



**TRU-TURF**

**GR11000C GOLF ROLLER MANUAL**

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**Separate Engine Owners Manual Included**



# Important

**Please read and understand before operating machine.**

1. Pre-check all nuts, bolts, grub screws for tightness prior to operating machine.
2. Understand the operating procedures and the controls before operating.
3. Use the machine to roll **18-36 greens** then **check** that all nuts, bolts etc. are tight. If loose and the Loctite seal has been broken, treat item as per Loctite instructions, reseal, then tighten securely.
4. **Loose transmission and drive roller sprockets will cause damage to shafts and keyways. Ensure they are correctly tightened at all times.**
5. **Change the transmission oil after 50 hours of operation, then as per the servicing schedule.**

We use and recommend Penrite Synthetic 5 SAE 5W-60. Available through our dealer network.

**U.S.A.** customers contact your dealer or visit [www.truturf.com](http://www.truturf.com) to find your nearest dealer.

**Australian** customers call 07 5594 7199.

**International** customers contact your dealer or visit [www.truturf.com](http://www.truturf.com) to find your nearest dealer.

# Machine Information Record

Congratulations on your investment in the GR11000C Golf Green Roller and your move to smoother, faster, more consistent putting Greens. The following operation and maintenance manual has been prepared for use with the GR11000C Golf Green Roller. It is intended as a guide and supplemental updates to the manual may take place at a future date, without prior notice.

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.

### Distributor Information

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

### Machine Information

Model. GR11000C Golf Green Roller

Serial No. \_\_\_\_\_

Engine No. \_\_\_\_\_

Transmission No. \_\_\_\_\_

Purchase Date No. \_\_\_\_\_

# Safety Information

## Safety Information

**Safety is of the utmost importance when operating turf equipment.**

**To ensure safe operation of the GR11000 C Golf Greens Roller, please follow the following safety guidelines.**

- Always make a pre-operation inspection before you start the engine. 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 engine when in motion. Read and understand engine 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.
- Do not use in enclosed areas unless well ventilated. Carbon monoxide gases are dangerous if inhaled, it can cause death; use the machine outdoors.
- When transporting the roller, make sure the trailer lock down mechanism is secure 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. When carrying out maintenance ensure the catch is engaged correctly; if it is not the trailer arm could fly up making contact with a person(s) causing serious injury.
- When engine is running, always keep hands and loose clothing away from rotating shafts, chains and sprockets in the transmission area. If hair, clothing or loose objects become entangled on a rotating shaft serious bodily injury could occur. Stop engine before opening safety cover fitted to the transmission area.
- 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.**

# Warranty

## Universal Conditions:

Tru-Turf Pty. Ltd. will either repair or replace any item or part of a Tru-Turf Pty. Ltd. Golf Greens Roller that is defective in workmanship or material for a period of **thirty six (36)** months from the date of delivery of the new product to the original end user. These items will be repaired or replaced free of charge and freight free.

## Products Protected By This Warranty:

This Warranty relates to the following products manufactured by Tru-Turf Pty. Ltd. :-

GR11000C; RS48-11C; RS48-11D; R52-11T, R52-11TC and R52-ELT Golf Greens Rollers.

TR66 Triplex roll 'n' spike mower attachment heads and brackets; SR72 Sports ground roller.

MT5000-1, MT5000-2 and MT5000-3 Totes are covered for a period of twelve (12) months.

## Parts Warranted By Suppliers To Tru-Turf:

Specific component parts supplied to Tru-Turf Pty. Ltd. are covered by that supplier's Warranty. These parts include Eaton Transmission, Honda Engines and Kohler Engines.

Only Tru-Turf Pty. Ltd. manufactured parts qualify for the the Thirty Six month warranty.

## Normal Wear and Tear:

Tru-Turf Pty. Ltd. will not repair or replace parts subject to normal maintenance routines as specified in the products Operator's Manual nor to parts subject to wear and tear during the correct operation of the product. These parts include, but are not limited to, oils, filters, tyres, shafts, bearings, blades, spikers, slicers, brakes, belts, hoses, spark plugs, drive chains, sprockets, drive rollers & smoothing rollers.

## Other Items Not Covered By This Warranty:

Tru-Turf Pty. Ltd. will not repair or replace free-of-charge any item that has been damaged by accident, lack of reasonable care and protection or lack of suitable storage. We will not cover parts that have been altered or modified by anyone other than Tru-Turf Pty. Ltd. nor will we cover used parts that are installed in place of failed parts. We will not cover parts that have not been installed correctly by the end user or its agents nor will we cover parts that have not been maintained as per the Operator's Manual. Service calls and overtime-labour rates will not be covered. We will not cover freight costs related to the return of the faulty product to Tru-Turf Pty. Ltd. or its agents. Tru-Turf Pty. Ltd. will not be liable for any consequential loss or damage or costs caused by or incidental to the failure of any new part supplied with the original purchase or any new part supplied as a replacement for any failed part.

## Lodging Warranty Claims:

The final purchaser of the new Tru-Turf Pty. Ltd. product must lodge a Warranty Claim with Tru-Turf Pty. Ltd. or its agents. The original purchaser must provide written evidence detailing the product's delivery date to that purchaser and the reasons why the purchaser believes that the product or its part is defective in the categories of faulty material or workmanship. The purchaser is to deliver the faulty product or part to Tru-Turf Pty. Ltd. or its agents at the purchaser's expense. Acceptance or rejection of the Warranty Claim is entirely at the discretion of Tru-Turf Pty. Ltd. or their Suppliers who warrant their own part/s.

*Visit [www.truturf.com](http://www.truturf.com). Fill out the warranty form and return it to [warranty@truturf.com](mailto:warranty@truturf.com)*

*No person or organisation has the authority to modify the terms or conditions or limitations of this Warranty without the written consent of Tru-Turf Pty. Ltd.*

# Assembly

## Initial Assembly

When you receive the crate, the machine will be broken down into components ready for assembly. If you run into any problems during assembly, please feel free to call your local distributor or agent.

## List of Components

QTY	Description
1	Operation, Maintenance and Parts Manual
1	Machine Frame/Body
1	Drivers Seat
4	M8 x 20 Bolts
2	Tires mounted on Wheel Rim
1	Steering Joystick
1	Dampener Strut (attached to main body end)
1	Left-side Trailer Arm
1	Right-side Trailer Arm
2	30mm External Circlips
1	Drawbar Coupling Assembly
2	$\frac{3}{8}$ " x $2\frac{1}{4}$ " UNF Hex Head Bolts
2	$\frac{3}{8}$ " UNF Nyloc Nuts

# Assembly

## Assembly Procedure

### Step 1: Mounting the seat to the seat base.

- Use the 4 x M8 x 20 bolts to fasten the seat to the seat base.

### Step 2: Mount the steering joystick to the steering shaft.

- Select the steering joystick.
- Slide the joystick into the slot on the top of the steering shaft, already installed in the steering column directly in front of the foot pedal controls, insert the  $\frac{3}{8}$ " bolt into the bottom bolt hole, select a comfortable operating position, joystick forward for extra operating room or back for less, once determined insert the other  $\frac{3}{8}$ " bolt into the upper hole and tighten both bolts securely.

### Step 3: Attaching the left-hand trailer arm to machine body.

- Locate the trailer arm support axle 30mm in diameter which extends out on the side of the machine, remove the circlip from the support axle. Oil machined portion. Slide the left hand side trailer arm, onto the axle, replace the circlip, ensuring it is located in the groove correctly.

### Step 4: Attaching dampener strut and right hand trailer arm.

- Locate the trailer arm support axle 30mm in diameter which extends out on the right side of the machine, remove the circlip from the axle. Hold the right side trailer arm in the vertical position and slide it onto the axle. Locate dampener strut, remove packing from the unattached end.

- Apply Thread lock "Loctite" to the M10 bolt attached to the dampener strut. Screw the M10 bolt into the strut support on the trailer arm.
- If necessary use a soft headed hammer and tap the trailer arm onto the axle until the circlip groove is revealed, fit the circlip, ensuring it is located in the groove correctly.

### Step 5: Attaching draw bar to trailer arms.

- Locate the draw bar assembly.
- Gather the ends of the right and left trailer arms.
- Place the drawbar assembly between the trailer arms and align the holes, ensure the bend is upwards.
- Place one  $2\frac{1}{4}$ " x  $\frac{3}{8}$ " bolt through each hole, fit  $\frac{3}{8}$ " Nyloc nut to each bolt & tighten securely.
- Test to ensure the trailer latch is correctly locking the trailer arms in the down position. This is important when trailing the machine. Use the catch locking pin when transporting the roller, for safety.

### Step 6: Attaching wheels to trailer arms.

- Locate the two wheels for the left and right side trailer arms.
- Check tires for the correct air pressure, approximately 18psi. Do not exceed this pressure. The tires act as the suspension, hence the low P.S.I.
- Remove wheel nuts from both hubs, slide wheels onto hub with air valves facing outwards. Replace wheel nuts and tighten securely.
- Ensure the taper on the nuts, mate into the wheel tapers correctly.



# Assembly

## Step 7: Correct dampener strut operation

- When the roller is in the trailing position Carefully hold the draw bar assembly, release the locking catch, gently with a firm grip begin to raise the draw bar, when it has travelled sufficiently the dampener strut will take over and prevent the trailer arms rapidly rotating on it's axle, allowing the roller to lower to the surface gently. This prevents the operator from being injured. When the roller is resting on the ground push the trailer arms back gently, (do not use excessive force) until the trailer arms will travel no further. The dampener strut is designed to hold the trailer arms back behind the operator with the wheels off the ground.

## Step 8: Replace engine oil

- A tag is placed on the engine's On/Off switch indicating you must fill the machine with oil prior to operation. Low oil level will cause the engine to stop on steep hills, the engine cut off safety switch is designed this way to protect the engine from damage if low in oil.
- The oil in the engine upon delivery (if not pre-delivered) is to prevent the inside of the engine from corroding, replace it with the correct engine oil, as per the manufacturers specifications.

## Step 9: Transmission oil tank breather.

- Unscrew the plastic plug from the top of the tank and replace it with the anti-splash breather supplied. Seal damage and oil leakage will occur if the breather is not installed. If this is not done damage to the seals in the transmission will occur.

## Step 10: Lubricate smoothing head pivot bearings.

- There is a grease nipple or zirk located on the smoothing head centre ball joint swivel. Apply grease to lubricate fitting.
- When rolling of the green is completed, move the roller onto the fringe, stop the engine, lock the trailer into the trailing position, connect it to the towing vehicle then move off to the next green to be rolled. 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. **Remember** turn off the fuel cock whilst towing the roller.

# Operation procedures

## Operation procedures

### Pre-operation checks

- Check engine as per Honda manual.
- Ensure steering joystick has no looseness.
- Check that foot pedal depresses under normal foot pressure in both directions and returns to the neutral position. (Similar resistance to a motor vehicle clutch). If this action is not smooth, check the yoke and transmission struts for correct operation.
- 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 bearings on each smoothing head and main support bearing.
- Grease lightly Bearings fitted to Drive Roller and Smoothing Head pivot bearings. Replace plastic caps if fitted.
- Grease rod ends, sparingly.
- Check tire pressure for proper operating pressure (18psi). Do not over inflate.
- Check for oil and fuel leaks - rectify before using machine.
- Lubricate the drive chain with a suitable chain lubricant.

## Standard operation procedures

- Inspect and check that the roller is serviceable prior to departing from workshop.
- Use a suitable towing vehicle to move roller from green to green.
- Maximum recommended towing speed would be equal to a motorized golf buggy. Approximately 4mph/7kph. Towing at excess speed or across rough terrain may cause damage to the machine and trailer.
- 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, start up the roller and drive it onto the green.
- Greens can be rolled in any direction; take care to ensure there are no crease lines produced on the surface.
- It is recommended that you place the smoothing head rollers on the high side of the green when rolling. This increases the weight on the rubber drive roller and gives better traction, it also reduces slipping or spinning of the drive roller on the green, depending also on the operators ability. Whilst becoming familiar with the roller, set the throttle at about  $\frac{1}{2}$  -  $\frac{3}{4}$  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.

# Operation procedures

- 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 miss no 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 time or quicker than by mowing using a triplex mower.
- When rolling of the green is completed, move the roller onto the fringe, stop the engine, lock the trailer into the trailing position, connect it to the towing vehicle then move off to the next green to be rolled. 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.
- Remember turn off the fuel cock whilst towing the roller.

## Park brake

- To engage, push parking lever forward until it will travel no further, the lever operates on a over cam principal, when it is fully engaged the lever will remain in this position with the brake applied. To dis-engage the park brake, pull the lever up and back. The lever will remain in the off position until re-applied. Do not operate the roller with the park brake engaged, damage to the drive roller rubber coating will occur.
- Ensure the park brake is released prior to operating the roller, if not irreparable damage to the rubber on the drive roller will occur.

## Points to remember

- Make sure the roller is serviceable before rolling.
- Start rolling from the fringe of the green.
- Smooth operation on the foot pedals.
- 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.

# Maintenance

## Maintenance

- Stop engine before performing any maintenance.
- Service the Honda engine according to the manufacturers maintenance schedule.

## Transmission (pump, Eaton 11)

- Oil can only be changed from the stainless steel reservoir tank, no drain facilities are fitted on the transmission pump.
- 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 liters 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)

## Storing

- It is important to store this roller in the towing position. This ensures the trailer strut is in the closed position, protecting the shaft from corrosion, then failure and also the weight is taken off the roller bearings.

## Service of the drive chain system

- Replacement - Some chains look a like, but they are not, 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 Chain Oil, WD40, equivalent (CRC; Penetrene) or a specified chain lubricant each time prior to rolling of the Greens.
- Lubricate transmission yoke slides, where the strut connects to the yoke on both sides.
- Rod Ends

# Maintenance

## 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 from the machine, undo the four swivel mount bolts on upper body and steering rod, wheel the roller away until the total head 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.

or

If the rollers are a sealed type remove the roller and replace with a complete new roller.

