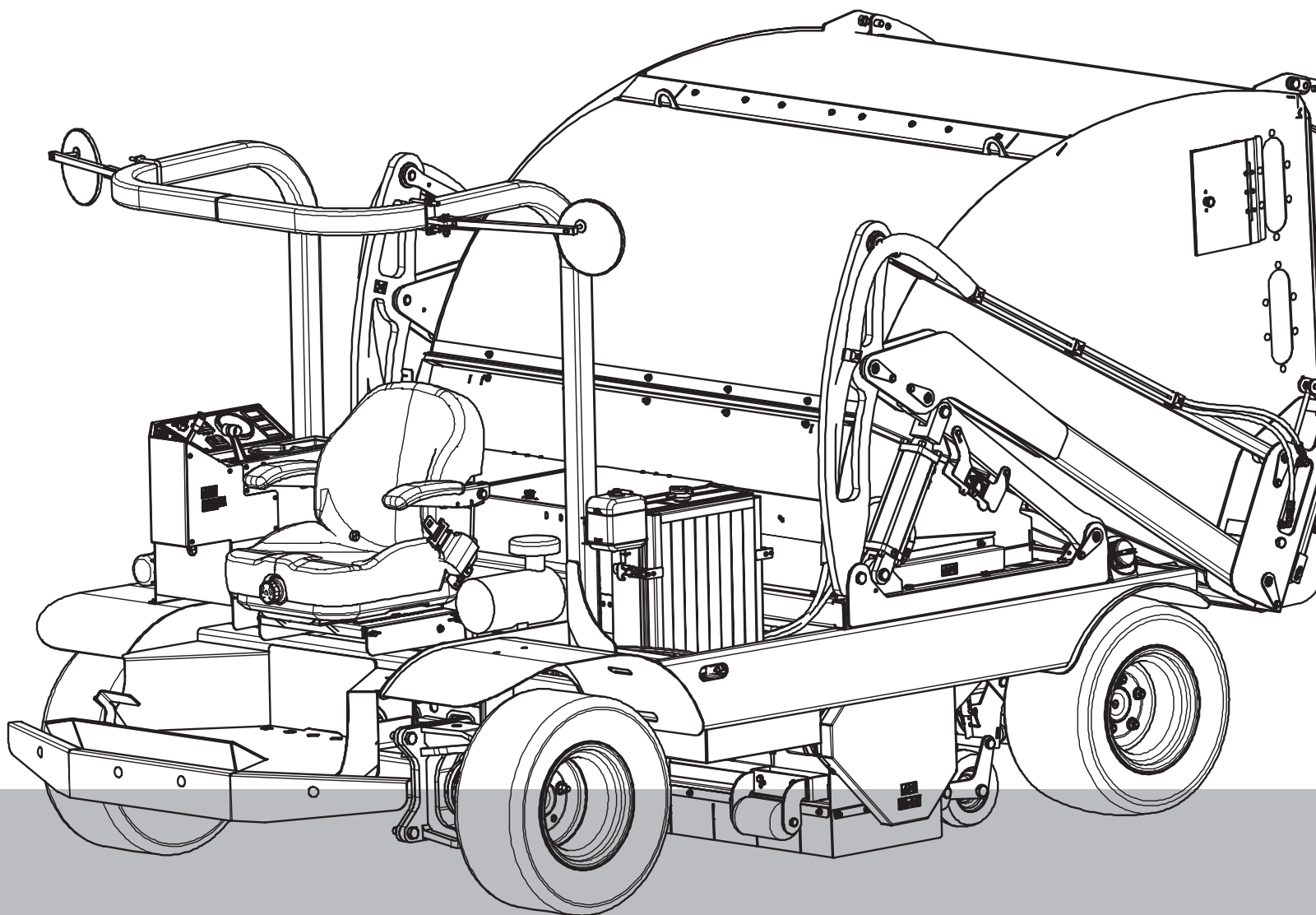


HK 4400

Serial Number: 23A01+
Part # 301045



HARPER HAWK *PARTS MANUAL*

Thank you for purchasing a Harper Hawk.

As with all Harper products, the Harper Hawk has been developed through tough design and testing procedures to produce a top-quality machine. This manual gives assembly, operating, and service information for the model HK4400 Sweeper. Please read and understand all instructional material included with the Sweeper or its components before assembling and operating the equipment.

A Sweeper can present hazards to an operator who follows unsafe procedures in either the operation or maintenance of the unit. Therefore, **SAFETY WARNINGS** are presented at certain locations in the text.

THIS SYMBOL:



MEANING: Failure to understand and obey this warning may result in injury to you or others. Whenever this symbol is used, please pay very close attention to the information presented, and make sure you fully understand. If you do not, contact your dealer or Harper Industries, Inc. for clarification.



ALL SHIELDS AND GUARDS MUST BE IN PLACE FOR PROPER AND SAFE OPERATION OF THIS EQUIPMENT. WHERE THEY ARE SHOWN REMOVED IN THIS MANUAL, IT IS FOR PURPOSES OF ILLUSTRATION AND INSTRUCTION ONLY. DO NOT OPERATE THIS EQUIPMENT UNLESS ALL SHIELDS AND GUARDS ARE IN PLACE.



WARNING: Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel

Harper Industries, Inc. is continually striving to improve the design and performance of its products. We reserve the right to make changes in specifications and design without thereby incurring any obligation relative to previously manufactured products.

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The Harper name is a registered trademark of Harper Industries, Inc. All other brand and product names are trademarks or registered trademarks of their respective companies.

LIMITED WARRANTY

Harper Industries, Inc. (HII) warrants to each purchaser of a new Harper Hawk from an authorized dealer or representative, that such equipment is free of manufacturer's defects in workmanship and materials which appear while in normal service for a period of ONE YEAR commencing with delivery to the original user.

The obligation of HII under this warranty is expressly limited, at our option, to replacement or repair at a service facility designated by Harper Industries or at the manufacturing plant in Harper, KS. A part will be replaced after inspection discloses it to have been defective. This warranty does not apply to defects caused by damage or unreasonable use (including failure to provide reasonable and necessary maintenance, or by performing functions without genuine Harper Turf Sweeper accessories) while in the possession of the consumer.

Warranty is limited to parts, labor and ground freight delivery of replacement parts. HII shall not be liable for the consequential damages of any kind, including but not limited to consequential labor costs or transportation charges in connection with replacement or repair of defective parts.

This warranty does not apply to parts subjected to misuse, abuse, alteration, improper or inadequate maintenance, or normal wear (including belts, battery, chains, filters, knives, brush and broom).

Engines are not covered under this warranty. Refer to manufacturer's warranty for specific warranty information. Harper Industries, its agents or representatives, make or imply no other warranties.

Harper Industries makes no warranty with respect to trade accessories. They are subject to the warranties of their respective manufacturers.

ANY IMPLIED OR STATUTORY WARRANTIES, INCLUDING ANY WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. HII makes no other express warranty, nor is anyone authorized to make any on behalf of HII.

For further information please contact your nearest Harper Turf Sweeper dealer.

RECORDS

Date of Purchase _____ / _____ / _____

Dealer's Name _____

Dealer's Phone _____

Serial Number Machine _____

Serial Number Engine _____

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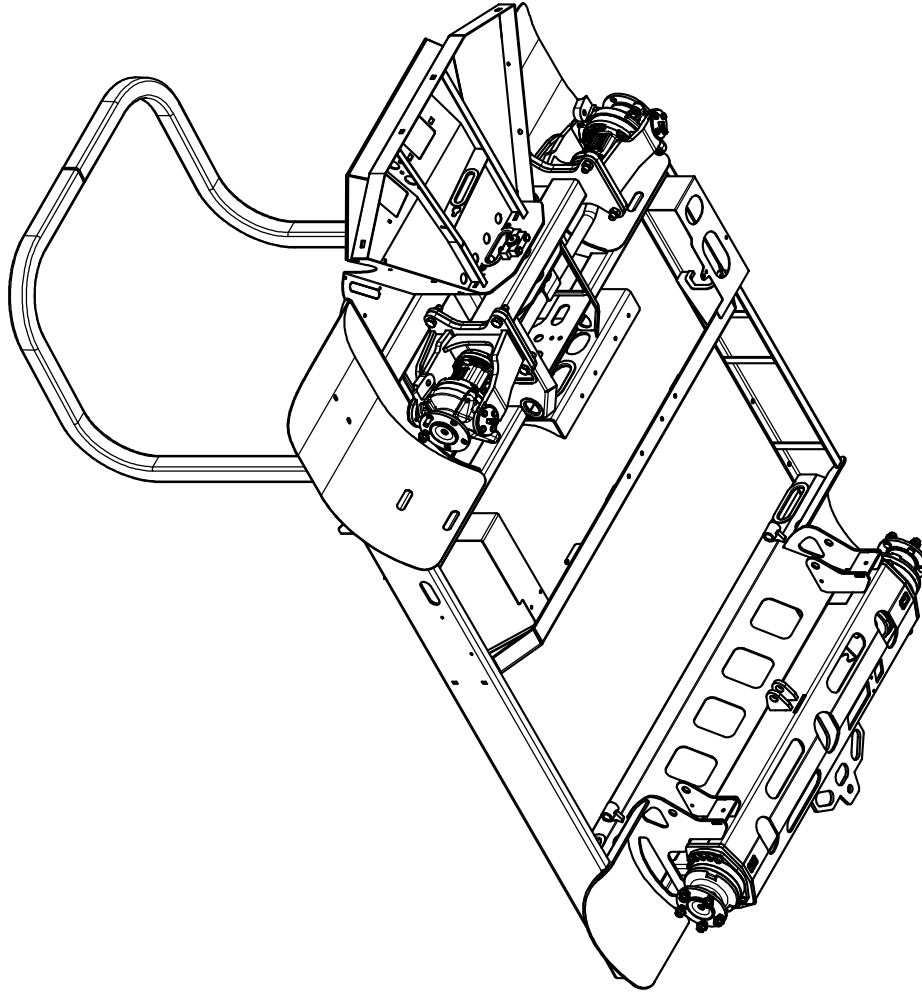
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WHEEL MOTOR & AXLE INSTALLATION



Parts List			DESCRIPTION
ITEM	QTY	PART #	
1	10'	100365	MOLDING - EDGE GUARD, 5/32
2	1	102136	Clevis Pin, 5/8 x 1.5
3	2	110053	Hex Nut M12 X 1.75 Thd
4	4	110129	BOLT, 1/2-13 X 2.75 HEX
5	20	110244	BOLT, 1/2-13 X 1.5 SHCS
6	2	110347	BOLT, M12x1.75 x 25 Gr 10.9
7	8	110454	BOLT, 3/4-10 X 2.5
8	1	110600	NUT, 5/16-18; UNITORQUE LOCK
9	4	110610	NUT, 1/2-13
10	8	110625	NUT, 3/4-10; UNITORQUE LOCK
11	1	110665	WASHER, 5/16" FLAT STANDARD
12	24	110666	WASHER, 1/2" LOCK
13	1	110862	WASHER - THRUST, IGUS MTI-24
14	2	110888	SNAP RING - EXT, 1-1/2
15	1	111190	BOLT, 3/8 X 2.0 SHOULDER SHCS
16	13'	112084	Rubber Seal, .625 X .25
17	2	120235	ADAPTER, 4MJ-4MB90
18	10	120249	ADAPTER, 4MJ-6MB
19	8	120446	ADAPTER, 8MJ-10MB
20	2	120732	ADAPTER, 4MJ-6MB 45
21	1	200029	COTTER PIN, 5/32 X 1
22	2	302129	NUT, 7/8-18 HEX JAM GR 2
23	2	311459	KEEPER - AXLE PIVOT, LOWER
24	2	312032	Tie Rod End, RH
25	1	315338	WELDMENT, FRONT AXLE
26	1	315350	FRAME WELDMENT, SWEEPER
27	1	315367	WELDMENT, ROUND STEERING LINK
28	1	317174	PIN, FRONT AXLE
29	1	323010	CYLINDER - STEERING, 1-3/4 X 6
30	1	323055	MOTOR, LH FRONT WHEEL, 24.3 CI, 2-SPD
31	1	323056	MOTOR, RH FRONT WHEEL, 24.3 CI, 2-SPD
32	1	323057	MOTOR, LH REAR WHEEL, 24.3 CI, 2-SPD
33	1	323058	MOTOR, RH REAR WHEEL, 24.3 CI, 2-SPD
34	2	500230	GREASE ZERK, 1/4-28 90deg
35	1	510174	GREASE ZERK, 1/4-28 ST

305081 REV: C

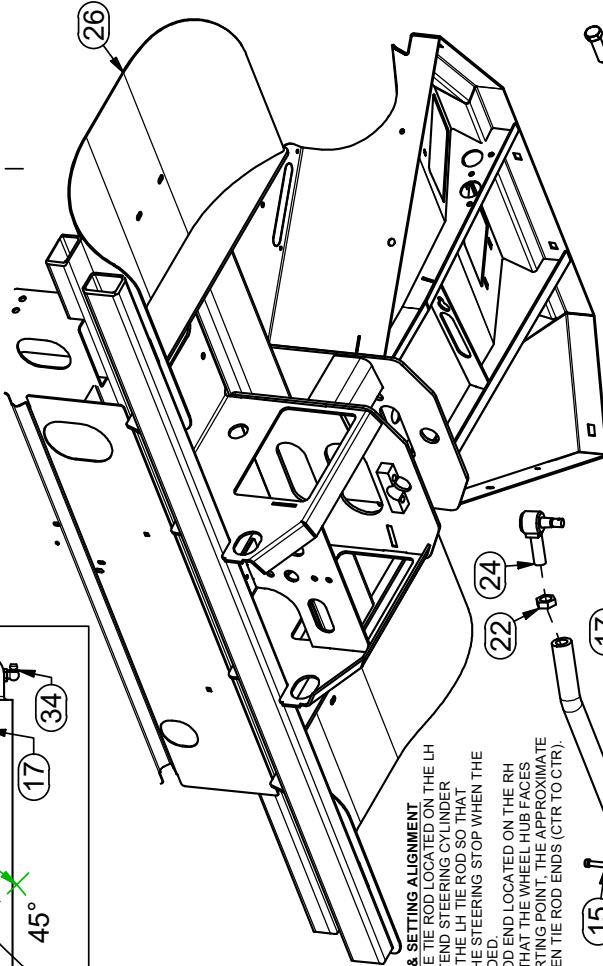
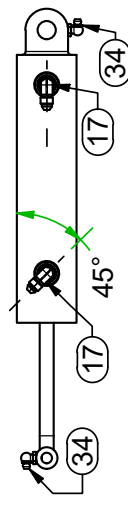
FRONT AXLE INSTALLATION

RIGHT

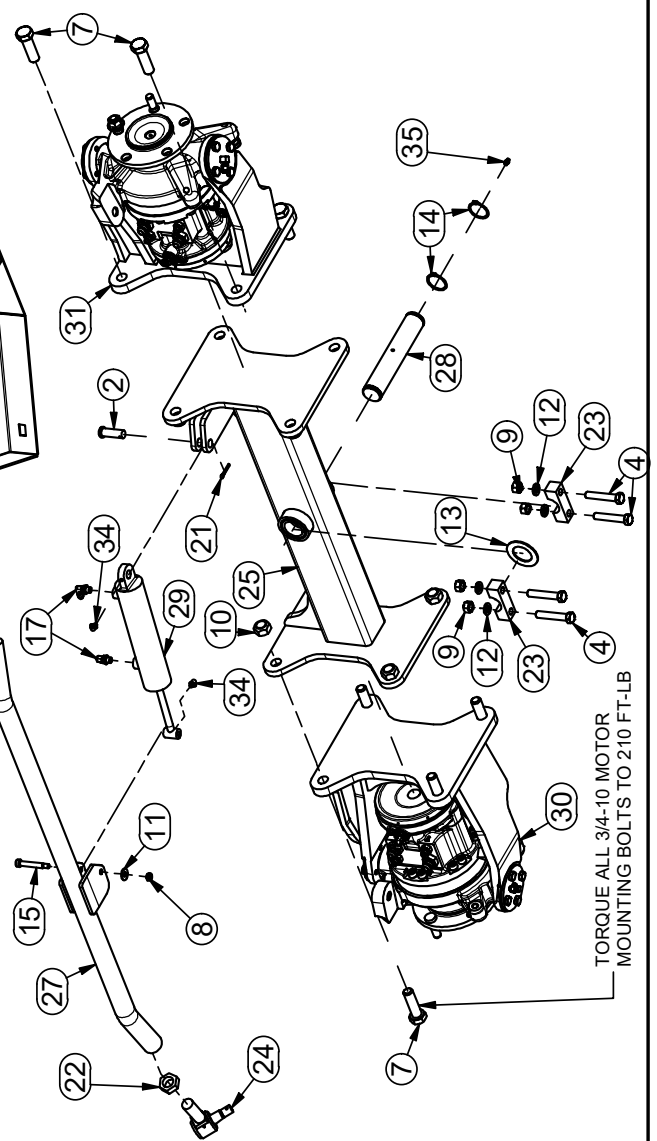
STEERING BAR ORIENTATION

LEFT

STEERING CYLINDER ADAPTER & ZERK ORIENTATION



ADJUSTING TIE ROD ENDS & SETTING ALIGNMENT
1. START BY ADJUSTING THE TIE ROD LOCATED ON THE LH SIDE OF THE MACHINE. EXTEND STEERING CYLINDER COMPLETELY AND ADJUST THE LH TIE ROD SO THAT THE SPINDLE CONTACTS THE STEERING STOP WHEN THE CYLINDER IS FULLY EXTENDED.
2. THEN ADJUST THE TIE ROD END LOCATED ON THE RH SIDE OF THE MACHINE SO THAT THE WHEEL HUB FACES ARE PARALLEL, AS A STARTING POINT. THE APPROXIMATE DIMENSION IS 47.0" BETWEEN TIE ROD ENDS (CTR TO CTR).



TORQUE ALL 3/4-10 MOTOR MOUNTING BOLTS TO 210 FT-LB

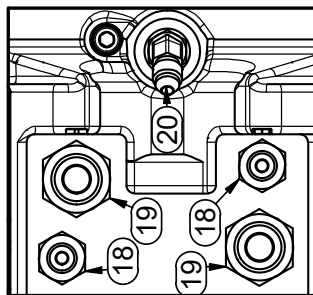
Parts List		DESCRIPTION
ITEM	QTY PART #	
2	1 102136	Clevis Pin, 5/8 x 1.5
3	2 110053	Hex Nut M12 X 1.75 Thd
4	4 110129	BOLT, 1/2-13 X 2.75 HEX
6	2 110347	BOLT, M12x1.75 x 25 Gr 10.9
7	8 110454	BOLT, 3/4-10 X 2.5
8	1 110600	NUT, 5/16-18, UNITORQUE LOCK
9	4 110610	NUT, 1/2-13
10	8 110625	NUT, 3/4-10, UNITORQUE LOCK
11	1 110665	WASHER, 5/16" FLAT STANDARD
12	24 110666	WASHER, 1/2" LOCK
13	1 110862	WASHER - THRUST, IGUS MTI-24
14	2 110888	SNAP RING - EXT, 1-1/2
15	1 111190	BOLT, 3/8 X 2.0 SHOULDER SHCS
17	2 120235	ADAPTER, 4MJ-4MB90
18	10 120249	ADAPTER, 4MJ-6MB
19	8 120446	ADAPTER, 8MJ-10MB
20	2 120732	ADAPTER, 4MJ-6MB 45
21	1 200029	COTTER PIN, 5/32 X 1
22	2 302129	NUT, 7/8-18 HEX JAM GR 2
23	2 311459	KEEPER - AXLE PIVOT, LOWER
24	2 312032	Tie Rod End, RH
25	1 315338	WELDMENT, FRONT AXLE
26	1 315350	FRAME WELDMENT, SWEEPER
27	1 315367	WELDMENT, ROUND STEERING LINK
28	1 317174	PIN, FRONT AXLE
29	1 323010	CYLINDER - STEERING, 1-3/4 X 6
30	1 323055	MOTOR, LH FRONT WHEEL, 24.3 CI, 2-SPD
31	1 323056	MOTOR, RH FRONT WHEEL, 24.3 CI, 2-SPD
34	2 500230	GREASE ZERK, 1/4-28 90deg
35	1 510174	GREASE ZERK, 1/4-28 ST

WHEEL MOTOR INSTALLATION

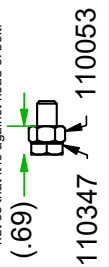
Front Left Wheel Motor:

Model Code: MGE02-2-G1A-W10-A121-Y8JM

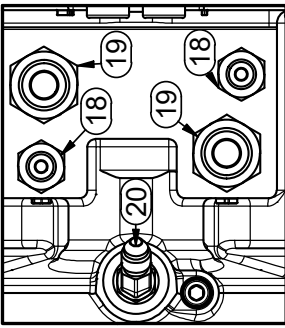
Steering Stop Bolts - Tighten jam nut so that it is against head of bolt.



110347 110053



Steering Stop



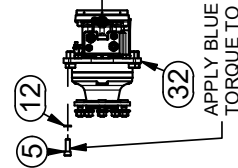
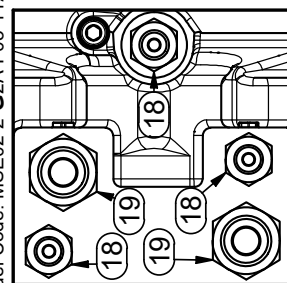
Front Right Wheel Motor:

Model Code: MGE02-2-D1A-W20-C121-Y8JM

Parts List		DESCRIPTION
ITEM	QTY	PART #
3	2	110053 Hex Nut M12 X 1.75 Thd
5	20	110244 BOLT, 1/2-13 X 1.5 SHCS
6	2	110347 BOLT, M12x1.75 x 25 Gr 10.9
18	10	120249 ADAPTER, 4MJ-6MB
19	8	120446 ADAPTER, 8MJ-10MB
20	2	120732 ADAPTER, 4MJ-6MB 45
21	1	200029 COTTER PIN, 5/32 X 1
30	1	323055 MOTOR, LH FRONT WHEEL, 24.3 CI, 2-SPD
31	1	323056 MOTOR, RH FRONT WHEEL, 24.3 CI, 2-SPD
32	1	323057 MOTOR, LH REAR WHEEL, 24.3 CI, 2-SPD
33	1	323058 MOTOR, RH REAR WHEEL, 24.3 CI, 2-SPD

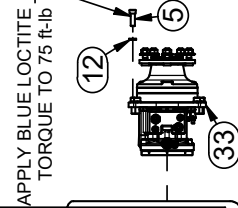
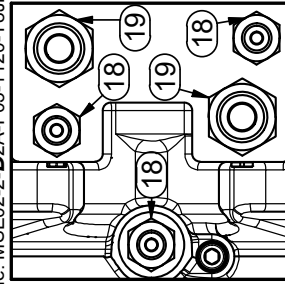
Left Rear Wheel Motor:

Model Code: MSE02-2-G2A-F03-1120-Y8JM



Right Rear Wheel Motor:

Model Code: MSE02-2-D2A-F03-1120-Y8JM

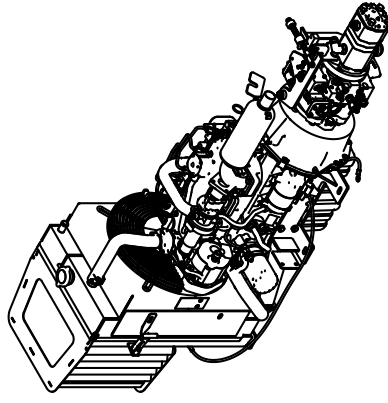


EDGE TRIM PLACEMENT

Parts List		
ITEM	QTY	DESCRIPTION
1	10'	100365 MOLDING - EDGE GUARD, 5/32
16	13'	112084 Rubber Seal, .625 X .25

NOTES: APPLY EDGE TRIM TO ALL
OVALS SHOWN ON THIS PAGE.
- 1/4" MATERIAL USES 112084 TRIM
- ALL OTHER MATL USES 100365 TRIM

ENGINE ASSEMBLY

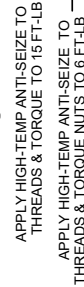


Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	1	102074	Clamp, Adel .75w x 1.25id x .406 Hole	32	1	120254	ADAPTER, 12MJ-12MB
2	4	110001	BOLT, 1/2-13 X 1.25, WIZ FLANGE	33	2	120256	ADAPTER, 12MJ-16MB
3	2	110020	Bolt, 5/16-18 X 0.75 in Carriage	34	1	120319	ADAPTER, 6MJ-6MB
4	6	110069	WASHER, 5/16" FLAT SAE	35	1	120546	ADAPTER, 20BH-16MB90
5	3	110074	Hex Nut M6 X 1.0 Thd	36	1	120705	Test Port, M16, 4MB
6	1	110141	NUT, M8 X 1.25 WIZFLANGE	37	1	120740	Adapter, 20mj-12mb
7	2	110155	WASHER, 3/8" FLAT SAE	38	1	120754	Adapter, 6fx-6mj, -4fb Gage Port
8	2	110176	BOLT, M10x1.5 x 35 SHCS	39	2	132014	INSULATOR CAP, (ALTERNATOR)
9	4	110220	BOLT, 1/2-13 X 1, WIZ FLANGE	40	1	132092	FUSE COVER, BUSS CFCOVER-1R
10	1	110300	COTTER PIN, 3/32 X 0.75	41	1	132093	FUSE HOLDER, BUSS CFBAR1-M8XSP
11	2	110419	BOLT, 1/2-13 X 1.75	42	1	132150	FUSE, 50 AMP
12	2	110422	BOLT, 5/16-18 X .75	43	1	302151	Formed Hose, Radiator Bottom
13	1	110459	BOLT, 5/16-18 X 1, WIZ FLANGE	44	1	302152	Formed Hose, Radiator Top
14	5	110469	BOLT, M8x1.25 x 20 Gr 10.9	45	1	302161	COLLAR, TAPERED SPRING TENSIONER
15	9	110560	BOLT, M10-1.25 X 20 HHCS 8.8 PLAIN	46	1	302162	COLLAR, SPRING TENSIONER
16	4	110588	NUT, 1/2-13 WIZ FLANGE	47	1	305112	ASSY, RADIATOR SCREEN
17	3	110606	NUT, 5/16-18 WIZ FLANGE	48	1	315186	Weldment, Kubota Throttle Mnt
18	3	110623	NUT, 5/16-24	49	1	315379	WELDMENT, RADIATOR MOUNT
19	2	110666	WASHER, 1/2" LOCK	50	1	315417	WELDMENT, NEUTRAL CENTERING
20	7	110674	WASHER, 5/16" LOCK	51	2	317301	CATCH, LATCH
21	11	110689	Washer, M10, Lock	52	1	317303	BRKT, NEUTRAL SAFETY SW
22	2	110692	WASHER, 6mm LOCK	53	1	317304	LEVER, PROPULSION PUMP
23	1	110728	CLAMP, ADEL DOUBLE .75WX.5IDX.406HOLE	54	1	317305	BRKT, PUSH/PULL CABLE
24	2	110931	BOLT, M6x1 x 25 Gr 8.8	55	1	317316	BOLT, NEUTRAL CENTERING PIVOT
25	1	111196	Connecting Rod, 5/16-24 X 5/16-24 X 6.0, ZINC	56	1	317421	BRKT, NEUTRAL SPRING
26	1	111197	Spring, Compression 5.12 L X .54 OD X .049 Wire	57	1	323054	Pump, PM30 Propulsion, 1.53 CI / .49 CI Charge
27	4	112101	CLAMP, 1.50", T-BOLT	58	1	323063	PUMP, DOUBLE GEAR 1.16 / .24 CI
28	1	112148	Washer, .474 X .937 X .1, GR 9 Zinc-Plated	59	1	332004	Sender, Water, 3/8 Npt
29	1	120144	ADAPTER, 6MJ-10MB	60	1	332066	SWITCH, 221 F TEMP, 6MP, N.O. RISING
30	1	120224	ADAPTER, 10MJ-10MB90	61	1	342011	ADAPTER - PUMP, KUBOTA 1505, KIT
31	2	120249	ADAPTER, 4MJ-6MB	62	1	342067	MANIFOLD, TOP OUTLET EXHAUST

(PARTS LIST CONTINUED
ON PAGE 2)

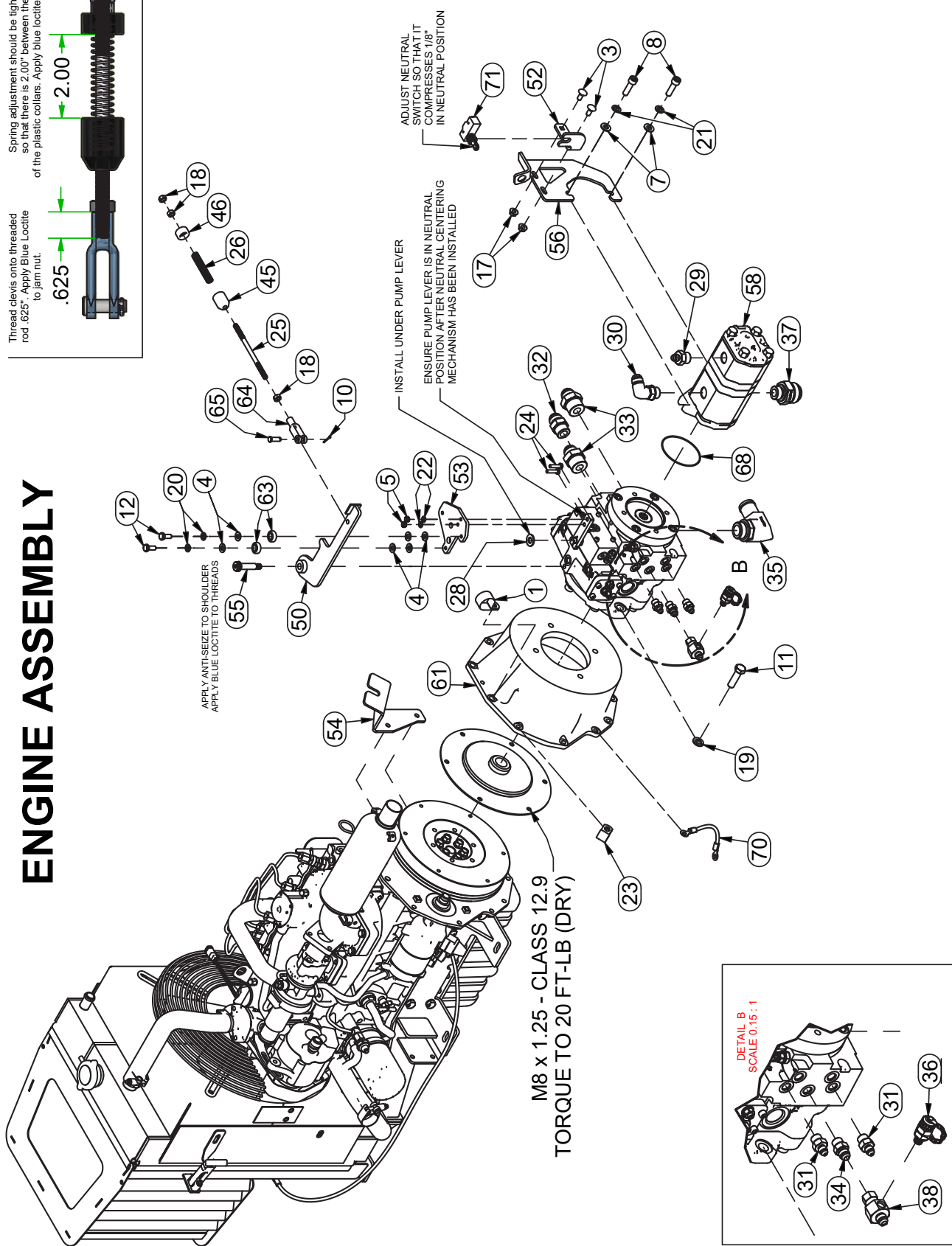
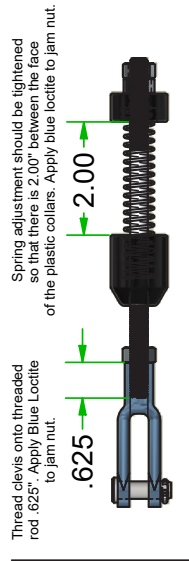
MANUFACTURING NOTE:
AIR INTAKE CANNISTER,
ENGINE FAN, FUEL FILTER, AND
MUFFLER KIT INCLUDED WITH ENGINE

(PARTS LIST CONTINUED FROM PAGE 1)

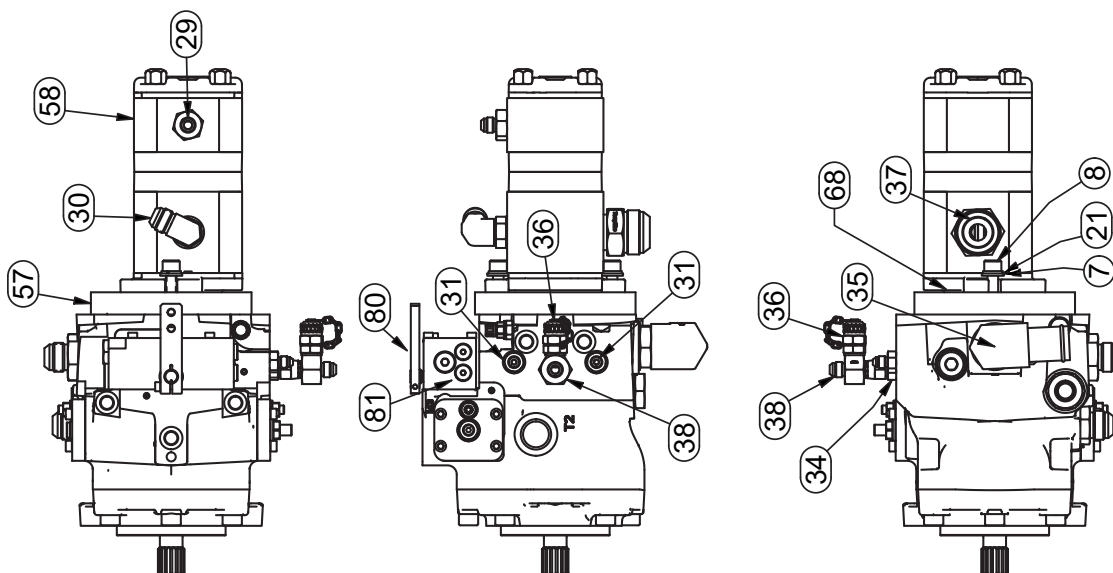


843005 Engine - Service Parts	
PART #	DESCRIPTION
302058	FILTER, OIL
802063	BELT, ENGINE FAN
842018	FAN, ENGINE COOLING
842017	MUFFLER KIT. KUBOTA C31

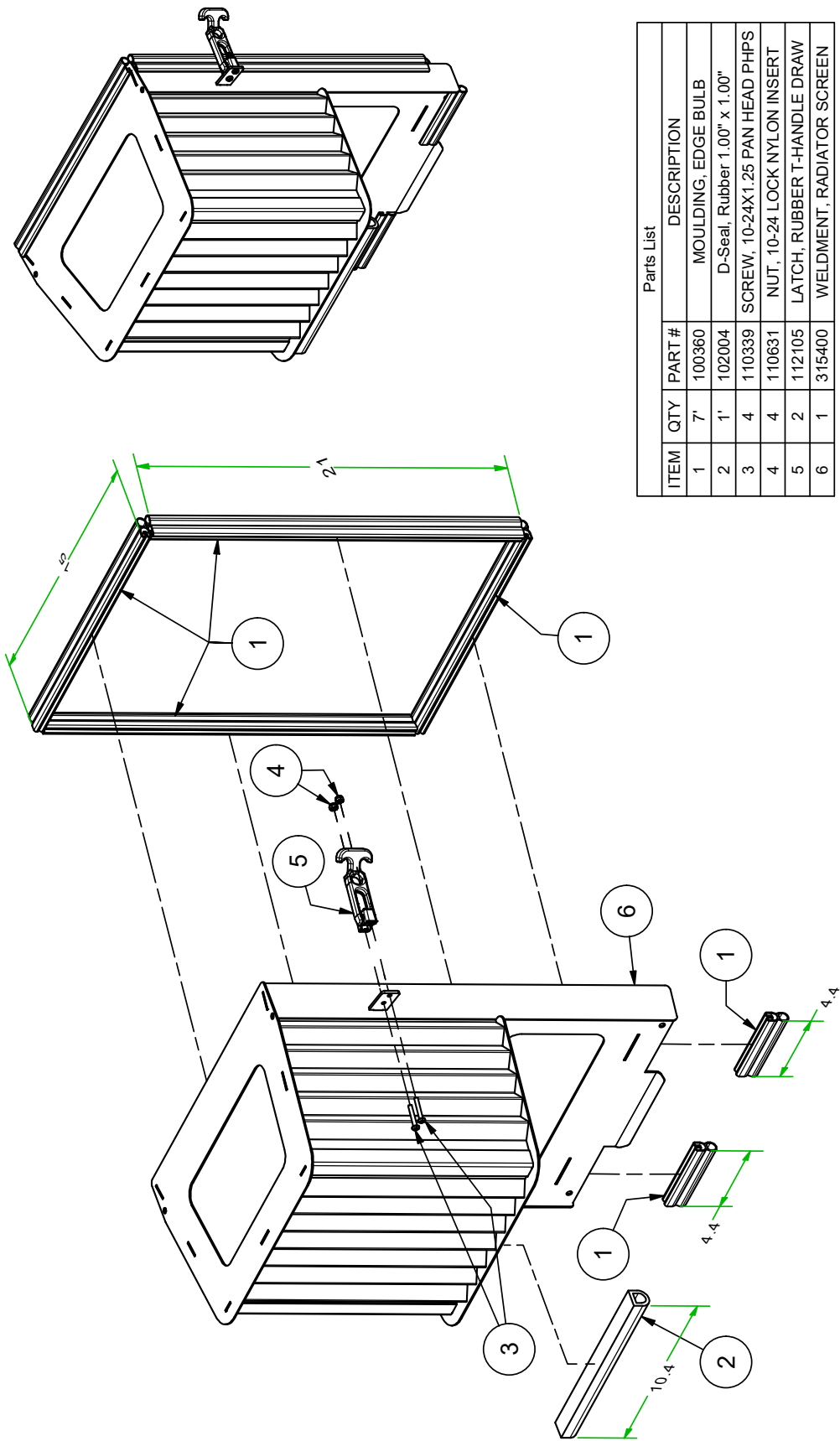
305072 REV: H



This diagram shows an exploded view of a mechanical assembly. Callout 32 points to a small cylindrical component, and callout 33 points to a larger, more complex component that appears to be a valve or actuator. The assembly is shown in a perspective view, with various bolts and fasteners visible.



Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
7	2	110155	Washer, 3/8" Flat Sae	38	1	12075	Adapter, 6fjx-6mj, -4fbs Gage Port
8	2	110176	Bolt, M10x1.5 X 35 Shcs	57	1	323054	Pump, PM30 Propulsion, 1.53ci / .49ci Charge
11	11	110689	Washer, M10, Lock	58	1	323063	Pump, Double Gear 1.16 / .24 Ci
21	29	120144	Adapter, 6mj-10mb	68	1	820247	O'ring 2.042 1/16" Buna
30	30	120224	Adapter, 10mj-10mb90	80	1	322111	Servo Controller, PM30
31	2	120249	Adapter, 4mj-6mb	81	1	325013	Seal Kit, PM30 Servo Control
32	1	120254	Adapter, 12mj-12mb	81.1	1	322104	GASKET-CONT-PM50
33	2	120256	Adapter, 12mj-16mb	81.2	1	322105	OR-1.78-15.60-X
34	1	120319	Adapter, 6mj-6mb	81.3	2	322106	OR-1.78-7.65-NBR70
35	1	120546	Adapter, 20bh-16mb90	81.4	1	322107	OR-1.78-14-NBR70
36	1	120705	Test Port, M16, 4mb	81.5	1	322108	OR-1.78-9.25-NBR90
37	1	120740	Adapter, 20mi-12mb				



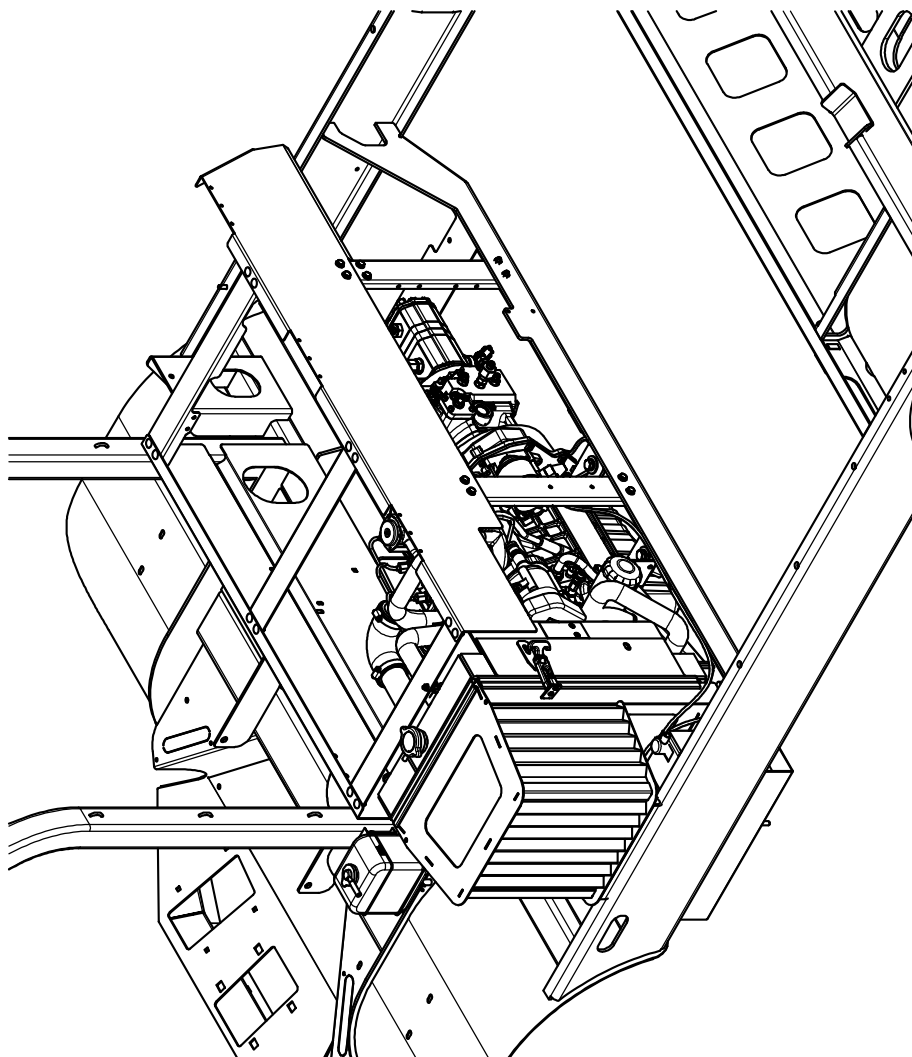
Parts List			DESCRIPTION
ITEM	QTY	PART #	
1	7'	100360	MOULDING, EDGE BULB
2	1'	102004	D-Seal, Rubber 1.00" x 1.00"
3	4	110339	SCREW, 10-24X1.25 PAN HEAD PHPS
4	4	110631	NUT, 10-24 LOCK NYLON INSERT
5	2	112105	LATCH, RUBBER T-HANDLE DRAW
6	1	315400	WELDMENT, RADIATOR SCREEN

REPLACES 305073

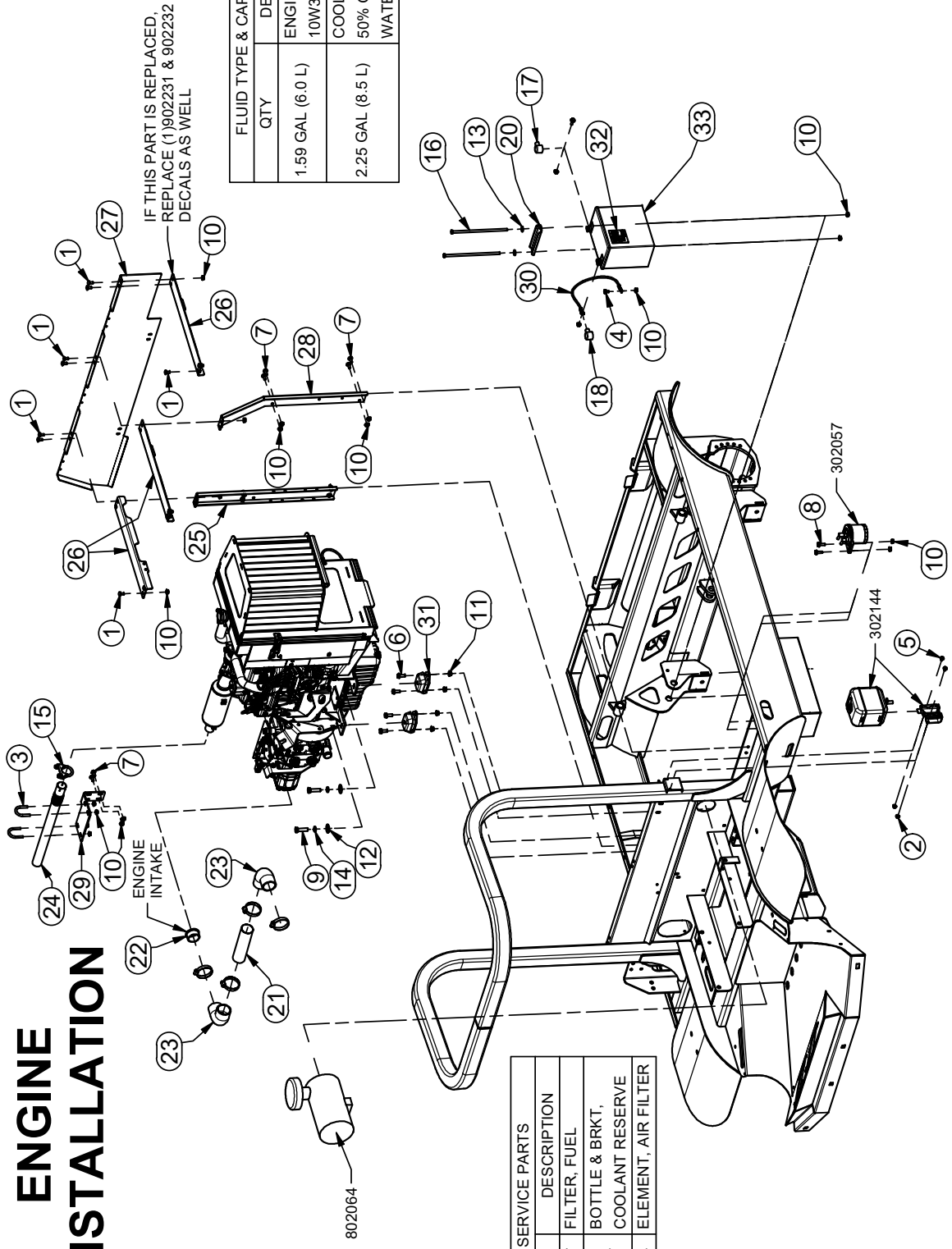
RADIATOR SCREEN ASSEMBLY

ENGINE INSTALLATION

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	12	110020	Bolt, 5/16-18 X 0.75 in Carriage
2	2	110290	NUT, 1/4-20 WIZ FLANGE
3	2	110362	U-BOLT, 5/16
4	1	110426	BOLT, 5/16-18 X 0.5, WIZ FLANGE
5	2	110434	BOLT, 1/4-20 X 0.5, WIZ FLANGE
6	8	110440	BOLT, 3/8-16 X 1, WIZ FLANGE
7	10	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
8	2	110459	BOLT, 5/16-18 X 1, WIZ FLANGE
9	4	110577	BOLT, M12x1.75 x 45 Gr 10.9
10	31	110606	NUT, 5/16-18 WIZ FLANGE
11	8	110645	NUT, 3/8-16 WIZ FLANGE
12	4	110658	WASHER, 1/2" FLAT STANDARD
13	2	110665	WASHER, 5/16" FLAT STANDARD
14	4	110666	WASHER, 1/2" LOCK
15	1	110779	CLAMP, 1 1/2" EXHAUST
16	2	111198	BOLT, 5/16-18 X 9.5 Zinc Full Thread
17	1	132069	BATTERY TERMINAL COVER, POSITIVE
18	1	132070	BATTERY TERMINAL COVER, NEGATIVE
19	1	305072	ASSY, ENGINE
20	1	311603	BRACKET - HOLD DOWN, BATTERY
21	1	311941	TUBE, AIR INTAKE
22	1	312036	REDUCER, 2.0" TO 1.75"
23	2	312037	ELBOW, 2.0" 90 DEG
24	1	315389	WELDMENT, HAWK EXHAUST
25	1	317205	SUPPORT, REAR SHIELD
26	3	317206	SUPPORT, UPPER SHIELD
27	1	317235	SHIELD, REAR ENGINE
28	1	317236	SUPPORT, VERTICAL REAR SHIELD
29	1	317248	BRKT, EXHAUST SUPPORT
30	1	530051	CABLE, BATTERY/GND 16" BLACK
31	4	800021	MOTOR MOUNT
32	1	800195	DECAL, RECYCLE BATTERY
33	1	832011	BATTERY, SEALED GEL W/ L TERMINAL



ENGINE INSTALLATION

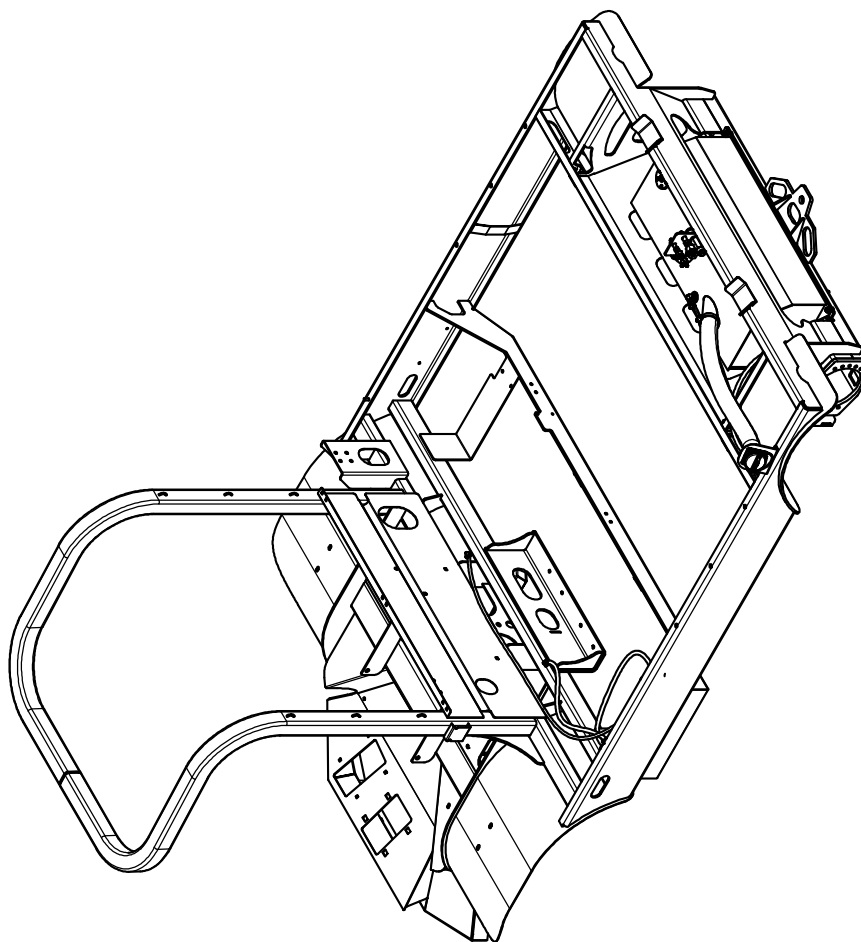


FLUID TYPE & CAPACITIES		
QTY	DESCRIPTION	
1.59 GAL (6.0 L)	ENGINE OIL - SAE 10W30 or 15W-40	
2.25 GAL (8.5 L)	COOLANT - 50% GLYCOL / 50% WATER MIX	

SERVICE PARTS	
Part #	DESCRIPTION
302057	FILTER, FUEL
302144	BOTTLE & BRKT, COOLANT RESERVE
802064	ELEMENT, AIR FILTER

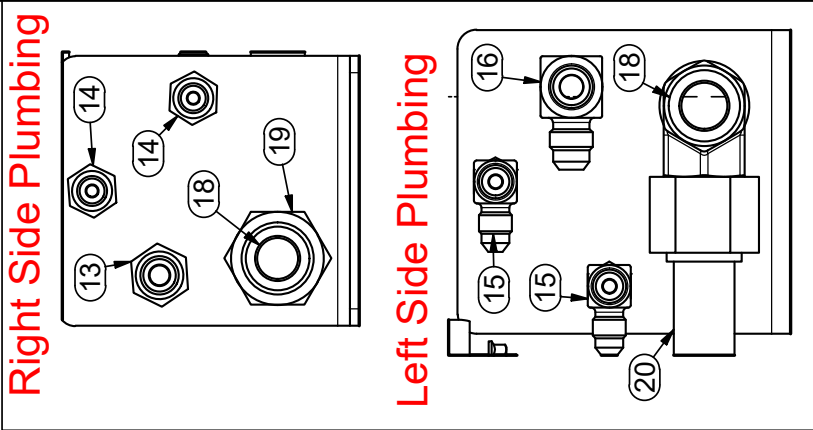
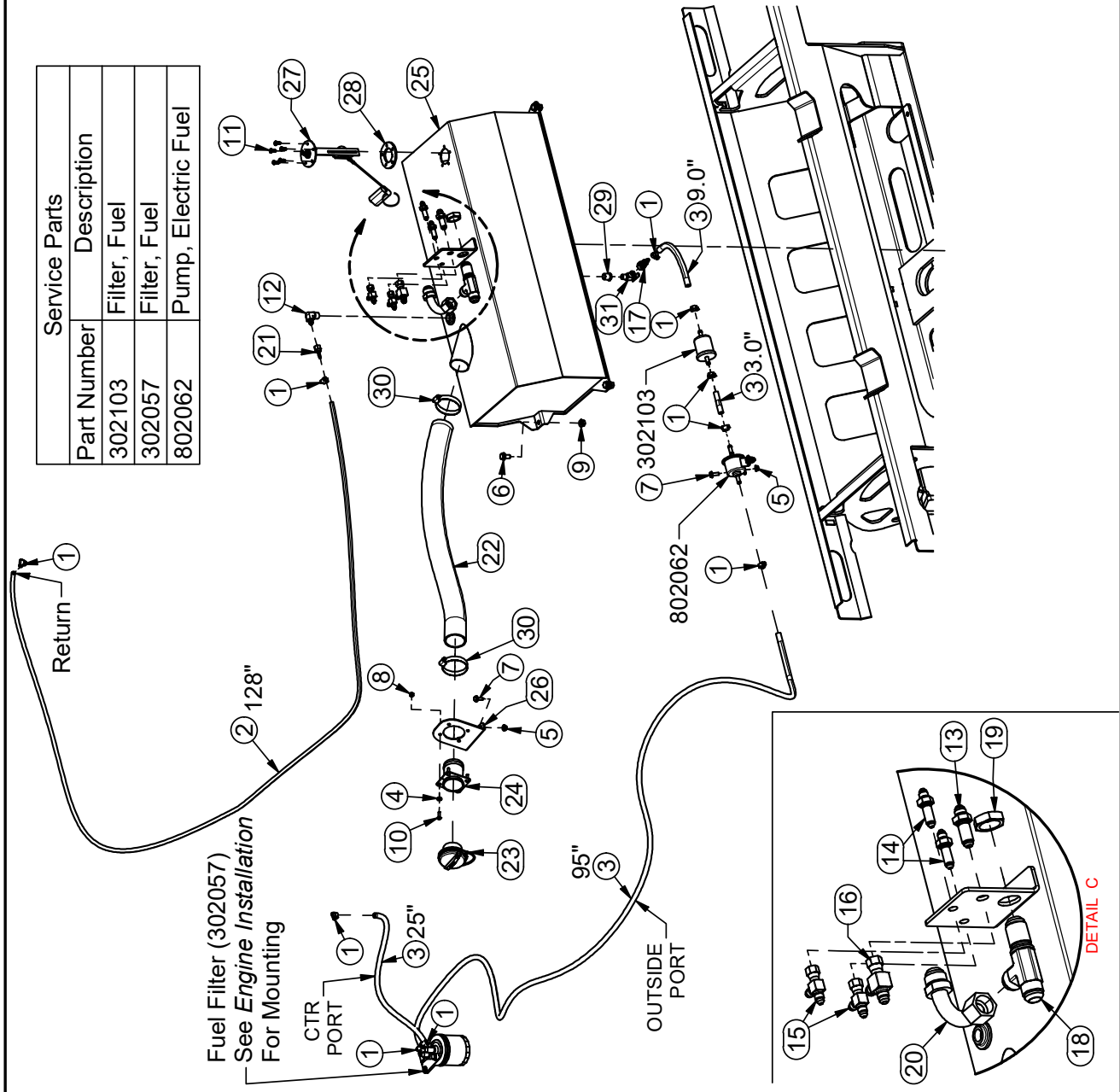
FUEL TANK INSTALLATION

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	10	100361	CLAMP, HOSE #4 .25 MINI
2	128"	100708	Hose, 3/16 High Pressure Fuel
3	132"	100756	Hose, 5/16 High Pressure Fuel
4	1	110090	WASHER, #10 FLAT STANDARD
5	4	110290	NUT, 1/4-20 WIZ FLANGE
6	4	110437	BOLT, 3/8-16 X 0.75, WIZ FLANGE
7	4	110468	BOLT, 1/4-20 X 0.75, WIZ FLANGE
8	4	110631	NUT, 10-24 LOCK NYLON INSERT
9	4	110645	NUT, 3/8-16 WIZ FLANGE
10	4	110709	SCREW, 10-24 X 0.75, RHMS
11	5	112053	SCREW, 10-32 X 1/2 MACH SEAL
12	1	120040	ADAPTER, 4MJ-6MP90
13	1	120102	ADAPTER, BULKHEAD, 6MJ-6MJ
14	2	120126	ADAPTER, BULKHEAD, 4MJ-4MJ
15	2	120215	ADAPTER, 4MJ-4F JX-4MJ
16	1	120216	ADAPTER, 6MJ-6F JX-6MJ
17	1	120378	ADAPTER, 5HB-6FBX
18	1	120487	ADAPTER, 12MJ-12MJ-12MJ BULKHEAD
19	1	120495	Nut, Lock, Bulkhead, -12
20	1	120516	Adapter, 12fjx-12mj90tube
21	1	120655	Adapter, 3hb-4fj
22	1	301010	HOSE, FUEL FILL
23	1	302137	FUEL CAP, 2" DIESEL, GREEN
24	1	315301	WELDMENT, DIESEL FILLER NECK
25	1	315342	WELDMENT, FUEL TANK
26	1	317175	BRKT, FUEL FILL
27	1	332058	Fuel Level Sender, 9.5" Depth
28	1	500172	GASKET, FUEL SENDER
29	1	500209	FITTING, REDUCER 3/8 X 1/4 NPT
30	2	511003	CLAMP, HOSE #36 2.25"
31	1	802023	VALVE, FUEL SHUT OFF 6MB-4MP



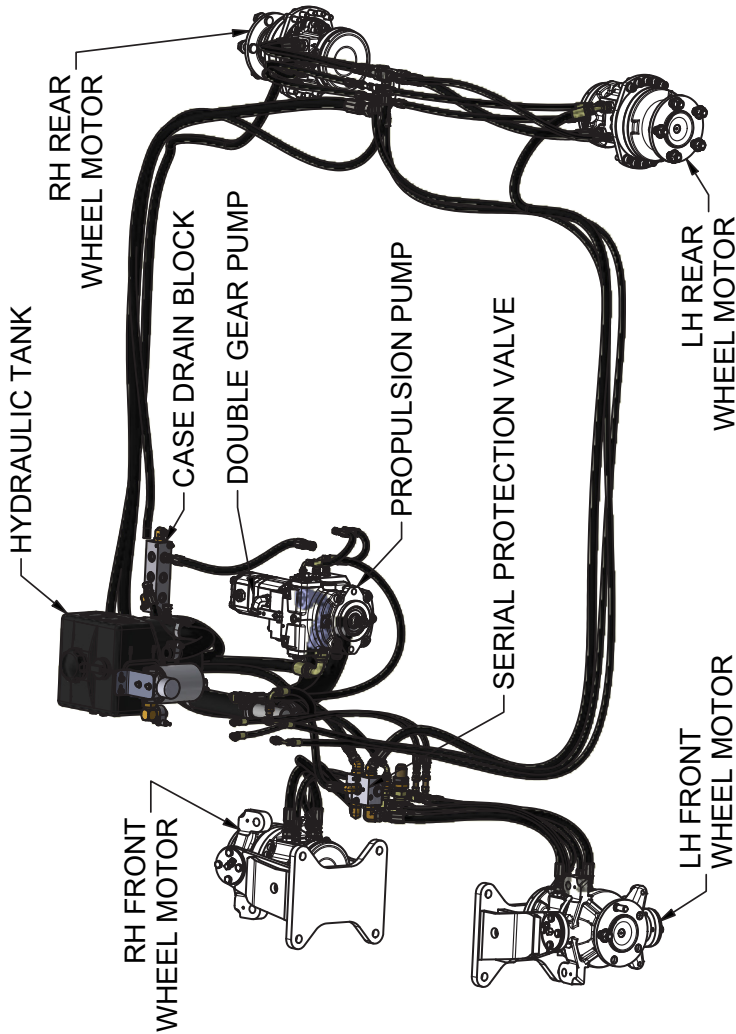
FUEL TANK INSTALLATION

Service Parts	
Part Number	Description
302103	Filter, Fuel
302057	Filter, Fuel
802062	Pump, Electric Fuel



PROPULSION HYDRAULIC INSTALLATION

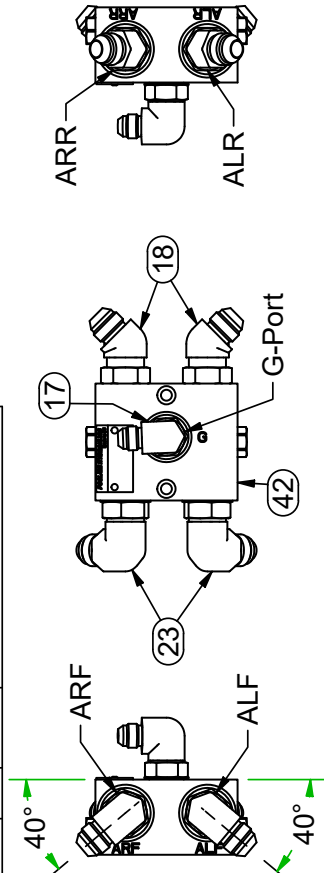
Parts List				Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	6	110290	NUT, 1/4-20 WIZ FLANGE	11	6	112008	CLAMP, 1.25", T-BOLT	21	5	120222	ADAPTER, 6MJ-6MB90
2	4	110410	BOLT, 1/4-20 X 2.5	12	2	112101	CLAMP, 1.50", T-BOLT	22	2	120226	ADAPTER, 12BH-12MB90
3	4	110434	BOLT, 1/4-20 X 0.5, WIZ FLANGE	13	2	112137	CLAMP, 2.00", T-BOLT	23	2	120245	ADAPTER, 8MJ-10MB90
4	4	110440	BOLT, 3/8-16 X 1, WIZ FLANGE	14	1	120057	ADAPTER, 6MJ-6MJ-6F-JX	24	4	120249	ADAPTER, 4MJ-6MB
5	2	110529	BOLT, 5/16-18 X 4.5	15	1	120102	ADAPTER, BULKHEAD, 6MJ-6MJ	25	1	120292	NUT, BULKHEAD LOCKNUT, -6
6	2	110606	NUT, 5/16-18 WIZ FLANGE	16	2	120126	ADAPTER, BULKHEAD, 4MJ-4MJ	26	1	120303	ADAPTER, 12MB-16HB
7	2	111011	Bolt, M5-.80 X 55, SHCS, Stainless	17	3	120134	ADAPTER, 6MJ-8MB90	27	2	120319	ADAPTER, 6MJ-6MB
8	2	111012	Nut, M5-.80, Nylock, Stainless	18	2	120139	ADAPTER, 8MJ-10MB 45	28	1	120495	Nut, Lock, Bulkhead, -12
9	2	111013	WASHER, M5, Flat, Stainless	19	1	120187	ADAPTER, 12BH-8MB90	29	1	120516	Adapter, 12fjx-12mj90tube
10	3	112007	CLAMP, 1.75", T-BOLT	20	1	120216	ADAPTER, 6MJ-6F-JX-6MJ	30	1	120663	ADAPTER, BULKHEAD, 12MJ-12MJ
								31	1	120728	PLUG, 6MB HEX
								32	2	120739	ADAPTER, 4MJ-8MB
								33	2	120741	ADAPTER, 4MJ-4MJ-4F-JX
								34	1	120742	ADAPTER, 12MB-12FB-12FB
								35	1	122016	ADAPTER, 12MJ-12MJ-12F-JX
								36	1	122034	HEAD, SPIN-ON FILTER, -12SAE
								37	1	260265	MOUNTING BRACKET, FILTER
								38	1	305087	Assy, Hydraulic Tank, ISO
								39	1	322095	BLOCK, CASE DRAIN
								40	1	322096	TEE, 1.5 x 1.25 x 1.25 BH
								41	1	322098	GAUGE, PRESSURE, 600 PSI, 4MB
								42	1	323059	VALVE, SERIAL PROTECTION
								43	1	323060	VALVE, LOOP FLUSH
								44	1	323064	HOSE KIT, 4WD HAWK GROUND DRIVE
								45	1	323067	VALVE, BRAKE RELEASE & HI GEAR
								46	1	822044	FILTER, 3 MICRON
								47	1	822045	GAUGE, OIL FILTER



VALVE ASSEMBLIES

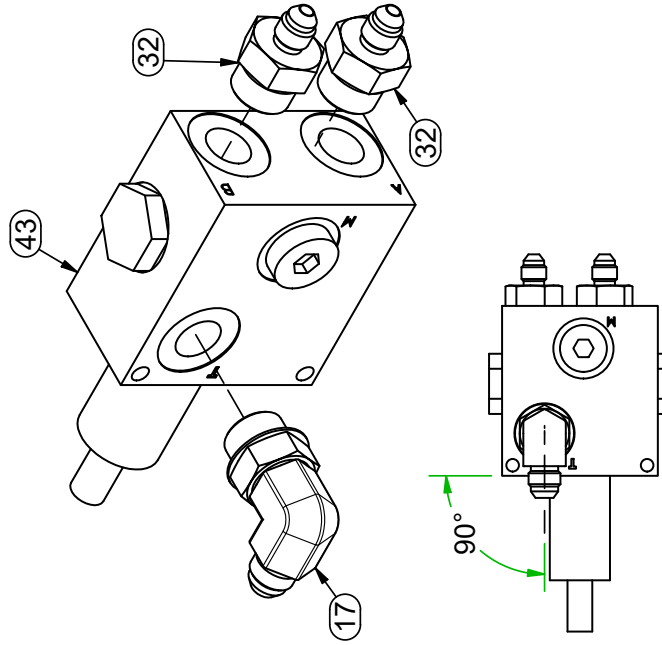
Serial Protection Valve

Parts List		
ITEM	QTY	DESCRIPTION
17	1	ADAPTER, 6MJ-8MB90
18	2	ADAPTER, 8MJ-10MB 45
23	2	ADAPTER, 8MJ-10MB90
42	1	VALVE, SERIAL PROTECTION

