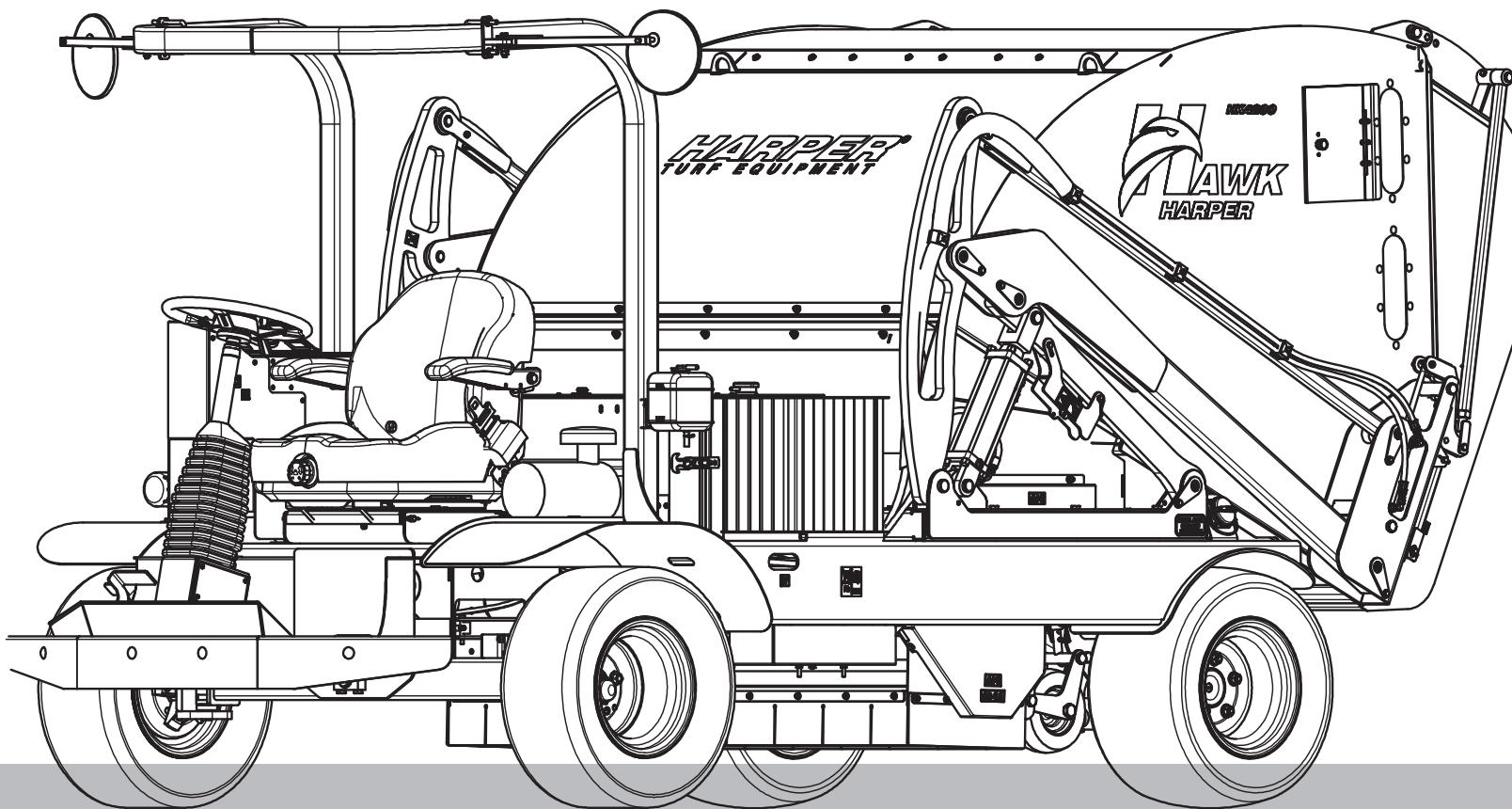


HK 4200

Serial Number: 23A01+
Part # 301015



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 HK4200 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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HK4200

HARPER
TURF EQUIPMENT

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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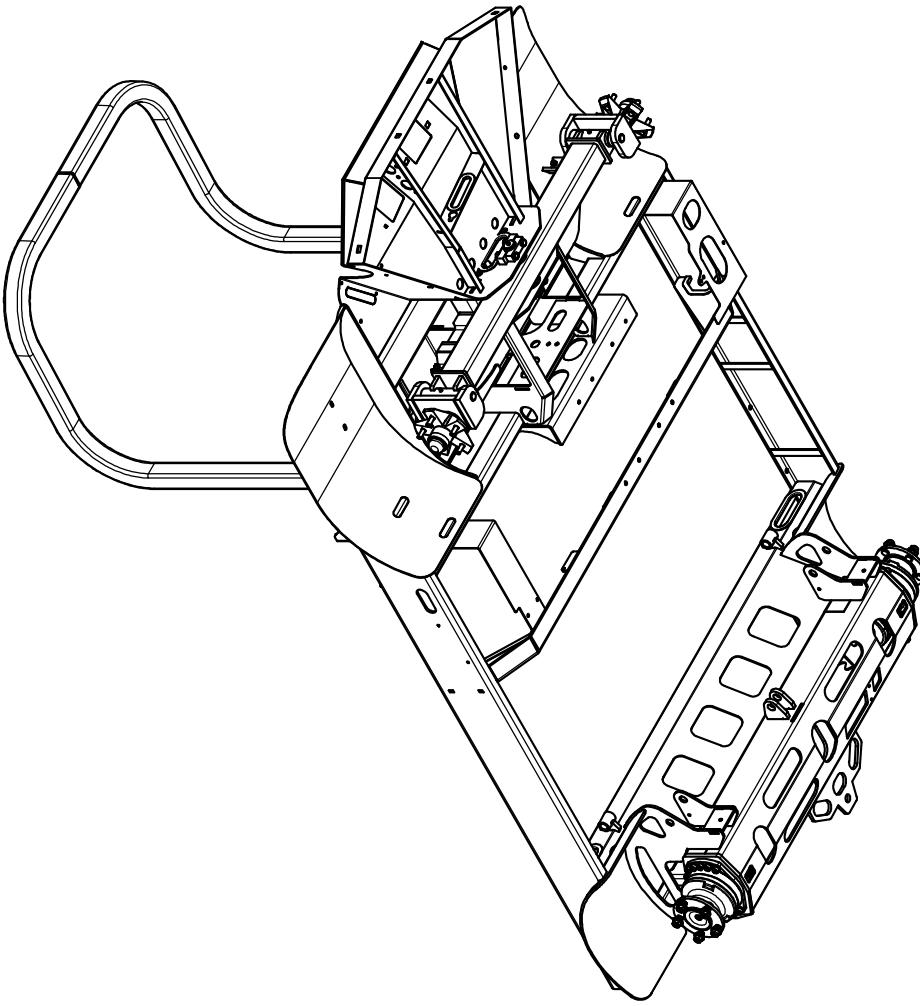
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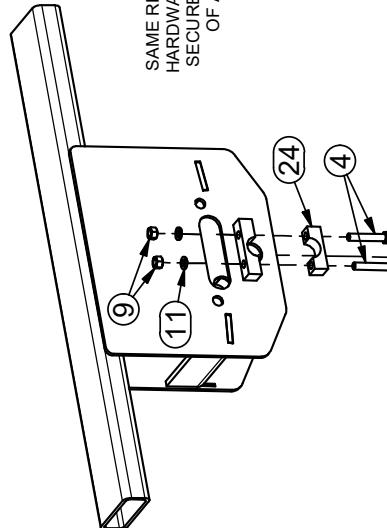
WHEEL MOTOR & AXLE INSTALLATION

| Parts List | | | |
|------------|-----|--------|--------------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 7' | 100365 | MOLDING - EDGE GUARD, 5/32 |
| 2 | 2 | 102043 | BEARING - THRUST, 1.0 ID X 5/8 T |
| 3 | 1 | 102136 | Clevis Pin, 5/8 x 1.5 |
| 4 | 4 | 110129 | BOLT, 1/2-13 X 2.75 HEX |
| 5 | 20 | 110244 | BOLT, 1/2-13 X 1.5 SHCS |
| 6 | 2 | 110425 | BOLT, 3/8-16 X 1.25 |
| 7 | 2 | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE |
| 8 | 1 | 110600 | NUT, 5/16-18, UNITORQUE LOCK |
| 9 | 4 | 110610 | NUT, 1/2-13 |
| 10 | 1 | 110655 | WASHER, 5/16" FLAT STANDARD |
| 11 | 24 | 110666 | WASHER, 1/2" LOCK |
| 12 | 4 | 110826 | NUT, 3/8-16 GR 5 |
| 13 | 1 | 110862 | WASHER - THRUST, GUS MTI-24 |
| 14 | 2 | 110888 | SNAP RING - EXT, 1-1/2 |
| 15 | 1 | 111190 | BOLT, 3/8 X 2.0 SHOULDER SHCS |
| 16 | 11' | 112034 | Rubber Seal, .625 X .25 |
| 17 | 2 | 120027 | ADAPTER, 4MB-4MJ 45 |
| 18 | 6 | 120249 | ADAPTER, 4MJ-6MB |
| 19 | 4 | 120446 | ADAPTER, 8MJ-10MB |
| 20 | 1 | 200029 | COTTER PIN, 5/32 X 1 |
| 21 | 2 | 302129 | NUT, 7/8-18 HEX JAM GR 2 |
| 22 | 1 | 305109 | ASSY, LH SPINDLE & HUB |
| 23 | 1 | 305110 | ASSY, RH SPINDLE & HUB |
| 24 | 2 | 311439 | KEEPER - AXLE PIVOT, LOWER |
| 25 | 2 | 312032 | Tie Rod End, RH |
| 26 | 1 | 315350 | FRAME WELDMENT, SWEEPER |
| 27 | 1 | 315394 | WELDMENT, FRONT AXLE, 2WD |
| 28 | 2 | 315397 | WELDMENT, 2WD KINGPIN |
| 29 | 1 | 315398 | WELDMENT, ROUND STEERING LINK |
| 30 | 1 | 317174 | PIN, FRONT AXLE |
| 31 | 1 | 323010 | CYLINDER - STEERING, 1-3/4 X 6 |
| 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 | 3 | 510174 | GREASE ZERK, 1/4-28 ST |



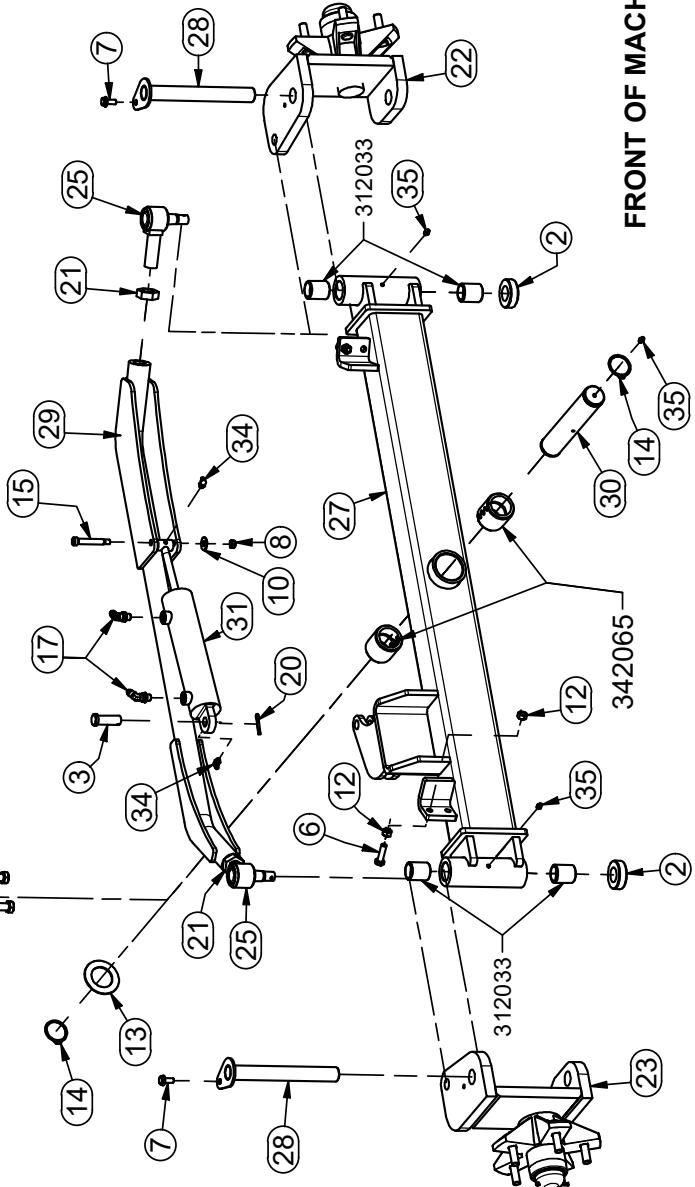
FRONT AXLE INSTALLATION

SAME RETAINER AND
HARDWARE USED TO
SECURE REAR SIDE
OF AXLE PIN

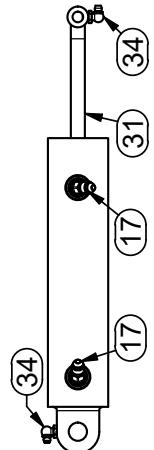


ADJUSTING THE ROD ENDS & SETTING ALIGNMENT

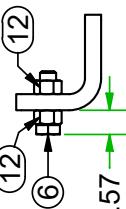
1. START BY ADJUSTING THE TIE ROD LOCATED ON THE RH SIDE OF THE MACHINE. EXTEND STEERING CYLINDER COMPLETELY AND ADJUST THE RH TIE ROD SO THAT THE SPINDLE CONTACTS THE STEERING STOP WHEN THE CYLINDER IS FULLY EXTENDED.
2. THEN ADJUST THE TIE ROD END LOCATED ON THE LH SIDE OF THE MACHINE SO THAT THE WHEEL HUB FACES ARE PARALLEL AS A STARTING POINT, THE APPROXIMATE DIMENSION IS 42.0° BETWEEN THE ROD ENDS (CTR TO CTR).



STEERING CYLINDER ADAPTER & ZERK ORIENTATION



**STEERING STOP INSTALLATION
- INSTALL AS SHOWN BELOW**



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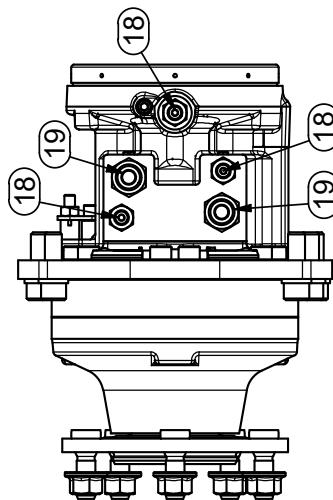
WHEEL MOTOR INSTALLATION

305105

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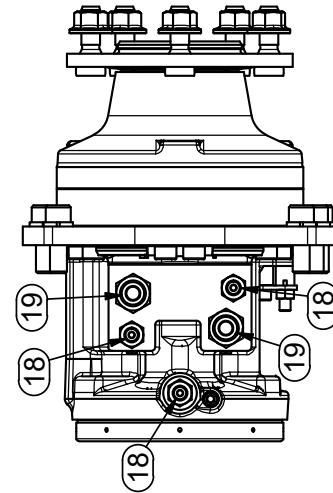
LH Wheel Motor:

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



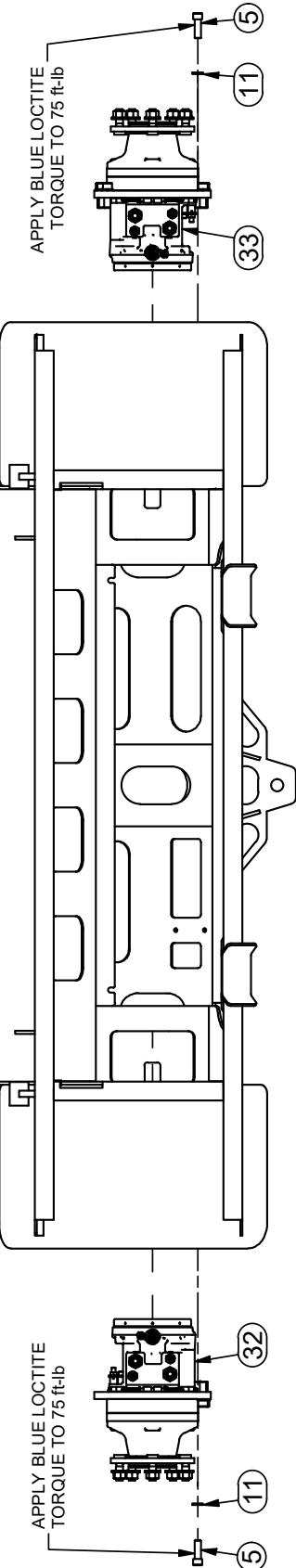
RH Wheel Motor:

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

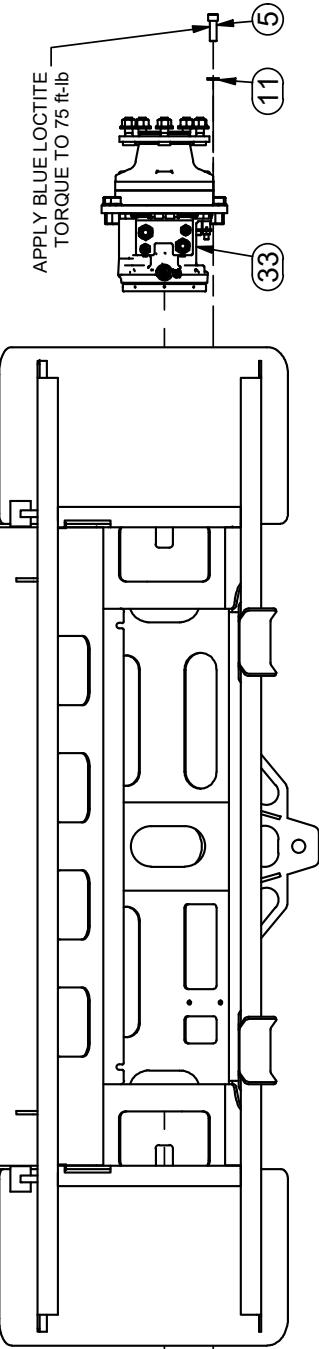


| Parts List | | |
|------------|------|--------|
| ITEM | Q.TY | PART # |
| 5 | 20 | 110244 |
| 11 | 24 | 110666 |
| 18 | 6 | 120249 |
| 19 | 4 | 120446 |
| 32 | 1 | 323057 |
| 33 | 1 | 323058 |
| 22 | 1 | 305109 |
| 23 | 1 | 305110 |

APPLY BLUE LOCTITE
TORQUE TO 75 ft-lb

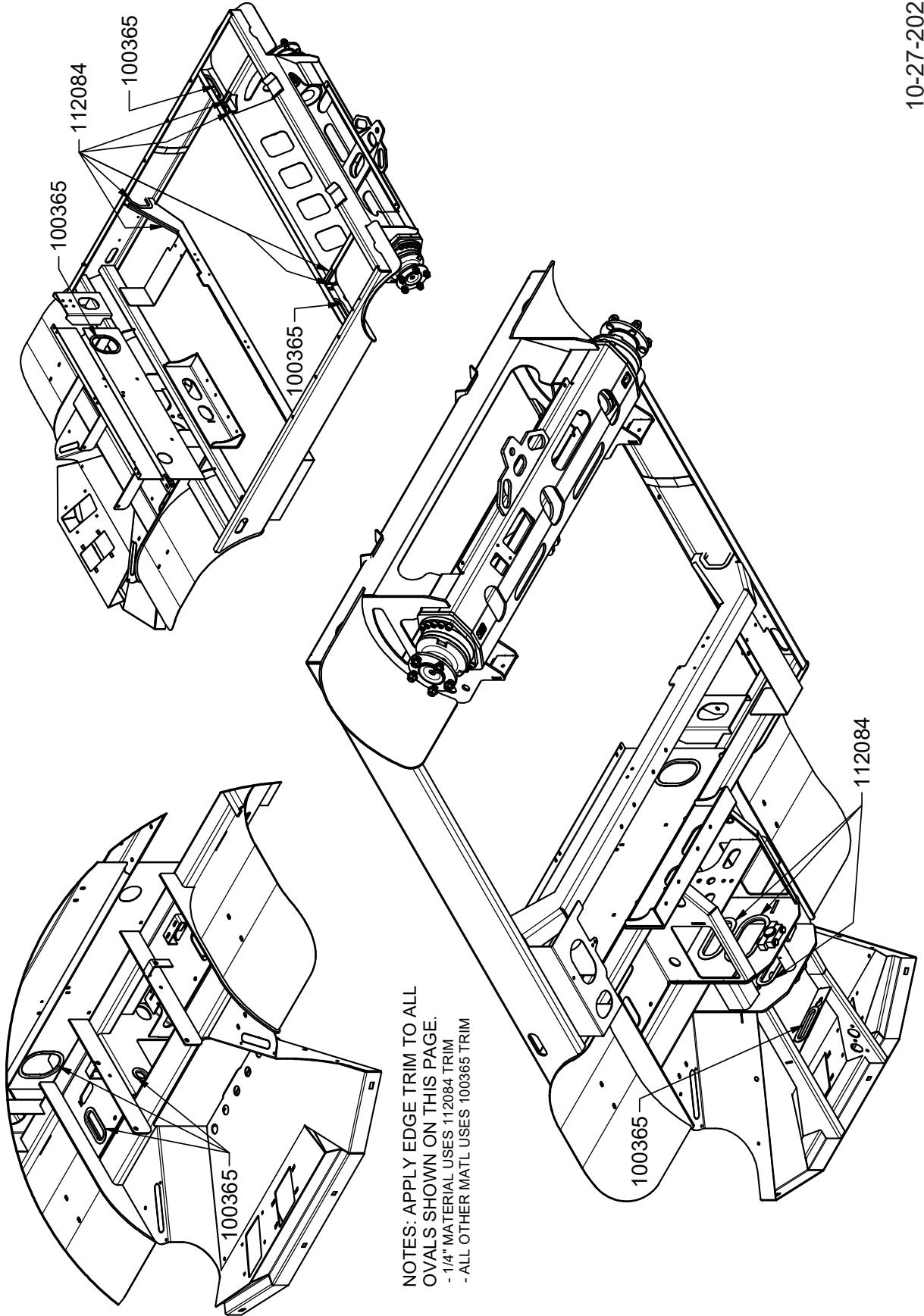


APPLY BLUE LOCTITE
TORQUE TO 75 ft-lb



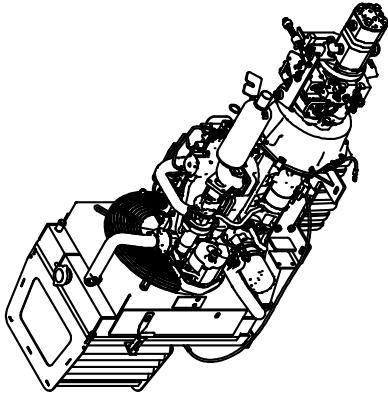
10-27-2021

EDGE TRIM PLACEMENT



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

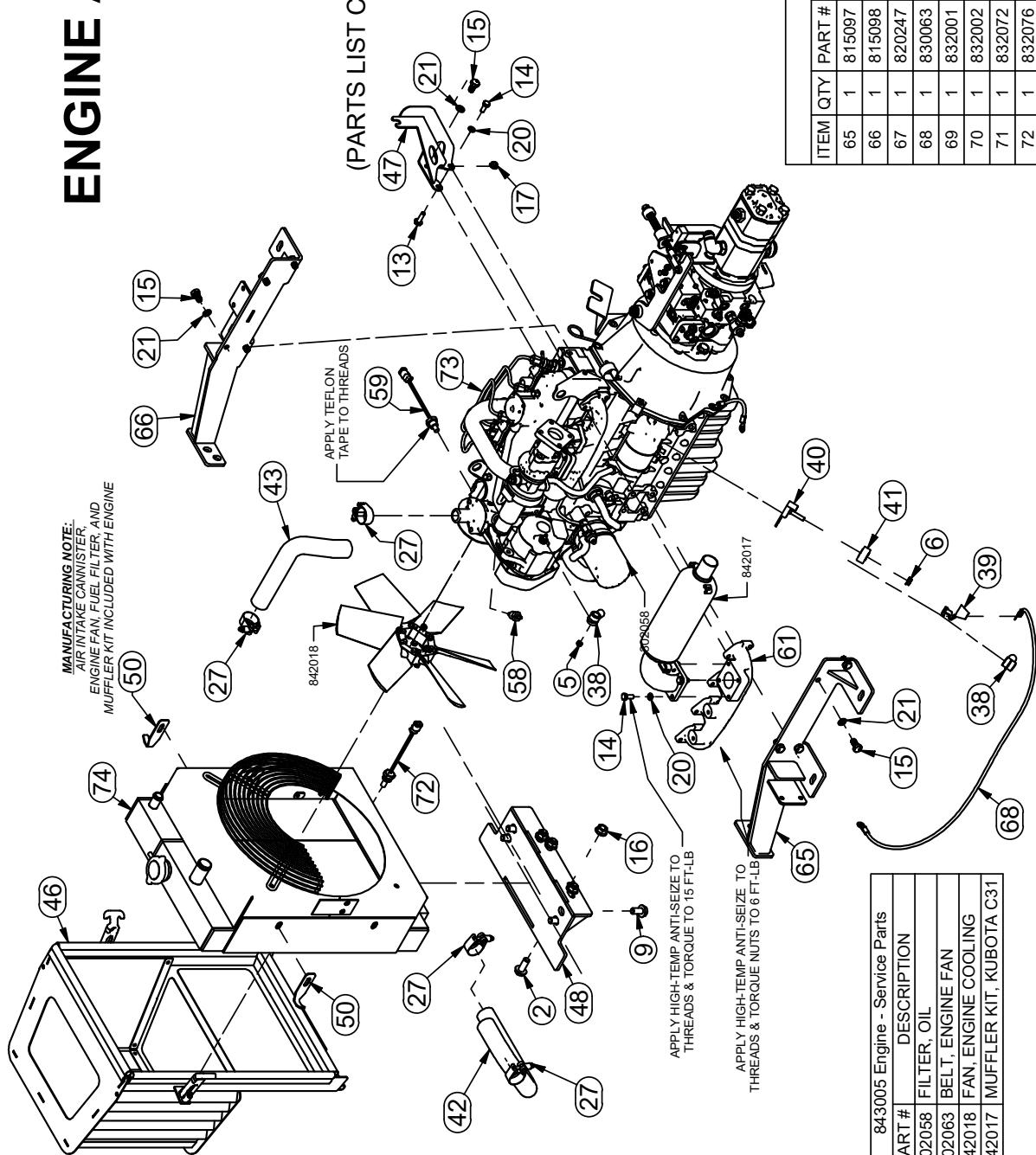
ENGINE ASSEMBLY



(PARTS LIST CONTINUED
ON PAGE 2)

| Parts List | | | |
|------------|-----|--------|---|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 1 | 102074 | Clamp, Adel .75w x 1.25id x 406 Hole |
| 2 | 4 | 110001 | BOLT, 1/2-13 X 1.25, WIZ FLANGE |
| 3 | 2 | 110020 | Bolt, 5/16-18 X 0.75 in Carriage |
| 4 | 6 | 110069 | WASHER, 5/16" FLAT SAE |
| 5 | 3 | 110074 | Hex Nut M6 X 1.0 Thd |
| 6 | 1 | 110141 | NUT, M8 X 1.25 WIZFLANGE |
| 7 | 2 | 110155 | WASHER, 3/8" FLAT SAE |
| 8 | 2 | 110176 | BOLT, M10x1.5 x 35 SHCS |
| 9 | 4 | 110220 | BOLT, 1/2-13 X 1, WIZ FLANGE |
| 10 | 1 | 110300 | COTTER PIN, 3/32 X 0.75 |
| 11 | 2 | 110419 | BOLT, 1/2-13 X 1.75 |
| 12 | 2 | 110422 | BOLT, 5/16-18 X .75 |
| 13 | 1 | 110459 | BOLT, 5/16-18 X 1, WIZ FLANGE |
| 14 | 5 | 110469 | BOLT, M8x1.25 x 20 Gr 10.9 |
| 15 | 9 | 110560 | BOLT, M10-1.25 X 20 HHCS 8.8 PLAIN |
| 16 | 4 | 110588 | NUT, 1/2-13 WIZ FLANGE |
| 17 | 3 | 110606 | NUT, 5/16-18 WIZ FLANGE |
| 18 | 3 | 110623 | NUT, 5/16-24 |
| 19 | 2 | 110666 | WASHER, 1/2" LOCK |
| 20 | 7 | 110674 | WASHER, 5/16" LOCK |
| 21 | 11 | 110689 | Washer, M10, Lock |
| 22 | 2 | 110692 | WASHER, 6mm LOCK |
| 23 | 1 | 110728 | CLAMP, ADEL DOUBLE .75WX.5IDX.406HOLE |
| 24 | 2 | 110931 | BOLT, M6x1 x 25 Gr 8.8 |
| 25 | 1 | 111196 | Connecting Rod, 5/16-24 X 5/16-24 X 6.0, ZINC |
| 26 | 1 | 111197 | Spring, Compression 5.12 L X .54 OD X .049 Wire |
| 27 | 4 | 112101 | CLAMP, 1.50", T-BOLT |
| 28 | 1 | 120144 | ADAPTER, 6MJ-10MB |
| 29 | 1 | 120224 | ADAPTER, 10MJ-10MB90 |
| 30 | 2 | 120249 | ADAPTER, 4MJ-6MB |
| 31 | 1 | 120254 | ADAPTER, 12MJ-12MB |
| 32 | 2 | 120256 | ADAPTER, 12MJ-16MB |

ENGINE ASSEMBLY

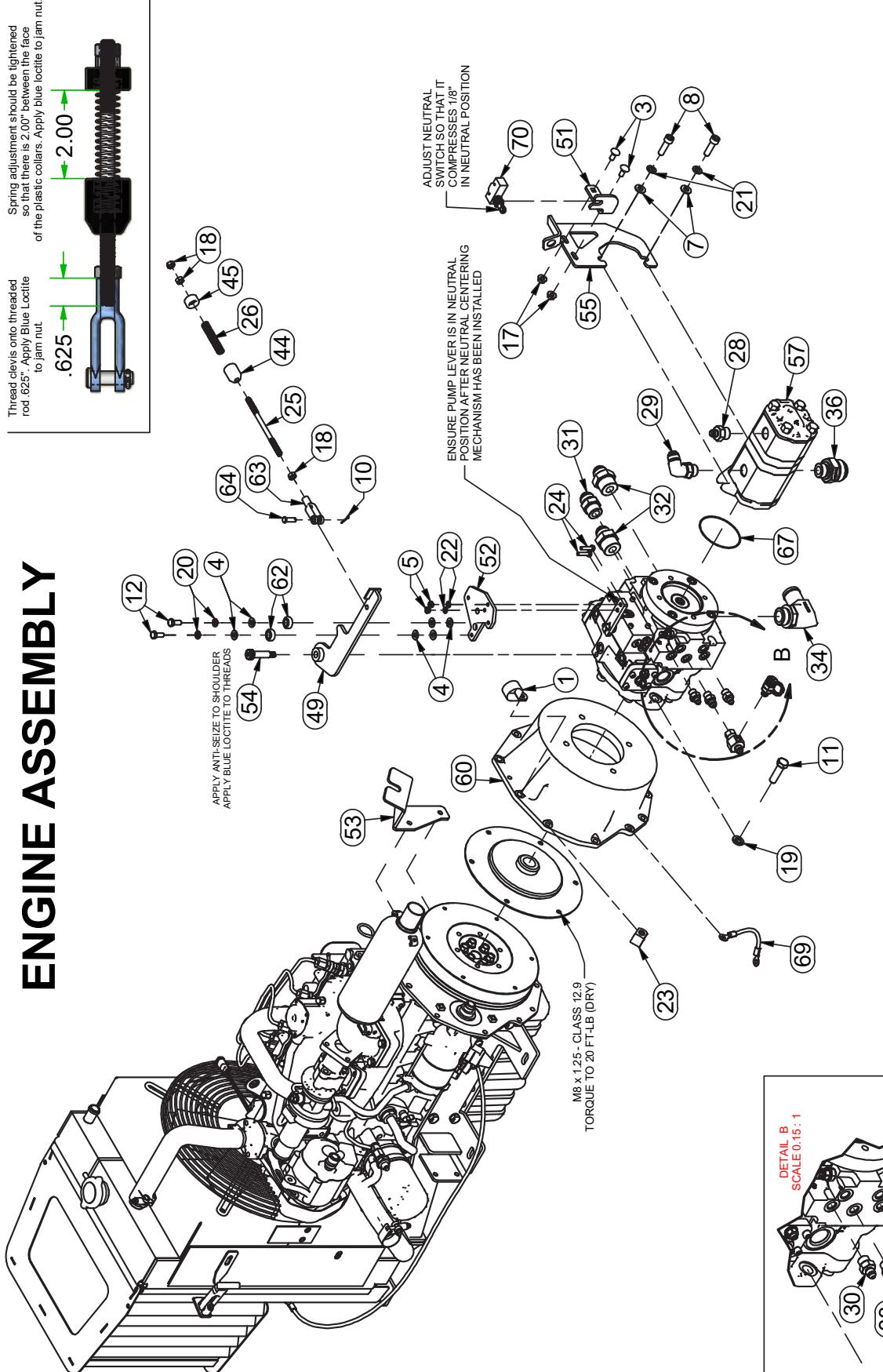


| Parts List | | |
|------------|-----|--------|
| ITEM | QTY | PART # |
| 65 | 1 | 815097 |
| 66 | 1 | 815098 |
| 67 | 1 | 820247 |
| 68 | 1 | 830063 |
| 69 | 1 | 832001 |
| 70 | 1 | 832002 |
| 71 | 1 | 832072 |
| 72 | 1 | 832076 |
| 73 | 1 | 843005 |
| 74 | 1 | 843006 |

305072

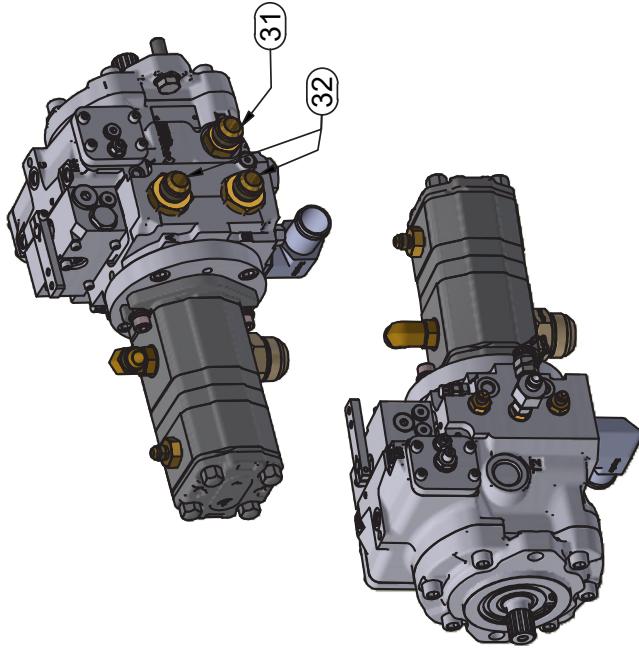
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ENGINE ASSEMBLY

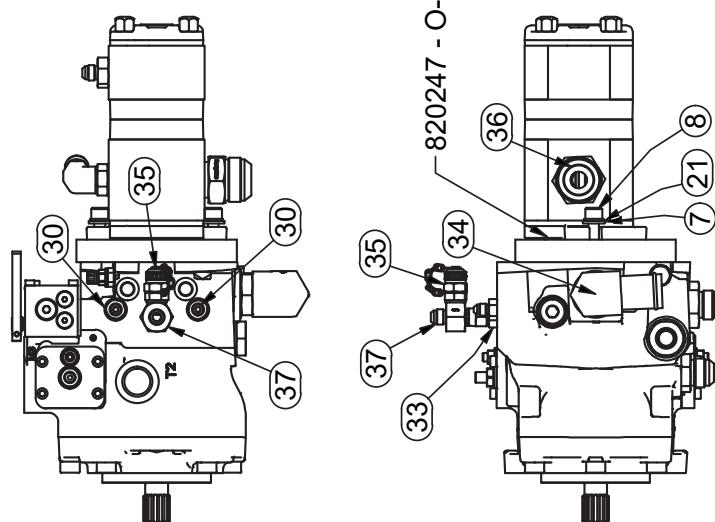
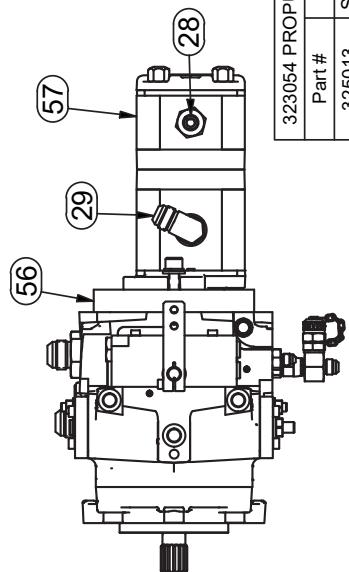


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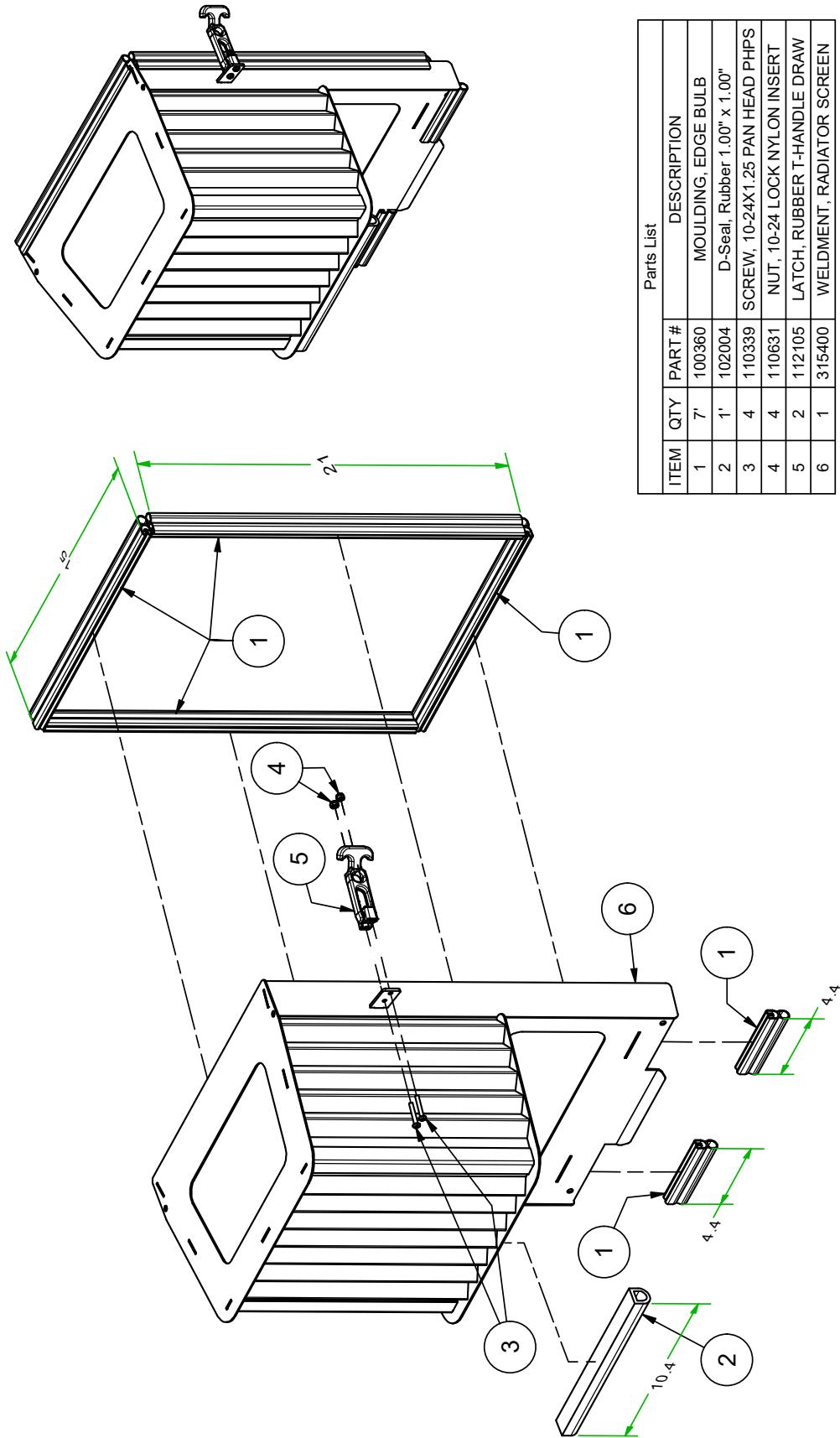
HYDRAULIC PUMP ASSEMBLY



| 322054 PROPULSION PUMP - SERVICE PARTS | |
|--|------------------------------|
| Part # | DESCRIPTION |
| 325013 | SEAL KIT, PM30 SERVO CONTROL |



| Parts List | | | | | | | |
|------------|-----|--------|-------------------------|------|-----|--------|--|
| ITEM | QTY | PART # | DESCRIPTION | ITEM | QTY | PART # | DESCRIPTION |
| 7 | 2 | 110155 | WASHER, 3/8" FLAT SAE | 34 | 1 | 120546 | ADAPTER, 20BH-16MB90 |
| 8 | 2 | 110176 | BOLT, M10x1.5 x 35 SHCS | 35 | 1 | 120705 | Test Port, M16, 4MB |
| 21 | 11 | 110689 | Washer, M10, Lock | 36 | 1 | 120740 | Adapter, 20mj-12mb |
| 28 | 1 | 120144 | ADAPTER, 6MJ-10MB | 37 | 1 | 120754 | Adapter, 6jx-6mj, -4fb Gage Port |
| 29 | 1 | 120224 | ADAPTER, 10MJ-10MB90 | | | | |
| 30 | 2 | 120249 | ADAPTER, 4MJ-6MB | 56 | 1 | 323054 | Pump, PM30 Propulsion, 1.53 CI / .49 CI Charge |
| 31 | 1 | 120254 | ADAPTER, 12MJ-12MB | | | | |
| 32 | 2 | 120256 | ADAPTER, 12MJ-16MB | 57 | 1 | 323063 | PUMP, DOUBLE GEAR 1.16 / .24 Cl |
| 33 | 1 | 120319 | ADAPTER, 6MJ-6MB | 67 | 1 | 820247 | ORING 2-042 1/16" EUNA |



REPLACES 305073

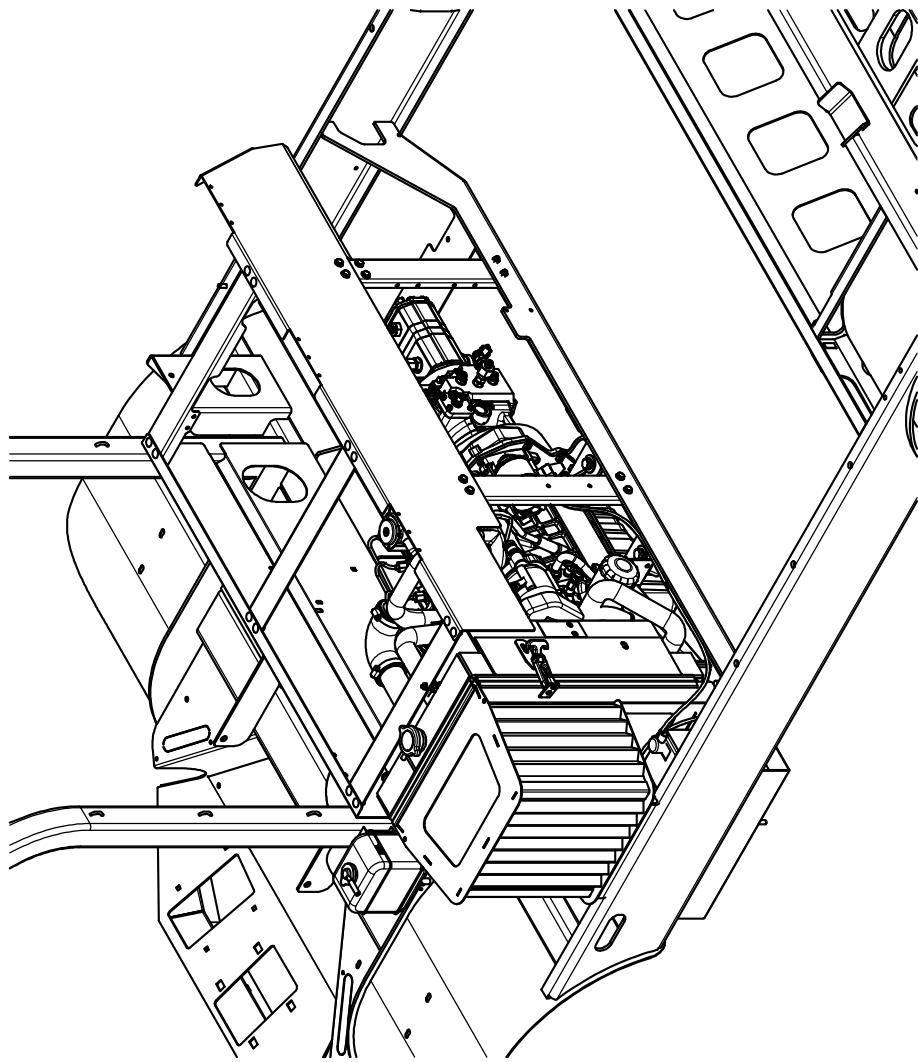
RADIATOR SCREEN ASSEMBLY

HK4200

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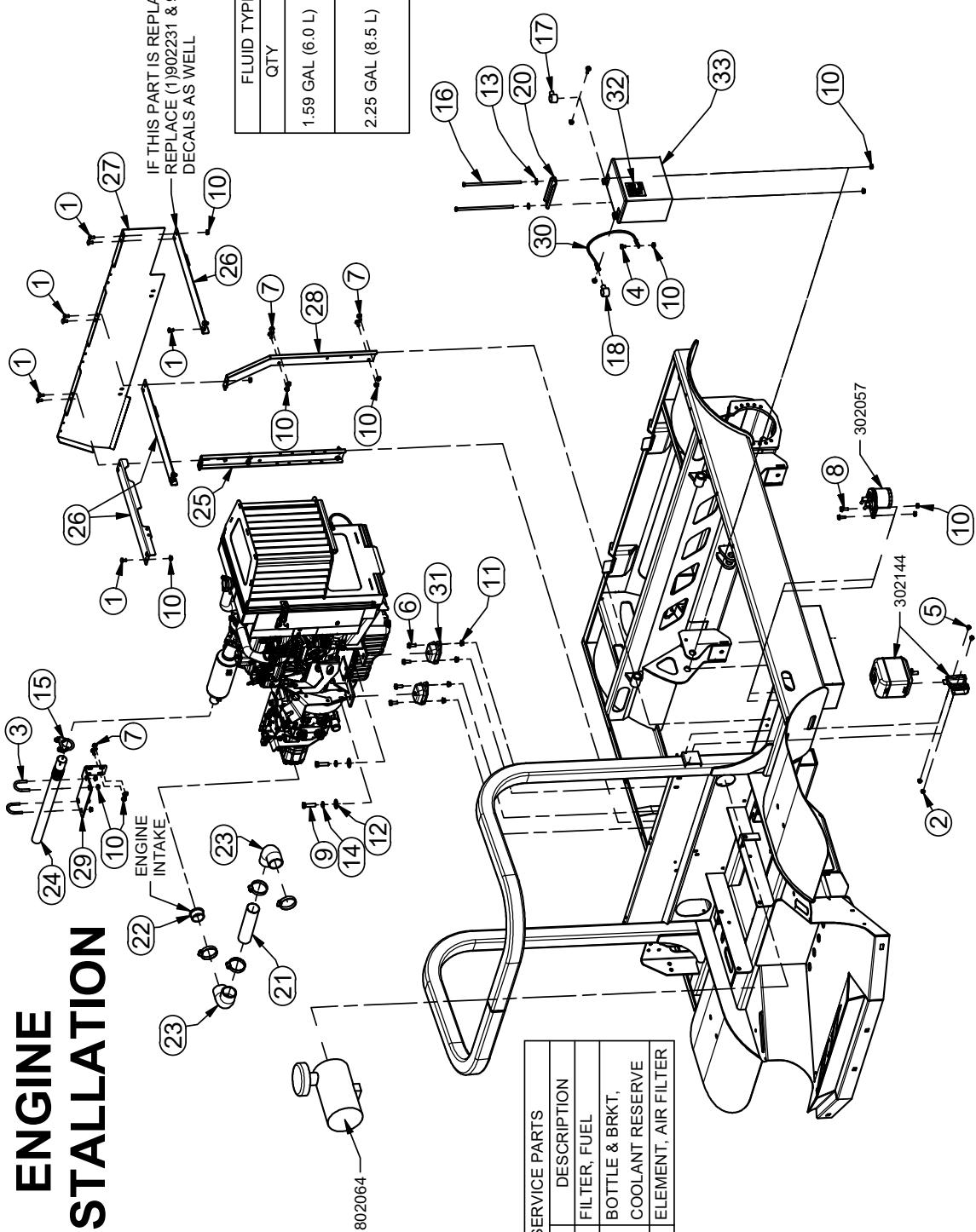
ENGINE INSTALLATION

| 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 |



305082 REV: C

ENGINE INSTALLATION



HK4200

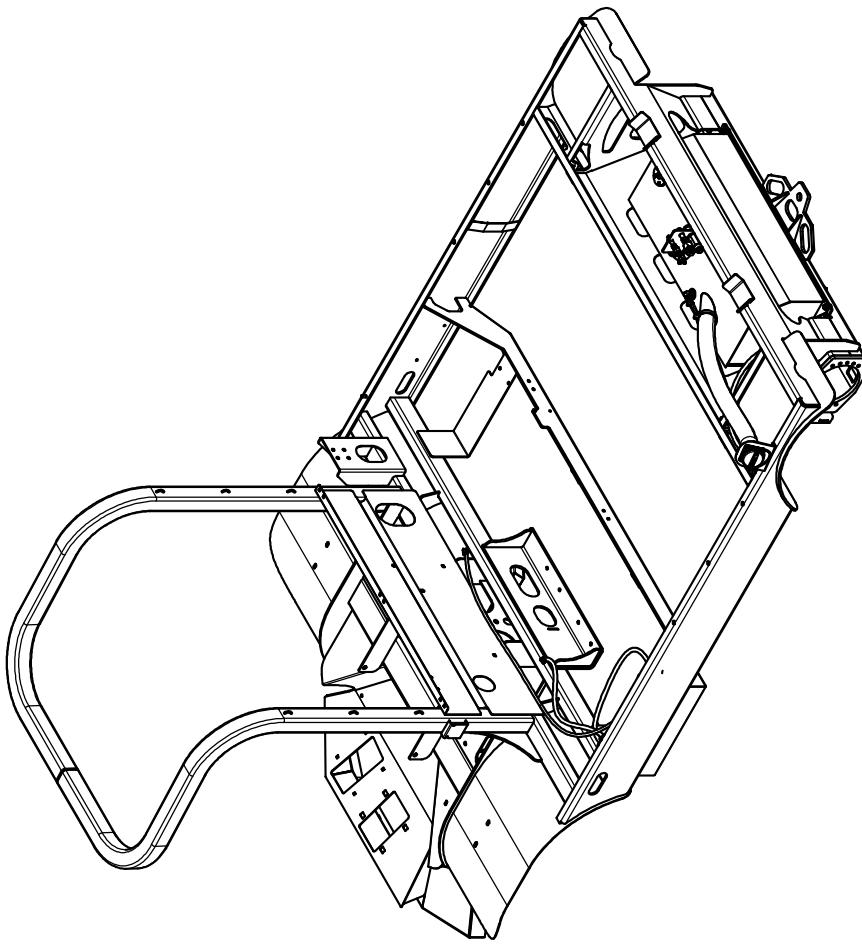
HARPER
TURF EQUIPMENT

FUEL TANK INSTALLATION

305088

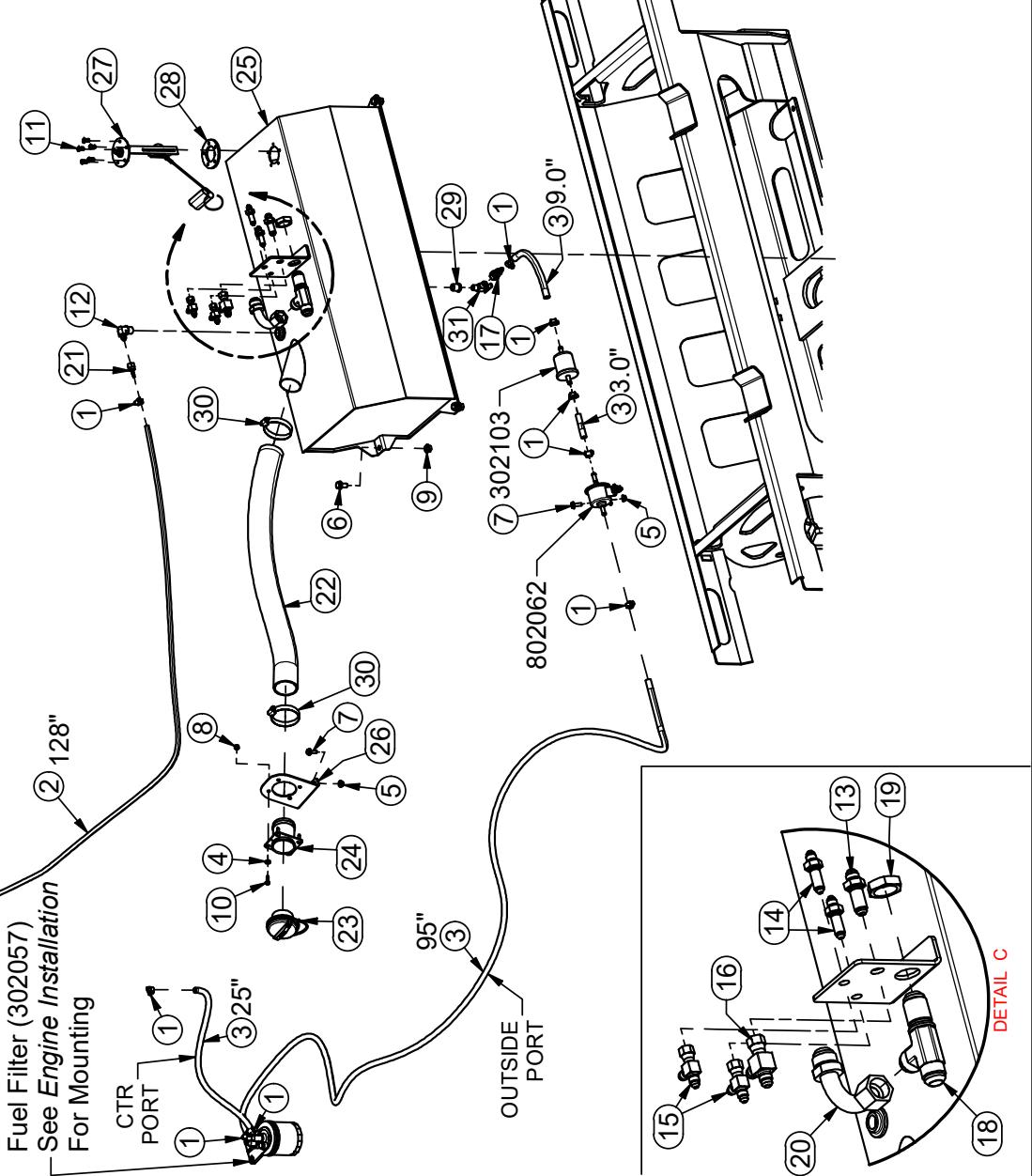
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| Parts List | | | |
|------------|------|--------|----------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 10 | 100361 | CLAMP, HOSE #4.25 MINI |
| 2 | 128" | 100708 | Hose, 3/16 High Pressure Fuel |
| 3 | 132" | 100756 | Hose, 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-4FJX-4MJ |
| 16 | 1 | 120216 | ADAPTER, 6MJ-6FJX-6MJ |
| 17 | 1 | 120378 | ADAPTER, 5FB-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 |

