


# ***Ditch Witch***<sup>®</sup>

## **5020**

ISSUE NO. 3/PL-6/92

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Issue No. 3/PL—6/92 For Replacement Copy Order P/N 053-402

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# FOREWARD

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Ditch Witch equipment is quality engineered and manufactured to provide years of dependable service. To help ensure you obtain this long and satisfactory service we have provided you with this Parts Manual containing illustrated parts list from which you may select quality Ditch Witch replacement parts.

To help you in obtaining the exact parts you need please specify the parts required by part number and description, not illustration reference numbers. Also, because we are continually seeking ways to improve our equipment and do make changes, it will be of great help to have the model and serial number of your specific equipment available when ordering parts from your Ditch Witch dealer.

Make sure you read all footnotes carefully as they help identify the part you may need. Part numbers shown in reverse type (white on black) are no longer available from The Charles Machine Works, Inc. However, your Ditch Witch dealer may be able to assist you. You may find the footnotes make reference to assembly instructions and/ or Tech Bit articles. These publications are not included in this Parts Manual but may be obtained by contacting your local Ditch Witch dealer.

In some instances it may be important to replace more than a single part when making a repair to prevent premature failure or wear of the new part or to preclude the necessity for repeat repairs. For instance, when replacing digging chain due to wear it is recommended that the digging chain sprockets also be replaced to prevent accelerated wear on the new chain, and vice versa. Very often your Ditch Witch dealer may have a parts kit available containing the parts you will need or can advise you as to what parts are recommended to be replaced.

We recommend that ordinary vendor items not be substituted for genuine Ditch Witch replacement parts because of variances in materials, specifications or workmanship which may not be apparent upon visual inspection. Genuine Ditch Witch replacement parts have been quality engineered and tested to provide satisfactory service and provide the best protection for your equipment investment.

Instructions on recommended use and maintenance of your Ditch Witch equipment can be found in the Operator's Manual. Should you have questions not answered in these publications please contact your Ditch Witch dealer.

The descriptions and specifications contained in this manual were current at the time of its publication. However, The Charles Machine Works, Inc. reserves the right, as part of its normal product improvement to modify or change specifications at any time without notice.

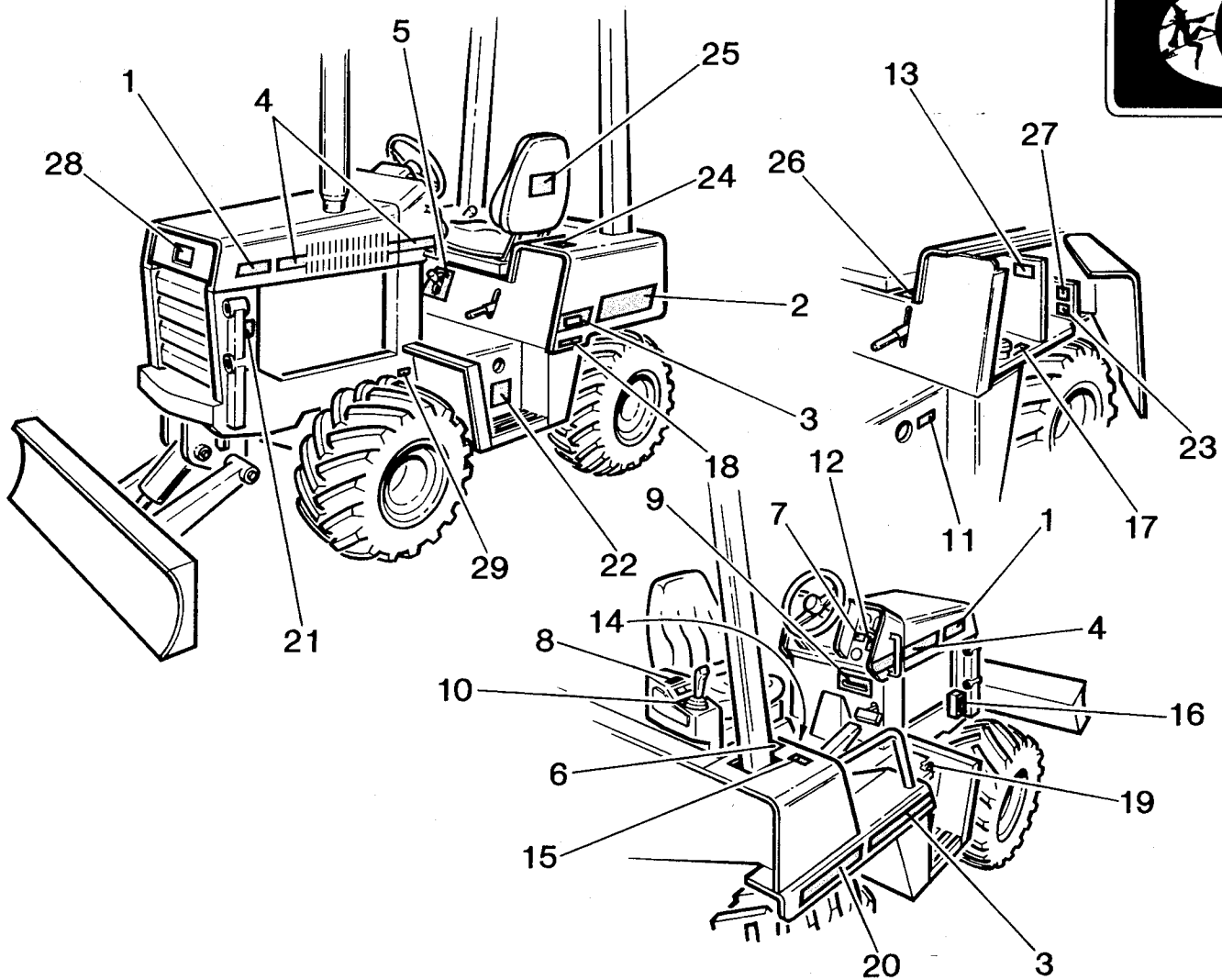
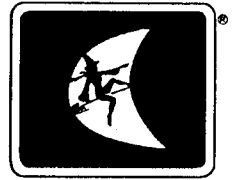
The keys to long and productive equipment life are proper equipment operation, adherence to a good service/ maintenance program and the use of quality parts. You have an investment in your Ditch Witch equipment and we want to help you gain the most from that investment. A Ditch Witch dealer is your equipment partner in the underground construction equipment business and can gladly provide you with Ditch Witch Professional ProTech™ Parts and Service as well as a full range of equipment assistance.

We thank you for your patronage and confidence in Ditch Witch equipment.

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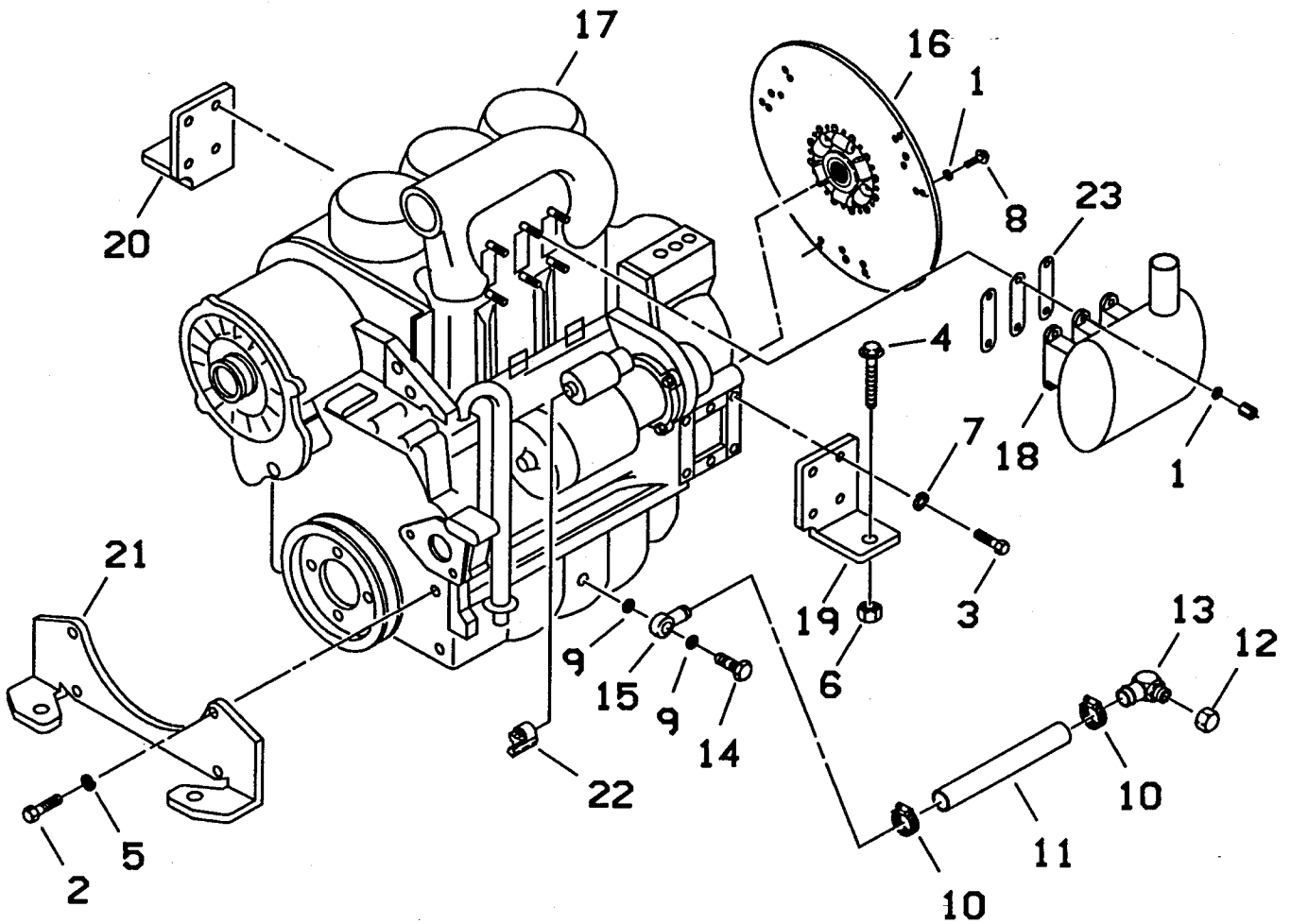


**275-595 DECAL KIT**  
FOR MODELS 5020, 7520 & 8020

Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
	050-395		Location Diagram	15.	275-070	1	Warning Runaway
1.	274-023	2	5020 Model-ID	16.	275-100	1	Manifold
	274-059	2	7520 Model-ID	17.	275-120	1	Reservoir (THF)
	274-071	2	8020 Model-ID	18.	275-131	1	Modularmatic-ID
2.	274-024	1	Ditch Witch-ID	19.	275-148	1	Fuel Tank (Diesel)
3.	274-025	2	Fender Accent Stripe	20.	275-172	1	Ditch Witch-ID (5020)
4.	274-026	2	Hood Accent Stripe		275-309	1	Ditch Witch-ID (7520, 8020)
5.	274-027	1	Transmission & Operation	21.	275-184	2	Warning Moving Parts
6.	274-028	1	Attachment Drive (5020)	22.	275-185	2	Warning Single Operator
	274-082	1	Attachment Drive (7520, 8020)	23.	275-245	1	Caution Battery Acid
7.	274-029	1	Engine Stop (5020, 7520)	24.	275-303	1	Warning Rollover
8.	274-030	1	Selector-Rear Steer	25.	275-307	1	Ditch Witch Emblem
9.	274-031	1	Rear Steer Indicator	26.	275-361	1	Parking Brake
10.	274-032	1	Control Valve	27.	275-419	1	Warning Flammable
11.	275-023	1	Oil Level	28.	275-449	1	Ditch Witch Emblem Plaque (8020)
12.	275-032	1	Throttle		274-112	1	Ditch Witch Emblem Plaque (5020, 7520)
13.	275-033	1	Notice Alternator	29.	275-497	1	Engine Oil Drain
14.	275-048	1	Important Safety Rules				

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# DEUTZ ENGINE



Ref. No.	Part Number	Qty.	Description
1.	105-091	12	Lock Washer (5/16")
2.	105-235	4	Bolt (M14-2.0 X 90mm)
3.	105-247	8	Bolt (M12-1.75 x 35mm)
4.	105-337	4	Flange Bolt (5/8-NC x 2")
5.	105-990	4	Lock Washer (9/16")
6.	105-994	4	Flange Locknut (5/8-NC)
7.	106-030	8	Lock Washer (M12)
8.	106-083	6	Bolt (M8-1.25 x 20mm)
9.	155-748	2	O-Ring (-916)
10.	110-353	2	Worm Gear Clamp
11.	116-094	AR	Suction Hose (1" ID)—use 18" on early models
	116-335	AR	Suction Hose (1" ID)—use 18" on present production
12.	154-329	1	Cap (-16 ORS FM)
13.	154-360	1	Banjo Connector (-16 ORS x 1" OD hub x 90°)

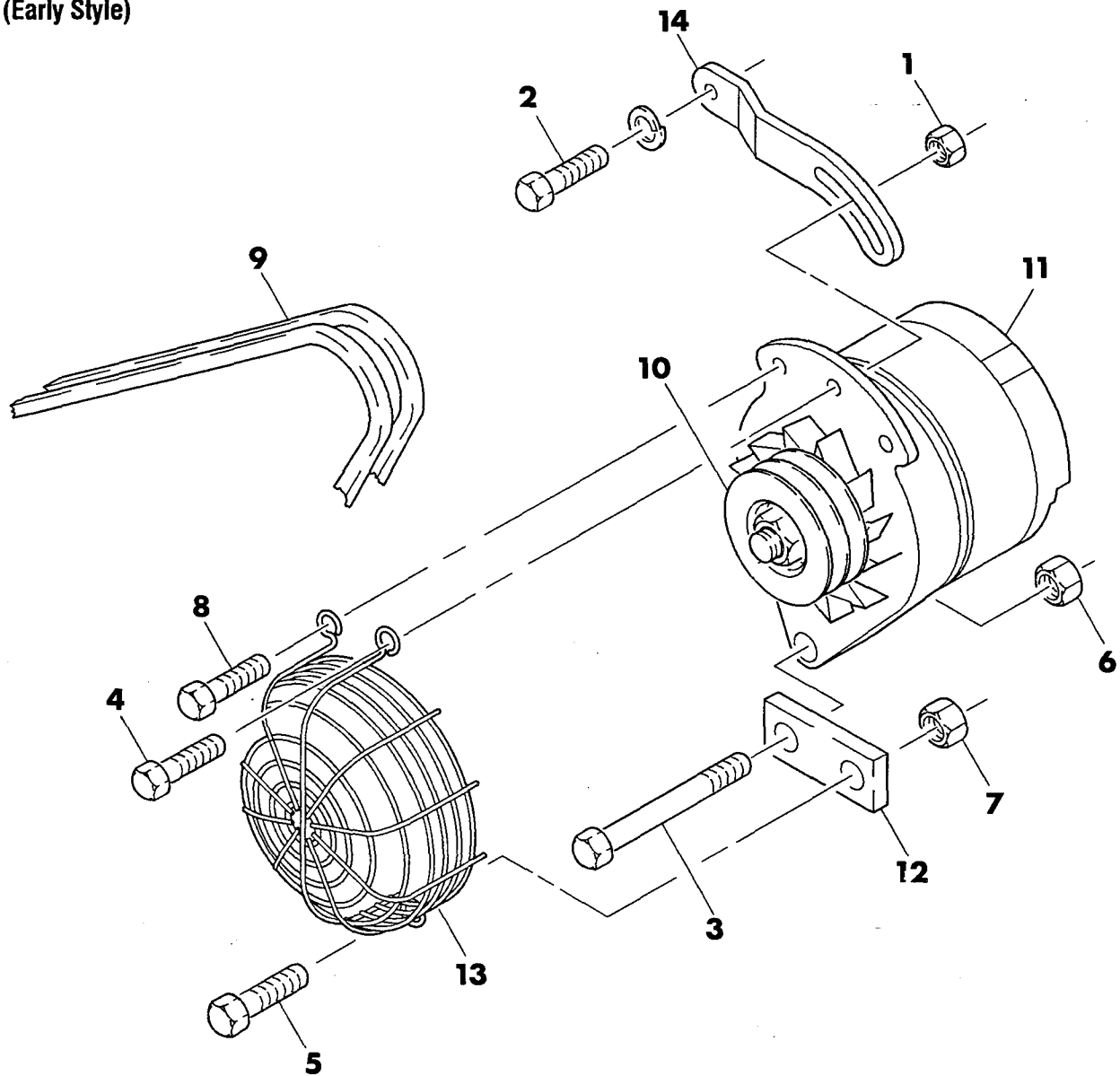
Ref. No.	Part Number	Qty.	Description
14.	156-267	1	Banjo Drain Bolt (M30-1.5 x 1/2")
15.	156-266	1	Banjo Fitting (.75" ID x 1" OD)
16.	160-866	1	Drive Plate
17.	195-853	1	Deutz Diesel Engine
18.	196-129	1	Exhaust Muffler
19.	314-118	1	Left Rear Engine Mount
20.	314-119	1	Right Rear Engine Mount
21.	314-120	1	Front Engine Mount
22.	215-015	1	Solenoid Cover
23.	195-825	3	Muffler Gasket

Not Shown:

195-813	Fuel Filter
195-814	Oil Filter

# ALTERNATOR

(Early Style)



Ref. No.	Part Number	Qty.	Description
1.	105-003	1	Flange Locknut (5/16-NC)
2.	105-292	1	Bolt (M8-1.25 x 75mm)
3.	105-802	1	Bolt (1/2-NC x 5-1/2")
4.	105-822	1	Flange Lock Bolt (5/16-NC x 1/2")
5.	105-825	1	Flange Lock Bolt (3/8-NC x 3/4")
6.	105-833	1	Flange Locknut (1/2-NC)
7.	105-834	1	Flange Locknut (3/8-NC)

Ref. No.	Part Number	Qty.	Description
8.	105-866	1	Flange Lock Bolt (5/16-NC x 1-1/4")
9.	170-089	1	Belt Set (2/set)
10.	170-265	1	Sheave (2 groove)
11.	215-163	1	Alternator (#8AR2070K)
12.	314-121	1	Strap (3" LG)
13.	362-602	1	Alternator Guard
14.	363-082	1	Alternator Bracket (8.31" LG)





# ALTERNATOR

5110, 7520, 7610

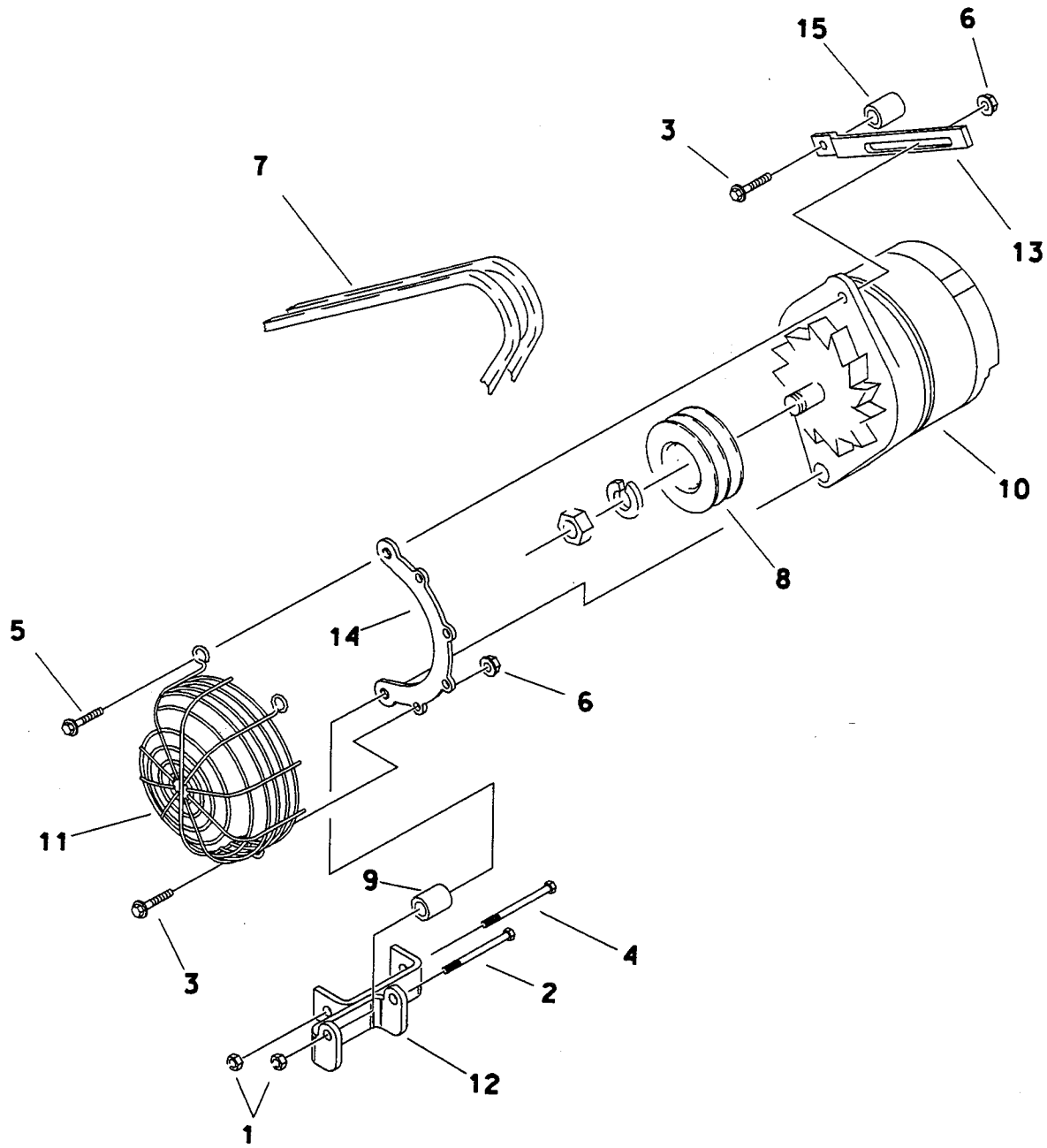
4010, 6510, 7510, R40/R65

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	106-165	1	BOLT (M10-1.5 X 120mm, 8.8)	
2.	105-117	AR	WASHER (5/16")	
3.	105-894	2	FLG NUT (M10-1.5)	
4.	106-124	1	BOLT (M10-1.5 X 110mm, 8.8)	SEE FOOTNOTE 1
5.	106-162	2	FLG BOLT (M8-1.25 X 20mm, 8.8)	
6.	106-200	1	FLG BOLT (M8-1.25 X 45mm, 8.8)	
7.	106-201	3	FLG NUT (M8-1.25, 8.8)	
8.	170-059	1	BELT	
9.	170-266	1	ALTERNATOR SHEAVE	
10.	184-115	1	SPACER	SEE FOOTNOTE 1
11.	363-100	1	BELT TIGHTENER	USE ON 5020, 5110, 7520, 7610
	363-104		BELT TIGHTENER	USE ON 4010, 5010, 6510, 7510, R40/R65
12.	215-159	1	ALTERNATOR	
13.	362-628	1	FAN GUARD	
14.	363-097	1	ALTERNATOR BRACKET	SEE FOOTNOTE 1
15.	363-101	1	FAN GUARD BRACKET	
16.	106-162	1	FLG BOLT (M8-1.25 X 20mm, 8.8)	SEE FOOTNOTE 1
17.	184-443	1	SPACER	
18.	105-266	1	WASHER (5/16")	
19.	105-814	1	FLG LOCKNUT (3/8-NC)	
20.	105-242	1	BOLT (3/8-NC X 6-1/2")	
21.	106-200	1	FLG BOLT (M8-1.00 X 45mm, 8.8)	
22.	181-636	1	SPACER	
23.	363-434	2	FRONT MOUNT	
24.	363-433	1	REAR SUPPORT	

## FOOTNOTES

1-EARLY STYLE MOUNTING WITH WELDED BRACKET.

# ALTERNATOR

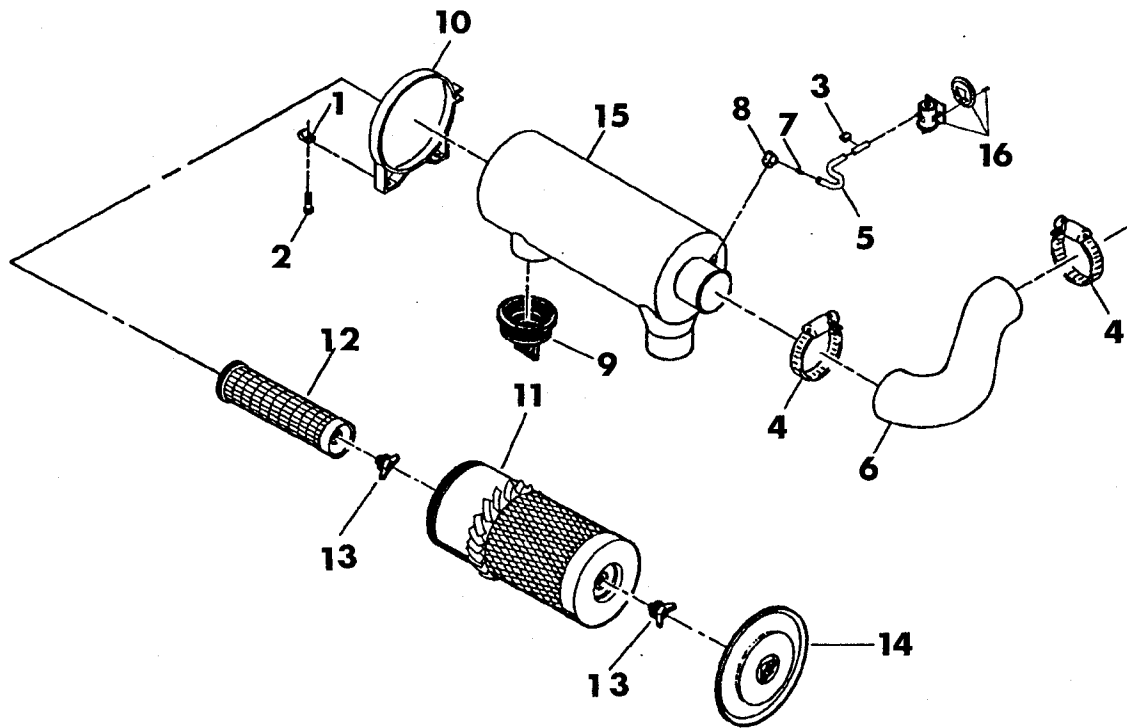


# ALTERNATOR

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-894	2	NUT (M10-1.5)	
2.	106-124	1	BOLT (M10-1.5 X 110mm)	
3.	106-162	3	FLANGE LOCK BOLT (M8-1.25 X 20mm)	
4.	106-165	1	BOLT (M10-1.5 X 120mm)	
5.	106-200	1	FLANGE BOLT (M8-1.25 X 45mm)	
6.	106-201	3	FLANGE NUT (M8-1.25)	
7.	170-089	1	BELT SET	2 BELTS
	170-094	1	BELT	1 BELT, 5110 ONLY
8.	170-267	1	SHEAVE	2 GROOVE
	170-266	1	SHEAVE	1 GROOVE, 5110 ONLY
9.	184-115	1	SPACER	
10.	215-159	1	ALTERNATOR	
11.	362-628	1	ALTERNATOR GUARD	
12.	363-097	1	LOWER ALTERNATOR BRACKET	
13.	363-100	1	UPPER ALTERNATOR BRACKET	
14.	363-101	1	FAN GUARD BRACKET	
15.	181-600	1	SPACER	

## FOOTNOTES

# AIR FILTER SYSTEM



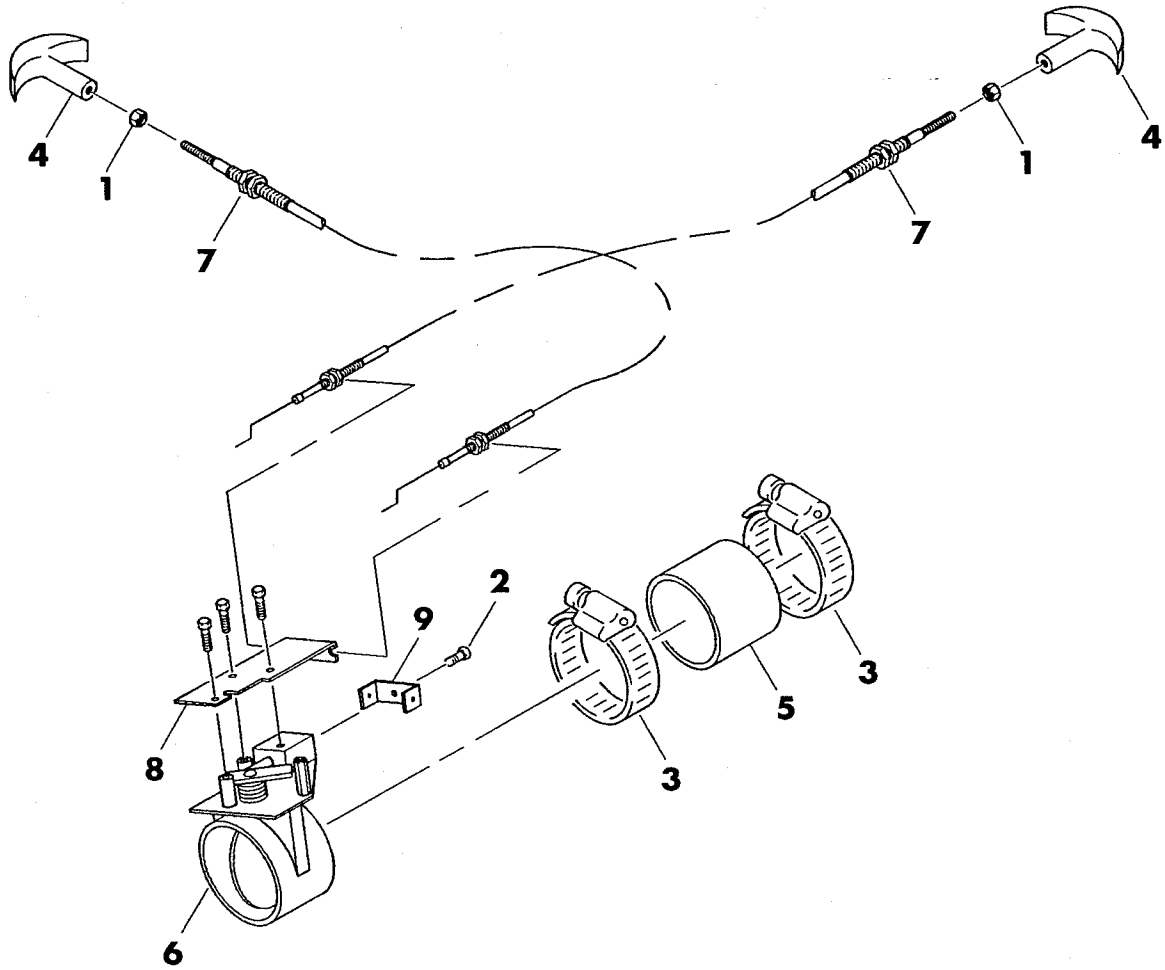
Ref. No.	Part Number	Qty.	Description
1.	105-137	4	Clip Nut (5/16-NC)
2.	105-873	4	Flange Lock Bolt (5/16-NC x 1")
3.	110-155	1	Clamp (7/32")
4.	110-169	2	Hose Clamp (.5")
5.	116-192	AR	Hose (7/64" ID)—use 48"
6.	116-346	1	<sup>1</sup> Air Cleaner Hose (10.04" LG)
	116-388	1	<sup>2</sup> Air Cleaner Hose (12.92" LG)
7.	155-150	1	Slip On Coupler (-1 NPT M x -1 hub, STR)
8.	156-228	1	Elbow (-1 NPT FM x -1 NPT FM x 90°)
9.	195-428	1	Discharge Valve

Ref. No.	Part Number	Qty.	Description
10.	195-656	2	Mounting Band (6-1/2")
11.	195-690		Primary Element
12.	195-809		Safety Element
13.	195-815		Wing Nut
14.	195-823		Access Cover Plate
15.	195-854	1	Air Cleaner (Incl. ref. no.'s 9 and 11 thru 14)
16.	215-150	1	Restriction Indicator

<sup>1</sup>This hose is used on early models, with air shutoff controls.

<sup>2</sup>This hose is used on present models, without air shutoff controls.

# AIR SHUTOFF CONTROLS (Early Models)

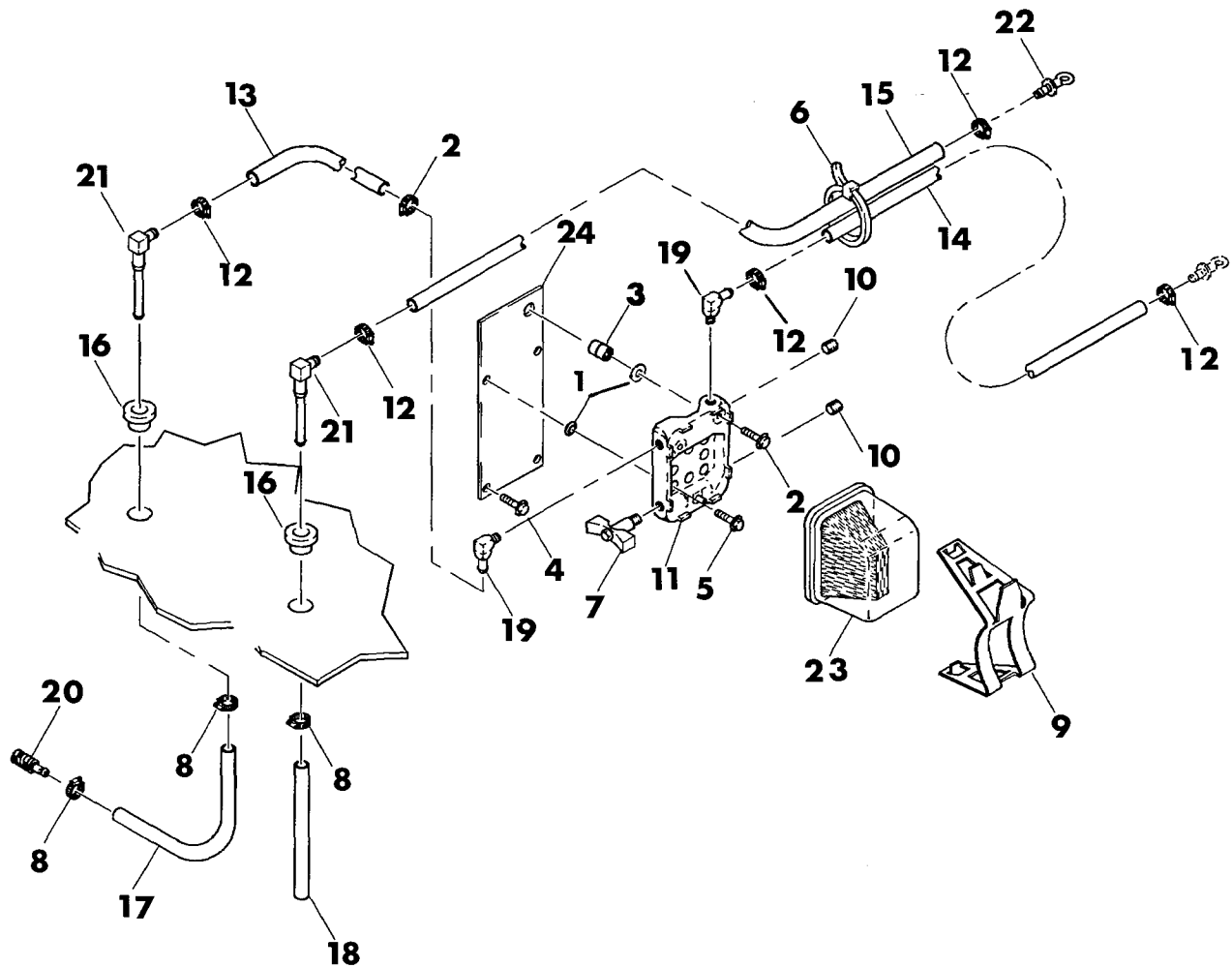


Ref. No.	Part Number	Qty.	Description
1.	105-078	2	Nut (1/4-NC)
2.	106-114	1	Bolt (1/4-NF x 1/2")
3.	110-169	2	Hose Clamp (.5")
4.	110-387	2	<sup>1</sup> T-Handle (1/4-NC)
5.	116-248	1	Hose (2.75" ID x 3.25" OD x 2" LG)

Ref. No.	Part Number	Qty.	Description
6.	196-079	1	Air Shutoff Valve
7.	196-113	2	<sup>1</sup> Control Cable (40.34" LG)
8.	314-114	1	Cable Bracket
9.	363-031	1	Actuator Bracket

<sup>1</sup>One t-handle and control cable (ref. no.'s 4 and 7) and hardware are used when tractor is equipped with an A420 backhoe.

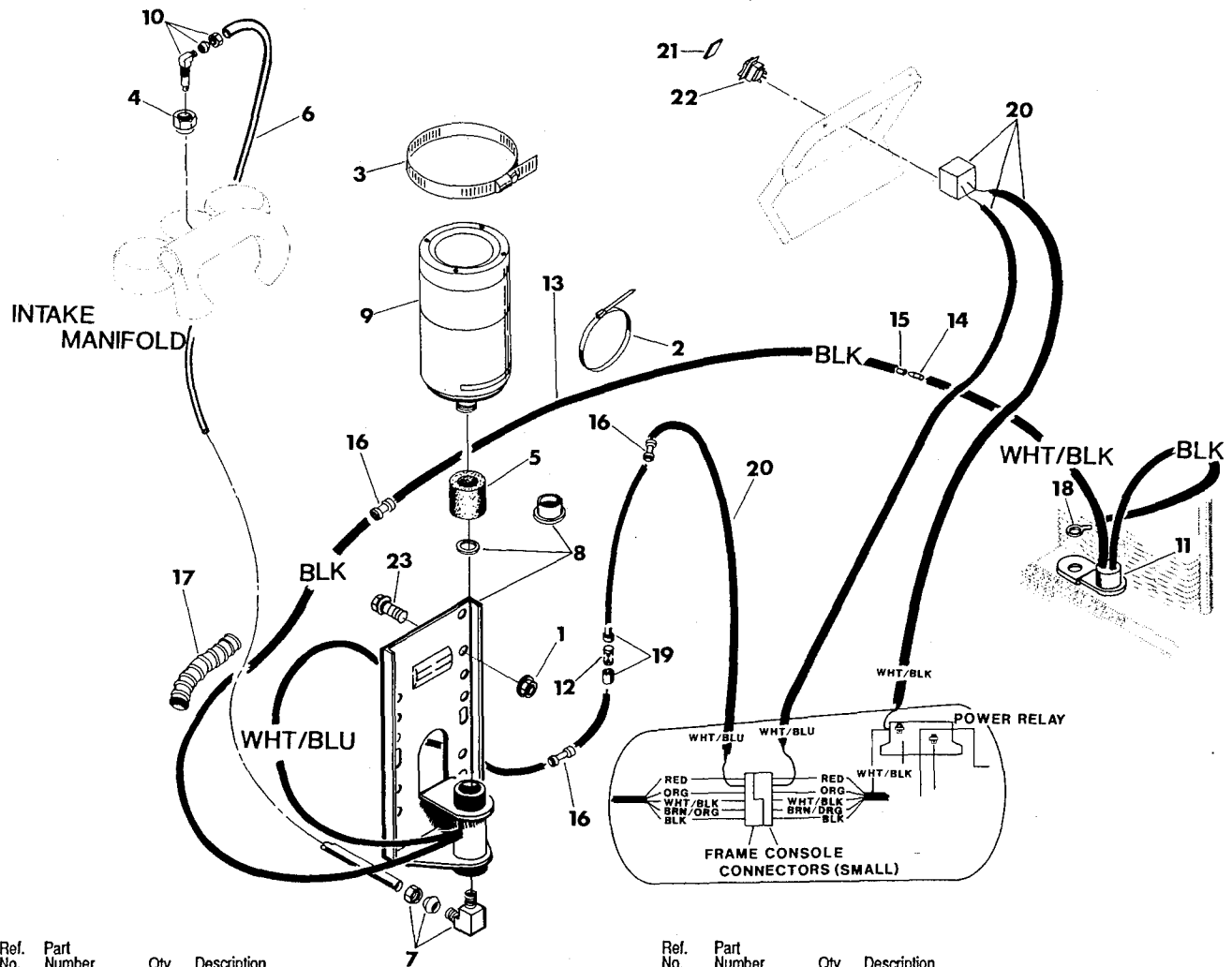
# FUEL LINE



Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
1.	105-267	2	Cup Washer (5/16")	13.	116-108	AR	Fuel Hose (.296" ID)—use 31"
2.	105-866	1	Flange Lock Bolt (5/16-NC x 1-1/4")	14.	116-108	AR	Fuel Hose (.296" ID)—use 27"
3.	106-038	1	Nutsert (5/16-NC)	15.	116-108	AR	Fuel Hose (.296" ID)—use 45"
4.	106-162	3	Flange Bolt (M8-1.25 x 20mm)	16.	116-325	2	Rubber Bushing (1.055" OD)
5.	106-163	1	Flange Bolt (M8-1.25 x 30mm)	17.	116-356	AR	Hose (.25" ID)—use 14"
6.	110-030	1	Cable Tie (15" LG)	18.	116-356	AR	Hose (.25" ID)—use 10"
7.	110-141	1	Drain Valve (-2 NPT M)	19.	155-164	2	Slip On Coupler
8.	110-248	3	Cable Tie	20.	156-268	1	Fuel Strainer
9.	110-255	1	Spring Clamp	21.	156-269	2	Fuel Tank Fitting
10.	110-256	1	Plug Kit	22.	156-270	1	Banjo Fitting (1.42" LG)
11.	110-257	1	Separator Base	23.	159-009	1	Separator Element
12.	110-528	6	Hose Clamp	24.	314-117	1	Separator Mount Plate

# COLD START KIT

## Ether Canister Type Deutz Diesel Engine



Ref. No.	Part Number	Qty.	Description
	190-440	2	Cold Start Conversion Kit (Incl. ref. no.'s 1 thru 8 and 10 thru 23)
1.	105-003	4	Flange Locknut (5/16-NC)
2.	110-248	6	Cable Tie (1/16" to 1-1/4")
3.	110-367	1	Clamp (3-5/16" to 4-1/4")
4.	110-280	1	Reducer (M2-1.5 x 1/8-NPT)
5.	115-365	AR	Greomet (1.5")
6.	156-018	AR	Nylon Tube (1/8" OD)—use 120"
7.	156-272	1	Blockor Connector (1/8" T x 1/8-NPT x 90°)
	156-204		Ferrule
	156-205		Nut (1/8" T)
8.	195-841	1	Valve/Canister Bracket
	110-252		Caplug
	195-844		Gasket
9.	195-842	1	1 Ether Canister
10.	195-843	1	1 Injector Nozzle
	156-204		Ferrule (1/8" T)
	156-205		Nut (1/8" T)

Ref. No.	Part Number	Qty.	Description
11.	215-073	1	Sensor Switch
12.	215-074	1	Fuse (15 AMP)
13.	215-457	AR	Wire (16 GA)—use 99"
14.	215-458	1	Male Bullet Terminal (.156")
15.	215-459	1	Female Bullet Terminal (.156")
16.	215-478	3	Butt Connector (16 GA)
17.	215-488	AR	Flex Guard (use 60")
18.	215-590	1	Ring Terminal (3/8")
19.	215-600	1	Fuse Holder (16 GA)
20.	215-821	1	Cold Start Harness
21.	217-028	1	Insert (blank)
22.	217-706	1	Rocker Switch
23.	501-325	4	Flange Lock Bolt (5/16-NC x 5/8")

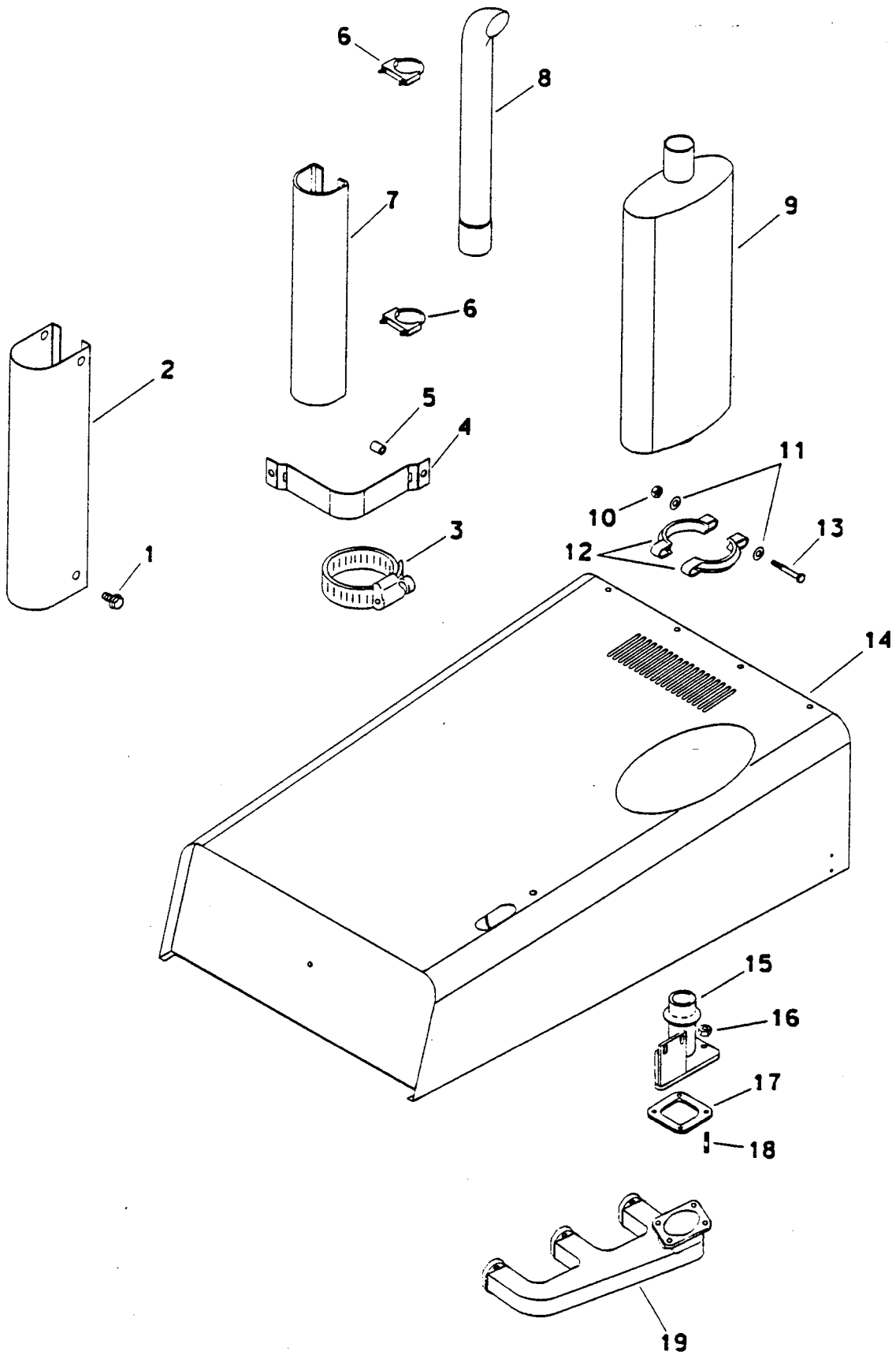
**Not Shown:**

274-080 1 Cold Start Operation Decal

<sup>1</sup>Ether canister is not part of kit and must be ordered separately.

<sup>2</sup>Refer to installation diagram 050-199.

# SPARK ARRESTOR MUFFLER KIT 5020



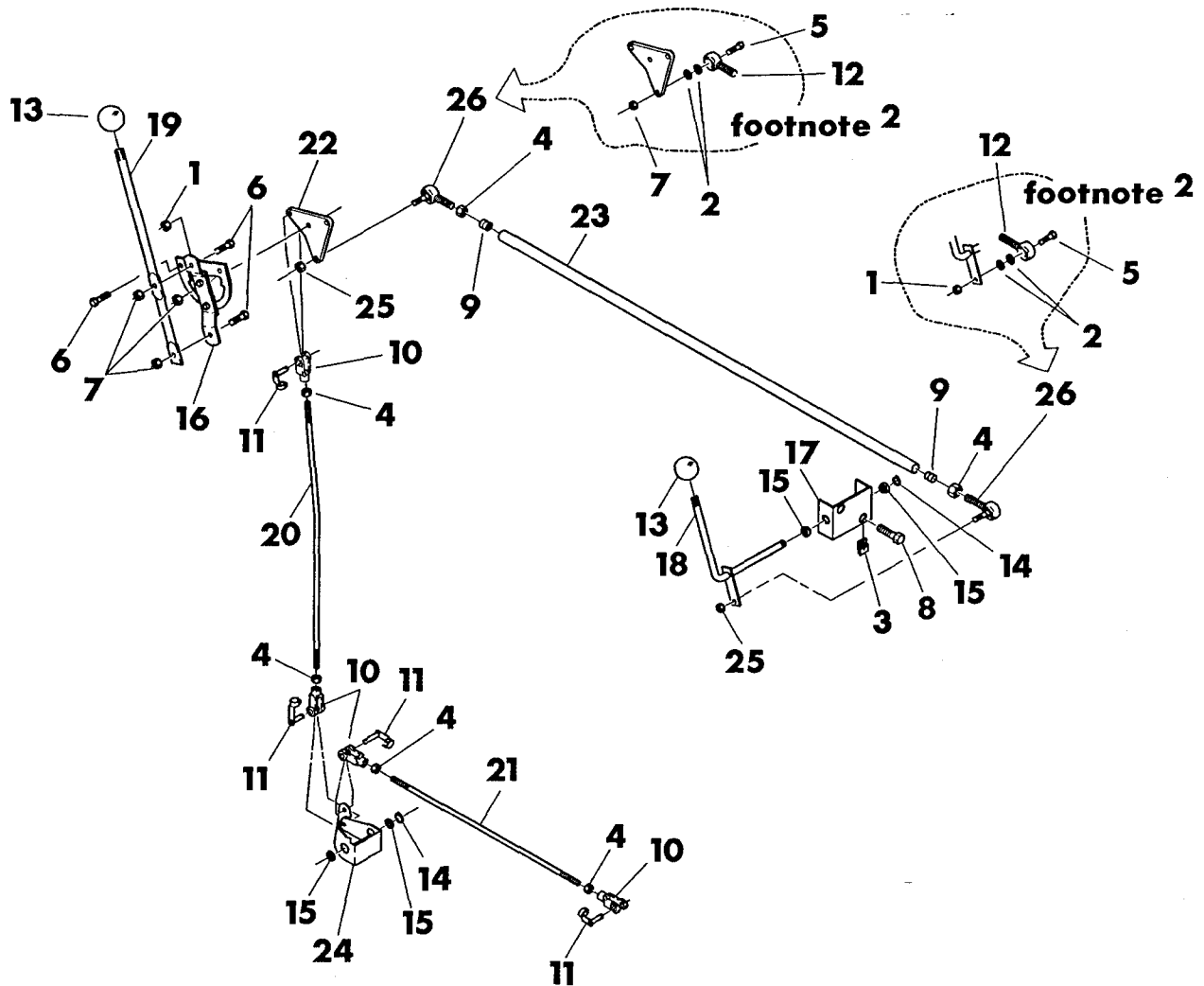


# SPARK ARRESTOR MUFFLER KIT 5020

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-494	1	SPARK ARRESTOR MUFFLER KIT	(INCLUDES REF NO.'S 1-19)
1.	105-822	4	FLANGE BOLT (5/16-NC X 1/2")	
2.	362-736	1	HEAT SHIELD	
3.	110-656	2	CLAMP (2-1/2" TO 3-1/2")	
4.	363-282	2	HEAT SHIELD BRACKET	
5.	106-038	4	NUTSERT (5/16-NC)	
6.	196-008	2	MUFFLER CLAMP (2" TO 2-1/16")	
7.	196-179	1	PERSONNEL PROTECTOR	
8.	196-002	1	EXHAUST STACK	
9.	195-990	1	MUFFLER W/ SPARK ARRESTING	
10.	105-047	2	LOCKNUT (3/8-NC)	
11.	105-118	4	WASHER (3/8")	
12.	195-967	1	MUFFLER CLAMP (2") PAIR	
13.	105-183	2	BOLT (3/8-NC X 2-1/2")	
14.	314-168	1	HOOD ASSEMBLY	
15.	196-158	1	MANIFOLD ADAPTER	
16.	105-375	4	NUT (M8 1.25)	
17.	165-753	1	GASKET	
18.	106-431	4	STUD BOLT	
19.	195-894	1	EXHAUST MANNIFOLD	

FOOTNOTES

# THROTTLE



Ref. No.	Part Number	Qty.	Description
1.	105-078	2	Nut (1/4-NC)
2.	105-095	4	Washer (1/4")
3.	105-137	2	Clip Nut (5/16-NC)
4.	105-152	4	Nut (1/4-NF)
5.	105-819	2	Flange Lock Bolt (1/4-NC x 1")
6.	105-820	6	Flange Lock Bolt (1/4-NC x 3/4")
7.	105-832	6	Flange Locknut (1/4-NC)
8.	105-873	2	Flange Lock Bolt (5/16-NC x 1")
9.	106-152	2	Nutsert (1/4-NF)
10.	110-067	4	Clevis (1/4")
11.	110-297	4	Spring Clevis Pin (1/4")
12.	110-386	2	1 Rod End (1/4-NF)
13.	110-519	2	Knob (1/2-NC, orange)
14.	115-482	2	External Grip Ring (for 1/2" shaft)
15.	125-779	4	Nyliner Bushing (.201" LG)

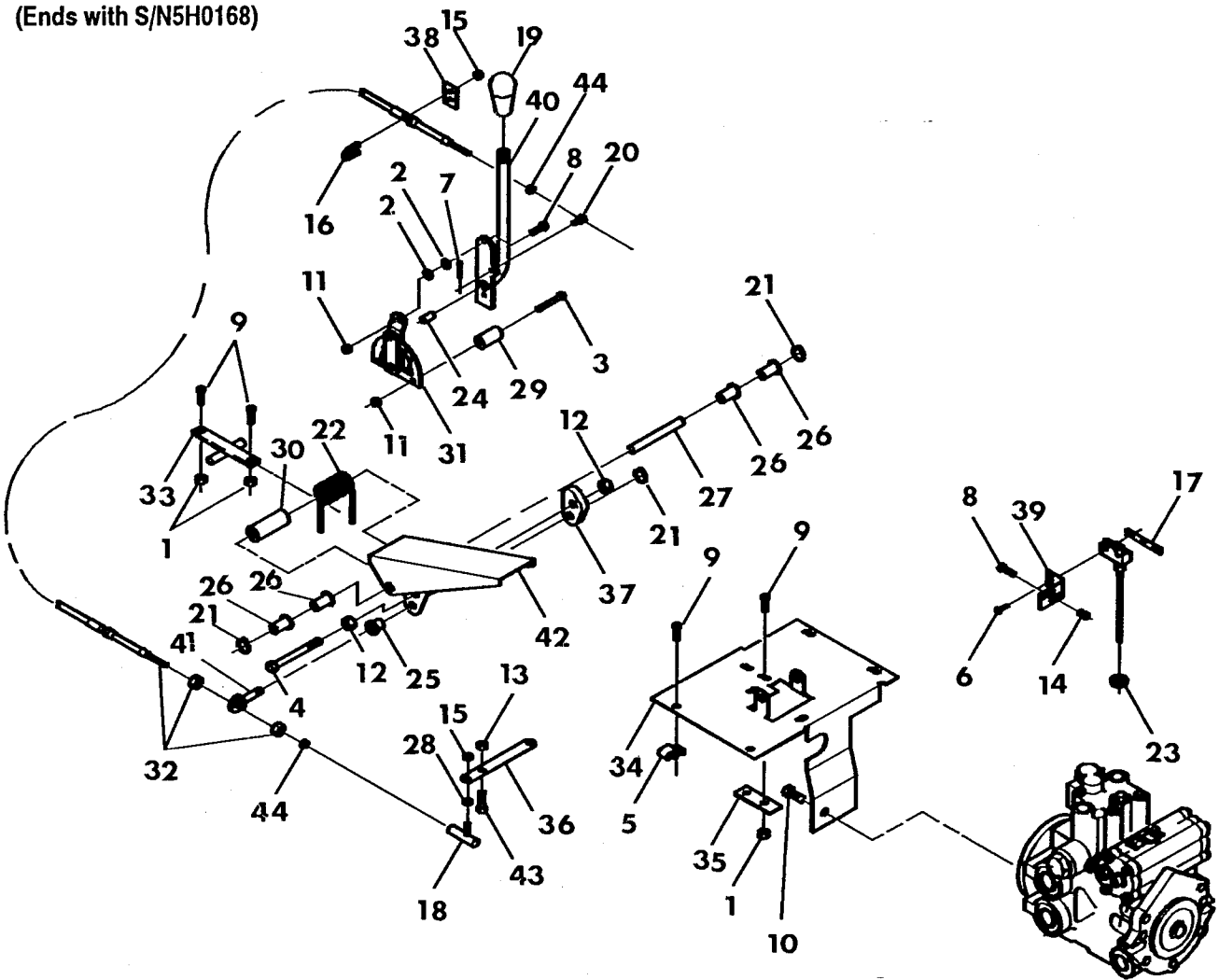
Ref. No.	Part Number	Qty.	Description
16.	196-130	1	Throttle Control
17.	314-149	1	1 Remote Throttle Bracket
18.	365-114	1	1 Remote Throttle Lever
19.	365-128	1	Throttle Handle
20.	365-130	1	Primary Throttle Rod (17.28" LG, 1/4-NF)
21.	365-131	1	Secondary Throttle Rod (14" LG, 1/4-NF)
22.	365-142	1	Throttle Output Lever
23.	365-143	1	1 Remote Throttle Rod
24.	365-146	1	Throttle Bellcrank
25.	106-154	2	Nut (1/4-NF)
26.	110-565	2	1 Rod End (1/4-NF)

<sup>1</sup>These parts and associated hardware are used when tractor is equipped with an A420 backhoe. See footnote 2.