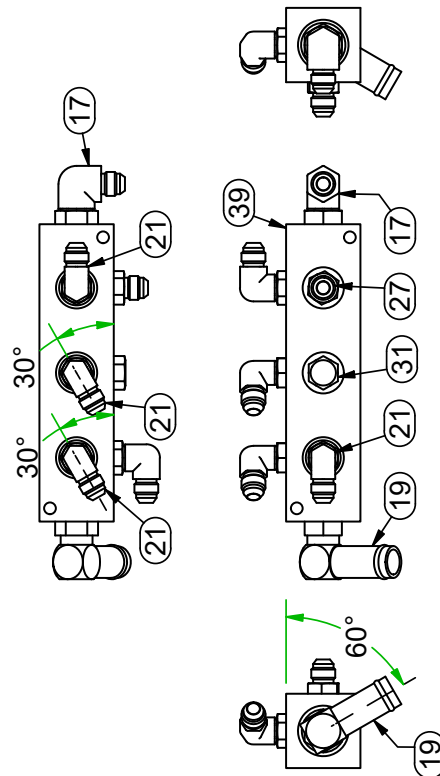


Loop Flush Valve

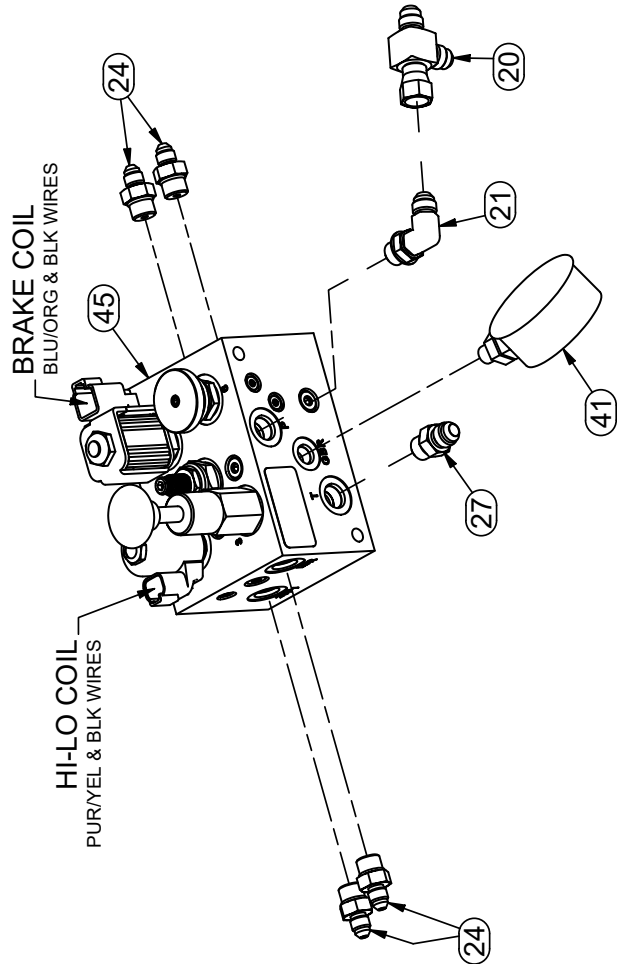
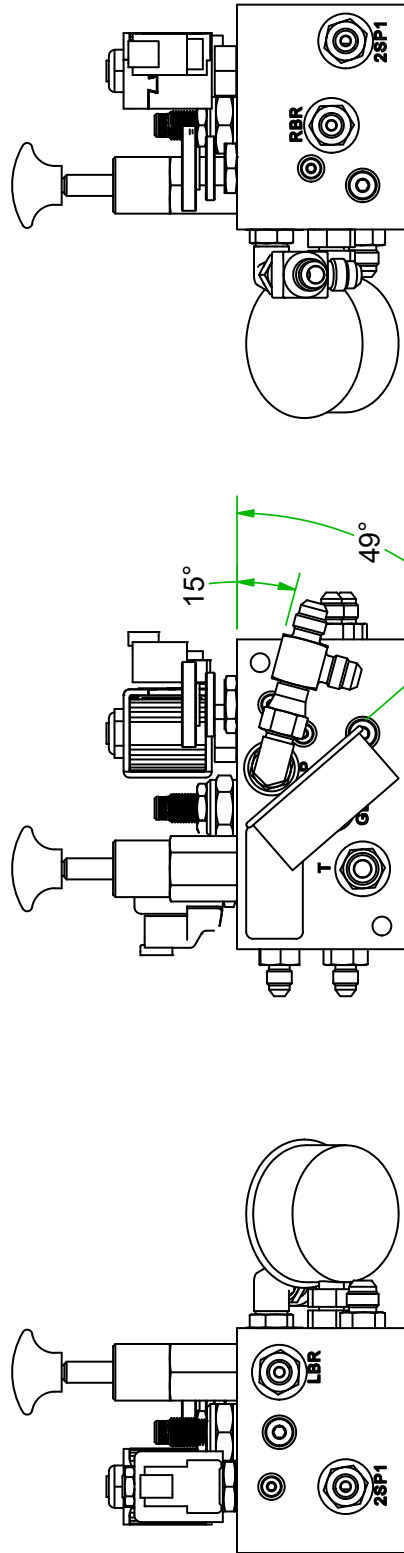
Parts List		
ITEM	QTY	DESCRIPTION
17	1	ADAPTER, 6MJ-8MB90
32	2	ADAPTER, 4MJ-8MB
43	1	VALVE, LOOP FLUSH



Case Drain Block



BRAKE RELEASE / HI GEAR VALVE ASSEMBLY



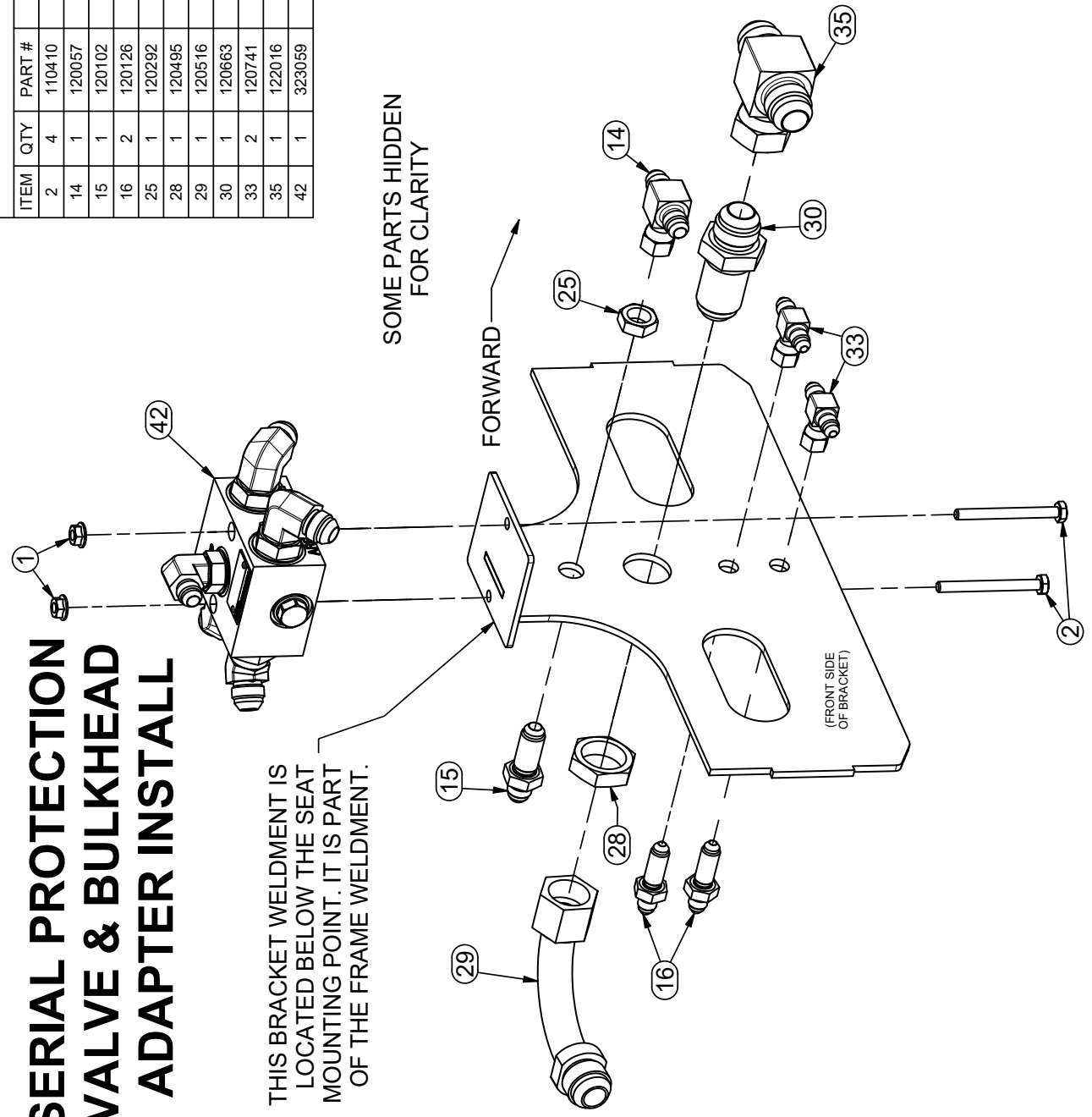
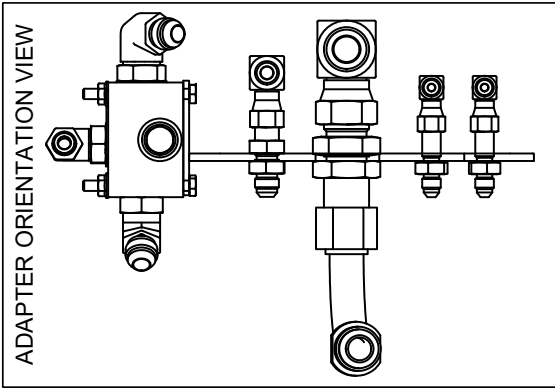
Parts List		
ITEM	QTY	PART # DESCRIPTION
20	1	120216 ADAPTER, 6MJ-6FJX-6MJ
21	5	120222 ADAPTER, 6MJ-6MB90
24	4	120249 ADAPTER, 4MJ-6MB
27	2	120319 ADAPTER, 6MJ-6MB
41	1	322098 GAUGE, PRESSURE, 600 PSI, 4MB
45	1	323067 VALVE, BRAKE RELEASE & HI GEAR

Parts List			
ITEM	QTY	PART #	DESCRIPTION
2	4	110410	BOLT, 1/4-20 X 2.5
14	1	120057	ADAPTER, 6MJ-6MJ-6FJX
15	1	120102	ADAPTER, BULKHEAD, 6MJ-6MJ
16	2	120126	ADAPTER, BULKHEAD, 4MJ-4MJ
25	1	120292	NUT, BULKHEAD LOCKNUT, -6
28	1	120495	Nut, Lock, Bulkhead, -12
29	1	120516	Adapter, 12fjx-12mj90tube
30	1	120663	ADAPTER, BULKHEAD, 12MJ-12MJ
33	2	120741	ADAPTER, 4MJ-4MJ-4FJX
35	1	122016	ADAPTER, 12MJ-12MJ-12FJX
42	1	323059	VALVE, SERIAL PROTECTION

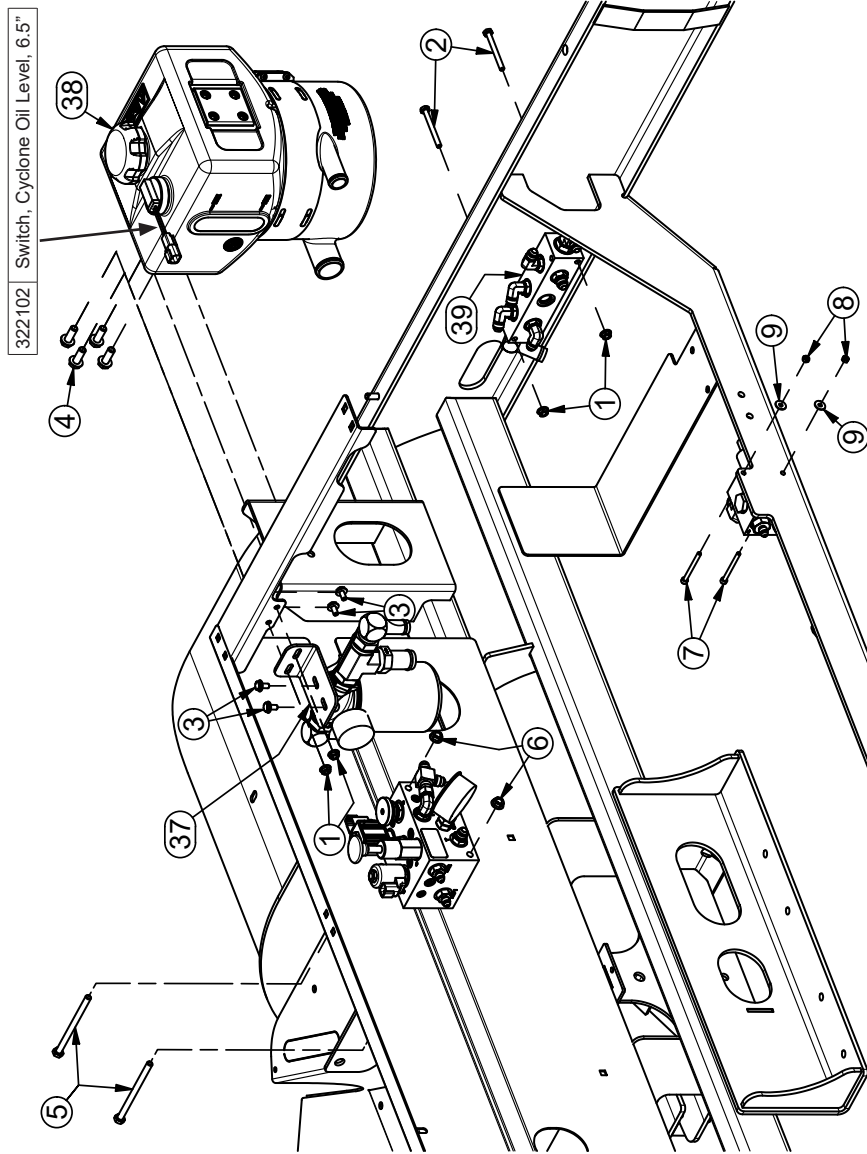
SERIAL PROTECTION VALVE & BULKHEAD ADAPTER INSTALL

THIS BRACKET WELDMENT IS LOCATED BELOW THE SEAT MOUNTING POINT. IT IS PART OF THE FRAME WELDMENT.

SOME PARTS HIDDEN FOR CLARITY

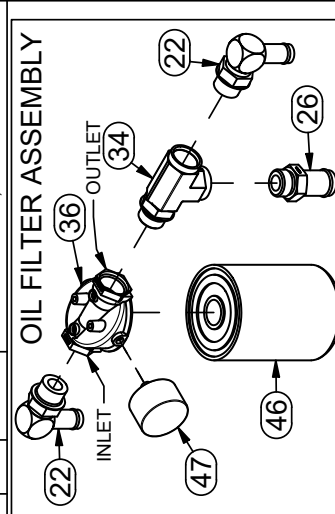


TANK, FILTER, & VALVE INSTALLATION

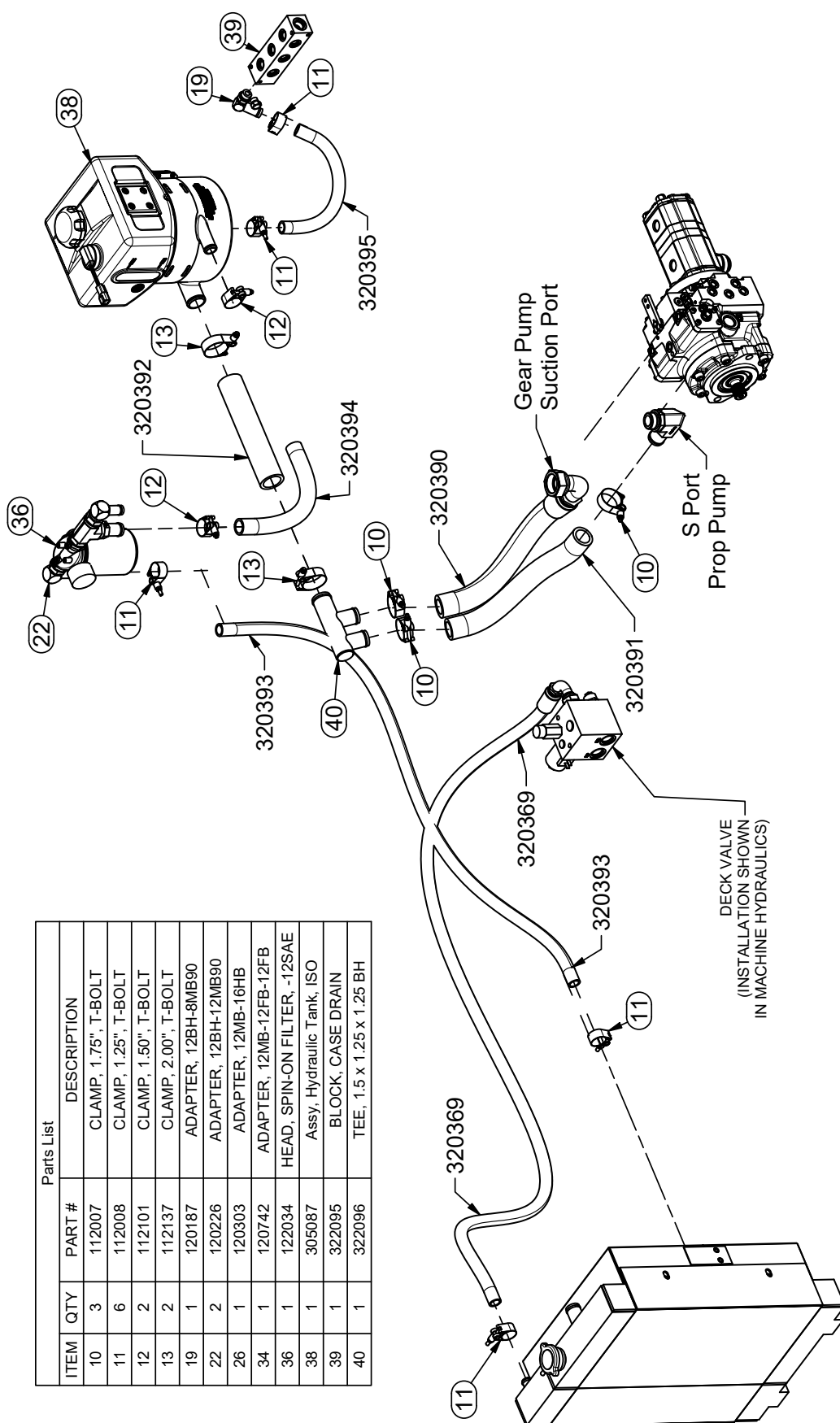


SOME PARTS HIDDEN
FOR CLARITY

305097				REV: C
Parts List				
ITEM	QTY	PART #	DESCRIPTION	
1	6	110290	NUT, 1/4-20 WIZ FLANGE	
2	4	110410	BOLT, 1/4-20 X 2.5	
3	4	110434	BOLT, 1/4-20 X 0.5, WIZ FLANGE	
4	4	110440	BOLT, 3/8-16 X 1, WIZ FLANGE	
5	2	110529	BOLT, 5/16-18 X 4.5	
6	2	110606	NUT, 5/16-18 WIZ FLANGE	
7	2	111011	Bolt, M5-.80 X 55, SHCS, Stainless	
8	2	111012	Nut, M5-.80, Nylock, Stainless	
9	2	111013	Washer, M5, Flat, Stainless	
22	2	120226	ADAPTER, 12BH-12MB90	
26	1	120303	ADAPTER, 12MB-16HB	
32	2	120739	ADAPTER, 4MJ-8MB	
34	1	120742	ADAPTER, 12MB-12FB-12FB	
36	1	122034	HEAD, SPIN-ON FILTER, -12SAE	
37	1	260265	MOUNTING BRACKET, FILTER	
38	1	305087	Assy, Hydraulic Tank, ISO	
39	1	322095	BLOCK, CASE DRAIN	
41	1	322098	GAUGE, PRESSURE, 600 PSI, 4MB	
43	1	323060	VALVE, LOOP FLUSH	
45	1	323067	VALVE, BRAKE RELEASE & HI GEAR	
46	1	822044	FILTER, 3 MICRON	
47	1	822045	GAUGE, OIL FILTER	

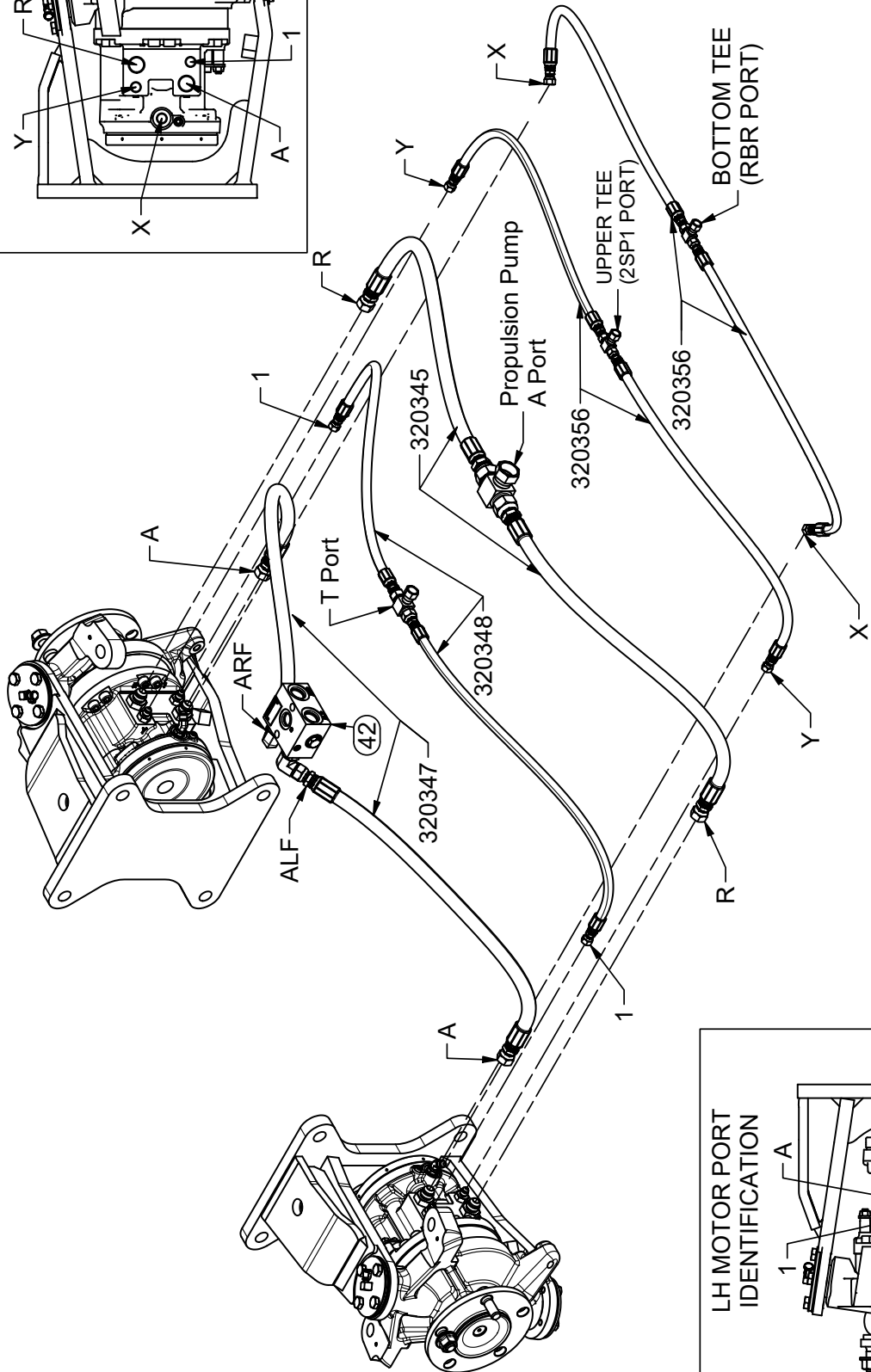
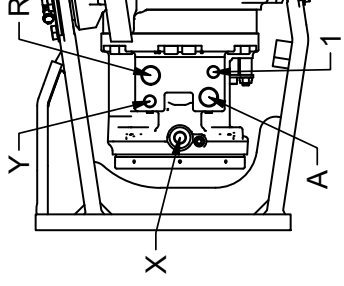


Parts List			
ITEM	QTY	PART #	DESCRIPTION
10	3	112007	CLAMP, 1.75", T-BOLT
11	6	112008	CLAMP, 1.25", T-BOLT
12	2	112101	CLAMP, 1.50", T-BOLT
13	2	112137	CLAMP, 2.00", T-BOLT
19	1	120187	ADAPTER, 12BH-3MB90
22	2	120226	ADAPTER, 12BH-12MB90
26	1	120303	ADAPTER, 12MB-16HB
34	1	120742	ADAPTER, 12MB-12FB-12FB
36	1	122034	HEAD, SPIN-ON FILTER, -12SAE
38	1	305087	Assy, Hydraulic Tank, ISO
39	1	322095	BLOCK, CASE DRAIN
40	1	322096	TEE, 1.5 x 1.25 x 1.25 BH

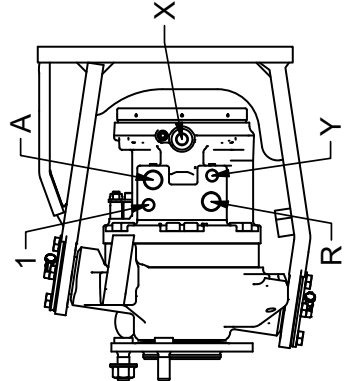


FRONT WHEEL MOTOR PLUMBING

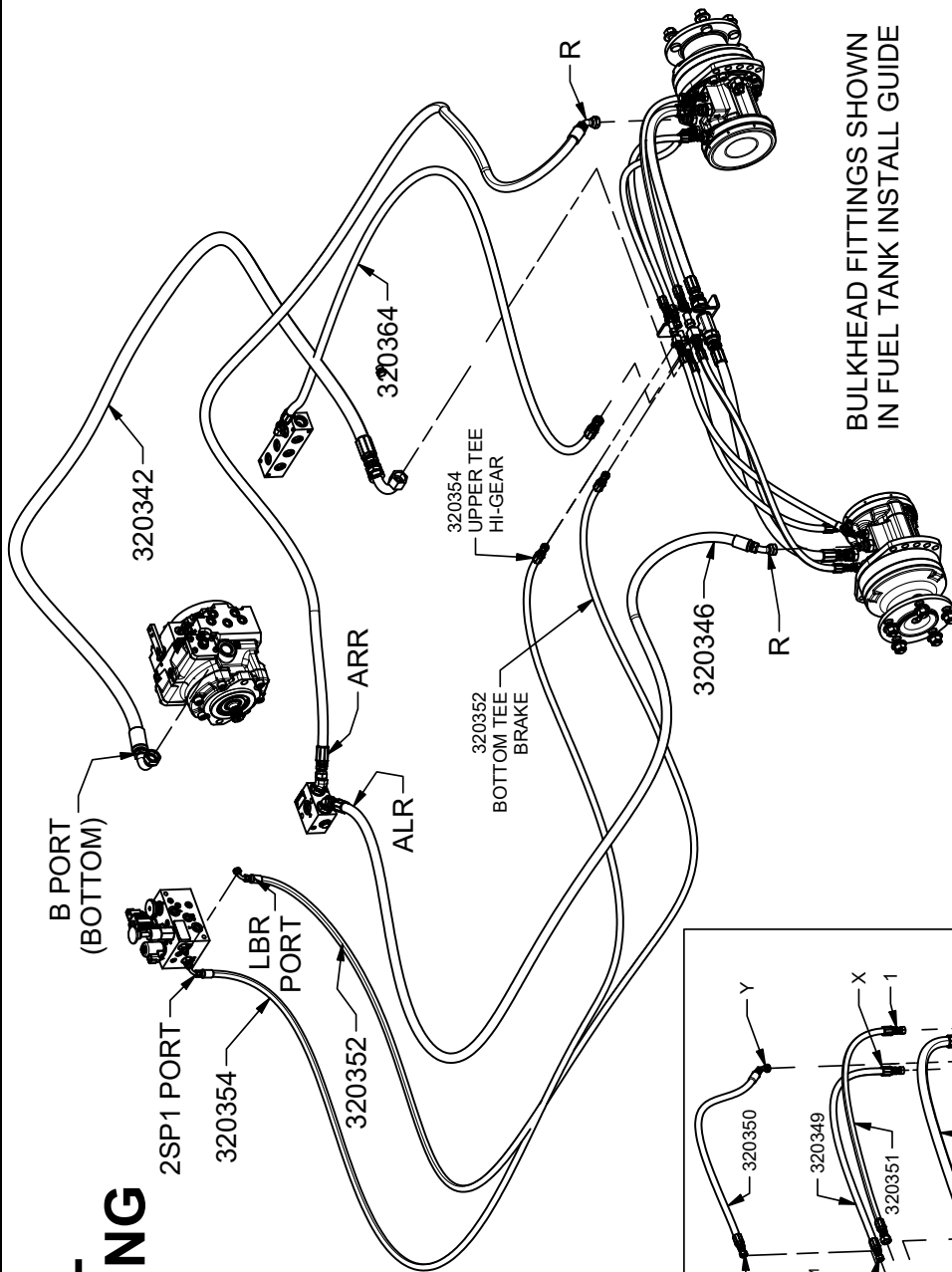
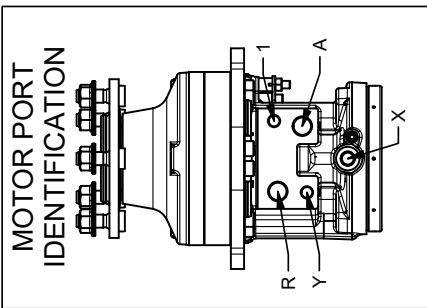
RH MOTOR PORT IDENTIFICATION



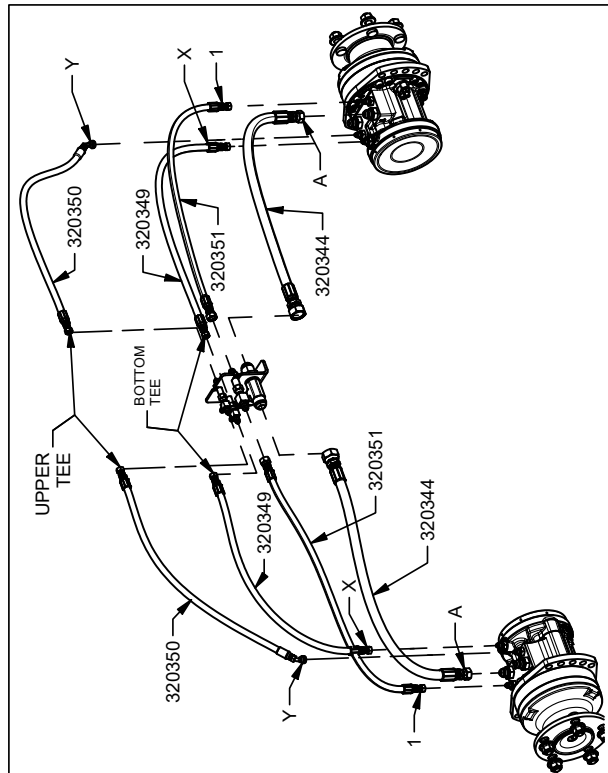
LH MOTOR PORT IDENTIFICATION



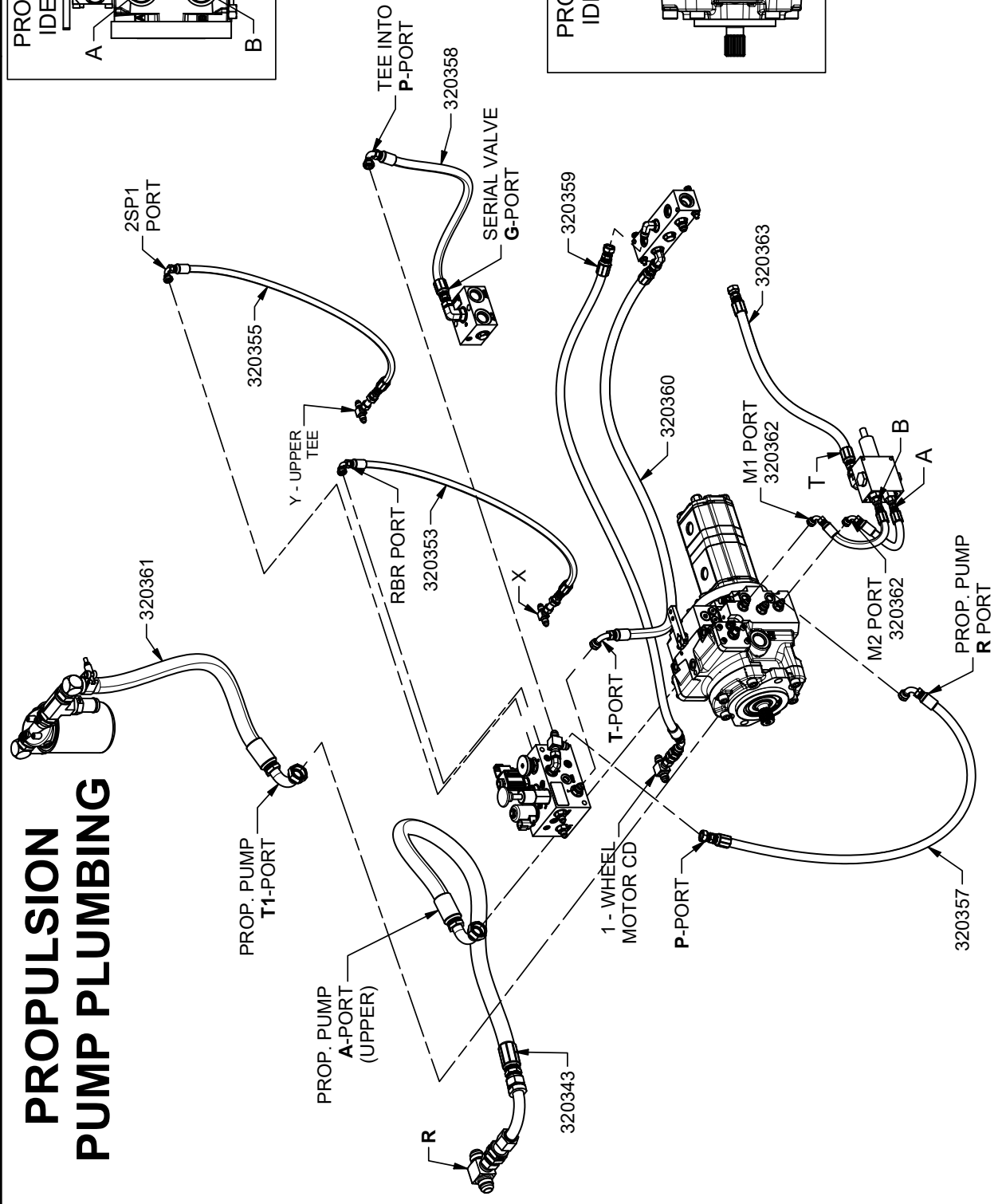
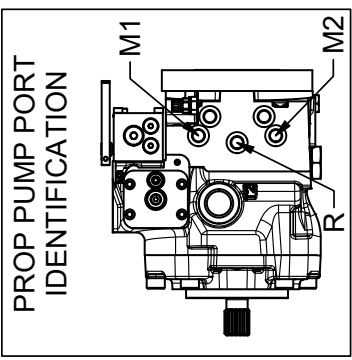
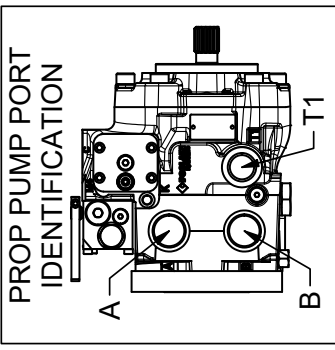
REAR WHEEL MOTOR PLUMBING



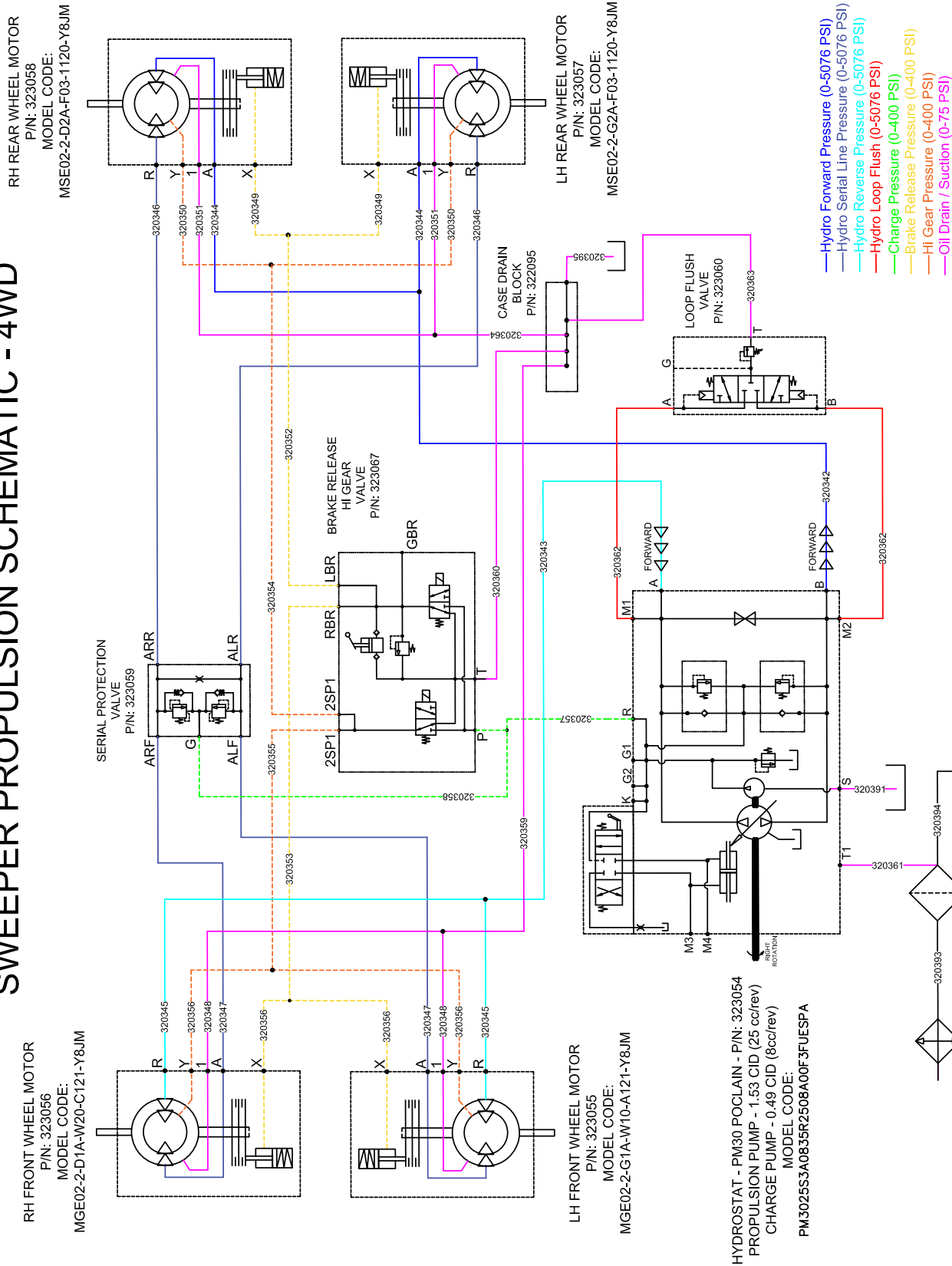
BULKHEAD FITTINGS SHOWN
IN FUEL TANK INSTALL GUIDE



PROPULSION PUMP PLUMBING



SWEEPER PROPULSION SCHEMATIC - 4WD



04/23/21

PAGE 10 OF 10

Parts List			Parts List		
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY
1	8	110264	BOLT, 10-24 X .5 STAINLESS, PHILLIPS	39	1
2	6	110290	NUT, 1/4-20 WIZ FLANGE	40	1
3	2	110434	BOLT, 1/4-20 X 0.5, WIZ FLANGE	41	1
4	4	110437	BOLT, 3/8-16 X 0.75, WIZ FLANGE	42	1
5	4	110474	BOLT, 1/4-20 X 1-1/2		
6	2	110529	BOLT, 5/16-18 X 4.5		
7	4	110588	NUT, 1/2-13 WIZ FLANGE		
8	5	110606	NUT, 5/16-18 WIZ FLANGE		
9	4	110640	Hex Nut M10		
10	4	110645	NUT, 3/8-16 WIZ FLANGE		
11	4	110689	WASHER, 10mm LOCK		
12	8	110999	Nut, 10-24 U-Type, .025"- .125" panel		
13	4	111055	STUD, M10 X 1.5 X 42 GRADE 8.8		
14	3	111151	Hex Cap 5-16x2_1-4 UNC		
15	4	112070	Bolt, 1/2-13 X 1.25 in Carriage		
16	4	120092	ADAPTER, 6MJ-6MJ-6MB		
17	1	120134	ADAPTER, 6MJ-8MB90		
18	1	120143	ADAPTER, 12MJ-10MB		
19	2	120216	ADAPTER, 6MJ-6FJX-6MJ		
20	2	120222	ADAPTER, 6MJ-6MB90		
21	1	120239	ADAPTER, 6MJ-8MB		
22	2	120249	ADAPTER, 4MJ-6MB		
23	1	120251	ADAPTER, 10MJ-10MB		
24	1	120319	ADAPTER, 6MJ-6MB		
25	2	120398	ADAPTER, REST 6MJ-6MB, .047		
26	2	120446	ADAPTER, 8MJ-10MB		
27	2	120689	Adapter, 6MB90-6FB		
28	6	120739	ADAPTER, 4MJ-8MB		
29	2	130012	CLAMP, ADEL AC28 .265 HOLE		
30	1	302079	COLUMN ASSY, TILT STEERING		
31	1	311726	MOUNT, STEERING COLUMN		
32	2	311737	PLATE, ORBITAL COVER		
33	1	315353	WELDMENT, OPERATOR CONSOLE		
34	2	322074	VALVE, PO CHECK		
35	2	322075	VALVE BODY, 3-WAY SAE-6		
36	1	322097	VALVE ASSY, THREE SPOOL		
37	1	323046	MOTOR, STEERING ORBITAL		
38	1	323062	HOSE KIT, HAWK MACHINE HYDRAULIC		

STEERING ORBITAL MOTOR

3-SPOOL CYLINDER CONTROL VALVE

CASE DRAIN BLOCK

DECK CONTROL VALVE

DOUBLE GEAR PUMP

HOPPER DOOR PO CHECK VALVE

HOPPER LIFT PO CHECK VALVE

STEERING CYLINDER

DECK LIFT

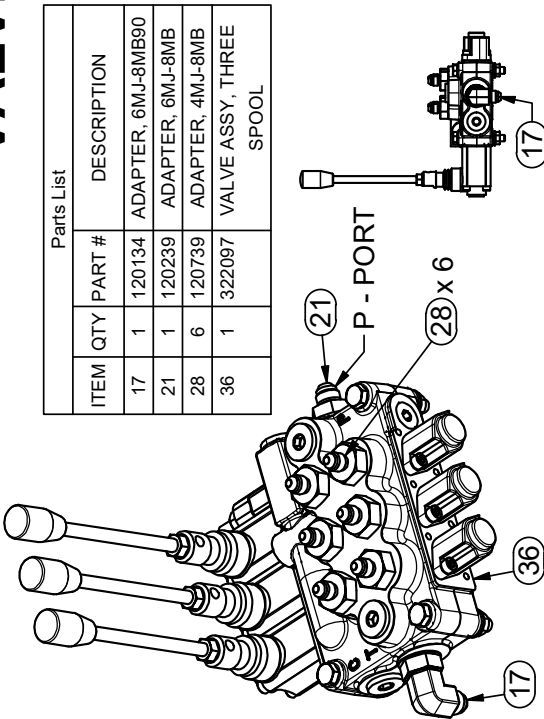
Parts List			Parts List		
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY
39	1	502087	Cap, Center Steering		
40	1	502088	Nut, Steering Wheel, 13/16-20 UNEF		
41	1	552002	STEERING WHEEL		
42	1	820158	DECK VALVE		

MACHINE HYDRAULIC INSTALLATION

HYDRAULIC SCHEMATIC
SHOWN ON PAGE 10

VALVE ASSEMBLIES

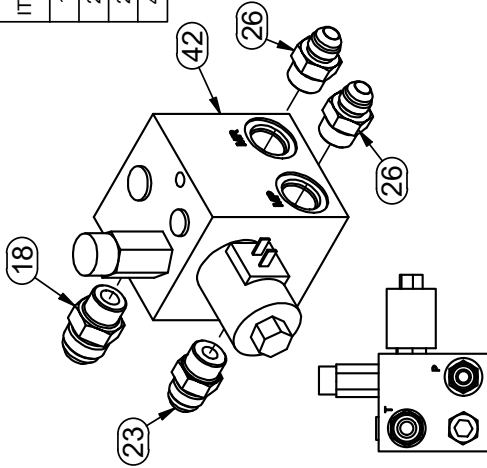
Three Spool Valve Assembly



Parts List		
ITEM	QTY	DESCRIPTION
17	1	ADAPTER, 6MJ-8MB90
21	1	ADAPTER, 6MJ-8MB
28	6	ADAPTER, 4MJ-8MB
36	1	VALVE ASSY, THREE SPOOL

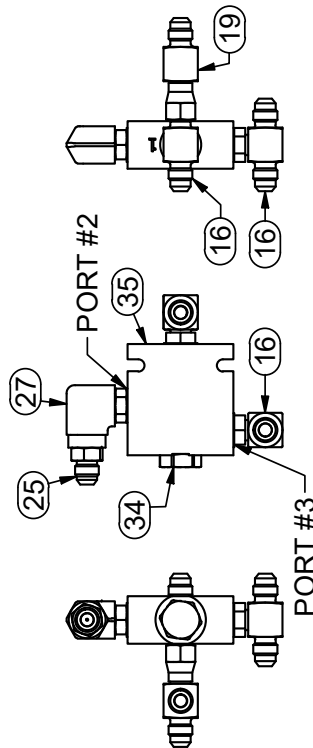
Deck Valve Assembly

Parts List		
ITEM	QTY	DESCRIPTION
18	1	ADAPTER, 12MJ-10MB
23	1	ADAPTER, 10MJ-10MB
26	2	ADAPTER, 8MJ-10MB
42	1	DECK VALVE



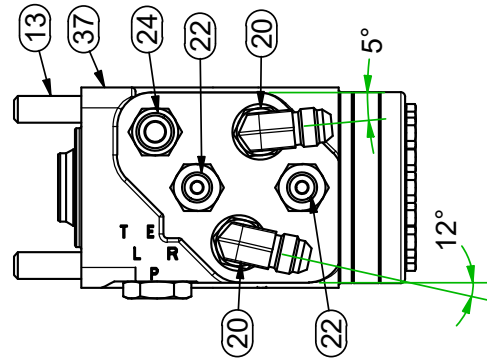
820158 - SERVICE PARTS		
PART #	DESCRIPTION	
522163	COIL, 12VDC DEUTSCH	
820230	VALVE, COUNTER BALANCE	
820231	RELIEF, 3000 PSI PRESSURE	
820232	VALVE, N.O. SOLENOID CARTRIDGE	

P.O. Check Valve Assembly X 2

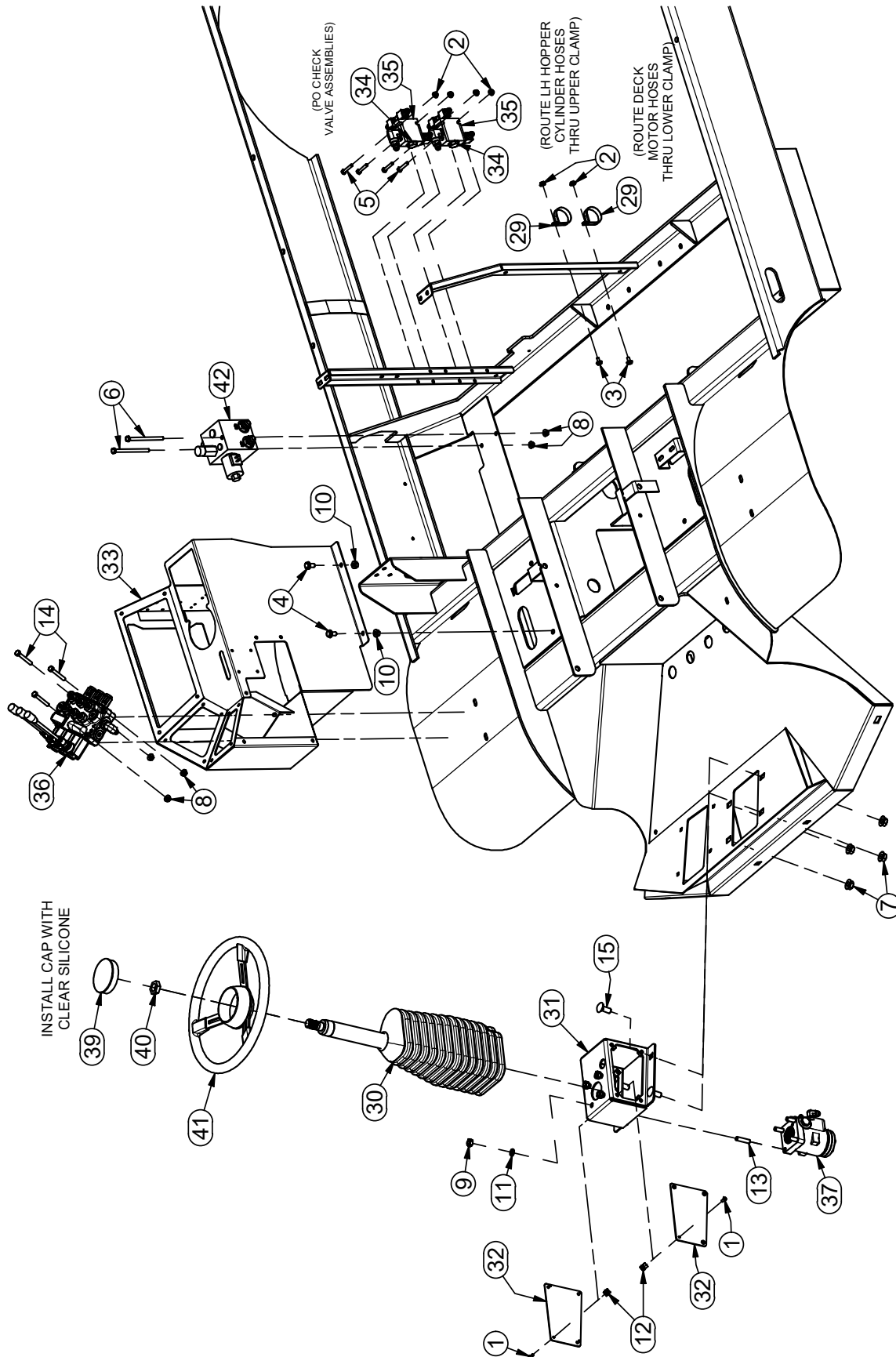


Parts List		
ITEM	QTY	DESCRIPTION
16	4	ADAPTER, 6MJ-6MJ-6MB
19	2	ADAPTER, 6MJ-6FJX-6MJ
25	2	ADAPTER, REST 6MJ-6MB, .047
27	2	Adapter, 6MB90-6FB
34	2	VALVE, PO CHECK
35	2	VALVE BODY, 3-WAY SAE-6

Steering Orbital Assembly

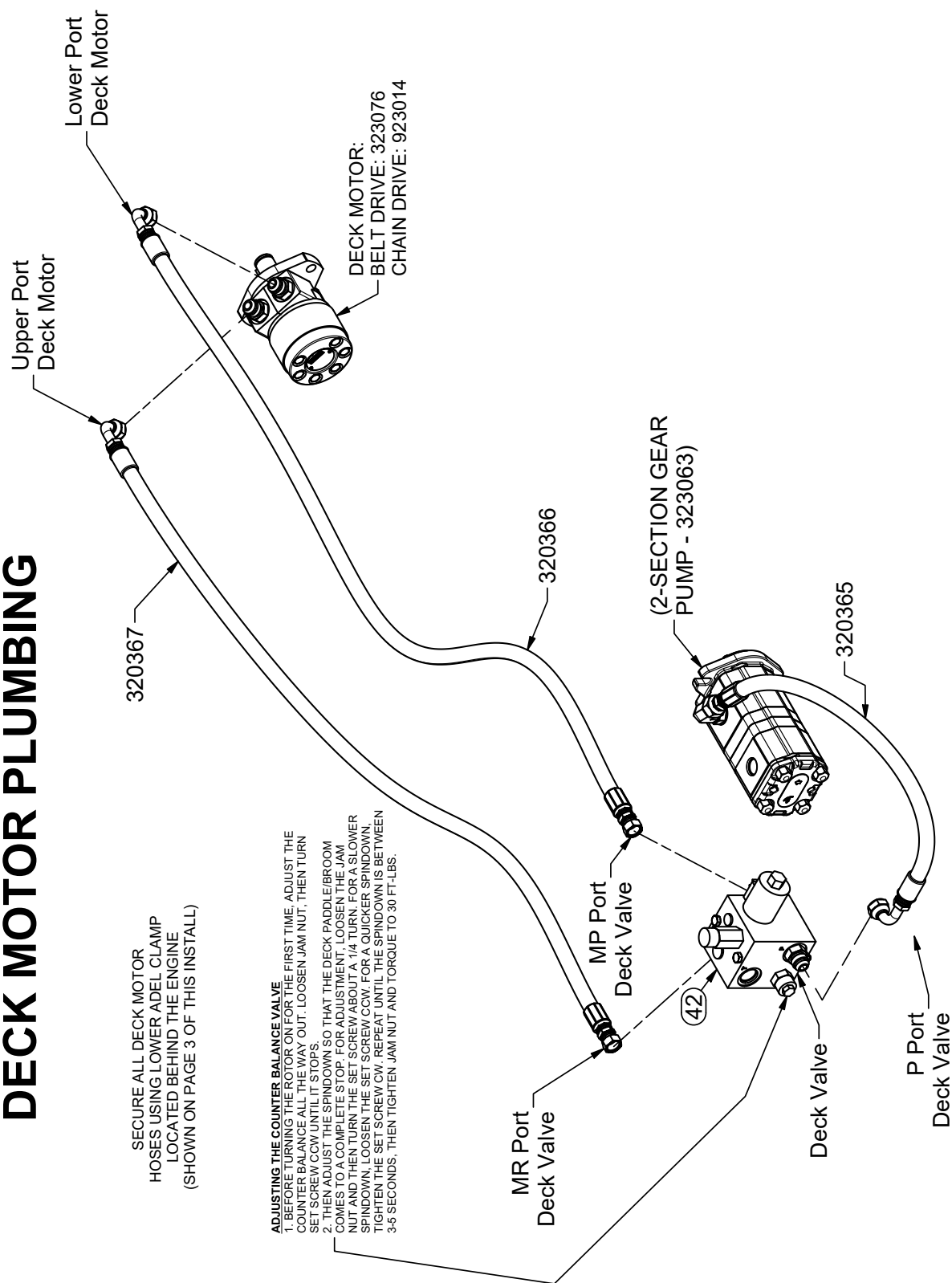


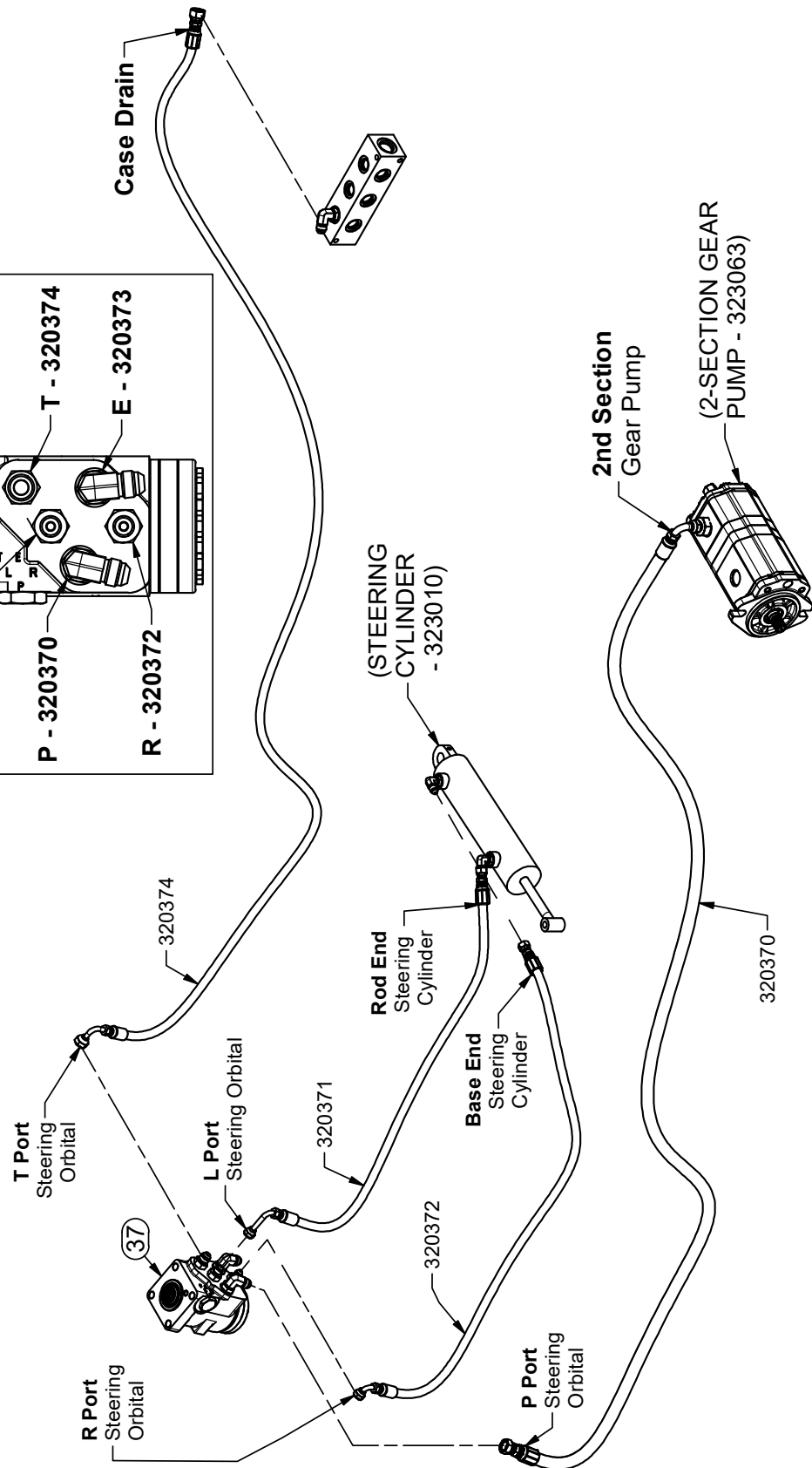
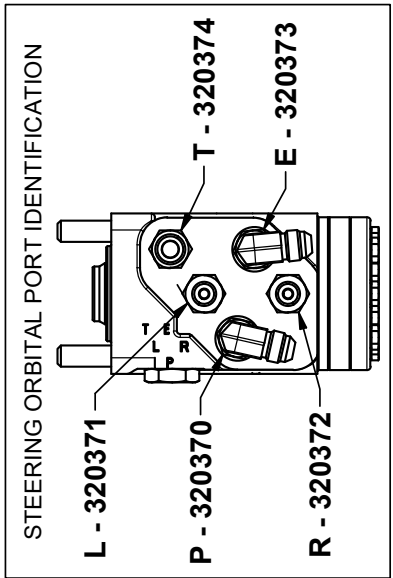
Parts List		
ITEM	QTY	DESCRIPTION
13	4	STUD, M10 X 1.5 X 42 GRADE 8.8
20	2	ADAPTER, 6MJ-6MB90
22	2	ADAPTER, 4MJ-6MB
24	1	ADAPTER, 6MJ-6MB
37	1	MOTOR, STEERING ORBITAL



VALVE INSTALLATION

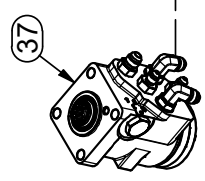
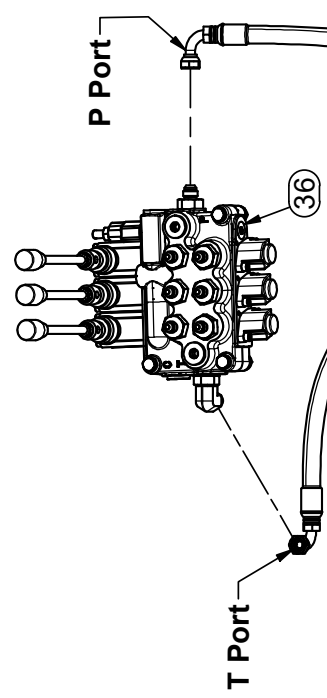
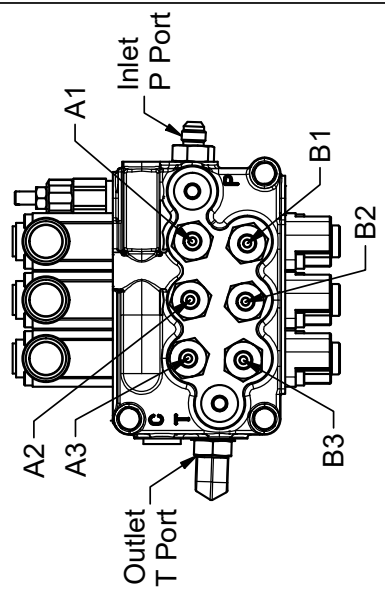
DECK MOTOR PLUMBING





STEERING PLUMBING

THREE SPOOL VALVE
PORT IDENTIFICATION



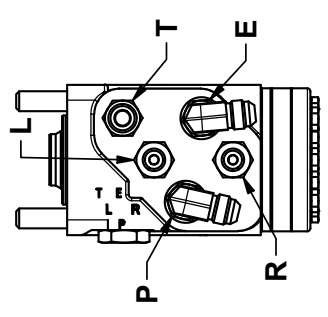
Port E
Steering Orbital

320373

320375

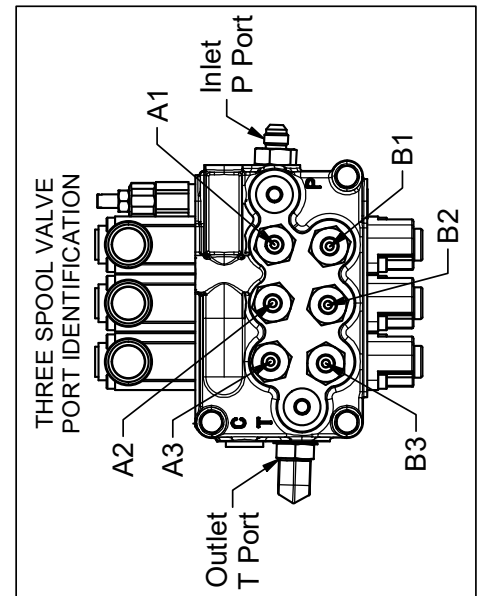
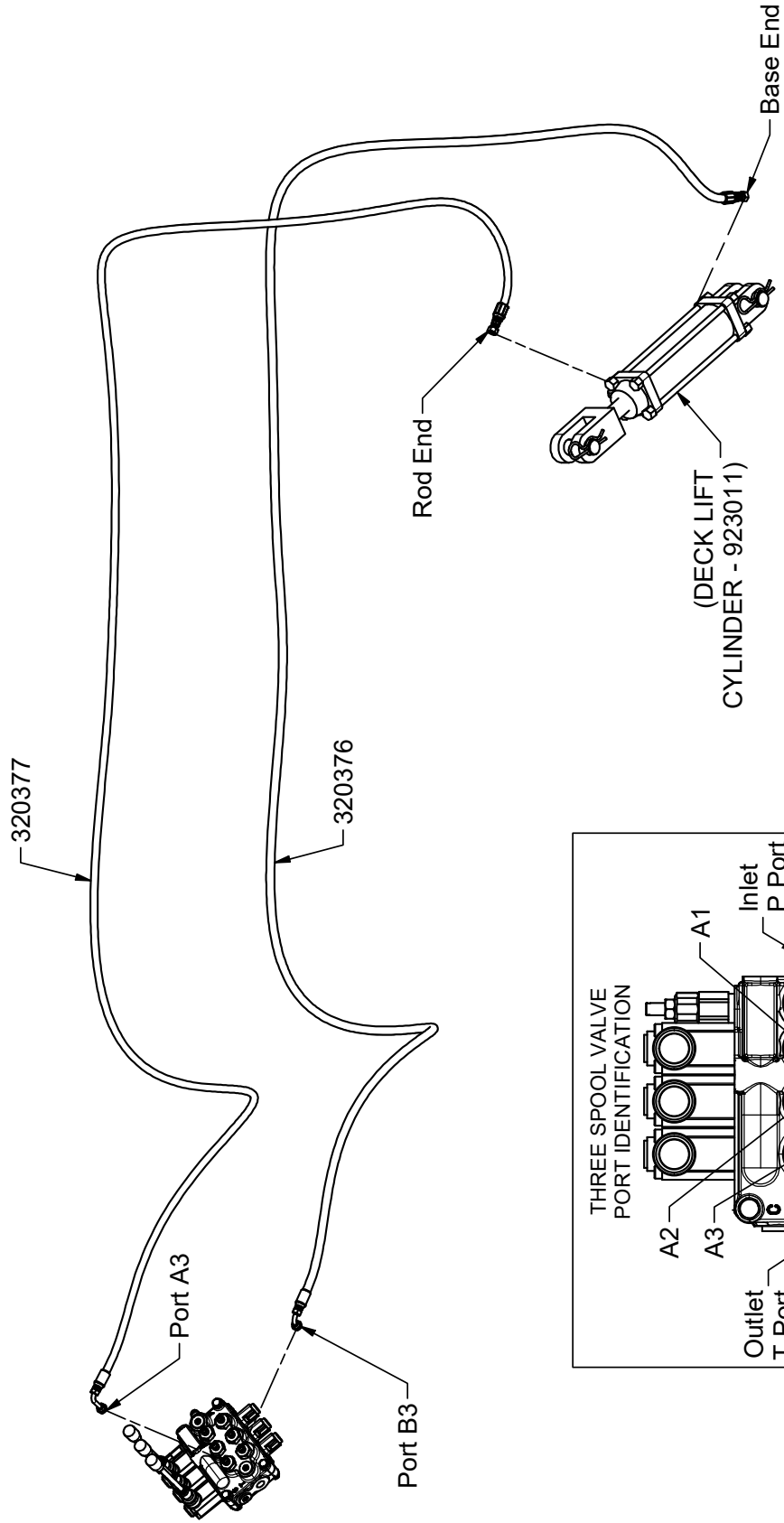
Case Drain

