



RH918 ROTARY HOE

Operation, Safety & Maintenance Instructions



Online Demonstration Available at: www.redroo.com/products/rotaryhoe



INTRODUCTION

Dear Valued Customer,

Congratulations! You are now the proud owner of the Red Roo Model RH918 Rotary Hoe. Please take a moment of your time to look over the following information. Familiarise yourself with the rotary hoe, its characteristics and method of operation. Pay particular attention to the safety and operating instructions.

If you have any questions or need any replacement parts in the future please contact us at your convenience on our toll-free phone number 1300 133 767 or redroo.com

You alone know the operational demands and special conditions affecting the equipment in your situation and therefore assume the responsibility for developing, carrying out and enforcing the safety concepts which apply to your own operation to effect the greatest safety for yourself and the people around you.

*THANK YOU for your patronage, confidence and support in
Red Roo Commercial Environmental Equipment.*

Machine Identification Record:

Red Roo Customer number _____

Machine model number _____

Machine serial number _____

Engine manufacturer _____

Engine model number _____

Engine serial number _____



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ASSEMBLY INSTRUCTIONS

1. Remove rotary hoe from shipping crate.
2. Screw the handle bar adjustment crank into the lower handle bar adjuster pin.
3. Fasten handle bar to rotary hoe using the 1/2" x 3" bolt supplied.
4. Arrange hoses down handle bar tube and fasten to the tube with tie wraps provided.
5. Adjust clutch cable by removing all slack in lever.
6. Check reservoir according to instructions in service information on page eight (8).
7. Fill engine with fuel and oil according to the engine manual.
8. Free wheel hubs: Pull one free wheeling pin slightly, using the split ring. Rotate the pin until the 1/8" diameter roll pin aligns with the slot mounting plate. Allow the pin to slide through the slot. Repeat for the other wheel. Roll the rotary hoe until each pin drops into a hole in the hub. The hubs are now locked.
9. Uncoil the wire for the remote engine on/off switch. Route wire along the clutch cable to the engine and secure with the cable ties provided. Splice this wire to the kill switch wire on the engine with the electrical splice provided.



ABOUT THIS MANUAL

The information contained in this manual has been prepared to assist you in the safe operation, the routine maintenance and general care of your Red Roo product. By following these guidelines, you may look forward to years of reliable service from your Red Roo. Information is categorised and denoted by the following symbols and phrases:



SAFETY FIRST Identifies general safety practices.



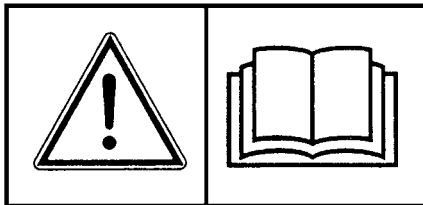
DANGER! An instruction which, if not followed, could result in serious or fatal injury.



WARNING! An instruction which, if not followed, could result in personal injury.



CAUTION! An instruction which, if not followed, could damage machine components.



Before operating this Machine read and observe all Warnings, Cautions and Instructions on the Machine and in the Operators Manual. Although the reading of information contained in this manual does not eliminate the risk involved in operating this machine, your understanding of this information will promote the correct and safe use of your machine. Failure to follow Instructions and Safety Information could result in serious injury or death.

HAZARD SYMBOLS & MEANINGS



Read



Hearing Protection



Eye Protection



Wear Gloves



Cut Hand



Electrical Shock



Moving Parts



Hot Surfaces



Remove Spark Plug Leads



Toxic Fumes



No Bystanders



Don't Remove Guards



Explosion



Don't Refuel Hot Engine



Keep Clear Rotating Tynes

SAFETY FIRST – Stay Alert, Do Not Get Hurt



Read this section before use!

The RH918 Rotary Hoe is designed to cultivate soil and therefore is potentially dangerous. Careless or improper use may result in serious or even fatal injury.

It is important that you read and understand the contents of this manual and that you allow only mature, adult individuals to operate your Rotary Hoe. It is your responsibility to ensure that any individual who operates your rotary hoe has read and understood this manual.

Never use the rotary hoe for any other purpose than soil cultivation. The machine is designed for this purpose only. Any other use may result in serious or even fatal injury and/or damage to the machine.

SAFETY INSTRUCTIONS FOR RH918 USERS

Outdoor Power Equipment Institute Recommendations




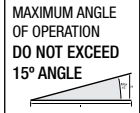












WARNING TO PURCHASERS OF INTERNAL COMBUSTION ENGINE EQUIPPED MACHINERY OR DEVICES:

The equipment which you have purchased does not have a spark arrester muffler. If this equipment is to be used on any forest and brush covered land or grass covered unimproved land, the law may require that a spark arrester muffler be installed and be in effective working order. The spark arrester must be attached to the exhaust system and comply with local authorities by-laws.







USE COMMON SENSE AND PLENTY OF IT

- 1)  **DO NOT** allow any person to operate the rotary hoe without first reading and understanding the safety precautions and operating instructions. Read and understand the engine manual. **KNOW THE CONTROLS AND HOW TO STOP THE ROTARY HOE QUICKLY IN AN EMERGENCY.**
- 2) **NEVER** allow children or untrained adults to operate the rotary hoe.
- 3) **ALWAYS** wear protective clothing when operating the rotary hoe. This includes, but is not limited to: safety glasses, loose fitting gloves, steel capped boots and hearing protection. **NEVER** wear loose fitting clothing or jewellery when operating the rotary hoe. Keep all clothing away from moving parts. Items could become caught in the machine, resulting in injury. 
- 4) **ALWAYS** operate the rotary hoe in a well lighted area. 
- 5) **ALWAYS** make certain that the tyne engagement control lever is in the "neutral" position prior to starting the engine. The TYNE ENGAGEMENT CONTROL LEVER on the left handlebar is for the operator's protection. All motion stops when the control lever's released!
DO NOT TAPE THE CONTROL LEVER UP or otherwise by-pass this safety feature!
- 6)  **MAXIMUM ANGLE OF OPERATION DO NOT EXCEED 15° ANGLE**  **ALWAYS** operate rotary hoe on level ground only. Police the area before rotary hoeing. Remove any foreign objects in the digging area (eg bricks, rocks, wire and sticks). Locate and mark any sprinkler heads, water pipes, gas lines, electrical and telephone cables or any other hazard either below or above ground.
- 7)  **DO NOT** allow other persons near the rotary hoe. It is the responsibility of the operator to keep bystanders and animals a minimum of 6 metres (18ft) away from the machine while it is in operation.
- 8)  Hydraulic oil is under extreme pressure and can get under skin and burn or poison. Check for leaks with cardboard.
- 9) **NEVER** operate the rotary hoe when fatigued. **ALWAYS BE ALERT!** If you become tired while operating the rotary hoe, take a break. If you have any physical or mental condition that may be aggravated by strenuous work, consult your physician before you operate this equipment. **NEVER** operate the rotary hoe under the influence of medication, alcohol or drugs.
- 10)  **ALWAYS KEEP YOUR HANDS, FEET AND BODY AWAY FROM THE DIGGING AREA WHILE ENGINE IS RUNNING.**
- 11)  **NEVER** operate the unit without the safety guards in place and in working order. Keep the unit well maintained and in good working order
- 12) **DO NOT** leave the machine unattended while the engine is running.
- 13) **DO NOT** overspeed the engine or alter the governor settings. Excessive speed is dangerous and will shorten engine life.
- 14)  **NEVER** operate the rotary hoe in an enclosed area. Engine exhaust contains carbon monoxide, an odourless and tasteless poison.
- 15)  **STOP** the engine, disconnect the spark plug lead and allow engine to cool before inspecting or performing maintenance on the rotary hoe.
- 16)  **REFUELLING**
 - * **SHUT OFF ENGINE. DO NOT REFUEL AN ENGINE WHILE OPERATING!**
 - * Allow engine to cool. Minimum 5 minutes.
 - * **USE UNLEADED FUEL ONLY. Use clean, fresh unleaded fuel.**
 - * **Do not mix oil with unleaded fuel.**
 - * Do not over-fill fuel tank. Allow space for fuel expansion. 
 - * Do not smoke near equipment. 
 - * Allow no naked flame or hot material in refuelling area.
 - * Use only approved fuel containers and funnels. Remember, fuel is a potential hazard.
 - * Refer to engine owners manual for full details.




