DR[®] DIRT BOSS™ TOWABLE BACKHOE

SAFETY & OPERATING INSTRUCTIONS





Serial No. _____

Order No. ____



READ AND UNDERSTAND THIS MANUAL AND ALL INSTRUCTIONS BEFORE OPERATING THIS DR BACKHOE.

Congratulations on your purchase of a new DR DIRT BOSS TOWABLE BACKHOE!

We have done our utmost to ensure that your DR DIRT BOSS TOWABLE BACKHOE will be one of the most trouble-free and satisfying pieces of equipment you have ever owned. Please let us know of any questions you may have. We want to answer them as quickly as possible. When you do call, please have your order number handy. For technical assistance, please contact us at www.DRpower.com call Toll-Free 1-800-DR-OWNER (376-9637) and one of our Technical Support Representatives will be happy to help you. We also hope to hear from you on how much you like your new helper.

In addition, please tell your friends about your new DR DIRT BOSS TOWABLE BACKHOE! Having DR Owners spread the word about our products and our way of doing business is the best advertising we can have, and the best way to help us provide even better service in the years to come.

Thanks once again!

Inn Pront

for all of us at DR Power Equipment

Sales Manager

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CHAPTER 1

INTRODUCING THE DR DIRT BOSS TOWABLE BACKHOE

This manual will help you set up and safely operate your new DR DIRT BOSS TOWABLE BACKHOE. Careful adherence to the safety and operating instructions in this manual will ensure many years of productive use.

Please let us know of any questions you may have. We want to answer them as quickly as possible. When you do call, please have your order number handy. For technical assistance, please contact us at www.DRpower.com or call Toll-Free 1-800-DR-OWNER (376-9637) and one of our Technical Support Representatives will be happy to help you.

Conventions used in this manual

A DANGER!

THIS INDICATES A HAZARDOUS SITUATION, WHICH, IF NOT FOLLOWED, <u>WILL RESULT</u> IN <u>DEATH</u> <u>OR SERIOUS INJURY.</u>

WARNING!

THIS INDICATES A HAZARDOUS SITUATION, WHICH, IF NOT AVOIDED, <u>COULD RESULT</u> IN <u>DEATH</u> <u>OR SERIOUS INJURY</u>.

CAUTION!

THIS INDICATES A HAZARDOUS SITUATION, WHICH, IF NOT AVOIDED, <u>COULD RESULT</u> IN <u>MINOR</u> <u>OR MODERATE INJURY.</u>

NOTICE!

THIS INFORMATION IS IMPORTANT IN THE PROPER USE OF YOUR MACHINE. FAILURE TO FOLLOW THIS INSTRUCTION COULD RESULT IN DAMAGE TO YOUR MACHINE OR PROPERTY.

Tip: This is a helpful hint to guide you in getting the most out of your BACKHOE.

Tools Needed: This indicates you will need a special tool to perform a maintenance function on your Backhoe.

NOTE: This information may be helpful to you.

If you are ever unsure about an action you are about to take, don't do it. Contact us at www.DRpower.com or call DR Power Equipments' toll-free support at 1-800-DR-OWNER (376-9637) for help or information.

CONTACT US AT www.DRpower.com or CALL TOLL FREE 1-800-DR-OWNER 1

Specifications

MECHANICAL SPECIFICATIONS

Engine	Subaru Manual Start
Series	EX21 Robin
Max. HP	7.0 (5.1 kW)/4000 rpm.
Torque	10.26 ft. pds. (13.9 N.m.)/2500 rpm.
Fuel Capacity	.7 Gal (2.7 L)
Oil Capacity	1.3 pt. (0.60 L)
Tire Size	4.80/4.00-8 Pneumatic
Digging Depth	78"
Horizontal Reach	100"
Ripping Force	1,950 lbs.
Bucket Size - Standard	12"
Max. Digging Radius	140 degrees
Lubrication	17 Grease Fittings at pivot points
Bucket Rotation	147 degrees
Tow Ball Size	2" Ball
Towing Speed	45 mph. max.
Front Stabilizers Width	Down 117"UP 44"
Dry Weight	1,175 lbs.
Operating Weight	1,260 lbs.

HYDRAULIC SPECIFICATIONS

Hydraulic Tank	12.46 gallon capacity
Hydraulic System	13.72 gallon capacity (including tank, cylinder, hoses, filter)
Hydraulic Fluid Filter	Spin-on type, 10 micron filter
Gear Pump	Single stage, 2.788 GPM
Hydraulic Fluid	Universal Hydraulic Fluid (all temps)

SHIPPING SPECIFICATIONS

Shipping Dimensions	119" x 64" x 69 1/2"	
Shipping Weight	1,175 lbs	

Serial Number

A Serial Number is used to identify your machine. The number is located on the serial number label on your machine. For your convenience and ready reference, enter the Identification number in the space provided on the front cover of this manual.

Order Number

An Order Number is used to check and maintain your order history. The number is located on the upper left portion of your packing slip. For your convenience and ready reference, enter the order number in the space provided on the front cover of this manual.

DR[®] DIRT BOSS™ TOWABLE BACKHOE

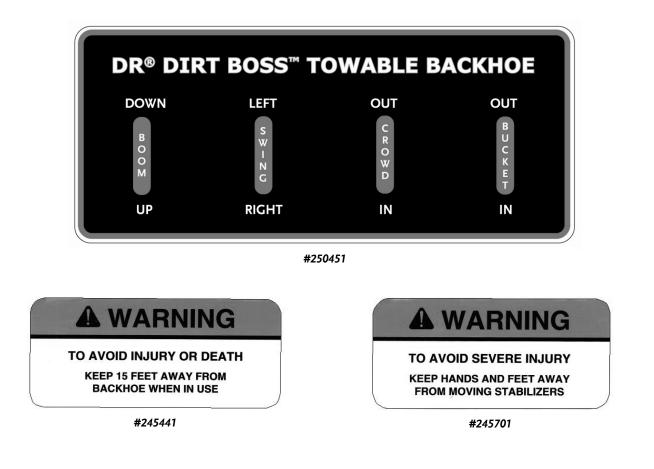
GENERAL SAFETY RULES

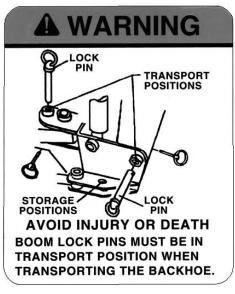
WARNING!

READ THIS SAFETY & OPERATING MANUAL BEFORE YOU USE THE DR BACKHOE. BECOME FAMILIAR WITH THE OPERATION AND SERVICE RECOMMENDATIONS TO ENSURE THE BEST PERFORMANCE FROM YOUR MACHINE. IF YOU HAVE ANY QUESTIONS OR NEED ASSISTANCE, PLEASE CONTACT US AT WWW.DRPOWER.COM OR CALL TOLL FREE 1-800-DR-OWNER (376-9637) AND ONE OF OUR TECHNICAL SUPPORT REPRESENTATIVES WILL BE HAPPY TO HELP YOU.

Labels

Your DR DIRT BOSS TOWABLE BACKHOE carries prominent labels as reminders for its proper and safe use. Shown below are copies of all the Safety and Information labels that appear on the equipment. Take a moment to study them and make a note of their location on your Backhoe as you set up and before you operate the unit. Replace damaged or missing safety and information labels immediately.





#245871

A WARNING

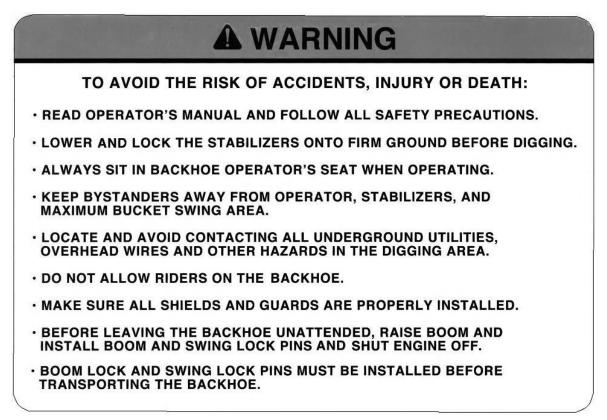
HIGH PRESSURE HYDRAULIC OIL LEAKS CAN PENETRATE SKIN • CHECK FOR LEAKS WITH CARDBOARD; NEVER USE HAND.

- BEFORE LOOSENING FITTINGS: LOWER LOAD, RELEASE PRESSURE, AND BE SURE OIL IS COOL.
- CONSULT PHYSICIAN IMMEDIATELY IF SKIN PENETRATION OCCURS. SKIN PENETRATION CAN RESULT IN SERIOUS INJURY AND GANGRENE

#246041

A WARNING PINCH POINT

#250441



#245851

WARNING!

THIS IS A HIGH-POWERED MACHINE, WITH MOVING PARTS OPERATING WITH HIGH ENERGY. YOU MUST OPERATE THE MACHINE SAFELY. UNSAFE OPERATION CAN CREATE A NUMBER OF HAZARDS FOR YOU, AS WELL AS ANYONE ELSE IN THE NEARBY AREA. ALWAYS TAKE THE FOLLOWING PRECAUTIONS WHEN USING THIS MACHINE:

- KEEP IN MIND THAT THE OPERATOR OR USER IS RESPONSIBLE FOR ACCIDENTS OR HAZARDS OCCURRING TO OTHER PEOPLE, THEIR PROPERTY, AND THEMSELVES.
- ALWAYS WEAR PROTECTIVE GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS WHILE USING THE BACKHOE TO PROTECT YOUR EYES FROM POSSIBLE THROWN DEBRIS.
- AVOID WEARING LOOSE CLOTHING OR JEWELRY, WHICH CAN CATCH ON MOVING PARTS.
- WE RECOMMEND WEARING GLOVES WHILE USING THE BACKHOE. BE SURE YOUR GLOVES FIT PROPERLY AND DO NOT HAVE LOOSE CUFFS OR DRAWSTRINGS.
- WEAR SHOES WITH NON-SLIP TREADS WHEN USING YOUR BACKHOE. IF YOU HAVE SAFETY SHOES, WE RECOMMEND WEARING THEM. DO NOT USE THE MACHINE WHILE BAREFOOT OR WEARING OPEN SANDALS.
- WEAR LONG PANTS WHILE OPERATING THE BACKHOE.
- USE EAR PROTECTORS OR EAR PLUGS RATED FOR AT LEAST 20 DBA TO PROTECT YOUR HEARING.
- KEEP BYSTANDERS AT LEAST 100 FEET AWAY FROM YOUR WORK AREA AT ALL TIMES. LOWER THE BUCKET AND STOP THE ENGINE WHEN ANOTHER PERSON OR PET APPROACHES.
- POSITION A BARRICADE AROUND THE WORK AREA.
- NEVER ALLOW A PERSON TO WORK UNDER A RAISED BUCKET.
- NEVER LIFT A PERSON WITH THE BACKHOE.

Safety for Children and Pets

WARNING!

TRAGIC ACCIDENTS CAN OCCUR IF THE OPERATOR IS NOT ALERT TO THE PRESENCE OF CHILDREN AND PETS. CHILDREN ARE OFTEN ATTRACTED TO THE MACHINE AND THE DIGGING ACTIVITY. *NEVER* ASSUME THAT CHILDREN WILL REMAIN WHERE YOU LAST SAW THEM. ALWAYS FOLLOW THESE PRECAUTIONS:

- KEEP CHILDREN AND PETS AT LEAST 100 FEET FROM THE WORKING AREA AND ENSURE THEY ARE UNDER THE WATCHFUL CARE OF A RESPONSIBLE ADULT.
- BE ALERT AND TURN THE MACHINE OFF IF CHILDREN OR PETS ENTER THE WORK AREA.
- NEVER ALLOW CHILDREN TO OPERATE THE BACKHOE.