STEERING ORBITAL
PORT IDENTIFICATION



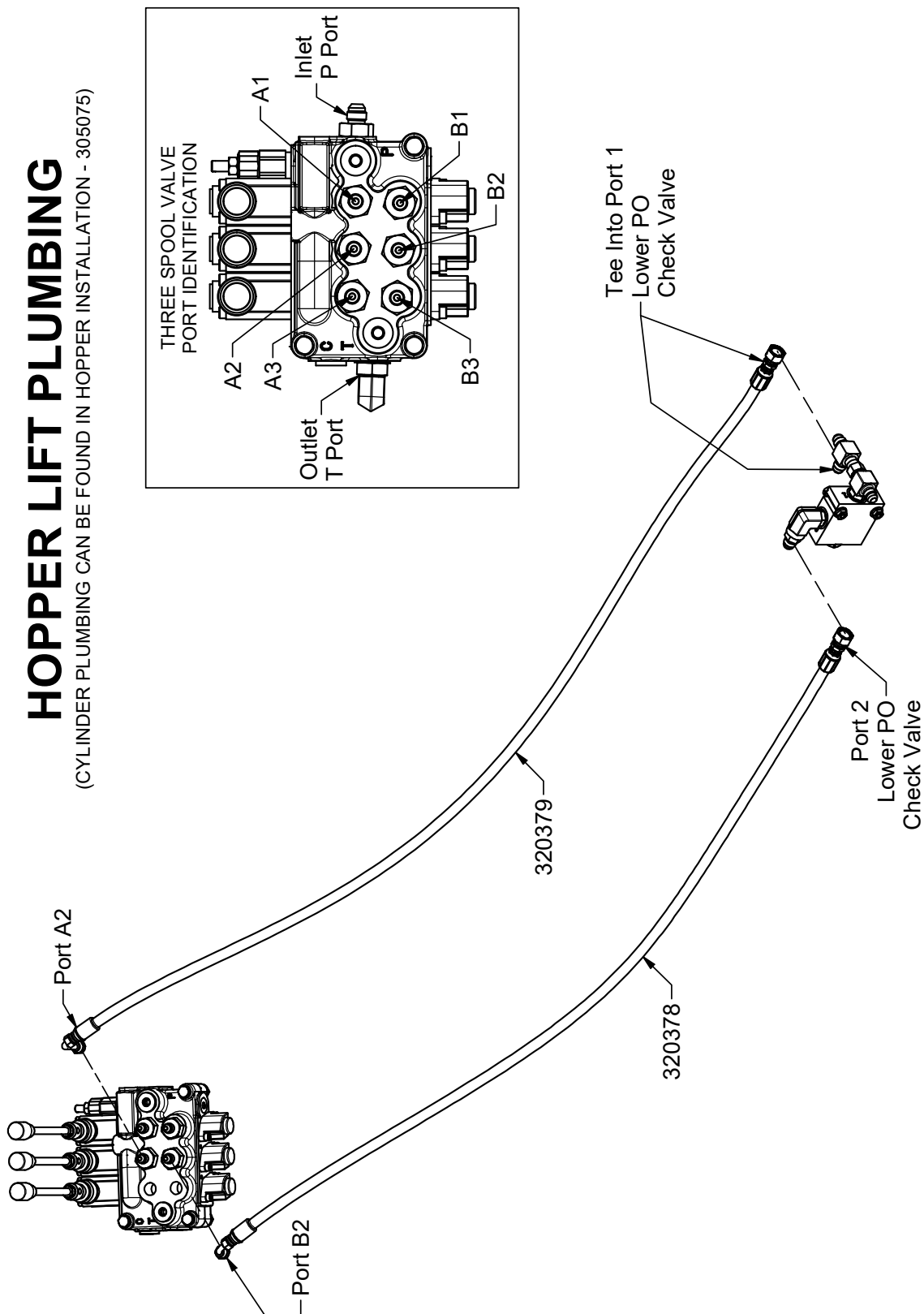
THREE SPOOL VALVE PLUMBING

DECK LIFT PLUMBING



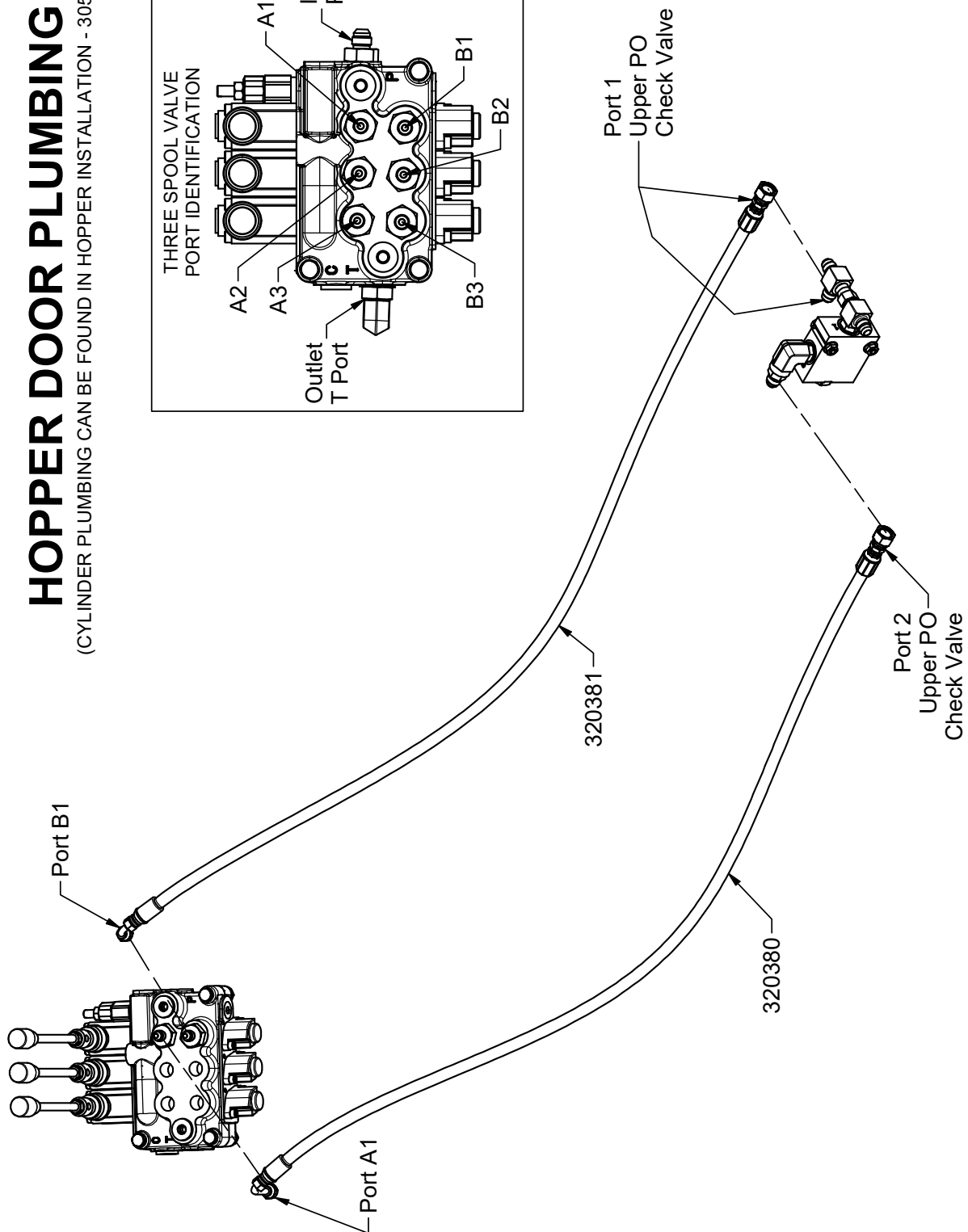
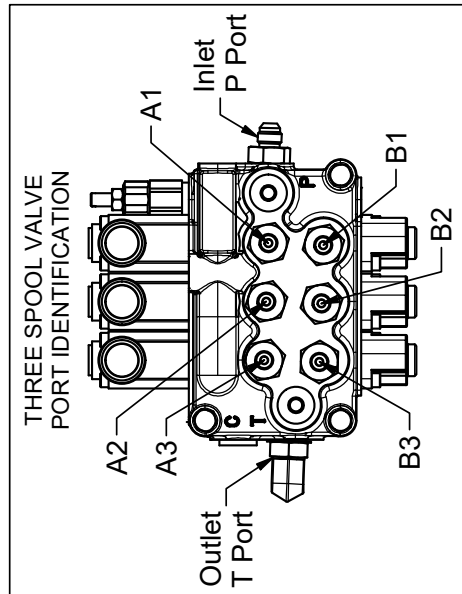
HOPPER LIFT PLUMBING

(CYLINDER PLUMBING CAN BE FOUND IN HOPPER INSTALLATION - 305075)

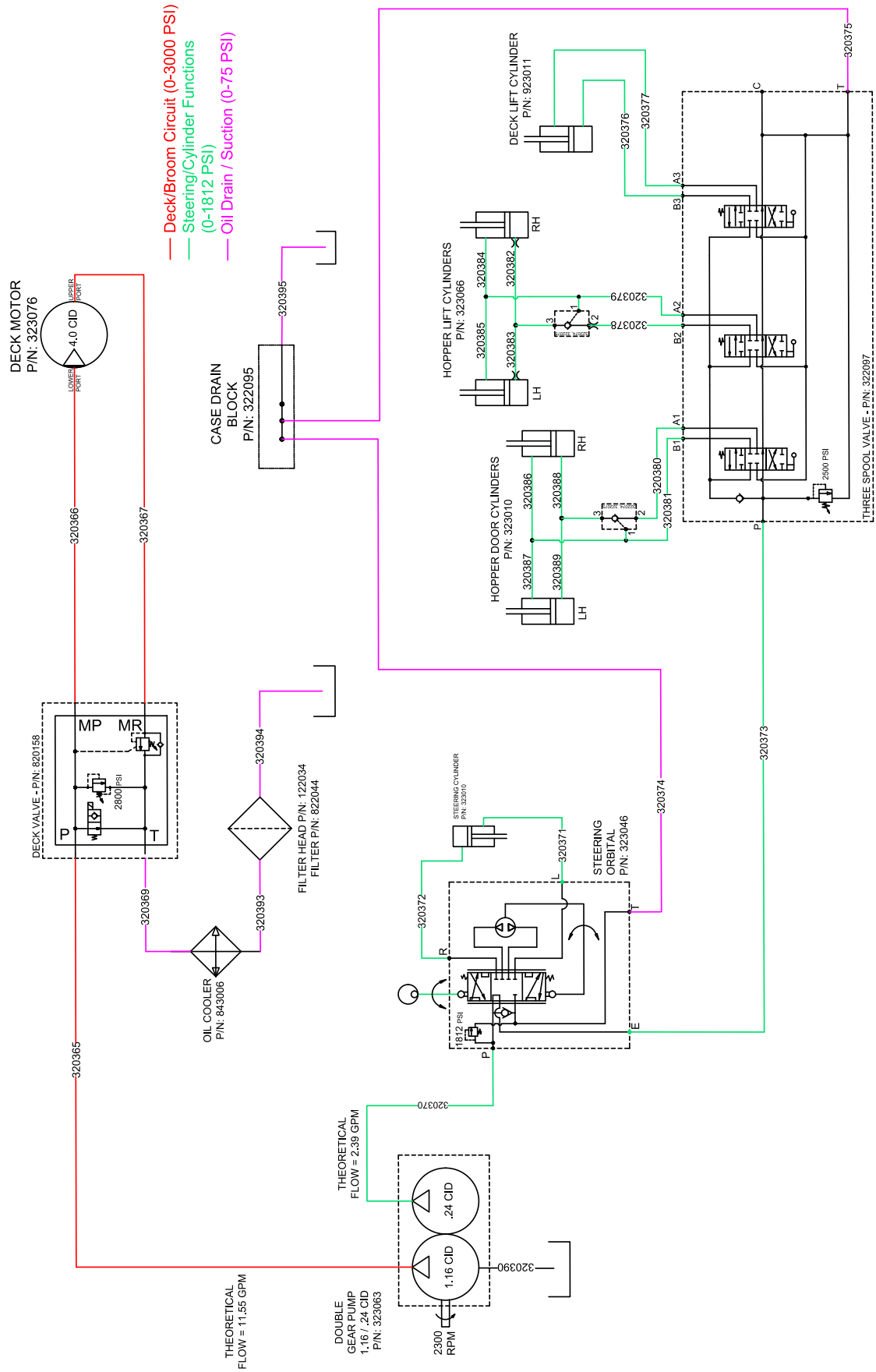


HOPPER DOOR PLUMBING

(CYLINDER PLUMBING CAN BE FOUND IN HOPPER INSTALLATION - 305075)

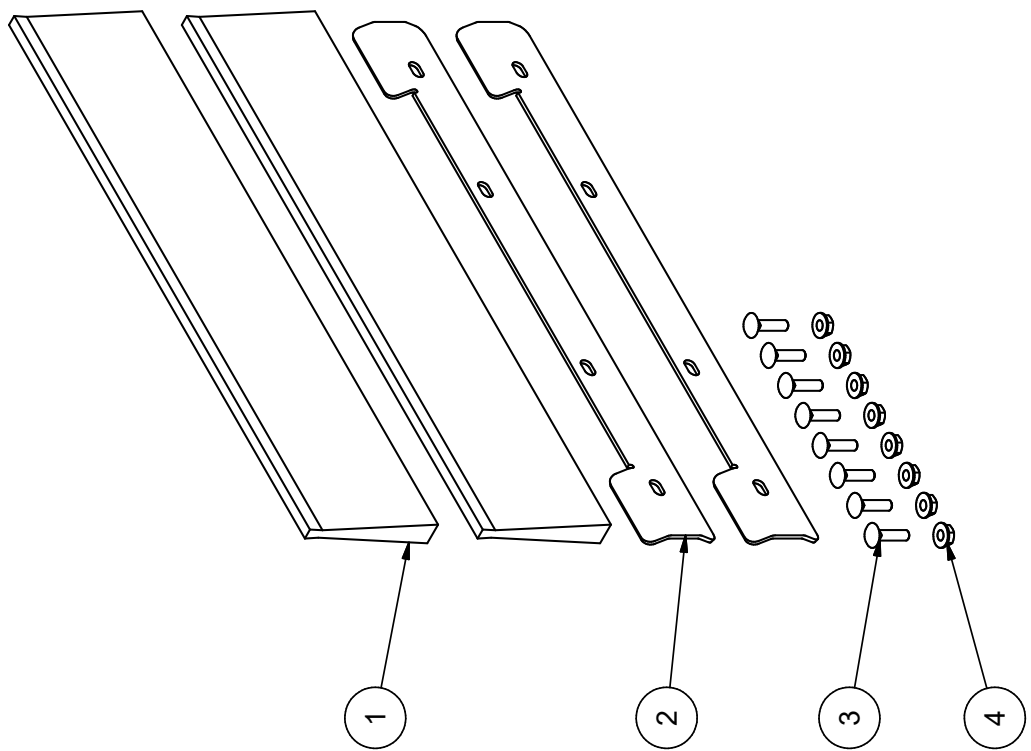


SWEeper MACHINE HYDRAULIC SCHEMATIC



SIDE SKIRT UPDATE KIT

305189		REV: NC	
Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	2	302183	Brush, Side Skirt
2	2	317567	RETAINER, SIDE SKIRT
3	8	110326	Bolt, 1/4-20 X 1 in Carriage
4	8	110290	NUT, 1/4-20 W/ Z FLANGE



DECK ASSEMBLY

SERIAL NUMBERS

CHAIN DRIVEN: 24A45 - OLDER

BELT DRIVEN: 24A46 - 26A01

BELT DRIVEN W/HD PADDLE: 26A01 +

305125 REV: F

Parts List				Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	1	102133	Decal, ISO, FOOT CRUSH	36	2	110826	NUT, 3/8-16 GR 5	70	2	315340	WELDMENT, LOWER WHEEL ADJUST
2	3	110010	BOLT, 1/2-13 X 9.0	37	1	110929	BOLT, M8-1.25 X 20 WIZ FLNG	71	2	315341	WELDMENT, GAUGE WHEEL BRKT
3	19	110020	Bolt, 5/16-18 X 0.75 in Carriage	38	1	110987	Pin, Square Retainer, .50 X 3.00 Pin Dia	72	1	315377	WELDMENT, SWEEPER DRIVE IDLER
4	2	110023	BOLT, 5/8-11 X 6.5	39	2	111033	WASHER, 1/4" X 1" OD, Plain	73	1	315378	WELDMENT, IDLER ADJUSTMENT
5	4	110024	BOLT, 5/8-11 X 8.0	40	2	111186	WASHER, 1.50 x .406 x .125, FLAT	74	1	315418	WELDMENT, REAR CHUTE SUPPORT
6	2	110086	BOLT, 1/2-13 X 1.0	41	1	112130	Clevis Pin, 3/8" x 3/4", ZINC	75	1	315424	WELDMENT, SWEEPER DECK, U.S.
7	48	110154	Bolt, 1/4-20 X 0.75 in Carriage	42	2	112147	U-BOLT, 1/4-20 X 1.25, ZINC PLATED	76	3	315425	WELDMENT, ANTI-SCALP WHEEL MOUNT
8	12	110174	NUT, 1/4-20, UNITORQUE LOCK	43	1	120233	ADAPTER, 40MJ-4MB	77	4	317252	RETAINER, FRONT DECK
9	2	110272	BOLT, 3/4-10 X 6.75, Hhcs Gr 5 Zinc	44	2	120251	ADAPTER, 10MJ-10MB	78	1	317256	SPACER, KEYWAY, 1.625 X .5 X .909
10	62	110290	NUT, 1/4-20 WIZ FLANGE	45	1	142002	SPRING, COMP 1 1/4 x 4 x .148	79	2	317258	TENSIONER, GEAR MOUNT
11	2	110304	PIN, LOCK 3/8 X 2.5 SQ	46	1	142013	Sprocket, 40T Idler, 5/8	80	1	317261	RETAINER, UPPER SIDE SEAL
12	8	110326	Bolt, 1/4-20 X 1 in Carriage	47	4	142019	Flange, 52mm, 2 Bolt	81	2	317289	COLLAR, SPRING TENSIONER
13	1	110335	WASHER, 1" FLAT MACHINE	48	2	142025	Bearing, 52mm Spherical O.D., 1.0 ID	82	1	317295	Shield, Broom Bearing
14	6	110358	Bolt, 1/4-20 X 0.625 in Carriage	49	2	142026	Bearing, 62mm Spherical O.D., 1.25 ID	83	1	317337	ROD, DECK PROP
15	1	110403	BOLT, 1/2-13 X 2.5	50	4	142027	Flange, 62mm, 2 Bolt	84	1	317365	LINER, DECK
16	4	110419	BOLT, 1/2-13 X 1.75	51	1	142029	SPROCKET, 40BS15 X 1.25	85	1	317424	RETAINER, SIDE CHUTE
17	8	110437	BOLT, 3/8-16 X 0.75, WIZ FLANGE	52	2	142030	SPROCKET, 40BS38 X 1.0	86	2	317428	RETAINER, FRONT DECK
18	6	110440	BOLT, 3/8-16 X 1, WIZ FLANGE	53	2	200029	COTTER PIN, 5/32 X 1	87	1	317441	BRKT, FRONT DECK SEAL
19	2	110459	BOLT, 5/16-18 X 1, WIZ FLANGE	54	1	302112	SKIRT, FRONT DECK	88	1	317448	RETAINER, SIDE SKIRT
20	8	110464	BOLT, 1/4-20 X 1.0	55	1	302113	SKIRT, REAR DECK	89	2	317567	Plate, Debris Spinner Mnt
21	1	110513	BOLT, 5/8-11 X 2.5	56	1	302116	SEAL, REAR TRANSITION	90	2	317621	PLATE, DEBRIS SPINNER RETAINER
22	4	110556	Bolt, 3/8-16 X 1 in Carriage	57	2	302117	SEAL, SIDE DECK	91	2	317622	SPACER, 1.25 X 1.875 X .179
23	1	110597	NUT, 5/8-11	58	1	302146	Decal, Tension Adjustment	92	1	317639	ROLLER CHAIN, #40 DECK (63")
24	19	110606	NUT, 5/16-18 WIZ FLANGE	59	1	302165	CUTOFF, AIR FLOW	93	1	340013	Roller, Anti-Scalp
25	6	110610	NUT, 1/2-13	60	1	302166	SEAL, FRONT DECK	94	3	510047	KEY, 1/4 X 1/4 X 1.0 UNDER
26	4	110615	NUT, 1/2-13, UNITORQUE LOCK	61	2	302168	SEAL, SIDE CHUTE	95	1	510228	CASTER WHEEL ASSY, 9 X 3.5-4
27	2	110625	NUT, 3/4-10, UNITORQUE LOCK	62	2	302183	Brush, Side Skirt	96	2	510237	COTTER PIN, 1/8 X 0.75
28	6	110639	NUT, 5/8-11, UNITORQUE LOCK	63	1	302202	DECAL, DECK HEIGHT ADJUSTMENT	97	1	510249	BUSHING, IGUS, FOOT PEDAL
29	18	110645	NUT, 3/8-16 WIZ FLANGE	64	1	305068	ASSY, BRUSH	98	4	800128	Decal, Do Not Remove Shield
30	1	110655	WASHER, 5/8" LOCK	65	1	305111	ASSY, PADDLE	99	1	902228	Decal, Shaft Hazard
31	8	110658	WASHER, 1/2" FLAT STANDARD	66	1	305123	ASSY, PADDLE SHIELD	100	1	902230	Decal, High Pressure Injection
32	1	110663	WASHER, 5/8" FLAT SAE	67	2	311608	FINGER, 12" RUBBER	101	1	902232	SPACER, 1.125 X .812 X .9375
33	6	110666	WASHER, 1/2" LOCK	68	2	312015	PIN, 5/8" x 3.5"	102	4	910865	MOTOR, 4.9 CID
34	4	110673	WASHER, 1/4" FLAT STANDARD	69	2	315339	WELDMENT, UPPER WHEEL ADJUST	103	1	923014	
35	1	110771	KEY, 1/4 X 1/4 X .625 in								

CHAIN DRIVEN DECK ASSEMBLY

Serial Number: 24A45 & Older

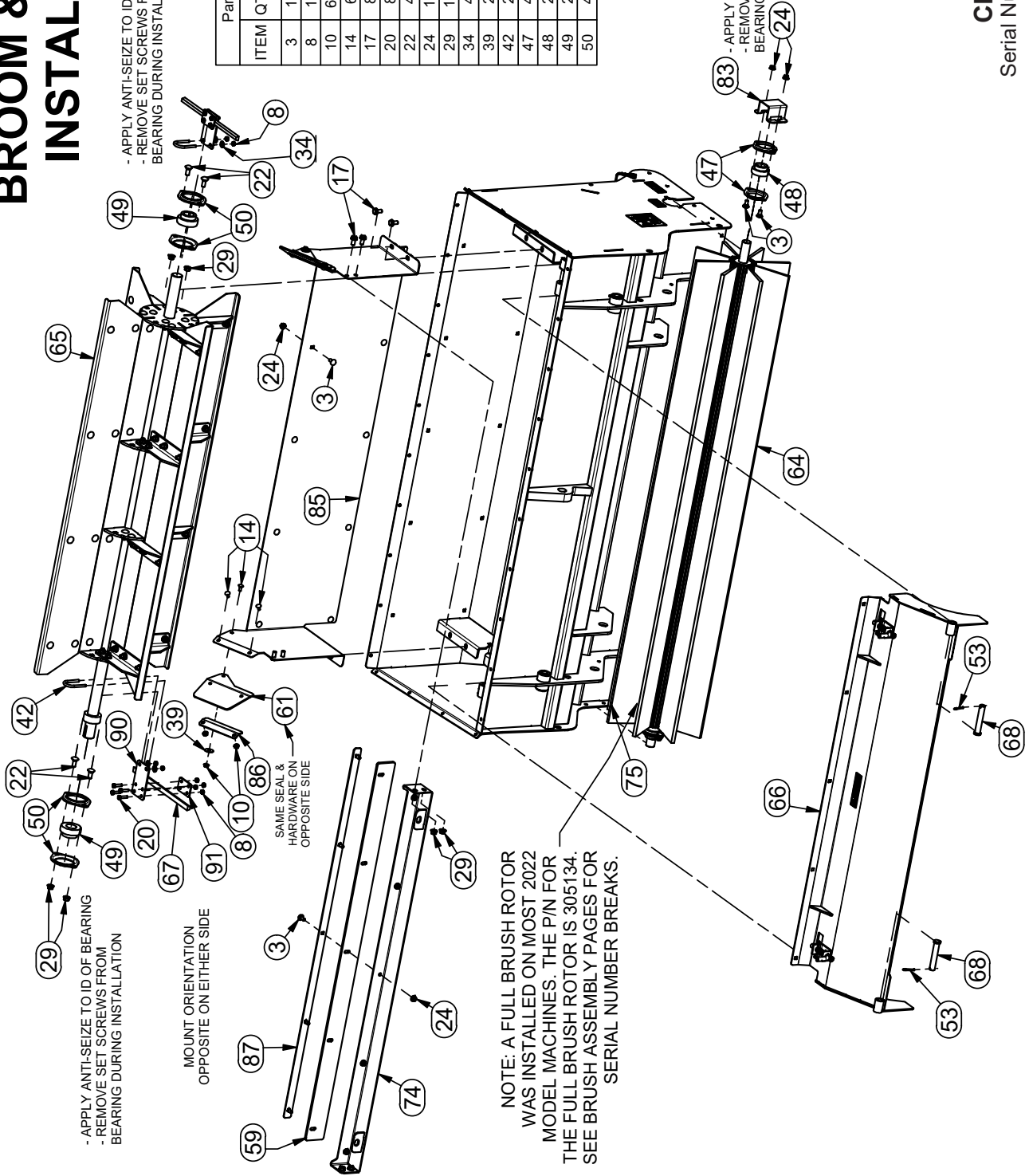
(May have upgraded to optional Speed Increaser Kit.)

SIMILAR TO 305130

BROOM & PADDLE INSTALLATION

- APPLY ANTI-SEIZE TO ID OF BEARING
- REMOVE SET SCREWS FROM BEARING DURING INSTALLATION

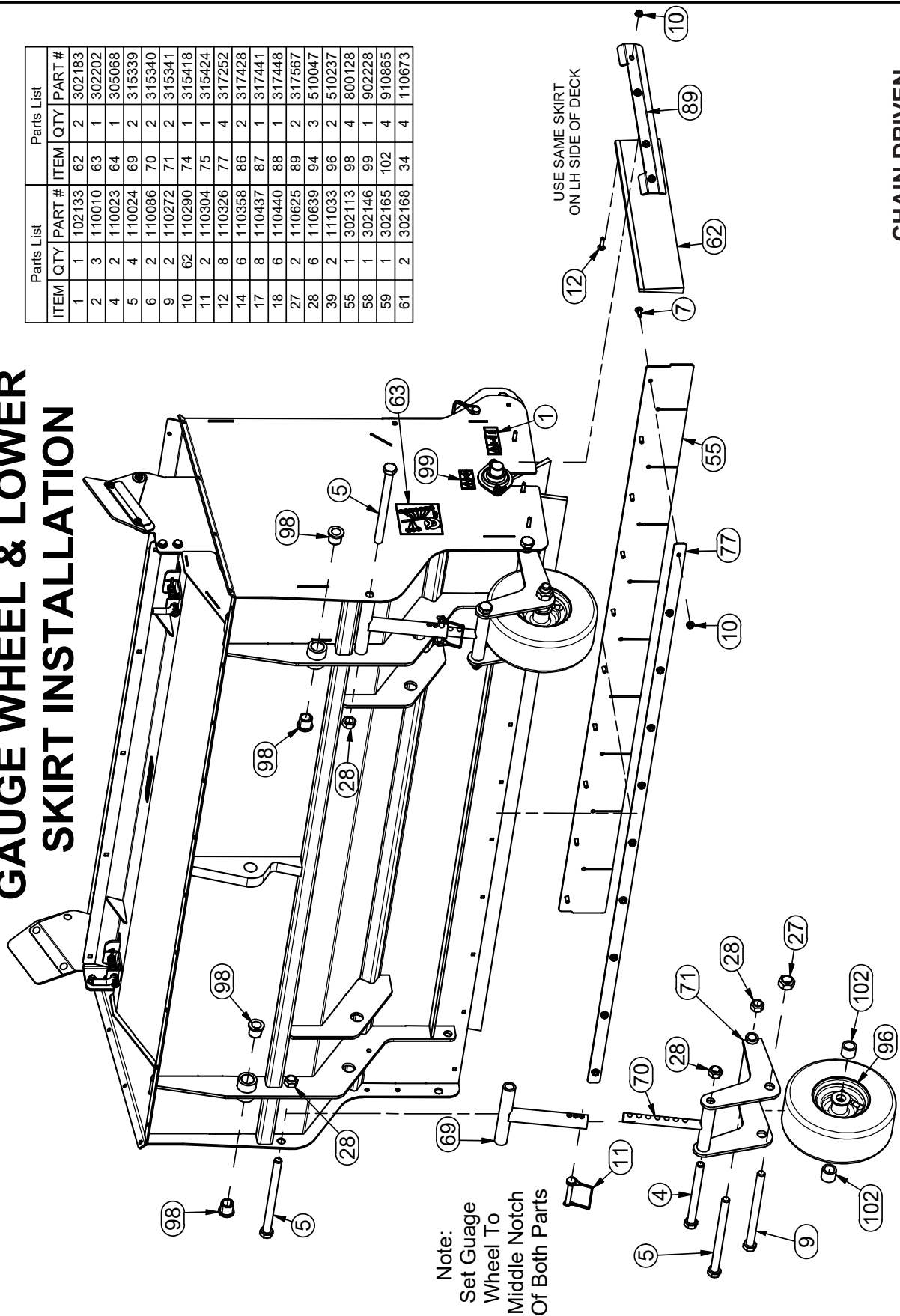
Parts List			Parts List		
ITEM	QTY	PART #	ITEM	QTY	PART #
3	19	110020	53	2	200029
8	12	110174	59	1	302165
10	62	110290	61	2	302168
14	6	110358	64	1	305068
17	8	110437	65	1	305111
20	8	110464	66	1	305123
22	4	110556	67	2	311608
24	19	110606	68	2	312015
29	18	110645	74	1	315418
34	4	110673	75	1	315424
39	2	111033	83	1	317337
42	2	112147	85	1	317424
47	4	142019	86	2	317428
48	2	142025	87	1	317441
49	2	142026	90	2	317621
50	4	142027	91	2	317622



CHAIN DRIVEN
Serial Number: 24A45 & Older

GAUGE WHEEL & LOWER SKIRT INSTALLATION

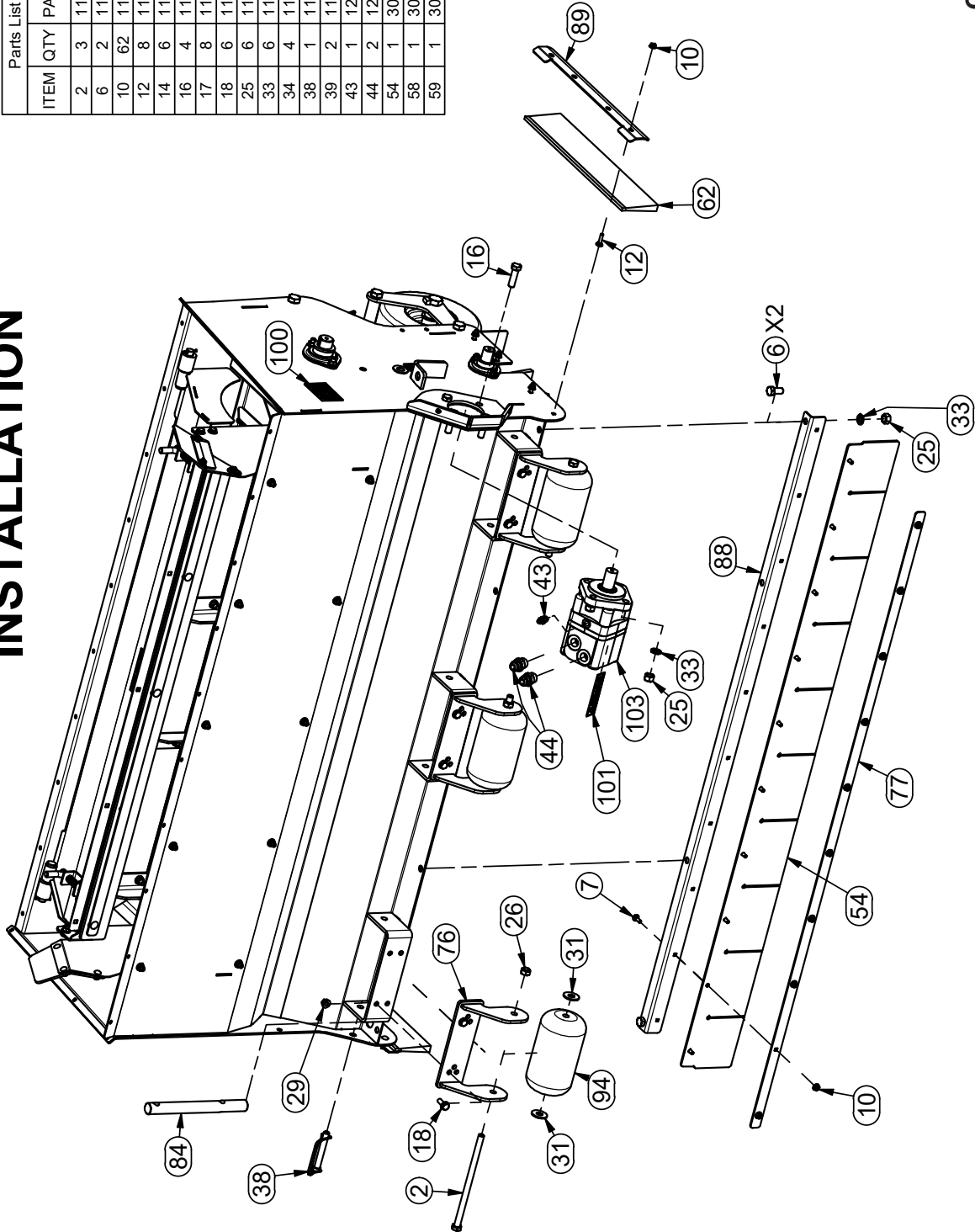
Parts List		Parts List	
ITEM	QTY	PART #	ITEM QTY PART #
1	1	102133	62 2 302183
2	3	110010	63 1 302202
4	2	110023	64 1 305068
5	4	110024	69 2 315339
6	2	110086	70 2 315340
9	2	110272	71 2 315341
10	62	110290	74 1 315418
11	2	110304	75 1 315424
12	8	110326	77 4 317252
14	6	110358	86 2 317428
17	8	110437	87 1 317441
18	6	110440	88 1 317448
27	2	110625	89 2 317567
28	6	110639	94 3 510047
39	2	111033	96 2 510237
55	1	302113	98 4 800128
58	1	302146	99 1 902228
59	1	302165	102 4 910865
61	2	302168	34 4 110673



CHAIN DRIVEN
Serial Number: 24A45 & Older

HYDRAULIC MOTOR, SCALP WHEELS & LOWER SKIRT INSTALLATION

Parts List			Parts List		
ITEM	QTY	PART #	ITEM	QTY	PART #
2	3	110010	61	2	302168
6	2	110086	62	2	302183
10	62	110290	64	1	305068
12	8	110326	67	2	311608
14	6	110358	71	2	315341
16	4	110419	74	1	315418
17	8	110437	75	1	315424
18	6	110440	76	3	315425
25	6	110610	77	4	317252
33	6	110666	84	1	317365
34	4	110673	86	2	317428
38	1	110987	87	1	317441
39	2	111033	88	1	317448
43	1	120233	92	1	317639
44	2	120251	94	3	510047
54	1	302112	100	1	902230
58	1	302146	101	1	902232
59	1	302165	103	1	923014



CHAIN DRIVEN

Serial Number: 24A45 & Older

305164

REV: A

PARTS LIST

Item	Qty	Part #	DESCRIPTION
1	12	110174	Nut, 1/4-20, Unitorque Lock
2	8	110464	Bolt, 1/4-20 X 1.0
3	4	110673	Washer, 1/4" Flat Standard
4	2	112147	U-Bolt, 1/4-20 X 1.25, Zinc Plated
5	2	311608	Finger, 12" Rubber
6	2	317621	Plate, Debris Spinner Mnt
7	2	317622	Plate, Debris Spinner Retainer

Diagram illustrating the assembly of the Return Air Debris Cleaner Kit. The main assembly is shown with callouts 1 through 7. Callout 1 points to a nut, 2 to a bolt, 3 to a washer, 4 to a U-bolt, 5 to a finger, 6 to a debris spinner mounting plate, and 7 to a debris spinner retainer plate. Below the main assembly are two detailed side views: 'LEFT SIDE DETAIL' and 'RIGHT SIDE DETAIL'. A label 'SIDE PLATES TOWARD BEARINGS' with arrows points to the side plates in both detail views.

LEFT SIDE DETAIL

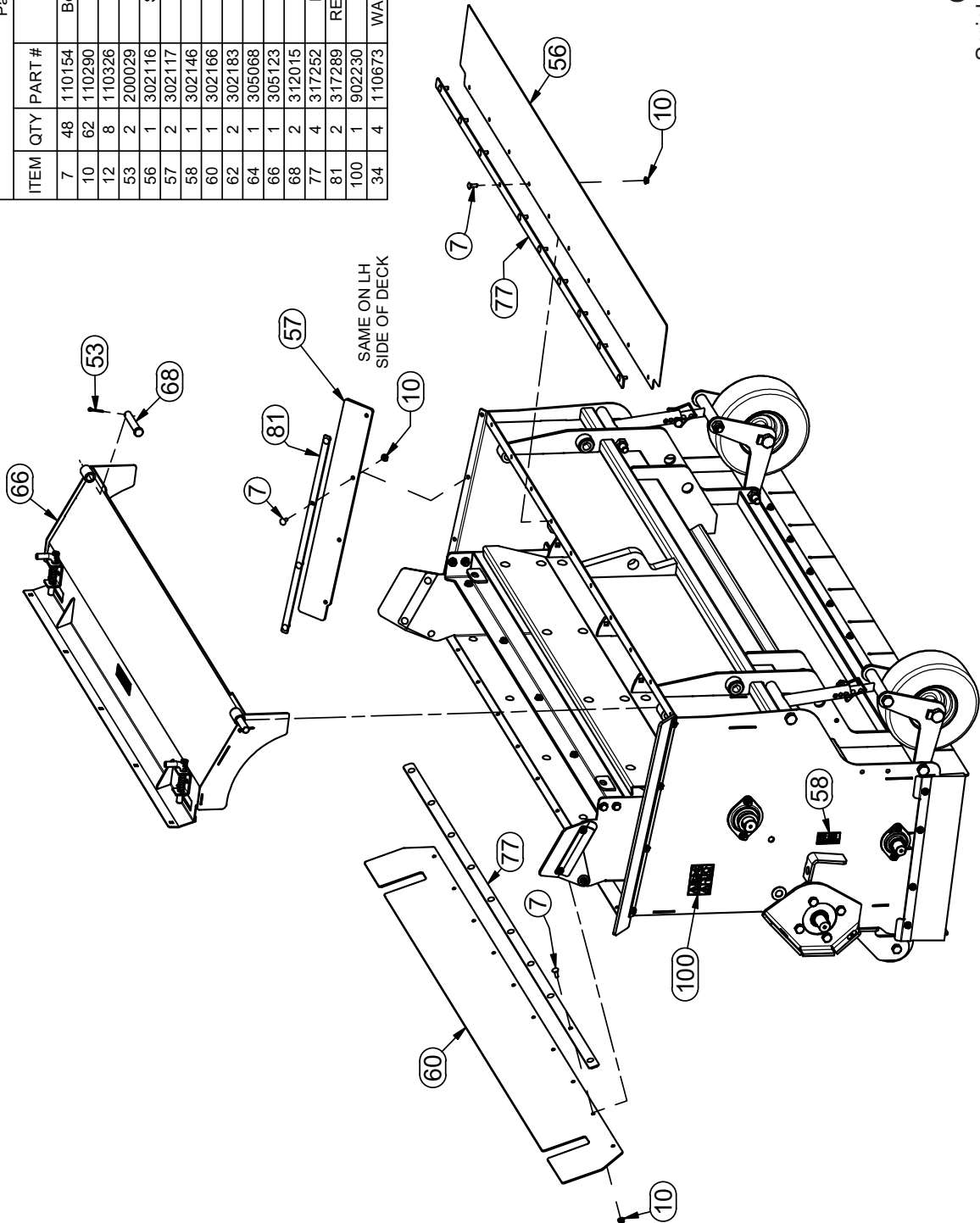
RIGHT SIDE DETAIL

RETURN AIR DEBRIS CLEANER KIT

Standard on S/N: 24A04+ Optional for S/N: 24A03 & older

UPPER DECK SEAL & PADDLE SHIELD INSTALLATION

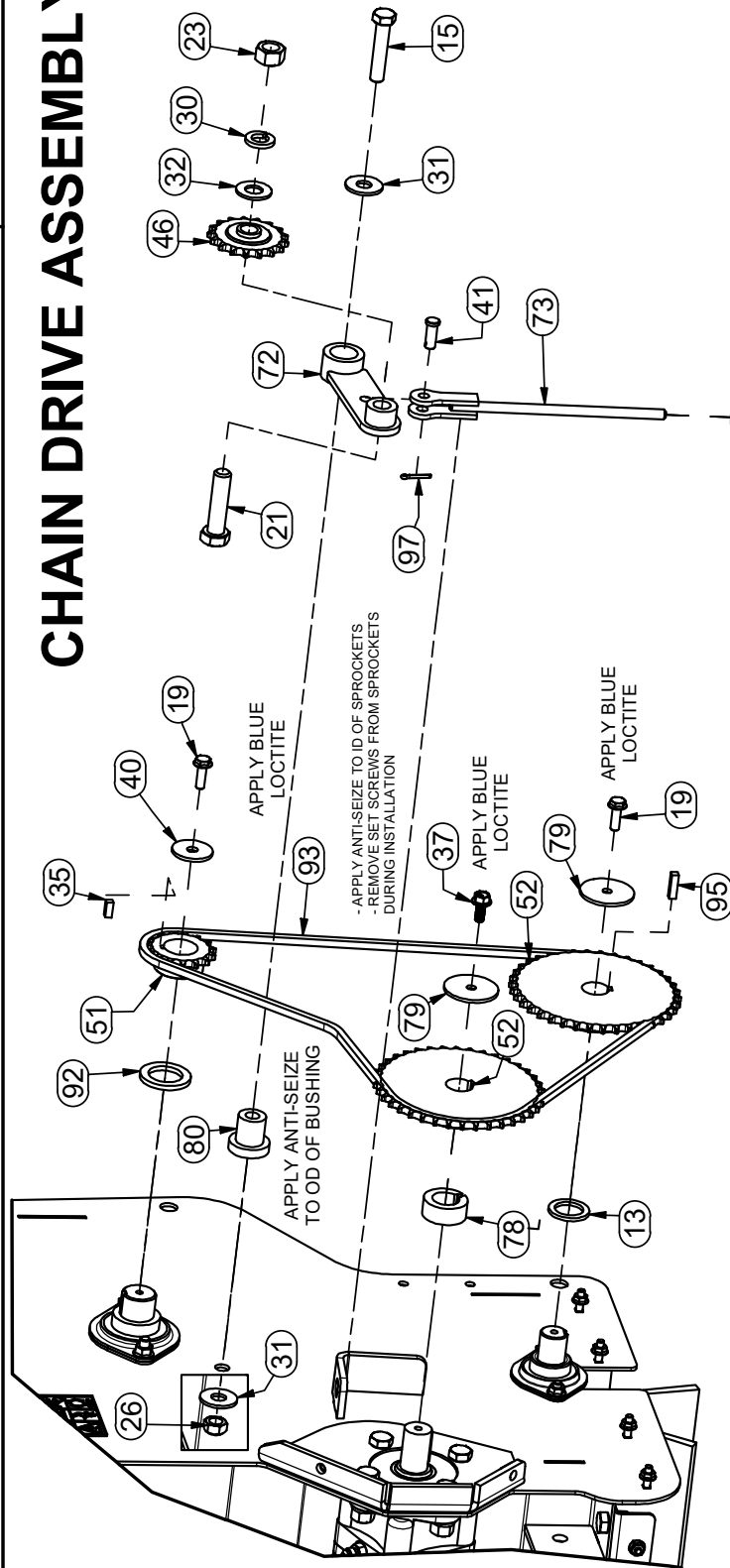
Parts List			
ITEM	QTY	PART #	DESCRIPTION
7	48	110154	Bolt, 1/4-20 X 0.75 in Carriage
10	62	110290	NUT, 1/4-20 W/IZ FLANGE
12	8	110326	Bolt, 1/4-20 X 1 in Carriage
53	2	200029	COTTER PIN, 5/32 X 1
56	1	302116	SEAL, REAR TRANSITION
57	2	302117	SEAL, SIDE DECK
58	1	302146	Decal, Tension Adjustment
60	1	302166	SEAL, FRONT DECK
62	2	302183	Brush, Side Skirt
64	1	305068	ASSY, BRUSH
66	1	305123	ASSY, PADDLE SHIELD
68	2	312015	PIN, 5/8" x 3.5"
77	4	317252	RETAINER, FRONT DECK
81	2	317289	RETAINER, UPPER SIDE SEAL
100	1	902230	Decal, Shaft Hazard
34	4	110673	WASHER, 1/4" FLAT STANDARD



CHAIN DRIVEN

Serial Number: 24A45 & Older

CHAIN DRIVE ASSEMBLY

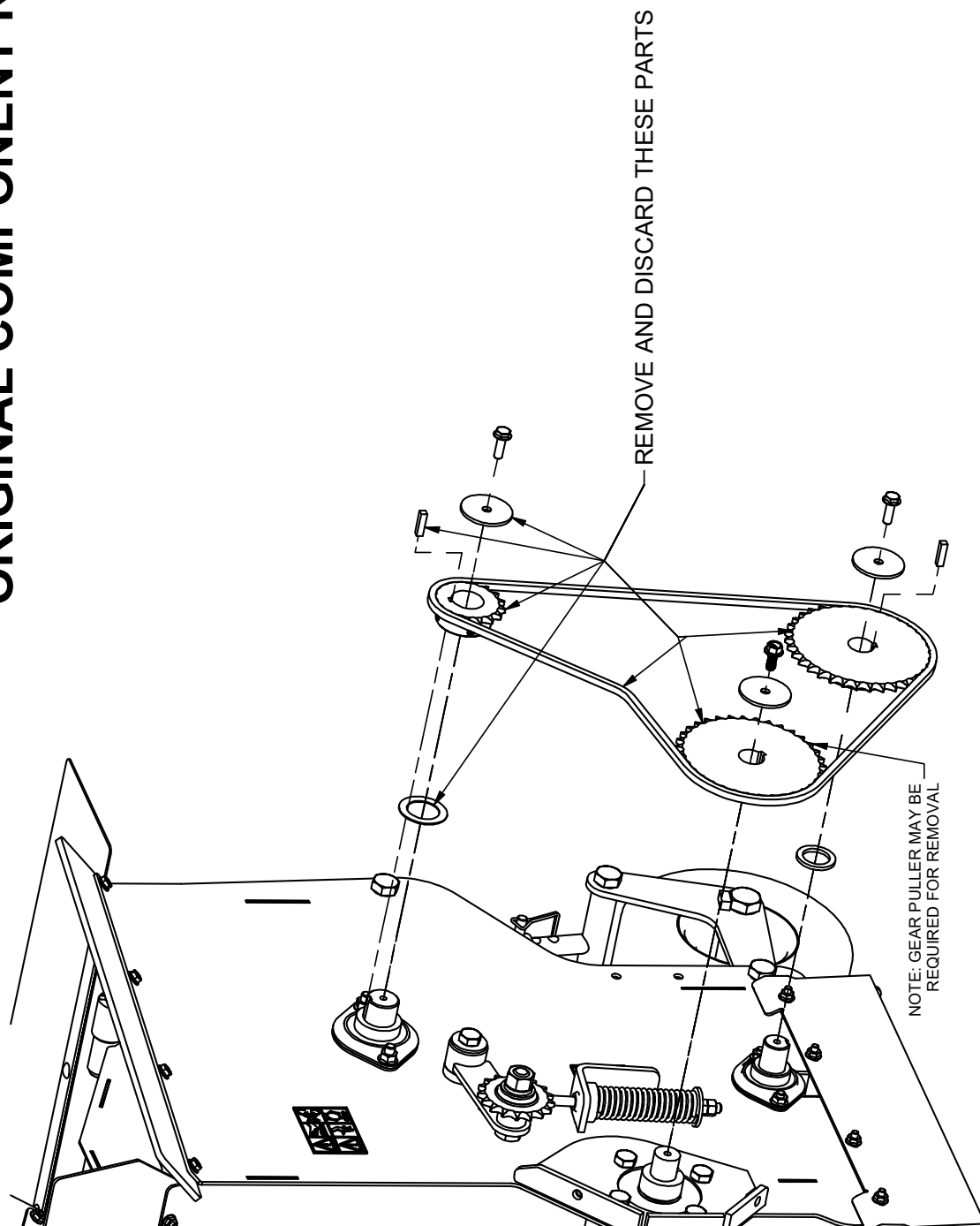


INSTALLATION: TIGHTEN
NUT UNTIL FLAT WASHER
CONTACTS COLLAR, THEN
TIGHTEN JAM NUT

Parts List			Parts List		
ITEM	PART #	DESCRIPTION	ITEM	PART #	DESCRIPTION
13	110335	WASHER, 1" FLAT MACHINE	46	142013	Sprocket, 4017 Idler, 5/8
15	110403	BOLT, 1/2-13 X 2.5	51	142029	SPROCKET, 40BS15 X 1.25
19	110459	BOLT, 5/16-18 X 1, WIZ FLANGE	52	142030	SPROCKET, 40BS38 X 1.0
21	110513	BOLT, 5/8-11 X 2.5	62	302183	Brush, Side Skirt
23	110597	NUT, 5/8-11	64	305068	ASSY, BRUSH
26	110615	NUT, 1/2-13, UNITORQUE LOCK	72	315377	WELDMENT, SWEEPER DRIVE IDLER
30	110655	WASHER, 5/8" LOCK	73	315378	WELDMENT, IDLER ADJUSTMENT
31	110658	WASHER, 1/2" FLAT STANDARD	78	317256	SPACER, KEYWAY, 1.625 X .5 X .909
32	110663	WASHER, 5/8" FLAT SAE	79	317258	WASHER, 2.0 X .344 X .12
34	110673	WASHER, 1/4" FLAT STANDARD	80	317261	TENSIONER, GEAR MOUNT
35	110771	KEY, 1/4 X 1/4 X .625 in	82	317295	COLLAR, SPRING TENSIONER
36	110826	NUT, 3/8-16 GR 5	92	317639	SPACER, 1.25 X 1.875 X .179
37	110929	BOLT, M8-1.25 X 20 WIZ FLNG	93	340013	ROLLER CHAIN, #40 DECK (53")
40	111186	WASHER, 1.50 x .406 x .125, FLAT	95	510228	KEY, 1/4 X 1/4 X 1.0 UNDER
41	112130	Clevis Pin, 3/8" x 3/4", ZINC	97	510249	COTTER PIN, 1/8 X 0.75
45	142002	SPRING, COMP 1 1/4 x 4 x .148			

CHAIN DRIVEN
Serial Number: 24A45 & Older

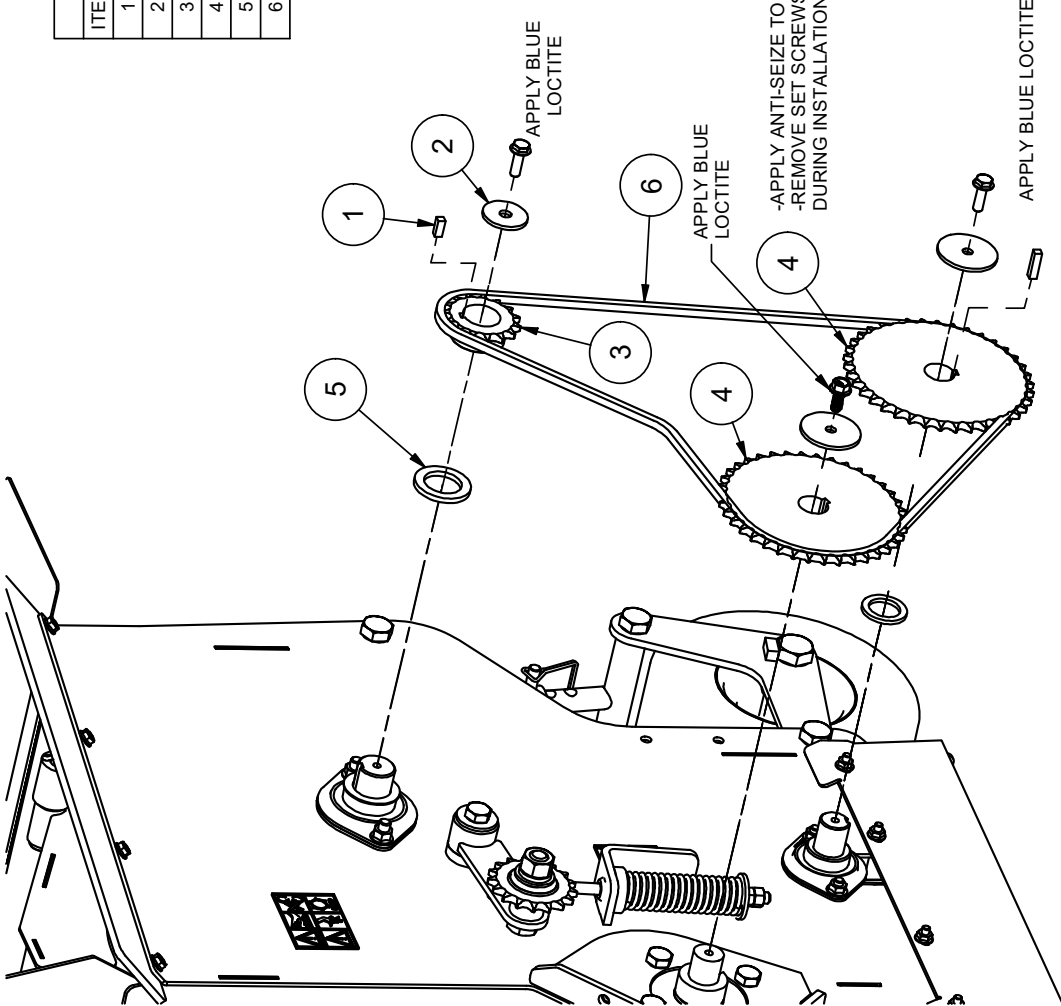
ORIGINAL COMPONENT REMOVAL



SPEED INCREASER KIT

Standard on S/N: 24A04 - 24A45 Optional for S/N: 24A03 & older

UPDATED COMPONENT INSTALL

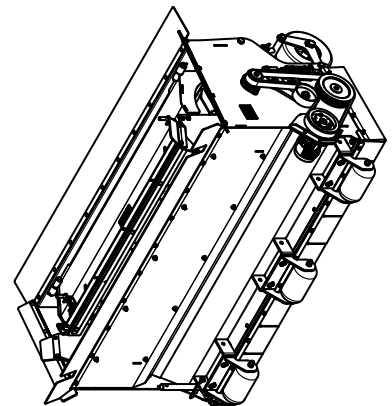


Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	1	110771	KEY, 1/4 X 1/4 X .625 in
2	1	111186	WASHER, 1.50 x .406 x .125, FLAT
3	1	142029	SPROCKET, 40BS15 X 1.25
4	2	142030	SPROCKET, 40BS38 X 1.0
5	1	317639	SPACER, 1.25 X 1.875 X .179
6	1	340013	ROLLER CHAIN, #40 DECK DRIVE

SPEED INCREASER KIT

Standard on S/N: 24A04 - 24A45 Optional for S/N: 24A03 & older

Parts List				Parts List				Parts List			
Item	Qty	Part #	DESCRIPTION	Item	Qty	Part #	DESCRIPTION	Item	Qty	Part #	DESCRIPTION
1	1	102133	Decal, Iso, Foot Crush	33	1	110987	Pin, Square Retainer, .50 X 3.00 Pin Dia	65	1	315458	Weldment, Deck Belt Tensioner
2	3	110010	Bolt, 1/2-13 X 9.0	34	2	111033	Washer, 1/4" X 1" Od, Plain	66	1	315467	Weldment, Tensioner Adjustment
3	19	110020	Bolt, 5/16-18 X 0.75 In Carriage	35	2	112147	U-Bolt, 1/4-20 X 1.25, Zinc Plated	67	1	315470	Weldment, Sweeper Deck, Belt, Us
4	2	110023	Bolt, 5/8-11 X 6.5	36	2	120251	Adapter, 10mj-10mb	68	4	317252	Retainer, Front Deck
5	4	110024	Bolt, 5/8-11 X 8.0	37	4	142019	Flange, 52mm, 2 Bolt	69	2	317258	Washer, 2.0 X .344 X .12
6	2	110086	Bolt, 1/2-13 X 1.0	38	2	142025	Bearing, 52mm Spherical O.d., 1.0 Id	70	2	317289	Retainer, Upper Side Seal
7	2	110122	Bolt, 5/16-18 X 1.25, Wiz Flange	39	2	142026	Bearing, 62mm Spherical O.d., 1.25 Id	71	1	317337	Shield, Broom Bearing
8	1	110125	Bolt, 1/2-13 X 2.25 Gr 5 Zinc Plate	40	4	142027	Flange, 62mm, 2 Bolt	72	1	317365	Rod, Deck Prop
9	48	110154	Bolt, 1/4-20 X 0.75 In Carriage	41	1	142031	Spring, Compression, 1.5x4.5x.75, 257lbs	73	1	317424	Liner, Deck
10	12	110174	Nut, 1/4-20, Unitorque Lock	42	2	200029	Colter Pin, 5/32 X 1	74	2	317428	Retainer, Side Chute
11	2	110272	Bolt, 3/4-10 X 6.75, Hncs Gr 5 Zinc	43	1	302112	Skirt, Front Deck	75	1	317441	Retainer, Front Deck
12	62	110290	Nut, 1/4-20 Wiz Flange	44	1	302113	Skirt, Rear Deck	76	1	317448	Brkt, Front Deck Seal
13	1	110300	Colter Pin, 3/32 X 0.75	45	1	302116	Seal, Rear Transition	77	2	317567	Retainer, Side Skirt
14	2	110304	Pin, Lock 3/8 X 2.5 Sq	46	2	302117	Seal, Side Deck	78	2	317621	Plate, Debris Spinner Mnt
15	8	110326	Bolt, 1/4-20 X 1 In Carriage	47	1	302165	Cutoff, Air Flow	79	2	317622	Plate, Debris Spinner Retainer
16	6	110358	Bolt, 1/4-20 X 0.625 In Carriage	48	1	302166	Seal, Front Deck	80	1	323076	Motor, Deck Drive, 4.0 Cid
17	3	110419	Bolt, 1/2-13 X 1.75	49	2	302168	Seal, Side Chute	81	1	342077	Belt, Sweeper Deck Drive, Brush
18	8	110437	Bolt, 3/8-16 X 0.75, Wiz Flange	50	2	302183	Brush, Side Skirt	82	1	342078	Sheave, 3/3v5.60 Sds-Qd
19	6	110440	Bolt, 3/8-16 X 1, Wiz Flange	51	1	302202	Decal, Deck Height Adjustment	83	1	342079	Sheave, 3/3v6.50 X 1.0
20	8	110464	Bolt, 1/4-20 X 1.0	52	1	302203	Decal, Deck Belt Tensioning	84	1	342080	Sheave, 3/3v2.50 X 1.25
21	4	110556	Bolt, 3/8-16 X 1 In Carriage	53	1	305068	Assy, Brush	85	1	342081	Pulley, Idler, 4" Flat X 1.56"
22	1	110588	Nut, 1/2-13 Wiz Flange	54	1	305111	Assy, Paddle	86	1	500274	Clevis Pin, 3/8 X 7/8
23	19	110606	Nut, 5/16-18 Wiz Flange	55	1	305123	Assy, Paddle Shield	87	3	510047	Roller, Anti-Scalp
24	6	110610	Nut, 1/2-13	56	2	311608	Finger, 12" Rubber	88	1	510055	Washer, 1.5 X 1.0 X 14ga Mach
25	3	110615	Nut, 1/2-13, Unitorque Lock	57	2	312015	Pin, 5/8" X 3.5"	89	2	510228	Key, 1/4 X 1/4 X 1.0 Under
26	4	110621	Nut, 3/8-16, Unitorque Lock	58	1	312060	Collar, Belt Spring Tensioner	90	2	510237	Caster Wheel Assy, 9 X 3.5-4
27	2	110625	Nut, 3/4-10, Unitorque Lock	59	2	312061	Bushing, .75 X .875 X .375, Fing	91	1	510241	Bushing, Qd 1" Sds
28	6	110639	Nut, 5/8-11, Unitorque Lock	60	2	315339	Weldment, Upper Wheel Adjust	92	4	800128	Bushing, Igus, Foot Pedal
29	18	110645	Nut, 3/8-16 Wiz Flange	61	2	315340	Weldment, Lower Wheel Adjust	93	1	902228	Decal, Do Not Remove Shield
30	8	110658	Washer, 1/2" Flat Standard	62	2	315341	Weldment, Gauge Wheel Brkt	94	1	902230	Decal, Shaft Hazard
31	4	110666	Washer, 1/2" Lock	63	1	315418	Weldment, Rear Chute Support	95	1	902232	Decal, High Pressure Injection
32	4	110673	Washer, 1/4" Flat Standard	64	3	315425	Weldment, Anti-Scalp Wheel Mount	96	4	910865	Spacer, 1.125 X .812 X .9375



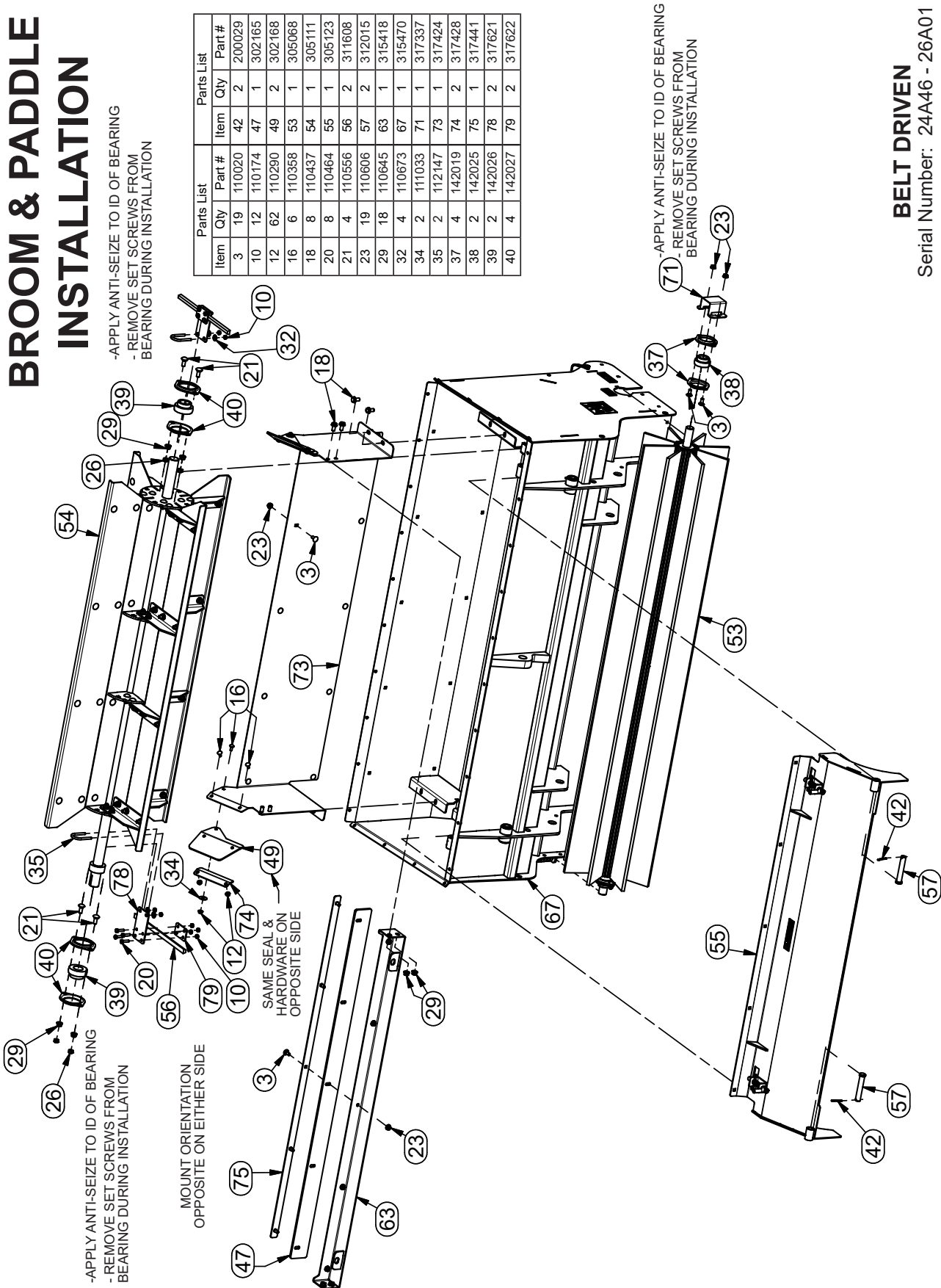
DECK ASSEMBLY BELT DRIVEN

Serial Number: 24A46 - 26A01

BROOM & PADDLE INSTALLATION

-APPLY ANTI-SEIZE TO ID OF BEARING
- REMOVE SET SCREWS FROM
BEARING DURING INSTALLATION

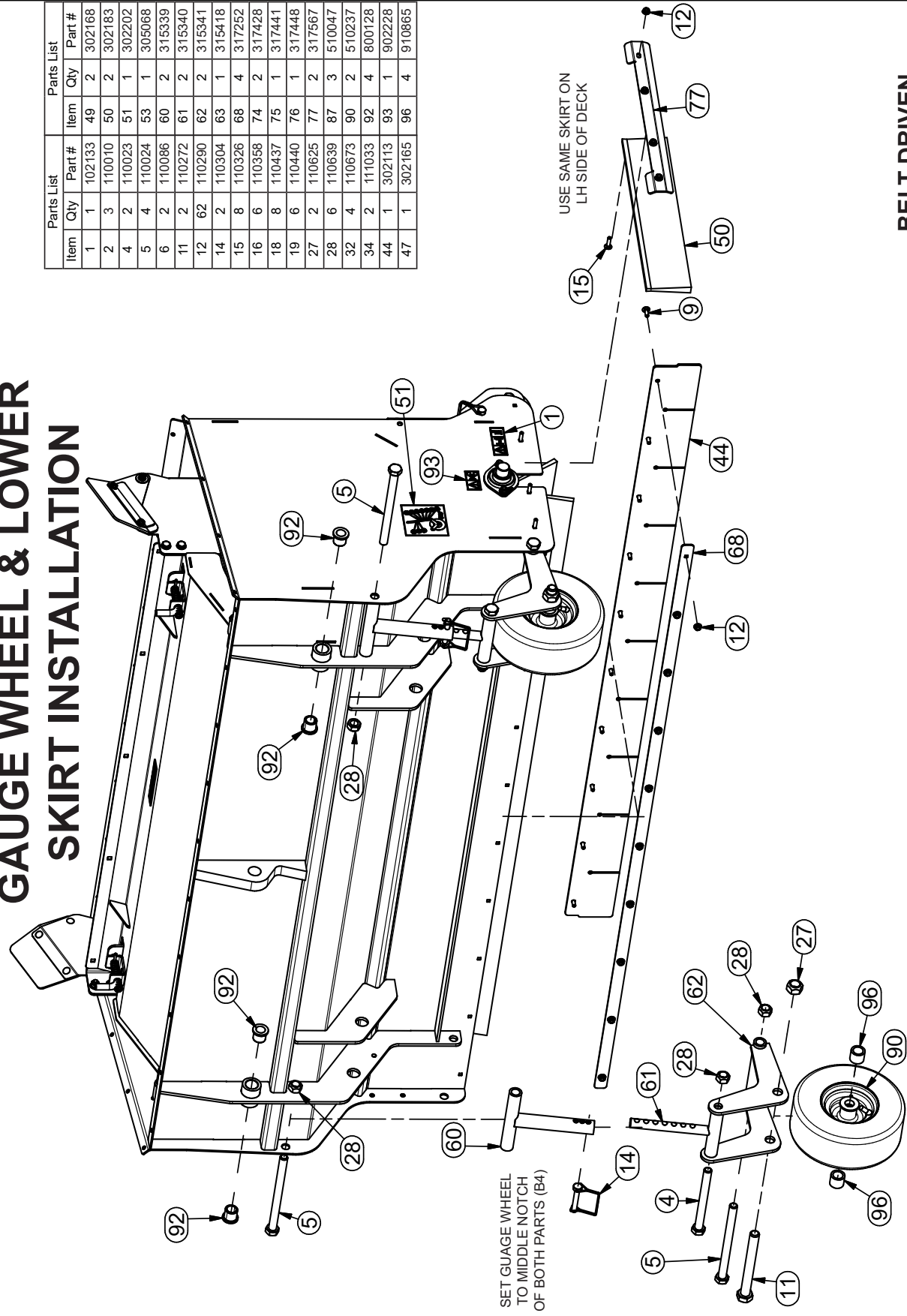
Parts List			Parts List		
Item	Qty	Part #	Item	Qty	Part #
3	19	110020	42	2	200029
10	12	110174	47	1	302165
12	62	110290	49	2	302168
16	6	110358	53	1	305068
18	8	110437	54	1	305111
20	8	110464	55	1	305123
21	4	110556	56	2	311608
23	19	110606	57	2	312015
29	18	110645	63	1	315418
32	4	110673	67	1	315470
34	2	111033	71	1	317337
35	2	112147	73	1	317424
37	4	142019	74	2	317428
38	2	142025	75	1	317441
39	2	142026	78	2	317621
40	4	142027	79	2	317622



