



# TR-224H TURF ROLLER

## OPERATOR & PARTS MANUAL



### **Kesmac Inc.**

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July 2025

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**KESMAC INC.**  
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Keswick, ON L4P 0N1  
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## STATEMENT OF LIMITED WARRANTY

**Brouwer Kesmac** warrants its full line of equipment to be free from defects in material and factory workmanship for a period of 12 months. This warranty begins on the date of sale or use of the equipment to the original purchaser. This statement does not extend or limit engine, tractor or component warranties in which the engine, tractor or component manufacturers may carry extended time periods up to 24 months. Engine, tractor or component warranty claims will be subject to the engine, tractor or components manufacturer's approval.

**Replacement Parts** carry a 90 day replacement warranty and are reimbursed to the dealer. All electrical and hydraulic parts are limited by this policy and will only be covered upon approval by the service department after inspection of the part. The installation and removal of a part will automatically place that part under the replacement parts warranty.

This warranty is limited exclusively to equipment or accessories manufactured or supplied by **Brouwer Kesmac** and are subject to the inspection and analysis by the company to conclusively identify the nature and cause of failure.

**PRODUCT REGISTRATION FORM** must be completely filled out, signed by the customer at the original date of installation, and returned to **Brouwer Kesmac** before any claims will be considered.

**Brouwer Kesmac** reserves the right to incorporate improvements in material and design of its products without notice and is not obligated to make the same improvements to equipment previously manufactured.

**Brouwer Kesmac** is not obliged under any warranty policy different from the Kesmac Brouwer Turf warranty policy as published above.

### **BROUWER KESMAC RESPONSIBILITIES**

**Brouwer Kesmac's** obligation under the terms of this warranty is limited to the repair, replacement or credit, at its option, of the equipment, parts or supply items that conform to its warranty.

### **DEALER'S RESPONSIBILITIES**

1. Only factory-trained service or approved personnel will be permitted to perform warranty service on **Brouwer Kesmac** equipment.
2. All major warranty claims exceeding \$650.00 (in total including parts and labour) must be authorized by **Brouwer Kesmac** before work is performed.
3. All replacement parts used in warranty situations must be furnished by **Brouwer Kesmac** or approved by **Brouwer Kesmac** personnel. The use of non-recommended oil could nullify warranty.

### **OWNERS RESPONSIBILITIES**

The owner is obligated to operate and maintain the equipment in accordance with the recommendations published by **Brouwer Kesmac** in the owners/operators manual for the unit. The owner is responsible for the costs associated with such maintenance and operating adjustments that may be required on a regularly scheduled basis. Where applicable the owner is responsible for transportation to and from the dealership or service calls made by the dealer.

### **CONDITIONS THAT VOID WARRANTY**

This warranty shall not apply to equipment which:

- 1. Has had repairs or modifications not authorized by **Brouwer Kesmac**
- 2. Has been subject to abuse, improper maintenance, or improper application.
- 3. Has been modified from original equipment specifications.

### **WARRANTY EXCEPTIONS**

This warranty does not apply to the following items:

- 1. Wear items including blades, cutting edges, cutting arms, spark plugs, belts, filters, bearings, sprockets, chains, tires, light bulbs, lubricants and fluids etc. Cost of normal maintenance including replacement of service items.
- 2. Damages to engine/drive systems caused by lack of/ or improper lubricants and/or fluids.
- 3. Damages arising from accident, misuse or neglect.
- 4. Damages to engine/drive systems caused by improper operation and/or maintenance.
- 5. **Brouwer Kesmac** will not be liable for any incidental or consequential damage or injuries, including but not limited to loss of profits, loss of crops, rental of substitute equipment, or other commercial loss or for damage to the equipment in which the Company Product is installed.

### **FREIGHT CARRIER DAMAGE**

Claims for equipment damaged in transit should be referred to the freight carrier. Visible damage should be reported immediately and concealed damage as soon as possible, in accordance with freight carrier regulations.



# BROUWER

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Date of Purchase: Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

Dealer Name \_\_\_\_\_ Phone \_\_\_\_\_

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

Model Number \_\_\_\_\_

*ALWAYS GIVE THE SERIAL NUMBER, MODEL NUMBER AND PART COLOR WHEN ORDERING SERVICE PARTS.*



### **CALIFORNIA**

#### **Proposition 65 Warning**

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.



### **WARNING**

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

#### **Californie Proposition 65 Avertissement**

Les échappements des moteurs diesel et certains de leurs composés sont reconnus par l'Etat de Californie pour être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.



### **AVERTISSEMENT**

L'émission du moteur de ce matériel contient des produits chimiques que l'Etat de Californie considère être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.

#### **California Advertencia de la Proposicion 65**

El estado de California hace saber que los gases de escape de los motores diesel y algunos de sus componentes producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.



### **ADVERTENCIA**

El estado de California hace saber que los gases de escape de este producto contienen productos químicos que producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.



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## IMPORTANT

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Your new Brouwer Turf Roller has been designed and built to give many years of outstanding performance. The service and reliability you receive from this product will be affected by the proper maintenance and operation of the machine.

It is important the operator of the machine follows all recommended operating procedures and service schedules, to ensure the safety of the machine, themselves and any bystanders.

It is not possible to list all situations that may effect the safety of the machine or the operators, therefore Brouwer cannot identify all precautions that may possibly prevent accidents.

The owner/operator must assume responsibility for their own safety, the safety of others and of the machine.

### BE A QUALIFIED OPERATOR BY ;

- Reading and obeying the instructions in this manual and on the safety decals on the machine.
- Receiving training on the correct operation of the machine.
- Asking your supervisor or equipment dealer to explain anything you do not understand.
- Explaining the instructions in the operator's manual and safety decals to user/operators who cannot read or understand them.

### IF YOU DO NOT UNDERSTAND....ASK

Use only genuine Brouwer replacement parts. Parts not supplied by Brouwer may not meet factory specifications or standards of manufacture. The use of non-approved parts may result in component failure and result in an accident to the operator or bystanders.

The Brouwer **Turf Roller** must not be used for any purpose other than that for which it was designed.

Prior to shipping from the manufacturer the machines are inspected to insure that all safety guards, shields and warning/safety/operating decals are correctly positioned and secure.

The machine must not be used if any of the above items are missing or damaged.

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## INTRODUCTION / SPECIFICATIONS

## TURF ROLLER

### DESCRIPTION

The TR-224H is the ideal turf roller for Landscapers, Rental outlets and other contractors. The 24 in. wide rollers, specially designed to prevent turf damage, and its exceptional maneuverability make the TR-224H most suitable for lawn rolling, turf installation and other rolling tasks.

A reliable Honda Engine drives through a variable speed hydrostatic transmission that shifts effortlessly from forward to reverse with a single lever. The unique steering design, comfortable seat and driving position reduce operator fatigue.

The Brouwer Turf Roller is an outstanding machine that is efficient, reliable, economical and easy to operate.

### SPECIFICATIONS

#### Dimensions:

Overall Length .....	60" (152 cm)
Overall Width .....	32" (81 cm)
Overall Height .....	50-1/2" (128 cm)
Weight .....	Empty ..... 515 lbs. (233 kg)
	Loaded ..... 1107 lbs. (502 kg)
Front Roller .....	24" diameter (61 cm)
	24" wide (61 cm)
Rear Roller .....	18" diameter (46 cm)
	24" wide (61 cm)

#### Engine:

Honda ..... 5-1/2 hp

#### Drive Train:

Speed ..... 0 - 4.2 mph  
Transmission ..... Walker Model 700-053 Hydrostatic  
F - N - R Single Lever Shift

#### Steering:

Steering ..... Handle Bar with Lever Assist



## WARNING

Unauthorized modifications may result in **extreme** safety hazards to operators and bystanders, and could result in damage to the machine.

Brouwer Kescmac warns against and strongly rejects and disclaims against any modifications, add-on accessories or product modifications that are not designed, developed, tested, and approved by Brouwer Engineering Department.

Any Brouwer Kescmac product that is altered or modified in anyway that is not authorized, after original manufacture, including after market accessories or component parts that are not approved by Brouwer, will result in the machine warranty be voided.

All liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Brouwer Kescmac will be considered the responsibility of the individual(s) or company designing and/or making such changes.

Brouwer Kescmac will vigorously pursue full indemnification and costs from any party responsible for unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This symbol means:  
**ATTENTION!**  
**BECOME ALERT!**

Your safety and the safety of others is involved.

## Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Brouwer machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

## DANGER

**DANGER** indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

## WARNING

**WARNING** indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.


## CAUTION

**CAUTION** indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

## CAUTION

**CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage

**See Page 16 for Safety Decals.**

		<b>KESMAC INC.</b> KESWICK, ONT. CANADA PHONE: (905) 476-6222 FAX: (905) 476-6744
SERIAL NO. <input type="text"/>		
WEIGHT <input type="text"/>		
	<small>2006/42/EC EN ISO 12100:2010 EN ISO 4413:2010 BS EN 349 BS EN 953 EMC STANDARDS</small>	<small>made in CANADA fabrique au CANADA</small>

## MODEL NUMBER :

This number appears on sales literature, technical manuals and price lists.