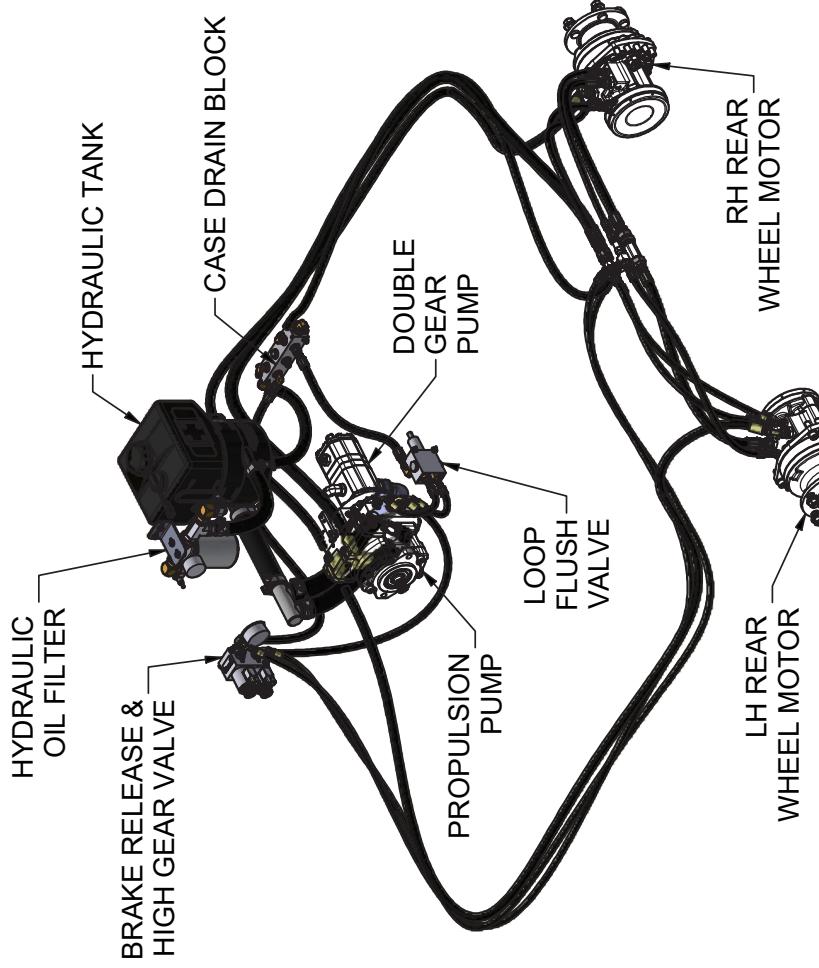


5-17-2021

FUEL TANK INSTALLATION



PROPELLION HYDRAULIC INSTALLATION

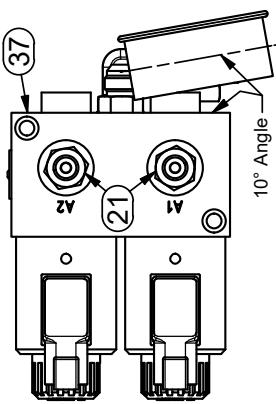


| Parts List | | |
|------------|-----|---|
| ITEM | QTY | PART # |
| 1 | 2 | 110845 BOLT, M12x1.75 x 60 Gr 10.9 |
| 2 | 6 | 110290 NUT, 1/4-20 WIZ FLANGE |
| 3 | 2 | 110410 BOLT, 1/4-20 X 2.5 |
| 4 | 4 | 110434 BOLT, 1/4-20 X 0.5, WIZ FLANGE |
| 5 | 4 | 110440 BOLT, 3/8-16 X 1, WIZ FLANGE |
| 6 | 1 | 120728 PLUG, 6MB HEX |
| 7 | 1 | 120291 CAP, 6FJ |
| 8 | 2 | 111011 Bolt, M5-.80 X 55, SHCS, Stainless |
| 9 | 2 | 111012 STEP AP203 |
| 10 | 2 | 111013 WASHER, M5, Flat, Stainless |
| 11 | 2 | 570483 TOOL, BRAKE RELEASE |
| 12 | 3 | 112007 CLAMP, 1.75", T-BOLT |
| 13 | 6 | 112008 CLAMP, 1.25", T-BOLT |
| 14 | 2 | 112101 CLAMP, 1.50", T-BOLT |
| 15 | 2 | 112137 CLAMP, 2.00", T-BOLT |
| 16 | 2 | 120134 ADAPTER, 6MJ-8MB90 |
| 17 | 1 | 120187 ADAPTER, 12BH-8MB90 |
| 18 | 1 | 120216 ADAPTER, 6MJ-6FJ-X-6MJ |
| 19 | 4 | 120222 ADAPTER, 6MJ-6MB90 |
| 20 | 2 | 120226 ADAPTER, 12BH-12MB90 |
| 21 | 2 | 120249 ADAPTER, 4MJ-6MB |
| 22 | 1 | 120754 Adapter, 6FJx-6mj, -4fb Gage Port |
| 23 | 1 | 120303 ADAPTER, 12MB-16HB |
| 24 | 3 | 120319 ADAPTER, 6MJ-6MB |
| 25 | 2 | 111101 STEP AP203 |
| 26 | 2 | 120739 ADAPTER, 4MJ-8MB |
| 27 | 1 | 120742 ADAPTER, 12MB-12FB-12FB |
| 28 | 2 | 110844 BOLT, 1/4-20 X 3 |
| 29 | 1 | 122016 ADAPTER, 12MJ-12MJ-12FJX |
| 30 | 1 | 122034 HEAD, SPIN-ON FILTER, -12SAE |
| 31 | 1 | 260265 MOUNTING BRACKET, FILTER |
| 32 | 1 | 305087 Assy, Hydraulic Tank, ISO |
| 33 | 1 | 322095 BLOCK, CASE DRAIN |
| 34 | 1 | 322096 TEE, 1.5 x 1.25 x 1.25 BH |
| 35 | 1 | 322098 GAUGE, PRESSURE, 600 PSI, 4MB |
| 36 | 1 | 323060 VALVE, LOOP FLUSH |
| 37 | 1 | 323061 VALVE, BRK RELEASE & HI GEAR |
| 38 | 1 | 323068 HOSE KIT, 2WD HAWK GROUND DRIVE |
| 39 | 2 | 110053 Hex Nut M12 X 1.75 Thd |
| 40 | 1 | 822044 FILTER, 3 MICRON |
| 41 | 1 | 822045 GAUGE, OIL FILTER |

VALVE ASSEMBLIES

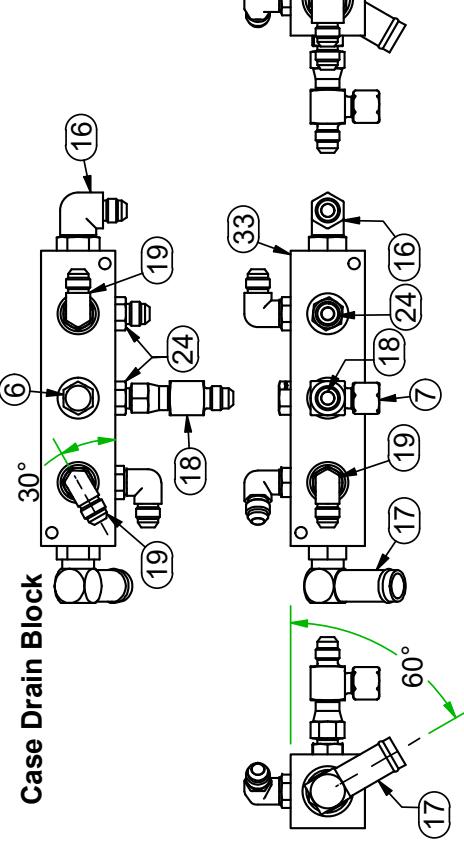
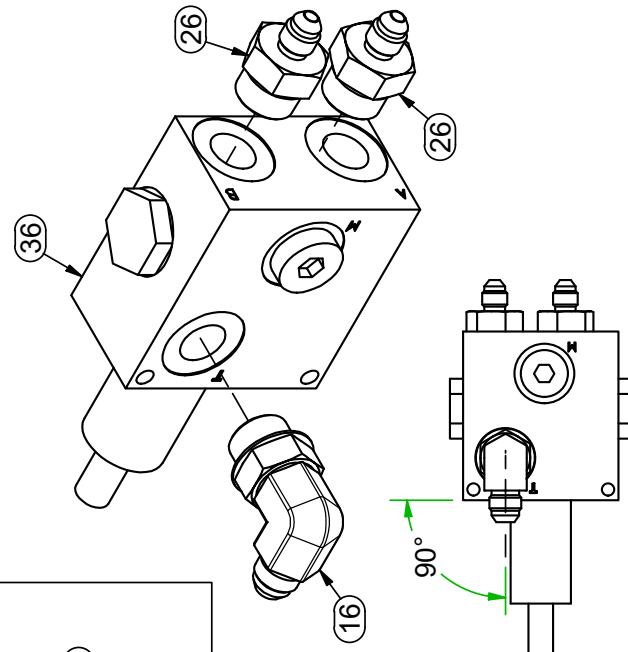
Brake Release & High Gear Valve

| Parts List | | | |
|------------|-----|--------|---------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 19 | 1 | 120222 | ADAPTER, 6MJ-6MB90 |
| 21 | 2 | 120249 | ADAPTER, 4MJ-6MB |
| 24 | 1 | 120319 | ADAPTER, 6MJ-6MB |
| 35 | 1 | 322098 | GAUGE, PRESSURE, 600 PSI, 4MB |
| 37 | 1 | 323061 | VALVE, BRK RELEASE & HI GEAR |
| 22 | 1 | 120754 | Adapter, 6JX-6MJ, 4fb Gage Port |



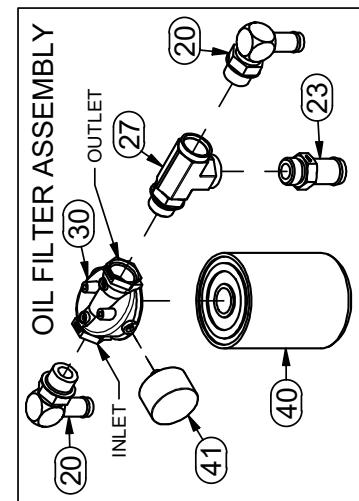
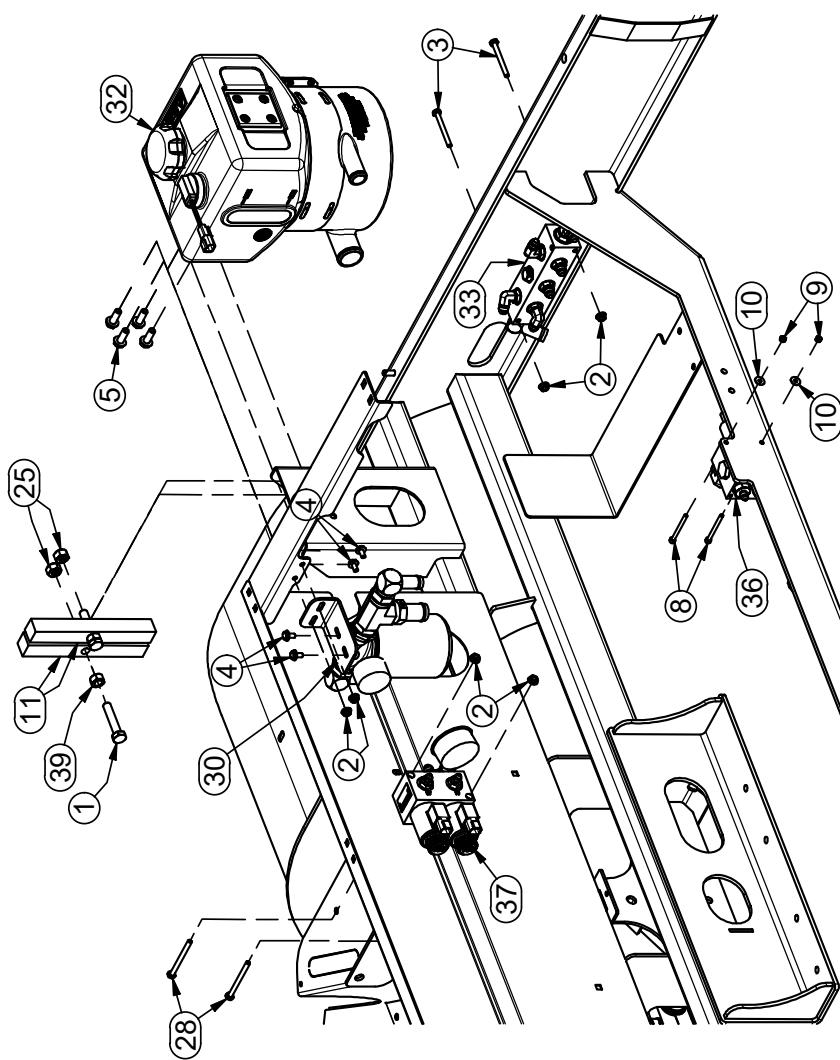
Loop Flush Valve

| Parts List | | | |
|------------|-----|--------|--------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 16 | 1 | 120134 | ADAPTER, 6MJ-8MB90 |
| 26 | 2 | 120739 | ADAPTER, 4MJ-8MB |
| 36 | 1 | 323060 | VALVE, LOOP FLUSH |



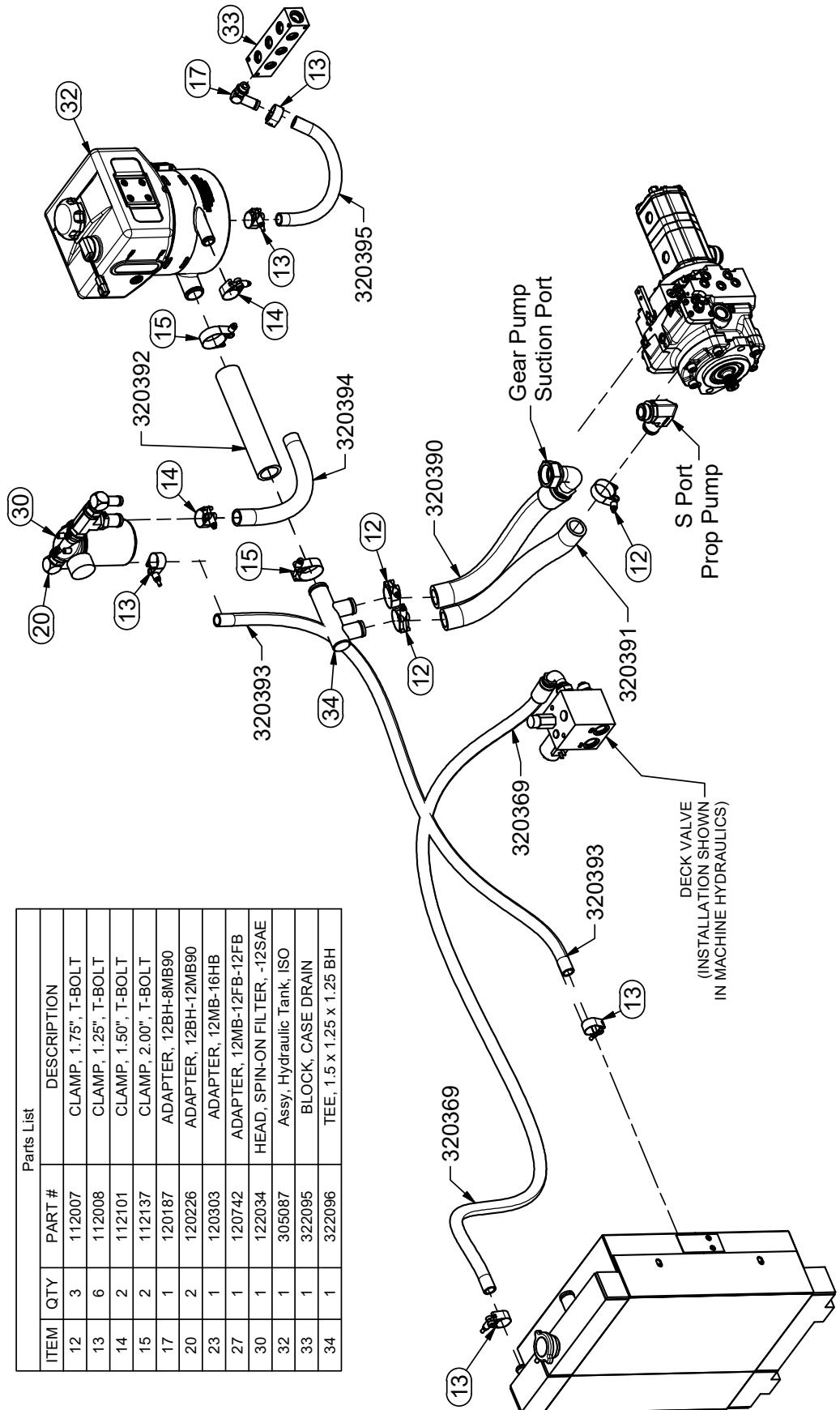
| Parts List | | | |
|------------|-----|--------|---------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 6 | 1 | 120728 | PLUG, 6MB HEX |
| 7 | 1 | 120291 | CAP, 6FJ |
| 16 | 1 | 120134 | ADAPTER, 6MJ-8MB90 |
| 17 | 1 | 120187 | ADAPTER, 12BH-8MB90 |
| 33 | 1 | 322095 | BLOCK, CASE DRAIN |

TANK, FILTER, & VALVE INSTALLATION



| Parts List | | | |
|------------|-----|--------|------------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 39 | 2 | 110053 | Hex Nut M12 X 1.75 Thd |
| 2 | 6 | 110290 | NUT, 1/4-20 WIZ FLANGE |
| 3 | 2 | 110410 | BOLT, 1/4-20 X 2.5 |
| 4 | 4 | 110434 | BOLT, 1/4-20 X 0.5, WIZ FLANGE |
| 5 | 4 | 110440 | BOLT, 3/8-16 X 1, WIZ FLANGE |
| 28 | 2 | 110844 | BOLT, 1/4-20 X 3 |
| 1 | 2 | 110846 | BOLT, M12x1.75 x60 Gr10.9 |
| 8 | 2 | 111011 | Bolt, M5-.80 X 55, SHCS, Stainless |
| 9 | 2 | 111012 | Nut, M5-.80, Nylock, Stainless |
| 10 | 2 | 111013 | Washer, M5, Flat, Stainless |
| 25 | 2 | 111101 | Nut, M12-1.75, Nylock Gr 10.9 ZY |
| 20 | 2 | 120226 | ADAPTER, 12BH-12MB90 |
| 23 | 1 | 120303 | ADAPTER, 12MB-16HB |
| 6 | 1 | 120728 | PLUG, 6MB HEX |
| 26 | 2 | 120739 | ADAPTER, 4MJ-8MB |
| 27 | 1 | 120742 | ADAPTER, 12MB-12FB-12FB |
| 22 | 1 | 120754 | Adapter, 6fix-6mi, -4fb Gage Port |
| 30 | 1 | 122034 | HEAD, SPIN-ON FILTER, -12SAE |
| 32 | 1 | 305087 | Asy, Hydraulic Tank, ISO |
| 33 | 1 | 322095 | BLOCK, CASE DRAIN |
| 35 | 1 | 322098 | GAUGE, PRESSURE, 600 PSI, 4MB |
| 36 | 1 | 323060 | VALVE, LOOP FLUSH |
| 37 | 1 | 323061 | VALVE, BRK RELEASE & HI GEAR |
| 11 | 2 | 570483 | TOOL, BRAKE RELEASE |
| 40 | 1 | 822044 | FILTER, 3 MICRON |
| 41 | 1 | 822045 | GAUGE, OIL FILTER |

PROPULSION SUCTION & DRAIN PLUMBING

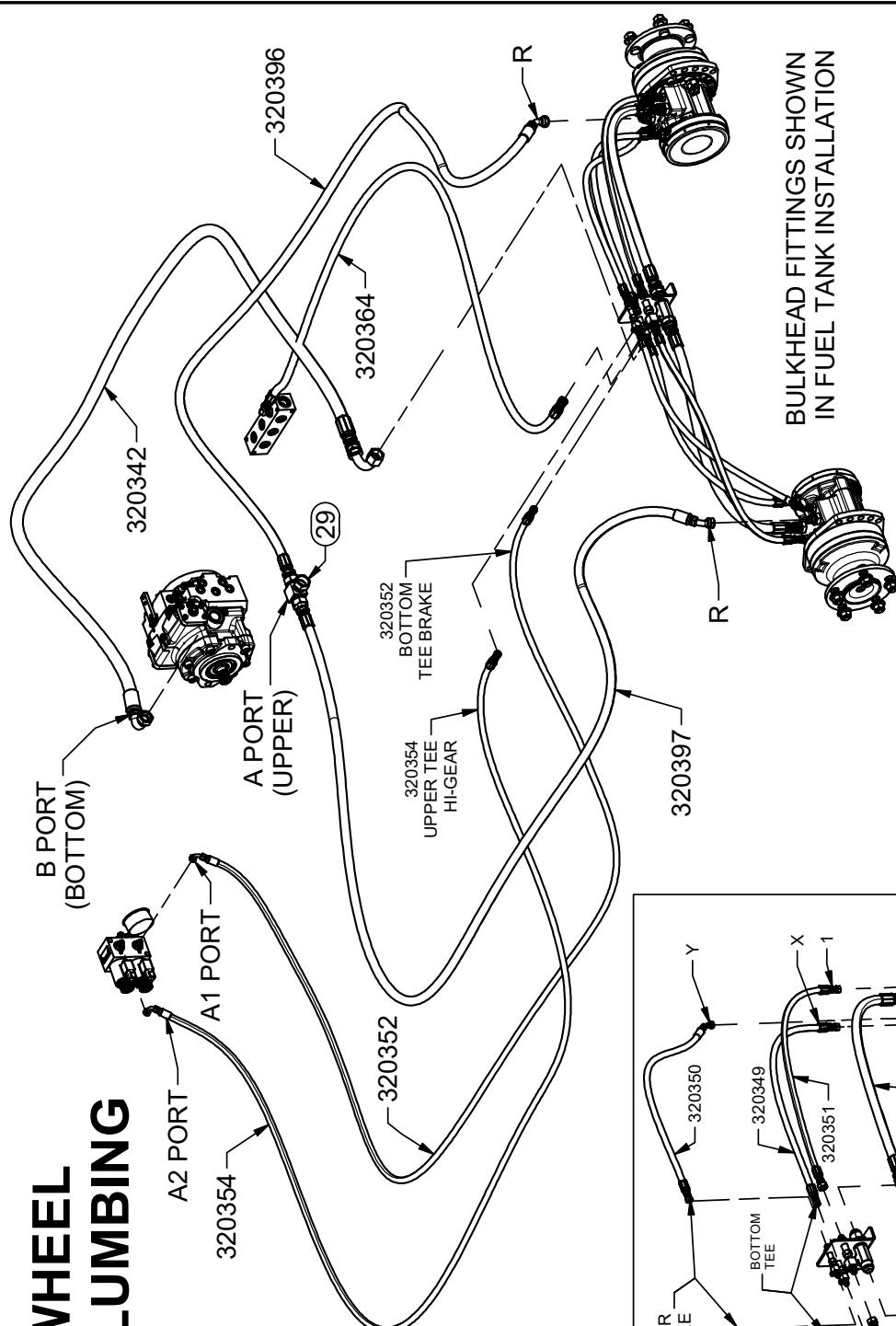


| Parts List | | | |
|------------|-----|--------|------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 12 | 3 | 112007 | CLAMP, 1.75", T-BOLT |
| 13 | 6 | 112008 | CLAMP, 1.25", T-BOLT |
| 14 | 2 | 112101 | CLAMP, 1.50", T-BOLT |
| 15 | 2 | 112137 | CLAMP, 2.00", T-BOLT |
| 17 | 1 | 120187 | ADAPTER, 12BM-8MB90 |
| 20 | 2 | 120226 | ADAPTER, 12BH-12MB90 |
| 23 | 1 | 120303 | ADAPTER, 12MB-16HB |
| 27 | 1 | 120742 | ADAPTER, 12MB-12FB-12FB |
| 30 | 1 | 122034 | HEAD, SPIN-ON FILTER, -12SAE |
| 32 | 1 | 305087 | Assy, Hydraulic Tank, ISO |
| 33 | 1 | 322095 | BLOCK, CASE DRAIN |
| 34 | 1 | 322096 | TEE, 1.5 x 1.25 x 1.25 BH |

REAR WHEEL MOTOR PLUMBING

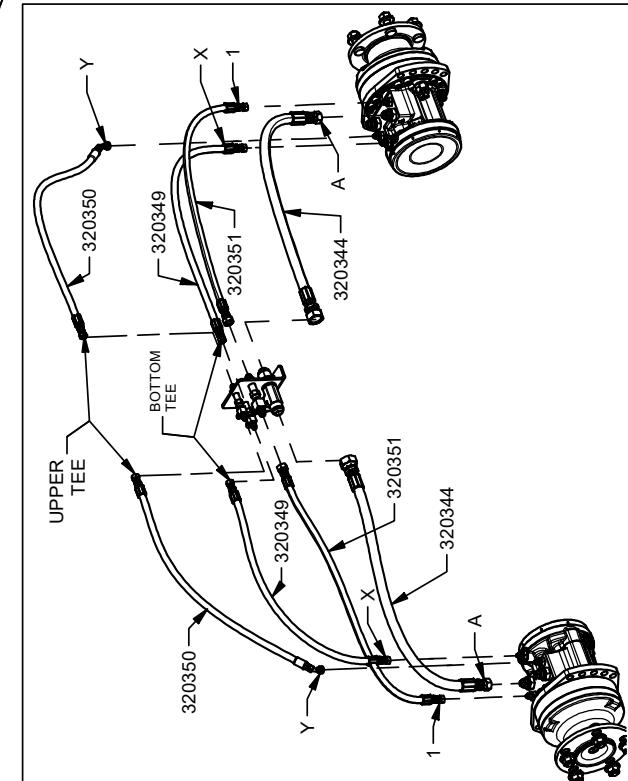
305106

A



**MOTOR PORT
IDENTIFICATION**



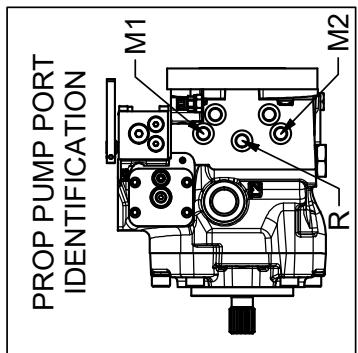
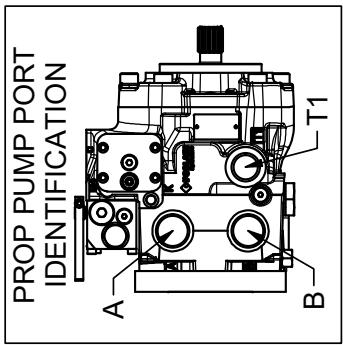
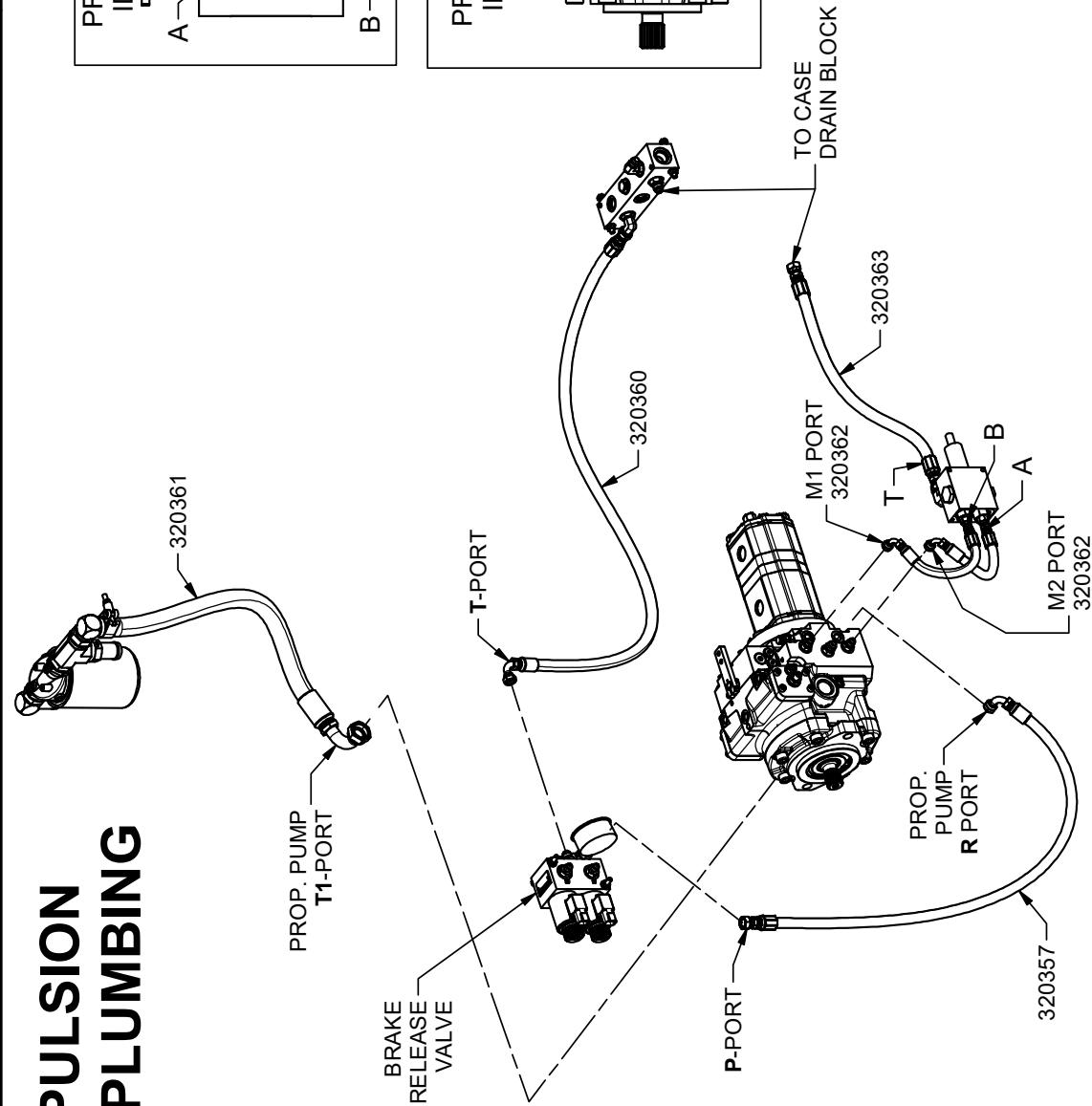


**BULKHEAD FITTINGS SHOWN
IN FUEL TANK INSTALLATION**

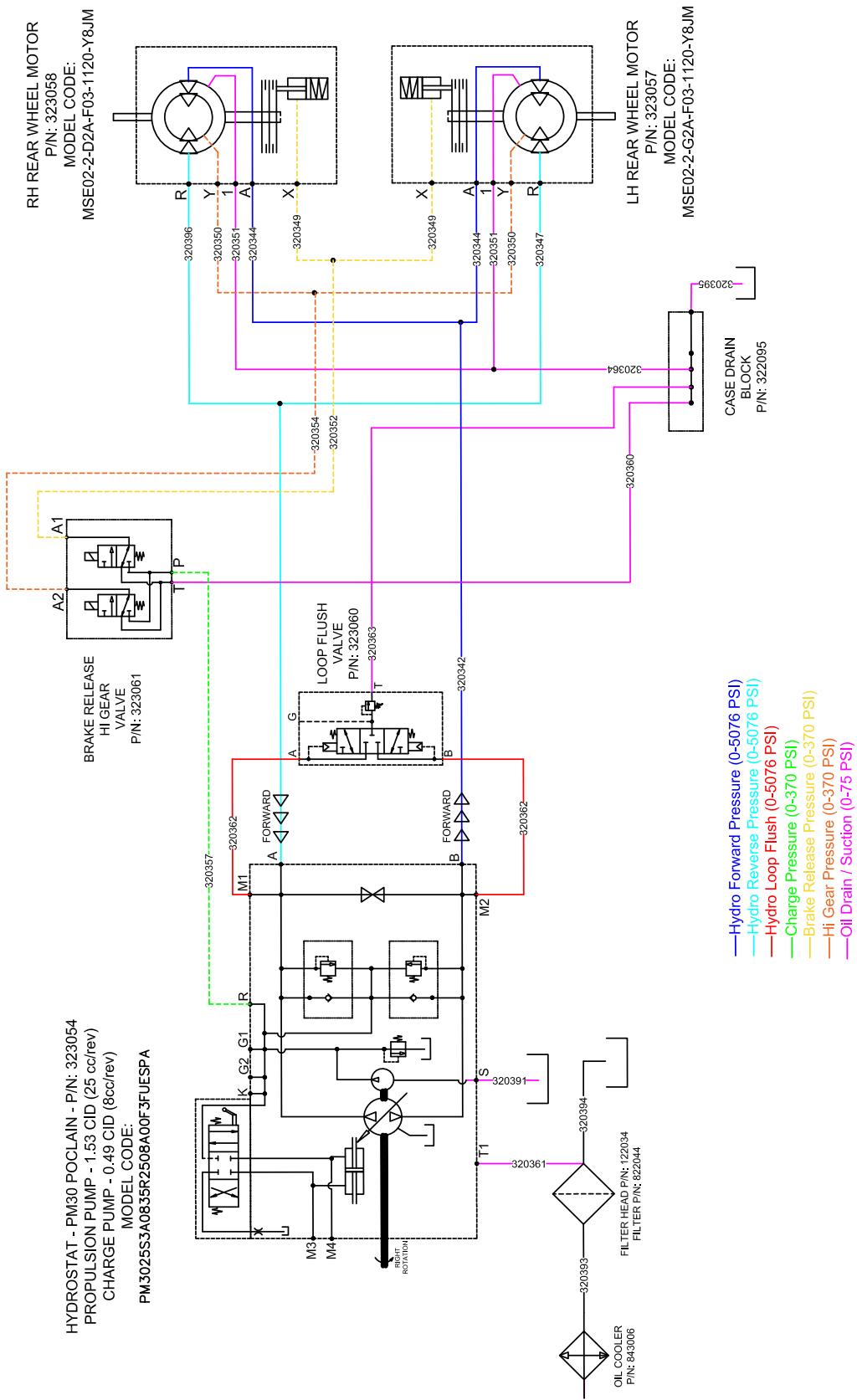
1-5-2022

PROPELLION PUMP PLUMBING

305106 REV: A



SWEEPER PROPULSION SCHEMATIC - 2WD

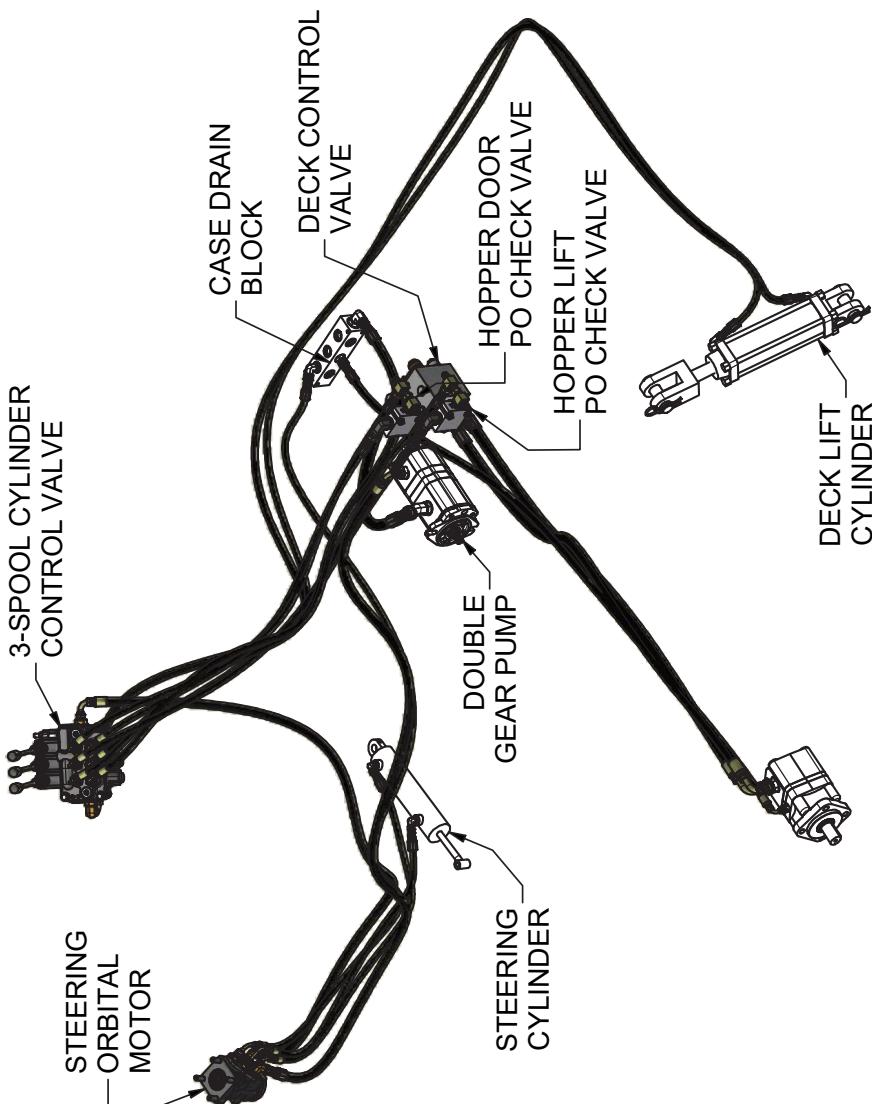


305098

REV: A

HYDRAULIC SCHEMATIC
SHOWN ON PAGE 5.10

| ITEM | QTY | PART # | DESCRIPTION | ITEM | QTY | PART # | DESCRIPTION |
|------|-----|--------|--------------------------------------|------|-----|--------|------------------------------------|
| 1 | 8 | 110264 | BOLT, 10-24 X .5 STAINLESS, PHILLIPS | 39 | 1 | 502087 | Cap, Center Steering |
| 2 | 6 | 110290 | NUT, 1/4-20 WIZ FLANGE | 40 | 1 | 502088 | Nut, Steering Wheel, 13/16-20 UNEF |
| 3 | 2 | 110434 | BOLT, 1/4-20 X 0.5, WIZ FLANGE | 41 | 1 | 552002 | STEERING WHEEL |
| 4 | 4 | 110437 | BOLT, 3/8-16 X 0.75, WIZ FLANGE | 42 | 1 | 820158 | DECK VALVE |
| 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 | | | | |

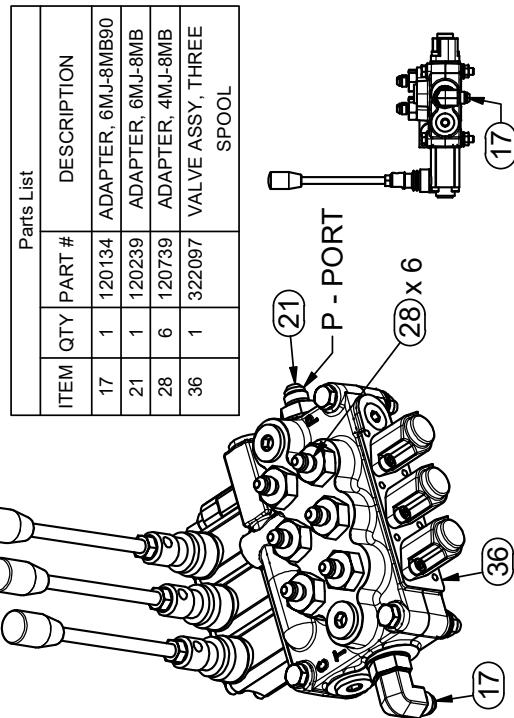


MACHINE HYDRAULIC INSTALLATION

5-17-2021

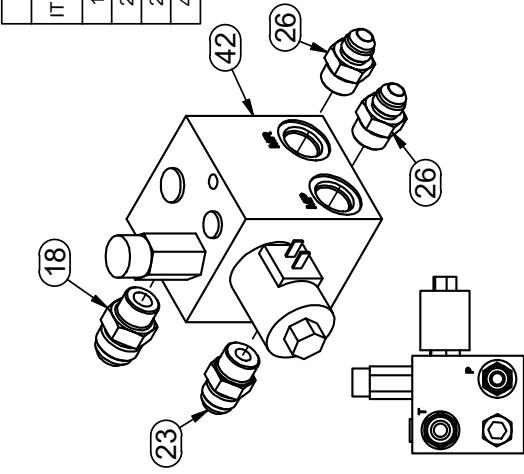
Three Spool Valve Assembly

VALVE ASSEMBLIES



| Parts List | | | |
|------------|-----|--------|-------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 17 | 1 | 120134 | ADAPTER, 6MJ-6MB90 |
| 21 | 1 | 120239 | ADAPTER, 6MJ-8MB |
| 28 | 6 | 120739 | ADAPTER, 4MJ-8MB |
| 36 | 1 | 322097 | VALVE ASSY, THREE SPOOL |

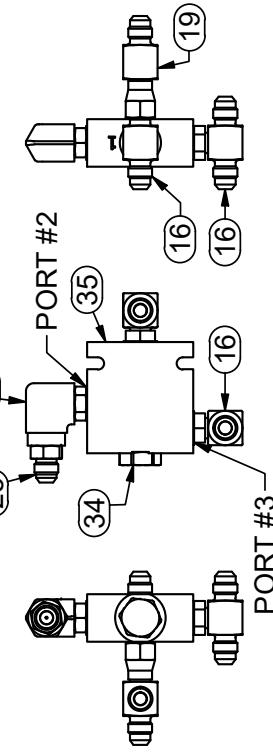
Deck Valve Assembly



| Parts List | | | |
|------------|-----|--------|--------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 18 | 1 | 120143 | ADAPTER, 12MJ-10MB |
| 23 | 1 | 120251 | ADAPTER, 10MJ-10MB |
| 26 | 2 | 120446 | ADAPTER, 8MJ-10MB |
| 42 | 1 | 820158 | DECK VALVE |

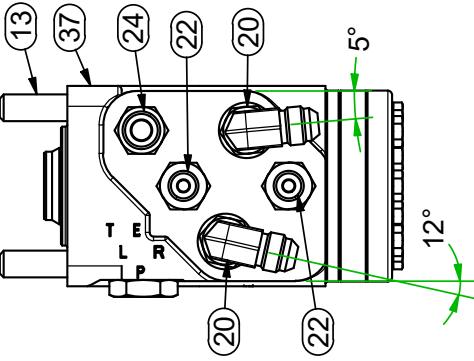
| Parts List | | |
|------------|--------------------------------|--|
| PART # | DESCRIPTION | |
| 522163 | COIL, 12VDC DEUTSCH | |
| 820230 | VALVE, COUNTER BALANCE | |
| 820231 | RELIEF, 3000 PSI PRESSURE | |
| 820232 | VALVE, N.O. SOLENOID CARTRIDGE | |

P.O. Check Valve Assembly X 2

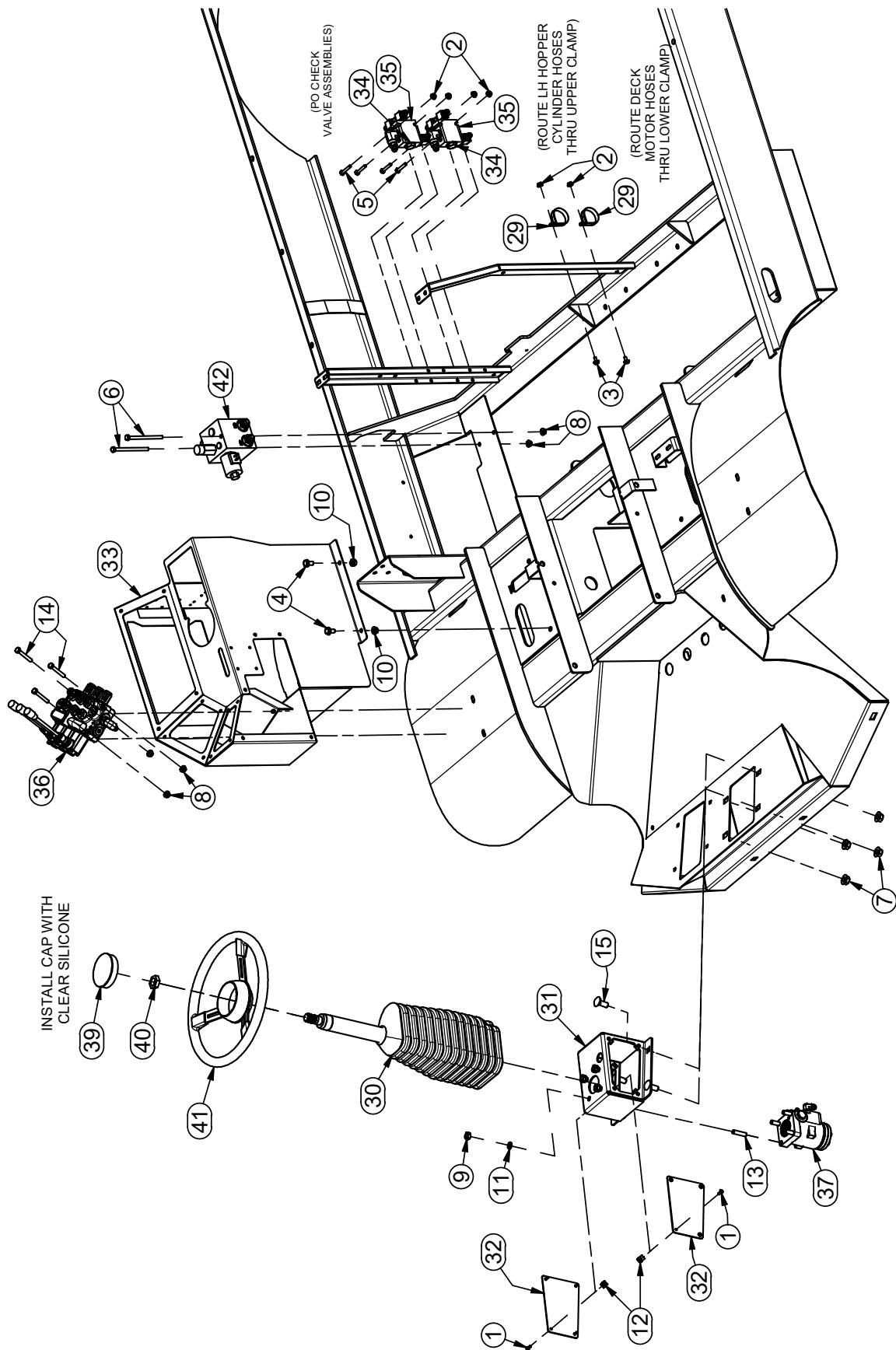


| Parts List | | | |
|------------|-----|--------|-----------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 16 | 4 | 120092 | ADAPTER, 6MJ-6MJ-6MB |
| 19 | 2 | 120216 | ADAPTER, 6MJ-6FJX6MJ |
| 25 | 2 | 120398 | ADAPTER, REST 6MJ-6MB, .047 |
| 27 | 2 | 120689 | Adapter, 6MB90-6FB |
| 34 | 2 | 322074 | VALVE, PO CHECK |
| 35 | 2 | 322075 | VALVE BODY, 3-WAY SAE-6 |