<sup>2</sup>Early style rod end (ref. no. 12) and associated parts may be replaced with rod end and nut (ref. no.'s 25 and 26).

# GROUND DRIVE PUMP CONTROLS

(Ends with S/N5H0168)

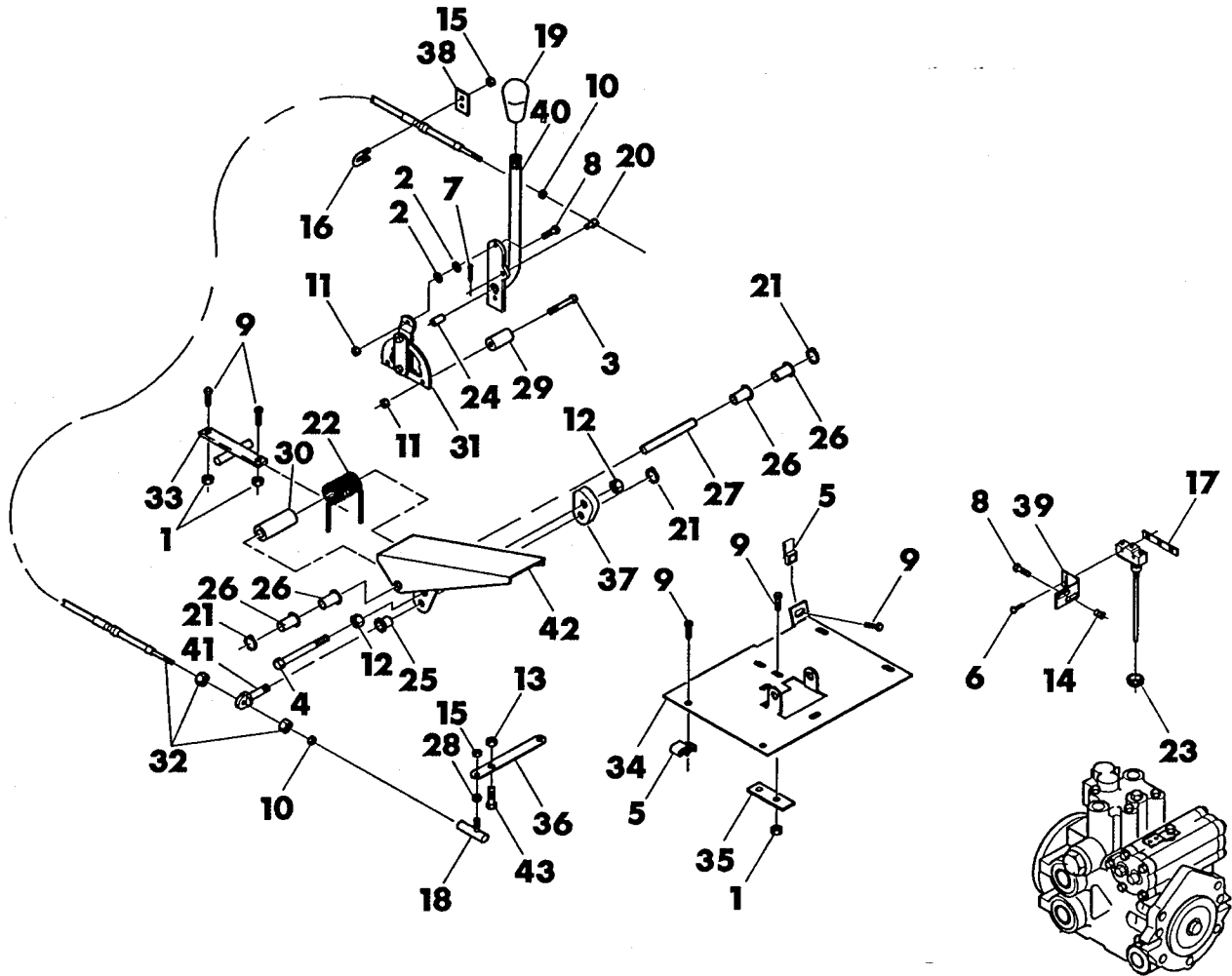


Ref. No.	Part Number	Qty.	Description
1.	105-003	4	Flange Locknut (5/16-NC)
2.	105-095	4	Washer (1/4")
3.	105-106	2	Bolt (1/4-NC x 2")
4.	105-111	1	Bolt (1/2-NC x 4")
5.	105-137	2	Clip Nut (5/16-NC)
6.	105-216	2	Bolt (No. 6-32 x 1-1/4", BUT HD)
7.	105-512	1	Cotter Pin (3/32" x 3/4")
8.	105-820	4	Flange Lock Bolt (1/4-NC x 3/4")
9.	105-823	6	Flange Lock Bolt (5/16-NC x 3/4")
10.	105-826	1	Flange Lock Bolt (3/8-NC x 1")
11.	105-832	4	Flange Locknut (1/4-NC)
12.	105-833	2	Flange Locknut (1/2-NC)
13.	105-834	1	Flange Locknut (3/8-NC)
14.	106-015	2	Nutsert (1/4-NC)
15.	106-154	3	Flange Locknut (1/4-NF)
16.	106-166	1	U-Bolt (1/4-NF)
17.	106-169	1	Speed Nut Bar
18.	110-318	1	Ball Joint (No. 10-32, RH THD)
19.	110-495	1	Knob (5/8-NC x M16, orange)
20.	110-521	1	Cable Swivel
21.	115-482	3	External Grip Ring (for 1/2" shaft)
22.	115-650	1	Torsion Spring (1.4" OD x 2.25" LG)

Ref. No.	Part Number	Qty.	Description
23.	116-170	1	Grommet (fits 3/8" DIA hole)
24.	116-190	1	Open/Close Grommet
25.	125-447	1	Bronze Bushing (.628" ID x .75" LG)
26.	125-779	4	Nyliner Bushing (.5" ID)
27.	183-653	1	Pin (.5" DIA x 4.24" LG)
28.	184-070	1	Pump Arm Bushing
29.	184-075	2	Spacer (.812 OD x 1.5" LG)
30.	184-077	1	Spacer (1" OD x 2.6" LG)
31.	196-131	1	Friction Control
32.	196-134	1	Control Cable
33.	314-111	1	Spring Anchor
34.	314-138	1	Pedal Mount
35.	314-139	1	Pedal Stop
36.	314-140	1	Switch Actuator
37.	314-141	1	Bushing Support
38.	314-151	1	Cable Spacer
39.	363-083	1	Switch Bracket
40.	365-125	1	Pump Control Lever
41.	365-139	1	Cable Pivot
42.	365-145	1	Rocker Pedal
43.	501-153	1	Flange Lock Bolt (3/8-NC x 5/8")
44.	506-021	2	Nut (No. 10-32)

# GROUND DRIVE PUMP CONTROLS

(S/N5H0169 thru S/N5H0174)



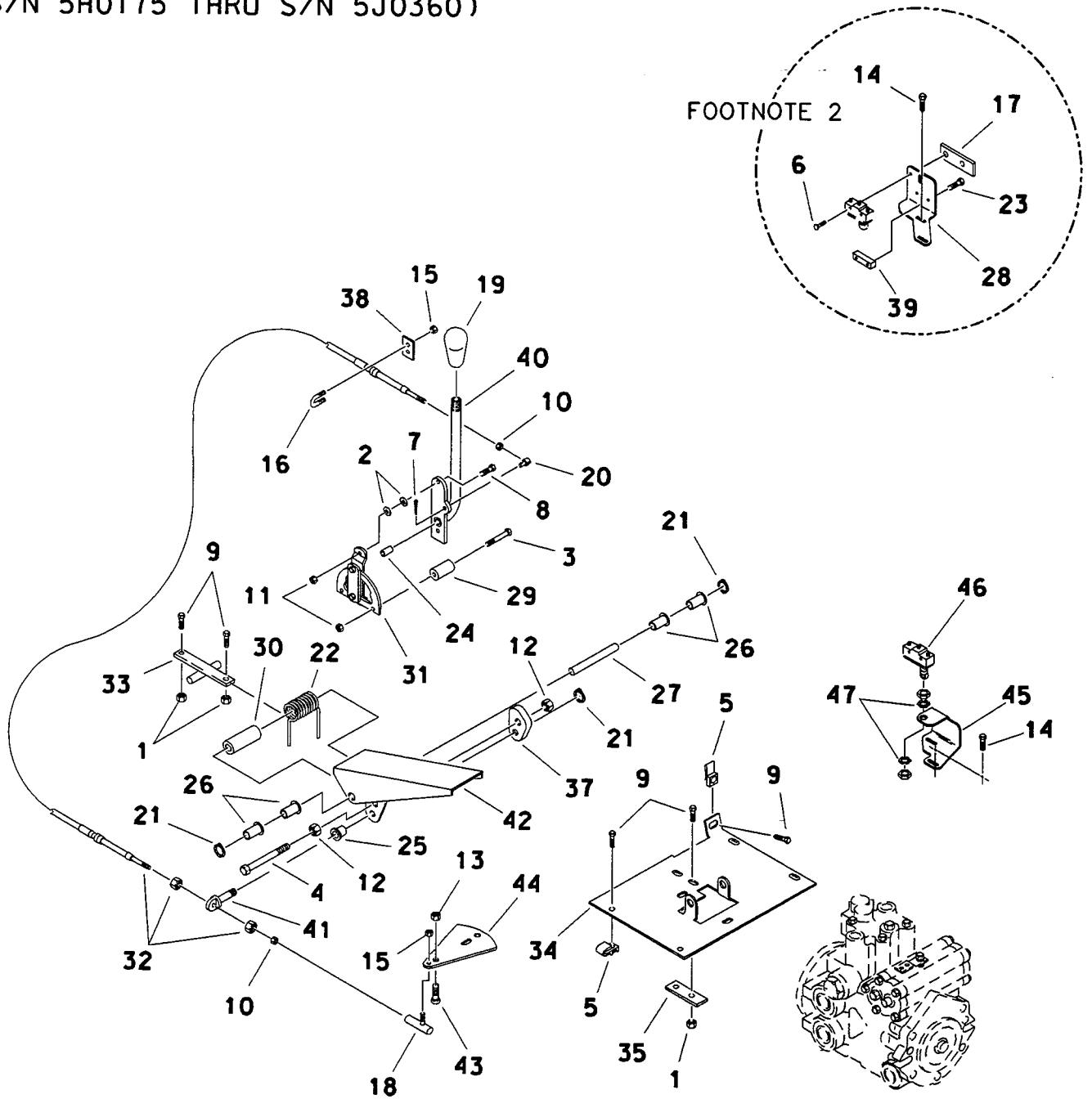
Ref. No.	Part Number	Qty.	Description
1.	105-003	4	Flange Locknut (5/16-NC)
2.	105-095	4	Washer (1/4")
3.	105-106	2	Bolt (1/4-NC x 2")
4.	105-111	1	Bolt (1/2-NC x 4")
5.	105-137	3	Clip Nut (5/16-NC)
6.	105-216	2	Bolt (No. 6-32 x 1-1/4", BUT HD)
7.	105-512	1	Cotter Pin (3/32" x 3/4")
8.	105-820	4	Flange Lock Bolt (1/4-NC x 3/4")
9.	105-823	7	Flange Lock Bolt (5/16-NC x 3/4")
10.	506-021	2	Nut (No. 10-32)
11.	105-832	4	Flange Locknut (1/4-NC)
12.	105-833	2	Flange Locknut (1/2-NC)
13.	105-834	1	Flange Locknut (3/8-NC)
14.	106-015	2	Nutsert (1/4-NC)
15.	106-154	3	Flange Locknut (1/4-NF)
16.	106-166	1	U-Bolt (1/4-NF)
17.	106-169	1	Speed Nut Bar
18.	110-318	1	Ball Joint (No. 10-32, RH THD)
19.	110-495	1	Knob (5/8-NC x M16, orange)
20.	110-521	1	Cable Swivel
21.	115-482	3	External Grip Ring (for 1/2" shaft)
22.	115-650	1	Torsion Spring (1.4" OD x 2.25" LG)

Ref. No.	Part Number	Qty.	Description
23.	116-170	1	Grommet (fits 3/8" DIA hole)
24.	116-190	1	Open/Close Grommet
25.	125-447	1	Bronze Bushing (.628" ID x .75" LG)
26.	125-779	4	Nyliner Bushing (.5" ID)
27.	183-653	1	Pin (.5" DIA x 4.24" LG)
28.	184-070	1	Pump Arm Bushing
29.	184-075	2	Spacer (.812 OD x 1.5" LG)
30.	184-077	1	Spacer (1" OD x 2.6" LG)
31.	196-131	1	Friction Control
32.	196-134	1	Control Cable
33.	314-111	1	Spring Anchor
34.	314-165	1	Pedal Mount
35.	314-139	1	Pedal Stop
36.	314-140	1	Switch Actuator
37.	314-141	1	Bushing Support
38.	314-151	1	Cable Spacer
39.	363-083	1	Switch Bracket
40.	365-125	1	Pump Control Lever
41.	365-139	1	Cable Pivot
42.	365-145	1	Rocker Pedal
43.	501-153	1	Flange Lock Bolt (3/8-NC x 5/8")

**NOTES:**

# GROUND DRIVE PUMP CONTROLS

(S/N 5H0175 THRU S/N 5J0360)



# GROUND DRIVE PUMP CONTROLS

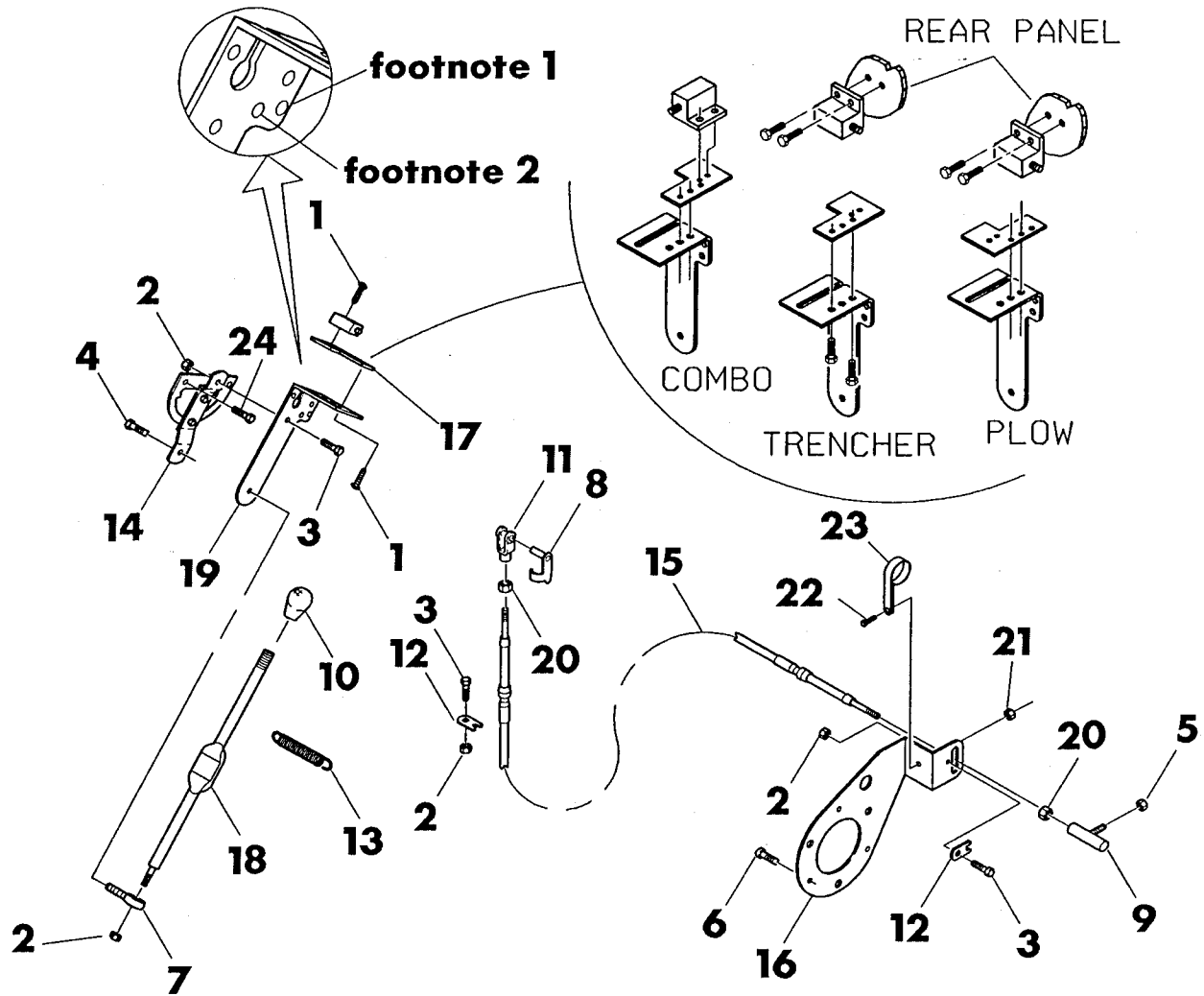
(S/N 5H0175 THRU S/N 5J0360)

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-003	4	FLANGE LOCKNUT (5/16-NC)	
2.	105-095	4	WASHER (1/4")	
3.	105-106	2	BOLT (1/4-NC X 2")	
4.	105-111	1	BOLT (1/2-NC X 4")	
5.	105-137	3	CLIP NUT (5/16-NC)	
6.	105-216	2	BOLT(#6-32 X 1-1/4, BUT HD SOC)	SEE FOOTNOTE 2
7.	105-512	1	COTTER PIN (3/32" X 3/4")	
8.	105-820	2	FLG LK BOLT (1/4-NC X 3/4")	
9.	105-823	7	FLG LK BOLT (5/16-NC X 3/4")	
10.	506-021	2	NUT (#10-32)	
11.	105-832	4	FLANGE LOCKNUT (1/4-NC)	
12.	105-833	2	FLANGE LOCKNUT (1/2-NC)	
13.	105-834	1	FLANGE LOCKNUT (3/8-NC)	
14.	105-836	2	FLG LK BOLT (1/4-NC X 1/2")	
15.	106-154	3	FLANGE LOCKNUT (1/4-NF)	
16.	106-166	1	U-BOLT	
17.	106-169	1	SPEED NUT BAR	SEE FOOTNOTE 2
18.	110-318	1	BALL JOINT	
19.	110-495	1	KNOB (DRANGE)	
20.	110-521	1	CABLE SWIVEL	
21.	115-482	3	EXTERNAL GRIP RING	
22.	115-650	1	TORSION SPRING	
23.	106-159	2	FLANGE SCREW (1/4-NC X 3/4")	SEE FOOTNOTE 2
24.	116-190	1	OPEN/CLOSE GROMMET	
25.	125-447	1	BUSHING	
26.	125-779	4	BUSHING	
27.	183-653	1	PIN	
28.	363-125	1	SWITCH MOUNT	SEE FOOTNOTE 2
29.	184-075	2	SPACER	
30.	184-077	1	SPACER	
31.	196-131	1	FRICTION CONTROL	
32.	196-134	1	CONTROL CABLE	
33.	314-111	1	SPRING ANCHOR	
34.	314-165	1	PEDAL MOUNT	
35.	314-139	1	PEDAL STOP	
36.	315-055	1	SWITCH ACTUATOR	SEE FOOTNOTE 2
37.	314-141	1	BUSHING SUPPORT	
38.	314-151	1	CABLE SPACER	
39.	315-085	1	TRIGGER SUPPORT (SWITCH)	SEE FOOTNOTE 2
40.	365-125	1	PUMP CONTROL LEVER	
41.	365-139	1	CABLE PIVOT	
42.	365-145	1	ROCKER PEDAL	
43.	501-153	1	FLG LK BOLT (3/8-NC X 5/8")	
44.	365-239	1	SWITCH ACTUATOR	SEE FOOTNOTE 1
45.	363-292	1	SWITCH BRACKET	SEE FOOTNOTE 1
46.	215-046	1	SWITCH	SEE FOOTNOTE 1
	215-082	1	ROLLER PLUNGER BRACKET	
47.	106-409	2	STAR WASHER (1/2")	SEE FOOTNOTE 1

## FOOTNOTES

- 1- BEGINS WITH S/N 5J0361.
- 2- ENDS WITH S/N 5J0360.

# ATTACHMENT PUMP CONTROLS



Ref. No.	Part Number	Qty.	Description
1.	105-214	4	Flange Screw (No. 10-24 x 1/2")
2.	105-832	6	Flange Locknut (1/4-NC)
3.	105-836	3	Flange Lock Bolt (1/4-NC x 1/2")
4.	106-114	1	Flange Lock Bolt (1/4-NF x 1/2")
5.	106-154	1	Flange Locknut (1/4-NF)
6.	106-161	4	Flange Bolt (M6-1.0 x 20mm)
7.	110-281	1	Rod End (1/4-NF)
8.	110-297	1	Spring Clevis Pin (1/4")
9.	110-318	1	Ball Joint (No. 10-32, RH THD)
10.	110-375	1	Knob (1/2-NC, yellow)
11.	110-517	1	Clevis (No. 10-32)
12.	110-522	2	Conduit Clamp
13.	115-649	1	Extension Spring (.313" OD x 3.4" LG)
14.	196-131	1	Friction Control

Ref. No.	Part Number	Qty.	Description
15.	196-133	1	Control Cable
16.	314-136	1	Cable Mount
17.	314-137	1	Switch Mount
18.	365-129	1	Pump Control Lever
19.	365-144	1	Pump Control Output Lever
20.	506-021	2	Nut (No. 10-32)
21.	105-003	1	Flange Locknut (5/16-NC)
22.	105-873	1	Flange Lock Bolt (5/16-NC x 1")
23.	110-332	1	Clamp (1-5/8")
24.	106-103	2	Bolt (1/4-NC x 1/2", BUT HD)

<sup>1</sup>Early units use this hole. See footnote 3.

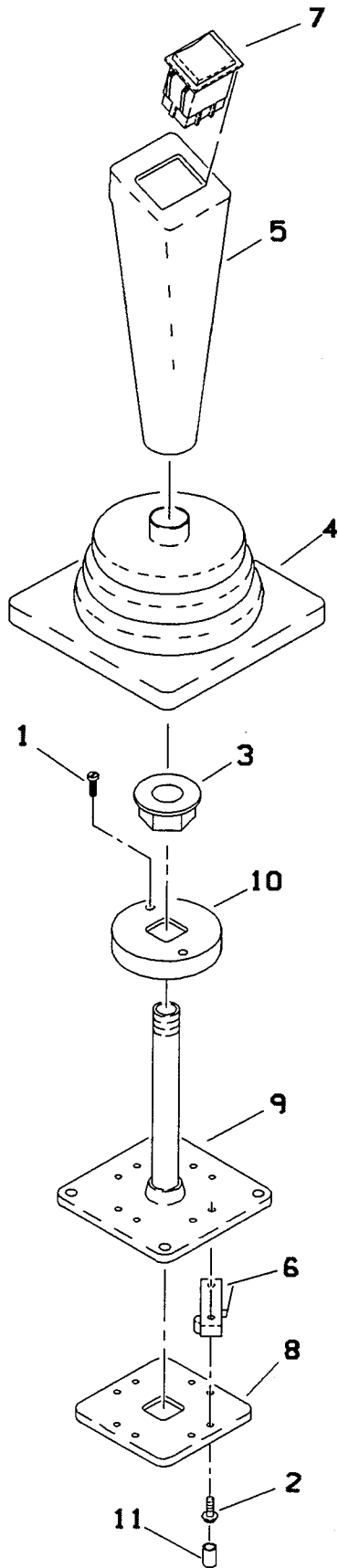
<sup>2</sup>Present production units use this hole. See footnote 3.

<sup>3</sup>Electrical switch is only used on units equipped with combo attachments.



**NOTES:**

# BACKFILL BLADE CONTROL

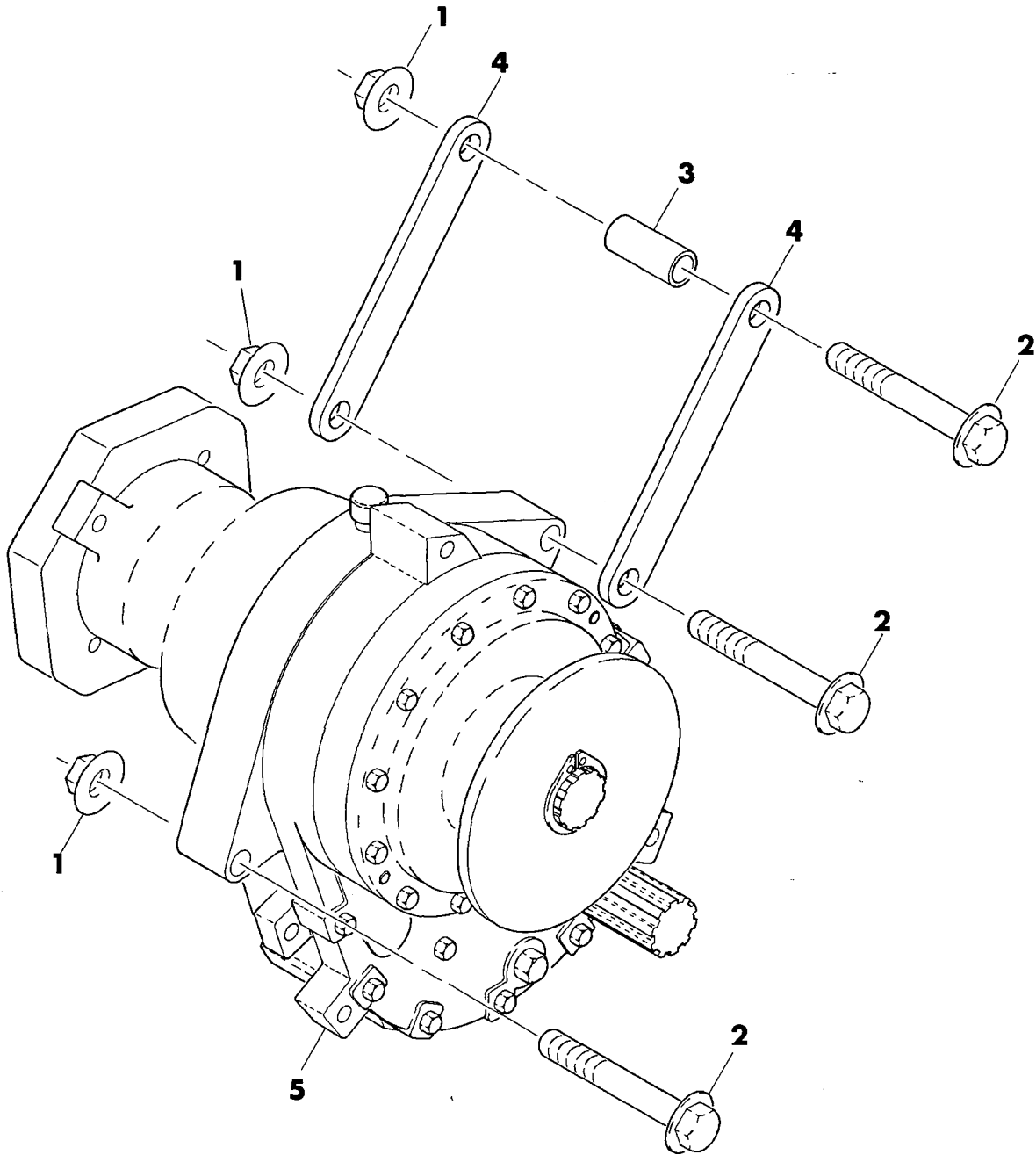


# BACKFILL BLADE CONTROL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-184	2	SCREW (#10-24 X 3/4")	
2.	106-155	8	SCREW (#4-40 X 5/8")	
3.	105-833	1	FLANGE NUT	
	106-171	1	NUT	
4.	110-330	1	DUST BOOT	
5.	110-526	1	JOYSTICK HANDLE	
6.	215-081	4	SWITCH	
7.	217-708	1	ROCKER SWITCH	
8.	314-115	1	CONTROL STOP	
9.	365-133	1	CONTROL MOUNT	
10.	365-157	1	UPPER CONTROL STOP	
11.	110-397	4	SLEEVE CAP	

FOOTNOTES

# GROUND DRIVE TRANSMISSION MOUNT



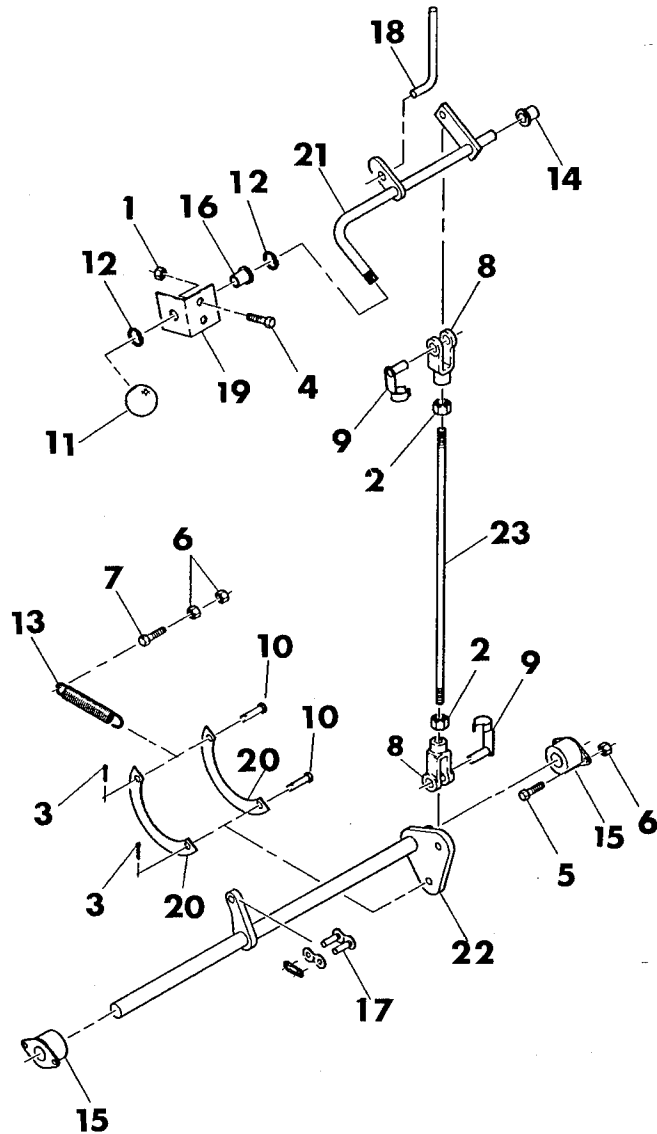
Ref. No.	Part Number	Qty.	Description
1.	105-340	3	Flange Locknut (3/4-NC)
2.	106-157	3	Flange Bolt (3/4-NC x 5")
3.	184-071	1	Spacer (1" OD x 2.38" LG)

Ref. No.	Part Number	Qty.	Description
4.	314-126	2	Transmission Mount Bar
5.	166-059	1	<sup>1</sup> Ground Drive Transmission

<sup>1</sup>For component parts to the ground drive transmission refer to page entitled GROUND DRIVE TRANSMISSION.

# GROUND DRIVE TRANSMISSION CONTROLS

(Ends with S/N5H0174)

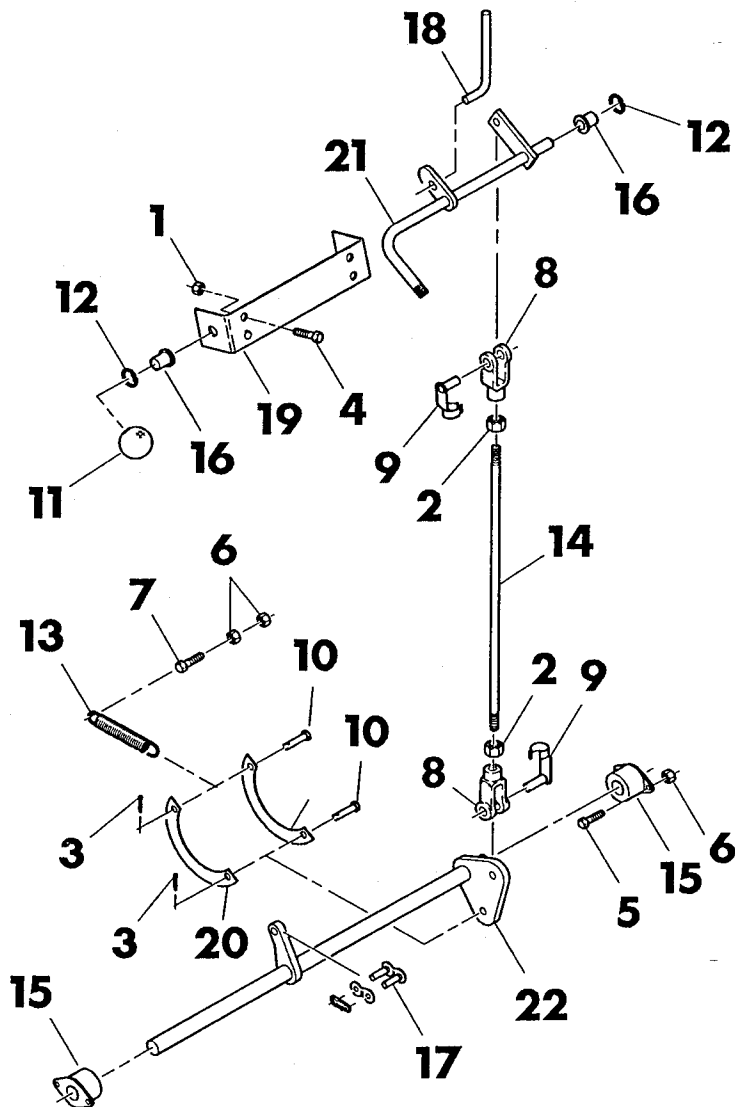


Ref. No.	Part Number	Qty.	Description
1.	105-003	2	Flange Lock Nut (5/16-NC)
2.	105-093	2	Nut (3/8-NF)
3.	105-523	2	Cotter Pin (1/8" x 3/4")
4.	105-823	2	Flange Lock Bolt (5/16-NC x 3/4")
5.	105-826	4	Flange Lock Bolt (3/8-NC x 1")
6.	105-845	6	Flange Locknut (3/8-NC)
7.	105-874	1	Flange Lock Bolt (3/8-NC x 1-1/2")
8.	110-027	2	Clevis (3/8-NF)
9.	110-286	2	Spring Clevis Pin (3/8")
10.	110-306	2	Clevis Pin (3/8")
11.	110-465	1	Knob (1/2-NC, orange)
12.	115-482	2	External Grip Ring (for 1/2" shaft)

Ref. No.	Part Number	Qty.	Description
13.	115-602	1	Extension Spring (5/8" OD x 6-3/4" LG)
14.	125-447	1	Bronze Bushing (.5" ID x .75" LG)
15.	125-609	2	Flange Bronze Bearing (.75" ID x 3" LG)
16.	125-779	1	Nyliner Bushing (.501" ID)
17.	130-304	1	Connector Link (#80)
18.	183-652	1	Lock Out Pin
19.	314-134	1	Shift Lever Support
20.	314-150	2	Spring Link
21.	365-117	1	Shift Lever
22.	365-121	1	Cross Shaft
23.	365-132	1	Link Rod (16.57" LG, 3/8-NF)

# GROUND DRIVE TRANSMISSION CONTROLS

(Begins with S/N5H0175)

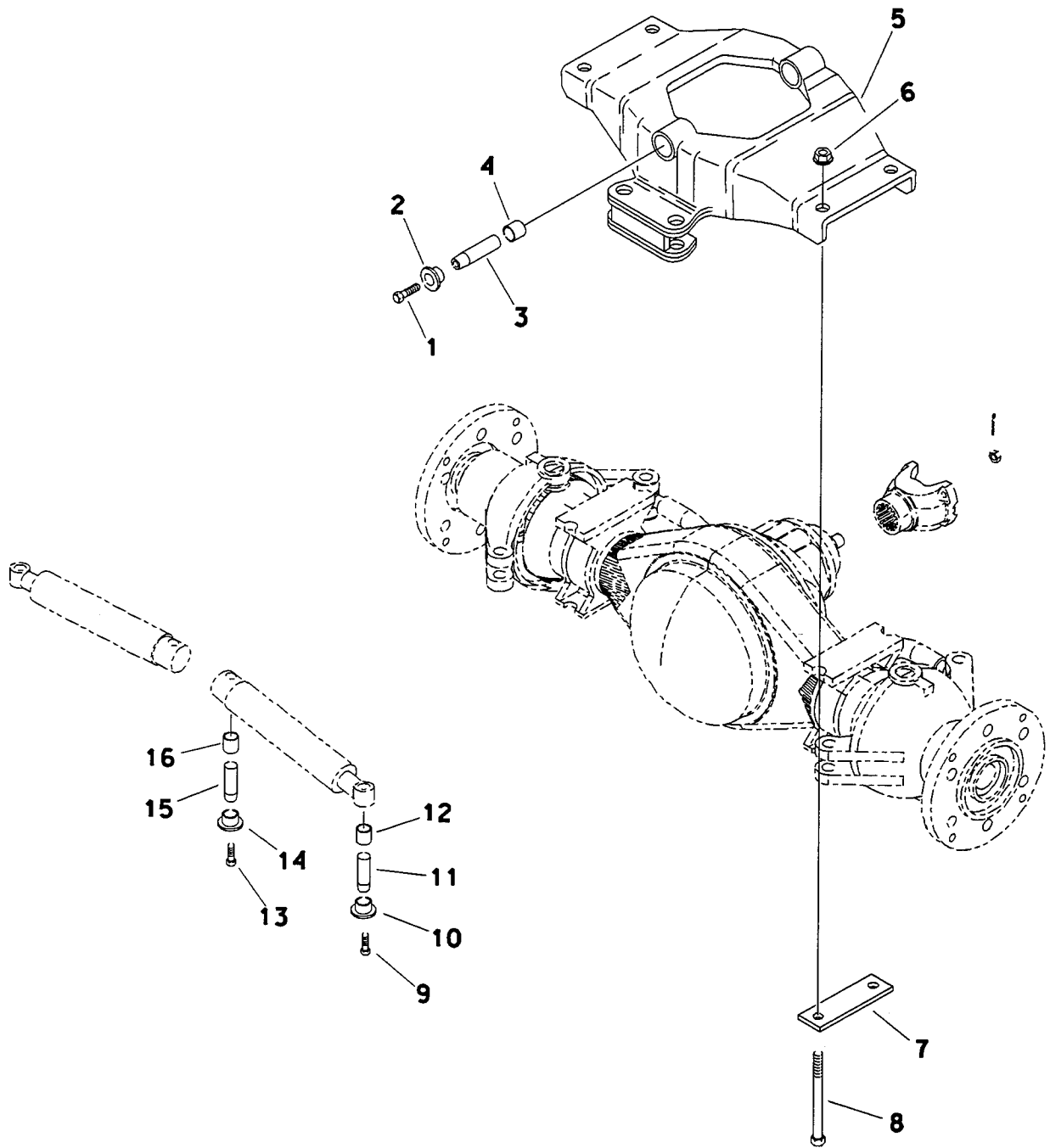


Ref. No.	Part Number	Qty.	Description
1.	105-003	4	Flange Lock Nut (5/16-NC)
2.	105-093	2	Nut (3/8-NF)
3.	105-523	2	Cotter Pin (1/8" x 3/4")
4.	105-823	4	Flange Lock Bolt (5/16-NC x 3/4")
5.	105-826	4	Flange Lock Bolt (3/8-NC x 1")
6.	105-845	6	Flange Locknut (3/8-NC)
7.	105-874	1	Flange Lock Bolt (3/8-NC x 1-1/2")
8.	110-027	2	Clevis (3/8-NF)
9.	110-286	2	Spring Clevis Pin (3/8")
10.	110-306	2	Clevis Pin (3/8")
11.	110-465	1	Knob (1/2-NC, orange)

Ref. No.	Part Number	Qty.	Description
12.	115-482	2	External Grip Ring (for 1/2" shaft)
13.	115-602	1	Extension Spring (5/8" OD x 6-3/4" LG)
14.	365-132	1	Link Rod (16.57" LG, 3/8-NF)
15.	125-609	2	Flange Bronze Bearing (.75" ID x 3" LG)
16.	125-779	1	Nyliner Bushing (.501" ID)
17.	130-304	1	Connector Link (#80)
18.	183-652	1	Lock Out Pin
19.	315-054	1	Shift Lever Support
20.	314-150	2	Spring Link
21.	365-164	1	Shift Lever
22.	365-121	1	Cross Shaft

**NOTES:**

# FRONT DIFFERENTIAL MOUNT





# FRONT DIFFERENTIAL MOUNT

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-969	2	FLANGE BOLT (5/8-NC X 1-1/2")	
2.	184-065	2	TAPERED INSERT	
3.	183-606	2	TAPERED PIN	
4.	125-785	2	FIBER BUSHING	
5.	314-075	1	DIFFERENTIAL MOUNT	
6.	105-919	4	FLANGE NUT (1-NC)	
7.	314-116	2	AXLE RETAINER STRAP	
8.	105-492	4	BOLT (1-NC X 10")	
9.	105-874	2	FLANGE LOCK BOLT	
10.	181-981	2	TAPERED INSERT	
11.	183-584	2	TAPERED PIN	
12.	125-770	2	FIBER BUSHING	
13.	106-096	2	FLANGE BOLT (1/2-NC X 1-3/4")	
14.	181-982	2	TAPERED BUSHING	
15.	183-588	2	PIN	
16.	125-771	2	FIBER BUSHING	

## FOOTNOTES



# FRONT STEERING

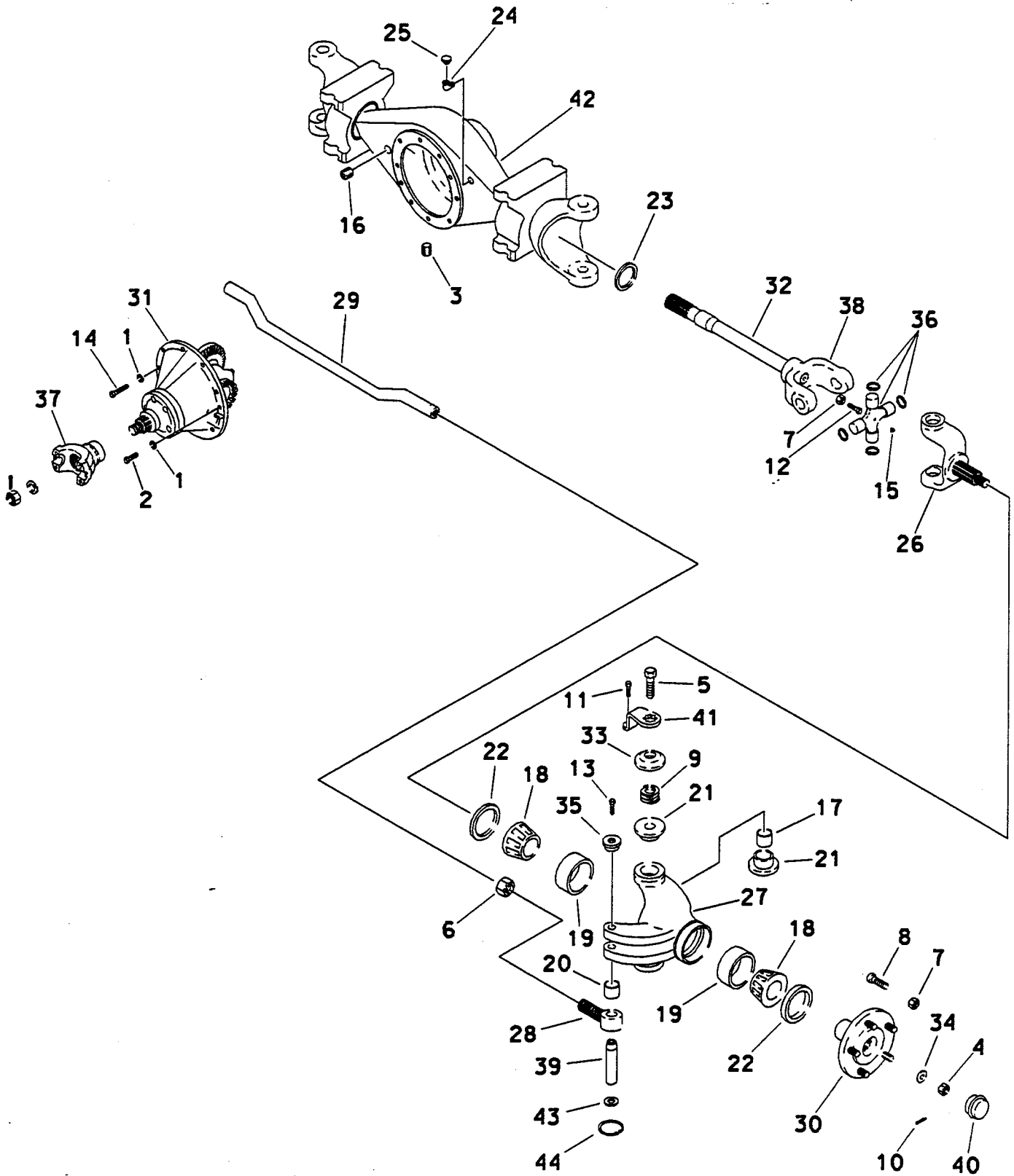
## DANA 70

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-223	2	WASHER (3/8")	
2.	105-349	2	SLOTTED NUT (1-NF)	
3.	105-353	4	BOLT(3/4-NFX2-5/8",NLK GD8)	
4.	105-362	1	FLANGE NUT (7/8-NF)	
5.	105-378	2	JAM NUT (1-NF)	
6.	105-424	10	LUG NUT (3/4-NF)	
7.	105-426	10	LUG BOLT (3/4-NF X 1-13/16")	
8.	105-451	12	WAVE WASHER (3/4")	
9.	105-516	2	ROLL PIN (3/16" X 1-1/2")	
10.	105-825	6	FLG LOCK BOLT (3/8-NC X 3/4")	
11.	105-826	2	FLG LOCK BOLT (3/8-NC X 1")	
12.	115-002	2	ZERK (Q2N, 90)	
13.	125-301	4	COMPOSITION BUSHING (3/4")	
14.	125-367	4	BEARING	
15.	125-368	4	RACE	
16.	125-432	2	BRONZE BUSHING (1")	
17.	125-716	8	URETHANE FLG BUSHING (1")	
18.	155-804	4	INTERNAL SEAL	
19.	155-868	2	SEAL	
20.	160-386	2	SPINDLE SHAFT AND YOKE	
21.	160-406	2	SPINDLE HOUSING	
22.	160-413	2	ROD END	
23.	160-431	1	TIE ROD	
	160-419	1	TIE ROD	
24.	161-057	2	SPINDLE FLANGE	
25.	161-124	1	STEERABLE DIFFERENTIAL	INCL. REF. NO.'S 4 & 31
26.	161-126	2	AXLE	
27.	180-061	4	SPINDLE WASHER (3/4")	
28.	181-685	2	WASHER (1")	
29.	181-981	2	TAPERED INSERT (1.000")	
30.	182-099	2	CROSS AND BEARING KIT	
31.	182-148	1	YOKE	
32.	182-143	2	YOKE	
33.	183-694	2	TAPERED PIN (1.000" X 3.765")	
34.	205-744	2	HUB CAP	
35.	301-151	4	SPINDLE BOLT LOCK	
	190-273		SPINDLE BOLT CONVERSION KIT	INCL. RERF. NO.'S 3,8,10, 13,17,27,& 35. SEE F/N 1

### FOOTNOTES

1. REFER TO INSTALLATION DIAGRAM 050-946

# FRONT STEERING ROCKWELL



# FRONT STEERING ROCKWELL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	190-517		FRT STEER CONVER. KIT	INC REF #'S 1-6 & 8-44 AND SEE FOOTNOTE 3
1.	105-073	10	LOCK WASHER (7/16")	
2.	105-222	10	BOLT (7/16-NC X 1-3/4")	
3.	115-165	1	PLUG (Ø8N, ALN HD)	
4.	105-349	2	CASTLE NUT (1-NF)	
5.	105-353	4	BOLT (3/4-NF X 2-5/8", NYLDCK)	
6.	105-378	2	JAM NUT (1-NF)	
7.	105-424	10	LUG NUT (3/4-NF)	
8.	105-426	10	LUG BOLT (3/4-NF X 1-13/16")	
9.	105-451	8	WAVE SPRING WASHER (3/4")	
10.	105-516	2	ROLL PIN (3/16" X 1-1/2")	
11.	105-825	4	FLANGE LOCK BOLT	
12.	105-826	2	FLANGE LOCK BOLT	
13.	105-874	2	FLG LK BOLT (3/8-NC X 1-1/2")	SEE FOOTNOTE 1
	105-826	2	FLG LK BOLT (3/8-NC X 1")	SEE FOOTNOTE 2
14.	105-911	2	BOLT (7/16-NC X 2-3/4")	
15.	115-002	2	ZERK (Ø2N, 90)	
16.	115-152	1	PLUG (12N, SQ)	
17.	125-301	4	BUSHING	
18.	125-367	4	BEARING	
19.	125-368	4	BALL BEARING	
20.	125-432	2	BRONZE BUSHING	
21.	125-716	8	URETHANE FLANGE BUSHING	
22.	155-804	4	INTERNAL SEAL	
23.	155-868	2	SEAL	
24.	156-241	1	STREET ELBDW (Ø2N-Ø2NF90)	
25.	159-003	1	VENT PLUG	
26.	160-386	2	SPINDLE SHAFT AND YOKE	
27.	160-406	2	SPINDLE HOUSING	
28.	160-413	2	ROD END (1-NF)	
29.	160-431	1	TIE ROD	
	160-419	1	TIE ROD	
30.	161-057	2	SPINDLE FLANGE	
31.	161-125	1	DIFFERENTIAL CARRIER	
32.	161-127	2	AXLE	
33.	180-061	4	SPINDLE WASHER	
34.	181-685	2	WASHER	
35.	181-981	2	TAPERED INSERT	
36.	182-099	2	CROSS AND BEARING KIT	
37.	182-141	1	YOKE	5020
	182-051	1	YOKE	5110
38.	182-143	2	YOKE	
39.	183-694	2	TAPERED PIN	SEE FOOTNOTE 1 & 2
40.	205-744	2	HUB CAP	
41.	301-151	4	SPINDLE BOLT LOCK	INCL REF NO.'S 5,9,11,17,21,33 & 41 (SEE FOOTNOTE 1)
	190-273		BOLT LOCK KIT	
42.	161-133	1	DIFFERENTIAL HOUSING	
43.	115-524	2	SNAP RING	
44.	110-078	2	WASHER	

## FOOTNOTES

1-EARLY STYLE PINS WERE DRILLED FOR 1-1/2" LONG BOLTS.

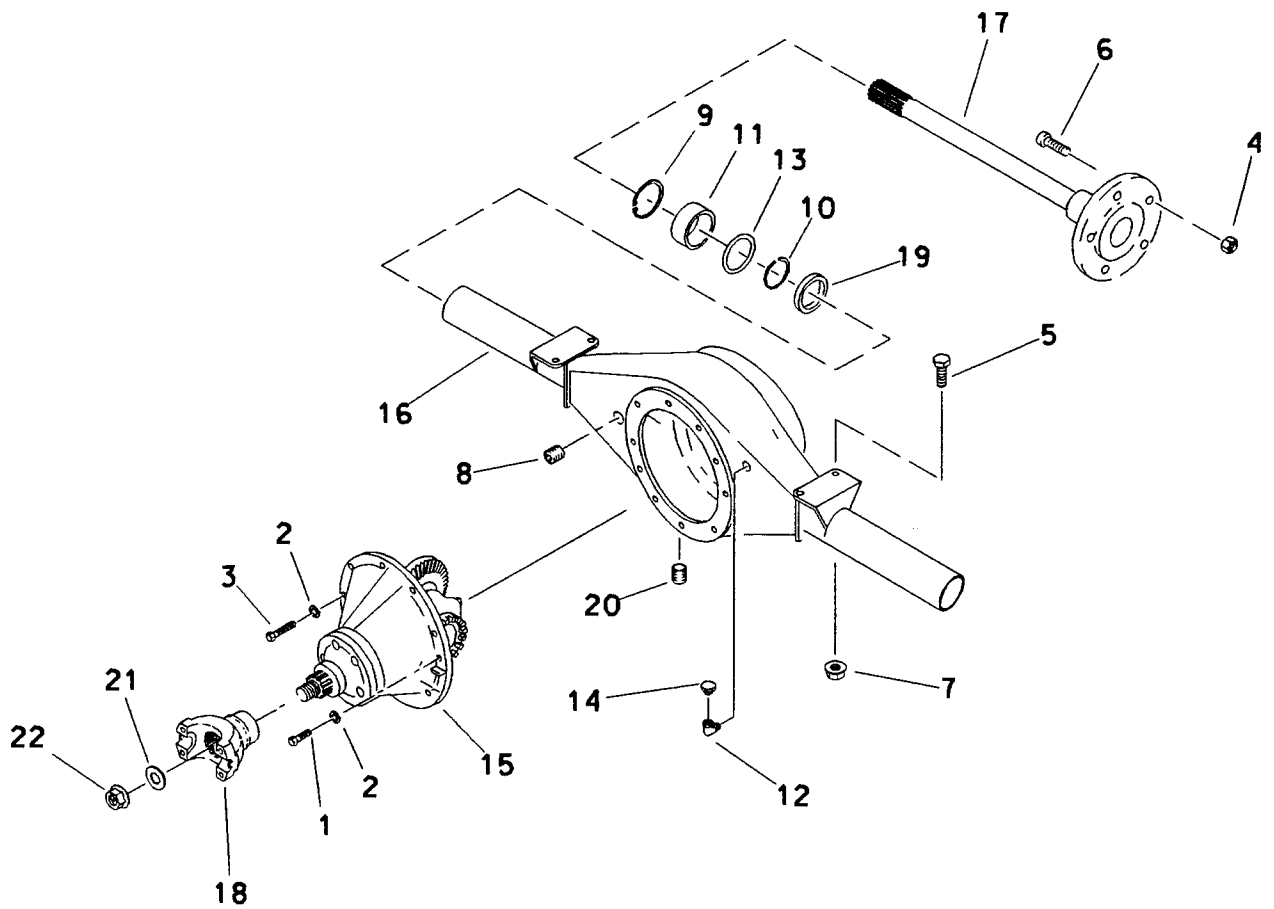
2-PRESENT STYLE PINS ARE DRILLED FOR 1" LONG BOLTS.