## SERIAL NUMBER:

This number applies only to the machine to which it is allocated.

The serial number must be quoted when ordering parts or calling for service or warranty advice.

The serial number plate is located on the Lower Right Hand Door Frame.

## GENERAL SAFETY

- Read and understand the owner's manual, before attempting to operate this machine.
- Operate all controls from the operator's seat, (if so equipped). **NO RIDERS.**
- Keep all shields in place and safety switches adjusted properly.
- Do not leave equipment unattended. "STOP" the engine and remove the key (if so equipped).
- Do not allow minors or the inexperienced to operate this machine.
- Never allow anyone to operate or service this machine while under the influence of alcohol or drugs.
- Keep people and pets a safe distance away from machines using power driven attachments. Injury could result from flying debris.
- Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears, hands, and feet.
- Operate the machine only in daylight or in good artificial light.

## CAUTION

- Do not run engine at excessive speeds.
- Keep operator's feet on the footplate provided.
- Do not adjust or perform any maintenance while the unit is running.
- If a malfunction occurs, cease operation and "STOP" the engine.
- Do not operate this machine on slopes greater than 20 degrees. Exercise caution when operating across the side of a slope. Reduce engine speed to the lowest possible operable speed. If the slope is too steep (20 degrees incline or more), the machine may tip over causing personal injury and machine damage.
- To prevent accidental movement of the machine when it is unattended, ensure it is parked on level ground and the shift lever is engaged. Place blocks under the rollers.

### BEFORE STARTING:

1. READ SAFETY DECALS (See Page 16).
2. Check engine and transmission oil levels.
3. Visually check for loose or missing parts or bolts.
4. Fill with clean fuel.

### WARNING

**WHEN STARTING OR TURNING OFF, MAKE SURE F-N-R SHIFT LEVER IS IN NEUTRAL POSITION.**

### STARTING INSTRUCTIONS:

1. Position the machine on a level surface. If necessary, place blocks under the rollers to prevent machine moving inadvertently.
2. Move the shift lever into the "LOCKED NEUTRAL" position.
3. Turn the fuel valve to the "OPEN" position.
4. Move the choke lever to the "CLOSE" position.

**NOTE:** The choke may not be needed if the engine is warm.

5. Move the throttle lever to a "slightly open" position.
6. Turn the engine switch to the "ON" position on console.
7. Pull the recoil starter grip lightly until resistance is felt, then pull briskly.

**NOTE:** Return it slowly to prevent damage to the starter mechanism.

8. As the engine warms up, gradually move the choke lever to the "OPEN" position.
9. Position throttle for the desired engine speed.

### CAUTION

**NEVER USE ETHER AS A STARTING AID, OR SEVERE DAMAGE TO ENGINE MAY OCCUR.**

### DANGER

**NEVER FILL FUEL TANK WITH ENGINE RUNNING!**

### SPECIFICATIONS FOR FUELS AND OILS:

#### ENGINE OIL

Fill the crankcase with oil that meets API service designation SF, SF/CC, or SF/CD. Do not mix brands or grades of oil. Recommended weight for general all temperature use is:

SAE 10W-30

#### FUEL

Use clean, fresh, regular or unleaded fuel.

## PRE - START INSTRUCTIONS

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## TURF ROLLER

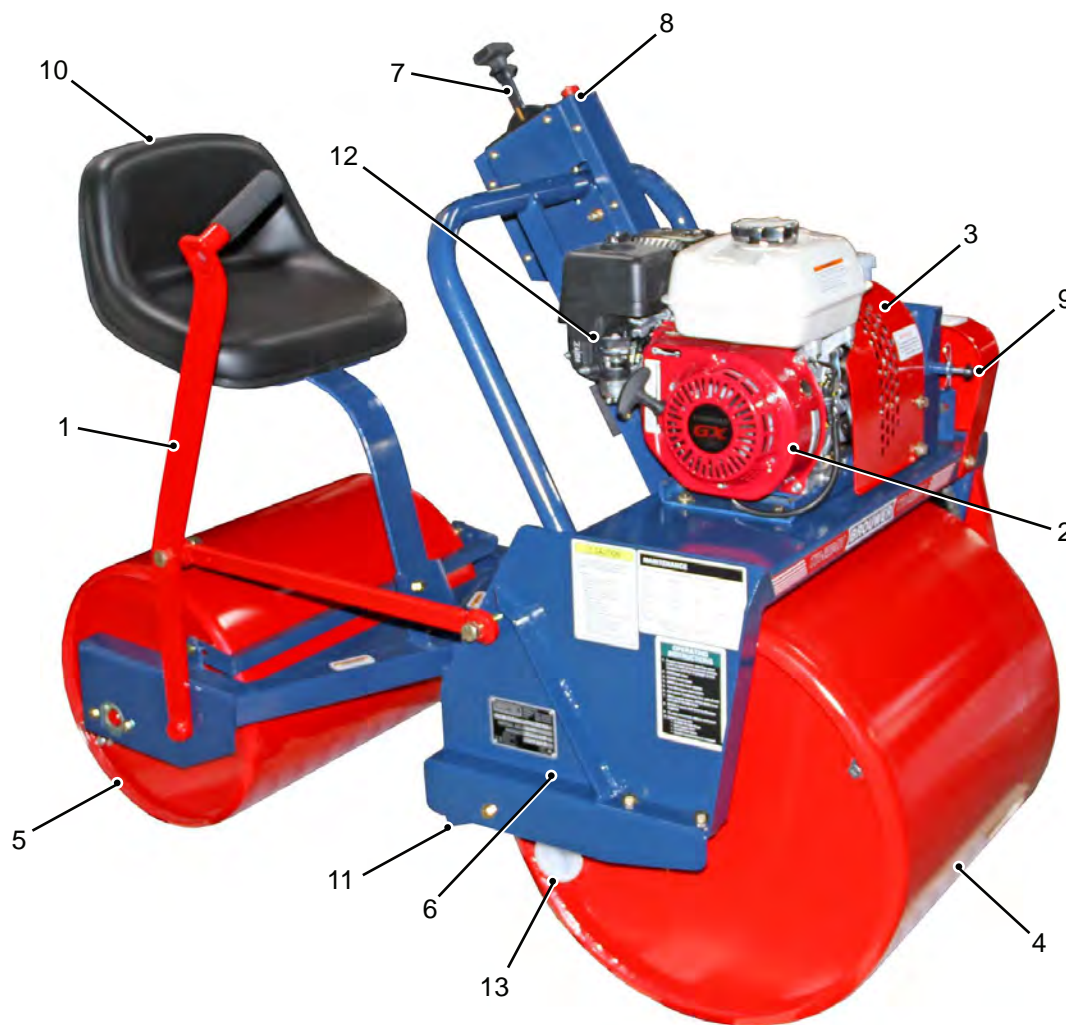
### FILLING THE ROLLERS WITH WATER

1. Position the unit on level ground with the roller fill/drain plugs at highest/lowest position.
2. Remove upper drain plugs.
3. Fill rollers with the required amount of water.
4. Re-install drain plugs



### FEATURES AND CONTROLS

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| 1. Steering assist lever          | 8. ON/OFF Switch                    |
| 2. Honda engine                   | 9. Free Wheeling Clevis Pin         |
| 3. Hydrostatic Transmission       | 10. Operator seat                   |
| 4. 24" Wide rollers               | 11. Roller scrapers                 |
| 5. Special 'rounded edge' rollers | 12. Throttle control                |
| 6. Articulating joint             | 13. Two fill/drain plugs per roller |
| 7. F-N-R Shift lever              |                                     |



## ENGINE

The Brouwer TR-224H Turf Roller is fitted with a Honda GX160 Engine. The owner's manual for the engine is supplied with the machine.

It is important to follow the operating and service instructions contained in the manual.

## CONTROLS

### FIG. 1

The hand control lever for the hydrostatic transmission is located on the console.

Squeeze the handle and move the lever up for 'FORWARD' and move down for 'REVERSE'.

The transmission is fitted with a "FREE-WHEEL" control. This allows easy movement of the machine when the engine is not running. The control is located on the front of the transmission mounting support, between the fan shroud and chain guard.

To put the transmission into "FREE WHEEL", remove the Hitch Pin from the 'inner hole' and press the Control Pin – 'fully inward', insert the Hitch Pin into the 'center hole'. Reverse the procedure for 'DRIVE' mode.



## WARNING

**Do not activate the Free-Wheel control if the engine is running or the machine is stopped on an incline.**

**To prevent sudden movement of the machine, which may cause injury to the operator or others, operate the Control Lever slowly and smoothly from NEUTRAL to FORWARD and REVERSE.**

When the hand control lever is in the NEUTRAL (centered) position, the engine is DISENGAGED from the transmission.

When the engine is stopped and the hand control lever is in the NEUTRAL (centered) position, the transmission is locked.

