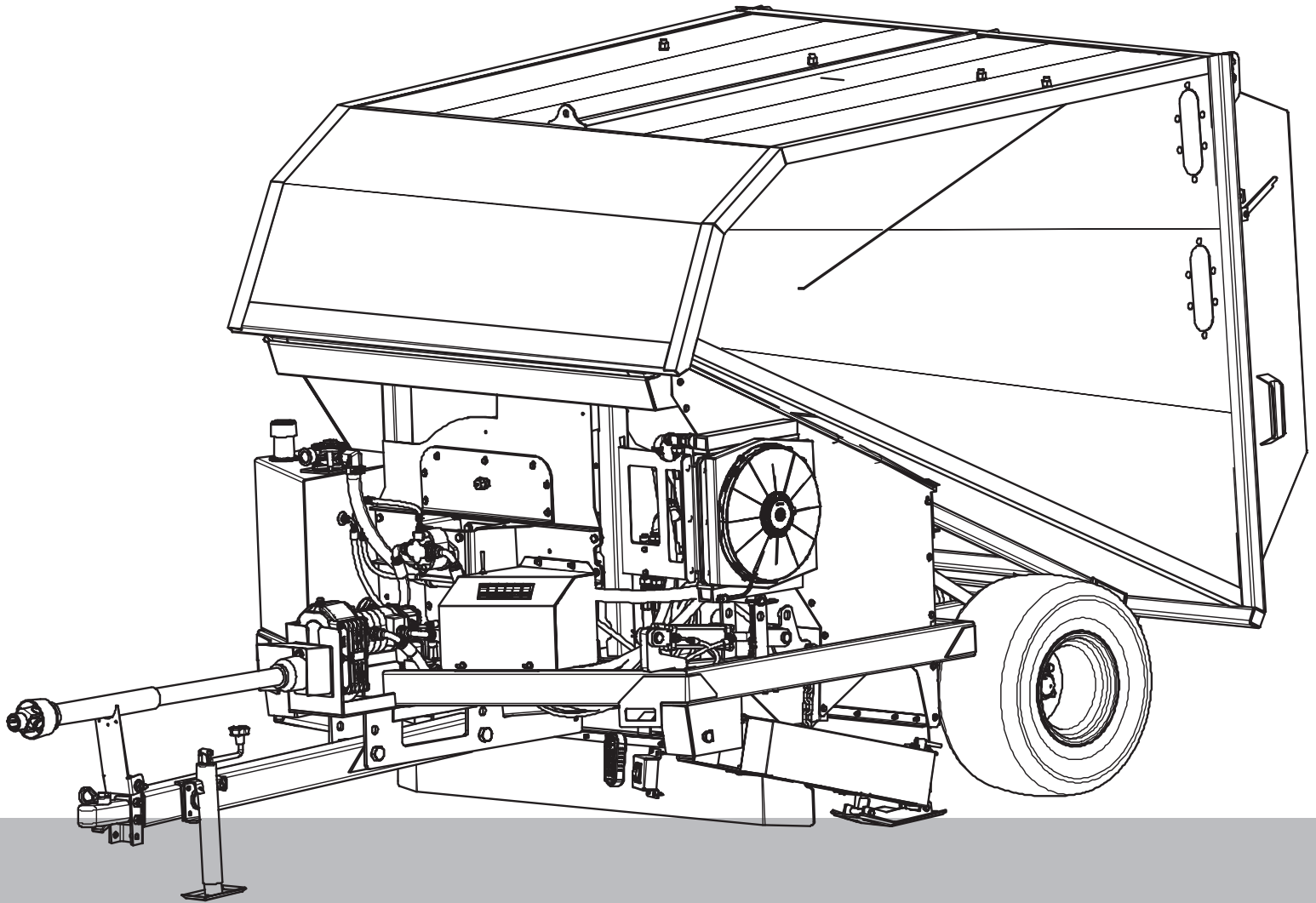


# TURBO VAC 60RHD

Serial Number: 22A01+

Part # 301041



## OPERATOR'S & PARTS MANUAL



**Thank you for purchasing a Harper Turbo Vac.**

**TO THE OWNER OR OPERATOR:**

As with all Harper products, the Harper Turbo Vac has been developed through tough design and testing procedures to produce a machine that can be relied on. This manual gives assembly, operating, and service information for models **TV60RHD**. Please read and understand all instructional material included with the Turbo Vac and its components before assembling and operating the equipment.

A Turbo Vac 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.

**SYMBOL:**



**SAFETY WARNING!**



**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 for clarification.



**SAFETY WARNING!**



**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.**

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.

© 2025 Harper Industries, Inc.

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

## LIMITED WARRANTY

Harper Industries, Inc. (HII) warrants to each purchaser of a new Harper Turbo Vac 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 Turbo Vac 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 Turbo Vac dealer.

## RECORDS

Date of Purchase \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Dealer's Name \_\_\_\_\_

Dealer's Phone \_\_\_\_\_

Serial Number Machine \_\_\_\_\_

Serial Number Engine \_\_\_\_\_

# Supplier's declaration of conformity



This is the Australian Communications and Media Authority (ACMA) approved form for a declaration of conformity under the following legislative instruments:

- > Radiocommunications Equipment (General) Rules 2021
- > Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2017.

This is a sample form for a declaration of conformity under the Telecommunications (Labelling Notice for Customer Equipment and Customer Cabling) Instrument 2015.

## Instructions for completion

**Do not return this form to the ACMA.** This completed form must be retained by the supplier as part of the documentation required for the compliance records. However, it must be made available for inspection by the ACMA when requested.

## Supplier's details (manufacturer, importer or authorised agent)

Company name (or individual)

TORO Australia Pty. Ltd

ACN/ARBN

N1625

or

New Zealand IRDN

47 001 310 443

Trading as

Street address (Australia or New Zealand)

53 Howards Rd

Beverly, S.A

POSTCODE 5009

Phone:

## Product details and date of manufacture

Product description – brand name, type, current model, lot, batch or serial number (if available), software/firmware version (if applicable)

| Model No. | Product Description                 |
|-----------|-------------------------------------|
| 900244    | TV60 RHD Base Machine - PTO Powered |

### Compliance – applicable standards and other supporting documents

Evidence of compliance with applicable standards may be demonstrated by test reports, endorsed/accredited test reports, certification/competent body statements.

Having had regard to these documents, I am satisfied the above-mentioned product complies with the requirements of the relevant ACMA standards made under the *Radiocommunications Act 1992* and/or the *Telecommunications Act 1997*.

List these documents including details of the standard title, number and, if applicable, number of the test report/endorsed test report or certification/competent body statement.

|                      |
|----------------------|
| AS/NZS CISPR 12:2007 |
|                      |
|                      |
|                      |
|                      |

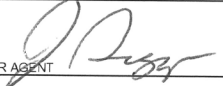
### Declaration

I hereby declare that:

1. I am authorised to make this declaration on behalf of the Company mentioned above
2. the contents of this form are true and correct
3. the product mentioned above complies with the applicable above mentioned standards and all products supplied under this declaration will be identical to the product identified above
4. I understand that giving false or misleading information is a serious offence.

**Note:** It is an offence to knowingly provide false or misleading information to a Commonwealth entity or a person who is exercising powers, performing functions under, or in connection with, a law of the Commonwealth. It is an offence to knowingly provide false or misleading information or documents in compliance or purported compliance with a law of the Commonwealth. (See sections 137.1 and 137.2 of the *Criminal Code Act 1995*.)

Penalty: 12 months imprisonment

|                                                                                     |
|-------------------------------------------------------------------------------------|
| SIGNATURE OF SUPPLIER OR AGENT                                                      |
|  |
| PRINT NAME <b>Joe Biggerstaff</b>                                                   |

|                          |                          |
|--------------------------|--------------------------|
| POSITION IN ORGANISATION | <b>VP of Engineering</b> |
| DATE                     | <b>22-Jul-24</b>         |

The *Privacy Act 1988* (Cth) (the Privacy Act) imposes obligations on the ACMA in relation to the collection, security, quality, access, use and disclosure of personal information. These obligations are detailed in the Australian Privacy Principles.

The ACMA may only collect personal information if it is reasonably necessary for, or directly related to, one or more of the ACMA's functions or activities.

The purpose of collecting the personal information in this form is to ensure the supplier is identified in the 'declaration of conformity'. If this declaration of conformity is not completed and the requested information is not provided, a compliance label cannot be applied.

Further information on the Privacy Act and the ACMA's privacy policy is available at [www.acma.gov.au/privacypolicy](http://www.acma.gov.au/privacypolicy). The privacy policy contains details about how you may access personal information about you that is held by the ACMA, and seek the correction of such information. It also explains how you may complain about a breach of the Privacy Act and how we will deal with such a complaint.

Should you have any questions in this regard, please contact the ACMA's privacy contact officer on telephone on 1800 226 667 or by email at [privacy@acma.gov.au](mailto:privacy@acma.gov.au).

**MANUFACTURER'S NOTICE OF COMPLIANCE****AUSTRALIA WORK AND SAFETY ACT AND REGULATIONS OF 2011**

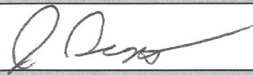
The turf machine identified below was designed and manufactured by Harper Industries, Inc. headquartered in Harper Kansas, USA.

**Hazard identification, Risk Assessment and Risk Reduction:** Harper Industries has undertaken a hazard identification, risk assessment and risk reduction procedure on a sample of the product and model identified below. The procedure undertaken followed the principles identified in the Australian safety standard AS/NZS 4024.1201 – Safety of *machinery – General principles for design – Risk assessment and risk reduction*. The procedure followed meets the requirements specified in the Occupational Work and Safety Regulations 2011 as amended for the design and manufacture of plant. The machine has been designed and manufactured to comply with the relevant and applicable industry safety standards. Appropriate hazard elimination or control measures have been incorporated into the product design and specifications.

**Health and Safety Information:** An operator's manual, which includes instructions on the safe use of the machine, is provided with each machine. Product warning signs are affixed to the product where necessary.

**Operator Noise Exposure:** The sound level at the operator's station of ride-on equipment has been measured on a representative sample of a machine in accordance with ISO 5131, Annex B or equivalent standard. The sound level depends upon the machine operating conditions such as engine and travel speed, as well as the condition and maintenance of the machine.

**Operator Station Sound Level:** 83 d(B)A

|                                            |                                                                                      |
|--------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Product Description</b>                 | Pull Type Turbo Vac                                                                  |
| <b>Model Number(s)</b>                     | TV60RHD - 900244                                                                     |
| <b>Manufacturing Unit</b>                  | Harper Industries Inc., Harper, Kansas, USA                                          |
| <b>Authorized Representative Signature</b> |  |
| <b>Name</b>                                | Joe Biggerstaff, VP Engineering                                                      |
| <b>Date</b>                                | 9-23-24                                                                              |

151 E. US Hwy 160  
Harper, Kansas 67058, USA  
[www.harperindustries.com](http://www.harperindustries.com)

☎ 620.896.7381  
📠 620.896.7129  
☎ 800.835.1042  
✉ [info@harperindustries.com](mailto:info@harperindustries.com)

**EC declaration of conformity**  
**according to the EC Machinery Directive 2006/42 / EC, Annex II 1.A**

**Manufacturer:**

Harper Industries Inc.  
151 E US Highway 160  
Harper, Kansas, USA, 67058  
Phone: +1 (620) 896-7381

**Person established in the Community, who is authorized to compile the technical file:**

ProDoku  
Hartmut Hartmann, Dipl.-Ing. (FH)  
Wersener Holz 2a  
D-49504 Lotte  
Phone.: +49 (0) 5404 / 5637  
Mobil: +49 (0) 176 / 10590693  
Email: Hartmut.Hartmann@prodoku.com

**Description and identification of the machinery:**

**Machine Type:** Turf Vacuum Sweeper s

**Model(s):** TV60RHD

**Serial number:** NNNNNNNN

**Measured Sound Pressure Level:** 84 dB

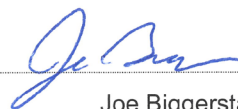
**It is expressly declared, that the machinery fulfils with all the relevant provisions of the following EC directives:**

|                      |                                                                                                                                                            |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Directive 2006/42/EG | Directive on machinery<br>Published in the Official Journal of the European Union, L 157/41 of 9.6.2006                                                    |
| Directive 2000/14/EC | Directive on noise emission in the environment by equipment for use outdoors<br>Published in the Official Journal of the European Union, L 162 of 3.7.2000 |
| Directive 2005/88/EC | Amending Directive 2000/14/EC<br>Published in the Official Journal of the European Union, L 344/44 of 27.12.2005                                           |

**Place of the declaration:** Harper, Kansas, USA

**Date of the declaration:** 5 December 2024

**Signature:**



Joe Biggerstaff

**Title:**

Vice President, Engineering

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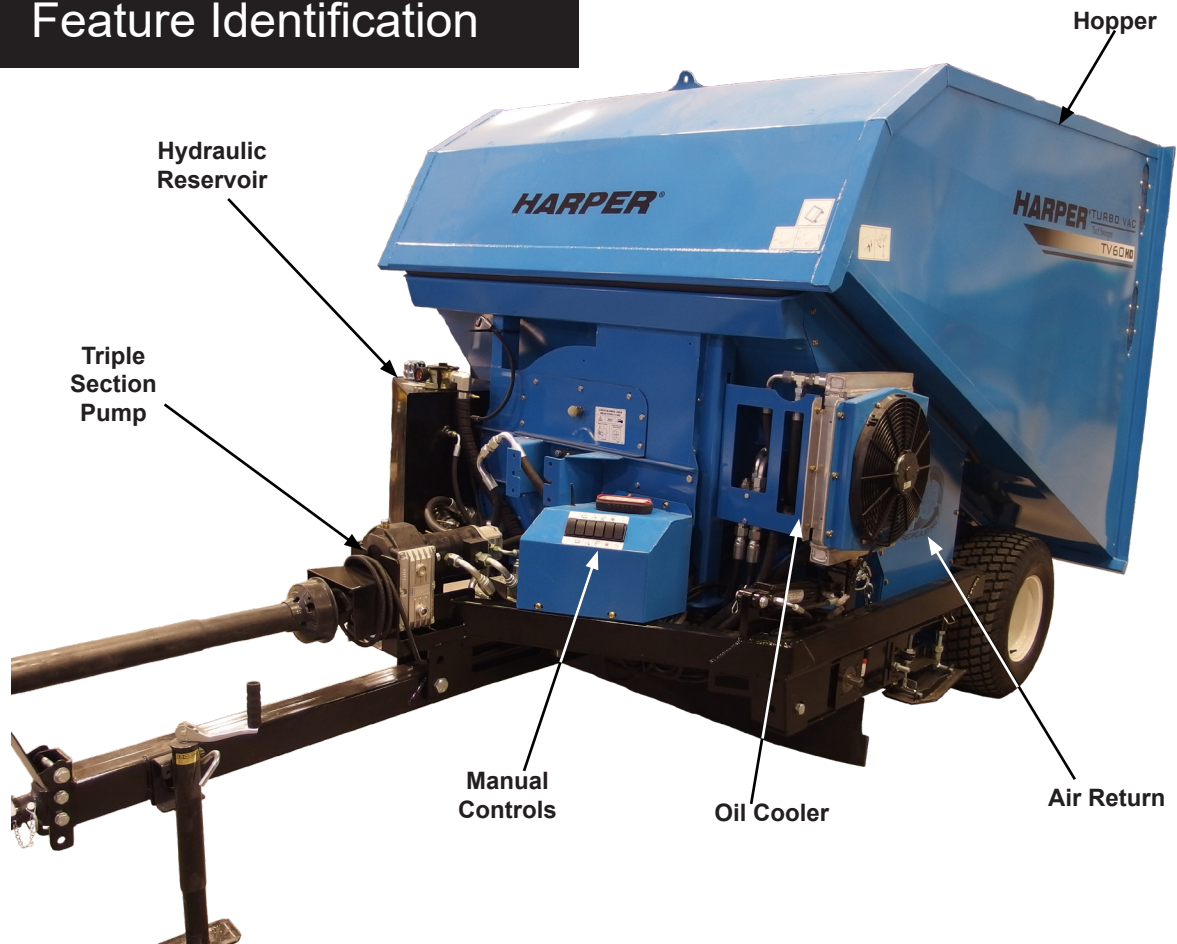
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## Specifications

|                                       |                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Noise Levels</b>                   | • 83dBa                                                                                                                                                                                                                                                                                                          |
| <b>Safety Features</b>                | Locking safety latches on all cylinders for service functions                                                                                                                                                                                                                                                    |
| <b>Power</b>                          | Tractor PTO - 540 RPM - <i>40 HP Tractor required</i>                                                                                                                                                                                                                                                            |
| <b>Hydraulic System</b>               | PTO driven triple-section pump powers fan, deck rotor, and cylinders                                                                                                                                                                                                                                             |
| <b>Hydraulic Reservoir</b>            | 20 gallons - Crown AW46                                                                                                                                                                                                                                                                                          |
| <b>Blower Drive</b>                   | Hydraulic motor powered by gear pump                                                                                                                                                                                                                                                                             |
| <b>Blower Fan &amp; Housing Liner</b> | <ul style="list-style-type: none"> <li>• 25" diameter fan of abrasion-resistant steel</li> <li>• 1½" shaft with self-aligned bearings supporting both ends</li> <li>• Easy access to housing liner* for inspection and replacement</li> </ul> <p>*UHMW poly-liner - Ultra High Molecular Weight Polyethylene</p> |
| <b>Deck Drive</b>                     | Hydraulic motor - chain drive                                                                                                                                                                                                                                                                                    |
| <b>Broom Option</b>                   | 12" diameter X 60" wide pick-up broom with heavy-duty polyethylene bristles                                                                                                                                                                                                                                      |
| <b>Rubber Finger Option</b>           | 12" diameter X 60" wide rubber finger pick-up rake                                                                                                                                                                                                                                                               |
| <b>Verticutter Option</b>             | 12" diameter blades X 56" cutting width<br>* 28 - 10 Gauge blades on 2" spacing<br>* adjustable skids for height adjustment                                                                                                                                                                                      |
| <b>Bearings</b>                       | Greasable bearings and sealed bearings                                                                                                                                                                                                                                                                           |
| <b>Hopper</b>                         | 7 yard capacity                                                                                                                                                                                                                                                                                                  |
| <b>Wheels/Tires</b>                   | 6-bolt steel wheels<br><ul style="list-style-type: none"> <li>• Turf tires – 26 x 12 (standard)</li> <li>• Radial tires – 225 X 60R15 steel belted (available as an option)</li> </ul>                                                                                                                           |
| <b>Controls</b>                       | Wireless RF (radio frequency) remote controls                                                                                                                                                                                                                                                                    |
| <b>Discharge</b>                      | Hydraulic dump with hydraulic powered latches                                                                                                                                                                                                                                                                    |
| <b>Hitch</b>                          | Adjustable height tongue with ball hitch                                                                                                                                                                                                                                                                         |
| <b>Paint</b>                          | Durable 2-part polyurethane                                                                                                                                                                                                                                                                                      |
| <b>Dimensions</b>                     | 164" long X 85" wide X 85" high                                                                                                                                                                                                                                                                                  |
| <b>Weight</b>                         | 2250 lbs – 1023 kg                                                                                                                                                                                                                                                                                               |
| <b>Hitch Weight</b>                   | 675 lbs – 306 kg                                                                                                                                                                                                                                                                                                 |

**NOTE:** Following publication of this manual certain changes in standard equipment and/or options may have occurred that would not be included in these pages. Your Harper/Goosen dealer is the best source for up-to-date information.

## Feature Identification



**Triple Section Pump** – The triple section pump powers the deck, fan, and implement parts of the machine.

**Deck Motor** – The broom motor turns the broom clock-wise, throwing material forward and upward into the air stream.

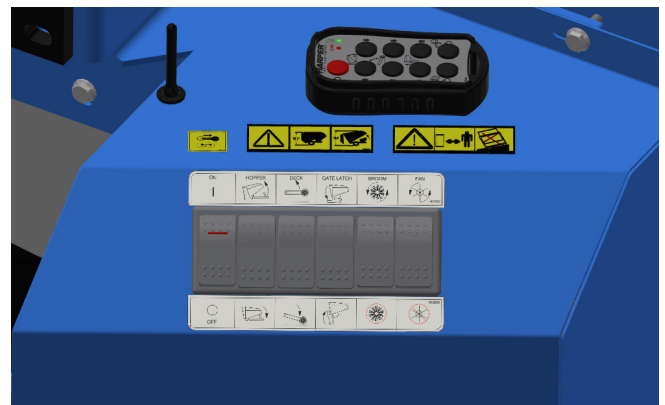
**Oil Cooler** – The oil cooler prevents the hydraulic oil from over-heating. Always keep the fins free of debris.

**Hydraulic Reservoir** – The hydraulic reservoir on a TV60RHD has a 20 gallon capacity.

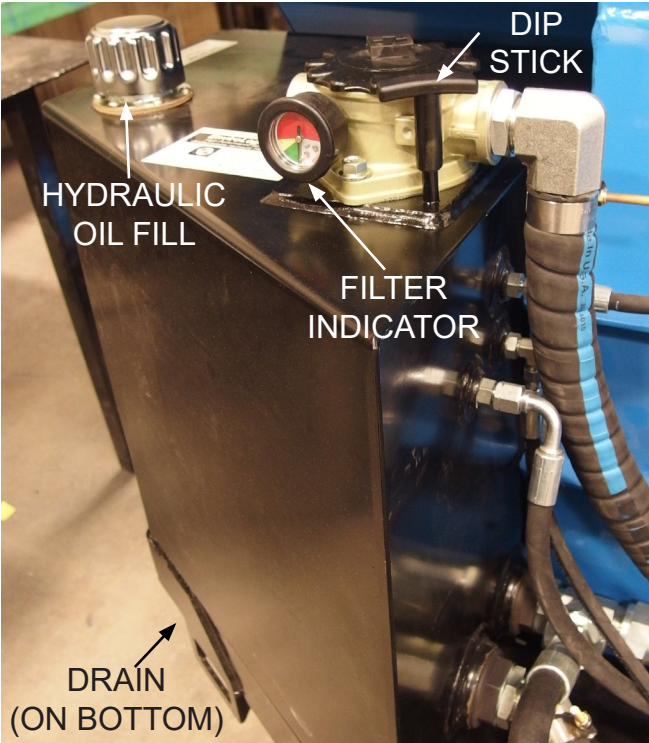
**Air Return** – The air return allows air to be recirculated, significantly reducing dust.

**Hopper** – The hopper stores up to seven yards of collected material.

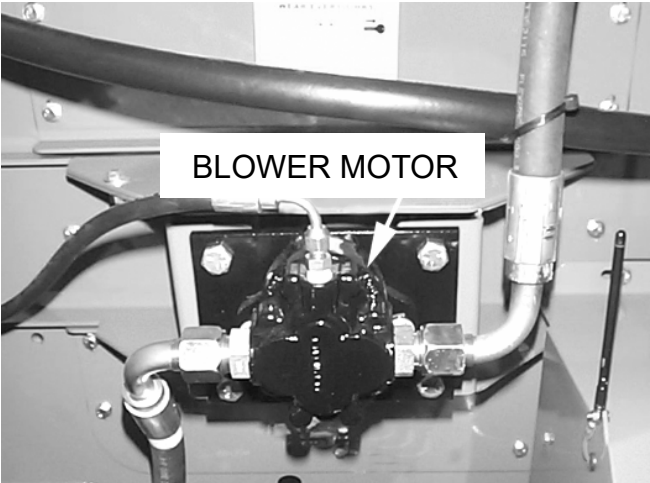
**Manual Controls** – All of the functions on the Turbo Vac can be operated with the manual controls or the remote controls.



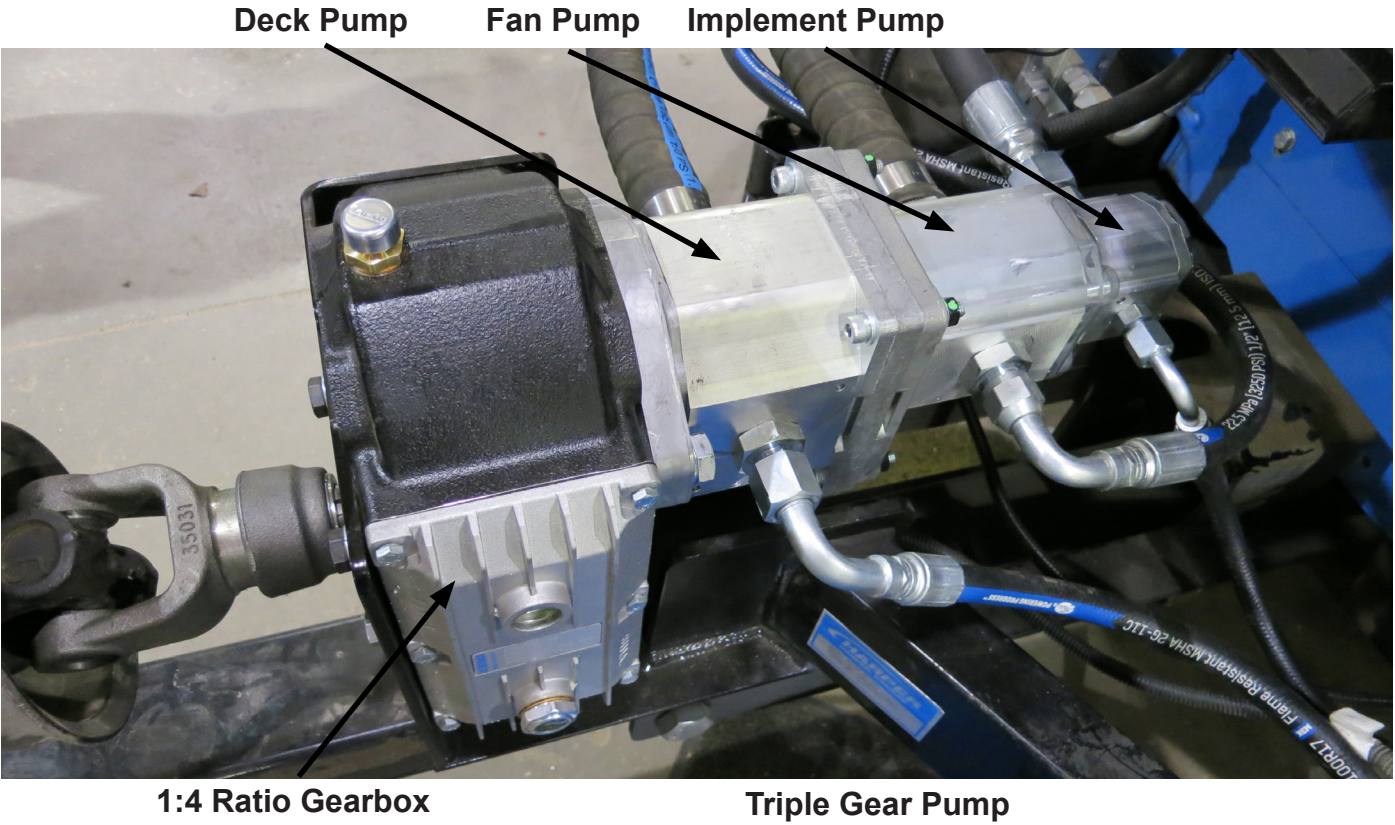
**TV60RHD - Hydraulic System**



**Hydraulic Reservoir Assembly**



**Blower Motor**



# General Safety Guidelines

## Equipment & Controls

- Before operating this equipment, read and understand the Owner's Manual.
- Altering the unit in any way that adversely affects its safe operation, performance or durability will void the warranty and may cause hazardous conditions.
- Know the location and function of all controls and how to stop the equipment quickly in an emergency before you operate the Turbo Vac.
- Keep all nuts, bolts and screws tight to ensure safe operation of equipment.

## Guards & Shields

- Keep all safety devices in place and in good operating condition.
- Replace all worn, damaged, unusable, missing or lost safety shields and guard before operating unit.

## Before Operation

- Do not allow children near this machine.
- Make sure bolts in tongue are secure and jack is in the transport position.
- Tire pressure should be 30-32 psi and equal in both tires.
- Engine governor settings are preset and should not be changed; any change can damage moving parts and void warranty.
- Before starting the machine, visually inspect all nuts, bolts and other fasteners to see that they are properly secured.
- Nuts, bolts and other fasteners should be checked after the first hour of operation and every 8 to 10 hours thereafter for proper alignment and tightness.
- Make sure that all belts are in good condition, and replace if necessary.



## **SAFETY WARNING!**

**Not for use on public roadways.**

## During Operation

- While operating the equipment, make sure that no foreign objects such as rocks, bottles or other hard materials are in the path of the Turbo Vac.
- If an object should strike the broom or blower mechanism causing an unusual noise or vibration, shut the engine off immediately and allow it to come to a complete stop. Disconnect the spark plug wire from the spark plug of the power unit, and do the following:
  1. Inspect for damage.
  2. Repair or replace damaged parts.
  3. Check for and tighten any loose bolts, nuts, fasteners or parts.
- Keep the engine area clean and free of debris and other accumulations.
- If the Turbo Vac should become clogged, shut off the engine and allow it to come to a complete stop. Disconnect the spark plug wire from the spark plug of the power unit before attempting to remove the clog.
- After use, use provided wheel chocks for parking.



## **SAFETY WARNING!**

**Always keep a fire extinguisher near the Turbo Vac during operation and service.**



## **SAFETY WARNING!**

**To prevent possible eye injury, always wear SAFETY GLASSES while operating or servicing the equipment.**



## **SAFETY WARNING!**

**Noise levels are noted but depend upon machine towing unit. Use appropriate hearing protection.**

## During Service & Maintenance



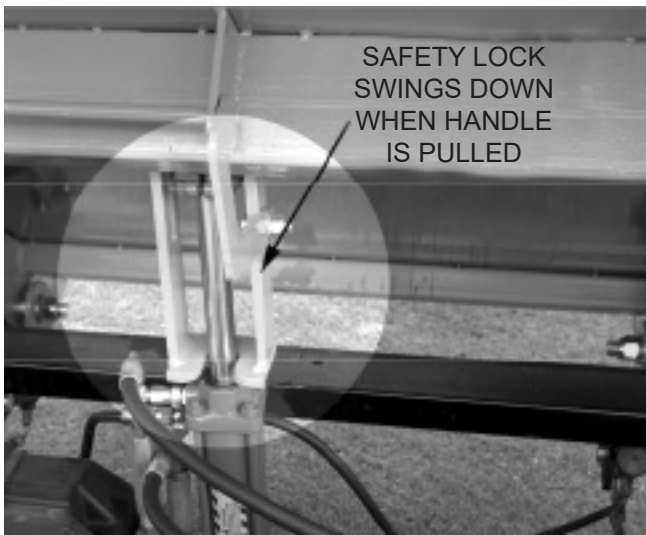
### **SAFETY WARNING!**



When working under the hopper the cylinder safety lock should be engaged to prevent the hopper from falling.



- To engage the cylinder safety lock, take the pin out of the bracket on the hopper and pull the handle down.



- The cylinder safety lock prevents the hopper from being lowered so that maintenance can be performed safely.
- When finished working under the hopper, disengage the safety lock, put the handle back into the bracket on the hopper and replace the pin.



### **SAFETY WARNING!**



Attempting to lower the hopper while the cylinder safety lock is engaged may cause damage to the cylinder and/or the safety lock mechanism.



### **SAFETY WARNING!**



If it is necessary to get between the hopper and the hopper door, set the door prop to avoid being pinched.

- To set the door prop, pull the door open and insert prop into pre-cut hole in door.



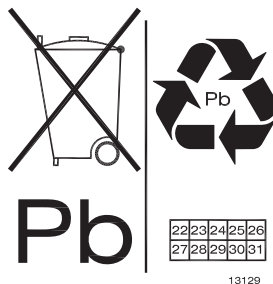
## Safety Decals

- If safety related or instructional decals become illegible or are removed, replace them immediately. New decals may be obtained from your local Harper Dealer.
- If parts are replaced, make sure all safety related or instructional decals are present before the equipment is operated again.

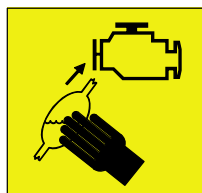
## Safety Symbols

**⚠ WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

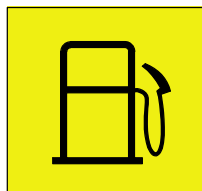
### 1. P65 Warning



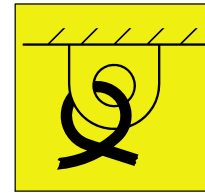
### 2. Recycle the battery



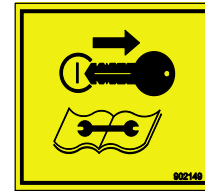
### 3. Engine prime bulb



### 4. Fuel Tank



### 5. Tie down point



### 6. Read manual before starting/ operation



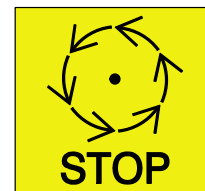
### 7. Safety Alert



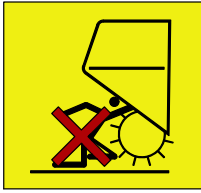
### 8. Hand can be entangled in moving parts



### 9. Contacting moving parts will cause serious injury



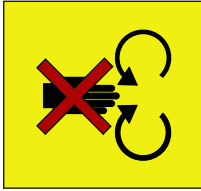
### 10. Shut off equipment before servicing



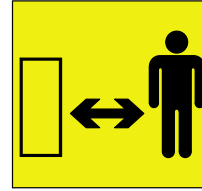
11. Don't enter machine while it's running



17. High pressure spray could erode flesh



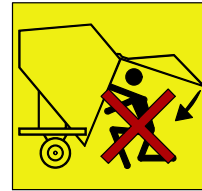
12. Don't remove safety shields while machine is running.



18. Stay safe distance from machine when in use



13. Hopper can come down on operator



19. Don't enter while door is loose



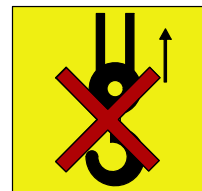
14. Hot surface could burn fingers or hands



20. Don't stand behind machine



15. Shut off engine before servicing



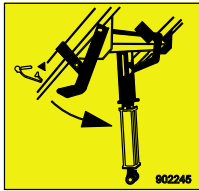
21. Don't use for lifting machine



16. High pressure fluid could be injected into the body



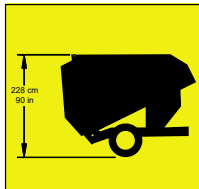
22. Never tip machine on soft ground or a slope



23. Install cylinder safety lock before servicing



24. Insert prop rod



25. Machine height



26. Machine height with raised hopper



27. Swinging door can crush person standing behind



28. Swinging door can pinch person entering hopper

## Replacement Parts



### **SAFETY WARNING!**

Use genuine factory parts or parts with equivalent characteristics including: type, strength and material. Failure to do so may result in voidance of warranty, product malfunction or possible injury to operator and others.

- Replace locknuts and locking screws if they can be tightened without considerable resistance for several turns before they are completely tight.
- If hardware is not secure, or if some of the fasteners are over-tightened, equipment failure may result, posing possible safety hazards.
- Use proper torque specifications for all fasteners when they are replaced.

## Hydraulics



### **SAFETY WARNING!**

#### **HIGH-PRESSURE FLUID HAZARD!**

Fluid escaping under pressure can penetrate skin, causing serious injury or death.

#### **To prevent serious injury or death:**

- Relieve pressure on system before repairing, adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks.
- Use wood or cardboard instead of hands when looking for leaks.
- Keep all hoses, fittings and components in good repair.
- Do not use any type of heat or flame (welding, soldering, cutting torch, etc.) near pressurized hydraulic lines.

## Specific Safety Guidelines

### **TV60RHD**

- Avoid wearing loose clothing to prevent it from getting caught in the PTO drive.
- Keep clothing and all body parts away from rotating parts.
- The pump stop bar must be properly positioned to keep the hydraulic pump from spinning with the PTO.
- The Turbo Vac hydraulic system operates under high pressure. Be sure the hydraulic system is disabled prior to service.



