# **OWNERS MANUAL**





### **RB70 GOLF GREENS ROLLER**

**Original Instructions** 

#### **EU** Authorised Representative:

VeriSafe Compliance Ltd. 77 Lower Camden St Dublin DO2 XE80 Ireland

### **Original Instructions**

The products detailed in this manual conform to the following standards: Machinery Directive 2006/42/EC, EMC Directive 2014/30/EU & EN ISO 4254-1:2015

CE Declaration available at <u>www.truturf.com</u>

Manual Revision: E Released: 05/04/2024

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Separate engine Owner's Manual can be downloaded from <u>www.truturf.com</u> or from Honda website: <u>Honda GX200</u>

## Machine Information Record

Congratulations on your investment in the RB70 Golf Greens Roller and your move to smoother, faster, more consistent putting greens.

The following operation and maintenance manual has been prepared for use with the RB70 Golf Greens Roller.

It is intended as a guide and supplemental updates to the manual may take place at a future date, without prior notice. For the latest information visit <u>www.truturf.com</u>.

This machine is engineered to be simple to operate and easy to maintain.

If you have any questions or concerns that this manual does not address, please feel free to contact your distributor or email <u>technicalsupport@truturf.com</u>

#### **Distributor Information**

| Name:                         |                     |
|-------------------------------|---------------------|
| Address:                      |                     |
| Telephone:                    |                     |
| Fax:                          |                     |
| Email:                        |                     |
|                               | $ \longrightarrow $ |
| Machine Information           |                     |
| Model. RB70 Golf Green Roller |                     |
| Serial No                     |                     |
| Engine No                     |                     |
| Transmission No               |                     |
| Purchase Date No.             |                     |
|                               |                     |



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# Specifications

| Engine<br>Type<br>Power<br>Lighting<br>Oil Capacity | Honda - Gasoline<br>6.5 hp, (4.85kw)<br>Yes<br>0.63qts (0.6L) |  |  |
|---|---|--|--|
| Transmission<br>Manufacturer Type                   | Eaton Hydrostatic 11  |  |  |
| Oil Capacity  | 6qts (6.84L) + Filter   |  |  |
| Cooling   | 8 blade hydro transmission cooling fan                        |  |  |
| Drivetrain  | 1/2" duplex chain, self adjusting ISO 08B2.                   |  |  |
| Drive Roller  | Rubber coated, flexi-type                                     |  |  |
| Direction and Speed Control                         | Foot pedals   |  |  |
| Operating Speed                                     | 0-9 mph (0-15kph)   |  |  |
| Steering  | Light load joystick   |  |  |
| Vibration   | Reduced through engine isolation mounts.                      |  |  |
| Seat  | Premium UV protected, with adjustable arm rests.              |  |  |

| Trailer                     | Integrated, heavy duty. Quick & easy transition from transport to rolling position. |
|-----------------------------|---|
| Drawbar                     | Pin hitch – standard<br>Ball hitch- optional  |
| Ground Pressure (Footprint) | 3.7 psi (25.5 kPa)  |
| Smoothing Heads             | Triple rolling heads, with overlapping patented offset rollers.                     |
| Rolling Width (Swath)       | 70"(1778mm)   |
| Weight - Operating          | 808lb. (368kg)  |
| Roller Cleaners             | Adjustable nodules.   |
| Tires                       | 18 x 6.50 x 8   |
| Start / Stop                | Pull / Switch   |
| Brake - Park                | Handbrake. Drum style.  |
| OPS Safety Switch           | Seat activated.   |
| Lighting                    | LED - optional  |
| Warranty                    | 2 years - Limited manufacturers warranty.   |



Safety is of the utmost importance when operating turf equipment.

To ensure safe operation of the RB70 Golf Greens Roller, please follow the following safety guidelines.

- Always make a pre-operation inspection before you start rolling. If this procedure is not carried out, damage to property or personnel may occur.
- Keep children, pets and inexperienced personnel away from the machine. This machine should only be operated by trained and *skilled personnel* check with your supervisor if you are unsure.
- Know how to stop the machine when in motion. Read and understand manufacturers manual, as supplied.
- Never permit *inexperienced operators* to use the machine. This machine requires certain knowledge and expertise to operate it; you must be a trained person to use this machine. Unskilled persons can harm themselves and others if they operate this machine.
- When transporting the roller or carrying out maintenance, make sure the trailer lockdown mechanism is secured by the locking pin to prevent premature release of the catch.

- If the trailer catch is not correctly engaged while towing and releases accidentally, the front of the roller can drop and dig into the ground, causing the machine to move dangerously in any direction causing bodily injury and result in damage to the drive roller and other components.
- When the roller is running, always keep hands and loose clothing away from rotating shafts, chains, belts and sprockets in the transmission area.
- This machine should not be used on slopes greater that 10 degrees.
- It is recommended to wear appropriate person protection equipment, (ppe), as per local laws. These may include hearing protection, eyes and appropriate closed shoes and clothing ppe. Environmental conditions should also be taken into consideration.



- If hair, clothing, or loose objects become entangled on a rotating shaft, serious bodily injury could occur. Always stop engine before opening safety cover.
- Never ride on the machine when machine is being towed.

Operator: remember it is your responsibility to be aware of your surroundings.

To avoid accidents, think safe and operate safe.



### IMPORTANT EU MACHINERY DIRECTIVE INFORMATION SAFETY WARNINGS



### **Read Operator's Manual.**

Only personnel that have read and fully understood the Operator's Manual should operate this equipment.



### Keep Bystanders Away.

The operator should ensure that bystanders are not in the immediate vicinity of the machine when it is in use.



### Machine Rollover.

Do not use this machine on slopes greater than 10 degrees.



### Hearing Protection. Hearing protection to be worn whilst operating this machine.



### **IMPORTANT EU MACHINERY DIRECTIVE INFORMATION**

### **SAFETY WARNINGS**

### SOUND AND VIBRATION LEVELS

The sound and whole body/hand/arm vibration levels are shown below. Please take note of the levels and determine appropriate operator actions, (wearing hearing protection and/or limiting the time of use when operating the machinery).

| Sound Levels                        |                                       |
|-------------------------------------|---------------------------------------|
| Measured Sound Pressure – LpA dB(A) | Guaranteed Sound Pressure – LwA dB(A) |
| 91                                  | 101                                   |

| Vibration Levels |                                    |                                     |                                    |  |  |
|------------------|------------------------------------|-------------------------------------|------------------------------------|--|--|
|                  | Measured value (m/s <sup>2</sup> ) | Time to reach Exposure Action Value | Time to reach Exposure Limit Value |  |  |
| Hand/Arm         | 2.1                                | n/a                                 | n/a                                |  |  |
| Whole Body       | 1.1                                | 1hr50min                            | 9hr46min                           |  |  |

Readings taken at full power



#### **Conditions and Products Covered**

Tru-Turf warrant your Tru-Turf Roller to be free from defects in materials or workmanship for two years or 1550 operational hours\*, whichever occurs first.

This warranty is applicable to all products. Where a warrantable condition exists, we will repair the product at no cost to you including diagnostics, labor, and parts. This warranty begins on the date the product is delivered to the original retail purchaser.

• Product to be equipped with an operating hour meter fitted.

#### **Claiming Warranty Service**

You are responsible for notifying the Products Distributor or Authorized Products Dealer from whom you purchased the product as soon as you believe a warrantable condition exists. If you need help locating a products distributor or authorized dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

### **Tru-Turf Service Department**

Tru-Turf Pty Ltd 16/6 Energy Circuit, Robina Queensland 4221, Australia E-mail: technicalsupport@truturf.com

### **Owner Responsibilities**

As the Product Owner, you are responsible for required maintenance and adjustments stated in your Operator's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.



#### Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Tru-Turf replacement parts, or from installation and use of add-on, or modified non-Tru-Turf branded accessories and products.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Tru-Turf roller per the Recommended Maintenance listed in the Operator's Manual can result in claims for warranty being denied.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brakes pads and linings, slicers, spiker tines,

tires, filters, belts, springs, sprockets, chains, bearings and pulleys.

- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved lubricants or additives, etc.
- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces or scratched decals.



 Specific component parts supplied to Tru-Turf by OEM suppliers are covered by that supplier's Warranty. These parts and components include but are not limited to, Eaton Transmissions, Honda Engines, Sevcon Controllers, Foot Pedal & Trailer Arm Struts, Curtis Controllers & Electronic Foot Pedals, Toggle Switch, Rexnord Gearboxes & Electric Motors, Seats, Drive Rollers, Hour Meter, Rod Ends, Lights, Hood, Transmission Cover, Fan, Rubber Coupling.

#### Parts

Parts scheduled for replacement as required maintenance are warranted for the period up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and the removed parts become the property of Tru-Turf. Tru- Turf will make the final decision whether to repair any existing part or assembly or replace it. Tru-Turf may use remanufactured parts for warranty repairs.

#### Note Regarding Deep Cycle Battery Warranty:

- Deep cycle batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out.
- Replacement of worn-out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense.

#### Maintenance is at Owner's Expense

Maintenance of your Tru-Turf roller is to be conducted as per the owner's manual for your Tru- Turf product at the owner's expense.



#### **General Conditions**

Repair by an Authorized Tru-Turf Distributor or Dealer is your sole remedy under this warranty.

Tru-Turf is not liable for indirect, incidental or consequential damages in connection with the use of the Tru-Turf Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty.

All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty. Some states/ countries do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.