WARNING!

GASOLINE IS A HIGHLY FLAMMABLE LIQUID. GASOLINE ALSO GIVES OFF FLAMMABLE VAPOR THAT CAN BE EASILY IGNITED AND CAUSE A FIRE OR EXPLOSION. NEVER OVERLOOK THE HAZARDS OF GASOLINE. ALWAYS FOLLOW THESE PRECAUTIONS:

- NEVER RUN THE ENGINE IN AN ENCLOSED AREA OR WITHOUT PROPER VENTILATION AS THE EXHAUST FROM THE ENGINE CONTAINS CARBON MONOXIDE, WHICH IS AN ODORLESS, TASTELESS, AND DEADLY POISONOUS GAS.
- STORE ALL FUEL AND OIL IN CONTAINERS SPECIFICALLY DESIGNED AND APPROVED FOR THIS PURPOSE AND KEEP AWAY FROM HEAT AND OPEN FLAME, AND OUT OF THE REACH OF CHILDREN.
- REPLACE RUBBER FUEL LINES AND GROMMETS WHEN WORN OR DAMAGED AND AFTER 5 YEARS OF USE.
- FILL THE GASOLINE TANK OUTDOORS WITH THE ENGINE OFF AND ALLOW THE ENGINE TO COOL COMPLETELY. DON'T HANDLE GASOLINE IF YOU OR ANYONE NEARBY IS SMOKING, OR IF YOU'RE NEAR ANYTHING THAT COULD CAUSE IT TO IGNITE OR EXPLODE. REINSTALL THE FUEL TANK AND FUEL CONTAINER CAPS SECURELY.
- IF YOU SPILL GASOLINE, DO NOT ATTEMPT TO START THE ENGINE. MOVE THE MACHINE AWAY FROM THE AREA OF THE SPILL AND AVOID CREATING ANY SOURCE OF IGNITION UNTIL THE GAS VAPORS HAVE DISSIPATED. WIPE UP ANY SPILLED FUEL TO PREVENT A FIRE HAZARD AND PROPERLY DISPOSE OF THE WASTE.
- ALLOW THE ENGINE TO COOL COMPLETELY BEFORE STORING IN ANY ENCLOSURE. NEVER STORE A MACHINE THAT HAS GAS IN THE TANK, OR A FUEL CONTAINER, NEAR AN OPEN FLAME OR SPARK SUCH AS A WATER HEATER, SPACE HEATER, CLOTHES DRYER OR FURNACE.
- NEVER MAKE ADJUSTMENTS OR REPAIRS WITH THE ENGINE RUNNING. SHUT DOWN THE ENGINE, DISCONNECT THE SPARK PLUG WIRE, KEEPING IT AWAY FROM THE SPARK PLUG TO PREVENT ACCIDENTAL STARTING, WAIT 5 MINUTES BEFORE MAKING ADJUSTMENTS OR REPAIRS.
- NEVER TAMPER WITH THE ENGINE'S GOVERNOR SETTING. THE GOVERNOR CONTROLS THE MAXIMUM SAFE OPERATION SPEED AND PROTECTS THE ENGINE. OVER-SPEEDING THE ENGINE IS DANGEROUS AND WILL CAUSE DAMAGE TO THE ENGINE AND TO THE OTHER MOVING PARTS OF THE MACHINE. IF REQUIRED, SEE YOUR AUTHORIZED DEALER FOR ENGINE GOVERNOR ADJUSTMENTS.
- KEEP COMBUSTIBLE SUBSTANCES AWAY FROM THE ENGINE WHEN IT IS HOT.
- NEVER COVER THE MACHINE WHILE THE MUFFLER IS STILL HOT.
- DO NOT OPERATE THE ENGINE WITH THE AIR CLEANER OR THE CARBURETOR AIR INTAKE COVER REMOVED. REMOVAL OF SUCH PARTS COULD CREATE A FIRE HAZARD. DO NOT USE FLAMMABLE SOLUTIONS TO CLEAN THE AIR FILTER.
- THE MUFFLER AND ENGINE BECOME VERY HOT AND CAN CAUSE A SEVERE BURN; DO NOT TOUCH.

A WARNING!

HIGH FLUID PRESSURES ARE DEVELOPED IN HYDRAULIC MACHINES. PRESSURIZED HYDRAULIC FLUID ESCAPING THROUGH A PIN HOLE OPENING CAN PUNCTURE SKIN AND CAUSE SEVERE BLOOD POISONING. THEREFORE, THE FOLLOWING INSTRUCTIONS SHOULD BE HEEDED AT ALL TIMES.

- DO NOT OPERATE THE UNIT WITH FRAYED, KINKED, CRACKED OR DAMAGED HOSES, FITTINGS, OR TUBING. STOP THE ENGINE, WAIT 5 MINUTES AND RELIEVE HYDRAULIC SYSTEM PRESSURE BEFORE CHANGING OR ADJUSTING FITTINGS, HOSES, TUBING, OR OTHER SYSTEM COMPONENTS.
- DO NOT CHANGE ANY BACKHOE NEEDLE VALVE SETTINGS. THEY ARE SET AT THE FACTORY FOR BEST BACKHOE PERFORMANCE AND SAFETY.
- DO NOT CHECK FOR LEAKS WITH YOUR HAND. LEAKS CAN BE LOCATED BY PASSING CARDBOARD OR WOOD OVER THE SUSPECTED AREA: LOOK FOR DISCOLORATION. IF INJURED BY ESCAPING FLUID, SEE A DOCTOR AT ONCE. SERIOUS INFECTION OR REACTION CAN DEVELOP IF PROPER MEDICAL TREATMENT IS NOT ADMINISTERED IMMEDIATELY.
- ALWAYS WEAR SAFETY GLASSES TO PROTECT YOUR EYES FROM HYDRAULIC FLUID.

Safety When Digging Near Utilities

A DANGER!

CALL 811 BEFORE YOU BEGIN ANY DIGGING PROJECT. A NEW, FEDERALLY-MANDATED NATIONAL "CALL BEFORE YOU DIG" NUMBER, 811 WAS CREATED TO HELP PROTECT YOU FROM UNINTENTIONALLY HITTING UNDERGROUND UTILITIES WHILE WORKING ON DIGGING PROJECTS. EVERY DIGGING JOB REQUIRES A CALL. IF YOU HIT AN UNDERGROUND UTILITY LINE WHILE DIGGING, YOU CAN HARM YOURSELF OR THOSE AROUND YOU, DISRUPT SERVICE AND POTENTIALLY BE RESPONSIBLE FOR FINES AND REPAIR COSTS.

- THERE MAY BE BURIED POWER, GAS, AND/OR TELEPHONE LINES IN THE WORK AREA. ELECTRIC SHOCK, DEATH, OR EXPLOSION MAY OCCUR.
- HAVE THE PROPERTY OR WORK AREA MARKED FOR BURIED LINES AND DO NOT DIG IN MARKED AREAS.
- THERE MAY ALSO BE OVERHEAD POWER LINES IN THE WORK AREA. ELECTRIC SHOCK OR DEATH MAY OCCUR IF A POWER LINE IS TOUCHED BY THE BACKHOE.
- SURVEY AND MARK THE AREA WHERE THERE ARE OVERHEAD POWER LINES AND DIG WITH CAUTION UNDER POWER LINES TO ENSURE THAT YOU DO NOT TOUCH THEM WITH THE BACKHOE.

Towing

WARNING!

- ALWAYS CHECK BEFORE TOWING TO MAKE CERTAIN YOUR BACKHOE IS CORRECTLY AND SECURELY ATTACHED TO THE TOWING VEHICLE. BE SURE THAT THE BALL HITCH YOU ARE USING IS THE PROPER SIZE FOR THE HITCH COUPLER ON THE BACKHOE. BE SURE THE SAFETY CHAINS ARE PROPERLY HOOKED TO THE VEHICLE LEAVING ENOUGH SLACK FOR TURNING.
- ALWAYS INSTALL THE SWING AND BOOM TRANSPORT HITCH PINS AND LYNCH PINS BEFORE TRANSPORTING THE BACKHOE.
- ALWAYS USE ACCESSORY LIGHTS AND DEVICES WHEN TRANSPORTING ON A ROAD OR HIGHWAY TO WARN OPERATORS OF OTHER VEHICLES. CHECK YOUR LOCAL GOVERNMENT REGULATIONS.
- ALWAYS ALLOW FOR ADDED LENGTH OF THE BACKHOE WHEN TURNING, PARKING, CROSSING INTERSECTIONS, AND IN ALL DRIVING SITUATIONS.
- ALWAYS BE CAREFUL WHEN BACKING UP. YOU COULD JACKKNIFE YOUR BACKHOE IF CARE IS NOT TAKEN.
- NEVER EXCEED 45 M.P.H. WHEN TOWING YOUR BACKHOE. OBEY ALL STATE AND LOCAL REGULATIONS WHEN TOWING ON STATE AND LOCAL ROADS AND HIGHWAYS. ADJUST YOUR SPEED FOR TERRAIN AND CONDITIONS, AS NEEDED. BE EXTRA CAUTIOUS WHEN TOWING OVER ROUGH TERRAIN, ESPECIALLY OVER A RAILROAD CROSSING.
- NEVER ALLOW ANYONE TO SIT OR RIDE ON YOUR BACKHOE.
- NEVER CARRY ANY CARGO ON YOUR BACKHOE.
- TRAVEL SLOWLY OVER ROUGH TERRAIN, ON HILLSIDES, AND AROUND CURVES TO PREVENT TIPPING.
- DO NOT TOW THE BACKHOE NEAR THE EDGE OF A DITCH OR EXCAVATION.

General Safety

WARNING!

OPERATING THIS BACKHOE SAFELY IS NECESSARY TO PREVENT OR MINIMIZE THE RISK OF <u>DEATH</u> <u>OR SERIOUS INJURY</u>. UNSAFE OPERATION CAN CREATE A NUMBER OF HAZARDS FOR YOU. ALWAYS TAKE THE FOLLOWING PRECAUTIONS WHEN OPERATING THIS BACKHOE:

- YOUR BACKHOE IS A POWERFUL TOOL, NOT A PLAYTHING. EXERCISE EXTREME CAUTION AT ALL TIMES. THE DESIGN OF THIS MACHINE IS TO DIG HOLES. DO NOT USE IT FOR ANY OTHER PURPOSE.
- KNOW HOW TO STOP THE BACKHOE QUICKLY; SEE "STOPPING THE ENGINE" IN CHAPTER 4.
- OPERATE THIS MACHINE ON A LEVEL SURFACE ONLY. NEVER OPERATE YOUR UNIT ON A SLIPPERY, WET, MUDDY, OR ICY SURFACE. EXERCISE CAUTION TO AVOID SLIPPING OR FALLING.
- SEE MANUFACTURER'S INSTRUCTIONS FOR PROPER OPERATION AND INSTALLATION OF ACCESSORIES. ONLY USE ACCESSORIES APPROVED BY DR POWER EQUIPMENT.
- NEVER USE THE MACHINE WITHOUT ENSURING THAT ALL GUARDS AND SHIELDS ARE IN PLACE.
- NEVER, UNDER ANY CONDITIONS, REMOVE, BEND, CUT, FIT, WELD, OR OTHERWISE ALTER STANDARD PARTS ON THE BACKHOE. THIS INCLUDES ALL SHIELDS AND GUARDS. MODIFICATIONS TO YOUR MACHINE COULD CAUSE PERSONAL INJURIES AND PROPERTY DAMAGE AND WILL VOID YOUR WARRANTY.
- ALWAYS OPERATE THE BACKHOE FROM THE OPERATOR SEAT ONLY.
- ALLOW ONLY ONE PERSON TO OPERATE THE BACKHOE AT ANY TIME.
- NEVER DIG WITH THE BACKHOE UNLESS THE STABILIZERS ARE PROPERLY SET.
- DO NOT DIG UNDER THE STABILIZERS. SOFT GROUND OR SANDY SOIL CAN CAUSE CAVE-INS.
- DO NOT USE THE BACKHOE BUCKET AS A BATTERING RAM.
- ALWAYS LOWER THE BUCKET TO THE GROUND BEFORE LEAVING THE OPERATOR'S SEAT.
- NEVER LEAVE THE BACKHOE WITH THE ENGINE RUNNING. STOP THE ENGINE AND TURN THE IGNITION SWITCH TO "OFF".
- BE SURE THE AREA IS CLEAR OF UNDERGROUND OBSTRUCTIONS. CALL "811" BEFORE YOU DIG.
- USE THE STEPS PROVIDED WHEN CLIMBING ON OR OFF THE BACKHOE TO PREVENT SLIPPING.

