

C12x/C16x/C24x/C30x

Operator's Manual



Overview

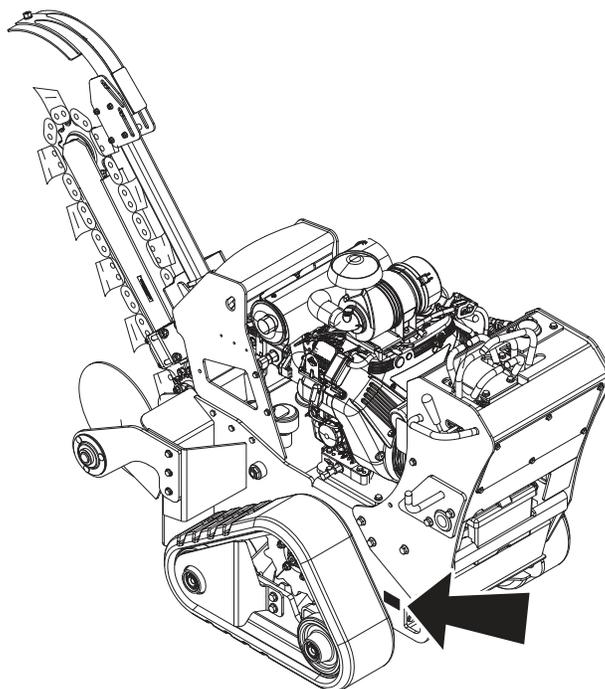


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Serial Number Location

Record serial numbers and date of purchase in spaces provided. Trencher serial number is located as shown.



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Item	
date of manufacture	
date of purchase	
trencher serial number	
trailer serial number	
engine serial number	

Intended Use



The C12x, C16x, C24x and C30x pedestrian trenchers are designed to install buried cable and pipe. The maximum trenching depth is 24" (610 mm) for C12x, 36" (915 mm) for C16x and C24x, and 48" (1220 mm) for C30x. The maximum trenching width is 6" (200 mm).

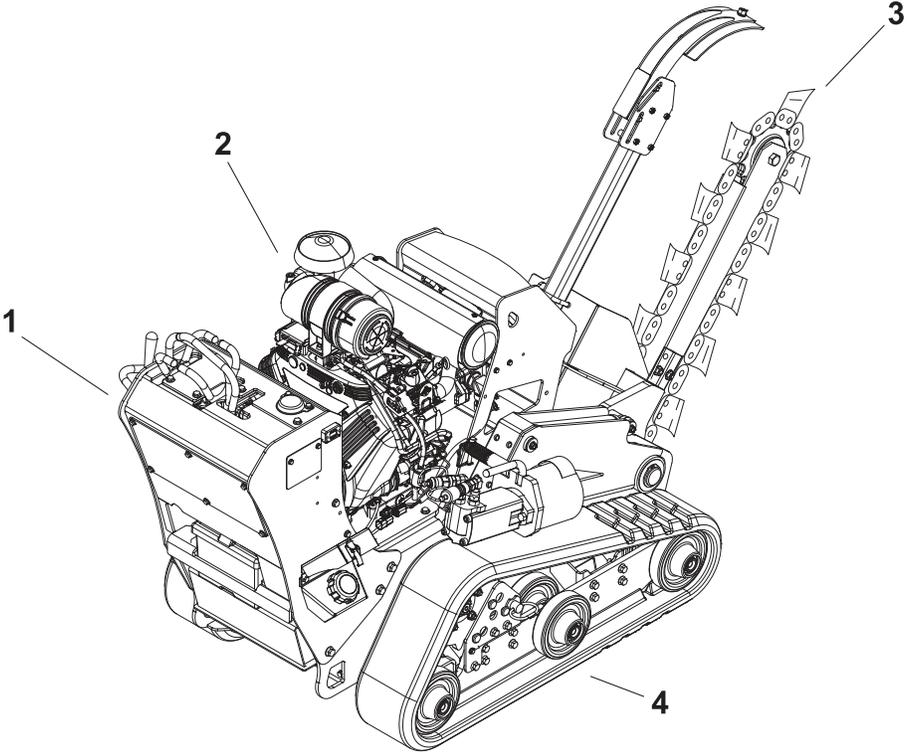
These units are intended for operation in ambient temperatures from 20° to 115°F (-7° to 46°C). Contact your Ditch Witch® dealer for provisions required for operating in extreme temperatures. Use in any other way is considered contrary to the intended use.

C12x, C16x, C24x and C30x units should be used with genuine Ditch Witch chain, teeth, and sprockets. They should be operated, serviced, and repaired only by persons familiar with their particular characteristics and acquainted with the relevant safety procedures.