# **Pre-Operation Checklist**

- □ Ensure steering joystick has no looseness.
- Check that foot pedal depresses under normal foot pressure.
- Ensure that the draw bar locking catch mechanism is securely locked to the main draw bar and the safety pin is fitted when trailing the roller.
- Check and tighten grub screws fitted to the end bearing lock rings on the rubber coated drive roller and the spiker shaft bearings (if fitted) & pivot bearings on each smoothing head.
- □ Lightly grease bearings fitted to drive roller, spiker shaft (if fitted) and Smoothing Head pivot bearings. Replace plastic caps if missing.
- □ Oil rod ends, sparingly.
- □ Check tire pressure for proper operating pressure (18-24psi). Do not over inflate.



## **Standard Operation Procedures**

- Inspect and check that the roller is serviceable prior to departing 7. from the workshop.
- 2. Use a suitable towing vehicle to move the roller from green to green.
- 3. Maximum recommended towing speed would be equal to a motorized golf buggy, i.e., approximately 10-12mph/ 16-19kph. Towing at excess speed or across rough terrain may cause damage to the machine and trailer.
- 4. When approaching the green do not tow the roller onto the green to set up, put the roller on the fringe of the green. Put trailer in the up position, switch on the roller and drive it onto the green.
- 5. Greens can be rolled in any direction; take care to ensure there are no crease lines produced on the surface.
- 6. It is recommended that you place the smoothing head rollers on the high side of the green when rolling. This increases the weight onto the rubber drive roller and creates better traction, it also reduces slipping or spinning of the drive roller on the green, depending on the operator's ability.

Whilst becoming familiar with the roller, set the throttle at about 1/2 - 3/4 speed. Press the left or right foot pedal down gently but not suddenly. Be smooth with your action, hold in this position until nearing the edge of the green, then take your foot gently off the pedal, the roller will come to a stop. Rest your other foot on the opposite pedal and gently apply the pressure to the pedal. It then starts to move the roller in the opposite direction. Once again be gentle with the pedal, but not sudden. By using the left and right pedal in this manner, will ensure there is no damage to the green and less wear and tear on the equipment and operator.

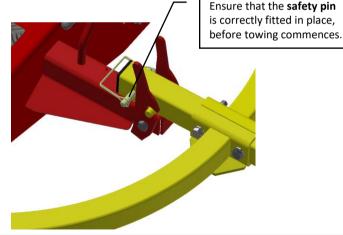


## Standard Operation Procedures

- 8. The correct procedure for rolling the green is:
- a) Select the correct direction to roll the green, remember this roller can roll the greens in all directions.
- b) Start on one side of the green and work your way across the green in a zigzag fashion, slightly overlapping each lap you roll: this makes sure you don't miss any part of the green and all of the green is rolled. Avoid coming back across the green to roll missed areas if possible. You should be able to complete the rolling of 18 greens in the same amount of time, or quicker, than by mowing using a triplex mower.
- 9. When rolling of the green is completed, move the roller onto the fringe, switch off the ignition, lock the trailer into the towing position, connect it to the towing vehicle then move off to the next green to be rolled.
- 10. When using the pin hitch style drawbar, the following 3 points must be adhered to.
- a) Ensure that the hole size in the tow hitch fitted to the towing vehicle is at least 3/8" (10mm) larger in diameter than the pin size fitted on the roller draw bar hitch.

- b) When towing forwards or reversing, be sure that the roller is not put into a jack-knifed position, if it is, then damage to the pin hitch will occur.
- c) Do not cross excessively steep hills or dips where the tow hitch pin may gouge the turf and damage the drive roller.

Do not put the trailer down into the towing position on the green; damage may occur to the green from the roller tires and body.



## **Standard Operation Procedures**

- 11. This machine is equipped with a seat safety switch. This operates in the same way as that on the ride-on mowers, where if the operator attempts to leave the seat whilst the engine is running and has not fully engaged the parking brake, the engine will stop.
- 12. Starting the engine. The engine will not start unless the park brake lever is in the fully engaged or in the *on* position. Refer to the Honda user manual for correct engine starting and running procedures.
- 13. Ensure that the fuel cock is switched to the *off* position whilst transporting the roller between greens, otherwise flooding of the engine with fuel may occur. This causes difficulties in the starting of the engine.
- 14. Keep the roller on the greens surface. It is not necessary to roll onto the collars or fringes.
- 15. The operator needs to become familiar with the timing required to stop and the distance required to do so at the speed being travelled, remembering that the roller is quite heavy.
- 16. There is a park brake fitted to the roller. This is to be used only in an emergency or when parking or leaving the machine, especially on an incline. The park brake should not be used in

the normal operation of the roller.

#### Park Brake

The park brake lever operates on an over-centre principal.

To engage the park brake, pull the park brake lever fully up and back.

The park brake lever will remain in this **on** position.

To disengage the park brake, push the park brake lever fully forward and down.

The park brake lever will remain in this *off* position.

Always operate the roller with the park brake off!

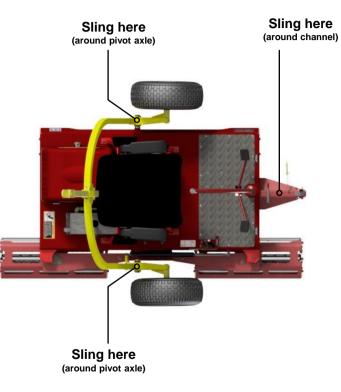
*Caution:* Do not operate the roller with the park brake engaged as this will damage park brake components.

### When stopping and before getting off the machine, always apply the Park Brake.



# Transport lifting

WARNING: The lift points shown in the diagram, must only be used to lift the machine to carry out transport lifting. It is not permitted to carry out maintenance whilst the roller is hanging from the slings.





## Points to Remember

- Make sure the roller is serviceable before rolling.
- Start rolling from the fringe of the green.
- Pick a point on the other side of the green to roll to.
- Do not look at the green close to the roller, it makes it difficult to steer the roller straight. Look well ahead.
- Use 1/2 throttle until you are proficient at operating the roller.
- Once you choose your rolling line hold the joystick steady, correcting direction gently as required.
- Move the steering joystick a little at a time to change direction; excessive movement of the joystick makes it difficult to maintain a straight line.
- Roll in straight lines.
- Do not leave the engine running with the roller parked on the green; the engine vibration will cause roller depression marks on the green.
- Move off the green when rolling is complete before putting

the trailer in the down position.

- When rolling steep greens and the engine stops, check engine oil level. The engine is fitted with a safety switch; when the engine oil level is low the engine will stop.
- When stopping and before getting off the machine always apply the **Park Brake**.
- Remember turn off the fuel cock whilst towing the roller.



## Maintenance Schedule

| Description                                      | Pre-Delivery | Pre-Operating     | Monthly    | 12 Monthly  |
|--|--------------|-------------------|------------|-------------|
| Check engine oil                                 | ٧            | ٧                 |            |             |
| Check transmission oil level                     | ٧            | v                 |            |             |
| Beware of contaminants entering the transmission | ٧            | v                 |            |             |
| Lubricate drive chain                            | ٧            | v                 |            |             |
| Check tires max 24 psi                           | ٧            | v                 |            |             |
| Check fuel level                                 | ٧            | v                 |            |             |
| Check smoothing roller bearings                  | ٧            | v                 | ٧          |             |
| Check drive roller bearings                      | ٧            | v                 | ٧          |             |
| Check for loose nuts and bolts                   | ٧            | v                 |            |             |
| Renew engine oil                                 | A            | s per manufacture | rs handboo | ok          |
| Renew transmission oil                           |              | Every 500hrs or 1 | 2 monthly  |             |
| Renew transmission oil filter                    |              | *                 |            | v           |
| Renew smoothing roller bearings                  |              | *                 |            | v           |
| Renew drive roller bearings                      |              | *                 |            | ٧           |
| Renew chain tensioner wear pads                  |              | *                 |            | as required |
| Renew drive chain                                |              | *                 |            | ٧           |
| Replace foot pedal struts                        | *            |                   |            | as required |
| Replace trailer strut                            |              | *                 |            | as required |

Note. Areas indicated with a \* need to be changed when defective or as required. This may be before the recommended replacement schedule.

Please replace all parts, as necessary.



### Safety

## You must always employ safe working practices when performing any assembly or service tasks on the machine.

For carrying out service, the trailer must be secured in the towing position. The roller can then be raised by either employing car ramps or a suitable motor vehicle hoist. The trailer wheels must be secured to prevent movement.

**Important:** If maintenance is carried out correctly, there is no need to crawl under the roller machine at any time. All maintenance can be done by reaching from the outside.

#### Storing

It is important to store this roller in the towing position. This ensures the trailer gas strut is in the closed position, protecting the shaft from the elements which, if damaged, would accelerate seal wear.

### **Adjusting the Pedals**

If the direction foot pedals become unbalanced for any reason it can be adjusted as follows. Open the transmission cover. It will be necessary to have the engine running and the roller in the transport position, suspended horizontal while performing this process. Take care to keep all limbs and clothing well away from the rotating shaft and coupling. Using the correct spanner release the lock nut on the gas strut. Rotate each strut to return the pedals to a central position while at the same time ensuring that the transmission is not engaging when in the central neutral position. Reset the locknut after performing this procedure to both struts.



### Service of the drive chain system

- Replacement use only the chain and sprockets recommended as per the correct spare parts number. Wrong pitch drive chain fitted will cause excessive sprocket wear and possible drive failure.
- Tensioning the drive chain No adjustment is required; the chain tension is automatically adjusted

#### Lubrication

Lubricate drive chain with a chain lube such as Molykote, Innox or ChunkaRocol ITW. Spray on the inside of the chain so that the lubricant is forced into each roller and around each pin prior to rolling of the Greens. Do not over lubricate.

