

Ditch Witch[®]

HT110 ZH830/RC110

ISSUE NO. 02PL-07/01

For Replacement Copy Order **P/N 053-083**

This manual contains information concerning the following models:

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FOREWORD

This manual contains illustrated parts lists to help you select quality ProTech[®] Replacement parts for your Ditch Witch[®] 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.

DITCH WITCH® EQUIPMENT AND REPLACEMENT PARTS LIMITED WARRANTY POLICY

SECTION WARRANTY POLICY 1

U.S. And Canada Policy

1(1)

April 1999

The following Major Component Limited Warranty covers only Major Components listed under Major Component Limited Warranty that are manufactured and distributed by Charles Machine Works, Inc. (CMW). Replacement parts and other serial numbered Products ("Products") that are not listed under Major Component Limited Warranty, and non-major components are covered under Product Limited Warranty.

MAJOR COMPONENT LIMITED WARRANTY

Major components are warranted for a period of 1000 hours of use or one year, whichever occurs first, beginning on date of delivery of any such new product. The Major Component Limited Warranty covers only Major Components listed under Major Component Limited Warranty that are manufactured and distributed by The Charles Machine Works, Inc. ("CMW"). Replacement parts and other serial numbered products ("Products") that are not listed under Major Component Limited Warranty, and nonmajor components are covered under Product Limited Warranty.

Major Components are defined as:

- Frames.
- Differentials and parts contained within.
- Mechanical transmissions.
- Drive gear boxes and parts contained within.
- Hydraulic, hydrostatic, and fluid pumps, motors and components that control or protect pumps and motors.
- Auxiliary hydraulic control valves and electrical components used for controlling hydraulic components.
- Hydraulic cylinders and components excluding repair kits.
- Batteries, alternators, instruments, gauges, and protection components for electrical systems.
- Pierce Arrow® bodies, strikers, and tailpieces.

Free replacement parts and labor will be provided at any authorized dealership for any part of Major Components which has a defect in material or workmanship within warranty period. Defects will be determined by an inspection of major component or part by CMW or its authorized dealer. The product containing a major component or part must be presented to CMW or its authorized dealer for inspection within 30 days of the date major component or part fails. CMW will provide the location of its inspection facilities or its nearest authorized dealer upon inquiry. CMW reserves the right to supply remanufactured replacement parts as it deems appropriate.

PRODUCT LIMITED WARRANTY

Products are warranted for *90 days from date of delivery of any new product. Free replacement parts and labor will be provided at any authorized dealership for any product which has a defect in material or workmanship within warranty period. Replacement parts are warranted for 90 days from date of delivery of any such replacement part. Any part of a product subject to ground contact is warranted only for defects in material or workmanship and only for the period of operational life of such part, which period shall not in any event exceed 90 days. Defects will be determined by an inspection of the product or part by CMW or its authorized dealer. The product or part must be presented to CMW or its authorized dealer for inspection within 30 days of the date of failure. CMW will provide the location of its inspection facilities or its nearest authorized dealer upon inquiry. CMW reserves the right to supply remanufactured replacement parts as it deems appropriate.

*Equipment owners in countries other than U.S., and Canada should refer to Ditch Witch International Warranty Policy.

**DITCH WITCH® EQUIPMENT AND REPLACEMENT PARTS
LIMITED WARRANTY POLICY**

CONTINUED - SECTION WARRANTY POLICY 1

EXCLUSIONS FROM MAJOR COMPONENT AND PRODUCT LIMITED WARRANTY

SPECIFICALLY EXCLUDED FROM MAJOR COMPONENT AND PRODUCT LIMITED WARRANTY ARE:

- Transportation charges related to repair, replacement, or inspection of products, major components, or parts.
- Parts subject to ground contact (including but not limited to drill pipe, downhole tools, digging chain, teeth and sprockets).
- 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).
- Parts which may be 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.

This limited warranty applies to the owner of the product. Some states do not allow exclusion or limitation of incidental or consequential damages, so 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 the owner specific legal rights and the 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.

First Printing 1/91, Revised 4/93, Revised 4/99

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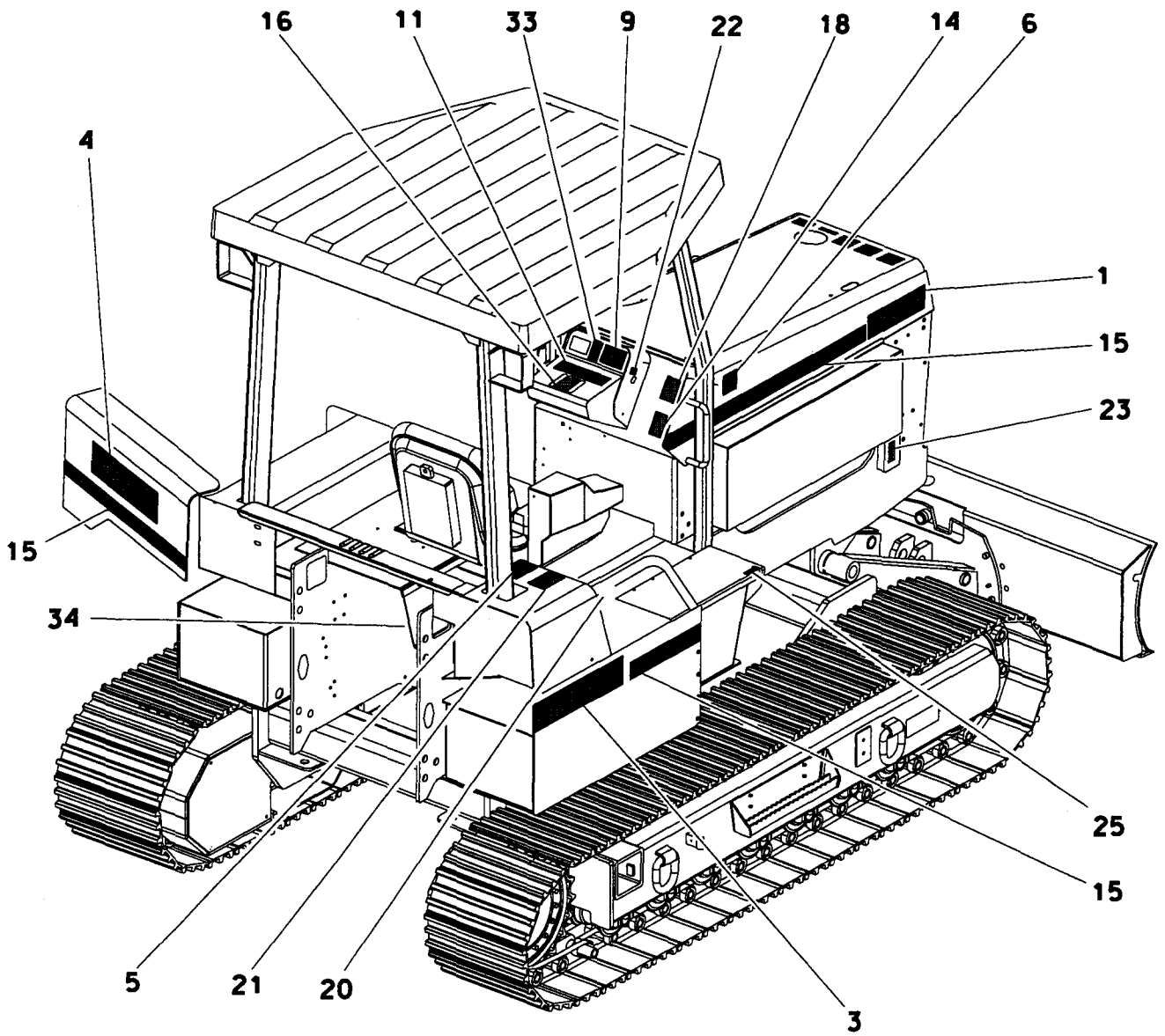
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DECALS

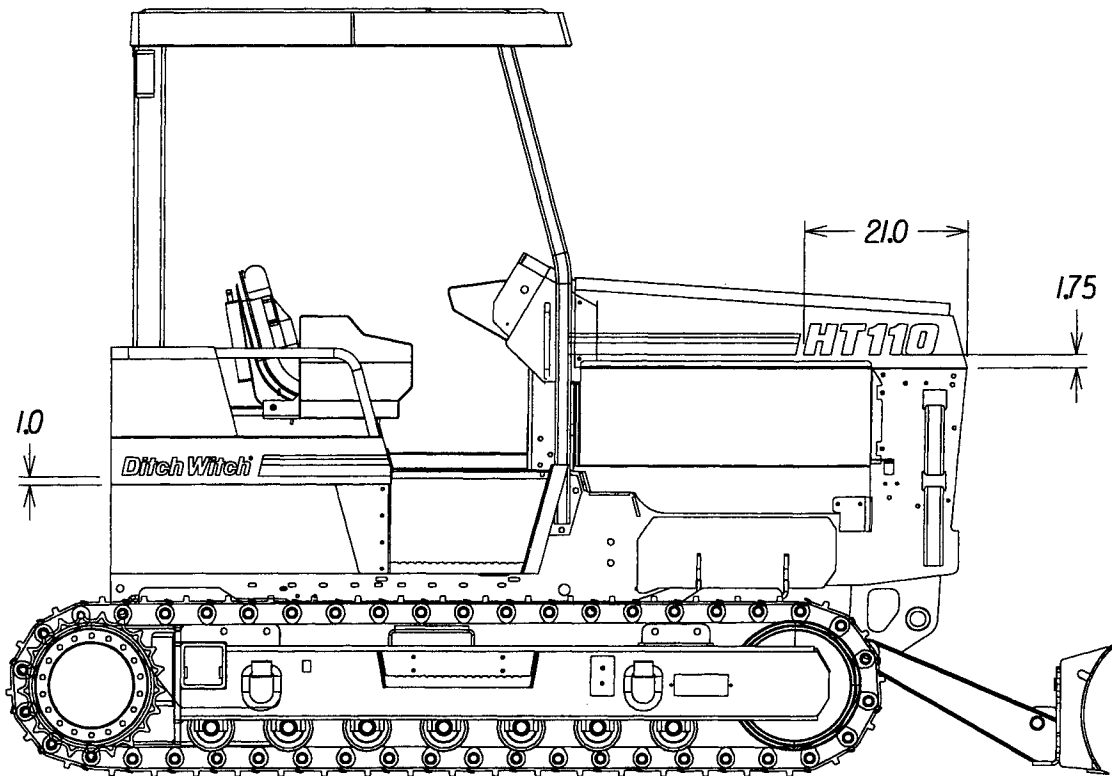
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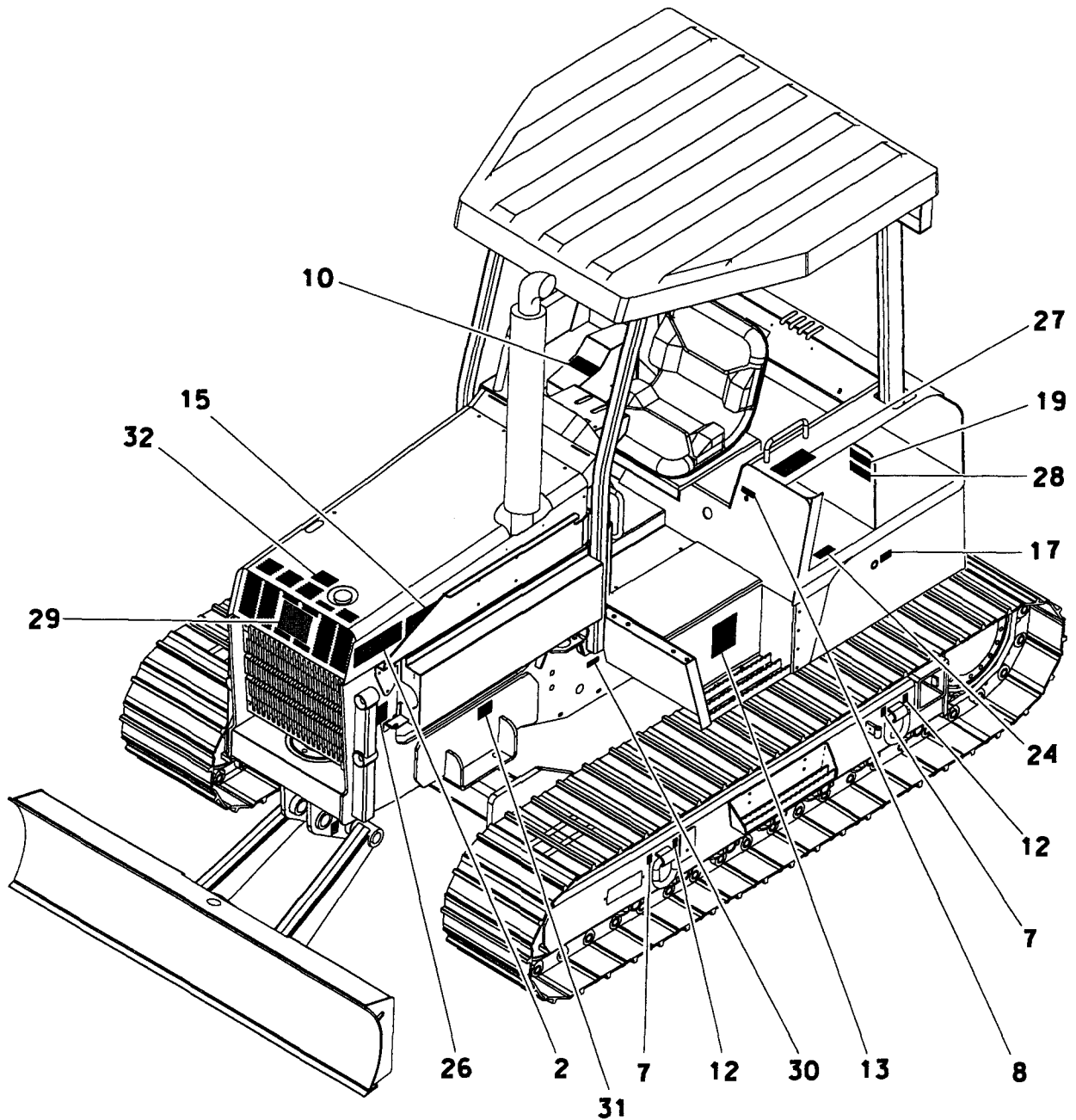
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DECAL LOCATION
HT110



DECAL LOCATION HT110



B

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DECAL LOCATION

HT110

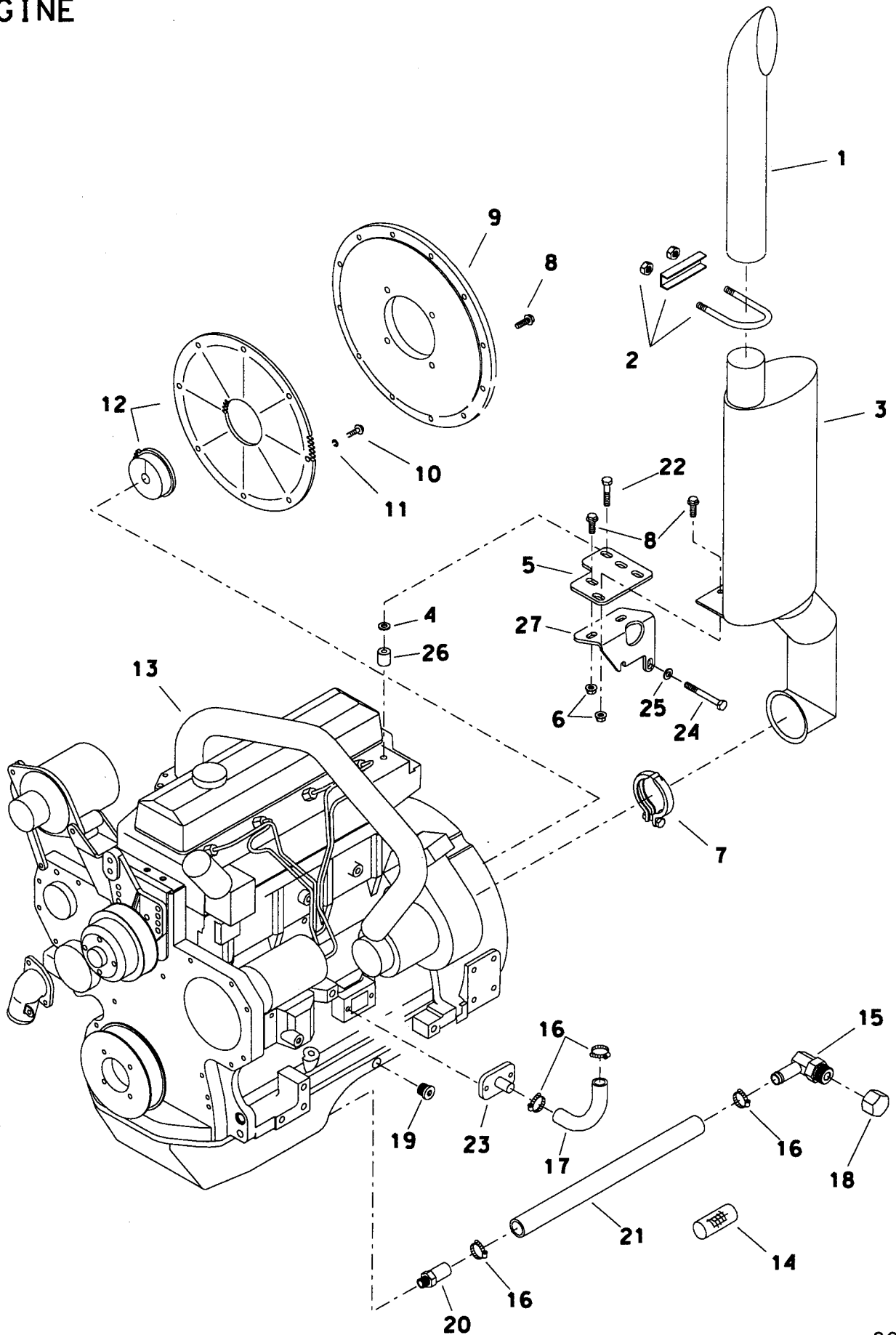
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-810		DECAL KIT - HT110	
1.	273-035	1	HT110 MODEL IDENTIFIER	
2.	273-041	1	HT110 LEFT MODEL IDENTIFIER	
3.	275-172	1	DITCH WITCH-ID	
4.	274-312	1	DITCH WITCH LOGOTYPE	
5.	274-082	1	ATTACHMENT DRIVE	
6.	274-291	1	SOUND POWER RATING	SEE FOOTNOTE.
7.	274-318	4	TIE-DOWN LOCATION	
8.	274-375	1	MASTER DISCONNECT SWITCH	
9.	274-377	1	INTERLOCK	
10.	274-417	1	BACKFILL BLADE FUNCTIONS	
11.	274-430	1	COLD START-HI-LO-REEL-BRAKE	
12.	274-442	4	LIFT LOCATION	
13.	274-482	2	WARNING SINGLE OPERATOR	
14.	274-724	1	ONE CALL NOTIFICATION	
15.	274-877	AR	GRAPHIC STRIPE	USE 150"
16.	274-977	1	TRACK CONTROLS	
17.	274-198	1	NOTICE - OIL LEVEL	
18.	275-032	1	HAND THROTTLE OPERATION	
19.	275-033	1	NOTICE, ELECTRICAL SYSTEM	
20.	275-048	1	IMPORTANT SAFETY RULES	
21.	275-070	1	WARNING RUNAWAY	
22.	275-087	1	IGNITION SWITCH	
23.	275-100	1	MANIFOLD	
24.	275-120	1	RESERVOIR (THF)	
25.	275-148	1	FUEL TANK (DIESEL)	
26.	275-184	2	WARNING MOVING PARTS	
27.	275-303	1	WARNING ROLLOVER	
28.	275-419	1	WARNING, NO FLAME	
29.	275-449	1	DITCH WITCH LOGO PLACARD	
30.	275-497	1	OIL DRAIN-ID	
31.	273-138	1	NOTICE - COOLANT	
32.	273-146	1	NOTICE, ADD COOLANT	
33.	273-028	1	WORKLIGHTS-ON-OFF	
34.	275-339	1	PRESSURE	

FOOTNOTES:

P/N 274-291 NOT PART OF KIT.

ENGINE COMPONENTS

ENGINE



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807-614

ENGINE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	196-164	1	EXHAUST STACK	
2.	196-165	1	MUFFLER CLAMP	
3.	196-333	1	EXHAUST MUFFLER	
4.	106-396	AR	WASHER (M10)	
5.	315-313	1	MUFFLER BRACKET	
6.	106-387	4	FLG LOCKNUT (M10-1.50)	
7.	196-231	1	MUFFLER CLAMP (3.500")	
8.	107-001	17	FLG LK BOLT (M10-1.50 X 25mm)	
9.	160-901	1	PUMP PLATE	
10.	105-156	8	BOLT (3/8-NC X 1-1/2")	
11.	105-072	8	LOCK WASHER (3/8")	
12.	194-731	1	FLYWHEEL COUPLING	SEE FOOTNOTE 1
13.	194-775	1	ENGINE (DEERE 4045TF150)	
14.	115-811	1	ABRASION SLEEVE (1.59" X 20")	
15.	154-360	1	BK S/D COUPLER (160-16H90BK)	
16.	110-353	4	WORM CLAMP (3/4" TO 1-1/2")	
17.	116-767	1	OIL DRAIN HOSE	
18.	154-329	1	CAP (160)	
19.	514-345	1	PLUG (M22-1.5, ALN)	
20.	514-343	1	S/D COUPLER (M18-1.5-16H)	
21.	116-335	1	BULK HOSE (1")	USE 21-3/4"
22.	106-995	1	FLG LK BOLT (M10-1.50 X 45MM)	
23.	194-796	1	CONNECTOR	
24.	106-206	2	BOLT (M10-1.50 X 90MM)	USE LOCTITE WHEN INSERTING BOLT
25.	106-396	2	WASHER (M10)	
26.	184-868	1	BUSHING	
27.	315-312	1	MUFFLER BRACKET SUPPORT	

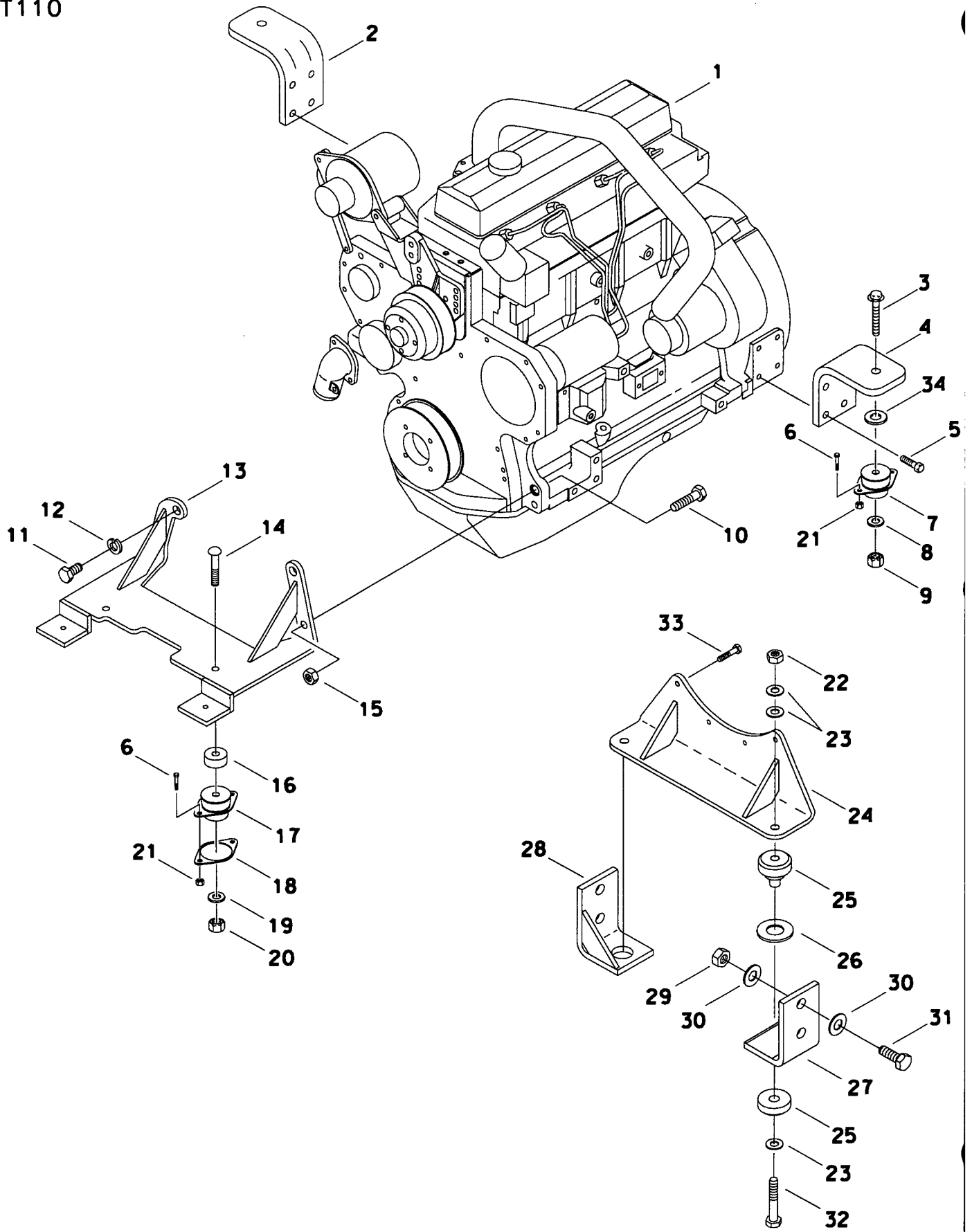
NOT SHOWN:

194-815 OIL FILTER ELEMENT
 171-010 FAN BELT

FOOTNOTES

1. USE GEAR COMPOUND 256-648 ON FLY WHEEL COUPLING.

ENGINE MOUNT HT110



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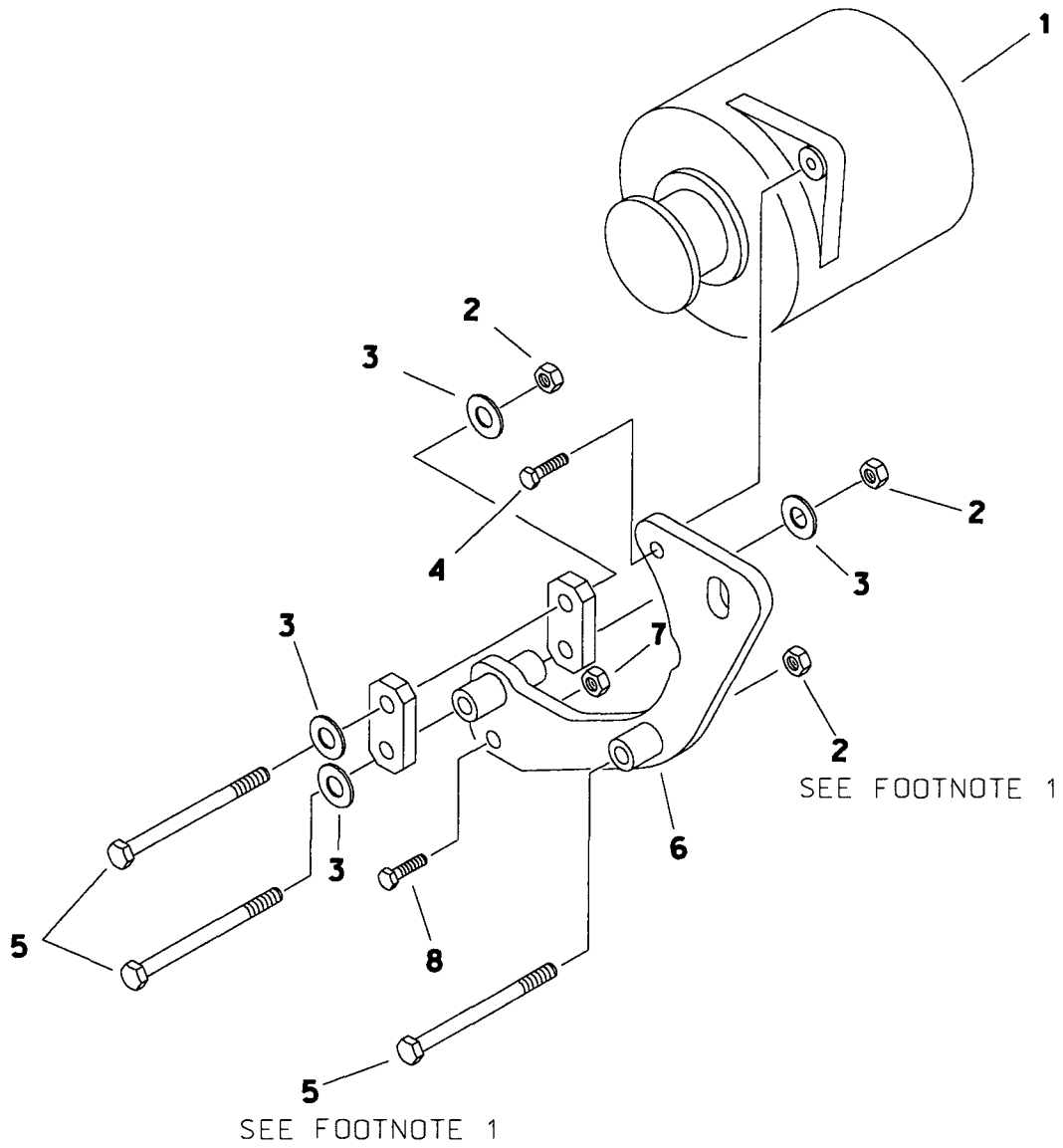
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ENGINE MOUNT HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	194-775	-	ENGINE (DEERE 4045TF150)	
2.	303-895	1	RIGHT REAR MOUNT	
3.	105-993	2	FLG BOLT (5/8-NC X 4")	
	106-028	2	FLG BOLT (5/8-NC X 5", GD8)	USED WITH STANDARD GEARBOX ONLY
4.	303-894	1	LEFT REAR MOUNT	
5.	106-469	8	FLG SCREW (M12-1.75 X 30mm)	
6.	105-826	8	FLG LOCK BOLT (3/8-NC X 1")	
7.	116-673	2	SHOCK MOUNT	
8.	105-416	2	WASHER (5/8")	
9.	105-994	2	FLG LOCKNUT (5/8-NC)	
10.	105-943	2	BOLT (5/8-NC X 2-3/4")	
11.	106-338	2	SCREW (M16-2.00 X 30mm)	
12.	105-385	2	LOCK WASHER (5/8")	
13.	315-254	1	ENGINE MOUNT	
14.	105-256	2	CARRIAGE BOLT (1/2-NC X 3-1/2")	
15.	105-994	2	FLG LOCKNUT (5/8-NC)	
16.	178-060	2	SPACER	
17.	116-424	2	SHOCK MOUNT	
18.	315-049	2	MOUNT PLATE	
19.	105-475	2	WASHER (1/2")	
20.	105-065	2	LOCKNUT (1/2-NC)	
21.	105-834	8	FLG LOCKNUT (3/8-NC)	
22.	105-357	2	LOCKNUT (5/8-NC)	USED WITH EARTH SAW ONLY
23.	105-931	6	WASHER (5/8")	USED WITH EARTH SAW ONLY
24.	315-301	1	REAR ENGINE MOUNT	USED WITH EARTH SAW ONLY
25.	116-127	2	SHOCK MOUNT	USED WITH EARTH SAW ONLY
26.	140-775	2	DIRT SHIELD (WASHER)	USED WITH EARTH SAW ONLY
27.	315-292	1	LEFT ENGINE MOUNT	USED WITH EARTH SAW ONLY
28.	315-293	1	RIGHT ENGINE MOUNT	USED WITH EARTH SAW ONLY
29.	105-953	4	LOCKNUT (3/4-NC)	USED WITH EARTH SAW ONLY
30.	105-975	8	WASHER (3/4")	USED WITH EARTH SAW ONLY
31.	105-961	4	BOLT (3/4-NC X 2")	USED WITH EARTH SAW ONLY
32.	105-407	2	BOLT (5/8-NC X 4")	USED WITH EARTH SAW ONLY
33.	106-621	4	BOLT (M10-1.50 X 45mm, 10.9)	USED WITH EARTH SAW ONLY
34.	105-964	AR	WASHER (5/8")	USED WITH STANDARD GEARBOX ONLY

FOOTNOTES

ALTERNATOR
BEGINS WITH S/N 5T0257



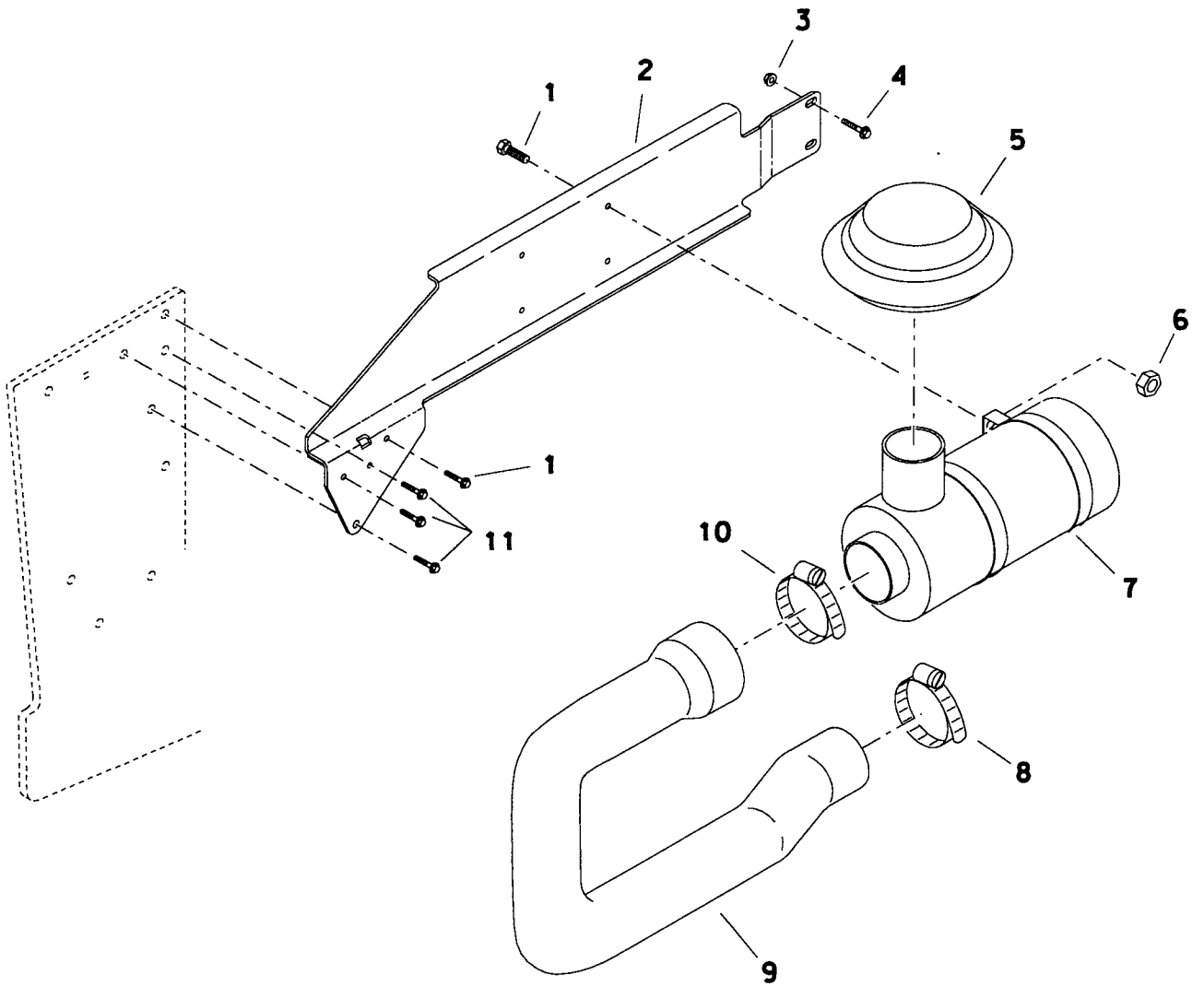
ALTERNATOR BEGINS WITH S/N 5T0257

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-451	1	ELEMENT (ALTERNATOR)	
2.	105-894	2	LOCKNUT(M10-1.50,PRV TRQ,10.9)	
3.	106-390	2	WASHER (M10)	
4.	105-272	2	SCREW (M8-1.25 X 30MM, 10.9)	
5.	106-564	2	SCREW (M10-1.50 X 100MM)	
6.	308-384	1	ALTERNATOR MOUNT WELDMENT	
7.	106-387	1	FLG LOCKNUT (M10-1.50)	SEE FOOTNOTE 1
8.	107-002	1	FLG LK SCREW (M10-1.50 X 30MM)	SEE FOOTNOTE 1

FOOTNOTES

1. INCL WITH ENGINE.

AIR FILTER SYSTEM

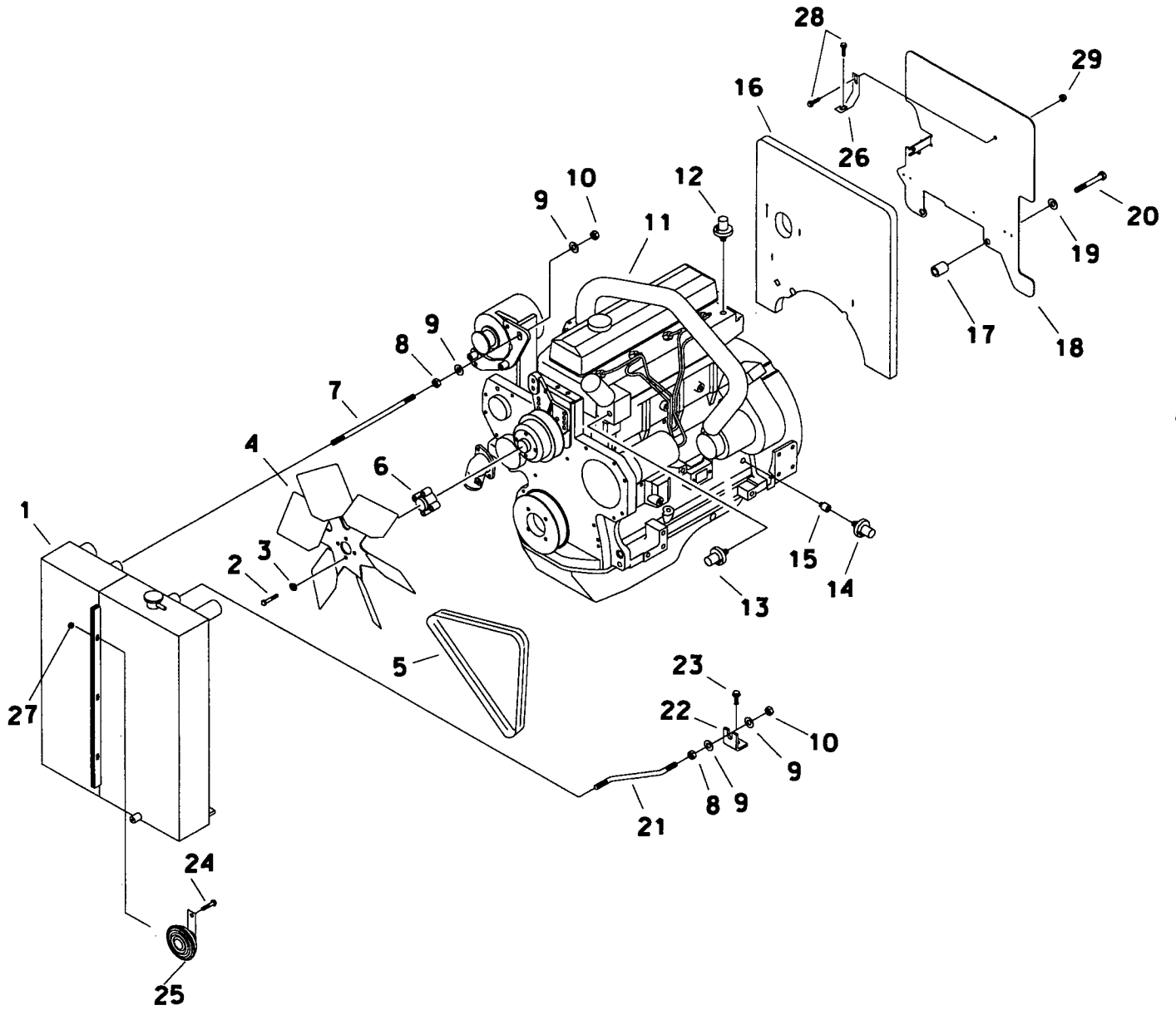


AIR FILTER SYSTEM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-825	5	FLG LK BOLT (3/8-NC X 3/4")	
2.	345-124	1	AIR FILTER MOUNT BRACKET	
3.	105-833	2	FLG LOCKNUT (1/2-NC)	
4.	105-829	2	FLG LK BOLT (1/2-NC X 3/4")	
5.	195-707	1	STACK CAP (4.500")	
6.	105-834	4	FLG LOCKNUT (3/8-NC)	
7.	195-881	1	AIR CLEANER	
	195-892	1	AIR FILTER ELEMENT	
	195-893	1	AIR FILTER SAFETY ELEMENT	
	195-815	1	WING NUT (7/16-NF)	
	195-705	2	MOUNTING BAND (9")	
8.	110-169	1	WORM CLAMP (2.812" TO 3.750")	
9.	116-766	1	AIR FILTER HOSE	
10.	110-170	1	WORM CLAMP (4-1/8" TO 5")	
11.	105-827	3	FLG LK BOLT (3/8-NC X 1-1/4")	

FOOTNOTES

ENGINE / RADIATOR ACCESSORIES

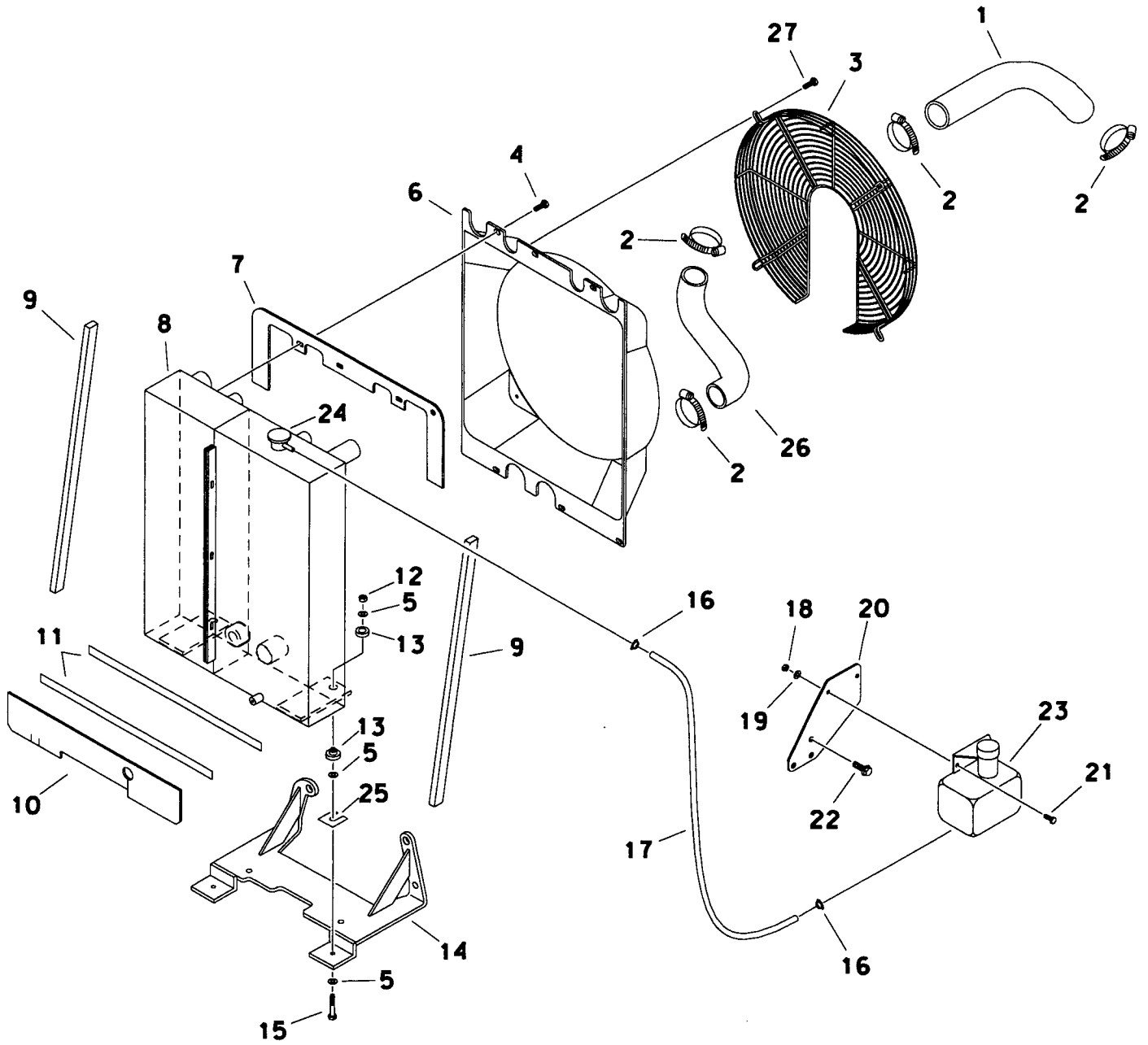


ENGINE / RADIATOR ACCESSORIES

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-827	-	RADIATOR / DIL CDDLER	
2.	106-330	4	BDLT (M8-1.25 X 70mm)	
3.	105-091	4	LDCK WASHER (5/16")	
4.	194-824	1	FAN (19.5" D.D. X 30 DEG.)	
5.	171-006	1	PDLY-VEE BELT	
	171-010	1	PDLY-VEE BELT	
6.	195-869	1	FAN SPACER	
7.	345-228	1	RADIATOR RDD	ENDS WITH S/N 5T0256
	194-175	1	RADIATOR RDD	BEGINS WITH S/N 5T0257
8.	105-044	2	JAM NUT (1/2-NC)	
9.	106-743	4	WASHER (1/2", HARDENED)	
10.	105-065	2	LDCKNUT (1/2-NC)	
11.	194-775	-	ENGINE	
12.	217-513	1	WATER TEMPERATURE SENDER	
13.	217-575	1	TEMPERATURE SWITCH	
14.	217-736	1	DIL PRESSURE SWITCH	
15.	156-226	1	REDUCER (02N-02NF)	
16.	115-865	1	FIREWALL INSULATION	USED WITH QUIET PACKAGE DNLY
17.	184-207	2	SPACER	
18.	345-647	1	BARRIER PLATE	
19.	106-391	2	WASHER (M12)	
20.	106-700	2	BDLT (M12-1.75 X 80mm)	
21.	365-462	1	RDD	
22.	315-285	1	MDUNT	
23.	107-003	1	FLG LK SCREW (M12-1.75 X 35mm)	
24.	105-823	1	FLG LK BDLT (5/16-NC X 3/4 ")	
25.	306-609	2	HIGH FREQUENCY HDNR	INCLUDES MDUNTING HARDWARE
26.	363-205	1	BRACKET	
27.	105-003	1	FLG LDCKNUT (5/16-NC)	
28.	106-382	1	FLG LK BDLT (M10-1.50 X 20mm)	
29.	106-387	1	FLG LDCKNUT (M10-1.50)	