The engine 'ON-OFF' switch has been relocated from the engine to the handle, for operator convenience and safety.

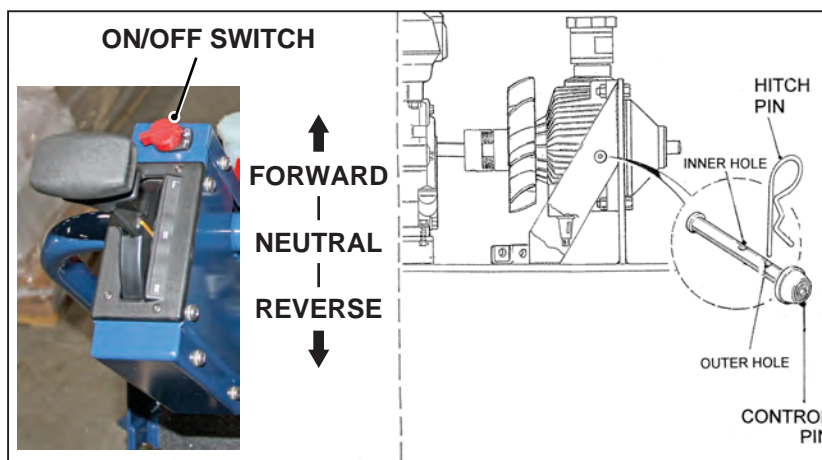


Fig.1

### **⚠ CAUTION**

Do not operate this machine on slopes greater than 20°. Reduce engine speed to lowest possible operable speed when negotiating slopes. **Rollers must be filled with water before operating on any slope.**

### **FORWARD / REVERSE OPERATION**

Remove any blocks from under rollers.

#### **To move forward:**

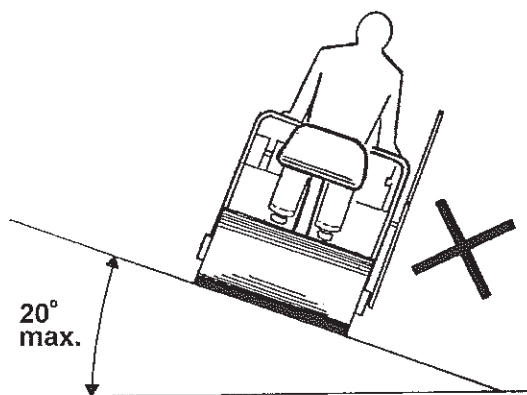
- Push the shift lever (1) into "FORWARD" position.

#### **To move in reverse:**

- Pull the shift lever (1) into "REVERSE" position.

#### **To STOP/PARK the machine:**

- The shift lever can be moved from "FORWARD" to "REVERSE" (or vice versa) quickly to provide braking action. When at a complete stop, select "NEUTRAL", switch the engine "OFF" and close fuel valve. With the engine stopped, select "FORWARD" or "REVERSE".



### **⚠ CAUTION**

When the machine is left unattended, position blocks under the rollers to prevent accidental movement.

### **ENGINE SPEED CONTROL**

Refer to the Honda Engine Owners manual for the instructions on setting the engine speed. Set the engine speed control to give two-thirds throttle opening.

#### **IMPORTANT**

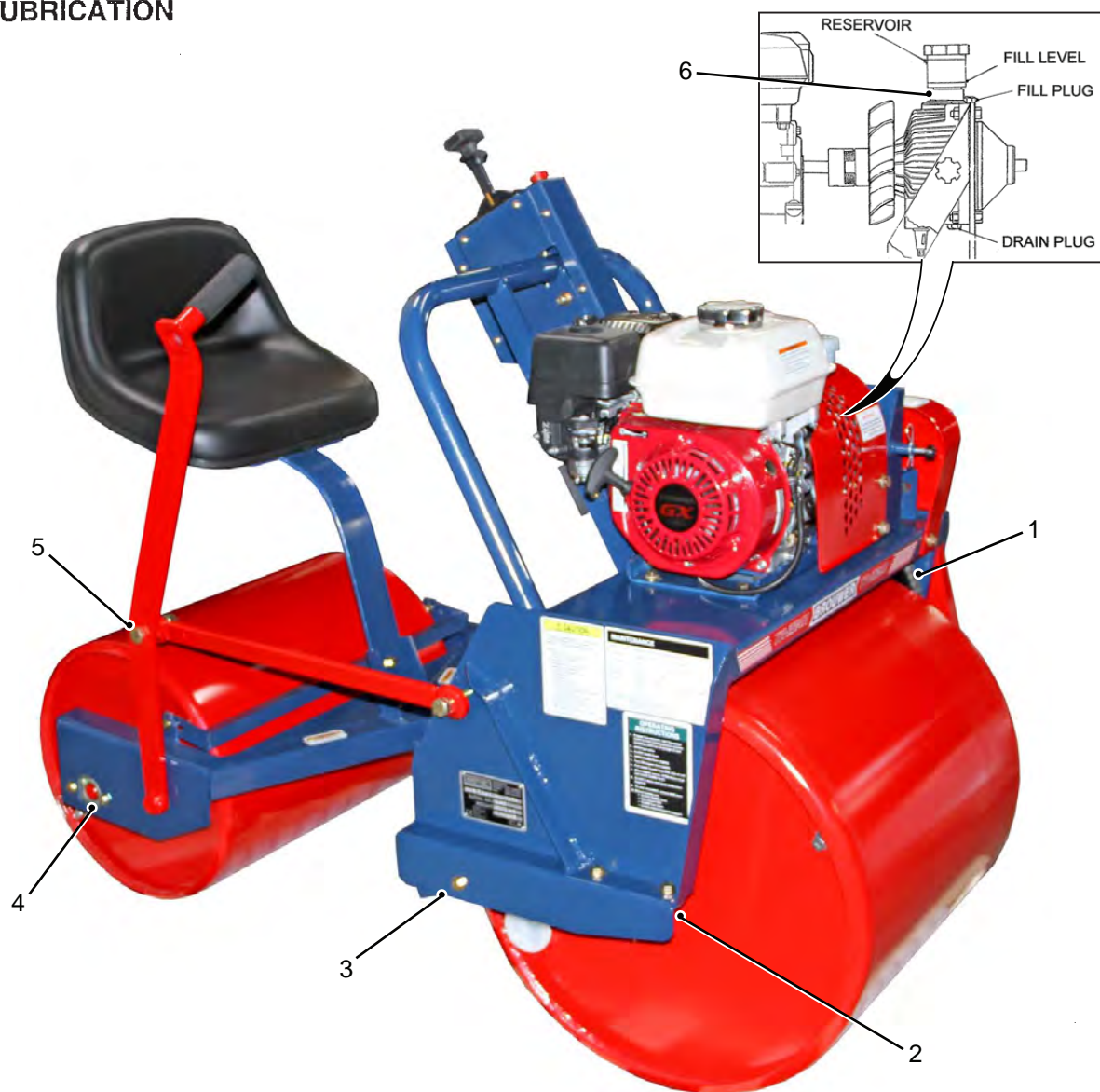
Do not run the engine at low speed as this may cause damage to the transmission due to inadequate cooling air flow and keep Cooling Fins clean of all oil and debris daily (See Fig. 1, Pg. 13).



#### **WARNING**

When the engine is running and the hand control lever is in the NEUTRAL (centered) position, the transmission is in "FREE-WHEEL" mode and if the machine is left unattended it can move/roll and cause personal injury or machine damage.

