OPERATORS MANUAL

TR460

Ride on Spreader & Sprayer

Read this manual before using this product. Failure to follow the instructions and safety precautions in this manual can result in serious injury or death.

Keep this manual in a safe location for future use.

Turfware Equipment Company

www.turfware.com

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To use this QR Code to visit our **Website**, order **Parts**, and view the **Full Maintenance Video Playlist.**..

1- Open QR code reader or your mobile device camera.
2- Hold your device so the code is visible on the screen.
3- Click the link when it pops up.

Introduction

Congratulations on the purchase of your TR360 ride-on spreader and sprayer from Turfware Equipment Company. We look forward to working with you and your organization to help meet your turf maintenance goals for years to come.

The TR360 Operator's Manual is part of this machine and must be available to the operator at all times. Store this manual in the Operator's Manual storage compartment located on the left side of the machine.

This manual provides you with the information you need to understand the safety requirements, operation, and features of the TR360 ride-on spreader and sprayer.

The TR360 should only be operated and maintained by thoroughly trained individuals. All operators and maintenance personnel are urged to read this entire manual for their personal safety, and to fully understand the machine operation.

Do not operate this machine unless all safety and warning labels are in place.
In addition to this manual, the Honda Owner's Manual is included separately with your machine. Refer to the Honda manual for more information about the care and servicing of the engine.

Safety Overview

The safety symbols shown in this manual and the safety labels located on the machine are used to draw attention to potential safety hazards.

Please read and follow all safety label instructions to avoid injury to yourself and others, and to prevent machine damage.

If you discover a machine safety label is damaged, missing or scratched, order a replacement immediately and do not operate the machine until the label has been replaced.

Safety Symbols - In this Manual

The safety symbols used in this manual are shown below.

⚠ WARNING — **The WARNING symbol used in this manual identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.**

⚠ IMPORTANT — **The IMPORTANT symbol used in this manual identifies information that is critical for successful application and understanding of the product.**

NOTE: The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty and service. Please refer to the Honda Owner's Manual, included separately with your machine, for more information.

Safety Labels - On the Machine

Safety labels found on your TR460 are illustrated in this section. Always follow their instructions and heed their warnings.

⚠ DANGER

A DANGER label indicates a hazardous situation that, if not avoided, will cause death or serious injury. For your safety, locate and become familiar with the hazardous areas of the machine.

The following Danger label is found on the dashboard. For your safety and protection, be sure to locate and become familiar with all the dangerous areas of the machine.

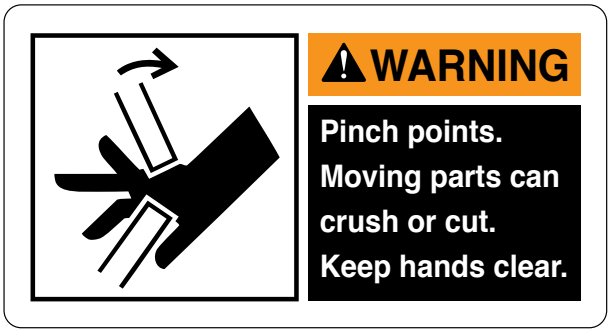
⚠ DANGER Before operator steps away from and/or turns off equipment, parking brake must be engaged. Can cause serious injury or death.

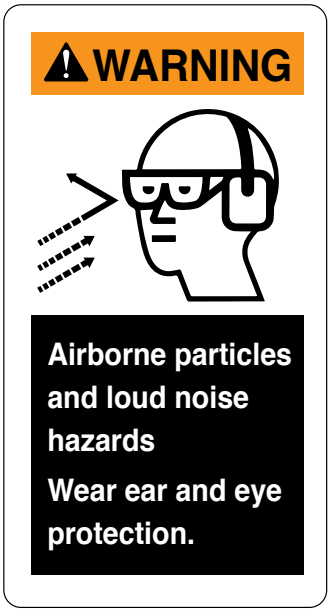
⚠ WARNING

A WARNING label indicates a hazardous situation that, if not avoided, could result in death or serious injury.

The following safety warning labels are found on the machine. For your protection, locate and become familiar with the hazardous areas of the machine.

The following safety labels are found on the machine. For your protection, locate and become familiar with the hazardous areas of the machine.





Warnings and Precautions

⚠ WARNING General Safety Precautions

- Read, understand and follow all instructions in this Operator's Manual, the Honda Owner's Manual, and on the machine before starting the machine.
- Become familiar with the safe operation of the equipment, operator controls and safety labels.
- All operators and maintenance personnel should be trained before using the equipment.
- Do not operate this machine while under the influence of alcohol or drugs.
- Never let children under the age of 18 years old or untrained people operate or service the equipment.
- Do not remove any shields, guards, labels or safety devices.
- Verify any shields, guards, labels or safety devices are in place and functioning properly. If needed, repair or replace it before operating the equipment.
- Never run the engine indoors or in an enclosed area without adequate ventilation. Exhaust fumes are extremely hazardous and can kill you.
- Exercise extreme caution when applying and handling chemicals. Chemicals can be dangerous; read the chemical
- MSDS (Material Safety Data Sheets) and container label for proper/safe handling instructions.
- Always wear safety glasses, long pants and safety shoes when operating or maintaining this equipment, and when applying and handling chemicals. Use protective measures as directed by the MSDS.
- Do not operate this equipment while under the influence of prescription medicines which may impair your coordination.

⚠ WARNING Operation Precautions

- Do not operate the machine unless all safety devices are functioning properly.
- Keep adults, children and pets away from the area to be managed.
- Before working, inspect the work area and remove debris and other objects that may interfere with the machine.
- Watch for holes, sprinkler heads and other hidden hazards.
- Reduce speed when making turns.
- Use extra care when operating the machine with an empty hopper. This can affect the stability of the machine.
- Do not operate the machine on slopes exceeding 20 degrees.
- Do not operate the machine on steep slopes if you are uncertain about machine traction and stability.
- Do not operate the machine in wet or low light conditions.
- Slow down and use extra caution on hillsides. Go laterally or diagonally across the slope, not up and down the slope. Be aware that turf conditions can affect the machine's stability.
- Use caution while operating near drop-offs, ditches or embankments.
- Always have proper footing on slopes and hillsides, and never operate the machine when conditions are slippery. Be very careful on wet grass.
- Use care when approaching blind corners, shrubs, trees or other objects that may obstruct your vision.
- Do not operate in reverse unless absolutely necessary. Look behind and down before backing up to be sure the path is clear.
- Never carry passengers.
- Use care when loading or unloading the machine into a trailer or truck.
- Use care when crossing gravel paths or roadways.
- Always have your feet and hands clear of the controls when starting the engine.
- To avoid serious burns, do not touch the engine or muffler while the engine is running or until it has cooled for at least 30 minutes after it has been shut off.
- To prevent the engine from accidentally starting, always disconnect the spark plug wire before performing any maintenance on this machine.
- Keep the machine, and especially the engine/transmission area, clean and free of grease, grass and leaves to reduce the potential for overheating and fire.
- Do not exceed the hopper capacity of 250 lbs.

⚠ WARNING Fuel Precautions

- Use extra care when handling gasoline and other fuels. Gasoline is highly flammable and vapors are explosive.
- Always stop the engine and allow it to cool before removing the fuel tank cap.
- Add fuel outdoors in an open area on level ground.
- Never add fuel while the engine is running.
- Never refuel or drain the machine indoors.
- When filling the fuel tank, stop when the gasoline reaches the maximum fuel level limit. Do not overfill to allow for expansion.
- Never use stale or contaminated gas.
- Never use an oil/gas mixture.
- Do not smoke or permit others to smoke while handling gasoline.
- Always use approved containers for gasoline.
- If the fuel container spout does not fit inside the fuel tank opening use a funnel. Wipe up any spilled gasoline immediately.

⚠ IMPORTANT **Refer to the Honda Owner's Manual, included separately with your machine, for more information about engine precautions.**

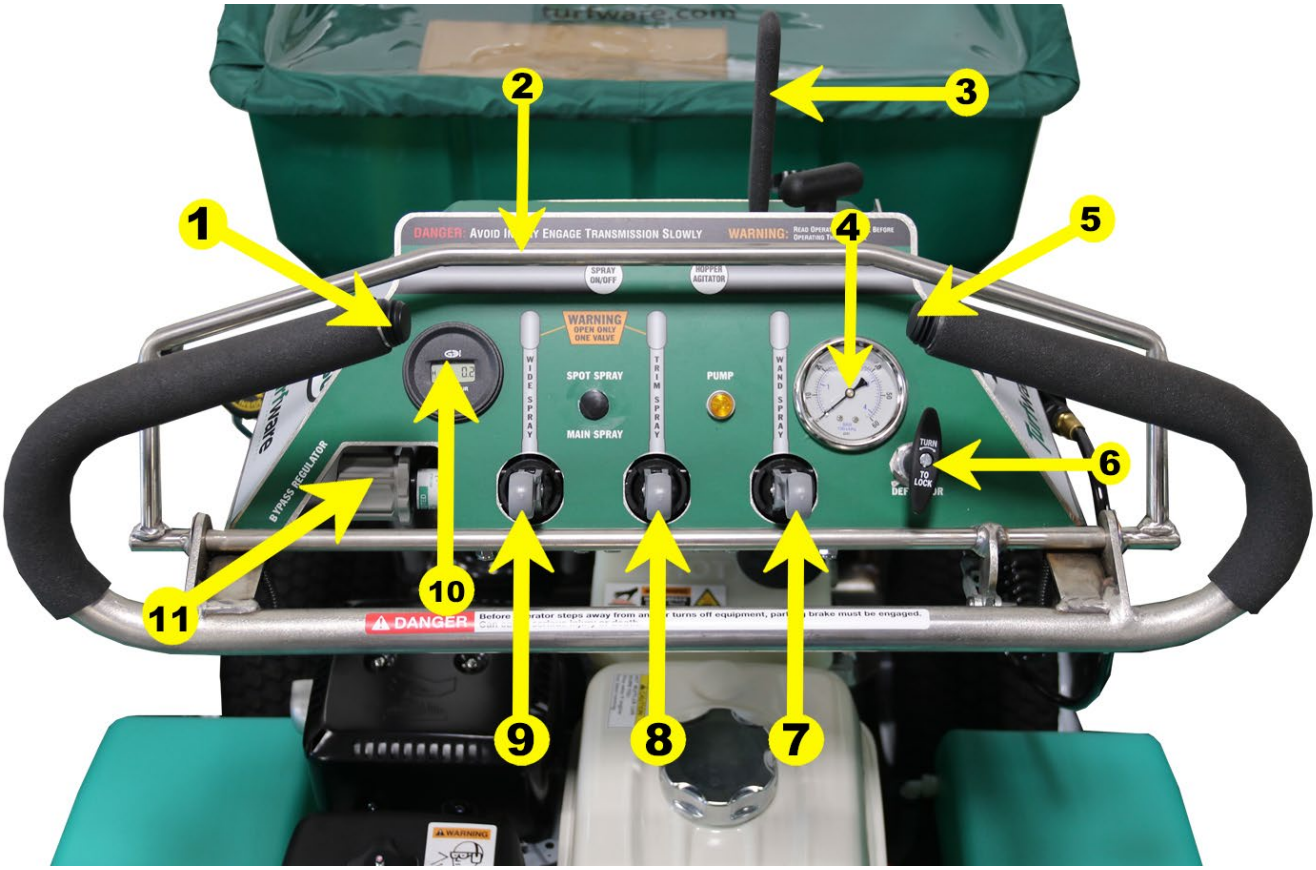
⚠ WARNING Engine Precautions

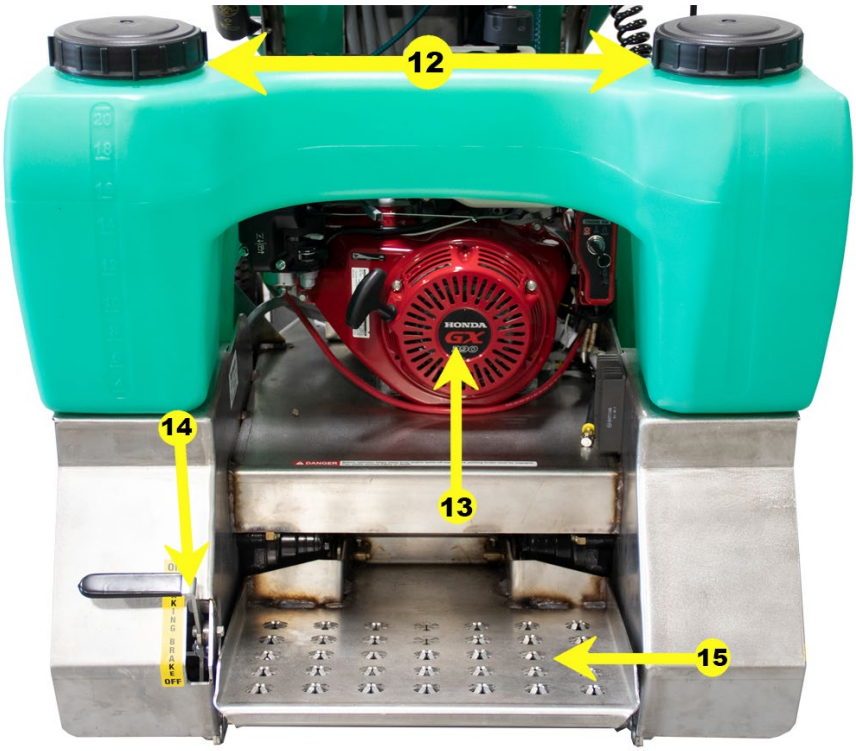
- The engine exhaust emits toxic carbon monoxide gas. Do not run the engine in an enclosed area.
- Engine exhaust, some of its constituents and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
- Allow the engine parts, especially the muffler, to cool before touching to avoid burns.

⚠ WARNING Tire Precautions

- Before operating the machine check for worn tires. Tires with excessively worn tread are dangerous on slopes or inclines. Replace as needed.
- Always maintain the tire pressure at max PSI of 22 lbs. Do not under or over inflate the tires.