3-KIT ALSO INCLS PAGE 801-614 - CYL. PINS & RELATED PARTS ON PAGE 801-613 AND SHAFT AND YOKE ON PAGE 801-615

## NOTE:

REFER TO INSTALLATION DIAGRAM 050-946.

# RIGID REAR DIFFERENTIAL



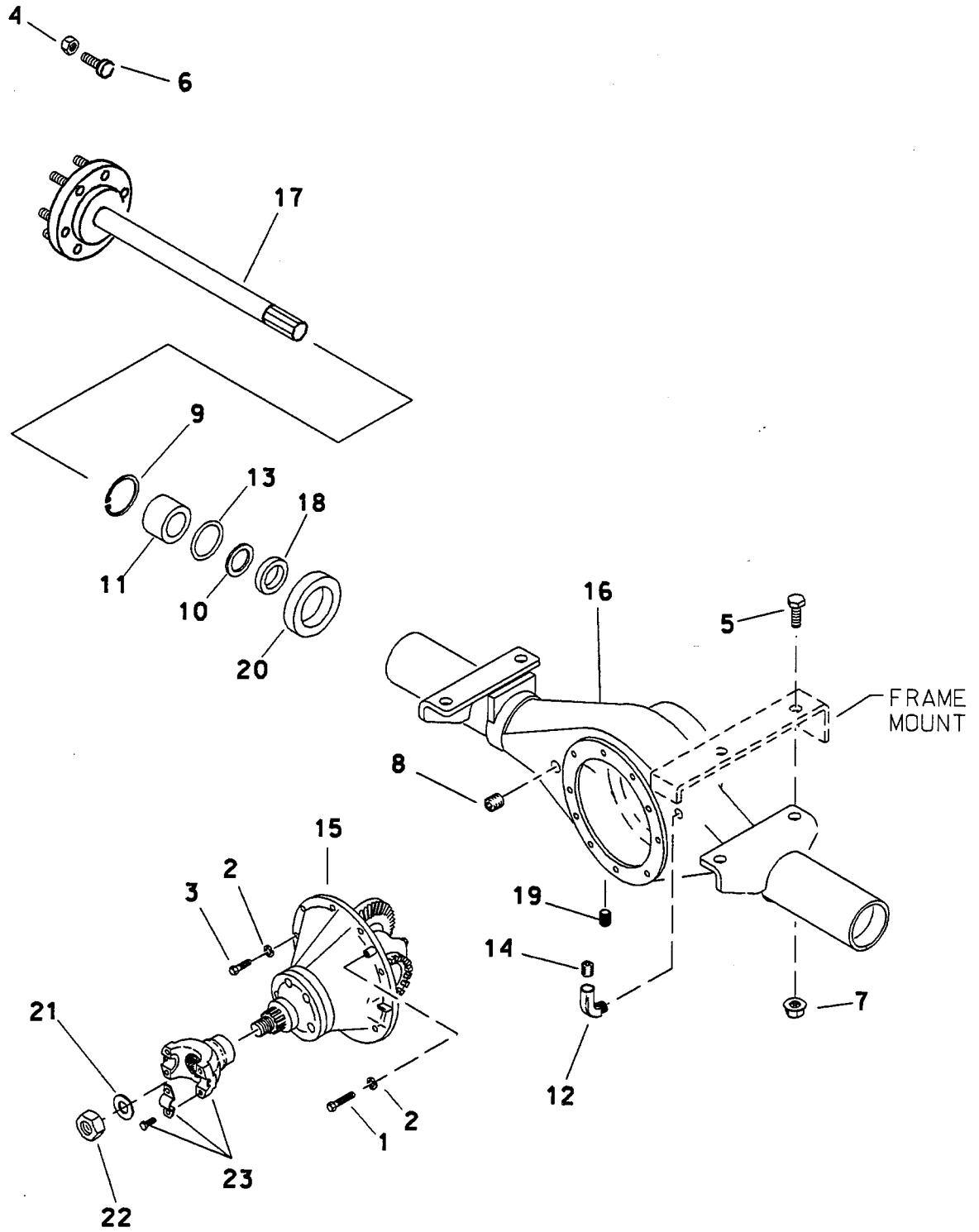
# RIGID REAR DIFFERENTIAL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-046	2	BOLT (7/16-NC X 2-1/4")	
2.	105-073	10	LOCK WASHER (7/16")	
3.	105-132	8	BOLT (7/16-NC X 1-1/2")	
4.	105-424	10	LUG NUT (3/4-NF)	
5.	105-425	4	BOLT (1-NC X 2-1/2")	
6.	105-426	10	LUG BOLT (3/4-NF X 1-13/16")	
7.	105-919	4	FLANGE NUT (1-NC)	
8.	115-152	1	PIPE PLUG (12N, SQ HD)	
9.	115-488	2	INTERNAL SNAP RING	
10.	115-546	2	RETAINER RING	
11.	125-027	2	BALL BEARING	
12.	156-241	1	STREET ELL (02N-02NF90)	
13.	157-043	2	O-RING (347 D70)	
14.	159-003	1	VENT PLUG (02N)	
15.	161-125	1	CARRIER PARTS ASSEMBLY	
16.	161-128	1	DIFFERENTIAL HOUSING	
17.	161-132	2	AXLE (27.06 LG, 34 S)	
18.	182-141	1	YOKE (2.25" OD, 10 S)	
19.	184-083	2	RETAINER	
20.	115-165	1	PIPE PLUG (08N)	
21.	105-930	1	WASHER (1")	
22.	106-208	1	FLG LK NUT (1-UNEF)	

## FOOTNOTES

# ROCKWELL RIGID REAR DIFFERENTIAL

5020 - 7520 - 8020





# ROCKWELL RIGID REAR DIFFERENTIAL

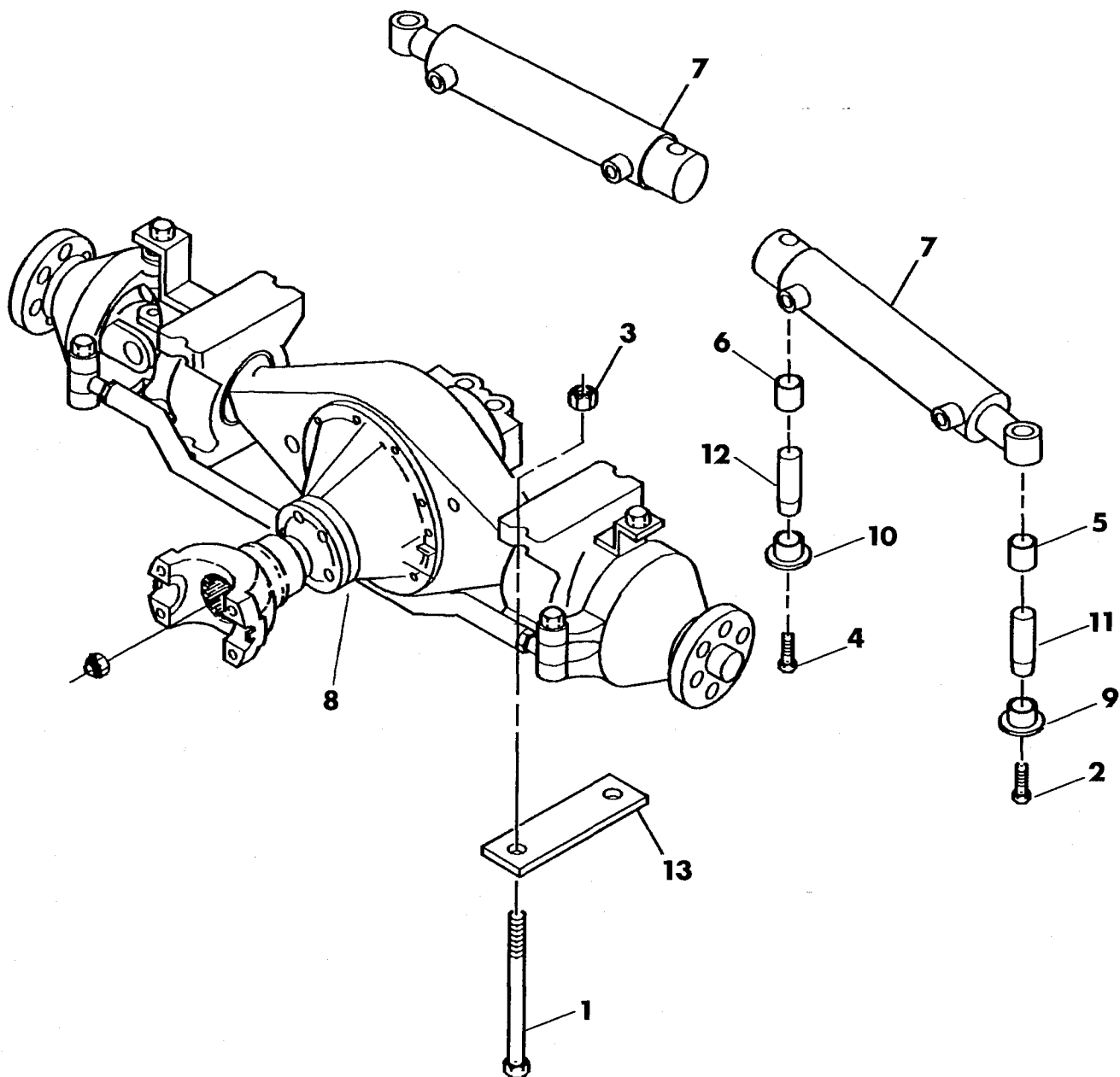
## 5020 - 7520 - 8020

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-046	2	BOLT (7/16-NC X 2-1/4")	
	105-911	2	BOLT (7/16-NC X 2-3/4")	5020 ONLY
2.	105-073	10	LOCK WASHER (7/16")	
3.	105-132	8	BOLT (7/16-NC X 1-1/2")	
4.	105-424	10	LUG NUT (3/4-NF)	NOT INCLUDED WITH REF. NO. 17
5.	105-425	4	BOLT (1-NC X 2-1/2")	
6.	105-426	12	LUG BOLT (3/4-NF X 1-13/16")	NOT INCLUDED WITH REF. NO. 17
7.	105-919	4	FLG NUT (1-NC)	
8.	115-152	1	PIPE PLUG (12N)	
9.	115-488	2	INTERNAL SNAP RING	
10.	115-546	2	RETAINER RING	
11.	125-027	2	BALL BEARING	
12.	156-241	1	STREET ELBOW (02N-02NF90)	
13.	157-003	2	O-RING (346 D70)	EARLY STYLE USED WITHOUT SEAL (REF #20)
	157-043	2	O-RING (347 D70)	LATER STYLE USED WITHOUT SEAL (REF #20)
14.	159-003	1	VENT PLUG (02N)	
15.	161-125	1	CARRIER PARTS ASSEMBLY	5020/7520/8020 & INC'S REF #'S 21 & 22
16.	161-143	1	DIFFERENTIAL HOUSING	7520/8020
	161-128	1	DIFFERENTIAL HOUSING	5020
17.	161-142	2	AXLE	7520/8020 DOES NOT INCL REF #'S 4 & 6
	161-132	2	AXLE	5020/ DOES NOT INCL REF #'S 4 & 6
18.	184-083	2	RETAINER	SEE FOOTNOTE 1
19.	115-165	1	PIPE PLUG (08N, ALN HD)	
20.	157-620	2	SEAL	
21.	105-930	1	WASHER (1-1/32")	
22.	106-208	1	NUT (1-NEF)	
23.	182-141	1	YOKER	

### FOOTNOTES

1-REFER TO REPLACEMENT DIAGRAM 052-129

# REAR STEERING DIFFERENTIAL MOUNT



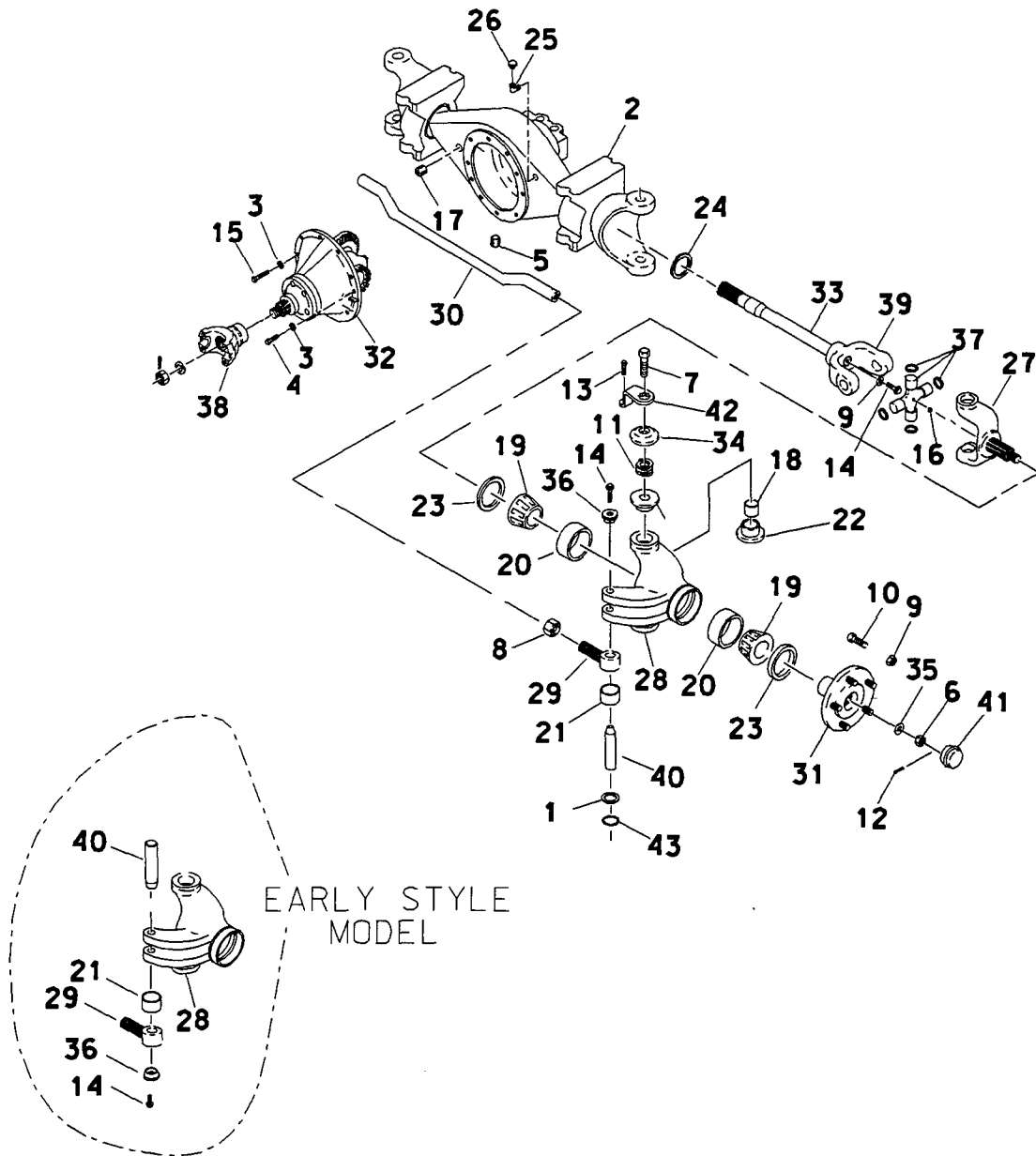
Ref. No.	Part Number	Qty.	Description
1.	105-492	4	Bolt (1-NC x 10")
2.	105-874	2	Flange Lock Bolt (3/8-NC x 1-1/2")
3.	105-919	4	Flange Nut (1-NC)
4.	106-096	2	Flange Bolt (1/2-NC x 1.75")
5.	125-770	2	Fiber Bushing (1" ID x 1.25" OD x 1" LG)
6.	125-771	2	Fiber Bushing (1.25" ID x 1.5" OD x 1.25" LG)

Ref. No.	Part Number	Qty.	Description
7.	151-044	2	Steering Cylinder
8.	N.A.	1	<sup>1</sup> Differential
9.	181-981	2	Tapered Insert (.406" ID)
10.	181-982	2	Tapered Insert (.563" ID)
11.	183-584	2	Tapered Pin (1" DIA x 2.44", 3/8-NC)
12.	183-588	2	Tapered Pin (1.25" DIA x 3.94", 1/2-NC)
13.	314-116	2	Axle Retainer Strap (10" LG)

<sup>1</sup>Refer to pages entitled REAR STEERING DIFFERENTIAL for differential parts.

**NOTES:**

# REAR STEERING DIFFERENTIAL ROCKWELL



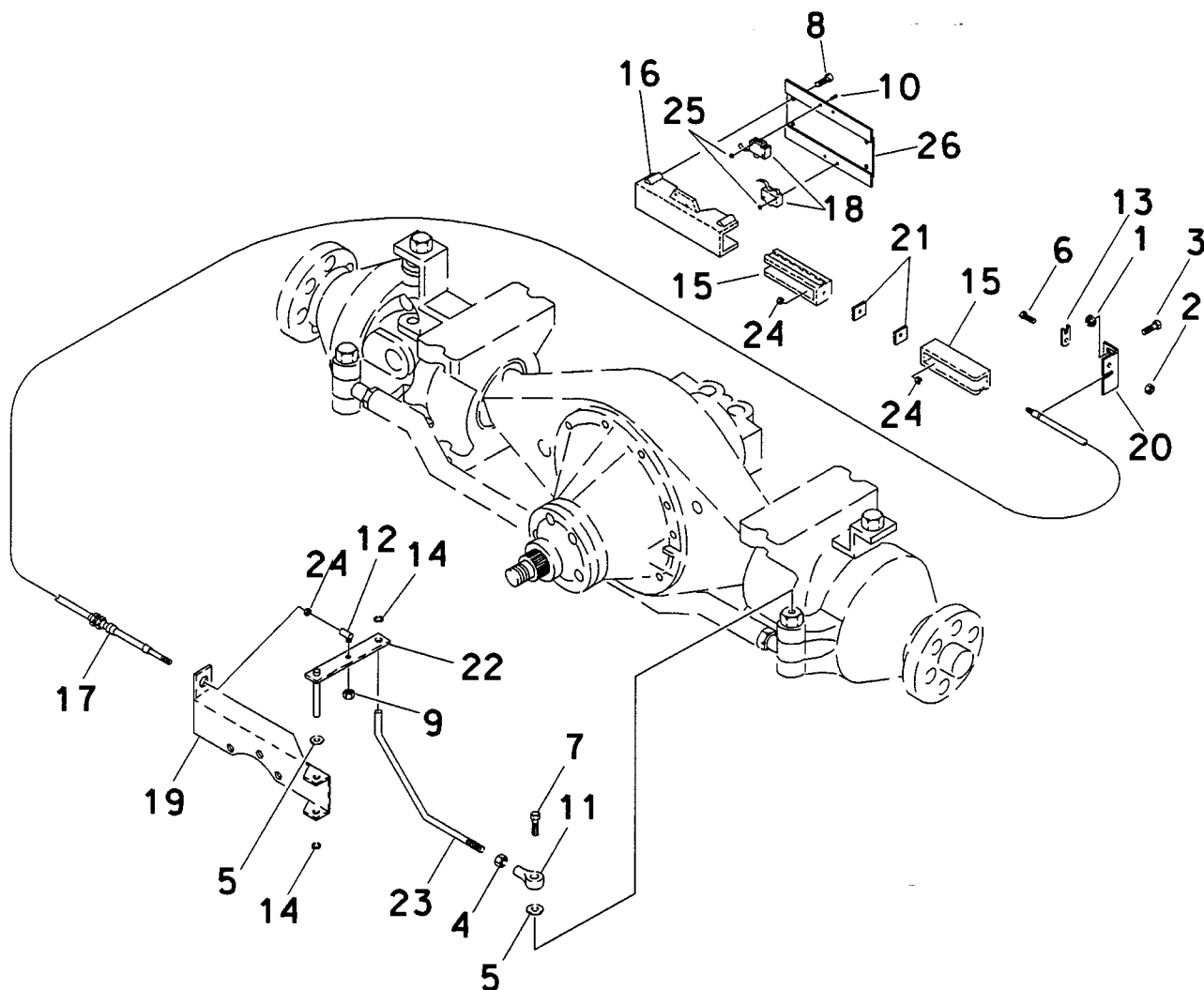
# REAR STEERING DIFFERENTIAL ROCKWELL

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-078	2	WASHER	
2.	161-121	1	DIFFERENTIAL HOUSING	
3.	105-073	10	LOCK WASHER (7/16")	
4.	105-222	10	BOLT (7/16-NC X 1-3/4")	
5.	115-165	1	PLUG (08N, ALN)	
6.	105-349	2	SLOTTED NUT (1-NF)	
7.	105-353	4	BOLT (3/4-NF X 2-5/8", NYLOK)	
8.	105-378	2	JAM NUT (1-NF)	
9.	105-424	10	LUG NUT (3/4-NF)	
10.	105-426	10	LUG BOLT (3/4-NF X 1-13/16")	
11.	105-451	8	WAVE WASHER (3/4")	
12.	105-516	2	ROLL PIN (3/16" X 1-1/2")	
13.	105-825	4	FLG LOCK BOLT (3/8-NC X 3/4")	
14.	105-826	4	FLG LOCK BOLT (3/8-NC X 1")	
15.	105-911	2	BOLT (7/16-NC X 2-3/4")	
16.	115-002	2	ZERK (02N, 90)	
17.	115-152	1	PLUG (12N, SQ)	
18.	125-301	4	COMPOSITION BUSHING (3/4")	
19.	125-367	4	BEARING	
20.	125-368	4	BALL BEARING	
21.	125-432	2	BRONZE BUSHING (1")	
22.	125-716	8	URETHANE FLG BUSHING (1")	
23.	155-804	4	INTERNAL SEAL	
24.	155-868	2	SEAL	
25.	156-241	1	STREET ELBOW (02N-02NF90)	
26.	159-003	1	VENT PLUG (02N)	
27.	160-386	2	SPINDLE SHAFT AND YOKE (43S)	
28.	160-406	2	SPINDLE HOUSING	
29.	160-413	2	ROD END (1-NF)	
30.	160-431	1	TIE ROD	
	160-419	1	TIE ROD	
31.	161-057	2	SPINDLE FLANGE (43S)	
32.	161-125	1	DIFFERENTIAL CARRIER	
33.	161-127	2	AXLE (ROCKWELL)	
34.	180-061	4	SPINDLE WASHER (3/4")	
35.	181-685	2	WASHER (1")	
36.	181-981	2	TAPERED INSERT (1.000")	
37.	182-099	2	CROSS AND BEARING KIT	
38.	182-141	1	YOKE	
39.	182-143	2	YOKE	
40.	183-694	2	TAPERED PIN (1" X 3.765")	PRESENT STYLE
	183-584	2	TAPERED PIN (1" X 2.440")	EARLY STYLE
41.	205-744	2	HUB CAP	
42.	301-151	4	SPINDLE BOLT LOCK	
	190-273		BOLT LOCK KIT	INC. REF. NO.'S 5,9,11,17,21,33,& 41. SEE F/N 1
43.	115-524	2	SNAP RING	

## FOOTNOTES

1. REFER TO INSTALLATION DIAGRAM 050-946.

# REAR STEERING INDICATOR

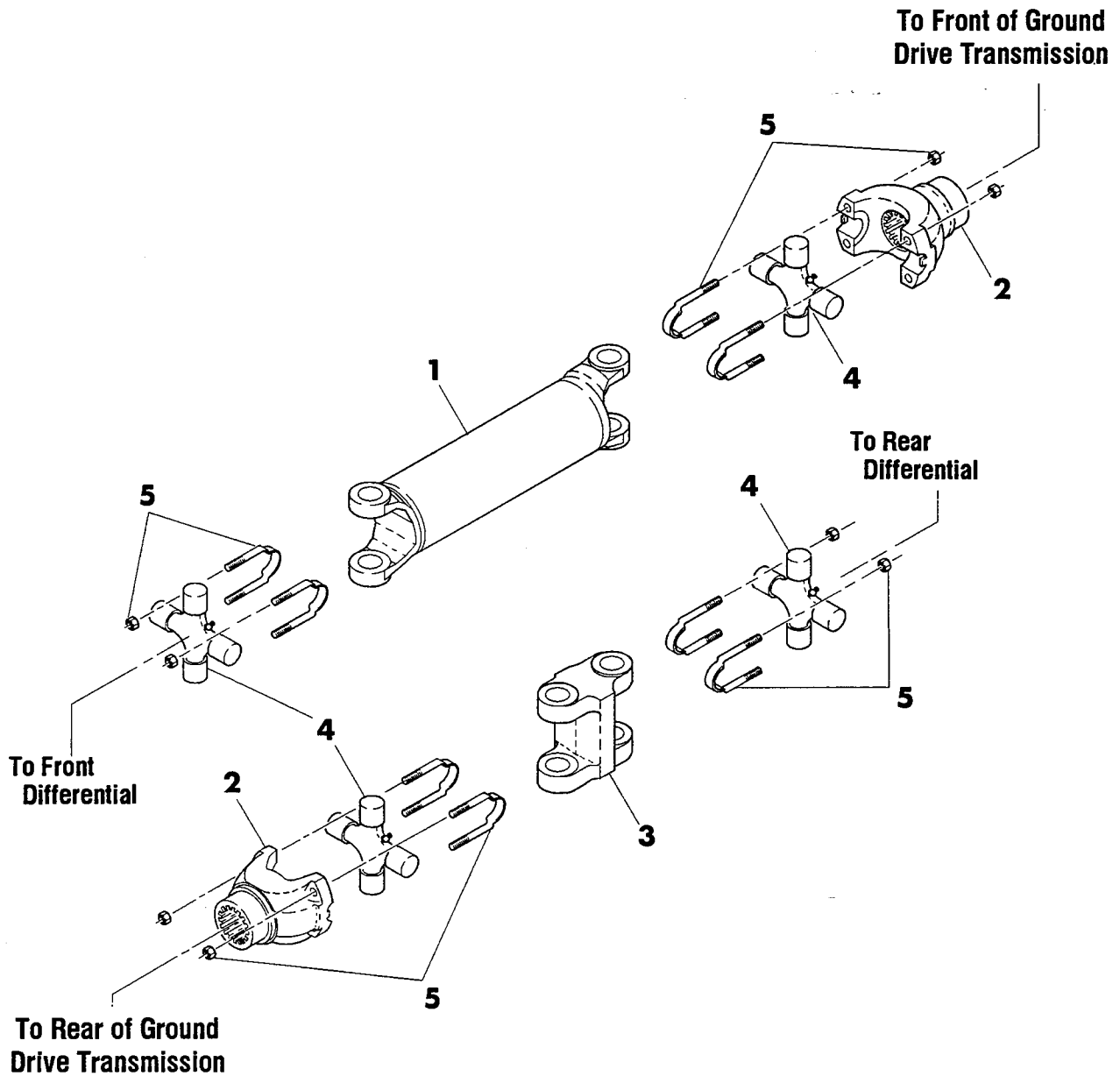


REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	105-003	2	FLANGE LOCKNUT
2.	105-085	1	LOCKNUT
3.	105-090	2	BOLT (5/16-NC X 3/4")
4.	105-093	1	NUT (3/8-NF)
5.	105-264	2	WASHER (3/8")
6.	105-865	1	BOLT (1/4-NC X 3/4")
7.	105-874	1	FLANGE LOCK BOLT
8.	106-010	4	FLANGE SCREW
9.	106-154	1	FLANGE LOCKNUT
10.	106-315	4	<sup>2</sup> SCREW (NO. 4-40 X 1")
	106-155	1	<sup>1</sup> SCREW (4-40 X 5/8")
11.	110-102	1	ROD END (3/8-NF)
12.	110-318	1	BALL JOINT (NO. 10-32)
13.	110-522	1	CONDUIT CLAMP

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
14.	115-477	2	EXTERNAL GRIP RING
15.	115-787	2	STEERING INDICATOR
16.	115-788	1	STEERING INDICATOR HOUSING
17.	196-132	1	CONTROL CABLE (88")
18.	215-087	2	<sup>2</sup> SWITCH
	215-715	1	<sup>1</sup> SWITCH
19.	314-129	1	PIVOT MOUNT
20.	314-130	1	CABLE MOUNT
21.	314-153	3	REAR STEERING INDICATOR
22.	365-137	1	PIVOT
23.	365-141	1	LINK ROD (11.1")
24.	506-021	3	NUT (NO. 10-32)
25.	106-277	4	NUT (NO. 4-40)
26.	362-735	1	WINDOW/SWITCH PANEL

<sup>1</sup> EARLY PRODUCTION  
<sup>2</sup> PRESENT PRODUCTION

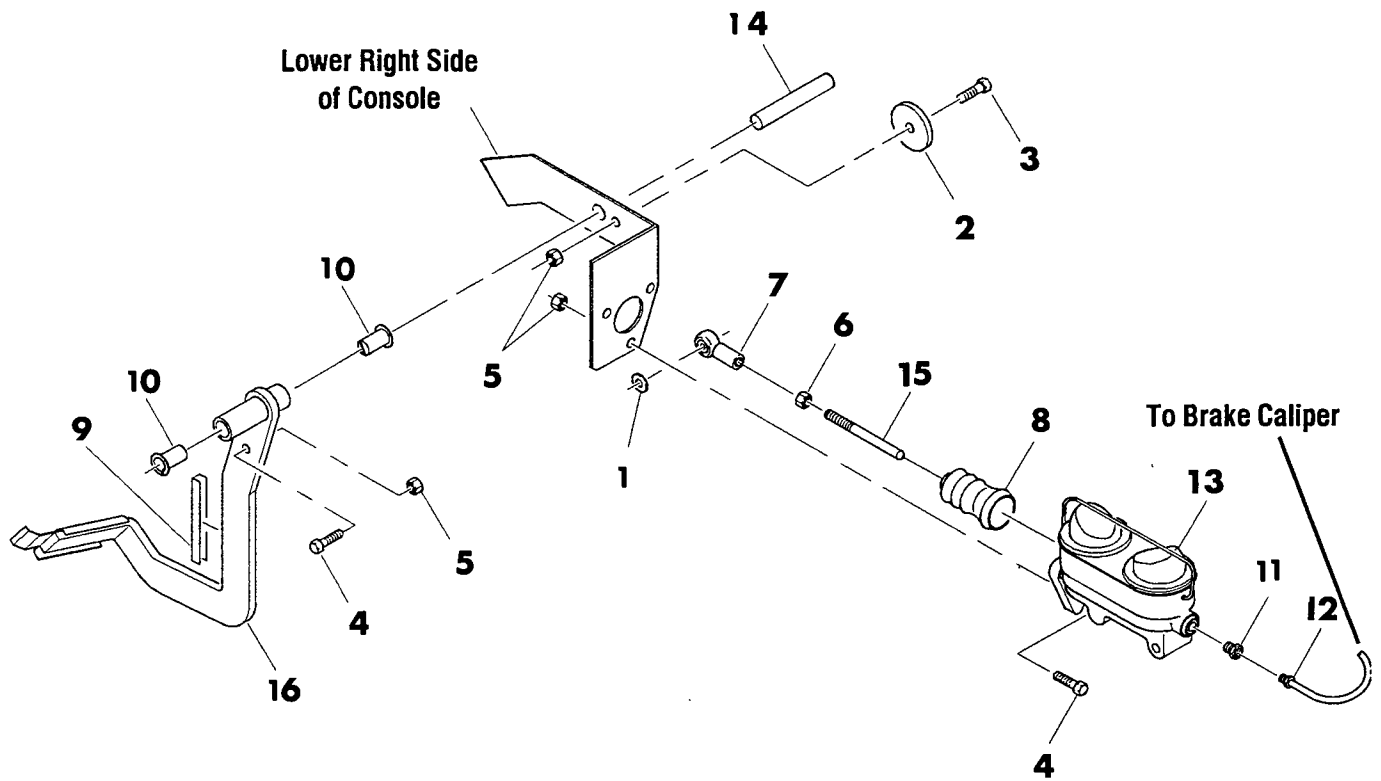
# DRIVE LINE



Ref. No.	Part Number	Qty.	Description
1.	165-500	1	Drive Shaft (3.5" OD x 14.9" LG)
2.	182-140	2	Input Yoke (1.5" ID, 10S)
3.	182-142	1	Double Center Yoke
	182-147		Double Universal Joint (Incl. ref. no.'s 2 thru 5)

Ref. No.	Part Number	Qty.	Description
4.	182-145	4	Cross and Bearing
5.	182-146	4	U-Bolt Kit (Incl. lock washer and nut)
	105-072		Lock Washer (3/8")
	105-152		Nut (3/8-NF)

# BRAKE SYSTEM

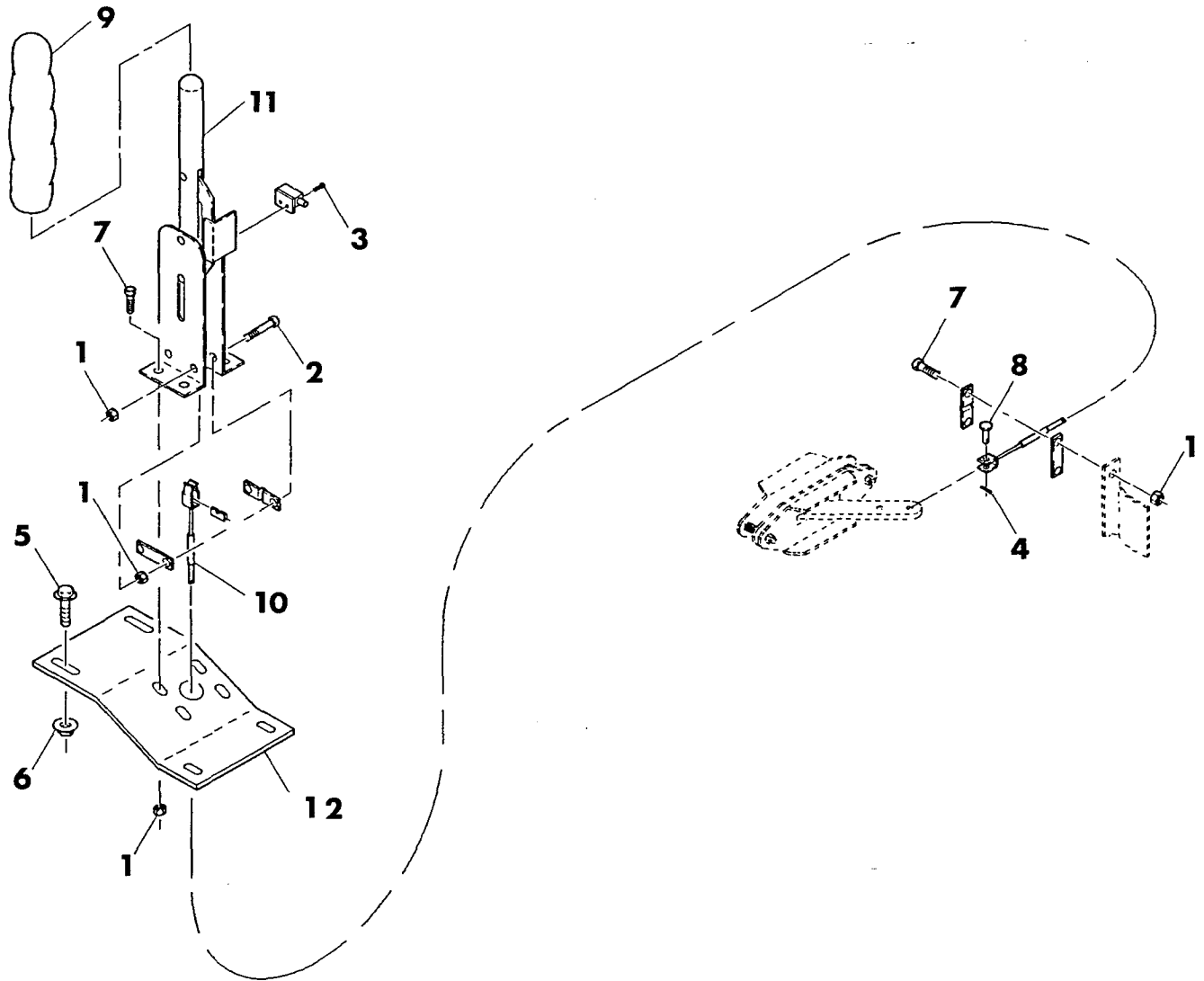


Ref. No.	Part Number	Qty.	Description
1.	105-117	1	Washer (5/16")
2.	105-223	1	Washer (3/8")
3.	105-826	1	Flange Lock Bolt (3/8-NC x 1")
4.	105-827	4	Flange Lock Bolt (3/8-NC x 1-1/4")
5.	105-834	5	Flange Locknut (3/8-NC)
6.	105-093	1	Nut (3/8-NF)
7.	110-102	1	Rod End (3/8-NF)
8.	115-329	1	Dust Cover
9.	115-704	4	Grommet Edging
10.	125-786	2	Bushing (1.125" LG)

Ref. No.	Part Number	Qty.	Description
11.	156-271	1	Adapter Fitting (3/8-SAE FM x 1/2-SAE M)
12.	160-650	1	Brake Line (3/16" T x 60")
13.	163-089	1	Master Cylinder
	163-095		Master Cylinder Cover
	163-096		Cylinder Cover Bellows
	190-180		Master Cylinder Repair Kit
14.	183-056	1	Pin (.625" DIA x 4" LG)
15.	361-887	1	Master Cylinder Rod (4" LG)
16.	365-112	1	Brake Pedal



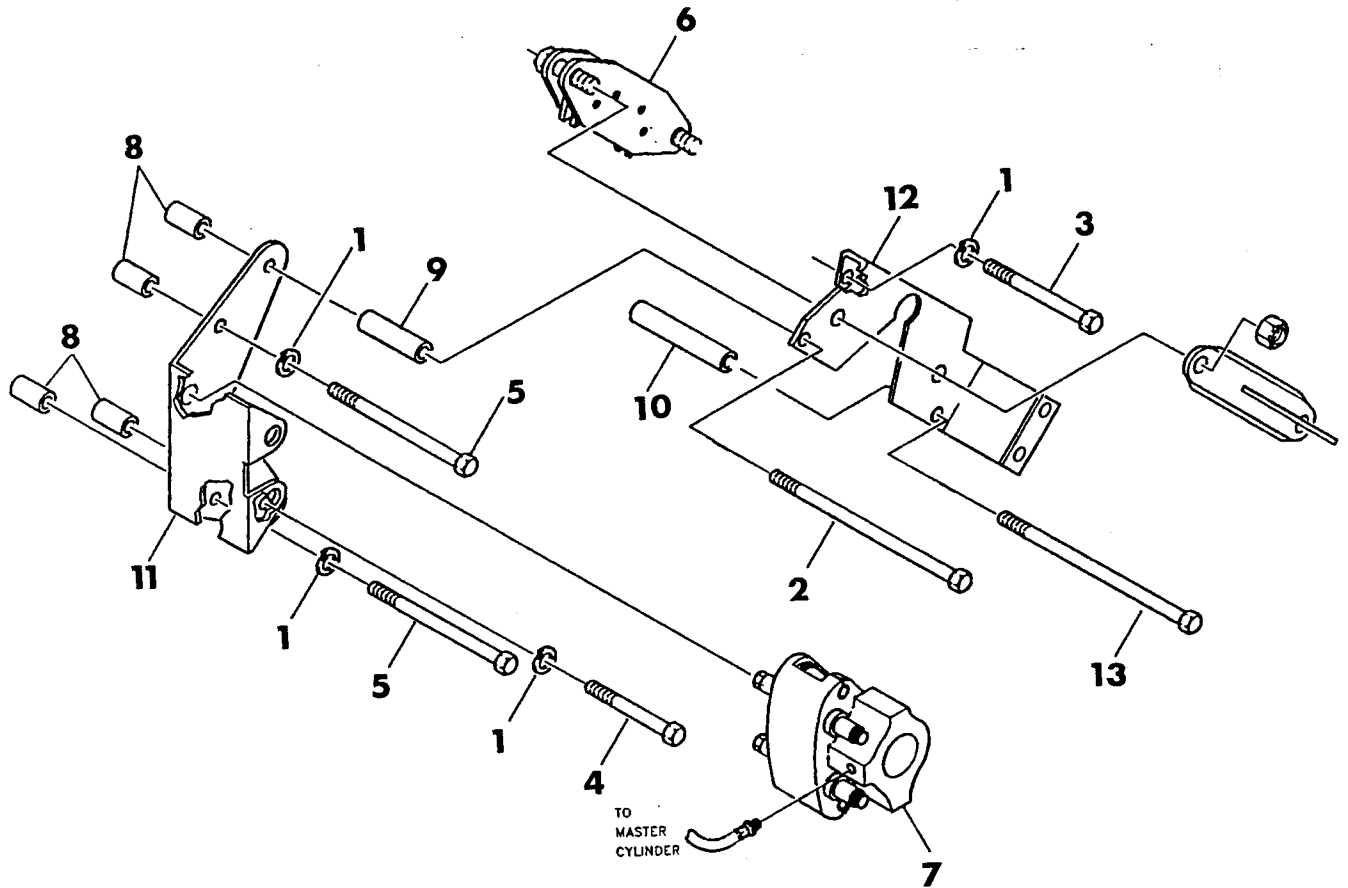
# PARKING BRAKE



Ref. No.	Part Number	Qty.	Description
1.	105-003	8	Lock Nut (5/16-NC)
2.	105-109	2	Bolt (5/16-NC x 1-1/2")
3.	105-214	2	Flange Screw (No. 10-24 x 1/2")
4.	105-523	1	Cotter Pin (1/8" x 3/4")
5.	105-827	4	Flange Lock Bolt (3/8-NC x 1-1/4")
6.	105-834	4	Flange Locknut (3/8-NC)
7.	105-873	6	Flange Lock Bolt (5/16-NC x 1")

Ref. No.	Part Number	Qty.	Description
8.	110-150	1	CLevis Pin (5/16" x 1")
9.	110-469	1	Handle Grip (4" LG)
10.	163-090	1	Control Cable (50")—Incl. mounting plates
11.	163-091	1	Parking Brake Lever
12.	314-036	1	Brake Mount Plate
13.	311-149	1	Cable End Clamp

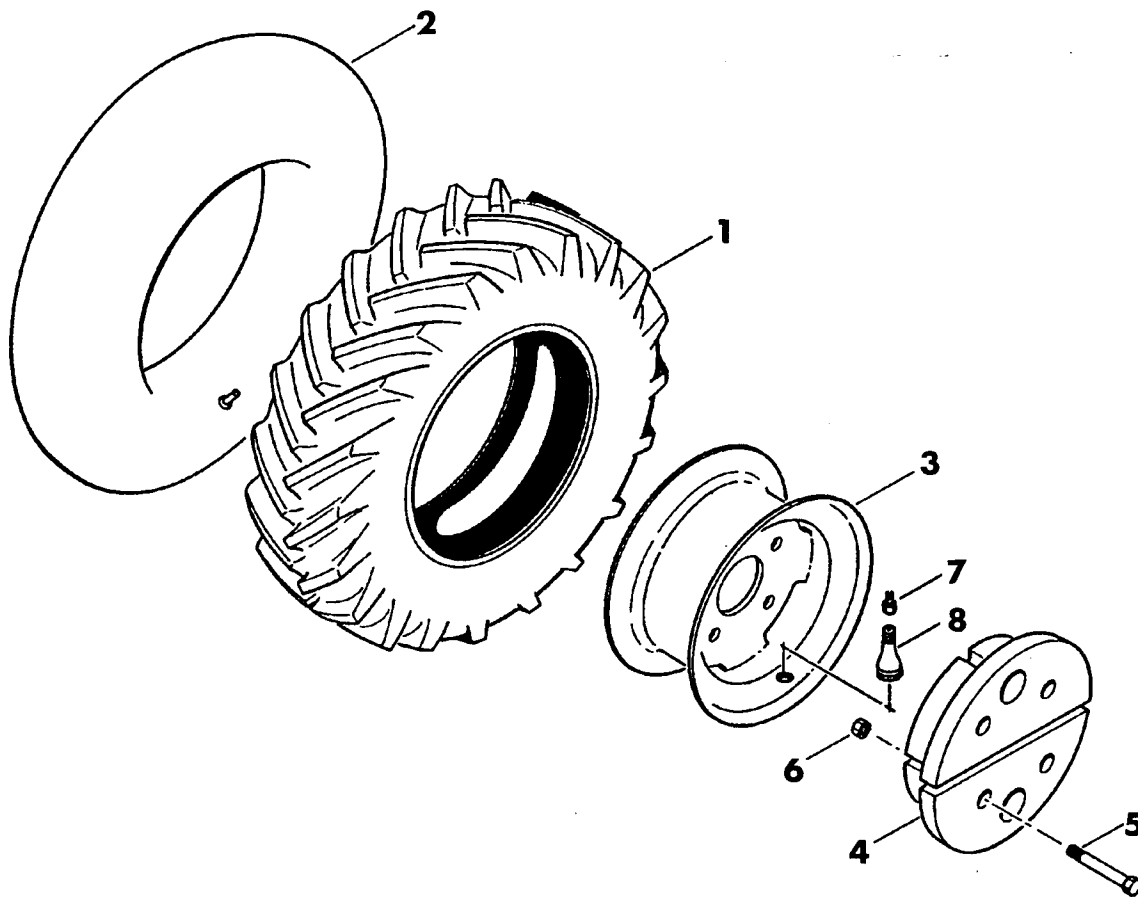
# BRAKE CALIPERS



Ref. No.	Part Number	Qty.	Description
1.	105-072	4	Lock Washer (3/8")
2.	105-243	1	Bolt (3/8-NC x 8")
3.	105-217	1	Bolt (3/8-NC x 4-1/2")
4.	105-258	1	Bolt (3/8-NC x 3-3/4")
5.	105-877	2	Bolt (3/8-NC x 5-3/4")
6.	163-087	1	Disc Brake Caliper (incl. brackets and nuts)—parking
7.	163-088	1	Disc Brake Caliper (service)
	505-093		Housing Half (piston side)
	505-094		Housing Half
	505-095		Brake Pad Set (pair)

Ref. No.	Part Number	Qty.	Description
8.	184-072	4	Spacer (1-1/4" LG)
9.	184-073	1	Spacer (2.4" LG)
10.	184-074	1	Spacer (3.83" LG)
11.	314-127	1	Service Brake Bracket
12.	314-128	1	Parking Brake Bracket
13.	105-242	2	Bolt (3/8-NC x 6-1/2")

# TIRE—TUBE—WHEEL



Ref. No.	Part Number	Qty.	Description
1.	205-109	4	Super Terra Grip Tire (31 x 15.5-15, 8-ply)
	205-787		Super Terra Grip Tire & Wheel (31 x 15.5-15, 8-ply)—Incl. ref. no.'s 1, 2, 3 and 7
	205-850		Super Terra Grip Tire & Wheel (31 x 15.5-15, 8-ply)—Incl. ref. no.'s 1, 3, 7 and 8
	205-827		Super Terra Grip Tire & Wheel (31 x 15.5-15, 8-ply)—Incl. tyrfil and ref. no.'s 1, 3, 7 and 8
2.	205-160	4	Tube (31 x 15.5-15)—Incl. ref. no. 7

Ref. No.	Part Number	Qty.	Description
3.	205-255	4	Wheel (13" WD x 15" DIA, 7" B.C.)
4.	375-059	8	Wheel Weight Casting (15" OD, 100 LBS)—optional/ 2 per wheel
5.	105-371	16	Bolt (3/4-NC x 6-1/2")
6.	105-340	16	Flange Locknut (3/4-NC)
7.	205-165	4	Valve Cap
8.	205-161	4	Valve Stem (Incl. ref. no. 7)

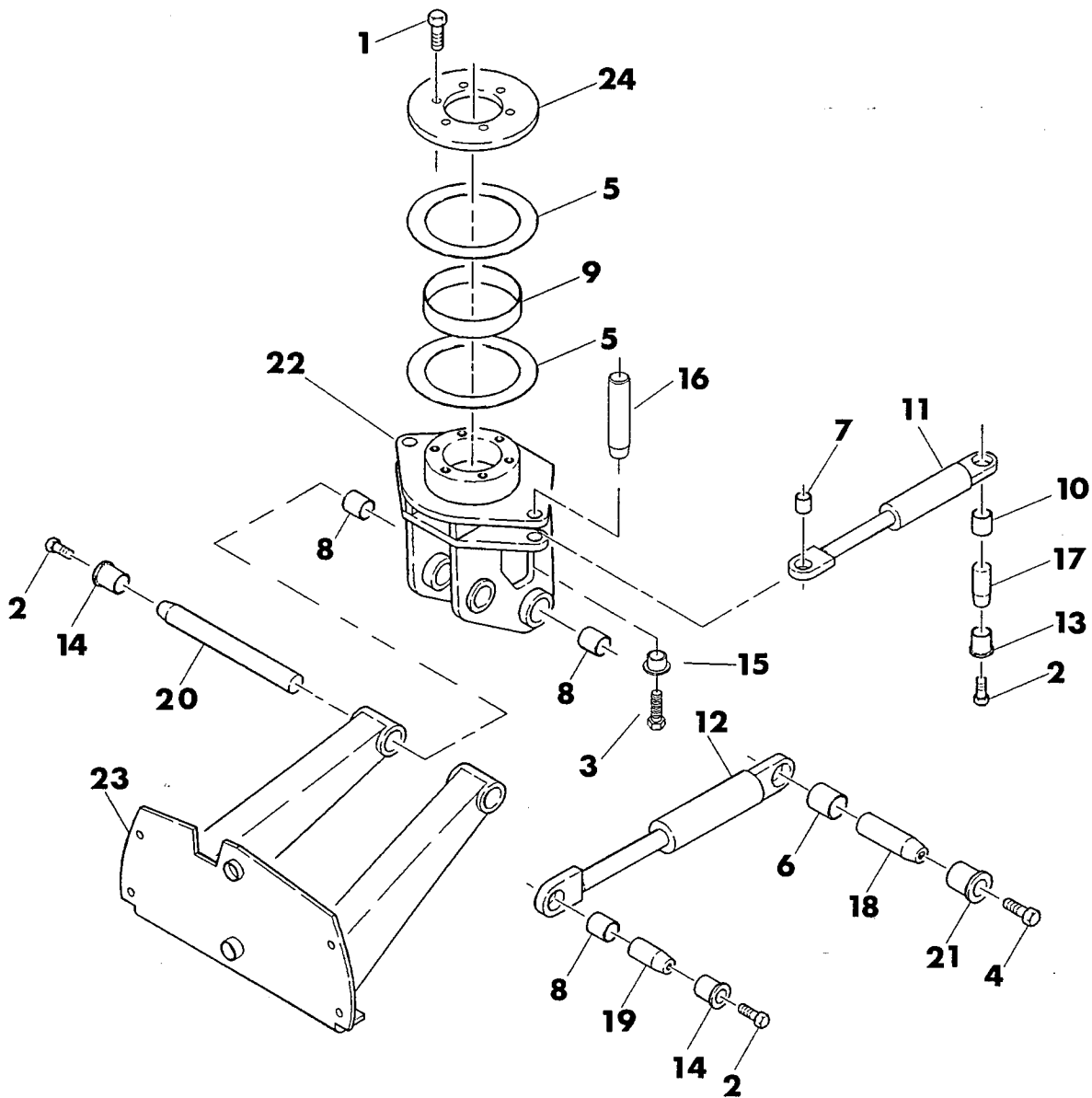
**Not Shown:**

205-173 AR Tyrfil (245 LBS/ 15.5-15 tire)

**NOTE:** Refer to general specification 052-195 for recommended tire pressures.

# BACKFILL BLADE MOUNT

(Ends with S/N6G2147)

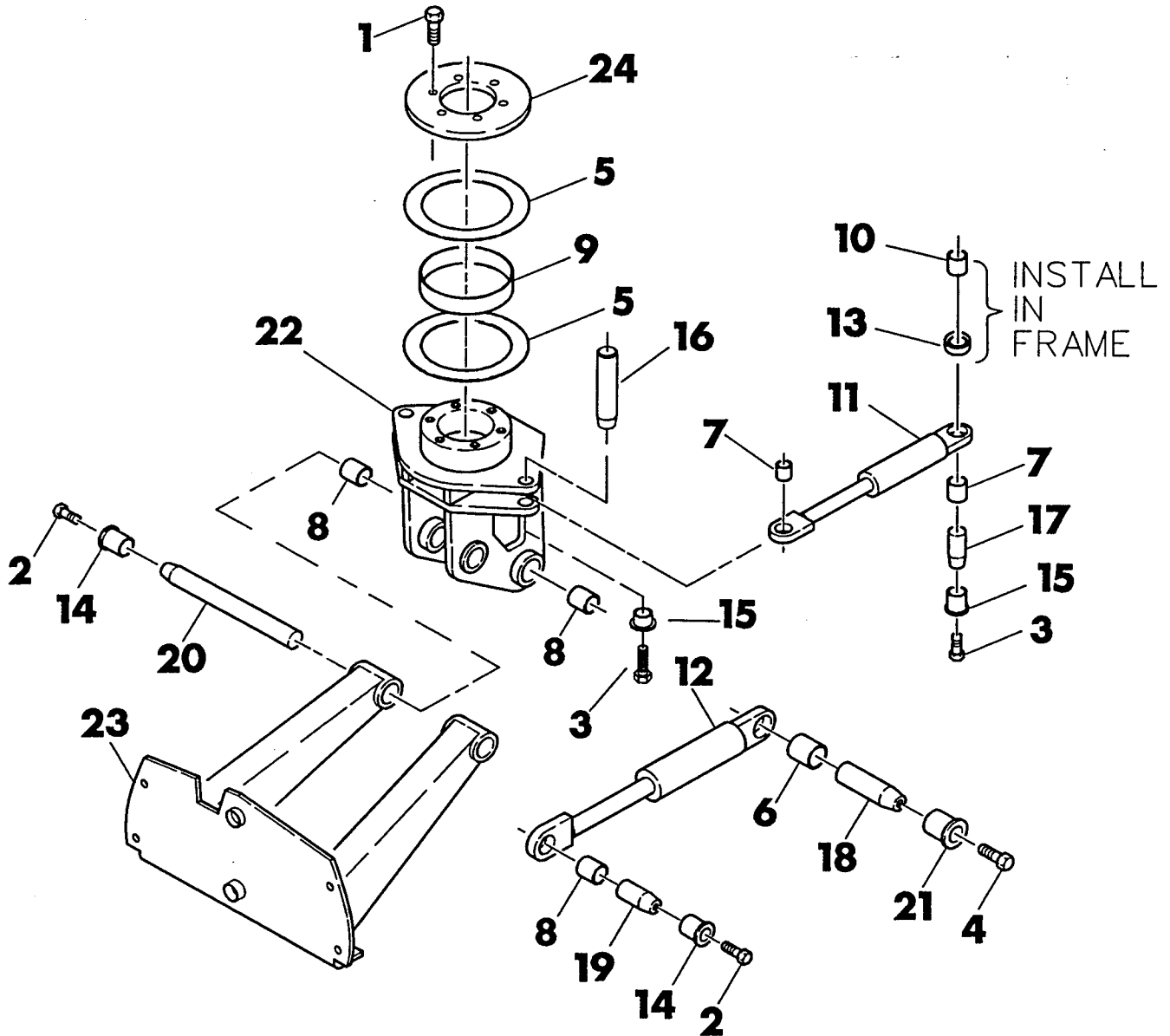


Ref. No.	Part Number	Qty.	Description
1.	105-499	6	Bolt (3/4-NC x 1-3/4")
2.	105-969	4	Flange Bolt (5/8-NC x 1-1/2", GD 8)
3.	106-096	2	Flange Bolt (1/2-NC x 1-3/4", GD 8)
4.	106-098	1	Flange Bolt (3/4-NC x 2", GD 8)
5.	115-782	2	Thrust Bearing (8.28" ID x 11" OD)
6.	125-754	1	Fiber Bushing (2" ID x 2" LG)
7.	125-771	2	Fiber Bushing (1.25" ID x 1.25" LG)
8.	125-773	3	Fiber Bushing (1.75" ID x 1.75" LG)
9.	125-780	1	Fiber Bushing (8.27" ID x 1.75" LG)
10.	125-772	2	Fiber Bushing (1.5" ID x 1.5" LG)
11.	151-045	2	Backfill Swing Cylinder
12.	151-046	1	Backfill Lift Cylinder