BELT DRIVEN
Serial Number: 24A46 - 26A01

GAUGE WHEEL & LOWER SKIRT INSTALLATION

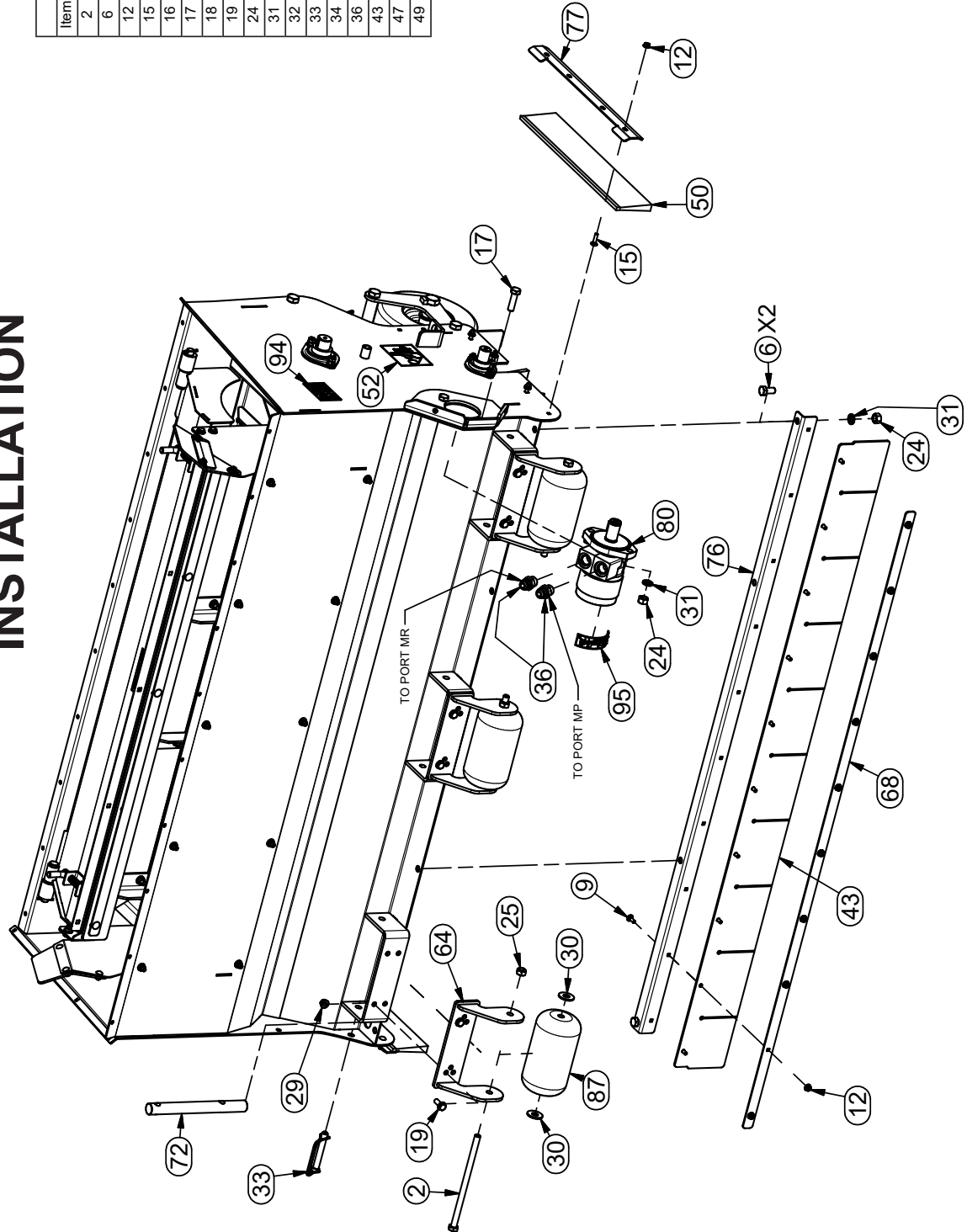
Parts List		Parts List	
Item	Qty	Part #	Part #
1	1	102133	49
2	3	110010	50
4	2	110023	51
5	4	110024	53
6	2	110086	60
11	2	110272	61
12	62	110290	62
14	2	110304	63
15	8	110326	68
16	6	110358	74
18	8	110437	75
19	6	110440	76
27	2	110625	77
28	6	110639	87
32	4	110673	90
34	2	111033	92
44	1	302113	93
47	1	302165	96



BELT DRIVEN

Serial Number: 24A46 - 26A01

HYDRAULIC MOTOR, SCALP WHEELS & LOWER SKIRT INSTALLATION



Parts List			Parts List		
Item	Qty	Part #	Item	Qty	Part #
2	3	110010	50	2	302183
6	2	110086	52	1	302203
12	62	110290	53	1	305068
15	8	110326	56	2	311608
16	6	110358	62	2	315341
17	3	110419	63	1	315418
18	8	110437	64	3	315425
19	6	110440	68	4	317252
24	6	110610	72	1	317365
31	4	110666	74	2	317428
32	4	110673	75	1	317441
33	1	110987	76	1	317448
34	2	111033	80	1	323076
36	2	120251	87	3	510047
43	1	302112	94	1	902230
47	1	302165	95	1	902232
49	2	302188			

BELT DRIVEN
Serial Number: 24A46 - 26A01

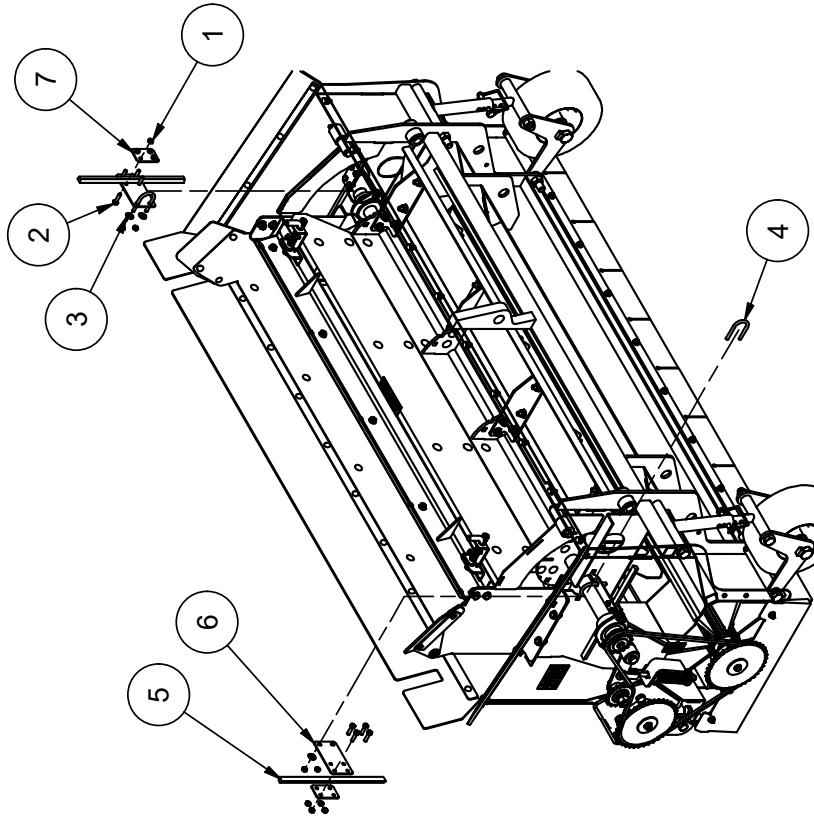
Copy 2 for belt drive

305164

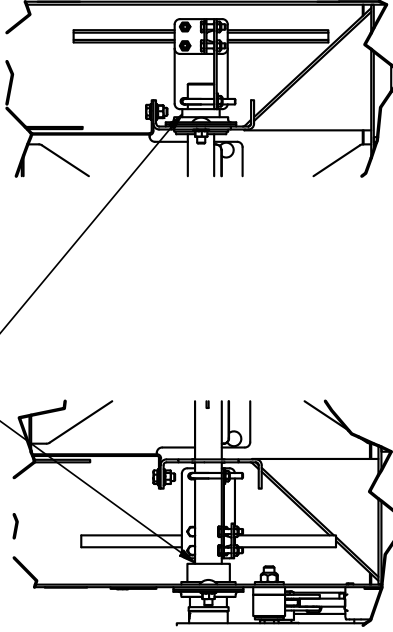
REV: A

Parts List

Item	Qty	Part #	DESCRIPTION
1	12	110174	Nut, 1/4-20, Unitorque Lock
2	8	110464	Bolt, 1/4-20 X 1.0
3	4	110673	Washer, 1/4" Flat Standard
4	2	112147	U-Bolt, 1/4-20 X 1.25, Zinc Plated
5	2	311608	Finger, 12" Rubber
6	2	317621	Plate, Debris Spinner Mint
7	2	317622	Plate, Debris Spinner Retainer



SIDE PLATES
TOWARD BEARINGS



LEFT SIDE DETAIL

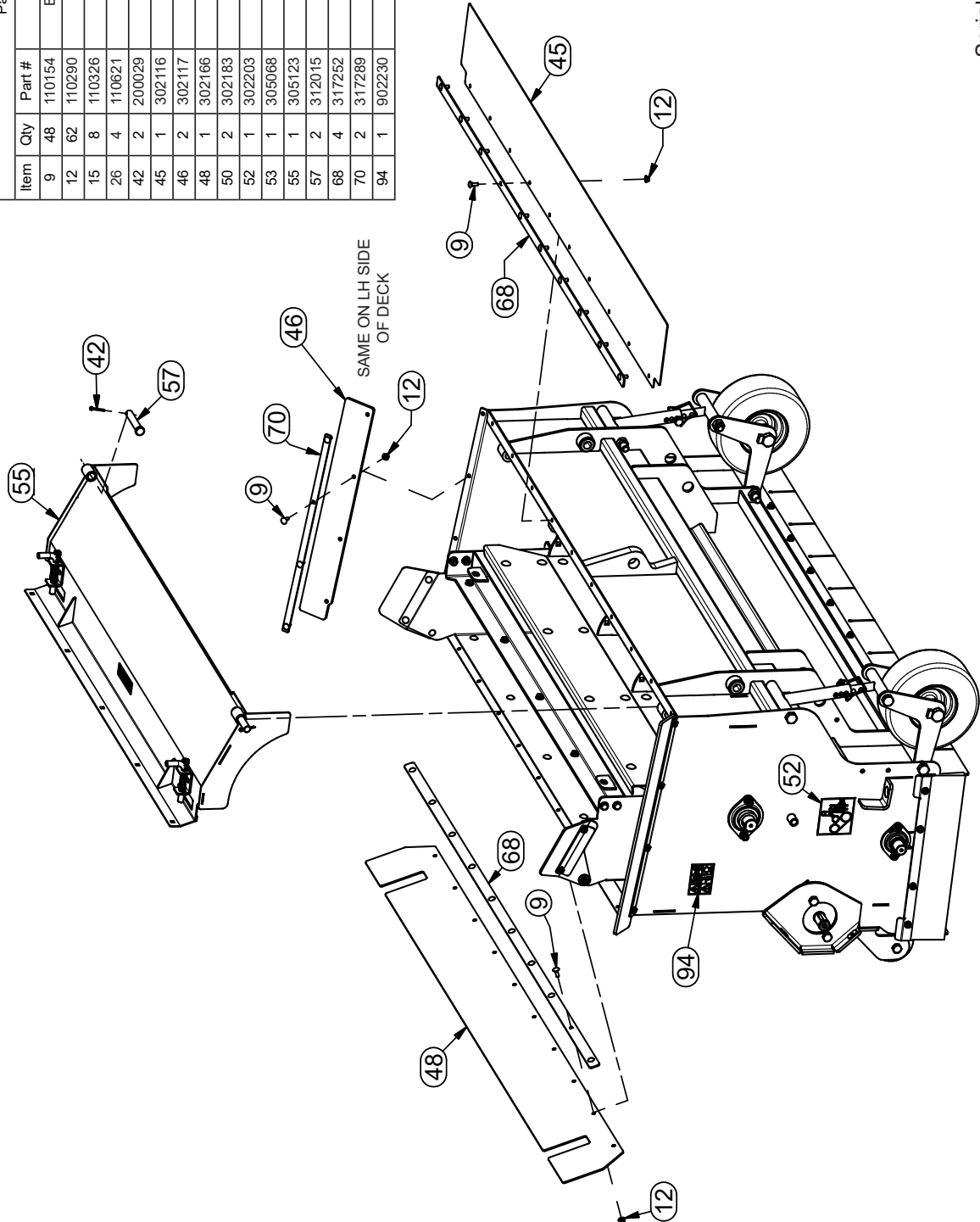
RIGHT SIDE DETAIL

RETURN AIR DEBRIS CLEANER KIT

Standard on S/N: 24A04+ Optional for S/N: 24A03 & older

UPPER DECK SEAL & PADDLE SHIELD INSTALLATION

Parts List			DESCRIPTION
Item	Qty	Part #	
9	48	110154	Bolt, 1/4-20 X 0.75 In Carriage
12	62	110290	Nut, 1/4-20 W/iz Flange
15	8	110326	Bolt, 1/4-20 X 1 In Carriage
26	4	110621	Nut, 3/8-16, Unitorque Lock
42	2	200029	Cotter Pin, 5/32 X 1
45	1	302116	Seal, Rear Transition
46	2	302117	Seal, Side Deck
48	1	302166	Seal, Front Deck
50	2	302183	Brush, Side Skirt
52	1	302203	Decal, Deck Belt Tensioning
53	1	305068	Assy, Brush
55	1	305123	Assy, Paddle Shield
57	2	312015	Pin, 5/8" X 3.5"
68	4	317252	Retainer, Front Deck
70	2	317289	Retainer, Upper Side Seal
94	1	902230	Decal, Shaft Hazard

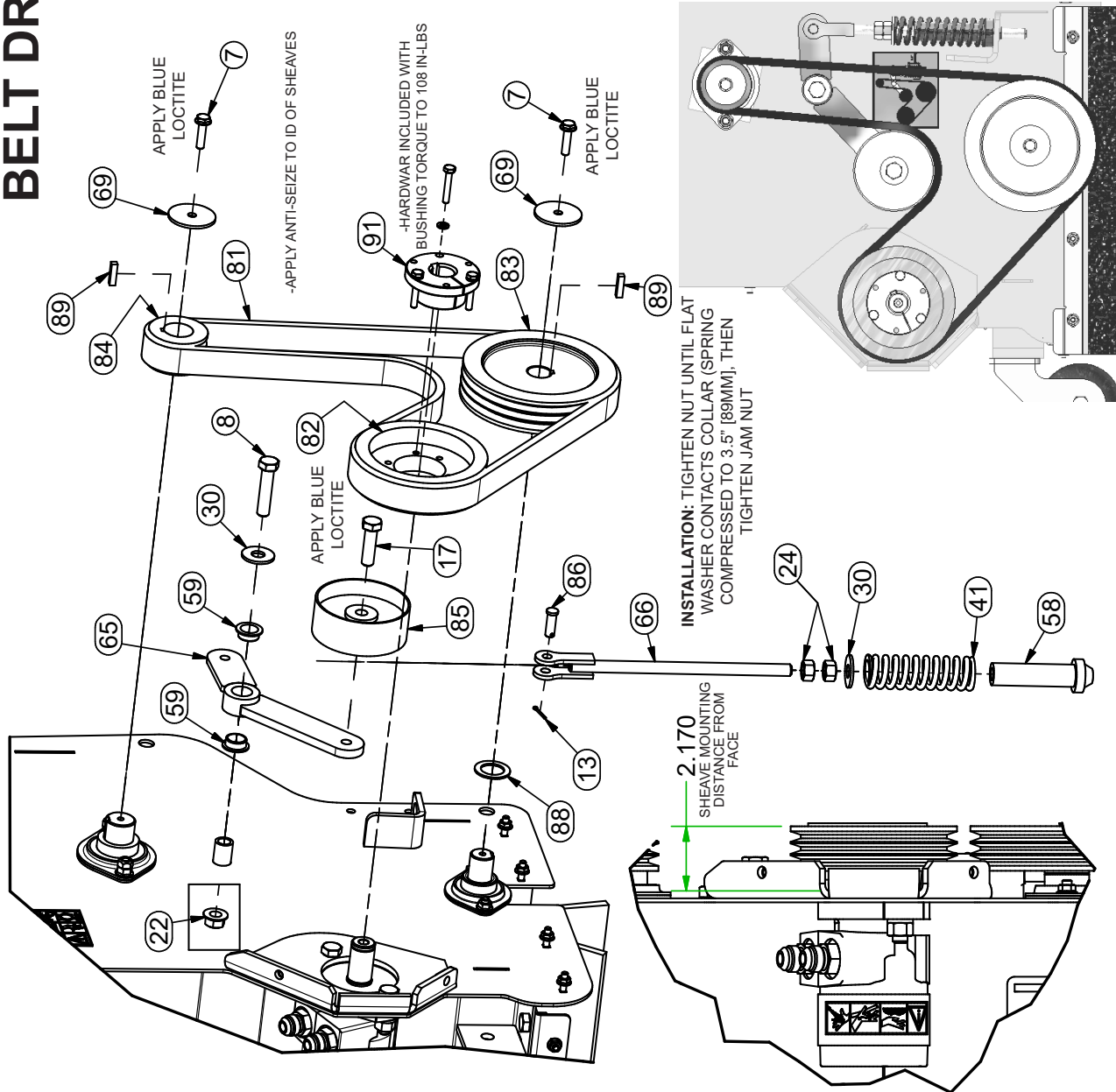


BELT DRIVEN

Serial Number: 24A46 - 26A01

BELT DRIVE ASSEMBLY

Parts List			DESCRIPTION
Item	Qty	Part #	
7	2	110122	Bolt, 5/16-18 X 1.25, Wiz Flange
8	1	110125	Bolt, 1/2-13 X 2.25 Gr 5 Zinc Plate
13	1	110300	Cotter Pin, 3/32 X 0.75
17	3	110419	Bolt, 1/2-13 X 1.75
22	1	110588	Nut, 1/2-13 Wiz Flange
24	6	110610	Nut, 1/2-13
25	3	110615	Nut, 1/2-13, Unitorque Lock
30	8	110658	Washer, 1/2" Flat Standard
32	4	110673	Washer, 1/4" Flat Standard
41	1	142031	Spring, Compression, 1.5x4.5x.75, 257lbs
50	2	302183	Brush, Side Skirt
52	1	302203	Decal, Deck Belt Tensioning
53	1	305068	Assy, Brush
58	1	312060	Collar, Belt Spring Tensioner
59	2	312061	Bushing, .75 X .875 X .375, Flng
65	1	315458	Weldment, Deck Belt Tensioner
66	1	315467	Weldment, Tensioner Adjustment
69	2	317258	Washer, 2.0 X .344 X .12
80	1	323076	Motor, Deck Drive, 4.0 Cld
81	1	342077	Belt, Sweeper Deck Drive, Brush
82	1	342078	Sheave, 3/3v5.60 Sds-Qd
83	1	342079	Sheave, 3/3v6.50 X 1.0
84	1	342080	Sheave, 3/3v2.50 X 1.25
85	1	342081	Pulley, Idler, 4" Flat X 1.56"
86	1	500274	Clevis Pin, 3/8 X 7/8
88	1	510055	Washer, 1.5 X 1.0 X 14ga Mach
89	2	510228	Key, 1/4 X 1/4 X 1.0 Under
91	1	510241	Bushing, Qd 1" Sds



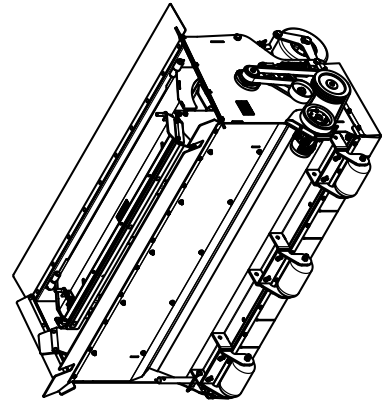
BELT DRIVEN
Serial Number: 24A46 - 26A01

Parts List			Parts List			Parts List			Parts List		
Item	Qty	Part #	DESCRIPTION	Item	Qty	Part #	DESCRIPTION	Item	Qty	Part #	DESCRIPTION
1	1	102133	Decal, Iso, Foot Crush	33	1	110987	Pin, Square Retainer, .50 X 3.00 Pin Dia	65	1	315458	Weldment, Deck Belt Tensioner
2	3	110010	Bolt, 1/2-13 X 9.0	34	2	111033	Washer, 1/4" X 1" Od, Plain	66	1	315467	Weldment, Tensioner Adjustment
3	19	110020	Bolt, 5/16-18 X 0.75 In Carriage	35	2	112147	U-Bolt, 1/4-20 X 1.25, Zinc Plated	67	1	315470	Weldment, Sweeper Deck, Belt, Us
4	2	110023	Bolt, 5/8-11 X 6.5	36	2	120251	Adapter, 10mj-10mb	68	4	317252	Retainer, Front Deck
5	4	110024	Bolt, 5/8-11 X 8.0	37	4	142019	Flange, 52mm, 2 Bolt	69	2	317258	Washer, 2.0 X .344 X .12
6	2	110086	Bolt, 1/2-13 X 1.0	38	2	142025	Bearing, 52mm Spherical O.d., 1.0 Id	70	2	317289	Retainer, Upper Side Seal
7	2	110122	Bolt, 5/16-18 X 1.25, Wiz Flange	39	2	142026	Bearing, 62mm Spherical O.d., 1.25 Id	71	1	317337	Shield, Broom Bearing
8	1	110125	Bolt, 1/2-13 X 2.25 Gr 5 Zinc Plate	40	4	142027	Flange, 62mm, 2 Bolt	72	1	317365	Rod, Deck Prop
9	48	110154	Bolt, 1/4-20 X 0.75 In Carriage	41	1	142031	Spring, Compression, 1.5x4.5x.75, 257lbs	73	1	317424	Liner, Deck
10	12	110174	Nut, 1/4-20, Unitorque Lock	42	2	200029	Colter Pin, 5/32 X 1	74	2	317428	Retainer, Side Chute
11	2	110272	Bolt, 3/4-10 X 6.75, Hcnc Gr 5 Zinc	43	1	302112	Skirt, Front Deck	75	1	317441	Retainer, Front Deck
12	62	110290	Nut, 1/4-20 Wiz Flange	44	1	302113	Skirt, Rear Deck	76	1	317448	Brkt, Front Deck Seal
13	1	110300	Colter Pin, 3/32 X 0.75	45	1	302116	Seal, Rear Transition	77	2	317567	Retainer, Side Skirt
14	2	110304	Pin, Lock 3/8 X 2.5 Sq	46	2	302117	Seal, Side Deck	78	2	317621	Plate, Debris Spinner Mnt
15	8	110326	Bolt, 1/4-20 X 1 In Carriage	47	1	302165	Cutoff, Air Flow	79	2	317622	Plate, Debris Spinner Retainer
16	6	110358	Bolt, 1/4-20 X 0.625 In Carriage	48	1	302166	Seal, Front Deck	80	1	323076	Motor, Deck Drive, 4.0 Cid
17	3	110419	Bolt, 1/2-13 X 1.75	49	2	302168	Seal, Side Chute	81	1	342077	Belt, Sweeper Deck Drive, Brush
18	8	110437	Bolt, 3/8-16 X 0.75, Wiz Flange	50	2	302183	Brush, Side Skirt	82	1	342078	Sheave, 3/3v5.60 Sds-Qd
19	6	110440	Bolt, 3/8-16 X 1, Wiz Flange	51	1	302202	Decal, Deck Height Adjustment	83	1	342079	Sheave, 3/3v6.50 X 1.0
20	8	110464	Bolt, 1/4-20 X 1.0	52	1	302203	Decal, Deck Belt Tensioning	84	1	342080	Sheave, 3/3v2.50 X 1.25
21	4	110556	Bolt, 3/8-16 X 1 In Carriage	53	1	305068	Assy, Brush	85	1	342081	Pulley, Idler, 4" Flat X 1.56"
22	1	110588	Nut, 1/2-13 Wiz Flange	54	1	305111	Assy, Paddle	86	1	500274	Clevis Pin, 3/8 X 7/8
23	19	110606	Nut, 5/16-18 Wiz Flange	55	1	305123	Assy, Paddle Shield	87	3	510047	Roller, Anti-Scalp
24	6	110610	Nut, 1/2-13	56	2	311608	Finger, 12" Rubber	88	1	510055	Washer, 1.5 X 1.0 X 14ga Mach
25	3	110615	Nut, 1/2-13, Unitorque Lock	57	2	312015	Pin, 5/8" X 3.5"	89	2	510228	Key, 1/4 X 1/4 X 1.0 Under
26	4	110621	Nut, 3/8-16, Unitorque Lock	58	1	312060	Collar, Belt Spring Tensioner	90	2	510237	Caster Wheel Assy, 9 X 3.5-4
27	2	110625	Nut, 3/4-10, Unitorque Lock	59	2	312061	Bushing, .75 X .875 X .375, Fing	91	1	510241	Bushing, Qd 1" Sds
28	6	110639	Nut, 5/8-11, Unitorque Lock	60	2	315339	Weldment, Upper Wheel Adjust	92	4	800128	Bushing, Igus, Foot Pedal
29	18	110645	Nut, 3/8-16 Wiz Flange	61	2	315340	Weldment, Lower Wheel Adjust	93	1	902228	Decal, Do Not Remove Shield
30	8	110658	Washer, 1/2" Flat Standard	62	2	315341	Weldment, Gauge Wheel Brkt	94	1	902230	Decal, Shaft Hazard
31	4	110666	Washer, 1/2" Lock	63	1	315418	Weldment, Rear Chute Support	95	1	902232	Decal, High Pressure Injection
32	4	110673	Washer, 1/4" Flat Standard	64	3	315425	Weldment, Anti-Scalp Wheel Mount	96	4	910865	Spacer, 1.125 X .812 X .9375

DECK ASSEMBLY

BELT DRIVEN W/HD PADDLE

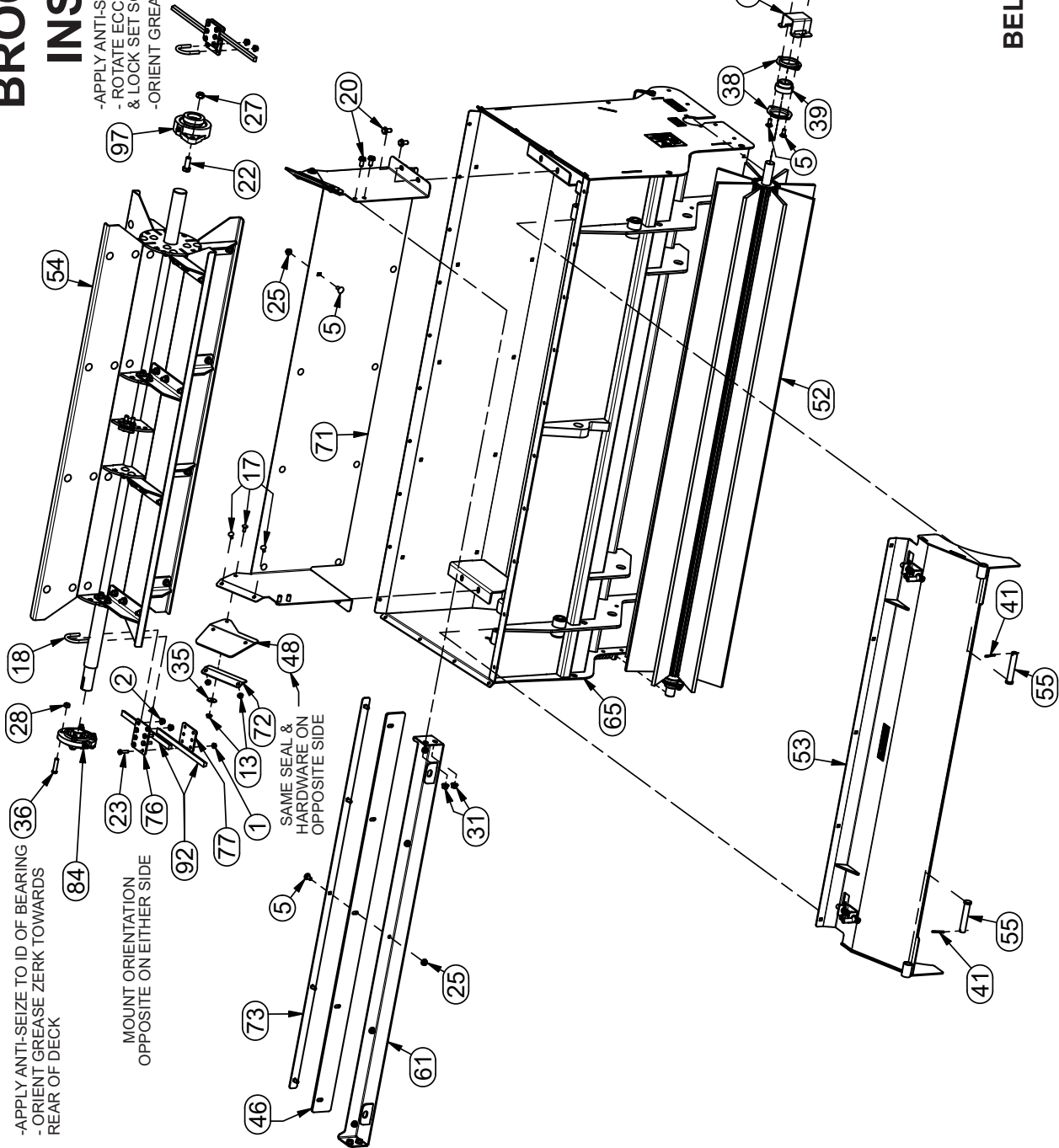
Serial Number: 26A01+



BROOM & PADDLE INSTALLATION

- APPLY ANTI-SEIZE TO ID OF BEARING
- ROTATE ECCENTRIC LOCK COUNTER-CLOCKWISE & LOCK SET SCREW
- ORIENT GREASE ZERK UP

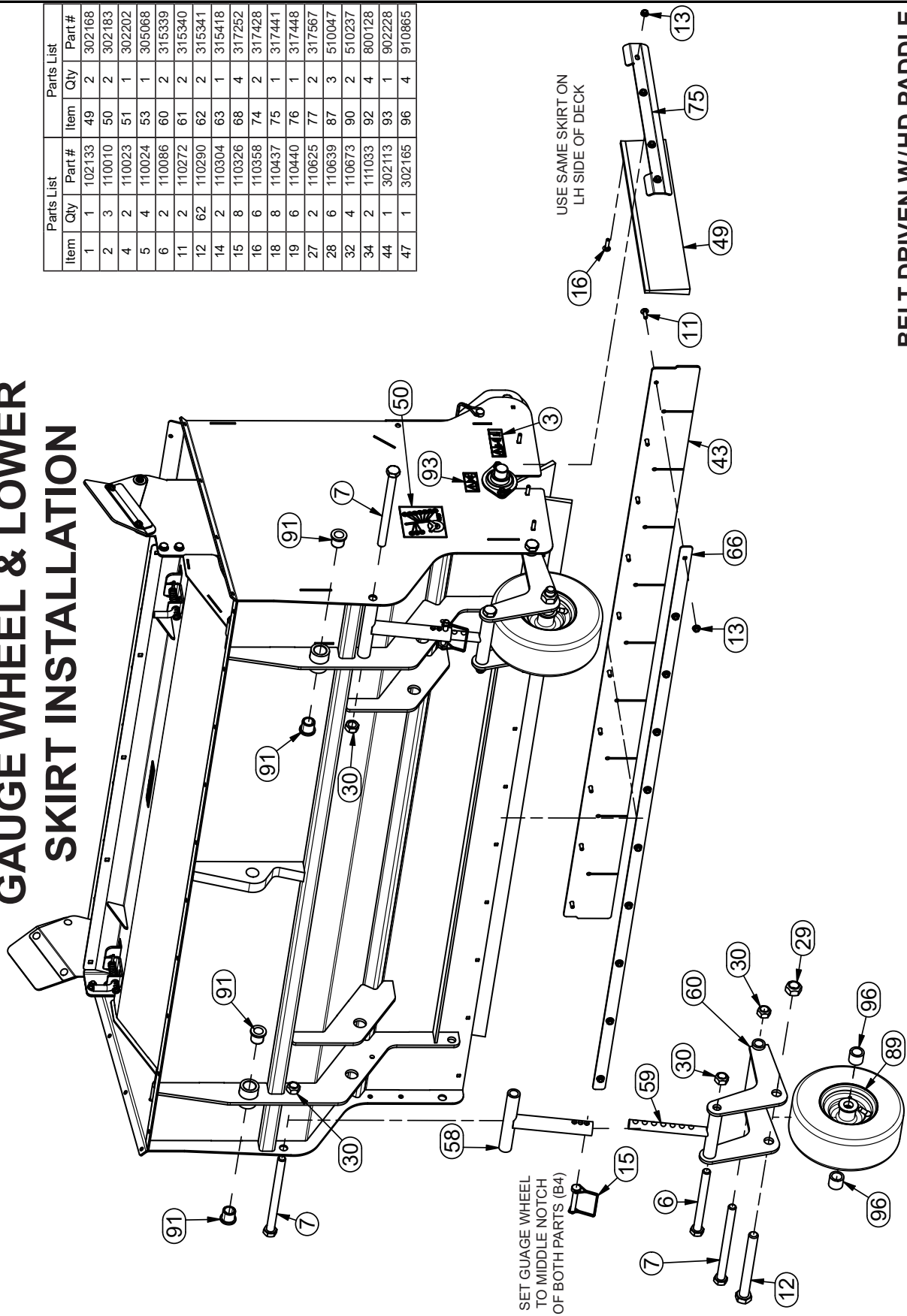
Parts List		Parts List	
Item	Qty	Part #	Part #
3	19	110020	42
10	12	110174	47
12	62	110290	49
16	6	110358	53
18	8	110437	54
20	8	110464	55
21	4	110556	56
23	19	110606	57
29	18	110645	63
32	4	110673	67
34	2	111033	71
35	2	112147	73
37	4	142019	74
38	2	142025	75
39	2	142026	78
40	4	142027	79



BELT DRIVEN W/HD PADDLE
Serial Number: 26A01+

GAUGE WHEEL & LOWER SKIRT INSTALLATION

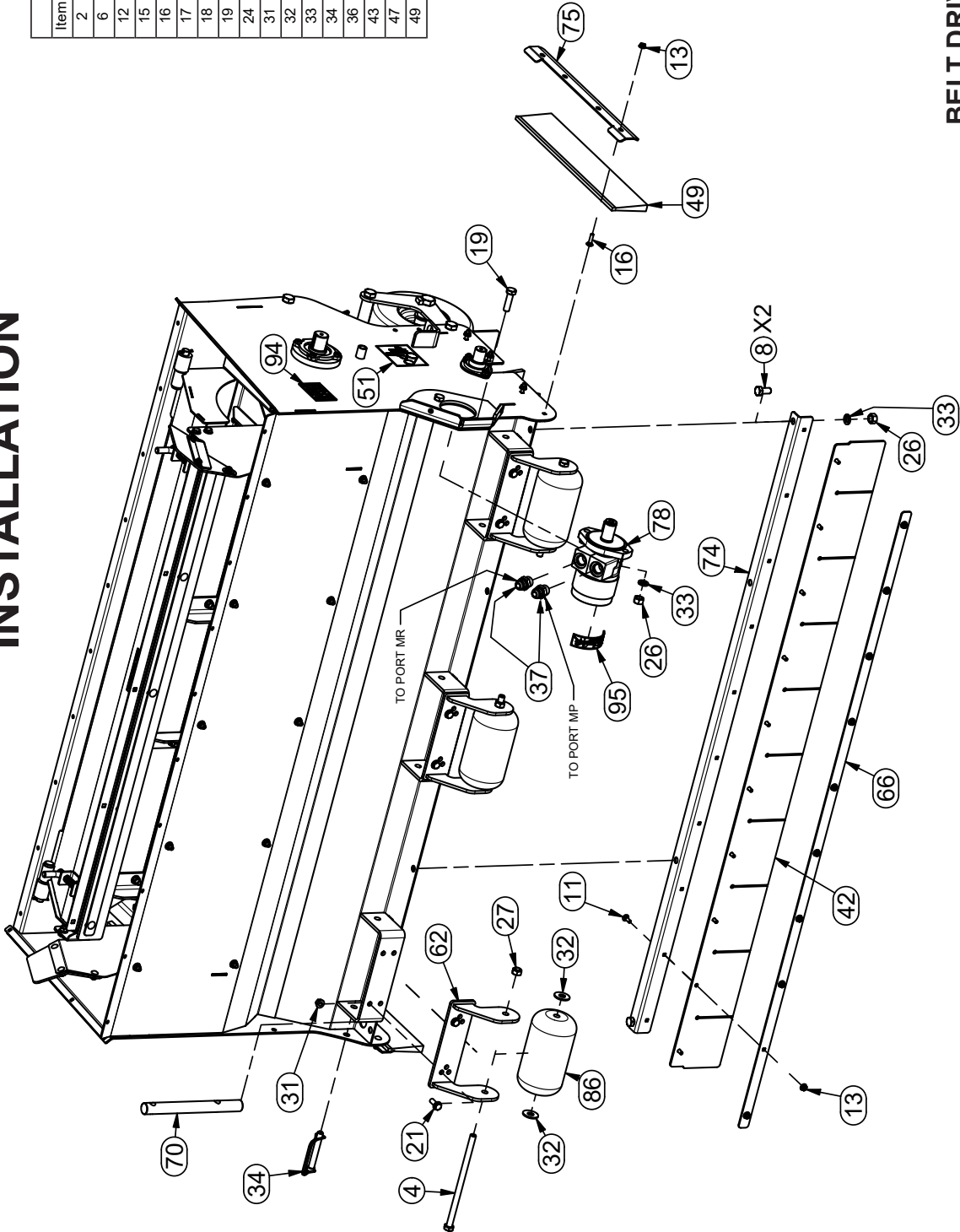
Parts List			Parts List		
Item	Qty	Part #	Item	Qty	Part #
1	1	102133	49	2	302168
2	3	110010	50	2	302183
4	2	110023	51	1	302202
5	4	110024	53	1	305068
6	2	110086	60	2	315339
11	2	110272	61	2	315340
12	62	110290	62	2	315341
14	2	110304	63	1	315418
15	8	110326	68	4	317252
16	6	110358	74	2	317428
18	8	110437	75	1	317441
19	6	110440	76	1	317448
27	2	110625	77	2	317567
28	6	110639	87	3	510047
32	4	110673	90	2	510237
34	2	111033	92	4	800128
44	1	302113	93	1	902228
47	1	302165	96	4	910865



BELT DRIVEN W/HD PADDLE
Serial Number: 26A01+

HYDRAULIC MOTOR, SCALP WHEELS & LOWER SKIRT INSTALLATION

Parts List			Parts List		
Item	Qty	Part #	Item	Qty	Part #
2	3	110010	50	2	302183
6	2	110086	52	1	302203
12	62	110290	53	1	305068
15	8	110326	56	2	311608
16	6	110358	62	2	315341
17	3	110419	63	1	315418
18	8	110437	64	3	315425
19	6	110440	68	4	317252
24	6	110610	72	1	317365
31	4	110666	74	2	317428
32	4	110673	75	1	317441
33	1	110987	76	1	317448
34	2	111033	80	1	323076
36	2	120251	87	3	510047
43	1	302112	94	1	902230
47	1	302165	95	1	902232
49	2	302168			



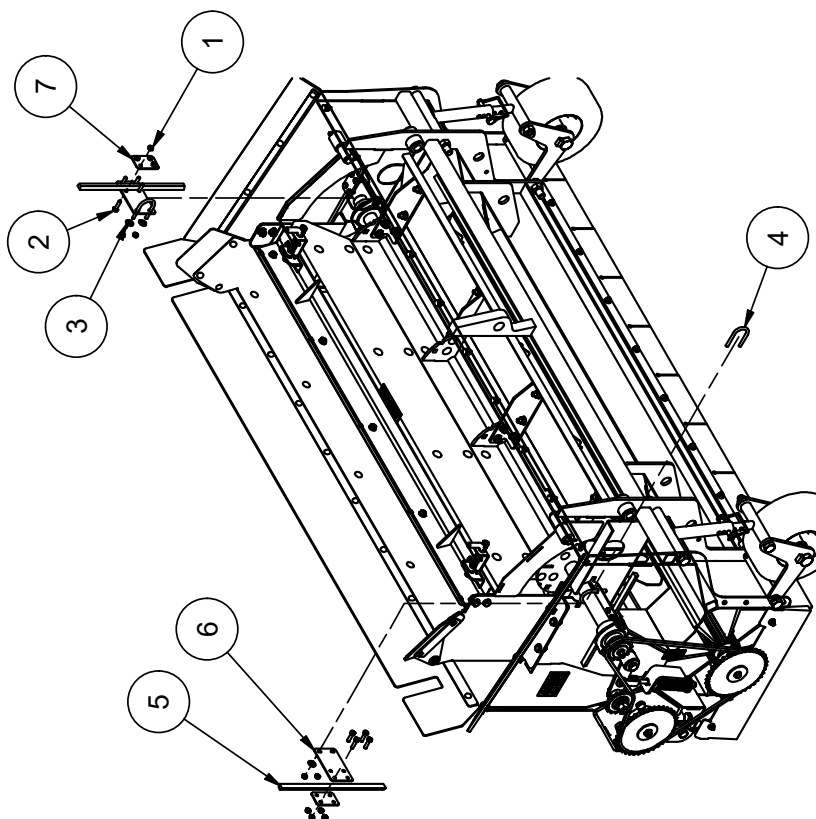
BELT DRIVEN W/HD PADDLE
Serial Number: 26A01+

Copy 2 for belt drive

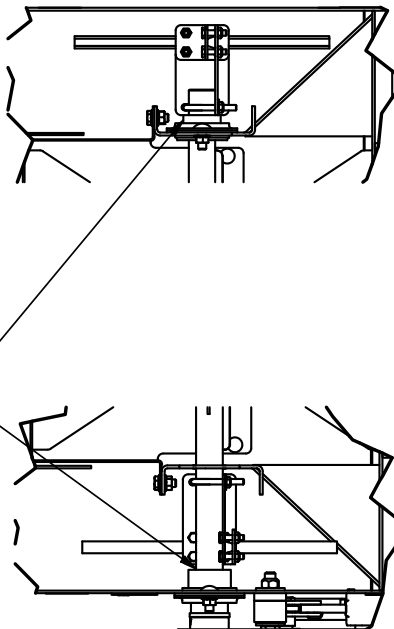
305164 REV: A

Parts List

Item	Qty	Part #	DESCRIPTION
1	12	110174	Nut, 1/4-20, Unitorque Lock
2	8	110464	Bolt, 1/4-20 X 1.0
3	4	110673	Washer, 1/4" Flat Standard
4	2	112147	U-Bolt, 1/4-20 X 1.25, Zinc Plated
5	2	311608	Finger, 12" Rubber
6	2	317621	Plate, Debris Spinner Mint
7	2	317622	Plate, Debris Spinner Retainer



SIDE PLATES
TOWARD BEARINGS

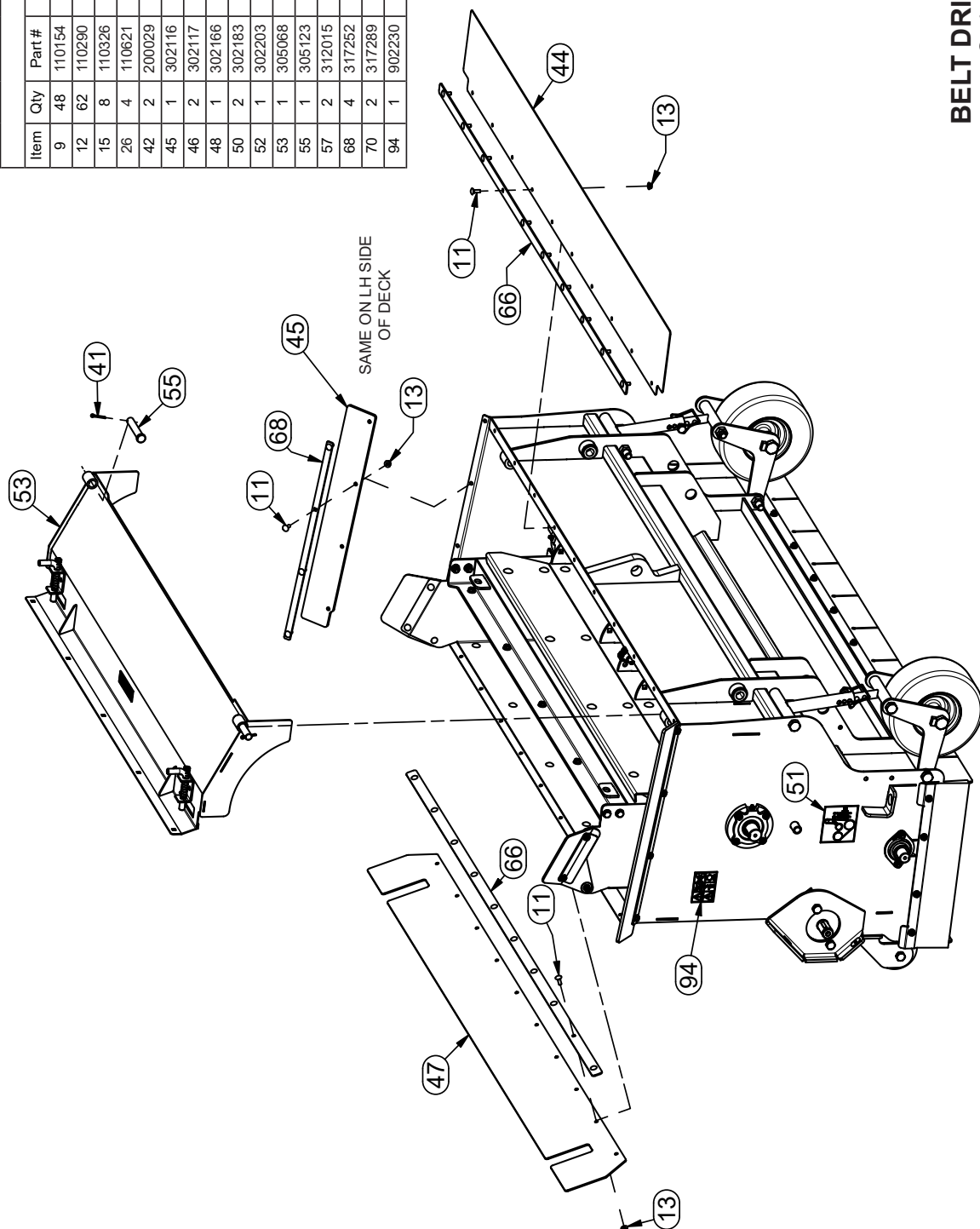


RETURN AIR DEBRIS CLEANER KIT

Standard on S/N: 24A04+ Optional for S/N: 24A03 & older

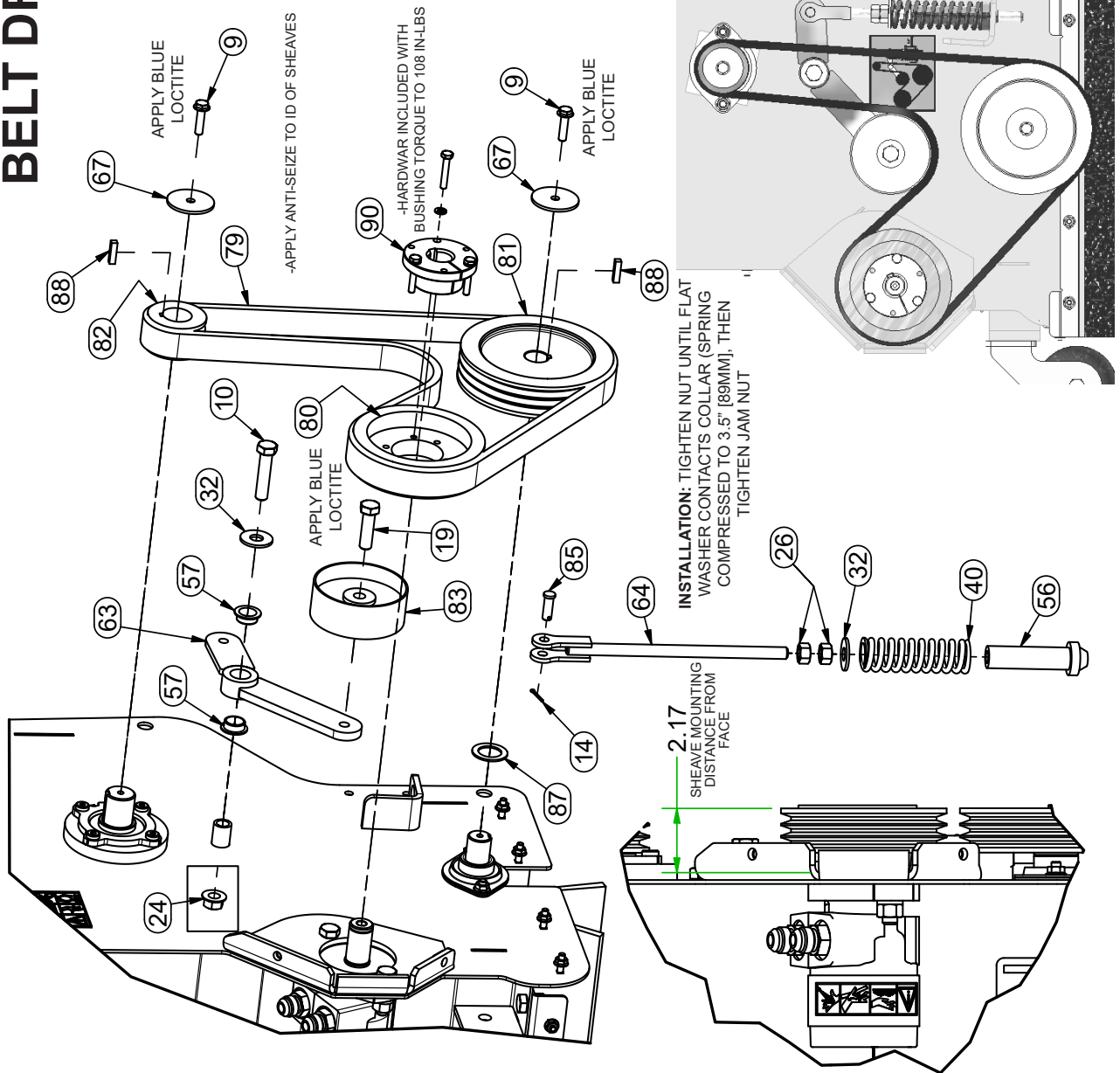
UPPER DECK SEAL & PADDLE SHIELD INSTALLATION

Parts List			DESCRIPTION
Item	Qty	Part #	DESCRIPTION
9	48	110154	Bolt, 1/4-20 X 0.75 In Carriage
12	62	110290	Nut, 1/4-20 W/ Flange
15	8	110326	Bolt, 1/4-20 X 1 In Carriage
26	4	110621	Nut, 3/8-16, Unitorque Lock
42	2	200029	Cotter Pin, 5/32 X 1
45	1	302116	Seal, Rear Transition
46	2	302117	Seal, Side Deck
48	1	302166	Seal, Front Deck
50	2	302183	Brush, Side Skirt
52	1	302203	Decal, Deck Belt Tensioning
53	1	305068	Assy, Brush
55	1	305123	Assy, Paddle Shield
57	2	312015	Pin, 5/8" X 3.5"
68	4	317252	Retainer, Front Deck
70	2	317289	Retainer, Upper Side Seal
94	1	902230	Decal, Shaft Hazard



BELT DRIVEN W/HD PADDLE
Serial Number: 26A01+

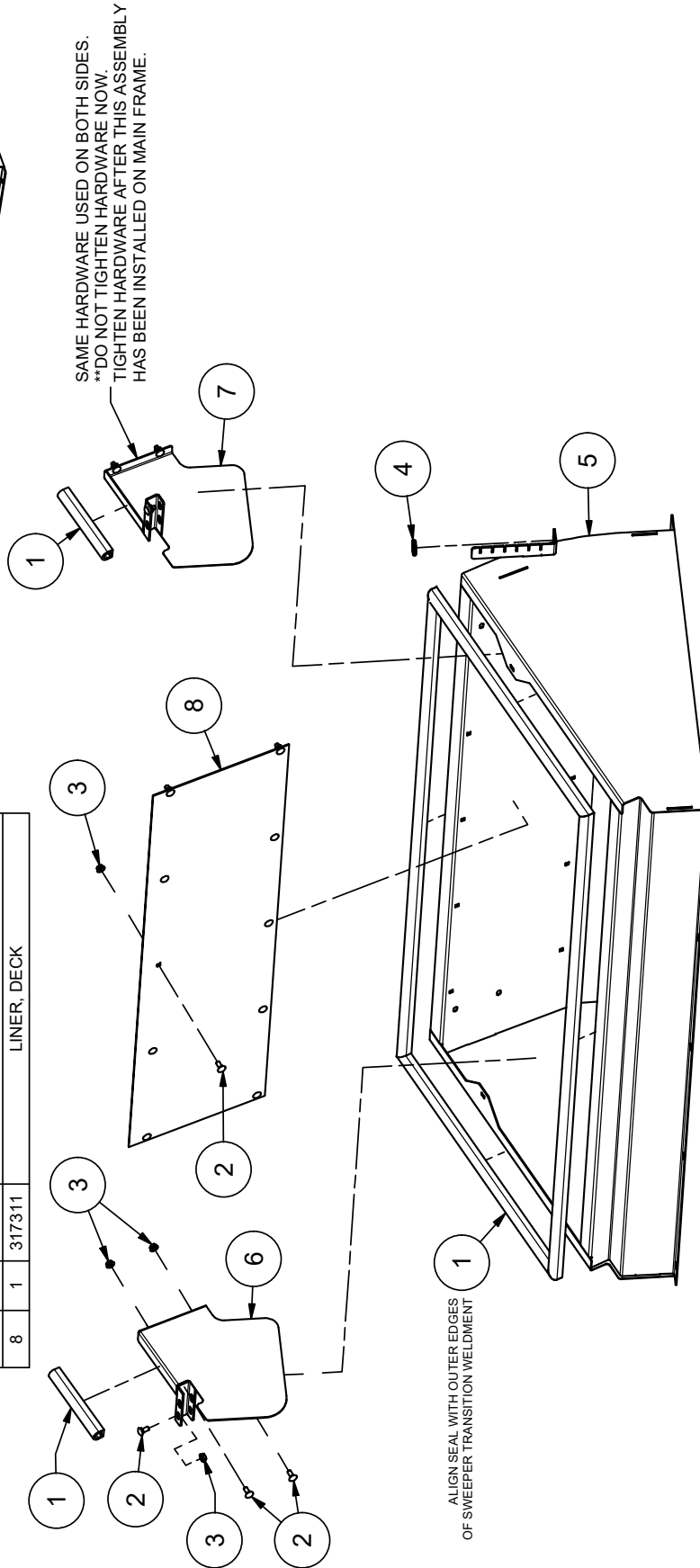
BELT DRIVE ASSEMBLY



Parts List		DESCRIPTION
Item	Qty	Part #
7	2	110122 Bolt, 5/16-18 X 1.25, Wiz Flange
8	1	110125 Bolt, 1/2-13 X 2.25 Gr 5 Zinc Plate
13	1	110300 Cotter Pin, 3/32 X 0.75
17	3	110419 Bolt, 1/2-13 X 1.75
22	1	110588 Nut, 1/2-13 Wiz Flange
24	6	110610 Nut, 1/2-13
25	3	110615 Nut, 1/2-13, Unitorque Lock
30	8	110658 Washer, 1/2\" Flat Standard
32	4	110673 Washer, 1/4\" Flat Standard
41	1	142031 Spring, Compression, 1.5x4.5x.75, 257lbs
50	2	302183 Brush, Side Skirt
52	1	302203 Decal, Deck Belt Tensioning
53	1	305068 Assy, Brush
58	1	312060 Collar, Belt Spring Tensioner
59	2	312061 Bushing, .75 X .875 X .375, Flng
65	1	315458 Weldment, Deck Belt Tensioner
66	1	315467 Weldment, Tensioner Adjustment
69	2	317258 Washer, 2.0 X .344 X .12
80	1	323076 Motor, Deck Drive, 4.0 Cld
81	1	342077 Belt, Sweeper Deck Drive, Brush
82	1	342078 Sheave, 3/3v5.60 Sds-Qd
83	1	342079 Sheave, 3/3v6.50 X 1.0
84	1	342080 Sheave, 3/3v2.50 X 1.25
85	1	342081 Pulley, Idler, 4\" Flat X 1.56"
86	1	500274 Clevis Pin, 3/8 X 7/8
88	1	510055 Washer, 1.5 X 1.0 X 14ga Mach
89	2	510228 Key, 1/4 X 1/4 X 1.0 Under
91	1	510241 Bushing, Qd 1\" Sds

BELT DRIVEN W/HD PADDLE
Serial Number: 26A01+

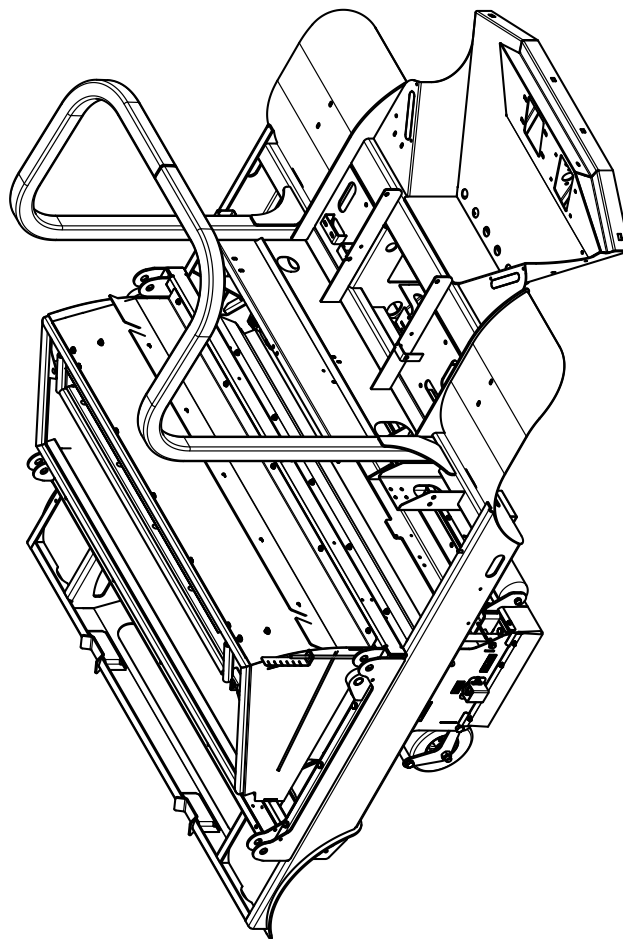
Parts List			DESCRIPTION
ITEM	QTY	PART #	
1	17'	102004	D-Seal, Rubber 1.00" x 1.00"
2	16	110020	Bolt, 5/16-18 X 0.75 in Carriage
3	16	110606	NUT, 5/16-18 W/IZ FLANGE
4	1	110941	GROMMET - 1/2 ID X 1-1/4 OD, 1/16 X 1
5	1	315420	WELDMENT, SWEEPER TRANSITION, US
6	1	315421	WELDMENT, LH CHUTE
7	1	315422	WELDMENT, RH CHUTE
8	1	317311	LINER, DECK



DECK TRANSITION ASSEMBLY

DECK INSTALLATION

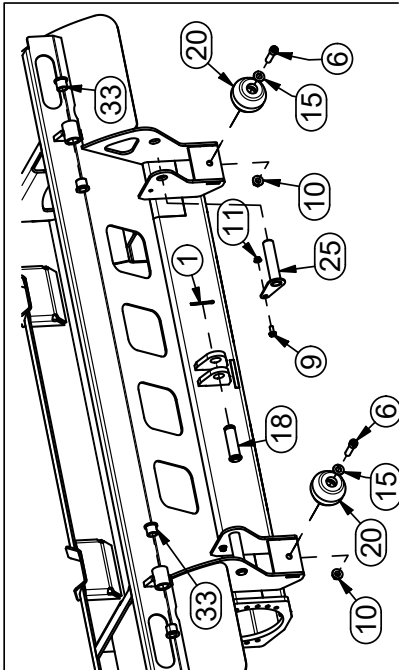
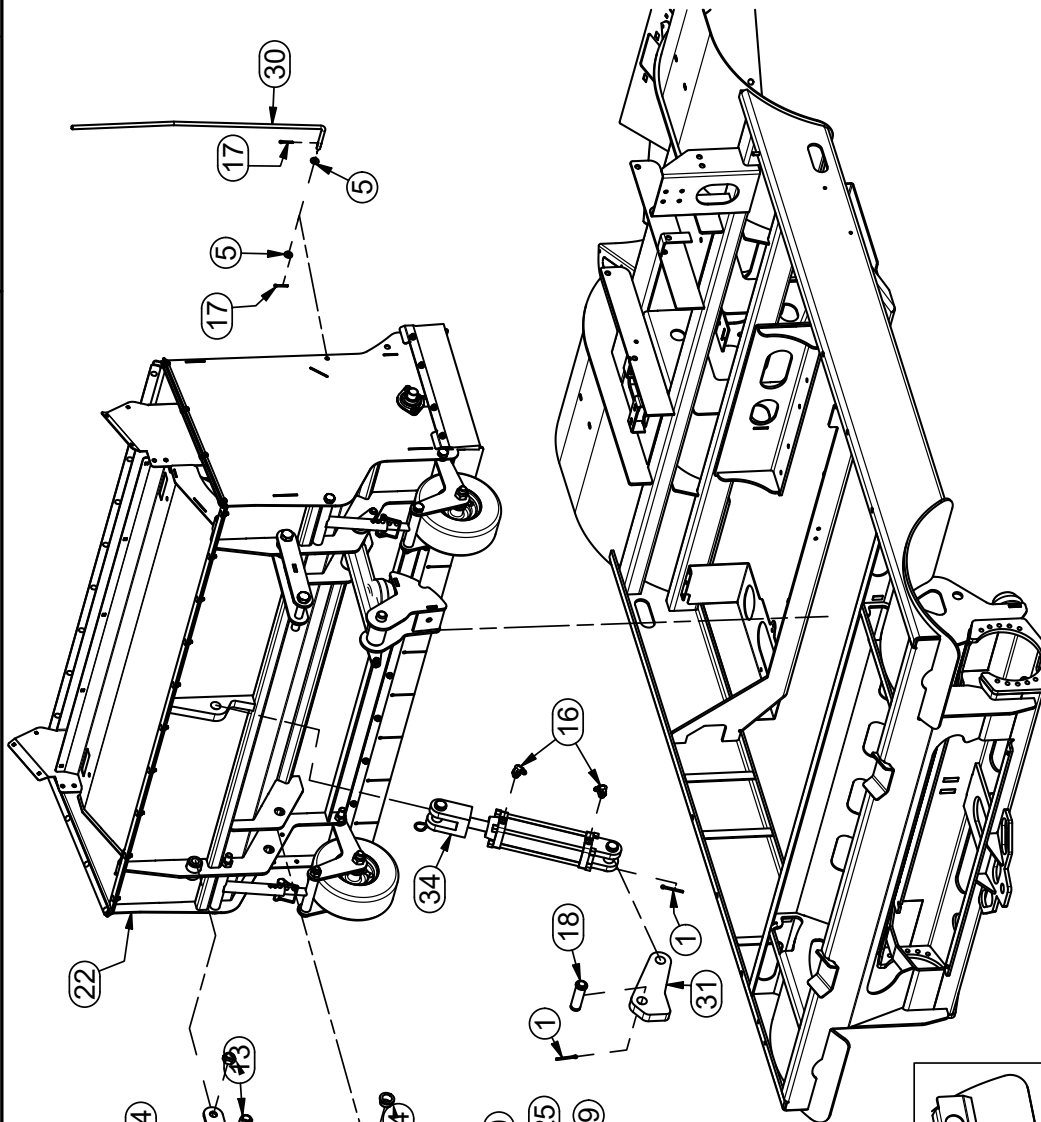
Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	2	100465	COTTER PIN, 3/16 X 1.75
2	4.4 FT	102004	D-Seal, Rubber 1.00" x 1.00"
3	6	110003	BOLT, 1/2-13 X 4.0
4	10	110020	Bolt, 5/16-18 X 0.75 in Carriage
5	2	110155	WASHER, 3/8" FLAT SAE
6	4	110166	BOLT, 1/2-13 X 2.0 SHCS
7	4	110170	BOLT, 3/4-10 X 4.5
8	2	110304	PIN, LOCK 3/8 X 2.5 SQ
9	14	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
10	4	110588	NUT, 1/2-13 WIZ FLANGE
11	14	110606	NUT, 5/16-18 WIZ FLANGE
12	6	110615	NUT, 1/2-13, UNITORQUE LOCK
13	4	110625	NUT, 3/4-10, UNITORQUE LOCK
14	8	110851	BUSHING - IGUS, 1-1/4 x 1 x 3/4 fng
15	4	111119	WASHER, 1/2" FLAT SAE
16	2	120220	ADAPTER, 4MJ-6MB90
17	2	200029	COTTER PIN, 5/32 X 1
18	1	220480	PIN
19	1	302167	SEAL, REAR CHUTE
20	4	302171	Spring, 500lb Rubber
21	1	305124	ASSY, DECK TRANSITION, U.S.
22	1	305184	ASSY, DECK, BELT DRIVE, US
23	1	315315	WELDMENT, HOPPER MOUNT
24	2	315346	WELDMENT, UPPER DECK LINK
25	2	315373	WELDMENT, LOWER DECK PIN, 4.50
26	2	315375	WELDMENT, LOWER DECK LINK
27	2	315376	WELDMENT, LOWER DECK PIN, 6.25
28	1	315423	WELDMENT, UPPER CHUTE RETAINER
29	2	315430	WELDMENT, RUBBER SPRING
30	1	317267	ROD, DECK HEIGHT INDICATOR
31	1	317282	LINK, DECK LIFT
32	2	317441	RETAINER, FRONT DECK
33	4	800128	BUSHING, IGUS, FOOT PEDAL
34	1	923011	Cylinder, 2 X 6, -6 SAE Cross



