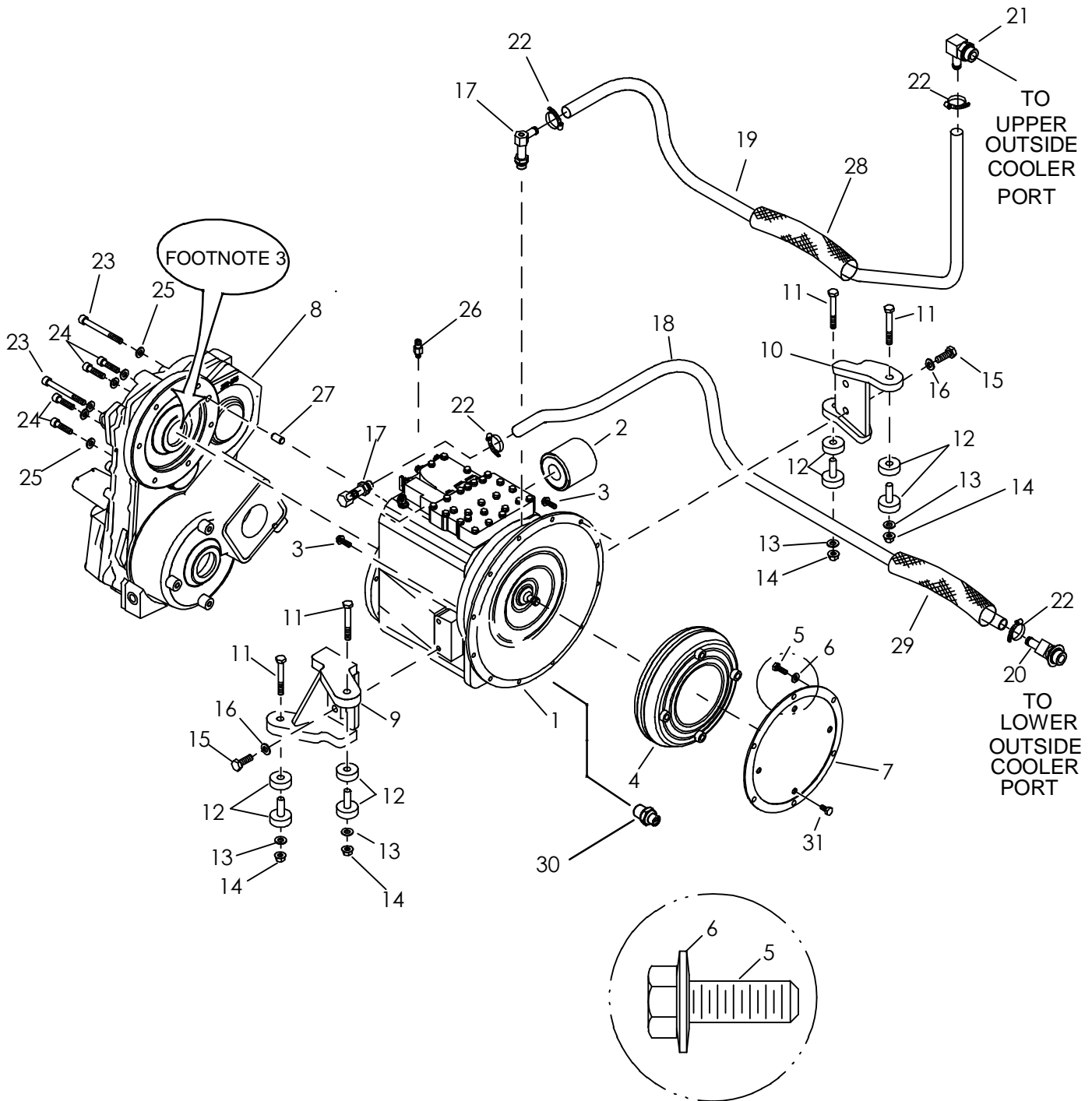




# **POWER TRAIN**

# POWERSHIFT TRANSMISSION

RT70M  
RT90M



# POWERSHIFT TRANSMISSION

## RT70M

## RT90M

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	165-538	1	TRANSMISSION (2-SPD) W/O PTO	SEE FOOTNOTE 5 & NOT SHOWN FOR SERVICE PARTS.
	197-116		REMANUFACTURED 165-538 TRANS	SEE FOOTNOTE 5 & NOT SHOWN FOR SERVICE PARTS.
2.	159-509	-	OIL FILTER	
3.	106-383	12	FLG LK SCREW (M10-1.50 X 30mm)	SEE FOOTNOTE 1
4.	166-478	-	TORQUE CONVERTER (2.40 NEEDLE)	
5.	105-090	6	BOLT (5/16-NC X 3/4 ")	SEE FOOTNOTE 1
6.	107-505	-	BEVELED WASHER (M8)	SERVICE PART ONLY - SEE FOOTNOTE 2
7.	166-252	-	DRIVE PLATE	
8.	166-193	-	GROUND DRIVE TRANSMISSION	SEE FOOTNOTE 1
9.	306-971	1	RIGHT REAR TRANSMISSION MOUNT	
10.	306-972	1	LEFT REAR TRANSMISSION MOUNT	
11.	105-386	4	BOLT (5/8-NC X 4-1/2")	SEE FOOTNOTE 1
12.	116-151	4	SHOCK MOUNT	
13.	105-416	4	WASHER (5/8")	
14.	105-994	4	FLG LOCKNUT (5/8-NC)	
15.	107-572	4	SCREW (M14-1.50 X 40mm)	SEE FOOTNOTE 1
16.	105-071	4	WASHER (1/2")	
17.	149-790	2	S/O COUPLER (M22-1.50-10H90XL)	
18.	116-044	AR	BULK HOSE (5/8", SOLD PER 1")	USE 1@ 80"
19.	116-044	AR	BULK HOSE (5/8", SOLD PER 1")	USE 1@ 70"
20.	149-811	1	S/O COUPLER (16S-10H)	
21.	149-596	1	S/O COUPLER (16S-10H90)	
22.	110-026	4	WORM CLAMP (1/2" TO 1-1/4")	
23.	105-678	2	SCREW (M12-1.75 X 140mm, SOC)	
24.	106-707	4	SCREW (M12-1.75 X 45mm, SOC)	
25.	106-397	6	WASHER (M12, HARDENED)	
26.	157-311	1	QDC ADAPTER (02-04H)	SERVICE PART ONLY
27.	107-893	2	DOWELL PIN (16mm X 32mm)	SERVICE PART ONLY
28.	117-691	1	ABRASION SLEEVE (1.25" X 68")	
29.	117-324	1	ABRASION SLEEVE (1.25" X 48")	
30.	213-293	1	TRANSMISSION OIL TEMP. SWITCH	SERVICE PART ONLY
31.	108-231	-	BOLT (3/8-NF X 1/2")	SERVICE PART ONLY - SEE FOOTNOTE 4

### NOT SHOWN:

500-1528	1	SHIFT SOLENOID
500-2076	1	CLUTCH KIT
500-2077	1	DISTRIBUTOR SEAL KIT
500-2078	1	TRANSMISSION GASKET KIT
500-2086	1	SEAL, REAR MAIN
111-151	1	TRANSMISSION DIPSTICK

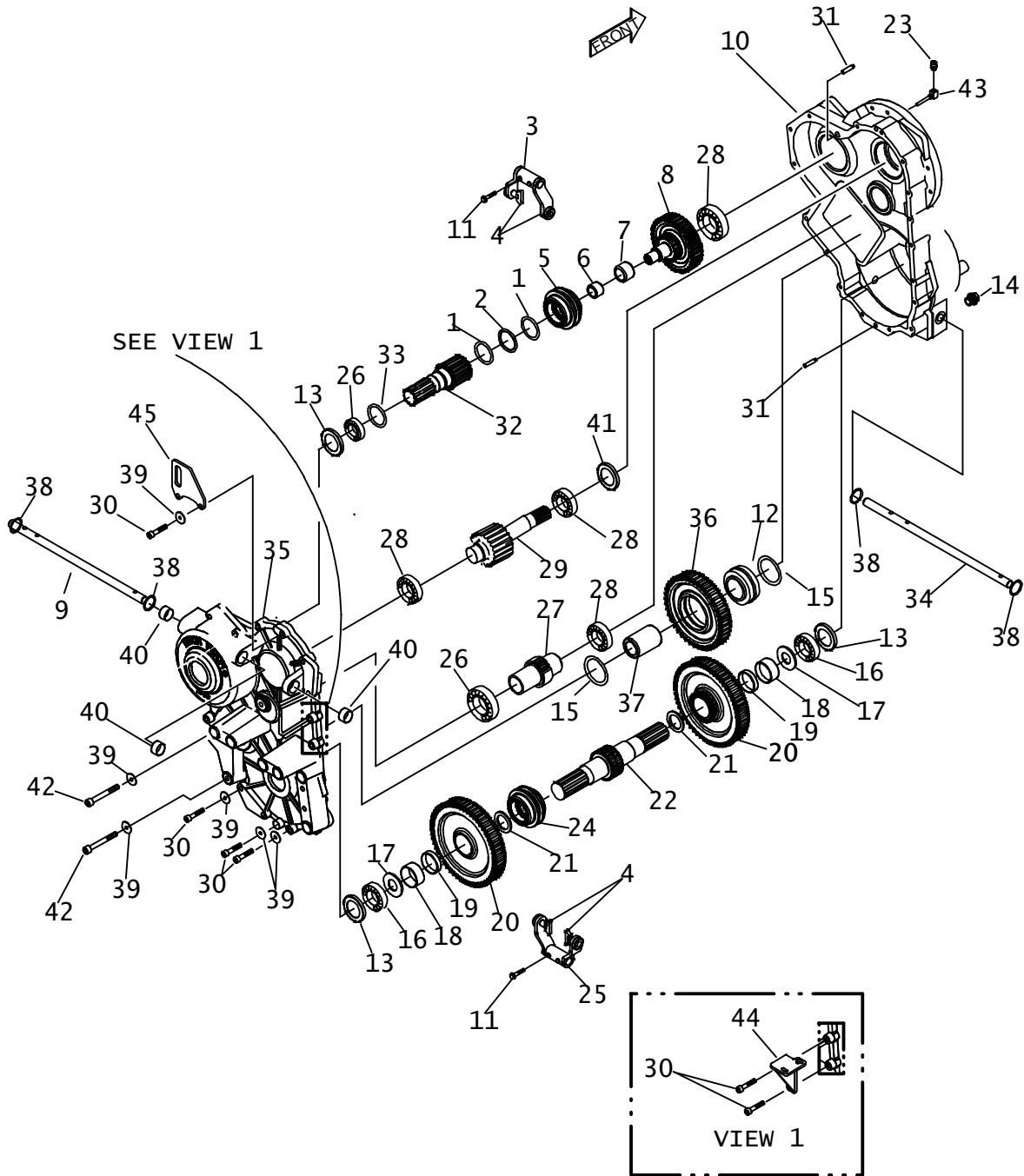
### FOOTNOTES:

1. USE LOCTITE NO. 242 OR ITS EQUIVALENT
2. USE BEVELED WASHER TO PREVENT CRACKING DRIVE PLATE REF #7.
3. APPLY NEVER SEIZE TO INPUT SHAFT SPLINES.
4. REF #31 (108-231) COMES WITH REF #7 (166-252).
5. REPLACEMENT FOR INPUT SHAFT SEAL 500-2022.

### NOTE:

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

# TRANSFER CASE



# TRANSFER CASE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-193		GROUND DRIVE TRANSMISSION	
1.	125-384	2	BEARING RACE (1.375")	
2.	125-383	1	NEEDLE BEARING (1.375")	
3.	361-934	1	SHIFT YOKE	
4.	361-578	4	SHIFT PADDLE	
5.	165-564	1	SHIFT COLLAR (UPPER)	
6.	125-171	1	NEEDLE BEARING	
7.	126-031	1	NEEDLE BEARING (1.375")	
8.	168-062	1	IDLER GEAR	
9.	167-355	1	SHIFT SHAFT	
10.	165-585	1	DROP BOX HOUSING	
11.	105-827	4	FLG LK BOLT (3/8-NC X 1-1/4")	
12.	125-168	1	ROLLER BEARING	
13.	156-984	3	SEAL	
14.	115-211	3	PLUG (O8N,SQ,MAG)	
15.	156-982	2	O-RING	
16.	125-045	2	BALL BEARING (1.771")	
17.	107-503	2	THRUST WASHER (45mm)	
18.	185-198	2	BEARING	
19.	185-199	2	BEARING	
20.	165-562	2	OUTPUT GEAR	
21.	125-170	2	THRUST WASHER (2.000")	
22.	167-350	1	OUTPUT SHAFT	
23.	159-003	1	AIR VENT (O2N)	
24.	165-565	1	SHIFT COLLAR (LOWER)	
25.	182-226	1	SHIFT YOKE	
26.	125-040	2	BALL BEARING (1.968")	
27.	165-584	1	CROWD PINION	
28.	125-049	4	BALL BEARING (2.165")	
29.	167-349	1	PINION SHAFT	
30.	106-555	15	SCREW (M10-1.50 X 45mm, SOC)	
31.	106-866	2	DOWEL PIN (M10 X 30mm)	
32.	167-348	1	OUTPUT SHAFT	
33.	125-378	1	THRUST RACE (2.756")	
34.	167-356	1	SHIFT SHAFT	
35.	165-586	1	DROP BOX COVER	
36.	165-563	1	IDLER GEAR	
37.	165-561	1	IDLER SLEEVE	
38.	155-878	4	INTERNAL SEAL (.750")	
39.	106-396	18	WASHER (M10, HARDENED)	
40.	125-175	3	SLEEVE BEARING	
41.	157-501	1	INTERNAL SEAL	
42.	107-502	3	SCREW (M10-1.50 X 80mm, SOC)	
43.	514-123	1	PICKUP TUBE (O2N-O2NF90-2")	
44.	307-458	1	STOP	
45.	320-647	1	TRANSFER CASE LIFT	SEE FOOTNOTE I

NOT SHOWN:

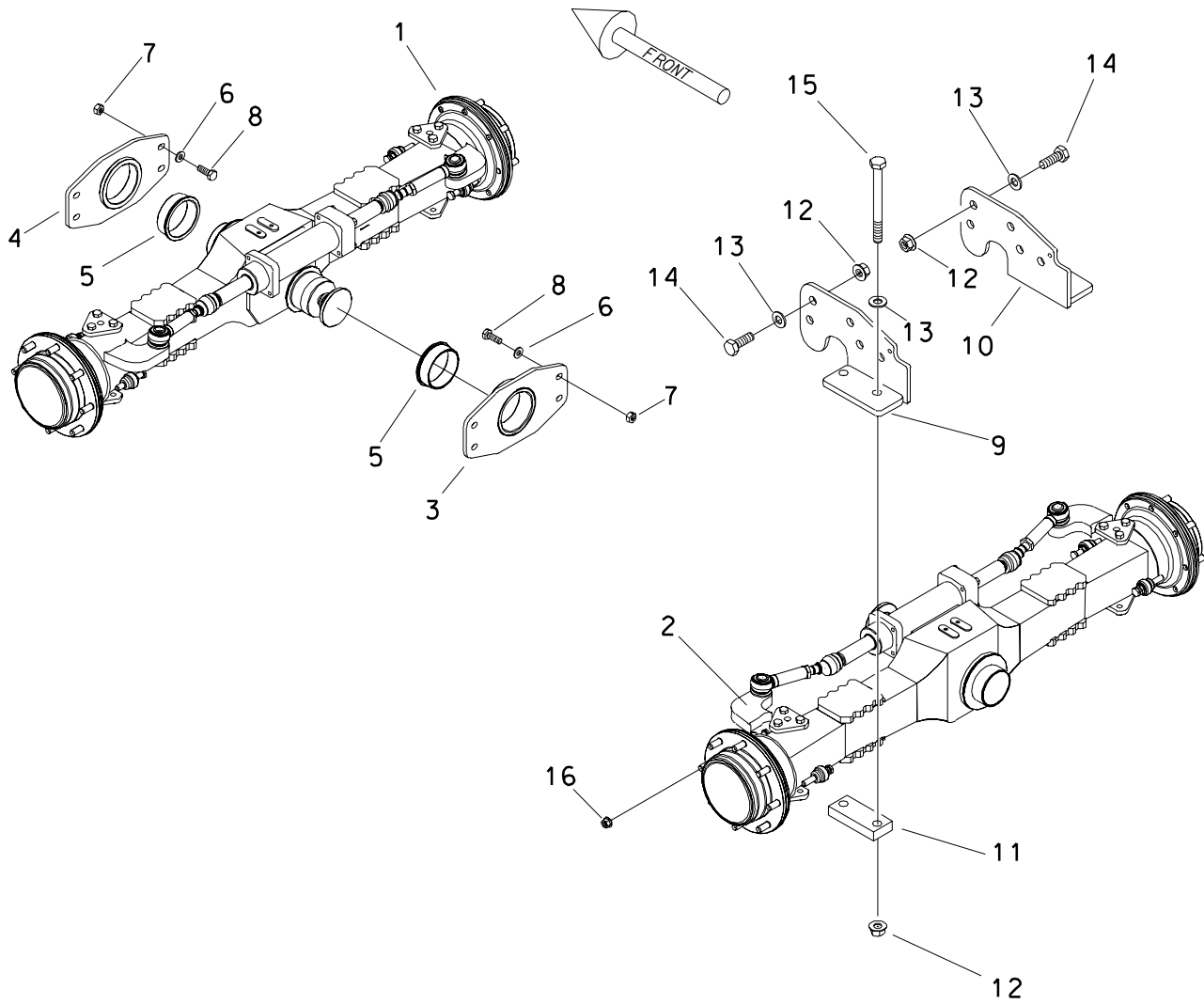
#### FOOTNOTES:

- I. TRANSFER CASE LIFT BRACKET (p/n 320-647) IS REQUIRED TO REMOVE TRANSFER CASE. REMOVE TWO MOUNTING SCREWS, ALIGN, BRACKET WITH MOUNTING HOLES AS SHOWN, AND RE-INSTALL SCREWS. REFER TO RT POWERSHIFT REPAIR GUIDE P/N 055-072 FOR FURTHER INSTRUCTIONS.

NOTE:

# DIFFERENTIAL

RT90/RT95/RT115



# DIFFERENTIAL

## RT90/RT95/RT115

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	160-455	1	STEERABLE AXLE (26.22)	QTY. OF 2 WITH REAR STEER
2.	160-456	1	RIGID PLANETARY AXLE (28.22)	
	160-455	-	STEERABLE AXLE (26.22)	
3.	306-748	1	AXLE MOUNT	
4.	307-711	1	AXLE MOUNT	
5.	178-365	2	BRONZE BUSHING (4.928")	
6.	106-398	8	WASHER (M16, HARDENED)	
7.	106-355	8	FLG NUT (M16-2.00, 10.9)	
8.	106-616	8	SCREW (M16-2.00 X 55mm, 10.9)	
9.	306-896	1	LEFT AXLE MOUNT	
10.	307-280	1	RIGHT AXLE MOUNT	
11.	307-303	2	CLAMP PLATE	
12.	106-489	14	FLG NUT (M24-3.00, 10.9)	
13.	106-625	14	WASHER (M24)	
14.	107-152	10	SCREW (M24-3.00 X 80mm, 10.9)	
15.	107-089	4	SCREW (M24-3.00 X 260mm, 10.9)	
16.	499-521	32	LUG NUT (M20-1.50)	

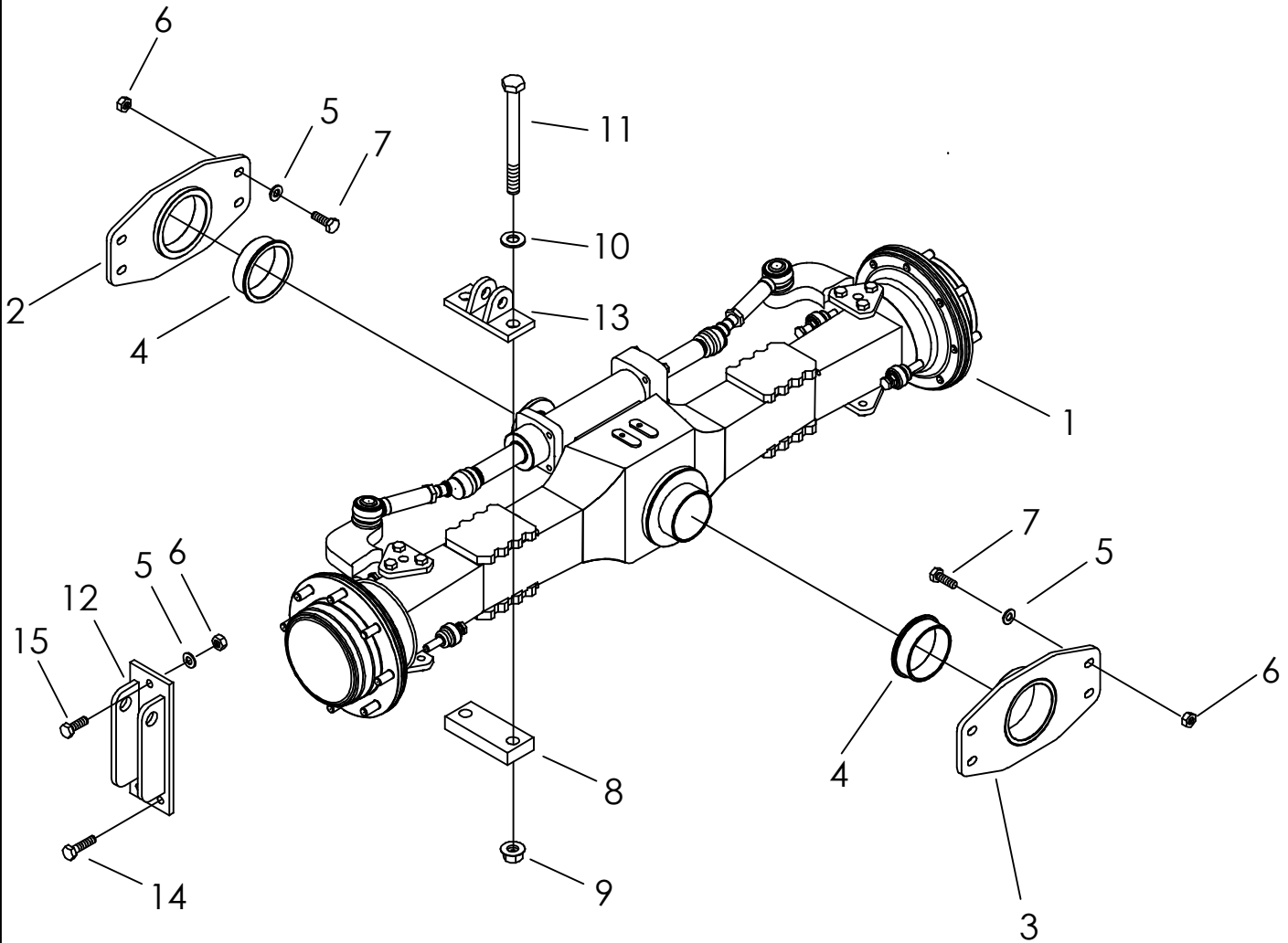
FOOTNOTES



**TILT FRAME DIFFERENTIAL MOUNT**

RT90/RT95/RT115 BEGINS WITH S/N CMWRT95MLB0000374

CMW 15T3CB0000220, CMW15QPB0000161, CMWRT95HVB0000410



## TILT FRAME DIFFERENTIAL MOUNT

RT90/RT95/RT115 BEGINS WITH S/N CMWRT95MLB0000374

CMW 15T3CB0000220, CMW15QPB0000161, CMWRT95HVB0000410

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	160-456	-	RIGID PLANETARY AXLE (28.22)	
	160-455	-	STEERABLE AXLE (26.22)	
2.	306-748	1	AXLE MOUNT	
3.	307-711	1	AXLE MOUNT	
4.	178-365	2	BRONZE BUSHING (4.928")	
5.	106-398	14	WASHER (M16, HARDENED)	
6.	106-545	14	LOCKNUT (M16-2.0, PRV TRQ, 10.9)	
7.	106-616	8	SCREW (M16-2.00 X 55mm, 10.9)	
8.	307-303	2	CLAMP PLATE	
9.	106-489	4	FLG NUT (M24-3.00, 10.9)	
10.	106-625	4	WASHER (M24)	
11.	107-089	4	SCREW (M24-3.00 X 260mm, 10.9)	
12.	301-1942	2	TILT CYLINDER MOUNT	SEE FOOTNOTE 1
13.	301-1940	2	TILT CYLINDER AXLE MOUNT	SEE FOOTNOTE 1
14.	106-666	4	SCREW (M16-2.00 X 65mm, 10.9)	
15.	106-340	2	SCREW (M16-2.00 X 50mm)	

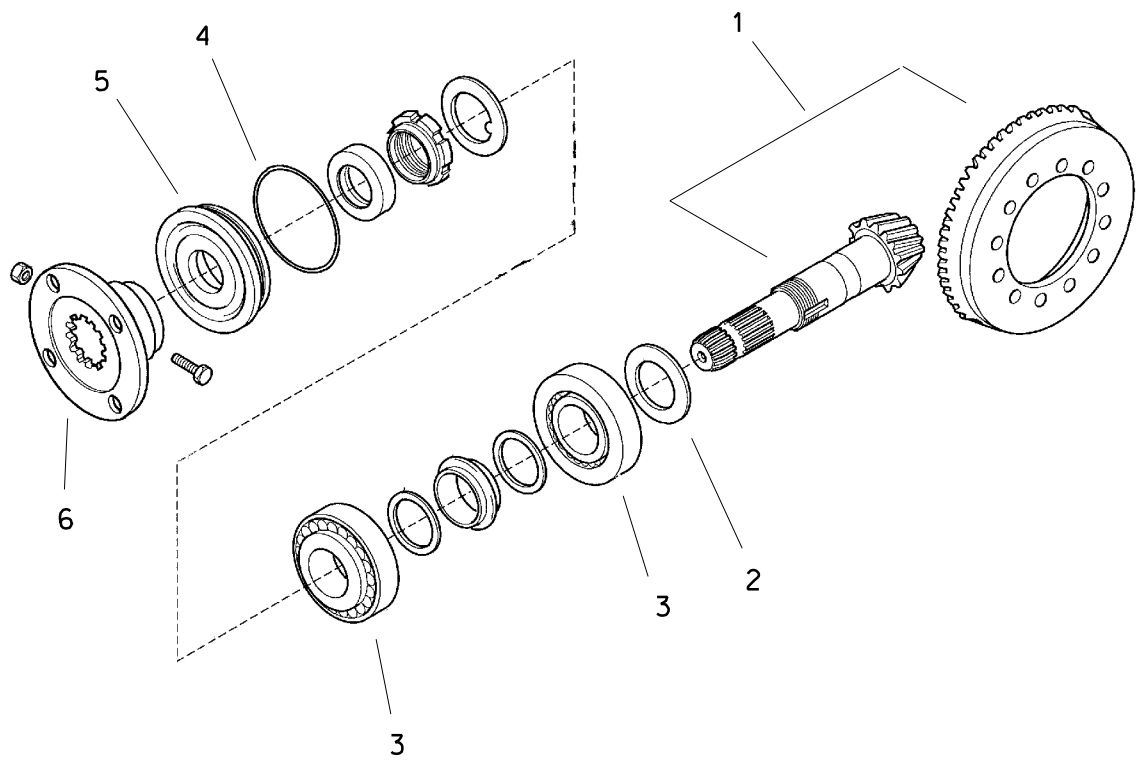
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### FOOTNOTES:

1. OLDER UNITS USED TILT MOUNTS 306-891 AND 306-893. IF REPLACING ONE OF THESE COMPONENTS ALL 4 PARTS MUST BE REPLACED BY 301-1940 AND 301-1942.

NOTE:

AXLE -  
BEVEL GEAR/PINION SET  
STEERABLE/RIGID

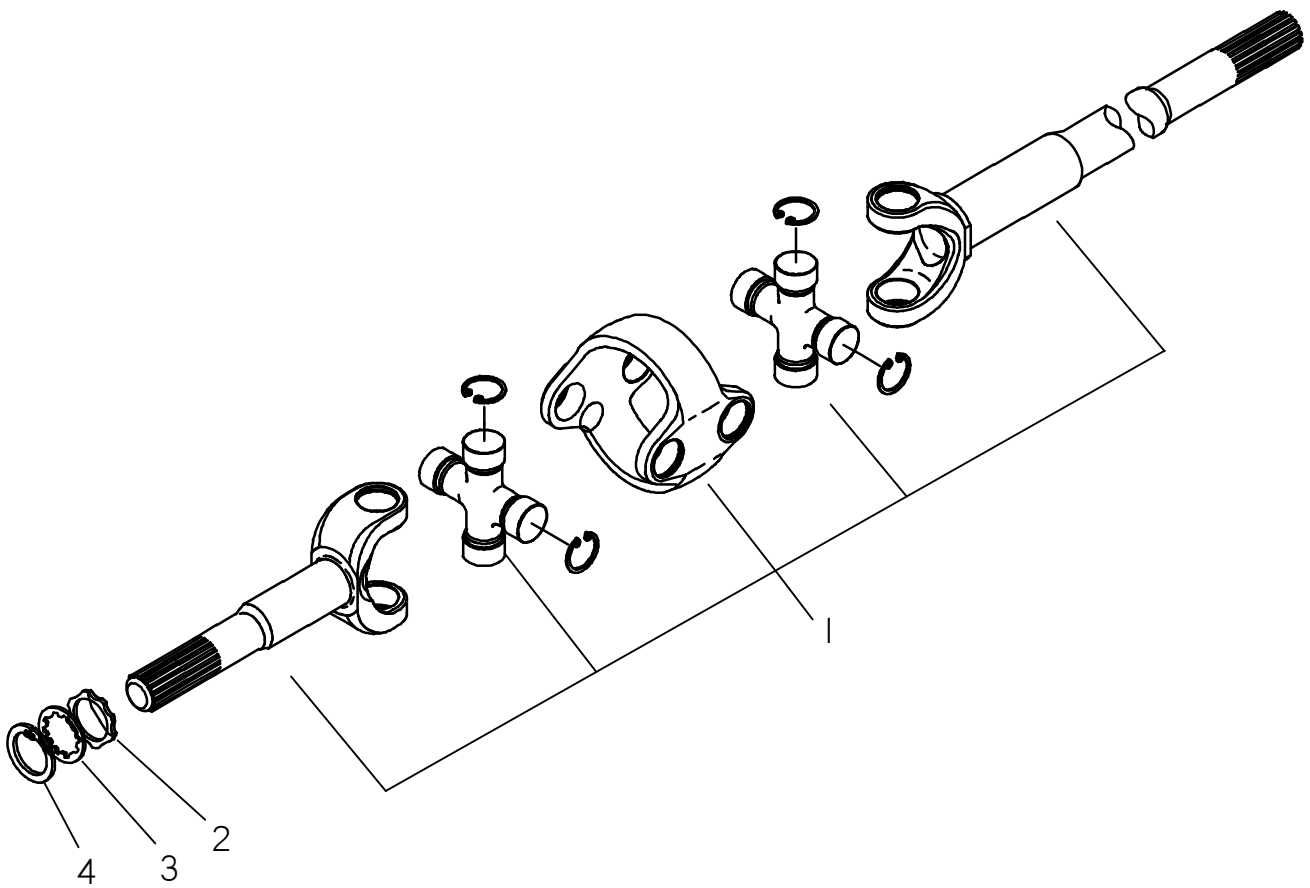


# AXLE- BEVEL GEAR/PINION SET STEERABLE/RIGID

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	499-478	1	BEVEL GEAR SET Z12/32	
2.	499-487	1	SHIM KIT	
			SHIM 2.50mm	
			SHIM 2.60mm	
			SHIM 2.70mm	
			SHIM 2.80mm	
			SHIM 2.90mm	
			SHIM 3.00mm	
			SHIM 3.10mm	
			SHIM 3.20mm	
			SHIM 3.30mm	
			SHIM 3.40mm	
3.	499-479	2	BEARING	
4.	499-480	1	OIL SEAL RING	
5.	499-481	1	O-RING	
6.	499-482	1	FLANGE	

## FOOTNOTES

AXLE  
DOUBLE JOINT  
STEERABLE



**AXLE  
DOUBLE JOINT  
STEERABLE**

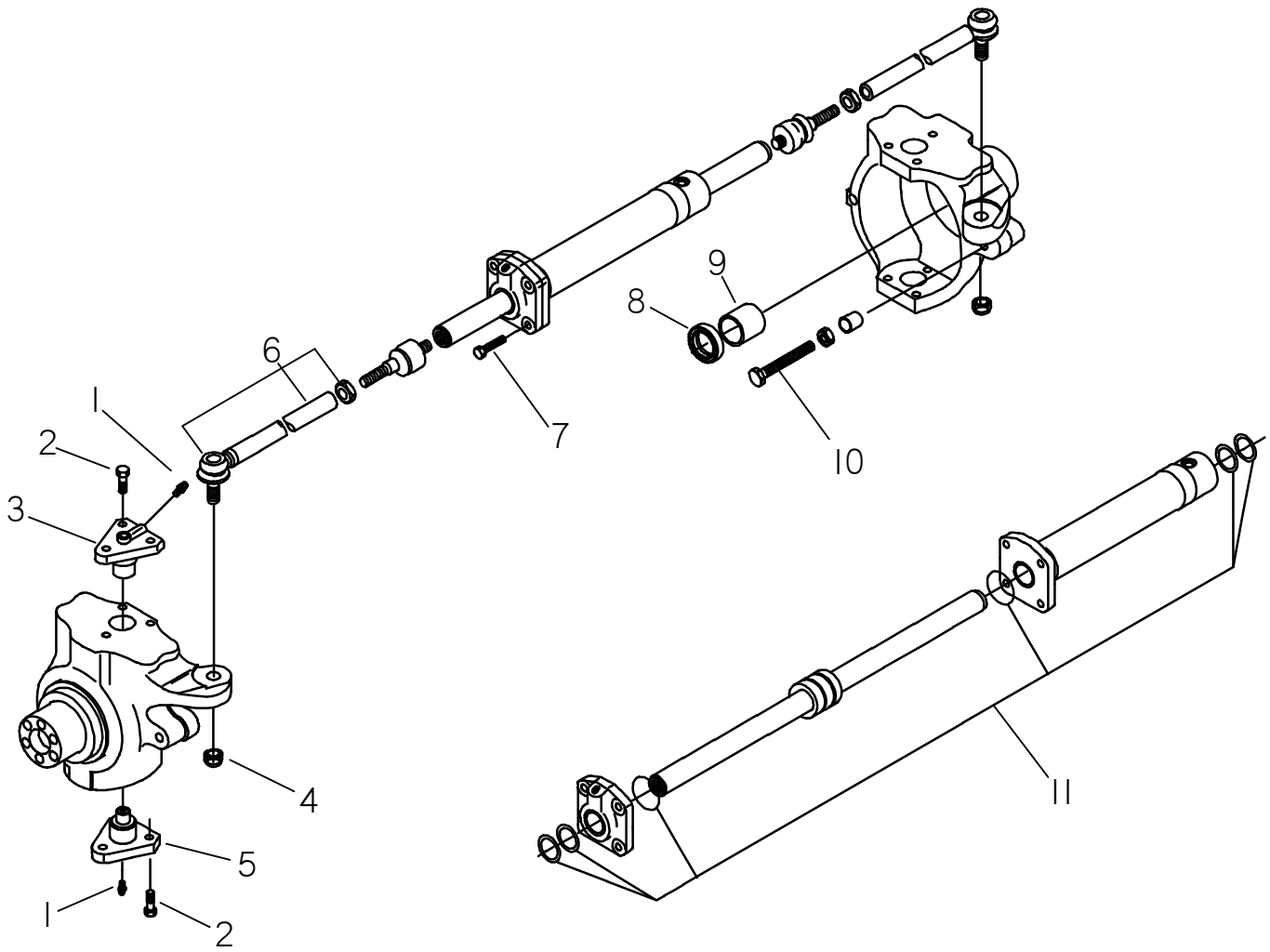
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	499-495	2	DOUBLE JOINT	
2.	500-1266	2	THRUST WASHER	
3.	500-1267	2	WASHER	
4.	500-1268	2	SNAP RING	

NOT SHOWN:

FOOTNOTES:

NOTE:

**AXLE**  
SWIVEL HOUSING & STEERING CYL.  
STEERABLE



# AXLE SWIVEL HOUSING & STEERING CYL. STEERABLE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-065	4	ZERK, METRIC (M6 X 1)	
2.	106-472	12	SCREW (M14-2.00 X 35mm)	
3.	499-473	2	KING PIN	
4.	499-474	2	NUT (M20-1.5)	
5.	499-475	2	KING PIN	
6.	499-476	2	STEERING ARM ASS'Y	
7.	107-344	4	LK SCREW (M12-1.75 X 45mm)	
8.	157-747	2	OIL SEAL	
9.	178-172	2	BUSHING	
10.	107-345	4	SCREW (M16-2.00 X 100mm)	
11.	499-477	1	OIL SEAL KIT (CYL)	

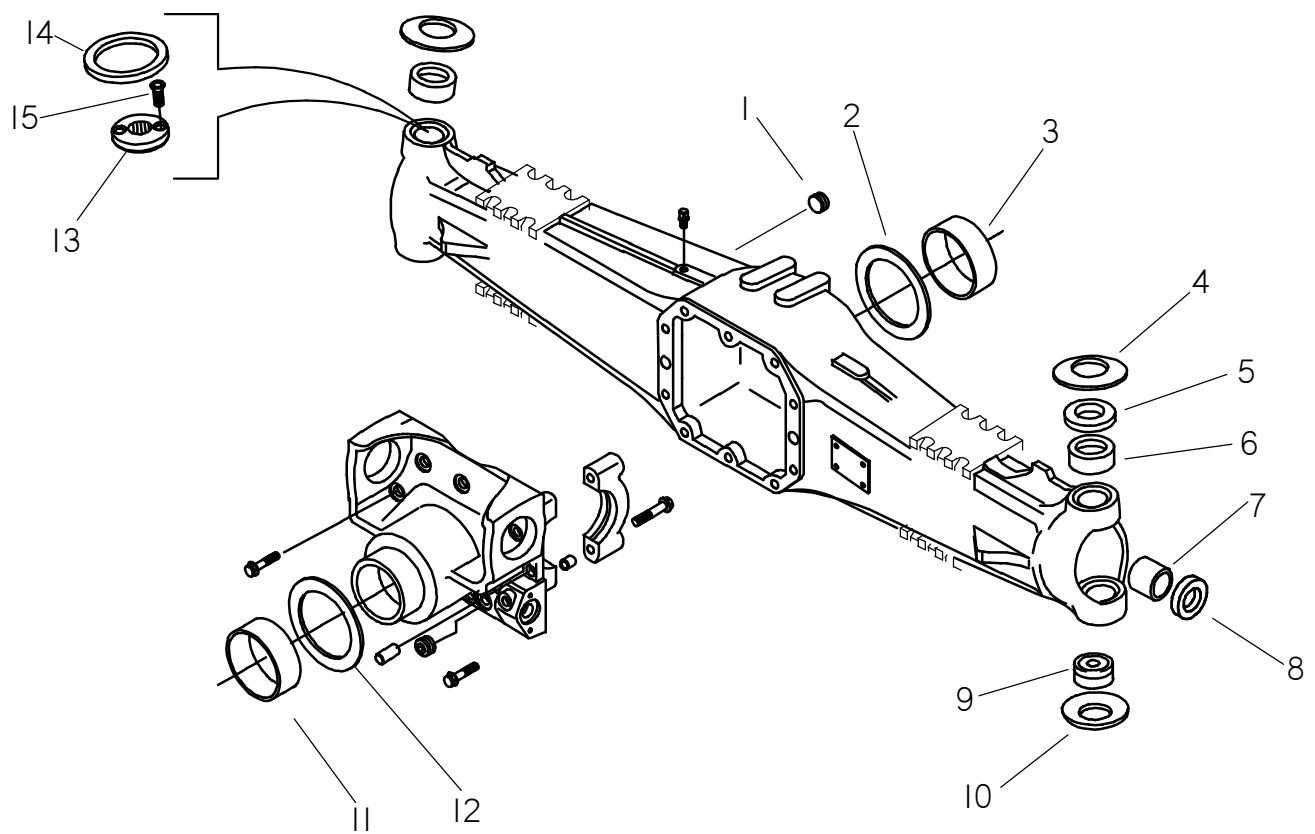
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FOOTNOTES:

NOTE:



# AXLE AXLE HOUSING STEERABLE



# AXLE AXLE HOUSING STEERABLE

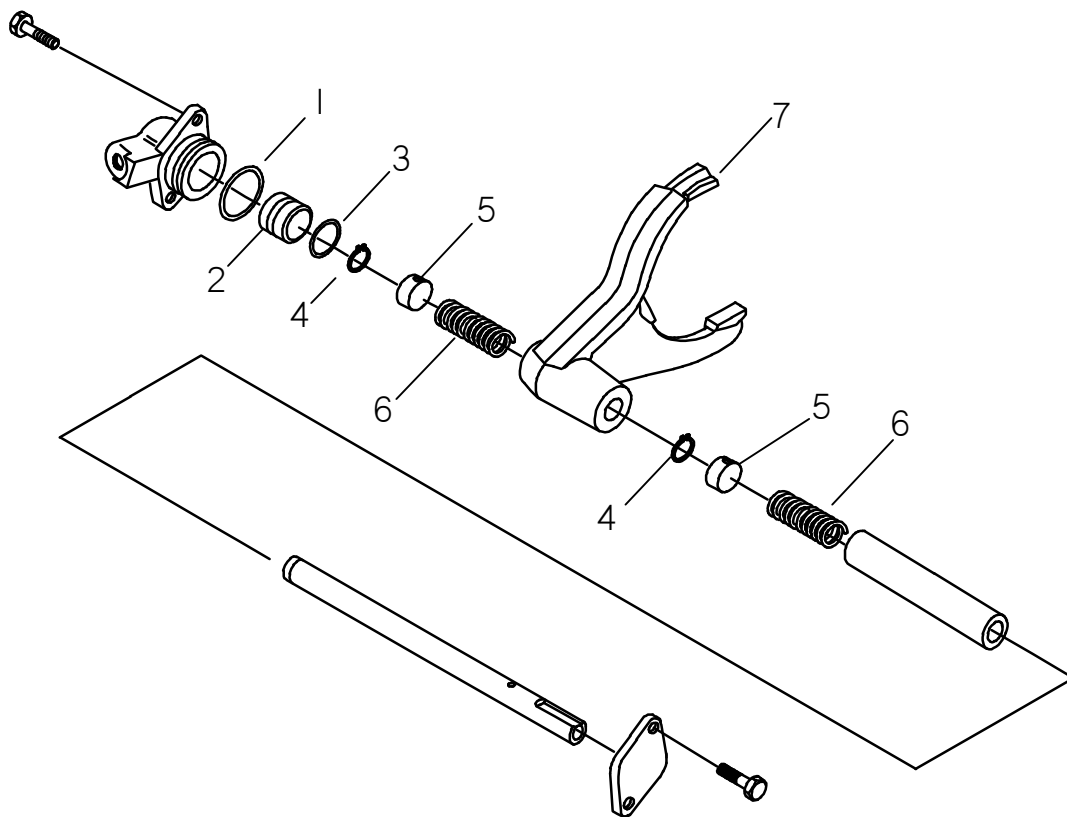
REF	PART				REMARKS
NO.	NUMBER	QTY	DESCRIPTION		
1.	514-345	2	PLUG (M22-1.50, SOC)		
2.	499-461	1	THRUST WASHER		
3.	499-462	1	BUSHING		
4.	499-463	2	BELLEVILLE WASHER		
5.	499-464	1	SPACER		
6.	499-465	2	BUSHING		
7.	499-466	2	BUSHING		
8.	499-467	2	OIL SEAL RING		
	500-1135	2	OIL SEAL		
9.	499-468	2	SPHERICAL BEARING		
10.	499-469	2	BELLEVILLE WASHER		
11.	499-470	1	BUSHING		
12.	499-471	1	THRUST WASHER		
13.	499-472	1	PIN LOCKING WASHER		
14.	500-1697	1	LH BUSH (SPACER)		
15.	500-1698	2	SCREW (M4-.7 x 10mm, 10.9)		

NOT SHOWN:

FOOTNOTES:

NOTE:

AXLE  
DIFF LOCK  
STEERABLE/RIGID



**AXLE  
DIFF LOCK  
STEERABLE/RIGID**

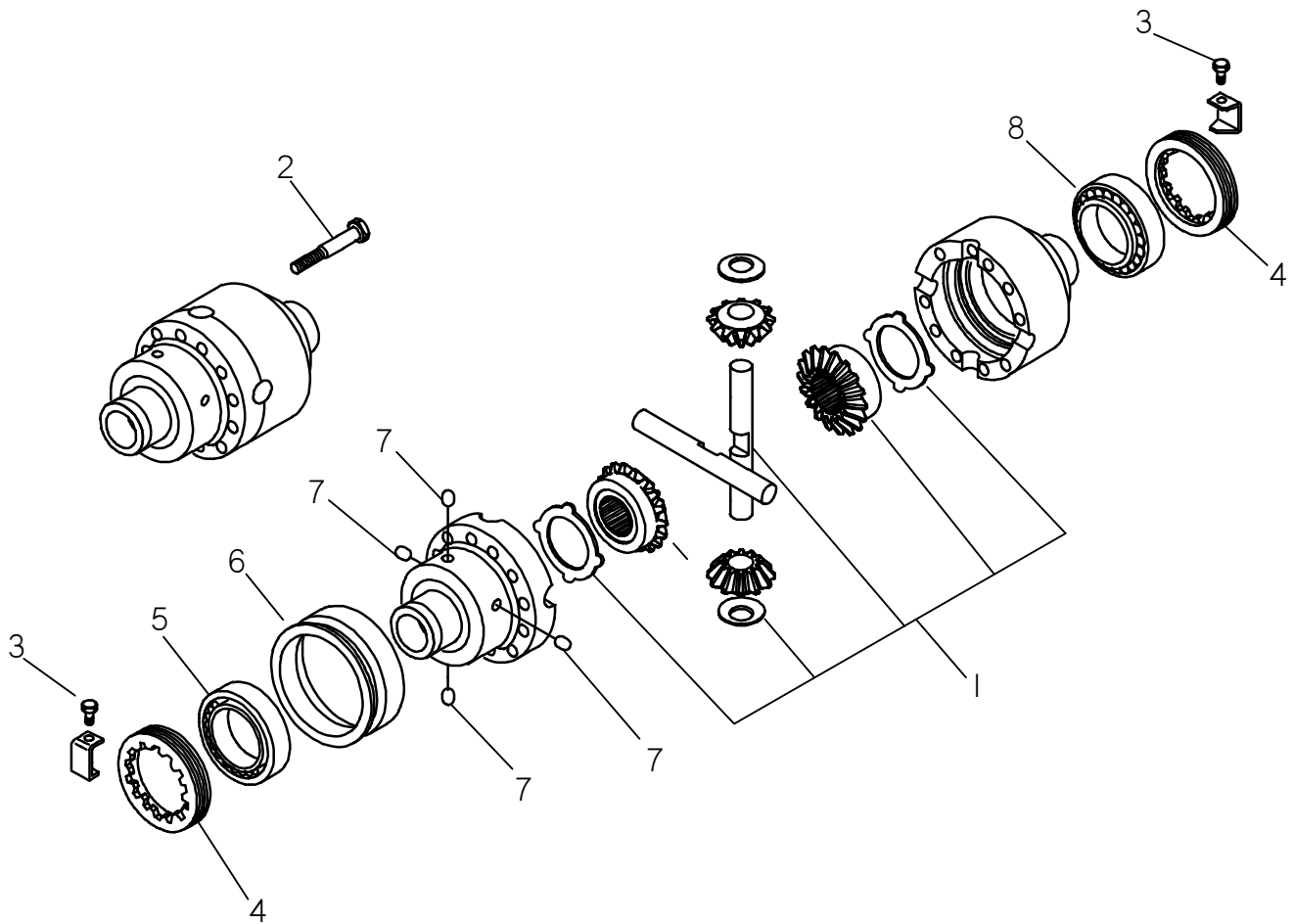
REF PART NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	499-488	1	O-RING	
2.	499-489	1	PISTON	
3.	499-490	1	O-RING	
4.	499-491	2	SNAP RING (D12)	
5.	499-492	2	SPACER	
6.	499-493	2	SPRING	
7.	499-494	1	FORK	

NOT SHOWN:

FOOTNOTES:

NOTE:

# AXLE DIFFERENTIAL RIGID



# AXLE DIFFERENTIAL RIGID

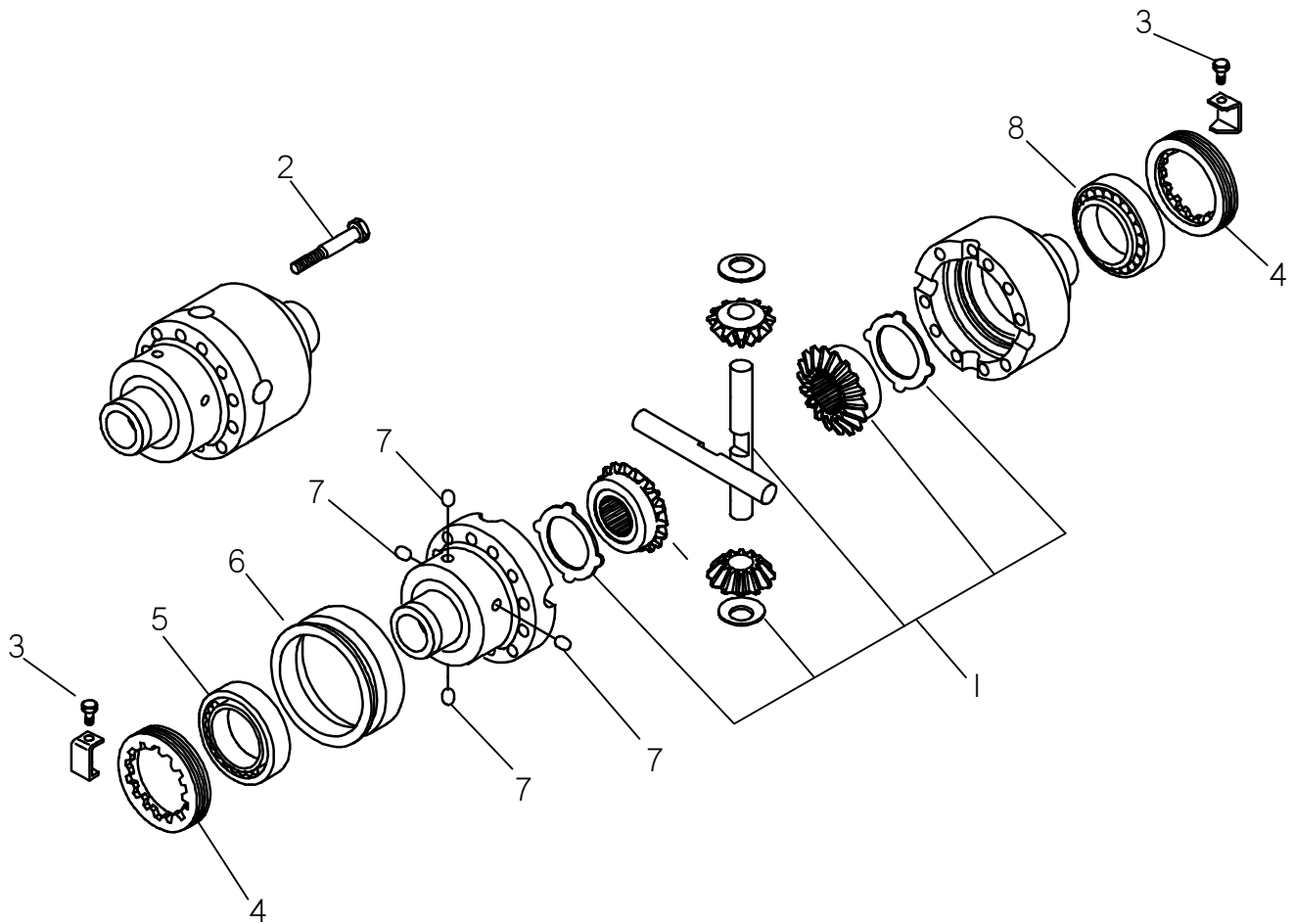
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	499-513	1	DIFFERENTIAL KIT	
2.	107-346	12	LK SCREW (M10-1.50 X 75mm)	
3.	107-348	2	SCREW (M6-1.00 X 10mm)	
4.	501-893	2	RING NUT	
5.	499-484	2	BEARING	USED ON ALL MODELS. SIZE: 90X50X21.75mm
6.	499-485	1	SLEEVE	
7.	499-486	4	PIN	
8.	500-2006	1	BEARING	REPLACES ONE 499-484 ON NEWER MODELS. SIZE: 90X55X23mm

NOT SHOWN:

FOOTNOTES:

NOTE:

# AXLE DIFFERENTIAL STEERABLE



# AXLE DIFFERENTIAL STEERABLE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	499-483	1	DIFFERENTIAL KIT	
2.	107-346	12	LK SCREW (M10-1.50 X 75mm)	
3.	107-348	2	SCREW (M6-1.00 X 10mm)	
4.	501-893	2	RING NUT	
5.	499-484	2	BEARING	USED ON ALL MODELS. SIZE: 90X50X21.75mm
6.	499-485	1	SLEEVE	
7.	499-486	4	PIN	
8.	500-2006	1	BEARING	REPLACES ONE 499-484 ON NEWER MODELS. SIZE: 90X55X23mm

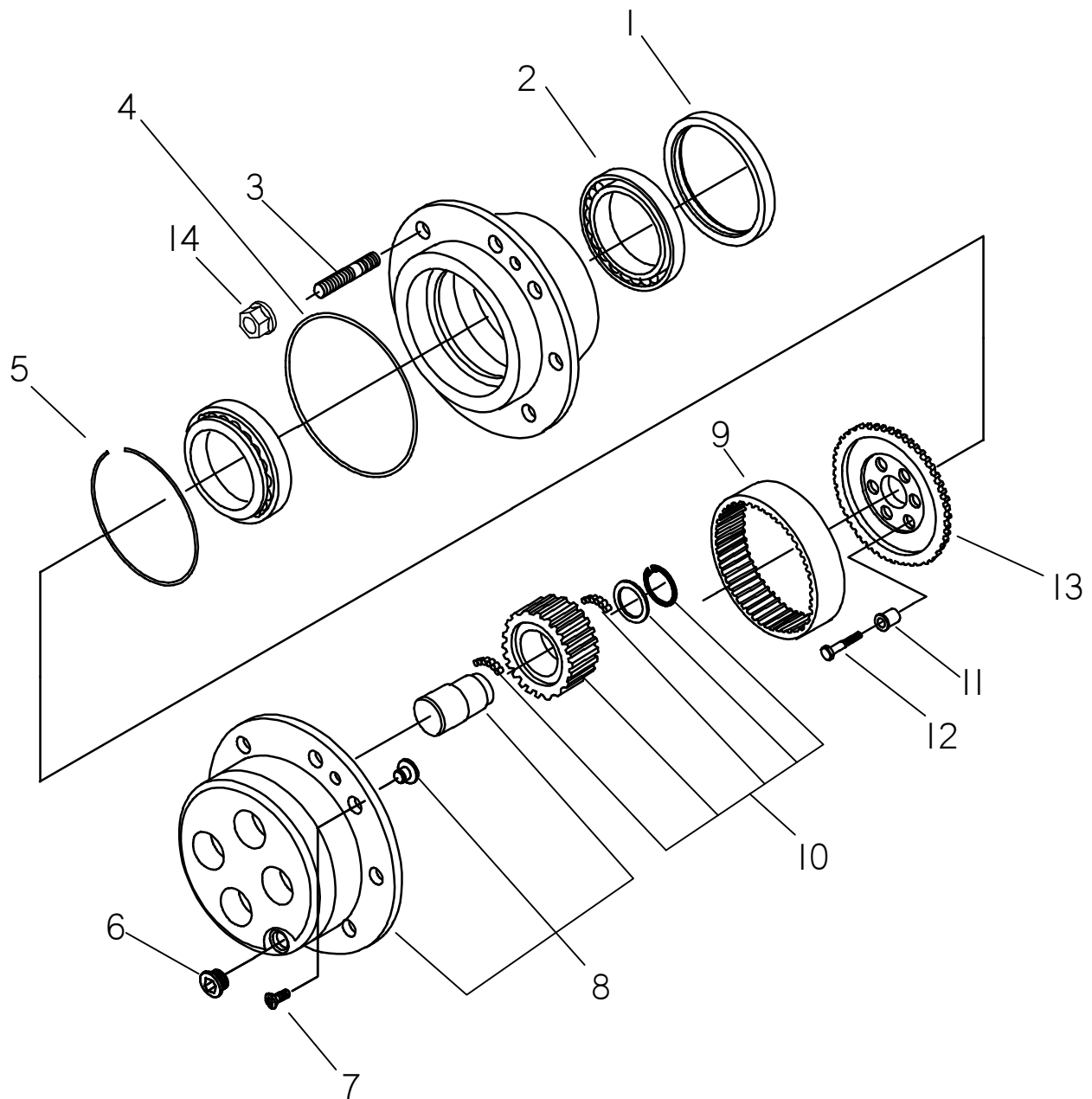
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FOOTNOTES:

NOTE:



# AXLE-WHEEL HUB/REDUCTION GEAR STEERABLE



## AXLE-WHEEL HUB/REDUCTION GEAR STEERABLE

REF PART NO. NUMBER	QTY	DESCRIPTION	REMARKS
1. 499-497	2	SEAL RING	EARLY STYLE 176mm OD
499-940		SEAL KIT	CURRENT PRODUCTION 180mm OD
499-948		OIL SEAL	CURRENT PRODUCTION
2. 499-498	4	BEARING	
3. 499-499	8	STUD	QTY PER WHEEL ASS'Y
4. 157-224	2	O-RING	
5. 499-501	2	RING	
6. 114-036	2	PLUG, PLANETARY CARRIER	
7. 107-349	4	SCREW (M8-1.25 X 20mm)	
8. 499-502	2	PLANETARY CARRIER ASS'Y	
9. 499-503	2	CROWN GEAR	
10. 499-504	1	PLANET GEAR KIT	4 KITS PER WHEEL ASSEMBLY
11. 499-505	12	CENTERING BUSHING	
12. 499-506	12	BOLT (M12 X 45)	
13. 499-507	2	WHEEL CARRIER	
14. 499-521	8	LUG NUT (M20-1.50)	QTY PER WHEEL ASS'Y

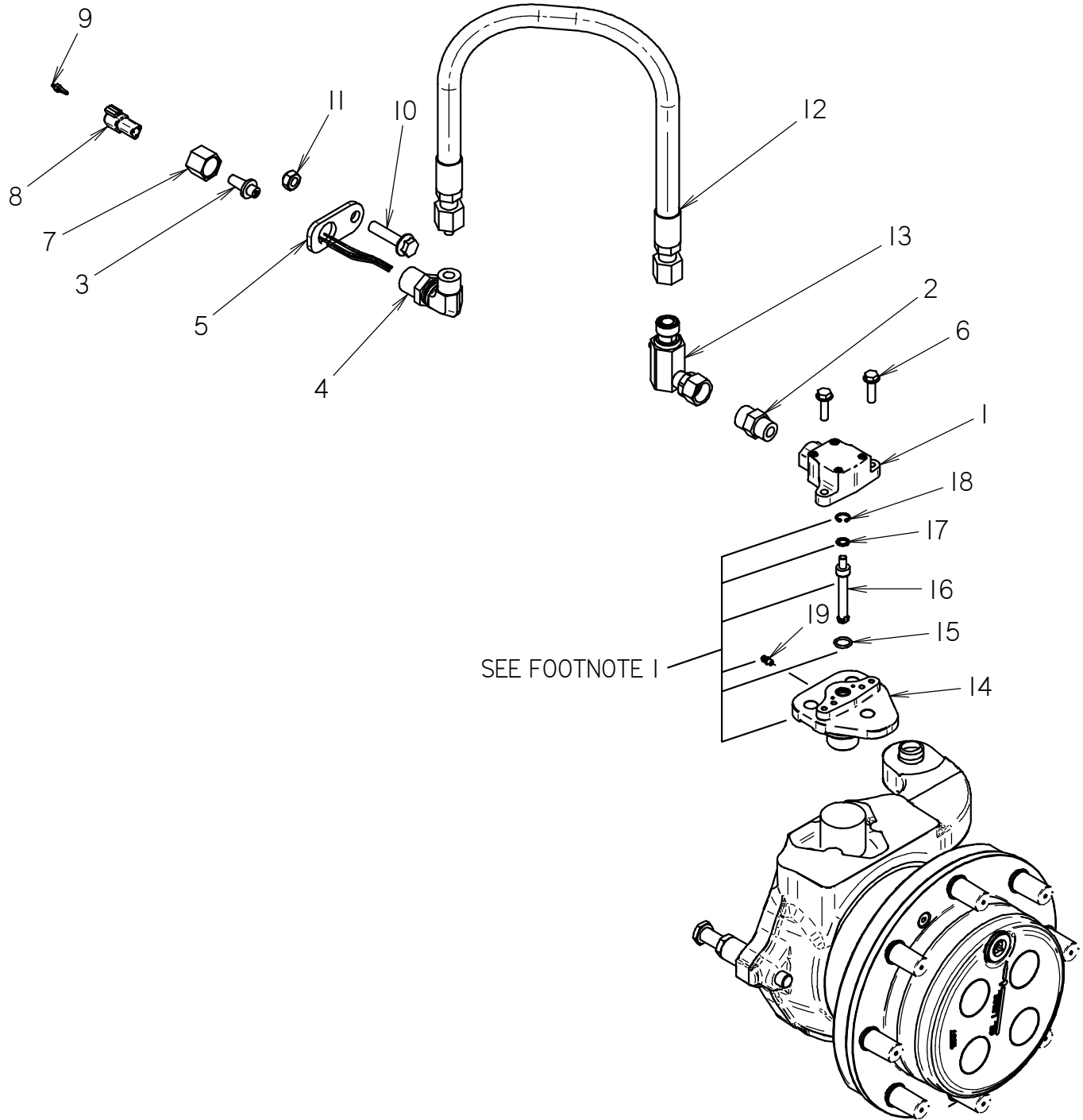
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FOOTNOTES:

NOTE:

# REAR STEER AXLE SENSOR

BEGINS WITH S/N'S: CMWRT95MH90000290, CMWRT95HV90000367, CMWRI5T3C90000132



# REAR STEER AXLE SENSOR

BEGINS WITH S/N'S: CMWRT95MH90000290, CMWRT95HV90000367, CMWRI5T3C90000132

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	215-1503	1	REAR STEER SENSOR	SEE FOOTNOTE 4
2	154-301	1	CONNECTOR (10S-100)	SEE FOOTNOTE 4
3	362-1404	1	WIRE GROMMET	SEE FOOTNOTE 4
4	154-291	1	BK CONNECTOR (100-10090BK)	SEE FOOTNOTE 4
5	300-9066	1	BRACKET	SEE FOOTNOTE 2 & 4
6	106-163	2	FLG SCREW (M8-1.25 X 30MM)	
7	154-310	1	REDUCER NUT (100F)	
8	215-1518	1	3 PIN DEUTSCH CONNECTOR, DT04-3P	SEE FOOTNOTE 4
9	215-1517	1	3 PIN DEUTSCH PLUG, W3P	SEE FOOTNOTE 4
10	107-008	1	FLG LK SCREW (M12-1.75 X 50MM)	
11	106-685	1	LOCKNUT (M12-1.75, PRV TRQ, 10.9)	
12	150-2907	1	HOSE (100FX-22"-3000)	SEE FOOTNOTE 3 & 4
13	150-2843	1	SWIVEL (100-100FX90; DO NOT PRESSURIZE)	SEE FOOTNOTE 4 & 5
14	500-1804	1	KING PIN (REAR STEER)	SEE FOOTNOTE 1
15	499-512	1	O-RING	SEE FOOTNOTE 1
16	500-1801	1	SHAFT	SEE FOOTNOTE 1
17	500-1802	1	WASHER	SEE FOOTNOTE 1
18	500-1803	1	SNAP RING D15	SEE FOOTNOTE 1
19	115-065	1	ZERK (M6 X 1)	SEE FOOTNOTE 1

#### NOT SHOWN:

- 214-133, TERMINAL PIN (DEUTSCH), USE QTY=3 PER AXLE SENSOR ASSEMBLY
- 215-1535, HEAT SHRINK 3/8" ADHESIVE, USE QTY=3 @ 2" FOR A TOTAL OF 6" PER AXLE SENSOR ASSEMBLY
- 215-1546, KEVLAR BRAIDED SLEEVING (1/2"), USE QTY=2 @ 5" FOR A TOTAL OF 10" PER AXLE SENSOR ASSEMBLY

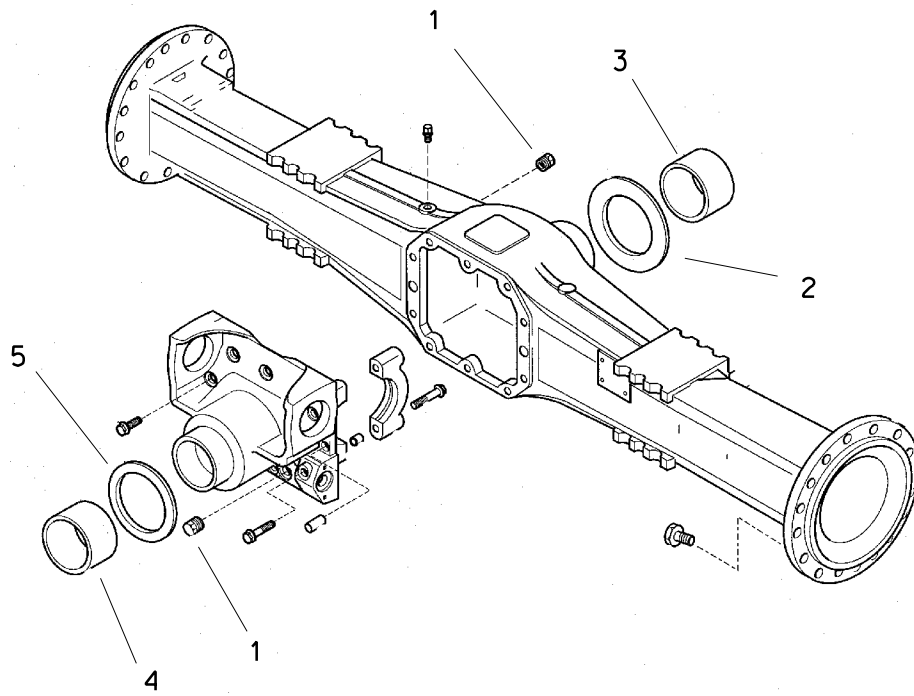
#### FOOTNOTES:

1. PARTS BELONG TO CARRARO REAR STEER KIT 190-1424.
2. BRACKET 300-9066 IS ONLY USED ON THE REAR AXLE SENSOR ASSEMBLIES, 220-1181 AND 220-1183.
3. HOSE 150-2907 USED IN AXLE SENSOR ASSEMBLY 220-1181; USE HOSE 153-294 FOR AXLE SENSOR ASSEMBLY 220-1180, HOSE 515-605 FOR AXLE SENSOR ASSEMBLY 220-1182, AND HOSE 150-1729 FOR AXLE SENSOR ASSEMBLY 220-1183.
4. PARTS BELONG TO AXLE SENSOR ASSEMBLIES; SEE NOTE BELOW FOR DETAILS
5. ONLY USED IN RT90/95/115 AXLE SENSOR ASSEMBLIES 220-1180 AND 220-1181.

