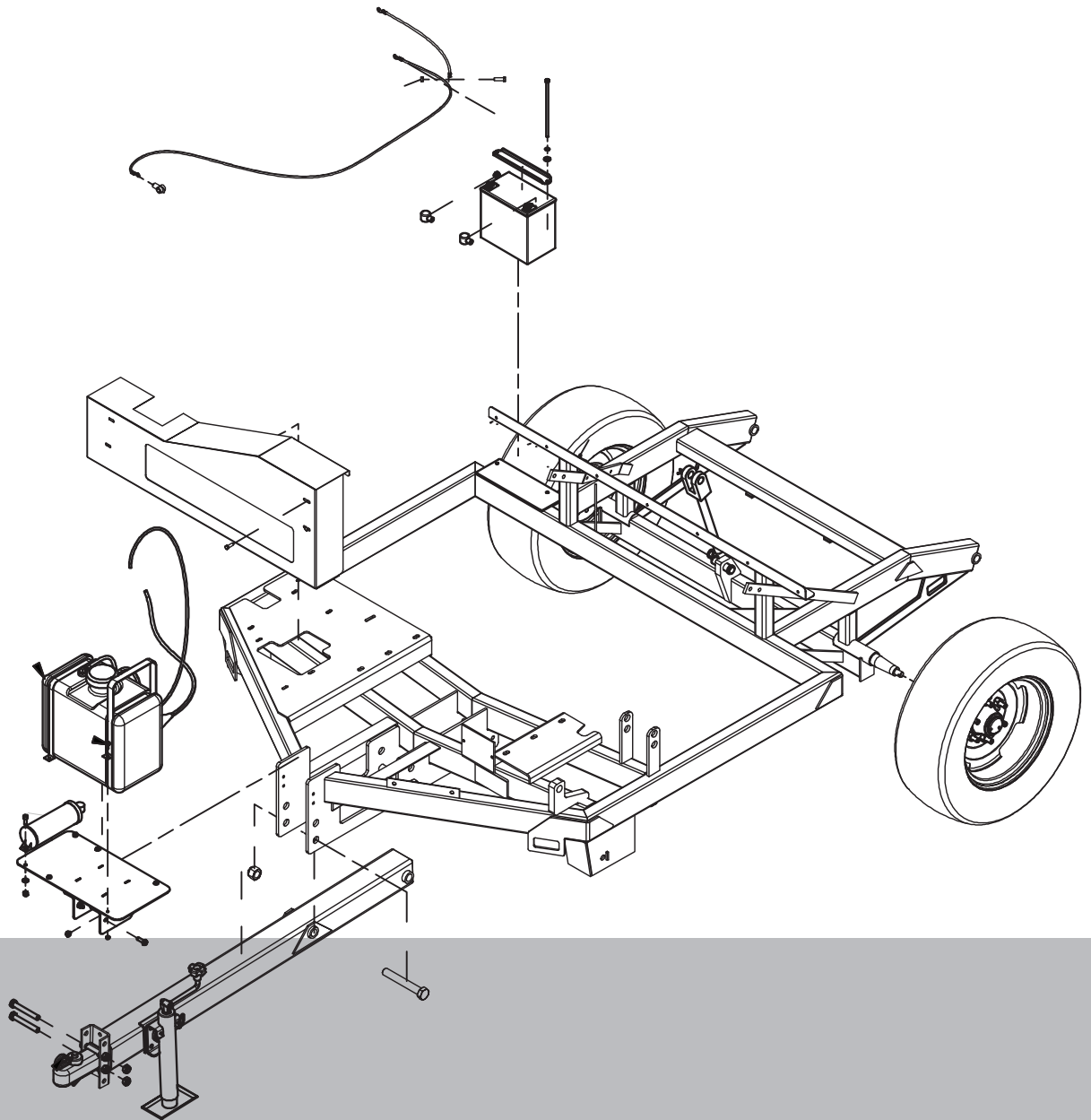


TURBO VAC 60RE



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 **TV60RE**. 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.

© 2021 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.

Evaporative Emissions Control System Warranty

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board and Harper Industries are pleased to explain the evaporative emission control system's warranty on your 2019 Harper Turbo VAC. In California, new equipment that use small off-engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. Harper Industries must warrant the evaporative emission control system on your small Turbo VAC for the period listed below provided there has been no abuse, neglect or improper maintenance of your equipment leading to the failure of the evaporative emission control system.

Your evaporative emission control system may include parts such as: carburetors, fuel tanks, fuel lines (for liquid fuel and fuel vapors), fuel caps, valves, canisters, filters, clamps, connectors, and other associated components.

MANUFACTURER'S WARRANTY COVERAGE:

This evaporative emission control system is warranted for two years. If any evaporative emission-related part on your equipment is defective, the part will be repaired or replaced by Harper Industries.

OWNER'S WARRANTY RESPONSIBILITIES:

1. As the Turbo VAC owner, you are responsible for performance of the required maintenance listed in your owner's manual. Harper Industries recommends that you retain all receipts covering maintenance on your Turbo VAC, but Harper Industries cannot deny warranty coverage solely for the lack of receipts.
2. As the Turbo VAC owner, you should be aware that Harper Industries may deny you warranty coverage if your Turbo VAC or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.
3. You are responsible for presenting your Turbo VAC to a Harper Industries dealer as soon as the problem exists. The warranty repairs shall be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact your authorized Harper Turbo VAC dealer or Harper Industries at (620) 896-7381.

RECORDS

Date of Purchase _____ / _____ / _____

Serial Number Machine _____

Dealer's Name _____

Serial Number Engine _____

Dealer's Phone _____

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Specifications

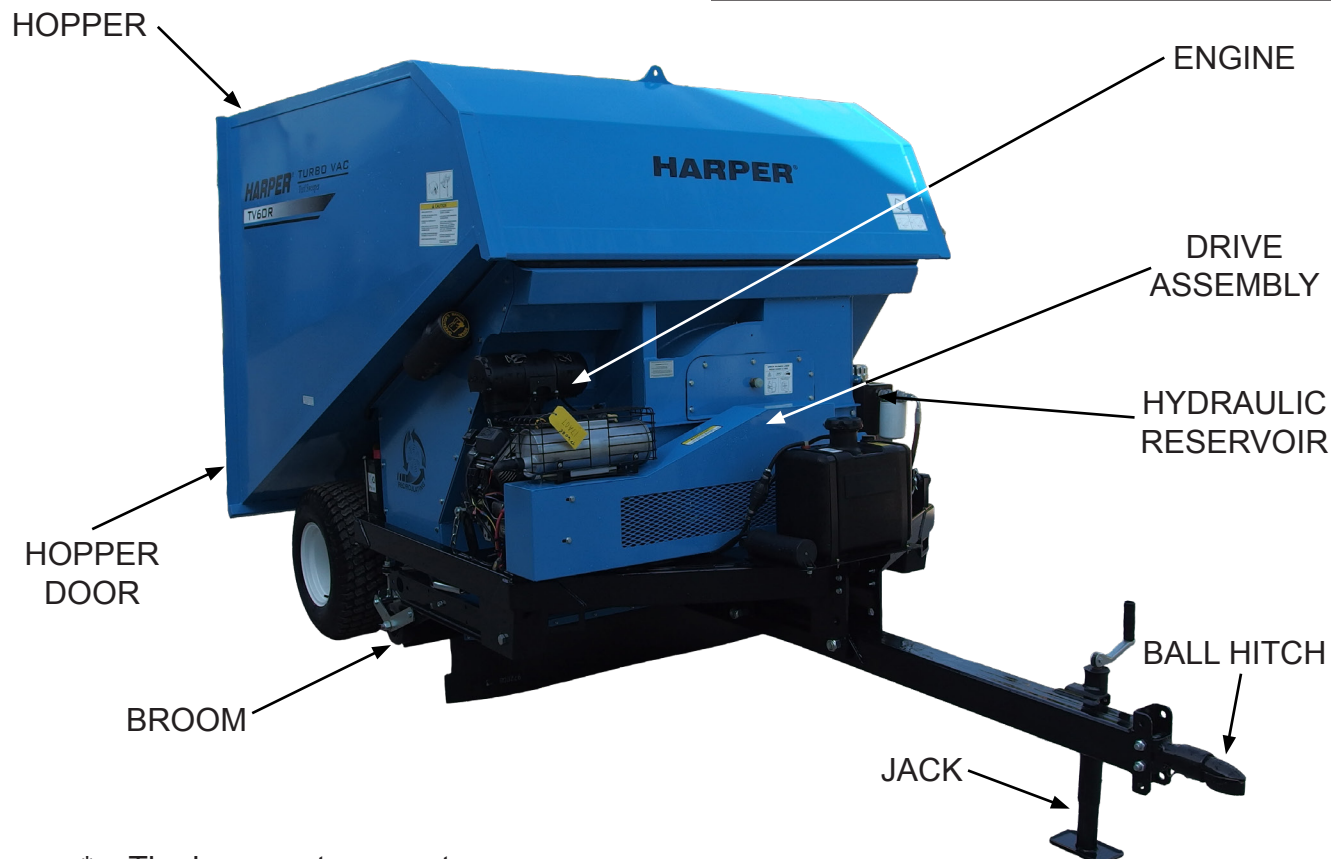
Safety Features	<ul style="list-style-type: none"> • Locking safety latches on all cylinders for service functions <ul style="list-style-type: none"> – Engine automatically returns to idle while dumping
Power	23.5 HP Kohler EFI gasoline engine
Hydraulic System	Belt-driven pump powers broom and cylinders
Hydraulic Reservoir	5 gallons, Crown AW46
Blower Drive	Dual Powerband belt drive w/ electric clutch
Blower Fan	25" diameter fan of abrasion-resistant steel
Housing Liner	<ul style="list-style-type: none"> • 1½" shaft with self-aligned bearings supporting both ends • Easy access to housing liner* for inspection and replacement <p>*UHMW poly-liner - Ultra High Molecular Weight Polyethylene</p>
Broom Drive	Hydraulic motor – direct drive
Broom	17" diameter X 60" wide pick-up broom with heavy-duty polyethylene bristles and adjustable gauge wheels
Bearings	Greasable bearings and sealed bearings
Hopper	7 yard capacity
Wheels/Tires	6-bolt steel wheels <ul style="list-style-type: none"> • Turf Tires – 26 x 12 (standard) • Radial Tires – 225 X 60R15 steel belted (available as an option)
Controls	Wireless RF (radio frequency) remote controls
Discharge	Hydraulic dump with automatic latch mechanism
Hitch	Adjustable height tongue with ball hitch
Paint	Durable 2-part polyurethane
Dimensions	164" long X 85" wide X 85" high
Weight	2300 lbs – 1046 kg
Fuel	6 gallon capacity - Gasoline

• Denotes common characteristics of both the **TV60RE** and **TV60RH**

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/Goossen dealer is the best source for up-to-date information.

Feature Identification

Model TV60RE



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

Hopper Door* – The hopper door opens when the door latches are opened.

Engine – A 23.5 HP Kohler EFI engine powers the drive assembly.

Drive Assembly – The drive assembly powers the hydraulic pump and blower.

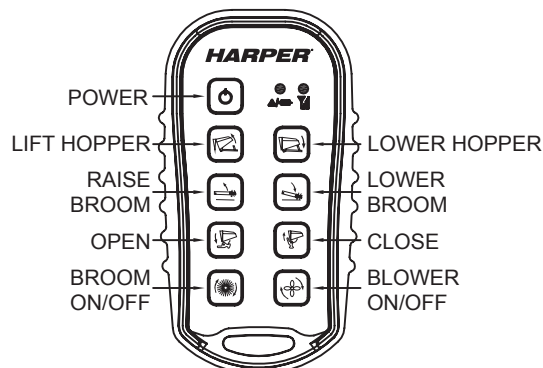
Hydraulic Reservoir – The hydraulic reservoir on a **TV60RE** has a 5 gallon capacity.

Broom* – The broom rotates to rake up the material from the turf.

Jack* – The jack supports the front of the Turbo Vac when it is not attached to a tow vehicle. During operation, the jack must be up, with the wheel removed and in the stow location.

Ball Hitch* – The TV60R is towed with a ball hitch. Unit is not approved highway towing.

Remote Controls* – A wireless transmitter allows functions of the Turbo Vac to be controlled from the tow vehicle. The remote transmitter uses two AA batteries with a sleep function that prolongs battery life.



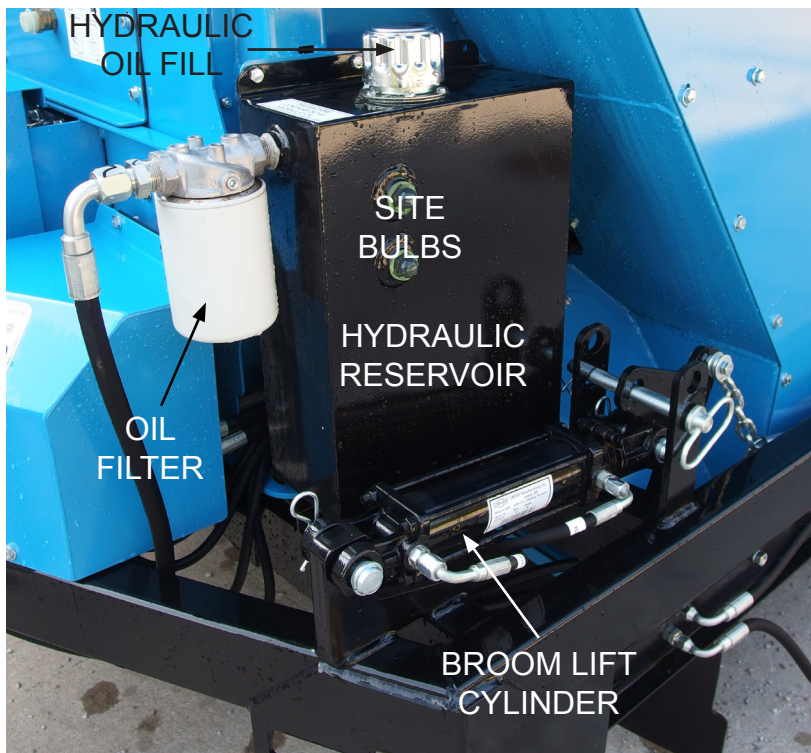
* Denotes common features of both the **TV60RE** and **TV60RH**.

See **Adjustments** section for information on the sleep function with the remote and transmitter.

TV60RE - 23.5 HP Kohler Engine



TV60RE - Hydraulic System & Fill Locations



Fuel Tank

Hydraulic Reservoir Assembly

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.
- Ensure tires are inflated to air pressure listed on side of tire.
- 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.

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.

 **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.

During Service & Maintenance



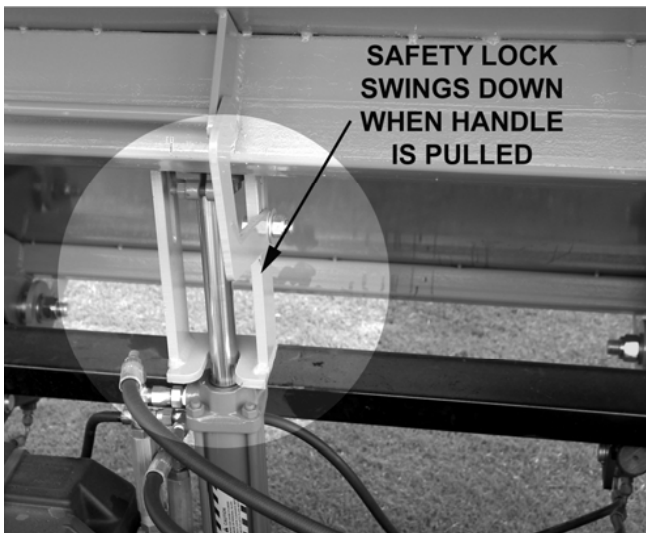
SAFETY WARNING!



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.
- If parts are replaced, make sure all safety related or instructional decals are present before the equipment is operated again.
- New decals may be obtained from your local Harper dealer.

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.

Gasoline



SAFETY WARNING!

Gasoline is extremely flammable and can be highly explosive.

- Always use an approved container for gasoline.
- Do not allow open flames or sparks while performing maintenance or refueling.
- Never remove the fuel tank cap or add gasoline when the engine is running or while it is hot.
- Never fill the fuel tank indoors. Gasoline fumes are heavy and will sink to the lowest point, collecting and becoming increasingly hazardous. One part gasoline in 20 parts air will explode easily and violently.
- Wipe up spilled gasoline immediately.
- Do not store gasoline in a room with an appliance that has a gas pilot or electrical switch that may cause sparks.
- Always store gasoline outside in a safety can (a can that has a flame

arrestor and pressure relief valve in pour spout).

- Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing in any enclosure.
- Be certain to provide adequate ventilation if an engine must be run indoors - exhaust fumes are dangerous.

Hydraulics



SAFETY WARNING!

HIGH-PRESSURE FLUID HAZARD!

Escaping fluid under pressure can penetrate skin and cause 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

TV60RE

- Be sure to provide adequate ventilation if the engine must be run indoors – exhaust fumes are very dangerous.
- The Turbo Vac hydraulic system operates under high pressure. Be sure the hydraulic system is disabled prior to service.
- Periodically clean area around engine to lessen the possibility of fire.
- The engine governor should not be adjusted; any change can damage moving parts and void warranty.
- Keep clothing and all body parts away from rotating parts.



SAFETY WARNING!

Gasoline is extremely flammable and can be highly explosive.

- Always use an approved container for gasoline.
- Do not allow open flames or sparks while performing maintenance or refueling.
- Never remove the fuel tank cap or add gasoline while the engine is running or hot.
- Refer to the engine manual for additional information on gasoline.



SAFETY WARNING!

The battery on Turbo Vacs with electric start can produce explosive gasses.

- Ventilate when charging battery or using in an enclosed space.
- DO NOT produce sparks from cable clamps, tools, or other sources.
- DO NOT allow flames or smoking in the vicinity of the battery.
- Shield eyes when working near battery.

Set-Up and Operation



SAFETY WARNING!

Wear approved eye protection and safety gear during set-up and operation of the Turbo Vac.

TV60RE

1. Fill the tank with gasoline. (Refer to engine manual for gasoline specifics.)
2. Attach the unit to the tow vehicle. Be sure that the Turbo Vac is level with the ground. (Refer to the Adjustments section for information on leveling.)
4. Pull choke and turn key to start position and release as soon as the engine starts. **DO NOT TURN THE STARTER OVER FOR MORE THAN 10 SECONDS.**
5. Once the engine is running, gradually move the choke lever to the off position, and allow the engine to warm up. (When restarting a warm engine, it should not be necessary to use the choke lever.)



SAFETY WARNING!

Never remove the fuel tank cap or add gasoline when the engine is running or while it is hot.

6. The engine will automatically throttle up to operating speed when the blower and broom are engaged.



SAFETY WARNING!

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

Starting Operation



SAFETY WARNING!



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

Before operating the Turbo Vac, 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.
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

TV60RE

1. Push the BLOWER and BROOM switches on the remote control to turn off the **TV60RE** functions.
2. Shut off the engine and allow the machine 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

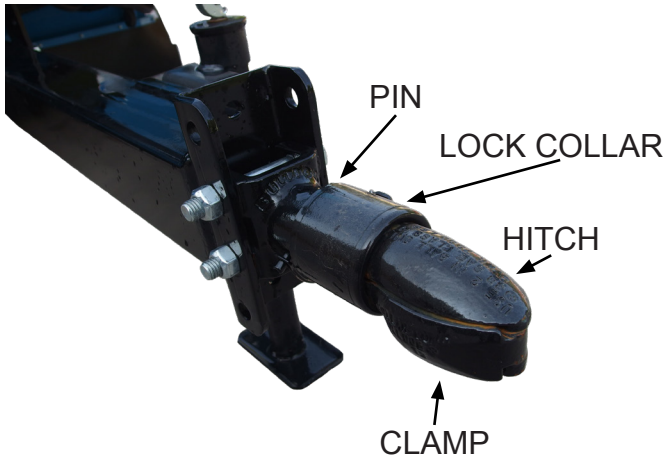


SAFETY WARNING!



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

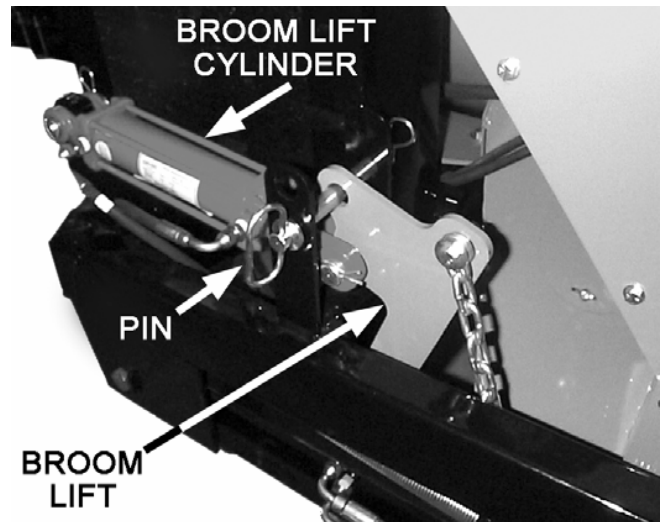
- Close the clamp around the ball and secure with the lock collar. Insert the pin to keep the lock collar in place.



- The jack 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.

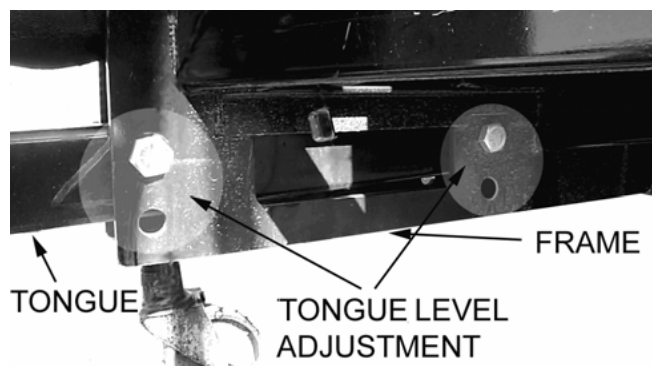


- Tires should be aired up to the proper tire pressure listed on the side of tire.
- Make sure the wheel lug nuts are tight.

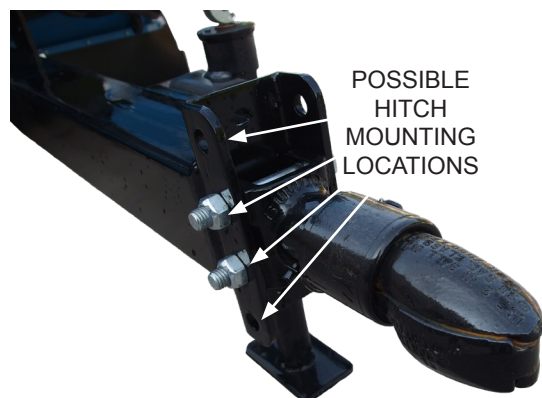
Adjustments

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.

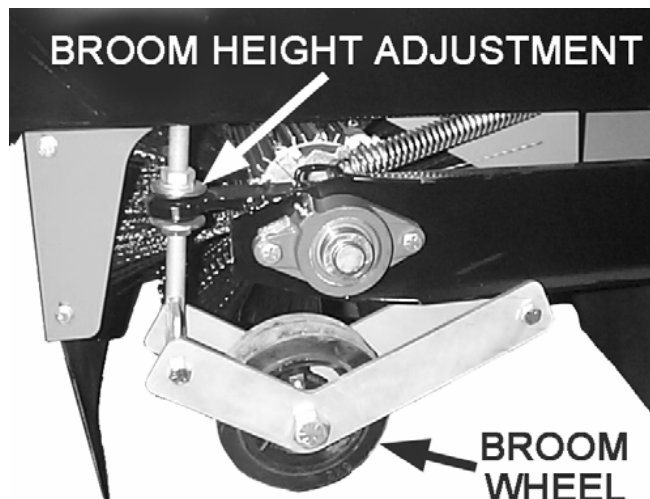


- The hitches on different tow vehicles vary in height, so there are adjustments on the hitch and the tongue to keep the Turbo Vac level.



