SERIAL NUMBER RECORD

Record serial numbers and date of purchase in spaces provided. Serial number plate is mounted to frame behind right wheel.

<table>
<thead>
<tr>
<th>Date of purchase</th>
<th></th>
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<tbody>
<tr>
<td>Serial number</td>
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<tr>
<td>Engine serial number</td>
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</table>
SUPPORT PROCEDURE

Notify your dealer immediately of any malfunction or failure of Ditch Witch equipment.

Always give model, serial number, and approximate date of equipment purchase. This information should be recorded and placed on file by owner at time of purchase.

Return damaged parts to dealer for inspection and warranty consideration.

Order genuine Ditch Witch replacement parts from your authorized Ditch Witch dealer. Use of another manufacturer’s parts may void warranty.

RESOURCES

Publications
Contact your Ditch Witch dealer for publications covering operation, service, and repair of your equipment.

Ditch Witch Training
For information about on-site, individualized training, contact your Ditch Witch dealer.
FOREWORD

This manual is an important part of your equipment. It provides safety information and operation instructions to help you use and maintain your Ditch Witch equipment.

Read this manual before using your equipment. Keep it with the equipment at all times for future reference. If you sell your equipment, be sure to give this manual to the new owner.

If you need a replacement copy, contact your Ditch Witch dealer. If you need assistance in locating a dealer, visit our website at www.ditchwitch.com or write to the following address:

The Charles Machine Works, Inc.
Attn: Marketing Department
PO Box 66
Perry, OK 73077-0066
USA

The descriptions and specifications in this manual are subject to change. The Charles Machine Works, Inc. reserves the right to improve equipment. Some product improvements may have taken place after this manual was published. For the latest information on Ditch Witch equipment, see your Ditch Witch dealer.

Thank you for buying and using Ditch Witch equipment.
Operator's Manual

Issue Number 4.2/OP-11/04
Part Number 054-515

by The Charles Machine Works, Inc.,
Perry, Oklahoma

Ditch Witch, CMW, AutoCrowd,
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The Ditch Witch 1030 and 1230 pedestrian trenchers are designed for easy, efficient use.

Color-coded controls are within easy reach of the operator. These compact units fit through most standard yard gates, and the machines are balanced for easy jobsite maneuvering. A choice of a 24”, 30”, or 36” (610-, 760-, or 915-mm) digging boom, along with several chain options, make these machines flexible enough for most soil conditions. The axle lock feature aids smooth, easy turns and straight trenching.

1. Trail wheel
2. Digging boom and chain
3. Engine
4. Operator station
CONTROLS

CONTROL CONSOLE OVERVIEW

1. Bail
2. Digging boom control (green)
3. Axle lock (blue)
4. Speed/direction control (orange)
5. Throttle (black)
6. Digging chain control (yellow)
7. Power switch

1. Bail
2. Digging boom control (green)
3. Axle lock (blue)
4. Speed/direction control (orange)
5. Throttle (black)
6. Digging chain control (yellow)
7. Power switch
**CONTROL CONSOLE DESCRIPTIONS**

**Bail**

This start interlock control engages and disengages hydraulic system.

- Move down into handlebar to engage.
- Release to disengage.

**Axle Lock (Blue)**

This lever locks or unlocks axle.

- Push to unlock. Use unlocked axle to maneuver trencher.
- Pull to lock. Use locked axle for straight trenching and driving over rough terrain.

**Digging Boom Control (Green)**

This lever raises or lowers digging boom when bail is engaged.

- Push to lower boom.
- Pull to raise boom.
Digging Chain Control (Yellow)

This lever starts digging chain when bail is engaged.

- Push to start digging chain.
- Returns to neutral and digging chain stops when bail is released.

Speed/Direction Control (Orange)

This lever controls unit speed and direction when bail is engaged.

- Ensure control is in BAIL RELEASE (neutral) position, and engage bail.
- Push to move forward.
- Pull to move backward.
- Move farther from center to go faster in either direction.
- Return to BAIL RELEASE (neutral) to stop.
Throttle (Black)

This lever controls engine speed. Increasing engine speed also increases digging chain speed.

- Push down to speed engine.
- Pull up to slow engine.

Power Switch

This two-position switch controls power to the machine.

- Turn clockwise to turn power on. In this position, engine will start when rope start is pulled.
- Turn counterclockwise to stop engine.
ENGINE CONTROLS OVERVIEW

1. Fuel shut-off valves
2. Choke
3. Pull start

1. Fuel shut-off valves
2. Choke
3. Pull start
ENGINE CONTROLS DESCRIPTIONS

Fuel Shut-off Valves

Two valves separate fuel reservoir from engine.

- Close when transporting unit to or from jobsite.
- Open before starting engine.

Choke

This valve regulates air/fuel mixture. Close valve to help start cold engine.

Pull Start

Cranks engine for starting.

- Ensure that power switch is on and fuel shut-off valves are open.
- Pull to start engine.

If engine does not start after three pulls, turn power switch off and check for fuel blockage or electrical system problems.
Follow these guidelines before operating any jobsite equipment:

- Complete proper training and read operator’s manual before using equipment.
- Contact One-Call (888-258-0808) and any utility companies which do not subscribe to One-Call. Have all underground pipes and cables located and marked before operating equipment. If you damage a utility, contact utility company.
- Classify jobsite based on its hazards and use correct tools and machinery, safety equipment, and work methods for jobsite.
- Mark jobsite clearly and keep spectators away.
- Wear personal protective equipment.
- Review jobsite hazards, safety and emergency procedures, and individual responsibilities with all personnel before work begins. Safety videos are available from your Ditch Witch dealer.
- Replace missing or damaged safety shields and safety signs.
- Use equipment carefully. Stop operation and investigate anything that does not look or feel right.
- Do not operate unit where flammable gas is present.
- Contact your Ditch Witch dealer if you have any question about operation, maintenance, or equipment use.