Steering Orbital Assembly

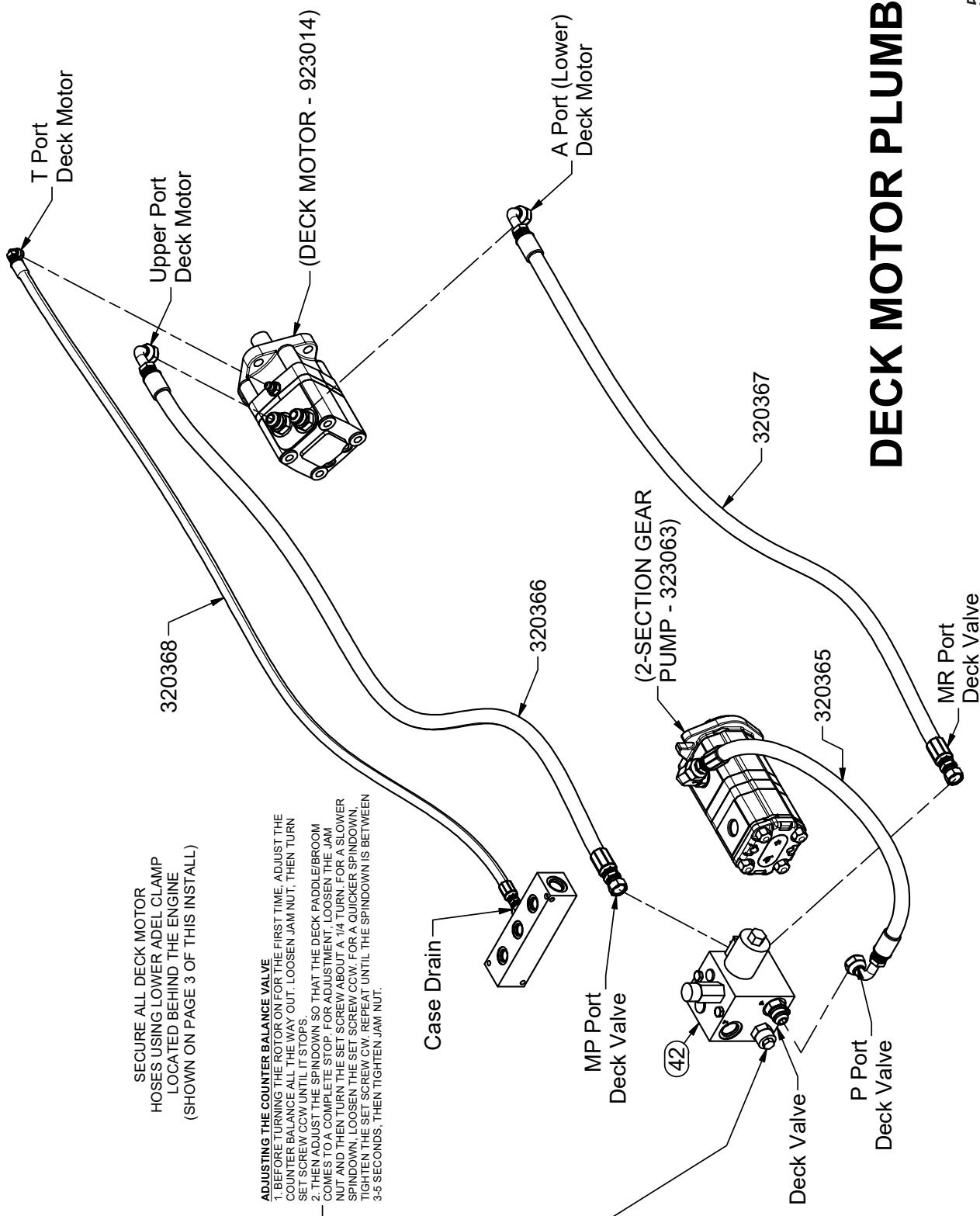


| Parts List | | | |
|------------|-----|--------|--------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 13 | 4 | 111055 | STUD, M10 X 1.5 X 42 GRADE 8.8 |
| 20 | 2 | 120222 | ADAPTER, 6MJ-6MB90 |
| 22 | 2 | 120249 | ADAPTER, 4MJ-6MB |
| 24 | 1 | 120319 | ADAPTER, 6MJ-6MB |
| 37 | 1 | 323046 | MOTOR, STEERING ORBITAL |



VALVE INSTALLATION

5-17-2021



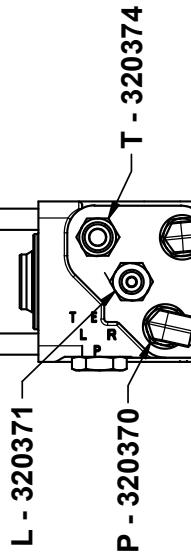
DECK MOTOR PLUMBING

5-17-2021

305098

REV: A

STEERING ORBITAL PORT IDENTIFICATION
(HOSE 320373 THAT ATTACHES TO E PORT IS SHOWN ON NEXT PG)



T Port Steering Orbital

R Port Steering Orbital

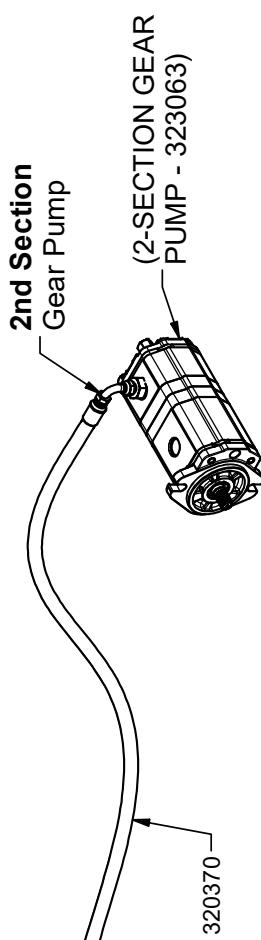
L Port Steering Orbital

(STEERING CYLINDER - 323010)

Rod End Steering Cylinder

Base End Steering Cylinder

P Port Steering Orbital

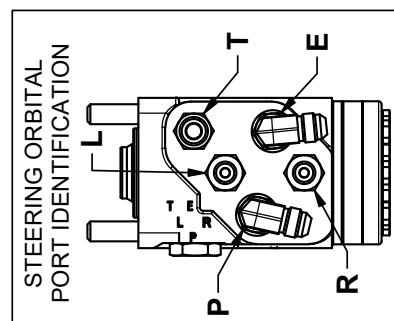
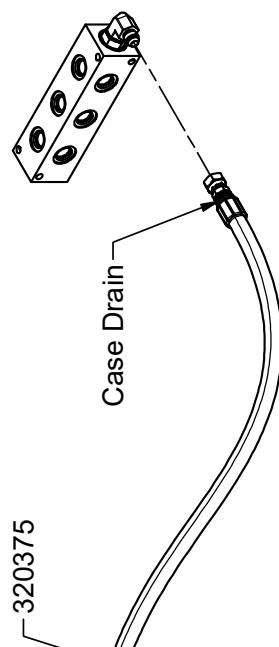
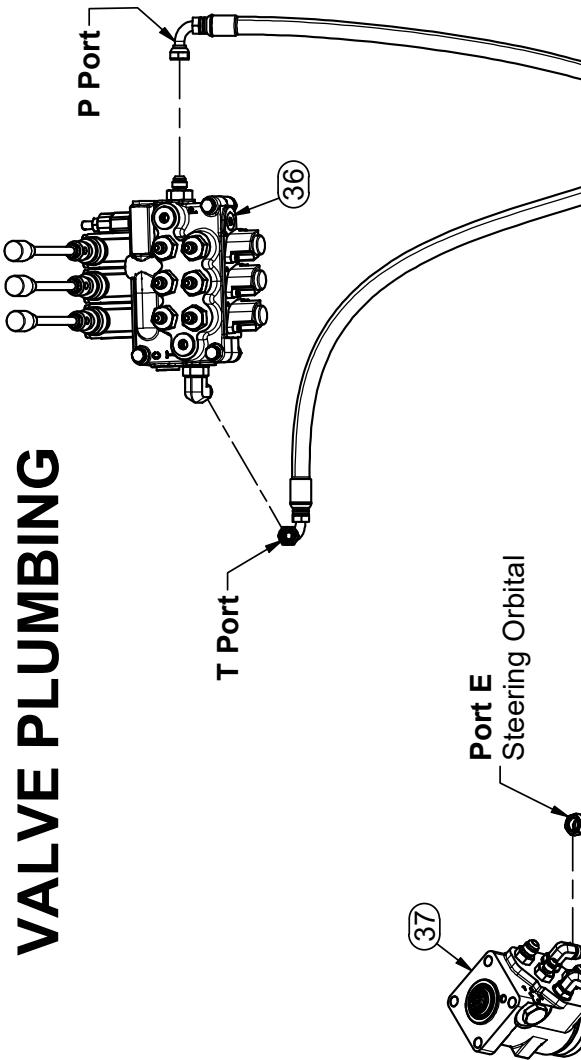
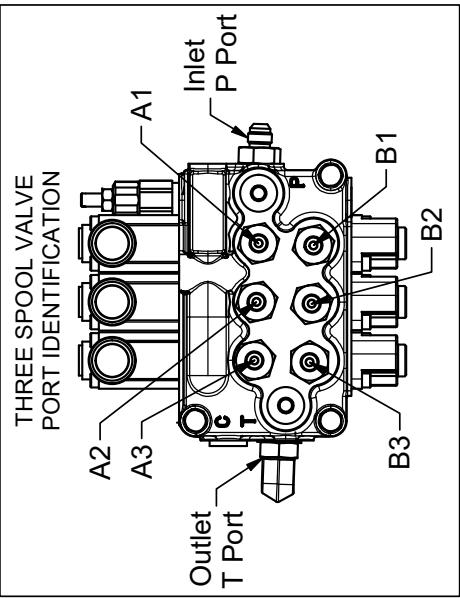


STEERING PLUMBING

THREE SPOOL VALVE PLUMBING

305098

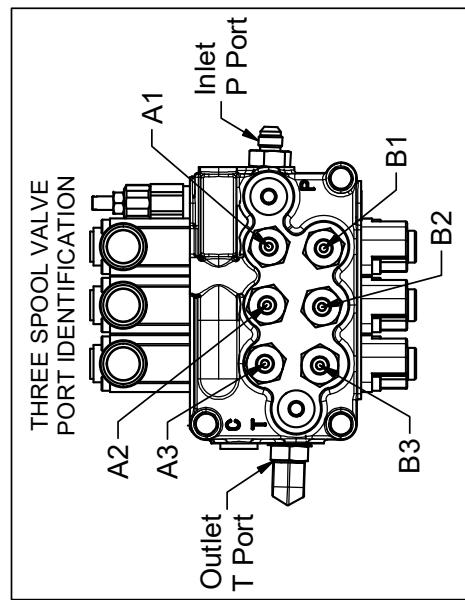
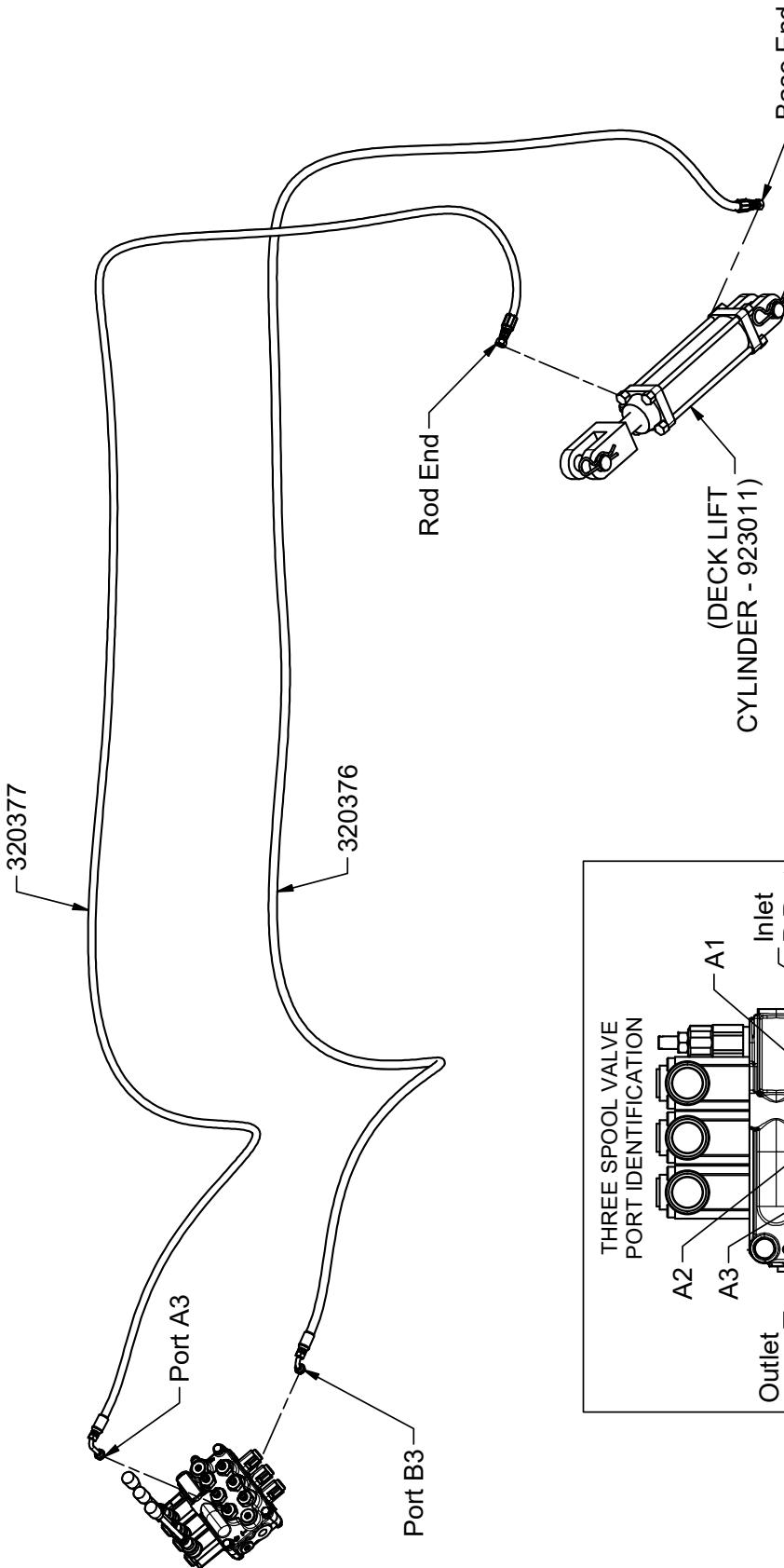
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5-17-2021

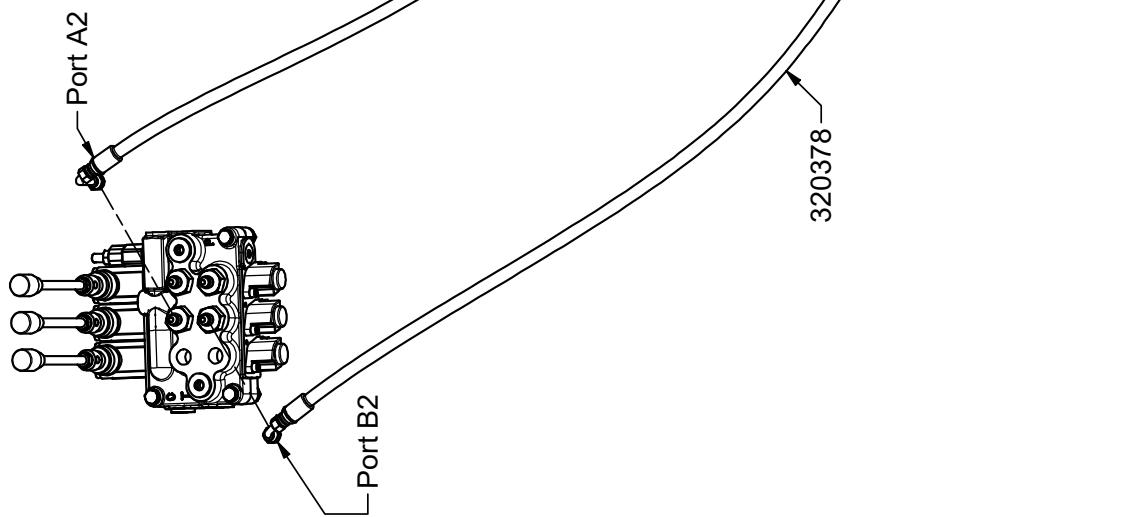
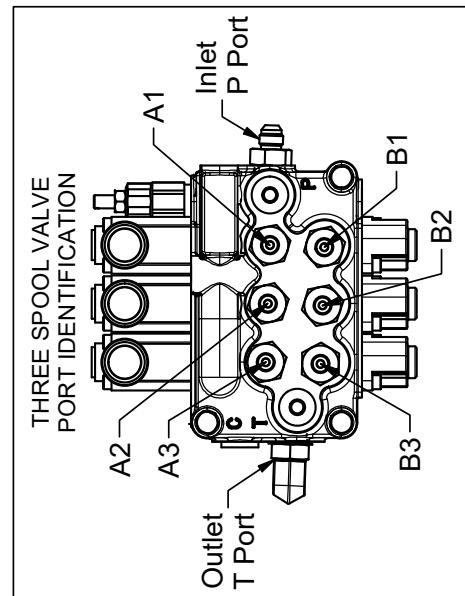
DECK LIFT PLUMBING

305098 REV: A



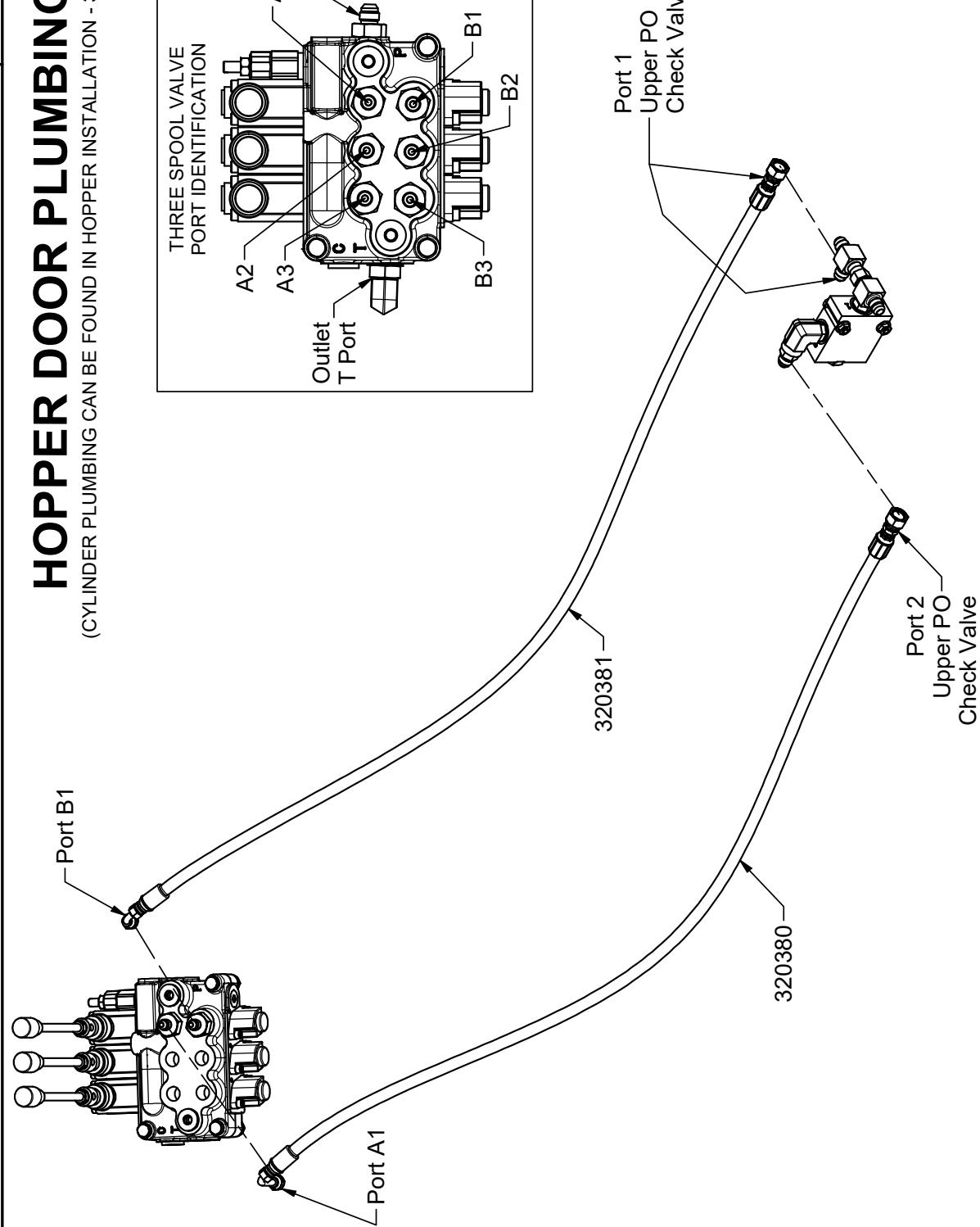
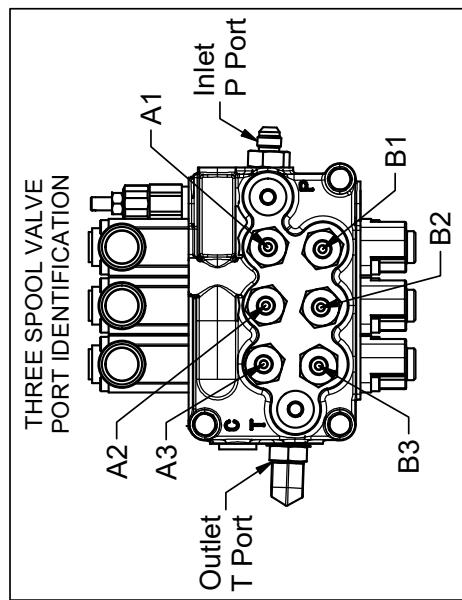
HOPPER LIFT PLUMBING

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

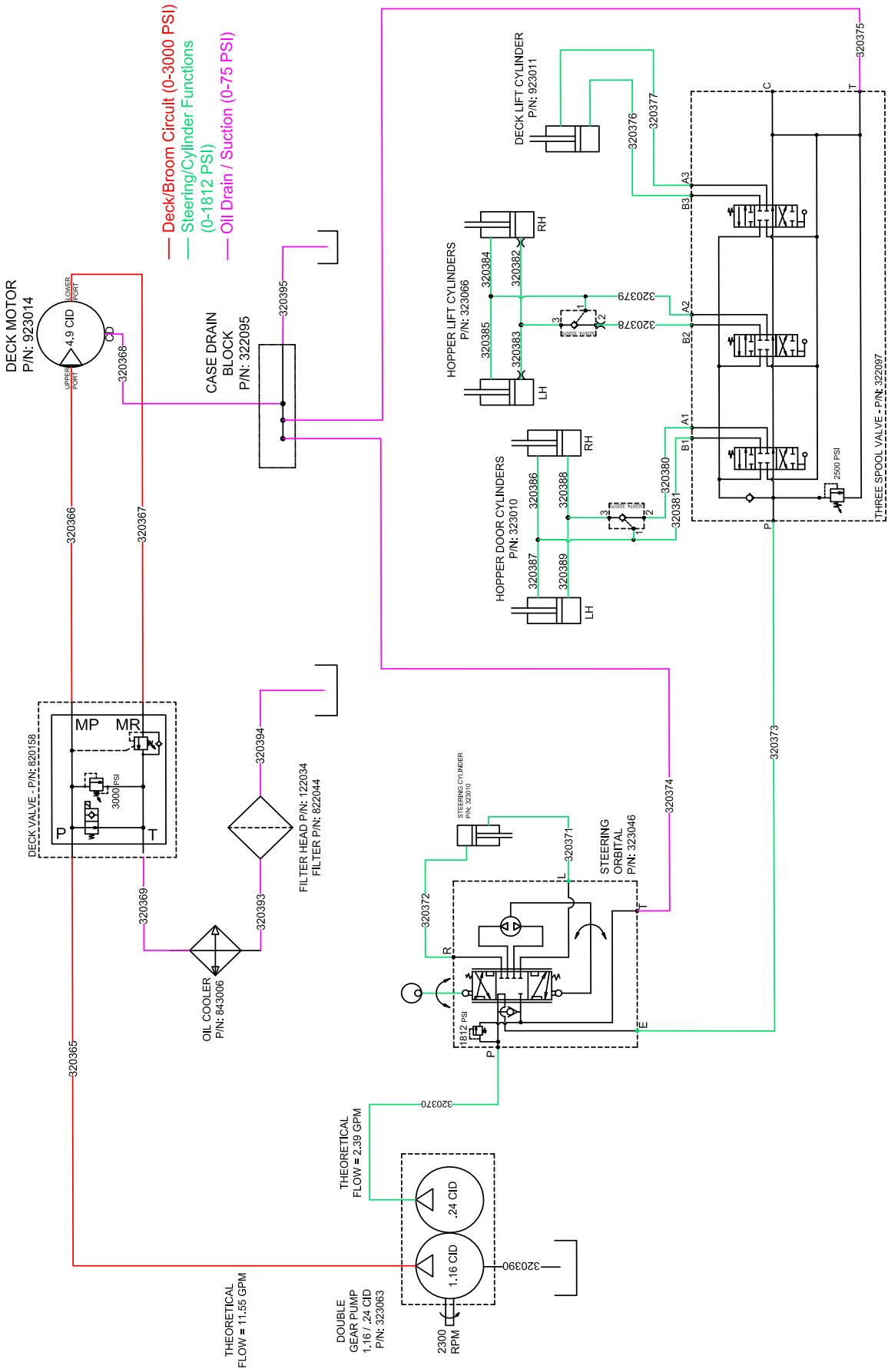


HOPPER DOOR PLUMBING

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



SWEeper MACHINE HYDRAULIC SCHEMATIC



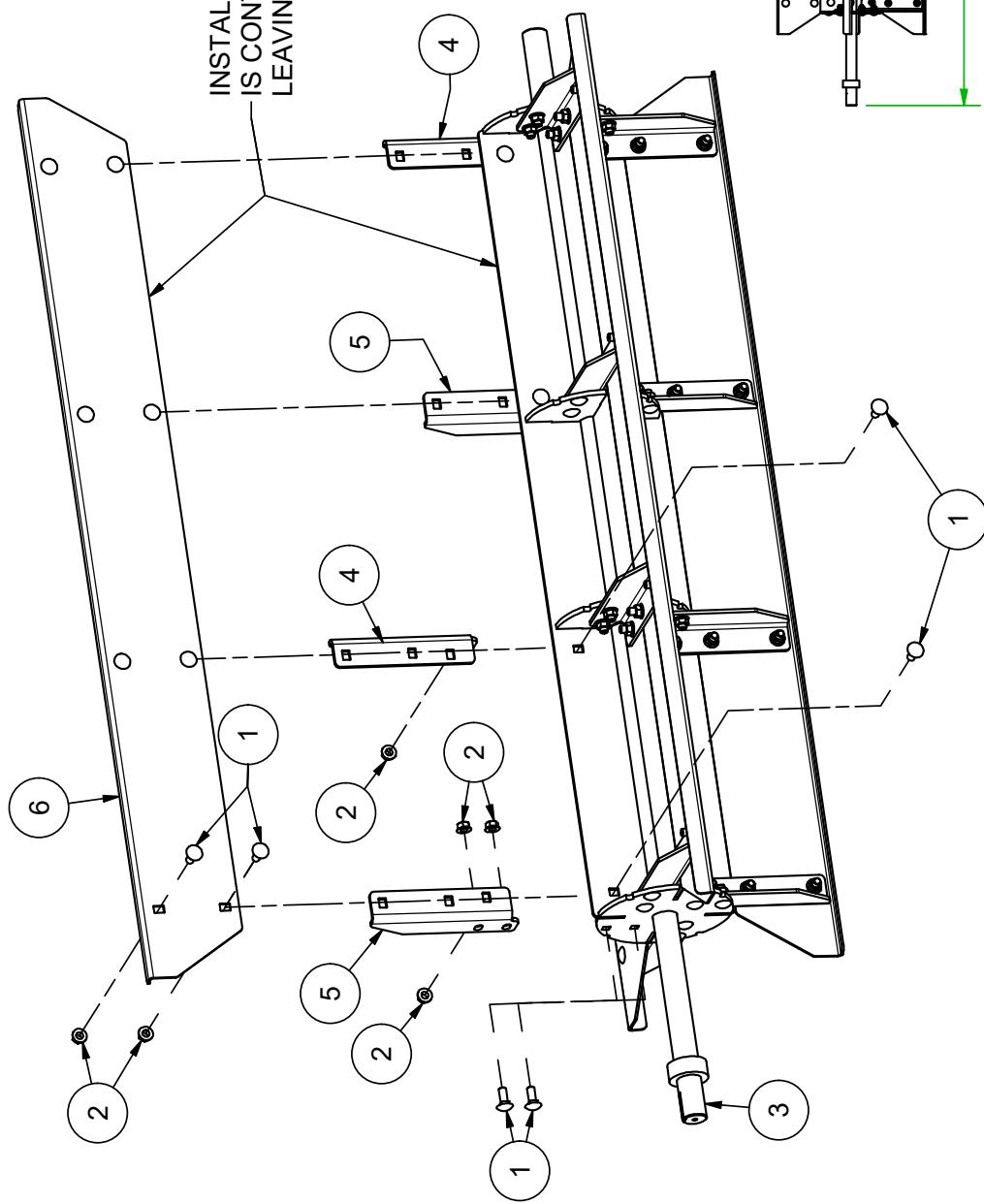
06/03/20

5-17-2021

PADDLE ASSEMBLY

INSTALL BLADE SO EDGE
IS CONTACTING STIFFENER
LEAVING NO GAP

| Parts List | | | |
|------------|-----|--------|------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 80 | 110556 | Bolt, 3/8-16 X 1 in Carriage |
| 2 | 80 | 110645 | NUT, 3/8-16 WIZ FLANGE |
| 3 | 1 | 315399 | WELDMENT, PADDLE |
| 4 | 8 | 317378 | SUPPORT, RH PADDLE |
| 5 | 8 | 317379 | SUPPORT, LH PADDLE |
| 6 | 4 | 317380 | PADDLE, SWEeper |



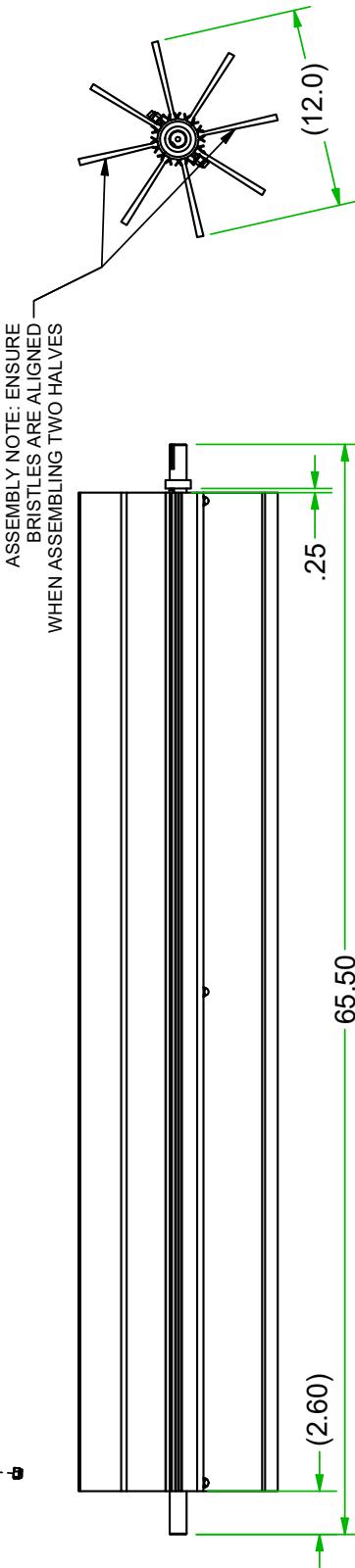
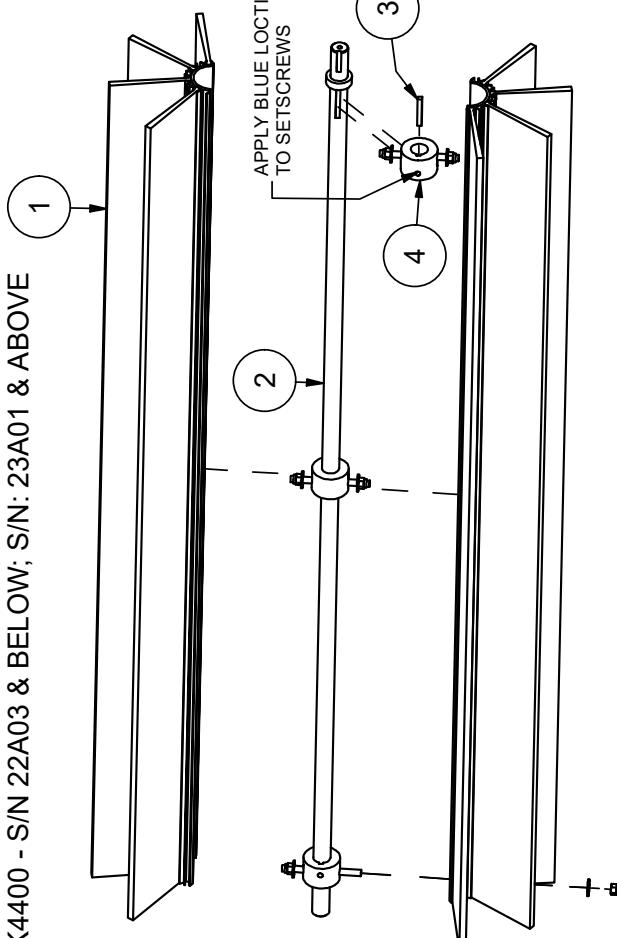
12-22-2020

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, TJ-16 |



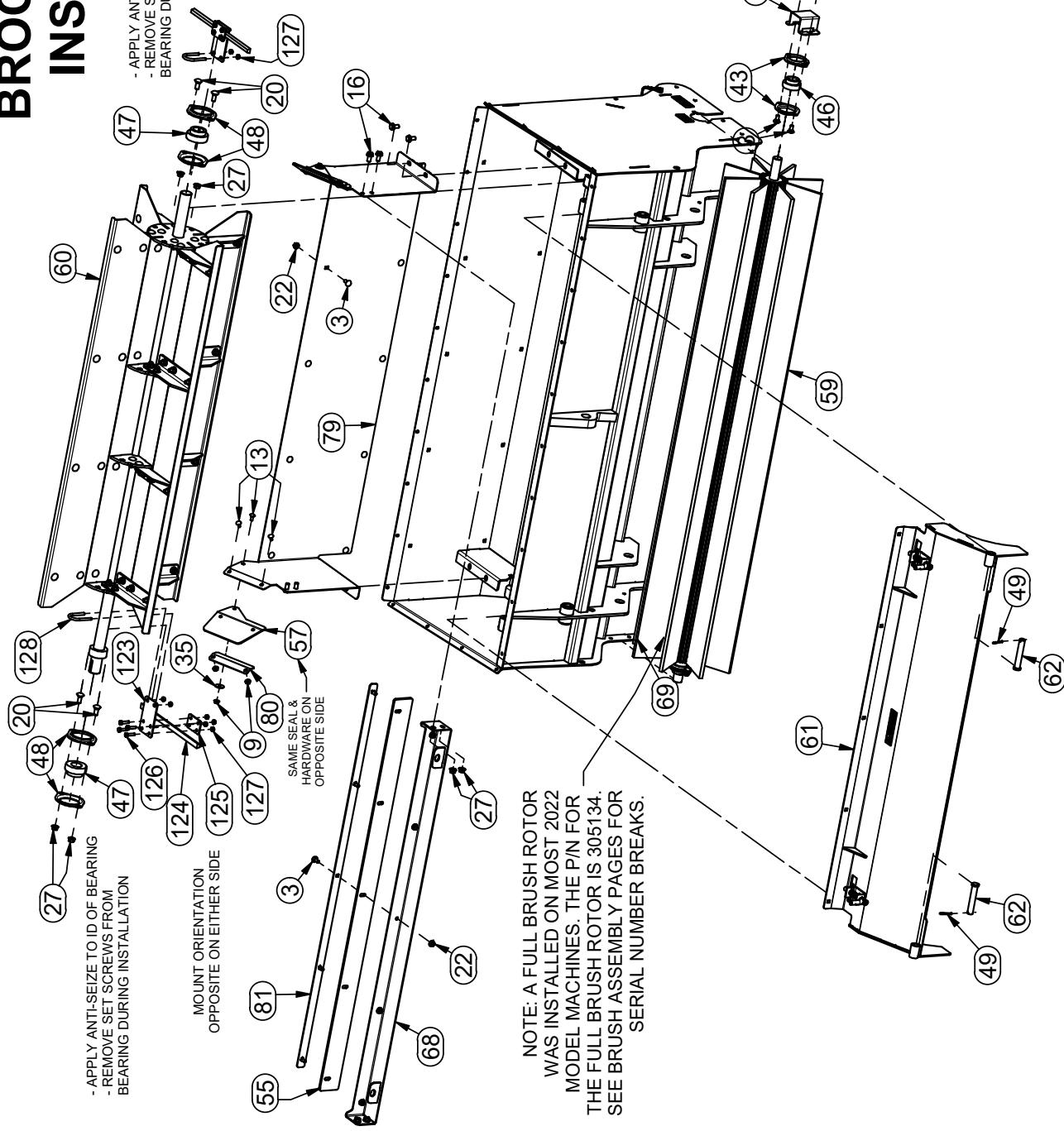
305125 REV: C

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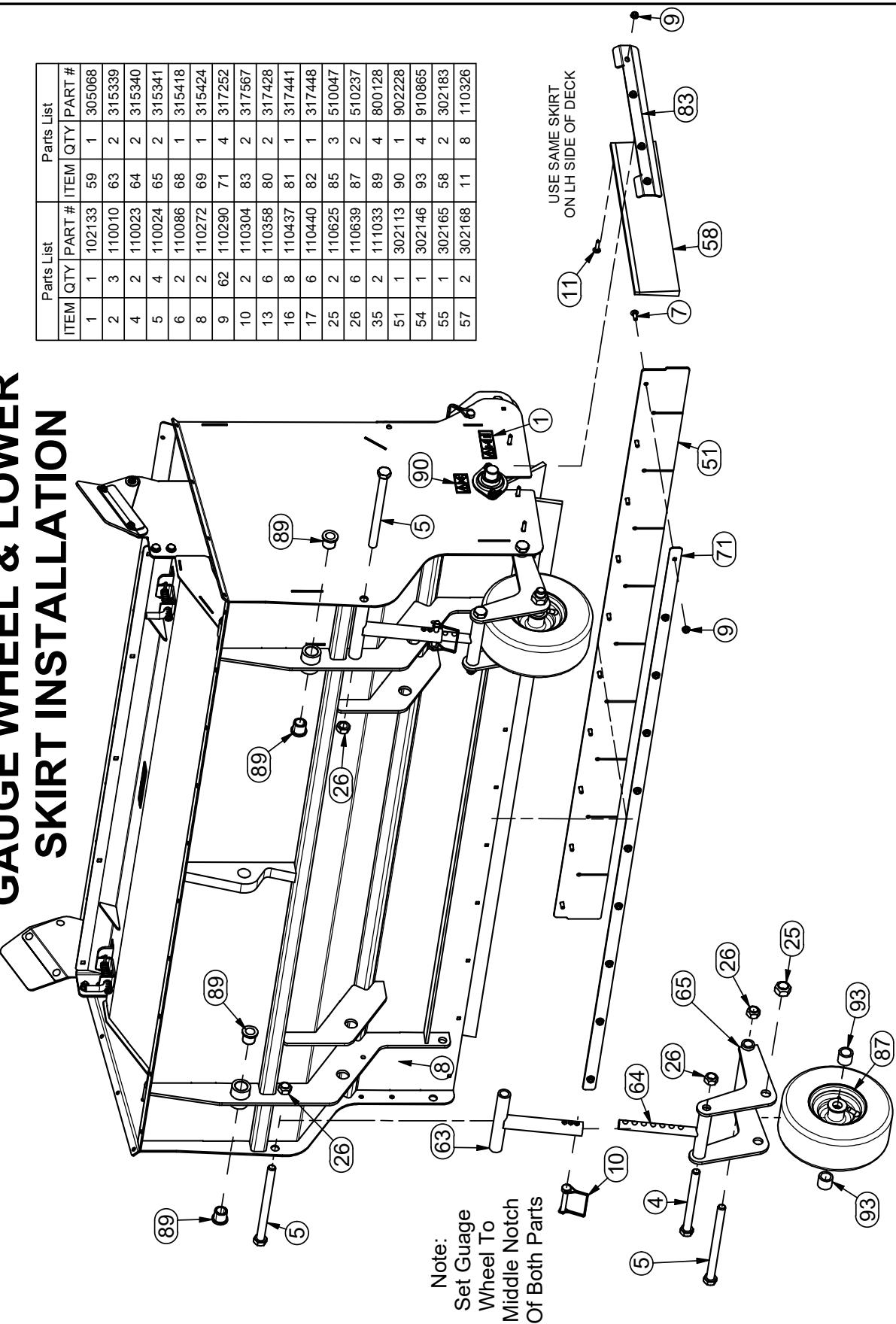
DECK ASSEMBLY

BROOM & PADDLE INSTALLATION



NOTE: A FULL BRUSH ROTOR
WAS INSTALLED ON MOST 2022
MODEL MACHINES. THE PIN FOR
THE FULL BRUSH ROTOR IS 305134.
SEE BRUSH ASSEMBLY PAGES FOR
SERIAL NUMBER BREAKS.

GAUGE WHEEL & LOWER SKIRT INSTALLATION

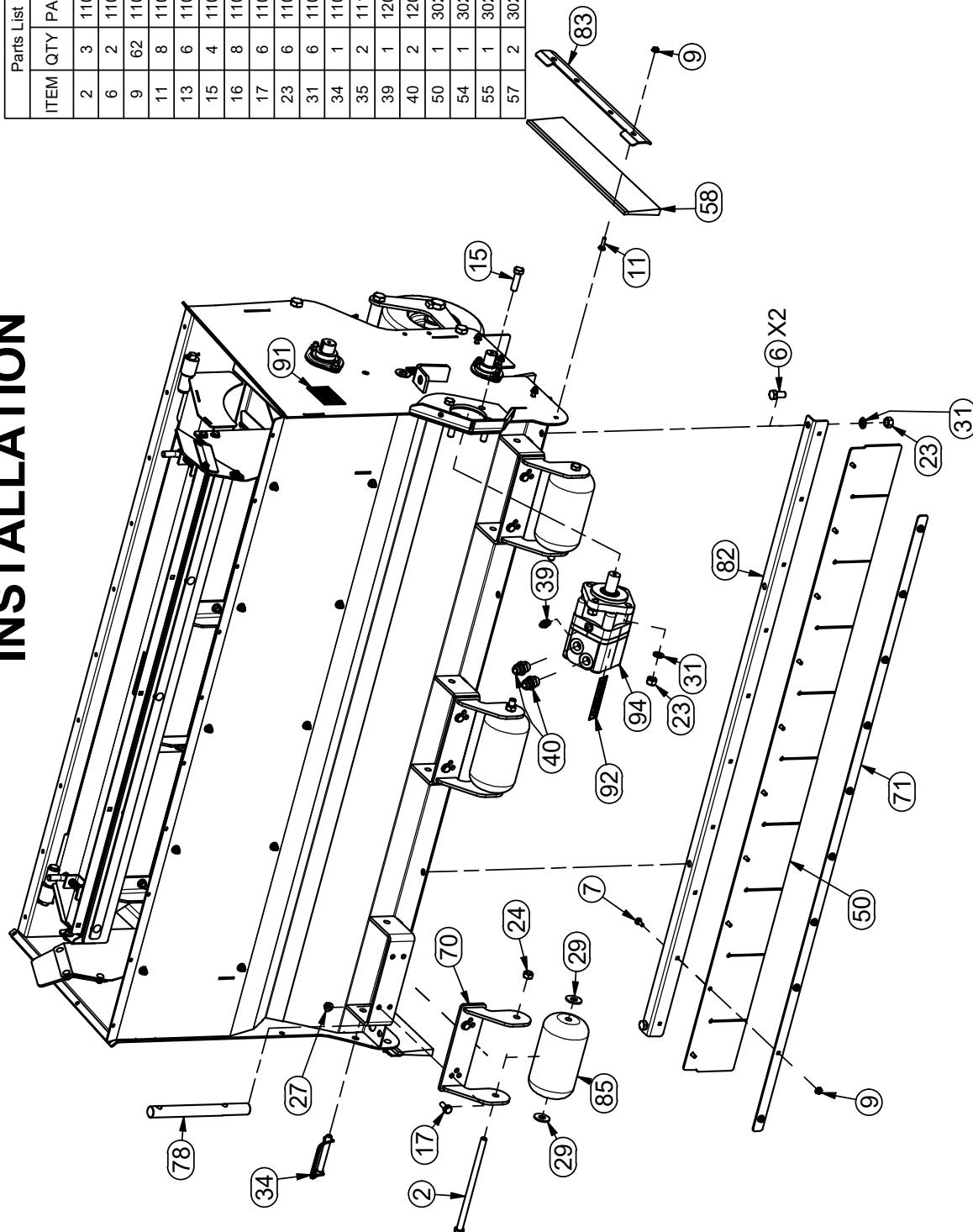


HYDRAULIC MOTOR, SCALP WHEELS & LOWER SKIRT INSTALLATION



| | |
|------------|------------|
| Parts List | Parts List |
|------------|------------|

| Parts List | | | Parts List | | |
|------------|-----|--------|------------|-----|--------|
| ITEM | QTY | PART # | ITEM | QTY | PART # |
| 2 | 3 | 110010 | 58 | 2 | 302183 |
| 6 | 2 | 110086 | 59 | 1 | 305068 |
| 9 | 62 | 110290 | 124 | 2 | 311608 |
| 11 | 8 | 110326 | 65 | 2 | 315341 |
| 13 | 6 | 110358 | 68 | 1 | 315418 |
| 15 | 4 | 110419 | 69 | 1 | 315424 |
| 16 | 8 | 110437 | 70 | 3 | 315425 |
| 17 | 6 | 110440 | 71 | 4 | 317252 |
| 23 | 6 | 110610 | 78 | 1 | 317365 |
| 31 | 6 | 110666 | 80 | 2 | 317428 |
| 34 | 1 | 110987 | 81 | 1 | 317441 |
| 35 | 2 | 111033 | 82 | 1 | 317448 |
| 39 | 1 | 120233 | 83 | 2 | 317567 |
| 40 | 2 | 120251 | 85 | 3 | 510047 |
| 50 | 1 | 302112 | 91 | 1 | 902230 |
| 54 | 1 | 302146 | 92 | 1 | 902232 |
| 55 | 1 | 302165 | 94 | 1 | 923014 |
| 57 | 2 | 302168 | | | |

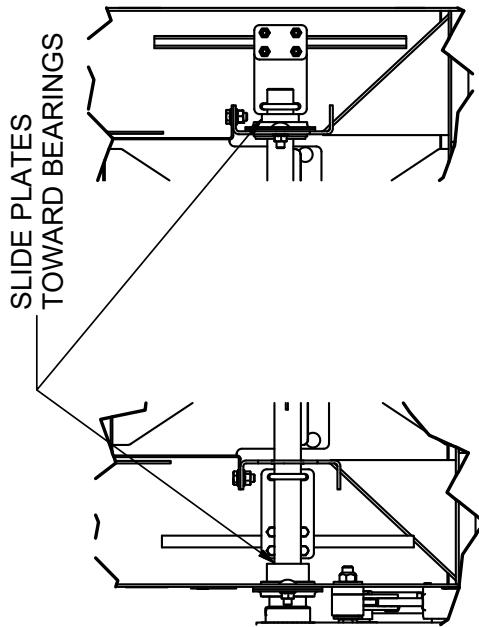


305164 REV. NC

Parts List

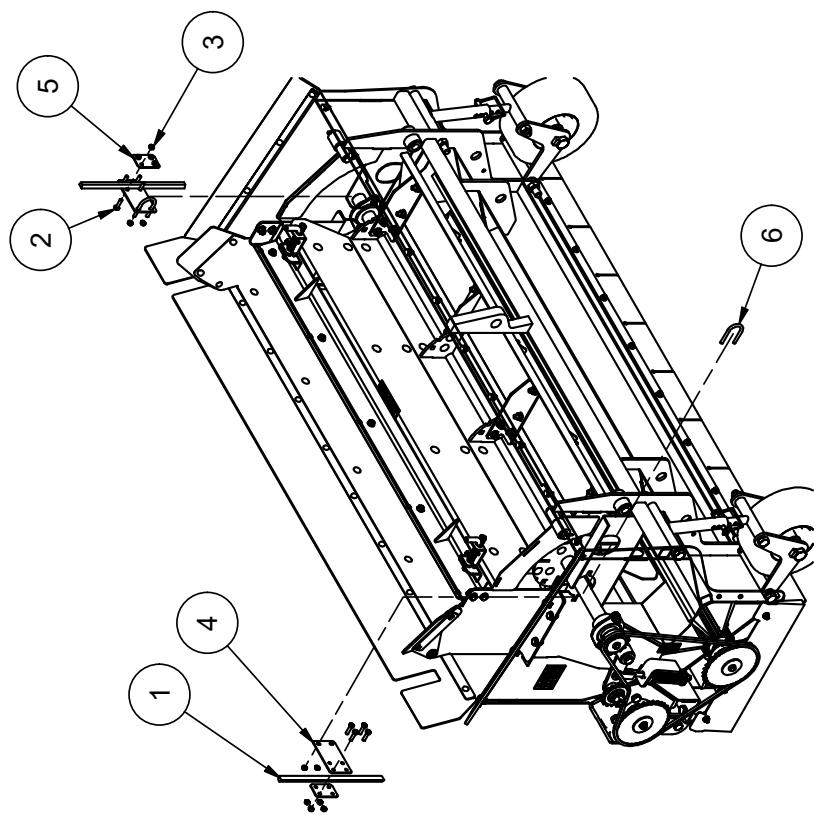
DESCRIPTION

| ITEM | QTY | PART # | DESCRIPTION |
|------|-----|--------|------------------------------------|
| 1 | 2 | 311608 | FINGER, 12" RUBBER |
| 2 | 8 | 110464 | BOLT, 1/4-20 X 1.0 |
| 3 | 12 | 110174 | NUT, 1/4-20, UNITORQUE LOCK |
| 4 | 2 | 317621 | Plate, Debris Spinner Mnt |
| 5 | 2 | 317622 | PLATE, DEBRIS SPINNER RETAINER |
| 6 | 2 | 112147 | U-BOLT, 1/4-20 X 1.25, ZINC PLATED |