#### NOTE:

- RT90/95/115 FRONT AXLE SENSOR ASSEMBLY IS P/N 220-1180
- RT90/95/115 REAR AXLE SENSOR ASSEMBLY IS P/N 220-1181
- RT70/75 FRONT AXLE SENSOR ASSEMBLY IS P/N 220-1182
- RT70/75 REAR AXLE SENSOR ASSEMBLY IS P/N 220-1183

AXLE -  
AXLE HOUSING  
RIGID

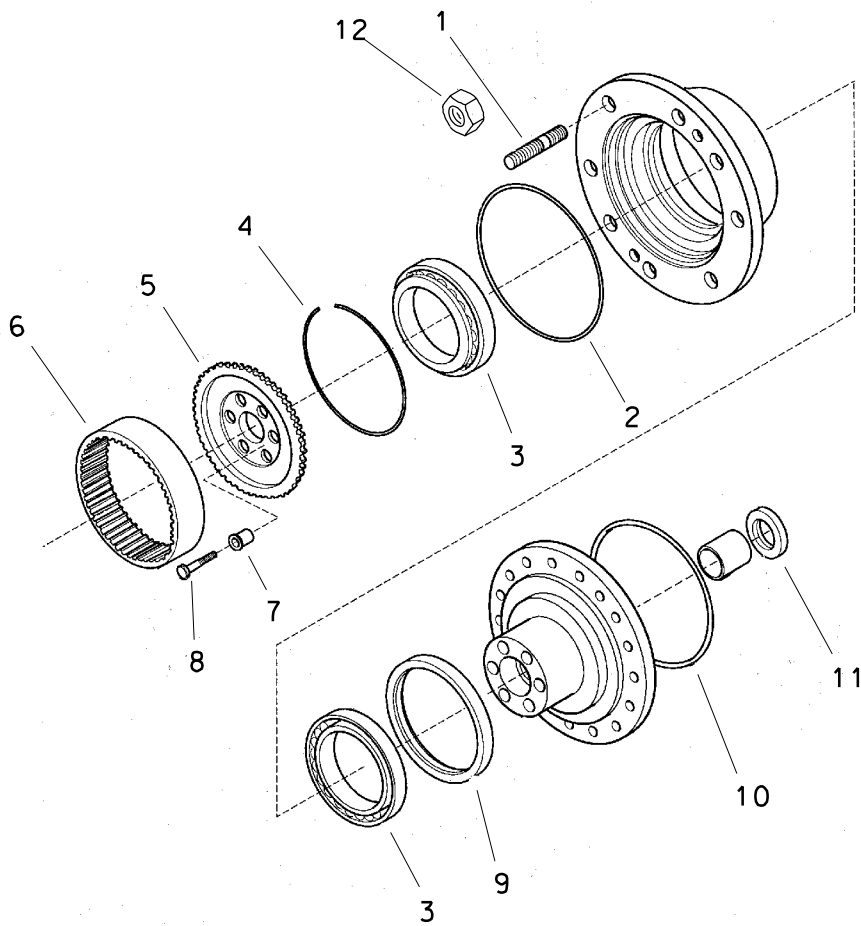


AXLE-  
AXLE HOUSING  
RIGID

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	514-345	2	PLUG (M22-1.50, SOC)	
2.	499-461	1	THRUST WASHER	
3.	499-462	1	BUSHING	
4.	499-470	1	BUSHING	
5.	499-471	1	THRUST WASHER	

FOOTNOTES

AXLE -  
WHEEL HUB  
RIGID



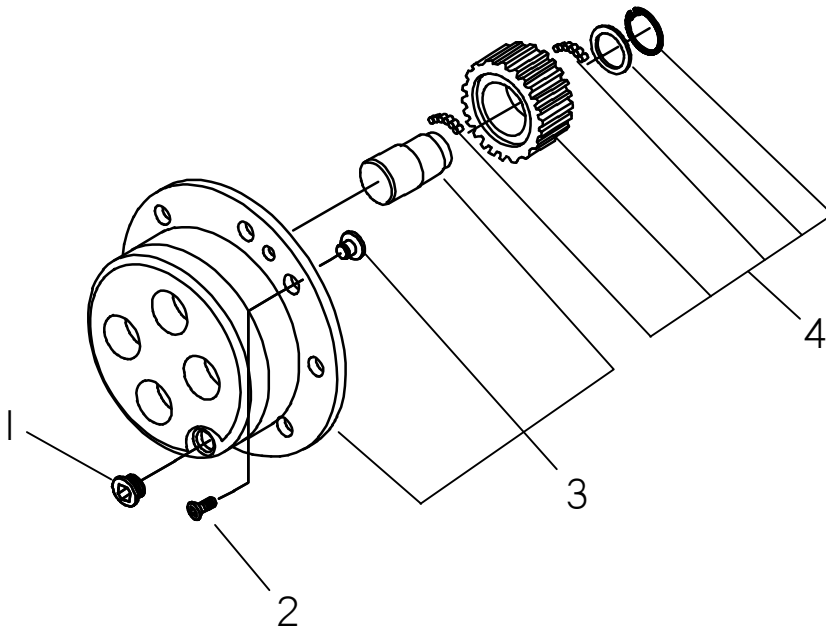
AXLE-  
WHEEL HUB  
RIGID

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	499-499	8	STUD	QTY PER WHEEL ASS'Y
2.	157-224	2	O-RING	
3.	499-498	4	BEARING	
4.	499-501	2	RING	
5.	499-507	2	WHEEL CARRIER	
6.	499-503	2	CROWN GEAR	
7.	499-505	16	CENTERING BUSHING	
8.	499-506	16	BOLT (M12 X 45)	
9.	499-497	2	SEAL RING	
10.	499-515	2	O-RING	
11.	499-516	2	SEAL RING	
12.	499-521	8	LUG NUT (M20 X 1.50)	QTY PER WHEEL ASS'Y

FOOTNOTES



## AXLE-REDUCTION GEARS RIDGE



# AXLE-REDUCTION GEARS RIDGE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	114-036	2	PLUG, PLANETARY CARRIER	
2.	107-349	4	SCREW (M8-1.25 X 20mm)	
3.	499-502	2	PLANETARY CARRIER ASS'Y	
4.	499-504	1	PLANET GEAR KIT	4 KITS PER WHEEL ASSEMBLY

**NOT SHOWN:**

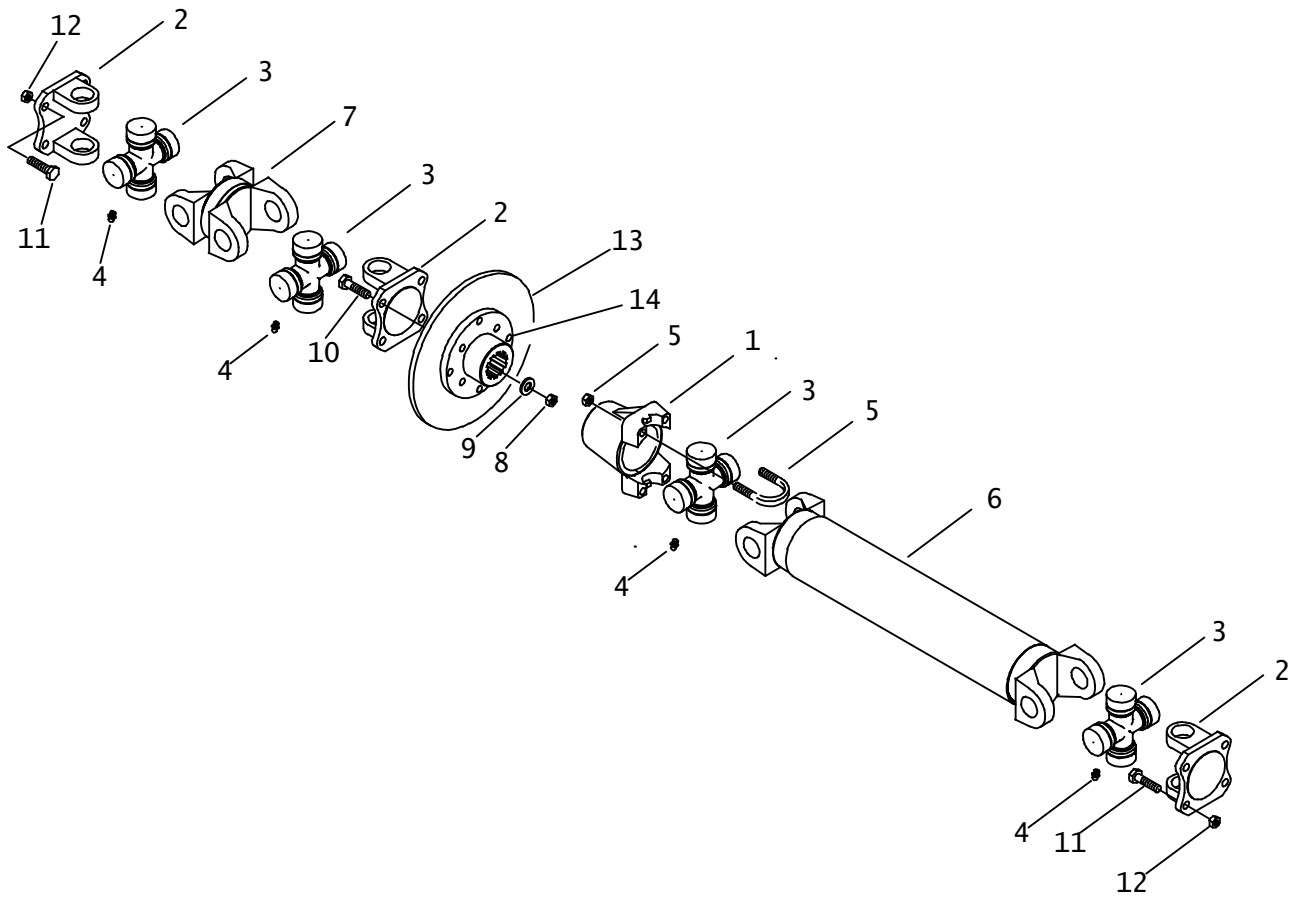
499-517 2 SPLINE SHAFT Z-12  
 499-518 2 COUPLING  
 499-519 2 SNAPRING (D33)  
 499-520 2 HALF SHAFT

**FOOTNOTES:**

**NOTE:**

# POWERSHIFT DRIVE LINE

RT90M



# POWERSHIFT DRIVE LINE

RT90M

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	182-140	1	YOKE	
2.	182-173	3	FLANGE YOKE	
3.	182-145	4	CROSS/BEARING KIT (1-3/16")	
4.	115-003	-	ZERK (1/4-NF, STR)	
5.	182-146	1	U BOLT KIT	
6.	166-235	1	FRONT DRIVE SHAFT	
7.	166-231	1	REAR DIRVE SHAFT	
8.	105-151	4	LOCKNUT (7/16-NC)	
9.	178-072	4	WASHER	
10.	105-222	4	BOLT (7/16-NC X 1-3/4")	
11.	105-119	8	BOLT (7/16 NF X 1-1/2")	
12.	105-120	8	NUT (7/16-NF)	USE LOCTITE 242 OR EQUIVALENT
13.	160-516	-	BRAKE DISC	
14.	306-970	-	DRIVELINE FLANGE	

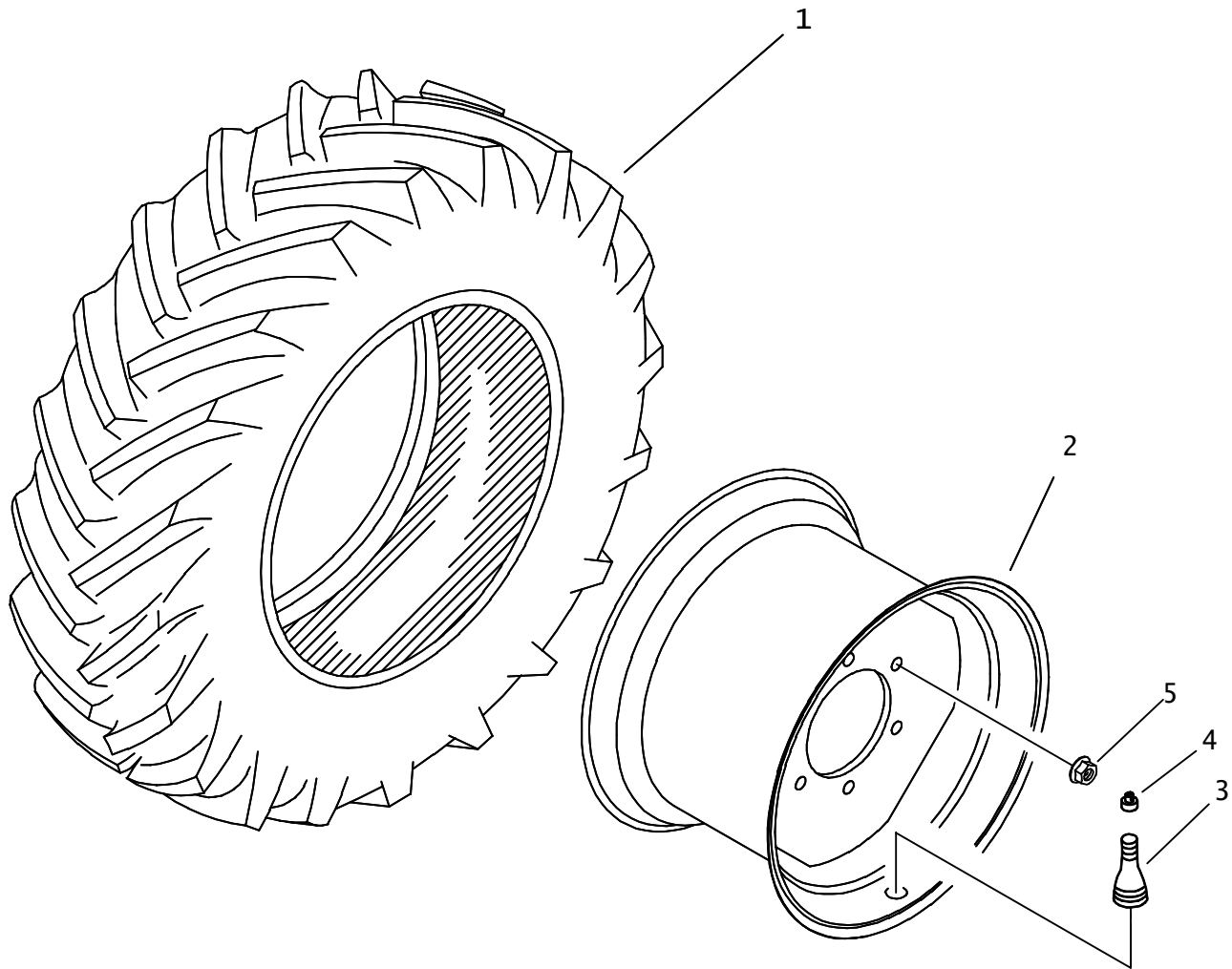
FOOTNOTES

NOTE:

B

806-356

**TIRE & WHEEL**  
38 X 18.00-20 E16TL



# TIRE & WHEEL

## 38 X 18.00-20 E16TL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	205-1126	4	T/W (38 X 18.00-20 16PLY)	INCL. REF. #'S 1, 2, 3
1.	205-1125	4	TIRE (38 X 18.00-20.0, E16TL)	16 PLY
2.	205-473	4	WHEEL (20.0 X 14 WD W/8) HP	
3.	205-168	4	VALVE STEM (.625")	INCL. REF #4
4.	205-165	4	VALVE CAP (.305"-32)	
5.	499-521	-	LUG NUT (M20-1.50)	

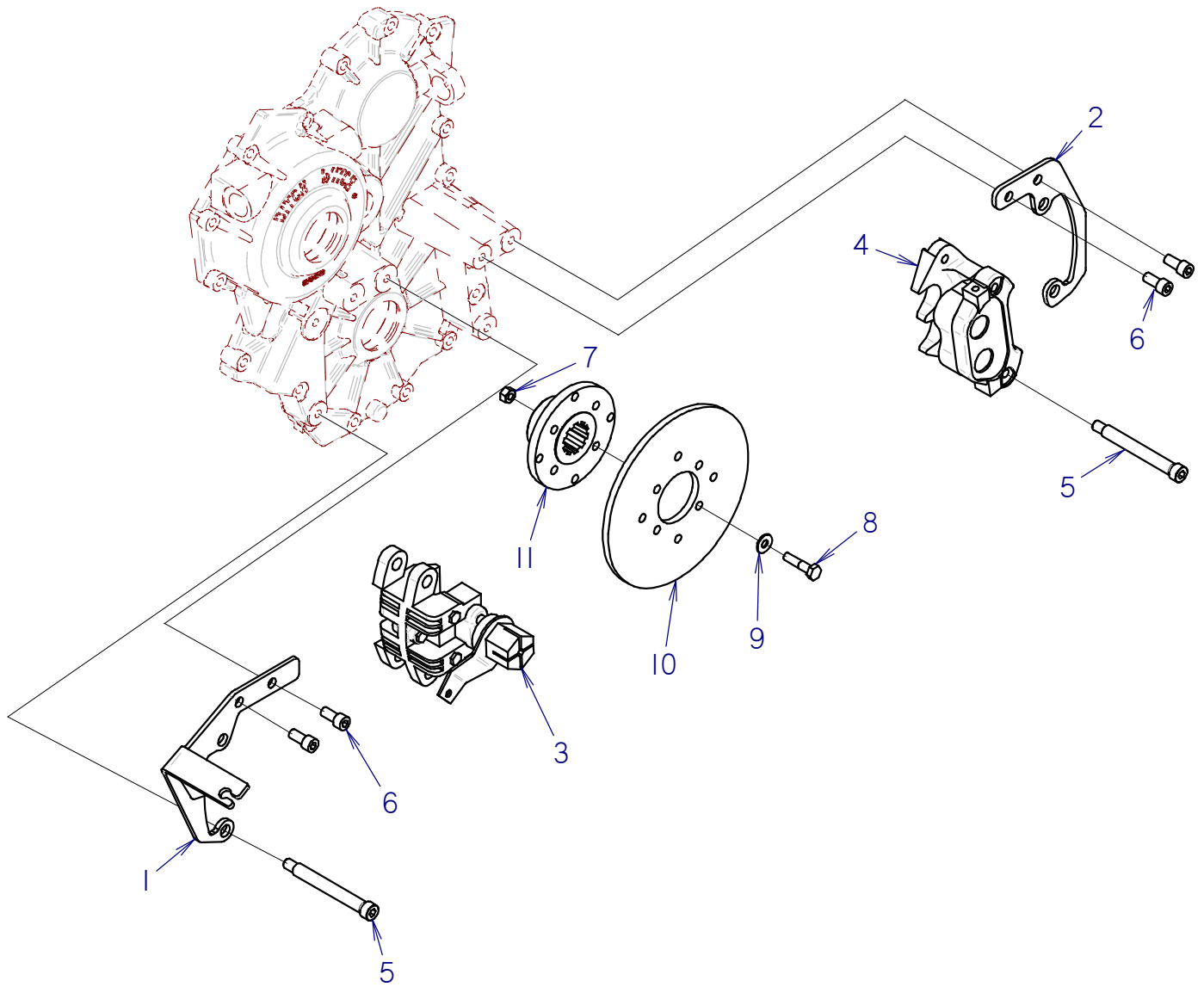
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FOOTNOTES:

NOTE:

REPLACES 205-456

# BRAKE CALIPER POWERSHIFT



# BRAKE CALIPER POWERSHIFT

REF PART NO.	NUMBER	QTY	DESCRIPTION	REMARKS
1	320-261	1	LEFT BRAKE BRACKET	
2	312-768	1	RIGHT BRAKE BRACKET	
3	160-773	1	BRAKE CALIPER	PARK BRAKE & SEE FOOTNOTE 1
4	160-534	1	BRAKE CALIPER	SERVICE BRAKE & SEE FOOTNOTE 2
5	107-498	4	SHLD BLT(M16 X 120MM,M12-1.75)	SEE FOOTNOTE #3.
6	105-248	4	SCREW (M12-1.75 X 25MM, SOC)	
7	105-894	4	LOCKNUT(M10-1.50,PRV TRQ,10.9)	
8	106-621	4	SCREW (M10-1.50 X 45MM, 10.9)	
9	105-793	4	WASHER (M10)	
10	160-516	1	BRAKE DISC	
11	306-970	1	DRIVELINE FLANGE	

NOT SHOWN:

**FOOTNOTES:**

- REF #3 (160-773) INCLUDES 1X EXTENSION SPRING, 115-600 & 1X FRICTION PAD KIT (PAIR) 505-073.
- REF #4 (160-534) INCLUDES 1 PAIR BRAKE PADS (505-083) & 1X INSULATOR (41 SERIES) 502-168.
- CLEAN BOLT THREADS & HOLE THREADS. APPLY LOCTITE 277 OR EQUIVALENT TO BOTH SETS OF THREADS AND TORQUE BOLTS TO 85 FT-LBS.

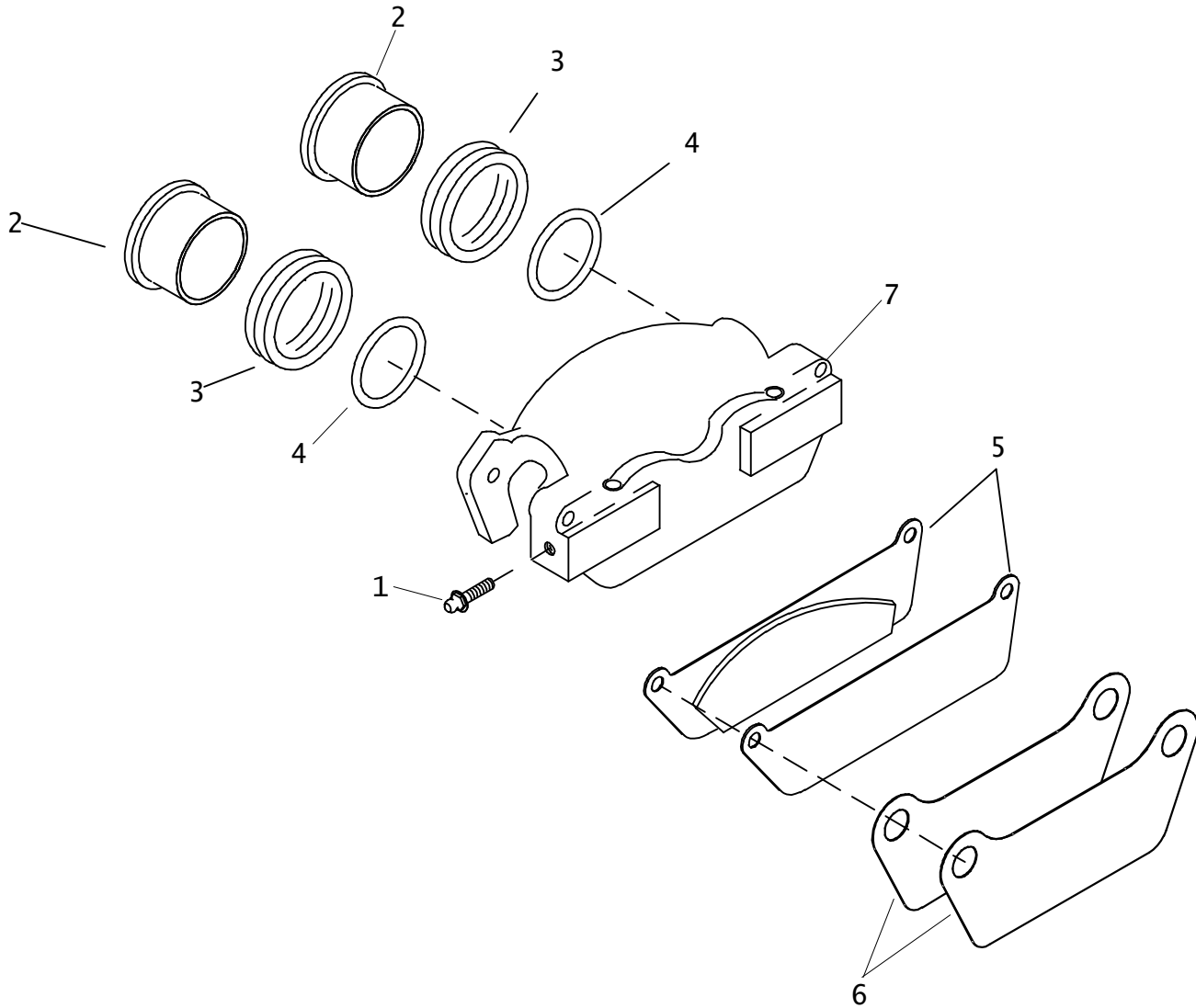
**NOTE:**

- REFER TO PARK BRAKE PAGE FOR INFORMATION ON PARK BRAKE CABLE.



# BRAKE CALIPER

RT70/RT75/RT90/RT95  
SERVICE



# BRAKE CALIPER

## RT70/RT75/RT90/RT95

### SERVICE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	160-534		BRAKE CALIPER	INCL REF NO:'S 1 THRU 7
1.	160-665	3	BRAKE BLEEDER VALVE	
2.	505-080	2	CALIPER PISTON	
3.	505-081	2	DUST BOOT	
4.	505-082	2	SQUARE RING (223 D70)	
5.	505-083	1	BRAKE PAD (PAIR)	PAIR
6.	502-168	2	INSULATOR	
7.	N.A.	1	CALIPER BODY	

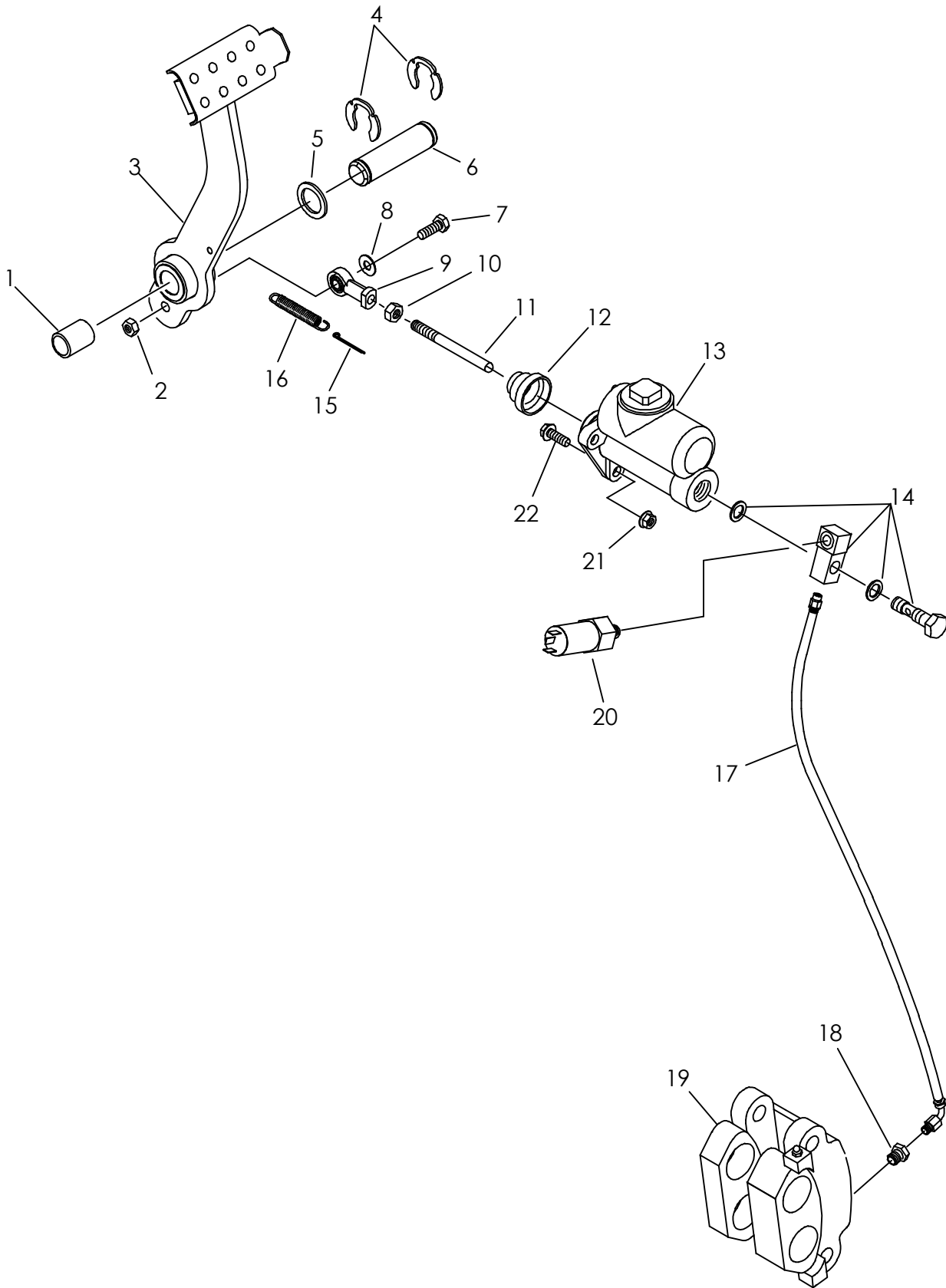
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FOOTNOTES:

NOTE:

# SERVICE BRAKE SYSTEM

POWERSHIFT  
BEGINS WITH S/N



# SERVICE BRAKE SYSTEM POWERSHIFT BEGINS WITH S/N

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	125-407	1	BRONZE BUSHING (1.000")	
2.	105-053	1	NUT (3/8-NC)	
3.	306-996	1	BRAKE PEDAL	
4.	115-484	2	EXTERNAL SNAP RING (1.000")	
5.	110-078	1	MACH BUSHING (1.000", 14GA)	
6.	178-383	1	PIN (1.000" X 3.900")	
7.	107-242	1	LK BOLT (3/8-NC X 1-1/2", NLK)	
8.	106-415	1	WASHER (.406")	
9.	110-102	1	ROD END (3/8-NF, FM)	
10.	105-093	1	NUT (3/8-NF)	
11.	361-887	1	MASTER CYLINDER ROD	
12.	115-329	1	DUST COVER	
13.	151-216	1	MASTER CYLINDER	USE REPAIR KIT 500-1586
14.	157-293	1	BANJO CONNECTOR (08-05T-04NF)	
15.	105-504	1	COTTER PIN (.187 X .750)	
16.	115-613	1	EXTENSION SPRING	
17.	149-861	1	BRAKE HOSE (3/16 T X 19")	
18.	156-282	1	FLARE FITTING (03TM-04TFM)	
19.	160-534	1	BRAKE CALIPER	
20.	214-914	1	BRAKE CUTOUT SWITCH	TORQUE TO 180 in-lbs
21.	106-266	3	FLG NUT (M10-1.50)	
22.	107-002	3	FLG LK SCREW (M10-1.50 X 30mm)	

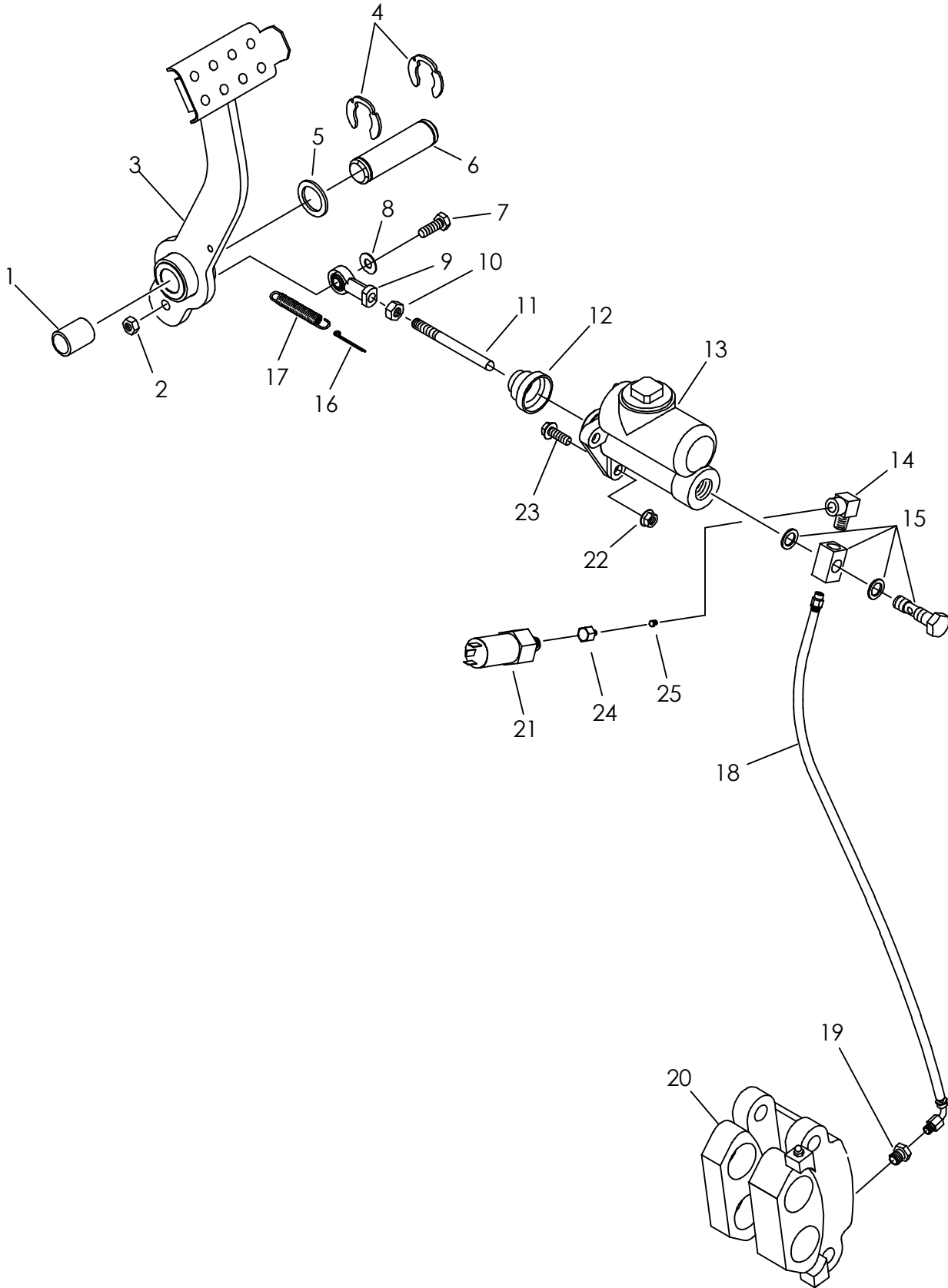
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FOOTNOTES:

NOTE:

# SERVICE BRAKE SYSTEM

POWERSHIFT  
ENDS WITH S/N



# SERVICE BRAKE SYSTEM

## POWERSHIFT

### ENDS WITH S/N

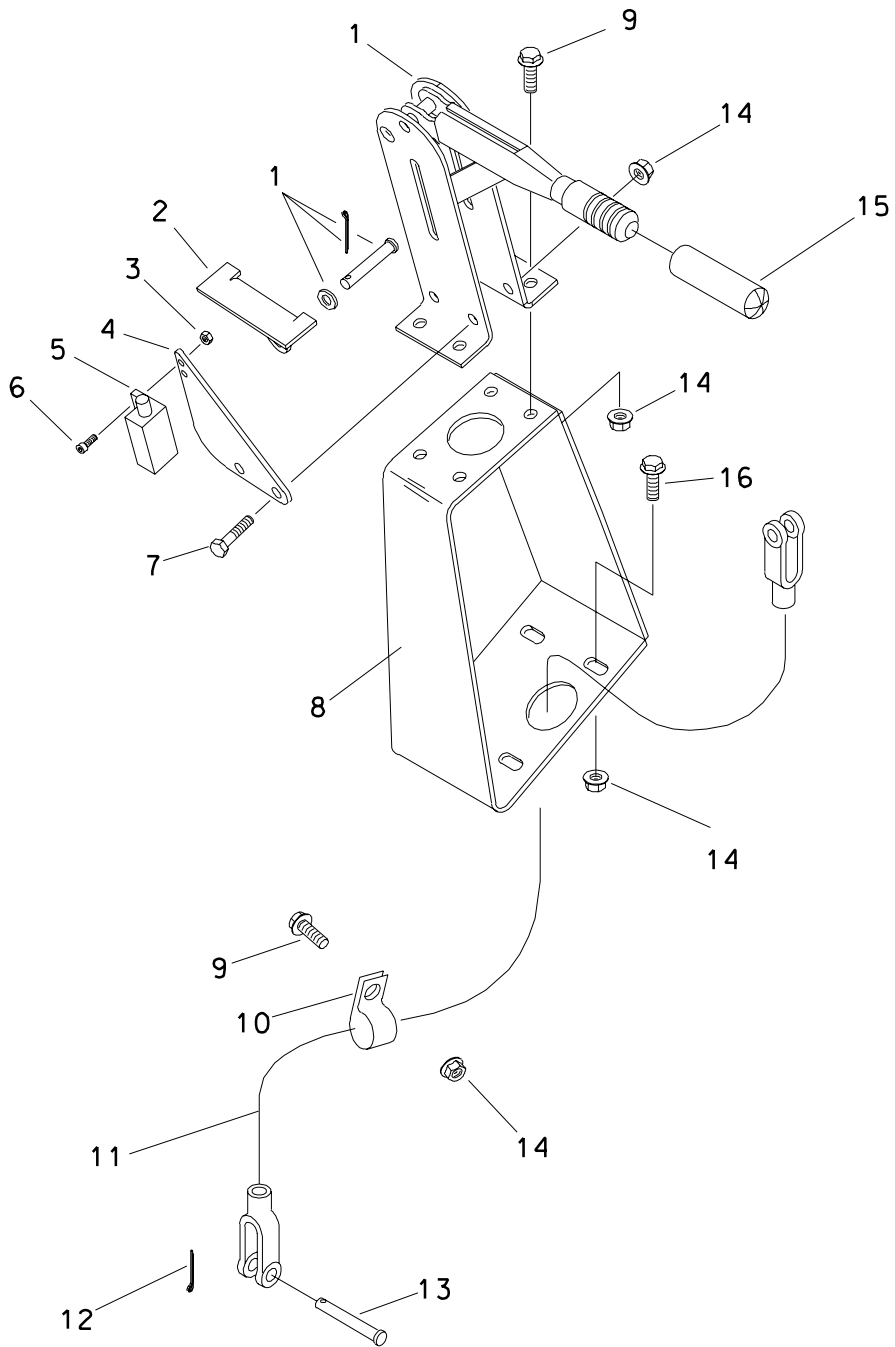
REF	PART			REMARKS
NO.	NUMBER	QTY	DESCRIPTION	
1.	125-407	1	BRONZE BUSHING (1.000")	
2.	105-053	1	NUT (3/8-NC)	
3.	306-996	1	BRAKE PEDAL	
4.	115-484	2	EXTERNAL SNAP RING (1.000")	
5.	110-078	1	MACH BUSHING (1.000", 14GA)	
6.	178-383	1	PIN (1.000" X 3.900")	
7.	107-242	1	LK BOLT (3/8-NC X 1-1/2", NLK)	
8.	106-415	1	WASHER (.406")	
9.	110-102	1	ROD END (3/8-NF, FM)	
10.	105-093	1	NUT (3/8-NF)	
11.	361-887	1	MASTER CYLINDER ROD	
12.	115-329	1	DUST COVER	
13.	151-216	1	MASTER CYLINDER	USE REPAIR KIT 500-1586
14.	155-120	1	STREET ELBOW (04N-04NF90)	
15.	157-293	1	BANJO CONNECTOR (08-05T-04NF)	
16.	105-504	1	COTTER PIN (.187 X .750)	
17.	115-613	1	EXTENSION SPRING	
18.	149-861	1	BRAKE HOSE (3/16 T X 19")	
19.	156-282	1	FLARE FITTING (03TM-04TFM)	
20.	160-534	1	BRAKE CALIPER	
21.	214-914	1	BRAKE CUTOUT SWITCH	TO INSTALL, HAND TIGHTEN THEN APPLY 180 in-lbs TORQUE MAX.
22.	106-266	3	FLG NUT (M10-1.50)	
23.	107-002	3	FLG LK SCREW (M10-1.50 X 30mm)	
24.	157-840	1	REDUCER (02N-04SF)	
25.	115-181	1	REDUCER (04N-02NF)	

NOT SHOWN:

FOOTNOTES:

NOTE:

## PARK BRAKE



## PARK BRAKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	160-744	1	PARKING BRAKE LEVER	
2.	309-413	1	ACTUATOR BRACKET	
3.	105-680	2	NUT (M4, W/LK WSHR)	
4.	309-412	1	SWITCH BRACKET	
5.	217-705	1	PLUNGER SWITCH	
6.	106-715	2	SCREW (M4-0.70 X 12mm, SOC)	
7.	106-328	2	SCREW (M8-1.25 X 40mm)	
8.	309-383	1	PARK BRAKE BRACKET	
9.	106-991	5	FLG LK SCREW (M8-1.25 X 20mm)	
10.	110-373	1	BOLT ON CLAMP (13/16")	
11.	194-183	1	BRAKE CABLE	USED ON POWER SHIFT
	194-184	1	BRAKE CABLE	USED ON HYDROSTATIC
12.	105-508	1	COTTER PIN (3/32" X 1")	
13.	110-053	1	CLEVIS PIN (3/8" X 1.078")	
14.	106-386	11	FLG LOCKNUT (M8-1.25)	
15.	110-469	1	GRIP (7/8", ORANGE)	
16.	106-162	4	FLG SCREW (M8-1.25 X 20mm)	SEE FOOTNOTE 1

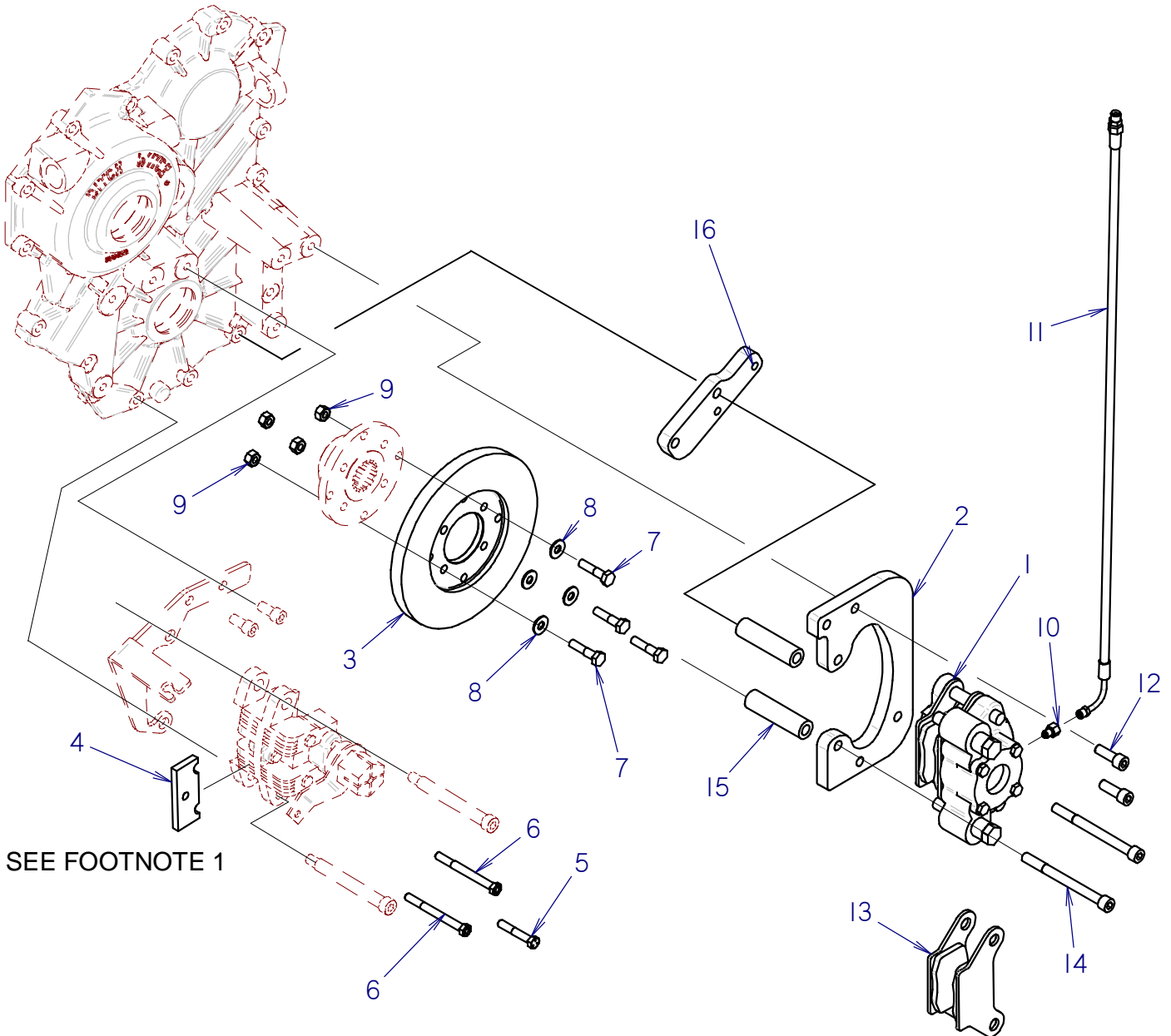
## FOOTNOTES

1. USE LOCTITE 242 (BLUE) WHEN INSTALLING BOLTS.



# HEAVY DUTY BRAKE KIT

RT70M/RT75M RT90M/RT95M  
KIT P/N 190-1097



SEE FOOTNOTE 1

# HEAVY DUTY BRAKE KIT

RT70M/RT75M RT90M/RT95M  
KIT P/N 190-1097

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	160-1033	1	BRAKE CALIPER	TORQUE MOUNTING BOLTS 180- 200 FT - LBS.
2	300-1958	1	RIGHT BRAKE BRACKET	
3	160-1036	1	BRAKE DISC	
4	160-1041	1	MECHANICAL CALIPER SPACER	
5	105-162	1	BOLT (3/8-NC X 2-1/4")	
6	105-022	2	BOLT (3/8-NC X 4")	
7	106-621	4	SCREW (M10-1.50 X 45MM, 10.9)	
8	105-793	4	WASHER (M10)	
9	105-894	4	LOCKNUT(M10-1.50,PRV TRQ,10.9)	
10	156-282	1	FLARE FITTING (03TM-04TFM)	
11	149-862	1	BRAKE HOSE (3/16T X 34")	
12	106-797	2	SCREW (M12-1.75 X 35MM, SOC)	
13	160-1066	2	BRAKE PAD (INDIVIDUAL)	
14	105-678	2	SCREW (M12-1.75 X 140MM, SOC)	
15	300-1960	2	SPACER	
16	300-1959	1	RIGHT BRAKE BRACKET	

NOT SHOWN:

**FOOTNOTES:**

- I. INSTALL ITEM #4 BETWEEN PARK BRAKE (160-733) CALIPER HALVES. RE-ASSEMBLE USING LONGER BOLTS, ITEMS #5 & #6 (2X) RE-USE STEEL FLAT WASHERS ON CALIPER. TORQUE BOLTS TO 30 - 35 FT/LBS.

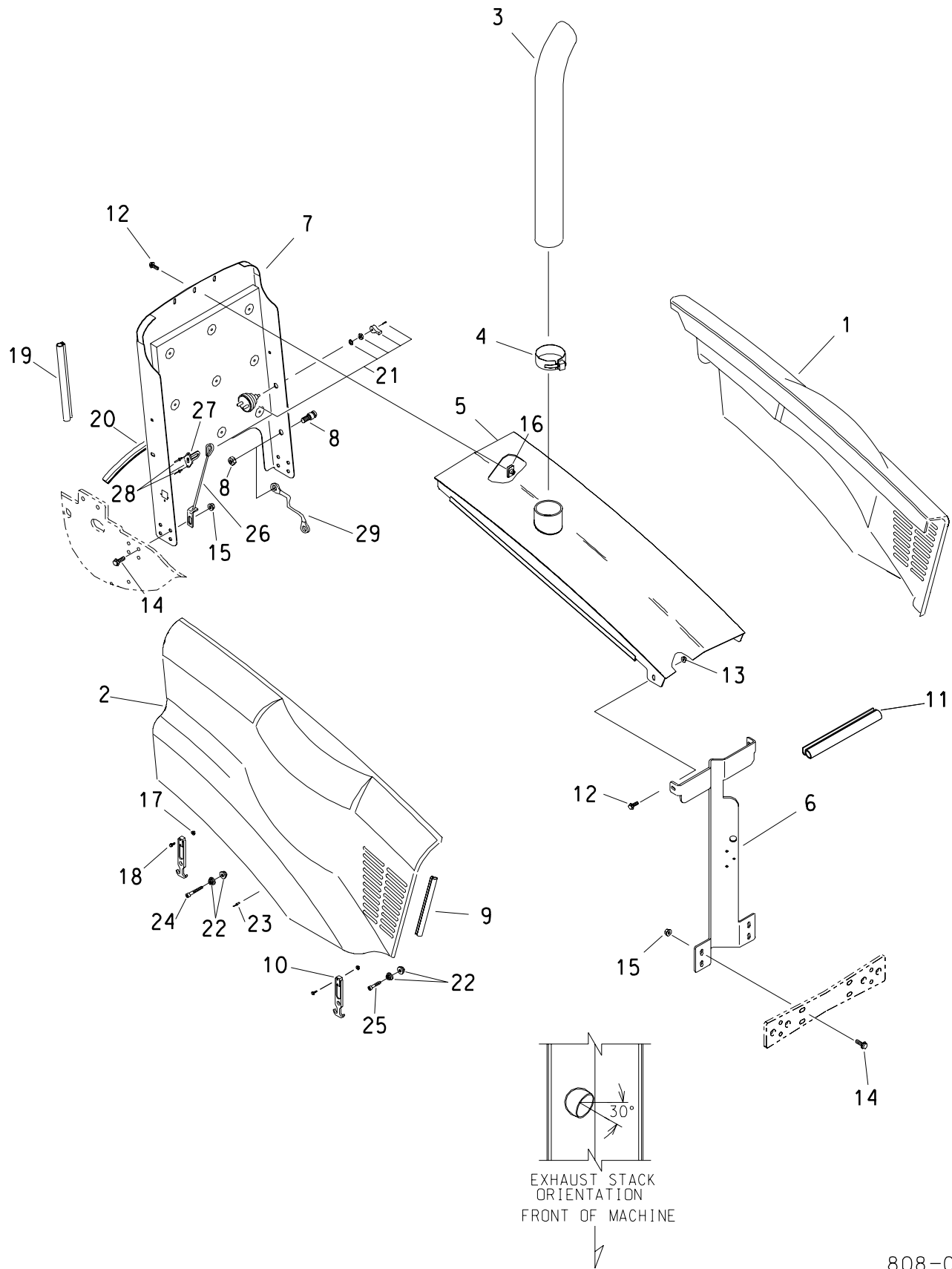
**NOTE:**

HEAVY DUTY BRAKE KIT, 190-1097, INCLUDES ITEMS 1 - 12 AND ITEMS 14 - 16.



# **FRAME COMPONENTS**

## ENGINE ENCLOSURE

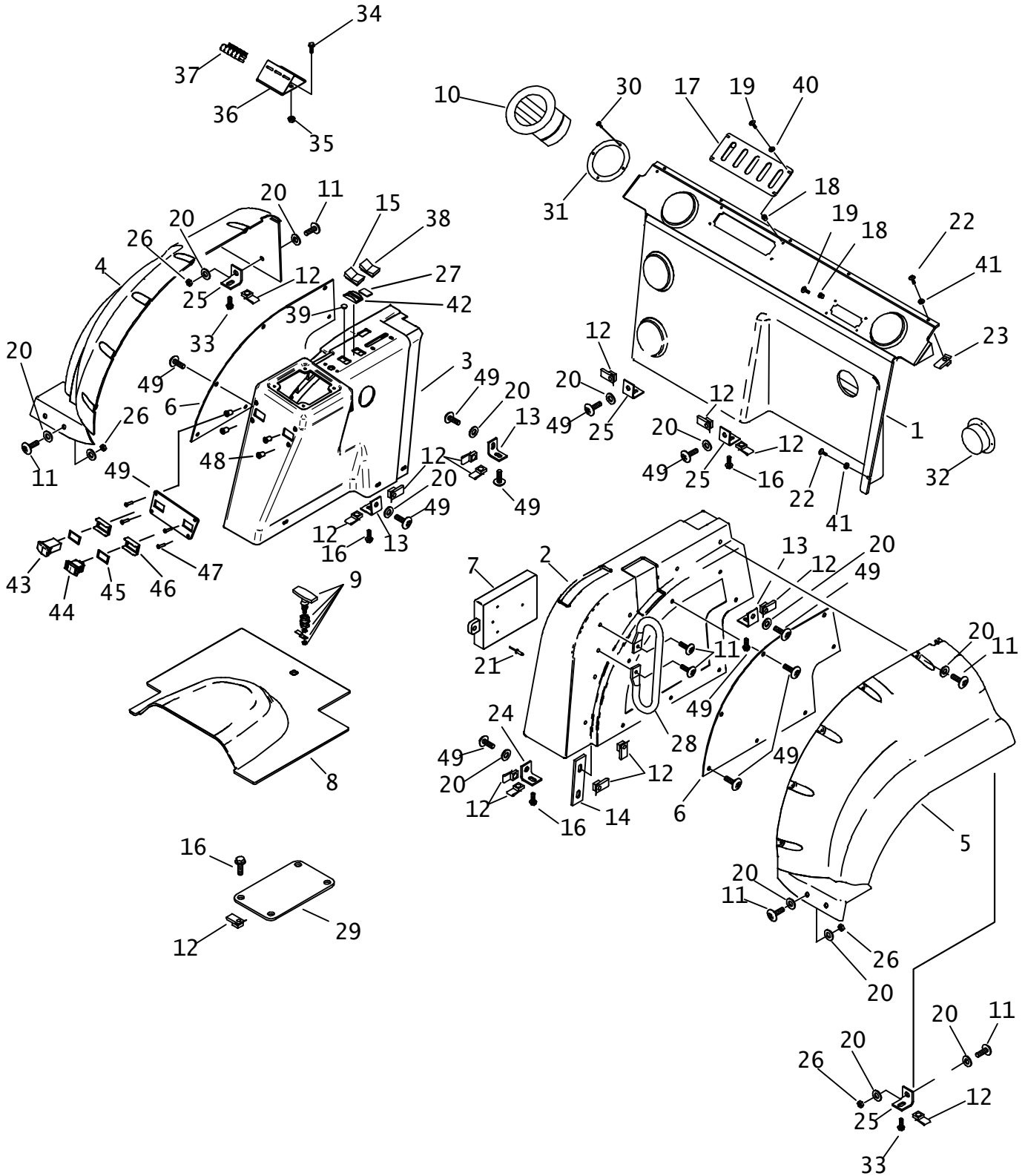


## ENGINE ENCLOSURE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-227		SIDE PANEL LOCK KIT	INCLUDES REF #26,27 & 28.
1.	307-463	1	LEFT SIDE PANEL	
2.	307-462	1	RIGHT SIDE PANEL	
3.	194-140	-	EXHAUST STACK	
4.	194-027	-	MUFFLER CLAMP (4.143")	
5.	307-266	1	MID HOOD ASSEMBLY	
6.	307-909	1	FRONT HOOD SUPPORT	
7.	310-716	1	FIREWALL	
	111-043	9	INSULATION STUD	
	117-341	1	SOUND INSULATION	
8.	211-087	1	BATTERY JUMPER TERMINALS (RED)	
9.	117-344	AR	BULK EDGE (3/16", SOLD PER 1')	USE 2 @ 25" EACH
10.	110-681	4	DRAW LATCH	
11.	117-344	AR	BULK EDGE (3/16", SOLD PER 1')	USE 1 @ 16" EACH
12.	107-001	7	FLG LK SCREW (M10-1.50 X 25mm)	
13.	106-266	4	FLG NUT (M10-1.50)	
14.	107-003	12	FLG LK SCREW (M12-1.75 X 35mm)	
15.	106-709	12	FLG LK NUT (M12-1.75)	
16.	106-558	3	CLIP NUT (M10-1.50)	
17.	106-048	8	LOCKNUT (#10-24)	
18.	106-408	8	BOLT (#10-24 X 1-1/4", SDC, GD8)	
19.	116-282	AR	BULK EDGE (1/16", SOLD PER 1')	USE 2 @ 27" EACH
20.	116-421	AR	BULK EDGE (1/8", SOLD PER 1')	USE 1 @ 26" LONG
21.	217-819	1	BATTERY DISCONNECT SWITCH	INCLUDES HARDWARE
22.	106-387	8	FLG LOCKNUT (M10-1.50)	
23.	110-253	8	POP RIVET (3/16" X 1/2")	
24.	106-725	2	SCREW (M10-1.50 X 65mm, SDC)	
25.	106-081	2	SCREW (M10-1.50 X 35mm, 12.9)	
26.	194-345	2	LOCK CABLE	
27.	318-523	2	LOCK BRACKET	
28.	110-348	4	POP RIVET (3/16" X .664")	
29.	214-873	1	POSITIVE JUMPER CABLE	

FOOTNOTES

# FENDERS AND COVERS



# FENDERS AND COVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-492	1	REAR PANEL	
	309-937	1	REAR PANEL	ASSY USED WITH A/C OR HEATER OPTION
2.	306-491	1	LEFT FENDER	
3.	306-490	1	RIGHT FENDER	
4.	313-225	1	RIGHT OUTSIDE FENDER	RT90/RT115
5.	313-226	1	LEFT OUTSIDE FENDER	RT90/RT115
6.	308-897	2	PANEL	
7.	250-622	1	MANUAL COMPARTMENT	
8.	313-238	1	FLOOR PLATE	
	318-793	1	FLOOR PLATE	
9.	107-461	1	LOCKING LATCH	
10.	120-085	4	ADJUSTABLE LOUVER (23-0005)	
11.	107-778	26	SCREW (M8-1.25 X 30mm, BUT SOC)	SEE FOOTNOTE 3
12.	107-135	38	CLIP NUT (M8-1.25)	
13.	306-796	2	TAB	
14.	309-816	2	STRAP	
15.	217-762	1	ROCKER SWITCH (SPDT)	USED WITH AXLE LOCK
16.	106-992	12	FLG LK SCREW (M8-1.25 X 25mm)	
17.	307-644	1	COVER	
18.	107-358	8	WELLNUT (M4-0.7 X 12.67mm LG)	
19.	107-580	8	SCREW (M4-0.70 X 16mm, BUT SOC)	
20.	107-629	43	WASHER (M8)	
21.	110-348	3	POP RIVET (3/16" X .664")	
22.	105-1549	7	SCREW (M6-1.00 X 20MM)	
23.	106-574	5	CLIP NUT (M6-1.00)	
24.	306-795	1	TAB	
25.	309-434	6	TAB	
26.	107-096	9	LOCKNUT (M8-1.25, NLK)	
27.	362-823	4	COVER	
28.	117-360	2	GRAB HANDLE	
29.	309-847	1	FUEL SENDER COVER	
30.	106-155	20	SCREW (#4-40 X 5/8", PAN PLPS)	
31.	120-084	4	HOSE ADAPTER (23-0048)	
32.	120-123	1	HOSE ADAPTER (23-0090)	
33.	106-989	2	FLG LK SCREW (M8-1.25 X 35mm)	
34.	106-806	2	FLG LK SCREW (M12-1.75 X 25mm)	
35.	106-709	2	FLG LK NUT (M12-1.75)	
36.	316-945	1	RELAY MOUNT	SEE FOOTNOTE 1

NOT SHOWN:

#### FOOTNOTES:

1. THIS IS TO BE USED FOR POWERSHIFT UNITS ONLY
2. USE LOCTITE 401 ADHESIVE
3. USE LOCTITE 242 OR EQUIVALENT.

NOTE:



## FENDERS AND COVERS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
37.	217-194	10	MICRO RELAY BASE	
38.	217-764	1	ROCKER SWITCH (SPDT)	USED WITH FRAME TILT OPTION
39.	157-333	1	HOLE PLUG (.750")	SEE FOOTNOTE 2 & 5
40.	107-597	4	WASHER (M4)	
41.	106-388	7	WASHER (M6)	
42.	110-854	2	SWITCH ACTUATOR GUARD	USED WITH AXLE LOCK AND FRAME TILT OPTION
43.	217-072	1	ROCKER SWITCH	SEE FOOTNOTE 4 & 5
44.	217-817	1	ROCKER SWITCH (SEALED)	SEE FOOTNOTE 4 & 5
45.	165-817	2	SWITCH GASKET	SEE FOOTNOTE 4 & 5
46.	107-312	4	SCREW (M6-1.00X25MM, BUT SOC)	SEE FOOTNOTE 4
47.	107-871	4	WELLNUT (M6-1.00 X 20.35MM LG)	SEE FOOTNOTE 4
48.	300-9262	1	SWITCH MOUNT	SEE FOOTNOTE 4
49.	106-163	22	FLG SCREW (M8-1.25 X 30MM)	

NOT SHOWN:

FOOTNOTES:

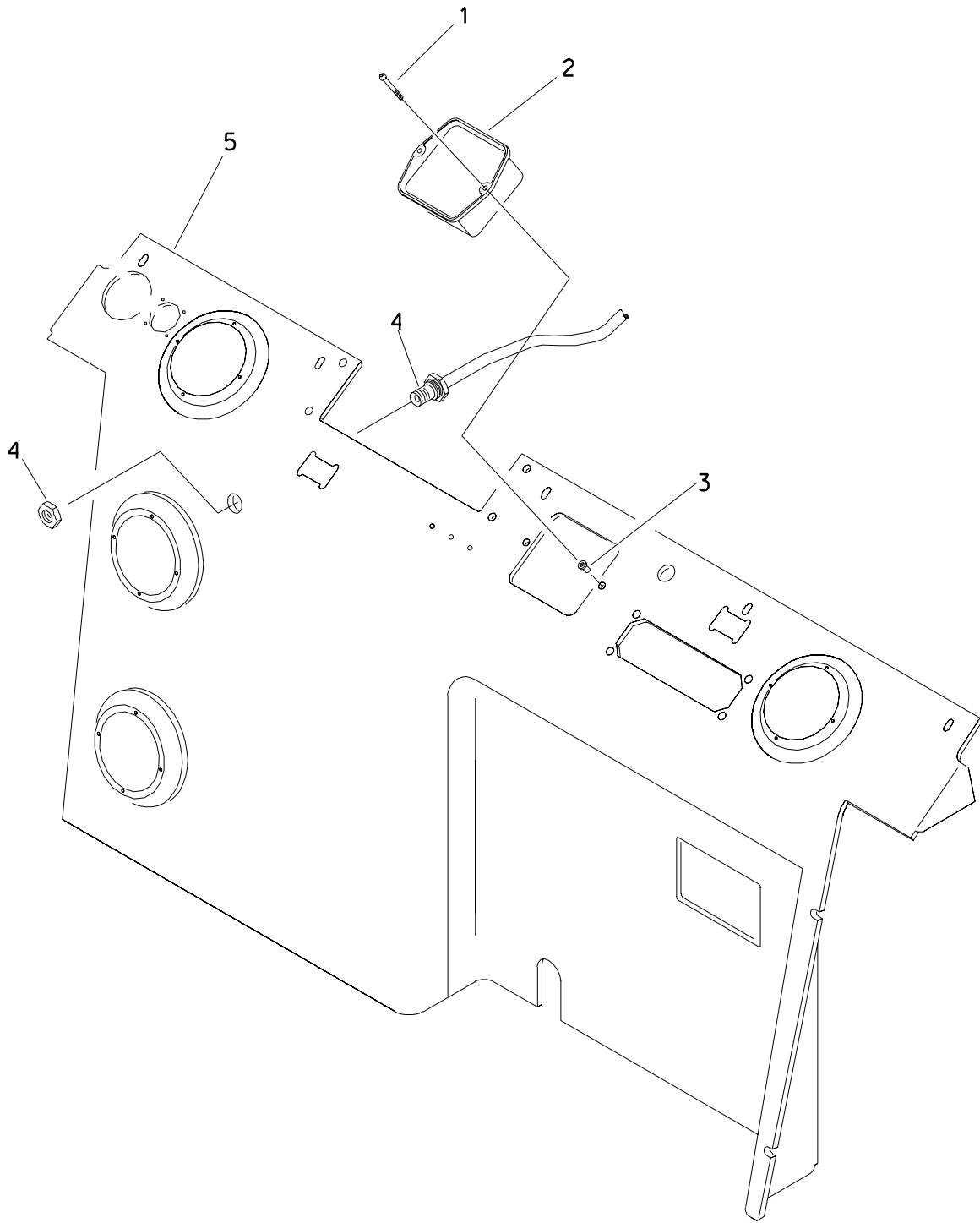
- 4) USED WITH REAR STEER SYSTEM.
- 5) UNITS WITHOUT REAR STEER USE PLUGS 362-823 INSTEAD OF SWITCHES.