OPERATING INSTRUCTIONS - RH918

BEFORE USE

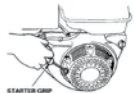
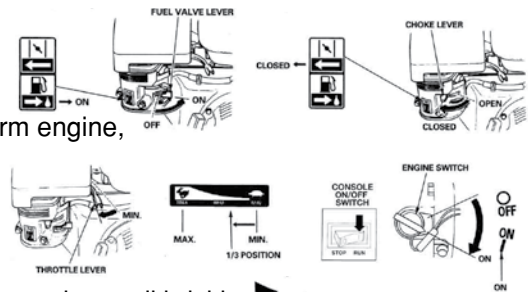
- 1) Ensure that all grass and weeds have been cut as low as possible.
- 2) If the rotary hoe is to be used in clay or hard ground conditions, it is recommended to water the area thoroughly and allow sufficient time for the soil to soften.
- 3)   Police the area. Remove any foreign objects from the area.
- 4)   Identify and mark the location of sprinkler heads, gas pipes, telephone cables, etc.

OPERATION

- 1) Remove the rotary hoe from its trailer/carrier/ute. **Use caution.** 
- 2) Familiarize yourself with the machine and its controls.
- 3) Adjust wheels if required, using the handle wheel adjustment lever.
- 4) Adjust depth shoe if required, using the depth control adjustment lever.
- 5) Ensure the tyne engagement control lever is in the neutral position. The tyne engagement control lever is located on the left hand side of the machine below handle bar. The neutral position of the lever is achieved by simply releasing the tyne engagement control lever.

6) STARTING THE ENGINE:

- a. Move the fuel valve lever to ON position.
- b. To start a cold engine, move the choke lever or choke rod (applicable types) to the CLOSED position. To restart a warm engine, leave the choke lever or choke rod in the OPEN position.
- c. Move the throttle lever away from the MIN position, about 1/3 of the way toward the MAX position.
- d. Turning the engine switch to the ON position.



RECOIL STARTER

Pull the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip gently.



- 7) When in position to begin rotary hoeing pull up on the tyne engagement control lever. The tynes will begin to turn, adjust accordingly in the rear position while rotary hoeing. Release the tyne engagement control lever to stop the tynes turning. Tyne speed is governed by engine throttle setting.
- 8) Do not hurry the job. Proceed slowly and allow the machine time to do the job. When ground is extremely hard, reduce engine speed. Consider watering the surface and reducing engine speed. Adjust wheels and depth shoe accordingly while rotary hoe.



WARNING! – KEEP HANDS AND FEET CLEAR OF TYNES AT ALL TIMES!

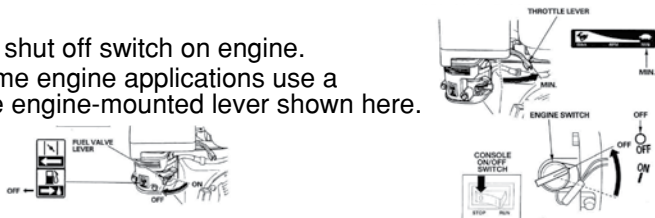


WARNING! – IN CASE OF DIFFICULTY, RELEASE THE TYNE ENGAGEMENT CONTROL LEVER ALL ROTARY HOEING ACTION STOPS. Turn the engine "STOP" switch to off located on the engine.





9) STOPPING THE ENGINE:

Shut off switch on console should be used, not shut off switch on engine.

- a. Move the throttle lever to the MIN position. Some engine applications use a remote-mounted throttle control rather than the engine-mounted lever shown here.
- b. Turn the engine switch to the OFF position.
- c. Turn the fuel valve lever to the OFF position.



AFTER USE

- 1)   Turn fuel shut off valve to the "OFF" position.
- 2)   Allow machine to cool down.
- 3) Wash mud and dirt off of the garden tiller. Ensure no water enters the carburettor.
- 4) Remove any weeds, wire, rope or other material that may have wrapped around the tynes and rotor assembly.
- 5) Return wheel axle to forward position for transport. Replace shaft locking collar.
- 6) Return depth shoe (if equipped) to full Up position.

SERVICE INFORMATION

1. Check reservoir level using sight glass on the left side of the tank. If required, add to reservoir with tractor transmission hydraulic oil (Shell DONAX TD FLUID or comparable). Recheck oil level after the rotary hoe has been run and poil has been circulated through the wheel and tyne motors. Routinely check level thereafter. **DO NOT OVERFILL THE TANK.**
2. Change the hydraulic oil filter after the first 50 hours of use. Change it after every 200 hours thereafter.
3. Add 1 quart of hydraulic oil to the reservoir with each oil filter change.
4. Check the tyne bolts after each use and tighten as needed., Check all hydraulic fittings for leaks and tighten if necessary.
5. Tynes should be changed as often as needed for the machine to do satisfactory and efficient rotary hoeing job. Use loctite stud and bearing adhesive/sealant on tyne bolt threads to prevent loosening.
6. The grease zerks on both ends of the tynes shaft flange bearing should be greased after every 4 to 8 hours of use.
7. Grease zerks on the wheel hubs should be greased once a week or so, depending upon freewheel use.

IMPORTANT: The engine is normally serviced prior to shipping. However, shipping regulations may prohibit this. Check levels and add oil and fuel as required before starting. Service according to the engine manual before starting.

WARNING: Running the rotary hoe without hydraulic oil will cause serious damage to the hydraulic pump. **CHECK RESERVOIR LEVEL BEFORE STARTING THE MACHINE.**

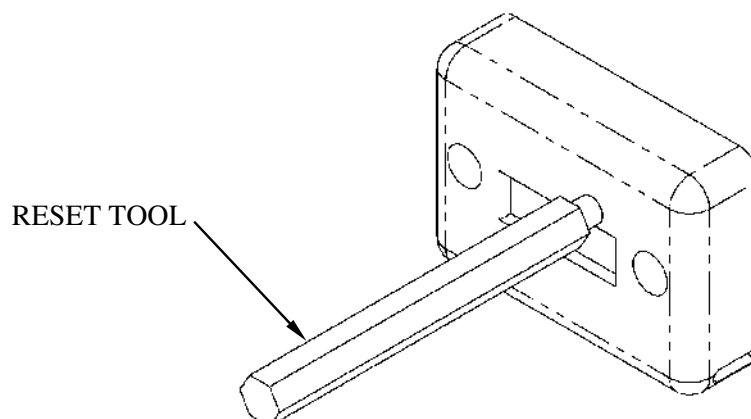
HOUR METER

The SenDEC® TACH/HOUR hour meter tracks the hours of machine operation in order for routine maintenance to be performed on a timely basis.

Your SenDEC® hour meter is preset at the SenDEC® factory to go into *Flash Alert* mode at 25-hour intervals. Although the engine manufacturer does not require changing engine oil this often, **due to heavy-duty use and extreme conditions inherent to tiller use, Red Roo strongly recommends frequent oil changes.**

Refer to this manual for equipment service requirements and to the **Engine Manual** for engine service requirements.

While *Flash Alert* is active, hold the tip of the RESET TOOL (Key Cancel Wand) against the meter as shown. Within several seconds, the display will stop flashing indicating the Service Interval has been reset. If the wand gets lost, a small mechanic's pick-up magnet will work.



RH918 ROTARY HOE TROUBLE SHOOTING GUIDE

CAUTION: ALWAYS USE EXTREME CARE WHEN TROUBLE SHOOTING OR MAKING ADJUSTMENTS ON THE ROTARY HOE. STAY CLEAR OF TYNES WHEN ENGINE IS RUNNING. ALWAYS SHUT THE ENGINE OFF BEFORE DISASSEMBLING ANY COMPONENT.

A. ENTIRE HYDRAULIC SYSTEM DOES NOT OPERATE AND THE ENGINE IS NOT UNDER LOAD

- | | |
|---|--|
| 1. Broken or improperly adjusted clutch (actuator) cable. | If broken, replace. Remove slack then adjust for 7/16" to 1/2" movement at actuator lever pin. |
| 2. Low hydraulic oil in tank. | Fill to centre of sight glass. |
| 3. Hydraulic pump-to-engine coupler has slipped. | Check for wear and replace both coupler halves and rubber spider as needed. |
| 4. Hydraulic pump worn or tyne motor relief valve not functioning properly. | Follow the series of tests described below: |

Remove the tank end of hose that goes from the pump to the tank. Start the engine and with the tynes and wheels in neutral, pump off about four gallons of hydraulic oil into a clean bucket. (The .52 CID pump, @ 1000PSI & 3000 RPM, should pump at the rate of 6.5 GPM). Replace the hose and remove the tank lid. Remove the end of the intake hose from the fitting on the tank lid. Submerge the end of the hose in the hydraulic oil in the tank. (A non-collapsible hose extension may be required). Block the tynes with a sort 4 X 4 and stand to the side.

With tynes selected to forward rotation, activate the actuator valve and check to see where the oil enters the tank. If the pump is good, the oil will enter through the relief valve or the return line from the filter. If the oil returns only through the filter return, the tyne drive motor is bad.