Equipment Modification

This equipment was designed and built in accordance with applicable standards and regulations. Modification of equipment could mean that it will no longer meet regulations and may not function properly or in accordance with the operating instructions. Modification of equipment should only be made by competent personnel possessing knowledge of applicable standards, regulations, equipment design functionality/requirements and any required specialized testing.

Unit Components



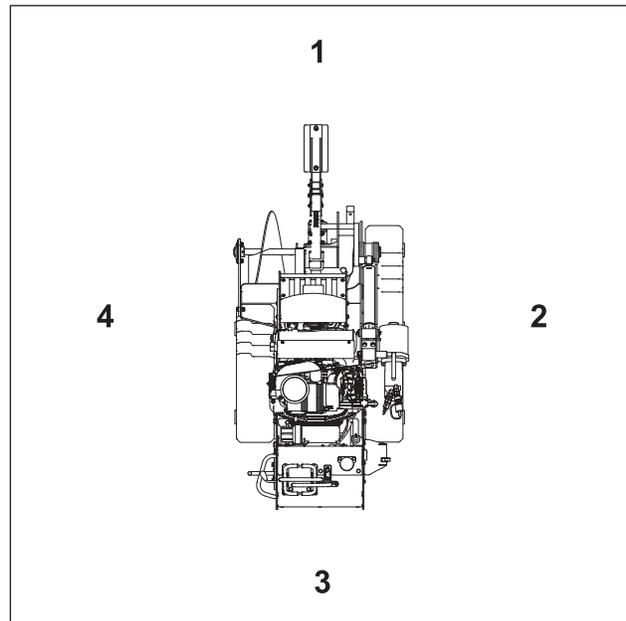
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- 1. Control console
- 2. Engine
- 3. Digging boom and chain
- 4. Tracks

Operator Orientation

IMPORTANT: Top view of unit is shown.

1. Front of unit
2. Right side of unit
3. Rear of unit
4. Left side of unit

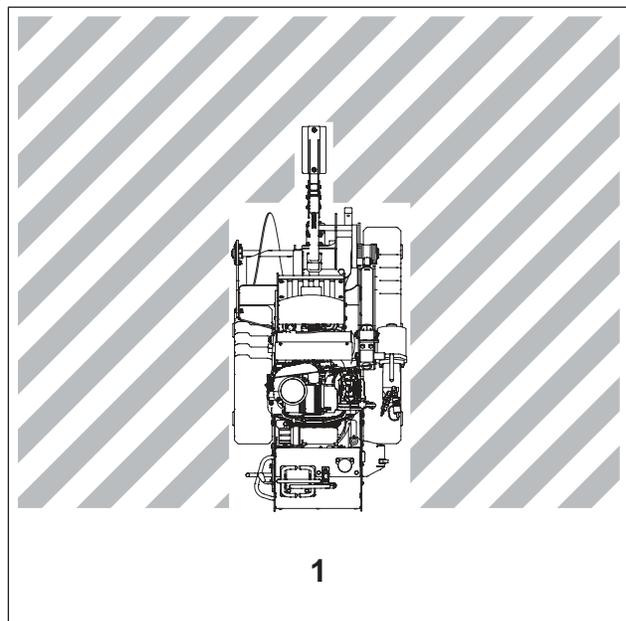


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Operating Area

IMPORTANT: Top view of unit is shown.

Operator should stand only in the location marked by number 1.



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About This Manual

This manual contains information for the proper use of this machine. See the beige **Operation Overview** pages for basic operating procedures. Cross references such as "See page 50" will direct you to detailed procedures.

Bulleted Lists

Bulleted lists provide helpful or important information or contain procedures that do not have to be performed in a specific order.

Numbered Lists

Numbered lists contain illustration callouts or list steps that must be performed in order.

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 without notice. 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.



**C12x/C16x/C24x/C30x
Operator's Manual**

Issue number 2.0/OM-11/17

Part number 053-2869

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This product and its use may be covered by one or more patents at <http://patents.charlesmachine.works>.

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Safety

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Guidelines



When you see this safety alert sign, carefully read and follow all instructions. **YOUR SAFETY IS AT STAKE.** Read this entire section before using your equipment.

Follow these guidelines before operating any jobsite equipment:

- Complete proper training and read operator's manual before using equipment.
- Mark proposed path with white paint and have underground utilities located before working. In the US or Canada, call 811 (US) or 888-258-0808 (US and Canada). Also contact any local utilities that do not participate in the One-Call service. In countries that do not have a One-Call service, contact all local utility companies to have underground utilities located.
- 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 or at www.ditchwitch.com/safe. Safety Data Sheets (SDS) are available at www.ditchwitch.com/support.
- Fully inspect equipment before operating. Repair or replace any worn or damaged parts. Replace missing or damaged safety shields and safety signs. Contact your Ditch Witch dealer for assistance.
- Use equipment carefully. Stop operation and investigate anything that does not look or feel right.
- Do not operate machine where flammable gas may be present.
- Only operate equipment in well-ventilated areas.
- Contact your Ditch Witch dealer if you have any question about operation, maintenance, or equipment use.
- Complete the equipment checklist located at www.ditchwitch.com/safe.