Right side detail

Left side detail

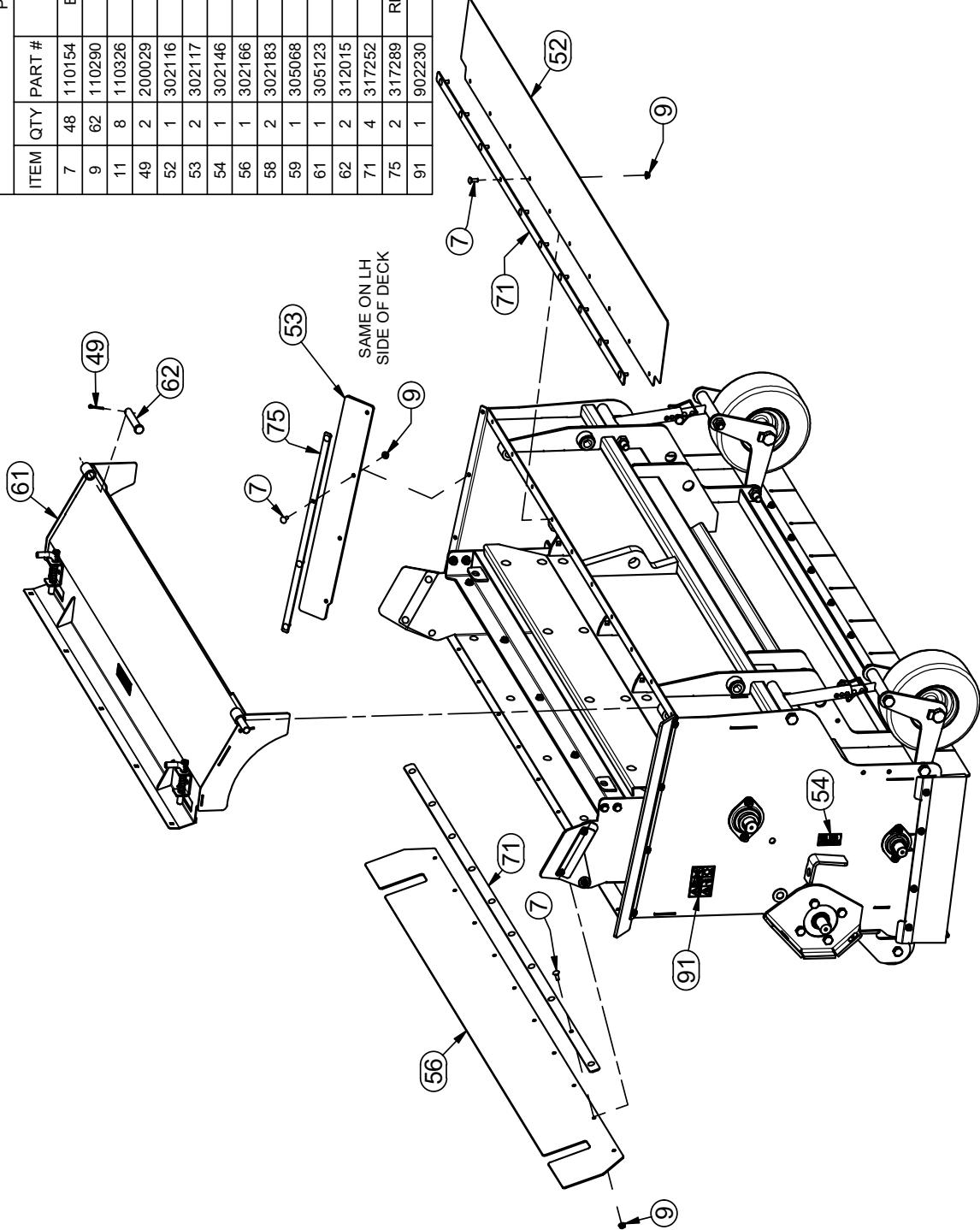


RETURN AIR DEBRIS CLEANER KIT

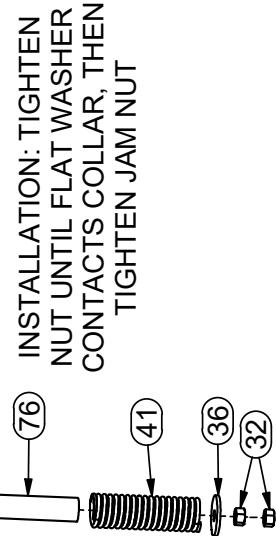
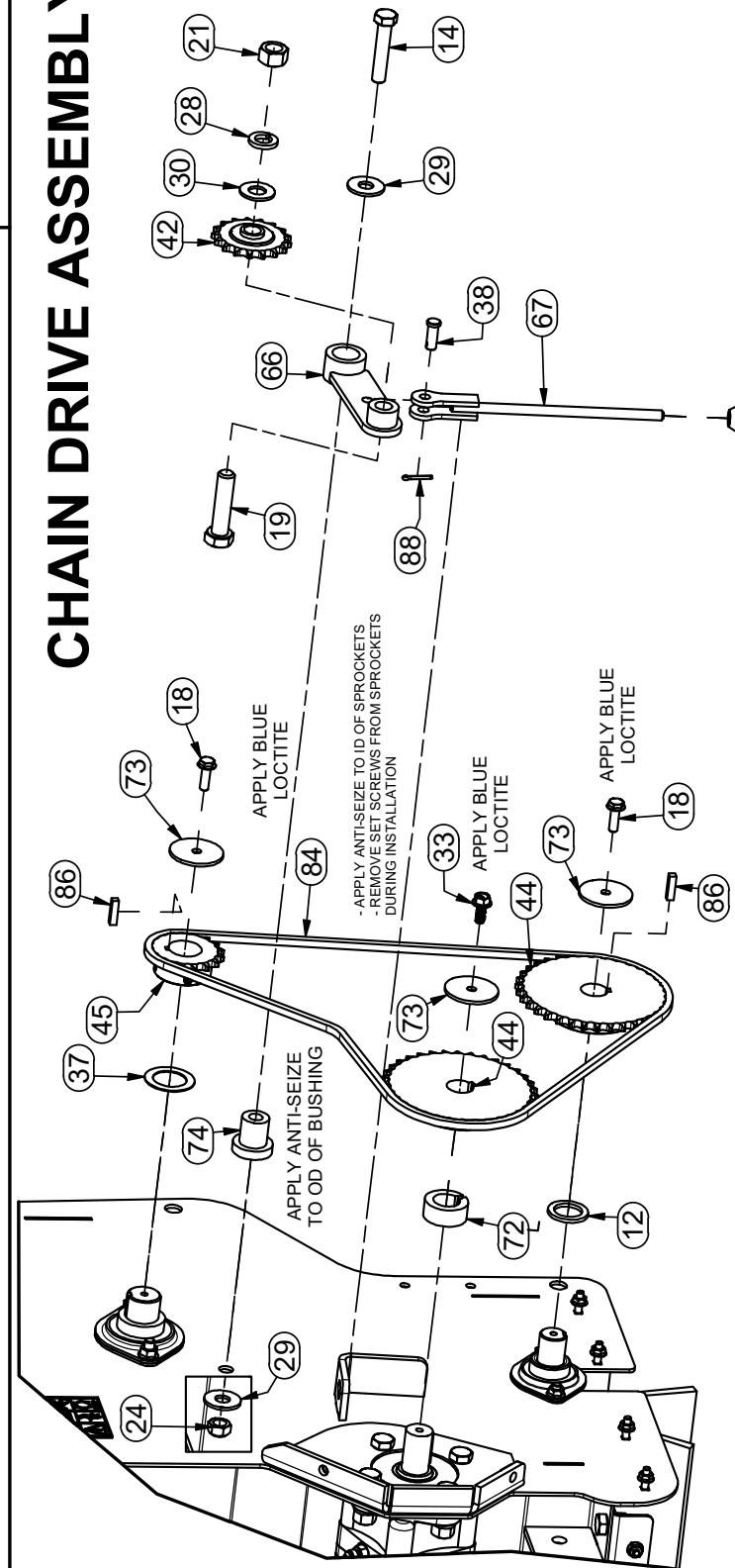
Standard on S/N: 24A04+ Optional for S/N: 24A03-

UPPER DECK SEAL & PADDLE SHIELD INSTALLATION

| Parts List | | |
|------------|-----|---------------------------|
| ITEM | QTY | PART # |
| 7 | 48 | 110154 |
| 9 | 62 | 110290 |
| 11 | 8 | 110326 |
| 49 | 2 | 200029 |
| | | COTTER PIN, 5/32 X 1 |
| 52 | 1 | 302116 |
| | | SEAL, REAR TRANSITION |
| 53 | 2 | 302117 |
| | | SEAL, SIDE DECK |
| 54 | 1 | 302146 |
| | | Decal, Tension Adjustment |
| 56 | 1 | 302166 |
| | | SEAL, FRONT DECK |
| 58 | 2 | 302183 |
| | | Brush, Side Skirt |
| 59 | 1 | 305068 |
| | | ASSY, BRUSH |
| 61 | 1 | 305123 |
| | | ASSY, PADDLE SHIELD |
| 62 | 2 | 312015 |
| | | PIN, 5/8" x 3.5" |
| 71 | 4 | 3117252 |
| | | RETAINER, FRONT DECK |
| 75 | 2 | 3117289 |
| | | RETAINER, UPPER SIDE SEAL |
| 91 | 1 | 902230 |
| | | Decal, Shaft Hazard |



CHAIN DRIVE ASSEMBLY

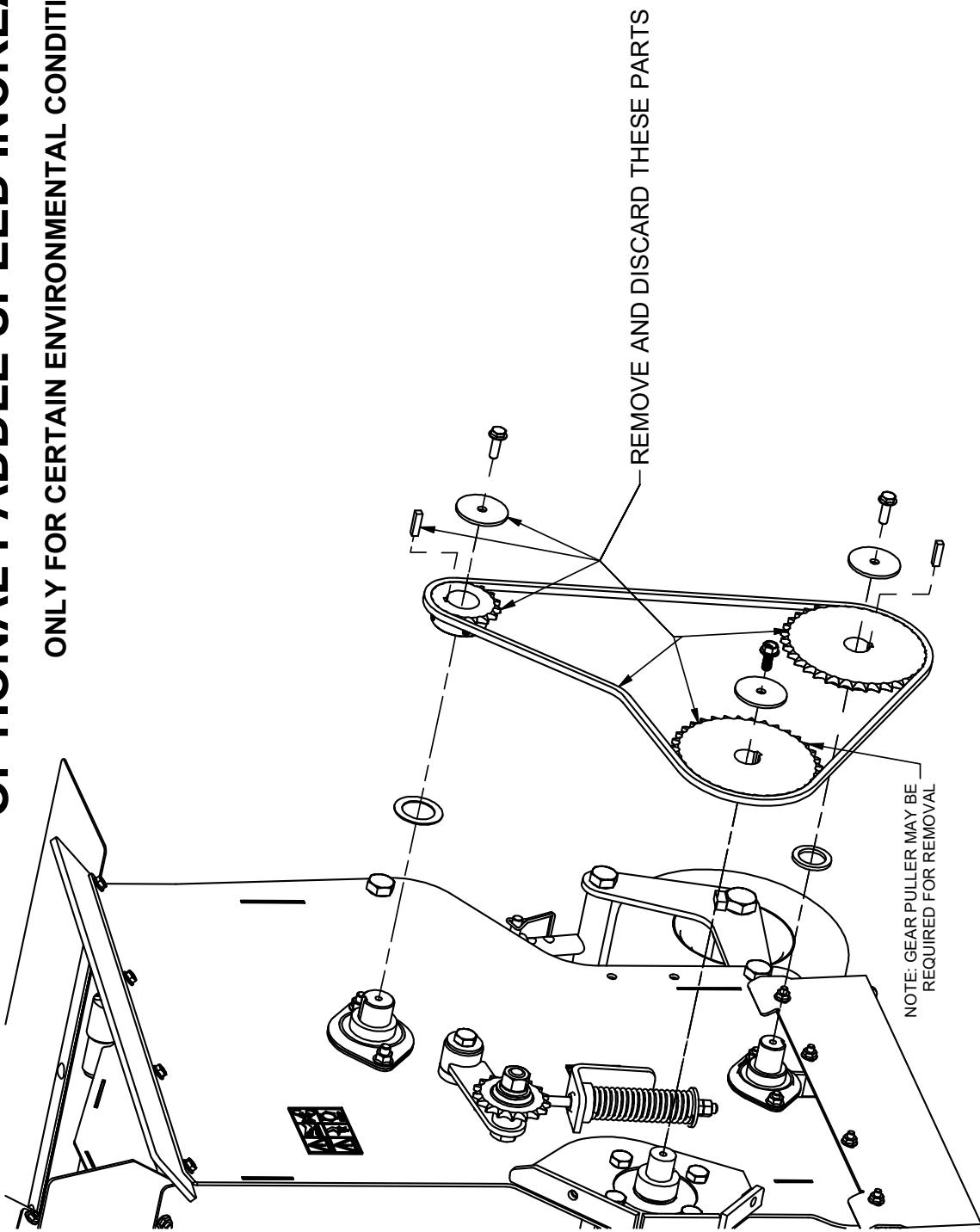


INSTALLATION: TIGHTEN NUT UNTIL FLAT WASHER CONTACTS COLLAR, THEN TIGHTEN JAM NUT

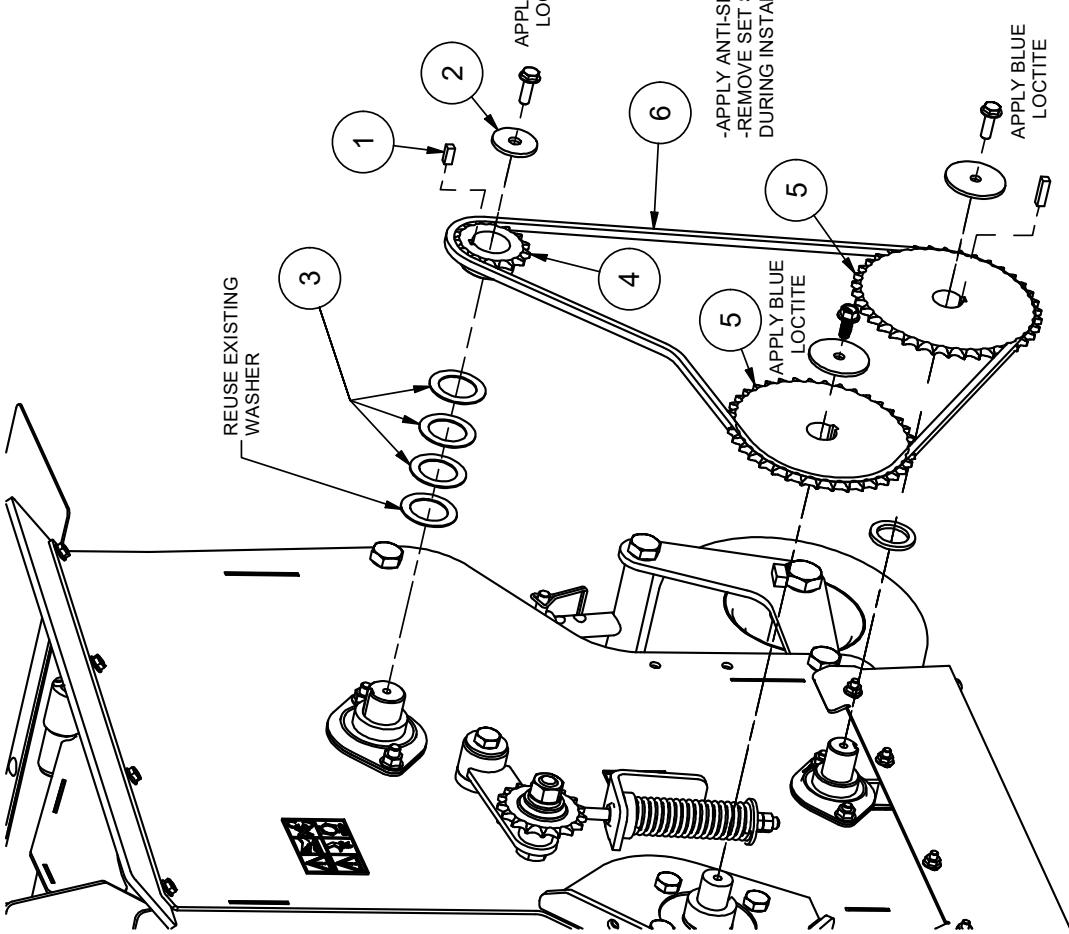
| Parts List | | Parts List | | | |
|------------|--------|-----------------------------------|------|--------|-----------------------------------|
| ITEM | PART # | DESCRIPTION | ITEM | PART # | DESCRIPTION |
| 11 | 110326 | Bolt, 1/4-20 X 1 in Carriage | 41 | 142002 | SPRING, COMP 1 1/4 X 4 X .148 |
| 12 | 110335 | WASHER, 1" FLAT MACHINE | 42 | 142013 | Sprocket, 4017 Idler, 5/8 |
| 14 | 110403 | BOLT, 1/2-13 X 2.5 | 44 | 142023 | SPROCKET, 40BS35 X 1.0 |
| 18 | 110459 | BOLT, 5/16-18 X 1, WIZ FLANGE | 45 | 142024 | SPROCKET, 40BS17 X 1.25 |
| 19 | 110513 | BOLT, 5/8-11 X 2.5 | 58 | 302183 | Brush, Side Skirt |
| 21 | 110597 | NUT, 5/8-11 | 59 | 305068 | ASSY, BRUSH |
| 24 | 110615 | NUT, 1/2-13, UNI TORQUE LOCK | 66 | 315377 | WELDMENT, SWEEPER DRIVE IDLER |
| 28 | 110655 | WASHER, 5/8" LOCK | 67 | 315378 | WELDMENT, IDLER ADJUSTMENT |
| 29 | 110658 | WASHER, 1/2" FLAT STANDARD | 72 | 317256 | SPACER, KEYWAY, 1.625 X .5 X .909 |
| 30 | 110663 | WASHER, 5/8" FLAT SAE | 73 | 317258 | WASHER, 2.0 X .344 X .12 |
| 32 | 110826 | NUT, 3/8-16 GR 5 | 74 | 317261 | TENSIONER, GEAR MOUNT |
| 33 | 110929 | BOLT, M8-1.25 X 20 WIZ FLNG | 76 | 317295 | COLLAR, SPRING TENSIONER |
| 36 | 111186 | WASHER, 1.50 X .406 X .125, FLAT | 84 | 340013 | ROLLER CHAIN, #40 DECK (53") |
| 37 | 111188 | WASHER, 1.25 X 1.875 X .047, FLAT | 86 | 510228 | KEY, 1/4 X 1/4 X 1.0 UNDER |
| 38 | 112130 | Clevis Pin, 3/8" X 3/4", ZINC | 88 | 510249 | COTTER PIN, 1/8 X 0.75 |

OPTIONAL PADDLE SPEED INCREASER KIT

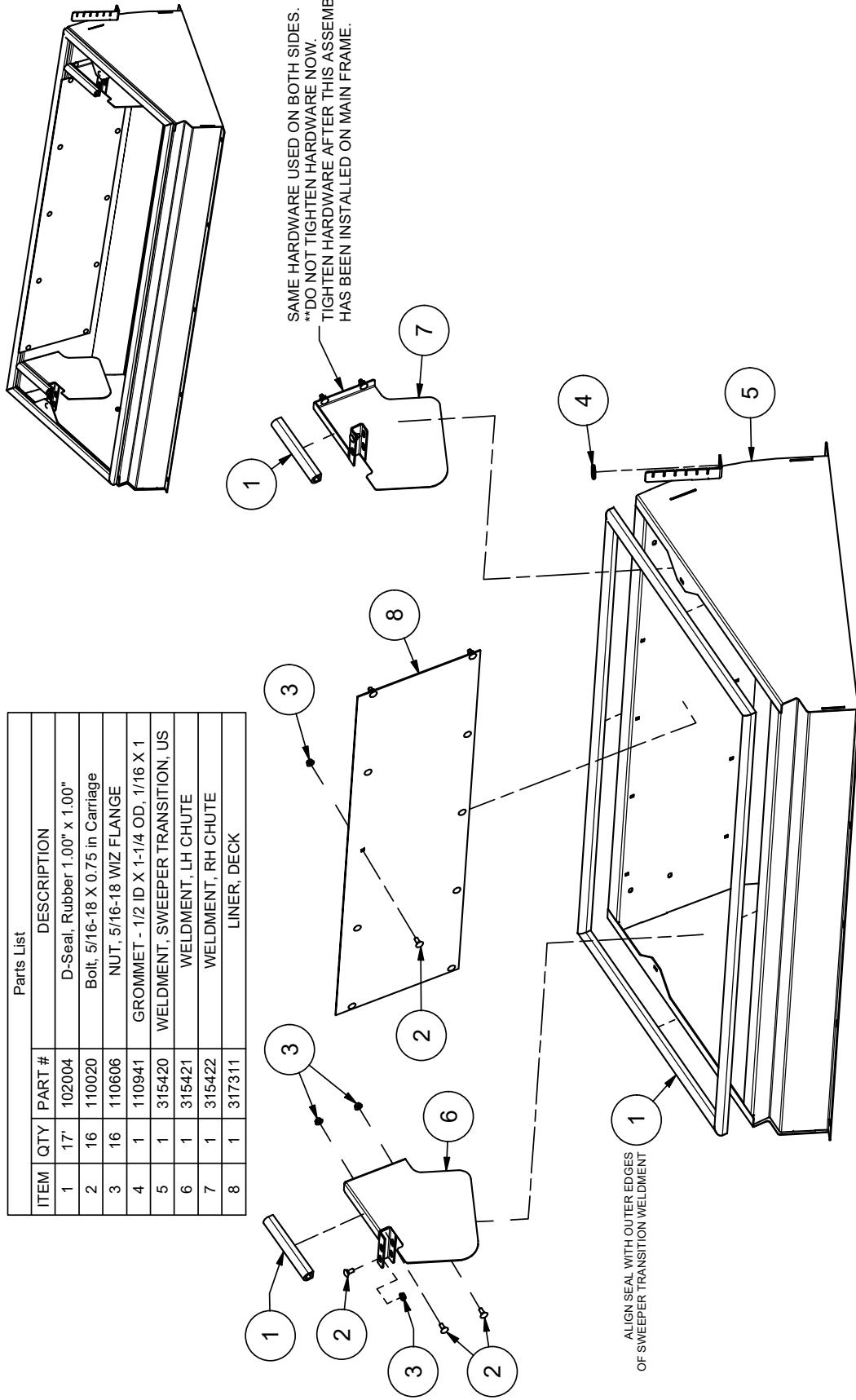
ONLY FOR CERTAIN ENVIRONMENTAL CONDITIONS



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 | 3 | 111188 | WASHER, 1.25 x 1.875 x .047, FLAT |
| 4 | 1 | 142029 | SPROCKET, 40BS15 X 1.25 |
| 5 | 2 | 142030 | SPROCKET, 40BS38 X 1.0 |
| 6 | 1 | 340013 | ROLLER CHAIN, #40 DECK DRIVE |

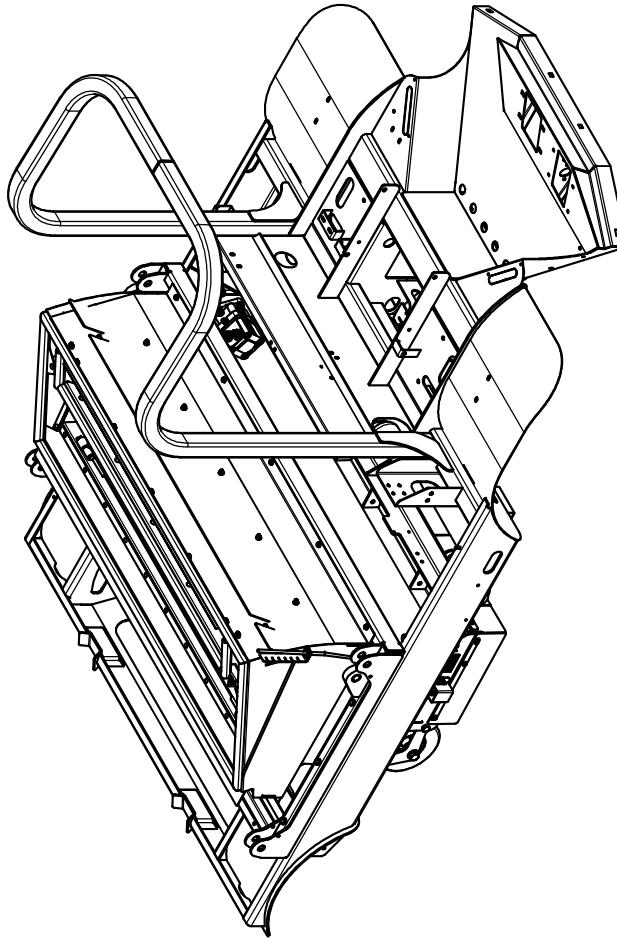


DECK TRANSITION ASSEMBLY

DECK INSTALLATION

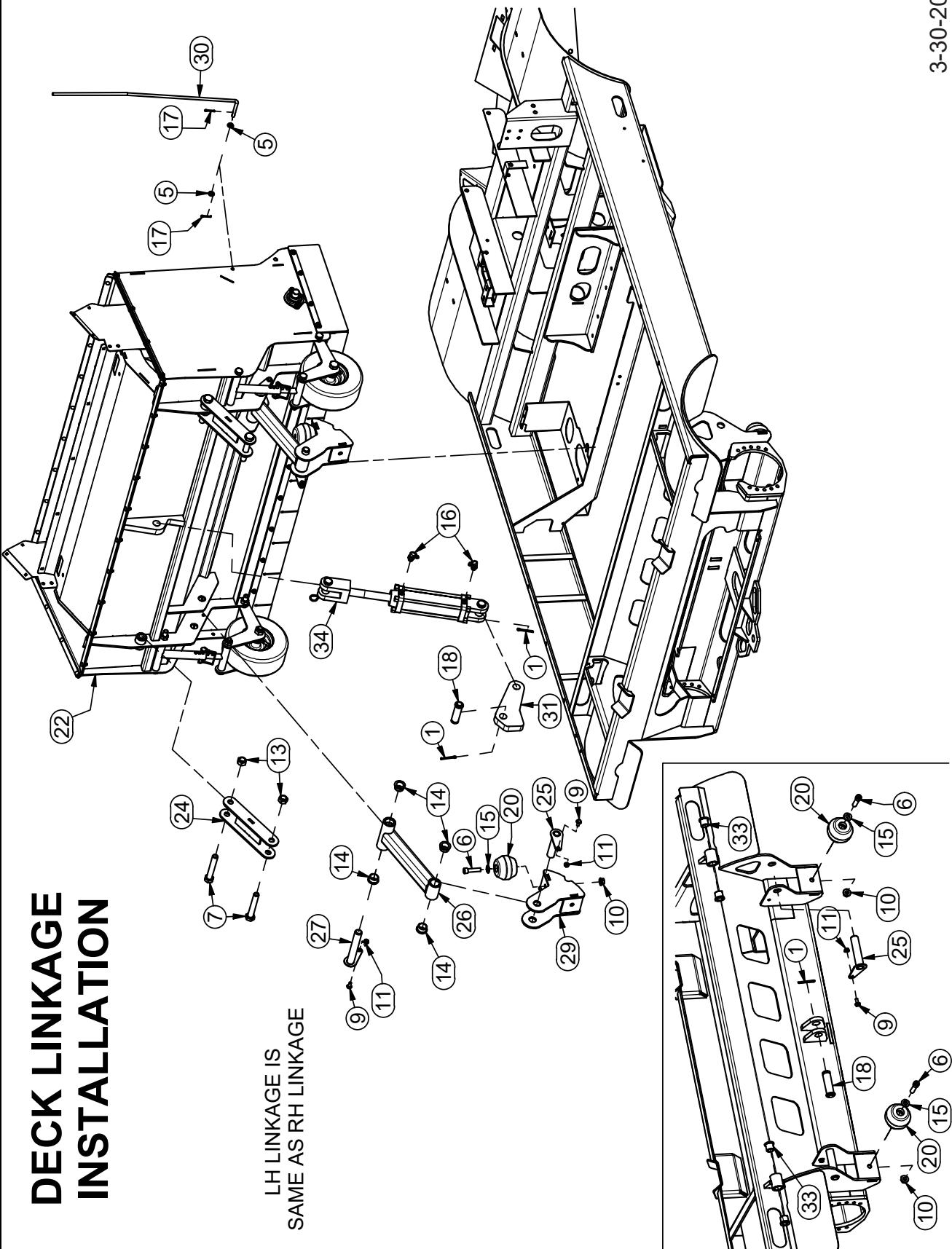
| Parts List | | | |
|------------|--------|--------|-------------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 2 | 100465 | COTTER PIN, 3/16 X 1.75 |
| 2 | 4.4 FT | 102004 | D-Seal, Rubber 1.00" x 1.00" |
| 3 | 6 | 110003 | BOLT, 1/2-13 X 4.0 |
| 4 | 10 | 110020 | Bolt, 5/16-18 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 | 305125 | ASSY, DECK, 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



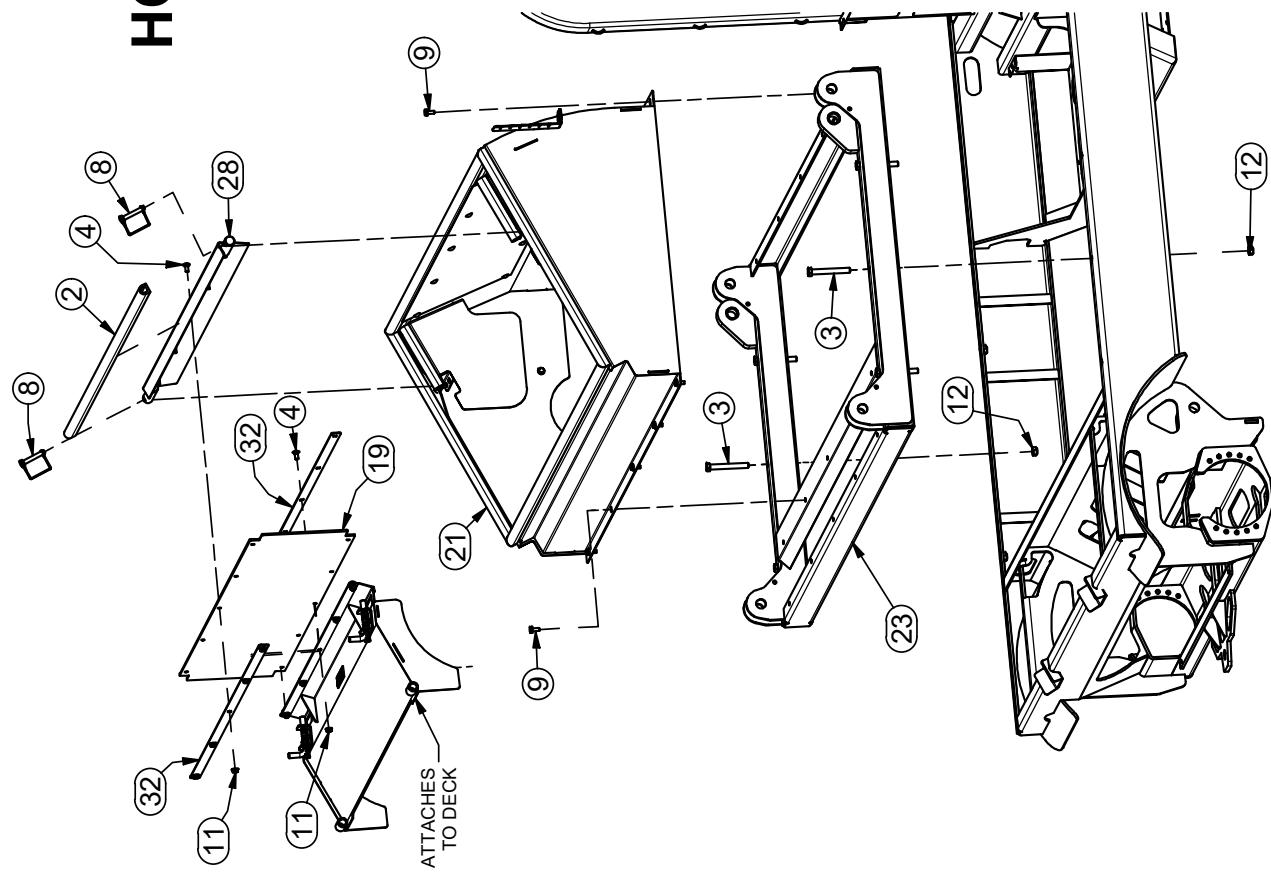
DECK LINKAGE INSTALLATION

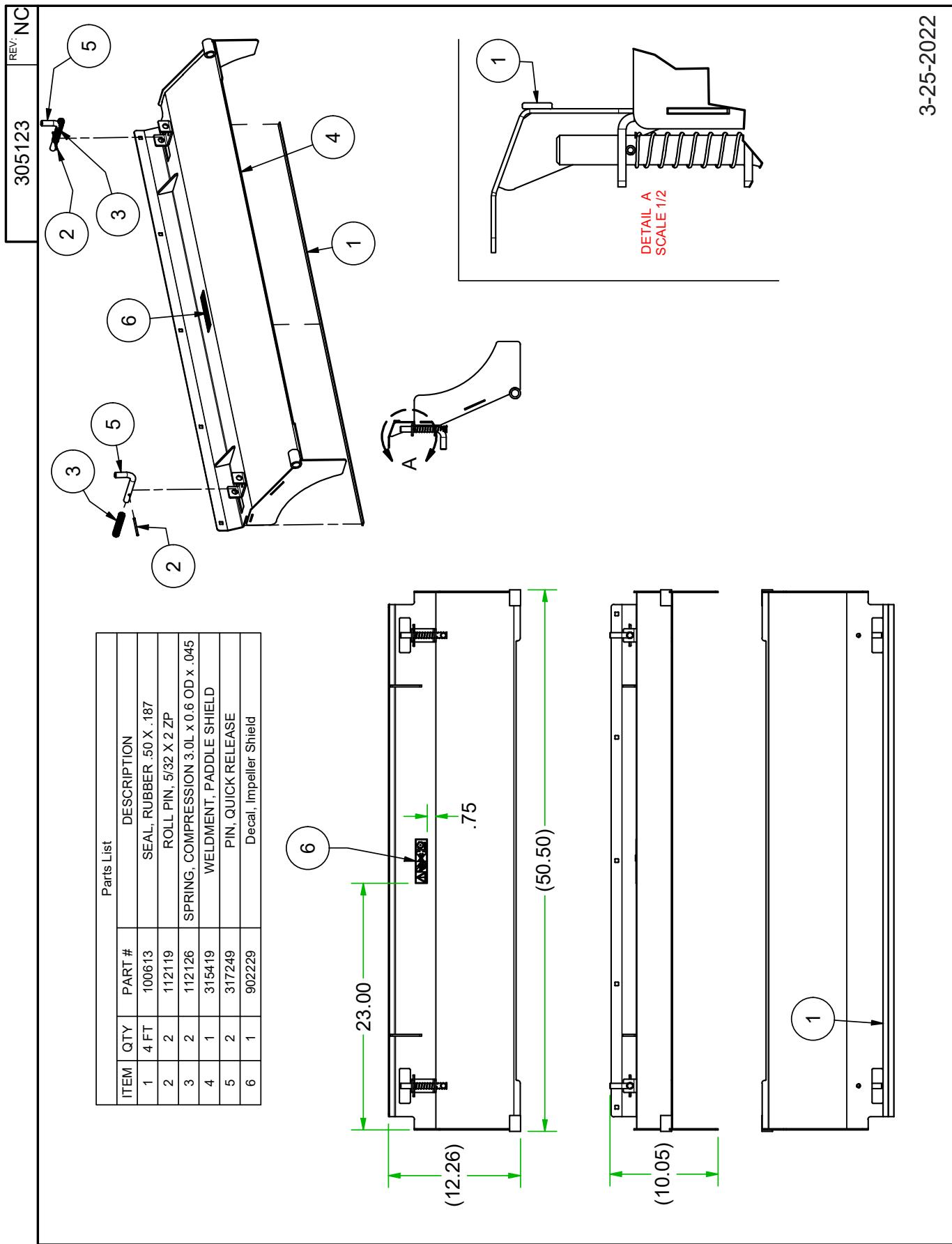
LH LINKAGE IS
SAME AS RH LINKAGE



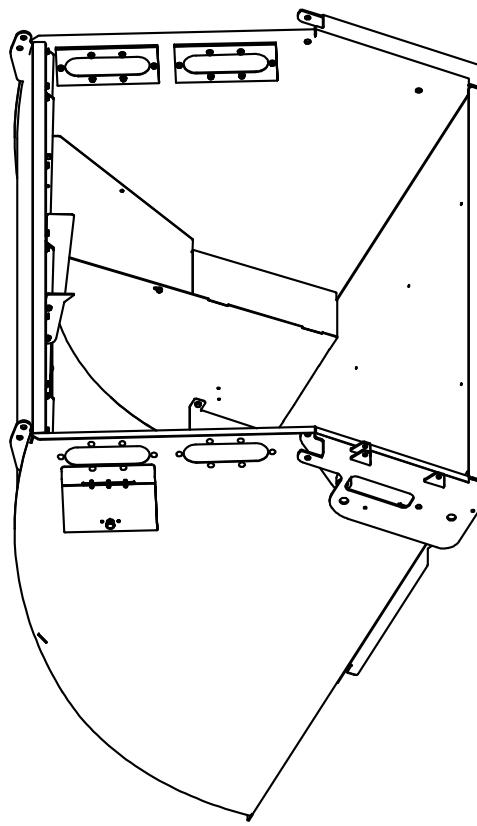
HOPPER TRANSITION & HOPPER MOUNT INSTALLATION

| 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 |





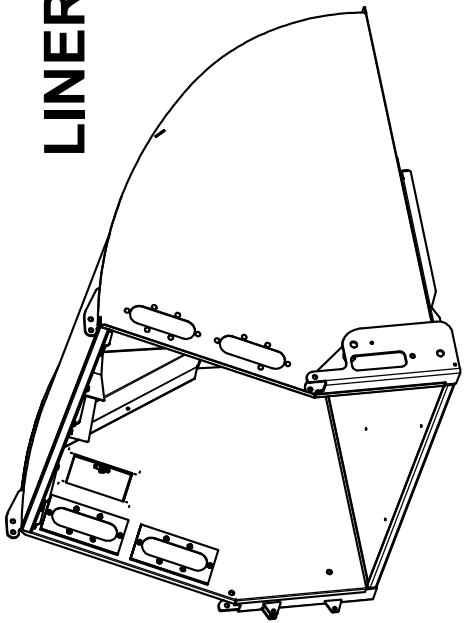
HOPPER ASSEMBLY



SIMILAR TO 305132

| Parts List | | | |
|------------|--------|--------|--|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 2 1/8" | 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 |

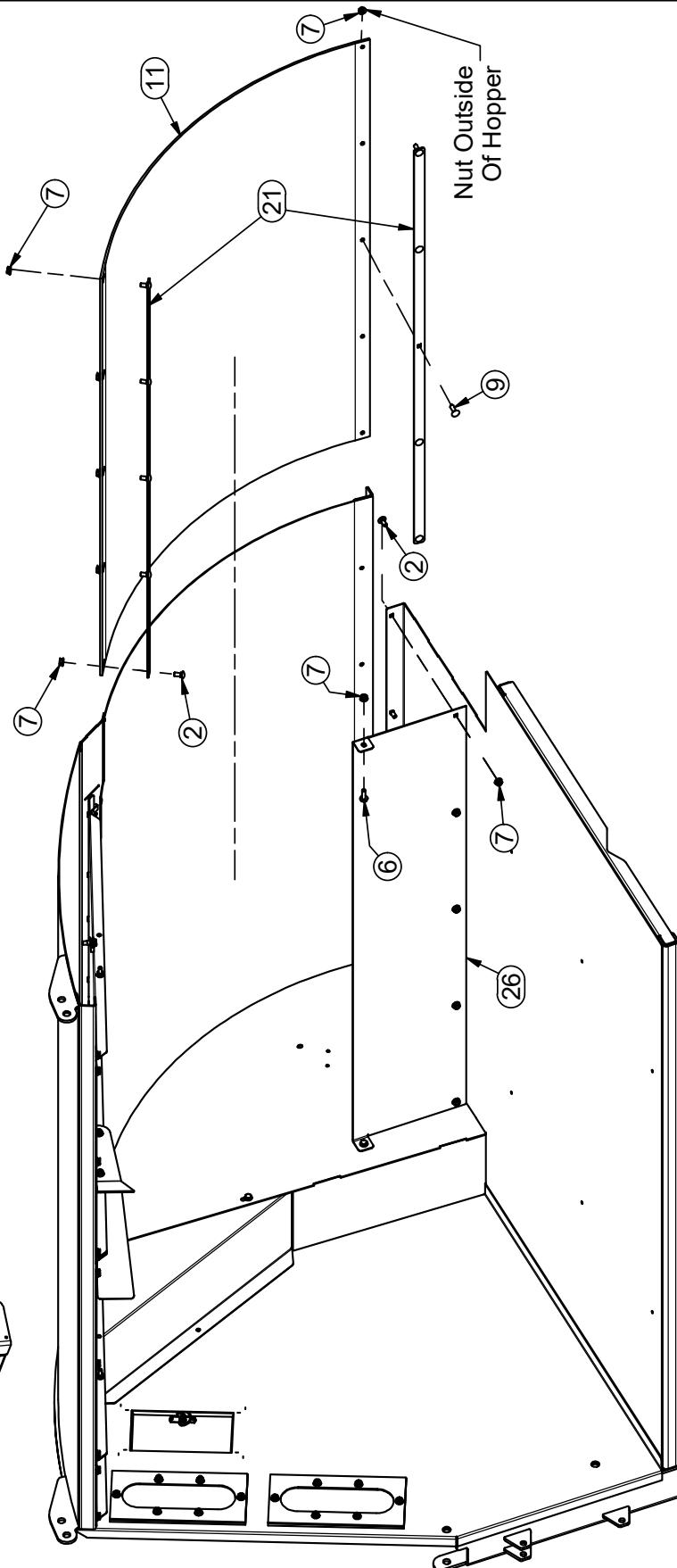
LINER & SHIELD INSTALL



| Parts List | | |
|------------|-----|--------|
| ITEM | QTY | PART # |
| 2 | 32 | 110020 |
| 6 | 24 | 110459 |
| 7 | 45 | 110606 |
| 9 | 7 | 110871 |
| 10 | 2 | 112051 |
| 11 | 1 | 302121 |
| 21 | 2 | 317245 |
| 22 | 1 | 317350 |
| 23 | 1 | 317351 |
| 26 | 1 | 317450 |

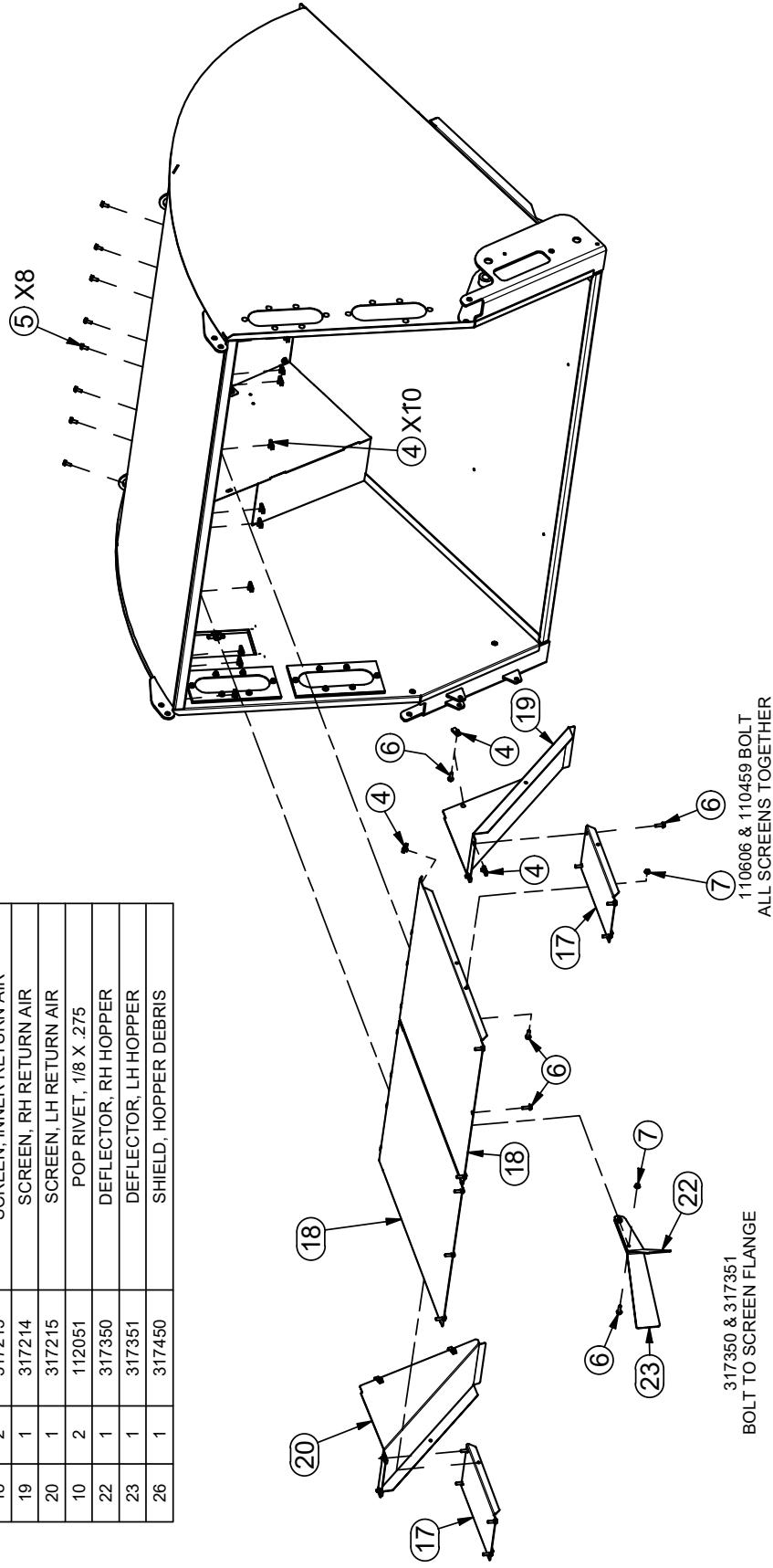
DESCRIPTION

Bolt, 5/16-18 X 0.75 in Carriage
BOLT, 5/16-18 X 1, WIZ FLANGE
NUT, 5/16-18 WIZ FLANGE
Bolt, 5/16-18 X 1 in Carriage
POP RIVET, 1/8 X 275
LINER, SWEEPER HOPPER
RETAINER, LINER
DEFLECTOR, RH HOPPER
DEFLECTOR, LH HOPPER
SHIELD, HOPPER DEBRIS



SCREEN ASSEMBLY AND INSTALL

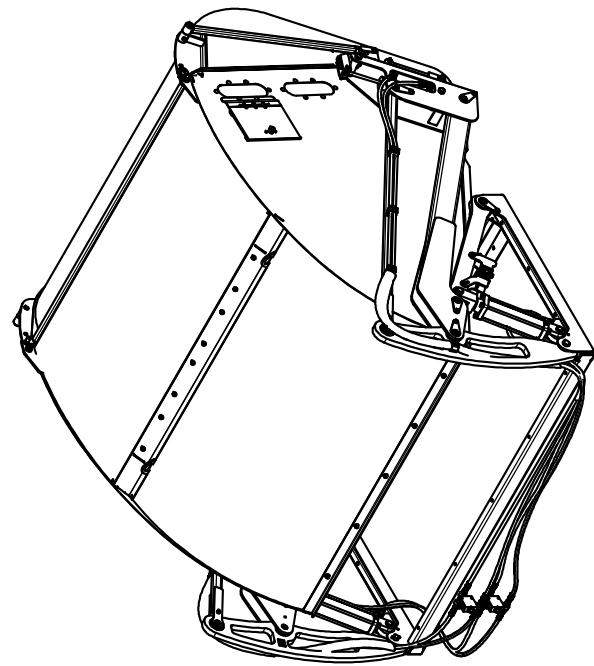
| Parts List | | | |
|------------|-----|--------|----------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 4 | 26 | 110319 | NUT, 5/16-18 U-TYPE .75L |
| 5 | 8 | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE |
| 6 | 24 | 110459 | BOLT, 5/16-18 X 1, WIZ FLANGE |
| 7 | 45 | 110606 | NUT, 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 |