  - (d) If the steering rod is removed or the length is altered ensure it is correctly adjusted so that the head is parallel to the body when in the straight ahead position. Adjust if necessary.

## Changing engine oil

- Change oil and service as per the manufacturers Servicing Schedule enclosed as a separate insert to this manual.

## Changing transmission oil

### Ongoing Maintenance, Lubricant and Replacement Schedule (below)

**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.

Description	Pre-Delivery	Pre-Operating	12 Monthly
Check Engine oil	✓	✓	
Check Transmission Oil Level	✓	✓	
Beware of contaminants entering the transmission	✓	✓	
Lubricate drive chain with WD40 or equivalent	✓	✓	
Check Tires Max 18 P.S.I.	✓	✓	
Check Gas	✓	✓	
Check Smoothing Roller Bearing	✓	✓	
Check Drive Roller Bearings	✓	✓	
Check for loose Nuts and Bolts	✓	✓	
Renew Engine Oil	as per manufacturers Handbook		
Renew Transmission Oil - See page 1 for correct oil	every 500hrs or...		✓
Renew Transmission Oil Filter	*		✓
Renew Smoothing Roller Bearings	*		✓
Renew Drive Roller Bearings	*		✓
Renew Chain Tensioner Sprocket Bearings	*		✓
Renew Drive Chain	*		✓
Replace Foot Pedal Struts	*		
Replace Trailer Strut	*		

# Fault Finding

## Fault Finding

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

- Chain is okay
- Sprockets are not worn or slipping on the shaft
- Foot control is operating - check all arms are secure
- 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
- Centre swivel bearing on top centre of the smoothing roller head has not seized
- Steering connecting rod is 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 Center

- Any out of alignment between engine and transmission.
- For damaged engine and transmission couplings

### Smoothing rollers seized, check

- Bearings have not 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

# Operating Positions



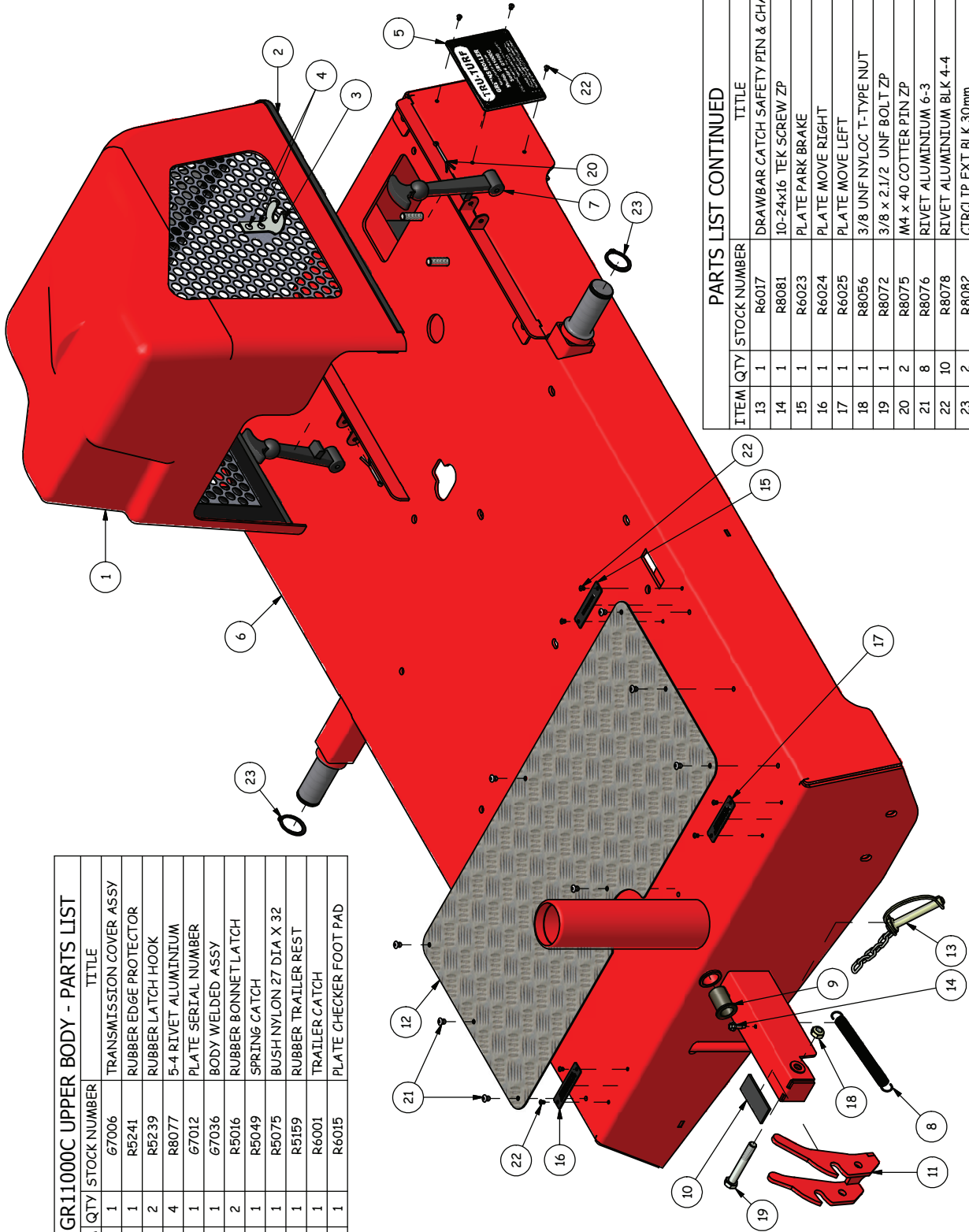
**Towing Position**



**Rolling Position**

# Upper Body

GR11000C UPPER BODY - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	G7006	TRANSMISSION COVER ASSY
2	1	R9241	RUBBER EDGE PROTECTOR
3	2	R9239	RUBBER LATCH HOOK
4	4	R8077	5-4 RIVET ALUMINIUM
5	1	G7012	PLATE SERIAL NUMBER
6	1	G7036	BODY WELDED ASSY
7	2	R5016	RUBBER BONNET LATCH
8	1	R5049	SPRING CATCH
9	1	R5075	BUSH NYLON 27 DIA X 32
10	1	R5159	RUBBER TRAILER REST
11	1	R6001	TRAILER CATCH
12	1	R6015	PLATE CHECKER FOOT PAD

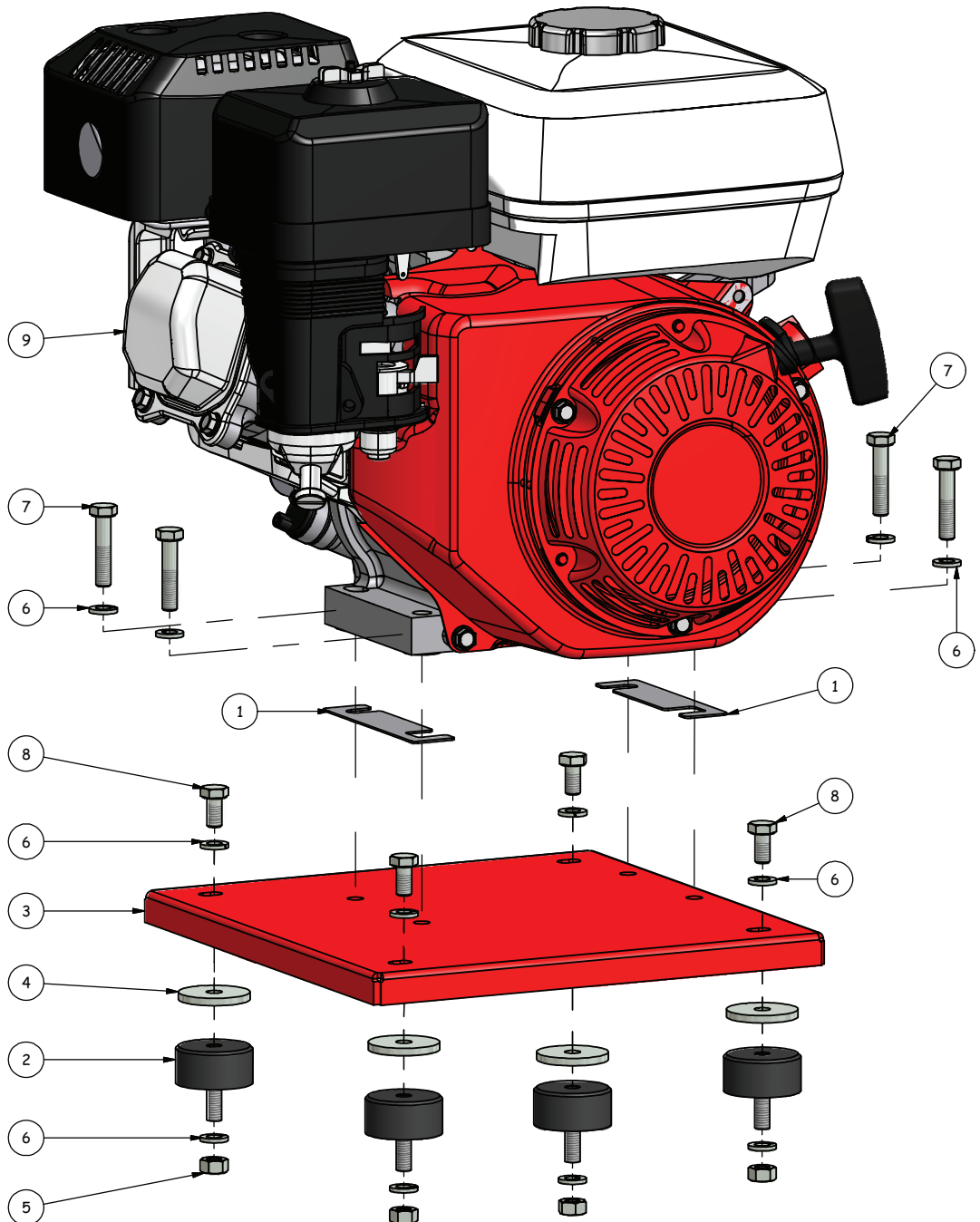


PARTS LIST CONTINUED			
ITEM	QTY	STOCK NUMBER	TITLE
13	1	R6017	DRAWBAR CATCH SAFETY PIN & CHAIN
14	1	R8081	10-24x16 TEK SCREW ZP
15	1	R6023	PLATE PARK BRAKE
16	1	R6024	PLATE MOVE RIGHT
17	1	R6025	PLATE MOVE LEFT
18	1	R8056	3/8 UNF NYLOC T-TYPE NUT
19	1	R8072	3/8 x 2.1/2 UNF BOLT ZP
20	2	R8075	M4 x 40 GOTTER PIN ZP
21	8	R8076	RIVET ALUMINIUM 6-3
22	10	R8078	RIVET ALUMINIUM BLK 4-4
23	2	R8082	CIRCLIP EXT BLK 30mm



# Engine

HONDA ENGINE MOUNTING - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	2	R5085	ADJUSTING SHIM ENGINE MOUNT
2	4	R5142	RUBBER ISOLATION ENGINE MOUNT
3	1	R5149	ENGINE MOUNT PLATE WELDED ASSY
4	4	R6068	WASHER ZP 38 OD X 8.5 ID X 4 PACKER ENG MNT
5	4	R8043	M8 HEX NUT ZP
6	12	R8051	5/16 SPRING WASHER ZP
7	4	R8065	5/16 x 1 1/2 UNF BOLT ZP
8	4	R8083	M8 x 16 BOLT ZP
9	1	R9001	6X200 ENGINE HONDA



# Seat & Frame

SEAT ASSEMBLY COMPLETE - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	2	E7045	LIGHT LED
2	1	E7067	LIGHT SWITCH
3	1	R5016	HOLD DOWN RUBBER STRAP
4	1	R5129	METER HOUR TACHO
5	1	R5239	RUBBER LATCH HOOK
6	1	R6013	BUFFER STOP UNDER BODY
7	1	R8024	SEAT NO ARMS MSC
8	1	R8025	ARM REST RH SEAT MSC
9	1	R8026	ARM REST LH SEAT MSC
10	2	R8046	5/16 x 0.75 WASHER ZP
11	2	R8048	3/8 x 3/4 WASHER ZP
12	6	R8051	5/16 SPRING WASHER ZP
13	2	R8076	RIVET ALUMINIUM 6-3