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- Contact your Ditch Witch dealer if you have any question about operation, maintenance, or equipment use.
ACCESSORIES

Fire Extinguisher
If required, a fire extinguisher should be mounted near the power unit but away from possible points of ignition. The fire extinguisher should always be classified for both oil and electric fires. It should meet legal and regulatory requirements.

Lighting Kit
If you need additional light, plug lighting kit into provided outlet. Contact your Ditch Witch dealer for further information.

UNDERGROUND HAZARDS

Striking underground hazards can cause explosion, electrocution, fire, and exposure to hazardous materials.

Hazards include:

- Electric lines
- Natural gas lines
- Fiber optic cables
- Water lines
- Sewer lines
- Pipes carrying other chemicals, liquids, or gases
- Storage tanks
EMERGENCY PROCEDURES

Before operating any equipment, review emergency procedures and check that all safety precautions have been taken.

**EMERGENCY SHUTDOWN** - Turn ignition switch to stop position or push remote engine stop button.

**Electric Strike Description**

When working near electric cables, remember the following:

- Electricity follows all paths to ground, not just path of least resistance.
- Pipes, hoses, and cables will conduct electricity back to all equipment.
- Low voltage current can injure or kill. Almost one-third of work-related electrocutions result from contact with less than 440 volts.

Most electric strikes are not noticeable, but indications of a strike include:

- power outage
- smoke
- explosion
- popping noises
- arcing electricity

If any of these occur, assume an electric strike has occurred.
If an Electric Line is Damaged

If you suspect an electric line has been damaged and you are on tractor, DO NOT MOVE. Remain on tractor and take the following actions. The order and degree of action will depend upon the situation.

• Warn people nearby that an electric strike has occurred. Instruct them to leave the area and contact utility.
• Raise attachments and drive from immediate area.
• Contact utility company to shut off power.
• Do not return to jobsite or allow anyone into area until given permission by utility company.

If you suspect an electric line has been damaged and you are off tractor, DO NOT TOUCH TRACTOR. Take the following actions. The order and degree of action will depend upon the situation.

• LEAVE AREA.
• Contact utility company to shut off power.
• Do not return to jobsite or allow anyone into area until given permission by utility company.

If you suspect an electric line has been damaged and you are on tractor, DO NOT MOVE. Remain on tractor and take the following actions. The order and degree of action will depend upon the situation.

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If you suspect an electric line has been damaged and you are off tractor, DO NOT TOUCH TRACTOR. Take the following actions. The order and degree of action will depend upon the situation.

• LEAVE AREA.
• Contact utility company to shut off power.
• Do not return to jobsite or allow anyone into area until given permission by utility company.
If a Gas Line is Damaged

If you suspect a gas line has been damaged, take the following actions. The order and degree of action will depend on the situation.

- Immediately shut off engine(s), if this can be done safely and quickly.
- Remove any ignition source(s), if this can be done safely and quickly.
- Warn others that a gas line has been cut and that they should leave the area.
- Leave jobsite as quickly as possible.
- Immediately call your local emergency phone number and utility company.
- If jobsite is along street, stop traffic from driving near jobsite.
- Do not return to jobsite until given permission by emergency personnel and utility company.

If a Fiber Optic Cable is Damaged

Do not look into cut ends of fiber optic or unidentified cable. Vision damage can occur.

If Machine Catches on Fire

Perform emergency shutdown procedure and then take the following actions. The order and degree of action will depend on the situation.

- Immediately move battery disconnect switch (if equipped) to disconnect position.
- If fire is small and fire extinguisher is available, attempt to extinguish fire.
- If fire cannot be extinguished, leave area as quickly as possible and contact emergency personnel.
JOBSITE CLASSIFICATION

Inspecting Jobsite

- Follow U.S. Department of Labor regulations on excavating and trenching (Part 1926, Subpart P) and other similar regulations.
- Contact One-Call (888-258-0808) and any utility companies which do not subscribe to One-Call.
- Inspect jobsite and perimeter for evidence of underground hazards, such as:
  - “Buried utility” notices
  - Utility facilities without overhead lines
  - Gas or water meters
  - Junction boxes
  - Drop boxes
  - Light poles
  - Manhole covers
  - Sunken ground
- Have an experienced locating equipment operator sweep area within 20' (6 m) to each side of trench path. Verify previously marked line and cable locations.
- Mark location of all buried utilities and obstructions.
- Classify jobsite.
Selecting a Classification

Jobsites are classified according to underground hazards present.

<table>
<thead>
<tr>
<th>If working . . .</th>
<th>then classify jobsite as . . .</th>
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</tr>
<tr>
<td>in sand, granite, or concrete which is capable of producing crystalline silica (quartz) dust</td>
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</tr>
<tr>
<td>within 10’ (3 m) of any other hazard</td>
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**NOTICE:** If you have any doubt about jobsite classification, or if jobsite might contain unmarked hazards, take steps outlined previously to identify hazards and classify jobsite before working.

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**NOTICE:** If you have any doubt about jobsite classification, or if jobsite might contain unmarked hazards, take steps outlined previously to identify hazards and classify jobsite before working.
Applying Precautions

Once classified, precautions appropriate for jobsite must be taken.

Electric Jobsite Precautions

Use one or both of these methods.