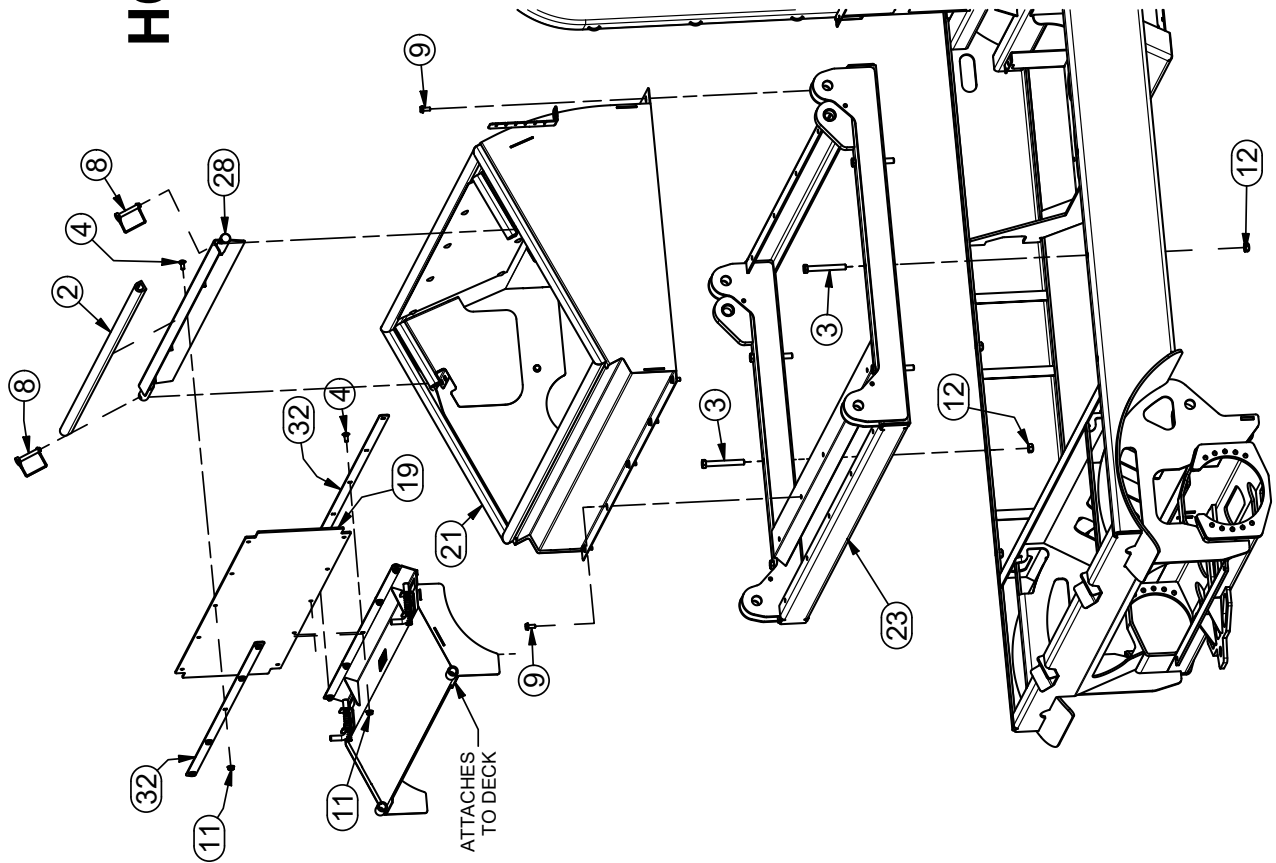
SIMILAR TO 305131

DECK LINKAGE INSTALLATION

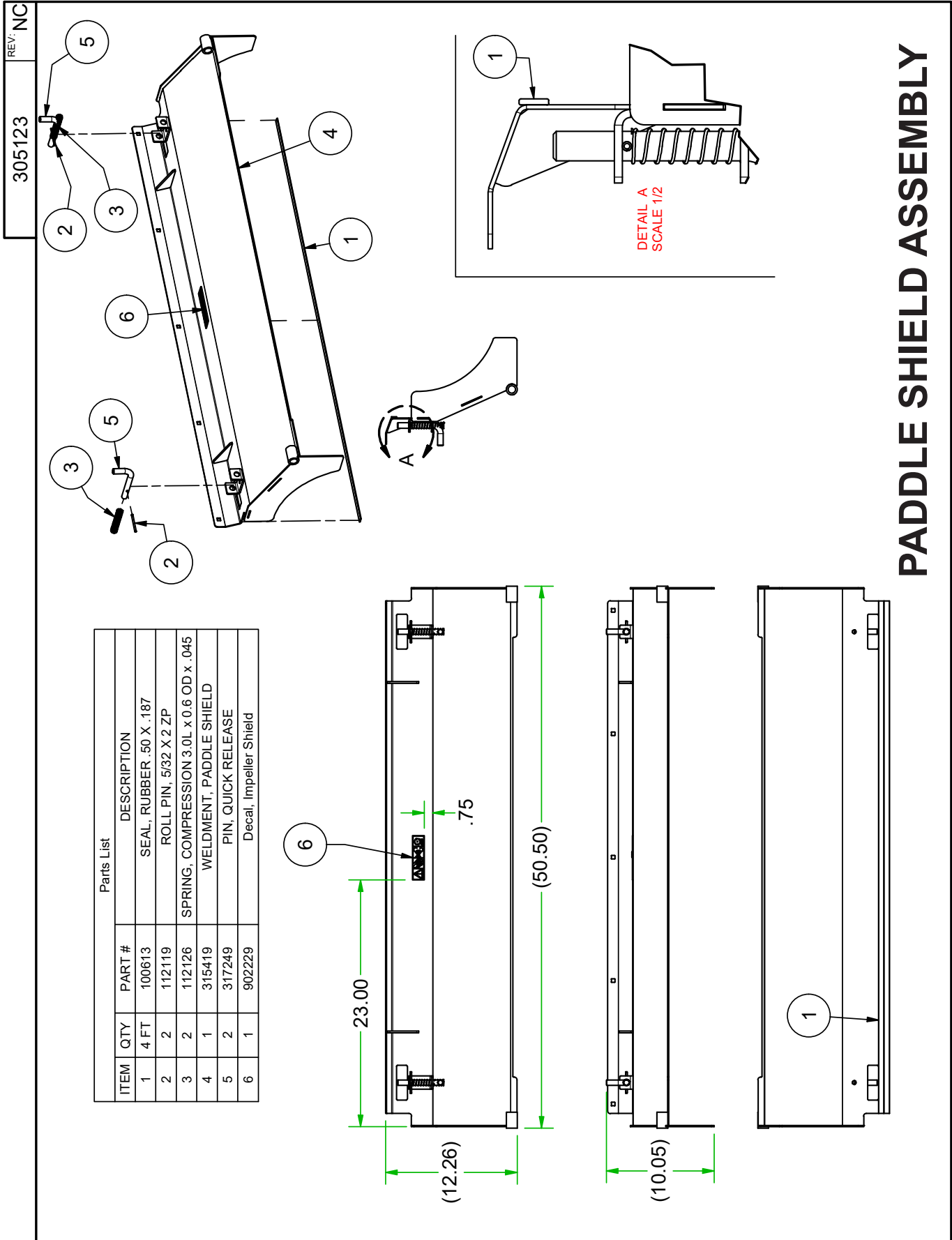
LH LINKAGE IS
SAME AS RH LINKAGE



HOPPER TRANSITION & HOPPER MOUNT INSTALLATION

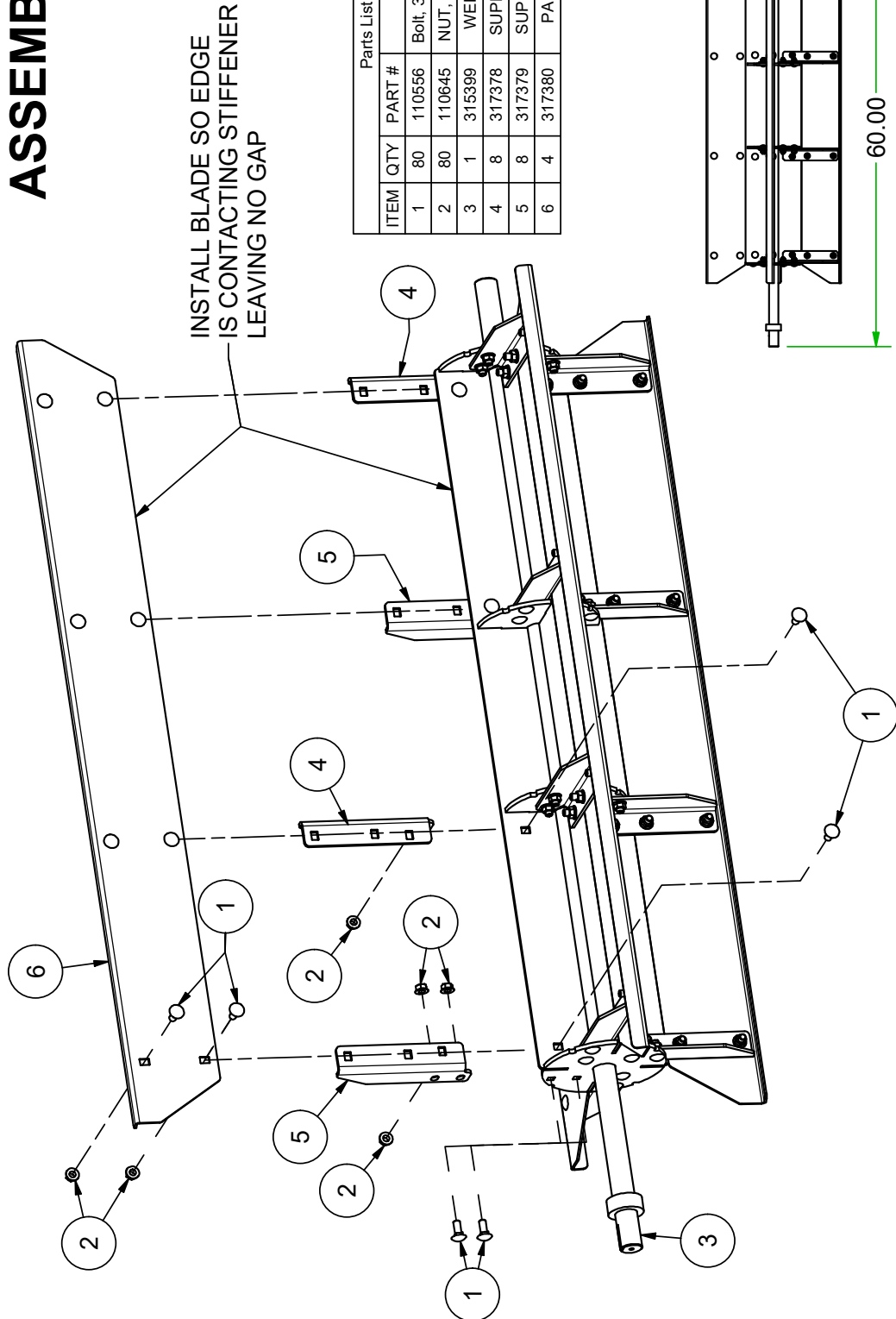


Parts List			
ITEM	QTY	PART #	DESCRIPTION
2	4.4 FT	102004	D-Seal, Rubber 1.00" x 1.00"
3	6	110003	BOLT, 1/2-13 X 4.0
4	10	110020	Bolt, 5/16-18 X 0.75 in Carriage
8	2	110304	PIN, LOCK 3/8 X 2.5 SQ
9	14	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
11	14	110606	NUT, 5/16-18 WIZ FLANGE
12	6	110615	NUT, 1/2-13, UNITORQUE LOCK
19	1	302167	SEAL, REAR CHUTE
21	1	305124	ASSY, DECK TRANSITION, U.S.
23	1	315315	WELDMENT, HOPPER MOUNT
28	1	315423	WELDMENT, UPPER CHUTE RETAINER
32	2	317441	RETAINER, FRONT DECK



PADDLE SHIELD ASSEMBLY

PADDLE ASSEMBLY



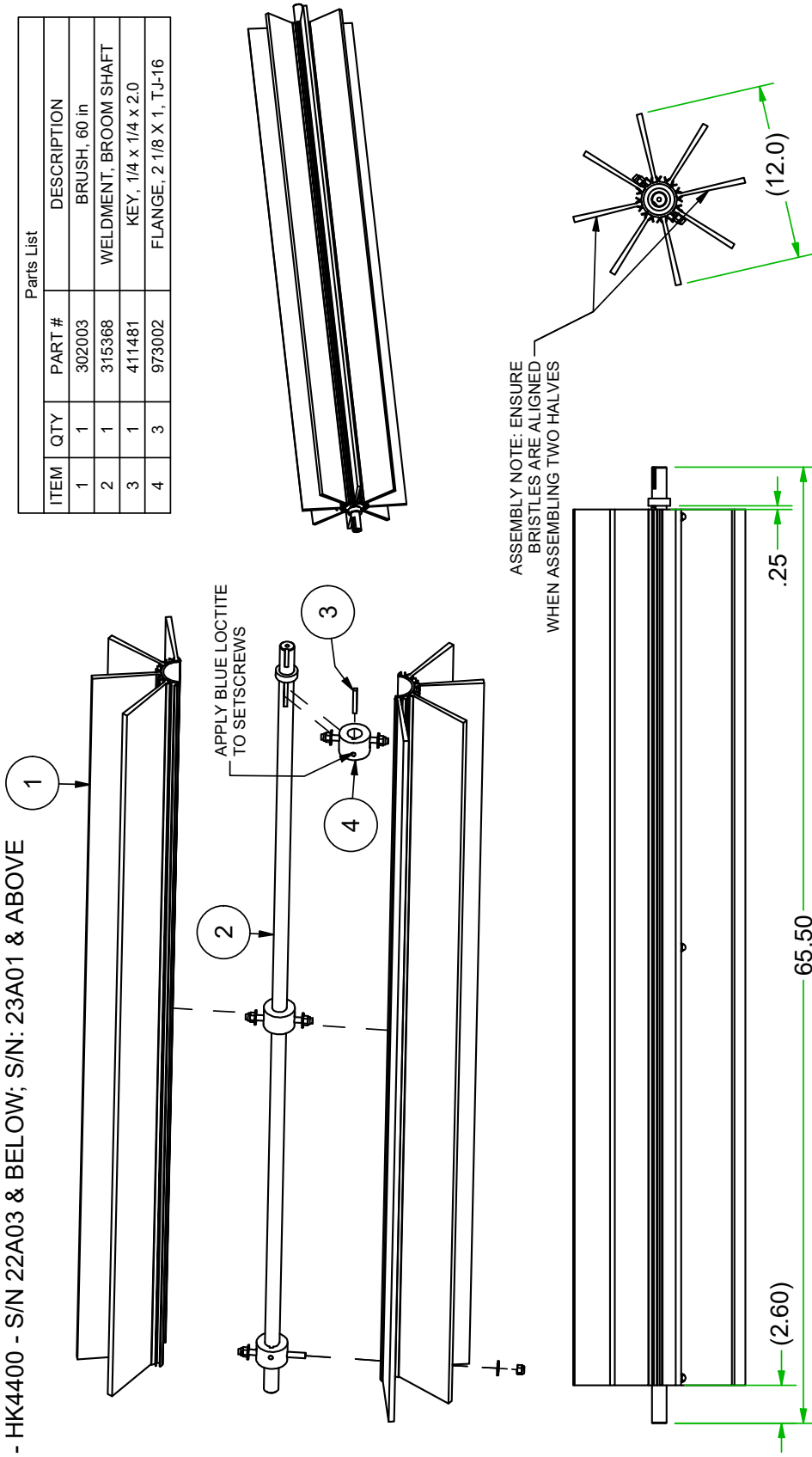
Parts List		
ITEM	QTY	DESCRIPTION
1	80	Bolt, 3/8-16 X 1 in Carriage
2	80	NUT, 3/8-16 WIZ FLANGE
3	1	WELDMENT, PADDLE
4	8	SUPPORT, RH PADDLE
5	8	SUPPORT, LH PADDLE
6	4	PADDLE, SWEEPER

INSTALLED ON THE FOLLOWING
PRODUCTION MACHINES.

- HK4200 - S/N 22A04 & BELOW; S/N: 23A01 & ABOVE
- HK4400 - S/N 22A03 & BELOW; S/N: 23A01 & ABOVE

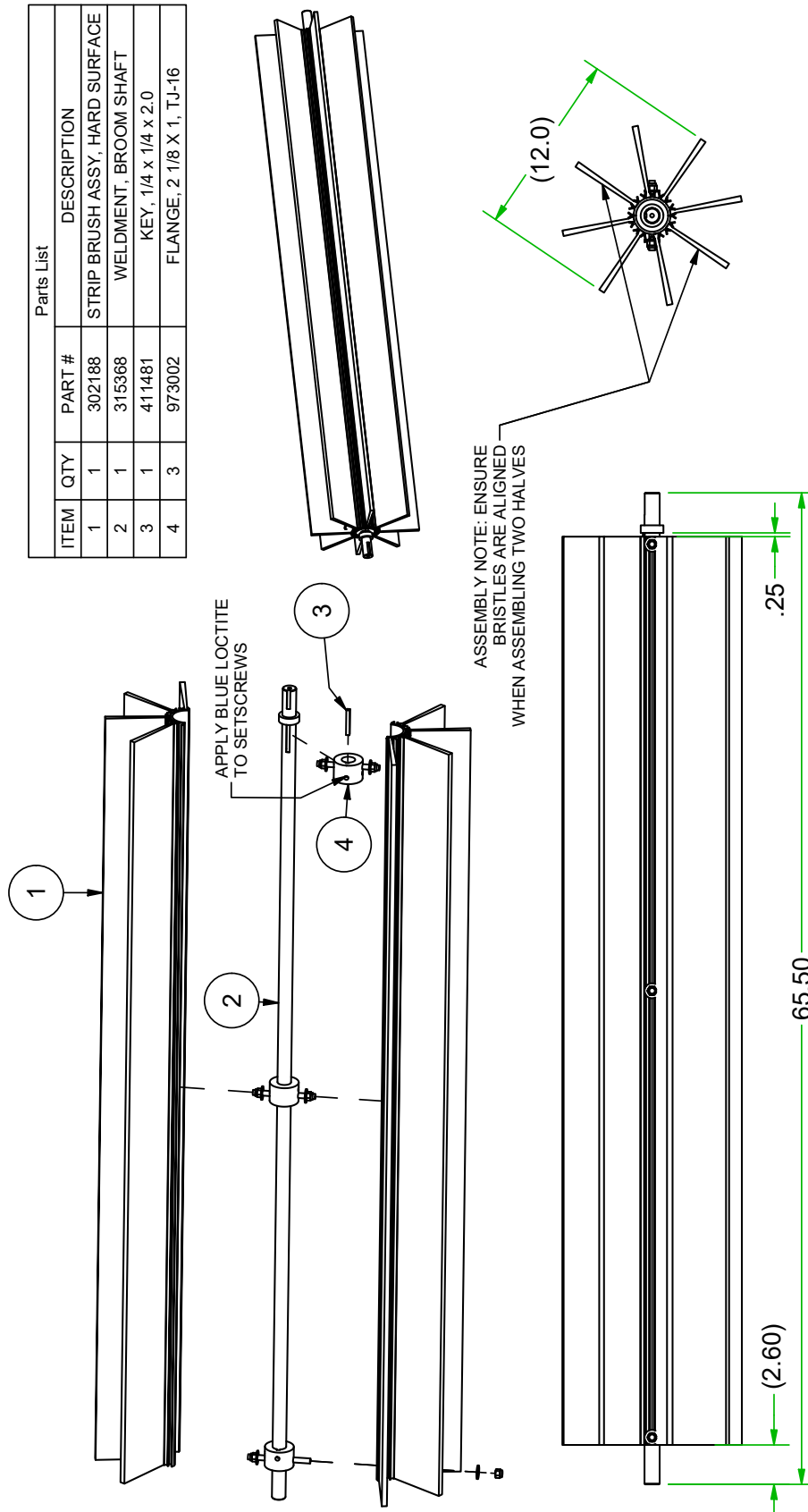
Brush Assembly

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	1	302003	BRUSH, 60 in
2	1	315368	WELDMENT, BROOM SHAFT
3	1	411481	KEY, 1/4 x 1/4 x 2.0
4	3	973002	FLANGE, 2 1/8 X 1, T-J-16



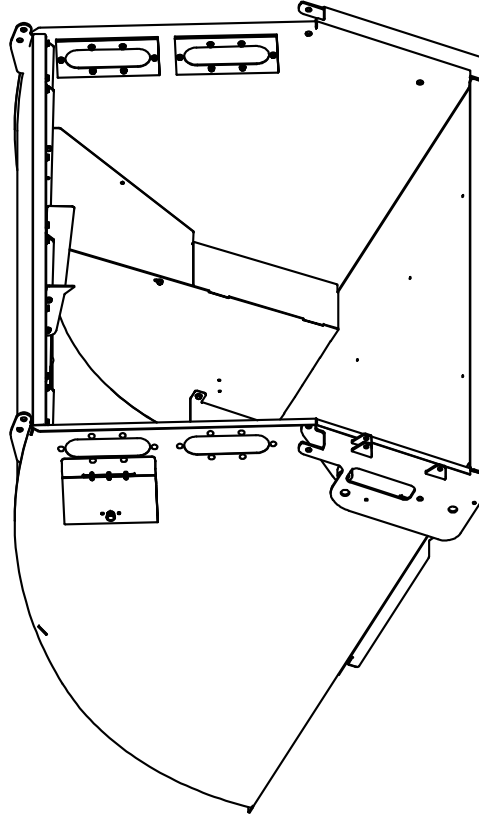
Hard Surface Brush Assembly

305190 REV: NC



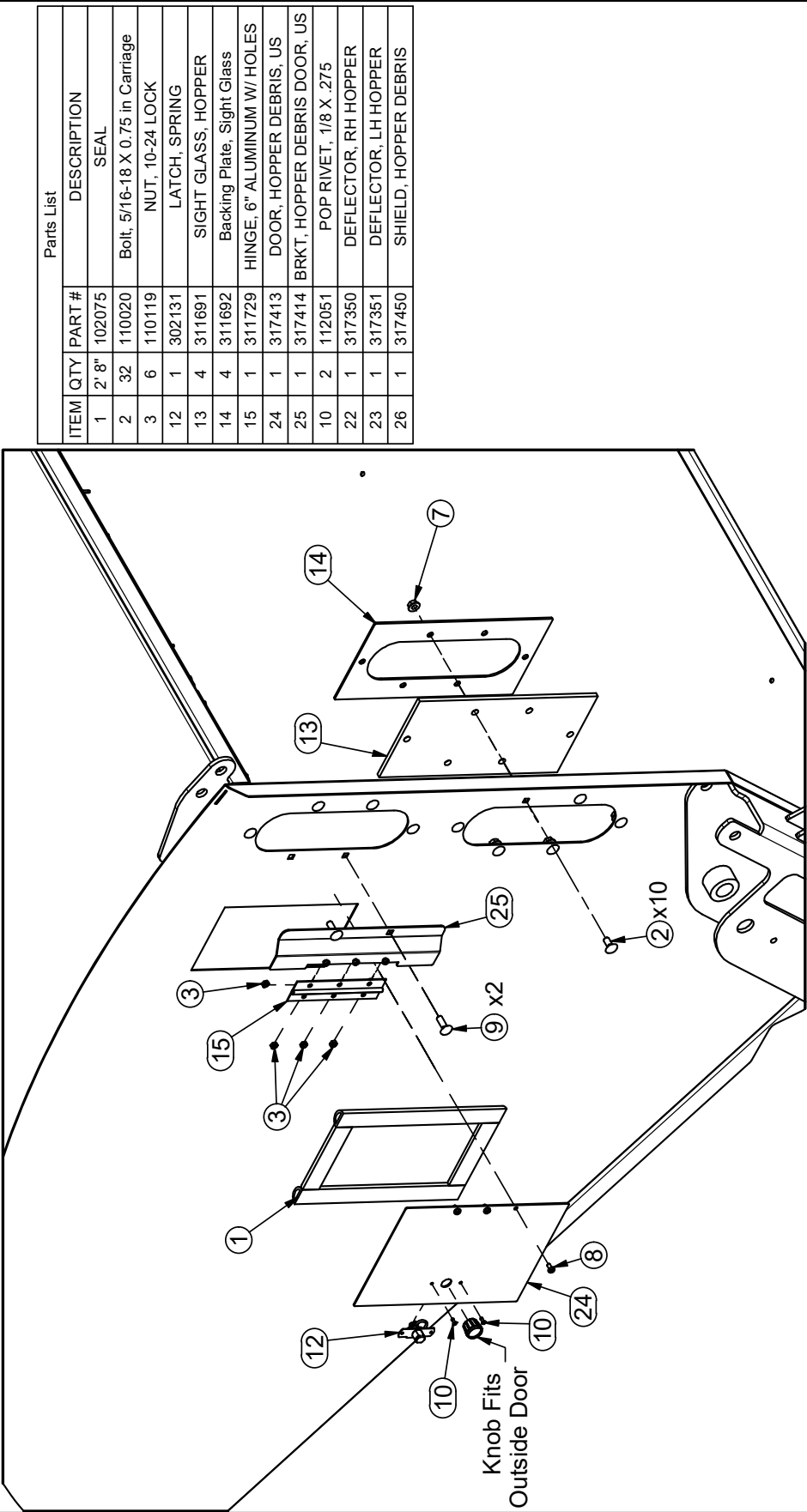
Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	2' 8"	102075	SEAL
2	32	110020	Bolt, 5/16-18 X 0.75 in Carriage
3	6	110119	NUT, 10-24 LOCK
4	26	110319	NUT, 5/16-18 U-TYPE .75L
5	8	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
6	24	110459	BOLT, 5/16-18 X 1, WIZ FLANGE
7	45	110606	NUT, 5/16-18 WIZ FLANGE
8	6	110788	BOLT, 10-24 X .375 STAINLESS, PHILLIPS
9	7	110871	Bolt, 5/16-18 X 1 in Carriage
10	2	112051	POP RIVET, 1/8 X .275
11	1	302121	LINER, SWEEPER HOPPER
12	1	302131	LATCH, SPRING
13	4	311691	SIGHT GLASS, HOPPER
14	4	311692	Backing Plate, Sight Glass
15	1	311729	HINGE, 6" ALUMINUM W/ HOLES
16	1	315428	WELDMENT, HOPPER, U.S.
17	2	317212	SCREEN, OUTER RETURN AIR
18	2	317213	SCREEN, INNER RETURN AIR
19	1	317214	SCREEN, RH RETURN AIR
20	1	317215	SCREEN, LH RETURN AIR
21	2	317245	RETAINER, LINER
22	1	317350	DEFLECTOR, RH HOPPER
23	1	317351	DEFLECTOR, LH HOPPER
24	1	317413	DOOR, HOPPER DEBRIS, US
25	1	317414	BRKT, HOPPER DEBRIS DOOR, US
26	1	317450	SHIELD, HOPPER DEBRIS

HOPPER ASSEMBLY



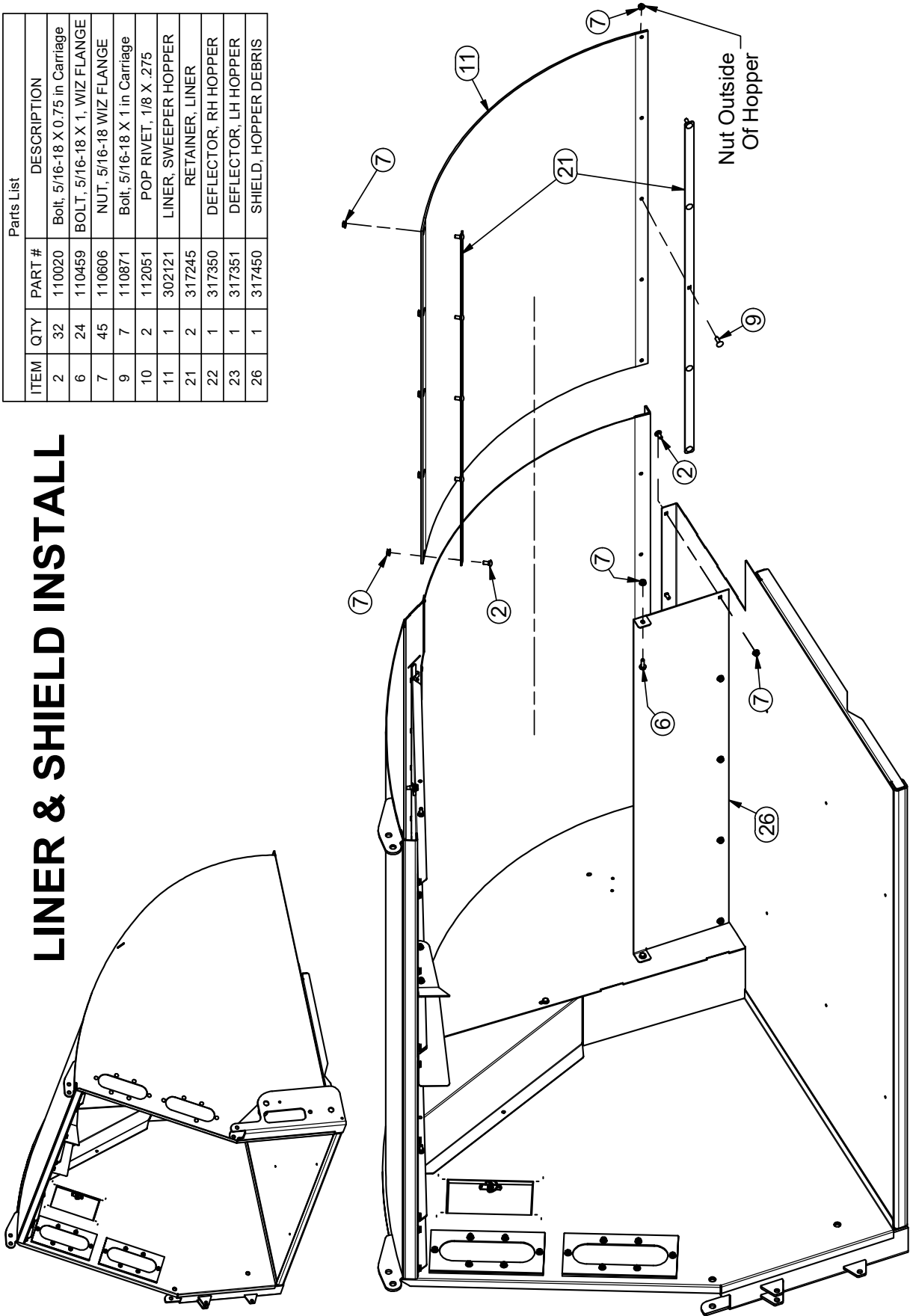
SIMILAR TO 305132

WINDOW AND DOOR INSTALL



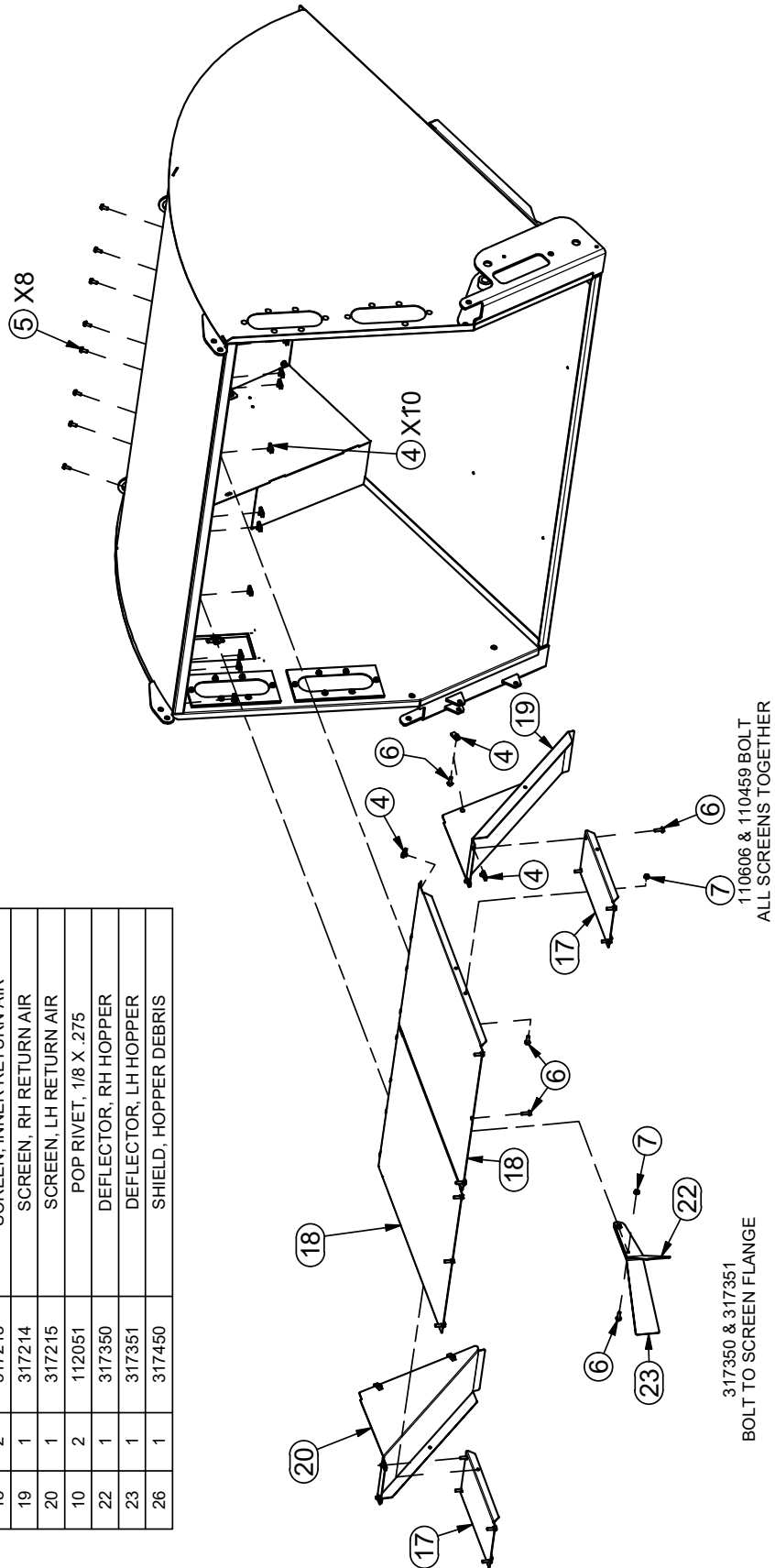
LINER & SHIELD INSTALL

Parts List			DESCRIPTION
ITEM	QTY	PART #	
2	32	110020	Bolt, 5/16-18 X 0.75 in Carriage
6	24	110459	BOLT, 5/16-18 X 1, WIZ FLANGE
7	45	110606	NUT, 5/16-18 WIZ FLANGE
9	7	110871	Bolt, 5/16-18 X 1 in Carriage
10	2	112051	POP RIVET, 1/8 X .275
11	1	302121	LINER, SWEEPER HOPPER
21	2	317245	RETAINER, LINER
22	1	317350	DEFLECTOR, RH HOPPER
23	1	317351	DEFLECTOR, LH HOPPER
26	1	317450	SHIELD, HOPPER DEBRIS



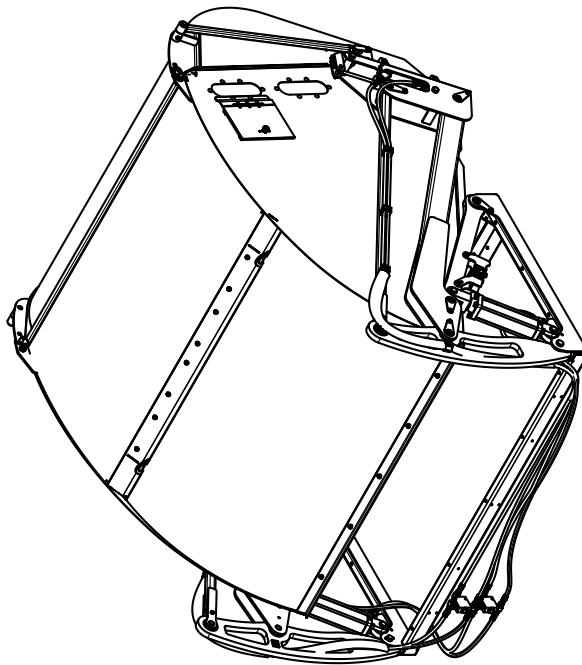
SCREEN ASSEMBLY AND INSTALL

Parts List			DESCRIPTION
ITEM	QTY	PART #	
4	26	110319	NUT, 5/16-18 U-TYPE .75L
5	8	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
6	24	110459	BOLT, 5/16-18 X 1, WIZ FLANGE
7	45	110606	NUT, 5/16-18 WIZ FLANGE
17	2	317212	SCREEN, OUTER RETURN AIR
18	2	317213	SCREEN, INNER RETURN AIR
19	1	317214	SCREEN, RH RETURN AIR
20	1	317215	SCREEN, LH RETURN AIR
10	2	112051	POP RIVET, 1/8 X .275
22	1	317350	DEFLECTOR, RH HOPPER
23	1	317351	DEFLECTOR, LH HOPPER
26	1	317450	SHIELD, HOPPER DEBRIS



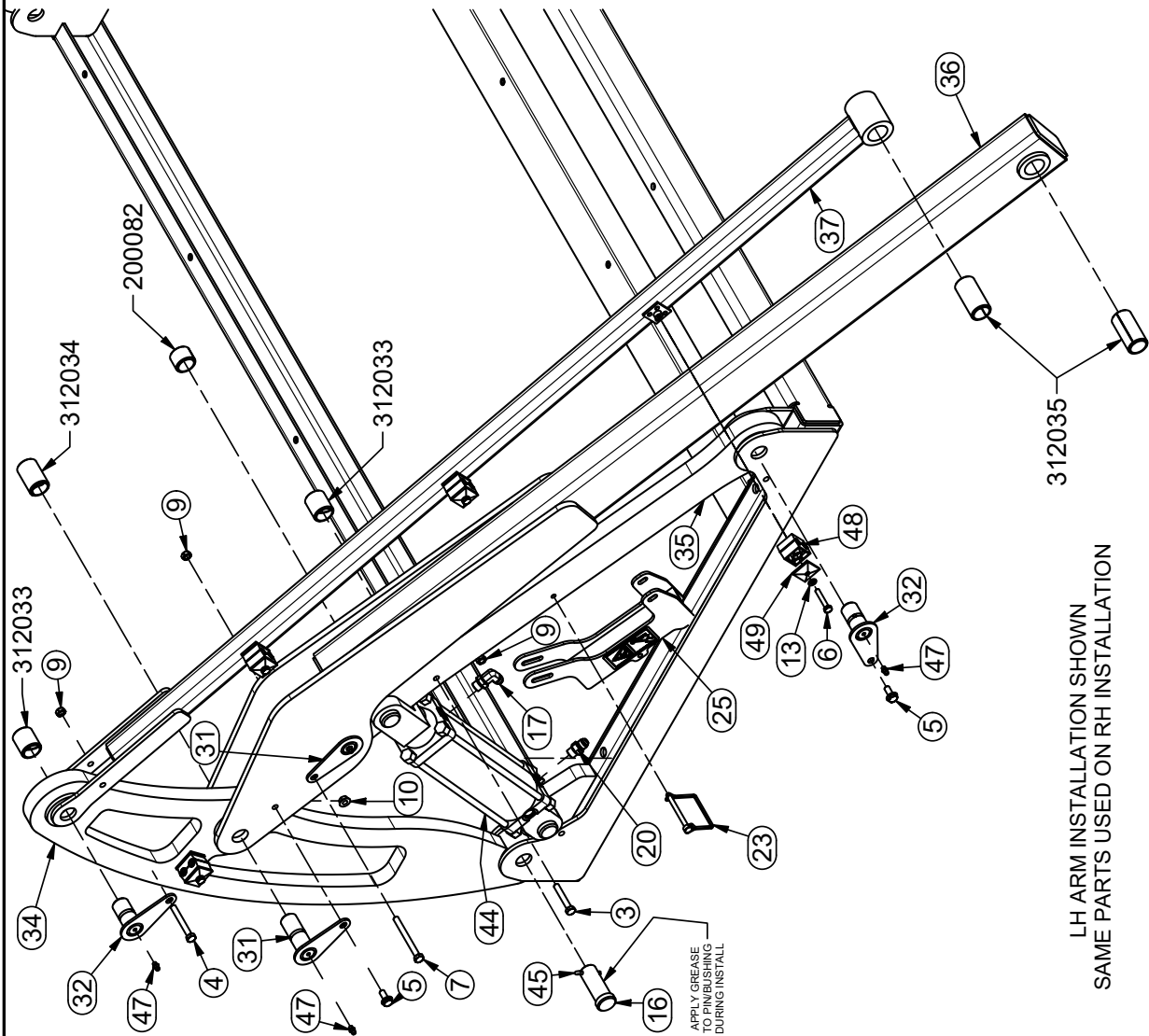
Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	8.75'	100354	WEBBING, NYLON 150ID, SHEATH	41	2	322110	BALL VALVE, -4 SAE O-RING, 7350 PSI
2	4	110025	BOLT, 5/8-11 X 5.5	42	2	323010	CYLINDER - STEERING, 1-3/4 X 6
3	4	110378	BOLT, 5/16-18 X 2.0	43	1	323065	HOSE KIT, HAWK HOPPER HYDRAULIC
4	2	110396	BOLT, 5/16-18 X 2.5	44	2	323066	Cylinder, 2.5 X 8, -6 SAE, Hopper
5	8	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE	45	2	500184	COTTER PIN, 3/16 X 1.25
6	8	110474	BOLT, 1/4-20 X 1-1/2	46	2	500230	GREASE ZERK, 1/4-28 90deg
7	2	110536	BOLT, 5/16-18 X 3.25	47	14	510174	GREASE ZERK, 1/4-28 ST
8	2	110576	BOLT, 5/8-11 X 1.5 GR 5	48	8	522104	DOUBLE HOSE CLAMP
9	10	110600	NUT, 5/16-18, UNITORQUE LOCK	49	8	522105	DOUBLE COVERPLATE
10	8	110606	NUT, 5/16-18 WIZ FLANGE				
11	6	110639	NUT, 5/8-11, UNITORQUE LOCK				
12	2	110665	WASHER, 5/16" FLAT STANDARD				
13	8	110667	WASHER, 1/4" LOCK				
14	2	111190	Bolt, 3/8 x 2 Shoulder				
15	2	112131	Clevis Pin, 1/2" x 1-1/2", ZINC-PLATED STEEL				
16	2	112133	Clevis Pin, 1" x 2-3/16", ZINC-PLATED STEEL				
17	2	120222	ADAPTER, 6MJ-6MB90				
18	4	120233	ADAPTER, 4MJ-4MB				
19	2	120266	ADAPTER, 4MJ-4FJX90				
20	2	120398	ADAPTER, REST 6MJ-6MB, .047				
21	2	120770	ADAPTER, 4MB-4FB, EXTENDER				
22	2	120771	ADAPTER, 4MB-4MB90				
23	2	140016	PIN, LOCK, 1/4 X 2-1/4, SQ WIRE				
24	3	200029	COTTER PIN, 5/32 X 1				
25	2	305103	Assy, Safety Latch, ISO				
26	1	305113	Assy, Hopper Door, ISO, US				
27	1	305127	ASSY, HOPPER, U.S.				
28	2	315257	PIN WELDMENT, HOPPER DOOR				
29	2	315327	WELDMENT, DOOR LIFT PIVOT LINK				
30	4	315331	WELDMENT, HOPPER LIFT - 4.00"				
31	4	315332	WELDMENT, LIFT LINK PIN - 2.87"				
32	4	315333	WELDMENT, LIFT LINK PIN - 2.12"				
33	2	315383	Weldment, Door Arm End				
34	2	315410	WELDMENT, VERTICAL LIFT LINK, US				
35	2	315411	WELDMENT, CYLINDER LIFT LINK, US				
36	2	315412	WELDMENT, LOWER LIFT LINK, US				
37	2	315413	WELDMENT, UPPER LIFT LINK, US				
38	2	315416	WELDMENT, DOOR LIFT LINK, US				
39	2	317216	CLEVIS PIN, 3/4 X 3.75, W/ HOLE				
40	4	317320	SPACER, CYLINDER				

HOPPER INSTALLATION



SIMILAR TO 305133

LIFT ARM ASSEMBLY

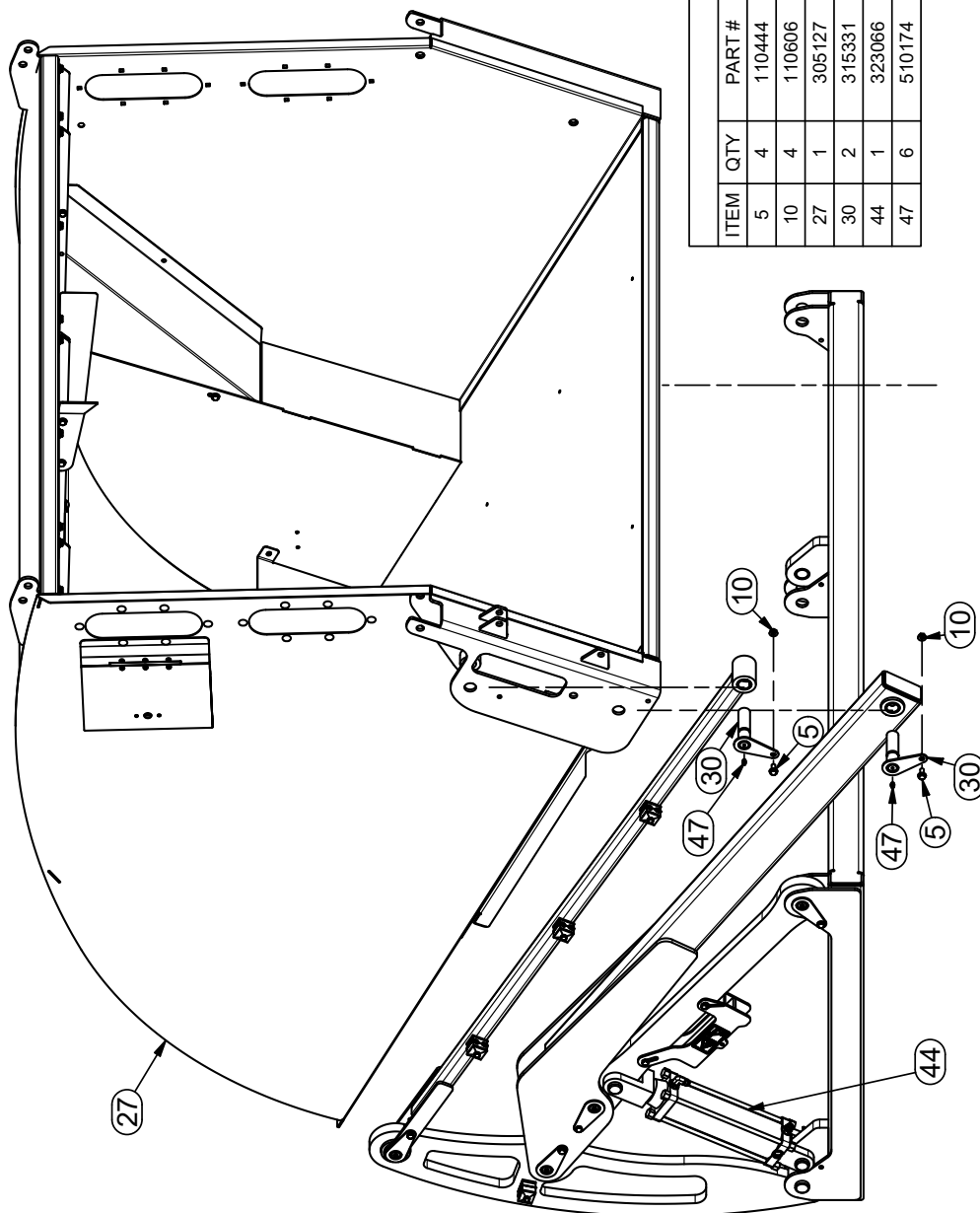


LH ARM INSTALLATION SHOWN
SAME PARTS USED ON RH INSTALLATION

Service Parts		
QTY	PART #	DESCRIPTION
1	200082	Bushing, 1.25 X 1 X 1, Split Steel
2	312033	Bushing, 1.25 X 1 X 1.438, Split, w/
1	312034	Bushing, 1.25 X 1 X 1.938, Split, w/
2	312035	Bushing, 1.25 X 1 X 2.5, Split, w/

Parts List				
ITEM	QTY	PART #	DESCRIPTION	
3	1	110378	BOLT, 5/16-18 X 2.0	
4	1	110396	BOLT, 5/16-18 X 2.5	
5	2	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE	
6	4	110474	BOLT, 1/4-20 X 1-1/2	
7	1	110536	BOLT, 5/16-18 X 3.25	
9	3	110600	NUT, 5/16-18, UNITORQUE LOCK	
10	2	110606	NUT, 5/16-18 WIZ FLANGE	
13	4	110667	WASHER, 1/4" LOCK	
16	1	112133	Clevis Pin, 1" x 2-3/16", ZINC-PLATED STEEL	
17	1	120222	ADAPTER, 6MJ-6MB90	
20	1	120398	ADAPTER, REST 6MJ-6MB, .047	
23	1	140016	PIN, LOCK, 1/4 X 2-1/4, SQ WIRE	
25	1	305103	Assy, Safety Latch, ISO	
31	2	315332	WELDMENT, LIFT LINK PIN - 2.87"	
32	2	315333	WELDMENT, LIFT LINK PIN - 2.12"	
34	1	315410	WELDMENT, VERTICAL LIFT LINK, US	
35	1	315411	WELDMENT, CYLINDER LIFT LINK, US	
36	1	315412	WELDMENT, LOWER LIFT LINK, US	
37	1	315413	WELDMENT, UPPER LIFT LINK, US	
44	1	323066	Cylinder, 2.5 X 8, -6 SAE, Hopper	
45	1	500184	COTTER PIN, 3/16 X 1.25	
47	4	510174	GREASE ZERK, 1/4-28 ST	
48	4	522104	DOUBLE HOSE CLAMP	
49	4	522105	DOUBLE COVERPIATE	

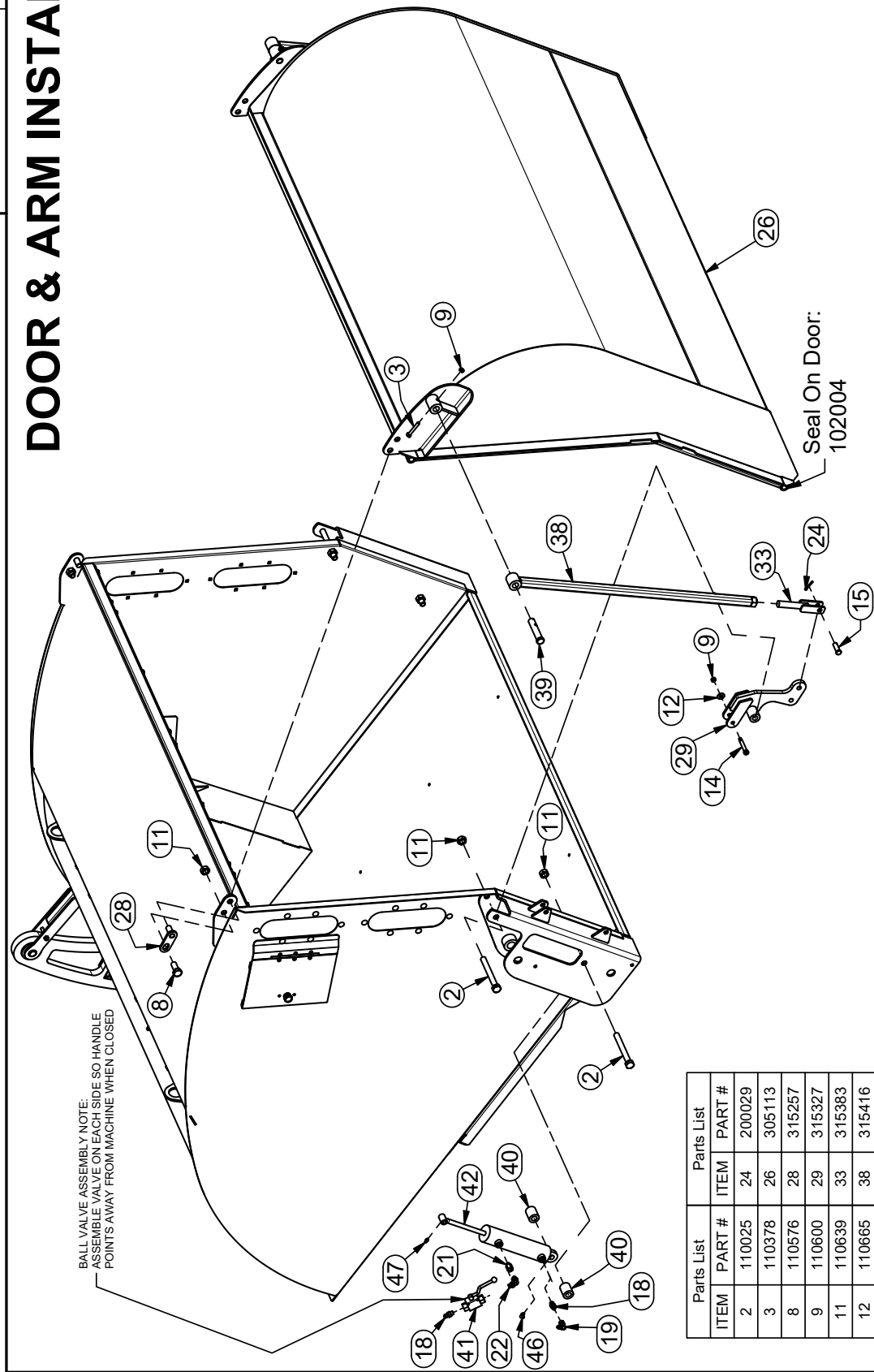
HOPPER INSTALL



Parts List			
ITEM	QTY	PART #	DESCRIPTION
5	4	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
10	4	110606	NUT, 5/16-18 WIZ FLANGE
27	1	305127	ASSY, HOPPER, U.S.
30	2	315331	WELDMENT, HOPPER LIFT - 4.00"
44	1	323066	Cylinder, 2.5 X 8, -6 SAE, Hopper
47	6	510174	GREASE ZERK, 1/4-28 ST

LH INSTALLATION SHOWN
SAME PARTS USED ON RH INSTALLATION

DOOR & ARM INSTALL

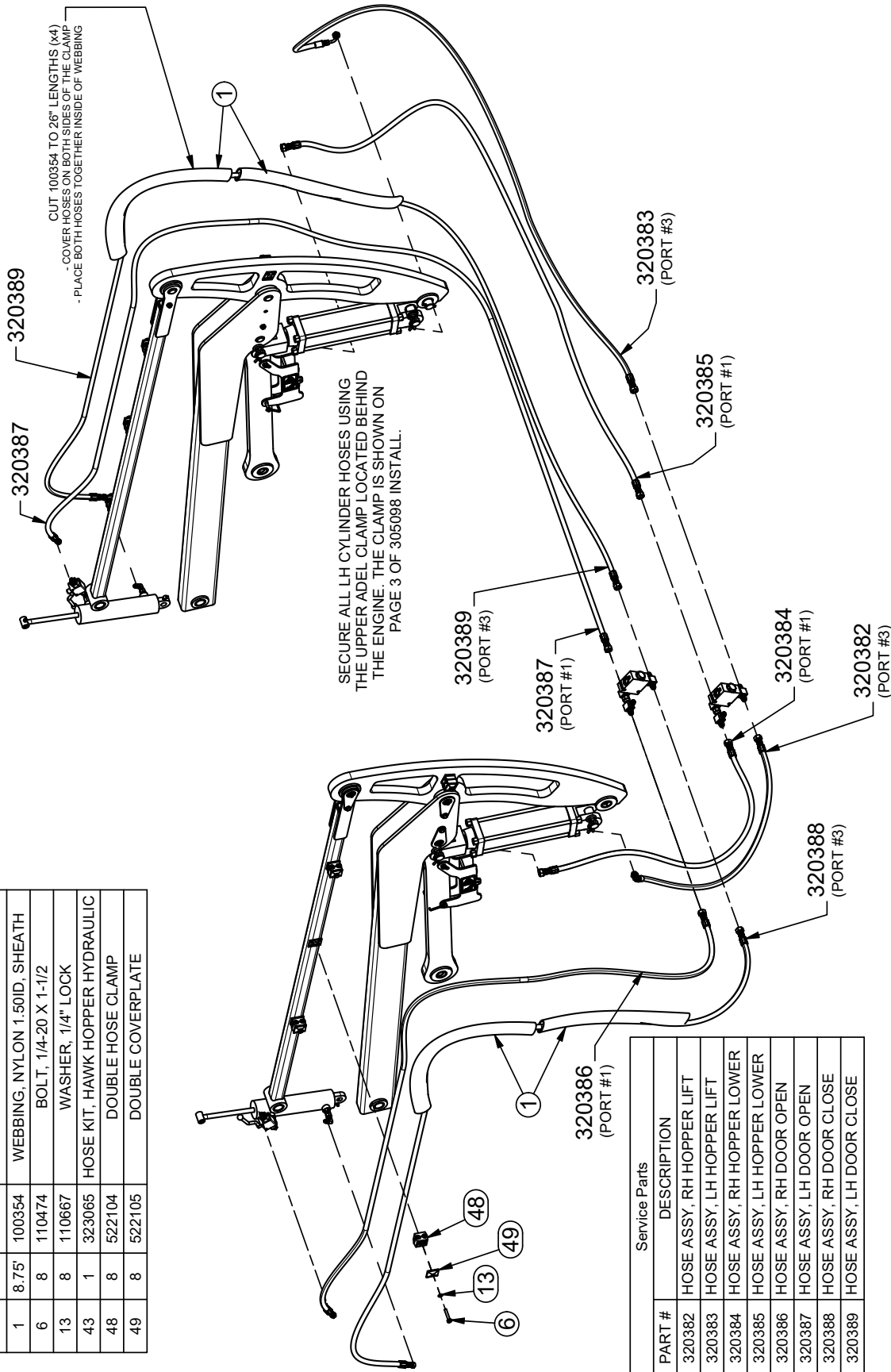


1. INITIALLY SET THE HOPPER DOOR LIFT LINK TO 36.5" (CTR TO CTR)
2. ADJUST AS NEEDED TO COMPRESS THE DOOR SEAL TO 0.5" AT THE BOTTOM OF THE DOOR

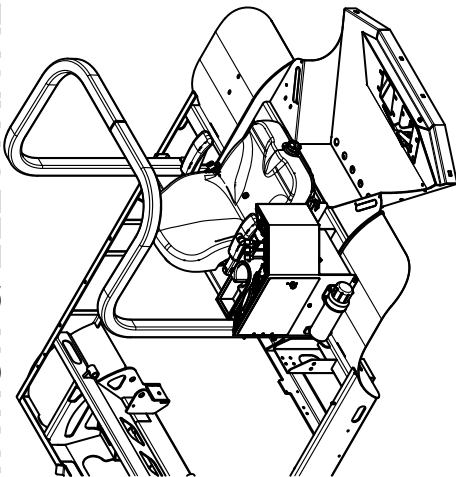
Parts List		Parts List	
ITEM	PART #	ITEM	PART #
2	110025	24	200029
3	110378	26	305113
8	110576	28	315257
9	110600	29	315327
11	110639	33	315383
12	110665	38	315416
14	111190	39	317216
15	112131	40	317320
18	120233	41	322110
19	120266	42	323010
21	120770	46	500230
22	120771	47	510174

HOPPER CYLINDER PLUMBING

Parts List			DESCRIPTION
ITEM	QTY	PART #	DESCRIPTION
1	8.75'	100354	WEBBING, NYLON 1.50ID, SHEATH
6	8	110474	BOLT, 1/4-20 X 1-1/2
13	8	110667	WASHER, 1/4" LOCK
43	1	323065	HOSE KIT, HAWK HOPPER HYDRAULIC
48	8	522104	DOUBLE HOSE CLAMP
49	8	522105	DOUBLE COVERPLATE

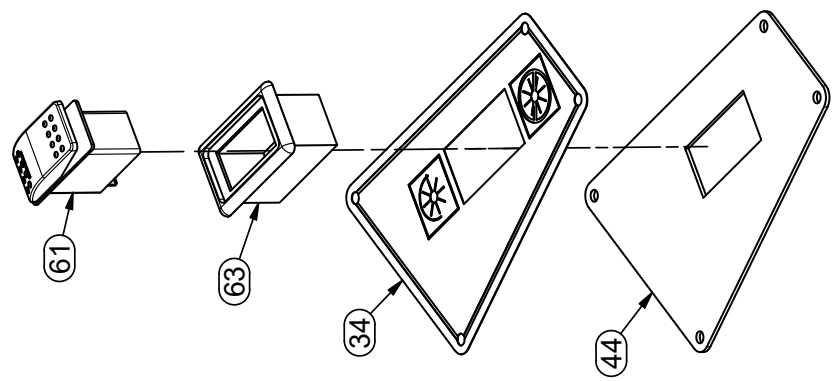


Service Parts	
PART #	DESCRIPTION
320382	HOSE ASSY, RH HOPPER LIFT
320383	HOSE ASSY, LH HOPPER LIFT
320384	HOSE ASSY, RH HOPPER LOWER
320385	HOSE ASSY, LH HOPPER LOWER
320386	HOSE ASSY, RH DOOR OPEN
320387	HOSE ASSY, LH DOOR OPEN
320388	HOSE ASSY, RH DOOR CLOSE
320389	HOSE ASSY, LH DOOR CLOSE

305090			REV: E				
Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	4'	100613	SEAL, RUBBER .50 X .187	36	1	302164	CABLE, PUSH/PULL 60"
2	2.5'	102072	TAPE, DOUBLE-SIDED AUTO, 1/2"x.045	37	1	305061	Assy, Forward Foot Pedal
3	4	110020	Bolt, 5/16-18 X 0.75 in Carriage	38	1	305062	Assy, Reverse Foot Pedal
4	12	110103	WASHER, #10 LOCK	39	1	305064	Assy, Console Panel, ISO
5	6	110119	NUT, 10-24 LOCK	40	1	311729	HINGE, 6" ALUMINUM W/ HOLES
6	17	110264	BOLT, 10-24 X .5 STAINLESS, PHILLIPS	41	1	315349	WELDMENT, FOOT PEDAL MOUNT
7	2	110404	BOLT, 3/8-16 X 1.75	42	1	315355	WELDMENT, FOOT PEDAL PIVOT
8	1	110425	BOLT, 3/8-16 X 1.25	43	1	317102	PANEL, LEVER
9	3	110437	BOLT, 3/8-16 X 0.75, WIZ FLANGE	44	1	317103	PANEL, DECK SWITCH
10	4	110468	BOLT, 1/4-20 X 0.75, WIZ FLANGE	45	1	317172	BASE, SEAT MOUNT
11	10	110606	NUT, 5/16-18 WIZ FLANGE	46	1	317173	PIN, SEAT MOUNTING
12	2	110621	NUT, 3/8-16, UNITORQUE LOCK	47	1	317186	COVER, FOOT PEDAL
13	4	110630	NUT, 1/4-20 LOCK (NYLON INSERT)	48	1	317193	DOOR, CONSOLE ACCESS
14	10	110631	NUT, 10-24 LOCK NYLON INSERT	49	1	317195	PANEL, GAUGE & SWITCH
15	2	110632	NUT, 1/4-28, UNITORQUE LOCK	50	2	317249	PIN, QUICK RELEASE
16	3	110645	NUT, 3/8-16 WIZ FLANGE	51	1	332031	SWITCH, IGNITION
17	6	110788	BOLT, 10-24 X .375 STAINLESS, PHILLIPS				
18	2	110826	NUT, 3/8-16 GR 5				
19	10	110834	SCREW, 10-24 X 3/4 SS PAN HEAD				
20	17	110835	NUT, 10-24 RIVET ALUMINUM				
21	2	110971	BOLT, 5/16-18 X .50 SHCS				
22	2	112051	POP RIVET, 1/8 X .275				
23	2	112119	ROLL PIN, 5/32 X 2 ZP				
24	2	112126	SPRING, COMP 3.0L x 0.6 OD x .045				
25	1	152004	HOLDER, MANUAL				
26	1	200020	CLAMP, ADEL AC22 .265 HOLE				
27	1	302015	HOLDER - CUP, MOLDED				
28	3	302017	CLEVIS - THROTTLE				
29	1	302078	SEAT, 13M SUSPENSION				
30	1	302124	CABLE, THROTTLE 60"				
31	1	302131	LATCH, SPRING				
32	1	302132	DECAL, MAIN CONSOLE				
33	1	302133	Decal, Hydraulics Panel				
34	1	302134	DECAL, BROOM PANEL				
35	1	302135	Decal, Throttle Panel				
OPERATOR STATION & ELECTRICAL ASSEMBLY							
				ITEM	QTY	PART #	DESCRIPTION
				52	1	332059	DISPLAY, MACHINE
				53	1	332060	HARNESS, MASTER
				54	1	332063	HARNESS, INSTRUMENT PANEL
				55	1	332064	HARNESS, RELAY
				56	2	510112	COTTER PIN, 3/16 X 1
				57	2	540075	BEARING, ROD END 1/4-28 W/STUD
				58	4	800128	BUSHING, IGUS, FOOT PEDAL
				59	1	810886	LINKAGE, 1/4-28 FOOT PEDAL
				60	1	815094	WELDMENT, REV FOOT PEDAL PIVOT
				61	2	832005	SWITCH, PADDLE, CARLING (29253)
				62	1	832018	SWITCH, SPDT, ON-ON
				63	6	832024	MOUNT, SWITCH (VMS)
				64	3	832033	HOLE PLUG (VHP)
				65	1	832068	MODULE, TIME DELAY, 1.75 SEC, 1804
				66	2	832082	ALARM, PANEL MOUNT, CONTINUOUS TONE

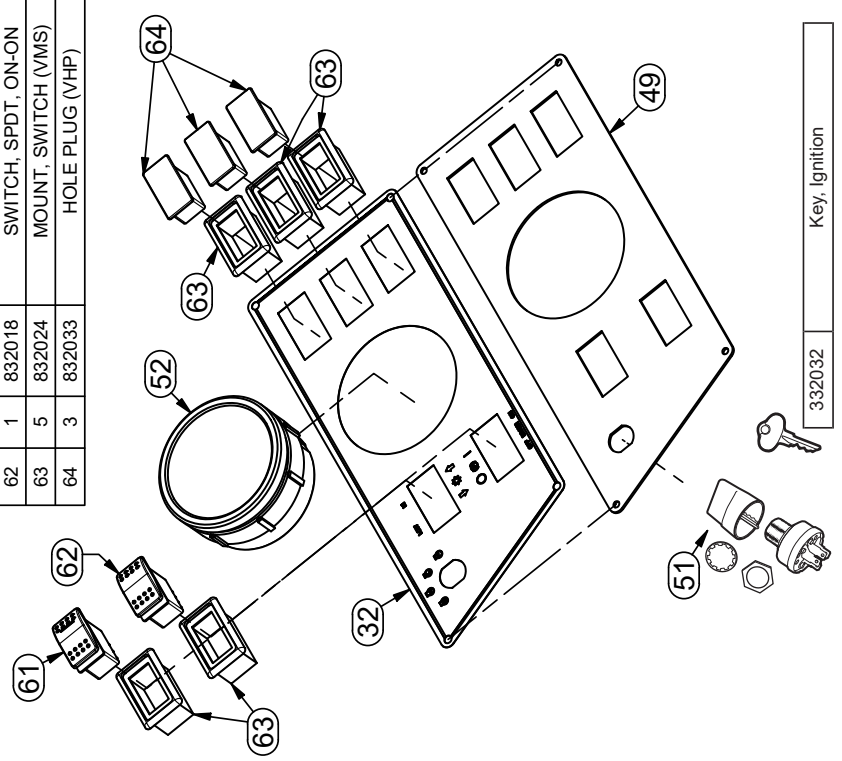
DECK SWITCH PANEL ASSEMBLY

Parts List		
ITEM	QTY	PART # DESCRIPTION
34	1	302134 DECAL, BROOM PANEL
44	1	317103 PANEL, DECK SWITCH
61	1	832005 SWITCH, PADDLE, CARLING (29253)
63	1	832024 MOUNT, SWITCH (VMS)



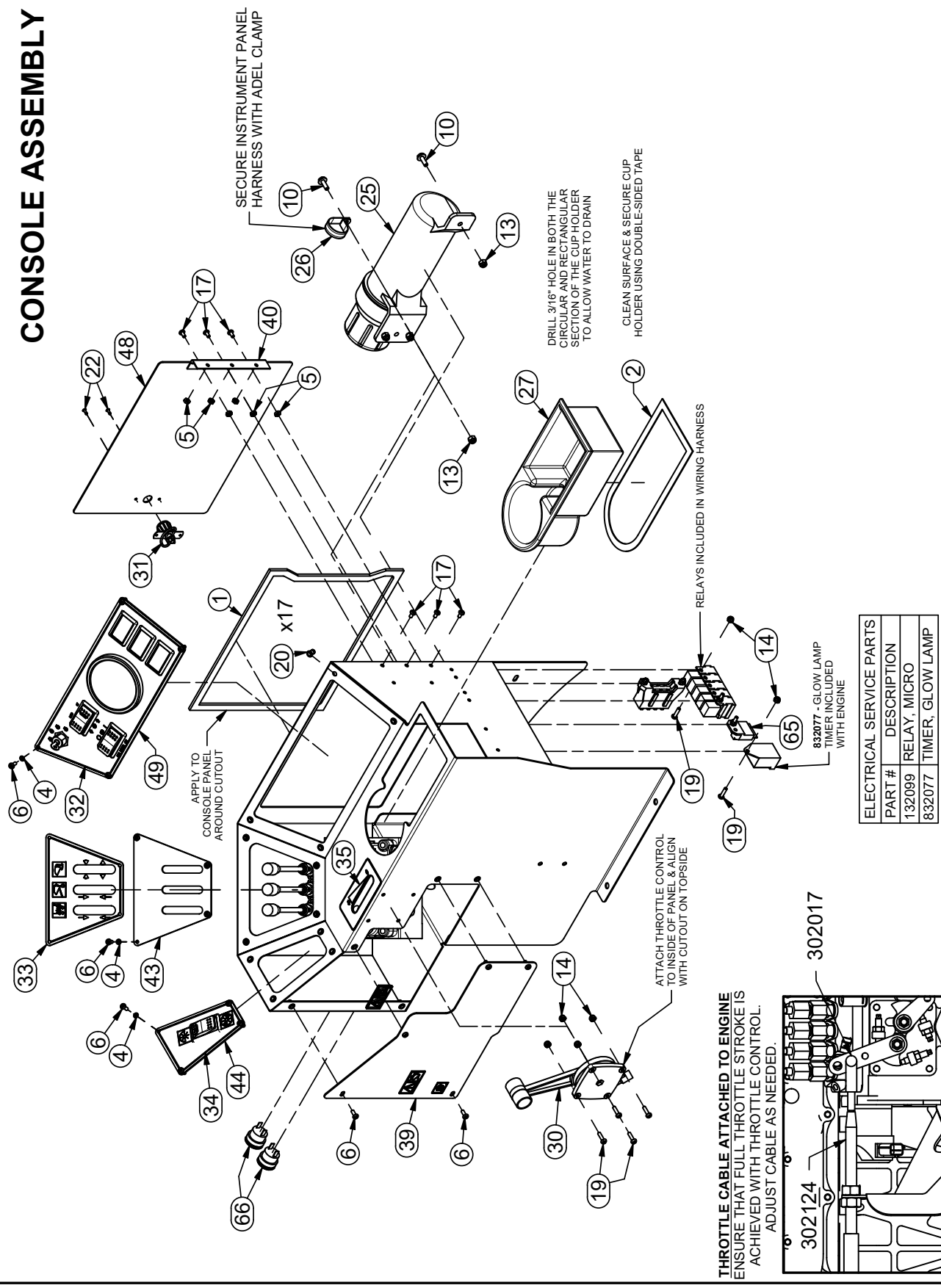
INSTRUMENT PANEL ASSEMBLY

Parts List		
ITEM	QTY	PART # DESCRIPTION
32	1	302132 DECAL, MAIN CONSOLE
49	1	317195 PANEL, GAUGE & SWITCH
51	1	332031 SWITCH, IGNITION
52	1	332059 DISPLAY, MACHINE
61	1	832005 SWITCH, PADDLE, CARLING (29253)
62	1	832018 SWITCH, SPDT, ON-ON
63	5	832024 MOUNT, SWITCH (VMS)
64	3	832033 HOLE PLUG (VHP)

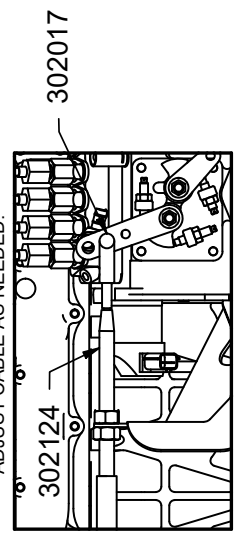


332032 Key, Ignition

CONSOLE ASSEMBLY



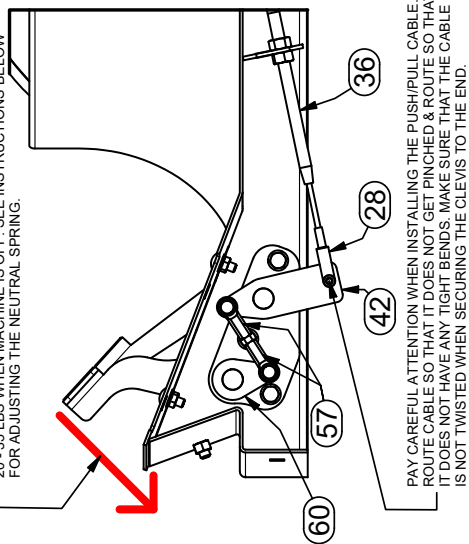
ELECTRICAL SERVICE PARTS		
PART #	DESCRIPTION	
132099	RELAY, MICRO	
832077	TIMER, GLOW LAMP	



FOOT PEDAL ASSEMBLY

FOOT PEDAL ASSEMBLY SIDE VIEW

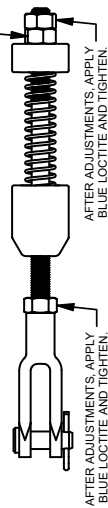
MEASURE FORWARD FOOT PEDAL FORCE USING A FISH SCALE OR SPRING SCALE. ENSURE THAT THE FORCE IS BETWEEN 20 - 35 LBS WHEN MACHINE IS OFF. SEE INSTRUCTIONS BELOW FOR ADJUSTING THE NEUTRAL SPRING.