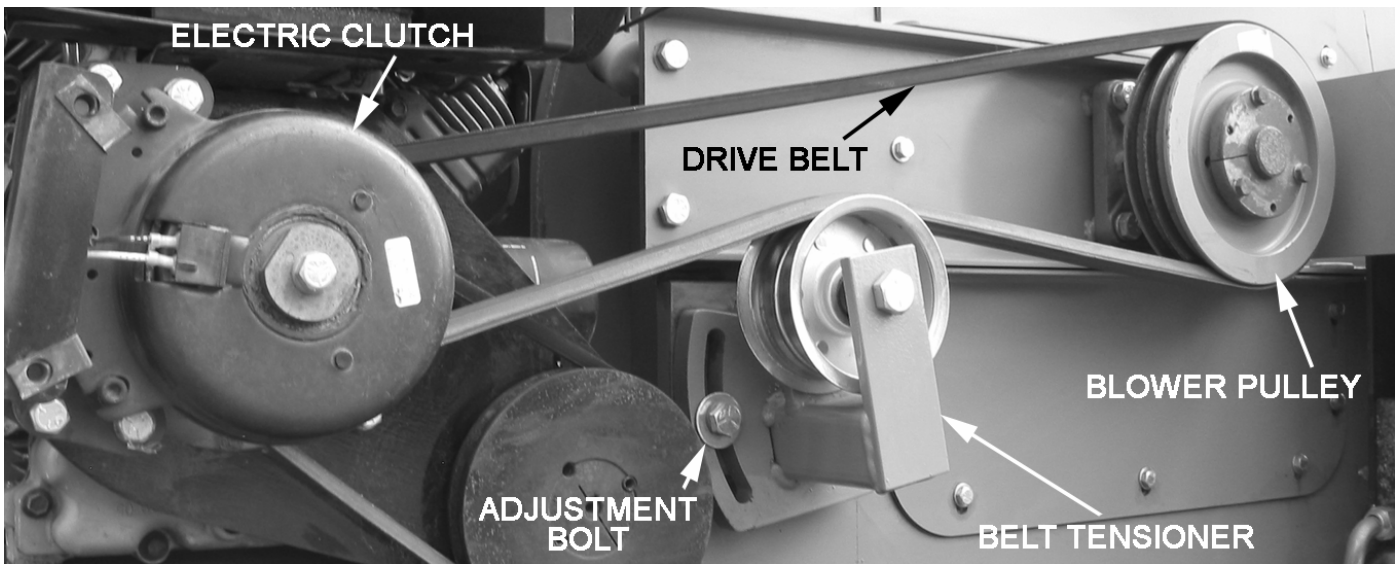
Broom Height

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

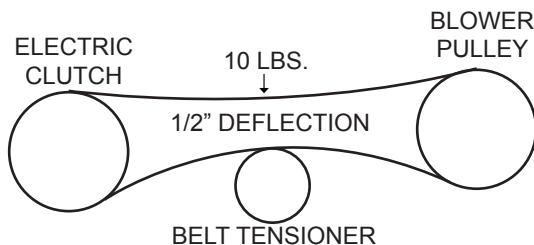


- Broom height is easily adjusted tightening or loosening the nuts on the broom height adjustment.
- Make sure that both broom wheels (one per side of unit) are adjusted the same so the broom stays level.
- Brooms are originally 17" in diameter.
- When the broom wears down to 15" the adjustment will not lower the broom enough for it to perform adequately and the broom needs to be replaced.

TV60RE Blower Drive Belt

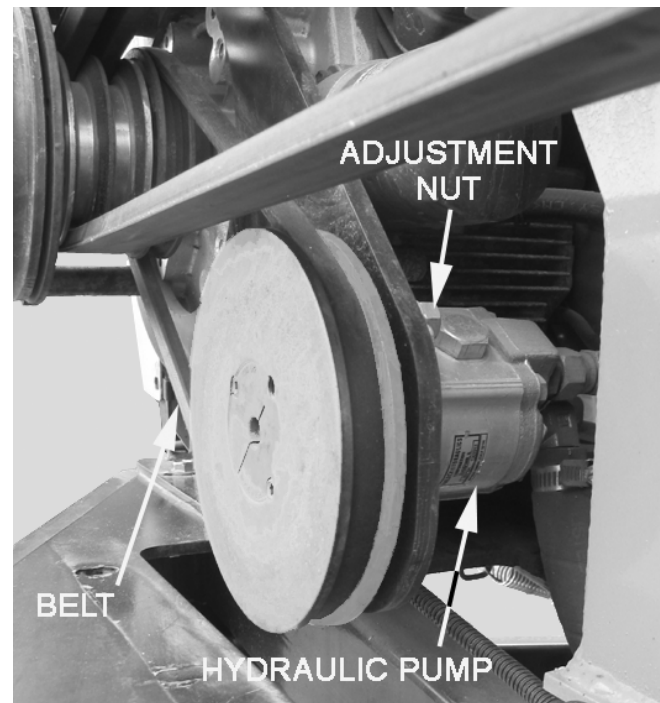


- To adjust belt tension, loosen the adjustment bolt and the bolt where the tensioner pivots. Position the tensioner to allow for proper deflection. Re-tighten both bolts.



- Apply 10 lbs. of pressure to the mid-point between the electric clutch and blower pulley. The belt should deflect $\frac{1}{2}$ in.
- Too much tension (minimal deflection) can damage the belt and bearings. Too little tension (excessive deflection) will allow belt to slip and decrease blower performance.
- To replace the drive belt, loosen the belt tensioner and remove the old belt. Install the new belt, and follow the same procedure for adjusting tension as described previously.
- Inspect the belts frequently and maintain the correct tension and alignment.

TV60RE Hydraulic Pump Belt



- To adjust the belt tension on the hydraulic pump, loosen the adjustment nut and the nut where the pump pivots.
- Position the pump to allow $\frac{1}{8}$ in. deflection at the mid-point when 6 lbs. applied. Re-tighten both nuts.
- If a belt shows signs of wear, such as: fraying, cracking or missing pieces; replace it immediately.

Remote and Receiver

System Operation

Press and hold the power button the transmitter until both LEDs turn on, then release. The green LED will flash rapidly when communication has been established. When the receiver is off, the red LED will flash slowly indicating this. With the receiver on, press the corresponding buttons on the transmitter keypad to turn on and off each of the outputs.

Cloning

1. On transmitter A (the teacher), press the POWER button, LOWER HOP, and BROOM ON/OFF simultaneously. At this point, both LEDs will flash on the first transmitter.
2. On transmitter B (the learner), press the POWER button to turn it on, then press LIFT HOP, LOWER BROOM, RAISE BROOM, and BROOM ON/OFF simultaneously. Both green and red LEDs will begin flashing.
3. Release buttons and wait for 1 second or until the green and red LEDs stop flashing on both units. Both transmitters will have the same ID at this point.

Sleep Time

The transmitter is factory set to turn off (sleep) after 15 minutes. To change the time, the transmitter waits before going to sleep, use the following procedure:

1. On the transmitter, press and hold POWER and buttons 3, 4, and 8.
2. Release the buttons. At this point, both lights will blink once per second.
3. On the transmitter, press one of the following buttons to adjust the sleep time:
 - a. 1=15 min.
 - b. 2=30 min.
 - c. 3=1 hr.
 - d. 4=2 hrs.
 - e. 8=sleep disabled

4. Sleep time programming complete.

Indicator Lights

The transmitter has two LED indicators, the red BATTERY/DIAGNOSTIC indicator and the green TRANSMIT indicator.

The green TRANSMITTER indicator flashes rapidly whenever there is communication between the transmitter and the receiver.

The red BATTERY/DIAGNOSTIC indicator starts blinking once every second when the battery voltage is low and requires replacement. It also blinks when there is a problem with the system in the form of an error code. Refer to the ERROR CODE CHART tables for more information.

Note: To check for low battery, turn the receiver off and leave the transmitter on. If the transmitter red LED continues to blink, the battery is low and requires replacement. If the red LED blinks only when the receiver is on, count the number of blinks and refer to ERROR CODE CHART tables for additional information.

Teach ID Code

To teach the transmitter ID code to the receiver, use the following procedure:

1. Make sure the receiver and transmitter are OFF.
2. Press and hold the transmitter's button 1 and 8, then press the power button until both LEDs start blinking, and then release.
3. Apply power to the receiver.
4. Wait for ~5 seconds or until the green LED on the transmitter starts blinking rapidly.
5. Teach complete.

Specifiactions

RF Transmit power (EIRP): 10 mW

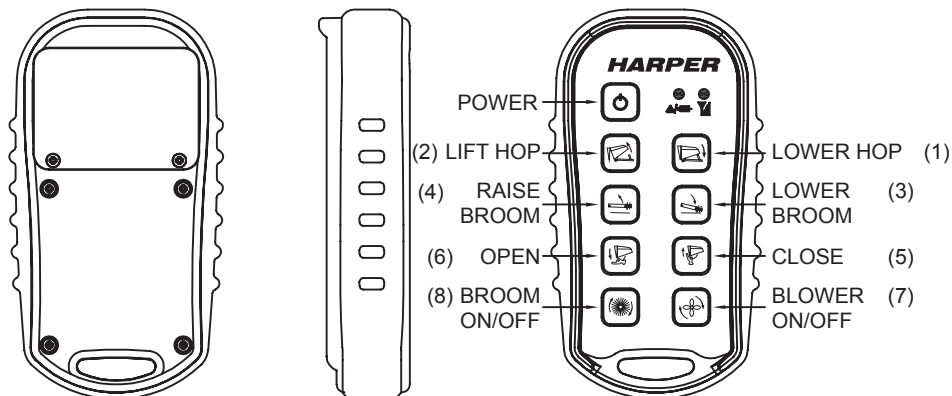
RF Frequency: 902-928 MHz

Operating temperature - Radio: -40C to +85C

Battery life (min): 30 hours continuous

Vibration: 3G to 200 Hz

Outputs: 5A maz each (20A system max)



TRANSMITTER (P/N: 3A1518C) Uses 2 AA Alkaline batteries.

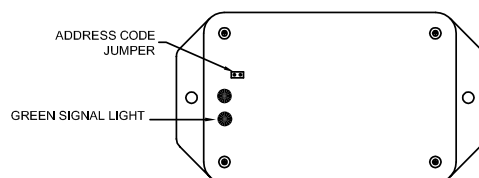
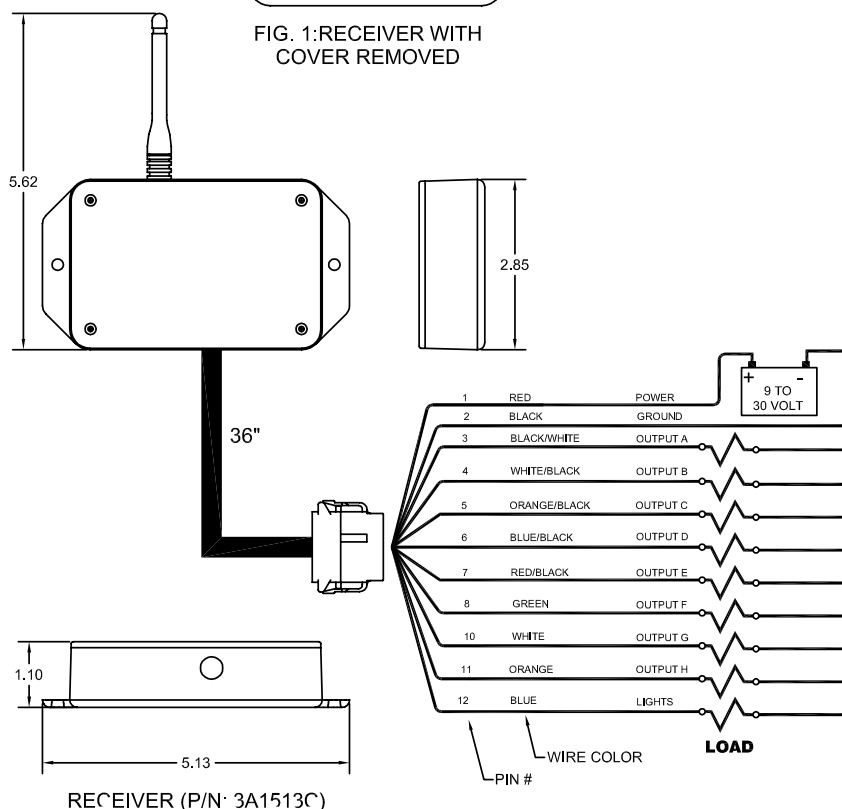


FIG. 1: RECEIVER WITH COVER REMOVED

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

ERROR CODE NUMBERS THE NUMBER OF RED LIGHT BLINKS BETWEEN EVERY PAUSE.



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

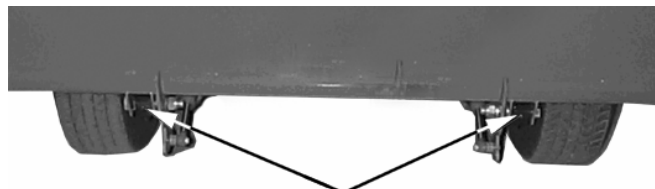
After the first hour of use:

- 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

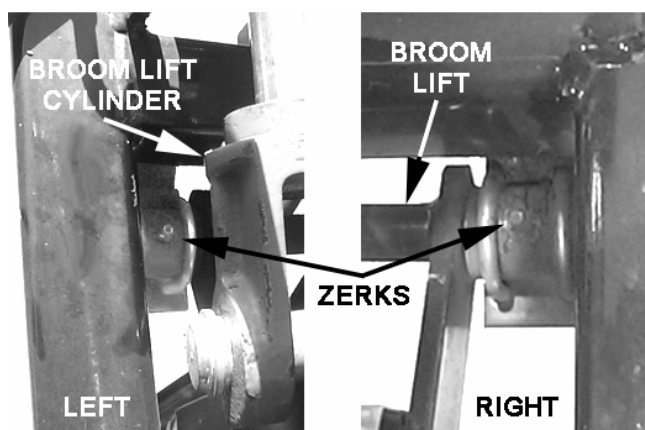
Nine grease zerks in the following locations should be greased daily to reduce wear:

- Hopper door latches (2)

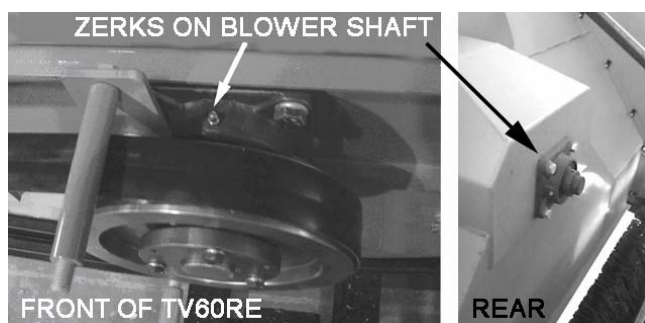


HOPPER DOOR LATCH ZERKS

- Broom lift (2)

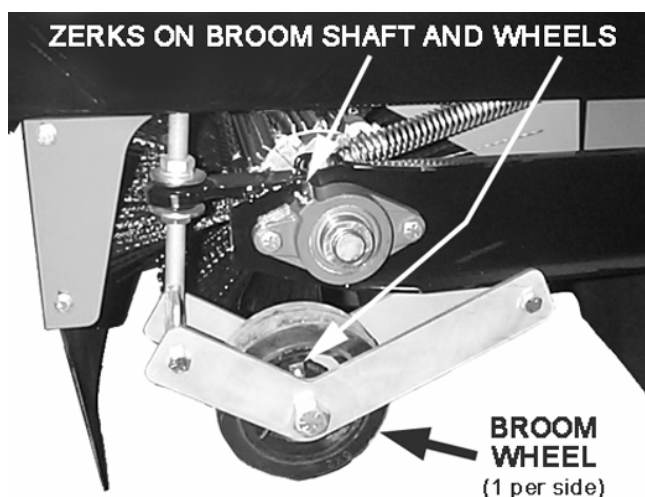


- Blower shaft (2)



Note: The safety shield must be removed to access grease zerk on front blower shaft of the **TV60RE**.

- Broom shaft (1)
- Broom wheels (2)



- Replace the safety shields before operating the Turbo Vac.

Hydraulic System

- The hydraulic system of the **TV60RE** is filled at the factory with Crown AW 46 hydraulic oil that has an ISO of 46.
- The **TV60RE** 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 = 1mm²/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 Univis N 46
- Pennzoil AWX MV 46
- Shell Tellus 52 M46
- Shell Tellus 52 V46
- Texaco Rando HDZ 46

TV60RE Hydraulic Oil Reservoir

- Maintain the oil level in the reservoir of the **TV60RE** between the upper and lower site bulbs at all times.
- Replace the spin-on oil filter (Part no. 720043) after every 250 hours of service.

Remote Control

- If the remote control transmitter or receiver should ever be replaced, the dip switches must be set so that the two components match.



RECEIVER



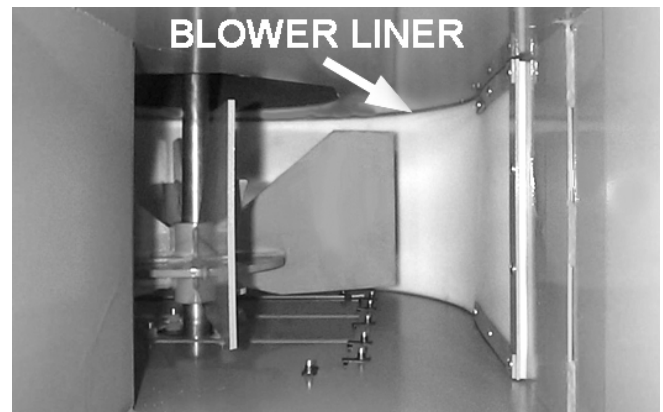
TRANSMITTER

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.



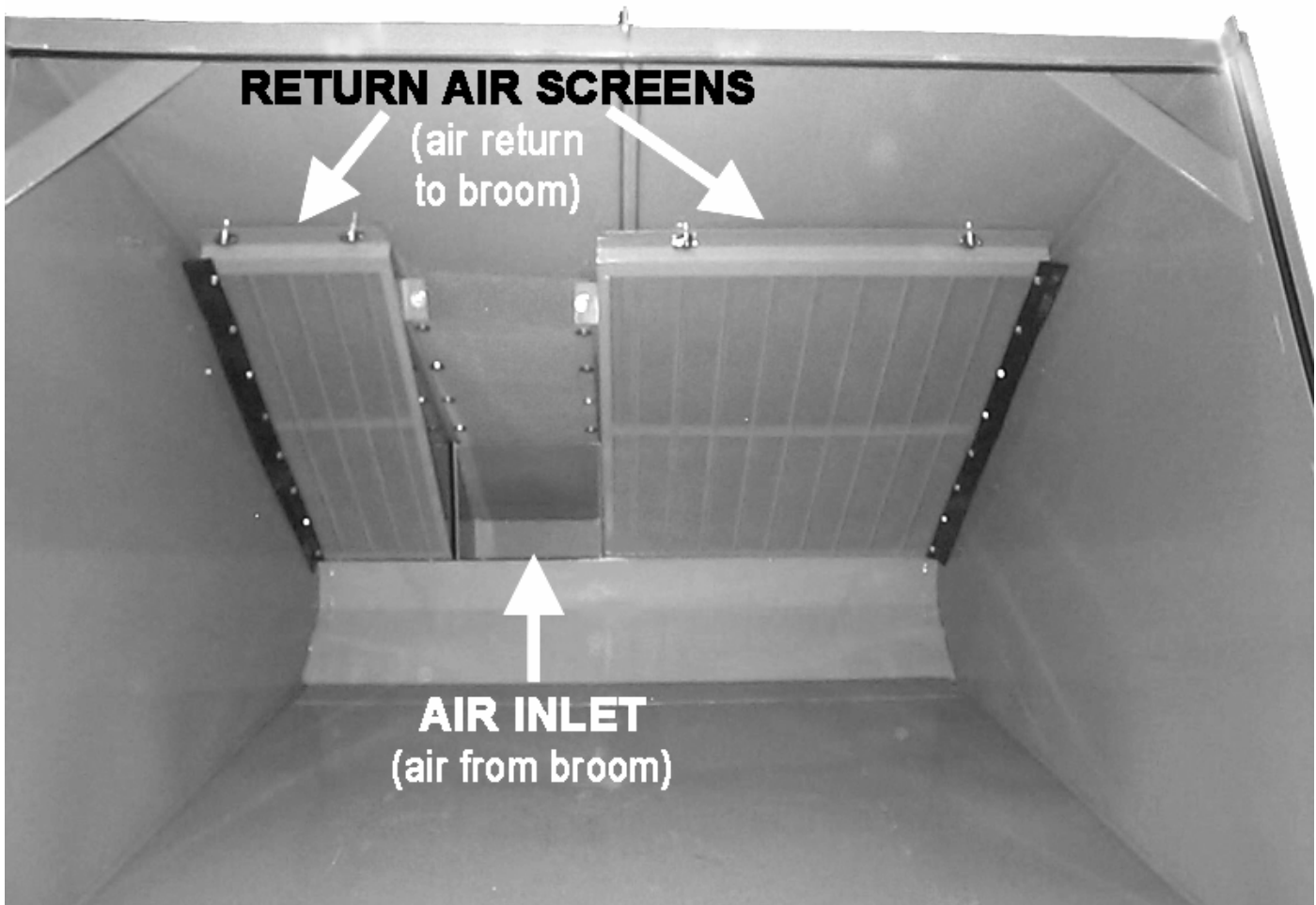
SAFETY WARNING!



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.

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.

TV60RE Service Schedule

- **Disclaimer – For the 23.5 HP engine, Kohler Engine Co. recommends the following:**

Daily or Before Starting Engine

Check engine oil level.....	SAE 10W-30
Check hydraulic oil level.....	Crown AW46 or equivalent
Fill fuel tank.....	Clean, unleaded, 87 octane or higher
Check air intake and cooling areas.....	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 pressure listed on the side of the tire.

100 Hour Service – Perform these and all previous items:

Check outer air cleaner element.....	Kohler part # 25 083 01-S
(change if element appears dusty due to severe conditions)	
Change engine oil.....	2.0 quarts SAE 10W30
Remove cooling shrouds.....	Clean cooling areas.
Check battery.....	Clean terminals if necessary.
Change hydraulic filter.....	DewEze part # 720043 Wix part # 51551

200 Hour Service – Perform these and all previous items:

Check spark plug.....	Set gap to 0.76 mm (.030 in.) Kohler part # 12 132 02-S Champion part # RC12YC
Change oil filter.....	Kohler part # 12 050 01-S

250 Hour Service

Change outer air cleaner element.....	Kohler part # 25 083 01-S
Check inner air cleaner element.....	Kohler part # 25 083 04-S
(change if element appears dusty due to severe conditions)	

Annual or 500 Hour Service – Perform these and all previous items:

Have Bendix starter drive serviced.*	
Have solenoid shift starter disassembled and cleaned.*	
Change hydraulic oil.....	5 gallons Crown AW46 or equivalent
Change inner air cleaner element.....	Kohler part # 25 083 04-S

- **Should be serviced by an authorized Kohler Dealer.**
- **Refer to Kohler engine manual for more information on engine servicing.**
- **The identification number of the 23.5 HP Kohler EFI engine is: PA-CH730-0142.**

Standard Torque Chart



SAFETY WARNING!