WARNING!

- IF THE MACHINE SHOULD START MAKING AN UNUSUAL NOISE OR VIBRATION, SHUT DOWN THE ENGINE, DISCONNECT THE SPARK PLUG WIRE, KEEPING IT AWAY FROM THE SPARK PLUG TO PREVENT ACCIDENTAL STARTING, WAIT 5 MINUTES, THEN INSPECT FOR DAMAGE. VIBRATION IS GENERALLY A WARNING OF TROUBLE. CLEAN, REPAIR AND/OR REPLACE DAMAGED PARTS.
- NEVER TAMPER WITH SAFETY DEVICES. CHECK THEIR PROPER OPERATION REGULARLY.
- BEFORE PERFORMING ANY MAINTENANCE/INSPECTION PROCEDURE OR BEFORE LEAVING THE BACKHOE UNATTENDED, RAISE AND CENTER THE BOOM, LOWER THE CROWD ARM, PULL IN THE BUCKET, ADJUST THE THROTTLE CONTROL LEVER TO IDLE, TURN THE IGNITION SWITCH TO "OFF", REMOVE THE SPARK PLUG WIRE, AND INSTALL THE SWING AND BOOM TRANSPORT HITCH PINS AND LYNCH PINS.
- NEVER ALLOW PEOPLE WHO ARE UNFAMILIAR WITH THESE INSTRUCTIONS TO USE THE BACKHOE. ALLOW ONLY RESPONSIBLE INDIVIDUALS WHO ARE FAMILIAR WITH THESE RULES OF SAFE OPERATION TO USE YOUR MACHINE.
- NEVER OVERLOAD OR ATTEMPT TO MOVE MATERIAL BEYOND THE MANUFACTURER'S RECOMMENDATION. PERSONAL INJURY OR DAMAGE TO THE MACHINE COULD RESULT.
- WHILE USING THE BACKHOE, DON'T HURRY OR TAKE THINGS FOR GRANTED. WHEN IN DOUBT ABOUT THE EQUIPMENT OR YOUR SURROUNDINGS, STOP THE MACHINE AND TAKE THE TIME TO LOOK THINGS OVER.
- NEVER OPERATE THE MACHINE WHEN UNDER THE INFLUENCE OF ALCOHOL, DRUGS, OR MEDICATION.
- USE THE MACHINE ONLY IN DAYLIGHT.
- STAY ALERT FOR HIDDEN HAZARDS OR TRAFFIC.
- KEEP ALL NUTS AND BOLTS TIGHT AND KEEP THE EQUIPMENT IN GOOD OPERATING CONDITION.
- NO LIST OF WARNINGS AND CAUTIONS CAN BE ALL-INCLUSIVE. IF SITUATIONS OCCUR THAT ARE NOT COVERED BY THIS MANUAL, THE OPERATOR MUST APPLY COMMON SENSE AND OPERATE THIS BACKHOE IN A SAFE MANNER. CONTACT US AT WWW.DRPOWER.COM OR CALL 1 (800) DR-OWNER (376-9637) FOR ASSISTANCE.

A Note to All Users

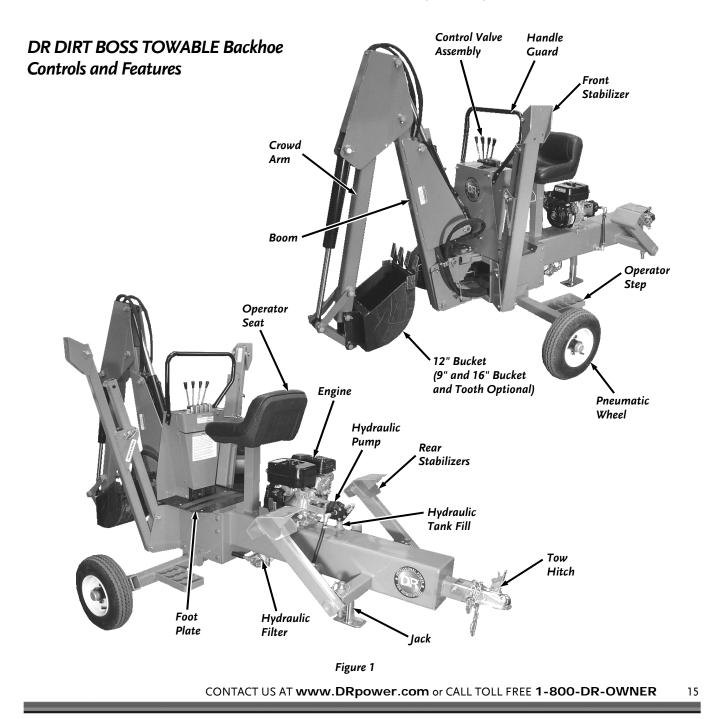
Under California law, and the laws of some other states, you are not permitted to operate an internal combustion engine using hydrocarbon fuels without an engine spark arrester. This also applies to operation on US Forest Lands. All DR[®] DIRT BOSS™ TOWABLE BACKHOES shipped to California, New Mexico and Washington State are provided with spark arresters. Failure of the owner or operator to maintain this equipment in compliance with state regulations is a misdemeanor under California law and may be in violation of other state and/or federal regulations. Contact your State Park Association or the appropriate state organization for specific information in your area.

Additional Information and Potential Changes

DR Power Equipment reserves the right to discontinue, change, and improve its products at any time without notice or obligation to the purchaser. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your machine.

SETTING UP YOUR DR DIRT BOSS TOWABLE BACKHOE

This chapter outlines unpacking and a few simple steps you will need to follow to set up your new machine before you use it. It may be helpful to familiarize yourself with the controls and features of your DR DIRT BOSS TOWABLE Backhoe as shown in *Figure 1* before beginning these procedures. If you have any questions at all, please feel free to contact us at **www.DRpower.com** or call our Customer Service Representatives at our toll free number: **1-800-DR-OWNER (376-9637)**.



Adding Oil and Gasoline

Capacities		
Engine	1.3 pt. (0.60 L) - SAE 30 for temp. 50 deg. F. or above, 10w-30 for 10-90 deg. F., 5w-30 for 30 deg. F. or below	
Fuel Tank	Unleaded gasoline, .7 Gal (2.7 L)	

NOTICE!

- YOU MUST ADD OIL BEFORE STARTING THE ENGINE. THIS MACHINE IS SHIPPED WITHOUT OIL. TRACES OF OIL MAY BE IN THE RESERVOIR FROM FACTORY TESTING, BUT <u>YOU MUST ADD</u> <u>OIL BEFORE STARTING THE ENGINE</u>. FILL THE RESERVOIR SLOWLY, CHECKING THE LEVEL FREQUENTLY TO AVOID OVERFILLING.
- TO GET AN ACCURATE READING WHEN CHECKING THE OIL LEVEL:
 - THE MACHINE SHOULD BE ON A LEVEL SURFACE.
 - THE DIPSTICK <u>SHOULD NOT</u> BE SCREWED DOWN TO ENSURE AN ACCURATE OIL LEVEL READING.

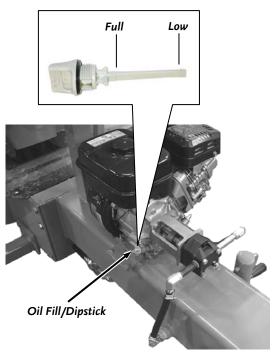


Figure 2

NOTE: Use only the recommended high detergent oil. Other types of oil could cause problems operating your machine. Please refer to your Engine Owner's Manual for detailed oil information.

- Place the machine on a level surface, remove the Oil Fill/Dipstick (*Figure 2*) and clean the end of it with a rag.
- Machines are shipped with no oil. Initially add 16 oz. of the oil recommended by the Engine Manufacturer. Wait one minute for the oil to settle.
- 3. Replace the Dipstick, but <u>DO NOT</u> screw it in, to ensure an accurate reading and then remove it to check the oil level (clean the Dipstick with the rag after checking).
- 4. Continue adding a few ounces of oil at a time, rechecking the Dipstick until the oil reaches the fill mark. Be careful not to overfill.
- 5. Replace the Dipstick and screw all the way down when full.

- 6. Remove the Gas Fill Cap and fill the Gas Tank with fresh, unleaded gas (with a minimum of 85 Octane) to approximately 1" to 1-1/2" below the top of the fill neck to allow for fuel expansion (*Figure 3*). Be careful not to overfill and reinstall the Gas Fill Cap before starting the engine. See your Engine Owner's Manual for more detailed information.
- **NOTE:** To refill the gas tank, turn the engine OFF and let the engine cool at least five minutes before removing the gas fill cap.

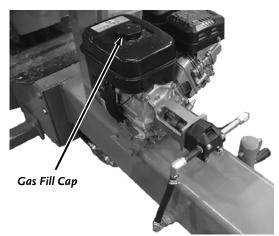


Figure 3

Adding Hydraulic Fluid

NOTICE!

- YOU MUST ADD HYDRAULIC FLUID BEFORE USING THE BACKHOE. THIS MACHINE IS SHIPPED WITHOUT HYDRAULIC FLUID. FILL THE HYDRAULIC TANK SLOWLY, CHECKING THE LEVEL FREQUENTLY TO AVOID OVERFILLING.
- TO GET AN ACCURATE READING WHEN CHECKING THE HYDRAULIC FLUID LEVEL:
 - THE MACHINE SHOULD BE ON A LEVEL SURFACE.
 - THE DIPSTICK <u>SHOULD BE</u> SCREWED ALL THE WAY DOWN TO ENSURE AN ACCURATE FLUID LEVEL READING.
 - 1. Remove the Hydraulic Fluid Fill Cap Dipstick and fill the Hydraulic Tank *(Figure 4)* with the recommended fluid (see the "specifications" section, page 2). The tank is full when the fluid level is at the full mark on the Dipstick.
 - **NOTE:** The total hydraulic system fluid capacity is 13.72 gallons.

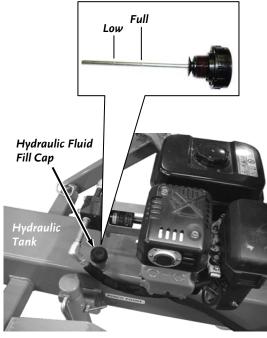


Figure 4

Check the Tire Pressure

Tools Needed:

- Tire Pressure Gauge
- Air Compressor

WARNING!

DO NOT OVER INFLATE THE TIRES. INFLATE TO THE MANUFACTURERS RECOMMENDED PRESSURE FOUND ON THE TIRES.

- 1. Remove the Valve Stem Protective Cap (Figure 5) and check the tire pressure with a tire pressure gauge.
- 2. If the pressure is too low, add air with an air hose through the Valve Stem.
- 3. Replace the Valve Stem Protective Cap when finished.