HK4200

HARPER®
TURF EQUIPMENT

| Parts List | | | | Parts List | | | |
|------------|-------|--------|---|------------|-----|--------|---|
| ITEM | QTY | PART # | DESCRIPTION | ITEM | QTY | PART # | DESCRIPTION |
| 1 | 8.75' | 100354 | WEBBING, NYLON 1.50ID, SHEATH | 37 | 2 | 315412 | WELDMENT, LOWER LIFT LINK, US |
| 2 | 2 | 102137 | CLEVIS PIN, 1/2 X 1.75 | 38 | 2 | 315413 | WELDMENT, UPPER LIFT LINK, US |
| 3 | 4 | 110025 | BOLT, 5/8-11 X 5.5 | 39 | 2 | 315416 | WELDMENT, DOOR LIFT LINK, US |
| 4 | 4 | 110378 | BOLT, 5/16-18 X 2.0 | 40 | 2 | 317216 | CLEVIS PIN, 3/4 X 3.75, W/HOLE SPACER, CYLINDER |
| 5 | 2 | 110396 | BOLT, 5/16-18 X 2.5 | 41 | 4 | 317320 | CYLINDER - STEERING, 1-3/4 X 6 |
| 6 | 8 | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE | 42 | 2 | 323010 | HOSE KIT, HAWK HOPPER HYDRAULIC CYLINDER, 2.5 X 8, -6 SAE, Hopper Cylinder, 3/16 X 1.25 |
| 7 | 8 | 110474 | BOLT, 1/4-20 X 1-1/2 | 43 | 1 | 323065 | COTTER PIN, 3/16 X 1.25 |
| 8 | 2 | 110536 | BOLT, 5/16-18 X 3.25 | 44 | 2 | 500184 | GREASE ZERK, 1/4-28 90deg |
| 9 | 2 | 110576 | BOLT, 5/8-11 X 1.5 GR 5 | 45 | 2 | 500230 | GREASE ZERK, 1/4-28 ST |
| 10 | 10 | 110600 | NUT, 5/16-18, UNITORQUE LOCK | 46 | 2 | 510174 | DOUBLE HOSE CLAMP |
| 11 | 8 | 110606 | NUT, 5/16-18 WIZ FLANGE | 47 | 14 | 522104 | DOUBLE COVERPLATE |
| 12 | 6 | 110639 | NUT, 5/8-11, UNITORQUE LOCK | 48 | 8 | 522105 | WASHER, 5/16" FLAT STANDARD |
| 13 | 2 | 110665 | WASHER, 5/16" FLAT STANDARD | 49 | 8 | 522106 | WASHER, 1/4" LOCK |
| 14 | 8 | 110667 | WASHER, 1/4" LOCK | | | | |
| 15 | 2 | 111190 | Bolt, 3/8 x 2 Shoulder Clevis Pin, 1/2" x 1-1/2", ZINC-PLATED STEEL | | | | |
| 16 | 2 | 112131 | Clevis Pin, 1" x 2-3/16", ZINC-PLATED STEEL | | | | |
| 17 | 2 | 112133 | ADAPTER, 6MJ-6MB90 | | | | |
| 18 | 2 | 120222 | ADAPTER, 4MJ-4MB | | | | |
| 19 | 4 | 120233 | ADAPTER, 4MJ-4FJ90 | | | | |
| 20 | 4 | 120266 | ADAPTER, REST 6MJ-MB .047 | | | | |
| 21 | 2 | 120398 | PIN, LOCK, 1/4 X 2-1/4, SQ WIRE | | | | |
| 22 | 2 | 140016 | COTTER PIN, 5/32 X 1 | | | | |
| 23 | 4 | 200029 | Assy, Safety Latch, ISO | | | | |
| 24 | 2 | 305103 | Assy, Hopper Door, ISO, US | | | | |
| 25 | 1 | 305113 | ASSY, HOPPER U.S. | | | | |
| 26 | 1 | 305127 | CLIP, HAIRPIN 3/32 X 1.625 | | | | |
| 27 | 1 | 312022 | PIN WELDMENT, HOPPER DOOR | | | | |
| 28 | 2 | 315257 | WELDMENT, DOOR LIFT PIVOT LINK | | | | |
| 29 | 2 | 315327 | WELDMENT, HOPPER LIFT - 4.00" | | | | |
| 30 | 4 | 315331 | WELDMENT, LIFT LINK PIN - 2.87" | | | | |
| 31 | 4 | 315332 | WELDMENT, LIFT LINK PIN - 2.12" | | | | |
| 32 | 4 | 315333 | Weldment, Door Arm End | | | | |
| 33 | 2 | 315383 | WELDMENT, DOOR STOP | | | | |
| 34 | 1 | 315393 | WELDMENT, VERTICAL LIFT LINK, US | | | | |
| 35 | 2 | 315410 | WELDMENT, CYLINDER LIFT LINK, US | | | | |
| 36 | 2 | 315411 | SIMILAR TO 305133 | | | | |

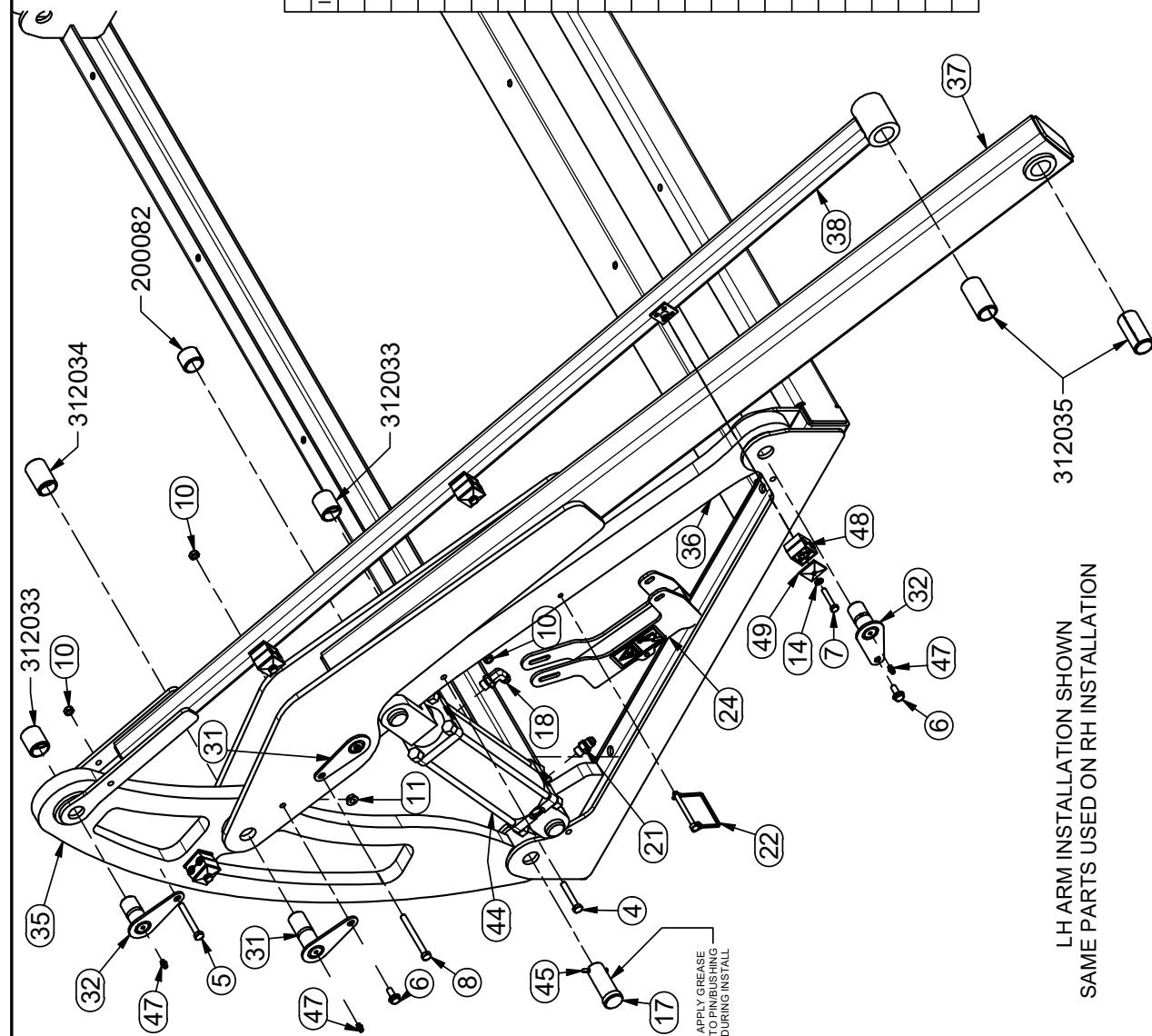


HOPPER INSTALLATION

305128

REV: NC

LIFT ARM ASSEMBLY

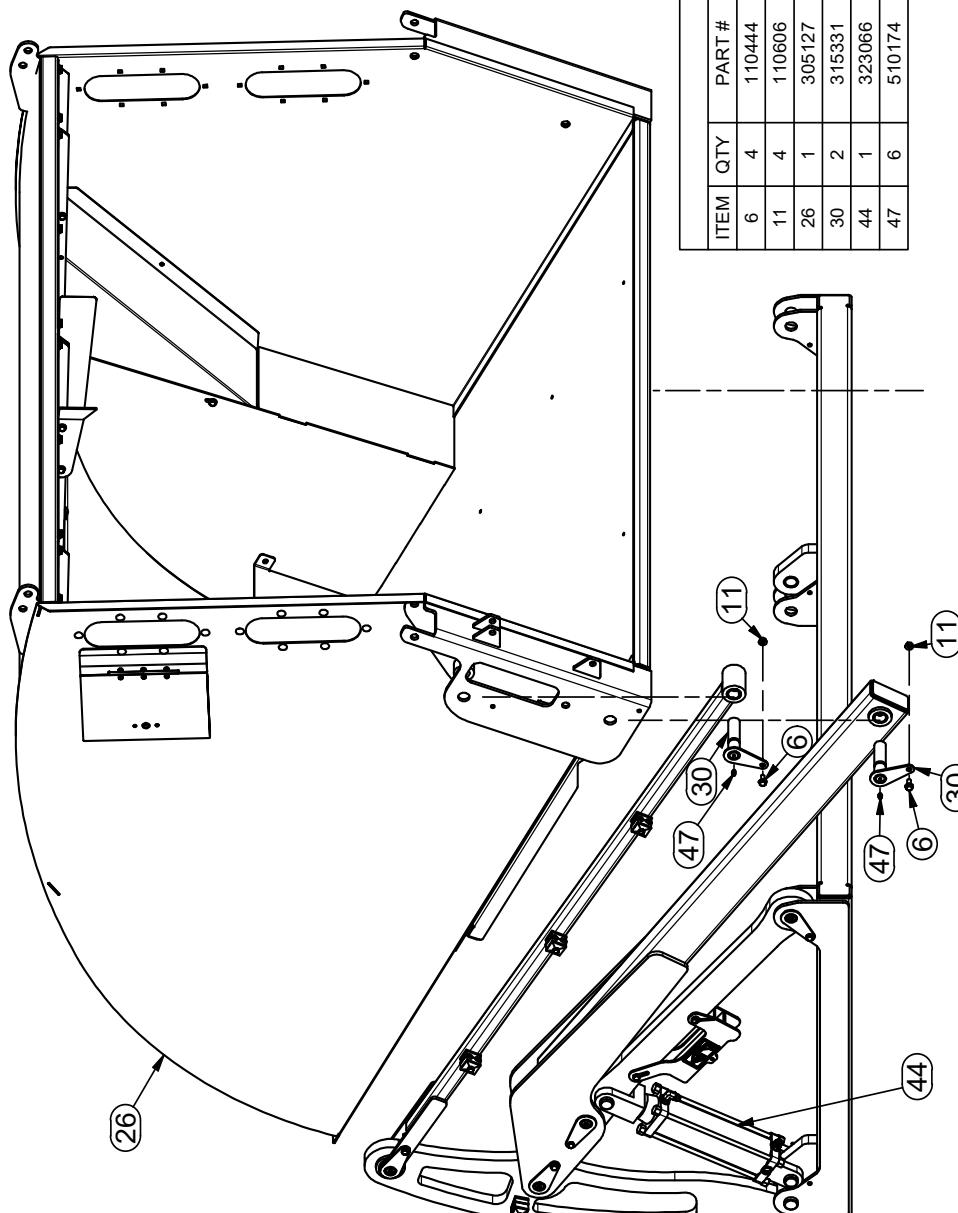


LH ARM INSTALLATION SHOWN
SAME PARTS USED ON RH INSTALLATION

| 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/ |

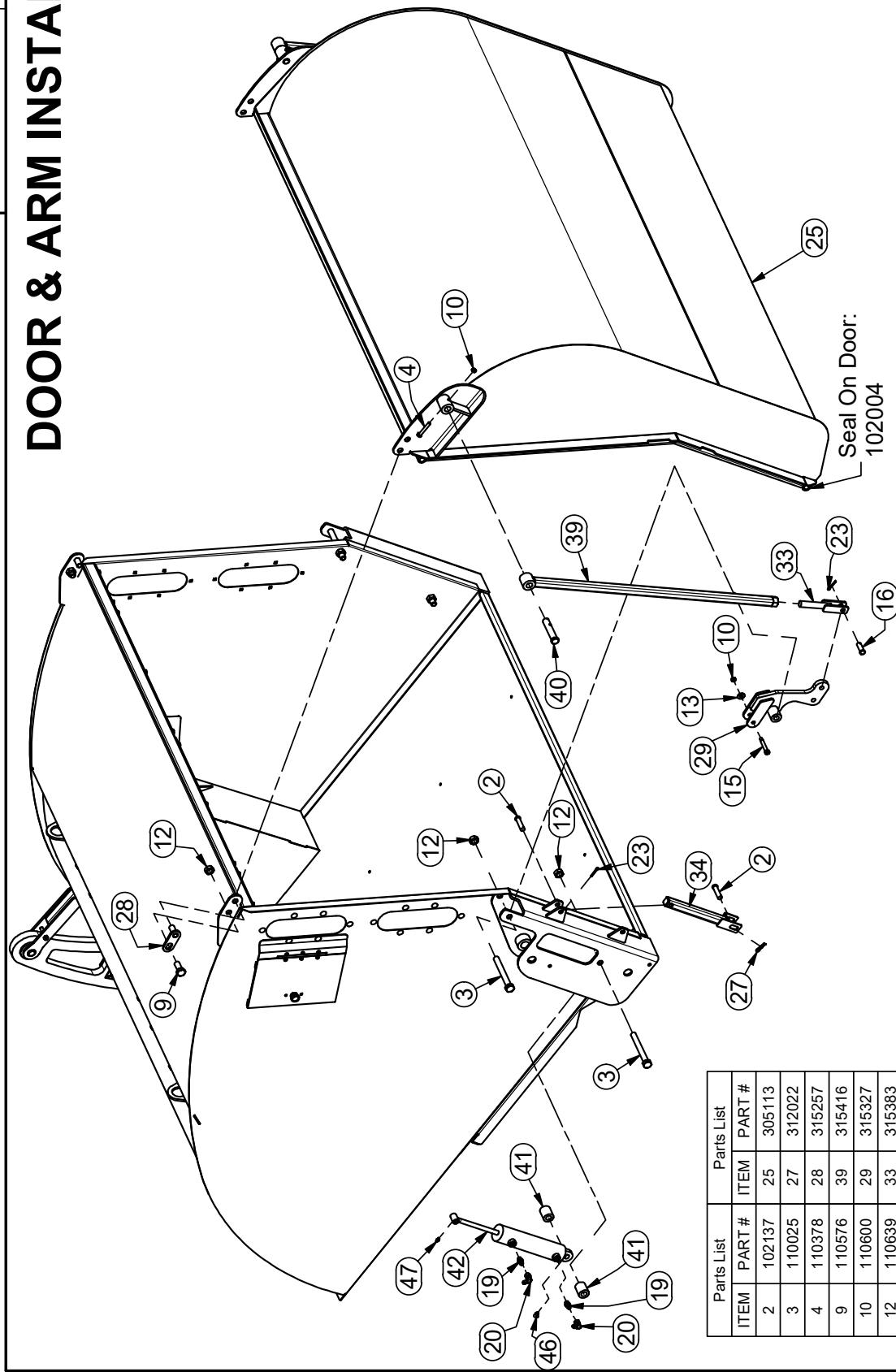
| Parts List | | | |
|------------|-----|--------|---|
| ITEM | QTY | PART # | DESCRIPTION |
| 4 | 1 | 110378 | BOLT, 5/16-18 X 2.0 |
| 5 | 1 | 110396 | BOLT, 5/16-18 X 2.5 |
| 6 | 2 | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE |
| 7 | 4 | 110474 | BOLT, 1/4-20 X 1-1/2 |
| 8 | 1 | 110536 | BOLT, 5/16-18 X 3.25 |
| 10 | 3 | 110600 | NUT, 5/16-18, UNITORQUE LOCK |
| 11 | 2 | 110606 | NUT, 5/16-18 WIZ FLANGE |
| 14 | 4 | 110667 | WASHER, 1/4" LOCK |
| 17 | 1 | 112133 | Clevis Pin, 1" x 2-3/16", ZINC-PLATED STEEL |
| 18 | 1 | 120222 | ADAPTER, 6MJ-6MB90 |
| 21 | 1 | 120398 | ADAPTER, REST 6MJ-6MB,.047 |
| 22 | 1 | 140016 | PIN, LOCK, 1/4 X 2-1/4, SQ WIRED |
| 24 | 1 | 305103 | Assy, Safety Latch, ISO |
| 31 | 2 | 315332 | WELDMENT, LIFT LINK PIN - 2.87" |
| 32 | 2 | 315333 | WELDMENT, LIFT LINK PIN - 2.12" |
| 35 | 1 | 315410 | WELDMENT, VERTICAL LIFT LINK, US |
| 36 | 1 | 315411 | WELDMENT, CYLINDER LIFT LINK, US |
| 37 | 1 | 315412 | WELDMENT, LOWER LIFT LINK, US |
| 38 | 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 COVERPLATE |

HOPPER INSTALL



| Parts List | | | |
|------------|-----|--------|-----------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 6 | 4 | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE |
| 11 | 4 | 110806 | NUT, 5/16-18 WIZ FLANGE |
| 26 | 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

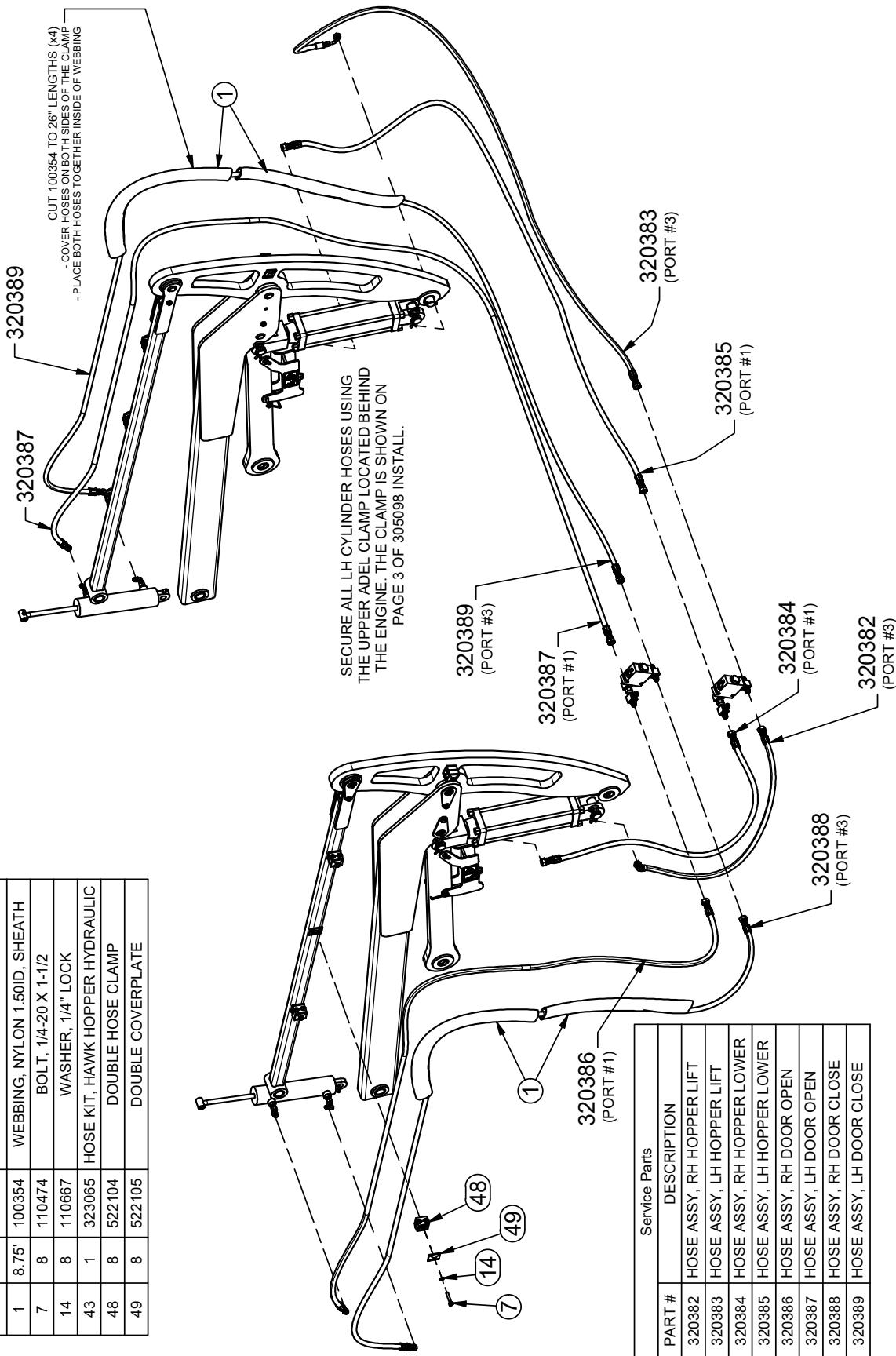
DOOR & ARM INSTALL

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 | | |
|------------|--------|-------------|
| ITEM | PART # | ITEM PART # |
| 2 | 102137 | 25 305113 |
| 3 | 110025 | 27 312022 |
| 4 | 110378 | 28 315257 |
| 9 | 110576 | 39 315416 |
| 10 | 110600 | 29 315327 |
| 12 | 110639 | 33 315383 |
| 13 | 110665 | 34 315393 |
| 15 | 111190 | 40 317216 |
| 16 | 112131 | 41 317320 |
| 19 | 120233 | 42 323010 |
| 20 | 120266 | 46 500230 |
| 23 | 200029 | 47 510174 |

HOPPER CYLINDER PLUMBING

| Parts List | | | |
|------------|-------|---------|---------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 8.75' | 100354 | WEBBING, NYLON 1.50ID, SHEATH |
| 7 | 8 | 110474 | BOLT, 1/4-20 X 1-1/2 |
| 14 | 8 | 110367 | WASHER, 1/4" LOCK |
| 43 | 1 | 3223065 | HOSE KIT, HAWK HOPPER HYDRAULIC |
| 48 | 8 | 522104 | DOUBLE HOSE CLAMP |
| 49 | 8 | 522105 | DOUBLE COVERPLATE |



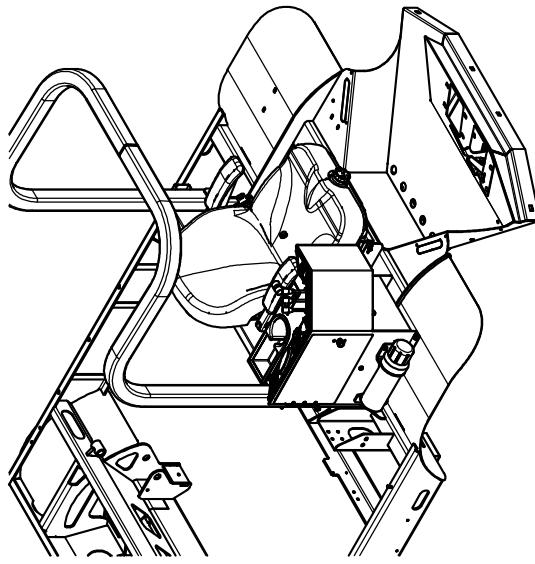
305090

REV: D

Parts List

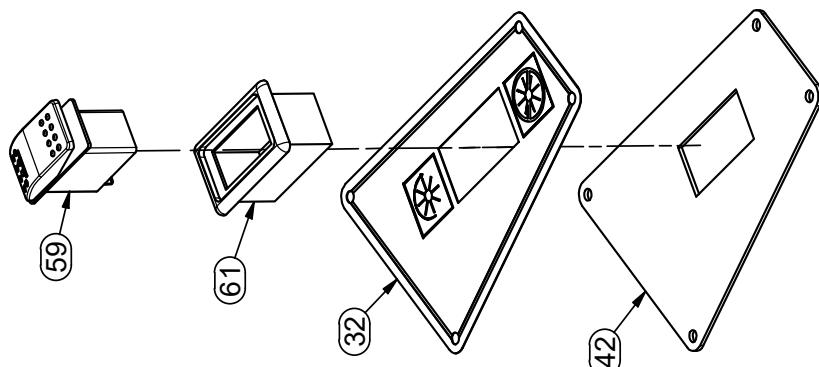
| ITEM | QTY | PART # | DESCRIPTION | ITEM | QTY | PART # | DESCRIPTION | ITEM | QTY | PART # | DESCRIPTION |
|------|------|--------|--|------|-----|--------|-----------------------------|------|-----|--------|-------------------------------------|
| 1 | 4' | 100613 | SEAL, RUBBER .50 X .187 | 37 | 1 | 305064 | Assy, Console Panel, ISO | 52 | 1 | 332063 | HARNESS, INSTRUMENT PANEL |
| 2 | 2.5' | 102072 | TAPE, DOUBLE-SIDED AUTO, 1/2"x.045 | 38 | 1 | 311729 | HINGE, 6" ALUMINUM W/ HOLES | 53 | 1 | 332064 | HARNESS, RELAY |
| 3 | 4 | 110020 | Bolt, 5/16-18 X 0.75 in Carriage | 39 | 1 | 315349 | WELDMENT, FOOT PEDAL MOUNT | 54 | 2 | 510112 | COTTER PIN, 3/16 X 1 |
| 4 | 12 | 110103 | WASHER, #10 LOCK | 40 | 1 | 315355 | WELDMENT, FOOT PEDAL PIVOT | 55 | 2 | 540075 | BEARING, ROD END 1/4-28 W/STUD |
| 5 | 6 | 110119 | NUT, 10-24 LOCK | 41 | 1 | 317102 | PANEL, LEVER | 56 | 4 | 800128 | BUSHING, IGUS, FOOT PEDAL |
| 6 | 17 | 110264 | BOLT, 10-24 X .5 STAINLESS, PHILLIPS | 42 | 1 | 317103 | PANEL, DECK SWITCH | 57 | 1 | 810836 | LINKAGE, 1/4-28 FOOT PEDAL |
| 7 | 2 | 110404 | BOLT, 3/8-16 X 1.75 | 43 | 1 | 317172 | BASE, SEAT MOUNT | 58 | 1 | 815094 | WELDMENT, REV FOOT PEDAL PIVOT |
| 8 | 3 | 110437 | BOLT, 3/8-16 X 0.75, WIZ FLANGE | 44 | 1 | 317173 | PIN, SEAT MOUNTING | 59 | 2 | 832005 | SWITCH, PADDLE, CARLING (29253) |
| 9 | 4 | 110468 | BOLT, 1/4-20 X 0.75, WIZ FLANGE | 45 | 1 | 317186 | COVER, FOOT PEDAL | 60 | 1 | 832018 | SWITCH, SPDT, ON-ON |
| 10 | 10 | 110606 | NUT, 5/16-18 WIZ FLANGE | 46 | 1 | 317193 | DOOR, CONSOLE ACCESS | 61 | 6 | 832024 | MOUNT, SWITCH (VMS) |
| 11 | 2 | 110621 | NUT, 3/8-16, UNITORQUE LOCK | 47 | 1 | 317195 | PANEL, GAUGE & SWITCH | 62 | 3 | 832033 | HOLE PLUG (VHP) |
| 12 | 4 | 110630 | NUT, 1/4-20 LOCK (NYLON INSERT) | 48 | 2 | 317249 | PIN, QUICK RELEASE | 63 | 1 | 832068 | MODULE, TIME DELAY, 1.75 SEC, 1804 |
| 13 | 10 | 110631 | NUT, 10-24 LOCK NYLON INSERT | 49 | 1 | 332031 | SWITCH, IGNITION | 64 | 2 | 832082 | ALARM, PANEL MOUNT, CONTINUOUS TONE |
| 14 | 2 | 110632 | NUT, 1/4-28, UNITORQUE LOCK | 50 | 1 | 332059 | DISPLAY, MACHINE | | | | |
| 15 | 3 | 110645 | NUT, 3/8-16 WIZ FLANGE | 51 | 1 | 332060 | HARNESS, MASTER | | | | |
| 16 | 6 | 110788 | BOLT, 10-24 X .375 STAINLESS, PHILLIPS | | | | | | | | |
| 17 | 10 | 110834 | SCREW, 10-24 X 3/4 SS PAN HEAD | | | | | | | | |
| 18 | 17 | 110835 | NUT, 10-24 RIVET ALUMINUM | | | | | | | | |
| 19 | 2 | 110971 | BOLT, 5/16-18 X 50 SHCS | | | | | | | | |
| 20 | 2 | 112051 | POP RIVET, 1/8 X .275 | | | | | | | | |
| 21 | 2 | 112119 | ROLL PIN, 5/32 X 2 ZP | | | | | | | | |
| 22 | 2 | 112126 | SPRING, COMP 3.0L X 0.6 OD X .045 | | | | | | | | |
| 23 | 1 | 152004 | HOLDER, MANUAL | | | | | | | | |
| 24 | 1 | 200020 | CLAMP, ADEL AC22 .285 HOLE | | | | | | | | |
| 25 | 1 | 302015 | HOLDER - CUP, MOLDED | | | | | | | | |
| 26 | 3 | 302017 | CLEVIS - THROTTLE | | | | | | | | |
| 27 | 1 | 302078 | SEAT, 13M SUSPENSION | | | | | | | | |
| 28 | 1 | 302124 | CABLE, THROTTLE 60" | | | | | | | | |
| 29 | 1 | 302131 | LATCH, SPRING | | | | | | | | |
| 30 | 1 | 302132 | DECAL, MAIN CONSOLE | | | | | | | | |
| 31 | 1 | 302133 | Decal, Hydraulics Panel | | | | | | | | |
| 32 | 1 | 302134 | DECAL, BROOM PANEL | | | | | | | | |
| 33 | 1 | 302135 | Decal, Throttle Panel | | | | | | | | |
| 34 | 1 | 302164 | CABLE, PUSH/PULL 60" | | | | | | | | |
| 35 | 1 | 305061 | Assy, Forward Foot Pedal | | | | | | | | |
| 36 | 1 | 305062 | Assy, Reverse Foot Pedal | | | | | | | | |

OPERATOR STATION & ELECTRICAL ASSEMBLY



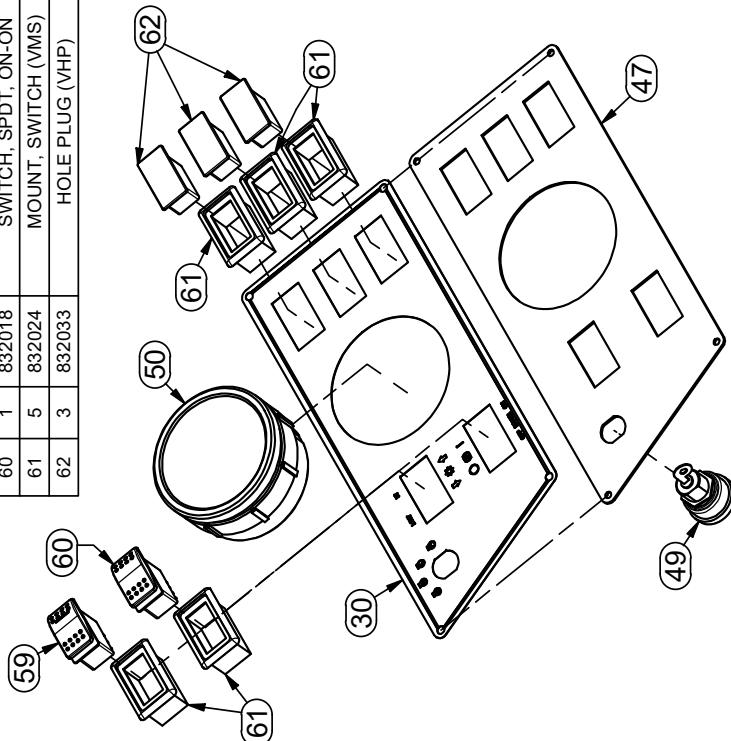
DECK SWITCH PANEL ASSEMBLY

| Parts List | | | |
|------------|-----|--------|---------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 32 | 1 | 302134 | DECAL, BROOM PANEL |
| 42 | 1 | 317103 | PANEL, DECK SWITCH |
| 59 | 1 | 832005 | SWITCH, PADDLE, CARLING (29253) |
| 61 | 1 | 832024 | MOUNT, SWITCH (VMS) |

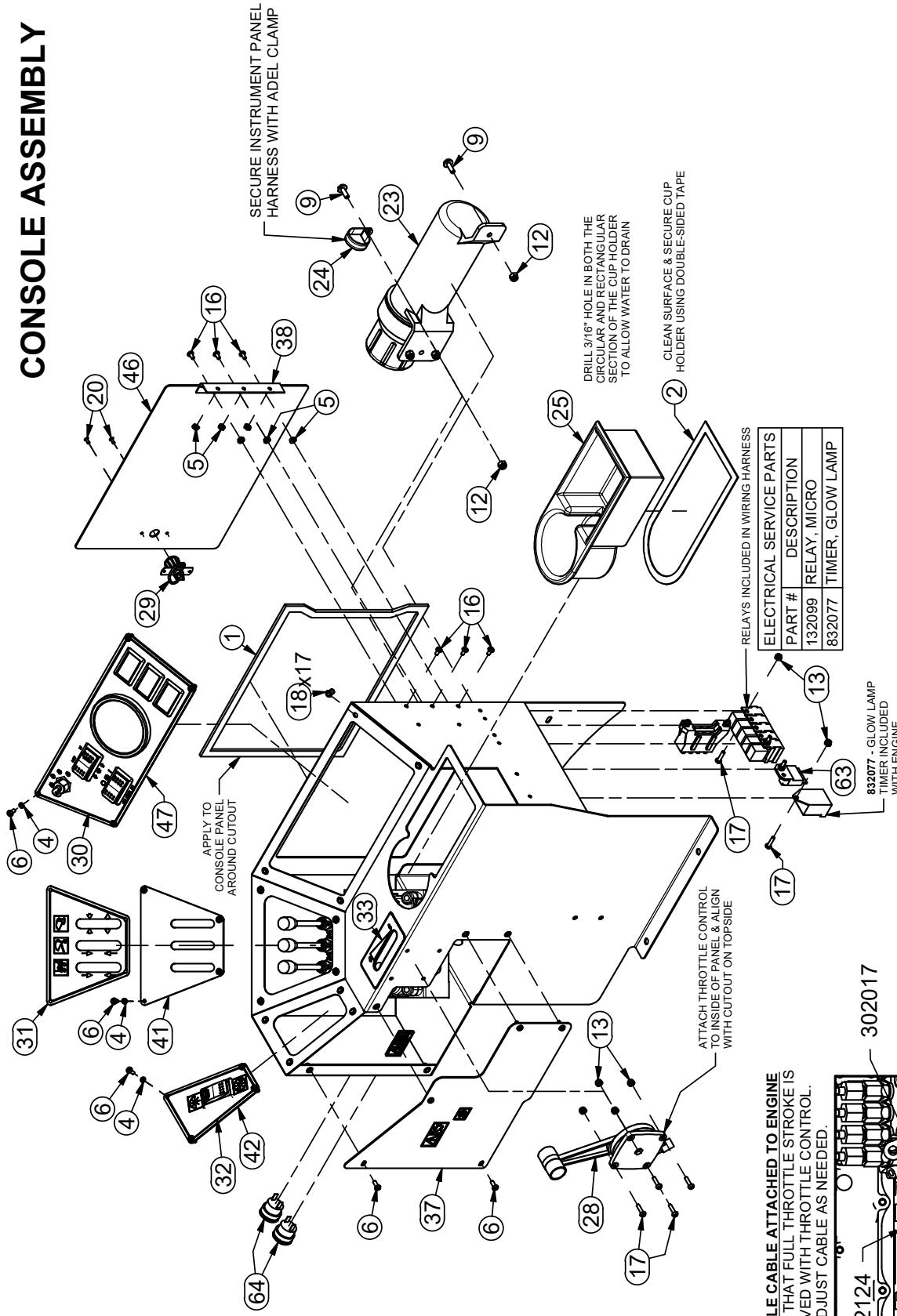


INSTRUMENT PANEL ASSEMBLY

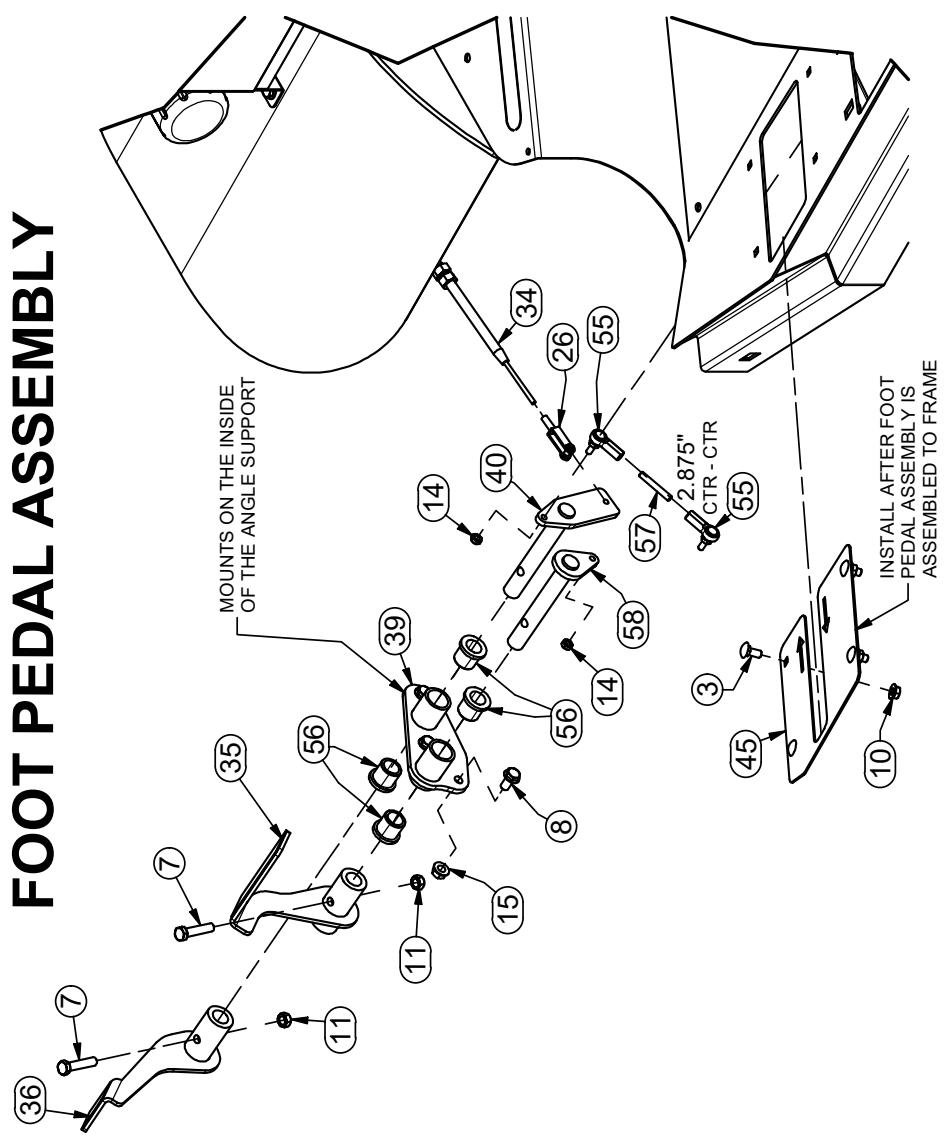
| Parts List | | | |
|------------|-----|--------|---------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 30 | 1 | 302132 | DECAL, MAIN CONSOLE |
| 47 | 1 | 317195 | PANEL, GAUGE & SWITCH |
| 49 | 1 | 332031 | SWITCH, IGNITION |
| 50 | 1 | 332059 | DISPLAY, MACHINE |
| 59 | 1 | 832005 | SWITCH, PADDLE, CARLING (29253) |
| 60 | 1 | 832018 | SWITCH, SPDT, ON-ON |
| 61 | 5 | 832024 | MOUNT, SWITCH (VMS) |
| 62 | 3 | 832033 | HOLE PLUG (VHP) |



CONSOLE ASSEMBLY

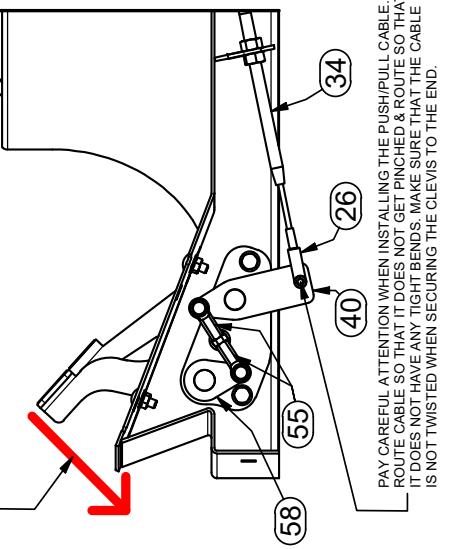


FOOT PEDAL ASSEMBLY



FOOT PEDAL ASSEMBLY SIDE VIEW

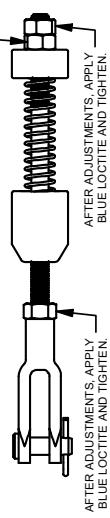
MEASURE FORWARD FOOT PEDAL FORCE USING A FISH SCALE OR SPRING SCALE; ENSURE THAT THE FORCE IS BETWEEN 20-35 LBS WHEN MACHINE IS OFF. SEE INSTRUCTIONS BELOW FOR ADJUSTING THE NEUTRAL SPRING.



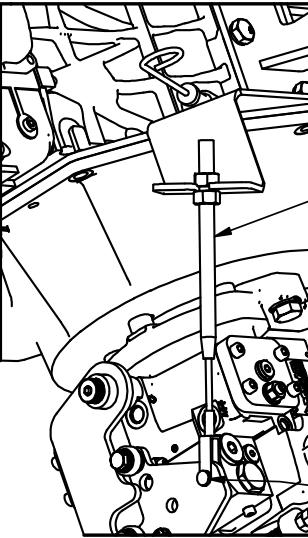
PAY CAREFUL ATTENTION WHEN INSTALLING THE PUSH/PULL CABLE. ROUTE CABLE SO THAT IT DOES NOT GET PINCHED & ROUTE SO THAT IT DOES NOT HAVE ANY TIGHT BENDS. MAKE SURE THAT THE CABLE IS NOT TWISTED WHEN SECURING THE CLEVIS TO THE END.

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.

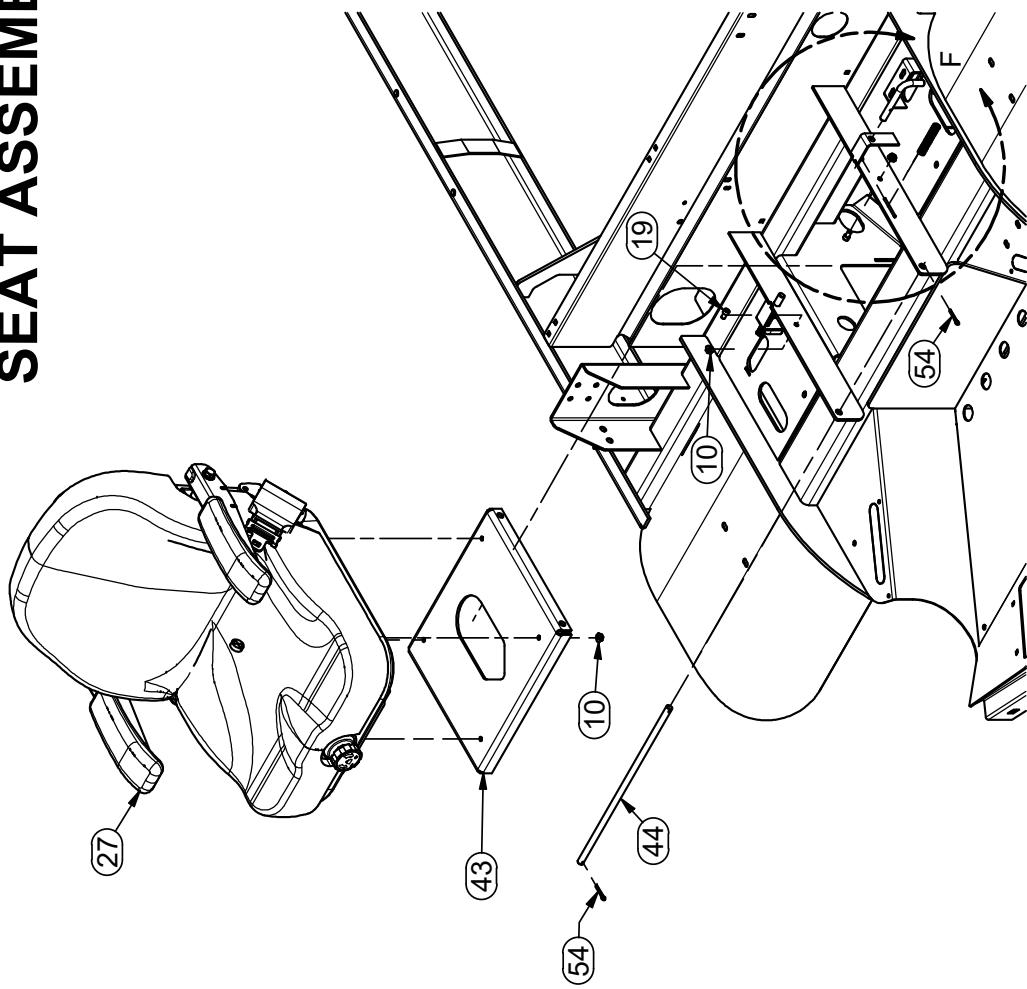


PEDAL CABLE TO PROPULSION PUMP

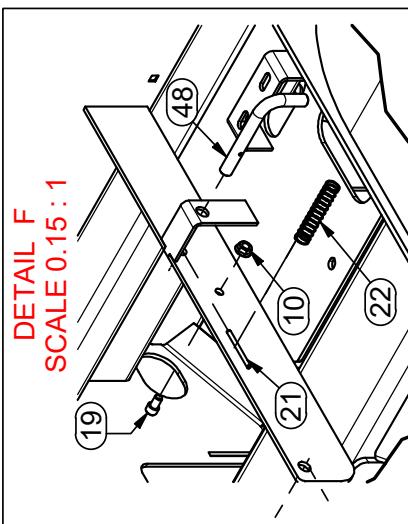
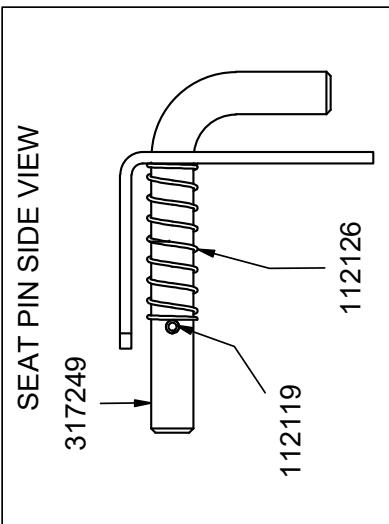


302017

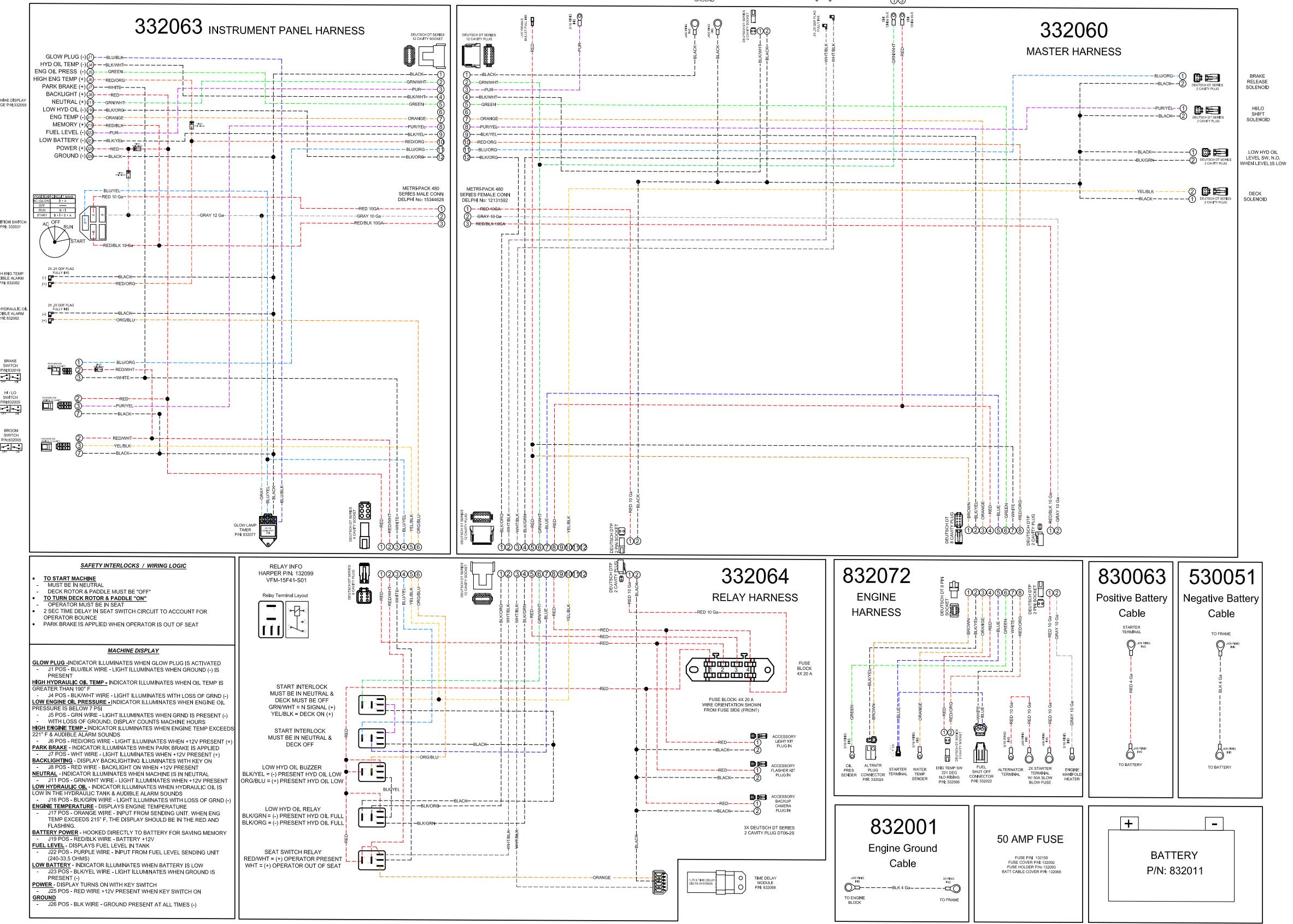
302164

SEAT ASSEMBLY

| Parts List | | | |
|------------|-----|--------|-----------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 10 | 6 | 110606 | NUT, 5/16-18 WIZ FLANGE |
| 19 | 2 | 110971 | BOLT, 5/16-18 X .50 SHCS |
| 21 | 2 | 112119 | ROLL PIN, 5/32 X 2 ZP |
| 22 | 2 | 112126 | SPRING, COMP 3.0L x 0.6 OD x .045 |
| 27 | 1 | 302078 | SEAT, 13M SUSPENSION |
| 43 | 1 | 317172 | BASE, SEAT MOUNT |
| 44 | 1 | 317173 | PIN, SEAT MOUNTING |
| 48 | 2 | 317249 | PIN, QUICK RELEASE |
| 54 | 2 | 510112 | COTTER PIN, 3/16 x 1 |



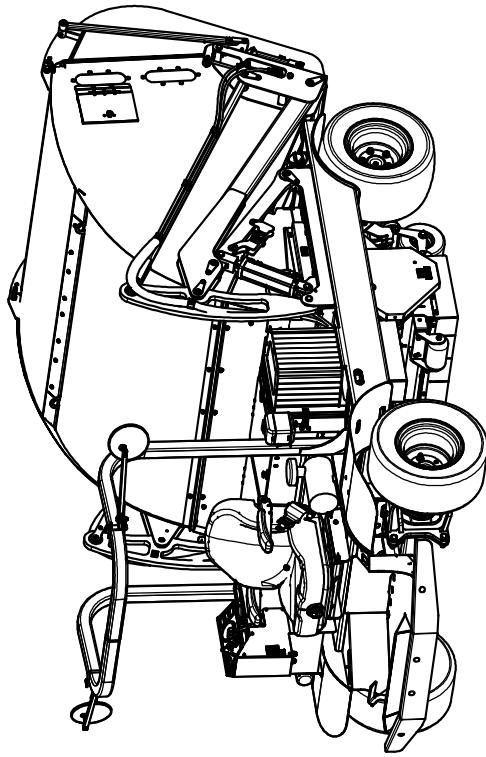
SWEEPER WIRING SCHEMATIC DIAGRAM OVERVIEW