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

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

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

TV60RE Engine:

Problem:	What to Check:
Engine will not start.	<ul style="list-style-type: none"> • Improper control settings. • Engine may be low on fuel. • Engine may be low or too full of oil. • Battery charge may be too low. • Possible internal problems. • Manual fast idle switch may be engaged, switch must be shut off for engine to start.
Problem:	What to Check:
Engine shuts off during operation.	<ul style="list-style-type: none"> • Engine may be low on fuel. • Engine may be low on oil. • Air breather may be clogged.

Belts:

Problem:	What to Check:
Belts Slip	<ul style="list-style-type: none"> • Tension adjustment. • Load may be excessive. • Foreign material may be lodged. • Bearings may have seized.
Problem:	What to Check:
Belts wear rapidly; Belts jump catch or twist.	<ul style="list-style-type: none"> • Pulleys may not be properly aligned. • Check with straightedge across faces of pulleys.

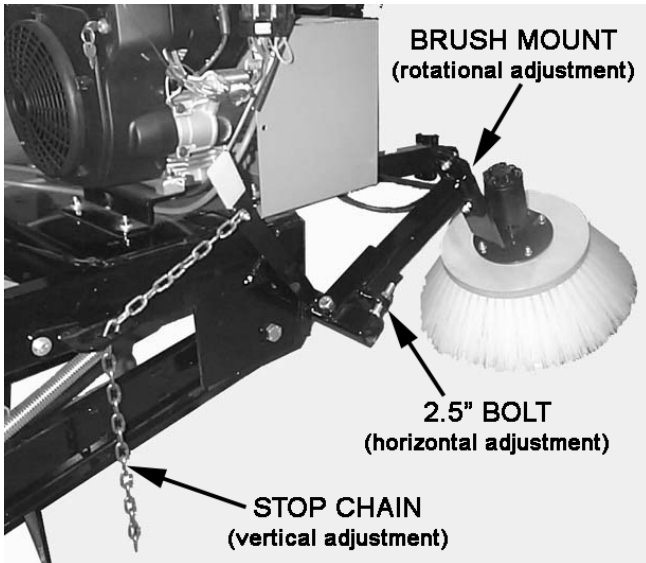
Hydraulic System:

Problem:	What to Check:
Hydraulic function will not respond or hold its position.	<ul style="list-style-type: none"> • The RF receiver or transmitter may be malfunctioning. • Hydraulic cylinder seals may be worn and in need of replacement.

Optional Equipment

Edge Brush

- A fence brush kit (Part no. 900218) is available for cleaning areas along fences and curbs, etc., that are difficult to reach with the Turbo Vac broom.



- The fence brush can be adjusted vertically and horizontally, as well as rotated at an angle, so that debris is thrown into the Turbo Vac broom. For best results, angle the front edge of the brush downward.
- The stop chain is used to adjust the height of the fence brush during operation and to hold it up during transport.
- Never allow the brush to rest completely on the ground during operation.

SAFETY WARNING!

The Turbo Vac should never be transported with the fence brush in operating position. Always use the stop chain to suspend the brush during transport.

Parts

TV60RE



TV60R

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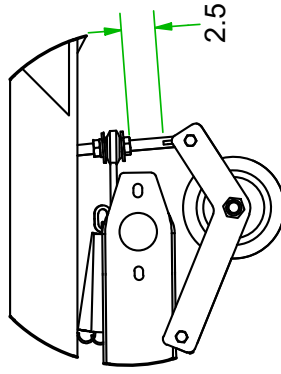
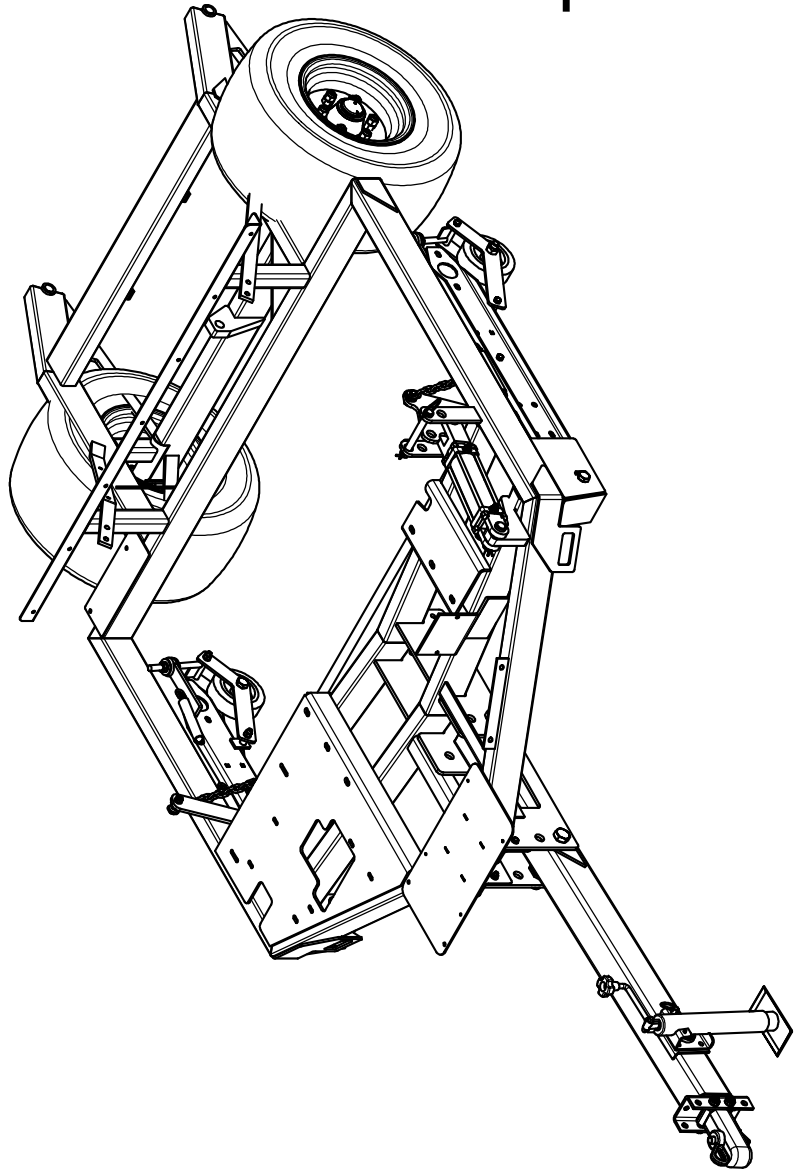
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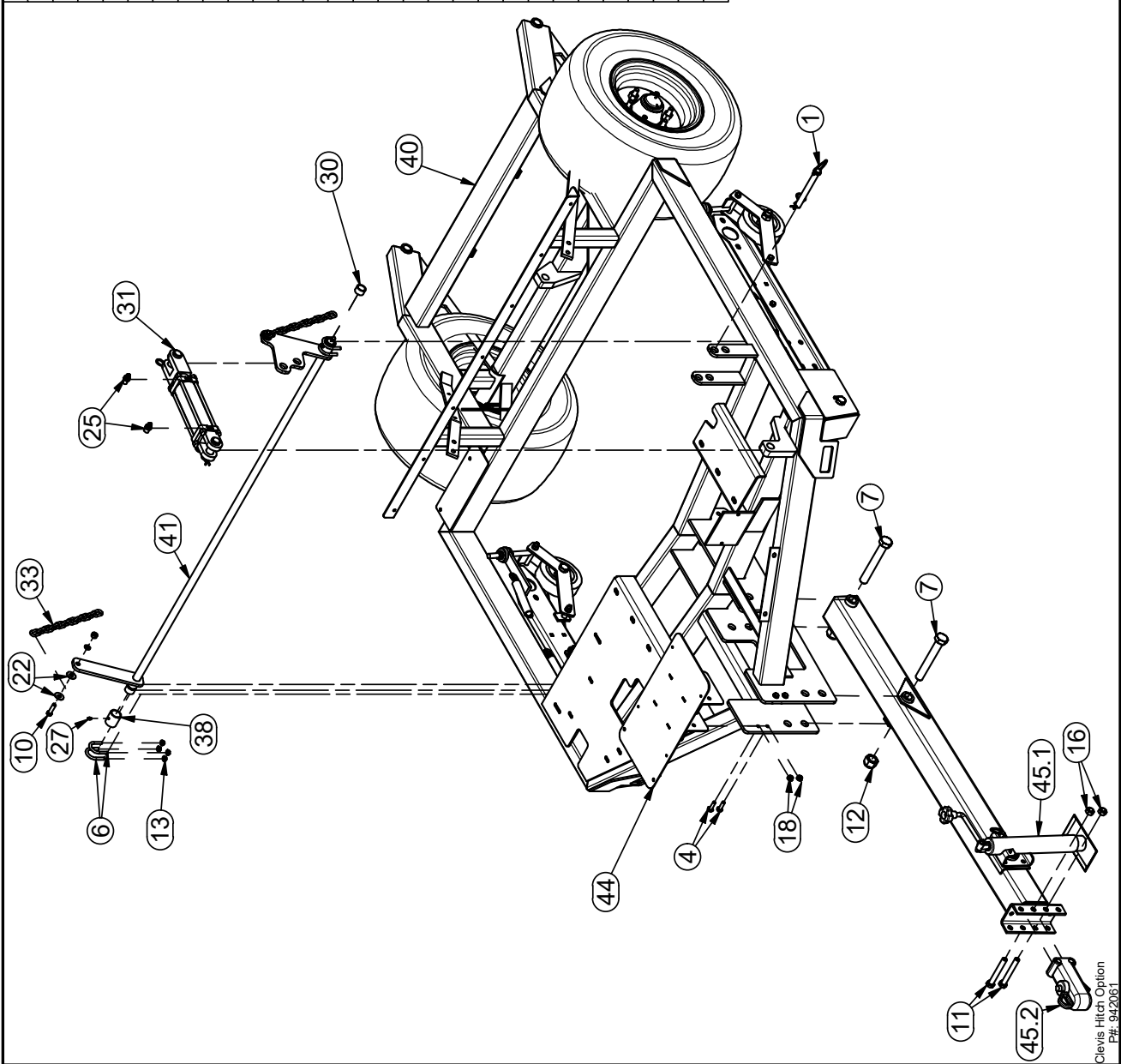
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ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION			
1	1	102015	HITCH PIN, 3/4 X 6 W/KEEPER	16	2	110639	NUT, 5/8-11, UNITORQUE LOCK	31	1	923011	Cylinder, 2 X 6, -6 SAE Cross			
2	4	110039	NUT, 5/8-11 JAM	17	10	110641	NUT, 7/16-14	32	2	940043	CASTER WHEEL ASSY			
3	4	110068	WASHER, 1.25 OD X .75 ID X .075	18	4	110645	NUT, 3/8-16 WIZ FLANGE	33	2	940126	BROOM LIFT CHAIN			
4	4	110161	BOLT, 3/8-16 X 1.25, WIZ FLANGE	19	4	110650	WASHER, 5/8" FLAT STANDARD	34	4	942054	SPRING			
5	2	110321	BOLT, 7/16-14 X 1.75 GR 5 HEX HEAD	20	2	110654	Washer, 1.75 X .815 Spindle	35	2	943053	26" MULTI-TRACK TIRE & WHEEL			
6	4	110362	U-BOLT, 5/16	21	2	110655	WASHER, 5/8" LOCK	36	4	970067	BROOM WHEEL BRACKET			
7	2	110364	BOLT, 1-8 X 7.0	22	8	110670	WASHER, 7/16" FLAT STANDARD	37	2	970254	CASTER WHEEL BOLT			
8	2	110383	BOLT, 3/4-10 X 6.0	23	8	110671	WASHER, 7/16" LOCK	38	2	970370	BROOM LIFT BUSHING			
9	4	110527	BOLT, 7/16-14 X 4.0	24	2	110677	WASHER, 3/4" FLAT STANDARD	39	2	975015	WHEEL HEIGHT ADJ. WLDMNT			
10	2	110535	BOLT, 7/16-14 X 1.5	25	2	120243	ADAPTER, 6MJ-6MP	40	1	975095	FRAME WLDMNT, TV60ER			
11	2	110562	BOLT, 5/8-11 X 4.5	26	2	413001	HUB COMPLETE, 35-6LM	41	1	975098	BROOM LIFT WELDMENT			
12	2	110602	NUT, 1-8 LOCK NYLON INSERT	27	4	510174	GREASE ZERK, 1/4-28 ST	42	1	975121	LEFT BROOM ARM WLDMNT			
13	8	110606	NUT, 5/16-18 WIZ FLANGE	28	2	510175	COTTER PIN, 3/16 X 2	43	1	975122	RIGHT BROOM ARM WLDMNT			
14	2	110613	NUT, 3/4-16, CASTLE	29	4	800128	BUSHING, IGUS, FOOT PEDAL	44	1	975175	Weldment, Tank Mount			
15	4	110625	NUT, 3/4-10, UNITORQUE LOCK	30	4	922006	BUSHING, 1.75 X 1 X .75	45	1	975436	WELDMENT, TV60R HD HITCH			



Wheel Height

TV60RE FRAME ASSEMBLY

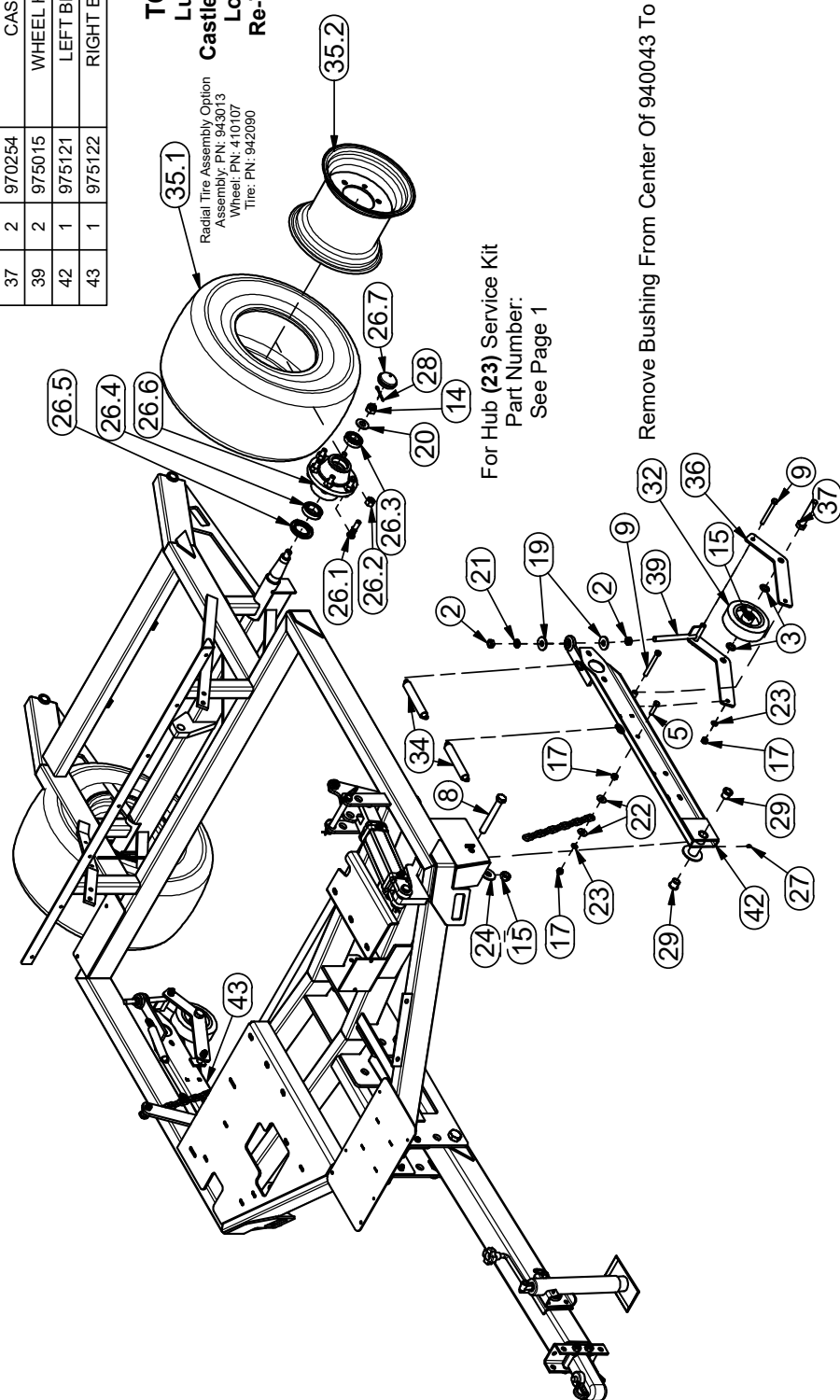
Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	1	102015	HITCH PIN, 3/4 X 6 W/KEEPER
3	1	110068	WASHER, 1.25 OD X .75 ID X .075
4	4	110161	BOLT, 3/8-16 X 1.25, WIZ FLANGE
6	4	110362	U-BOLT, 5/16
7	2	110364	BOLT, 1-8 X 7.0
10	2	110535	BOLT, 7/16-14 X 1.5
11	2	110562	BOLT, 5/8-11 X 4.5
12	2	110602	NUT, 1-8 LOCK NYLON INSERT
13	8	110606	NUT, 5/16-18 WIZ FLANGE
16	2	110639	NUT, 5/8-11, UNITORQUE LOCK
17	2	110641	NUT, 7/16-14
18	4	110645	NUT, 3/8-16 WIZ FLANGE
22	6	110670	WASHER, 7/16" FLAT STANDARD
23	2	110671	WASHER, 7/16" LOCK
24	2	110677	WASHER, 3/4" FLAT STANDARD
25	2	120243	ADAPTER, 6MJ-6MP
27	2	510174	GREASE ZERK, 1/4-28 ST
30	4	922006	BUSHING, 1.75 X 1 X .75
31	1	923011	Cylinder, 2 X 6, -6 SAE Cross
33	2	940126	BROOM LIFT CHAIN
38	2	970370	BROOM LIFT BUSHING
40	1	975095	FRAME WLDMNT, TV60R
41	1	975098	BROOM LIFT WELDMENT
44	1	975175	Weldment, Tank Mount
45	1	975436	WELDMENT, TV60R HD HITCH
45.1	1	410048	JACK, 2000lb. SWIVEL
45.2	1	942184	BALL COUPLER



Clevis Hitch Option
P# 942061

Parts List				Parts List				Parts List				905131	REV: A
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION		
2	4	110039	NUT, 5/8-11 JAM	23	8	110671	WASHER, 7/16" LOCK	26.7	2	410112	DUST CAP		
3	4	110068	WASHER, 1.25 OD X .75 ID X .075	24	2	110677	WASHER, 3/4" FLAT STANDARD	28	2	510175	COTTER PIN, 3/16 X 2		
5	2	110321	BOLT, 7/16-14 X 1.75 GR 5 HEX HEAD	14	2	110613	NUT, 3/4-16, CASTLE	27	2	510174	GREASE ZERK, 1/4-28 ST		
8	2	110383	BOLT, 3/4-10 X 6.0	20	2	110654	Washer, 1.75 X .815 Spindle	29	4	800128	BUSHING, IGUS, FOOT PEDAL		
9	4	110527	BOLT, 7/16-14 X 4.0	26.1	12	113006	Stud 9/16-18	32	2	940043	CASTER WHEEL ASSY		
15	4	110625	NUT, 3/4-10, UNITORQUE LOCK	26.2	12	113007	Nut 9/16-18	34	4	942054	SPRING		
17	10	110641	NUT, 7/16-14	26.3	2	410103	OUTER RACE AND BEARING	35	2	943053	26" MULTI-TRACK TIRE & WHEEL		
19	4	110650	WASHER, 5/8" FLAT STANDARD	26.4	2	410104	INNER RACE AND BEARING	35.1	2	342020	TIRE, 26x12x12/6 TITAN		
21	2	110655	WASHER, 5/8" LOCK	26.5	2	410105	SEAL	35.2	2	942072	WHEEL - 12 X 10-1/2, 5 ON 4-1/2		
22	4	110670	WASHER, 7/16" FLAT STANDARD	26.6	2	410111	Hub 6X6in	36	4	970067	BROOM WHEEL BRACKET		
								37	2	970254	CASTER WHEEL BOLT		
								39	2	975015	WHEEL HEIGHT ADJ. WLDMNT		
								42	1	975121	LEFT BROOM ARM WLDMNT		
								43	1	975122	RIGHT BROOM ARM WLDMNT		

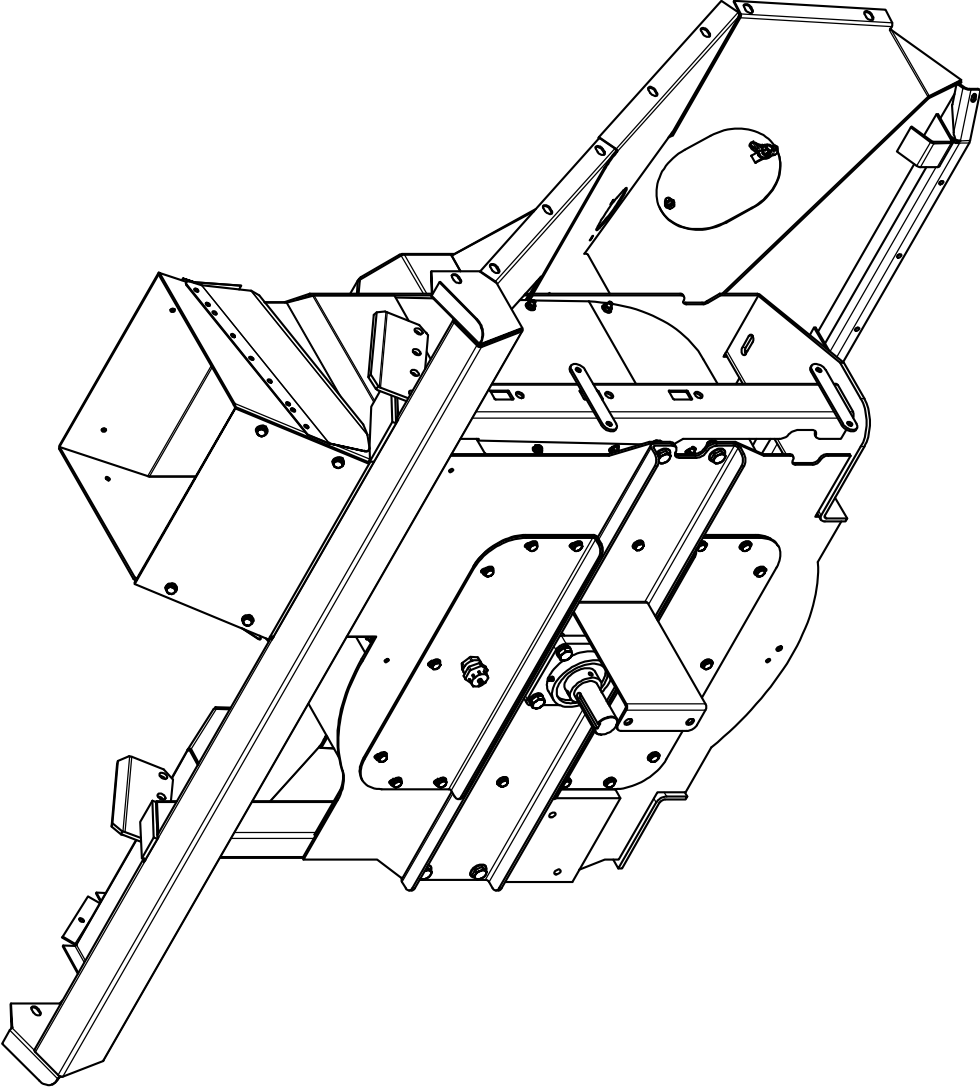
TORQUE SPECS:
 Lugnuts: 120 FT-LBS
 Castle Nut (Hub): 50 FT-LBS,
 Loosen one full turn,
 Re-Torque to 10 FT-LBS
 Install Cotter Pin