## LUBRICATION



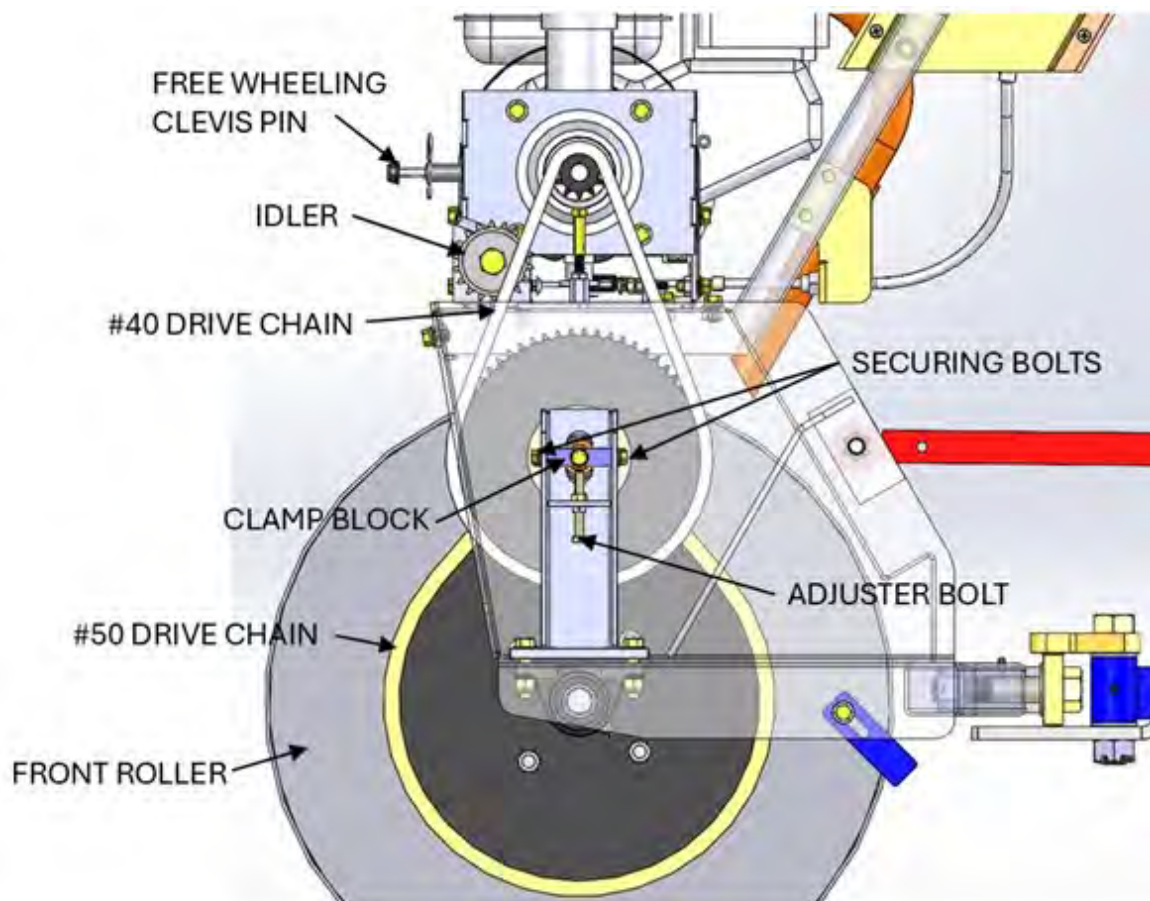
1. SAE 30 motor oil to roller drive chains. DO NOT grease. ....Daily
2. \*Grease both bearings on front roller. ....Monthly
3. \*Grease articulated joint. ....20/hrs
4. \*Grease both bearings on rear roller. ....Monthly
5. Light oil to shift lever linkage and steering assist lever ball joints. ....40/hrs
6. Check transmission oil level. (Synthetic SAE 5W40) ....Daily

\*Use lithium based grease.

**NOTE:** Refer to the engine manufacturer's owners manual for the service and lubrication schedule for the engine.

### DRIVE CHAINS, REMOVE/ REPLACE / ADJUST

- Park on level ground
- Remove drive chain guard, front chain guard, and sprocket adjustment cover.
- Loosen idler sprocket, and slacken # 40 drive chain
- Loosen clamp block securing bolts, and unscrew adjuster bolt to slacken #50 chain.
- Remove hitch pin clip, depress free wheeling clevis pin, re-install hitch pin clip
- Roll unit forward and backward to locate chain connector clips.
- Remove connector clip, and chain.
- Re-install in reverse order.
- Do not overtighten chains.



## STORAGE INSTRUCTIONS

### DAILY / SHORT TERM STORAGE:

- Check the engine oil level and air filter element as recommended in the engine manufacturers manual.
- Close the fuel flow valve.
- Clean the rollers.
- Park on a level surface. Engage "REVERSE" gear. Place blocks under rollers.

### EXTENDED STORAGE (More than 30 days):

- Drain all fuel from the fuel tank and lines. Use a hose or fuel line attached to the fuel shut-off valve to drain the fuel into a suitable container.
- Start the engine and run it until all fuel is used.
- Prepare the engine in accordance with the recommendations in the manufacturer's owner's manual.
- Thoroughly clean the machine of all dirt and grass. Lubricate as shown in the lubrication instructions.
- Park on a level surface. Engage "REVERSE" gear. Place blocks under rollers.
- Whenever possible, store the unit in a suitable enclosure or cover with a tarp.

**NOTE:** When there is a risk of water freezing, empty the rollers. Failure to do so may result in damage to the rollers.

## RETURNING TO SERVICE

- Remove tarp and if stored inside, select "NEUTRAL" and push to an open, level, well ventilated area.
- Select "REVERSE" gear.
- Fill the fuel tank with the grade of fuel recommended in the engine manufacturer's owner's manual.
- Check the engine crankcase oil level as shown in the engine manufacturer's owner's manual.
- Check the transmission oil level. Refer to Page 14.
- Check for fuel and oil leaks.
- Lubricate as shown in the lubrication instructions.
- Refill the rollers with water as required, temperature permitting.
- Select "NEUTRAL" and start the engine.

### ENGINE

Refer to the Honda Engine Owners Manual for recommended engine maintenance procedures,

### TRANSMISSION Fig. 1

Check the oil level in the transmission oil reservoir

**DAILY.** The reservoir is marked 'correct level' when COLD. **DO NOT OVERFILL.**

#### IMPORTANT

USE SYNTHETIC SAE 5W40  
ONLY. PETRO-CANADA\*  
DURON SYNTHETIC OR  
EQUIVALENT.

#### IMPORTANT

If the Roller is inadvertently upset, e.g. tips forward, ensure that the oil levels are checked in the Transmission and Engine and topped up if necessary. Failure to do so can cause serious damage to both units.

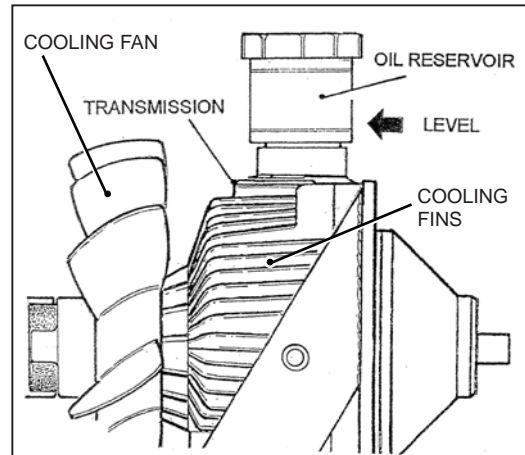


Fig.1

\*FOR CLOSEST PETRO-CANADA DEALER  
CALL - CANADA - 1 800 268-5850  
USA - 1 800 284-4572  
U.K. - +44(0) 2476-247294

### Fig.2

If the Roller is used daily it is recommended to change the transmission oil every 2 months. Occasional service would allow that period to be extended accordingly, but not to exceed 12 months. To change the oil:

- Remove the Fan Shroud.
- Remove the transmission drain plug (1/4" allen head) and the fill plug (11/16" wrench).
- Drain the oil into a suitable container.
- Replace the drain plug
- Refill with 20 fl. oz. (600ml.) of the correct oil to the bottom of the fill plug hole.
- Replace the fill plug.
- Top up the reservoir to the correct level
- Replace the Fan Shroud.

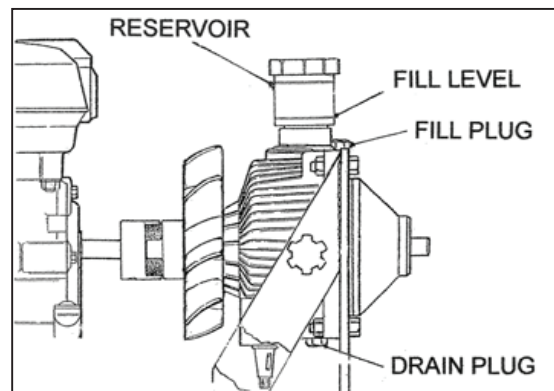


Fig.2

## FORWARD/ REVERSE SPEED ADJUSTMENT

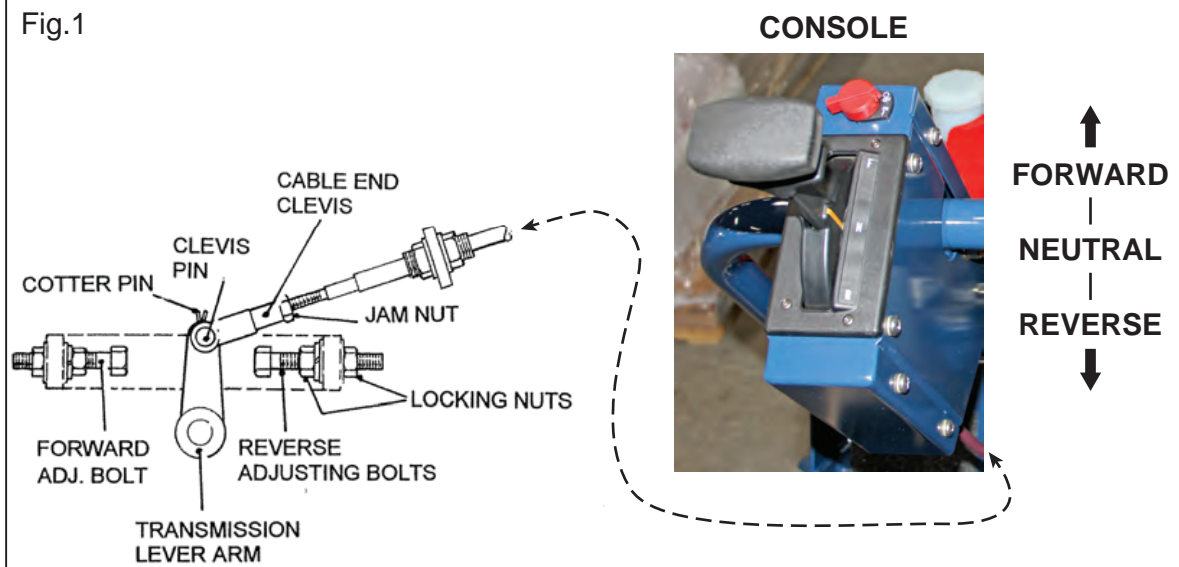
Aside from the throttle control located on the side of the GX160 engine, forward and reverse speed can also be adjusted by changing the amount of travel of the hydrostat transmission lever arm.