If the oil returns through the relief valve but does not kill the engine, check the out-put pressure of the pump. To do this, "T" a 4000 pound gauge into the line at the tank. **DO NOT BLOCK THE LINE OR DEAD-HEAD THE GAUGE INTO THE LINE.** With the tynes in forward and blocked, activate the hydraulic valve as before. The relief valve is set at 2750 pounds. If the gauge reaches this pressure, the valve is OK. If not, the relief valve is bad and needs to be replaced.

If the pressure reaches 2750 pounds but there is only a small amount of oil returning, the pump is worn and should be replaced.

RH918 ROTARY HOE TROUBLE SHOOTING GUIDE (CONTINUED)

B. TYNES FAIL TO ROTATE BUT WHEELS DRIVE.

- | | |
|---|--|
| 1. Clutch cable stretched so needs adjustment | Remove cable slack then adjust for 7/16" to 1/2" movement at actuator lever pin. |
| 2. Tyne motor worn | Rebuild or replace motor. Exchange motors are available from Red Roo. |
| 3. Wheel axle keys have sheared or removed. | |

C. WHEELS FAIL TO TURN BUT TYNES ROTATE

- | | |
|---|-----------------------|
| 1. Wheel axle keys have sheared or removed. | Replace keys |
| 2. Wheel relief valve bad | Replace relief valve. |

D. ENGINE LUGS DOWN OR DIES AND WHEELS AND TYNES DO NOT TURN.

- | | |
|---|--|
| 1. Rocks or other obstruction blocking tynes. | Shut OFF engine and remove obstruction. |
| 2. Tyne shaft bound with wire, vines or grass. | Shut OFF engine and remove debris, especially at the ends |
| 3. Rotary hoeing depth too great for soil conditions. | Shut OFF engine and lower depth bar to raise the tynes, decreasing rotary hoeing depth. |
| 4. Outboard tyne shaft bearings binding. | Lubricate or replace bearings as needed. |
| 5. Engine improperly tuned or maintained. | See engine manual and correct as needed. |
| 6. Low oil alert causes engine to shut down. | This may occur if rotary hoeing on hills, (not advised). Level the tiller and check engine oil level. Fill if required. Oil alert should reset. See engine manual. |
| 7. Engine losing power due to wear. | See engine manual. |

RH918 ROTARY HOE TROUBLE SHOOTING GUIDE (CONTINUED)

E. OIL LEAKS IN HYDRAULIC SYSTEM.

- | | |
|---------------------------------|---|
| 1. Fittings are loose. | Tighten as required. |
| 2. Worn or broken hoses. | Replace as necessary.. |
| 3. Oil around tyne motor shaft. | Inspect tyne motor for leaking shaft seal.
Rebuild per instructions in Hydraulic Motor manual or replace with a new motor. |

F. EXCESSIVE FOAMING OF HYDRAULIC OIL FROM VENT HOSE

- | | |
|------------------------------|---|
| 1. Improper oil used. | Verify that hydraulic oil used has anti-foaming additives*. |
| 2. Pump sucking air. | Inspect and tighten fittings on intake side of pump. |
| 3. Hydraulic pump is faulty. | Test using procedure in section A4 above.
(See page 9) |


* Recommended oil is Shell DONAX TD FLUID or equivalent hydraulic oil with anti-foaming and anti-wear additives




WORK SITE ASSESSMENT

Examine the work area for any conditions or obstructions that may inhibit rotary hoeing or create a safety hazard for the operator or others. Use the information in this manual combined with good judgment to identify any hazards to avoid.

In addition to calling to DETERMINE LOCATION OF UNDERGROUND UTILITIES (see previous section for details), the operator and/or job foreman should visually inspect the work site. Look for electrical drop boxes, notices of underground placements, manhole covers, recent trenching or rotary hoeing activity, any evidence of possible underground placements, banks, drop-offs, rocks, wire, uneven terrain, any existing holes and toxic ground conditions.


 Only operate rotary hoe outdoors and avoid breathing engine exhaust and fumes. **WARNING:** Engine exhaust contains carbon monoxide gas that is toxic. Breathing it can cause unconsciousness and death.

 Do not operate rotary hoe near any source of flammable dust or vapors. **WARNING:** Sparks from the engine exhaust can cause an explosion or fire in a flammable or explosive atmosphere. Fuel fumes can catch fire or explode.

Allow adequate side and overhead clearances between rotary hoe and any objects such as buildings, fences, and trees.

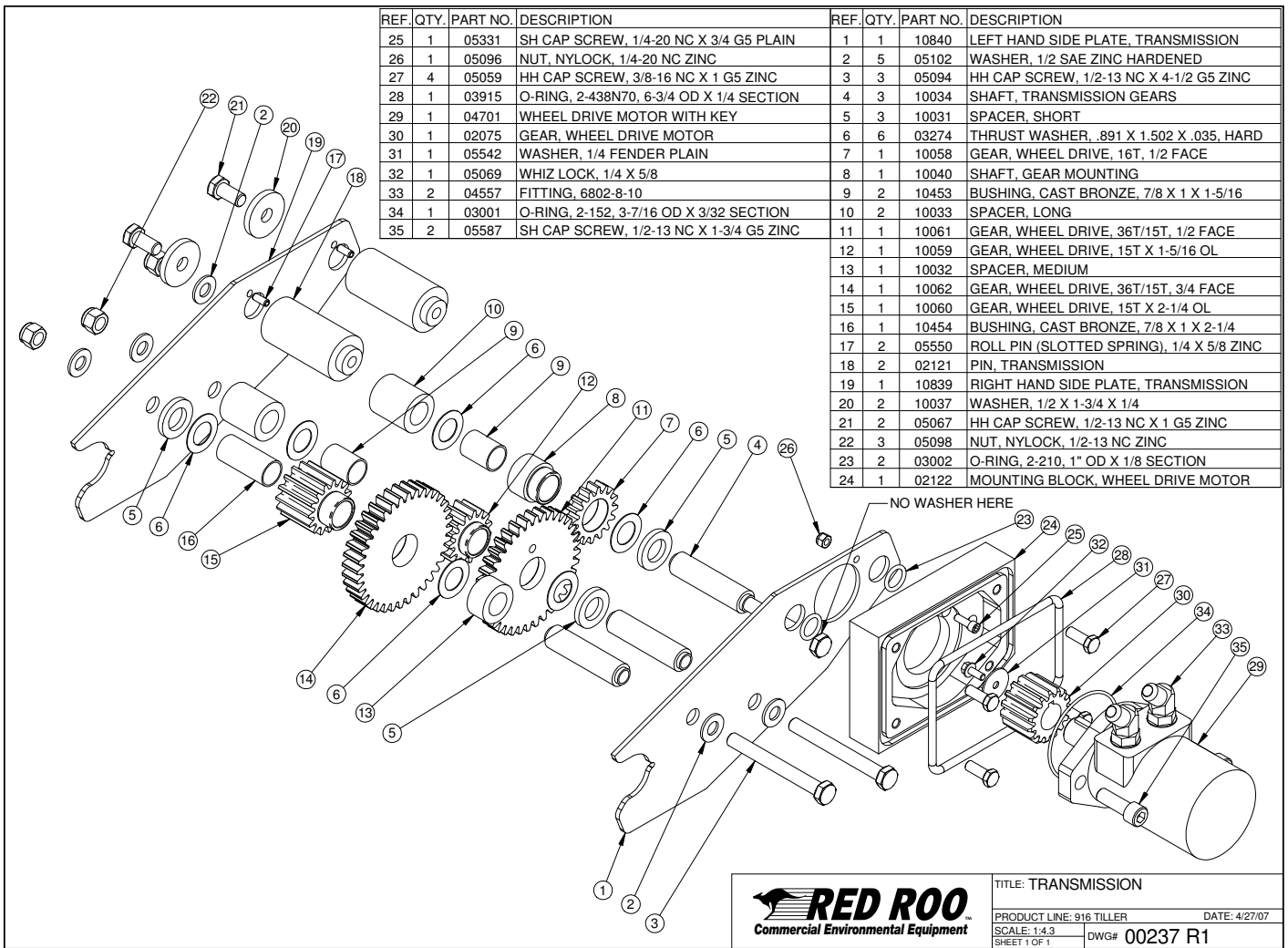
Adequate lighting is required, daylight or artificial, for safe operation of the rotary hoe.

Keep others away. If the job site is near a road or pedestrian path, warn and divert both motorized traffic and pedestrians. As appropriate, erect barriers, use traffic flag personnel, signs, cones, and lighting devices to insure safety.

 **WARNING:** Someone could step into the cultivated area by accident. Walking near the edge of the cultivated area could cause loss of balance and possibly cause someone to fall into the rotating tynes. Contact with the rotating tynes while in operation will cause serious injury or even death.