### Service of smoothing roller bearings

- Whilst the Roller is suspended by the Trailer, check operational smoothness of the bearings fitted to each smoothing roller by rotating the rollers by hand. If bearing tightness, roughness or excessive looseness is detected, replace the faulty bearings.
- If bearings are faulty:
  - a) Remove the complete smoothing head unit assembly from the machine, undo the four swivel

mount bolts on the upper body and disconnect the steering rod, wheel the roller away until the total head assembly is exposed to work on.

- b) Remove roller shaft bolts from end plates, remove rollers from the heads.
- c) Fit new bearings, replace rollers into the heads, lubricate shaft bolts with an anti-seize compound before installing them. Tighten securely and ensure rollers rotate freely when fully tightened.
- d) If the connecting rods are removed or lengths altered ensure they are correctly adjusted so that the two heads are parallel to each other when in the straight-ahead position. Adjust if necessary.



### Changing engine oil

Change oil and service as per the manufacturers servicing schedule. Click link below and find engine serial number for current owner's manual from the web page list.

#### Honda GX200

### Changing transmission oil

Ongoing Maintenance, Lubricant and Replacement Schedule (See <u>Maintenance Schedule</u> chart).

### Transmission pump, (Eaton 11)

- Initially, change the oil at 50 hours running time, then; change oil every 500 hours or annually, whichever occurs first.
- Change hydraulic oil filter every 500 hours or annually, whichever occurs first.
- Only use the manufacturer's recommended replacement oil filter. When fitting the filter, follow the instructions supplied with the filter. This will ensure that the filter remains tight and that no leaks occur.

- Check all hard-line oil pipes for rubbing, excessive vibration, leaks and tightness on a regular basis.
- Check transmission oil level on oil tank sight glass. Oil level should remain at a minimum of 25mm (1") and at a maximum of 40mm (1.5") from the top of the tank.
- Oil Capacity including filter is 6 litres or 5.3 U.S. quarts. For the ultimate performance we use and recommend the Penrite synthetic 5 SAE 5W-60 transmission oil (Part No. R5226) or synthetic oil equivalent.



### **Testing Park Brake**

Stop the machine safely on level ground and engage the park brake.

Switch off and dismount from the machine.

Try to push the machine manually.

The park brake must prevent machine from moving. If the machine moves, the parking brake requires adjusting.

### **Adjusting Park Brake**

To adjust the park brake, rotate the knob at the end of the park brake lever in a clockwise direction, when looking down at the lever.

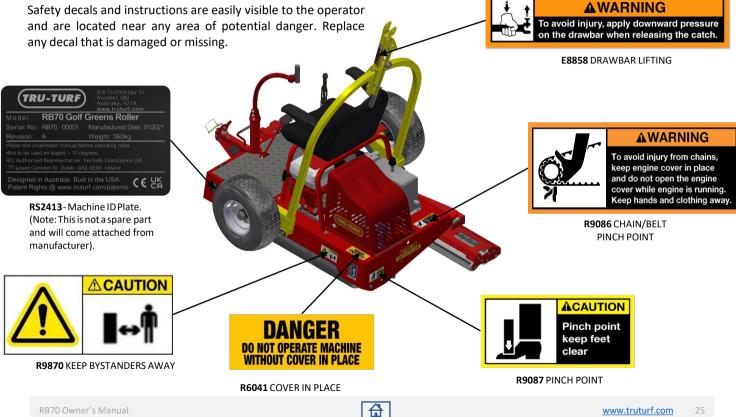
### Pressurized liquid/gas

- This roller makes use of pressurised gas cylinders and hydraulic lines.
- **Do not** try to open or re-gas pressurized cylinder. Replace with new.
- Only hydraulic qualified personnel to service the hydraulic lines/ components.



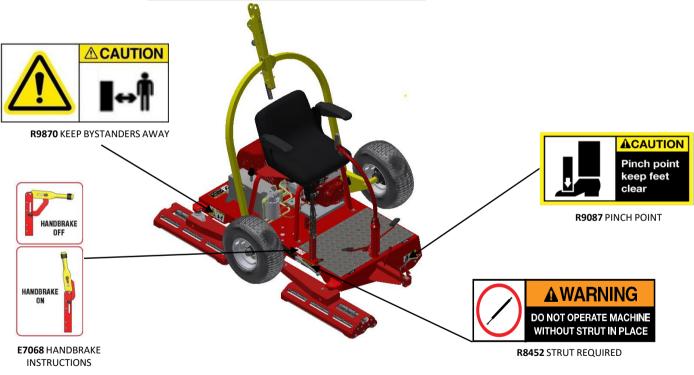


## Safety and Instructional Decals





## Safety and Instructional Decals





## **Operating Positions**



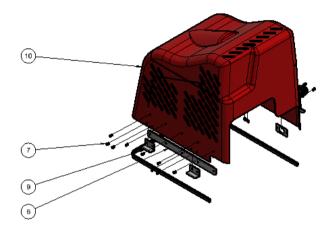
Rolling position

Towing position

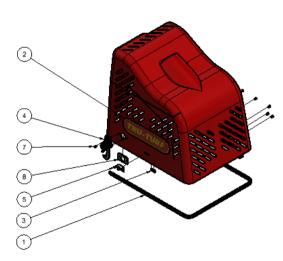




## Assembly, Generic Transmission Cover



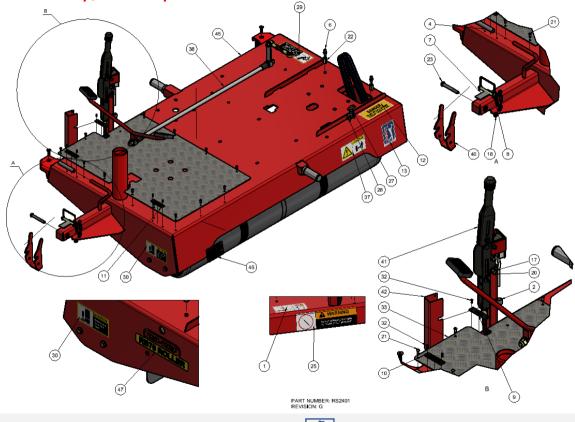
|      | RS2425 PARTS LIST |             |   |  |  |
|------|-------------------|-------------|---|--|--|
| ITEM | QTY               | PART NUMBER | DESCRIPTION                               |  |  |
| 1    | 1                 | R5241       | PINCHWELD EDGE, PROTECTOR TRANS COVER     |  |  |
| 2    | 1                 | R6057       | DECAL, TRU-TURF LOGO                      |  |  |
| 3    | 2                 | R8143       | 3/16" X 7/16" WASHER, SS                  |  |  |
| 4    | 1                 | R8343       | LATCH, PULL-AND-LOCK HOOK (1-250) - DIRAK |  |  |
| 5    | 1                 | R8921       | FORK BRACKET, RUBBER LATCH                |  |  |
| 6    | 1                 | R9495       | STIFFENER, GENERIC TRANS COVER            |  |  |
| 7    | 13                | R9594       | 5/32" X 13mm RIVET, ALUMINIUM             |  |  |
| 8    | 1                 | R9916       | MOUNT PLATE, LATCH                        |  |  |
| 9    | 2                 | RS2427      | FOOT, COVER, SHORT                        |  |  |
| 10   | 1                 | RS2452      | GENERIC TRANSMISSION COVER                |  |  |