California Proposition 65 Warning

This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

- battery posts, terminals and related accessories
- engine exhaust
- ethylene glycol

Emergency Procedures



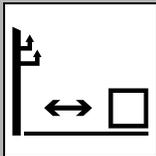
WARNING Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment.



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

EMERGENCY SHUTDOWN - Release all controls and stop engine.

Electric Strike Description



DANGER Electric shock will cause death or serious injury. Stay away. 274-049

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. Many 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 **near pedestrian unit**, DO NOT MOVE and do not touch unit. 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.
- Do not allow anyone into area until given permission by utility company.
- Do not allow anyone to touch equipment.

If a Gas Line is Damaged



⚠ WARNING Fire or explosion possible. Fumes could ignite and cause burns. No smoking, no flame, no spark. 275-419 (2P)



⚠ WARNING Explosion possible. Serious injury or equipment damage could occur. Follow directions carefully.

If you suspect a gas line has been damaged, take the following actions. The orders 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. Contact utility company.

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 and accessible) 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.

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 a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

 **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

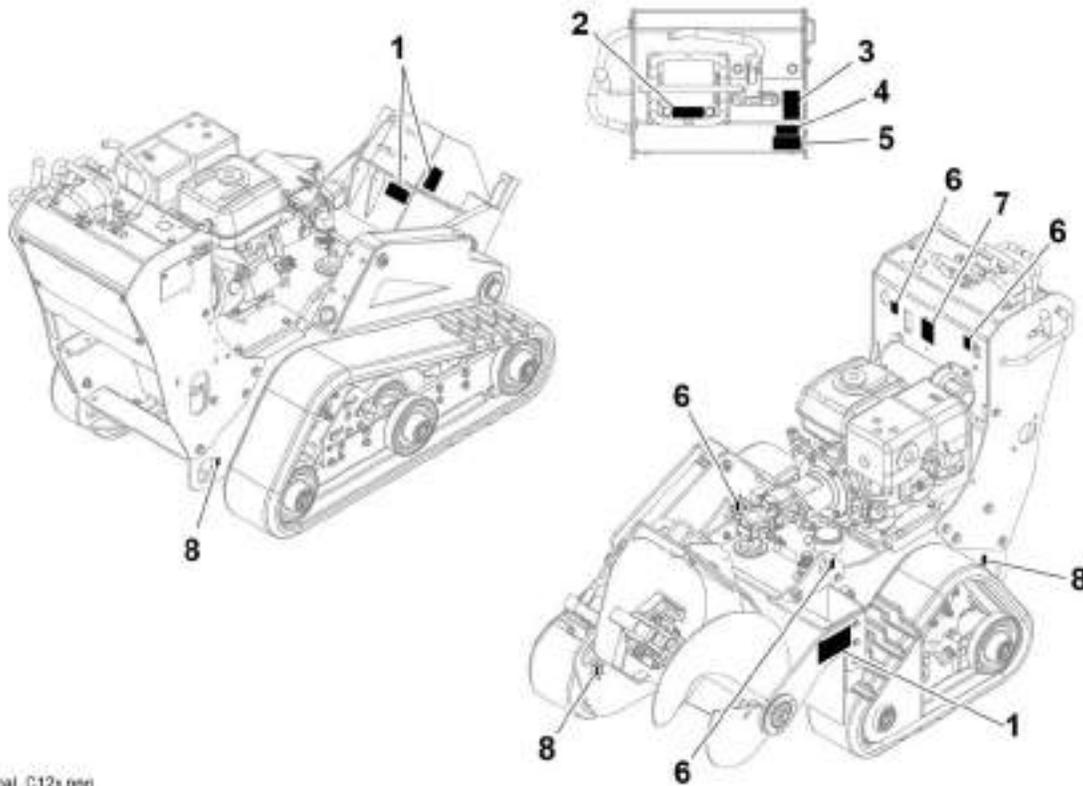
Watch for two other words: **NOTICE** and **IMPORTANT**.