MACHINE FUNCTION CHECK: If the operator releases the TYNE ENGAGEMENT CONTROL LEVER, the rotating tynes should stop. This is intended for your safety and must be maintained in good functional condition. Contact your dealer or the factory if anything on the rotary hoe does not function properly.



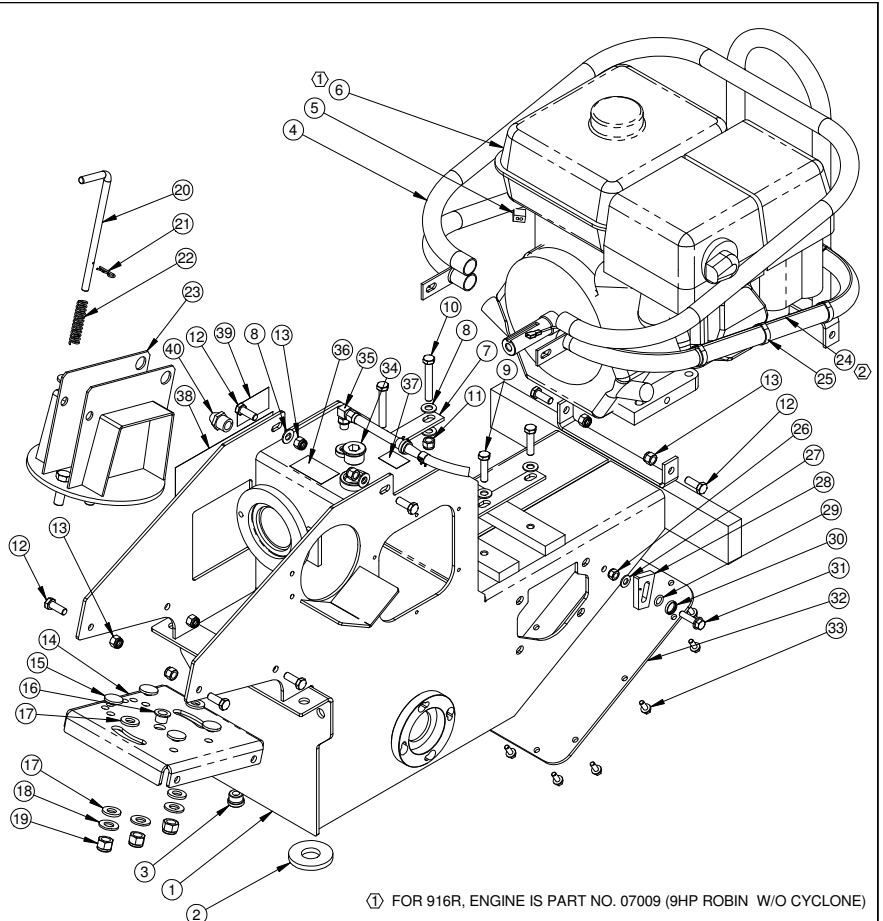


RED ROO
Commercial Environmental Equipment

TITLE: TRANSMISSION
 PRODUCT LINE: 916 TILLER
 SCALE: 1:4.3
 SHEET 1 OF 1

DATE: 4/27/07
 DWG# 00237 R1

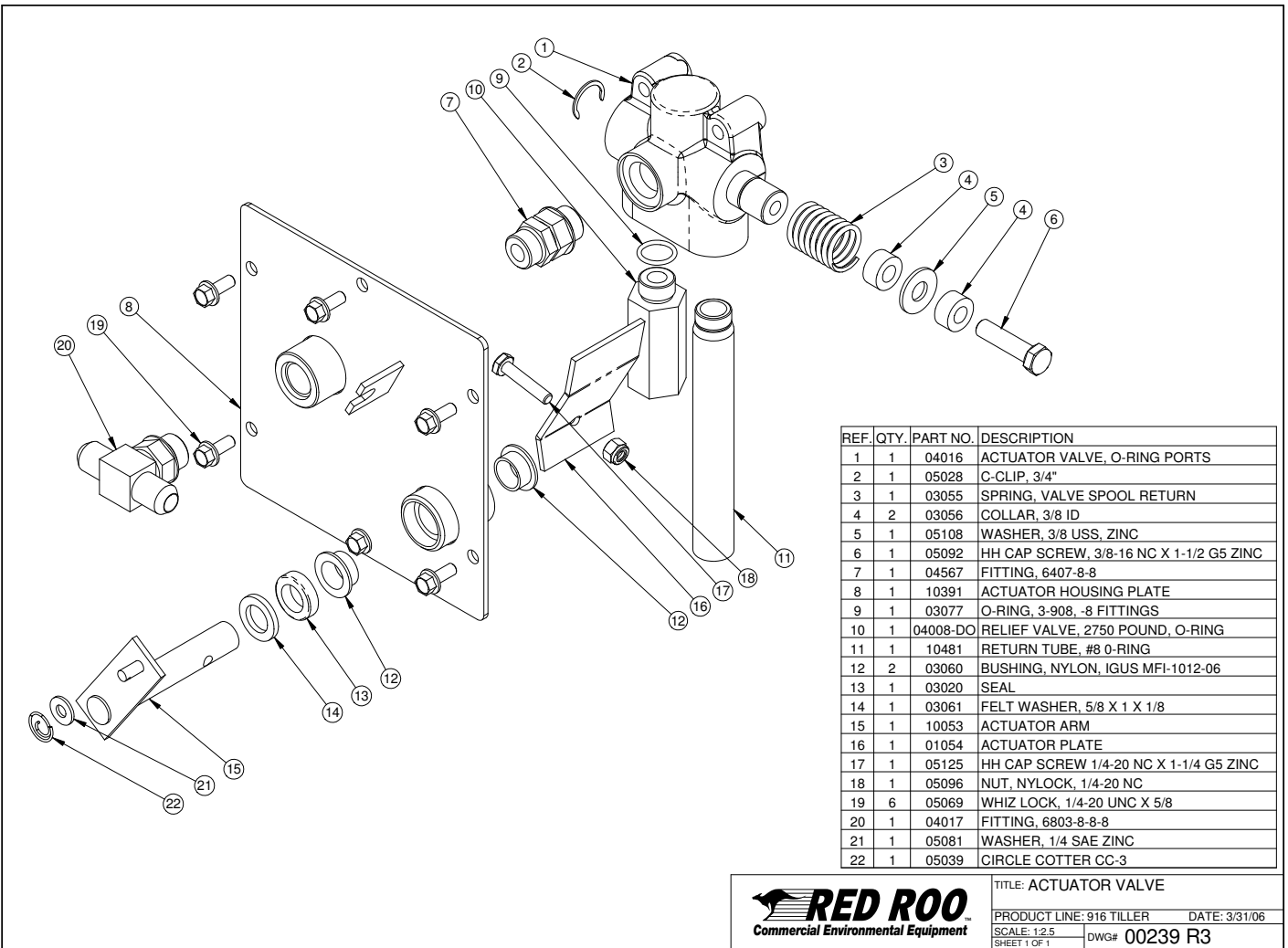
REF.	QTY.	PART NO.	DESCRIPTION
1	1	10701	916 & 918 BODY, BOLT ON TORQUE TUBE
2	2	03520	MAGNET
3	1	10361	FITTING, 6409-8 PLUG
4	1	10188	ENGINE GUARD, 916
5	1	03806	QUICK-SPLICE
6	1	07006	ENGINE, 9 HP HONDA GX270
7	2	11188	SPACER, 9 HP ENGINES
8	8	05101	WASHER, 3/8 SAE ZINC
9	2	05092	HH CAP SCREW, 3/8-16 NC X 1-1/2 G5 ZINC
10	2	05284	HH CAP SCREW, 3/8-16 NC X 2-1/2 G8 ZINC
11	2	05073	NUT, NYLOCK, 3/8-16 NC
12	8	05056	HH CAP SCREW, 3/8-24 NF X 1 G5 ZINC
13	8	05072	NUT, NYLOCK, 3/8-24 NF
14	1	10035	MOUNTING PLATE, HANDLE BAR
15	4	10064	BUSHING, NYLATRON, 1" OD SOLID
16	1	03501	BUSHING, IGUS MFI-0810-08
17	4	10469	THRUST WASHER, .500 X 1.000 X .125 NYLATRON
18	3	05102	WASHER, 1/2 SAE ZINC HARDENED
19	3	05098	NUT, NYLOCK, 1/2-13 NC
20	1	10068	PIN, HANDLE BAR
21	1	03065	HAIR SPRING COTTER #4
22	1	03080	SPRING
23	1	10036	HANDLE BAR BRACKET
24	1	10558	IGNITION WIRE, 916
25	6	03035	TIE WRAP, 1/8 X 6
26	1	05273	NUT, NYLOCK, 5/16-18 NC
27	1	05068	WASHER, 5/16 SAE ZINC
28	1	10555	WEDGE
29	1	03907	O-RING, 2-111, 5/8 OD X 3/32 SECTION
30	1	02526	HOUSING, 2-111 O-RING & FLANGE SCREW
31	1	05138	HH FLANGE SCREW, 5/16-18 NC X 1-1/4 G8 ZINC
32	1	10056	ACCESS PLATE
33	10	05069	WHIZ LOCK, 1/4-20 UNC X 5/8
34	1	10526	FITTING, 6409-12 PLUG
35	1	10189 R2	BREATHER HOSE ASSEMBLY
36	1	03040-06	DECAL, "HYDRAULIC OIL ONLY"
37	1	03040-16	DECAL, "CE"
38	1	03040-11	DECAL, "BARRETO", 2-3/16 X 7-3/8
39	1	03040-57	DECAL, "HYDRAULIC OIL LEVEL"
40	1	03503	SIGHT GAUGE