FOOTNOTES

RADIATOR

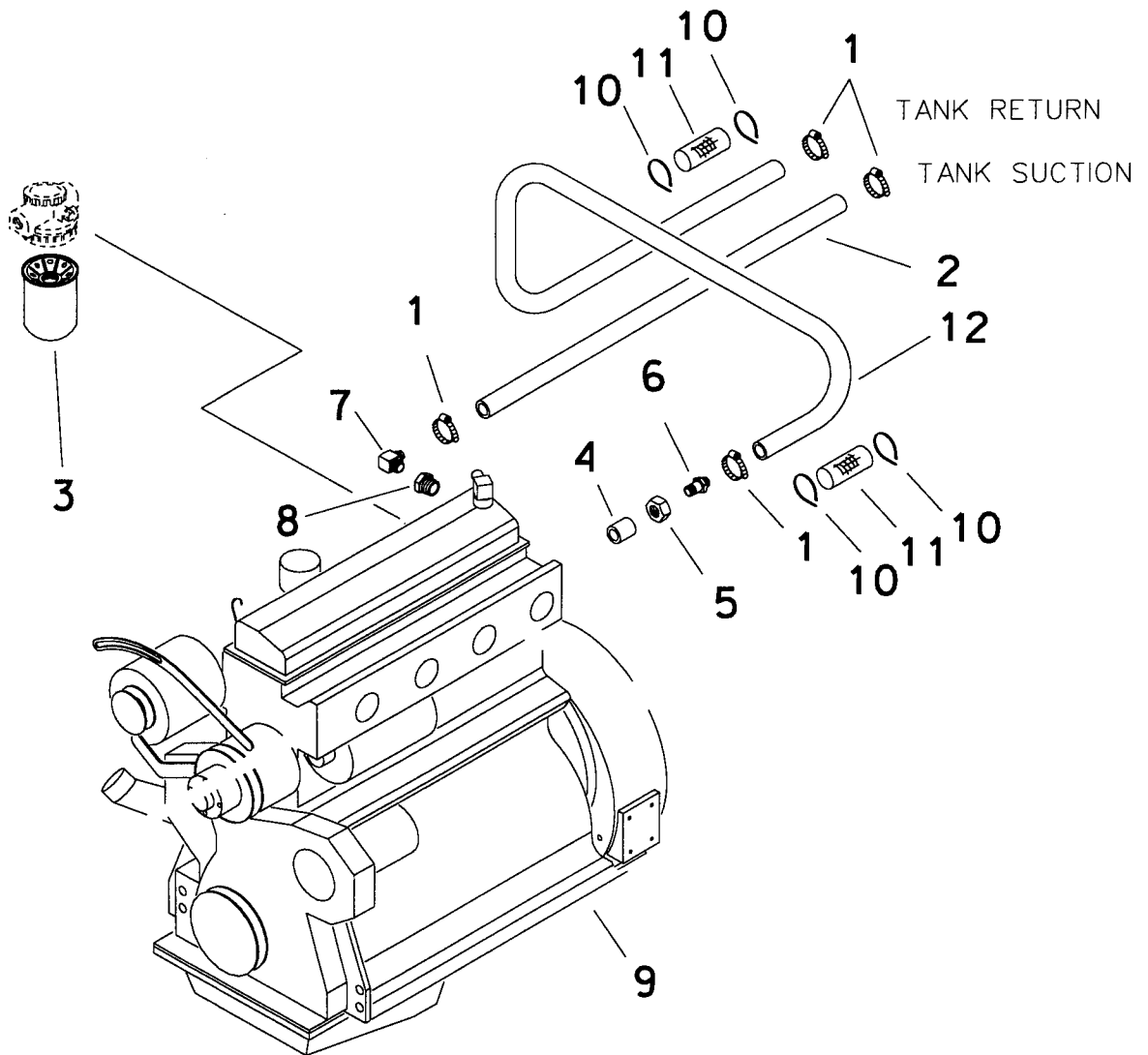


RADIATOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	116-746	1	COOLANT HOSE	
2.	110-134	4	WORM CLAMP (2.062" TO 2.750)	
3.	194-791	1	FAN GUARD	
4.	107-244	6	FLG BOLT (3/8-NC X 1", NLK)	
5.	105-118	6	WASHER (3/8")	
6.	194-794	1	FAN SHROUD	
7.	116-790	1	UPPER AIR BARRIER	
8.	306-827	1	RADIATOR / OIL COOLER	
	306-831	1	OIL COOLER	
	306-832	1	RADIATOR	
9.	116-107	AR	BULK STRIP (1.2",SOLD PER 1")	USE 2 @ 20"
10.	116-791	1	LOWER AIR BARRIER	
11.	110-366	AR	VELCRO STRIP (1",SOLD PER 1")	USE 2 @ 21"
12.	105-047	2	LOCKNUT (3/8-NC)	
13.	116-128	2	SHOCK MOUNT	
14.	315-254	-	ENGINE MOUNT	
15.	500-003	2	BOLT (3/8-NC X 2-3/4")	
16.	110-249	2	WORM CLAMP (1/4" TO 5/8")	
17.	116-108	AR	BULK HOSE (5/16", SOLD PER 1")	USE 1 @ 40"
18.	105-089	2	LOCKNUT (5/16-NC)	
19.	105-226	2	WASHER (5/16")	
20.	305-463	1	BRACKET	
21.	105-094	2	BOLT (5/16-NC X 1")	
22.	107-010	3	FLG LK SCREW (M12-1.75 X 30mm)	
23.	364-432	1	COOLANT OVERFLOW RESERVOIR	
	111-013		OVERFLOW CAP (PLASTIC)	
24.	110-898	1	RADIATOR CAP (14 PSI)	
25.	331-555	AR	SHIM	
26.	116-745	1	LOWER COOLANT HOSE	
27.	105-826	4	FLG LOCK BOLT (3/8-NC X 1")	LOCTITE BOLTS ON FAN GUARD

FOOTNOTES

FUEL LINE HT110



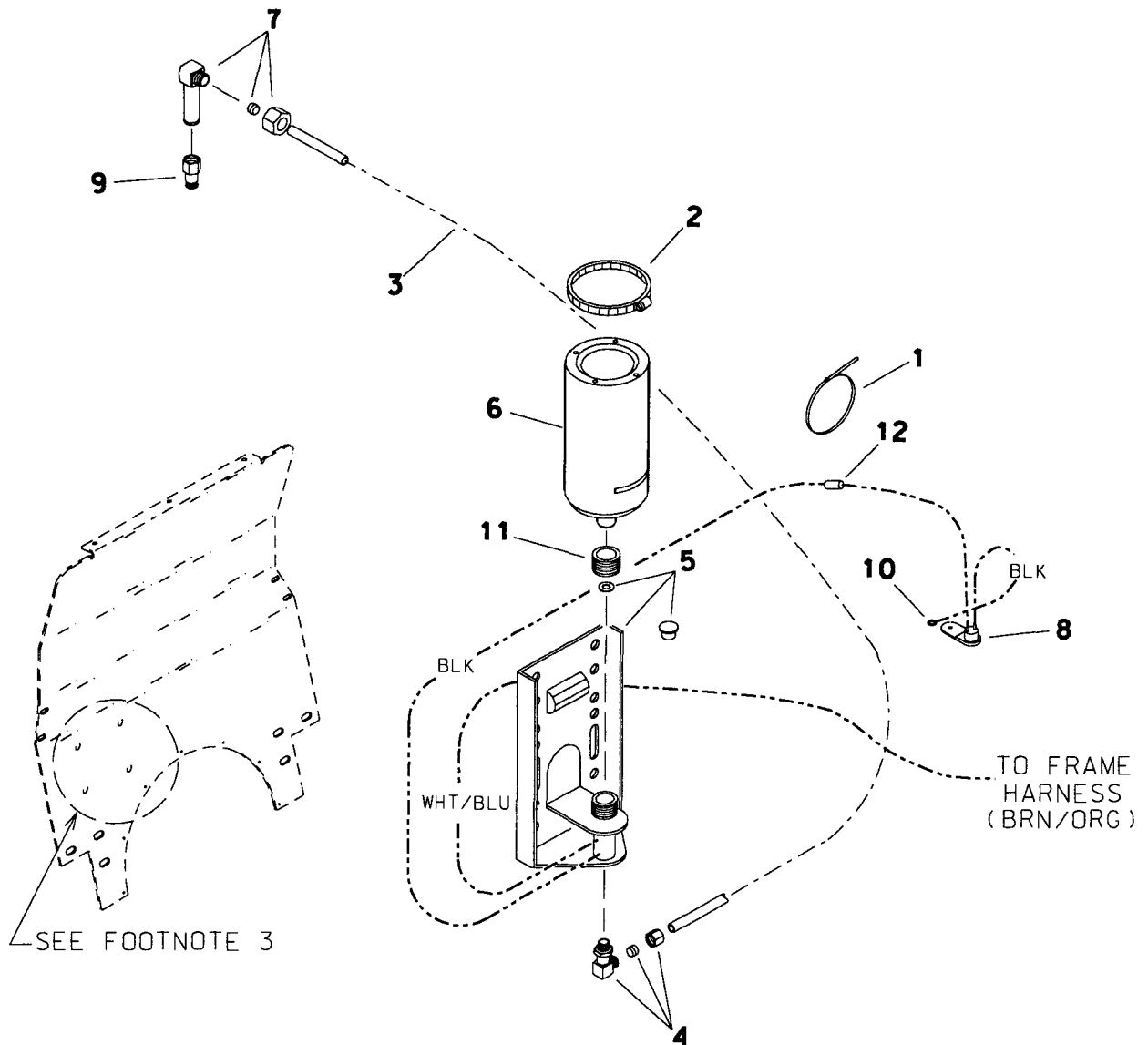
FUEL LINE

HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-528	4	SNAP-ON CLAMP (.531" TO .593")	
2.	116-108	1	BULK HOSE (5/16")	USE 36"
3.	194-816	1	FUEL FILTER ELEMENT	
4.	156-276	1	FERRULE (05T)	
5.	156-277	1	COMPRESSION NUT (05T)	
6.	156-275	1	TUBE CONNECTOR (04H-5T)	
7.	155-241	1	S/O COUPLER (02N-05H90)	
8.	114-033	1	P-SEAL ADAPT (M10-1.0 X 1/8-NPT)	
9.	194-775	-	ENGINE (DEERE 4045TF150)	
10.	110-030	4	CABLE TIE (1/16" TO 4")	
11.	115-776	2	ABRASION SLEEVE (1.59" X 7")	
12.	116-108	1	BULK HOSE (5/16")	USE 46"

FOOTNOTES

COLD START KIT DEERE ENGINE



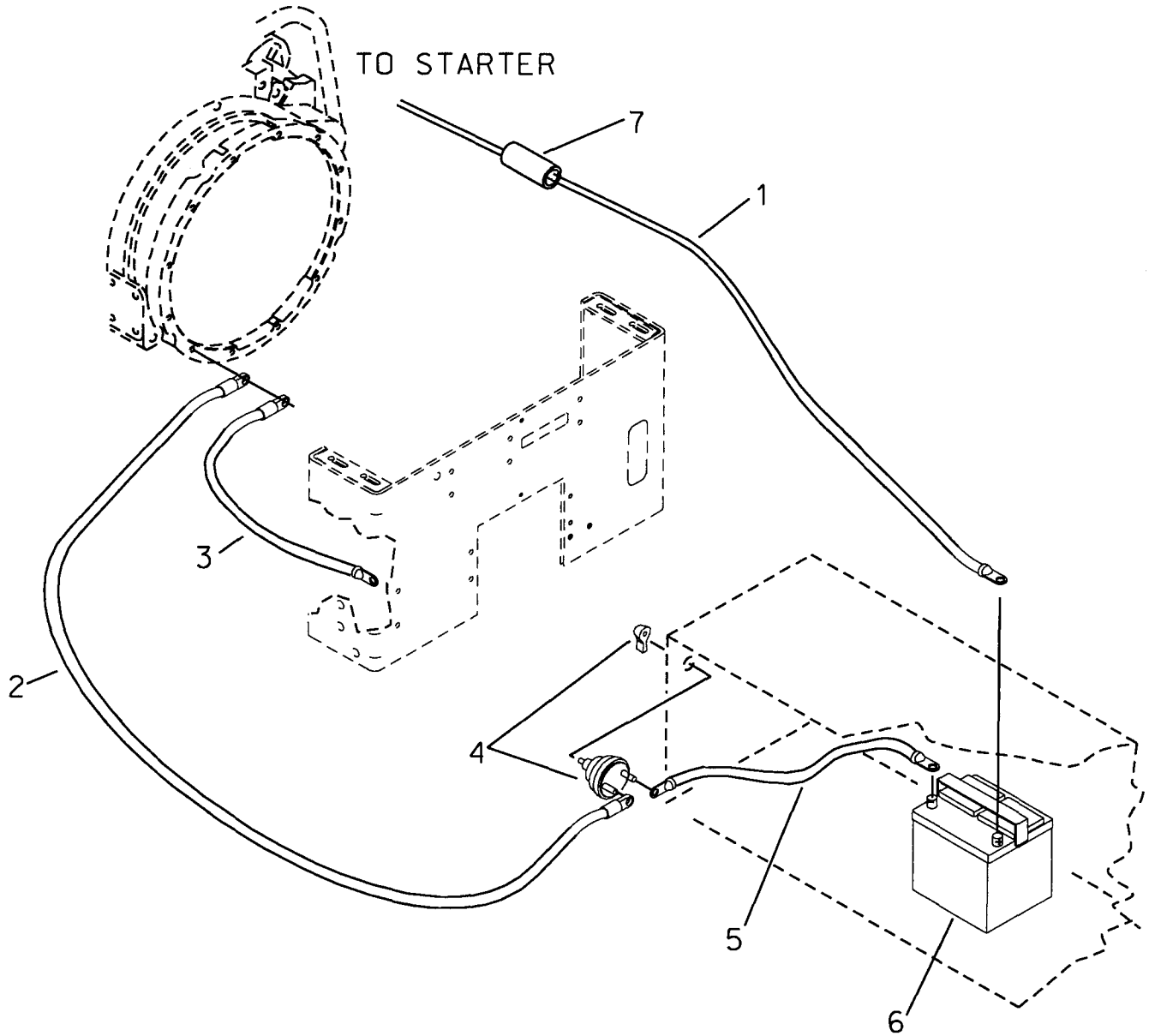
COLD START KIT DEERE ENGINE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-528		COLD START CONVERSION KIT	INCL REF #1-5 & 7-12, AND SEE FOOTNOTE 1
1.	110-248	3	CABLE TIE (1/16" TO 1-1/4")	
2.	110-367	1	CLAMP (3-3/16" TO 4-1/4")	
3.	156-018	AR	HOSE (02T)	USE 12" (7020 ONLY)
	156-018	AR	HOSE (02T)	USE 80" (8020T ONLY)
4.	156-272	1	BLOCK CONNECTOR	
	156-204		FERRULE (02T)	
	156-205		NUT (02T)	
5.	195-841	1	VALVE/CANISTER BRACKET	
	110-252		CAP PLUG	
	195-844		GASKET	
6.	195-842	1	ETHER CANISTER	SEE FOOTNOTE 2
7.	195-843	1	INJECTOR NOZZLE	INC FERRULE AND NUT
	156-204		FERRULE (02T)	
	156-205		NUT (02T)	
8.	215-073	1	SENSOR SWITCH	
9.	115-251	1	REDUCER (06N-02N)	BEFORE S/N 5P0354
	514-402	1	CONNECTOR (10S-02NF)	AFTER S/N 5P0355
10.	215-590	1	RING TERMINAL (.375")	
11.	115-365	1	GROMMET (1-1/2")	
12.	215-478	1	BUTT CONNECTOR	

FOOTNOTES

- 1-REFER TO INSTALLATION INSTRUCTIONS 050-241.
- 2-NOT PART OF KIT, NEED TO ORDER SEPARATELY.
- 3-USE EXISTING BOLTS TO CONNECT VALVE/CANISTER BRACKET (REF#5) TO REAR ENGINE PANEL. (7020 ONLY)

BATTERY CABLE ASSY' HT110



BATTERY CABLE ASSY'

HT110

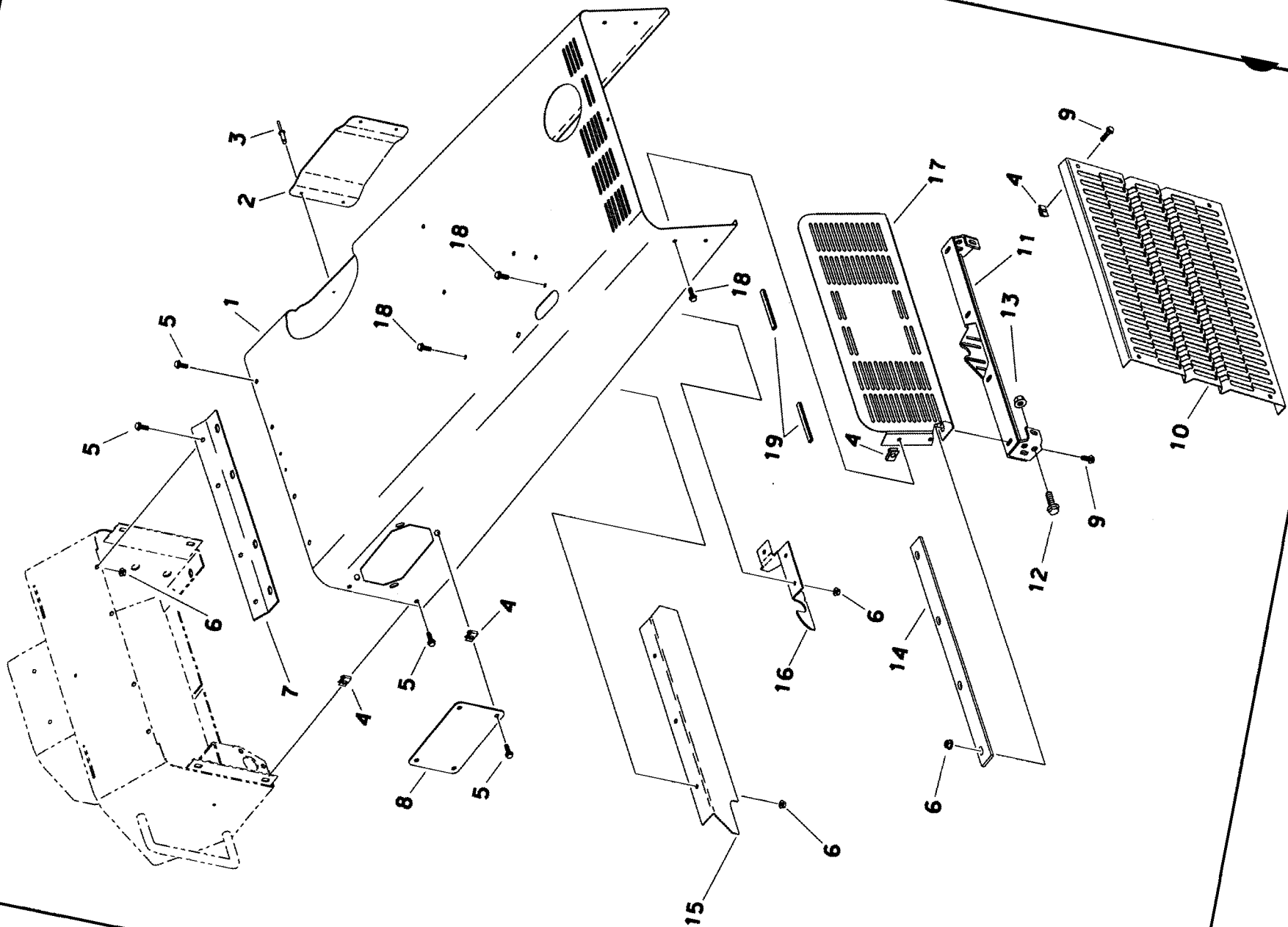
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	215-346	1	BAT CABLE (2/0 GA X 106", RED)	
2.	215-359	1	BAT CABLE (2/0 GA X 70", BLK)	
3.	215-309	1	BAT CABLE (4 GA X 20", BLK)	
4.	217-819	1	BAT DISCONNECT SWITCH	
5.	215-360	1	BAT CABLE (2 GA X 23.6", BLK)	
6.	215-244	1	BATTERY (12 V, 800AMP,)	
7.	116-389	AR	BULK TUBING (3/4" SOLD PER 1')	USE 30"

FOOTNOTES

NOTES:

FRAME COMPONENTS

HOOD
HT110

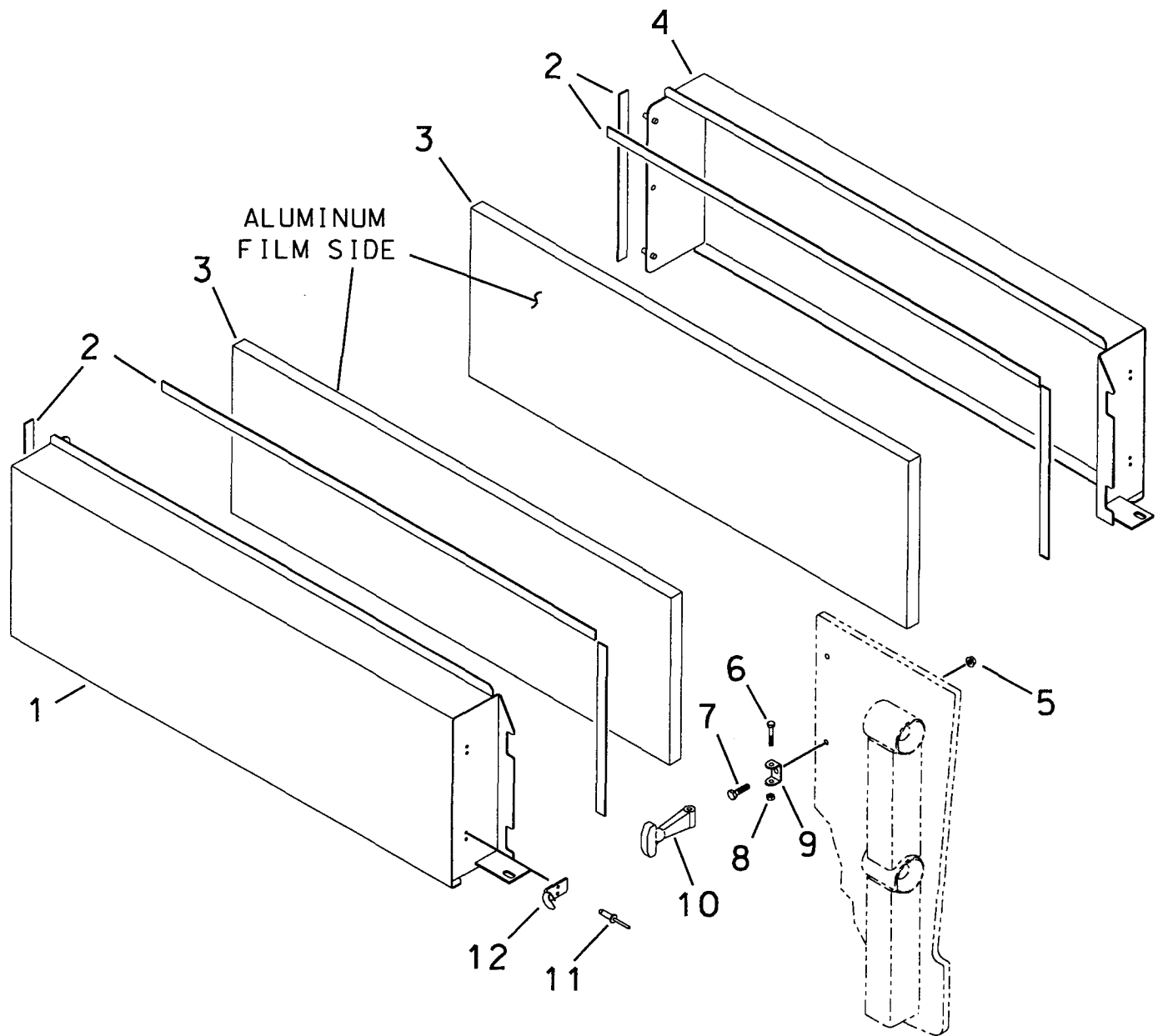


HOOD HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	309-862	1	HOOD SHELL	
2.	315-233	1	HOOD HEAT SHIELD	
3.	110-527	4	POP RIVET (3/16" X 1/2")	
4.	105-841	20	CLIP NUT (5/16-NC)	
5.	105-823	16	FLG LK BOLT (5/16-NC X 3/4")	
6.	105-003	14	FLG LOCKNUT (5/16-NC)	
7.	315-289	1	HOOD ADAPTER PLATE	
8.	331-413	1	COVER PLATE	
9.	105-866	8	FLG LK BOLT (5/16-NC X 1-1/4")	
10.	362-777	1	GRILLE	
11.	315-308	1	LATCH MOUNT	
12.	105-831	4	FLG LK BOLT (1/2-NC X 1-1/2")	
13.	106-198	4	FLG LOCKNUT (1/2-NC)	
14.	305-898	1	BAR, HOOD STIFFENER	
15.	315-235	1	HOOD BARRIER	
16.	315-234	1	MOUNT (REMOTE THROTTLE)	
17.	315-291	1	UPPER GRILLE	
18.	107-248	10	FLG BOLT (5/16-NC X 3/4", NLK)	
19.	115-671	AR	BULK EDGE (1/16", SOLD PER 1")	USE 2 @ 4.00"

FOOTNOTES

ENGINE COVERS QUIET PACKAGE

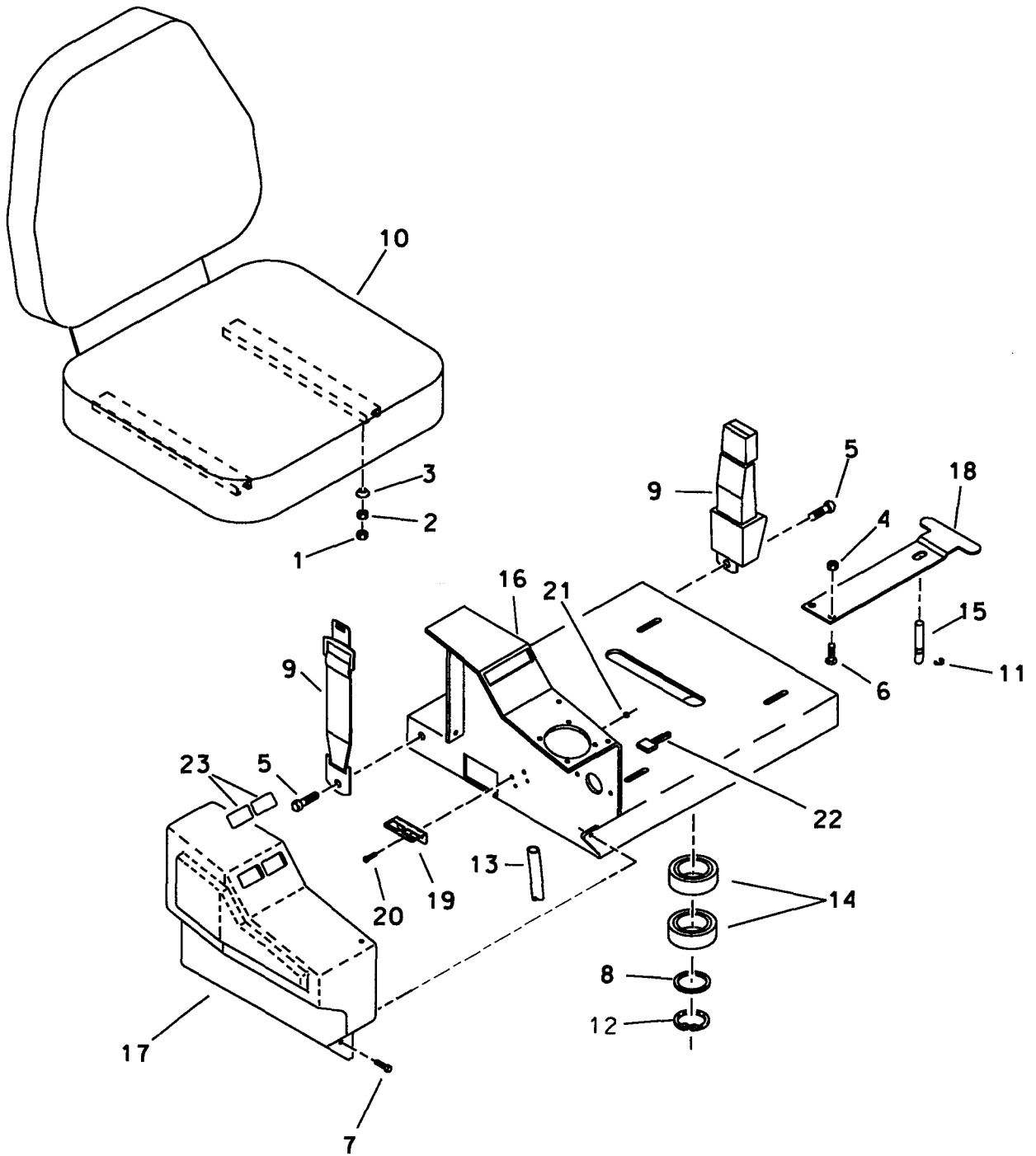


ENGINE COVERS QUIET PACKAGE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	362-720	1	RIGHT SIDE COVER	
2.	116-271	AR	BULK STRIP (1/8" X 3/4")	USE 129"
3.	115-870	2	ENGINE SIDE CORNER INSULATION	
4.	362-719	1	LEFT SIDE COVER	
	345-618	1	LEFT SIDE COVER	8020T ONLY
5.	105-003	4	FLG LOCKNUT (5/16-NC)	
6.	105-818	4	BOLT (1/4-NC X 1-1/2")	
7.	105-160	4	BOLT (5/16-NC X 1-1/4")	
8.	105-085	4	LOCKNUT (1/4-NC)	
9.	110-224	4	ANCHOR BRACKET	
10.	110-222	4	HOOD LATCH	
11.	110-253	8	POP RIVET (3/16" X 1/2")	
12.	110-646	4	KEEPER	

FOOTNOTES

SEAT MOUNT HT110



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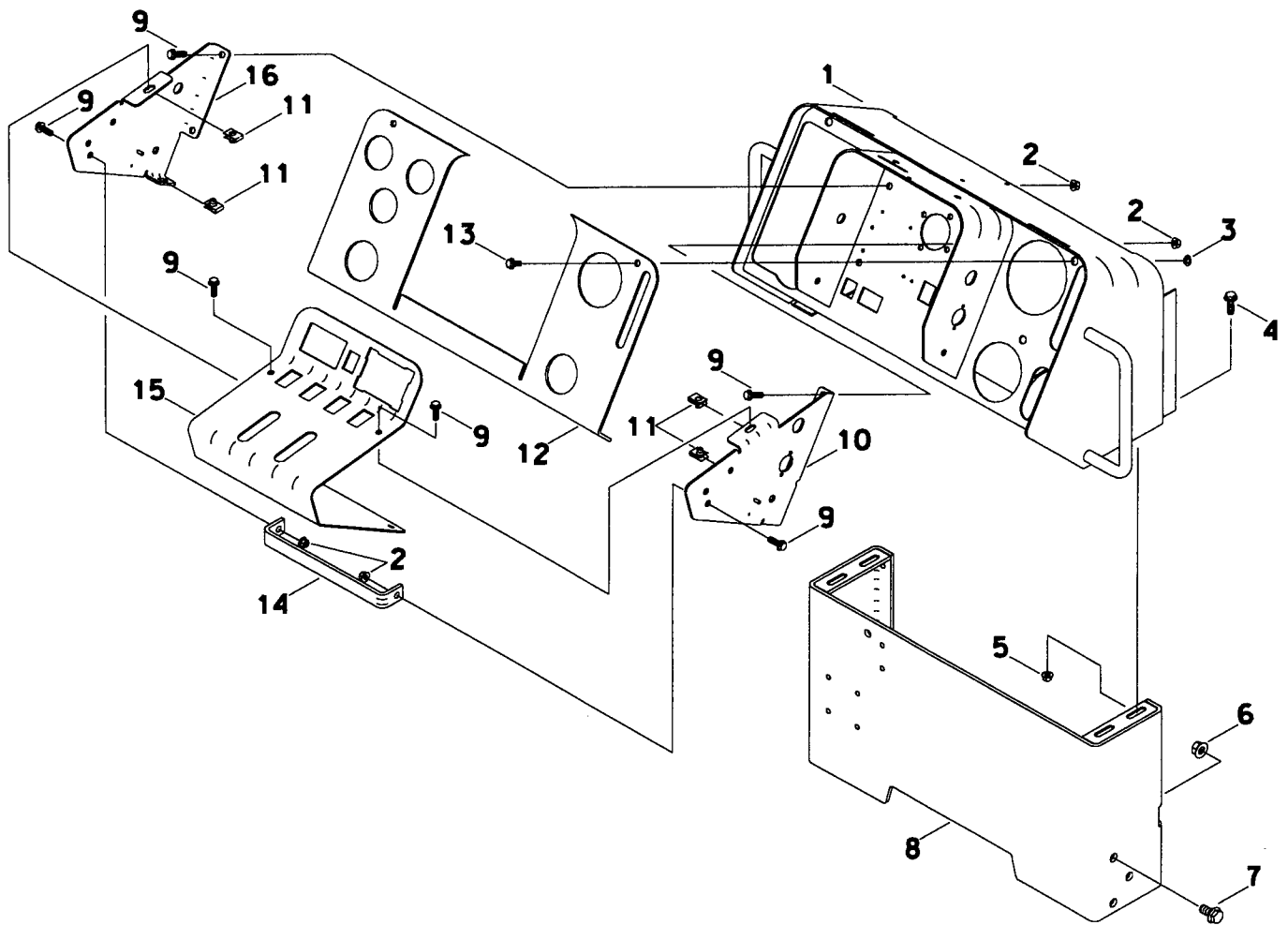
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SEAT MOUNT HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-003	4	FLG LOCKNUT (5/16-NC)	
2.	105-092	4	NUT (5/16-NC)	
3.	105-267	4	CUP WASHER (5/16")	
4.	105-814	2	FLG LOCKNUT (3/8-NC)	
5.	105-829	2	FLG LK BOLT (1/2-NC X 1")	
6.	106-029	2	BOLT (3/8-NC X 3/4", BUT SOC)	
7.	106-159	5	FLG SCREW (1/4-NC X 3/4")	
8.	110-303	1	MACHINERY BUSHING	
9.	110-520	1	SEAT BELT KIT	
10.	115-425	1	SEAT	INCLUDES SEAT TRACK SET & OPERATOR PRESENCE SWITCH SEAT ONLY
	115-445	1	SEAT	
11.	115-506	2	EXT CLIP RING	
12.	115-518	1	EXT SNAP RING	
13.	116-108	AR	BULK HOSE (5/16")	USE 1"
14.	125-001	2	BEARING	
15.	183-609	1	LATCH PIN	
16.	314-070	1	SEAT BASE	
17.	362-924	1	SIDE CONSOLE COVER (ABS)	USED WITH 2-POST AND 4-POST ROPS
	363-923	1	SIDE CONSOLE COVER (KCS)	USED WITH CABS ONLY
18.	314-135	1	SEAT LATCH	
19.	363-118	1	DIODE BLOCK BRACKET	
20.	105-836	1	FLG LK BOLT (1/4-NC X 1/2")	
21.	105-832	1	LOCKNUT (1/4-NC)	
22.	217-752	1	OPERATOR PRESENCE DELAY	
23.	362-823	2	PLUGS	

FOOTNOTES

CONSOLE HT110

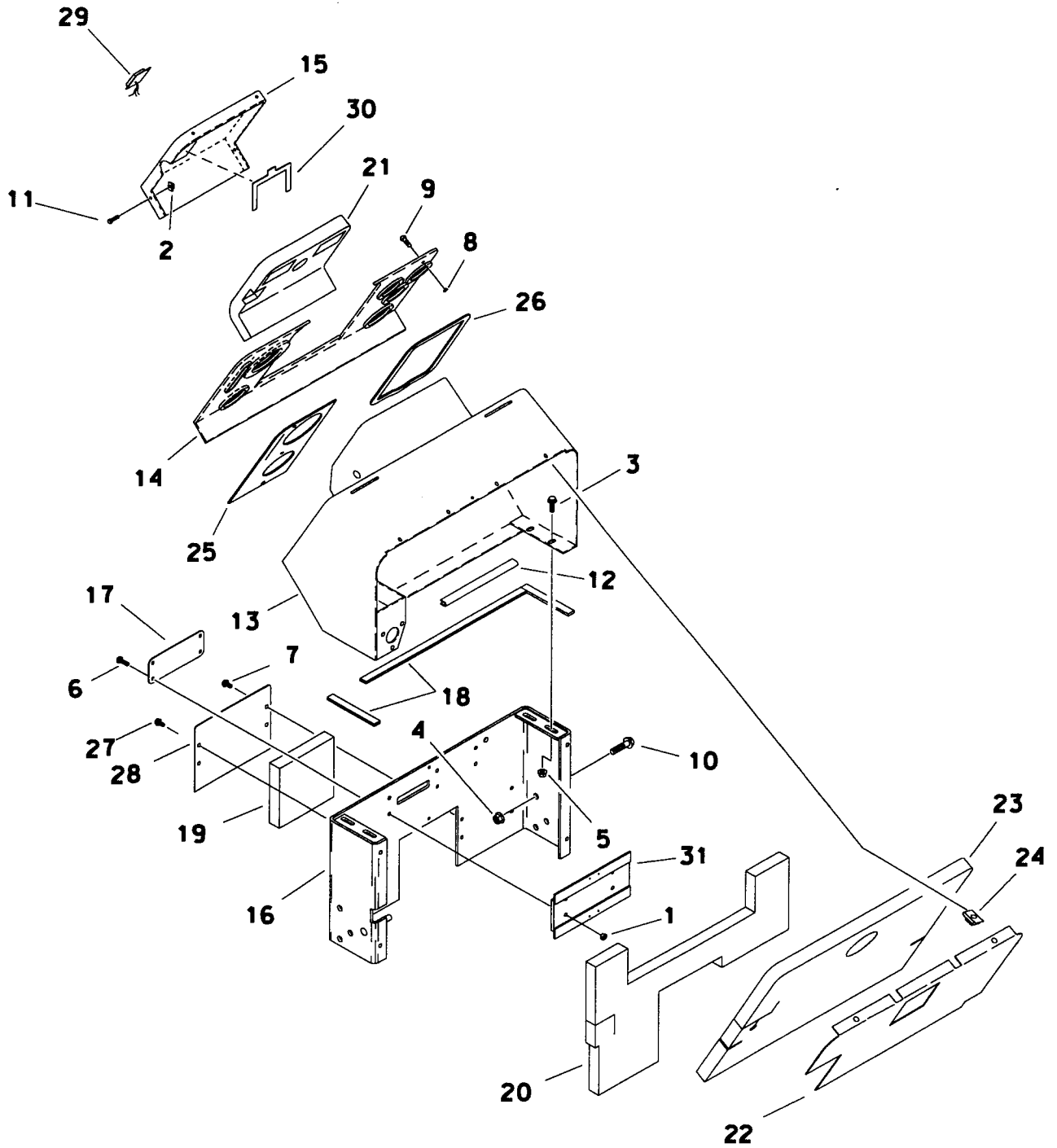


CONSOLE HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	315-088	1	CONSOLE	
2.	106-386	6	FLG LOCKNUT (M8-1.25)	
3.	106-038	4	NUTSERT (5/16-NC)	
4.	105-826	4	FLG LOCK BOLT (3/8-NC X 1")	
5.	105-845	4	FLG LOCKNUT (3/8-NC)	
6.	105-833	6	FLG LOCKNUT (1/2-NC)	
7.	106-096	6	FLG BOLT (1/2-NC X 1-3/4", GD8)	
8.	303-858	1	CONSOLE SUPPORT	
9.	106-162	10	FLG SCREW (M8-1.25 X 20mm, 8.8)	
10.	303-850	1	RIGHT CONSOLE PLATE	
11.	106-551	4	CLIP NUT (M8-1.25)	
12.	314-101	1	CONSOLE PANEL (ABS)	
13.	105-822	4	FLG LOCK BOLT (5/16-NC X 1/2")	
14.	303-852	1	STIFFENER	
15.	310-321	1	CONSOLE TOP	
16.	303-849	1	LEFT CONSOLE PLATE	

FOOTNOTES

CONSOLE QUIET PACKAGE



CONSOLE QUIET PACKAGE

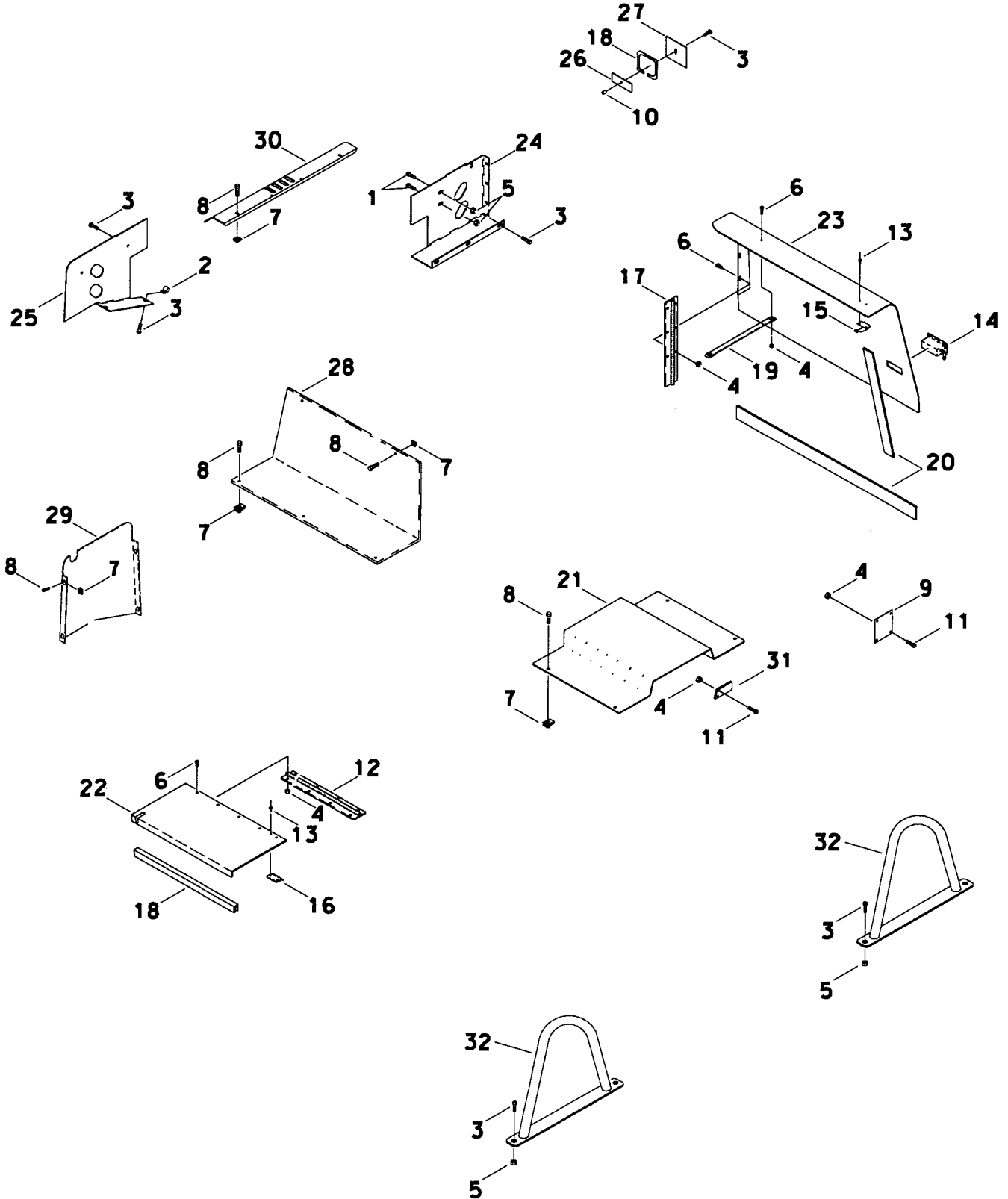
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-832	4	FLG LOCKNUT (1/4-NC)	SEE FOOTNOTE 1
2.	105-139	4	CLIP NUT (1/4")	
3.	105-826	4	FLG LK BOLT (3/8-NC X 1")	
4.	105-833	6	FLG LOCKNUT (1/2-NC)	
5.	105-845	4	FLG LOCKNUT (3/8-NC)	
6.	105-820	2	FLG LK BOLT (1/4-NC X 3/4")	
7.	105-823	2	FLG LK BOLT (5/16-NC X 3/4")	
8.	106-038	5	NUTSERT (5/16-NC)	
9.	105-823	5	FLG LK BOLT (5/16-NC X 3/4")	
10.	106-096	6	FLG BOLT (1/2-NC X 1-3/4")	
11.	105-820	4	FLG LK BOLT (1/4-NC X 3/4")	
12.	115-686	AR	BULK EDGING (5/32")	USE 18"
13.	315-088	1	CONSOLE	
14.	314-101	1	CONSOLE PANEL	
	315-306	1	CONSOLE PANEL (KCS)	
15.	314-102	1	CENTER CONSOLE PANEL	SEE FOOTNOTE 3
	314-171	1	CONSOLE PANEL	SEE FOOTNOTE 4
	315-305	1	CONSOLE PANEL (KCS)	USED WITH CABS ONLY
16.	315-072	1	CONSOLE SUPPORT	
	345-127	1	CONSOLE SUPPORT	8020T ONLY
17.	362-634	1	COVER PLATE	
18.	115-399	AR	BULK STRIP (1/4" X 3/4")	USE 38"
19.	115-866	1	FRONT PANEL DOOR INSUL	
20.	115-868	1	LOWER FRONT PANEL INSUL	
21.	115-869	1	CENTER INSTR PANEL INSUL	
22.	315-221	1	INSTR PANEL FIREWALL	
23.	115-867	1	INSTR PANEL FIREWALL INSUL	
24.	105-841	2	CLIP NUT (5/16-NC)	
25.	115-873	1	THROTTLE SEAL	
26.	116-271	AR	BULK STRIP (1/8" X 3/4")	USE 36"
27.	106-037	2	FLG BOLT (5/16-NC X 1/2")	
28.	362-641	1	PUMP COVER	
29.	217-756	1	INTERLOCK DISPLAY/MODULE	
30.	314-172	1	RETAINER	SEE FOOTNOTE 4
31.	362-735	2	THREE SLOT WINDOW/SWITCH PANEL	

FOOTNOTES

- 1-PARTS USED WITH RIGID REAR DIFFERENTIAL ONLY
- 2-PLUG OPEN HOLES WITH SILICONE SEALANT.
- 3-FOR UNITS WITHOUT INTERLOCK MODULE, ENDS WITH S/N
- 4-FOR UNITS WITH INTERLOCK MODULE, BEGINS WITH S/N

FENDERS AND COVERS

HT110



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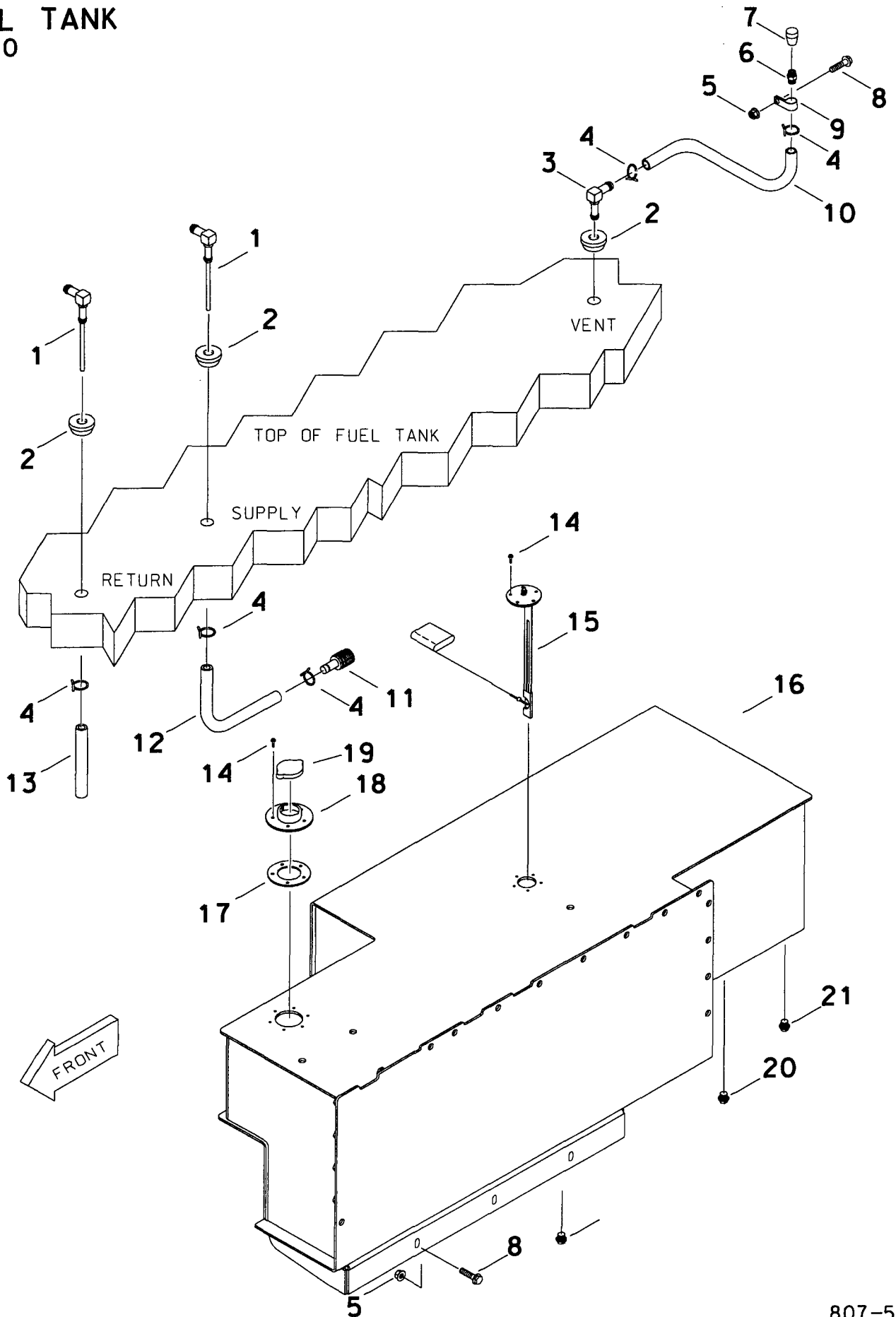
FENDERS AND COVERS

HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-827	2	FLG BOLT (3/8-NC X 1-1/4")	
2.	106-719	5	CLIP NUT (3/8-NC)	
3.	105-826	18	FLG LK BOLT (3/8-NC X 1")	
4.	105-832	24	FLG LOCKNUT (1/4-NC)	
5.	105-814	10	FLG LOCKNUT (3/8-NC)	
6.	105-836	18	FLG LOCK BOLT (1/4-NC X 1/2")	
7.	105-841	17	CLIP NUT (5/16-NC)	
8.	105-823	17	FLG LK BOLT (5/16"-NC X 3/4")	
9.	315-094	1	BYPASS COVER PLATE	
10.	106-039	1	NUTSERT (3/8-NC)	
11.	105-820	6	FLG LK BOLT (1/4-NC X 3/4")	
12.	110-218	1	HINGE (12-19/32")	
13.	110-527	6	POP RIVET (3/16" X 1/2")	
14.	110-757	1	LEVER LATCH (ADJUST, LOCKING)	
15.	110-523	1	RETAINER CLIP	
16.	110-524	1	SPRING RETAINER	
17.	110-568	1	HINGE (11")	
18.	115-686	AR	BULK EDGE (5/32")	USE 16"
19.	115-786	1	LIMIT STRAP (12")	
20.	116-271	AR	BULK STRIP (3/4")	USE 42"
21.	303-859	1	FLOOR PANEL	
22.	315-064	1	STEP LID	
23.	303-981	1	LEFT FENDER	
24.	315-068	1	LEFT REAR FENDER PANEL	
25.	315-069	1	RIGHT REAR FENDER PANEL	
26.	314-167	1	CLAMP BAR	
27.	314-166	1	COVER PLATE	
28.	362-639	1	ACCESS COVER	
29.	362-640	1	PUMP CONTROL COVER	
30.	314-538	1	CONSOLE COVER	
	315-232	1	CONSOLE COVER	FOR UNITS WITH AUTOCROWD
31.	305-408	1	COVER	
32.	310-104	2	HAND RAIL	