NOTE:



# TRENCH DEPTH METER MODULE

RT70/RT75/RT90/RT95/RT115



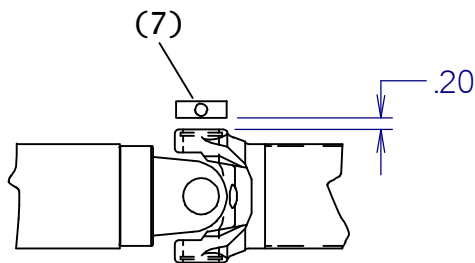
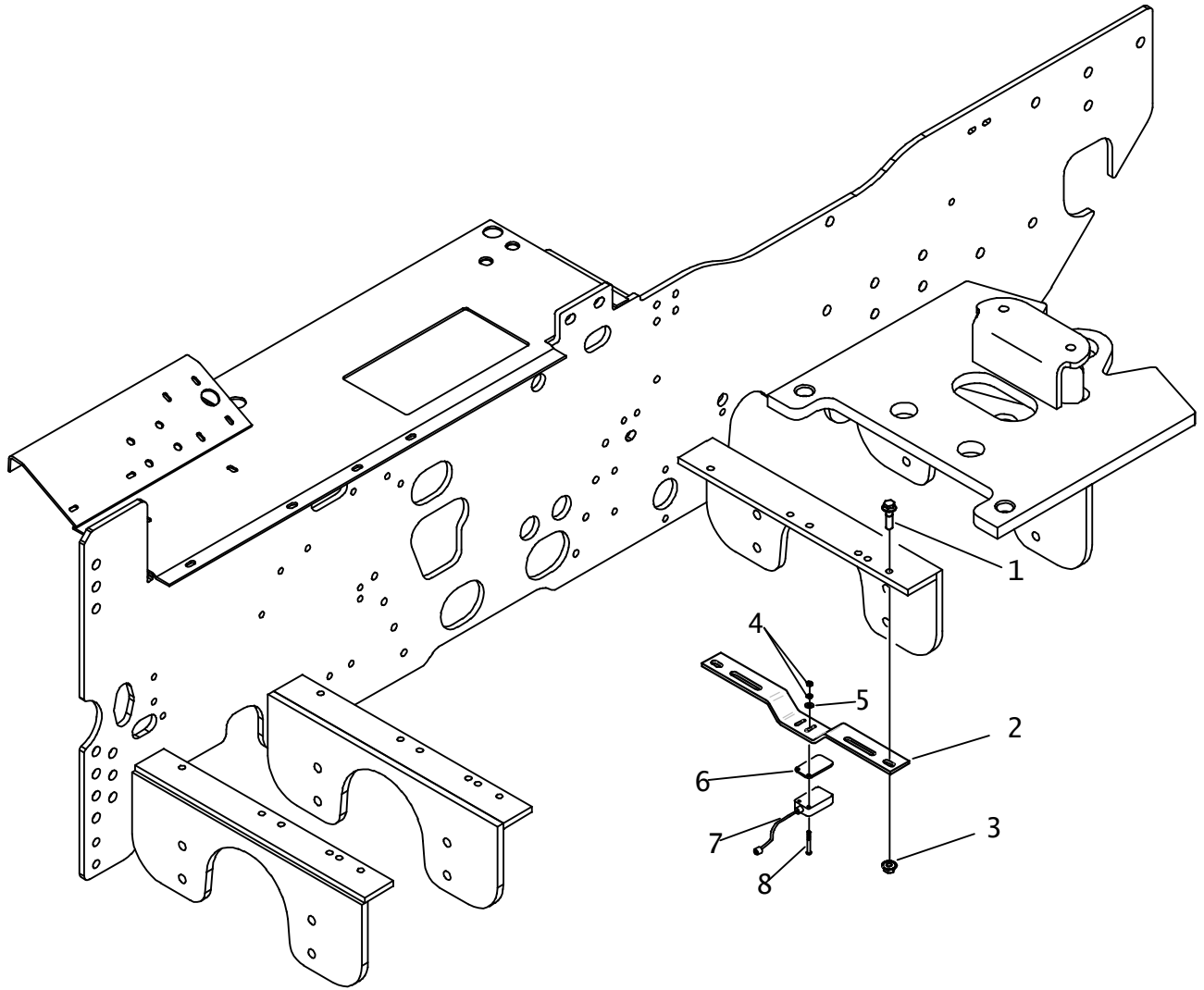
# TRENCH DEPTH METER MODULE

RT70/RT75/RT90/RT95/RT115

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	107-580	2	SCREW (M4-0.70 X 16mm, BUT SOC)	
2.	220-086	1	TRENCH DEPTH METER	
3.	107-358	2	WELLNUT (M4-0.7 X 12.67mm LG)	
4.	213-075	1	TDM HARNESS	
5.	319-745	-	REAR PANEL	

FOOTNOTES

# TRENCH DEPTH METER/ODOMETER MT



## TRENCH DEPTH METER/ODOMETER MT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	107-004	3	FLG LK SCREW (M12-1.75 X 45mm)	RT95 / RT115 & SEE FOOTNOTE 2
2.	315-744	1	SENSOR BRACKET	
3.	106-709	3	FLG LK NUT (M12-1.75)	RT95 / RT115 & SEE FOOTNOTE 2
4.	105-680	2	NUT (M4, W/LK WSHR)	
5.	107-597	2	WASHER (M4)	
6.	107-451	AR	SHIM (.135")	SEE FOOTNOTE 1
7.	214-692	1	PROXIMITY SWITCH	
8.	107-414	2	SCREW (M4-0.70 X 30mm, BUT SOC)	

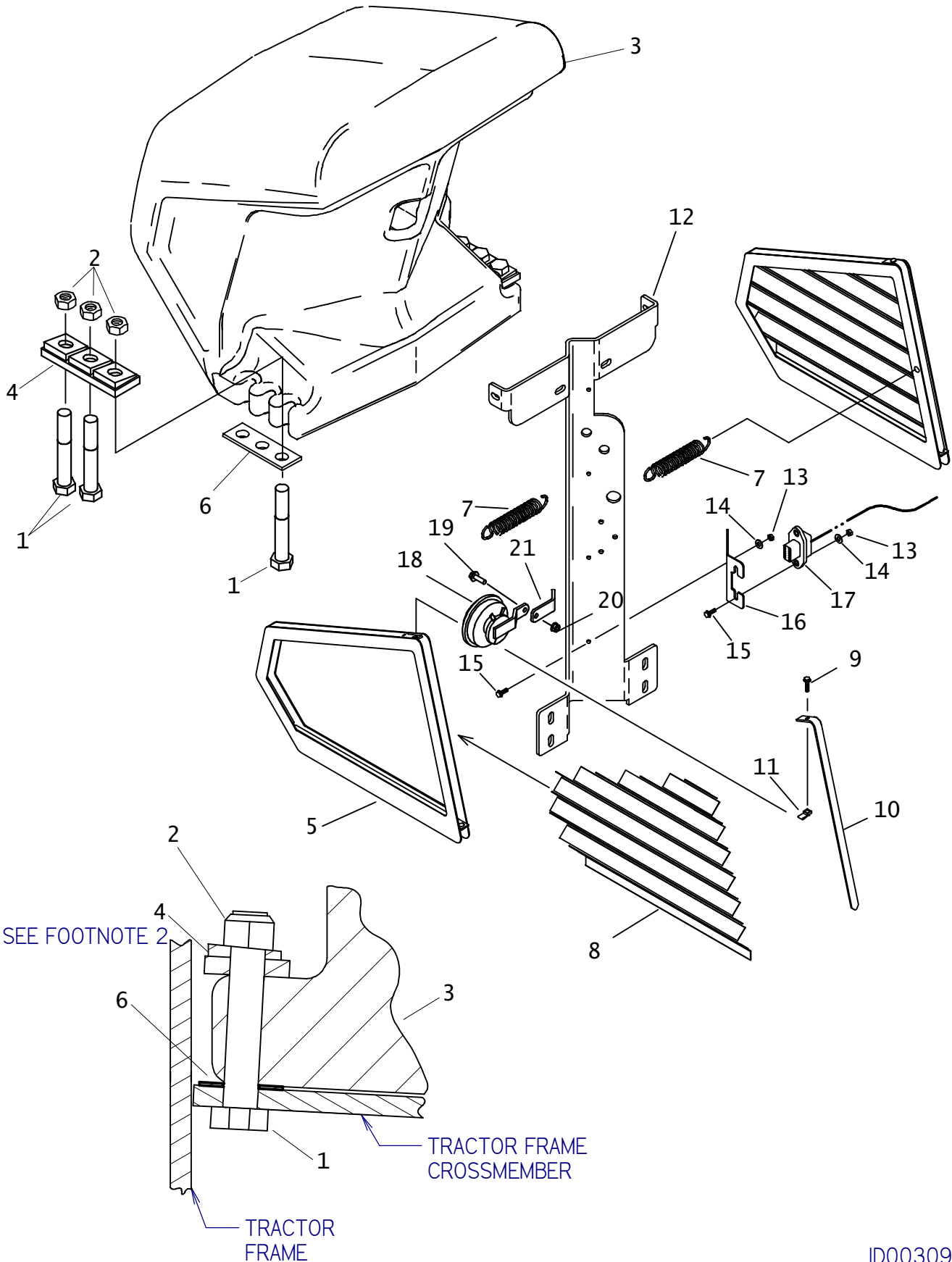
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### FOOTNOTES

- SHIMS (107-451) ARE USED TO ADJUST SPACING OF PROXIMITY SWITCH (214-692) FROM THE DRIVE SHAFT.
- RT75 USES 2X 105-003 (FLG LOCKNUT 5/16-NC) & 2X 105-190 (BOLT 5/16-NC X 2-3/4")

NOTE

# COUNTERWEIGHT/GRILLE (RT SERIES) ENDS WITH SERIAL NUMBER (SEE NOTES)



## COUNTERWEIGHT/GRILLE (RT SERIES)

ENDS WITH SERIAL NUMBER (SEE NOTES)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-633	6	SCREW (M20-2.5 X 130mm)	SEE FOOTNOTE 1, 3 & 4
2.	106-665	6	LOCKNUT (M20-2.50, 10.9)	SEE FOOTNOTE 4
3.	375-370	1	CASTING (FRAME NOSE)	SEE FOOTNOTE 3
4.	327-389	2	CLAMP BAR	SEE FOOTNOTE 2 & 4
5.	313-825	2	GRILLE	SEE FOOTNOTE 4
6.	118-400	2	SHIM (.075")	
7.	117-386	2	EXTENSION SPRING	
8.	308-723	2	SCREEN	
9.	106-987	2	FLG LK SCREW (M6-1.00 X 16mm)	
10.	178-873	2	SCREEN RETAINER	
11.	106-574	2	CLIP NUT(M6-1.00)	
12.	307-909	-	FRONT HOOD SUPPORT	
13.	106-237	3	LOCKNUT (M6-1.00, PRV TRQ, NLK)	
14.	105-284	3	WASHER (3/16")	
15.	106-161	3	FLG SCREW (M6-1.00 X 20mm)	
16.	318-726	1	PLATE	
17.	217-267	1	HYDROSTAT FRAME HARNESS	
	217-268	1	POWERSHIFT FRAME HARNESS	
18.	306-609	1	HIGH FREQUENCY HORN	OBSOLETE
	192-006	1	HIGH FREQUENCY HORN	
	192-005	1	HORN BRACKET	
19.	106-992	2	FLG LK SCREW (M8-1.25 X 25MM)	
20.	106-386	2	FLG LOCKNUT (M8-1.25)	
21.	323-673	1	HORN BRACKET	

NOT SHOWN:

FOOTNOTES:

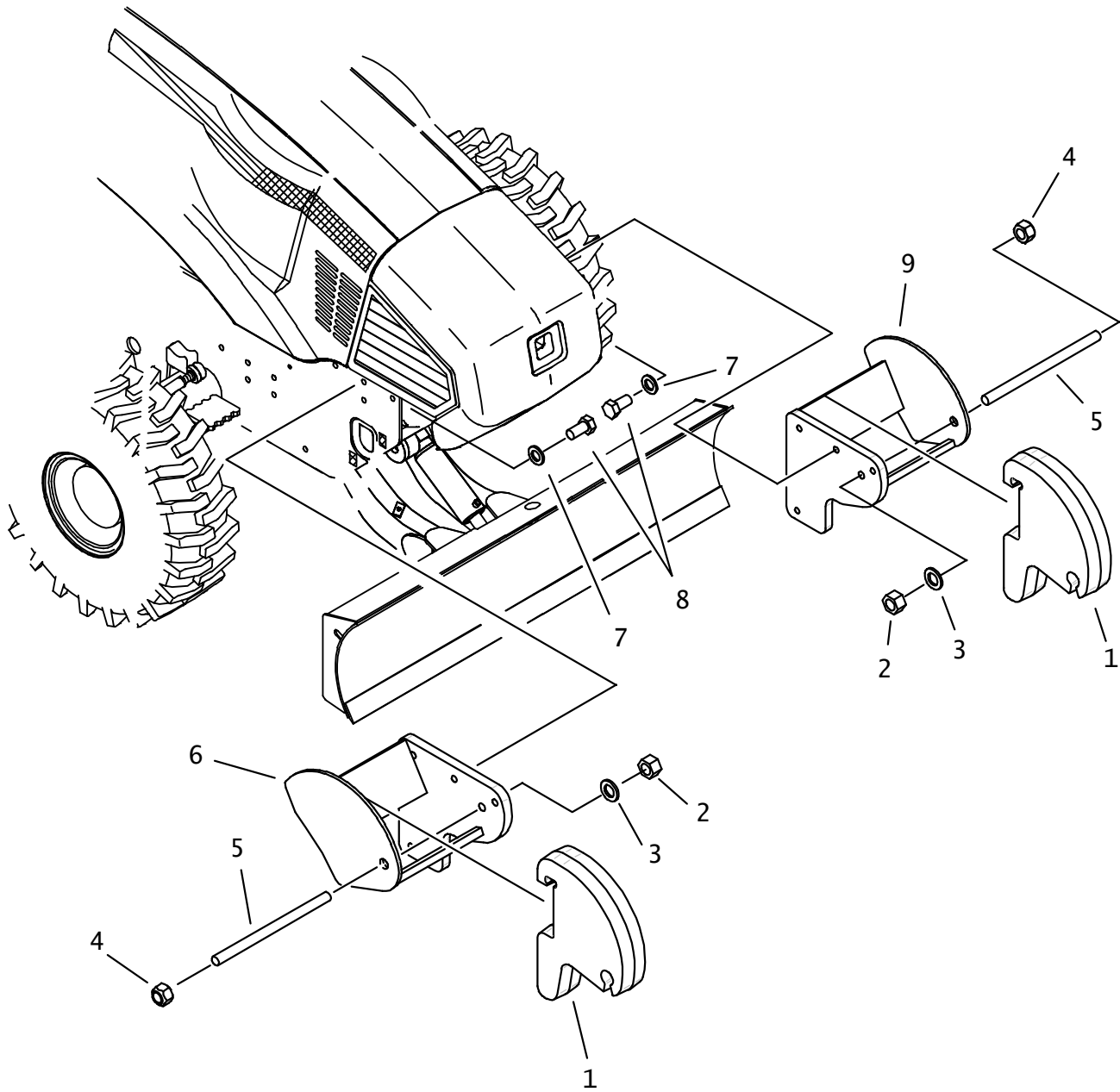
- 1- TORQUE BOLT TO 350 FT/LB (475 N/m)
- 2- INSTALL REF #4 (327-389) WITH THICK EDGE TO FRAME.
- 3- REFER TO NOSE CASTING INSTALLATION INSTRUCTION 051-420.
- 4- 104-186, BOLT AND SHIM KIT, INCLUDES REF #'S 1,2,4 & 6.

NOTE:

1. RT75 ENDS WITH S/N 5Z0663.
2. RT95 / RT115 ENDS WITH S/N 5Z0676



# FRONT COUNTERWEIGHT



## FRONT COUNTERWEIGHT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	100-863	-	COUNTERWEIGHT KIT	INCLUDES REF. NO'S 1-9
1.	375-369	8	WEIGHT CASTING	
2.	106-352	2	NUT (M24-3.00)	USED ONLY WITH 3 WEIGHTS OR LESS
3.	106-488	2	WASHER (M24, HARDENED)	USED ONLY WITH 3 WEIGHTS OR LESS
4.	106-587	2	LOCKNUT (M24-3.0, PRV TRQ, 10.9)	
5.	179-605	2	ALL THREAD ROD (M24 X 15.00)	
6.	319-948	1	RIGHT WEIGHT RACK	
7.	106-399	8	WASHER (M20, HARDENED)	
8.	106-611	8	SCREW (M20-2.50 X 40MM, 10.9)	
9.	319-947	1	LEFT WEIGHT RACK	

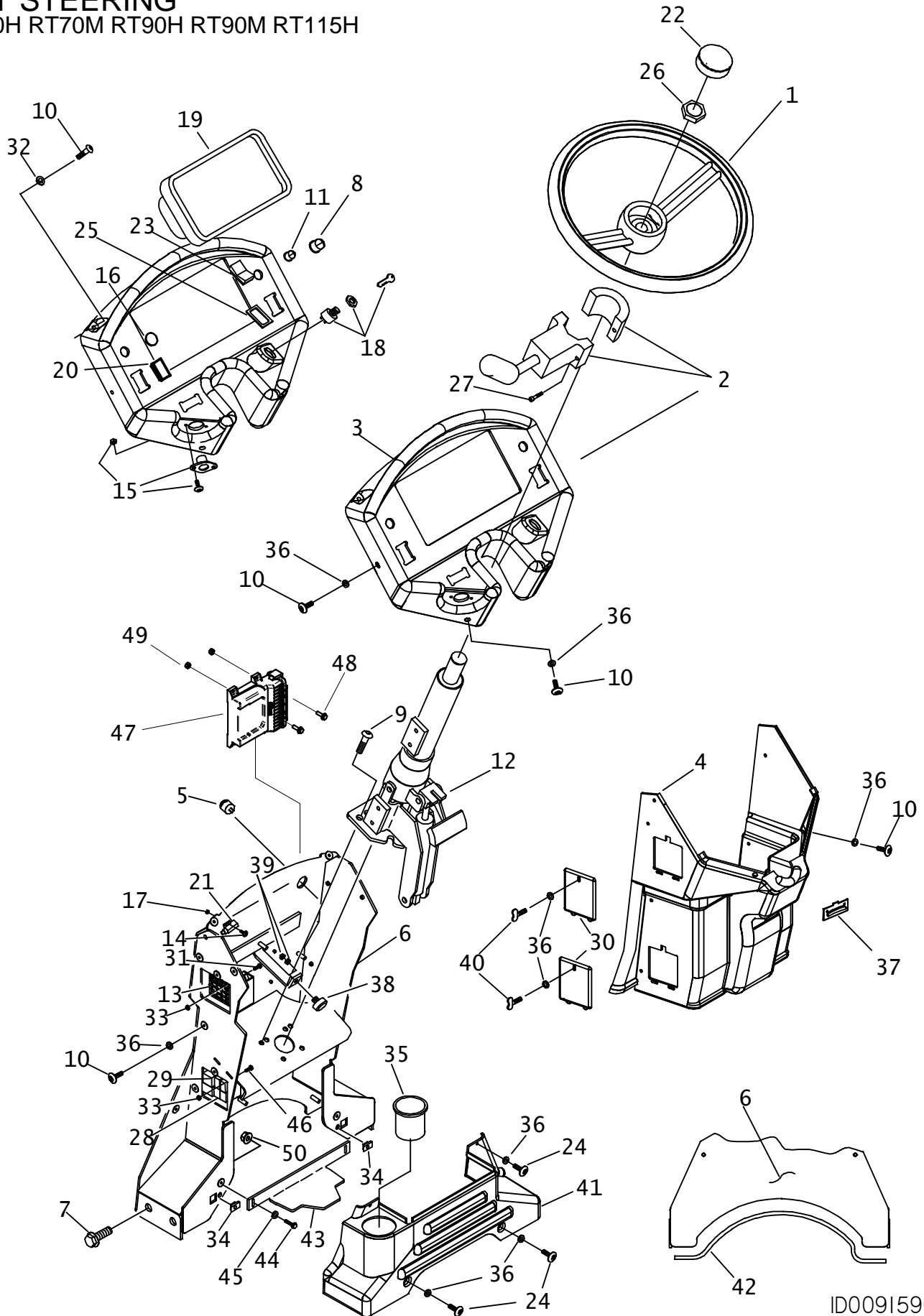
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FOOTNOTES:

NOTE:

# TILT STEERING

RT70H RT70M RT90H RT90M RT115H



# TILT STEERING

RT70H RT70M RT90H RT90M RT115H

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	160-428	1	STEERING WHEEL	
2.	215-243	1	F-N-R SHIFTER	POWERSHIFT UNITS ONLY
3.	318-555	1	MAIN CONSOLE	
4.	318-556	1	CONSOLE CENTER SECTION	
5.	306-603	1	AUDIO ALARM	
6.	315-142	1	PEDESTAL	
7.	106-470	4	FLG SCREW (M16-2.0 X 40mm)	
8.	306-608	1	BUTTON COVER	
9.	107-864	4	BOLT (3/8-NC X 1.00", BUT SOC)	
10.	105-1550	14	SCREW (M6-1.00 X 25MM)	
11.	306-607	1	HORN BUTTON	
12.	306-433	1	STEERING COLUMN	
	499-855	-	KNOB KIT	
	499-856	-	TILT LEVER KIT	
	499-857	-	SHAFT KIT	
	499-858	-	GAS SPRING KIT ( CYLINDER )	
13.	217-791	1	FUSE (MAXI, 40 AMP)	
	217-811	1	FUSE (ATC, 15 AMP)	
	217-812	1	FUSE (ATC, 20 AMP)	
	217-813	1	FUSE (ATC, 30 AMP)	
14.	107-580	2	SCREW (M4-0.70 X 16mm, BUT SOC)	
15.	214-301	1	ACCESSORY SOCKET	
	107-580	2	SCREW (M4-0.70 X 16mm, BUT SOC)	
	105-680	2	NUT (M4, W/LK WSHR)	
16.	211-067	1	DOME PLUG (.687")	
17.	105-680	2	NUT (M4,W/LKWSHR)	
18.	214-852	1	IGNITION SWITCH	
	214-961		KEY, PAIR	
	214-962		SWITCH MOUNTING NUT	
19.	211-259	1	5-GAUGE CLUSTER	
	217-223	1	5-GAUGE CLUSTER	
20.	362-823	AR	COVER	3 W/ POWERSHIFT UNITS, 2 W/ HYDROSTAT UNITS
21.	217-704	1	PLUNGER SWITCH	
22.	110-730	1	STEERING WHEEL CAP	
23.	217-762	1	ROCKER SWITCH (SPDT)	HYDROSTAT UNITS ONLY

## NOT SHOWN:

CONNECTOR CAP (TURK RS-CC), P/N: 211-078, QTY = 1  
 DIODE CONNECTOR, P/N: 214-449, QTY = 1

## FOOTNOTES:

## NOTE:

## TILT STEERING

RT70H RT70M RT90H RT90M RT115H

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
24.	105-1552	4	SCREW (M6-1.00 X 16MM)	
25.	165-817	1	SWITCH GASKET	HYDROSTAT UNITS ONLY
26.	105-361	1	JAM NUT (13/16 NF)	
27.	106-425	2	(M5-0.80 X 40mm, SOC)	
28.	217-710	2	MICRO RELAY (SPDT)	
29.	217-826	3	MINI RELAY (SPDT)	1 W/ POWERSHIFT UNITS
30.	318-560	2	ACCESS DOOR	
31.	106-049	6	BOLT (#10-24 X 3/4", PLPS)	
32.	107-744	2	WASHER (M6)	
33.	106-048	8	LOCKNUT (#10-24)	
34.	106-574	2	CLIP NUT (M6-1.00)	
35.	308-888	1	CUP HOLDER	
36.	107-801	18	WASHER (M6)	
37.	110-208	1	LEVEL INDICATOR	
38.	116-525	1	BUMPER	
39.	106-252	2	JAM NUT (5/16-NC)	
40.	107-800	2	WING SCREW (M6-1 X 25mm)	
41.	318-557	1	CONSOLE BASE	
42.	115-686	AR	BULK EDGE (5/32", SOLD PER 1")	USE 1 @ 25"
43.	314-487	1	BRACE	NOT USED ON POWER SHIFT UNITS
44.	106-381	2	FLG LK SCREW (M8-1.25 X 25MM)	NOT USED ON POWER SHIFT UNITS
45.	105-095	2	WASHER (1/4")	NOT USED ON POWER SHIFT UNITS
46.	105-185	2	BOLT (#10-24 X 1/2 ", RD SLT)	
47.	220-1241	1	30 PIN CONTROLLER V3	SEE FOOTNOTE 1
48.	106-161	2	FLG SCREW (M6-1.00 X 20MM)	SEE FOOTNOTE 1
49.	106-538	2	LOCKNUT (M6-1.00, PRV TRQ, 10.9)	SEE FOOTNOTE 1
50.	106-386	2	FLG LOCKNUT (M8-1.25)	

NOT SHOWN:

### FOOTNOTES:

1. USED WITH REAR STEER OPTION OR REAR STEER AND CRUISE CONTROL OPTION WHEN UPDATED WITH THE REAR STEER KITS 190-1437 OR 190-1438. CRUISE ONLY OPTION USES MODULE 220-569 @ 1X, BOLTS 105-815 @ 2X, AND NUTS 106-048 @ 2X.

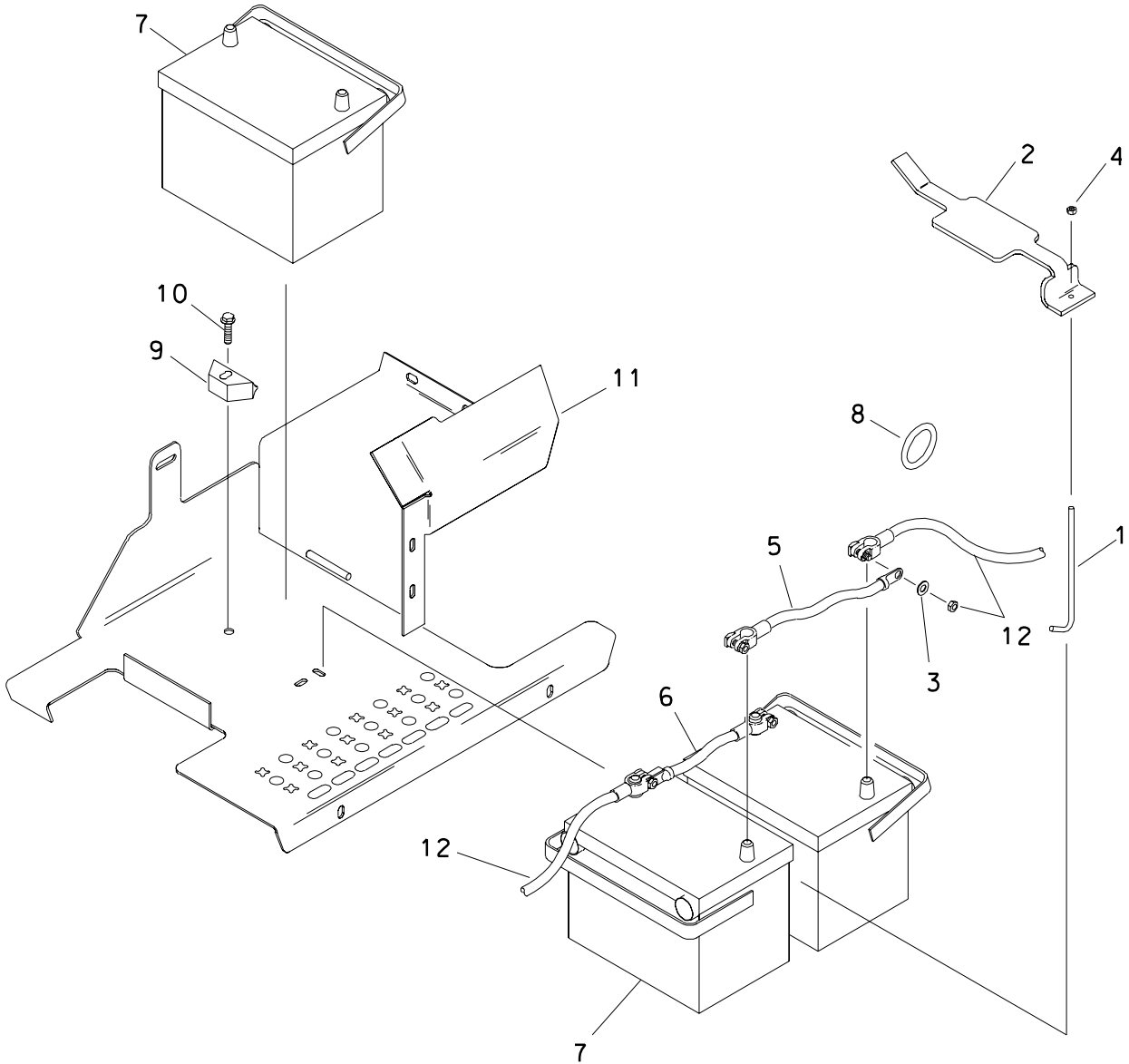
NOTE:



# BATTERY HOLD DOWN

RT70 ENDS WITH SERIAL NO. 5X0464

RT90/RT115 ENDS WITH SERIAL NO. \_\_\_\_\_



# BATTERY HOLD DOWN

RT70 ENDS WITH SERIAL NO. 5X0464

RT90/RT115 ENDS WITH SERIAL NO. \_\_\_\_\_

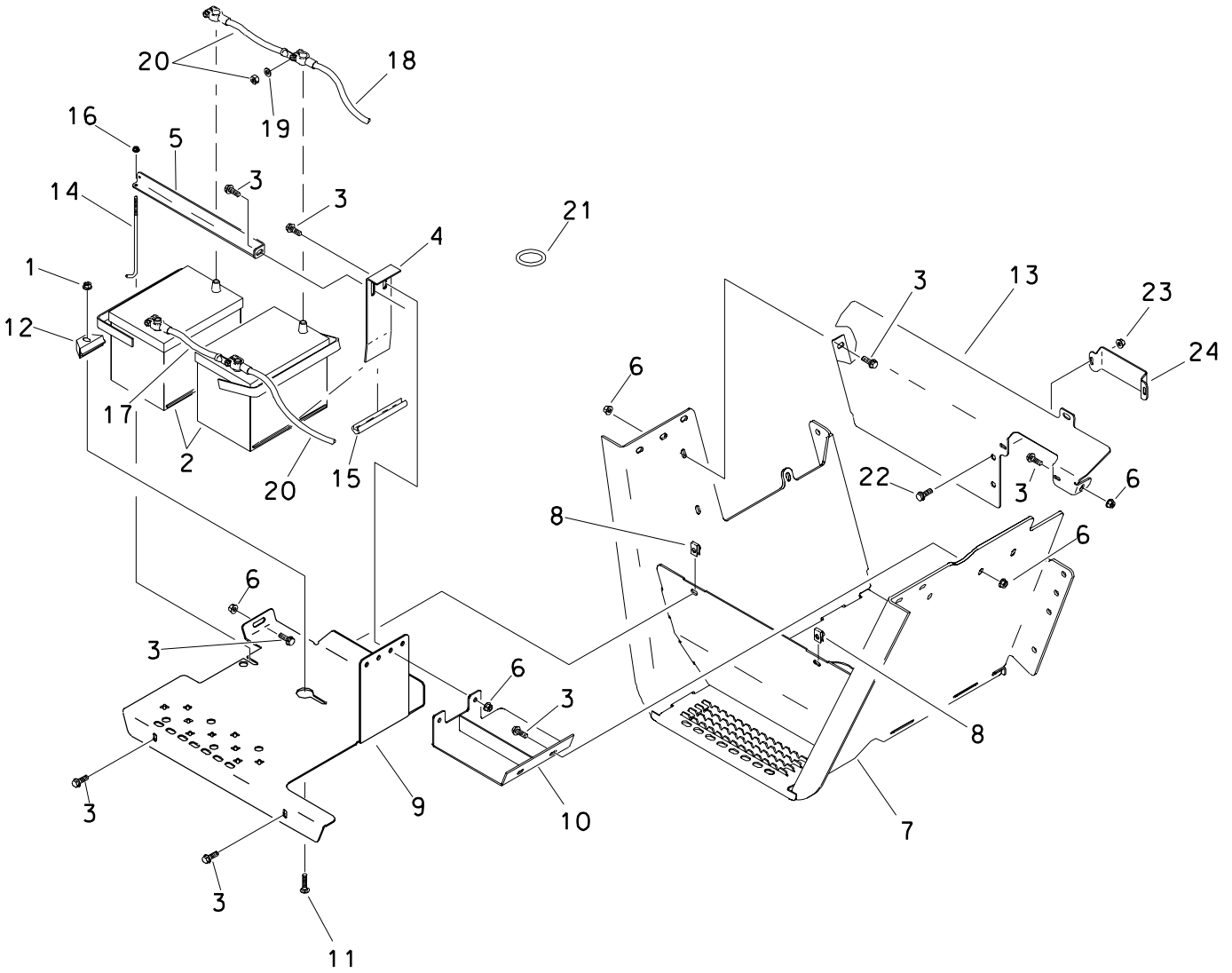
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-108	-	DUAL BATTERY CONVERSION KIT	ITEMS 1 THRU 7
1.	306-765	1	J HOOK (7.8")	
2.	309-576	1	DUAL BATTERY HOLD DOWN	
3.	106-390	2	WASHER (M10)	
4.	105-078	1	NUT (1/4-NC)	
5.	215-349	1	BATTERY CABLE (2 GA X 8", RED)	
6.	215-350	1	BAT CABLE (2 GA X 8", BLK)	
7.	215-244	1	BATTERY	
8.	115-320	1	GROMMET (1-1/2")	
9.	107-554	1	BATTERY HOLD DOWN	
10.	106-994	1	FLG LK SCREW (M10-1.50 X 40mm)	
11.	309-578	-	UPPER STEP	
12.	215-286	1	BATTERY CABLE KIT	

FOOTNOTES



# BATTERY INSTALLATION

BEGINS WITH S/N -----.



# BATTERY INSTALLATION

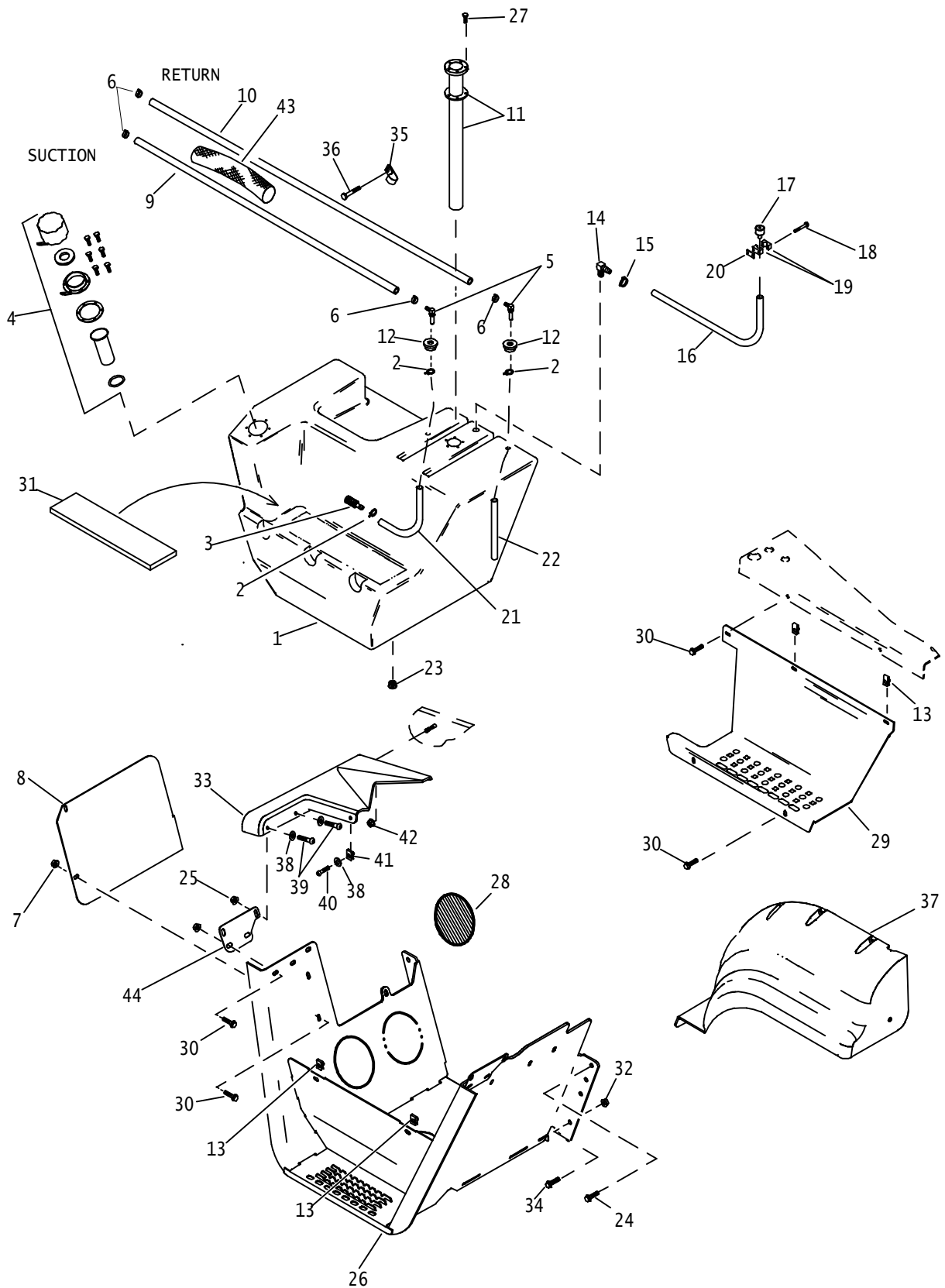
BEGINS WITH S/N \_\_\_\_\_.

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-944		DUAL BATTERY CONVERSION KIT	INCL'S REF. NO.'S 2,5,14,16-19
1.	105-814	1	FLG LOCKNUT (3/8-NC)	
2.	215-244	-	BATTERY	
3.	107-001	10	FLG LK SCREW (M10-1.50 X 25mm)	
4.	320-112	1	HOLD DOWN	
5.	322-951	1	BATTERY HOLD DOWN	
6.	106-387	6	FLG LOCKNUT (M10-1.50)	
7.	319-906	1	TANK CRADLE	
8.	106-558	2	CLIP NUT (M10-1.50)	
9.	320-116	1	BATTERY TRAY STEP	SEE FOOTNOTE 1
10.	320-115	1	TRAY SUPPORT	
11.	108-067	1	CARRIAGE BOLT (3/8-NC X 2")	REFER TO FOOTNOTE 1
12.	107-554	2	BATTERY HOLD DOWN	
13.	320-118	1	BATTERY COVER	
14.	179-799	1	J-HOOK	
15.	116-789	AR	RUBBER EDGE TRIM 1/8" (FT)	USE 3"
16.	105-832	1	FLG LOCKNUT (1/4-NC)	
17.	215-349	1	BAT CABLE (2 GA X 8", RED)	
18.	215-350	1	BAT CABLE (2 GA X 8", BLK)	
19.	106-390	2	WASHER (M10)	
20.	215-286	1	BATTERY CABLE KIT	
21.	115-320	1	GOMMET (1-1/2")	
22.	106-379	2	FLG LK SCREW (M6-1.00 X 20mm)	
23.	106-353	2	FLG NUT (M6-1.00)	
24.	323-279	1	COVER	

## FOOTNOTES

- HOLE IN CENTER OF BATTERY TRAY STEP IS FOR ACCESSING CARRIAGE BOLT WHEN STARTING TIGHTENING PROCESS.

# FUEL TANK



# FUEL TANK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-165	1	FUEL TANK	
2.	110-563	3	SPRING CLAMP (3/8")	
3.	156-268	1	FUEL STRAINER (04H)	
	194-505	1	FUEL PICKUP (04H)	BEGINS WITH S/N
4.	364-567	1	FILL NECK	SEE FOOTNOTE 3
	153-760	1	CAP	
	153-594	2	GASKET, FILL NECK CAP	
	153-607	1	FLANGE GASKET	
	153-761	1	FLANGE	
	107-781	6	HEX SCREW (#10-24 X 5/8")	
	153-606	1	STRAINER BASKET	
5.	156-269	2	S/O COUPLER (04H-05H90)	
6.	110-528	4	SNAP-ON CLAMP (.531" TO .593")	
7.	106-387	4	FLG LOCKNUT (M10-1.50)	BEGINS WITH S/N _____.
8.	319-484	1	COVER	
9.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 65"
10.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 51"
11.	214-650	1	FUEL SENDER	
	165-704	1	GASKET	
12.	116-325	2	GROMMET (.362")	
13.	106-558	4	CLIP NUT (M10-1.50)	
14.	156-108	1	S/O COUPLER (08N-08H90)	
15.	110-217	1	WORM CLAMP(7/16" TO 1")	
16.	116-322	AR	BULK HOSE (1/2",SOLD PER 1")	USE 1 @ 48"
17.	111-021	1	BREATHER CAP (TANK)	
18.	105-818	2	BOLT (1/4-NC X 1-1/2")	
19.	110-411	1	BOLT-ON CLAMP (3/4", SET)	
20.	322-289	1	BACKUP (BOLT-ON)	
21.	118-096	AR	BULK FUEL TUBING (1/4", PER FT)	USE 1 @ 24"
22.	118-096	AR	BULK FUEL TUBING (1/4", PER FT)	USE 1 @ 20"
23.	114-002	1	PLUG (06N, SOC)	
24.	105-829	2	FLG LK BOLT(1/2 NC X 1")	
25.	106-386	2	FLG LOCKNUT (M8-1.25)	

NOT SHOWN:

#### FOOTNOTES:

- ARRANGE LINER PADS IN AN EVEN PATTERN ON INTERIOR SURFACES OF THE SIDE PLATES, BOTTOM PLATE AND KICK PLATE. USE .12 THICK AND .25 THICK TO PROVIDE A SNUG FIT FOR THE TANK. APPLY AND ADJUST THE LINER PADS UNTIL THE LEAST MOVEMENT POSSIBLE HAS BEEN ACCOMPLISHED. ONCE FILLED THE TANK SHOULD NOT SHIFT.
- LAYER SUPPORT MAT BETWEEN LEDGE OF TANK AND UNDERSIDE OF STEP UNTIL FIRM PRESSURE IS REQUIRED TO ALIGN SLOTS AND INSERT SCREWS
- ORIENT PADLOCK LUGS AWAY FROM STAIRWELL

NOTE:

# FUEL TANK

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
26.	300-9750	1	CRADLE WELDMENT	
27.	105-1190	5	BOLT (#10-24 X 1-1/4")	
28.	117-425	AR	LINER PAD (.12"THK)	SEE FOOTNOTE 1
	117-463	AR	LINER PAD (.25"THK)	
29.	313-821	1	TREAD, FUEL	
30.	107-001	12	FLG LK SCREW (M10-1.50 X 25mm)	
31.	117-442	AR	SUPPORT MAT	SEE FOOTNOTE 2
32.	106-198	2	FLG LOCKNUT (1/2 NC, GD8)	
33.	313-911	1	LEFT AIR DEFLECTOR	
34.	105-831	2	FLG LOCK BOLT (1/2-NC X 1-1/2")	
35.	110-333	1	BOLT ON CLAMP (1")	
36.	105-033	1	BOLT (5/16-NC X 2")	
37.	313-226	-	LEFT OUTSIDE FENDER	
38.	107-629	3	WASHER (M8)	
39.	107-778	2	SCREW (M8-1.25 X 30mm, BUT SOC)	
40.	106-640	1	SCREW (M6-1.00 X 20mm, BUT SOC)	
41.	106-574	1	CLIP NUT (M6-1.00)	
42.	105-003	1	FLG LOCKNUT (5/16-NC)	
43.	117-671	1	ABRASION SLEEVE (1" X 12")	
44.	319-452	1	CONNECTOR PLATE	BEGINS WITH S/N _____.

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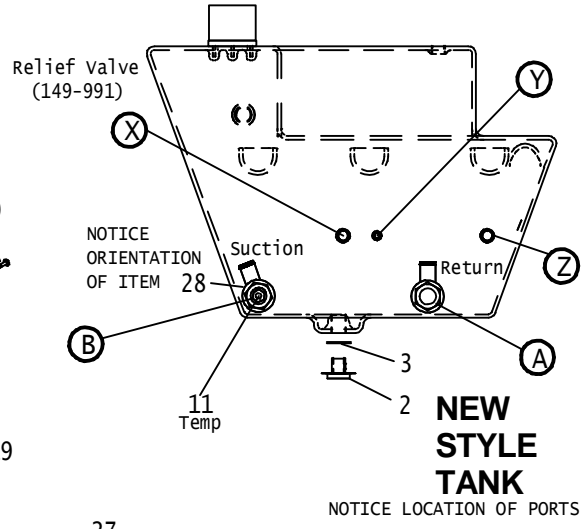
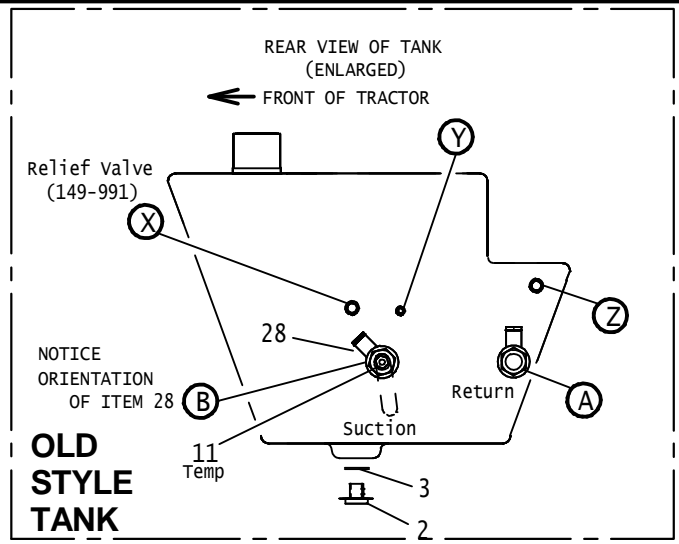
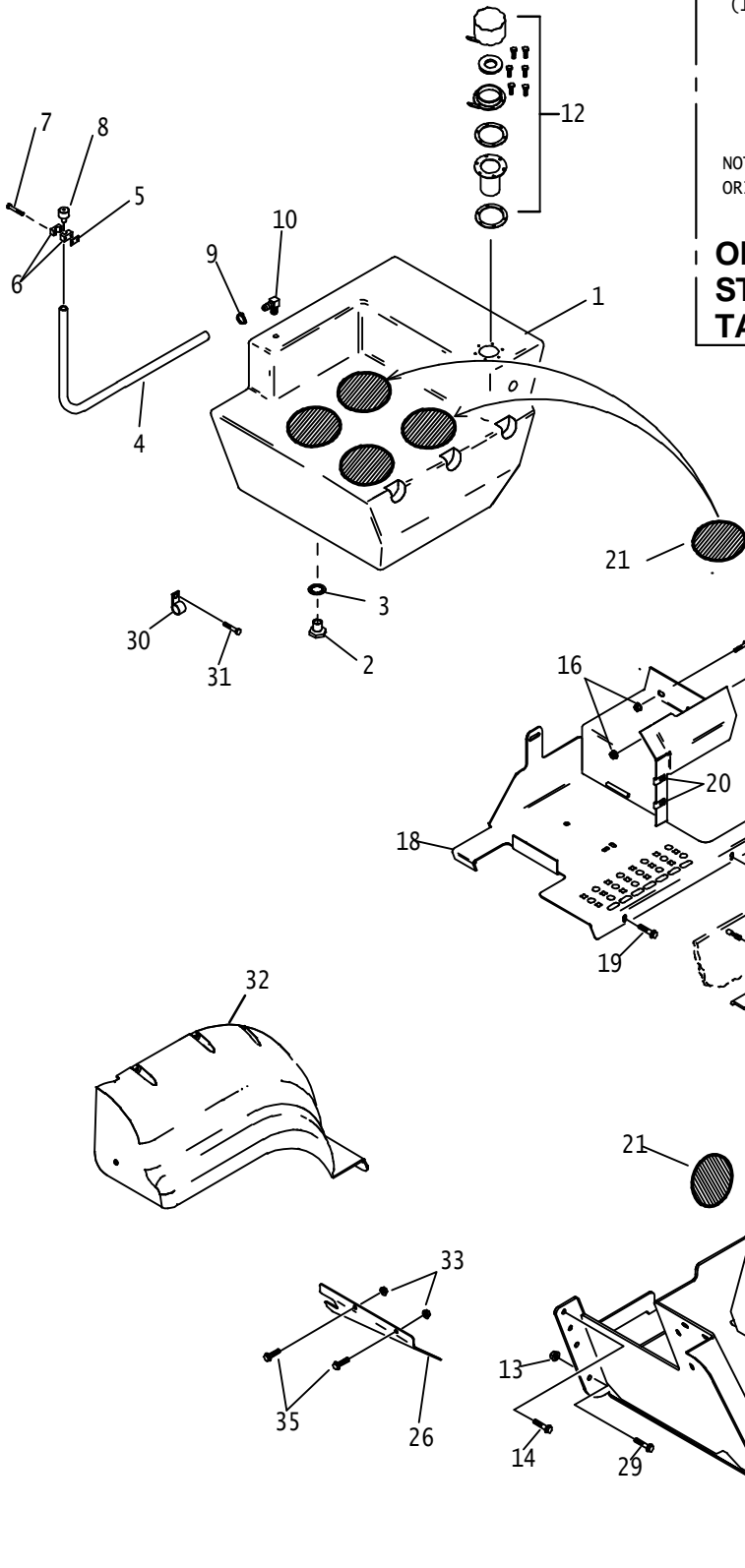
FOOTNOTES:

NOTE:



# HYDRAULIC RESERVOIR

RT90 / RT115  
ENDS WITH S/N 5X0709



# HYDRAULIC RESERVOIR

RT90 / RT115

ENDS WITH S/N 5X0709

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	150-1388	1	HYDRAULIC RESERVOIR	REFER TO FOOTNOTE 4 FOR SUPERCEDE INFORMATION
	121-040	-	SIGHT GLASS	
2.	157-466	1	DRAIN PLUG (1-UNF, .375 ORF)	
3.	500-749	1	O-RING (211 D70)	
4.	116-322	AR	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 48"
5.	322-289	1	BACKUP (BOLT-ON)	
6.	110-411	1	BOLT-ON CLAMP (3/4", SET)	
7.	105-818	2	BOLT (1/4-NC X 1-1/2")	
8.	111-021	1	BREATHER CAP (TANK)	
9.	110-217	1	WORM CLAMP (7/16" TO 1")	
10.	156-108	1	S/O COUPLER (08N-08H90)	
11.	214-854	-	TEMPERATURE SWITCH	
12.	364-567	1	FILL NECK	SEE FOOTNOTE 2
	153-760	1	CAP	
	153-594	1	GASKET, FILL NECK CAP	
	153-607	1	FLANGE GASKET	
	153-606	1	STRAINER BASKET	
	153-761	1	FLANGE	
	107-781	6	HEX SCREW (#10-24 X 5/8)	
13.	106-198	2	FLG LOCKNUT (1/2-NC, GD8)	
14.	105-829	6	FLG LK BOLT (1/2-NC X 1")	
15.	309-574	1	BATTERY DOOR	SEE FOOTNOTE 3
16.	106-387	6	FLG LOCKNUT (M10-1.50)	
17.	309-096	1	CRADLE	
18.	309-578	1	UPPER STEP	
19.	107-001	12	FLG LK SCREW (M10-1.50 X 25mm)	
20.	106-558	4	CLIP NUT (M10-1.50)	
21.	117-425	AR	LINER PAD (.12"THK)	SEE FOOTNOTE 1
	117-463	AR	LINER PAD (.25"THK)	SEE FOOTNOTE 1
22.	107-778	2	SCREW (M8-1.25 X 30mm, BUT SOC)	
23.	313-910	1	RIGHT AIR DEFLECTOR	
24.	106-640	1	SCREW (M6-1.00 X 20mm, BUT SOC)	
25.	106-574	1	CLIP NUT (M6-1.00)	
26.	315-440	1	TOP MUD SHIELD	
27.	105-003	1	FLG LOCKNUT (5/16-NC)	
28.	153-740	-	PICK UP TUBE	
29.	105-831	2	FLG LK BOLT (1/2-NC X 1-1/2")	
30.	110-333	1	BOLT-ON CLAMP (1")	
31.	105-033	1	BOLT (5/16-NC X 2")	
32.	313-225	-	RIGHT OUTSIDE FENDER	
33.	106-386	4	FLG LOCKNUT (M8-1.25)	
34.	107-629	3	WASHER (M8)	
35.	106-162	2	FLG SCREW (M8-1.25 X 20mm)	

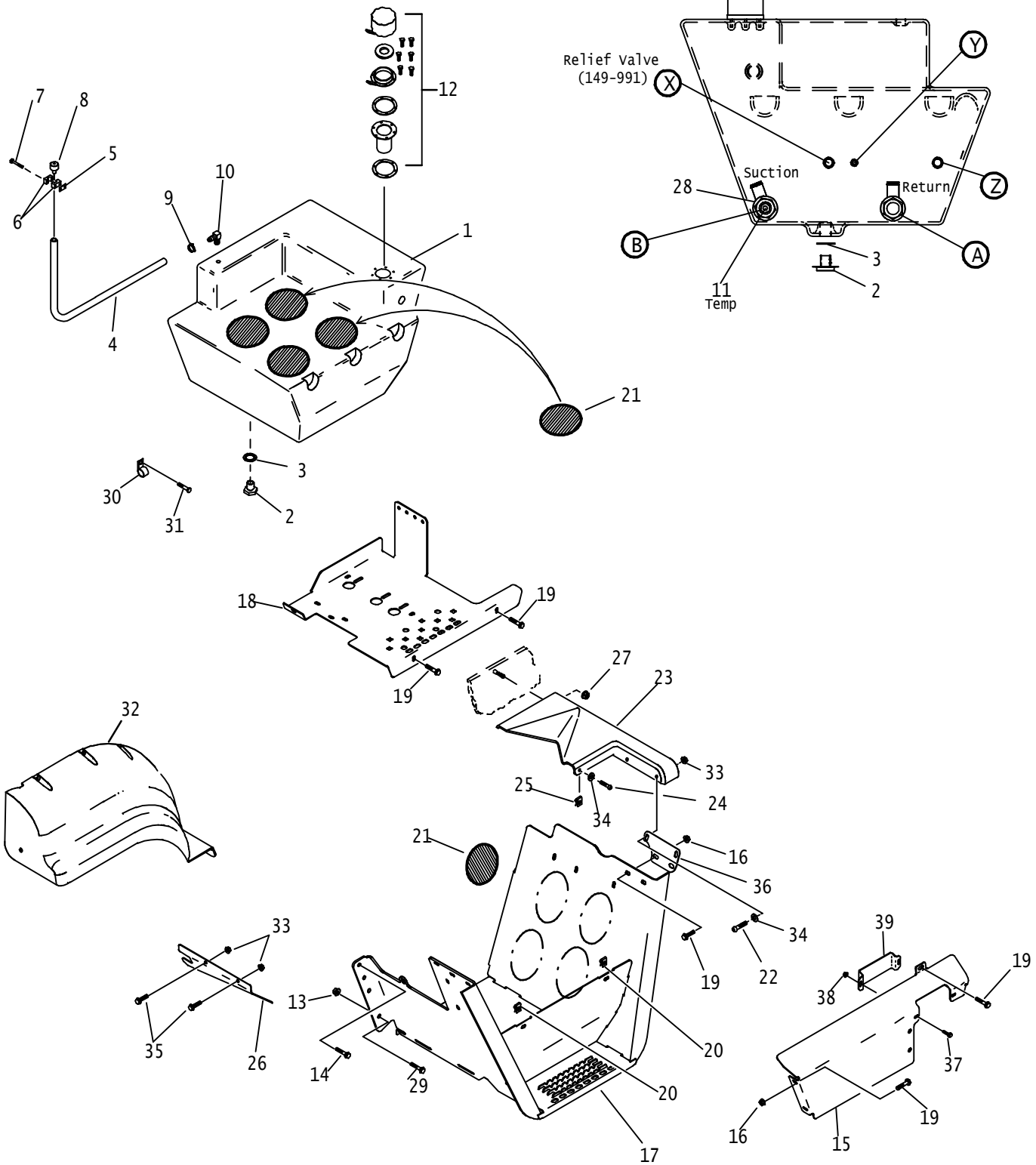
## FOOTNOTES

1. ARRANGE LINER PADS IN AN EVEN PATTERN ON INTERIOR SURFACES OF THE SIDE PLATES, BOTTOM PLATE AND AND KICK PLATE. USE .12" THICK AND .25" THICK TO PROVIDE A SNUG FIT FOR THE TANK. APPLY AND ADJUST THE LINER PADS UNTIL THE LEAST MOVEMENT POSSIBLE HAS BEEN ACCOMPLISHED. ONCE FILLED THE TANK SHOULD NOT SHIFT.
2. ORIENT PADLOCK LUGS AWAY FROM STAIRWELL.
3. REFER TO PAGE "BATTERY HOLD DOWN" FOR BATTERY INSTALLATION DETAILS.
4. REFER TO PAGE "HYDRAULIC RESERVOIR" ID0112200. HYDRAULIC RESERVOIR 153-112 WAS SUPERCEDED BY HYRAULIC RESERVOIR 153-1388 AND WILL REQUIRE A FRAME UPDATE AND FITTING/COUPLER UPDATE FOR PROPER INSTALLATION.