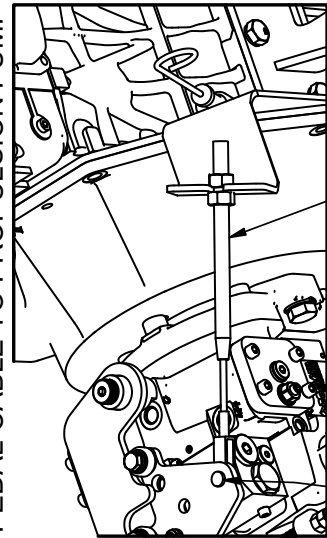
PAY CAREFUL ATTENTION WHEN INSTALLING THE PUSH/PULL CABLE. ROUTE CABLE SO THAT IT DOES NOT GET PINCHED & ROUTE SO THAT IT DOES NOT HAVE ANY TIGHT BENDS. MAKE SURE THAT THE CABLE IS NOT TWISTED WHEN SECURING THE CLEVIS TO THE END.

NEUTRAL RETURN SPRING ON PUMP

TIGHTEN TO INCREASE FOOT PEDAL FORCE.
LOOSEN TO DECREASE FOOT PEDAL FORCE.
ENSURE THAT CABLE ALWAYS RETURNS TO NEUTRAL AFTER ADJUSTMENTS ARE MADE.

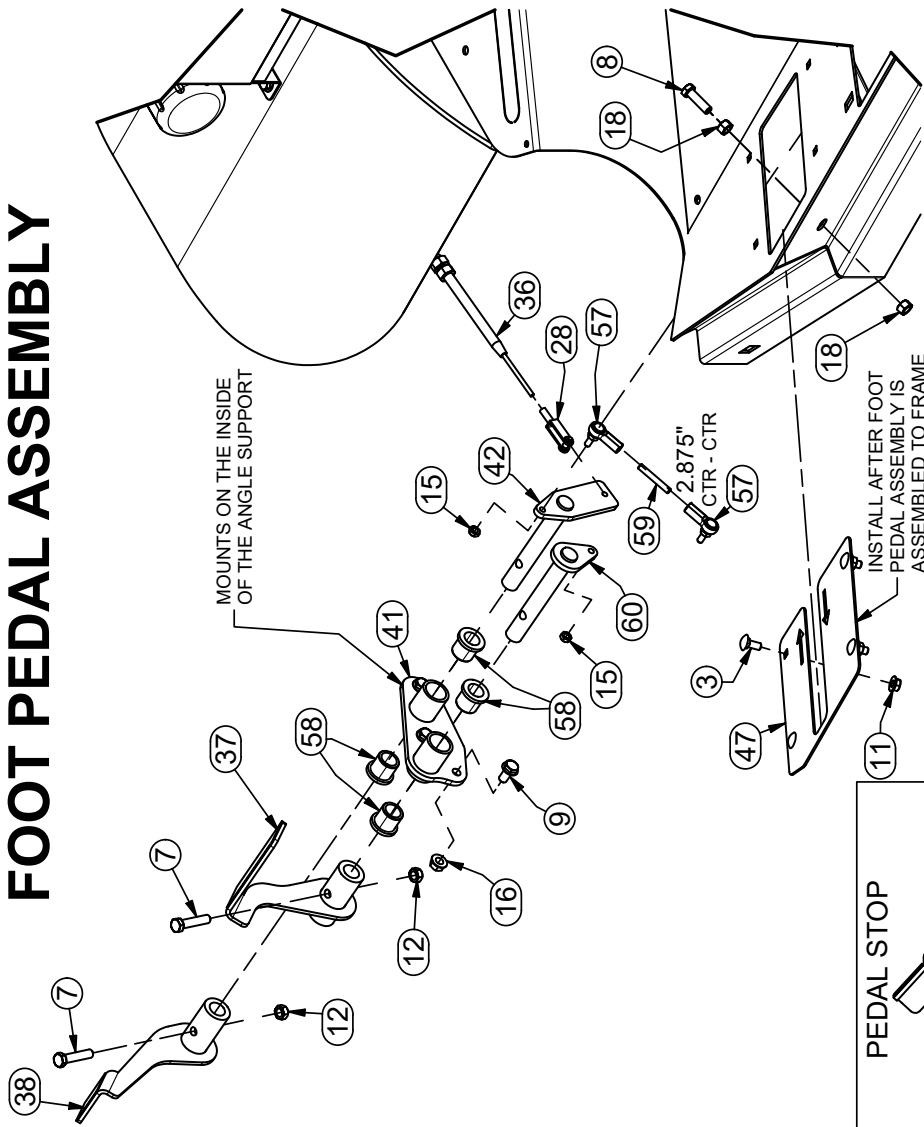


PEDAL CABLE TO PROPULSION PUMP



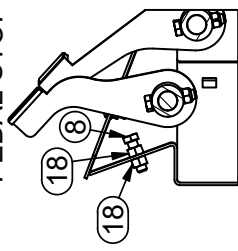
302017

302164



MOUNTS ON THE INSIDE OF THE ANGLE SUPPORT

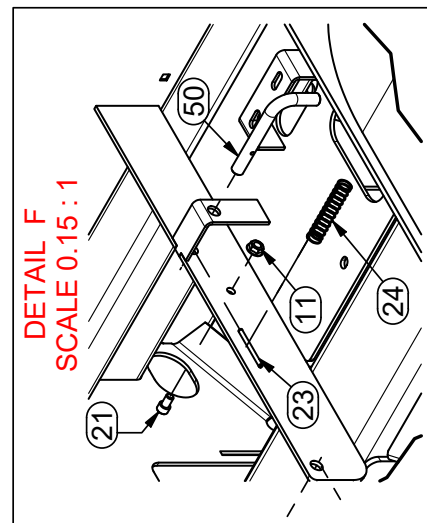
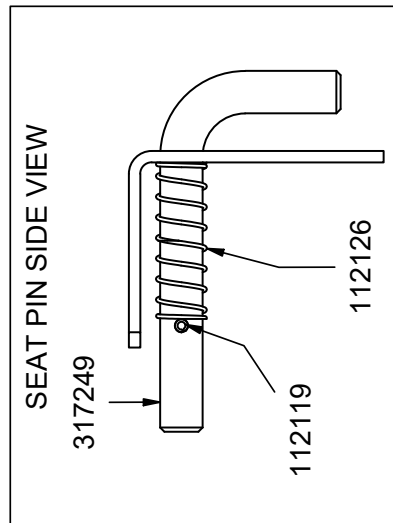
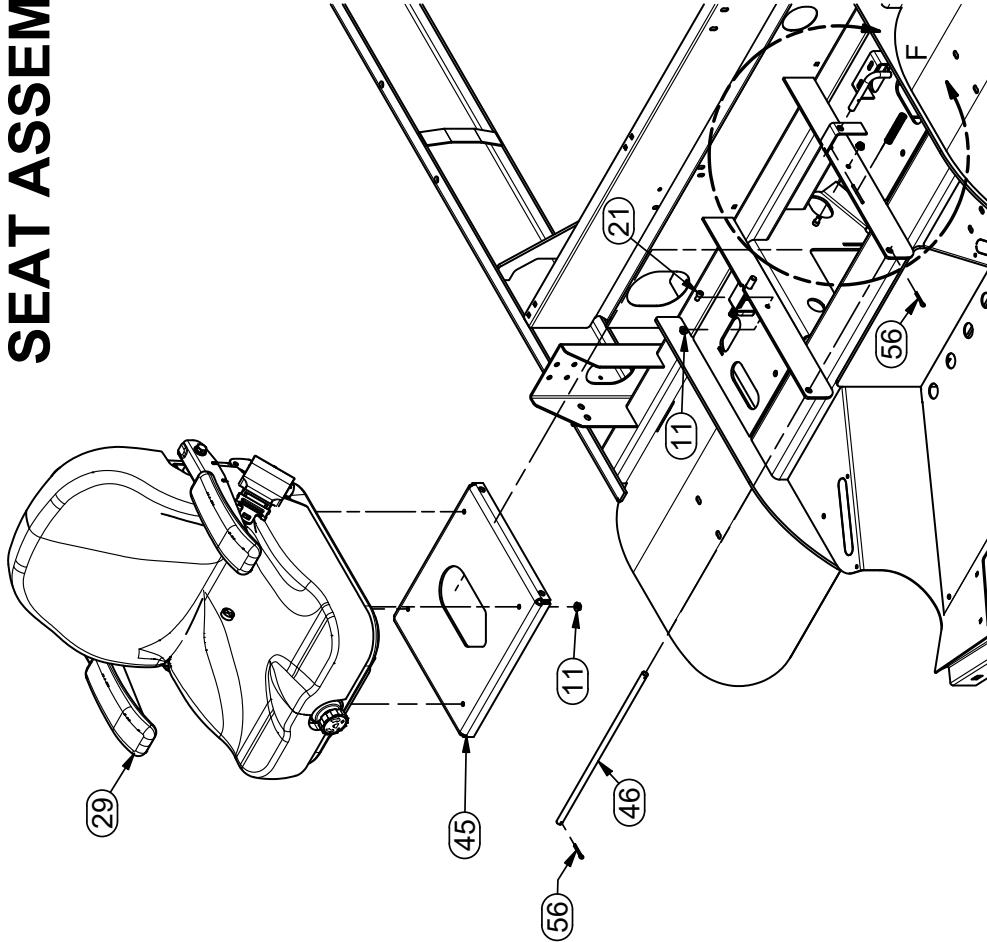
PEDAL STOP



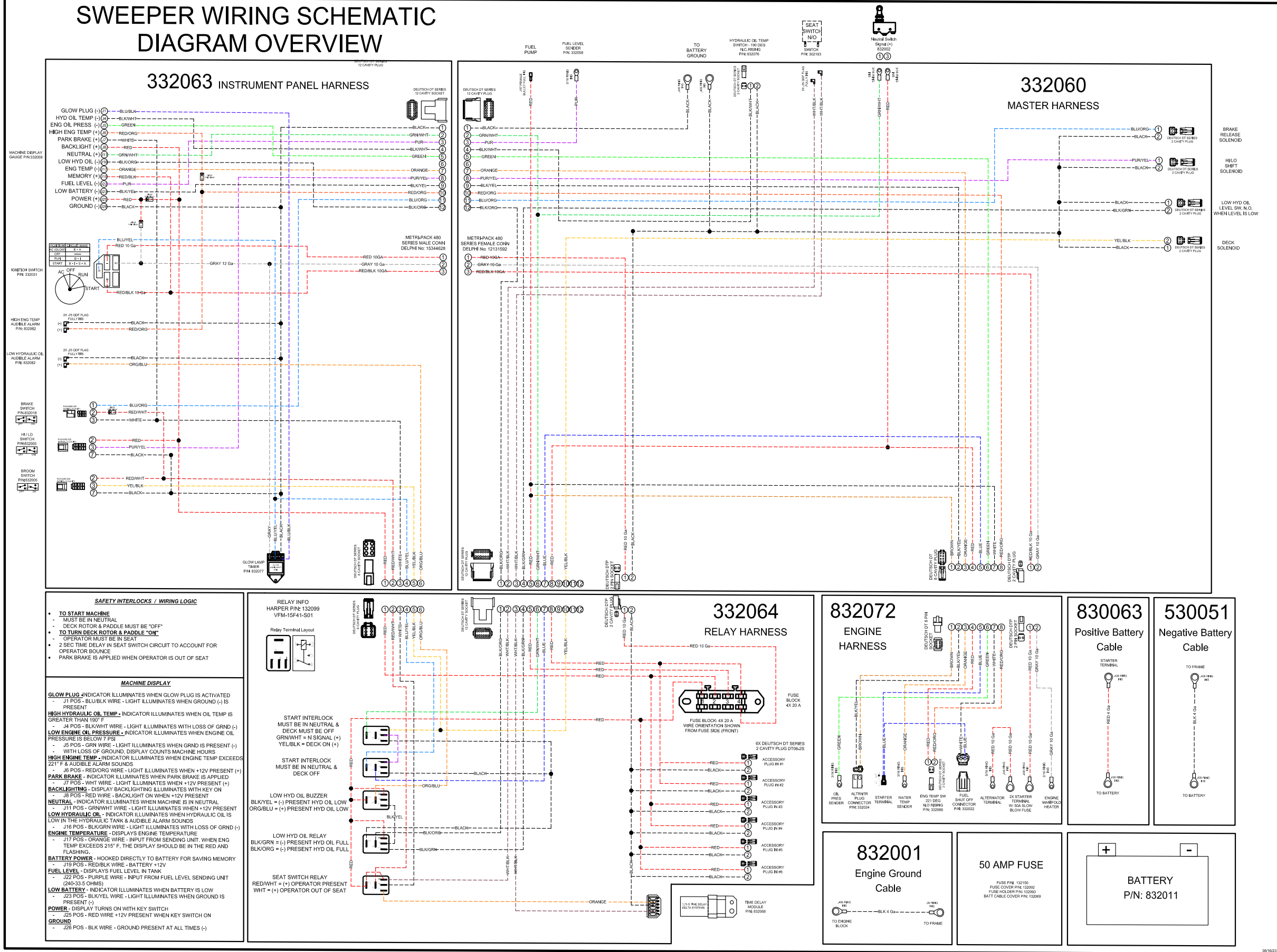
1. AFTER FOOT PEDAL ASSEMBLY AND LINKAGE IS INSTALLED AND ADJUSTED, INSTALL PEDAL STOP IN FRAME AS SHOWN ABOVE AND PUSH FORWARD PEDAL TO MAX STROKE.
2. ADJUST PEDAL STOP BOLT UNTIL HEAD CONTACTS PEDAL.
3. RETURN PEDAL TO NEUTRAL AND ADJUST BOLT TOWARDS PEDAL 1/4 TURN.
4. LOCK BOLT LOCATION BY TIGHTENING LOCKNUTS.

SEAT ASSEMBLY

Parts List			DESCRIPTION
ITEM	QTY	PART #	
11	6	110606	NUT, 5/16-18 W/IZ FLANGE
21	2	110971	BOLT, 5/16-18 X .50 SHCS
23	2	112119	ROLL PIN, 5/32 X 2 ZP
24	2	112126	SPRING, COMP 3.0L x 0.6 OD x .045
29	1	302078	SEAT, 13M SUSPENSION
45	1	317172	BASE, SEAT MOUNT
46	1	317173	PIN, SEAT MOUNTING
50	2	317249	PIN, QUICK RELEASE
56	2	510112	COTTER PIN, 3/16 X 1

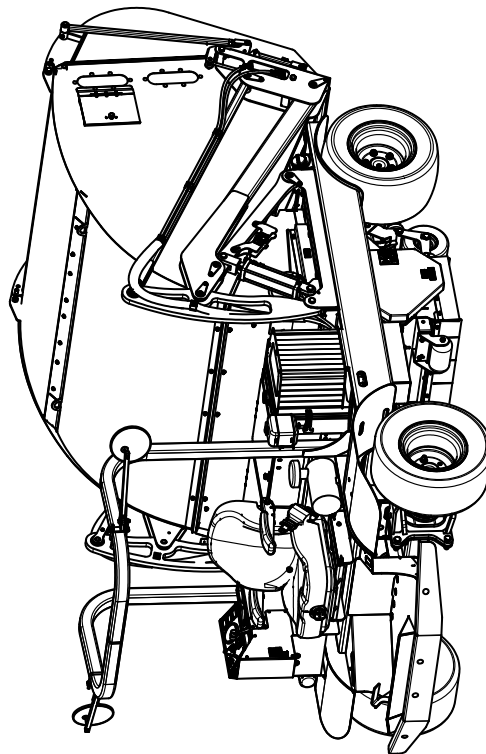


SWEEPER WIRING SCHEMATIC DIAGRAM OVERVIEW



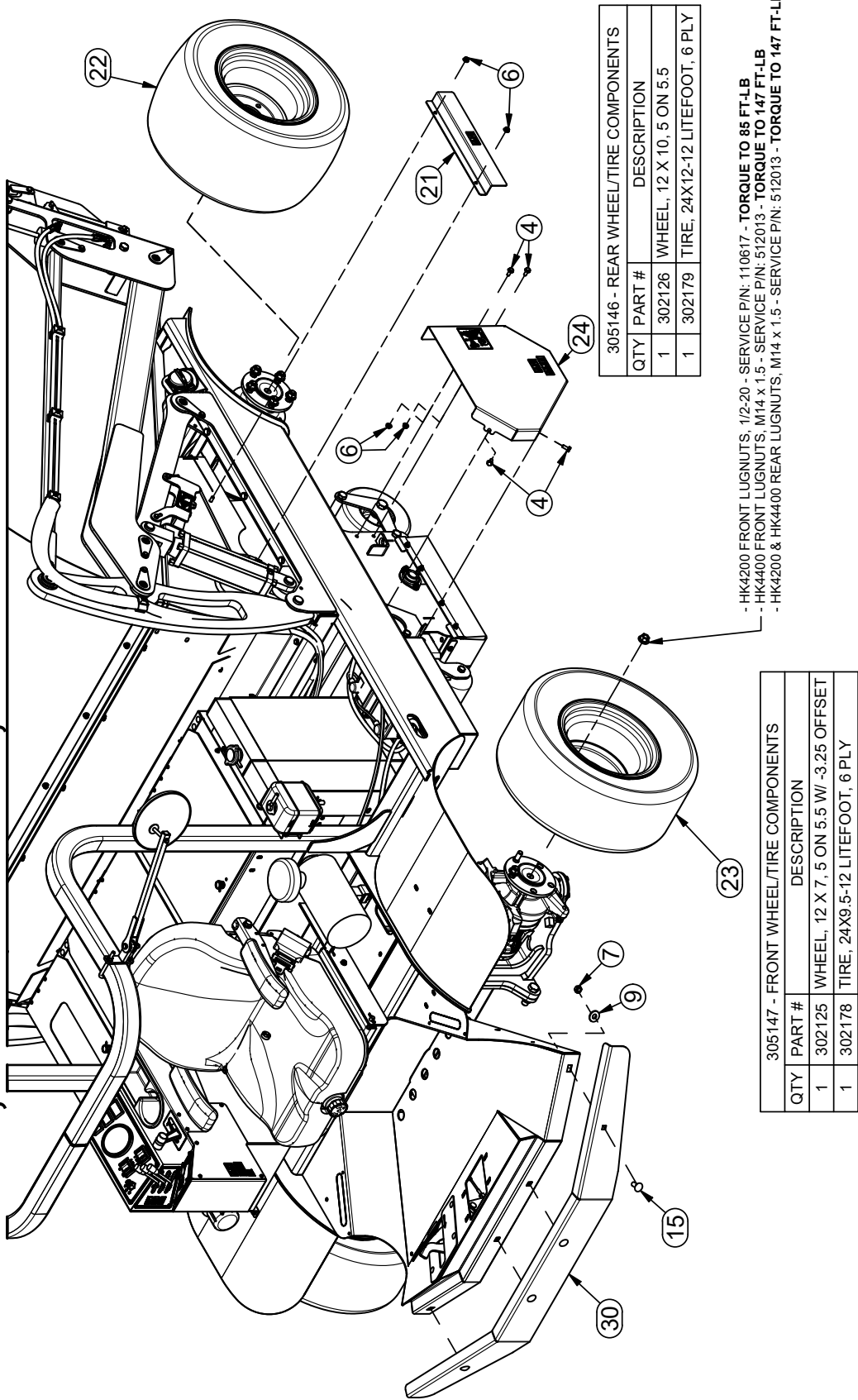
MIRROR, TIRE, & SHIELD INSTALLATION

Parts List		
ITEM	QTY	PART # DESCRIPTION
1	15 FT	SEAL, RUBBER .50 X .187
2	18	NUT, 10-24 LOCK
3	2	BOLT, 3/8-16 X 2.0
4	4	BOLT, 5/16-18 X 0.75, WIZ FLANGE
5	2	BOLT, 1/4-20 X 1-1/2
6	4	NUT, 5/16-18 WIZ FLANGE
7	4	NUT, 1/2-13, UNITORQUE LOCK
8	4	NUT, 3/8-16 WIZ FLANGE
9	4	WASHER, 1/2" FLAT STANDARD
10	2	WASHER, 1/4" LOCK
11	18	BOLT, 10-24 X .375 STAINLESS, PHILLIPS
12	4	NUT, 3/8-16 GR 5
13	2	BOLT, SQUARE U, 3/8-16 x 2.50 x 4.0
14	6	POP RIVET, 1/8 X .275
15	4	Bolt, 1/2-13 X 1.25 in Carriage
16	4	FRICTION WASHER 1.5"
17	3	LATCH, SPRING
18	2	Convex Mirror, 8" Round, Offset Ball-Stud
19	4	Plug, Snap-In Square, 3/4"
20	1	ASSY, RH ENGINE SHIELD
21	1	ASSY, UPPER DECK SHIELD, US
22	2	ASSY, REAR TIRE, 6 PLY
23	2	ASSY, FRONT TIRE, 6 PLY
24	1	ASSY, LOWER DECK SHIELD, US
25	3	HINGE, 6" ALUMINUM W/ HOLES
26	1	CLIP, HAIRPIN 3/32 x 1.625
27	2	WELDMENT, SWINGING MIRROR
28	2	WELDMENT, MIRROR UBOLT MOUNT
29	2	SHIELD, UPPER ENGINE
30	1	BUMPER, FRONT

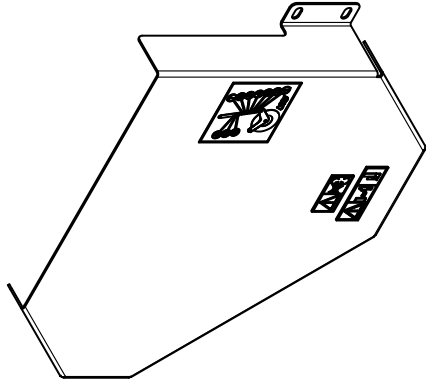
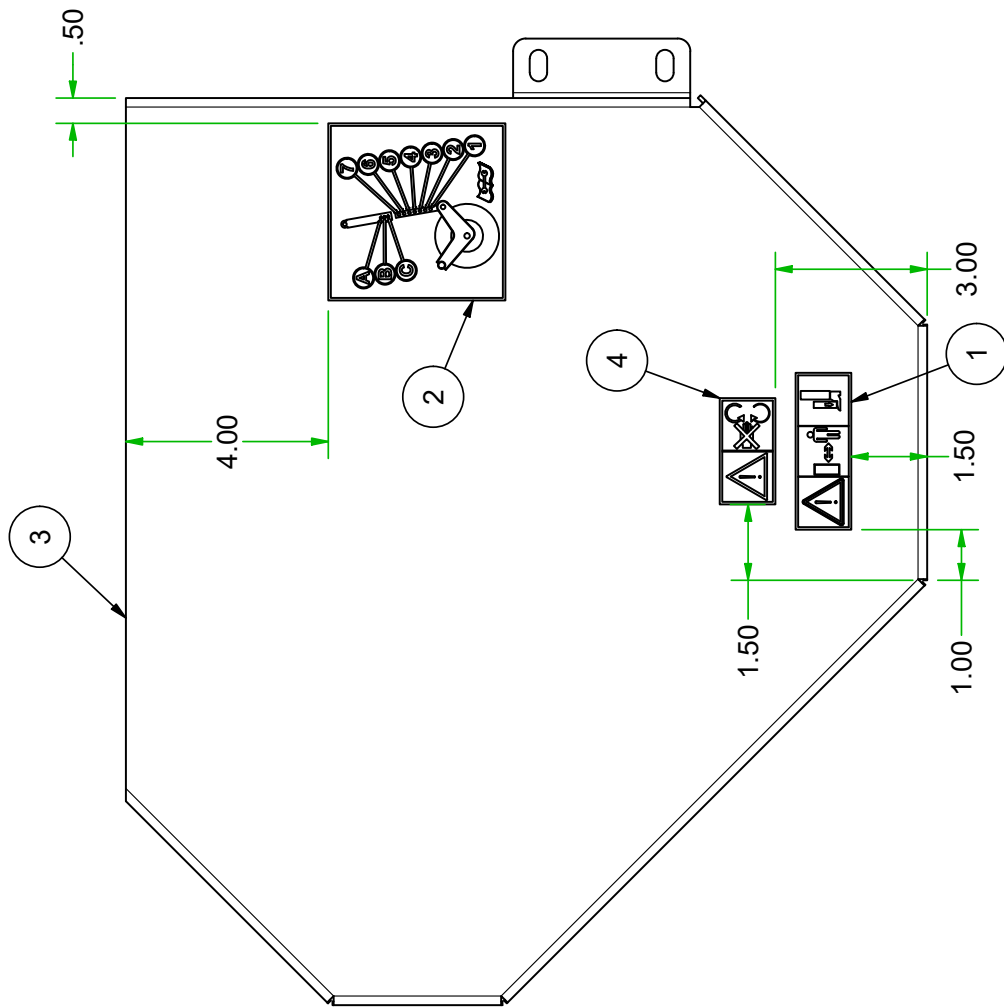


SIMILAR TO 305095

BUMPER, DECK SHIELDS, & WHEEL/TIRE ASSEMBLY



Parts List		
ITEM	QTY	PART # DESCRIPTION
1	1	102133 Decal, ISO, FOOT CRUSH
2	1	302202 DECAL, DECK HEIGHT ADJUSTMENT
3	1	317645 SHIELD, LOWER DECK, BELT, HATSUTA
4	1	902228 Decal, Do Not Remove Shield



305187

REV: NC

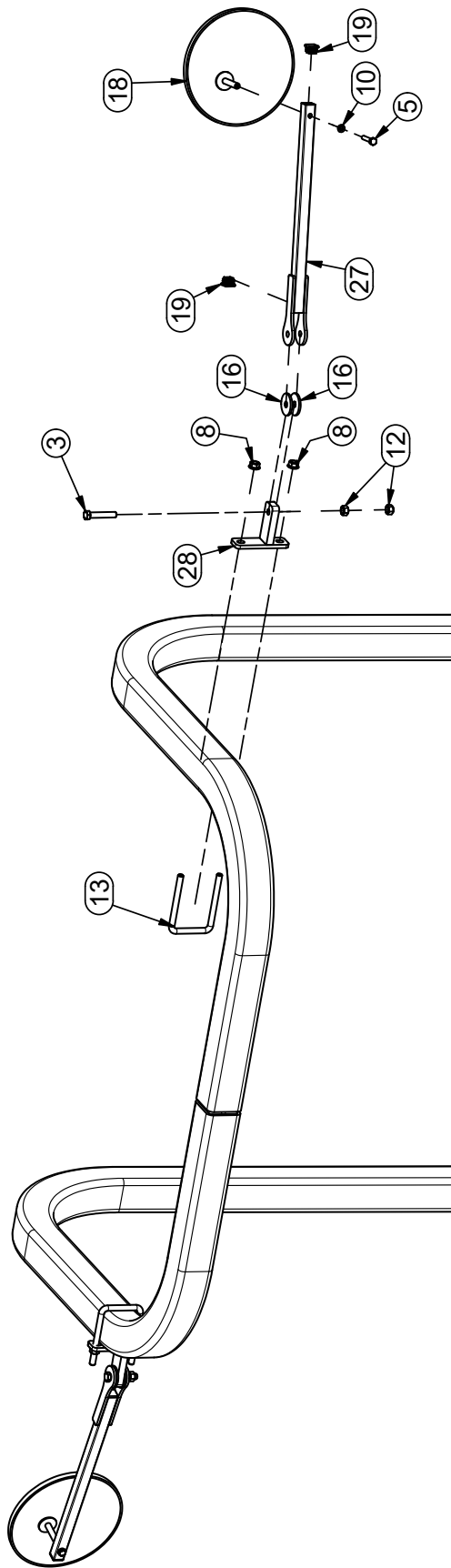
LOWER DECK SHIELD ASSEMBLY

Parts List

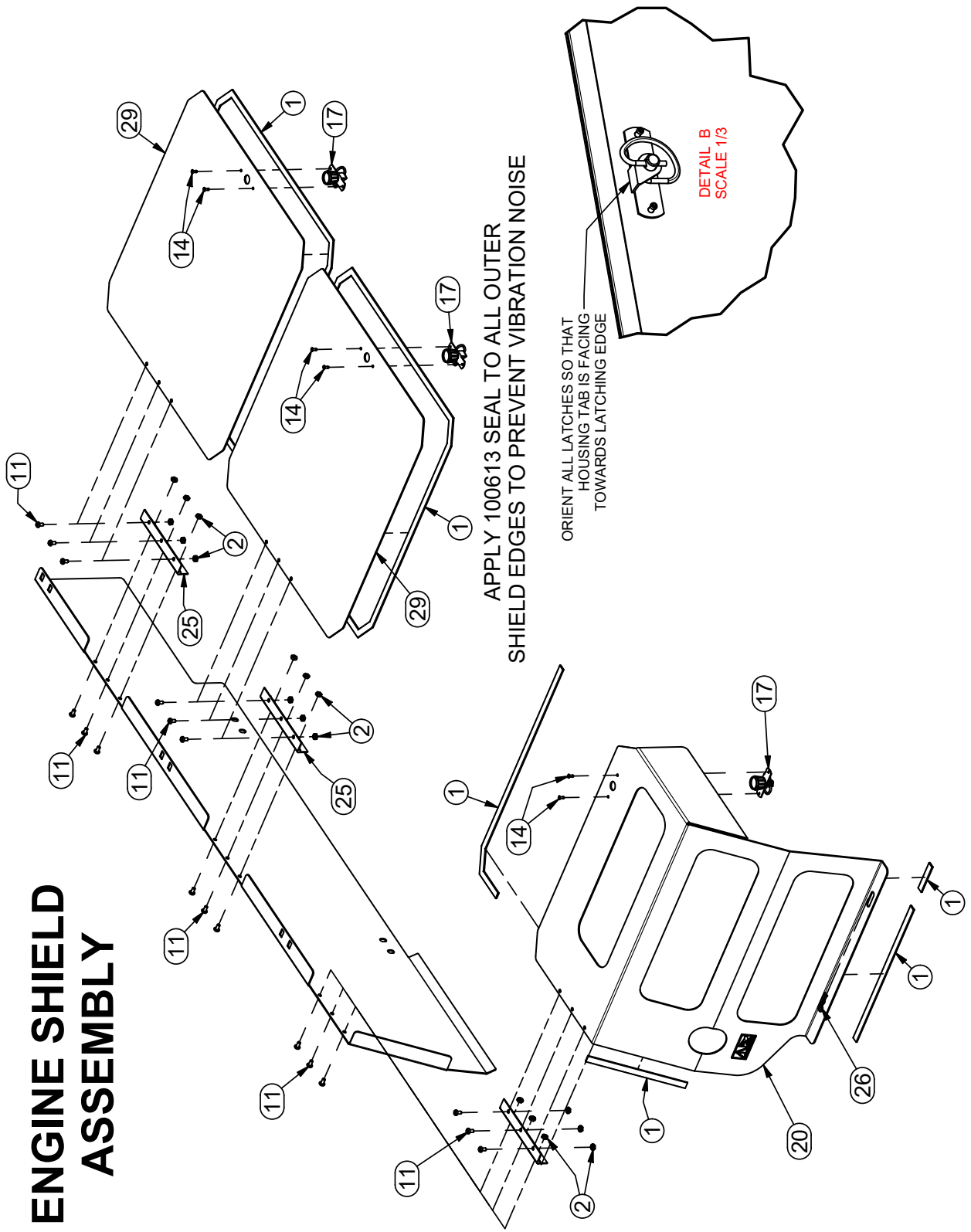
ITEM	QTY	PART #	DESCRIPTION
3	2	110400	BOLT, 3/8-16 X 2.0
5	2	110474	BOLT, 1/4-20 X 1-1/2
8	4	110645	NUT, 3/8-16 W/IZ FLANGE
10	2	110667	WASHER, 1/4" LOCK
12	4	110826	NUT, 3/8-16 GR 5
13	2	111185	BOLT, SQUARE U, 3/8-16 x 2.50 x 4.0
16	4	211747	FRICTION WASHER 1.5"
18	2	302139	Convex Mirror, 8" Round, Offset Ball-Stud
19	4	302140	Plug, Snap-In Square, 3/4"
27	2	315385	WELDMENT, SWINGING MIRROR
28	2	315391	WELDMENT, MIRROR UBOLT MOUNT

MIRROR ASSEMBLY

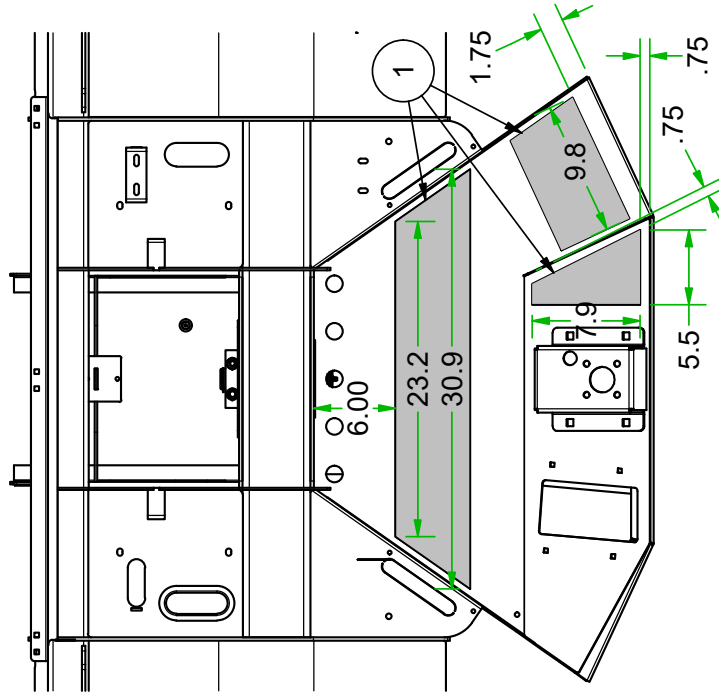
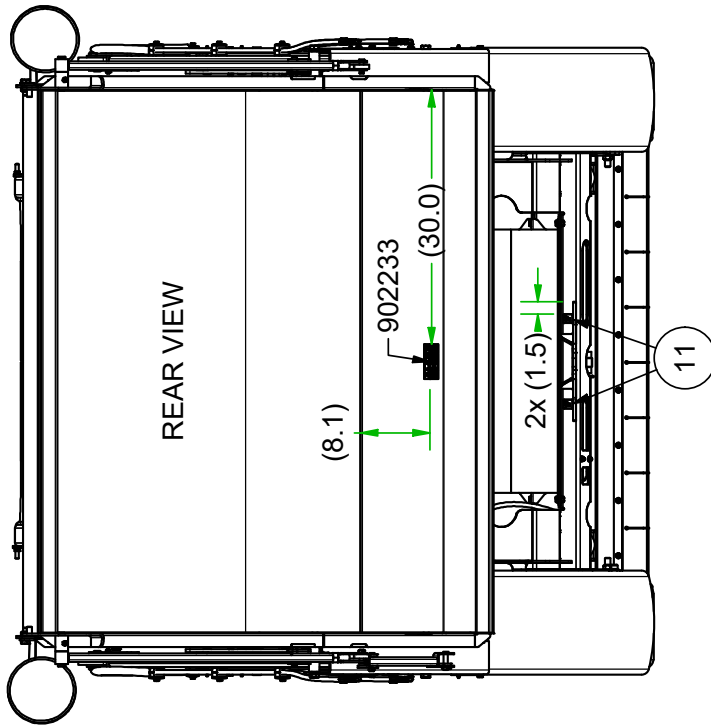
SAME PARTS USED ON OPPOSITE SIDE



ENGINE SHIELD ASSEMBLY



DECAL INSTALLATION



TRACTION PAD INSTALLATION

Parts List			DESCRIPTION
ITEM	QTY	PART #	DESCRIPTION
1	46"	100373	Traction Pad, Flex-tread, 5.5
2	1	202133	Decal, Prop 65, Diesel
3	1	202134	DECAL, PROP 65, SHORT FORM
4	1	302106	DECAL, DIESEL FUEL
5	2	302136	Decal, Hawk
6	1	302150	Decal, Hk Rops Certification
7	1	302172	Decal, QR Code, Hawk Tutorial
8	1	302204	DECAL, HAWK ROPS CERT
9	1	302205	DECAL, EPA STANDARDS TIER 4
10	1	800195	DECAL, RECYCLE BATTERY
11	4	802067	Decal, Tie Down Point
12	1	902231	Decal, Hot Surface, Oil Cooler
13	1	902232	Decal, High Pressure Injection
14	2	902234	Decal, No Lift
15	1	902240	Plate, Serial Number, Harper Turf, Blue
16	1	902242	Decal, Harper Turf Equipment, 30"

Technical drawing of a vehicle chassis, likely a truck or heavy-duty vehicle, showing dimensions and part numbers. The drawing is oriented vertically, with the front of the vehicle at the top.

Key dimensions and part numbers shown:

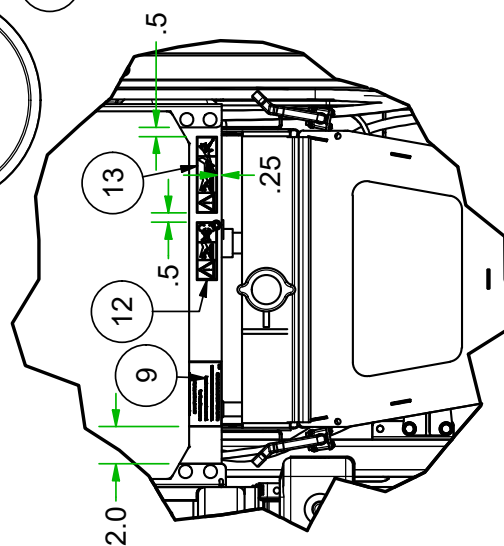
- Overall width: 18.0
- Overall height: 1.25
- Front suspension components: 102134, 102133, 902239, 902228, 302202, 902233
- Engine/Generator: 11
- Steering wheel: 1
- Dimensions for front suspension: 1.8, 3.8, 1.0, .75, .5
- Dimensions for rear suspension: 2x (10.454), 2x (3.00)
- Dimensions for front suspension: 2.5, 5
- Dimensions for rear suspension: 1.0, 1.25
- Dimensions for front suspension: 1.0, 1.25
- Dimensions for rear suspension: 1.0, 1.25
- Dimensions for front suspension: 1.0, 1.25
- Dimensions for rear suspension: 1.0, 1.25

The drawing includes a side view of the chassis, showing the engine, generator, steering wheel, and suspension components. The dimensions are indicated by green arrows and numbers. The part numbers are indicated by black text and lines pointing to the corresponding components.

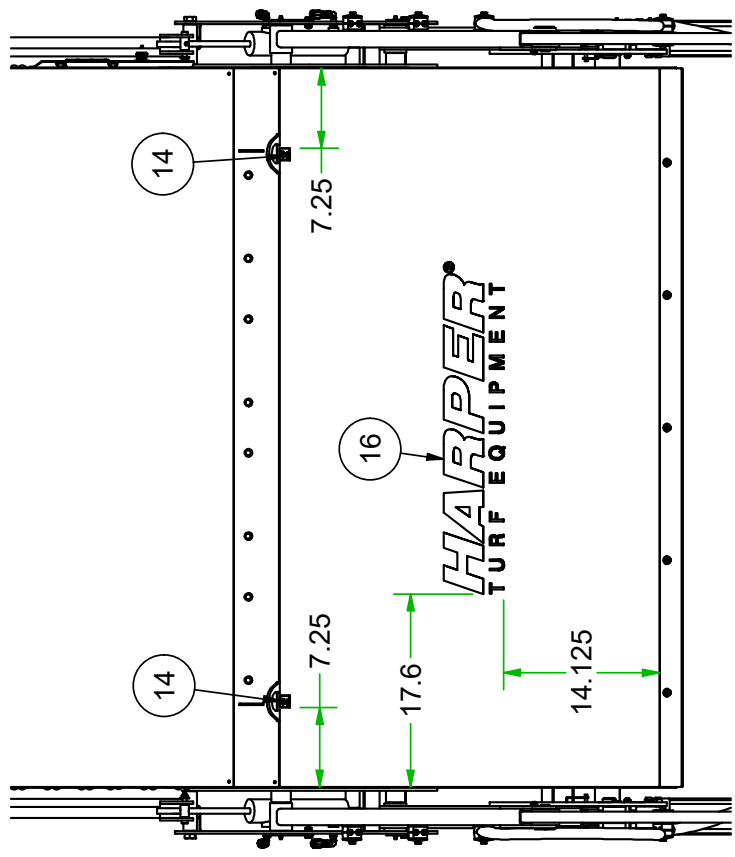
NOTE: ALL DIMENSIONS FOR REFERENCE, PLACE AS CLOSE TO AS SHOWN AND FOR FULL VISIBILITY

[illegible]

NOTE: ALL DIMENSIONS FOR REFERENCE, PLACE AS CLOSE TO AS SHOWN AND FOR FULL VISIBILITY



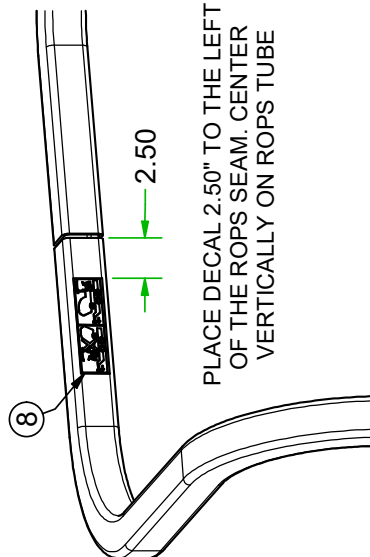
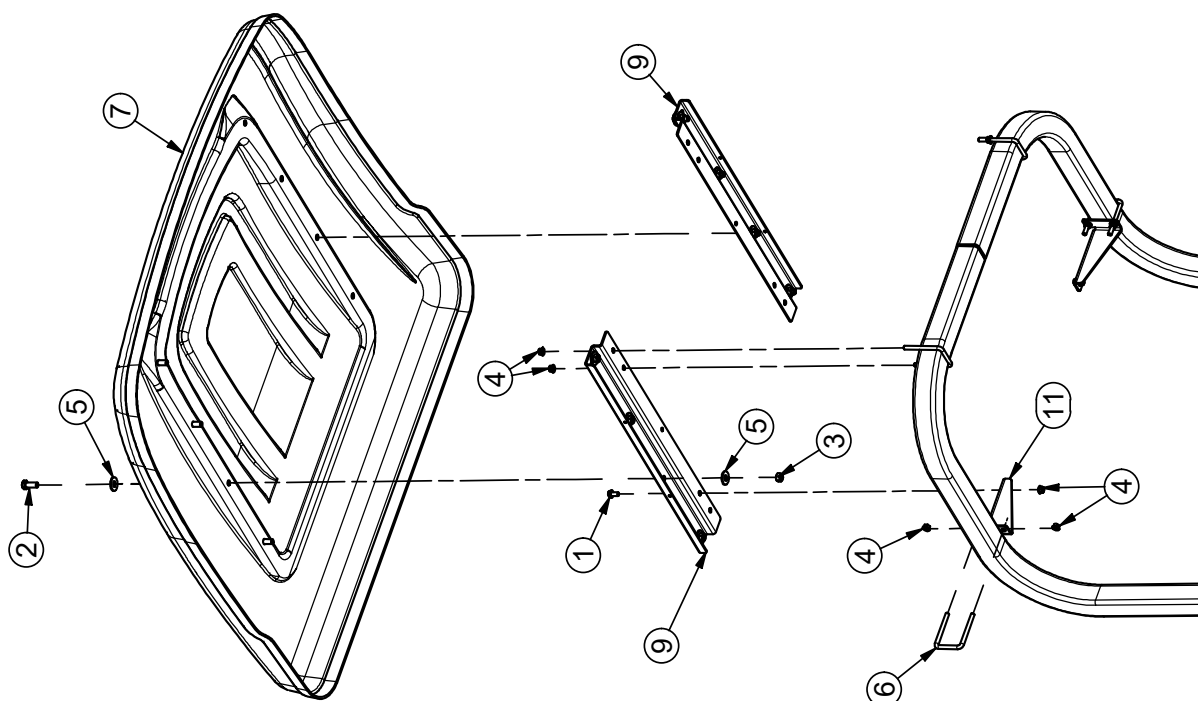
HOPPER DECAL INSTALLATION



CANOPY

FACTORY INSTALL P/N: 300083
CUSTOMER INSTALL P/N: 300082

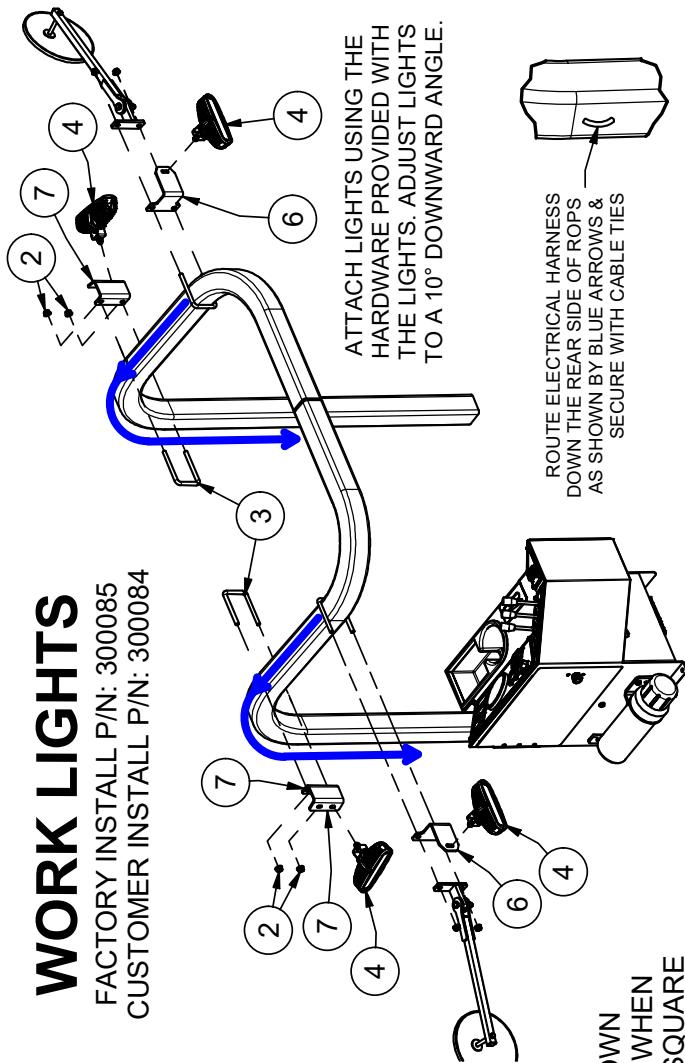
Parts List		
ITEM	QTY	DESCRIPTION
1	2	BOLT, 3/8-16 X 0.75, WIZ FLANGE
2	8	BOLT, 1/2-13 X 1.25
3	8	NUT, 1/2-13, UNITORQUE LOCK
4	10	NUT, 3/8-16 WIZ FLANGE
5	16	WASHER, 1/2" FLAT STANDARD
6	4	BOLT, SQUARE U, 3/8-16 x 2.50 x 4.0
7	1	CANOPY, BLACK ABS PLASTIC
8	1	DECAL, HAWK CANOPY TRANSPORT
9	2	BRKT, CANOPY SUPPORT
10	1	BRKT, LH CANOPY MOUNT
11	1	BRKT, RH CANOPY MOUNT



PLACE DECAL 2.50" TO THE LEFT
OF THE ROPS SEAM. CENTER
VERTICALLY ON ROPS TUBE

WORK LIGHTS

FACTORY INSTALL P/N: 300085
CUSTOMER INSTALL P/N: 300084



ATTACH LIGHTS USING THE
HARDWARE PROVIDED WITH
THE LIGHTS. ADJUST LIGHTS
TO A 10° DOWNWARD ANGLE.

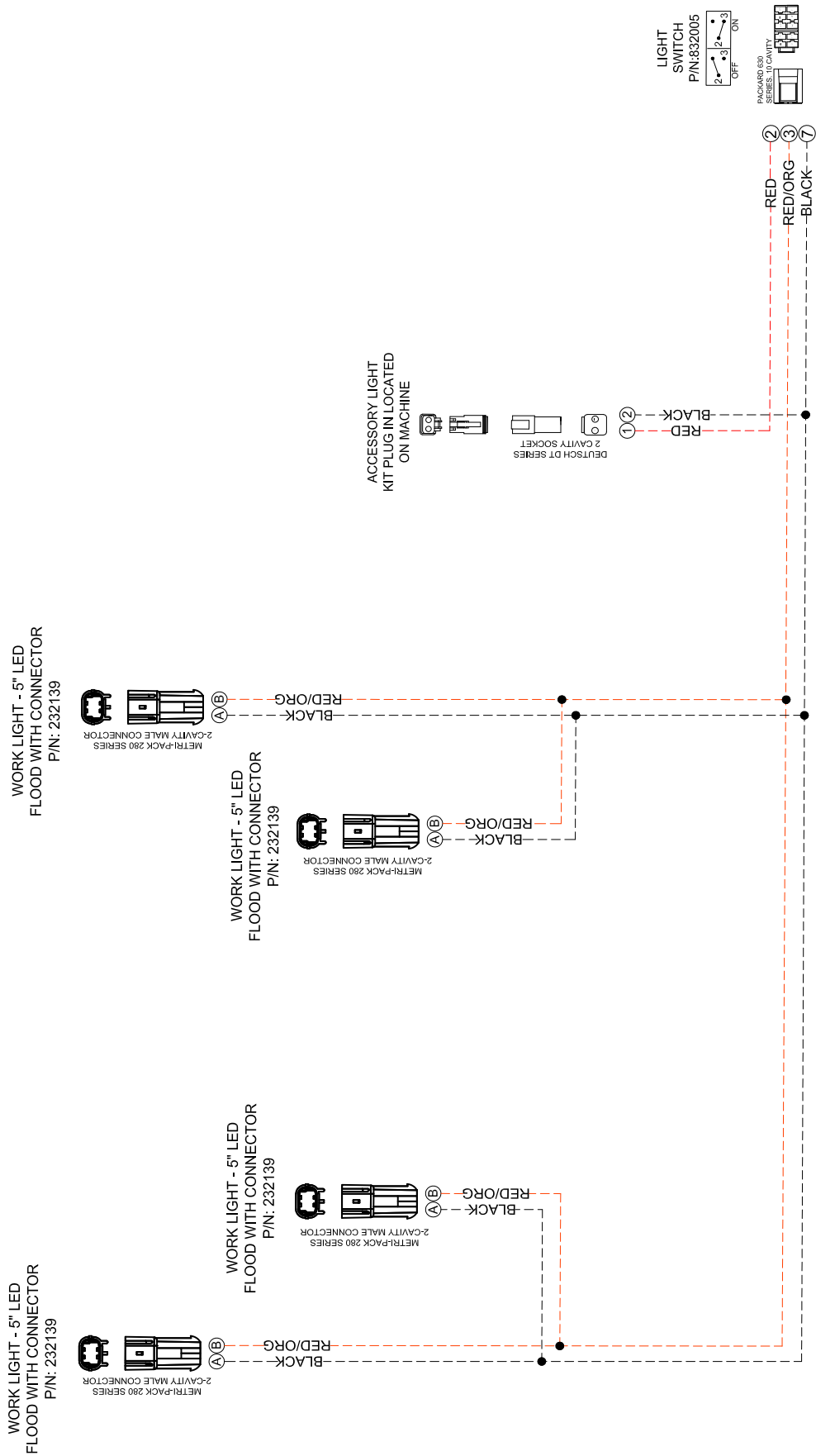
ROUTE ELECTRICAL HARNESS
DOWN THE REAR SIDE OF ROPS
AS SHOWN BY BLUE ARROWS &
SECURE WITH CABLE TIES

INSTALLATION

- MOUNT WORK LIGHTS TO ROPS AS SHOWN IN THE EXPLODED DIAGRAM TO THE RIGHT. WHEN MOUNTING FRONT LIGHTS, USE THE SAME SQUARE U-BOLT THAT IS USED TO ATTACH THE MIRROR BRACKETS. POSITION WORK LIGHTS AND MIRRORS SO THERE IS NO INTERFERENCE. IF A CANOPY IS INSTALLED, MOUNT THE WORK LIGHTS TO THE REAR SIDE OF THE REAR CANOPY BRACKETS.
- THE CONSOLE CONTAINS 3 OPEN POSITIONS TO INSTALL THE ROCKER SWITCH. REMOVE 1 OF THE PLUGS TO INSTALL THE SWITCH.
- THE MACHINE IS ALSO EQUIPPED WITH 3 EXTRA CONNECTORS BELOW THE CONSOLE THAT PROVIDE +12V POWER / GROUND FOR THIS KIT. SEE ELECTRICAL SCHEMATIC ON PAGE 2.
- ROUTE THE WIRING HARNESS DOWN THE BACKSIDE OF THE ROPS AND SECURE USING THE CABLE TIES. ROUTE THE HARNESS FROM THE LH ROPS TO THE CONSOLE BY ROUTING THROUGH THE ENGINE COMPARTMENT.

Parts List		
ITEM	QTY	PART # DESCRIPTION
1	12	100578 CABLE TIE 14" BLACK 50 Lb Tens
2	4	110645 NUT, 3/8-16 WIZ FLANGE
3	2	111185 BOLT, SQUARE U, 3/8-16 x 2.50 x 4.0
4	4	232139 Light, 5" Rectangle, Flood w/Connector
5	1	302158 DECAL, WORK LIGHT SWITCH
6	2	317395 BRKT, FRONT WORK LIGHT
7	2	317412 BRKT, REAR WORK LIGHT
8	1	332069 HARNESS, WORK LIGHT
9	1	832005 SWITCH, PADDLE, CARLING (29253)

SWEEPER WORK LIGHT WIRING SCHEMATIC



2-25-2021

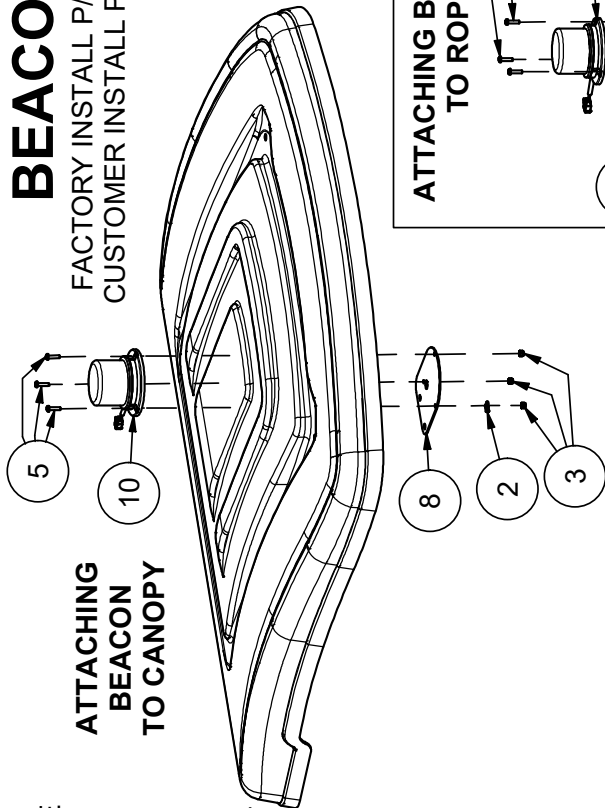
INSTALLATION

- FOR MOUNTING THE BEACON, USE THE HARDWARE INCLUDED IN THIS KIT (NOT THE HARDWARE INCLUDED WITH THE BEACON)
- IF THE CANOPY OPTION IS INSTALLED, THEN MOUNT THE BEACON TO THE TOP OF THE CANOPY AS SHOWN IN THE EXPLODED VIEW. POSITION THE BEACON IN THE CENTER OF THE CANOPY & THEN DRILL 3 - 9/32" HOLES IN THE PLASTIC CANOPY. DRILL A 3/4" HOLE TO ROUTE THE WIRE THROUGH (USE THE 317394 BRACKET TO LOCATE THE 3/4" HOLE).
- IF A CANOPY IS NOT INSTALLED, THEN MOUNT THE BEACON TO THE ROPS USING THE U-BOLT AS SHOWN IN THE EXPLODED VIEW.
- THE CONSOLE CONTAINS 3 OPEN POSITIONS TO INSTALL THE ROCKER SWITCH. REMOVE ONE OF THE PLUGS TO INSTALL THE SWITCH.
- THE MACHINE IS ALSO EQUIPPED WITH 3 EXTRA CONNECTORS BELOW THE CONSOLE THAT PROVIDE +12V POWER / GROUND FOR THIS KIT. SEE ELECTRICAL SCHEMATIC ON PAGE 2.
- ROUTE THE WIRING HARNESS ALONG THE BACKSIDE OF THE ROPS AND SECURE USING THE CABLE TIES.

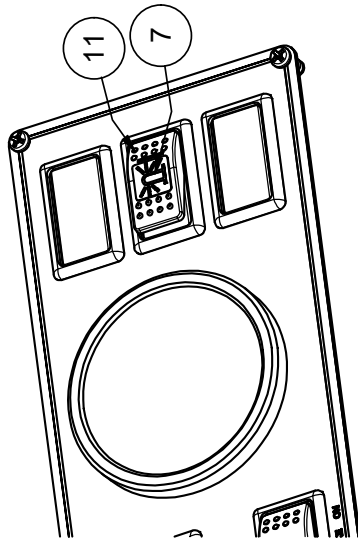
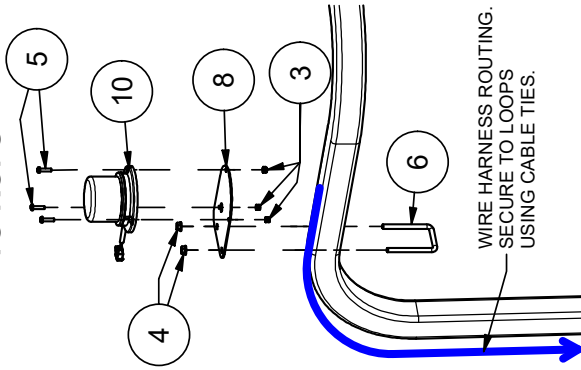
BEACON

FACTORY INSTALL P/N: 300089
CUSTOMER INSTALL P/N: 300088

ATTACHING
BEACON
TO CANOPY



ATTACHING BEACON
TO ROPS



Parts List		
ITEM	QTY	PART # DESCRIPTION
1	5	100578 CABLE TIE 14" BLACK 50 Lb Tens
2	1	110117 CLAMP, ADEL AC4 .265 HOLE
3	3	110630 NUT, 1/4-20 LOCK (NYLON INSERT)
4	2	110645 NUT, 3/8-16 WIZ FLANGE
5	3	110973 SCREW, 1/4-20 X 1 SS PHILLIPS PAN HEAD
6	1	111185 BOLT, SQUARE U, 3/8-16 x 2.50 x 4.0
7	1	302157 DECAL, BEACON
8	1	317394 BRKT, BEACON MOUNTING
9	1	332068 HARNESS, BEACON
10	1	335004 BEACON ASSY, LED
11	1	832005 SWITCH, PADDLE, CARLING (29253)

SWEEPER BEACON WIRING SCHEMATIC

BEACON ASSY
WITH CONNECTOR
P/N: 335004

BEACON WIRING
HARNESS
P/N: 332068

BEACON
SWITCH
P/N: 832005

DEUTSCH DT SERIES
2 CAVITY PLUG

DEUTSCH DT SERIES
2 CAVITY SOCKET

DEUTSCH DT SERIES
2 CAVITY SOCKET

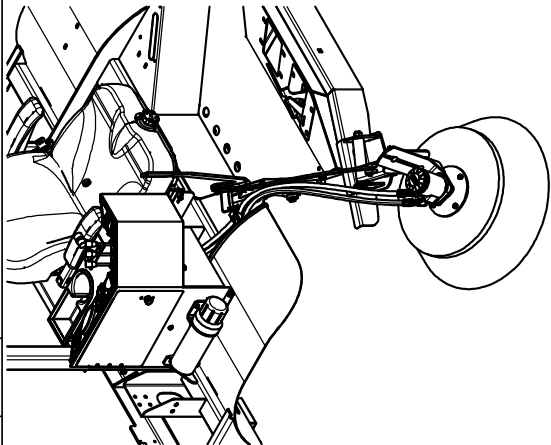
RED
BLACK

RED
BLACK

RED
ORG
BLACK

PACKARD 830
SERIES 10 CAVITY

4-9-2021

Parts List				Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	1	110125	BOLT, 1/2-13 X 2.25 GR 5 ZINC PLATE	17	2	110665	WASHER, 5/16" FLAT STANDARD	37	1	315403	WELDMENT, CURB BRUSH ARM, SWPR
2	4	110290	NUT, 1/4-20 WIZ FLANGE	18	4	110672	WASHER, 3/8" LOCK	38	1	315404	WLDMT, CURB BRUSH BASE RIGHT, SWPR
3	2	110354	BOLT, 1/4-20 X 2.0 HEX HEAD	19	1	110674	WASHER, 5/16" LOCK	39	1	315406	WELDMENT, CURB BRUSH MOUNT, SWPR
4	2	110358	Bolt, 1/4-20 X 0.625 in Carriage	20	6	110676	WASHER, 3/8" FLAT STANDARD	40	1	315407	WELDMENT, BRUSH ADAPTER, SWPR
5	2	110392	Bolt, 3/8-16 X 2 in Carriage	21	1	110895	Bolt, 5/8-11 X 3 in Carriage	41	1	317258	WASHER, 2.0 X .344 X .12
6	1	110396	BOLT, 5/16-18 X 2.5	22	1	111189	Bolt, 5/8-11 X 7.5, HHCS Gr 5 Zinc	42	1	317261	TENSIONER, GEAR MOUNT, BUSHING
7	4	110400	BOLT, 3/8-16 X 2.0	23	1	111199	BOLT, 3/8 X .625 SHOULDER SHCS, ZINC	43	1	317398	LINK, CURB BRUSH LIFT
8	4	110420	BOLT, 3/8-16 X 1.0	24	1	111208	Pin, Lock 3/8 x 3.00" Usable Length, Sq Wire	44	1	317458	BRKT, RH CURB BRUSH RETAINING
9	1	110434	BOLT, 1/4-20 X 0.5, WIZ FLANGE	25	1	120216	ADAPTER, 6MJ-6F-JX-6MJ	45	1	317459	SHIM, CURB BRUSH MOTOR VALVE
10	2	110597	NUT, 5/8-11 HEX	26	1	120239	ADAPTER, 6MJ-8MB	46	2	320400	HOSE ASSY, RH CURB BRUSH
11	3	110600	NUT, 5/16-18, UNITORQUE LOCK	27	4	120319	ADAPTER, 6MJ-6MB	47	1	320402	HOSE ASSY, CURB BRUSH INLET
12	1	110606	NUT, 5/16-18 WIZ FLANGE	28	2	120753	Jic(-6) to Male O-ring (-10), 45 degrees	48	1	320403	HOSE ASSY, CURB BRUSH RETURN
13	1	110615	NUT, 1/2-13, UNITORQUE LOCK	29	1	211747	FRICTION WASHER 1.5"	49	1	322099	HIGH PRESSURE CARRYOVER PLUG
14	4	110621	NUT, 3/8-16, UNITORQUE LOCK	30	2	302063	KNOB, ALUMINUM 3/8-16	50	1	323069	VALVE ASSEMBLY, 2-WAY/4 POSITION
15	1	110639	NUT, 5/8-11, UNITORQUE LOCK	31	1	302064	BRUSH, 24" x 6" x 40 DEG	51	1	332070	HARNES, CURB BRUSH
16	2	110658	WASHER, 1/2" FLAT STANDARD	32	1	302160	DECAL, CURB BRUSH	52	1	820097	CLAMP BODY
				33	1	312022	CLIP, HAIRPIN 3/32 x 1.625	53	1	820098	COVER PLATE
				34	1	312039	GAS SPRING	54	1	832005	SWITCH, PADDLE, CARLING (29253)
				35	1	312041	GLEVIS PIN, 3/8 X 1.5, ZINC	55	1	910044	COVER, VINYL .25 X 1.5 X 4 GRIP
				36	1	315401	WLDMT, CURB BRUSH HANDLE RIGHT	56	1	922004	MOTOR, EATON 101-1009

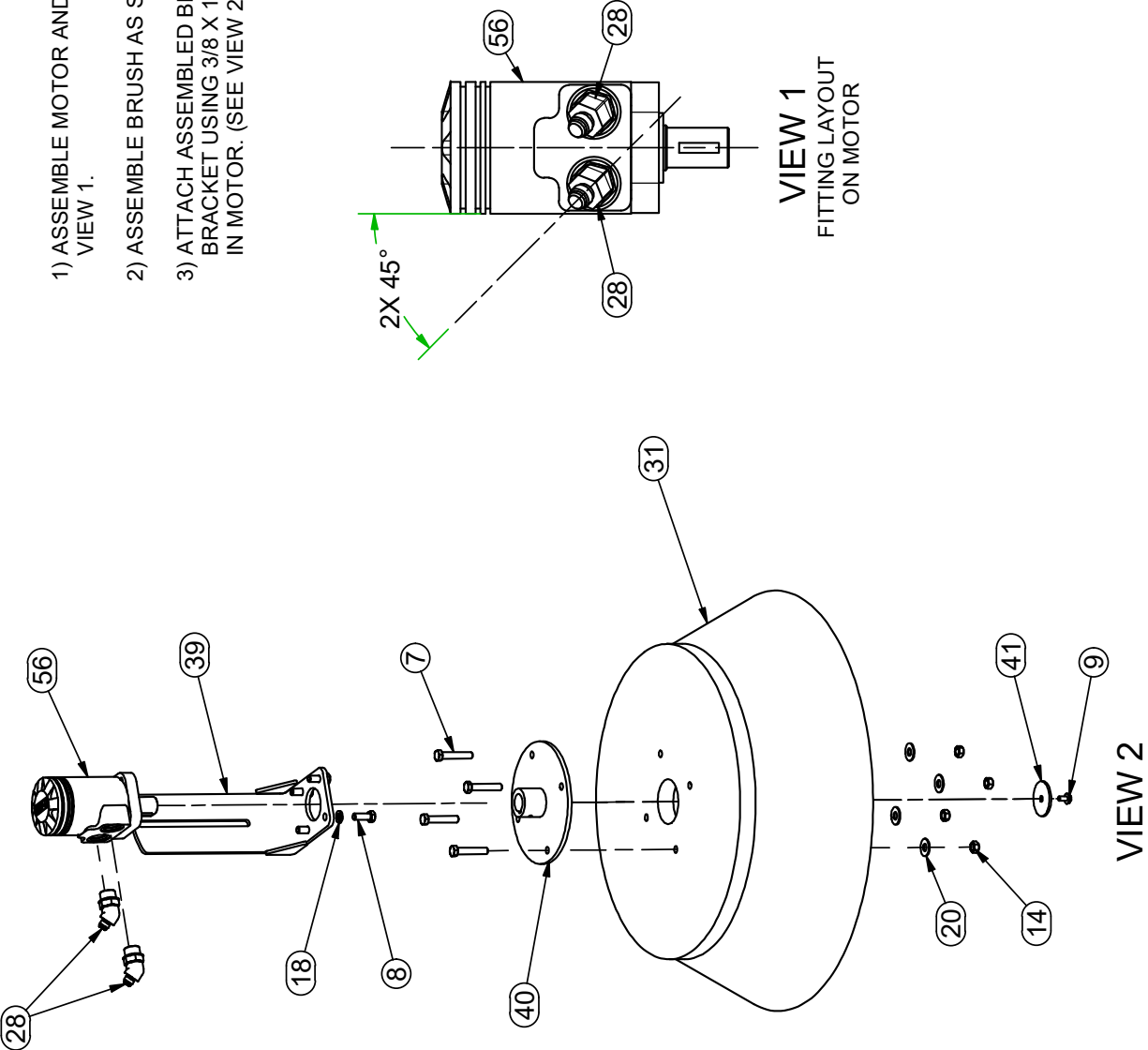
FOR SERIAL NUMBERS 21A11 AND PRIOR,
SEE PAGES 11 & 12 FOR DETAILS ON
UPDATES NEEDED FOR CURB BRUSH
INSTALLATION

CUSTOMER INSTALL: 300090
FACTORY INSTALL: 300091

HAWK RIGHT CURB BRUSH INSTALL

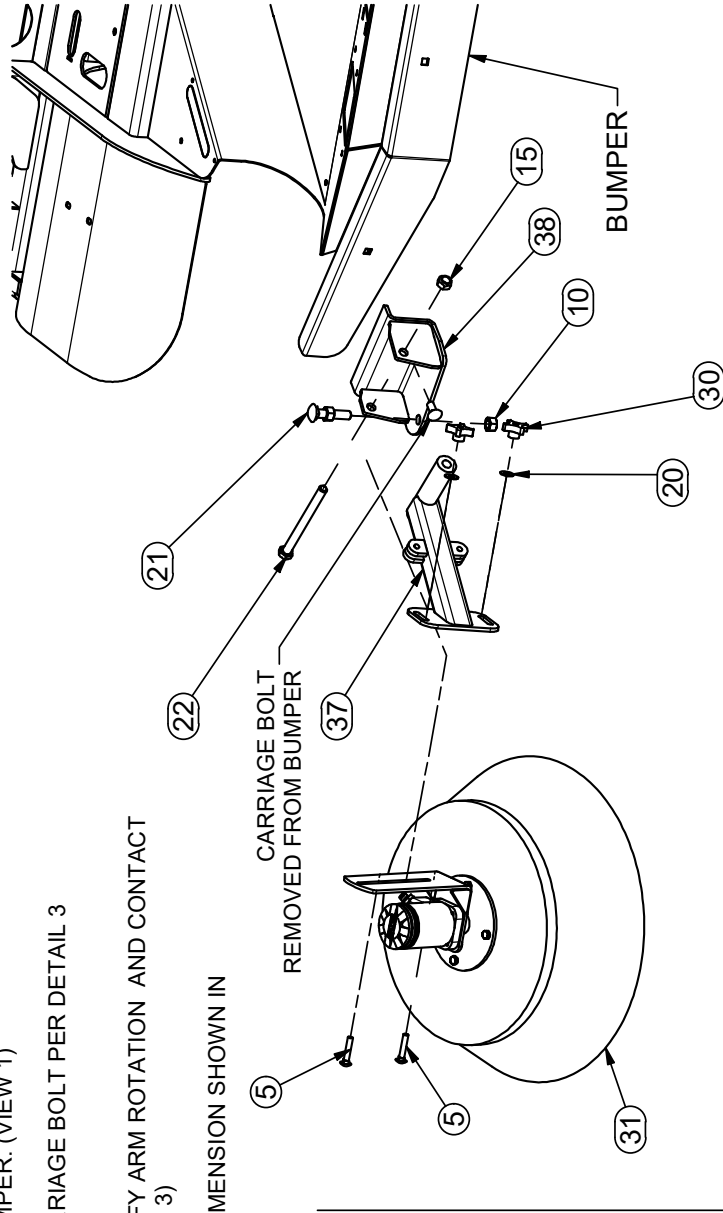
BRUSH ASSEMBLY

- 1) ASSEMBLE MOTOR AND FITTINGS PER VIEW 1.
- 2) ASSEMBLE BRUSH AS SHOWN IN VIEW 2.
- 3) ATTACH ASSEMBLED BRUSH & MOTOR TO BRACKET USING 3/8 X 1 BOLTS, INTO THREADED HOLE IN MOTOR. (SEE VIEW 2)

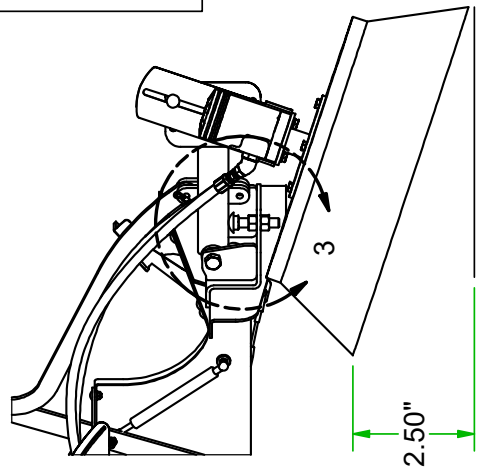


BRUSH & ARM ASSEMBLY

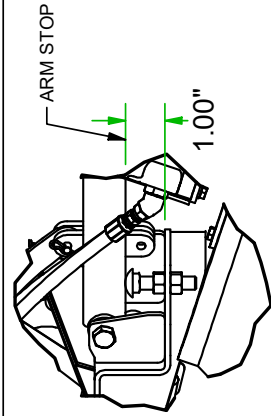
- 1) ATTACH MOUNT BRACKET TO BUMPER USING (112070) CARRIAGE BOLT, ALREADY INSTALLED IN BUMPER. (VIEW 1)
- 2) INSTALL & ADJUST ARM STOP CARRIAGE BOLT PER DETAIL 3 BELOW
- 3) ATTACH ARM TO BRACKET & VERIFY ARM ROTATION AND CONTACT WITH ARM STOP. (VIEW 1 & DETAIL 3)
- 4) INSTALL BRUSH ON ARM AT 2.5" DIMENSION SHOWN IN VIEW 2 BELOW.