Figure 5

CHAPTER 4

OPERATING YOUR DR DIRT BOSS TOWABLE BACKHOE

This chapter discusses the basic operation of your new DR DIRT BOSS TOWABLE BACKHOE. It may be helpful to better learn the features of your Backhoe by reviewing *Figure 1* in Chapter 3 before beginning the steps outlined in this chapter.

ANGER!

READ AND UNDERSTAND THE DANGERS LISTED IN THE "SAFETY WHEN DIGGING NEAR UTILITIES" SECTION IN CHAPTER 2, GENERAL SAFETY RULES, BEFORE OPERATING THIS BACKHOE.

WARNING!

READ AND UNDERSTAND THE WARNINGS LISTED IN CHAPTER 2, GENERAL SAFETY RULES, BEFORE OPERATING THIS BACKHOE.

Control Levers

 Familiarize yourself with all of the Control Levers (*Figure 6*) and all of their functions (*Figure 7*) before operating the Backhoe.

Starting the Engine

 Turn the Ignition Switch to the "ON" position (*Figure* 8).

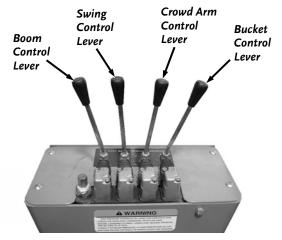


Figure 6

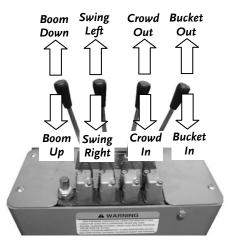


Figure 7

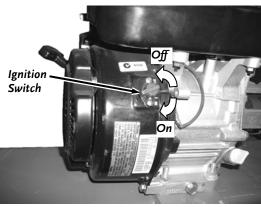


Figure 8

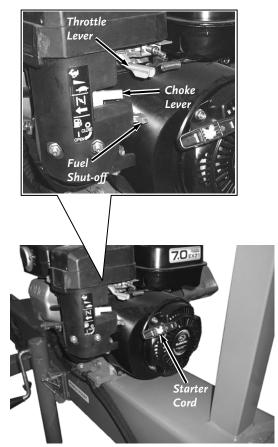


Figure 9

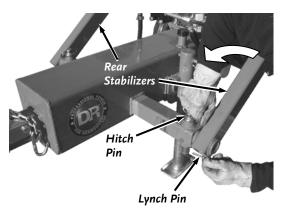


Figure 10

- Make sure the Fuel Shut-off is in the "OPEN" position (*Figure 9*).
- 3. Move the Choke Control Lever to the left to the choke position (leave in the run position to the right if the engine is already warm).
- 4. Move the Throttle Control Lever to about half way between Slow and Fast position.
- 5. Slowly pull the Starter Cord until you feel resistance, then pull quickly. The Cord will recoil back into position.
- 6. As the engine warms up, slowly adjust the Choke to the right towards the run position. Wait until the engine runs smoothly before each Choke adjustment.
- 7. When the Engine is warmed up and running smoothly with the Choke in the run position, move the Throttle Control Lever to the fast position for operating the Backhoe.

Stopping the Engine

- 1. Slowly move the Throttle Control Lever to the idle position (*Figure 9*).
- Turn the Ignition Switch to the "Off" position (*Figure* 8).

Stabilizing the Backhoe for Digging

A. LOWERING THE REAR STABILIZERS

- 1. Pull the Rear Stabilizer Lynch-Pin from the Hitch pin and remove the Hitch Pin (*Figure 10*).
- 2. Rotate the Rear Stabilizer towards the Tow Hitch until the holes line up and allow you to reinstall the Hitch Pin. Secure the Hitch Pin with the Lynch Pin.

NOTE: If the Stabilizer hits the ground before the holes line up, then the Jack must be jacked up more to provide the needed clearance.

3. Repeat for the other Rear Stabilizer.

 Lower the rear of the Backhoe to the ground by cranking the Jack Handle counterclockwise (*Figure* 11).

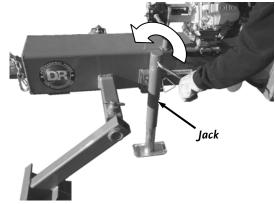


Figure 11

Figure 12

Jack Locking Pin

the horizontal position (*Figure 12*).

counterclockwise until the Lock Pin locks the Jack into

5. Pull the Lock Pin of the Jack and rotate the Jack

B. LOWERING THE FRONT STABILIZERS

- **NOTE:** When using the Backhoe for the first time after initial setup, you must first cycle the Hydraulic Fluid into the cylinders before you can control the Boom effectively and have it stay in position when the Control Levers are released.
- 1. Start the Engine as instructed in the "Starting the Engine" section in this chapter.

NOTE: Refer to Figures 6 and 7 for Control Lever functions.

- 2. Pull back on the Boom Control Lever until you see the Boom move towards you. When the Boom is moved to this position, pressure is removed from the Boom Hitch Pins.
- 3. Remove the Lynch Pins from the two Hitch Pins and remove the Hitch Pins from the Boom (*Figure 13*).
- 4. Install the two Hitch Pins into the storage holes in the Boom and secure with the Lynch Pins.

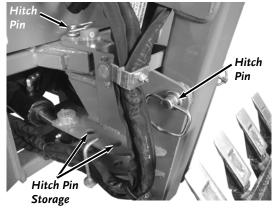


Figure 13

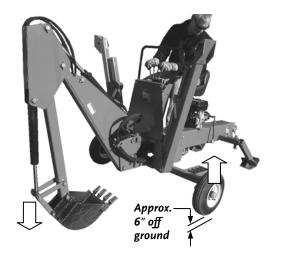


Figure 14

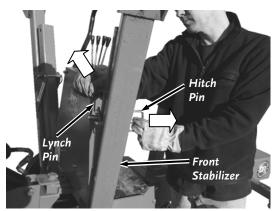


Figure 15

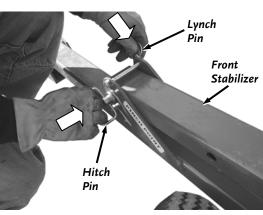


Figure 16

- 5. Push the Swing Control Lever slowly all the way forward and pull all the way back four to six times to fill the Swing Cylinder with fluid.
- 6. Push the Bucket Control Lever slowly all the way forward and pull all the way back four to six times to fill the Bucket Cylinder with fluid.
- 7. Push the Crowd Arm Control Lever slowly all the way forward and pull all the way back four to six times to fill the Crowd Arm Cylinder with fluid.
- 8. Push the Boom Control Lever slowly forward (do not push full forward) to slowly fill the Boom Cylinder the rest of the way and lower the Boom.
- 9. Pull the Boom Control Lever slowly all the way back and push all the way forward four to six times to fill the Boom Cylinder with fluid.
- Center the Boom and slowly lower the Bucket to the ground and lift the front of the Backhoe until the Wheels are about 6" off the ground (*Figure 14*).
- 11. Carefully get off the Backhoe and shut down the engine.

WARNING!

WHEN THE FRONT STABILIZERS ARE LOWERED OR RAISED THERE IS A HAZARD OF PINCHING YOUR HANDS. KEEP YOUR HANDS CLEAR OF THE PINCH POINT AREAS AS INDICATED BY THE LABELS.

- 12. Pull the Front Stabilizer Lynch-Pin from the Hitch pin and remove the Hitch Pin (*Figure 15*).
- 13. Lower the Front Stabilizer to the ground.
- 14. Line up the holes in the Front Stabilizer and insert the Hitch Pin. Secure the Hitch Pin with the Lynch Pin (*Figure 16*).
- 15. Repeat the last three steps for the other Front Stabilizer.

16. Start the Backhoe engine and get into the Operator seat to raise the Boom to lower the Backhoe onto the Front Stabilizers (Figure 17).

Digging with the Backhoe

It is not difficult (but it does take practice) to become an efficient operator. A control lever operating decal is located just forward of the control levers. Study this decal; it will help you become familiar with the controls. See Figures 6 and 7 for control locations and functions.

Smooth, light handling of the controls will result in the most efficient machine operation. Operate the backhoe control levers to become familiar with their speed and movements. The engine speed will determine the speed of the cylinder operation.

Swing the boom several times to practice controlling the speed of the swing. Do not operate the swing more than 45 degrees each way for the first few times. Gradually increase the arc.

Best results are obtained by digging near the center of the swing arc so material can be dumped to either side.

CAUTION!

TO AVOID DAMAGE TO THE BACKHOE, DO NOT SLAM THE SWING UNIT INTO THE END OF THE SWING CYLINDER STROKE.

1. Lower the Bucket to the digging area with the Bucket pivot 18" to 24" forward of the Boom/Crowd Arm pivot

NOTE: It is important for the Bucket to be in the proper

2. Using down pressure on the Bucket bottom, force the

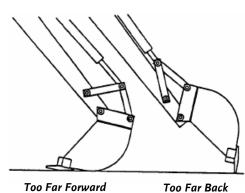
position for digging efficiency. The Bucket will not dig as well if you attempt to dig with the Bucket in the wrong position, tilted too far forward or too far back

Bucket Digging

(Figure 18).

(Figure 19).

Bucket into the ground.







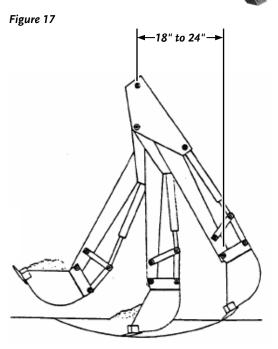


Figure 18

- 3. With the Bucket in the ground, simultaneously retract the Crowd Arm and load the Bucket until it is full (*Figure 18*).
- 4. If the Bucket stalls, raise the Boom slightly and continue to dig until the Bucket is full.
- 5. Raise the Bucket to the top of the trench and dump it on the spoil pile.
- 6. When lifting the loaded Bucket high, continue rolling the Bucket in as it is being raised to prevent spilling the contents.

NOTE: With a little practice, raising, swinging, and dumping can be accomplished in one smooth operation.

Crowd Arm Digging

- Lower the Bucket to the digging area with the Bucket pivot 18" to 24" forward of the Boom/Crowd Arm pivot.
- 2. Rotate the Bucket until the cutting edge teeth are flat on the ground.
- 3. Using only the Crowd Arm Control Lever, retract the Crowd Arm, dragging the Bucket through the trench until it is about half full. Roll the Bucket as you continue to retract the Crowd Arm.
- 4. Raise the Bucket and swing the Boom until the Bucket can be dumped in the spoil area.

Preparing the Backhoe for Moving/Towing

- 1. Lift the front of the Backhoe by lowering the Boom until the Front Stabilizers lift slightly off the ground (*Figure 20*).
- Move the Throttle Lever to the idle position (*Figure* 9) and turn the Ignition Switch of the Engine to the "OFF" position (*Figure 8*).

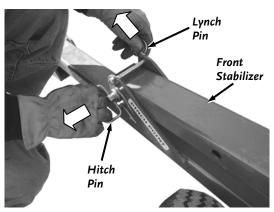
WARNING!

WHEN THE FRONT STABILIZERS ARE LOWERED OR RAISED THERE IS A HAZARD OF PINCHING YOUR HANDS. KEEP YOUR HANDS CLEAR OF THE PINCH POINT AREAS AS INDICATED BY THE LABELS.

3. Pull the Front Stabilizer Lynch-Pins from the Hitch pins and remove the Hitch Pins (*Figure 21*).



Figure 20





- 4. Raise the Front Stabilizers to the Vertical position (*Figure 22*).
- 5. Line up the holes in the Front Stabilizers and insert the Hitch Pins. Secure the Hitch Pins with the Lynch Pins.