PART NUMBER: R\$2425 REVISION: G



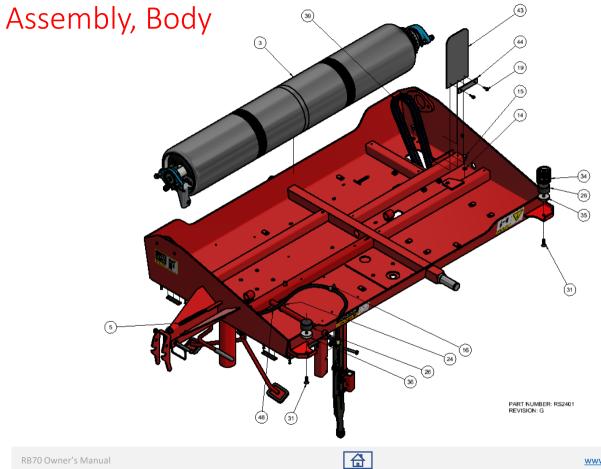
# Assembly, Body





# Assembly, Body

|      | RS2401 PARTS LIST |             |  |      |     |             |   |
|------|-------------------|-------------|--|------|-----|-------------|---|
| ITEM | QTY               | PART NUMBER | DESCRIPTION                              | ITEM | QTY | PART NUMBER | DESCRIPTION                                   |
| 1    | 1                 | E7068       | DECAL, HAND BRAKE OPERATION INSTRUCTION  | 25   | 1   | R8452       | DECAL, WARNING - DO NOT OPERATE WITHOUT STRUT |
| 2    | 2                 | E7076       | CLIP, P, 10 mm                           | 26   | 2   | R8676       | BUFFER, INTERNAL THREADED                     |
| 3    | 1                 | E7285       | ASSEMBLY, FLEXI CHAIN DRIVE ROLLER       | 27   | 1   | R8922       | RUBBER LATCH                                  |
| 4    | 1                 | R5014       | GRIP, HAND - 12 ID x 90 LG               | 28   | 1   | R8923       | PIN AND COTTER                                |
| 5    | 1                 | R5049       | SPRING, EXTENSION, ZP - Ø1/2"x18g.x5" LG | 29   | 1   | R9086       | DECAL, PINCH POINT - FINGERS                  |
| 6    | 2                 | R5108       | BALL STUD 10mm SMALL FLANGE ZP           | 30   | 2   | R9087       | DECAL, PINCH POINT - FEET                     |
| 7    | 1                 | R5159       | REST, RUBBER, TRAILER - 3 mm THK.        | 31   | 2   | R9132       | 5/16" UNF x 1" LG, CSK SOCKET HEAD SCREW, ZP  |
| 8    | 1                 | R6017       | ASSEMBLY, DRAWBAR SAFETY PIN & CHAIN     | 32   | 6   | R9210       | 4-5 RIVET, ALUMINIUM, BLK                     |
| 9    | 1                 | R6023       | PLATE, LABEL, PARK BRAKE                 | 33   | 1   | R9318       | FOOT PAD                                      |
| 10   | 1                 | R6024       | PLATE, INSTRUCTION, MOVE RIGHT           | 34   | 1   | R9363       | COMPRESSION SPRING                            |
| 11   | 1                 | R6025       | PLATE, INSTRUCTION, MOVE LEFT            | 35   | 1   | R9381       | PACKER, COMPRESSION SPRING                    |
| 12   | 1                 | R6041       | DECAL, DANGER - COVER IN PLACE           | 36   | 1   | R9382       | PACKER, NO SPRING                             |
| 13   | 1                 | R6059       | DECAL, PGA TOUR                          | 37   | 2   | R9870       | DECAL, KEEP BYSTANDERS AWAY                   |
| 14   | 2                 | R8034       | M8 SPRING WASHER, ZP                     | 38   | 1   | RS2025      | ASSEMBLY, FOOT PEDAL                          |
| 15   | 2                 | R8037       | M8 X 12 SET SCREW, ZP                    | 39   | 1   | RS2078      | ROLLER CHAIN 08B-2                            |
| 16   | 1                 | R8053       | 1/4" UNF NYLOC NUT, ZP                   | 40   | 1   | RS2117      | CATCH, WIDE, FOLDED, TRAILER DRAWBAR          |
| 17   | 2                 | R8054       | 5/16" UNF NYLOC NUT, ZP                  | 41   | 1   | RS2123      | ASSEMBLY, HANDBRAKE LEVER WITH SWITCH         |
| 18   | 1                 | R8056       | 3/8" UNF NYLOC NUT, (TYPE T), ZP         | 42   | 1   | RS2126      | COVER, SAFETY, S/S, HANDBRAKE LEVER           |
| 19   | 2                 | R8081       | 10-24 X 16 TEK SCREW, ZP                 | 43   | 1   | RS2183      | MUD FLAP                                      |
| 20   | 2                 | R8095       | 5/16" UNF X 2" BOLT, ZP                  | 44   | 1   | RS2184      | STRAP, MUDFLAP, SCREW ON                      |
| 21   | 14                | R8134       | 6-6 RIVET, ALUMINIUM                     | 45   | 1   | RS2402      | WELDMENT, DECK                                |
| 22   | 2                 | R8171       | M8 X 25 SOCKET NUT, ZP                   | 46   | 1   | RS2413      | DECAL, SERIAL NUMBER, RB70                    |
| 23   | 1                 | R8190       | 3/8" UNF X 2-3/4" BOLT, ZP               | 47   | 1   | RS2414      | DECAL, MODEL ID                               |
| 24   | 2                 | R8273       | CABLE TIE - 100 X 2.5 - COVER            | 48   | 1   | T7034       | CABLE ASSY - PARK DRUM BRAKE TYPE             |



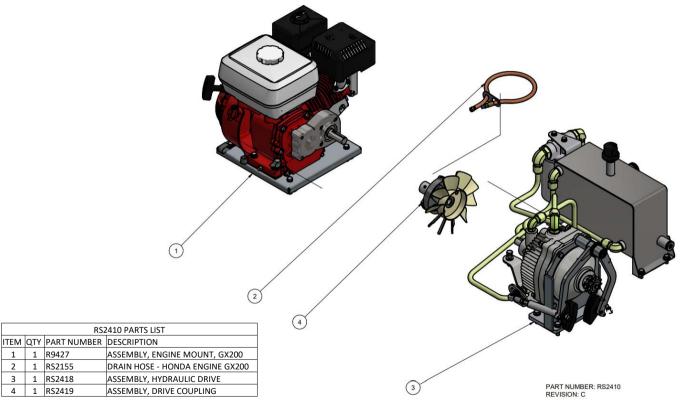
## Assembly, Foot Pedal

|      |     |             |   |   |                                       | 2    |
|------|-----|-------------|---|---|---------------------------------------|------|
|      | ,   |             | RS2025 PARTS LIST                       |   |                                       | •    |
| ITEM | QTY | PART NUMBER | DESCRIPTION                             |   |                                       |      |
| 1    | 2   | R5012       | RUBBER COVER,FOOT PEDAL                 |   |                                       |      |
| 2    | 1   | R5046       | ROD UNIT, TRANSMISSION YOKE, ASSY       |   |                                       | ~    |
| 3    | 2   |             | BUSH, ACETYL - 27 Dia. x 32 LG.         |   | V —                                   | (10) |
| 4    | 2   | R5156       | 1/8" X 5/8" WOODRUFF KEY                |   |                                       |      |
| 5    | 1   | R8048       | 3/8" X 3/4" FLAT WASHER, ZP             | - | · · · · · · · · · · · · · · · · · · · | ~    |
| 6    | 1   | R8055       | 3/8" UNF NYLOC NUT, ZP                  | 4 |                                       | (7)  |
| 7    | 2   | R8060       | 1/2" UNC NYLOC NUT, ZP                  | ÷ |                                       |      |
| 8    | 1   | R8069       | 3/8" UNF X 1-1/4" SET SCREW, ZP         |   |                                       | (4)  |
| 9    | 1   | RS2027      | ARM, WELDED, TRANS SELECTOR, FOOT PEDAL |   |                                       | 0    |
| 10   | 1   | RS2196      | PEDAL, FOOT PEDAL, SHORT, WELDED, ASSY  |   |                                       |      |
| 11   | 1   | TRI608      | SHAFT, FOOT PEDAL                       |   | PART NUMBER: R\$2025<br>REVISION: C   |      |

REVISION: C



## Assembly, Drive Unit



1 R9427

1 RS2155

1 RS2418

1 RS2419

1 2

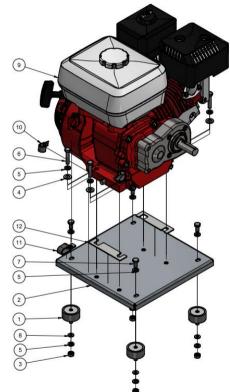
3

4



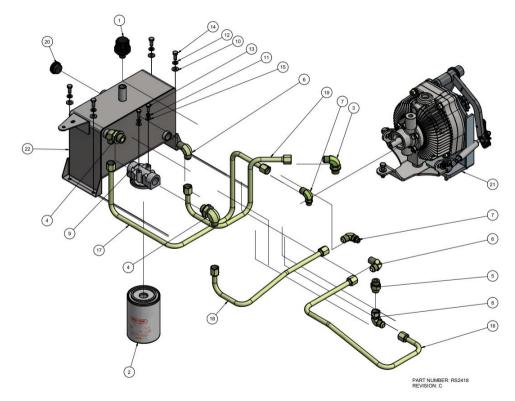
## Assembly, Engine Mount, GX200

|      | R9427 PARTS LIST |             |  |  |  |  |
|------|------------------|-------------|--|--|--|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                                |  |  |  |
| 1    | 4                | R5142       | ISOLATION MOUNT                            |  |  |  |
| 2    | 1                | R5149       | PLATE, ENGINE MOUNT, WELDED, ASSY          |  |  |  |
| 3    | 4                | R8043       | M8 NUT, ZP                                 |  |  |  |
| 4    | 4                | R8048       | 3/8" X 3/4" FLAT WASHER, ZP                |  |  |  |
| 5    | 12               | R8051       | 5/16" SPRING WASHER, ZP                    |  |  |  |
| 6    | 4                | R8065       | 5/16" UNF X 1-1/2" BOLT, ZP                |  |  |  |
| 7    | 4                | R8083       | M8 X 16 SET SCREW, ZP                      |  |  |  |
| 8    | 4                | R8200       | 1/4" X 9/16" X 1/16" FLAT WASHER, ZP       |  |  |  |
| 9    | 1                | R9001       | ENGINE, HONDA, GX200, 2:1 REDUCTION        |  |  |  |
| 10   | 1                | R9155       | J-CLIP, VINYL, 5/16" X 9/32"               |  |  |  |
| 11   | 1                | R9156       | DOUBLE TUBE CLAMP, 5/16" X 13/32" X 11/16" |  |  |  |
| 12   | 4                | T39072      | SHIM, ADJUSTING, ENGINE MOUNT              |  |  |  |