NOTICE indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

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

Machine Safety Alerts

C12x



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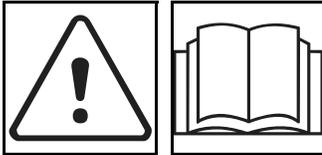
1			<p>⚠ DANGER Moving digging teeth. Contact will cause death or serious injury. Stay away. 270-1156, 274-002</p>
2			<p>⚠ CAUTION Tip over possible. When loading/unloading run at low idle and keep boom low. 270-7596</p>
3			<p>⚠ CAUTION Exposure to high noise levels may cause hearing loss. Wear hearing protection. 700-009 (2-P)</p>

4



⚠ WARNING Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment. 274-050; 274-724 (2P), 700-133

5



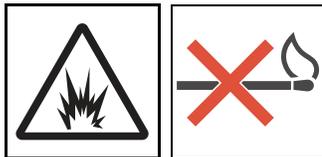
⚠ WARNING Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. 273-475

6



Lift point. See Transport chapter for more information. 274-442

7



⚠ WARNING Fire or explosion possible. Fumes could ignite and cause burns. No smoking, no flame, no spark. 275-419 (2P)

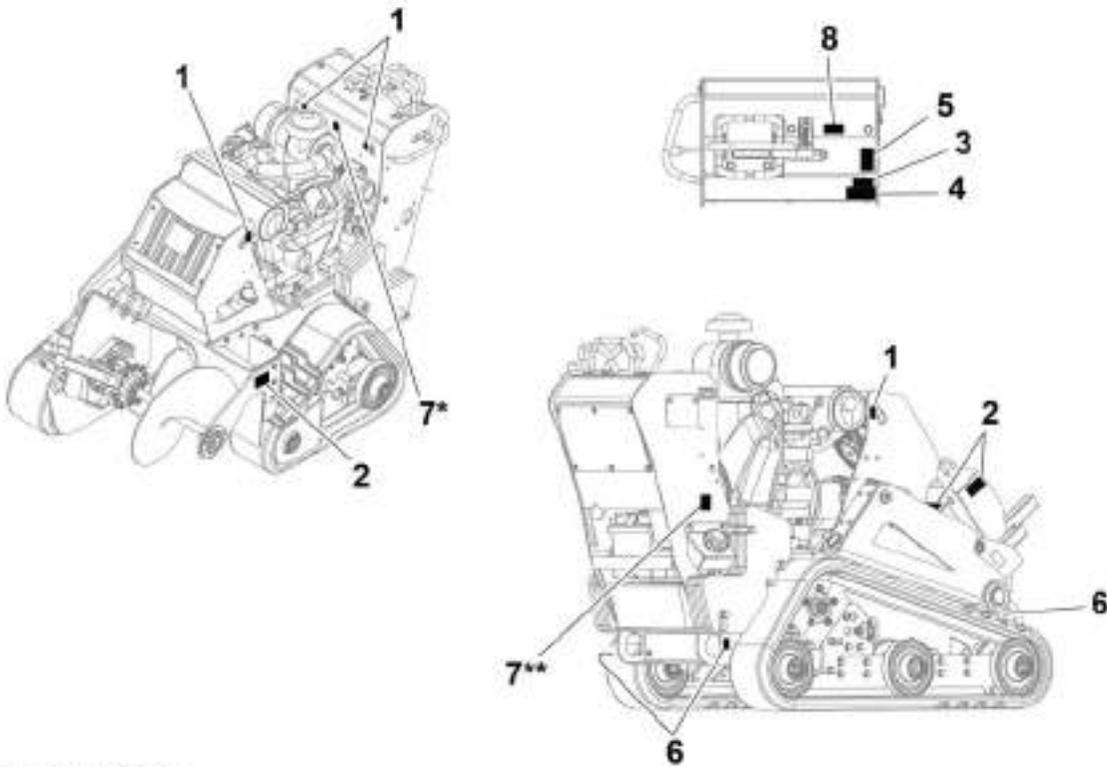
8



Tiedown location. See Transport chapter for more information. 274-318



C16x/C24x/C30x



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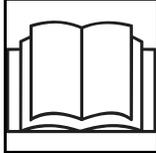
Lift point. See Transport chapter for more information. 274-442



⚠ DANGER Moving digging teeth. Contact will cause death or serious injury. Stay away. 270-1156, 274-002



⚠ WARNING Jobsite hazards could cause death or serious injury. Use correct equipment and work methods. Use and maintain proper safety equipment. 274-050; 274-724 (2P), 700-133

4   **⚠ WARNING** Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. 273-475

5   **⚠ CAUTION** Exposure to high noise levels may cause hearing loss. Wear hearing protection. 700-009 (2-P)

6  Tiedown location. See Transport chapter for more information. 274-318

7   **⚠ WARNING** Fire or explosion possible. Fumes could ignite and cause burns. No smoking, no flame, no spark. 275-419 (2P)

8   **⚠ CAUTION** Tip over possible. When loading/unloading run at low idle and keep boom low. 270-7596