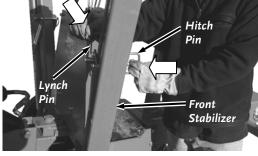


Figure 22



Figure 23

7. Use the Controls to center and pull in the Boom, pull the Crowd arm all the way towards you, and pull the Bucket in. This will line up the holes for the next step.

NOTE: You may need to check that the holes are aligned properly before you shut down the Engine.

- 8. Move the Throttle Control Lever to the idle position and turn the Engine Ignition Switch to "OFF".
- Remove the Lynch Pins from the Hitch Pins and then remove the two Hitch Pins from the storage area. Install the Hitch Pins into their positions to lock the Boom in place (*Figure 24*).

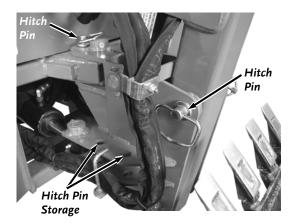
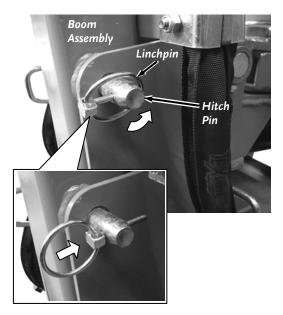
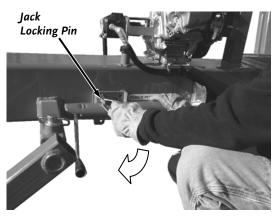


Figure 24

6. Start the Backhoe Engine and raise the Boom to lower the Backhoe onto the Wheels (*Figure 23*).







10. Insert the Lynch Pins into the Hitch Pins and secure them by snapping the Lynch Pin Ring over the Hitch Pin (*Figure 25*).

11. Pull the Jack Spring Pin out and rotate the Jack until it locks into the vertical position (*Figure 26*).

Figure 26

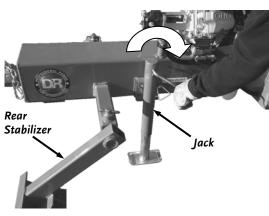


Figure 27

12. Rotate the Jack Handle clockwise until the Rear Stabilizers are lifted off the ground (*Figure 27*).

- 13. Remove the Hitch Pins of the Rear Stabilizers and rotate them into their upright position until the holes are aligned (*Figure 28*).
- 14. Reinstall Hitch Pins into the Rear Stabilizers and secure with the Lynch Pins.

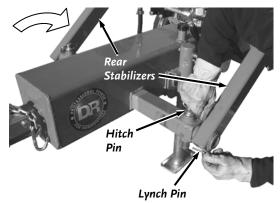
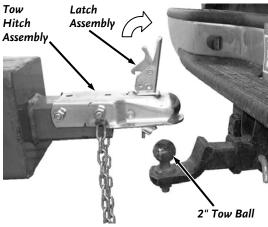


Figure 28

Towing the Backhoe

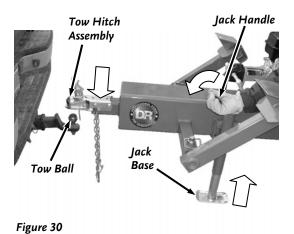
The Backhoe must be prepared for towing by following the procedures in the previous "Preparing the Backhoe for Towing" section first.

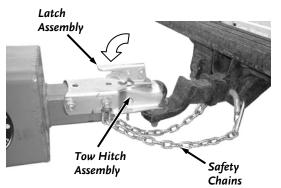
- 1. Position the Backhoe behind the tow vehicle and raise or lower the Jack to position the Tow Hitch just over the Tow Ball (*Figure 29*).
- 2. Pull the Latch Assembly of the Tow Hitch Assembly up and into the open position.





3. Lower the Hitch Coupler of the Backhoe onto the tow vehicle's Tow Ball (must be a 2" tow ball) by lowering the Jack until all the weight is on the Tow Ball and the Jack Base comes off the ground (*Figure 30*).





 Close the Latch Assembly on the Tow Hitch Assembly to lock the Tow Hitch Assembly onto the Tow Ball (*Figure 31*). Attach the towing Safety Chains to the tow vehicle ensuring there is enough slack for turning.

Figure 31

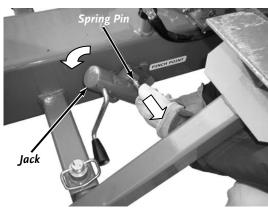


Figure 32

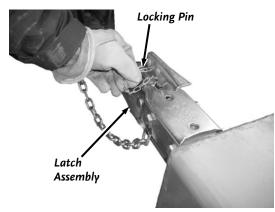


Figure 33

5. Rotate the Jack to the towing position by pulling the spring pin and rotating the Jack until it locks into the tow position *(Figure 32)*. Make sure the hitch coupler is properly and securely attached to the tow ball.

- 6. Insert the Locking Pin into the hole of the Latch Assembly to lock it in the closed position.
- 7. For extra safety and security, you may want to purchase a lock to install into the hole of the latch assembly *(Figure 33)*.

WARNING!

MAKING SURE THE BACKHOE IS SECURELY ATTACHED TO THE VEHICLE IS THE RESPONSIBILITY OF THE OWNER/OPERATOR. FAILURE TO SECURELY ATTACH THE BACKHOE CAN CAUSE LOSS OF CONTROL OF THE VEHICLE OR THE BACKHOE BEING SEPARATED FROM THE TOWING VEHICLE, RESULTING IN SERIOUS INJURY OR DEATH.

ALWAYS USE ACCESSORY LIGHTS AND DEVICES WHEN TRANSPORTING ON A ROAD OR HIGHWAY TO WARN OPERATORS OF OTHER VEHICLES. CHECK YOUR LOCAL GOVERNMENT REGULATIONS.

Hitch Coupler Adjustment Check

- Place the proper size ball in the socket of the coupler and close the latch assembly *(Figure 34)*. Verify that the locking trigger is properly engaged in its detent.
- 2. Pull on the ball and/or coupler, trying to remove the ball from the socket. If the ball moves more than 1/16" in the coupler's socket, the clamp requires adjustment. Follow the proper adjustment procedure in the following steps.

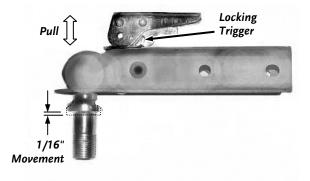


Figure 34

Hitch Coupler Adjustment

- With the proper size ball in the socket of the hitch coupler, close the latch of the coupler completely (*Figure 35*). Verify that the locking trigger is properly engaged in its detent.
- 2. Tighten the lock nut on the underside of the coupler until the spring between the nut and the clamp is fully compressed. Then back off the lock nut 1/2 turn or just enough that the latch is able to clamp and unclamp from the ball.

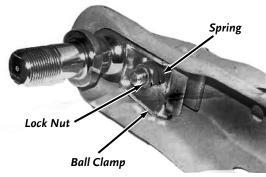


Figure 35

MAINTAINING THE DR DIRT BOSS TOWABLE BACKHOE

Regular maintenance is the way to ensure the best performance and long life of your machine. Please refer to this manual and the engine manufacturer's owner's manual for maintenance procedures. Service intervals listed in the checklist below supersede those listed in the engine manufacturer's owner's manual.

WARNING!

CENTER THE BOOM. RETRACT THE BOOM, CROWD ARM AND BUCKET. INSTALL THE BOOM HITCH PINS AND LYNCH PINS TO LOCK THE BOOM IN PLACE. SHUT DOWN THE ENGINE, REMOVE THE SPARK PLUG WIRE AND WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE BACKHOE.

Regular Maintenance Checklist

Procedure	BEFORE EACH USE	Every 25 Hours	Every 100 Hours
Check Engine Oil Level			
Check General Equipment Condition			
Check Tire Pressure			
Check Hydraulic Fluid Level			
Check Hydraulic Hoses and Connections			
Lubricate Grease Fittings	▲ *		
Clean Air Filter			
Change Engine Oil	1 st time 5 hours		
Clean Engine Exterior & Cooling Fins			
Replace Spark Plug			
Replace Hydraulic Fluid and Filter			
Replace Air Filter			

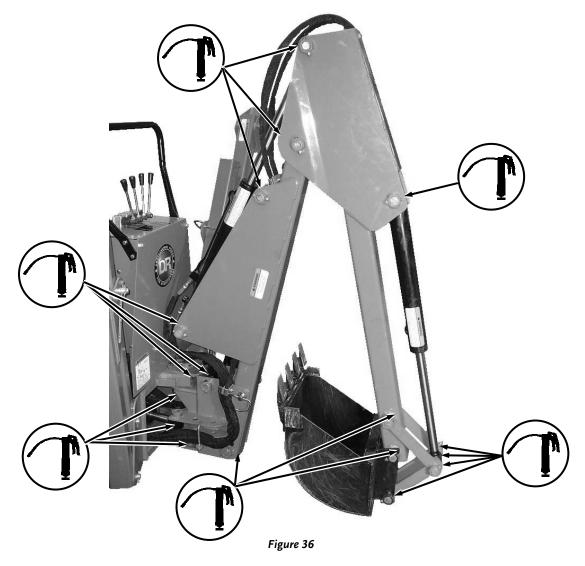
*Lubricate grease fittings after every four hours of use.

Greasing the Backhoe

Economical and efficient operation of any machine is dependant upon regular and proper lubrication of all moving parts with a quality lubricant. All parts provided with grease fittings should be lubricated with a good quality chassis lube type grease. If any grease fittings are missing, replace them immediately.

Tools and Supplies Needed:

- Grease Gun (general purpose grease)
- Rags
- 1. Wipe any grease or dirt from all Grease Fittings with a rag.
- 2. Grease the Backhoe at all seventeen Grease Fittings (*Figure 36*) until you notice grease escaping from the joint.
- 3. Wipe off any excess grease with a rag.

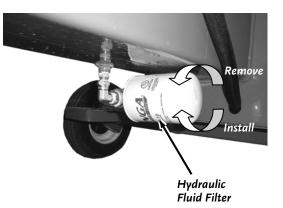


NOTICE!

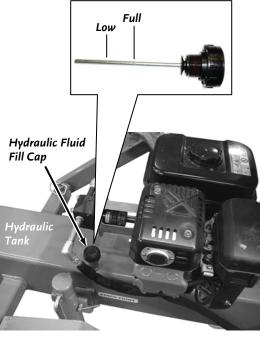
NEVER RUN THE BACKHOE UNLESS THE HYDRAULIC FLUID TANK IS FULL.

Tools needed:

- 3/4"Wrench
- 7/8" Wrench
- Filter Wrench
- 1. Place a waste fluid container under Filter and Connections. Your container must be large enough to hold the 12.46 gallons of fluid in the Tank.
- 2. Slightly raise the hitch end of the Backhoe by turning the Jack Handle clockwise. The hitch end of the Hydraulic Tank should be slightly higher than the Filter end.
- 3. Remove the existing Hydraulic Fluid Filter and properly dispose of it (Figure 37).
- 4. Let the Hydraulic Fluid drain into the container.
- 5. Apply a thin coat of fresh hydraulic fluid to the Rubber Seal of the new Hydraulic Fluid Filter.
- 6. Screw the filter onto the filter head. Once the filter seal makes contact with the filter head, turn it an additional ¾ turn. Hand-tighten only.
- 7. Remove the Hydraulic Tank Fill Cap/Dipstick and fill the Hydraulic Tank with the recommended type and quantity of hydraulic fluid until the level reaches the fill mark on the Dipstick (Figure 38). Refer to the Spec sheet on page 2.









End of Season and Storage

WARNING!