• Expose line by careful hand digging or soft excavation.
• Have service shut down while work is in progress. Have electric company test lines before returning them to service.

Natural Gas Jobsite Precautions

In addition to positioning equipment upwind from gas lines, use one or both of these methods.

• Expose lines by careful hand digging or soft excavation.
• Have gas shut off while work is in progress. Have gas company test lines before returning them to service.
Crystalline Silica (Quartz) Dust Precautions

Follow OSHA or other guidelines for exposure to crystalline silica when trenching, sawing or drilling through material that might produce dust containing crystalline silica (quartz).

Other Jobsite Precautions

You may need to use different methods to safely avoid other underground hazards. Talk with those knowledgeable about hazards present at each site to determine which precautions should be taken or if job should be attempted.
SAFETY ALERT CLASSIFICATIONS

These classifications and the icons defined on the following pages work together to alert you to situations which could be harmful to you, jobsite bystanders or your equipment. When you see these words and icons in the book or on the machine, carefully read and follow all instructions. YOUR SAFETY IS AT STAKE.

Watch for the three safety alert levels: DANGER, WARNING and CAUTION. Learn what each level means.

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

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

⚠️ CAUTION  indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Watch for two other words: NOTICE and IMPORTANT.

NOTICE  can keep you from doing something that might damage the machine or someone’s property. It can also alert you against unsafe practices.

IMPORTANT  can help you do a better job or make your job easier in some way.

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SAFETY ALERTS

**DANGER** Moving digging teeth will kill you or cut off arm or leg. Stay away.

**DANGER** Turning shaft will kill you or crush arm or leg. Stay away.

**DANGER** Electric shock. Contacting electric lines will cause death or serious injury. Know location of lines and stay away.

**DANGER** Deadly gases. Lack of oxygen or presence of gas will cause sickness or death. Provide ventilation.
Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment.

Crushing weight could cause death or serious injury. Use proper procedures and equipment or stay away.

Moving parts could cut off hand or foot. Stay away.

Fall possible. Riders can fall from machine and be injured or killed. Only operator is allowed on machine.

Rollover possible. If machine rolls over, you could be thrown from seat and killed or crushed. Wear seat belt.
**WARNING** Explosion possible. Serious injury or equipment damage could occur. Follow directions carefully.

**WARNING** Incorrect procedures could result in death, injury, or property damage. Learn to use equipment correctly.

**WARNING** Looking into fiber optic cable could result in permanent vision damage. Do not look into ends of fiber optic or unidentified cable.

**WARNING** Fluid or air pressure could pierce skin and cause injury or death. Stay away.

**WARNING** Runaway possible. Machine could run over you or others. Learn how to use all controls. Start and operate only from operator’s position.
**WARNING** Fire or explosion possible. Fumes could ignite and cause burns. No smoking, no flame, no spark.

**WARNING** Moving traffic - hazardous situation. Death or serious injury could result. Avoid moving vehicles, wear high visibility clothing, post appropriate warning signs.

**WARNING** Hot pressurized cooling system fluid could cause serious burns. Allow to cool before servicing.

**WARNING** Improper control function could cause death or serious injury. If control does not work as described in instructions, stop machine and have it serviced.
Flying objects may cause injury. Wear hard hat and safety glasses.

Hot parts may cause burns. Do not touch until cool.

Exposure to high noise levels may cause hearing loss. Wear hearing protection.

Fall possible. Slips or trips may result in injury. Keep area clean.

Battery acid may cause burns. Avoid contact.

Improper handling or use of chemicals may result in illness, injury, or equipment damage. Follow instructions on labels and in material safety data sheets (MSDS).
LIFT

Lifting Points

Lifting points are identified by lifting decals. Lifting at any other point can be unsafe and can damage machinery.
Lifting Unit

![WARNING](image)

Crushing weight could cause death or serious injury. Use proper procedures and equipment or stay away.

Before lifting, check **SPECIFICATIONS**. Use a hoist capable of supporting equipment’s size and weight.

Lift trencher by running a sling through the front guide, under lifting hooks, and around back of console tower.
TIEDOWN

Tiedown Points
Tiedown points are identified by tiedown decals. Securing unit to truck or trailer at any other points may be unsafe and can damage machinery.

Tieing Down Unit
Attach tiedowns at front and rear tiedown points. Make sure tiedowns are tight before transporting unit.
Crushing weight could cause death or serious injury. Use proper procedures and equipment or stay away.

NOTICES:

- Read trailer operator’s manual, if applicable, before loading or transporting your machine. Incorrectly loaded machine can slip or cause trailer sway.
- Check that loading ramps will support weight (see SPECIFICATIONS).
- Check payload rating of truck or trailer.
- Park, load, and unload truck or trailer on a level part of the jobsite.
- Check that adequate tiedowns are available.
Loading

The 1030 and 1230 trenchers can be hauled in the bed of a light truck or by trailer. To load:

1. Start engine. See **OPERATION** for start-up procedures.
2. Raise digging boom, but keep it low.
4. With bail engaged, move speed/direction control to forward or reverse and drive to loading sight.
   To steer, unlock axle, push down on handlebar, and turn machine.
5. Align trencher with ramps or trailer.
7. Drive trencher onto trailer or truck bed until tiedown position is reached.
8. Move speed/direction control to BAIL RELEASE (neutral) position, and lower digging boom.
10. Securely chain trencher to truck or trailer at tiedown points.