Lever arm adjustment;

- Remove cooling fan shroud
- Locate transmission lever arm and forward and reverse adjustment bolts (ie. lever stops)
- Loosen lock nuts and thread adjustment bolts in for increased lever travel (faster speed), or thread bolts out for decreased lever (slower speed).

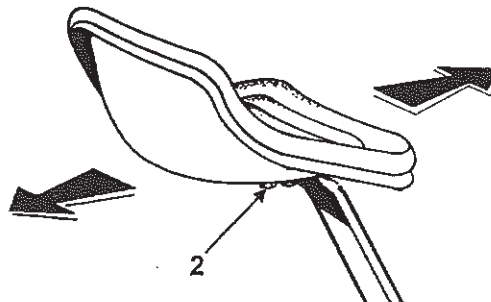
When removing and/or servicing transmission, shifter, or control cable ensure that the cable is properly adjusted to position the lever arm in the neutral position when the shifter is in neutral. Various adjustment points are provided to 'fine tune' the cable adjustment, including; threaded cable end clevis, threaded cable bulkhead nuts, slotted cable mounting bracket, and threaded cable connection to the shifter. Failure to properly set the transmission lever in neutral will result in the unit creeping forward or reverse when the controller is in neutral.

Fig.1



## SEAT:

The operator may adjust the seat fore and aft by loosening the mounting bolts 2. Reposition seat and tighten bolts 2.

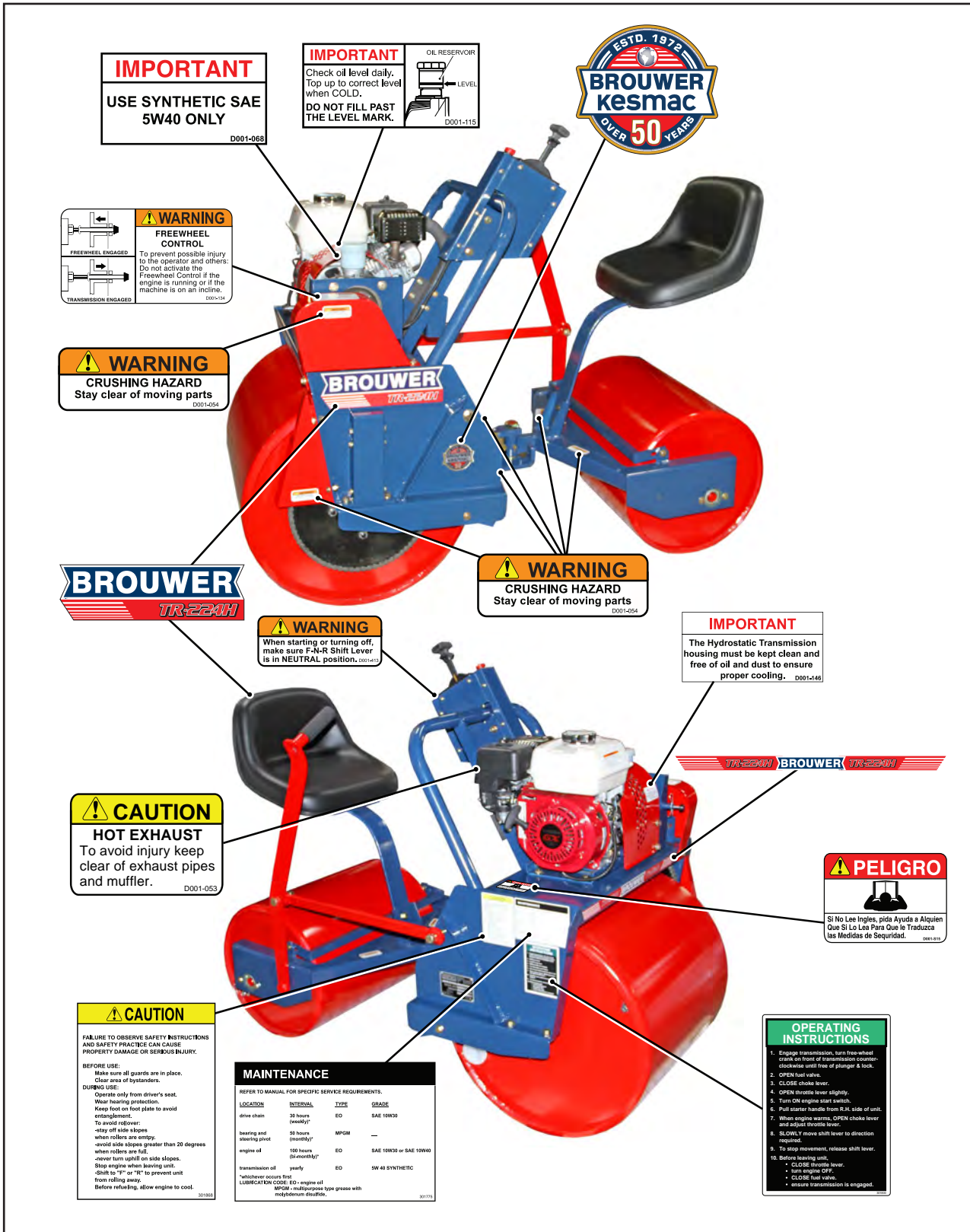


### TRANSPORT INSTRUCTIONS

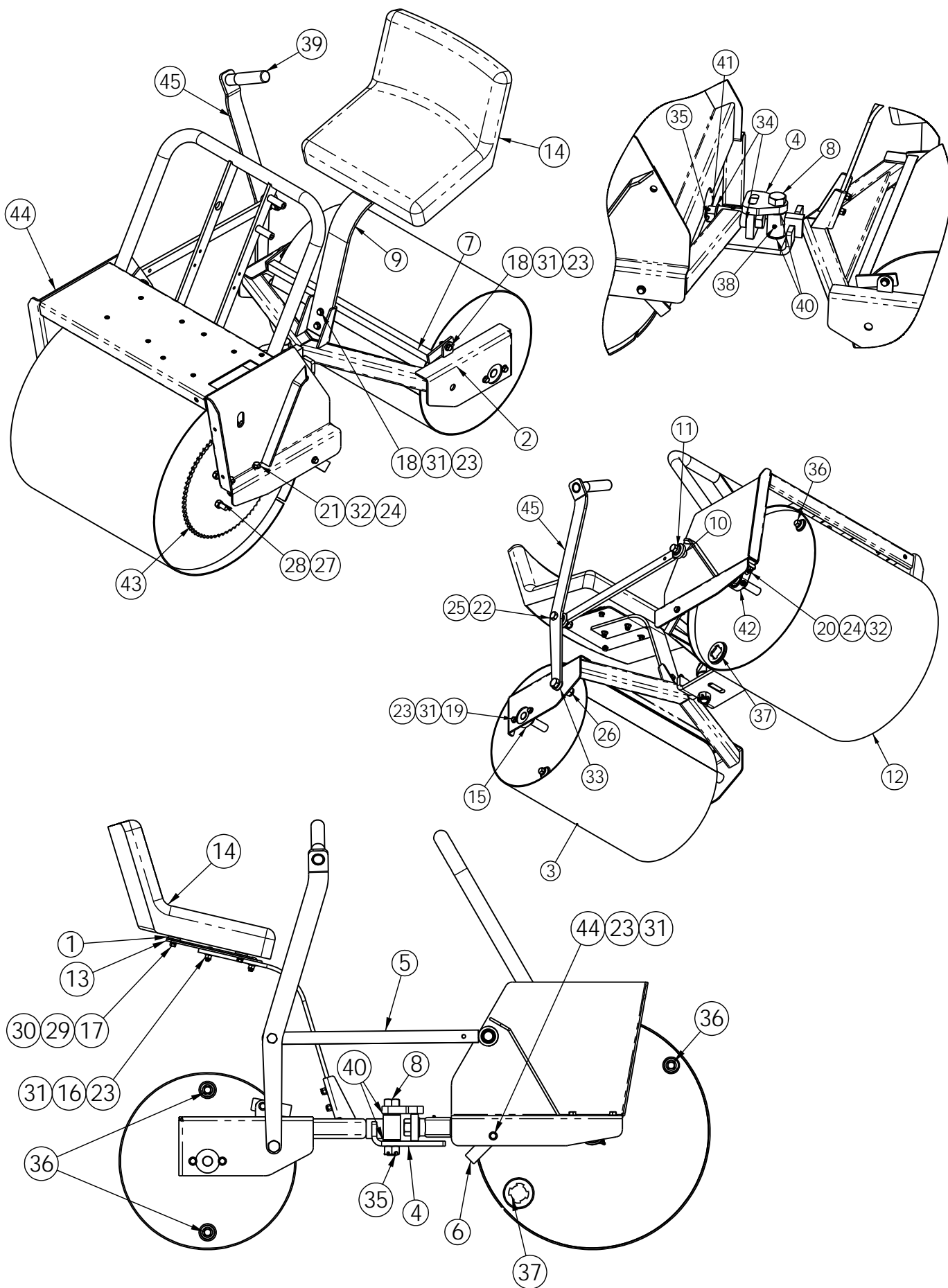
- When transporting the unit by truck or trailer, drain the water from the rollers.
- Load on a low bed trailer using "shallow angle" ramps. Rubber/corrugated ramp surfaces are recommended.
- Drive the machine on to the trailer, with a helper pushing the unit up the ramps.
- Switch the ignition switch to the "OFF" position.
- Ensure the fuel valve is in the "CLOSED" position.
- Ensure the transmission lever is positioned in "REVERSE".
- Securely block the rollers to prevent the machine from moving.
- Use tie-down straps or chains to prevent the machine from moving.