### **SAFETY WARNING!**

Engage the tractor PTO at low engine RPM when operating the TV60 RHD to prevent premature failure of hydraulic system components.



### **SAFETY WARNING!**

#### **HIGH-PRESSURE FLUID HAZARD!**

Escaping fluid under pressure can penetrate skin and cause serious injury or death.

## Set-Up and Operation



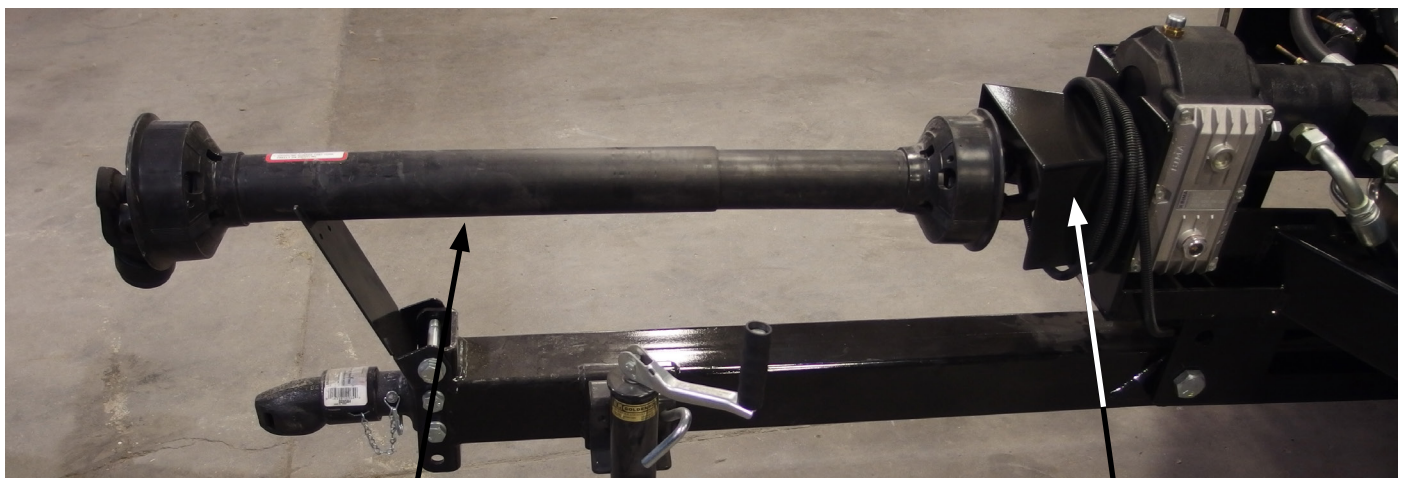
### **SAFETY WARNING!**



Periodically clean material away from engine to lessen the possibility of fire.

#### **TV60RHD**

1. Before using the **TV60RHD** for the first time, install the battery cable onto the tractor battery to supply power to the unit's valve and RF receiver. Connect the black wire of the cable to the negative terminal and the red wire (with 30 amp fuse) to the positive terminal of the battery. When using more than one tractor, other power cords may be ordered (p/n 935017).
2. Attach the unit to a tractor with a PTO. Be sure that the Turbo Vac is level with the ground. (Refer to Adjustments section.)
3. Attach the PTO shaft to the tractor's PTO.
4. Make certain that the case drain hose is on top of the pump and in a vertical position when attached to the tractor.
5. Plug quick connector on battery cable to the quick connector located on the tongue of the **TV60RHD**.
6. Engage tractor PTO and set to 540 RPM.



540 RPM PTO Shaft

1:4 Ratio Gearbox

## Starting Operation



### **SAFETY WARNING!**

Before operating the Turbo Vac, perform the daily inspection as described in the Service & Maintenance section.

The operator should be familiar with the area to be swept, and make sure it is clear of large debris.

1. Push the switches on the remote control or move the manual switches to activate the functions on the Turbo Vac. The tractor PTO must be engaged for the blower to function on the **TV60 RHD**.
2. Engage the tow vehicle and advance slowly at first to test environmental conditions and machine performance.
3. Proceed with caution, steering clear of obstacles that could damage broom.



### **SAFETY WARNING!**

Wear approved eye and ear protection while operating the Turbo Vac.

Keep all guards in place during operation. Never operate the Turbo Vac with safety shields removed.

Always keep a fire extinguisher near the Turbo Vac during operation.

## Stopping Operation

### **TV60RHD**

1. Push the BROOM switch only on the remote control to turn off the broom.

**Note:** The BLOWER switch is not used on the **TV60RHD** remote control.

2. Move the throttle on the tractor to the "SLOW" position and disengage the PTO lever to turn off the blower.
3. Shut off the tractor engine and allow the unit to come to a complete stop.



### **SAFETY WARNING!**

Do not leave the Turbo Vac unattended, or attempt any service or inspection unless the machine has come to a complete stop, the engine has been shut off, and the spark plug has been disconnected.

## Unloading Hopper

1. Check the overhead clearance. 8' 6" is required for dumping.
2. To unload, press the OPEN LATCH and LIFT HOPPER buttons on the remote.
3. When unload is complete, press the LOWER HOPPER button. Once the hopper has lowered completely, press the CLOSE LATCH button.



### **SAFETY WARNING!**

Do not stand near the back of the Turbo Vac while unloading.

If there is grass stuck in the hopper, do not go in between the hopper and the door without setting the safety lock.

Check overhead clearance during use.

Clearance is:       7' 6" for sweeping  
                          8' 6" for dumping

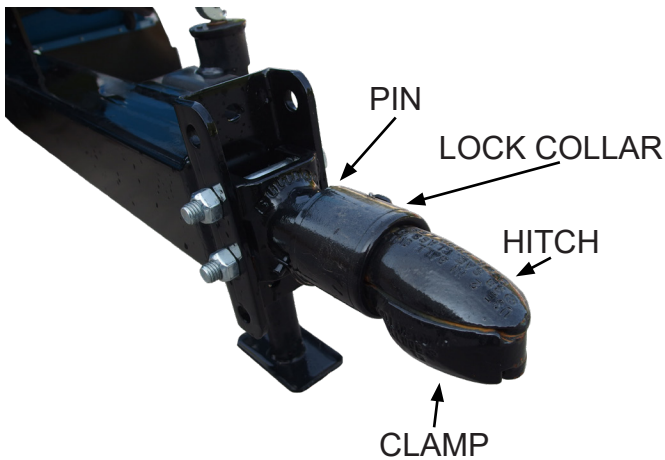
## Towing



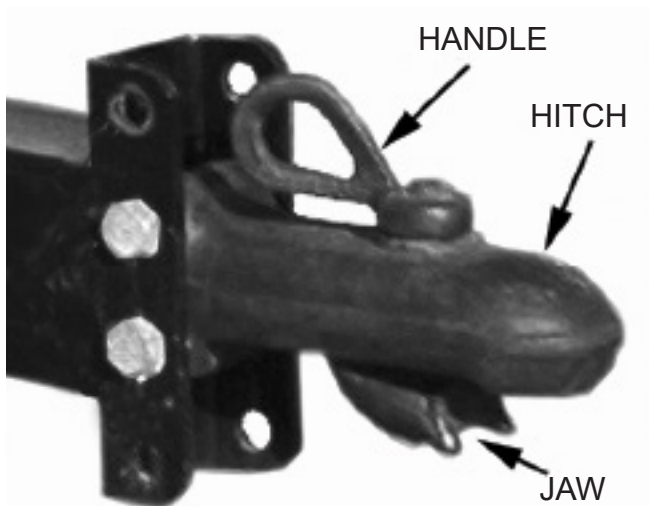
### **SAFETY WARNING!**

The Turbo Vac does not meet highway Safety codes. Tail lights, turn signals and safety chains must be attached before towing on public roadways.

- Two types of ball hitches have been used on the Turbo Vacs: clamp and jaw.
- For the clamp-type displayed in the following photograph, close the clamp around the ball and secure with the lock collar. Insert the pin to keep the lock collar in place.



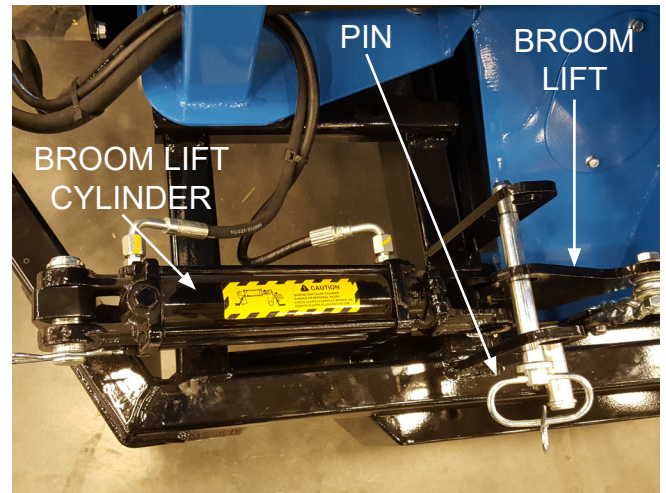
- For the jaw-type displayed in the following photograph, turn the handle until the jaw closes completely around the ball.



- The jack stand should be up whenever the Turbo Vac is connected to a tow vehicle.



- Always use the safety pin to lock the broom lift when towing the unit.

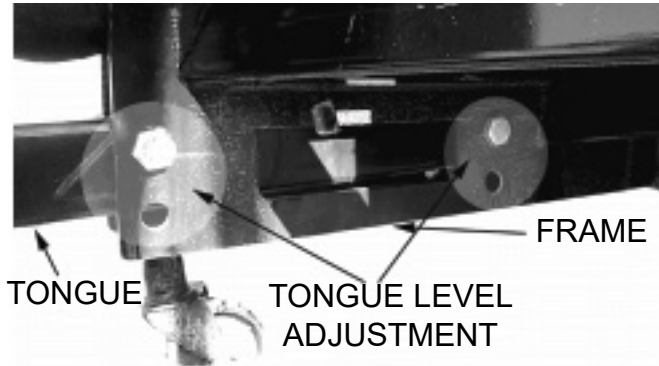


- Tire pressure should be 30-32 psi and equal in both tires.
- Make sure the wheel lug nuts are tight.

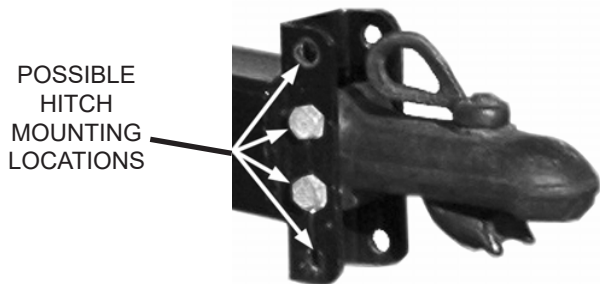
# Adjustments

## Level Hook-Up

- For the Turbo Vac to work properly, the frame needs to be level with the ground.
- The tongue can be moved up or down depending on which set of holes on the frame are used.

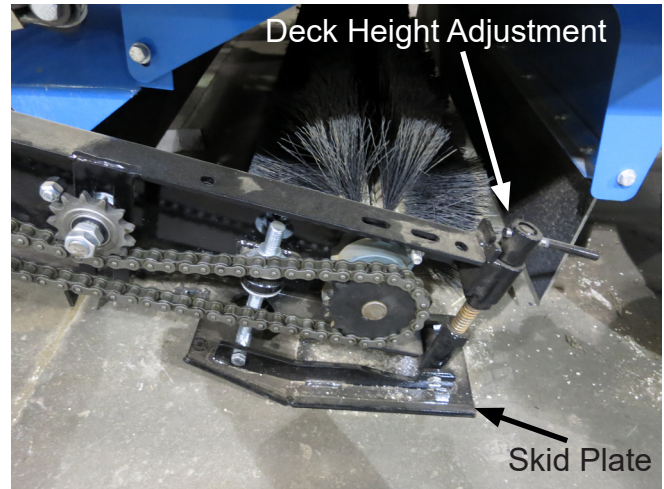


- The hitches on different tow vehicles vary in height, so there are adjustments on the hitch and the tongue to keep the Turbo Vac level.



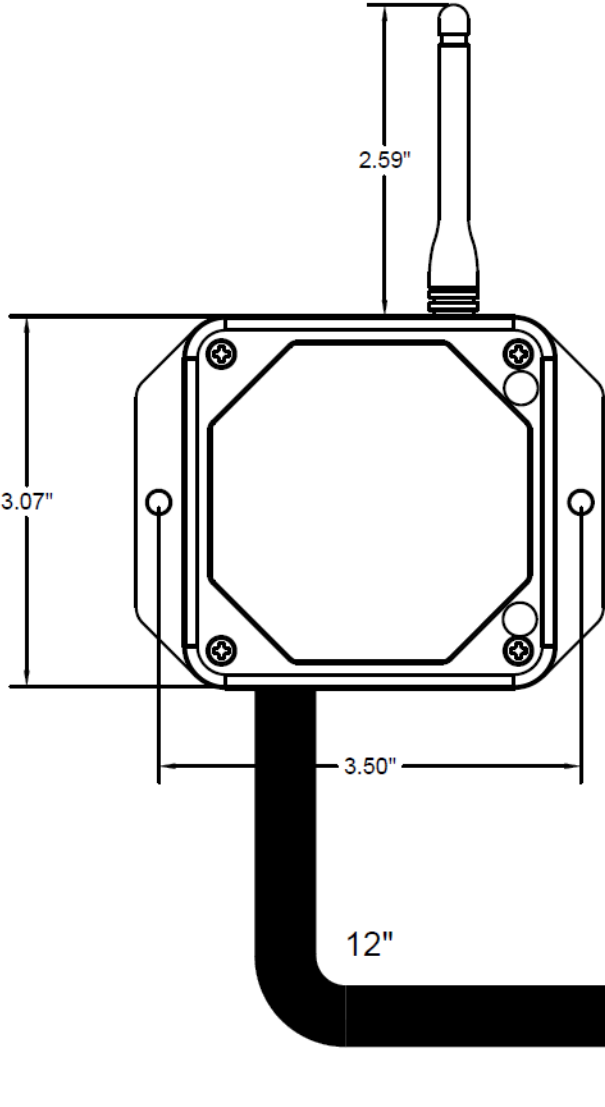
## Deck Height

- The deck height should be adjusted so that the deck barely touches the grass.



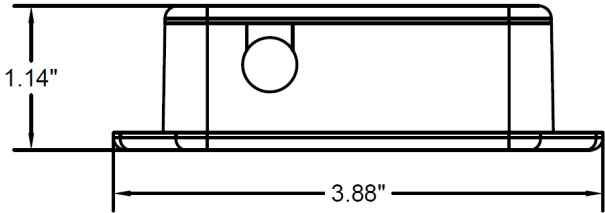
- Deck height is easily adjusted tightening or loosening the deck height adjustment tool that is attached.
- Make sure that both skid plates (one per side of unit) are adjusted the same so the deck stays level.

# Remote and Receiver



| TRANSMITTER ERROR CODE CHART |                            |
|------------------------------|----------------------------|
| ERROR CODE                   | PROBABLE CAUSE             |
| 1                            | LOW BATTERY                |
| 2                            | FAULTY CIRCUIT TO OUTPUT B |
| 3                            | FAULTY CIRCUIT TO OUTPUT A |
| 4                            | FAULTY CIRCUIT TO OUTPUT D |
| 5                            | FAULTY CIRCUIT TO OUTPUT C |
| 6                            | FAULTY CIRCUIT TO OUTPUT F |
| 7                            | FAULTY CIRCUIT TO OUTPUT E |
| 8                            | FAULTY CIRCUIT TO OUTPUT H |
| 9                            | FAULTY CIRCUIT TO OUTPUT I |

ERROR CODE NUMBER IS THE NUMBER OF RED LIGHT BLINKS BETWEEN EVERY PAUSE



| CONN:055-157-1200 CABLE: 020-050-1218 |               |
|---------------------------------------|---------------|
| PIN                                   | DESCRIPTION   |
| 1                                     | POWER (9-30V) |
| 2                                     | GROUND        |
| 3                                     | OUTPUT A      |
| 4                                     | OUTPUT B      |
| 5                                     | OUTPUT C      |
| 6                                     | OUTPUT D      |
| 7                                     | OUTPUT E      |
| 8                                     | OUTPUT F      |
| 9                                     | OUTPUT I      |
| 10                                    | OUTPUT G      |
| 11                                    | OUTPUT H      |
| 12                                    | INPUT J       |

## Operation

- Turn on the transmitter, press and hold the POWER button for at least 2 seconds and release.
- To turn the transmitter off, press and hold the POWER button until the LEDs stop blinking.
- The transmitter is designed with a power saving feature which turns the transmitter off after 15 minutes irrespective of receiver status.
- Transmitter and receiver have red and green LEDs. The green LED will double blink when no buttons are pressed, blink rapidly when a synched button is pressed, and will blink slowly if there is no communication (i.e. - no power to the receiver) when a button is pressed.
- The red LED on the receiver will blink if there is a shorted or open output.
- The transmitter's red LED blinks 1 time per second if the battery is low and needs charging.
- If transmitter is powered off or goes out of range outputs will turn off and be disabled until power on and in range.

## Synchronizing Transmitter and Receiver

Each transmitter and receiver pair is synchronized together at the factory. If a new transmitter is needed, synchronizing is required. Use the following procedure:

1. Turn both transmitter and receiver off.
2. With the transmitter off, press and hold the POWER button for more than 10 seconds. LEDs start blinking.
3. Release buttons.
4. Apply power to receiver.
5. Wait for 5 seconds or until just the green LED on the transmitter blinks rapidly.
6. Teach complete.

## Sleep Time

All transmitters have the ability to change the sleep time from the default to user's preference. The transmitter is factory set to turn off (sleep) after 15 minutes irrespective of receiver status. To change the time the transmitter waits before going to sleep, use the following procedure:

1. With the transmitter off, press and hold buttons RAISE BROOM, LOWER BROOM, BROOM ON/OFF, & POWER (~ 5 seconds)
2. At this point, both lights will blink once per second. Release the buttons.
3. On the transmitter, press one of the following buttons to adjust the sleep time:
  - LIFT HOP = 15 minutes
  - LOWER HOP = 30 minutes
  - RAISE BROOM = 60 minutes
  - LOWER BROOM = 120 minutes
  - BROOM ON/OFF = DISABLED
4. Sleep time programming complete.

## Cloning Transmitters



### SAFETY WARNING



**Only one transmitter can be on at a time, they cannot be used simultaneously. Use caution.**

Occasionally, it is desired to have more than one transmitter work with a single receiver. This is accomplished by a process called cloning. Cloning allows an additional transmitter (B) to have the same ID code as the original transmitter (A). If this feature is desired, use the following procedure:

1. Make sure both transmitters and the receiver are off.
2. On Transmitter A, press and hold the POWER button for 10 seconds until LEDs blink, then release. Green and red LEDs will blink together at this point.
3. On Transmitter B, press and hold buttons LIFT HOP, LOWER HOP, and POWER simultaneously until both LEDs blink.

4. Wait for a few seconds until the green LED starts to blink on both transmitter A and transmitter B.
5. Turn both the transmitters off.
6. Synchronize one of the transmitters to the receiver using SYNCHRONIZING TRANSMITTER AND RECEIVER instructions.

If the cloning feature has been invoked and is no longer desired, the ID code of one of the transmitters needs to be changed. This will unclone the transmitters. If this is desired, use the following procedure:

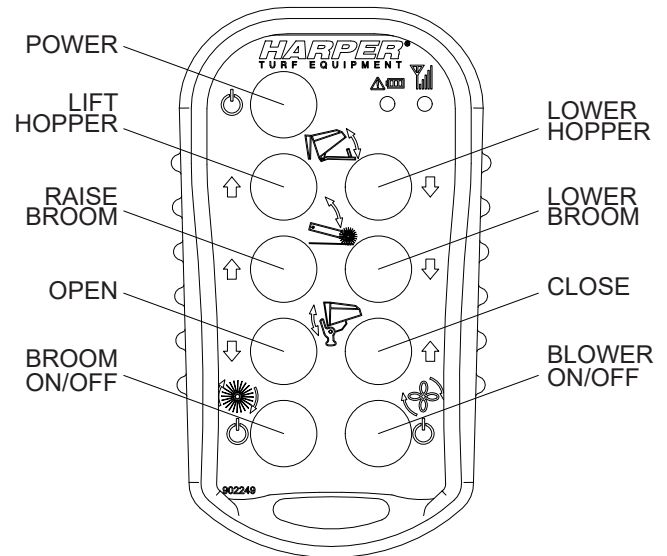
- Make sure the transmitter is off.
- Press and hold hold LOWER HOP, RAISE BROOM, BLOWER ON/OFF and POWER buttons for 5 seconds.
- Release all the buttons when GREEN and RED LEDs start toggling.
- Press any button and release. GREEN LED should start to double-blink.
- ID change Sequence complete.

## SPECIFICATIONS

- RF: 2.4GHz FHSS 100mW
- Temperature:
  - o Receiver: -40 to +85°C
  - o Transmitter: -20 to 60°C
- Transmitter Power: 3.7V LiPo rechargeable battery, Battery life: 30-40 hours continuous
- Micro-USB Charger Port
- Receiver Power: 9-30V DC

SN: 25A49+ come standard with the 2.4GHz remote systems. Old remote systems and the 2.4 GHz components are NOT compatible.

| BUTTON PRESS  | ENGAGE OUTPUTS |
|---------------|----------------|
| LOWER HOPPER  | A              |
| LIFT HOPPER   | B              |
| LOWER BROOM   | C              |
| RAISE BROOM   | D              |
| CLOSE         | E              |
| OPEN          | F              |
| BLOWER ON/OFF | G (LATCHING)   |
| BROOM ON/OFF  | H (LATCHING)   |



## Service & Maintenance



### **SAFETY WARNING!**

Before servicing or inspecting the Turbo Vac, make sure the power source is shut off and all moving parts have stopped.



### **SAFETY WARNING!**

Disconnect the spark plug wire or the negative battery cable to prevent the engine from being turned on.



### **SAFETY WARNING!**

Always wear safety glasses and protective gloves when servicing the Turbo Vac.

### Break-in Service

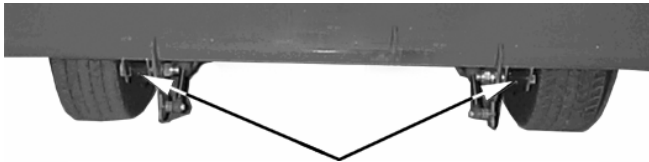
#### After the first hour of use:

- Check belts. Tighten if needed.
- Tighten set screws on bearings.
- Check nuts, bolts, and fasteners to see that they are secure. Tighten if needed.
- Check hydraulic hoses and fittings for leaks using the method described in the General Safety Guidelines. Tighten or replace if needed.

### Lubrication

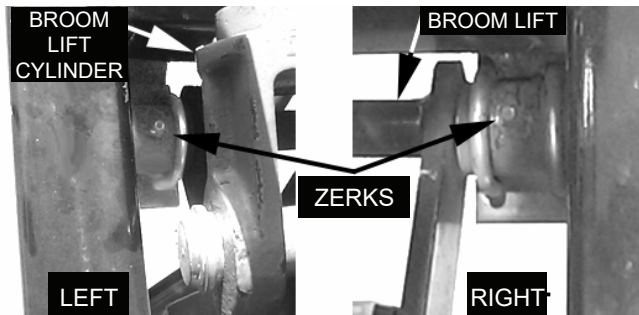
Ten grease zerks in the following locations should be greased daily to reduce wear:

- Hopper door latches (2)



HOPPER DOOR LATCH ZERKS

- Broom lift (2)



- Blower shaft (2)  
ZERKS ON BLOWER SHAFT



- Rotor shaft (2) - one per side
- Deck Hinge Shaft (2) - one per side



Deck Hinge Shaft

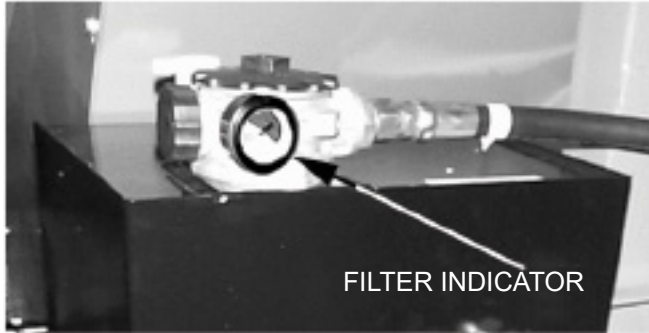
Rotor Shaft

\* Located behind frame and must be turned until its visible.

- Replace the safety shields before operating the Turbo Vac.

## TV60RHD Hydraulic Oil Reservoir

- The **TV60RHD** is equipped with a HYDAC hydraulic oil filter assembly that is designed for a long service life.
- Monitor the needle in the filter indicator daily. The element (Part no. 822002) does not need replaced until the needle is in the red portion of the gauge.

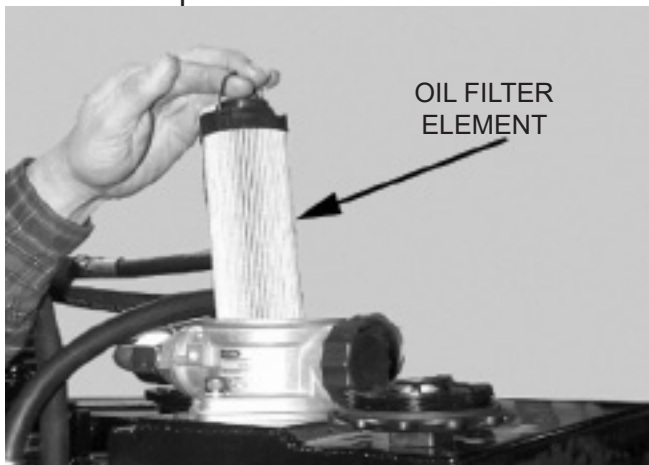


- To replace the element, unscrew the cover, remove the old element and insert the new one.
- Replace hydraulic oil every **500 hours**.

**Note:** The Turbo Vac is filled at the factory with biodegradable hydraulic oil. Mixing with regular oil will reduce biodegradability.

To add hydraulic oil to a **TV60RHD** reservoir:

- For small quantities, simply remove cover and add oil. The oil will seep past the filter element slowly.
- For larger quantities, remove the cover and the filter element. Take extra care that no impurities enter the reservoir.
- Maintain the oil level in the reservoir between the FILL and ADD marks on the dipstick at all times.



## SAFETY WARNING!



**Escaping hydraulic fluid under pressure can penetrate skin and cause serious injury or death.**

### Hydraulic System

- The hydraulic system of the **TV60RHD** is filled at the factory with Crown AW46 hydraulic oil that has an ISO of 46.
- The **TV60RHD** has a 10 micron, beta rated hydraulic oil filter designed for long life.

The following list of hydraulic fluids are compatible and can be mixed with Crown hydraulic fluid. **MIXING OTHER OILS THAT ARE NOT INCLUDED ON THIS LIST COULD CAUSE GELLING AND DAMAGE TO THE HYDRAULIC COMPONENTS.** If another type of oil is desired, then the system must be completely drained and flushed first.

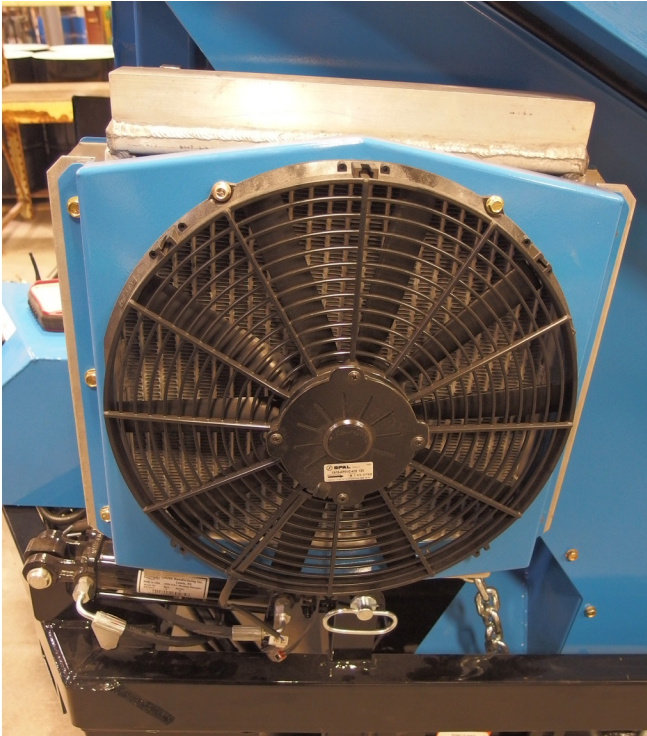
### Appropriate replacements:

**ISO 46:** Recommend for running in ambient air temperatures of 32°F-110°F, and it contains a kinematic viscosity rating around 46 cSt at 40°C. (1cSt = 1mm<sup>2</sup>/s)

- Mobil DTE 25
- Mobil DTE 15M
- Amoco Rykon Premium Oil ISO 46
- Chevron Rykon Premium Oil ISO 46
- Conoco Hydroclear AW MV 46
- Exxon Univas N 46
- Pennzoil AWX MV 46
- Shell Tellus 52 M46
- Shell Tellus 52 V46
- Texaco Rando HDZ 46

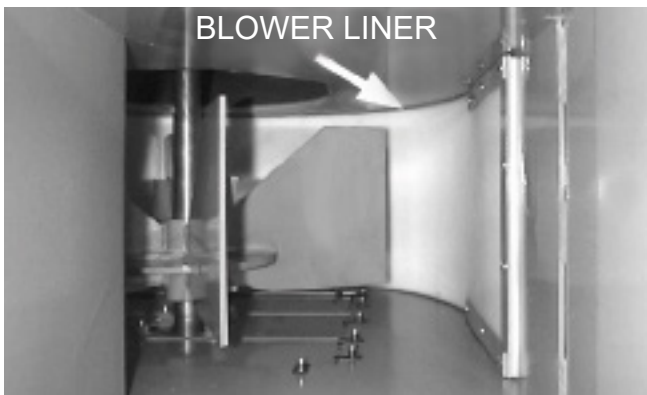
## TV60RHD Hydraulic Oil Cooler

- Make sure that the oil cooler assembly is kept free of debris. Clean as necessary.



## Blower Liner

- Regularly inspect the blower liner in the blower housing for wear.
- If the blower liner wears excessively, damage may result to the blower housing.
- The blower liner is a wear item and is not covered under warranty.
- Sandy conditions will shorten the life of the blower liner.



## To check the blower liner:

- Raise hopper and set the safety lock as shown in the General Safety Guide lines.

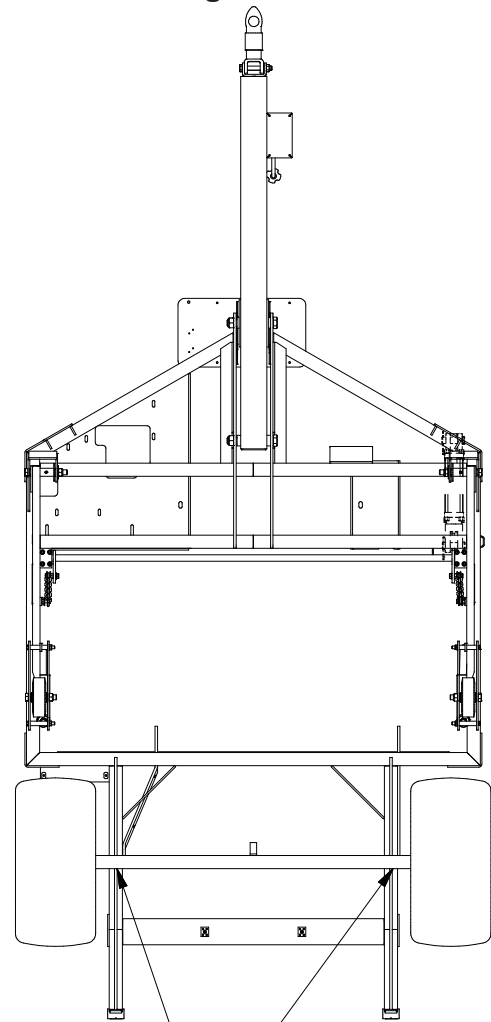
- Check the blower liner located around the inside of the blower housing.
- If the blower liner is damaged or worn through, replace it before damage is done to the blower housing.



**Before attempting to inspect the liner, make sure the power unit is turned off, the unit has come to a complete stop, and the spark plug wire has been removed.**

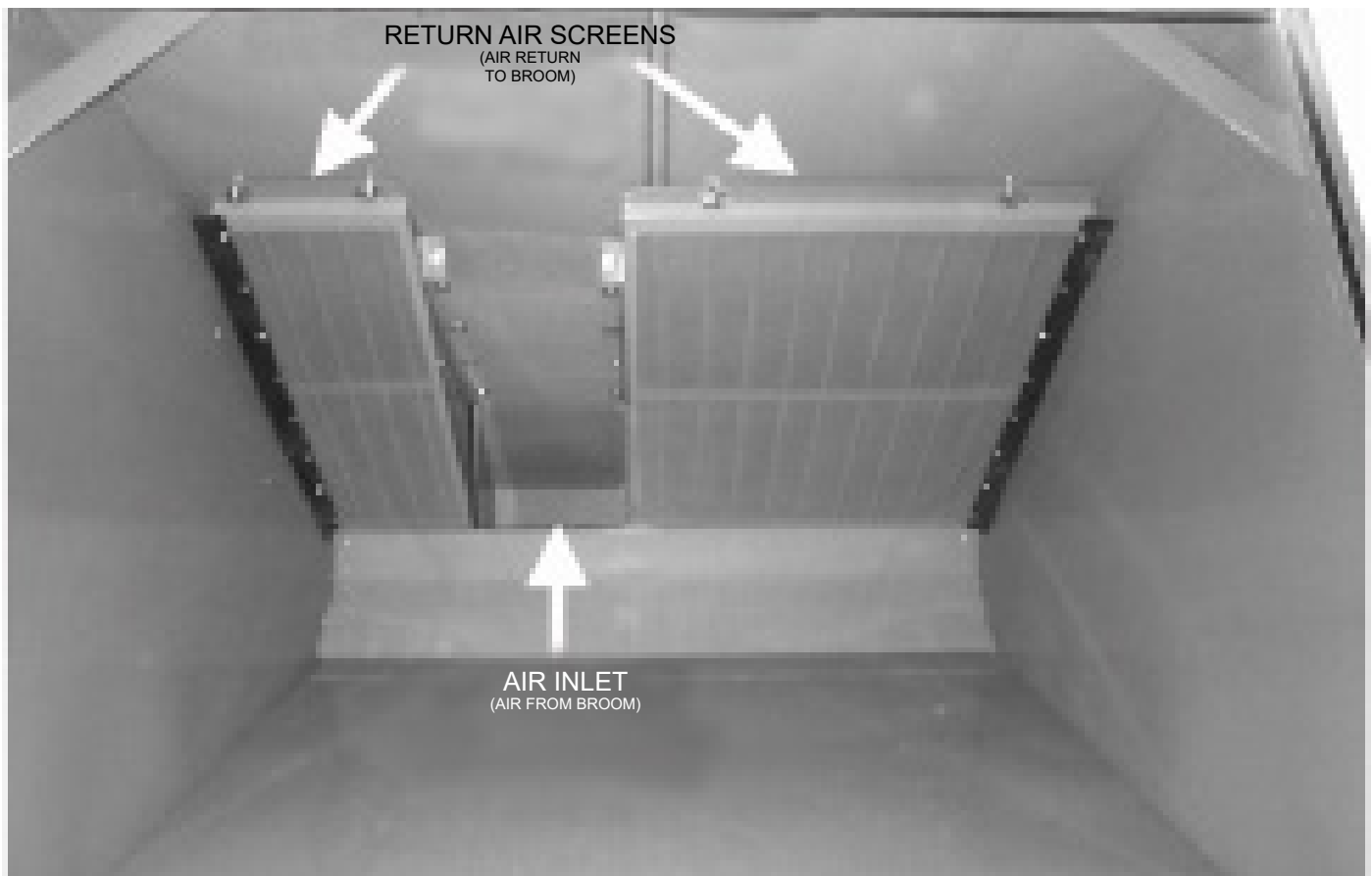
**When working under the hopper the cylinder safety lock should be engaged to prevent the hopper from falling.**

## Lift Points for Servicing Wheels



**PLACE JACK UNDER  
AXLE SUPPORT**

## Return Air Screens



- The return air screens do not require cleaning on a regular basis.
- Material that sticks to the screens during operation will fall off when the blower is stopped. However, if debris is extremely wet or muddy, plugging may occur.
- If there is a noticeable decline in ability to pick up debris, visually inspect screens for clogging and clean, if necessary.
- The return air screens may be cleaned with a broom or water hose, and may be removed, if necessary.