FOOTNOTES

FUEL TANK HT110



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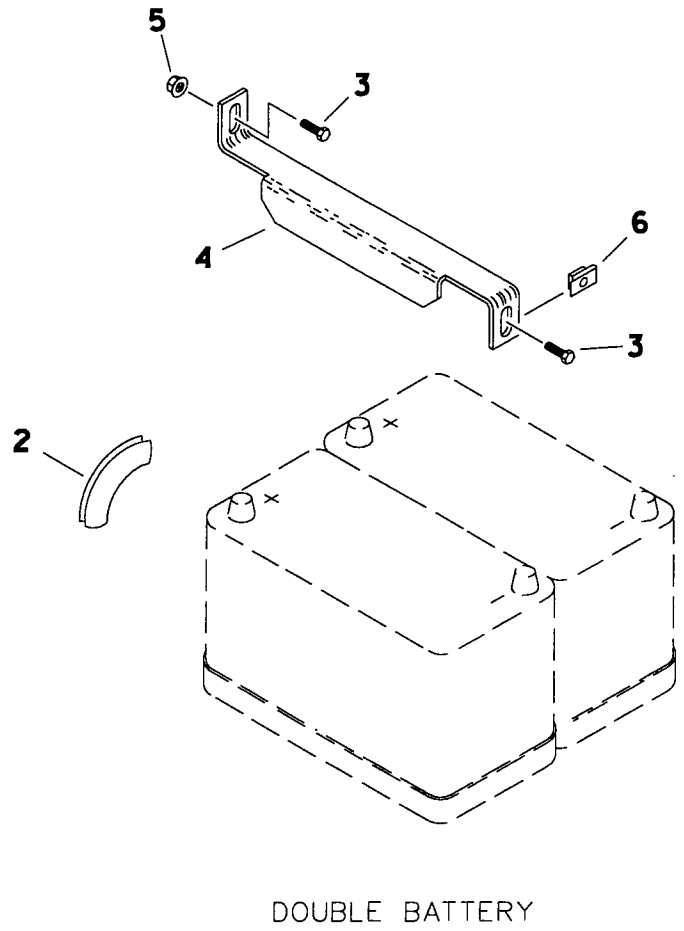
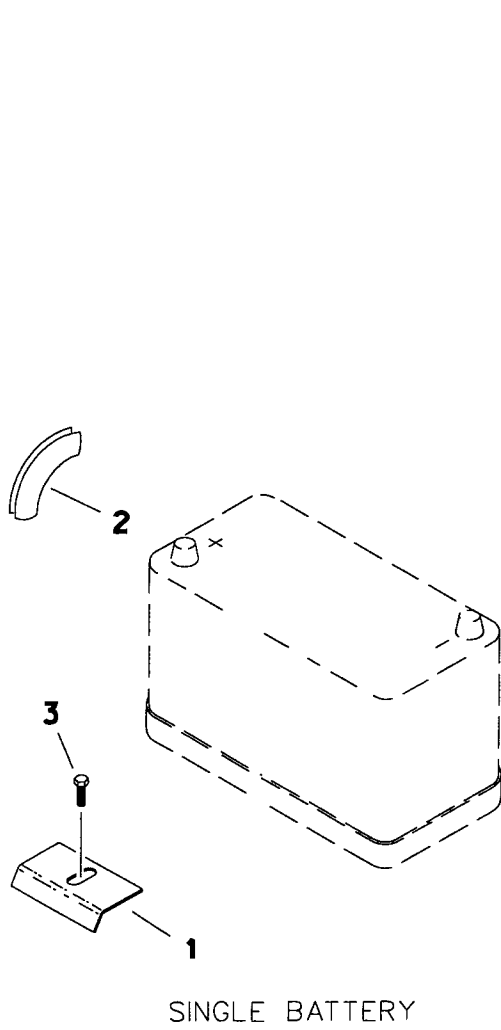
FUEL TANK

HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	156-269	2	S/O COUPLER (04H-05H90)	
2.	116-325	3	GROMMET (.362")	
3.	156-265	1	S/O COUPLER (04H-04H90)	
4.	110-563	5	SPRING CLAMP (3/8")	
5.	106-266	13	FLG NUT (M10-1.50)	
6.	156-206	1	S/O COUPLER (02NF-04H)	
7.	155-912	1	AIR VENT (02N)	
8.	106-993	24	FLG LK SCREW (M10-1.50 X 35mm)	
9.	110-126	1	BOLT-ON CLAMP (1/2")	
10.	116-356	AR	BULK HOSE (1/4")	USE 36"
11.	156-268	1	FUEL STRAINER (04H)	
12.	116-356	AR	BULK HOSE (1/4")	USE 16"
13.	116-356	AR	BULK HOSE (1/4")	USE 24"
14.	105-214	11	FLG SCREW (#10-24 X 1/2")	
15.	215-139	1	FUEL SENDER	
	165-704		GASKET	
	506-021		NUT (#10-32)	
16.	364-549	1	FUEL TANK ASS'Y	
17.	165-626	1	FILLER NECK GASKET	
18.	110-132	1	FILLER NECK	
19.	110-673	1	FUEL CAP (1-7/16")	
20.	155-184	1	PLUG (16S)	
21.	155-177	1	PLUG (24S)	

FOOTNOTES

BATTERY MOUNT

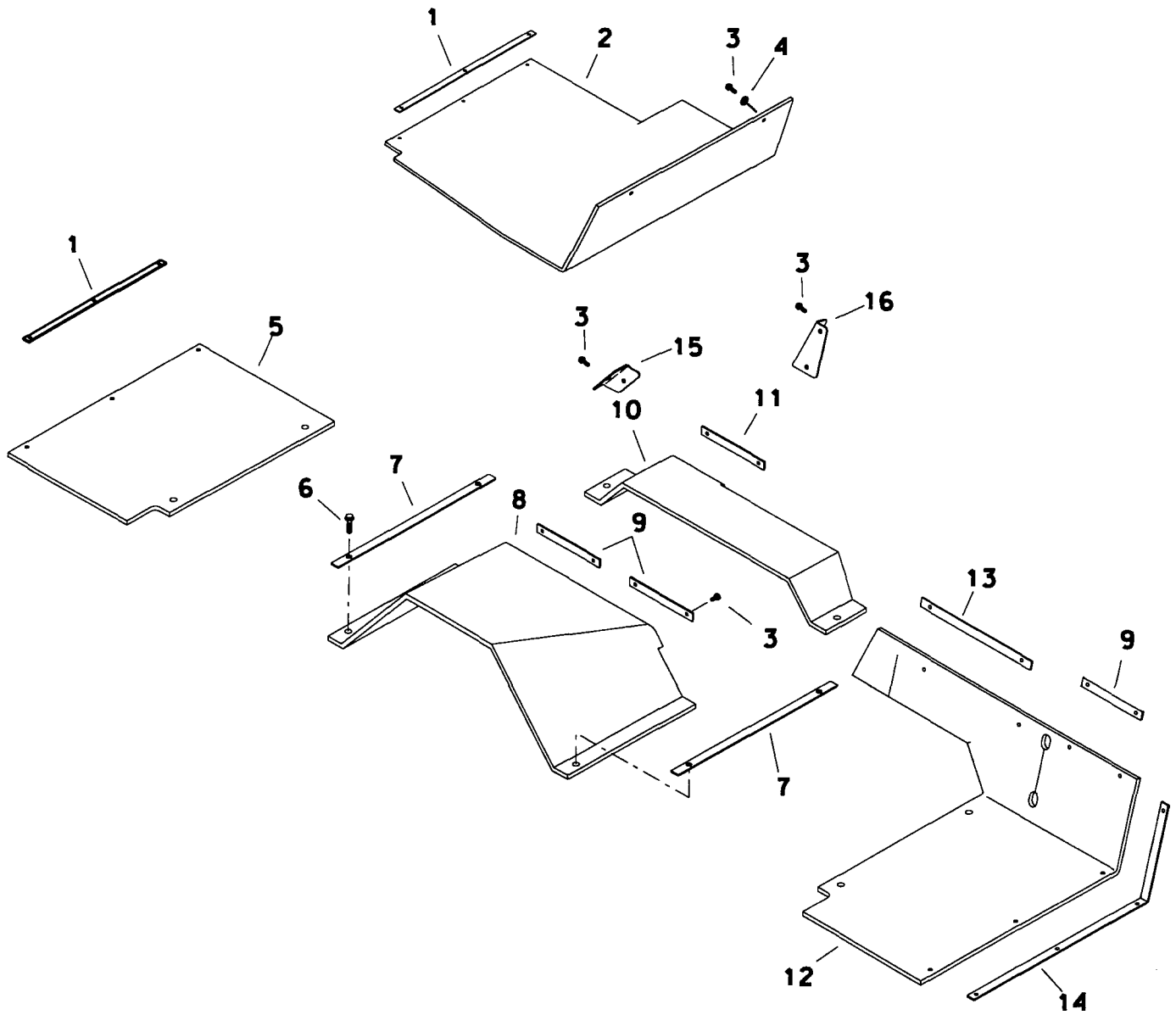


BATTERY MOUNT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-474		DUAL BATTERY CONVERSION KIT	
1.	315-101	1	BATTERY BRACKET	USED ON OPTIMA SINGLE AND DOUBLE BATTERY
	303-812	1	BATTERY BRACKET	USED ON INTERSTATE SINGLE BATTERY
2.	115-686	AR	BULK EDGE, (5/32", SOLD PER 1")	
3.	105-826	1	FLG LK BOLT (3/8-NC X 1")	
4.	303-813	1	BATTERY BRACKET	USED ON INTERSTATE DOUBLE BATTERY
5.	105-834	1	FLG LOCKNUT (3/8-NC)	
6.	106-719	1	CLIP NUT (3/8-NC)	

FOOTNOTES

FLOOR MAT
QUIET PACKAGE
HT110

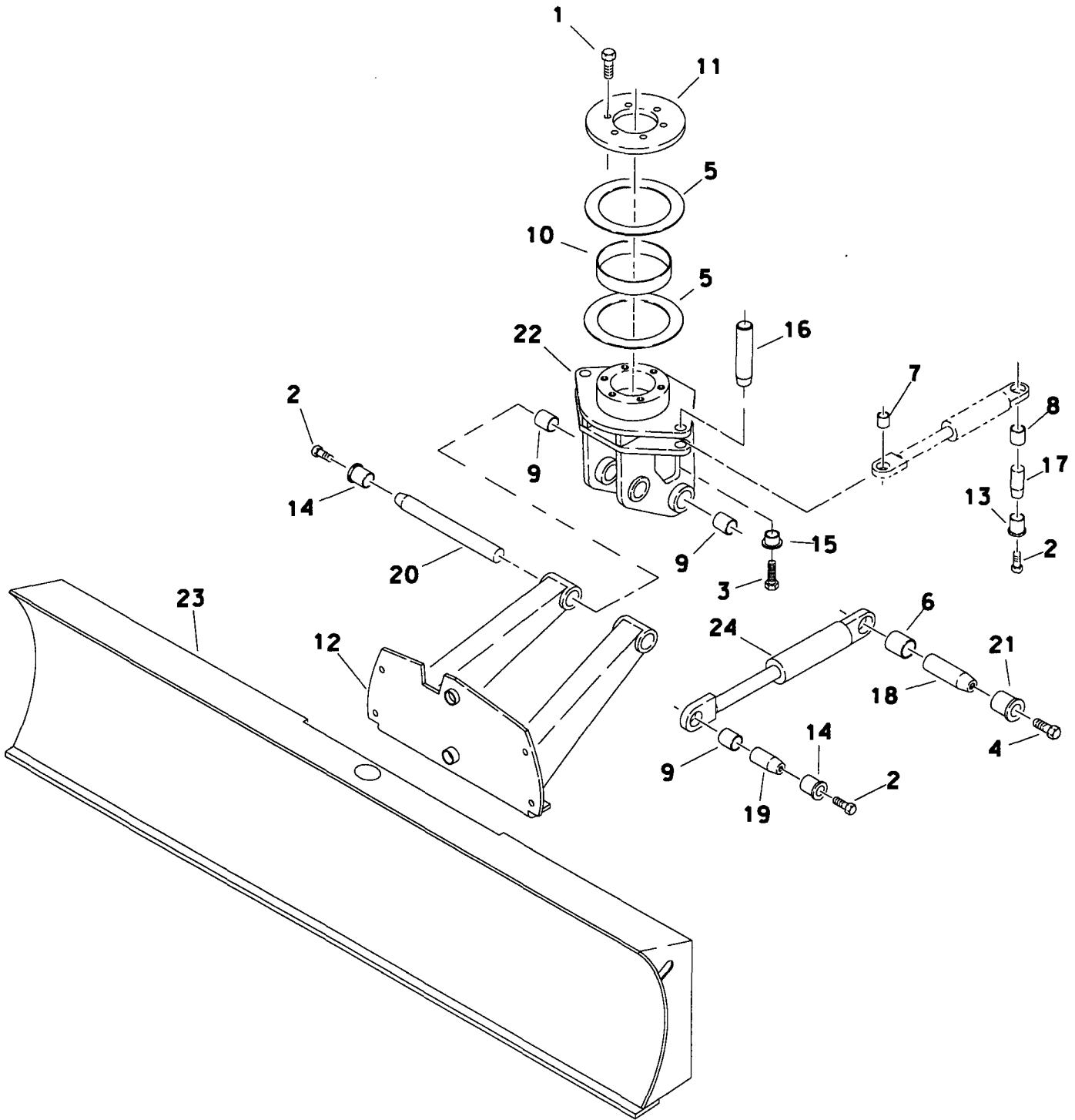


**FLOOR MAT
QUIET PACKAGE
HT110**

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	363-253	1	FLOOR MAT RETAINER STRIP	
2.	115-872	1	RIGHT REAR FLOOR MAT	
3.	105-231	26	SCREW (1/4-NC X 3/4", SLF-TAP)	
4.	105-117	2	WASHER (5/16")	
5.	117-766	1	LEFT FLOOR MAT	
6.	105-866	4	FLG LK BOLT (5/16-NC X 1-1/4")	
7.	345-696	2	HOLD DOWN STRAP	
8.	XXX-XXX	1	FRONT FLOOR MAT	
9.	363-250	3	FLOOR MAT RETAINER STRIP	
10.	117-763	1	REAR FLOOR MAT	
11.	315-272	1	RETAINER	
12.	117-765	1	RIGHT FLOOR MAT	
13.	363-252	1	FLOOR MAT RETAINER STRIP	
14.	363-251	1	FLOOR MAT RETAINER STRIP	
15.	315-311	1	RETAINER	
16.	315-310	1	SHIFTER DECAL PLATE	

FOOTNOTES

BACKFILL BLADE HT110

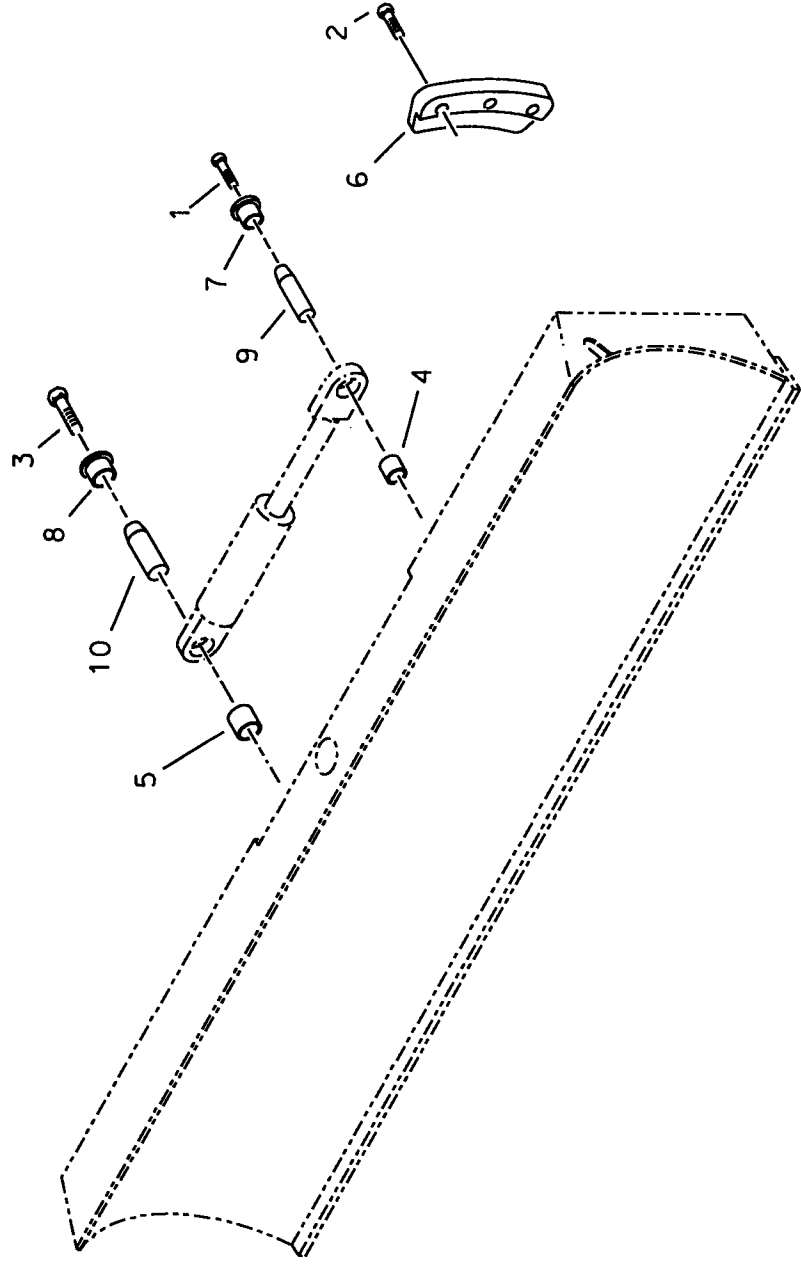


BACKFILL BLADE HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-499	6	BOLT (3/4-NC X 1-3/4")	
2.	105-969	4	FLG BOLT (5/8-NC X 1-1/2", GD 8)	
3.	106-096	2	FLG BOLT (1/2-NC X 1-3/4", GD 8)	
4.	106-098	1	FLANGE BOLT (3/4-NC X 2", GD 8)	
5.	115-782	2	FRICTION WASHER (8.28")	
6.	125-754	1	COMPOSITION BUSHING	
7.	125-771	2	COMPOSITION BUSHING	
8.	125-772	2	COMPOSITION BUSHING	
9.	125-773	3	COMPOSITION BUSHING	
10.	125-780	1	COMPOSITION BUSHING	
11.	314-142	1	TOP BOLT PLATE	
12.	315-040	1	LIFT ARM	
13.	181-974	2	TAPERED INSERT (1.5")	
14.	181-975	2	TAPERED INSERT (1.75")	
15.	181-982	2	TAPERED INSERT (1.25")	
16.	183-587	2	TAPERED PIN (1.25" X 3")	
17.	183-608	2	TAPERED PIN (1.5" X 3.75")	
18.	183-610	1	TAPERED PIN (2" X 6.9")	
19.	183-611	1	TAPERED PIN (1.75" X 4")	
20.	183-612	1	TAPERED PIN (1.75" X 16")	
21.	184-064	1	TAPERED INSERT (2")	
22.	314-076	1	BACKFILL BLADE PIVOT	
23.	XXX-XXX	1	BACKFILL BLADE (80")	
24.	151-056	1	CYL (3.5" X 1.75" X 8.0")	

FOOTNOTES

BACK FILL BLADE TILT

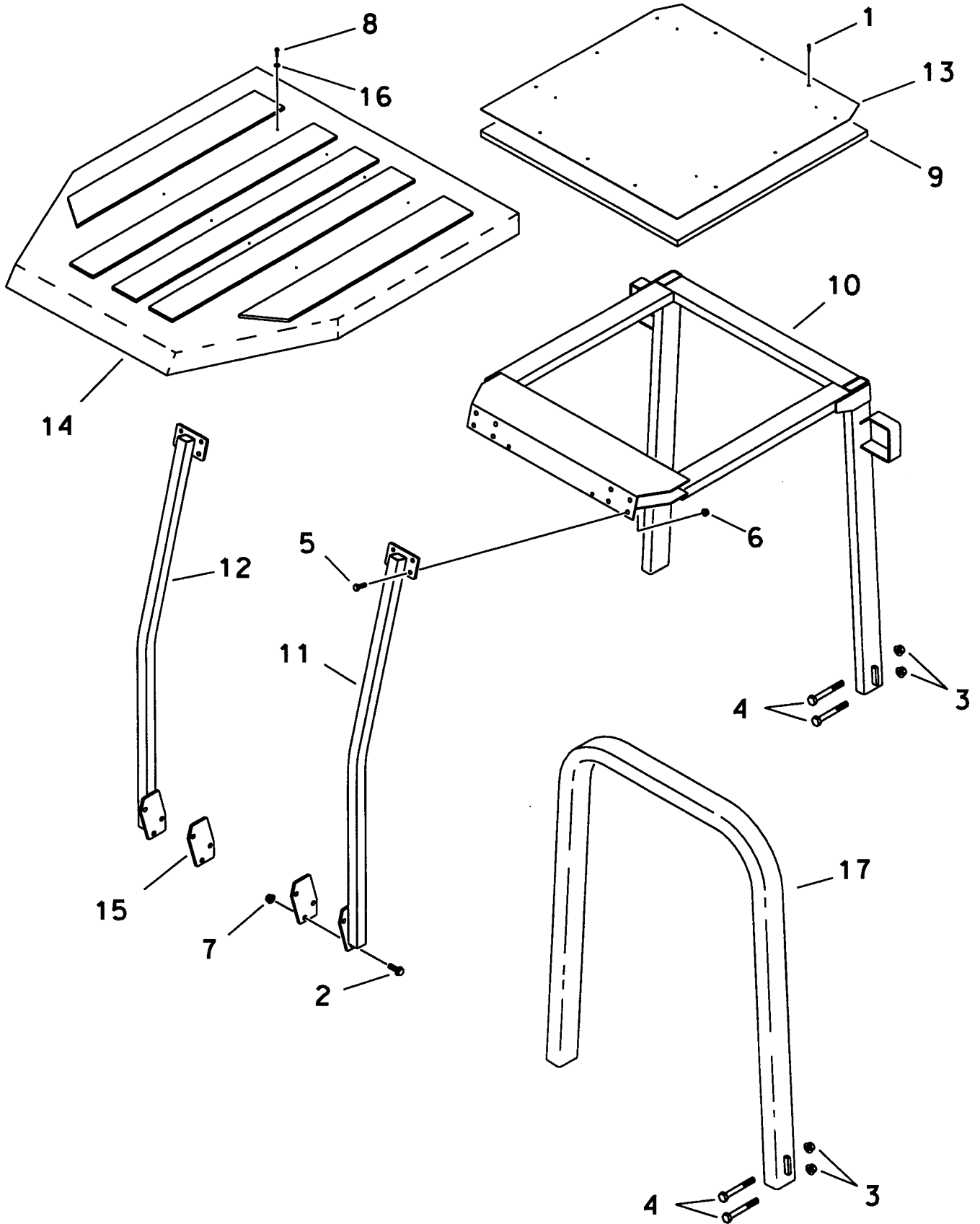


BACK FILL BLADE TILT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-874	1	FLG LK BOLT (3/8-NC X 1-1/2")	
2.	105-885	6	FLG LK BOLT (1/2-NC X 2")	
3.	106-096	1	FLG BOLT (1/2-NC X 1-3/4", GD8)	
4.	125-770	1	COMPOSITION BUSHING	
5.	125-771	1	COMPOSITION BUSHING	
6.	314-104	2	TILT BLADE RETAINER	
7.	181-981	1	TAPERED INSERT (1.000")	
8.	181-982	1	TAPERED INSERT (1.250")	
9.	183-584	1	TAPERED PIN (1.000" X 2.440")	
10.	183-613	1	TAPERED PIN (1.250" X 3.500")	

FOOTNOTES

ROPS

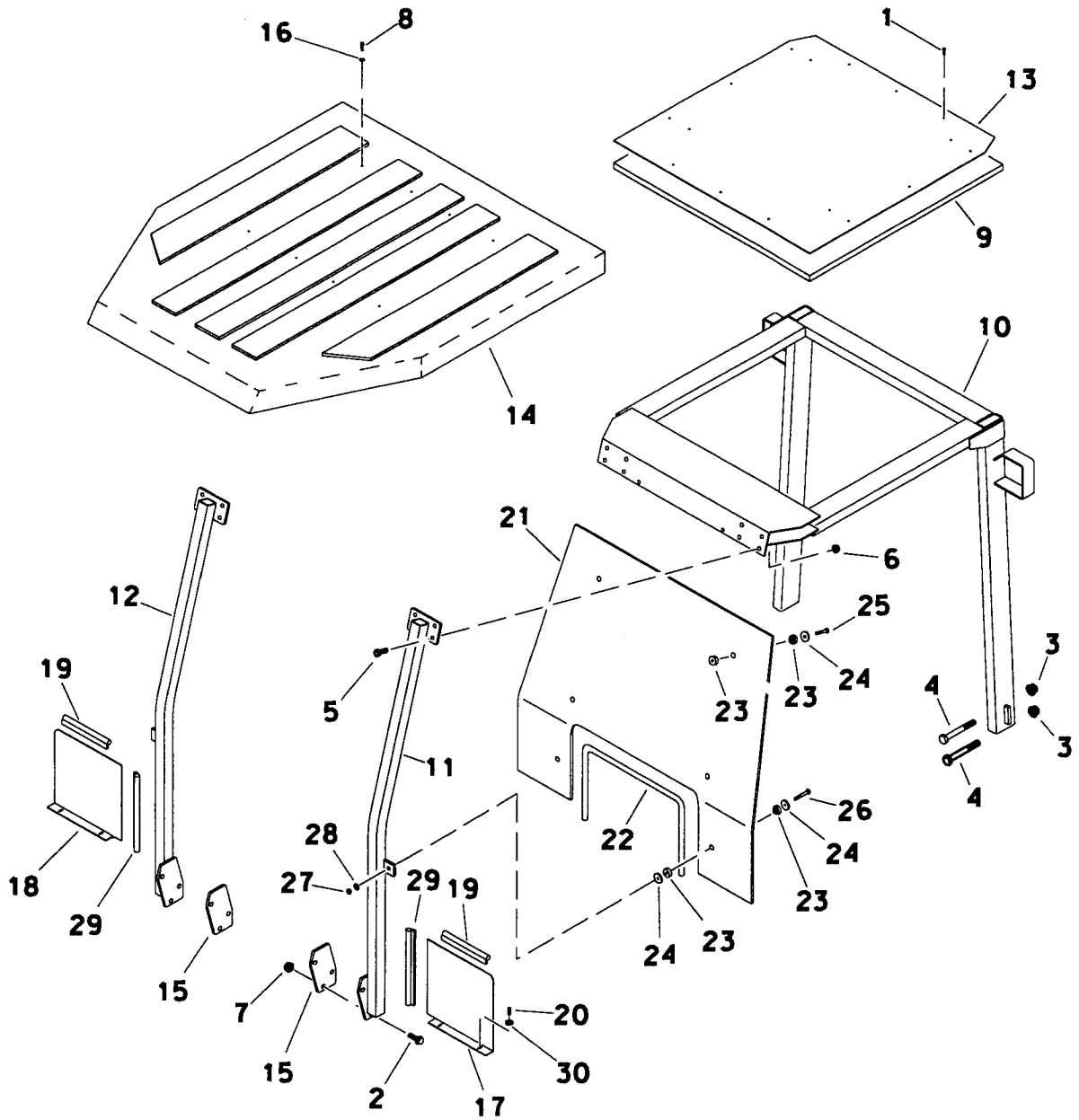


ROPS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-444		4-POST ROPS CONVERSION KIT	
	190-402		2-POST ROPS CONVERSION KIT	INCLUDES REF# 3, 4 & 17
1.	105-221	12	SCREW (#14-10 X 1-1/2")	
2.	105-302	6	BOLT (5/8-NC X 2")	
3.	105-340	4	FLG LOCKNUT (3/4-NC)	
4.	105-383	4	BOLT (3/4-NC X 6")	
5.	105-830	8	FLG LK BOLT (1/2-NC X 1-1/4")	
6.	105-833	8	FLG LOCKNUT (1/2-NC)	
7.	105-357	6	LOCKNUT (5/8-NC)	
8.	106-010	4	FLG SCREW (5/16-NC X 3/4")	
9.	116-397	1	HEADLINER INSULATION	(39 3/4 " X 40 1/2 ")
10.	306-267	1	REAR ROPS FRAME	
11.	306-268	1	LEFT FRONT LEG	
12.	306-269	1	RIGHT FRONT LEG	
13.	306-271	1	FOPS PLATE	
14.	306-266	1	CANOPY	
15.	314-152	2	LOWER BOLT SPACER	
16.	505-114	4	THRUST WASHER	
17.	306-249	1	2-POST ROPS FRAME	

FOOTNOTES

4 POST ROPS & WINDSHIELD QUIET PACKAGE

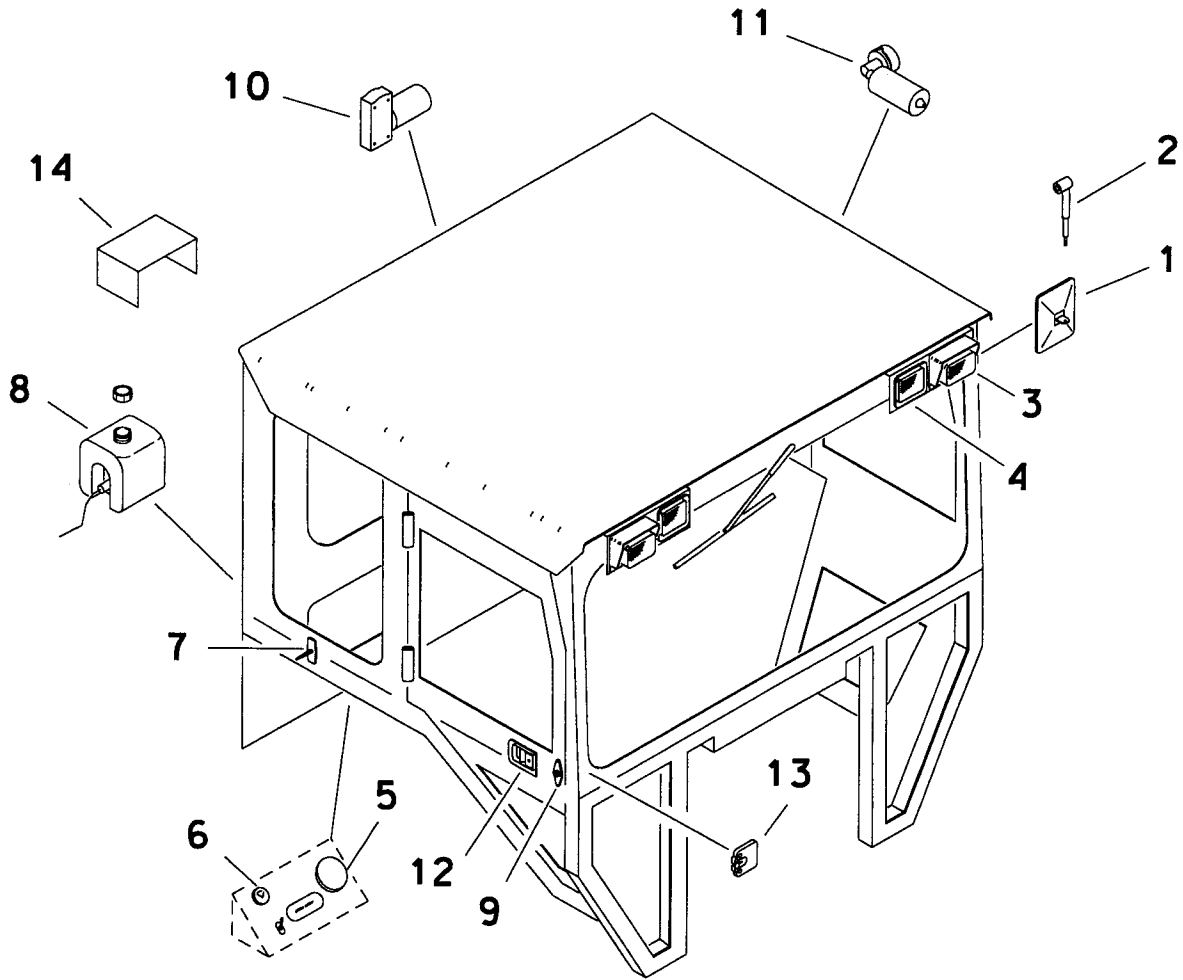


4 POST ROPS & WINDSHIELD QUIET PACKAGE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-221	12	SCREW (#14-10 X 1-1/2")	
2.	105-302	6	BOLT (5/8-NC X 2", GO 8)	
3.	105-340	4	FLG LOCKNUT (3/4-NC)	
4.	105-383	4	BOLT (3/4-NC X 6")	
5.	105-830	8	FLG LK BOLT (1/2-NC X 1-1/4")	
6.	105-833	8	FLG LOCKNUT (1/2-NC)	
7.	105-357	6	LOCKNUT (5/8-NC)	
8.	106-010	4	FLG SCREW (5/16-NC X 3/4")	
9.	116-397	1	HEADLINER INSULATION	(39 3/4 " X 40 1/2 ")
10.	306-267	1	REAR ROPS FRAME	
11.	306-288	1	FRONT LEFT LEG (QT)	
12.	306-289	1	FRONT RIGHT LEG (QT)	
13.	306-271	1	FOPS PLATE	
14.	306-266	1	CANOPY	
15.	314-152	2	LOWER BOLT SPACER	
16.	505-114	4	THRUST WASHER	
17.	315-226	1	LEFT WINDSHIELD EXTENSION	
18.	315-227	1	RIGHT WINDSHIELD EXTENSION	
19.	116-282	AR	EDGING (1/16")	USE ----"
20.	105-231	4	SCREW (1/4-NC X 3/4")	
21.	115-874	1	WINDSHIELD	
22.	116-461	AR	EDGING W/SEAL (3/8")	USE ----"
23.	116-142	6	SHOCK MOUNT	
24.	105-069	8	WASHER (3/8")	
25.	105-075	4	BOLT (3/8-NC X 2")	
26.	105-183	2	BOLT (3/8-NC X 2-1/2", GO 8)	
27.	105-047	2	LOCKNUT (3/8-NC)	
28.	105-118	2	WASHER (3/8")	
29.	116-421	AR	EDGING (1/8")	USE ----"
30.	105-095	4	WASHER (1/4")	

FOOTNOTES

CAB
7520/8020



CAB
7520/8020

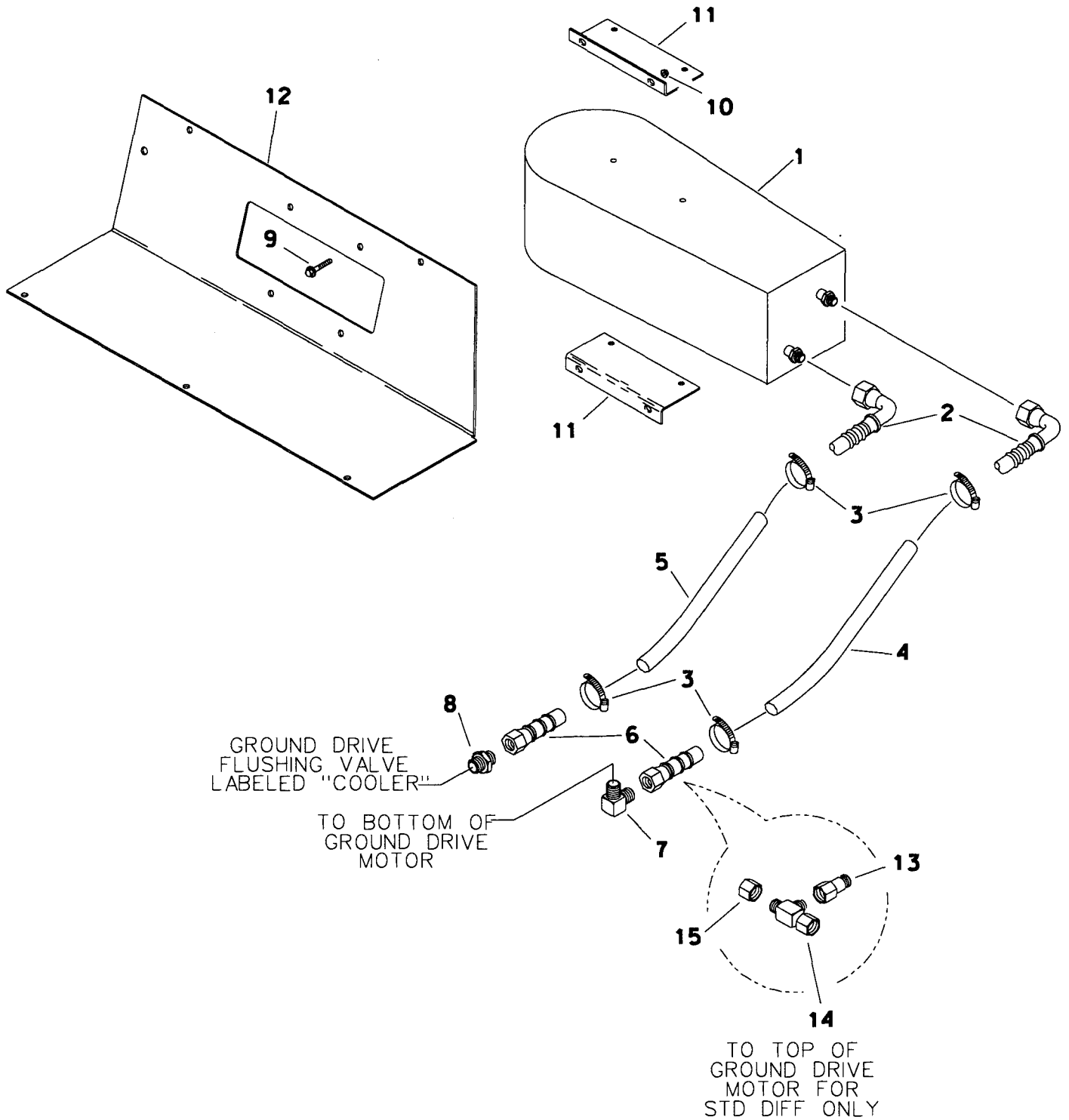
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	100-753		CAB	INC REF #'S 1-13
1.	110-603	2	MIRROR HEAD	
2.	110-604	2	MIRROR ARM	
3.	217-057	2	WORKING LIGHT	
4.	217-058	2	WARNING LIGHT	
5.	217-059	1	INTERIOR LIGHT	
6.	217-733	1	WIPER/WASHER SWITCH	
7.	502-047	1	DOOR HOLDER PLUNGER	
8.	502-048	1	WASHER KIT	
9.	502-056	1	DOOR HOLDER SOCKET	
10.	502-050	1	WIPER MOTOR (2 SPEED)	
11.	502-051	1	WIPER MOTOR (1 SPEED)	
12.	502-052	1	LEFT OUTSIDE HANDLE	
	502-054	1	RIGHT OUTSIDE HANDLE	
	502-057		HANDLE GASKET	
13.	502-053	1	LEFT LATCH ASSEMBLY	
	502-055	1	RIGHT LATCH ASSEMBLY	
	502-057		HANDLE GASKET	
14.	502-058	1	4 SPOOL VALVE COVER	
	502-059	1	1 SPOOL VALVE COVER	

NOT SHOWN:

502-049 2 LATCH STUD

FOOTNOTES

CAB HEATER
BEFORE SERIAL NUMBER 5R0205



CAB HEATER

BEFORE SERIAL NUMBER 5R0205

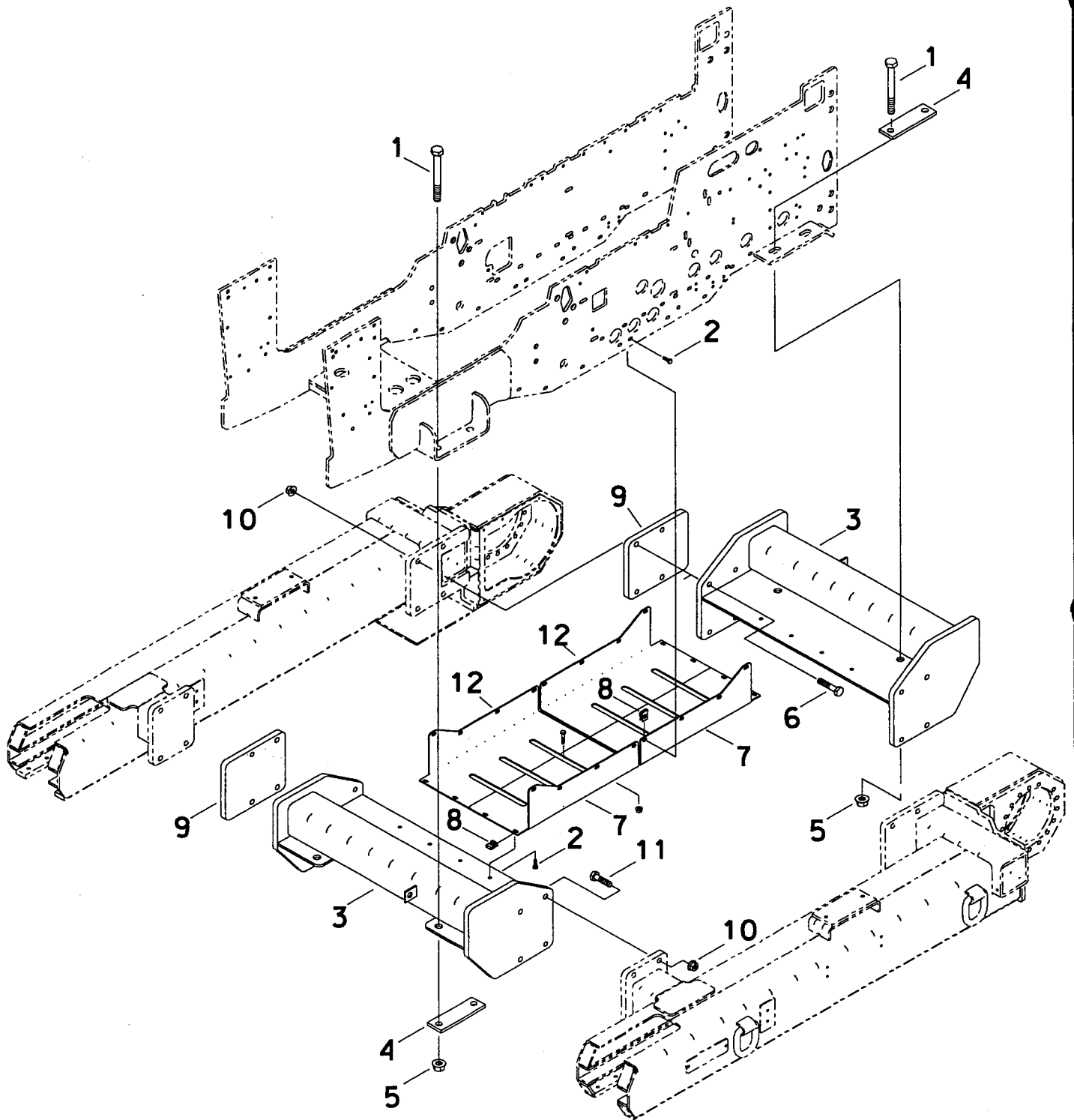
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	100-754		ELECTRIC HEATER CONVERSION KIT	
1.	215-204	1	HEATER	
2.	154-208	2	COUPLER (12S-5/80D90)	
3.	110-026	4	WORM CLAMP (1/2" TO 1-1/4")	
4.	116-044	AR	BULK HOSE (5/8", SOLD PER 1")	
5.	116-044	AR	BULK HOSE (5/8", SOLD PER 1")	
6.	510-301	2	COUPLER (10RSX5/80D,STR)	
7.	154-323	1	CONNECTOR (100-08S90)	
8.	154-391	1	CONNECTOR (08S-100)	
9.	105-823	4	FLG LK BOLT (5/16-NC X 3/4")	
10.	105-003	4	FLG LOCKNUT (5/16-NC)	
11.	363-208	2	BRACKET (HEATER)	
12.	362-732	1	ACCESS COVER (HEATER)	
13.	154-262	1	REDUCER (060-080F)	SEE FOOTNOTE 1
14.	154-266	1	RUN TEE (080FX-080-080)	SEE FOOTNOTE 1
15.	154-327	1	CAP (080F)	SEE FOOTNOTE 1

FOOTNOTES

- REF NO. 13-15 USED ONLY WITH STANDARD DIFFERENTIAL (BEGINS WITH S/N 5N0686). WILL REPLACE (1) REF NO. 6, REF NO. 7, AND WILL BE REROUTED TO TOP OF GROUND DRIVE MOTOR

TRACK COMPONENTS

UNDERCARRIAGE MOUNT AND BELLYPAN

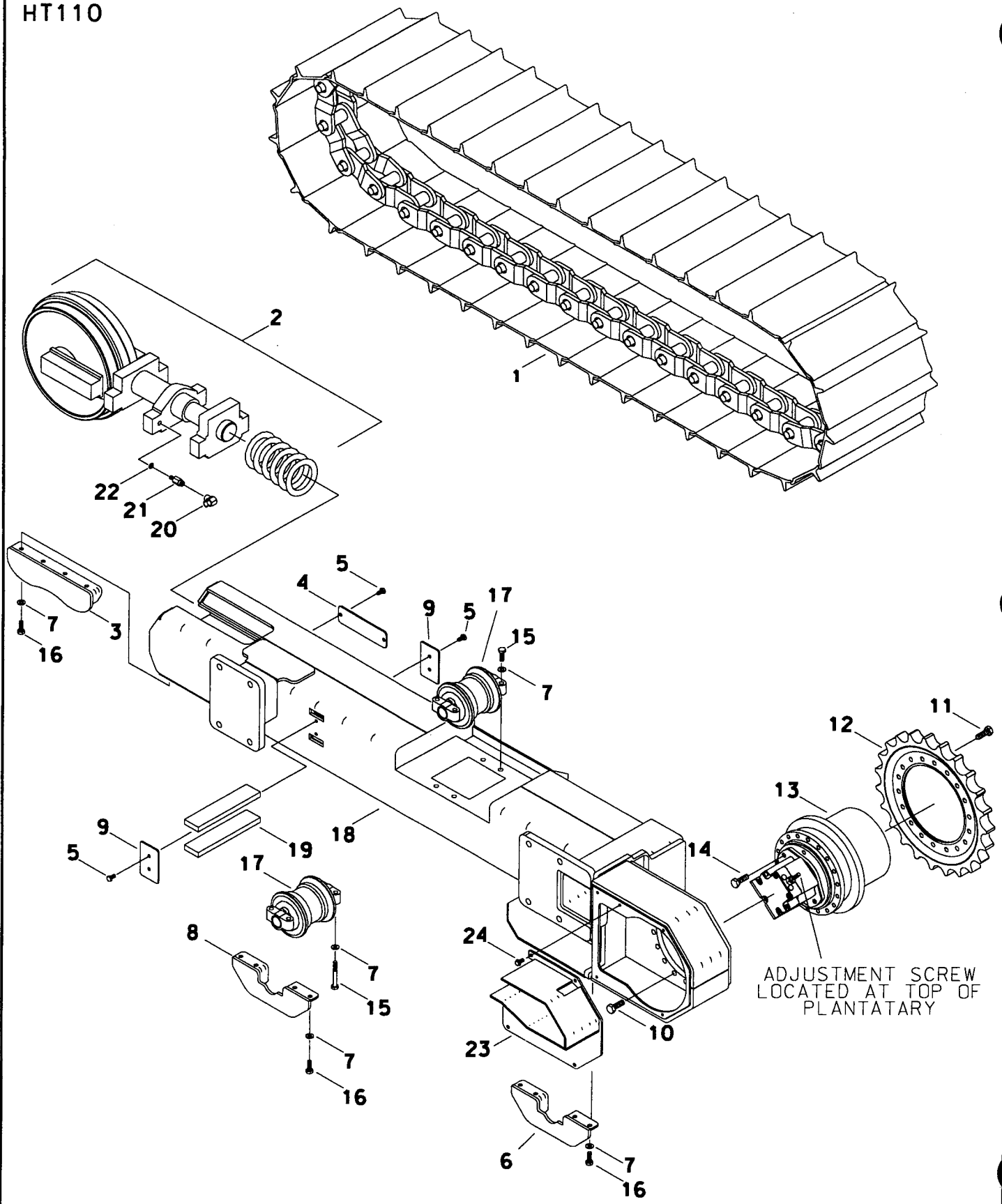


UNDERCARRIAGE MOUNT AND BELLYPAN

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-973	8	BOLT (1-NC X 9")	
2.	105-827	24	SCREW (3/8-NC X 1-1/4")	
3.	303-692	2	UNDERCARRIAGE MOUNT	
4.	305-473	4	MOUNT	
5.	105-919	8	FLG NUT (1-NC)	
6.	106-610	8	SCREW (M20-2.50 X 100mm, 10.9)	
7.	309-959	2	2 PC BELLY PAN	
8.	106-719	24	CLIP NUT (3/8-NC)	
9.	303-693	2	SPACER PLATE	
10.	106-356	16	FLG NUT (M20-2.50, 10.9)	
11.	107-127	8	SCREW (M20-2.50 X 80mm, 10.9)	
12.	309-958	2	2 PC BELLY PAN	

FOOTNOTES

TRACK GROUP (STEEL)
HT110



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TRACK GROUP (STEEL)