**NOTICE:** To keep engine from flooding during transport, close both fuel shut-off valves before transporting unit.

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Unloading

1. Remove tiedowns.
2. Open fuel shut-off valves and start engine.
3. Move throttle to about 1/4 open.
4. Ensure that axle is locked and speed/direction control is in the BAIL RELEASE (neutral) position.
5. Engage bail.
6. Raise digging boom, but keep it low.
7. Slowly drive trencher off trailer.
FREEWHEEL

If trencher must be moved without engine running, this feature allows the 1030 or 1230 to be wheeled manually.

WARNING Crushing weight could cause death or serious injury. Use proper procedures and equipment or stay away.

1. Elevate left side of trencher with jackstand or safety blocks.
2. Remove nut from left wheel hub.
3. Horizontally align two of the three threaded holes (A) in wheel hub with machine frame, as shown.
4. Insert bolts (supplied in operator's manual compartment) into threaded holes and tighten until wheel is released from axle.
5. Remove key (B) from axle.
6. Replace wheel and hub, and tighten only enough to keep hub on axle. Overtightening can lock hub to axle.
7. Wheel trencher to a clear area of the jobsite.

NOTICE: Do not freewheel the trencher more than 100' (30 m) in this manner. Damage to wheel hub or axle will occur.
TOW

Under normal conditions, unit should not be towed. If unit becomes disabled and towing is necessary:

- tow for short distances at less than 1 mph (1.6 km/h)
- do not tow for more than 100’ (30 m)
- use no more than 1,300 lb (5 800 N) of towing force

To tow:

1. Follow “Freewheel” instructions to enable unit to be towed.
2. Attach tow line to all available tiedown points facing towing vehicle.

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DAILY INSPECTION

For safe and efficient use of your machine, do the following before each day’s work.

- Check general appearance of tractor and digging attachment. Look for loose, worn, or damaged parts and fluid leaks.
- Check condition of digging chain, teeth, air filter, and optional remote air cleaner.
- Check fuel lines and hydraulic lines and fittings for signs of leakage, wear, or other damage.
- Check tire pressure.
- Check hydraulic and engine oil levels.
- Check fuel level.
- Check that all signs, guards, and shields are in place and readable.

Service machine according to schedules in **LUBRICATION AND MAINTENANCE**, and in engine manufacturer’s guide.
STARTUP

Before operating trencher, read engine manufacturer's starting and operating instructions. Follow instructions for new engine break-in.

⚠️ WARNING ⚠️ Incorrect procedures could result in death, injury, or property damage. Learn to use equipment correctly.

EMERGENCY SHUTDOWN: Turn power switch off.
1. Check that bail is up and fuel shut-off valves are open.
2. If necessary, choke cold engine.
3. Move throttle to 1/4 open.
4. Turn power switch on.
5. Pull rope start.

**IMPORTANT:** If engine does not start after three pulls, turn power switch off and check for fuel blockage or electrical system problems.

**WARNING** Improper control function could cause death or serious injury. If control does not work as described in instructions, stop machine and have it serviced.

**NOTICES:**
- If interlock system does not work, contact your Ditch Witch dealer. Improper repair might allow machine to start or operate with controls in gear.
- Do not wire or tape bail to handlebar or defeat interlock system in any manner. Machine will not start, and digging chain control will be stuck in gear.

6. Run engine at half throttle or less for five minutes before operating trencher.
   During warmup, check that all controls work properly.
   **EMERGENCY SHUTDOWN:** Turn power switch off.
**DRIVING**

**WARNING** Incorrect procedures could result in death, injury, or property damage. Learn to use equipment correctly.

**NOTICE:** Keep attachment low when operating on a slope. Drive slowly and cautiously at all times.

1. Ensure that speed/direction control is in the BAIL RELEASE (neutral) position.
2. Move bail down into handlebar.
3. Raise digging boom.
4. Lock axle to drive straight, or unlock axle to allow steering.
6. Move speed/direction control to forward or reverse.

**IMPORTANT:** Bail must be down in order for unit to move.

7. To steer, ensure axle is unlocked, push down on handlebar, and turn machine.

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7. To steer, ensure axle is unlocked, push down on handlebar, and turn machine.
TRENCHING

⚠️ WARNING ⚠️ Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment.

NOTICE: Know and comply with regulations covering One-Call service and utility notification before digging.

⚠️ WARNING ⚠️ Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment.

NOTICE: Cutting or drilling concrete containing sand or rock containing quartz may result in exposure to silica dust. Use respirator, water spray or other means to control dust. Silica dust can cause lung disease and is known to the State of California to cause cancer.

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1. Drive trencher to starting point. Move in line with planned trench.
2. For a straighter trench, lock axle.
3. Move throttle to half open.
4. Ensure that speed/direction control and digging chain control are in neutral.
5. Lower digging boom to just above ground.

![DANGER]
Moving digging teeth will cause death or serious injury. Stay away.

**NOTICE:** Keep everyone at least 6’ (2 m) from machine, digging boom, and its range of movement.

6. Engage digging chain control. DIGGING CHAIN WILL MOVE.

**EMERGENCY STOP:** Release bail.
7. Slowly lower digging boom to desired trench depth.

**WARNING** Incorrect procedures can result in death, injury, or property damage. Learn to use equipment correctly.

**NOTICES:**
- Machine may move when chain starts to dig. Allow 3’ (1 m) between end of chain and obstacle.
- Digging chain on top side of boom can catch on root or rock, forcing handlebar down suddenly. Stand back from console and hold handlebar loosley.

8. When desired trench depth is reached, move throttle to full open.

9. Move speed/direction control to reverse. Trencher will move toward you.

*Trenching movement is toward you.*
10. When trench is complete, move speed direction control to neutral.
11. Move throttle to half open.
12. Raise digging boom to top of trench.
13. Release bail to stop digging chain.
15. Drive trencher away from trench.
16. Let machine idle for three minutes to cool engine.
17. Turn power switch off.
LUBRICATION AND
MAINTENANCE

Proper lubrication and maintenance protects Ditch Witch equipment from damage and failure. In extreme conditions, lubricate more frequently.