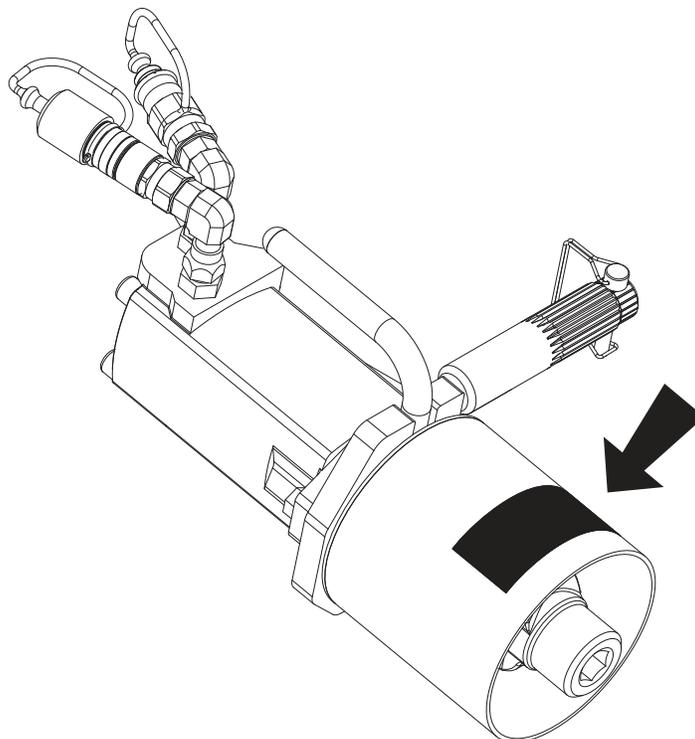
* C16x

** C24x, C30x

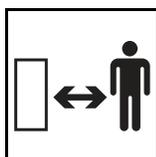


Attachment Safety Alerts

Roto Witch[®] Drilling Attachment



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⚠ DANGER Rotating shaft will kill or seriously injure. Stay away.

275-197

Controls

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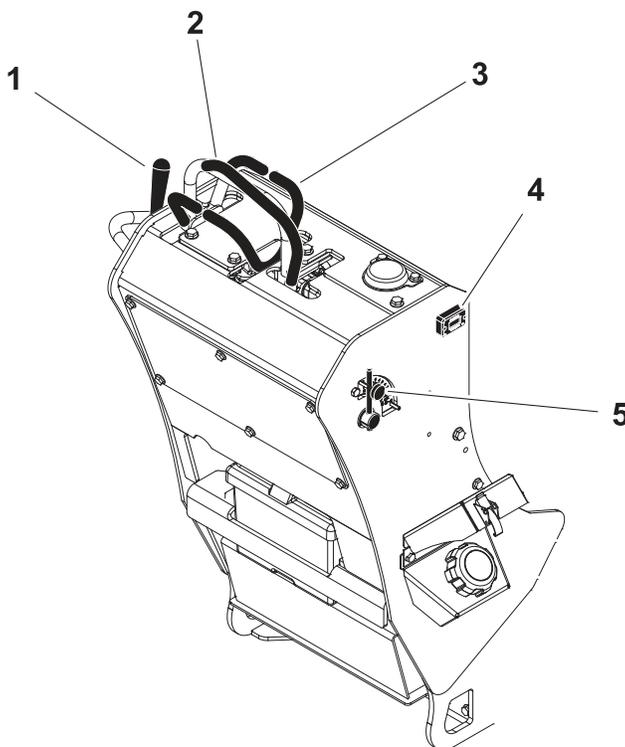
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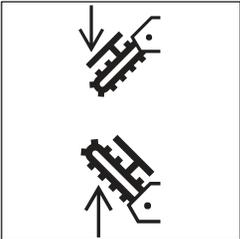


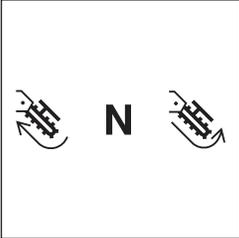
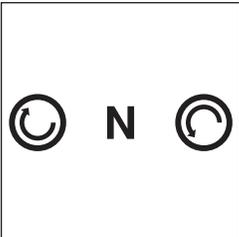
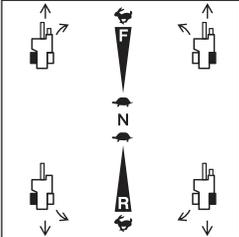
Control Console