## Assembly, Hydraulic Drive

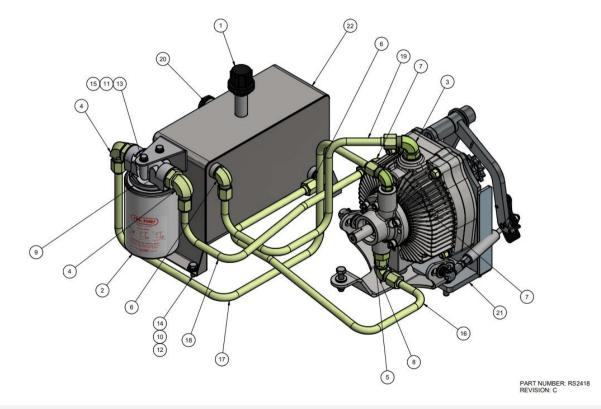




## Assembly, Hydraulic Drive

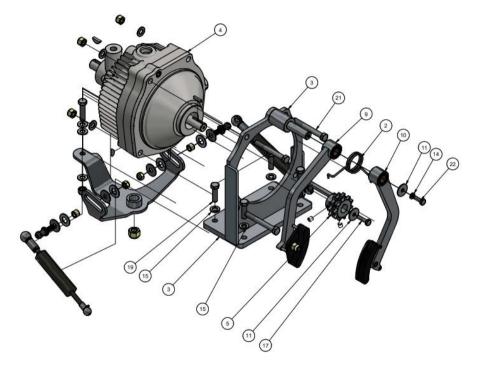
|      | RS2418 PARTS LIST |             |   |  |  |
|------|-------------------|-------------|---|--|--|
| ITEM | QTY               | PART NUMBER | DESCRIPTION                                       |  |  |
| 1    | 1                 | R5144       | BREATHER, OIL TANK                                |  |  |
| 2    | 1                 | R5147       | CARTRIDGE, FILTER, TRANSMISSION OIL TANK          |  |  |
| 3    | 1                 | R5227       | ELBOW, 90 DEG, 9/16-18 JIC - 7/8-14 UNO (M-M)     |  |  |
| 4    | 2                 | R5229       | ELBOW, 90 DEG, 3/4-16 JIC - 3/4-14 BSPP (M-M)     |  |  |
| 5    | 1                 | R5230       | STRAIGHT, 3/4 JIC - 7/8 UNO (M-M)                 |  |  |
| 6    | 2                 | R5232       | ELBOW, 90 DEG, 1/2-14 BSPT - 3/4-16 JIC (M-M)     |  |  |
| 7    | 2                 | R5233       | ELBOW, 90 DEG, 3/4-16 JIC - 9/16-18 UNO-ADJ (M-M) |  |  |
| 8    | 1                 | R5234       | ELBOW, 90 DEG, 1/2 JIC - SWIVEL - 1/2 JIC - (F-M) |  |  |
| 9    | 1                 | R8013       | HOUSING, FILTER, TRANSMISSION OIL TANK            |  |  |
| 10   | 4                 | R8046       | 5/16" X 3/4" FLAT WASHER, ZP                      |  |  |
| 11   | 2                 | R8050       | 1/4" SPRING WASHER, ZP                            |  |  |
| 12   | 4                 | R8051       | 5/16" SPRING WASHER, ZP                           |  |  |
| 13   | 2                 | R8118       | 1/4" UNC X 3/4" SET SCREW, ZP                     |  |  |
| 14   | 4                 | R8177       | 5/16" UNF X 3/4" SET SCREW, ZP                    |  |  |
| 15   | 2                 | R8200       | 1/4" X 9/16" X 1/16" FLAT WASHER, ZP              |  |  |
| 16   | 1                 | R8869       | TUBE, TANK OUT - PUMP IN                          |  |  |
| 17   | 1                 | R8870       | TUBE, PUMP OUT - FILTER IN                        |  |  |
| 18   | 1                 | R8871       | TUBE, FILTER OUT - DRIVE IN                       |  |  |
| 19   | 1                 | R8872       | TUBE, DRIVE OUT - TANK IN                         |  |  |
| 20   | 1                 | R8930       | OIL LEVEL SITE GLASS                              |  |  |
| 21   | 1                 | RS2061      | ASSEMBLY, TRANSMISSION UNIT                       |  |  |
| 22   | 1                 | RS2417      | WELDMENT, HYD TANK                                |  |  |

## Assembly, Hydraulic Drive





## Assembly, Transmission Unit



PART NUMBER: RS2061 REVISION: G

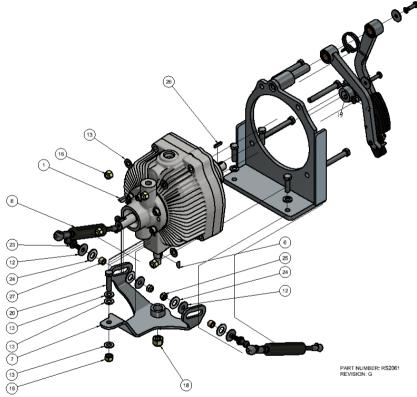


# Assembly, Transmission Unit

|      | RS2061 PARTS LIST |             |   |  |  |  |
|------|-------------------|-------------|---|--|--|--|
| ITEM | QTY               | PART NUMBER | DESCRIPTION                                   |  |  |  |
| 1    | 1                 | R5089       | 3/16" X 3/4" WOODRUFF KEY                     |  |  |  |
| 2    | 1                 | R5094       | SPRING, TENSIONED, CHAIN ARM                  |  |  |  |
| 3    | 1                 | R5131       | BRACKET, TRANSMISSION, WELDED, EATON 11, ASSY |  |  |  |
| 4    | 1                 | R5133       | EATON 11 HYDROSTATIC TRANSMISSION - 1100-078  |  |  |  |
| 5    | 1                 | R5136       | SPROCKET, 11TOOTH, TRANS. CHAIN 08B-2         |  |  |  |
| 6    | 1                 | R5156       | 1/8" X 5/8" WOODRUFF KEY                      |  |  |  |
| 7    | 1                 | R5171       | WELDMENT, TRANSMISSION YOKE                   |  |  |  |
| 8    | 2                 | R5173       | ASSEMBLY, STRUT, TRANSMISSION                 |  |  |  |
| 9    | 1                 | R5251       | ASSEMBLY, CHAIN TENSIONER ARM, LH             |  |  |  |
| 10   | 1                 | R5251_1     | ASSEMBLY, CHAIN TENSIONER ARM, RH             |  |  |  |
| 11   | 2                 | R8045       | 1/4" X 1" FLAT WASHER, ZP                     |  |  |  |
| 12   | 4                 | R8047       | 5/16" X 1" FLAT WASHER, ZP                    |  |  |  |
| 13   | 7                 | R8048       | 3/8" X 3/4" FLAT WASHER, ZP                   |  |  |  |
| 14   | 1                 | R8050       | 1/4" SPRING WASHER, ZP                        |  |  |  |
| 15   | 4                 | R8052       | 3/8" SPRING WASHER, ZP                        |  |  |  |
| 16   | 5                 | R8055       | 3/8" UNF NYLOC NUT, ZP                        |  |  |  |
| 17   | 1                 | R8059       | 1/4" UNC X 1" SET SCREW, ZP                   |  |  |  |
| 18   | 1                 | R8060       | 1/2" UNC NYLOC NUT, ZP                        |  |  |  |
| 19   | 4                 | R8069       | 3/8" UNF X 1-1/4" SET SCREW, ZP               |  |  |  |
| 20   | 1                 | R8070       | 3/8" UNF X 1-1/2" SET SCREW, ZP               |  |  |  |
| 21   | 4                 | R8073       | 3/8" UNF X 3" BOLT, ZP                        |  |  |  |
| 22   | 1                 | R8118       | 1/4" UNC X 3/4" SET SCREW, ZP                 |  |  |  |
| 23   | 2                 | R8210       | Ø13 BALL STUD, M8X22 (STABILUS)               |  |  |  |
| 24   | 4                 | R8218       | 12.7 X 25.4 X 1.6mm FLAT WASHER, ACETAL       |  |  |  |
| 25   | 2                 | R8256       | M8 NYLOC NUT, ZP                              |  |  |  |
| 26   | 1                 | R9085       | KEY, OUTPUT SHAFT, EATON 11                   |  |  |  |
| 27   | 2                 | T39478      | SPACER, PEDAL STRUT, YOKE TRANSMISSION        |  |  |  |

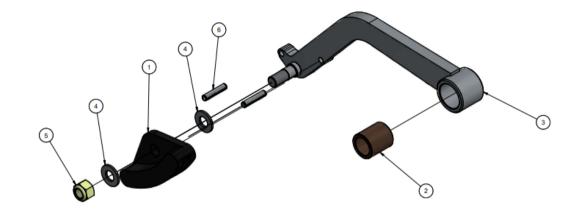


## Assembly, Transmission Unit





#### Assembly, Chain Tensioner Arm - LH



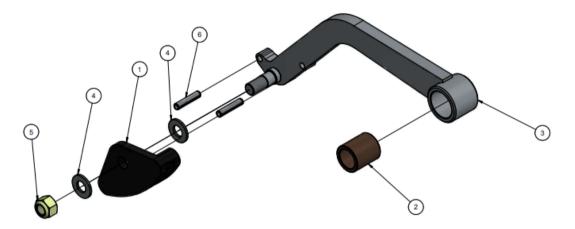
|      | R5251 PARTS LIST |             |                                    |  |  |
|------|------------------|-------------|------------------------------------|--|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                        |  |  |
| 1    | 1                | E7044       | CHAIN TENSION GUIDE                |  |  |
| 2    | 1                | R5099       | BUSH, BRONZE, CHAIN TENSIONER ARMS |  |  |
| 3    | 1                | R5132       | ARM, CHAIN TENSION, WELDED, ASSY   |  |  |
| 4    | 2                | R8048       | 3/8" X 3/4" FLAT WASHER, ZP        |  |  |
| 5    | 1                | R8055       | 3/8" UNF NYLOC NUT, ZP             |  |  |
| 6    | 2                | R8293       | M5 X 24, ROLL SPRING PIN           |  |  |