Use only recommended lubricants. Fill to capacities listed in SPECIFICATIONS.

Recommended Lubricants

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO</td>
<td>Gasoline engine oil (see chart for appropriate SAE viscosity rating) meeting API engine service classification SD</td>
</tr>
<tr>
<td>AGMA-7</td>
<td>Worm gear lubricant matching American Gear Manufacturer’s Association Compound #7</td>
</tr>
<tr>
<td>MPG</td>
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</tr>
<tr>
<td>THF</td>
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WARNING Incorrect procedures could result in death, injury, or property damage. Learn to use equipment correctly.

NOTICES:

- Unless otherwise instructed, all service should be performed with engine off.
- Refer to engine manufacturer’s manual for engine maintenance instructions.
- Before servicing equipment, lower digging boom to ground.

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LUBRICATION OVERVIEW

Pivot gearbox on opposite side of machine not shown. Check oil every 50 hours. Change gearbox oil every 1000 hours with THF.
## LUBRICATION SCHEDULE

<table>
<thead>
<tr>
<th>Interval</th>
<th>Task</th>
<th>Page</th>
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<tbody>
<tr>
<td>Each use</td>
<td>Check engine oil</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Check hydraulic oil</td>
<td>51</td>
</tr>
<tr>
<td>10 hours</td>
<td>Lube attachment pivot</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Lube pivot stub</td>
<td>54</td>
</tr>
<tr>
<td>25 hours</td>
<td>Lube trail wheel</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Lube axle lock</td>
<td>52</td>
</tr>
<tr>
<td>50 hours</td>
<td>Check pivot gearbox oil</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Check worm drive oil</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Lube digging boom adjustment screw</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>Lube greaseable digging boom stub</td>
<td>55</td>
</tr>
<tr>
<td>100 hours</td>
<td>Change engine oil</td>
<td>50</td>
</tr>
<tr>
<td>250 hours</td>
<td>Change hydraulic filter</td>
<td>51</td>
</tr>
<tr>
<td>500 hours</td>
<td>Change hydraulic oil</td>
<td>51</td>
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</tr>
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</table>
**Engine Oil**

**Check**

Check engine oil at dipstick (A) before each operation. Add GEO at fill neck (A) as necessary to keep oil level at highest line on dipstick.

**Change**

- Change oil every 100 hours with GEO.
- Drain crankcase (B) while oil is still warm.
- Refill at fill neck with 2.3 pt (1.1 L) of GEO.
Hydraulic Oil and Filter

Check
With digging boom fully raised, check hydraulic oil at dipstick (A) before each operation. Add THF at fill neck (A) as necessary to keep oil level at highest line on dipstick. Clean dust from cap by blowing with low pressure air.

Change
Change hydraulic filter (B) every 250 hours.

Drain hydraulic oil at drain (C), change filter, and refill at fill neck with THF every 500 hours.
**Tires**
Lube trail wheel (A) every 25 hours with MPG.

**Pivot**
Lube Pivot (B) every 10 hours with MPG.

**Axle Lock**
Lube axle lock every 25 hours with MPG.
Pivot Gearbox

Check
Check gearbox oil every 50 hours at fill plug (A). Refill with THF as necessary to keep oil level with fill plug.

Change
Change gearbox oil every 1000 hours.
- Remove both plugs and drain oil.
- Replace bottom plug (B).
- Fill with THF to fill plug, approximately 2 pt (.95 L).
- Replace fill plug.
Worm Drive

Check
Check worm drive oil every 50 hours at fill plug (A). Refill with AGMA-7 as necessary to keep oil level with fill plug.

Change
Change worm drive oil every 500 hours.
- Empty worm drive at drain (B).
- Replace drain plug.
- Fill with AGMA-7 to fill plug, approximately 3.25 pt (1.5 L).

NOTICE: Do not use a substitute lubricant. Worm drive failure could occur.
Digging Boom

Boom with Adjustment Screw
Lube adjustment screw (A) every 50 hours with MPG.
Lube pivot stub (B) every 10 hours with MPG.

Greaseable Boom
Lube boom stub every 50 hours with MPG.

Digging Boom

Boom with Adjustment Screw
Lube adjustment screw (A) every 50 hours with MPG.
Lube pivot stub (B) every 10 hours with MPG.

Greaseable Boom
Lube boom stub every 50 hours with MPG.
### Trail Wheel

#### Tire Pressure
Check trail wheel tire pressure daily. Maintain pressure under 32 psi (221 kPa).

#### Lug Nut Torque
Check lug nut torque daily. Tighten to 85 ft•lb (115 N•m).

#### Air Filter
Change foam air filter element every 100 hours. Do not allow dirt to fall into carburetor.

### Table: Maintenance Schedule

<table>
<thead>
<tr>
<th>Interval</th>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each use</td>
<td>Check tire pressure</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Check lug nut torque</td>
<td>56</td>
</tr>
<tr>
<td>100 hours</td>
<td>Change air filter paper element</td>
<td>56</td>
</tr>
<tr>
<td>As needed</td>
<td>Change remote air cleaner paper element</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Adjust digging chain tension</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Adjust drive belt tension</td>
<td>59</td>
</tr>
</tbody>
</table>

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<td>57</td>
</tr>
<tr>
<td></td>
<td>Adjust drive belt tension</td>
<td>59</td>
</tr>
</tbody>
</table>
Remote Air Cleaner

Change optional air cleaner paper element as needed.