Product Overview

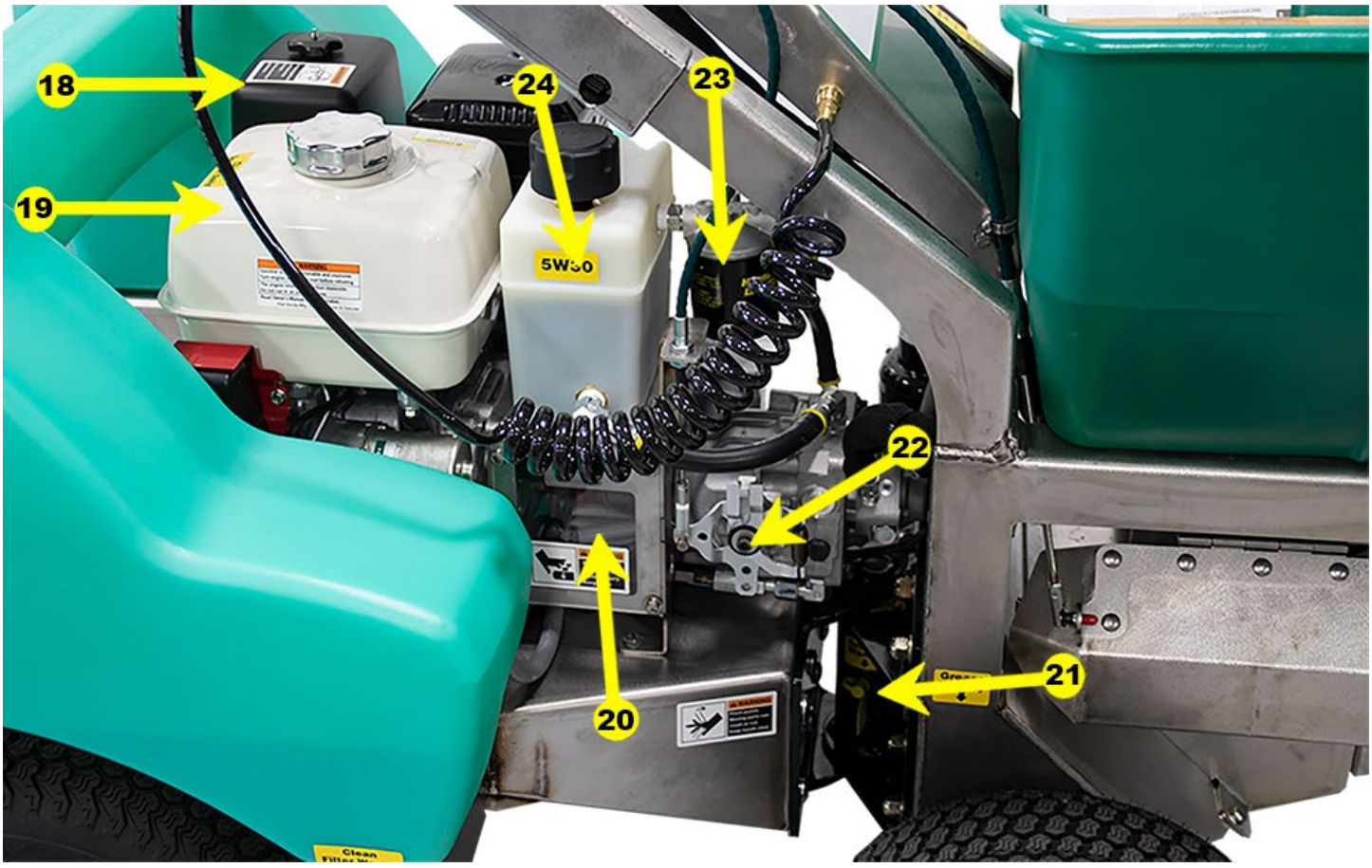




1 - Spray On/Off Button
2 - Drive Bar
3 - Hopper Open/Closed Lever
4 - Pressure Gauge
5 - Hopper Agitation Button
6 - Deflector Shield Control
7 - Spray Wand Lever
8 - Trim Spray Lever
9 - Wide Spray Lever
10 - Tachometer/Hour Meter
11 - Pressure Regulator
12 - Spray Tank Lids
13 - Honda Engine
14 - Parking Brake
15 - Operator Platform

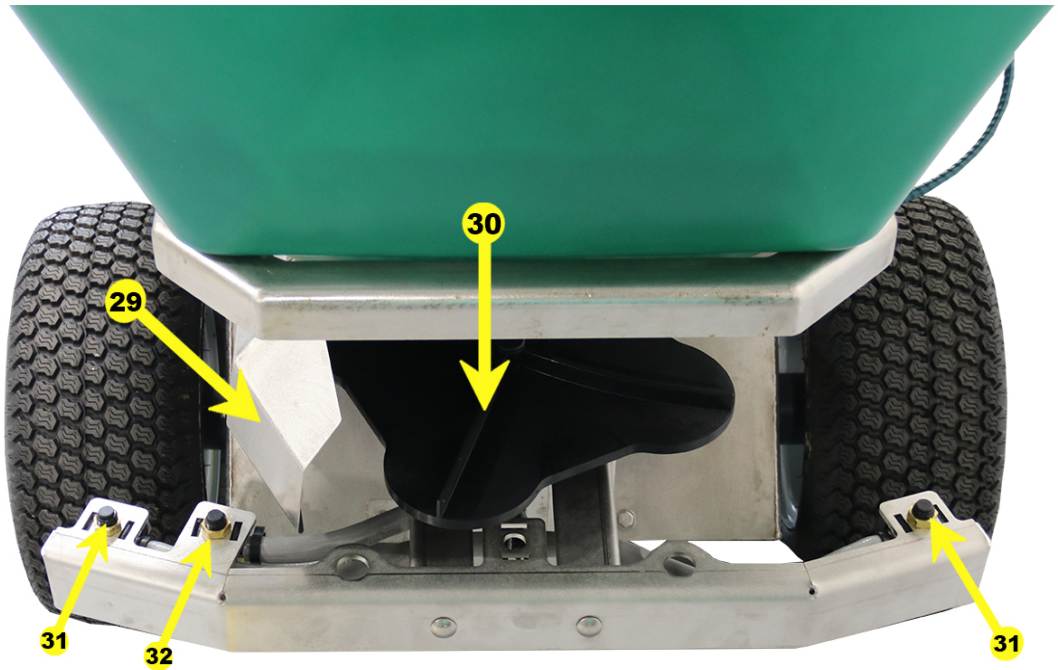
Product Overview Continued

16 - Box of Spare Parts
(retail customers only)
17 - Spray Wand
18 - Air filter
19 - Fuel Tank
20 - Lovejoy Coupler Assembly
21 - Pivot Point Assembly
22 - Hydraulic Pump
23 - Hydraulic System Filter
24 - Hydraulic Reservoir



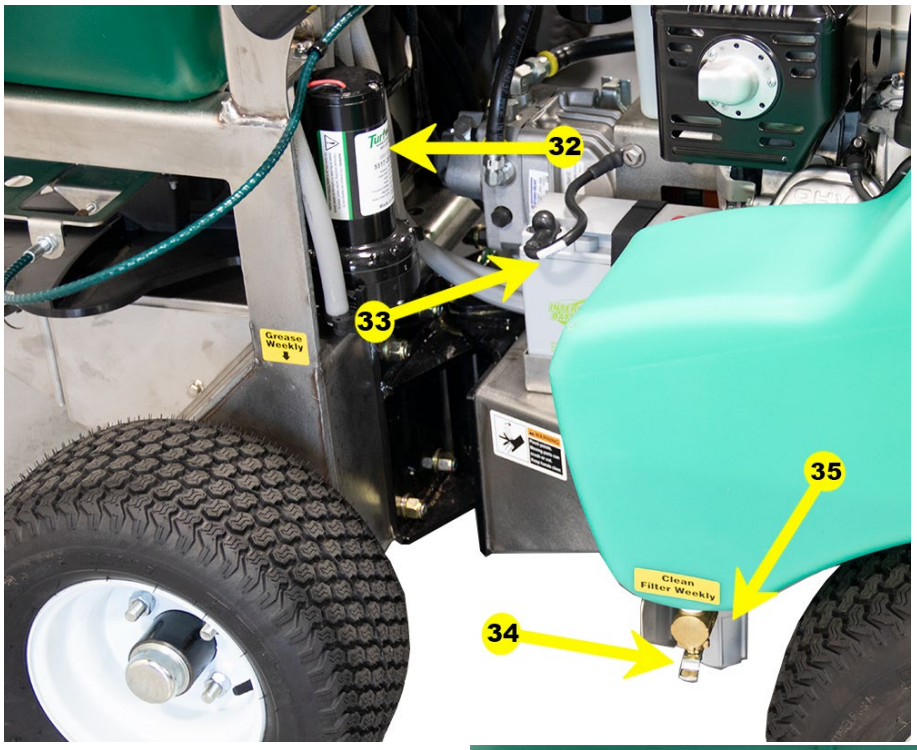
Product Overview Continued

25 - Hopper On/Off lever
26 - Product Rate Selector
27 - Impeller Speed Contrc
28 - Spray Wand

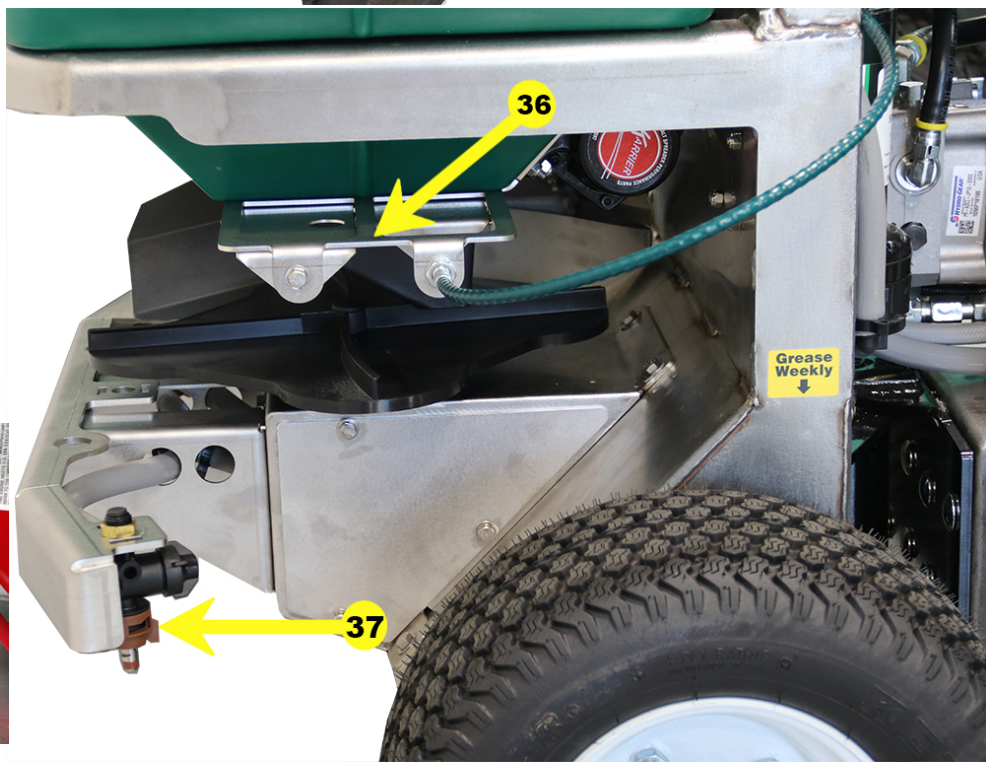


29 - Deflector Shield
30 - Spreader Impeller
31 - Wide Spray Nozzle Assembly
32 - Trim Nozzle Assembly

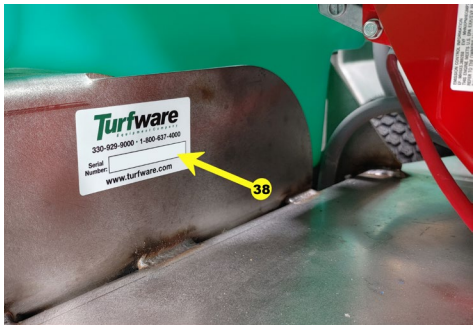
Product Overview cont.



32 - Spray Pump
33 - Battery
34 - Spray Tank Shut-off Valve
35 - Spray System Filter Housing/Clean-out



36 - Hopper Slide Shutoff and Flow Assembly
37 - Self Aligning Cap and Nozzle
38 - Serial Number



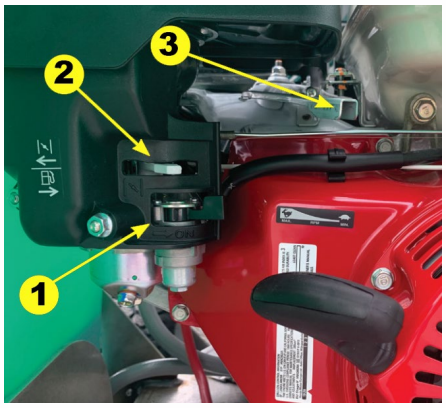
TR360 Use & Care

IMPORTANT **Refer to the Honda Owner's Manual, included separately with your machine, for more information about engine pre-checks and starting/stopping the engine**

Starting the TR460 Engine

WARNING **Before starting the engine engage the parking brake to avoid injury.**

NOTE: Refer to the **Honda Owner's Manual**, included separately with your machine, for more information about the fuel valve lever, choke lever and engine switch location.



Starting The Engine:

1) Move the Fuel Valve Lever **1** to the ON position.
2) Always move the Choke Lever **2** to the Left/Closed position when cranking starter, then move Choke lever **2** to the Right/Open position once the engine is running.
3) Move the Throttle Lever **3** away from the MIN position to about 1/3 of the way toward the MAX position.
4) Turn the engine switch **4** to START and hold it there until the engine has started and allow the switch to return to the **5** ON position.

Tip: *If the battery is dead use the recoil starter to start the engine. Make sure the key is in the run position.*

a) NEVER RUN THE STARTER FOR MORE THAN 5 SECONDS OR MOTOR DAMAGE MAY OCCUR. IF ENGINE FAILS TO START WAIT 10 SECONDS BEFORE OPERATING THE STARTER AGAIN.
b) If using the recoil starter pull the pull cord toward you then return the pull cord gently.
c) If using the electric starter key turn the key to the START position and hold it there until the engine starts. When the engine starts release the key, allowing it to return to the ON position.
6) If the choke lever is in the CLOSED position gradually move it to the OPEN position as the engine warms up.
7) Set the throttle level to control the engine speed. Do not exceed 3200 RPMs.