CENTER THE BOOM. RETRACT THE BOOM, CROWD ARM AND BUCKET. INSTALL THE BOOM HITCH PINS AND LYNCH PINS TO LOCK THE BOOM IN PLACE. SHUT DOWN THE ENGINE, REMOVE THE SPARK PLUG WIRE AND WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE BACKHOE.

- Coat the exposed piston rods of all hydraulic cylinders with a grease or corrosion preventative.
- Lubricate all grease fittings (See page 32).
- Clean the exterior of the unit to remove all dirt, grease, and any other foreign material. To prevent rust, touch up painted surfaces that have been scratched or chipped.
- If possible, store the Backhoe in a dry, protected place. If it is necessary to store the Backhoe outside, cover it with a protective material (especially the Engine and Seat).

TROUBLESHOOTING

Most problems are easy to fix. Consult the Troubleshooting Table below for common problems and their solutions. If you continue to experience problems, call DR Power Equipment for support.

WARNING!

CENTER THE BOOM. RETRACT THE BOOM, CROWD ARM AND BUCKET. INSTALL THE BOOM HITCH PINS AND LYNCH PINS TO LOCK THE BOOM IN PLACE. SHUT DOWN THE ENGINE, REMOVE THE SPARK PLUG WIRE AND WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE BACKHOE.

Troubleshooting Table

S YMPTOM	POSSIBLE CAUSE
Backhoe fails to lift or	\Rightarrow Low hydraulic fluid supply; Add fluid.
swing.	\Rightarrow Pump not running; Start engine.
	\Rightarrow Worn control valve; Replace or repair worn valve.
	\Rightarrow Pump damaged or worn; Replace pump.
	\Rightarrow Broken hydraulic line; Check for leaks, replace line.
	\Rightarrow Faulty relief valve; Clean or replace relief valve.
	\Rightarrow Bent piston rod; repair or replace cylinder.
Backhoe lifting or	\Rightarrow Cold hydraulic fluid; Warm fluid with engine at idle.
swinging too slowly.	\Rightarrow Engine speed too low; Open throttle
	\Rightarrow Hydraulic fluid leaking past control valve; repair or replace worn valve.
	\Rightarrow Hydraulic fluid too heavy; Use recommended fluid.
	\Rightarrow Scored Cylinder; Replace cylinder.
	\Rightarrow Pump damaged or worn; Repair or replace pump.
	\Rightarrow Hydraulic fluid leaking past cylinder packings; Replace packings.
	⇒ Pinched supply hose; Replace hose, rout to prevent kinking or pinching.
Backhoe fails to hold	\Rightarrow Broken hydraulic lines; Check for leaks and replace line.
up the load.	\Rightarrow Hydraulic fluid leaking past cylinder packings; Replace packings.
NOTE: All loads will settle down over a period of time. This is normal.	\Rightarrow Hydraulic fluid leaking past control valve; repair or replace worn valve.

WARNING!

CENTER THE BOOM. RETRACT THE BOOM, CROWD ARM AND BUCKET. INSTALL THE BOOM HITCH PINS AND LYNCH PINS TO LOCK THE BOOM IN PLACE. SHUT DOWN THE ENGINE, REMOVE THE SPARK PLUG WIRE AND WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE BACKHOE.

Troubleshooting Table (continued)

S үмртом	POSSIBLE CAUSE			
Hydraulic Fluid	\Rightarrow Dirty hydraulic fluid; Drain fluid and refill.			
Heating.	⇒ Control valve handle held open too long; Return control valve handle to neutral position when not in use.			
	\Rightarrow Hydraulic fluid too light in hot weather; Use recommended fluid.			
	⇒ Engine running too fast; Reduce throttle.			
	\Rightarrow Damaged hydraulic lines; Replace damaged lines.			
External leakage.	\Rightarrow Damaged O-rings on valve spools; Repair control valve.			
	\Rightarrow Cylinder seals damaged; Repair cylinder.			
	\Rightarrow Broken hydraulic line; Check for leaks and replace line.			
Swing cylinder	\Rightarrow Hydraulic fluid leaking past packing or seals; Replace packing or seals.			
malfunctioning.	\Rightarrow Faulty cross-over relief valve; Clean or replace.			
Control valve sticking	Scored bore or bent spool; Repair or replace worn valve.			
or working hard.	\Rightarrow Control linkage misaligned; Correct misalignment.			
	\Rightarrow Return spring binding or broken; Replace spring.			
	\Rightarrow Foreign matter in spool bore; Clean valve.			
	\Rightarrow Dirty hydraulic fluid; Drain fluid and refill.			
Spongy or jerking	\Rightarrow Low hydraulic fluid supply; Add fluid.			
action of cylinders	\Rightarrow Cold hydraulic fluid too stiff; Use recommended fluid.			
and/or very noisy pump action.	⇒ Air in system; Purge system of air by operating machine at maximum hydraulic fluid flow and through full movements.			
	\Rightarrow Pinched suction line to pump; Replace hose, rout to prevent kinking or pinching.			

DR DIRT BOSS TOWABLE BACKHOE ACCESSORIES

The optional Buckets and Digging Tooth provide more options for the type of digging you do by enabling a choice of larger or smaller amounts of earth that can be loosened or moved.

WARNING!

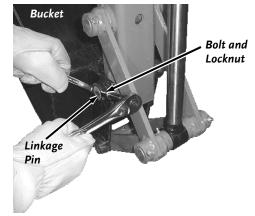
CENTER THE BOOM. RETRACT THE BOOM, CROWD ARM AND BUCKET. INSTALL THE BOOM HITCH PINS AND LYNCH PINS TO LOCK THE BOOM IN PLACE. SHUT DOWN THE ENGINE, REMOVE THE SPARK PLUG WIRE AND WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE BACKHOE.

Tools and Supplies Needed:

- Two 7/16" wrenches
- Hammer
- Brass Drift Punch
- Wood Blocks
- Safety Glasses

Installing a Bucket or Digging Tooth

- 1. Insert Wood Blocks under the Bucket for support.
- 2. Remove the four Bolts and Locknuts from the Bucket Linkage Pins (*Figure 37*).





3. Use a Drift Punch to remove the two Linkage Pins from the Bucket (*Figure 38*).

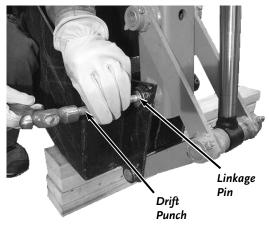


Figure 38

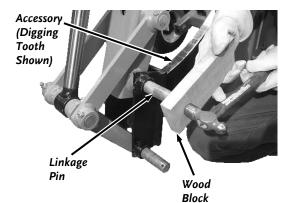


Figure 39

Bolt and Locknut

- 4. Remove the Bucket and position the accessory Bucket or Digging Tooth at the same orientation as the original Bucket.
- 5. Install the two Linkage Pins into the Bucket or Digging Tooth and Linkage (*Figure 39*).

NOTE: Do not hammer directly on the Linkage Pin. Use a block of wood so you do not damage the end of the Pin. Make sure the holes in the Linkage Pins are aligned with the holes in the Accessory.

 Install the four Bolts into the Linkage and Bucket or Digging Tooth and secure with four Locknuts (*Figure* 40).

If you have any questions or need assistance, Please contact us at www.Drpower.com or call toll free 1-800-DR-OWNER (376-9637).

Figure 40

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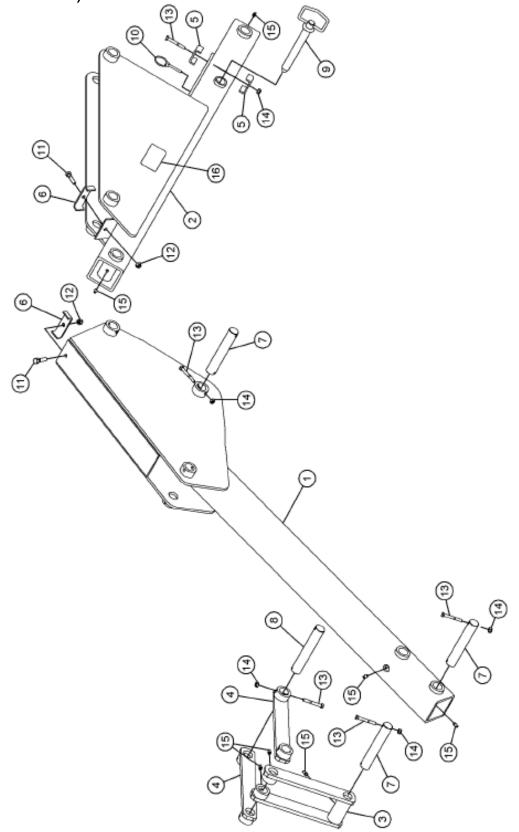
CHAPTER 8

PARTS LIST AND SCHEMATIC DIAGRAMS

Parts List - LINKAGE, CROWD ARM AND BOOM ASSEMBLY

Ref#	Part#	Description	Ref#	Part#	Description
01	245291	Crowd Arm	11	245391	Screw, Hex Head Cap, 5/16-18 x
02	245301	Boom			1-1/4"
03	245311	Linkage	12	245401	Locknut, 5/16-18
04	245321	Strap, Linkage	13	245411	Screw, Hex Head Cap, 1/4-20 x
05	245331	Bracket, Hose			2"
06	245341	Bracket, Hose	14	245421	Locknut, 1/4-20
07	245351	Pin	15	245431	Fitting, Grease, 1/4-28
08	245361	Pin, Linkage	-		
09	245371	Pin, Hitch, 3/4" x 6"	Safety & Information Labe		ition Labels
10	245381	Linchpin, 3/16" x 9/16"		245441	Label, Warning

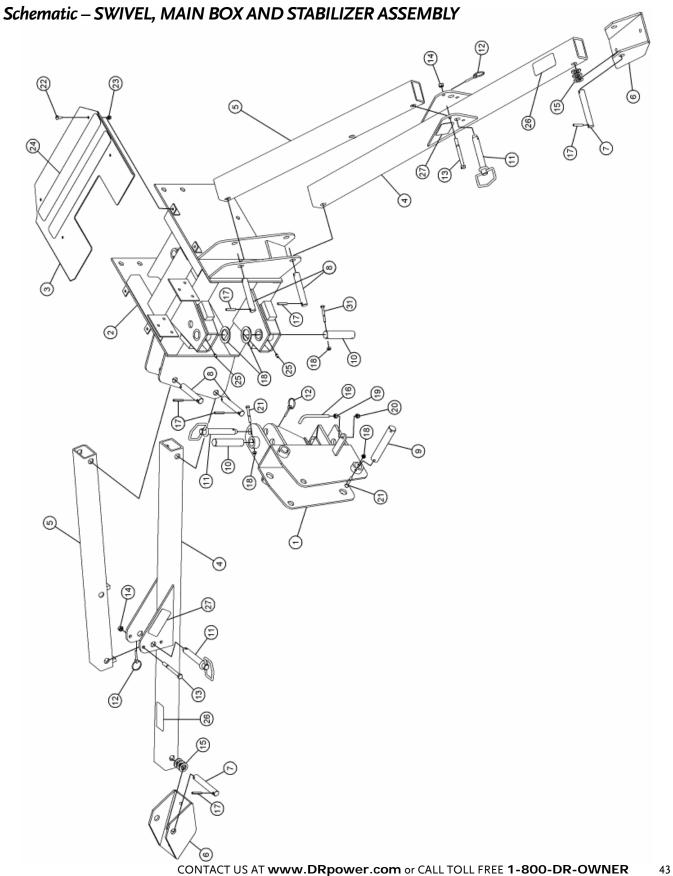
Schematic – LINKAGE, CROWD ARM AND BOOM ASSEMBLY



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Parts List – SWIVEL, MAIN BOX AND STABILIZER ASSEMBLY