HK4200

HARPER®
TURF EQUIPMENT

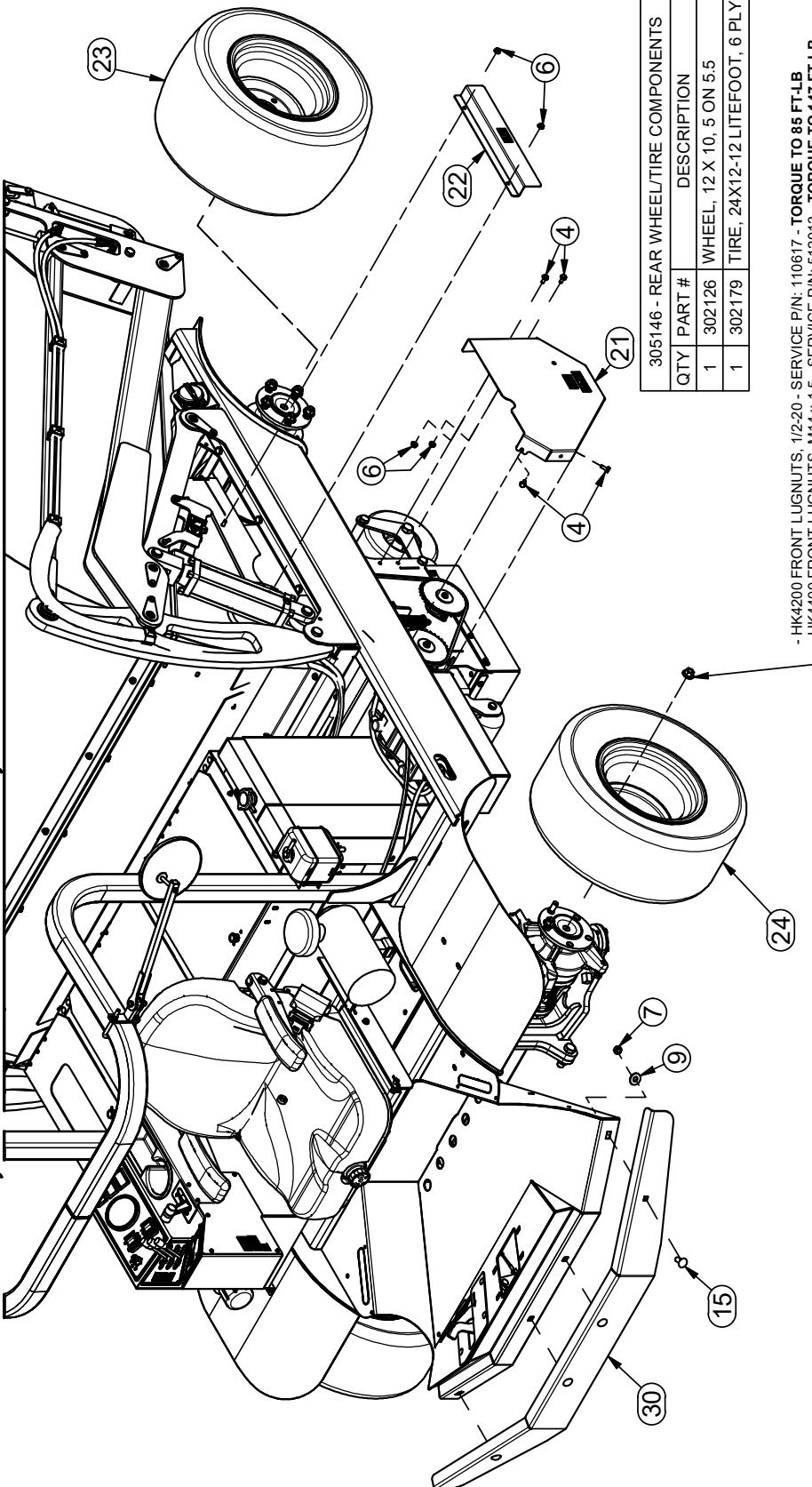
MIRROR, TIRE, & SHIELD INSTALLATION



| Parts List | | | |
|------------|-------|--------|---|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 15 FT | 100613 | SEAL, RUBBER .50 X 1.87 |
| 2 | 18 | 110119 | NUT, 10-24 LOCK |
| 3 | 2 | 110400 | BOLT, 3/8-16 X 2.0 |
| 4 | 4 | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE |
| 5 | 2 | 110474 | BOLT, 1/4-20 X 1-1/2 |
| 6 | 4 | 110606 | NUT, 5/16-18 WIZ FLANGE |
| 7 | 4 | 110615 | NUT, 1/2-13, UNI TORQUE LOCK |
| 8 | 4 | 110645 | NUT, 3/8-16 WIZ FLANGE |
| 9 | 4 | 110658 | WASHER, 1/2" FLAT STANDARD |
| 10 | 2 | 110667 | WASHER, 1/4" LOCK |
| 11 | 18 | 110788 | BOLT, 10-24 X .375 STAINLESS, PHILLIPS |
| 12 | 4 | 110826 | NUT, 3/8-16 GR 5 |
| 13 | 2 | 111185 | BOLT, SQUARE U, 3/8-16 X 2.50 X 4.0 |
| 14 | 6 | 112051 | POP RIVET, 1/8 X 275 |
| 15 | 4 | 112070 | Bolt, 1/2-13 X 1.25 in Carriage |
| 16 | 4 | 211747 | FRiction WASHER 1.5" |
| 17 | 3 | 302131 | LATCH, SPRING |
| 18 | 2 | 302139 | Convex Mirror, 8" Round, Offset Ball Stud |
| 19 | 4 | 302140 | Plug, Snap-In Square, 3/4" |
| 20 | 1 | 305101 | ASSY, RH ENGINE SHIELD |
| 21 | 1 | 305119 | ASSY, LOWER DECK SHIELD, US |
| 22 | 1 | 305120 | ASSY, UPPER DECK SHIELD, US |
| 23 | 2 | 305146 | ASSY, REAR TIRE, 6 PLY |
| 24 | 2 | 305147 | ASSY, FRONT TIRE, 6 PLY |
| 25 | 3 | 311729 | Hinge, 6" ALUMINUM W/ HOLES |
| 26 | 1 | 312022 | CLIP, HAIRPIN 3/32 X 1.625 |
| 27 | 2 | 315385 | WELDMENT, SWINGING MIRROR |
| 28 | 2 | 315391 | WELDMENT, MIRROR U-BOLT MOUNT |
| 29 | 2 | 317237 | SHIELD, UPPER ENGINE |
| 30 | 1 | 317244 | BUMPER, FRONT |

SIMILAR TO 305095

BUMPER, DECK SHIELDS, & WHEEL/TIRE ASSEMBLY



| 305146 - REAR WHEEL/TIRE COMPONENTS | |
|-------------------------------------|---------------------------------------|
| QTY | PART # |
| 1 | 302126 WHEEL, 12 X 10, 5 ON 5.5 |
| 1 | 302179 TIRE, 24X12-12 LITEFOOT, 6 PLY |

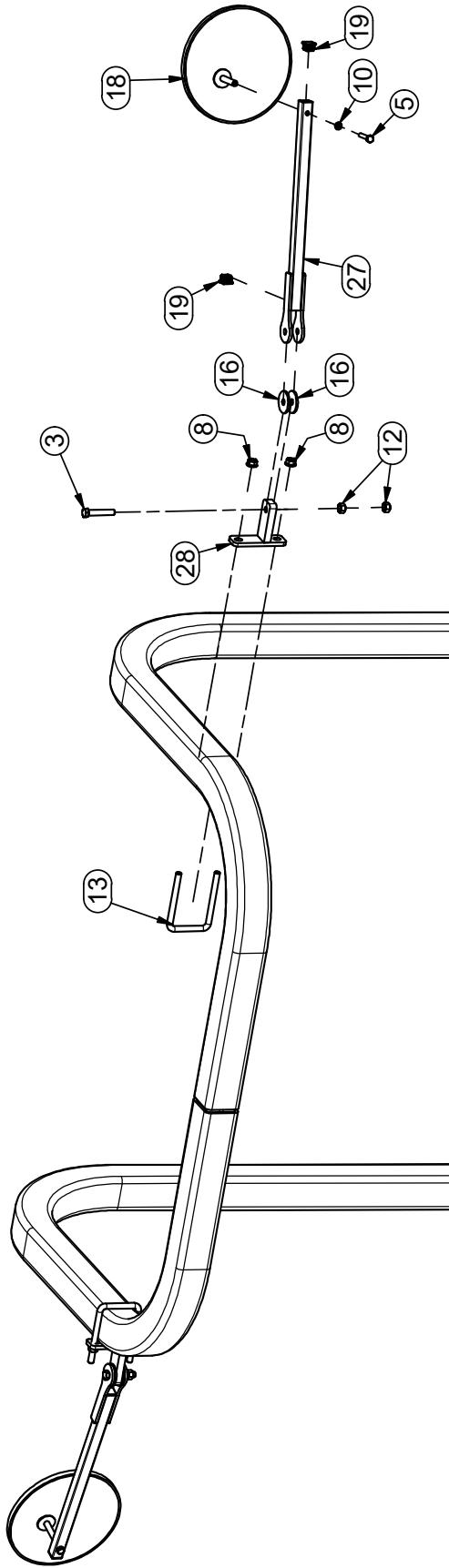
- HK4200 FRONT LUGNUTS, 1/2-20 - SERVICE P/N: 110617 - TORQUE TO 85 FT-LB
- HK4400 FRONT LUGNUTS, M14 x 1.5 - SERVICE P/N: 512013 - TORQUE TO 147 FT-LB
- HK4200 & HK4400 REAR LUGNUTS, M14 x 1.5 - SERVICE P/N: 512013 - TORQUE TO 147 FT-LB

| 305147 - FRONT WHEEL/TIRE COMPONENTS | |
|--------------------------------------|--|
| QTY | PART # |
| 1 | 302125 WHEEL, 12 X 7, 5 ON 5.5 W/ -3.25 OFFSET |
| 1 | 302178 TIRE, 24X9.5-12 LITEFOOT, 6 PLY |

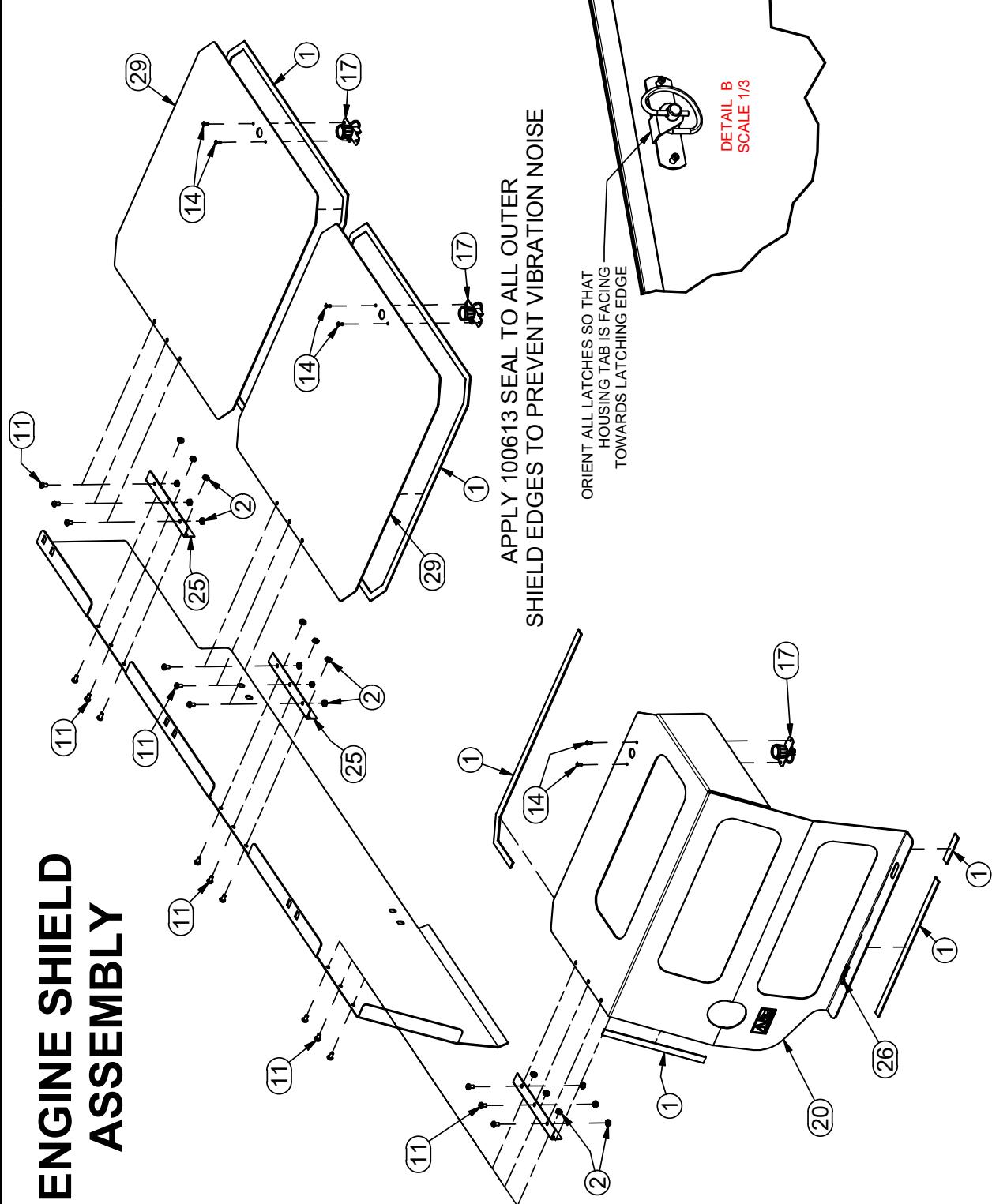
MIRROR ASSEMBLY

| 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 WIZ 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 |

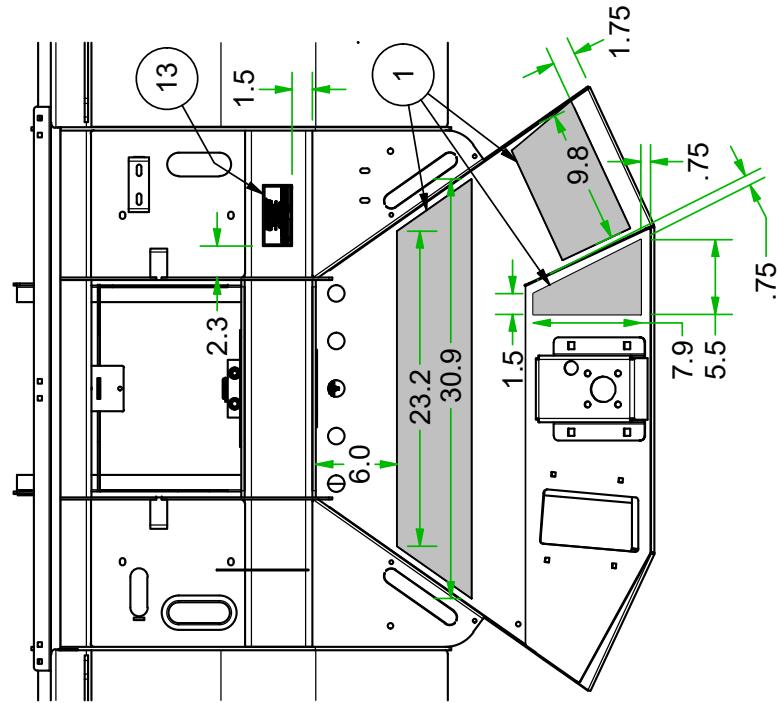
SAME PARTS USED ON OPPOSITE SIDE



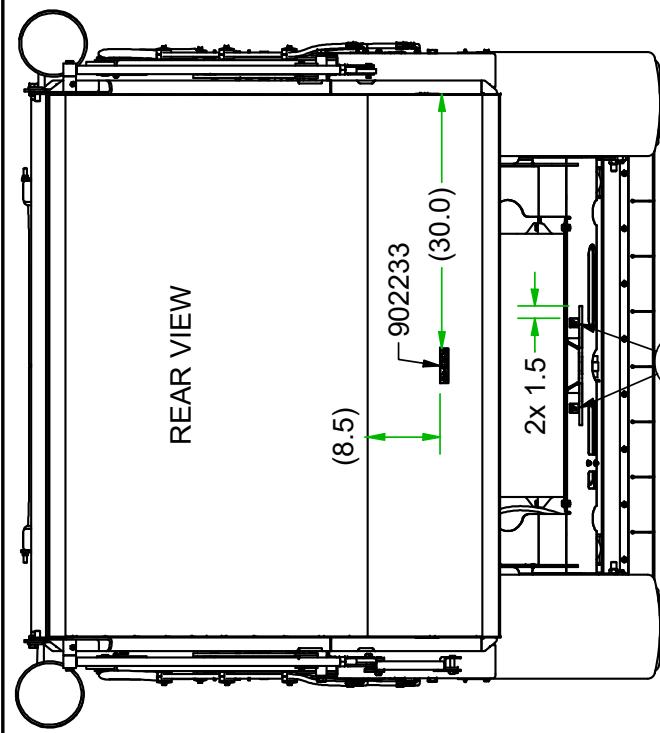
ENGINE SHIELD ASSEMBLY



DECAL INSTALLATION



TRACTION PAD INSTALLATION

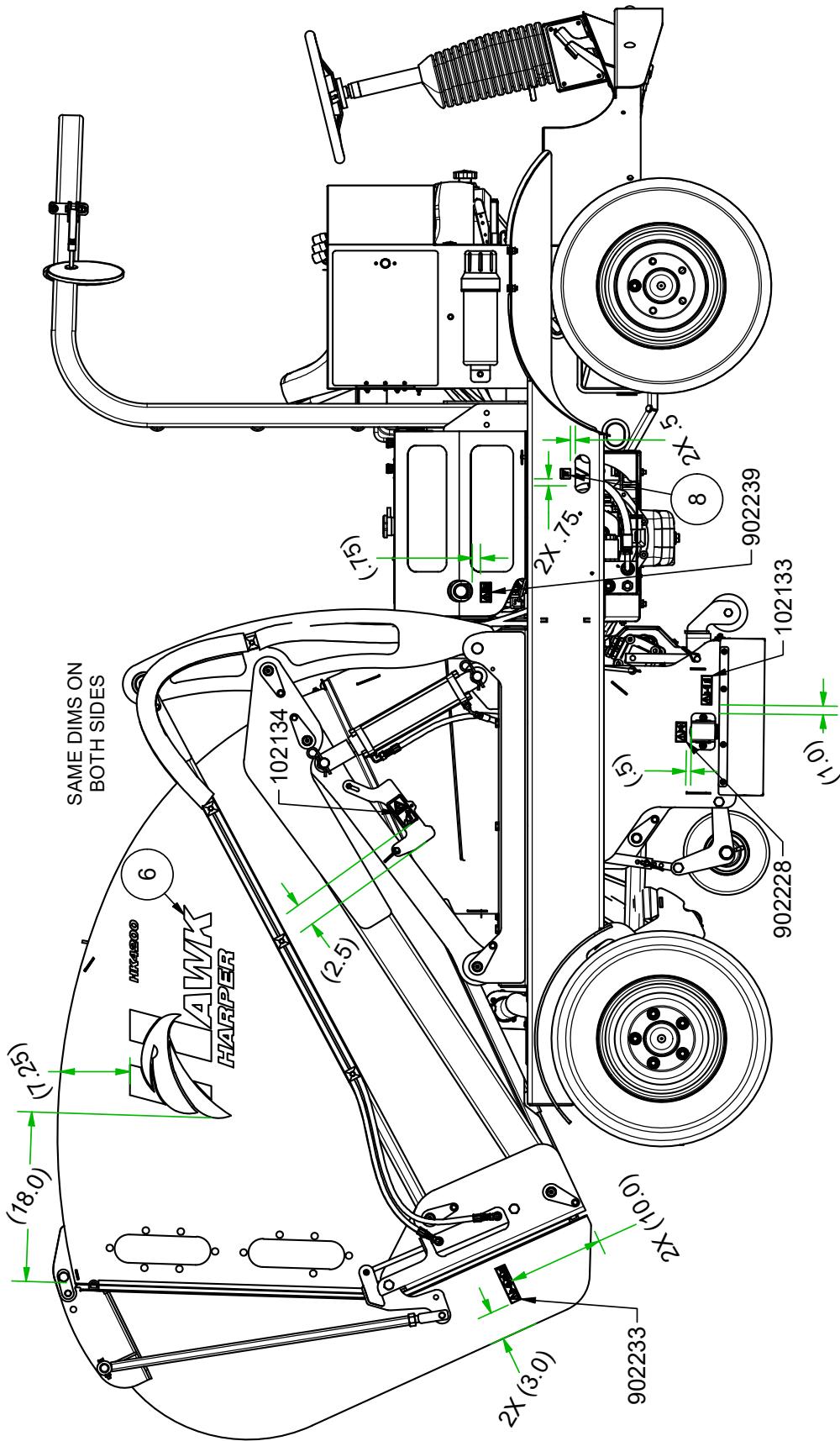


REAR VIEW

| Parts List | | | |
|------------|-----|--------|---|
| 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 | 1 | 302150 | Decal, Hk Rops Certification |
| 6 | 2 | 302155 | Decal, Hawk |
| 7 | 1 | 302172 | Decal, QR Code, Hawk Tutorial |
| 8 | 4 | 802067 | Decal, Tie Down Point |
| 9 | 1 | 902186 | DECAL, EPA STANDARDS |
| 10 | 1 | 902231 | Decal, Hot Surface, Oil Cooler |
| 11 | 1 | 902232 | Decal, High Pressure Injection |
| 12 | 2 | 902234 | Decal, No Lift |
| 13 | 1 | 902240 | Plate, Serial Number, Harper Turf, Blue |
| 14 | 1 | 902242 | Decal, Harper Turf Equipment, 30" |

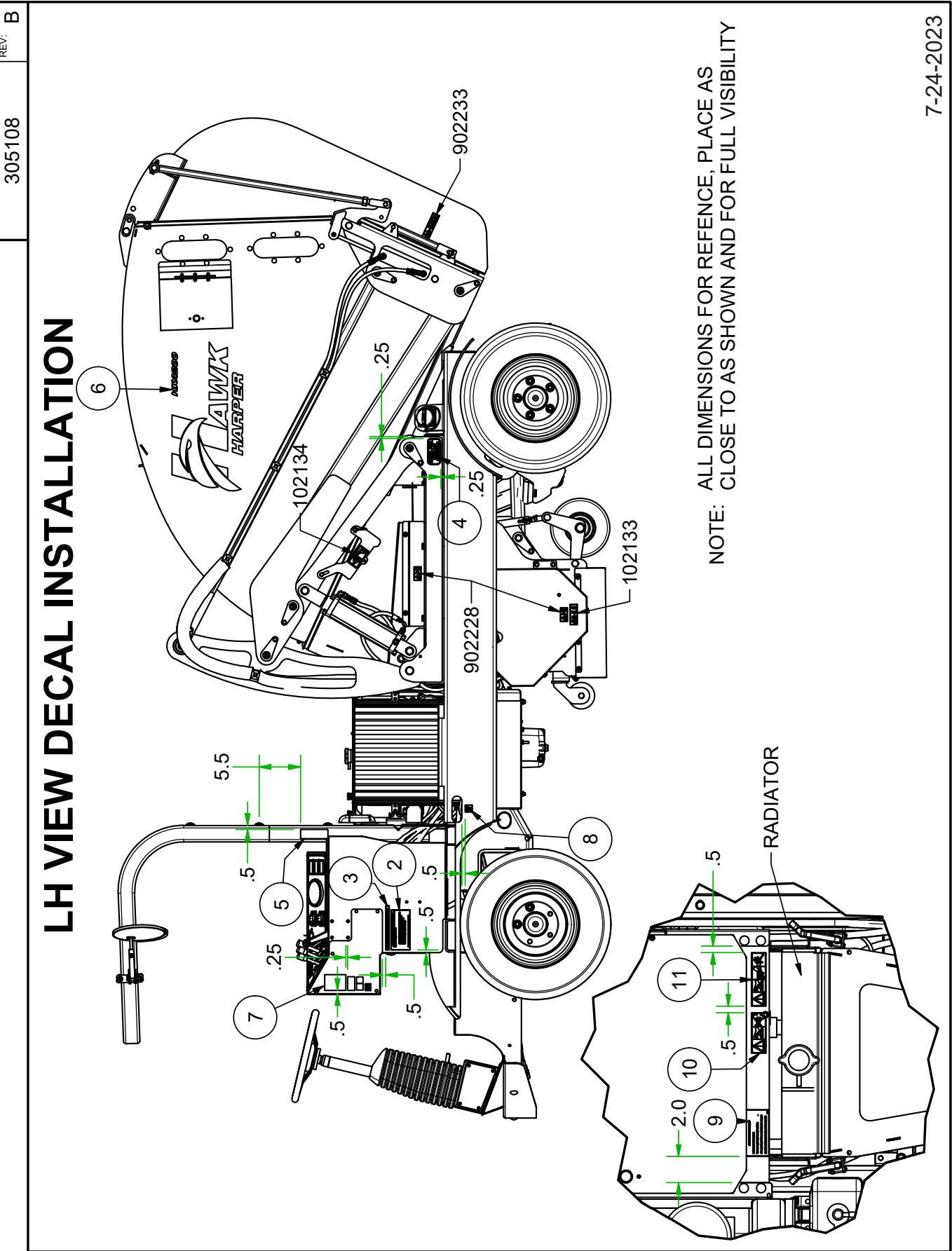
RH VIEW DECAL INSTALLATION

305108 REV: B

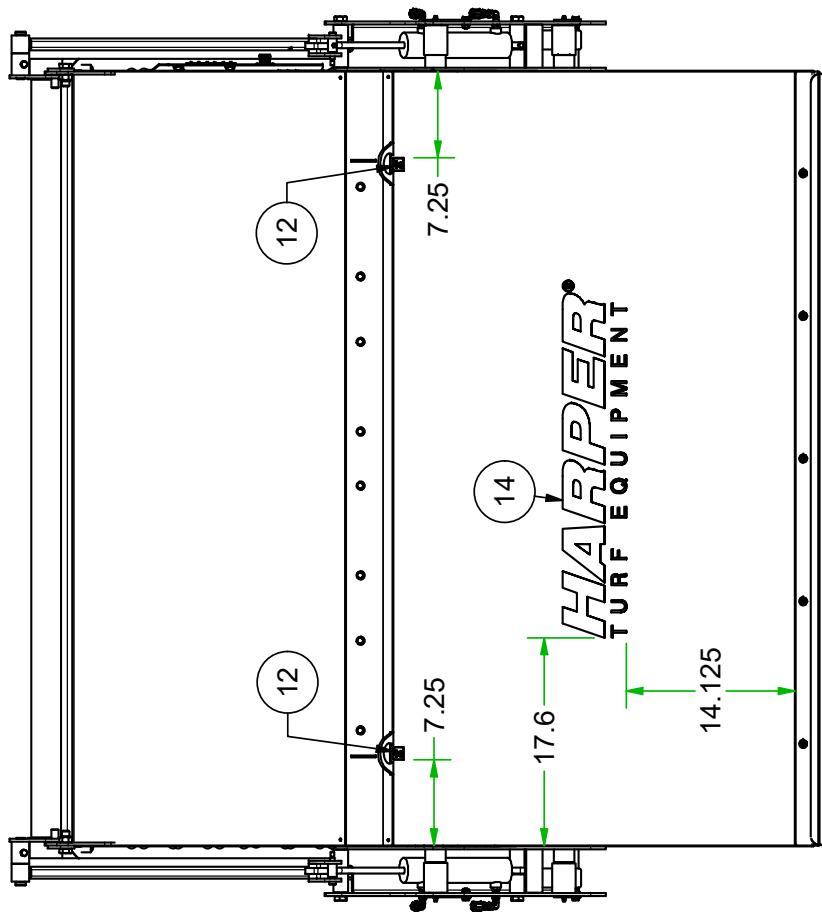


NOTE: ALL DIMENSIONS FOR REFERENCE, PLACE AS
CLOSE TO AS SHOWN AND FOR FULL VISIBILITY

LH VIEW DECAL INSTALLATION



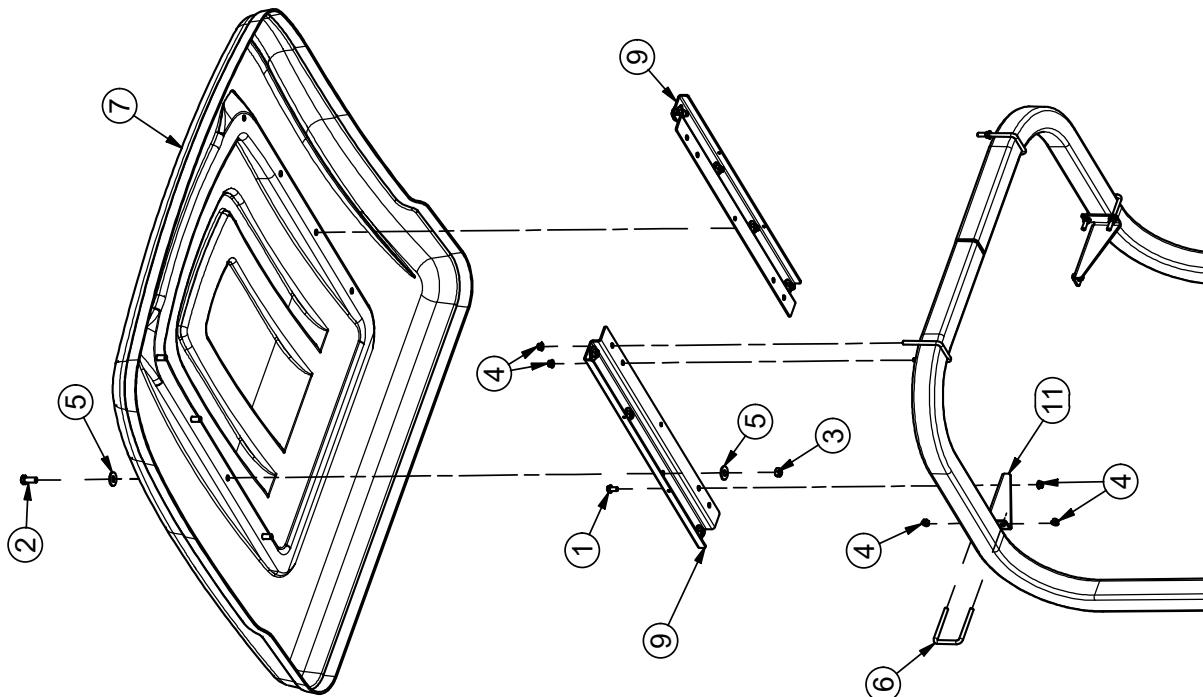
HOPPER DECAL INSTALLATION



CANOPY

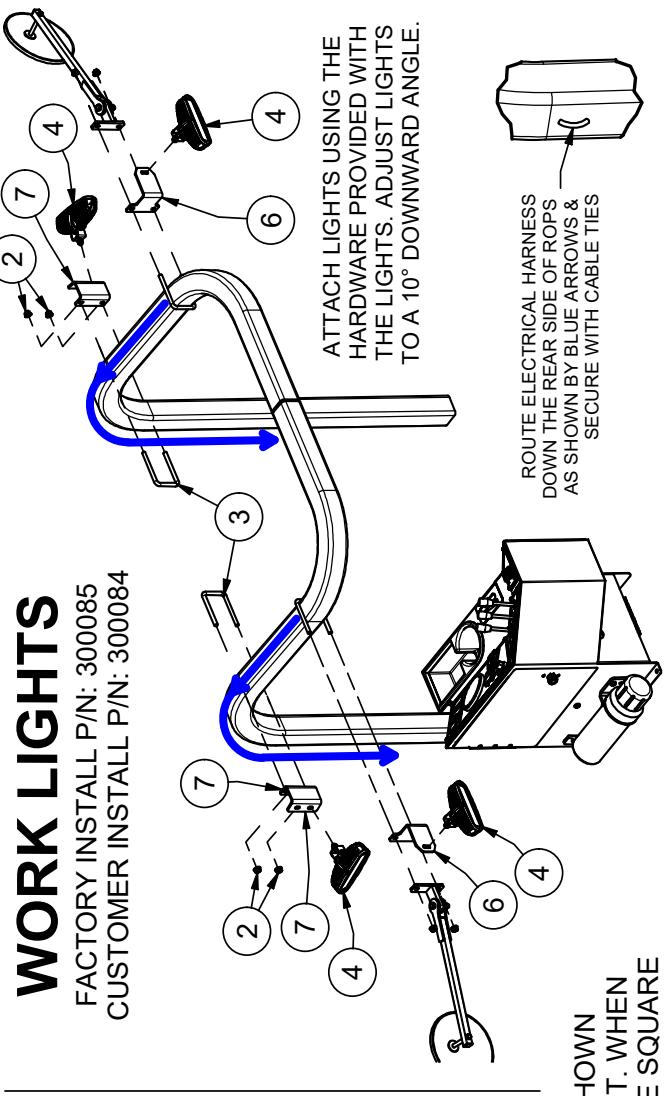
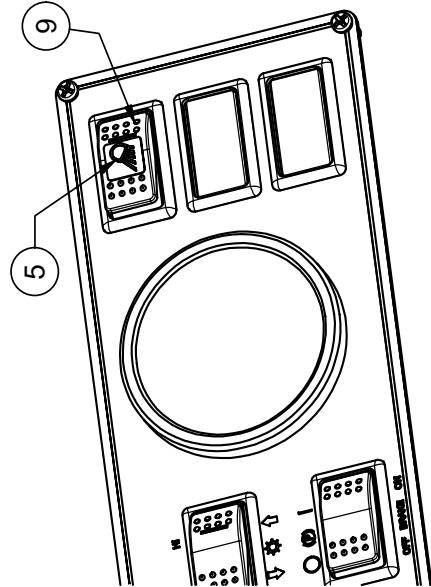
FACTORY INSTALL P/N: 300083
CUSTOMER INSTALL P/N: 300082

| Parts List | | | |
|------------|-----|--------|-------------------------------------|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 2 | 110437 | BOLT, 3/8-16 X 0.75, WIZ FLANGE |
| 2 | 8 | 110442 | BOLT, 1/2-13 X 1.25 |
| 3 | 8 | 110615 | NUT, 1/2-13, UNITORQUE LOCK |
| 4 | 10 | 110645 | NUT, 3/8-16 WIZ FLANGE |
| 5 | 16 | 110658 | WASHER, 1/2"-FLAT STANDARD |
| 6 | 4 | 111185 | BOLT, SQUARE U, 3/8-16 X 2.50 X 4.0 |
| 7 | 1 | 302142 | CANOPY, BLACK ABS PLASTIC |
| 8 | 1 | 302173 | DECAL, HAWK CANOPY TRANSPORT |
| 9 | 2 | 317332 | BRKT, CANOPY SUPPORT |
| 10 | 1 | 317333 | BRKT, LH CANOPY MOUNT |
| 11 | 1 | 317334 | BRKT, RH CANOPY MOUNT |



WORK LIGHTS

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



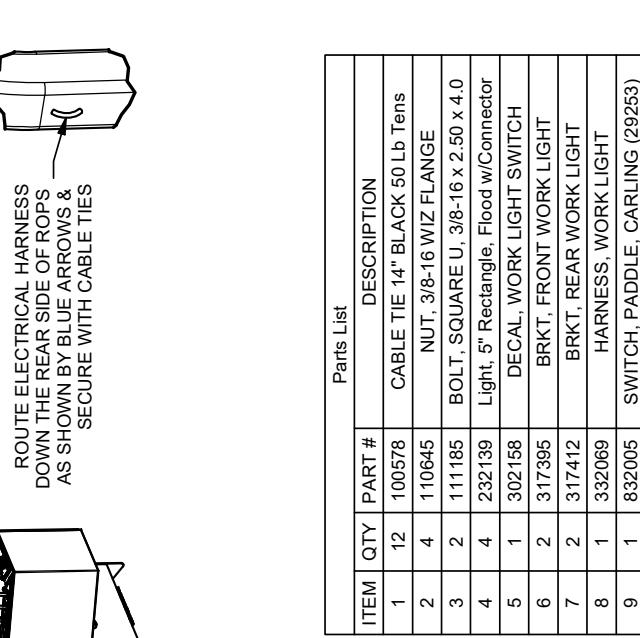
INSTALLATION

- 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.



SWEeper WORK LIGHT WIRING SCHEMATIC

WORK LIGHT - 5" LED
FLOOD WITH CONNECTOR
P/N: 2332139

**WORK LIGHT - 5" LED
FLOOD WITH CONNECTOR
P/N: 232139**

WORK LIGHT - 5" LED
FLOOD WITH CONNECTOR
P/N: 232139

WORK LIGHT - 5" LED
FLOOD WITH CONNECTOR
P/N: 222120

ACCESSORY LIGHT
KIT PLUG IN LOCATED
ON MACHINE

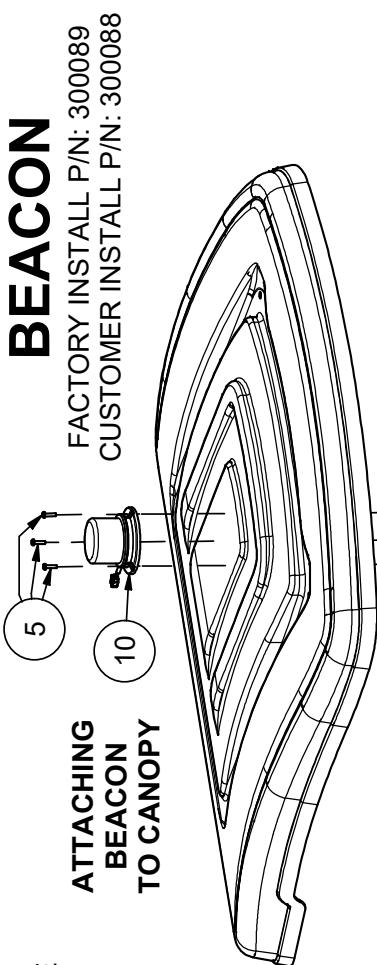
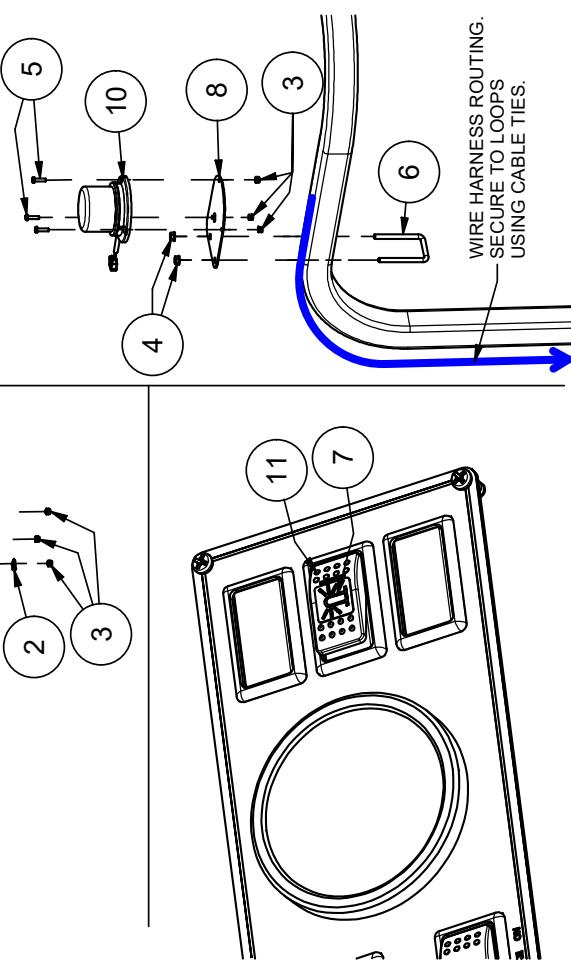
2-25-2021

INSTALLATION

- FOR MOUNTING THE BEACON, USE THE HARDWARE INCLUDED IN THIS KIT (NOT THE HARDWARE INCLUDED WITH THE BEACON)

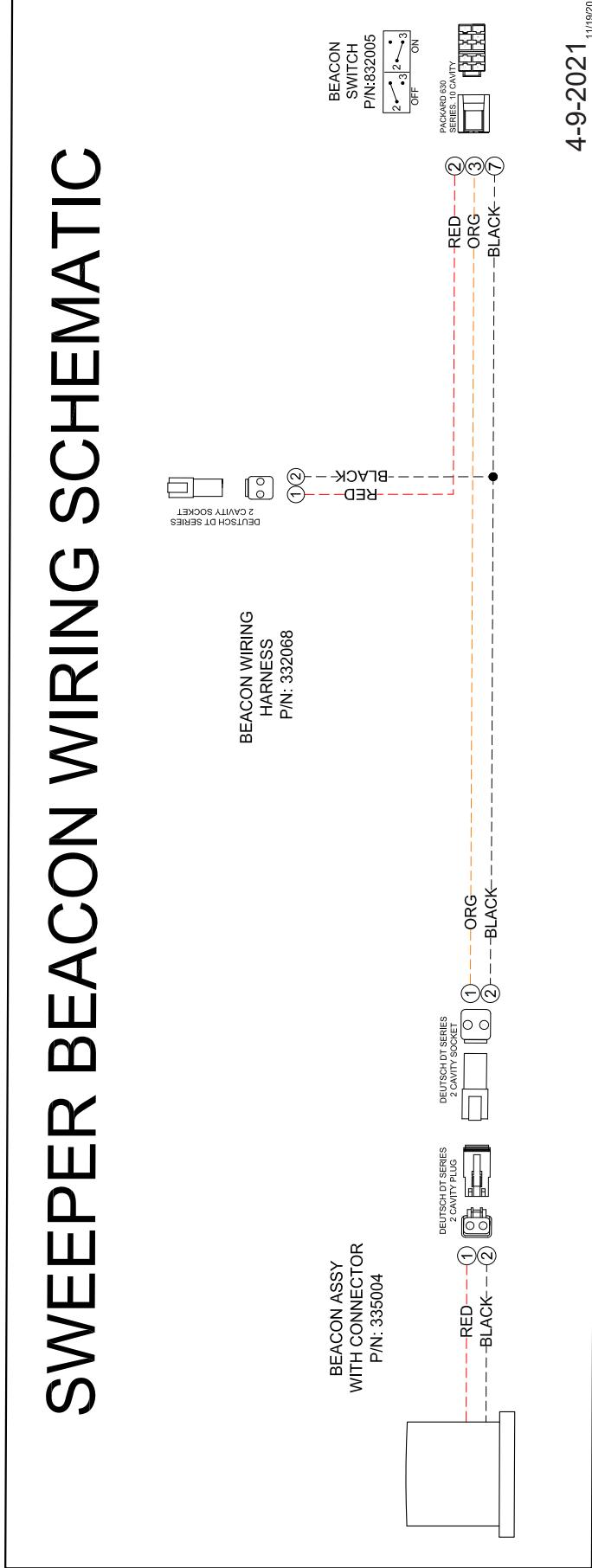
- IF THE CANOPY OPTION IS INSTALLED, THEN MOUNT THE BEACON TO THE TOP OF THE CANOPY AS SHOWN IN THE EXPLODED VIEW. POSITION THE BEACON IN THE CENTER OF THE CANOPY & THEN DRILL 3 - 9/32" HOLES IN THE PLASTIC CANOPY. DRILL A 3/4" HOLE TO ROUTE THE WIRE THROUGH (USE THE 317394 BRACKET TO LOCATE THE 3/4" 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.

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) |

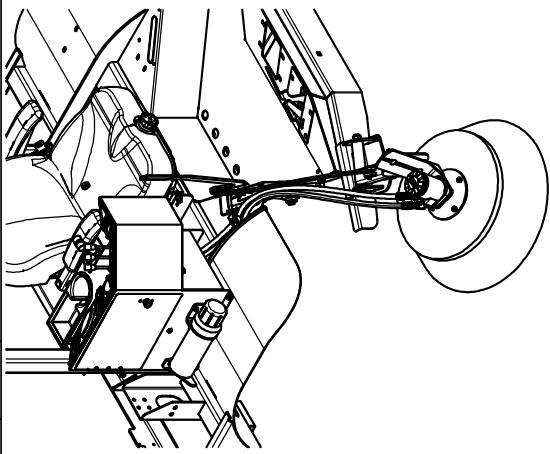
SWEeper BEACON WIRING SCHEMATIC



| 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 Bolt, 3/8-16 X 2 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 6.25 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 | FRICITION 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 | HARNESS, 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 | CLEVIS 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 | | | | |

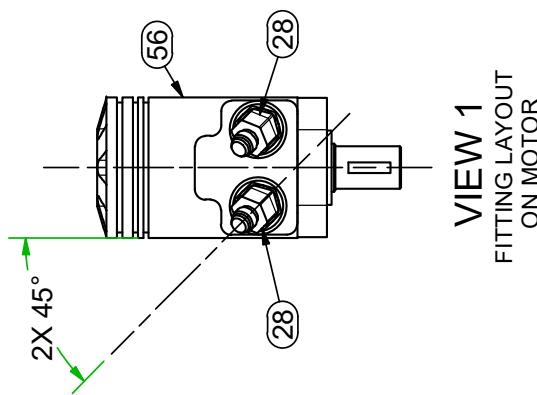
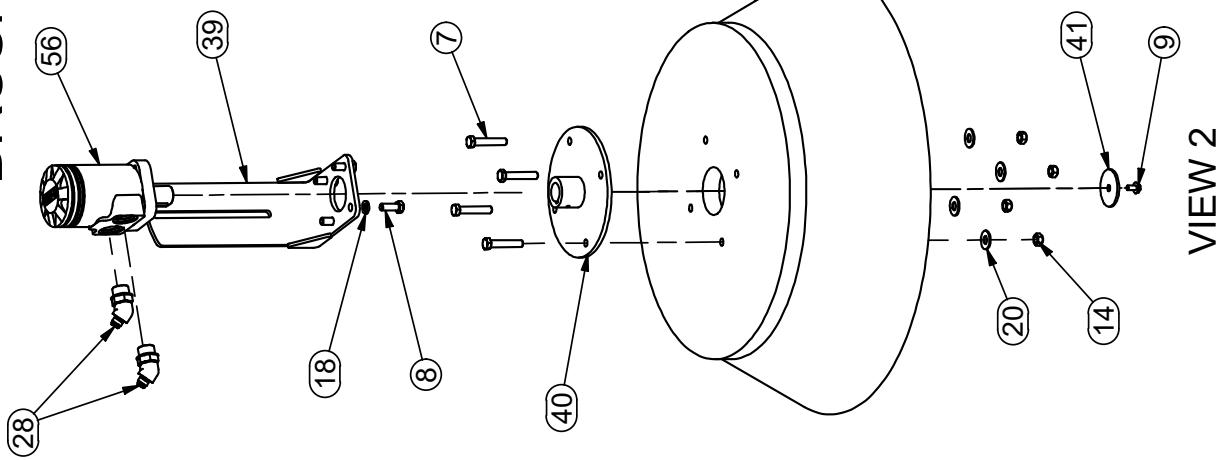
FOR SERIAL NUMBERS **21A11** AND **PRIOR**,
SEE PAGES **11 & 12** FOR DETAILS ON
UPDATES NEEDED FOR CURB BRUSH
INSTALLATION

CUSTOMER INSTALL: 300090
FACTORY INSTALL: 300091



HAWK RIGHT CURB BRUSH INSTALL

BRUSH ASSEMBLY



300090 | REV: D

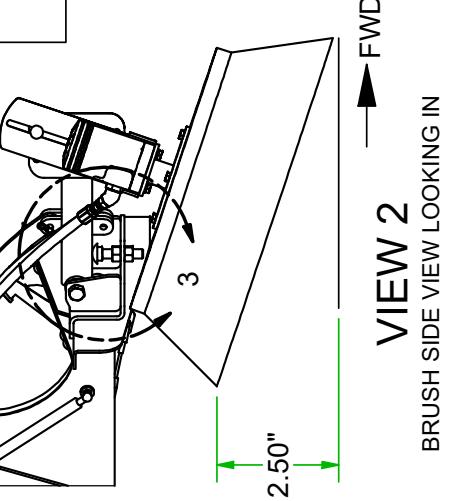
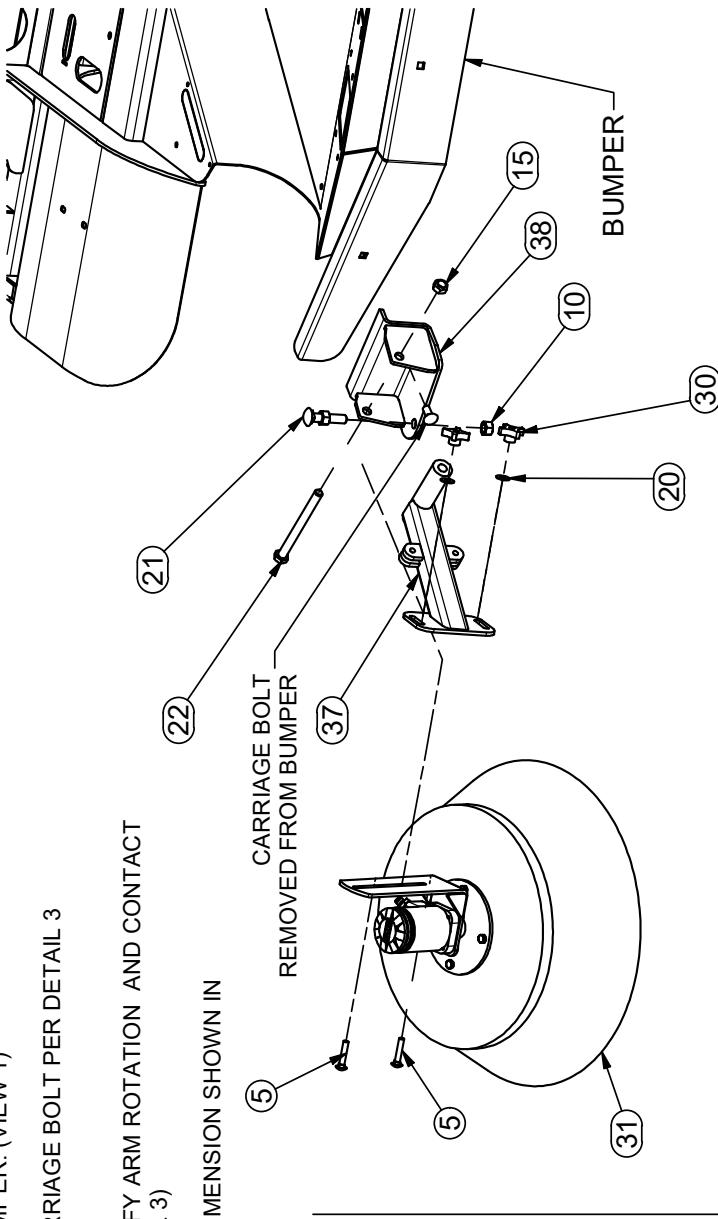
- 1) ASSEMBLE MOTOR AND FITTINGS PER
VIEW 1.
- 2) ASSEMBLE BRUSH AS SHOWN IN VIEW 2.
- 3) ATTACH ASSEMBLED BRUSH & MOTOR TO
BRACKET USING 3/8 X 1 BOLTS, INTO THREADED HOLE
IN MOTOR. (SEE VIEW 2)

2-20-2023

BRUSH & ARM ASSEMBLY

300090 REV: D

- 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.