- To set door prop, pull the door open and insert prop into the pre-cut hole in door.



### **SAFETY WARNING!**

When it is necessary to get between the hopper and the hopper door, set the door prop to avoid being pinched.

## TV60RHD Service Schedule

### Daily

|                                                          |                                                                |
|----------------------------------------------------------|----------------------------------------------------------------|
| Check hydraulic oil level.....                           | Crown AW46 or equivalent                                       |
| Check hydraulic oil filter indicator.....                | Change filter element when needle is in red portion of gauge.* |
| Check hydraulic oil cooler.....                          | Clean as necessary.                                            |
| Visually inspect belts, bolts, fittings, and hoses ..... | Tighten or replace if necessary.                               |
| Grease.....                                              | See Service & Maintenance Section.                             |
| Check tire pressure.....                                 | Inflate to 30-32 psi.                                          |

### After first 50 hours

|                                    |                        |
|------------------------------------|------------------------|
| Change 1:4 ratio gear box oil..... | SAE90, 2.43 qts (2.3L) |
|------------------------------------|------------------------|

### Annually or 500 Hours

|                                    |                        |
|------------------------------------|------------------------|
| Change hydraulic oil.....          | 20 gallons             |
| Change 1:4 ratio gear box oil..... | SAE90, 2.43 qts (2.3L) |

• The TV60RHD is equipped with a Hydac, 10 micron, beta rated, hydraulic filter and is designed for a long service life. When the hydraulic oil is warm and the indicator needle is in the red portion of the gauge, the filter needs to be changed.

## Standard Torque Chart

| Size      | In-Lbs  | Ft-Lbs  | N-m     |
|-----------|---------|---------|---------|
| No. 10-24 | 25-35   | 5-7     | 2.8-4.0 |
| ¼ in.     | 60-80   | 18-20   | 7-9     |
| 5/16 in.  | 120-140 | 28-30   | 14-16   |
| 3/8 in.   | 340-360 | 64-74   | 24-27   |
| ½ in.     |         | 126-150 | 90-100  |



### SAFETY WARNING!



Refer to the Standard Torque Chart whenever bolts, nuts or screws are tightened.

**Note:** When tightening two or more fasteners on the same part, DO NOT tighten the fasteners completely one at a time. To avoid distortion, first tighten all fasteners in sequence to one-third of torque value, then tighten to two-thirds of torque value, then tighten to full value.

## Troubleshooting

|                                                                                 |                                                                                                                           |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Hydraulic System:</b>                                                        |                                                                                                                           |
| <b>Problem:</b><br><br>Hydraulic function will not respond or hold its position | <b>What to Check:</b><br><br>• RF receiver or transmitter malfunctioning<br>• Hydraulic cylinder seals worn, replace them |

# *Parts*

## TV60RHD



TV60R

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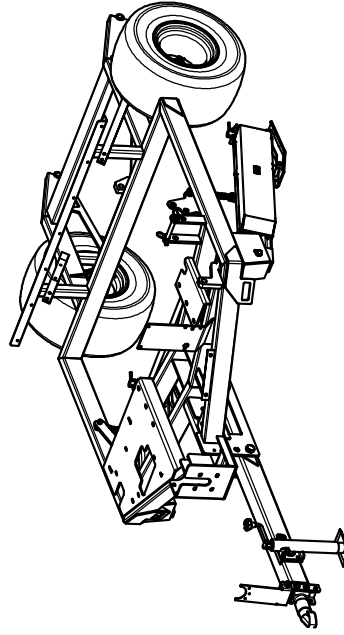
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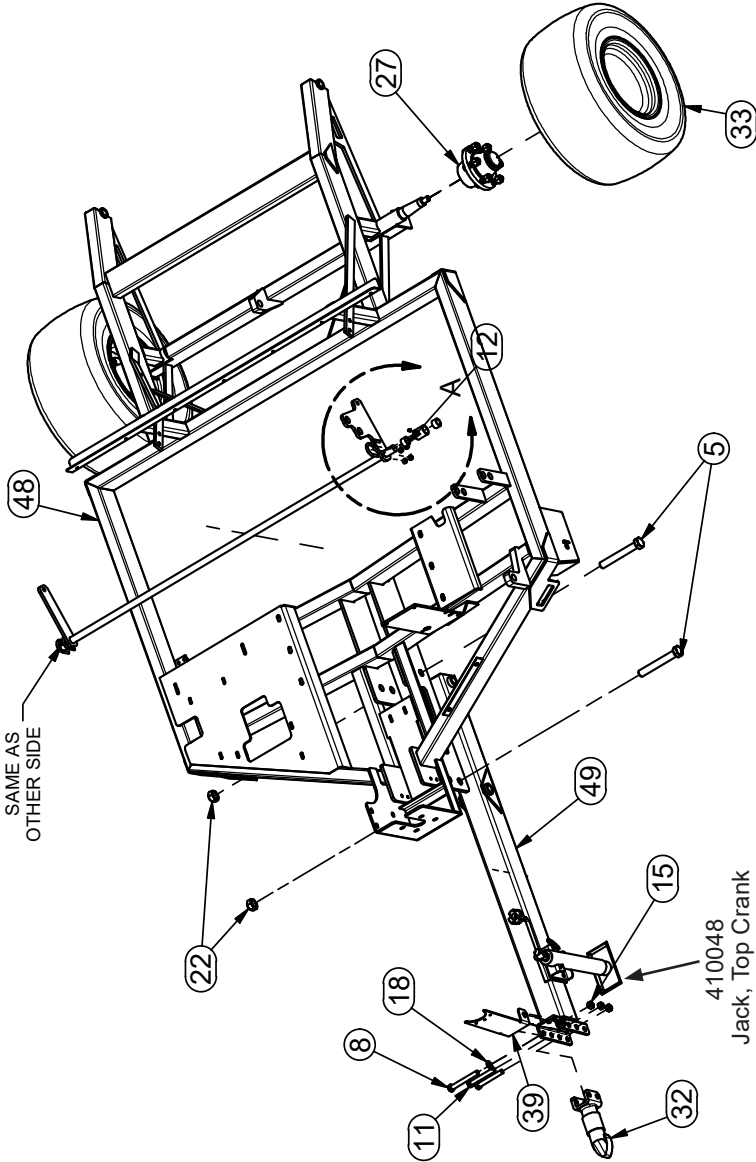
|                                  |    |
|----------------------------------|----|
| Verticutter Kit.....             | 71 |
| Verticutter Carbide Tip Kit..... | 72 |
| Finger Rotor Kit.....            | 73 |
| Broom Kit (22A01+).....          | 74 |
| Broom Kit (Older-21A99).....     | 75 |
| Brush Assy.....                  | 76 |
| Obsoleted Brush.....             | 77 |

| Parts List |     |        |                                 | Parts List |     |        |                                  | Parts List |     |        |                                    | 975431 | REV: H |
|------------|-----|--------|---------------------------------|------------|-----|--------|----------------------------------|------------|-----|--------|------------------------------------|--------|--------|
| ITEM       | QTY | PART # | DESCRIPTION                     | ITEM       | QTY | PART # | DESCRIPTION                      | ITEM       | QTY | PART # | DESCRIPTION                        |        |        |
| 1          | 1   | 102015 | HITCH PIN, 3/4 X 6 W/KEEPER     | 17         | 8   | 110662 | WASHER, 1/2" FLAT SPECIAL 1.250d | 33         | 2   | 943053 | Tire & Wheel Assy, 26" Grassmaster |        |        |
| 2          | 6   | 110039 | NUT, 5/8-11 JAM                 | 18         | 2   | 110663 | WASHER, 5/8" FLAT SAE            | 34         | 2   | 970370 | BROOM LIFT BUSHING                 |        |        |
| 3          | 2   | 110320 | NUT, 3/4-10 NYLOCK              | 19         | 2   | 110677 | WASHER, 3/4" FLAT STANDARD       | 35         | 2   | 970841 | CHAIN, DECK LIFT, 3/8 X 8 LINKS    |        |        |
| 4          | 4   | 110362 | U-BOLT, 5/16                    | 20         | 4   | 110768 | NUT, 7/16-14 LOCK 2-WAY          | 36         | 2   | 970855 | BUSHING, ADJUSTABLE SKID           |        |        |
| 5          | 2   | 110364 | BOLT, 1-8 X 7.0                 | 21         | 1   | 110895 | Bolt, 5/8-11 X 3 in Carriage     | 37         | 2   | 970857 | HANDLE, .375 X 4.25                |        |        |
| 6          | 2   | 110379 | BOLT, 1/2-13 X 2.0              | 22         | 2   | 111226 | NUT, 1-8, UNITORQUE LOCK         | 38         | 1   | 970862 | SPACER, IDLER SPROCKET             |        |        |
| 7          | 2   | 110383 | BOLT, 3/4-10 X 6.0              | 23         | 2   | 111230 | WASHER, 3/4" FLAT STANDARD Gr    | 39         | 1   | 970863 | BRKT, PTO SHAFT HOLDER             |        |        |
| 8          | 1   | 110407 | BOLT, 5/8-11 X 5.0              |            |     |        | 8                                | 40         | 2   | 975015 | WELDMENT, HEIGHT ADJUSTMENT        |        |        |
| 9          | 5   | 110437 | BOLT, 3/8-16 X 0.75, WIZ FLANGE | 24         | 2   | 112070 | Bolt, 1/2-13 X 1.25 in Carriage  | 41         | 1   | 975098 | BROOM LIFT WELDMENT                |        |        |
| 10         | 4   | 110527 | BOLT, 7/16-14 X 4.0             | 25         | 4   | 112104 | ROLL PIN, 1/8 X 0.5625           | 42         | 2   | 975144 | WELDMENT, TV60 VERTICUT SKID       |        |        |
| 11         | 2   | 110562 | BOLT, 5/8-11 X 4.5              | 26         | 2   | 140016 | PIN, LOCK, 1/4 X 2-1/4, SQ WIRE  | 43         | 2   | 975145 | MOUNT, ADJUSTABLE SKID             |        |        |
| 12         | 8   | 110606 | NUT, 5/16-18 WIZ FLANGE         | 27         | 2   | 413001 | HUB COMPLETE, 35-6LM             | 44         | 1   | 975146 | WELDMENT, TV60HD RH ARM            |        |        |
| 13         | 2   | 110613 | NUT, 3/4-16, CASTLE             | 28         | 4   | 510174 | GREASE ZERK, 1/4-28 ST           | 45         | 1   | 975147 | WELDMENT, TV60HD LH ARM            |        |        |
| 14         | 4   | 110615 | NUT, 1/2-13, UNITORQUE LOCK     | 29         | 2   | 510175 | COTTER PIN, 3/16 X 2             | 46         | 2   | 975148 | WELDMENT, ADJUSTABLE SCREW         |        |        |
| 15         | 3   | 110639 | NUT, 5/8-11, UNITORQUE LOCK     | 30         | 4   | 800128 | BUSHING, IGUS, FOOT PEDAL        | 47         | 1   | 975194 | Assy, Chain Shield w/Decal         |        |        |
| 16         | 4   | 110650 | WASHER, 5/8" FLAT STANDARD      | 31         | 4   | 922006 | BUSHING, 1.75 X 1 X .75          | 48         | 1   | 975435 | FRAME WELDMENT, TV60R HD           |        |        |
|            |     |        |                                 | 32         | 1   | 942184 | COUPLER, 2" FORGED 7000#         | 49         | 1   | 975436 | WELDMENT, TV60R HD HITCH           |        |        |

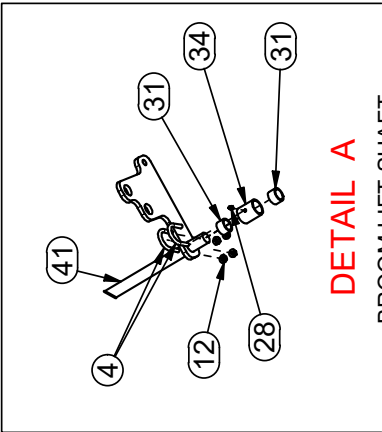
## TV60RHD FRAME ASSEMBLY



# FRAME ASSEMBLY

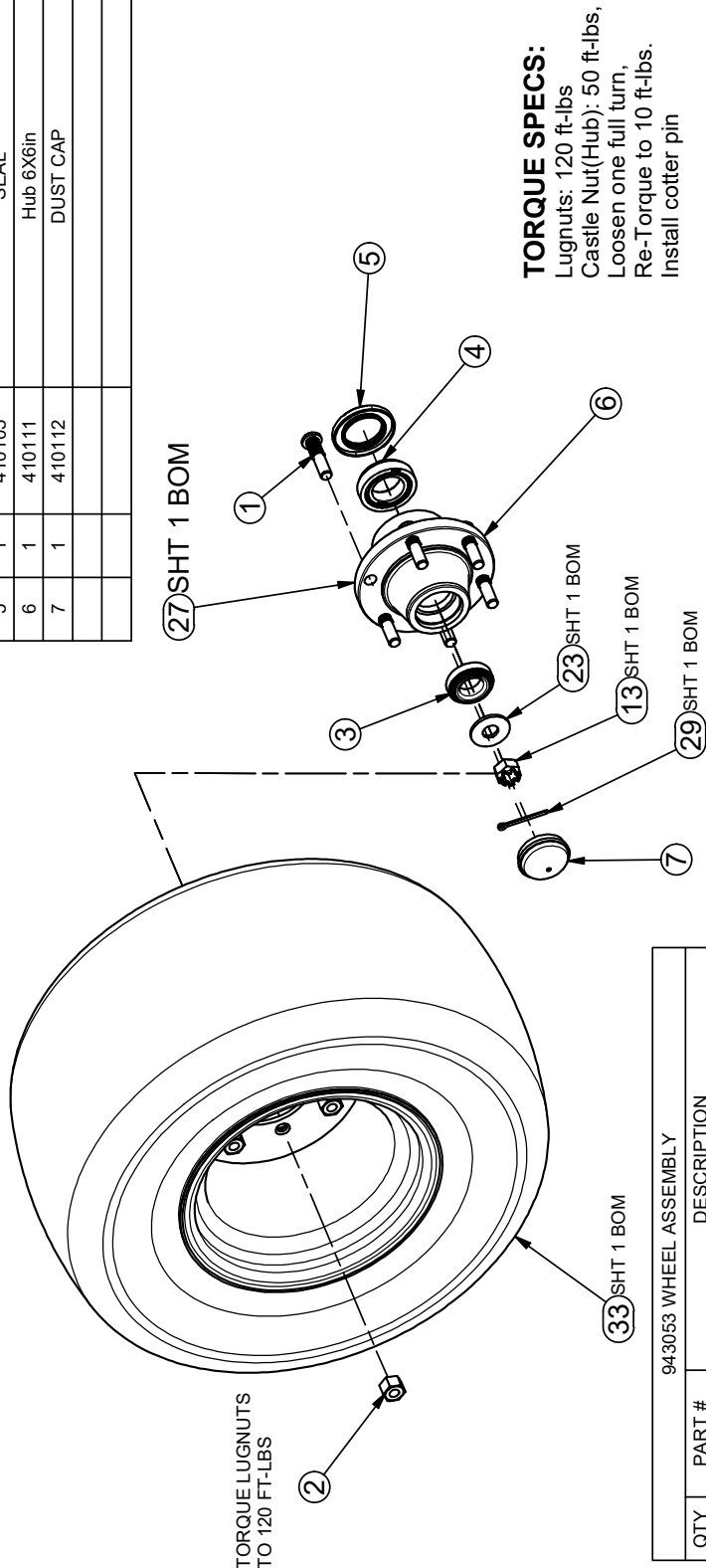


| Parts List |     |        |                                    |
|------------|-----|--------|------------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                        |
| 4          | 4   | 110362 | U-BOLT, 5/16                       |
| 5          | 2   | 110364 | BOLT, 1-8 X 7.0                    |
| 8          | 1   | 110407 | BOLT, 5/8-11 X 5.0                 |
| 11         | 2   | 110562 | BOLT, 5/8-11 X 4.5                 |
| 12         | 8   | 110606 | NUT, 5/16-18 WIZ FLANGE            |
| 15         | 3   | 110639 | NUT, 5/8-11, UNITORQUE LOCK        |
| 18         | 2   | 110663 | WASHER, 5/8" FLAT SAE              |
| 22         | 2   | 111226 | NUT, 1-8, UNITORQUE LOCK           |
| 27         | 2   | 413001 | HUB COMPLETE, 35-6LM               |
| 28         | 4   | 510174 | GREASE ZERK, 1/4-28 ST             |
| 31         | 4   | 922006 | BUSHING, 1.75 X 1 X .75            |
| 32         | 1   | 942184 | COUPLER, 2" FORGED 7000#           |
| 33         | 2   | 943053 | Tire & Wheel Assy, 26" Grassmaster |
| 34         | 2   | 970370 | BROOM LIFT BUSHING                 |
| 39         | 1   | 970863 | BRKT, PTO SHAFT HOLDER             |
| 41         | 1   | 975098 | BROOM LIFT WELDMENT                |
| 48         | 1   | 975435 | FRAME WELDMENT, TV60R HD           |
| 49         | 1   | 975436 | WELDMENT, TV60R HD HITCH           |



# WHEEL ASSEMBLY

| 413001 HUB ASSEMBLY |     |        |                      |
|---------------------|-----|--------|----------------------|
| ITEM                | QTY | PART # | DESCRIPTION          |
| 1                   | 6   | 113006 | Stud 9/16-18         |
| 2                   | 6   | 113007 | Nut 9/16-18          |
| 3                   | 1   | 410115 | Bearing 2.328 x .465 |
| 4                   | 1   | 410114 | Bearing 2.8910 x .58 |
| 5                   | 1   | 410105 | SEAL                 |
| 6                   | 1   | 410111 | Hub 6X6in            |
| 7                   | 1   | 410112 | DUST CAP             |
|                     |     |        |                      |
|                     |     |        |                      |



**TORQUE SPECS:**  
Lugnuts: 120 ft-lbs  
Castle Nut(Hub): 50 ft-lbs,  
Loosen one full turn,  
Re-Torque to 10 ft-lbs.  
Install cotter pin

| 943053 WHEEL ASSEMBLY |        |                                                    |
|-----------------------|--------|----------------------------------------------------|
| QTY                   | PART # | DESCRIPTION                                        |
| 1                     | 342020 | TIRE, 26x12x12/6                                   |
| 1                     | 942072 | WHEEL, 12 X 10-1/2, 6 ON 6", White, w/ -2/0 Offset |

RADIAL TIRE ASSEMBLY  
OPTION AVAILABLE  
ASSEMBLY: P/N 943013  
WHEEL: P/N 410107  
TIRE: P/N 942090

TORQUE LUGNUTS  
TO 120 FT-LBS

975431

REV: H

| Parts List |     |        | Parts List                      |      |     |        |                              |
|------------|-----|--------|---------------------------------|------|-----|--------|------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                     | ITEM | QTY | PART # | DESCRIPTION                  |
| 2          | 6   | 110039 | NUT, 5/8-11 JAM                 | 36   | 2   | 970855 | BUSHING, ADJUSTABLE SKID     |
| 10         | 4   | 110527 | BOLT, 7/16-14 X 4.0             | 37   | 2   | 970857 | HANDLE, .375 X 4.25          |
| 15         | 3   | 110639 | NUT, 5/8-11, UNITORQUE LOCK     | 38   | 1   | 970862 | SPACER, IDLER SPROCKET       |
| 16         | 4   | 110650 | WASHER, 5/8" FLAT STANDARD      | 40   | 2   | 975015 | WELDMENT, HEIGHT ADJUSTMENT  |
| 20         | 4   | 110768 | NUT, 7/16-14 LOCK 2-WAY         | 42   | 2   | 975144 | WELDMENT, TV60 VERTICUT SKID |
| 21         | 1   | 110895 | Bolt, 5/8-11 X 3 in Carriage    | 43   | 2   | 975145 | MOUNT, ADJUSTABLE SKID       |
| 25         | 4   | 112104 | ROLL PIN, 1/8 X 0.5625          | 44   | 1   | 975146 | WELDMENT, TV60HD RH ARM      |
| 26         | 2   | 140016 | PIN, LOCK, 1/4 X 2-1/4, SQ WIRE | 45   | 1   | 975147 | WELDMENT, TV60HD LH ARM      |
| 28         | 4   | 510174 | GREASE ZERK, 1/4-28 ST          | 46   | 2   | 975148 | WELDMENT, ADJUSTABLE SCREW   |
| 30         | 4   | 800128 | BUSHING, IGUS, FOOT PEDAL       |      |     |        |                              |

## DECK ARM ASSEMBLIES

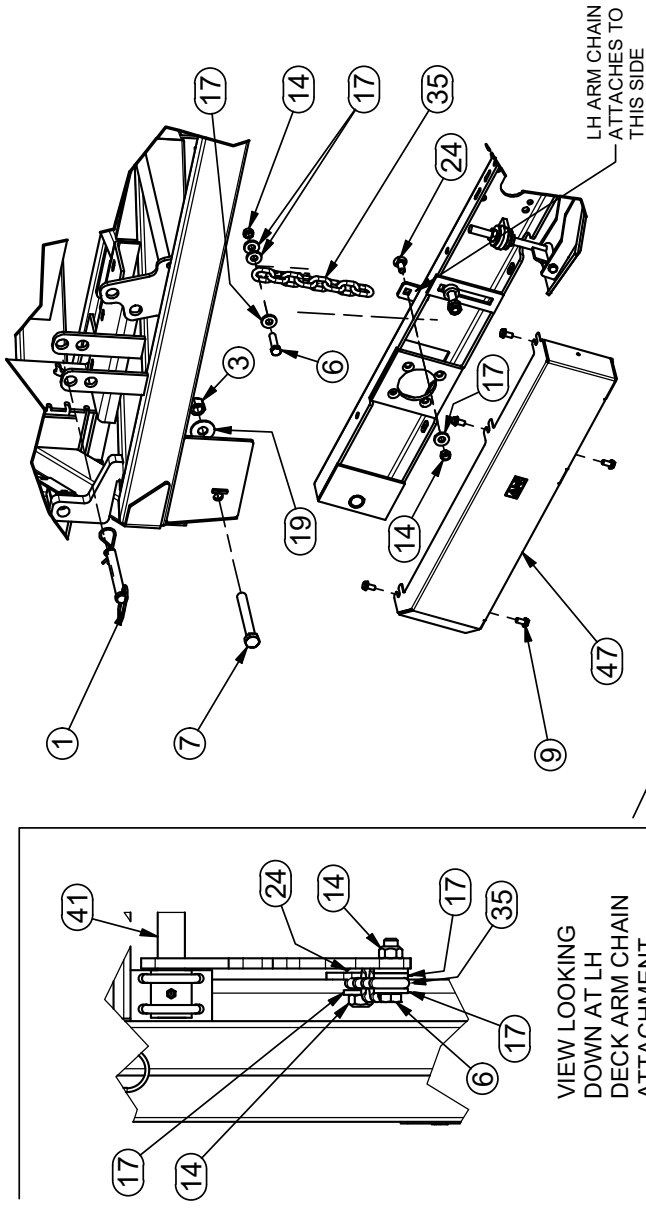
VIEW SHOWING SKID  
DEPTH SETTINGS

### RH DECK ARM

### LH DECK ARM

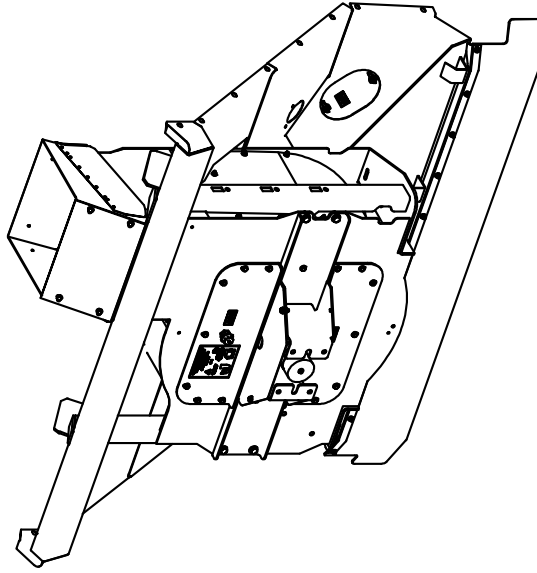
REPEAT ASSEMBLY OF RH ARM

# ATTACHING DECK ARMS



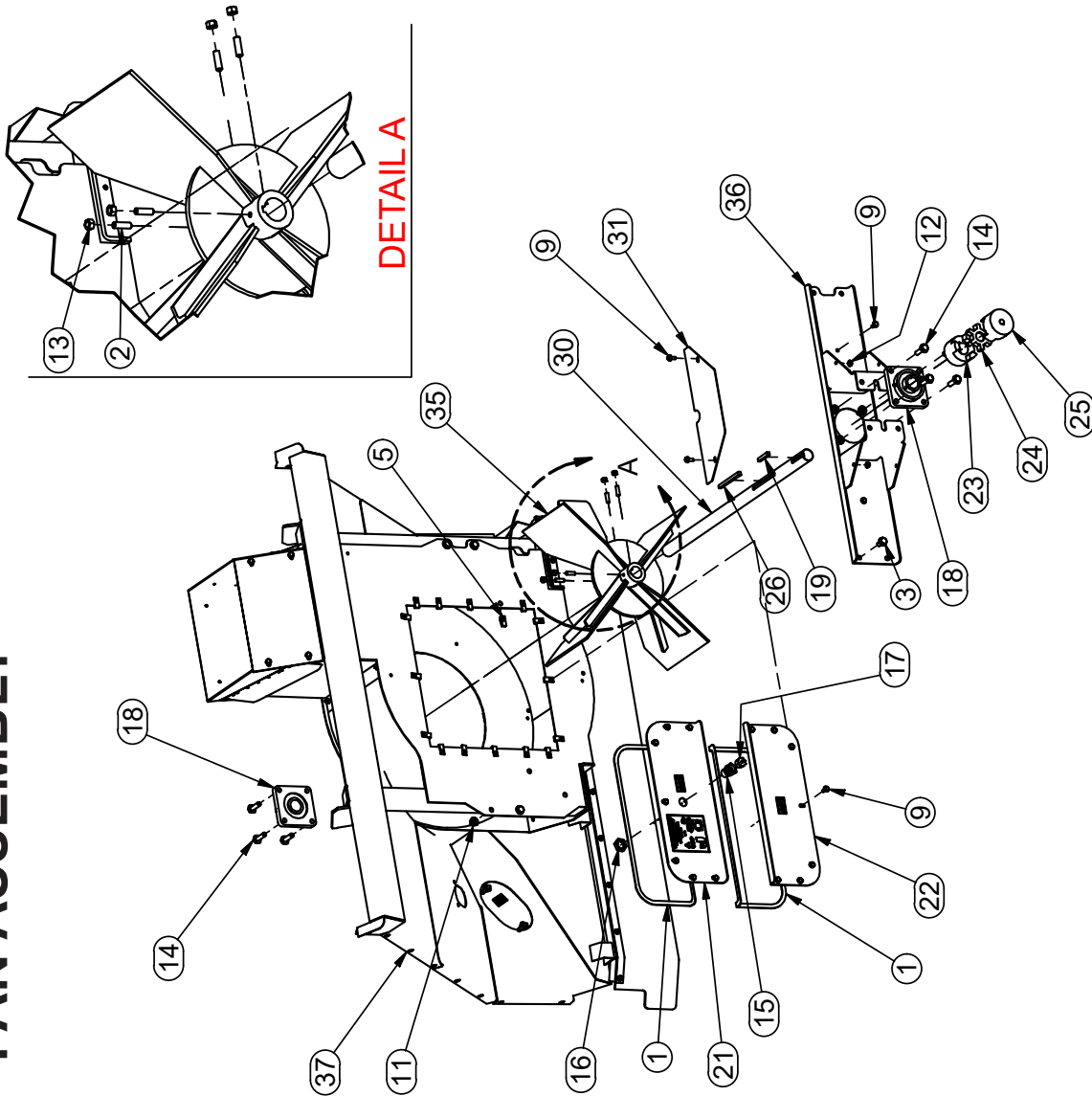
| Parts List |     |        |                                  |
|------------|-----|--------|----------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                      |
| 1          | 1   | 102015 | HITCH PIN, 3/4 X 6 W/KEEPER      |
| 3          | 2   | 110320 | NUT, 3/4-10 NYLOCK               |
| 6          | 2   | 110379 | BOLT, 1/2-13 X 2.0               |
| 7          | 2   | 110383 | BOLT, 3/4-10 X 6.0               |
| 9          | 5   | 110437 | BOLT, 3/8-16 X 0.75, WIZ FLANGE  |
| 14         | 4   | 110615 | NUT, 1/2-13, UNITORQUE LOCK      |
| 17         | 8   | 110662 | WASHER, 1/2" FLAT SPECIAL 1.250d |
| 19         | 2   | 110677 | WASHER, 3/4" FLAT STANDARD       |
| 24         | 2   | 112070 | Bolt, 1/2-13 X 1.25 in Carriage  |
| 35         | 2   | 970841 | CHAIN, DECK LIFT, 3/8 X 8 LINKS  |
| 47         | 1   | 975194 | Assy, Chain Shield w/Decal       |

| Parts List |      |        |                                  | Parts List |     |        |                                 | Parts List |     |        |                              |
|------------|------|--------|----------------------------------|------------|-----|--------|---------------------------------|------------|-----|--------|------------------------------|
| ITEM       | QTY  | PART # | DESCRIPTION                      | ITEM       | QTY | PART # | DESCRIPTION                     | ITEM       | QTY | PART # | DESCRIPTION                  |
| 1          | 10ft | 100613 | Seal, .50 X .187                 | 13         | 4   | 110826 | Nut, 3/8-16 Gr 5                | 25         | 1   | 922098 | Coupling, 5/8" Bore, 5/32 Kw |
| 2          | 4    | 110093 | Setscrew, 3/8-16 X 1.25          | 14         | 8   | 111222 | Bolt, 1/2-13 X 1.75, Wiz Flange | 26         | 1   | 940113 | Key, 3/8 X 5                 |
| 3          | 4    | 110220 | Bolt, 1/2-13 X 1, Wiz Flange     | 15         | 1   | 302060 | Swivel, Garden Hose-To-Pipe     | 27         | 1   | 970086 | Clamp Bar                    |
| 4          | 23   | 110290 | Nut, 1/4-20 Wiz Flange           | 16         | 1   | 302061 | Locknut, 3/4 Npt                | 28         | 2   | 970161 | Blower Liner Retainer, Inner |
| 5          | 24   | 110319 | Nut, 5/16-18 U-Type .75l         | 17         | 1   | 302062 | Plug, Garden Hose               | 29         | 2   | 970162 | Blower Liner Retainer, Outer |
| 6          | 12   | 110326 | Bolt, 1/4-20 X 1 In Carriage     | 18         | 2   | 410851 | Bearing, 4fng 1 1/2"            | 30         | 1   | 970287 | Blower Shaft                 |
| 7          | 4    | 110327 | Nut, 5/16-18 Wing                | 19         | 1   | 411120 | Key, 3/8 X 3/8 X 2.25           | 31         | 1   | 970508 | Fan Motor Shield             |
| 8          | 4    | 110423 | Bolt, 5/16-18 X 1.0              | 20         | 2   | 905122 | Assembly, Nozzle Access Cover   | 32         | 1   | 970558 | Blower Plate                 |
| 9          | 22   | 110444 | Bolt, 5/16-18 X 0.75, Wiz Flange | 21         | 1   | 905194 | Assy, Upper Fan Shield W/Decal  | 33         | 1   | 972008 | Debris Flap                  |
| 10         | 11   | 110464 | Bolt, 1/4-20 X 1.0               | 22         | 1   | 905195 | Assy, Lower Fan Shield W/Decal  | 34         | 1   | 972010 | Blower Liner, .250 Uhmw      |
| 11         | 4    | 110588 | Nut, 1/2-13 Wiz Flange           | 23         | 1   | 922068 | Hub, Coupling 1-1/2" Bore       | 35         | 1   | 975195 | Fan Assy Wldmnt              |
| 12         | 2    | 110606 | Nut, 5/16-18 Wiz Flange          | 24         | 1   | 922069 | Lovejoy Coupler Spider          | 36         | 1   | 975101 | Bearing Channel              |
|            |      |        |                                  |            |     |        |                                 | 37         | 1   | 975119 | Blower Weldment, Tv60hr      |