VIEW 1



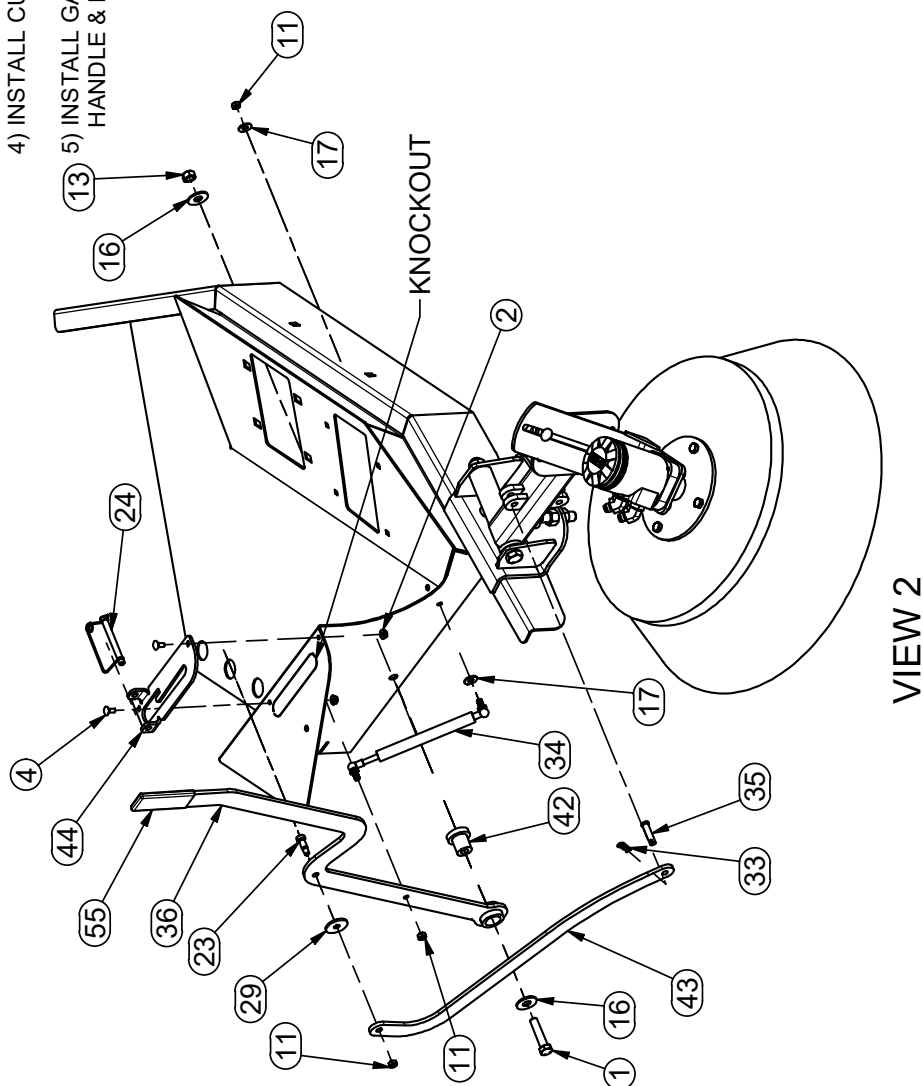
VIEW 2
BRUSH SIDE VIEW LOOKING IN



DETAIL 3

CURB BRUSH LIFT HANDLE INSTALLATION

- 1) REMOVE BRUSH HANDLE SLOT KNOCKOUT (VIEW 2)
(IF MODEL S/N PRIOR TO 21A11, MAKE CUTOUT &
DRILL HOLES PER SHT 11)
- 2) INSTALL HANDLE THRU SLOT, ATTACH TO FRAME. (VIEW 2)
- 3) ATTACH CURB BRUSH PLATE USING (2) 1/4 X 5/8
CARRIAGE BOLTS.(VIEW 2)
- 4) INSTALL CURB BRUSH LIFT LINK TO HANDLE & BRUSH ARM (VIEW 2)
- 5) INSTALL GAS SPRING TO LOWER HOLE IN LIFT
HANDLE & FRAME. (VIEW 2)

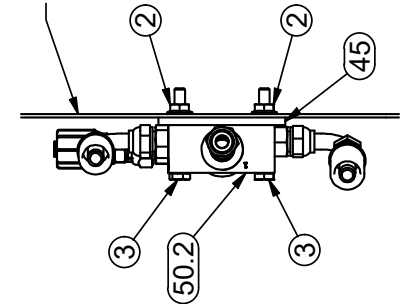


CURB BRUSH HYDRAULICS

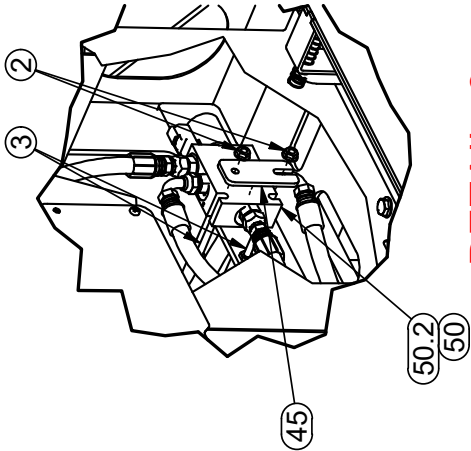
MOTOR VALVE INSTALLATION

- 1) INSTALL FITTINGS (120319) IN VALVE (323069) PER VIEW 1
- 2) ATTACH MOTOR VALVE (323069) TO INSIDE OF CONSOLE, USING HOLES ON SIDE OF PANEL. (VIEW 2,3 & 4)

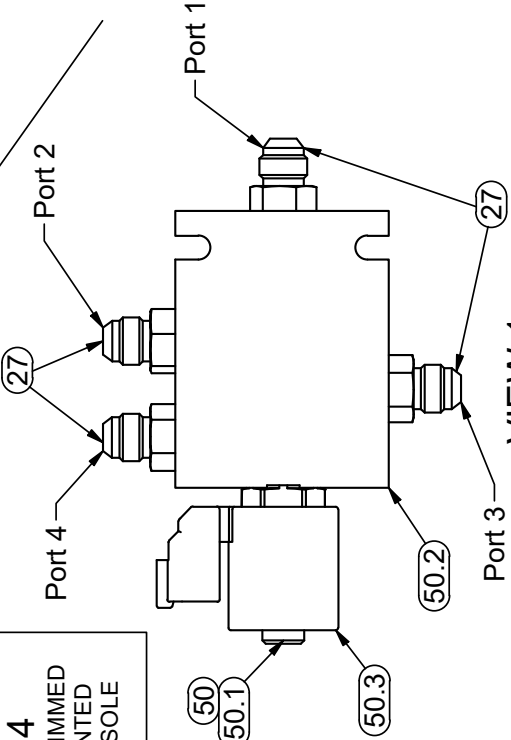
NOTE: IF UNIT S/N IS 21A11 OR PRIOR, SEE SHEET 12 FOR INSTALLATION HOLE DIMENSIONS



VIEW 4
SHOWING SHIMMED
VALVE MOUNTED
INSIDE CONSOLE

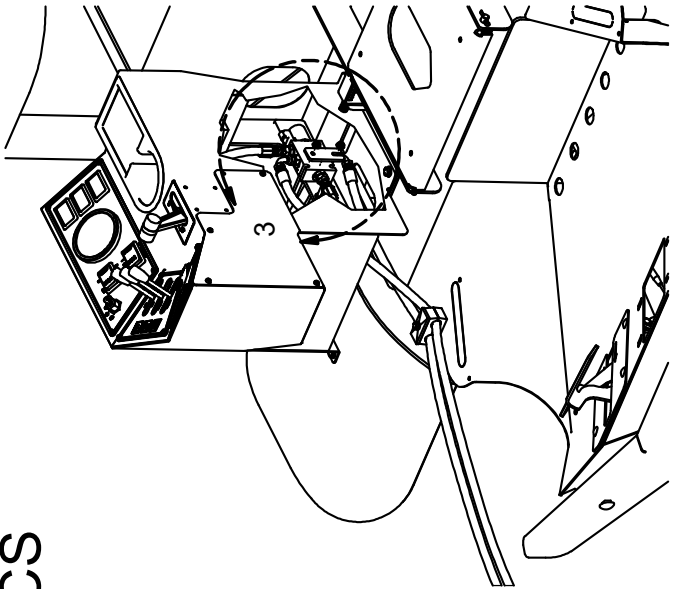


DETAIL 3



VIEW 1

323069 VALVE LAYOUT VIEW



VIEW 2

VIEW OF CONTROL PANEL

Parts List			
ITEM	QTY	PART #	DESCRIPTION
2	4	110290	NUT, 1/4-20 WIZ FLANGE
3	2	110354	BOLT, 1/4-20 X 2.0 HEX HEAD
27	4	120319	ADAPTER, 6MJ-6MB
45	1	317459	SHIM, CURB BRUSH MOTOR VALVE
50	1	323069	VALVE ASSEMBLY, 2-WAY/4 POSITION
50.1	1	222052	Valve, #8 Spool, 4-Way 2-Position
50.2	1	322100	BODY, 8 SIZE, 4 WAY, SAE-6
50.3	1	322101	COIL, 12V ERZ

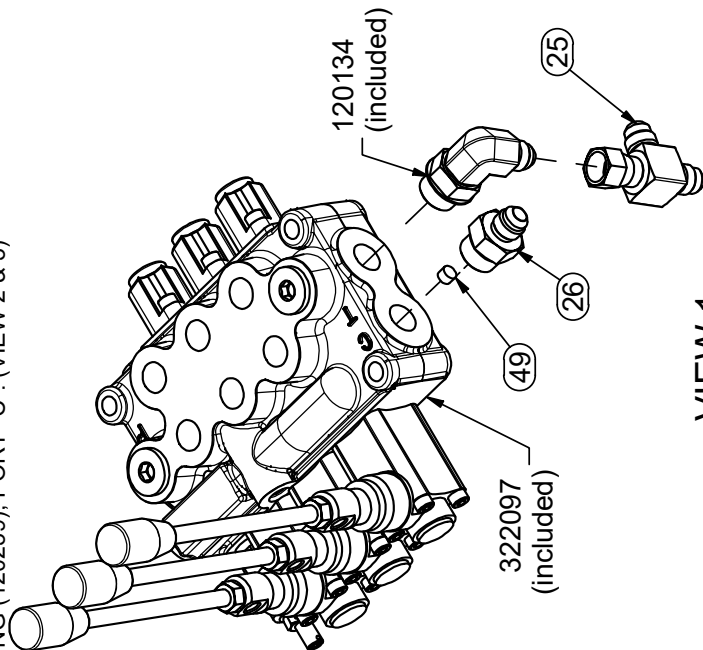
CURB BRUSH HYDRAULICS

CONTROL VALVE CONFIGURATION

1) REMOVE PLUG FROM POWER BEYOND PORT, PORT "C" SHOWN IN VIEW 1.

2) INSTALL HIGH PRESSURE CARRYOVER PLUG (322099) AND FITTING (120239) IN PORT "C". (VIEW 1)

3) INSTALL MOTOR VALVE PRESSURE HOSE (320402) ON FITTING (120239), PORT "C". (VIEW 2 & 3)

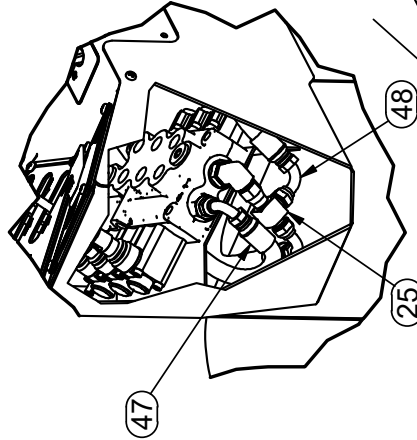


VIEW 1

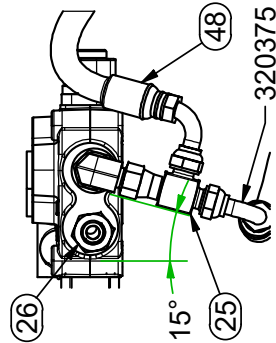
4) REMOVE HOSE ASSY (320375) FROM ELBOW (120134) ON PORT "T"

5) ADD TEE (120216) TO ELBOW (120134) ALREADY INSTALLED ON CONTROL VALVE (322087), THEN RE-INSTALL HOSE (320375) TO OPEN END OF TEE. (VIEW 1, 2 & 3)

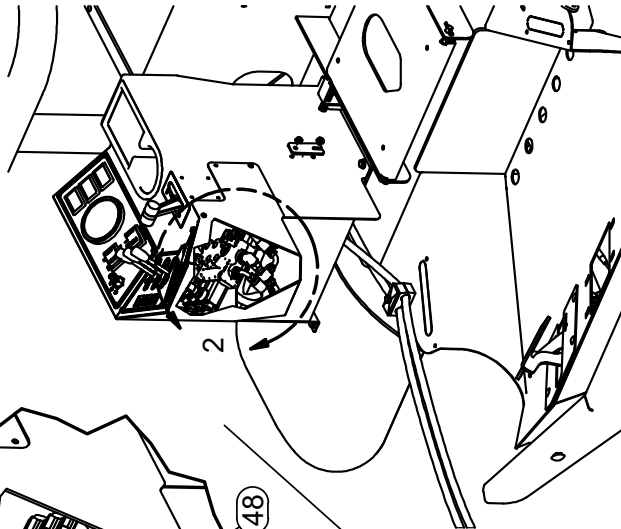
6) ATTACH CURB BRUSH MOTOR VALVE HOSE (320403) TO OPEN SIDE PORT OF TEE (120216). (VIEW 2 & 3)



DETAIL 2



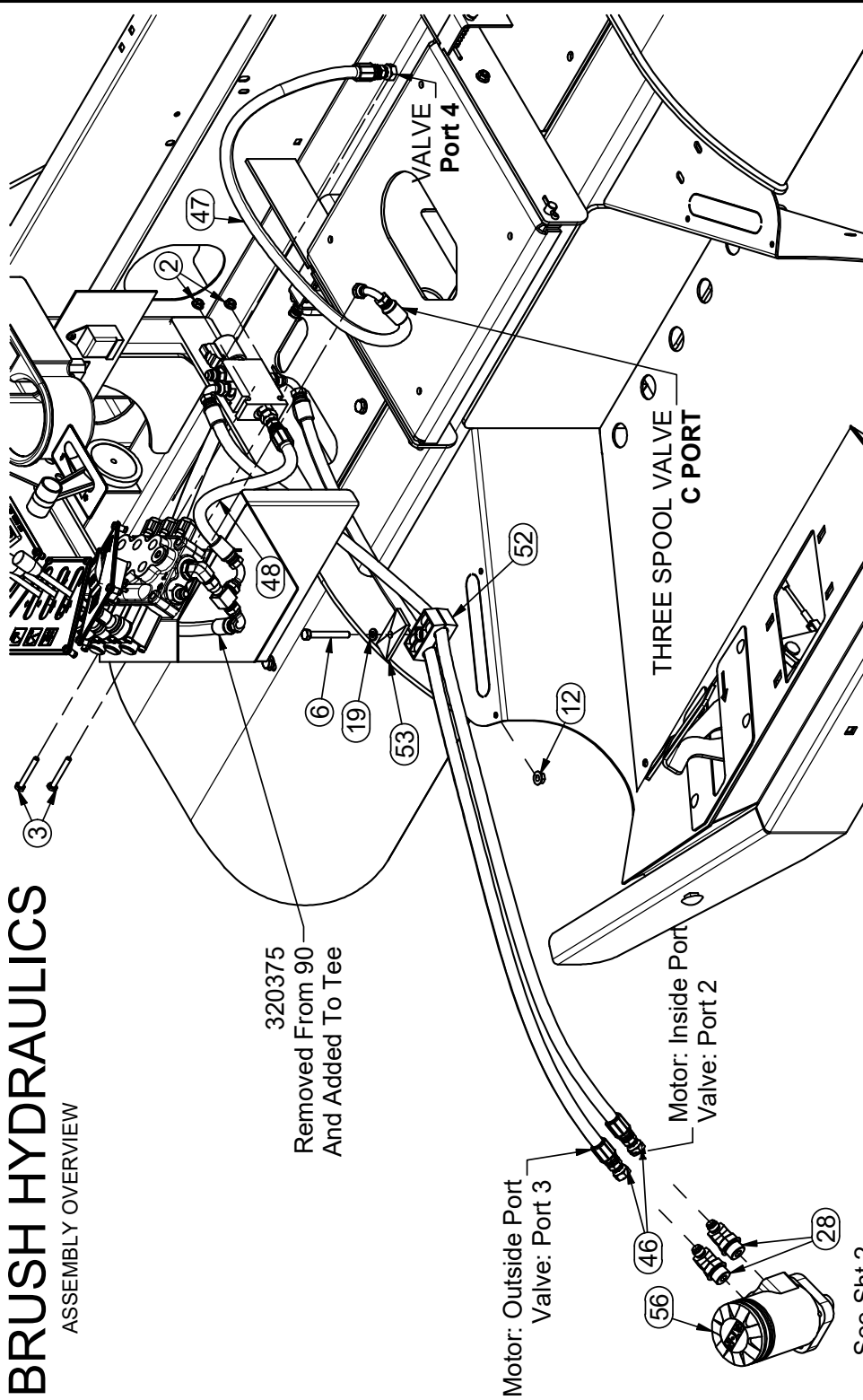
VIEW 3
TEE LAYOUT VIEW



VIEW 4
VIEW OF CONTROL PANEL

CURB BRUSH HYDRAULICS

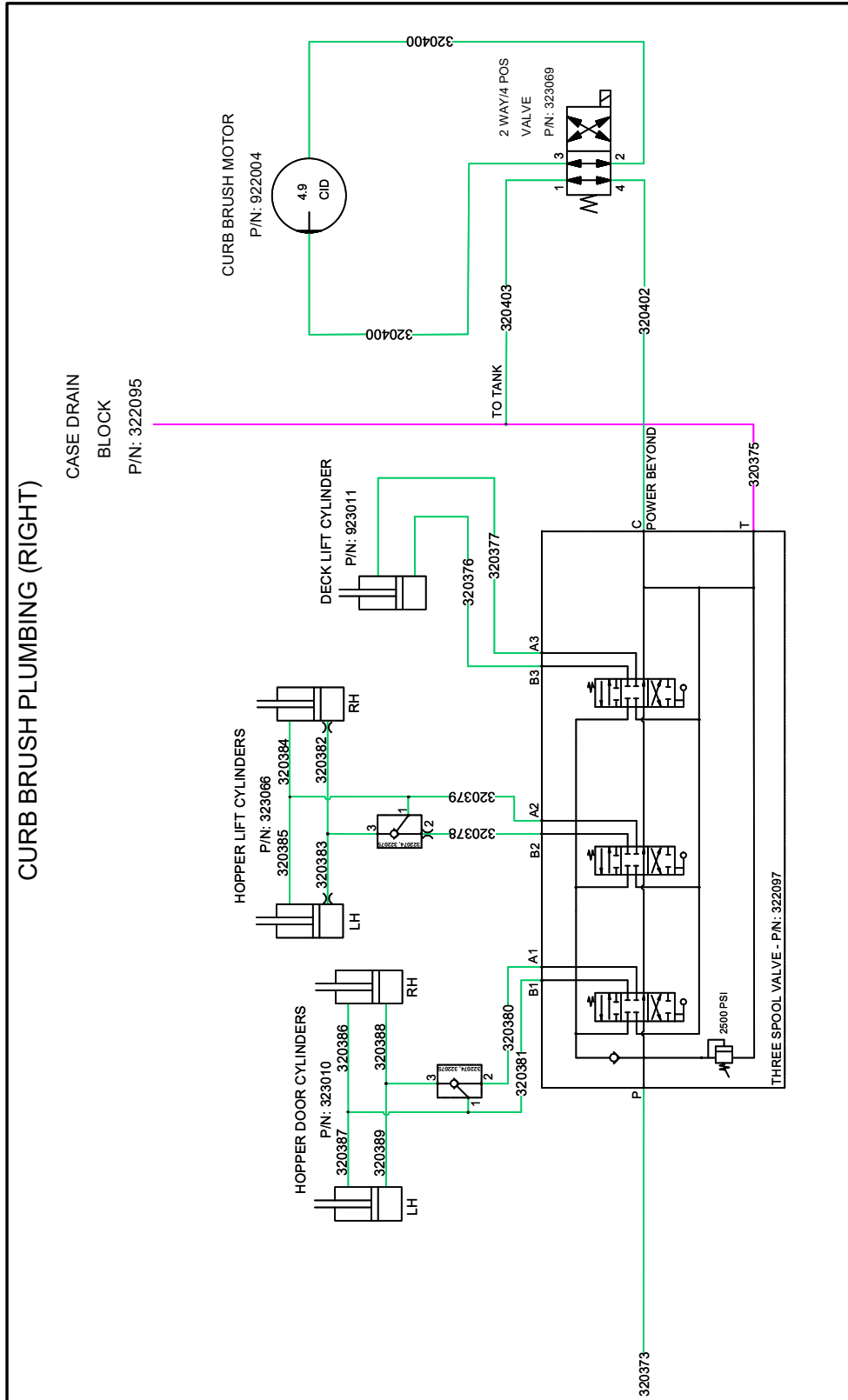
ASSEMBLY OVERVIEW



See Sht 2
for motor fitting
layout

CURB BRUSH HYDRAULICS

CURB BRUSH PLUMBING (RIGHT)



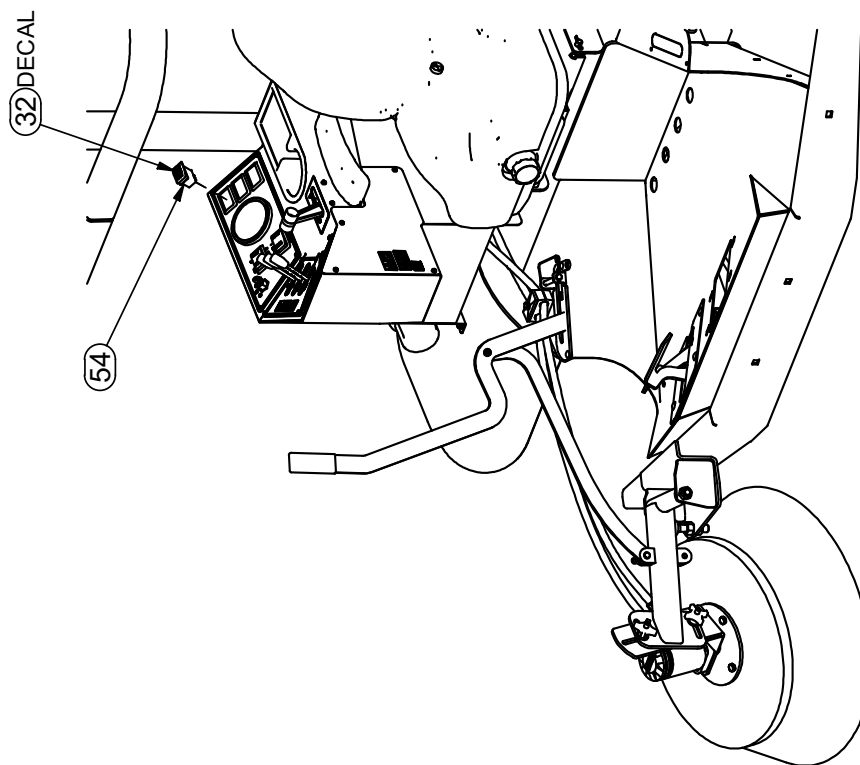
2-20-2023

CURB BRUSH SWITCH & ELECTRICAL INSTALLATION

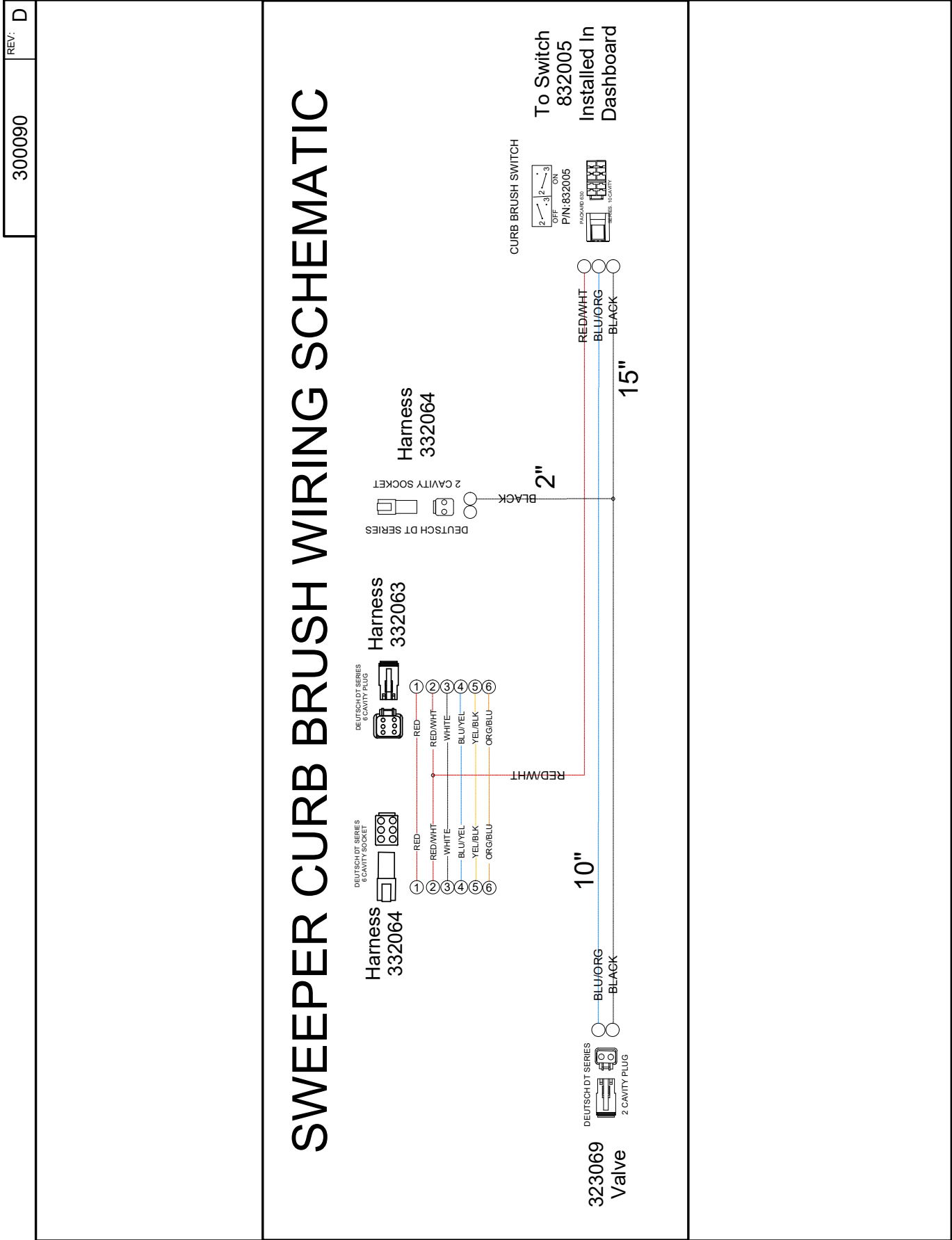
To Install Wiring Harness (332070):

- 1) Disconnect harness 332064 & 332063 at the 6 cavity Deutsch connector. This plug is located inside operator's console. It is the only 6 cavity Deutsch connector in the console. Connect harness 332064 and 332063 to the harness included with this kit (332070)
- 2) Connect 2 cavity Deutsch, black wire only, to one of the 3 available accessory plugs (harness 332064). These 2 cavity plugs should be located near the fuse block inside the console.
- 3) Remove the plastic plug located on the console, insert the Packard 10 cavity switch (832005) into this cavity and attach the wiring harness on the back side (VIEW 1)
- 4) Connect 2 cavity Deutsch, Blu/Org & Blk, to 323069 valve.

wiring harness on next page for reference

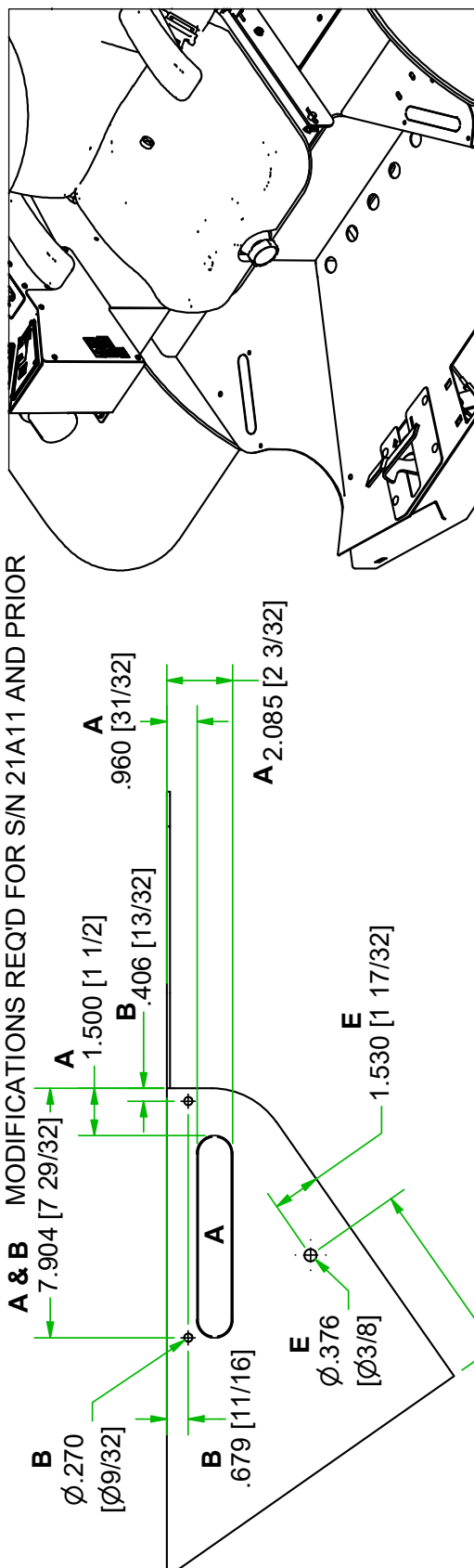


VIEW 1



CURB BRUSH ASSEMBLY

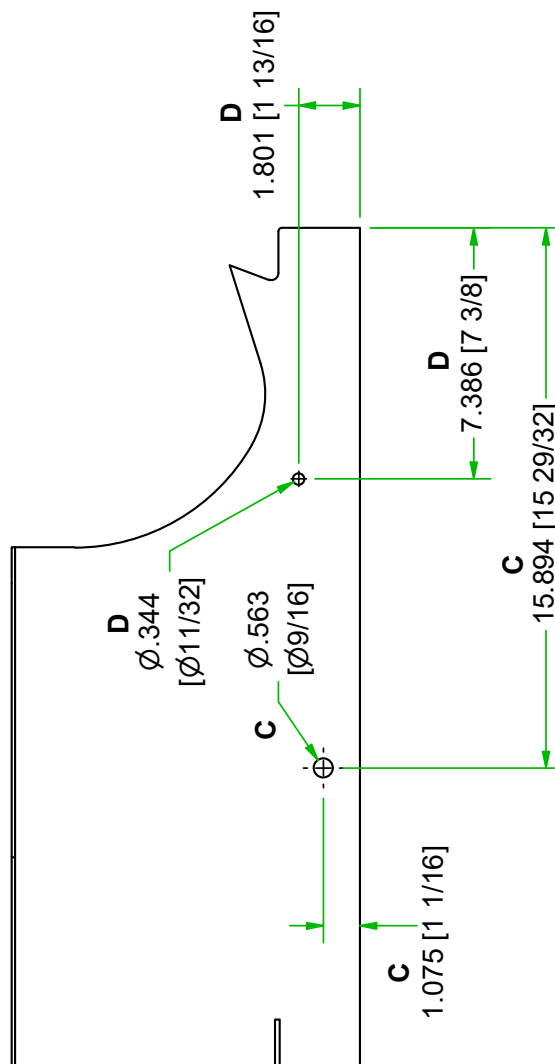
A & B MODIFICATIONS REQ'D FOR S/N 21A11 AND PRIOR

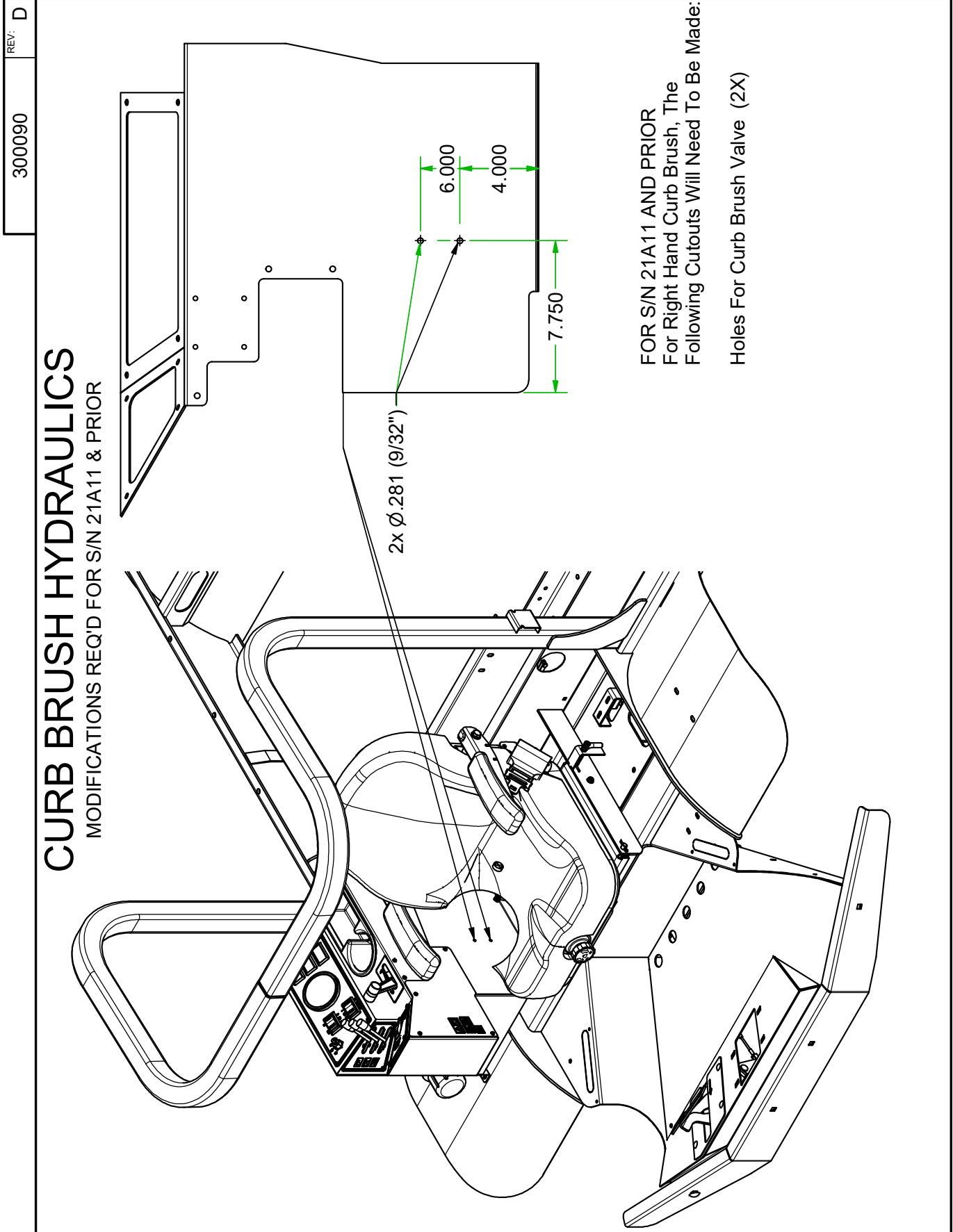


FOR S/N 21A11 AND PRIOR

For Right Hand Curb Brush, The Following Cutouts Will Need To Be Made.

- A. Cutout For Handle Mount (1X)
- B. Holes For Curb Brush Plate Mount (2X)
- C. Pivot Hole For Curb Brush Handle (1X)
- D. Gas Spring Mount Hole (1X)
- E. Hose Clamp Hole Mount

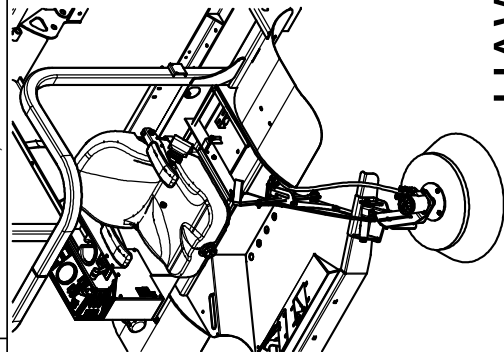




300092

REV: C

Parts List												Parts List												Parts List																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
1	1	110125	BOLT, 1/2-13 X 2.25 GR 5 ZINC PLATE	20	6	110676	WASHER, 3/8" FLAT STANDARD	38	1	315405	WELDMENT, CURB BRUSH BASE LEFT, SWPR	39	1	315406	WELDMENT, CURB BRUSH MOUNT, SWPR	40	1	315407	WELDMENT, BRUSH ADAPTER, SWPR	41	1	317258	WASHER, 2.0 X .344 X .12	42	1	317261	TENSIONER, GEAR MOUNT, BUSHING	43	1	317398	LINK, CURB BRUSH LIFT	44	1	317457	BRKT, LH CURB BRUSH RETAINING	45	1	317459	SHIM, CURB BRUSH MOTOR VALVE	46	2	320401	HOSE ASSY, LH CURB BRUSH	47	1	320402	HOSE ASSY, CURB BRUSH INLET	48	1	320403	HOSE ASSY, CURB BRUSH RETURN	49	1	322099	HIGH PRESSURE CARRYOVER PLUG	50	1	323069	VALVE ASSEMBLY, 2-WAY/4 POSITION	51	1	332070	HARNES, CURB BRUSH	52	1	820097	CLAMP BODY	53	1	820098	COVER PLATE	54	1	832005	SWITCH, PADDLE, CARLING (29253)	55	1	910044	COVER, VINYL .25 X 1.5 X 4 GRIP	56	1	922004	MOTOR, EATON 101-1009																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
2	4	110290	NUT, 1/4-20 WIZ FLANGE	21	1	110895	Bolt, 5/8-11 X 3 in Carriage																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															



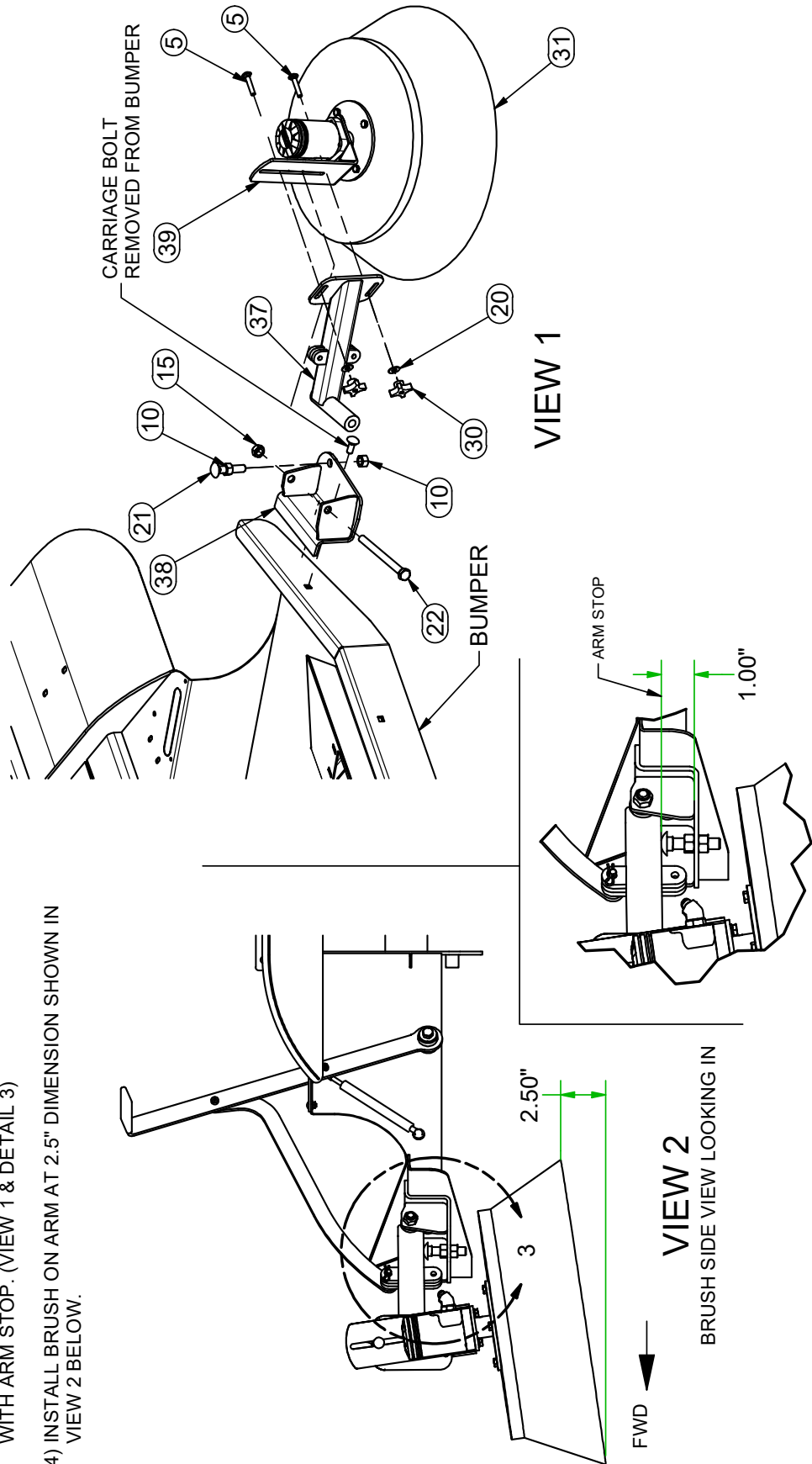
FOR SERIAL NUMBERS 21A11 AND PRIOR,
SEE PAGES 11-12 FOR DETAILS ON
UPDATES NEEDED FOR CURB BRUSH
INSTALLATION

CUSTOMER INSTALL: 300092
FACTORY INSTALL: 300093

HAWK LEFT CURB BRUSH INSTALL

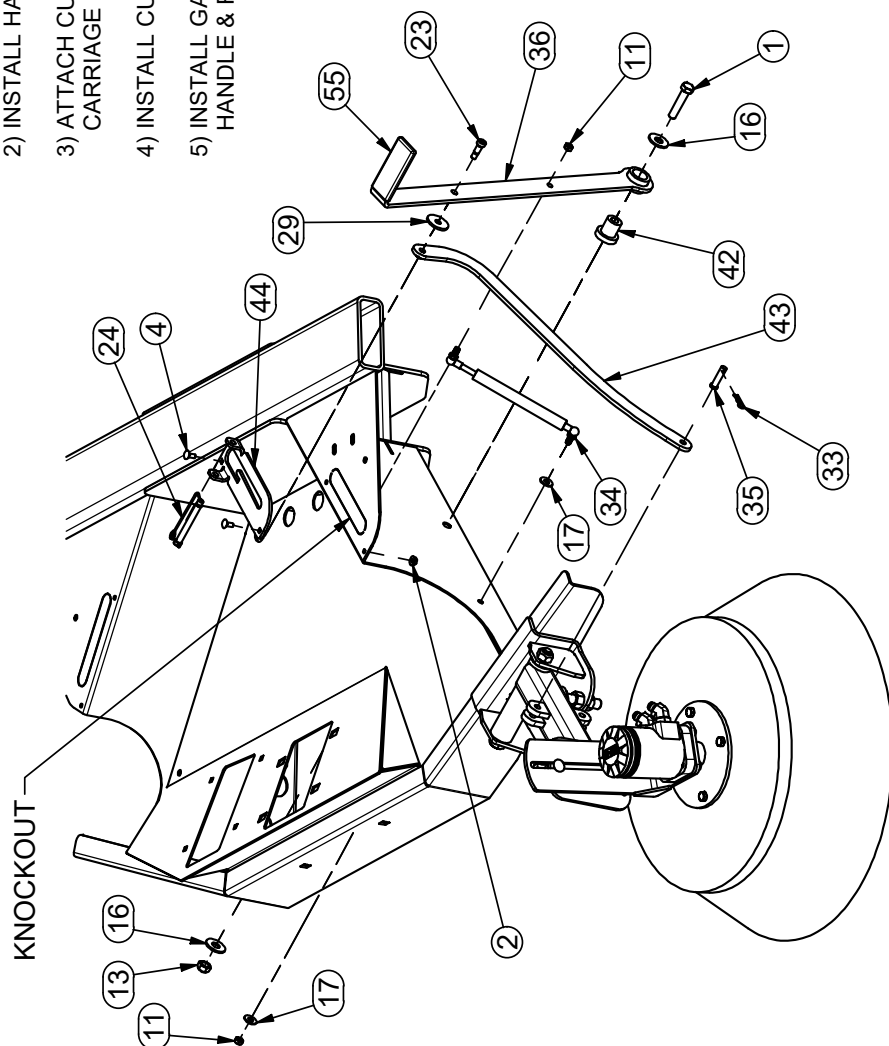
BRUSH & ARM ASSEMBLY

- 1) ATTACH MOUNT BRACKET TO BUMPER USING (112070) CARRIAGE BOLT, ALREADY INSTALLED IN BUMPER. (VIEW 1)
- 2) INSTALL & ADJUST ARM STOP CARRIAGE BOLT PER DETAIL 3 BELOW
- 3) ATTACH ARM TO BRACKET & VERIFY ARM ROTATION AND CONTACT WITH ARM STOP. (VIEW 1 & DETAIL 3)
- 4) INSTALL BRUSH ON ARM AT 2.5" DIMENSION SHOWN IN VIEW 2 BELOW.



CURB BRUSH LIFT HANDLE INSTALLATION

- 1) REMOVE BRUSH HANDLE SLOT KNOCKOUT (VIEW 2)
(IF MODEL S/N PRIOR TO 21A11, MAKE CUTOUT &
DRILL HOLES PER SHT 11)
- 2) INSTALL HANDLE THRU SLOT, ATTACH TO FRAME. (VIEW 2)
- 3) ATTACH CURB BRUSH PLATE USING (2) 1/4 X 5/8
CARRIAGE BOLTS.(VIEW 2)
- 4) INSTALL CURB BRUSH LIFT LINK TO HANDLE & BRUSH ARM (VIEW 2)
- 5) INSTALL GAS SPRING TO LOWER HOLE IN LIFT
HANDLE & FRAME. (VIEW 2)



VIEW 1
CURB BRUSH
HANDLE INSTALLED

VIEW 2

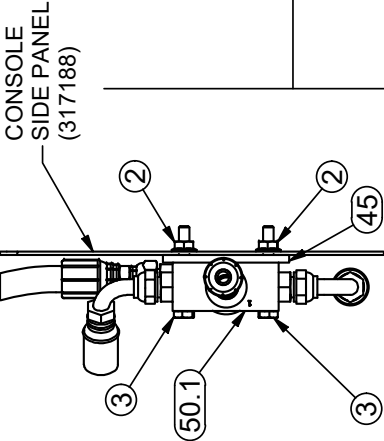
CURB BRUSH HYDRAULICS

MOTOR VALVE INSTALLATION

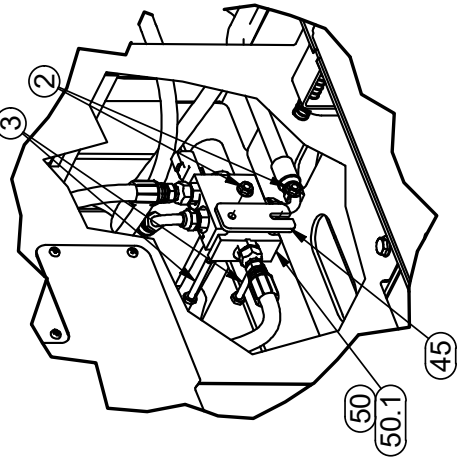
1) INSTALL FITTINGS (120319) IN VALVE (323069) PER VIEW 1

2) ATTACH MOTOR VALVE (323069) TO INSIDE OF CONSOLE, USING HOLES ON SIDE OF PANEL. (VIEW 2,3 & 4)

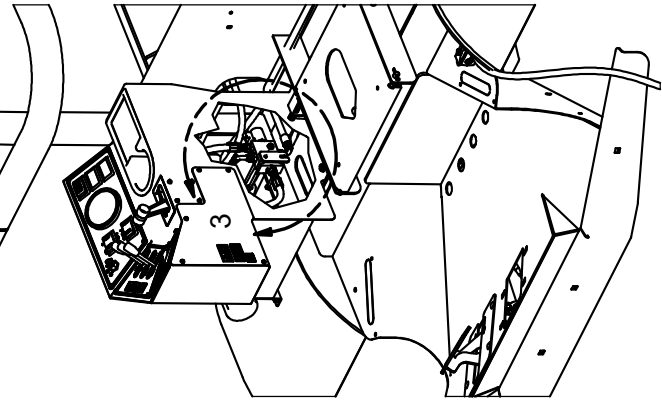
NOTE: IF UNIT SIN IS 21A11 OR PRIOR, SEE SHEET 12 FOR INSTALLATION HOLE DIMENSIONS



VIEW 4
SHOWING SHIMMED
VALVE MOUNTED
INSIDE CONSOLE

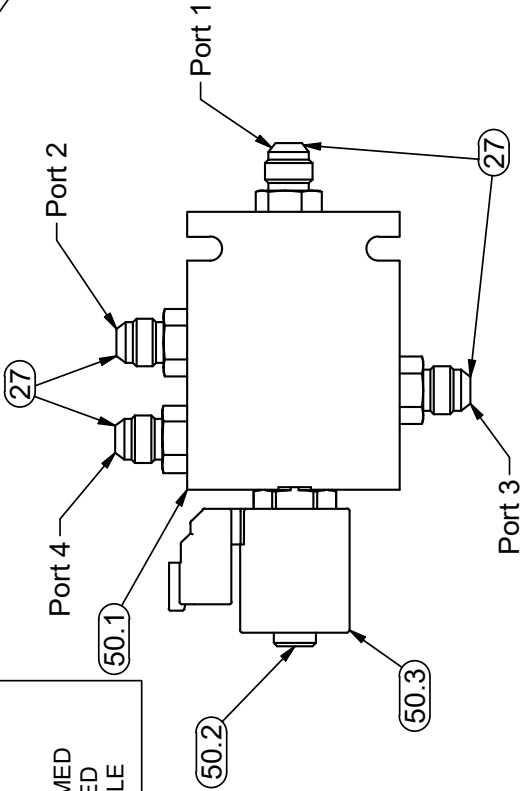


DETAIL 3



VIEW 2
VIEW OF CONTROL PANEL

Parts List		
ITEM	QTY	PART # DESCRIPTION
2	4	110290 NUT, 1/4-20 WIZ FLANGE
3	2	110354 BOLT, 1/4-20 X 2.0 HEX HEAD
27	4	120319 ADAPTER, 6MJ-6MB
45	1	317459 SHIM, CURB BRUSH MOTOR VALVE
50	1	323069 VALVE ASSEMBLY, 2-WAY/4 POSITION
50.2	1	222052 Valve, #8 Spool, 4-Way 2-Position
50.1	1	322100 BODY, 8 SIZE, 4 WAY, SAE-6
50.3	1	322101 COIL, 12V ERZ



VIEW 1
323069 VALVE LAYOUT VIEW

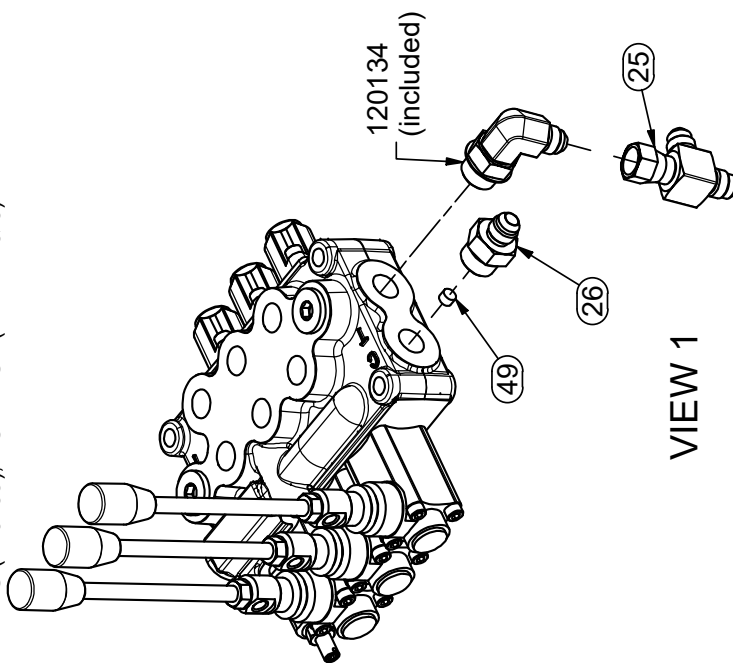
CURB BRUSH HYDRAULICS

CONTROL VALVE CONFIGURATION

1) REMOVE PLUG FROM POWER BEYOND PORT, PORT "C" SHOWN IN VIEW 1.