HT110

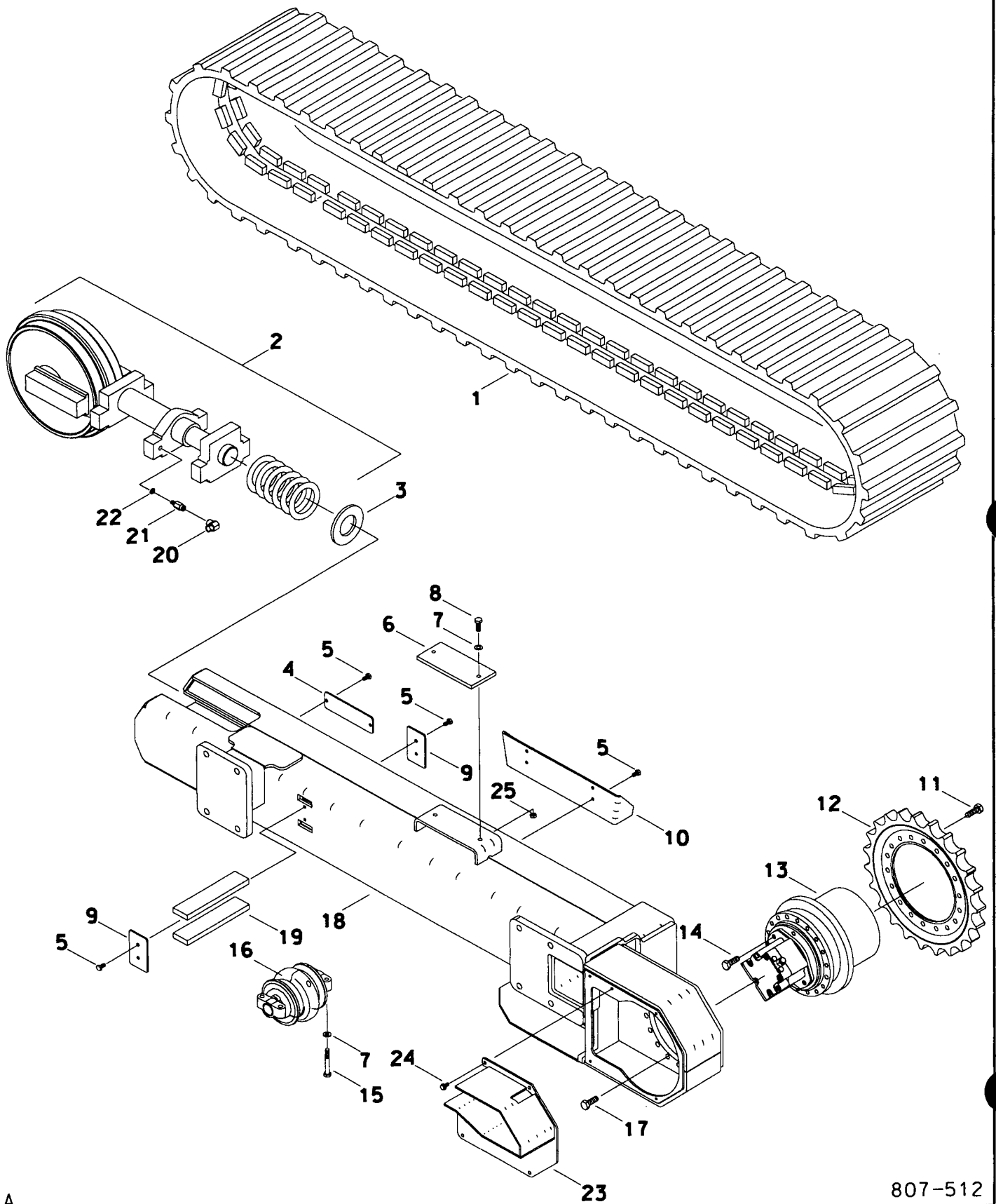
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	305-869	2	STEEL TRACK	
2.	349-006	2	IDLER	
3.	306-563	4	FRONT GUARD	
4.	349-330	2	COVER	
5.	106-382	12	FLG LK SCREW (M10-1.5 X 20mm)	
6.	309-887	2	INSIDE REAR WEAR BAR	
7.	106-397	112	WASHER (M12, HARDENED)	
8.	309-890	6	MIDDLE GUARD	
9.	349-324	4	COVER	
10.	105-998	34	SCREW (M16-2.00 X 40mm)	
11.	106-340	36	SCREW (M16-2.00 X 50mm)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
12.	142-083	2	SPROCKET (5.515"A21)	GROUND DRIVE
13.	166-202	2	GEARBOX AND DRIVE PLANETARY	GROUND DRIVE
14.	107-116	-	SCREW (M16-2.00 X 40mm)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
15.	106-335	64	SCREW (M12-1.75 X 70mm)	USE LOCTITE 242 OR EQUIVALENT
16.	105-273	48	SCREW (M12-1.75 X 30mm)	
17.	349-002	16	TRACK ROLLER	
18.	309-860	1	RIGHT ROLLER FRAME	
19.	349-333	4	RECOIL STOP BAR	
20.	115-258	2	COUPLER (02NF, BUT)	
21.	115-022	2	ZERK (M16-1.50)	
22.	115-023	2	SEAL WASHER (M17)	
23.	305-567	1	RIGHT COVER	
24.	105-245	8	FLG LK SCREW (M10-1.50 X 25MM)	

NOT SHOWN:

309-861	1	LEFT ROLLER FRAME
305-566	1	LEFT COVER

FOOTNOTES

TRACK GROUP (RUBBER) HT110



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TRACK GROUP (RUBBER)

HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	349-004	2	RUBBER TRACK	
2.	349-006	2	IDLER	
3.	370-382	2	SPACER RING	SEE FOOTNOTE 1
4.	349-330	2	COVER	
5.	106-382	20	FLG LK SCREW (M10-1.5 X 20mm)	
6.	349-314	2	SLIDE PAD	
7.	106-397	60	WASHER (M12, HARDENED)	
8.	106-333	4	SCREW (M12-1.75 X 40mm)	
9.	349-324	4	COVER	
10.	303-703	2	STEP	
11.	106-340	36	SCREW (M16-2.00 X 50mm)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
12.	175-736	2	SPROCKET (5.303"A23)	GROUND DRIVE
13.	166-202	2	GEARBOX AND DRIVE PLANETARY	GROUND DRIVE
14.	107-116	4	SCREW (M16-2.00 X 40mm)	TORQUE TO 240 FT LBS; USE LOCTITE 242 OR EQUIVALENT.
15.	106-335	56	SCREW (M12-1.75 X 70mm)	USE LOCTITE 242 OR EQUIVALENT
16.	129-004	14	TRACK ROLLER	
17.	105-998	34	SCREW (M16-2.00 X 40mm)	
18.	309-860	1	RIGHT ROLLER FRAME	
19.	349-325	4	RECOIL STOP BAR	
20.	115-258	2	COUPLER (02NF, BUT)	
21.	115-022	2	ZERK (M16-1.50)	
22.	115-023	2	SEAL WASHER (M17)	
23.	305-567	1	RIGHT COVER	
24.	106-654	8	FLG LK SCREW (M10-1.50 X 16mm)	
25.	106-685	4	LOCKNUT (M12-1.75, PRV TRQ)	

NOT SHOWN:

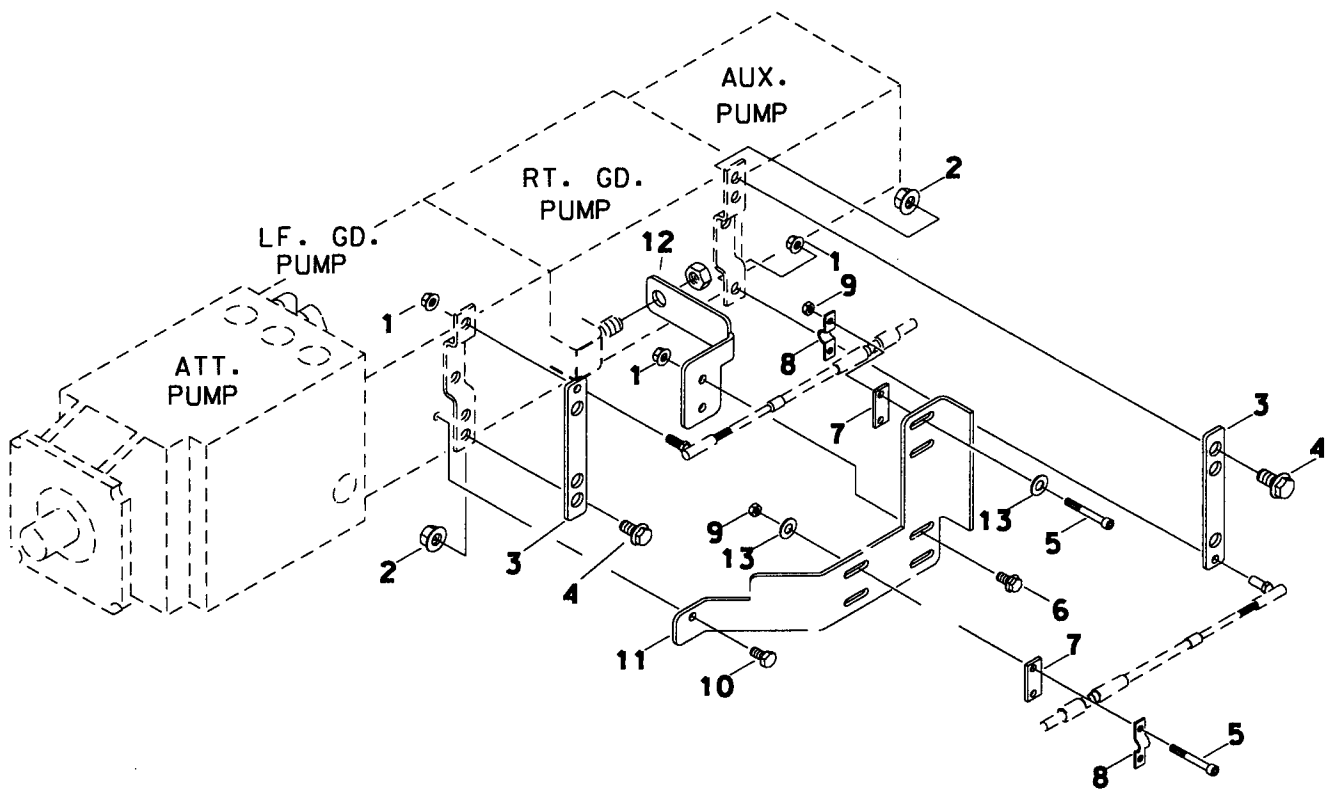
309-861	1	LEFT ROLLER FRAME
305-566	1	LEFT COVER

FOOTNOTES

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

CONTROL COMPONENTS

GROUND DRIVE CONTROLS HT110



GROUND DRIVE CONTROLS

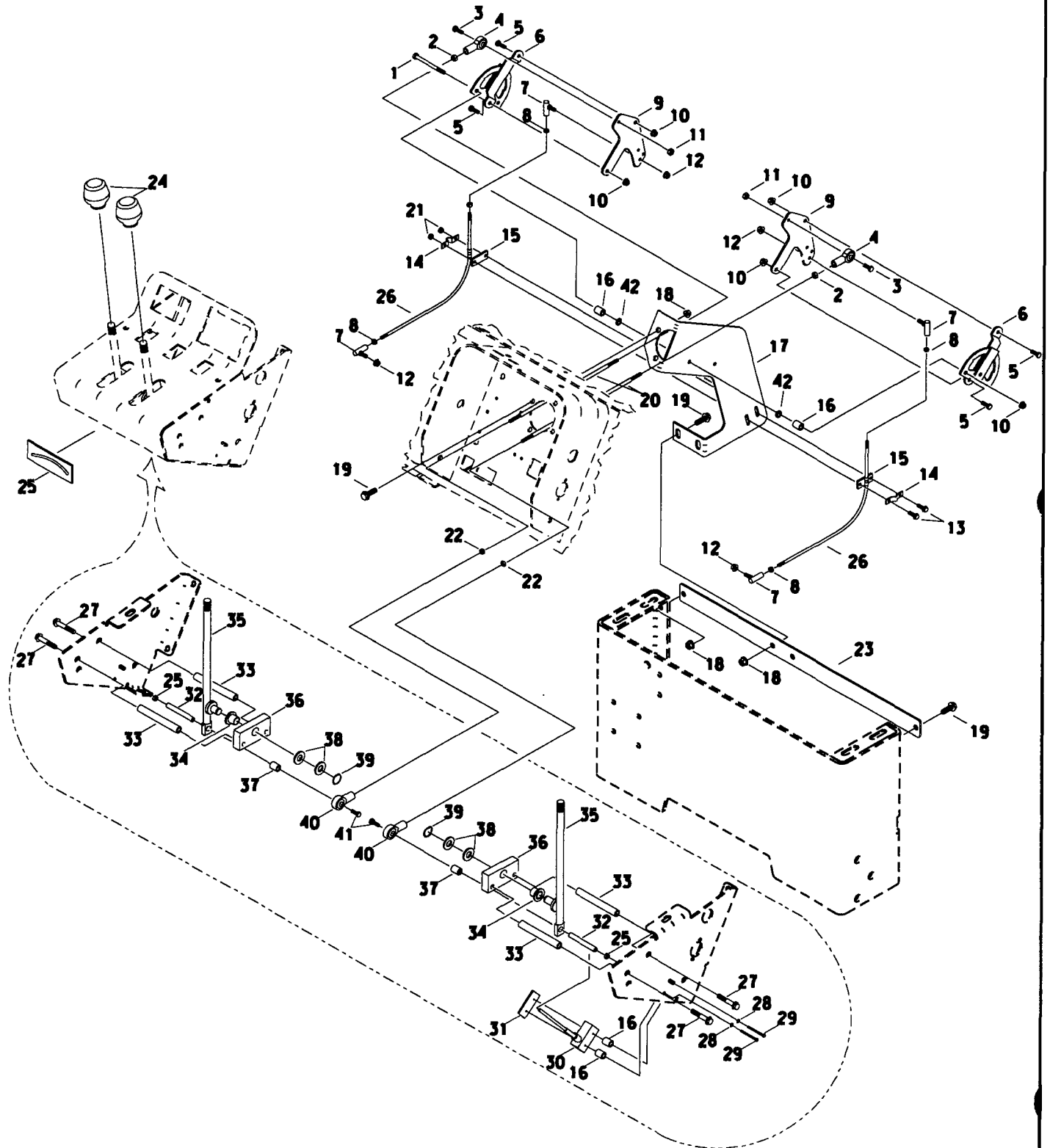
HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-154	4	FLG LOCKNUT (1/4-NF)	
2.	105-834	2	FLG LOCKNUT (3/8-NC)	
3.	303-853	2	HANDLE PLATE	
4.	106-428	4	SCREW (M5-0.80 X 14MM, SOC)	
5.	106-425	4	SCREW (M5-0.80 X 40mm, ALN)	
6.	106-114	2	FLG LK BOLT (1/4-NF X 1/2")	
7.	331-166	2	BOLT-ON BACK-UP (.360")	
8.	110-697	2	BOLT-ON CLAMP (.360")	
9.	106-138	4	NUT (M5-0.80)	
10.	105-836	1	FLANGE BOLT (1/4-NC X 1/2")	
11.	303-857	1	CABLE BRACKET	
12.	303-856	1	BRACKET MOUNT	
13.	106-388	4	WASHER (M6)	

FOOTNOTES

TRACK DRIVE CONTROLS

HT110



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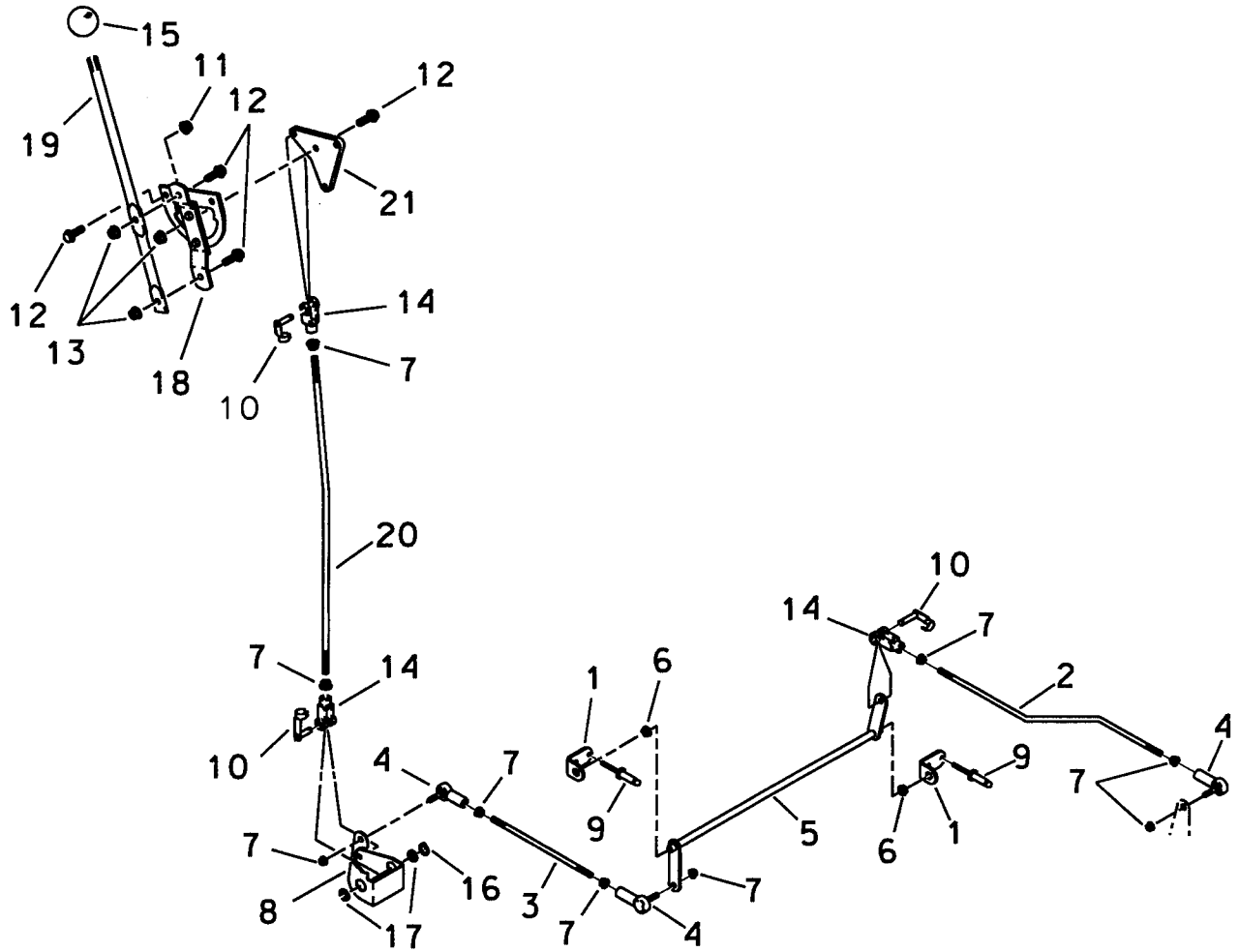
TRACK DRIVE CONTROLS

HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-566	2	SCREW (M6-1.00 X 70mm)	
2.	105-878	2	NUT (1/4-NF, LH)	
3.	105-865	2	BOLT (1/4-NC X 3/4, GD8)	
4.	110-282	2	ROD END (1/4-NF, FM LH)	
5.	106-231	4	SCREW (M6-1.0 X 16mm)	
6.	196-131	2	FRICTION CONTROL	
7.	110-318	4	BALL JOINT (#10-32, FM)	
8.	506-021	4	NUT (#10-32)	
9.	331-733	2	STEERING PIVOT PLATE	
10.	106-385	6	FLG LOCKNUT (M6-1.00)	
11.	105-085	2	LOCKNUT (1/4-NC)	
12.	106-154	4	FLG LOCKNUT (1/4-NF)	
13.	105-810	2	SCREW (#10-24 X 7/8", ALN)	
14.	110-697	2	BOLT-ON CLAMP (.360")	
15.	331-166	2	BOLT-ON BACK-UP (.360")	
16.	331-062	8	LEVER STOP	
17.	303-947	1	BRACKET	
18.	106-386	6	FLG LOCKNUT (M8-1.25)	
19.	106-162	6	FLG SCREW (M8-1.25 X 20mm, 8.8)	
20.	365-341	2	THREADED ROD	
21.	106-048	2	NUT (#10-24)	
22.	105-152	2	NUT (1/4-NF)	
23.	303-950	1	STIFFENER	
24.	110-487	2	KNOB (1/2-NC, ORANGE)	
25.	106-353	2	FLG NUT (M6-1.00)	
26.	196-295	2	TRACK CABLE (78")	
27.	106-160	4	FLG SCREW (M8-1.25 X 120mm)	
28.	106-013	4	WASHER (3/16")	
29.	106-571	4	BOLT (#6-32 X 2-1/4", RD SLT)	
30.	217-703	2	OMNI LEVER SWITCH	
31.	106-169	2	SPEED NUT BAR (#6-32)	
32.	178-259	2	SPACER	
33.	178-248	4	SPACER	
34.	125-447	2	FLG BRONZE BUSHING (.502")	
35.	365-347	2	LEVER	
36.	331-735	2	LEVER PIVOT PLATE	
37.	184-820	2	SPACER	
38.	110-096	4	MACHINERY BUSHING (1/2")	
39.	115-482	2	GRIP RING (.500")	
40.	110-281	2	ROD END (1/4-NF, FM)	
41.	106-215	2	BOLT (1/4-NC X 4")	
42.	105-117	4	WASHER (5/16")	

FOOTNOTES

THROTTLE

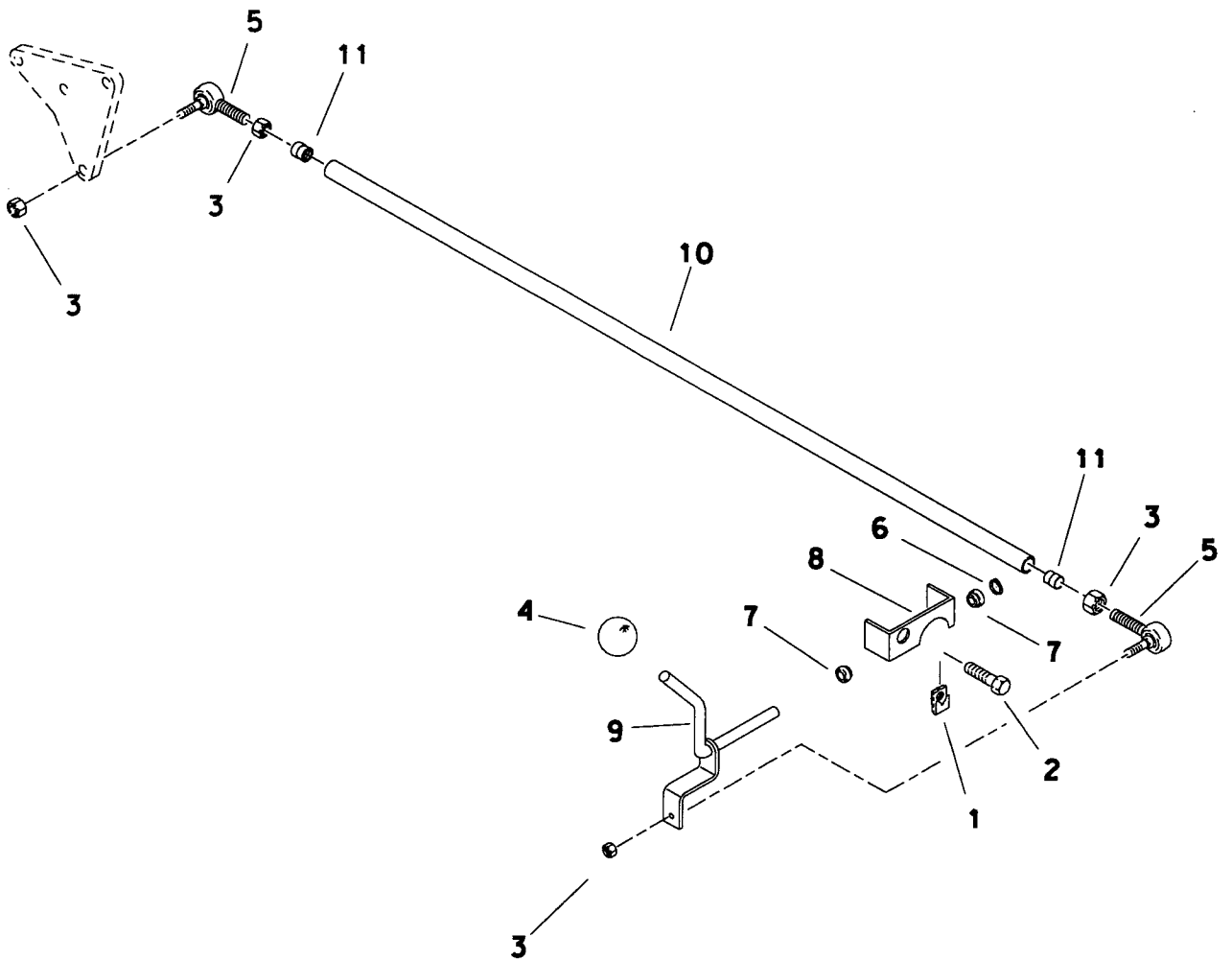


THROTTLE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	315-218	2	MOUNT (BELL CRANK)	
2.	315-256	1	THROTTLE ROD	
3.	365-203	1	CONNECTOR ROD	
4.	110-131	3	BALL JOINT (1/4-NF)	
5.	365-199	1	BELL CRANK	
6.	125-798	2	BEARING BUSHING (NYLINER)	
7.	106-154	9	FLG LOCKNUT (1/4-NF)	
8.	365-146	1	THROTTLE BELL CRANK	
9.	110-253	4	POP RIVET (3/16" X 1/2")	
10.	110-297	3	SPG CLEVIS PIN (1/4" X 11/16")	
11.	105-078	2	NUT (1/4-NC)	
12.	105-820	6	FLG LK BOLT (1/4-NC X 3/4")	
13.	105-832	4	FLG LOCKNUT (1/4-NC)	
14.	110-067	3	CLEVIS (1/4-NF)	
15.	110-519	1	KNOB (1/2-NC, ORANGE)	
16.	115-482	1	EXTERNAL GRIP RING	
17.	125-779	2	BEARING BUSHING (NYLINER)	
18.	196-130	1	FRICTION CONTROL	
19.	365-128	1	THROTTLE HANDLE	
20.	365-130	1	PRIMARY THROTTLE ROD	
21.	365-142	1	THROTTLE OUTPUT LEVER	

FOOTNOTES

REMOTE CONTROL



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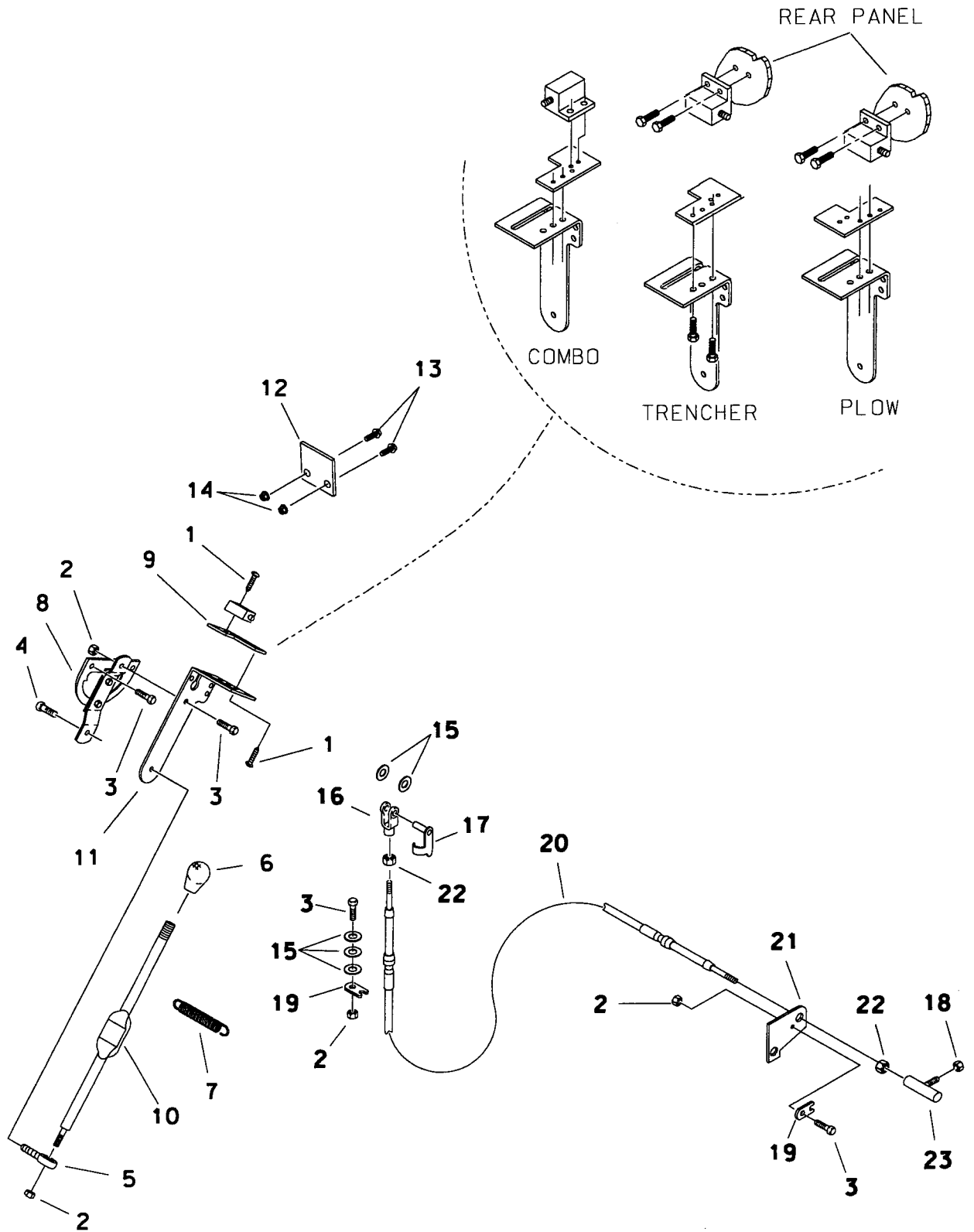
804-548

REMOTE CONTROL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-137	2	CLIPNUT (5/16-NC)	
2.	105-823	2	FLG LK BOLT (5/16-NC X 3/4")	
3.	106-154	4	FLG LOCKNUT (1/4-NF)	
4.	110-519	1	KNOB (1/2-NC, ORG)	
5.	110-565	2	ROD END (1/4-NF)	
6.	115-482	1	EXT GRIP RING	
7.	125-779	2	BUSHING	
8.	363-203	1	THROTTLE BRACKET	
9.	365-490	1	REMOTE THROTTLE LEVER	
10.	365-492	1	REMOTE THROTTLE ROD	
11.	106-152	2	NUTSERT (1/4-NF)	

FOOTNOTES

ATTACHMENT PUMP CONTROLS HT110



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ATTACHMENT PUMP CONTROLS

HT110

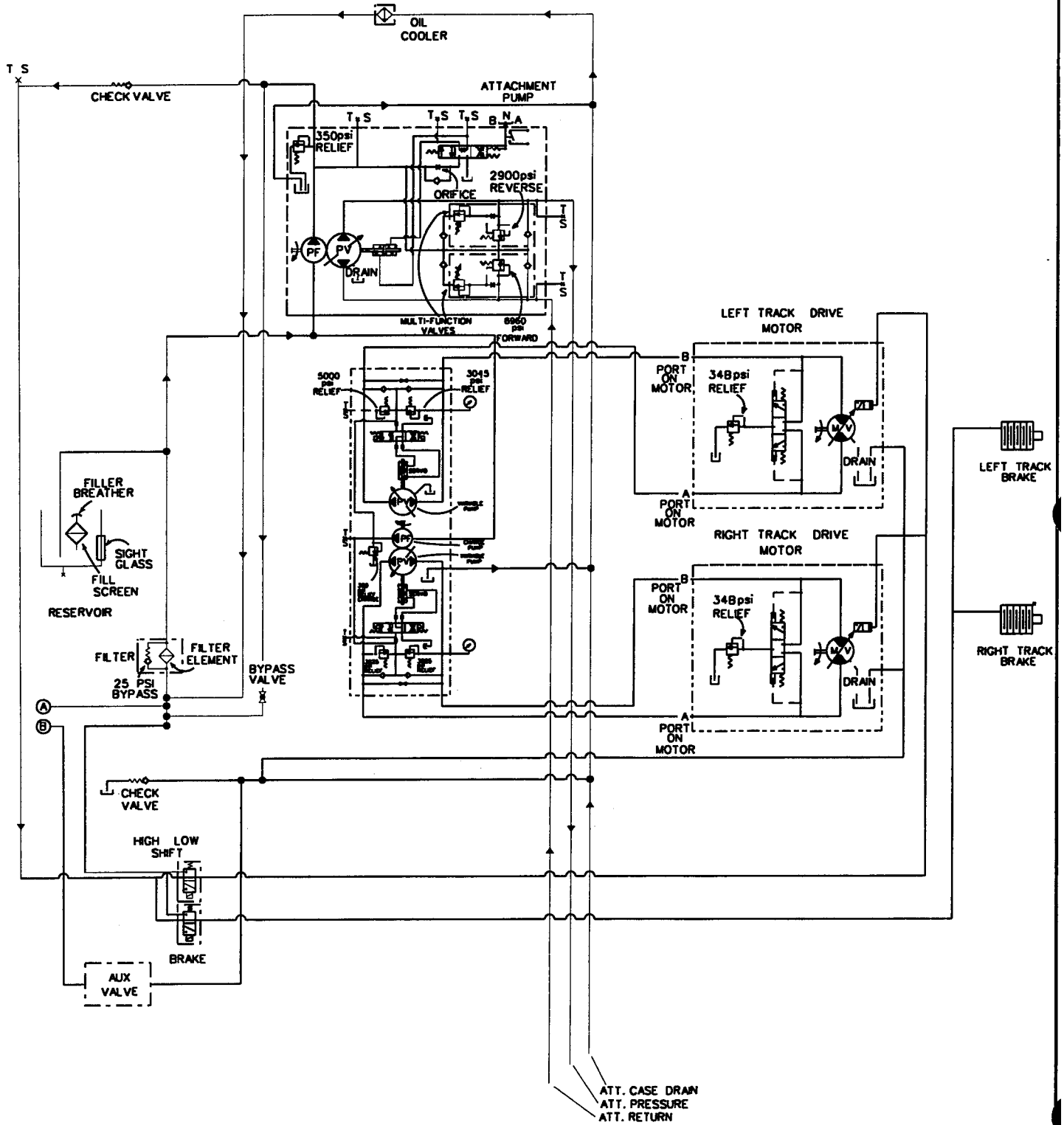
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-214	4	FLG SCREW (#10-24 X 1/2")	
2.	105-832	8	FLG LOCKNUT (1/4-NC)	
3.	105-836	7	FLG LK BOLT (1/4-NC X 1/2")	
4.	106-114	1	FLG LK BOLT (1/4-NF X 1/2")	
5.	110-281	1	ROD END (1/4-NF)	
6.	110-375	1	KNOB (1/2-NC, YEL)	
7.	115-649	1	EXTENSION SPRING	
8.	196-131	1	FRICTION CONTROL	
9.	314-137	1	SWITCH MOUNT	
10.	365-129	1	PUMP CONTROL LEVER	
11.	365-144	1	PUMP CONTROL OUTPUT LEVER	
12.	315-250	1	CONTROL STOP	SEE FOOTNOTE 1
13.	105-826	2	FLG LK BOLT (3/8-NC X 1")	SEE FOOTNOTE 1
14.	105-814	2	FLG LOCKNUT (3/8-NC)	SEE FOOTNOTE 1
15.	105-284	5	WASHER (3/16")	
16.	110-517	1	CLEVIS (#10-32)	
17.	110-297	1	SPG CLEVIS PIN (1/4" X 11/16")	
18.	106-154	2	FLG LOCKNUT (1/4-NF)	
19.	110-522	2	CONDUIT CLAMP	
20.	194-091	1	CONTROL CABLE	
21.	345-227	1	PUMP CABLE CONTROL BRACKET	
22.	506-021	1	NUT (#10-32)	
23.	110-318	1	BALL JOINT (#10-32)	

FOOTNOTES

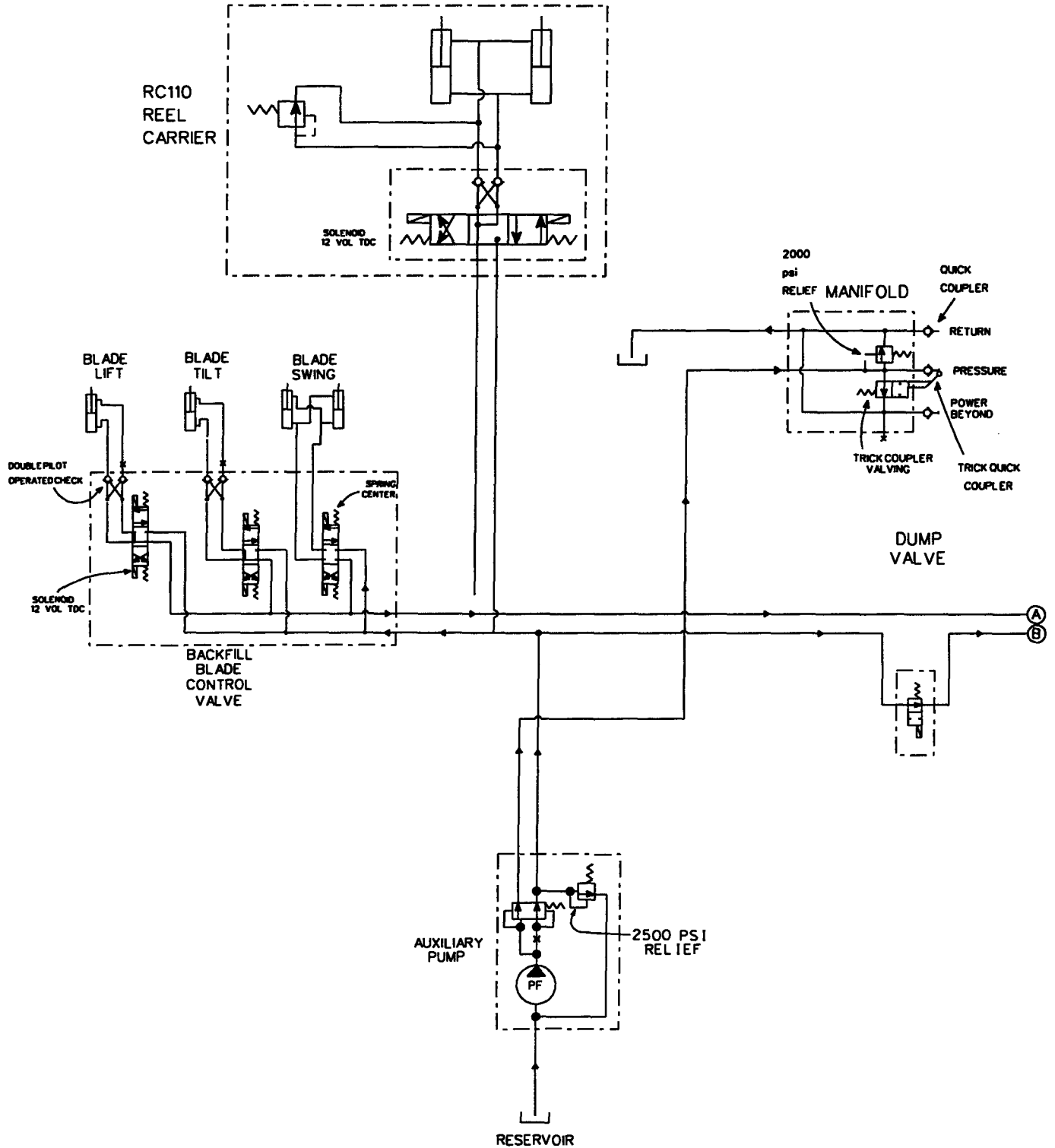
1 USED WITH H830 AND H850 PLOW/COMBO, ADJUST VIBRATOR SPEED TO 1650 MAX

HYDRAULICS

HYDRAULIC SCHEMATIC GROUND DRIVE AND ATTACHMENT CIRCUIT



HYDRAULIC SCHEMATIC GROUND DRIVE AND ATTACHMENT CIRCUIT

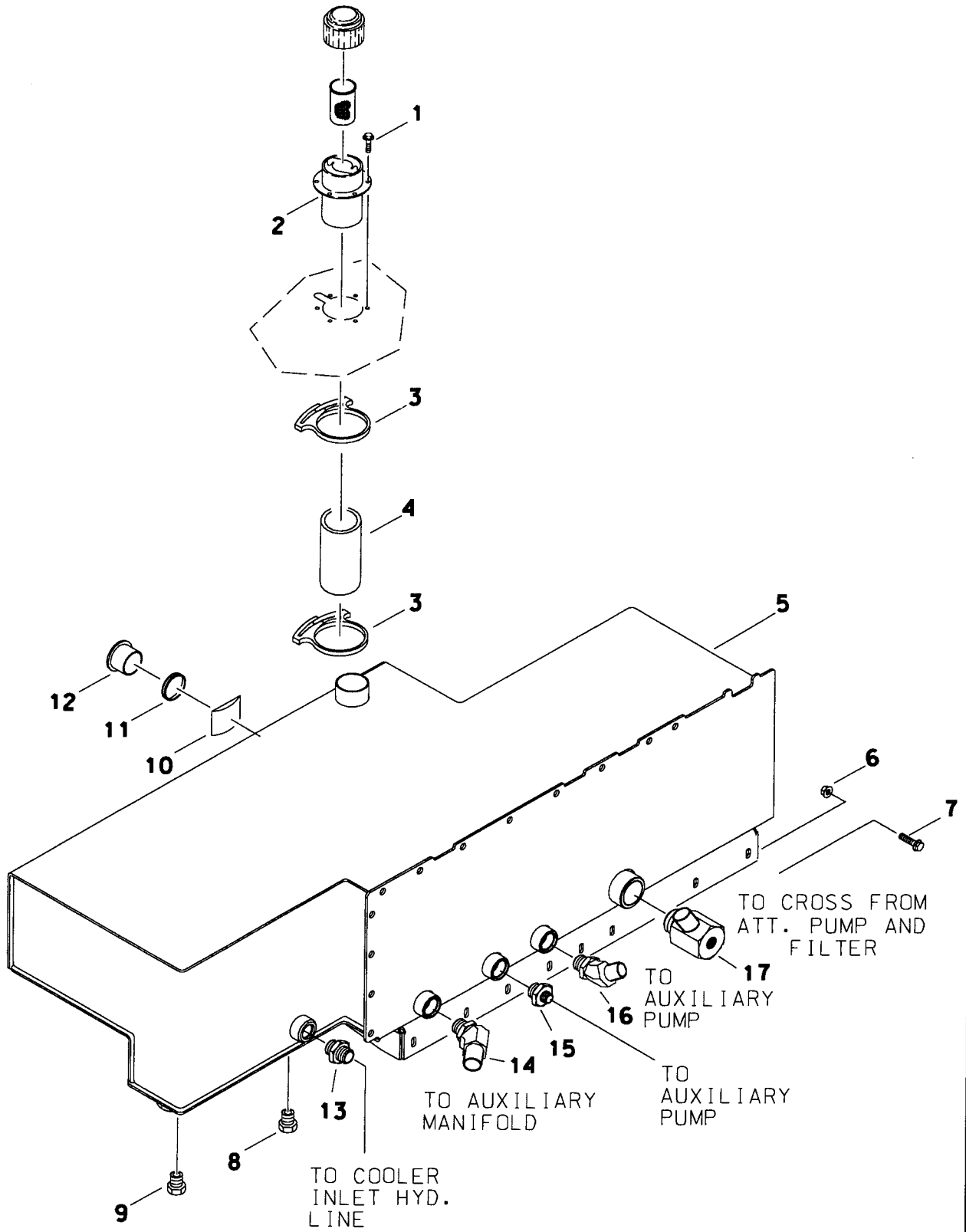


HYDRAULIC SCHEMATIC GROUND DRIVE AND ATTACHMENT CIRCUIT

SPECIFICATIONS

ENGINE		PUMP			MOTOR	
MFG (NO LOAD)	RPM	TYPE	GPM	DISPLACEMENT	TYPE	DISPLACEMENT
4045TF150	2250	GROUND DRIVE		in. ³	GROUND DRIVE HIGH LOW	2.81 1.50
		FRONT	27.3	2.8 in. ³		
		REAR	27.3	2.8 in. ³		
		CHARGE	13.6	13.6 in. ³		
		ATTACHMENT	44.5	4.57 in. ³		
CHARGE	11.7	1.20 in. ³				

HYDRAULIC RESERVOIR HT110



HYDRAULIC RESERVOIR

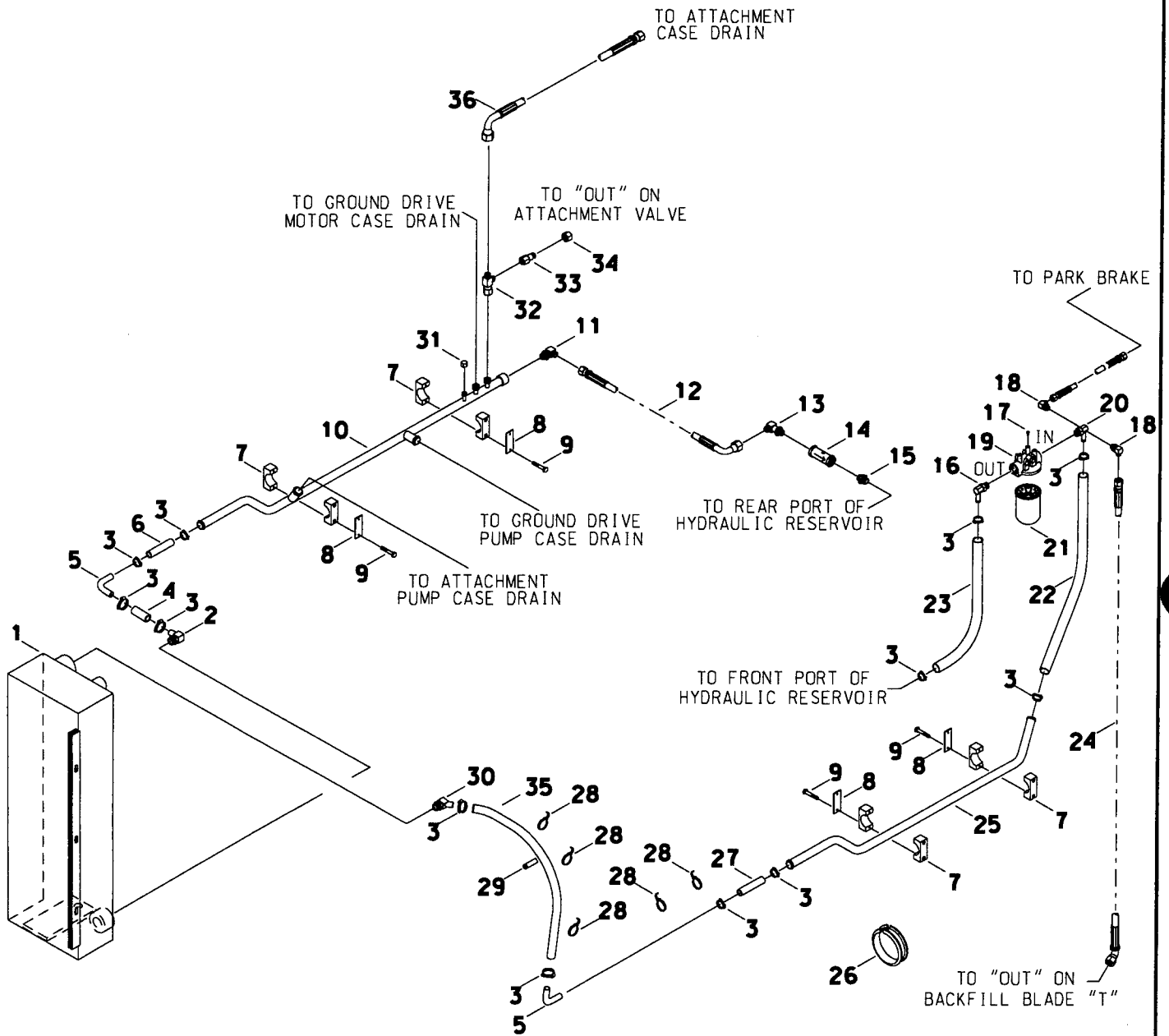
HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-214	6	FLG SCREW (#10-24 X 1/2")	
2.	110-540	1	FILLER BREATHER (2-1/8")	
3.	110-529	2	SNAP-ON CLAMP (2.536" TO 2.881")	
4.	116-552	1	BULK HOSE	USE 4"
5.	153-239	1	HYDRAULIC RESERVOIR	
6.	106-266	13	FLG NUT (M10-1.50)	
7.	106-993	24	FLG LK SCREW (M10-1.50 X 35mm)	
8.	155-184	1	PLUG (16S)	
9.	155-177	1	PLUG (24S)	
10.	360-849	1	REFLECTOR	
11.	115-320	1	GROMMET (1-1/2")	
12.	116-218	1	SIGHT GLASS (2")	
13.	155-152	-	CONNECTOR (12S-120)	
14.	155-230	-	S/O COUPLER (16S-16H45)	
15.	154-307	-	CONNECTOR (16S-080)	
16.	115-281	-	SLIP-ON COUPLER (16S-20H45)	
17.	149-366	-	CROSS (24S-24H-16H-08NF)	