## BLOWER HOUSING ASSEMBLY

# FAN ASSEMBLY

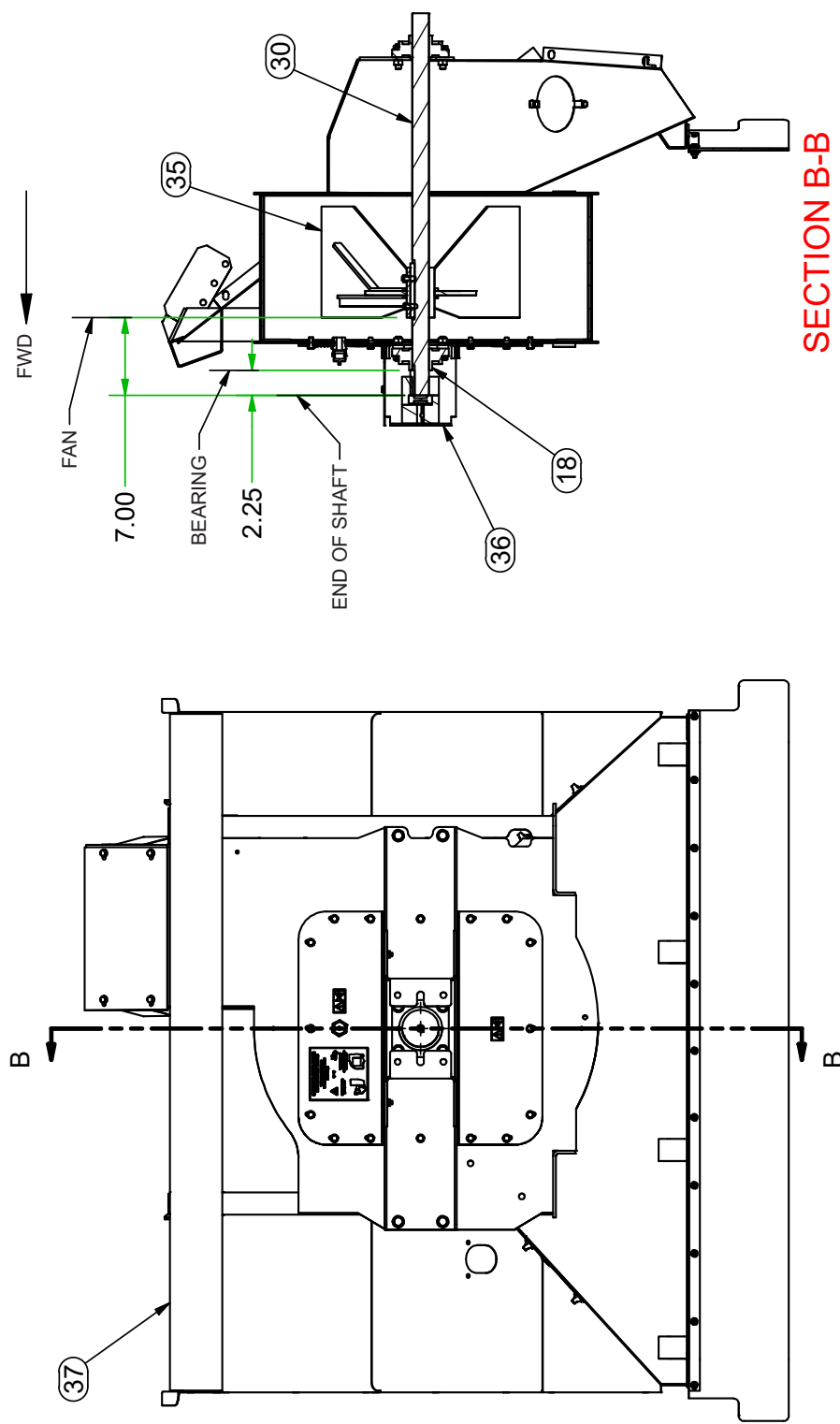


| Parts List |      |        |                                  |
|------------|------|--------|----------------------------------|
| ITEM       | QTY  | PART # | DESCRIPTION                      |
| 1          | 10ft | 100613 | Seal, .50 X .187                 |
| 2          | 4    | 110093 | Setscrew, 3/8-16 X 1.25          |
| 3          | 4    | 110220 | Bolt, 1/2-13 X 1, Wiz Flange     |
| 5          | 24   | 110319 | Nut, 5/16-18 U-Type .75l         |
| 7          | 4    | 110327 | Nut, 5/16-18 Wing                |
| 8          | 4    | 110423 | Bolt, 5/16-18 X 1.0              |
| 9          | 22   | 110444 | Bolt, 5/16-18 X 0.75, Wiz Flange |
| 11         | 4    | 110588 | Nut, 1/2-13 Wiz Flange           |
| 12         | 2    | 110606 | Nut, 5/16-18 Wiz Flange          |
| 13         | 4    | 110826 | Nut, 3/8-16 Gr 5                 |
| 14         | 8    | 111222 | Bolt, 1/2-13 X 1.75, Wiz Flange  |
| 15         | 1    | 302060 | Swivel, Garden Hose-To-Pipe      |
| 16         | 1    | 302061 | Locknut, 3/4 Npt                 |
| 17         | 1    | 302062 | Plug, Garden Hose                |
| 18         | 2    | 410851 | Bearing, 4fng 1 1/2"             |
| 19         | 1    | 411120 | Key, 3/8 X 3/8 X 2.25            |
| 21         | 1    | 905194 | Assy, Upper Fan Shield W/Decal   |
| 22         | 1    | 905195 | Assy, Lower Fan Shield W/Decal   |
| 23         | 1    | 922068 | Hub, Coupling 1-1/2" Bore        |
| 24         | 1    | 922069 | Lovejoy Coupler Spider           |
| 25         | 1    | 922098 | Coupling, 5/8" Bore, 5/32 Kw     |
| 26         | 1    | 940113 | Key, 3/8 X 5                     |
| 30         | 1    | 970287 | Blower Shaft                     |
| 31         | 1    | 970508 | Fan Motor Shield                 |
| 35         | 1    | 975195 | Fan Assy Wildmnt                 |
| 36         | 1    | 975101 | Bearing Channel                  |
| 37         | 1    | 975119 | Blower Weldment, Tv60hr          |

975434

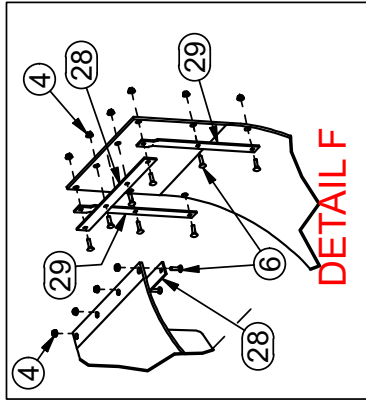
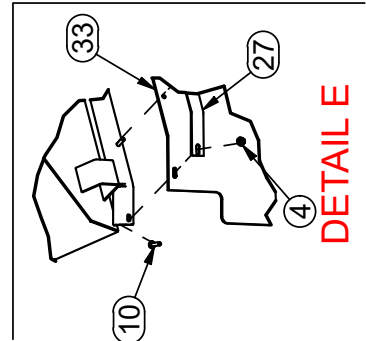
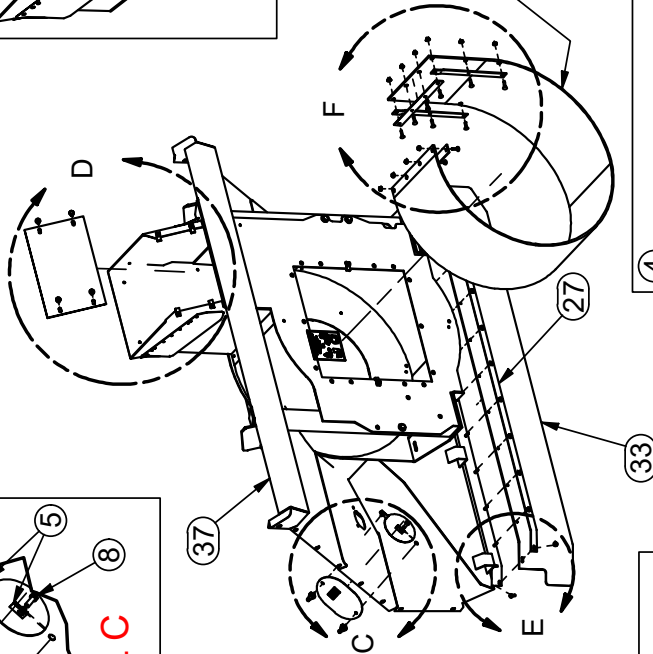
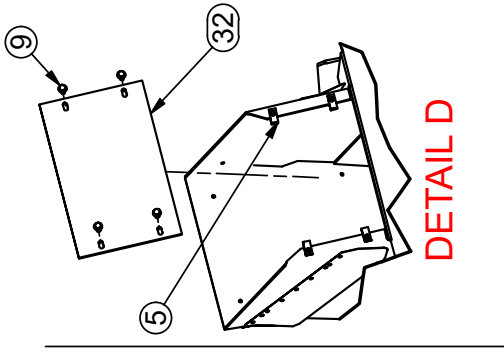
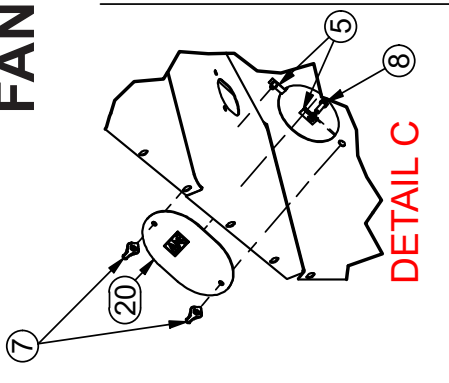
REV: J

# FAN SHAFT ASSEMBLY

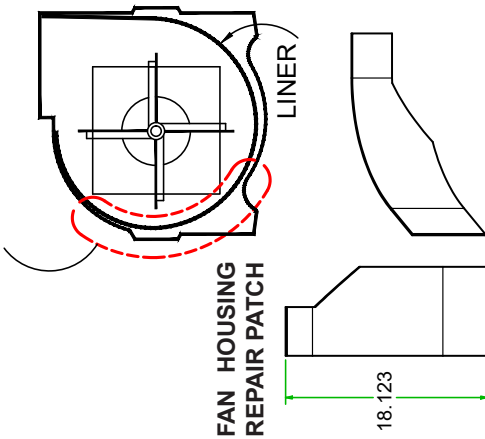


# FAN HOUSING ASSEMBLY

(Liner & Debris Flap)



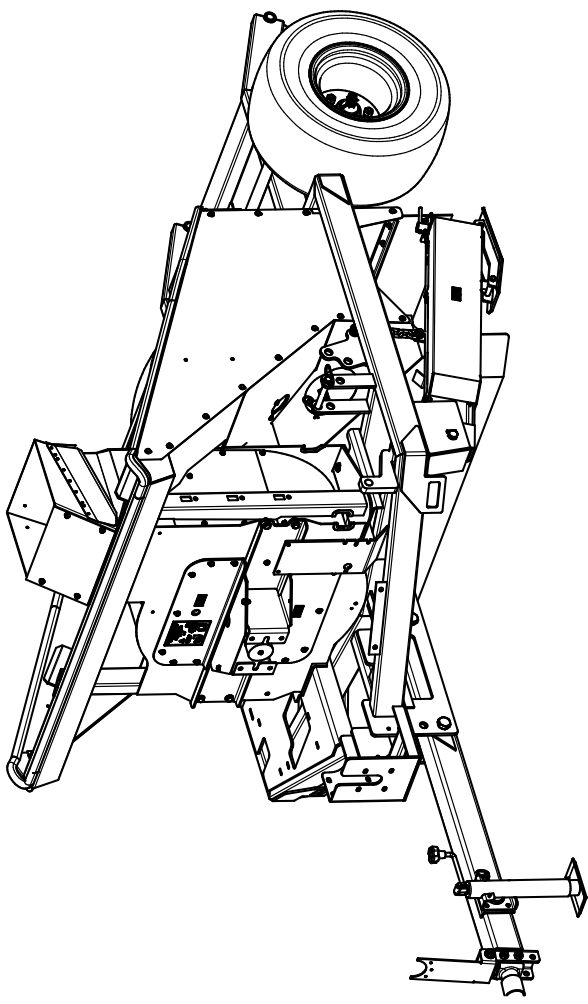
CHECK LINER IN THIS AREA FOR WEAR



IF LINER NOT REPLACED, THE HOUSING WILL WEAR. WELD METAL PATCH 911251 TO REPAIR.

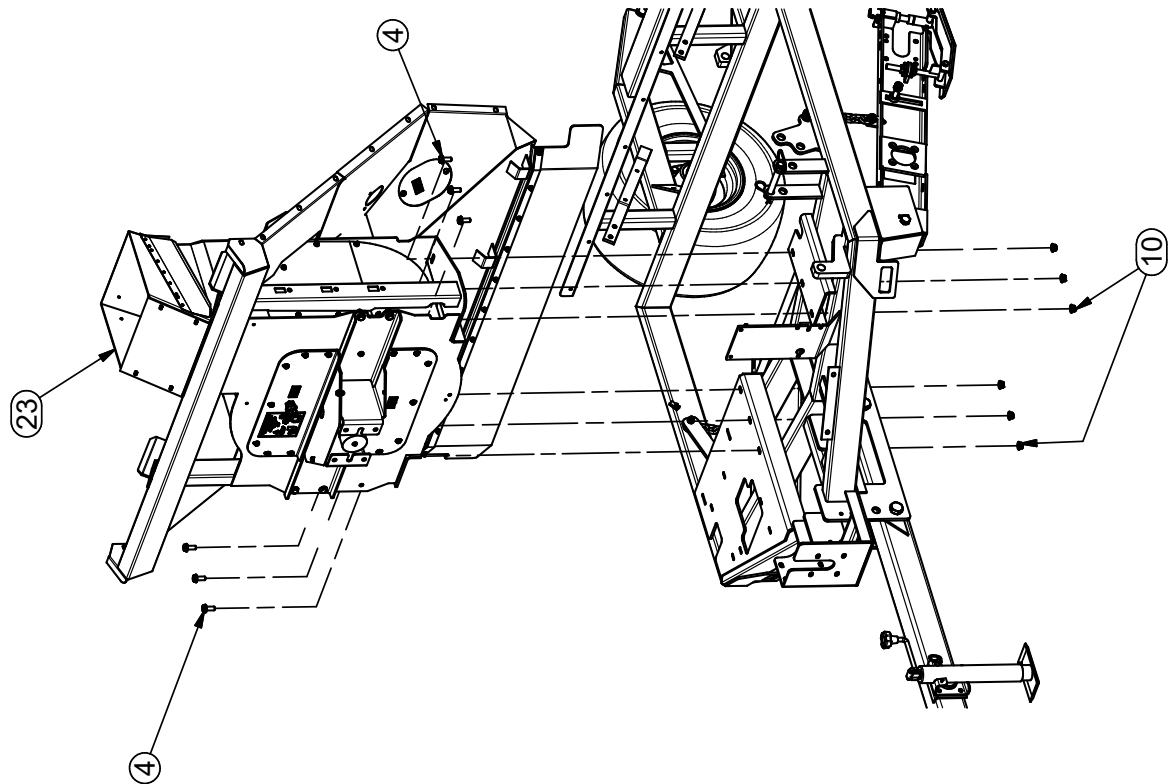
| Parts List |     |                                         |
|------------|-----|-----------------------------------------|
| ITEM       | QTY | PART # DESCRIPTION                      |
| 4          | 23  | 110290 Nut, 1/4-20 Wiz Flange           |
| 5          | 24  | 110319 Nut, 5/16-18 U-Type .75l         |
| 6          | 12  | 110326 Bolt, 1/4-20 X 1 In Carriage     |
| 7          | 4   | 110327 Nut, 5/16-18 Wing                |
| 8          | 4   | 110423 Bolt, 5/16-18 X 1.0              |
| 9          | 22  | 110444 Bolt, 5/16-18 X 0.75, Wiz Flange |
| 10         | 11  | 110464 Bolt, 1/4-20 X 1.0               |
| 20         | 2   | 905122 Assembly, Nozzle Access Cover    |
| 27         | 1   | 970086 Clamp Bar                        |
| 28         | 2   | 970161 Blower Liner Retainer, Inner     |
| 29         | 2   | 970162 Blower Liner Retainer, Outer     |
| 32         | 1   | 970558 Blower Plate                     |
| 33         | 1   | 972008 Debris Flap                      |
| 34         | 1   | 972010 Blower Liner .250 Uhmw           |
| 37         | 1   | 975119 Blower Weldment, Tv60hr          |

# TV60RHD BLOWER HOUSING INSTALLATION



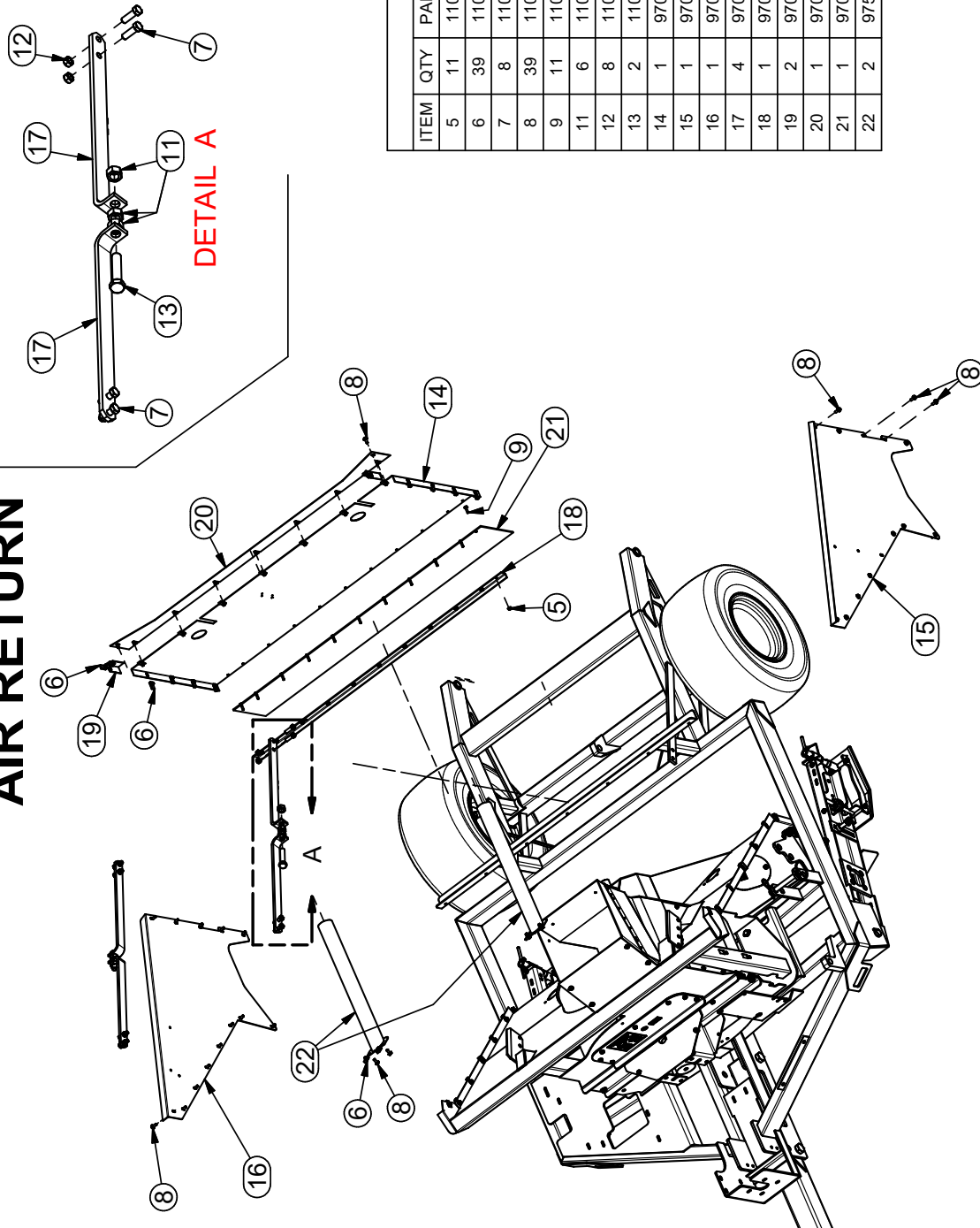
| Parts List |       |        |                                    |
|------------|-------|--------|------------------------------------|
| ITEM       | QTY   | PART # | DESCRIPTION                        |
| 1          | 6 ft  | 100360 | MOULDING, EDGE, AIR INLET          |
| 2          | 30 in | 100365 | TRIM, EDGE, .085 TO .210 THICKNESS |
| 3          | 15 ft | 102004 | D SEAL, 1.00 X 1.00                |
| 4          | 6     | 110001 | BOLT, 1/2-13 X 1.25, WIZ FLANGE    |
| 5          | 11    | 110290 | NUT, 1/4-20 WIZ FLANGE             |
| 6          | 39    | 110319 | NUT, 5/16-18 U-TYPE .75L           |
| 7          | 8     | 110429 | BOLT, 1/2-13 X 1.5                 |
| 8          | 39    | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE   |
| 9          | 11    | 110464 | BOLT, 1/4-20 X 1.0                 |
| 10         | 6     | 110588 | NUT, 1/2-13 WIZ FLANGE             |
| 11         | 6     | 110596 | NUT, 3/4-10                        |
| 12         | 8     | 110615 | NUT, 1/2-13, UNITORQUE LOCK        |
| 13         | 2     | 110713 | BOLT, 3/4-10 X 3.5 TAP             |
| 14         | 1     | 970390 | BACK AIR RETURN                    |
| 15         | 1     | 970391 | LEFT AIR RETURN                    |
| 16         | 1     | 970392 | RIGHT AIR RETURN                   |
| 17         | 4     | 970393 | TRUSS BAR                          |
| 18         | 1     | 970394 | FLAP RETAINER                      |
| 19         | 2     | 970542 | ANGLE, AIR RETURN                  |
| 20         | 1     | 970545 | REAR SEAL                          |
| 21         | 1     | 970685 | DEBRIS FLAP MAIN                   |
| 22         | 2     | 975111 | HOSE TUBE                          |
| 23         | 1     | 975434 | ASSEMBLY, TV60HD BLOWER HOUSING    |

# FAN HOUSING INSTALLATION



| Parts List |     |        |                                 |
|------------|-----|--------|---------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                     |
| 4          | 6   | 110001 | BOLT, 1/2-13 X 1.25, WIZ FLANGE |
| 10         | 6   | 110588 | NUT, 1/2-13 WIZ FLANGE          |
| 23         | 1   | 975434 | ASSEMBLY, TV60HD BLOWER HOUSING |

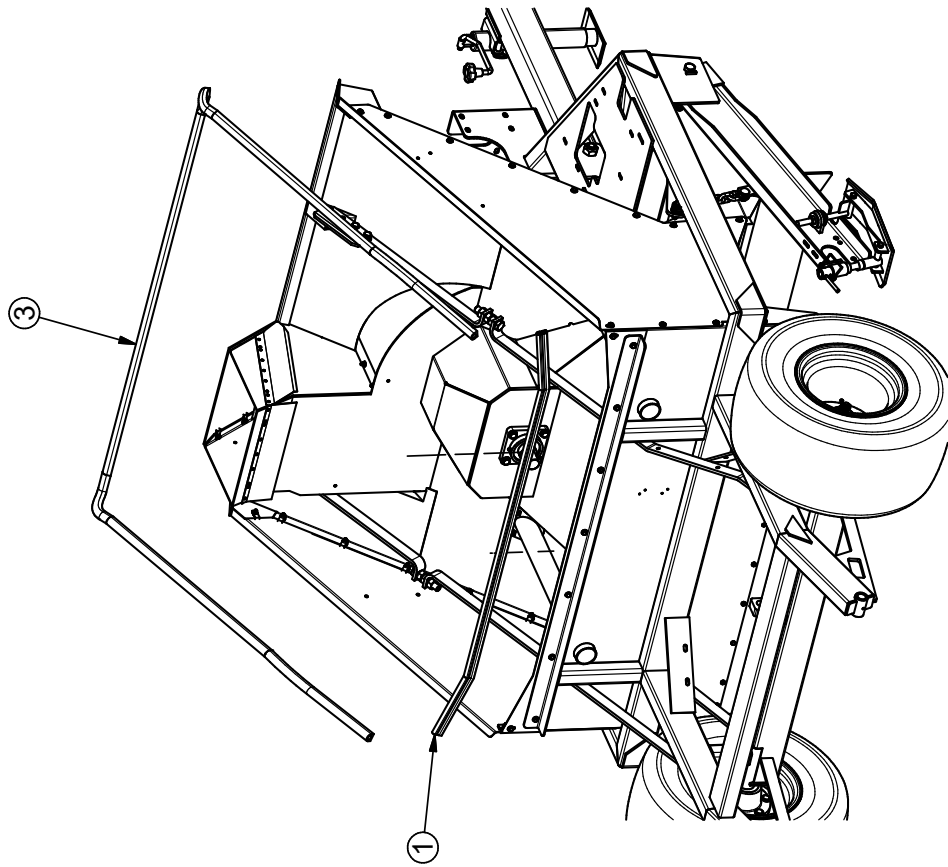
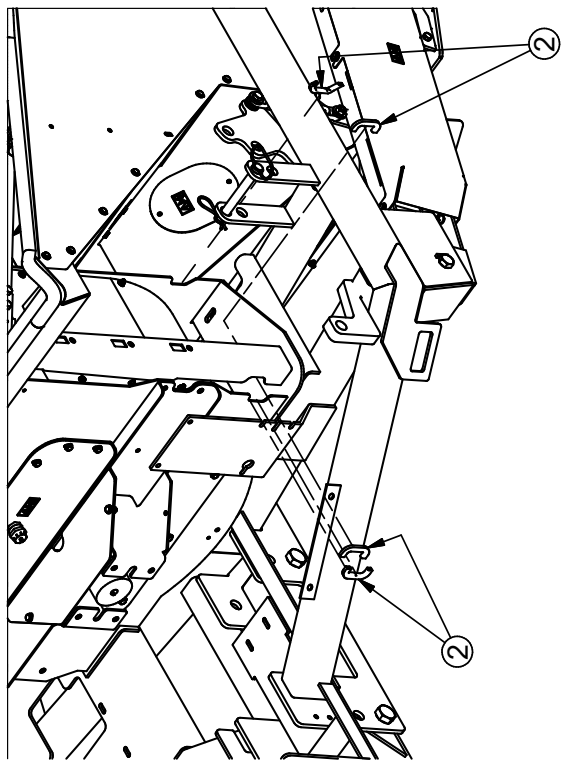
# AIR RETURN



Parts List

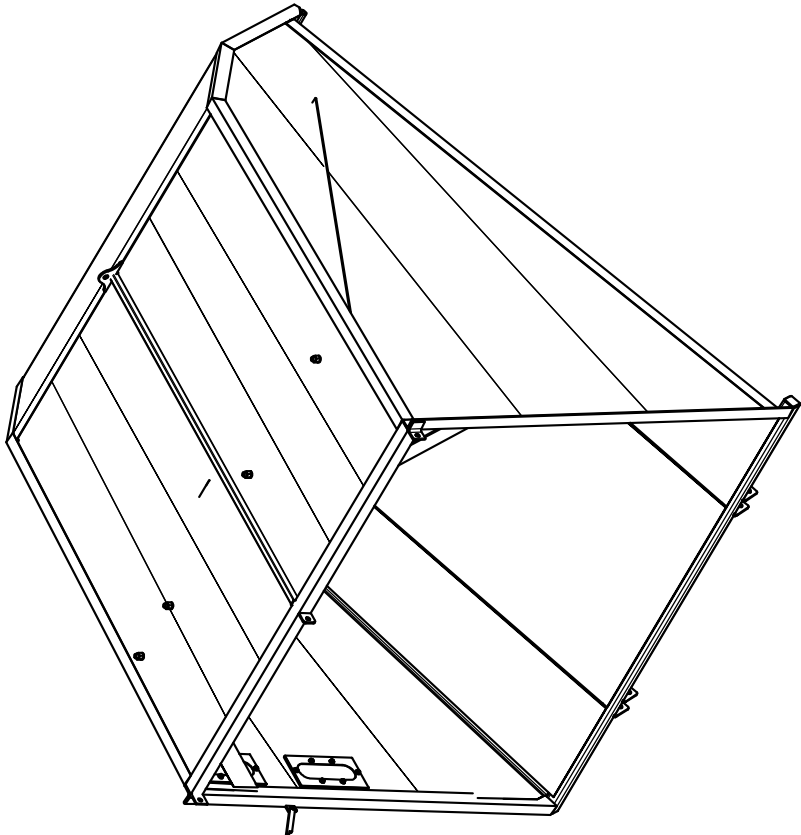
| ITEM | QTY | PART # | DESCRIPTION                      |
|------|-----|--------|----------------------------------|
| 5    | 11  | 110290 | NUT, 1/4-20 WIZ FLANGE           |
| 6    | 39  | 110319 | NUT, 5/16-18 U-TYPE .75L         |
| 7    | 8   | 110429 | BOLT, 1/2-13 X 1.5               |
| 8    | 39  | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE |
| 9    | 11  | 110464 | BOLT, 1/4-20 X 1.0               |
| 11   | 6   | 110596 | NUT, 3/4-10                      |
| 12   | 8   | 110615 | NUT, 1/2-13, UNITORQUE LOCK      |
| 13   | 2   | 110713 | BOLT, 3/4-10 X 3.5 TAP           |
| 14   | 1   | 970390 | BACK AIR RETURN                  |
| 15   | 1   | 970391 | LEFT AIR RETURN                  |
| 16   | 1   | 970392 | RIGHT AIR RETURN                 |
| 17   | 4   | 970393 | TRUSS BAR                        |
| 18   | 1   | 970394 | FLAP RETAINER                    |
| 19   | 2   | 970542 | ANGLE, AIR RETURN                |
| 20   | 1   | 970545 | REAR SEAL                        |
| 21   | 1   | 970685 | DEBRIS FLAP MAIN                 |
| 22   | 2   | 975111 | HOSE TUBE                        |

# SEAL & TRIM INSTALLATION



| Parts List |       |        |                                    |
|------------|-------|--------|------------------------------------|
| ITEM       | QTY   | PART # | DESCRIPTION                        |
| 1          | 6 ft  | 100360 | MOULDING, EDGE, AIR INLET          |
| 2          | 30 in | 100365 | TRIM, EDGE, .085 TO .210 THICKNESS |
| 3          | 15 ft | 102004 | D SEAL, 1.00 X 1.00                |

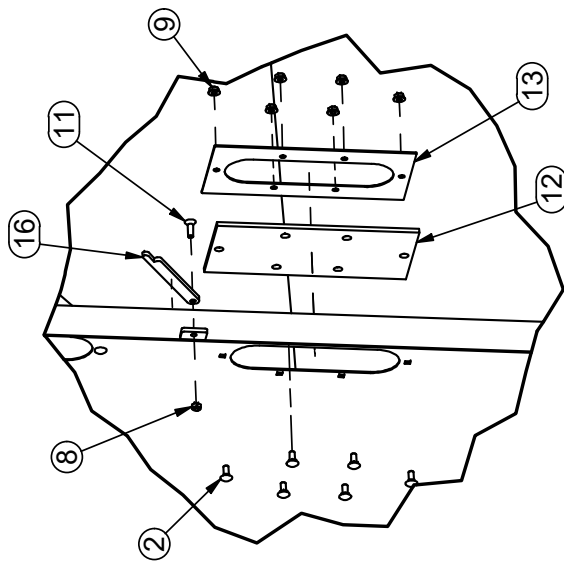
# TV60RHD HOPPER ASSEMBLY



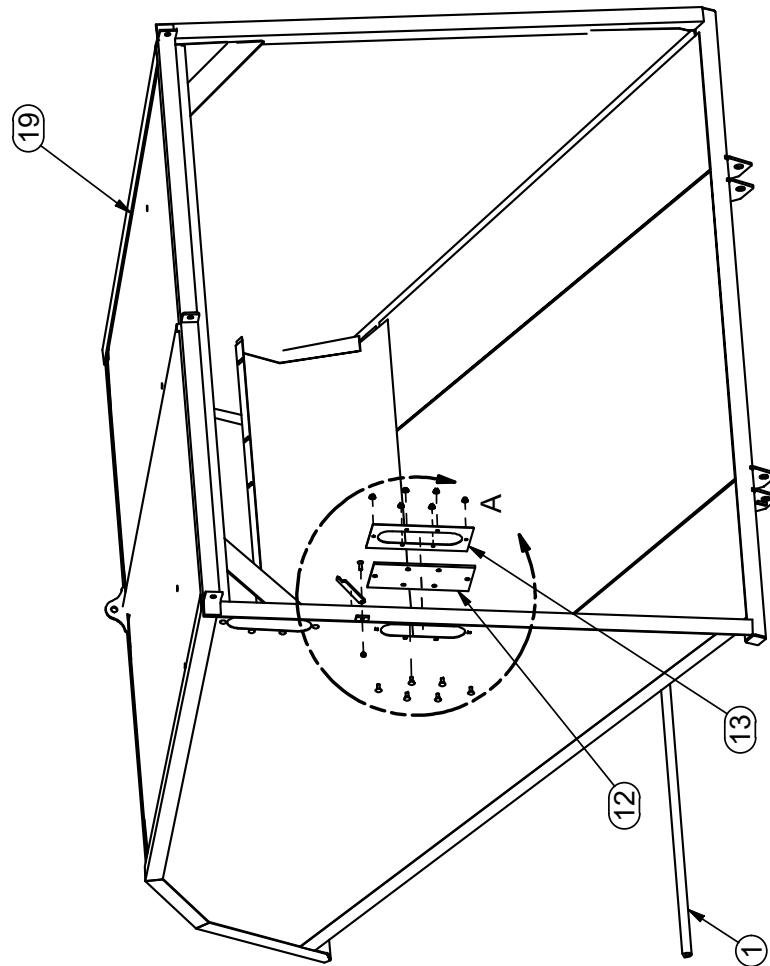
| Parts List |      |        |                                  |
|------------|------|--------|----------------------------------|
| ITEM       | QTY  | PART # | DESCRIPTION                      |
| 1          | 6 ft | 102004 | SEAL, RUBBER, D 1' X 1'          |
| 2          | 12   | 110020 | Bolt, 5/16-18 X 0.75 in Carriage |
| 3          | 4    | 110038 | WASHER, 1" FLAT STANDARD         |
| 4          | 10   | 110049 | WASHER, 5/16" X 1 1/2 FENDER     |
| 5          | 4    | 110305 | Pin, Lynch 7/16 x 1 3/4          |
| 6          | 10   | 110319 | NUT, 5/16-18 U-TYPE .75L         |
| 7          | 10   | 110423 | BOLT, 5/16-18 X 1.0              |
| 8          | 1    | 110600 | NUT, 5/16-18, UNITORQUE LOCK     |
| 9          | 17   | 110606 | NUT, 5/16-18 WIZ FLANGE          |
| 10         | 16   | 110673 | WASHER, 1/4" FLAT STANDARD       |
| 11         | 1    | 110986 | SCREW, 5/16-18 UNC X1 FH         |
| 12         | 2    | 311691 | SIGHT GLASS, HOPPER              |
| 13         | 2    | 311692 | Backing Plate, Sight Glass       |
| 14         | 16   | 710586 | SCREW, 1/4 X 1 TEK SELF-TAP      |
| 15         | 4    | 942161 | PIN, STABILIZER                  |
| 16         | 1    | 970211 | BAR, PROP                        |
| 17         | 1    | 970366 | MIDDLE SCREEN                    |
| 18         | 2    | 970729 | DEBRIS FLAP-RETURN SCREEN        |
| 19         | 1    | 975091 | HOPPER WELDMENT                  |
| 20         | 1    | 975099 | LEFT RETURN SCREEN               |
| 21         | 1    | 975100 | RIGHT RETURN SCREEN              |