IMPORTANT **To avoid injury always engage the drive bar slowly.**

8) To move the machine:
   a) Forward - Pull the drive bar toward you.
   b) Reverse - Push the drive bar away from you.
   c) Release the drive bar to return to neutral and stop the forward/reverse motion.

ALWAYS OPERATE THE DRIVE BAR SLOWLY AND GENTLY

Stopping the TR460 Engine

1) **MOVE THROTTLE TO THE MINIMUM POSITION TO REDUCE RPM's BEFORE TURNING OFF. FAILURE TO DO SO WILL CAUSE CARBON TO BUILD UP ON THE ENGINE PISTON.**
2) Turn the engine switch to the OFF position.
3) Turn the fuel valve lever to the OFF position (when stored).

NOTE: To stop the engine in an emergency situation you can turn the engine switch to the OFF position

Spreader Operation

The spreader unit is designed to handle dry, clean, free-flowing granular material only.

IMPORTANT **Spreader calibration should be performed as an ongoing process throughout the day. Monitor material used versus area serviced and adjust accordingly. The application rate will vary throughout the application process. Factors affecting the calibration rate include product rate selector setting, ground speed of the unit, impeller speed, width of passes, humidity level, and treatment method.**

NOTE: The sprayer unit and the spreader unit can be operated at the same time to provide an even distribution of both the sprayed and spread products to an area.

Operating The Spreader

IMPORTANT **When spreading material fully engage the drive bar or operate at your own application speed..**

Refer to the TR460 calibration sheet for more information about granular application.

1) Fill the hopper with material. Do not exceed the maximum hopper weight capacity of 250 lbs.
2) Set the engine to the recommended 3200 RPMs. Confirm with the hour/ tachometer meter on the dashboard.
3) Adjust the **Product Rate Selector, 1** located above the hopper lever, to match the material coverage you desire.

NOTE: The numbers are merely an indicator and have no bearing on material rate.

TIP: *For best results use a setting on the low side. If the setting proves to be too low cover the area again. Once the desired setting is determined a higher setting can be used.*

4)Adjust the variable **Impeller Speed Control 2** to achieve the desired fertilizer spread width. The impeller speed control knob will increase or decrease the spread width to your desired spread pattern.

NEVER RUN THE SPREADER WITH THE IMPELLER SHUT OFF AND NOT TURNING. THIS WILL CAUSE DAMAGE TO THE HYDRAULIC PUMP AND VOID THE WARRANTY!

NOTE: The spread pattern is independent of ground speed.

5) Monitor and adjust the product rate selector as needed to maintain accurate coverage of material. The product rate selector position determines the amount of material to be broadcast. The higher the number, the heavier the application of material.
6) Go to the spreading location.
7) Ensure the area to be maintained is clear.
8) Engage the drive bar fully when applying materials.
9) Push the hopper lever to the OPEN position.
10) Adjust the impeller speed control as needed to obtain coverage width.

Operating the Spreader cont.

11) Apply the granular material on 18-foot center passes. The outer edge of the fertilizer pattern should fall between the wheel tracks of your previous pass(see diagram on page 17). This will require a total spread width of 18'.
12) Evaluate the spread pattern:
    a) If the spread pattern is good continue to spread at a recommended speed of 5 MPH.
    b) Adjust the spread pattern as necessary.
13) When applicable, use the deflector shield to prevent granular material from being spread to the right side of the machine.

NOTE: When using the deflector be sure to reduce the fertilizer rate to avoid over fertilizing the area.

14) Move the hopper lever to the CLOSED position.
15) Clean the hopper after each day's use.

Cleaning the Spreader - Daily

Always empty and properly clean the spreader unit immediately after each use.

1) Drive the machine to a designated cleaning area.
2) Stop the machine on a level surface, turn off the engine and engage the parking brake.
3) Empty the contents of the hopper and place the material into the original bag for future use.
4) Using a garden hose, spray the inside and outside of the entire spreader with clean water.

⚠ IMPORTANT **Use caution when using a power washer to clean the machine. The high pressure water may force residual corrosive materials into other parts of the spreader and sprayer units.**

5) Allow the machine to dry completely before the next use.

Sprayer Operation

The sprayer unit is designed to disperse liquid materials only.

NOTE: The sprayer unit and the spreader unit can be operated at the same time to provide an even distribution of both the sprayed and spread products to an area.

Refer to the TR460 Calibration Sheet on Page 18 for more information about the liquid application.

Operating the Sprayer

IMPORTANT **The spray system is not for use with wettable powders or water granules. All materials must be in liquid form and premixed prior to adding them to the tank.**

1) Make sure the machine is on level ground and apply the parking brake.
2) Open the tank cap on the spray tank and fill the tank with the pre-mixed liquid.

NOTE: Make sure the tank is at least half full before priming the spray system.

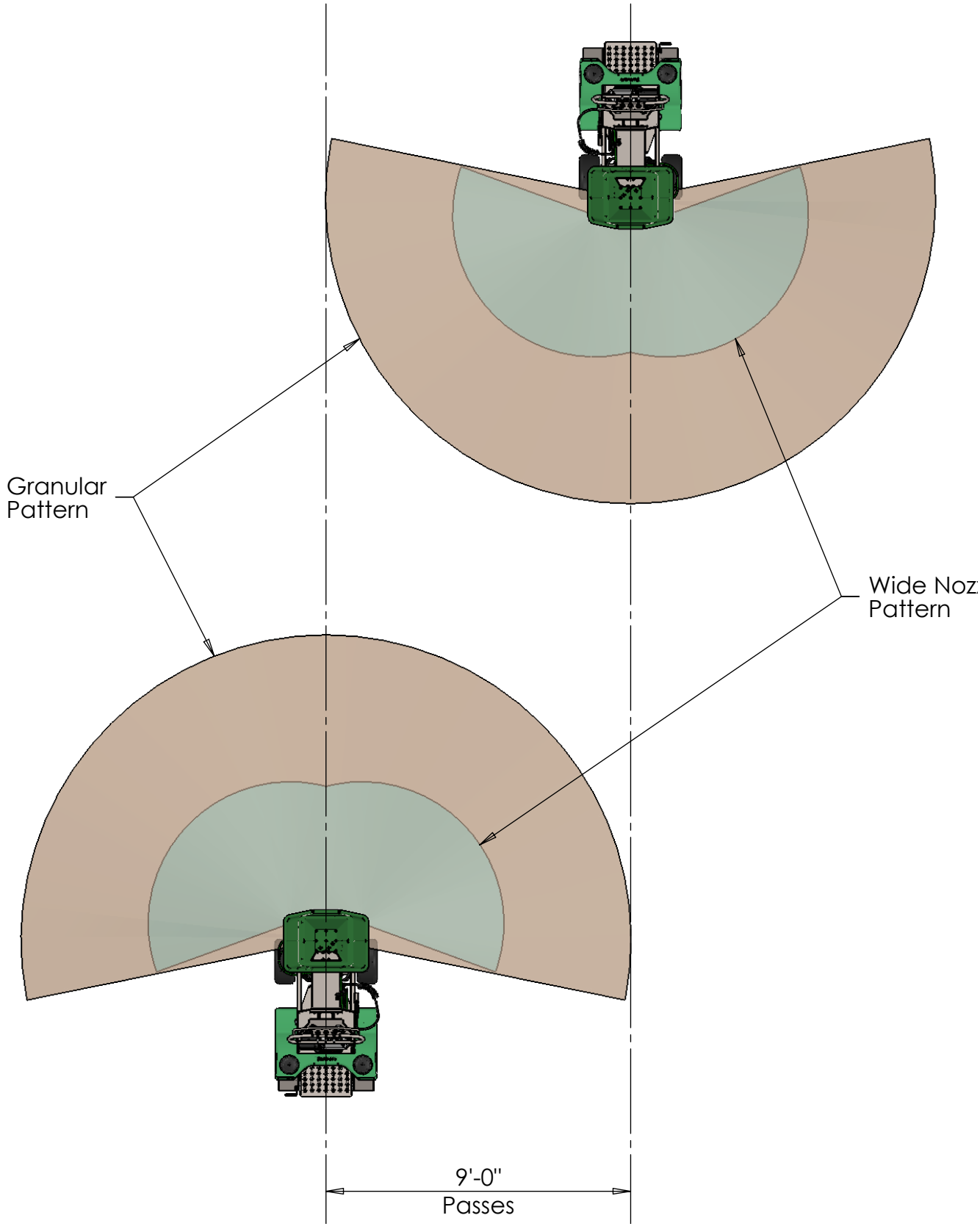
3) Set spray lever open for wand.
4) Turn the spray pump on.
5) Bleed the line by spraying the wand back into the tank in 3-4 short bursts.
6) Adjust regulator between 28 and 32 PSI, tighten the lock ring and turn off pump.
7) If pump still won't pressurize...
8) remove cap on regulator, depress spring retainer 4-5 times until pressure resumes.
9) check supply lines to pump are securely sealed and there are no leaks.
10) also check that the O-Rings are properly seated in the filter housings. Once pressure resumes...
11) Go to the work area.
12) Ensure the area to be maintained is clear.
13) Select the appropriate spray pattern: wide, trim or wand.
    a) To spray using the front sprayer nozzles:
        i) Move the Wide Spray Lever forward.
        ii) Press the spray button on the left handlebar to apply the solution to the work area.
    b) To use the spray wand:
        i) Remove the wand from the holder.
        ii) Move the Wand Spray Lever forward.
        iii) Hold the spray wand and point it in the direction to be sprayed.
        iv) Squeeze the spray wand trigger to begin spraying.

Cleaning the Sprayer-Daily/Long Term

Always empty and properly clean the sprayer unit immediately after each use and prior to storage.
1) Spray all contents onto a turf area until the spray system is empty.
2) Fill the tank with fresh water.
3) Spray all contents onto a turf area again through the wide nozzle, narrow nozzle and spray wand until fresh water flows through each. Repeat this cleaning process three times to ensure complete rinsing of the spray system.
4) Remove, clean, and inspect the three nozzle screens located in the spray nozzle bodies and the main spray system filter. Replace if necessary. When cleaning the screen be sure the screen housing GASKET remains in place. The spray system will not build pressure without the gasket.
5) For long-term storage in freezing conditions add an RV type of anti-freeze and cycle it completely through the spray system.

Refer to the Honda Owner's Manual, included separately with your machine, for more information about proper long-term storage of the engine. MAINTENANCE AND STORAGE - DAILY

Spray-Spread Patterns



Application Calibration Rates

Calibration suggestions are based on known basic standards of use. Each operator MUST calibrate the machine to his/her condition of use.

Operator ground speed, engine rpm, spray system pressure level, spread application pass width, terrain traveled, ground moisture, and wind conditions affect the rate of application for both granular and liquid applications.

All spreaders must be calibrated to real use conditions. The recommended method of calibration fine tuning is to use the products over a measured area and determine the actual rate of application.

Granular:
With all factory settings in place, the granular scale for application will deliver roughly the number of pounds product (215-240 SGN) per thousand square feet as displayed on the rate scale.

To Verify Your Use Rate:
Measure 1000 square feet and determine the rate of application upon use. <OR> With a known quantity of product (50 lbs.),apply over a flat turf area and measure the total square feet covered with the full amount of product. Calculate your rate of application and adjust accordingly.

Liquid:
With all factory settings in place, the liquid rate of application will remain roughly 32 fluid ounces per 1000 square feet of turf grass area.

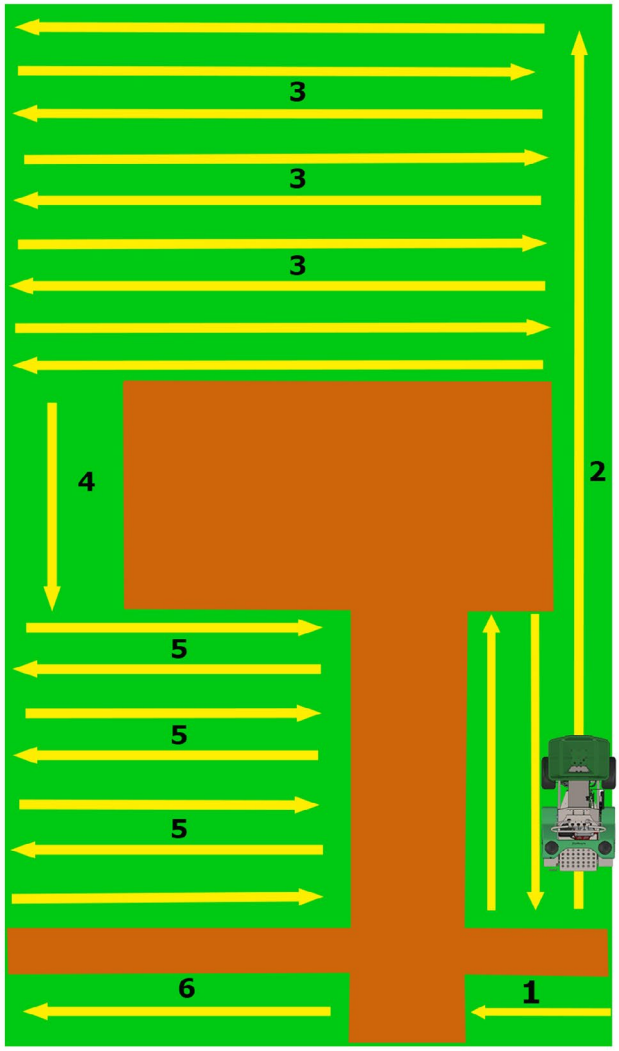
To Verify Your Use Rate:
Capture the liquid from the nozzle for a one-minute period of time. Then operate your machine in a straight line under your conditions over a one-minute period of time. This will provide the known total liquid coverage rate of application for your machine.