2) INSTALL HIGH PRESSURE CARRYOVER PLUG (322099) AND FITTING (120239) IN PORT "C". (VIEW 1)

3) INSTALL MOTOR VALVE PRESSURE HOSE (320402) ON FITTING (120239), PORT "C". (VIEW 2 & 3)

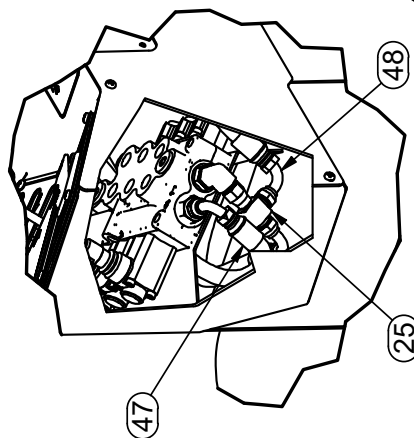


VIEW 1

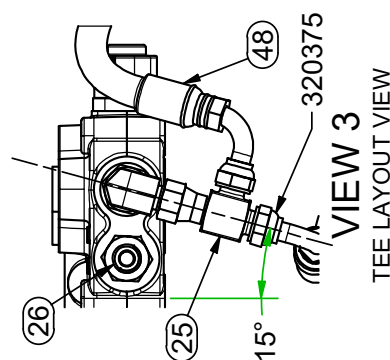
4) REMOVE HOSE ASSY (320375) FROM ELBOW (120134) ON PORT "T"

5) ADD TEE (120216) TO ELBOW (120134) ALREADY INSTALLED ON CONTROL VALVE (322087), THEN RE-INSTALL HOSE (320375) TO OPEN END OF TEE. (VIEW 1, 2 & 3)

6) ATTACH CURB BRUSH MOTOR VALVE HOSE (320403) TO OPEN SIDE PORT OF TEE (120216). (VIEW 2 & 3)

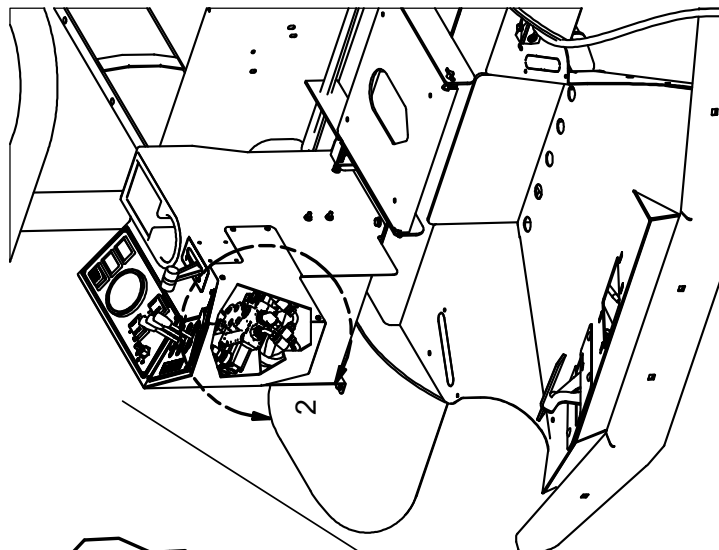


DETAIL 2



VIEW 3

TEE LAYOUT VIEW

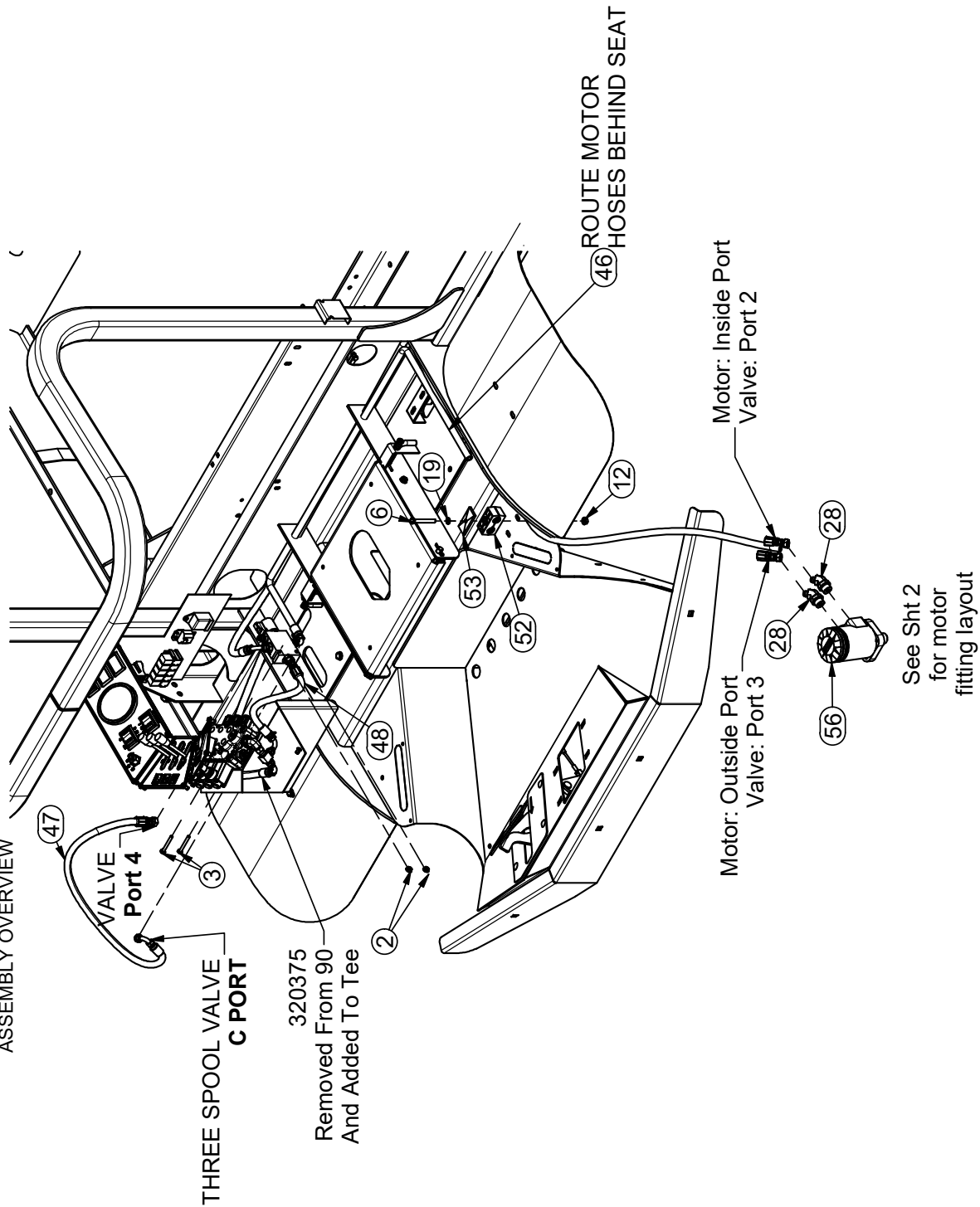


VIEW 4

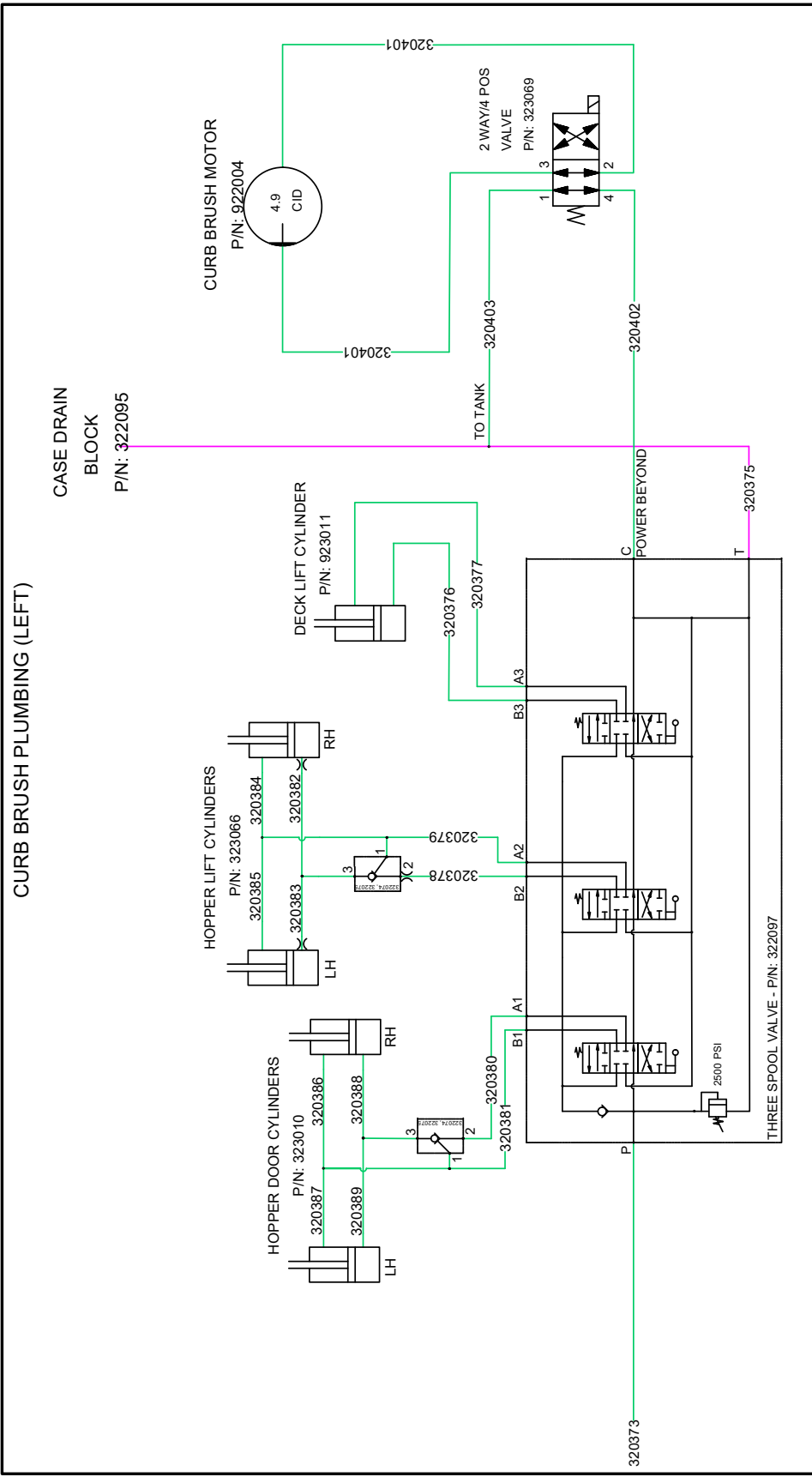
VIEW OF CONTROL PANEL

CURB BRUSH HYDRAULICS

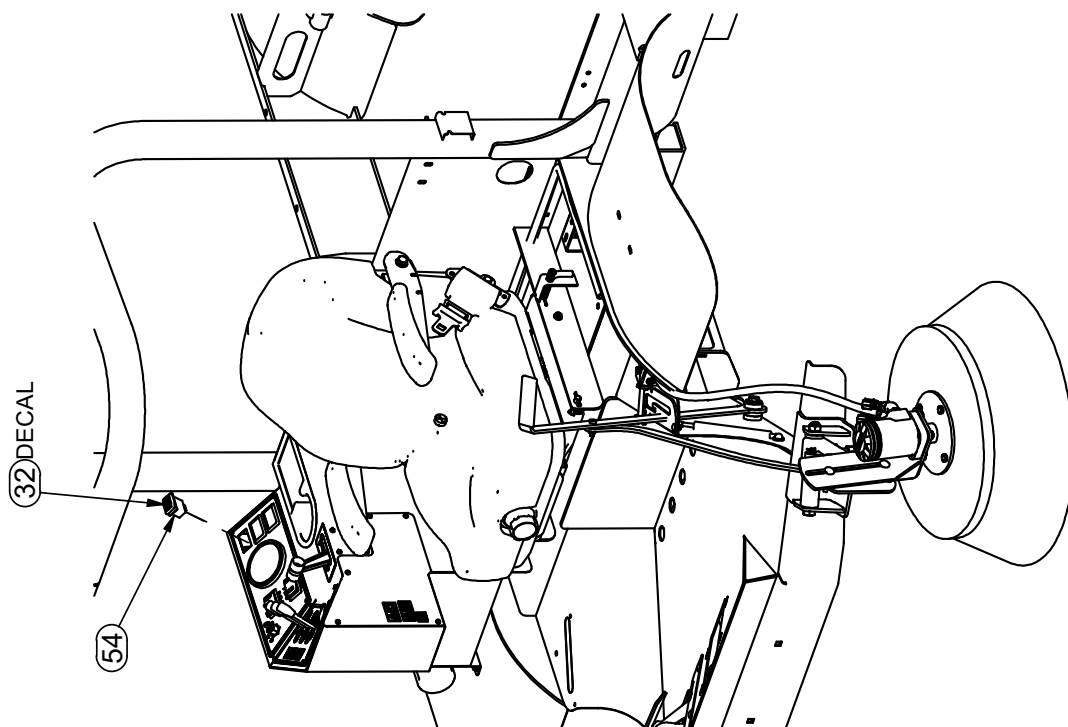
ASSEMBLY OVERVIEW



CURB BRUSH HYDRAULICS



CURB BRUSH SWITCH & ELECTRICAL INSTALLATION

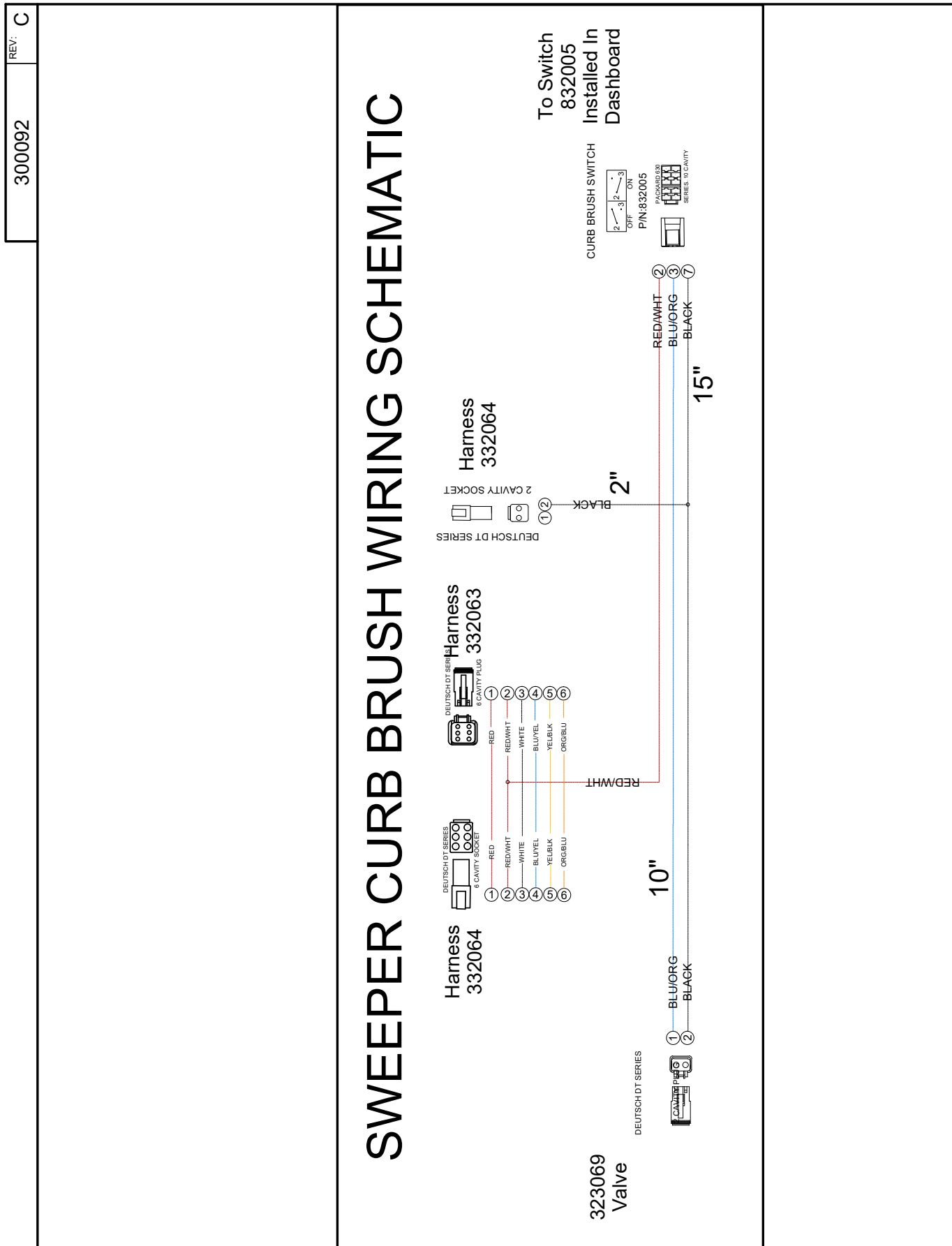


VIEW 1

To Install Wiring Harness (332070):

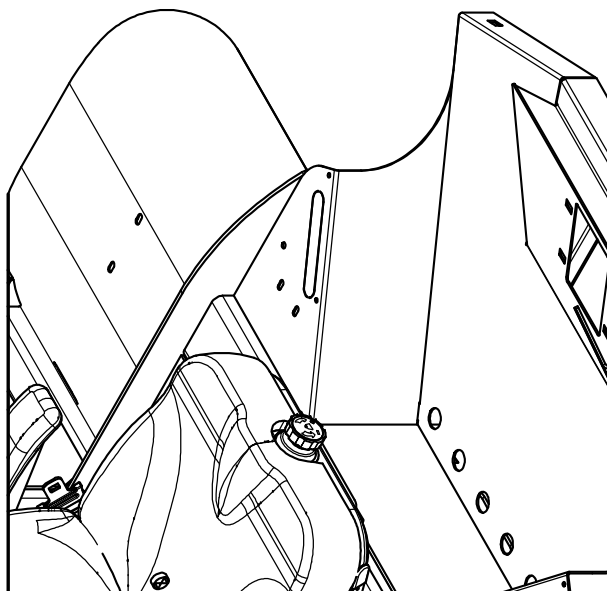
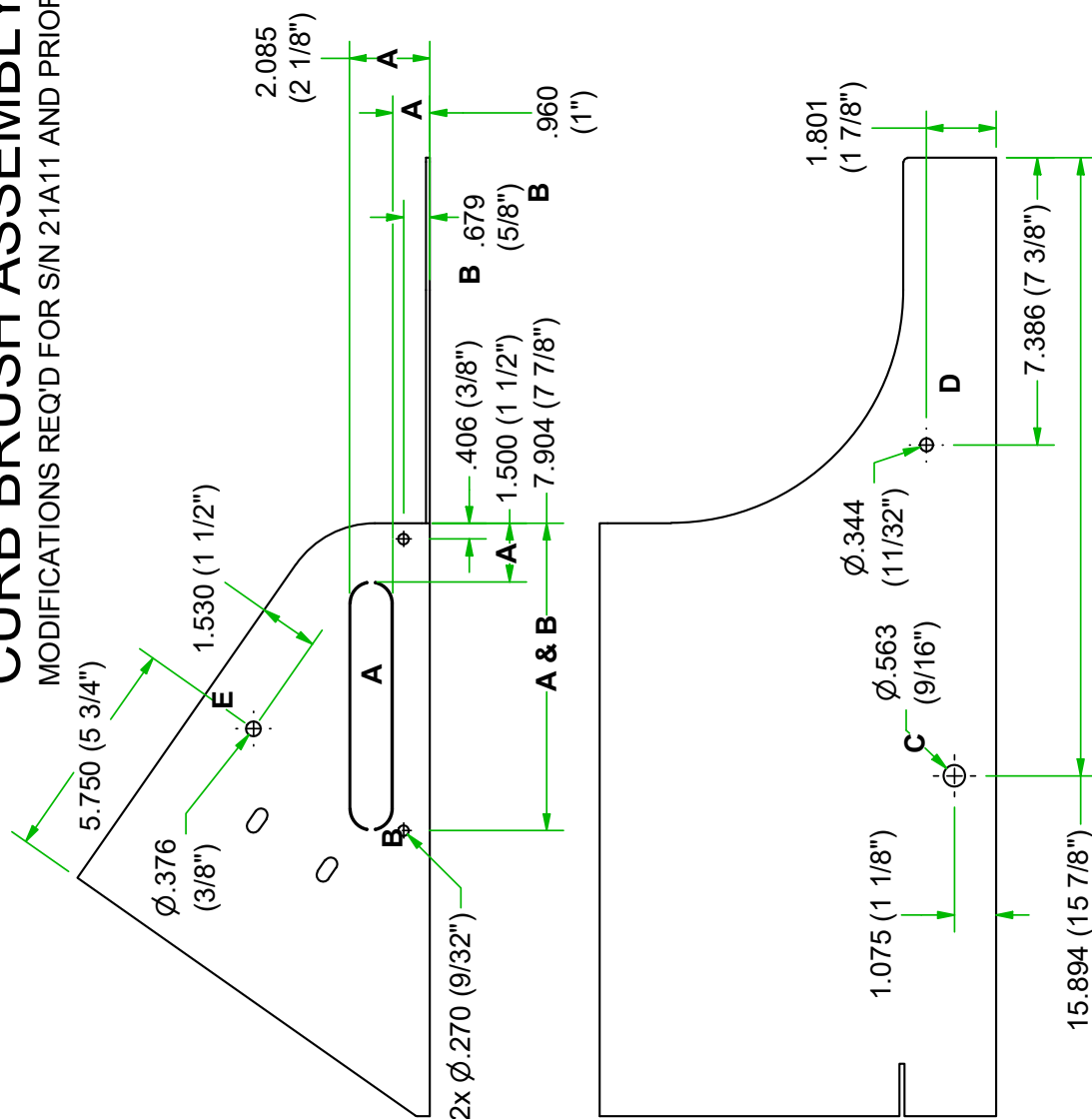
- 1) Disconnect harness 332064 & 332063 at the 6 cavity Deutsch connector. This plug is located inside operator's console. It is the only 6 cavity Deutsch connector in the console. Connect harness 332064 and 332063 to the harness included with this kit (332070)
- 2) Connect 2 cavity Deutsch, black wire only, to one of the 3 available accessory plugs (harness 332064). These 2 cavity plugs should be located near the fuse block inside the console.
- 3) Remove the plastic plug located on the console, insert the Packard 10 cavity switch (832005) into this cavity and attach the wiring harness on the back side (VIEW 1)
- 4) Connect 2 cavity Deutsch, Blu/Org & Blk, to 323069 valve.

wiring harness on next page for reference



CURB BRUSH ASSEMBLY

MODIFICATIONS REQ'D FOR S/N 21A11 AND PRIOR

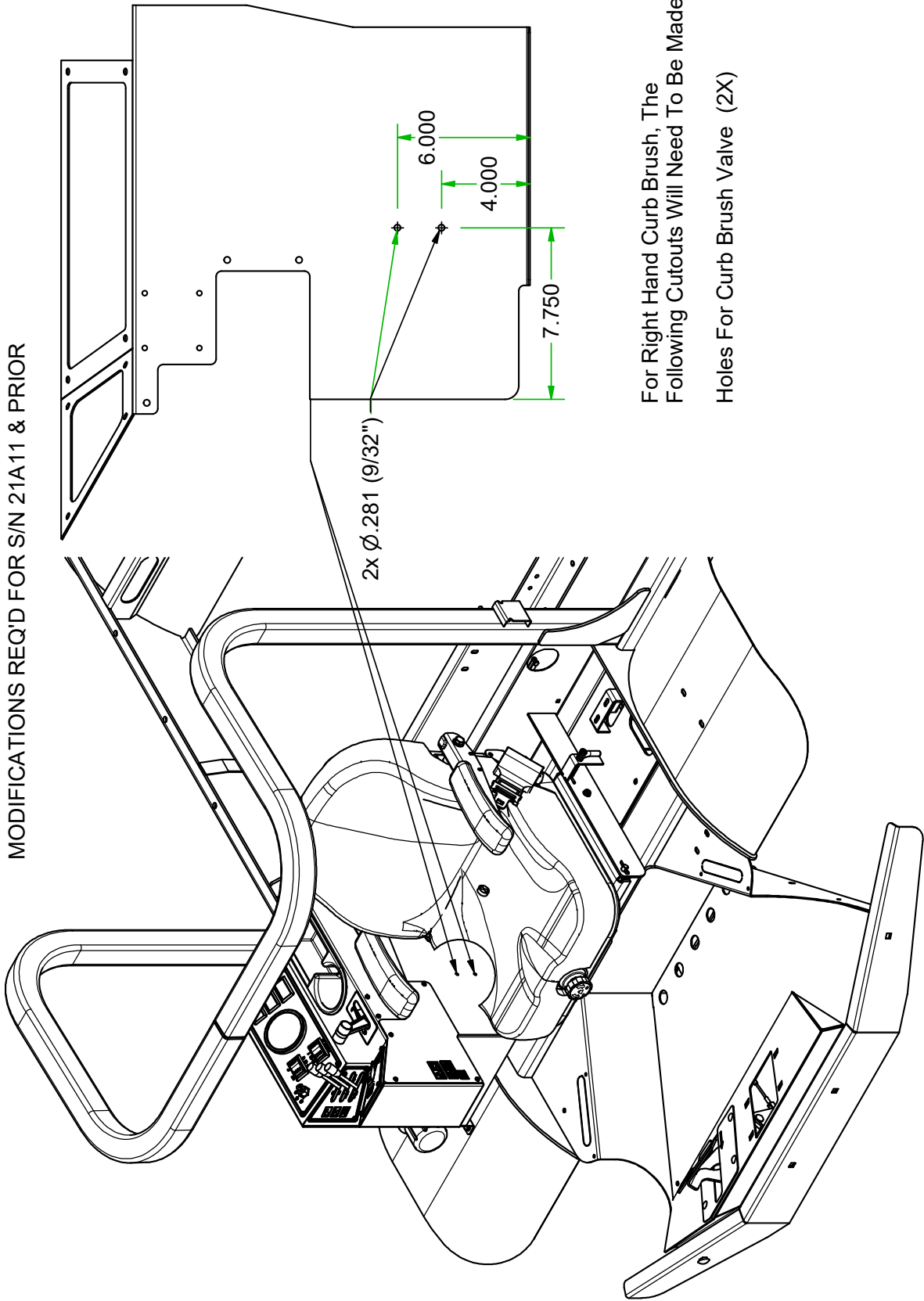


For Left Hand Curb Brush, The Following Cutouts Will Need To Be Made.

- A. Cutout For Handle Mount (1X)
- B. Holes For Curb Brush Plate Mount (2X)
- C. Pivot Hole For Curb Brush Handle (1X)
- D. Gas Spring Mount Hole (1X)
- E. Hose Clamp Hole Mount

CURB BRUSH HYDRAULICS

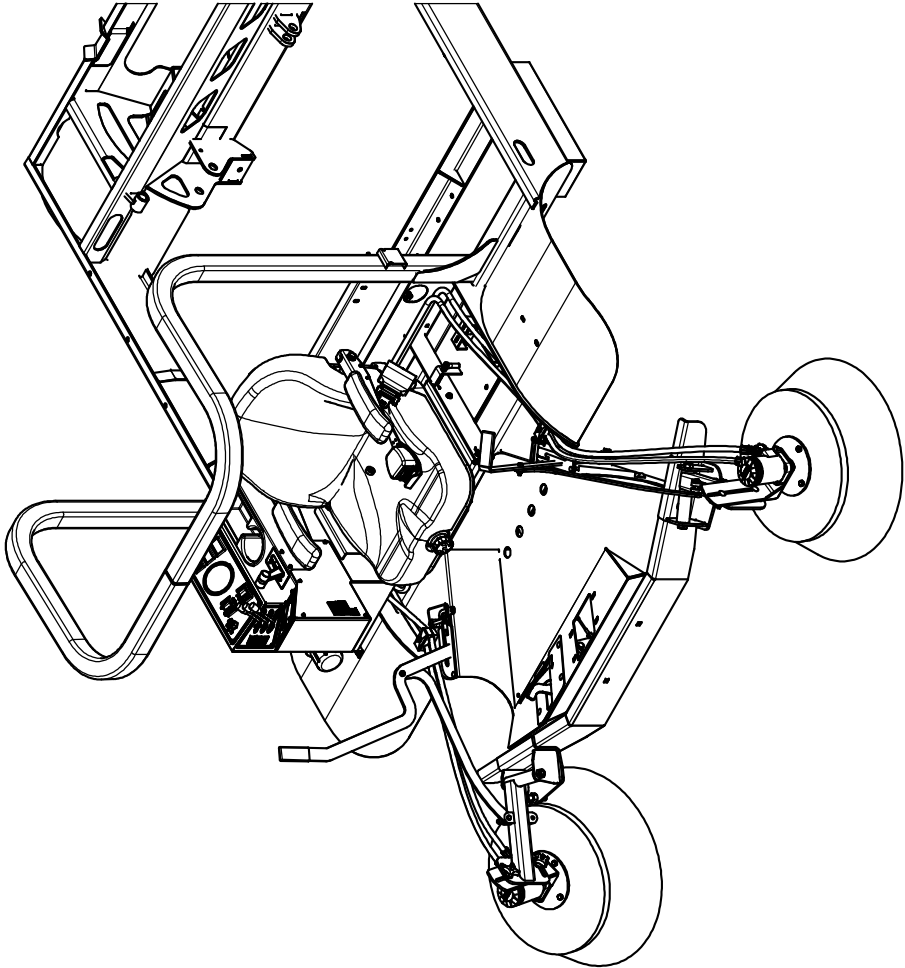
MODIFICATIONS REQ'D FOR S/N 21A11 & PRIOR



HAWK DUAL CURB BRUSH INSTALL

USE ASSEMBLY INSTRUCTIONS INCLUDED
WITH 300090 AND 300092 FOR ASSEMBLING
BRUSH MOUNTS AND LINKAGE.

Parts List		
ITEM	QTY	PART # DESCRIPTION
1	4	110290 NUT, 1/4-20 W/ Z FLANGE
2	2	110412 BOLT, 1/4-20 X 3.5
3	4	110788 BOLT, 10-24 X .375 STAINLESS, PHILLIPS
4	1	120219 ADAPTER, 6MJ-6MB 45
5	1	317423 SHIELD, DUAL CB VALVE
6	1	320404 HOSE ASSY, CB DUAL INLET
7	1	332071 HARNESS, CURB BRUSH DUAL
8	1	802035 BOX, PLASTIC, MANUAL OVERRIDE
9	1	810747 SWITCH SHIM
10	1	810818 MOUNT, ARM REST SWITCH



REV: A

300094

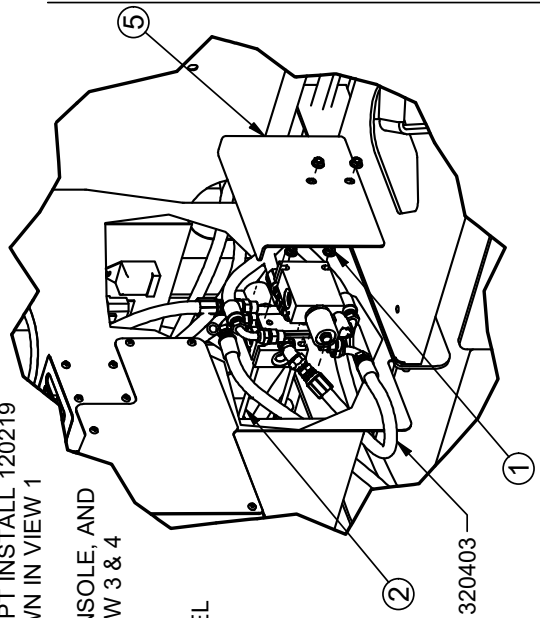
CURB BRUSH HYDRAULICS

MOTOR VALVE INSTALLATION

1) INSTALL FITTINGS PER 300090 & 300092, EXCEPT INSTALL 120219 IN PLACE OF (1) 120319, IN RH VALVE, AS SHOWN IN VIEW 1

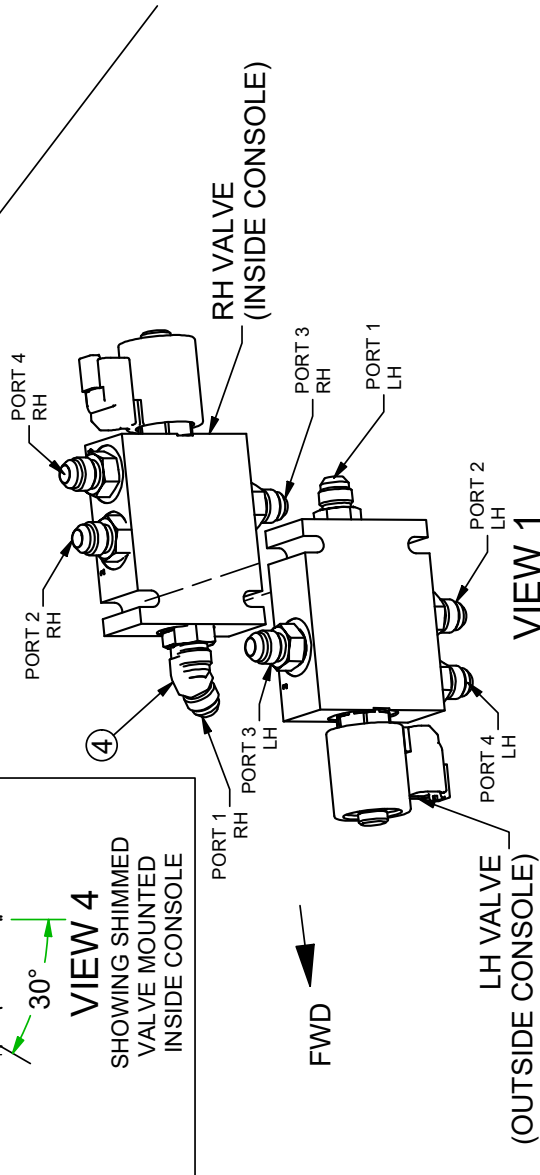
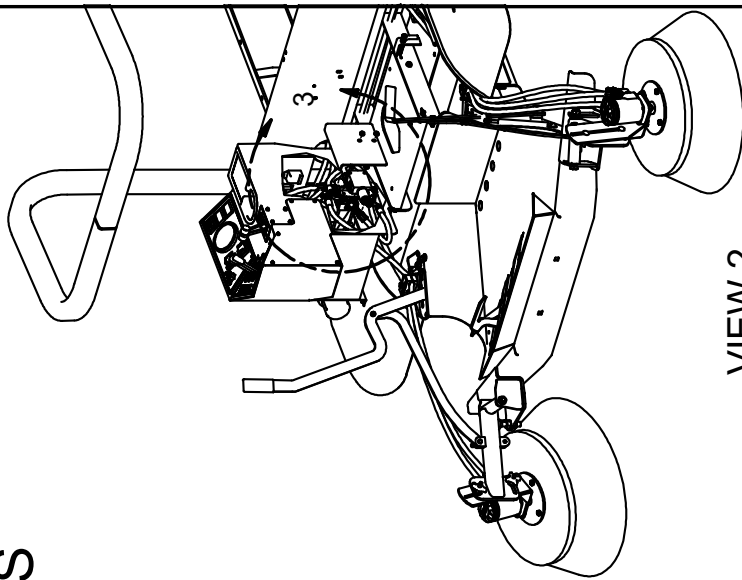
2) ATTACH RH VALVE (323069) TO INSIDE OF CONSOLE, AND LH VALVE TO OUTSIDE OF CONSOLE. SEE VIEW 3 & 4

3) INSTALL SHIELD (317423). SEE VIEW 3 & 4



DETAIL 3

VIEW 2
VIEW OF CONTROL PANEL



VIEW 1
323069 VALVE LAYOUT VIEW

VIEW 4

SHOWING SHIMMED
VALVE MOUNTED
INSIDE CONSOLE

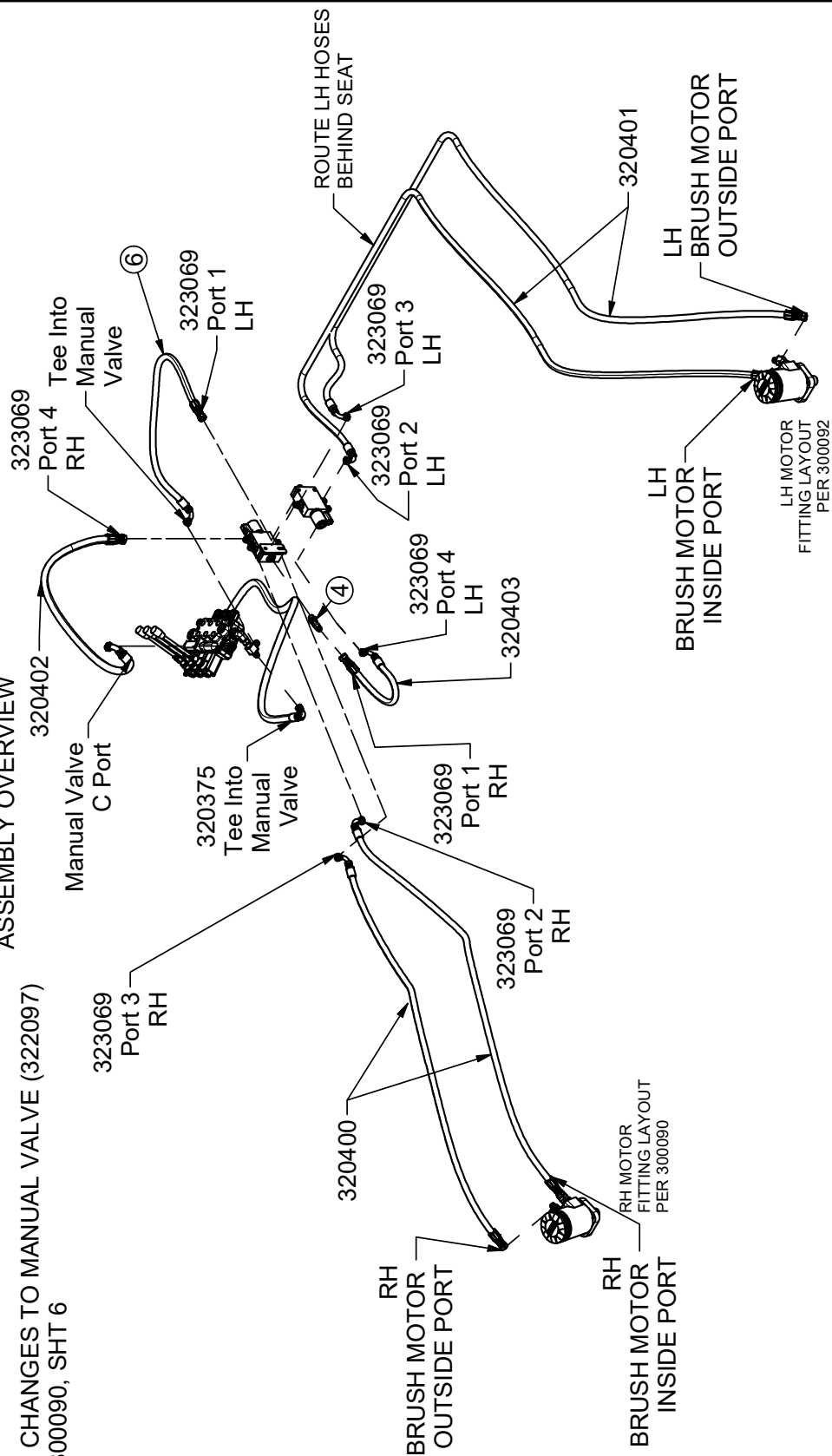
FWD

LH VALVE
(OUTSIDE CONSOLE)

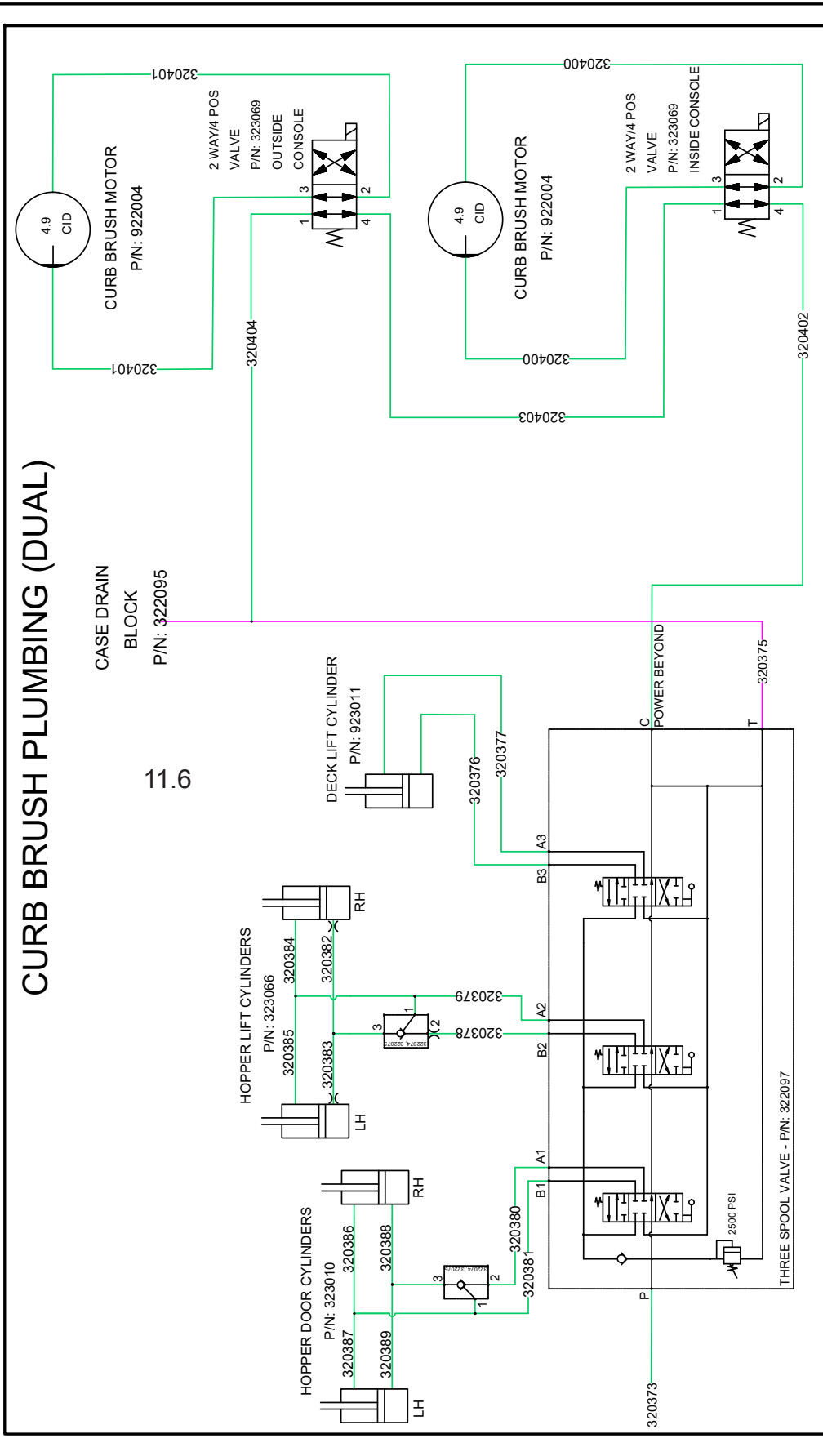
CURB BRUSH HYDRAULICS

ASSEMBLY OVERVIEW

MAKE CHANGES TO MANUAL VALVE (322097)
PER 300090, SHT 6



CURB BRUSH PLUMBING (DUAL)



CURB BRUSH SWITCH & ELECTRICAL INSTALLATION

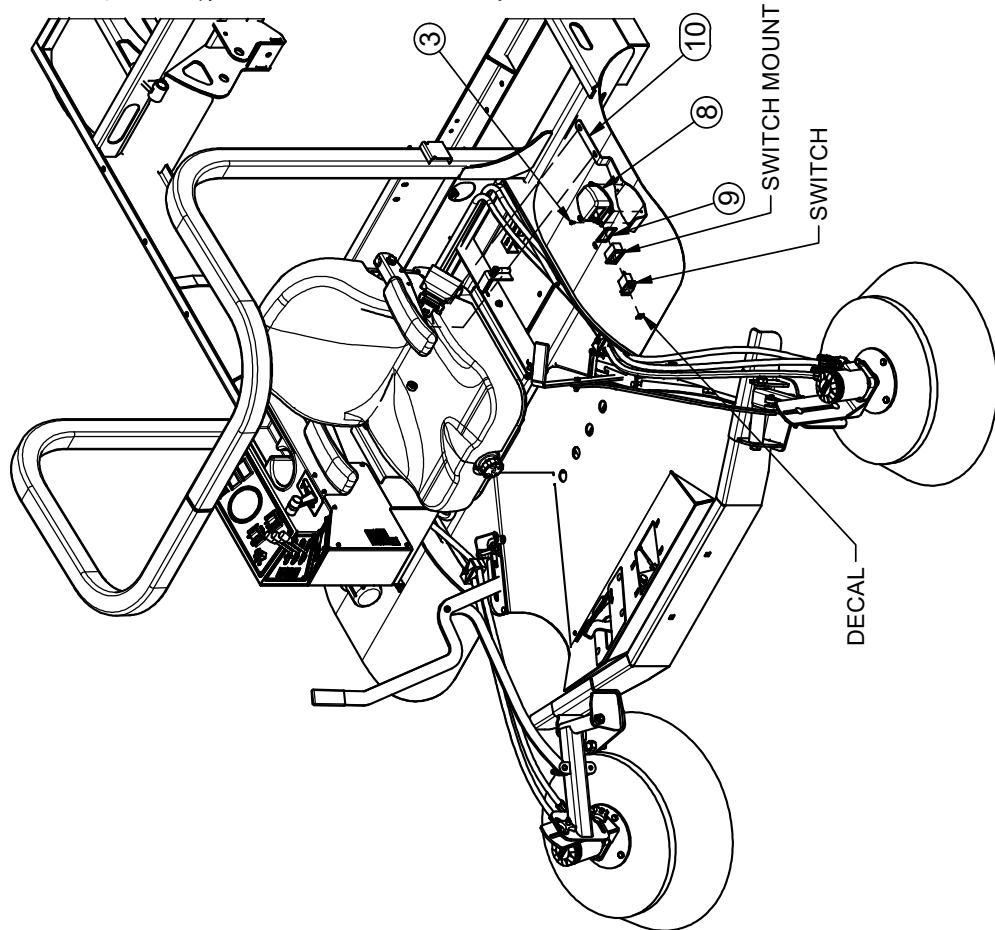
To Install Wiring Harnesses (332070 & 332071):

- 1) Disconnect harness 332064 & 332063 at the 6 cavity Deutsch connector. This plug is located inside operator's console. It is the only 6 cavity Deutsch connector in the console. Connect harness 332064 and 332063 to the harnesses included with this kit (332070 & 332071)
- 2) Connect two, 2 cavity Deutsch, (Black Wire Only) to 2 of the 3 available accessory plugs (Harness 332064). These 2 cavity plugs should be located near the fuse block inside the console.
- 3) Remove the plastic plug(s) located on the console, insert the Packard 10 cavity switch (832005) into this cavity(s) and attach the wiring harness on the back side. 332070 to RH brush switch and 332071 to LH brush switch. (VIEW 1)
If no open socket is available for the LH switch, use the arm switch mount, provided with kit, to install LH switch on LH arm of operator's seat, as shown in VIEW 1.

Note: route LH switch harness through seat back cover, to ensure harness is secure during seat movement

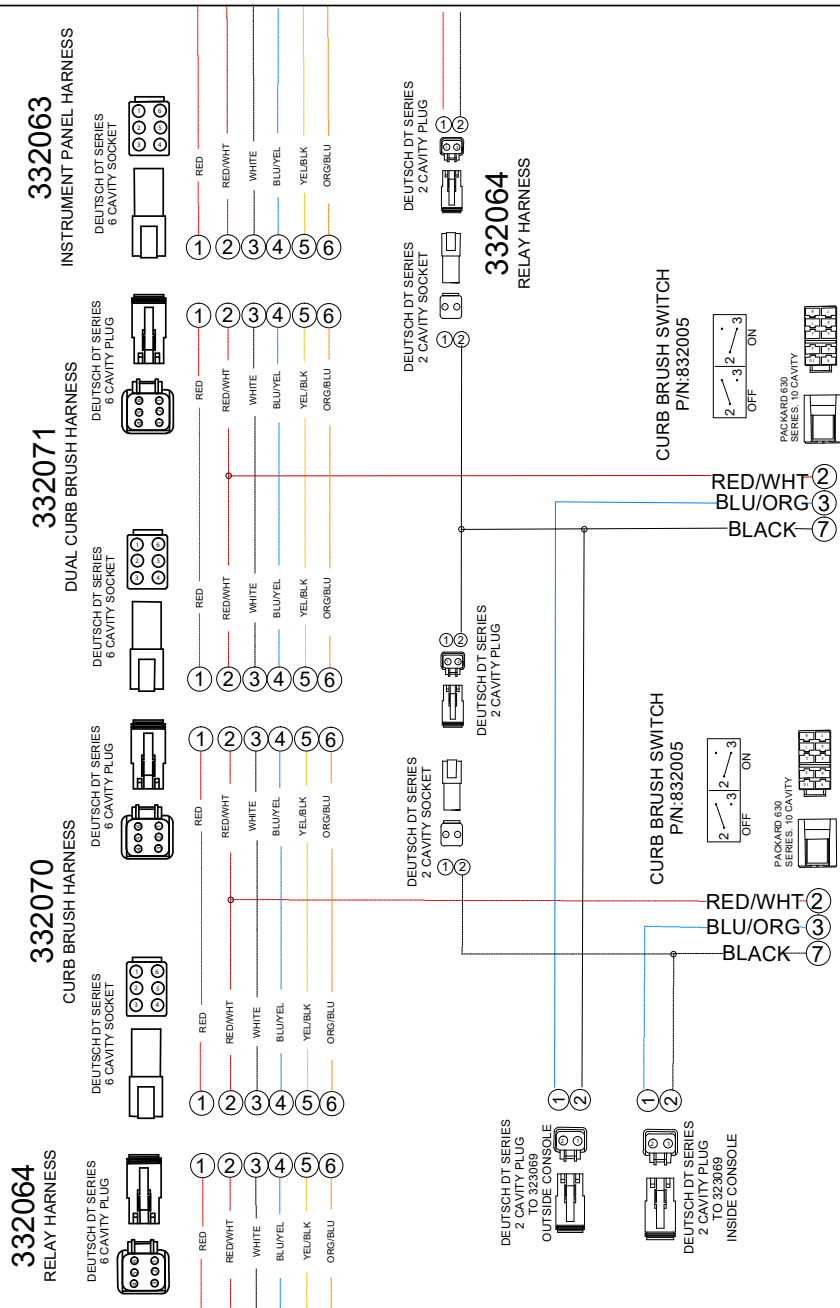
- 4) Connect 2 cavity Deutsch, Blu/Org & Blk, on 332070 harness to 332069 valve installed inside of console. Connect 2 cavity Deutsch, Blu/Org & Blk, on 332071 harness to 332069 valve installed outside of console.

wiring harness on next page for reference



VIEW 1

SWEEPER DUAL CURB BRUSH WIRING SCHEMATIC



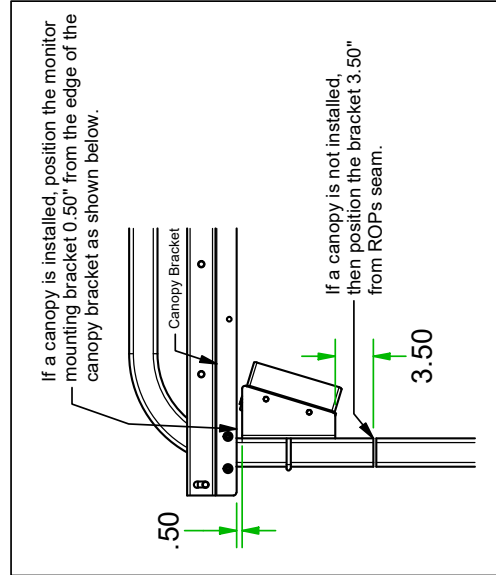
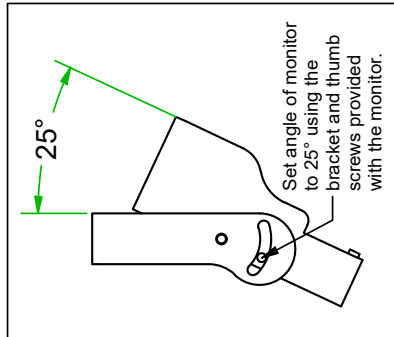
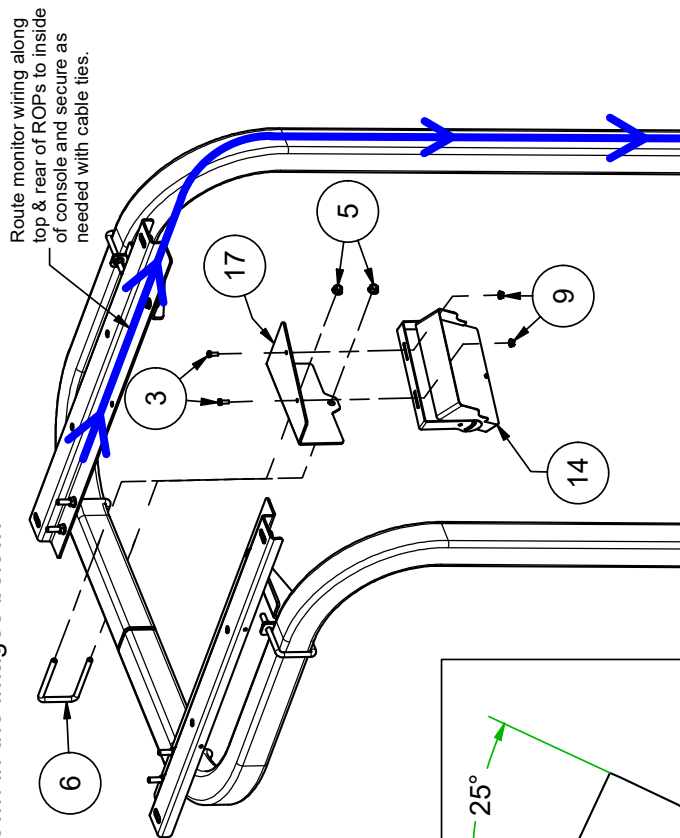
300095

REV: NC

1. Attach the monitor to the ROPs and route the monitor wiring as shown in the images below.

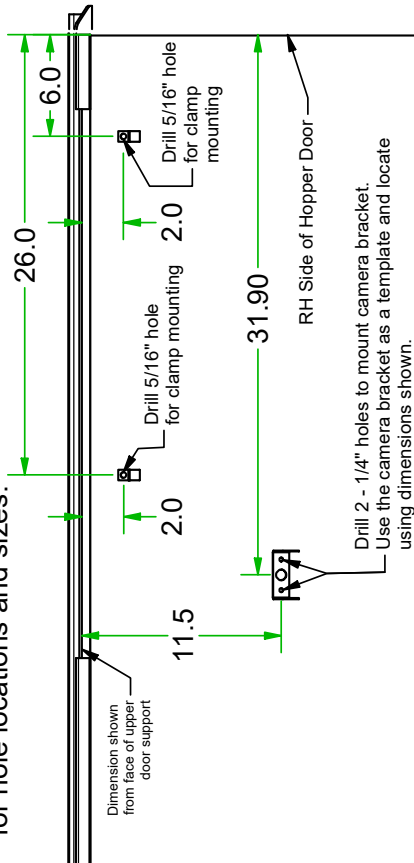
BACKUP CAMERA

FACTORY INSTALL P/N: 300096
CUSTOMER INSTALL: 300095

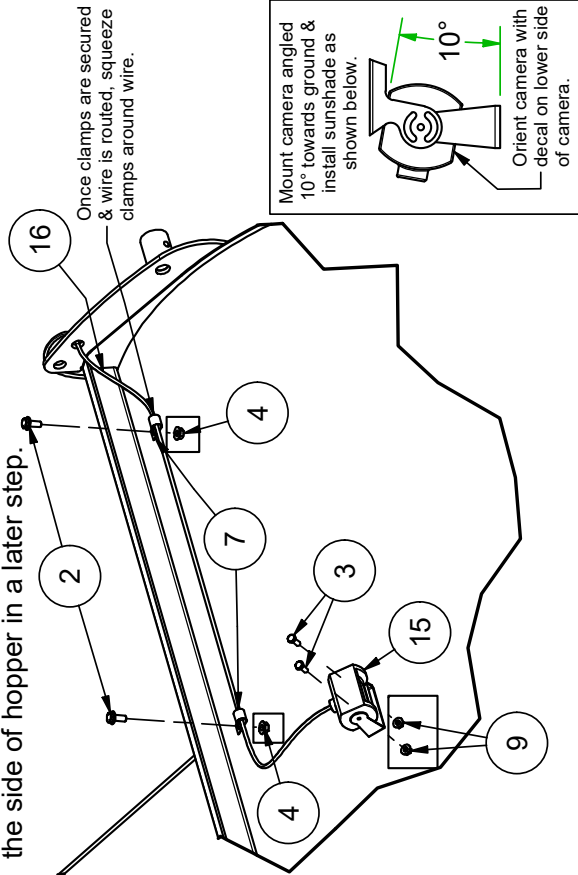


Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	20	100578	CABLE TIE 14" BLACK 50 Lb Tens
2	5	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
3	6	110484	BOLT, M6x1 x 16 Gr 10.9
4	2	110606	NUT, 5/16-18 WIZ FLANGE
5	2	110645	NUT, 3/8-16 WIZ FLANGE
6	1	111185	BOLT, SQUARE U, 3/8-16 x 2.50 x 4.0
7	11	111206	Clamp, 1/2" Open Cable, .344 Mounting Hole
8	1	111207	GROMMET, 3/16" ID X 5/8" OD X .063
9	6	112074	NUT, M6-1, FLANGE, GR. 8.8, ZINC
10	15 ft	130014	LOOM, 3/8 FLEX GUARD
11	1	130047	CONNECTOR, 2 CAVITY, DEUTSCH DT (DT-04-2P)
12	1	130048	SECONDARY LOCK, DEUTSCH DT (W2P)
13	2	132096	Terminal, Solid Pin, 18-16 Deutsch
14	1	302076	MONITOR, BACKUP CAMERA
15	2	302077	CAMERA, BACKUP
16	2	302109	CABLE, BACKUP CAMERA, 21'
17	1	317456	BRKT, MONITOR MOUNTING

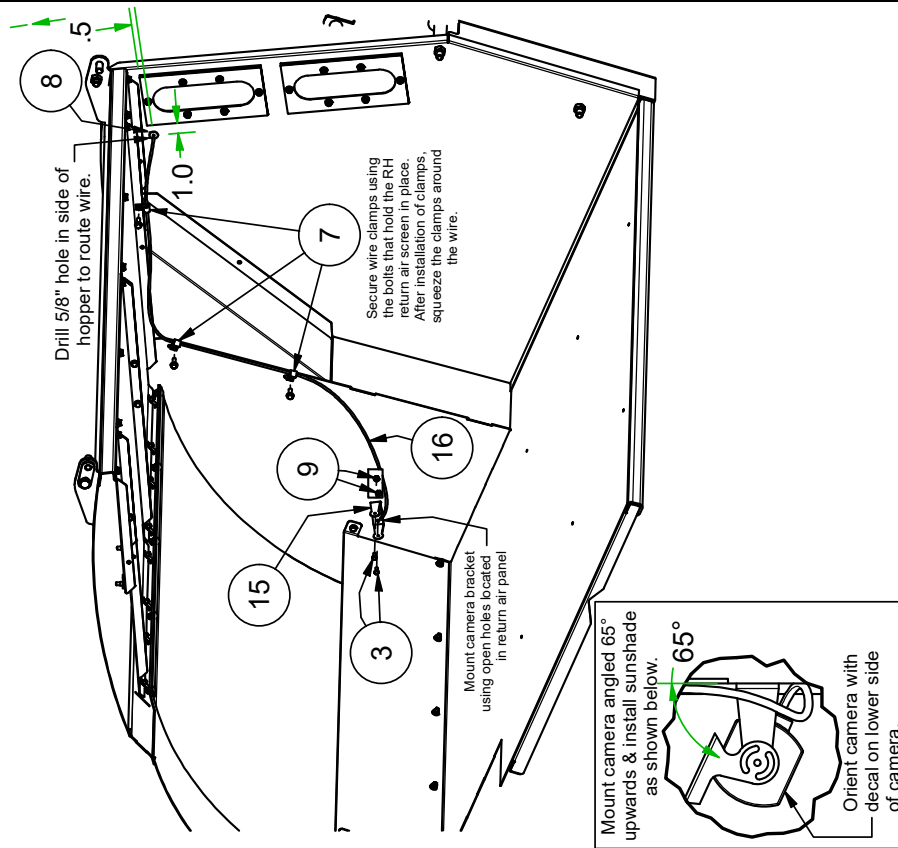
2. Drill holes into the top of the hopper door to mount the backup camera and the clamps to secure the wiring. See diagram below for hole locations and sizes.



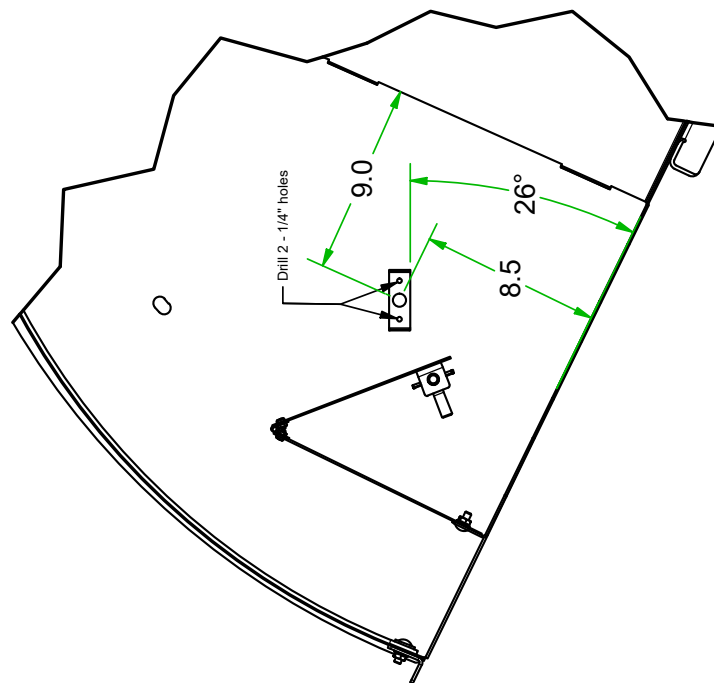
3. Attach camera to hopper door, route wire, and secure wire using the hardware shown in the diagram. Route wire through hole on RH side of hopper door. The wire will be secured on the side of hopper in a later step.



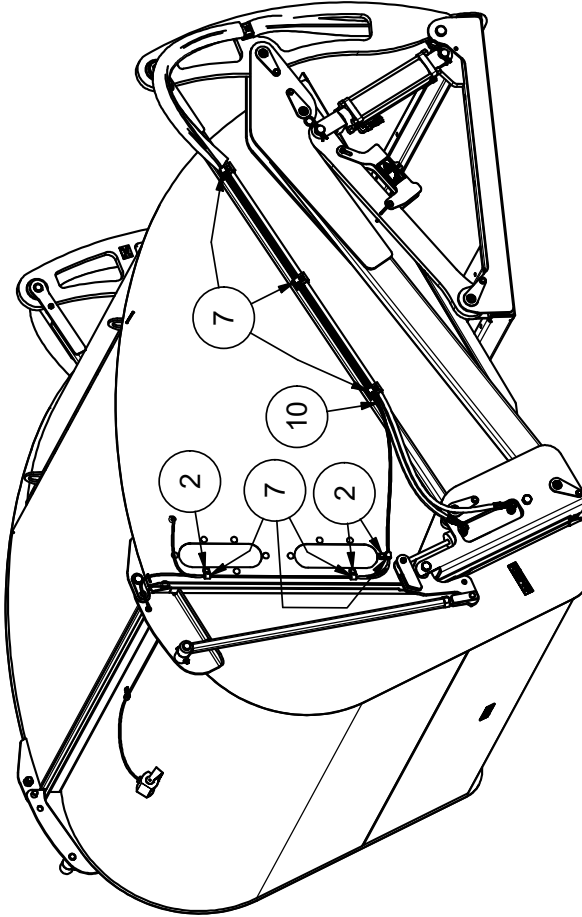
4a. Next, install the second camera on the inside of the hopper. This camera is used to show when the hopper is full. If the machine serial number is 22A10 or greater, then install as shown in the diagram below. If serial number is prior to 22A10, proceed to 4b for camera mounting.



4b. For machines with serial number prior to 22A10, place the debris door in the down position. The door will be remain in the down position after the installation of the camera. It is unnecessary for it to be in the up position. Place the camera mounting bracket at the following location and mark the two bolt holes. Then drill 2 - 1/4" holes for mounting bracket. Refer to 4a for attaching camera and routing wire.

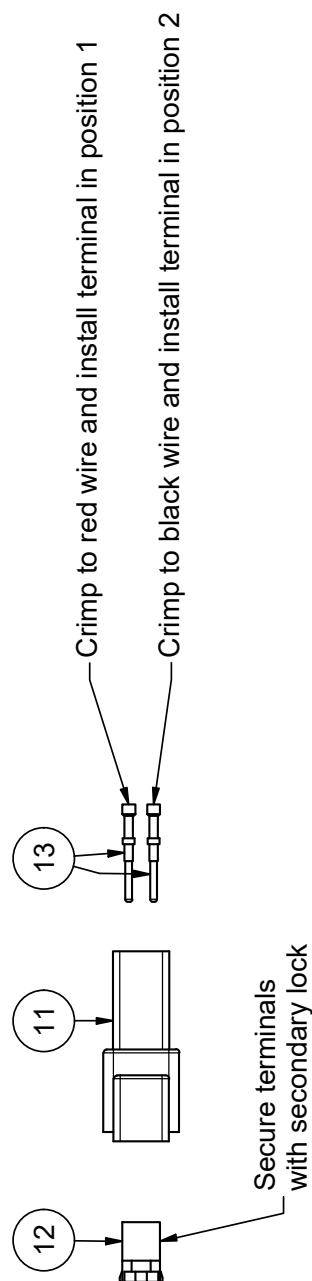


5. Install remaining wire clamps at the locations identified below. Remove carriage bolts on side of hopper and replace with the 110444 bolts. To attach the clamps on the upper arm, use the hardware installed. Route the two camera wires at the clamp locations and then through the engine compartment to below the console. Combine the two camera wires and place into 130014 corrugated loom where routed together. Secure wires in clamps located on the hopper by squeezing the clamps around the wires. Then raise the hopper to ensure that enough slack is left in the wires for the rotation of the hopper when in the UP position. When in the UP position, secure the camera wires to the hopper arm by squeezing the clamps and using cable ties as needed. Also secure the wires through the engine compartment using cable ties.



6. Now that all wires are routed below the console, the wires can be connected. Connect the camera wire installed on the hopper door to the monitor harness connector labeled "CAM1." Then, connect the camera wire installed inside the hopper to the monitor harness labeled "CAM2." Next, install the connector and terminals to the red (power) and black (ground) wires on the monitor harness. This connector can then be plugged into 1 of the 3 open mating connectors located below the console. This will power up the backup camera system when the key is turned on. Secure all wires using the remaining cable ties.

***If 3 attachments are already installed on the machine, then an additional harness can be added to the machine to add additional connectors to supply power. The part number for this harness is 332072.

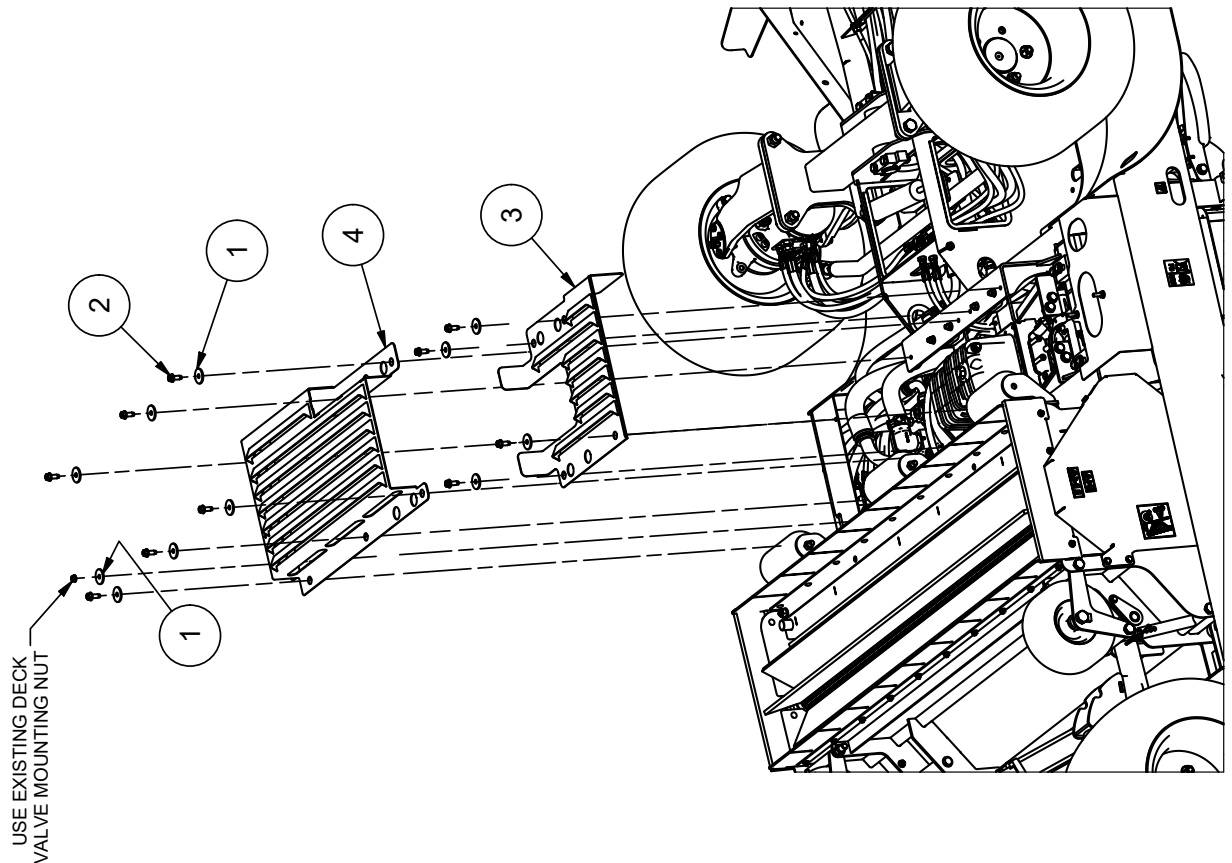


7. Turn ON monitor to verify that both cameras are working properly. Adjust camera angles as needed for the best view.

ENGINE AIR DEFLECTOR KIT INSTALLATION

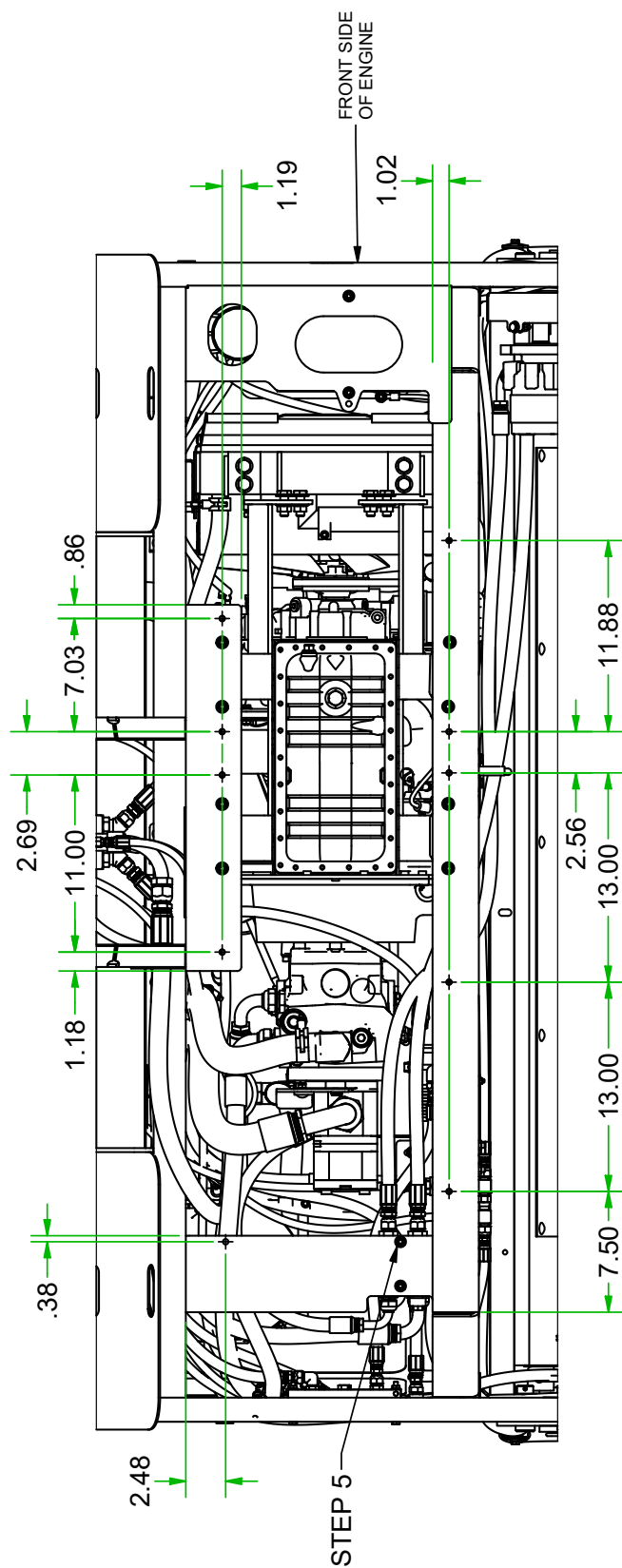
MOUNTING INSTRUCTIONS ON PAGE 2

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	11	111186	WASHER, 1.50 x .406 x .125, FLAT
2	10	111269	BOLT, 3/8-16 X 1.0, THREAD CUT, WIZ FLNG, ZINC
3	1	315474	WELDMENT, FRONT ENGINE AIR DEFLECTOR
4	1	315475	WELDMENT, REAR ENGINE FAN DEFLECTOR



ENGINE AIR DEFLECTOR SHIELDS MOUNTING INSTRUCTIONS

1. FOR MACHINE SERIAL NUMBERS BEFORE 25A25, MARK THE 10 LOCATIONS BELOW. FOR SERIAL NUMBERS 25A25+, SKIP TO STEP 4
2. MOCK UP FITMENT OF DEFLECTOR SHIELDS TO CHECK HOLE LOCATIONS ARE CORRECT.
3. USING A DRILL BIT SIZE R (0.339"), DRILL HOLES AT THE 10 MARKED LOCATIONS.



4. USING THE SUPPLIED THREAD CUTTING SCREWS (111269), USE AN IMPACT DRIVER TO PRE THREAD THE 10 HOLES IN THE FRAME.
5. REMOVE THE INSIDE DECK VALVE MOUNTING NUT, AND THE THREAD CUTTING SCREWS.
6. INSTALL THE TWO SHIELDS AT THE 11 MOUNTING LOCATIONS USING THE SUPPLIED HARDWARE. REUSE THE NUT.
7. CHECK FOR HYDRAULIC HOSE CLEARANCE SO THAT NO HOSES ARE RUBBING THE SHIELD.
8. START ENGINE AND CHECK FOR EXCESSIVE SHIELD VIBRATION AND REPOSITION AS NECESSARY.

NOTES

Harper Industries, Inc.
151 E. Highway 160
Harper, KS 67058

Telephone: 620-896-7381
Toll-Free: 800-835-1042
Fax: 620-896-7129

Website: www.harperindustries.com

E-mail: info@harperindustries.com