# HYDRAULIC RESERVOIR

RT90 / RT95 / RT115  
BEGINS WITH S/N 5X0710



**HYDRAULIC RESERVOIR**

RT90 / RT95 / RT115

BEGINS WITH S/N 5X0710

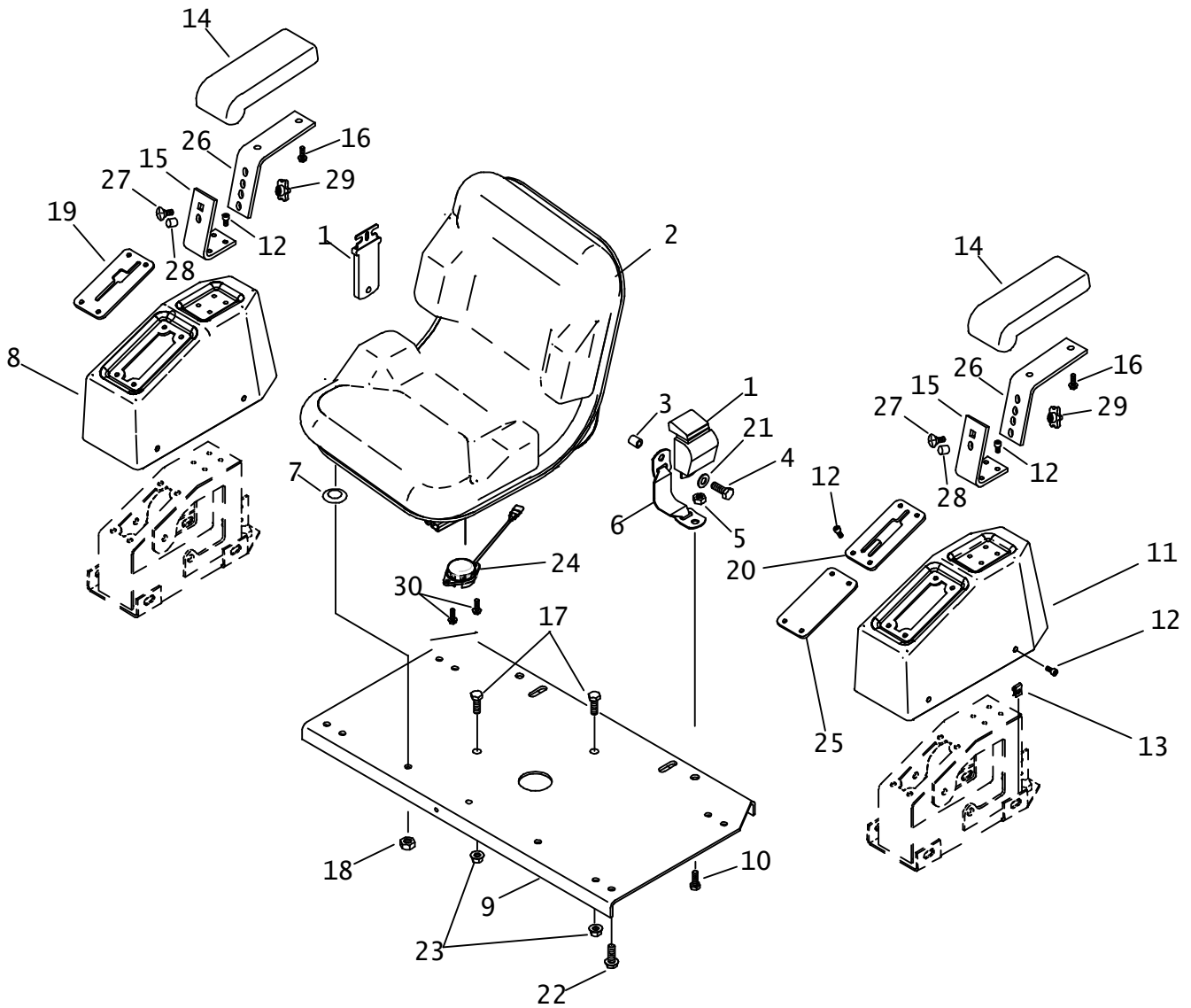
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	150-1388	1	HYDRAULIC RESERVOIR	
	121-040	-	SIGHT GLASS	
2.	157-466	1	DRAIN PLUG (1-UNF, .375 ORF)	
3.	500-749	1	O-RING (211 D70)	
4.	116-322	AR	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 48"
5.	322-289	1	BACKUP (BOLT-ON)	
6.	110-411	1	BOLT-ON CLAMP (3/4", SET)	
7.	105-818	2	BOLT (1/4-NC X 1-1/2")	
8.	111-021	1	BREATHER CAP (TANK)	
9.	110-217	1	WORM CLAMP (7/16" TO 1")	
10.	156-108	1	S/O COUPLER (08N-08H90)	
11.	214-854	-	TEMPERATURE SWITCH	
12.	364-567	1	FILL NECK	SEE FOOTNOTE 2
	153-760	1	CAP	
	153-594	1	GASKET, FILL NECK CAP	
	153-607	1	FLANGE GASKET	
	153-606	1	STRAINER BASKET	
	153-761	1	FLANGE	
	107-781	6	HEX SCREW (#10-24 X 5/8)	
13.	106-198	2	FLG LOCKNUT (1/2-NC, GD8)	
14.	105-829	6	FLG LK BOLT (1/2-NC X 1")	
15.	320-118	1	BATTERY COVER	SEE FOOTNOTE 3
16.	106-387	6	FLG LOCKNUT (M10-1.50)	
17.	300-9750	1	CRADLE WELDMENT	
18.	320-116	1	BATTERY TRAY STEP	
19.	107-001	12	FLG LK SCREW (M10-1.50 X 25mm)	
20.	106-558	4	CLIP NUT (M10-1.50)	
21.	117-425	AR	LINER PAD (.12"THK)	SEE FOOTNOTE 1
	117-463	AR	LINER PAD (.25"THK)	SEE FOOTNOTE 1
22.	107-778	2	SCREW (M8-1.25 X 30mm, BUT SOC)	
23.	313-910	1	RIGHT AIR DEFLECTOR	
24.	106-640	1	SCREW (M6-1.00 X 20mm, BUT SOC)	
25.	106-574	1	CLIP NUT (M6-1.00)	
26.	315-440	1	TOP MUD SHIELD	
27.	105-003	1	FLG LOCKNUT (5/16-NC)	
28.	157-987	1	S/O COUPLER (20S-16H90,04NF)	
	514-446	1	REDUCER (24S-20SF)	
29.	105-831	2	FLG LK BOLT (1/2-NC X 1-1/2")	
30.	110-333	1	BOLT-ON CLAMP (1")	
31.	105-033	1	BOLT (5/16-NC X 2")	
32.	313-225	-	RIGHT OUTSIDE FENDER	
33.	106-386	4	FLG LOCKNUT (M8-1.25)	
34.	107-629	3	WASHER (M8)	
35.	106-162	2	FLG SCREW (M8-1.25 X 20mm)	
36.	319-452	1	CONNECTOR PLATE	
37.	106-379	2	FLG LK SCREW (M6-1.00 X 20mm)	
38.	106-353	2	FLG NUT (M6-1.00)	
39.	323-279	1	COVER	

## FOOTNOTES

1. ARRANGE LINER PADS IN AN EVEN PATTERN ON INTERIOR SURFACES OF THE SIDE PLATES, BOTTOM PLATE AND AND KICK PLATE. USE .12" THICK AND .25" THICK TO PROVIDE A SNUG FIT FOR THE TANK. APPLY AND ADJUST THE LINER PADS UNTIL THE LEAST MOVEMENT POSSIBLE HAS BEEN ACCOMPLISHED. ONCE FILLED THE TANK SHOULD NOT SHIFT.
2. ORIENT PADLOCK LUGS AWAY FROM STAIRWELL.
3. REFER TO PAGE "BATTERY INSTALLATION" FOR BATTERY INSTALLATION DETAILS.

# SEAT PLATFORM

RT70M - RT90M - RT70H - RT90H  
RT115 - RT115T2



# SEAT PLATFORM

RT70M - RT90M - RT70H - RT90H  
RT115 - RT115T2

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-924	1	SEAT BELT SET W/5.75" TONGUE	
	117-925	-	SEAT BELT TONGUE (5.75")	
2.	117-429	1	SEAT	
	115-445		REPLACEMENT SEAT	
	115-428		ADJUSTABLE TRACK	
3.	184-252	2	BUSHING (.562" X 1" X .590")	
4.	106-333	2	SCREW (M12-1.75 X 40mm, 8.8)	
5.	106-031	2	LOCKNUT (M12-1.75, NLK)	
6.	115-430	2	SEAT BELT TETHER	
7.	105-267	4	CUP WASHER (5/16")	
8.	309-431	1	RIGHT SEAT CONSOLE	
9.	314-594	1	SEAT BASE	
10.	105-273	2	SCREW (M12-1.75 X 30mm)	
11.	305-649	1	LEFT SEAT CONSOLE	
12.	107-312	32	SCREW (M6-1.00 X 25mm, BUT SOC)	
13.	106-574	8	CLIP NUT (M6-1.00)	
14.	117-314	2	ARMREST	
15.	309-294	2	LOWER ARMREST BRACKET	
16.	106-159	4	FLG SCREW (1/4-NC X 3/4")	
17.	105-876	2	SCREW (M10-1.50 X 35mm)	
18.	105-089	4	LOCKNUT (5/16-NC)	
19.	309-295	1	Z-GATE	USED W/ GROUND DRIVE ON ALL MACHINES
	319-158	1	Z-GATE	USED W/ GROUND DRIVE ON ALL MACHINES
20.	313-411	1	Y-GATE	USED WITH COMBO ATTACHMENT
	316-479	1	PLOW GATE	USED WITH PLOW ATTACHMENT
21.	106-391	2	WASHER (M12)	
22.	107-001	8	FLG LK SCREW (M10-1.50 X 25mm)	
23.	106-387	2	FLG LOCKNUT (M10-1.50)	
24.	215-1107	1	SEAT SWITCH	
25.	310-801	1	BLANK	USED ON MECHANICAL UNITS ONLY
26.	313-707	2	UPPER ARMREST BRACKET	
27.	107-702	2	CARRIAGE BOLT (3/8-NC x 3/4")	
28.	107-698	2	DOWEL PIN (.375 X .500)	
29.	110-383	2	KNOB (3/8-NC, BLACK)	
30.	106-168	2	FLG LK BOLT (1/4-NC X 3/4")	SEE FOOTNOTE 1

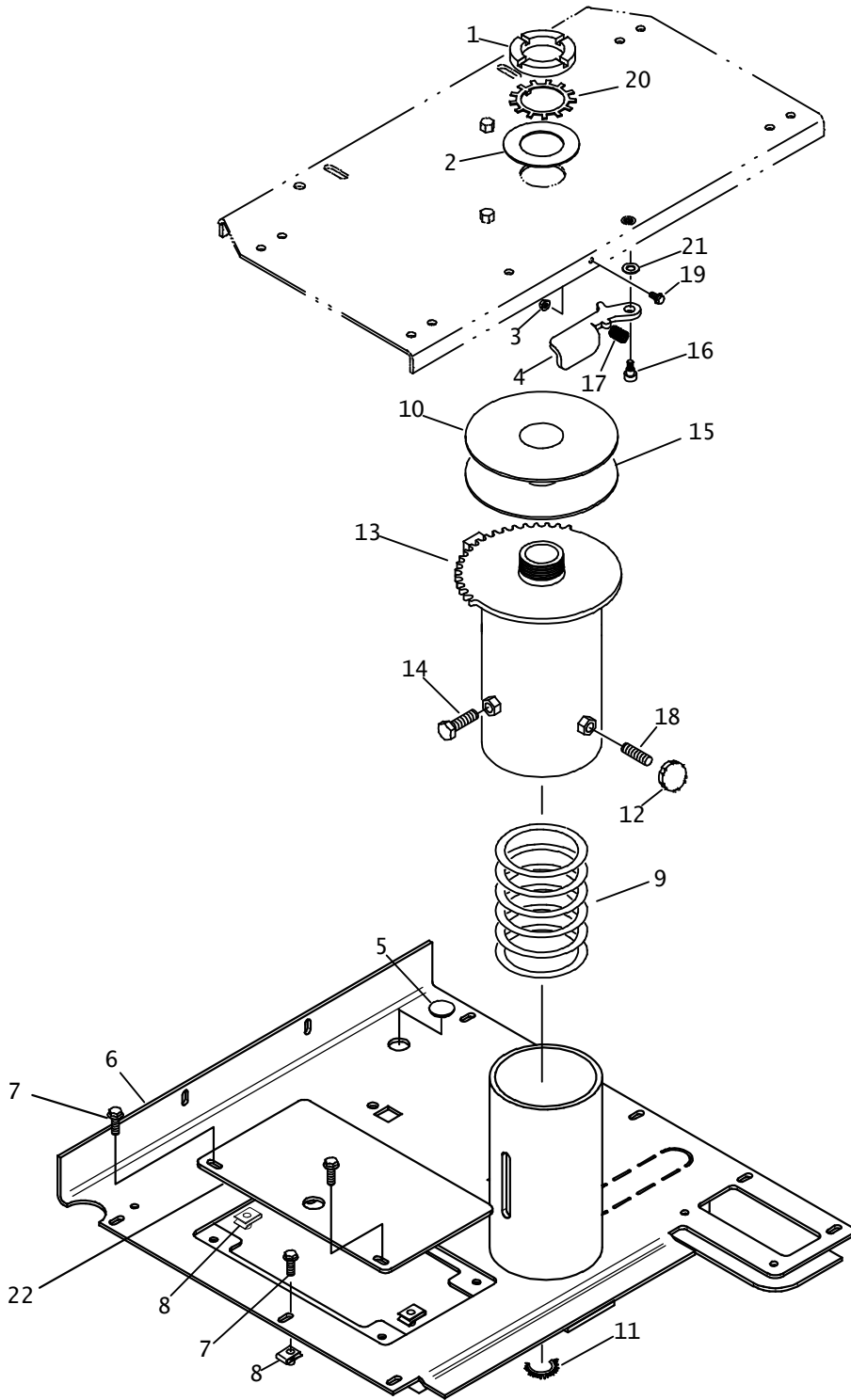
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FOOTNOTES:

- I. USE LOCTITE 242 OR EQUIVALENT

NOTE:

# SEAT SWIVEL AND BASE



## SEAT SWIVEL AND BASE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	107-528	1	PN10 SLOTTED NUT	SEE FOOTNOTE 2
2	106-522	1	WASHER (2-1/16")	
3	106-385	1	FLG LOCKNUT (M6-1.00)	
4	308-895	1	LEVER	
5	110-178	2	PLUG (7/8")	
6	306-844	1	SEAT BASE	
	322-986	1	SEAT BASE	FOR TIER 2 RT90 & RT115
	324-729	1	SEAT BASE	FOR HT115
	300-8537	1	SEAT BASE	SEE FOOTNOTE 4 FOR INSTR. & BEG. S/N; FOOTNOTE 5
7	106-992	9	FLG LK SCREW (M8-1.25 X 25mm)	SEE FOOTNOTE 1
8	107-135	13	CLIP NUT (M8-1.25)	
9	117-816	1	COMPRESSION SPRING	
10	179-382	1	SHIM (.020)	
11	115-662	1	GROMMET EDGE (3/16" X 12.7")	
12	110-383	1	KNOB (3/8-NC, BLACK)	
13	308-879	1	SWIVEL	
14	106-559	1	SCREW (M12-1.75 X 25mm)	
15	117-301	1	SWIVEL DISK (7" UHMW)	SEE FOOTNOTE 3
16	107-582	1	SHLD BOLT (3/8" X 1/4", 5/16-NC)	SEE FOOTNOTE 1
17	115-645	1	COMPRESSION SPRING	
18	106-121	1	STUD BOLT (3/8-NC X 1-1/2")	
19	106-986	1	FLG LK SCREW (M6-1.00 X 12mm)	
20	107-606	1	TANG LOCK WASHER (2")	
21	105-095	1	WASHER (1/4")	
22	300-8446	1	ACCESS PANEL	SEE FOOTNOTE 4 FOR INSTR. & BEG. S/N; FOOTNOTE 5

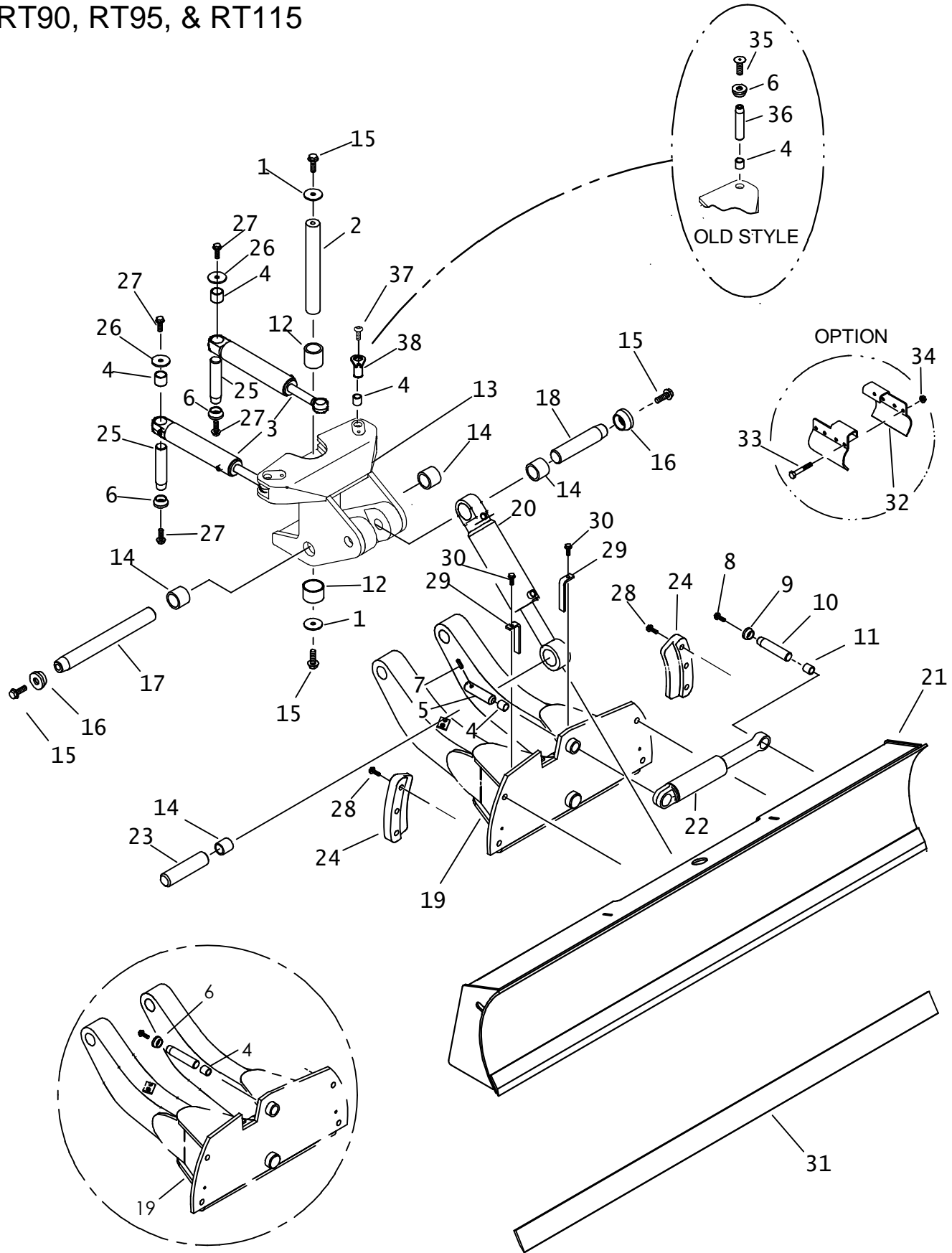
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### FOOTNOTES:

- USE LOCTITE 242 OR EQUIVALENT
- TORQUE SPANNER NUT TO PREVENT ROTATION, THEN REVERSE DIRECTION AND LOOSEN 1/8 OF A TURN.
- NO LUBRICANT ON ITEM #15
- SEAT BASE 300-8537, ACCESS PANEL 300-8446 MUST BE USED TOGETHER.  
BEGINS WITH SERIAL NUMBERS; RT95ME90000274 RT95HJ90000351 RT115T3T90000125.
- USE 2X 106-264 FOR RETAINING 300-8446 TO 300-8537 IF WELDNUTS ARE PRESENT.  
BEGINS WITH SERIAL NUMBERS; RT95HP90000380 RT95ME90000291 RI5T3L90000135.

NOTE:

# BACKFILL BLADE ASSEMBLY RT90, RT95, & RT115



SEE FOOTNOTE 2

## BACKFILL BLADE ASSEMBLY RT90, RT95, & RT115

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-416	2	WASHER (5/8")	
2.	178-572	1	PIN (1.75" X 12.75")	
3.	151-057	-	CYL (2.0" X 1.25" X 8.0")	
4.	125-771	5	COMPOSITION BUSHING (1.25")	
5.	300-7763	1	PIN	SEE FOOTNOTE 2
6.	181-982	1	TAPERED INSERT (1.25")	
7.	107-434	1	ROLL PIN 3/8 X 1-5/8	
8.	106-164	1	FLG LK SCREW (M10-1.50 X 30mm)	
9.	181-981	1	TAPERED INSERT (1")	
10.	183-767	1	TAPERED PIN (25.4mm X 60mm)	
11.	125-770	1	COMPOSITION BUSHING (1")	
12.	125-822	2	COMPOSITION BUSHING (1.750")	
13.	331-475	1	PIVOT	
14.	125-773	4	COMPOSITION BUSHING (1.750")	
15.	106-470	4	FLG SCREW (M16-2.00 X 40mm)	
16.	181-975	2	TAPERED INSERT (1.75")	
17.	178-584	1	TAPERED PIN (1.750" X 13.90")	
18.	183-768	1	TAPERED PIN (44.4mm X 205mm)	
19.	308-921	1	LIFT ARM	
20.	151-070	-	CYL (3" X 1.75" X 8")	
21.	300-8635	1	LOW ANGLE BACKFILL BLADE, 80"	SEE FOOTNOTE 1
22.	151-202	-	CYL (2" X 1" X 3.38")	
23.	178-532	1	PIN (1.750" X 7.000")	
24.	314-104	2	TILT BLADE RETAINER	
25.	178-394	2	TAPERED PIN (1.250" X 4.250")	
26.	105-475	2	WASHER (1/2")	
27.	105-830	4	FLG LK BOLT (1/2-NC X 1-1/4")	
28.	106-012	6	FLANGE BOLT (5/8-NC X 3")	
29.	309-138	2	RETAINER	
30.	106-383	2	FLG LK SCREW (M10-1.50 X 30mm)	
31.	331-751	1	80" CUTTING EDGE	
32.	322-360	2	FITTING GUARD (3.0" CYL)	OPTION
33.	106-330	4	SCREW (M8-1.25 X 70mm)	OPTION
34.	106-386	4	FLG LOCKNUT (M8-1.25)	OPTION
35.	105-1187	2	SCREW (M10-1.5 X 35mm)	USE LOCTITE 242
36.	105-1188	2	TAPERED PIN (1.250" X 2.560")	
37.	107-537	2	SCREW (M10-1.5 X 20mm)	USE LOCTITE 242
38.	300-8460	2	TAB PIN (1.250" X 2.57")	

NOT SHOWN:

### FOOTNOTES:

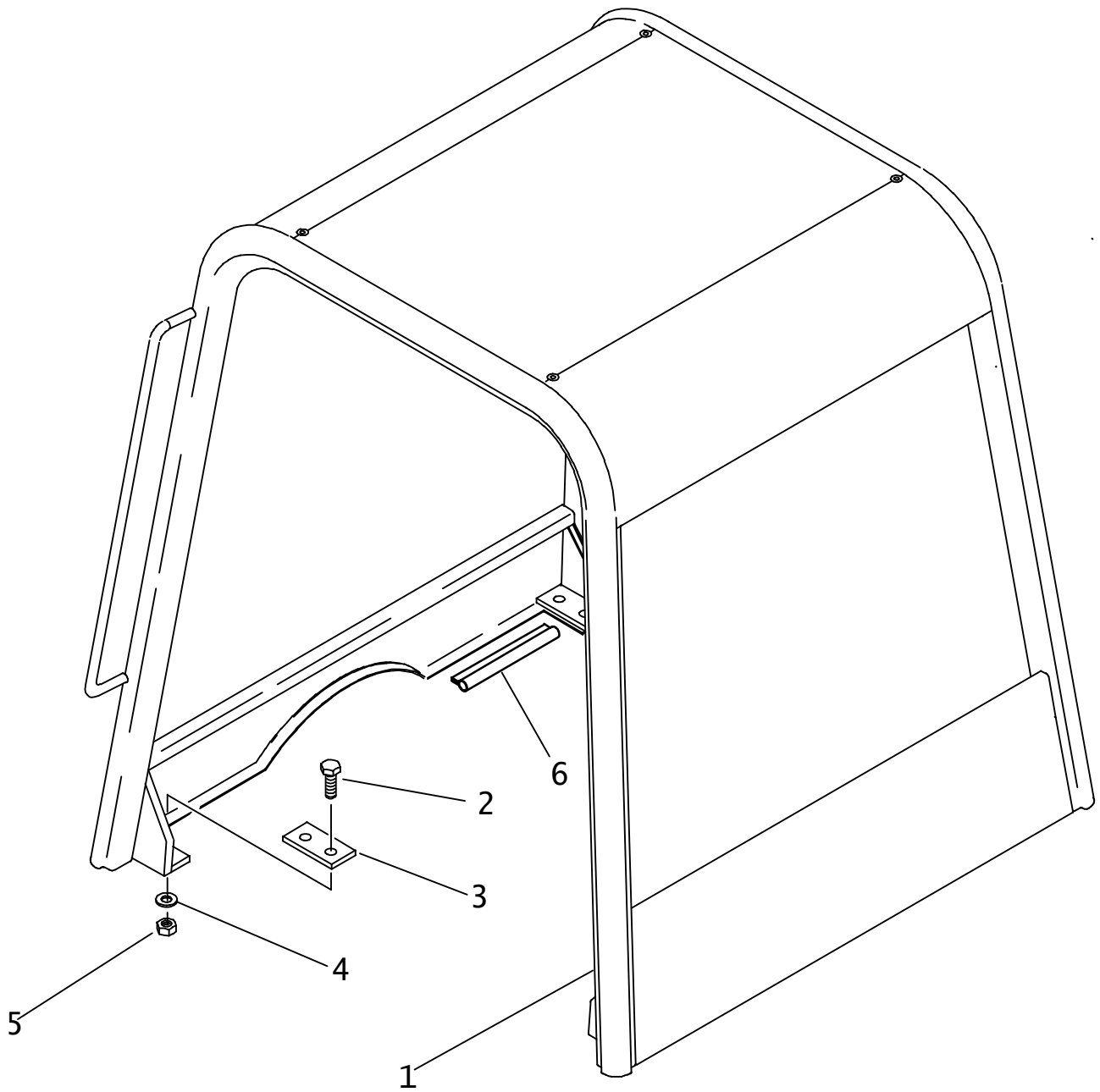
- BACKFILL BLADE 300-4321 IS SUPERSEDED BY 300-8635 ON RT90, RT95, AND RT115.  
RT95M BEGINS WITH S/N CMWRT95MJ90000296  
RT95H BEGINS WITH S/N CMWRT95HK90000364  
RT115 BEGINS WITH S/N CMWRI5T3K90000130
- EARLIER MODELS USE P/N 183-766 TAPERED PIN (31.7mm X 90MM) WITH 106-469 FLG SCREW (M12-1.75 X 30mm)

NOTE:



# 4 - POST ROPS

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



## 4 - POST ROPS

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

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-372	1	4-POST ROPS FRAME	OBSOLETE & SEE FOOTNOTE 2
	318-453	1	4-POST ROPS FRAME	SEE FOOTNOTE 2
2.	106-345	8	SCREW (M20-2.50 X 50mm)	SEE FOOTNOTE 1
3.	307-352	4	BOLT STRAP	
4.	106-393	8	WASHER (M20)	
5.	106-665	8	LOCKNUT (M20-2.50, 10.9)	
6.	116-421 AR		BULK EDGE (1/8", SOLD PER 1')	USE 1@ 2.5 FT

### FOOTNOTES

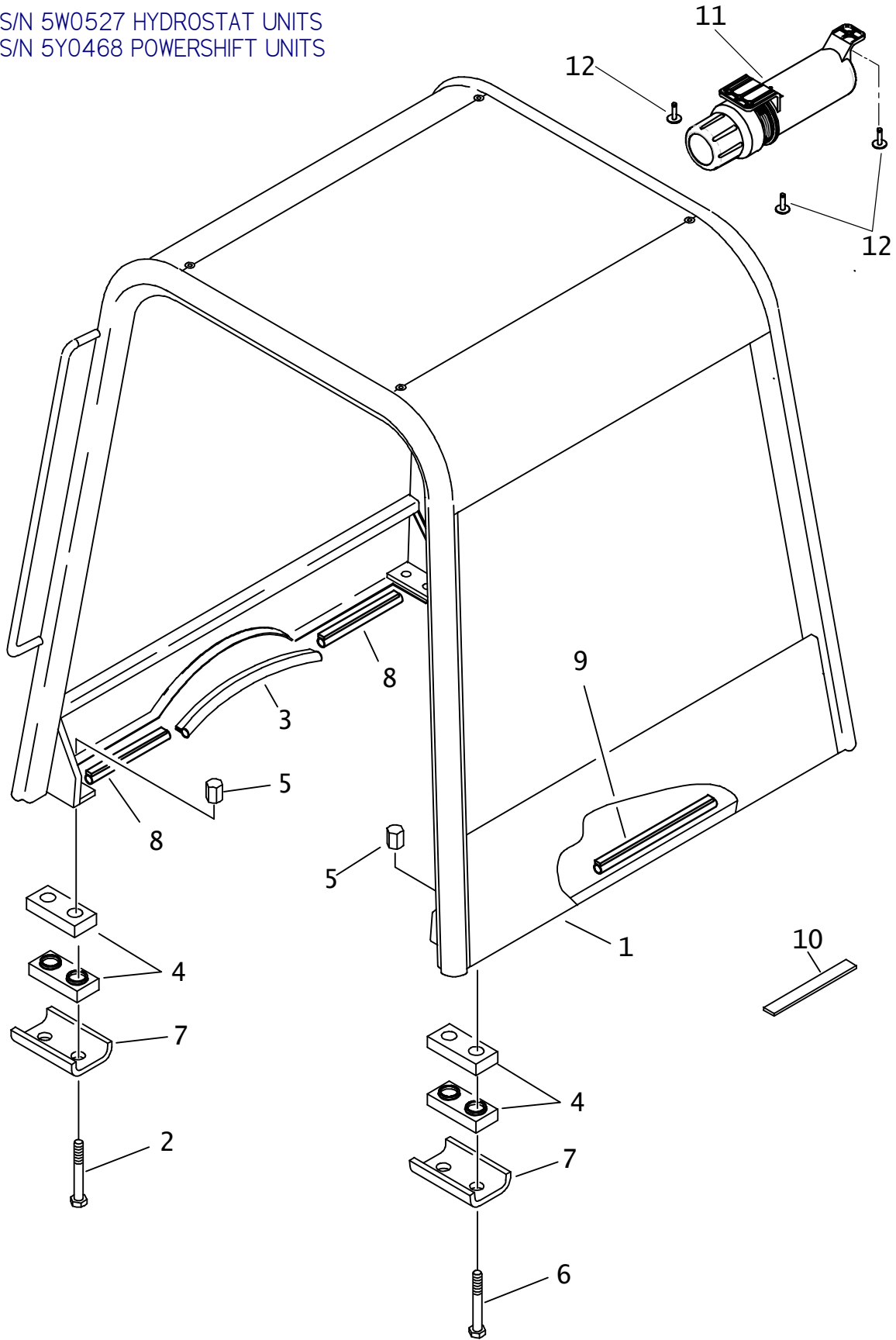
1 CHECK TORQUE CHART

2 THIS ROPS IS ONLY USED ON RT70M AND RT90M

NOTE:

# 4 - POST ROPS

BEGINS WITH S/N 5W0527 HYDROSTAT UNITS  
BEGINS WITH S/N 5Y0468 POWERSHIFT UNITS



## 4 - POST ROPS

BEGINS WITH S/N 5W0527 HYDROSTAT UNITS  
 BEGINS WITH S/N 5Y0468 POWERSHIFT UNITS

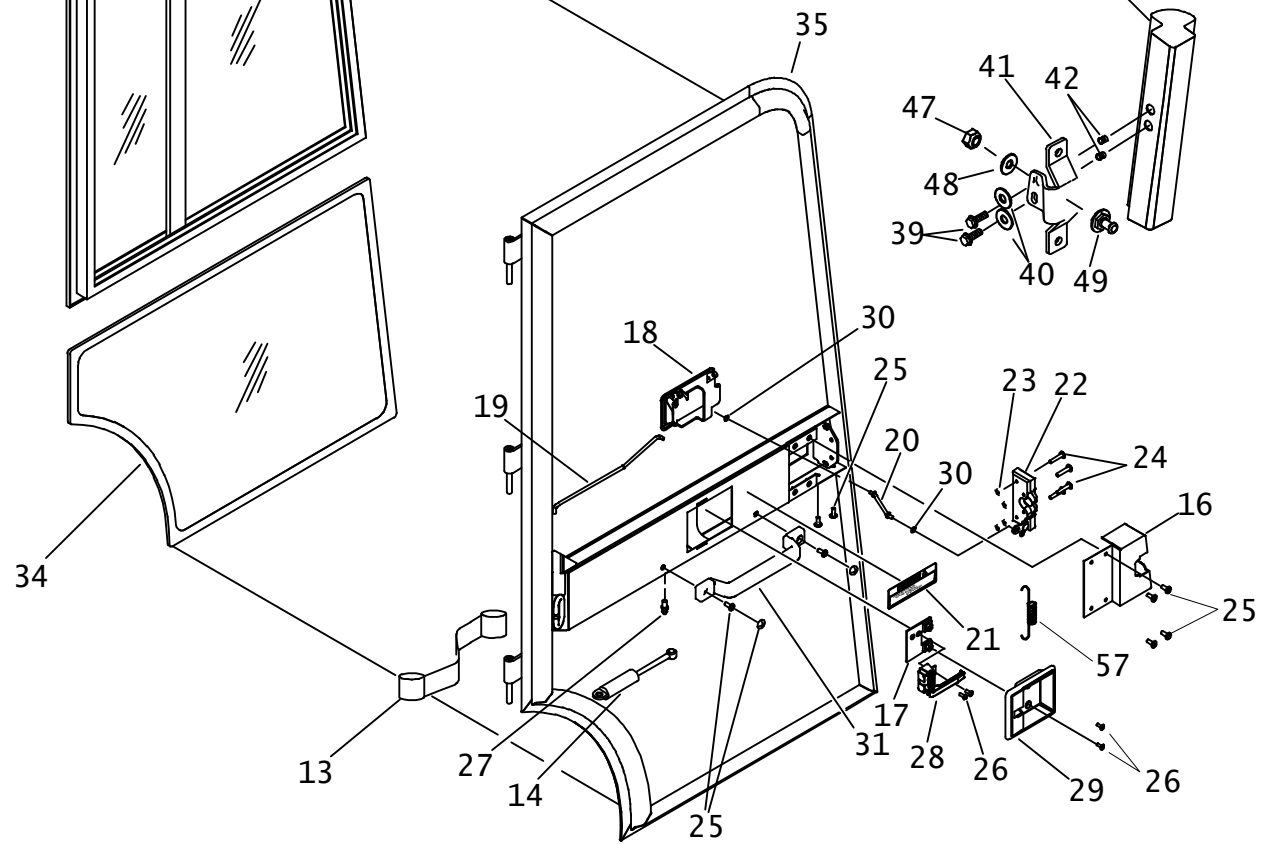
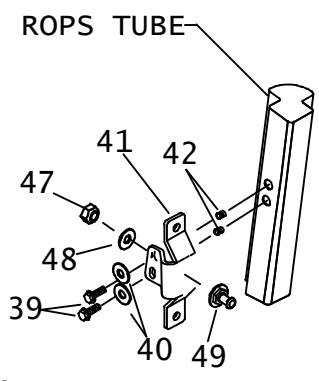
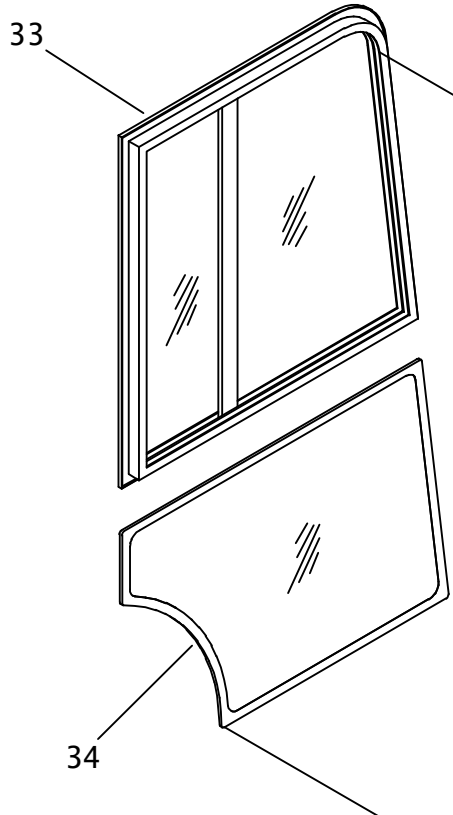
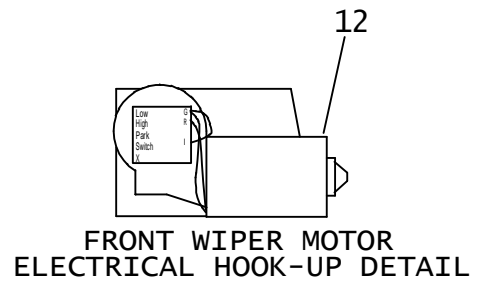
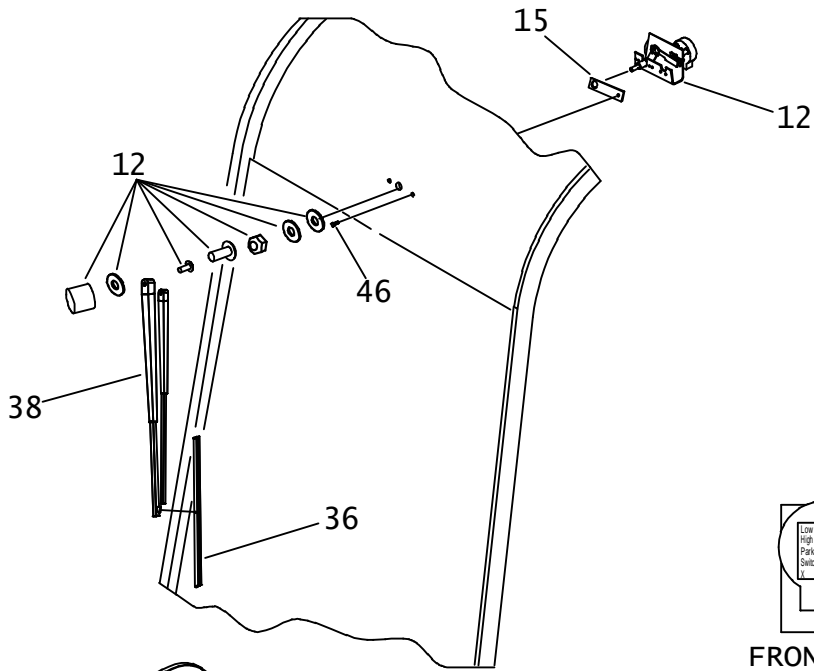
REF PART NO.	NUMBER	QTY	DESCRIPTION	REMARKS
1.	320-250	1	4-POST ROPS FRAME	
2.	107-923	4	SCREW (3/4-NC X 5", GD5) SPEC.	REFER TO FOOTNOTE 1
3.	116-421 AR		BULK EDGE (1/8", SOLD PER 1')	USE 1@ 2.5 FT
4.	117-973	8	SHOCK MOUNT	
5.	107-924	8	NUT (3/4-NC) SPECIAL	
6.	107-922	4	SCREW (3/4-NC X 4-1/2", GD5) SPEC.	REFER TO FOOTNOTE 2
7.	320-240	4	ISOLATOR IRON	
8.	117-344 AR		BULK EDGE (3/16", SOLD PER 1")	USE 2 @ 1 FT.
9.	117-344 AR		BULK EDGE (3/16", SOLD PER 1")	USE 1 @ 3.5 FT.
10.	320-745	1	CHECK GAUGE	
11.	250-063	1	MANUAL COMPARTMENT	
12.	110-348	3	POP RIVET (3/16" X .664")	

### FOOTNOTES

1. SCREW (107-923) HAS GOLD PLATING TO DISTINGUISH IT FROM SCREW (107-922). PROPER LOCATION IS IMPORTANT FOR PROPER ASSEMBLY OF THE ROPS. TORQUE TO 200 Ft.Lbs, USE LOCTITE 271 OR EQUIVALENT.
2. SCREW (107-922) HAS SILVER PLATING TO DISTINGUISH IT FROM SCREW (107-923). PROPER LOCATION IS IMPORTANT FOR PROPER ASSEMBLY OF THE ROPS. TORQUE TO 200 Ft.Lbs, USE LOCTITE 271 OR EQUIVALENT.

NOTE:

# CAB KIT



# CAB KIT

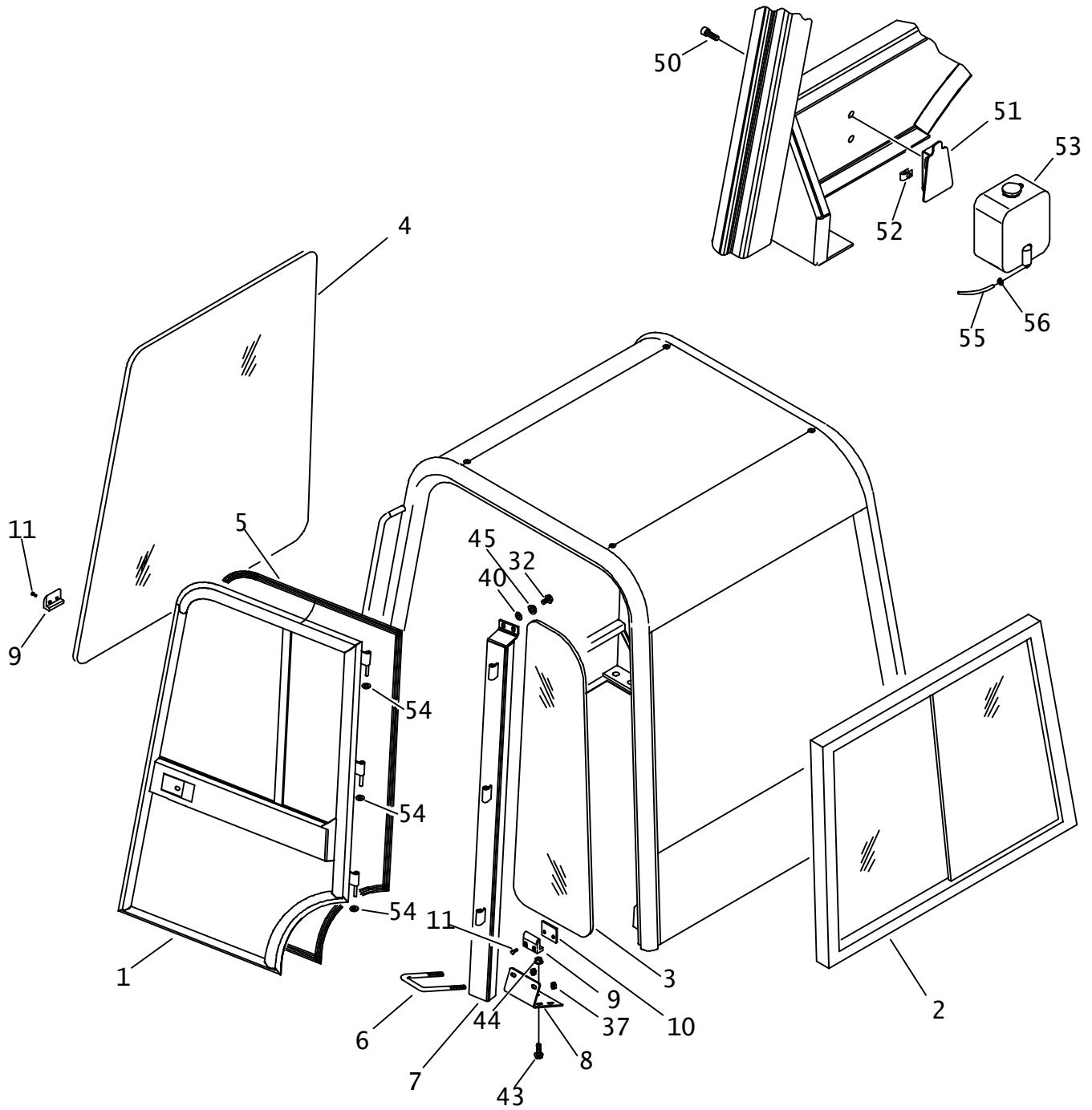
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-179		CAB KIT	INCL. REF. #S I-57
1.	499-436	1	DOOR ASSY (RIGHT)	
	499-437	1	DOOR ASSY (LEFT)	
2.	121-044	1	SLIDER ASS'Y (REAR)	SEE NOT SHOWN FOR REPLACEMENT LATCH.
	499-747	-	WINDOW FRAME	OBSOLETE
	499-748	-	REAR WINDOW	
3.	121-045	1	SIDE WINDOW (LEFT)	
	121-046	1	SIDE WINDOW (RIGHT)	
4.	121-047	1	FRONT WINDOW	
5.	117-829	21	SEAL, PSA DOUBLE D	
6.	318-374	1	U-CLAMP	
7.	318-358	1	DOORPOST (LEFT)	
	318-359	1	DOORPOST (RIGHT)	
8.	318-375	2	BRACKET, LOWER DOOR POST	
9.	318-376	2	WINDOW RETAINING CLIP	
10.	318-377	2	PLATE	
11.	107-786	32	SCREW, (#10-32 X 1-1/2") HEX	
12.	214-897	1	WIPER MOTOR	
13.	499-441	2	DOOR STRAP	
14.	499-438	2	GAS SPRING STRUT	
15.	119-003	1	SPACER, WIPER MOTOR	
16.	318-360	1	CAM LATCH COVER (RIGHT)	
	318-361	1	CAM LATCH COVER (LEFT)	
17.	318-362	1	INNER BRACKET (RIGHT)	
	318-363	1	INNER BRACKET (LEFT)	
18.	117-825	1	L. LATCH, PADDLE W/KEY	
	117-854	1	R. LATCH, PADDLE W/KEY	
19.	117-821	1	LEFT ROD, DOOR LINKAGE	
	117-855	1	RIGHT ROD, DOOR LINKAGE	
20.	117-856	2	ROD, DOOR LINKAGE	
21.	273-279	1	WARNING TAG	
22.	117-824	1	LEFT LATCH, ROTARY	
	117-857	1	RIGHT LATCH, ROTARY	
23.	105-085	4	LOCKNUT (1/4-NC)	
24.	107-787	4	SCREW (1/4-20 X 1-1/4) TRUS, TORX	
25.	107-788	8	SCREW (1/4 X 5/8) TRUS, TORX T27	COMES WITH SNAP-ON COVER
26.	107-789	4	SCREW (#10-24 X 1/2 ") TRUS, TORX	
27.	166-450	1	STUD, CYLINDER	
28.	117-823	1	LEFT HANDLE, INSIDE	
	117-858	1	RIGHT HANDLE, INSIDE	
29.	499-440	1	INSIDE DOOR BEZEL	
30.	117-828	4	RETAINER, INTERNAL TOOTH	
31.	499-439	1	DOOR PULL	
32.	107-245	4	FLG LK BOLT (3/8-NC X 3/4", NLK)	

## NOTE:

### MOUNTING A CAB ON THE RT70/RT90/RT115

1. A CAB CAN BE MOUNTED DIRECTLY ON RT70M OR RT90M WHEN OLD ROPS HAS NOT BEEN MODIFIED WITH THE NEW ISOLATORS.
2. A CAB CAN NOT BE MOUNTED ON A RT70H, RT90H OR RT115H WHEN AN OLD ROPS HAS BEEN MODIFIED WITH THE NEW ISOLATORS.
3. A CAB CAN BE MOUNTED ON A RT79H, RT90H OR RT115H WITH A NEW ROPS WITH THE NEW ISOLATORS.

# CAB KIT

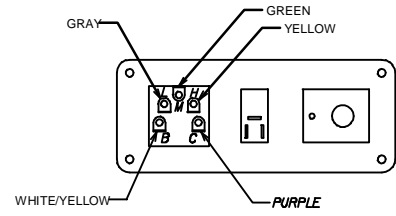


# CAB KIT

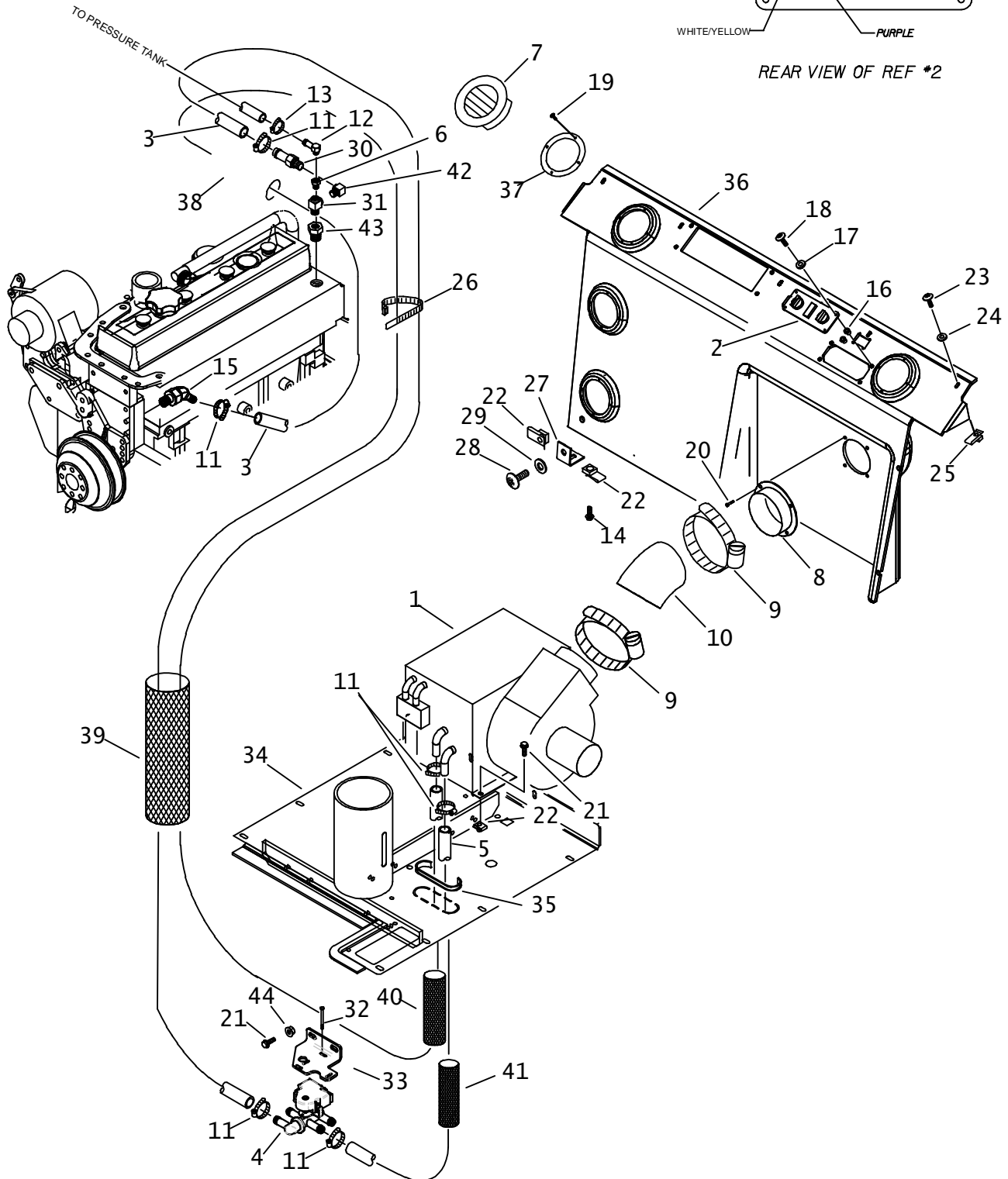
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
33.	121-048	1	SLIDER, (LEFT DOOR)	SEE NOT SHOWN FOR REPLACEMENT LATCH.
	121-049	1	SLIDER, (RIGHT DOOR)	SEE NOT SHOWN FOR REPLACEMENT LATCH.
34.	121-050	1	GLASS (LOWER DOOR), LEFT	
	121-051	1	GLASS (LOWER DOOR), RIGHT	
35.	318-364	1	RIGHT DOOR	
	318-365	1	LEFT DOOR	
36.	121-052	1	WIPER BLADE	
37.	105-047	4	LOCKNUT (3/8-NC)	
38.	121-053	1	WIPER ARM	
39.	106-991	8	FLG LK SCREW (M8-1.25 X 20mm)	
40.	106-415	8	WASHER (.406")	
41.	117-826	1	STRIKE BRACKET (RIGHT)	
	117-827	1	STRIKE BRACKET (LEFT)	
42.	106-565	8	NUTSERT, (M8-1.25)	
43.	106-469	8	FLG SCREW (M12-1.75 X 30mm)	
44.	106-709	8	FLG LK NUT (M12-1.75)	
45.	105-895	4	LOCK WASHER (3/8")	
46.	105-865	1	BOLT (1/4-NC X 3/4", GD8)	
47.	105-151	2	LOCKNUT (7/16-NC)	
48.	105-059	2	WASHER (7/16)	
49.	117-861	2	STRIKER BOLT	
50.	107-778	2	SCREW (M8-1.25 X 30mm, BUT SOC)	
51.	318-879	1	BOTTLE BRACKET	
52.	107-135	2	CLIP NUT (M8-1.25)	
53.	344-115	1	WINDSHIELD WASHER TANK	
54.	107-875	6	WASHER (.400" ID. BRASS)	
55.	116-866	AR	BULK HOSE (3/16", SOLD PER 1")	USE 1 @ 150"
56.	110-249	1	WORM CLAMP (1/4" TO 5/8")	
57.	118-357	1	EXTENSION SPRING	
NOT SHOWN:				
	256-669	2	URETHANE ADHESIVE	10.5 FL. OZ. TUBES
	105-1305	1	KEYS (RT TRACTOR CAB)	REPLACEMENT KEYS
	115-1014	2	CLIP	RETAINS STRUT 499-438 ONTO STUD 166-450
	500-2067		LEFT SLIDER LATCH REAR	USED ON 121-044 SLIDER (REAR)
	500-2068		RIGHT SLIDER LATCH REAR	USED ON 121-044 SLIDER (REAR)
	500-2069		LEFT SLIDER LATCH	USED ON 121-048 SLIDER (LT DOOR)
	500-2070		RIGHT SLIDER LATCH	USED ON 121-049 SLIDER (RT DOOR)
NOTE:				



# CAB HEATER ASM



REAR VIEW OF REF \*2



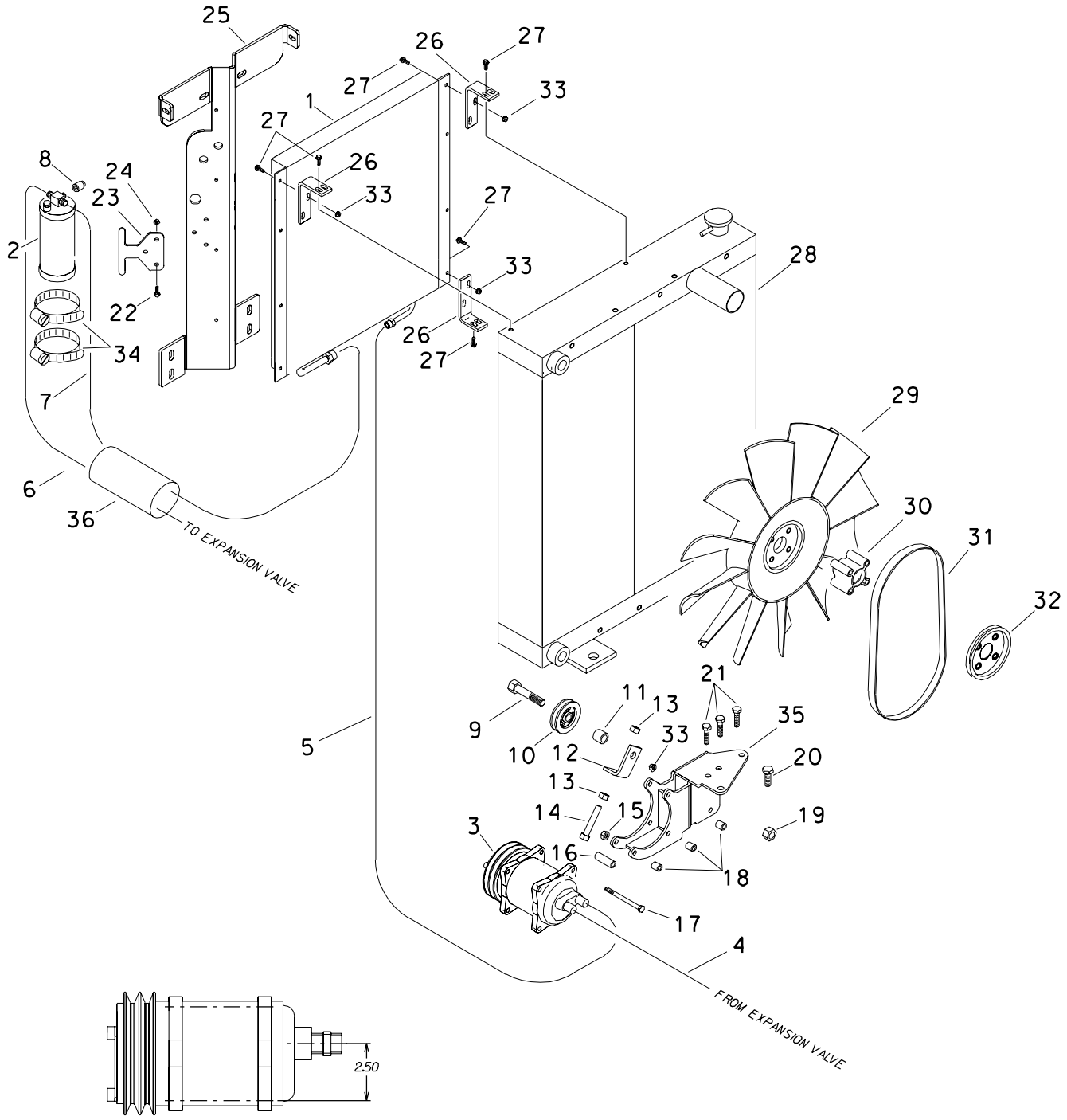
# CAB HEATER ASM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-247		A/C HEATER KIT	INCL. REF. #'S 1-13,15-25,30-33,35-44.
	191-181		HEATER KIT	INCL. REF. #'S 1-13,15-25,30-33,35-44.
1.	499-551	1	A/C HEATER	
	499-552	1	HEATER	
2.	499-553	1	AC- HEATER CONTROL PANEL	
3.	116-044	AR	BULK HOSE (5/8" , SOLD PER 1")	USE 2 @ 90"
4.	499-554	1	HEATER VALVE	
5.	116-044	AR	BULK HOSE (5/8" , SOLD PER 1")	USE 1 @ 22"
6.	115-106	1	REDUCER (06N-04NF)	
7.	120-085	4	ADJUSTABLE LOUVER (23-0005)	
8.	120-123	1	HOSE ADAPTER (23-0090)	
9.	110-170	2	WORM CLAMP (4-1/8"TO 5")	
10.	157-416	1	AIR DUCT HOSE	USE 1 @ 12"
11.	110-217	6	WORM CLAMP (7/16"TO 1")	
12.	155-164	2	S/O COUPLER (04N-05H90)	
13.	110-249	1	WORM CLAMP (1/4"TO 5/8")	
14.	106-992	-	FLG LK SCREW (M8-1.25 X 25mm)	
15.	153-804	1	CONNECTOR (M14-1.50 X 10H45)	
16.	107-358	4	WELLNUT (M4-0.7 X 12.67mm LG)	
17.	107-597	4	WASHER (M4)	
18.	107-580	4	SCREW (M4-0.70 X 16mm, BUT SOC)	
19.	107-852	16	SCREW (#8 X 5/8" CSK PLPS)	
20.	105-194	4	SCREW (#8-32 X 1/2")	
21.	106-992	4	FLG LK SCREW (M8-1.25 X 25mm)	
22.	107-135	2	CLIP NUT (M8-1.25)	
23.	106-640	5	SCREW (M6-1.00 X 20mm, BUT SOC)	
24.	106-388	5	WASHER (M6)	
25.	106-574	5	CLIP NUT (M6-1.00)	
26.	110-030	1	CABLE TIE (1/16" TO 4")	
27.	309-434	-	TAB	
28.	107-778	-	SCREW (M8-1.25 X 30mm,BUT SOC)	
29.	107-629	-	WASHER (M8)	
30.	155-112	1	S/O COUPLER (06N-10H)	
31.	155-017	1	SERVICE TEE (06N-06NF-06NF)	
32.	107-863	2	SCREW (M4-0.70 X 60mm PAN)	
33.	318-811	1	VALVE BRACKET	
34.	306-844	-	SEAT BASE	
35.	115-662	1	GROMMET EDGE (3/16" X 12.7")	
36.	309-937	1	REAR PANEL	
37.	120-084	4	HOSE ADAPTER (23-0048)	
38.	117-397	1	ABRASION SLEEVE (1.25" X 35")	
39.	117-265	1	ABRASION SLEEVE (1.75" X 50")	
40.	117-396	1	ABRASION SLEEVE (1.25" X 28")	
41.	117-622	1	ABRASION SLEEVE (1.25" X 20")	
42.	156-260	1	STREET ELBOW (06N-06NF90)	
43.	514-085	1	REDUCER (08N-06NF)	
44.	106-386	2	FLG LOCKNUT (M8-1.25)	

FOOTNOTES:

NOTE:

# AIR CONDITIONING KIT



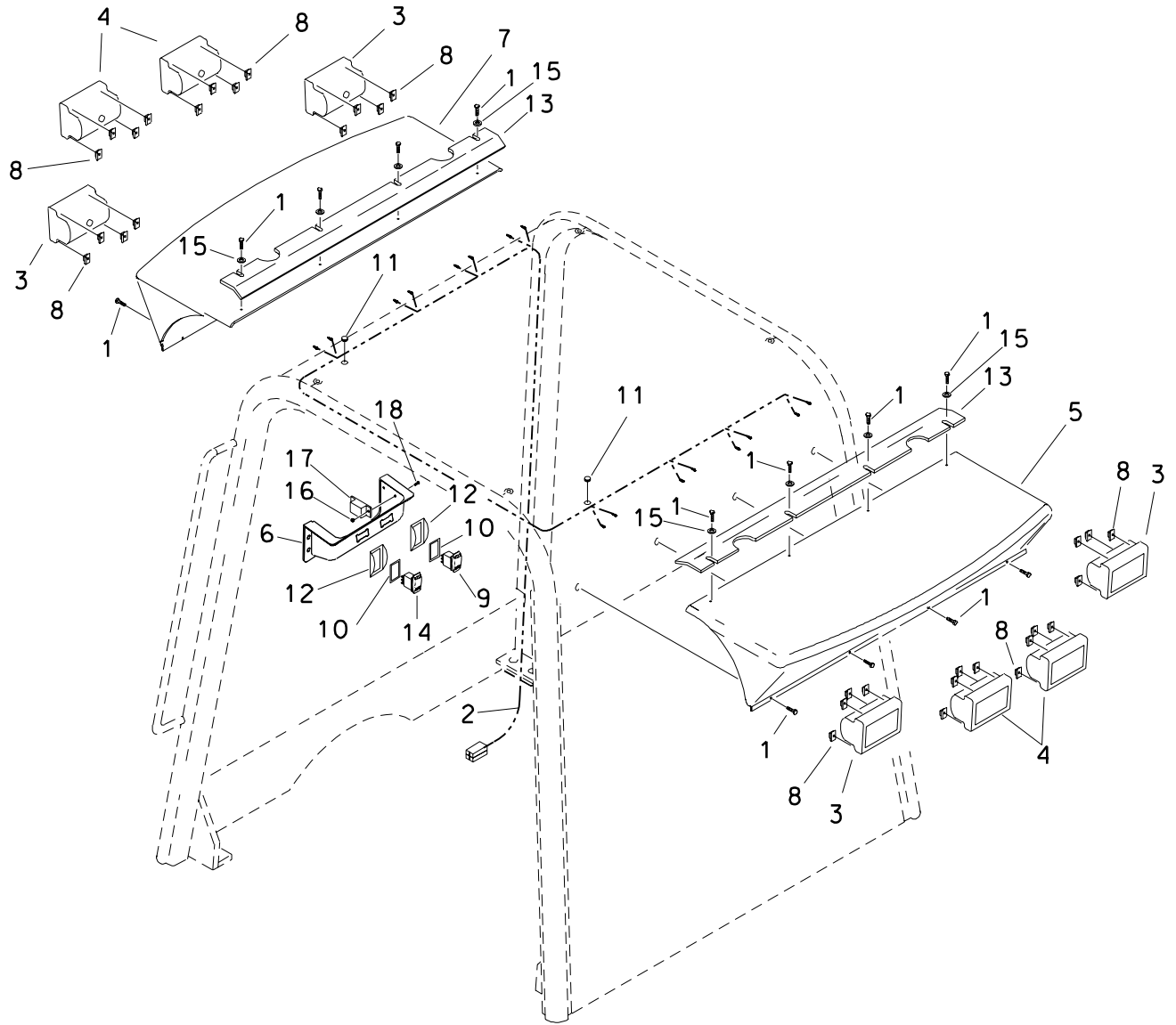
## AIR CONDITIONING KIT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-247		A/C-HEATER KIT	INCL. REF. #'S 1-36.
1.	194-369	1	CONDENSER COIL	
2.	499-546	1	DRIER	
3.	120-147	1	A/C COMPRESSOR	
4.	499-547	1	HOSE (A/C)	
5.	499-548	1	HOSE (A/C)	
6.	499-549	1	HOSE (A/C)	
7.	499-550	1	HOSE (A/C)	
8.	217-285	1	BINARY SWITCH	
9.	107-197	1	SCREW (M16-2.00 X 80mm, 10.9)	SEE FOOTNOTE 1
10.	170-359	1	BALL BEARING V-PULLEY IDLER	
11.	178-441	1	SPACER	
12.	307-980	1	SLIDE BAR	
13.	106-089	1	NUT (M12-1.75, 10.9)	
14.	106-720	1	SCREW (M12-1.75 X 70mm)	
15.	105-089	3	LOCKNUT (5/16-NC)	
16.	178-978	2	SPACER	
17.	105-838	3	BOLT (5/16-NC X 5")	
18.	178-440	3	SPACER	
19.	106-077	1	NUT (M16-2.00, 10.9)	
20.	106-333	1	SCREW (M12-1.75 X 40mm, 8.8)	SEE FOOTNOTE 1
21.	105-876	3	SCREW (M10-1.50 X 35mm)	SEE FOOTNOTE 1
22.	106-381	3	FLG LK SCREW (M8-1.25 X 25mm)	
23.	310-983	1	BRACKET	
24.	106-386	3	FLG LOCKNUT (M8-1.25)	
25.	307-909	-	FRONT HOOD SUPPORT	
26.	306-769	3	MOUNT BAR	
27.	106-987	6	FLG SCREW (M6-1.00 X 16mm)	
28.	306-459	-	RADIATOR/OIL COOLER	
29.	194-112	-	FAN (21.80")	
30.	194-052	-	FAN SPACER	
31.	171-007	1	COMPRESSOR BELT	
32.	170-365	1	DRIVE PULLEY	
33.	106-385	4	FLG LOCKNUT (M6-1.00)	
34.	110-169	2	WORM CLAMP (2.812" TO 3.750")	
35.	307-975	1	COMPRESSOR MOUNT	
36.	115-687	1	ABRASION SLEEVE (SOLD PER FOOT)	USE 1 @ 2'

## FOOTNOTES

1- USE LOCTITE 242 OR EQUIVALENT.