# SIGHT WINDOW INSTALLATION

975440 REV: A



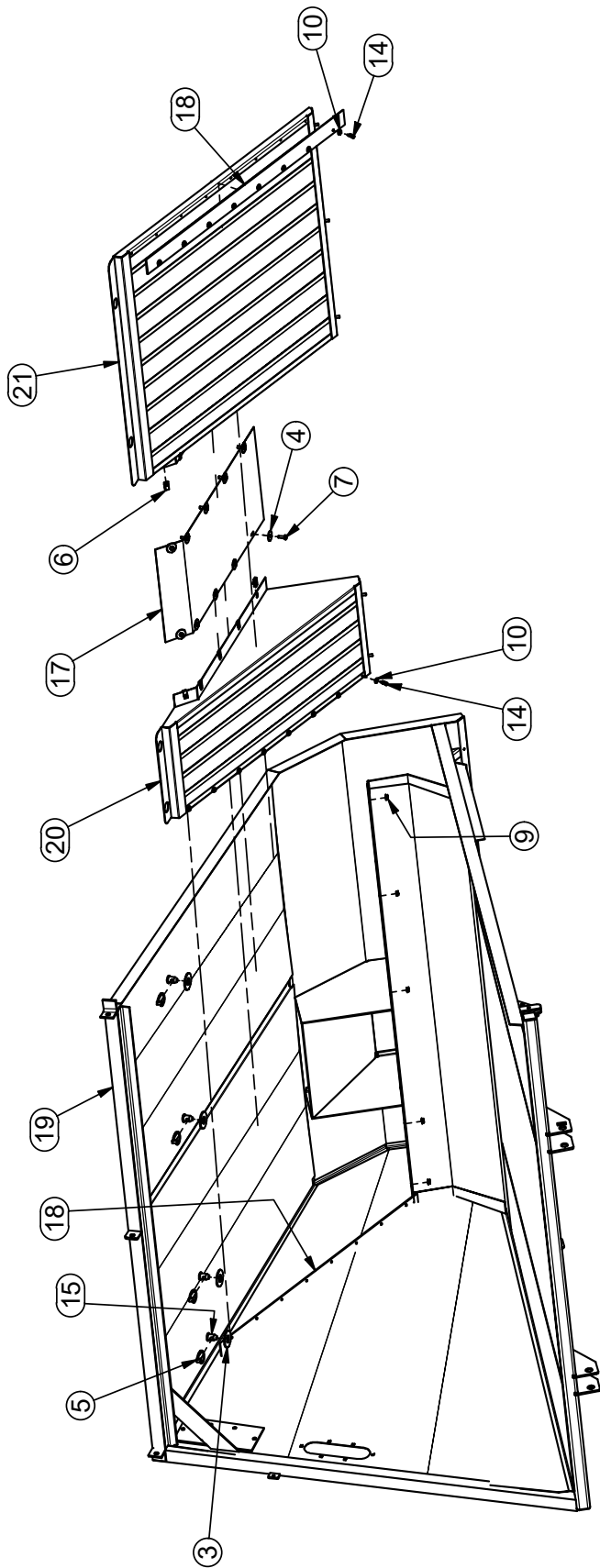
DETAIL A



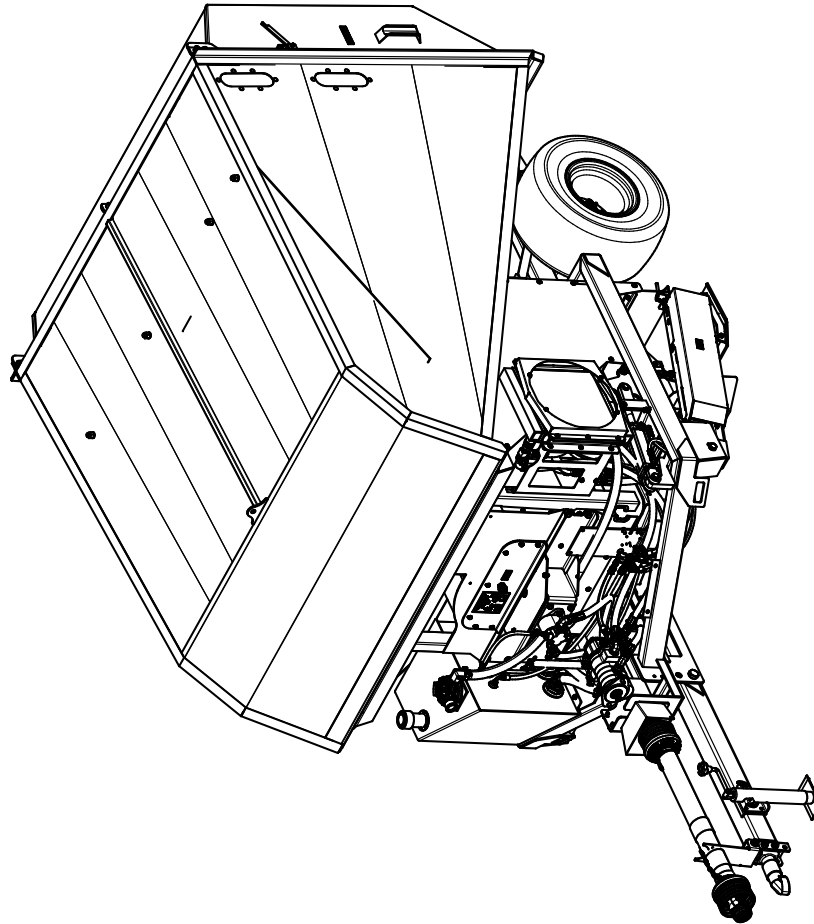
| Parts List |      |        |                                  |
|------------|------|--------|----------------------------------|
| ITEM       | QTY  | PART # | DESCRIPTION                      |
| 1          | 6 ft | 102004 | SEAL, RUBBER, D 1' X 1'          |
| 2          | 12   | 110020 | Bolt, 5/16-18 X 0.75 in Carriage |
| 8          | 1    | 110600 | NUT, 5/16-18, UNITORQUE LOCK     |
| 9          | 17   | 110606 | NUT, 5/16-18 WIZ FLANGE          |
| 12         | 2    | 311691 | SIGHT GLASS, HOPPER              |
| 13         | 2    | 311692 | Backing Plate, Sight Glass       |
| 16         | 1    | 970211 | BAR, PROP                        |
| 19         | 1    | 975091 | HOPPER WELDMENT                  |
| 11         | 1    | 110986 | SCREW, 5/16-18 UNC X 1 FH        |

| Parts List |     |        |                              | Parts List |     |        |                             | Parts List |     |        |                           |
|------------|-----|--------|------------------------------|------------|-----|--------|-----------------------------|------------|-----|--------|---------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                  | ITEM       | QTY | PART # | DESCRIPTION                 | ITEM       | QTY | PART # | DESCRIPTION               |
| 3          | 4   | 110038 | WASHER, 1" FLAT STANDARD     | 9          | 17  | 110606 | NUT, 5/16-18 WIZ FLANGE     | 18         | 2   | 970729 | DEBRIS FLAP-RETURN SCREEN |
| 4          | 10  | 110049 | WASHER, 5/16" X 1 1/2 FENDER | 10         | 16  | 110673 | WASHER, 1/4" FLAT STANDARD  | 19         | 1   | 975091 | HOPPER WELDMENT           |
| 5          | 4   | 110305 | Pin, Lynch 7/16 x 1 3/4      | 14         | 16  | 710586 | SCREW, 1/4 X 1 TEK SELF-TAP | 20         | 1   | 975099 | LEFT RETURN SCREEN        |
| 6          | 10  | 110319 | NUT, 5/16-18 U-TYPE .75L     | 15         | 4   | 942161 | PIN, STABILIZER             | 21         | 1   | 975100 | RIGHT RETURN SCREEN       |
| 7          | 10  | 110423 | BOLT, 5/16-18 X 1.0          | 17         | 1   | 970366 | MIDDLE SCREEN               |            |     |        |                           |

# SCREEN INSTALLATION

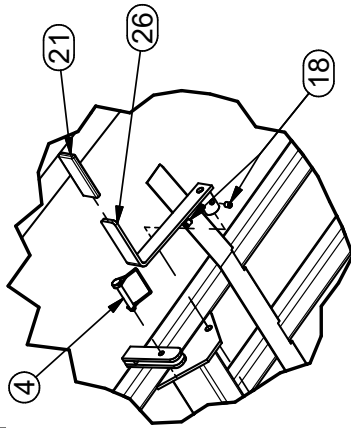


## TV60RHD HOPPER INSTALLATION

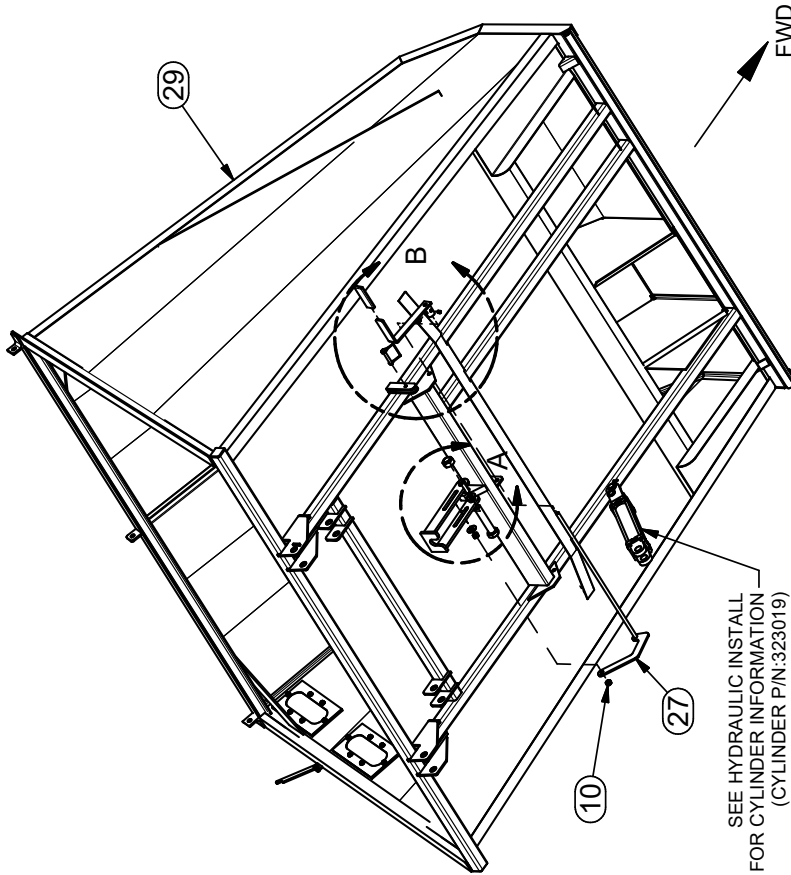


| Parts List |     |                                        |
|------------|-----|----------------------------------------|
| ITEM       | QTY | PART # DESCRIPTION                     |
| 1          | 3   | 110026 BOLT, 5/8-11 X 1.25             |
| 2          | 2   | 110179 BOLT, 7/16-14 X 2.75            |
| 3          | 1   | 110208 BOLT, 1-8 X 5.0                 |
| 4          | 1   | 110304 PIN, LOCK 3/8 X 2.5 SQ          |
| 5          | 2   | 110334 BOLT, 1-8 X 6.0                 |
| 6          | 2   | 110336 WASHER, 1-1/4 FLAT MACHINE 10GA |
| 7          | 2   | 110337 NUT, 7/16-14 WIZ FLANGE         |
| 8          | 1   | 110379 BOLT, 1/2-13 X 2.0              |
| 9          | 1   | 110610 NUT, 1/2-13                     |
| 10         | 1   | 110615 NUT, 1/2-13, UNITORQUE LOCK     |
| 11         | 3   | 110639 NUT, 5/8-11, UNITORQUE LOCK     |
| 12         | 2   | 110658 WASHER, 1/2" FLAT STANDARD      |
| 13         | 2   | 110670 WASHER, 7/16" FLAT STANDARD     |
| 14         | 3   | 111226 NUT, 1-8, UNITORQUE LOCK        |
| 15         | 2   | 210326 CLIP, HAIRPIN                   |
| 16         | 2   | 220480 PIN                             |
| 17         | 3   | 315257 PIN WELDMENT, HOPPER DOOR       |
| 18         | 2   | 510161 SetScrew, 3/8-16 X 0.5          |
| 19         | 2   | 510174 GREASE ZERK, 1/4-28 ST          |
| 20         | 1   | 905136 ASSEMBLY, TV60 DOOR             |
| 21         | 1   | 910044 COVER, VINYL .25 X 1.5 X 4 GRIP |
| 22         | 2   | 970148 HOPPER DOOR LATCH               |
| 23         | 2   | 970149 LATCH PIVOT BUSHING             |
| 24         | 2   | 970150 LATCH SPACER                    |
| 25         | 2   | 970151 LATCH PIVOT SPACER              |
| 26         | 1   | 975055 HANDLE WELDMENT, DUMP CYL LOCK  |
| 27         | 1   | 975056 SHAFT WELDMENT, DUMP CYL LOCK   |
| 28         | 1   | 975057 STOP WLDMNT, CYLINDER LOCK      |
| 29         | 1   | 975440 ASSEMBLY, TV60HD HOPPER         |

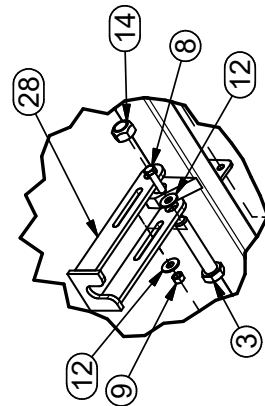
# LIFT LOCK INSTALLATION



DETAIL B



SEE HYDRAULIC INSTALL  
FOR CYLINDER INFORMATION  
(CYLINDER P/N:323019)

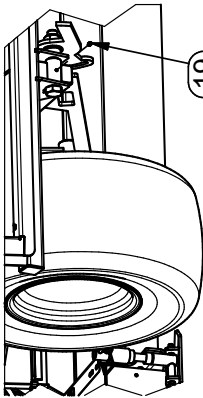
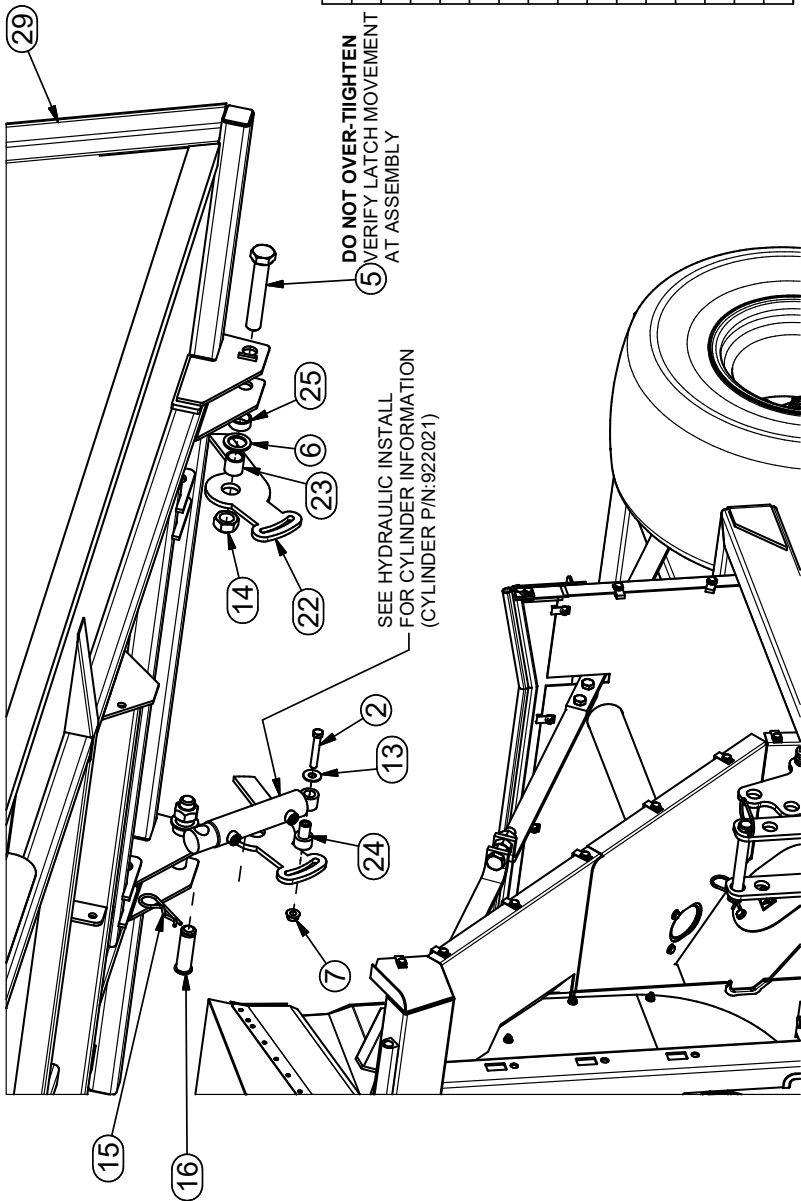


DETAIL A

| Parts List |     |        |
|------------|-----|--------|
| ITEM       | QTY | PART # |
| 3          | 1   | 110208 |
| 4          | 1   | 110304 |
| 8          | 1   | 110379 |
| 9          | 1   | 110610 |
| 10         | 1   | 110615 |
| 12         | 2   | 110658 |
| 14         | 3   | 111226 |
| 18         | 2   | 510161 |
| 21         | 1   | 910044 |
| 26         | 1   | 975055 |
| 27         | 1   | 975056 |
| 28         | 1   | 975057 |
| 29         | 1   | 975440 |

| DESCRIPTION                     |  |
|---------------------------------|--|
| BOLT, 1-8 X 5.0                 |  |
| PIN, LOCK 3/8 X 2.5 SQ          |  |
| BOLT, 1/2-13 X 2.0              |  |
| NUT, 1/2-13                     |  |
| NUT, 1/2-13, UNITORQUE LOCK     |  |
| WASHER, 1/2" FLAT STANDARD      |  |
| NUT, 1-8, UNITORQUE LOCK        |  |
| SetScrew, 3/8-16 X 0.5          |  |
| COVER, VINYL .25 X 1.5 X 4 GRIP |  |
| HANDLE WELDMENT, DUMP CYL LOCK  |  |
| SHAFT WELDMENT, DUMP CYL LOCK   |  |
| STOP WLDMNT, CYLINDER LOCK      |  |
| ASSEMBLY, TV60HD HOPPER         |  |

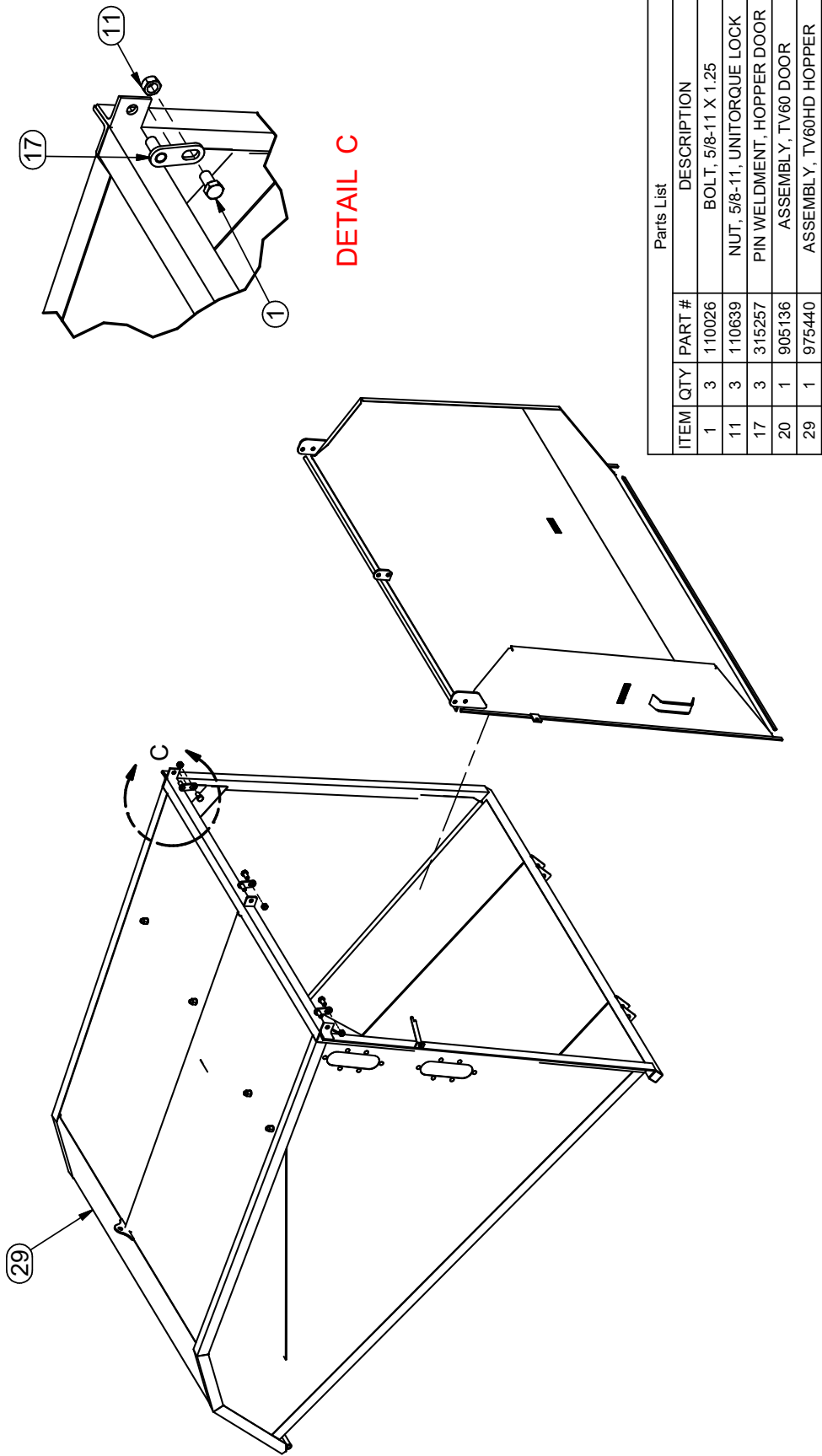
# DOOR LATCH INSTALLATION



HOPPER HINGE  
GREASE ZERK  
INSTALLATION

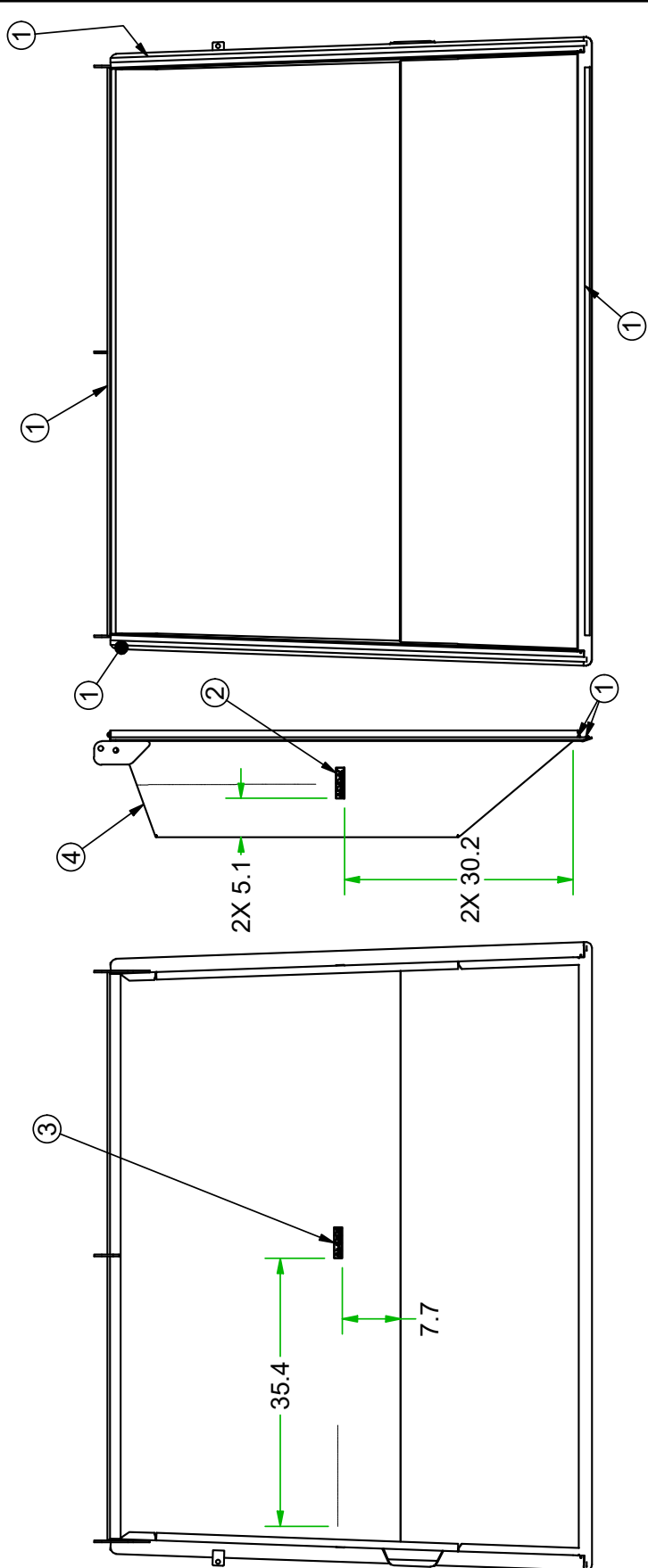
| Parts List |     |        |                                 |
|------------|-----|--------|---------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                     |
| 2          | 2   | 110179 | BOLT, 7/16-14 X 2.75            |
| 5          | 2   | 110334 | BOLT, 1-8 X 6.0                 |
| 6          | 2   | 110336 | WASHER, 1-1/4 FLAT MACHINE 10GA |
| 7          | 2   | 110337 | NUT, 7/16-14 WIZ FLANGE         |
| 13         | 2   | 110670 | WASHER, 7/16" FLAT STANDARD     |
| 14         | 3   | 111226 | NUT, 1-8, UNITORQUE LOCK        |
| 19         | 2   | 510174 | GREASE ZERK, 1/4-28 ST          |
| 22         | 2   | 970148 | HOPPER DOOR LATCH               |
| 23         | 2   | 970149 | LATCH PIVOT BUSHING             |
| 24         | 2   | 970150 | LATCH SPACER                    |
| 25         | 2   | 970151 | LATCH PIVOT SPACER              |
| 29         | 1   | 975440 | ASSEMBLY, TV60HD HOPPER         |
| 16         | 2   | 220480 | PIN                             |
| 15         | 2   | 210326 | CLIP, HAIRPIN                   |

DOOR INSTALLATION



| 905136     |       | REV: B |                        |
|------------|-------|--------|------------------------|
| Parts List |       |        |                        |
| ITEM       | QTY   | PART # | DESCRIPTION            |
| 1          | 24 ft | 100623 | D SEAL, .375 X .625    |
| 2          | 2     | 902226 | Decal, Hopper Crushing |
| 3          | 1     | 902233 | Decal, Hopper Crushing |
| 4          | 1     | 975196 | DOOR WILDMNT           |

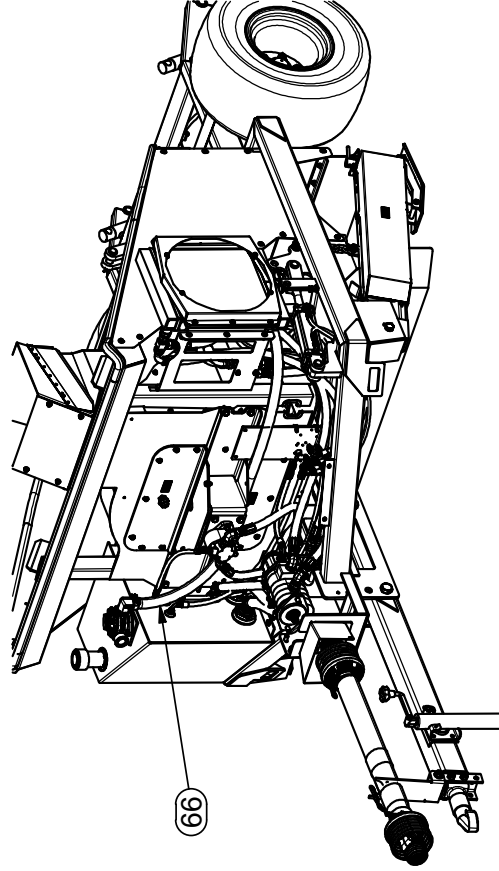
# TV60 HOPPER DOOR ASSEMBLY



| 975432     |     |        |                                       | REV: G     |     |        |                                                     |
|------------|-----|--------|---------------------------------------|------------|-----|--------|-----------------------------------------------------|
| Parts List |     |        |                                       | Parts List |     |        |                                                     |
| ITEM       | QTY | PART # | DESCRIPTION                           | ITEM       | QTY | PART # | DESCRIPTION                                         |
| 1          | 4   | 110001 | BOLT, 1/2-13 X 1.25, WIZ FLANGE       | 26         | 1   | 120031 | ADAPTER, 12MJ-12MB45                                |
| 2          | 2   | 110161 | BOLT, 3/8-16 X 1.25, WIZ FLANGE       | 27         | 10  | 120143 | ADAPTER, 12MJ-10MB                                  |
| 3          | 4   | 110290 | NUT, 1/4-20 WIZ FLANGE                | 28         | 1   | 120144 | ADAPTER, 6MJ-10MB                                   |
| 4          | 3   | 110319 | NUT, 5/16-18 U-TYPE .75L              | 29         | 2   | 120189 | ADAPTER, 20BH-20MB 45°                              |
| 5          | 3   | 110437 | BOLT, 3/8-16 X 0.75, WIZ FLANGE       | 30         | 1   | 120220 | ADAPTER, 4MJ-6MB90                                  |
| 6          | 4   | 110440 | BOLT, 3/8-16 X 1, WIZ FLANGE          | 31         | 3   | 120222 | ADAPTER, 6MJ-6MB90                                  |
| 7          | 18  | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE      | 32         | 3   | 120233 | ADAPTER, 4MJ-4MB                                    |
| 8          | 4   | 110468 | BOLT, 1/4-20 X 0.75, WIZ FLANGE       | 33         | 2   | 120235 | ADAPTER, 4MJ-4MB90                                  |
| 9          | 2   | 110474 | BOLT, 1/4-20 X 1-1/2                  | 34         | 2   | 120241 | ADAPTER, 4MJ-4MJ-4MJ                                |
| 10         | 4   | 110529 | BOLT, 5/16-18 X 4.5                   | 35         | 2   | 120249 | ADAPTER, 4MJ-6MB                                    |
| 11         | 2   | 110539 | BOLT, 7/16-14 X 1.25                  | 36         | 1   | 120254 | ADAPTER, 12MJ-12MB                                  |
| 12         | 4   | 110588 | NUT, 1/2-13 WIZ FLANGE                | 37         | 1   | 120256 | ADAPTER, 12MJ-16MB                                  |
| 13         | 18  | 110606 | NUT, 5/16-18 WIZ FLANGE               | 38         | 2   | 120257 | ADAPTER, 12MJ-12MB90                                |
| 14         | 4   | 110610 | NUT, 1/2-13                           | 39         | 1   | 120267 | ADAPTER, 12MJ-12FJX90                               |
| 15         | 4   | 110645 | NUT, 3/8-16 WIZ FLANGE                | 40         | 1   | 120268 | ADAPTER, 12MJ-12FJX-12MJ                            |
| 16         | 4   | 110666 | WASHER, 1/2" LOCK                     | 41         | 9   | 120319 | ADAPTER, 6MJ-6MB                                    |
| 17         | 2   | 110667 | WASHER, 1/4" LOCK                     | 42         | 1   | 120372 | PLUG, O-RING-8, EXTERNAL HEX                        |
| 18         | 2   | 110671 | WASHER, 7/16" LOCK                    | 43         | 2   | 120545 | ADAPTER, 12BH-12MB 45°                              |
| 19         | 4   | 111045 | Bolt, 1/2-13 x 1.75 FHCS              | 44         | 2   | 120546 | ADAPTER, 20BH-16MB90                                |
| 20         | 4   | 111223 | Bolt, M12-1.75 x 35, WIZ Flange, 8.8  | 45         | 1   | 120551 | ADAPTER, 6MJ-6MB90 R.062                            |
| 21         | 4   | 111224 | Bolt, M12-1.75 x 25, WIZ Flange, 10.9 | 46         | 2   | 120677 | ADAPTER, 20BH-16MB45                                |
| 22         | 2   | 111225 | Bolt, M14-2.0 x 35, WIZ Flange, 8.8   | 47         | 1   | 311493 | SHROUD - COOLER FAN                                 |
| 23         | 6   | 112007 | CLAMP, 1.75", T-BOLT                  | 48         | 2   | 312025 | MAGNET, 2"x2"x1" RECT 15LB                          |
| 24         | 2   | 112008 | CLAMP, 1.25", T-BOLT                  | 49         | 2   | 322012 | STRAINER, SUCTION, SAE-32/-20, 25 GPM               |
| 25         | 6   | 112053 | SCREW, 10-32 X 1/2 MACH SEAL          | 50         | 1   | 322025 | DIP STICK - TV30, HYDRAULIC TANK                    |
|            |     |        |                                       | 51         | 1   | 322028 | COOLER - HYDRAULIC, TV30                            |
|            |     |        |                                       | 52         | 1   | 322073 | FILL NECK ASSY                                      |
|            |     |        |                                       | 53         | 1   | 323019 | CYLINDER - 2 X 8, SAE-6                             |
|            |     |        |                                       | 54         | 1   | 335001 | SWITCH ASSY, 140 F TEMP, NC RISING                  |
|            |     |        |                                       | 55         | 2   | 522104 | DOUBLE HOSE CLAMP                                   |
|            |     |        |                                       | 56         | 2   | 522105 | DOUBLE COVERPLATE                                   |
|            |     |        |                                       | 57         | 2   | 722076 | Seal, Buna Rubber, Pressurized Fill                 |
|            |     |        |                                       | 58         | 1   | 723014 | FILTER ASSY                                         |
|            |     |        |                                       | 59         | 2   | 922021 | HYDRAULIC CYLINDER                                  |
|            |     |        |                                       | 60         | 1   | 923004 | MOTOR, 1.76 CI, FAN DRIVE                           |
|            |     |        |                                       | 61         | 1   | 923011 | Cylinder, 2 X 6, -6 SAE Cross                       |
|            |     |        |                                       | 62         | 1   | 923014 | MOTOR, 4.9 CID                                      |
|            |     |        |                                       | 63         | 1   | 923015 | MANIFOLD, TV60R HD CYLINDER                         |
|            |     |        |                                       | 64         | 1   | 923016 | Pump, Triple Section Gear (1.55, 1.55, & .24 cu in) |
|            |     |        |                                       | 65         | 2   | 923017 | VALVE, TV60HD CONTROL                               |
|            |     |        |                                       | 66         | 1   | 925011 | HOSE KIT, TV60R HD                                  |
|            |     |        |                                       | 67         | 1   | 932072 | FAN - 16", 12V, 12A, HYDRAULIC COOLER               |
|            |     |        |                                       | 68         | 1   | 942272 | Gearbox, M7 Bima 1:4                                |
|            |     |        |                                       | 69         | 1   | 943060 | PTO ASSY, TV60HD CE MARK                            |
|            |     |        |                                       | 70         | 1   | 970291 | ADAPTER PLATE                                       |
|            |     |        |                                       | 71         | 1   | 970839 | SUPPORT, REAR COOLER MOUNT                          |
|            |     |        |                                       | 72         | 1   | 970840 | SUPPORT, FRONT COOLER MOUNT                         |
|            |     |        |                                       | 73         | 1   | 970860 | SUPPORT, TV60 GEARBOX                               |
|            |     |        |                                       | 74         | 1   | 970864 | SHIELD, PTO                                         |
|            |     |        |                                       | 75         | 1   | 975437 | TANK WELDMENT, TV60R HD HYD                         |