FOOTNOTES

OIL COOLER AND FILTER HYDRAULICS

HT110



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OIL COOLER AND FILTER HYDRAULICS

HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-831	-	OIL COOLER	
2.	154-188	1	S/O COUPLER (16S-16H90)	
3.	110-250	12	WORM CLAMP (1-1/4" TO 2-1/8")	
4.	116-460	AR	BULK HOSE (1")	USE 4.5"
5.	156-866	2	HYD LINE (-16)	
6.	116-460	AR	BULK HOSE (1")	USE 31"
7.	110-573	4	BOLT-ON CLAMP (1")	
8.	322-289	4	BACK-UP PLATE	
9.	105-818	8	BOLT (1/4-NC X 1-1/2")	
10.	149-350	1	HYD LINE (-16)	
11.	154-298	1	CONNECTOR (10S-10090)	
12.	515-129	1	HOSE (100FX90-30"-3000)	
13.	154-300	1	CONNECTOR (100-12S90)	
14.	158-576	1	CHECK VALVE (12SF-12SF)	
15.	155-152	1	CONNECTOR (12S-12S)	
16.	155-195	1	S/O COUPLER (20S-16H90)	
17.	501-153	1	FLG LK BOLT (3/8-NC X 5/8")	
18.	154-342	2	CONNECTOR (06S-06090)	
19.	149-844	1	HYD OIL FILTER (20SF-20SF)	
20.	155-213	1	S/O RUN TEE (20S-16H-06SF-06SF)	
21.	159-079	1	FILTER ELEMENT (1-1/2-UNF)	
22.	116-460	AR	BULK HOSE (1")	USE 36"
23.	116-460	AR	BULK HOSE (1")	USE 47"
24.	154-813	1	HOSE (060FX45-62"-3000)	
25.	149-349	1	HYD LINE (-16)	
26.	116-259	AR	BULKEDGE (1/2")	
27.	116-460	AR	BULK HOSE (1")	USE 24"
28.	110-030	5	CABLE TIE (1/16" TO 4")	
29.	110-332	3	BOLT-ON CLAMP (1-5/8")	
30.	155-230	1	S/O COUPLER (16S-16H45)	
31.	154-296	1	CAP (040F)	
32.	154-266	1	UN RN TEE (080FX-080-080)	
33.	154-262	1	REDUCER (060-080F)	
34.	154-326	1	CAP (060F)	USE W/O ATTACHMENT
35.	116-460	AR	BULK HOSE (1")	USE 42"
36.	515-025	1	(080FX90- 40"-3000)	

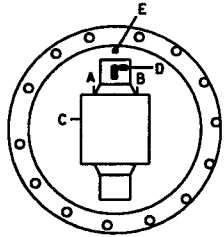
FOOTNOTES

NOTE:

REFER TO O-RING CHART (800-031) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS

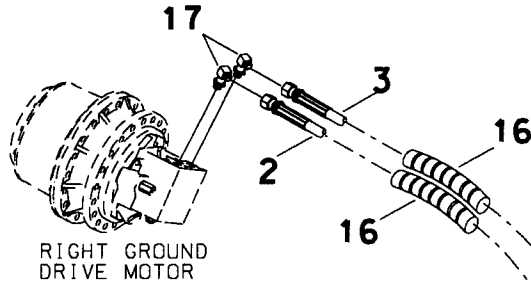
GROUND DRIVE HYDRAULICS

HT110

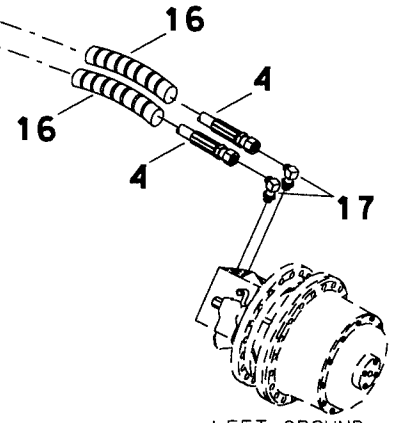


GROUND DRIVE HYDRAULIC DIAGRAM

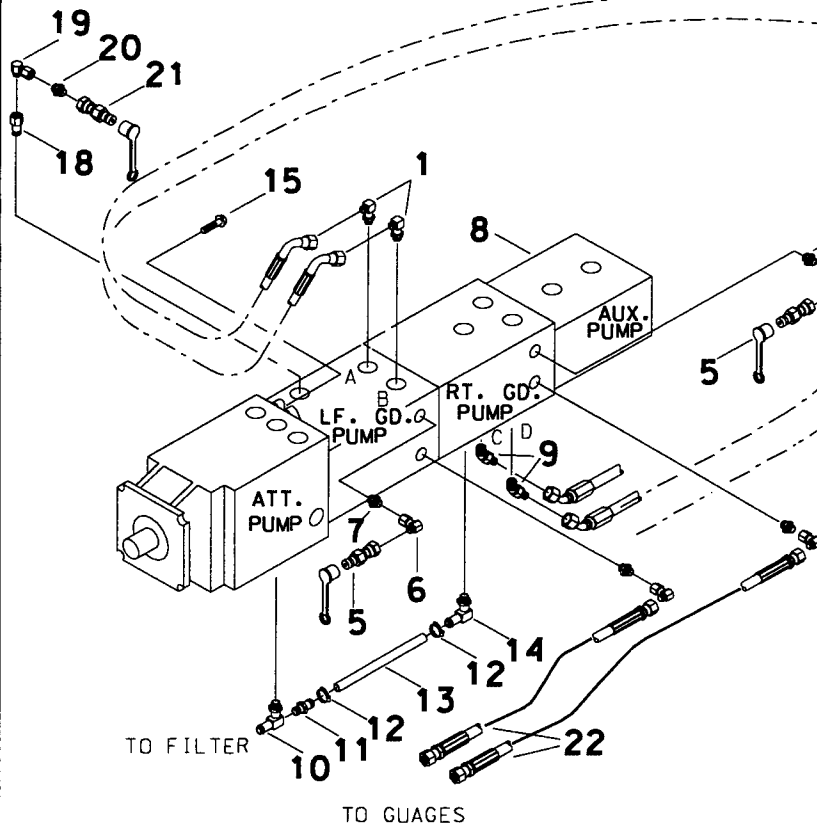
A FORWARD
B REVERSE
C CASE DRAIN
D TWO SPEED
E BRAKE



RIGHT GROUND DRIVE MOTOR



LEFT GROUND DRIVE MOTOR



TO FILTER

TO GAUGES

GROUND DRIVE HYDRAYLICS

HT110

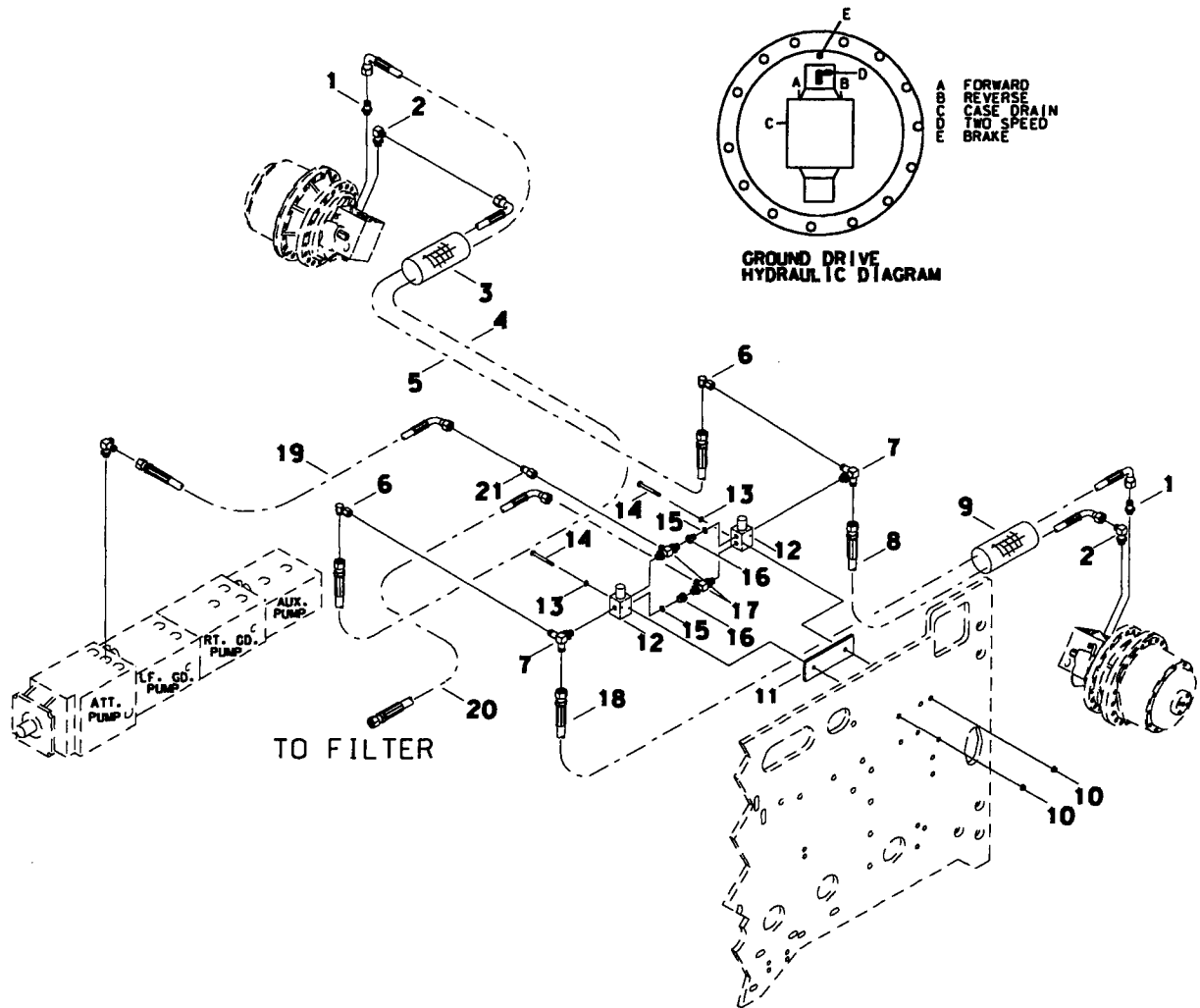
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-286	2	CONNECTOR (120-16S90)	
2.	149-361	1	HOSE (120FX45-60"-5000)	
3.	149-360	1	HOSE (120FX45-63"-5000)	
4.	149-359	2	HOSE (120FX90-73"-5000)	
5.	159-156	2	QDC ADAPTER (02-040F)	
6.	154-255	4	UNION (040-040FX90)	
7.	154-220	4	CONNECTOR (040-06S)	
8.	149-351	1	HYD. TANDEM PUMP (PISTON)	
9.	154-358	2	CONNECTOR (120-16S45)	
10.	156-934	1	S/O COUPLER (16S-24H90-16SF)	
11.	155-147	1	COUPLER (16S-24H, STR)	
12.	110-250	2	WORM CLAMP (1-1/4" TO 2-1/8")	
13.	116-588	AR	BULK HOSE (1-1/2")	USE 9.25"
14.	514-136	1	S/O COUPLER (20S-24H90)	
15.	106-096	2	FLG. BOLT (1/2-NC X 1-3/4", GDB)	
16.	110-930	AR	SPIRAL WRAP (1.5")	USE 24" EA.
17.	154-270	4	CONNECTOR (12S-12090)	
18.	155-129	1	REDUCER (12S-060F)	
19.	154-228	1	UNION (060-060FX90)	
20.	154-221	1	CONNECTOR (06S-060)	
21.	159-157	1	QDC ADAPTER (02-060F)	
22.	515-311	2	HOSE (040FX-50"-5000)	

FOOTNOTES

REFER TO O-RING CHART (800-031) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS

2 SPEED AND PARK BRAKE HYDRAULICS

HT110



2 SPEED AND PARK BRAKE HYDRAULICS

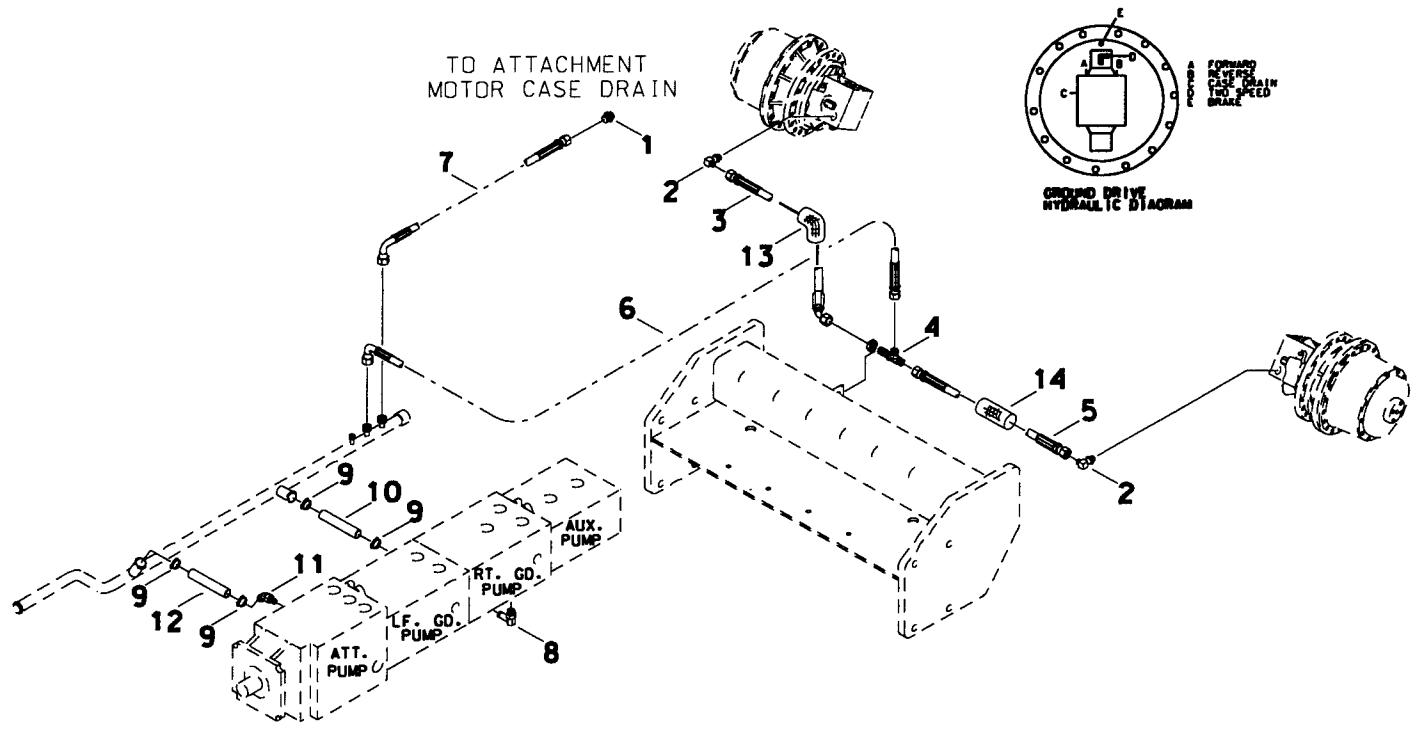
HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	514-301	2	CONNECTOR (04D-M12-1.5)	
2.	154-226	2	CONNECTOR (04D-06S90)	
3.	117-655	1	ABRASION SLEEVE (1.59" X 38")	
4.	154-705	1	HOSE (04DFX90-60"-3000)	
5.	154-669	1	HOSE (04DFX-50"-3000)	
6.	154-255	2	UNION (04D-04DFX90)	
7.	154-230	2	BRANCH TEE (06S-04D-04D)	
8.	154-653	1	HOSE (04DFX-40"-3000)	
9.	115-713	1	ABRASION SLEEVE (1.59" X 24")	
10.	106-385	2	FLG LOCKNUT (M6-1.00)	
11.	305-562	1	SPACER BAR	
12.	158-555	2	HYD. CONTROL VALVE	
13.	105-284	2	WASHER (3/16")	
14.	106-595	2	SCREW (M6-1.00 X 60mm)	
15.	155-705	2	O-RING (906 D90)	
16.	514-409	2	UNION (06J-06DFX)	
17.	154-345	2	RUN TEE (06S-06D-06D)	
18.	149-362	1	HOSE (04DFX90S-46"-3000)	
19.	515-257	1	HOSE (04DFX90S-54"-3000)	
20.	155-486	1	HOSE (06DFX90-31"-3000)	
21.	154-373	1	REDUCER (04D-06DF)	

FOOTNOTES

CASE DRAIN HYDRAULICS

HT110



A

807-501

CASE DRAIN HYDRAULICS HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-331	1	PLUG (080)	USE W/O ATTACHMENT
2.	154-236	2	CONNECTOR (080-12S90)	
3.	149-363	1	HOSE (080FX45-17"-3000)	
4.	154-295	1	BK RUN TEE (080)	
5.	154-739	1	HOSE (080FX-32"-3000)	
6.	515-003	1	HOSE (080FX90-31"-3000)	
7.	515-197	1	HOSE (080FX90-23"-3000)	
8.	155-146	1	S/O COUPLER (12S-16H90)	
9.	110-250	4	WORM CLAMP (1-1/4" TO 2-1/8")	
10.	116-460	AR	BULK HOSE (1")	USE 8.5"
11.	155-197	1	S/O COUPLER (12S-16H45)	
12.	116-460	AR	BULK HOSE (1")	USE 5.5"
13.	115-777	1	ABRASION SLEEVE (1.59" X 15")	
14.	115-713	1	ABRASION SLEEVE (1.59" X 24")	

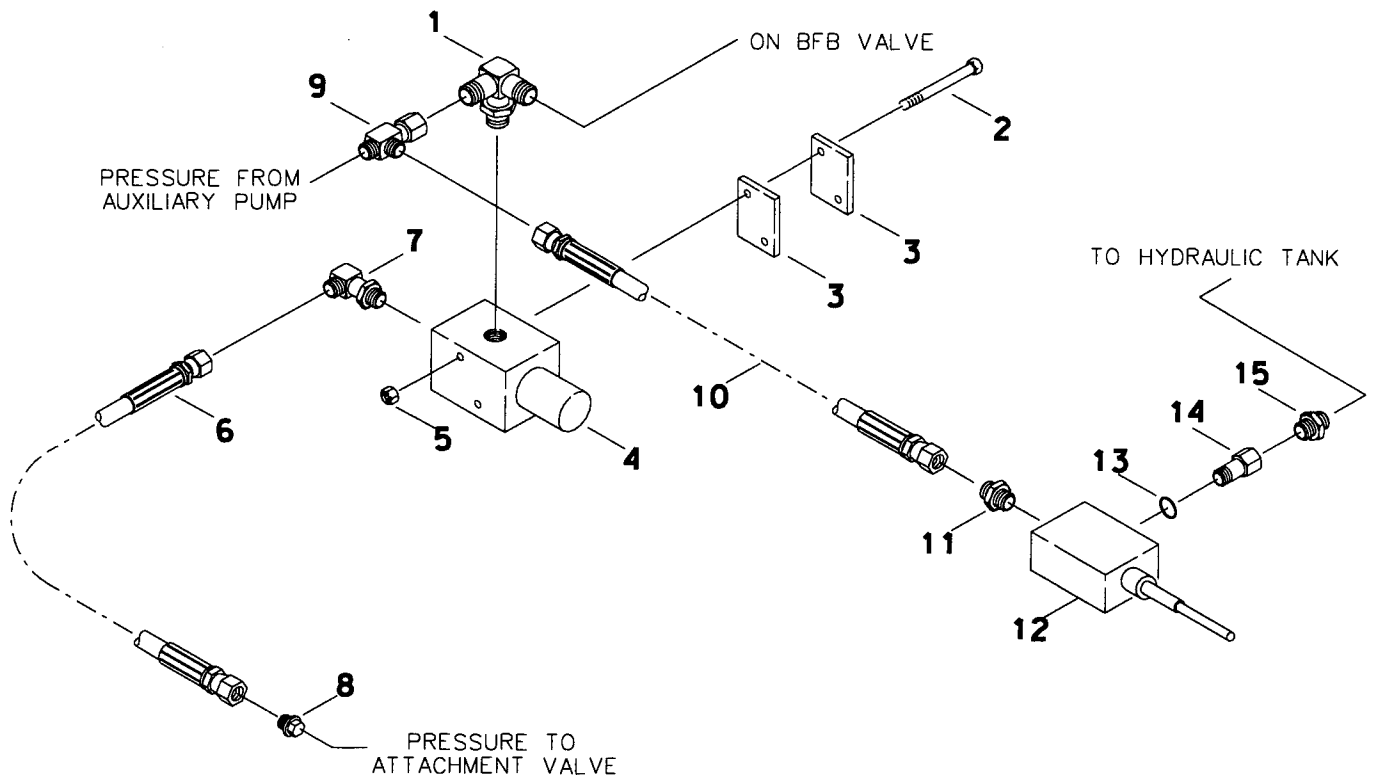
FOOTNOTES

NOTE:

REFER TO O-RING CHART (800-031) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS.

DIVERSION VALVE HYDRAULICS

HT110



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807-507

DIVERSION VALVE HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	514-051	1	BRANCH TEE (08S-060-060)	
2.	105-224	2	BOLT (1/4-NC X 2-1/2")	
3.	324-127	2	VALVE SPACER	
4.	158-569	1	SOLENOID DIVERSION VALVE	
5.	105-085	2	LOCKNUT (1/4-NC)	
6.	154-722	1	HOSE (060FX-32"-3000)	
7.	154-227	1	CONNECTOR (060-08S90)	
8.	154-330	1	PLUG (060)	USE W/O ATTACHMENT
9.	154-344	1	UN RUN TEE (060FX-060-060)	
10.	154-732	1	HOSE (060FX-19"-3000)	
11.	154-222	1	CONNECTOR (060-08S)	
12.	158-681	1	RELIEF VALVE (AUXILIARY)	
13.	155-706	1	O-RING (908-D90)	
14.	156-732	1	CONNECTOR (08J-080)	
15.	154-307	1	CONNECTOR (16S-080)	

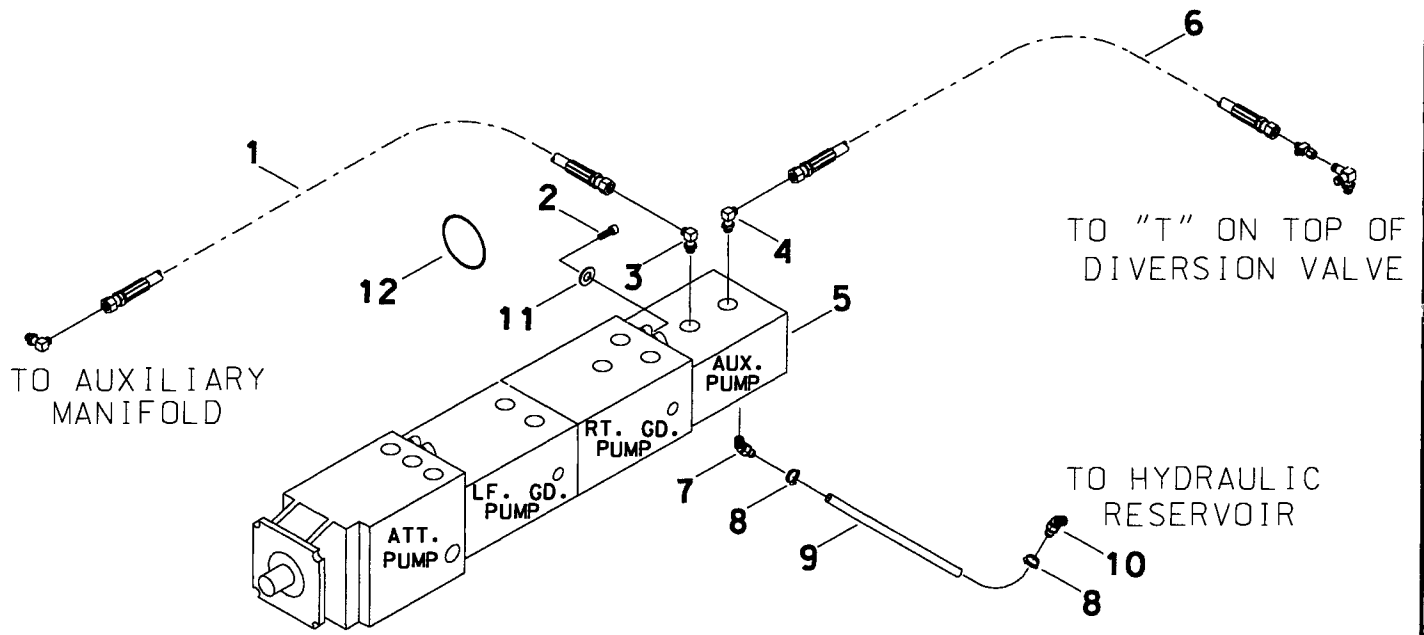
FOOTNOTES

NOTE:

REFER TO O-RING CHART (800-031) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS.

AUXILIARY PUMP HYDRAULICS

HT110



B

807-497

AUXILIARY PUMP HYDRAYLICS

HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	155-466	1	HOSE (100FX90-74"-2750)	
2.	105-052	2	BOLT (3/8-NC X 1 1/4")	
3.	154-298	1	CONNECTOR (10S-10090)	
4.	154-421	1	CONNECTOR (060-10S90)	
5.	158-311	1	TANDEM HYDRAULIC PUMP	
6.	154-831	1	HOSE (060FX-21"-3000)	
7.	155-168	2	S/O COUPLER (20S-20H90)	
8.	110-133	2	WORM CLAMP (1 1/16" TO 1 15/16")	
9.	116-587	AR	BULK HOSE (1 1/4")	USE 9.5"
10.	115-281	1	S/O COUPLER (16S-20H45)	
11.	106-396	2	WASHER (M10, HARDENED)	
12.	157-041	1	O-RING (152-D70)	

FOOTNOTES

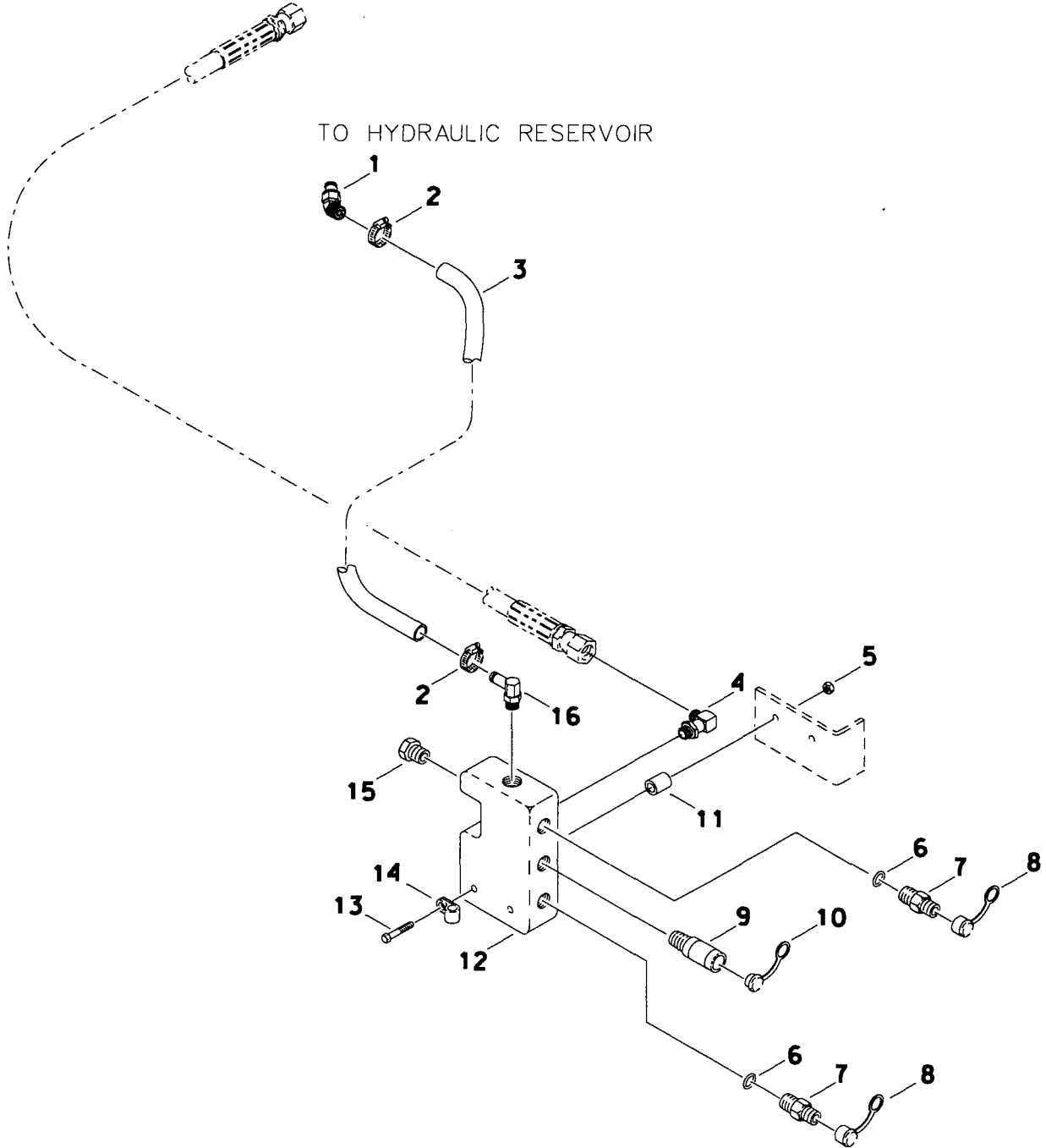
REFER TO O-RING CHART (800-031) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS

AUXILIARY MANIFOLD HYDRAULICS

HT110

TO 90° ON TOP OF AUX. PUMP

TO HYDRAULIC RESERVOIR



AUXILIARY MANIFOLD HYDRAULICS HT110

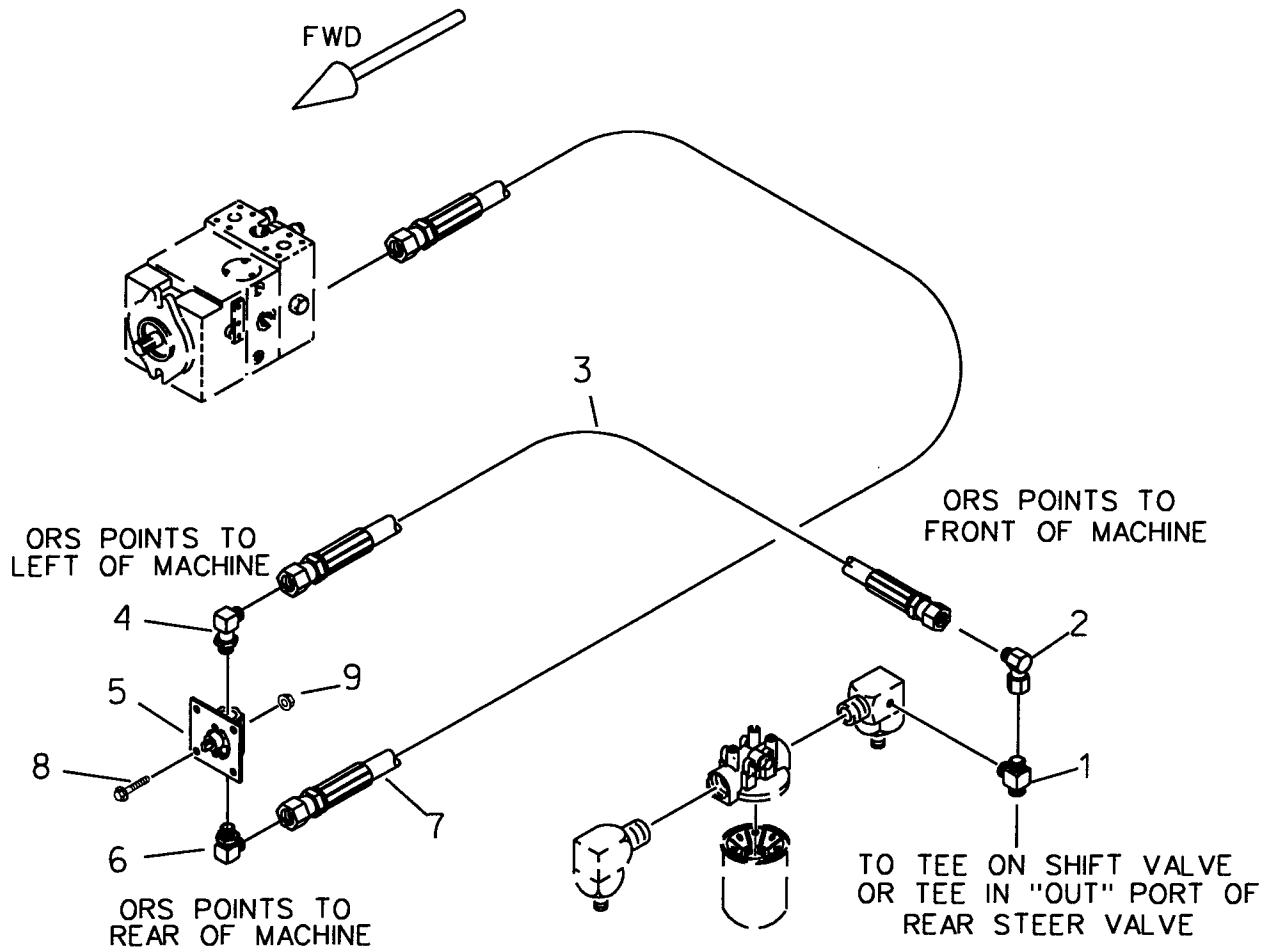
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	155-230	1	S/O COUPLER (16S-16H45)	
2.	110-353	2	WORM CLAMP (3/4" to 1-1/2")	
3.	116-460	AR	BULK HOSE (1")	USE 96"
4.	154-300	1	CONNECTOR (100-12S90)	
5.	105-834	2	FLG LOCKNUT (3/8-NC)	
6.	155-709	2	O-RING (912 D90)	
7.	155-933	2	QDC ADAPTER (12S-12J)	
	190-184		SEAL REPAIR KIT	
8.	155-935	2	DUST CAP (1/2"-3/4")	
9.	155-958	1	TRICK QDC BODY (12-14S)	
10.	155-936	1	DUST PLUG (1/2"-3/4")	
11.	181-075	2	SLEEVE	USED WITH BACKHOE OPTION ONLY
12.	159-080	1	HYDRAULIC MANIFOLD	
13.	105-179	2	BOLT (3/8-NC X 3-1/2")	
14.	110-097	1	BDLT-ON CLAMP (1/2")	
15.	155-630	1	WH RELIEF CARTRIDGE (2000 PSI)	
16.	155-146	1	S/O COUPLER (12S-16H90)	

FOOTNOTES

NOTE:

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

COLD START BYPASS



COLD START BYPASS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-346	1	BRANCH TEE (060-060-06S)	
	157-038		O-RING (012 D90)	
	155-705		O-RING (906 D90)	
2.	154-228	1	UNION (060-060FX90)	
	157-038		O-RING (012 D90)	
3.	154-831	1	HOSE (060FX 21" 3000PSI)	
4.	154-420	1	CONN (060-08N90)	
	157-038		O-RING (012 D90)	
5.	158-597	1	BYPASS VALVE	
	110-538		VALVE LEVER	
6.	154-352	1	CONN (080-08N90)	
	157-038		O-RING (012 D90)	
7.	154-745	1	HOSE (080-50"-3000)	
8.	105-820	4	FLG LK BOLT (1/4-NC X3/4")	
9.	105-832	4	FLG LOCKNUT (1/4-NC)	

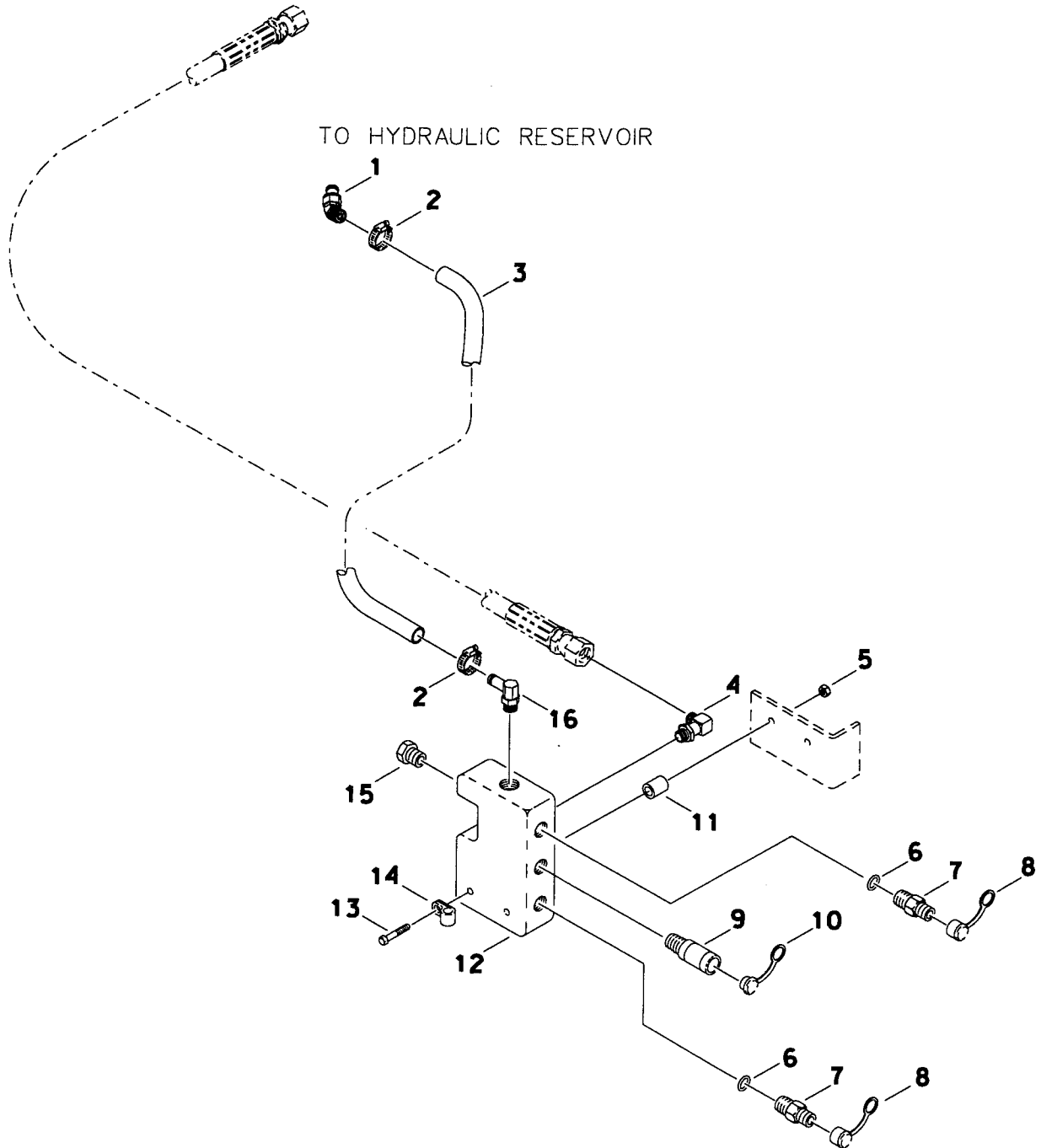
FOOTNOTES

AUXILIARY MANIFOLD HYDRAULICS

HT110

TO 90° ON TOP OF AUX. PUMP

TO HYDRAULIC RESERVOIR



AUXILIARY MANIFOLD HYDRAULICS HT110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	155-230	1	S/O COUPLER (16S-16H45)	
2.	110-353	2	WORM CLAMP (3/4" to 1-1/2")	
3.	116-460	AR	BULK HOSE (1")	USE 96"
4.	154-300	1	CONNECTOR (100-12S90)	
5.	105-834	2	FLG LOCKNUT (3/8-NC)	
6.	155-709	2	O-RING (912 D90)	
7.	155-933	2	QDC ADAPTER (12S-12J)	
	190-184		SEAL REPAIR KIT	
8.	155-935	2	DUST CAP (1/2"-3/4")	
9.	155-958	1	TRICK QDC BODY (12-14S)	
10.	155-936	1	DUST PLUG (1/2"-3/4")	
11.	181-075	2	SLEEVE	USED WITH BACKHOE OPTION ONLY
12.	159-080	1	HYDRAULIC MANIFOLD	
13.	105-179	2	BOLT (3/8-NC X 3-1/2")	
14.	110-097	1	BOLT-ON CLAMP (1/2")	
15.	155-630	1	WH RELIEF CARTRIDGE (2000 PSI)	
16.	155-146	1	S/O COUPLER (12S-16H90)	

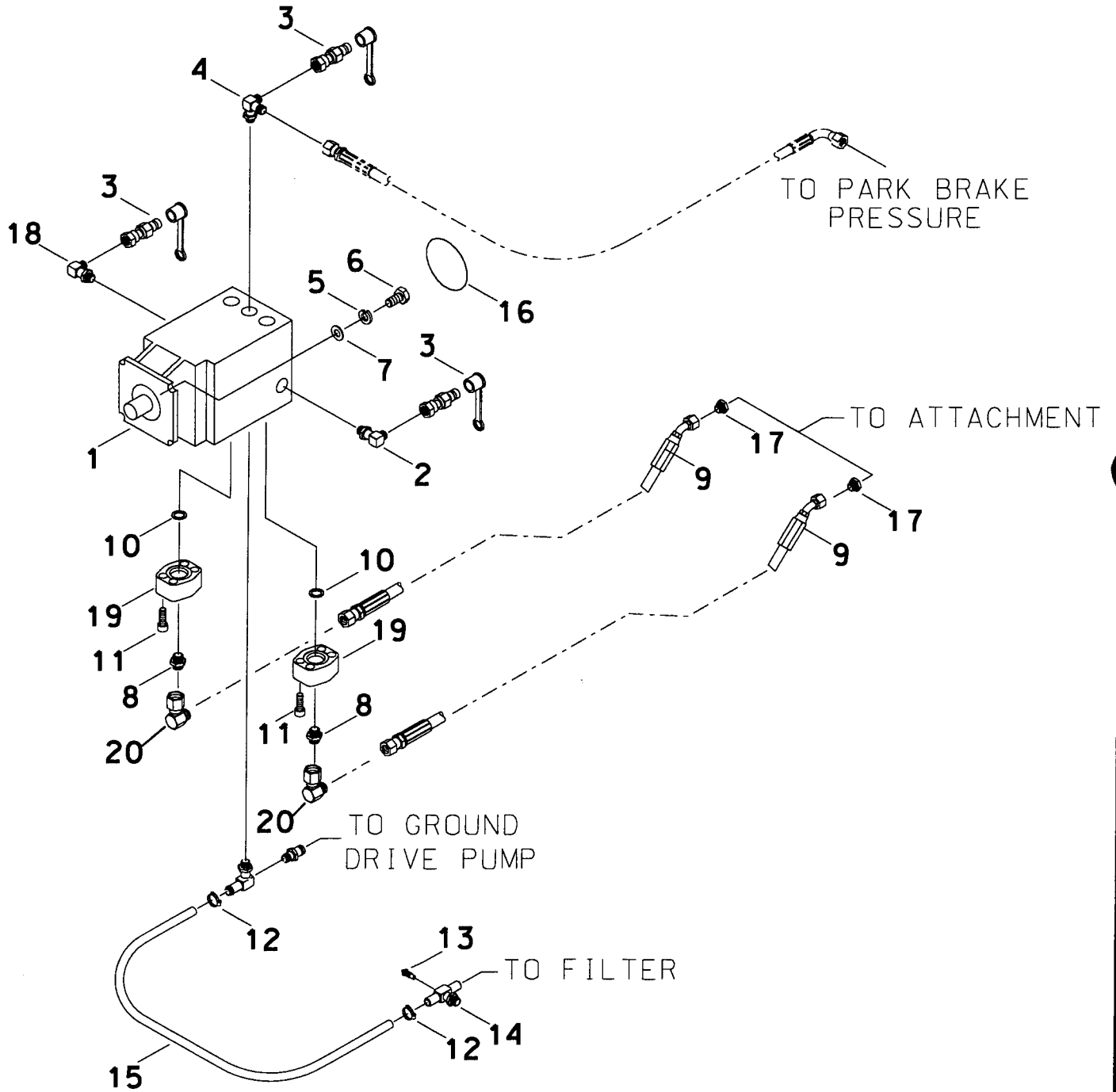
FOOTNOTES

NOTE:

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

ATTACHMENT PUMP HYDRAULICS

HT110



ATTACHMENT PUMP HYDRAULICS

HT110

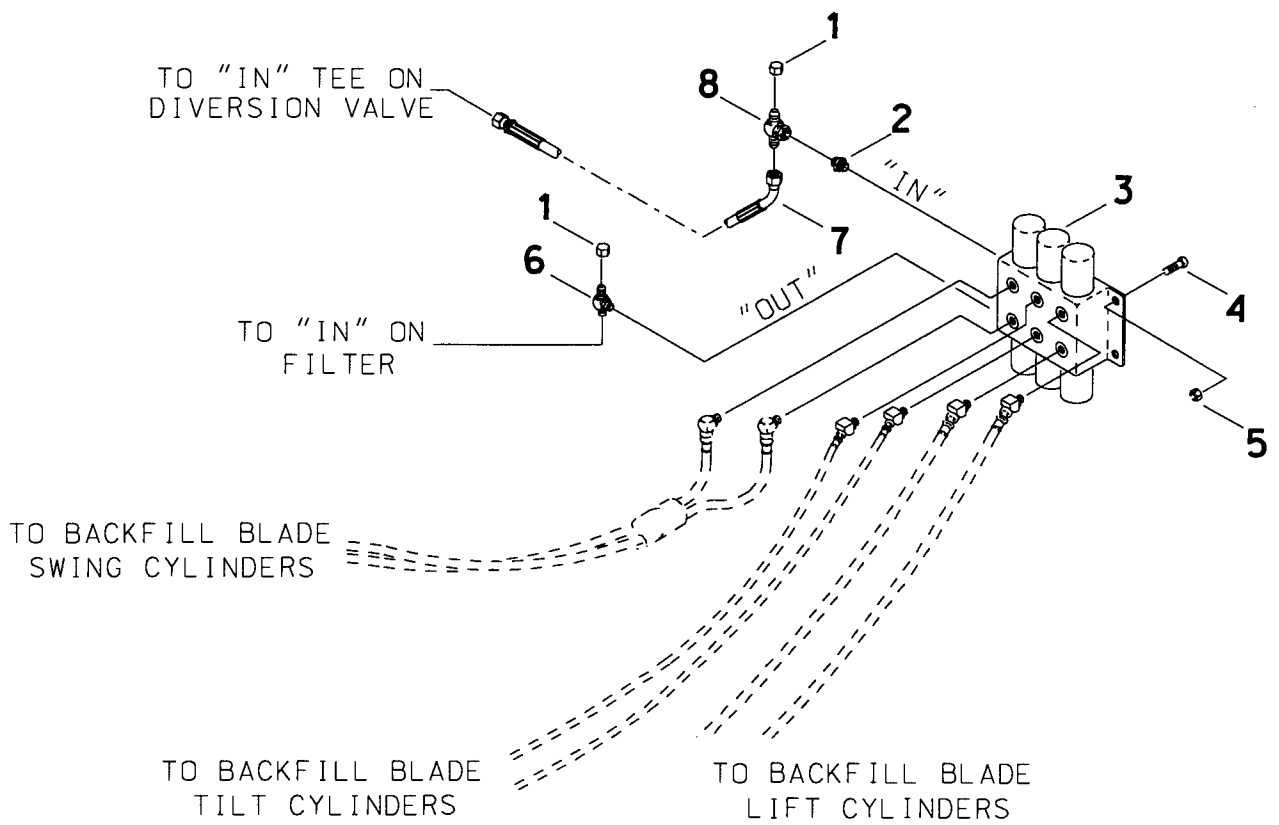
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	158-371	1	HYDRAULIC PUMP	
2.	154-226	1	CONNECTOR (040-06S90)	
3.	159-156	3	QDC ADAPTER (02-040F)	
	159-148	3	DUST CAP (1/8")	
4.	154-230	1	BRANCH TEE (06S-040-040)	
5.	106-030	4	LOCK WASHER (M12)	
6.	106-333	4	SCREW (M12-1.75 X 40mm)	
7.	106-743	4	WASHER (.531", HARDENED)	
8.	154-281	2	CONNECTOR (16S-160)	
9.	515-359	2	HOSE (160FX45-61"-6000)	
10.	157-029	2	O-RING (219-D90)	
11.	105-918	8	BOLT (7/16-NC X 1-1/2", SOC)	
12.	110-250	2	WORM CLAMP (1-1/4" TO 2-1/8")	
13.	215-148	1	TEMPERATURE SWITCH	
14.	149-366	1	CROSS (24S-24H-16H-08NF)	
15.	116-047	AR	BULK HOSE (1-1/2")	USE 34"
16.	155-800	1	O-RING (045-D70)	
17.	154-334	2	PLUG (160)	
18.	154-387	1	CONNECTOR (040-06S90, ORF)	
19.	514-245	2	HEAD FLANGE (16HFL-16SF)	
20.	154-290	2	UNION (160-160FX90)	

FOOTNOTES

REFER TO O-RING CHART (800-031) IN BACK OF BOOK FOR REPLACEMENT OF O-RINGS

BACKFILL BLADE SUPPLY HYDRAULICS

HT110



BACKFILL BLADE SUPPLY HYDRAULICS HT110

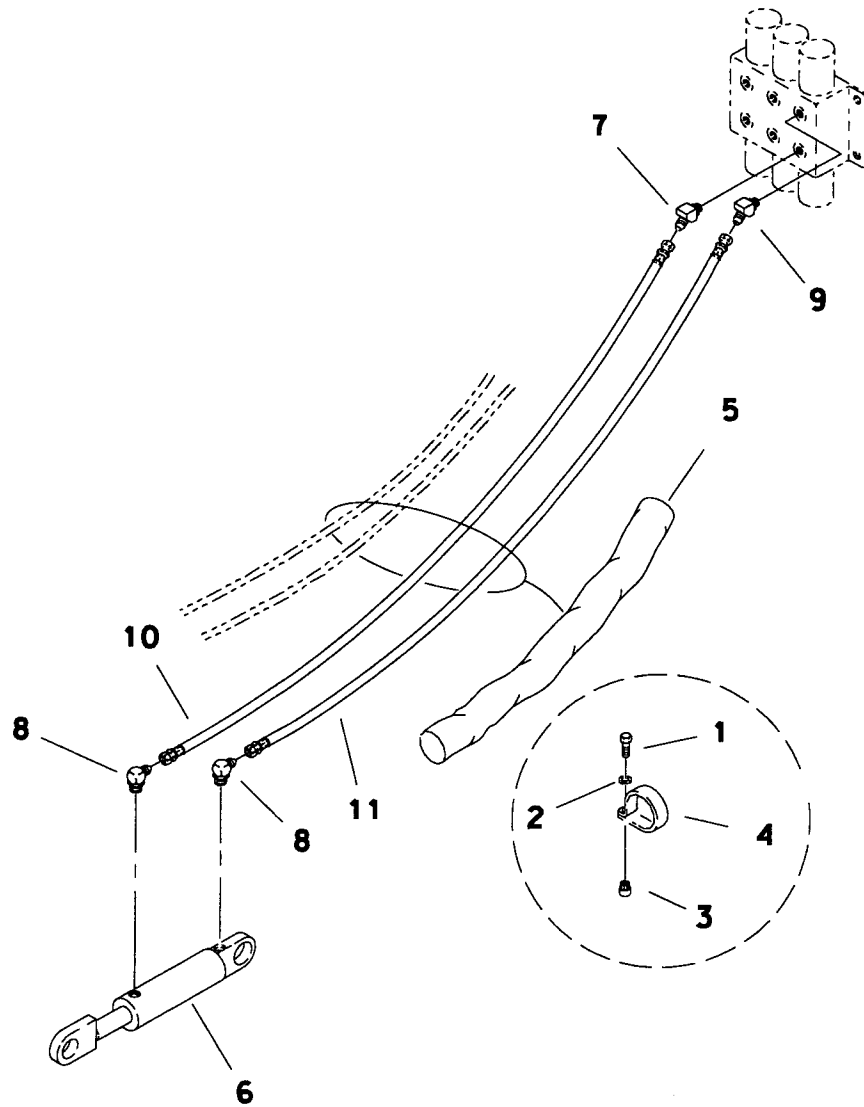
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-326	2	CAP (060F)	
2.	154-221	1	CONNECTOR (06S-060)	
3.	158-574	1	HYDRAULIC CONTROL VALVE	
4.	105-823	4	FLG LK BOLT (5/16-NC X ³ / ₄ ")	
5.	105-003	2	FLG LOCKNUT (5/16-NC)	
6.	154-346	1	BRANCH TEE (06S-060-060)	
7.	149-358	1	HOSE (060FX45-55"-3000)	
8.	154-348	1	UN BR TEE (060FX-060-060)	

FOOTNOTES

NOTE:

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

BFB LIFT HYDRAULICS



BFB LIFT HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-090	2	BOLT (5/16-NC X 3/4")	
2.	105-091	2	LOCK WASHER (5/16")	
3.	106-038	2	NUTSERT (5/16-NC)	
4.	110-332	2	BOLT-ON CLAMP (1-5/8")	
5.	115-755	1	ABRASION SLEEVE (1.59" X 60")	
6.	151-056	1	HYD CYL (3.5" X 1.75" X 8")	
7.	154-224	1	CONNECTOR (06S-06045)	
8.	154-227	2	CONNECTOR (06S-08090)	
9.	154-382	1	CONNECTOR (06S-06S45, ORF)	USE WITH ALL REPLACEMENTS
10.	154-735	1	HOSE (060FX-70"-3000)	
11.	154-798	1	HOSE (060FX-62"-3000)	

FOOTNOTES

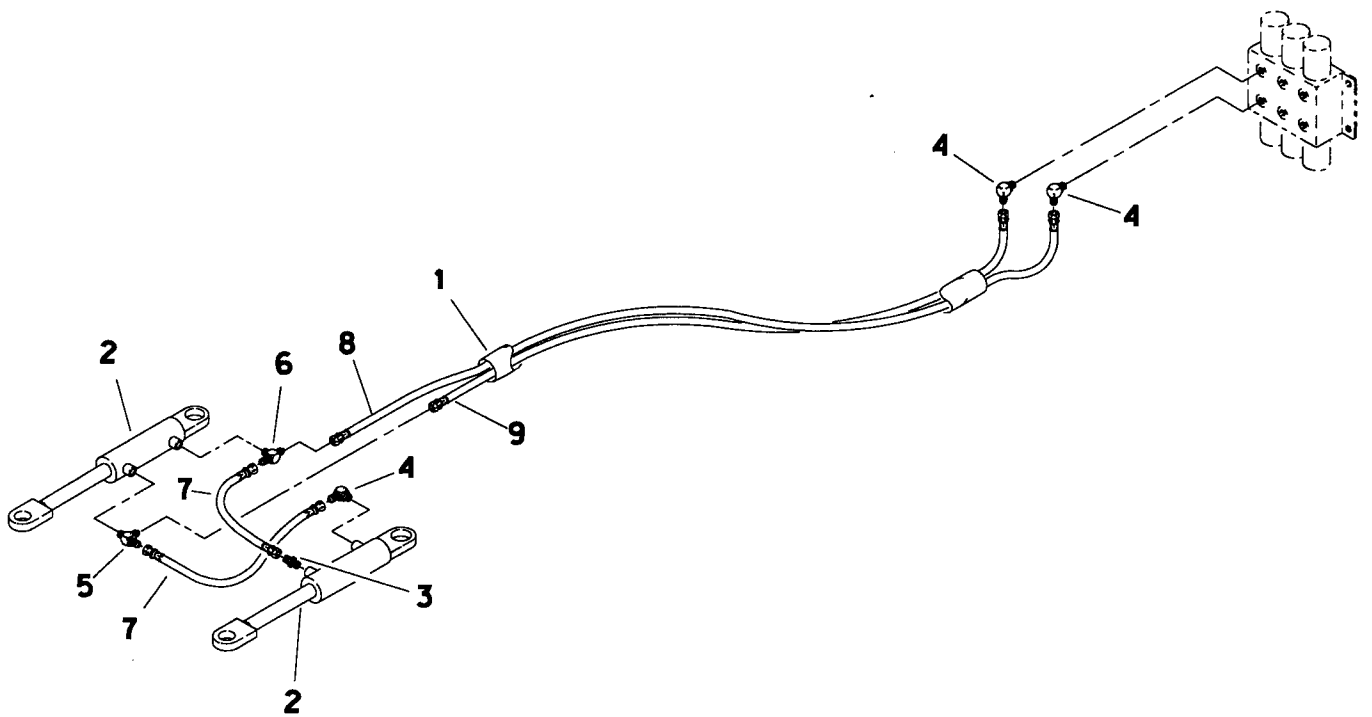
.1 CLAMP BACKFILL HOSES ON 7520 ONLY. 8020 AROUND OIL COOLER HOSE.