# DECALS

# TURF ROLLER



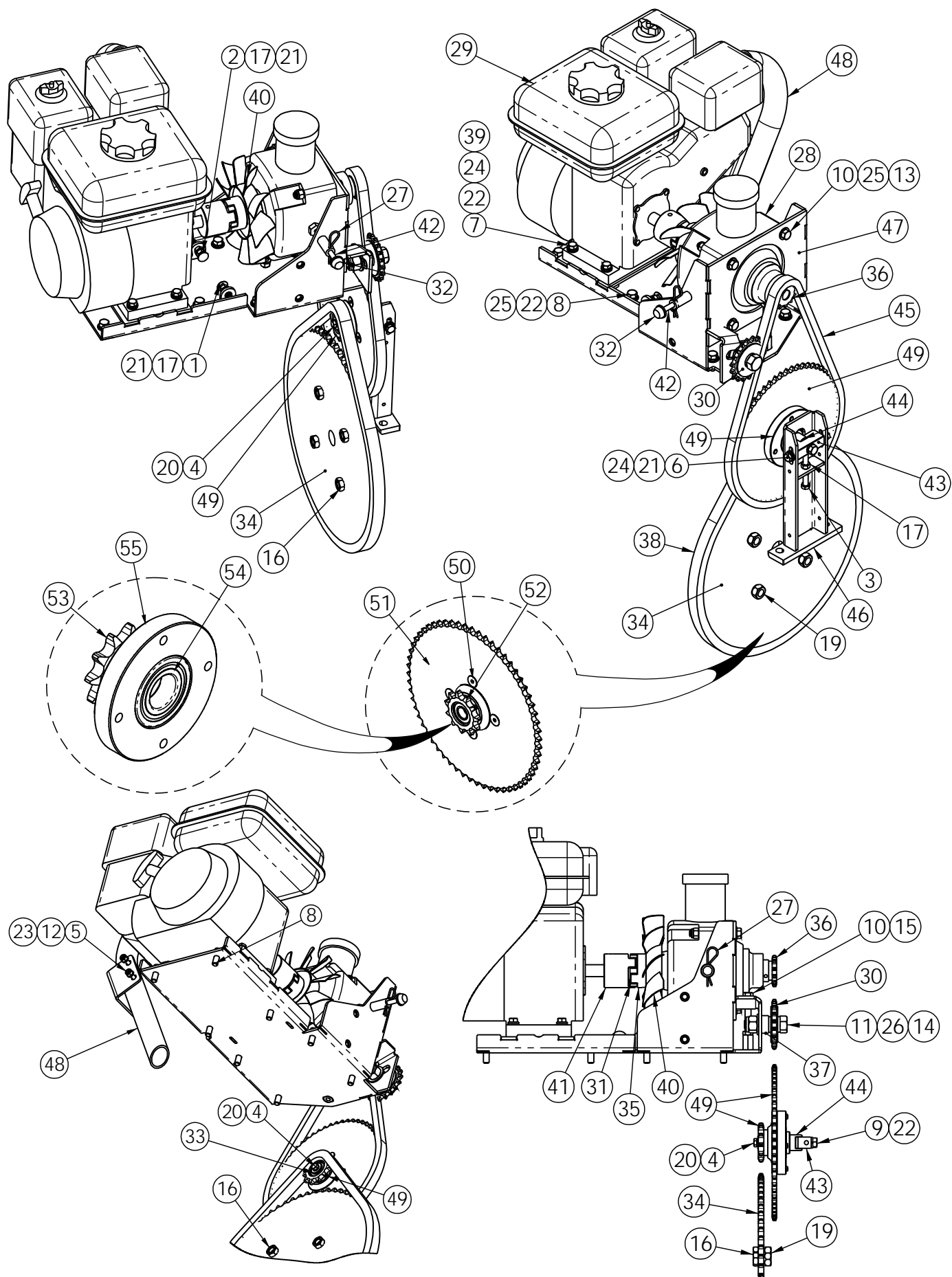
**ILLUSTRATED  
PARTS LIST**



## Brouwer TR-224H Ride On Turf Roller

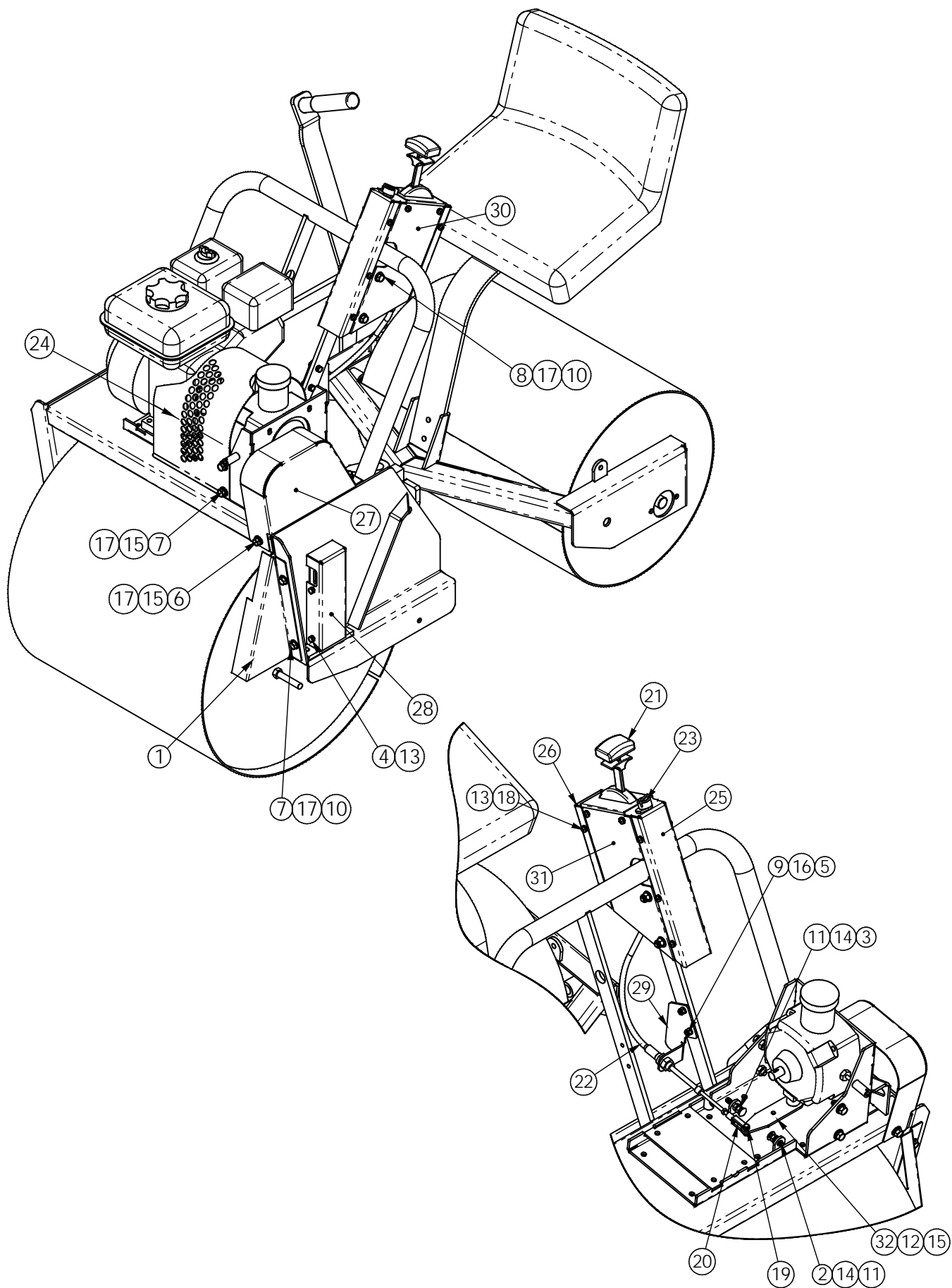
### Rollers & Frame Components

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	06-046	4	SEAT SPACER
2	301777	1	REAR FRAME RIDE ON WELDMENT
3	301779	1	TR224 18" REAR ROLLER W/A
4	301780	1	ARTICULATION JOINT W/A
5	301782	1	STEERING ROD ASSEMBLY
6	301786	1	SCRAPER ASSEMBLY FRONT ROLLER
7	301787	1	SCRAPER ASSEMBLY REAR ROLLER
8	301788	1	CONNECTING BOLT
9	301789	1	SEAT SUPPORT
10	301810	2	STEERING LEVER SPACER
11	301811	2	STEERING LEVER SPACER
12	301881	1	TR224 ROLLER W/A 24" DIA X 24" LG
13	350002	1	SEAT PLATE WELDMENT
14	47120	1	SEAT
15	B0119	2	FLANGE BEARING
16	F020612	2	CARRIAGE BOLT - 3/8 UNC x 1 1/4
17	F040510	4	HEX BOLT - 5/16 - 18 UNC x 1.0 LG. GR. 8
18	F040612	6	BOLT - 3/8 UNC x 1 1/4 Gr 8
19	F040614	4	HEX HD BOLT - 3/8-16 UNC x 1.50 GR 8
20	F040714	2	BOLT - 7/16 UNC x 1 1/2 Gr 8