Ref. No.	Part Number	Qty.	Description
13.	181-974	2	Tapered Insert (.688" ID)—for 1.5" DIA pin
14.	181-975	2	Tapered Insert (.688" ID)—for 1.75" DIA pin
15.	181-982	2	Tapered Insert (.563" ID)—for 1.25" DIA pin
16.	183-587	2	Tapered Pin (1.25" DIA x 3" LG, 1/2-NC)
17.	183-608	2	Tapered Pin (1.5" DIA x 3.75" LG, 5/8-NC)
18.	183-610	1	Tapered Pin (2" DIA x 6.9" LG, 3/4-NC)
19.	183-611	1	Tapered Pin (1.75" DIA x 4" LG, 5/8-NC)
20.	183-612	1	Tapered Pin (1.75" DIA x 16" LG, 5/8-NC)
21.	184-064	1	Tapered Insert (.813" ID)—for 2" DIA pin
22.	314-076	1	Backfill Blade Pivot
23.	314-088	1	Lift Arm
24.	314-142	1	Top Bolt Plate

# BACKFILL BLADE MOUNT

(Begins with S/N6G2148)

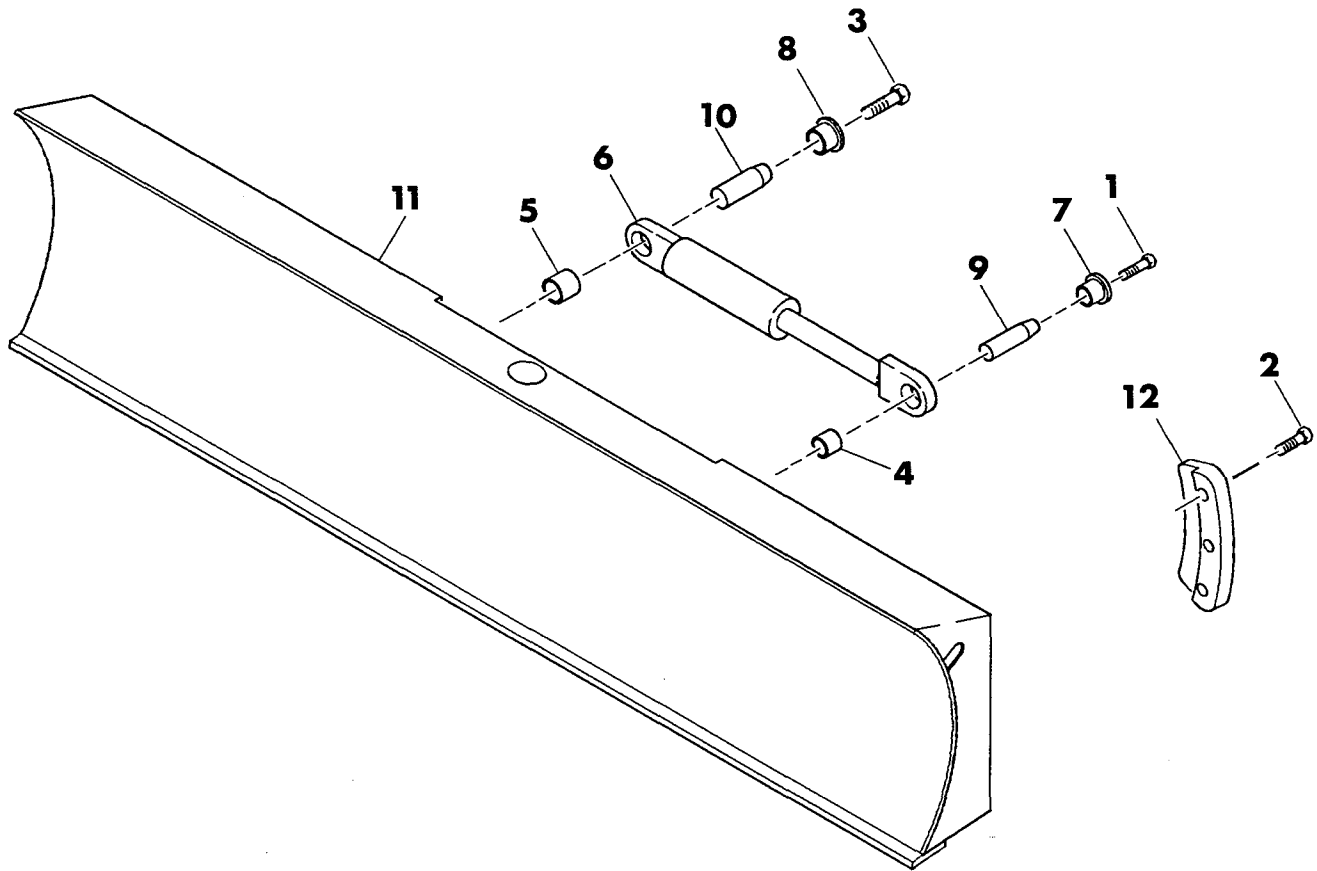


INSTALL  
IN  
FRAME

Ref. No.	Part Number	Qty.	Description
1.	105-499	6	Bolt (3/4-NC x 1-3/4")
2.	105-969	2	Flange Bolt (5/8-NC x 1-1/2", GD 8)
3.	106-096	4	Flange 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	Thrust Bearing (8.28" ID x 11" OD)
6.	125-796	1	Fiber Bushing (2" ID x 1.75" LG)
7.	125-771	4	Fiber Bushing (1.25" ID x 1.25" LG)
8.	125-773	3	Fiber Bushing (1.75" ID x 1.75" LG)
9.	125-780	1	Fiber Bushing (8.27" ID x 1.75" LG)
10.	125-794	2	Spring Bushing (1.25" ID x .75" LG)
11.	151-057	2	Backfill Swing Cylinder
12.	151-058	1	Backfill Lift Cylinder

Ref. No.	Part Number	Qty.	Description
13.	125-795	2	Spring Bushing (1.25" ID x 1.25" LG)
14.	181-975	2	Tapered Insert (.688" ID)—for 1.75" DIA pin
15.	181-982	4	Tapered Insert (.563" ID)—for 1.25" DIA pin
16.	183-587	2	Tapered Pin (1.25" DIA x 3" LG, 1/2-NC)
17.	183-588	2	Tapered Pin (1.25" DIA x 3.94" LG, 1/2-NC)
18.	183-610	1	Tapered Pin (2" DIA x 6.9" LG, 3/4-NC)
19.	183-611	1	Tapered Pin (1.75" DIA x 4" LG, 5/8-NC)
20.	183-612	1	Tapered Pin (1.75" DIA x 16" LG, 5/8-NC)
21.	184-064	1	Tapered Insert (.813" ID)—for 2" DIA pin
22.	314-076	1	Backfill Blade Pivot
23.	314-088	1	Lift Arm
24.	314-142	1	Top Bolt Plate

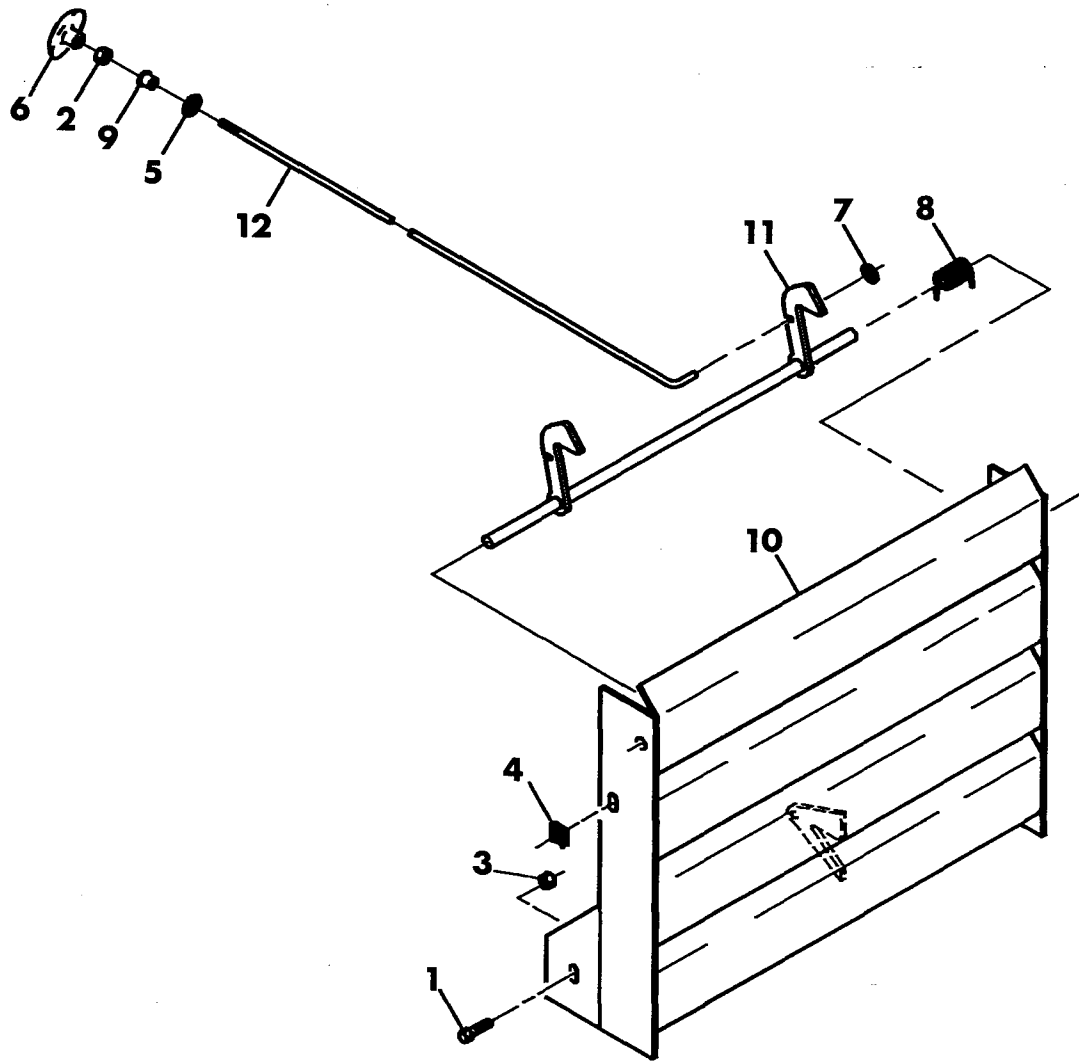
# BACKFILL BLADE



Ref. No.	Part Number	Qty.	Description
1.	105-874	1	Flange Lock Bolt (3/8-NC x 1-1/2")
2.	105-885	6	Bolt (1/2-NC x 2")
3.	106-096	1	Flange Bolt (1/2-NC x 1-3/4")
4.	125-770	1	Fiber Bushing (1" ID x 1" LG)
5.	125-771	1	Fiber Bushing (1.25" ID x 1.25" LG)
6.	151-039	1	Backfill Blade Tilt Cylinder

Ref. No.	Part Number	Qty.	Description
7.	181-981	1	Tapered Insert (.406" ID)—for 1" DIA pin
8.	181-982	1	Tapered Insert (.563" ID)—for 1-1/4" DIA pin
9.	183-584	1	Tapered Pin (1" DIA x 2.44" LG, 3/8-NC)
10.	183-613	1	Tapered Pin (1.25" DIA x 3.5" LG, 1/2-NC)
11.	314-081	1	72" Backfill Blade
12.	314-104	2	Retainer

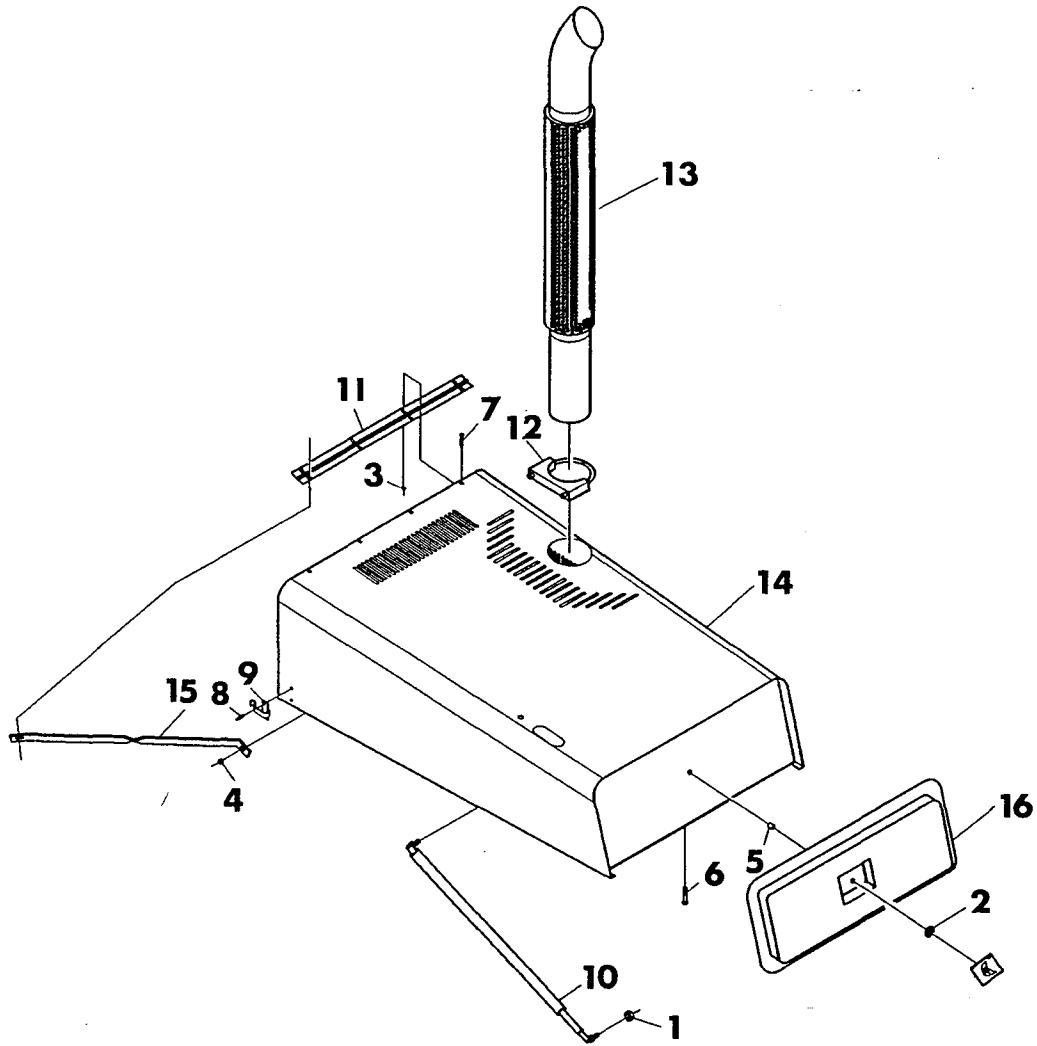
# GRILLE



Ref. No.	Part Number	Qty.	Description
1.	105-827	4	Flange Lock Bolt (3/8-NC x 1-1/4")
2.	105-832	1	Flange Locknut (1/4-NC)
3.	105-834	2	Flange Locknut (3/8-NC)
4.	105-233	2	Clip Nut (3/8-NC)
5.	106-153	1	Push Nut (1/2")
6.	110-518	1	T-Handle (1/4-NC)

Ref. No.	Part Number	Qty.	Description
7.	115-476	1	External Grip Ring
8.	115-622	1	Torsion Spring (1.02" LG)
9.	125-787	1	Bushing (.5" LG)
10.	362-598	1	Grille
11.	365-134	1	Hood Latch
12.	365-147	1	Hood Release Rod (44.6" LG)

# HOOD



Ref. No.	Part Number	Qty.	Description
1.	105-003	2	Flange Locknut (5/16-NC)
2.	105-059	1	Washer (7/16")
3.	105-085	8	<sup>1</sup> Locknut (1/4-NC)
	105-003	8	<sup>2</sup> Flange Locknut (5/16-NC)
4.	105-834	4	Flange Locknut (3/8-NC)
5.	106-038	1	Nutsert (5/16-NC)
6.	106-042	1	Bolt (5/16-NC x 1/2", BUT HD)
7.	106-168	8	<sup>1</sup> Flange Lock Bolt (1/4-NC x 3/4")
	106-297	8	<sup>2</sup> Flange Lock Bolt (5/16-NC x 3/4", BUT HD)
8.	110-253	4	Pop Rivet (3/16" x 1/2")
9.	110-523	2	Retainer Clip

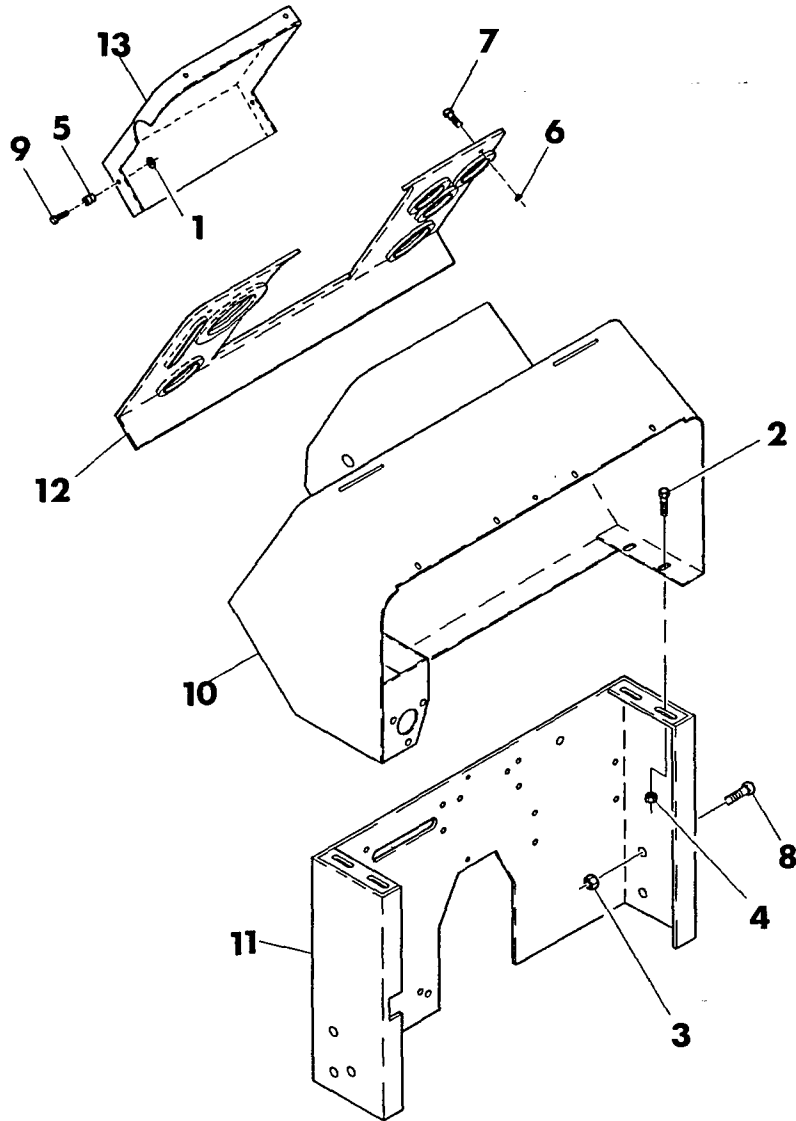
Ref. No.	Part Number	Qty.	Description
10.	110-534	1	Hood Support
11.	110-536	1	<sup>1</sup> Hood Hinge (.0625" THK x 1.5" WID)
	110-591	1	<sup>2</sup> Hood Hinge (.075" THK x 2.5" WID)
12.	195-993	2	Muffer Clamp (3-1/2")
13.	196-135	1	Exhaust Stack
14.	314-105	1	<sup>1</sup> Hood
	314-163	1	<sup>2</sup> Hood
15.	314-148	1	Hood Brace
16.	362-604	1	Hood Cap

<sup>1</sup>These parts are associated with early style hood and hinge.

<sup>2</sup>These parts are associated with present production hood and hinge.



# CONSOLE



Ref. No.	Part Number	Qty.	Description
1.	105-805	4	Spring Washer (3/8")
2.	105-826	4	Flange Lock Bolt (3/8-NC x 1")
3.	105-833	6	Flange Locknut (1/2-NC)
4.	105-845	4	Flange Locknut (3/8-NC)
5.	106-015	4	Nutsert (1/4-NC)
6.	106-038	4	Nutsert (5/16-NC)
7.	106-042	4	Bolt (5/16-NC x 1/2", BUT HD)
8.	106-096	6	Flange Bolt (1/2-NC x 1-3/4")
9.	106-103	4	Bolt (1/4-NC x 1/2", BUT HD)
10.	314-054	1	<sup>2</sup> Console
	315-088	1	<sup>3</sup> Console

Ref. No.	Part Number	Qty.	Description
11.	314-063	1	Console Support
12.	314-101	1	Console Panel
13.	314-102	1	Center Console Panel
14.	362-634	1	<sup>1</sup> Cover Plate
15.	106-168	4	<sup>1</sup> Bolt (1/4-NC x 3/4")
16.	105-832	4	<sup>1</sup> Nut (1/4-NC)

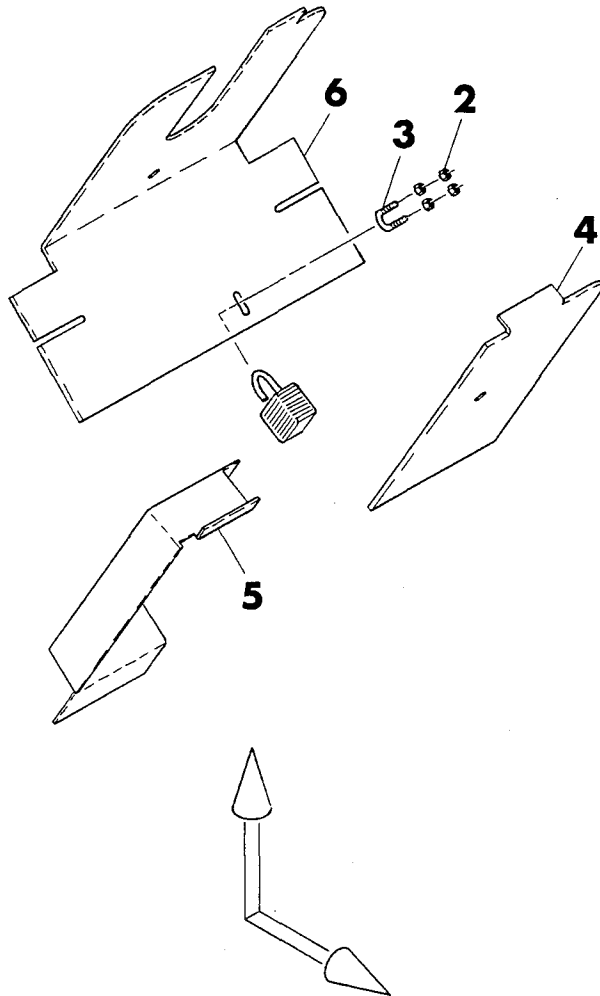
<sup>1</sup>These parts are used with units not equipped with rear steering.

<sup>2</sup>This console (ref. no. 10) is used on early models.

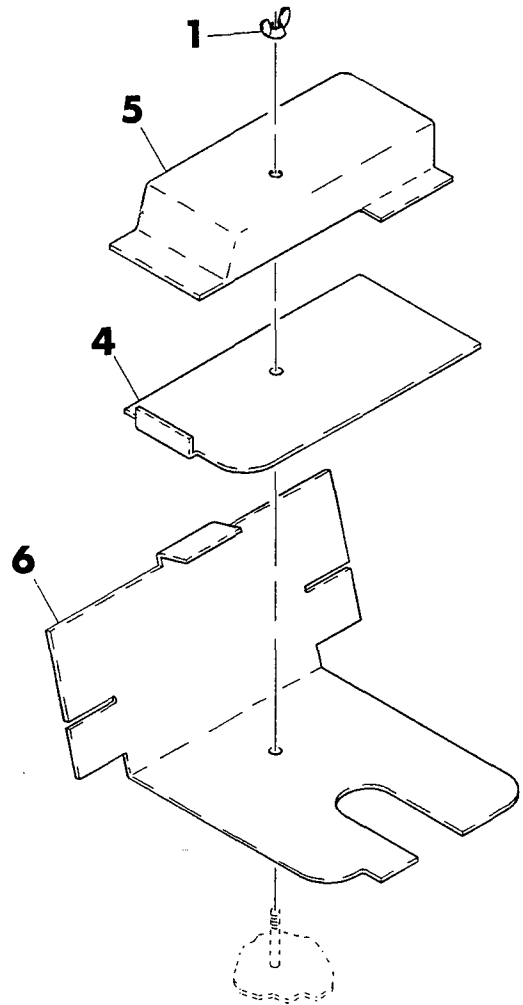
<sup>3</sup>This console (ref. no. 10) is used on present production models.

# VANDAL KIT

**Mounted  
Position**



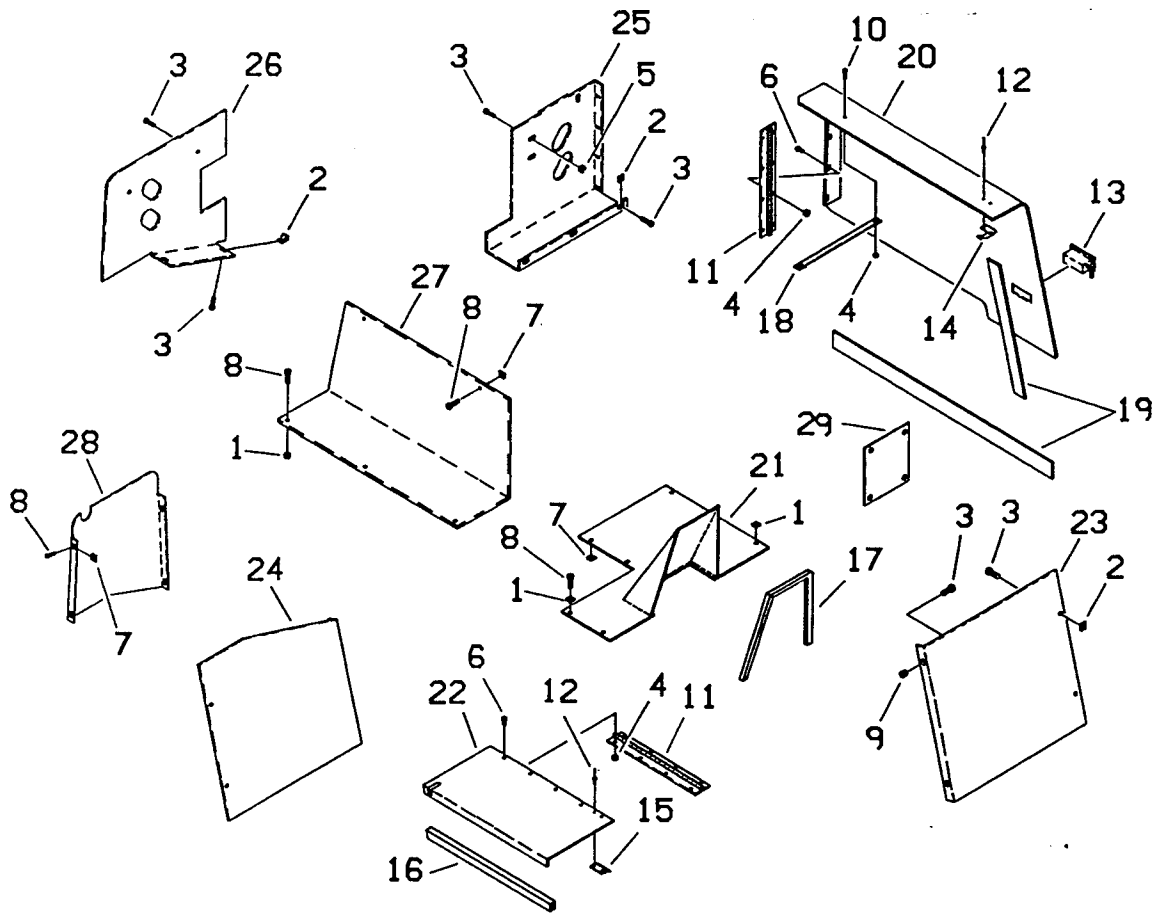
**Storage  
Position**



Ref. No.	Part Number	Qty.	Description
	190-429		Vandal Conversion Kit (Incl. ref. no.'s 1 thru 6)
1.	105-180	1	Wing Nut (3/8-NC)
2.	106-154	4	Flange Locknut (1/4-NF)

Ref. No.	Part Number	Qty.	Description
3.	106-166	1	U-Bolt (1/4-NF)
4.	362-607	1	Left Console Cover
5.	362-608	1	Right Console Cover
6.	362-609	1	Center Console Cover

# FENDERS and COVERS

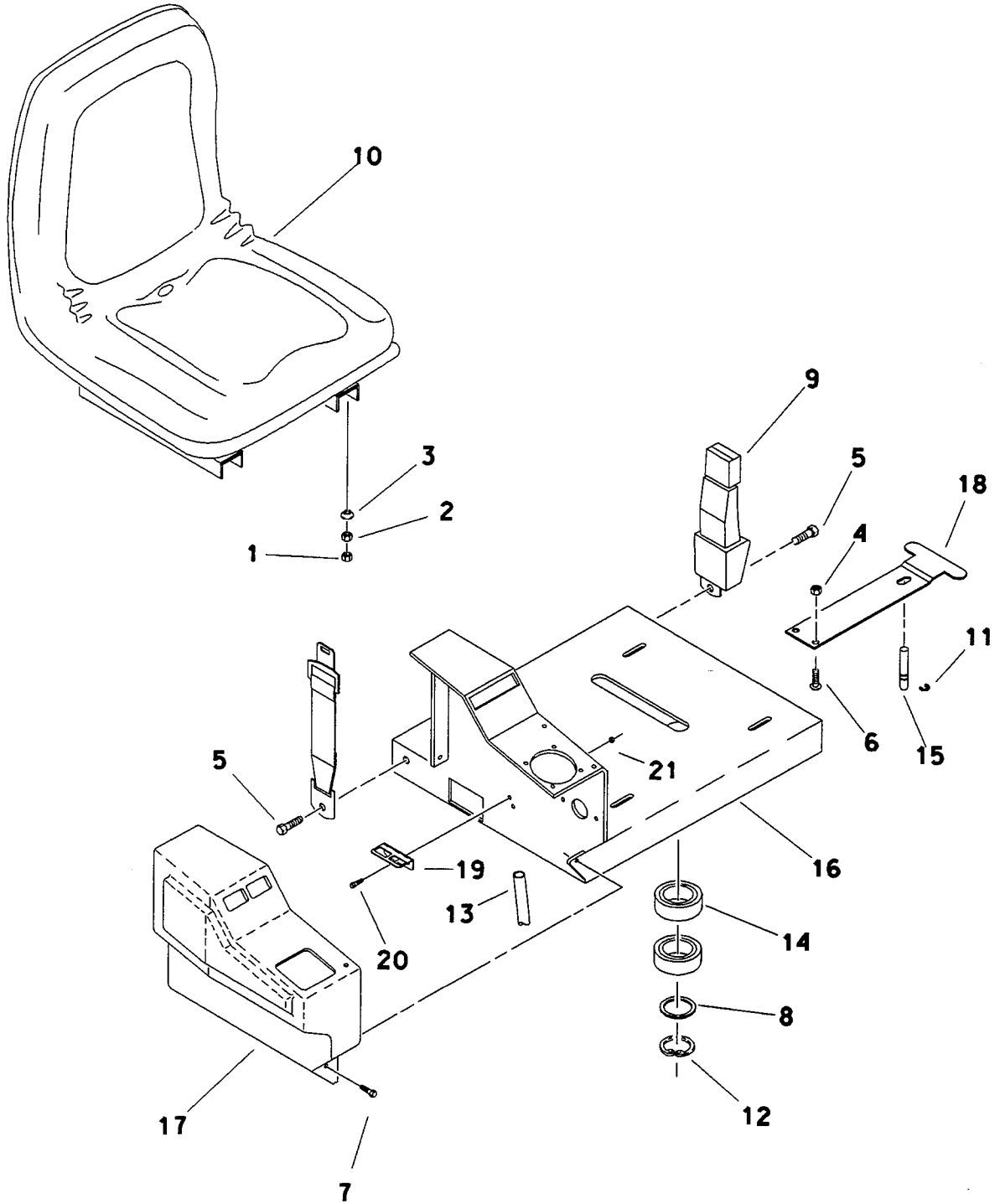


Ref. No.	Part Number	Qty.	Description
1.	105-137	5	Clip Nut (5/16-NC)
2.	105-233	17	Clip Nut (3/8-NC)
3.	105-826	17	Flange Lock Bolt (3/8-NC x 1")
4.	105-832	18	Flange Locknut (1/4-NC)
5.	105-834	2	Nut (3/8-NC)
7.	105-836	16	Flange Lock Bolt (1/4-NC x 1/2")
7.	105-841	8	Clip Nut (5/16-NC)
8.	105-873	13	Flange Lock Bolt (5/16-NC x 1")
9.	106-039	4	Nutsert (3/8-NC)
10.	106-103	2	Bolt (1/4-NC x 1/2", BUT HD)
11.	110-218	2	Hinge
12.	110-253	6	Pop Rivet (3/16" x 1/2")
13.	110-515	1	Latch
14.	110-523	1	Retainer Clip
15.	110-524	1	Spring Retainer Clip
16.	115-686	AR	Grommet Edging (use 16")

Ref. No.	Part Number	Qty.	Description
17.	115-686	AR	Grommet Edging (use 26")
18.	115-786	1	Limit Strap
19.	116-271	AR	Weather Stripping (use 42")
20.	314-066	1	Left Fender
21.	314-069	1	Floor Plate
22.	314-143	1	Step Lid
23.	314-144	1	Left Inner Fender
24.	314-145	1	Right Inner Fender
25.	314-146	1	Left Rear Fender Panel
26.	314-147	1	Right Rear Fender Panel
27.	362-605	1	Access Cover
28.	362-606	1	Pump Control Cover
29.	315-094	1	<sup>1</sup> ByPass Valve Hole Cover Plate
	105-820	4	<sup>1</sup> Flange Lock Bolt
	105-832	4	<sup>1</sup> Flange Locknut

<sup>1</sup>Begins with S/N5H0175.

# SEAT MOUNT

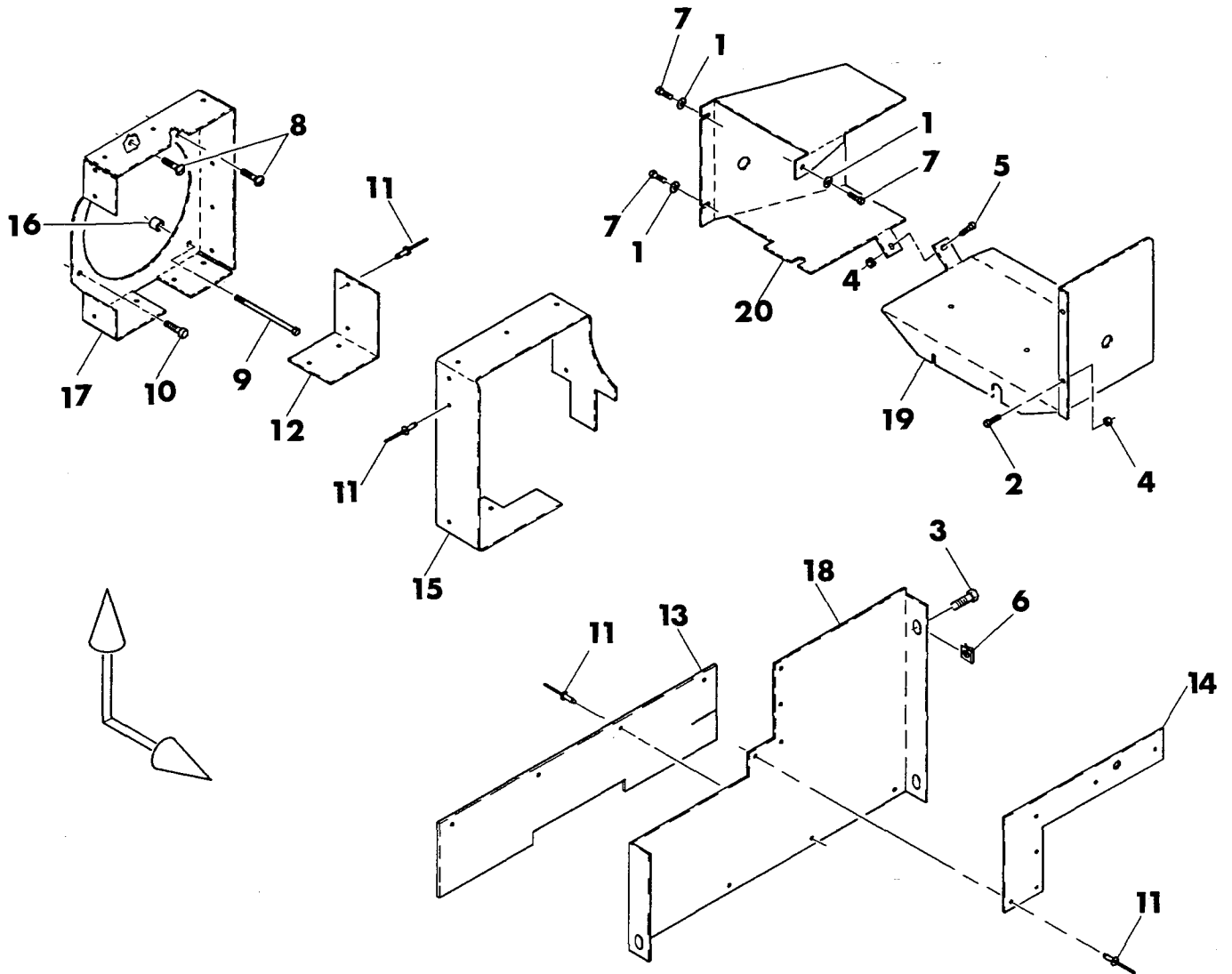


# SEAT MOUNT

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 HD)	
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	
11.	115-506	2	EXTERNAL CLIP RING	
12.	115-518	1	EXTERNAL SNAP RING	
13.	116-108	AR	HOSE (.296 ID)	USE 1"
14.	125-001	2	BEARING	
15.	183-609	1	LATCH PIN	
16.	314-070	1	SEAT BASE	
17.	314-103	1	SIDE CONSOLE COVER	
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)	

## FOOTNOTES

# AIR DUCTS

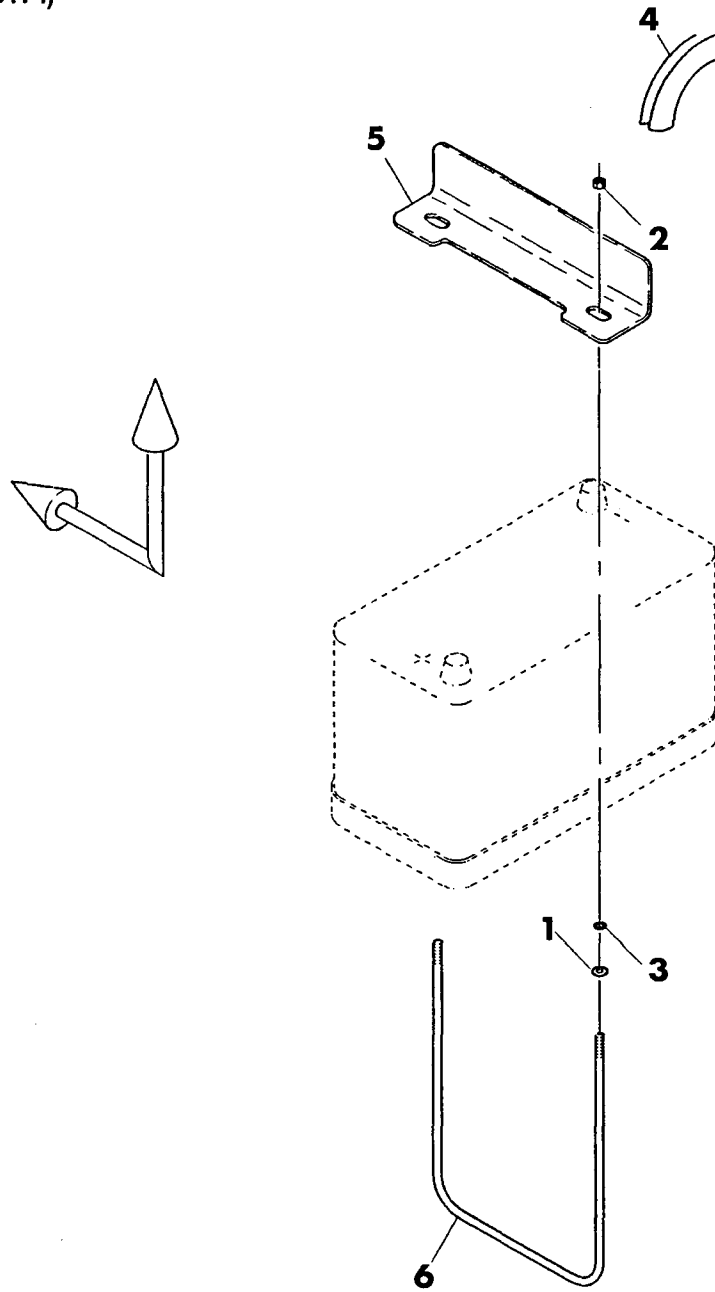


Ref. No.	Part Number	Qty.	Description
1.	105-095	3	Washer (1/4")
2.	105-174	2	Bolt (1/4-NC x 1/2")
3.	105-827	3	Flange Lock Bolt (3/8-NC x 1-1/4")
4.	105-832	3	Flange Locknut (1/4-NC)
5.	105-836	1	Flange Lock Bolt (1/4-NC x 1/2")
6.	105-853	3	Clipnut (3/8-NC)
7.	105-860	3	Bolt (M6-1.0 x 10mm)
8.	106-010	2	Flange Lock Screw (5/16-NC x 3/4")
9.	106-160	1	Flange Bolt (M8-1.25 x 120mm)
10.	106-161	1	Flange Bolt (M6-1.0 x 20mm)

Ref. No.	Part Number	Qty.	Description
11.	110-348	24	Pop Rivet (3/16" x .664")
12.	116-367	1	Air Duct Seal (7.79" LG)
13.	116-368	1	Air Duct Seal (20.95" LG)
14.	116-369	1	Hood Support Seal (12.2" LG)
15.	116-370	1	Air Duct Seal (35.39" LG)
16.	181-600	1	Retainer
17.	314-122	1	Air Duct Inlet
18.	314-123	1	Air Blockoff Plate
19.	314-124	1	Air Exhaust Duct
20.	314-125	1	Cooler Exhaust Duct

# BATTERY MOUNT

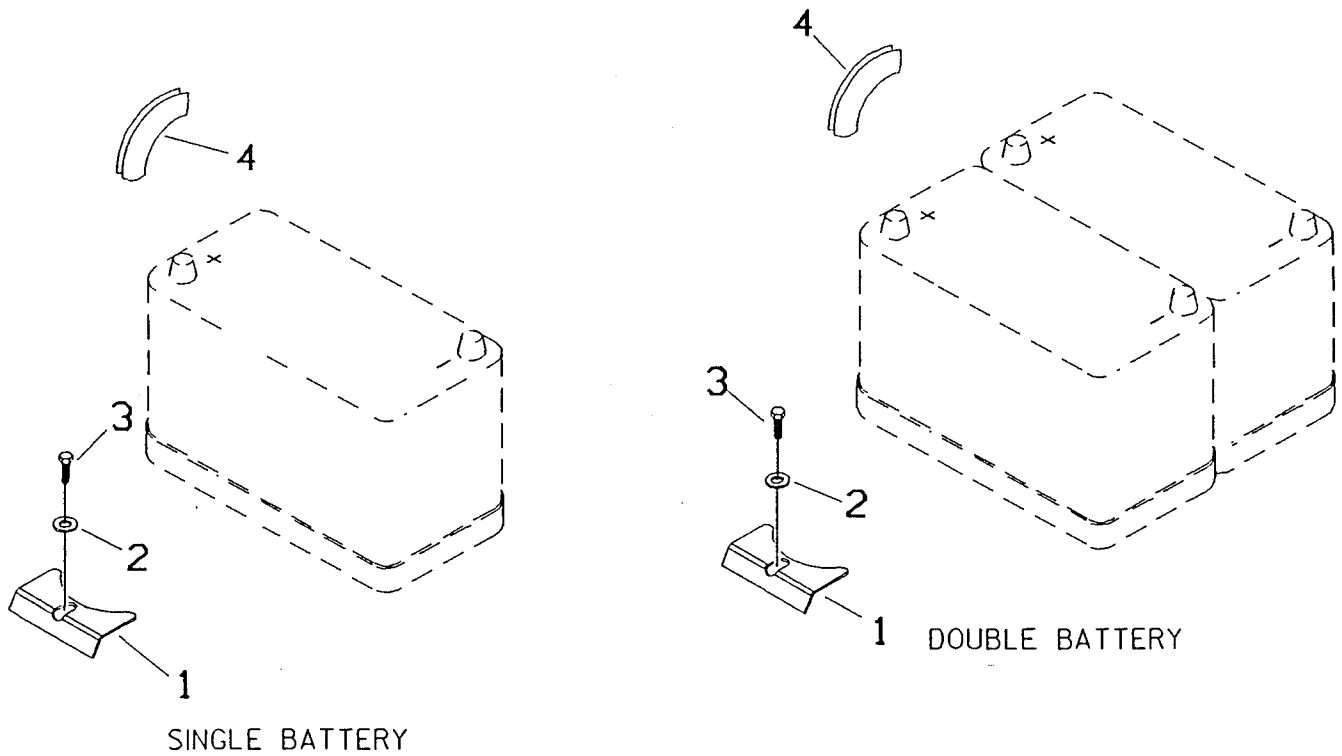
(Ends with S/N5H0174)



Ref. No.	Part Number	Qty.	Description
1.	105-095	2	Washer (1/4")
2.	105-832	2	Flange Locknut (1/4-NC)
3.	115-476	2	External Grip-Ring

Ref. No.	Part Number	Qty.	Description
4.	115-686	AR	Grommet Edging (use 8")
5.	312-136	1	Battery Strap (8-1/4" LG)
6.	314-131	1	Battery Hold Down

**BATTERY MOUNT**  
**BEGINS WITH S/N 5H0175**



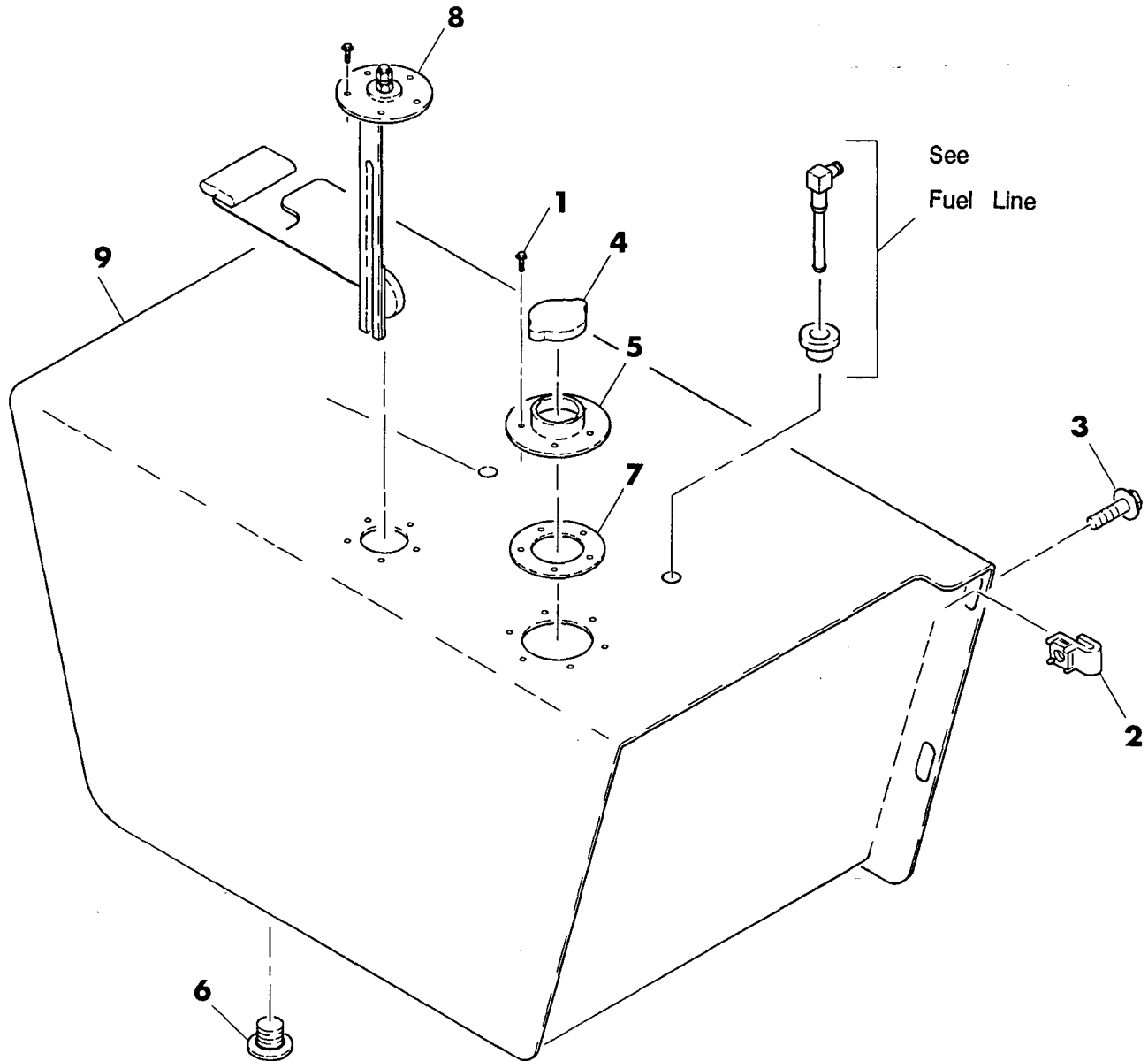
REF. NO.	PART NUMBER	QTY.	DESCRIPTION
	190-474		<sup>1</sup> DUAL BATTERY CONVERSION KIT
1.	315-101	1	BRACKET
2.	105-118	1	WASHER (3/8")

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
3.	105-052	1	BOLT (3/8-NC X 1-1/4")
4.	115-686	1	EDGING (7" LG)

<sup>1</sup>REFER TO INSTALLATION DIAGRAM 050-213.