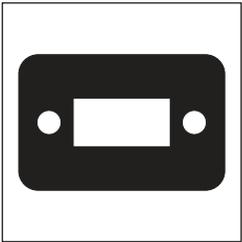
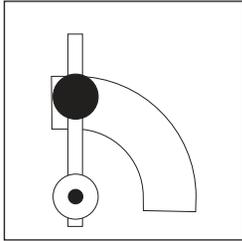
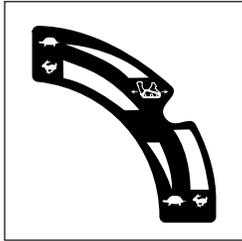
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- 1. Boom lift control
 - 2. Digging chain/Roto Witch[®] control
 - 3. Speed/Direction controls
 - 4. Hourmeter/Tachometer*
 - 5. Variable speed control**
- *C16x and C30x only
** C16x only

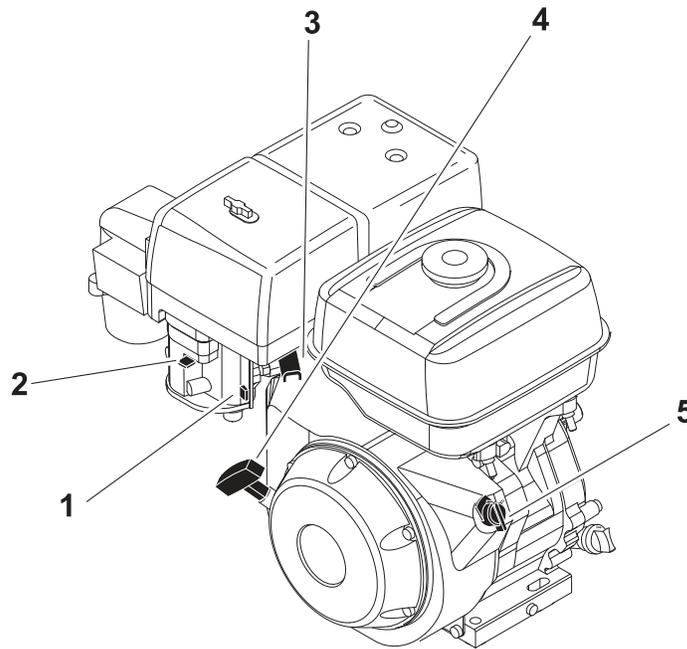
Item	Description	Notes
<p>1. Boom lift control</p>  <p>c00ic004c.eps</p>	<p>To lower boom, push.</p> <p>To raise boom, pull.</p>	

Item	Description	Notes
<p>2. Digging chain control/ Roto Witch® control</p>  <p>c00ic553h.eps</p>  <p>c00ic559h.eps</p>	<p>To start digging chain, pull rearward, then move to the left.</p> <p>To stop digging chain, return to neutral position.</p> <p>To dislodge a rock or other obstruction, pull rearward, then move to the right to reverse chain</p> <p>In drill mode:</p> <p>To drill clockwise, push down.</p> <p>To stop drill rotation, release control.</p> <p>To drill counterclockwise, pull up.</p>	<p>IMPORTANT: This control changes function when equipped with optional Roto Witch® drilling attachment.</p> <p>Trenching movement is always backward (toward you).</p> <p>NOTICE: Operate digging chain in reverse only to dislodge a rock or other obstruction.</p>
<p>3. Speed/direction controls</p>  <p>c00ic266w.eps</p>	<p>To drive straight forward, push BOTH controls slowly forward.</p> <p>To drive straight in reverse, pull BOTH controls slowly rearward.</p> <p>To turn left, move RIGHT speed/direction control for forward or reverse.</p> <p>To turn right, move LEFT speed/direction control for forward or reverse.</p> <p>To go faster in any direction, move controls farther from neutral position.</p> <p>To stop, release controls.</p>	<p>Trenching movement is always backward (toward you).</p>



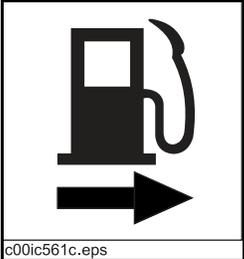
Item	Description	Notes
<p>4. Hourmeter/Tachometer</p>  <p>c00ic556h.eps</p>	<p>Displays engine operating time and engine speed.</p>	<p>Use engine operating times to schedule service.</p>
<p>5. Variable speed control</p>  <p>c00ic136h.eps</p>  <p>c00ic265w.eps</p>	<p>To increase trenching speed and decrease ground drive speed, loosen knob, move control up, then tighten knob.</p> <p>To decrease trenching speed and increase ground drive speed, loosen knob, move control down, then tighten knob.</p>	

C12x Engine Controls

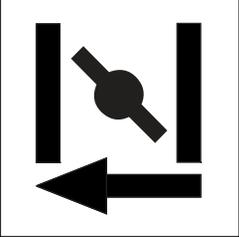
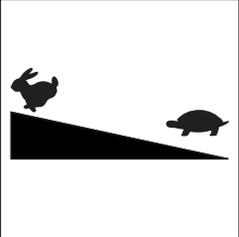
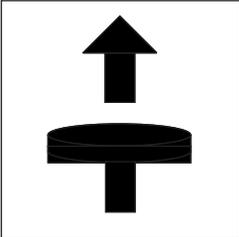