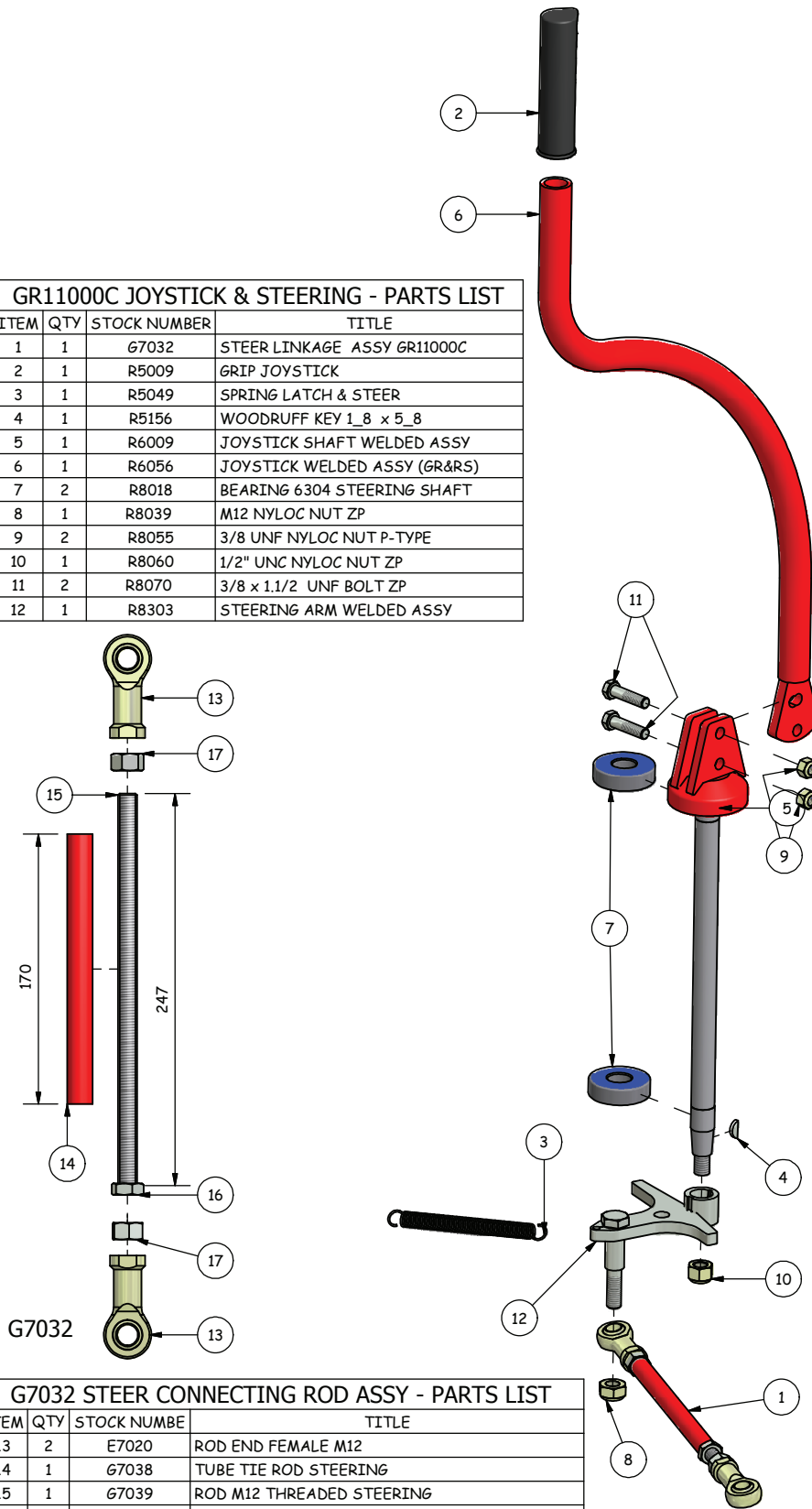
SEAT ASSEMBLY COMPLETE - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
14	5	R8055	3/8 UNF NYLOC NUT P-TYPE
15	2	R8067	3/8 x 1 UNF HEX BOLT ZP
16	6	R8068	5/16 x 3/4 UNC BOLT ZP
17	1	R8075	M4 x 40 COTTER PIN ZP
18	2	R8077	5-4 RIVET ALUMINIUM
19	2	R8095	5/16 x 2.0 UNF BOLT ZP
20	2	R8175	5/16 HEX NUT UNF ZP
21	2	R8245	5/16 UNC NYLOC NUT
22	1	R8256	M8 NYLOC NUT ZP
23	1	R8270	WIRE LOOM FOR LIGHTS
24	1	R8274	SEAT FRAME WELDED ASSY
25	1	R8275	SEAT BASE PLATE WELDED ASSY
26	1	R8296	SEAT COMPLETE WITH ARM RESTS



**LIGHTS ARE OPTIONAL  
& COME AS A KIT  
THE KIT INCLUDES ITEMS  
1, 2, 10, 12, 16, 19, 20, 21 & 23.  
FOR OLDER MODELS ADD ITEMS  
11, 14, 15 & 25.**

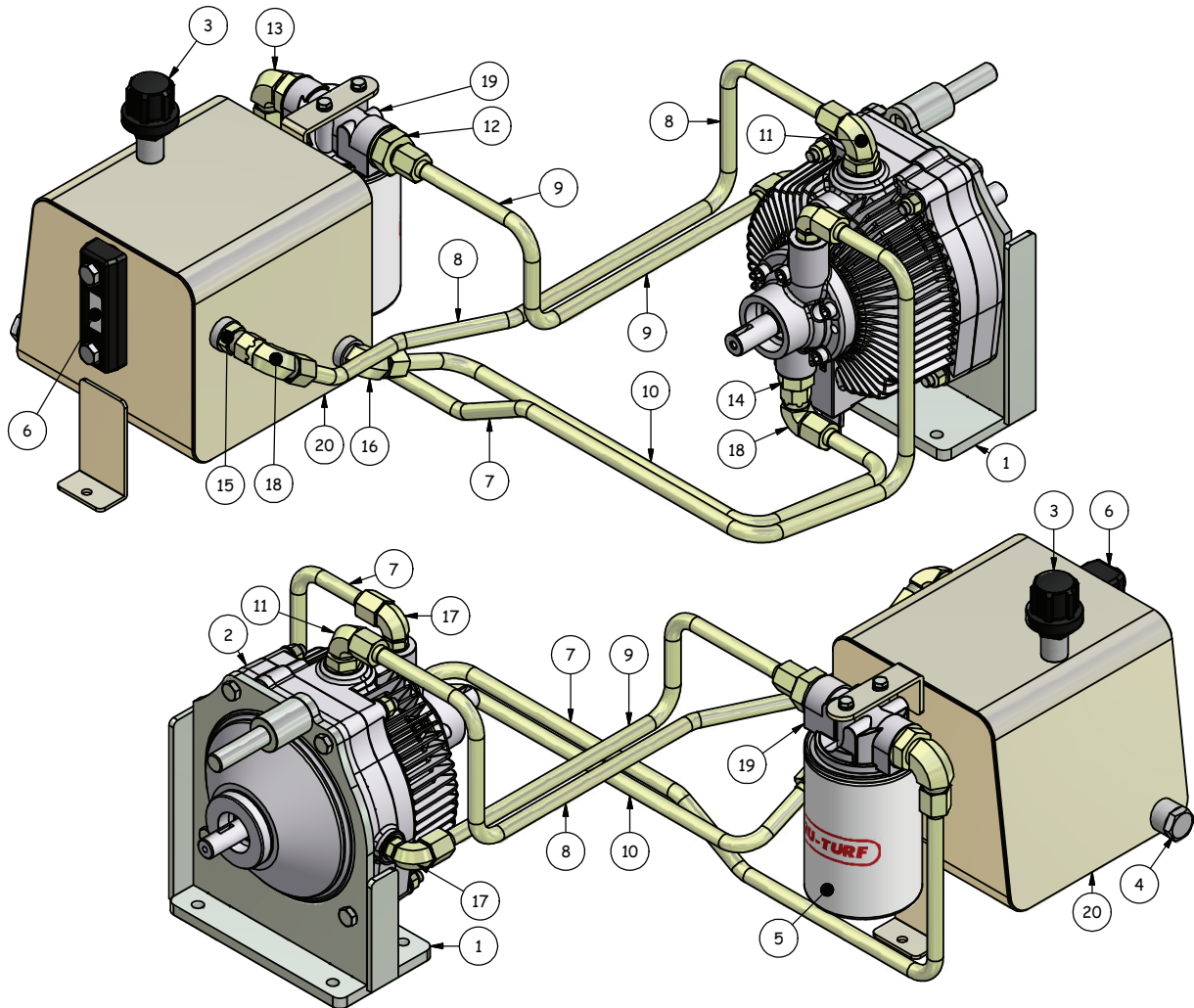
# Joystick & Steering Components

GR11000C JOYSTICK & STEERING - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	G7032	STEER LINKAGE ASSY GR11000C
2	1	R5009	GRIP JOYSTICK
3	1	R5049	SPRING LATCH & STEER
4	1	R5156	WOODRUFF KEY 1_8 x 5_8
5	1	R6009	JOYSTICK SHAFT WELDED ASSY
6	1	R6056	JOYSTICK WELDED ASSY (GR&RS)
7	2	R8018	BEARING 6304 STEERING SHAFT
8	1	R8039	M12 NYLOC NUT ZP
9	2	R8055	3/8 UNF NYLOC NUT P-TYPE
10	1	R8060	1/2" UNC NYLOC NUT ZP
11	2	R8070	3/8 x 1.1/2 UNF BOLT ZP
12	1	R8303	STEERING ARM WELDED ASSY



G7032 STEER CONNECTING ROD ASSY - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
13	2	E7020	ROD END FEMALE M12
14	1	G7038	TUBE TIE ROD STEERING
15	1	G7039	ROD M12 THREADED STEERING
16	1	R8086	M12 HALF NUT ZP
17	2	R8087	M12 FULL NUT ZP

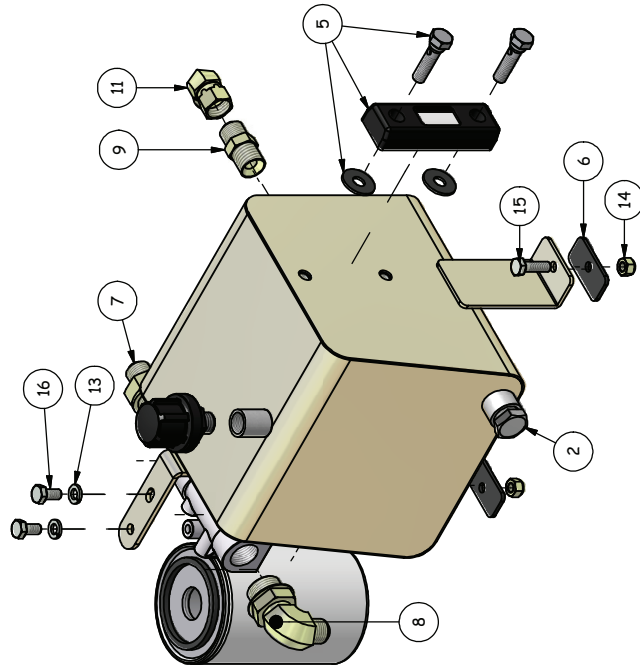
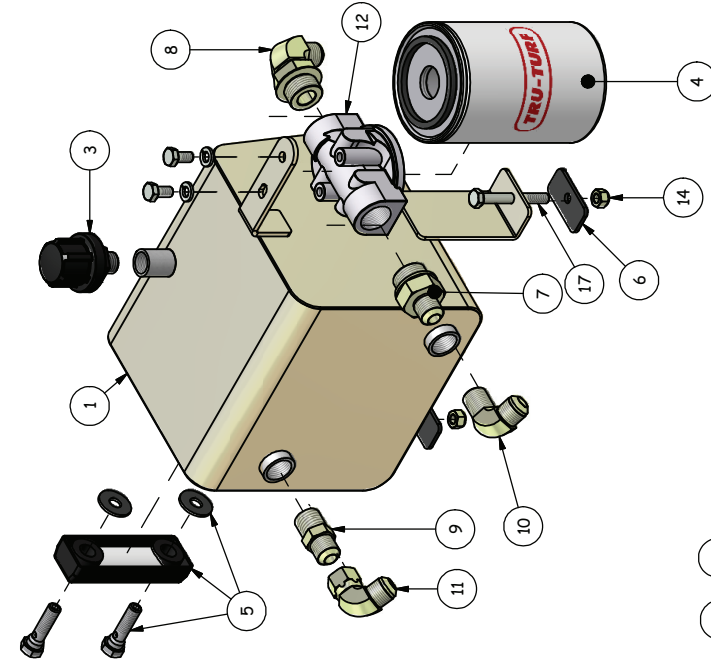
# Oil Tank & Pipes



TRANSMISSION, TANK & OIL PIPES ASSEMBLY - PARTS LIST

ITEM	QTY	STOCK NUMBER	TITLE
1	1	R5131	EATON 11 TRANSMISSION BRKT WELDED ASSY
2	1	R5133	EATON 11 HYDROSTATIC TRANSMISSION
3	1	R5144	BREATHER OIL TANK
4	1	R5145	PLUG TANK DRAIN
5	1	R5147	CARTRIDGE FILTER TRANSMISSION OIL TANK
6	1	R5148	SIGHT GAUGE TRANSMISSION OIL ASSY
7	1	R5152	PIPE PUMP TO OIL FILTER
8	1	R5153	PIPE TRANSMISSION TO OIL TANK
9	1	R5154	PIPE OIL FILTER TO ACCELERATION VALVES
10	1	R5178	PIPE OIL TANK TO TRANSMISSION
11	1	R5227	FITTING 90 DEG ELBOW M-10 ORB TO M-8 JIC (G-NP-90-1214)
12	1	R5228	FITTING STRAIGHT M-12 BSPP-ORR TO M-8 JIC WITH DOWTY SEAL (B-G-1212)
13	1	R5229	FITTING 90 DEG ELBOW M-12 ORB TO M-8 JIC WITH DOWTY SEAL (GPB-90-1212)
14	1	R5230	FITTING STRAIGHT M-10 ORB TO M-8 JIC (S90-1214)
15	1	R5231	FITTING STRAIGHT M 1/2" NPT TO M-8 JIC (A-G-0812)
16	1	R5232	FITTING 90 DEG ELBOW M-8 JIC TO M 1/2" NPT (A-G-90-0812)
17	2	R5233	FITTING 90 DEG ELBOW M-6 ORB TO M-8 JIC (G-NP-90-1209)
18	2	R5234	FITTING 90 DEG ELBOW F-8 JIC SWIVEL TO M-8 JIC (G-J-90-1212)
19	1	R8013	HOUSING FILTER TRANSMISSION OIL TANK
20	1	R5143	OIL TANK TRANSMISSION WELDED ASSY