# CANOPY AND LIGHT KIT



# CANOPY AND LIGHT KIT

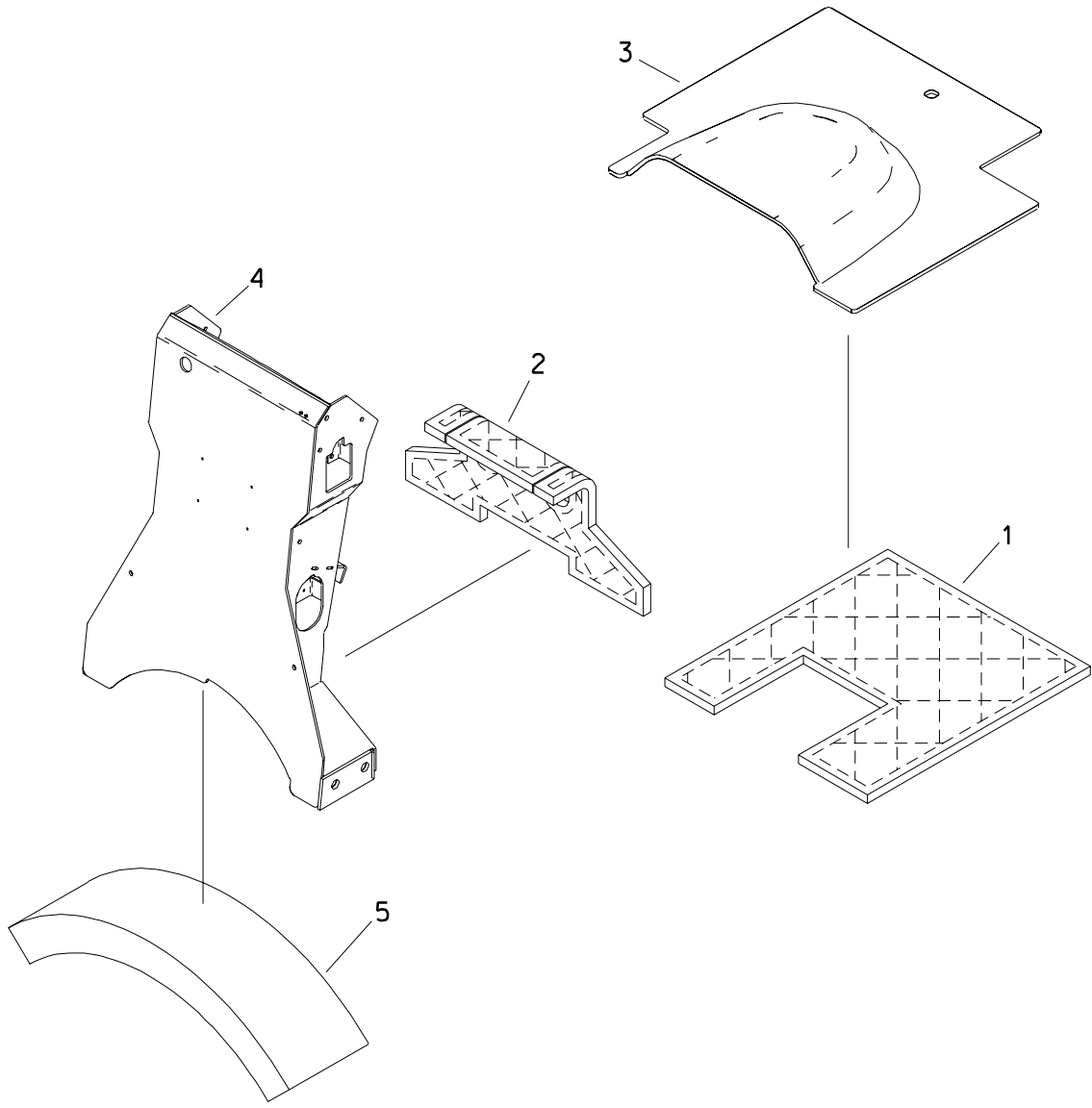
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-180		LIGHT KIT	INCLUDES REF #'S 1-18
1.	108-161	16	SCREW (1/4"-14 X 1 1/4" SLF DR)	
2.	214-659	1	LIGHT KIT HARNESS	
3.	217-288	4	WORK LIGHT (100FO)	
4.	217-287	4	WARNING LIGHT	
5.	305-658	1	EYE-BROW CANOPY	
6.	308-894	1	OVERHEAD CONSOLE	
7.	310-113	1	FRONT EYE-BROW CANOPY	
8.	107-405	32	CLIP NUT (6-32)	
9.	217-762	1	ROCKER SWITCH (SPDT)	
10.	165-817	2	SWITCH GASKET	
11.	115-349	2	GRDMMET (1/2")	DRILL 2-23/32" HOLES ON DIMPLES; EXCEPT HT115
12.	110-854	2	SWITCH ACTUATOR GUARD	
13.	318-661	2	STRAP	
14.	214-912	1	DPST ON-OFF ROCKER SWITCH	
15.	105-284	8	WASHER (3/16")	
16.	106-048	2	LOCKNUT (#10-24)	
17.	215-041	1	FLASHER	
18.	105-185	2	BOLT (#10-24 X 1/2", RD SLT)	

NOT SHOWN:

217-826	MINI RELAY (SPDT)
362-823	COVER

FOOTNOTES

# SOUND BLANKETS



# SOUND BLANKETS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-833	1	SOUND BLANKET	POWERSHIFT ONLY
	117-832	1	SOUND BLANKET	HT115 AND HYDROSTAT ONLY
2.	117-834	1	SOUND BLANKET	USED ON RT/HT115 & POWERSHIFT ONLY
	117-835	1	SOUND BLANKET	USED ON RT75/95 HYDROSTAT ONLY
3.	313-238	-	FLOOR PLATE	
	318-793	-	FLOOR PLATE	
	324-566	-	FLOOR PLATE	HT115 ONLY
4.	315-142	-	PEDESTAL	
5.	117-847	1	HEAT BLANKET	

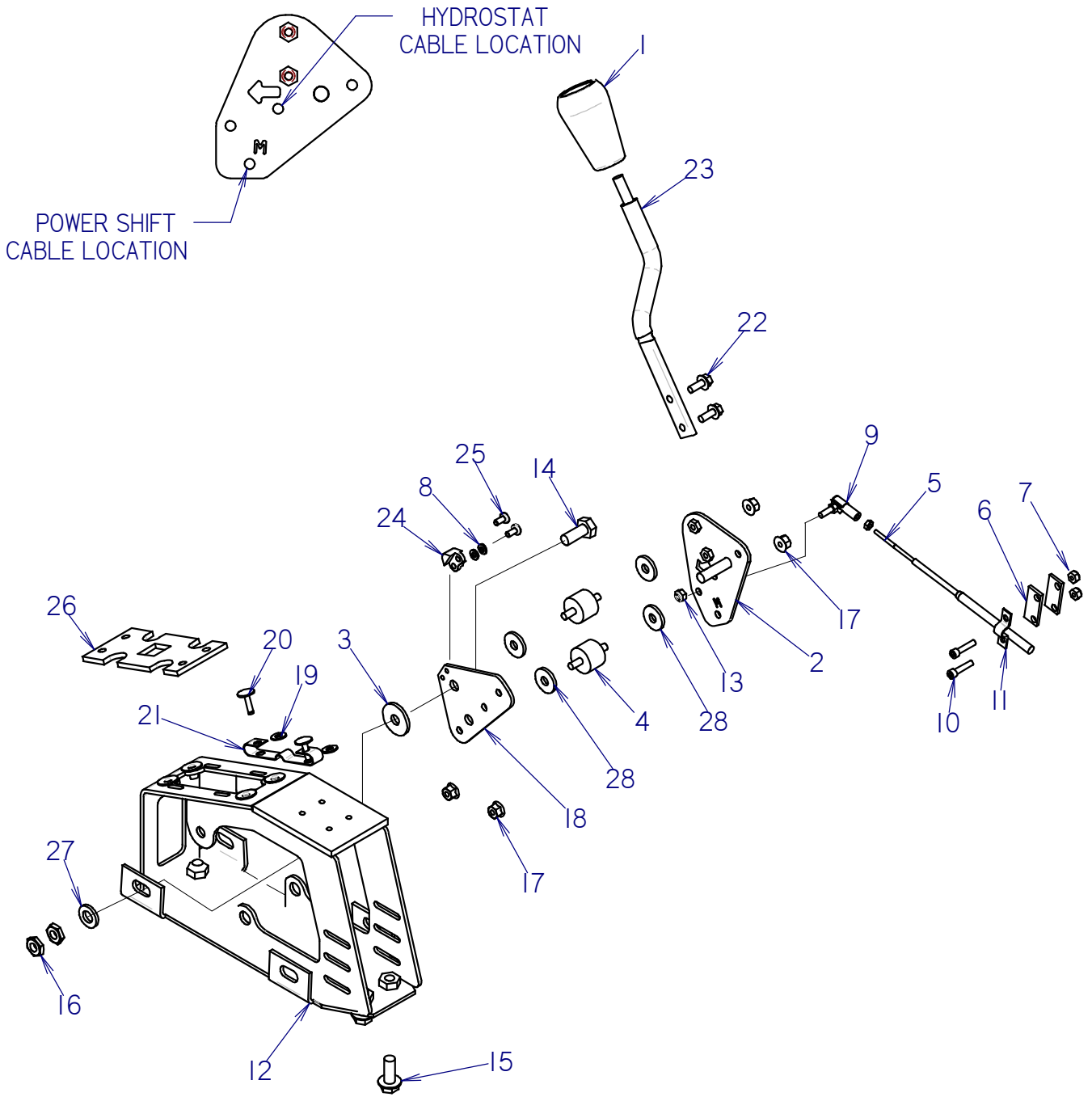
## FOOTNOTES





# **CONTROL COMPONENTS**

# GRND SPEED DIRECTION HAND CNTL



## GRND SPEED DIRECTION HAND CNTL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	110-445	1	KNOB (3/8-NC, ORANGE)	
2	319-914	1	RIGHT CONTROL	SEE FOOTNOTE 3 AND INCLUDES HARDWARE
3	107-529	1	WASHER UHMW (3/8)	
4	116-980	2	SHOCK MOUNT	
5	196-287	1	CONTROL CABLE	SEE FOOTNOTE 4
6	331-166	2	BOLT-ON BACK-UP (.306")	
7	106-048	2	LOCKNUT (#10-24)	
8	106-205	2	WASHER (.191")	
9	110-318	1	BALL JOINT (#10-32, FM)	
10	105-810	2	BOLT (#10-24 X 7/8", SOC)	
11	110-697	1	BOLT-ON CLAMP (.360")	
12	309-227	1	CONTROL LEVER FRAME	
13	107-770	1	LOCKNUT (1/4-NF, NYL INSERT)	
14	105-245	1	SCREW (M10-1.50 X 25MM)	
15	107-001	4	FLG LK SCREW (M10-1.50 X 25MM)	
16	107-769	2	JAM NUT (M10-1.50)	SEE FOOTNOTE 2
17	105-832	4	FLG LOCKNUT (1/4-NC)	
18	310-127	1	PIVOT PLATE	
19	105-284	2	WASHER (3/16")	
20	110-348	2	POP RIVET (3/16" X .664")	
21	115-598	1	SPRING DETENT	
22	106-987	2	FLG LK SCREW (M6-1.00 X 16MM)	
23	117-519	1	CONTROL HANDLE	
24	315-149	1	DETENT TIP	
25	106-271	2	SCREW (M5-0.80 X 8MM, PLPS)	SEE FOOTNOTE 1
26	316-476	1	TEMPLATE	
27	106-396	1	WASHER (M10, HARDENED)	
28	106-261	4	WASHER (.334")	

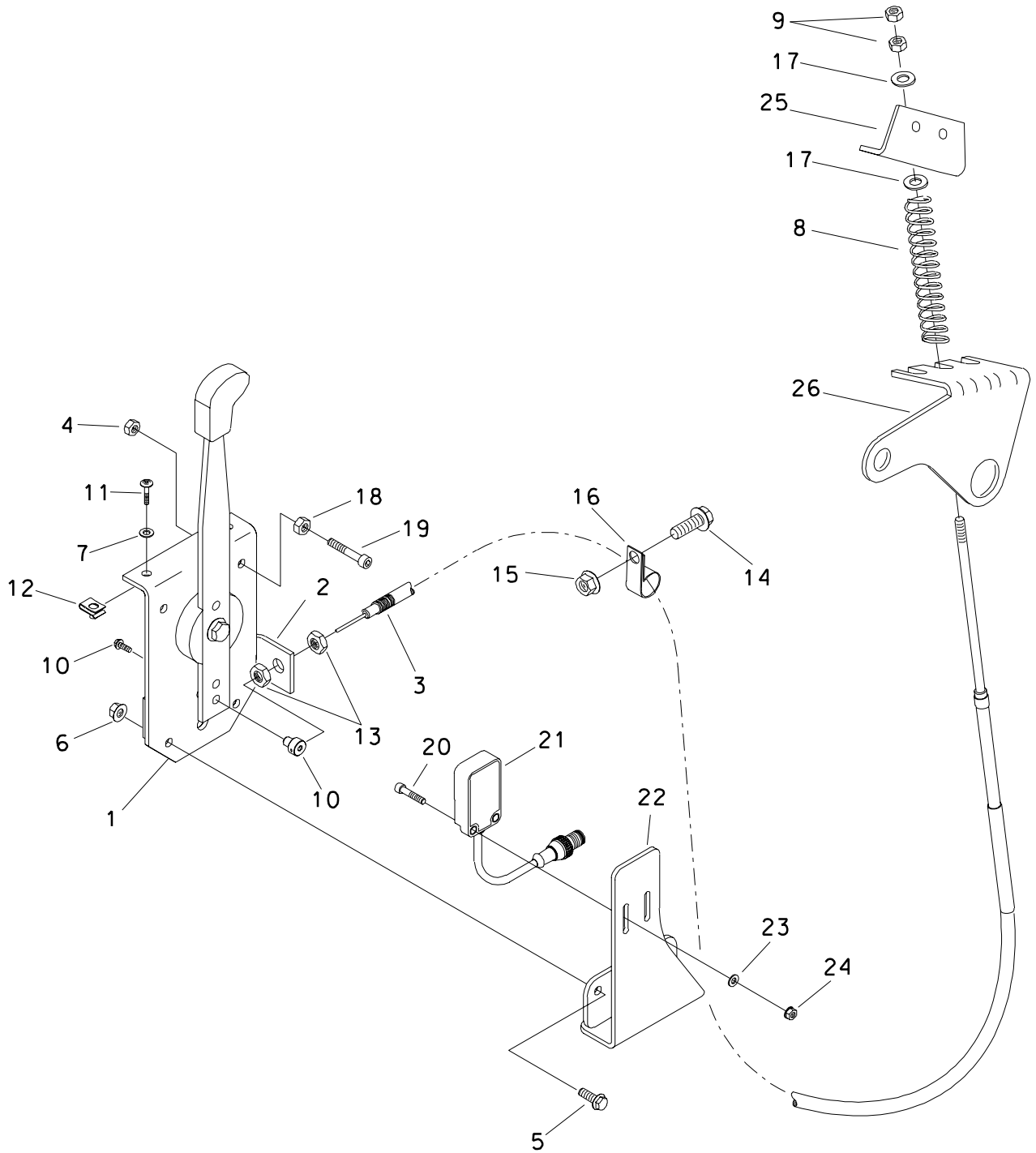
### FOOTNOTES

1. USE LOCTITE 242 OR EQUIVALENT
2. TORQUE TO 70 IN.-LBS.
3. IF ORDERING THIS PART FOR MACHINE WITH S/N \_\_\_\_\_ OR OLDER, YOU MUST ALSO ORDER LEVER (#319-916) AND REFER TO PARTS PAGE "GRD SPEED DIRECTION FOOT CONTROL", IF THIS UNIT IS EQUIPPED WITH CRUISE CONTROL, PART 319-916 IS NOT NEEDED.
4. 196-287 IS FOR HYDROSTAT TRACTORS. USE 194-196 FOR POWER SHIFT TRACTORS.

NOTE:

# HAND THROTTLE

ENDS WITH S/N 5Y0226



# HAND THROTTLE

## ENDS WITH S/N 5Y0226

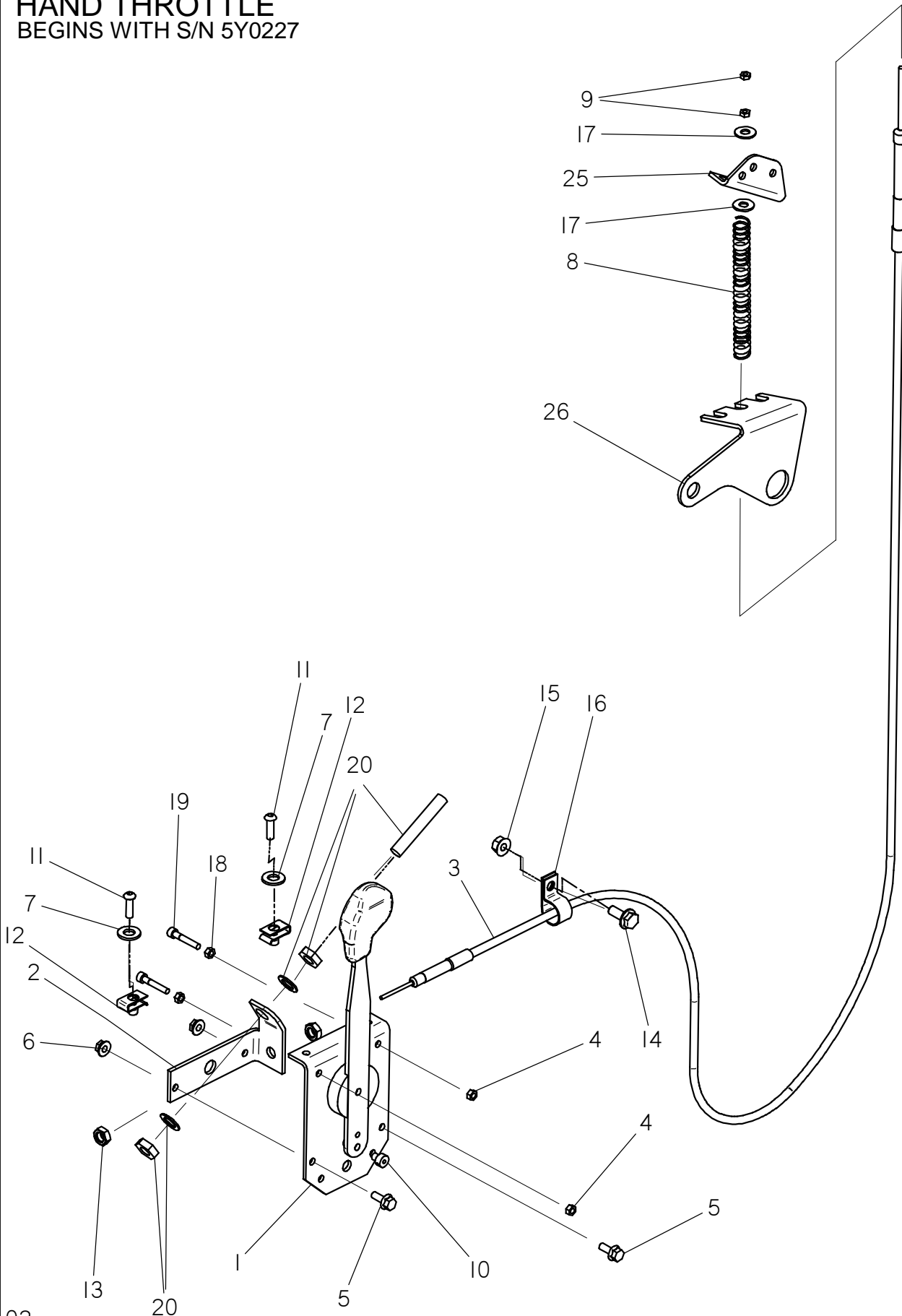
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-619	1	CONTROL LEVER	
	117-593	1	KNOB (ORANGE)	
2.	307-067	1	CONTROL BRACKET	
3.	194-124	1	CONTROL CABLE	
	194-539	1	CONTROL CABLE	SEE FOOTNOTE 1
4.	106-850	2	LOCKNUT (M5-0.80)	
5.	106-987	2	FLG LK SCREW (M6-1.00 X 16mm)	
6.	106-353	2	FLG NUT (M6-1.00)	
7.	107-744	2	WASHER (M6)	
8.	115-604	1	COMPRESSION SPRING	
9.	506-021	2	NUT (#10-32)	
10.	196-058	1	CABLE SWIVEL (.081")	
	106-205	1	WASHER (.191")	
	505-114	1	THRUST WASHER (.343")	
11.	106-640	2	SCREW (M6-1.00 X 20mm, BUT SOC)	
12.	106-574	2	CLIP NUT (M6-1.00)	USE LOCTITE 242 OR ITS EQUIVILENT
13.	106-018	2	JAM NUT (3/8-NF)	
14.	106-991	1	FLG LK SCREW (M8-1.25 X 20mm)	
15.	106-386	1	FLG LOCKNUT (M8-1.25)	
16.	110-373	1	BOLT-ON CLAMP (13/16")	
17.	105-095	2	WASHER (1/4")	
18.	106-138	2	NUT (M5-0.80)	
19.	107-465	2	SCREW (M5-0.80 X 30mm, SOC)	
20.	107-268	2	SCREW (M4-0.70 X 20mm, SOC)	POWERSHIFT ONLY
21.	217-269	1	PROXIMITY SWITCH	POWERSHIFT ONLY
22.	316-940	1	SWITCH BRACKET	POWERSHIFT ONLY
23.	107-597	2	WASHER (M4)	POWERSHIFT ONLY
24.	105-680	2	NUT (M4, W/LK WSHR)	POWERSHIFT ONLY
25.	307-069	-	LEVER BRACKET	
26.	307-068	-	CABLE BRACKET	

### FOOTNOTES

1. 194-539 (CONTROL CABLE) ENDS WITH S/N\_\_\_\_\_ FOR RT115 ONLY, PREVIOUS TO TIER II DESIGN.

# HAND THROTTLE

BEGINS WITH S/N 5Y0227



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ID0025136

# HAND THROTTLE

## BEGINS WITH S/N 5Y0227

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-619	1	CONTROL LEVER	
	117-593	1	KNOB (ORANGE)	
2.	324-666	1	CONTROL BRACKET	
3.	194-539	1	CONTROL CABLE	
4.	106-850	2	LOCKNUT (M5-0.80)	
5.	106-987	2	FLG LK SCREW (M6-1.00 X 16mm)	
6.	106-353	2	FLG NUT (M6-1.00)	
7.	107-744	2	WASHER (M6)	
8.	115-604	1	COMPRESSION SPRING	
9.	506-021	2	NUT (#10-32)	
10.	196-058	1	CABLE SWIVEL (.081")	
	106-205	1	WASHER (.191")	
	505-114	1	THRUST WASHER (.343")	
11.	106-640	2	SCREW (M6-1.00 X 20mm ,BUT SOC)	
12.	106-574	2	CLIP NUT (M6-1.00)	
13.	106-018	2	JAM NUT (3/8-NF)	USE LOCTITE 242 OR ITS EQUIVILENT
14.	106-991	1	FLG LK SCREW (M8-1.25 X 20MM)	
15.	106-386	1	FLG LOCKNUT (M8-1.25)	
16.	110-373	1	BOLT-ON CLAMP (13/16")	
17.	105-095	2	WASHER (1/4")	
18.	106-138	2	NUT (M5-0.8.)	
19.	107-465	2	SCREW (M5-0.80 X 30MM, SOC)	
20.	215-1447	1	PROXIMITY SWITCH 12MM EUROFAST	POWERSHIFT ONLY & REFER TO F/N 1
21.	307-069	-	LEVER BRACKET	
22.	307-068	-	CABLE BRACKET	

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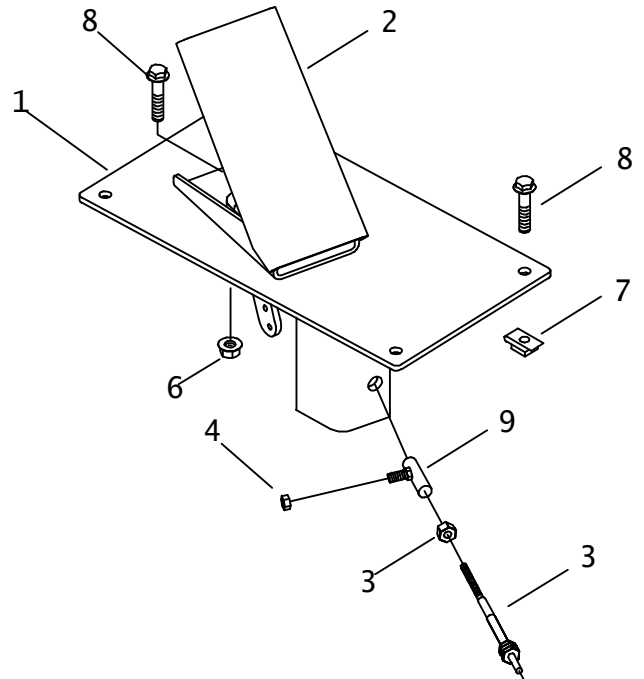
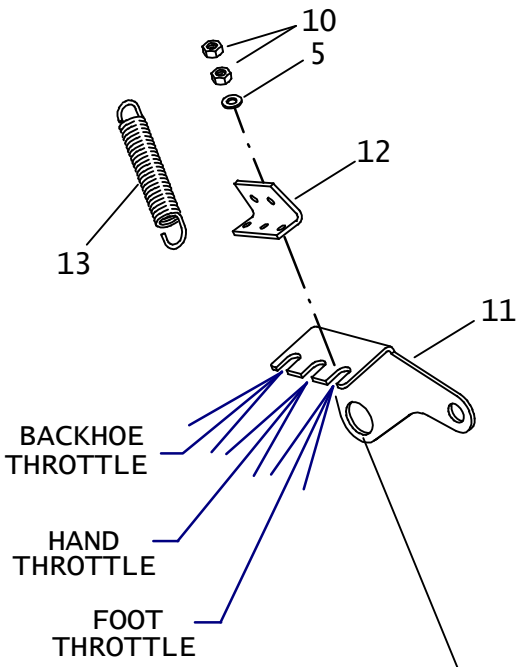
FOOTNOTES:

- I. PROXIMITY SWITCH 215-1447 SUPERCEDED PROXIMITY SWITCH 213-272

NOTE:



# FOOT THROTTLE



# FOOT THROTTLE

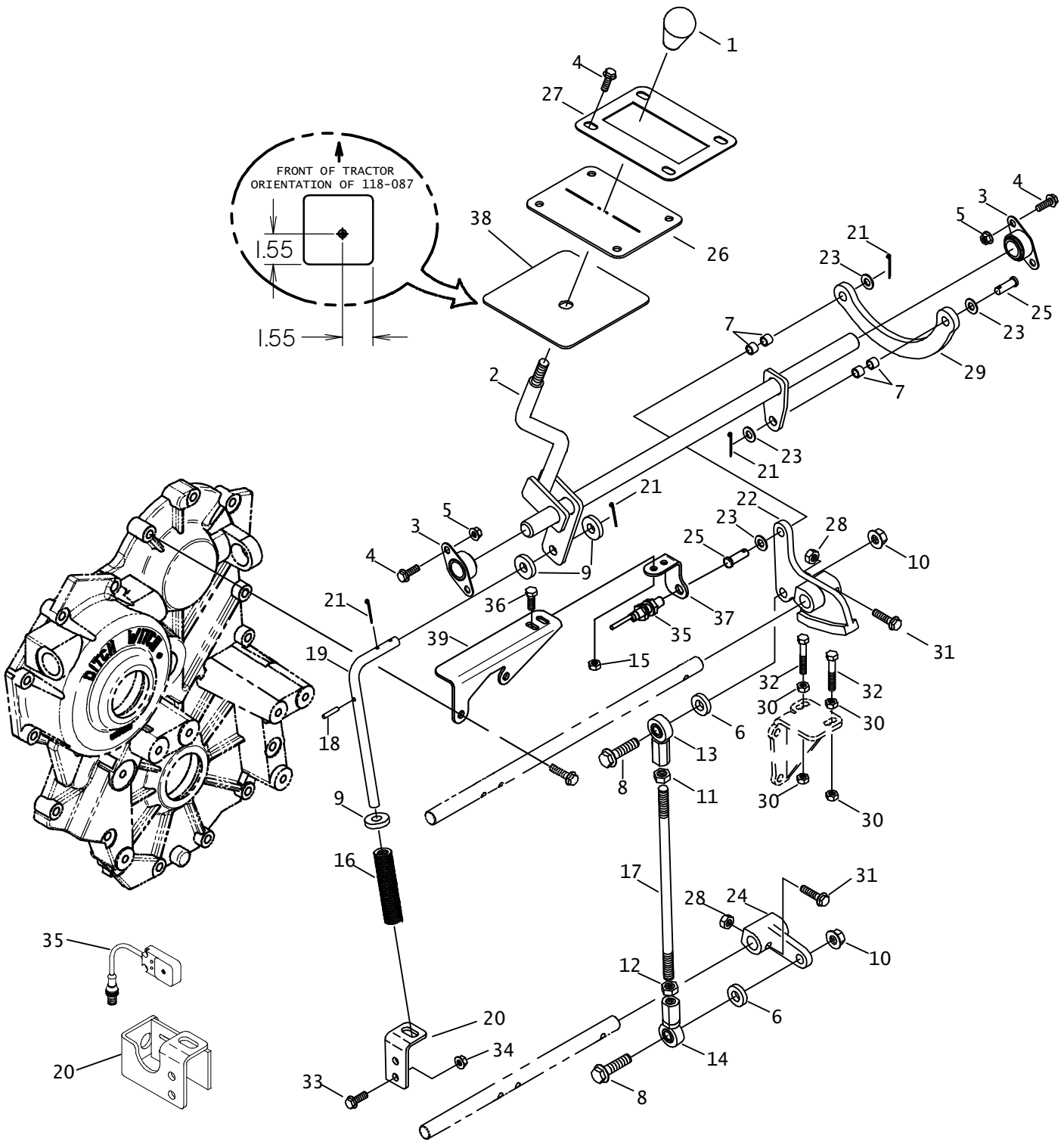
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	307-530	1	BASE	
2	307-515	1	THROTTLE PEDAL	
3	194-133	1	CONTROL CABLE (110.0")	
	506-021	1	NUT (#10-32)	
4	107-770	1	LOCKNUT (1/4-NF, NYL INSERT)	
5	105-095	1	WASHER (1/4")	
6	106-386	2	FLG LOCKNUT (M8-1.25)	
7	107-135	4	CLIP NUT (M8-1.25)	
8	106-992	6	FLG LK SCREW (M8-1.25 X 25mm)	
9	110-318	1	BALL JOINT (#10-32, FM)	
10	506-021	2	NUT (#10-32)	
11	307-068	-	CABLE BRACKET	
12	307-069	-	LEVER BRACKET	
13	117-959	1	EXTENSION SPRING	

NOT SHOWN:

FOOTNOTES:

NOTE:

# POWERSHIFT LEVER



# POWERSHIFT LEVER

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-375	1	KNOB (1/2-NC, YELLOW)	
2.	306-954	1	SHIFT ARM	
3.	125-488	2	FLANGE BUSHING (.875")	
4.	106-992	8	FLG LK SCREW (M8-1.25 X 25mm)	
5.	106-386	4	FLG LOCKNUT (M8-1.25)	
6.	106-397	2	WASHER (M12, HARDENED)	
7.	125-174	4	BRONZE BUSHING (.375"X.500")	
8.	107-004	2	FLG LK SCREW (M12-1.75 X 45mm)	
9.	105-244	AR	WASHER (1/2")	
10.	106-354	2	FLANGE NUT (M12-1.75)	
11.	106-447	1	JAM NUT (1/2-NF)	
12.	107-573	1	JAM NUT (1/2-NF, LH)	
13.	110-290	1	ROD END (1/2-NF, FM)	
14.	107-574	1	ROD END (1/2-NF, FM, LH)	
15.	105-832	2	FLG LOCKNUT (1/4-NC)	
16.	117-019	1	COMPRESSION SPRING	
17.	306-762	1	SHIFT ROD	
18.	106-131	1	DOWEL PIN (.187 X 1.000)	
19.	306-666	1	SPRING ROD	
20.	316-939	1	SWITCH BRACKET	BEFORE S/N
	307-568	1	SPRING MOUNT	AFTER S/N
21.	105-509	4	COTTER PIN (1/8" X 1")	
22.	375-395	1	LEVER	
23.	105-117	4	WASHER (5/16")	
24.	375-396	1	LEVER	
25.	110-306	2	CLEVIS PIN (3/8" X .890")	
26.	307-585	1	BELLOW	OBSOLETE
	118-074	1	DUST SHIELD	
27.	307-580	1	BELLOW MOUNT	
28.	105-047	2	LOCKNUT (3/8-NC)	
29.	306-763	1	SHIFT LINK	
30.	106-539	4	JAM NUT (M8-1.25)	
31.	105-883	2	FLG LK BOLT (3/8-NC X 2")	
32.	106-892	2	SCREW (M8-1.25 X 50mm)	
33.	107-002	2	FLG LK SCREW (M10-1.50 X 30mm)	
34.	106-266	2	FLG NUT(M10-1.50)	
35.	217-269	1	PROXIMITY SWITCH	BEFORE S/N
	215-1447	1	PROXIMITY SWITCH	AFTER S/N_____ & REFER TO FOOTNOTE I
36.	106-168	2	FLG LK BOLT (1/4-NC X 3/4")	
37.	329-489	1	MOUNT	
38.	118-087	1	DUST SHIELD	
39.	329-488	1	MOUNT	

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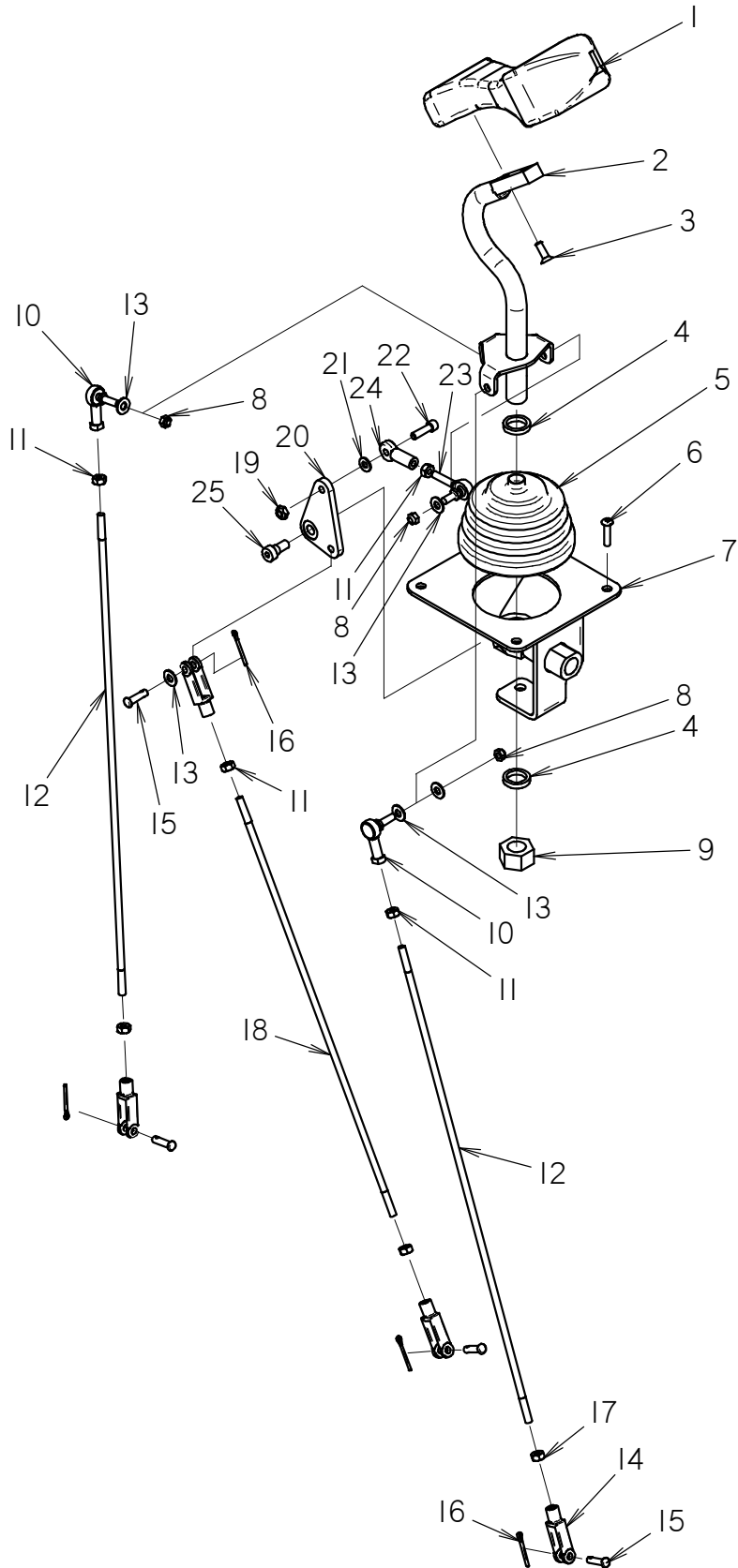
#### FOOTNOTES:

- I. PROXIMITY SWITCH 215-1447 SUPERCEDES PROXIMITY SWITCH 213-272.

#### NOTE:

- I. ADD LOCTITE 242 TO ALL ADJUSTMENT SCREW THREADS

# BFB BLADE CONTROLS



# BFB BLADE CONTROLS

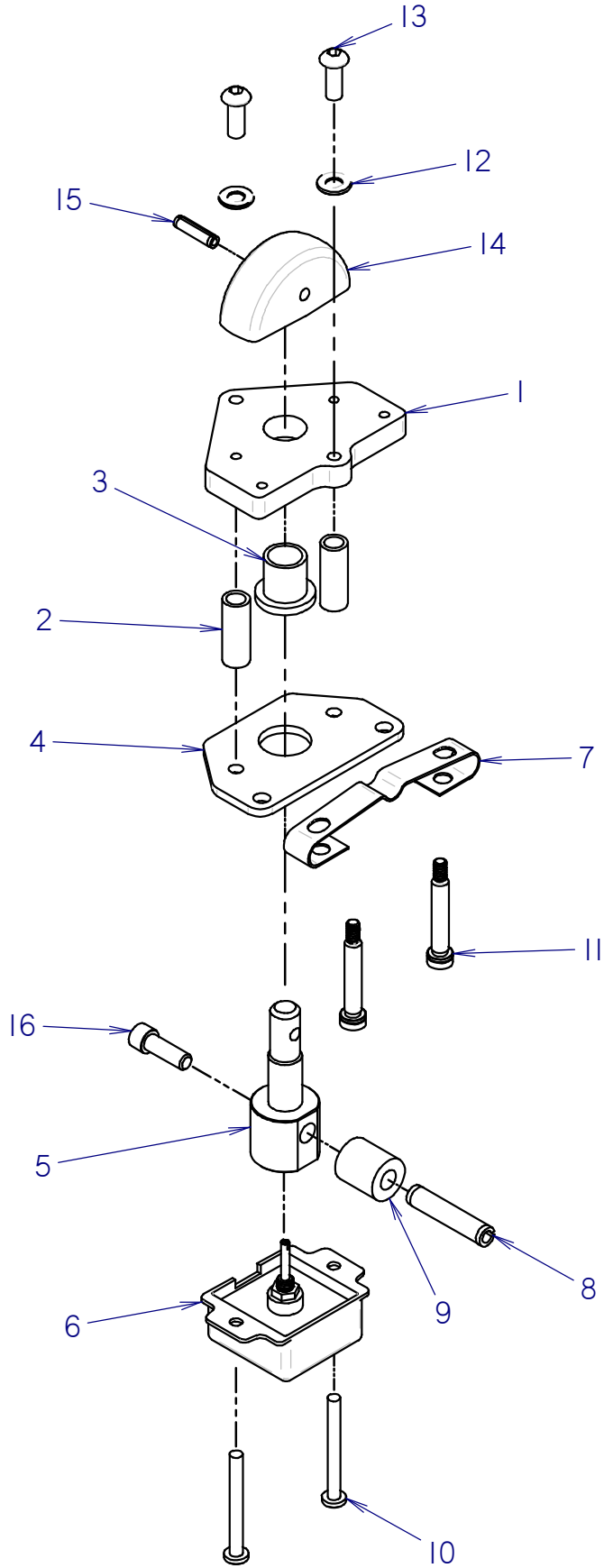
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	117-345	1	CONTROL HANDLE	
2	305-728	1	HANDLE ASSEMBLY	
3	105-263	2	BOLT (1/4-NC X 3/4", CSK, SOC)	
4	178-421	2	BUSHING	
5	110-330	1	DUST BOOT	
6	107-312	4	SCREW (M6-1.00 X 25MM, BUT SOC)	
7	305-727	1	MOUNT ASSEMBLY	
8	107-770	3	LOCKNUT (1/4-NF, NYL INSERT)	
9	105-387	1	LOCKNUT (3/4-NF)	
10	160-540	2	ROD END	
11	105-152	4	NUT (1/4-NF)	
12	179-884	2	ROD (19.44")	
13	106-076	5	WASHER (1/4")	
14	107-790	4	CLEVIS (1/4-NF-LH)	
15	110-082	4	CLEVIS PIN (1/4 X 11/16)	
16	105-508	4	COTTER PIN (3/32" X 1")	
17	105-878	3	NUT (1/4-NF, LH)	
18	179-885	1	ROD (17")	
19	105-085	1	LOCKNUT (1/4"-NC)	
20	305-724	1	LINKAGE PLATE	
21	105-284	1	WASHER (3/16")	
22	105-087	1	BOLT (1/4-NC X 7/8", SOC)	
23	110-565	1	BALL JOINT (1/4-NF)	
24	110-281	1	ROD END (1/4-NF, FM)	
25	107-582	1	SHLD BOLT(3/8" X 1/4",5/16-NC)	

NOT SHOWN:

FOOTNOTES:

NOTE:

# REAR STEER CONTROL KIT



## REAR STEER CONTROL KIT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	318-366	1	MOUNT PLATE	SEE FOOTNOTE 1
2	179-416	2	BOSS	
3	125-447	1	BUSHING	
4	318-367	1	BOTTOM PLATE	
5	166-449	1	SHAFT	
6	217-273	1	POSITION POTENTIOMETER	
7	115-598	1	SPRING DETENT	
8	105-529	1	ROLL PIN (5/16" X 1-1/2")	
9	179-418	1	BUSHING	
10	106-120	2	SCREW (#10-24 X1-3/4",PAN SLT)	SEE FOOTNOTE 2
11	107-785	2	SHLD BLT(1/4" X 1-1/4",#10-24)	SEE FOOTNOTE 2
12	107-744	2	WASHER (M6)	
13	107-193	2	SCREW (M6-1.00 X 16MM,BUT SOC)	
14	117-887	1	KNOB	
15	105-522	1	ROLL PIN (3/16" X 3/4")	
16	105-161	1	BOLT (1/4-NC X 3/4", SOC)	SEE FOOTNOTE 2

NOT SHOWN:

**FOOTNOTES:**

1. P/N 191-221 REAR STEER CONTROL KIT INCLUDES REFERENCE # 1-16
2. USE LOCTITE 242 OR EQUIVALENT

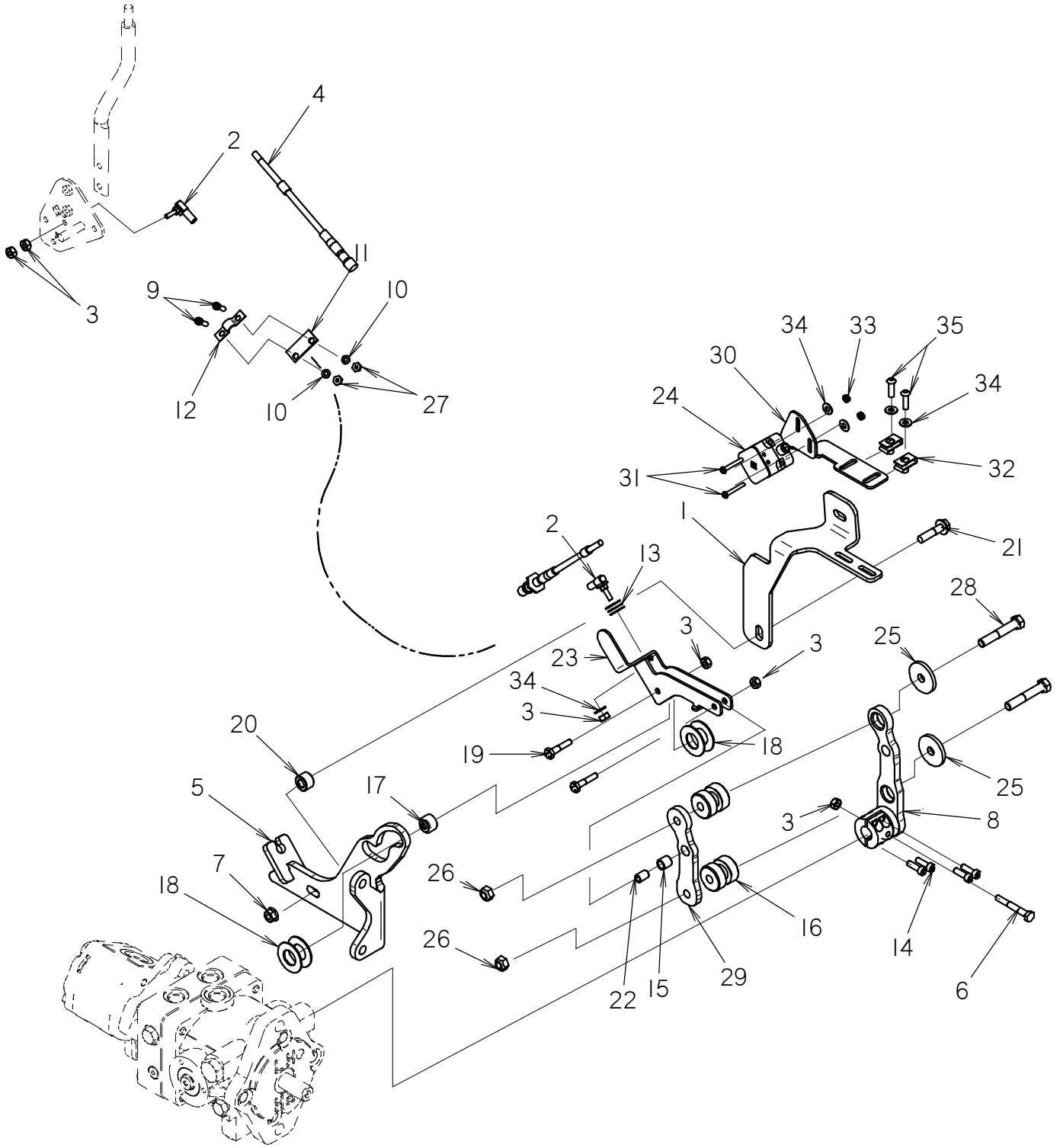
**NOTE:**

REFER TO INSTALLATION INSTRUCTION 051-319 FOR REAR STEER UPGRADE KIT INFORMATION.  
 191-251 IS THE REAR STEER UPGRADE KIT AND 259-516 IS THE REAR STEER ALIGNMENT (SPECAL TOOL) .  
 REFER TO O-RING CHART (800-301) FOR REPLACEMENT O-RINGS.



# HYDROSTATIC PUMP LINKAGE

BEGINS WITH S/N CMWRT95MK90000264



# HYDROSTATIC PUMP LINKAGE

## BEGINS WITH S/N CMWRT95MK90000264

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1	315-735	1	REAR SUPPORT (AUX DRIVE PUMP)	
2	110-318	2	BALL JOINT (#10-32, FM)	
3	106-678	6	LOCKNUT (1/4-NF)	
4	194-196	1	CONTROL CABLE	
5	315-484	1	CAM PLATE	SEE FOOTNOTE 1
6	105-106	1	BOLT (1/4-NC X 2")	
7	106-386	1	FLG LOCKNUT (M8-1.25)	
8	315-483	1	PUMP TRUNNION LEVER	
9	105-810	2	BOLT (#10-24 X 7/8", SOC)	
10	106-205	2	WASHER (1.91")	
11	331-166	1	BOLT-ON BACK-UP (.306")	
12	110-697	1	BOLT-ON CLAMP (.360")	
13	107-092	3	WASHER (.254")	
14	106-528	4	SCREW (M6-1.00 X 20MM, SOC)	SEE FOOTNOTE 2
15	179-301	1	BRONZE BUSHING (.375)	
16	116-142	2	SHOCK MOUNT	
17	125-491	1	CAM YOKE ROLLER BEARING	
18	117-614	4	FRICTION WASHER (.781")	
19	105-699	2	BOLT (1/4-NF X 1 1/4")	SEE FOOTNOTE 2
20	181-636	1	BUSHING	
21	106-989	1	FLG LK SCREW (M8-1.25 X 35MM)	
22	179-302	1	SLEEVE (.250)	
23	313-954	1	CABLE CONNECTOR	
24	215-1175	1	PROXIMITY SWITCH	SEE FOOTNOTE 3, BEGINS W/ S/N: CMWRT95MK90000264
25	105-069	2	WASHER (.406")	
26	105-047	2	LOCKNUT (3/8-NC)	
27	105-811	2	LOCKNUT (#10-24)	
28	105-162	2	BOLT (3/8-NC X 2-1/4")	
29	315-536	1	INNER CONTROL ARM	
30	300-6250	1	PROXIMITY SWITCH MOUNT	SEE FOOTNOTE 3, BEGINS W/ S/N: CMWRT95MK90000264
31	107-414	2	SCREW (M4-0.70 X 30MM,BUT SOC)	SEE FOOTNOTE 3, BEGINS W/ S/N: CMWRT95MK90000264
32	106-574	2	CLIP NUT (M6-1.00)	
33	105-680	2	NUT (M4, W/LK WSHR)	
34	105-284	5	WASHER (.316")	
35	106-640	2	SCREW (M6-1.00 X 20MM,BUT SOC)	

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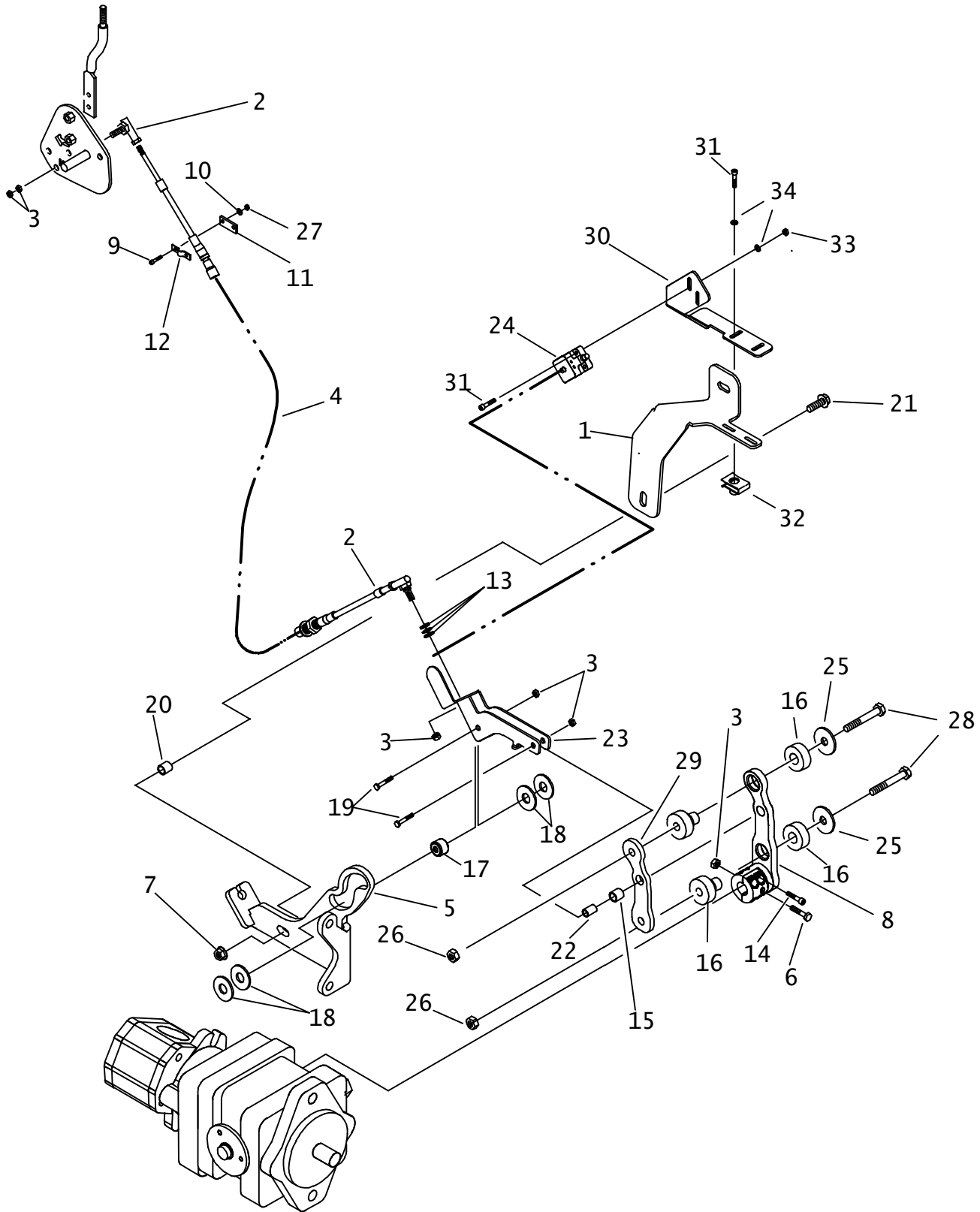
### FOOTNOTES:

1. TO ATTACH BRACKET (REF #5) USE TWO INSIDE BOLTS LOCATED IN THE REAR OF THE FRONT PUMP ON THE SAME SIDE AS THE TRUNNION SHAFT.
2. APPLY LOCTITE BEFORE ASSEMBLY.
3. UNITS PRIOR TO S/N CMWRT95MK90000264 USE SENSOR 217-269 (1X), BRACKET 315-646 (1X), AND BOLTS 107-268 (2X).

NOTE:

# HYDROSTATIC PUMP LINKAGE

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



## HYDROSTATIC PUMP LINKAGE ENDS WITH S/N\_\_\_\_\_.

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	315-735	1	REAR SUPPORT (AUX DRIVE PUMP)	
2.	110-318	2	BALL JOINT (#10-32, FM)	
3.	106-678	6	LOCKNUT (1/4-NF)	
4.	194-196	-	CONTROL CABLE (116")	
5.	315-484	1	CAM PLATE	SEE FOOTNOTE 1
6.	105-106	1	BOLT (1/4-NC X 2")	
7.	106-386	1	FLG LOCKNUT (M8-1.25)	
8.	315-483	1	PUMP TRUNNION LEVER	
9.	105-810	2	BOLT (#10-24 X 7/8", SOC)	
10.	106-205	2	WASHER (.191")	
11.	331-166	1	BOLT-ON BACKUP (.360")	
12.	110-697	1	BOLT-ON CLAMP (.360")	
13.	107-092	3	WASHER (.254")	
14.	106-528	4	SCREW (M6-1.00 X 20mm, SOC)	SEE FOOTNOTE 2
15.	179-301	1	BRONZE BUSHING (.375)	
16.	116-142	2	SHOCK MOUNT	
17.	125-491	1	CAM YOKE ROLLER BEARING	
18.	117-614	4	FRICTION WASHER (.781")	
19.	105-699	2	BOLT (1/4-NF X 1-1/4")	SEE FOOTNOTE 2
20.	181-636	1	BUSHING	
21.	106-989	1	FLG LK SCREW (M8-1.25 X 35mm)	
22.	179-302	1	SLEEVE (.250)	
23.	313-954	1	CABLE CONNECTOR	
24.	217-269	1	PROXIMITY SWITCH	
25.	105-069	2	WASHER (.406")	
26.	105-047	2	LOCKNUT (3/8-NC)	
27.	105-811	2	LOCKNUT (#10-24)	
28.	105-162	2	BOLT (3/8-NC X 2-1/4")	
29.	315-536	1	INNER CONTROL ARM	
30.	315-646	1	PROXIMITY SWITCH MOUNT	
31.	107-268	4	SCREW (M4-0.70 X 20mm, SOC)	
32.	107-516	2	CLIP NUT (M4-.7)	
33.	105-680	2	NUT (M4, W/LK WSHR)	
34.	107-597	4	WASHER (M4)	

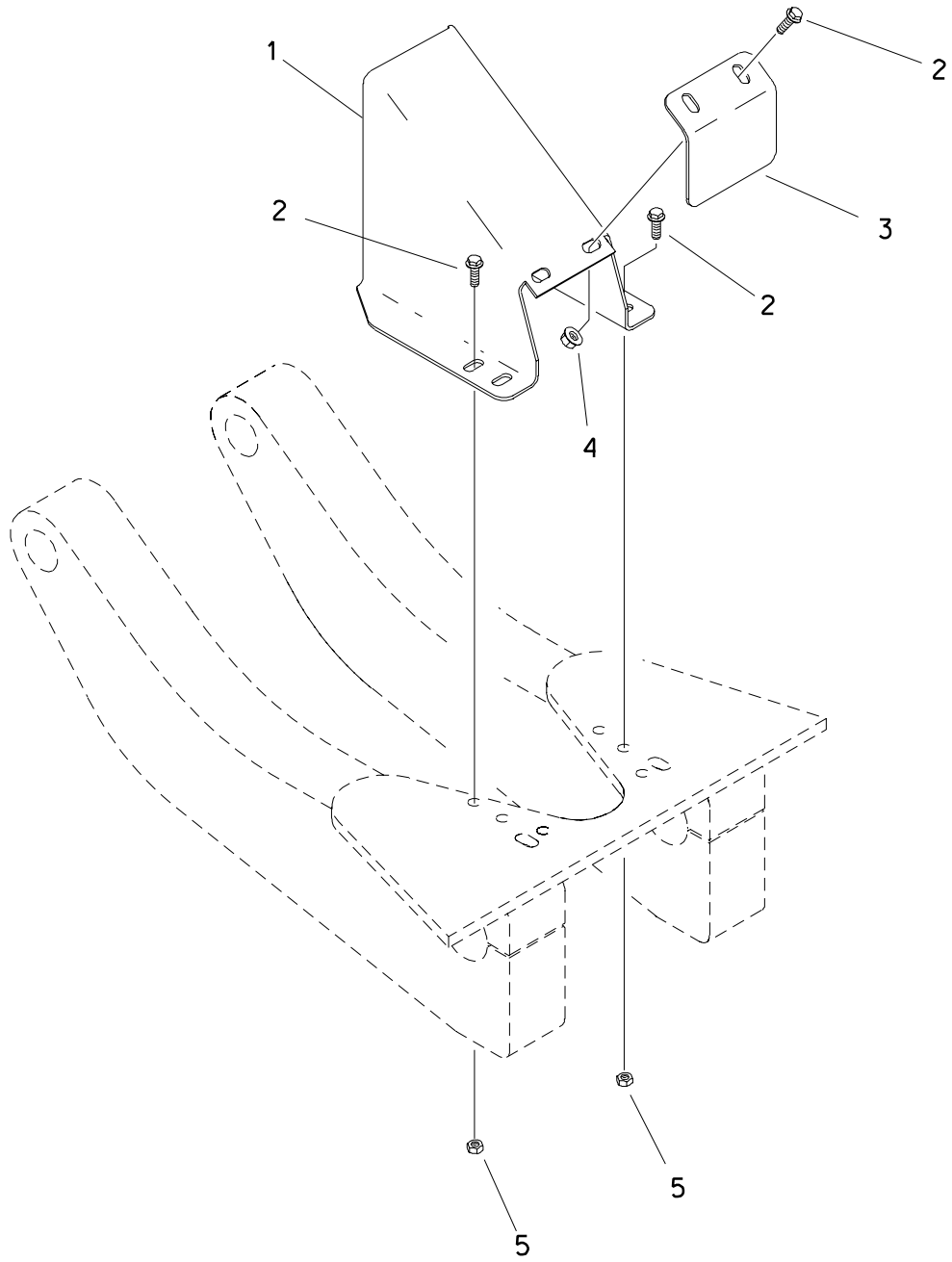
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### FOOTNOTES:

1. TO ATTACH BRACKET (REF #5) USE THE TWO INSIDE BOLTS LOCATED IN THE REAR OF THE FRONT PUMP ON THE SAME SIDE AS THE TRUNION SHAFT.
2. APPLY LOCTITE BEFORE ASSEMBLY.