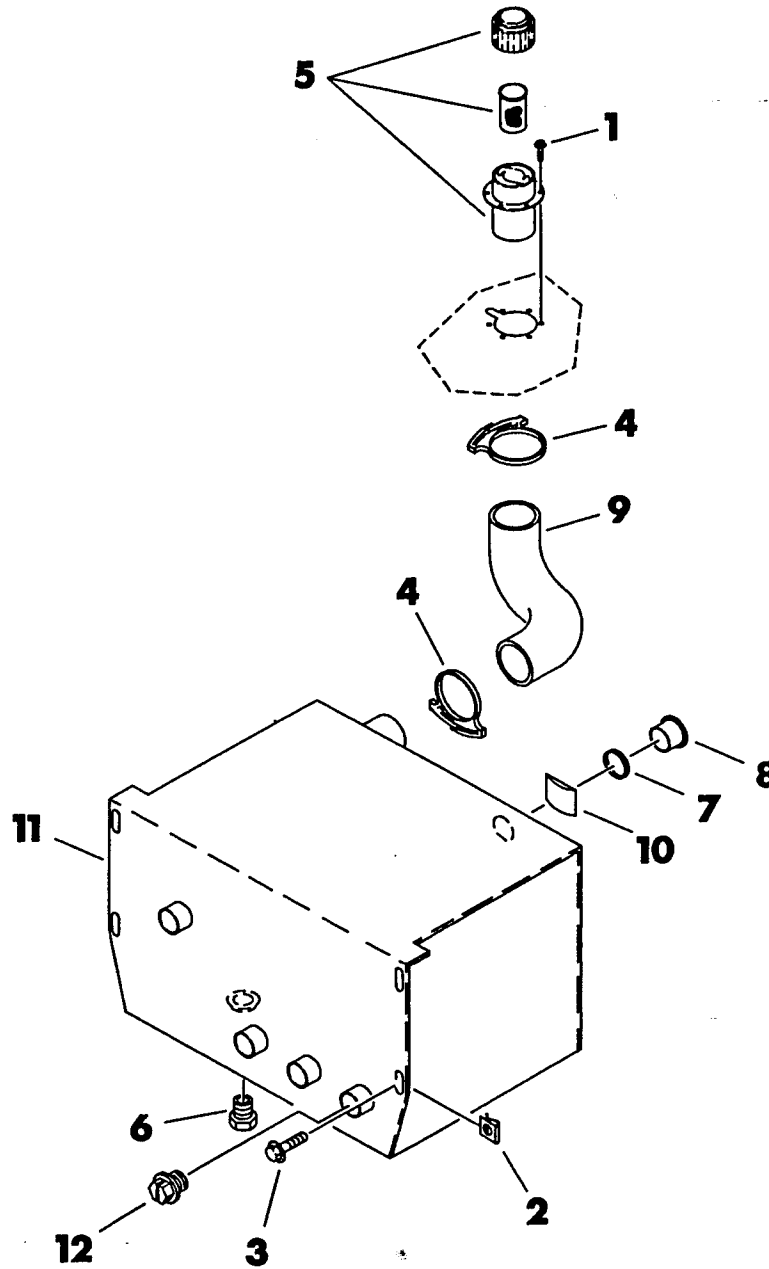
# FUEL TANK



Ref. No.	Part Number	Qty.	Description
1.	105-214	11	Flange Screw (No. 10-24 x 1/2")
2.	105-233	4	Clip Nut (3/8-NC)
3.	105-827	4	Flange Lock Bolt (3/8-NC x 1-1/4")
4.	110-010	1	Fuel Cap
5.	110-132	1	Filler Neck
6.	115-152	1	Pipe Plug (3/4-NPT M, SQ HD)

Ref. No.	Part Number	Qty.	Description
7.	165-626	1	Filler Neck Gasket
8.	217-523	1	Fuel Sender
	165-704		Gasket
	506-021		Nut (No. 10-32)
9.	364-043	1	Fuel Tank

# HYDRAULIC RESERVOIR

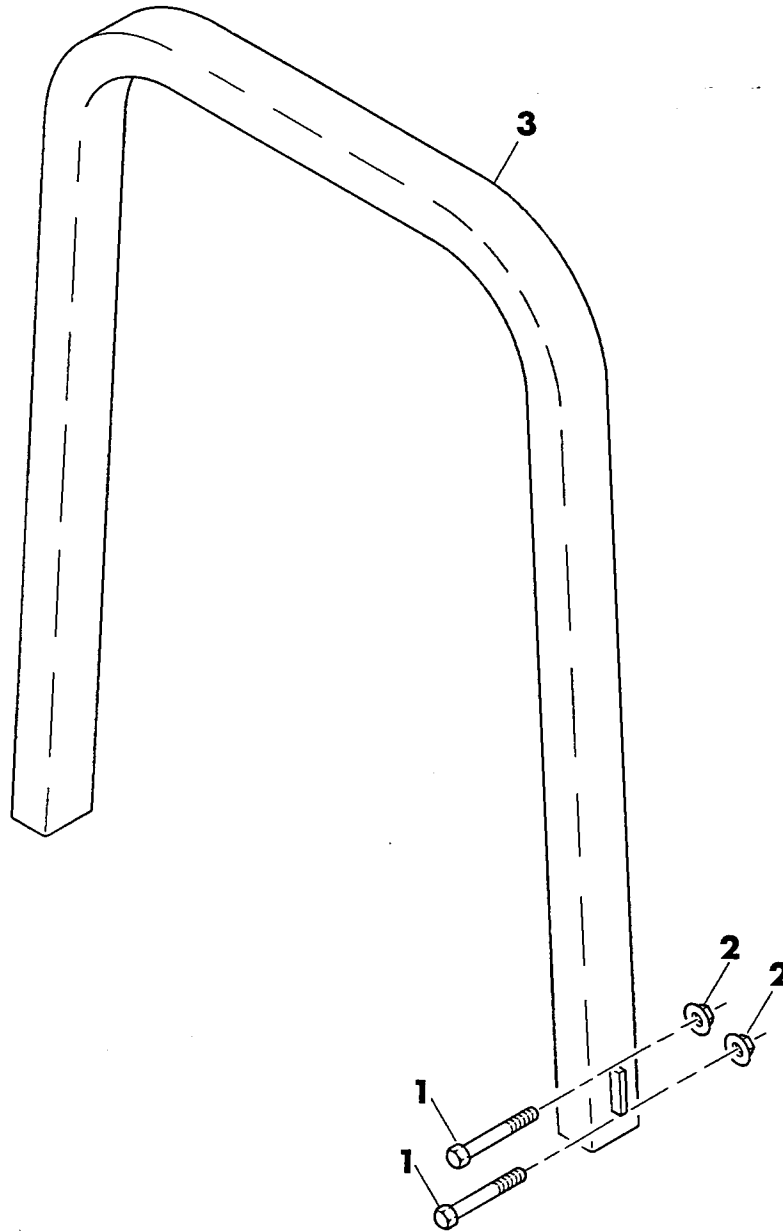


Ref. No.	Part Number	Qty.	Description
1.	105-214	6	Flange Screw (No. 10-24 x 1/2")
2.	105-233	4	Clip Nut (3/8-NC)
3.	105-827	4	Flange Lock Bolt (3/8-NC x 1-1/4")
4.	110-529	2	Snapper Clamp
5.	110-540	1	Filler Breather
6.	115-152	1	Pipe Plug (3/4-NPT M, SQ HD)
7.	115-320	1	Sight Glass Grommet

Ref. No.	Part Number	Qty.	Description
8.	116-218	1	Sight Glass (2" DIA)
9.	116-359	1	Inlet Hose
10.	360-849	1	Reflector
11.	364-046	1	Hydraulic Reservoir
12.	155-138	1	Plug

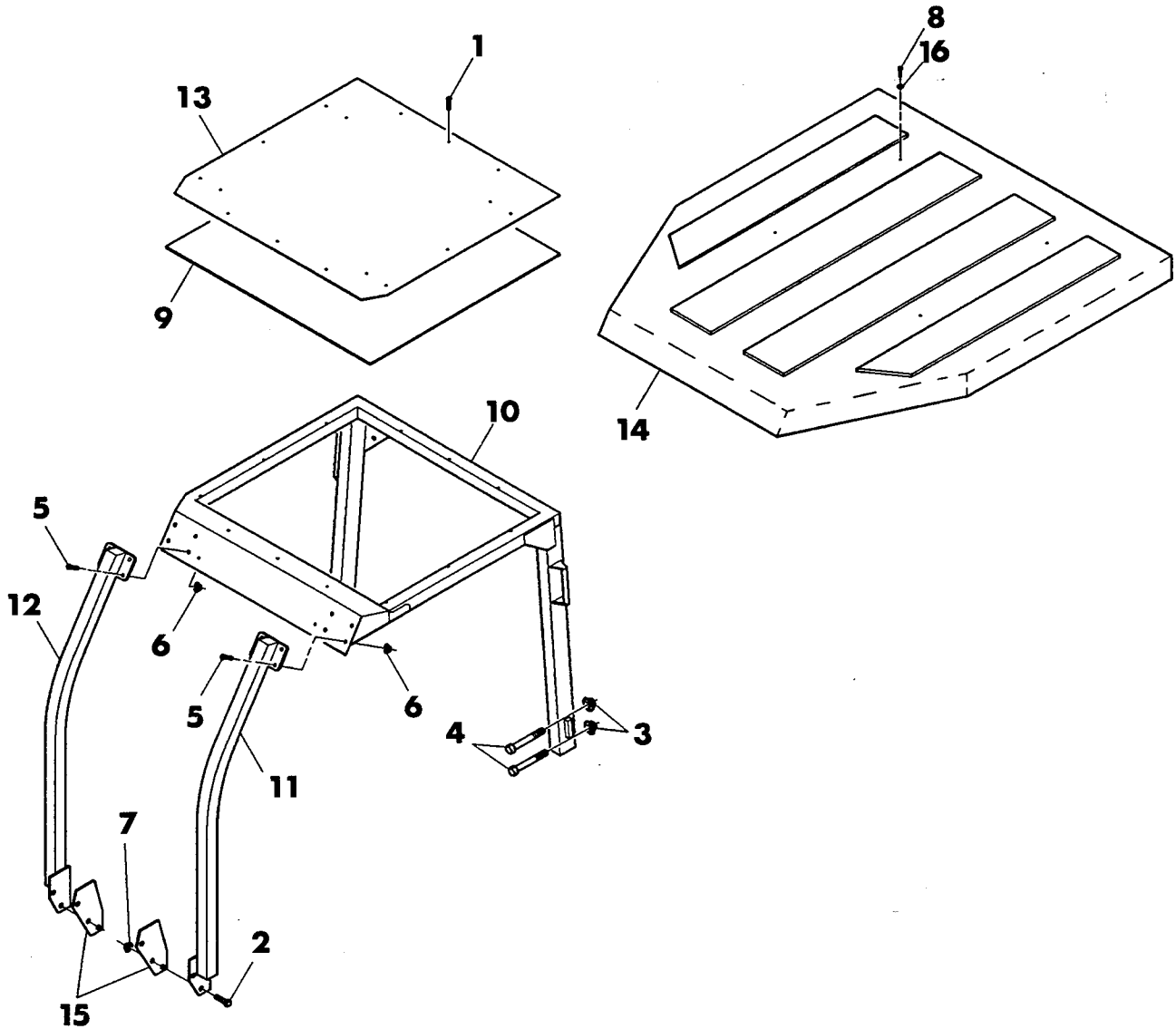
<sup>1</sup>Begins with S/N5H0175.

# 2 POST R.O.P.S.



Ref. No.	Part Number	Qty.	Description
1.	105-383	4	Bolt (3/4-NC x 6", GD 8)
2.	105-340	4	Flange Locknut (3/4-NC)
3.	306-249	1	2 Post R.O.P.S.

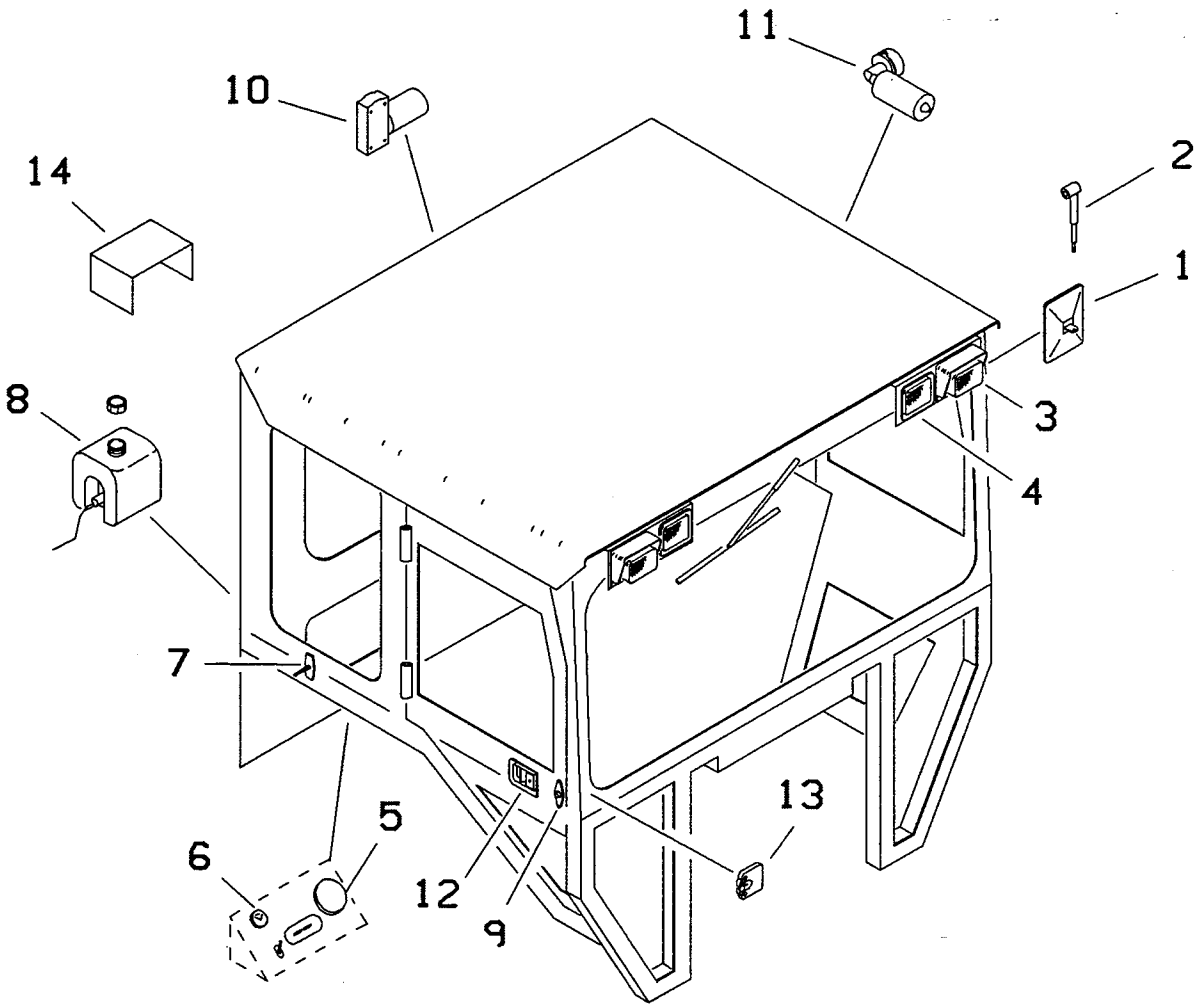
# 4 POST R.O.P.S.



Ref. No.	Part Number	Qty.	Description
	190-428		4-Post R.O.P.S. Conversion Kit (Incl. ref. no.'s 1 thru 16)
1.	105-221	12	Screw (No. 14-10 x 1-1/2")
2.	105-303	6	Flange Bolt (5/8-NC x 2-1/2")
3.	105-340	4	Flange Locknut (3/4-NC)
4.	105-383	4	Bolt (3/4-NC x 6", GD 8)
5.	105-830	8	Bolt (1/2-NC x 1-1/4")
6.	105-833	8	Flange Locknut (1/2-NC)
7.	105-994	6	Flange Locknut (5/8-NC)

Ref. No.	Part Number	Qty.	Description
8.	106-010	4	Flange Screw (5/16-NC x 3/4")
9.	116-365	1	Headliner Insulation
10.	306-250	1	4 Post R.O.P.S.
11.	306-251	1	Left Front Leg
12.	306-252	1	Right Front Leg
13.	306-265	1	FOPS Plate
14.	306-266	1	Canopy
15.	314-152	2	Lower Bolt Spacer
16.	505-114	4	Thrust Washer (1" OD)

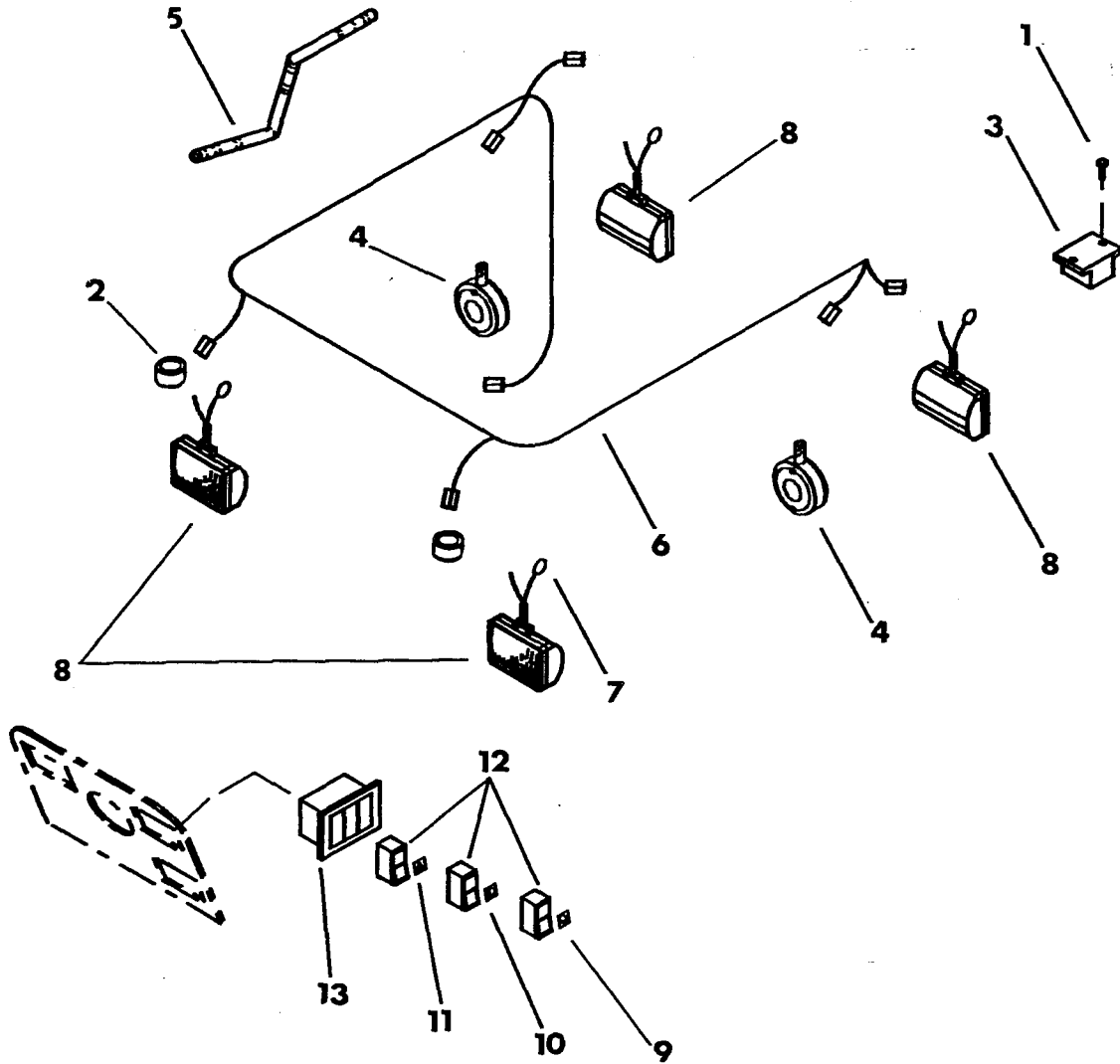
CAB  
5020



REF. NO.	PART NUMBER	QTY.	DESCRIPTION
	100-750	1	CAB (INCL REF NO.'S 1 THRU 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

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
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

# WARNING/WORKING LIGHTS



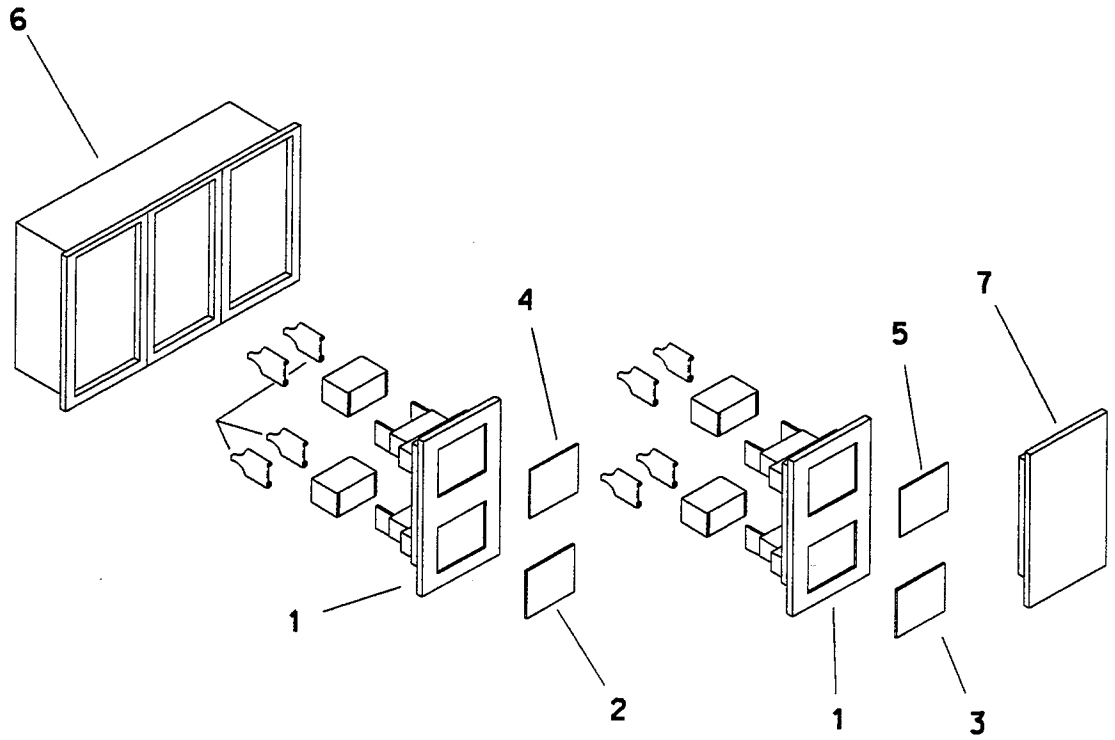
Ref. No.	Part Number	Qty.	Description
	190-432	1	Working Light Conversion Kit (Incl. ref. no.'s 1 thru 13)
1.	110-527	2	Rivet (3/16" x 1/2")
2.	116-203	2	Grommet
3.	215-041	1	Flasher
4.	215-442	2	Warning Light (round amber)
5.	215-579	AR	Wire Guard (uses 2 of 45")
6.	215-803	1	4 Post R.O.P.S. Light Harness
7.	215-804	4	Ring Terminal (1/2")

Ref. No.	Part Number	Qty.	Description
8.	217-007	4	Working Light
9.	217-031	1	Black Insert (headlight)
10.	217-032	1	Black Insert (worklight)
11.	217-033	1	Orange Insert (warning)
12.	217-707	3	Rocker Switch
13.	217-712	1	Mounting Frame (3 bank)

<sup>1</sup>Refer to installation diagram.

**NOTES:**

# INTERLOCK LIGHT SYSTEM



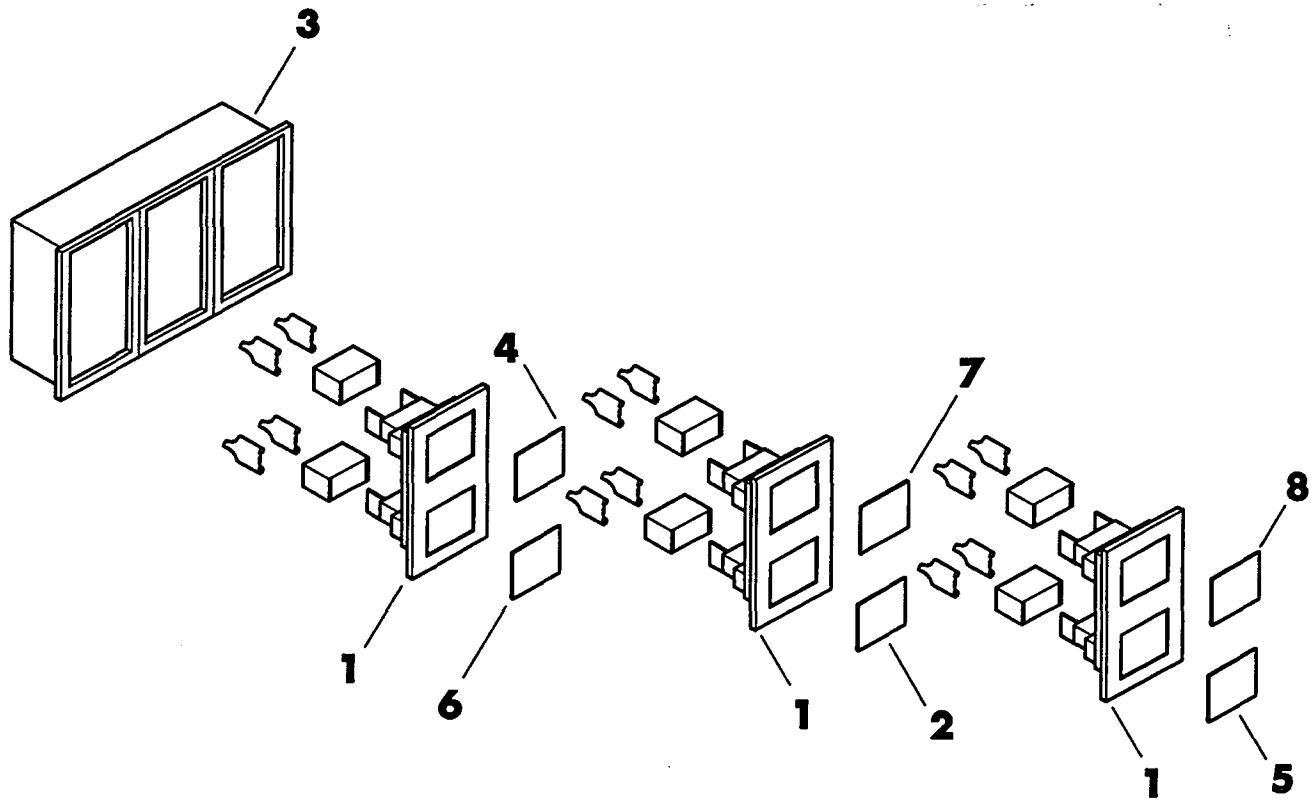


# INTERLOCK LIGHT SYSTEM

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	217-020	2	PILOT LAMP	
	217-046		BULB REPLACEMENT	
2.	217-028	1	BLACK INSERT (PARKING BRAKE)	
3.	217-030	1	GREEN INSERT (ATTACHMENT DRI)	
4.	217-035	1	GREEN INSERT (SEAT)	
5.	217-037	1	GREEN INSERT (GROUND DRIVE)	
6.	217-712	1	MOUNTING BEZEL (3 POSITION)	
7.	217-713	1	BLANK COVER	

## FOOTNOTES

# WARNING SYSTEM LIGHT



Ref. No.	Part Number	Qty.	Description
1.	217-020	3	Dual Pilot Light
2.	217-036	1	Amber Lens (hydraulic filter pressure)
3.	217-712	1	Mounting Frame (3 position)
4.	217-034	1	Red Lens (engine oil temperature)

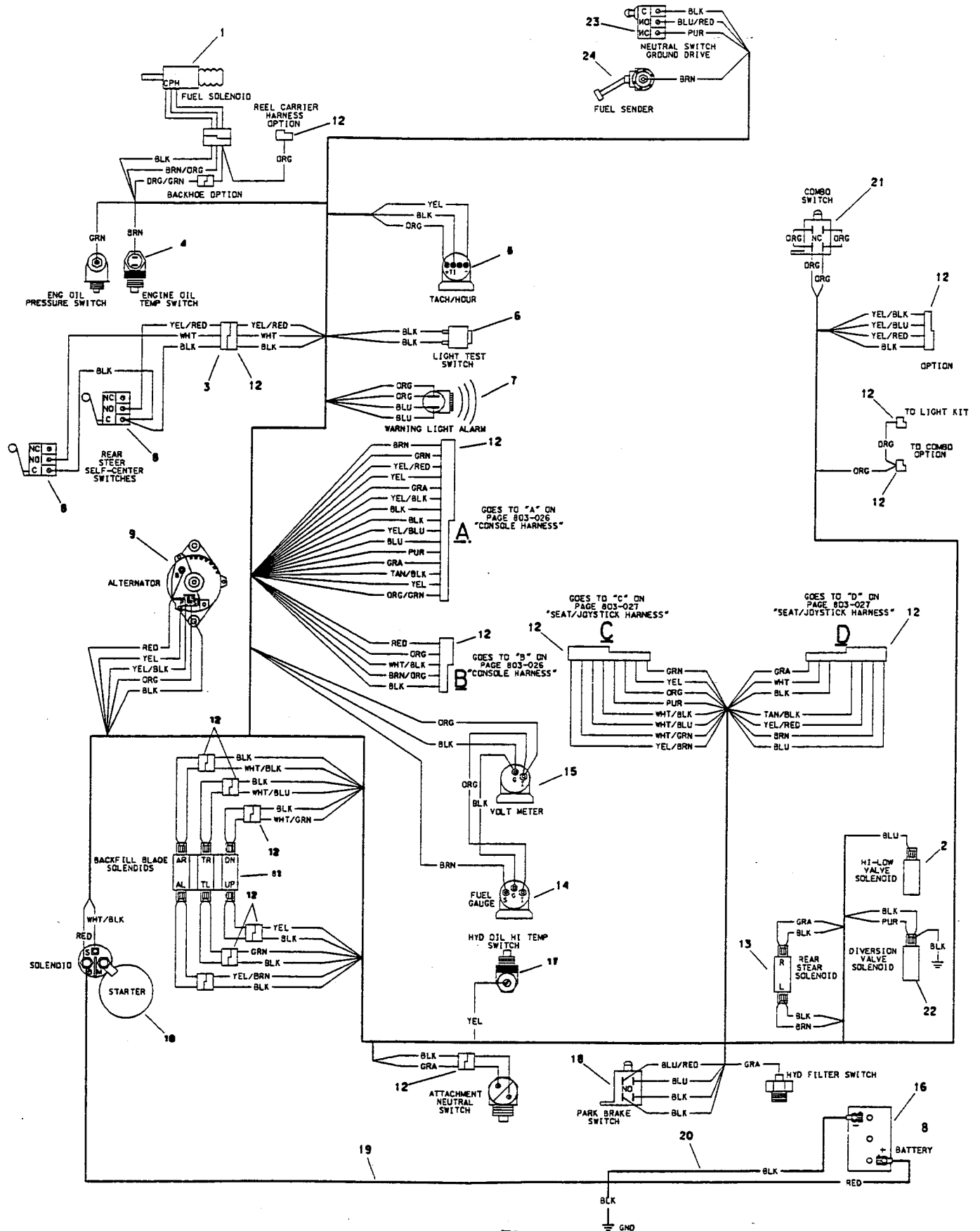
Ref. No.	Part Number	Qty.	Description
5.	217-029	1	Red Lens (parking brake)
6.	217-021	1	Red Lens (engine oil pressure)
7.	217-027	1	Red Lens (hydraulic temperature)
8.	217-038	1	Red Lens (alternator/ fan belt)

**NOTES:**

# ELECTRICAL DIAGRAM

## 5020, 7520 DEUTZ

### FRAME HARNESS



# ELECTRICAL DIAGRAM

## 5020, 7520 DEUTZ

### FRAME HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	215-098	1	FUEL SHUT-OFF SOLENOID	
2.	158-555	1	SOLENOID HI-LOW SHIFT VALVE	
3.	215-765	1	REAR STEER HARNESS	SEE FOOTNOTE 3
	215-931	1	REAR STEER HARNESS	
4.	217-518	1	ENG OIL TEMP SWITCH	
5.	215-118	1	TACHOMETER	
	215-415	1	LIGHT KIT (OPTION)	
6.	215-040	1	BUTTON SWITCH	
7.	306-603	1	AUDIO ALARM	
8.	215-087	2	ROLLER LEVER SWITCH	
	106-315	4	SCREW (#4-40 X 1")	
9.	215-159	1	ALTERNATOR	
	106-005	4	BOLT (M8-1.25 X 16MM)	
10.	195-877	1	STARTER (5 HP)	
	197-752	1	REBUILT STARTER (4 HP)	
11.	158-574	1	SOLENOID BFB VALVE	
12.	215-761	1	FRAME HARNESS	
HARNESS HARDWARE:				
	110-366	AR	VELCRO STRIP (25")	
	110-431	AR	VELCRO STRIP, PLAIN (25")	
	110-259	3	CLAMP (5/8")	
	105-836	2	FLANGE LOCK BOLT	
	105-832	2	FLANGE NUT (1/4-NC)	
	110-332	1	CLAMP (1-5/8")	
	105-873	1	FLANGE LOCK BOLT	
	105-003	1	FLANGE NUT (5/16")	
13.	158-575	1	SOLENOID REAR STEER VALVE	
14.	215-133	1	FUEL GAUGE	
	215-415	1	LIGHT KIT	OPTION
15.	215-129	1	VOLT METER	
16.	215-266	1	BATTERY	
	215-275	1	BATTERY	REPLACES BATTERY #215-266.
17.	215-148	1	TEMPERATURE SWITCH	
18.	217-704		PLUNGER SWITCH	
19.	215-339	1	BATTERY CABLE (96" 2/0 GA)	
20.	215-338	1	BATTERY CABLE (70" 2/0 GA)	
21.	217-705	1	PLUNGER SWITCH	
	105-214	2	SCREW	
22.	158-569	1	SOLENOID DIVERSION VALVE	
23.	215-046	1	ROLLER LEVER SWITCH	
	215-082	1	ROLLER PLUNGER BRACKET	SEE FOOTNOTE 3
	217-703	1	OMNI LEVER SWITCH	SEE FOOTNOTE 1
	215-047	1	ACTUATOR BRACKET	INC'S BOLTS & NUTS AND SEE FOOTNOTE 2
	105-216	2	BOLT (#6-32 X 1-1/4")	SEE FOOTNOTE 2
	105-215	2	NUT (#6-32)	SEE FOOTNOTE 2
24.	217-523	1	FUEL SENDER (5020)	
	217-527	1	FUEL SENDER (7520)	
	165-704		GASKET	
	105-214	6	FLANGE SCREW	

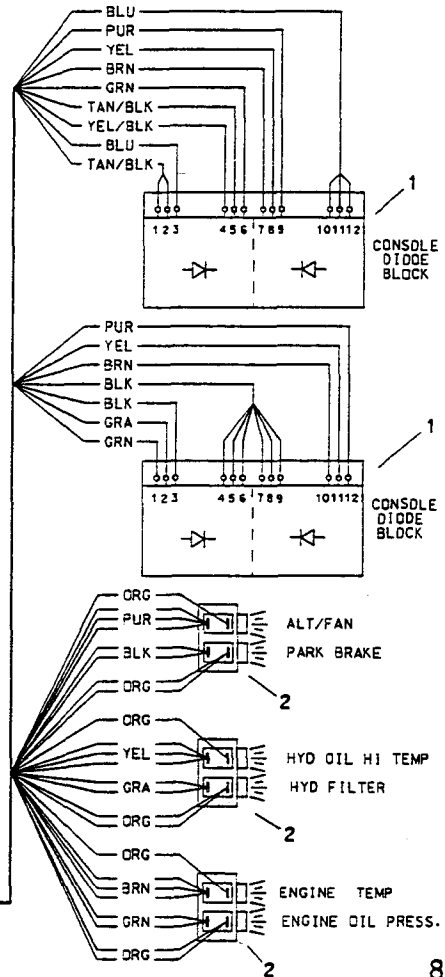
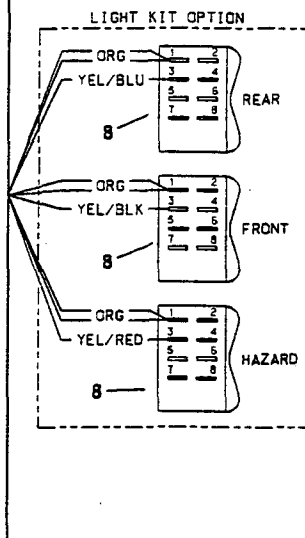
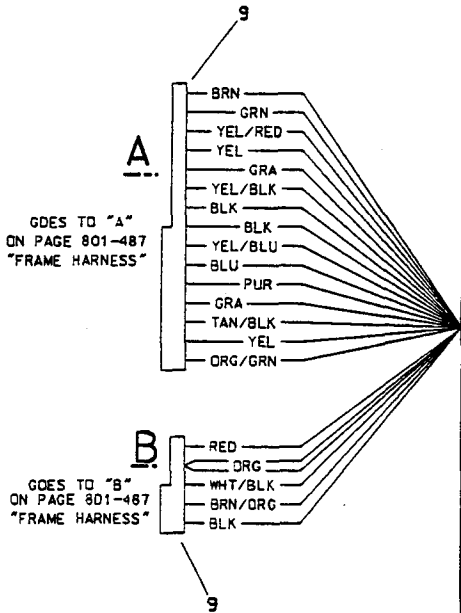
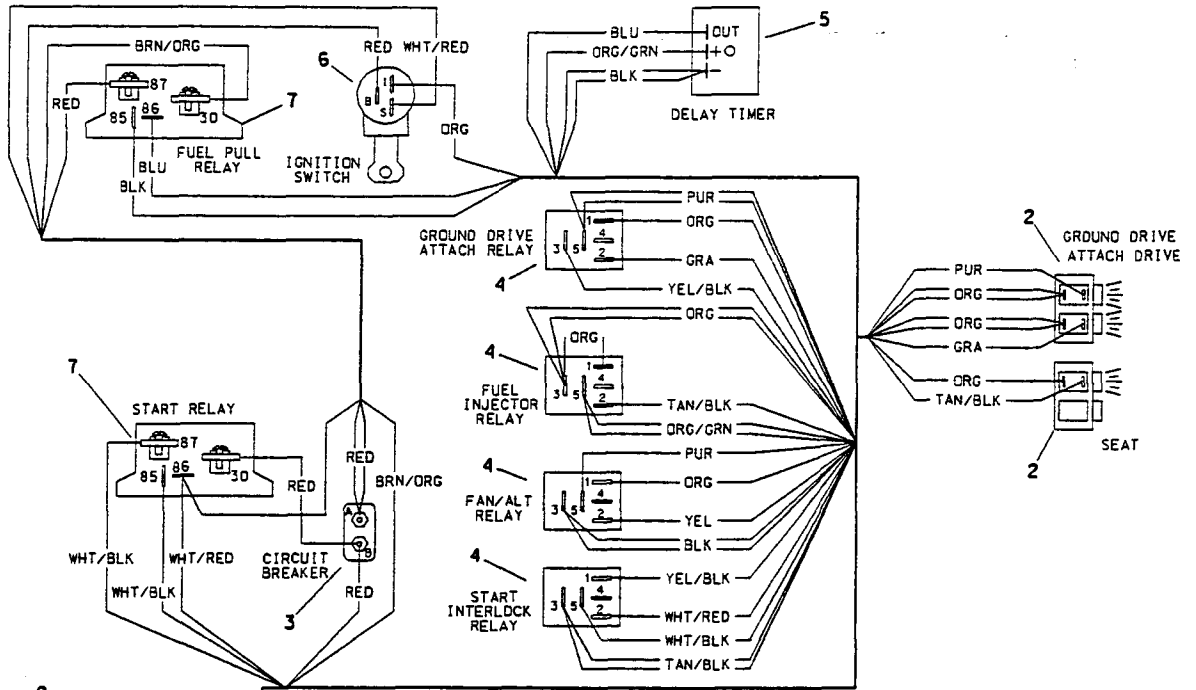
#### FOOTNOTES

- 1-USED ON EARLIER MODELS (5020) & SEE FOOTNOTE 2.  
 2-ENDS WITH S/N 5H0174 (5020) & ENDS WITH S/N (7520).  
 3-BEGINS WITH S/N (5020) & BEGINS WITH S/N (7520).

# ELECTRICAL DIAGRAM

## 5020, 7520 DEUTZ

### CONSOLE HARNESS



# ELECTRICAL DIAGRAM

## 5020, 7520 DEUTZ

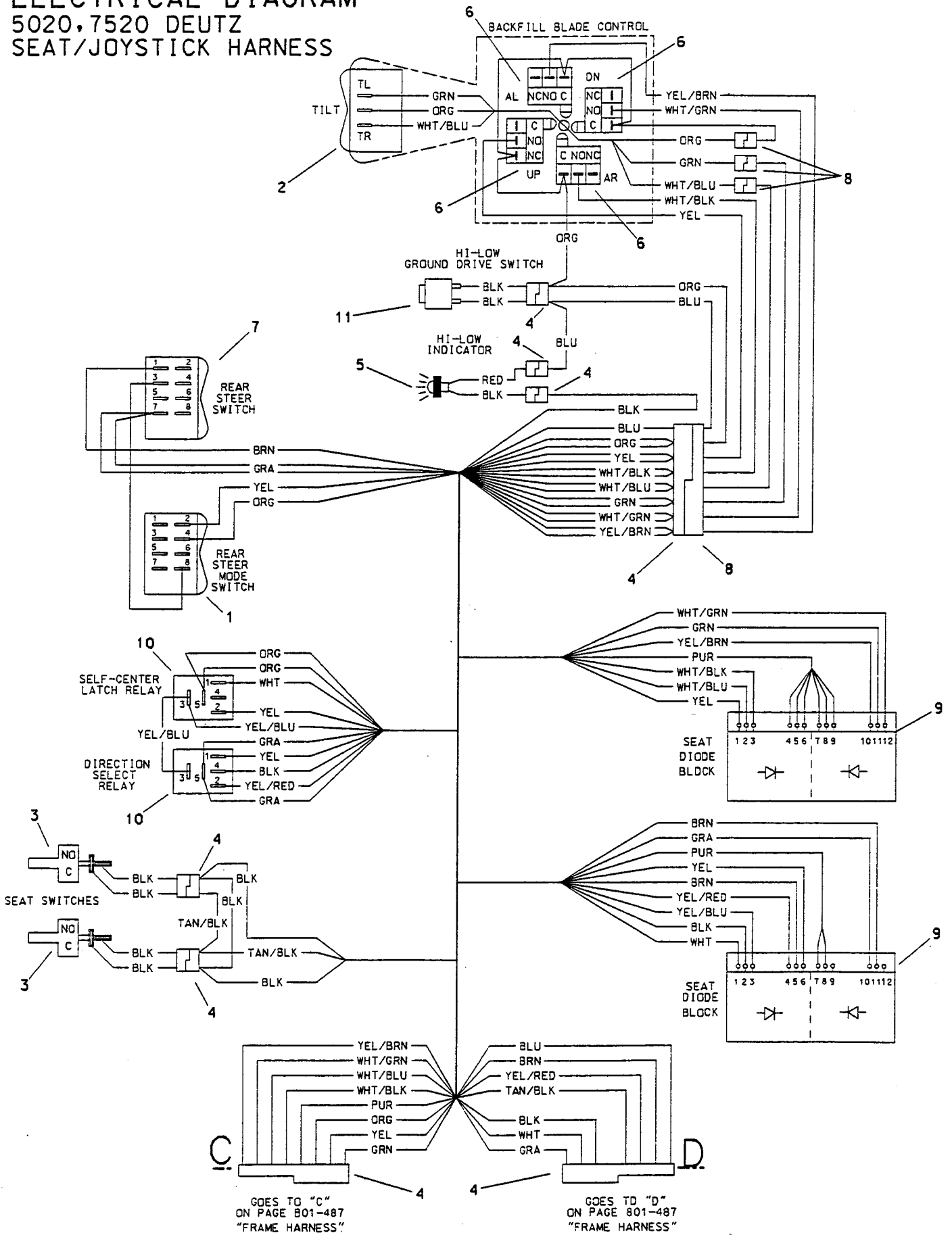
### CONSOLE HARNESS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	216-509	2	DIODE BLOCK	SEE FOOTNOTE 1
	216-521	2	DIODE BLOCK	
	363-118	1	DIODE BLOCK BRACKET	
	105-820	1	FLANGE LOCK BOLT	
	105-832	1	FLANGE LOCKNUT	
2.	217-020	5	PILOT LIGHT	
	217-046		BULB (REPLACEMENT)	
	217-712	2	MOUNT BEZEL (3-WAY)	
	217-713	1	BLANK COVER	
	217-021	1	INSERT-ENGINE OIL PRESS	
	217-027	1	INSERT-HYD OIL HI TEMP	
	217-028	1	INSERT-BLANK	
	217-029	1	INSERT-PARK BRAKE	
	217-030	1	INSERT-ATTACH DRIVE	
	217-034	1	INSERT-ENGINE OIL TEMP	
	217-035	1	INSERT-SEAT	
	217-036	1	INSERT-HYD OIL PRESS	
	217-037	1	INSERT-GROUND DRIVE	
	217-038	1	INSERT-ALT/FAN	
	3.	215-065	1	
110-253		2	POP RIVET	
110-397		2	SLEEVE CAP	
4.	217-710	6	RELAY (SPOT)	
	110-253	6	POP RIVET	
	106-205	6	WASHER	
5.	217-711	1	DELAY TIMER	
	106-158	1	SCREW (10-16 X 1-1/4")	
6.	215-051	1	IGNITION SWITCH	INCL KEYS AND NUTS
	215-052		KEYS (PAIR)	
	105-909		JAM NUT	
	216-008	1	JAM NUT (NYLOK)	
	216-009	1	COVER (NYLOK)	
7.	217-701	2	POWER RELAY (SPDT)	
	105-820	2	FLANGE LOCK BOLT	
	105-832	2	FLANGE LOCKNUT	
8.	217-707	3	ROCKER SWITCH	
	217-028		INSERT-BLANK	
9.	215-764	1	CONSOLE HARNESS	

#### FOOTNOTES

1-ENDS WITH S/N 5H0174 (5020) & ENDS WITH S/N (7520).

# ELECTRICAL DIAGRAM 5020,7520 DEUTZ SEAT/JOYSTICK HARNESS





# ELECTRICAL SCHEMATIC (CONT' D)

## 5020, 7520 DEUTZ

CKT.	WIRE COLOR	FUNCTION
1	BLK	SYSTEM GROUND
2	RED	BATTERY CIRCUIT
3	ORG	IGNITION CIRCUIT
4	RED	BATTERY CIRCUIT (CIRCUIT BREAKER PROTECTED)
5	RED/BLK	BATTERY CIRCUIT (CIRCUIT BREAKER PROTECTED)
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 & REAR STEER TO DIV VALVE SOLENOID
14	YEL	SELECT SWITCH TO SELF-CENTER RELAYS
15	RED	SELECT SWITCH TO STEERING SWITCH
16	GRA	STEER SWITCH TO REAR STEER SOLENOID (L)
17	BRN	STEER SWITCH TO REAR STEER SOLENOID (R)
18	BLK	DIRECTION SELECT RELAY TO DIODE
19	YEL/BLU	SELF-CENTER LATCH RELAY TO DIRECTION SELECT RELAY
20	WHT	SELF-CENTER (L) TO SELF-CENTER LATCH RELAY
21	YEL/RED	SELF-CENTER (R) TO DIRECTION SELECT RELAY
22	YEL	TACH TO ALTERNATOR WIRE (66)
23	BRN	FUEL SENDER TO FUEL GAUGE
24	YEL/BLK	ALT/FAN RELAY TO ALTERNATOR
25	PUR	ALT/FAN RELAY TO LIGHT
26	BLU	DIODES AND PARK BRAKE SWITCH TO AUDIO ALARM
27	BLU/RED	PARK BRAKE SWITCH TO GROUND DRIVE NEUTRAL SWITCH
28	BLK	PARK BRAKE LIGHT TO PARK BRAKE SWITCH
29	BLK	DIODES TO PUSH BUTTON TEST SWITCH
30	BRN	ENGINE OIL TEMP LIGHT TO SWITCH
31	GRN	ENGINE OIL PRESSURE LIGHT TO SWITCH
32	YEL	HYDRAULIC OIL TEMP LIGHT TO SWITCH
33	GRA	HYDRAULIC FILTER LIGHT TO SWITCH
34	GRA	ATTACH NEUTRAL SW TO GND DR/ATTACH RELAY & LIGHT
35	PUR	GROUND DRIVE NEUTRAL SWITCH TO GD/A RELAY & LIGHT
36	YEL/BLK	GD/A RELAY TO START INTERLOCK RELAY
38	TAN/BLK	SEAT SWITCH TO LIGHT & START INTERLOCK RELAY
139	WHT/BLK	START INTERLOCK RELAY TO START RELAY
240	WHT/BLK	START RELAY TO START SOLENOID
41	ORG/GRN	FUEL INT RELAY TO DELAY TIMER & FUEL SOLENOID
42	BLU	DELAY TIMER TO FUEL PULL RELAY
43	BRN/ORG	FUEL PULL RELAY TO FUEL SOLENOID
44	BLU	TWO SPEED GND DRIVE SWITCH TO SOLENOID & LIGHT
45	ORG	COMBO SWITCH TO SOLENOID
46	ORG	KILL LATCH RELAY TO SWITCH
47	ORG/GRN	KILL SWITCH TO TRACTOR HARNESS
48	ORG/BLK	KILL LATCH RELAY TO FUEL SOLENOID
49	ORG	FOOT SWITCH TO TOW VALVE SOLENOID
50	YEL/BLK	SWITCH TO HEADLIGHTS
51	YEL/BLU	SWITCH TO WORK LIGHTS
52	YEL/RED	SWITCH TO FLASHER RELAY
53	YEL/RED	FLASHER RELAY TO HAZARD LIGHTS
54	RED/BLU	CAB RELAY TO CAB SWITCHES
55	BLK	POWER WIRE TO FUES BLOCK
56	GRA	SWITCH TO REAR WIPER
57	LT GRN	SWITCH TO FRONT WIPER (LO)
58	RED	SWITCH TO FRONT WIPER (HI)
59	YEL	SWITCH TO WINDSHIELD WASHER
60	YEL	SWITCH TO FAN
61	BLU	SWITCH TO HEATER FAN
62	BLK	SWITCH TO DOME LIGHT
63	BRN	BDOM UNLOCK CIRCUIT
65	GRA	TRAVERSE SWITCH TO LEFT SOLENOID
65	GRN	TRAVERSE SWITCH TO RIGHT SOLENOID
66	BLK	TACH CIRCUIT TO ALTERNATOR

1/8 GA WIRE  
2/12 GA WIRE

# HYDRAULIC SCHEMATIC

## 5020

### SPECIFICATIONS

ENGINE		PUMP			MOTOR	
MFG (NO LOAD)	RPM	TYPE	GPM	DISPLACEMENT	TYPE	DISPLACEMENT
DEUTZ (DIESEL)	2500	GROUND DRIVE	30.3	2.80 IN <sup>3</sup>	GROUND DRIVE STEERING	2.80 IN <sup>3</sup>
		CHARGE	9.1	.85 IN <sup>3</sup>		11.88 IN <sup>3</sup>
		ATTACHMENT	27.7	2.56 IN <sup>3</sup>		
		CHARGE	9.3	.86 IN <sup>3</sup>		
		AUXILLARY	7.1	.66 IN <sup>3</sup>		
		MANIFOLD	14.8	1.37 IN <sup>3</sup>		
				2.80 IN <sup>3</sup>		

NOTE: REFERENCE NUMBERS IN BALLOONS REFER TO CONNECTIONS ON ATTACHMENT HYDRAULIC SCHEMATICS.