# Oil Tank & Fittings

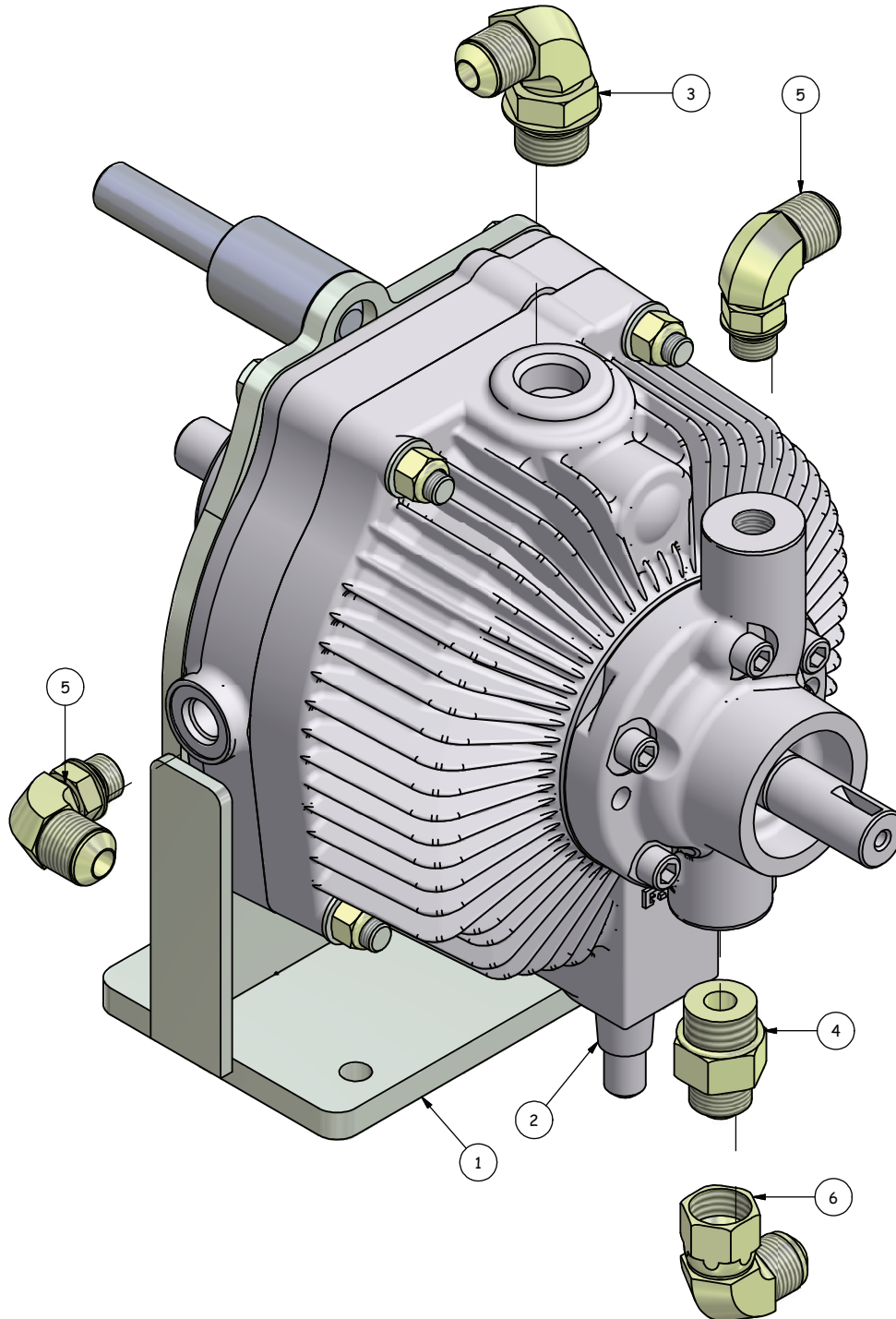


OIL TANK & FITTINGS - PARTS LIST		TITLE
ITEM	QTY	STOCK NUMBER
1	1	R5143
2	1	R5145
3	1	R5144
4	1	R5147
5	1	R5148
6	2	R5197
7	1	R5228
8	1	R5229
9	1	R5231
10	1	R5232
11	2	R5234
12	1	R8013
13	2	R8051
14	2	R8054
15	1	R8064
16	2	R8083
17	1	R8189

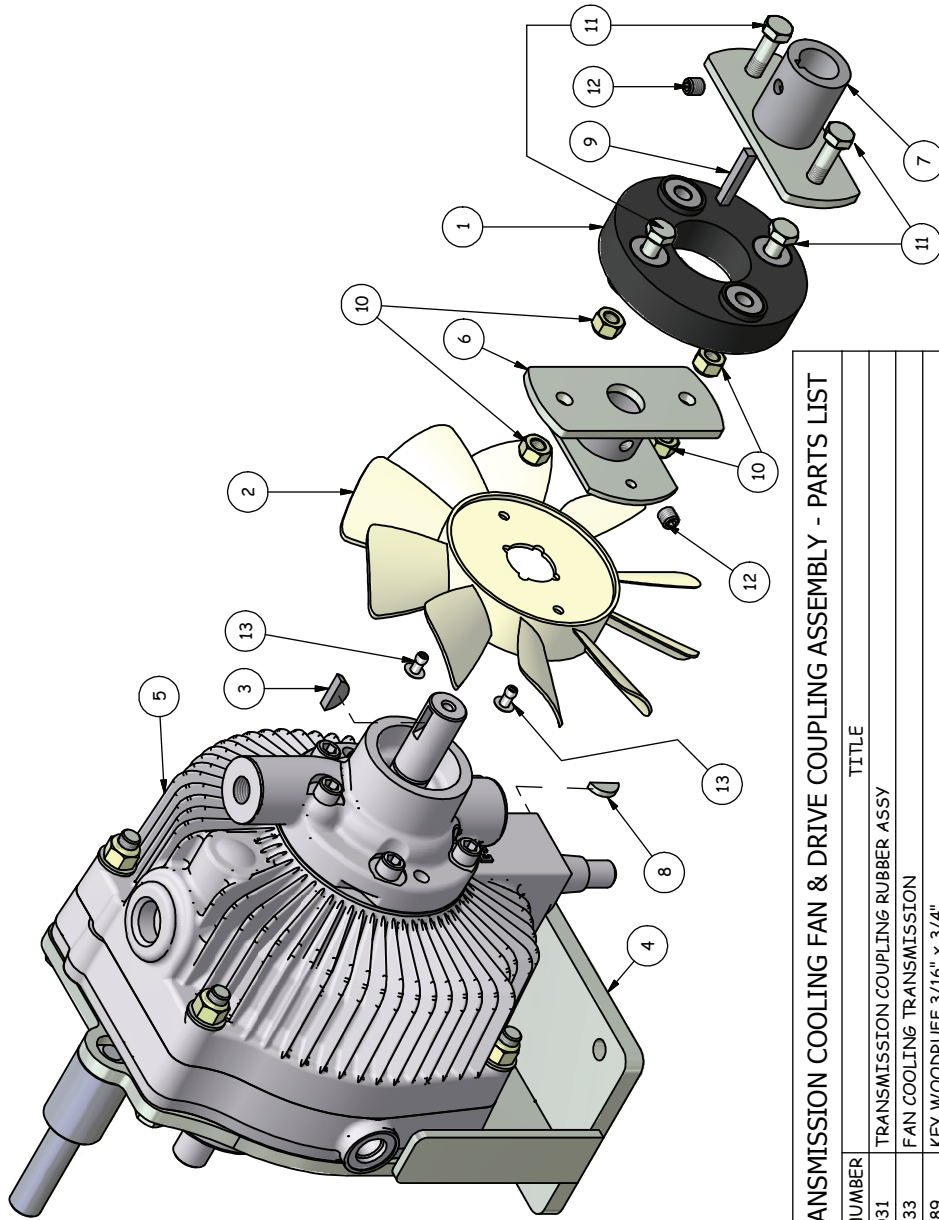
		OIL TANK WELDED ASSEMBLY
		PLUG TANK DRAIN
		BREATHER OIL TANK
		CARTRIDGE FILTER TRANSMISSION OIL TANK
		SIGHT GAUGE TRANSMISSION OIL ASSY
		RUBBER STRIP OIL TANK MOUNT
		FITTING STRAIGHT M-12 BSPP-ORR TO M-8 JIC WITH DOWTY SEAL (B-G-1212)
		FITTING 90 DEG ELBOW M-12 ORB TO M-8 JIC WITH DOWTY SEAL (GFB-90-1212)
		FITTING STRAIGHT M 1/2" NPT TO M-8 JIC (A-G-0812)
		FITTING 90 DEG ELBOW M-8 JIC TO M 1/2" NPT (A-G-90-0812)
		FITTING 90 DEG ELBOW F-8 JIC SWIVEL TO M-8 JIC (G-J-90-1212)
		HOUSING FILTER TRANSMISSION OIL TANK
		5/16 SPRING WASHER ZP
		5/16 UNF NYLOC NUT
		5/16 x 1.0 UNF BOLT ZP
		M8 x 16 BOLT ZP
		5/16 x 2-1/2 UNF HEX BOLT

# Transmission

EATON 11 TRANSMISSION - OIL PIPE FITTINGS PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	R5131	EATON 11 TRANSMISSION BRKT WELDED ASSY
2	1	R5133	EATON 11 HYDROSTATIC TRANSMISSION
3	1	R5227	FITTING 90 DEG ELBOW M-10 ORB TO M-8 JIC (G-NP-90-1214)
4	1	R5230	FITTING STRAIGHT M-10 ORB TO M-8 JIC (S90-1214)
5	2	R5233	FITTING 90 DEG ELBOW M-6 ORB TO M-8 JIC (G-NP-90-1209)
6	1	R5234	FITTING 90 DEG ELBOW F-8 JIC SWIVEL TO M-8 JIC (G-J-90-1212)



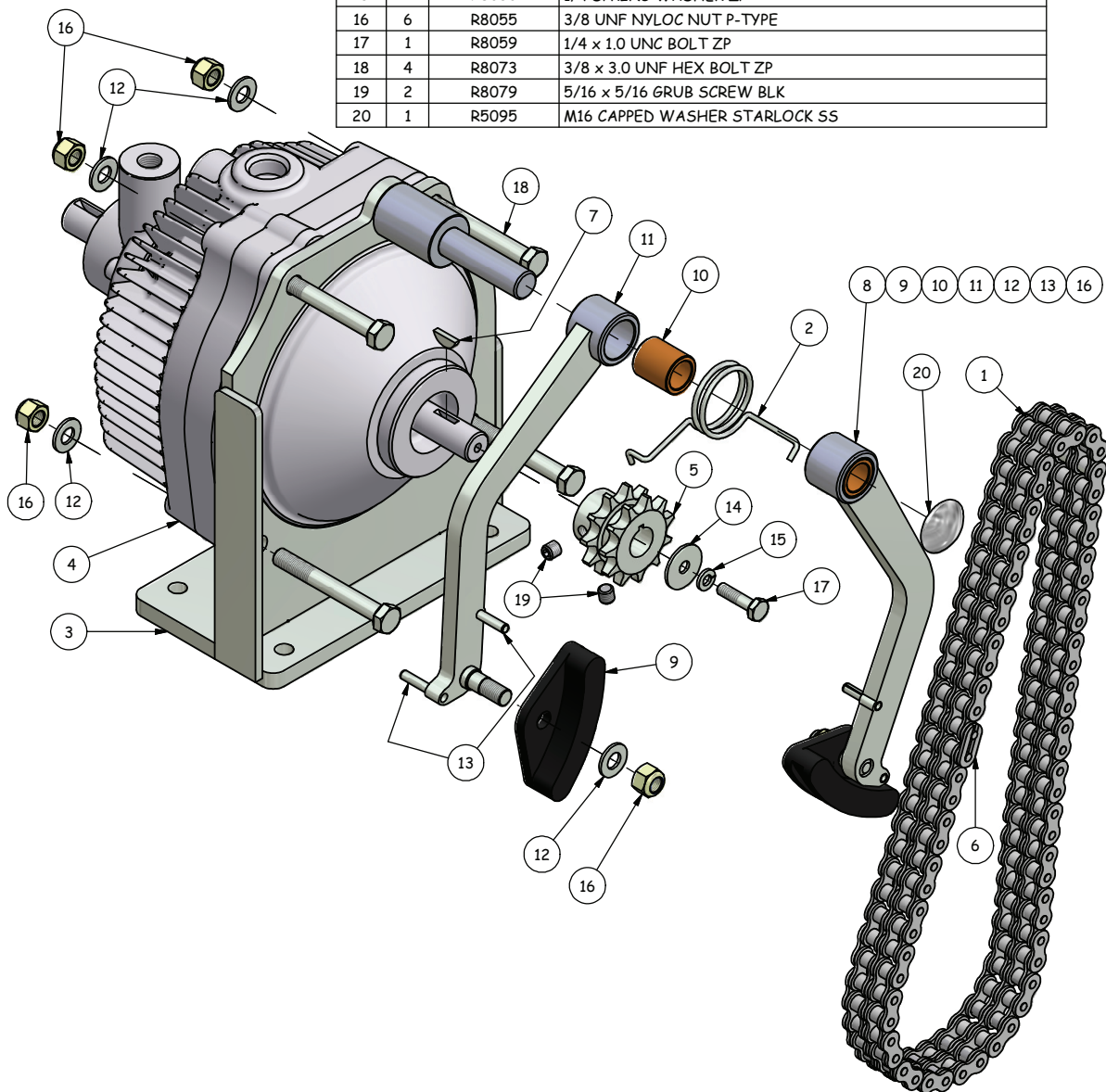
# Fan & Coupling



ITEM QTY	STOCK NUMBER	TITLE
1	R5031	TRANSMISSION COUPLING RUBBER ASSY
2	R5033	FAN COOLING TRANSMISSION
3	R5089	KEY WOODRUFF 3/16" x 3/4"
4	R5131	EATON 11 TRANSMISSION BRKT WELDED ASSY
5	R5133	EATON 11 HYDROSTATIC TRANSMISSION
6	R5139	COUPLING WELDED ASSY EATON 11 TRANS
7	R5140	ENGINE DRIVE COUPLING WELDED ASSY HONDA 5.5HP
8	R5156	WOODRUFF KEY 1.8 x 5.8
9	R5195	KEY SHAFT HONDA ENGINE
10	R8054	5/16 UNF NYLOC NUT
11	R8065	5/16 x 1.1/2 UNF BOLT ZP
12	R8079	5/16 x 5/16 GRUB SCREW BLK
13	R8134	6-6 RIVET