905132


REV: NC

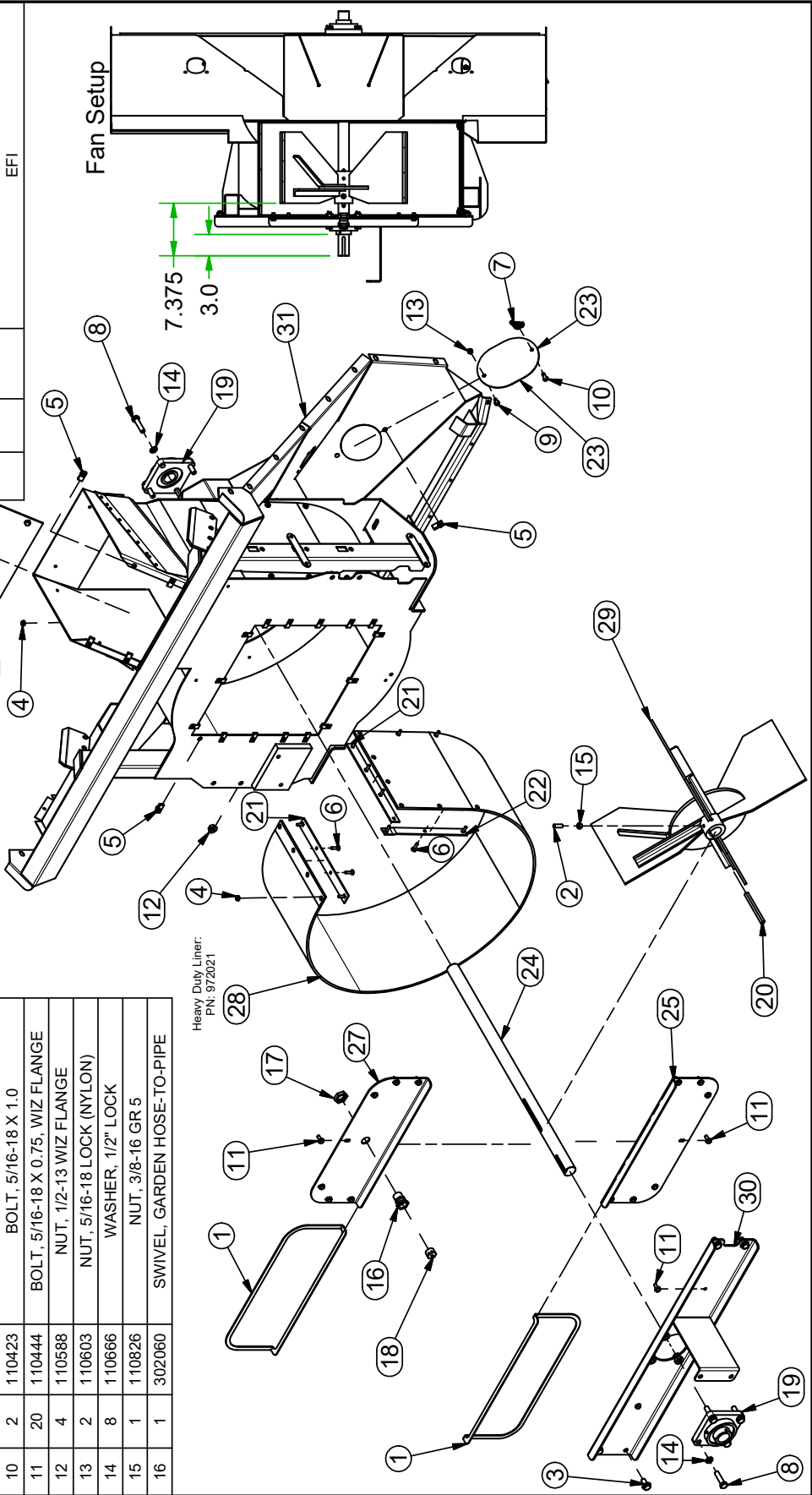
Parts List



ITEM	QTY	PART #	DESCRIPTION
1	10	100613	SEAL, .50 X .187
2	1	110093	SetScrew, 3/8-16 X 1.25
3	4	110220	BOLT, 1/2-13 X 1, WIZ FLANGE
4	12	110290	NUT, 1/4-20 WIZ FLANGE
5	22	110319	NUT, 5/16-18 U-TYPE .75L
6	12	110326	Bolt, 1/4-20 X 1 in Carriage
7	2	110327	NUT, 5/16-18 WING
8	8	110379	BOLT, 1/2-13 X 2.0
9	2	110422	BOLT, 5/16-18 X .75
10	2	110423	BOLT, 5/16-18 X 1.0
11	20	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
12	4	110588	NUT, 1/2-13 WIZ FLANGE
13	2	110603	NUT, 5/16-18 LOCK (NYLON)
14	8	110666	WASHER, 1/2" LOCK
15	1	110826	NUT, 3/8-16 GR 5
16	1	302060	SWIVEL, GARDEN HOSE-TO-PIPE
17	1	302061	LOCKNUT, 3/4 NPT
18	1	302062	PLUG, GARDEN HOSE
19	2	410851	BEARING, 4FNG 1 1/2"
20	1	940113	KEY, 3/8 X 5
21	2	970161	BLOWER LINER RETAINER
22	2	970162	BLOWER LINER RETAINER
23	2	970205	NOZZLE ACCESS COVER
24	1	970287	BLOWER SHAFT
25	1	970506	COVER PANEL
26	1	970558	BLOWER PLATE
27	1	970833	PANEL, FAN ACCESS
28	1	972010	BLOWER LINER, .250 UHMW
29	1	975195	FAN ASSY WIDMNT
30	1	975102	BEARING CHANNEL
31	1	975150	WELDMENT, BLOWER HOUSING, TV60E, EFI

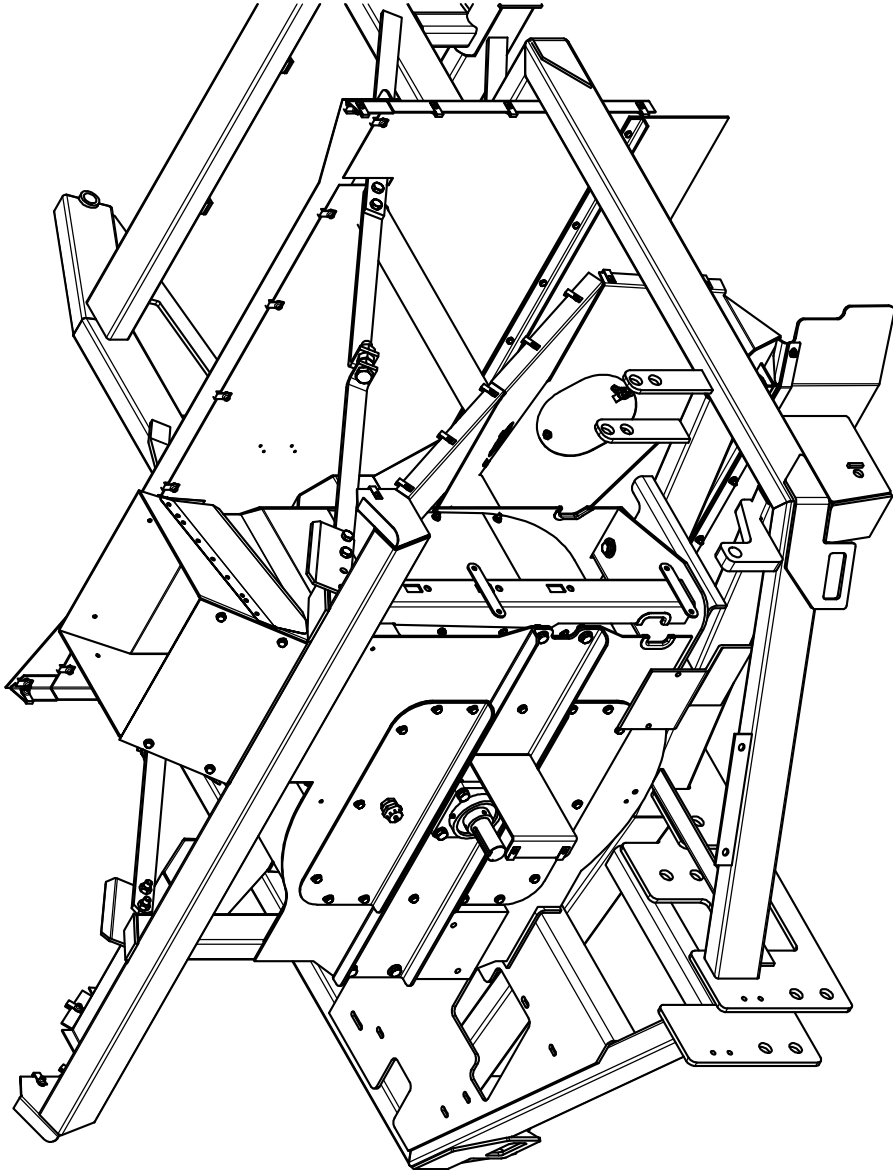
TV60RE BLOWER HOUSING ASSEMBLY

Parts List				Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	10'	100613	SEAL, .50 X .187	17	1	302061	LOCKNUT, 3/4 NPT	23	2	970205	NOZZLE ACCESS COVER
2	1	110093	SetScrew, 3/8-16 X 1.25	18	1	302062	PLUG, GARDEN HOSE	24	1	970287	BLOWER SHAFT
3	4	110220	BOLT, 1/2-13 X 1, WIZ FLANGE	19	2	410851	BEARING, 4FNG 1 1/2"	25	1	970506	COVER PANEL
4	12	110290	NUT, 1/4-20 WIZ FLANGE	20	1	940113	KEY, 3/8 X 5	26	1	970558	BLOWER PLATE
5	22	110319	NUT, 5/16-18 U-TYPE .75L	21	2	970161	BLOWER LINER RETAINER	27	1	970833	PANEL, FAN ACCESS
6	12	110326	Bolt, 1/4-20 X 1 in Carriage	22	2	970162	BLOWER LINER RETAINER	28	1	972010	BLOWER LINER, .250 UHMW
7	2	110327	NUT, 5/16-18 WING					29	1	975195	FAN ASSY W/DMNT
8	8	110379	BOLT, 1/2-13 X 2.0					30	1	975102	BEARING CHANNEL
9	2	110422	BOLT, 5/16-18 X .75					31	1	975150	WELDMENT, BLOWER HOUSING, TV60E,
10	2	110423	BOLT, 5/16-18 X 1.0					EFI			

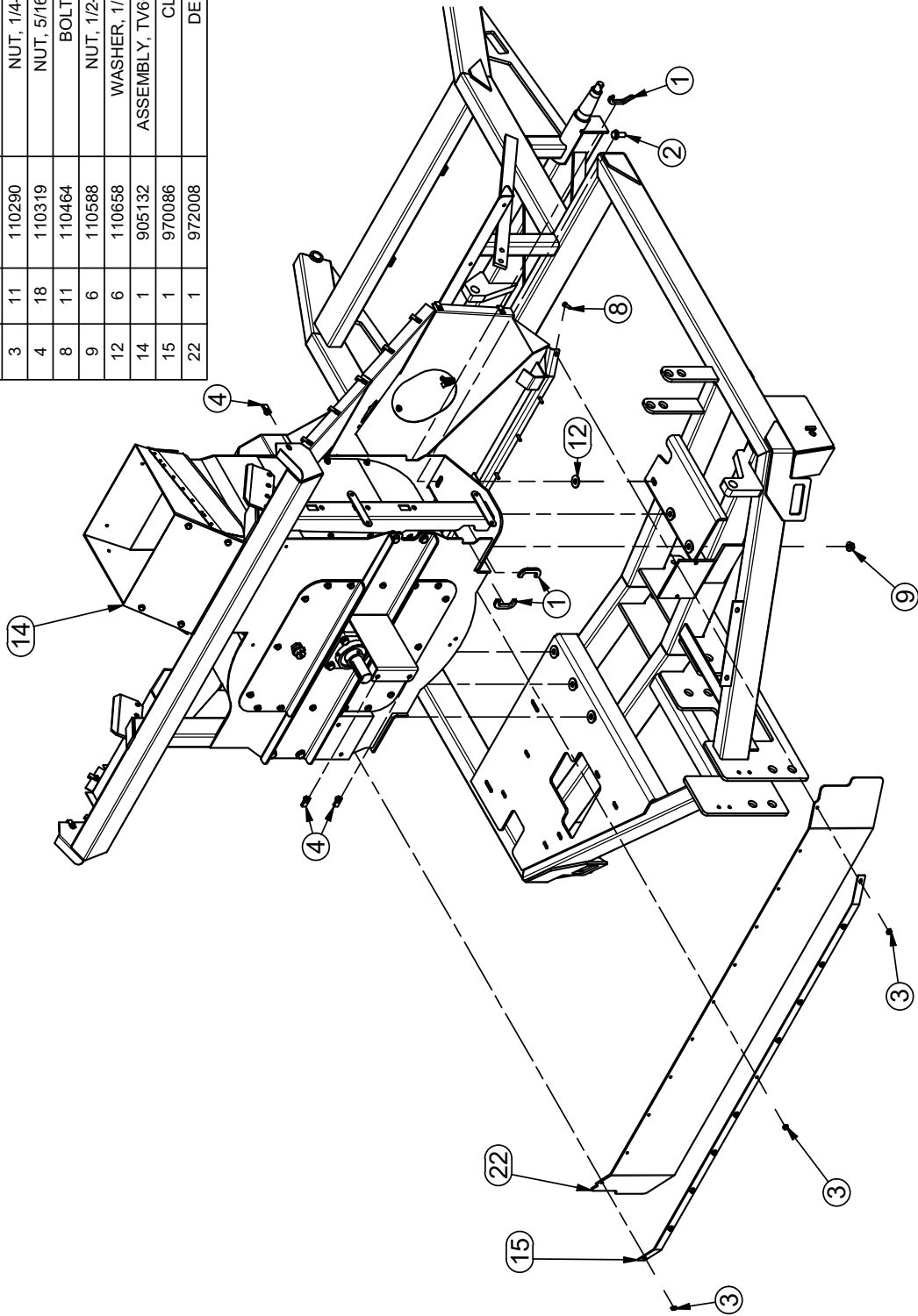


BLOWER HOUSING INSTALL

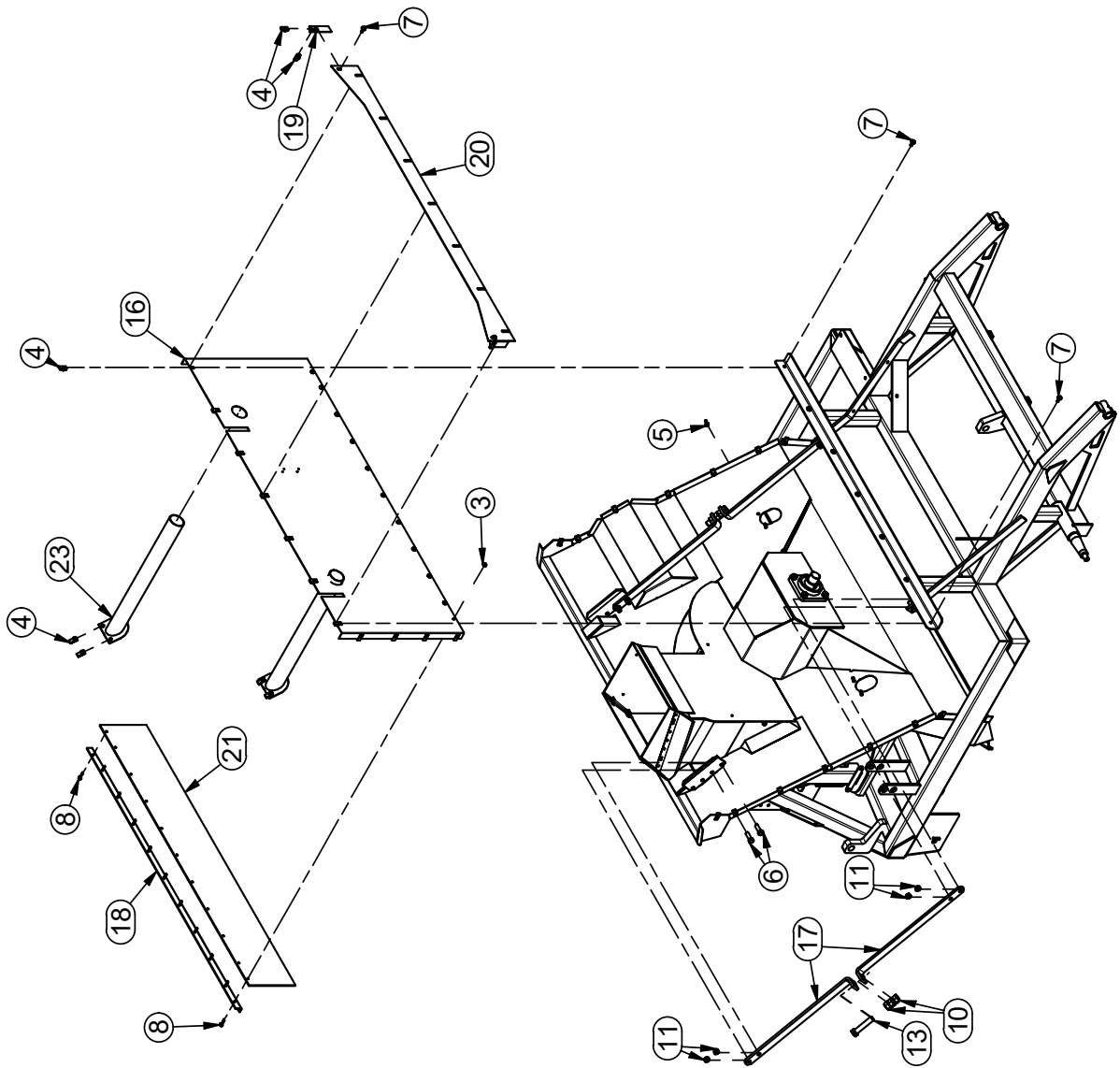
Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	3	100365	Molding, Edge
2	6	110001	BOLT, 1/2-13 X 1.25, WIZ FLANGE
3	22	110290	NUT, 1/4-20 WIZ FLANGE
4	41	110319	NUT, 5/16-18 U-TYPE .75L
5	4	110423	BOLT, 5/16-18 X 1.0
6	8	110429	BOLT, 1/2-13 X 1.5
7	9	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
8	22	110464	BOLT, 1/4-20 X 1.0
9	6	110588	NUT, 1/2-13 WIZ FLANGE
10	6	110596	NUT, 3/4-10
11	8	110615	NUT, 1/2-13, UNITORQUE LOCK
12	6	110658	WASHER, 1/2" FLAT STANDARD
13	2	110713	BOLT, 3/4-10 X 3.5 TAP
14	1	905132	ASSEMBLY, TV60RE BLOWER HOUSING
15	1	970086	CLAMP BAR
16	1	970390	BACK 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	1	972008	DEBRIS FLAP
23	2	975111	HOSE TUBE



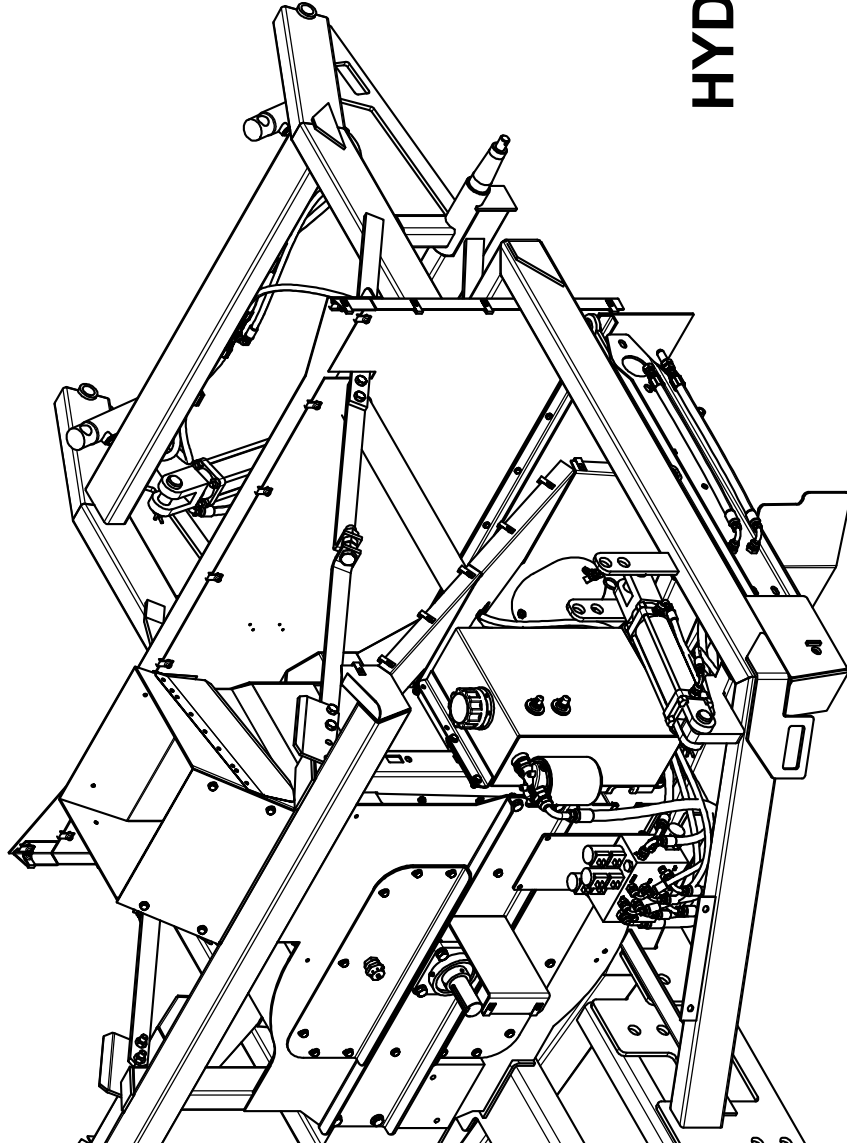
Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	3	100365	Molding, Edge
2	6	110001	BOLT, 1/2-13 X 1.25, WIZ FLANGE
3	11	110290	NUT, 1/4-20 WIZ FLANGE
4	18	110319	NUT, 5/16-18 U-TYPE .75L
8	11	110464	BOLT, 1/4-20 X 1.0
9	6	110588	NUT, 1/2-13 WIZ FLANGE
12	6	110658	WASHER, 1/2" FLAT STANDARD
14	1	905132	ASSEMBLY, TV60RE BLOWER HOUSING
15	1	970086	CLAMP BAR
22	1	972008	DEBRIS FLAP