## TV60RHD HYDRAULIC INSTALLATION

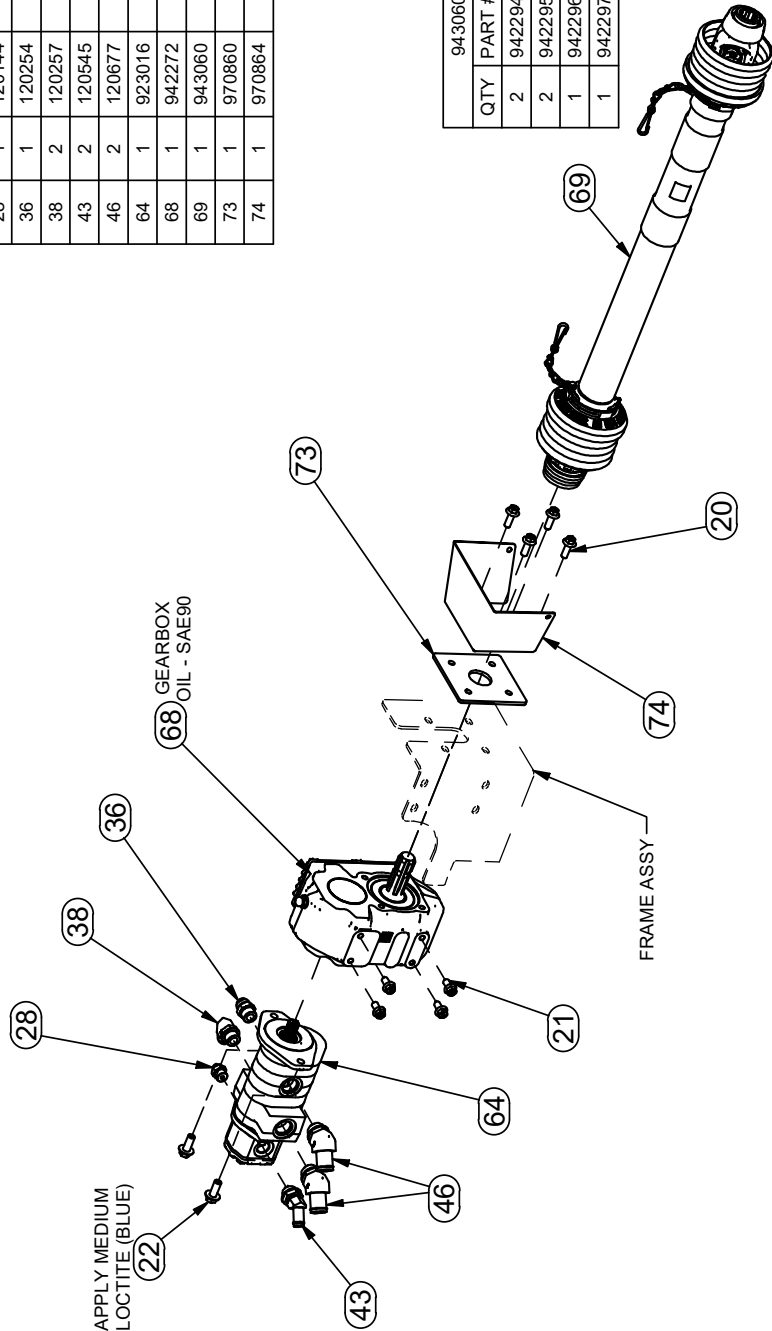
# TV60RHD HYDRAULIC INSTALLATION



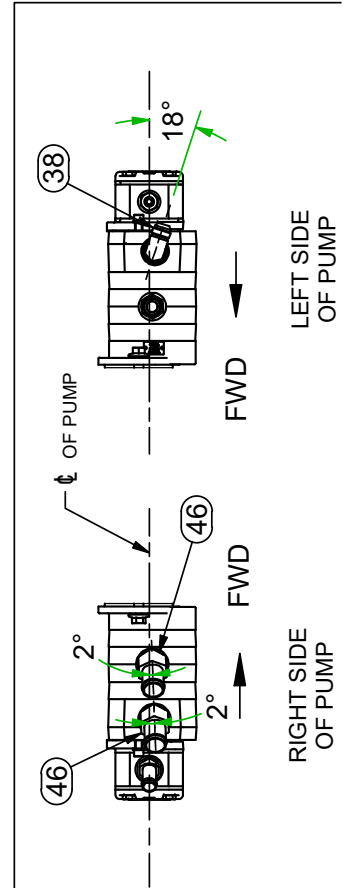
| 925011 HOSE KIT PARTS LIST |        |                                 |
|----------------------------|--------|---------------------------------|
| QTY                        | PART # | DESCRIPTION                     |
| 1                          | 920016 | HOSE ASSY, DECK VALVE TO COOLER |
| 2                          | 920019 | HOSE, FAN/DECK SUCTION          |
| 1                          | 920023 | HOSE ASSY, FAN VALVE RETURN     |
| 1                          | 920024 | HOSE ASSY, FAN MTR CD           |
| 1                          | 920026 | HOSE ASSY, DECK MTR RET         |
| 1                          | 920027 | HOSE ASSY, DECK MTR CD          |
| 1                          | 920028 | HOSE, COOLER RETURN             |
| 1                          | 920029 | HOSE ASSY, CYL MANIFOLD PRESS   |
| 1                          | 920030 | HOSE ASSY, CYL MANIFOLD RETURN  |
| 1                          | 920031 | HOSE ASSY, DECK MTR PRESS       |
| 1                          | 920032 | HOSE, IMPLEMENT SUCTION         |
| 2                          | 922038 | HOSE ASSY, HOPPER LIFT          |
| 4                          | 922052 | HOSE ASSY, DOOR LATCH           |
| 2                          | 922133 | Hose Assy, Deck Lift            |
| 2                          | 922136 | Hose Assy, Door Latch           |
| 1                          | 922138 | HOSE ASSY, FAN VALVE PRESSURE   |
| 1                          | 922139 | HOSE ASSY, FAN MTR PRESSURE     |
| 1                          | 922140 | HOSE ASSY, FAN MTR RETURN       |
| 1                          | 922141 | HOSE ASSY, DECK VALVE PRESS     |

# PTO DRIVE & PUMP ASSEMBLY

| 975432     |     | REV: G |                                                    |
|------------|-----|--------|----------------------------------------------------|
| Parts List |     |        |                                                    |
| ITEM       | QTY | PART # | DESCRIPTION                                        |
| 20         | 4   | 111223 | Bolt, M12-1.75 x 35, W/iz Flange, 8.8              |
| 21         | 4   | 111224 | Bolt, M12-1.75 x 25, W/iz Flange, 10.9             |
| 22         | 2   | 111225 | Bolt, M14-2.0 x 35, W/iz Flange, 8.8               |
| 28         | 1   | 120144 | ADAPTER, 6MJ-10MB                                  |
| 36         | 1   | 120254 | ADAPTER, 12MJ-12MB                                 |
| 38         | 2   | 120257 | ADAPTER, 12MJ-12MB90                               |
| 43         | 2   | 120545 | ADAPTER, 12BH-12MB 45°                             |
| 46         | 2   | 120677 | ADAPTER, 20BH-16MB45                               |
| 64         | 1   | 923016 | Pump, Triple Section Gear (1.55, 1.55, & 24 cu in) |
| 68         | 1   | 942272 | Gearbox, M7 Bima 1:4                               |
| 69         | 1   | 943060 | PTO ASSY, TV60HD CE MARK                           |
| 73         | 1   | 970860 | SUPPORT, TV60 GEARBOX                              |
| 74         | 1   | 970864 | SHIELD, PTO                                        |

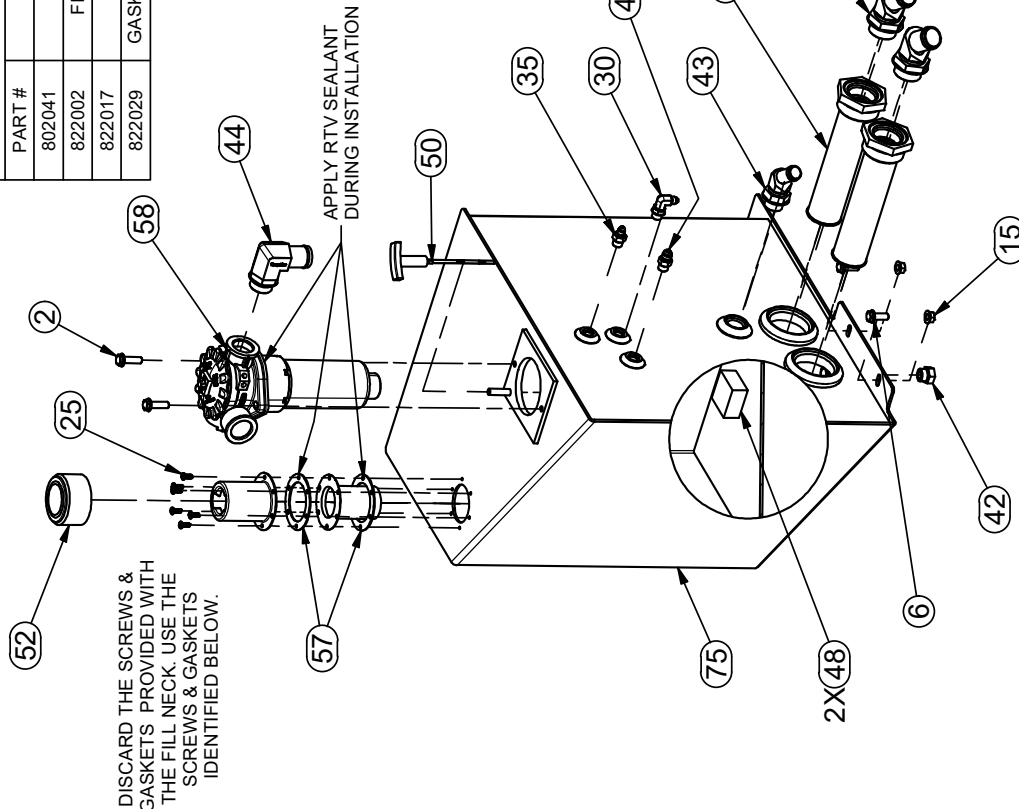


(SERVICE NOTE: PTO ASSY 945007  
USED ON S/N 19A14 & BELOW)



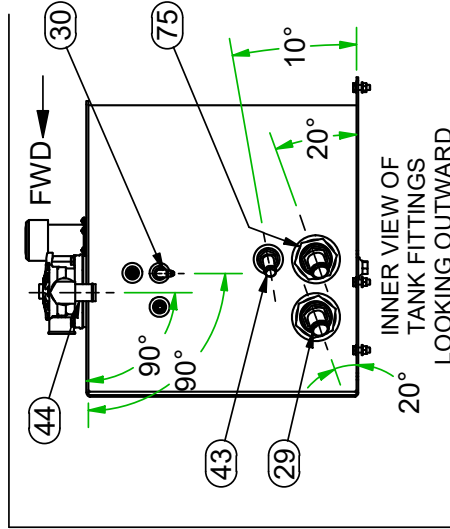
# HYDRAULIC RESERVOIR

| 723014 SERVICE PARTS |                           |
|----------------------|---------------------------|
| PART #               | DESCRIPTION               |
| 802041               | O-RING, CAP               |
| 822002               | FILTER REPLACEMENT        |
| 822017               | GUAGE, OIL FILTER         |
| 822029               | GASKET, RETURN OIL FILTER |



## Parts List

| ITEM | QTY | PART # | DESCRIPTION                           |
|------|-----|--------|---------------------------------------|
| 2    | 2   | 110161 | BOLT, 3/8-16 X 1.25, WIZ FLANGE       |
| 6    | 4   | 110440 | BOLT, 3/8-16 X 1, WIZ FLANGE          |
| 15   | 4   | 110645 | NUT, 3/8-16 WIZ FLANGE                |
| 25   | 6   | 112053 | SCREW, 10-32 X 1/2 MACH SEAL          |
| 29   | 2   | 120189 | ADAPTER, 20BH-20MB 45°                |
| 30   | 1   | 120220 | ADAPTER, 4MJ-6MB90                    |
| 35   | 2   | 120249 | ADAPTER, 4MJ-6MB                      |
| 41   | 9   | 120319 | ADAPTER, 6MJ-6MB                      |
| 42   | 1   | 120372 | PLUG, O-RING-8, EXTERNAL HEX          |
| 43   | 2   | 120545 | ADAPTER, 12BH-12MB 45°                |
| 44   | 2   | 120546 | ADAPTER, 20BH-16MB90                  |
| 48   | 2   | 312025 | MAGNET, 2"x2"x1" RECT 15LB            |
| 49   | 2   | 322012 | STRAINER, SUCTION, SAE-32/-20, 25 GPM |
| 50   | 1   | 322025 | DIP STICK - TV30, HYDRAULIC TANK      |
| 52   | 1   | 322073 | FILL NECK ASSY                        |
| 57   | 2   | 722076 | Seal, Buna Rubber, Pressurized Fill   |
| 58   | 1   | 723014 | FILTER ASSY                           |
| 75   | 1   | 975437 | TANK WELDMENT, TV60R HD HYD           |

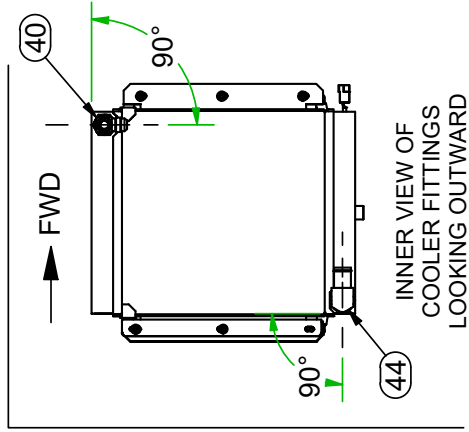
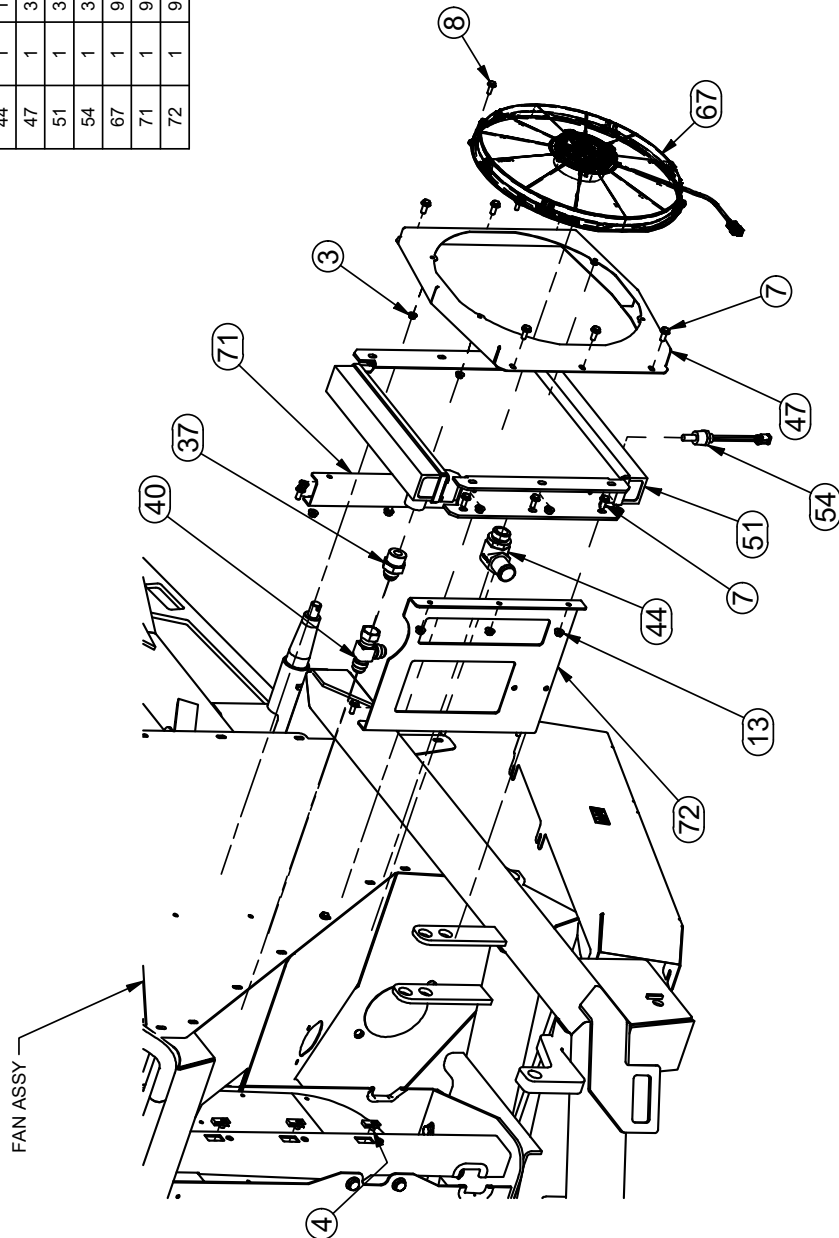


975432

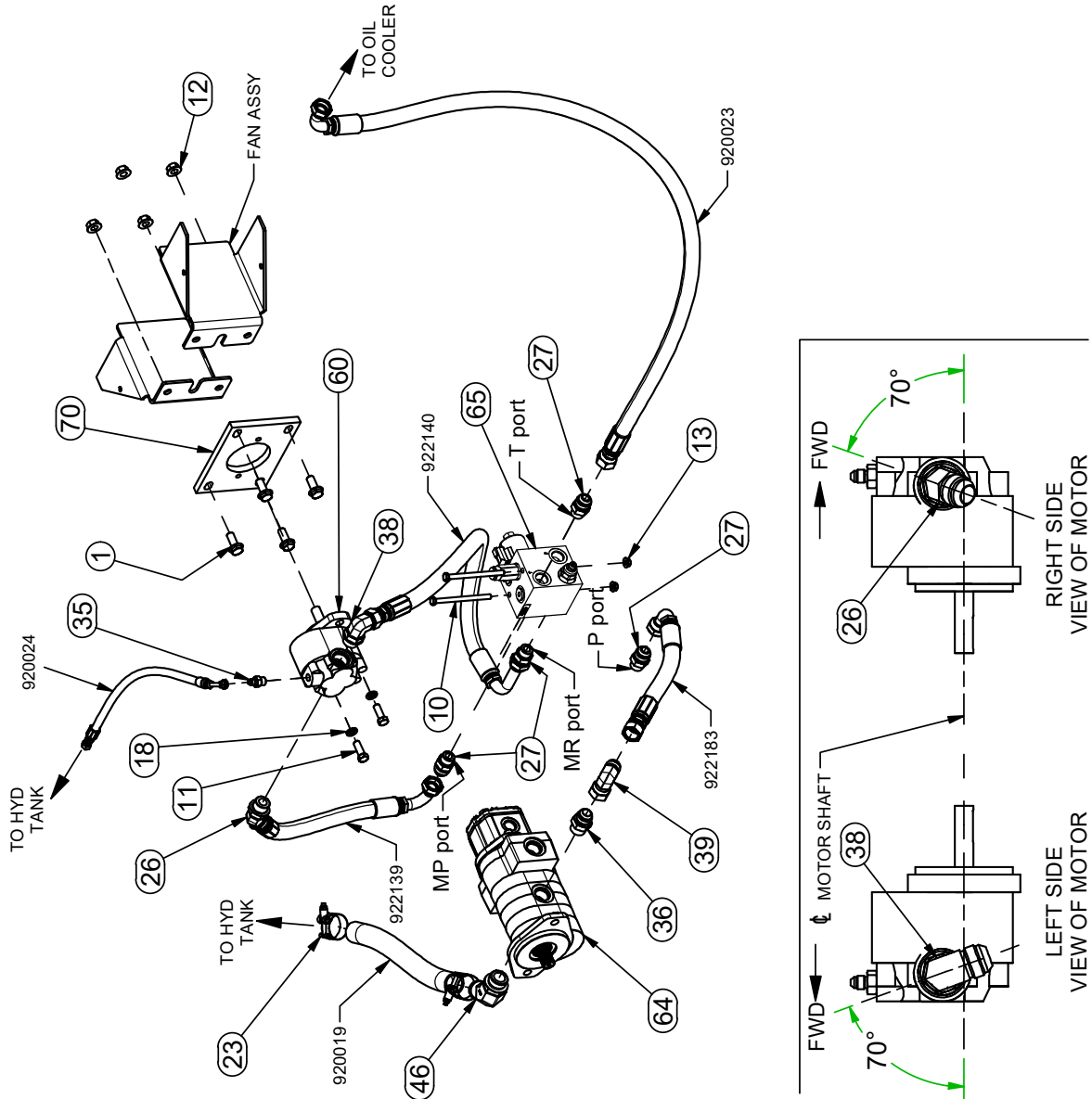
REV: G

# OIL COOLER ASSEMBLY

| 975432     |     | REV. G |                                       |
|------------|-----|--------|---------------------------------------|
| Parts List |     |        |                                       |
| ITEM       | QTY | PART # | DESCRIPTION                           |
| 3          | 4   | 110290 | NUT, 1/4-20 WIZ FLANGE                |
| 4          | 3   | 110319 | NUT, 5/16-18 U-TYPE .75L              |
| 7          | 18  | 110444 | BOLT, 5/16-18 X 0.75, WIZ FLANGE      |
| 8          | 4   | 110468 | BOLT, 1/4-20 X 0.75, WIZ FLANGE       |
| 13         | 14  | 110606 | NUT, 5/16-18 WIZ FLANGE               |
| 37         | 1   | 120256 | ADAPTER, 12MJ-16MB                    |
| 40         | 1   | 120268 | ADAPTER, 12MJ-12FJX-12MJ              |
| 44         | 1   | 120546 | ADAPTER, 20BH-16MB90                  |
| 47         | 1   | 311493 | SHROUD - COOLER FAN                   |
| 51         | 1   | 322028 | COOLER - HYDRAULIC, TV/30             |
| 54         | 1   | 335001 | SWITCH ASSY, 140 F TEMP, NC RISING    |
| 67         | 1   | 932072 | FAN - 16", 12V, 12A, HYDRAULIC COOLER |
| 71         | 1   | 970839 | SUPPORT, REAR COOLER MOUNT            |
| 72         | 1   | 970840 | SUPPORT, FRONT COOLER MOUNT           |

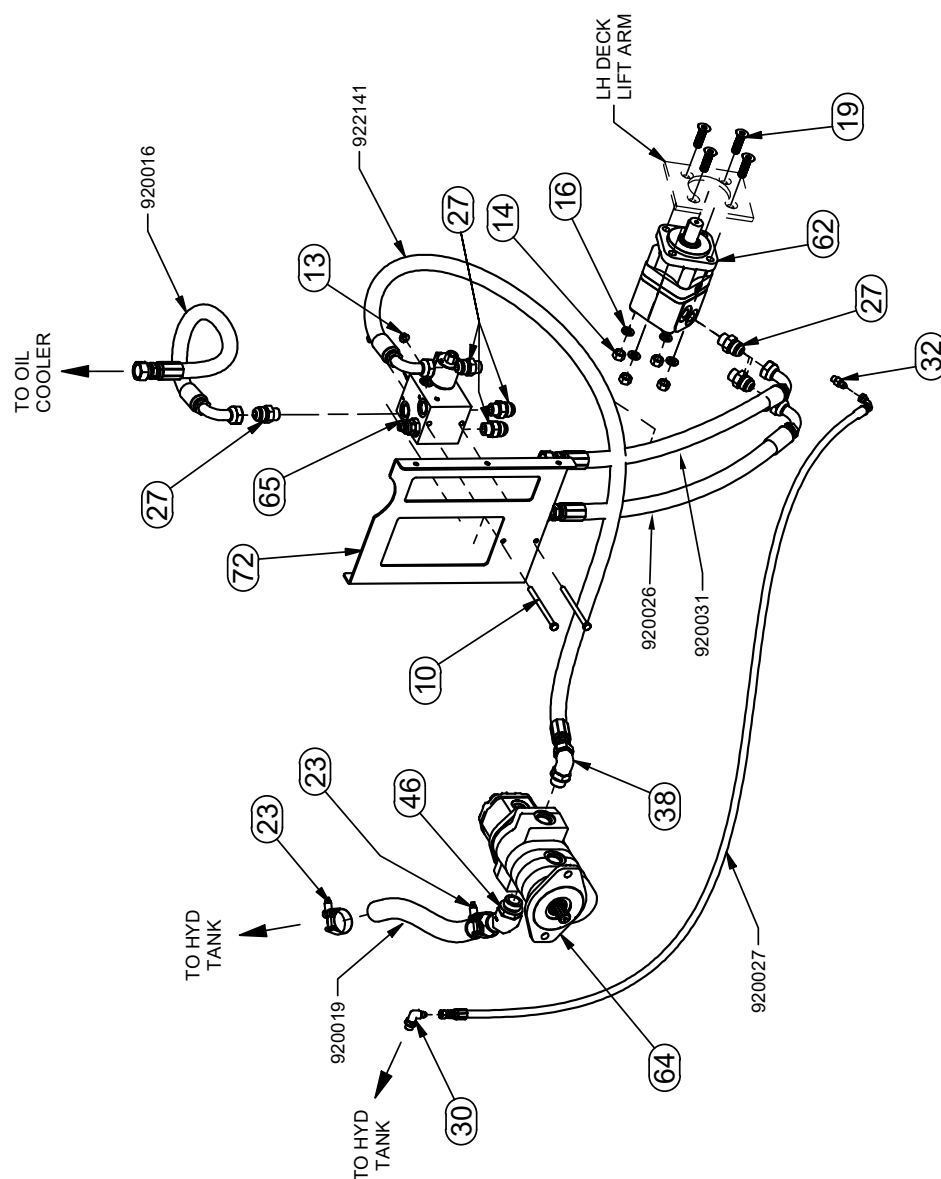


# FAN DRIVE HYDRAULICS



| Parts List |     |        |                                                     |
|------------|-----|--------|-----------------------------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                                         |
| 1          | 4   | 110001 | BOLT, 1/2-13 X 1.25, WIZ FLANGE                     |
| 10         | 4   | 110529 | BOLT, 5/16-18 X 4.5                                 |
| 11         | 2   | 110539 | BOLT, 7/16-14 X 1.25                                |
| 12         | 4   | 110588 | NUT, 1/2-13 WIZ FLANGE                              |
| 13         | 18  | 110606 | NUT, 5/16-18 WIZ FLANGE                             |
| 18         | 2   | 110671 | WASHER, 7/16" LOCK                                  |
| 23         | 6   | 112007 | CLAMP, 1.75", T-BOLT                                |
| 26         | 1   | 120031 | ADAPTER, 12MJ-12MB45                                |
| 27         | 10  | 120143 | ADAPTER, 12MJ-10MB                                  |
| 35         | 2   | 120249 | ADAPTER, 4MJ-6MB                                    |
| 36         | 1   | 120254 | ADAPTER, 12MJ-12MB                                  |
| 38         | 2   | 120257 | ADAPTER, 12MJ-12MB90                                |
| 39         | 1   | 120267 | ADAPTER, 12MJ-12FX90                                |
| 46         | 2   | 120677 | ADAPTER, 20BH-16MB45                                |
| 60         | 1   | 923004 | MOTOR, 1.76 Ci, FAN DRIVE                           |
| 64         | 1   | 923016 | Pump, Triple Section Gear (1.55, 1.55, & .24 cu in) |
| 65         | 2   | 923017 | VALVE, TV60HD CONTROL                               |
| 70         | 1   | 970291 | ADAPTER PLATE                                       |

# DECK DRIVE HYDRAULICS

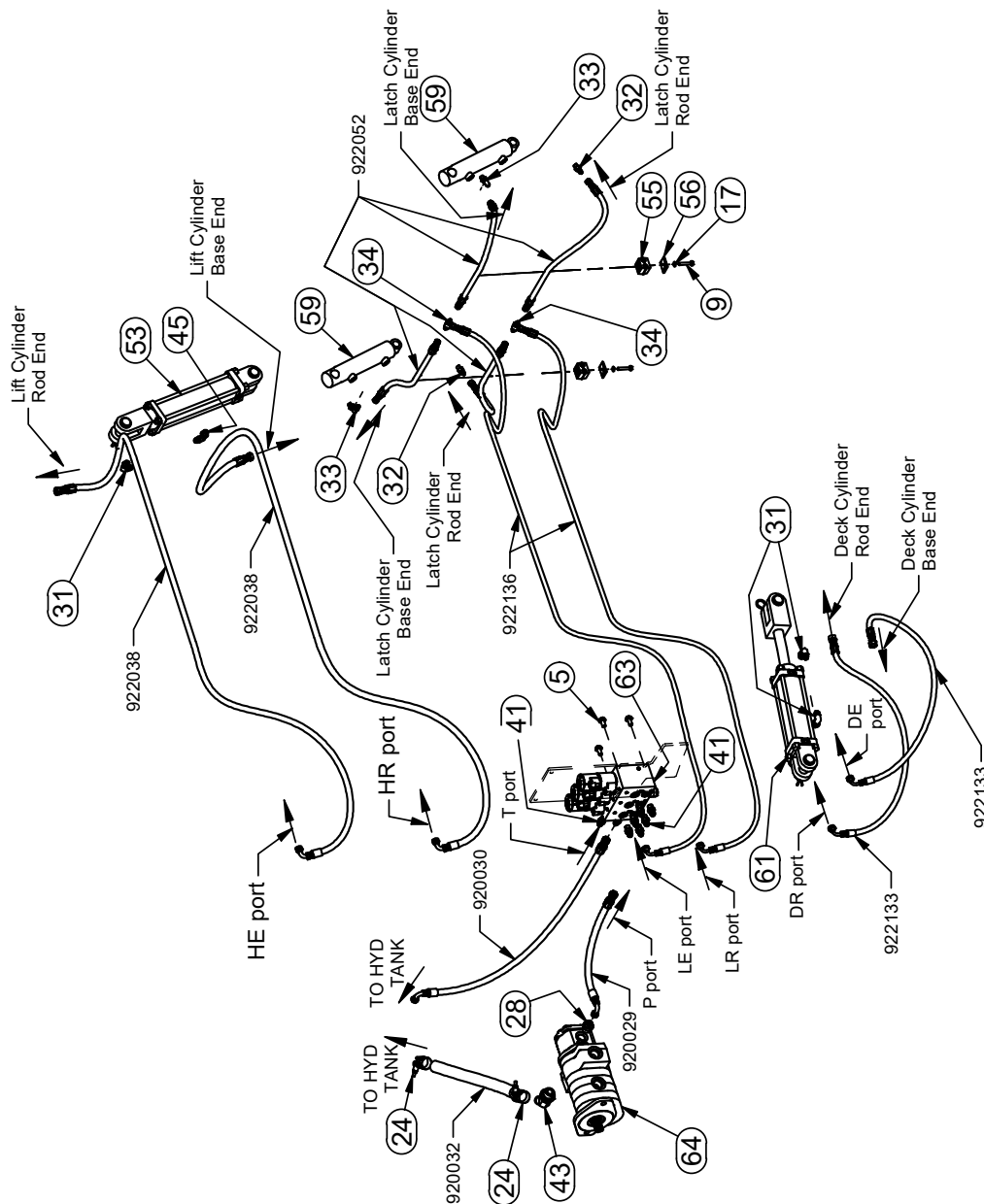


## Parts List

| ITEM | QTY | PART # | DESCRIPTION                                        |
|------|-----|--------|----------------------------------------------------|
| 10   | 4   | 110529 | BOLT, 5/16-18 X 4.5                                |
| 13   | 18  | 110606 | NUT, 5/16-18 W/IZ FLANGE                           |
| 14   | 4   | 110610 | NUT, 1/2-13                                        |
| 16   | 4   | 110686 | WASHER, 1/2" LOCK                                  |
| 19   | 4   | 111045 | Bolt, 1/2-13 x 1.75 FHCS                           |
| 23   | 6   | 112007 | CLAMP, 1.75", T-BOL T                              |
| 27   | 10  | 120143 | ADAPTER, 12MJ-10MB                                 |
| 30   | 1   | 120220 | ADAPTER, 4MJ-6MB90                                 |
| 32   | 3   | 120233 | ADAPTER, 4MJ-4MB                                   |
| 38   | 2   | 120257 | ADAPTER, 12MJ-12MB90                               |
| 46   | 2   | 120677 | ADAPTER, 20BH-16MB45                               |
| 62   | 1   | 923014 | MOTOR, 4.9 CID                                     |
| 64   | 1   | 923016 | Pump, Triple Section Gear (1.55, 1.55 & .24 cu in) |
| 65   | 2   | 923017 | VAI VE TV60H/D CONTROL                             |

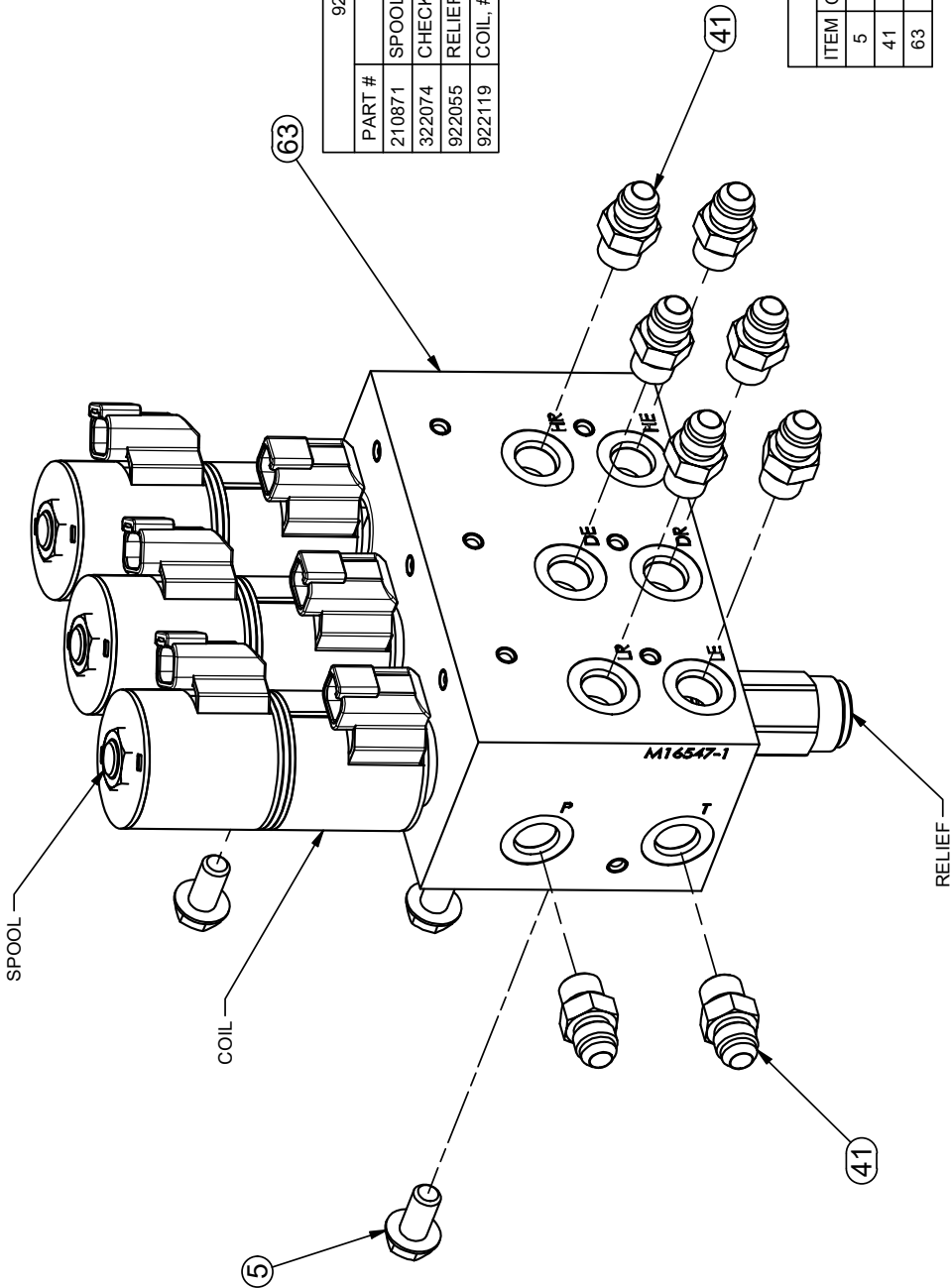
# IMPLEMENT DRIVE HYDRAULICS

975432 REV: G



| Parts List |     |        |                                                  |
|------------|-----|--------|--------------------------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                                      |
|            | 3   | 110457 | BOLT, 3/8-16 X 0.75, W/IZ FLANGE                 |
|            | 2   | 110474 | BOLT, 1/4-20 X 1-1/2                             |
| 17         | 2   | 110667 | WASHER, 1/4" LOCK                                |
| 24         | 2   | 112008 | CLAMP, 1.25", T-BOLT                             |
| 28         | 1   | 120144 | ADAPTER, 6MJ-10MB                                |
| 31         | 3   | 120222 | ADAPTER, 6MJ-6MB90                               |
| 32         | 3   | 120233 | ADAPTER, 4MJ-4MB                                 |
| 33         | 2   | 120235 | ADAPTER, 4MJ-4MB90                               |
| 34         | 2   | 120241 | ADAPTER, 4MJ-4MJ                                 |
| 41         | 9   | 120319 | ADAPTER, 6MJ-6MB                                 |
| 43         | 2   | 120545 | ADAPTER, 12BH-12MB 45°                           |
| 45         | 1   | 120551 | ADAPTER, 6MJ-6MB90 R.062                         |
| 53         | 1   | 323019 | CYLINDER - 2 X 8, SAE-6                          |
| 55         | 2   | 522104 | DOUBLE HOSE CLAMP                                |
| 56         | 2   | 522105 | DOUBLE COVERPLATE                                |
| 59         | 2   | 922021 | HYDRAULIC CYLINDER                               |
| 61         | 1   | 923011 | Cylinder, 2 X 6, -6 SAE Cross                    |
| 63         | 1   | 923015 | MANIFOLD, TV60R HD CYLINDER                      |
| 64         | 1   | 923016 | Pump, Triple Section Gear (1.55, 1.55&.24 cu in) |

# IMPLEMENT VALVE ASSEMBLY

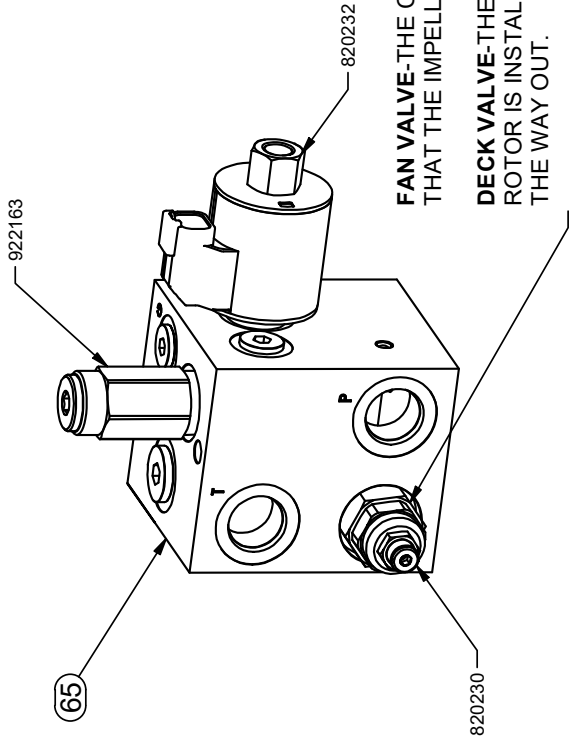


| 923015 Valve - Service Parts |                                            |
|------------------------------|--------------------------------------------|
| PART #                       | DESCRIPTION                                |
| 210871                       | SPOOL, #10, 4W3P TANDEM CENTER             |
| 322074                       | CHECK, #8, PILOT TO OPEN, 25 psi           |
| 922055                       | RELIEF, #8, DIRECT ACTING POPPET, 2000 psi |
| 922119                       | COIL, #10, DEUTSCH DT04-2P                 |

| Parts List |     |                                        |
|------------|-----|----------------------------------------|
| ITEM       | QTY | PART # DESCRIPTION                     |
| 5          | 3   | 110437 BOLT, 3/8-16 X 0.75, WIZ FLANGE |
| 41         | 9   | 120319 ADAPTER, 6MJ-6MB                |
| 63         | 1   | 923015 MANIFOLD, TV60R HD CYLINDER     |

# FAN & DECK VALVE

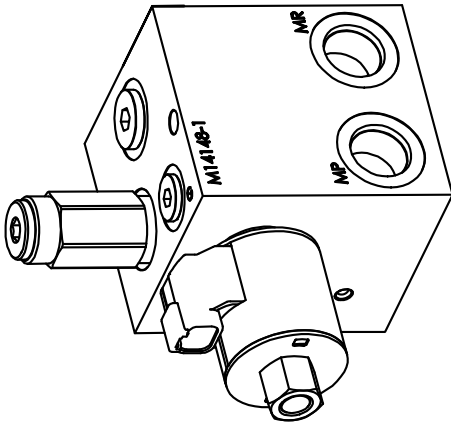
| 923017 Valve - Service Parts |                                      |
|------------------------------|--------------------------------------|
| PART #                       | DESCRIPTION                          |
| 522163                       | COIL, #10, HYDRAFORCE                |
| 820230                       | VALVE, COUNTER BALANCE               |
| 820232                       | VALVE, SPOOL                         |
| 922130                       | VALVE, RELIEF DIRECT ACTING 2900 psi |



**FAN VALVE**-THE COUNTER BALANCE VALVE WILL INITIALLY BE SET SO THAT THE IMPELLER FAN HAS APPROXIMATELY A 3-5 SECOND SPINDOWN.

