

**Ditch
Witch**

SK4TR Attachment Operator's Manual

Publication number: ID0550345; page 1 of 8

Foreword

Read and understand this manual and the power unit operator's manual before using your attachment. 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. 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.

SK4TR (2019) Trencher Attachment Operator's Manual

Issue number 1.0/OM-05/19

Part number ID0550345

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Ditch Witch is a registered trademark of The Charles Machine Works, Inc.

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.



A CHARLES MACHINE WORKS COMPANY

Intended Use

The SK4TR trencher attachment is designed for digging trenches up to 12" (305 mm) wide and 48" (1.2 m) deep.

Safety

- Complete proper training and read operator's manual before using equipment.
- Contact your local One-Call (811 in USA) or the One-Call referral number (888-258-0808 in USA and Canada) to have underground utilities located before digging. Also contact any utilities that do not participate in the One-Call service. Mark proposed path with white paint prior to contacting One-Call or utilities.
- 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 may be present.
- Contact your Ditch Witch dealer if you have any question about operation, maintenance, or equipment use.

Safety Alert Classifications

These classifications and the icons 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.

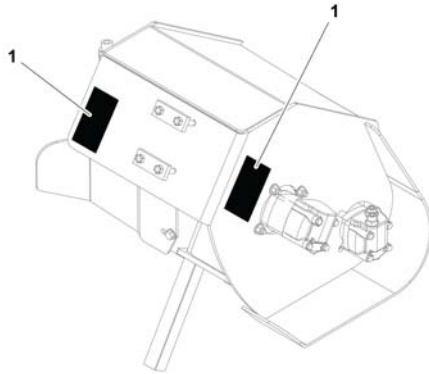
⚠ DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

⚠ 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.

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.

Safety Alerts



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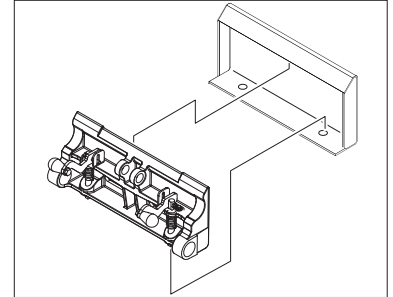


⚠ DANGER Moving digging teeth. Contact will cause death or serious injury. Stay at least 6' (2m) away.

Connect Attachment

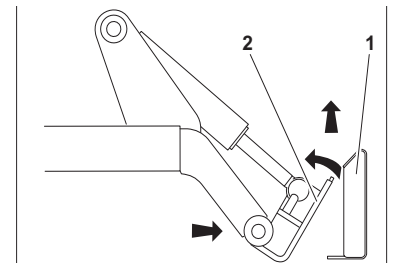
IMPORTANT: Before connecting attachment to unit, ensure that mount and receiver plates are free of dirt and debris and that latch handles are down.

1. Position attachment on level surface with enough space behind it to accommodate unit.



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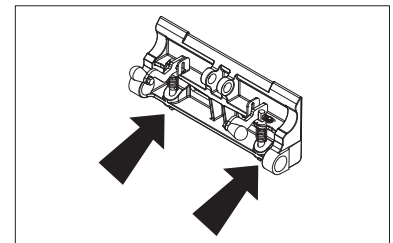
2. Start engine.
3. Tilt mount plate (2) forward.
4. Position mount plate in the upper lip of the receiver plate (1) on attachment.
5. Raise lift arms while tilting back mount plate.



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IMPORTANT: Attachment should be raised enough to clear the ground. Mount plate should be tilted back fully.

6. Pins will automatically engage.
7. Ensure lock pins are engaged by rotating attachment down. Verify that bottoms of lock pins are visible under attachment plate.



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Hydraulic Hoses

Connect hydraulic hoses.



WARNING Pressurized fluid or air could pierce skin and cause injury or death. Stay away.

To help avoid injury:

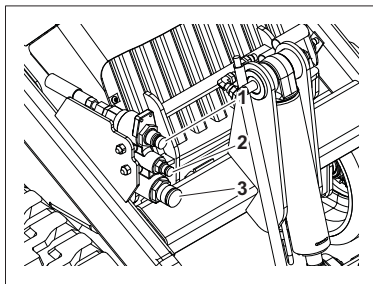
- Use a piece of cardboard or wood, rather than hands, to search for leaks.
- Wear protective clothing, including gloves and eye protection.
- Before disconnecting a hydraulic line, turn engine off and operate all controls to relieve pressure.
- Lower, block, or support any raised component with a hoist.
- Cover connection with heavy cloth and loosen connector nut slightly to relieve residual pressure. Catch all fluid in a container.
- Before using system, check that all connections are tight and all lines are undamaged.
- If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.



CAUTION Hot parts may cause burns. Do not touch until cool or wear gloves.

To help avoid injury: Wear gloves when connecting and disconnecting hydraulic hoses and wait until unit has cooled before touching hydraulic components.

1. Remove dirt and debris from hydraulic couplers.
2. Connect male coupler on attachment to female coupler (3) on unit.
3. Connect female coupler on attachment to male coupler (1) on unit.
4. Ensure that connections are secure by pulling on hoses.