Parts List			
ITEM	QTY	PART #	DESCRIPTION
3	11	110290	NUT, 1/4-20 WIZ FLANGE
4	41	110319	NUT, 5/16-18 U-TYPE .75L
5	4	110423	BOLT, 5/16-18 X 1.0
6	8	110429	BOLT, 1/2-13 X 1.5
7	9	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
8	11	110464	BOLT, 1/4-20 X 1.0
10	6	110596	NUT, 3/4-10
11	8	110615	NUT, 1/2-13, UNITORQUE LOCK
13	2	110713	BOLT, 3/4-10 X 3.5 TAP
14	1	905132	ASSEMBLY, TV60RE BLOWER HOUSING
16	1	970390	BACK 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
23	2	975111	HOSE TUBE



Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	2	110441	BOLT, 5/16-18 X 4.0	9	2	120239	ADAPTER, 6MJ-8MB
2	4	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE	10	2	120241	ADAPTER, 4MJ-4MJ-4MJ
3	6	110606	NUT, 5/16-18 WIZ FLANGE	11	1	120243	ADAPTER, 6MJ-6MP
4	2	120027	ADAPTER, 4MB-4MJ 45	12	1	120253	ADAPTER, 10MJ-12MB
5	2	120102	ADAPTER, BULKHEAD, 6MJ-6MJ	13	1	120277	ADAPTER, 8MJ-8MB
6	1	120138	ADAPTER, 10MJ-12MP	14	6	120319	ADAPTER, 6MJ-6MB
7	1	120227	ADAPTER, 12BH-12MP	15	1	120551	ADAPTER, 6MJ-6MB90 R.062
8	2	120233	ADAPTER, 4MJ-4MB	16	2	200116	SIGHT GLASS
				17	1	323019	CYLINDER - 2 X 8, SAE-6
				18	1	500175	PIPE PLUG, 1/2" SQ HEAD PLAIN
				19	1	720041	FILTER HEAD
				20	1	720043	FILTER, 10 MICRON
				21	1	720077	FITTING, NIPPLE 3/4 X 1.375
				22	2	922021	HYDRAULIC CYLINDER
				23	1	923001	BREATHER/FILLER CAP
				24	1	923006	VALVE, 4 BANK, TV60 W/O NEEDLE
				25	1	923011	Cylinder, 2 X 6, -6 SAE Cross
				26	1	925005	HYD HOSE KIT, TV60RE
				27	1	970263	SHIELD BRACKET
				28	1	975115	HYD TANK W/LDMNT



HYDRAULIC INSTALL

820229: Coil Deck Valve

210871: Valve Cartridge

922072: Valve, Pilot Check

922034 To Base
(14) End Of 923011

922037 To Rod
(14) End Of 323019

922037 To Base
(14) End Of 323019

922056: Valve, Spool, Broom

820143: Coil, 12 Volt, Broom

922036 To Deck
Motor Bottom Port

922036 To Deck
Motor Top Port

922055: Valve, Relief 2000 PSI

922086 To Rod
(14) End Of 922021

922085 To Pump
"Outlet" Port

922032 To Filter

922086 To
Base End Of
922021

LOW

922034 To Rod
End Of 923011

LF

BP

BT

D

U

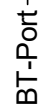
Parts List			Parts List			Parts List					
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	2	110441	BOLT, 5/16-18 X 4.0	9	2	120239	ADAPTER, 6MJ-8MB	16	2	200116	SIGHT GLASS
2	4	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE	11	1	120243	ADAPTER, 6MJ-6MP	17	1	323019	CYLINDER - 2 X 8, SAE-6
3	6	110606	NUT, 5/16-18 WIZ FLANGE	12	1	120253	ADAPTER, 10MJ-12MB	18	1	500175	PIPE PLUG, 1/2" SQ HEAD PLAIN
5	2	120102	ADAPTER, BULKHEAD, 6MJ-6MJ	13	1	120277	ADAPTER, 8MJ-8MB	19	1	720041	FILTER HEAD
6	1	120138	ADAPTER, 10MJ-12MP	14	6	120319	ADAPTER, 6MJ-6MB	20	1	720043	FILTER, 10 MICRON
7	1	120227	ADAPTER, 12BH-12MP	15	1	120551	ADAPTER, 6MJ-6MB90 R.062	21	1	720077	FITTING, NIPPLE 3/4 X 1.375
								26.6	2	922041	HOSE, BROOM ARM TO BROOM MOTOR
								23	1	923001	BREATHER/FILLER CAP
								24	1	923006	VALVE, 4 BANK, TV/60 W/O NEEDLE
								27	1	970263	SHIELD BRACKET
								28	1	975115	HYD TANK W/DMNT

USE RTV SEALANT ON CORK GUSSET FOR BETTER SEAL.

HYDRAULIC TANK ASSEMBLY

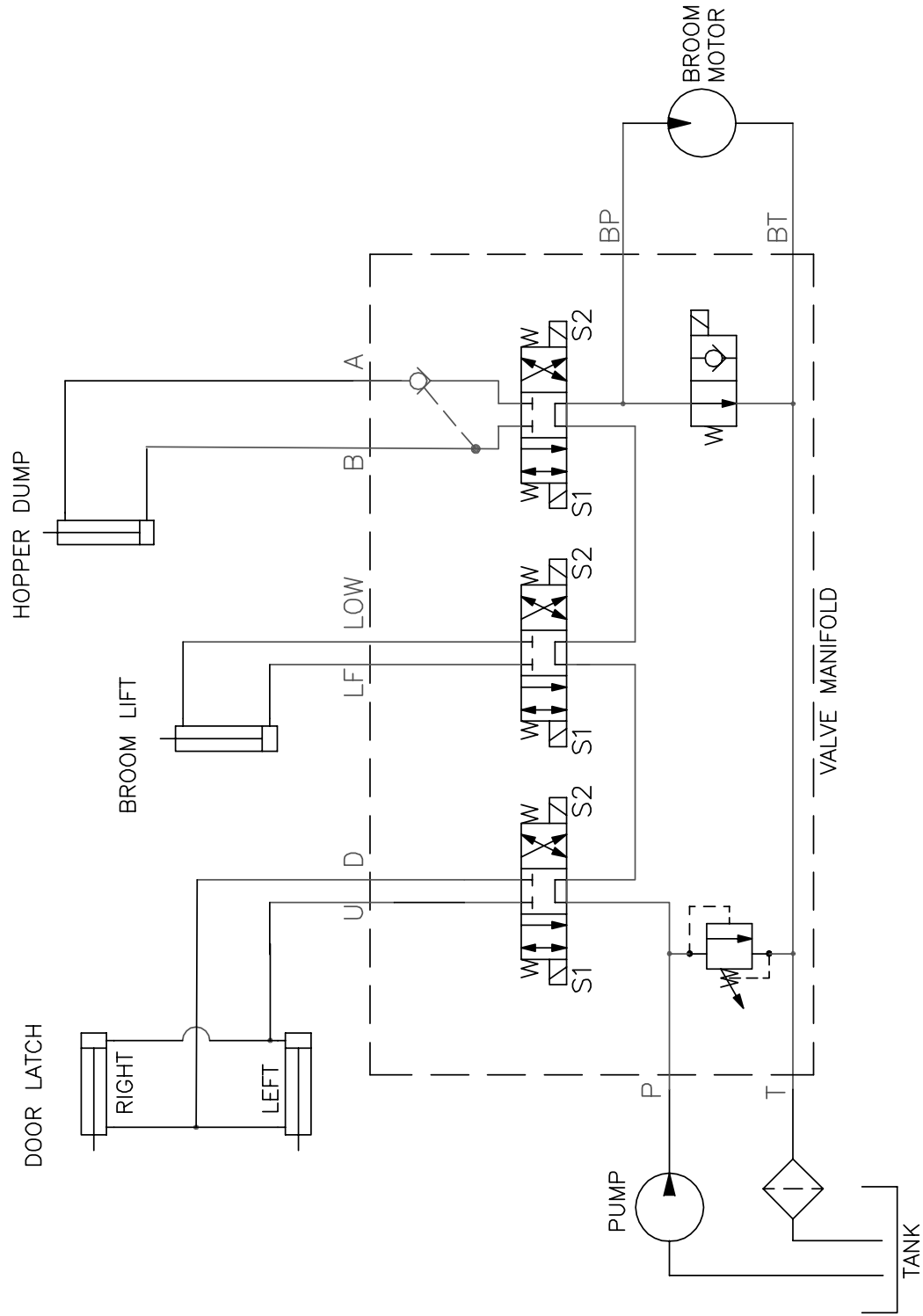
SOME PIECES HIDDEN FOR CLARITY

REPLACE OIL FILTER
(PN: 720043)
EVERY 100 HOURS



Parts List			
ITEM	QTY	PART #	DESCRIPTION
4	2	120027	ADAPTER, 4MB-4MJ 45
5	2	120102	ADAPTER, BULKHEAD, 6MJ-6MJ
6	1	120138	ADAPTER, 10MJ-12MP
7	1	120227	ADAPTER, 12BH-12MP
8	2	120233	ADAPTER, 4MJ-4MB
19	1	720041	FILTER HEAD
20	1	720043	FILTER, 10 MICRON
22	2	922021	HYDRAULIC CYLINDER
26.1	1	922032	HOSE, VALVE "T" TO FILTER "INLET"
26.2	2	922034	HOSE, VALVE "LOW" TO BROOM LIFT CYL "RE"
26.3	2	922036	HOSE, VALVE "BT&BP" TO BROOM ARM
26.4	1	922037	HOSE, .37 X 92", 6-FX90S - 6 - 6FXJ90M
26.5	1	922038	HOSE, VALVE "B" TO DUMP CYL "BE"
26.6	2	922041	HOSE, BROOM ARM TO BROOM MOTOR
26.7	4	922052	1/4" X 35" 4-4FJX - 4 - 4FJX
26.8	2	922086	HOSE .25 X 120 4FJX90M-6FJX90S

TV60RE HYDRAULIC SCHEMATIC



905135

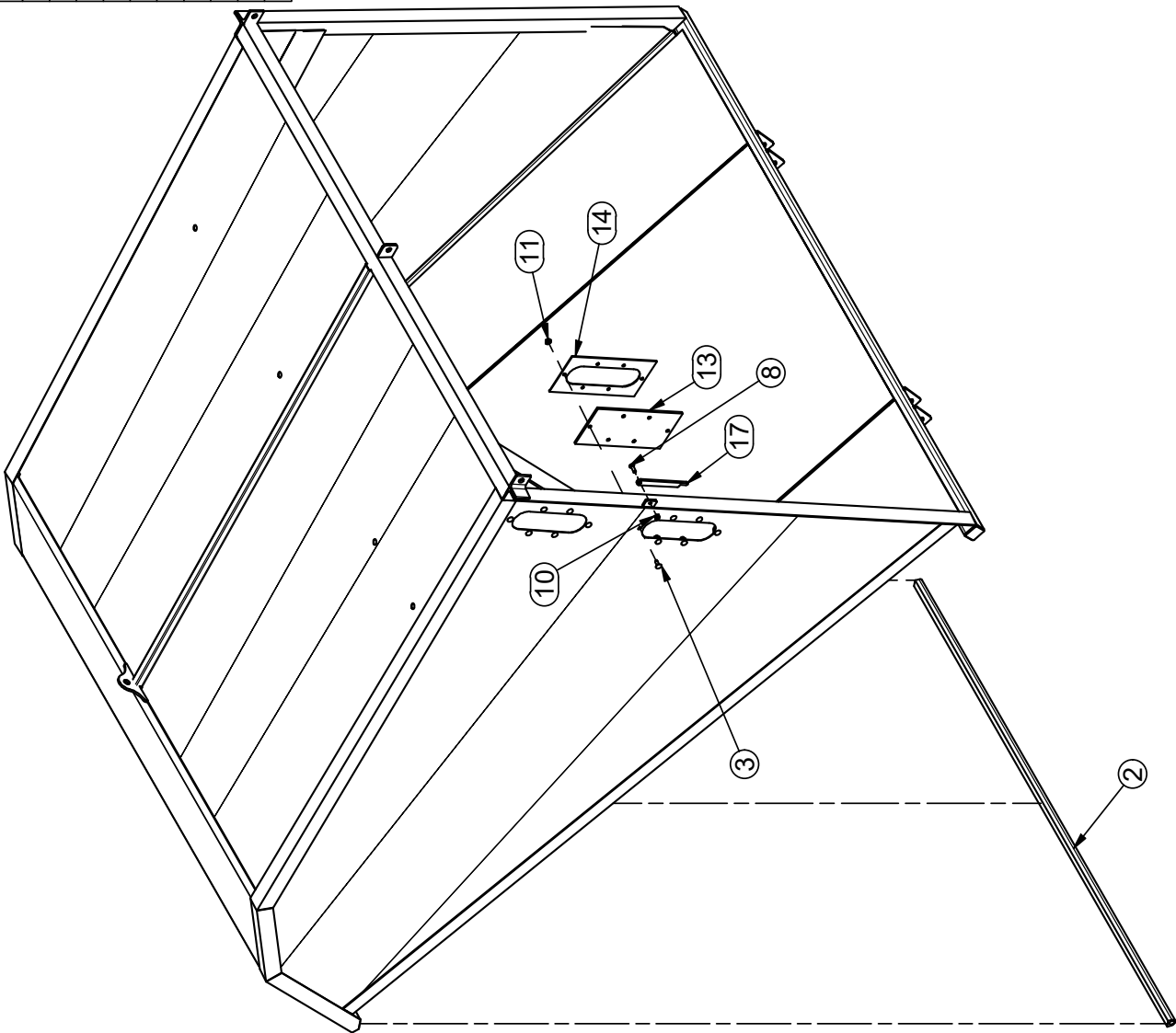
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Parts List

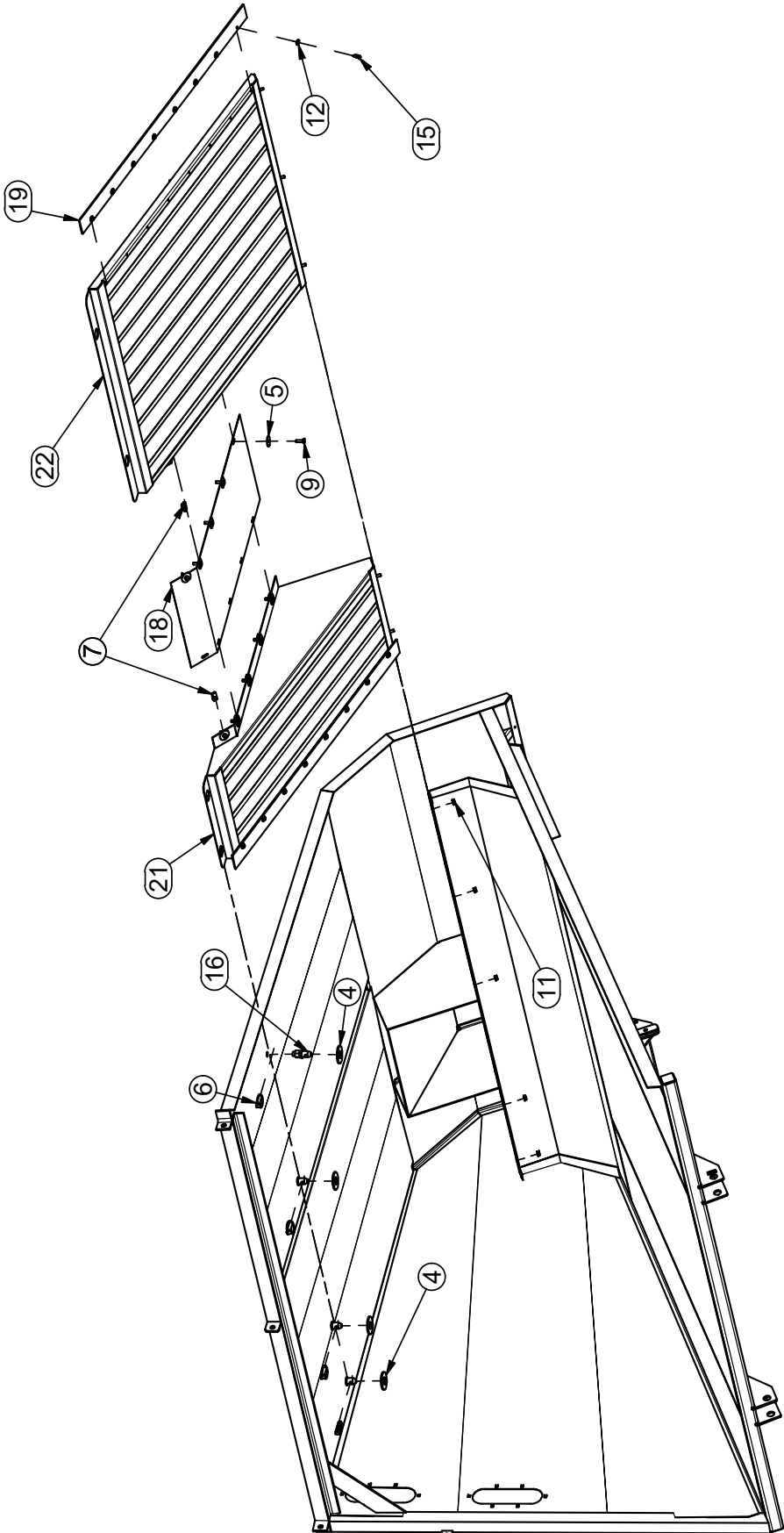
ITEM	QTY	PART #	DESCRIPTION
2	6	102004	SEAL, RUBBER, D 1" X 1"
3	12	110020	Bolt, 5/16-18 X 0.75 in Carriage
4	4	110038	WASHER, 1" FLAT STANDARD
5	10	110049	WASHER, 5/16 X 1.50 FENDER
6	4	110305	Pin, Lynch 7/16 x 1 3/4
7	10	110319	NUT, 5/16-18 U-TYPE .75L
8	1	110328	BOLT, 5/16-18 X 1 FLT HD SKT
9	10	110423	BOLT, 5/16-18 X 1.0
10	1	110603	NUT, 5/16-18 LOCK (NYLON)
11	17	110606	NUT, 5/16-18 WIZ FLANGE
12	16	110673	WASHER, 1/4" FLAT STANDARD
13	2	311691	SIGHT GLASS, HOPPER
14	2	311692	Backing Plate, Sight Glass
15	16	710586	SCREW, 1/4 X 1 TEK SELF-TAP
16	4	942161	PIN, STABILIZER
17	1	970211	BAR, PROP
18	1	970366	MIDDLE SCREEN
19	2	970729	DEBRIS FLAP-RETURN SCREEN
20	1	975091	HOPPER WELDMENT
21	1	975099	LEFT RETURN SCREEN
22	1	975100	RIGHT RETURN SCREEN

HOPPER ASSEMBLY

Parts List			
ITEM	QTY	PART #	DESCRIPTION
2	6	102004	SEAL, RUBBER, D 1' X 1'
3	12	110020	Bolt, 5/16-18 X 0.75 in Carriage
8	1	110328	BOLT, 5/16-18 X 1 FLT HD SKT
10	1	110603	NUT, 5/16-18 LOCK (NYLON)
11	12	110606	NUT, 5/16-18 WIZ FLANGE
13	2	311691	SIGHT GLASS, HOPPER
14	2	311692	Backing Plate, Sight Glass
17	1	970211	BAR, PROP
20	1	975091	HOPPER WELDMENT



Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
4	4	110038	WASHER, 1" FLAT STANDARD	15	16	710586	SCREW, 1/4 X 1 TEK SELF-TAP
5	10	110049	WASHER, 5/16 X 1.50 FENDER	16	4	942161	PIN, STABILIZER
6	4	110305	Pin, Lynch 7/16 x 1 3/4	18	1	970366	MIDDLE SCREEN
7	10	110319	NUT, 5/16-18 U-TYPE .75L	19	2	970729	DEBRIS FLAP-RETURN SCREEN
9	10	110423	BOLT, 5/16-18 X 1.0	20	1	975091	HOPPER WELDMENT
11	5	110606	NUT, 5/16-18 WIZ FLANGE	21	1	975099	LEFT RETURN SCREEN
12	16	110673	WASHER, 1/4" FLAT STANDARD	22	1	975100	RIGHT RETURN SCREEN