- Remove air cleaner cover.
- Remove paper element and replace.

NOTICE: Use of this option does not eliminate the need for proper maintenance of standard air filter.

Digging Chain Tension

Check digging chain regularly and adjust as needed.

Adjustment Screw

Digging chain is properly tensioned when chain can be moved .5" (13 mm) up or down. To adjust digging chain tension:

- Loosen four clamp bolts (B) so that boom slides freely.
- Loosen jam nut on adjustment screw (A).
- Turn adjustment screw clockwise to tighten digging chain or counterclockwise to loosen digging chain.
- When proper tension is reached, tighten jam nut and torque clamp bolts to 75 ft•lb (102 N•m).
Grease Cylinder:

To tighten digging chain, pump MPG into cylinder at check valve zerk.

**NOTICE:** Do not overtighten chain. Overtightening will cause chain stretch, loss of machine performance, and possible premature chain failure.

To loosen digging chain, stand on opposite side of boom and unscrew check valve zerk to release grease.

⚠️ **WARNING**  Fluid pressure could pierce skin and cause injury or death. Stay away.

**NOTICE:** Service digging boom grease cylinder only while standing on opposite side of boom. Wear gloves and safety glasses and cover fitting with cloth when relieving pressure in cylinder.
## Drive Belts

Check drive belts regularly and adjust tension as needed.

- Turn engine off.
- Move bail down into handlebar and clamp in place.
- Engage digging chain control until locked in place.
- Tighten or loosen both digging belt adjustment nut (1) and pump belt adjustment nut (2) until springs (A and B) are each 1.8\" (48 mm) long.

See repair guide for more information.
## Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>U.S.</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Trench depth, maximum</td>
<td>30 in</td>
<td>760 mm</td>
</tr>
<tr>
<td>B Trench width</td>
<td>4.3 - 6 in</td>
<td>110-150 mm</td>
</tr>
<tr>
<td>C Boom travel down</td>
<td>60°</td>
<td>60°</td>
</tr>
<tr>
<td>C1 Boom travel up</td>
<td>47°</td>
<td>47°</td>
</tr>
<tr>
<td>F Headshaft height–digging chain</td>
<td>8.60 in</td>
<td>220 mm</td>
</tr>
<tr>
<td>L² Length</td>
<td>88 in</td>
<td>2.2 m</td>
</tr>
<tr>
<td>W² Width</td>
<td>32 in</td>
<td>810 mm</td>
</tr>
<tr>
<td>H² Height</td>
<td>47 in</td>
<td>1.2 m</td>
</tr>
<tr>
<td>W⁴ Tread</td>
<td>26 in</td>
<td>660 mm</td>
</tr>
<tr>
<td>A³ Angle of departure</td>
<td>65°</td>
<td>65°</td>
</tr>
<tr>
<td>L⁴ Wheelbase</td>
<td>32 in</td>
<td>810 mm</td>
</tr>
</tbody>
</table>
### Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>U.S.</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>E&lt;sup&gt;1&lt;/sup&gt;</td>
<td>15 in</td>
<td>381 mm</td>
</tr>
<tr>
<td>E&lt;sup&gt;2&lt;/sup&gt;</td>
<td>17 in</td>
<td>432 mm</td>
</tr>
<tr>
<td>N</td>
<td>10.6 in</td>
<td>270 mm</td>
</tr>
<tr>
<td>A&lt;sup&gt;2&lt;/sup&gt;</td>
<td>35°</td>
<td>35°</td>
</tr>
</tbody>
</table>

Dimensions based on 16x6.50x8 tires and 24" (610-mm) boom in transport position

### General

Ditch Witch model 1030, self-propelled, pedestrian, manually steered, two-wheel drive rigid frame, chain type trencher

### Operational

<table>
<thead>
<tr>
<th>Dimension</th>
<th>U.S.</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum transit forward</td>
<td>155 fpm</td>
<td>47 m/min</td>
</tr>
<tr>
<td>Maximum transit reverse</td>
<td>155 fpm</td>
<td>47 m/min</td>
</tr>
<tr>
<td>Digging chain speed</td>
<td>276 fpm</td>
<td>84 m/min</td>
</tr>
</tbody>
</table>

### Spoils handling (single, open-end auger)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>U.S.</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer diameter</td>
<td>12 in</td>
<td>305 mm</td>
</tr>
<tr>
<td>Inner diameter</td>
<td>4 in</td>
<td>102 mm</td>
</tr>
<tr>
<td>Length</td>
<td>9 in</td>
<td>229 mm</td>
</tr>
</tbody>
</table>

Operating weight [with 33,000-lb (14 969-kg) test, two-pitch digging chain] 900 lb 408 kg

### Power

<table>
<thead>
<tr>
<th>Engine</th>
<th>Honda GX340</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>gasoline</td>
</tr>
<tr>
<td>Cooling medium</td>
<td>air</td>
</tr>
<tr>
<td>Number of cylinders</td>
<td>1</td>
</tr>
<tr>
<td>Displacement</td>
<td>20.6 in³</td>
</tr>
<tr>
<td>Bore</td>
<td>3.22 in</td>
</tr>
<tr>
<td>Stroke</td>
<td>2.52 in</td>
</tr>
<tr>
<td>Gross power @ 3600 rpm</td>
<td>11 hp</td>
</tr>
</tbody>
</table>
## POWER