# Chain Tensioner & Chain

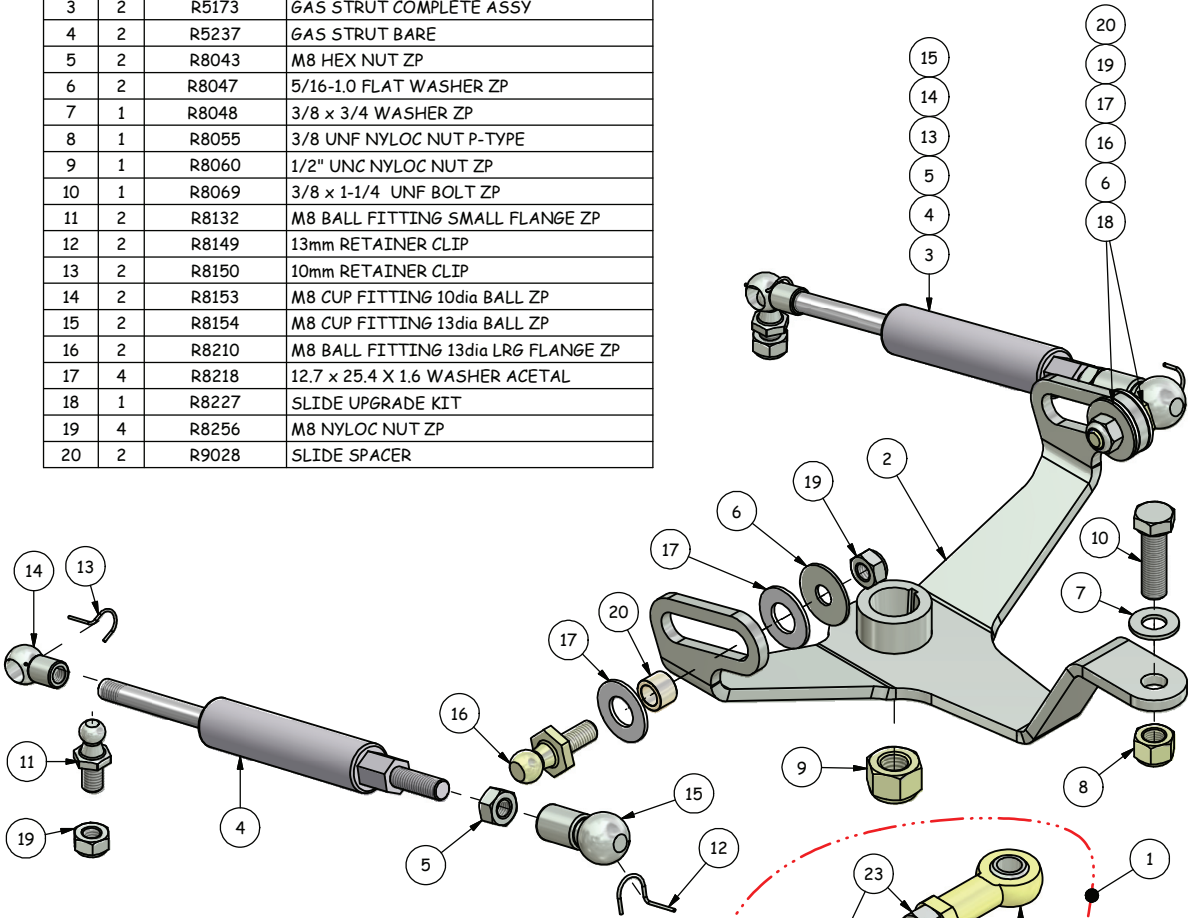
RS48-11C & GR1100C CHAIN & TENSIONERS - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	E7050	DRIVE CHAIN
2	1	R5094	SPRING TENSIONED CHAIN ARM
3	1	R5131	EATON 11 TRANSMISSION BRKT WELDED ASSY
4	1	R5133	EATON 11 HYDROSTATIC TRANSMISSION
5	1	R5136	SPROCKET 11TOOTH PINION TRANSMISSION
6	1	R5138	JOINER LINK DRIVE CHAIN
7	1	R5156	WOODRUFF KEY 1_8 x 5_8
8	2	R5251	CHAIN TENSIONER ASSY COMPLETE
9	2	E7044	CHAIN TENSION GUIDE
10	2	R5099	BUSH BRONZE CHAIN TENSIONER ARMS
11	2	R5132	CHAIN TENSION ARM WELDED ASSY
12	6	R8048	3/8 x 3/4 WASHER ZP
13	4	R8293	ROLL SPRING PIN ZP M5 x 24
14	1	R8045	1/4 x 1.0 WASHER ZP
15	1	R8050	1/4 SPRING WASHER ZP
16	6	R8055	3/8 UNF NYLOC NUT P-TYPE
17	1	R8059	1/4 x 1.0 UNC BOLT ZP
18	4	R8073	3/8 x 3.0 UNF HEX BOLT ZP
19	2	R8079	5/16 x 5/16 GRUB SCREW BLK
20	1	R5095	M16 CAPPED WASHER STARLOCK SS





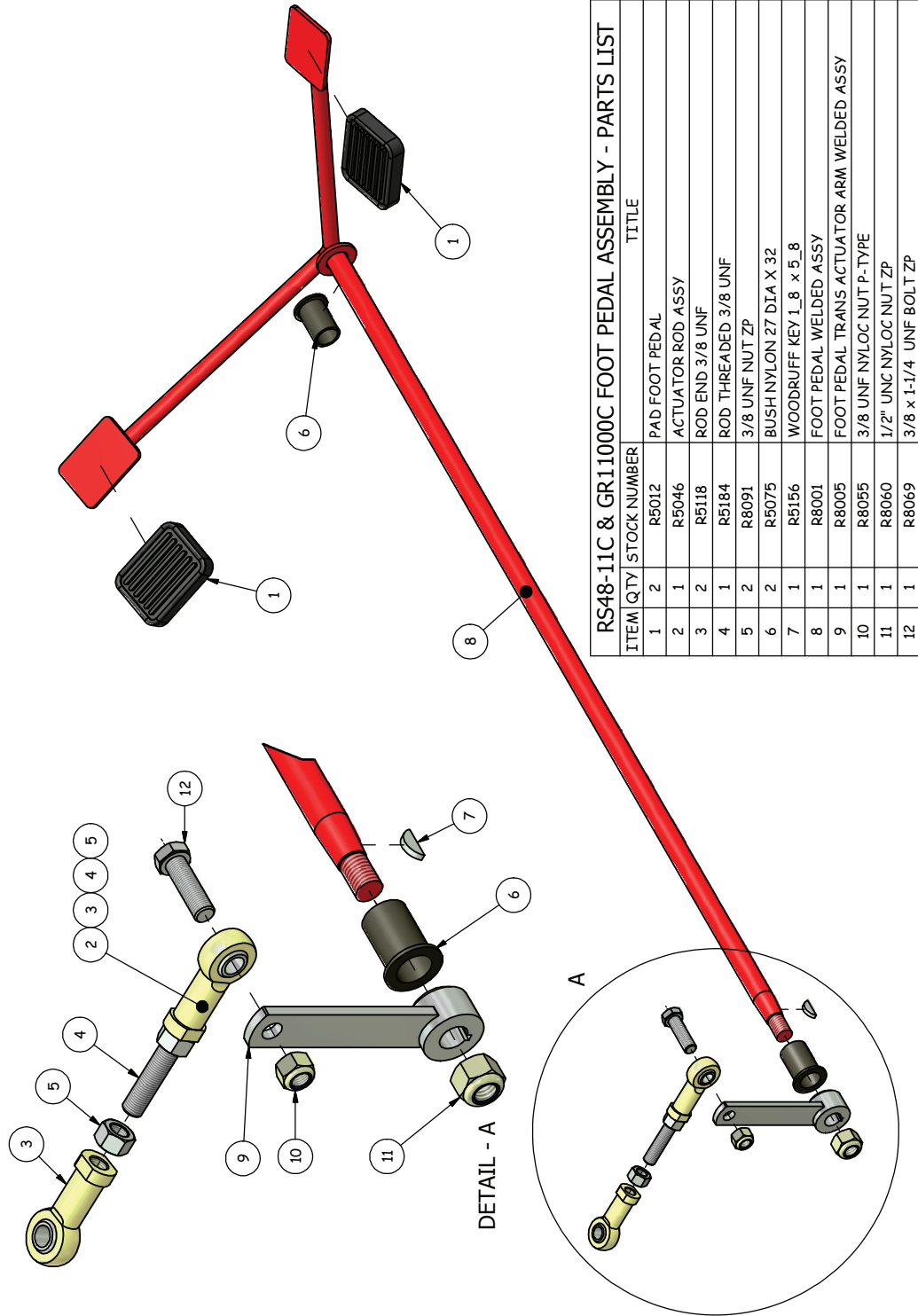
# Yoke & Struts

YOKE & STRUTS - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	R5046	CONNECTING ROD ASSY
2	1	R5171	TRANSMISSION YOKE
3	2	R5173	GAS STRUT COMPLETE ASSY
4	2	R5237	GAS STRUT BARE
5	2	R8043	M8 HEX NUT ZP
6	2	R8047	5/16-1.0 FLAT WASHER ZP
7	1	R8048	3/8 x 3/4 WASHER ZP
8	1	R8055	3/8 UNF NYLOC NUT P-TYPE
9	1	R8060	1/2" UNC NYLOC NUT ZP
10	1	R8069	3/8 x 1-1/4 UNF BOLT ZP
11	2	R8132	M8 BALL FITTING SMALL FLANGE ZP
12	2	R8149	13mm RETAINER CLIP
13	2	R8150	10mm RETAINER CLIP
14	2	R8153	M8 CUP FITTING 10dia BALL ZP
15	2	R8154	M8 CUP FITTING 13dia BALL ZP
16	2	R8210	M8 BALL FITTING 13dia LRG FLANGE ZP
17	4	R8218	12.7 x 25.4 X 1.6 WASHER ACETAL
18	1	R8227	SLIDE UPGRADE KIT
19	4	R8256	M8 NYLOC NUT ZP
20	2	R9028	SLIDE SPACER



R5046 TRANSMISSION CONNECTING ROD - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
21	2	R5118	ROD END 3/8 UNF
22	1	R5184	ROD THREADED 3/8 UNF
23	2	R8091	3/8 UNF NUT ZP

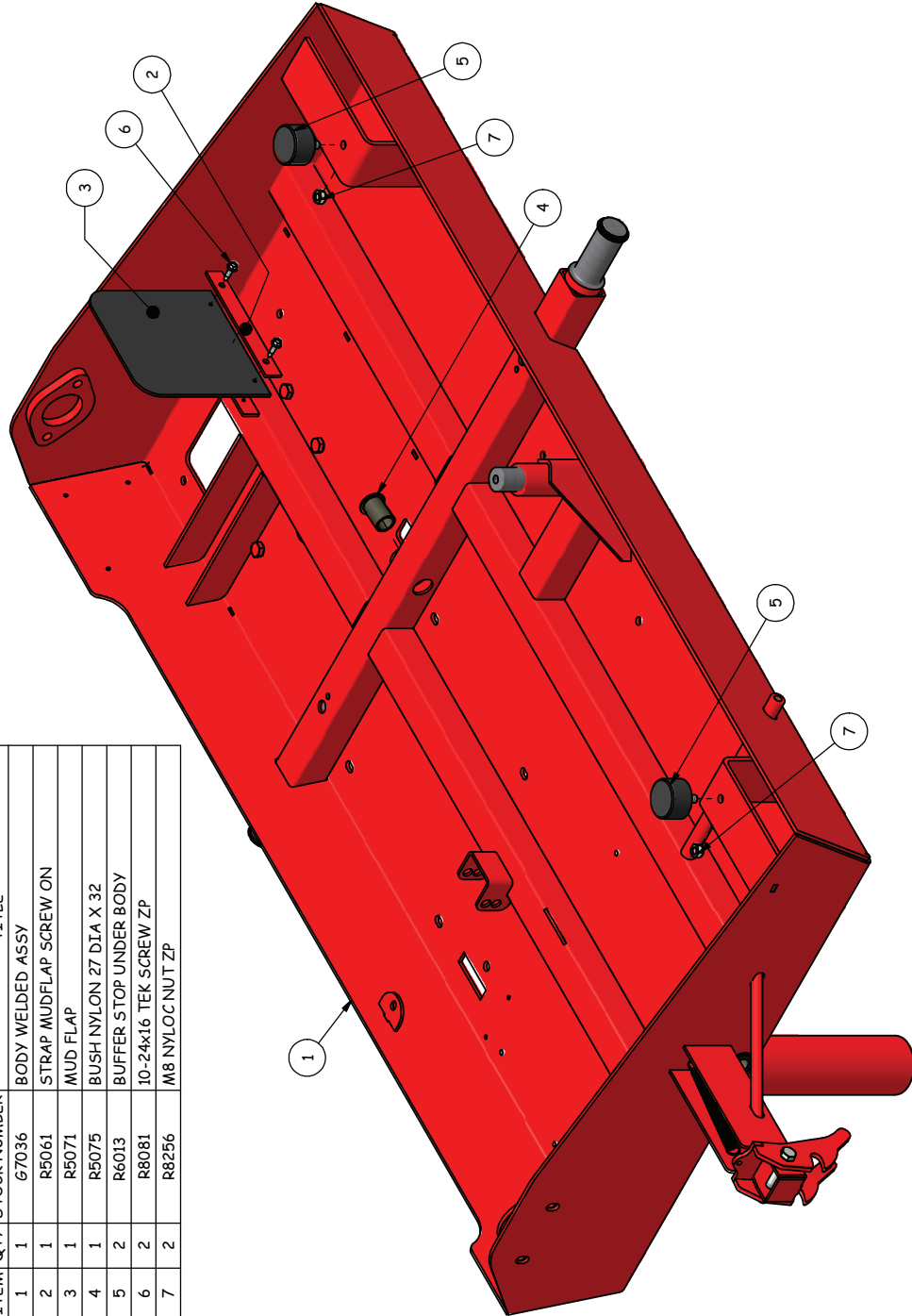
# Foot Pedal Control



ITEM	QTY	STOCK NUMBER	TITLE
1	2	R5012	PAD FOOT PEDAL
2	1	R5046	ACTUATOR ROD ASSY
3	2	R5118	ROD END 3/8 UNF
4	1	R5184	ROD THREADED 3/8 UNF
5	2	R8091	3/8 UNF NUT ZP
6	2	R5075	BUSH NYLON 27 DIA X 32
7	1	R5156	WOODRUFF KEY 1.8 x 5.8
8	1	R8001	FOOT PEDAL WELDED ASSY
9	1	R8005	FOOT PEDAL TRANS ACTUATOR ARM WELDED ASSY
10	1	R8055	3/8 UNF NYLOC NUT P-TYPE
11	1	R8060	1/2" UNC NYLOC NUT ZP
12	1	R8069	3/8 x 1-1/4 UNF BOLT ZP