RED ROO
Commercial Environmental Equipment

TITLE: BODY,
BOLT ON TORQUE TUBE
 PRODUCT LINE: 916/18
 SCALE: 1:7.2
 SHEET 1 OF 1

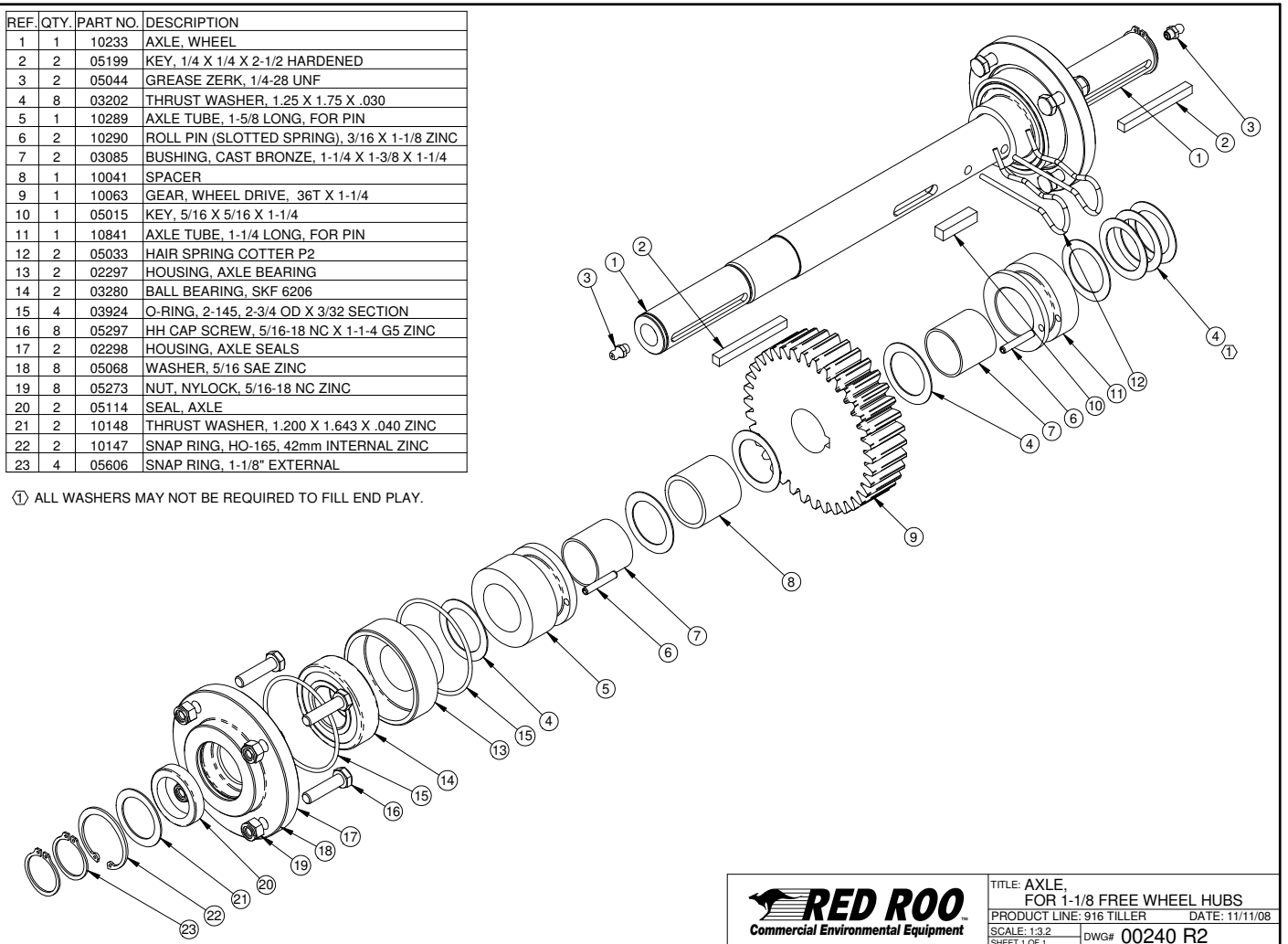
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 DWG# 00238 R4



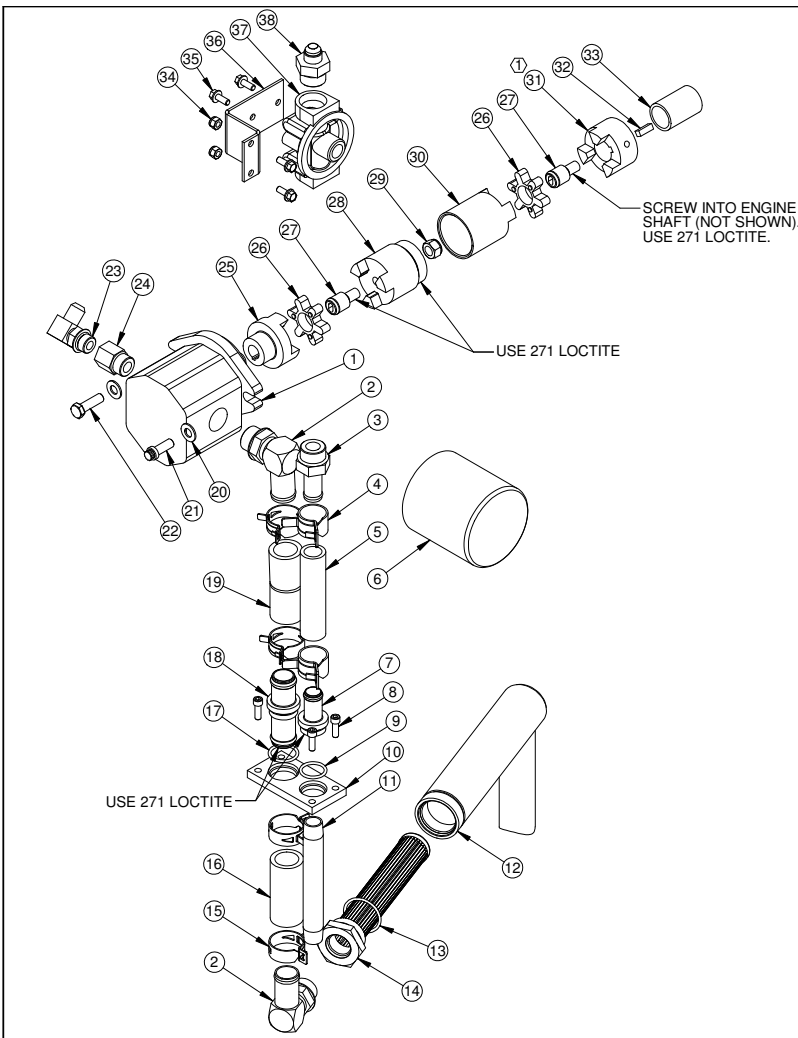
TITLE: ACTUATOR VALVE
 PRODUCT LINE: 916 TILLER DATE: 3/31/06
 SCALE: 1:2.5 DWG# 00239 R3
 SHEET 1 OF 1

REF.	QTY.	PART NO.	DESCRIPTION
1	1	10233	AXLE, WHEEL
2	2	05199	KEY, 1/4 X 1/4 X 2-1/2 HARDENED
3	2	05044	GREASE ZERK, 1/4-28 UNF
4	8	03202	THRUST WASHER, 1.25 X 1.75 X .030
5	1	10289	AXLE TUBE, 1-5/8 LONG, FOR PIN
6	2	10290	ROLL PIN (SLOTTED SPRING), 3/16 X 1-1/8 ZINC
7	2	03085	BUSHING, CAST BRONZE, 1-1/4 X 1-3/8 X 1-1/4
8	1	10041	SPACER
9	1	10063	GEAR, WHEEL DRIVE, 36T X 1-1/4
10	1	05015	KEY, 5/16 X 5/16 X 1-1/4
11	1	10841	AXLE TUBE, 1-1/4 LONG, FOR PIN
12	2	05033	HAIR SPRING COTTER P2
13	2	02297	HOUSING, AXLE BEARING
14	2	03280	BALL BEARING, SKF 6206
15	4	03924	O-RING, 2-145, 2-3/4 OD X 3/32 SECTION
16	8	05297	HH CAP SCREW, 5/16-18 NC X 1-1-4 G5 ZINC
17	2	02298	HOUSING, AXLE SEALS
18	8	05068	WASHER, 5/16 SAE ZINC
19	8	05273	NUT, NYLOCK, 5/16-18 NC ZINC
20	2	05114	SEAL, AXLE
21	2	10148	THRUST WASHER, 1.200 X 1.643 X .040 ZINC
22	2	10147	SNAP RING, HO-165, 42mm INTERNAL ZINC
23	4	05606	SNAP RING, 1-1/8" EXTERNAL

① ALL WASHERS MAY NOT BE REQUIRED TO FILL END PLAY.