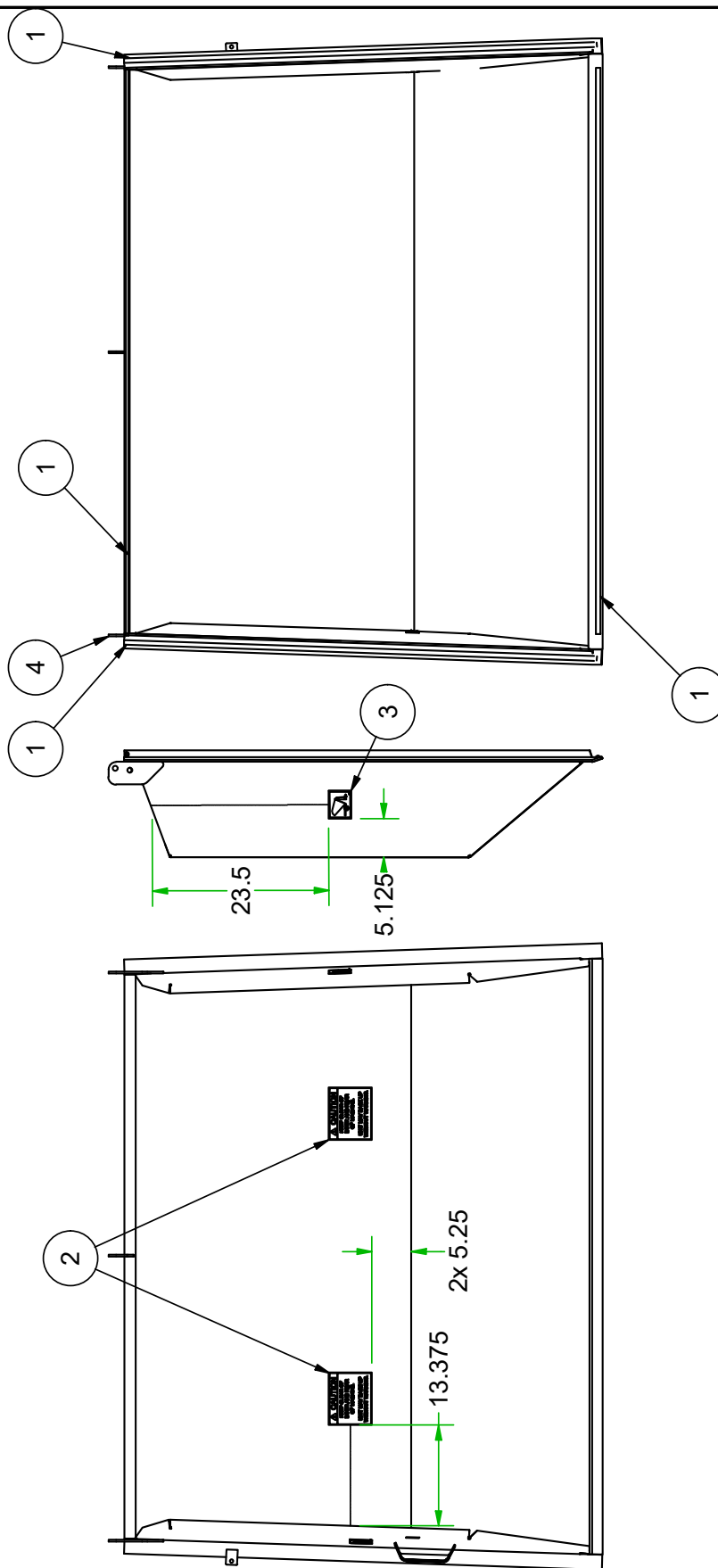


DOOR ASSEMBLY

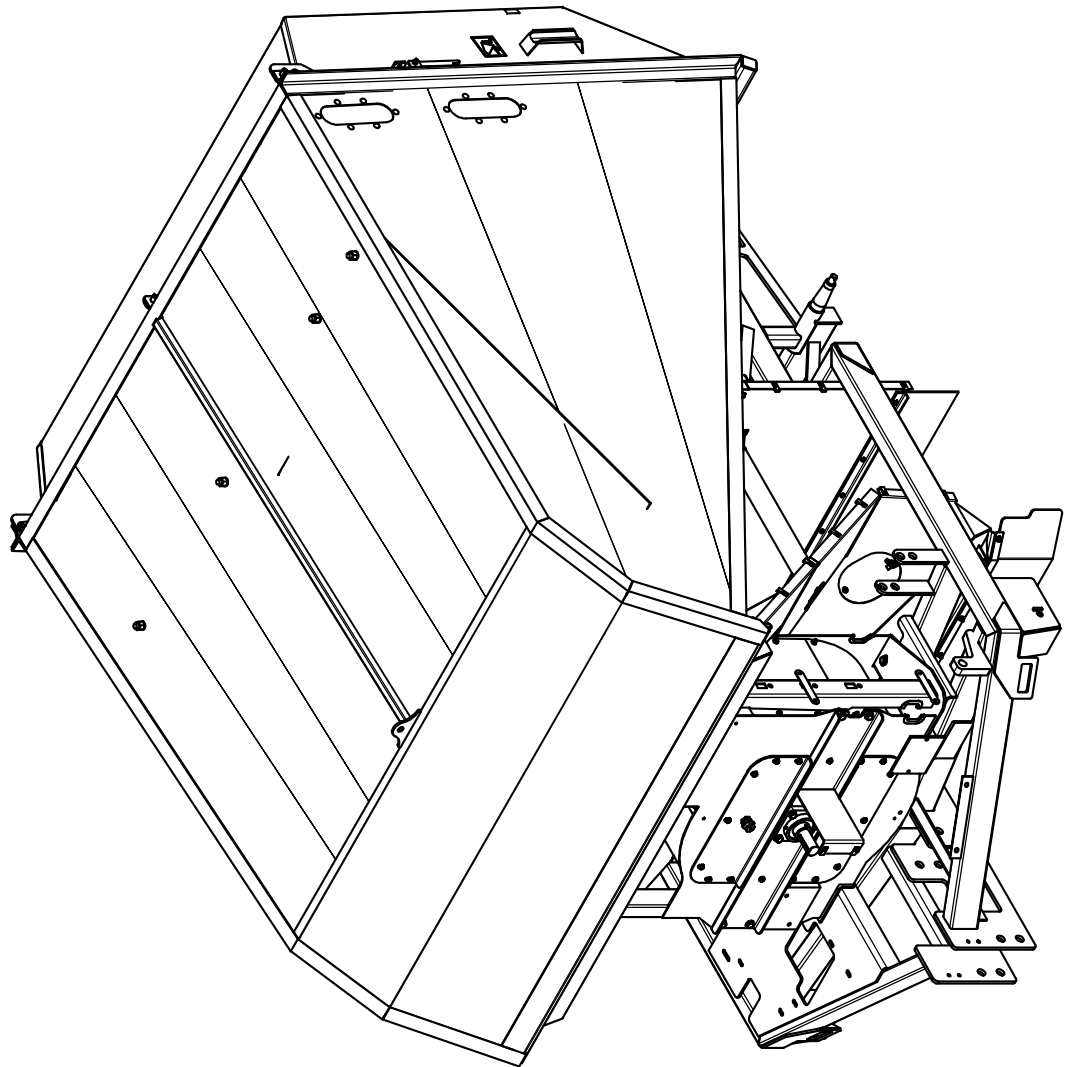
905136 REV: NC

Parts List

ITEM	QTY	PART #	DESCRIPTION
1	23.5'	100623	D SEAL, .375 X .625
2	2	902075	DECAL, KEEP CLEAR
3	2	902151	DECAL, DOOR SAFETY LOCK
4	1	975090	DOOR WLDMNT

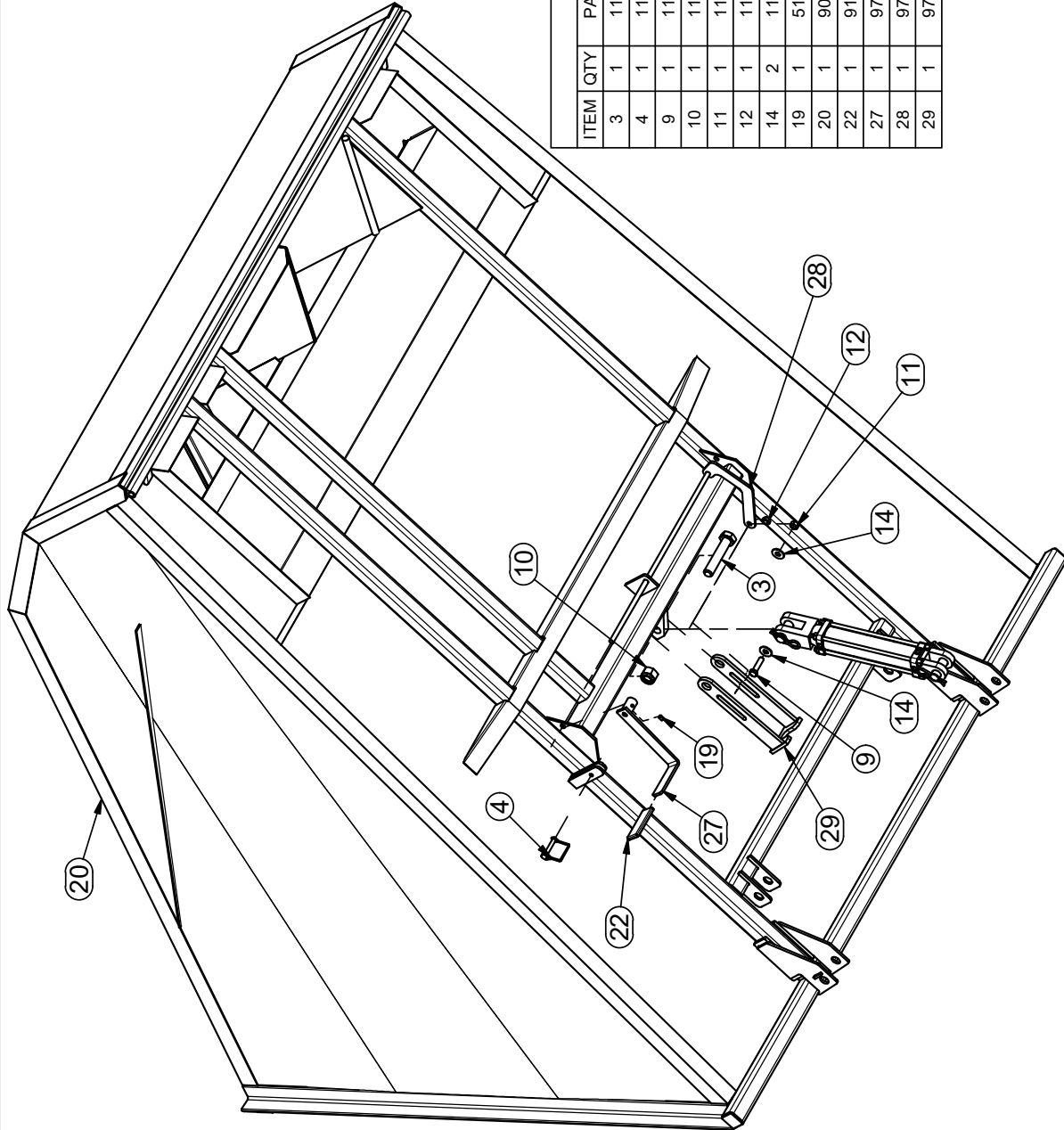


HOPPER INSTALL



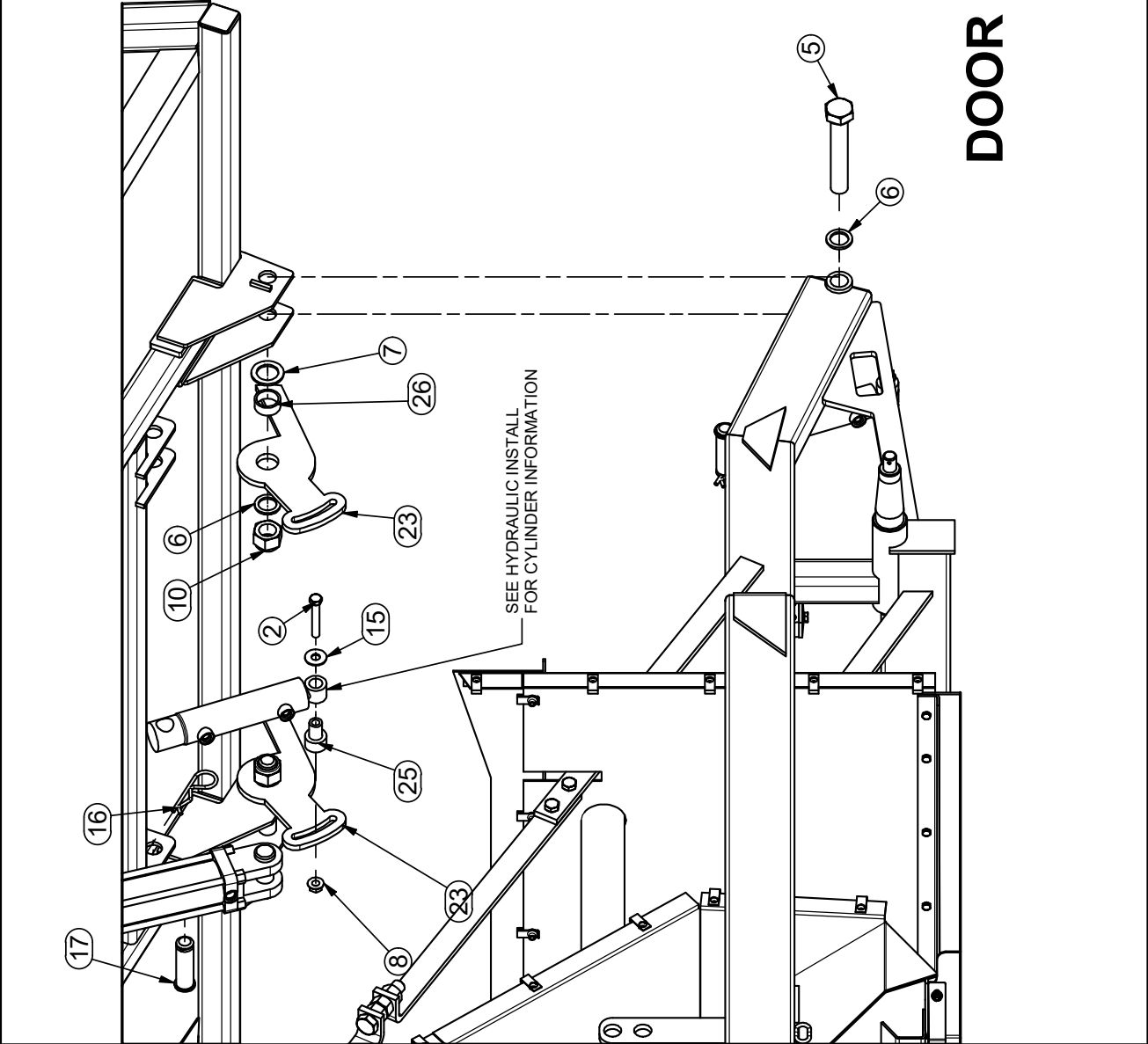
905137 REV: NC

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	4	110335	WASHER, 1" FLAT MACHINE
7	2	110336	WASHER, 1-1/4 FLAT MACHINE 10GA
8	2	110337	NUT, 7/16-14 WIZ FLANGE
9	1	110379	BOLT, 1/2-13 X 2.0
10	3	110602	NUT, 1-8 LOCK NYLON INSERT
11	1	110610	NUT, 1/2-13
12	1	110615	NUT, 1/2-13, UNITORQUE LOCK
13	3	110639	NUT, 5/8-11, UNITORQUE LOCK
14	2	110658	WASHER, 1/2" FLAT STANDARD
15	2	110670	WASHER, 7/16" FLAT STANDARD
16	2	210326	CLIP, HAIRPIN
17	2	220480	PIN
18	3	315257	PIN WELDMENT, HOPPER DOOR
19	1	510161	SetScrew, 3/8-16 X 0.5
20	1	905135	ASSEMBLY, TV60 HOPPER
21	1	905136	ASSEMBLY, TV60 DOOR
22	1	910044	COVER, VINYL 25 X 1.5 X 4 GRIP
23	2	970148	HOPPER DOOR LATCH
24	2	970149	LATCH PIVOT BUSHING
25	2	970150	LATCH SPACER
26	2	970151	LATCH PIVOT SPACER
27	1	975055	HANDLE WELDMENT, DUMP CYL LOCK
28	1	975056	SHAFT WELDMENT, DUMP CYL LOCK
29	1	975057	STOP WLDMNT, CYLINDER LOCK



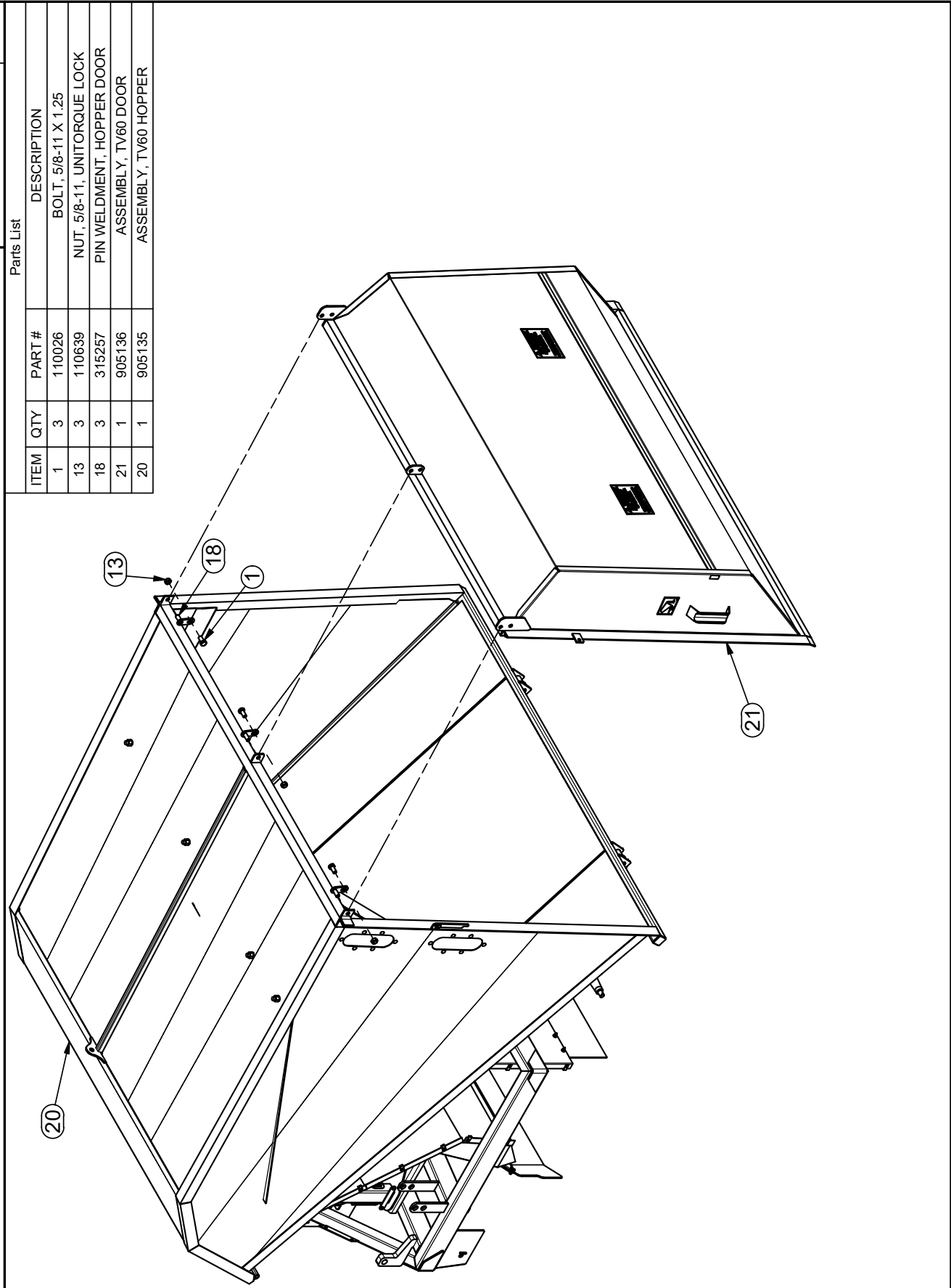
Parts List			
ITEM	QTY	PART #	DESCRIPTION
3	1	110208	BOLT, 1-8 X 5.0
4	1	110304	PIN, LOCK 3/8 X 2.5 SQ
9	1	110379	BOLT, 1/2-13 X 2.0
10	1	110602	NUT, 1-8 LOCK NYLON INSERT
11	1	110610	NUT, 1/2-13
12	1	110615	NUT, 1/2-13, UNITORQUE LOCK
14	2	110658	WASHER, 1/2" FLAT STANDARD
19	1	510161	SetScrew, 3/8-16 X 0.5
20	1	905135	ASSEMBLY, TV60 HOPPER
22	1	910044	COVER, VINYL .25 X 1.5 X 4 GRIP
27	1	975055	HANDLE WELDMENT, DUMP CYL LOCK
28	1	975056	SHAFT WELDMENT, DUMP CYL LOCK
29	1	975057	STOP WLDMNT, CYLINDER LOCK

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	4	110335	WASHER, 1" FLAT MACHINE
7	2	110336	WASHER, 1-1/4 FLAT MACHINE 10GA
8	2	110337	NUT, 7/16-14 W/IZ FLANGE
9	1	110379	BOLT, 1/2-13 X 2.0
10	3	110602	NUT, 1-8 LOCK NYLON INSERT
11	1	110610	NUT, 1/2-13
12	1	110615	NUT, 1/2-13, UNITORQUE LOCK
13	3	110639	NUT, 5/8-11, UNITORQUE LOCK
14	2	110658	WASHER, 1/2" FLAT STANDARD
15	2	110670	WASHER, 7/16" FLAT STANDARD
16	2	210326	CLIP, HAIRPIN
17	2	220480	PIN
18	3	315257	PIN WELDMENT, HOPPER DOOR
19	1	510161	SetScrew, 3/8-16 X 0.5
22	1	910044	COVER, VINYL .25 X 1.5 X 4 GRIP
23	2	970148	HOPPER DOOR LATCH
25	2	970150	LATCH SPACER
26	2	970151	LATCH PIVOT SPACER
27	1	975055	HANDLE WELDMENT, DUMP CYL LOCK
28	1	975056	SHAFT WELDMENT, DUMP CYL LOCK
29	1	975057	STOP WLDMNT, CYLINDER LOCK



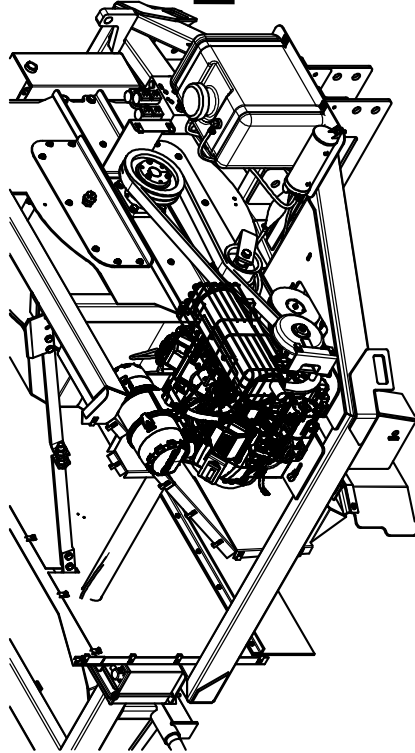
DOOR LATCH INSTALL

Parts List			
ITEM	QTY	PART #	DESCRIPTION
1	3	110026	BOLT, 5/8-11 X 1.25
13	3	110639	NUT, 5/8-11, UNITORQUE LOCK
18	3	315257	PIN WELDMENT, HOPPER DOOR
21	1	905136	ASSEMBLY, TV60 DOOR
20	1	905135	ASSEMBLY, TV60 HOPPER