<table>
<thead>
<tr>
<th></th>
<th>U.S.</th>
<th>METRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum governed speed installed (no load)</td>
<td>3400 rpm</td>
<td>3400 rpm</td>
</tr>
<tr>
<td>Flywheel power @ 3200 rpm (full load)</td>
<td>10.2 hp</td>
<td>7.5 kW</td>
</tr>
<tr>
<td>Fuel consumption @3600 rpm</td>
<td>.89 gph</td>
<td>3.4 L/h</td>
</tr>
<tr>
<td>Maximum tilt angle</td>
<td>20°</td>
<td>20°</td>
</tr>
<tr>
<td>Fuel tank capacity</td>
<td>1.7 gal</td>
<td>6.5 L</td>
</tr>
<tr>
<td>Engine oil capacity</td>
<td>2.3 pt</td>
<td>1.1 L</td>
</tr>
</tbody>
</table>

## POWER TRAIN

**Ground drive transmission**

- Ground drive: hydrostatic, infinitely variable from zero to maximum, gearbox to axle, speed and direction controlled with single lever
- Pump drive clutch: mechanical, hand-operated, spring-loaded, with tension roller for belt drive
- Digging chain clutch: mechanical, hand-operated, spring-loaded with tension roller for belt drive

**Tires**

- Drive, standard: 16x6.50x8
- Drive, optional: 18x8.50x8
- Trail: 13x5.00x6

- Trencher drive: mechanical, belt drive to reduction drive, headshaft

**Belt**

- “power band,” two-groove

**Digging chain**

- 33,000 lb (16 969 kg) test

**Chain drive sprocket**

- Forged and tempered

**Digging teeth**

- Bolt-on cup teeth with hard-surfaced edge of tungsten carbide

**Spoils handling drive**

- Mechanical, attached to and rotates with headshaft

## NOISE LEVELS

- Operator 88dBA sound pressure per ISO 6394.
- Exterior 101 dBA sound power per ISO 6393.

## VIBRATION LEVELS

- Vibration at the operator’s hand during normal operation is 6.1 m/s²

---

## POWER

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<td>Headshaft height--digging chain</td>
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</tr>
<tr>
<td>L2</td>
<td>Length</td>
<td>88 in</td>
</tr>
<tr>
<td>W2</td>
<td>Width</td>
<td>32 in</td>
</tr>
<tr>
<td>H2</td>
<td>Height</td>
<td>47 in</td>
</tr>
<tr>
<td>W4</td>
<td>Tread</td>
<td>26 in</td>
</tr>
<tr>
<td>A3</td>
<td>Angle of departure</td>
<td>65°</td>
</tr>
<tr>
<td>L4</td>
<td>Wheelbase</td>
<td>32 in</td>
</tr>
<tr>
<td>E1</td>
<td>Centerline trench to outside edge of machine, left</td>
<td>15 in</td>
</tr>
<tr>
<td>E2</td>
<td>Centerline trench to outside edge of machine, right</td>
<td>17 in</td>
</tr>
<tr>
<td>N</td>
<td>Spoil discharge reach</td>
<td>10.6 in</td>
</tr>
</tbody>
</table>
### GENERAL

Ditch Witch model 1230, self-propelled, pedestrian, manually steered, two-wheel drive rigid frame, chain type trencher

### OPERATIONAL

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<tr>
<th>U.S.</th>
<th>METRIC</th>
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<tbody>
<tr>
<td><strong>Vehicle speeds</strong></td>
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<tr>
<td>Maximum transit forward</td>
<td>155 fpm</td>
</tr>
<tr>
<td>Maximum transit reverse</td>
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</tr>
<tr>
<td><strong>Digging chain speed</strong></td>
<td>276 fpm</td>
</tr>
<tr>
<td><strong>Spoils handling (single, open-end auger)</strong></td>
<td></td>
</tr>
<tr>
<td>Outer diameter</td>
<td>12 in</td>
</tr>
<tr>
<td>Inner diameter</td>
<td>4 in</td>
</tr>
<tr>
<td>Length</td>
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**Operating weight** [with 33,000-lb (14 969-kg) test, two-pitch digging chain] 900 lb 408 kg

### POWER

**Engine:** Honda GX390

**Fuel:** gasoline

**Cooling medium:** air

**Number of cylinders:** 1

**Displacement** 23.7 in³ 389 cm³

**Bore** 3.53 in 90 mm

**Stroke** 2.52 in 64 mm

**Gross power @ 3600 rpm** 13 hp 9.7 kW

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### DIMENSIONS

**Angle of approach** 35°

Dimensions based on 16x6.50x8 tires and 24” (610-mm) boom in transport position
### POWER

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<tr>
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<tbody>
<tr>
<td>Maximum governed speed installed (no load)</td>
<td>3600 rpm</td>
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</tr>
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</tr>
<tr>
<td>Fuel consumption @3600 rpm</td>
<td>.89 gph</td>
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<td>.89 gph</td>
</tr>
<tr>
<td>Maximum tilt angle</td>
<td>20°</td>
<td>Maximum tilt angle</td>
<td>20°</td>
</tr>
<tr>
<td>Fuel tank capacity</td>
<td>1.7 gal</td>
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<tr>
<td>Engine oil capacity</td>
<td>2.3 pt</td>
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</tbody>
</table>

### POWER TRAIN

Ground drive transmission

- Ground drive: hydrostatic, infinitely variable from zero to maximum, gearbox to axle, speed and direction controlled with single lever
- Pump drive clutch: mechanical, hand-operated, spring-loaded, with tension roller for belt drive
- Digging chain clutch: mechanical, hand-operated, spring-loaded with tension roller for belt drive