TITLE: AXLE, FOR 1-1/8 FREE WHEEL HUBS
 PRODUCT LINE: 916 TILLER DATE: 11/11/08
 SCALE: 1:3.2 DWG# 00240 R2
 SHEET 1 OF 1



REF.	QTY.	PART NO.	DESCRIPTION
1	1	04004-A	PUMP, HYDRAULIC
2	2	04530	FITTING, 4601-16-12
3	1	04219	FITTING, 4604-12-12
4	2	05008	CLAMP, 1" HOSE, CTB-29
5	1	10796	HOSE, RETURN TO TANK
6	1	03951	FILTER, HYDRAULIC OIL, WITH BY-PASS
7	1	10853	FITTING, 3/4 HOSE BIB, 1/2 NPT
8	4	05611	SH CAP SCREW, 1/4-20 NC X 3/4 G5 ZINC
9	1	03075	O-RING, 3-912, -12 FITTINGS
10	1	10851	MOUNTING PLATE, HOSE BIB FITTINGS
11	1	01020	PIPE NIPPLE, 1/2 X 6, SCH 40
12	1	10860	SUCTION TUBE, #20 O-RING
13	1	03293	O-RING, 3-920N90, -20 FITTINGS
14	1	10247	SUMP SCREEN #20 EXT #12 INT O-RING
15	4	05225	CLAMP, 1-1/2" HOSE, CTB-35 ST
16	1	10184	HOSE, SUMP SCREEN
17	1	10855	O-RING, 3-914, -14 FITTINGS
18	1	10852	FITTING, 1" HOSE BIBS
19	1	10854	HOSE, PUMP INTAKE
20	2	05101	WASHER, 3/8 SAE ZINC
21	1	05119	12 POINT HEAD SCREW, 3/8-16 NC X 1
22	1	05091	HH CAP SCREW, 3/8-16 NC X 1-1/4 G5 ZINC
23	1	04554	FITTING, 6801-8-8
24	1	04209	FITTING, 6410-10-8
25	1	10747	JAW COUPLER, PUMP. 5/8 BORE
26	2	03022	SPIDER, RUBBER
27	2	10738	PILOT
28	1	10737	COUPLER SHAFT, PUMP SIDE
29	1	05077	NUT, NYLOCK, 7/16-20 NF
30	1	10739	COUPLER SHAFT, ENGINE SIDE
31	1	03023	JAW COUPLER, 1" BORE ML095
32	1	05014	KEY, 1/4 X 1/4 X 3/4
33	1	10180	SPACER, ENGINE SHAFT
34	2	05096	NUT, NYLOCK, 1/4-20 NC
35	4	05069	WHIZ LOCK, 1/4-20 UNC X 5/8
36	1	10798	BRACKET, FILTERHEAD
37	1	04403	FILTER HEAD, #12 O-RING
38	1	10808	FITTING, 6400-8-12

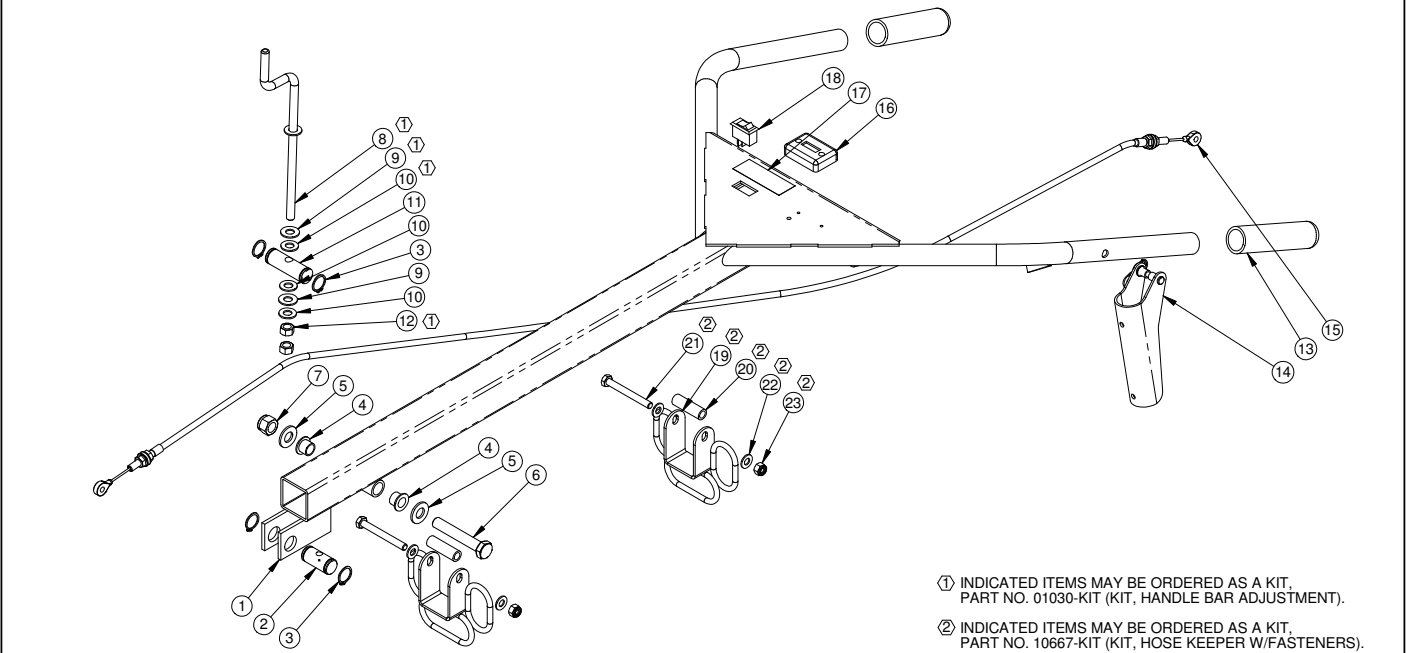
NOTES:

- ① COMES WITH SET SCREW. REPLACEMENT SET SCREW IS 5/16 X 5/16, PART NO. 05127.