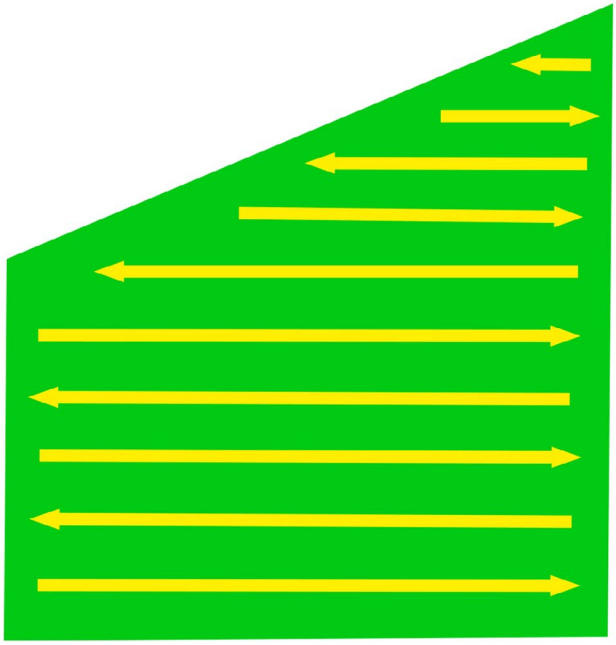
Average Your Rates:

Measure the area treated by your machine using known quantities of both liquid material sprayed and granular material applied. Average this calculation over various areas. Or, check your use rate after several lawns or areas are treated throughout the day. This will ensure that the applicator knows the rates of application used throughout the day and can make the fine turned adjustments as needed.

EVERY OPERATOR APPLIES PRODUCT DIFFERENTLY. MAKE SURE THE MACHINE OPERATOR VERIFIES THEIR PERSONAL USE RATES ON AN ONGOING BASIS. EVERY DAY IS DIFFERENT.

Example Service Path





Grease Maintenance

IMPORTANT **There are only 3 Grease Fittings that require WEEKLY GREASE on the TR460.**

THIS IS THE SINGLE MOST IMPORTANT CARE POINT FOR YOU TO FOCUS EFFORT ON. Grease is like preventative medicine. Liberal use of grease and care of the machines needs will prevent major costly issues.

It is always better to over grease than under grease. **FAILURE TO GREASE THE PIVOT AND FRONT WHEEL BEARINGS HUBS WILL RESULT IN FAILURE AND EXPENSIVE REPAIR.** We do everything possible to utilize the best tapered bearings, seals, and other wear items to prevent wear and provide long life. **Please do your part!**

You can ensure years of uninterrupted life from your **TR460** by simple greasing the **Front Wheel Bearing Hubs** and adjusting and greasing the **Pivot Point.**

IMPORTANT

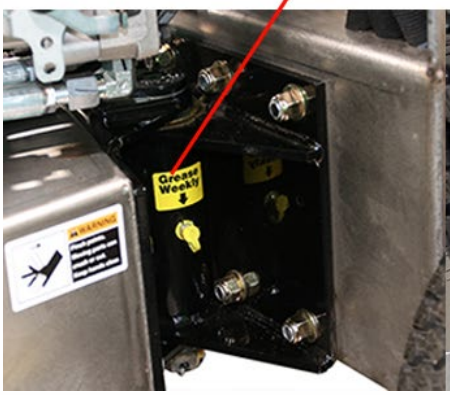
Pivot Point (1 Grease Fitting)

After the first 50 **Hours of use (break in period) adjust the Pivot Point. Remove the Cotter Pin at the base of the Pivot Point Spindle. Tighten (CW Turn) the Castle Nut and replace the Cotter Pin back in the Spindle. GREASE the Pivot Point Heavily. Repeat this as necessary to keep tension on the Pivot Point and reduce sloppiness from being felt in the Operator Steering Handle Bar.**

KEEP THE PIVOT POINT GREASED ON GOING! AT LEAST WEEKLY.

Front Wheel Bearings(1 Grease Fitting each side of the Spreader)

Grease the Fittings on the inside of the Front Wheel Hubs **WEEKLY!**



Pivot Point Grease Fitting

Front Axle Inner Wheel Hubs

Honda GX390 engine maintenance schedule and oil change procedures.

Maintenance Schedule

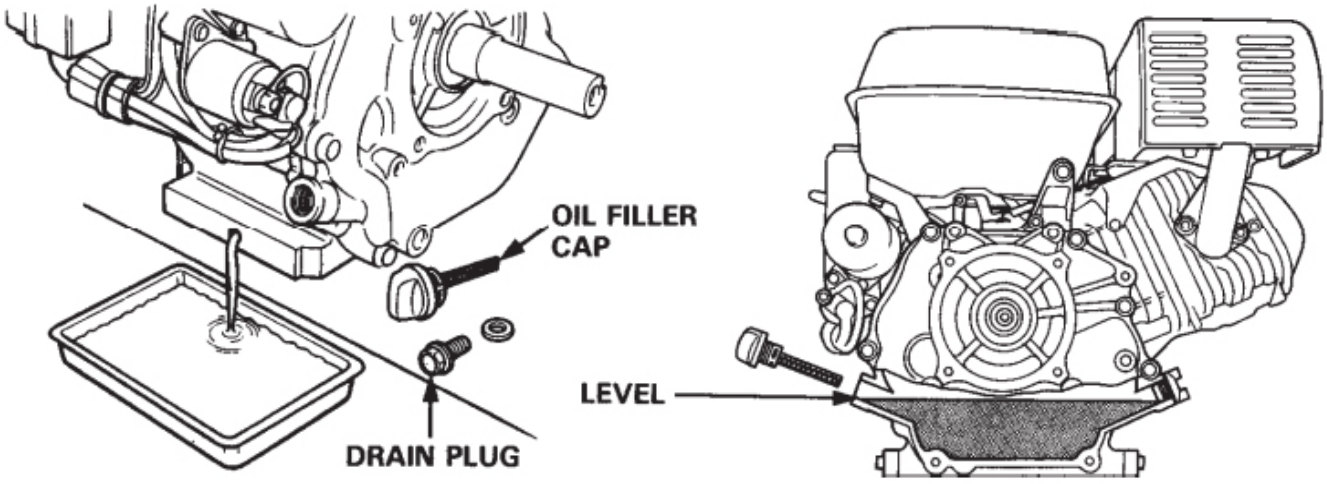
ITEM (Performed at every indicated monthor operating hour interval, whichever comes first.)		Each use	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.
Engine oil	Check level	O				
	Change		O		O	
Reduction gear oil (applicable models only)	Check level	O				
	Change		O			O
Air cleaner	Check	O				
	Clean			O(1)		
Sediment cup	Clean				O	
Spark plug	Clean-Readjust				O	
Spark arrester (optional part)	Clean				O	
Valve clearance	Check-Readjust					O(2)
Fuel tank and strainer	Clean					O(2)
Fuel line	Check (Replace if necessary)	Every 2 years (2)				

NOTE: (1) Service more frequently when used in dusty areas.
(2) These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

Drain the oil while the engine is still warm to assure rapid and complete draining.

1- Remove oil filler cap and drain plug to drain the oil.
2- Install the drain plug, and tighten it securely.
3- Refill with 5W30 oil and check the oil level.
4- Install the oil filler cap.

ENGINE OIL CAPACITY: 1.2 US QT.



⚠ CAUTION Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

NOTE: Please dispose of used motor oil in a manner that is compatible with the environment. Do not throw it in the trash or pour it on the ground.

To use this QR Code to view **Full Maintenance Videos Playlist.**

This is a list of some of the videos in our maintenance series...

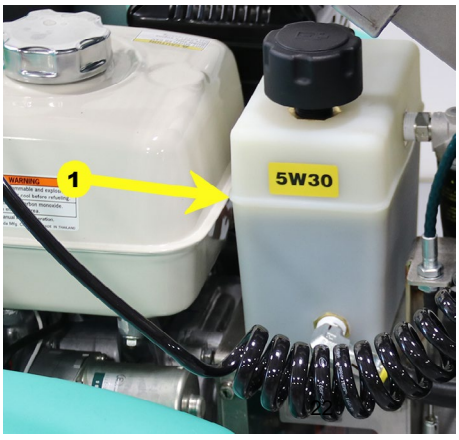
-Clean/Replace Filter Screen
-Prime Spray Pump
-Replace Sprayer/Agitator Buttons
-Replace Spray Pump
-Replace Impeller
-Replace Deflector cable
-Replace Hopper Cable
-Replace Drive Cable
-Adjust and Grease Pivot
-Replace Hydraulic Pump/Lovejoy
-Rebuild Pivot
-Weekly Greasing & General maintenance
-Drain & Replace Hydraulic Oil
-Replace Agitator

Maintenance and Storage - Daily

1) Clean the entire spreader completely.
2) Inspect the entire spreader and pay special attention to any worn parts.
3) Inspect the pivot point. Grease and adjust the castle nut as needed.
4) Check all fluid levels and inspect hoses and fittings for leaks.
5) Check the hydraulic pump, Lovejoy coupling and cables for fit, wear and alignment. Make the appropriate adjustments or repairs.
6) Check tire pressure.

Hydraulic System Maintenance - Daily

1) Check the hydraulic reservoir oil level.
   - Use 5w-30 oil.
   - 1 Bring the level up to the return line circling the reservoir.
2) Check the entire hydraulic system for leaks and make necessary adjustments.
3) If you need to push or tow the TR460, release the valve on top of the hydraulic pump. (A hex head with a hole running through it.) Turn the hex head counter-clockwise 1 to 2 turns. This opens the hydraulic system and allows for easy rolling. **Remember to re-tighten the valve to resume operating.**



Maintenance Record

Refer to the Honda Owner's Manual, included separately with your machine, for detailed information about engine maintenance procedures and maintenance intervals.

Maintenance Chart

	Honda Engine	Drive System	Wheels and Tires	Pivot Point	Front Axle	Spreader System	Spray System	Safety Checks
Before each use	• Check engine oil level • Check engine rpms to 2800	• Check hydraulic oil level • Check Lovejoy coupler for tightness and fit • Check hoses and fittings for leaks • Check drive cable for wear	• Check tire pressure • Check lug nuts for proper tightness • Check for tire wear • Check and confirm cotter pins are in place	• Inspect cotter pin • Inspect all pivot point hardware	• Inspect cotter pin	• Check impeller condition • Clean impeller • Check spreader on/off cable • Check and clean material diverter • Check impeller speed • Check agitator	• Check and clean the nozzle screens located in the spray nozzle bodies. • Check and clean in-line filter • Check spray wand hose condition • Check hoses and fitting for leaks	• Verify all safety and warning labels are in place
After initial 20 hours	• Change engine oil • Check air filter			• Inspect and tighten castle nut	• Inspect and tighten castle nut			
Every 50 Hours			• Grease front wheel hubs	• Grease pivot point				
Every 100 Hours	• Change engine oil			• Inspect and tighten castle nut	• Inspect and tighten castle nut			
Every 300 Hours	• Change air filter • Check spark plug							
Every 500 Hours		• Change hydraulic oil • Change hydraulic oil filter	• Repack and adjust front wheel bearings					

Specifications - Model TR460

Hopper Capacity	250 lbs. for Single Hopper		125/125 lbs. for Dual Hopper	
Spray Tank Capacity	20 gals Spray coverage 80 M sq. ft. per tank			
Honda GX390	13 hp, Recoil and Electric Start, 18 Amp built in charging system, Full day run on fuel tank			
	Hydro-Gear Hydraulic Components			
	Electric on demand REMCO 5.3 gal per minute spray pump			
	Electric on demand hopper agitation			
Unit weight (empty)	620 lbs.			
Weight distribution	**FL**	**FR**	**RL**	**RR**
	140 lbs.	140 lbs.	149 lbs.	153 lbs.
Fully loaded with 250 lbs. plus 20 gal	302 lbs.	302 lbs.	175 lbs.	190 lbs.
Ground Speed	4.5 mph max recommended			
Application Speed	3564 sq. ft./minute on flat turf			
Spread Width	9’ Split hopper capability			
Spray Width – wide	9’ On demand push button control			
Spray Width – narrow	4.5’ Spot spray extension hose – nozzle			
Spray Width Wand	Spot spray extension hose - nozzle			

Turfware Equipment Company

TR460

Spraying Systems Nozzle Selection Rates

TEEJET NOZZLE	PSI	DROP SIZE	CAPACITY ONE NOZZLE IN GPM	CAPACITY ONE NOZZLE IN OZ / MIN	PER NOZZLE RATE GPA 4.0 MPH	PER NOZZLE RATE GPA 5.0 MPH	PER NOZZLE RATE GPA 6.0 MPH
TF VS 2.0	20	XC	0.28	36	10.4	8.3	6.9
	30	XC	0.35	45	13.0	10.4	8.7
	40	VC	0.40	51	14.9	11.9	9.9
TF VS 2.5	20	UC	0.35	45	13.0	10.4	8.7
	30	XC	0.43	55	16.0	12.8	10.6
Standard Installed	40	XC	0.50	64	18.6	14.9	12.4
TF VS 3.0	20	UC	0.42	54	15.6	12.5	1.4
	30	XC	0.52	67	19.3	15.4	12.9
	40	XC	0.60	77	22.0	17.8	14.9
TF VS 4.0	20	UC	0.57	73	21.0	16.9	14.1
	30	XC	0.69	88	26.0	20.0	17.1
	40	XC	0.80	102	30.0	24.0	19.8
TF VS 5.0	20	UC	0.71	91	26.0	21.0	17.6
	30	UC	0.87	111	32.0	26.0	22.0
	40	XV	1.00	128	30.0	30.0	25.0
TF VS 7.5	20	UC	1.06	136	39.0	31.0	26.0
	30	UC	1.30	166	48.0	39.0	32.0
	40	XC	1.50	192	56.0	45.0	37.0

Turfware Equipment Company – Safe Work Procedure
360 RIDE-ON Spreader/Sprayer

DO NOT use this machine unless you have been instructed in its safe use and operation and have been given permission

THIS PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN

PRE-OPERATIONAL SAFETY CHECKS

- ✓ Locate and ensure you are familiar with all machine operations and controls.
- ✓ Ensure all guards are fitted, secure and functional. Do not operate if guards are missing or faulty.
- ✓ Ensure that all warning labels are in place and in sound condition.
- ✓ Ensure any pneumatic and hydraulic mechanisms are in sound condition.
- ✓ Ensure all electrical switches are functioning.
- ✓ Ensure the engine area is clear of all debris, fuel and grease before using.

OPERATIONAL SAFETY CHECKS

- ✓ Be sure the parking brake is engaged prior to starting the machine.
- ✓ Keep clear of moving machine parts.
- ✓ Drive at a speed slow enough to keep control over unexpected hazards.
- ✓ Travel up/down slopes rather than across, taking extra care when ascending or descending steep slopes.
- ✓ Take care when refuelling to avoid spilling fuel onto hot motor or exhaust.
- ✓ Before making adjustments, bring the machine to a complete standstill and engage the parking brake and turn off the engine.
- ✓ Watch for ejected material. Ensure no person or animal is endangered when operating equipment.