DETAIL 3

VIEW 2

BUSH SIDE VIEW LOOKING IN

2-20-2023

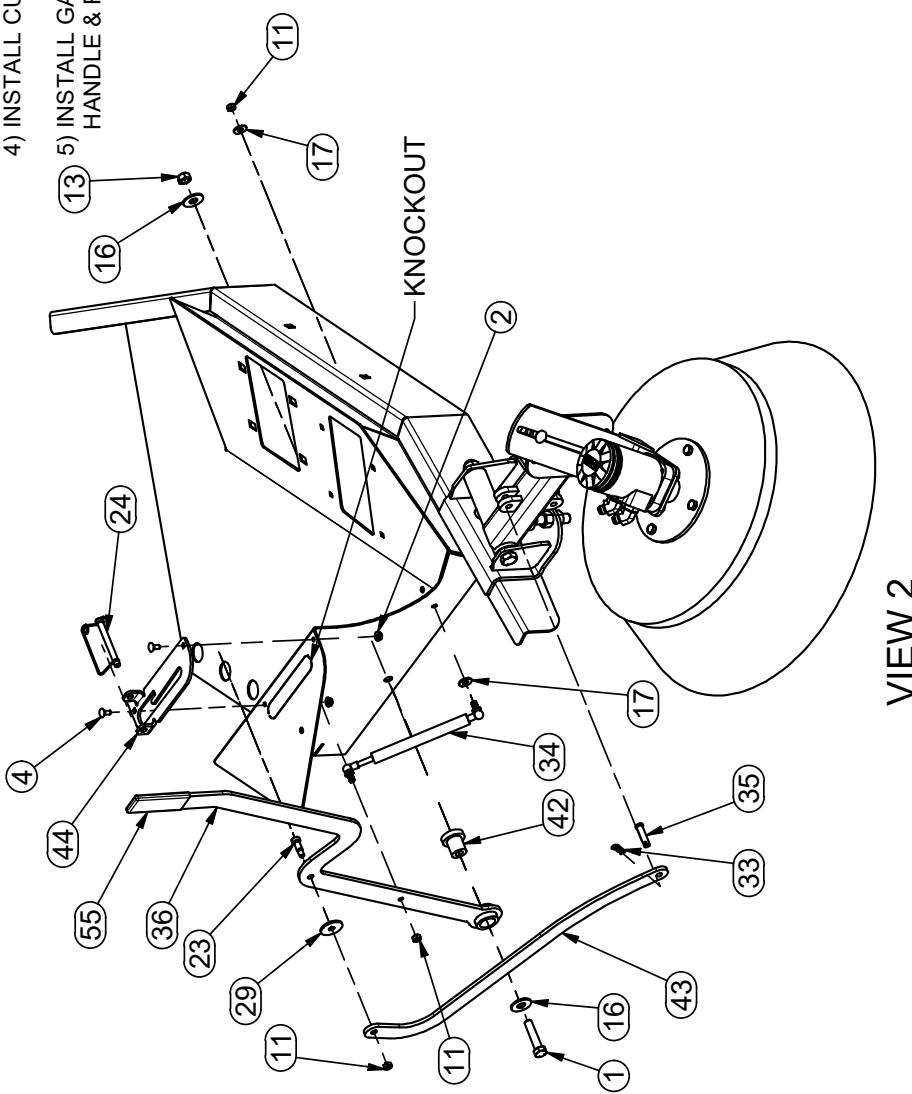
CURB BRUSH LIFT HANDLE INSTALLATION

1) REMOVE CURB BRUSH HANDLE SLOT KNOCKOUT
(IF MODEL SIN 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)
(13) 5) INSTALL GAS SPRING TO LOWER HOLE IN LIFT
HANDLE (11)



VIEW 1
CURB BRUSH
HANDLE INSTALLED

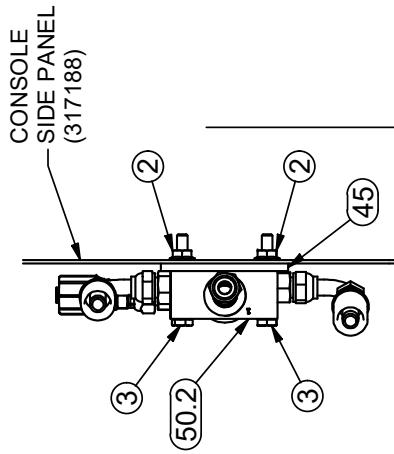
VIEW 2

CURB BRUSH HYDRAULICS

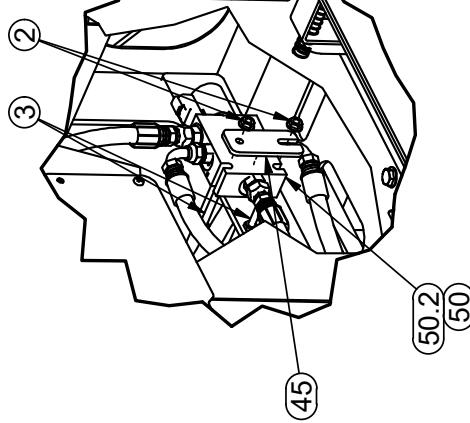
MOTOR VALVE INSTALLATION

- 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 S/N IS 21A11 OR PRIOR, SEE SHEET 12 FOR INSTALLATION HOLE DIMENSIONS



CONSOLE
SIDE PANEL
(317188)



③

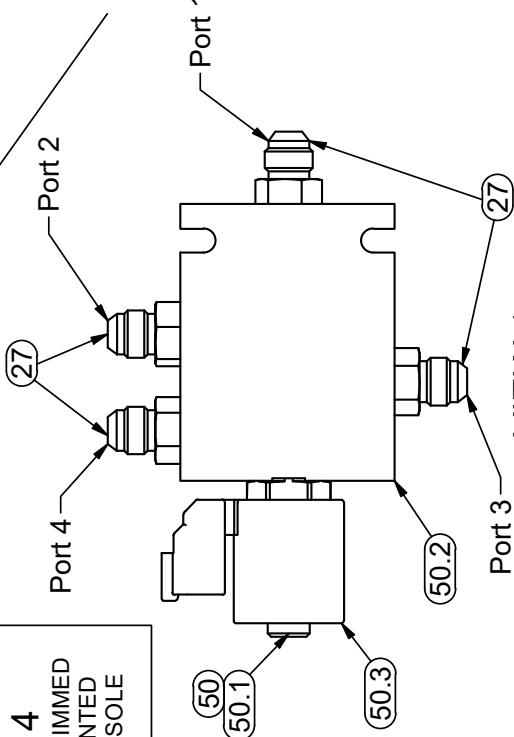
②

③

④

DETAIL 3

VIEW 4
SHOWING SHIMMED
VALVE MOUNTED
INSIDE CONSOLE



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 W/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 |

2-20-2023

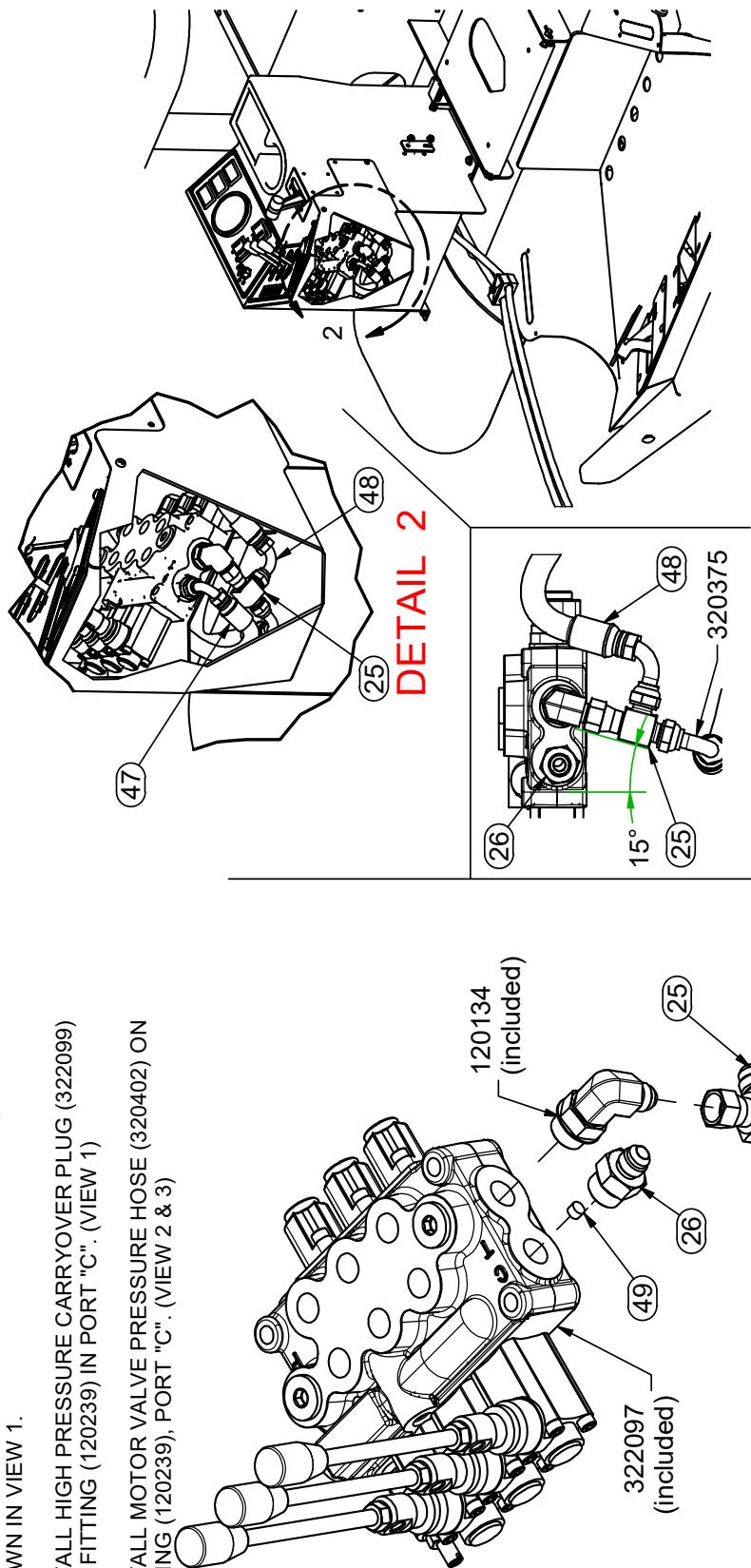
CURB BRUSH HYDRAULICS

CONTROL VALVE CONFIGURATION

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

2) INSTALL HIGH PRESSURE CARRYOVER PLUG (3222099) 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)

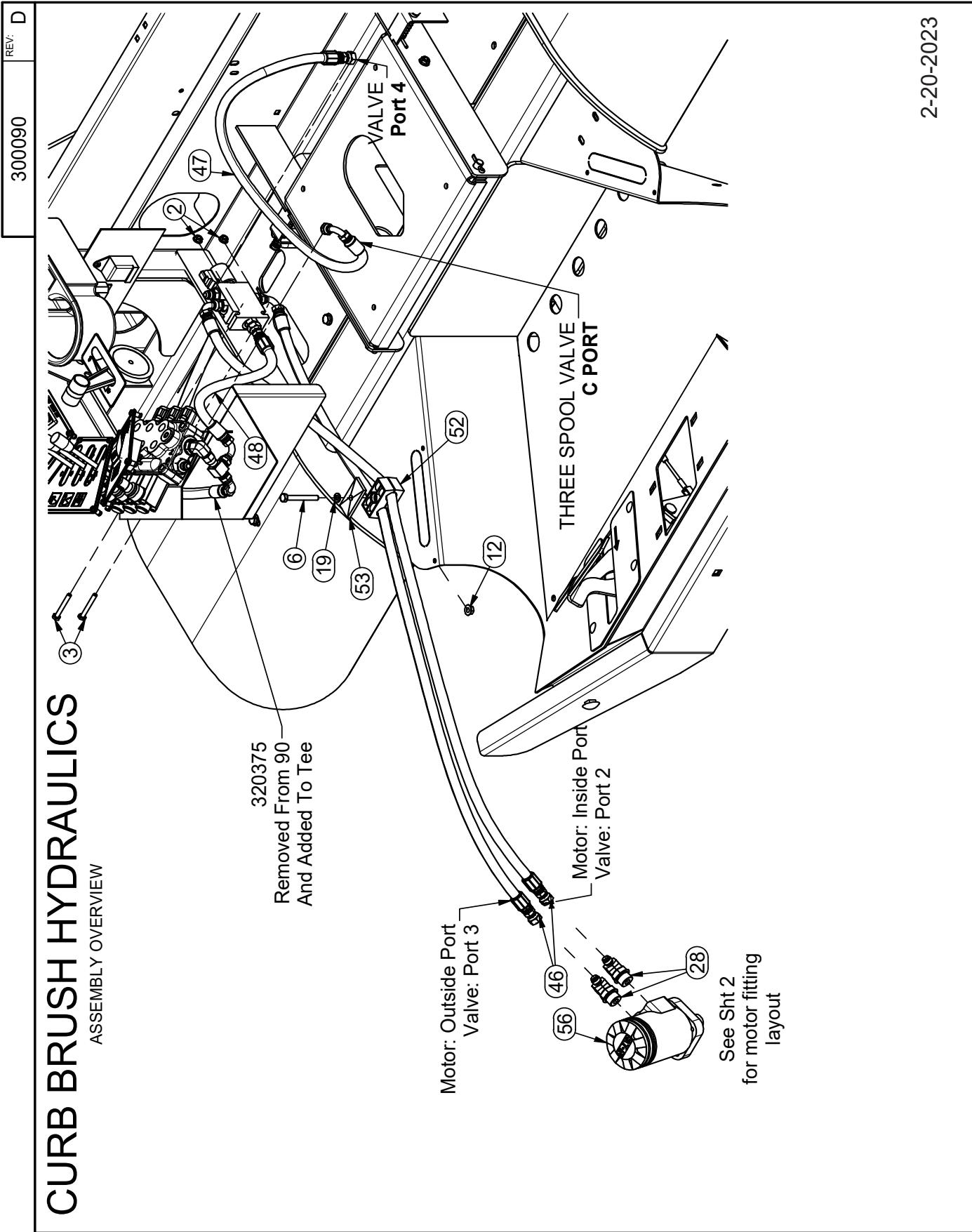
6) ATTACH CURB BRUSH MOTOR VALVE HOSE (320403) TO OPEN SIDE PORT OF TEE (120216). (VIEW 2 & 3)

VIEW 4
VIEW OF CONTROL PANEL

2-20-2023

CURB BRUSH HYDRAULICS

ASSEMBLY OVERVIEW



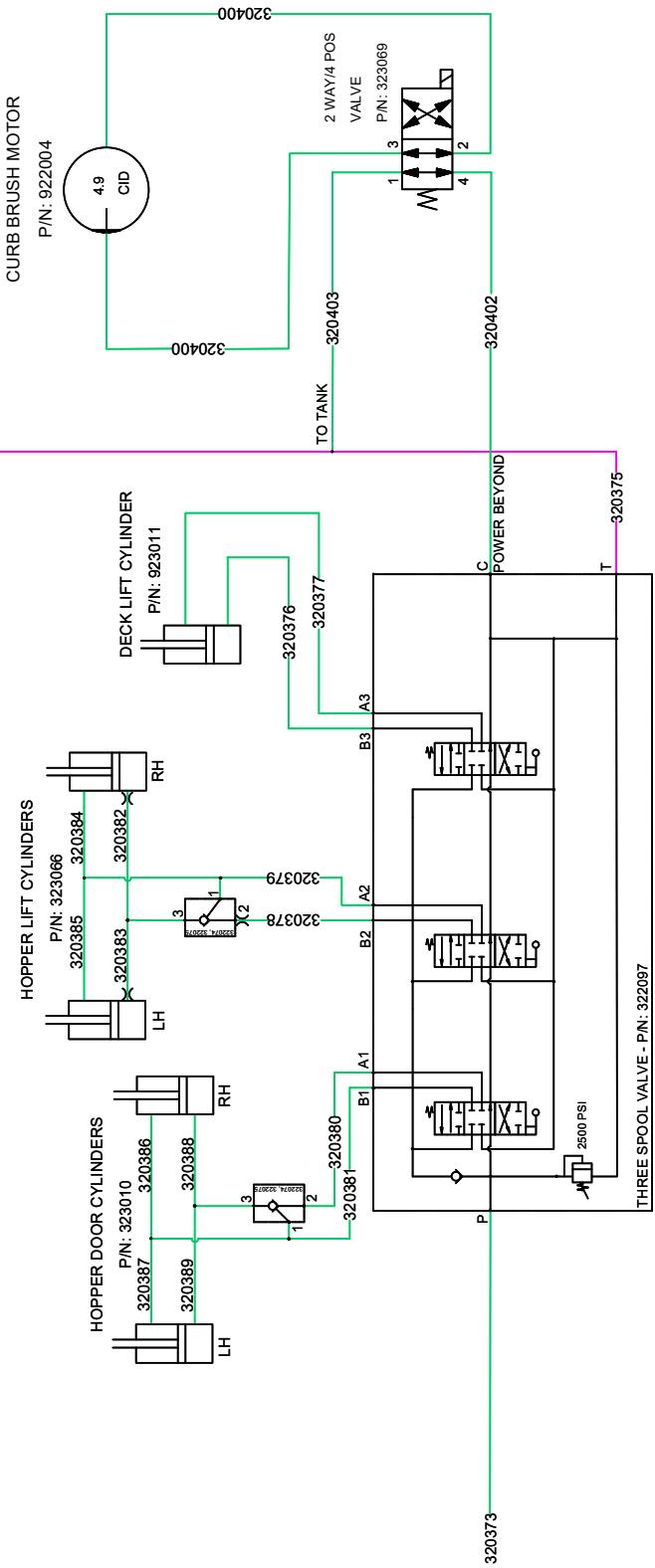
REV.: D

REV: D
300090

CURB BRUSH HYDRAULICS

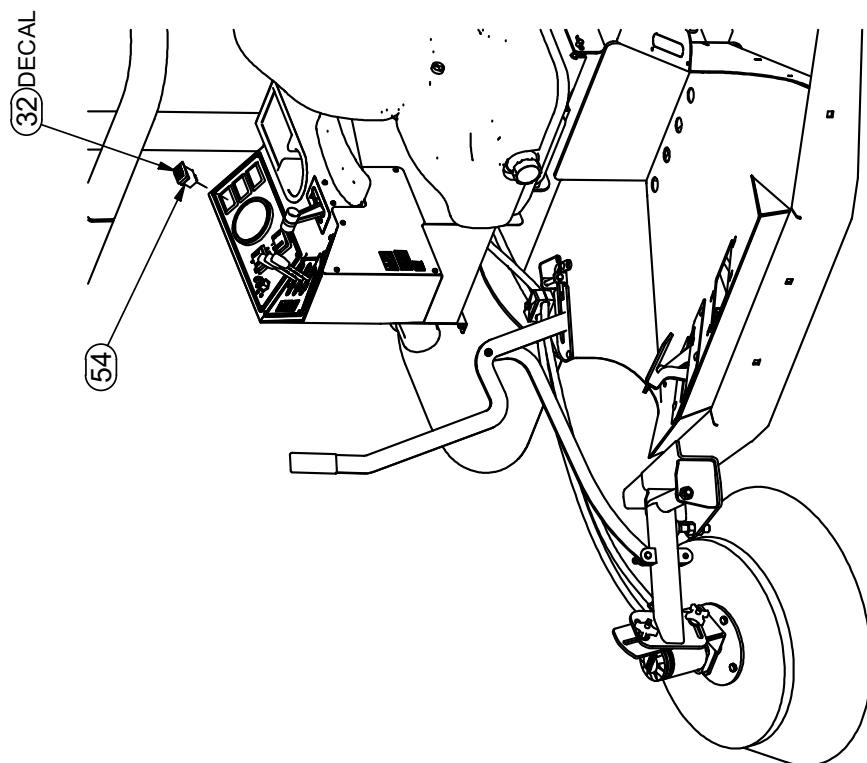
CURB BRUSH PLUMBING (RIGHT)

CASE DRAIN
BLOCK
P/N: 322095



2-20-2023

CURB BRUSH SWITCH & ELECTRICAL INSTALLATION



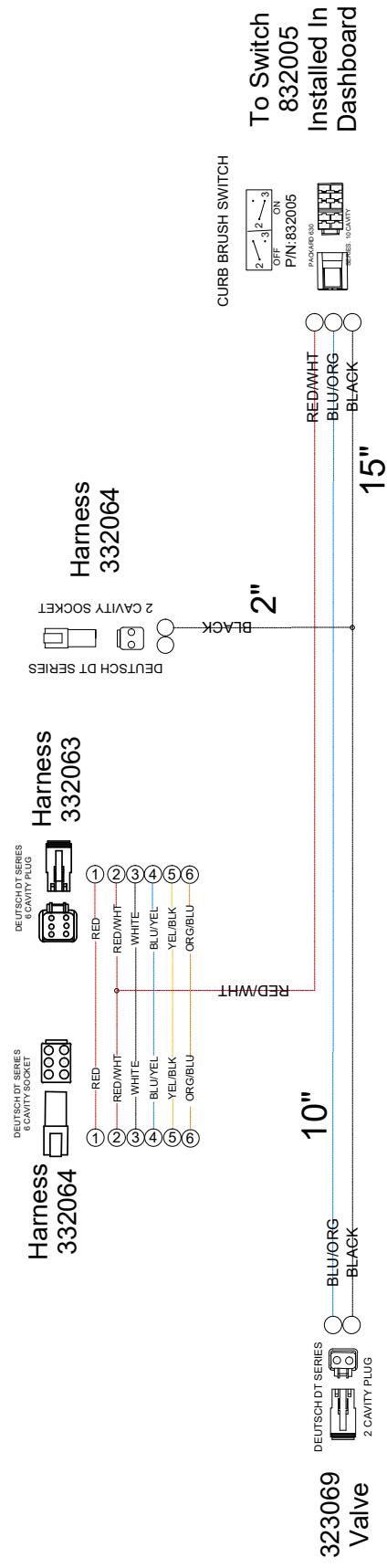
VIEW 1

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

SWEeper CURB BRUSH WIRING SCHEMATIC



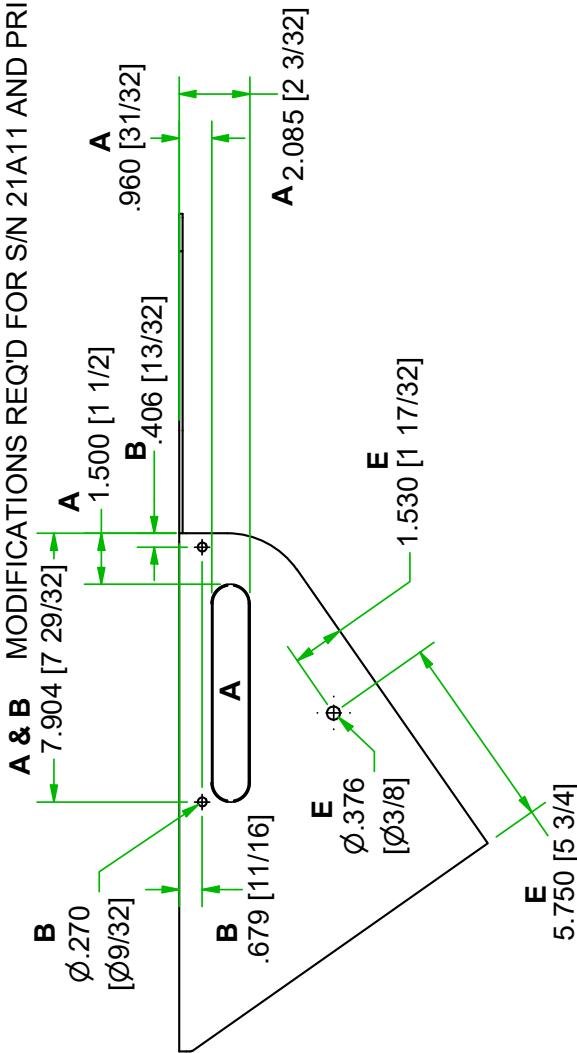
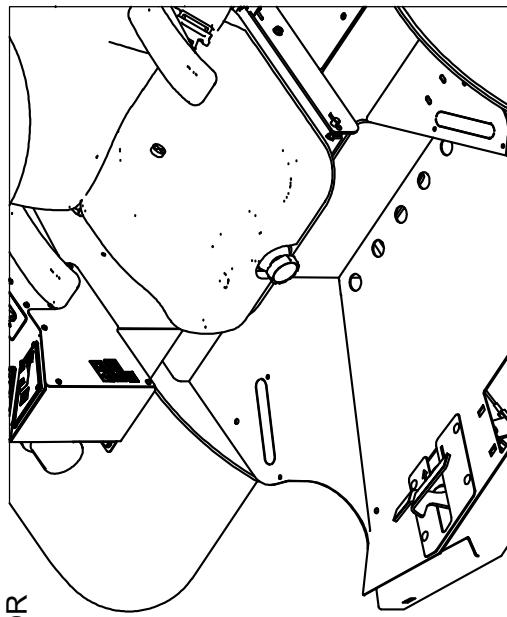
x 11.4

300090

REV: D

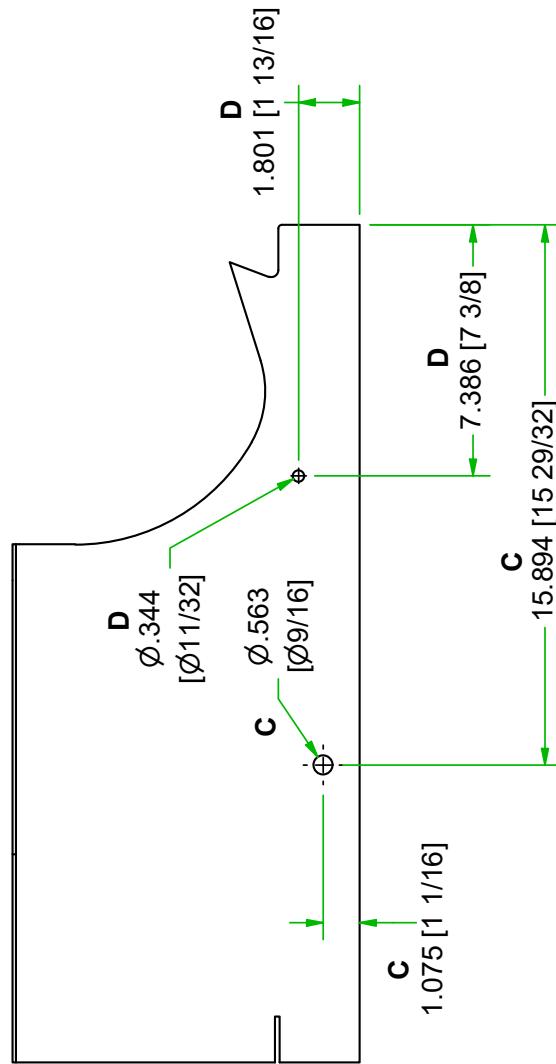
CURB BRUSH ASSEMBLY

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.

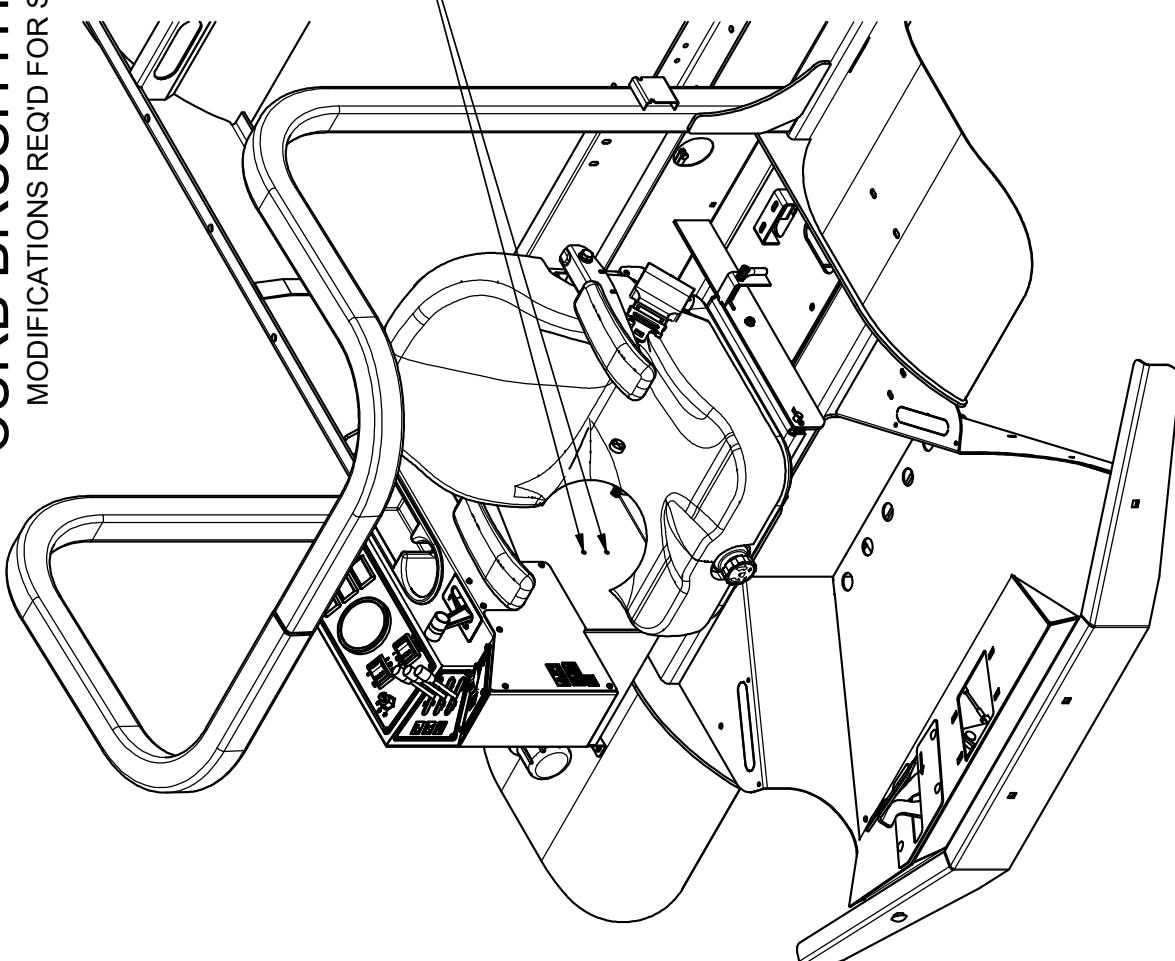
- A. Cutout For Handle Mount (1X)
- B. Holes For Curb Brush Plate Mount (2X)
- C. Pivot Hole For Curb Brush Handle (1X)
- D. Gas Spring Mount Hole (1X)
- E. Hose Clamp Hole Mount



CURB BRUSH HYDRAULICS

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

300090 REV. D



FOR S/N 21A11 AND PRIOR
For Right Hand Curb Brush, The
Following Cutouts Will Need To Be Made:

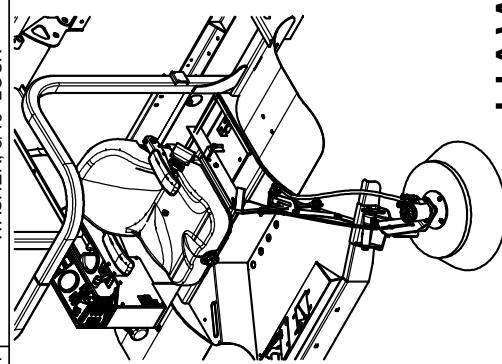
Holes For Curb Brush Valve (2X)

2-20-2023

| 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 | 20 | 6 | 110676 | WASHER, 3/8" FLAT STANDARD | 38 | 1 | 315405 | WELDMENT, CURB BRUSH BASE LEFT, SWPR |
| 2 | 4 | 110290 | NUT, 1/4-20 WIZ FLANGE | 21 | 1 | 110895 | Bolt, 5/8-11 X 3 in Carriage | | | | |
| 3 | 2 | 110354 | BOLT, 1/4-20 X 2.0 HEX HEAD | 22 | 1 | 111189 | Bolt, 5/8-11 X 7.5, HHCS Gr 5 Zinc | 39 | 1 | 315406 | WELDMENT, CURB BRUSH MOUNT, SWPR |
| 4 | 2 | 110358 | Bolt, 1/4-20 X 0.625 in Carriage | 23 | 1 | 111199 | BOLT, 3/8 X 625 SHOULDER SHCS | 40 | 1 | 315407 | WELDMENT, BRUSH ADAPTER, SWPR |
| 5 | 2 | 110392 | Bolt, 3/8-16 X 2 in Carriage | 24 | 1 | 111208 | Pin, Lock 3/8 X 3.00" Usable Length, Sq Wire | 41 | 1 | 317258 | WASHER, 2.0 X .344 X .12 |
| 6 | 1 | 110396 | BOLT, 5/16-18 X 2.5 | 25 | 1 | 120216 | ADAPTER, 6MJ-6FJX-6MJ | 42 | 1 | 317261 | TENSIONER, GEAR MOUNT, BUSHING |
| 7 | 4 | 110400 | BOLT, 3/8-16 X 2.0 | 26 | 1 | 120239 | ADAPTER, 6MJ-8MB | 43 | 1 | 317388 | LINK, CURB BRUSH LIFT |
| 8 | 4 | 110420 | BOLT, 3/8-16 X 1.0 | 27 | 4 | 120319 | ADAPTER, 6MJ-6MB | 44 | 1 | 317457 | BRKT, LH CURB BRUSH RETAINING |
| 9 | 1 | 110434 | BOLT, 1/4-20 X 0.5, WIZ FLANGE | 28 | 2 | 120753 | JIC(-6) to Male O-ring (-10), 45 degrees | 45 | 1 | 317459 | SHIM, CURB BRUSH MOTOR VALVE |
| 10 | 2 | 110597 | NUT, 5/8-11 HEX | 29 | 1 | 211747 | FRiction WASHER 1.5" | 46 | 2 | 320401 | HOSE ASSY, LH CURB BRUSH |
| 11 | 3 | 110600 | NUT, 5/16-18, UNTORQUE LOCK | 30 | 2 | 302063 | KNOB, ALUMINUM 3/8-16 | 47 | 1 | 320402 | HOSE ASSY, CURB BRUSH INLET |
| 12 | 1 | 110606 | NUT, 5/16-18 WIZ FLANGE | 31 | 1 | 302064 | BRUSH, 24" X 6" X 40 DEG | 48 | 1 | 320403 | HOSE ASSY, CURB BRUSH RETURN |
| 13 | 1 | 110615 | NUT, 1/2-13, UNITORQUE LOCK | 32 | 1 | 302160 | DECAL, CURB BRUSH | 49 | 1 | 322099 | HIGH PRESSURE CARRYOVER PLUG |
| 14 | 4 | 110621 | NUT, 3/8-16, UNITORQUE LOCK | 33 | 1 | 312022 | CLIP, HAIRPIN 3/32 X 1.625 | 50 | 1 | 323069 | VALVE ASSEMBLY, 2-WAY/4 POSITION |
| 15 | 1 | 110639 | NUT, 5/8-11, UNITORQUE LOCK | 34 | 1 | 312039 | GAS SPRING | 51 | 1 | 332070 | HARNESS, CURB BRUSH |
| 16 | 2 | 110658 | WASHER, 1/2" FLAT STANDARD | 35 | 1 | 312041 | CLEVIS PIN, 3/8 X 1.5, ZINC | 52 | 1 | 820057 | CLAMP BODY |
| 17 | 2 | 110665 | WASHER, 5/16" FLAT STANDARD | 36 | 1 | 315402 | WLDmnt, CURB BRUSH HANDLE LEFT, SWPR | 53 | 1 | 820098 | COVER PLATE |
| 18 | 4 | 110672 | WASHER, 3/8" LOCK | | | | | 54 | 1 | 832005 | SWITCH, PADDLE, CARLING (29253) |
| 19 | 1 | 110674 | WASHER, 5/16" LOCK | 37 | 1 | 315403 | WELDMENT, CURB BRUSH ARM, SWPR | 55 | 1 | 910044 | COVER, VINYL .25 X 1.5 X 4 GRIP |
| | | | | | | | | 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: 300092
FACTORY INSTALL: 300093

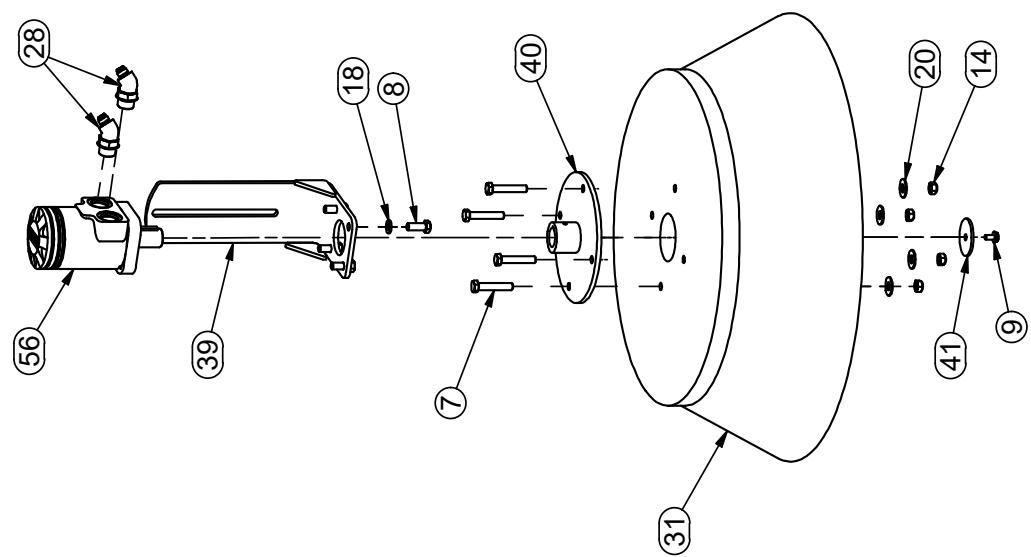


HAWK LEFT CURB BRUSH INSTALL

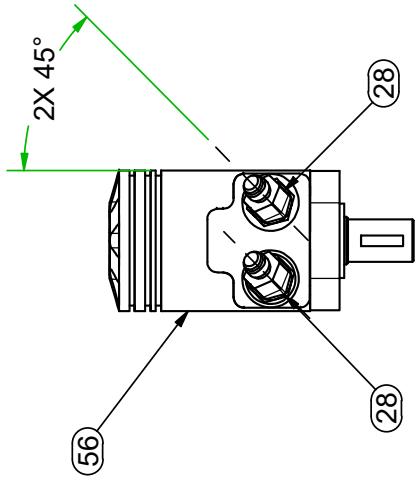
BRUSH ASSEMBLY

300092 | REV: C

- 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)



VIEW 1
FITTING LAYOUT
ON MOTOR



VIEW 2

2-20-2023

300092 REV: C

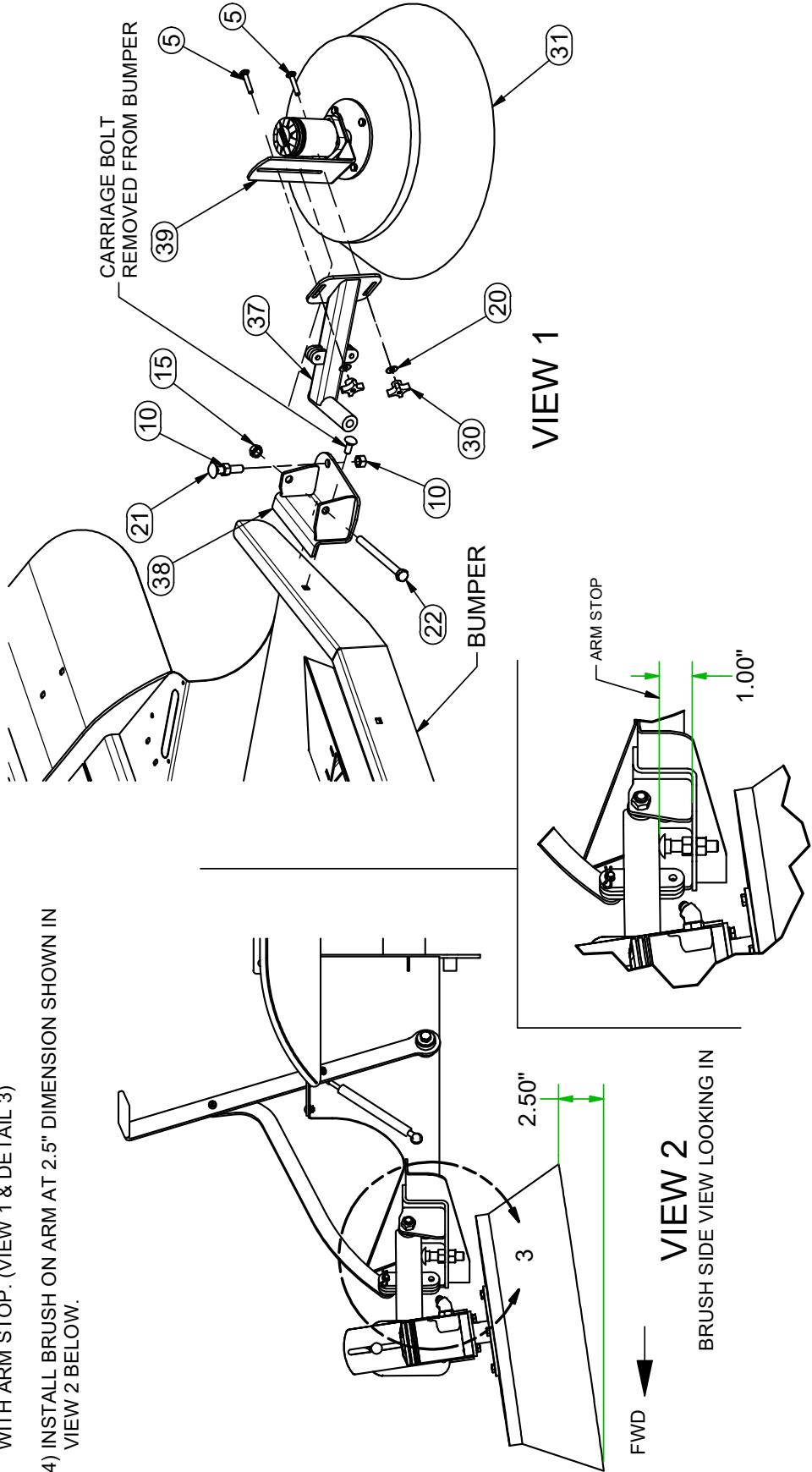
BRUSH & ARM ASSEMBLY

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

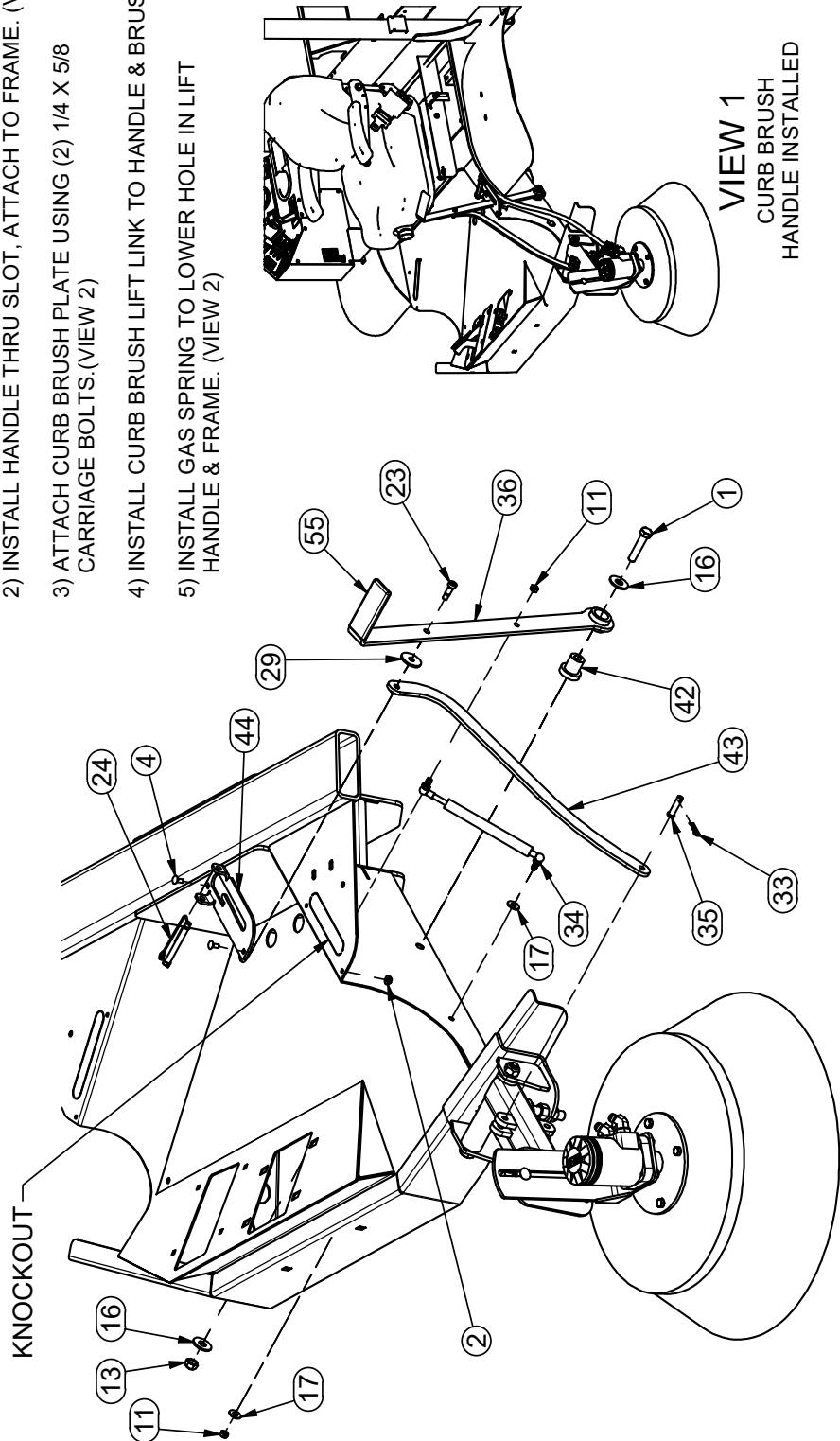
3) ATTACH ARM TO BRACKET & VERIFY ARM ROTATION AND CONTACT WITH ARM STOP. (VIEW 1 & DETAIL 3)

4) INSTALL BRUSH ON ARM AT 2.5" DIMENSION SHOWN IN VIEW 2 BELOW.



CURB BRUSH LIFT HANDLE INSTALLATION

- 1) REMOVE BRUSH HANDLE SLOTH 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

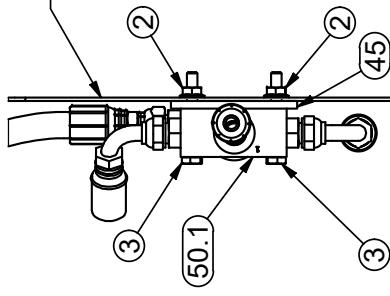
CURB BRUSH HYDRAULICS

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)

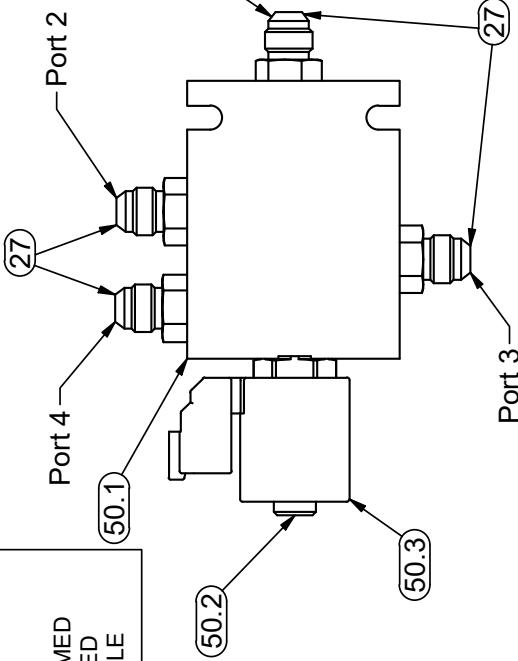
NOTE: IF UNIT S/N IS 21A11 OR PRIOR, SEE SHEET 12 FOR INSTALLATION HOLE DIMENSIONS

CONSOLE
SIDE PANEL
(317188)



DETAIL 3

VIEW 4
SHOWING SHIMMED
VALVE MOUNTED
INSIDE CONSOLE



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

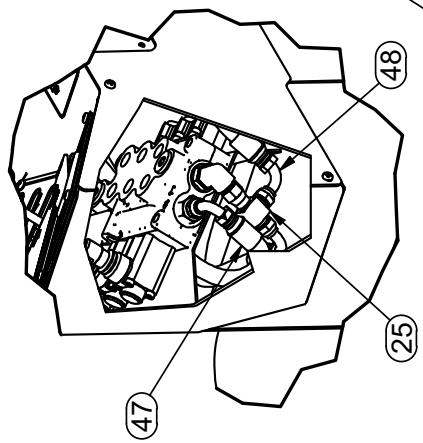
CURB BRUSH HYDRAULICS

CONTROL VALVE CONFIGURATION

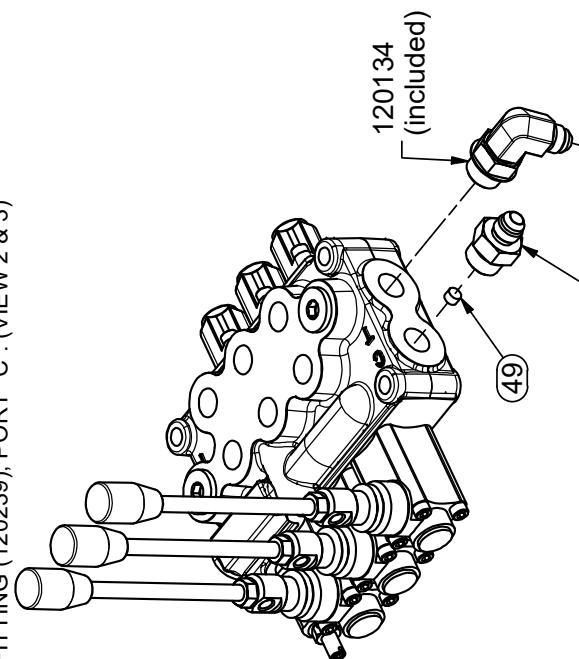
1) REMOVE PLUG FROM POWER BEYOND PORT, PORT "C"
SHOWN IN VIEW 1.