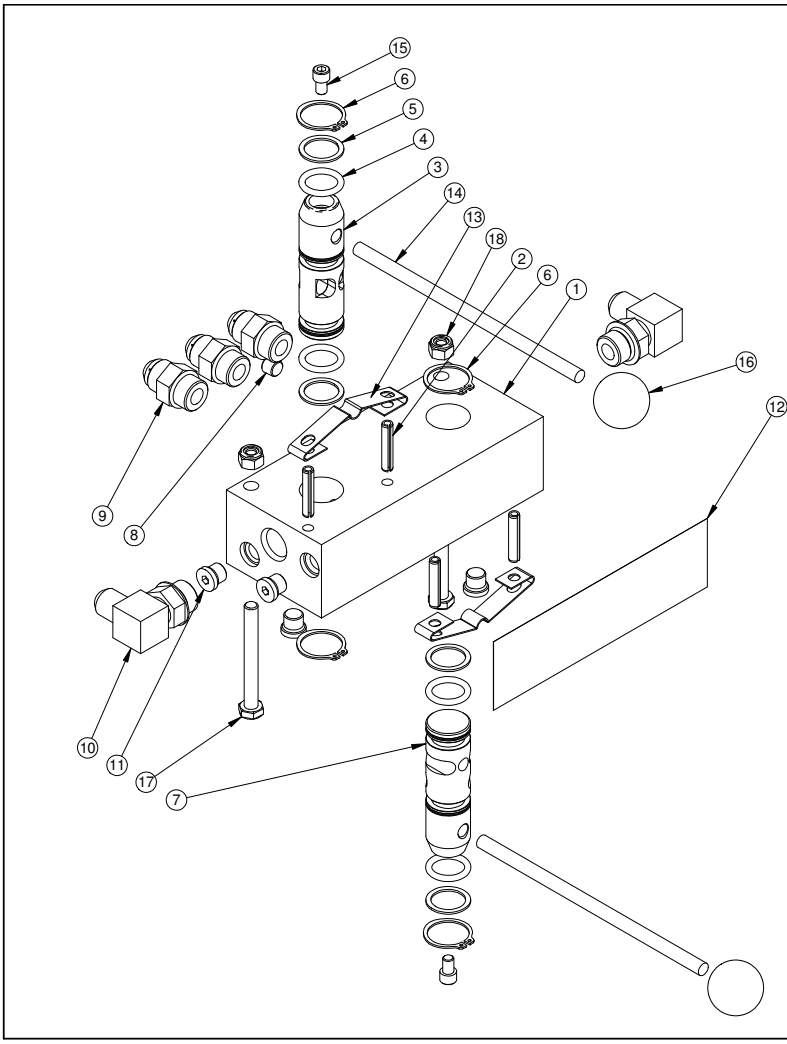


TITLE: PUMP
PRODUCT LINE: 916 DATE: 2/15/06
SCALE: 1:5.8 DWG# 00241 R3
SHEET 1 OF 1

REF.	QTY.	PART NO.	DESCRIPTION	REF.	QTY.	PART NO.	DESCRIPTION
1	1	01017	HANDLE BARS	13	2	03032-01	GRIP, 1 X 5 (P/N 03032 IS A PAIR)
2	1	02027-L	HANDLE BAR ADJUSTER PIN, LOWER	14	1	03029	LEVER ASSEMBLY (COMPLETE)
3	4	05216	SNAP RING, 3/4 EXTERNAL	15	1	10057	CABLE, ACTUATOR
4	2	03501	BUSHING, IGUS MFI-0810-08	16	1	03009	HOUR METER - COMPLETE KIT
5	2	05102	WASHER, 1/2 SAE ZINC HARDENED	17	1	03341-07	DECAL, "IGNITION OFF/ON"
6	1	05093	HH CAP SCREW, 1/2-13 NC X 3 G5 ZINC	18	1	06420	ROCKER SWITCH, IGNITION OFF/ON
7	1	05098	NUT, NYLOCK, 1/2-13 NC	19	2	10667	HOSE KEEPER
8	1	01030	CRANK, HANDLE BAR ADJUSTMENT	20	2	10668	SPACER, HOSE KEEPER
9	2	05058	WASHER, 3/8 NYLON	21	2	05065	HH CAP SCREW, 5/16-18 NC X 2-3/4 G5 ZINC
10	3	05103	WASHER, 3/8 A325 HARDENED ZINC	22	4	05068	WASHER, 5/16 SAE ZINC
11	1	02027-U	PIN, HANDLE BAR ADJUSTMENT, UPPER	23	2	05273	NUT, NYLOCK, 5/16-18 NC
12	2	05269	NUT, 3/8-16 NC GRB ZINC				



TITLE: HANDLE BARS & CRANK
PRODUCT LINE: 916 1/16/07
SCALE: 1:6.2 DWG# 00250 R1
SHEET 1 OF 1

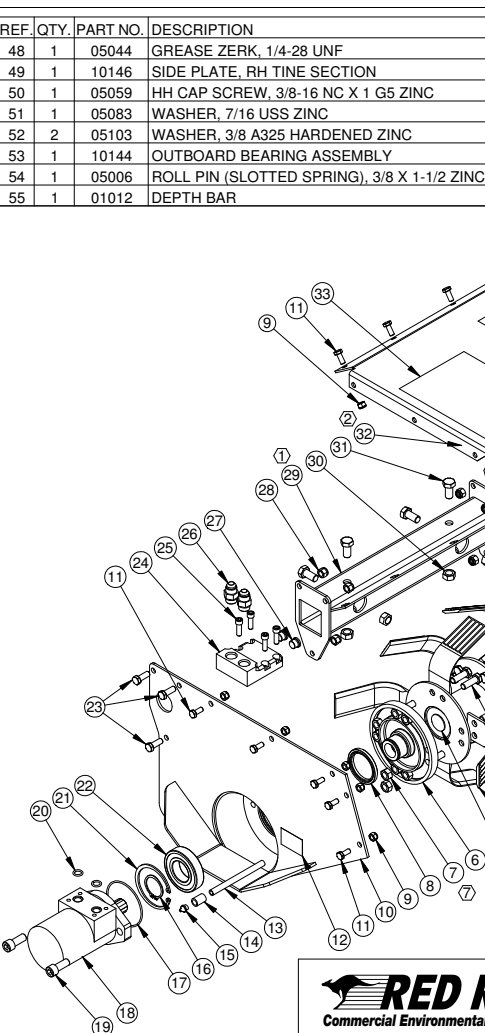


REF.	QTY.	PART NO.	DESCRIPTION
1	1	04010	CONTROL VALVE BODY (ORDER 04010-K)
2	4	05200	ROLL PIN (SLOTTED SPRING), 1/4 X 1-1/4 ZINC
3	1	04015-D	VALVE SPOOL, TINES (ORDER 04010-K)
4	4	03002	O-RING, 2-210, 1" OD X 1/8 SECTION
5	4	03025	BACK-UP RING, 1" TEFLON
6	4	05010	SNAP RING, 1" EXTERNAL
7	1	04015-C	VALVE SPOOL, WHEEL DRIVE (ORDER 04010-K)
8	1	05023	PIPE PLUG, 1/8"
9	3	04520	FITTING, 6400-8-8
10	2	04554	FITTING, 6801-8-8
11	4	03300	FITTING, 6409-4 PLUG
12	1	03040	DECAL, CONTROL VALVE
13	2	03027	DETENT SPRING
14	2	02017	HANDLE, 5/16 X 7
15	2	05573	SH CAP SCREW, 1/4-20 NC X 3/8 ZINC
16	2	03026	KNOB, 5/16-NC
17	2	05065	HH CAP SCREW, 5/16-18 NC X 2-3/4 G5 ZINC
18	2	05273	NUT, NYLOCK, 5/16-18 NC ZINC



TITLE: CONTROL VALVE
 PRODUCT LINE: 916 DATE: 4/26/07
 SCALE: 1:3 DWG# 00251 R1
 SHEET 1 OF 1

REF.	QTY.	PART NO.	DESCRIPTION
1	1	11279	TINE SHAFT
2	16	05061	HH CAP SCREW, 7/16-20 NF X 1 G8 ZINC
3	8	05063	HH CAP SCREW, 7/16-20 NF X 1-1/4 G8 ZINC
4	12	03196	TINE, REVERSIBLE
5	1	03928	SOFT PLUG, 1-1/4 DIA
6	1	11278	TINE MOTOR HUB, SPLINED
7	24	05074	NUT, 7/16-20 NF G8 ZINC
8	1	03930	SEAL, CR 19763
9	14	05071	NUT, NYLOCK, 5/16-24 NF ZINC
10	1	01067	TINE MOTOR MOUNT & LH SIDE PLATE
11	14	05052	HH CAP SCREW, 5/16-24 NF X 3/4 G5 ZINC
12	2	03040-04	DECAL, "GREASE DAILY"
13	1	05282	PIPE NIPPLE, 1/8" X 5 LONG
14	1	05204	PIPE COUPLER, 1/8"
15	1	05256	GREASE ZERK, 1/8 NPT
16	1	05607	SNAP RING, SH-156, 1-9/16" EXTERNAL
17	1	03001	O-RING, 2-152, 3-7/16 OD X 3/32 SECTION
18	1	04605	TINE MOTOR
19	2	05585	SH CAP SCREW, 1/2-13 NC X 1-1/4 G5 ZINC
20	2	03926	O-RING, 2-112N90, 11/16 OD X 3/32 SECTION
21	1	05603	SNAP RING, HQ-315, 3-5/32 INTERNAL
22	1	03943	BALL BEARING, SKF 6208
23	6	05056	HH CAP SCREW, 3/8-24 NF X 1 G5 ZINC
24	1	02065	MANIFOLD, TINE MOTOR
25	4	05572	SH CAP SCREW, 5/16-18 NC X 1 G5 ZINC
26	2	04520	FITTING, 6400-8-8
27	2	03302	FITTING, 6409-6 PLUG
28	6	05072	NUT, NYLOCK, 3/8-24 NF ZINC
29	1	10702	TORQUE TUBE, 17" BOLT ON
30	4	05046	NUT, GRIPCO, 1/2-13 NC G5 ZINC
31	4	05067	HH CAP SCREW, 1/2-13 NC X 1 G5 ZINC
32	1	10067	TINE COVER, 916
33	1	03341-22	DECAL, "TILLER OPERATING INSTRUCTIONS"
34	1	03341-23	DECAL, "TILLER SAFETY INSTRUCTIONS"
35	2	05092	HH CAP SCREW, 3/8-16 NC X 1-1/2 G5 ZINC
36	2	05073	NUT, NYLOCK, 3/8-16 NC ZINC
37	1	01099	HANDLE, DEPTH BAR
38	1	03018	GRIP, 1/8 X 3/4 X 2-3/4
39	1	03080	SPRING
40	1	01018	PIN, DEPTH BAR
41	1	03065	HAIR SPRING COTTER #4
42	1	03040-02	DECAL, "BARRETO", 3-1/2 X 11-1/4
43	1	03040-01	DECAL, "MADE IN USA"
44	1	03040-08	DECAL, "WARNING" (YELLOW)
45	1	03040-03	DECAL, "CAUTION" (BLACK & WHITE)
46	1	03040-07	DECAL, "CAUTION" (YELLOW)
47	1	04340	DECAL, "916"