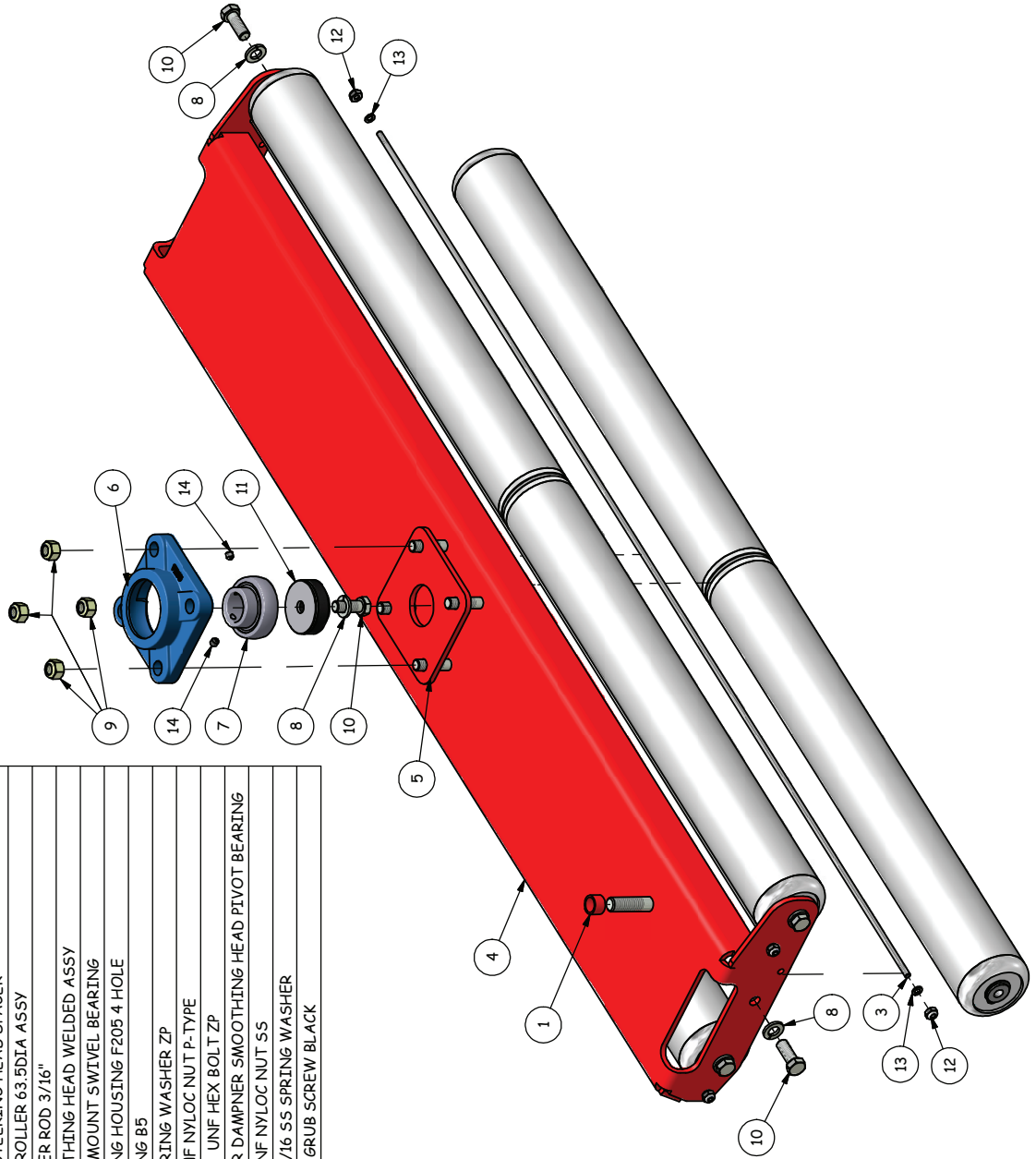
# Under Body

GR11000C UNDER BODY - PARTS LIST		
ITEM	QTY / STOCK NUMBER	TITLE
1	1	G7036 BODY WELDED ASSY
2	1	R5061 STRAP MUDFLAP SCREW ON
3	1	R5071 MUD FLAP
4	1	R5075 BUSH NYLON 27 DIA X 32
5	2	R6013 BUFFER STOP UNDER BODY
6	2	R8081 10-24x16 TEK SCREW ZP
7	2	R8256 M8 NYLOC NUT ZP



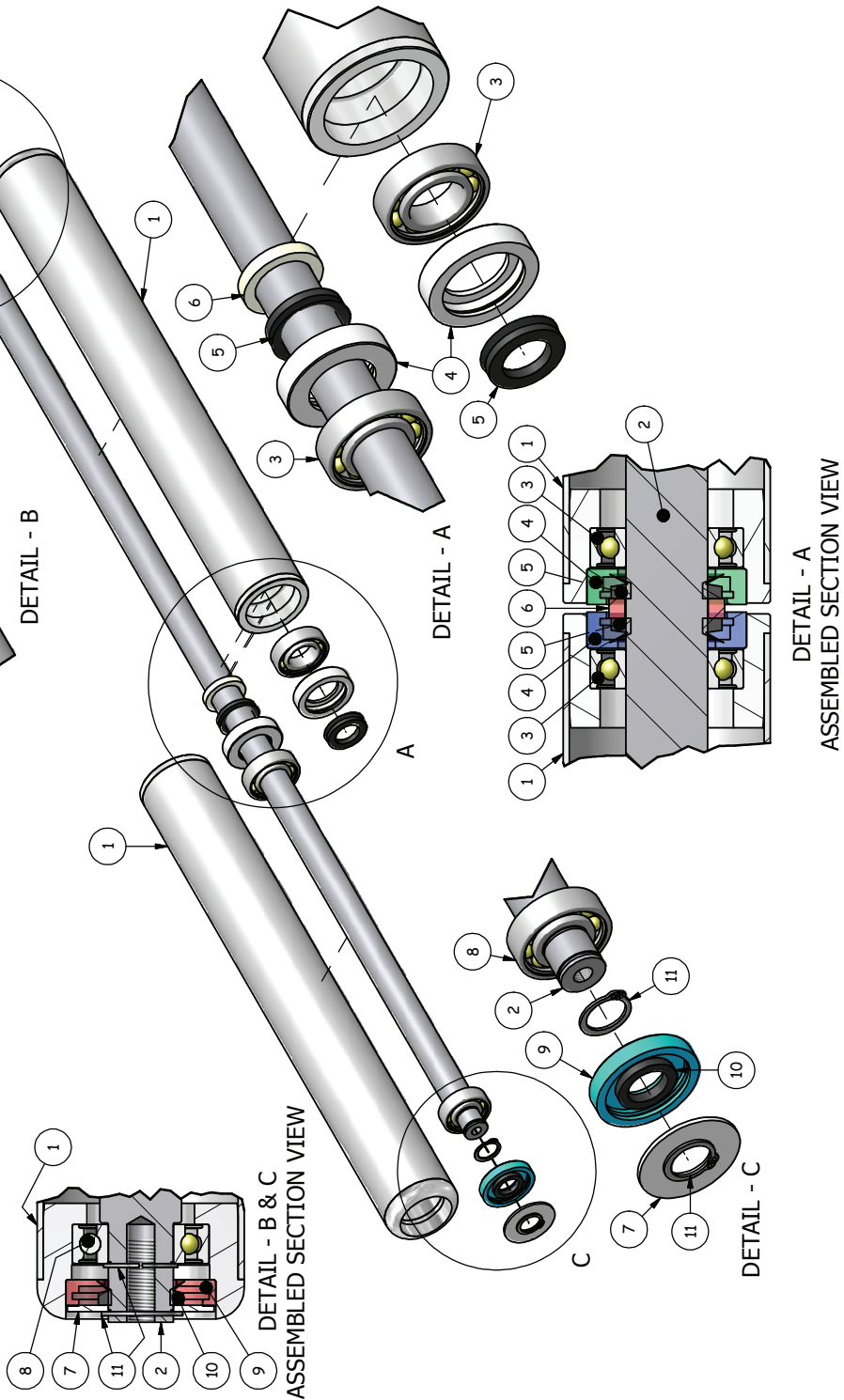
# Smoothing Head

GR11000C SMOOTHING HEAD ASSY (G7035) - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	E7028	TUBE STEERING HEAD SPACER
2	3	G7024	SPLIT ROLLER 63.5DIA ASSY
3	3	G7033	SCRAPER ROD 3/16"
4	1	G7037	SMOOTHING HEAD WELDED ASSY
5	1	G7041	PLATE MOUNT SWIVEL BEARING
6	1	R5067	BEARING HOUSING F205 4 HOLE
7	1	R5070	BEARING B5
8	7	R8052	3/8 SPRING WASHER ZP
9	4	R8055	3/8 UNF NYLOC NUT P-TYPE
10	7	R8067	3/8 x 1 UNF HEX BOLT ZP
11	1	R8225	RUBBER DAMPNER SMOOTHING HEAD PIVOT BEARING
12	6	R8250	3/16 UNF NYLOC NUT SS
13	6	R8251	3/16x7/16 SS SPRING WASHER
14	2	R8312	M6 x 6 GRUB SCREW BLACK

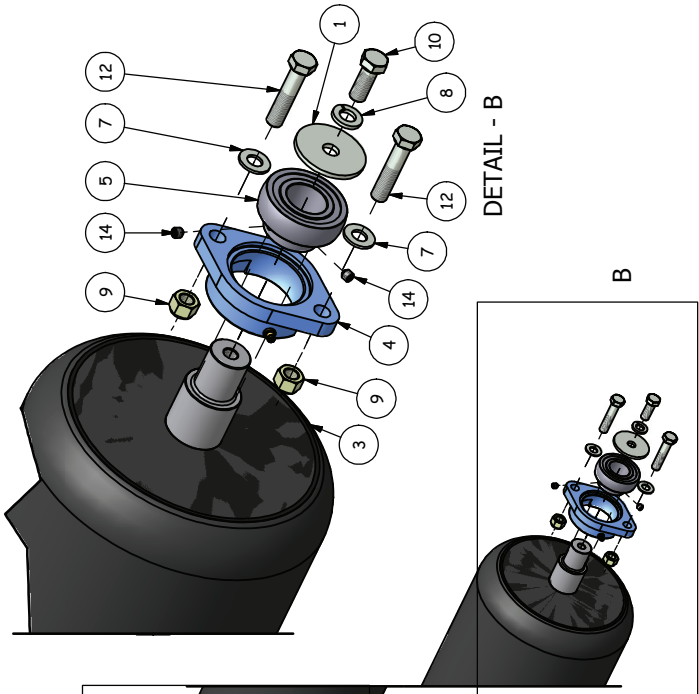


# Drive Roller

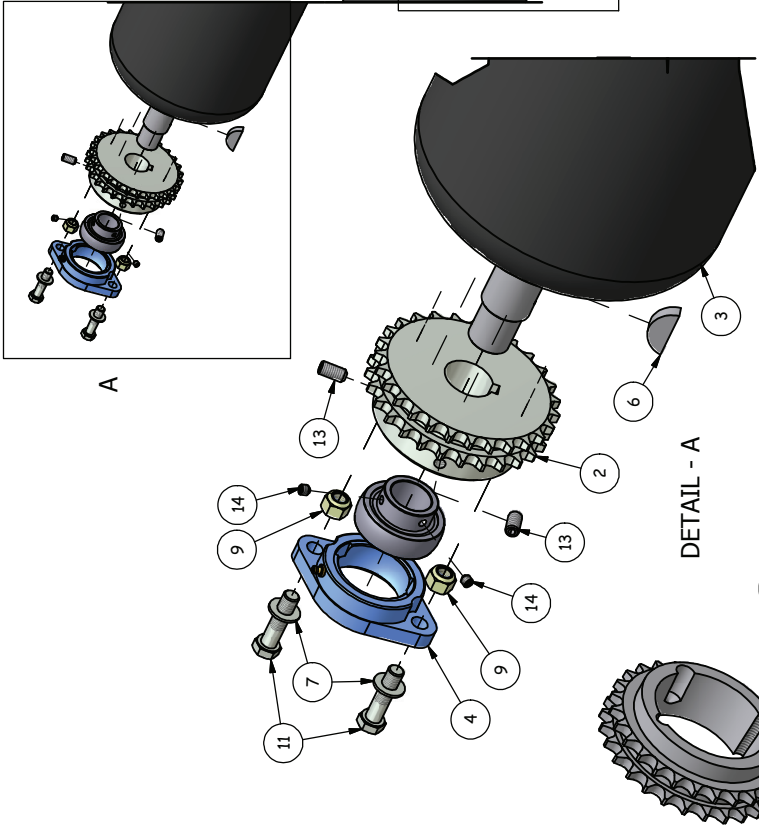
GR11000C SPLIT ROLLER ASSY (G7024) - PARTS LIST		TITLE
ITEM	QTY	STOCK NUMBER
1	2	G7022
2	1	G7023
3	2	G7025
4	2	G7028
5	2	G7029
6	1	G7030
7	2	R8209
8	2	R8212
9	2	R8213
10	2	R8214
11	4	R8215