NOTE:

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

BFB SWING HYDRAULICS

HT110



BFB SWING HYDRAULICS

HT110

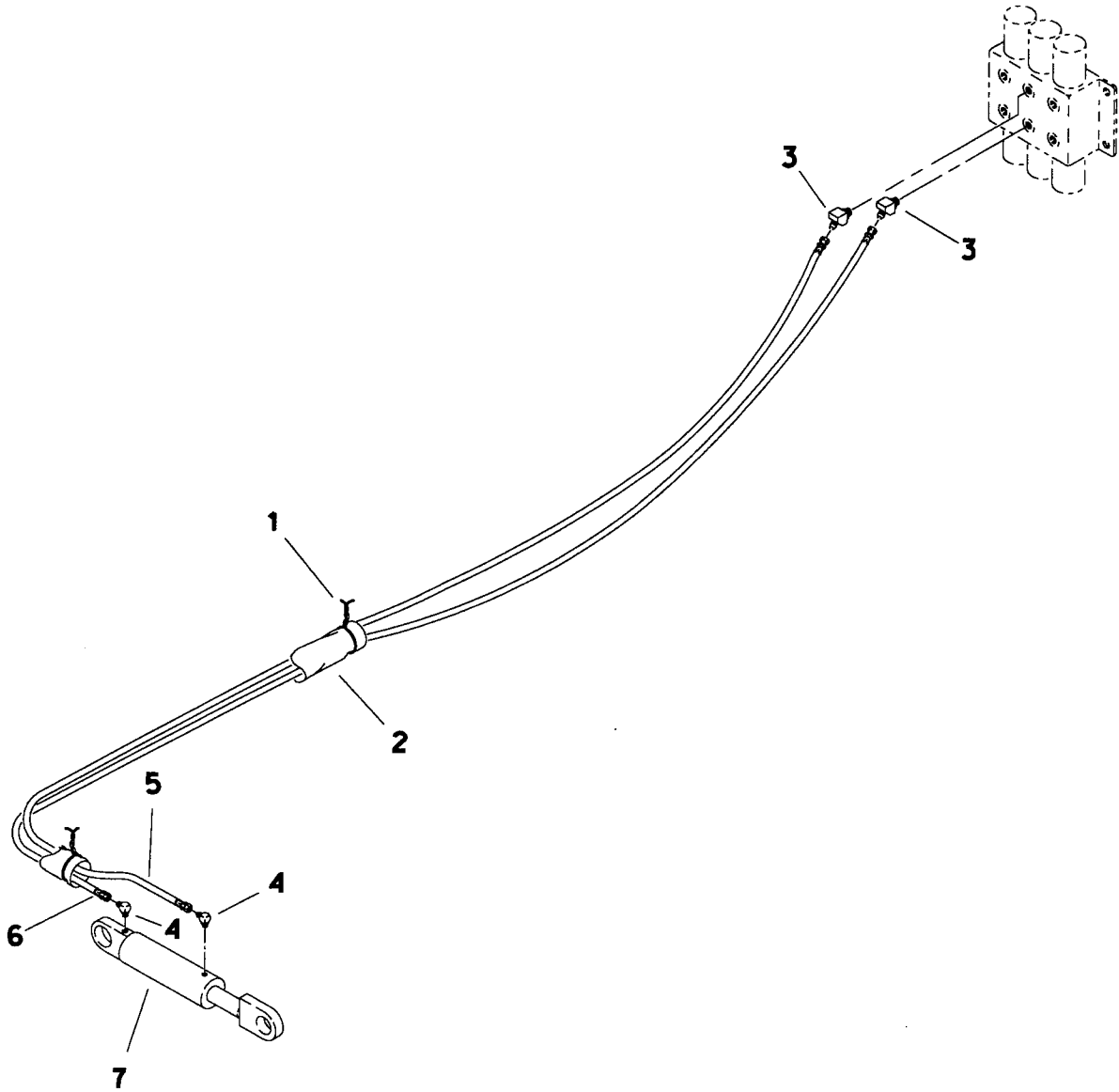
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	115-813	1	ABRASION SLEEVE (36")	
2.	149-373	2	CYL (2.5" X 1.25" X 8")	
3.	154-221	1	CONNECTOR (06S-060)	
4.	154-342	3	CONNECTOR (060-06S90)	
5.	154-345	1	RUN TEE (060-060-06S)	
6.	154-346	1	BRANCH TEE (060-060-06S)	
7.	154-732	2	HOSE (060-19"-3000)	
8.	154-776	1	HOSE (060-42"-3000)	
9.	154-806	1	HOSE (060-54"-3000)	

FOOTNOTES

NOTE:

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

BFB TILT HYDRAULICS



BFB TILT HYDRAULICS

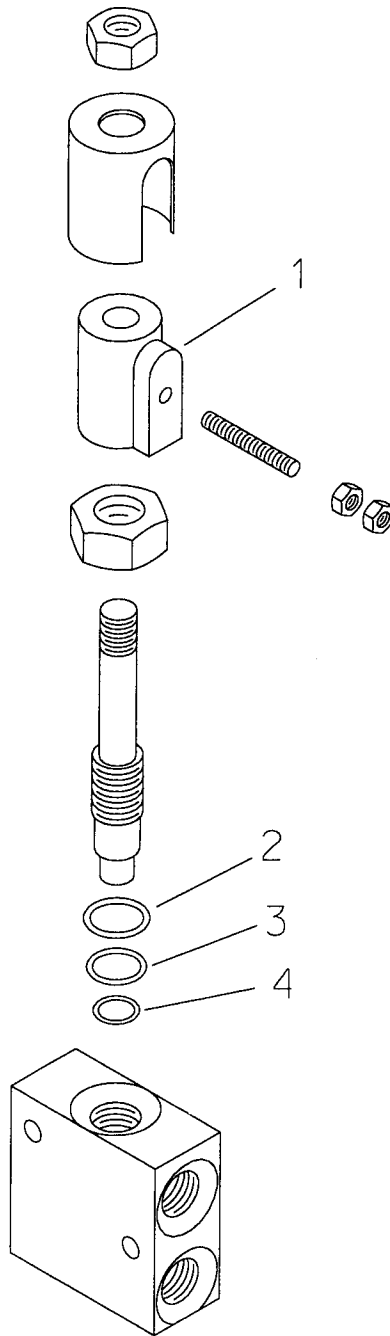
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-030	2	CABLE TIE (1/16" TO 4")	
2.	115-713	1	ABRASION SLEEVE (1.59" X 24")	
3.	154-250	2	CONNECTOR (040-06S90)	
4.	154-252	2	CONNECTOR (040-04S90)	
5.	154-694	1	HOSE (040FX90-98"-3000)	
6.	154-725	1	HOSE (040FX-90"-3000)	
7.	151-039	1	HYD CYL (2" X 1" X 5")	

FOOTNOTES

NOTE:

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

SOLENOID CONTROL VALVE



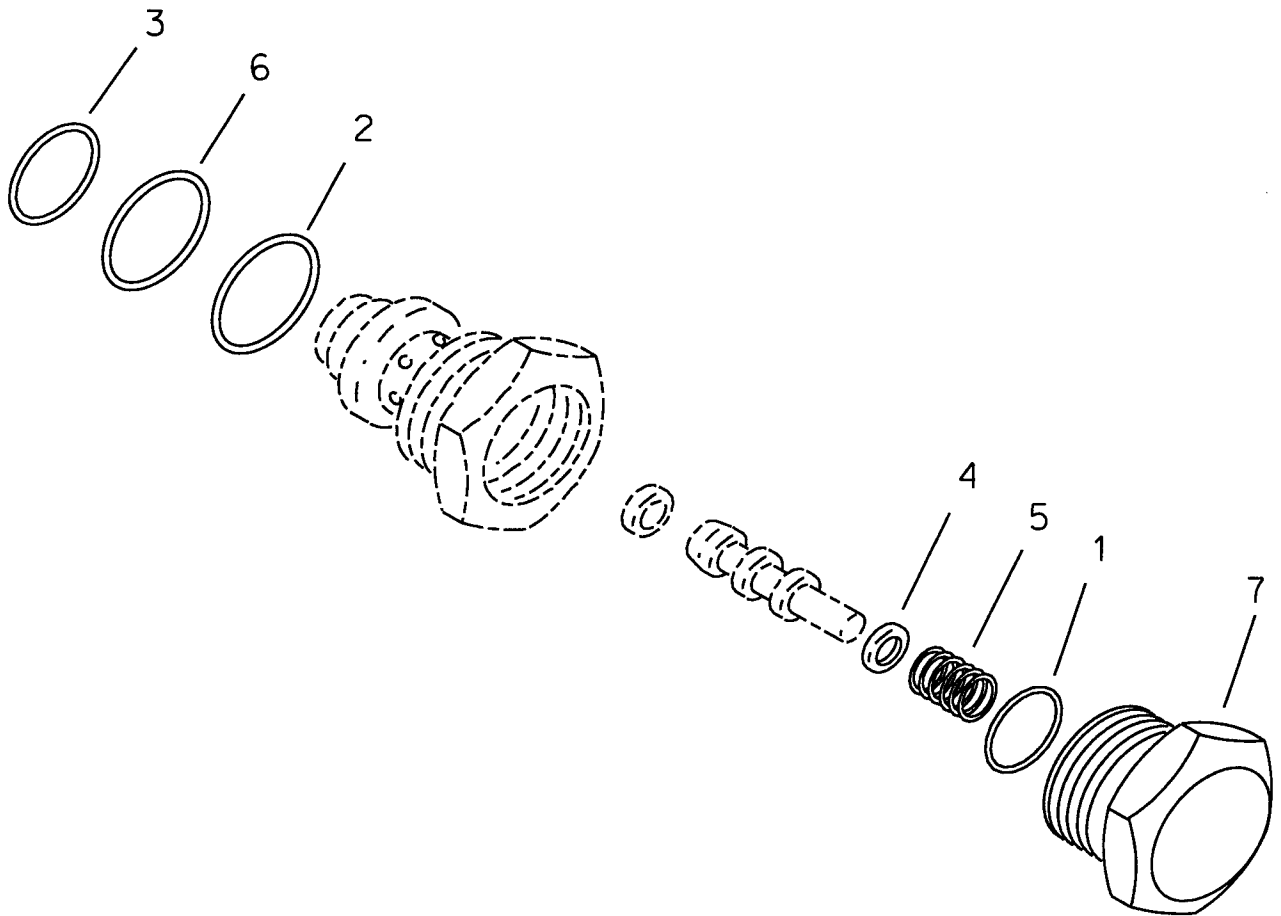
SOLENOID CONTROL VALVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	158-555		SOLENOID CONTROL VALVE	INCL. REF. NO'S 1 THRU 4
1.	217-746	1	SOLENIOD COIL	
2.	500-163	1	O-RING	
3.	157-070	1	O-RING	
4.	157-070	1	O-RING	

FOOTNOTES

REFER TO O-RING CHART FOR REPLACEMENTS

RELIEF CARTRIDGE



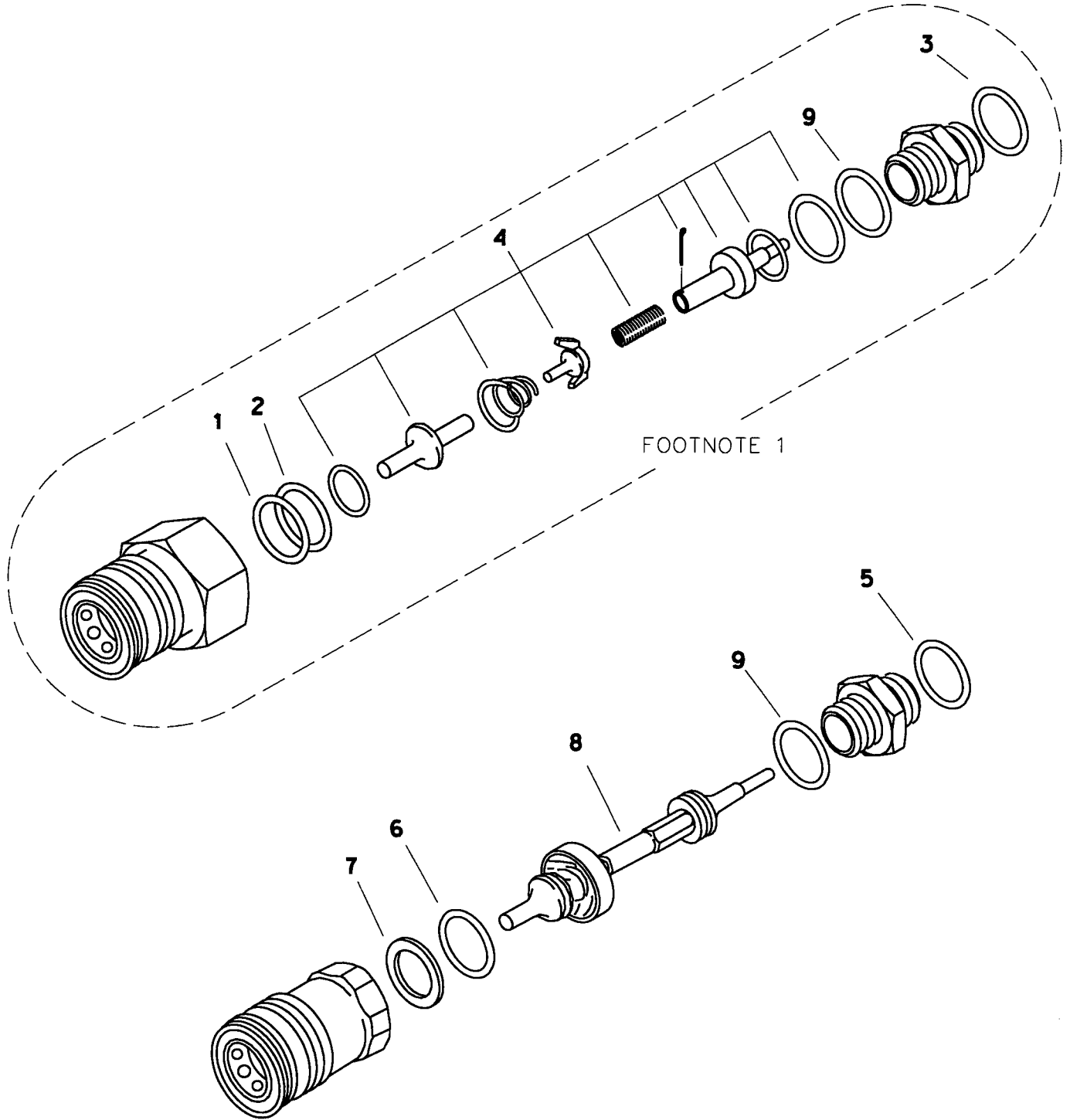
RELIEF CARTRIDGE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	155-630		RELIEF CARTRIDGE 1-3/16-NC	2000 PSI INCL. #1-7, FN 1
1.	155-707	1	O-RING (910-D90)	
2.	155-749	1	O-RING (023-D70)	
3.	155-750	1	O-RING (022-D90)	
4.	500-025 AR		SHIM (.010" THK)	160 PSI / SHIM
5.	500-318	1	COMPRESSION SPRING	FN 2
6.	157-508	1	BACKUP RING (022)	
7.	500-408	1	CAP (2000 PSI)	

FOOTNOTES

1. REFER TO INSTALLATION DIAGRAM 052-139 FOR REPLACEMENT PROCEDURES..
2. OLD STYLE .556 O.D. X 1.286 LG .120 DIA PIANO WIRE.
2. NEW STYLE .605 O.D. X 1.296 LG .125 DIA STAINLESS STEEL WIRE

TRICK QUICK COUPLER



TRICK QUICK COUPLER

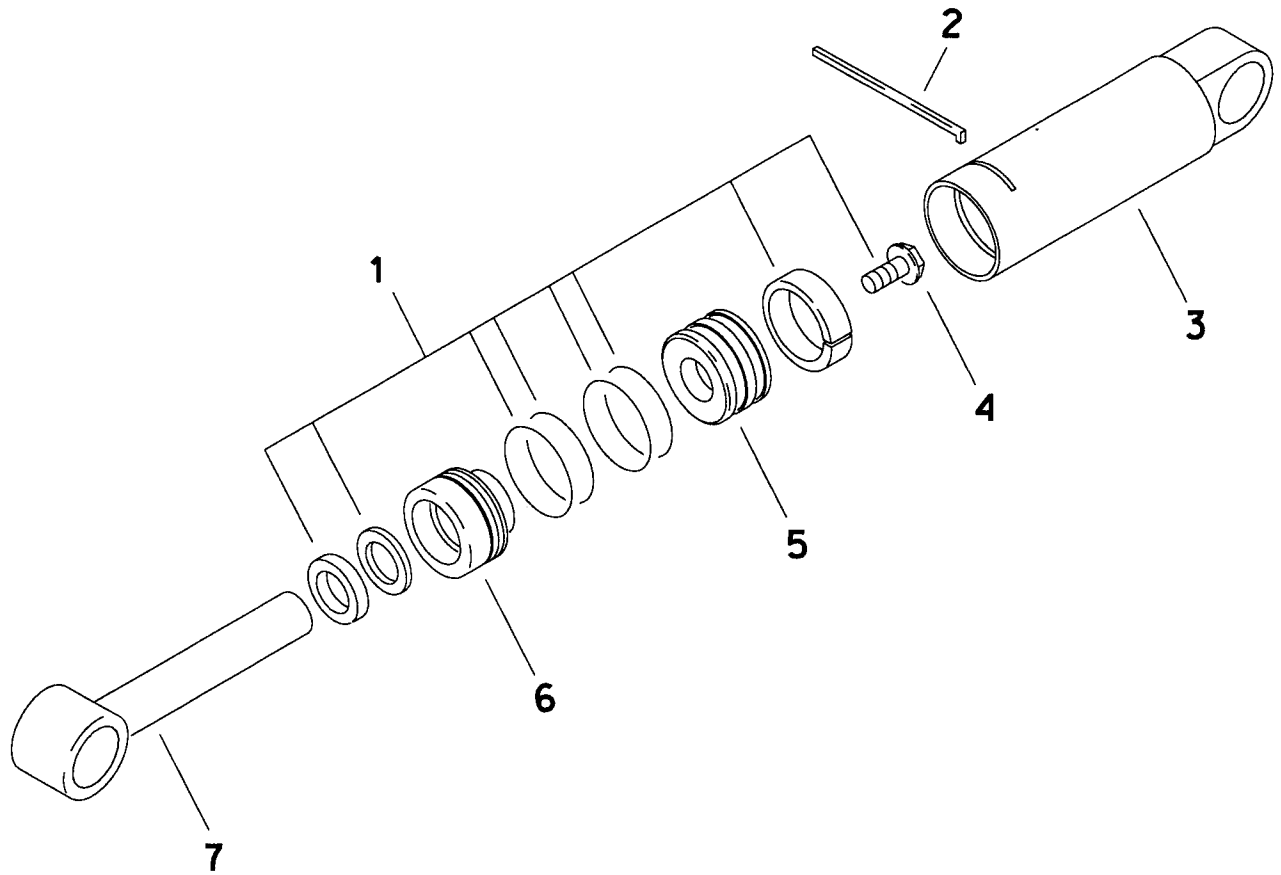
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	155-958		TRICK QOC-BODY (12-14S)	SEE FOOTNOTE 2
1.	155-728	1	BACKUP RING (213 090)	SEE FOOTNOTE 1
2.	155-745	1	O-RING (213 070)	SEE FOOTNOTE 1
3.	155-747	1	O-RING (914 090)	SEE FOOTNOTE 1
4.	500-358	1	VALVE STEM REPAIR KIT	SEE FOOTNOTE 1
5.	155-747	1	O-RING (914 090)	SEE FOOTNOTE 2
6.	155-777	1	O-RING (119 090)	SEE FOOTNOTE 2
7.	157-016	1	BACKUP RING (119 090)	SEE FOOTNOTE 2
8.	500-493	1	VALVE STEM REPAIR KIT	SEE FOOTNOTE 2
6.	157-233	1	O-RING (025 070)	SEE FOOTNOTE 2

FOOTNOTES

1. THESE PARTS ARE ASSOCIATED WITH "SNAPTITE" COUPLERS, WHICH ARE NO LONGER AVAILABLE.
2. THESE PARTS ARE ASSOCIATED WITH "FASTER" COUPLERS, WHICH ARE USED IN PRESENT PRODUCTION AND ALL REPLACEMENTS.

HYDRAULIC CYLINDER

2.0" ID BARREL X 1.00" OD ROD X 5.0" STROKE



HYDRAULIC CYLINDER

2.0" ID BARREL X 1.00" OD ROD X 5.0" STROKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-039		CYL (2" X 1" X 5")	INCL REF NO.'S 1 THRU 7
1.	190-165	1	SEAL REPAIR KIT	
2.	150-778	1	LOCK RING (2")	
3.	150-291	1	CYLINDER BARREL	
4.	106-096	1	FLG BOLT (1/2-NC X 1-3/4",GD 8)	SEE FOOTNOTE 1
5.	150-775	1	CYLINDER PISTON	
6.	150-772	1	CYLINDER HEAD	
7.	150-422	1	CYLINDER ROD	

NOT SHOWN:

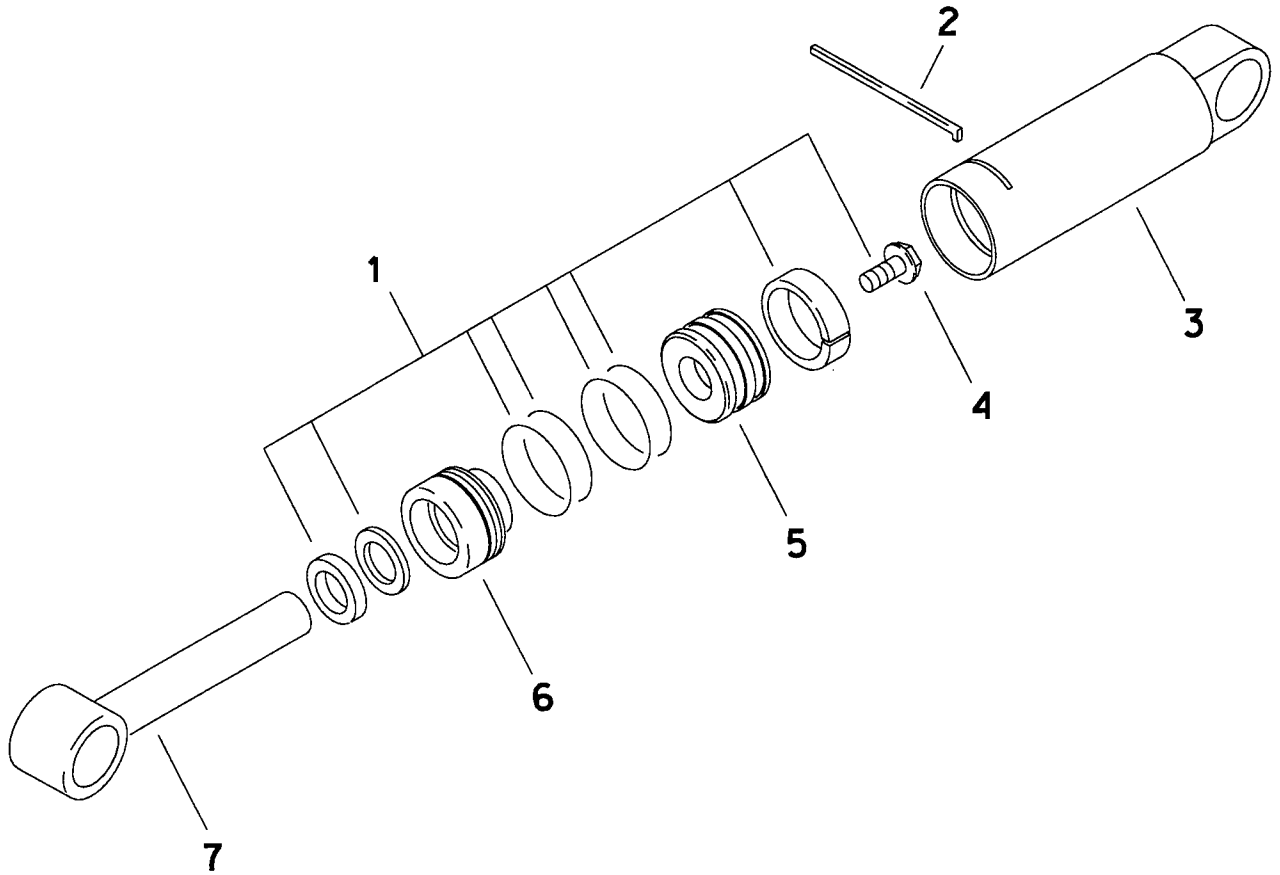
259-100	U-SEAL INSTALLER (1"- 1.4")
259-235	ROD WIPER INSTALLER (1")
259-239	WIPER/SEAL INSTALLER (2")
259-241	PISTON INSTALLER (2")
259-188	CYL HEAD SPANNER - TWO PIN

FOOTNOTES

1. CLEAN & DRY THREADS. APPLY RED LOCTITE (RC 271 OR RC 272). TORQUE TO 90-100 FT LBS (120-135 NM)

HYDRAULIC CYLINDER

2.0" ID BARREL X 1.00" OD ROD X 6.0" STROKE



HYDRAULIC CYLINDER

2.0" ID BARREL X 1.00" OD ROD X 6.0" STROKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-044		HYDRAULIC CYLINDER	INCLUDES REF NO.'S 1 THRU 7
1.	190-165	1	SEAL REPAIR KIT	
2.	150-778	1	LOCK RING	
3.	150-294	1	CYLINDER BARREL	
4.	106-096	1	FLG BOLT (1/2-NC X 1-3/4",GD 8)	SEE FOOTNOTE 1
5.	150-775	1	PISTON	
6.	150-772	1	CYLINDER HEAD	
7.	150-424	1	CYLINDER ROD	

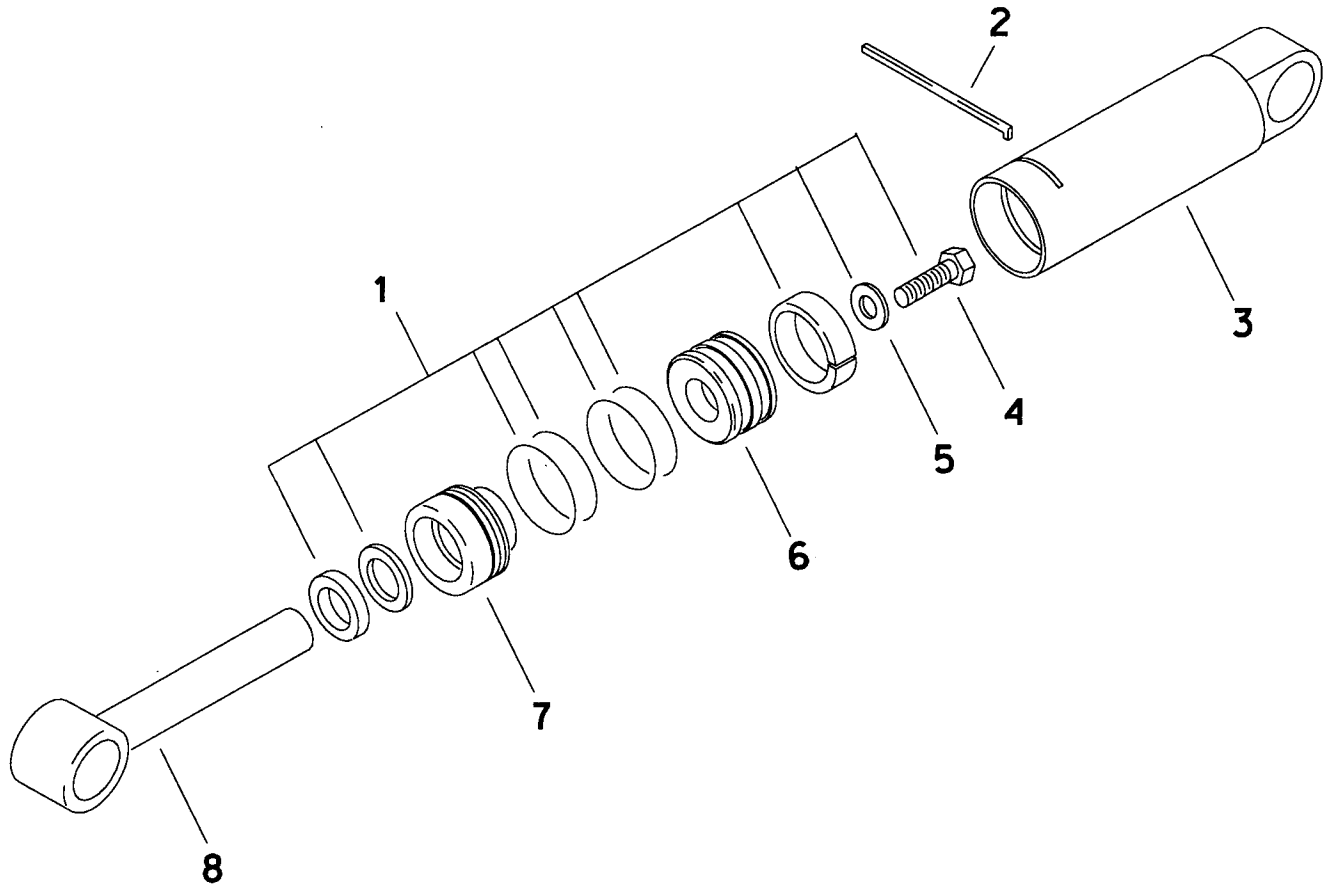
NOT SHOWN:

259-100	ROD U-SEAL INSTALLER
259-235	ROD WIPER INSTALLER
259-239	PISTON SEAL INSTALLER
259-241	PISTON INSTALLER
259-188	CYLINDER HEAD SPANNER WRENCH

FOOTNOTES

1-LUBRICATE WITH WD-40 OR EQUAL.TORQUE TO 90-100 FT-LBS (120-135 N.M)

HYDRAULIC CYLINDER
3.5" ID BARREL X 1.75" OD ROD X 8.0" STROKE



HYDRAULIC CYLINDER

3.5" ID BARREL X 1.75" OD ROD X 8.0" STROKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-056		CYL (3.5 X 1.75 X 8.0)	INCLUDES REF NO.'S 1 THRU 8
1.	190-174	1	SEAL REPAIR KIT (3.5" X 1.75")	
2.	149-302	1	LOCK RING (3.5")	
3.	152-006	1	CYLINDER BARREL	
4.	106-122	1	BOLT (7/8-NC X 2-1/4", GD8)	SEE FOOTNOTE 1
5.	105-363	1	WASHER (7/8")	
6.	149-301	1	CYLINDER PISTON	
7.	150-761	1	CYLINDER HEAD	
8.	150-436	1	CYLINDER ROD	

NOT SHOWN:

259-040	U-SEAL INSTALLER (1.5" - UP)
259-238	WIPER SEAL INSTALLER (1.75")
259-244	PISTON SEAL INSTALLER (3.50")
259-245	PISTON INSTALLER (3.50")
259-188	CYL HEAD SPANNER - TWO PIN

FOOTNOTES

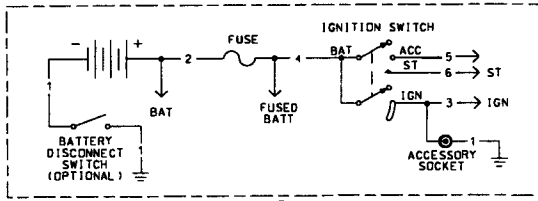
1-ASSEMBLE USING LOCTITE 277 OR EQUAL; TORQUE TO 410-460 FT-LBS (550-625 N.M)

ELECTRICAL

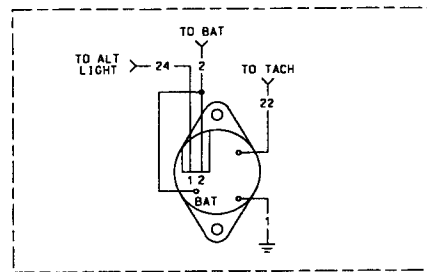
ELECTRICAL SCHEMATIC

HT 110

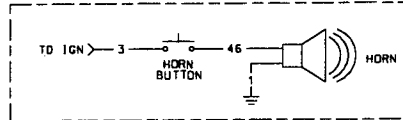
POWER CIRCUIT



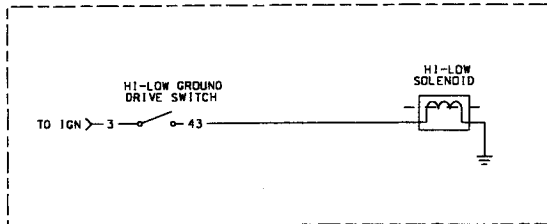
ALTERNATOR



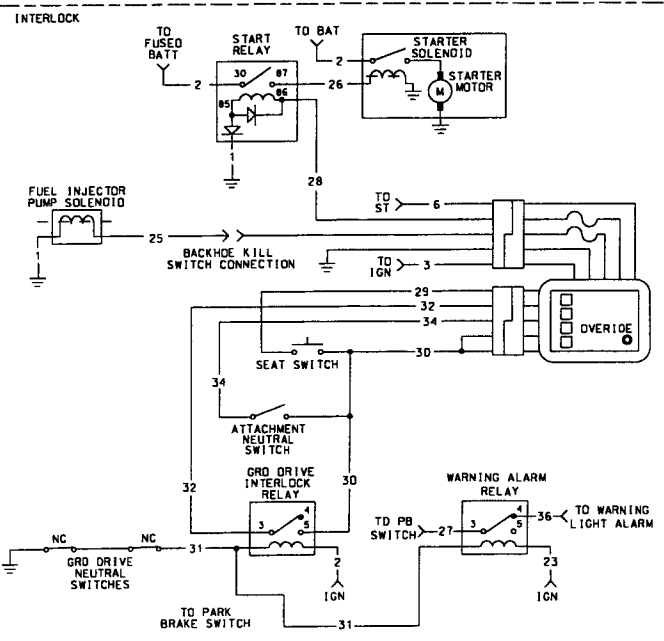
HORN OPTION



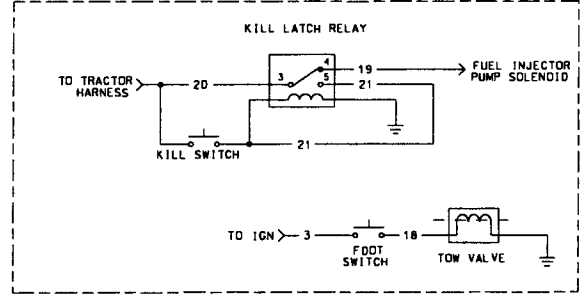
2 SPEED GROUND DRIVE



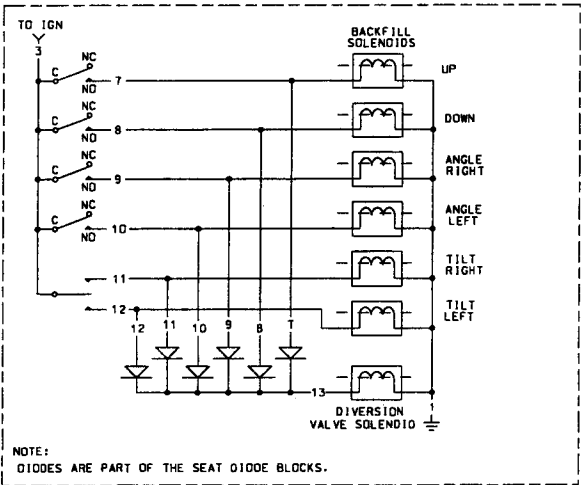
INTERLOCK



BACKHOE OPTION

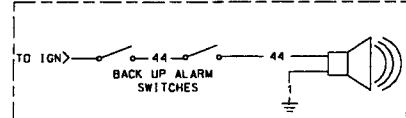


BACKFILL BLADE

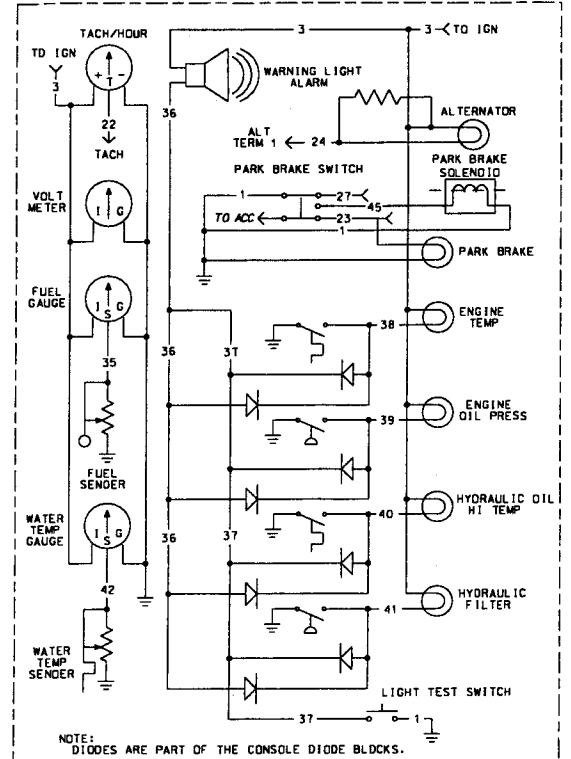


NOTE: DIODES ARE PART OF THE SEAT DIODE BLOCKS.

BACK UP ALARM



STATUS INDICATOR



NOTE: DIODES ARE PART OF THE CONSOLE DIODE BLOCKS.