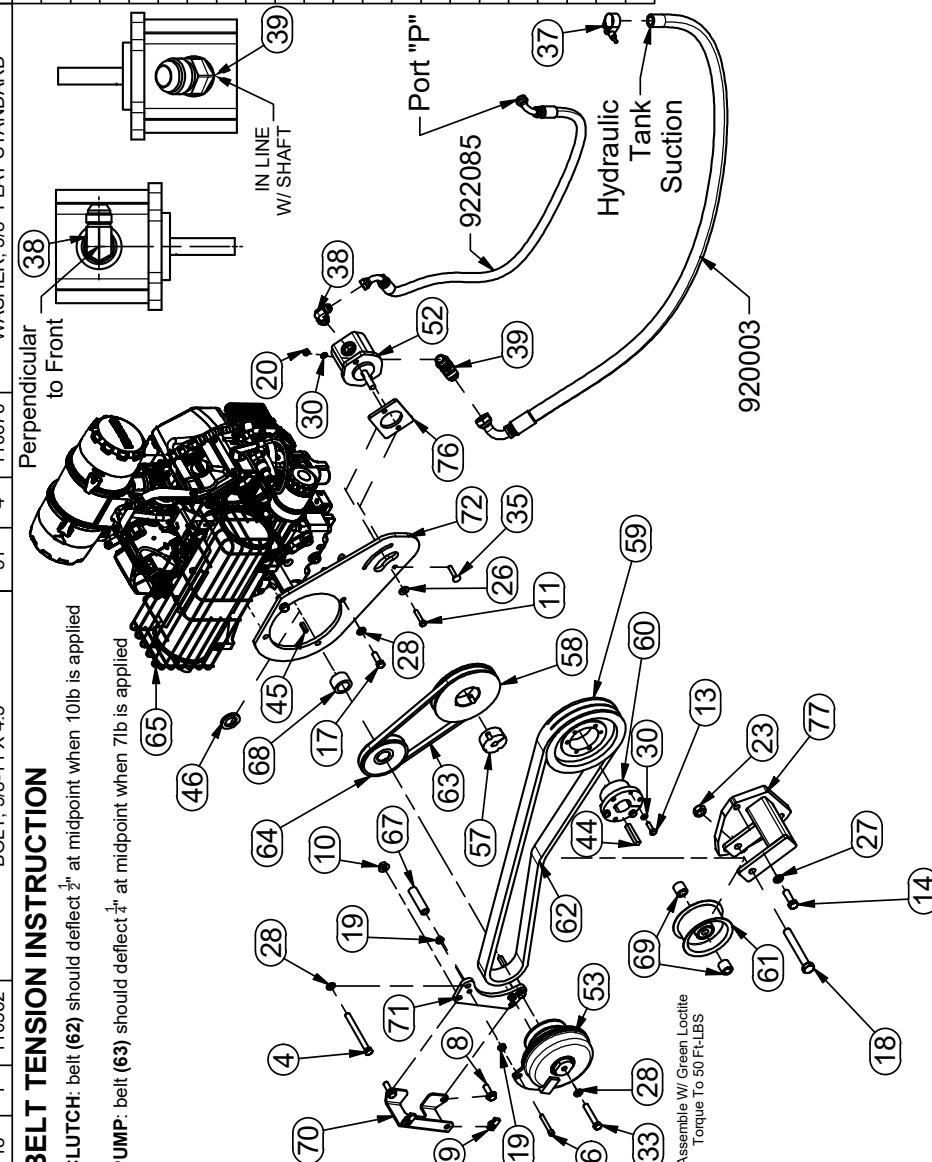


Parts List			Parts List			Parts List			905138			REV: B	
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION		
1	7	100361	CLAMP, HOSE #4 .25 MINI	37	1	112008	CLAMP, 1.25", T-BOLT	57	1	940127	Bushing, Taperlock 1610 .531 Bore		
2	5.1'	100363	HOSE, 3/16 LOW PRESS	38	1	120288	ADAPTER, 8MJ-8MB90	58	1	942027	SHEAVE, 1A5.6/B6.0 -1610 TL		
3	9.2'	100644	HOSE, 1/4" LOW PERM	39	1	120389	ADAPTER, 12MJ-10MB45	59	1	942063	PULLEY, 2 GROOVE QD BUSHING		
4	2	110012	BOLT, 7/16-14 X 4.5	40	1	132069	BATTERY TERMINAL COVER, POSITIVE	60	1	942067	BUSHING, SK 1 1/2		
5	4	110161	BOLT, 3/8-16 X 1.25, WIZ FLANGE	41	1	132070	BATTERY TERMINAL COVER, NEGATIVE	61	1	942167	IDLER PULLEY ASSY		
6	2	110168	BOLT, 5/16-18 X 2.0 SHCS	42	1	132090	SWITCH, SPST MOMENTARY, N.C.	62	1	942186	BELT, POWERBAND 2/B74		
7	4	110174	NUT, 1/4-20 LOCK 2-WAY	43	2	200019	CLAMP, ADEL AC10 .265 HOLE	63	1	942187	BELT, GATES A33		
8	2	110264	BOLT, 7/16-14 X 1.25, WIZ FLANGE	44	1	411120	KEY, 3/8 X 3/8 X 2.25	64	1	942188	SHEAVE, 1A4.5 X 1 1/8KSS		
9	2	110319	NUT, 5/16-18 U-TYPE .75L	45	1	510228	KEY, 1/4 X 1/4 X 1.0 UNDER	65	1	943054	ENGINE, 23.5 HP KOHLER, EFI		
10	2	110337	NUT, 7/16-14 WIZ FLANGE	46	3	510925	Machine Bushing	66	1	952030	Primer Bulb, CARB		
11	1	110377	BOLT, 5/16-18 X 1-1/2	47	1	530051	CABLE, BATTERY TO GROUND	67	2	970284	SPACER, .75 X .50 X 2.75		
12	2	110395	BOLT, 3/8-16 X 1.0 SHCS	48	1	832011	BATTERY, SEALED GEL W/L TERMINAL	68	1	970509	SPACER, 1.625 X 1.13 X 1.00		
13	5	110423	BOLT, 5/16-18 X 1.0	49	1	902162	FUEL TANK ASSY, 6 GAL	69	2	970529	SPACER		
14	2	110429	BOLT, 1/2-13 X 1.5	50	2	902163	STRAP, HOLD DOWN	70	1	970548	BELT GUARD, BRACKET R		
15	1	110433	BOLT, 3/8-16 X .75	51	1	902190	CANISTER, 550 CC CARBON	71	1	970680	CLUTCH BRACKET		
16	6	110468	BOLT, 1/4-20 X 0.75, WIZ FLANGE	52	1	920006	PUMP, .31cid X 1/2" HALDEX W600	72	1	970785	Plate, Pump Mount AA		
17	2	110539	BOLT, 7/16-14 X 1.25	53	1	932018	CLUTCH, ELECTRIC	73	1	970825	MOUNT - TAC, KOHLER		
18	1	110562	BOLT, 5/8-11 X 4.5	54	1	932061	Harness, Engine/Remote TV60E	74	1	970873	Mount, Engine 23.5 Tier 4		
19	4	110606	NUT, 5/16-18 WIZ FLANGE	55	1	932062	CABLE, BATTERY, 4GA 96" WIRING	75	1	970876	BRKT, BATTERY HOLD DOWN		
20	4	110608	NUT, 5/16-18	TERMINALS				76	1	970879	Pump Mount Spacer		
21	2	110630	NUT, 1/4-20 LOCK (NYLON INSERT)	56	1	932070	Tach/Hour Meter, 23.5 Kohler	77	1	975117	TENSIONER WELDMENT		
22	2	110631	NUT, 10-24 LOCK NYLON INSERT										
23	1	110639	NUT, 5/8-11, UNITORQUE LOCK										
24	11	110645	NUT, 3/8-16 WIZ FLANGE										
25	1	110658	WASHER, 1/2" FLAT STANDARD										
26	3	110665	WASHER, 5/16" FLAT STANDARD										
27	2	110666	WASHER, 1/2" LOCK										
28	5	110671	WASHER, 7/16" LOCK										
29	2	110673	WASHER, 1/4" FLAT STANDARD										
30	9	110674	WASHER, 5/16" LOCK										
31	4	110676	WASHER, 3/8" FLAT STANDARD										
32	2	110709	SCREW, 10-24 X 0.75, RHMS										
33	1	110715	BOLT, 7/16-20 X 2.5										
34	4	111067	BOLT, 3/8-16 X 2.0 FHCS 82°										
35	1	111164	Bolt, 5/16-18 X 1.5 in Carriage										
36	2	111198	BOLT, 5/16-18 X 9.5 Zinc Full Thread										

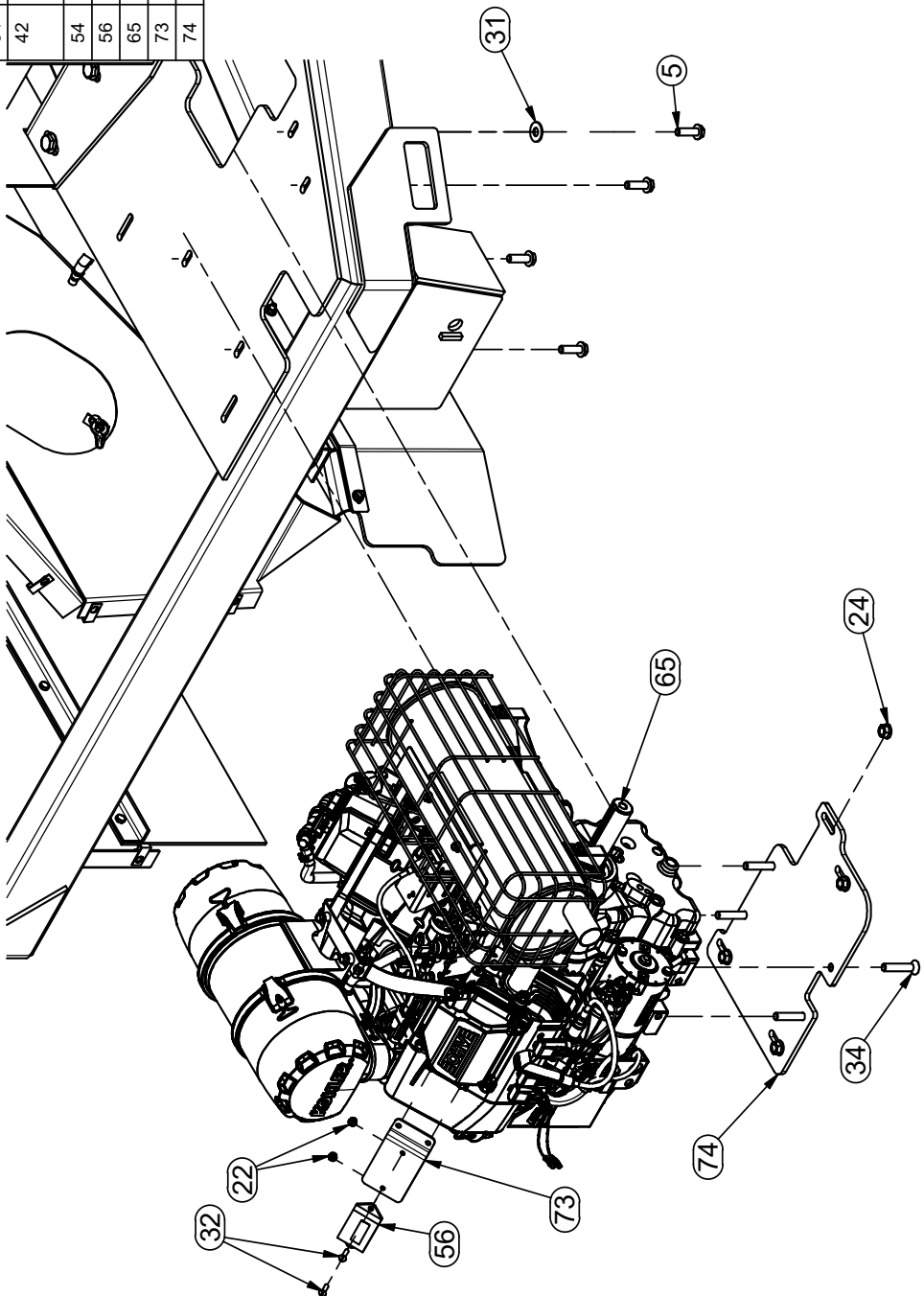
ENGINE
INSTALLATION

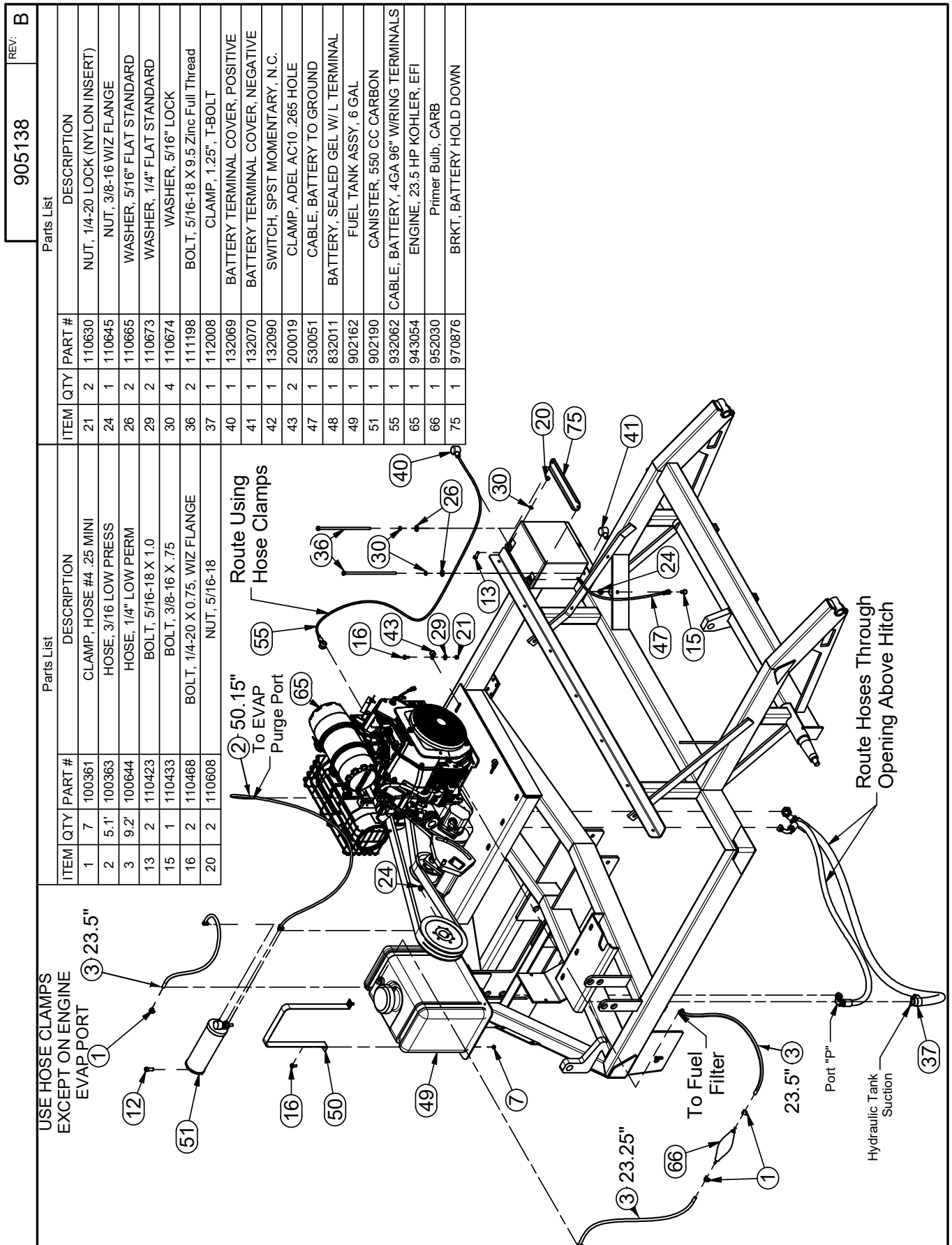


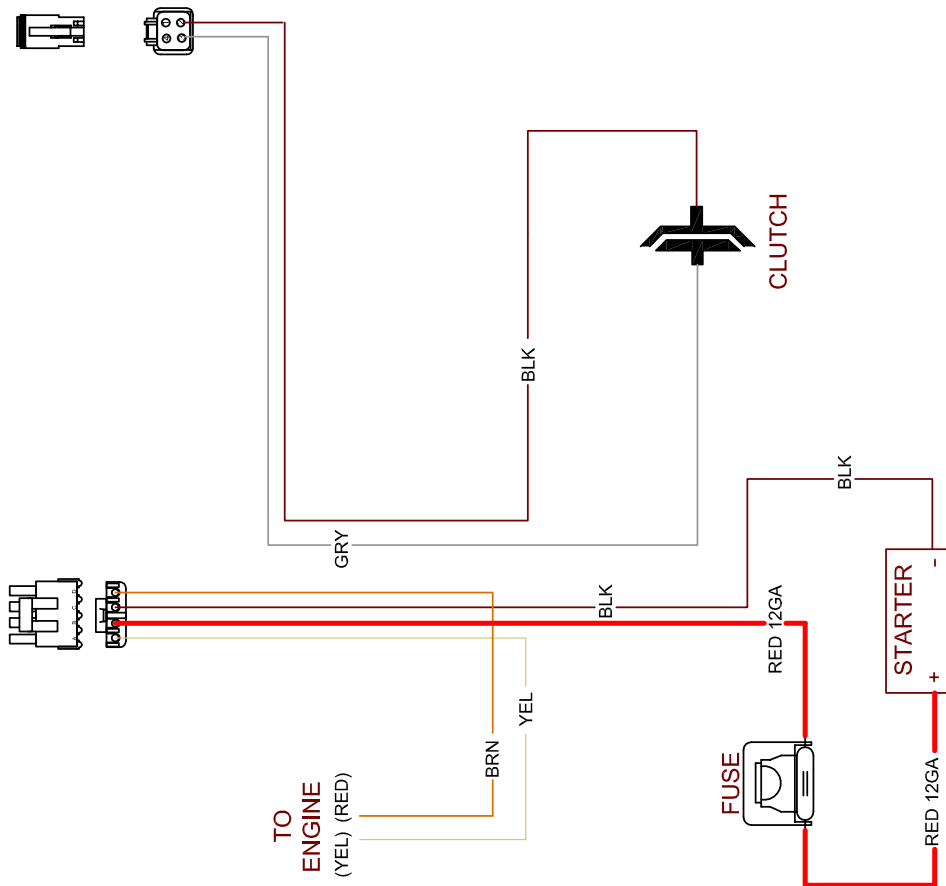
ENGINE INSTALLATION

Parts List				Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
4	2	110012	BOLT, 7/16-14 X 4.5	19	4	110606	NUT, 5/16-18 WIZ FLANGE	32	2	110709	SCREW, 10-24 X 0.75, RHMS
6	2	110168	BOLT, 5/16-18 X 2.0 SHCS	20	2	110608	NUT, 5/16-18	33	1	110715	BOLT, 7/16-20 X 2.5
8	2	110264	BOLT, 7/16-14 X 1.25, WIZ FLANGE	22	2	110631	NUT, 10-24 LOCK NYLON INSERT	35	1	111164	Bolt, 5/16-18 X 1.5 in Carriage
9	2	110319	NUT, 5/16-18 U-TYPE .75L	23	1	110639	NUT, 5/8-11, UNITORQUE LOCK	37	1	112008	CLAMP, 1.25", T-BOLT
10	2	110337	NUT, 7/16-14 WIZ FLANGE	25	1	110658	WASHER, 1/2" FLAT STANDARD	38	1	120288	ADAPTER, 8MJ-8MB90
11	1	110377	BOLT, 5/16-18 X 1-1/2	26	1	110665	WASHER, 5/16" FLAT STANDARD	39	1	120389	ADAPTER, 12MJ-10MB45
13	3	110423	BOLT, 5/16-18 X 1.0	27	2	110666	WASHER, 1/2" LOCK	42	1	132090	SWITCH, SPST MOMENTARY, N.C.
14	2	110429	BOLT, 1/2-13 X 1.5	28	5	110671	WASHER, 7/16" LOCK	44	1	411120	KEY, 3/8 X 3/8 X 2.25
17	2	110539	BOLT, 7/16-14 X 1.25	30	5	110674	WASHER, 5/16" LOCK	45	1	510228	KEY, 1/4 X 1/4 X 1.0 UNDER
18	1	110562	BOLT, 5/8-11 X 4.5	31	4	110676	WASHER, 3/8" FLAT STANDARD	46	3	510925	Machine Bushing
BELT TENSION INSTRUCTION				<p>Perpendicular to Front</p>  <p>CLUTCH: belt (62) should deflect $\frac{1}{2}$" at midpoint when 10lb is applied</p> <p>PUMP: belt (63) should deflect $\frac{1}{4}$" at midpoint when 7lb is applied</p>				<p>PUMP, .31cid X 1/2" HALDEX W600</p> <p>CLUTCH, ELECTRIC</p> <p>Harness, Engine/Remote TV60E</p> <p>Tach/Hour Meter, 23.5 Kohler</p> <p>Bushing, Taperlock 1610 .531 Bore</p> <p>SHEAVE, 1A5.6/B6.0 -1610 TL</p> <p>PULLEY, 2 GROOVE QD BUSHING</p> <p>BUSHING, SK 1 1/2</p> <p>IDLER PULLEY ASSY</p> <p>BELT, POWERBAND 2/B74</p> <p>BELT, GATES A33</p> <p>SHEAVE, 1A4.5 X 1 1/8KSS</p> <p>ENGINE, 23.5 HP KOHLER, EFI</p> <p>SPACER, .75 X .50 X 2.75</p> <p>SPACER, 1.625 X 1.13 X 1.00</p> <p>SPACER</p> <p>BELT GUARD, BRACKET R</p> <p>CLUTCH BRACKET</p> <p>Plate, Pump Mount AA</p> <p>MOUNT - TAC, KOHLER</p> <p>Pump Mount Spacer</p> <p>TENSIONER WELDMENT</p>			

Parts List			
ITEM	QTY	PART #	DESCRIPTION
5	4	110161	BOLT, 3/8-16 X 1.25, WIZ FLANGE
22	2	110631	NUT, 10-24 LOCK NYLON INSERT
24	8	110645	NUT, 3/8-16 WIZ FLANGE
31	4	110676	WASHER, 3/8" FLAT STANDARD
32	2	110709	SCREW, 10-24 X 0.75, RHMS
34	4	111067	BOLT, 3/8-16 X 2.0 FHCS 82°
42	1	132090	SWITCH, SPST MOMENTARY, N.C.
54	1	932061	Harness, Engine/Remote TV60E
56	1	932070	Tach/Hour Meter, 23.5 Kohler
65	1	943054	ENGINE, 23.5 HP KOHLER, EFI
73	1	970825	MOUNT - TAC, KOHLER
74	1	970873	Mount, Engine 23.5 Tier 4







ELECTRONICS INSTALLATION

905139

REV: NC

Parts List

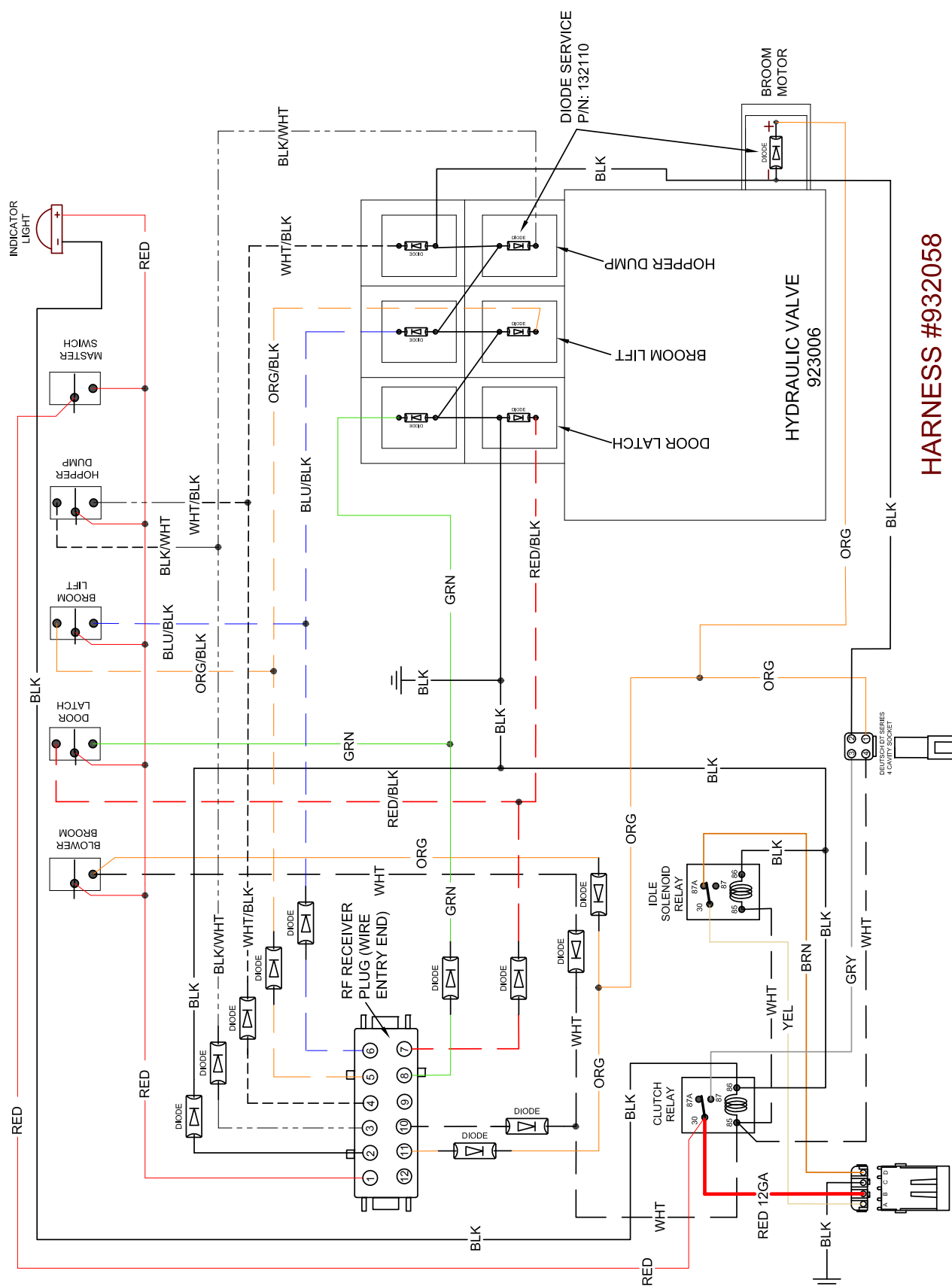
ITEM	QTY	PART #	DESCRIPTION
1	2	110319	NUT, 5/16-18 U-TYPE .75L
2	4	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE
3	2	110606	NUT, 5/16-18 WIZ FLANGE
4	1	110630	NUT, 1/4-20 LOCK (NYLON INSERT)
5	4	110631	NUT, 10-24 LOCK NYLON INSERT
6	1	110815	SCREW, 1/4-20 X 3/4 STAINLESS PHILLIPS PAN HEAD
7	1	110967	GROMMET, RUBBER 7/16 ID X 3/4 OD
8	1	130012	CLAMP, ADEL AC28 .265 HOLE
9	5	132035	SWITCH BOOT
10	7	132110	Flyback Diode Assembly
11	2	230038	TERMINAL, MALE PUSH ON, 16-14ga
12	4	510960	SCREW, 10-24 X 0.5, RHMS