NOTE:

# BFB CYLINDER GUARD



# BFB CYLINDER GUARD

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	191-285		CYLINDER GUARD KIT	INCLUDES REF NUMBERS 1-5 & SEE FOOTNOTE 1
1.	319-787	1	CYLINDER GUARD	
2.	106-724	6	FLG SCREW (M10-1.50 X 25mm)	
3.	319-789	1	COVER	
4.	106-387	2	FLG LOCKNUT (M10-1.50)	
5.	106-758	4	LOCKNUT (M10-1.50)	

**NOTE**

REFER TO INSTALLATION INSTRUCTIONS 051-336 FOR INSTALLING BFB CYLINDER GUARD.

**FOOTNOTES**

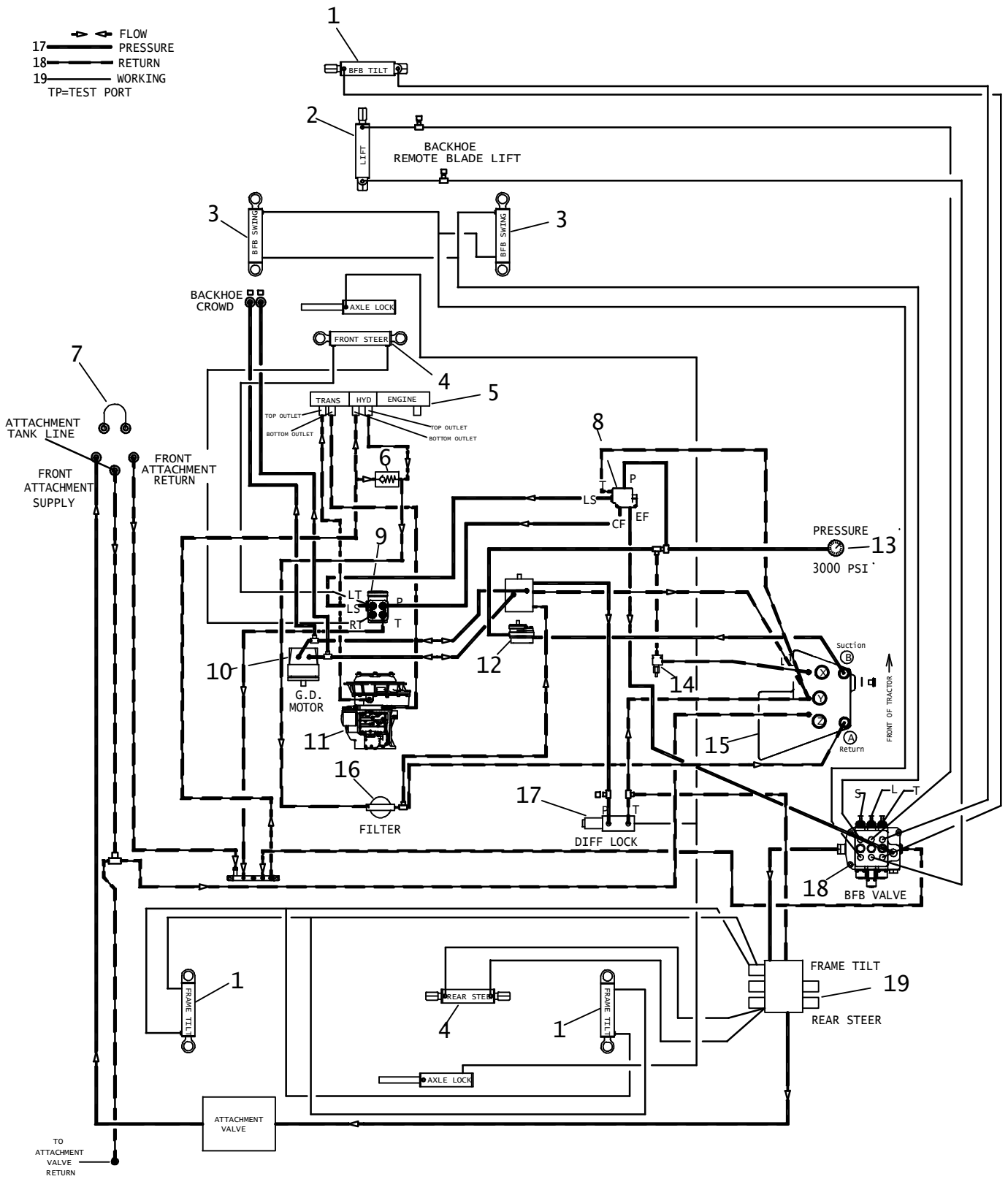
1. THIS OPTION CANNOT BE USED WITH AUX. MANIFOLD KIT 191-272 BECAUSE OF INTERFERENCE.



# HYDRAULICS



# HYDRAULIC DIAGRAM RT70 / RT90 POWERSHIFT



# HYDRAULIC DIAGRAM

## RT70 / RT90 POWERSHIFT

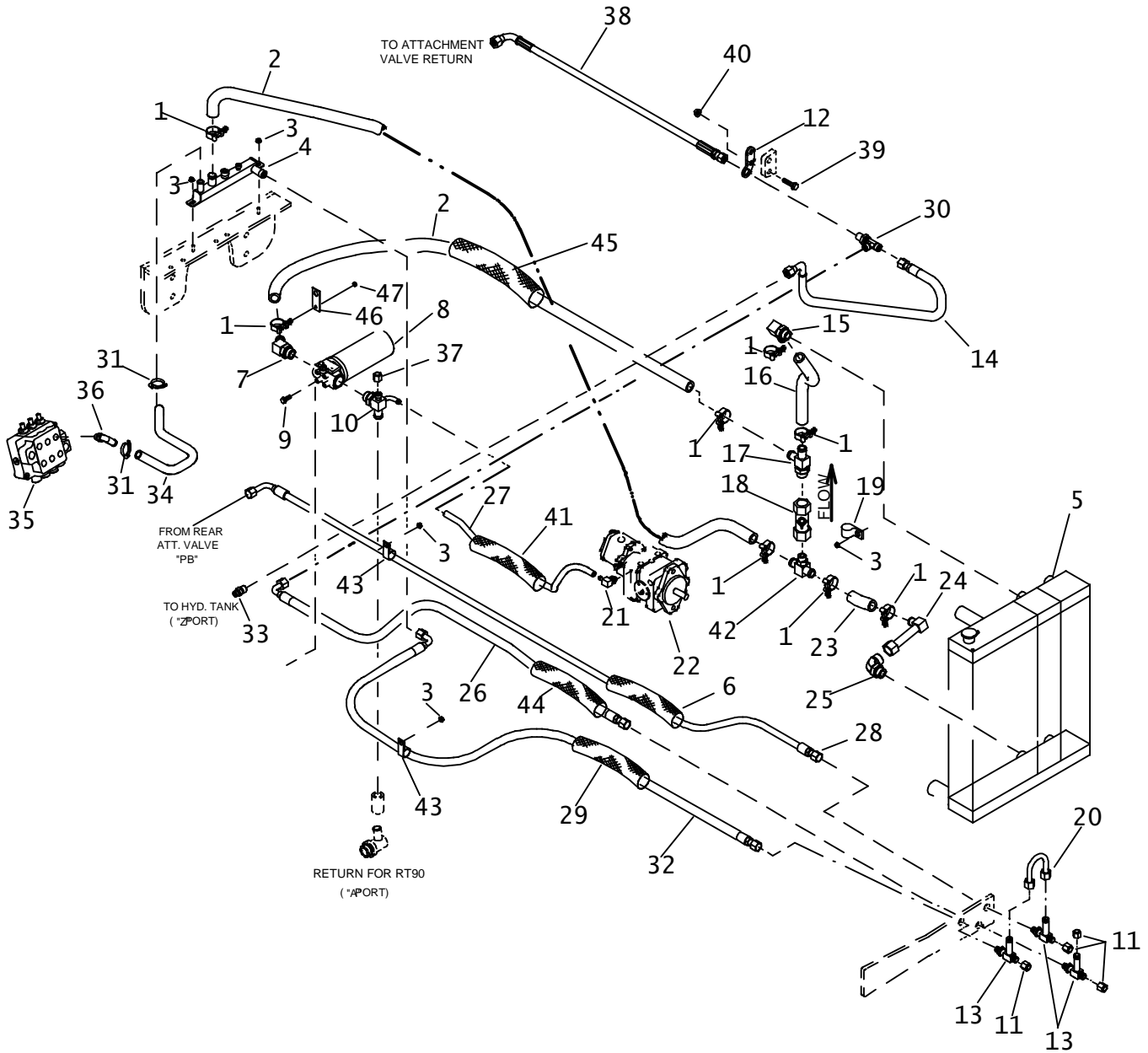
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	151-202		CYL (2" X 1" X 3.38")	
2.	151-070		CYL (3" X 1.75" X 8")	
3.	151-057		CYL (2" X 1" X 8")	
4.			STEERING CYLINDER	PART OF STEERING AXLE
5.	194-283		RADIATOR/SPLIT COOLER	
6.	153-888		CHECK VALVE (16SF-16SF, 25 PSI)	
7.	149-821		HYD LINE (-10)	
8.	157-917		PRIORITY VALVE	
9.	158-900		POWER STEERING VALVE	
10.	158-046		HYD MOTOR (GROUND)	
11.	165-538		TRANSMISSION (2-SPD) W/O PTO	
12.	153-564		TANDEM HYDRAULIC PUMP	
	150-2680		AUXILAIRY PUMP	
13.	217-551		PRESSURE GAUGE (3000 PSI)	
14.	158-681		RELIEF VALVE (AUXILIARY)	PRE SET TO 2500 PSI
15.	150-1387		HYDRAULIC RESERVOIR	RT70
	<u>153-112</u>		HYDRAULIC RESERVOIR	RT90
	150-1388		HYDRAULIC RESERVOIR	RT90
16.	149-642		HYD OIL FILTER	
17.	157-245		MANIFOLD (1-SPL)	
18.	<u>158-033</u>		HYD CONTROL VALVE (3-SPL)	ENDS WITH S/N_____.
	159-809		HYD CONTROL VALVE (3-SPL)	BEGINS WITH S/N_____.
19.	153-785		HYD VALVE (SGL SPOOL)	
	153-786		HYD VALVE (2-SPOOL)	FRAME TILT & REAR STEER OPTION

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FOOTNOTES:

NOTE:

# HYDRAULIC FILTER RT90 POWERSHIFT



# HYDRAULIC FILTER

## RT90 POWERSHIFT

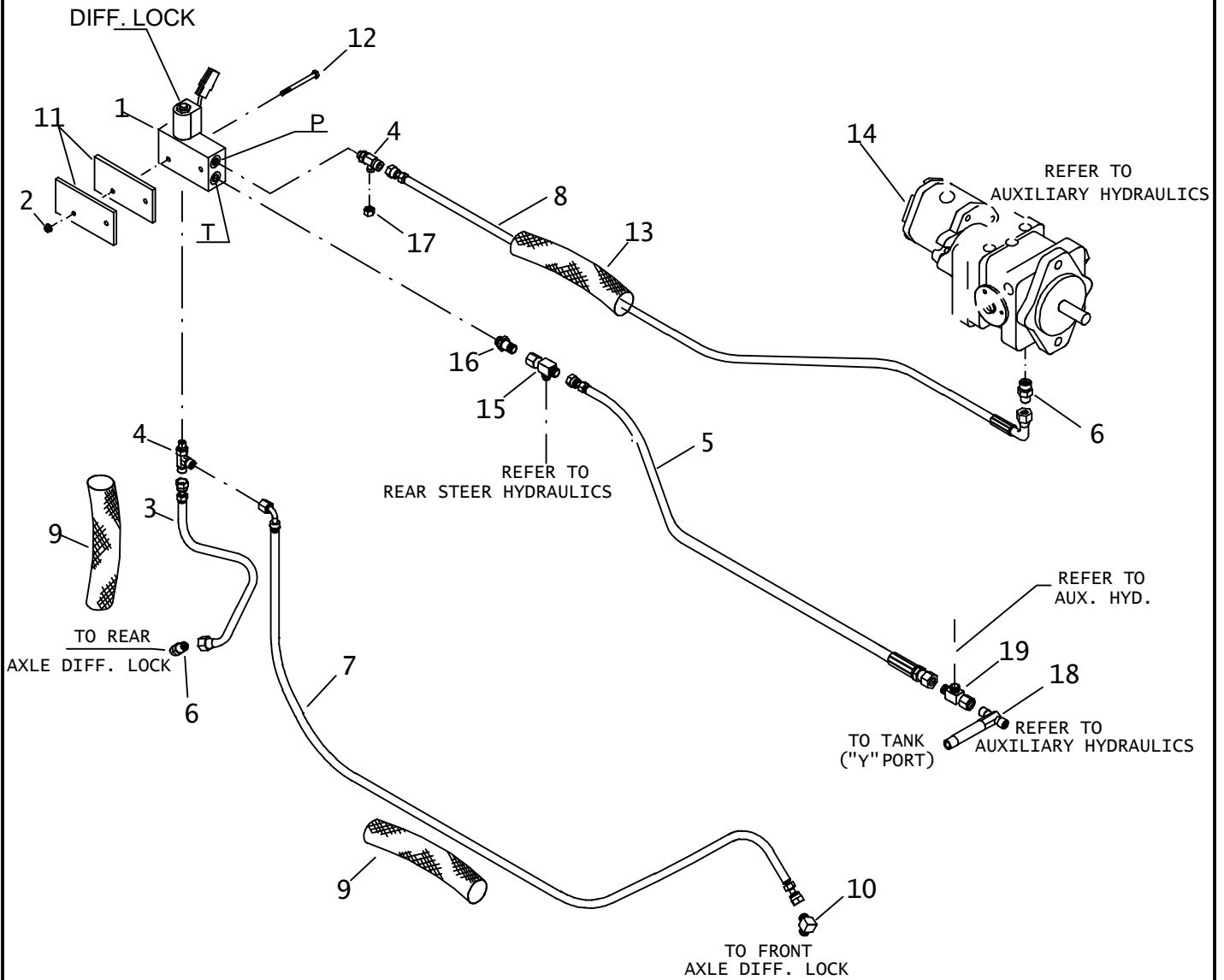
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	111-027	8	T-BOLT CLAMP (1.25" - 1.50")	
2.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 2 @ 75"
3.	105-003	5	FLG LOCKNUT (5/16-NC)	
4.	153-210	1	HYDRAULIC MANIFOLD (5 PORT)	
5.	194-283	-	RADIATOR/OIL COOLER	
6.	117-764	1	ABRASION SLEEVE (1.59" X 90")	
7.	155-230	1	S/O COUPLER (16S-16H45)	
8.	149-642	1	HYD OIL FILTER	SEE FOOTNOTE 1
	149-641	1	HYD OIL FILTER ELEMENT	SEE FOOTNOTE 2
	149-854	1	HYD OIL FILTER ELMT (1-3/8 UNF)	SEE FOOTNOTE 3
9.	105-827	2	FLG LK BOLT (3/8-NC X 1-1/4")	
10.	153-862	1	TEE (16S-080-16H-08H)	
11.	154-324	4	CAP (100F)	
12.	316-850	1	BRACKET	
13.	153-984	3	BK RUN TEE (100-100-100L)	
14.	153-957	1	HOSE (100FX45-44"-3000)	ENDS WITH S/N 5X0709.
	153-956	1	HOSE (100FX90-50"-3000)	BEGINS WITH S/N 5X0710.
15.	154-188	1	S/O COUPLER (16S-16H90)	
16.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 22"
17.	155-231	1	S/O BR TEE (16S-16H-16H)	
18.	153-888	1	CHECK VALVE ((16SF-16SF, 25 PSI)	
19.	110-332	1	BOLT-ON CLAMP (1-5/8")	
20.	149-821	1	HYD LINE (-10)	
21.	153-850	-	S/O COUPLER (10S-08H90)	
22.	153-564	-	TANDEM HYDRAULIC PUMP	
	150-2680		AUXILIARY PUMP	
23.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 7.5"
24.	157-313	1	CONNECTOR (160FX-16H90, XLG)	
25.	154-287	1	CONNECTOR (16S-16090)	
26.	155-466	1	HOSE (100FX90-74"-2750)	
27.	116-286	-	BULK HOSE (1/2", SOLD PER 1")	
28.	157-343	1	HOSE (100FX90S-120"-3000)	
29.	117-392	1	ABRASION SLEEVE (1.25" X 60")	
30.	154-319	1	BK RUN TEE (100)	
31.	110-353	2	WORM CLAMP (3/4" TO 1-1/2")	
32.	515-618	1	HOSE (100FX90-95"-3000)	
33.	154-391	1	CONNECTOR (08S-100)	
34.	116-636	AR	BULK HOSE (3/4", SOLD PER 1')	USE 1 @ 30"
35.	158-033	-	HYD CONTROL VALVE (3-SPOOL)	ENDS WITH S/N_____.
	159-809	-	HYD CONTROL VALVE (3-SPOOL)	BEGINS WITH S/N_____.
36.	154-362	1	S/O COUPLER (10S-12H90)	
37.	154-327	1	CAP (080F)	
38.	515-515	1	HOSE (100FX45-50"-3000)	
39.	107-336	2	FLG SCREW (M16-2.00 X 45mm, 10.9)	
40.	106-442	2	FLG LOCKNUT (M16-2.00, PRV TRQ)	
41.	117-611	1	ABRASION SLEEVE (1.00" X 22")	
42.	149-908	1	RUN TEE (16S-16H-16H)	
43.	110-333	2	BOLT-ON CLAMP (1")	
44.	117-691	1	ABRASION SLEEVE (1.25" X 68")	
45.	117-214	1	ABRASION SLEEVE (1.25" X 40")	
46.	320-253	1	TAB	SEE FOOTNOTE 4
47.	105-152	1	NUT (1/4-NF)	SEE FOOTNOTE 4

### FOOTNOTES:

- 149-642 (HYD. OIL FILTER) IS THE FILTER HEAD AND ELEMENT (149-854) IS A BREAK-IN FILTER.
- AFTER 50 HOURS CHANGE TO FILTER ELEMENT 149-641 WHICH IS THE REGULAR SERVICE FILTER.
- HOWEVER IF THE HYDRAULIC SYSTEM IS EVER EXPOSED TO CONTAMINATES THE BREAK-IN FILTER (149-854) SHOULD BE RE-INSTALLED FOR AT LEAST 50 HOURS OF OPERATION.
- REF. #46 (320-253) BOLTS TO T-BOLT CLAMP (111-027) AND SUPPORTS ELECTRICAL HARNESS CONNECTOR.

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

# POWERSHIFT MANIFOLD HYDRAULICS RT90M



# POWERSHIFT MANIFOLD HYDRAULICS RT90M

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	157-245	1	MANIFOLD (1-SPL)	SEE FOOTNOTE 1
2.	106-385	2	FLG LOCKNUT (M6-1.00)	
3.	154-743	1	HOSE (040FX90-23"-3000)	
4.	154-316	2	RUN TEE (04S-040-040)	
5.	157-909	1	HOSE (060FX-28"-3000)	
6.	154-220	2	CONNECTOR (040-06S)	
7.	515-174	1	HOSE (040FX90-74"-3000)	
8.	515-712	1	HOSE (040FX90L-68"-3000)	
9.	117-611	2	ABRASION SLEEVE (1.00" X 22")	
10.	154-226	1	CONNECTOR (040-06S90)	
11.	306-885	2	MOUNT PLATE	SEE FOOTNOTE 2
12.	106-566	2	SCREW (M6-1.00 X 70mm)	
13.	117-387	1	ABRASION SLEEVE (1.00" X 42")	
14.	153-564	-	TANDEM HYDRAULIC PUMP	
	150-2680		AUXILIARY PUMP	
15.	154-344	1	UN RUN TEE (060FX-060-060)	
16.	154-411	1	CONNECTOR (04S-060)	
17.	154-296	1	CAP (040F)	
18.	153-917	-	TEE (08N-060-060)	
19.	157-331	-	UN RUN TEE (060FX-060-080)	

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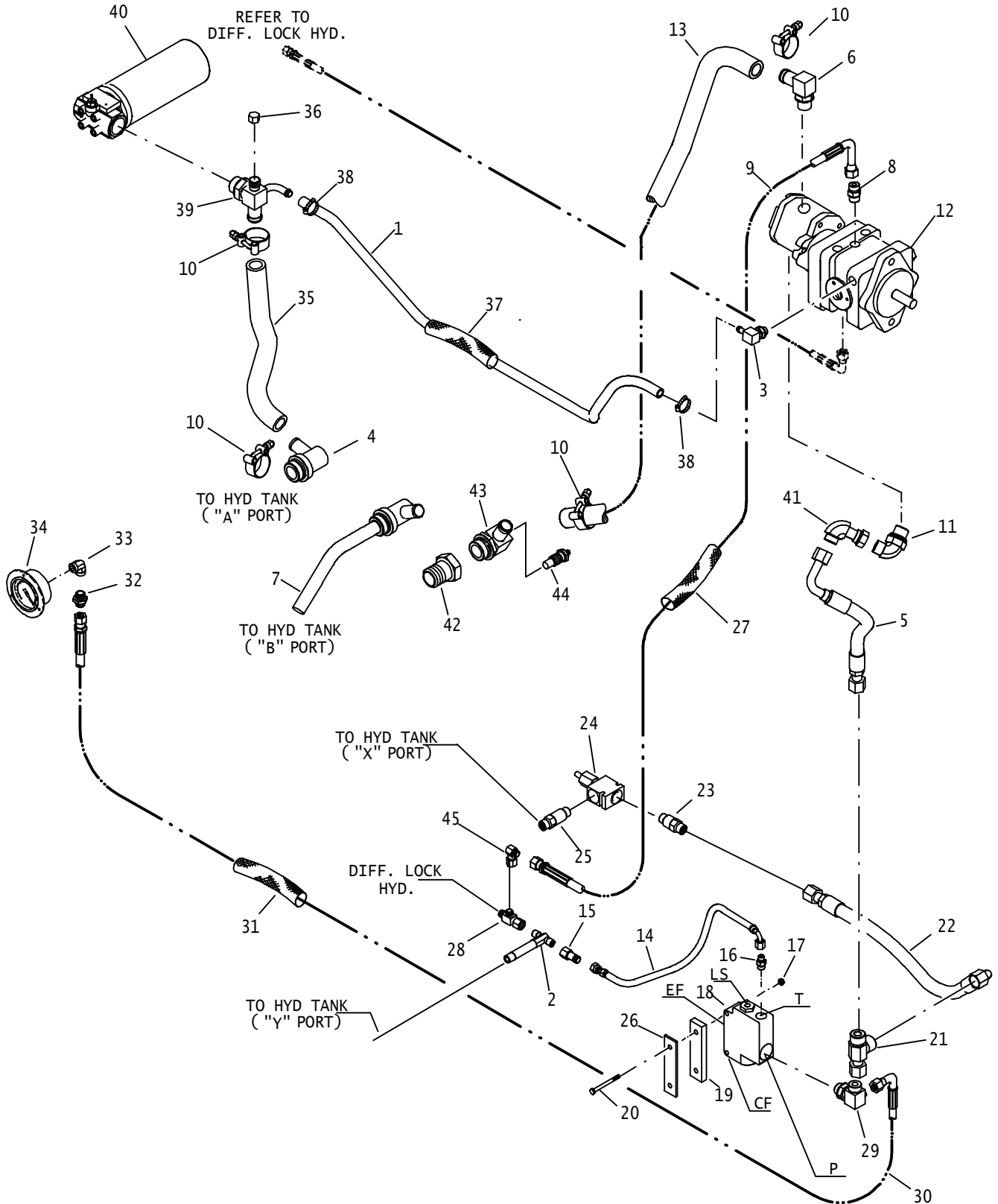
#### FOOTNOTES:

1. EARLY PRODUCTION MANIFOLDS HAVE A CAVITY PLUG WHERE THE RELIEF VALVE WAS LOCATED.
2. WITH "REAR STEER" OPTION TWO MOUNT PLATES (306-885) ARE REQUIRED, ONE ON EITHER SIDE OF FRAME.  
WITH "NO REAR STEER" ONLY ONE MOUNT PLATE (306-885) IS REQUIRED ON OUTSIDE OF FRAME.

#### NOTE:

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

# AUXILIARY HYDRAULICS RT90 POWERSHIFT



## AUXILIARY HYDRAULICS RT90 POWERSHIFT

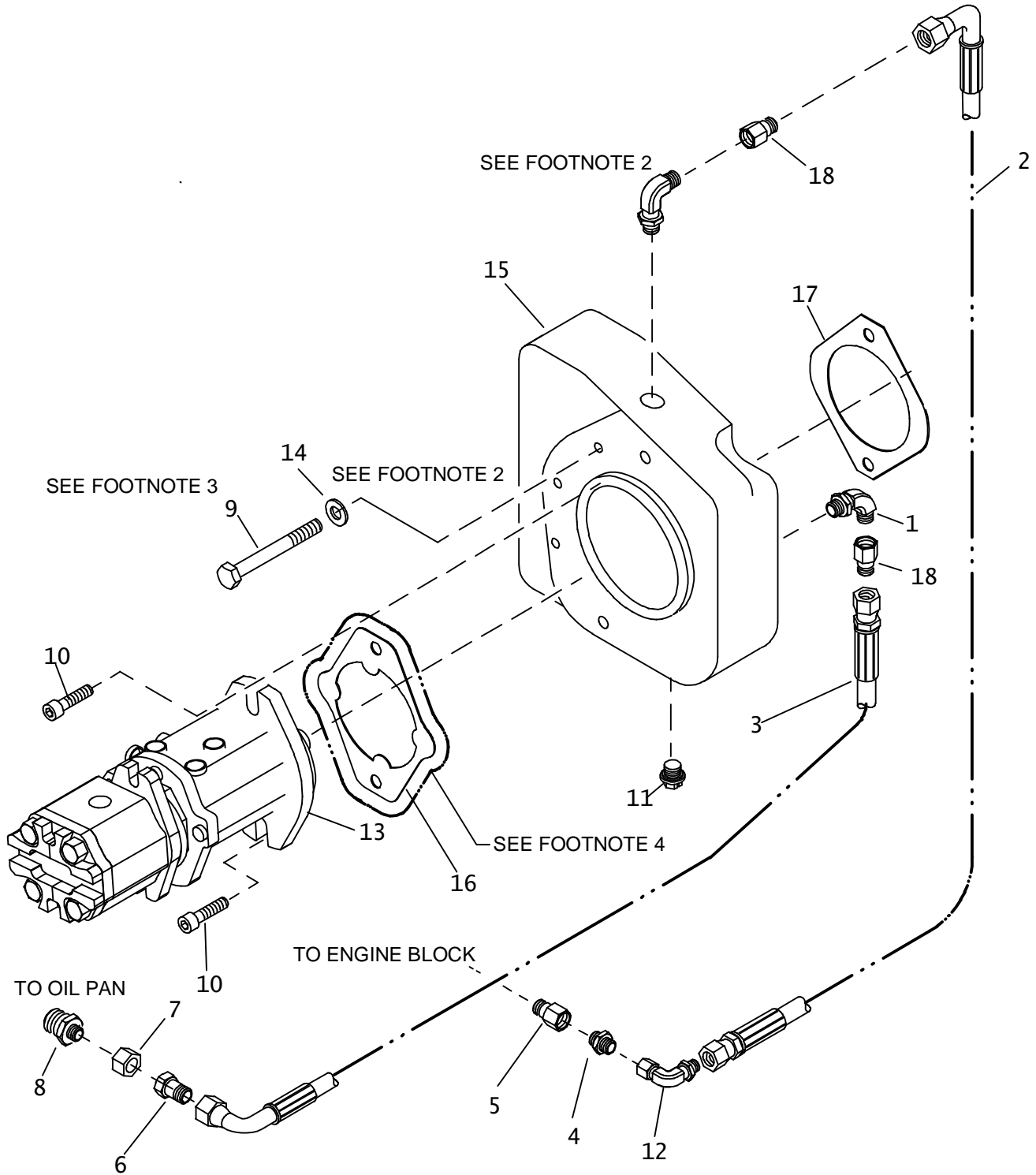
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	116-286	AR	BULK HOSE (1/2", SOLD PER 1")	USE 1 @ 48"
2.	153-917	1	TEE (08N-060-060)	
3.	153-850	1	S/O COUPLER (10S-08H90)	
4.	153-142	1	S/O COUPLER (20S-16H90)	
5.	155-491	1	HOSE (100FX90L-12"-3000)	
6.	155-146	1	S/O COUPLER (12S-16H90)	
7.	153-740	-	PICK UP TUBE	ENDS WITH S/N 5X0709.
8.	154-233	1	CONNECTOR (08S-080)	
9.	515-192	1	HOSE (080FX90L-54"-3000)	
10.	111-027	4	T-BOLT CLAMP (1.25" - 1.50")	
11.	154-298	1	CONNECTOR (10S-10090)	
12.	153-564	1	TANDEM HYDRAULIC PUMP	
	150-2680		AUXILIARY PUMP	
13.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 42"
14.	515-437	1	HOSE (040FX90-21"-3000)	ENDS WITH S/N 5X0709.
	154-743	1	HOSE (040FX90S-23"-3000)	BEGINS WITH S/N 5X0710
15.	154-373	1	REDUCER (040-060F)	
16.	154-278	1	CONNECTOR (04S-040)	
17.	106-385	2	FLG LOCKNUT (M6-1.00)	
18.	157-917	1	PRIORITY VALVE	
19.	306-886	1	SPACER	USED ON INSIDE OF FRAME PLATE
20.	107-054	2	SCREW (M6-1.00 X 90mm)	
21.	154-488	1	UN RUN TEE (100FX-100-100)	
22.	515-605	1	HOSE (100FX90S-20"-3000)	
23.	154-391	1	CONNECTOR (08S-100)	
24.	158-681	1	RELIEF VALVE (AUXILIARY)	PRE SET TO 2500 PSI
25.	149-991	1	CONNECTOR (08S-08S, XLG HEX)	
26.	309-817	1	SPACER PLATE	USED ON OUTSIDE OF FRAME PLATE
27.	117-612	1	ABRASION SLEEVE (1.00" X 46")	
28.	157-331	-	UN RUN TEE (060FX-060-080)	
29.	153-787	1	TEE (100-10S-040)	
30.	515-075	1	HOSE (040FX90S-82"-3000)	
31.	117-218	1	ABRASION SLEEVE (1.00" X 52")	
32.	154-339	1	CONNECTOR (04N-040)	
33.	149-896	1	STREET ELBOW (04NF-04NF90)	
34.	217-551	1	PRESSURE GAUGE (3000 PSI)	
35.	116-460	AR	BULK HOSE (1", SOLD PER 1')	USE 1 @ 25"
36.	154-327	-	CAP (080F)	
37.	117-611	1	ABRASION SLEEVE (1.00" X 22")	
38.	110-026	2	WORM CLAMP (1/2" TO 1-1/4")	
39.	153-862	-	TEE (16S-080-16H-08H)	
40.	149-642	-	HYD OIL FILTER HEAD	
41.	154-315	1	UNION (100-100FX90)	
42.	514-446	-	REDUCER (24S-20SF)	BEGINS WITH S/N 5X0710.
43.	157-987	-	S/O COUPLER (20S-16H90, 04NF)	BEGINS WITH S/N 5X0710.
44.	214-854	-	TEMPERATURE SWITCH	
45.	154-256	1	UNION (080-080FX90)	

## NOTE:

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



# AUX DRIVE LUBRICATION RT90



## AUX DRIVE LUBRICATION RT90

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-226	1	CONNECTOR (040-06S90)	
2.	154-726	1	HOSE (040FX90-15"-3000)	
3.	515-041	1	HOSE (040FX90-20"-3000)	
4.	154-261	1	CONNECTOR (040-08S)	
5.	153-971	1	CONNECTOR (06N-08SF)	
6.	154-248	1	REDUCER STEM (040)	
7.	154-272	1	REDUCER NUT (080F)	
8.	153-757	1	CONNECTOR (M22-1.50-080)	
9.	106-645	2	SCREW (M12-1.75 X 110mm, 10.9)	SEE FOOTNOTE 3
10.	107-044	-	BOLT (M12-1.75 X 45mm, SOC)	SEE FOOTNOTE 1
11.	155-130	1	PLUG (06S)	
12.	154-255	1	UNION (040-040FX90)	
13.	153-564	-	TANDEM HYDRAULIC PUMP	SEE FOOTNOTE 1
	150-2680		AUXILIARY PUMP	
14.	106-391	2	WASHER (M12)	
15.	166-464	1	AUX DRIVE ADAPTER "B" PAD (9T)	
16.	153-833	-	GASKET (ENGINE/PUMP AUX DRIVE)	SEE FOOTNOTE'S 1, 2 & 4
17.	165-880	-	GASKET	
18.	154-373	2	REDUCER (040-060F)	

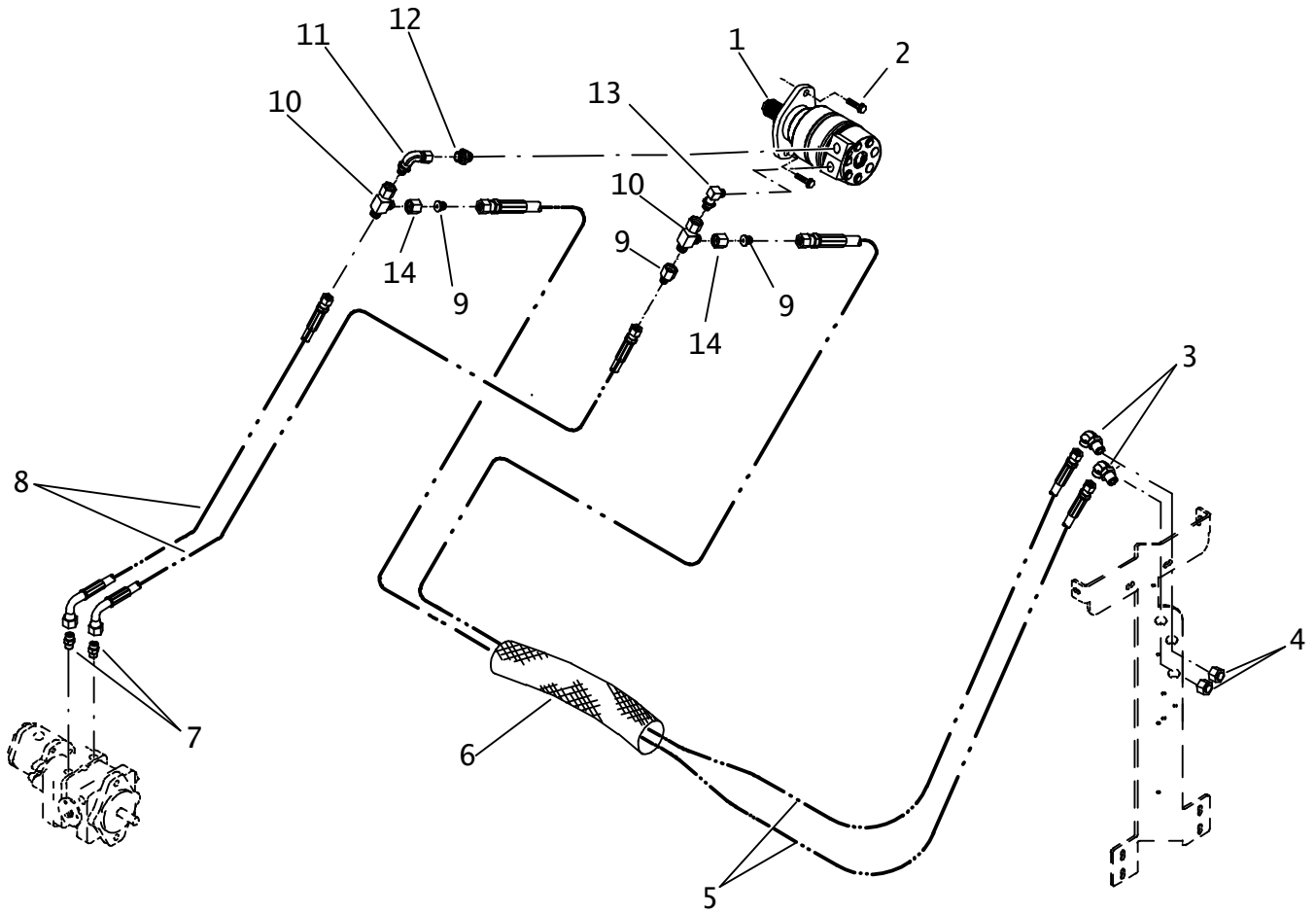
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### FOOTNOTES:

1. REFER TO "AUXILIARY HYDRAULICS POWERSHIFT", THE TANDEM PUMP, HARDWARE AND GASKET ARE SHOWN ON THIS PAGE.
2. COVER & ELBOW CONNECTOR COME WITH AUXILIARY DRIVE.
3. SCREW (106-645) HOLDS AUXILIARY DRIVE TO ENGINE.
4. SILICON SEALER IS REQUIRED TO BOTH SURFACES OF ITEM 16 FOR PROPER SEAL.

NOTE:

# GROUND DRIVE MOTOR HYDRAULICS



# GROUND DRIVE MOTOR HYDRAULICS

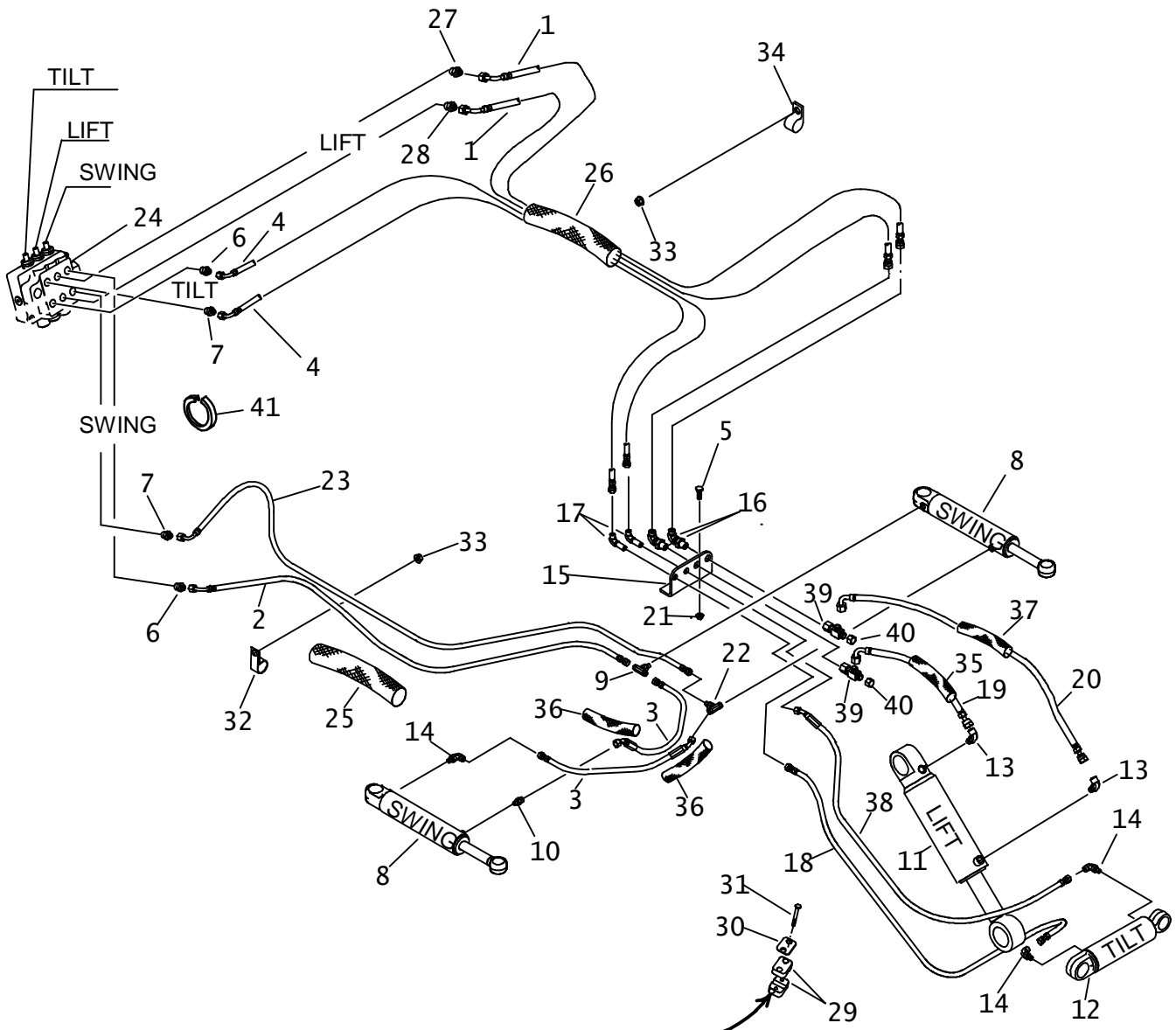
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-046	1	HYD. MOTOR (GROUND)	
2.	106-632	2	FLG LK SCREW (M12-1.75 X 35mm, SER)	
3.	154-355	2	BK CONNECTOR (040-04090BK)	
4.	154-296	2	CAP (040F)	
5.	157-263	2	HOSE (040FX-102"-5000)	
6.	115-902	1	ABRASION SLEEVE (1.59" X 100")	
7.	154-233	2	CONNECTOR (08S-080)	
8.	154-716	2	HOSE (080FX90-48"-3000)	
9.	154-248	2	REDUCER STEM (040)	
10.	154-266	2	UNION RUN TEE (080FX-080-080)	
11.	154-256	1	UNION (080-080FX90)	
12.	154-279	1	CONNECTOR (080-10S)	
13.	154-322	1	CONNECTOR (080-10S90)	
14.	154-272	2	REDUCER NUT (080F)	

NOT SHOWN:

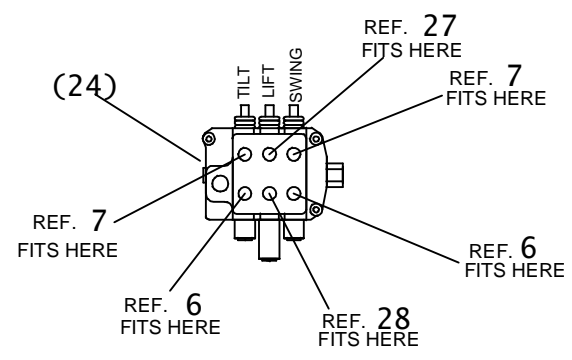
FOOTNOTES:

NOTE:

# BACKFILL BLADE HYDRAULICS



FOOTNOTE 2



# BACKFILL BLADE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	153-074	2	HOSE (060FX90-88"-3000)	LIFT
2.	153-968	1	HOSE (040FX90S-82"-5000)	SWING
3.	515-310	2	HOSE (040FX45-22"-5000)	SWING
4.	515-137	2	HOSE (040FX90-90"-3000)	TILT
5.	106-327	2	SCREW (M8-1.25 X 30mm)	
6.	154-261	2	CONNECTOR (040-08S)	
7.	154-374	2	CONNECTOR (040-08S, ORF)	
8.	151-057	2	CYL (2.0" X 1.25" X 8.0")	SEE FOOTNOTE 1
9.	154-293	1	BRANCH TEE (04S-040-040)	
10.	154-278	1	CONNECTOR (04S-040)	
11.	151-070	1	CYL (3" X 1.75" X 8")	SEE FOOTNOTE 1
12.	151-202	1	CYL (2" X 1" X 3.38")	SEE FOOTNOTE 1
13.	154-342	2	CONNECTOR (06S-06090)	
14.	154-252	3	CONNECTOR (04S-04090)	
15.	307-416	1	BK BRACKET	
16.	154-229	2	BK CONNECTOR (060-06090BK)	
17.	154-355	2	BK CONNECTOR (040-04090BK)	
18.	154-921	1	HOSE (040FX-54"-3000-AR)	TILT
19.	154-929	1	HOSE (060FX90-19"-3000)	LIFT
20.	515-221	1	HOSE (060FX90S-28"-3000)	LIFT
21.	106-386	2	FLG LOCKNUT (M8-1.25)	
22.	154-316	1	RUN TEE (04S-040-040)	
23.	153-967	1	HOSE (040FX90S-90"-5000)	SWING
24.	158-033	-	HYD. CONTROL VALVE (3-SPOOL)	ENDS WITH S/N 5Y0446. OBSOLETE
	159-809	-	HYD. CONTROL VALVE (3-SPOOL)	BEGINS WITH S/N 5Y0447, USE FLOAT KIT 500-2020
25.	117-691	1	ABRASION SLEEVE (1.25" X 68")	
26.	115-920	1	ABRASION SLEEVE (2.38" X 70")	
27.	514-294	1	CONNECTOR (08S-060, ORF)	
28.	154-222	1	CONNECTOR (060-08S)	
29.	110-866	2	CLAMP SET (1/2")	SEE FOOTNOTE 2
30.	110-958	2	BACKUP PLATE	
31.	105-818	4	BOLT (1/4-NC X 1-1/2")	
32.	110-332	1	BOLT-ON CLAMP (1-5/8")	SEE FOOTNOTE 3
33.	105-003	2	FLG LOCKNUT (5/16-NC)	SEE FOOTNOTE 3
34.	110-333	1	BOLT-ON CLAMP (1")	SEE FOOTNOTE 3
35.	117-328	1	ABRASION SLEEVE (1.00" X 18")	
36.	117-672	2	ABRASION SLEEVE (1.00" X 20")	
37.	117-409	1	ABRASION SLEEVE (1.00" X 28")	
38.	153-973	1	HOSE (040FX45-54"-3000-AR)	TILT
39.	154-344	2	UN RUN TEE (060FX-060-060)	
40.	154-326	2	CAP (060F)	
41.	116-259	AR	BULK EDGE (1/2", SOLD PER FT)	USE 1 @ 20" & SEE FOOTNOTE 4

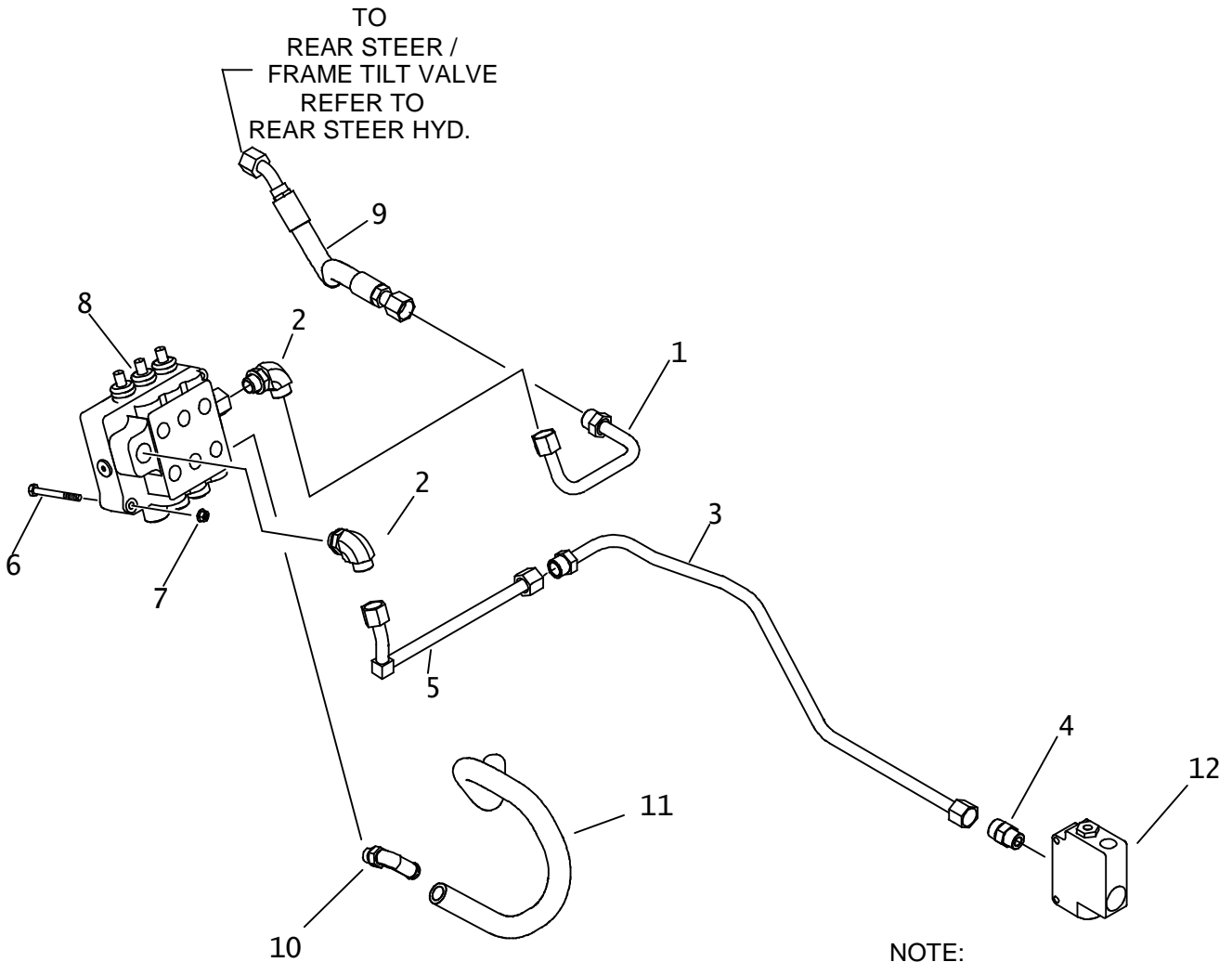
#### FOOTNOTES:

1. REFER TO PARTS PAGE "BACKFILL BLADE ASSEMBLY" FOR CYLINDER INSTALLATION HARDWARE.
2. CLAMP SET (110-866) BOLTS ONTO WELD PLATE ON BFB LIFT ARM.
3. #110-333, 105-003 & 110-332 ATTACH TO STUD BOLTS ON FRAME PLATES.
4. USE EDGING ON FRAME WHERE HOSE'S PASS THRU.

#### NOTE:

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

# BACKFILL BLADE VALVE RT95



SEE FOOTNOTE 1

NOTE:  
FOR HYDROSTAT UNITS  
REFER TO  
AUX. HYD.- HYDROSTAT  
&  
FOR POWER SHIFT UNITS  
REFER TO  
AUX. HYD.- POWER SHIFT

## BACKFILL BLADE VALVE RT95

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	149-851	1	HYD LINE (-10)	
2.	154-298	2	CONNECTOR (10S-10090)	
3.	149-849	1	HYD LINE (-10)	
4.	154-301	1	CONNECTOR (10S-100)	
5.	157-322	1	HYD LINE (-10)	
6.	105-292	3	SCREW (M8-1.25 X 75mm)	
7.	106-386	3	FLG LOCKNUT (M8-1.25)	
8.	<u>158-033</u>	1	HYD. CONTROL VALVE (3-SPOOL)	ENDS WITH S/N_____, SEE FOOTNOTE 1
	159-809	1	HYD. CONTROL VALVE (3-SPOOL)	BEGINS WITH S/N_____.
9.	153-907	1	HOSE (100FX45-16"-3000)	
10.	154-362	-	S/O COUPLER (10S-12H90)	
11.	116-636	-	BULK HOSE (3/4", SOLD PER 1')	USE 1 @ 25"
12.	157-917	-	PRIORITY VALVE	

### FOOTNOTES

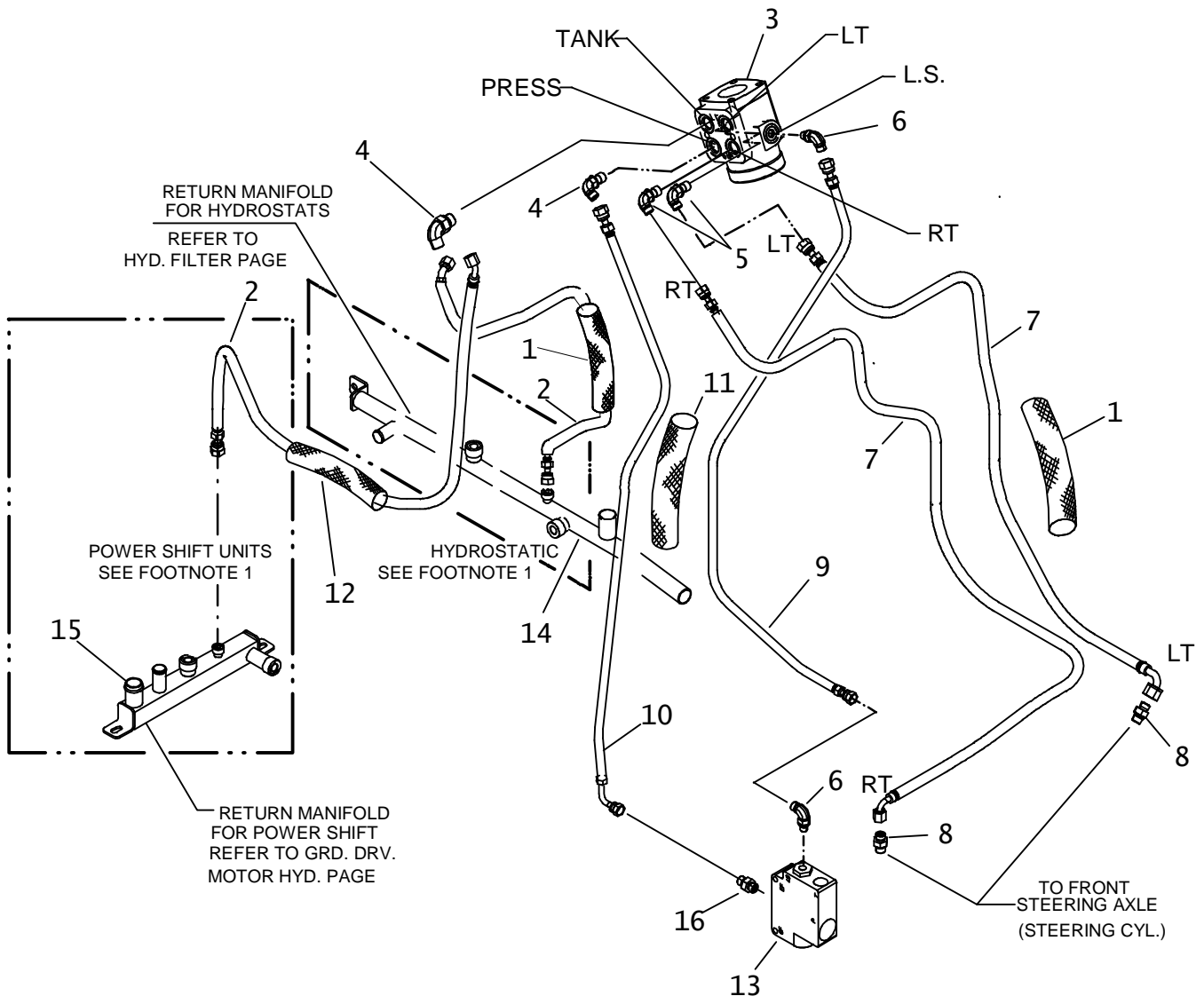
- FOR BFB VALVE RETURN HOSE'S REFER TO PAGE "PUMP DRIVE HYDRAULICS" FOR HYDROSTATICS OR PAGE "GROUND DRIVE MOTOR HYDRAULICS" FOR POWERSHIFTS.

### NOTE

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



# POWER STEERING VALVE HYDRAULIC



## POWER STEERING VALVE HYDRAULIC

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	117-214	2	ABRASION SLEEVE (1.25" X 40")	
2.	515-222	1	HOSE (060FX45-46"-3000)	HYDROSTAT UNITS ONLY & SEE FOOTNOTE 1
	149-358	1	HOSE (060FX45-55"-3000)	POWER SHIFT UNITS ONLY & SEE FOOTNOTE 1
3.	149-371	1	POWER STEERING VALVE	
	190-913	1	SEAL REPAIR KIT	
4.	154-227	2	CONNECTOR (060-08S90)	
5.	154-276	2	CONNECTOR (040-08S90)	
6.	154-252	2	CONNECTOR (04S-04090)	
7.	116-804	2	HOSE (040FX90-69"-3000)	
8.	152-146	2	CONNECTOR (040-08S) SHORT	
9.	154-695	1	HOSE (040FX-38"-3000)	
10.	153-315	1	HOSE (060FX90S-36"-3000)	
11.	117-396	1	ABRASION SLEEVE (1.25" X 28")	
12.	117-387	1	ABRASION SLEEVE (1.00" X 42")	
13.	158-901	-	PRIORITY VALVE	
14.	307-535	-	RETURN MANIFOLD	
15.	153-210	-	HYDRAULIC MANIFOLD (5 PORT)	
16.	154-222	1	CONNECTOR (060-08S)	

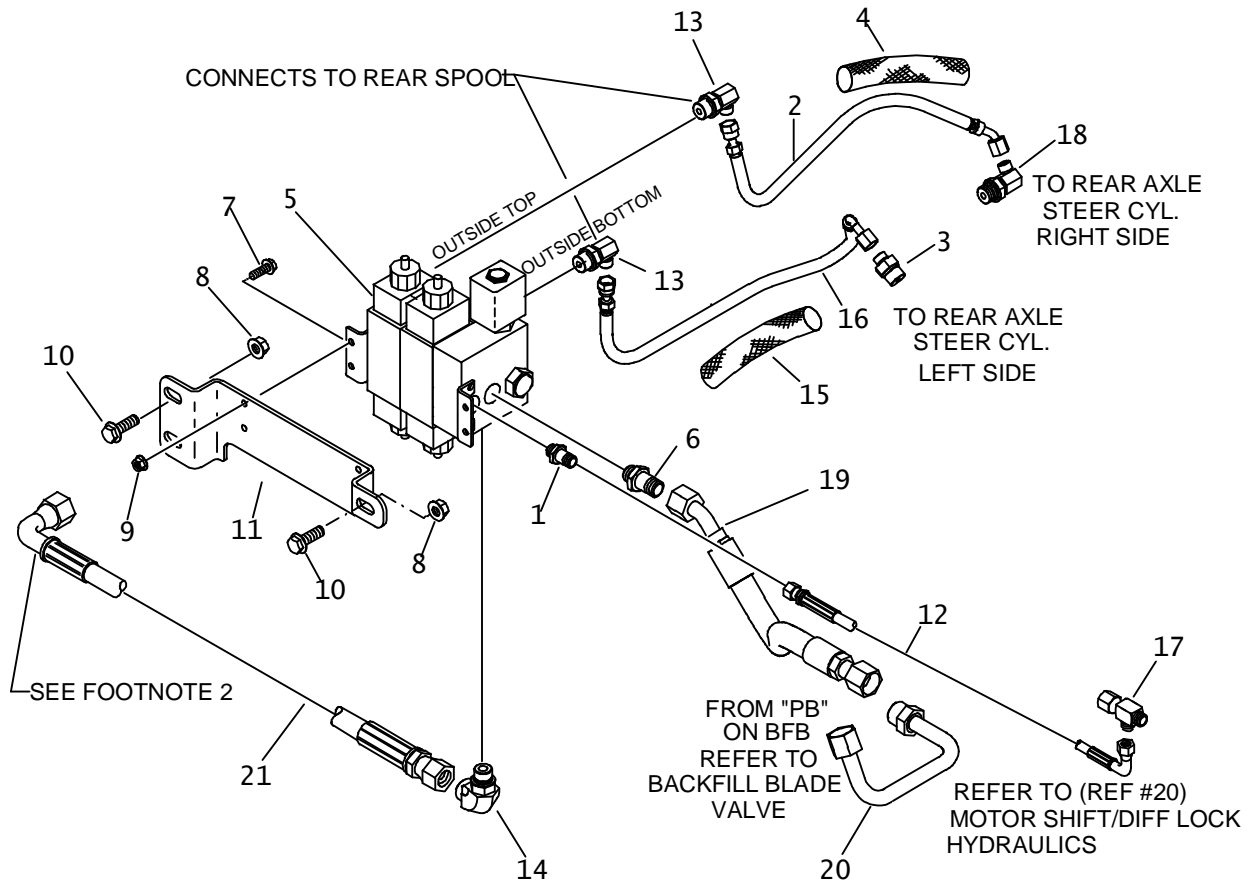
### FOOTNOTES

- AS INDICATED BY THE GRAPHICS, "RETURN TO TANK" ON HYDROSTATIC UNITS RETURNS TO RETURN MANIFOLD ON SIDE OF LEFT FRAME PLATE. "RETURN TO TANK" ON POWER SHIFT UNITS RETURNS TO RETURN MANIFOLD ON CROSSMEMBER OF FRAME.