**DECK VALVE**-THE DECK VALVE WILL NEED TO BE ADJUSTED AFTER THE ROTOR IS INSTALLED. INITIALLY, THE COUNTER BALANCE IS ADJUSTED ALL THE WAY OUT.

**ADJUSTING THE COUNTER BALANCE VALVE**-THE SPINDOWN FOR THE IMPELLER FAN AND THE DECK ROTOR SHOULD BOTH BE BETWEEN 3-5 SECONDS. FOR ADJUSTMENT, LOOSEN THE JAM NUT AND THEN TURN THE SET SCREW ABOUT A 1/4 TURN. FOR A SLOWER SPINDOWN, LOOSEN THE SET SCREW. FOR A QUICKER SPINDOWN, TIGHTEN THE SET SCREW. REPEAT UNTIL THE SPINDOWN IS BETWEEN 3-5 SECONDS, THEN TIGHTEN JAM NUT.



MOTOR SIDE  
PORT VIEW

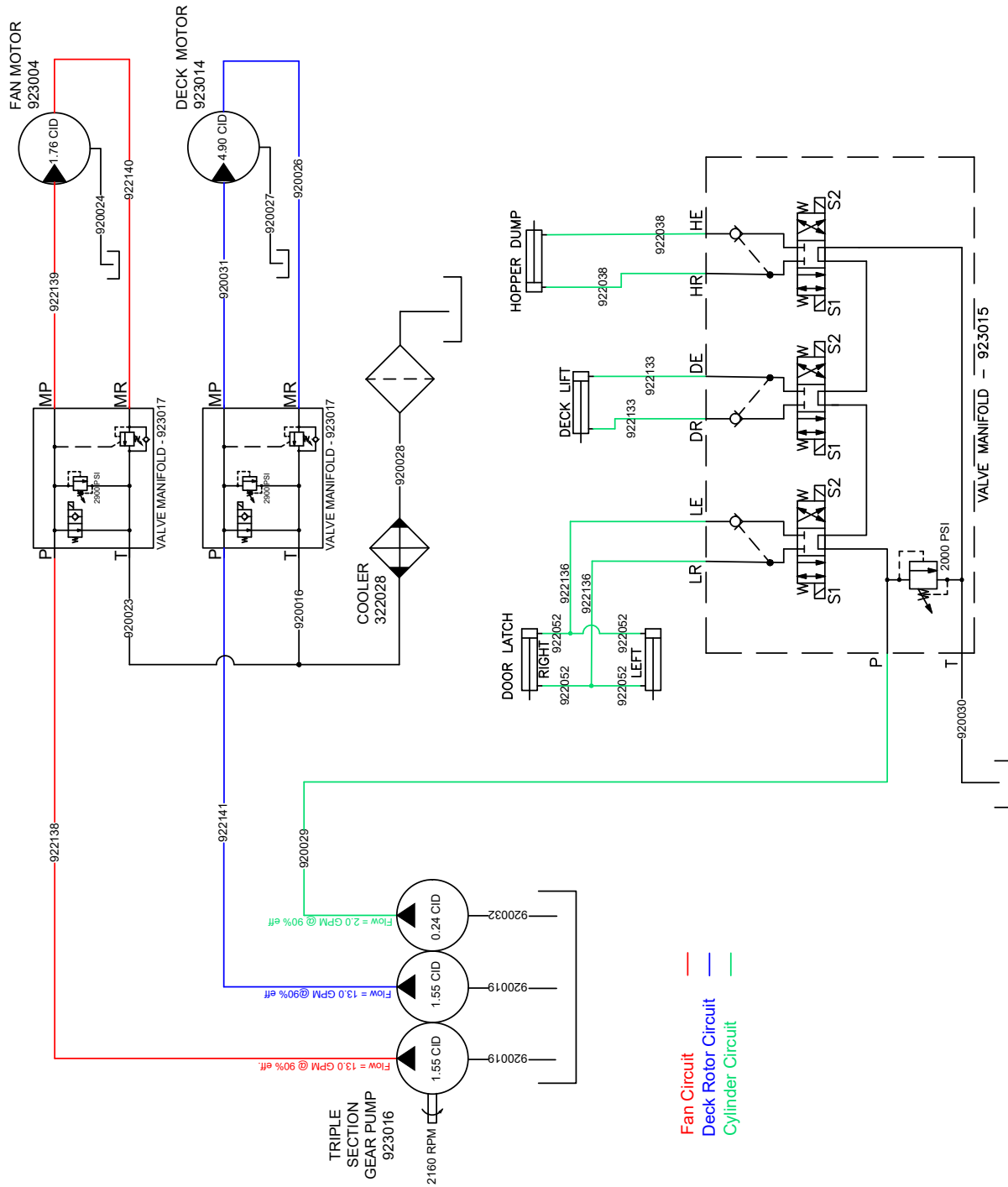
| Parts List |     |                              |
|------------|-----|------------------------------|
| ITEM       | QTY | DESCRIPTION                  |
| 65         | 2   | 923017 VALVE, TV60HD CONTROL |

975432

REV: G

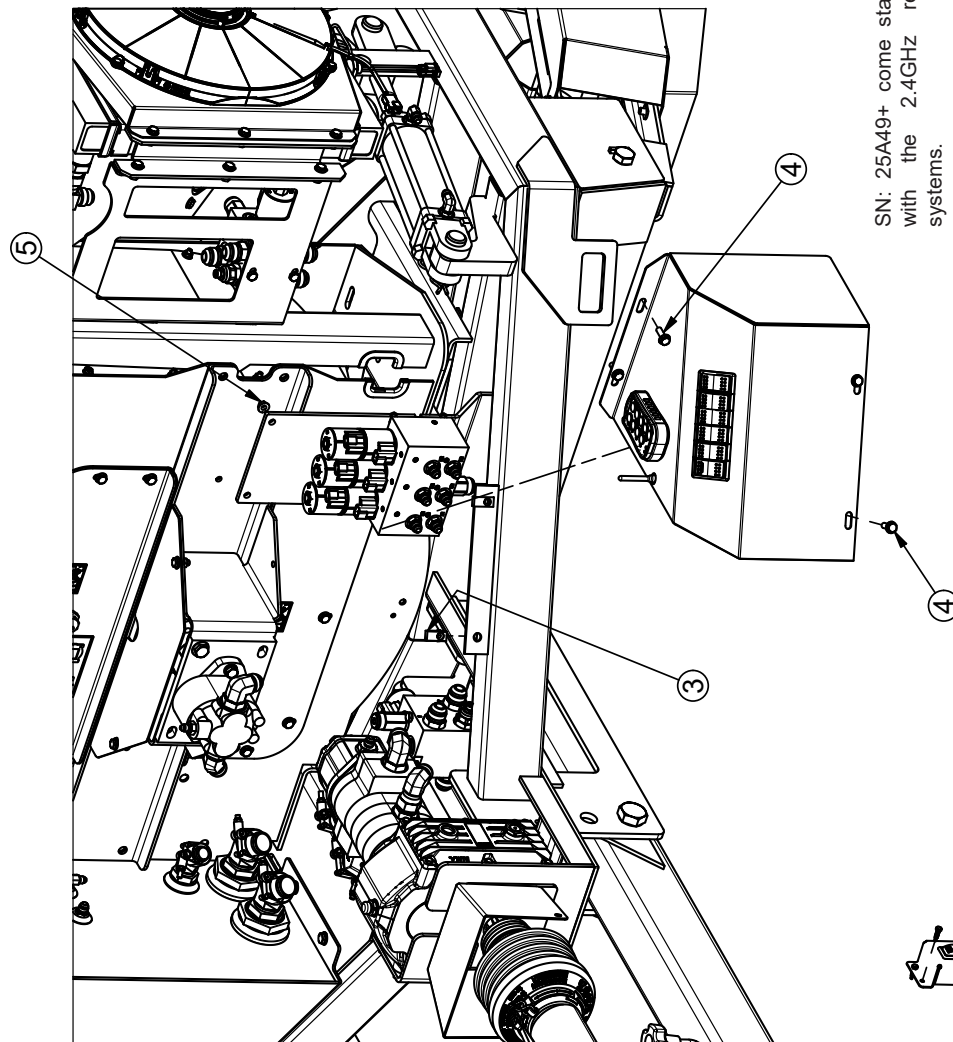
# TV60HD HYDRAULIC SCHEMATIC

## S/N: 22A11 & ABOVE



05/28/25

# ELECTRONICS INSTALLATION



SN: 25A49+ come standard with the 2.4GHz remote systems.

NOTE: New style remote items are NOT compatible with Old style remote components.

18 Install on pull vehicle

975192 REV: B

## Parts List

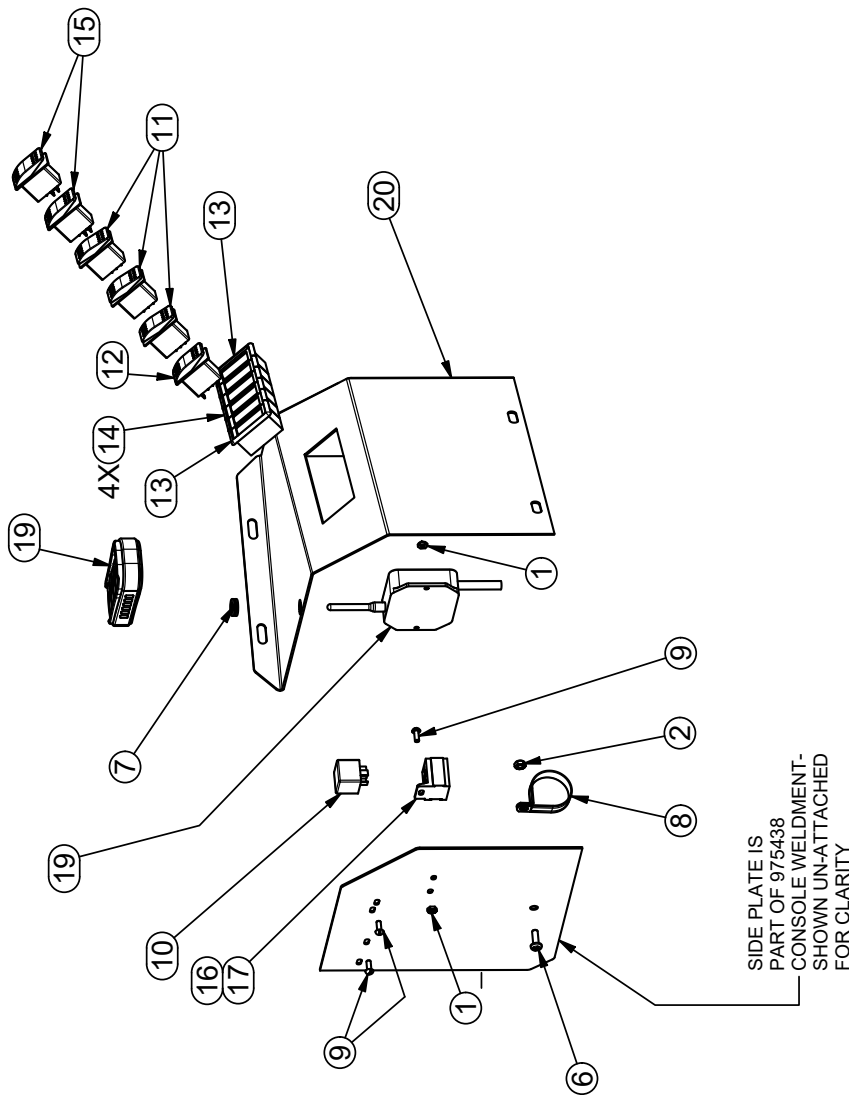
| ITEM | QTY | PART # | DESCRIPTION                          |
|------|-----|--------|--------------------------------------|
| 1    | 3   | 110119 | Nut, 10-24 Lock                      |
| 2    | 1   | 110174 | Nut, 1/4-20, Unitorque Lock          |
| 3    | 2   | 110319 | Nut, 5/16-18 U-Type .75l             |
| 4    | 4   | 110459 | Bolt, 5/16-18 X 1, Wiz Flange        |
| 5    | 2   | 110606 | Nut, 5/16-18 Wiz Flange              |
| 6    | 1   | 110815 | Screw, 1/4-20 X 3/4 SS Phillips Head |
| 7    | 1   | 110967 | Grommet, Rubber 7/16 Id X 3/4 Od     |
| 8    | 1   | 130012 | Clamp, Adel Ac28 .265 Hole           |
| 9    | 3   | 510960 | Screw, 10-24 X 0.5, Rhms             |
| 10   | 1   | 530111 | Relay                                |
| 11   | 3   | 832004 | Switch, Paddle, Carling (29261)      |
| 12   | 1   | 832005 | Switch, Paddle, Carling (29253)      |
| 13   | 2   | 832007 | Switch Mount, End                    |
| 14   | 4   | 832008 | Switch Mount, Middle                 |
| 15   | 2   | 832018 | Switch, Spdt, On-On                  |
| 16   | 1   | 932060 | Harness, Vehicle/Remote Tv60h        |
| 17   | 1   | 932078 | Harness, Tv60hdi Receiver            |
| 18   | 1   | 935017 | Kit, Tv40/60h Tractor Harness        |
| 19   | 1   | 935025 | Transmitter/Receiver, 2.4 Ghz, Tv60  |
| 20   | 1   | 975438 | Weldment, Operators Console          |

| 935016 Kar-Tech Upgrade Kit (Field Install) |        |                               |
|---------------------------------------------|--------|-------------------------------|
| QTY                                         | PART # | DESCRIPTION                   |
| 7                                           | 132110 | Flyback Diode Assembly        |
| 1                                           | 333006 | Transmitter/Receiver, 2.4 Ghz |
| 1                                           | 902110 | Decal, Switches               |
| 1                                           | 905075 | Bolt Kit, Elect Assy          |
| 1                                           | 932078 | Harness, Receiver             |
| 1                                           | 932060 | Harness, Vehicle/Remote       |
| 1                                           | 932063 | Harness, Tractor              |
| 1                                           | 932064 | Harness, Kar-Tech Update      |

| NEW 2.4 GHz 935025 Kar-Tech Transmitter / Receiver |        |                      |
|----------------------------------------------------|--------|----------------------|
| QTY                                                | PART # | DESCRIPTION          |
| 1                                                  | 332075 | Receiver, 2.4 GHz    |
| 1                                                  | 935029 | Transmitter, 2.4 GHz |
| 1                                                  | 902249 | Decal, 2.4 GHz       |

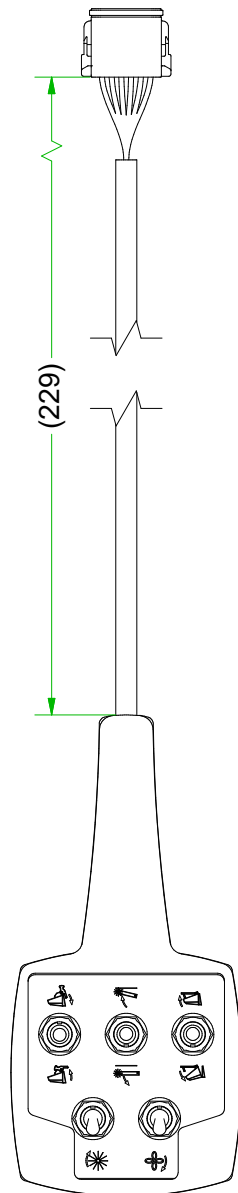
| OLD STYLE 933003 Kar-Tech Transmitter / Receiver |        |             |
|--------------------------------------------------|--------|-------------|
| QTY                                              | PART # | DESCRIPTION |
| 1                                                | 932056 | Receiver    |
| 1                                                | 233004 | Transmitter |
| 1                                                | 902158 | Decal       |

# CONTROL PANEL ASSEMBLY



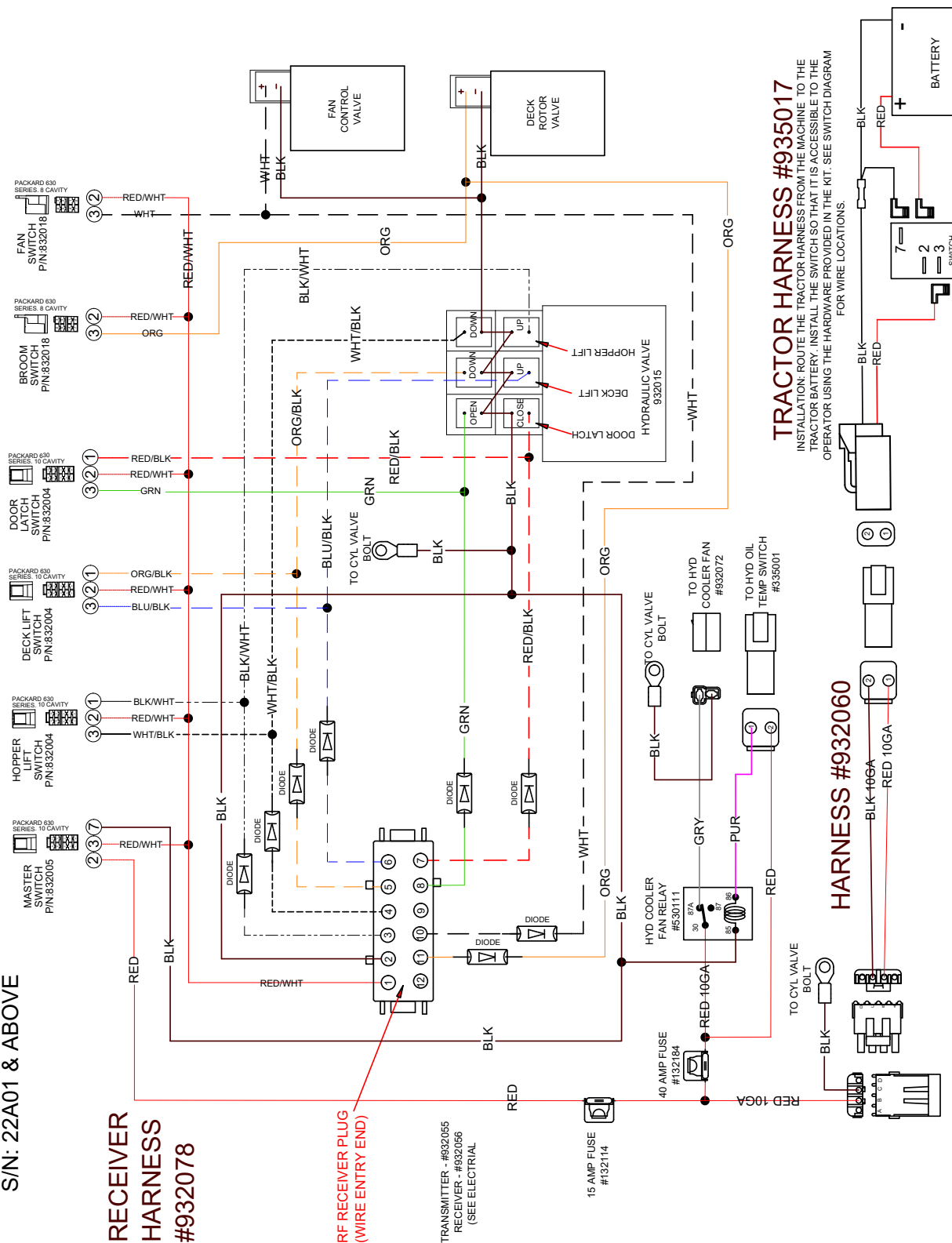
SIDE PLATE IS  
PART OF 975438  
CONSOLE WELDMENT-  
SHOWN UN-ATTACHED  
FOR CLARITY

| Parts List |     |        |                                      |
|------------|-----|--------|--------------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                          |
| 1          | 3   | 110119 | Nut, 10-24 Lock                      |
| 2          | 1   | 110174 | Nut, 1/4-20, Unitorque Lock          |
| 3          | 2   | 110319 | Nut, 5/16-18 U-Type .75l             |
| 4          | 4   | 110459 | Bolt, 5/16-18 X 1, Wiz Flange        |
| 5          | 2   | 110606 | Nut, 5/16-18 Wiz Flange              |
| 6          | 1   | 110815 | Screw, 1/4-20 X 3/4 SS Phillips Head |
| 7          | 1   | 110967 | Grommet, Rubber 7/16 Id X 3/4 Od     |
| 8          | 1   | 130012 | Clamp, Adel Ac28 .265 Hole           |
| 9          | 3   | 510960 | Screw, 10-24 X 0.5, Rhms             |
| 10         | 1   | 530111 | Relay                                |
| 11         | 3   | 832004 | Switch, Paddle, Carling (29261)      |
| 12         | 1   | 832005 | Switch, Paddle, Carling (29253)      |
| 13         | 2   | 832007 | Switch Mount, End                    |
| 14         | 4   | 832008 | Switch Mount, Middle                 |
| 15         | 2   | 832018 | Switch, Spdt, On-On                  |
| 16         | 1   | 932060 | Harness, Vehicle/Remote Tv60h        |
| 17         | 1   | 932078 | Harness, Tv60hd Receiver             |
| 18         | 1   | 935017 | Kit, Tv40/60h Tractor Harness        |
| 19         | 1   | 935025 | Transmitter/Receiver, 2.4 Ghz, Tv60  |
| 20         | 1   | 975438 | Weldment, Operators Console          |



| Optional Corded Remote |        |                        |
|------------------------|--------|------------------------|
| QTY                    | PART # | DESCRIPTION            |
| 1                      | 930011 | Corded Remote Assembly |

S/N: 22A01 & ABOVE

RECEIVER  
HARNESS  
#932078

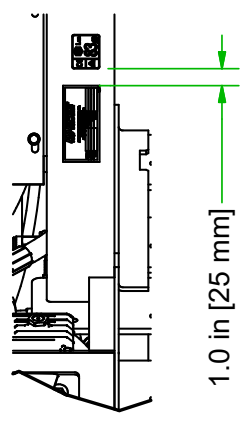
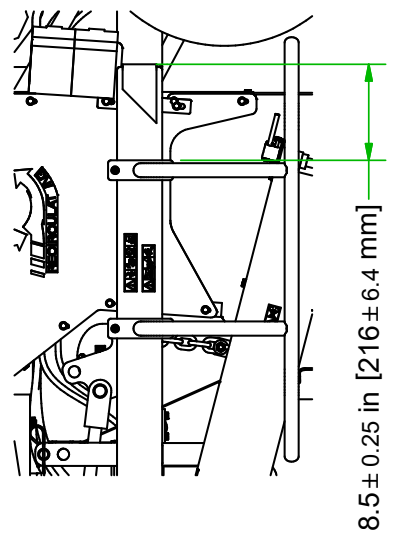
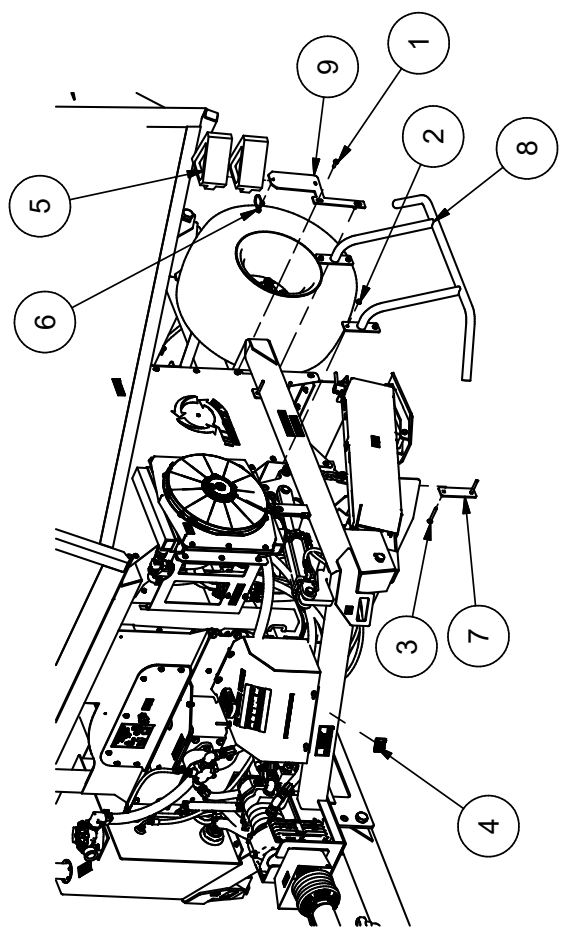
INSTALLATION: ROUTE THE TRACTOR HARNESS FROM THE MACHINE TO THE TRACTOR BATTERY. INSTALL THE SWITCH SO THAT IT IS ACCESSIBLE TO THE OPERATOR USING THE HARDWARE PROVIDED IN THE KIT. SEE SWITCH DIAGRAM FOR WIRE LOCATIONS.

HARNES #932060

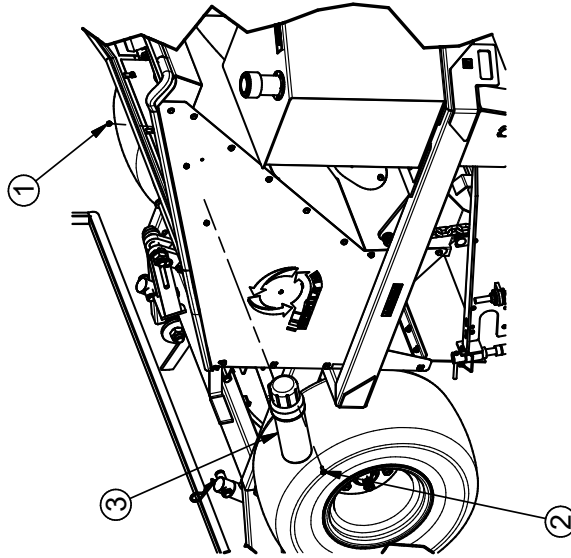
# EXPORT KIT

905207 REV: NC

| Parts List |     |        |                                  |
|------------|-----|--------|----------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                      |
| 1          | 2   | 110459 | BOLT, 5/16-18 X 1, WIZ FLANGE    |
| 2          | 8   | 110606 | NUT, 5/16-18 WIZ FLANGE          |
| 3          | 8   | 112090 | Bolt, 5/16-18 X 2.75 in Carriage |
| 4          | 1   | 302206 | DECAL, SOUND LEVEL TV60RE        |
| 5          | 2   | 302207 | WHEEL CHOCK, SOLID RUBBER        |
| 6          | 1   | 510962 | PIN, WIRE LOCK                   |
| 7          | 4   | 911272 | SIDE GUARD BOLT PLATE            |
| 8          | 2   | 915856 | SIDE GUARD W/A                   |
| 9          | 1   | 970937 | CHOCK HANGER                     |



# TV60RHD FINAL INSTALLATION



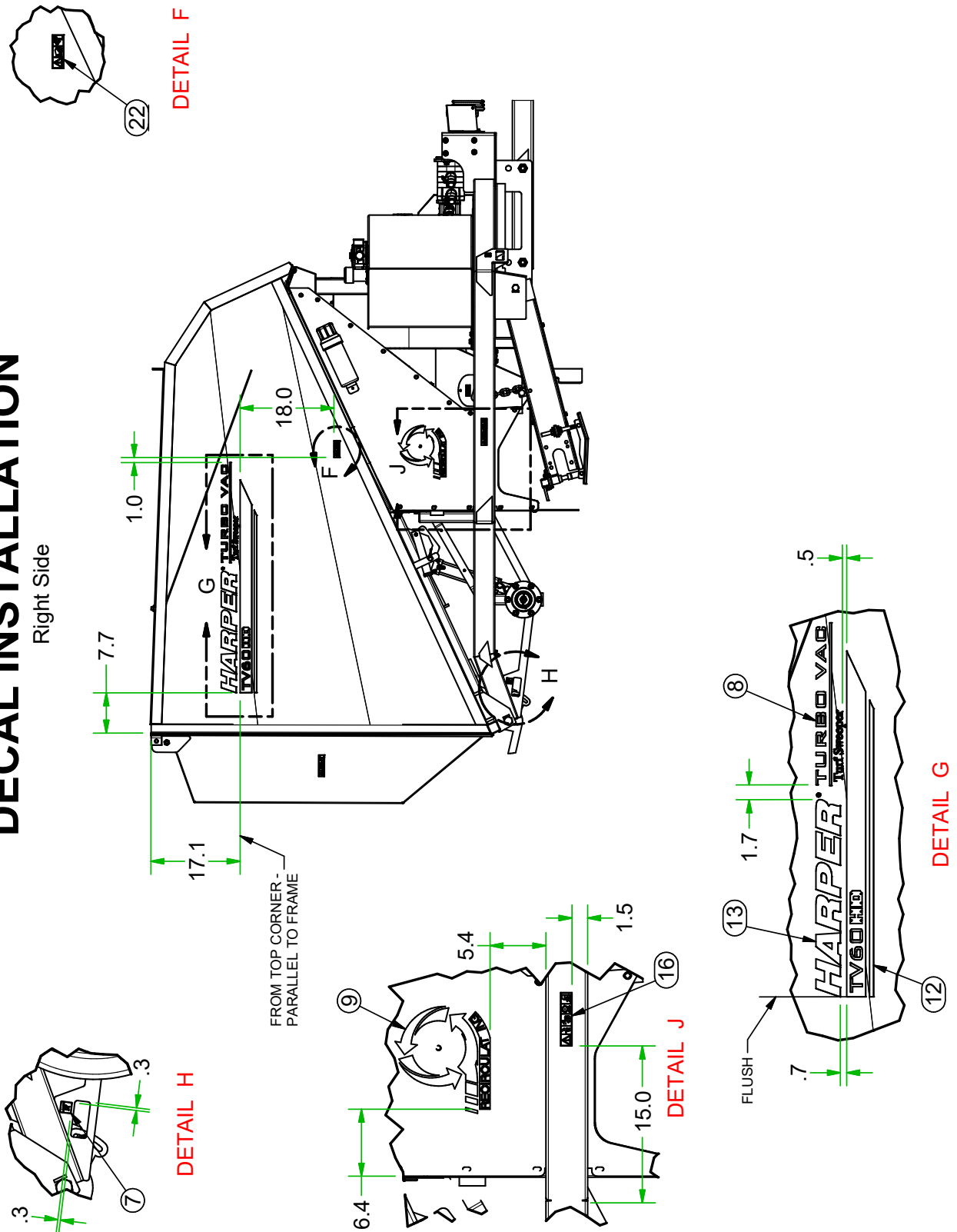
| Parts List |     |                                                |
|------------|-----|------------------------------------------------|
| ITEM       | QTY | PART # DESCRIPTION                             |
| 1          | 3   | 110290 NUT, 1/4-20 WIZ FLANGE                  |
| 2          | 3   | 110468 BOLT, 1/4-20 X 0.75, WIZ FLANGE         |
| 3          | 1   | 152005 HOLDER, MANUAL                          |
| 4          | 1   | 202134 DECAL, PROP 65, SHORT FORM              |
| 7          | 4   | 802067 Decal, Tie Down Point                   |
| 8          | 2   | 902084 Decal, Turbo Vac, Turf Sweeper          |
| 9          | 2   | 902104 DECAL, RECIRCULATING                    |
| 10         | 1   | 902149 DECAL, READ OPERATORS MANUAL            |
| 11         | 1   | 902193 DECAL, STRIPE LEFT TV60R HD             |
| 12         | 1   | 902194 DECAL, STRIPE RIGHT, TV60R HD           |
| 13         | 3   | 902195 DECAL, HARPER 2.87 X 24.00, BLACK GLOSS |
| 14         | 1   | 902202 DECAL, SWITCHES, TV60R HD               |
| 15         | 1   | 902204 DECAL, ISO 46 HYDRAULIC OIL             |
| 16         | 2   | 902227 Decal, Entanglement                     |
| 17         | 2   | 902228 Decal, Do Not Remove Shield             |
| 18         | 3   | 902232 Decal, High Pressure Injection          |
| 19         | 1   | 902234 Decal, No Lift                          |
| 20         | 1   | 902235 Decal, Safe Distance, No Slope          |
| 21         | 1   | 902239 Decal, Hot Surface                      |
| 22         | 2   | 902245 Decal, Hopper Safety Lock               |
| 23         | 1   | 902247 Decal, Overhead Clearance               |