ENDING OPERATIONS

- ✓ Park on even ground.
- ✓ Lock the parking brake.
- ✓ Stop the engine and remove the key.
- ✓ Turn the fuel valve to the CLOSED or OFF position.

CLEANING UP

- ✓ Remove any foreign material from in and around engine and catcher parts.
- ✓ Check that all fasteners are properly installed to ensure that the TR360 is in safe operating condition.

POTENTIAL HAZARDS AND INJURIES

- ⓘ Rapidly rotating impeller.
- ⓘ Noise and heat.
- ⓘ Pinch point.
- ⓘ Ejected material and flying debris.

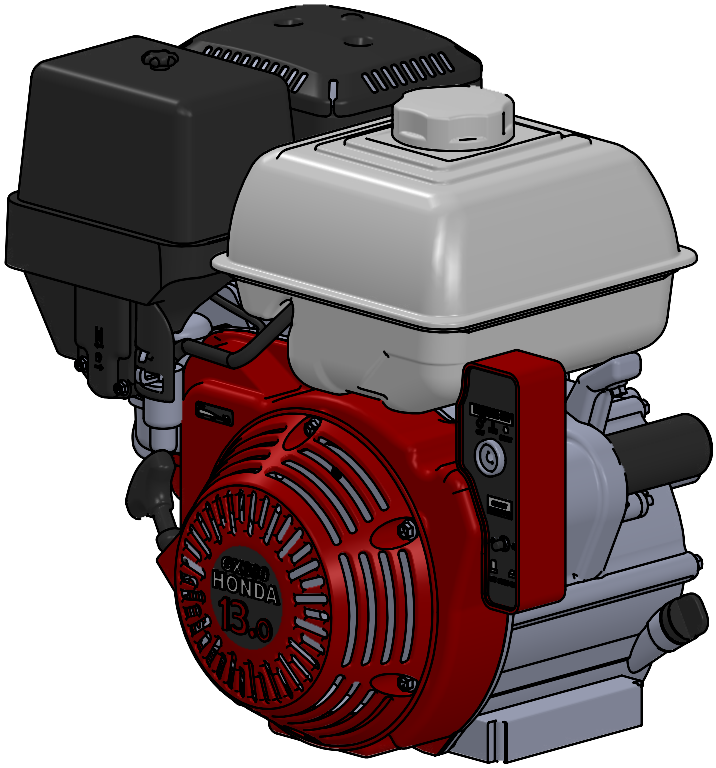
DON'T

- ✘ Do not use faulty equipment. Report suspect machinery immediately to your supervisor.
- ✘ Never carry passengers.
- ✘ Never allow anyone near the machine while in operation.
- ✘ Never operate this machine on slopes exceeding 20 degrees in any direction

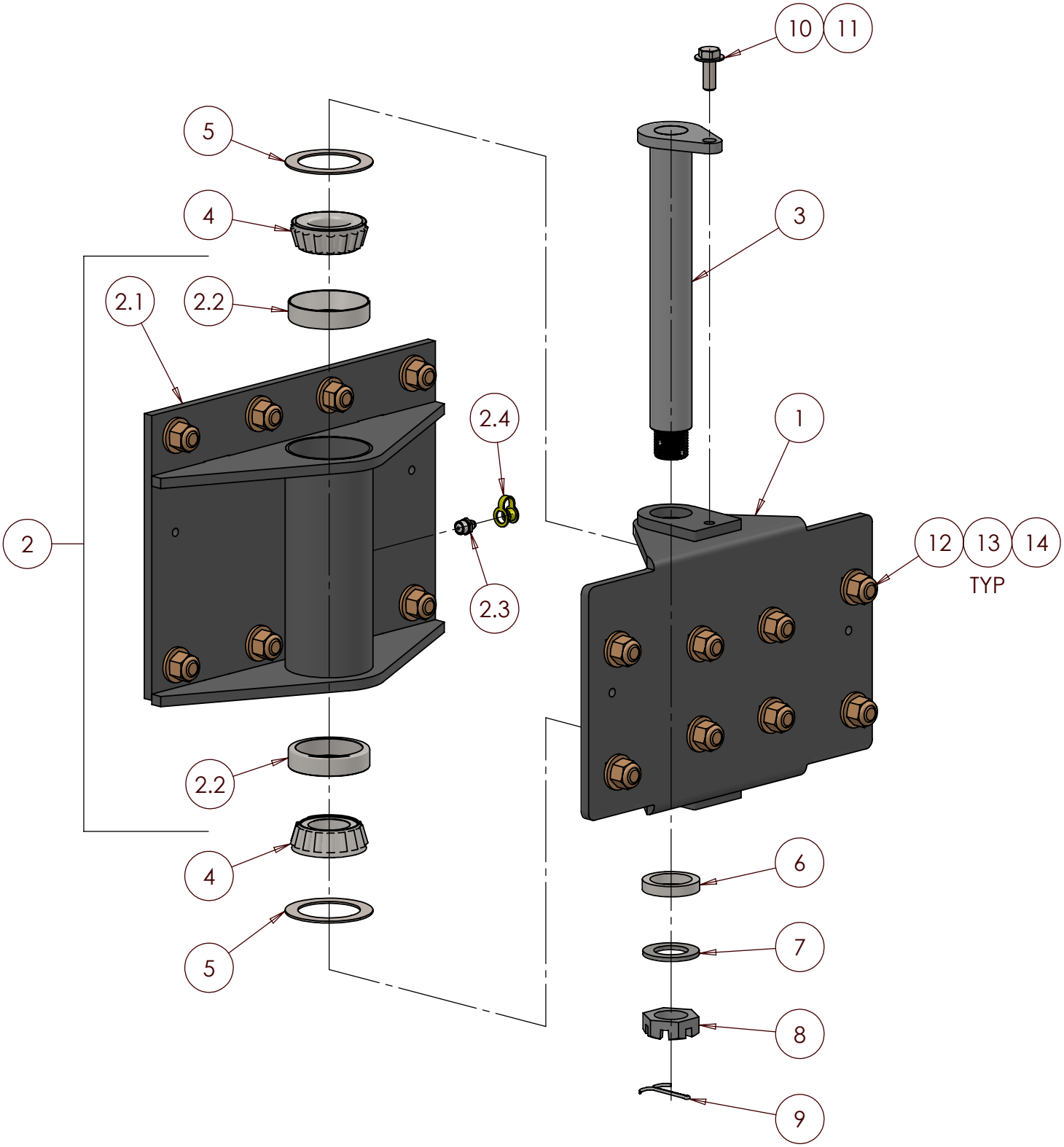
This SWP does not necessarily cover all possible hazards associated with this equipment and should be used in conjunction with other references. It is designed as a guide to be used to compliment training and as a reminder to users prior to equipment use.

TR360 AND TR460 HONDA GX390 PARTS

Item	Qty	Part Number	Description
1	1	3607012	Engine, Honda GX390 OUT2 QNR2, 18 Amp
2	1	3607001	Engine, Honda GX390 OUT2 QNE2, 10 Amp
3	1	3607010	Honda GX390 Spark Plug
4	1	3607011	Honda GX390 Air Filter
5	1	3601078	Honda GX390 Gas Cap
6	1	3607035	Honda GX390 Pull Cord Starter Assembly
7	1	3607032	Honda GX390 Fan Cover
8	1	3607031	Honda GX390 Starter Motor, 12 Volt
9	1	3607030	Honda GX390 Coil Assembly, Ignition
10	1	3607009	Honda GX390 Voltage Rectifier, 18 Amp
11	1	3607220	Honda GX390 Sub Wiring Harness, 18 Amp
12	1	3607019	Honda GX390 Voltage Rectifier, 10 Amp
13	1	3607022	Honda GX390 Sub Wiring Harness, 10 Amp



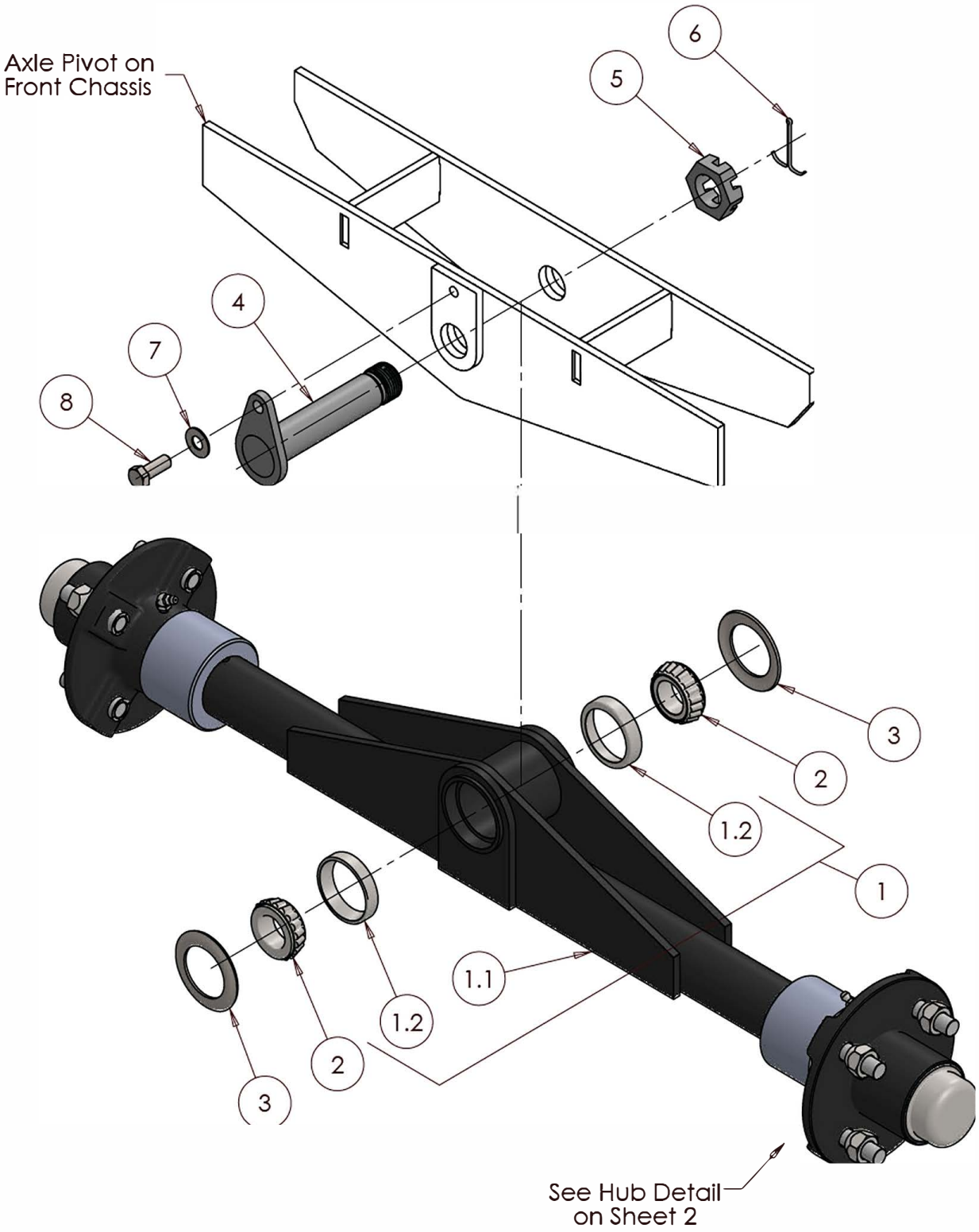
TR460 AND TR460XL MAIN PIVOT (V1)



TR460 AND TR460XL MAIN PIVOT (V1)

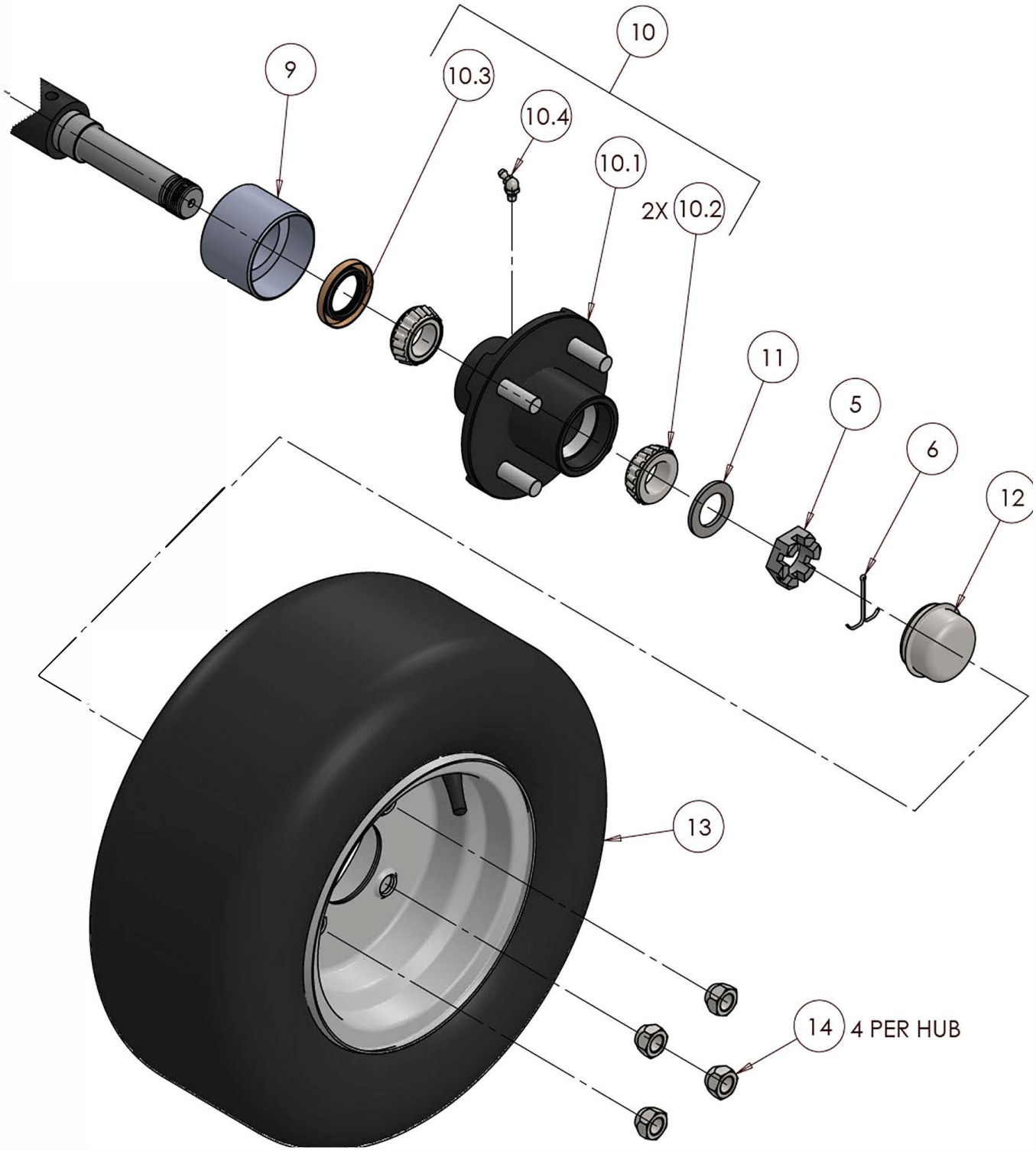
Assy, Main Pivot (V1) TR460 ... PN XXXXXXX			
Item	Qty	Part Number	Description
1	1	XXXXXXX	Weldment, Rear Pivot
2	1	XXXXXXX	Assy, Front Pivot
2.1	1	XXXXXXX	Weldment, Front Pivot
2.2	2	3606052	Bearing Race, 15243
2.3	1	3601060	Grease Fitting, 1/8"-27 MPT, Straight Ball Check
2.4	1	3601092	Dust Cap, Grease Fitting
3	1	XXXXXXX	Assy, Main Pivot Shaft
4	2	3606051	Tapered Roller Bearing, 1-1/4" Shaft, 15125
5	2	XXXXXXX	Pivot Washer Seal, TR460
6	1	XXXXXXX	Spacer, Pivot Shaft
7	1	3606025	Spindle Washer, 1-11/16" OD, 1" Shaft
8	1	3606018	Castle Nut, Slotted, 1"-14 THRD
9	1	3606019	Cotter Pin, 3/32" x 2" Lg
10	1	3601028	Flat Washer, 3/8" SST
11	1	3601035	Hx Cap Screw, 3/8"-16 x 1" Lg, SST
12	16	3601046	Carriage Bolt, 1/2"-13 x 1-1/4" Lg, Z5
13	16	3601044	Flat Washer, 1/2" YZ8
14	16	3601045	Lock Nut, 1/2-13 Nylon Insert, YZ8