PART NUMBER: R5251 REVISION: B

RB70 Owner's Manual



#### Assembly, Chain Tensioner Arm - RH



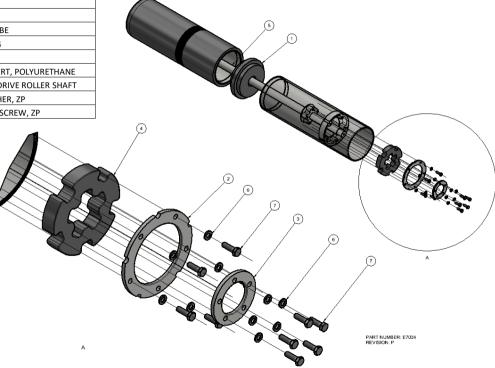
|      | R5251-1 PARTS LIST |             |                                    |  |  |
|------|--------------------|-------------|------------------------------------|--|--|
| ITEM | QTY                | PART NUMBER | DESCRIPTION                        |  |  |
| 1    | 1                  | E7044       | CHAIN TENSION GUIDE                |  |  |
| 2    | 1                  | R5099       | BUSH, BRONZE, CHAIN TENSIONER ARMS |  |  |
| 3    | 1                  | R5132       | ARM, CHAIN TENSION, WELDED, ASSY   |  |  |
| 4    | 2                  | R8048       | 3/8" X 3/4" FLAT WASHER, ZP        |  |  |
| 5    | 1                  | R8055       | 3/8" UNF NYLOC NUT, ZP             |  |  |
| 6    | 2                  | R8293       | M5 X 24, ROLL SPRING PIN           |  |  |

PART NUMBER: R5251\_1 REVISION: B



## Assembly, Flex Tube Drive Roller

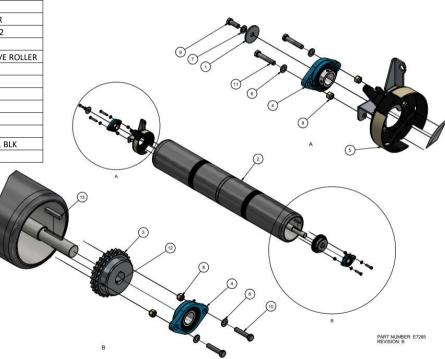
|      | E7034 PARTS LIST |             |                                    |  |  |
|------|------------------|-------------|------------------------------------|--|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                        |  |  |
| 1    | 1                | E7099       | COUPLING, FLEX TUBE                |  |  |
| 2    | 2                | E7102       | OUTER CLAMP RING                   |  |  |
| 3    | 2                | E7103       | INNER CLAMP RING                   |  |  |
| 4    | 2                | E7116       | DRIVE CENTRE, INSERT, POLYURETHANE |  |  |
| 5    | 1                | E7171       | WELDMENT, FLEXI DRIVE ROLLER SHAFT |  |  |
| 6    | 20               | R8051       | 5/16" SPRING WASHER, ZP            |  |  |
| 7    | 20               | R8064       | 5/16" UNF X 1" SET SCREW, ZP       |  |  |
|      |                  |             | , ,                                |  |  |





## Assembly, Flex Chain Drive Roller

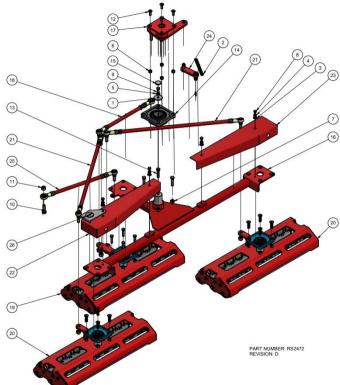
|      | E7285 PARTS LIST |             |  |  |  |
|------|------------------|-------------|--|--|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                              |  |  |
| 1    | 1                | E7010       | M10 X 43 X 3 FLAT WASHER, ZP             |  |  |
| 2    | 1                | E7034       | ASSEMBLY, FLEX TUBE DRIVE ROLLER         |  |  |
| 3    | 1                | E7131       | SPROCKET, DRIVE ROLLER, TYPE 08B2        |  |  |
| 4    | 2                | R5265       | BEARING UNIT ASSY - SBLF206              |  |  |
| 5    | 1                | R7037       | DRUM BRAKE ASSY - FLEX TUBE DRIVE ROLLER |  |  |
| 6    | 4                | R8048       | 3/8" X 3/4" FLAT WASHER, ZP              |  |  |
| 7    | 1                | R8052       | 3/8" SPRING WASHER, ZP                   |  |  |
| 8    | 4                | R8055       | 3/8" UNF NYLOC NUT, ZP                   |  |  |
| 9    | 1                | R8067       | 3/8" UNF X 1" BOLT, ZP                   |  |  |
| 10   | 2                | R8096       | 3/8" UNF X 1-3/4" SET SCREW, ZP          |  |  |
| 11   | 2                | R8097       | 3/8" UNF X 2" BOLT, ZP                   |  |  |
| 12   | 2                | R8208       | M8 X 16 GRUB SCREW, (CUP POINT), BLK     |  |  |
| 13   | 1                | R9112       | KEY, STEEL, 8x8x47                       |  |  |





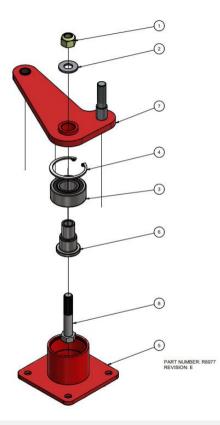
## Assembly, Triple Steering Head

|      | RS2472 PARTS LIST |             |  |  |  |
|------|-------------------|-------------|--|--|--|
| ITEM | QTY               | PART NUMBER | DESCRIPTION                              |  |  |
| 1    | 1                 | EL492       | M10 X 43 X 3 FLAT WASHER, ZP             |  |  |
| 2    | 1                 | R5049       | SPRING, EXTENSION, ZP - Ø1/2"x18g.x5" LG |  |  |
| 3    | 4                 | R8046       | 5/16" X 3/4" FLAT WASHER, ZP             |  |  |
| 4    | 4                 | R8051       | 5/16" SPRING WASHER, ZP                  |  |  |
| 5    | 1                 | R8052       | 3/8" SPRING WASHER, ZP                   |  |  |
| 6    | 4                 | R8055       | 3/8" UNF NYLOC NUT, ZP                   |  |  |
| 7    | 4                 | R8057       | 7/16" UNF NYLOC NUT, ZP                  |  |  |
| 8    | 4                 | R8063       | 5/16" UNF X 1/2" BOLT, ZP                |  |  |
| 9    | 1                 | R8066       | 3/8" UNF X 3/4" BOLT, ZP                 |  |  |
| 10   | 1                 | R8098       | 1/2" UNF X 1-1/2" BOLT, ZP               |  |  |
| 11   | 1                 | R8101       | 1/2" UNF NYLOC NUT, ZP                   |  |  |
| 12   | 4                 | R8158       | 3/8" UNF X 1" FLAT HEAD SOCKET SCREW, ZP |  |  |
| 13   | 4                 | R8405       | 7/16" UNF X 1-3/4" BOLT, ZP              |  |  |
| 14   | 1                 | R8515       | FLANGED BEARING, UCF208                  |  |  |
| 15   | 1                 | R8880       | METAL ROUND PLUG                         |  |  |
| 16   | 1                 | R8970       | WELDMENT, TRI-HEAD PIVOT BEAM            |  |  |
| 17   | 1                 | R8977       | ASSEMBLY, STEERING BOSS BRACKET          |  |  |
| 18   | 1                 | R8986       | ASSEMBLY, STEERING ROD                   |  |  |
| 19   | 1                 | R9310       | ASSEMBLY, CENTRAL STEERING HEAD          |  |  |
| 20   | 2                 | R9311       | ASSEMBLY, OUTER STEERING HEAD            |  |  |
| 21   | 2                 | R9316       | ASSEMBLY, CONNECTING ROD                 |  |  |
| 22   | 1                 | R9319       | GUARD, PIVOT BEAM, LH                    |  |  |
| 23   | 1                 | R9320       | GUARD, PIVOT BEAM, RH                    |  |  |
| 24   | 1                 | R9324       | WELDMENT, LINK PLATE, STEERING           |  |  |
| 25   | 1                 | R9330       | ASSEMBLY, STABILISER ROD                 |  |  |
| 26   | 1                 | R9447       | WELDMENT, SCRATCH GUARD                  |  |  |



# Assembly, Triple Steering Head

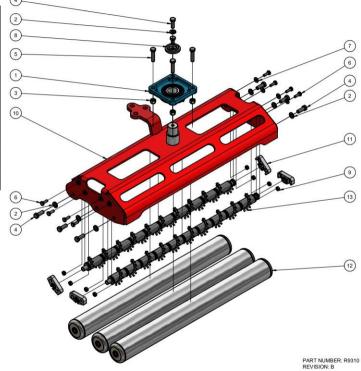
|      | R8977 PARTS LIST |             |                                 |  |
|------|------------------|-------------|---------------------------------|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                     |  |
| 1    | 1                | R8060       | 1/2" UNC NYLOC NUT, ZP          |  |
| 2    | 1                | R8503       | 1/2" FLAT WASHER, ZP            |  |
| 3    | 1                | R8671       | BEARING, 5205-2RS               |  |
| 4    | 1                | R8728       | CIRCLIP INTERNAL D1300-50       |  |
| 5    | 1                | R8978       | WELDMENT, STEERING BOSS BRACKET |  |
| 6    | 1                | R8981       | PIN, STEERING BOSS              |  |
| 7    | 1                | R8982       | WELDMENT, PIVOT ARM             |  |
| 8    | 1                | R9452       | 1/2" UNC X 2-3/4" BOLT, ZP      |  |