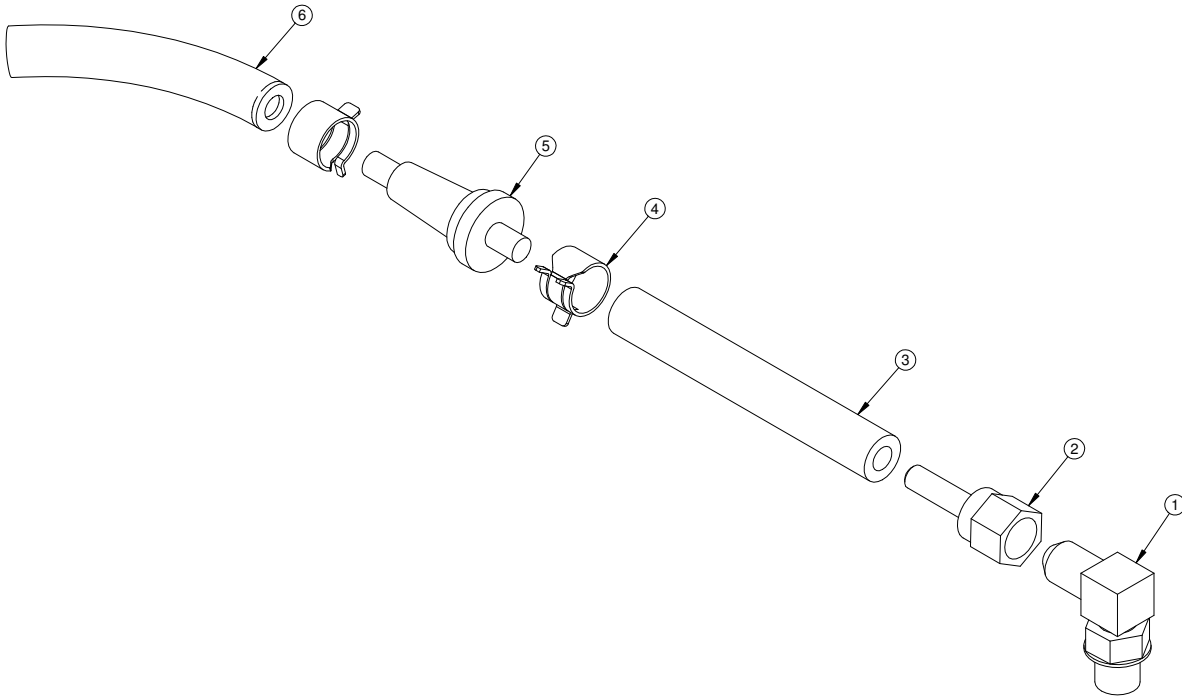



- ① FOR 918, USE PART NO. 10706 (TORQUE TUBE, 19")
- ② FOR 918, USE PART NO. 01066 (TINE COVER, 918)
- ③ FOR 918, USE PART NO. 03040-51 (DECAL, "918")
- ④ FOR 918, USE PART NO. 11281 (TINE SHAFT, 918)
- ⑤ PART NO. 05063-24 IS A SET OF 24 PIECES.
- ⑥ PART NO. 03196-12 IS A SET OF 12 PIECES.
- ⑦ PART NO. 05074-24 IS A SET OF 24 PIECES.
- ⑧ REFERENCE DWG. 10144 FOR INDIVIDUAL PARTS.



TITLE: TINE SECTION,
 16" OR 18" DIGGING WIDTH
 PRODUCT LINE: 916 & 918 TILLER DATE: 4/26/07
 SCALE: 1:3 DWG# 00253 R2
 SHEET 1 OF 1

REF.	QTY.	PART NO.	DESCRIPTION
1	1	04555	FITTING, 6801-4-4
2	1	04214	FITTING, JS-4-4, HOSE BARB 1/4 X 1/4 SWIVEL
3	1	11348	HOSE, 1/4 INCH GASOLINE, 4L5, 3-1/2" LONG
4	2	03062-06	CLAMP, 1/4" FUEL LINE
5	1	04516	BREATHER, FILTER SNAPPER 1435
6	1	11347	HOSE, 1/4 INCH GASOLINE, 4L5, 3-1/4" LONG



	TITLE: BREATHER HOSE ASSEMBLY	
	PRODUCT LINE: 916	DATE: 4/26/07
	SCALE: 1:1.3	DWG# 10189 R2
	SHEET 1 OF 1	

HOSES, 916 TILLER

QTY.	PART NO.	DESCRIPTION
1	10204	HOSE, PUMP TO ACTUATOR TEE FITTING
1	10205	HOSE, CONTROL VALVE TO ACTUATOR TEE FITTING
1	10206	HOSE, CONTROL VALVE TO OIL FILTER MOUNT
1	10207	HOSE, CONTROL VALVE TO WHEEL DRIVE MOTOR FRONT PORT
1	10208	HOSE, CONTROL VALVE TO WHEEL DRIVE MOTOR REAR PORT
1	10209	HOSE, CONTROL VALVE TO TINE MOTOR FRONT PORT
1	10210	HOSE, CONTROL VALVE TO TINE MOTOR REAR PORT

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Superseding Warranty
Red Roo Group of Companies
Warranty Policy
effective January 1, 2013

Replaces all undated previous Warranties and all Warranties dated prior to January 1, 2012.

"For a time period shown below from date of purchase, pending owner registration, Red Roo Sales & Service Company, P/L, herein referred to as "MANUFACTURER", will, at its option, repair or replace for the original purchasers of new Red Roo equipment, free of charge, any part, or parts of the unit (excluding Power Unit, warranty coverage provided by respective engine manufacturer), found upon inspection and testing by a Factory Authorised Agent, or by the Factory at Keysborough, Victoria, to be defective in material or workmanship or both under normal operating conditions; this is the exclusive remedy. All transportation charges on parts submitted to the MANUFACTURER for replacement under this Warranty are the responsibility of the purchaser.

This Warranty shall not apply to any product that has been altered, modified, or operated in a manner not approved or recommended by the MANUFACTURER. Warranty will be null and void in the following circumstances: (1) repairs or attempted repairs have been performed by persons other than agents authorised by the MANUFACTURER; (2) repairs are required because of normal wear; (3) the unit has been subject to abuse or involved in an accident; (4) misuse is evident, such as that caused by an application that unit is not intended to perform.

The MANUFACTURER reserves the right to modify, alter, or otherwise improve any product or part.

The purchaser is responsible for the performance of regular maintenance services as specified in the operator manual applicable to the unit. Untimely and/or improper care and replacement of normal maintenance items (eg.: filters, belts, drive chains, blades, knives, lubricants) may void Warranty. Use of non genuine Red Roo parts may void Warranty.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO 14 DAYS FROM PURCHASE, AND TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. RED ROO GROUP OF COMPANIES DOES NOT AUTHORISE ANY PERSON OR ENTITY TO CREATE FOR IT ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS OR SERVICES. Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation exclusion 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."

Red Roo Sales & Service Company, P/L
James A. Kerr III
Managing Director

Warranty Period

All Equipment	Consumer Use* 365 Days	Commercial Use* 90 Days
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* For the purposes of this warranty policy, "consumer use" shall mean personal residential household use by the original retail consumer. "Commercial use" shall mean all other uses, including use for commercial, income producing or hire purposes. Once a unit has experienced commercial use, it shall thereafter be considered as a commercial use unit for purposes of this warranty policy.

Proper registration of your Red Roo equipment is required to obtain warranty service. It is the responsibility of the original purchaser to register equipment within 10 days of purchase.

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IS EVERYBODY'S BUSINESS

...now

You alone know the operational demands and special conditions affecting the equipment in your situation and therefore assume the responsibility for developing, carrying out, and enforcing the safety concepts which apply to your own operation to effect the greatest safety for yourself and the people around you.

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Commercial Environmental Equipment