21	F040720	2	BOLT - 7/16 UNC x 2.00 Gr 8
22	F041030	2	BOLT-5/8 UNC X 3.00 GR 8
23	F210600	12	HEX LOCK NUT - 3/8 -16 UNC
24	F210700	4	HEX LOCK NUT - 7/16 UNC
25	F211000	2	NUT-5/8 UNC NYLOC
26	F211200	1	NYLOC NUT 3/4 UNC
27	F220850	4	HEX JAM NUT - 1/2 -20 UNF
28	F260800	4	WHEEL NUT 1/2 -20 UNF
29	F310500	4	LOCK WASHER - 5/16
30	F330500	4	5/16 SAE WASHER
31	F330600	18	FLAT WASHER SAE 3/8
32	F330700	4	7/16 SAE FLAT WASHER
33	F331200	1	SAE FLAT WASHER - 3/4 IN.
34	F331600	2	FLAT WASHER - 1.00 SAE
35	F910620	2	COTTER PIN 3/16 Dia x 2.00 Lg.
36	KH00015	3	PLUG - SQUARE HEAD PIPE PLUG - 3/4 NPT
37	KH00026	1	2" NPT PLUG
38	KM11400	2	STRAIGHT GREASE FITTING
39	KM40021	1	CUSHIONED GRIP
40	KX20031	2	WASHER - FLAT 1.00
41	KX20035	1	1-14, HEX SLOTTED NUT, ZN FINISH
42	MB30001	2	PILLOW BLOCK BEARING - 1.00 BORE
43	TR10027	1	ROLLER SPROCKET
44	TR30555	1	FRONT FRAME HOUSING
45	TR30526	1	STEERING LEVER



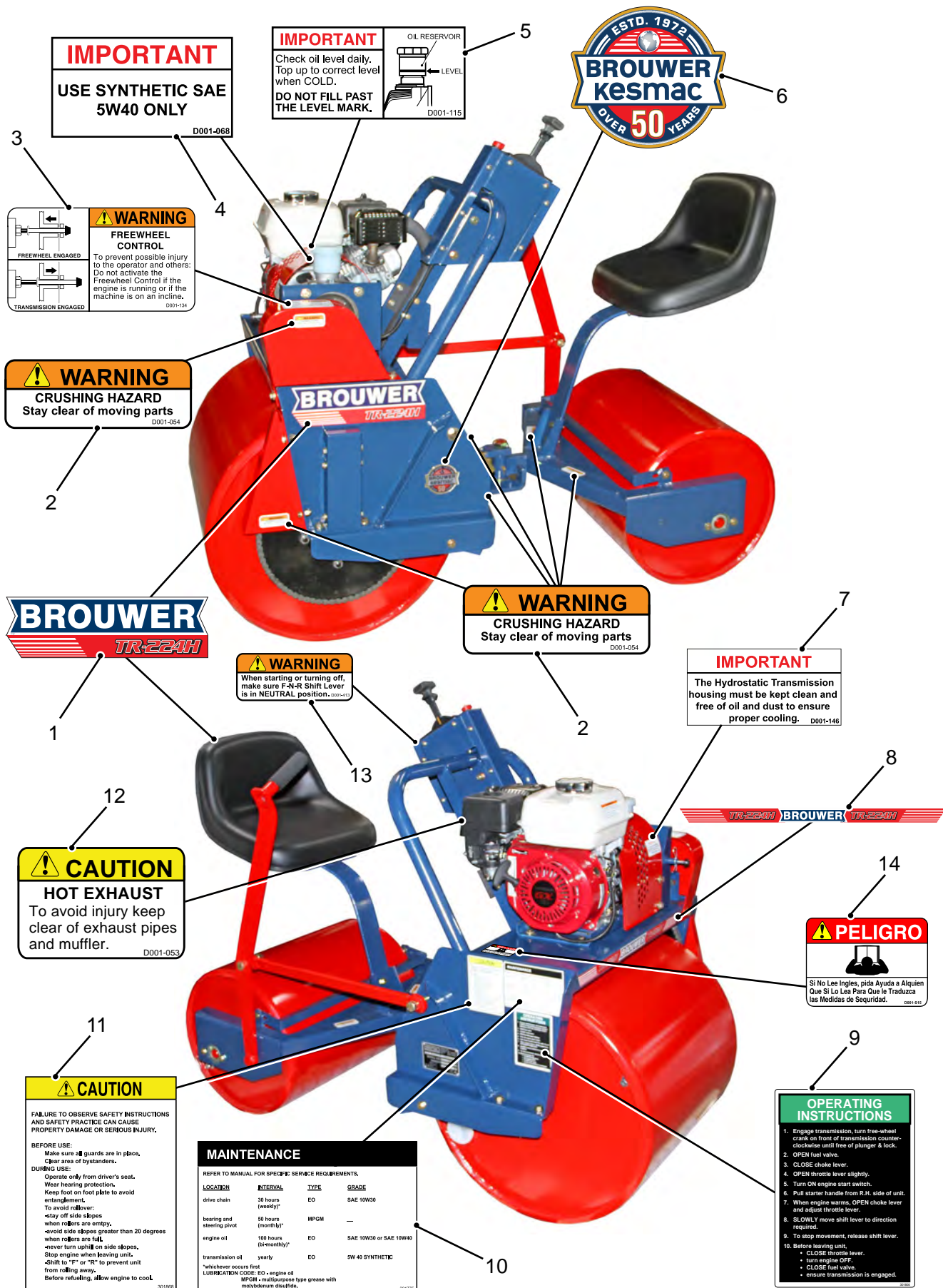
## Brouwer TR-224H Ride On Turf Roller Engine, Transmission & Drive Components