# Drive Roller Sprocket & Bearings

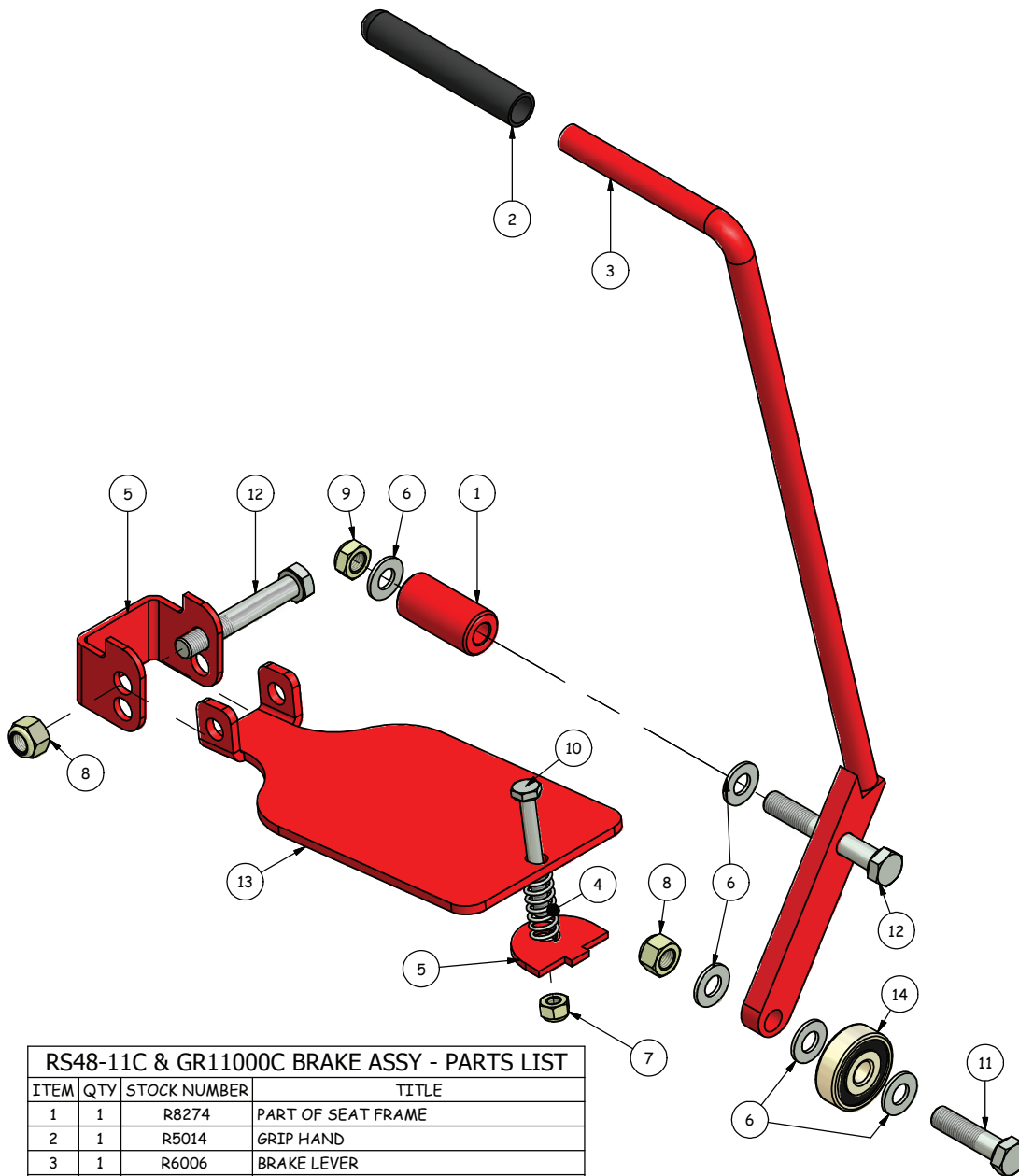


GR11000C DRIVE ROLLER - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	E7010	WASHER M10x43x3
2	1	E7131	SPROCKET DRIVE ROLLER
3	1	G7001	DRIVE ROLLER RUBBER COATED GR11000
4	2	R5068	BEARING HOUSING DRIVE ROLLER
5	2	R5070	BEARING B5
6	1	R5087	KEY WOODRUFF
7	4	R8048	3/8 x 3/4 WASHER ZP
8	1	R8052	3/8 SPRING WASHER ZP
9	4	R8055	3/8 UNF NYLOC NUT P-TYPE
10	1	R8067	3/8 x 1 UNF HEX BOLT ZP
11	2	R8070	3/8 x 1.1/2 UNF BOLT ZP
12	2	R8096	3/8 x 1-3/4 UNF BOLT ZP
13	2	R8208	M8 x 16 GRUB SCREW Cup Point
14	4	R8312	M6 x 6 GRUB SCREW BLACK



**R5141 & R5039A  
TAPER LOCK SPROCKET  
& BUSH WITH R8125  
7/16 GRUB SCREWS.  
HAVE BEEN REPLACED WITH ITEMS 2 & 13.**

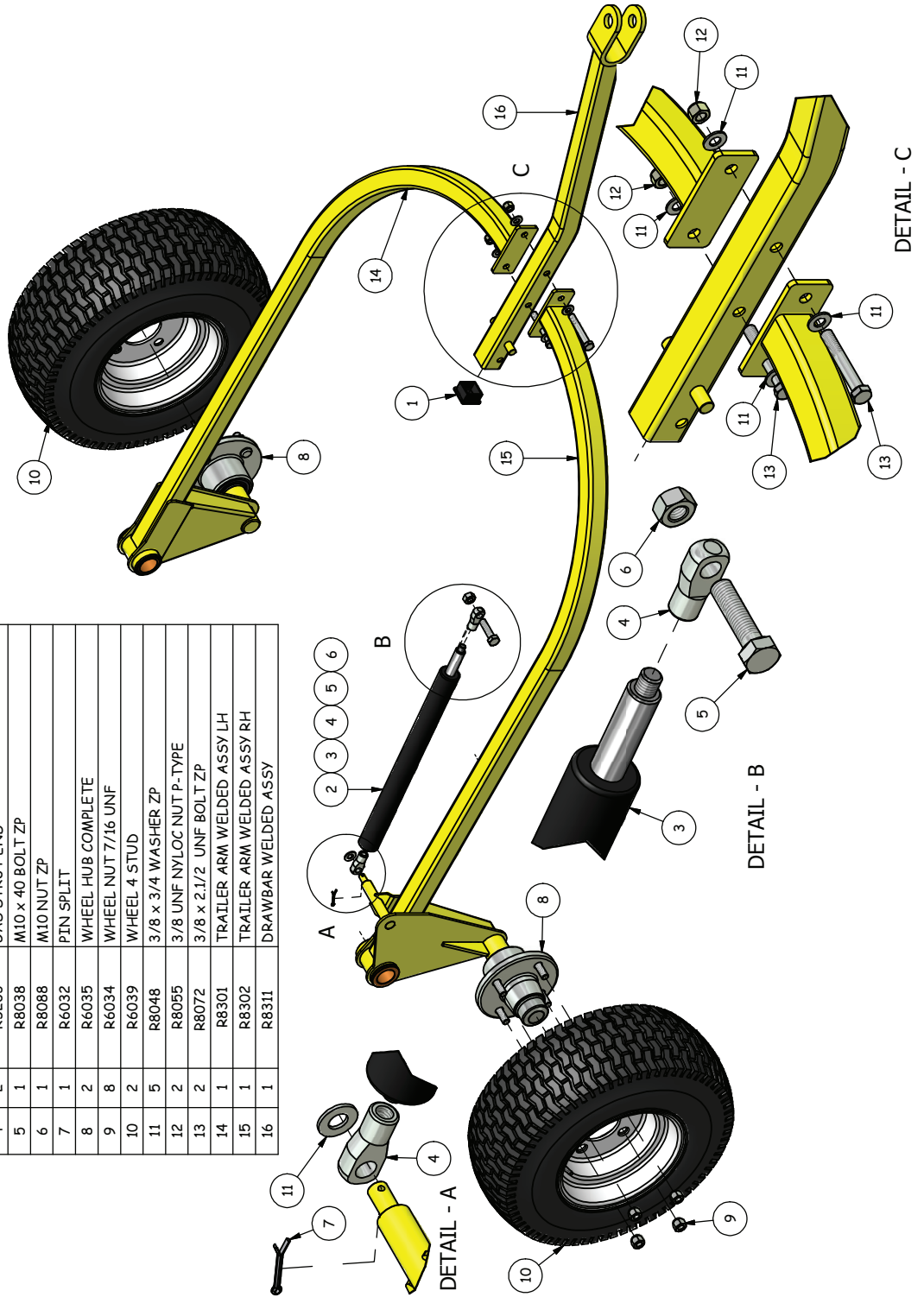
# Park Brake



RS48-11C & GR11000C BRAKE ASSY - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	R8274	PART OF SEAT FRAME
2	1	R5014	GRIP HAND
3	1	R6006	BRAKE LEVER
4	1	R6011	SPRING BRAKE
5	1	R8000	PART OF BODY
6	5	R8048	3/8 x 3/4 WASHER ZP
7	1	R8053	1/4 UNF NYLOC NUT
8	2	R8055	3/8 UNF NYLOC NUT P-TYPE
9	1	R8056	3/8 UNF NYLOC T-TYPE NUT
10	1	R8062	1/4 x 2.1/4 UNF BOLT ZP
11	1	R8070	3/8 x 1.1/2 UNF BOLT ZP
12	2	R8072	3/8 x 2.1/2 UNF BOLT ZP
13	1	R8280	BRAKE PLATE FOLDED
14	1	T7019	BEARING BRAKE

# Trailer Assembly

GR11000C TRAILER ASSY - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	R5025B	END CAP BLACK PLASTIC 35x35
2	1	R5210	GAS STRUT ASSY
3	1	R5202	GAS STRUT BODY TRAILER
4	2	R5203	GAS STRUT END
5	1	R8038	M10 x 40 BOLT ZP
6	1	R8088	M10 NUT ZP
7	1	R6032	PIN SPLIT
8	2	R6035	WHEEL HUB COMPLETE
9	8	R6034	WHEEL NUT 7/16 UNF
10	2	R6039	WHEEL 4 STUD
11	5	R8048	3/8 x 3/4 WASHER ZP
12	2	R8055	3/8 UNF NYLOC NUT P-TYPE
13	2	R8072	3/8 x 2.1/2 UNF BOLT ZP
14	1	R8301	TRAILER ARM WELDED ASSY LH
15	1	R8302	TRAILER ARM WELDED ASSY RH
16	1	R8311	DRAWBAR WELDED ASSY

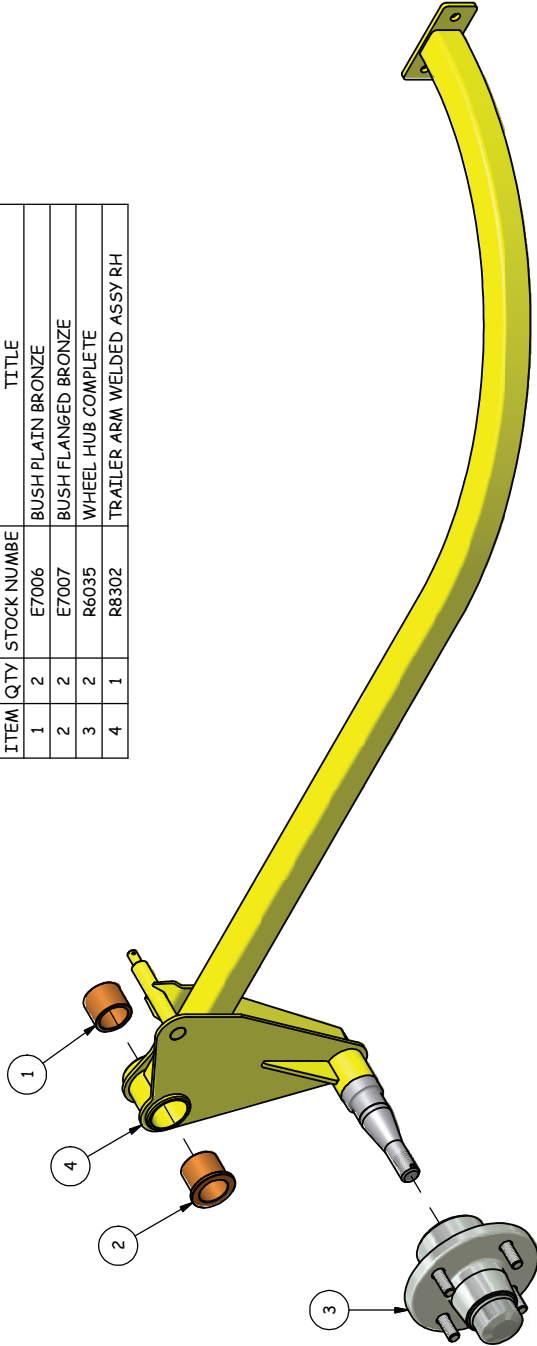




# Trailer Arm

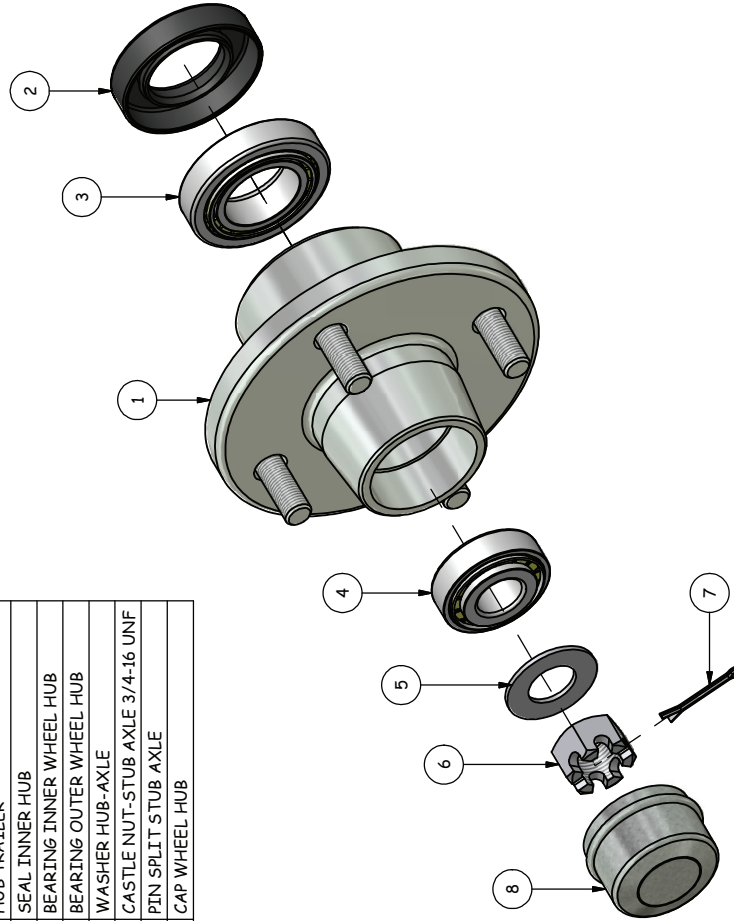
**R8302 TRAILER ARM ASSEMBLY - PARTS LIST**