### NOTE:

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

# REAR STEER HYDRAULICS



## REAR STEER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-222	1	CONNECTOR (060-08S)	
2.	154-934	1	HOSE (040FX45-18"-3000)	
3.	152-146	1	CONNECTOR (040-08S) SHORT	
4.	117-608	1	ABRASION SLEEVE (1.00" X 15")	
5.	153-785	1	HYDRAULIC VALVE (SGL SPOOL)	
	153-786	1	HYDRAULIC VALVE (2-SPOOL)	SEE FOOTNOTE 1
	159-505	-	SOLENOID TUBE	
	149-616	-	CAP NUT	
6.	154-391	1	CONNECTOR (08S-100)	
7.	106-379	4	FLG LK SCREW (M6-1.00 X 20mm)	
8.	106-354	3	FLANGE NUT (M12-1.75)	
9.	106-385	4	FLG LOCKNUT (M6-1.00)	
10.	106-632	3	FLG LK SCREW (M12-1.75 X 35mm, SER)	
11.	307-074	1	BRACKET	
12.	153-320	1	HOSE (060FX90L-17"-3000)	
13.	157-334	2	CONNECTOR (040-06S90, ORF)	
14.	154-298	1	CONNECTOR (10S-10090)	
15.	117-328	1	ABRASION SLEEVE (1.00" X 18")	
16.	515-462	1	HOSE (040FX90-22"-3000 AR)	
17.	154-344	-	UN RUN TEE (060FX-060-060)	REFER TO "MOTOR SHIFT/DIFF LOCK HYD" FOR DESTINATION
18.	154-276	1	CONNECTOR (040-08S90)	
19.	153-907	-	HOSE (100FX45-16"-3000)	
20.	149-851	-	HYD. LINE (-10)	
21.	515-129	-	HOSE (100FX90-30"-3000)	SEE FOOTNOTE 2

NOT SHOWN

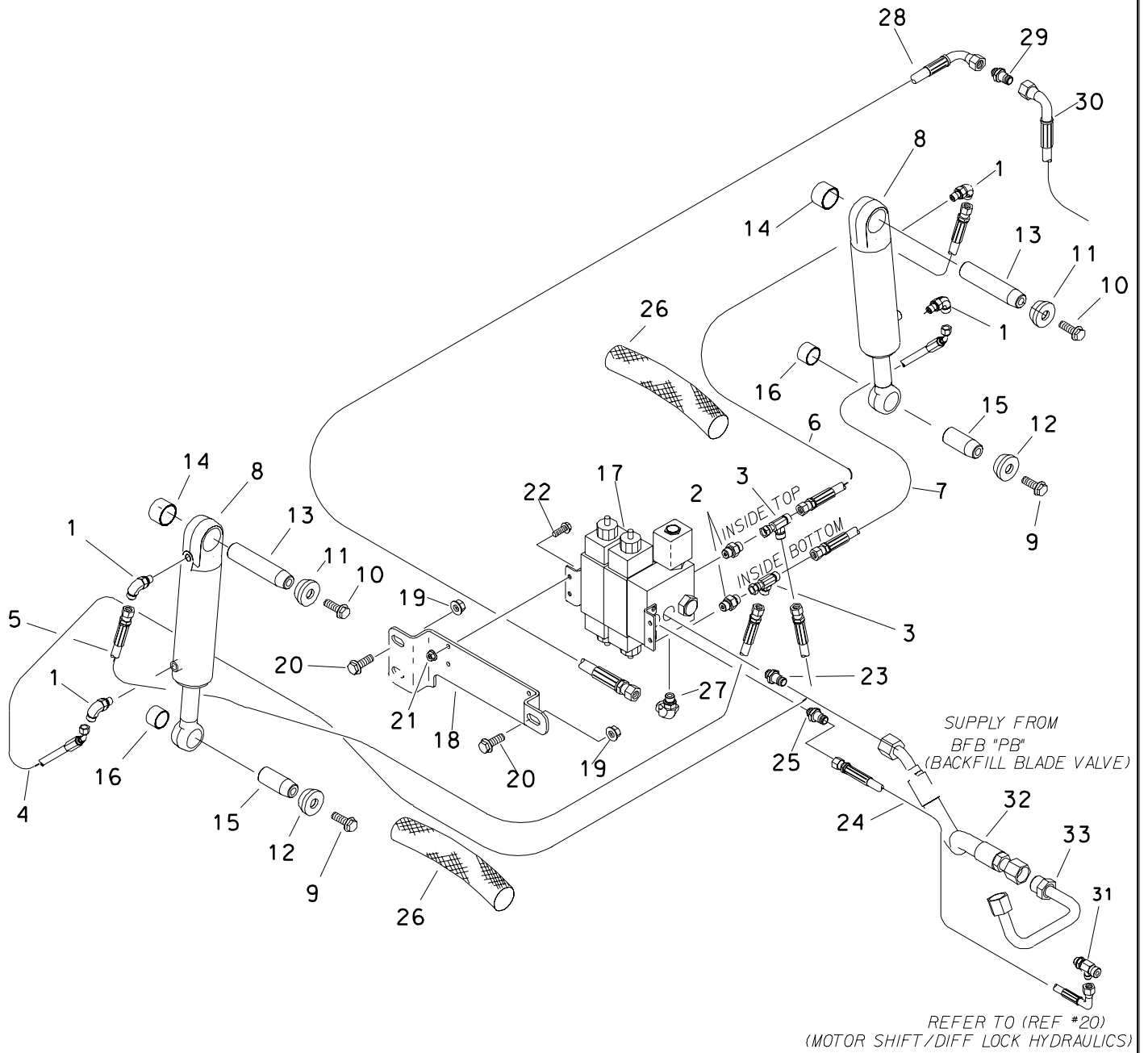
### FOOTNOTES

1. 153-786 (2 SPOOL VALVE) IS USED WHEN FRAME TILT & REAR STEER OPTIONS ARE BOTH USED.
2. REFERENCE #3 FROM "PUMP DRIVE HYD" WILL ATTACH HERE UNTIL A REAR ATTACHMENT IS ATTACHED ON TRACTOR.

### NOTE

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

# FRAME TILT HYDRAULICS



# FRAME TILT HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-252	4	CONNECTOR (04S-04090)	
2.	154-385	2	CONNECTOR (040-06S, ORF)	
3.	154-265	2	UN RUN TEE (040FX-040-040)	
4.	154-963	1	HOSE (040FX45-24"-3000)	
5.	154-702	1	HOSE (040FX-30"-3000)	
6.	515-229	1	HOSE (040FX-34"-3000)	
7.	515-019	1	HOSE (040FX45-34"-3000)	
8.	151-202	2	CYL (2" X 1" X 3.38")	
9.	106-164	2	FLG LK SCREW (M10-1.50 X 30mm)	
10.	106-469	2	FLG SCREW (M12-1.75 X 30mm)	
11.	181-982	2	TAPERED INSERT (1.25")	
12.	181-981	2	TAPERED INSERT (1")	
13.	183-765	2	TAPERED PIN (31.7mm X 110mm)	
14.	125-771	2	COMPOSITION BUSHING (1.25")	
15.	183-767	2	TAPERED PIN (25.4mm X 60mm)	
16.	125-770	2	COMPOSITION BUSHING (1")	
17.	153-786	1	HYDRAULIC VALVE (2-SPOOL)	SEE FOOTNOTE 1
	153-785	1	HYDRAULIC VALVE (SGL SPOOL)	SEE FOOTNOTE 1
	217-948		COIL, 12VDC	
	149-616		CAP NUT	
	499-445		COIL RETAINING NUT	
	159-505		SOLENOID TUBE	
	499-444		SOLENOID TUBE ASSM'Y	
	214-909		SOLENOID COIL	
	157-262		DUAL P.O. CHECK	
18.	307-074	1	BRACKET	
19.	106-354	3	FLG NUT (M12-1.75)	
20.	106-632	3	FLG LK SCREW (M12-1.75 X 35mm, SER)	
21.	106-385	4	FLG LK NUT (M6-1.00)	
22.	106-379	4	FLG LK SCREW (M6-1.00 X 20mm)	
23.	154-391	1	CONNECTOR (08S-100)	
24.	154-715	1	HOSE (040FX90-18"-3000)	
25.	154-222	1	CONNECTOR (060-08S)	
26.	115-811	2	ABRASION SLEEVE (1.59" X 20")	
27.	154-298	1	CONNECTOR (10S-10090)	
28.	515-129	1	HOSE (100FX90-30"-3000)	
29.	154-464	1	CONNECTOR (100-100)	
30.	157-343	-	HOSE (100FX90S-120"-3000)	REFER TO REF #3 ON PUMP DRIVE HYDRAULICS
31.	154-344	-	UN RUN TEE (060FX-060-060)	
32.	153-907	-	HOSE (100FX45-16"-3000)	
33.	149-851	-	HYD LINE (-10)	

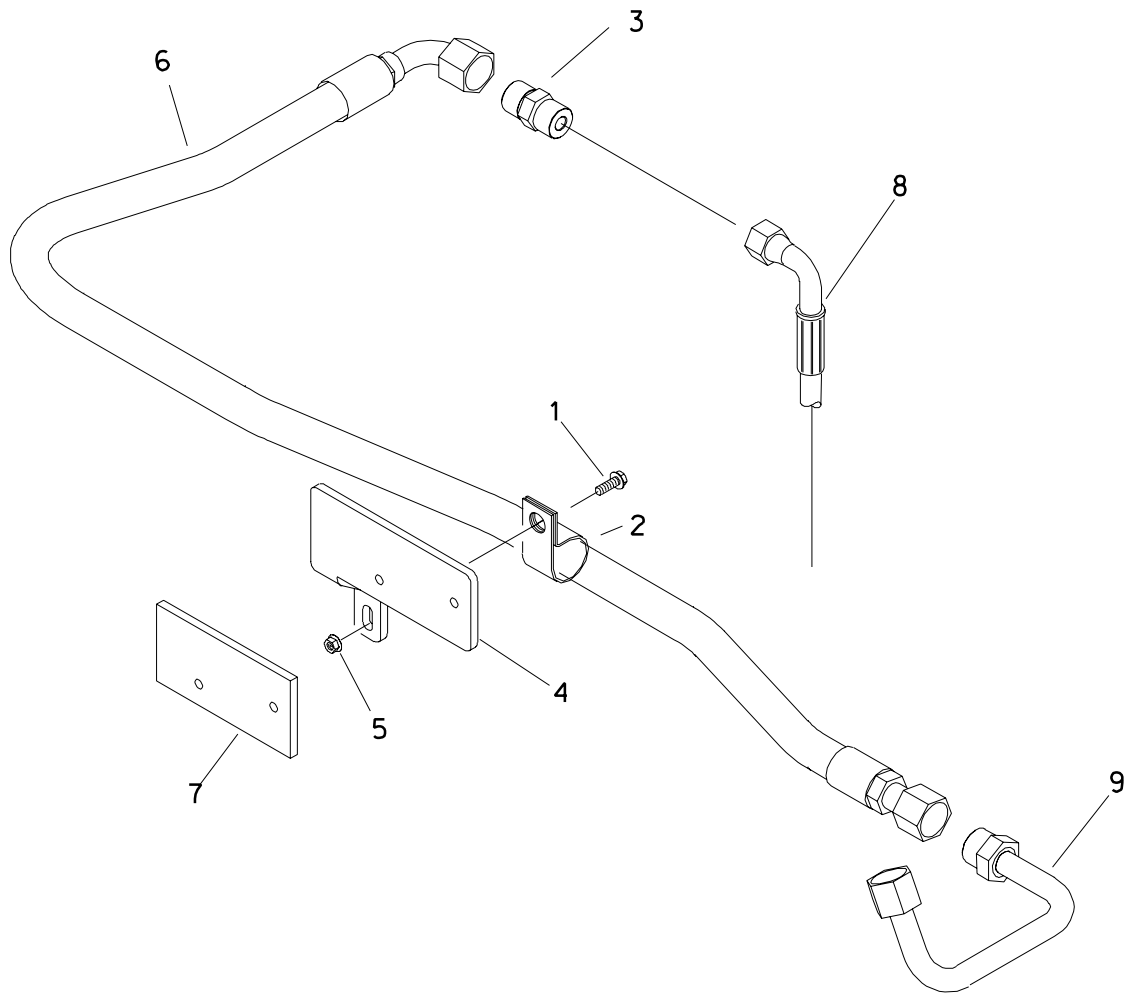
## FOOTNOTES

- 153-786 (2-SPOOL VALVE) IS USED WHEN FRAME TILT & REAR STEER OPTIONS ARE BOTH USED. SEE REAR STEER PARTS PAGE FOR REAR STEER OPTION.

## NOTE

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

NO FRAME TILT / NO REAR STEER OPTION



# NO FRAME TILT / NO REAR STEER OPTION

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-988	1	FLG LK SCREW (M6-1.00 X 20mm)	
2.	110-333	1	BOLT-ON CLAMP (1")	
3.	154-464	1	CONNECTOR (100-100)	
4.	315-176	1	SPACER BRACKET	SEE FOOTNOTE 1
5.	106-385	1	FLG LOCKNUT (M6-1.00)	
6.	154-939	1	HOSE (100FX90S-50"-3000)	
7.	306-885	-	MOUNT PLATE	
8.	157-343	-	HOSE (100FX90S-120"-3000)	
9.	149-851	-	HYD LINE (-10)	

**FOOTNOTES**

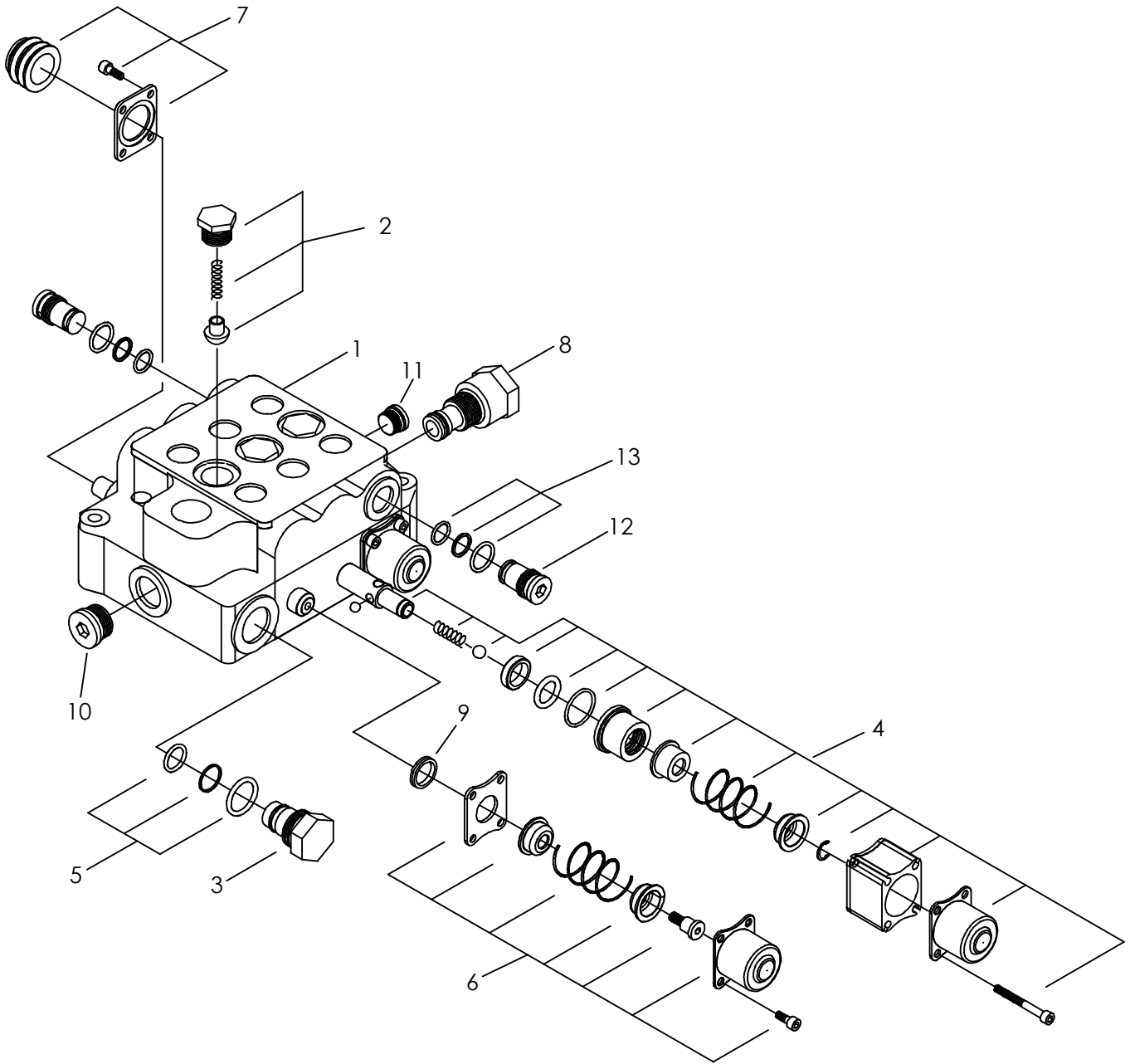
1. REFERENCE #4 (315-176) WILL REPLACE (1X) REFERENCE #2 ON PARTS PAGE "MOTOR SHIFT/DIFF LOCK HYD" WHEN "NO FRAME TILT/NO REAR STEER" IS USED.

**NOTE**

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



# HYDRAULIC CONTROL VALVE 3 SPOOL UPPER VALVE



## HYDRAULIC CONTROL VALVE 3 SPOOL UPPER VALVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-033	1	HYD CONTROL VALVE (3-SPOOL)	ENDS WITH S/N_____. OBSOLETE
	159-809	1	HYD CONTROL VALVE (3-SPOOL)	BEGINS WITH S/N_____. USE FLOAT KIT 500-2020
2.	500-933	3	LOAD CHECK PLUG KIT	
3.	599-278	1	NR PLUG KIT	
4.	500-935	1	FLOAT POSITIONER KIT	
5.	191-149	1	PLUG SEAL KIT	
6.	500-934	2	SPOOL POSITIONER KIT	
7.	191-153	3	SPOOL BOOT KIT	
8.	191-157	1	POWER BEYOND SLEEVE	
9.	191-151	6	SPOOL LIP SEAL KIT	
10.	155-179	1	PLUG (10S, SOC)	
11.	154-384	1	PLUG (06S)	
12.	599-279	2	WORK PORT NR PLUG KIT	
13.	500-928	2	SEAL REPAIR KIT	

NOT SHOWN:

FOOTNOTES:

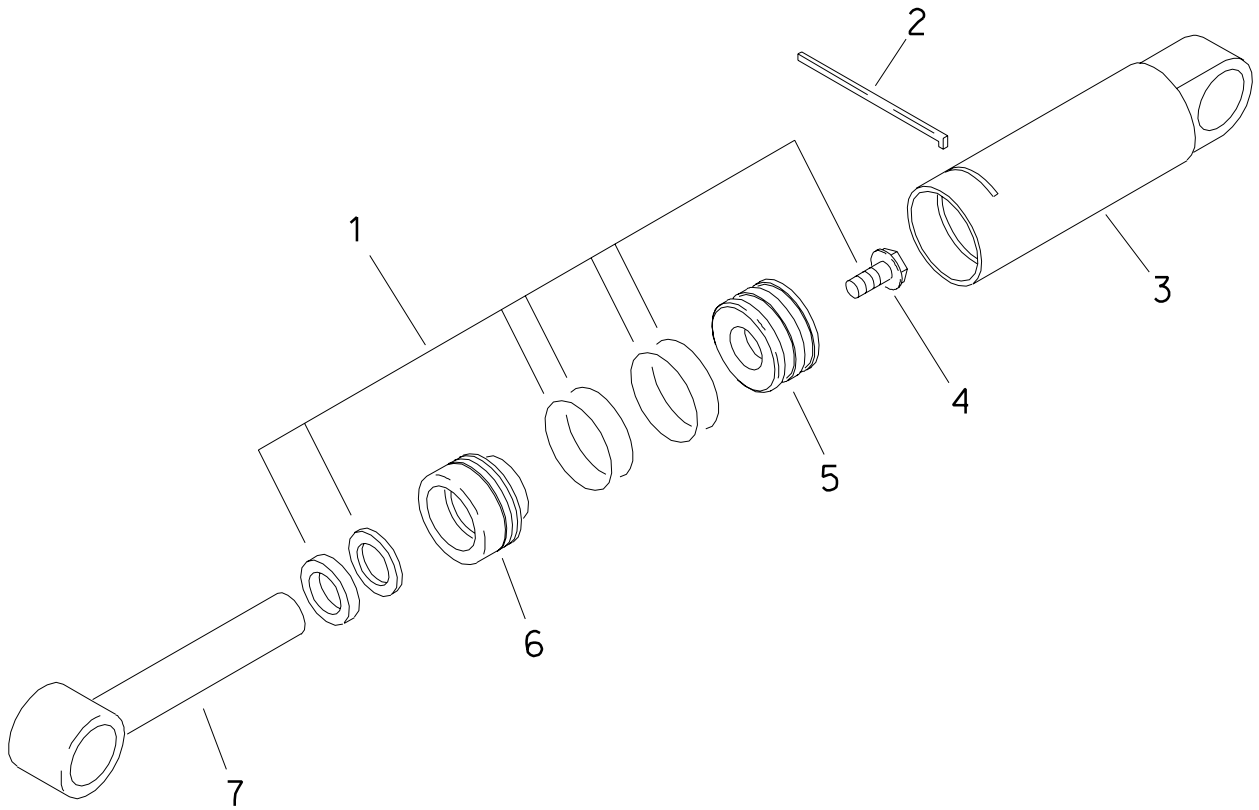
1. EARLY PRODUCTION VALVES HAVE A MACHINED WORK PORT WITH A PLUG INSTALLED, FUTURE PRODUCTION VALVES WILL NOT HAVE A MACHINED WORK PORT.

NOTE:

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

# HYDRAULIC CYLINDER

2" X 1.25" X 8"



# HYDRAULIC CYLINDER

2" X 1.25" X 8"

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-057		HYD CYLINDER (2" X 1.25" X 8")	INCL REF NO.'S 1 THRU 7
1.	190-169	1	SEAL REPAIR KIT (2.0" X 1.25")	
2.	150-778	1	LOCK RING (2.0")	
3.	150-285	1	CYLINDER BARREL (2")	
4.	106-097	1	FLG BOLT (5/8-NC X 1-3/4",GD8)	SEE FOOTNOTE 1
5.	150-771	1	CYLINDER PISTON (2" X 1.25")	SEE FOOTNOTE 2
6.	150-770	1	CYLINDER HEAD (2" X 1.25")	
7.	150-427	1	CYLINDER ROD	

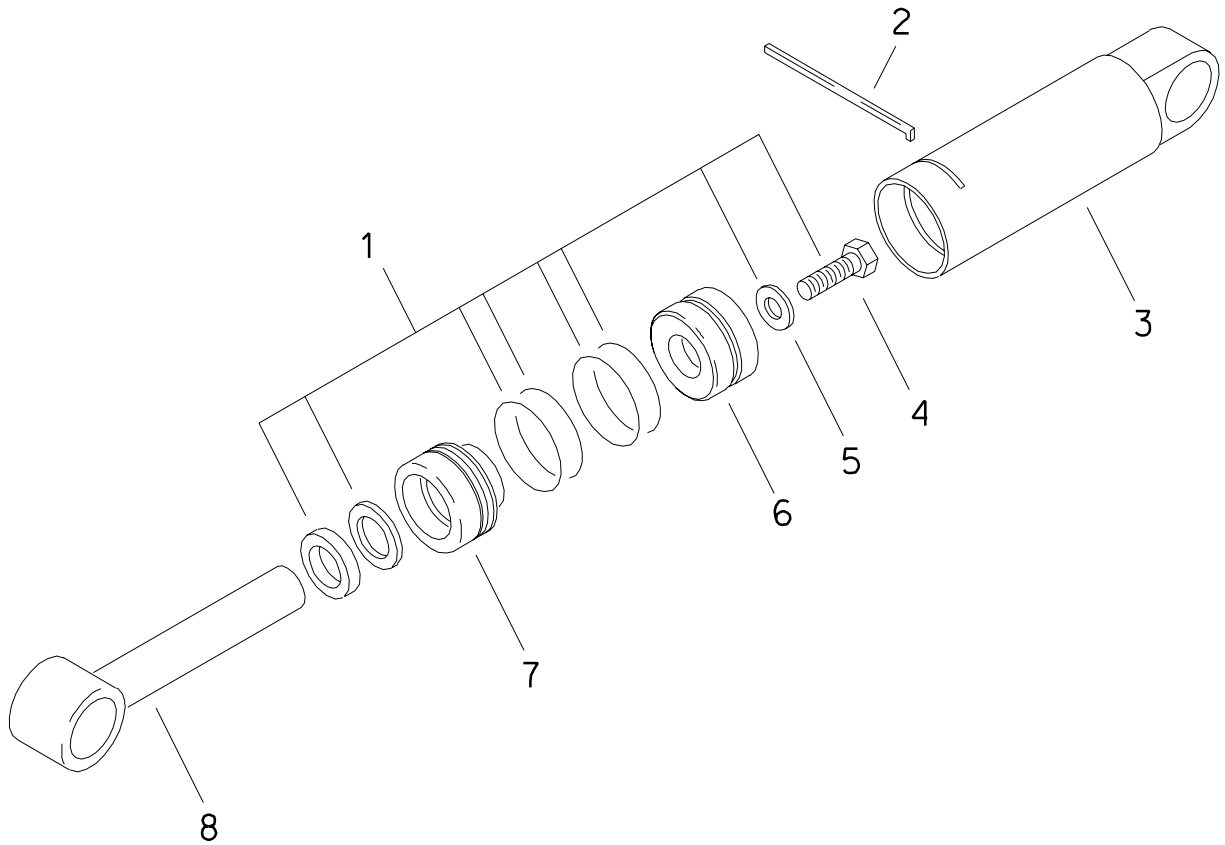
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	259-100		U-SEAL INSTALLER (1"-1.499")	
	259-236		WIPER INSTALLER (1.25")	
	259-239		WIPER/SEAL INSTALLER (2")	
	259-241		PISTON INSTALLER (2")	
	259-188		CYLINDER HEAD SPANNER - TWO PIN	

- FOOTNOTES
1. USE LOCTITE 277, AND TORQUE TO 180-200 FT-LBS (245-270 N.M)
  2. INCLUDES MOLDED-ON WEAR RING, H.P. SEAL, AND O-RING.

# HYDRAULIC CYLINDER

3" X 1.75" X 8"



## HYDRAULIC CYLINDER

3" X 1.75" X 8"

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-070		CYL (3.0" X 1.75" X 8.0")	INCL REF NO.'S 1 THRU 7
1.	190-172	1	SEAL REPAIR KIT (3.0" X 1.75")	INCL REF NO.'S 4 THRU 5
2.	150-911	1	LOCK RING (3")	
3.	152-014	1	CYLINDER BARREL (3")	
4.	106-122	1	BOLT (7/8-NC X 2-1/4", GD8)	SEE FOOTNOTE 1
5.	105-363	1	WASHER (7/8")	
6.	150-765	1	CYLINDER PISTON (3" X 1.75")	INCL MOLDED-ON WEAR RING
7.	150-763	1	CYLINDER HEAD (3" X 1.75")	
8.	150-436	1	CYLINDER ROD (1.75")	

## NOT SHOWN:

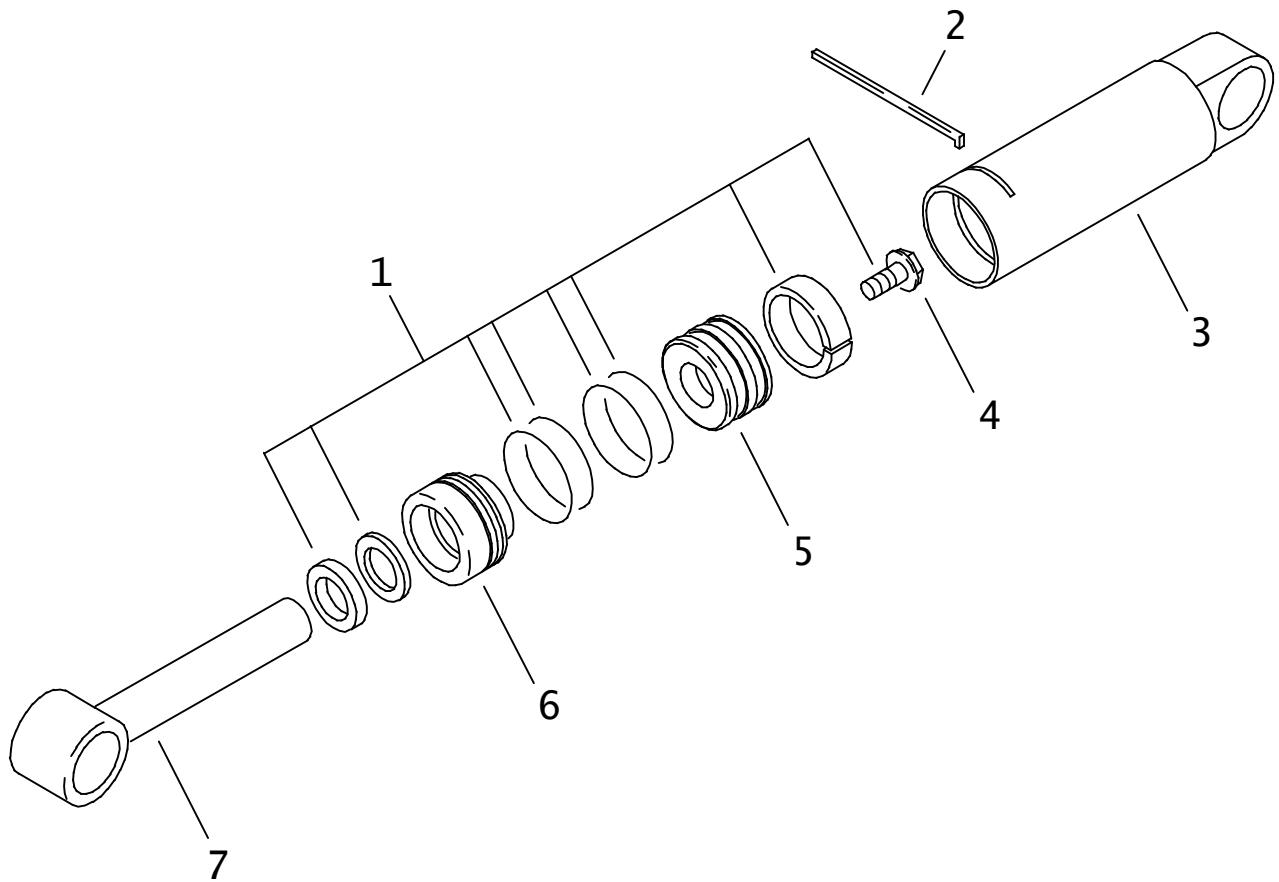
259-040 U-SEAL INSTALLER (1.5" - UP)  
 259-238 WIPER INSTALLER (1.75")  
 259-065 PISTON SEAL INSTALLER (3")  
 259-066 PISTON INSTALLER (3")  
 259-188 CYL HEAD SPANNER - TWO PIN

## FOOTNOTES

1. CLEAN & DRY THREADS. APPLY RED LOCTITE (RC 271 OR RC 272). TORQUE TO 410-460 FT-LBS (560-625 N.M.)

# HYDRAULIC CYLINDER

2.0" X 1.00" X 3.38"



# HYDRAULIC CYLINDER

## 2.0" X 1.00" X 3.38"

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-202		HYD CYL (2" X 1" X 3.38")	INCLUDES REF NO'S 1 THRU 7
1.	190-165	1	SEAL REPAIR KIT (2" X 1")	
2.	150-778	1	LOCK RING (2")	
3.	150-700	1	CYLINDER BARREL	
4.	106-096	1	FLG BOLT (1/2-NC X 1-3/4",GD8)	SEE FOOTNOTE 1
5.	150-775	1	CYLINDER PISTON (2" X 1")	
6.	150-772	1	CYLINDER HEAD (2" X 1")	
7.	150-698	1	CYLINDER ROD	

### NOT SHOWN:

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

### FOOTNOTES

1. APPLY LOCTITE 271 OR 277. TORQUE TO 90-100 FT-LBS (120-135 N.M.)

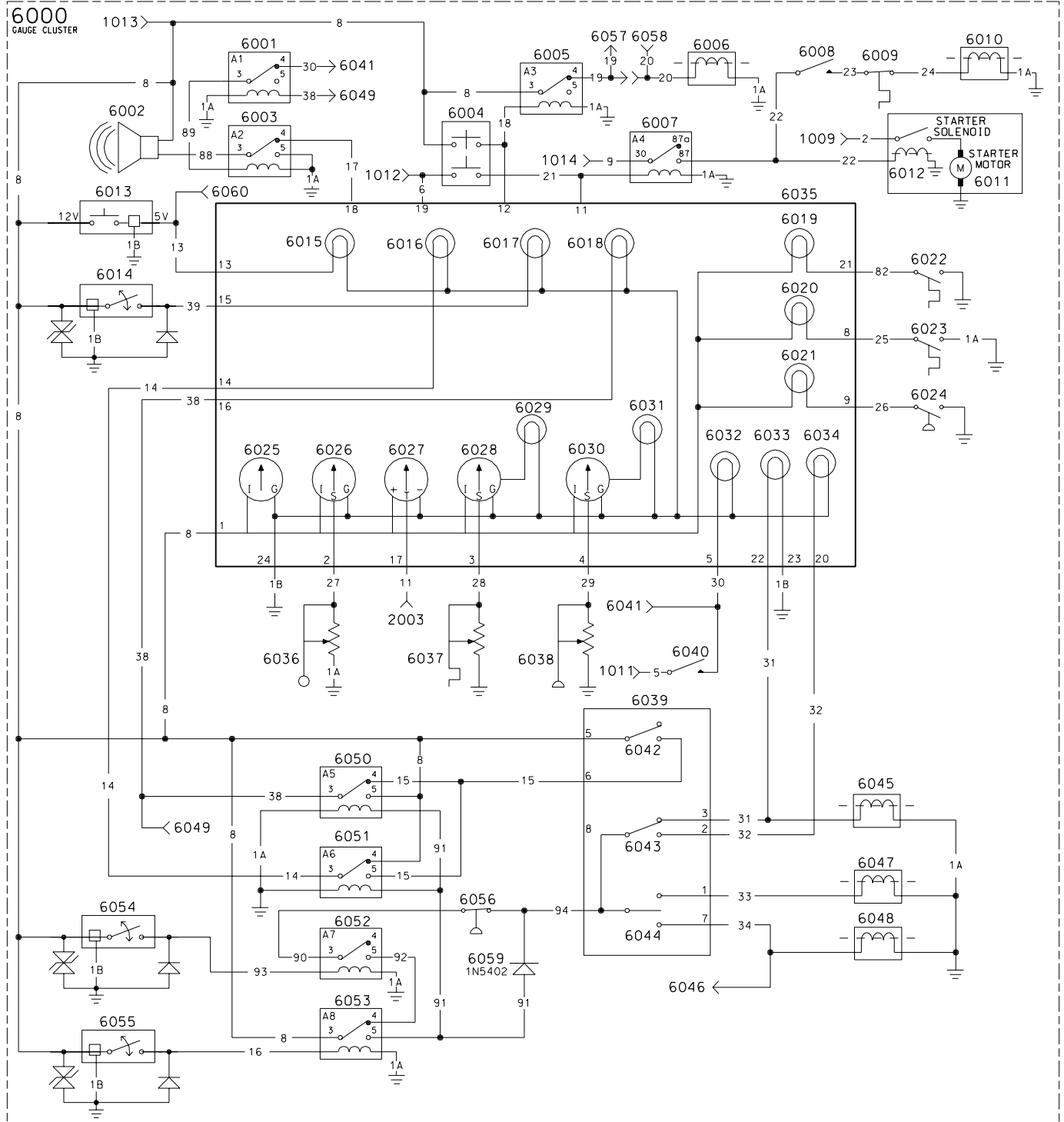
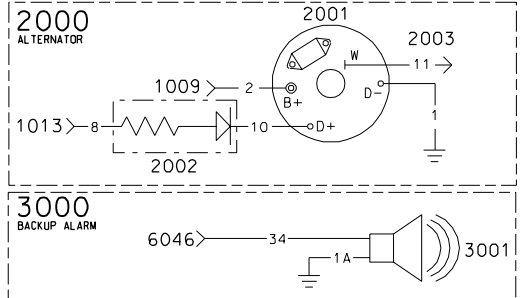
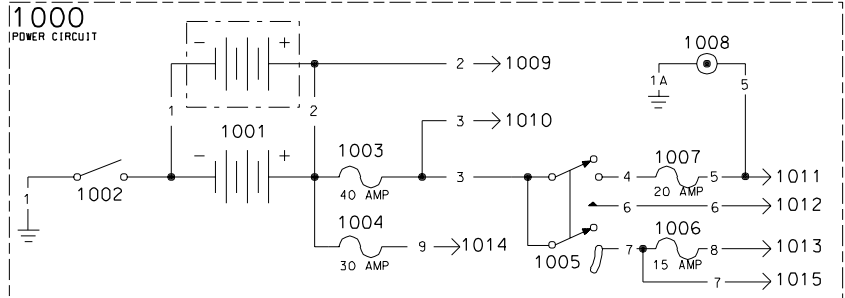
### NOTE:





# **ELECTRICAL**

# ELECTRICAL SCHEMATIC POWERSHIFT



F

# ELECTRICAL SCHEMATIC

## POWERSHIFT

### 1000--POWER

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
1001	BATTERY	1 BLK, 2 RED	DUAL BATTERY OPTION
1002	BATTERY DISCONNECT	1 BLK	
1003	FUSE #1	2 RED, 3 RED/GRN	40 AMP, P/N 217-791
1004	FUSE #2	2 RED, 9 PUR	30 AMP, P/N 217-813
1005	IGNITION SWITCH	3 RED/GRN, 4 BRN, 6 RED/BLK, 7 ORG/BLU.	
1006	FUSE #4	7 ORG/BLU, 8 ORG/GRN	15 AMP, P/N 217-811
1007	FUSE #3	4 BRN, 5 ORG	20 AMP, P/N 217-812
1008	ACCESSORY SOCKET	1A BLK/RED, 5 ORG	
1009	TO BATTERY	2 RED	
1010	TO BATTERY FUSED	3 RED/GRN	
1011	TO ACCESSORY	5 ORG	
1012	TO START	6 RED/BLK	
1013	TO IGNITION	8 ORG/GRN	
1014	TO START RELAY	9 PUR	
1015	TO REMOTE START SWITCH	7 ORG/BLU	

### 2000--ALTERNATOR

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
2001	ALTERNATOR	1 BLK, 2 RED, 10 ORG/BLU, 11 YEL	
2002	DIODE PACK	8 ORG/GRN, 10 ORG/BLU	P/N 214-256 INCLUDES RESISTOR
2003	TO TACHOMETER	11 YEL	

### 3000--BACKUP ALARM OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
3001	BACKUP ALARM	1A BLK/RED, 34 TAN/RED	

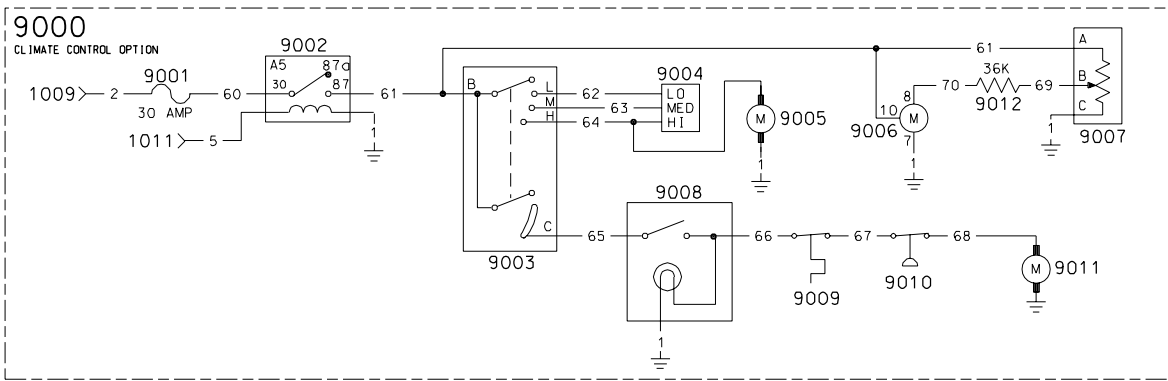
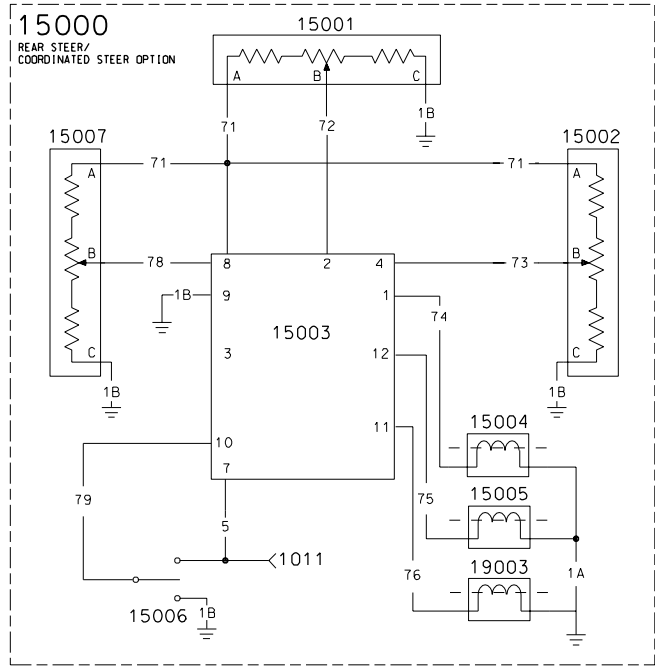
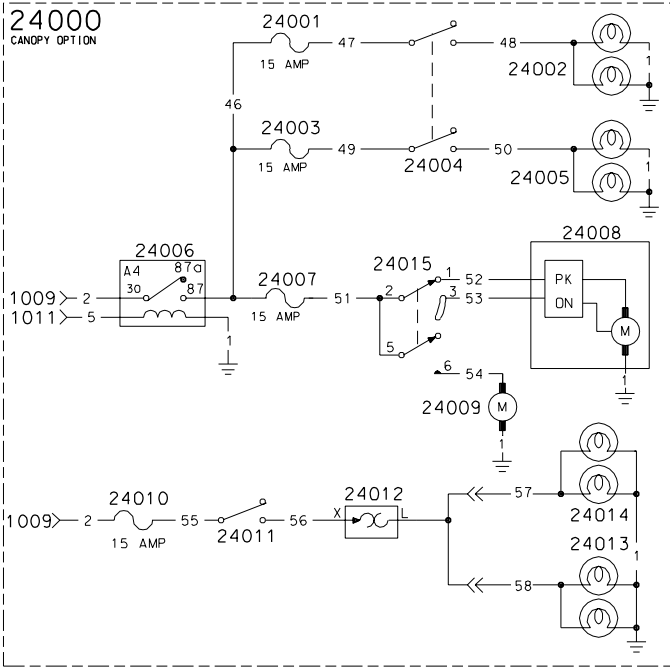
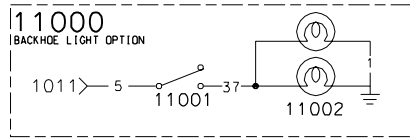
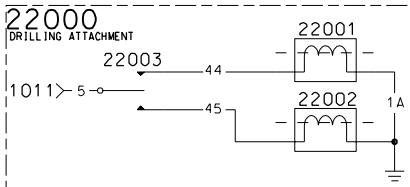
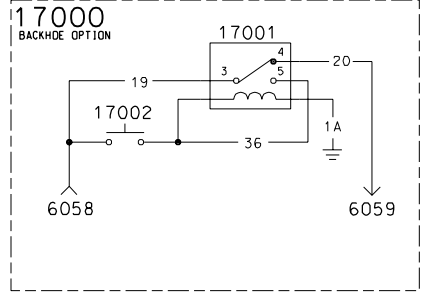
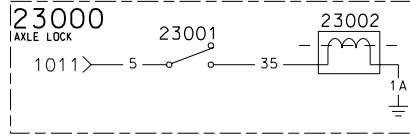
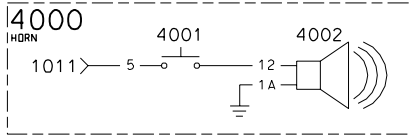
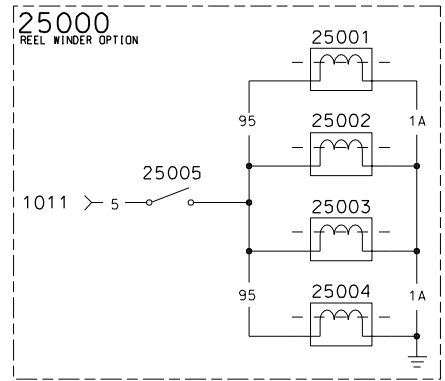
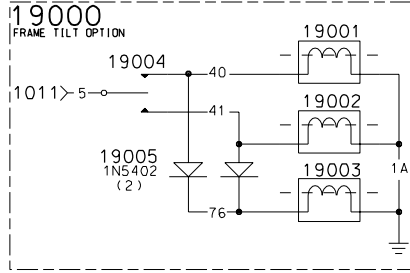
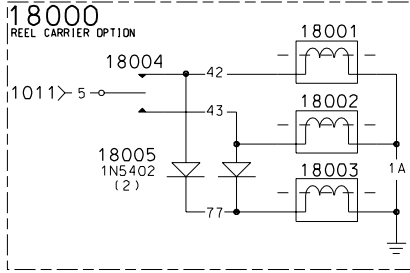
### 4000--HORN

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
4001	HORN BUTTON	5 ORG, 12 TAN	
4002	HORN	1A BLK/RED, 12 TAN	

### 6000--GAUGE CLUSTER CIRCUIT

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
6001	ALARM ENABLE RELAY	1A BLK/RED, 30 TAN 38 GRA, 89 PUR/GRN	
6002	WARNING ALARM	8 ORG/GRN, 88 YEL/GRN	
6003	WARNING ALARM RELAY	1A BLK/RED, 17 BRN/YEL, 88 YEL/GRN, 89 PUR/GRN	
6004	BYPASS SWITCH	6 RED/BLK, 8 ORG/GRN, 18 ORG/BLK, 21 WHT/BLK	
6005	FUEL RELAY	1A BLK/RED, 8 ORG/GRN, 18 ORG/BLK, 19 ORG/GRA	
6006	FUEL SOLENOID	1A BLK/RED, 20 ORG/BLK	
6007	START RELAY	1A BLK/RED, 9 PUR, 21 WHT/BLK, 22 PUR	
6008	COLD START SWITCH	22 PUR, 23 BRN	
6009	TEMPERATURE SWITCH	23 BRN, 24 BLK/ORG	
6010	COLD START SOLENOID	1A BLK/RED, 24 BLK/ORG	
6011	STARTER MOTOR	2 RED, CHASSIS GROUND	
6012	STARTER SOLENOID	22 PUR, CHASSIS GROUND	
6013	SEAT SWITCH	1B BLK/BLU, 8 ORG/GRN, 13 BLU/GRN	12V INPUT, 5V OUTPUT
6014	CROWD NEUTRAL SWITCH	1B BLK/BLU, 8 ORG/GRN, 39 GRA/GRN	ACTIVATES GROUND DRIVE 1 CIRCUIT
6015	OPERATOR PRESENCE LIGHT	1B BLK/BLU, 13 BLU/GRN	INPUT PIN 13, GROUND PIN 24
6016	ATTACHMENT NEUTRAL LIGHT	1B BLK/BLU, 14 WHT/GRN	INPUT PIN 14, GROUND PIN 24
6017	CROWD NEUTRAL LIGHT	1B BLK/BLU, 39 GRA/GRN	INPUT PIN 15, GROUND PIN 24

# ELECTRICAL SCHEMATIC POWERSHIFT



# ELECTRICAL SCHEMATIC

## POWERSHIFT

### 6000--GAUGE CLUSTER CIRCUIT

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
6018	DRIVE NEUTRAL LIGHT	1B BLK/BLU, 38 GRA/RED	INPUT PIN 16, GROUND PIN 24
6019	TRANSMISSION TEMP LIGHT	8 ORG/GRN, 82 WHT/ORG	12V PIN 1, SWITCHED GROUND PIN 21
6020	HYDRAULIC TEMP LIGHT	8 ORG/GRN, 25 GRA/BLK	12V PIN 1, SWITCHED GROUND PIN 8
6021	HYDRAULIC FILTER LIGHT	8 ORG/GRN, 26 GRA/YEL	12V PIN 1, SWITCHED GROUND PIN 9
6022	TRANSMISSION TEMP SWITCH	26 GRA/YEL, CHASSIS GROUND	
6023	HYDRAULIC TEMP SWITCH	1A BLK/RED, 25 GRA/BLK	
6024	HYDRAULIC FILTER SWITCH	26 GRA/YEL, CHASSIS GROUND	
6025	VOLTMETER	1B BLK/BLU, 8 ORG/GRN	
6026	FUEL GAUGE	1B BLK/BLU, 8 ORG/GRN, 27 BRN	FUEL SENDER INPUT PIN 2
6027	TACHOMETER	1B BLK/BLU, 8 ORG/GRN, 11 YEL	ALTERNATOR PULSED INPUT PIN 17 APPROX. FREQ RANGE OF 210HZ TO 765HZ
6028	ENGINE WATER TEMP GAUGE	1B BLK/BLU, 8 ORG/GRN, 28 GRN	WATER TEMPERATURE SENDER INPUT PIN 3
6029	ENGINE WATER TEMP LIGHT	INTERNAL CIRCUIT	
6030	ENGINE OIL PRESSURE GAUGE	1B BLK/BLU, 8 ORG/GRN, 29 BLU	OIL PRESSURE SENDER INPUT PIN 4
6031	ENGINE OIL PRESSURE LIGHT	INTERNAL CIRCUIT	
6032	PARKING BRAKE LIGHT	1B BLK/BLU, 30 TAN	INPUT PIN 5, GROUND PIN 24
6033	GROUND DRIVE LOW LIGHT	1B BLK/BLU, 31 BLU/ORG	INPUT PIN 22, GROUND PIN 23
6034	GROUND DRIVE HIGH LIGHT		INPUT PIN 20, GROUND PIN 24
6035	GAUGE CLUSTER	1B BLK/BLU, 6 RED/BLK, 8 ORG/GRN, 11 YEL, 13 BLU/GRN, 14 WHT/GRN, 17 BRN/YEL, 18 ORG/BLK, 21 WHT/BLK, 25 GRA/BLK, 26 GRA/YEL, 27 BRN, 28 GRN, 29 BLU, 30 TAN, 31 BLU/ORG, 32 PUR/ORG, 38 GRA/RED, 39 GRA/GRN, 82 WHT/ORG	
6036	FUEL SENDER	1A BLK/RED, 27 BRN	
6037	ENGINE WATER TEMP SENDER	28 GRN, CHASSIS GROUND	
6038	ENGINE OIL PRESSURE SENDER	29 BLU, CHASSIS GROUND	
6039	F-N-R SHIFTER	8 ORG/GRN, 15 WHT/BLU, 31 BLU/ORG, 32 PUR/ORG, 33 TAN/GRN, 34 TAN/RED, 94 ORG/RED	
6040	PARKING BRAKE SWITCH	5 ORG, 30 TAN	
6041	TO ALARM ENABLE RELAY	30 TAN	
6042	DRIVE/ATTACHMENT NEUTRAL SWITCH	8 ORG/GRN, 15 WHT/BLU	COMPONENT OF F-N-R SHIFTER
6043	DRIVE HIGH/LOW SWITCH	31 BLU/ORG, 32 PUR/ORG, 94 ORG/RED	COMPONENT OF F-N-R SHIFTER
6044	FORWARD/REVERSE SWITCH	33 TAN/GRN, 34 TAN/RED, 94 ORG/RED	COMPONENT OF F-N-R SHIFTER
6045	LOW SPEED SOLENOID	1A BLK/RED, 31 BLU/ORG	
6046	TO BACKUP ALARM OPTION	34 TAN/RED	
6047	FORWARD SOLENOID	1A BLK/RED, 33 TAN/GRN	
6048	REVERSE SOLENOID	1A BLK/RED, 34 TAN/RED	
6049	TO ALARM ENABLE RELAY	38 GRA/RED	
6050	DRIVE RELAY	1A BLK/RED, 8 ORG/GRN, 15 WHT/BLU, 38 GRA/RED, 91 YEL/GRA	CMW P/N: 217-710
6051	ATTACHMENT RELAY	1A BLK/RED, 8 ORG/GRN, 14 WHT/GRN, 15 WHT/BLU, 91 YEL/GRA	CMW P/N: 217-710

# ELECTRICAL SCHEMATIC

## POWERSHIFT

### 6000--GAUGE CLUSTER CIRCUIT

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
6052	SHIFTER ENABLE RELAY	1A BLK/RED, 90 ORG/WHT, 92 GRN/YEL, 93 ORG/BLU	CMW P/N: 217-710
6053	DIG/DRIVE RELAY	1A BLK/RED, 8 ORG/GRN, 16 WHT, 91 YEL/GRA, 92 GRN/YEL	CMW P/N: 217-710
6054	THROTTLE POSITION SWITCH	1B BLK/BLU, 8 ORG/GRN, 93 ORG/BLU	
6055	DIG/DRIVE SWITCH	1B BLK/BLU, 8 ORG/GRN, 16 WHT	
6056	SHIFTER CUTOUT SWITCH	90 ORG/WHT, 94 ORG/RED	
6057	TO BACKHOE OPTION	19 ORG/GRA	RED JUMPER REQUIRED WHEN BACKHOE IS NOT CONNECTED
6058	TO BACKHOE OPTION	20 ORG/BLK	RED JUMPER REQUIRED WHEN BACKHOE IS NOT CONNECTED
6059	DIODE	91 YEL/GRA, 94 ORG/RED	REPLACEMENT P/N 1N5402
6060	TO GAUGE CLUSTER	13 BLU/GRN	

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
9001	FUSE #9	2 RED, 60 RED/GRN	30 AMP, P/N 217-813
9002	A/C RELAY	1A BLK/RED, 5 ORG, 60 RED/GRN, 61 PUR	30 AMP, P/N 217-813
9003	BLOWER SWITCH	61 PUR, 62 YEL, 63 GRN, 64 GRA, 65 WHT/YEL	
9004	RESISTOR	62 YEL, 63 GRN, 64 GRA	
9005	BLOWER MOTOR	1 BLK, 64 GRA	
9006	HEATER CONTROL VALVE	1 BLK, 61 PUR, 70 WHT/BLU	
9007	TEMP CONTROL POTENTIOMETER	1 BLK, 61 PUR, 69 WHT/RED	
9008	A/C SWITCH	1 BLK, 65 WHT/YEL, 66 BLU	
9009	THERMOSTAT	66 BLU, 67 GRN/RED	
9010	PRESSURE SWITCH	67 GRN/RED, 68 YEL/PUR	
9011	A/C COMPRESSOR	68 YEL/PUR, CHASSIS GROUND	
9012	RESISTOR	69 WHT/RED, 70 WHT/BLU	REPLACEMENT PART 36KOHM 0.5WATT

### 11000--BACKHOE LIGHT OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
11001	BACKHOE LIGHT SWITCH	5 ORG, 37 YEL/GRN	
11002	BACKHOE LIGHTS	1 BLK, 37 YEL/GRN	

### 15000--REAR/COORDINATED STEER OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
15001	REAR STEER POTENTIOMETER	1B BLK/BLU, 71 BLU/GRN, 72 GRA/BLU	71 IS REGULATED 5V. 72 IS VARIABLE INPUT TO CONTROLLER PIN 2.
15002	REAR AXLE POSITION SENSOR	1B BLK/BLU, 71 BLU/GRN, 73 GRN/BLU	71 IS REGULATED 5V. 73 IS VARIABLE INPUT TO CONTROLLER PIN 4.
15003	REAR STEER MODULE	1B BLK/BLU, 5 ORG, 71 BLU/GRN, 72 GRA/BLU, 73 GRN/BLU, 74 GRN/BLK, 75 BLU/BLK, 76 TAN/BLU, 78 GRN/RED, 79 ORG/BRN	
15004	REAR STEER RIGHT SOLENOID	1A BLK/RED, 74 GRN/BLK	NOMINAL RESISTANCE: 6 TO 8 OHMS

# ELECTRICAL SCHEMATIC

## POWERSHIFT

### 15000--REAR/COORDINATED STEER OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
15005	REAR STEER LEFT SOLENOID	1A BLK/RED, 75 BLU/BLK	NOMINAL RESISTANCE: 6 TO 8 OHMS
15006	COORDINATED STEER SWITCH	1B BLK/BLU, 5 ORG, 79 ORG/BRN	
15007	FRONT AXLE POSITION SENSOR	1B BLK/BLU, 71 BLU/GRN, 78 GRN/RED	

### 17000--BACKHOE OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
17001	ENGINE STOP RELAY	1A BLK/RED, 19 ORG/GRA, 20 ORG/BLK	
17002	ENGINE STOP SWITCH	19 ORG/GRA, 36 YEL/RED	

### 18000--REEL CARRIER OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
18001	REEL CARRIER UP SOLENOID	1A BLK/RED, 42 TAN/GRN	NOMINAL RESISTANCE: 6 TO 8 OHMS
18002	REEL CARRIER DOWN SOLENOID	1A BLK/RED, 43 TAN/WHT	NOMINAL RESISTANCE: 6 TO 8 OHMS
18003	BYPASS SOLENOID	1A BLK/RED, 77 BLU/WHT	NOMINAL RESISTANCE: 6 TO 8 OHMS
18004	REEL CARRIER SWITCH	5 ORG, 42 TAN/GRN, 43 TAN/WHT	
18005	DIODES	42 TAN/GRN, 43 TAN/WHT, 77 BLU/WHT	REPLACEMENT P/N: 1N5402 (2)

### 19000--FRAME TILT OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
19001	FRAME TILT RIGHT SOLENOID	1A BLK/RED, 40 GRA/BLU	NOMINAL RESISTANCE: 6 TO 8 OHMS
19002	FRAME TILT LEFT SOLENOID	1A BLK/RED, 41 GRA/GRN	NOMINAL RESISTANCE: 6 TO 8 OHMS
19003	BYPASS SOLENOID	1A BLK/RED, 76 TAN/BLU	NOMINAL RESISTANCE: 6 TO 8 OHMS
19004	FRAME TILT SWITCH	5 ORG, 40 GRA/BLU, 41 GRA/GRN	
19005	DIODES	40 GRA/BLU, 41 GRA/GRN, 76 TAN/BLU	REPLACEMENT P/N: 1N5402 (2)

### 22000--DRILLING ATTACHMENT

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
22001	CLOCKWISE SOLENOID	1A BLK/RED, 44 YEL/GRA	NOMINAL RESISTANCE: 6 TO 8 OHMS
22002	COUNTERCLOCKWISE SOLENOID	1A BLK/RED, 45 YEL/BLU	NOMINAL RESISTANCE: 6 TO 8 OHMS
22003	DRILLING ATTACHMENT SWITCH	5 ORG, 44 YEL/GRA, 45 YEL/BLU	

### 23000--AXLE LOCK

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
23001	AXLE LOCK SWITCH	5 ORG, 35 TAN/RED	
23002	AXLE LOCK SOLENOID	1A BLK/RED, 35 TAN/RED	

### 24000--CANOPY OPTION

REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
24001	FUSE #5	46 PUR/WHT, 47 PUR	15 AMP, P/N 217-811
24002	FRONT WORK LIGHTS	1 BLK, 48 PUR/BLK	
24003	FUSE #6	46 PUR/WHT, 49 GRN	15 AMP, P/N 217-811
24004	WORK LIGHT SWITCH	47 PUR, 48 PUR/BLK, 49GRN, 50 GRN/BLK	
24005	REAR WORK LIGHTS	1 BLK, 50 GRN/BLK	
24006	CANOPY RELAY	1 BLK, 2 RED, 5 ORG, 46 PUR/WHT	



ELECTRICAL SCHEMATIC  
POWERSHIFT

24000--CANOPY OPTION

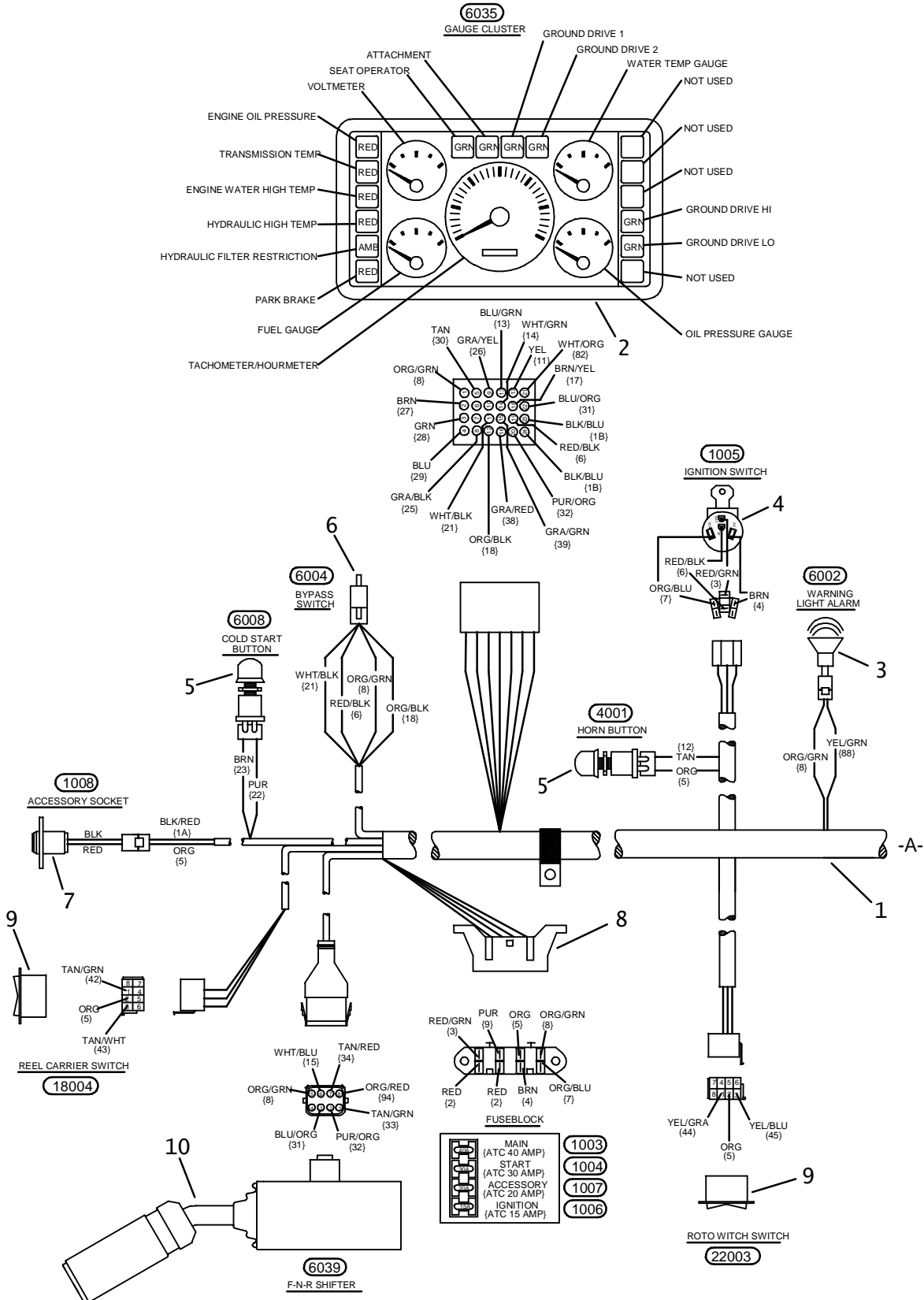
REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
24007	FUSE #7	46 PUR/WHT, 51 BRN	15 AMP, P/N 217-811
24008	WINDSHIELD WIPER MOTOR	1 BLK, 52 PNK, 53 PNK/BLU	
24009	WINDSHIELD WASHER PUMP	1 BLK, 54 TAN	15 AMP, P/N 217-811
24010	FUSE #8	2 RED, 55 WHT	
24011	HAZARD LIGHT SWITCH	55 WHT, 56 BLU/YEL	
24012	FLASHER	56 BLU/YEL, 57 YEL/BLK, 58 YEL/BLU	
24013	REAR HAZARD LIGHTS	1 BLK, 58 YEL/BLU	
24014	FRONT HAZARD LIGHTS	1 BLK, 57 YEL/BLK	