### Assembly, Central Smoothing Head

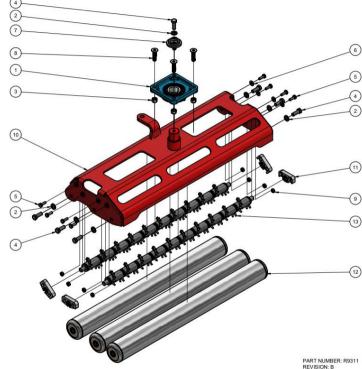
| R9310 PARTS LIST |                     |        |                                       |  |
|------------------|---------------------|--------|---------------------------------------|--|
| ITEM             | TEM QTY PART NUMBER |        | DESCRIPTION                           |  |
| 1                | 1                   | E7216  | BEARING UNIT ASSY UCF206              |  |
| 2                | 7                   | R8052  | 3/8" SPRING WASHER, ZP                |  |
| 3                | 4                   | R8055  | 3/8" UNF NYLOC NUT, ZP                |  |
| 4                | 7                   | R8067  | 3/8" UNF X 1" BOLT, ZP                |  |
| 5                | 4                   | R8070  | 3/8" UNF X 1-1/2" SET SCREW, ZP       |  |
| 6                | 8                   | R8137  | 1/4" UNF X 3/4" SET SCREW, ZP         |  |
| 7                | 8                   | R8140  | 1/4" X 5/8" X 0.065" FLAT WASHER, ZP  |  |
| 8                | 1                   | R8225  | WASHER, MOULDED, RUBBER, DAMPNER      |  |
| 9                | 8                   | R8836  | 1/4" UNF NYLOC NUT, (TYPE T), ZP      |  |
| 10               | 1                   | R9312  | WELDMENT, CENTRAL STEERING HEAD       |  |
| 11               | 4                   | R9421  | ASSEMBLY, BEARING HOUSING, NODULE     |  |
| 12               | 3                   | RS2050 | SMOOTHING ROLLER, LONG, COMPLETE ASSY |  |
| 13               | 2                   | RS2055 | ASSEMBLY, NODULE SWEEPER              |  |





### Assembly, Outer Smoothing Head

|      | R9311 PARTS LIST |             |  |  |
|------|------------------|-------------|--|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                                  |  |
| 1    | 1                | E7216       | BEARING UNIT ASSY UCF206                     |  |
| 2    | 7                | R8052       | 3/8" SPRING WASHER, ZP                       |  |
| 3    | 4                | R8055       | 3/8" UNF NYLOC NUT, ZP                       |  |
| 4    | 7                | R8067       | 3/8" UNF X 1" BOLT, ZP                       |  |
| 5    | 8                | R8137       | 1/4" UNF X 3/4" SET SCREW, ZP                |  |
| 6    | 8                | R8140       | 1/4" X 5/8" X 0.065" FLAT WASHER, ZP         |  |
| 7    | 1                | R8225       | WASHER, MOULDED, RUBBER, DAMPNER             |  |
| 8    | 4                | R8513       | 3/8" UNF X 1-1/2" FLAT HEAD SOCKET SCREW, ZP |  |
| 9    | 8                | R8836       | 1/4" UNF NYLOC NUT, (TYPE T), ZP             |  |
| 10   | 1                | R9313       | WELDMENT, OUTER STEERING HEAD                |  |
| 11   | 4                | R9421       | ASSEMBLY, BEARING HOUSING, NODULE            |  |
| 12   | 3                | RS2050      | SMOOTHING ROLLER, LONG, COMPLETE ASSY        |  |
| 13   | 2                | RS2055      | ASSEMBLY, NODULE SWEEPER                     |  |





## Assembly, Nodule Sweeper

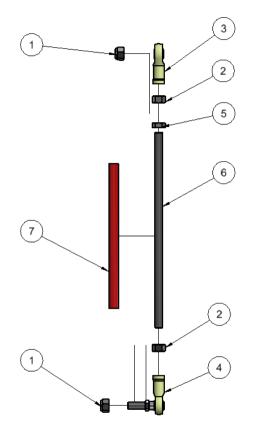
|      | RS2055 PARTS LIST                |        |  |  |  |
|------|----------------------------------|--------|--|--|--|
| ITEM | ITEM QTY PART NUMBER DESCRIPTION |        |  |  |  |
| 1    | 10                               | R8461  | RUBBER ROLLER SWEEPER - 12 NODULES x 30 deg. |  |  |
| 2    | 11                               | R9536  | 0.525" X 1" X 0.062" FLAT WASHER, NYLON      |  |  |
| 3    | 1                                | RS2056 | SHAFT, LONG, RUBBER ROLLER SWEEPER           |  |  |

PART NUMBER: RS2055 REVISION: G



# Connecting Rods

|      | R8986 PARTS LIST |             |                                   |  |
|------|------------------|-------------|-----------------------------------|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                       |  |
| 1    | 2                | R8101       | 1/2" UNF NYLOC NUT, ZP            |  |
| 2    | 2                | R8284       | 1/2" UNF NUT, ZP                  |  |
| 3    | 1                | R8285       | 1/2"UNF ROD END, FEMALE, ZP       |  |
| 4    | 1                | R8287       | 1/2" UNF ROD END, MALE            |  |
| 5    | 1                | R8352       | NUT, HEX, JAMB, ZP - 1/2" UNF     |  |
| 6    | 1                | R8987       | ROD, THREADED, STEERING, 1/2" UNF |  |
| 7    | 1                | R8988       | TUBE, STEERING ROD                |  |

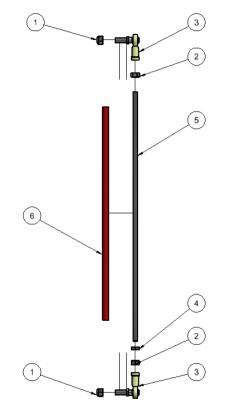


R8986



### Connecting Rods

|      | R9316 PARTS LIST |             |                                     |  |  |
|------|------------------|-------------|-------------------------------------|--|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                         |  |  |
| 1    | 2                | R8101       | 1/2" UNF NYLOC NUT, ZP              |  |  |
| 2    | 2                | R8284       | 1/2" UNF NUT, ZP                    |  |  |
| 3    | 2                | R8287       | 1/2" UNF ROD END, MALE              |  |  |
| 4    | 1                | R8352       | NUT, HEX, JAMB, ZP - 1/2" UNF       |  |  |
| 5    | 1                | R9317       | ROD, THREADED, CONNECTING, 1/2" UNF |  |  |
| 6    | 1                | R9333       | TUBE, CONNECTING ROD                |  |  |

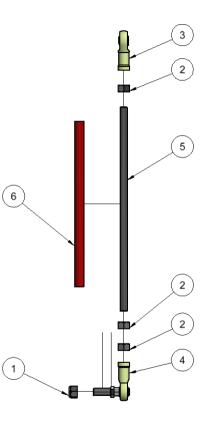


R9316



### Connecting Rods

| R9330 PARTS LIST |     |             |                                  |
|------------------|-----|-------------|----------------------------------|
| ITEM             | QTY | PART NUMBER | DESCRIPTION                      |
| 1                | 1   | R8101       | 1/2" UNF NYLOC NUT, ZP           |
| 2                | 3   | R8284       | 1/2" UNF NUT, ZP                 |
| 3                | 1   | R8285       | 1/2"UNF ROD END, FEMALE, ZP      |
| 4                | 1   | R8287       | 1/2" UNF ROD END, MALE           |
| 5                | 1   | R9331       | THREADED ROD, STABILIZER TIE-ROD |
| 6                | 1   | R9332       | TUBE, STABILIZER TIE ROD         |

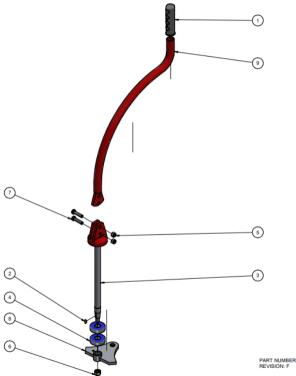


R9330



## Assembly, Joystick

|                      | RS2471 PARTS LIST |             |                                 |  |
|----------------------|-------------------|-------------|---------------------------------|--|
| ITEM QTY PART NUMBER |                   | PART NUMBER | DESCRIPTION                     |  |
| 1                    | 1                 | R5009       | GRIP, JOYSTICK - 27mm Dia.      |  |
| 2                    | 1                 | R5156       | 1/8" X 5/8" WOODRUFF KEY        |  |
| 3                    | 1                 | R6009       | JOYSTICK SHAFT, WELDED, ASSY    |  |
| 4                    | 2                 | R8018       | BALL BEARING S6304-2RS, SS      |  |
| 5                    | 2                 | R8055       | 3/8" UNF NYLOC NUT, ZP          |  |
| 6                    | 1                 | R8060       | 1/2" UNC NYLOC NUT, ZP          |  |
| 7                    | 2                 | R8070       | 3/8" UNF X 1-1/2" SET SCREW, ZP |  |
| 8                    | 1                 | R8989       | WELDMENT, STEERING ARM          |  |
| 9                    | 1                 | RS2007      | JOYSTICK, WELDED, ASSY          |  |