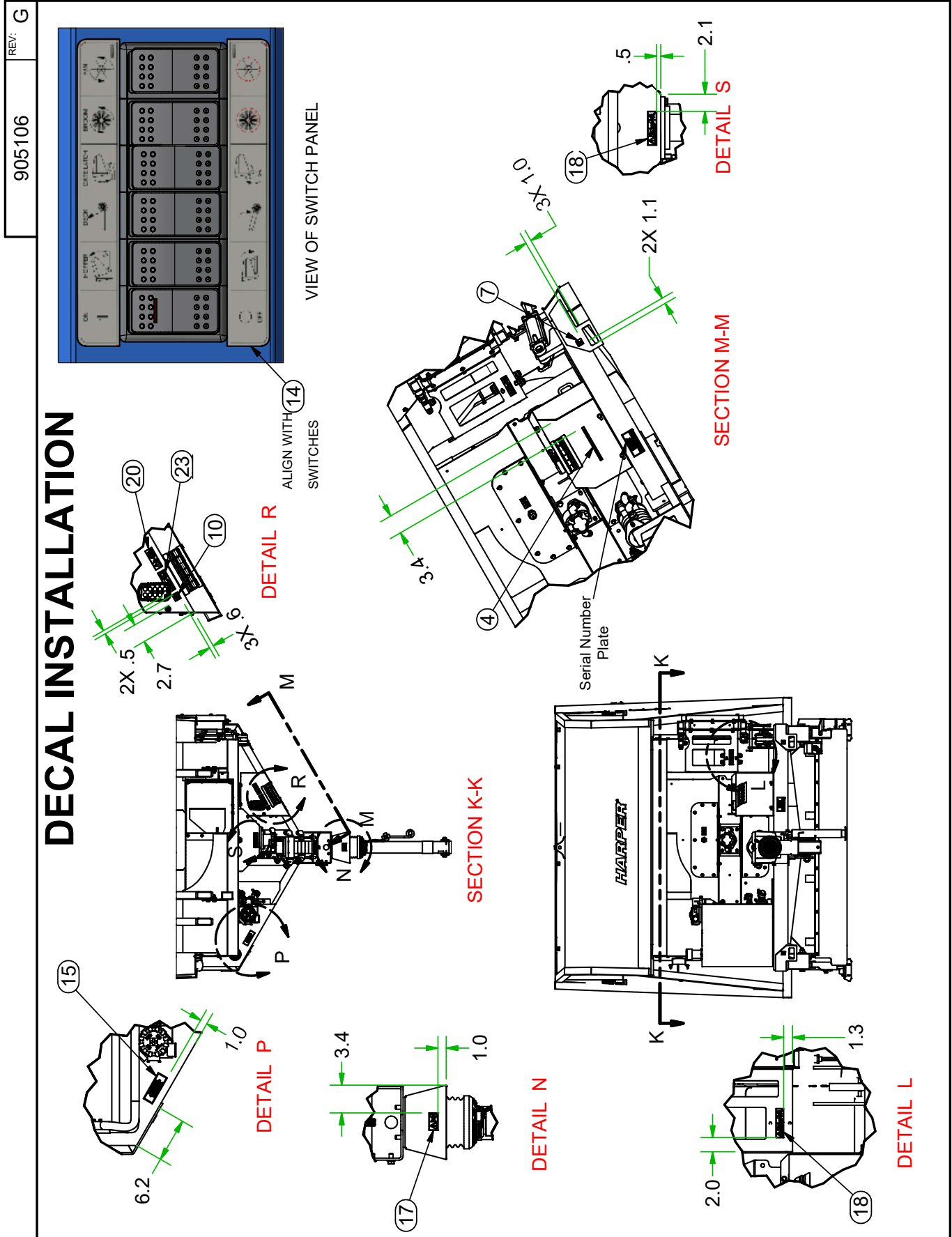
## Left Side



# DECAL INSTALLATION

Right Side

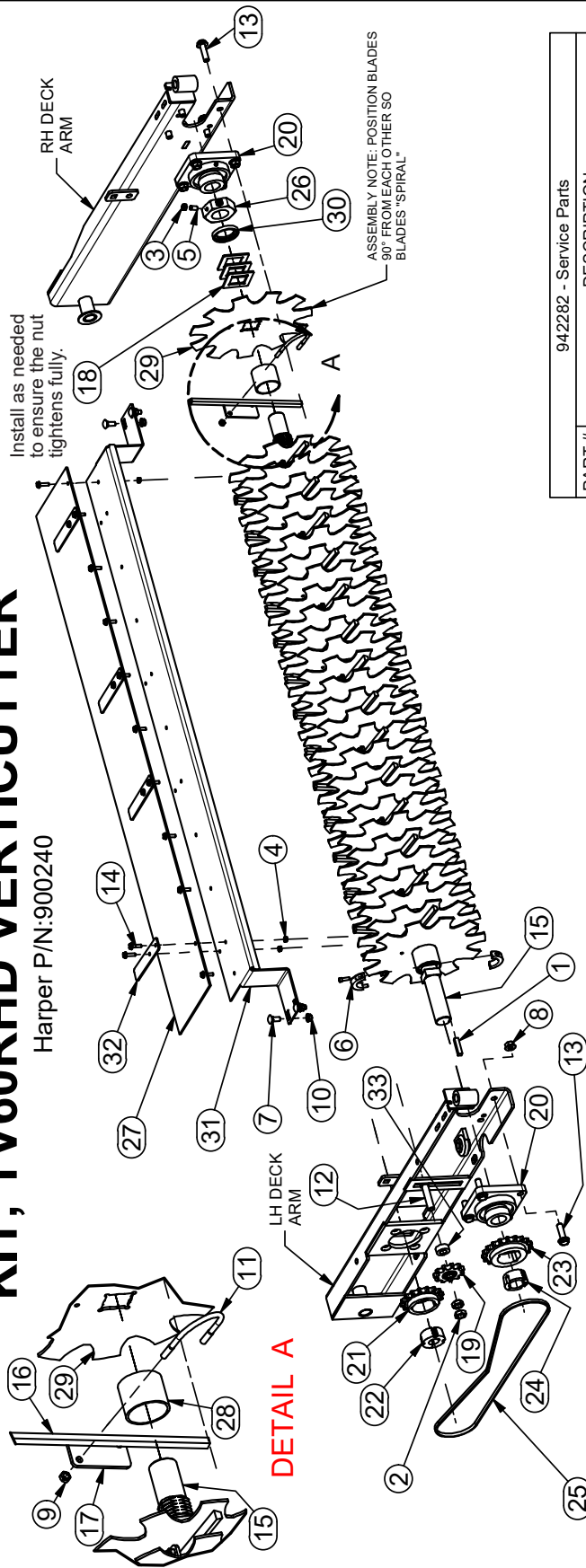




| Parts List |     |        | Parts List                         |      |     |        | Parts List                             |      |     |        | 900240                               | REV: B |
|------------|-----|--------|------------------------------------|------|-----|--------|----------------------------------------|------|-----|--------|--------------------------------------|--------|
| ITEM       | QTY | PART # | DESCRIPTION                        | ITEM | QTY | PART # | DESCRIPTION                            | ITEM | QTY | PART # | DESCRIPTION                          |        |
| 1          | 1   | 100567 | KEY, 3/8 X 3/8 X 1.75 in           | 12   | 1   | 110895 | Bolt, 5/8-11 X 3 in Carriage           | 23   | 1   | 942277 | Sprocket, Roller Chain 60BTB19H-1610 |        |
| 2          | 2   | 110039 | NUT, 5/8-11 JAM                    | 13   | 8   | 111222 | BOLT, 1/2-13 X 1.75, WIZ FLANGE        | 24   | 1   | 942278 | Bushing, Taper 1610 1.5" Bore        |        |
| 2          | 2   | 110107 | NUT, 3/8-16 HEX JAM GR 2           | 14   | 15  | 111227 | BOLT, 1/4-20 X 1, WIZ FLANGE           | 25   | 1   | 942282 | CHAIN, TV60HD Verticut #60 ROLLER    |        |
| 4          | 15  | 110174 | NUT, 1/4-20, UNITORQUE LOCK        | 15   | 1   | 311400 | SHAFT - VERTICUTTER, TV30              | 26   | 1   | 970475 | NUT - HEX, JAM, 1-3/4 - 5 UNC        |        |
| 2          | 2   | 116325 | SetScrew, 3/8-16 X 0.75            | 16   | 28  | 311608 | FINGER, 12" RUBBER                     | 27   | 1   | 970685 | DEBRIS FLAP MAIN                     |        |
| 1          | 1   | 116332 | COLLAR - 1-1/2" SPLIT              | 17   | 28  | 311609 | HOLDER, FINGER                         | 28   | 29  | 970803 | SPACER - VERTI CUTTER, 2 IN          |        |
| 4          | 1   | 110556 | Bolt, 3/8-16 X 1 in Carriage       | 18   | 3   | 911276 | SPACER, VERTICUTTER ASSY               | 29   | 29  | 970804 | Blade, Dethatch, 10ga, 11 Point      |        |
| 8          | 1   | 116588 | NUT, 1/2-13 WIZ FLANGE             | 19   | 1   | 942102 | SPROCKET - IDLER, 6011 - 5/8 HARDEN    | 30   | 1   | 970805 | WASHER - CUP, ROTOR                  |        |
| 9          | 56  | 110600 | NUT, 5/16-18, UNITORQUE LOCK       | 20   | 2   | 942273 | BEARING, 4FNG VCJ 1 1/2"               | 31   | 1   | 970851 | SHIELD, ROTOR DEBRIS                 |        |
| 10         | 4   | 110645 | NUT, 3/8-16 WIZ FLANGE             | 21   | 1   | 942274 | Sprocket, Roller Chain 60BTB16H - 1610 | 32   | 4   | 970853 | SUPPORT, DEBRIS FLAP                 |        |
| 11         | 28  | 110824 | BOLT, U-, 5/16-18 X 2-1/2 X 3-3/16 | 22   | 1   | 942275 | Bushing, Taper 1610 1.0" Bore          | 33   | 1   | 970862 | SPACER, IDLER SPROCKET               |        |

## KIT, TV60RHD VERTICUTTER

Harper P/N:900240



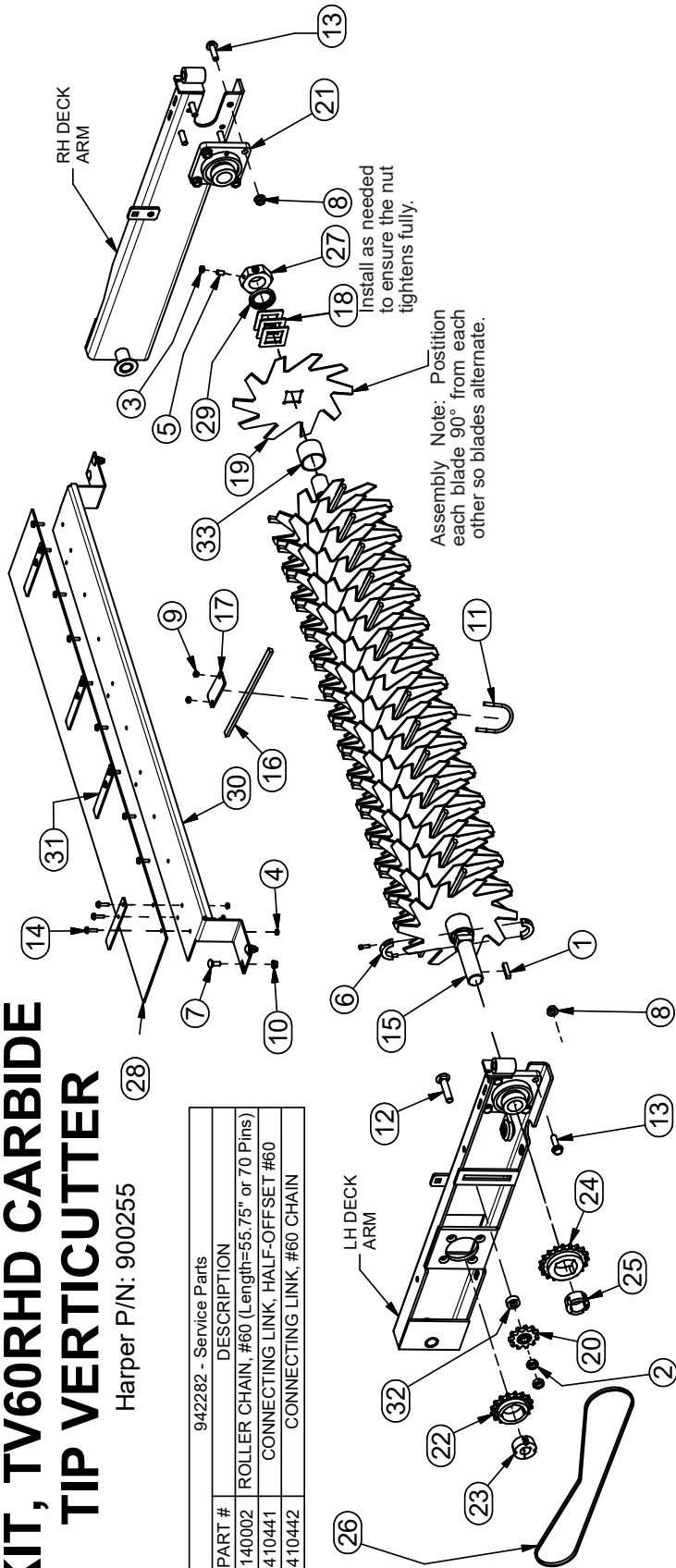
| 942282 - Service Parts |                                                |
|------------------------|------------------------------------------------|
| PART #                 | DESCRIPTION                                    |
| 140002                 | ROLLER CHAIN, #60 (Length=55.75 in or 70 pins) |
| 410441                 | CONNECTING LINK, HALF-OFFSET #60               |
| 410442                 | CONNECTING LINK, #60 CHAIN                     |

| Parts List |     |        |                              | Parts List |     |        |                                       | Parts List |     |        |                                        | 900255 | REV: B |
|------------|-----|--------|------------------------------|------------|-----|--------|---------------------------------------|------------|-----|--------|----------------------------------------|--------|--------|
| ITEM       | QTY | PART # | DESCRIPTION                  | ITEM       | QTY | PART # | DESCRIPTION                           | ITEM       | QTY | PART # | DESCRIPTION                            |        |        |
| 1          | 1   | 100567 | KEY, 3/8 X 3/8 X 1.75 in     | 11         | 28  | 110824 | BOLT, U-, 5/16-18 X 2-1/2 X 3-3/16    | 22         | 1   | 942274 | Sprocket, Roller Chain 60B1616H - 1610 |        |        |
| 2          | 2   | 110039 | NUT, 5/8-11 JAM              | 12         | 1   | 110895 | Bolt, 5/8-11 X 3 in Carriage          | 23         | 1   | 942275 | Bushing, Taper 1610 1.0" Bore          |        |        |
| 3          | 2   | 110107 | NUT, 3/8-16 HEX JAM GR 2     | 13         | 8   | 111222 | BOLT, 1/2-13 X 1.75, WIZ FLANGE       | 24         | 1   | 942277 | Sprocket, Roller Chain 60B1619H-1610   |        |        |
| 4          | 15  | 110174 | NUT, 1/4-20, UNITORQUE LOCK  | 14         | 15  | 111227 | BOLT, 1/4-20 X 1, WIZ FLANGE          | 25         | 1   | 942278 | Bushing, Taper 1610 1.5" Bore          |        |        |
| 5          | 2   | 110325 | SetScrew, 3/8-16 X 0.75      | 15         | 1   | 311400 | SHAFT - VERTICUTTER, TV30             | 26         | 1   | 942282 | CHAIN, TV60HD Verticut #60 ROLLER      |        |        |
| 6          | 1   | 110332 | COLLAR - 1-1/2" SPLIT        | 16         | 28  | 311608 | FINGER, 12" RUBBER                    | 27         | 1   | 970475 | NUT - HEX, JAM, 1-3/4 - 5 UNC          |        |        |
| 7          | 4   | 110556 | Bolt, 3/8-16 X 1 in Carriage | 17         | 28  | 311609 | HOLDER, FINGER                        | 28         | 1   | 970685 | DEBRIS FLAP MAIN                       |        |        |
| 8          | 8   | 110588 | NUT, 1/2-13 WIZ FLANGE       | 18         | 3   | 911276 | SPACER, VERTICUTTER ASSY              | 29         | 1   | 970805 | WASHER - CUP, ROTOR                    |        |        |
| 9          | 56  | 110600 | NUT, 5/16-18, UNITORQUE LOCK | 19         | 29  | 912013 | BLADE, CARBIDE TIP 12 GA VERTI-CUTTER | 30         | 1   | 970851 | SHIELD, ROTOR DEBRIS                   |        |        |
| 10         | 4   | 110645 | NUT, 3/8-16 WIZ FLANGE       | 20         | 1   | 942102 | SPROCKET - IDLER, 6011 - 5/8 HARDEN   | 31         | 4   | 970853 | SUPPORT, DEBRIS FLAP                   |        |        |
|            |     |        |                              | 21         | 2   | 942273 | BEARING, 4FNG VCJ 1 1/2"              | 32         | 1   | 970862 | SPACER, IDLER SPROCKET                 |        |        |
|            |     |        |                              |            |     |        |                                       | 33         | 29  | 970874 | SPACER, VERTI-CUTTER, 2 IN 12Ga BLADE  |        |        |

# KIT, TV60RHD CARBIDE TIP VERTICUTTER

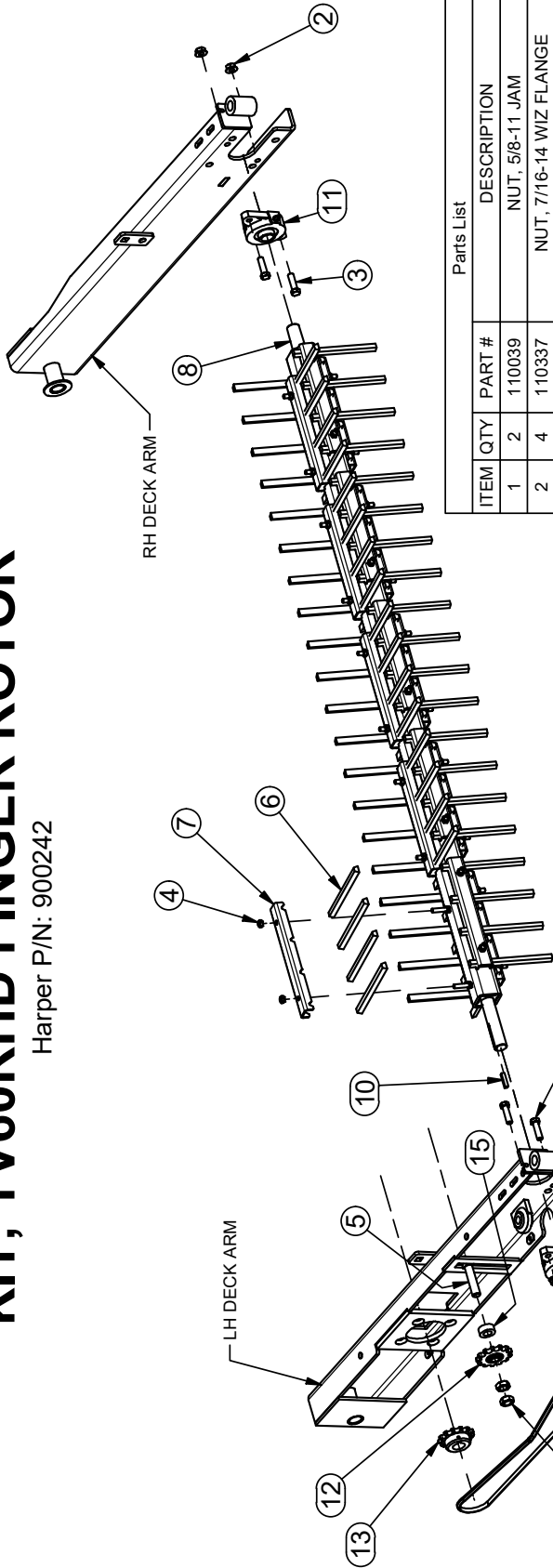
Harper P/N: 900255

| 942282 - Service Parts |                                              |
|------------------------|----------------------------------------------|
| PART #                 | DESCRIPTION                                  |
| 140002                 | ROLLER CHAIN, #60 (Length=55.75" or 70 Pins) |
| 410441                 | CONNECTING LINK, HALF-OFFSET #60             |
| 410442                 | CONNECTING LINK, #60 CHAIN                   |



# KIT, TV60RHD FINGER ROTOR

Harper P/N: 900242

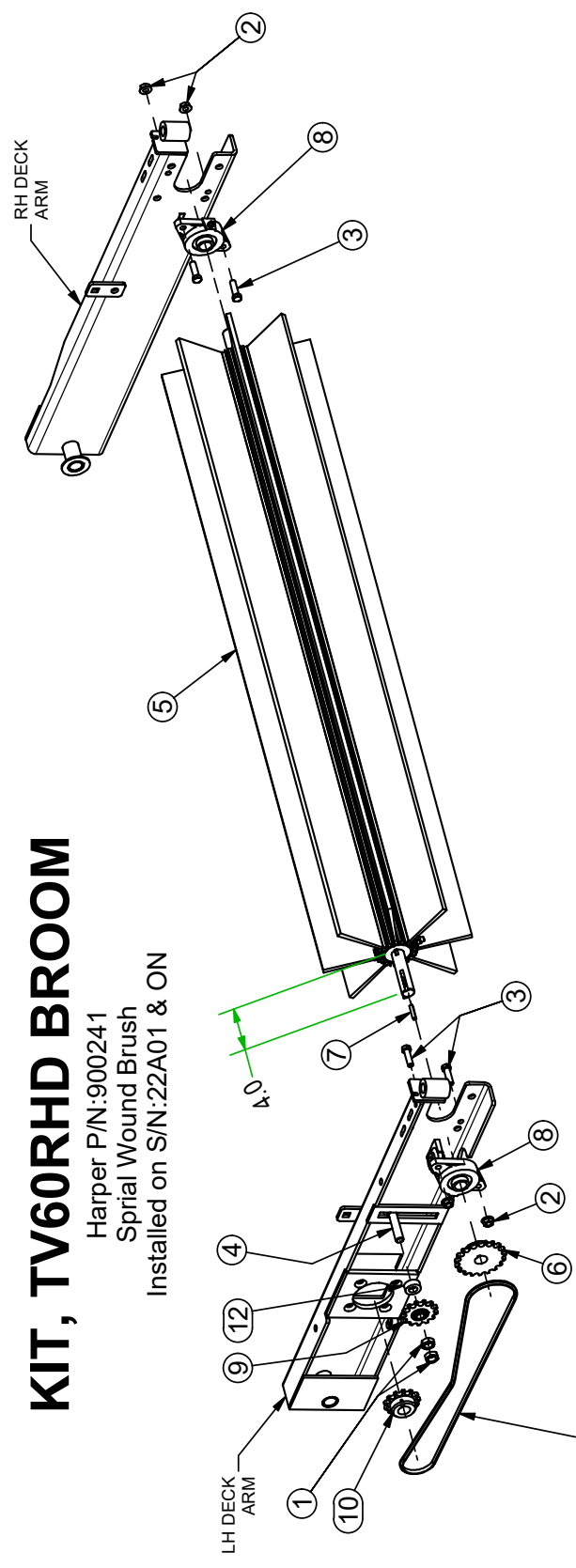


| Parts List |     |                                           |
|------------|-----|-------------------------------------------|
| ITEM       | QTY | PART # DESCRIPTION                        |
| 1          | 2   | 110039 NUT, 5/8-11 JAM                    |
| 2          | 4   | 110337 NUT, 7/16-14 WIZ FLANGE            |
| 3          | 4   | 110535 BOLT, 7/16-14 X 1.5                |
| 4          | 40  | 110600 NUT, 5/16-18, UNITORQUE LOCK       |
| 5          | 1   | 110895 Bolt, 5/8-11 X 3 in Carriage       |
| 6          | 80  | 302042 FINGER - RUBBER                    |
| 7          | 20  | 311403 CLAMP - RUBBER FINGER              |
| 8          | 1   | 315179 SHAFT - FINGER ROTOR, WELDMENT     |
| 9          | 1   | 342016 SPROCKET - 50B19 X 1               |
| 10         | 1   | 510089 Key, 1/4 X 1/4 X 1.25, Under       |
| 11         | 2   | 942080 BEARING, 1" 2 BOLT FLANGE          |
| 12         | 1   | 942279 SPROCKET, IDLER #50 x 13T x 5/8ID  |
| 13         | 1   | 942280 SPROCKET, ROLLER CHAIN 50BS13 X 1" |
| 14         | 1   | 942281 CHAIN, ROLLER #50 TV60HD           |
| 15         | 1   | 970862 SPACER, IDLER SPROCKET             |

| 942281 - Service Parts |                                      |
|------------------------|--------------------------------------|
| PART #                 | DESCRIPTION                          |
| 142006                 | ROLLER CHAIN, #50 (Length=51.219 in) |
| 140011                 | CONNECTING LINK, #50 CHAIN           |

# KIT, TV60RHD BROOM

Harper P/N:900241  
Spiral Wound Brush  
Installed on S/N:22A01 & ON



| 942281 - Service Parts |                               |
|------------------------|-------------------------------|
| PART #                 | DESCRIPTION                   |
| 142006                 | ROLLER CHAIN, #50 - (51.219") |
| 140011                 | CONNECTING LINK, #50 CHAIN    |

| Parts List |     |        |                                    |
|------------|-----|--------|------------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                        |
| 1          | 2   | 110039 | NUT, 5/8-11 JAM                    |
| 2          | 4   | 110337 | NUT, 7/16-14 WIZ FLANGE            |
| 3          | 4   | 110535 | BOLT, 7/16-14 X 1.5                |
| 4          | 1   | 110895 | Bolt, 5/8-11 X 3 in Carriage       |
| 5          | 2   | 305157 | ASSY, TV35/TV60HD STRIP BRUSH      |
| 6          | 1   | 342016 | SPROCKET - 50B19 X 1               |
| 7          | 1   | 510089 | KEY, 1/4 X 1/4 X 1.25 in           |
| 8          | 2   | 942080 | BEARING, 1" 2 BOLT FLANGE          |
| 9          | 1   | 942279 | SPROCKET, IDLER #50 x 13T x 5/8ID  |
| 10         | 1   | 942280 | SPROCKET, ROLLER CHAIN 50BS13 X 1" |
| 11         | 1   | 942281 | CHAIN, ROLLER #50 TV60HD           |
| 12         | 1   | 970862 | SPACER, IDLER SPROCKET             |

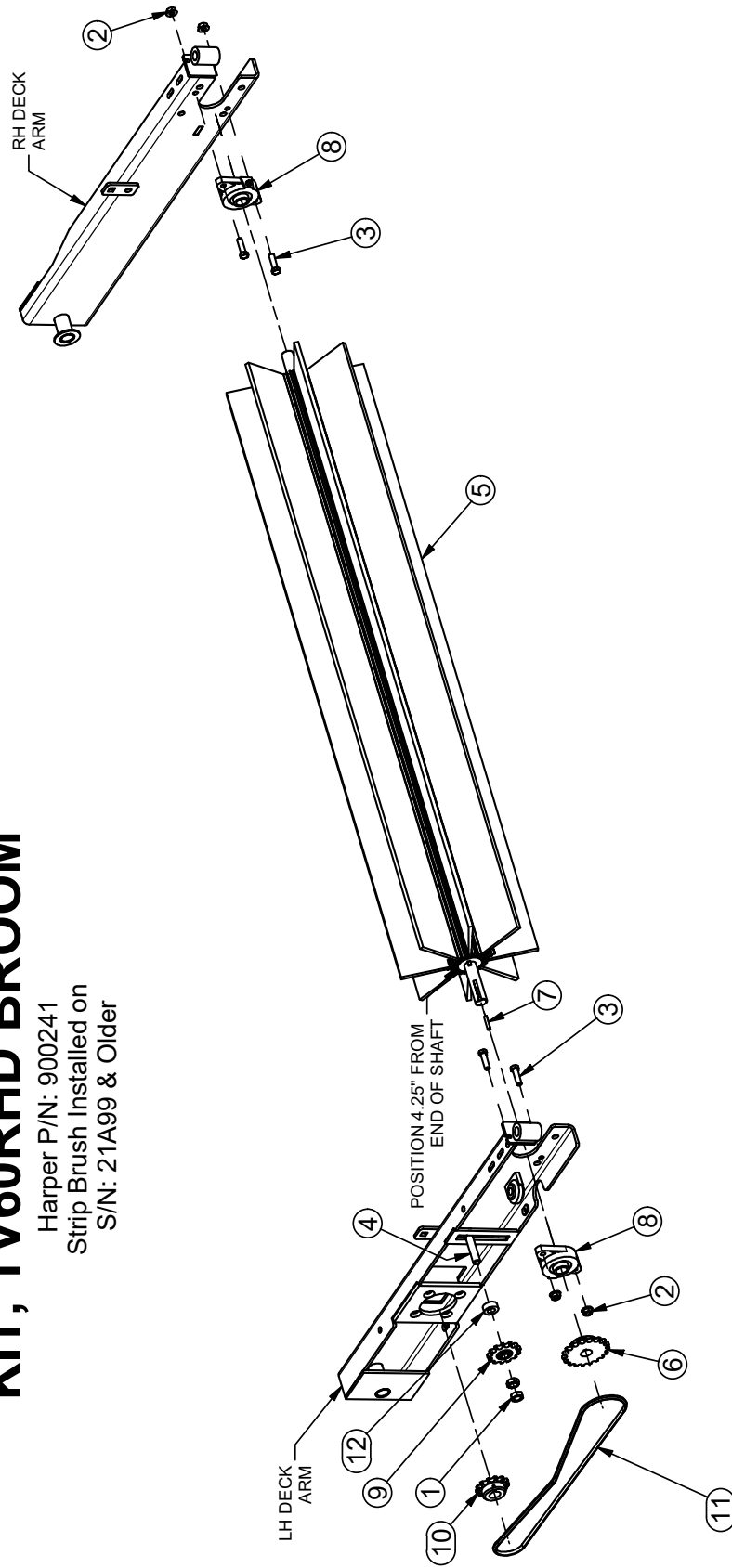
**Service Note**  
- Due to part availability, starting at S/N: 22A01, the machine may have been equipped with a Full Brush Rotor (P/N: 305135) or a Strip Brush Rotor (P/N: 305157). See the brush assembly pages for service part details.

900241 REV: C

| Parts List |     | Parts List |                                    |
|------------|-----|------------|------------------------------------|
| ITEM       | QTY | PART #     | DESCRIPTION                        |
| 1          | 2   | 110039     | NUT, 5/8-11 JAM                    |
| 2          | 4   | 110337     | NUT, 7/16-14 WIZ FLANGE            |
| 3          | 4   | 110535     | BOLT, 7/16-14 X 1.5                |
| 4          | 1   | 110895     | Bolt, 5/8-11 X 3 in Carriage       |
| 5          | 2   | 305157     | ASSY, TV35/TV60HD STRIP BRUSH      |
| 6          | 1   | 342016     | SPROCKET - 50B19 X 1               |
| 7          | 1   | 510089     | KEY, 1/4 X 1/4 X 1.25 in           |
| 8          | 2   | 942080     | BEARING, 1" 2 BOLT FLANGE          |
| 9          | 1   | 942279     | SPROCKET, IDLER #50 x 13T x 5/8ID  |
| 10         | 1   | 942280     | SPROCKET, ROLLER CHAIN 50BS13 X 1" |
| 11         | 1   | 942281     | CHAIN, ROLLER #50 TV60HD           |
| 12         | 1   | 970862     | SPACER, IDLER SPROCKET             |

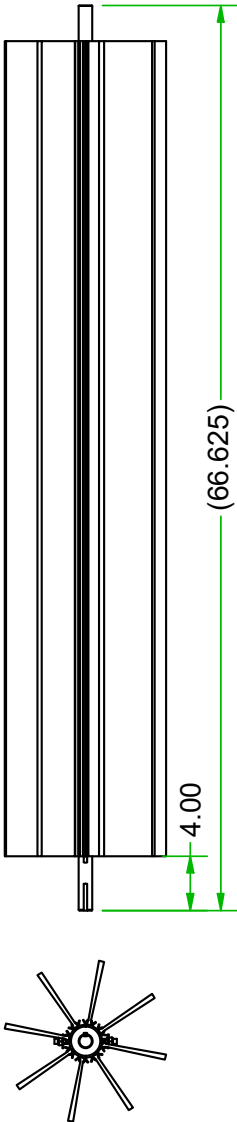
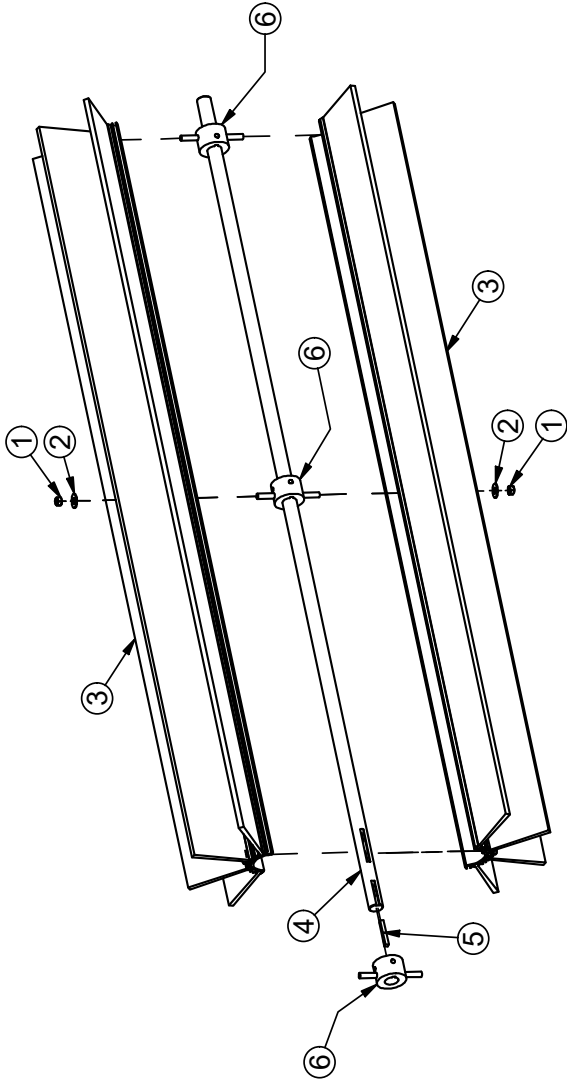
## KIT, TV60RHD BROOM

Harper P/N: 900241  
 Strip Brush Installed on  
 S/N: 21A99 & Older



| 942282 - Service Parts |                                      |
|------------------------|--------------------------------------|
| PART #                 | DESCRIPTION                          |
| 140006                 | ROLLER CHAIN, #50 (Length=51.219 in) |
| 140011                 | CONNECTING LINK, #50 CHAIN           |

# BRUSH ASSEMBLY



| Parts List |     |        |                                             |
|------------|-----|--------|---------------------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                                 |
| 1          | 6   | 110621 | NUT, 3/8-16, UNITORQUE LOCK                 |
| 2          | 6   | 110676 | WASHER, 3/8" FLAT STANDARD                  |
| 3          | 1   | 302003 | Brush, Strip Assembly, 60 x 12.0, .030 Poly |
| 4          | 1   | 311369 | SHAFT - BROOM, DECK                         |
| 5          | 1   | 411481 | KEY, 1/4 x 1/4 x 2.0                        |
| 6          | 3   | 973002 | FLANGE, 2 1/8 X 1, T-J-16                   |

BRUSH ASSEMBLY

Apply blue Loctite and tighten screws on each end to secure broom to shaft

4.00

(Ø11.50)

| Parts List |     |        |                                               |
|------------|-----|--------|-----------------------------------------------|
| ITEM       | QTY | PART # | DESCRIPTION                                   |
| 1          | 1   | 302170 | Brush, Spiral Wound, 60 x 11.50 OD, .030 Poly |
| 2          | 1   | 311369 | SHAFT - BROOM, DECK                           |
| 3          | 1   | 411481 | KEY, 1/4 x 1/4 x 2.0                          |

## NOTES

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