Tires

- Drive, standard: 16x6.50x8
- Drive, optional: 18x8.50x8
- Trail: 13x5.00x6

Trencher drive: mechanical, belt drive to reduction drive, headshaft

Belt: "power band," two-groove

Digging chain: 33,000 lb (16,969 kg) test

Chain drive sprocket: forged and tempered

Digging teeth: bolt-on cup teeth with hard-surfaced edge of tungsten carbide

Spoils handling drive: mechanical, attached to and rotates with headshaft

### NOISE LEVELS

- Operator 88 dBA sound pressure per ISO 6394
- Exterior 101 dBA sound power per ISO 6393

### VIBRATION LEVELS

- Vibration at the operator’s hand during normal operation is 6.1 m/s²
Ditch Witch Equipment and Replacement Parts
North American*
Limited Warranty Policy

Major Component Limited Warranty

Major components are warranted for a period of 1000 hours of use or one year, whichever occurs first, beginning on date of delivery of any such new product. The Major Component Limited Warranty covers only Major Components listed under Major Component Limited Warranty that are manufactured and distributed by The Charles Machine Works, Inc. (“CMW”). Replacement parts and other serial numbered products (“Products”) that are not listed under Major Component Limited Warranty, and non-major components are covered under Product Limited Warranty.

Major Components are defined as:
- Frames.
- Differentials and parts contained within.
- Mechanical transmissions.
- Drive gearboxes and parts contained within.
- Hydraulic, hydrostatic, and fluid pumps, motors and components that control or protect pumps and motors.
- Auxiliary hydraulic control valves and electrical components used for controlling hydraulic components.
- Hydraulic cylinders and components excluding repair kits.
- Batteries, alternators, instruments, gauges, and protection components for electrical systems.
- Pierce Airrow bodies, strikers, and tailpieces.

Free replacement parts and labor will be provided at any authorized dealership for any part of Major Component which has a defect in material or workmanship within warranty period. Defects will be determined by an inspection of major component or part by CMW or its authorized dealer. The product containing a major component or part must be presented to CMW or its authorized dealer for inspection within 30 days of the date major component or part fails. CMW will provide the location of its inspection facilities or its nearest authorized dealer upon inquiry. CMW reserves the right to supply remanufactured replacement parts as it deems appropriate.

* Equipment owners in countries other than U.S., Canada, Mexico, and Puerto Rico should refer to Ditch Witch International Warranty Policy.

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**Product Limited Warranty**

Products are warranted for 90 days from date of delivery of any new product. Free replacement parts and labor will be provided at any authorized dealership for any product which has a defect in material or workmanship within warranty period. Replacement parts are warranted for 90 days from date of delivery of any such replacement part. Any part of a product subject to ground contact is warranted only for defects in material or workmanship and only for the period of operational life of such part, which period shall not in any event exceed 90 days. Defects will be determined by an inspection of the product or part by CMW or its authorized dealer. The product or part must be presented to CMW or its authorized dealer for inspection within 30 days of the date of failure. CMW will provide the location of its inspection facilities or its nearest authorized dealer upon inquiry. CMW reserves the right to supply remanufactured replacement parts as it deems appropriate.
Exclusions

from Major Component and Product Limited Warranty

Specifically excluded from Major Component and Product Limited Warranty are:

• Transportation charges related to repair, replacement, or inspection of products, major components, or parts.
• Parts subject to ground contact (including but not limited to drill pipe, downhole tools, digging chain, teeth and sprockets).
• All incidental or consequential damages.
• All defects, damages, or injuries caused by misuse, abuse, improper installation, alteration, neglect, or uses other than those for which products were intended.
• All defects, damages, or injuries caused by improper training, operation, or servicing of products in a manner inconsistent with manufacturer’s recommendations.
• All engines and engine accessories (these are covered by original manufacturer’s warranty).
• Parts which may be subject to another manufacturer’s warranty (such warranty will be available to purchaser).
• All implied warranties not expressly stated herein, including any warranty of fitness for a particular purpose and merchantability.

IF THE PRODUCTS ARE PURCHASED FOR COMMERCIAL PURPOSES AS DEFINED BY THE UNIFORM COMMERCIAL CODE, THEN THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE HEREOF AND THERE ARE NO IMPLIED WARRANTIES OF ANY KIND WHICH EXTEND TO A COMMERCIAL BUYER. ALL OTHER PROVISIONS OF THIS LIMITED WARRANTY APPLY INCLUDING THE DUTIES IMPOSED.

Ditch Witch products have been tested to deliver acceptable performance in most conditions. This does not imply they will deliver acceptable performance in all conditions. Therefore, to assure suitability, products should be operated under anticipated working conditions prior to purchase.

This limited warranty applies to the owner of the product. Some states do not allow exclusion or limitation of incidental or consequential damages, so above limitation of exclusion may not apply. Further, some states do not allow exclusion of or limitation of how long an implied warranty lasts, so the above limitation may not apply. This limited warranty gives owner specific legal rights and the owner may also have other rights which vary from state to state.
For information regarding this limited warranty, contact CMW’s Product Support department, P.O. Box 66, Perry, OK 73077-0066, or contact your local Ditch Witch dealer.

First version: 1/91;  Latest revision: 4/99
A Note To
Ditch Witch
Equipment Owners:

If your equipment was purchased through a Ditch Witch dealer, there is no need to read further.

However, if you purchased from any other source, please fill out the form on the reverse side and return it to us.

This will enable you to receive updates on this equipment as well as information on new products of interest.

Thanks for using Ditch Witch equipment.

The Charles Machine Works, Inc.
P.O. Box 66
Ferry, Oklahoma 73077-9989
**Ditch Witch® Registration Card**

**Please Type or Print All Information**

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