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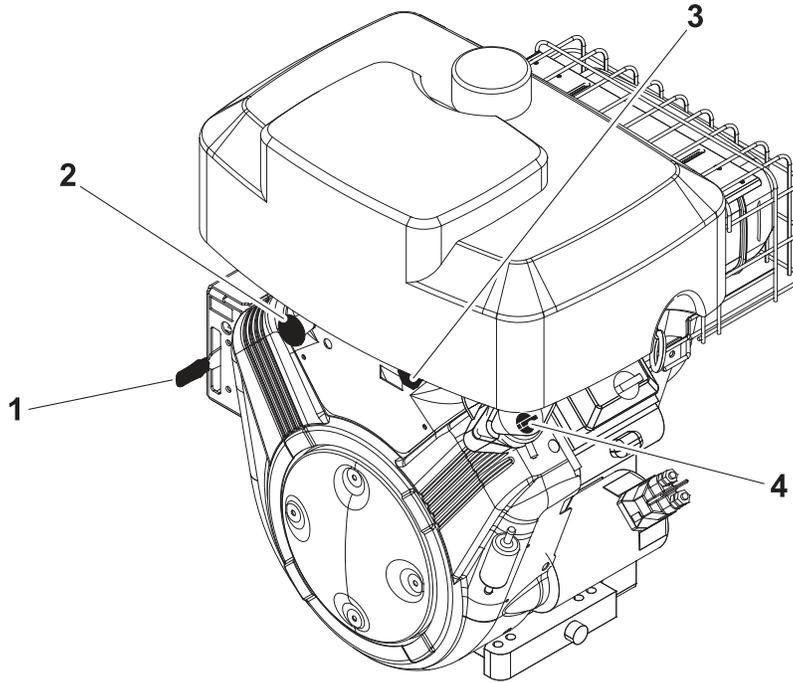
- | | |
|------------------------|--------------------|
| 1. Fuel shut-off valve | 4. Starter grip |
| 2. Choke control | 5. Ignition switch |
| 3. Throttle control | |

Item	Description	Notes
1. Fuel shut-off valve  <p>c00ic561c.eps</p>	<p>To close fuel shut-off valve, move lever to the left position.</p> <p>To open fuel shut-off valve, move lever to the right position.</p>	<p>Close valve:</p> <ul style="list-style-type: none"> • to transport unit to or from jobsite • to park unit • if machine tips over



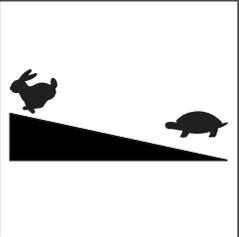
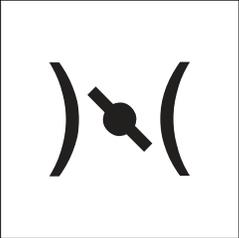
Item	Description	Notes
<p>2. Choke control</p>  <p>c00ic557p.eps</p>	<p>To close choke control, move lever to the left.</p> <p>To open choke control, move lever to the right.</p>	<p>Close choke control to help start a cold engine.</p> <p>Wait until engine warms to gradually open choke control.</p>
<p>3. Throttle control</p>  <p>c00ic571c.eps</p>	<p>To increase engine speed, move lever to the left.</p> <p>To decrease engine speed, move lever to the right.</p>	
<p>4. Starter grip</p>  <p>c00ic315c.eps</p>	<p>To start engine, pull starter grip lightly until resistance is felt, then pull briskly.</p>	
<p>5. Ignition switch</p>  <p>c00ic355c.eps</p>	<p>To enable engine startup procedure, move to ON position.</p> <p>To shut down engine, move to OFF position.</p>	

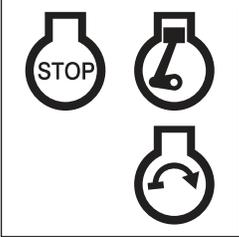
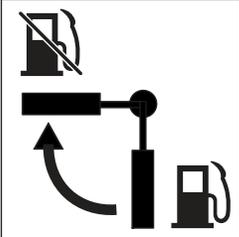
C16x Engine Controls