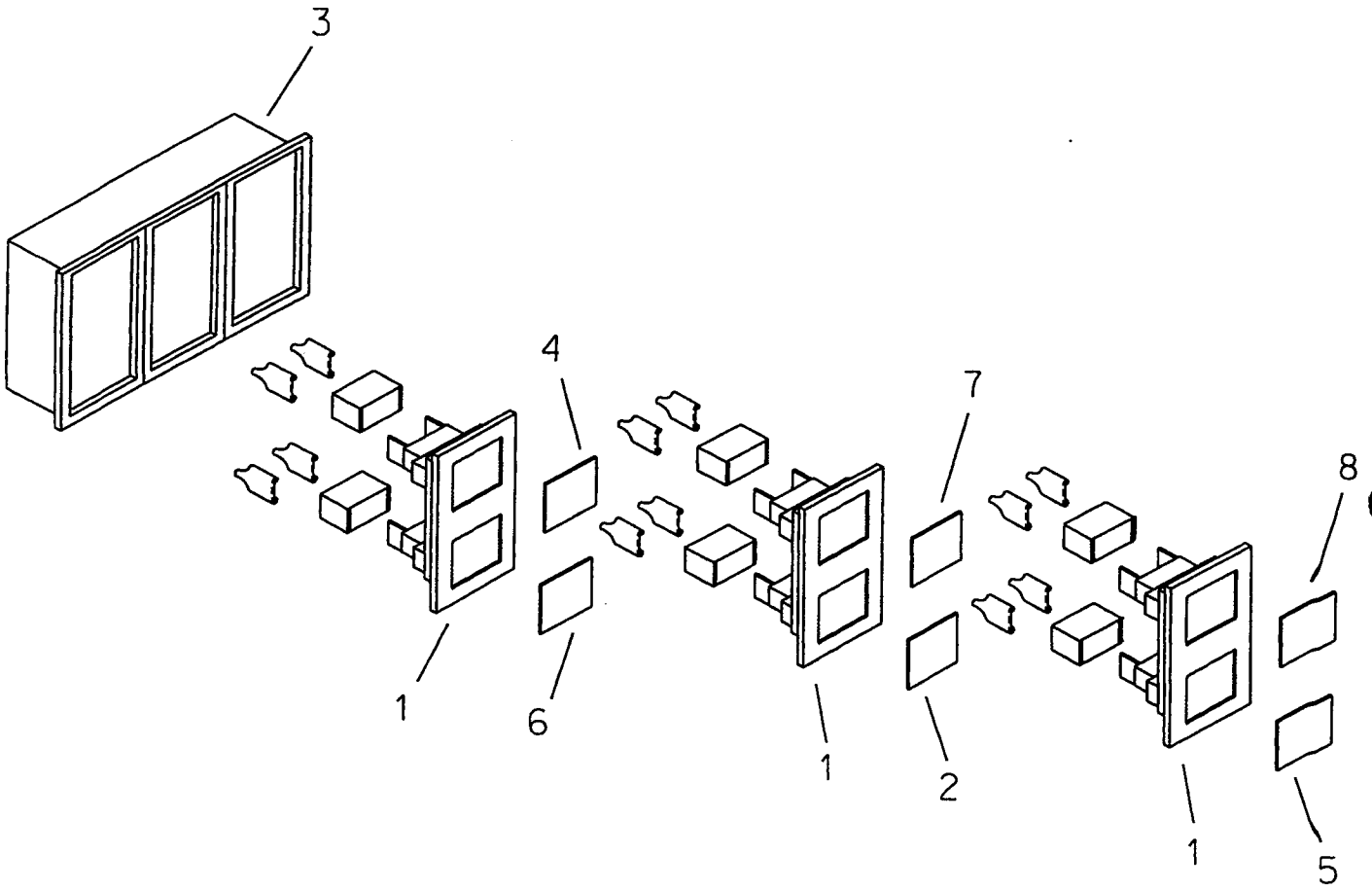
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ELECTRICAL SCHEMATIC

HT 110

CKT NO.	WIRE COLOR	FUNCTION	REMARKS
1	BLK	SYSTEM GROUND	
2	RED	BATTERY CIRCUIT	
3	ORG	IGNITION CIRCUIT	
4	RED	BATTERY CIRCUIT (CIRCUIT BREAKER PROTECTED)	
5	ORG/WHT	ACCESSORY CIRCUIT	
6	WHT/RED	IGNITION SWITCH START "ST"	
7	YEL	BACKFILL BLADE SWITCH TO SOLENOID (UP)	
8	WHT/GRN	BACKFILL BLADE SWITCH TO SOLENOID (DN)	
9	WHT/BLK	BACKFILL BLADE SWITCH TO SOLENOID (ANGLE R)	
10	YEL/BRN	BACKFILL BLADE SWITCH TO SOLENOID (ANGLE L)	
11	WHT/BLU	BACKFILL BLADE SWITCH TO SOLENOID (TILT R)	
12	GRN	BACKFILL BLADE SWITCH TO SOLENOID (TILT L)	
13	PUR	BACKFILL BLADE TO DIV VALVE SOLENOID	
14	YEL/RED	WORKLIGHT/HAZARD LIGHT SWITCH TO HAZARD RELAY	
15	YEL/BLU	WORKLIGHT/HAZARD SWITCH TO WORK LIGHT RELAY	
16	YEL/RED	FLASHER RELAY TO HAZARD LIGHTS	
17	YEL/BLK	WORKLIGHT RELAY TO WORKLIGHTS	
18	ORG	FOOT SWITCH TO TOW VALVE SOLENOID	
19	ORG/BLK	KILL LATCH RELAY TO FUEL SOLENOID	
20	ORG/GRN	KILL SWITCH TO TRACTOR HARNESS	
21	ORG	KILL LATCH RELAY TO SWITCH	
22	YEL	TACH TO ALTERNATOR WIRE (66)	
23	WHT/ORG	PARK BRAKE SWITCH TO PARK BRAKE LIGHT AND WARNING ALARM RELAY	
24	YEL/BLK	CHARGE LIGHT TO ALTERNATOR	
25	ORG/BLK	INTERLOCK MODULE TO DELAY TIMER & FUEL SOLENOID	
26	WHT/BLK	START RELAY TO START SOLENOID	12 GAUGE WIRE
27	GRN/YEL	PARK BRAKE SWITCH TO WARNING ALARM RELAY	
28	WHT/BLK	INTERLOCK MODULE TO START RELAY	18 GAUGE WIRE
29	WHT/RED	SEAT SWITCH TO INTERLOCK MODULE	
30	WHT	GD/A RELAY TO ATT NEUT SW, SEAT SW, INTERLOCK MODULE	16 GAUGE WIRE
31	PUR	GROUND DRIVE NEUTRAL SWITCH TO GD RELAY & WARNING ALARM RELAY	
32	WHT/BLU	GROUND DRIVE RELAY TO INTERLOCK MODULE	
33	GRA	HYDRAULIC FILTER LIGHT TO SWITCH	
34	WHT/GRN	ATTACH NEUTRAL SW TO INTERLOCK MODULE	16 GAUGE WIRE
35	BRN	FUEL SENDER TO FUEL GAUGE	
36	BLU	DIODES AND WARNING ALARM RELAY TO WARNING ALARM	
37	BLK	DIODES TO LIGHT TEST SWITCH	
38	BRN	WATER TEMP SWITCH TO LIGHT AND DIODE	
39	GRN	ENGINE OIL PRESSURE SWITCH TO LIGHT AND DIODE	
40	YEL	HYDRAULIC TEMP SWITCH TO LIGHT AND DIODE	
41	GRA	HYDRULIC FILTER SWITCH TO LIGHT AND DIODE	
42	GRA	WATER TEMP SENDER TO WATER TEMP GAUGE	
43	GRN/BLK	TWO SPEED GROUND DRIVE SWITCH TO SOLENOID	
44	BLU/WHT	BACK UP ALARM SWITCHES TO BACK UP ALARM	
45	BRN/ORG	PARK BRAKE SWITCH TO PARK BRAKE SOLENOID	
46	TAN/BLU	HORN SWITCH TO HORN	

WARNING SYSTEM LIGHT

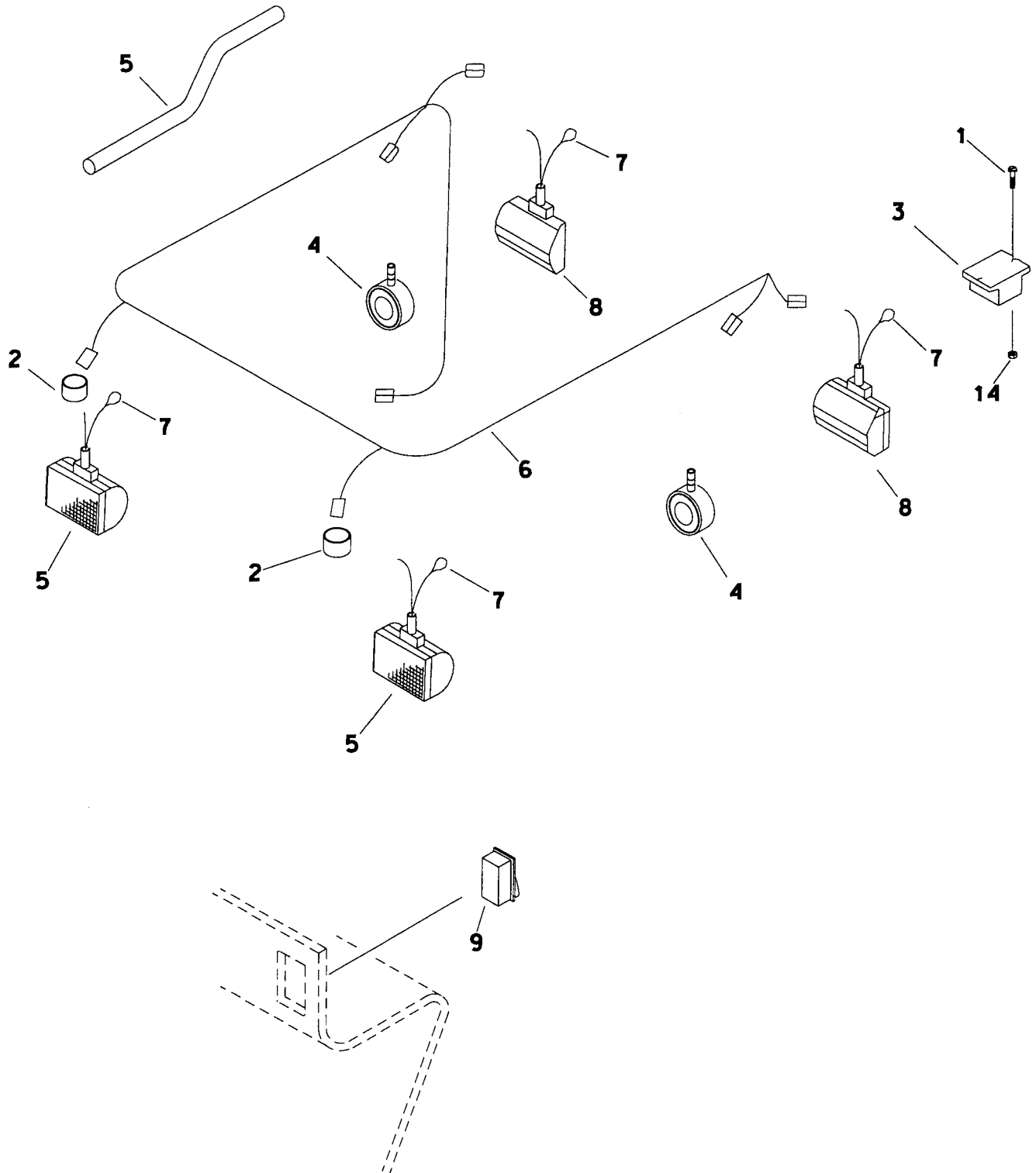


WARNING SYSTEM LIGHT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-020	3	PILOT LIGHT	
2.	217-036	1	INSERT - HYD OIL PSI (YEL)	
3.	217-712	1	MOUNT BEZEL (3-WAY)	
4.	217-051	1	INSERT - ENG TEMP (RED)	
5.	217-029	1	INSERT - PARK BRAKE (RED)	
6.	217-021	1	INSERT - ENG OIL PSI (RED)	
7.	217-027	1	INSERT - HYD OIL HI TEMP (RED)	
8.	217-061	1	INSERT - ALTERNATOR (RED)	

FOOTNOTES

WARNING / WORKING LIGHTS
HT110



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WARNING / WORKING LIGHTS

HT110

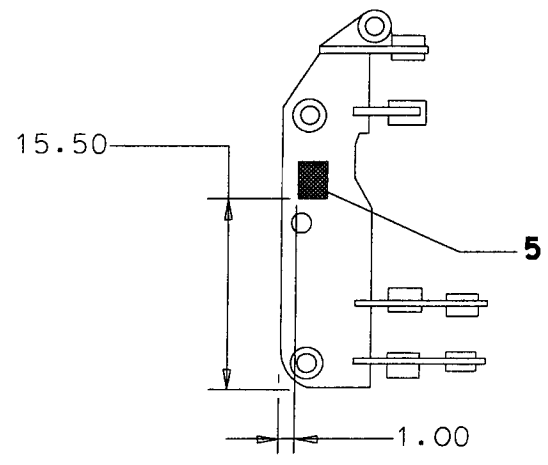
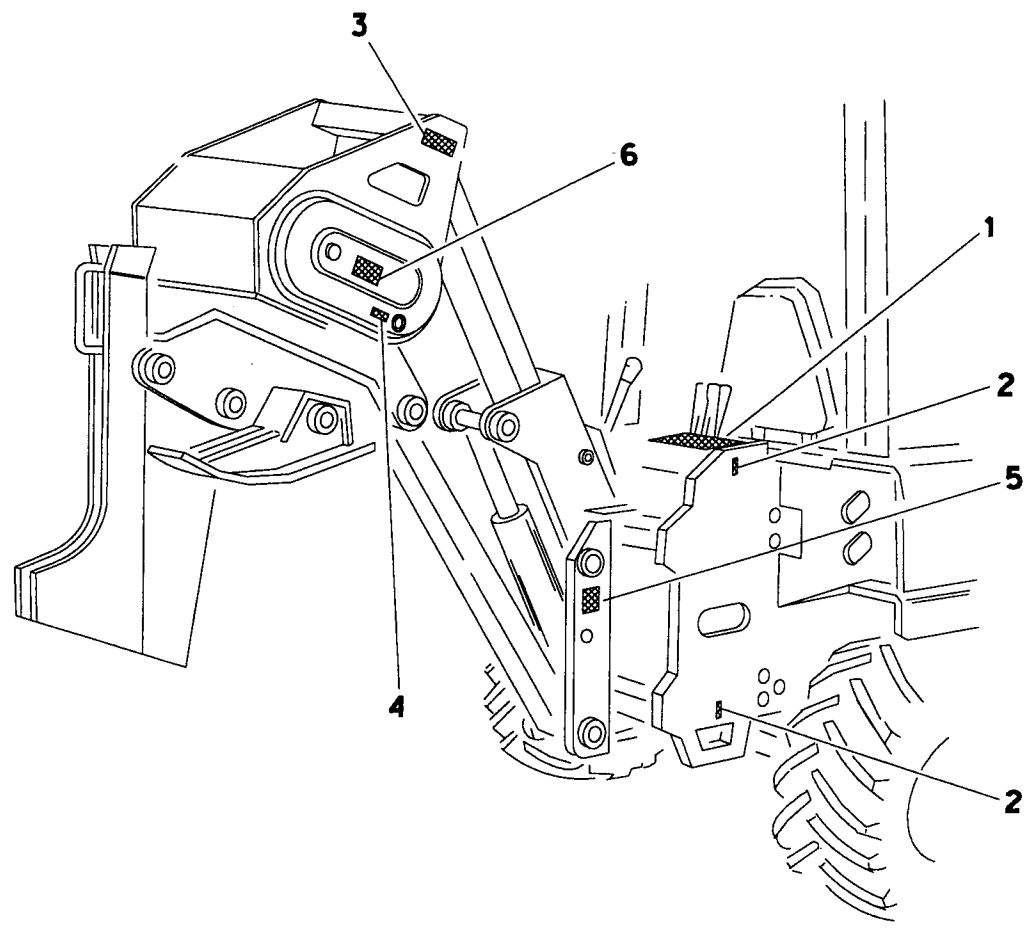
REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-432		WARNING/WORKING LIGHT CONV KIT	
1.	106-058	2	BOLT (#6-32 X 1-1/8", RD SLT HD)	
2.	116-203	2	GROMMET	
3.	215-041	1	FLASHER	
4.	215-442	2	WARNING LIGHT	
5.	215-579	AR	WIRE GUARD (1.250")	(USE 92")
6.	215-803	1	LIGHT HARNESS	
7.	215-804	4	RING TERMINAL (1/2")	
8.	217-007	4	WORKING LIGHT	
9.	214-783	1	ROCKER SWITCH OPDT (ON OFF ON)	
10.	105-215	2	NUT (#6-32)	

FOOTNOTES

- REFER TO INSTALLATION DIAGRAM 050-194.

ZH830

DECAL KIT
H830. ZH830



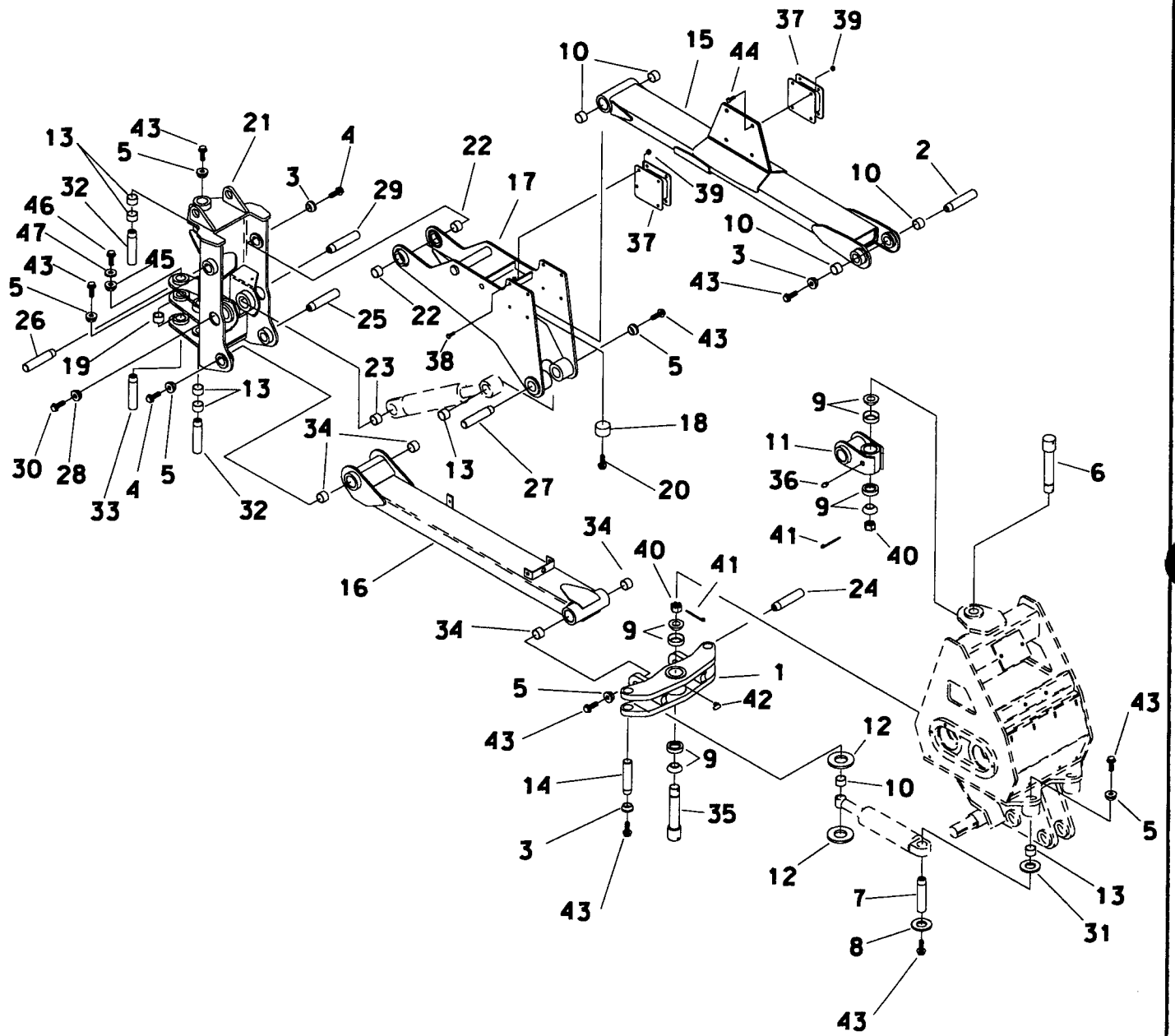
DECAL KIT

H830. ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-647		DECAL KIT - 830	
	275-823		DECAL KIT - ZH830	
1.	274-076	1	CONTROL VALVE	
	274-320	1	ATTACHMENT CONTROL	
	274-456	1	ATTACHMENT CONTROLS	
2.	274-318	4	TIE DOWN LOCATION	
3.	274-325	2	H830 MODEL-ID	
	273-042	2	ZH830 MODEL IDENTIFIER	
4.	275-023	2	OIL LEVEL	
5.	275-184	2	WARNING MOVING PARTS	
6.	275-284	1	AMPLITUDE CHART	

FOOTNOTES

PLOW ARM ZH830



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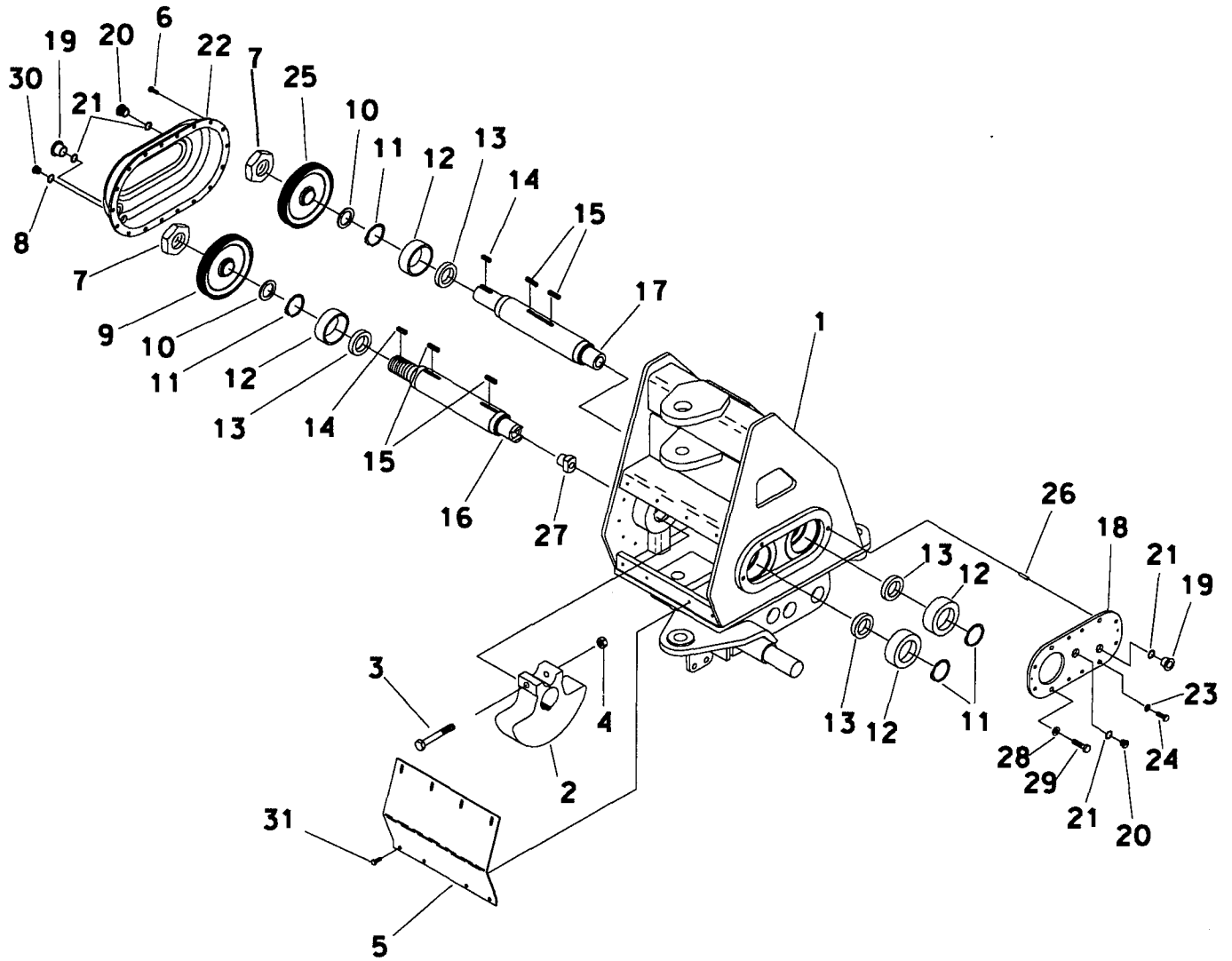
807-459

PLOW ARM ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	312-752	1	CONNECTOR BAR	
2.	183-628	1	TAPERED PIN (1.5" X 8.5")	
3.	181-974	4	TAPERED INSERT (1.500")	
4.	106-470	2	FLG SCREW (M16-2 X 40MM)	
5.	181-975	7	TAPERED INSERT (1.750")	
6.	179-099	1	UPPER CLEVIS PIN	
7.	179-152	2	TAPERED PIN (1.75" X 5.3")	
8.	105-964	2	WASHER (5/8")	
9.	126-131	4	SPHERICAL PLAIN BEARING	
10.	125-772	6	COMPOSITION BUSHING	
11.	312-403	1	UPPER CLEVIS	
12.	116-519	4	RUBBER WASHER (40MM)	
13.	125-773	7	COMPOSITION BUSHING	
14.	179-104	2	TAPERED PIN (1.5" X 4.33")	
15.	303-883	1	UPPER PLOW ARM	
16.	303-882	1	LOWER PLOW ARM	
17.	312-435	1	RADIUS ARM	
18.	116-348	4	BUMPER	
19.	184-035	1	BUSHING	
20.	105-828	4	FLG LK BOLT (1/2-NC X 3/4")	
21.	305-942	1	PLOW SWING ASSEMBLY	
22.	125-745	2	COMPOSITION BUSHING	
23.	125-754	1	COMPOSITION BUSHING	
24.	185-165	1	TAPERED PIN (1.75" X 9.88")	
25.	184-632	1	TAPERED PIN (44.4MM X 280MM)	
26.	178-357	1	TAPERED PIN (38.1 X 364MM)	
27.	179-107	1	TAPERED PIN (1.75" X 8.66")	
28.	184-064	1	TAPERED INSERT (2.000")	
29.	179-108	1	TAPERED PIN (2.0" X 5.91")	
30.	106-098	1	FLG BOLT (3/4-NC X 2" GD8)	
31.	116-520	2	RUBBER WASHER (46MM)	
32.	183-632	2	TAPERED PIN (1.75" X 7.1")	
33.	178-329	1	TAPERED PIN (31.7 X 272MM)	
34.	125-822	4	COMPOSITION BUSHING	
35.	107-378	1	CLEVIS PIN	
36.	115-020	1	ZERK (1/8-NPT, STR, X-LG)	
37.	116-667	2	SHEAR MOUNT (7.12" SQ X 3" TH)	
38.	105-830	12	FLG LK BOLT (1/2-NC X 1-1/4")	
39.	105-065	16	LOCKNUT (1/2"-NC)	
40.	106-067	2	CASTLE NUT (1-1/2-NF)	
41.	105-514	2	COTTER PIN (1/4" X 3")	
42.	115-002	1	ZERK (02N, 90)	
43.	105-969	11	FLG BOLT (5/8-NC X 1-1/2 GD8)	
44.	105-885	4	FLG LOCK BOLT (1/2-NC X 2.00")	
45.	181-982	1	TAPERED INSERT (1.25")	
46.	107-206	1	BOLT (M12-1.75 X 35MM)	
47.	106-379	1	WASHER	

FOOTNOTES

VIBRATOR ASSEMBLY ZH830



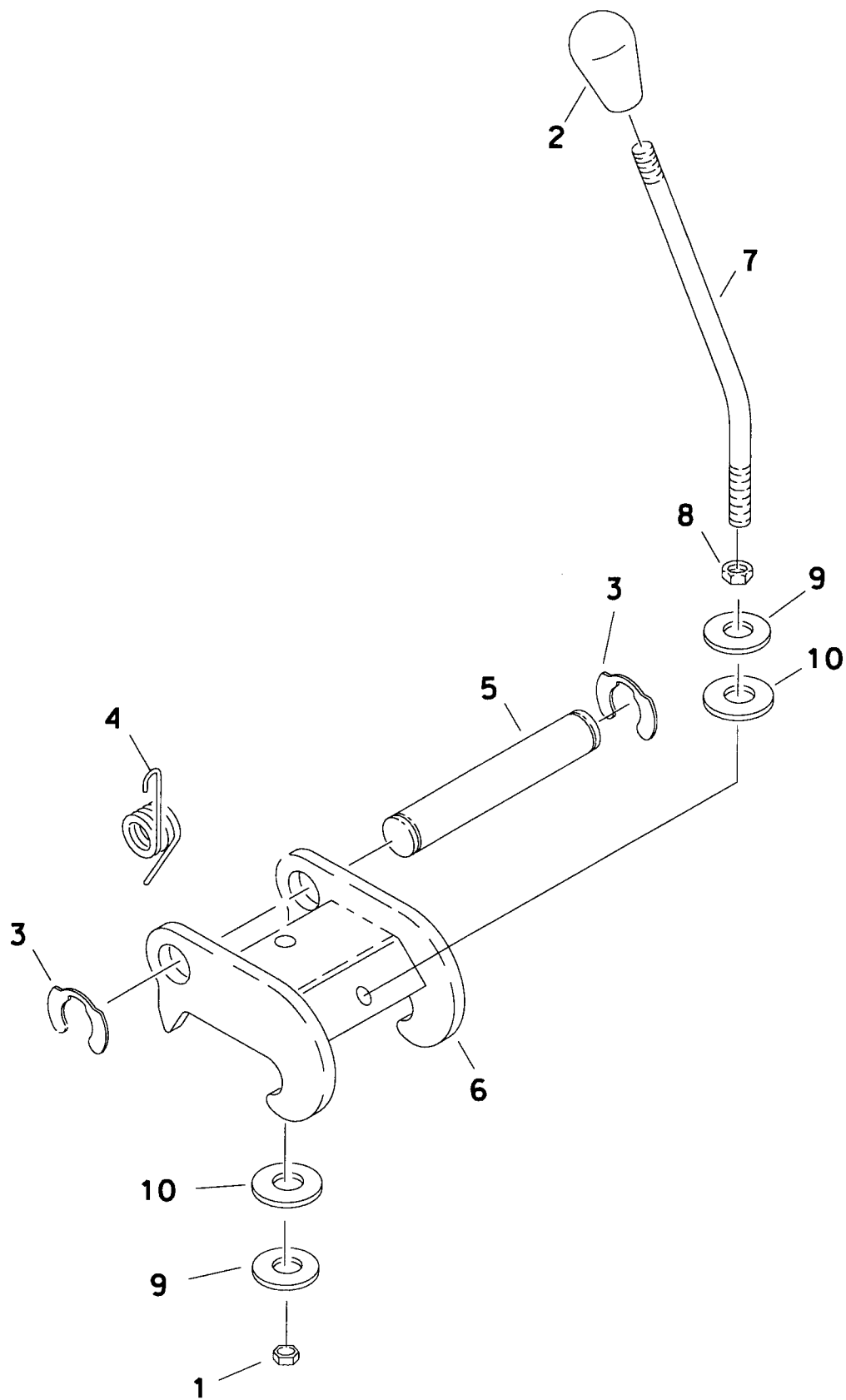
VIBRATOR ASSEMBLY ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	306-449	1	VIBRATOR	
2.	185-115	4	VIBRATOR WEIGHT	
3.	106-619	4	FLG BOLT (1/2-NC X 4.50")	
4.	106-077	4	FLG LK NUT (1/2-NC)	
5.	331-644	2	VIBRATOR SHIELD	
6.	105-823	18	FLG LK BOLT (5/16-NC X .750")	
7.	106-842	2	THRUST LOCKNUT (1.967-NF)	TORQUE TO 1500-1800 FT/LBS PER INSTRUCTIONS 051-032
8.	155-760	1	O-RING (904 D90)	
9.	185-097	1	LEFT GEAR	
10.	181-421	2	SPACER	
11.	115-488	4	INTERNAL SNAP RING	
12.	125-344	4	BEARING	
13.	157-627	4	INTERNAL SEAL	
14.	166-849	2	KEY (.375 X 1.120")	
15.	165-929	4	KEY (.375 X 2.453")	
16.	167-149	1	RIGHT SHAFT	
17.	167-061	1	LEFT SHAFT	
18.	185-116	1	FRONT COVER	
19.	110-111	2	SIGHT GAUGE (16S)	
20.	155-138	2	PLUG (16S)	
21.	155-748	4	O-RING (916 D90)	
22.	185-073	1	COVER	
23.	106-255	10	WASHER (.375)	
24.	105-031	10	BOLT (3/8-NC X 1.00")	
25.	185-098	1	RIGHT GEAR	
26.	105-517	2	DOWEL PIN (3/8 X 1.00")	
27.	180-642	1	MOTOR HUB	
28.	105-159	2	CAM WASHER (1/2")	
29.	105-066	2	BOLT (1/2-NC X 1.75")	
30.	155-125	1	PLUG (04S)	
31.	105-825	16	FLG LK BOLT (3/8-NC X .750")	

FOOTNOTES

STOW LOCK

ZH830

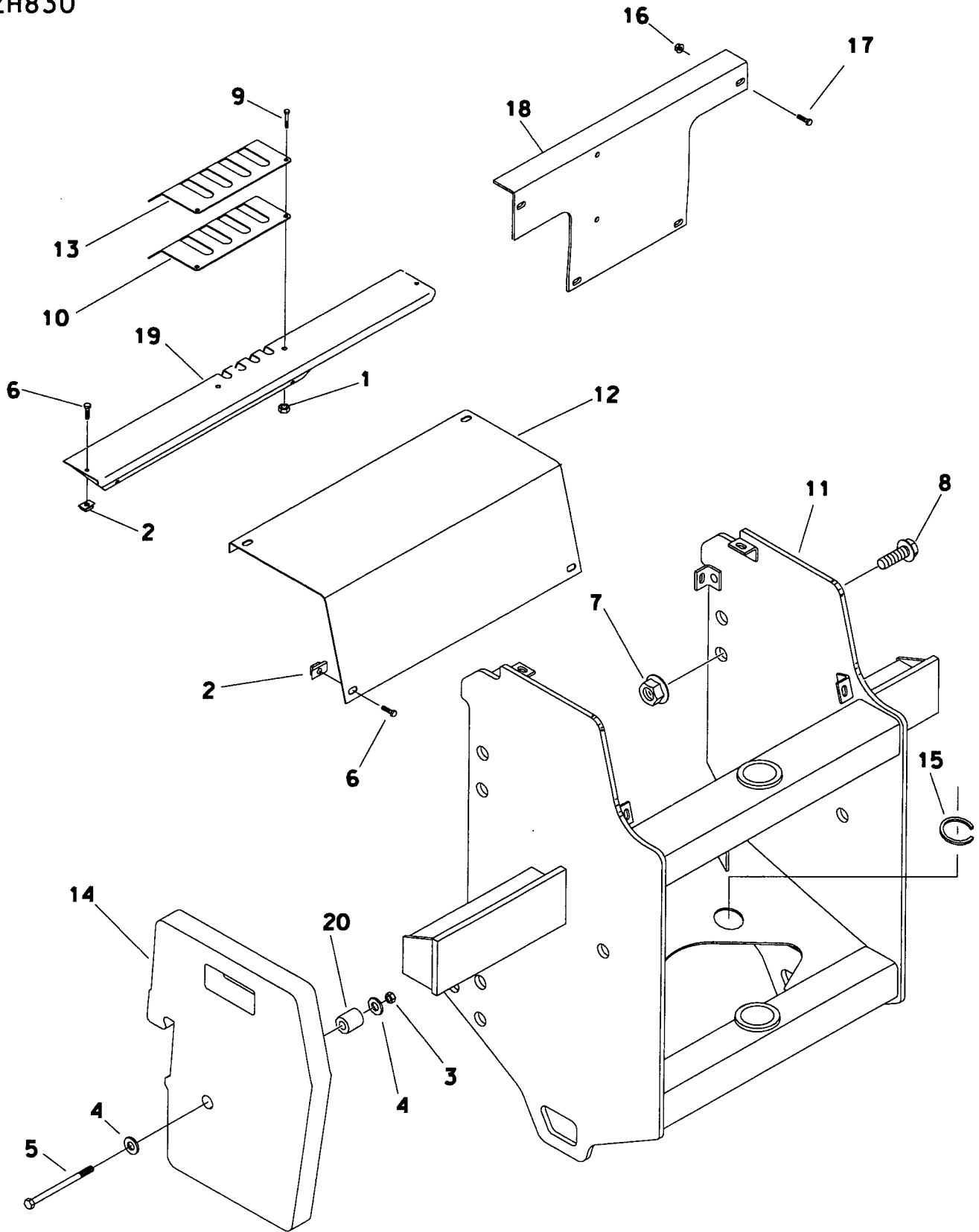


STOW LOCK ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-065	1	LOCKNUT (1/2-NC)	
2.	110-377	1	KNOB (1/2-NC, BLUE)	
3.	115-511	2	KLIP RING (1.500")	
4.	115-584	1	TORSION SPRING	
5.	183-624	1	STOW LOCK PIN	
6.	331-613	1	STOW LOCK	
7.	315-517	1	STOW LOCK HANDLE	
8.	105-044	1	JAM NUT (1/2-NC)	
9.	105-884	2	WASHER (1/2")	
10.	116-403	2	RUBBER WASHER (.560")	

FOOTNOTES

ATTACHMENT FRAME ZH830



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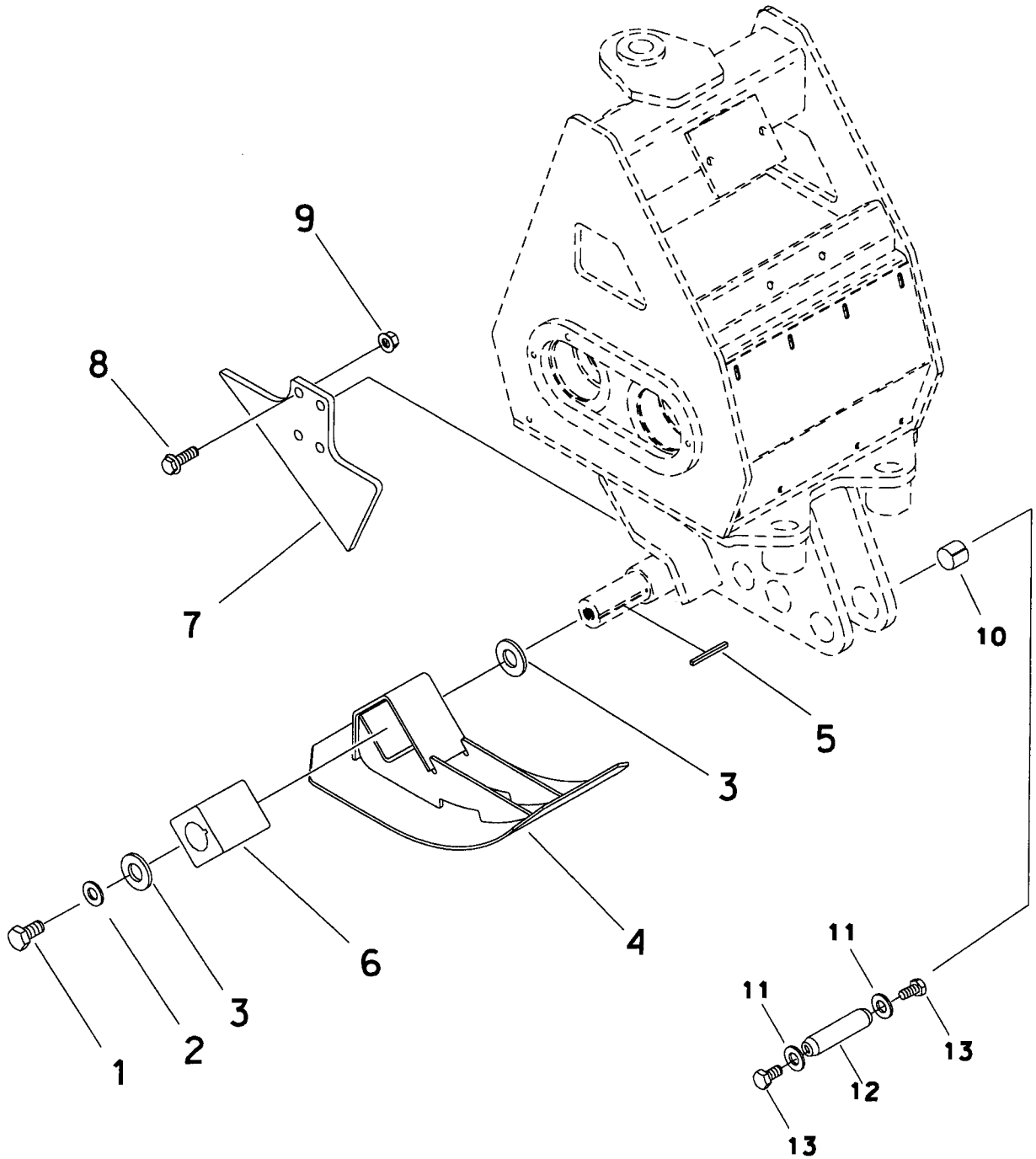
ATTACHMENT FRAME ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-078	4	FLG. LK NUT (1/4-NC)	
2.	105-137	8	CLIP NUT (5/16-NC)	
3.	105-372	2	LKNUT (3/4-NC)	
4.	105-384	4	WASH (3/4")	
5.	105-442	2	BOLT (3/4-NC X 13-1/2")	
6.	105-873	8	FLG LK BOLT (5/16-NC X 1")	
7.	105-919	10	FLG. NUT (1-NC)	
8.	106-167	10	BOLT (1-NC X 2")	
9.	105-819	4	FLG LK BOLT (1/4-NC X 1")	
10.	116-353	1	PANEL GASKET	
11.	305-943	1	ATTACHMENT FRAME	
12.	316-433	1	REAR CONSOLE COVER	
13.	314-663	1	VALVE HANDLE COVER	
14.	375-080	12	COUNTERWEIGHT (ORDERED INDIVIDUALLY AS NEEDED)	
15.	115-663	1	GROMMET EDGING (12-3/4")	
16.	105-814	4	FLG LOCKNUT (3/8 NC)	
17.	105-826	4	FLG LK SCREW (3/8-NC X 1")	
18.	331-231	1	VALVE PLATE	
19.	314-538	1	CONSOLE COVER	
20.	181-398	2	SPACER	

FOOTNOTES

SKID SHOES/SOD CUTTER/BLADE PIN

ZH830



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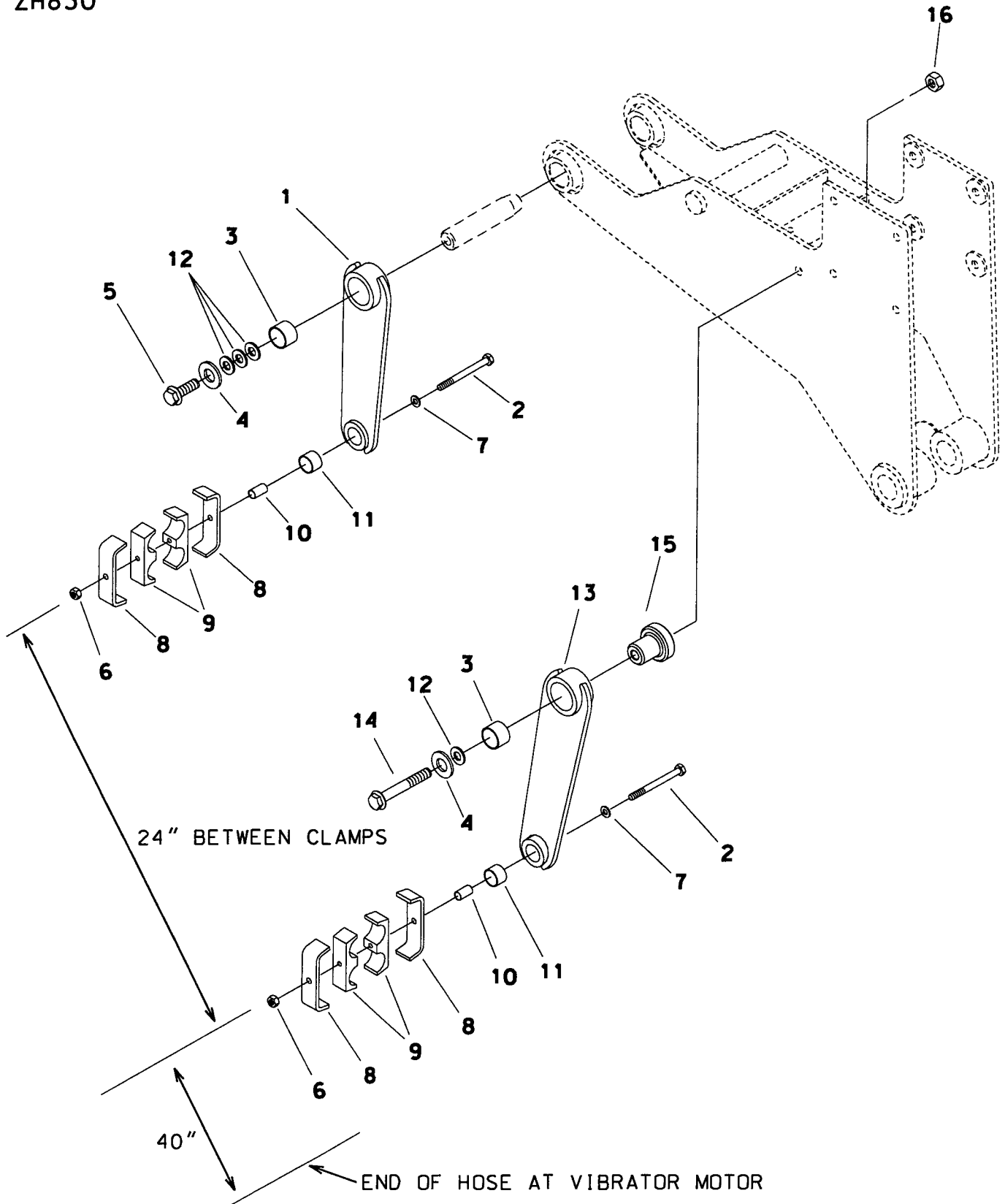
807-518

SKID SHOES/SOD CUTTER/BLADE PIN ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-319	2	BOLT (3/4 - NC X 1- 1/2)	
2.	105-915	2	WASHER (.781")	
3.	105-982	4	WASHER (2-1/16")	
4.	320-546	2	SKID SHOE	
5.	351-582	2	KEY (1/4" SQ. X 3-3/4")	
6.	116-100	2	SHOCK MOUNT	
7.	331-661	1	SOD CUTTER	
8.	105-970	4	FLG BOLT (5/8-NC X 1.750" , GD8)	
9.	105-994	4	FLG NUT (5/8-NC)	
10.	178-345	6	SPRING BUSHING	
11.	105-423	6	WASHER (3/4")	
12.	178-347	3	PIN (2.0" X 7.5")	
13.	105-379	6	LK BOLT (3/4-NC X 1-1/4",NLK)	

FOOTNOTES

DRIVE HOSE CLAMP ZH830



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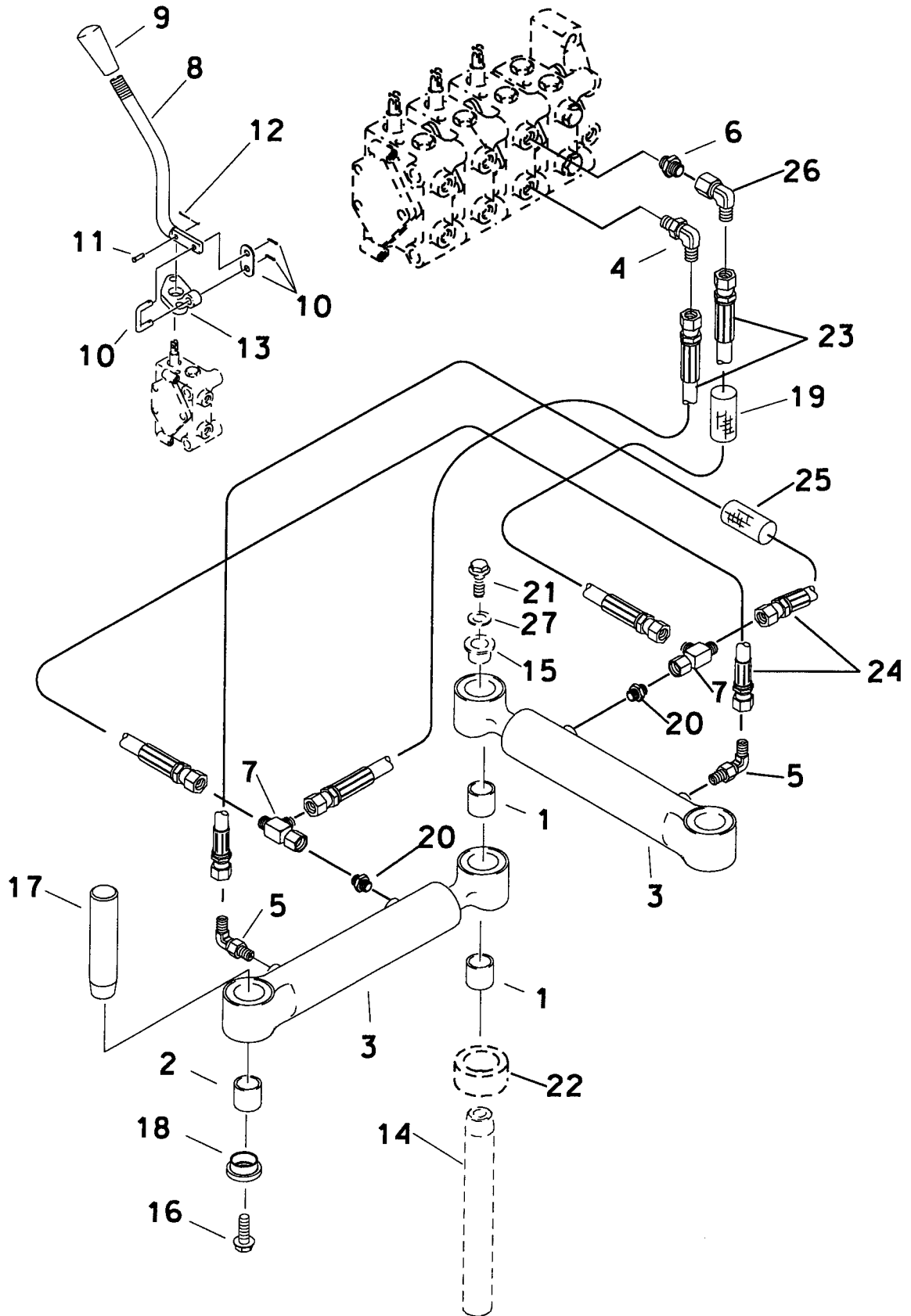
DRIVE HOSE CLAMP ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	331-658	2	HOSE CLAMP ARM	
2.	105-217	2	BOLT (3/8-NC X 4.5)	
3.	125-772	2	COMPOSITION BUSHING	
4.	105-416	2	WASHER (5/8")	
5.	106-470	1	FLG SCREW (M16-2.00 X 40MM)	
6.	105-814	2	FLG LOCKNUT (3/8" NC)	
7.	105-069	2	WASHER (.406)	
8.	315-623	4	BACK-UP SPACER	
9.	110-359	2	CLAMP (1-1/2")	
10.	145-906	2	PIVOT TUBE	
11.	125-770	2	COMPOSITION BUSHING	
12.	110-220	3	MACHINERY BUSHING	
13.	331-655	1	HOSE CLAMP ARM	
14.	105-407	1	BOLT (5/8-NC)	
15.	179-171	1	HOSE CLAMP SUPPORT PIN	
16.	105-357	1	LOCKNUT (5/8-NC)	