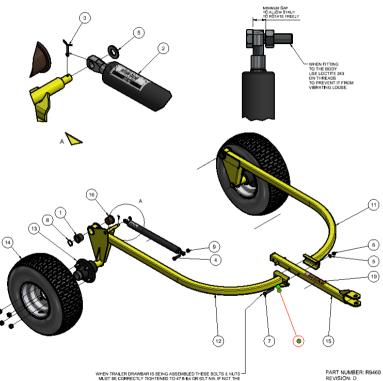


PART NUMBER: RS2471 REVISION: F



## Assembly, Hi-Lift Trailer

| R9342 PARTS LIST |     |             |                                  |  |
|------------------|-----|-------------|----------------------------------|--|
| ITEM             | QTY | PART NUMBER | DESCRIPTION                      |  |
| 1                | 2   | E7007       | BUSH, FLANGED                    |  |
| 2                | 1   | R5202       | GAS STRUT, 620                   |  |
| 3                | 1   | R8036       | M2.5 x 20 SPLIT PIN, ZP          |  |
| 4                | 1   | R8038       | M10 X 40 BOLT, ZP                |  |
| 5                | 4   | R8048       | 3/8" X 3/4" FLAT WASHER, ZP      |  |
| 6                | 2   | R8055       | 3/8" UNF NYLOC NUT, ZP           |  |
| 7                | 2   | R8082       | CIRCLIP, EXT, BLK, 30mm          |  |
| 8                | 1   | R8088       | M10 NUT, ZP                      |  |
| 9                | 1   | R8174       | M10 X 20 FLAT WASHER, ZP         |  |
| 10               | 2   | R8190       | 3/8" UNF X 2-3/4" BOLT, ZP       |  |
| 11               | 2   | R9037       | WHEEL HUB COMPLETE PARALLEL AXLE |  |
| 12               | 2   | R9074       | WHEEL, 4 STUD, 18" TYRE          |  |
| 13               | 1   | R9335       | ASSEMBLY, DRAWBAR, PIN HITCH     |  |
| 14               | 1   | R9360       | ASSEMBLY, DRAWBAR EXTENSION      |  |
| 15               | 2   | RS2424      | BUSH, FLANGED, CHAMFERED         |  |
| 16               | 1   | RS2461      | WELDMENT, TRAILER ARM, LH        |  |
| 17               | 1   | RS2462      | WELDMENT, TRAILER ARM, RH        |  |

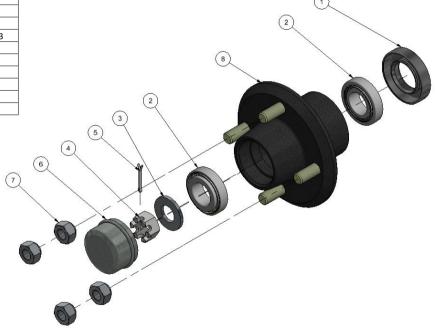


WHEN TRAILER DRAWBAR IS BEING ASSEMBLED THESE BOLTS & NUTS MUST BE CORRECTLY TIGHTENED TO 47 A-BA OR 63.7 Nm, IF NOT THE DRAWBAR CAN BECOME LODSE MOT THE THELES WILL WEAR MAKING IT DANGEROLS WHEN TOVING OR RNJSING / LOWERING THE TRAILER.



## Assembly, Trailer Hub

|      | R9037 PARTS LIST |             |                                  |  |
|------|------------------|-------------|----------------------------------|--|
| ITEM | QTY              | PART NUMBER | DESCRIPTION                      |  |
| 1    | 1                | R9029       | SEAL, INNER HUB - CR 12610       |  |
| 2    | 2                | R9030       | BEARING, TAPERED ROLLER - L44643 |  |
| 3    | 1                | R9032       | WASHER, STUB AXLE (19x38)        |  |
| 4    | 1                | R9033       | NUT, CASTLE, 3/4"-16 UNF         |  |
| 5    | 1                | R9034       | PIN, COTTER, (SPLIT) - M4 x 40   |  |
| 6    | 1                | R9035       | CAP, HUB BEARING                 |  |
| 7    | 4                | R9036       | NUT, WHEEL, 1/2 "UNF (USA)       |  |
| 8    | 1                | R9038       | HUB, TRAILER, PARALLEL AXLE      |  |



#### NOTE: R9037 HUB IS PURCHASED AS A COMPLETE ASSEMBLY ITEM



### Assembly, Seat & Frar

|      | RS2420 PARTS LIST |             |                                |  |
|------|-------------------|-------------|--------------------------------|--|
| ITEM | QTY               | PART NUMBER | DESCRIPTION                    |  |
| 1    | 1                 | E7067       | SWITCH, LIGHT                  |  |
| 2    | 1                 | R5129       | METER, HOUR, TACHO             |  |
| 3    | 1                 | R6013       | BUFFER STOP, UNDER BODY        |  |
| 4    | 2                 | R8048       | 3/8" X 3/4" FLAT WASHER, ZP    |  |
| 5    | 4                 | R8051       | 5/16" SPRING WASHER, ZP        |  |
| 6    | 4                 | R8052       | 3/8" SPRING WASHER, ZP         |  |
| 7    | 2                 | R8055       | 3/8" UNF NYLOC NUT, ZP         |  |
| 8    | 6                 | R8067       | 3/8" UNF X 1" BOLT, ZP         |  |
| 9    | 4                 | R8068       | 5/16" UNC X 3/4" SET SCREW, ZP |  |
| 10   | 1                 | R8256       | M8 NYLOC NUT, ZP               |  |
| 11   | 1                 | R8365       | MILSCO ALL PLASTIC SEAT        |  |
| 12   | 2                 | R8497       | 4-8 RIVET, ALUMINIUM           |  |
| 13   | 1                 | RS2421      | WELDMENT, FRAME, SEAT          |  |
| 14   | 1                 | RS2422      | WELDMENT, SEAT BASE            |  |



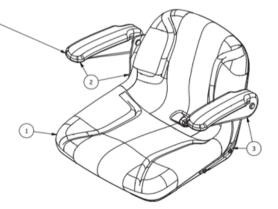


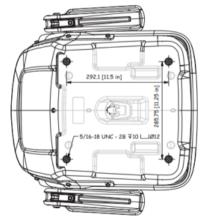
### Assembly, Seat

NOTE: WHEN FITTING THIS SEAT TO THE BASE PLATE THE RECOMMENDED DYNAMIC TORQUE FOR THE SEAT BOLTS IS 80±15 IN.LBS (<u>DO NOT EXCEED</u> 180 IN.LBS) ARMREST BRACKET BOLTS IS 70±10 IN.LBS

| R8365 PARTS LIST |     |             | PARTS LIST                |
|------------------|-----|-------------|---------------------------|
| ITEM             | QTY | PART NUMBER | TITLE                     |
| 1                | 1   | R8362       | SEAT ALL PVC PAN ONLY MSC |
| 2                | 1   | R8363       | ARM REST NEW RH ASSY      |
| 3                | 1   | R8364       | ARM REST NEW LH ASSY      |

- ARMRESTS NOW ATTACH TO SIDE OF SEAT PAN USING 3 SPEED CLIPS & HEX HEAD TAPPING SCREWS





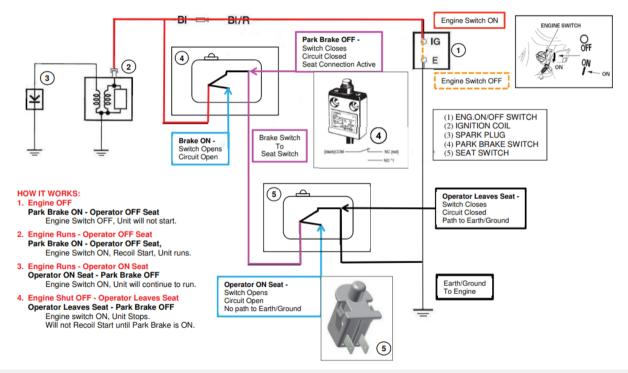
BOTTOM VIEW



SIDE VIEW

#### Harness Loom

SCHEMATIC DIAGRAM OF SAFETY INTERLOCK CIRCUIT & OPERATOR PRESENCE SYSTEM - MILSCO SEAT





## Troubleshooting: Roller

#### Roller will not move one or either way, check:

- Engine is running.
- Ignition is on.
- Belt is correctly fitted and tensioned.
- Sprockets are not worn or slipping on the shaft.
- Foot control is operating correctly.
- For sheared sprocket keys.
- Rubber coupling broken

#### Roller will not steer, check:

- Woodruff key is in place and not sheared.
- Rod ends are connected to smoothing roller head and the steering arm.
- Rod ends are not broken or seized.
- Swivel bearing on connecting the smoothing roller head to the pivot beam, have not seized.
- Connecting rods are in place and serviceable.

#### Roller has excessive vibration, check

- Disconnect engine-to- transmission and isolate the drive chain to determine whether the problem is in the engine or in the transmissions.
- If engine is at fault, contact your nearest engine agent for rectification.
- If the transmission is at fault, repair or replace as necessary, or seek professional advice from a local Eaton Service Centre.
- Any out of alignment between engine and transmission.
- For damaged engine and transmission couplings



## Troubleshooting: Roller

#### Smoothing rollers seized, check

- Bearings are OK and not rough or seized.
- Replace if necessary.
- Accumulated dry debris is not locking the smoothing rollers.

#### Rubber drive roller will not rotate, check

- Roller shaft end bearings have not seized.
- Broken chain
- Slipping sprockets
- The park brake is not locked on