TR460 FRONT AXLE WITH PIVOT



Patent Pending

TR460 FRONT AXLE WITH PIVOT



Hub/Wheel Detail
(Typical LH & RH Hubs)

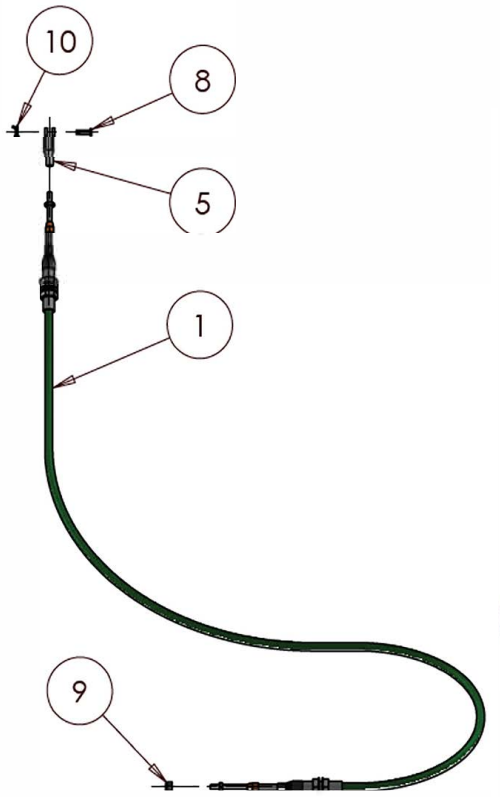
Patent Pending

TR460 FRONT AXLE WITH PIVOT

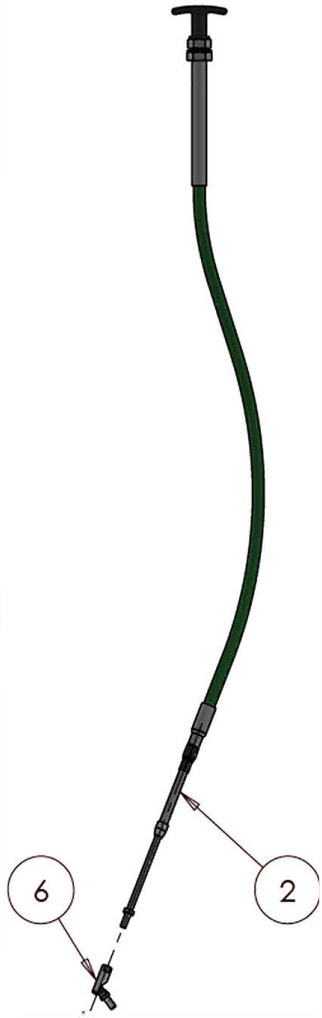
Item	Qty	Part Number	Description
1	1	3606425	Assy, Front Axle, TR360
1.1	1	3606429	Weldment, Front Axle, TR360
1.2	2	3606014	Bearing Race, L44610
2	2	3606021	Tapered Roller Bearing, 1" Shaft, L44643
3	2	3606625	Pivot Washer Seal, TR360
4	1	3606028	Assy, Axle Pivot Shaft
5	3	3606018	Castle Nut, Slotted, 1"-14 THRD
6	3	3606019	Cotter Pin, 3/32" x 2" Lg
7	1	3601028	Flat Washer, 3/8" SST
8	1	3601035	Hx Cap Screw, 3/8"-16 x 1" Lg, SST
9	2	3606413	Protective Cover, Wheel Hub Bearing
10	2	3606022	Assy, Front Wheel Hub w Seal & Bearings
10.1	1	3606005	Front Wheel Hub w Studs & Brg Races
10.2	2	3606021	Tapered Roller Bearing, 1" Shaft, L44643
10.3	1	3605027	Oil Seal, 1-1/4 x 2 x 1/4 w/Coating
10.4	1	3601059	Grease Fitting, 1/4"-28 Tapered Thrd, 65 Deg Ball Check
11	2	3606025	Spindle Washer, 1-11/16" OD, 1" Shaft
12	2	3606020	Grease Cap, 1" (2" OD) w Clear Chromate Dip
13	2	3606030	Tire Assy, 16 x 6.50-8, Super Turf Kenda K500
14	8	3606050	Lug Nut, 1/2"-20, Zinc Pltd

TR460 CONTROL CABLES & HARDWARE

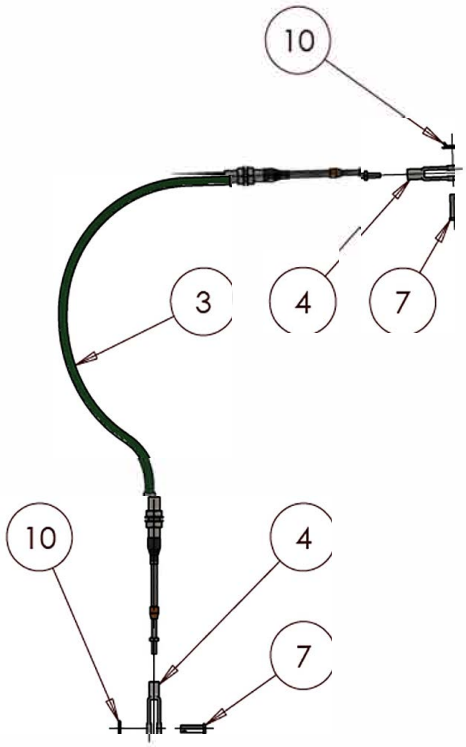
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	3609007	CABLE, HOPPER SLIDE CONTROL
2	1	3606110	CABLE, DEFLECTOR CONTROL
3	1	3609006	CABLE, DRIVE CONTROL
4	2	3601050	ROD END, 1/4" X 2" CLEVIS W 5/16" PIN HOLE, #10-32 TAP
5	1	3601053	ROD END, 3/16" X 1-9/16" CLEVIS W 3/16" PIN HOLE, #10-32 TAP
6	1	3601055	CABLE END, DEFLECTOR SHIELD CABLE
7	2	3601049	CLEVIS PIN, 5/16" X 1", SST
8	1	3601052	CLEVIS PIN, 3/16" X 5/8", SST
9	1	3601005	LOCK NUT, #10-32 NYLON INSERT, SST
10	3	3601051	COTTER PIN, 3/32" X 3/4" LG