FOOTNOTES

FLOW SWING HYDRAULICS

ZH830



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PLOW SWING HYDRAULICS

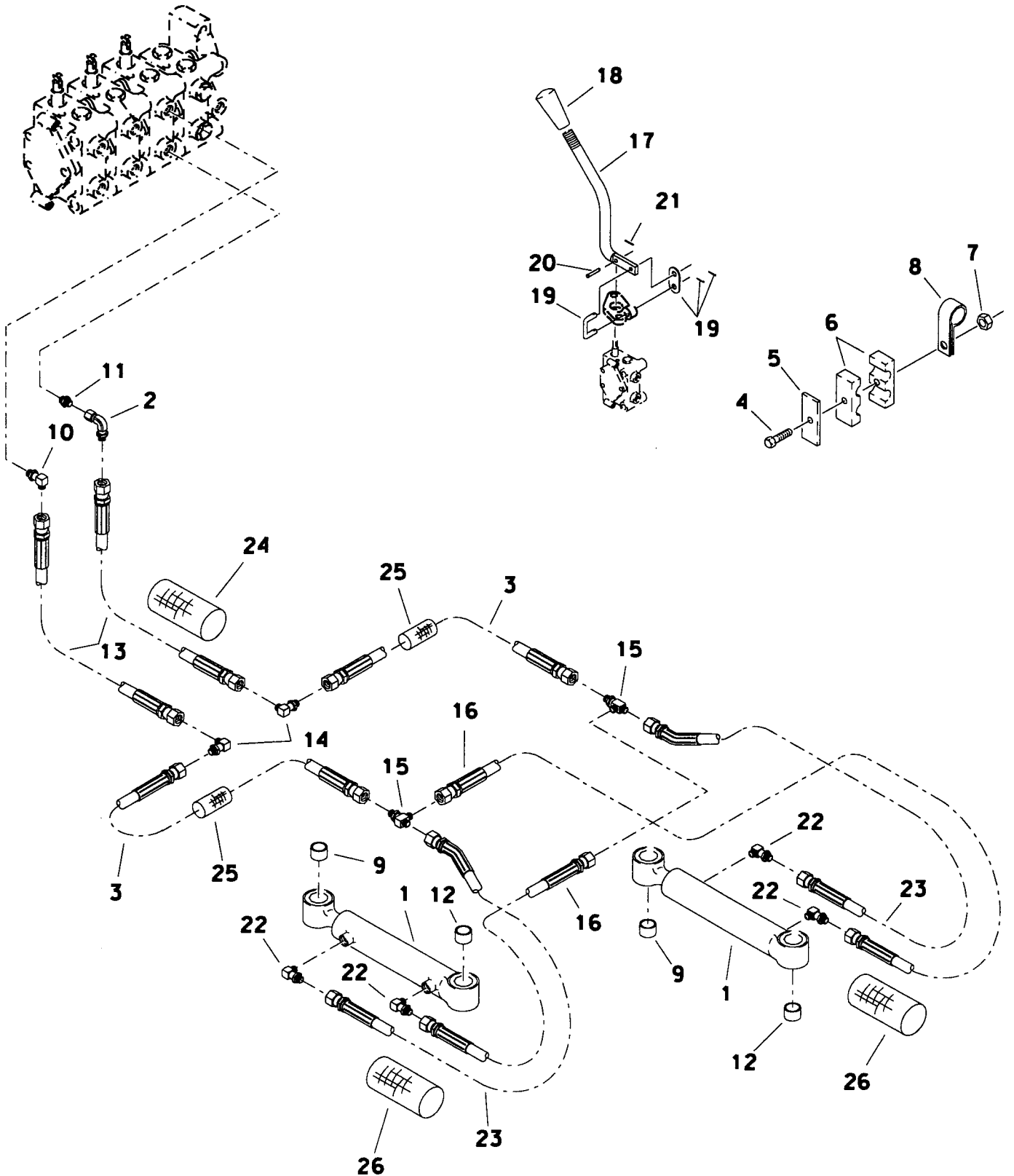
ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	125-771	2	COMPOSITION BUSHING (1.25)	
2.	125-772	2	COMPOSITION BUSHING (1.5)	
3.	151-028	2	CYLINDER (2.5" X 1.25" X 4")	
4.	510-019	1	CONNECTOR (040-08S90, DRF)	
5.	154-226	2	CONNECTOR (040-06S90)	
6.	154-261	1	CONNECTOR (040-08S)	
7.	154-265	2	UNION TEE RUN (040FX-040-040)	
8.	314-543	1	VALVE CONTROL LEVER	
9.	110-531	1	HANDLE (1/2-NC, BLK)	
10.	500-419	1	CONNECTOR LINK	
11.	110-082	1	CLEVIS PIN	
12.	105-526	1	COTTER PIN	
13.	500-027	-	HANDLE BRACKET	
14.	178-329	-	TAPPERED PIN (31.7 X 272MM)	
15.	181-982	-	TAPPERED INSERT (1.25 IN.)	
16.	105-969	2	FLG BOLT (5/8 NC X 1-1/2 GD 8)	
17.	183-699	2	TAPPERED PIN (1.500 X 4.90)	
18.	181-974	2	TAPPERED INSERT (1.5 IN)	
19.	117-676	2	ABRASION SLEEVE (1.00 X 30.0")	
20.	154-220	2	CONNECTOR (040-06S)	
21.	107-206	-	FLG SCREW (M12 1.75 X 35MM)	
22.	184-035	-	BUSHING	
23.	154-911	2	HOSE (040FX-36"-3000AR)	
24.	154-783	2	HOSE (040FX-24"-3000)	
25.	117-672	2	ABRAISION SLEEVE (1.00" X 20")	
26.	154-255	1	UNION (040-040FX90)	
27.	106-379	-	WASHER	

NOTE:

BLADE STEER HYDRAULICS

ZH830



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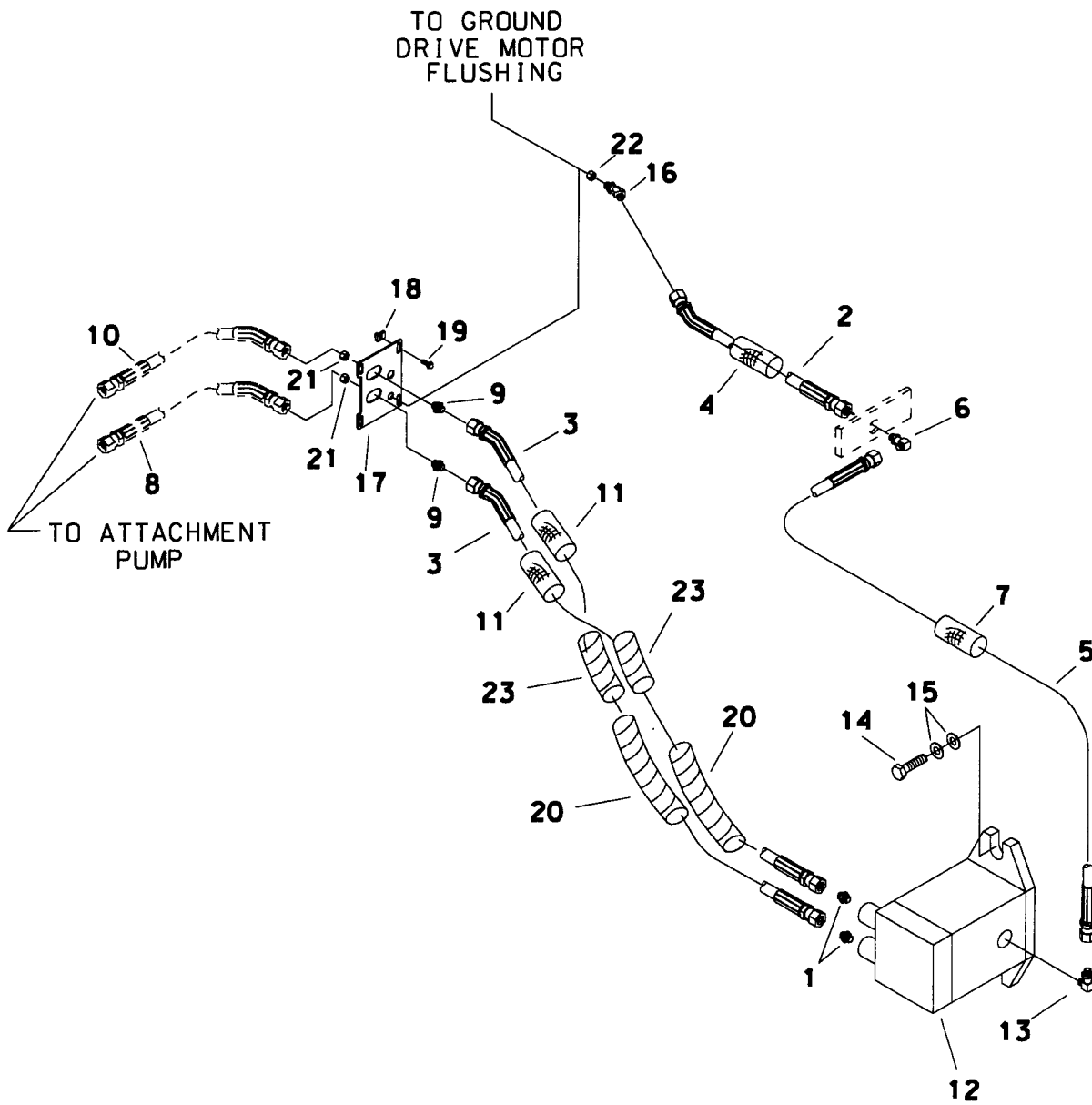
BLADE STEER HYDRAULICS ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	151-029	2	CYLINDER (3 X 1.5 X 10")	
2.	154-255	1	UNION (040-04DFX90)	
3.	154-695	2	HOSE (040-38"-3000)	
4.	105-162	7	(3/8-NC X 2-1/4)	
5.	305-256	7	BACK-UP SPACER	
6.	110-270	14	CLAMP (9/16")	
7.	105-814	7	FLNG LOCKNUT (3/8-NC)	
8.	110-333	1	BOLT ON CLAMP (1")	
9.	125-772	2	COMPOSITION BUSHING	
10.	154-276	1	CONNECTOR (080-04090)	
11.	154-261	1	CONNECTOR (040-08S)	
12.	125-773	2	COMPOSITION BUSHING	
13.	154-724	2	HOSE (040-040-82"-3000)	
14.	154-355	2	CONNECTOR (04090BK)	
15.	154-424	2	BULKHEAD RUN TEE (040)	
16.	515-425	2	HOSE (040-04045-42"-3000)	
17.	314-543	1	VALVE CONTROL HANDLE	
18.	110-531	1	HANDLE (1/2-NC, BLACK)	
19.	500-419	1	CONNECTOR LINK	
20.	110-082	1	CLEVIS PIN (1/4" X 11/16")	
21.	105-526	1	COTTER PIN (3/32" X 1/2")	
22.	154-226	4	CONNECTOR (040-06S90)	
23.	515-133	2	HOSE (04DFX45-38"-5000)	
24.	115-817	2	ABRASION SLEEVE (1.59" X 84")	
25.	117-676	2	ABRASION SLEEVE (1.00" X 30")	
26.	117-656	2	ABRASION SLEEVE (1.59" X 45")	

FOOTNOTES

VIBRATOR DRIVE HYDRAULICS

ZH830



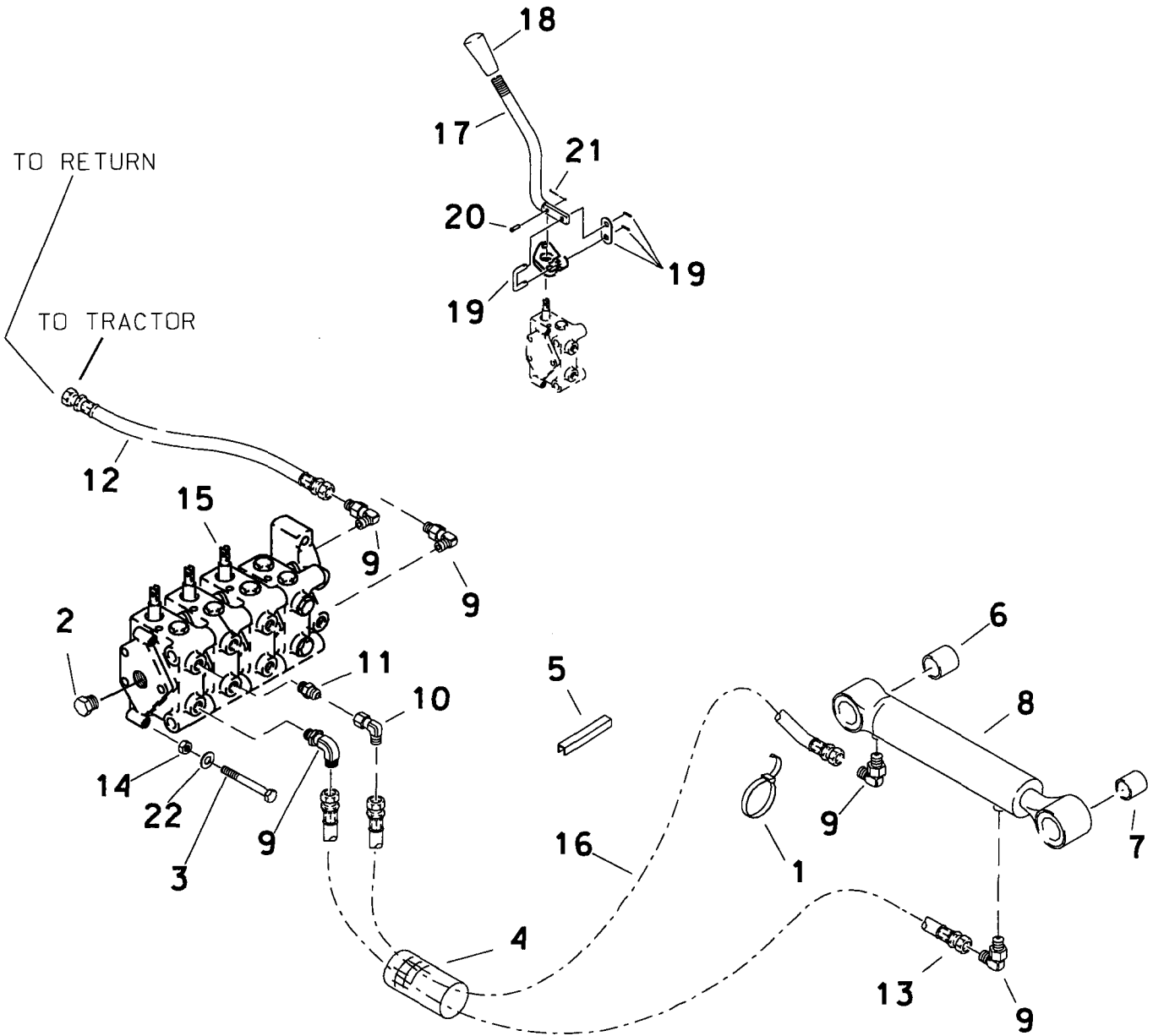
VIBRATOR DRIVE HYDRAULICS ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	154-306	2	CONNECTOR (160-12S-STR)	
2.	515-068	1	HOSE (080-08045-76"-3000)	
3.	515-400	2	HOSE (160-16045-94.0"-6000)	
4.	115-817	1	ABRASION SLEEVE (1.59" X 84")	
5.	154-930	1	HOSE (080-08045-36"-3000)	
6.	154-396	1	CONNECTOR (080-08090BK)	
7.	115-813	1	ABRASION SLEEVE (1.59" X 36")	
8.	154-878	-	HOSE (160-16045-60"-4000)	
9.	154-389	2	CONNECTOR (160-160BK)	
10.	515-359	-	HOSE (160-16045-61"-6000)	
11.	115-715	2	ABRASION SLEVE (2.07 X 42")	
12.	158-752	1	HYDRAULIC MOTOR	
	197-308	-	REBUILT HYDRAULIC MOTOR	
	190-625	-	SEAL REPAIR KIT	
13.	154-236	1	CONNECTOR (12S-08090)	
14.	105-066	-	BOLT (1/2-NC X 1-3/4")	
15.	105-159	-	CAM WASHER (1/2)	
16.	154-393	1	CONNECTOR (080-08045BK)	
17.	331-679	1	BULKHEAD PLATE	
18.	106-558	4	CLIP NUT (M10-1.5)	
19.	106-383	4	FLG LK SCREW (M10-1.5 X 30MM)	
20.	110-930	AR	SPIRAL WRAP (1-1/2")	USE 28" (2X)
21.	154-329	2	CAP (160F)	
22.	154-327	1	CAP (080F)	
23.	110-930	AR	SPIRAL WRAP (1-1/2")	USE 8" (2X)

FOOTNOTES

PLOW LIFT HYDRAULICS

ZH830



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PLOW LIFT HYDRAULICS

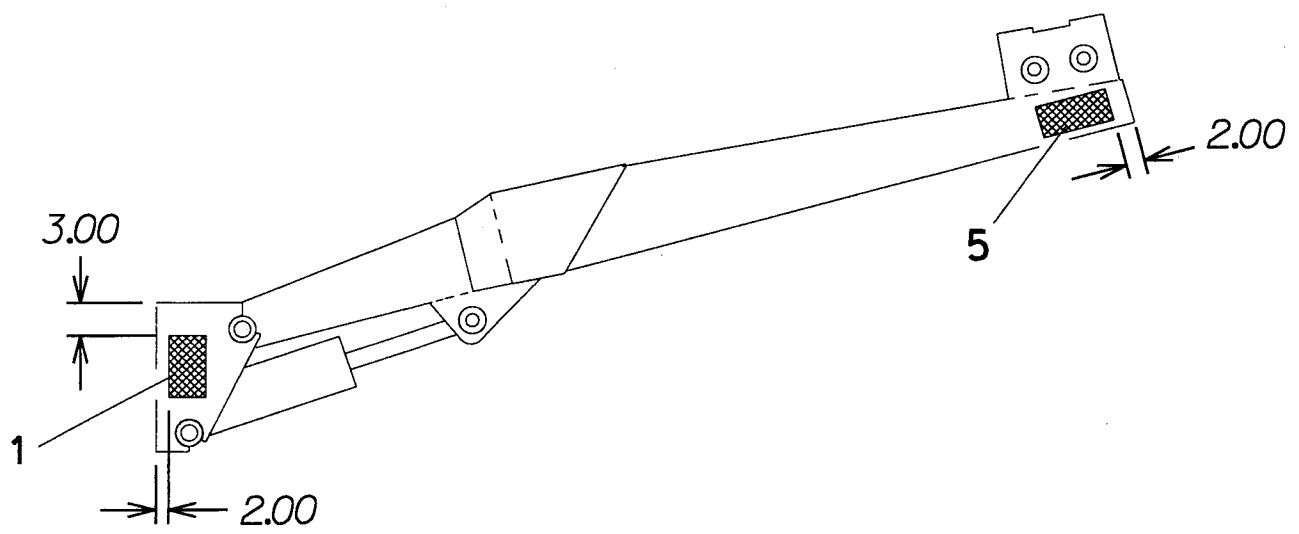
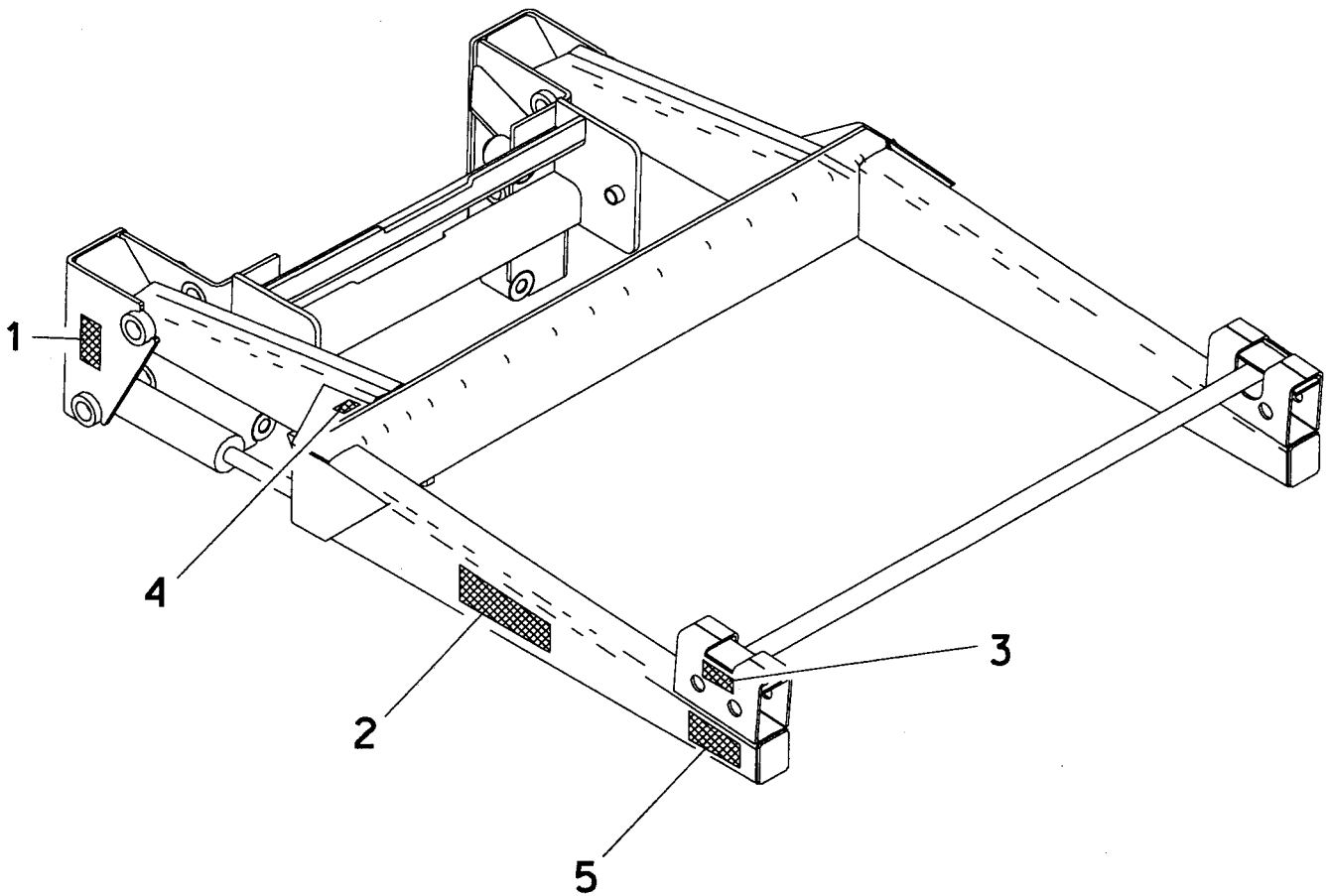
ZH830

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-030	1	CABLE TIE (1/16" TO 4")	
2.	155-179	1	PLUG (10S.SOC)	
3.	105-190	3	BOLT (5/16-NC X 2-3/4")	
4.	117-656	1	ABRASION SLEEVE (1.59 X 45")	
5.	115-704	1	BLUK EDGE (1/4", SOLD PER 1")	USE 5"
6.	125-754	1	COMPOSITION BUSHING	
7.	125-773	1	COMPOSITION BUSHING	
8.	151-085	1	CYLINDER (3.5" X 1.75" X 16")	
9.	154-227	5	CONNECTOR (060-08S90)	
10.	154-228	1	UNION ((060-060FX90)	
11.	154-356	1	CONNECTOR (060-08S-STR-DRF)	
12.	154-722	1	HOSE (060FX X 32" 3000 PSI)	
13.	154-683	1	HOSE (060-66"-3000)	
14.	105-003	3	FLG LK NUT (5/16-NC)	
15.	158-581	1	HYD CONTROL VALVE	
16.	154-813	1	HOSE (060-06045-62"-3000)	
17.	314-543	1	VALVE CONTROL LEVER	
18.	110-530	1	HANDLE (1/2-NC, GRN)	
19.	500-419	1	CONNECTOR LINK	
20.	110-082	1	CLEVIS PIN (1/4" X 11/16")	
21.	105-526	1	COTTER PIN (3/32" X 1/2")	
22.	105-117	3	WASHER (5/16")	

FOOTNOTES

RC110

DECAL KIT
RC110

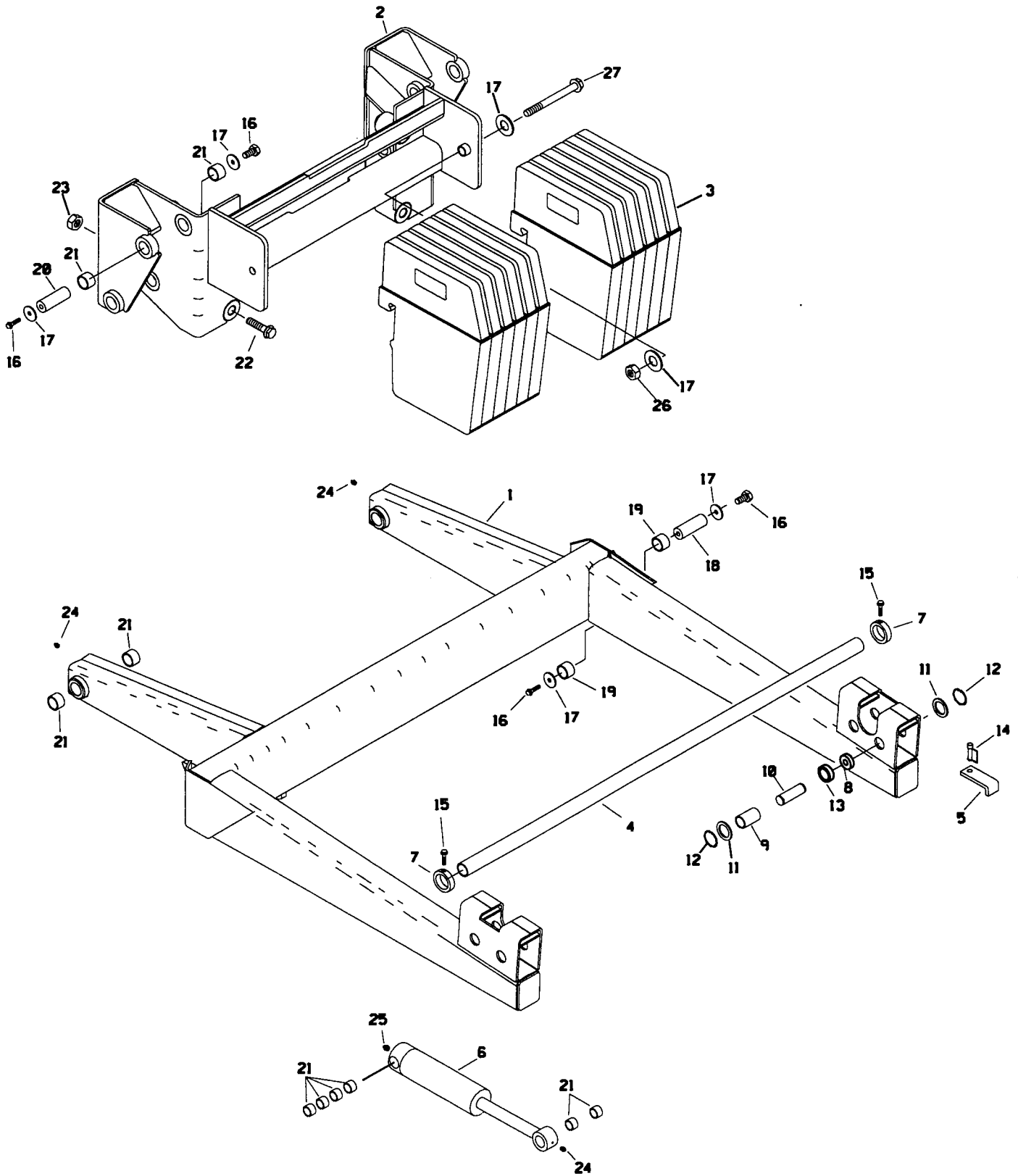


DECAL KIT RC110

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	275-814	1	DECAL KIT	
1.	275-184	2	WARNING MOVING PARTS	
2.	274-834	2	RC110 MODEL I.D.	
3.	274-835	2	RATED REEL CAPACITY	
4.	274-442	2	LIFTING POINT	
5.	275-326	2	WARNING, CRUSHING WEIGHT	

FOOTNOTES

ZRC80/RC110 REEL CARRIER ASS'Y



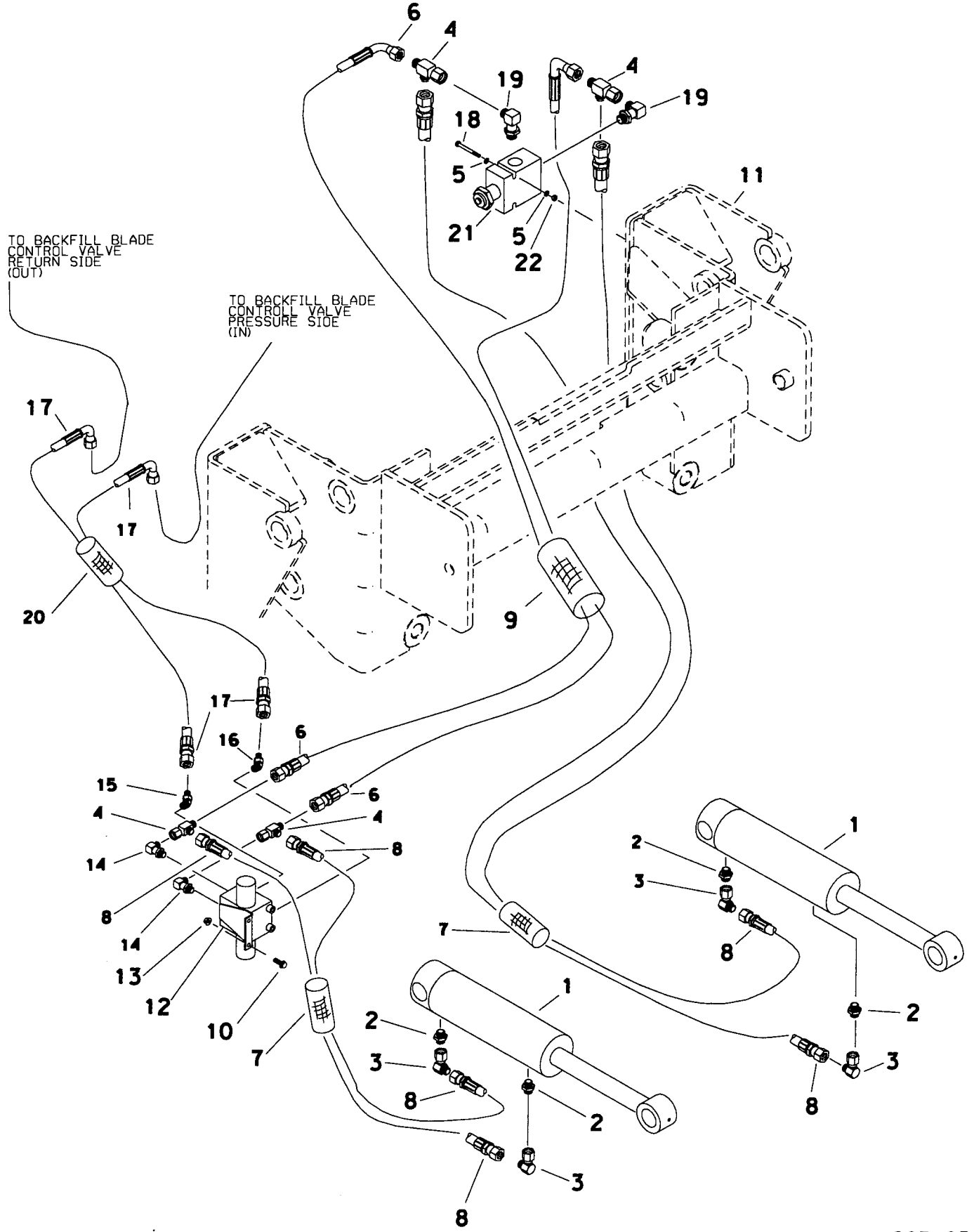
ZRC80/RC110 REEL CARRIER ASS'Y

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	318-154	1	REEL CARRIER ASS'Y	
2.	306-415	1	REEL CARRIER FRAME	
3.	375-080	12	COUNTERWEIGHT (100 LBS.)	SEE FOOTNOTE 1
4.	318-143	1	ARBOR SHAFT	
5.	305-170	2	LOCK RETAINER BAR	
6.	150-095	2	CYL. (4.0" X 1.500" X 9.125")	
7.	181-131	2	LOCK COLLAR	
8.	125-005	4	BALL BEARING	
9.	180-179	4	SLEEVE (1.375")	
10.	180-571	4	BEARING PIN (1.375" X 4.125")	
11.	110-007	8	MACHINE-BUSHING (1.375")	
12.	115-465	8	EXTERNAL SNAP RING (1.375")	
13.	181-296	4	BEARING SLEEVE (2.832")	
14.	110-032	2	SNAPPER PIN (5/16" X 2-1/2")	
15.	105-045	2	BOLT (1/2-NC X 1-1/4", NLK)	
16.	105-379	12	BOLT (3/4-NC X 1-1/4", NLK)	
17.	105-422	16	WASHER (3/4")	
18.	180-497	2	PIN	
19.	125-714	4	CLEVITE BUSHING (1.375")	
20.	183-154	4	CYLINDER PIN	
21.	125-713	24	CLEVITE BUSHING (1.375")	
22.	105-479	4	BOLT (7/8-NC X 8-1/2")	
23.	105-985	4	FLG NUT (7/8-NC)	
24.	115-009	4	ZERK (1/4-NF, STR XL)	
25.	115-006	2	ZERK (1/4-NF, 45°)	
26.	105-372	2	LOCKNUT (3/4-NC)	
27.	105-442	2	BOLT (3/4-NC X 13-1/2")	

FOOTNOTES

1. WEIGHTS ARE ORDERED INDIVIDUALLY

ZRC80/RC110 REEL CARRIER HYDRAULICS



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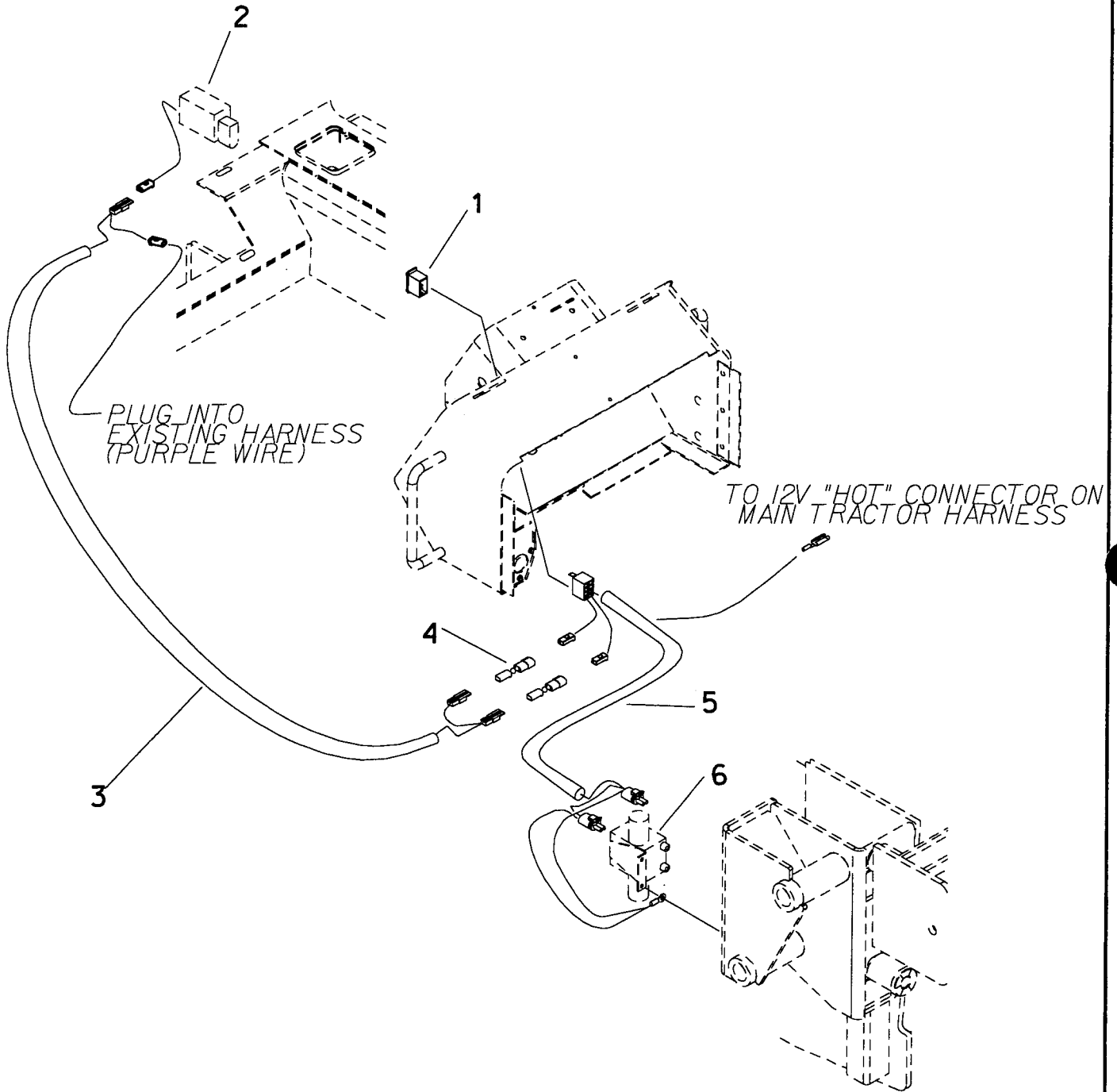
ZRC80/RC110

REEL CARRIER HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	150-095	-	CYL (4.0" X 1.500" X 9.125")	
2.	514-005	4	CONNECTOR (040-06N)	
3.	154-255	4	UNION (040-040FX90)	
4.	154-265	4	UN RUN TEE (040FX-040-040)	
5.	105-095	4	WASHER (1/4")	
6.	515-093	2	HOSE (040FX90-42"-3000)	
7.	115-754	2	ABRASION SLEEVE (1.59" X 30")	
8.	154-702	4	HOSE (040FX-30"-3000)	
9.	117-686	1	ABRASION SLEEVE (1.75" X 43")	
10.	105-873	4	FLG LK BOLT (5/16-NC X 1")	
11.	306-415	-	REEL CARRIER FRAME	
12.	158-575	1	HYDRAULIC CONTROL VALVE	
13.	105-003	2	FLG LOCKNUT (5/16")	
14.	154-226	2	CONNECTOR (04090-06S)	
15.	154-224	1	CONNECTOR (06S-06045)	
16.	154-382	1	CONNECTOR (06S-06045-ORF)	
17.	515-746	2	HOSE (060FX90-58"-3000)	
18.	105-224	2	BOLT (1/4-NC X 2-1/2")	
19.	154-276	2	CONNECTOR (040-08S90)	
20.	117-669	1	ABRASION SLEEVE (1.75" X 55")	
21.	149-591	1	RELIEF VALVE (AUXILIARY)	
22.	105-078	2	NUT (1/4-NC)	

FOOTNOTES

ZRC80/RC110
ELECTRICAL



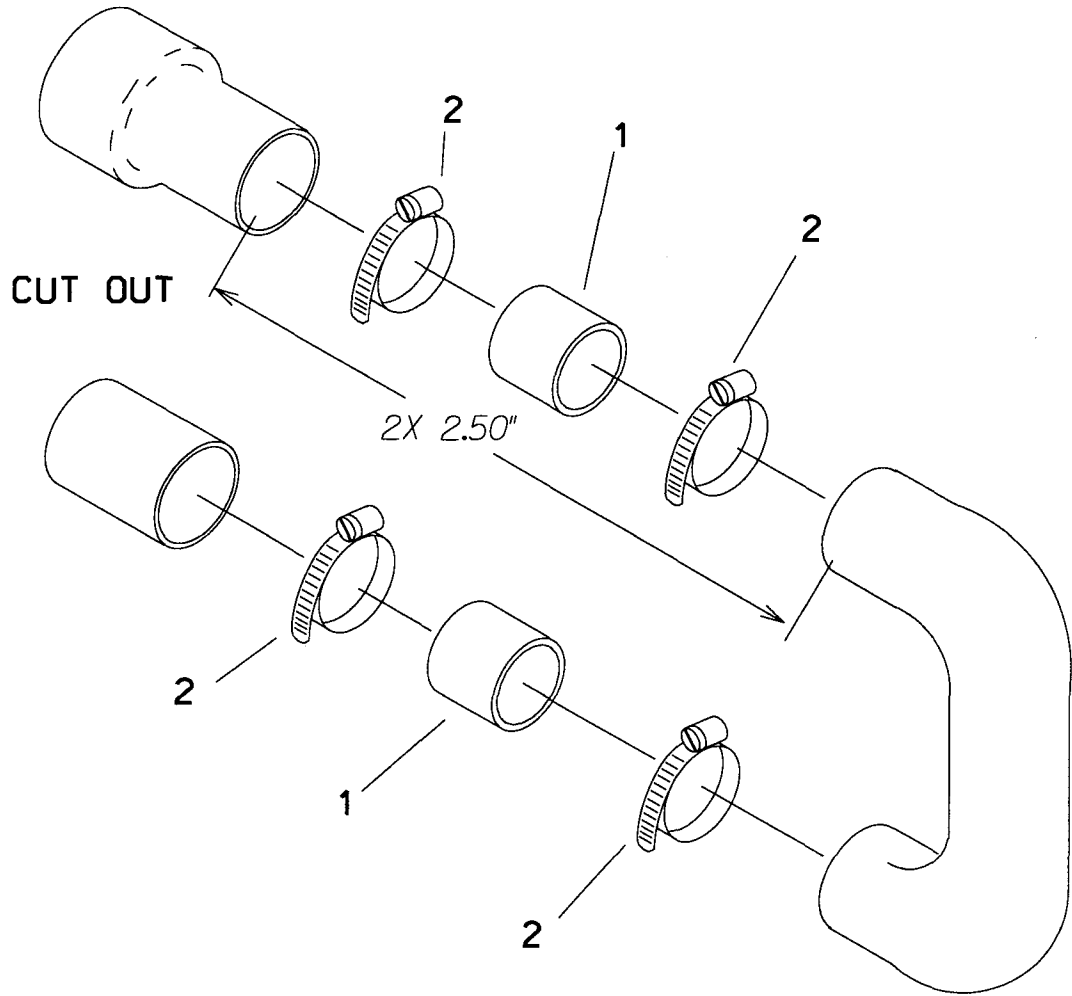
ZRC80/RC110 ELECTRICAL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-764	1	ROCKER SWITCH	
2.	158-569	-	HYDRAULIC CONTROL VALVE (DUMP)	
3.	215-815	1	REEL CARRIER HARNESS	
4.	215-054	2	DIODE	
5.	215-814	1	REEL CARRIER HARNESS	
6.	158-575	-	HYDRAULIC CONTROL VALVE	

FOOTNOTES

ZRC80/RC110
EXTENSION

EXISTING TUBE
USED ON 8020T/HT110



ZRC80/RC110 EXTENSION

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	195-734	2	EXTENSION TUBE	
2.	110-169	4	WORM CLAMP (2.812" TO 3.750")	

FOOTNOTES

MISCELLANEOUS

SAE TORQUE VALUE CHART

Grade-5: UNC or UNF						
Thread Size	Hex Nuts or Bolts Tapped Hex Nut or Drilled & Tapped Hole		Hex Top Deformed Locknut		Serrated Flange Nut or Locknut Tapped Flange Nut or Drilled & Tapped 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	102
7/16	65	88	40	55	125	170
1/2	100	135	60	82	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	1050	1425
1	840	1140	500	680	1580	2145
1-1/8	1030	1400	620	840	1950	2645
1-1/4	1460	1980	880	1195	2760	3745

Grade-8: UNC or UNF						
Thread Size	Hex Nuts or Bolts Tapped Hex Nut or Drilled & Tapped Hole		Hex Top Deformed Locknut		Serrated Flange Nut or Locknut Tapped Flange Nut or Drilled & Tapped 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	75	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	220	430	585
3/4	450	610	270	365	750	1015
7/8	730	990	440	600	1210	1640
1	1090	1480	650	880	1820	2470
1-1/8	1550	2100	930	1260	2580	3500
1-1/4	2180	2955	1310	1780	3640	4935

ⓐ For nuts that are not Grade-C, use torque values for Grade-5

METRIC TORQUE VALUE CHART

Size	Class 4.8				Class 8.8 & 9.8				Class 10.9				Class 12.9			
	①Lubricated		①Dry		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	26	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 a 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 the strength of the 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 Locknut to approximately 50 percent of the dry torque indicated on the chart. Apply torque to the nut – not the bolt head. Tighten toothed or serrated type lock nuts to the full torque value.

Reference: Bossard International Inc., Handbook.

1. **LUBRICATED** means coated with a lubricant such as engines oil, WD-40, anti-seize compound or phosphate and oil coatings.
DRY means plain or zinc plated without any other type of lubricant.

HT110


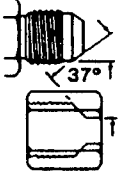

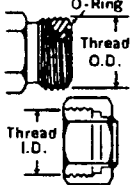
Related Publications

Component	Ass'y	P/N
<u>Model:</u> HT110	HT110	
Parts Manual		053-083

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

**DASH, O-RING & THREAD SIZE
CORRESPONDING CHART**

Dash Size	Fraction Size	NPT & NPTF		SAE (Port Seal O-Ring)		ORS or ORFS (Face Seal O-Ring)		Flange
		① Thread Size	① Thread Size	① Thread Size	② O-Ring P/N	① Thread Size	② O-Ring P/N	
-01	1/16"	①N/A	①N/A	①N/A	②N/A	①N/A	②N/A	②N/A
-02	1/8"	1/8-27	5/16-24	5/16-24	②N/A	①N/A	②N/A	②N/A
-03	3/16"	①N/A	3/8-24	3/8-24	②N/A	①N/A	②N/A	②N/A
-04	1/4"	1/4-18	7/16-20	7/16-20	155-760	9/16-18	157-037	②N/A
-05	5/16"	①N/A	1/2-20	1/2-20	155-717	①N/A	②N/A	②N/A
-06	3/8"	3/8-18	9/16-18	9/16-18	155-705	11/16-16	157-038	②N/A
-08	1/2"	1/2-14	3/4-16	3/4-16	155-706	13/16-16	157-039	②N/A
-10	5/8"	①N/A	7/8-14	7/8-14	155-707	1-14	157-040	②N/A
-12	3/4"	3/4-14	1-1/16-12	1-1/16-12	155-709	1-3/16-12	157-017	155-723
-14	7/8"	①N/A	1-3/16-12	1-3/16-12	155-747	①N/A	②N/A	②N/A
-16	1"	1-11.5	1-5/16-12	1-5/16-12	155-748	1-7/16-12	155-714	157-029
-20	1-1/4"	1-1/4-11.5	1-5/8-12	1-5/8-12	155-702	1-11/16-12	157-129	157-078
-24	1-1/2"	1-1/2-11.5	1-7/8-12	1-7/8-12	157-001	2-12	157-130	157-128
-32	2"	2-11.5	2-1/2-12	2-1/2-12	②N/A	①N/A	②N/A	500-031
-40	2-1/2"	2-1/2-8	3-12	3-12	②N/A	①N/A	②N/A	②N/A
-48	3"	3-8	3-1/2-12	3-1/2-12	②N/A	①N/A	②N/A	②N/A
-56	3-1/2"	3-1/2-8	①N/A	①N/A	②N/A	①N/A	②N/A	②N/A
-64	4"	4-8	①N/A	①N/A	②N/A	①N/A	②N/A	②N/A
								

① Diameter of threads in fractions of an inch and number of threads per inch

② N/A - Not a current thread or CMW p/n'd o-ring for dash size, not used in current CMW applications.

- BSPT:** A thread type which tapers similar to the npt except that the thread pitches are different in most sizes, and the thread form and od's are close but not the same. The seal take place by thread distortion. A thread sealant is recommended.
- NPT:** A thread type which tapers approximately 3/4" per foot. The seal takes place by deformation of the male and female threads.
- JIC:** A thread type which is a straight thread with 37° cone seat. The seal takes place by establishing a line contact between the male flare and the female cone seat.
- SAE:** A thread type which is a straight thread with o-ring seat. The seal takes place by the use of an o-ring on the male end being forced tightly against a machined boss around the female thread port.
- ORS:** A thread type which is a straight thread with o-ring groove in the face of male end. The seal takes place by compressing the o-ring onto the flat face of the female end.
- Flange:** A flat, non-threaded end with a machined groove for an o-ring which is held against the workpiece by a split flange held down with four bolts. The seal takes place by compressing the o-ring onto the flange head and the flat surface surrounding the port. The threaded bolts hold the connection together.

NOTE: Flange {Code 61, <4999 PSI, Less than}
Flange {Code 62, >5000 PSI, Greater than}

LUBRICANT ABBREVIATIONS

AGMA-7	Worm Gear Lubricant: meets American Gear Manufacturer's Association compound #7 CMW P/N 256-627 {qt}
ATF-F	Automatic Transmission Fluid: Automatic Transmission Fluid, Type "F" CMW P/N 256-648 {14 oz}
BF	Brake Fluid: meets Motor Vehicle Safety Standard #16, DOT 3
CG	Coupling Grease: meets Splined Coupling Grease, Texaco Code 1912
CL	Chain Lubricant:
DEO	Diesel Engine Oil: meets API {American Petroleum Institute} engine service classification SF-CD or CE, engine oil, SAE 10W40. The following is for Detroit Diesel engines, but the same oil may be used in other engines as well. Should meet Detroit Diesel spec 7SE270 {low ash - less than 1%}
DEXRON II or DX2 (ATF-A)	Automatic transmission fluid: meets Allison classification C3 & GM service classification {GM6432-M}, Automatic Transmission Fluid, Type "A"
EO	Engine Oil: meets API {American Petroleum Institute}, DEO or GEO, of the appropriate SAE weight listed under GEO {API: CC or SD}. EO is not intended for engine lubrication
EPG	Extreme Pressure Grease: Generally regarded as a molybdenum base. If lithium or another base lube is required, it must be specified by name
EP/CTJC or CTJC	Extreme Pressure: Generally regarded grease carrier, Copper Base Tool Joint Compound CMW P/N 256-663 {14 oz} CMW P/N 256-025 {5 gal} CMW P/N 256-830 {2 gal}
GA	Gasoline Additive: Generally regarded to maintain volatility of gasoline over and extended storage period, {not for use with diesel fuel}. Should meet Sta-Bil #1104d CMW P/N 256-632 {4 oz}
GEO	Gasoline Engine Oil: meets API {American Petroleum Institute} service classification SE-CC {refer to engine Operator's Manual for SAE weights}
HYDO	Hydraulic Oil: meets API {American Petroleum Institute}, service classification SE, engine oil, SAE 10W or 10W40
H₂O	Water: Generally regarded Coolant 50/50 mix of water & anti-freeze Generally regarded Battery Fresh distilled water
MPG	Multi Purpose Grease: Generally regarded as a molybdenum base. If lithium or another base lube is required, it must be specified by name.
MPL	Multi Purpose Gear Oil Lubricant: meets API {American Petroleum Institute}, service classification GL5, SAE 80W90
M-W	Multi Purpose Grease: Generally regarded PhilLube Grease non-lead grease or equivalent
N-S	Never Seize: Generally regarded Grease based lubricant with high metallic zinc content used to facilitate assembly & prevent galling of threadst. Generally used on threads subject to high heat or frequent assembly & disassembly. Typical Mil Spec: S46163
THF	Tractor Hydraulic Fluid: Generally regarded Texaco TDH oil, Phillips HG, Mobil Fluid 423, Chevron Tractor Hydraulic Fluid or equivalent
WTJC	Winter Tool Joint Compound: Generally regarded High concentration carbon/copper grease carrier, Tool Joint Compound CMW P/N 259-026 {14 oz}
10W40	Engine oil: meets API {American Petroleum Institute} service classification SE-CC, engine oil, SAE 10W40. See HYDO, EO or GEO

NOTE: Lubricants & other products available from CMW have CMW Part Numbers listed
Other products available locally.



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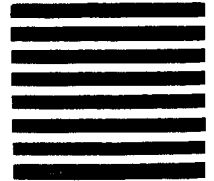
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