ITEM	QTY	STOCK NUMBE	TITLE
1	2	E7006	BUSH PLAIN BRONZE
2	2	E7007	BUSH FLANGED BRONZE
3	2	R6035	WHEEL HUB COMPLETE
4	1	R8302	TRAILER ARM WELDED ASSY RH

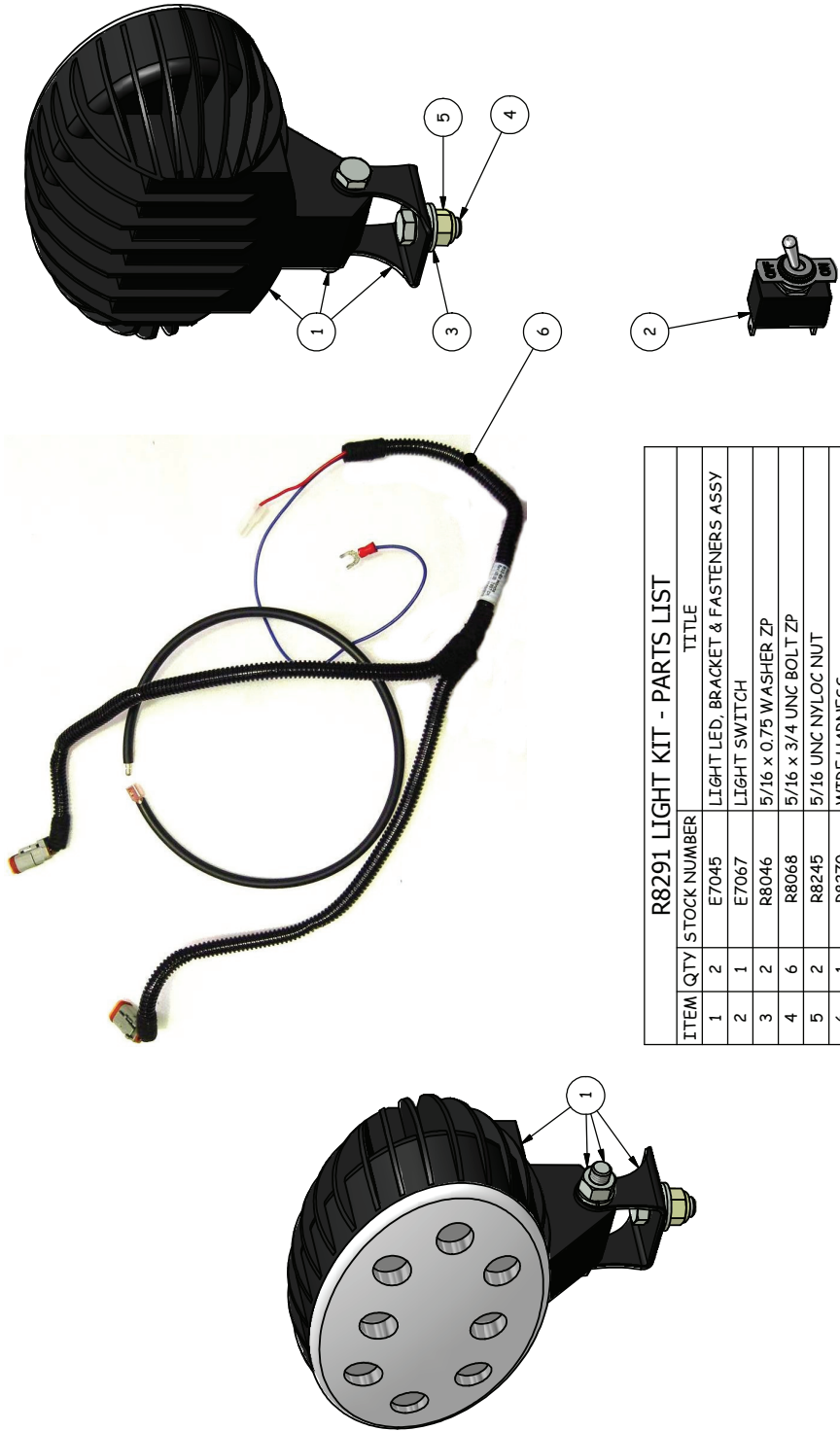


# Wheel Hub & Bearings

R6035 HUB COMPLETE - PARTS LIST			
ITEM	QTY	STOCK NUMBER	TITLE
1	1	R6026	HUB TRAILER
2	1	R6027	SEAL INNER HUB
3	1	R6028	BEARING INNER WHEEL HUB
4	1	R6029	BEARING OUTER WHEEL HUB
5	1	R6030	WASHER HUB-AXLE
6	1	R6031	CASTLE NUT-STUB AXLE 3/4-16 UNF
7	1	R6032	PIN SPLIT STUB AXLE
8	1	R6033	CAP WHEEL HUB



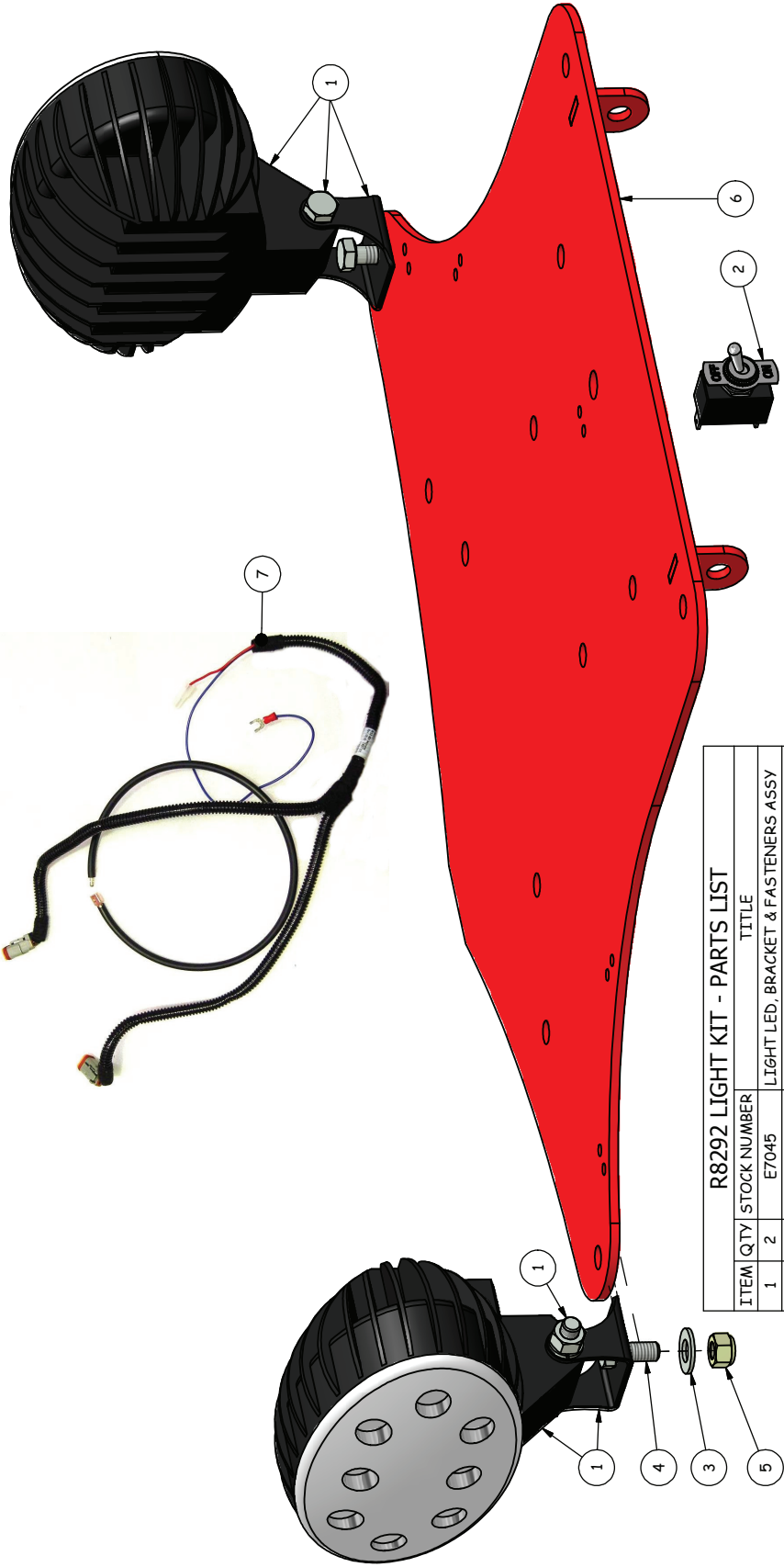
# Light Kit without base



R8291 LIGHT KIT - PARTS LIST		TITLE	
ITEM	QTY	STOCK NUMBER	
1	2	E7045	LIGHT LED, BRACKET & FASTENERS ASSY
2	1	E7067	LIGHT SWITCH
3	2	R8046	5/16 x 0.75 WASHER ZP
4	6	R8068	5/16 x 3/4 UNC BOLT ZP
5	2	R8245	5/16 UNC NYLOC NUT
6	1	R8270	WIRE HARNESS

# Light Kit with base

SUITS ALL MODELS EXCEPT R52-ELT.  
 TO ENSURE KIT WILL FIT YOUR MACHINE  
 PLEASE PROVIDE MACHINE SERIAL NUMBER WHEN ORDERING KIT.  
 OLDER MODELS CAN BE RETROFITTED BUT WILL REQUIRE  
 A 2 MONTH LEAD TIME TO MANUFACTURE.



R8292 LIGHT KIT - PARTS LIST		TITLE	
ITEM	QTY	STOCK NUMBER	
1	2	E7045	LIGHT LED, BRACKET & FASTENERS ASSY
2	1	E7067	LIGHT SWITCH
3	2	R8046	5/16 x 0.75 WASHER ZP
4	2	R8068	5/16 x 3/4 UNC BOLT ZP
5	2	R8245	5/16 UNC NYLOC NUT
6	1	R8275	SEAT BASE WELDED ASSY
7	1	R8270	WIRE HARNESS



G7012

R6025



R6024



R6023



R6040



R6041

# Parts List

Part No.	Description	Page
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E7007	Bush Flanged Bronze	31
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E7028	Tube Steering Spacer	26
E7044	Chain Tensioning Guide	22
E7045	LED Light	16, 33, 34
E7050	Drive Chain	22
E7067	Light Switch	16, 33, 34
E7131	Sprocket Drive Roller	28
G7001	Roller; Drive	28
G7006	Cover, Transmission	14
G7012	Plate; Serial Number	14, 35
G7022	Tube & End Caps Assembly Split Roller GR11000C	27
G7023	Shaft - Split Tube Roller 63.5dia	27
G7024	Split Roller 63.5dia Assembly	26, 27
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G7028	Seal Insert - Centre Cap	27
G7029	Seal Centre - V-Ring V25A	27
G7030	Washer - Centre Seal Spacer	27
G7032	Steer Linkage Assembly GR11000C	17
G7033	Scraper Rod 3/16"	26
G7035	GR11000C Smoothing Head Assembly	26
G7036	Body Welded Assembly	14, 25
G7037	Smoothing Head Welded Assembly	26
G7038	Tube Tie Rod Steering	17, 26
G7039	Rod M12 Threaded Steering	17
R5009	Grip; Hand; Joystick	17
R5012	Pad; Rubber; Foot Pedal	24
R5014	Grip; Lever	29
R5016	Catch; Rubber	14, 16
R5025B	End Cap Black Plastic 35 x 35	30
R5031	Coupling; Rubber	21
R5033	Fan	21
R5039A	Bush; Taper Lock	28
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R5068	Housing; LFL5J; 2 hole for R5070 Bearing	28
R5070	Bearing; B5	26, 28
R5071	Mud Flap	25

Part No.	Description	Page
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R5085	Shim 1.0 mm Thick; Honda / Kohler Engine	15
R5087	Key; Woodruff	28
R5089	Key; Woodruff	21
R5094	Spring; Arm; Chain Tensioner	22
R5095	Washer; Capped	22
R5099	Bush; Bronze; for Chain Tensioner Arms	22
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R5129	Meter; Hour/Tach	16
R5131	Bracket; Transmission; Eaton 11	18, 20, 21, 22
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