Hopper Control Cable

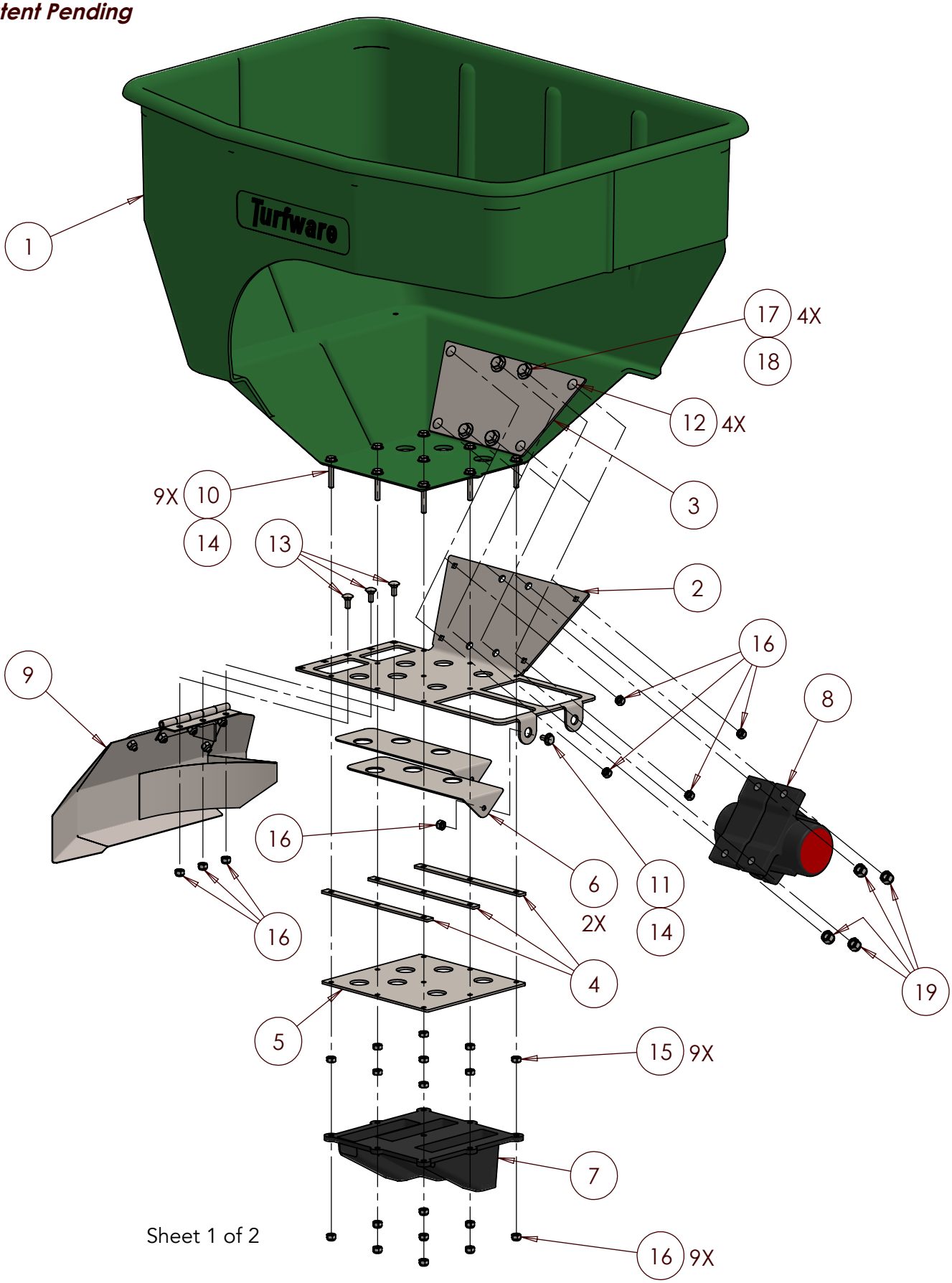


Deflector Control Cable



Drive Control Cable

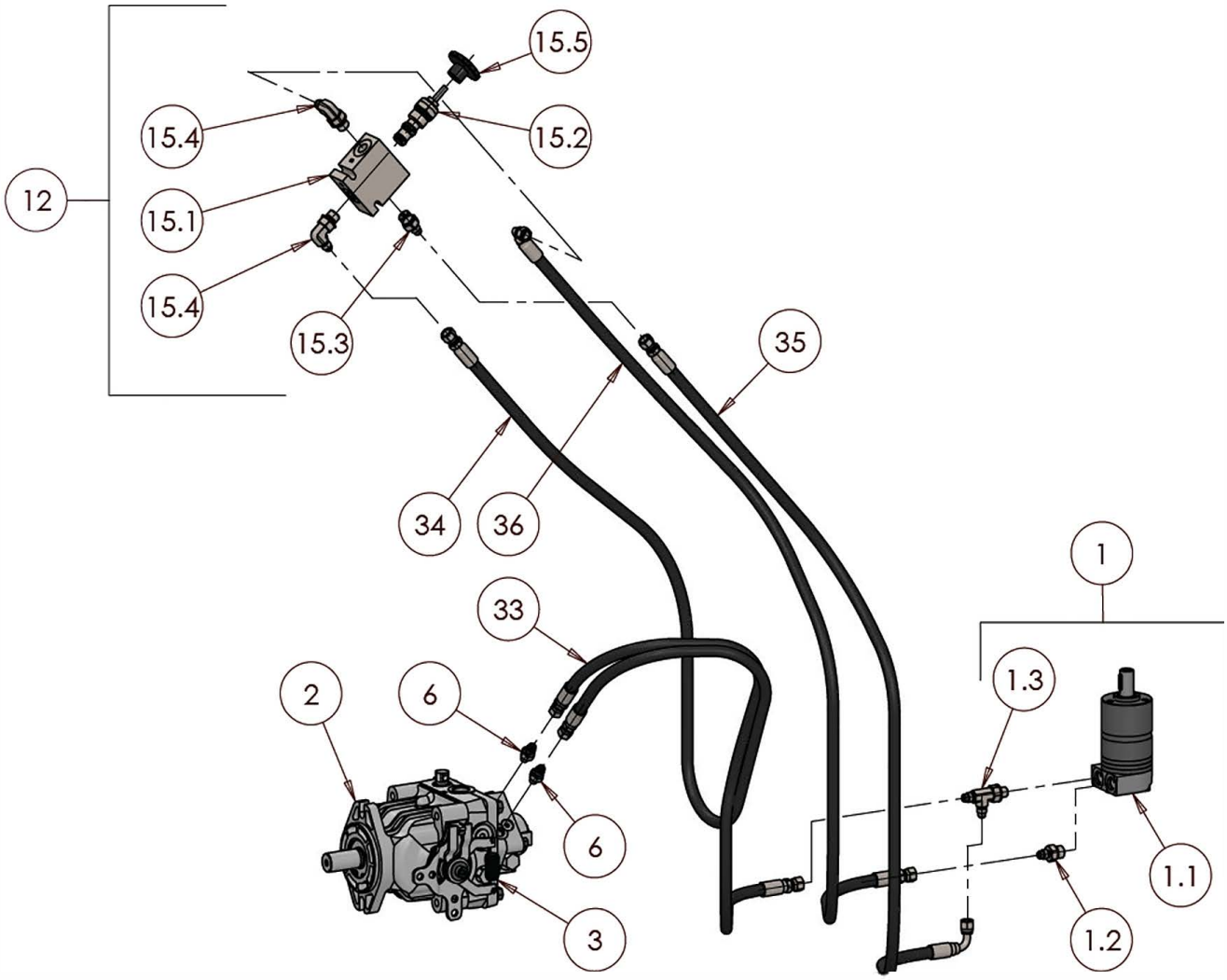
Patent Pending



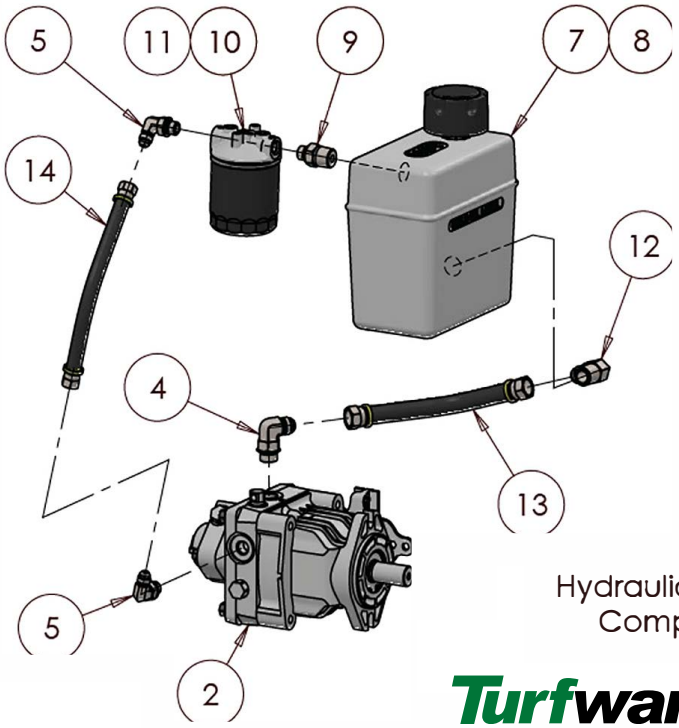
Sheet 1 of 2

TR360 AND TR460 HOPPER COMPONENTS

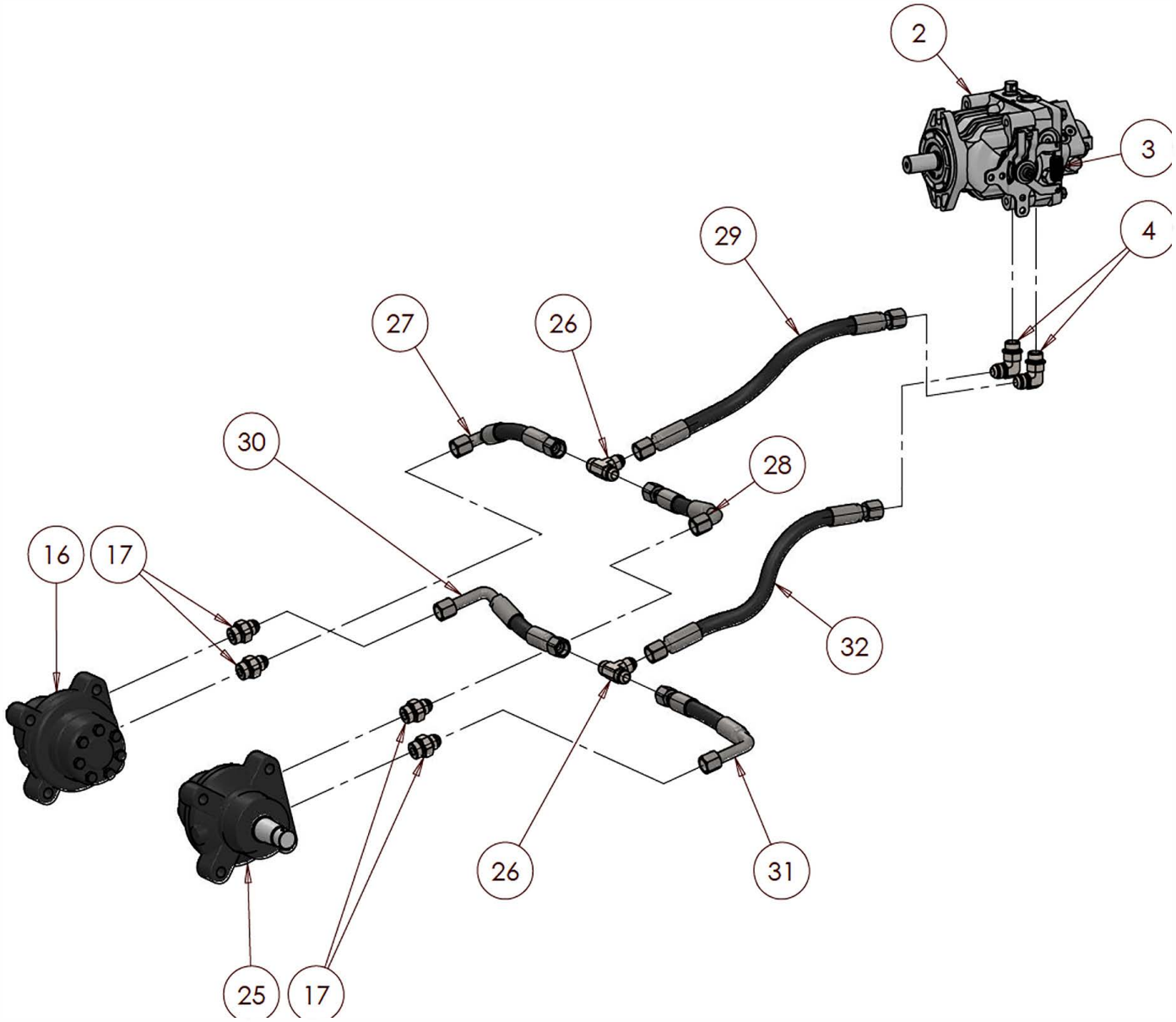
Assy, STD Hopper ... PN 3603305			
Item	Qty	Part Number	Description
1	1	3603300	STD Hopper, 250lb Capacity
2	1	3608651	Plate, Main Hopper Slide
3	1	3608595	Plate, Agitator Backing
4	3	3608652	Spacer, Hopper Slide
5	1	3608653	Diverter Plate
6	2	3608605	Hopper Lower Slide
7	1	3603007	Flow Diverter, Granular Hopper
8	1	3604019	Hopper Agitator (4 Bolt)
9	1	3608626	Assy, Deflector Shield w/Hinge
10	9	3601016	Hx Cap Screw, 1/4"-20 x 1-1/2" Lg, SST
11	1	3601015	Hx Cap Screw, 1/4"-20 x 9/16" Lg, SST
12	4	3601083	Carriage Bolt, 1/4"-20 x 1" Lg, SST
13	3	3601094	Carriage Bolt, 1/4"-20 x 5/8" Lg, SST
14	10	3601011	Flat Washer, 1/4" SST
15	9	3601018	Hx Nut, 1/4"-20, SST
16	17	3601017	Lock Nut, 1/4"-20 Nylon Insert, SST
17	4	3601036	Hx Cap Screw, 3/8"-16 x 2" Lg, SST
18	4	3601028	Flat Washer, 3/8" SST
19	4	3601037	Lock Nut, 3/8"-16 Nylon Insert, SST



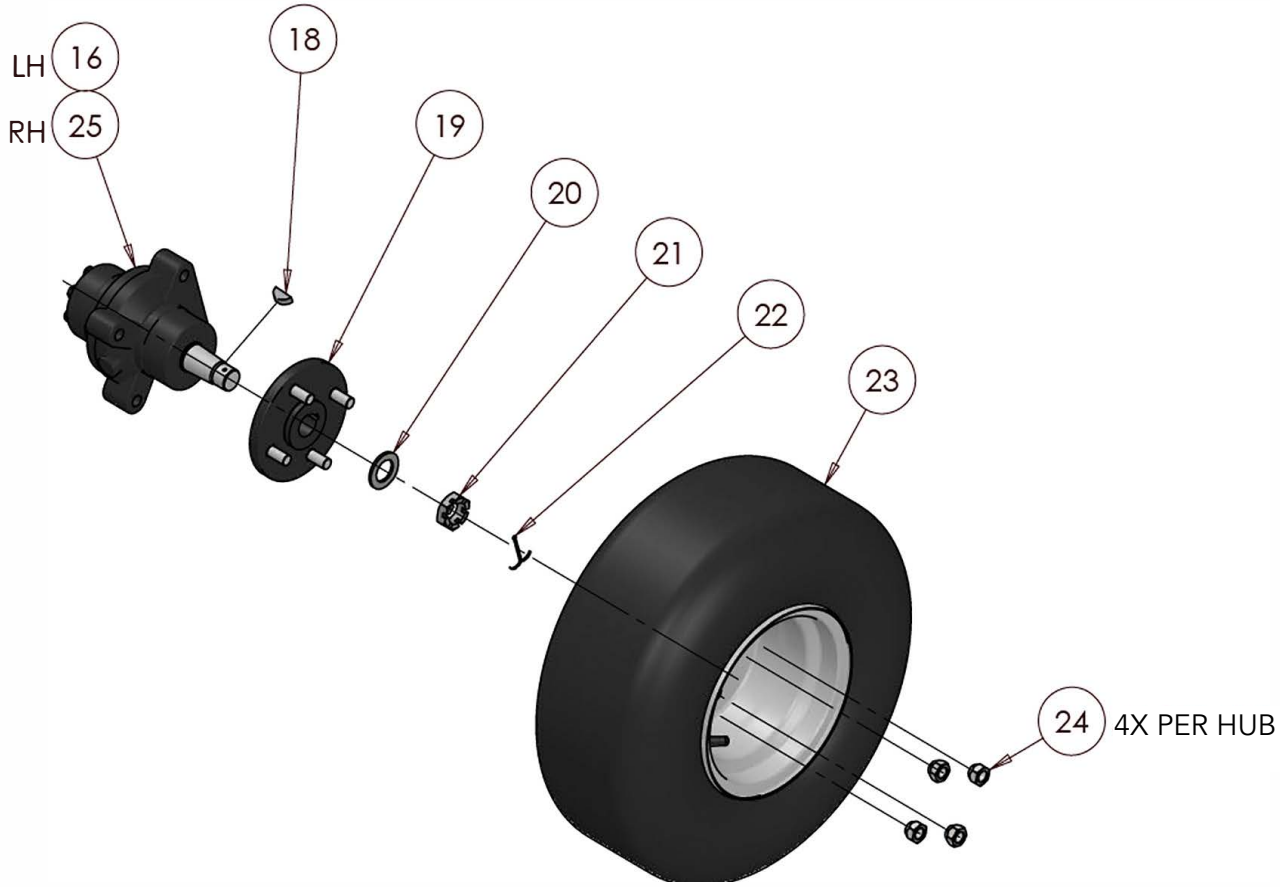
Impeller Drive Circuit



Hydraulic Reservior Components



Main Drive Circuit

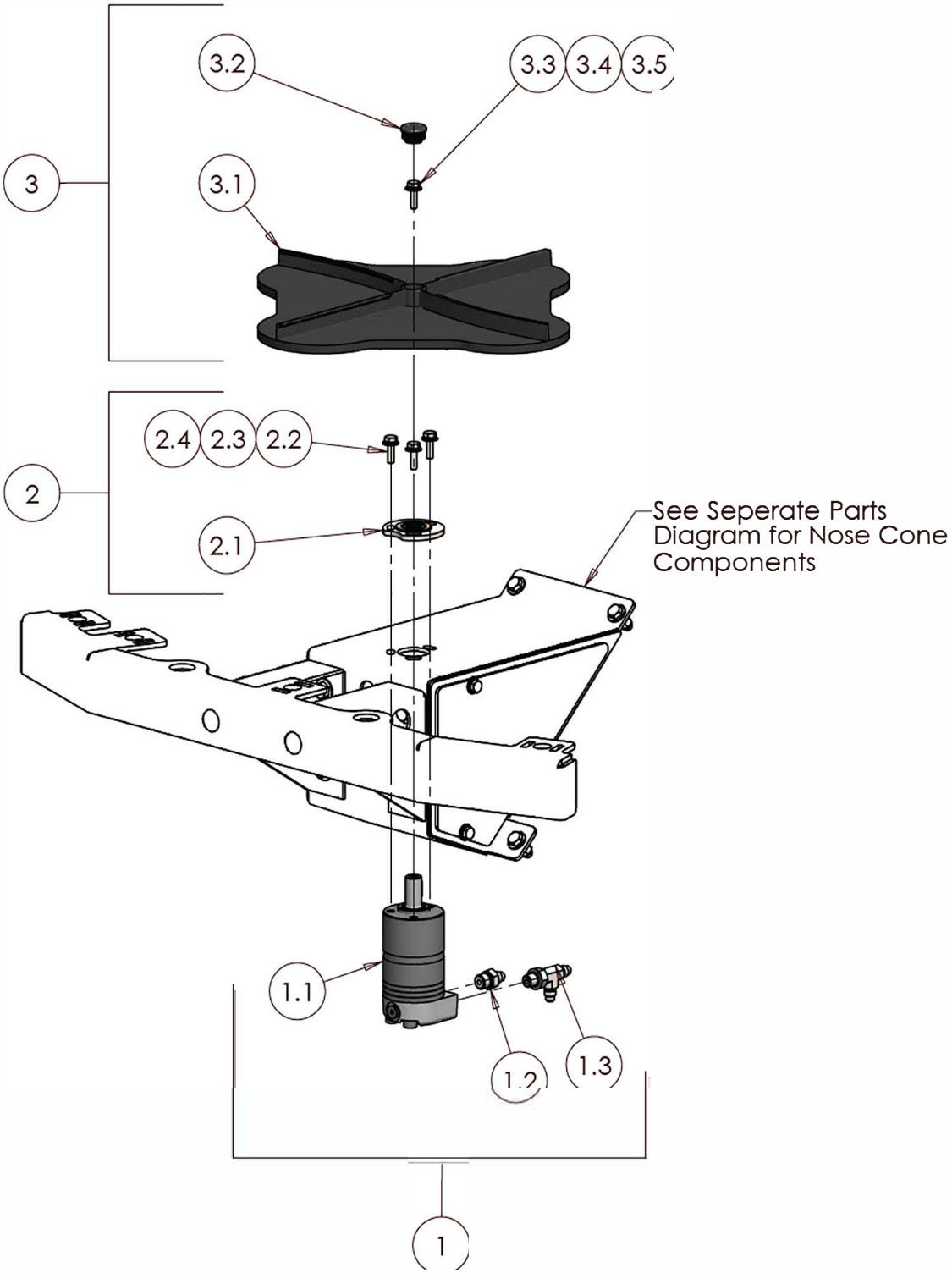


Rear Hub/Wheel Detail
(Typical LH & RH Hubs)