# ATTACHMENT AND GROUND DRIVE PUMP HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-072	8	LOCK WASHER (3/8")	
2.	106-202	4	FLANGE LOCK BOLT	
3.	217-519	1	PRESSURE GAUGE (6000 PSI)	
4.	106-004	8	BOLT (3/8-NC X 1-3/8")	
5.	110-026	2	HOSE CLAMP	
6.	110-030	1	CABLE TIE	
7.	110-133	2	HOSE CLAMP	
8.	110-353	4	HOSE CLAMP	
9.	116-364	AR	DRAIN HOSE (8")	
10.	116-362	AR	DRAIN HOSE (10-1/4")	
11.	116-363	AR	SUCTION HOSE (12-3/4")	
12.	116-361	AR	SUCTION HOSE (6")	
13.	154-192	1	SLIP ON TEE	
14.	154-220	2	CONNECTOR (04 O/06)	
15.	154-226	1	CONNECTOR (04 O/06 S 90)	5020
	154-387	1	CONNECTOR (04 S 90 ORF)	7520/8020
16.	154-287	2	CONNECTOR (16 O/16 S 90)	
17.	154-296	1	CAP	
18.	154-362	1	COUPLER (10 S 90)	
19.	154-728	1	HOSE (36" 3000 PSI)	
20.	155-214	1	BRANCH TEE (12 S)	
21.	155-146	1	SLIP ON COUPLER (12 S)	
22.	155-216	2	FITTING (16 O)	
23.	155-217	1	BRANCH TEE (12 S)	
24.	155-737	2	O-RING (214 D70)	
25.	156-455	1	HYDRAULIC LINE	
26.	158-337	1	HYDRAULIC PUMP	SEE FOOTNOTE 3
	158-336	1	HYDRAULIC PUMP	SEE FOOTNOTE 2
	158-316	1	HYDRAULIC PUMP	SEE FOOTNOTE 1
	126-014	1	INNER SHAFT BEARING	
	157-568	1	SHAFT SEAL	
	115-547	2	BEARING RETAINER	
	165-729	1	HOUSING GASKET	
	126-021	1	OUTER SHAFT BEARING	
	500-578	2	PISTON RING SET	
27.	158-320	1	DOUBLE HYDRAULIC PUMP	
	500-576		SEAL REPAIR KIT	
	500-639		NEUTRAL START SWITCH	
	500-763	1	MULTIFUNCTION VALVE - RELIEF	IDENTIFIED BY "7" ON A FLAT
	500-764	1	MULTIFUNCTION VALVE - LIMIT	IDENTIFIED BY "1" ON A FLAT
28.	159-039	4	SPLIT FLANGE (3/4")	
29.	115-776	1	ABRASION SLEEVE	7520/8020

## FOOTNOTES

1-5020 ENDS WITH S/N5J0360

7520 ENDS WITH S/N5J0287

8020 ENDS WITH S/N5J0283

2-5020 S/N5J0361 THRU S/N

7520 S/N5J0288 THRU S/N

8020 S/N5J0284 THRU S/N

3-5020 BEGINS WITH S/N

7520 BEGINS WITH S/N

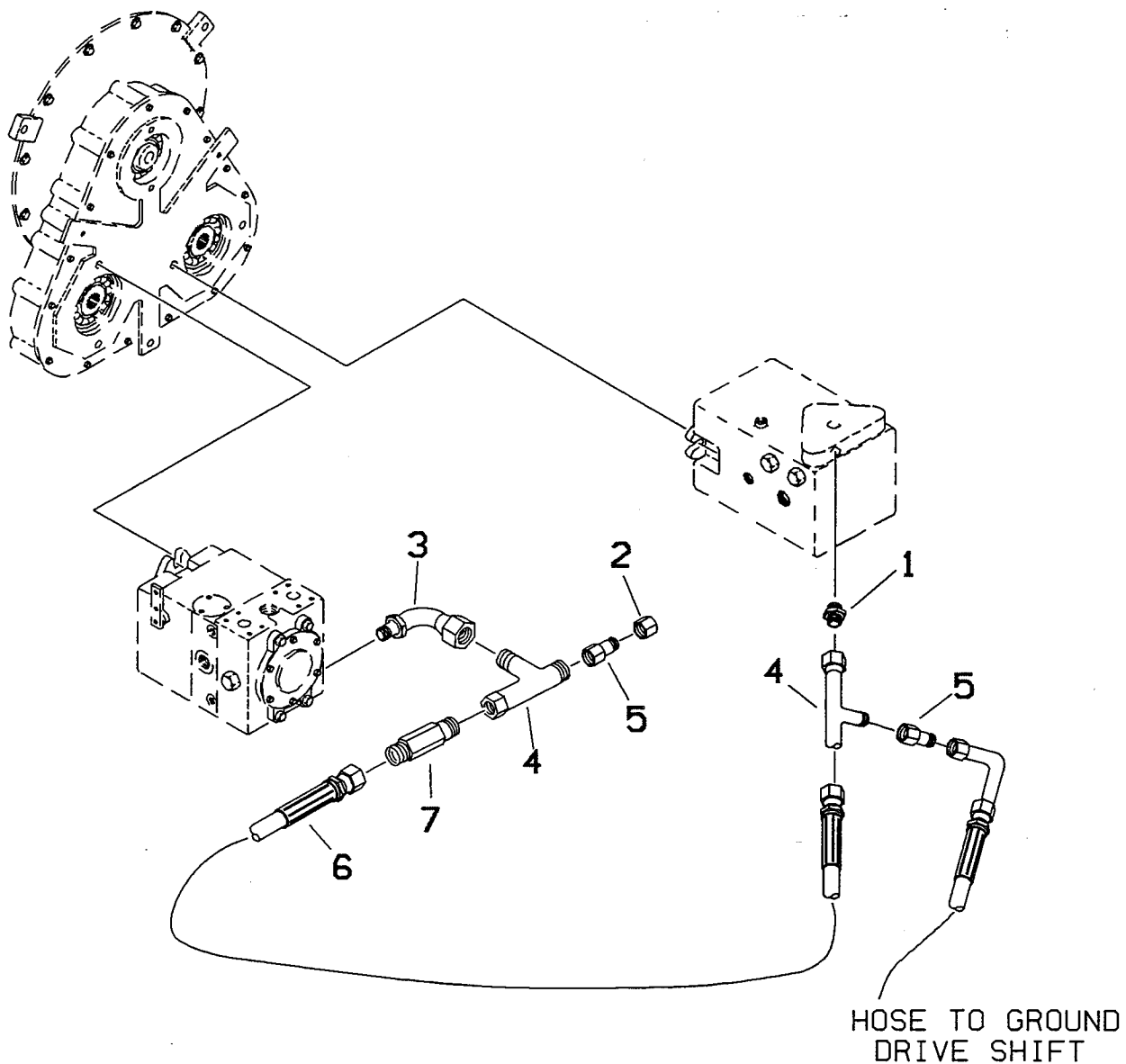
8020 BEGINS WITH S/N

## NOTE:

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

# CHECK VALVE HYDRAULICS

ENDS WITH S/N 5H0174

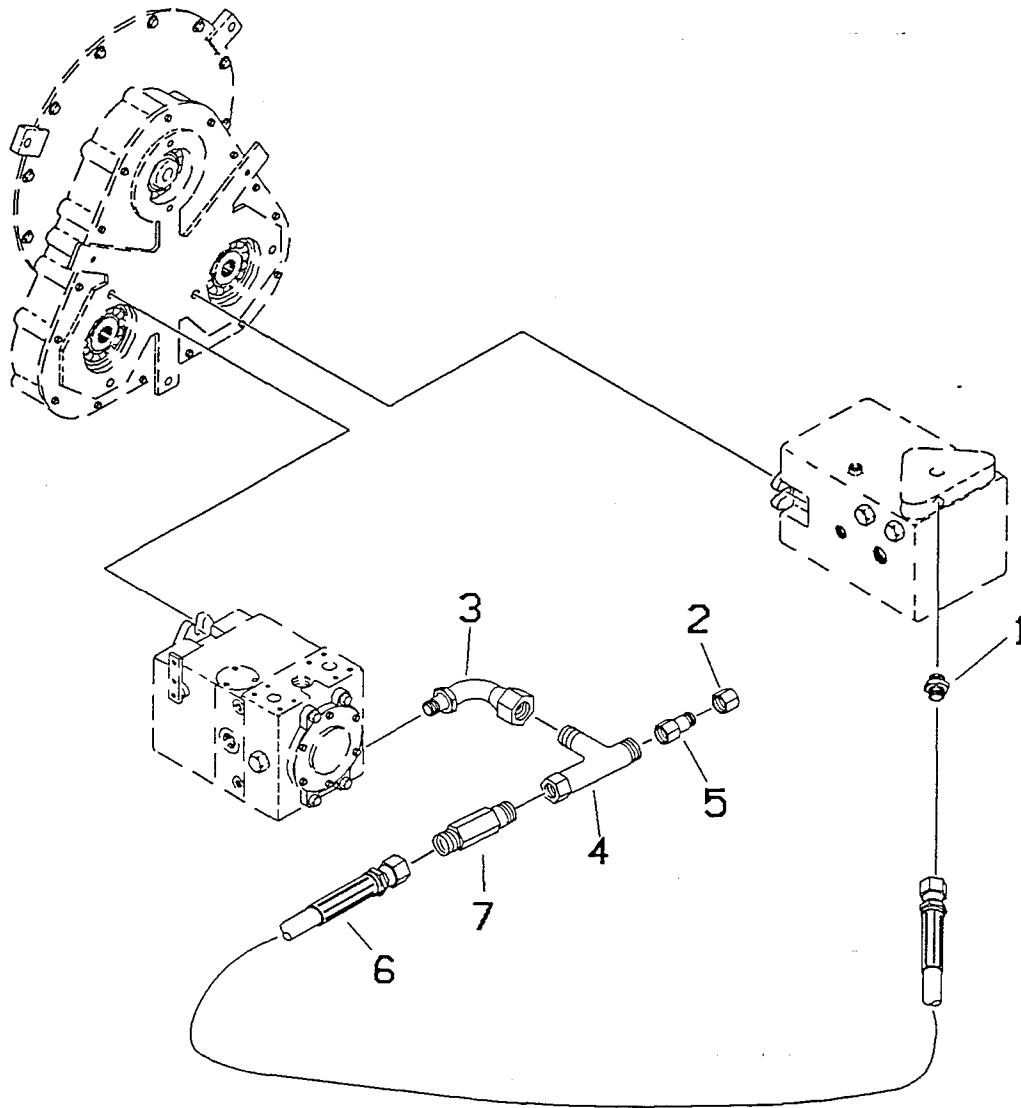


REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	154-221	1	CONNECTOR
	155-705		O-RING (906 D90)
	155-038		O-RING (012 D90)
2.	154-296	1	CAP
3.	154-343	1	ADAPTER UNION
	155-705		O-RING (906 D90)

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
4.	154-344	2	RUN TEE
	155-038		O-RING (012 D90)
5.	154-373	2	REDUCER BUSHING
	157-037		O-RING (011 D90)
6.	154-707	1	HOSE (16' 3000 PSI)
7.	159-095	1	CHECK VALVE

# CHECK VALVE HYDRAULICS

ENDS WITH S/N 5H0178

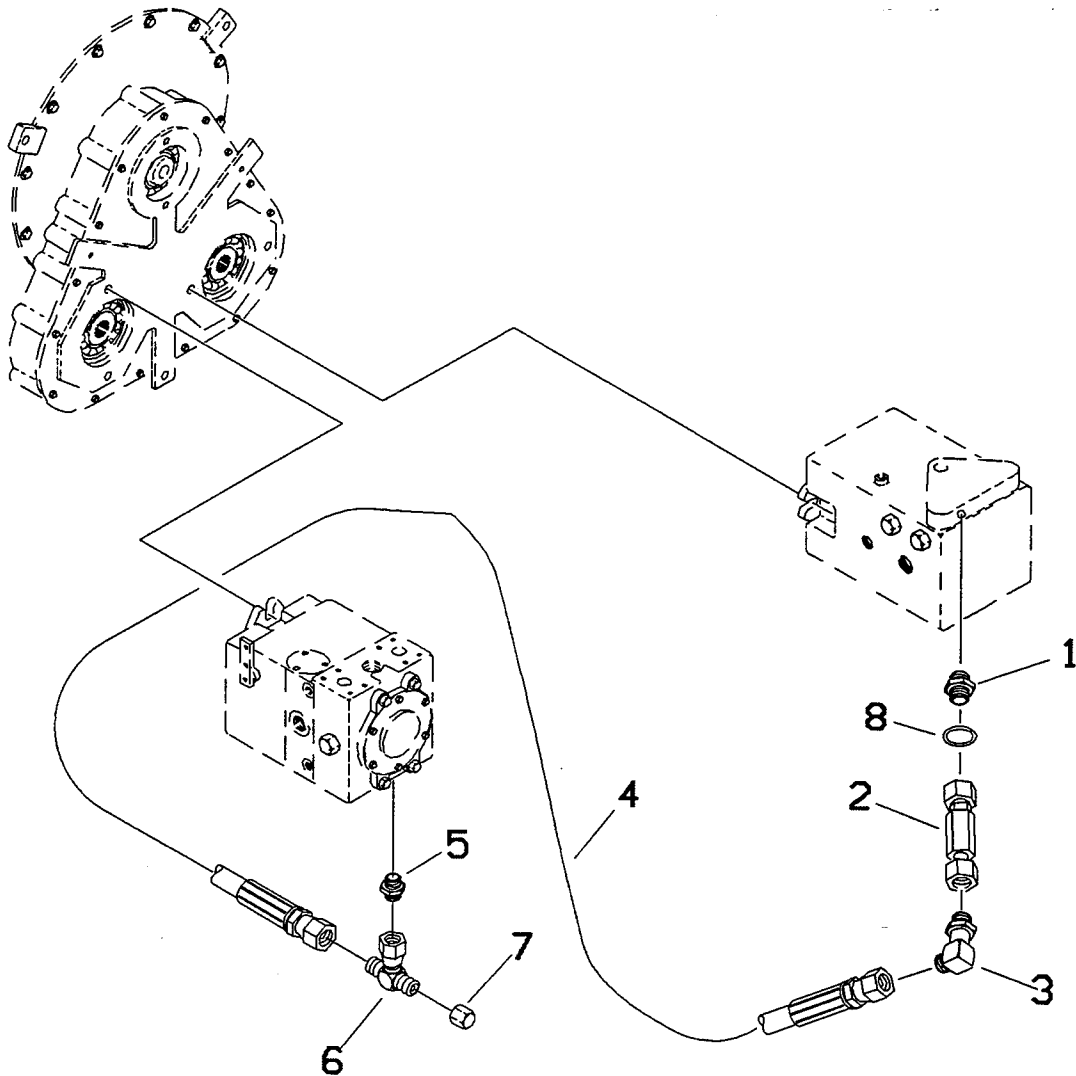


REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	154-221	1	CONNECTOR
	155-705		O-RING (906 D90)
	155-038		O-RING (012 D90)
2.	154-296	1	CAP
3.	154-343	1	ADAPTER UNION
	155-705		O-RING (906 D90)

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
4.	154-344	1	RUN TEE
	155-038		O-RING (012 D90)
5.	154-373	1	REDUCER BUSHING
	157-037		O-RING (011 D90)
6.	154-707	1	HOSE (16' 3000 PSI)
7.	159-095	1	CHECK VALVE

# CHECK VALVE HYDRAULICS

ENDS WITH S/N 5J0057 (5020 & 7520), 5J0055 (8020)

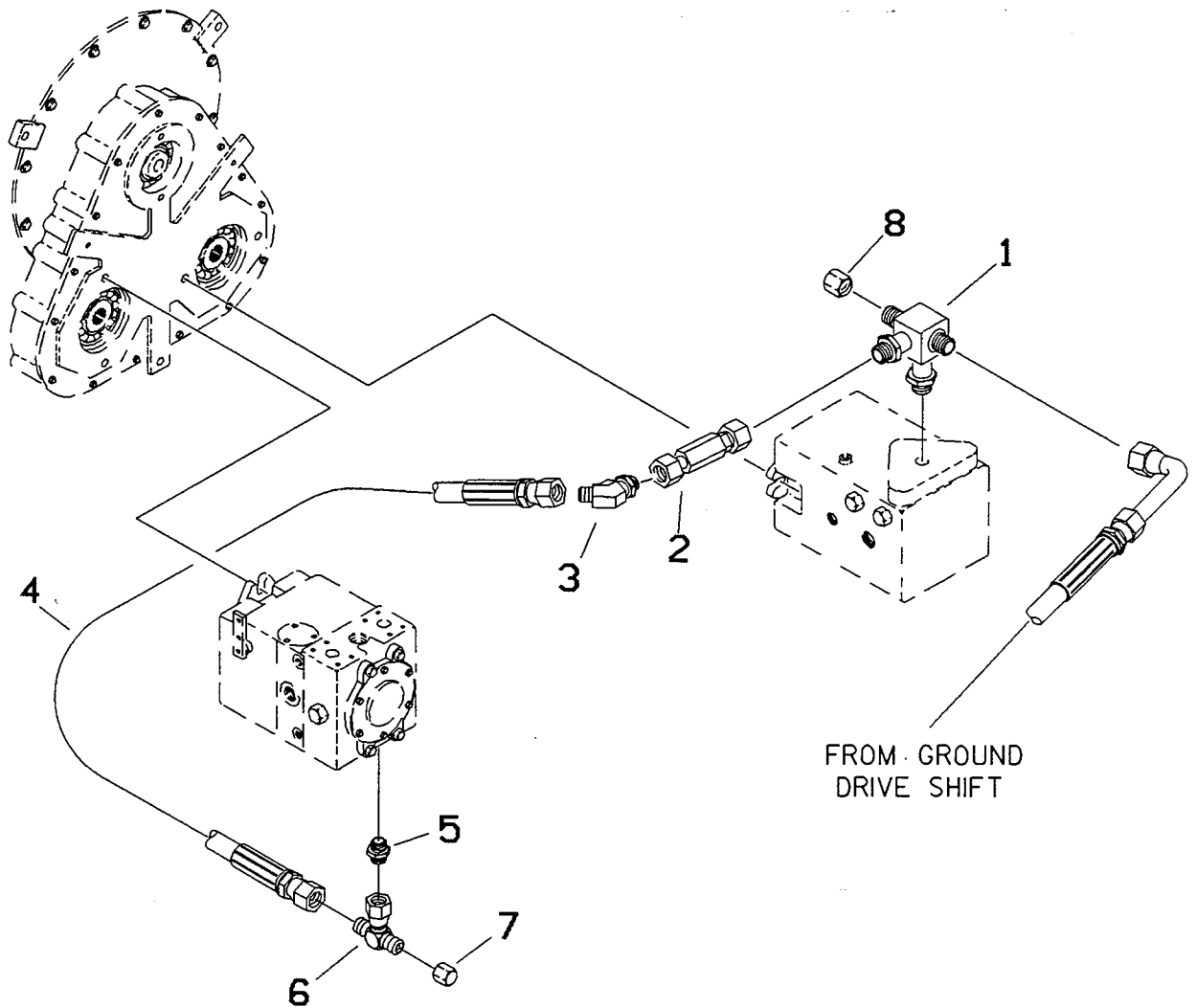


REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	154-004	1	CONNECTOR
	155-705		O-RING (906 D90)
2.	159-112	1	CHECK VALVE
3.	154-235	1	CONNECTOR
	157-039		O-RING (014 D90)
	155-706		O-RING (908 D90)
4.	154-708	1	HOSE (34' 3000 PSI)

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
5.	154-246	1	CONNECTOR
	157-039		O-RING (014 D90)
	155-705		O-RING (906 D90)
6.	154-257	1	BRANCH TEE
	157-039		O-RING (014 D90)
7.	154-327	1	CAP
8.	155-706	1	O-RING (908 D90)

# CHECK VALVE HYDRAULICS

BEGINS WITH S/N 5J0058 (5020 & 7520), 5J0056 (8020)



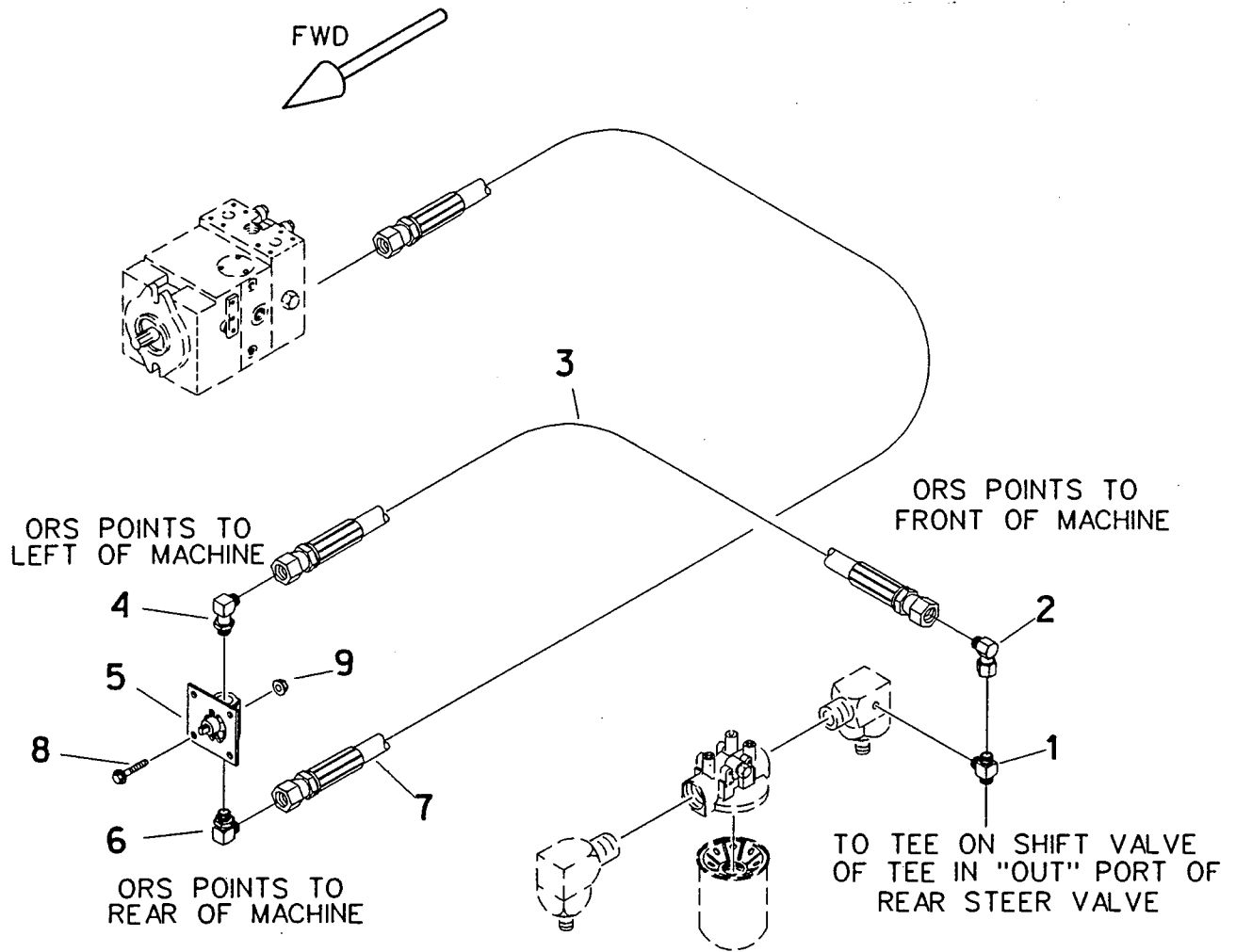
FROM GROUND  
DRIVE SHIFT

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	154-443	1	CONNECTOR
	155-705		O-RING (906 D90)
	155-706		O-RING (908 D90)
	157-037		O-RING (011 D90)
2.	159-112	1	CHECK VALVE
3.	154-284	1	<sup>1</sup> CONNECTOR
	157-039		O-RING (014 D90)
	155-706		O-RING (908 D90)
	154-235	1	<sup>2</sup> CONNECTOR
	157-039		O-RING (014 D90)
	155-706		O-RING (908 D90)

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
4.	154-759	1	HOSE (36' 3000 PSI)
5.	154-246	1	CONNECTOR
	157-039		O-RING (014 D90)
	155-705		O-RING (906 D90)
6.	154-257	1	BRANCH TEE
	157-039		O-RING (014 D90)
7.	154-327	1	CAP
8.	154-296	1	CAP

<sup>1</sup>5020 ONLY  
<sup>2</sup>7520/8020

# COLD START BYPASS



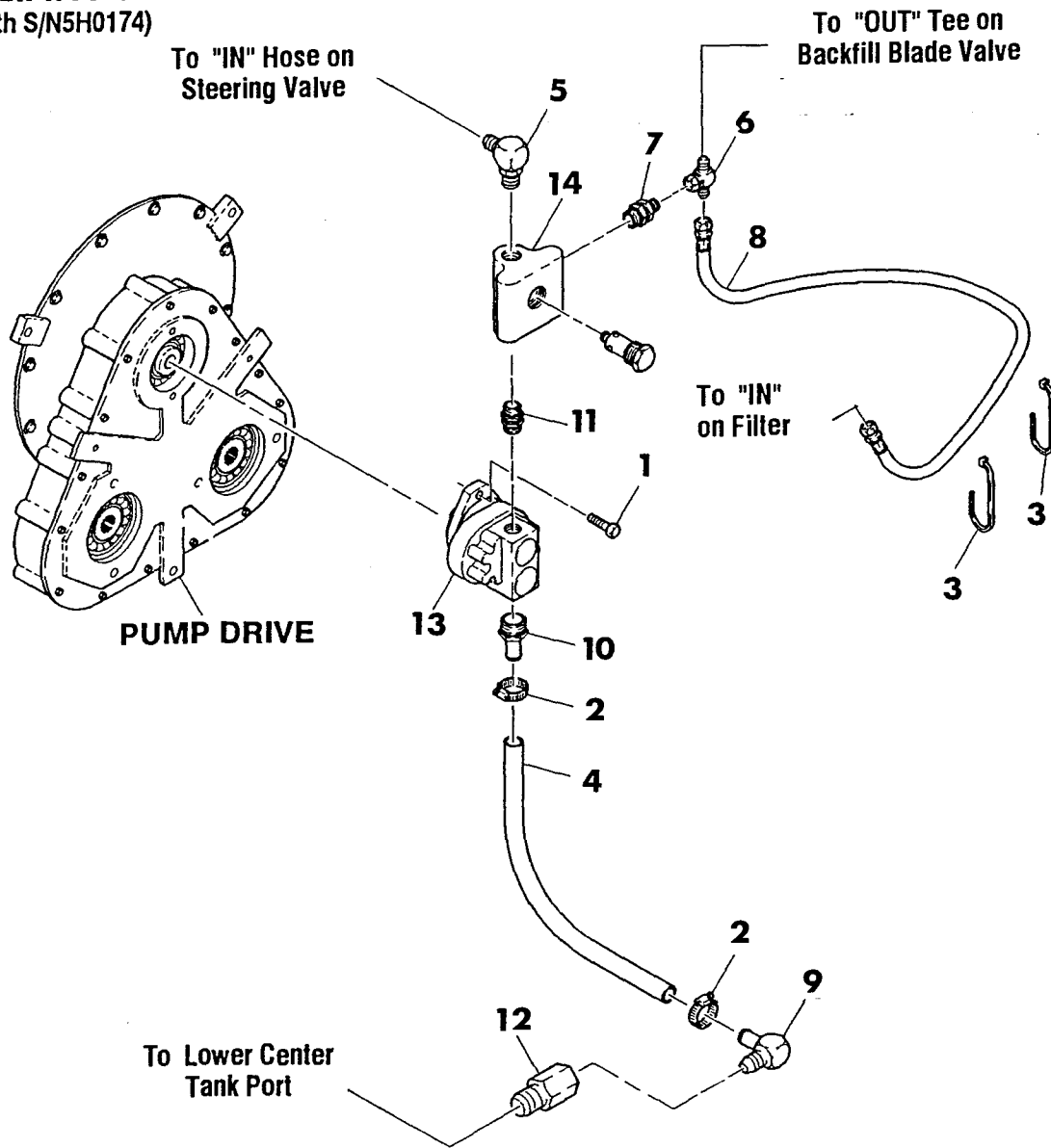
REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	154-346	1	BRANCH TEE
	157-038		O-RING (012 D90)
	155-705		O-RING (906 D90)
2.	154-228	1	CONNECTOR
	157-038		O-RING (012 D90)
3.	154-732	1	HOSE (19" 3000 PSI)
4.	154-420	1	CONNECTOR
	157-038		O-RING (012 D90)

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
5.	158-597	1	BYPASS VALVE
	110-538		VALVE LEVER
6.	154-352	1	CONNECTOR
	157-038		O-RING (012 D90)
7.	154-745	1	HOSE (50" 3000 PSI)
8.	105-820	4	FLANGE LOCK BOLT
9.	105-832	4	FLANGE LOCKNUT



# AUXILIARY PUMP HYDRAULICS

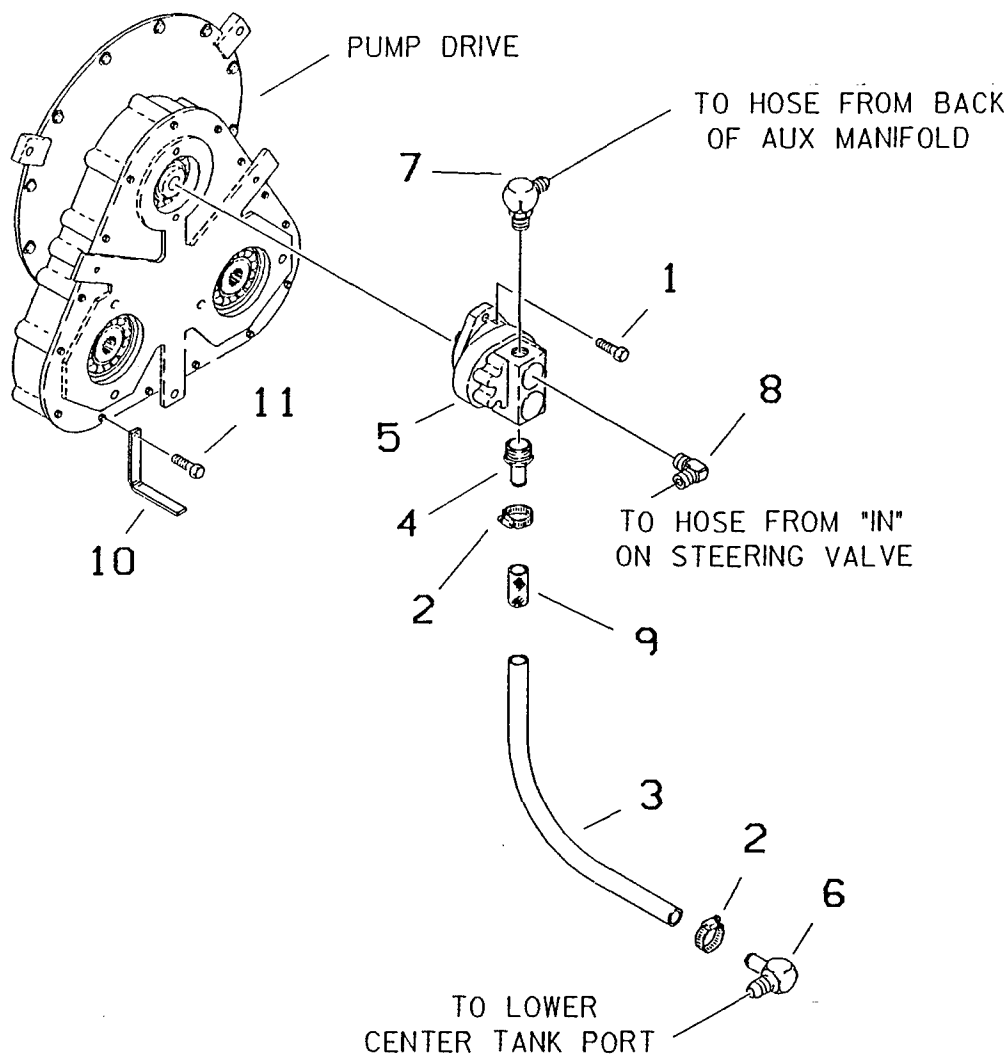
(Ends with S/N5H0174)



Ref. No.	Part Number	Qty.	Description
1.	105-826	2	Flange Lock Bolt (3/8-NC x 1")
2.	110-026	2	Clamp (1/2" to 1-1/4")
3.	110-030	3	Cable Tie (1/16" to 4")
4.	115-374	AR	Hose (3/4" ID)—use 1 of 25"
5.	154-322	1	Connector (-8 ORS M x -10 SAE M x 90°)
	157-039		ORS O-Ring (2-013)
	155-707		SAE O-Ring (-910)
6.	154-348	1	Branch Tee (-6 ORS M x -6 ORS M x -6 ORS FM)
	157-038		ORS O-Ring (2-012)
7.	154-369	1	Connector (-6 ORS M x -10 SAE M, STR)
	157-038		ORS O-Ring (2-012)
	155-707		SAE O-Ring (-910)
8.	154-735	1	Hose (-6 ORS FM x 70", 3000 PSI)

Ref. No.	Part Number	Qty.	Description
9.	155-174	1	Slip On Coupler (-12 SAE M x -12 hub x 90°)
	155-709		SAE O-Ring (-912)
10.	155-211	1	Slip On Coupler (-16 SAE M x -12 hub, STR)
	155-748		SAE O-Ring (-916)
11.	155-212	1	Adapter Connector (-10 SAE M x -10 SAE M, STR)
	155-707		SAE O-Ring (-910)
12.	155-222	1	Adapter Bushing (-16 SAE M x -12 SAE FM)
	155-748		SAE O-Ring (-916)
13.	158-317	1	Hydraulic Pump
	500-470		Seal Repair Kit
14.	158-565	1	Relief Valve (2500 PSI)
	155-679		Relief Cartridge

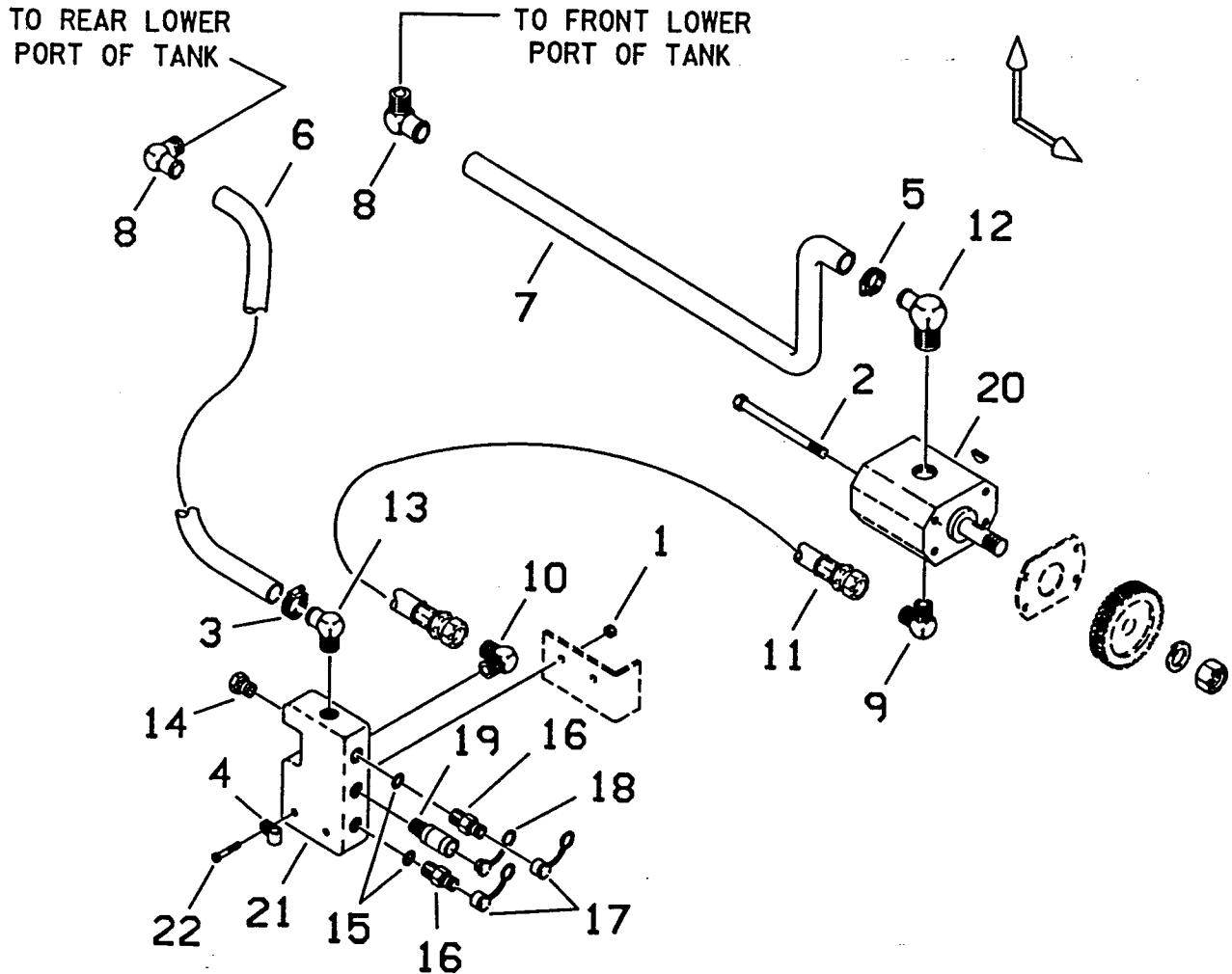
# AUXILIARY PUMP HYDRAULICS BEGINS WITH S/N 5H0175



REF. NO.	PART NUMBER	QTY.	DESCRIPTION	REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	105-826	2	FLANGE LOCK BOLT	7.	154-298	1	CONNECTOR
2.	110-353	2	HOSE CLAMP		155-707		O-RING (910 D90)
3.	116-080	AR	HOSE (1-1/4" X 74")		157-040		O-RING (016 D90)
4.	155-004	1	SLIP-ON COUPLER	8.	154-421	1	CONNECTOR
	155-702		O-RING (920 D90)		155-707		O-RING (910 D90)
5.	158-324	1	DOUBLE HYDRAULIC PUMP		157-038		O-RING (912 D90)
	500-470		SEAL REPAIR KIT (2 PER PUMP)	9.	115-687	AR	ABRASION SLEEVE (12')
6.	155-149	1	SLIP-ON COUPLER	10.	363-128	1	HOSE SUPPORT
	155-748		O-RING (916 D90)	11.	105-873	1	FLANGE LOCK BOLT

# AUXILIARY MANIFOLD HYDRAULICS

(Ends with S/N5H0174)

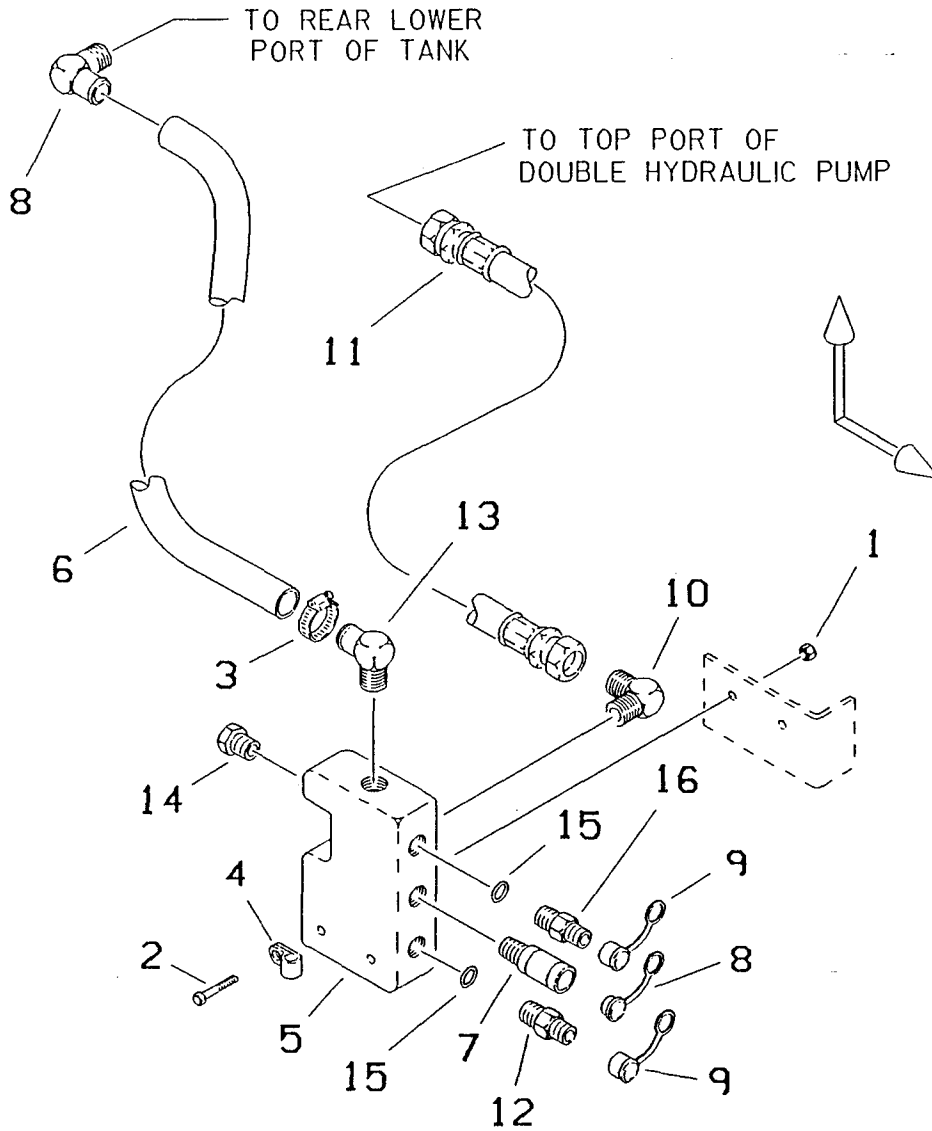


Ref. No.	Part Number	Qty.	Description
1.	105-834	2	Flange Locknut (3/8-NC)
2.	106-165	2	Bolt (M10-1.5 x 120mm)
3.	110-026	2	Hose Clamp (1/2" to 1-1/4")
4.	110-097	1	Clamp (1/2")
5.	110-353	2	Hose Clamp (3/4" to 1-1/2")
6.	115-374	AR	Hose (3/4" ID)—use 74"
7.	116-366	1	Hose (1" ID x 1.5" OD x 33" LG)
8.	154-188	1	Slip On Coupler (-16 SAE M x -16 hub x 90°)
	155-748		SAE O-Ring (-916)
9.	154-298	1	Connector (-10 ORS M x -10 SAE M x 90°)
	157-040		ORS O-Ring (2-016)
	155-707		SAE O-Ring (-910)
10.	154-300	1	Connector (-10 ORS M x -12 SAE M x 90°)
	157-040		ORS O-Ring (2-016)
	155-709		SAE O-Ring (-912)
11.	154-710	1	Hose (-10 ORS x 54", 2750 PSI)

Ref. No.	Part Number	Qty.	Description
12.	155-146	1	Slip On Coupler (-12 SAE M x -16 hub x 90°)
	155-709		SAE O-Ring (-912)
13.	155-174	1	Slip On Coupler (-12 SAE M x -12 hub x 90°)
	155-709		SAE O-Ring (-912)
14.	155-630	1	Relief Cartridge (2000 PSI)
15.	155-709	2	O-Ring (-912)
16.	155-933	2	Quick Coupler Adapter (-12 SAE M)
17.	155-935	2	Dust Cap
18.	155-936	1	Dust Plug
19.	155-958	1	Trick Quick Coupler (-14 SAE M)
	155-747		SAE O-Ring (-914)
20.	158-318	1	Hydraulic Pump (manifold)
	500-613		Seal Repair Kit
21.	159-080	1	Hydraulic Manifold
22.	500-003	2	Bolt (3/8-NC x 2-3/4")

# AUXILIARY MANIFOLD HYDRAULICS

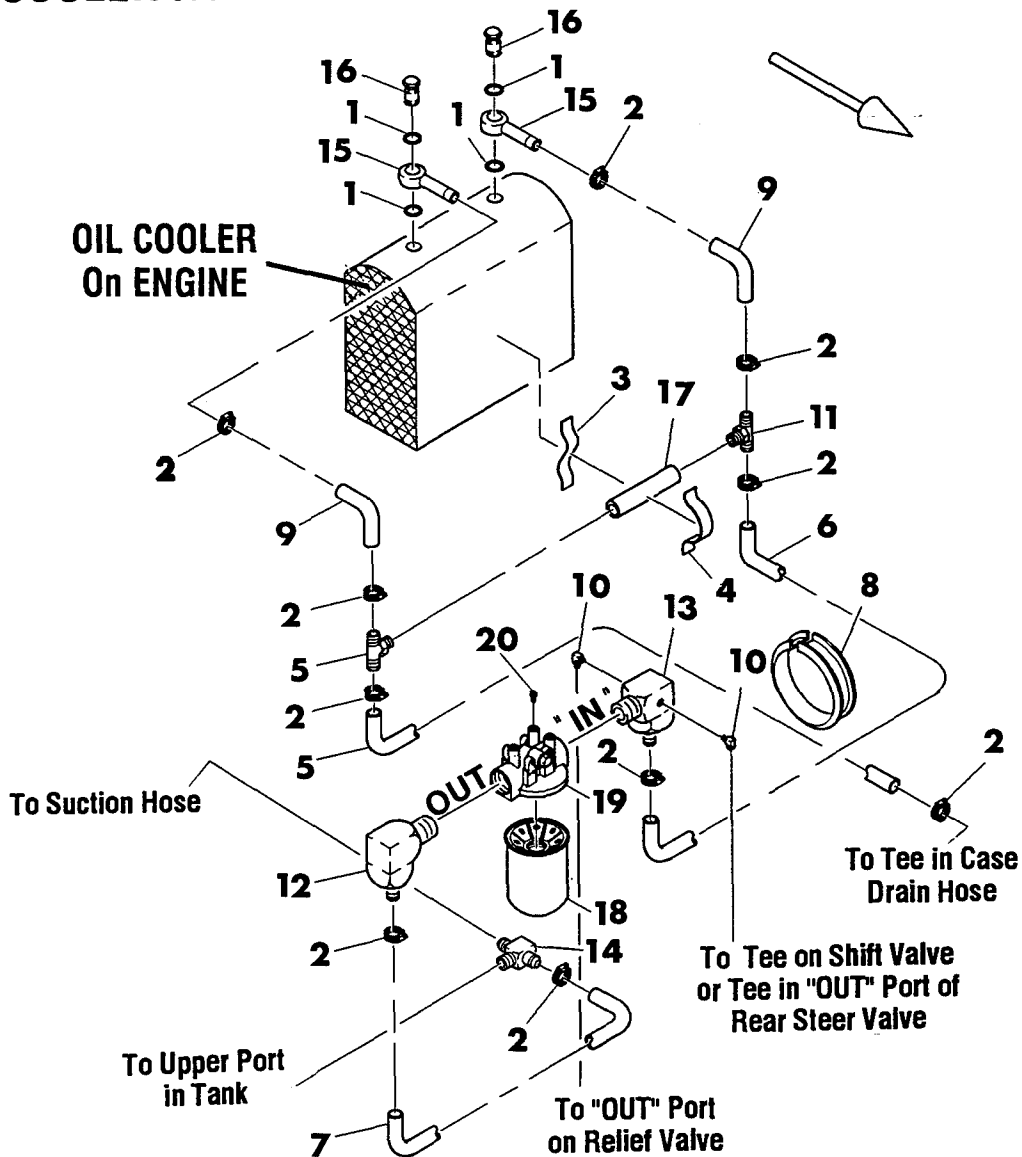
BEGINS WITH S/N 5H0175



REF. NO.	PART NUMBER	QTY.	DESCRIPTION
1.	105-834	2	FLANGE LOCKNUT
2.	500-003	2	BOLT (3/8-NC X 2-3/4")
3.	110-026	2	HOSE CLAMP
4.	110-097	1	CLAMP
5.	159-080	1	HYDRAULIC MANIFOLD
6.	115-374	AR	HOSE (3/4" X 74")
7.	155-958	1	TRICK BODY
	155-747		O-RING (914 D90)
8.	155-936	1	DUST PLUG
9.	155-935	2	DUST CAP

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
10.	154-300	1	CONNECTOR
	157-040		O-RING (016 D90)
	155-709		O-RING (912 D90)
11.	154-710	1	HOSE (54" 2750 PSI)
12.	155-933	2	QUICK COUPLER ADAPTER
13.	155-174	1	SLIP ON COUPLER
	155-709		O-RING (912 D90)
14.	155-630	1	RELIEF CARTRIDGE
15.	155-709	2	O-RING (912 D90)

# OIL COOLER HYDRAULICS

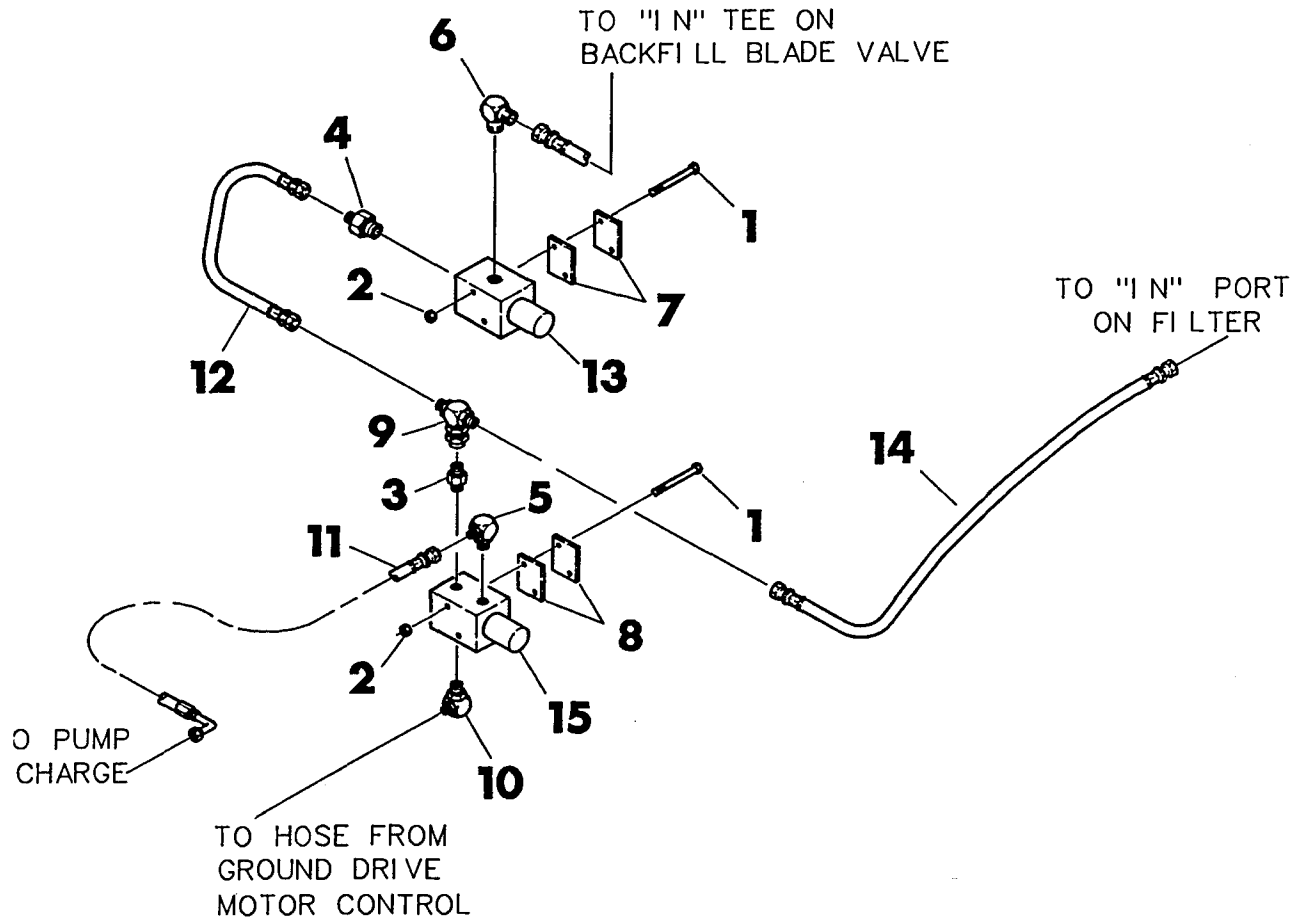


Ref. No.	Part Number	Qty.	Description
1.	155-748	4	O-Ring (-916)
2.	110-353	10	Hose Clamp (3/4" to 1-1/2")
3.	110-366	1	Bottom Velcro Strip (1" WID)—use 8"
4.	110-431	1	Top Velcro Strip (1" WID)—use 8"
5.	116-094	AR	Hose (1" ID)—use 39"
6.	116-094	AR	Hose (1" ID)—use 85"
7.	116-094	AR	Hose (1" ID)—use 32"
8.	116-259	AR	Grommet Edging (use 12.5")
9.	116-360	2	Hose (1" ID x 1.5" OD x 3.5" LG)
10.	154-342	2	Connector (-6 ORS M x -6 SAE M x 90°)
	157-038		ORS O-Ring (2-012)
	155-705		SAE O-Ring (-906)
11.	154-361	2	Branch Tee (-12 SAE M x -16 hub x -16 hub)
	155-709		SAE O-Ring (-912)
12.	155-195	1	Slip On Coupler (-20 SAE M x -12 hub x 90°)
	155-702		SAE O-Ring (-920)

Ref. No.	Part Number	Qty.	Description
13.	155-213	1	Adapter (-20 SAE M x -16 hub x -24 hub x -6 SAE FM x -6 SAE FM)
	155-702		SAE O-Ring (-920)
14.	155-215	1	Branch Tee (-16 SAE M x -16 hub x -24 hub x -8 SAE FM)
	155-748		SAE O-Ring (-916)
15.	156-266	2	Banjo Fitting (.75" ID x 1" OD)
16.	156-267	2	Banjo Bolt (M30-1.5 x 1/2" LG)
17.	158-576	1	Check Valve (-12 SAE FM)
18.	159-079	1	Filter Element
19.	159-081	1	Hydraulic Filter (Incl. ref. no. 18)
20.	501-153	3	Flange Lock Bolt (3/8-NC x 5/8")

# VALVE HYDRAULICS

## Units without Rear Steering

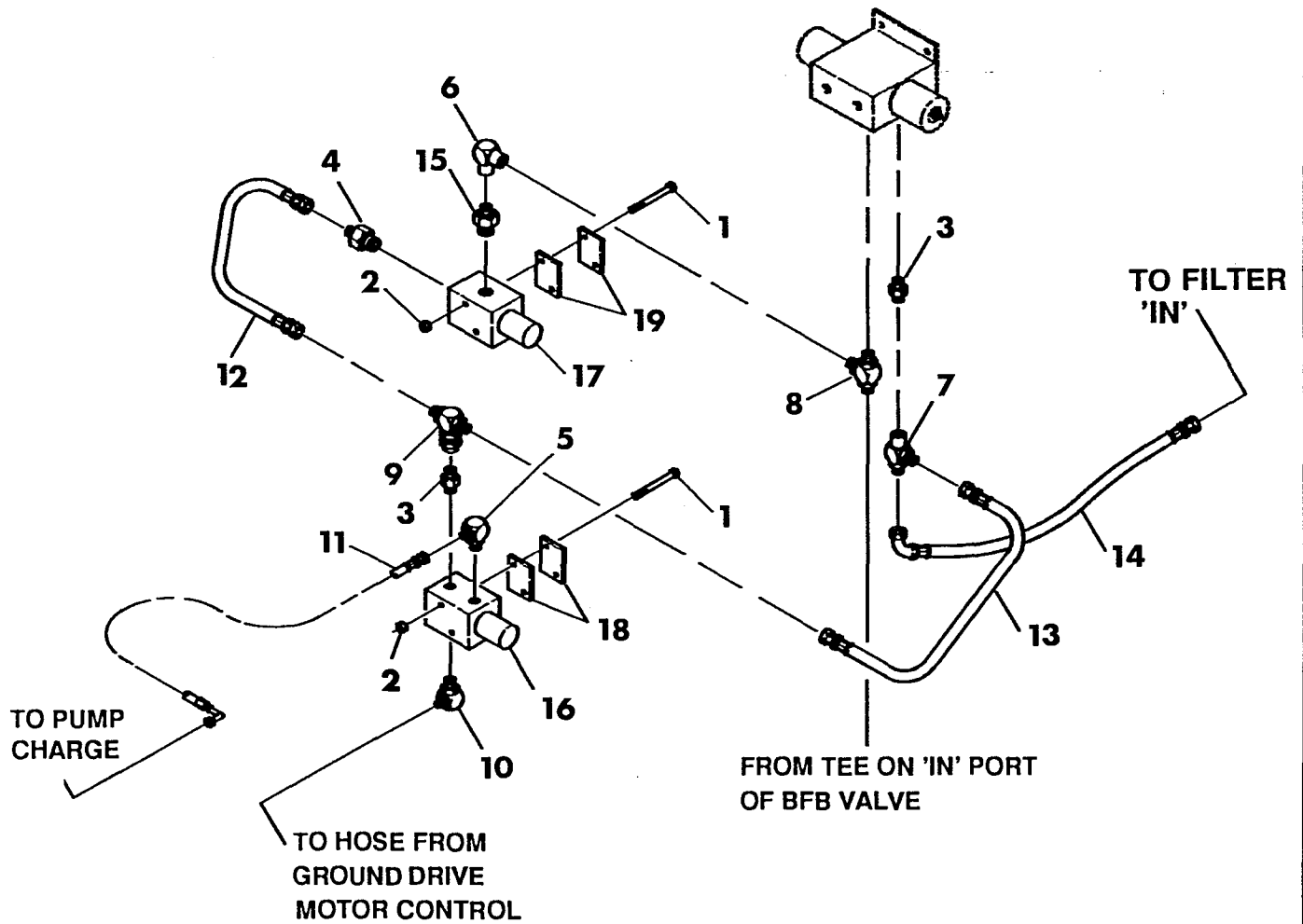


Ref. No.	Part Number	Qty.	Description
1.	105-224	4	Bolt (1/4-NC x 2-1/2")
2.	105-832	4	Flange Locknut (1/4-NC)
3.	154-221	1	Connector (-6 ORS M x -6 SAE M, STR)
	157-038		ORS O-Ring (2-012)
	155-705		SAE O-Ring (-906)
4.	154-222	1	Connector (-6 ORS M x -8 SAE M, STR)
	157-038		ORS O-Ring (2-012)
	155-706		SAE O-Ring (-908)
5.	154-226	1	Connector (-4 ORS M x -6 SAE M x 90°)
	157-037		ORS O-Ring (2-011)
	155-705		SAE O-Ring (-906)
6.	154-227	1	Adapter Union (-6 ORS M x -6 SAE M x 90°)
	155-705		SAE O-Ring (-906)
7.	324-127	2	Valve Spacer

Ref. No.	Part Number	Qty.	Description
8.	314-132	2	Valve Spacer Plate
9.	154-348	1	Branch Tee (-6 ORS M x -6 ORS M x -6 ORS FM)
	157-038		ORS O-Ring (2-012)
10.	154-364	2	Connector (-4 ORS M x -6 SAE M x 90°)
	157-037		ORS O-Ring (2-011)
	155-705		SAE O-Ring (-906)
11.	154-705	1	Hose (-4 ORS FM STR/90° x 60", 3000 PSI)
12.	154-722	1	Hose (-6 ORS FM x 32", 3000 PSI)
13.	158-569	1	Hydraulic Control Valve
	216-016		Solenoid Coil
	500-609		Plunger Seal Kit
14.	154-734	1	Hose (-6 ORS FM x 46", 3000 PSI)
15.	158-555	1	Solenoid Control Valve

# VALVE HYDRAULICS

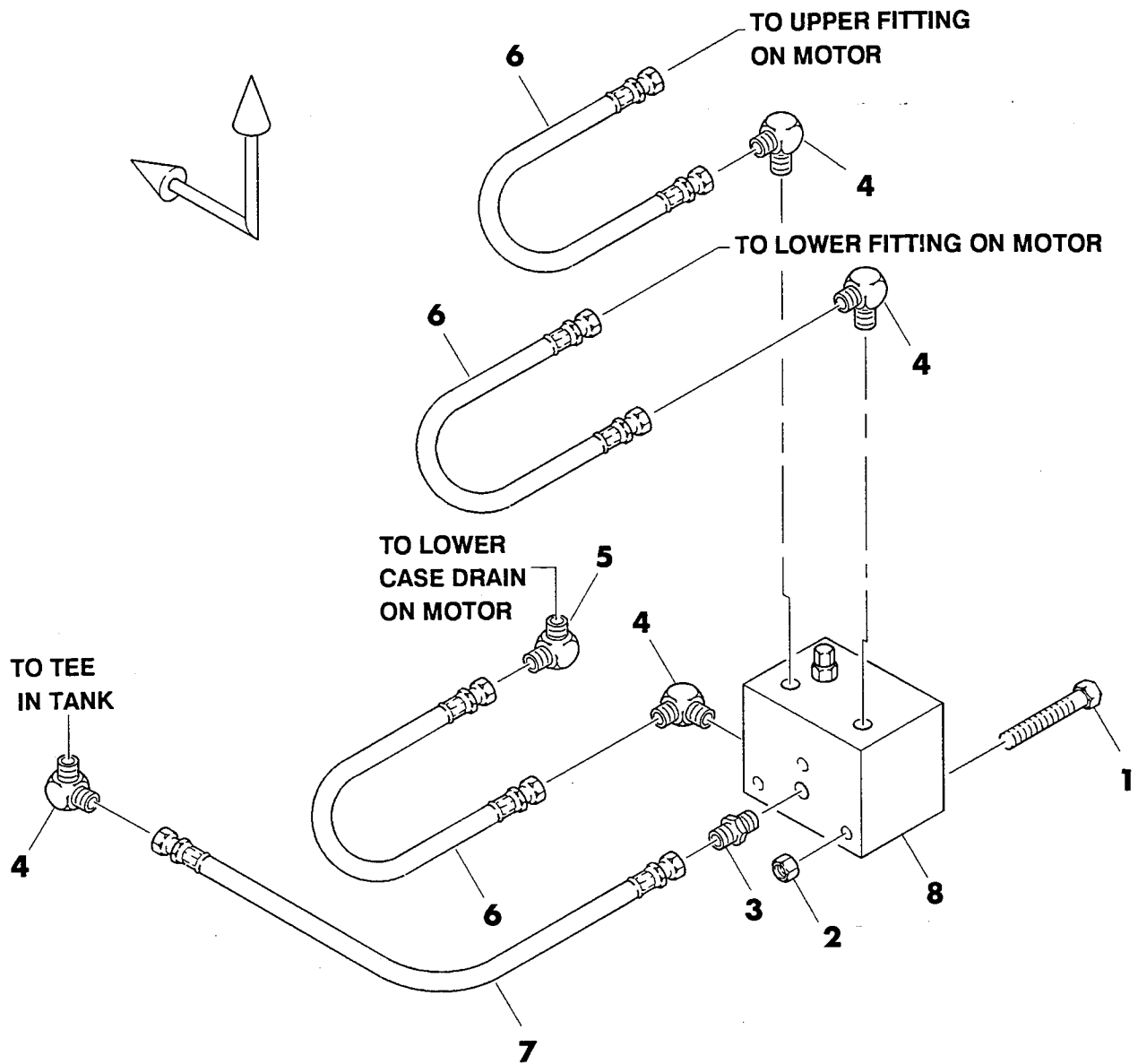
## Units with Rear Steering



Ref. No.	Part Number	Qty.	Description
1.	105-224	4	Bolt (1/4-NC x 2-1/2")
2.	105-832	4	Flange Locknut (1/4-NC)
3.	154-221	2	Connector (-6 ORS M x -6 SAE M, STR)
	157-038		ORS O-Ring (2-012)
	155-705		SAE O-Ring (-906)
4.	154-222	1	Connector (-6 ORS M x -8 SAE M, STR)
	157-038		ORS O-Ring (2-012)
	155-706		SAE O-Ring (-908)
5.	154-226	1	Connector (-4 ORS M x -6 SAE M x 90°)
	157-037		ORS O-Ring (2-011)
	155-705		SAE O-Ring (-906)
6.	154-343	1	Adapter Union (-6 ORS M x -6 SAE M x 90°)
	155-705		SAE O-Ring (-906)
7.	154-344	1	Run Tee (-6 ORS FM x -6 ORS M x -6 ORS M)
	157-038		ORS O-Ring (2-012)
8.	154-345	1	Run Tee (-6 ORS M x -6 ORS M x -6 SAE M)
	157-038		ORS O-Ring (2-012)
	155-705		SAE O-Ring (-906)