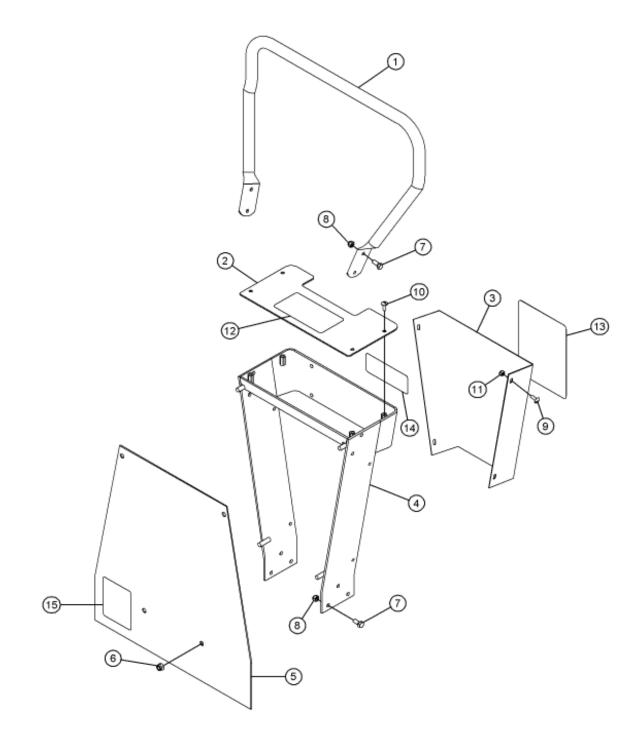
Ref#	Part#	Description	Ref#	Part#	Description
01	245451	Swivel	17	245611	Pin, Spring, 1/4" x 1-1/2"
02	245461	Box, Main	18	245621	Washer, Thrust
03	245471	Plate, Foot	19	245631	Locknut, 5/16–18
04	245481	Stabilizer	20	245801	Locknut, 5/16–18
05	245491	Tube, Lock, Stabilizer	21	245411	Screw, Hex Head Cap, 1/4-20 x
06	245501	Foot, Stabilizer			2"
07	245511	Pin, Foot	22	245811	Screw, Slotted Truss Head, 1/4-
08	245521	Pin, Stabilizer			20 x 3/4"
09	245351	Pin	23	245421	Locknut, 1/4-20
10	245541	Pin, Pivot	24	245681	Strip, Anti Skid
11	245551	Pin, Hitch 3/4" x 4-3/4"	25	245431	Fitting, Grease 1/4-28
12	245381	Linchpin, 3/16" x 1-9/16"			
13	245571	Screw, Hex Head Cap, 3/8-16 x 4"	<u>Safet</u>	y & Informa	tion Labels
14	245581	Locknut, 3/8–16		245701	Label, Warning
15	245591	Bushing, 3/4"		250441	Label, Pinch Point
16	245601	Holder, Hose		200111	



Parts List – HANDLE GUARD, VALVE MOUNT AND PANELS ASSEMBLY

Ref#	Part#	Description	Ref#	Part#	Description
01	245731	Guard, Handle	10	245821	Screw, Slotted Truss Head, 1/4-
02	245741	Cover, Valve			20 x 1/2"
03	245751	Guard, Hose	11	245421	Locknut, 1/4-20
04	245761	Mount, Valve			
05	245771	Panel, Front			
06	245781	Locknut, 3/8–16	Safet	y & Informa	tion Labels
07	246791	Screw, Hex Head Cap, 5/16–18 x		250451	Label, Operator
		3/4"		245851	Label, Warning
08	245801	Locknut, 5/16–18		246041	Label, Warning
09	245811	Screw, Slotted Truss Head, 1/4- 20 x 3/4"		245871	Label, Pin Placement

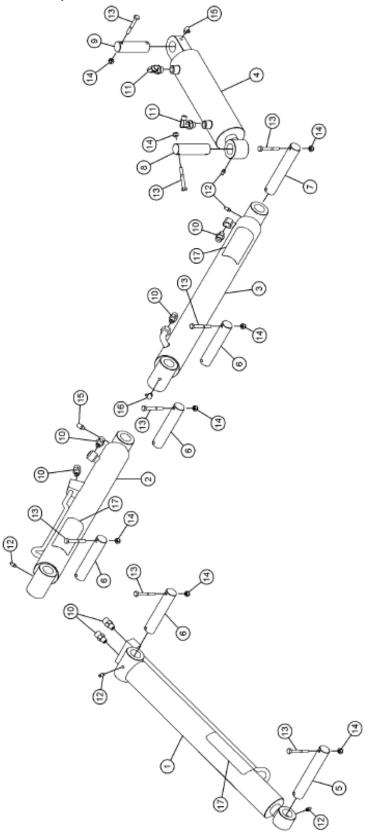
Schematic – HANDLE GUARD, VALVE MOUNT AND PANELS ASSEMBLY



Parts List – CYLINDERS, PINS AND FITTINGS ASSEMBLY

Ref#	Part#	Description	Ref#	Part#	Description
01	245881	Cylinder, Bucket	12	245431	Fitting, Grease, 1/4-28
02	245891	Cylinder, Crowd Arm	13	245411	Screw, Hex Head Cap, 1/4-20 x
03	245901	Cylinder, Boom			2"
04	245911	Cylinder, Swing	14	245421	Locknut, 1/4-20
05	245361	Pin	15	246021	Fitting, Grease, 1/4-28 x 45 deg
06	245931	Pin	16	246031	Fitting, Grease, 1/4-28 x 90 deg
07	245351	Pin			
08	245951	Pin			
09	245961	Pin	Safet	y & Informa	tion Labels
10	245971	Connector, 9/16-18 ORFS x 7/16 -20 ORB		246041	Label, Warning
11	245981	Elbow, Short, 9/16-18 ORFS x 7/16-20 ORB x 90 deg.			

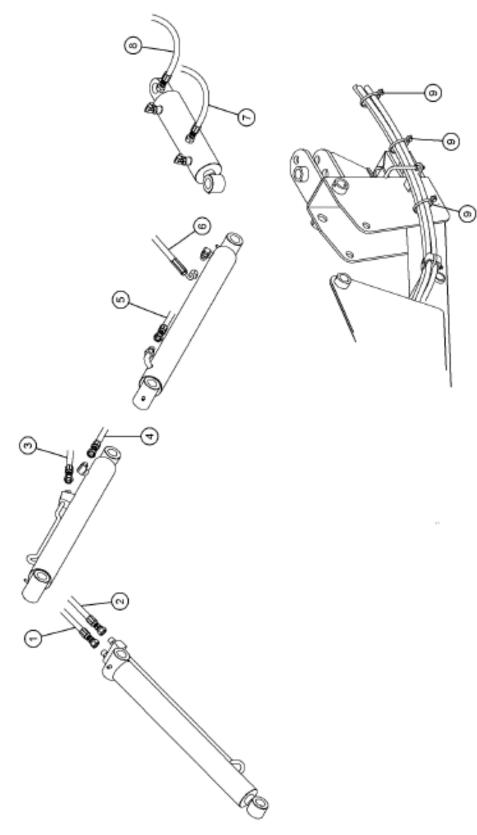
Schematic – CYLINDERS, PINS AND FITTINGS ASSEMBLY



Parts List – HYDRAULIC HOSES AND CYLINDERS ASSEMBLY

Ref#	Part#	Description	Ref#	Part#	Description
01	246051	Hose, Hydraulic, 1/4 x 130"	06	246201	Hose, Hydraulic, 1/4 x 84-1/2"
02	246061	Hose, Hydraulic, 1/4 x 127"	07	246211	Hose, Hydraulic, 1/4 x 27"
03	246071	Hose, Hydraulic, 1/4 x 78-1/2"	08	246221	Hose, Hydraulic, 1/4 x 21"
04	246081	Hose, Hydraulic, 1/4 x 75"	09	246231	Tie, Nylon
05	246091	Hose, Hydraulic, 1/4 x 78-1/2"			

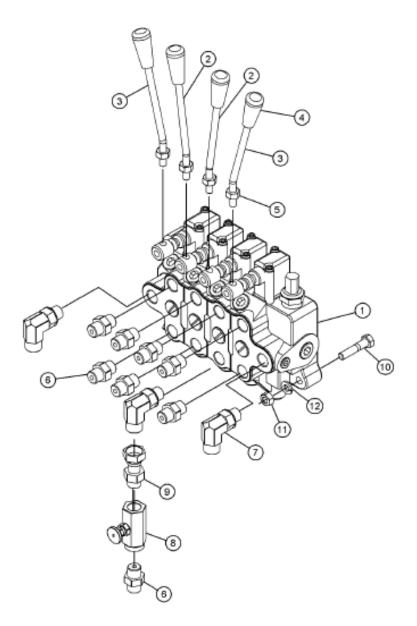
Schematic – HYDRAULIC HOSES AND CYLINDERS ASSEMBLY



Parts List – VALVE AND FITTINGS ASSEMBLY

Ref#	Part#	Description	Ref#	Part#	Description
01	246241	Valve, 4 Spool	08	246311	Valve, Needle
02	246251	Handle Assembly	09	246321	Connector, Swivel, Straight
03	246261	Handle Assembly			Thread
04	246271	Клов	10	246331	Screw, Hex Head Cap, 5/16–18 x
05	246281	Nut, Hex, 8mm–1.25			1-1/2"
06	246291	Connector, Straight Thread	11	245631	Nut, Hex, 5/16–18
07	246301	Elbow, Straight Thread, 90 deg.	12	246351	Lock Washer, 5/16

Schematic – VALVES AND FITTINGS ASSEMBLY

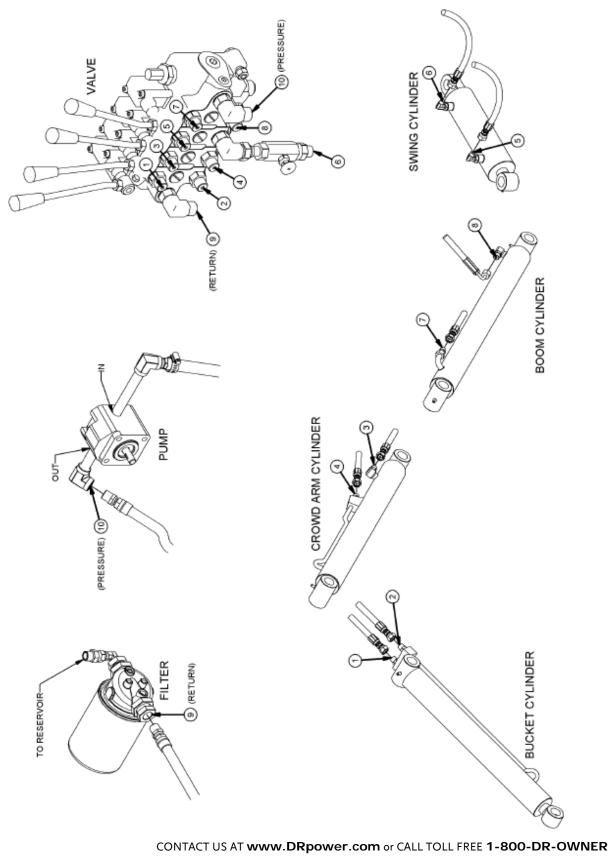


Parts List – HOSE CONNECTION DETAIL

NOTE: This list and schematic are reference for attaching hose ends. Part numbers are listed on other schematics.