TR460 HYDRAULIC SYSTEM

Item	Qty	Part Number	Description
1	1	3609003	Assy, Impeller Motor w/Fittings
1.1	1	3605010	Hydraulic Impeller Motor
1.2	1	3605051	Adapter, 3/8" x 1/4" Flared, SST
1.3	1	3605042	Tee, 1/4" Flared x 3/8" x 1/4" Flared, SST
2	1	3605006	Hydro-Gear Drive w Aux Pump
3	1	3609902	Return Spring, Hydro-Gear (Black)
4	3	3605058	Elbow, 1/2" x 1/2" Flared, SST
5	2	3605056	Elbow, 3/8" x 3/8" Flared, SST
6	2	3605062	Adapter, 1/4" x 1/4" Flared, SST
7	1	3609915	Tank, Hydraulic Oil (V2)
8	1	3605023	Cap, Hydraulic Reservior
9	1	3605057	Adapter, 1/2" NPT x 3/8" Hydraulic, SST
10	1	3605025	Filter Head, Hydraulic System
11	1	3605024	Spin-On Filter, Hydraulic System
12	1	3605059	Elbow, 1/2" NPT x 1/2" Flared, SST
13	1	XXXXXXX	Hose Assy, Hydro Pump Supply
14	1	XXXXXXX	Hose Assy, Hydro Pump Return
15	1	3609005	Assy, Control Valve, Impeller Speed
15.1	1	3605020	Control Valve, Impeller Speed
15.2	1	3609108	Cartridge, Impeller Speed Control Valve
15.3	1	3605051	Adapter, 3/8" x 1/4" Flared, SST
15.4	2	3605050	Elbow, 3/8" x 1/4" Flared, SST
15.5	1	3605022	Control Knob, Impeller Speed Valve
16	1	3605015	Wheel Motor (LH) Danfoss OMEW 160 CW
17	4	3605052	Adapter, 7/8" x 1/2" Flared, SST
18	2	3609107	Key, Rear Wheel Motor Shaft
19	2	XXXXXXX	Assy, Rear Wheel Hub
20	2	3606025	Spindle Washer, 1-11/16" OD, 1" Shaft
21	2	3609106	Castle Nut, Slotted, Rear Wheel Motor
22	2	3606019	Cotter Pin, 3/32" x 2" Lg
23	2	3606032	Tire Assy, 18 x 7.50-8, Super Turf Kenda K500
24	8	3606050	Lug Nut, 1/2"-20, Zinc Pltd
25	1	3605016	Wheel Motor (RH) Danfoss OMEW 160 CCW
26	2	3605053	Tee, 1/2" x 1/2" x 1/2" Flared, SST
27	1	3605060	Hose Assy, 1/2" x 9" Lg, Short Elbow
28	1	3605037	Hose Assy, 1/2" x 7-1/2" Lg, Short Elbow
29	1	3605061	Hose Assy, 1/2" x 19-1/8" Lg
30	1	3605032	Assy, Wheel Motor Hose, 1/2" x 7-1/2" Lg, Long Elbow
31	1	3605034	Assy, Wheel Motor Hose, 1/2" x 9" Lg, Long Elbow
32	1	3605030	Hose Assy, 1/2" x 17-3/4" Lg
33	1	3605036	Hose Assy, 1/4" x 36" Lg (Aux Pump to Impeller Tee)
34	1	3605040	Hose Assy, 1/4" x 40" Lg (Aux Pump to Port #1)
35	1	3605038	Hose Assy, 1/4" x 50-1/2" Lg (Impeller Tee Branch to Port #2)
36	1	3605047	Hose Assy, 1/4" x 47-1/4" Lg (Impeller Conn to Port #3)

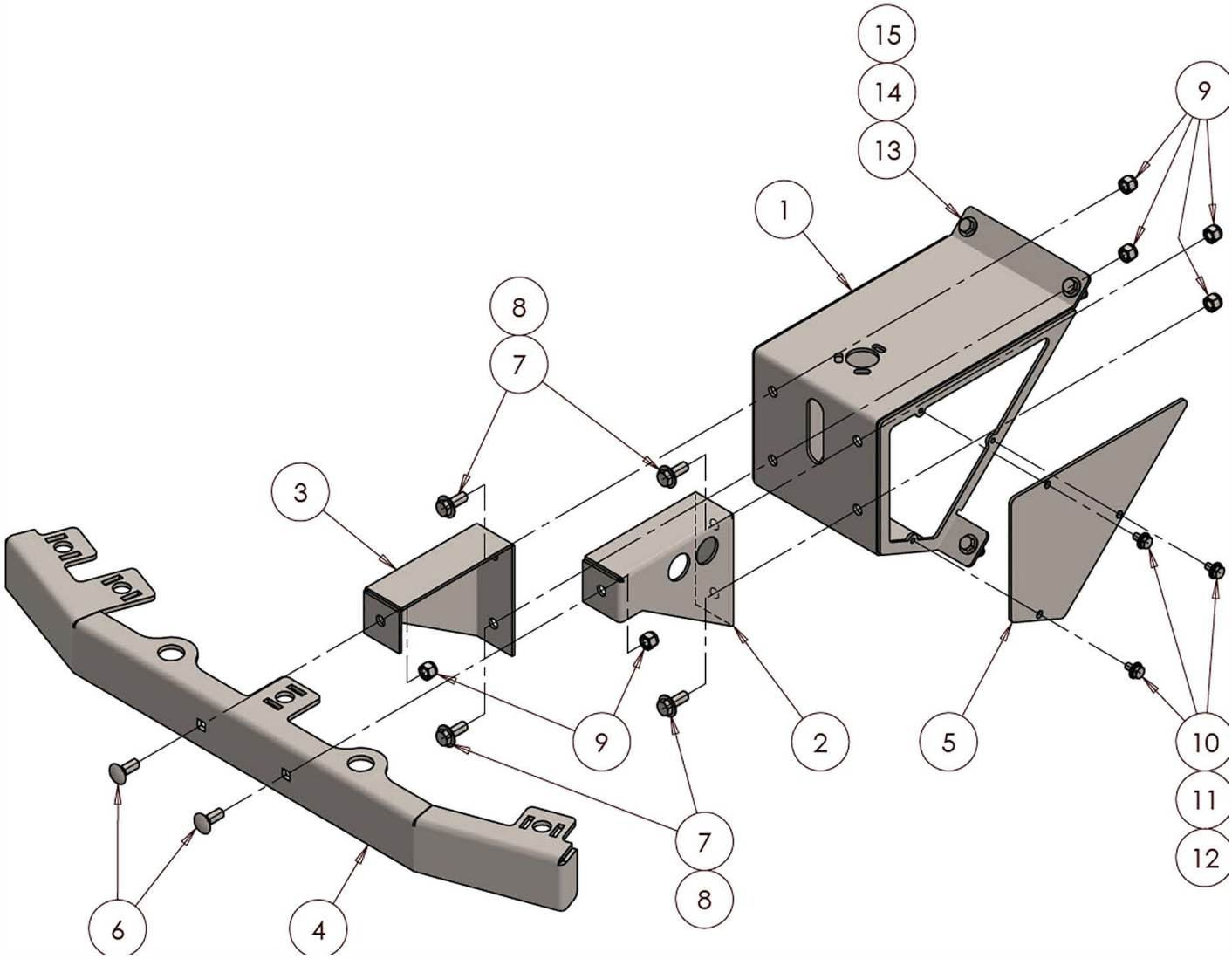
TR460 IMPELLER COMPONENTS



TR460 IMPELLER COMPONENTS

Item	Qty	Part Number	Description
1	1	3609003	Assy, Impeller Motor w/Fittings
1.1	1	3605010	Hydraulic Impeller Motor
1.2	1	3605051	Adapter, 3/8" x 1/4" Flared, SST
1.3	1	3605042	Tee, 1/4" Flared x 3/8" x 1/4" Flared, SST
2	1	3609004	Assy, Impeller Motor Seal Kit
2.1	1	3606003	Assy, Impeller Motor Seal
2.2	3	3601019	Hx Cap Screw, 1/4"-28 x 7/8" Lg, SST
2.3	3	3601010	Lock Washer, 1/4" SST
2.4	3	3601011	Flat Washer, 1/4" SST
3	1	3603008	Assy, Impeller w/Snap-In Plug & Fasteners
3.1	1	3603006	Impeller
3.2	1	3601069	Snap-In Plug, Impeller Hub
3.3	1	3601019	Hx Cap Screw, 1/4"-28 x 7/8" Lg, SST
3.4	1	3601010	Lock Washer, 1/4" SST
3.5	1	3601011	Flat Washer, 1/4" SST

TR360 AND TR460 NOSE CONE



TR360 AND TR460 NOSE CONE

Assy, Nose Cone ... PN 3608675			
Item	Qty	Part Number	Description
1	1	3608706	Weldment, Nose Cone
2	1	3608685	Support Bracket, Spray Bar (LH)
3	1	3608690	Support Bracket, Spray Bar (RH)
4	1	3608504	Spray Bar
5	1	3608705	Nose Cone Cover Plate
6	2	3601031	Carriage Bolt, 3/8"-16 x 1" Lg, SST
7	4	3601035	Hx Cap Screw, 3/8"-16 x 1" Lg, SST
8	4	3601028	Flat Washer, 3/8" SST
9	6	3601037	Lock Nut, 3/8"-16 Nylon Insert, SST
10	3	3601015	Hx Cap Screw, 1/4"-20 x 9/16" Lg, SST
11	3	3601010	Lock Washer, 1/4" SST
12	3	3601011	Flat Washer, 1/4" SST
13	4	3601023	Hx Cap Screw, 5/16"-18 x 1" Lg, SST
14	4	3601026	Flat Washer, 5/16" SST
15	4	3601027	Lock Nut, 5/16"-18 Nylon Insert, SST

Turfware Registration

CUSTOMER INFORMATION

Business Name_____

Contact Name_____

Billing Street Address_____

City_____ State_____ Zip Code_____

Phone_____

Email_____

Turfware Distributor / Location_____

Purchase Date_____

Serial Number_____

Model Number_____

Turfware Equipment Company

1049 McCauley Road • Stow, Ohio 44224 • Phone: 330-929-9000 • 1-800-637-4000 • www.turfware.com

Turfware, Inc

2-year Worry Free Parts Warranty

Turfware, Inc (the "Company") warrants its equipment and parts to be free of defects in materials and workmanship for a period of two years from the date of purchase, subject to the simple terms below.

Additional Manufacturer's Warranty. Some items such as small engines may have warranties extending beyond the two-year warranty period described above.

Consumable Parts. Parts that typically wear through normal use will be identified by Model and are excluded from this warranty. The following Turfware Model TR460 and TR460XL parts are excluded: the Impeller, the hopper cover/shower cap, tires (wear and puncture), the operator stand on pad, and all consumable parts and components such as spark plugs, engine oil, fuel, machine filters, lubricants, etc.

Warranty Claims: All Claims of part failure must be provided within the two-year warranty period via a picture of the defective part sent to the Company's Warranty Claims department at: warrantyclaim@turfware.com. In some cases, the Company may require the defective part, to be returned to the Company, at the Company's cost, to Turfware, Inc at 1049 McCauley Rd; Stow, Ohio 44224.

Parts will be replaced under Warranty upon confirmation of original part **failure**. We will immediately ship replacement parts for valid warranty claims via normal ground delivery of the replacement part.

Parts requests related to stocking of items shall be excluded from this warranty.

Preventative Maintenance. All efforts must be made by the purchaser to provide proper equipment care including daily cleaning, fluid check and proper lubricating. Please follow the procedures outlined within the equipment Operators Manual.

The sole liability of the Company with respect to this warranty shall be the replacement of defective parts. The Company shall not under any circumstances be liable for any loss or damage (including consequential or incidental damages or loss) beyond the replacement of the parts. Use of the equipment in a manner other than outlined within the Operators Manual shall void this warranty.

OTHER THAN THE LIMITED WARRANTY DESCRIBED HEREIN, THE COMPANY MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, WITH THE RESPECT TO ANY EQUIPMENT OR PARTS, NOR DOES IT WARRANT THE MERCHANTABILITY OF ANY EQUIPMENT OR PARTS, OR THAT ANY EQUIPMENT OR PARTS ARE FIT FOR ANY PARTICULAR PURPOSE, AND ALL SUCH WARRANTIES ARE HEREBY DISCLAIMED.

Our mission is to help you keep your equipment operating in a safe and productive manner.

Effective October 1, 2019

Notes

TR460

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