Ref. No.	Part Number	Qty.	Description
9.	154-348	1	Branch Tee (-6 ORS M x -6 ORS M x -6 ORS FM)
	157-038		ORS O-Ring (2-012)
10.	154-364	2	Connector (-4 ORS M x -6 SAE M x 90°)
	157-037		ORS O-Ring (2-011)
	155-705		SAE O-Ring (-906)
11.	154-705	1	Hose (-4 ORS FM STR/90° x 60", 3000 PSI)
12.	154-722	1	Hose (-6 ORS FM x 32", 3000 PSI)
13.	154-732	1	Hose (-6 ORS FM x 19", 3000 PSI)
14.	154-734	1	Hose (-6 ORS FM x 46", 3000 PSI)
15.	155-163	1	Adapter Bushing (-8 SAE M to -6 SAE FM)
	155-706		SAE O-Ring (-908)
16.	158-555	1	Solenoid Control Valve
17.	158-569	1	Hydraulic Control Valve
	216-016		Solenoid Coil
	500-608		Plunger Seal Kit
18.	314-132	2	Valve Spacer Plate
19.	324-127	2	Valve Spacer

# FLUSHING VALVE HYDRAULICS

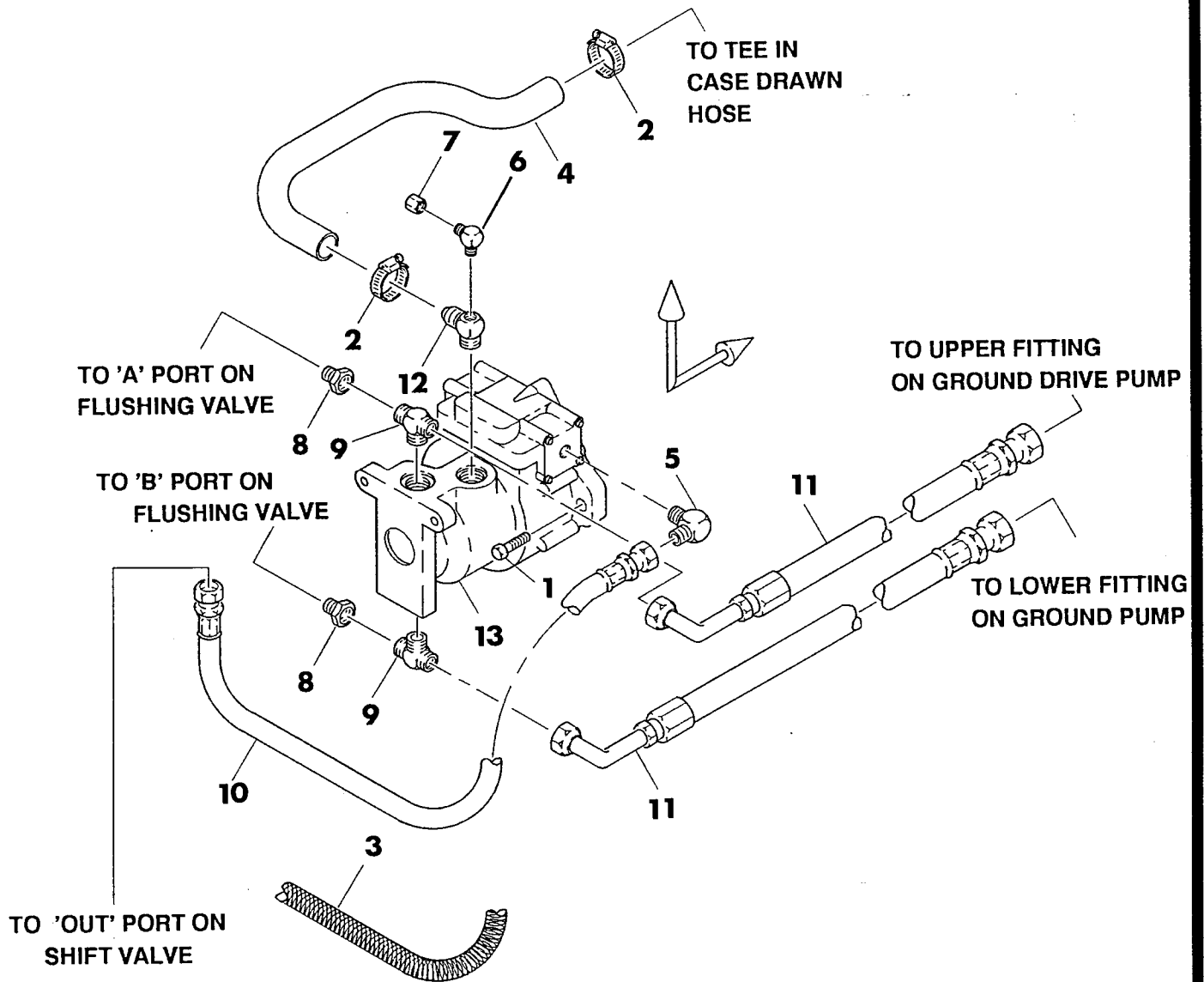


Ref. No.	Part Number	Qty.	Description
1.	105-217	3	Bolt (3/8-NC x 4-1/2")
2.	105-834	3	Flange Locknut (3/8-NC)
3.	154-233	1	Connector (-8 ORS M x -8 SAE M, STR)
	157-039		ORS O-Ring (2-013)
	155-706		SAE O-Ring (-908)
4.	154-235	4	Connector (-8 ORS M x -8 SAE M x 90°)
	157-039		ORS O-Ring (2-013)
	155-706		SAE O-Ring (-908)
5.	154-236	1	Connector (-8 ORS M x -12 SAE M x 90°)
	157-039		ORS O-Ring (2-013)
	155-709		SAE O-Ring (-912)

Ref. No.	Part Number	Qty.	Description
6.	154-674	3	Hose (-8 ORS FM x 24", 3000 PSI)
7.	154-739	1	Hose (-8 ORS FM x 32", 3000 PSI)
8.	158-572	1	Hydraulic Manifold Valve
	500-593		Check Valve
	500-594		Relief Valve
	500-595		Solenoid Valve
	500-596		Hot Oil Shuttle Valve



# GROUND DRIVE MOTOR HYDRAULICS

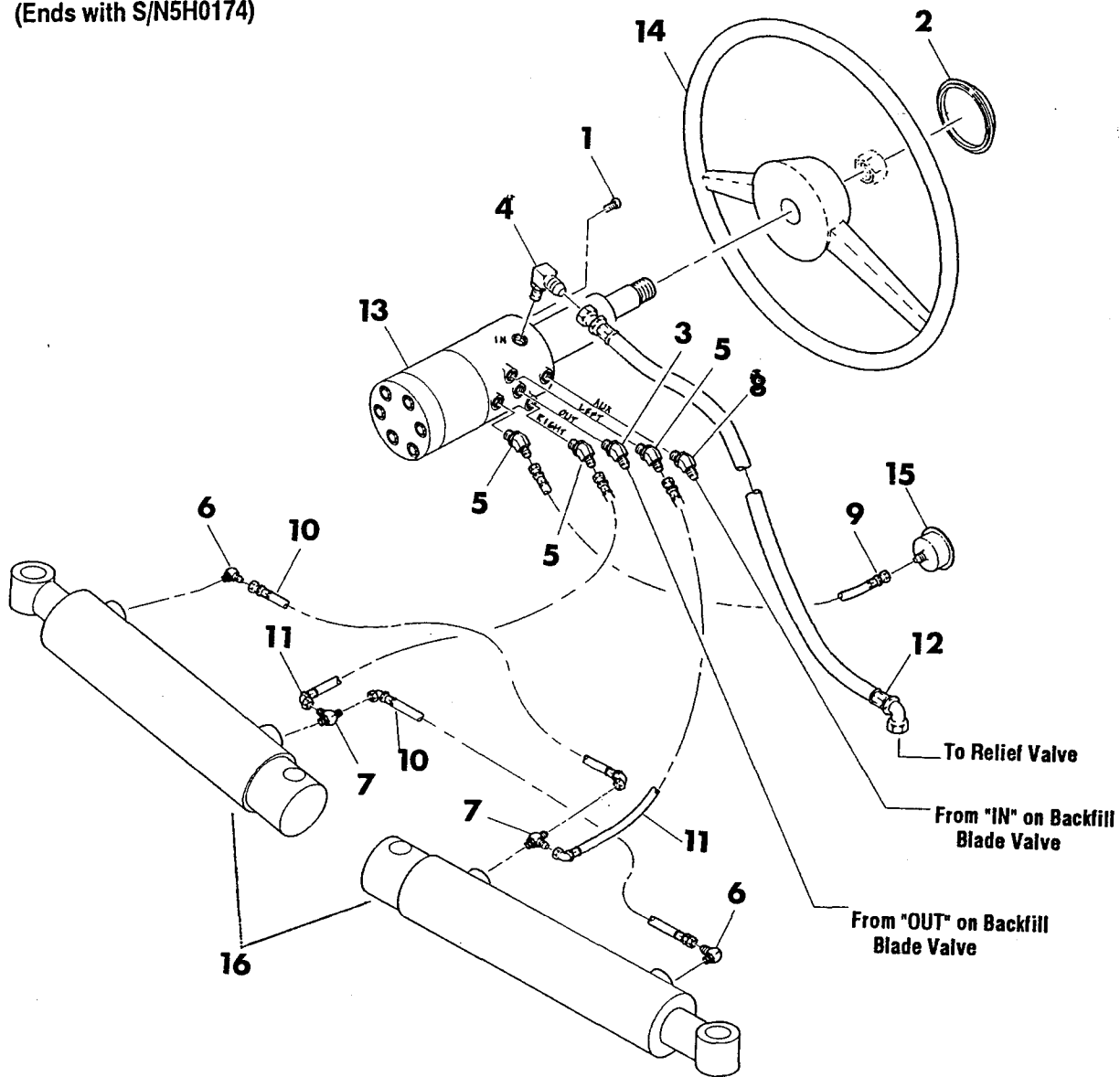


Ref. No.	Part Number	Qty.	Description
1.	105-831	2	Flange Lock Bolt (1/2-NC x 1-1/2")
2.	110-353	2	Clamp (3/4" to 1-1/2")
3.	115-714	1	Abrasion Sleeve (30" LG)
4.	116-110	1	Hose (1" ID x 31-1/2")
5.	154-226	1	Bulkhead Connector (-4 SAE M x -6 ORS M x 90°)
	155-705		SAE O-Ring (-906)
	157-038		ORS O-Ring (2-012)
6.	154-235	1	Connector (-8 ORS M x -8 SAE M x 90°)
	157-039		ORS O-Ring (2-013)
	155-706		SAE O-Ring (-908)
7.	154-327	1	Cap (-8 ORS FM)

Ref. No.	Part Number	Qty.	Description
8.	154-340	2	Bushing Nut (-16 ORS FM)
9.	154-347	2	Branch Tee (-16 ORS M x -16 ORS M x -16 SAE M)
	155-714		ORS O-Ring (-021)
	155-748		SAE O-Ring (-916)
10.	154-668	1	Hose (-4 ORS FM x 32", 3000 PSI)
11.	154-741	2	Hose (-16 ORS FM STR/90° x 27.5", 5000 PSI)
12.	155-218	1	Slip On Coupler (-12 SAE M x -16 hub x -8 SAE FM)
	155-709		SAE O-Ring (-912)
13.	158-707	1	Hydraulic Motor

# FRONT STEERING HYDRAULICS

(Ends with S/N5H0174)

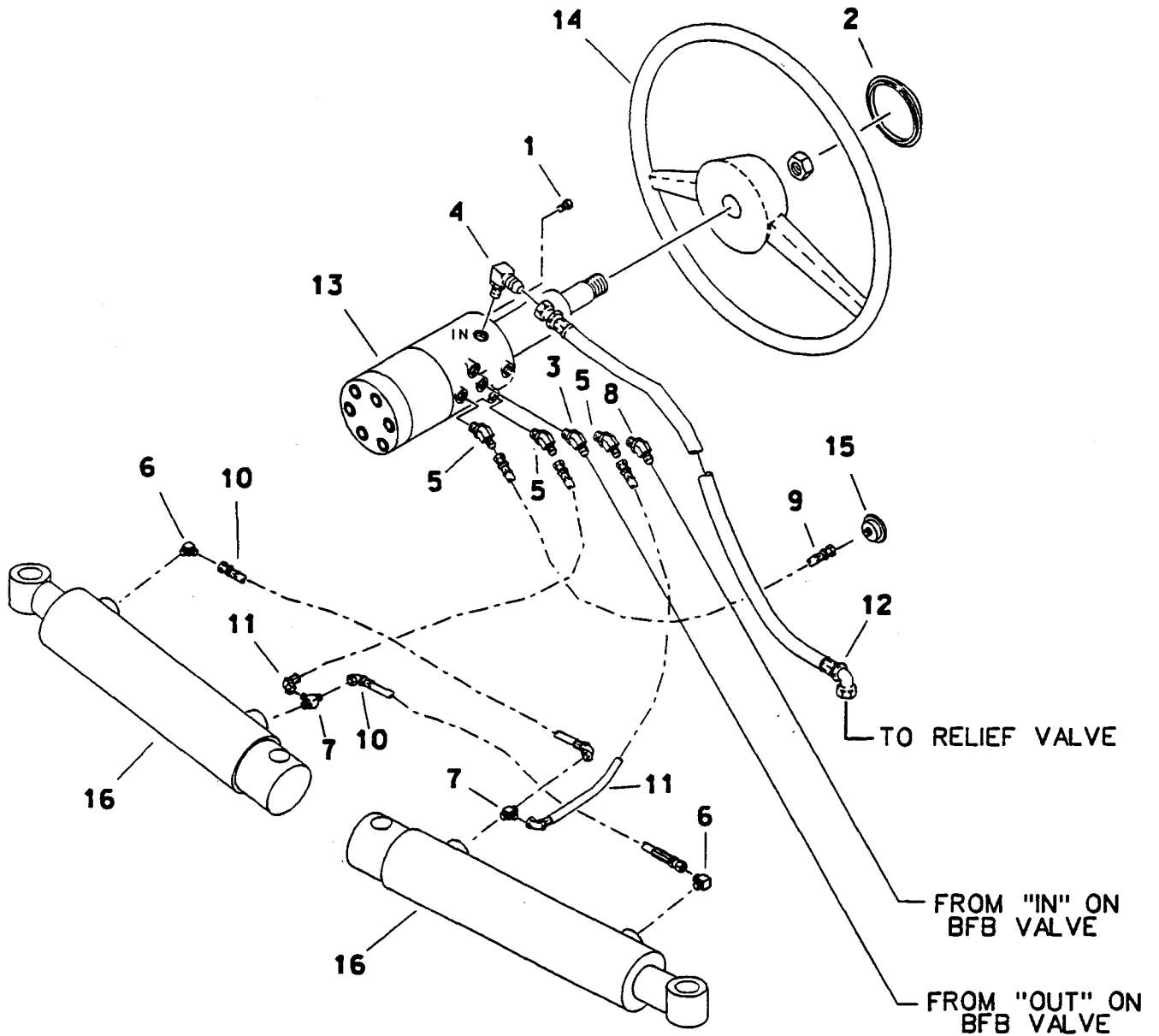


Ref. No.	Part Number	Qty.	Description	Ref. No.	Part Number	Qty.	Description
1.	105-822	4	Flange Lock Bolt (5/16-NC x 1/2")	7.	154-293	2	Branch Tee (-4 ORS M x -4 ORS M x -4 SAE M)
2.	110-525	1	Steering Wheel Cap		157-037		ORS O-Ring (2-011)
3.	154-224	1	Connector (-6 ORS M x -6 SAE M x 45°)		155-760		SAE O-Ring (-904)
				8.	154-253	1	Connector (-8 ORS M x -6 SAE M x 90°)
					157-038		ORS O-Ring (2-012)
					155-705		SAE O-Ring (-906)
4.	154-253	1	Connector (-8 ORS M x -6 SAE M x 90°)		157-038		ORS O-Ring (2-012)
					155-705		SAE O-Ring (-906)
				9.	154-701	1	Hose (-4 ORS FM x 14", 3000 PSI)
				10.	154-701	2	Hose (-4 ORS FM x 14", 3000 PSI)
5.	154-250	3	Connector (-4 ORS M x -6 SAE M x 45°)	11.	154-730	2	Hose (-4 ORS FM STR/45° x 66", 3000 PSI)
				12.	154-740	1	Hose (-8 ORS FM STR/90° x 26", 3000 PSI)
				13.	155-698	1	Power Steering Valve
				14.	160-412	1	Steering Wheel
6.	154-252	2	Connector (-4 ORS M x -4 SAE M x 90°)	15.	217-520	1	Pressure Gauge (3000 PSI)
				16.	151-044	2	Steering Cylinder (2" x 1" x 6")

**NOTES:**

# FRONT STEERING HYDRAULICS

5020/6520



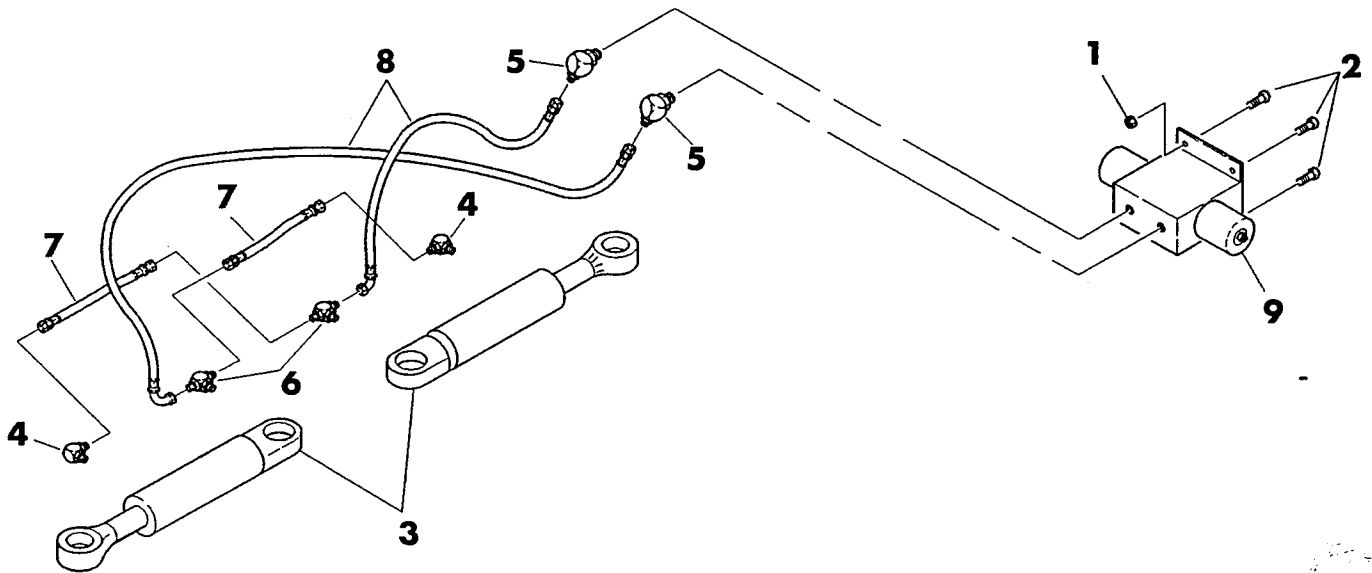
# FRONT STEERING HYDRAULICS

## 5020/6520

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-822	4	FLANGE LOCK BOLT (5/16-NC X 1/2")	
2.	110-663	1	STEERING WHEEL CAP	
3.	154-224	1	CONNECTOR (060-06S45)	
4.	154-342	1	CONNECTOR (060-06S90)	
5.	154-250	3	CONNECTOR (040-06S45)	
6.	154-252	2	CONNECTOR (04S-04090)	
7.	154-293	2	BRANCH TEE (040-040-04S)	
8.	154-253	1	CONNECTOR (080-06S90)	
9.	154-701	1	HOSE (040FX-14"-3000)	
10.	154-701	2	HOSE (040FX-14"-3000)	
11.	154-730	2	HOSE (060-17"-3000)	
12.	154-734	1	HOSE (060-46"-3000)	
13.	158-618	1	POWER STEERING VALVE	
14.	160-428	1	STEERING WHEEL	
15.	217-520	1	PRESSURE GAUGE	3000 PSI
16.	151-044	2	CYL (2.0" X 1.00" X 6.0")	

### FOOTNOTES

# REAR STEERING HYDRAULICS

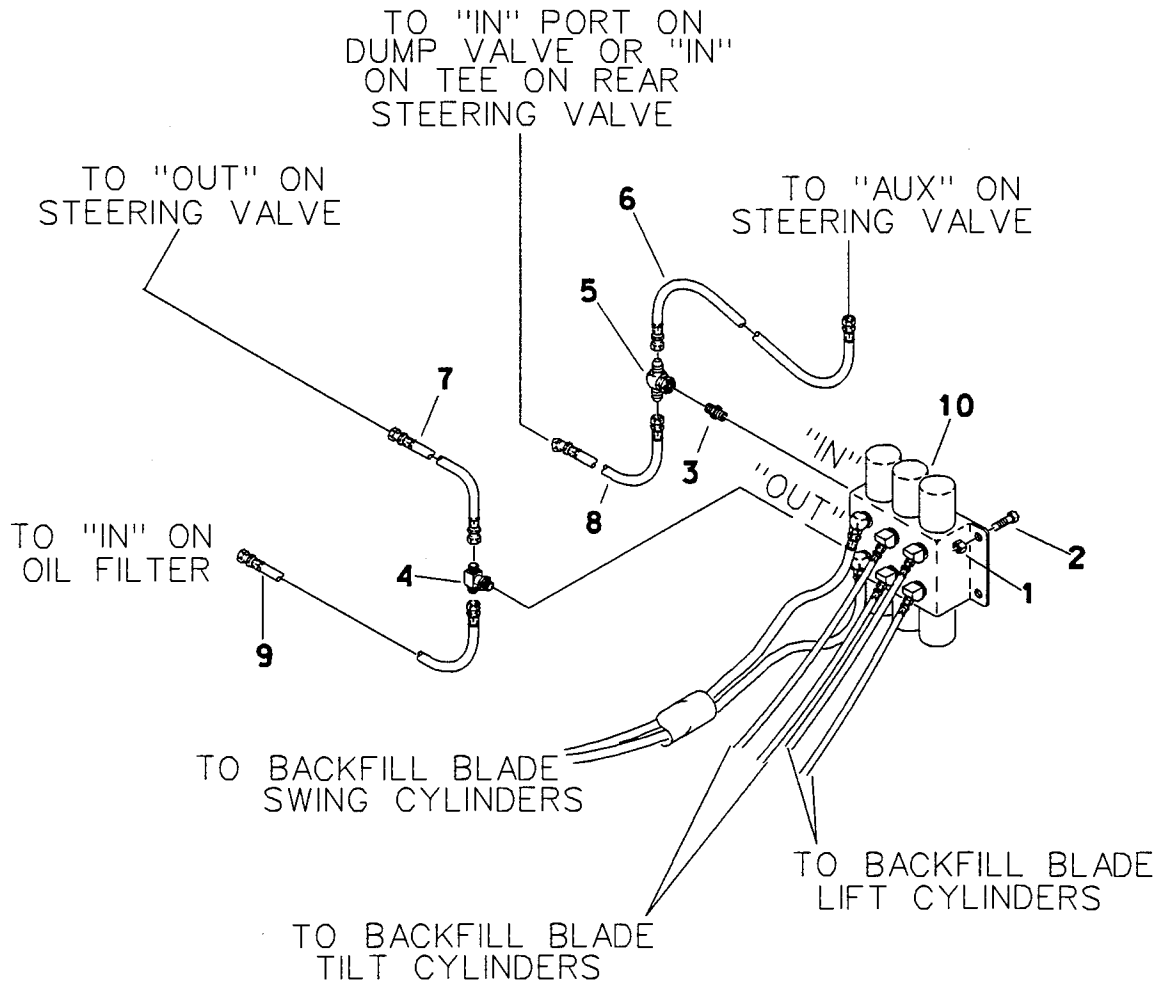


Ref. No.	Part Number	Qty.	Description
1.	105-003	2	Flange Locknut (5/16-NC)
2.	105-873	4	Flange Lock Bolt (5/16-NC x 1")
3.	151-044	2	Steering Cylinder (2" x 1" x 6")
4.	154-252	2	Connector (-4 ORS M x -4 SAE M x 90°)
	157-037		ORS O-Ring (2-011)
	155-760		SAE O-Ring (-904)
5.	154-250	2	Connector (-4 ORS M x -6 SAE M x 45°)
	157-037		ORS O-Ring (2-011)
	155-705		SAE O-Ring (-906)

Ref. No.	Part Number	Qty.	Description
6.	154-293	2	Branch Tee (-4 ORS M x -4 ORS M x -4 SAE M)
	157-037		ORS O-Ring (2-011)
	155-760		SAE O-Ring (-904)
7.	154-701	2	Hose (-4 ORS FM x 14", 3000 PSI)
8.	154-727	2	Hose (-4 ORS FM x 30", 3000 PSI)
9.	158-575	1	Rear Steering Control Valve

**NOTES:**

# BACKFILL BLADE SUPPLY HYDRAULICS





# BACKFILL BLADE SUPPLY HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-003	2	FLANGE LOCKNUT (5/16-NC)	
2.	105-823	4	FLG LK BOLT (5/16-NC X 3/4")	
3.	154-221	1	CONNECTOR (060-06S)	
4.	154-345	1	RUN TEE (060-060-06S)	SEE FOOTNOTE 1
	154-346	1	BRANCH TEE (060-060-06S)	SEE FOOTNOTE 2
5.	154-348	1	BRANCH TEE (06S-06S-06SF)	
6.	154-731	1	HOSE (060F-17"-3000)	
7.	154-732	1	HOSE (060F-19"-3000)	
8.	154-736	1	HOSE (060F45-86"-3000)	
9.	154-737	1	HOSE (060F90-17"-3000)	SEE FOOTNOTE 1
	154-735	1	HOSE (060F-70"-3000)	SEE FOOTNOTE 2
10.	158-574	1	HYDRAULIC CONTROL VALVE	BACKFILL BLADE

## FOOTNOTES

- 1-ENDS WITH S/N 5H0174.
- 2-BEGINS WITH S/N 5H0175.

## NOTE:

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



# BACKFILL BLADE LIFT HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	105-090	2	BLT (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	CLAMP (1-5/8")	
5.	115-755	1	ABRASION SLEEVE	
6.	151-046	1	CYL (3.5" X 1.75" X 6.0")	SEE FOOTNOTE 1
	151-058	1	CYL (3.0" X 1.75" X 6.0")	SEE FOOTNOTE 2
7.	154-224	1	CONNECTOR (060-06S45)	
8.	154-227	2	CONNECTOR (060-08S90)	SEE FOOTNOTE 1
	154-342	2	CONNECTOR (060-06S90)	SEE FOOTNOTE 2
9.	154-382	1	CONNECTOR (040-06S45)	W/.08 ORIFICE
10.	154-683	1	HOSE (060F-66"-3000)	
11.	154-735	1	HOSE (060F-70"-3000)	

## FOOTNOTES

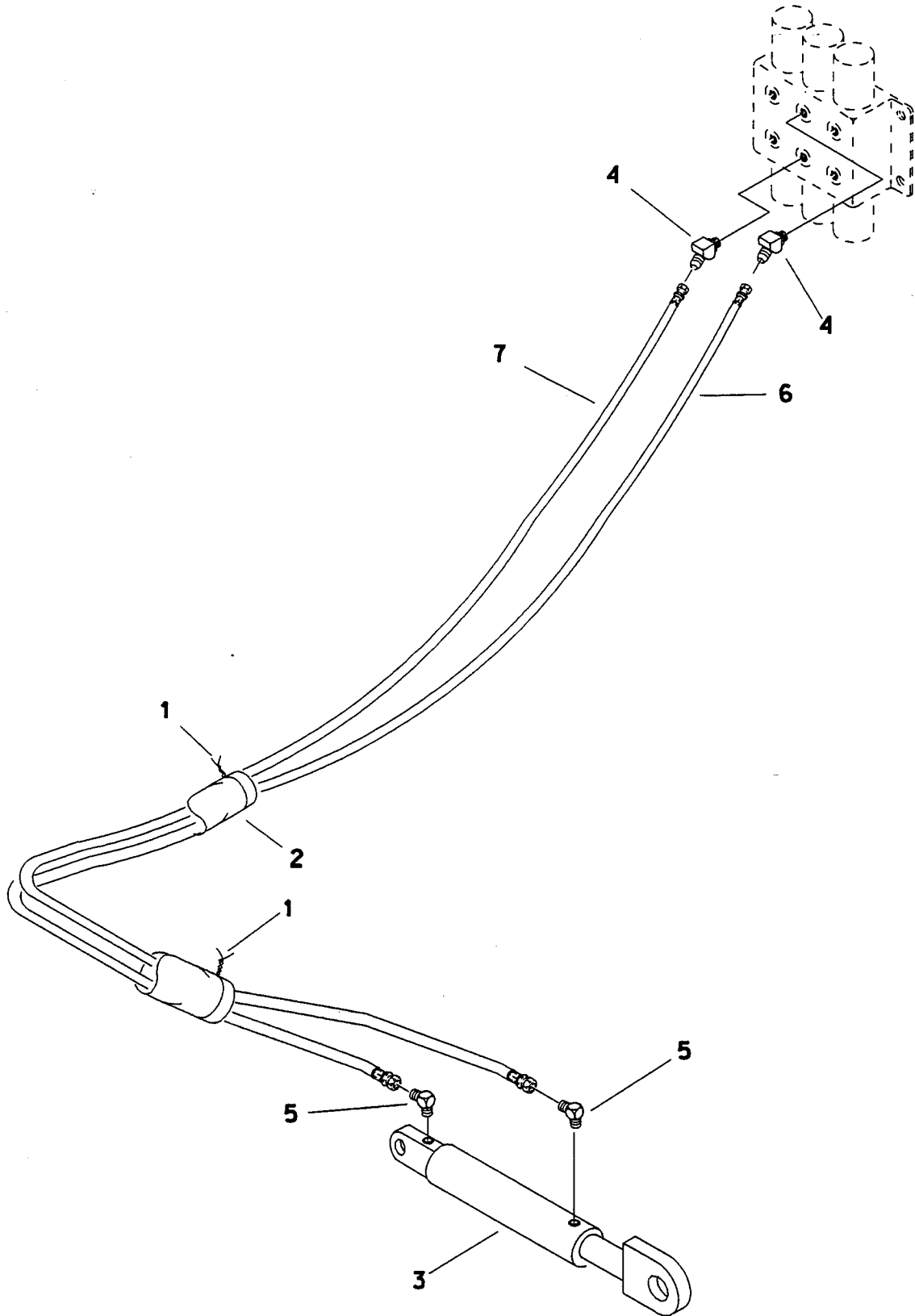
1-ENDS WITH S/N 6G2147. THESE PARTS ARE ASSOCIATED WITH EARLY MODELS THAT HAD LIFT CYLINDERS WITH SAE -8 PORTS.

2-BEGINS WITH S/N 6G2148. THSES PARTS ARE ASSOCIATED WITH PRESENT MODELS THAT HAVE LIFT CYLINDERS WITH -6 SAE PORTS.

## NOTE:

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

# BACKFILL BLADE TILT HYDRAULICS



# BACKFILL BLADE TILT HYDRAULICS

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
1.	110-030	2	CABLE TIE	
2.	115-713	1	ABRASION SLEEVE	
3.	151-039	1	CYL (2.0" X 1.0" X 5.0")	
4.	154-250	2	CONNECTOR (04D-06S45)	
5.	154-252	2	CONNECTOR (04D-04S90)	
6.	154-724	1	HOSE (040F-82"-3000)	
7.	154-725	1	HOSE (040F-90"-3000)	

## FOOTNOTES

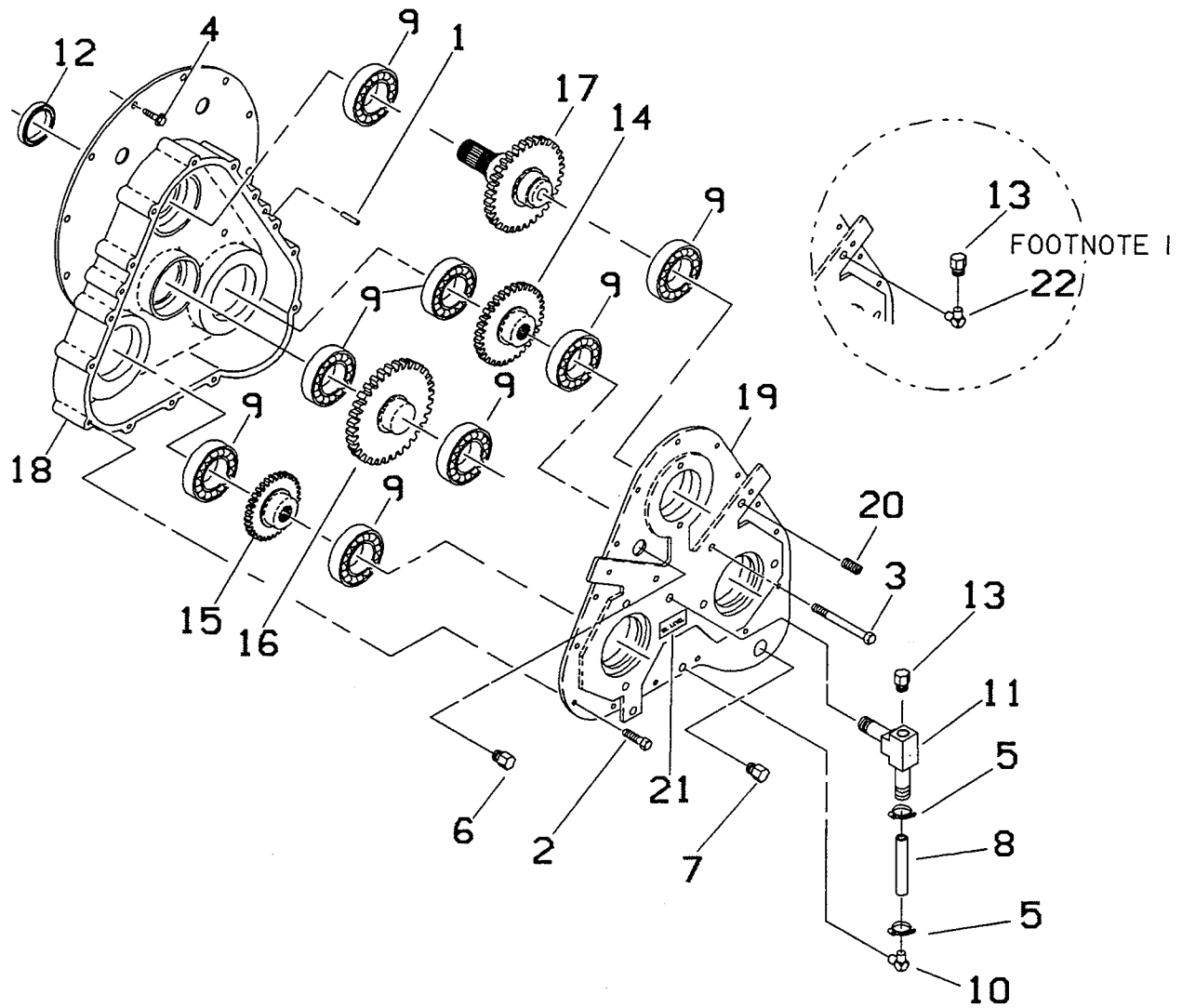
## NOTE:

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

# **Assembly Drawings**

**NOTES:**

# PUMP DRIVE





# PUMP DRIVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	166-060		PUMP DRIVE	INCL. REF. NO.'S 1, 2 & 5 THRU 20
1.	105-542	2	DOWEL PIN (1/4" X 1-1/4")	
2.	105-873	15	FLANGE LOCK BOLT	
3.	106-124	2	BOLT (M10-1.5 X 110mm)	
	105-022	2	BOLT (3/8-NC X 4")	8020 ONLY
4.	106-164	8	FLANGE BOLT (M10-1.5 X 30mm)	
	105-826	8	FLANGE LOCKBOLT	8020 ONLY
5.	110-491	2	CLAMP	
6.	115-165	1	PIPE PLUG	
7.	115-211	1	PIPE PLUG	
8.	116-166	AR	TUBING	USE 4.5"
9.	125-040	8	BEARING	
10.	155-158	1	SLIP ON COUPLER	SEE FOOTNOTE 2
11.	155-252	1	VENT TEE	
12.	157-552	1	INTERNAL SEAL	
13.	159-003	1	VENT PLUG	SEE FOOTNOTE 1
14.	165-111	1	GEAR	
15.	165-110	1	GEAR	
16.	165-109	1	GEAR	
17.	167-145	1	INPUT PINION SHAFT	
18.	169-022	1	PUMP HOUSING	
19.	169-023	1	PUMP COVER	
20.	115-157	1	PIPE PLUG	
21.	274-178	1	OIL LEVEL DECAL	
22.	156-241	1	STREET ELBOW	SEE FOOTNOTE 1

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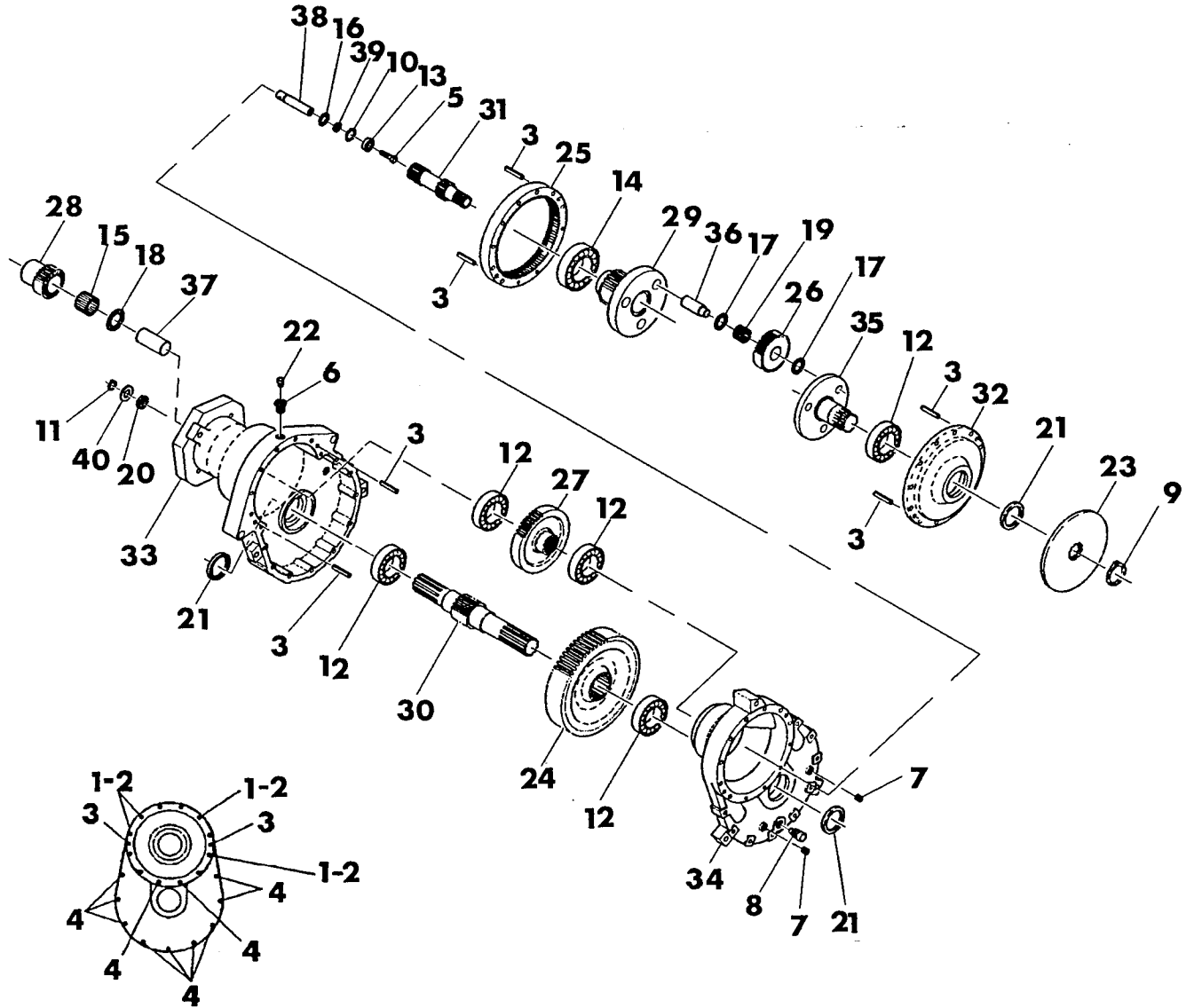
256-603 AR BLACK SILICONE

FOOTNOTES

1. -STREET ELBOW (REF. NO. 22) WAS USED IN EARLY STYLE MOUNTING OF VENT PLUG (\*159-003) ON 5020 ONLY.

2. -EARLY STYLE USED AN ADDITIONAL COUPLER (REF. NO.10) AND SERVICE TEE (\*156-237) FOR VENT PLUG (\*159-003) INSTEAD OF (REF. NO.11).

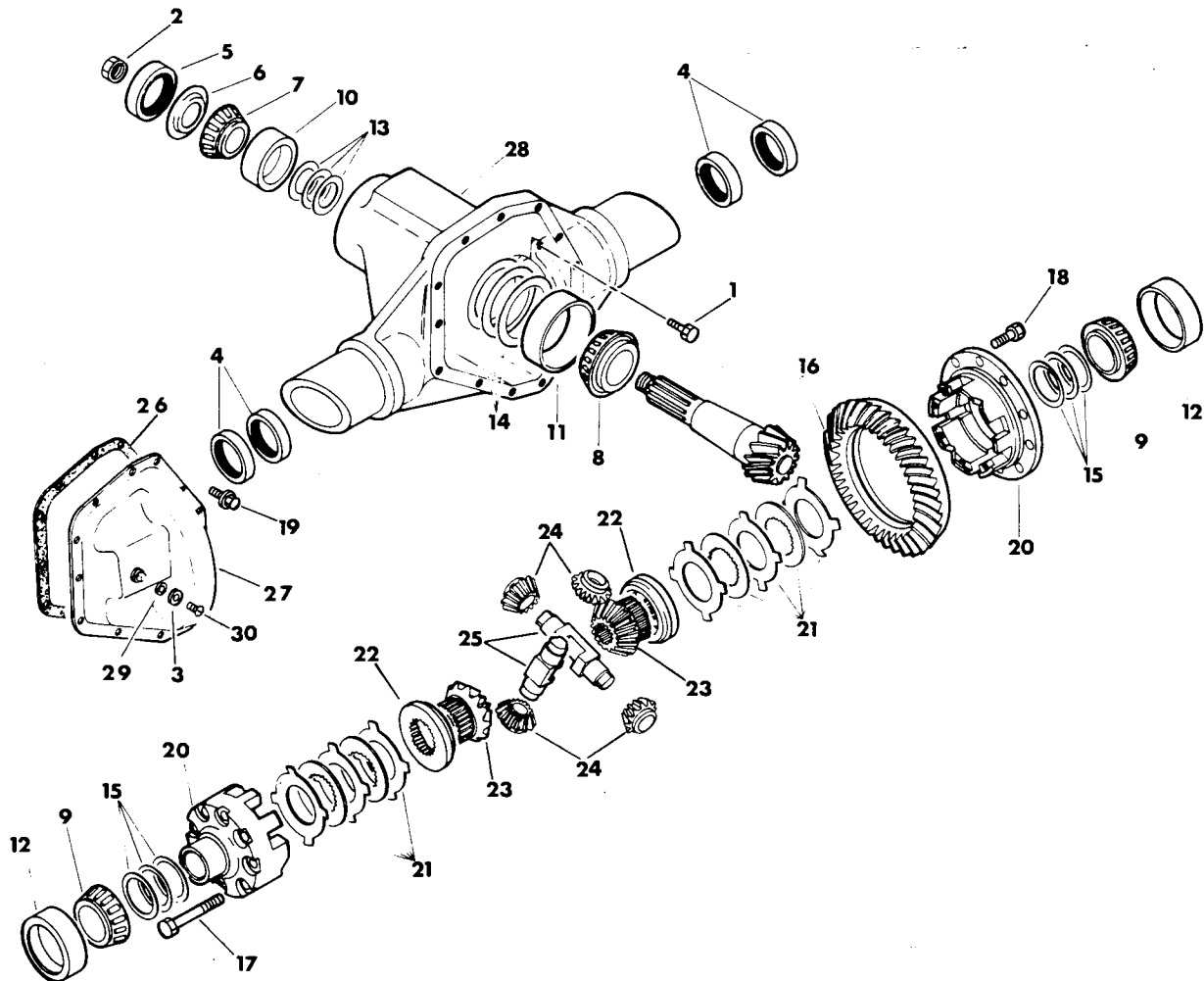
# GROUND DRIVE TRANSMISSION



Ref. No.	Part Number	Qty.	Description
	166-059		Ground Drive Transmission (Incl. ref. no.'s 1 thru 40)
1.	105-022	4	Bolt (3/8-NC x 4")
2.	105-072	4	Lock Washer (3/8")
3.	105-520	6	Roll Pin (3/8" x 1-1/4")
4.	105-883	12	Flange Lock Bolt (3/8-NC x 2")
5.	106-156	1	Bolt (3/8-NF x 1.06")
6.	115-127	1	Pipe Bushing (-8 NPT M to -1 NPT FM)
7.	110-549	1	Sight Gauge
8.	115-243	1	Pipe Plug (-10 NPT M, magnetic)
9.	115-456	1	External Snap Ring (for 1.75" shaft)
10.	115-544	1	Internal Snap Ring (for 1.188" ID housing)
11.	115-545	1	External Snap Ring (for .75" shaft)
12.	125-040	5	Bearing (50mm ID x 90mm OD)
13.	125-072	1	Bearing (.3937" ID x 1.18" OD)
14.	125-073	1	Bearing (2.36" ID x 4.33" OD)
15.	125-366	1	Bearing (1.375" ID x 1/75" OD x 1.25" WID)
16.	125-375	1	Thrust Race (.75" ID x 1.25" OD)
17.	126-009	6	Thrust Race (1" ID x 1.56" OD)
18.	126-010	1	Thrust Race (1.375" ID x 2.06" OD)
19.	126-011	3	Needle Bearing (1" ID x 1.31" OD x 1" WID)
20.	155-878	1	Internal Seal (.75" ID x 1.25" OD)
21.	157-552	3	Internal Seal (1.969" ID x 2.63" OD)

Ref. No.	Part Number	Qty.	Description
22.	159-003	1	Vent Plug (-1 NPT M, STR)
23.	163-092	1	Brake Disc
24.	165-104	1	Lower Output Gear (58T OD x 19S ID)
25.	165-105	1	Ring Gear (96T ID)
26.	165-106	3	Planet Gear (42T OD)
27.	165-107	1	Lower Input Gear (49T OD x 18S ID)
28.	165-108	1	Input Gear (21T OD x 13S ID)
29.	165-112	1	Output Gear (20T OD x 13S ID)
30.	167-144	1	Output Shaft (10S x 19S x 10S, 14.28" LG)
31.	167-146	1	Input Shaft (12T x 13S x 18S)
32.	169-007	1	Front Housing
33.	169-011	1	Motor Input Housing
34.	169-015	1	Planetary Housing
35.	169-019	1	Output Flange (10 S)
36.	183-604	3	Planet Pin (1" DIA x 2.75" LG)
37.	183-605	1	Input Pin (1.375" DIA x 3" LG)
38.	183-643	1	Shifter Shaft (3/8-NF)
39.	184-069	1	Keeper
40.	326-060	1	Washer (3/4")
Not Shown:			
	256-603	AR	Black Silicone

# DIFFERENTIAL COMPONENTS STANDARD FRONT



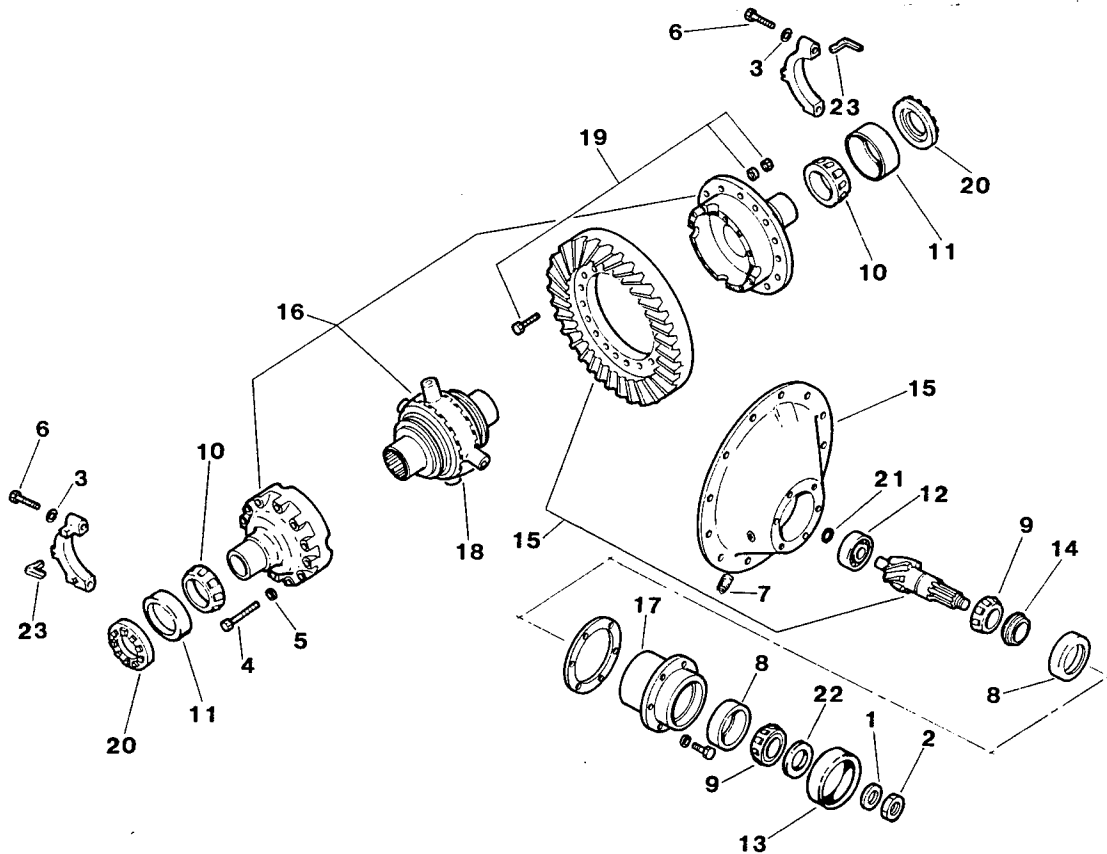
Ref. No.	Part Number	Qty.	Description
1.	105-002	4	Bolt (1/2-NC x 2-1/4")
2.	105-362	1	Flange Nut (7/8-NF)
3.	105-284	1	Washer (3/16")
4.	155-807	4	Internal Seal (1.5" ID)
5.	155-853	1	Internal Seal (1-7/8" ID)
6.	501-149	1	Pinion Oil Slinger
7.	125-285	1	Bearing (1.25" ID)
8.	125-287	1	Bearing (1.75" ID)
9.	125-260	2	Bearing (2.25" ID)
10.	125-286	1	Race (2.87" OD)
11.	125-288	1	Race (4.125" OD)
12.	125-284	2	Race (3.81" OD)
13.	501-163	AR	Shim (1.265" ID x 1.63" OD x .003" THK)
	501-164	AR	Shim (1.265" ID x 1.63" OD x .005" THK)
	501-165	AR	Shim (1.265" ID x 1.63" OD x .010" THK)
	501-166	AR	Shim (1.265" ID x 1.63" OD x .030" THK)
14.	501-309	AR	Shim (3.66" ID x 4.113" OD x .003" THK)
	501-310	AR	Shim (3.66" ID x 4.113" OD x .005" THK)
	501-311	AR	Shim (3.66" ID x 4.113" OD x .010" THK)
15.	501-142	AR	Shim (2.3437" ID x 2.9375" OD x .003" THK)
	501-143	AR	Shim (2.3437" ID x 2.9375" OD x .005" THK)
	501-144	AR	Shim (2.3437" ID x 2.9375" OD x .010" THK)
	501-145	AR	Shim (2.3437" ID x 2.9375" OD x .032" THK)

Ref. No.	Part Number	Qty.	Description
16.	501-632	1	Ring Gear and Pinion (Incl. ref. no.'s 2, 5 thru 8, 10, 11, 13 thru 16, 18 and 26)
17.	501-329	8	Flange Bolt (7/16-NC x 3-1/2")
	501-501	8	Cone Lock (order separately)
18.	501-150	12	Bolt (1/2-NF x 1-1/8")
19.	501-153	10	Flange Lock Bolt (3/8-NC x 5/8")
20.	501-273	1	Differential Case (Incl. ref. no. 17)
	501-259	1	Differential Case Assembly (Incl. ref. no.'s 17 and 20 thru 25)
21.	501-282	1	Clutch Pack (4 discs and 6 plates)
22.	501-324	2	Axle Gear Ring
23.	501-330	2	Axle Gear
24.	501-316	4	Pinion Gear
25.	501-317	2	Pinion Shaft
26.	165-613	1	Cover Gasket
27.	501-287	1	Differential Cover
28.	N.A.	1	Differential Housing
29.	155-751	1	Neoprene Washer
30.	105-173	1	Bolt (1/4-NC x 3/8", RD SLT HD)

NOTE: Refer to assembly instructions 052-185.