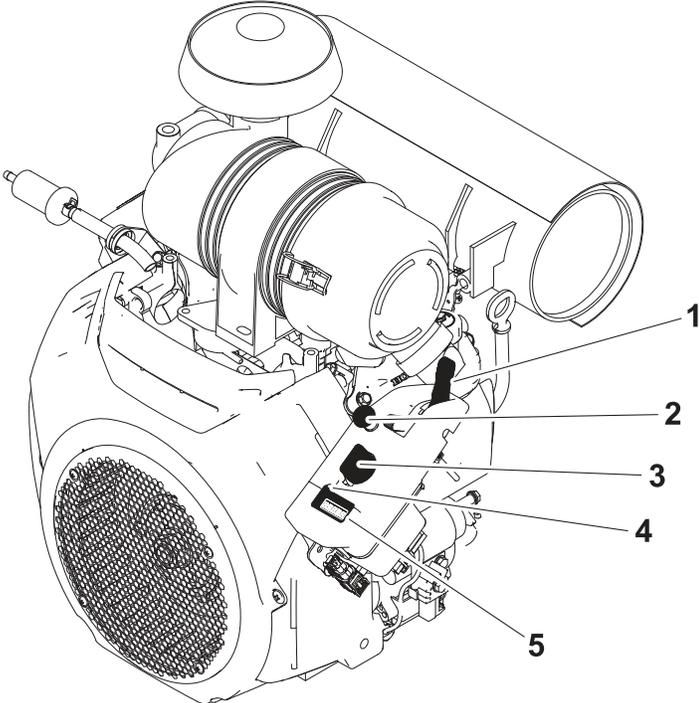
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- | | |
|---------------------|------------------------|
| 1. Throttle control | 3. Ignition switch |
| 2. Choke control | 4. Fuel shut-off valve |

Item	Description	Notes
<p>1. Throttle control</p>  <p>c00ic571c.eps</p>	<p>To increase engine speed, pull up.</p> <p>To decrease engine speed, push down.</p>	
<p>2. Choke control</p>  <p>c00ic557h.eps</p>	<p>To close choke valve, pull choke control.</p> <p>To open choke valve, push choke control.</p>	<p>Close choke control to help start a cold engine.</p> <p>Wait until engine warms to gradually open choke control.</p>

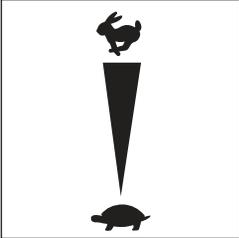
Item	Description	Notes
<p>3. Ignition switch</p>  <p>c00ic065h.eps</p>	<p>To start engine, turn key all the way clockwise. Release key as engine starts.</p> <p>To stop engine, turn key counterclockwise.</p>	
<p>4. Fuel shut-off valve</p>  <p>c00ic561s.eps</p>	<p>To close fuel shut-off valve, move lever clockwise.</p> <p>To open fuel shut-off valve, move lever counterclockwise.</p>	<p>Close valve:</p> <ul style="list-style-type: none">• to transport unit to or from jobsite• to park unit• if machine tips over

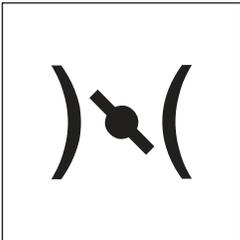
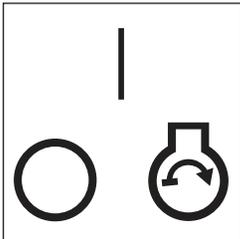
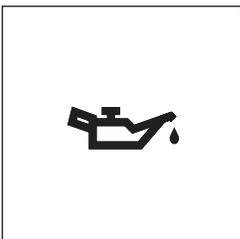
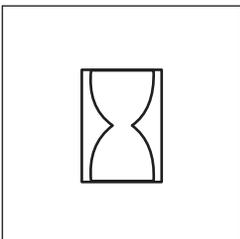
C24x Engine Controls



t47om008h.eps

- 1. Throttle control
- 2. Choke control
- 3. Ignition switch
- 4. Oil pressure indicator
- 5. Hourmeter

Item	Description	Notes
<p>1. Throttle control</p>  <p>c00ic571h.eps</p>	<p>To increase engine speed, push lever up.</p> <p>To decrease engine speed, push lever down.</p>	

Item	Description	Notes
<p>2. Choke control</p>  <p>c00ic557h.eps</p>	<p>To close choke valve, pull choke control.</p> <p>To open choke valve, push choke control.</p>	<p>Close choke control to help start a cold engine.</p> <p>Wait until engine warms to gradually open choke control.</p>
<p>3. Ignition switch</p>  <p>c00ic587h.eps</p>	<p>To start engine, turn key all the way clockwise. Release key as engine starts.</p> <p>To stop engine, turn key counterclockwise.</p>	
<p>4. Oil pressure indicator</p>  <p>c00ic586h.eps</p>	<p>Lights when oil pressure is too low.</p>	<p>NOTICE: Engine will not start. Check level and add oil as needed.</p>
<p>5. Hourmeter</p>  <p>c00ic585h.eps</p>	<p>Displays number of hours engine has operated.</p>	