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	F020512	1	5/16-UNC X 1-1/4 LG CARRIAGE BOLT
2	F020516	1	BOLT-5/16 UNC X 1 3/4 CARRIAGE
3	F030524	1	5/16-18 UNC X 2.5 FULL THRD
4	F040406	1	BOLT 1/4 UNC x 3/4 Gr 8
5	F040410	2	HEX BOLT - 1/4 -20 UNC x 1.00 Gr 8
6	F040506	2	BOLT - 5/16 UNC x 3/4 Gr 8
7	F040514	4	BOLT - 5/16 -18 UNC x 1 1/2 Gr 8
8	F040610	8	BOLT - 3/8 UNC x 1.0 Gr 8
9	F040614	1	HEX HD BOLT - 3/8-16 UNC x 1.50 GR 8
10	F040630	5	BOLT - 3/8 UNC x 3.0 Gr 8
11	F041022	1	BOLT - 5/8 UNC X 2 1/4 Gr 8
12	F210400	2	1/4-20 UNC NYLOC NUT
13	F210600	4	HEX LOCK NUT - 3/8 -16 UNC
14	F211000	1	NUT-5/8 UNC NYLOC
15	F220600	1	HEX JAM NUT - 3/8 UNC
16	F220850	4	HEX JAM NUT - 1/2 -20 UNF
17	F230500	3	HEX NUT - 5/16-18 UNC
18	F230600	1	NUT - 3/8-16
19	F260800	4	WHEEL NUT 1/2 -20 UNF
20	F310400	1	WASHER - 1/4 LOCK
21	F310500	4	LOCK WASHER - 5/16
22	F310600	14	LOCK WASHER - 3/8
23	F330400	4	1/4 SAE FLAT WASHER
24	F330500	6	5/16 SAE WASHER
25	F330600	12	FLAT WASHER SAE 3/8
26	F331000	1	FLAT WASHER SAE 5/8 IN.
27	F940224	1	HITCH PIN CLIP - 0.093 x 2.50
28	KD40017	1	HYDROSTAT TRANSMISSION (MODEL 7)
29	KD40019	1	HONDA GX 160 ENGINE
30	KD70003	1	SPROCKET #40 CHAIN 18 TOOTH IDLER 5/8 BORE
31	KD85104	1	COUPLING INSERT, POLYURETHANE, SIZE 4
32	KX50105	1	PUSH CAP NUT - 5/16
33	TR10005	1	RETAINING WASHER SPROCKET SPINDLE
34	TR10027	1	ROLLER SPROCKET
35	TR10028	1	HALF COUPLING, JAW TYPE, 17mm Dia. FAN MOUNT
36	TR10029	1	DRIVE SPROCKET
37	TR10089	1	SPACER CHAIN TENSIONER
38	TR10097	1	NO. 50 CHAIN - ROLLER TO IDLER, 48.5" LG
39	TR10170	2	NUT BAR ENGINE MOUNT
40	TR10177	1	COOLING FAN MODIFICATION ..(KD40018)
41	TR10239	1	HALF COUPLING, JAW TYPE, 0.75 Dia x 2.00 Lg
42	TR10320	1	FREE WHEELING CLEVIS PIN
43	TR10591	1	SPROCKET CLAMP
44	TR10592	1	SPROCKET SPINDLE
45	TR10616	1	#40 CHAIN, TRANS TO IDLER, 40" LG
46	TR30556	1	SPROCKET ADJUST BRACKET
47	TR30557	1	ENGINE/TRANS MOUNT BASE
48	TR30561	1	EXHAUST PIPE W/A
49	TR50322	1	INTERMEDIATE SPROCKET SUB-ASSEMBLY - (INCLUDES ITEMS 50,51,52)
50	F120510	4	FLAT HD HEX SOC - 5/16 x 1.00
51	TR10116	1	INTERMEDIATE SPROCKET MODIFICATION
52	TR50400	1	11 TOOTH SPROCKET SERVICE ASSEMBLY - (INCLUDES ITEMS 53, 54, 55)
53	KB11623	1	BEARING - BALL SEALED 0.625 I.D. x 1.375 O.D.
54	KB50003	1	SEALED BEARING, 25 mm ID x 52 mm OD x 15 mm THK
55	TR10026	1	MODIFIED 11 TOOTH SPROCKET INTERMEDIATE



**Brouwer TR-224H Ride On Turf Roller  
Guarding & Shift Control Components**

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	301790	1	SPROCKET CHAIN GUARD
2	F020512	1	5/16-UNC X 1-1/4 LG CARRIAGE BOLT
3	F020516	1	BOLT-5/16 UNC X 1 3/4 CARRIAGE
4	F040404	4	BOLT- HEX HD 1/4 UNC x 0.50 LG. GR 8
5	F040410	2	HEX BOLT - 1/4 -20 UNC x 1.00 Gr 8
6	F040606	2	BOLT 3/8 UNC X 3/4 . Gr 8
7	F040610	6	BOLT - 3/8 UNC x 1.0 Gr 8
8	F040634	2	BOLT-3/8 UNC X 3 1/2 GR 8
9	F210400	2	1/4-20 UNC NYLOC NUT
10	F210600	4	HEX LOCK NUT - 3/8 -16 UNC
11	F230500	2	HEX NUT - 5/16-18 UNC
12	F230600	1	NUT - 3/8-16
13	F310400	18	WASHER - 1/4 LOCK
14	F310500	2	LOCK WASHER - 5/16
15	F310600	7	LOCK WASHER - 3/8
16	F330400	4	1/4 SAE FLAT WASHER
17	F330600	14	FLAT WASHER SAE 3/8
18	F580404	14	PAN HD PHIL - 1/4 UNC x 0.50 LG. ST. STL.
19	KB10404	1	NON FRICTION CLIP FLANGE BUSHING
20	KD10026	1	CLEVIS YOKE - 1/4 UNF
21	KD10067	1	F-N-R CONTROLLER
22	KD10068	1	CONTROL CABLE
23	KD40025	1	ENGINE ON/OFF SWITCH
24	TR10030	1	FAN SHROUD TR-2430
25	TR10603	1	CONSOLE FRONT CAP
26	TR10604	1	CONSOLE REAR CAP
27	TR10605	1	DRIVE CHAIN GUARD
28	TR10606	1	SPROCKET ADJUSTER GUARD
29	TR10612	1	SHIFT CABLE BRACKET
30	TR30558	1	CONSOLE LH
31	TR30559	1	CONSOLE RH
32	TR30560	1	SHIFT LEVER



## IMPORTANT

USE SYNTHETIC SAE 5W40 ONLY

## IMPORTANT

Check oil level daily. Top up to correct level when COLD. DO NOT FILL PAST THE LEVEL MARK.



## WARNING

### FREEWHEEL CONTROL

To prevent possible injury to the operator and others: Do not activate the Freewheel Control if the engine is running or if the machine is on an incline.



## WARNING

CRUSHING HAZARD Stay clear of moving parts



## WARNING

CRUSHING HAZARD Stay clear of moving parts

## WARNING

When starting or turning off, make sure F-N-R Shift Lever is in NEUTRAL position.

## IMPORTANT

The Hydrostatic Transmission housing must be kept clean and free of oil and dust to ensure proper cooling.



## CAUTION

HOT EXHAUST To avoid injury keep clear of exhaust pipes and muffler.



## PELIGRO

Si No Lee Inglés, pida Ayuda a Alguien Que Si Lo Lea Para Que le Traduzca las Medidas de Seguridad.

## CAUTION

FAILURE TO OBSERVE SAFETY INSTRUCTIONS AND SAFETY PRACTICE CAN CAUSE PROPERTY DAMAGE OR SERIOUS INJURY.

BEFORE USE: Make sure all guards are in place. Clear area of bystanders.

DURING USE: Operate only from driver's seat. Wear hearing protection. Keep foot on foot plate to avoid entanglement. To avoid rollover: -stay off side slopes when rollers are empty. -avoid side slopes greater than 20 degrees when rollers are full. -never turn uphill on side slopes. Stop engine when leaving unit. -Shift to "P" or "R" to prevent unit from rolling away. Before refueling, allow engine to cool.

## MAINTENANCE

REFER TO MANUAL FOR SPECIFIC SERVICE REQUIREMENTS.

LOCATION	INTERVAL	TYPE	GRADE
drive chain	30 hours (weekly)	EO	SAE 10W30
bearing and steering pivot	50 hours (monthly)	MPGM	—
engine oil	100 hours (bi-monthly)	EO	SAE 10W30 or SAE 10W40
transmission oil	yearly	EO	5W 40 SYNTHETIC

\*whichever occurs first

LUBRICATION CODE: EO = engine oil MPGM = multipurpose type grease with molybdenum disulfide.

## OPERATING INSTRUCTIONS

- Engage transmission, turn free-wheel crank on front of transmission counter-clockwise until free of plunger & lock.
- OPEN fuel valve.
- CLOSE choke lever.
- OPEN throttle lever slightly.
- Turn ON engine start switch.
- Pull starter handle from R.H. side of unit.
- When engine warms, OPEN choke lever and adjust throttle lever.
- SLOWLY move shift lever to direction required.
- To stop movement, release shift lever.
- Before leaving unit,
  - CLOSE throttle lever.
  - turn engine OFF.
  - CLOSE fuel valve.
  - ensure transmission is engaged.

## Brouwer TR-224H Ride On Turf Roller Decals

ITEM NO.	PART NO.	QTY.	DESCRIPTION
1	D001-412	2	BROUWER TR-224H LOGO
2	D001-054	6	WARNING - CRUSHING HAZARD
3	D001-134	1	WARNING - FREEWHEEL CONTROL
4	D001-068	1	IMPORTANT - OIL SPEC.
5	D001-115	1	IMPORTANT - OIL LEVEL
6	D001-398	1	BROUWER KESMAC 50 YR.
7	D001-146	1	IMPORTANT - TRANS. CLEAN
8	D001-411	1	BROUWER TR-224H FRONT
9	301800	1	OPERATING INSTRUCTIONS
10	301775	1	MAINTENANCE
11	301868	1	CAUTION - SAFETY
12	D001-053	1	CAUTION - HOT EXHAUST
13	D001-413	1	WARNING - F-N-R SHIFT LEVER
14	D001-S15	1	PELIGRO



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