25000--REEL WINDER OPTION

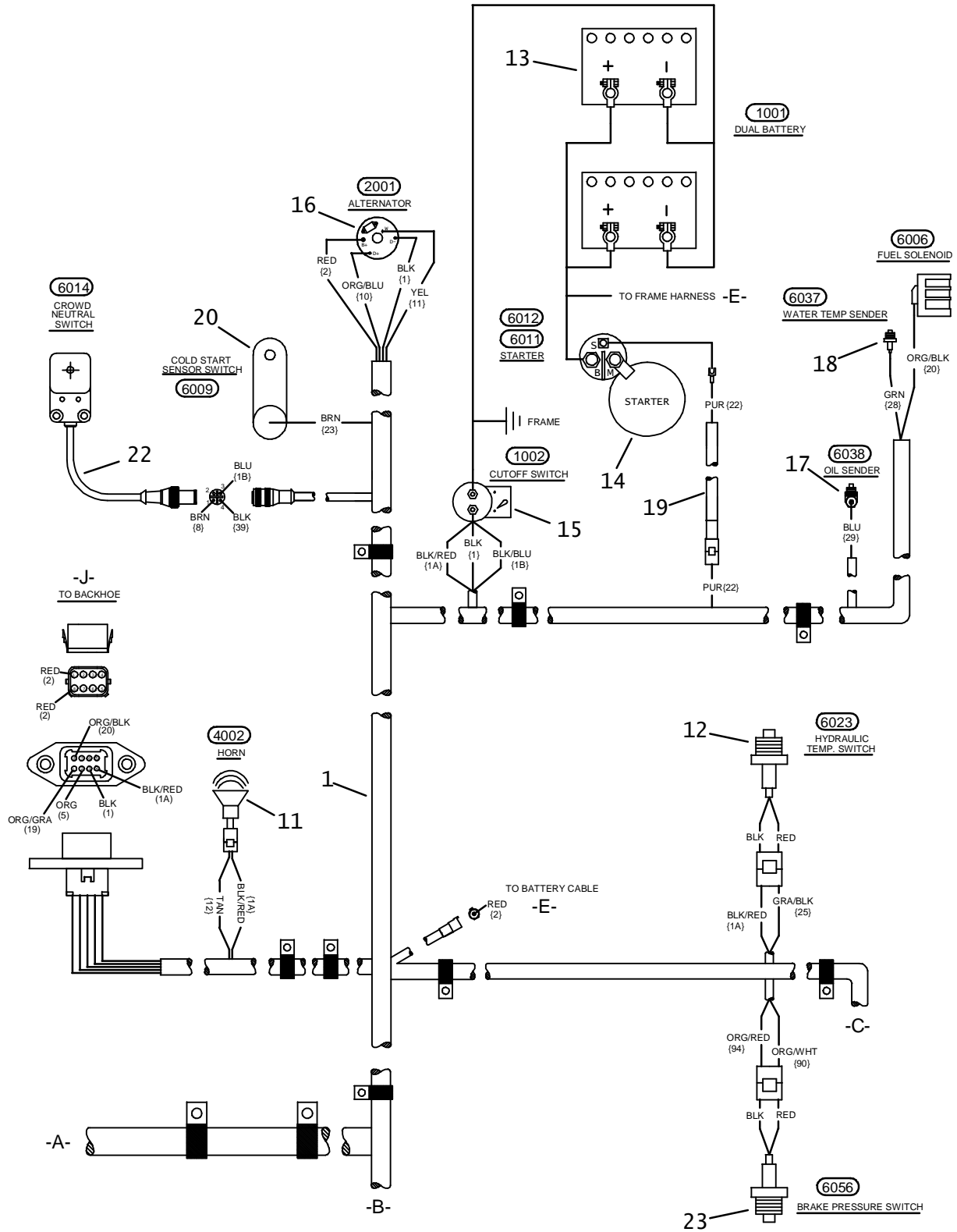
REF.	DESCRIPTION	WIRE DESCRIPTION	NOTES
25001	REEL WINDER SOLENOID #1	1A BLK/RED, 95 TAN/RED	NOMINAL RESISTANCE: 6 TO 8 OHMS
25002	REEL WINDER SOLENOID #2	1A BLK/RED, 95 TAN/RED	NOMINAL RESISTANCE: 6 TO 8 OHMS
25003	REEL WINDER SOLENOID #3	1A BLK/RED, 95 TAN/RED	NOMINAL RESISTANCE: 6 TO 8 OHMS
25004	REEL WINDER SOLENOID #4	1A BLK/RED, 95 TAN/RED	NOMINAL RESISTANCE: 6 TO 8 OHMS
25005	REEL WINDER SWITCH	5 ORG, 95 TAN/RED	



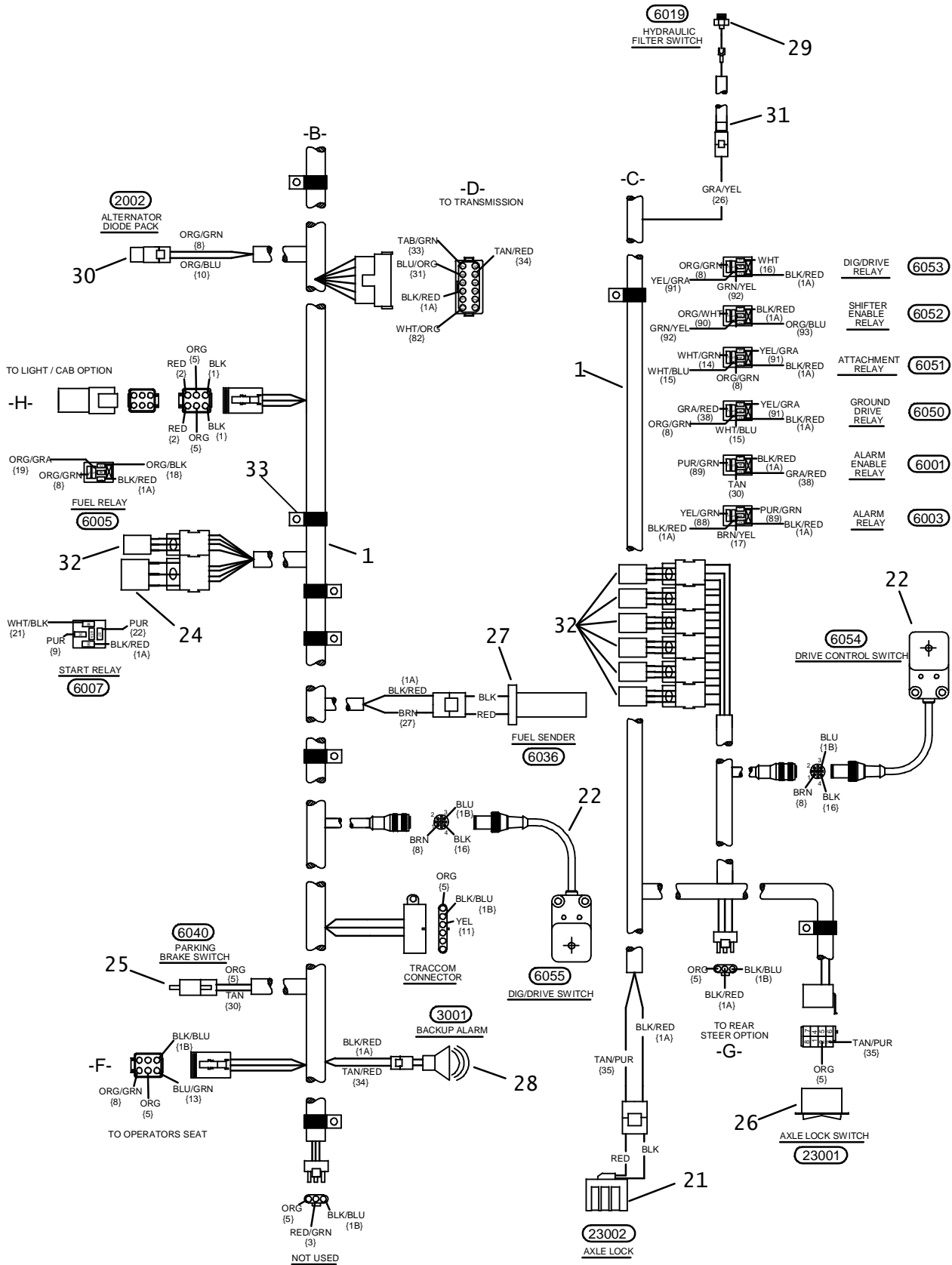
# ELECTRICAL DIAGRAM POWERSHIFT



# ELECTRICAL DIAGRAM POWERSHIFT



# ELECTRICAL DIAGRAM POWERSHIFT



# ELECTRICAL DIAGRAM POWERSHIFT

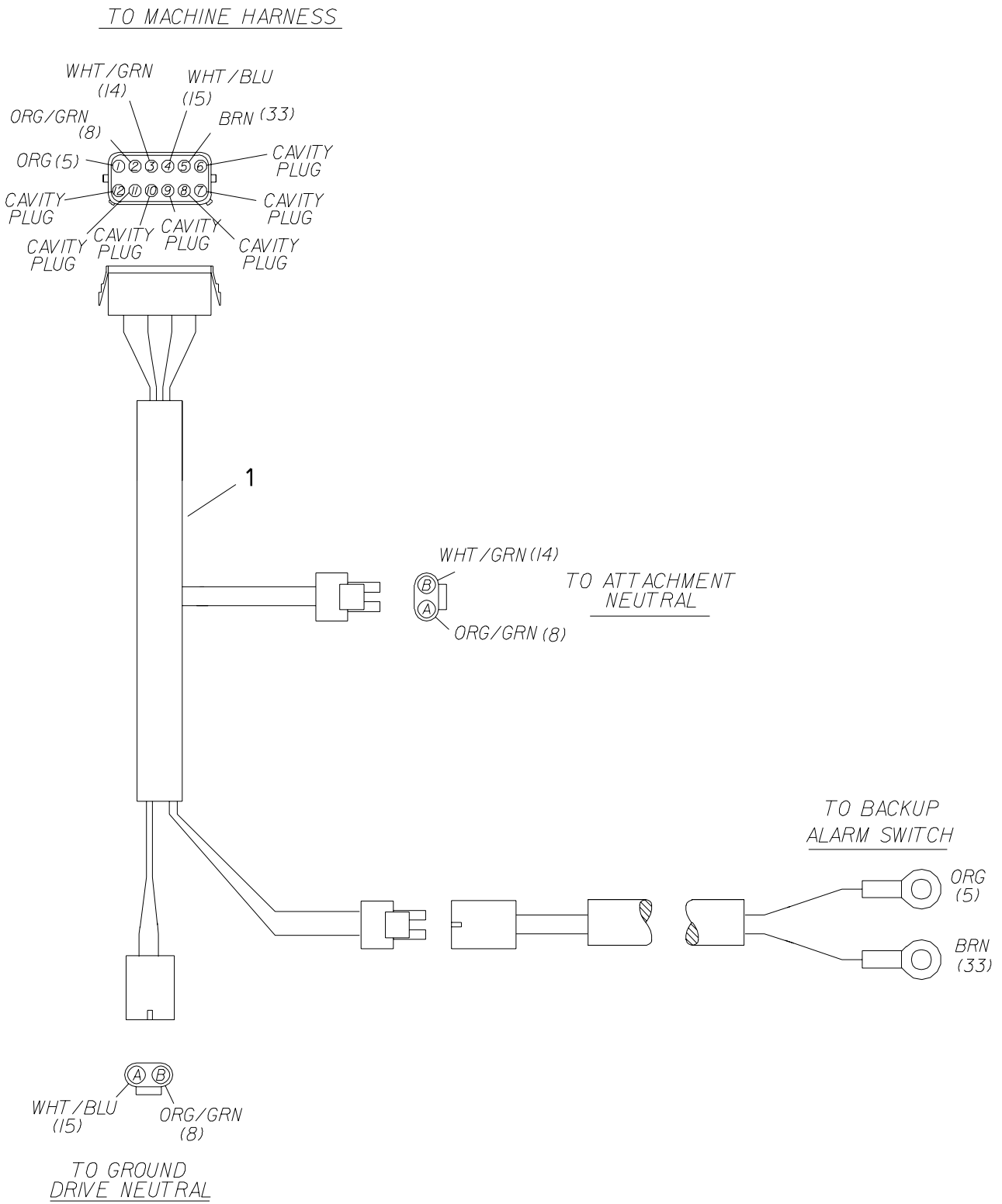
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-268	1	POWERSHIFT FRAME HARNESS	
2.	211-259	1	5-GAUGE CLUSTER	
3.	306-603	1	AUDIO ALARM	
4.	217-768	1	IGNITION SWITCH	----- OBSOLETE
	214-852	1	IGNITION SWITCH	
5.	306-607	2	HORN BUTTON	
	306-608	2	BUTTON COVER	
6.	217-704	1	PLUNGER SWITCH	
7.	214-301	1	ACCESSORY SOCKET	
8.	217-791	1	FUSE (MAXI, 40 AMP)	
	217-811	1	FUSE (ATC, 15 AMP)	
	217-812	1	FUSE (ATC, 20 AMP)	
	217-813	1	FUSE (ATC, 30 AMP)	
9.	217-764	2	ROCKER SWITCH (SPDT)	
10.	215-243	1	F-N-R SHIFTER	
11.	192-006	1	HIGH FREQUENCY HORN	
11.	306-609	1	HIGH FREQUENCY HORN	----- OBSOLETE
12.	214-854	1	TEMPERATURE SWITCH	
13.	215-244	1	BATTERY	
14.	194-254	1	STARTER	
15.	217-819	1	BATTERY DISCONNECT SWITCH	
16.	217-450	1	ALTERNATOR 65 AMP (REMAN)	
17.	215-183	1	SENDER, OIL PRESSURE HD	
18.	217-565	1	TEMPERATURE SENDER 100-280F	
19.	214-889	1	STARTER SOLENOID HARNESS	
20.	215-073	1	SENSOR SWITCH	
21.	214-491	1	COIL (12V)	
22.	217-269	3	PROXIMITY SWITCH	
23.	214-914	1	BRAKE CUTOUT SWITCH	
24.	217-826	1	MINI RELAY (SPDT)	
25.	217-705	1	PLUNGER SWITCH	
26.	217-762	1	ROCKER SWITCH (SPDT)	
27.	214-650	1	FUEL SENDER	
28.	306-602	1	BACKUP ALARM	
29.	217-765	1	INDICATOR SWITCH	
30.	214-256	1	DIODE CONNECTOR	
31.	214-887	1	HYDRAULIC FILTER HARNESS (HYD)	
32.	217-710	7	MICRO RELAY (SPDT)	
33.	110-856	1	CLAMP (1-5/16")	

NOT SHOWN:

FOOTNOTES:

NOTE:

# ELECTRICAL DIAGRAM HYDROSTAT NEUTRAL HARNESS



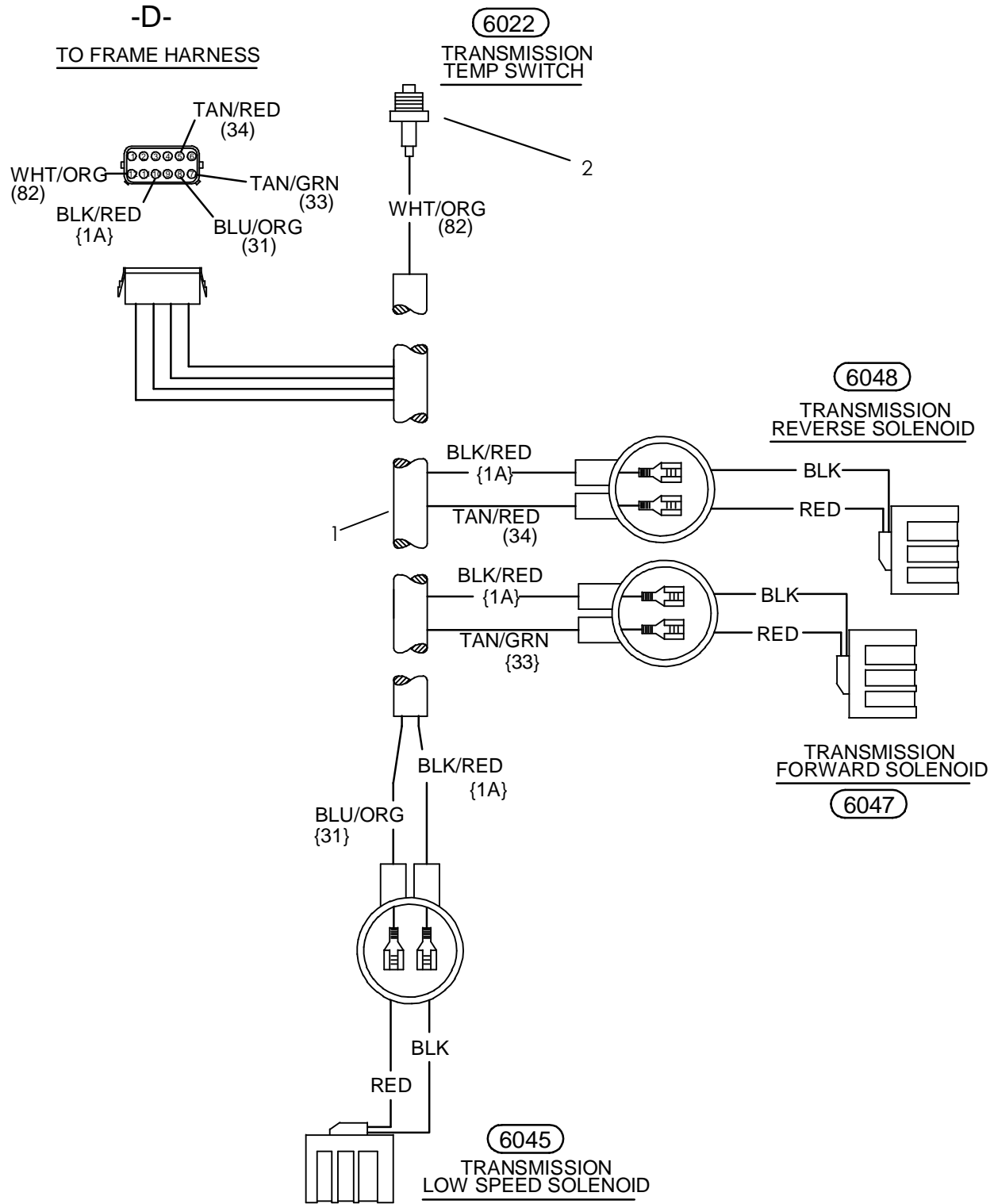
# ELECTRICAL DIAGRAM HYDROSTAT NEUTRAL HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-686	1	HYD PUMP HARNESS	

FOOTNOTES



# TRANSMISSION HARNESS (POWERSHIFT)



## TRANSMISSION HARNESS (POWERSHIFT)

1. 214-687 1 TRANSMISSION HARNESS (POWERSHIFT)
2. 213-293 1 TRANSMISSION OIL TEMP. SWITCH

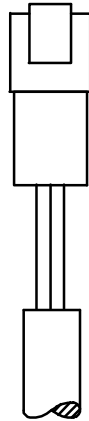
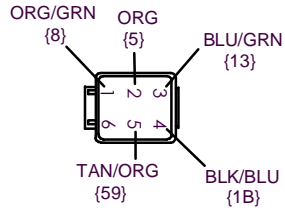
REFER TO O-RING CHART (800-301) FOR REPLACEMENT O-RINGS.

# ELECTRICAL DIAGRAM

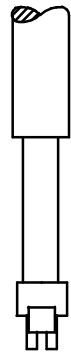
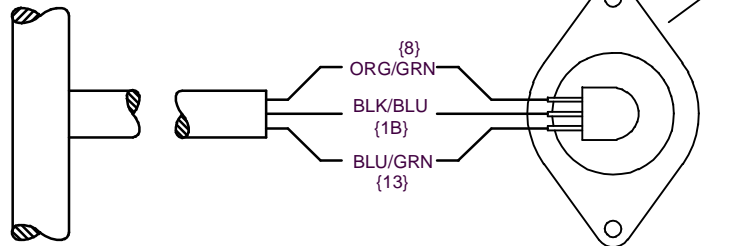
RT70M - RT90M - RT70H - RT90H - RT115

**-F-**

TO FRAME HARNESS



**6006**  
SEAT SWITCH



TO COMBO SWITCH HARNESS

**-K-**

# ELECTRICAL DIAGRAM

RT70M - RT90M - RT70H - RT90H - RT115

REF	PART			
NO.	NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-655	1	SEAT HARNESS	
2.	215-1107	1	SEAT SWITCH	

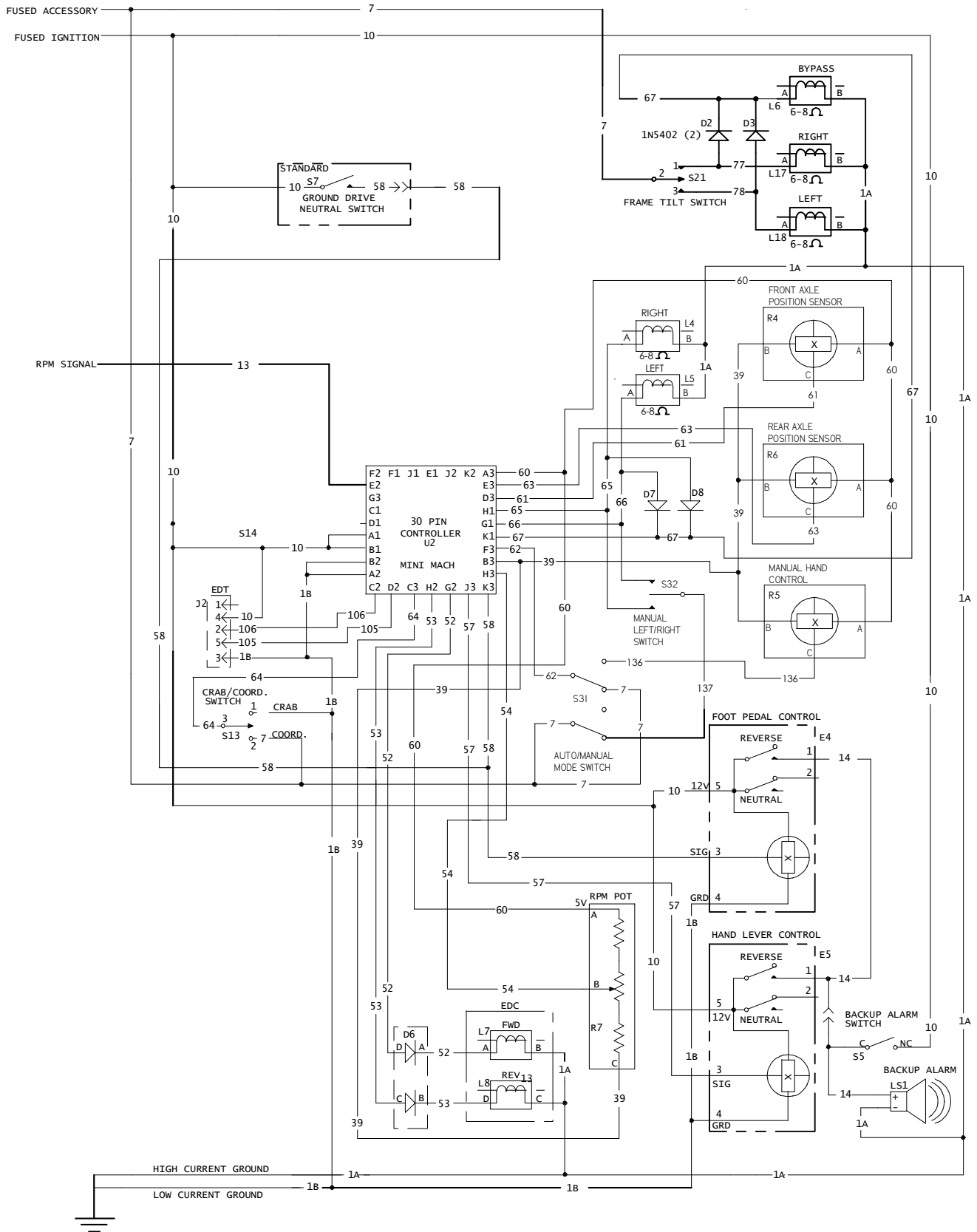
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FOOTNOTES:

NOTE:

# REAR STEER ELECTRICAL SCHEMATIC ADDITION

RT70M/H, RT90M/H, RT75M/H, RT95T2M/H, RT115H, & RT115T2



## REAR STEER ELECTRICAL SCHEMATIC ADDITION

RT70M/H, RT90M/H, RT75M/H, RT95T2M/H, RT115H, & RT115T2

<b>COMPONENT DESCRIPTIONS</b>			
<b>Ref. No.</b>	<b>Part No.</b>	<b>Component</b>	<b>Notes</b>
D2	See notes	Frame tilt diode	1N5402
D3	See notes	Frame tilt diode	
D6	214-449	Diode pack	Cruise option only
D7	See notes	Rear steer bypass diode	1N5402
D8	See notes	Rear steer bypass diode	
E4	215-1537	Foot pedal control	Cruise option only
E5	215-1536	Hand lever control	
J2	See notes	EDT connection	Machine ecu connection
L4	217-948	Coordinated steer right solenoid	Coordinated steer option only
L5	217-948	Coordinated steer left solenoid	
L6	214-909	Bypass solenoid	
L7	See notes	EDC forward solenoid	No CMW service part available
L8	See notes	EDC reverse solenoid	
L17	217-948	Frame tilt right solenoid	Frame tilt option only
L18	217-948	Frame tilt left solenoid	
LS1	306-602	Backup alarm switch	Saw option only
M5	211-326	Engine temperature gauge	
R4	215-1503	Front axle position sensor	Coordinated steer option only
R5	215-1619	Manual hand control	
R6	215-1503	Rear axle position sensor	
R7	217-892	RPM potentiometer	Cruise option only
S7	See notes	Ground drive neutral switch	
S8	217-704	Bypass switch	
S12	217-762	Speed select switch	
S13	217-854	Crab/coordinated steer switch	Coordinated steer option only
S14	217-789	Cruise switch	Cruise option only
S21	217-764	Frame tilt switch	
S30	215-1015	User Interface button	
S31	217-072	Auto/Manual Mode Switch	Coordinated steer option only
S32	217-817	Manual Left/Right Switch	Coordinated steer option only
U2	220-1213	30 pin controller	

## REAR STEER ELECTRICAL SCHEMATIC ADDITION

RT70M/H, RT90M/H, RT75M/H, RT95T2M/H, RT115H, & RT115T2

### CIRCUIT DESCRIPTIONS

Circuit Number	Wire Color	Function
1A	blk/red	Medium current ground
1B	blk/blu	Low current ground
7	org	Fused accessory circuit
10	org/grn	Fused ignition circuit
13	yel	Tachometer circuit
14	brn/red	Backup alarm switch to backup alarm
39	yel/blk	Analog return
52	tan/red	Machine ECU to Diode to EDC forward solenoid
53	tan/grn	Machine ECU to Diode to EDC reverse solenoid
54	gra	RPM potentiometer to Machine ECU
57	gra/grn	Hand control signal to Machine ECU
58	gra/red	Foot control signal to Machine ECU
60	blu/grn	5VDC Output from Machine ECU
61	grn/red	Front axle sensor to Machine ECU
62	gra/blu	Rear steer auto/manual switch to Machine ECU
63	grn/blu	Rear axle sensor to Machine ECU
64	org/brn	Crab/coordinated steer switch to Machine ECU
65	grn/blk	Machine ECU to right steer module
66	blu/blk	Machine ECU to left steer module
67	tan/blu	Machine ECU to bypass solenoid
77	grn/org	Frame tilt switch to frame tilt right solenoid
78	blu/org	Frame tilt switch to frame tilt left solenoid
105	gra	Machine ECU to EDT connection (serial)
106	wht	Machine ECU to EDT connection (serial)
136	gra/yel	Rear steer manual hand control to auto/manual switch
137	pur/red	Rear steer auto/manual switch to manual left/right switch

# REAR STEER ELECTRICAL SCHEMATIC ADDITION

RT70M/H, RT90M/H, RT75M/H, RT95T2M/H, RT115H, & RT115T2

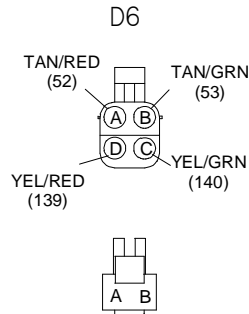
WIRING HARNESES			
Ref. No.	Part No.	Quantity	Description
1	215-1527	1	Coordinated Steer Harness (RT70/75/90/95T2/115T1)
2	215-1528	1	Coordinated Steer Harness (RT115T2)
3	215-1529	1	Rear Steer Controller Harness (RT115T2)



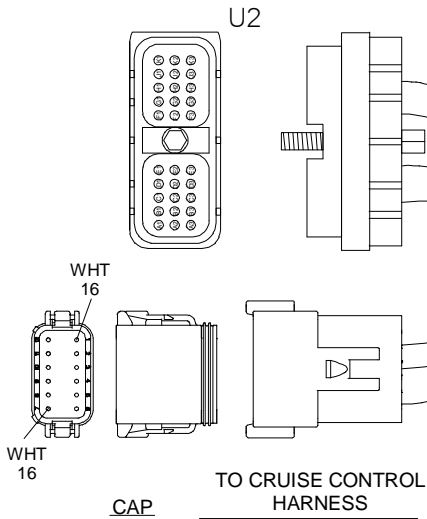
# ELECTRICAL DIAGRAM COORDINATED STEER HARNESS RT70/75/90/95T2/115T1

PIN#	PIN#	PIN#			
A1	ORG/RED (138)	A2	BLK/BLU (1B)	A3	BLU/GRN (60)
B1	ORG/RED (138)	B2	BLK/BLU (1B)	B3	YEL/BLK (135)
C1	CAVITY PLUG	C2	WHT (106)	C3	ORG/BRN (64)
D1	CAVITY PLUG	D2	GRA (105)	D3	GRN/RED (61)
E1	CAVITY PLUG	E2	YEL (13)	E3	GRN/BLU (63)
F1	CAVITY PLUG	F2	CAVITY PLUG	F3	GRA/BLU (62)
G1	BLU/BLK (66)	G2	YEL/RED (139)	G3	CAVITY PLUG
H1	GRN/BLK (65)	H2	YEL/GRN (140)	H3	GRA (54)
J1	CAVITY PLUG	J2	CAVITY PLUG	J3	GRA/GRN (57)
K1	TAN/BLU (67)	K2	CAVITY PLUG	K3	GRA/RED (58)

**DIODE PACK**

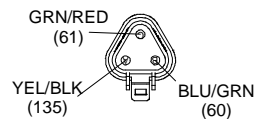


**MINI MACH CONTROLLER**



PIN#	PIN#		
1	ORG (7)	7	ORG/RED (138)
2	GRA/GRN (57)	8	BLU/GRN (60)
3	TAN/GRN (53)	9	BLK/BLU (1B)
4	YEL (13)	10	GRA (54)
5	GRA (105)	11	GRA/RED (58)
6	WHT (106)	12	TAN/RED (52)

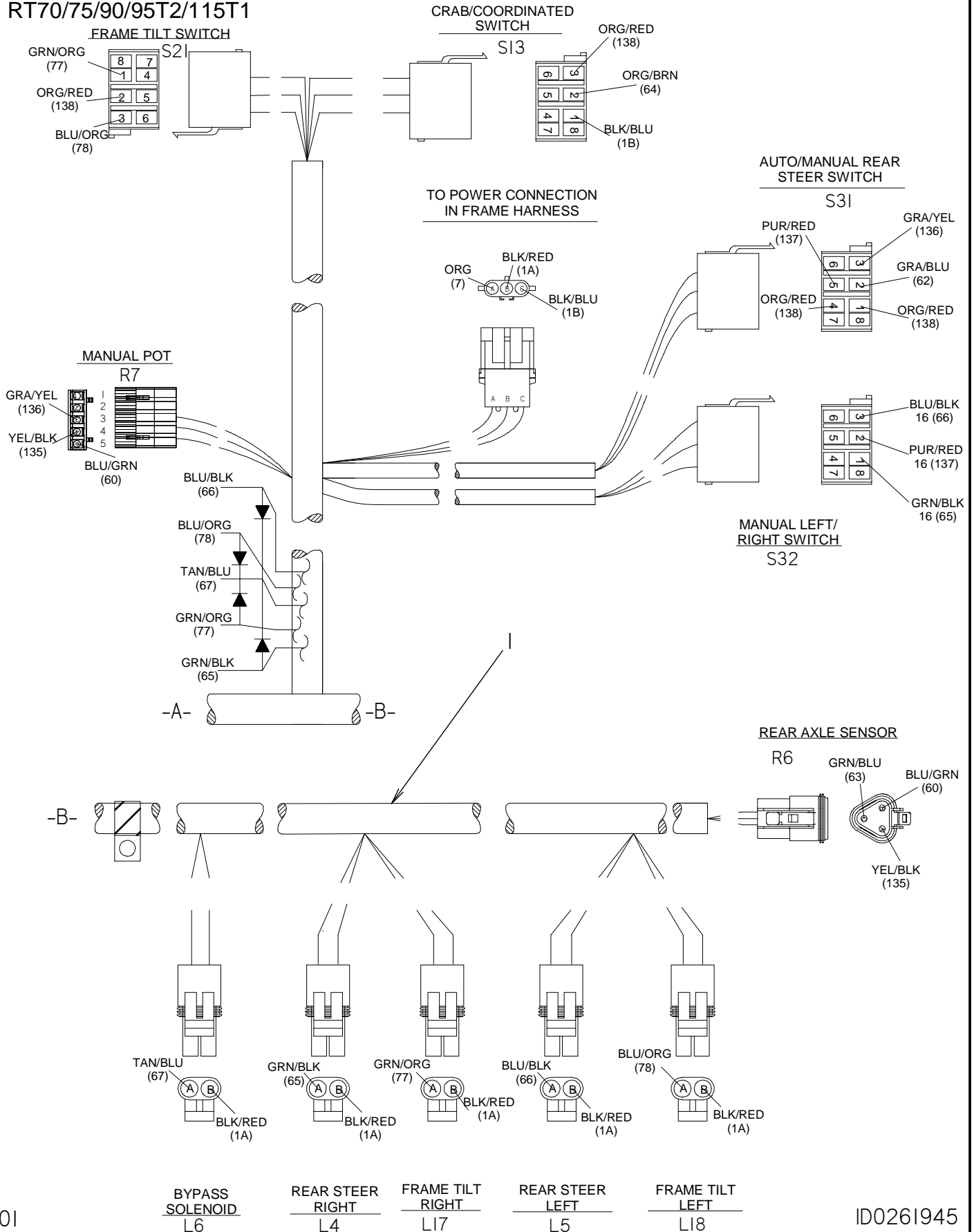
**MINI MACH EDT CONNECTION**



**FRONT AXLE SENSOR**

R4

# ELECTRICAL DIAGRAM COORDINATED STEER HARNESS RT70/75/90/95T2/115T1



01

ID0261945

# ELECTRICAL DIAGRAM

## COORDINATED STEER HARNESS

### RT70/75/90/95T2/115T1

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
I.	215-1527	1	Coordinated Steer Harness	Used on Units (RT70/75/90/95T2/115T2)

NOT SHOWN:

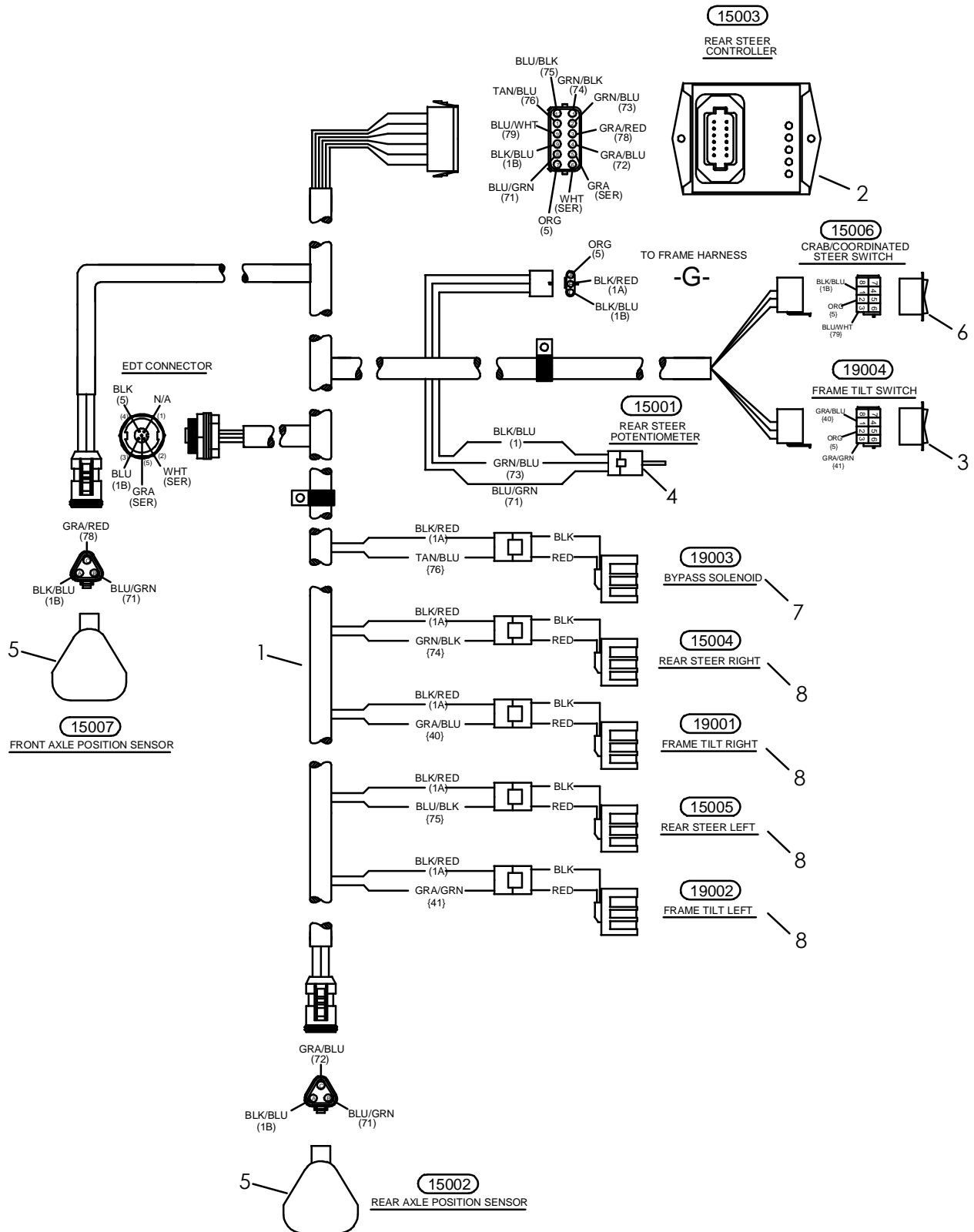
FOOTNOTES:

NOTE:



# ELECTRICAL DIAGRAM

## COORDINATED STEER HARNESS



## ELECTRICAL DIAGRAM

### COORDINATED STEER HARNESS

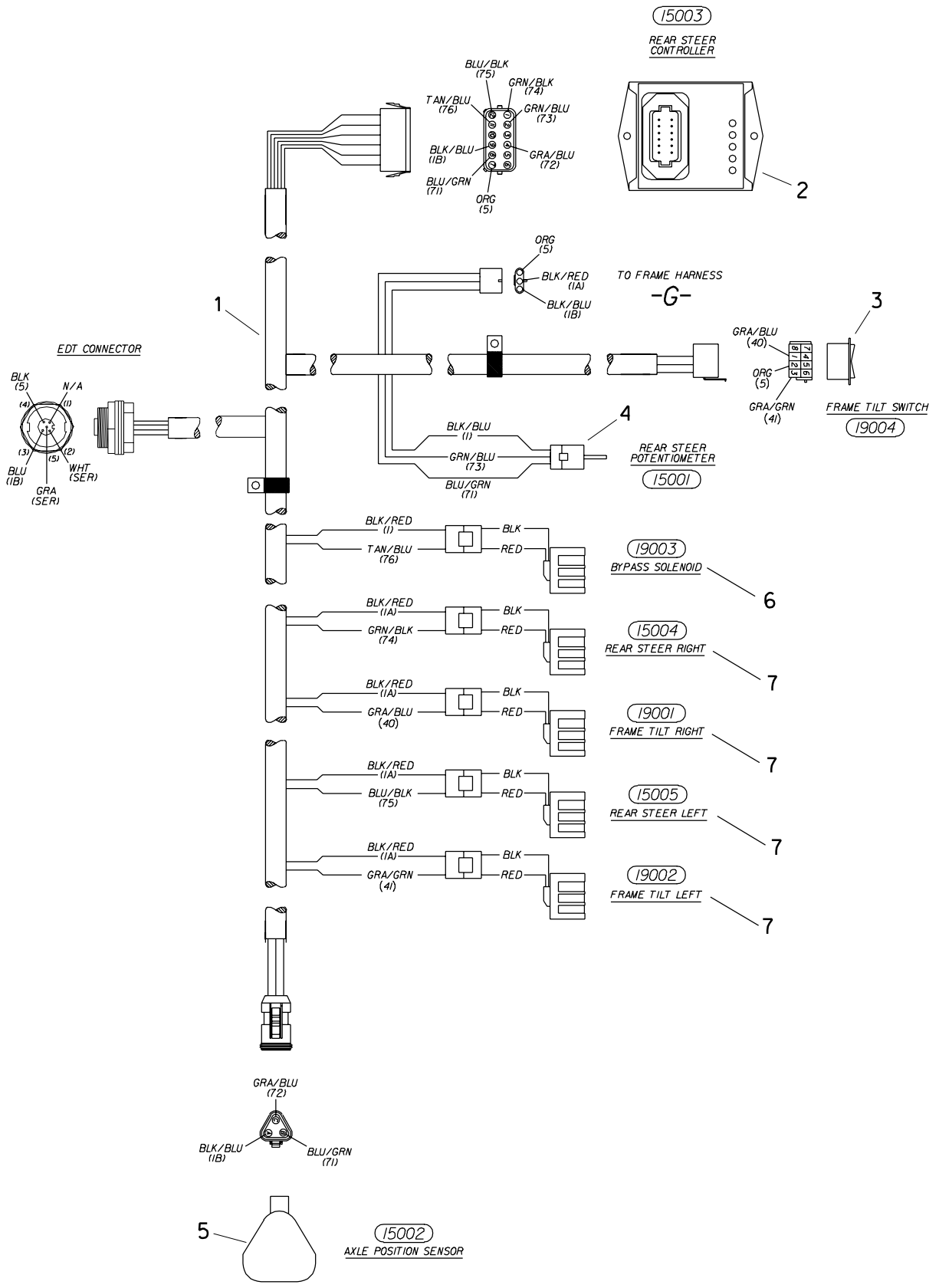
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-272	1	COORDINATED STEER HARNESS	
2.	217-239	1	CONTROL MODULE REAR STEER	
3.	217-764	1	ROCKER SWITCH (SPDT)	
4.	217-273	1	POSITION POTENTIOMETER	
5.	217-259	1	REAR STEER SENSOR	
6.	217-854	1	ROCKER SWITCH (SPDT)	
7.	214-909	1	SOLENOID COIL	
8.	217-948	4	COIL, 12VDC	

FOOTNOTES

NOTE:

# ELECTRICAL DIAGRAM

## REAR STEER/FRAME TILT HARNESS



# ELECTRICAL DIAGRAM

## REAR STEER/FRAME TILT HARNESS

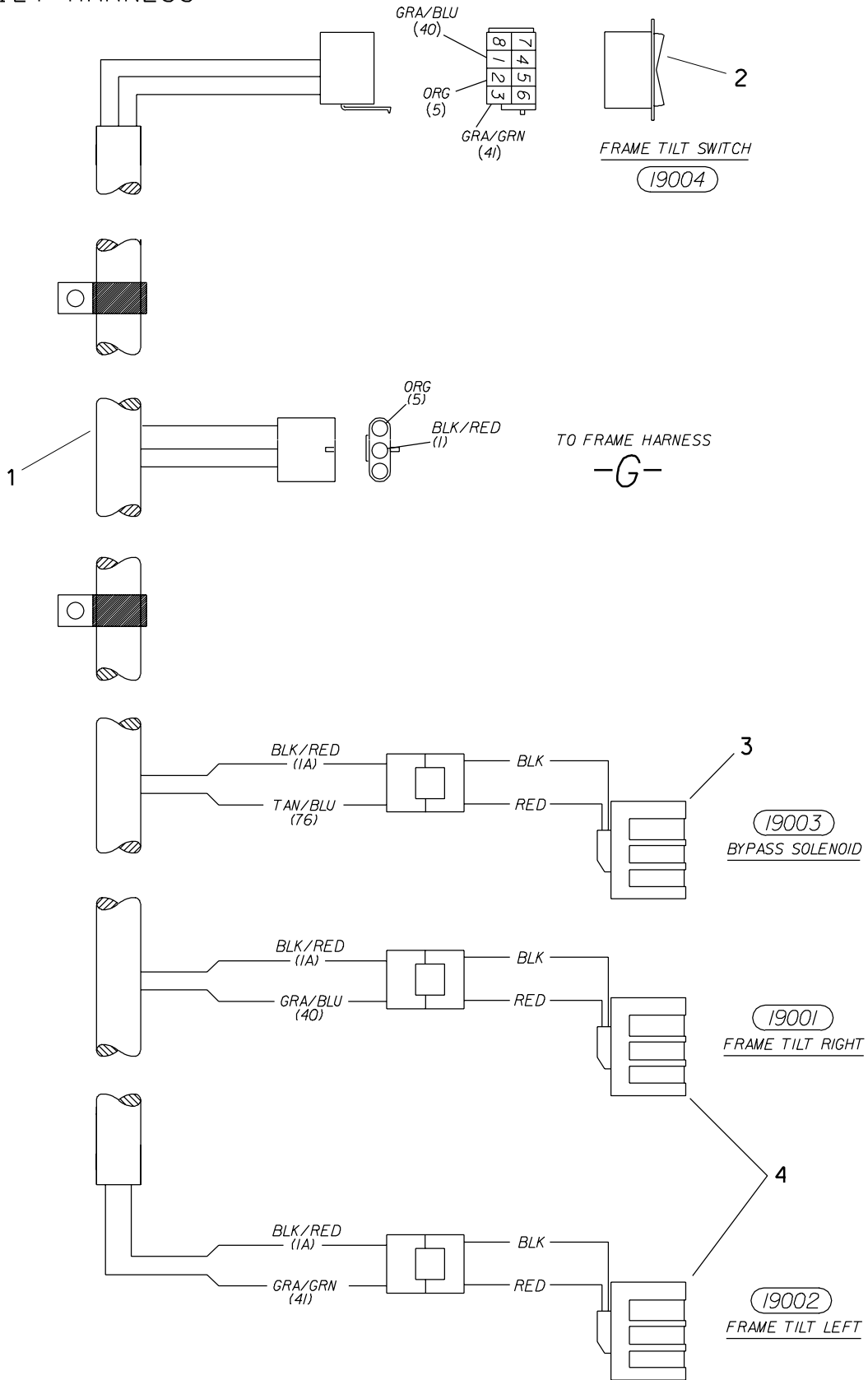
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-657	1	REAR STEER/FRAME TILT HARNESS	
2.	217-239	1	CONTROL MODULE REAR STEER ASS'Y	
3.	217-764	1	ROCKER SWITCH (SPDT)	
4.	217-273	1	POSITION POTENTIOMETER	
5.	217-259	1	REAR STEER SENSOR	
6.	214-909	1	SOLENOID COIL	
7.	217-948	4	COIL, 12VDC	

FOOTNOTES



# ELECTRICAL DIAGRAM

## FRAME TILT HARNESS



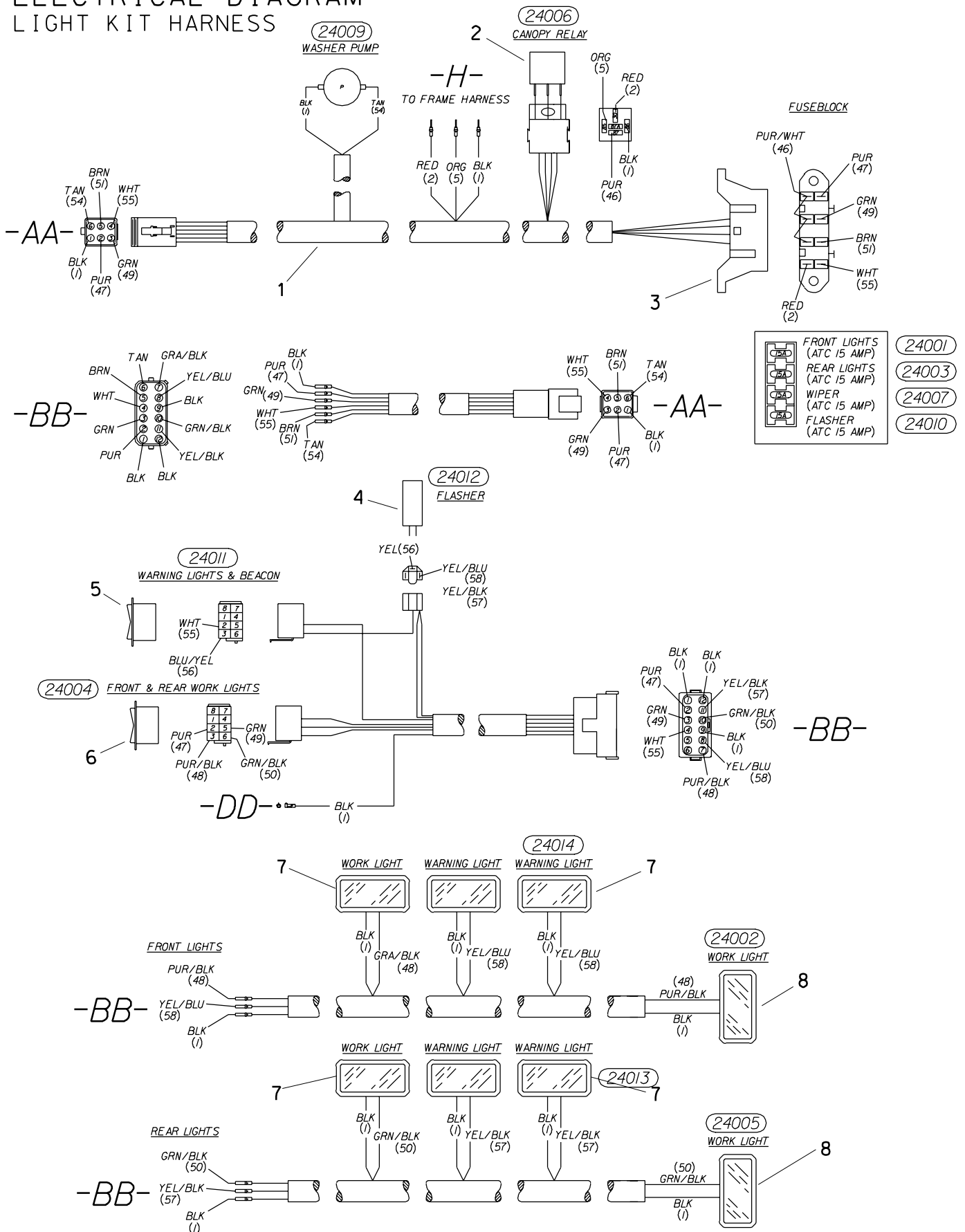
# ELECTRICAL DIAGRAM

## FRAME TILT HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-851	1	FRAME TILT OPTION HARNESS	
2.	217-764	1	ROCKER SWITCH (SPDT)	
3.	214-909	1	SOLENOID COIL	
4.	217-948	2	COIL, 12VDC	

FOOTNOTES

# ELECTRICAL DIAGRAM LIGHT KIT HARNESS



# ELECTRICAL DIAGRAM

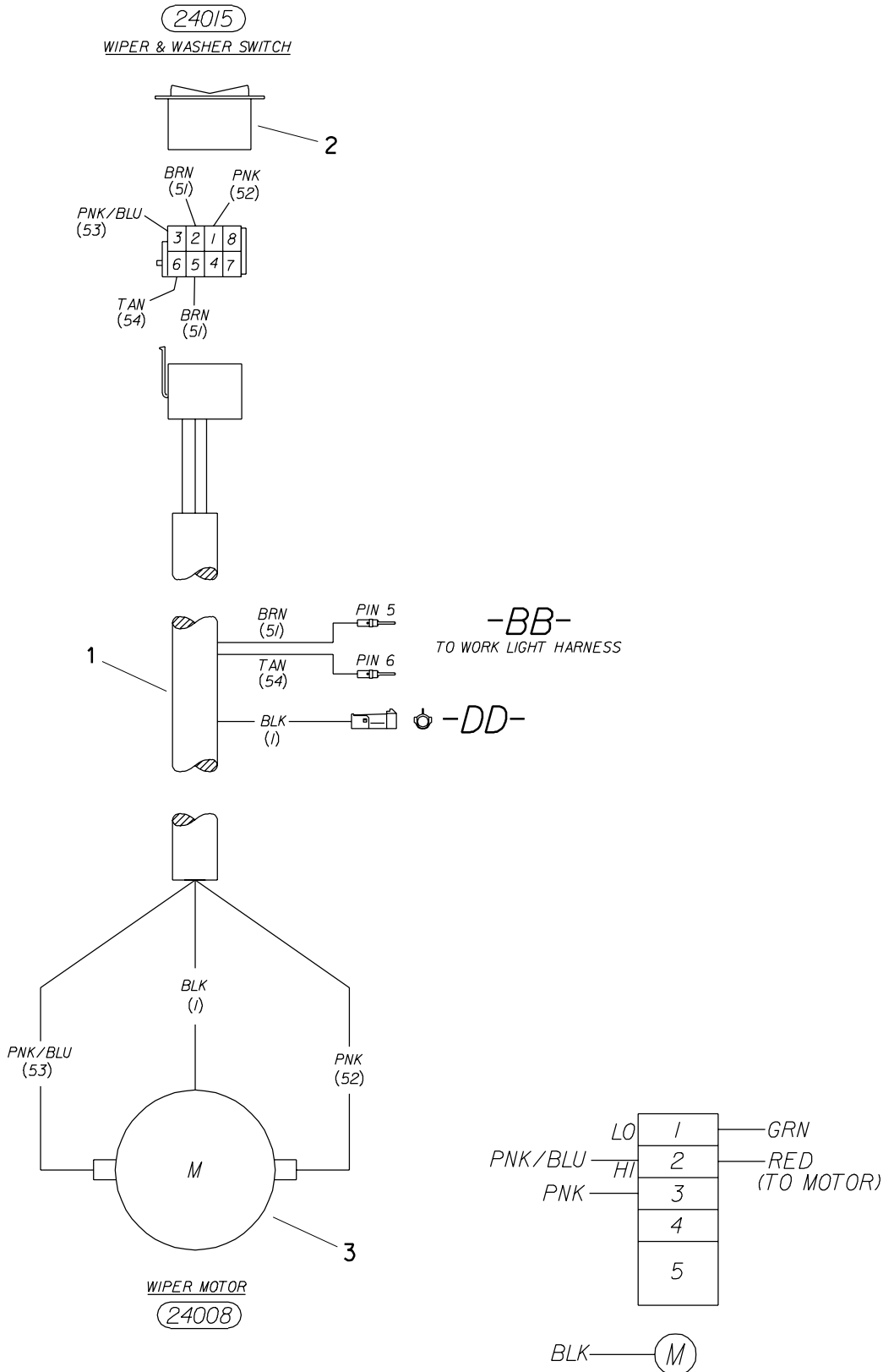
## LIGHT KIT HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-659	1	LIGHT KIT HARNESS	
2.	217-826	1	MINI RELAY (SPDT)	
3.	217-811	4	FUSE (ATC, 15 AMP)	
4.	215-041	1	FLASHER	
5.	217-762	1	ROCKER SWITCH (SPDT)	
6.	214-912	1	ROCKER SWITCH (DPST) ON-OFF	
7.	217-287	4	WARNING LIGHT	
8.	217-288	4	WORK LIGHT 100FO	

FOOTNOTES

# ELECTRICAL DIAGRAM

## WIPER/WASHER HARNESS



# ELECTRICAL DIAGRAM

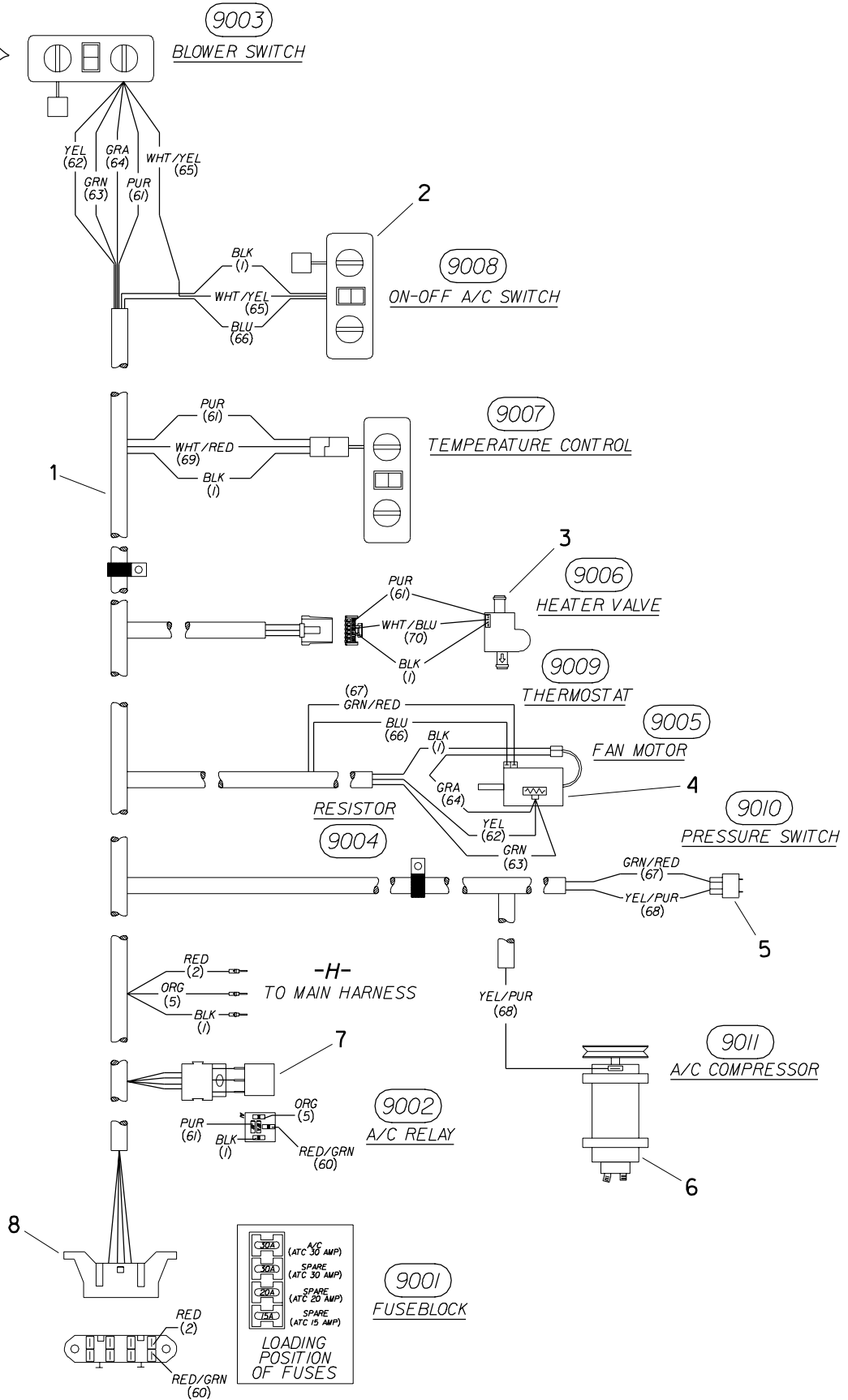
## WIPER/WASHER HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-784	1	WIPER/WASHER HARNESS	
2.	217-893	1	ROCKER SWITCH ON-ON-(ON)	
3.	214-897	1	WIPER MOTOR	

FOOTNOTES

# ELECTRICAL DIAGRAM A/C HARNESS

yellow=L0  
white/yel=BLOWER  
gray=HI  
purple=CLIMATE  
green=MEDIUM



# ELECTRICAL DIAGRAM

## A/C HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	214-782	1	A/C HARNESS	
2.	499-553	1	AC-HEATER CONTROL PANEL	
3.	499-554	1	HEATER VALVE	
4.	499-551	1	A/C HEATER	
5.	217-285	1	BINARY SWITCH	
6.	120-147	1	A/C COMPRESSOR	
7.	217-826	1	MINI RELAY (SPDT)	
8.	217-811	1	FUSE (ATC, 15 AMP)	
	217-812	1	FUSE (ATC, 20 AMP)	
	217-813	2	FUSE (ATC, 30 AMP)	

FOOTNOTES





# 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

# RT90M

## Related Publications

Component	Ass'y	P/N
<b>Model:</b>		
RT90 ..... Parts Manual .....		053-494
RT90 ..... Operators Manual .....		054-084
RT90 ..... Repair Guide (Service Manual) .....		N/A
RT90 ..... Supplementary Maint Guide - Trencher .....		050-633
RT90 ..... Special Tools Guide .....		052-901
<b>Engine:</b>		
John Deere ..... Parts Manual – 4045DF150 .....	194-103	053-059
John Deere ..... Operators Manual - 4045DF150 .....		054-049
John Deere ..... Service (Shop) Manual - 4045DF150.....		054-049

## Filters

<b>Engine:</b>		
Air Filter Parts Ass'y .....		197-762
Element (primary) .....		197-763
Element (secondary) .....		197-764
Oil Filter Element (spin-on) - John Deere .....		194-815
Fuel Filter Element (slip-on) – In-Line.....		155-941
Fuel Strainer (04H) Tank.....		156-268
Fuel Filter Element-John Deere.....		194-816
<b>Transmission:</b>		
Oil Filter Element (spin-on) .....		159-509
<b>Hydraulic:</b>		
Oil Filter Element (1-1/2-UNF, spin-on, Replacement) .....		149-641

## Optional Kits

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



# Parts Manual Change Request

(Please print clearly)

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

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1. _____ - _____ .....	1. _____
2. _____ - _____ .....	2. _____
3. _____ - _____ .....	3. _____

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- Graphics
- Missing Information

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

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





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

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

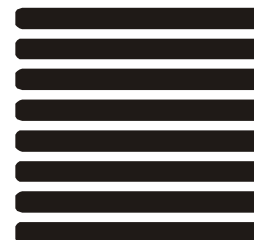
Thanks for using Ditch Witch equipment.

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Phone Number With Area Code

---

Model

Serial Number

---

Attachments/Accessories

Serial Numbers

---

Attachments/Accessories

Serial Numbers

---

Attachments/Accessories

Serial Numbers

---

Name of Ditch Witch Dealership

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Your Signature