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)



DETAIL 2



VIEW 1



VIEW 3

TEE LAYOUT VIEW

VIEW 4

VIEW OF CONTROL PANEL

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

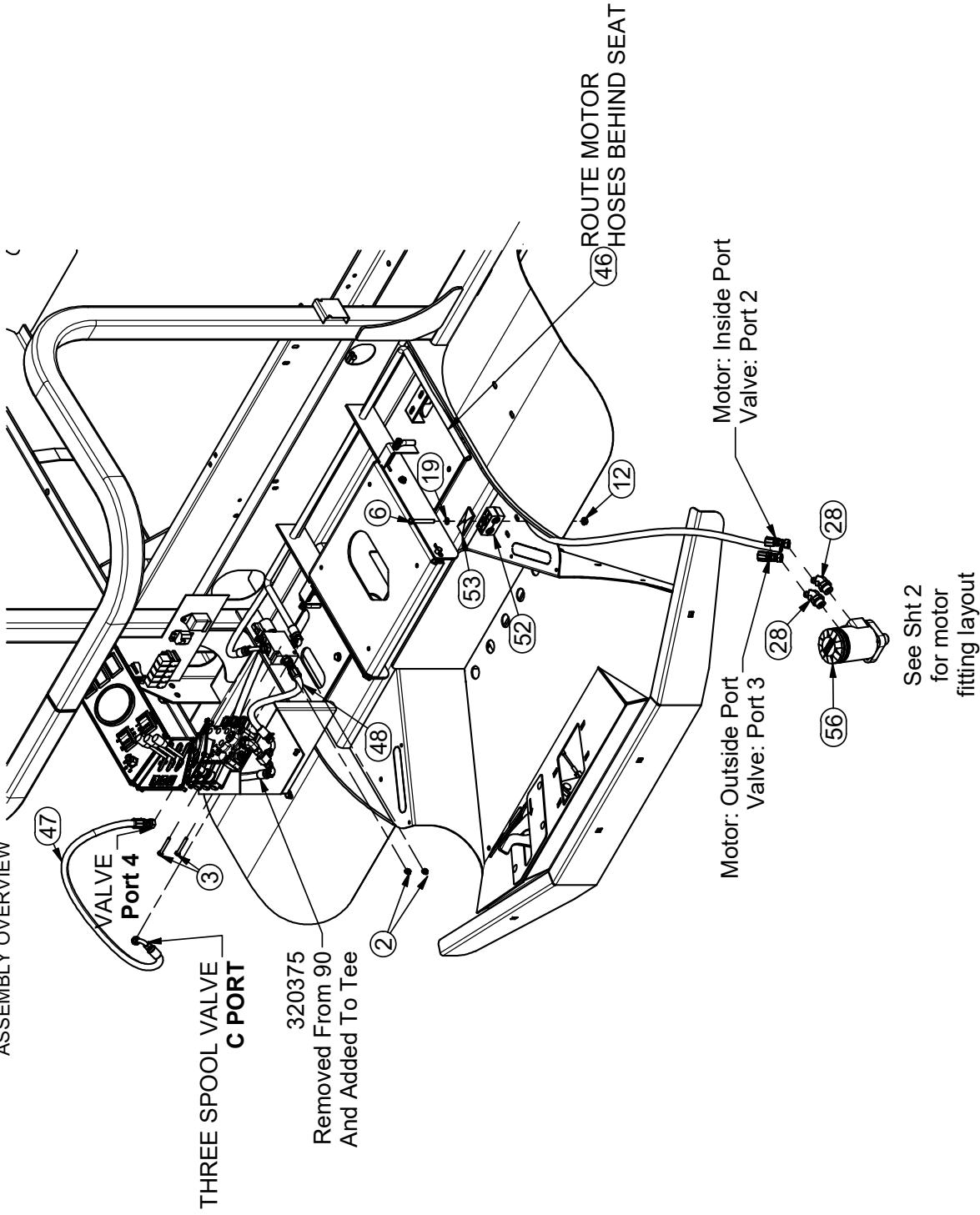
5) ADD TEE (120216) TO ELBOW (120134) ALREADY INSTALLED
ON CONTROL VALVE (322087), THEN RE-INSTALL HOSE (320375)
TO OPEN END OF TEE. (VIEW 1,2 & 3)

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

2-20-2023

CURB BRUSH HYDRAULICS

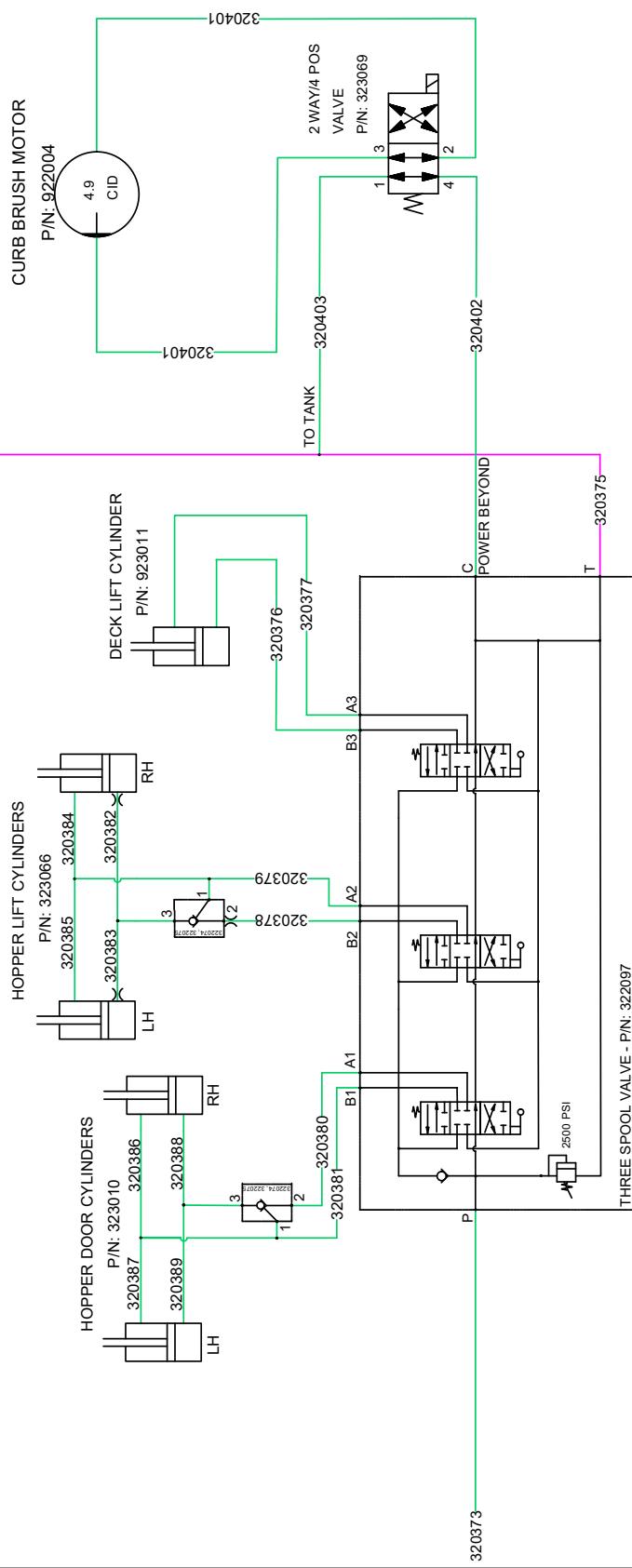
ASSEMBLY OVERVIEW



CURB BRUSH HYDRAULICS

CURB BRUSH PLUMBING (LEFT)

CASE DRAIN
BLOCK
P/N: 322095



300092

REV: C

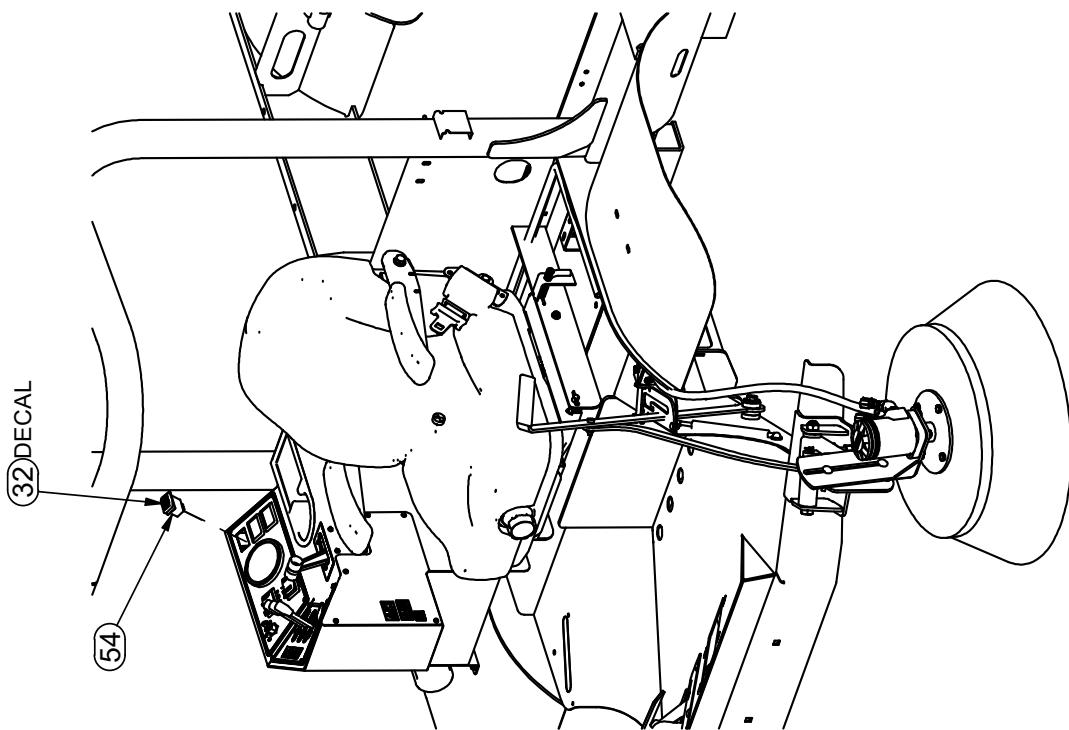
2-20-2023

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.

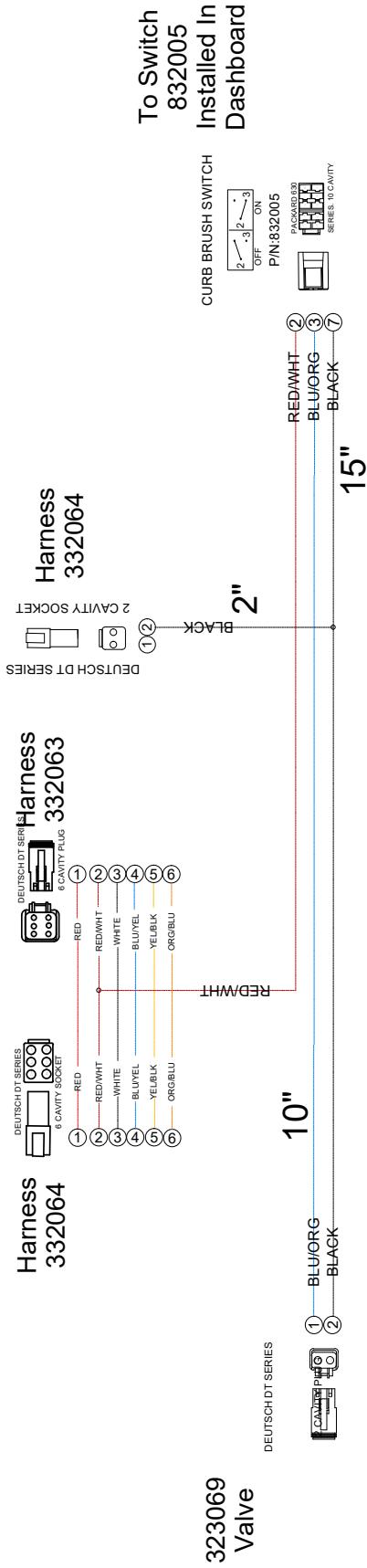
wiring harness on next page for reference



300092

REV: C

SWEeper CURB BRUSH WIRING SCHEMATIC



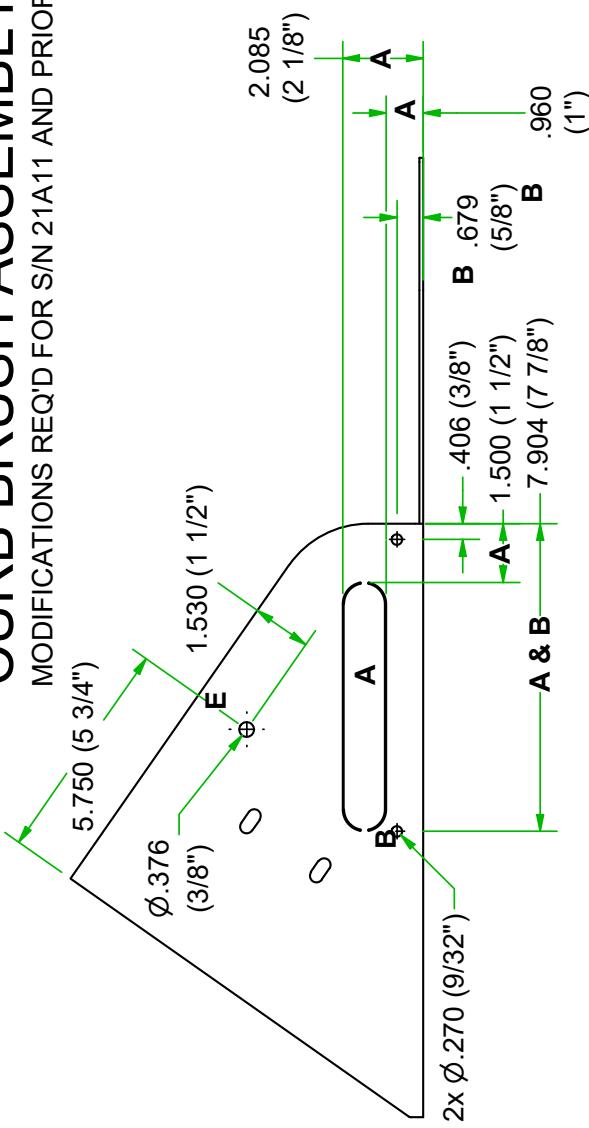
x 11.5

300092

REV: C

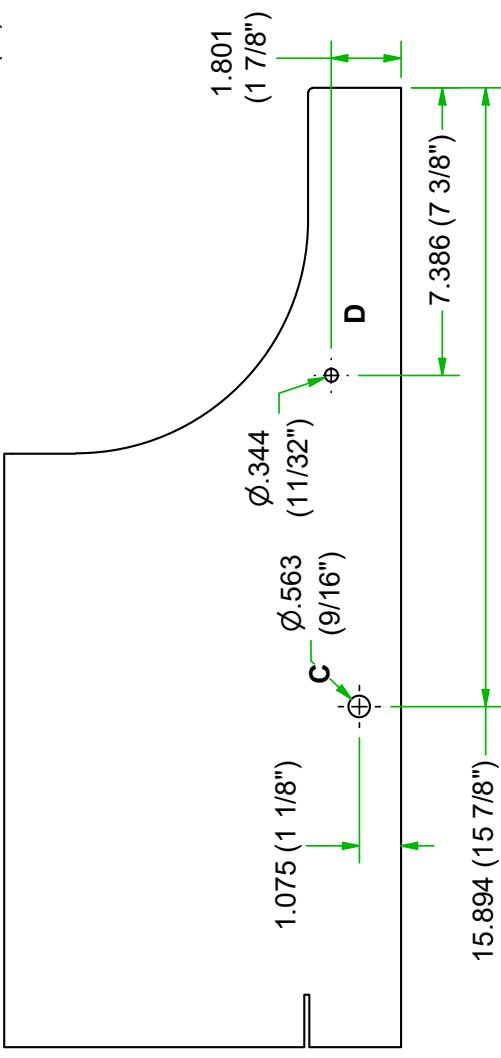
CURB BRUSH ASSEMBLY

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



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

- Cutout For Handle Mount (1X)
- Holes For Curb Brush Plate Mount (2X)
- Pivot Hole For Curb Brush Handle (1X)
- Gas Spring Mount Hole (1X)
- Hose Clamp Hole Mount

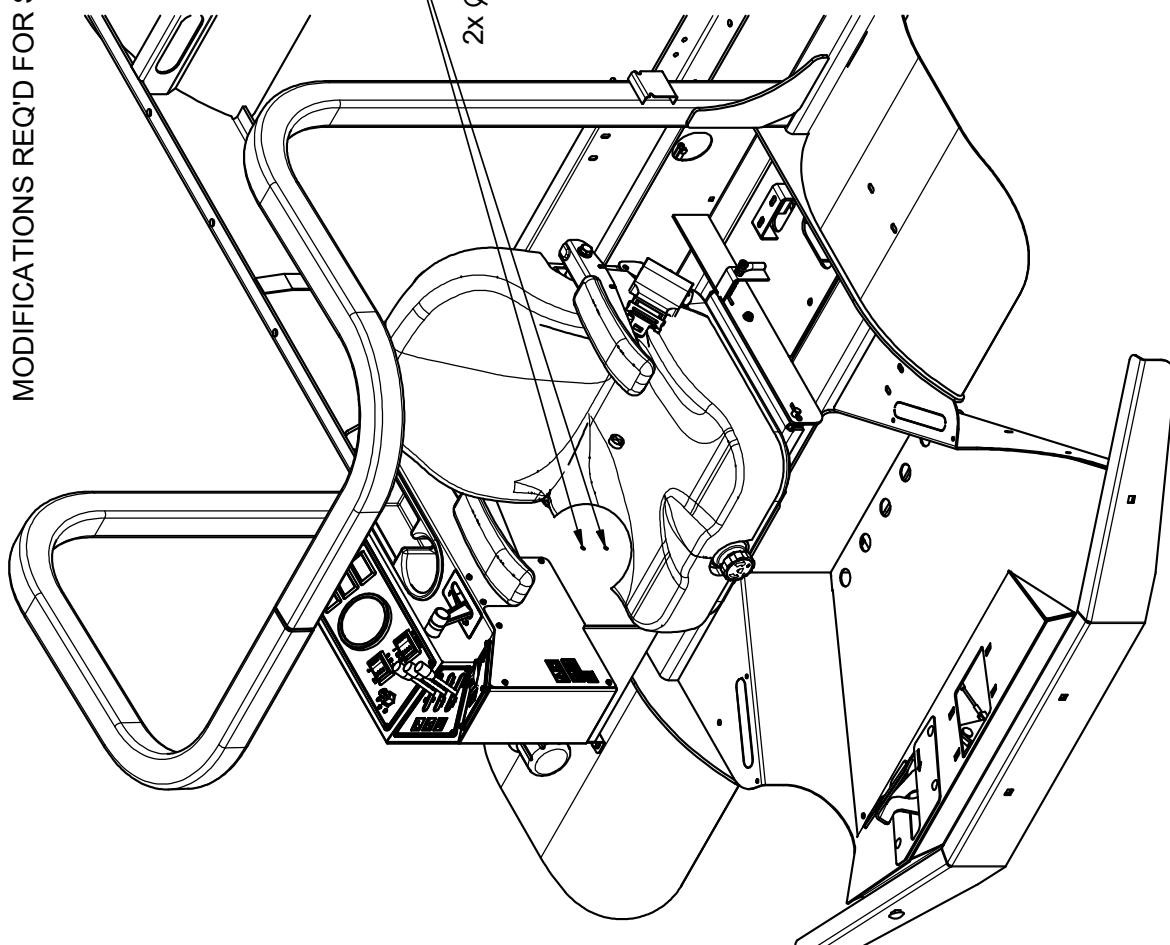


CURB BRUSH HYDRAULICS

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

300092

REV: C



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

Holes For Curb Brush Valve (2X)

2-20-2023

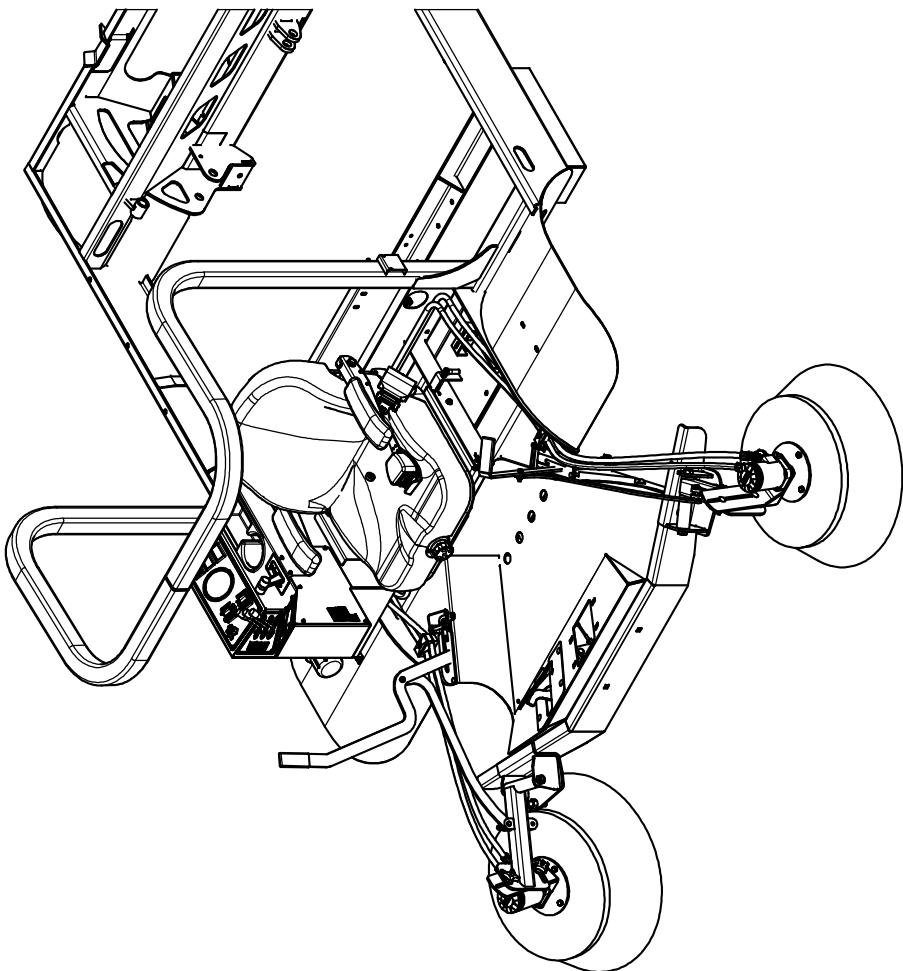
300094

REV: A

HAWK DUAL CURB BRUSH INSTALL

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

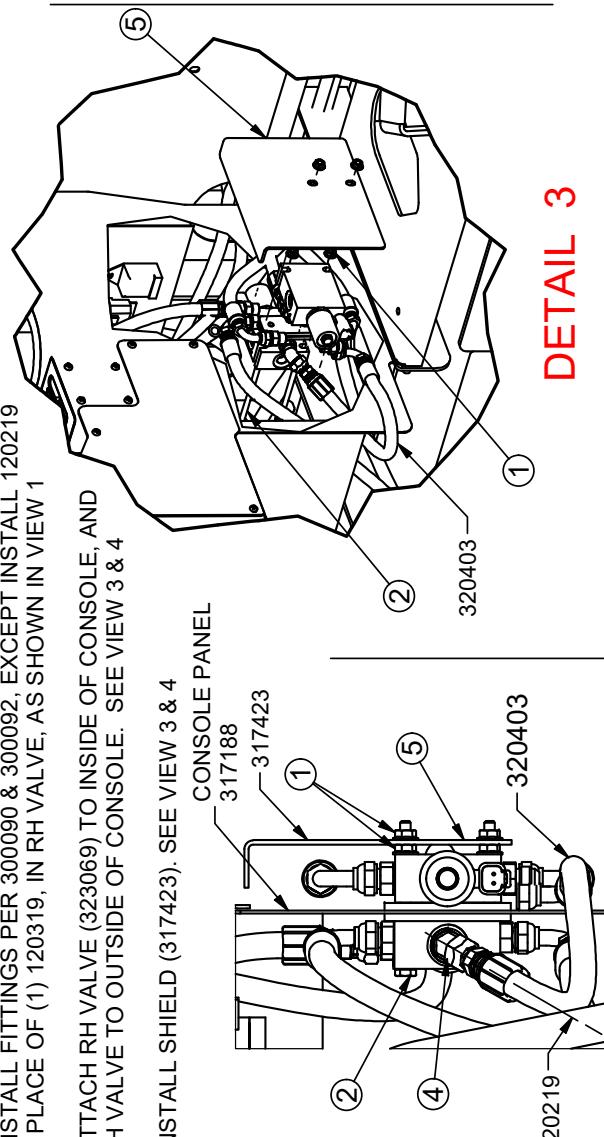
| Parts List | | | |
|------------|-----|--------|--|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 4 | 110290 | NUT, 1/4-20 WIZ FLANGE |
| 2 | 2 | 110412 | BOLT, 1/4-20 X 3.5 |
| 3 | 4 | 110788 | BOLT, 10-24 X .375 STAINLESS, PHILLIPS |
| 4 | 1 | 120219 | ADAPTER, 6MJ-6MB 45 |
| 5 | 1 | 317423 | SHIELD, 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 |



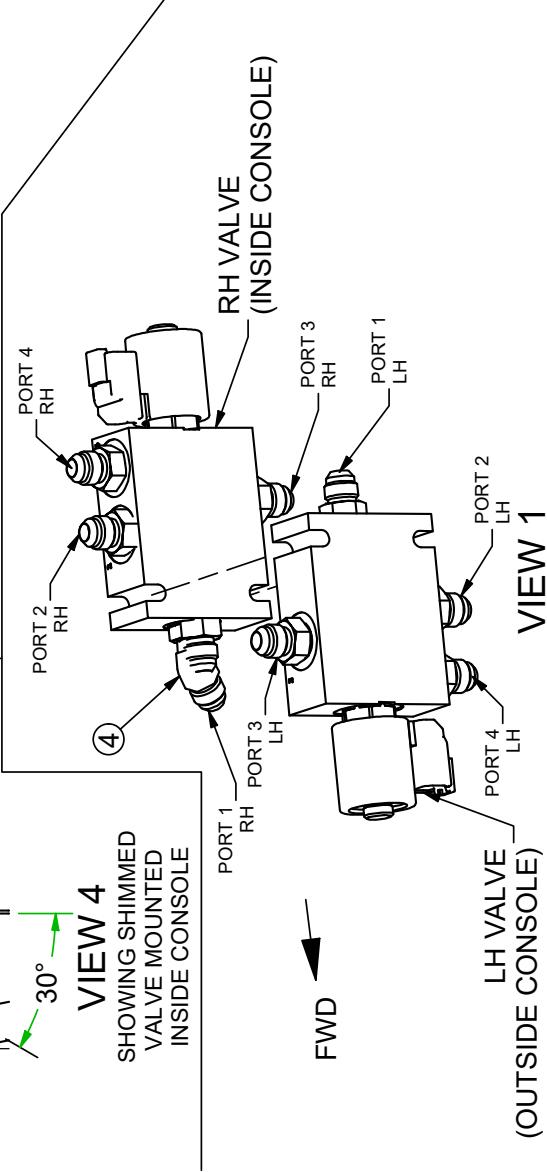
CURB BRUSH HYDRAULICS

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

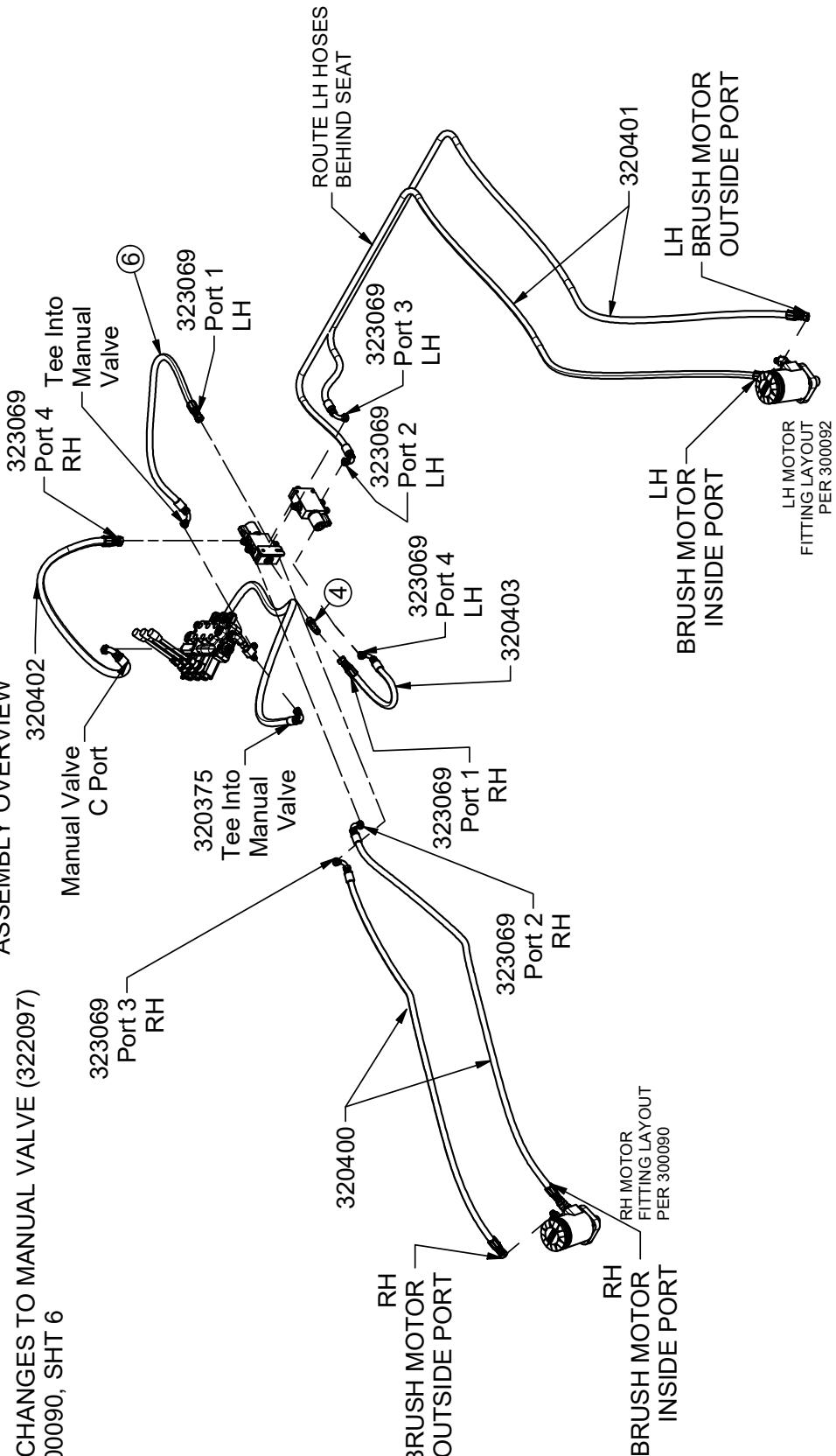


8-11-2022

CURB BRUSH HYDRAULICS

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

ASSEMBLY OVERVIEW



300094

REV: A

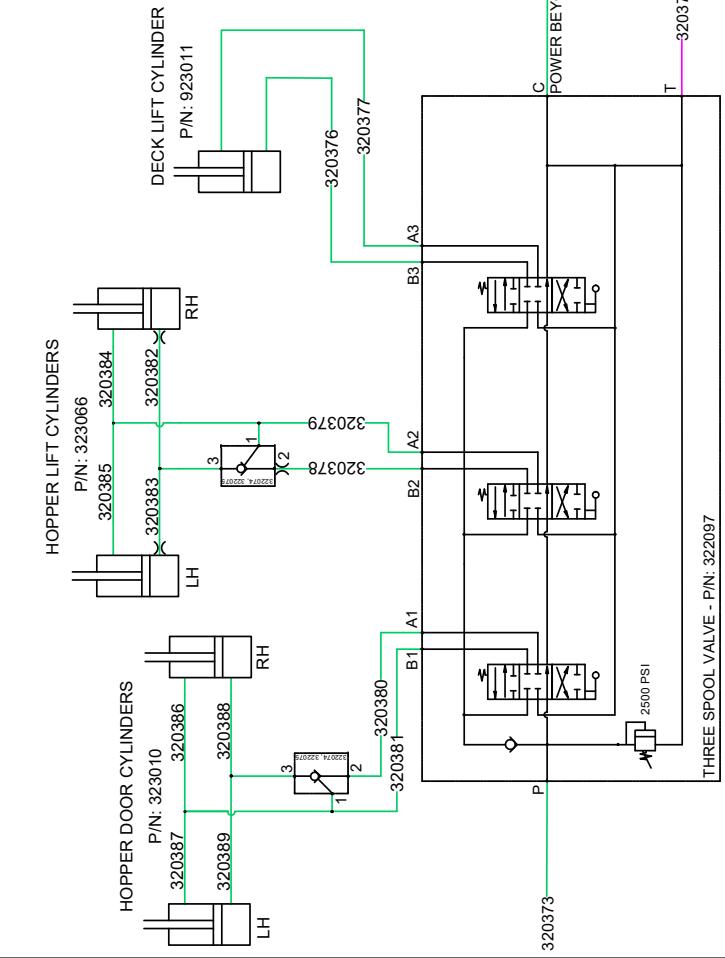
300094

REV: A

CURB BRUSH PLUMBING (DUAL)

CASE DRAIN
BLOCK
P/N: 322095

CURB BRUSH MOTOR
P/N: 922004



CURB BRUSH SWITCH & ELECTRICAL INSTALLATION

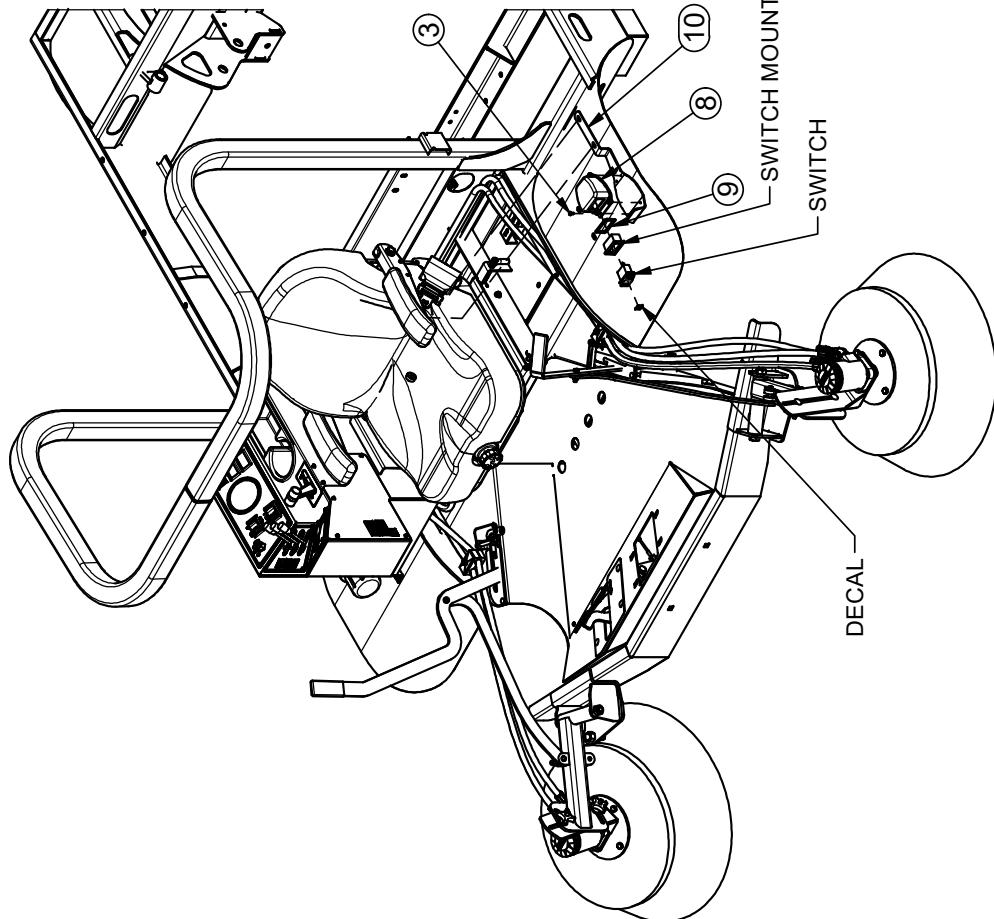
To Install Wiring Harnesses (332070 & 332071):

- 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 323069 valve installed inside of console. Connect 2 cavity Deutsch, Blu/Org & Blk, on 332071 harness to 323069 valve installed outside of console.

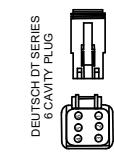
wiring harness on next page for reference



VIEW 1

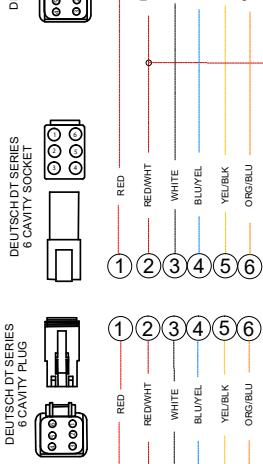
SWEeper DUAL CURB BRUSH WIRING SCHEMATIC

332064
RELAY HARNESS



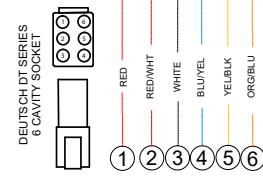
332070

CURB BRUSH HARNESS



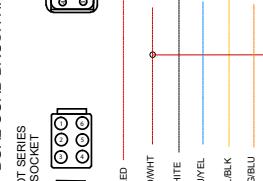
332063

INSTRUMENT PANEL HARNESS

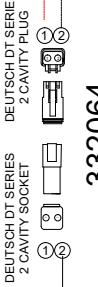


332071

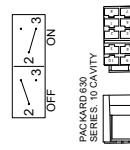
DUAL CURB BRUSH HARNESS



332064
RELAY HARNESS



CURB BRUSH SWITCH
P/N:832005



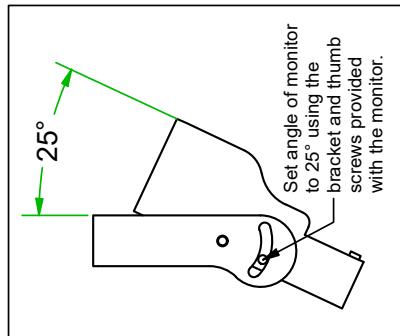
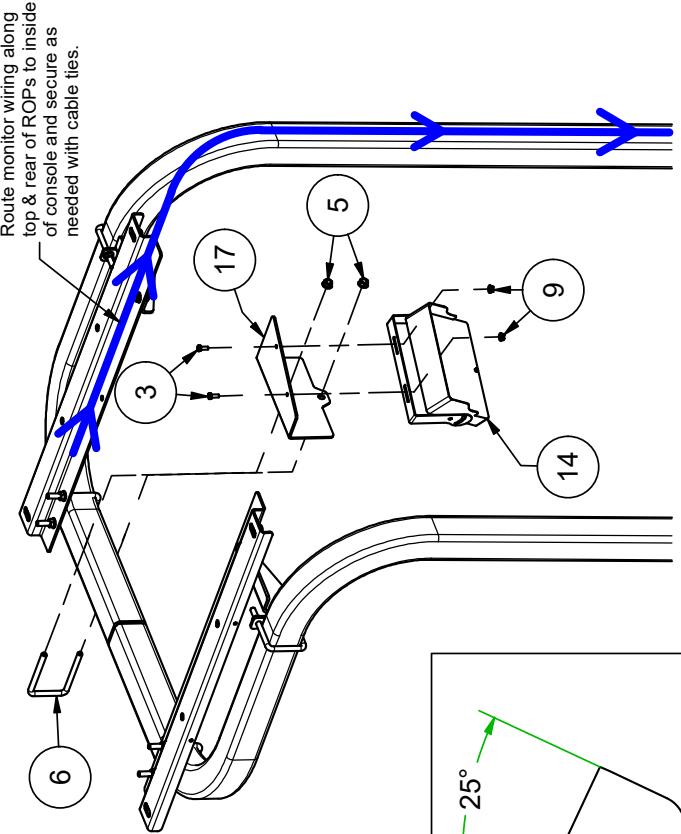
DEUTSCH DT SERIES
2 CAVITY SOCKET
P/N:832005

DEUTSCH DT SERIES
2 CAVITY PLUG
P/N:832005

BACKUP CAMERA

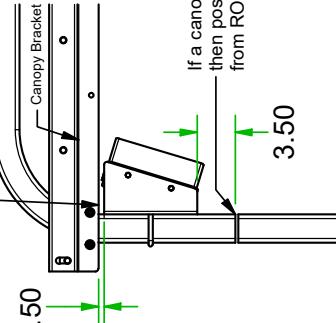
FACTORY INSTALL P/N: 300096
CUSTOMER INSTALL: 300095

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



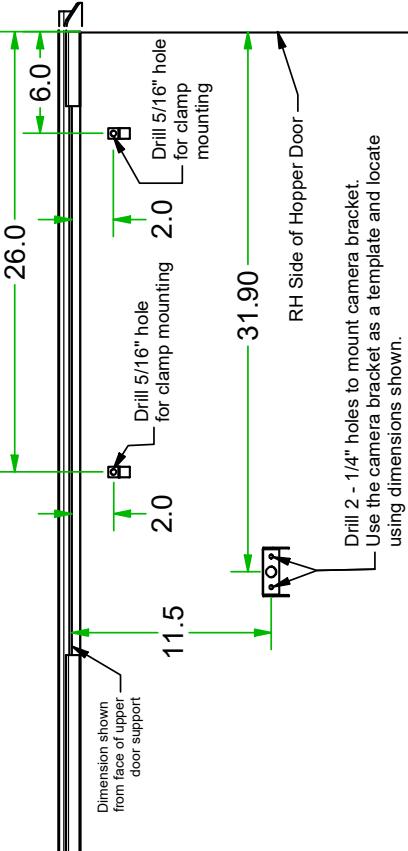
| Parts List | | | |
|------------|-------|--------|--|
| ITEM | QTY | PART # | DESCRIPTION |
| 1 | 20 | 100578 | CABLE TIE 14" BLACK 50 Lb Tens |
| 2 | 5 | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE |
| 3 | 6 | 110484 | BOLT, M6x1 x 16 Gr 10.9 |
| 4 | 2 | 110606 | NUT, 5/16-18 WIZ FLANGE |
| 5 | 2 | 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 PANEL |
| 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 |

If a canopy is installed, position the monitor mounting bracket 10' 50" from the edge of the canopy bracket as shown below.

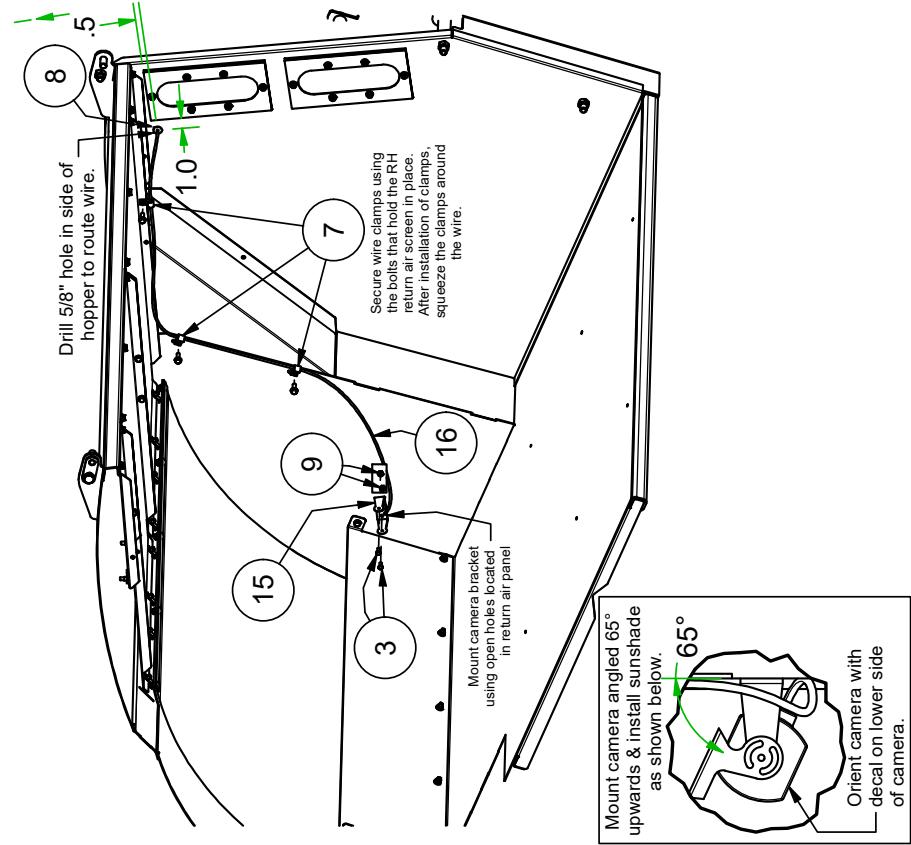


If a canopy is not installed, then position the bracket 3.50" from ROPS seam.

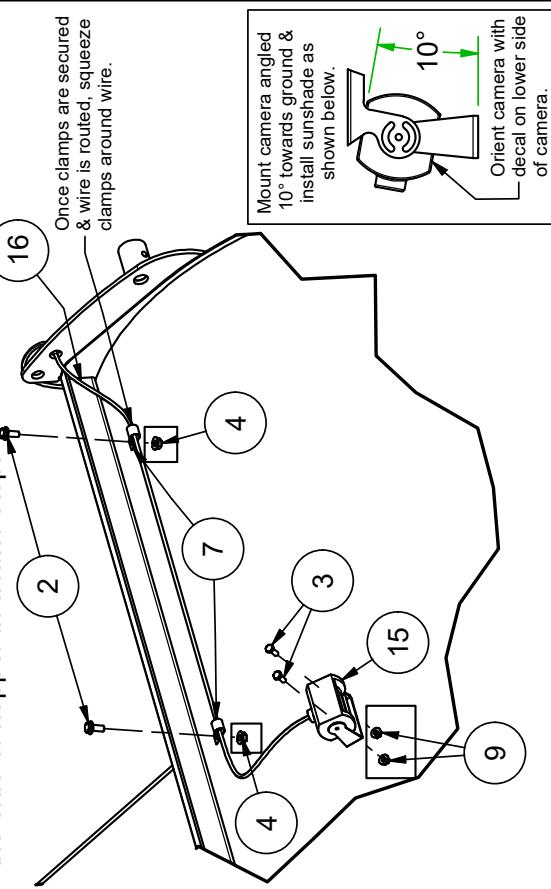
2. Drill holes into the top of the hopper door to mount the backup camera and the clamps to secure the wiring. See diagram below for hole locations and sizes.



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.

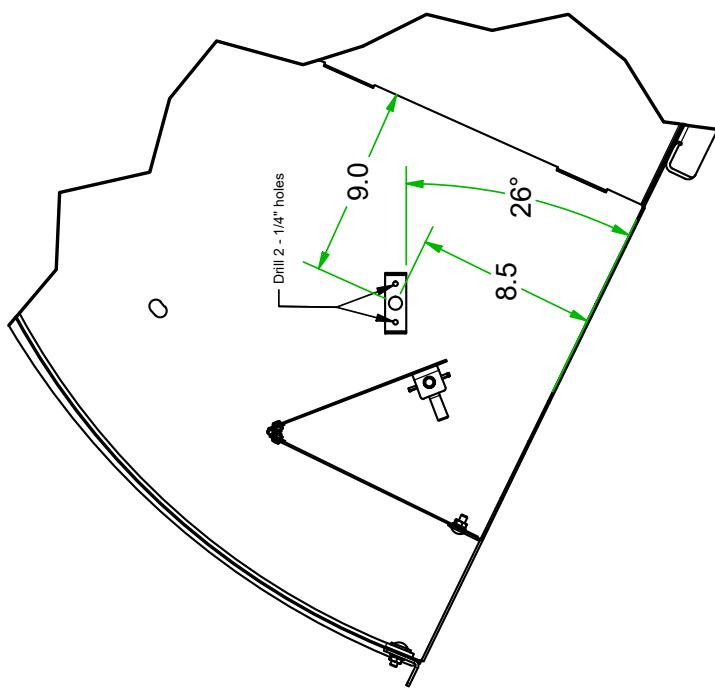
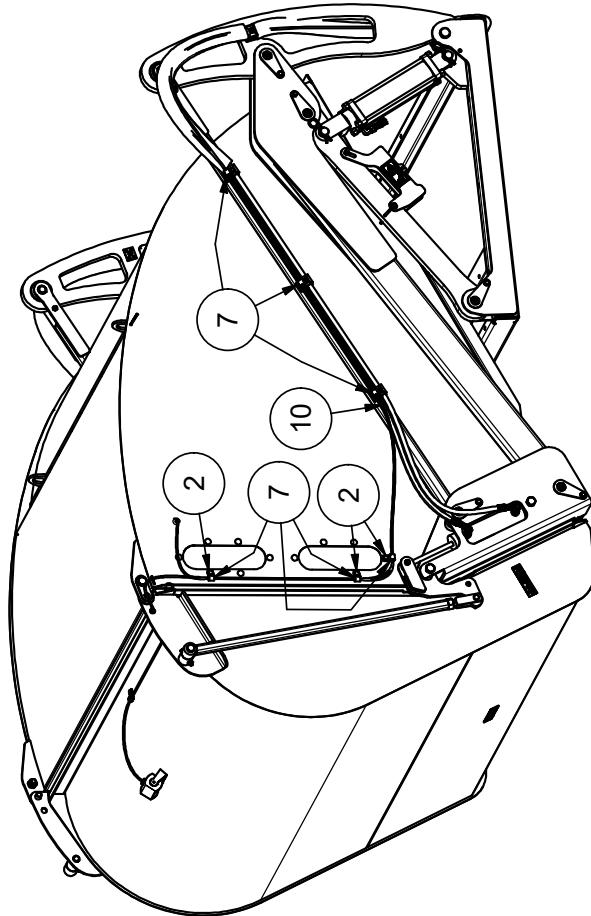


3. Attach camera to hopper door, route wire, and secure wire using the hardware shown in the diagram. Route wire through hole on RH side of hopper door. The wire will be secured on the side of hopper in a later step.

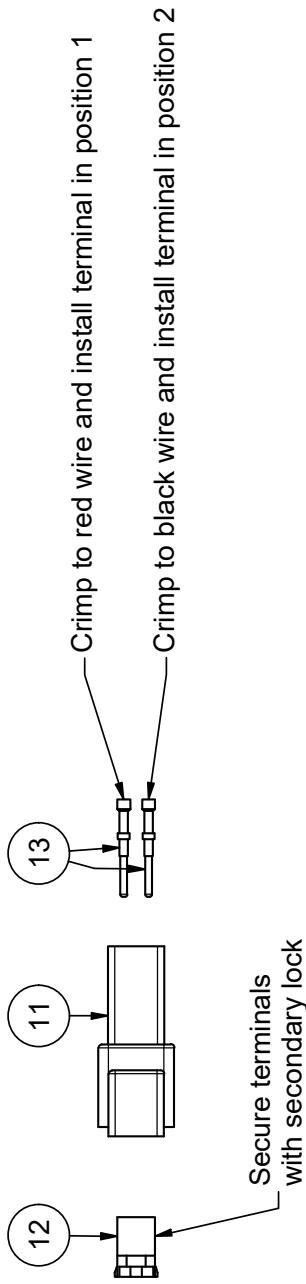


4b. For machines with serial number prior to 22A10, place the debris door in the down position. The door will be remain in the down position after the installation of the camera. It is unnecessary for it to be in the up position. Place the camera mounting bracket at the following location and mark the 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.

NOTES

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Harper, KS 67058

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

E-mail: info@harperindustries.com

HK4200

HARPER
TURF EQUIPMENT