Ref#	Description	Ref#	Description
01	Hose, Hydraulic, 1/4 x 130"	06	Hose, Hydraulic, 1/4 x 21"
02	Hose, Hydraulic, 1/4 x 127"	07	Hose, Hydraulic, 1/4 x 78-1/2"
03	Hose, Hydraulic, 1/4 x 75"	08	Hose, Hydraulic, 1/4 x 84-1/2"
04	Hose, Hydraulic, 1/4 x 78-1/2"	09	Hose, Hydraulic, 3/8 x 43"
05	Hose, Hydraulic, 1/4 x 27"	10	Hose, Hydraulic, 3/8 x 70"

Schematic – HOSE CONNECTION DETAIL

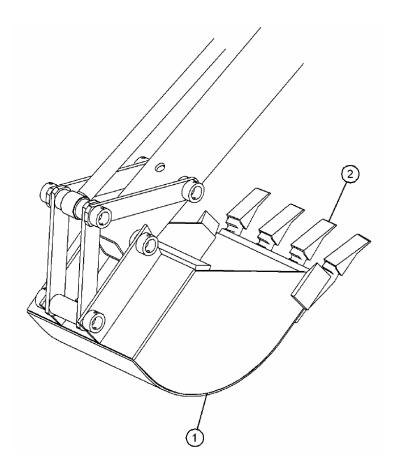


Parts List – BUCKET AND TEETH ASSEMBLY

NOTE: Part numbers listed are available through DR Power Equipment.

Ref# Part# Description	Not Illustrated
01 246311 Bucket, Standard, 12"	246301 Bucket, Standard, 9"
02 246331 Tooth	246321 Bucket, Standard, 16"

Schematic – BUCKET AND TEETH ASSEMBLY

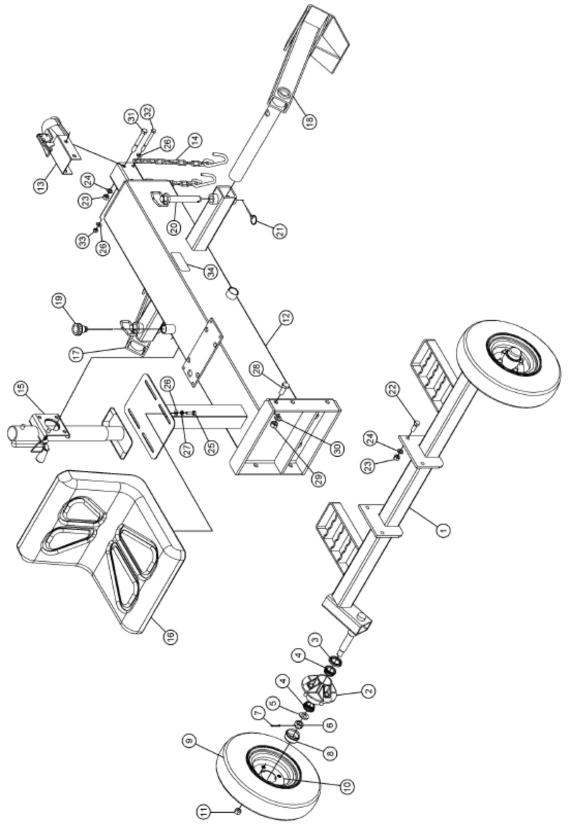


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Parts List – TONGUE AND AXLE ASSEMBLY

Ref#	Part#	Description	Ref#	Part#	Description
01	246361	Weldment, Axle	22	246571	Screw, Hex Head Cap 1/2-13 x 1-
02	246371	Hub			1/2"
03	246381	Seal	23	246581	Locknut, 1/2-13
04	246391	Bearing	24	246591	Lockwasher, 1/2"
05	246401	Washer	25	246601	Screw, Hex Head Cap, 3/8–16 x
06	246411	Nut	26	046677	
07	246421	Pin, Cotter	26	246611	Washer, Flat, 3/8"
08	246431	Cap-Dust	27	246621	Lockwasher, 3/8"
09	246441	Wheel	28	246631	Screw, Hex Head Cap, 5/8–11 x 1-1/2"
10	246451	Tire, 4.80-8	29	246641	Locknut, 5/8–11
11	246461	Nut, Stud, Hub	30	246651	Lockwasher, 5/8"
12	246471	Weldment, Tongue	31	246661	Screw, Hex Head Cap, 1/2-13 x
13	246481	Coupler	51	240001	4"
14	246491	Chains	32	246671	Screw, Hex Head Cap, 3/8–16 x
15	246501	Jack			4-1/2"
16	246511	Seat	33	245581	Locknut, 3/8–16
17	246521	Stablizer, Rear, R.H.			
18	246531	Stablizer, Rear, L.H.			
19	246541	Cap, Vent, w/Dipstick	Safet	y & Informa	tion Labels
20	246551	Pin, Hitch, 1" x 5-3/4"			
21	246561	Linchpin		250441	Label, Pinch Point

Schematic – TONGUE AND AXLE ASSEMBLY

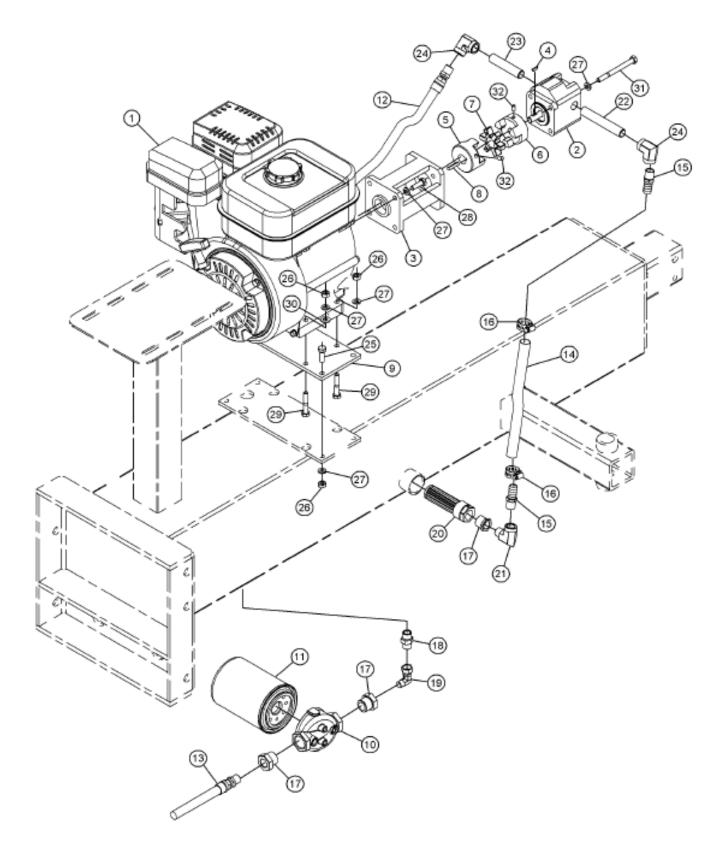


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Parts List – ENGINE AND PUMP ASSEMBLY

<u>Ref#</u>	Part#	Description	Ref#	Part#	Description
01	246701	Engine	19	245661	Union, Swivel, 3/8" MNPT x 3/8"
02	246711	Pump, W/Key			FNPT, 90 Deg.
03	246721	Mount, Pump-Engine	20	250561	Filter, Tank
04	246731	Key, Woodriff, #2	21	245711	Elbow, Steel, 3/8" x 90 Deg.
05	246741	Coupler, 3/4"	22	245641	Nipple, 3/8" x 4"
06	246751	Coupler, 7/16"	23	245941	Nipple, 3/8" x 3"
07	246761	Spider	24	245921	Elbow, Steel, 3/8" x 90 Deg.
08	246771	Key, Square, 3/16" x 3/16" x 1"	25	245561	Screw, Hex Head Cap, 5/16–18 x
09	246781	Plate, Mount, Engine			1"
10	246001	Mount, Filter	26	245631	Nut, Hex, 5/16-18
11	245991	Filter	27	246351	Washer, Lock, 5/16"
12	246011	Hose, Hydraulic, 3/8" x 70"	28	250571	Screw, Hex Head Cap, 5/16–24 x 1"
13	246241	Hose, Hydraulic, 3/8" x 43"	29	245691	Screw, Hex Head Cap, 5/16–18 x
14	245531	Hose, Suction, 1/2" x 9"	25	243031	1-3/4"
15	246681	Fitting, Barb, Hose	30	245671	Washer, Flat, 5/16"
16	246691	Clamp, Hose, #8	31	245841	Screw, Hex Head Cap, 5/16-18 x
17	245651	Bushing, Reducer, 1/2" To 3/8"			3-1/2"
18	245861	Nipple, Pipe, Ext., 3/8" x 3/8"	32	245831	Screw, Set, 1/4-20 x 3/8"

Schematic – ENGINE AND PUMP ASSEMBLY



Notes:

Notes:

DR[®] BACKHOE



2-Year Limited Warranty

Terms and Conditions

The **DR®** BACKHOE is warranted for two (2) years against defects in materials or workmanship when put to ordinary and normal consumer use; ninety (90) days for any other use.

For the purposes of all the above warranties, "ordinary and normal consumer use" refers to non-commercial residential use and does not include misuse, accidents or damage due to inadequate maintenance.

DR Power Equipment certifies that the **DR**[®] BACKHOE is fit for ordinary purposes for which a product of this type is used. DR Power Equipment however, limits the implied warranties of merchantability and fitness in duration to a period of two (2) years in consumer use, ninety (90) days for any other use.

The 2-Year Limited Warranty on the **DR®** BACKHOE starts on the date the machine ships from our factory. The 2-Year Limited Warranty is applicable only to the original owner.

The warranty holder is responsible for the performance of the required maintenance as defined by the manufacturer's owner's manuals. The warranty holder is responsible for replacement of normally wearing parts such as the Filters, Bucket Teeth and Wheels. Accessories to the machine are not covered by this warranty.

During the warranty period, the warranty holder is responsible for the machine transportation charges, if required. During the warranty period, warranty parts will be shipped by standard method at no charge to the warranty holder. Expedited shipping of warranty parts is the responsibility of the warranty holder.

SOME STATES DO NOT ALLOW LIMITATIONS ON THE LENGTH OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

DR Power Equipment shall not be liable under any circumstances for any **incidental or consequential damages or expenses** of any kind, including, but not limited to, cost of equipment rentals, loss of profit, or cost of hiring services to perform tasks normally performed by the **DR**[®] BACKHOE.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Customer Service Hotline

DR Power Equipment's objective is to have 100% satisfied customers. For that reason, we operate a 6-day-a-week Technical Service Department for our Owners. You can access a Representative by dialing our TOLL-FREE Hotline at **1-800-DR-OWNER (376-9637).** The sole job of our well-trained and friendly folks is to ensure that you get any help you need in a timely fashion. They are there to answer all your questions including: (1) inquiries on any of the above warranties, (2) inquiries about replacement parts, or (3) your questions regarding service, maintenance and operation.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

Daily Checklist for the DR DIRT BOSS TOWABLE BACKHOE

To help maintain your DR DIRT BOSS TOWABLE BACKHOE for optimum performance, we recommend you follow this checklist each time you use your Backhoe.

WARNING!

CENTER THE BOOM. RETRACT THE BOOM, CROWD ARM AND BUCKET. INSTALL THE BOOM HITCH PINS AND LYNCH PINS TO LOCK THE BOOM IN PLACE. SHUT DOWN THE ENGINE, REMOVE THE SPARK PLUG WIRE AND WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE BACKHOE.

BE SURE THE AREA IS CLEAR OF UNDERGROUND OBSTRUCTIONS. CALL "811" BEFORE YOU DIG.

- [] Check the engine oil level.
- [] Check the general condition of the Backhoe, e.g.; nuts, bolts, welds etc.
- [] Check Tire Pressure
- [] Check Hydraulic Hoses and Connections
- [] Lubricate Grease Fittings



DR[®] Power Equipment

75 MEIGS ROAD, P.O. BOX 25, VERGENNES, VERMONT 05491