# DIFFERENTIAL COMPONENTS

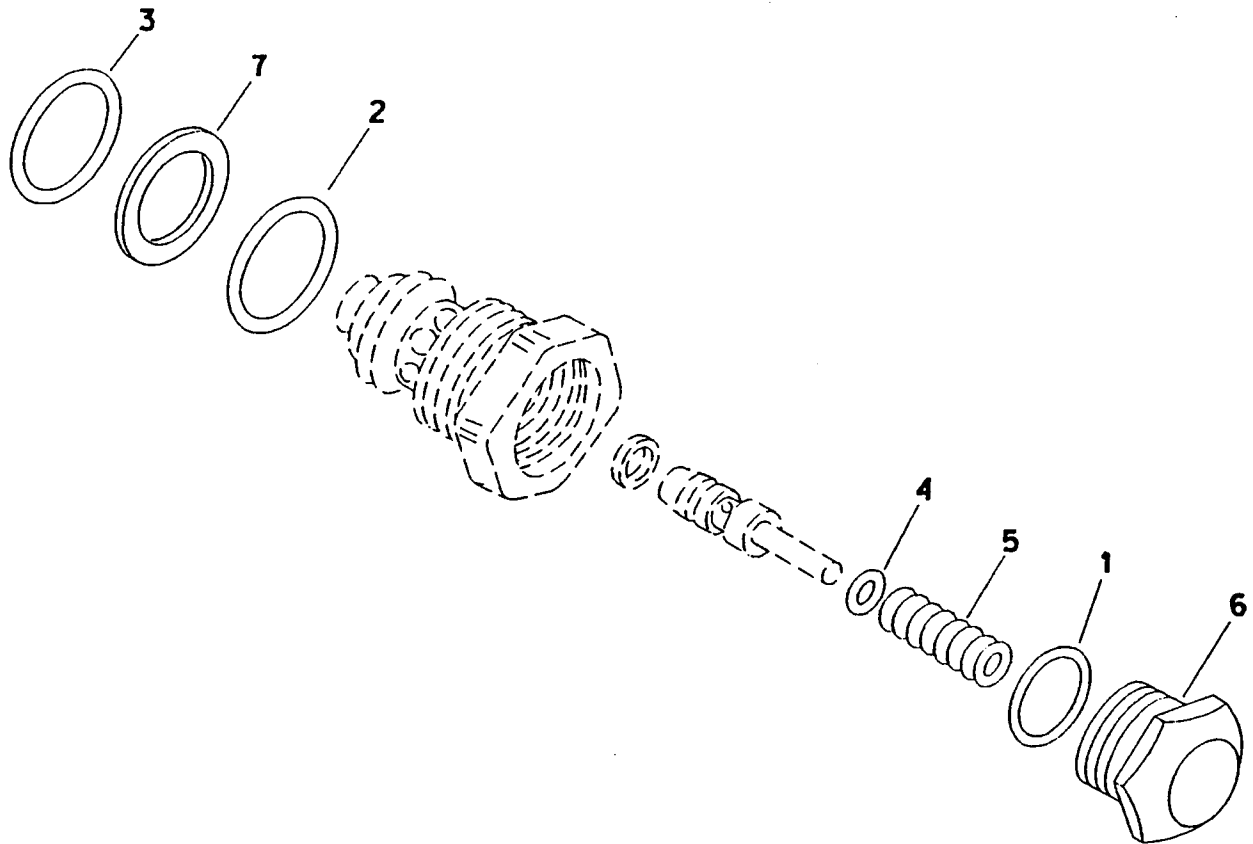
## Rockwell — F-Series



Ref. No.	Part Number	Qty.	Description
1.	105-930	1	Washer }1-1/32" ID)
2.	106-208	1	Pinion Nut (1-NEF)
3.	106-209	8	Washer (1-1/32" ID)
4.	106-210	8	Differential Case Bolt (1/2-NC x 3", GD 8)
5.	106-211	8	Washer (.531" ID)
6.	106-212	4	Bolt (5/8-NC x 3", GD 8)
7.	115-152	1	Plug (3/4-NPT M, 1/2" SQ FM HD)
8.	125-296	2	Race (3.5" OD)
9.	125-317	2	Bearing (1.75" ID)
10.	125-349	2	Carrier Bearing (2.625" ID)
11.	126-018	2	Race (4.33" OD)
12.	126-019	1	Pinion Pilot Bearing

Ref. No.	Part Number	Qty.	Description
13.	157-571	1	Internal Seal
14.	501-666	1	Pinion Bearing Shim Kit
15.	501-667	1	Ring Gear and Pinion Set
16.	501-668	1	Differential Case Parts Assembly
17.	501-669	1	Pinion Bearing Cage (Incl. ref. no. 8)
18.	501-670	1	No Spin Differential
19.	501-671	1	Ring Gear and Pinion Bolt Kit
20.	501-672	2	Bearing Adjuster
21.	501-673	1	Bearing Retainer
22.	501-674	1	Shim Washer
23.	501-675	2	Adjuster Lock

# RELIEF CARTRIDGE

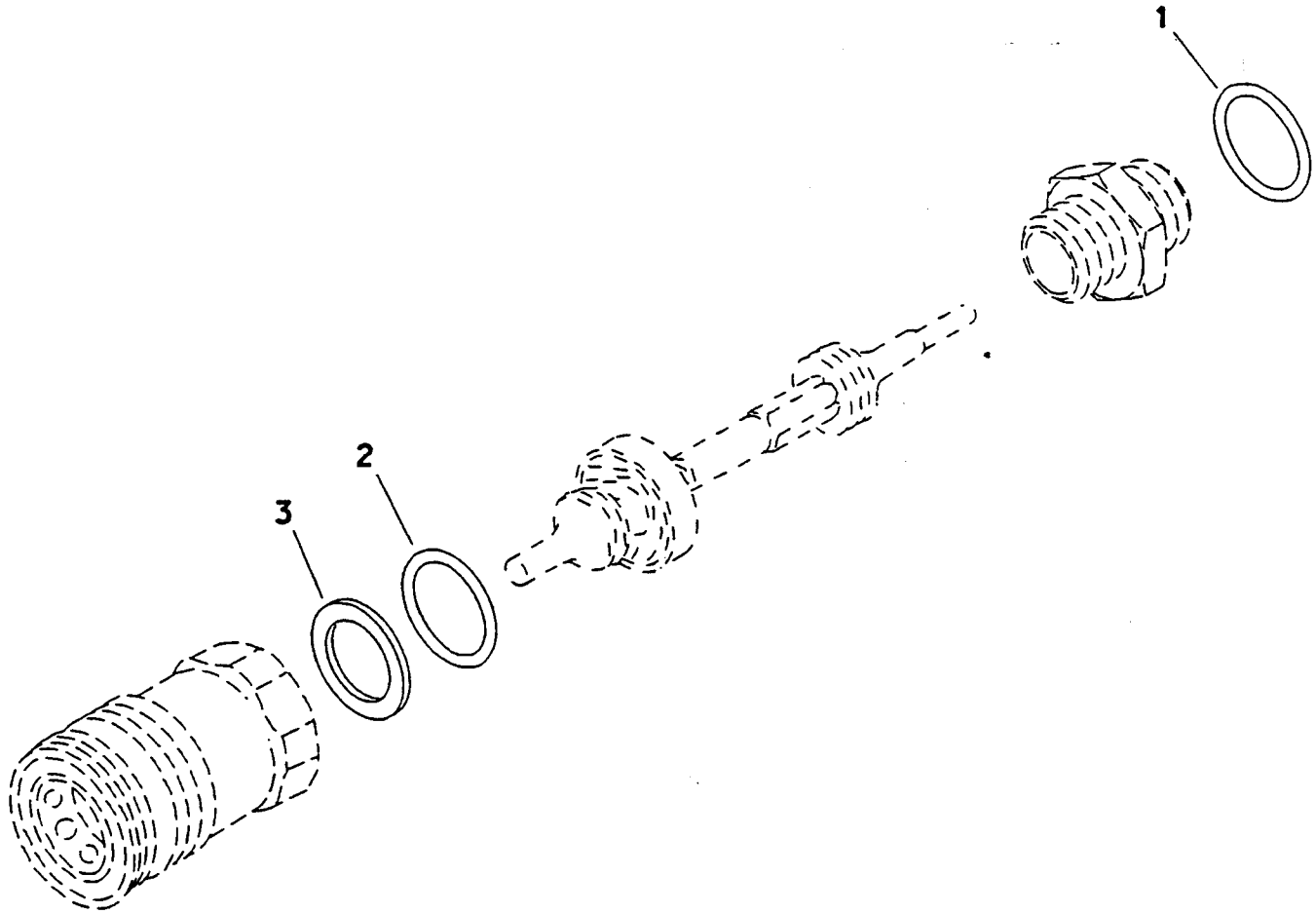


REF. NO.	PART NUMBER	QTY.	DESCRIPTION
	155-630	1	RELIEF CARTRIDGE (INCL. REF. NO'S 1 THRU 7)
1.	155-707	1	O-RING (910 D90)
2.	155-749	1	O-RING (023 D70)
3.	155-750	1	O-RING (022 D90)

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
4.	500-025 AR	1	SHIM
5.	500-318	1	COMPRESSION SPRING
6.	500-408	1	CAP
7.	157-508	1	BACKUP RING

<sup>1</sup> REFER TO INSTALLATION DIAGRAM 052-139 FOR REPLACEMENT PROCEDURES

# TRICK QUICK COUPLER

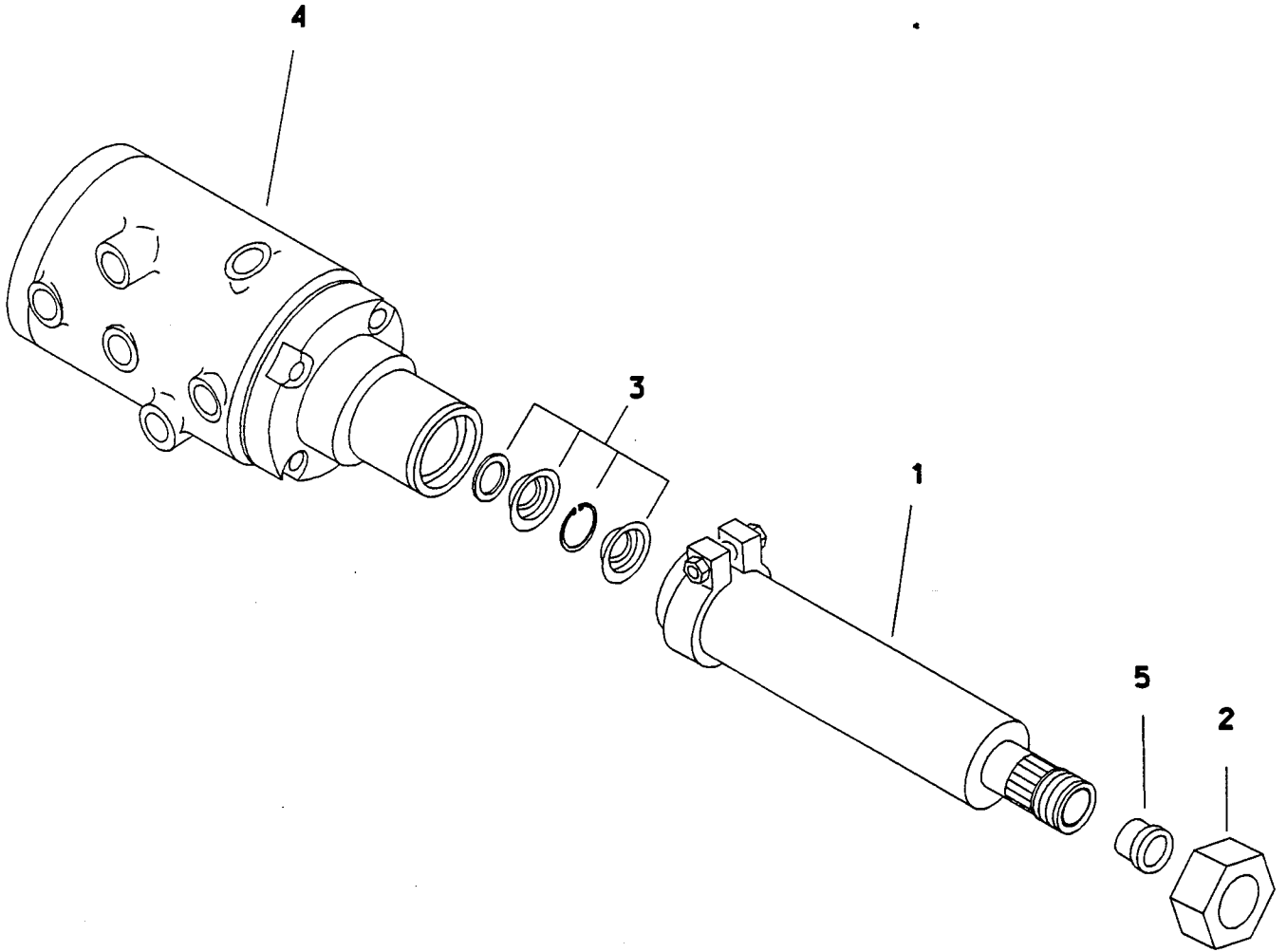


REF. NO.	PART NUMBER	QTY.	DESCRIPTION
	155-958		TRICK QUICK COUPLER (INCL. REF. NO'S 1 THRU 3)
1.	155-747	1	O-RING (914 D90)

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
2.	155-777	1	O-RING (117 D90)
3.	157-016	1	BACKUP RING

**NOTES:**

# POWER STEERING VALVE





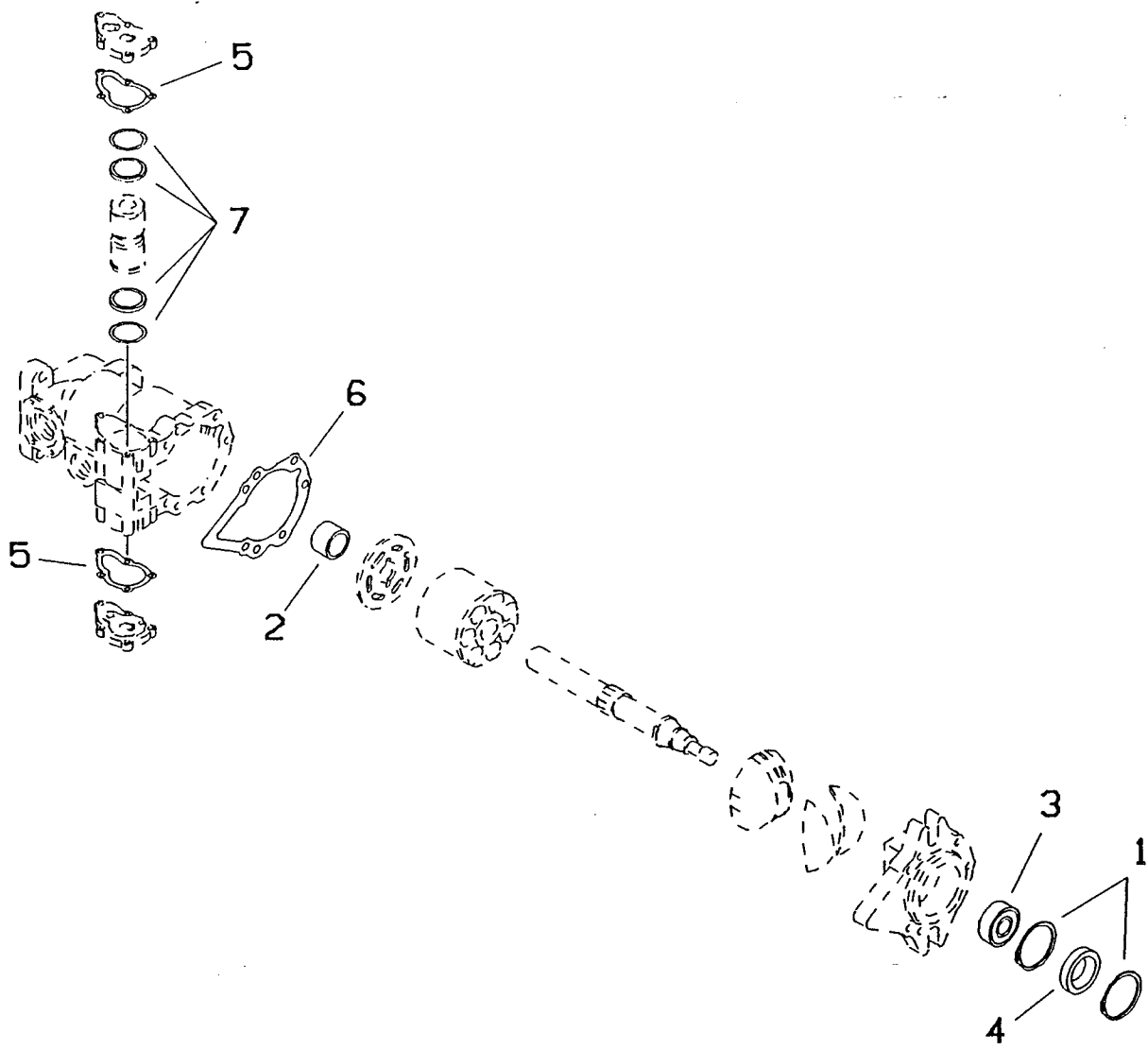
# POWER STEERING VALVE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	155-698		POWER STEERING VALVE	ENDS WITH S/N & SEE FOOTNOTE 1
	158-618		POWER STEERING VALVE	INCLS REF NO.'S 1 THRU 5 & BEGINS WITH S/N
1.	155-696		ORBITROL COLUMN	ENDS WITH S/N & SEE FOOTNOTE 1
	158-623	1	ORBITROL COLUMN	INCLS REF NO.'S 3 & 5 & BEGINS WITH S/N
2.	105-361	1	JAM NUT (13/16-NEF)	
3.	500-424	1	SEAL REPAIR KIT	EITHER STEERING VALVE
4.	155-697		ORBITROL VALVE	ENDS WITH S/N & SEE FOOTNOTE 1
	158-619	1	ORBITROL VALVE	INCLS REF NO. 3 & BEGINS WITH S/N
	155-790		O-RING (O32 D90)	
5.	500-459	1	SEAL	

## FOOTNOTES

1-ORDER 158-618 IF REPLACING 155-696 OR 155-697.

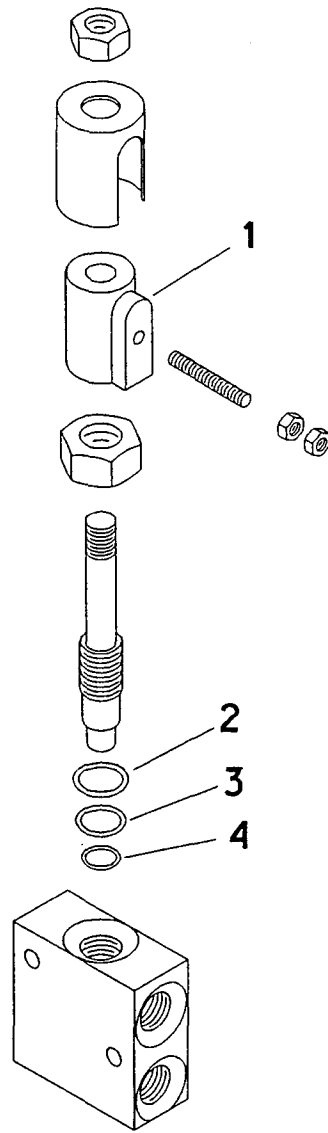
# HYDRAULIC MOTOR



REF. NO.	PART NUMBER	QTY.	DESCRIPTION
	158-707		HYDRAULIC MOTOR (INCL REF NO.'S 1 THRU 7)
1.	115-547	2	BEARING / SEAL RETAINER
2.	126-014	1	INNER SHAFT BEARING
3.	126-021	1	OUTER BEARING

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
4.	157-568	1	SHAFT SEAL
5.	165-728	2	SERVO COVER GASKET
6.	165-729	1	HOUSING GASKET
7.	500-578	2	PISTON SEAL REPAIR KIT

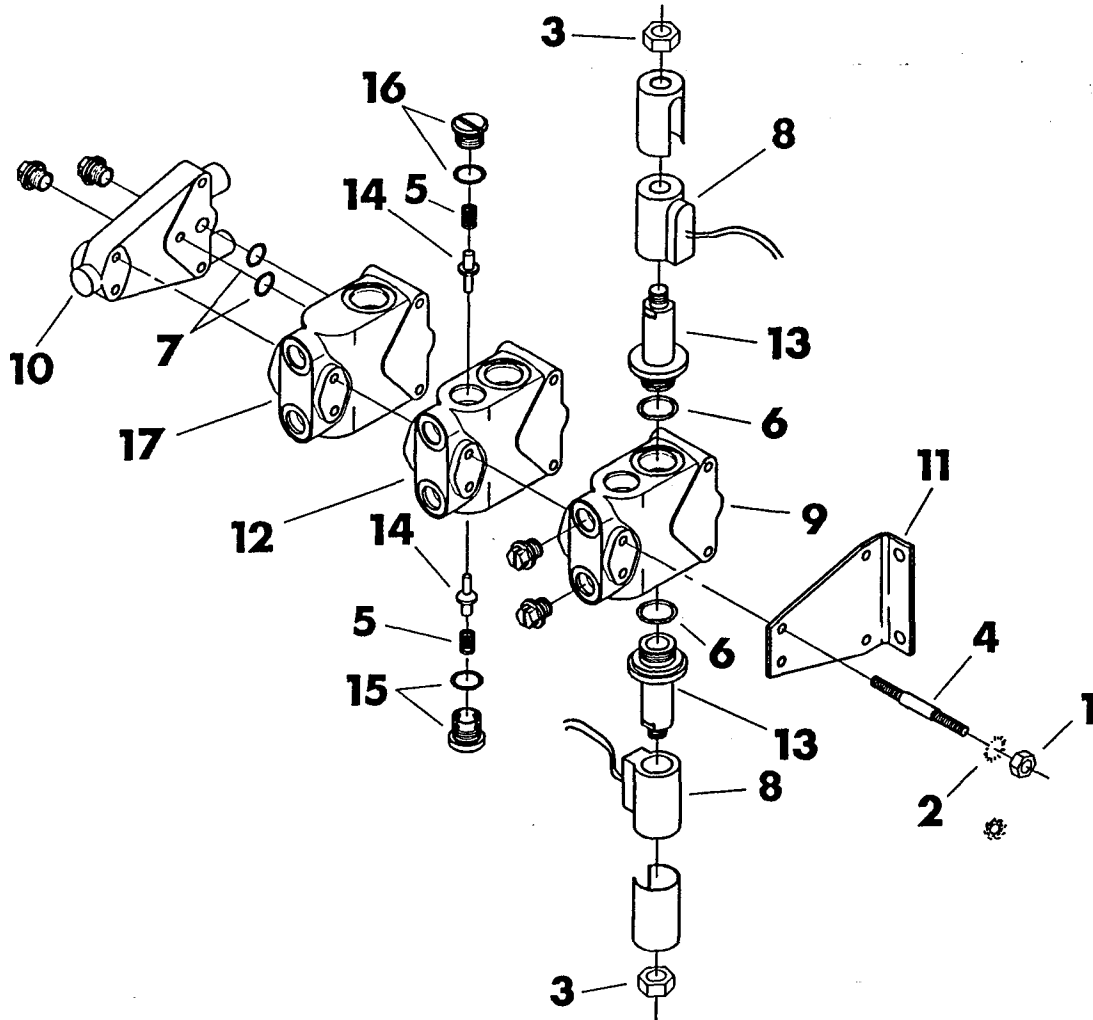
# SOLENOID CONTROL VALVE



REF. NO.	PART NUMBER	QTY.	DESCRIPTION
	158-555		SOLENOID CONTROL VALVE (INCL REF NO.'S 1 THRU 4)
1.	217-746	1	SOLENOID COIL

REF. NO.	PART NUMBER	QTY.	DESCRIPTION
2.	500-163	1	O-RING (114 D70)
3.	157-071	1	O-RING
4.	157-070	1	O-RING

# HYDRAULIC CONTROL VALVE 3 SPOOL



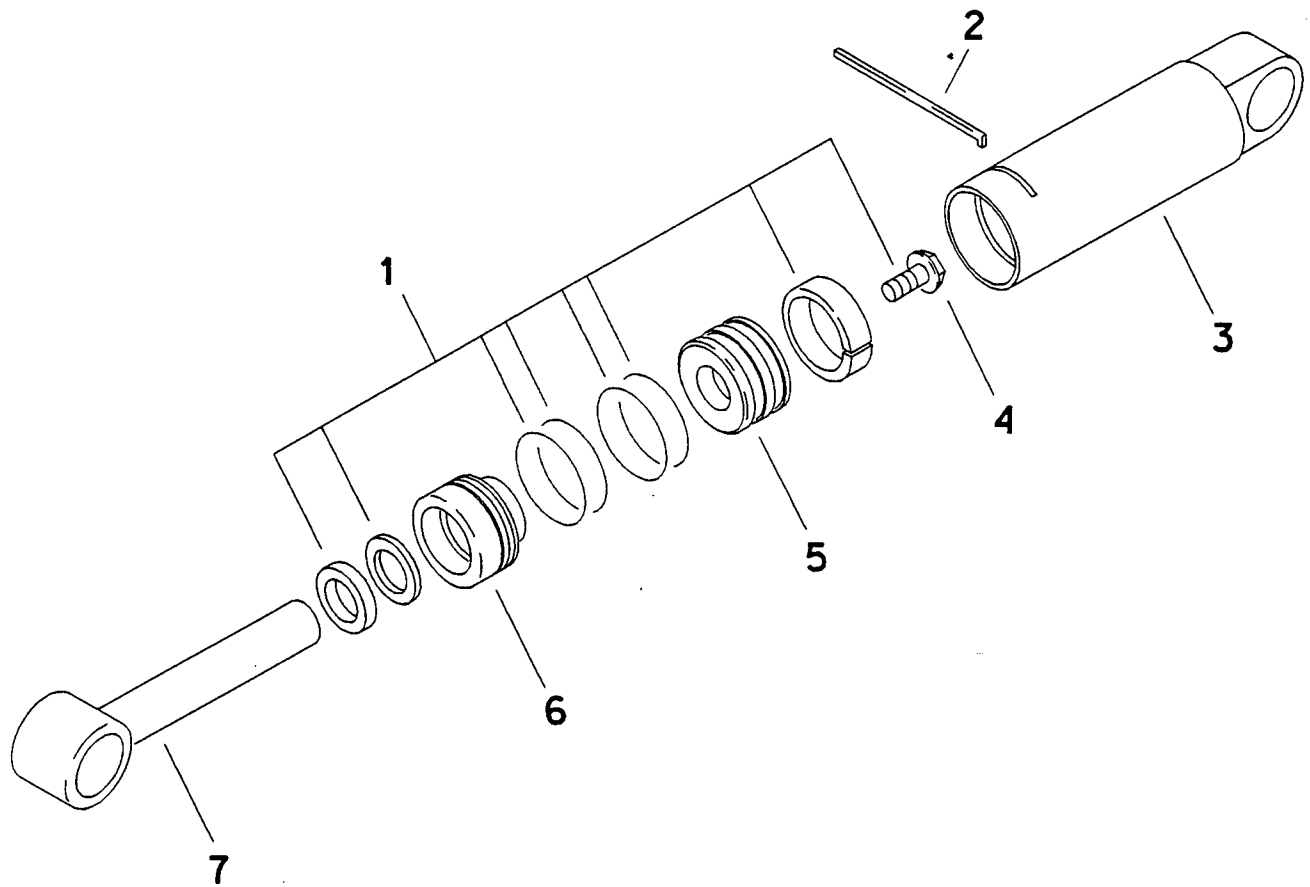
Ref. No.	Part Number	Qty.	Description
	158-574		Hydraulic Control Valve (Incl. ref. no.'s 1 thru 17)
1.	105-078	4	Nut (1/4-NC)
2.	105-079	4	Lock Washer (1/4")
3.	105-206	6	Nut (1/2-NF)
4.	106-289	4	Stud Bolt (1/4-NC x 6-1/2")
5.	117-012	4	Poppet Spring
6.	155-715	6	O-Ring (-019)
7.	155-778	2	O-Ring (-014 Viton)
8.	216-015	6	Solenoid Coil
9.	500-597	1	Valve Section (lift)—Incl. ref. no.'s 3, 5 thru 8 and 13 thru 16
	500-663		Lockout Plunger
	500-689		Seal Kit (Incl. ref. no.'s 6, 7 and 14)

Ref. No.	Part Number	Qty.	Description
10.	500-598	1	Port Plate (Inlet/ Outlet)
11.	500-599	1	Valve Mount Plate
12.	500-600	2	Valve Section (tilt)—Incl. ref. no.'s 3, 6, 7, 8 and 13
	500-689		Seal Kit (Incl. ref. no.'s 6, 7 and 14)
13.	500-661	6	Plunger Adapter
14.	500-662	4	Lockout Poppet
15.	500-664	2	Plunger Seat Retainer Plug
	155-706		O-Ring (-908)
16.	500-665	2	Poppet Spring Retainer Plug
	155-706		O-Ring (-908)
17.	500-688	1	Valve Section (angle)—Incl. ref. no.'s 3, 6, 7, 8 and 13)

**NOTES:**

# 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		HYDRAULIC CYLINDER	INCLUDES REF NO.'S 1 THRU 7
1.	190-165	1	SEAL REPAIR KIT	
2.	150-778	1	LOCK RING	
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	PISTON	
6.	150-772	1	CYLINDER HEAD	
7.	150-422	1	CYLINDER ROD	

NOT SHOWN:

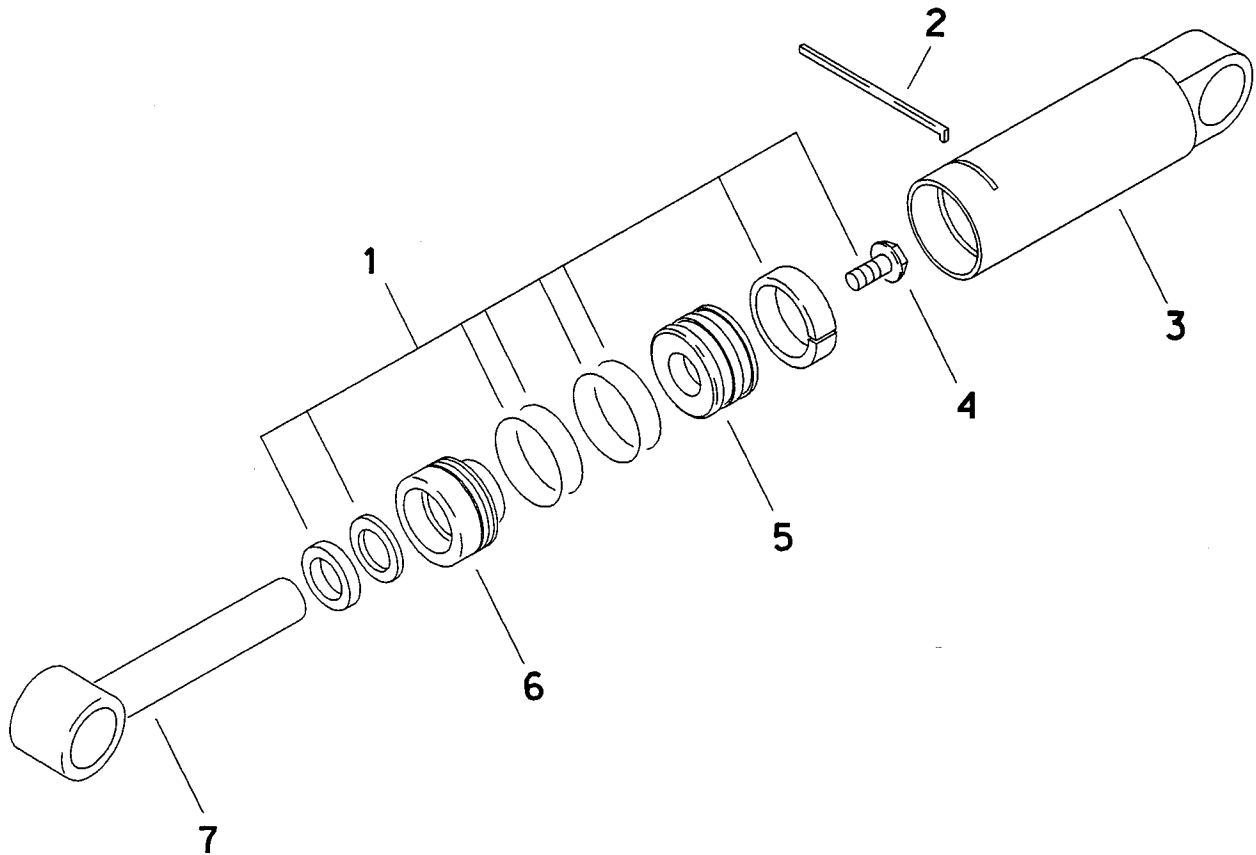
259-100	ROD U-SEAL INSTALLER
259-235	ROD WIPER INSTALLER
259-239	ROD WIPER/PISTON SEAL INSTALLER
259-241	PISTON INSTALLER
259-188	CYLINDER HEAD SPANNER WRENCH

FOOTNOTES

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

# HYDRAULIC CYLINDER

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 (5/8-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:**

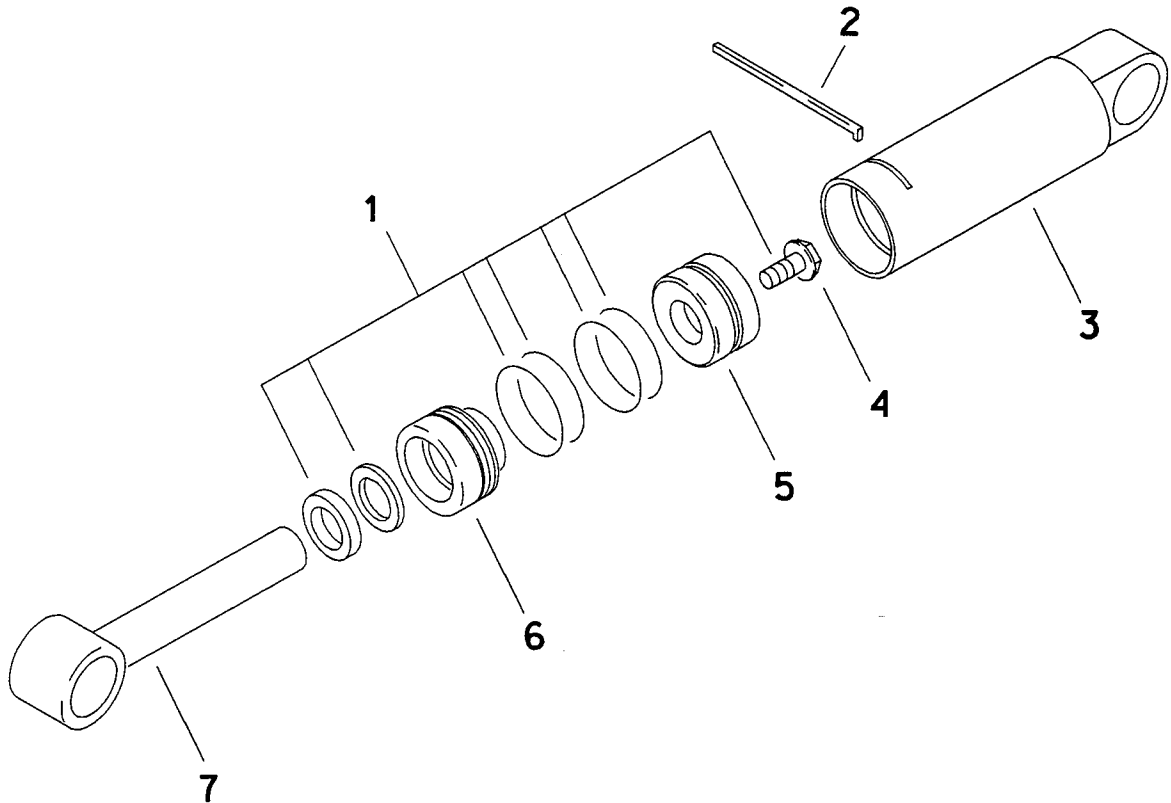
259-100	ROD U-SEAL INSTALLER
259-235	ROD WIPER INSTALLER
259-239	PISTON SEAL INSTALLER
259-241	PISTON INSTALLER
259-188	CYLINDER HEAD SPANNER WRENCH

**FOOTNOTES**

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

# HYDRAULIC CYLINDER

2.0" ID BARREL X 1.25" OD ROD X 8.0" STROKE



# HYDRAULIC CYLINDER

## 2.0" ID BARREL X 1.25" OD ROD X 8.0 STROKE

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

NOT SHOWN:

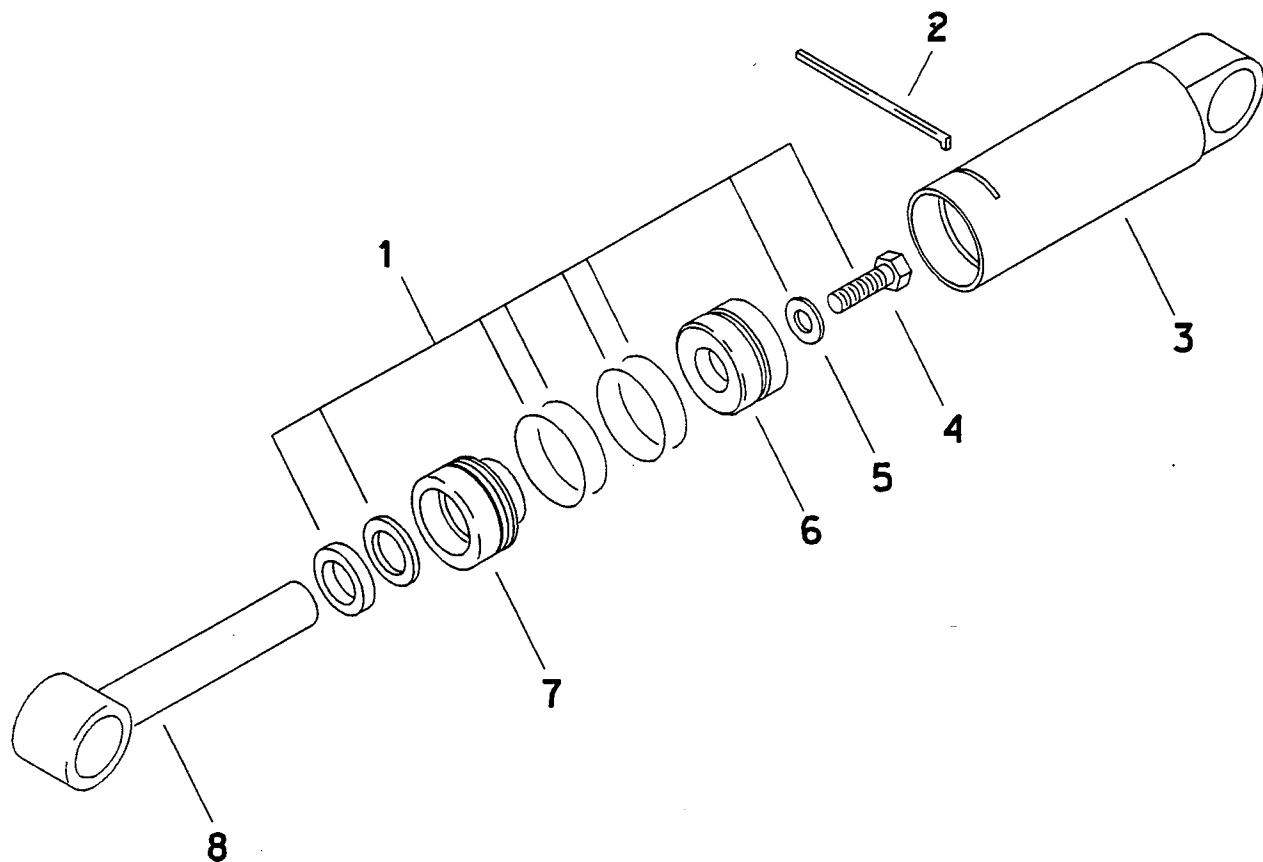
259-100	ROD U-SEAL INSTALLER
259-236	ROD WIPER INSTALLER
259-239	ROD WIPER/PISTON SEAL INSTALLER
259-241	PISTON INSTALLER
259-188	CYLINDER HEAD SPANNER WRENCH

FOOTNOTES

1-LUBRICATE WITH WD-40 OR EQUAL.TORQUE TO 180-200 FT-LBS (245-270 N.M)

# HYDRAULIC CYLINDER

3.0" ID BARREL X 1.75" OD ROD X 6.0" STROKE



# HYDRAULIC CYLINDER

## 3.0" ID BARREL X 1.75" OD ROD X 6.0" STROKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-058		HYDRAULIC CYLINDER	INCLUDES REF NO.'S 1 THRU 7
1.	190-172	1	SEAL REPAIR KIT	
2.	150-911	1	LOCK RING	
3.	152-008	1	CYLINDER BARREL	
4.	106-122	1	BOLT (7/8-NC X 2-1/4",GD 8)	SEE FOOTNOTE 1
5.	105-363	1	WASHER (7/8")	
6.	150-765	1	PISTON	INCLUDES MOLDED-ON WEAR RING
7.	150-763	1	CYLINDER HEAD	
8.	150-428	1	CYLINDER ROD	

**NOT SHOWN:**

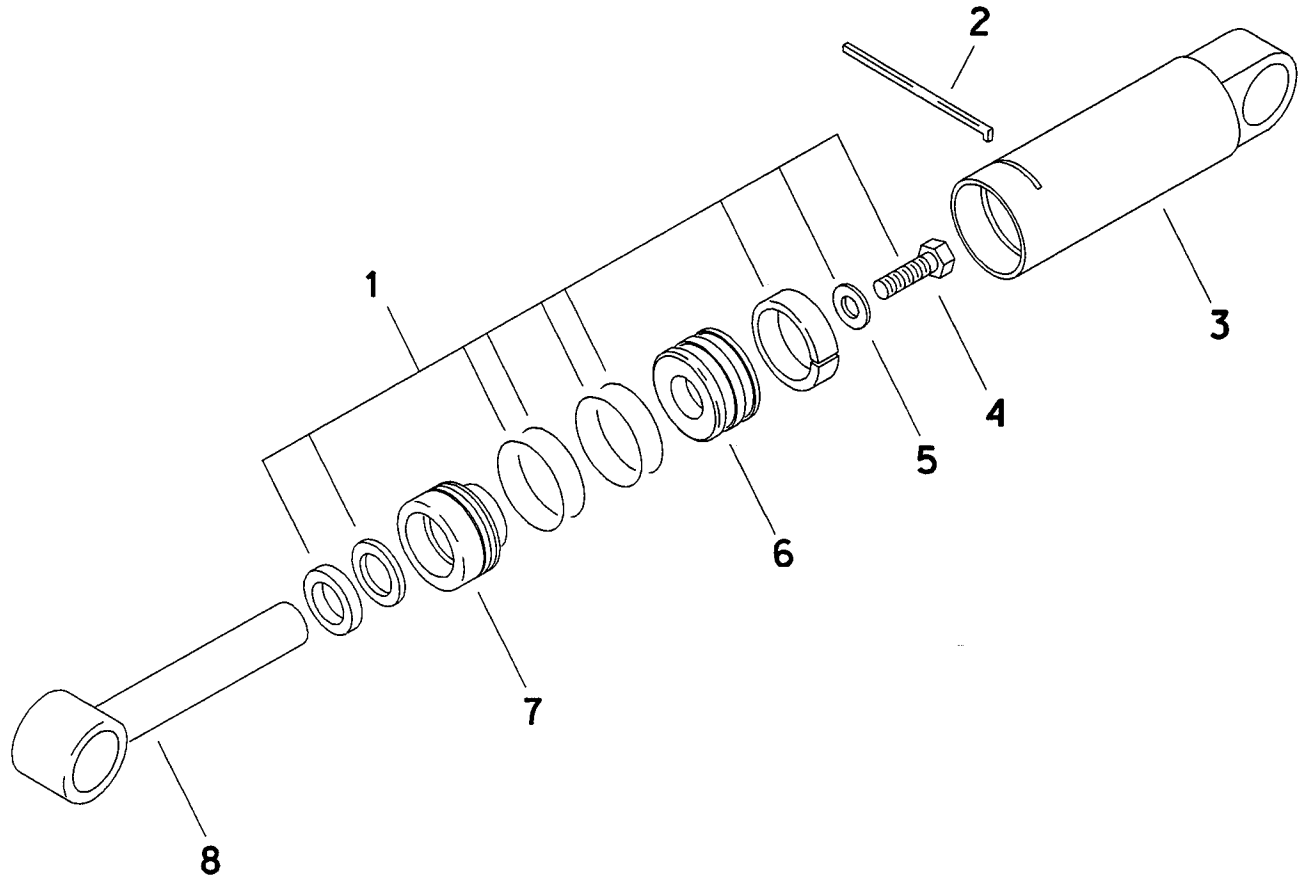
259-040	ROD U-SEAL INSTALLER
259-238	ROD WIPER INSTALLER
259-065	PISTON SEAL INSTALLER
259-066	PISTON INSTALLER
259-188	CYLINDER HEAD SPANNER WRENCH

**FOOTNOTES**

1-LUBRICATE WITH WD-40 OR EQUAL.TORQUE TO 410-460 FT-LBS (550-625 N.M)

# HYDRAULIC CYLINDER

3.5" ID BARREL X 1.75" OD ROD X 6.0" STROKE



# HYDRAULIC CYLINDER

## 3.5" ID BARREL X 1.75" OD ROD X 6.0" STROKE

REF NO.	PART NUMBER	QTY	DESCRIPTION	REMARKS
	151-046		HYDRAULIC CYLINDER	INCLUDES REF NO.'S 1 THRU 7
1.	190-174	1	SEAL REPAIR KIT	
2.	149-302	1	LOCK RING	
3.	150-296	1	CYLINDER BARREL	
4.	106-122	1	BOLT (7/8-NC X 2-1/4",GD 8)	SEE FOOTNOTE 1
5.	105-363	1	WASHER (7/8")	
6.	149-301	1	PISTON	
7.	150-761	1	CYLINDER HEAD	
8.	150-428	1	CYLINDER ROD	

NOT SHOWN:

259-040	ROD U-SEAL INSTALLER
259-238	ROD WIPER INSTALLER
259-244	PISTON SEAL INSTALLER
259-245	PISTON INSTALLER
259-188	CYLINDER HEAD SPANNER WRENCH

FOOTNOTES

1-LUBRICATE WITH WD-40 OR EQUAL.TORQUE TO 410-460 FT-LBS (550-625 N.M)

# Miscellaneous



## RELATED PUBLICATIONS

5020 PARTS MANUAL	053-402
5020 OPERATOR'S MANUAL	054-461
REPAIR GUIDE (SERVICE MANUAL)	055-461
DEUTZ PARTS MANUAL	050-609
DEUTZ F3L912 OPERATOR'S MANUAL	050-610
DEUTZ F3L912 SERVICE MANUAL	050-575
DEUTZ PROBLEM DIAGNOSIS GUIDE	050-555
SPECIAL TOOL GUIDE	052-901

## FILTERS

AIR FILTER (PRIMARY)	195-690
AIR FILTER (SECONDARY)	195-809
FUEL FILTER	195-813
WATER TRAP FUEL FILTER	159-009
ENGINE OIL FILTER	195-814
HYDRAULIC OIL FILTER	159-079

The Charles Machine Works, Inc. recommends the use of only original equipment Ditch Witch® filters.

## CAPACITIES

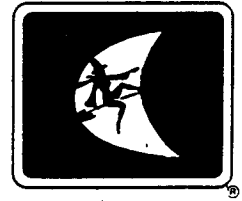
ENGINE OIL	8.5 QT	(7.0 l)	DEO
GROUND DRIVE TRANSMISSION	8.0 PT	(3.8 l)	MPL
PUMP DRIVE	1.5 QT	(1.4 l)	THF
DIFFERENTIALS			
DANA #70 FRONT	5.7 PT	(2.7 l)	MPL
ROCKWELL (FRONT OR REAR)	10.0 PT	(4.7 l)	MPL
HYDRAULIC OIL			
RESERVOIR	11.0 GAL	(41.6 l)	THF
SYSTEM	15.0 GAL	(56.7 l)	THF
FUEL TANK	16.0 GAL	(60.5 l)	

## LUBRICANT SPECIFICATIONS

THF	TRACTOR HYDRAULIC FLUID
DEO	DIESEL ENGINE OIL, SAE 15W40, MEETING API CLASSIFICATION SF/CD OR CE
GEO	GASOLINE ENGINE OIL MEETING API CLASSIFICATION SD
MPL	GEAR OIL, 80W90, MEETING API CLASSIFICATION GL-5
MPG	MULTI PURPOSE GREASE
HYDO	HYDRAULIC OIL, SAE 10W OR 10W40, MEETING API CLASSIFICATION SD
ATF-F	AUTOMATIC TRANSMISSION FLUID, TYPE F
DEXRON II	AUTOMATIC TRANSMISSION FLUID MEETING ALLISON SPECIFICATION C-3
AGMA-7	WORM GEAR LUBRICANT MATCHING AMERICAN GEAR MANUFACTURERS ASSOCIATION COMPOUND #7

DASH SIZE - THREAD SIZE - O-RING CHART

DASH SIZE	FRACTION	N P T	J I C	S A E	O-RING	O R S
01	1/16	NA	NA	NA	NA	NA
02	1/8	1/8-27	NA	5/16-24	NA	NA
03	3/16	NA	NA	3/8-24	NA	NA
04	1/4	1/4-18	7/16-20	7/16-20	155-760	157-037 9/16-18
05	5/16	NA	1/2-20	1/2-20	155-717	NA
06	3/8	3/8-18	9/16-18	9/16-18	155-705	157-038 11/16-16
08	1/2	1/2-14	3/4-16	3/4-16	155-706	157-039 13/16-16
10	5/8	NA	7/8-14	7/8-14	155-707	157-040 1-14
12	3/4	3/4-14	1-1/16-12	1-1/16-12	155-709	157-017 1-3/16-12
14	7/8	NA	1-3/16-12	1-3/16-12	155-747	NA
16	1	1-11.5	1-5/16-12	1-5/16-12	155-748	155-714 1-7/16-12
20	1-1/4	1-1/4-11.5	1-5/8-12	1-5/8-12	155-702	NA 1-11/16-12
24	1-1/2	1-1/2-11.5	1-7/8-12	1-7/8-12	157-001	NA 2-12
32	2	2-11.5	2-1/2-12	2-1/2-12	NA	NA
40	2-1/2	2-1/2-8	NA	3/12	NA	NA
48	3	3-8	NA	3-1/2-12	NA	NA



## BOLT AND NUT TORQUE

### SAE GR-5 BOLTS (FINE OR COARSE THREAD)

Bolt and Nut Details	Diameter (In Inches)											
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1-1/8	1-1/4
Regular hex nuts or regular hex bolt heads torqued into regular nuts, flange nuts, or drilled and tapped holes	12	25	40	65	100	150	200	350	560	840	1030	1460
Hex section top deflected locknuts	8	15	25	40	60	90	120	210	340	500	620	880
Flanged section with flange teeth nuts* or flange teeth bolt heads* torqued into flange nuts or drilled and tapped holes.	20	45	75	125	190	270	370	650	1050	1580	1950	2760

### SAE GR-8 BOLTS (FINE OR COARSE THREAD)

Bolt and Nut Details	Diameter (In Inches)											
	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1-1/8	1-1/4
Grade "C" regular hex nuts** or regular hex bolt heads torqued into grade "C" regular nuts**, flange nuts, or drilled and tapped holes.	14	30	55	85	130	190	260	450	730	1090	1550	2180
Grade "C" hex section top deflected locknuts**	10	18	35	50	80	110	160	270	440	650	930	1310
Flanged section with flange teeth nuts** or flange teeth bolt heads* torqued into flange nuts or drilled and tapped holes.	24	50	90	140	220	310	430	750	1210	1820	2580	3640

#### NOTES:

\* For flange sections without flange teeth use values for regular nuts and bolt heads.

\*\* For nuts that are not Grade "C" use values for grade 5.

# WARRANTY SUPPORT

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## SERIAL NUMBER RECORD

Record the serial number and date of purchase of your equipment in the space provided. Specify equipment serial number and part number to expedite processing of parts orders.

Date of Purchase: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Model Number: \_\_\_\_\_

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## WARRANTY SUPPORT PROCEDURE

Notify your dealer immediately of any malfunction or failure of Ditch Witch equipment.

Always give model, serial number and approximate date of your equipment purchase.

Return damaged parts to dealer for inspection and warranty consideration.

Order genuine Ditch Witch replacement or repair parts from your authorized Ditch Witch dealer. Use of another manufacturer's parts may void Warranty Support consideration.

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## Ditch Witch® EQUIPMENT AND REPLACEMENT PARTS LIMITED WARRANTY POLICY

Effective 01/01/91

The following Major Component Limited Warranty covers only the serial numbered products ("Products") as listed that are manufactured and distributed by Charles Machine Works, Inc. ("CMW") Replacement parts, serial numbered Products, and non-major components listed under Major Component Limited Warranty are covered under Product Limited Warranty.

### MAJOR COMPONENT LIMITED WARRANTY

Major Components of these Products and their attachments 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 to original purchaser.

Models 1010, 100SX, 1620, 2020, 520, and 255SX

Equipment and attachments for:

2310, 3500, 4500, 5110, 5020, 7520, 8020, Earth Augers, Jet Trac Guided Boring System, True Trac Guided Boring System, Pierce Arrow Tools, P40, P80, Trailers, Power Pacs, Subsite Surface Transmitters & Receivers

**Major Components are defined as:**

Subsite Surface Transmitters and Receivers.

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.

CMW will provide free replacement parts to original purchaser 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. Original purchaser of the Product containing a Major Component must present Major Component or part 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 to original purchaser. CMW will provide free replacement parts to original purchaser for any Product which has a defect in material or workmanship. Replacement parts are warranted for 90 days from date of delivery of any such replacement part to original purchaser. 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 the 90 day limited warranty above. Defects will be determined by an inspection of the Product or part by CMW or its authorized dealer. Original purchaser of the Product must present Product or part 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.

**\*180 days for Ditch Witch DR52, DR65, and DP195.**

## EXCLUSIONS FROM PRODUCT AND MAJOR COMPONENT LIMITED WARRANTY

SPECIFICALLY EXCLUDED FROM PRODUCT AND MAJOR COMPONENT LIMITED WARRANTY ARE:

Transportation and labor charges related to repair, replacement, or inspection of Products, Major Components, or parts.

All incidental or consequential damages.

All defects, damages, or injuries caused by misuse, abuse, improper installation, alteration, neglect or uses other than those for which Products were intended.

All defects, damages, or injuries caused by improper training, operation, or servicing of Products in a manner inconsistent with manufacturer's recommendations.

All engines and engine accessories (these are covered by original manufacturer's warranty).

Tires, belts, and other parts which 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 original purchasers only. 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 above limitation may not apply. This limited warranty gives original purchaser specific legal rights and the original purchaser may also have other rights which vary from state to state.

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

**A Note To  
Ditch Witch**

**Equipment Owners:**

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

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

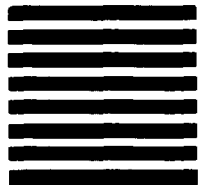
This will enable you to receive updates on this equipment as well as information on new products of interest.

Thanks for using Ditch Witch equipment!

(Please Fold Along This Line And Seal At Bottom With Tape)



**NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES**



**BUSINESS REPLY MAIL**  
FIRST CLASS      PERMIT NO. 23      PERRY, OKLAHOMA

POSTAGE WILL BE PAID BY

The Charles Machine Works, Inc.  
P.O. Box 66  
Perry, Oklahoma 73077-9989



# Ditch Witch® Registration Card

Please Type Or Print All Information

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Purchaser's Company Name

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Attention

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Street Address or P.O. Box

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City

County

---

State

Zip

Nation

---

(     )

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Phone Number With Area Code

---

Machine Model

Serial Number

---

Attachments

Serial Number

---

Attachments

Serial Number

---

Attachments

Serial Number

---

Name of Ditch Witch Dealership

---

Your Signature

Thanks!

The Charles Machine Works, Inc.  
Box 66  
Perry, OK 73077-9989