Parts List

ITEM	QTY	PART #	DESCRIPTION
13	2	530007	TOGGLE SWITCH
14	3	530020	SWITCH, SPDT-MOMENTARY RELAY
15	2	530111	
16	1	532059	LIGHT, INDICATOR, LED
17	1	902089	DECAL, SWITCHES TV60R E
18	1	902161	DECAL, TV 60 WIRING SCHEMATIC
19	1	932058	Harness, Receiver TV60
20	1	933003	TRANSMITTER/RECEIVER, TV60E, KAR-TECH
20.1	1	932055	TRANSMITTER, RF, TV60, KAR-TECH
20.2	1	932056	RECEIVER, TV60, KAR-TECH
21	1	975116	SHIELD - VALVE, WELDMENT

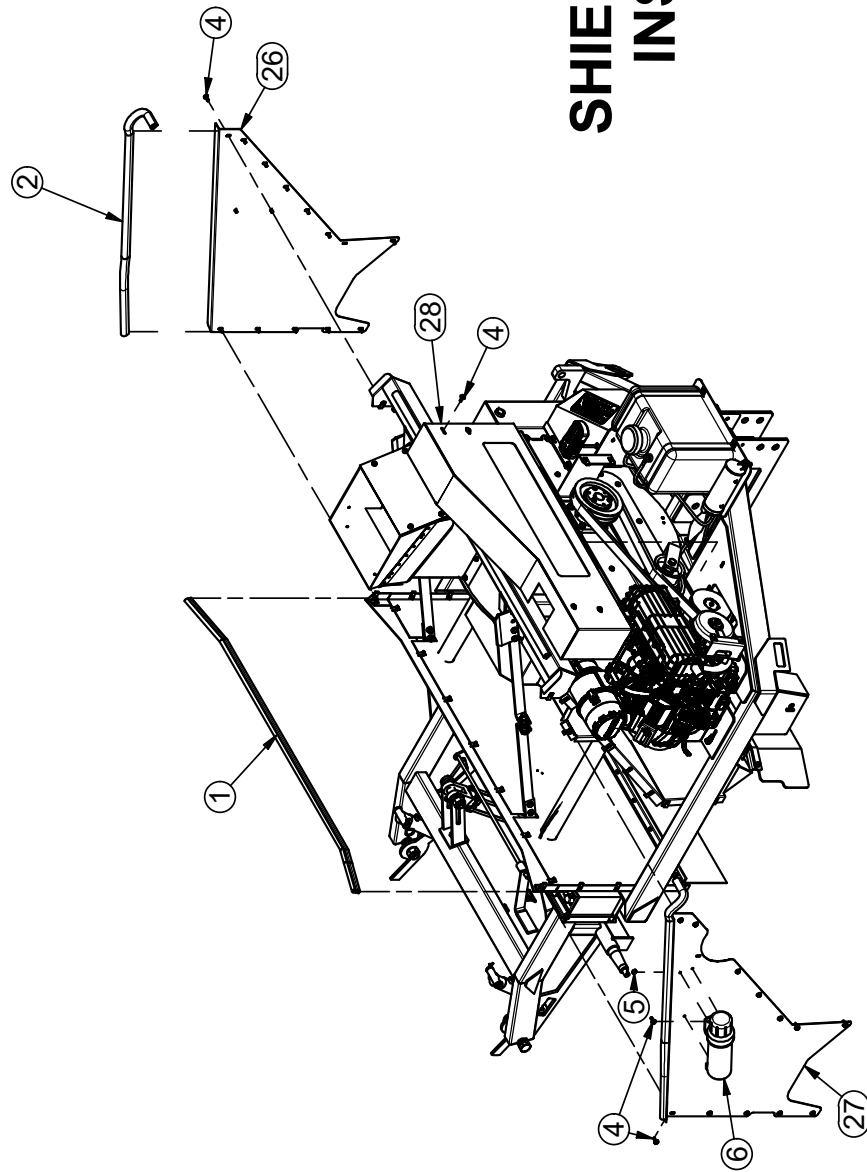
TV60RE PARTS
DECAL - 902089
TRANSMITTER - 932055
RECIEVER - 932056

WIRING SCHEMATIC TV60E WITH KAR-TECH REMOTE



HARNESS #932058

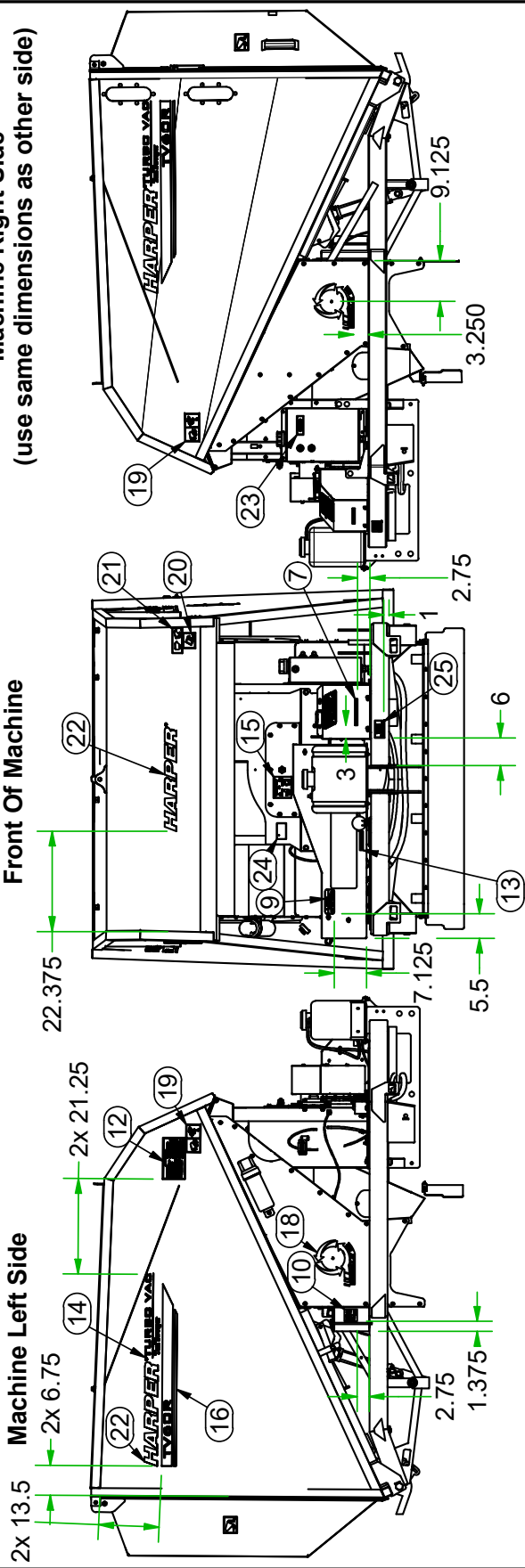
Parts List										Parts List										905140		REV: NC	
ITEM			QTY			PART #			DESCRIPTION			ITEM			QTY			PART #			DESCRIPTION		
1	5'	100360	MOULDING, EDGE, AIR INLET	11	1	901001	DOCUMENT, CARB WARRANTY	21	1	902154	DECAL, OVERHEAD CLEARANCE												
2	13'	102004	D SEAL, 1.00 X 1.00	12	1	902069	DECAL, BEFORE OPERATING	22	3	902195	DECAL, HARPER 2.87 X 24.00, BLACK GLOSS												
3	2	110426	BOL.T, 5/16-18 X 0.5, WIZ FLANGE	13	1	902071	Decal, Fuel Primer	23	1	902204	DECAL, ISO 46 HYDRAULIC OIL												
4	33	110444	BOLT, 5/16-18 X 0.75, WIZ FLANGE	14	2	902084	Decal, Turbo Vac, Turf Sweeper	24	1	902215	DECAL, EMISSIONS COMPLIANCE, TV60 POLY												
5	5	110606	NUT, 5/16-18 WIZ FLANGE	15	1	902095	Decal, Check Liner Wear	25	1	902240	Plate, Serial Number, Harper Turf, Blue												
6	1	152005	HOLDER, MANUAL	16	1	902102	DECAL, STRIPE LEFT TV60R	26	1	970391	LEFT AIR RETURN												
7	1	202134	Decal, Prop 65, Short Form	17	1	902103	DECAL, STRIPE RIGHT TV60R	27	1	970882	Right Air Return Shield												
8	1	400014	DECAL, SHIELD REMOVED	18	2	902104	DECAL, RECIRCULATING	28	1	975118	BELT GUARD												
9	1	500257	DECAL, HOT MUFFLER	19	2	902152	DECAL, HOPPER SAFETY LOCK																
10	1	800195	DECAL, RECYCLE BATTERY	20	1	902153	DECAL, ROLLOVER																



SHIELD AND DECAL INSTALLATION

Parts List												Parts List												Parts List											
ITEM	QTY	PART #	DESCRIPTION			ITEM	QTY	PART #	DESCRIPTION			ITEM	QTY	PART #	DESCRIPTION																				
1	5'	100360	MOULDING, EDGE, AIR INLET			10	1	800195	DECAL, RECYCLE BATTERY			19	2	902152	DECAL, HOPPER SAFETY LOCK																				
2	13'	102004	D SEAL, 1.00 X 1.00			11	1	901001	DOCUMENT, CARB WARRANTY			20	1	902153	DECAL, ROLLOVER																				
3	2	110426	BOLT, 5/16-18 X 0.5, WIZ FLANGE			12	1	902069	DECAL, BEFORE OPERATING			21	1	902154	DECAL, OVERHEAD CLEARANCE																				
4	33	110444	BOLT T, 5/16-18 X 0.75, WIZ FLANGE			13	1	902071	Decal, Fuel Primer			22	3	902195	DECAL, HARPER 2.87 X 24.00, BLACK GLOSS																				
5	5	110606	NUT, 5/16-18 WIZ FLANGE			14	2	902084	Decal, Turbo Vac, Turf Sweeper			23	1	902204	DECAL, ISO 46 HYDRAULIC OIL																				
6	1	152005	HOLDER, MANUAL			15	1	902095	Decal, Check Liner Wear			24	1	902215	DECAL, EMISSIONS COMPLIANCE, TV60																				
7	1	202134	Decal, Prop 65, Short Form			16	1	902102	DECAL, STRIPE LEFT TV60R						POLY																				
8	1	400014	DECAL, SHIELD REMOVED			17	1	902103	DECAL, STRIPE RIGHT TV60R			25	1	902240	Plate, Serial Number, Harper Turf, Blue																				
9	1	500257	DECAL, HOT MUFFLER			18	2	902104	DECAL, RECIRCULATING			26	1	970391	LEFT AIR RETURN																				
																	Right Air Return Shield																		
																	BELT GUARD																		

Machine Right Side
(use same dimensions as other side)



DECAL INSTALLATION

900231

REV: C

TV60 BROOM KIT - 900231

Parts List				Parts List				Parts List			
ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION	ITEM	QTY	PART #	DESCRIPTION
1	1	100365	MOULDING, EDGE	7	2	110670	WASHER, 7/16" FLAT STANDARD	13	1	942190	COUPLER, CLAMP, 1" SHAFT
2	2	102005	GROMMET, RUBBER, .875 OD X .625 ID	8	4	110671	WASHER, 7/16" LOCK	14	1	970147	MOUNT - MOTOR PLATE
3	4	110126	BOLT, 3/8-16 X .75 FLT HD SKT HD	9	6	110894	Bolt, 3/8-16 X 0.75 in Carriage	15	2	970230	BROOM MOTOR SPACER
4	4	110321	BOLT, 7/16-14 X 1.75 GR 5 HEX HEAD	10	2	120144	ADAPTER, 6MJ-10MB	16	1	970828	GUARD - MOTOR, DECK, TV60
5	4	110641	NUT, 7/16-14	11	1	922004	MOTOR, EATON 101-1009	17	1	970830	SUPPORT - TORQUE ARM
6	6	110645	NUT, 3/8-16 WIZ FLANGE	12	1	942080	BEARING, 1" 2 BOLT FLANGE	18	1	975049	ROTARY BRUSH ASSEMBLY, TV-60R

A

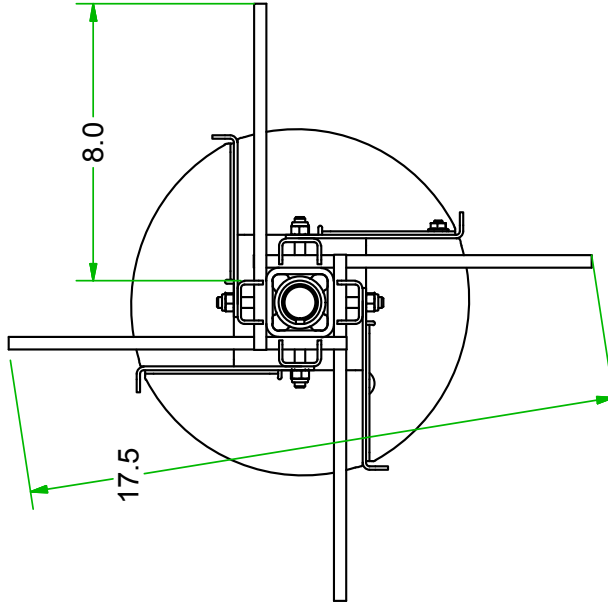
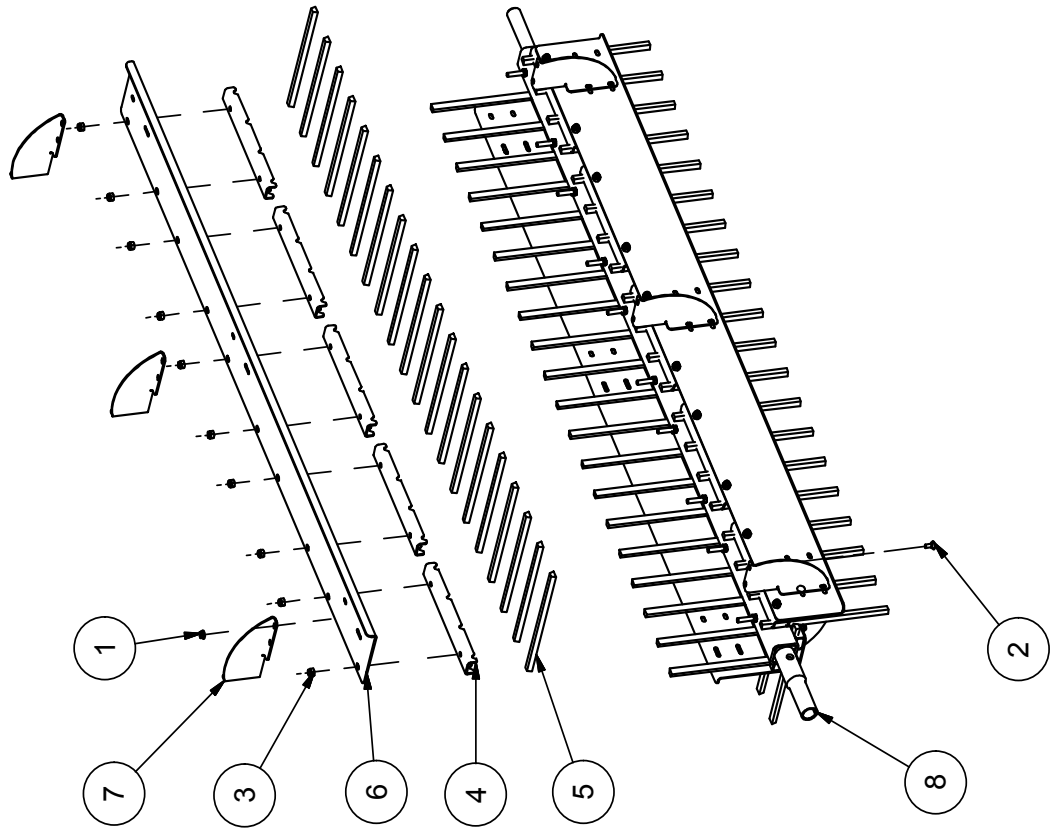
Parts List



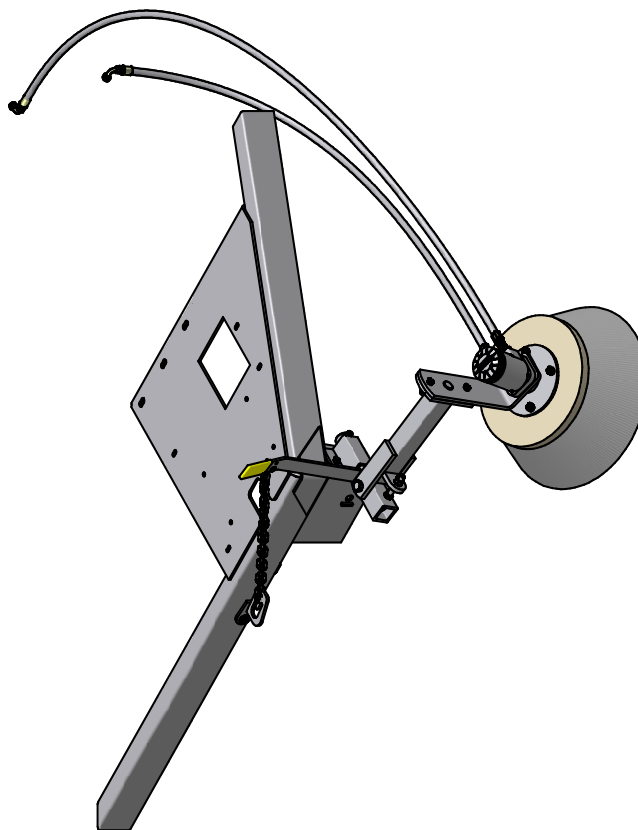
FINGER ROTOR

Parts List

ITEM	PART #	QTY	DESCRIPTION
1	110290	24	NUT, 1/4-20 WIZ FLANGE
2	110358	24	Bolt, 1/4-20 X 0.625 in Carriage
3	110603	40	NUT, 5/16-18 LOCK (NYLON)
4	311403	20	CLAMP - RUBBER FINGER
5	902160	80	FINGER - RUBBER, TV60
6	970824	4	SUPPORT - FINGER
7	970827	12	GUSSET - FINGER ROTOR SUPPORT
8	975802	1	SHAFT - FINGER ROTOR, WELDMENT



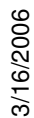
Fence Brush Option - TV60



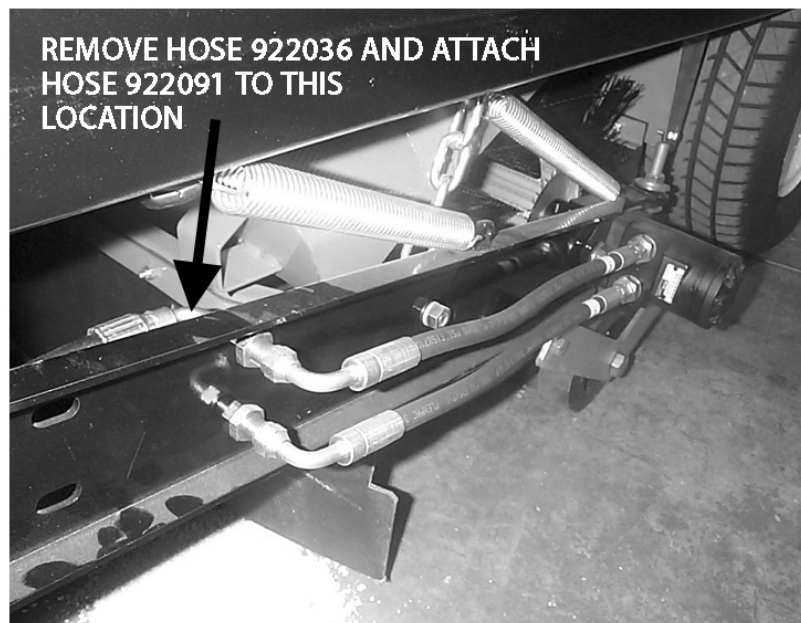
Parts List		
PART #	QUANTITY	DESCRIPTION
110015	1	BOLT, 3/8-16 X 3.0
110298	1	WASHER, 1/4" FLAT SAE
110378	1	BOLT, 5/16-18 X 2.0
110385	1	BOLT, 5/8-11 X 4.0
110400	4	BOLT, 3/8-16 X 2.0
110420	4	BOLT, 3/8-16 X 1.0
110425	2	BOLT, 3/8-16 X 1.25
110435	2	BOLT, 3/8-16 X 1.5
110464	1	BOLT, 1/4-20 X 1.0
110474	1	BOLT, 1/4-20 X 1-1/2
110553	1	BOLT, 1/2-13 X 2.5 TAP
110603	1	NUT, 5/16-18 LOCK (NYLON)
110610	1	NUT, 1/2-13
110612	8	NUT, 3/8-16 GR 2
110618	1	NUT, 3/8-16 LOCK NYLON INSERT
110630	1	NUT, 1/4-20 LOCK (NYLON INSERT)
110639	1	NUT, 5/8-11, UNITORQUE LOCK
110667	1	WASHER, 1/4" LOCK
110672	12	WASHER, 3/8" LOCK
110676	6	WASHER, 3/8" FLAT STANDARD
120144	2	ADAPTER, 6MJ-10MB
902112	1	BRUSH, 18" x 6" x 40 DEG
910044	1	COVER, VINYL .25 X 1.5 X 4 GRIP
922004	1	MOTOR, EATON 101-1009
922090	1	HOSE, VALVE TO FENCE BRUSH MOTOR TV60
922091	1	HOSE, FENCE BRUSH MOTOR TO BROOM MOTOR
970304	1	PUMP STOP CHAIN
970748	1	ARM, BRUSH MOTOR MOUNT
970759	1	SHAFT, LIFT PIVOT
970763	1	WASHER, 1.50 X .320
970764	1	SPACER, 1.700 X 1.005 X .320
975125	1	LIFT TUBE WELDMENT
975127	1	LIFT LEVER WELDMENT
975128	1	BRUSH ADAPTOR WELDMENT
975130	1	LIFT LATCH WELDMENT
975136	1	EDGE BRUSH HANGER WELDMENT

3/16/2006

Turbo Vac TV60R



**TV60RE & RH - INSTRUCTIONS FOR INSTALLING EDGE BRUSH
HYDRAULIC HOSES**



NOTES

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Harper, KS 67058

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Toll-Free: 800-835-1042
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Turbo Vac TV60R

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