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Function Overview

Attachment Function	
<p>c00c015c.eps</p>	To raise trencher, raise lift (loader) arms.
<p>c00c016c.eps</p>	To lower trencher, lower lift (loader) arms.
<p>c00c018c.eps</p>	To curl trencher up/tilt trencher up, tilt mount plate up.
<p>c00c017c.eps</p>	To curl trencher down/tilt trencher down, tilt mount plate down.
<p>c00c019c.eps</p>	To start digging chain, engage attachment drive (auxiliary) control in forward.
<p>c00c020c.eps</p>	To reverse digging chain, engage attachment drive (auxiliary) control in reverse.



Operate Attachment



⚠ DANGER Moving digging teeth. Contact will cause death or serious injury. Stay at least 6' (2m) away.

To help avoid injury: Machine might jerk when digging starts. Allow 3' (1 m) between digging teeth and obstacle.

EMERGENCY SHUTDOWN: Turn ignition switch to STOP.

1. Move unit to starting point of trench.
2. Move track drive controls to neutral.
3. Move throttle to half open.
4. Use lift (loader) arm control to lower trencher to 1" (25 mm) above ground surface.
5. Use attachment drive (auxiliary) control to start forward digging chain rotation. DIGGING CHAIN WILL MOVE.
6. Increase engine speed to full throttle.
7. Use lift (loader) arm control to slowly curl digging boom down to digging depth.
8. Move track drive controls to begin trenching. UNIT WILL MOVE.

IMPORTANT: Trenching movement is toward you.

9. When trench is complete, move track drive controls to neutral.
10. Move throttle to half open.
11. Use lift (loader) arm control to curl boom up to top of trench.
12. Use attachment drive (auxiliary) control to stop digging chain rotation.
13. Use lift (loader) arm control to raise trencher.
14. Use track drive controls to drive unit away from trench.
15. Lower attachment to ground surface.
16. Idle engine a few moments to stabilize engine temperature.
17. Stop engine.

For Proper Operation

- Avoid using badly worn teeth. When replacing teeth, maintain original pattern. Use Ditch Witch® replacement teeth.
- Use correct length boom. See your Ditch Witch dealer for more information.
- Do not make sharp turns. For easier turning, lower boom to full depth.
- If an object becomes lodged in chain, move digging chain control to neutral and raise boom slightly. Reverse chain direction. If object must be removed manually, turn engine off.
- When beginning trench near a wall or fence, allow enough distance between boom and footings, drains, and cables.
- When cutting across asphalt roads, start trench in soil at edge of road and dig with shortest possible boom at full digging depth.
- When straight trenching across a slope, it can be helpful to stake a wooden beam parallel to intended course and just far enough from trench to guide downslope track.
- Keep bystanders clear of work area.
- Do not walk or work under raised attachments unless lift (loader) arms are securely supported.
- Avoid sudden starts and stops.

Storage

Store attachment upright in a clean, dry place. Cover attachment to keep it clean.



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Service

To help avoid injury: Unless otherwise noted, all service should be performed with the engine off.

Each Use

Check Bit Rotation (Alligator chain)

Bits must rotate freely in bit holders. Clean chain and check bits for free rotation after each use. If any bit does not rotate, it will quickly wear unevenly. If using rock chain bits, replace bit when tungsten cap or insert is worn or adapter can be damaged.

10-Hour

Check Hydraulic Hoses and Fittings



WARNING Pressurized fluid or air could pierce skin and cause severe injury. Stay away.

To help avoid injury:

- Use a piece of cardboard or wood, rather than hands, to search for leaks.
- Wear protective clothing, including gloves and eye protection.
- Before using system, check that all connections are tight and all lines are undamaged.
- If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.



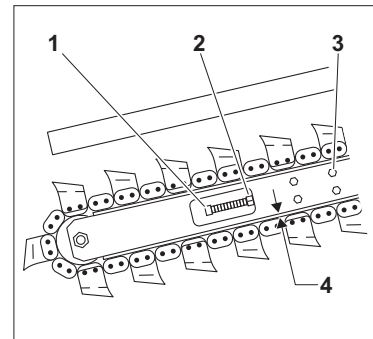
CAUTION Hot parts may cause burns. Do not touch until cool or wear gloves.

To help avoid injury: Wear gloves when connecting and disconnecting hydraulic hoses and wait until unit has cooled before touching hydraulic components.

Check hydraulic hoses for leaks every 10 hours.

Check and Adjust Digging Chain

Check digging chain tension every 10 hours. Clearance between chain and boom (4) should be approximately 1" (25 mm).

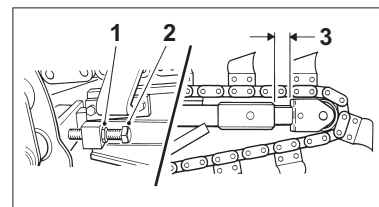


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To adjust chain with roller boom:

1. Lower boom to ground and stop engine.
2. Loosen four trencher boom clamp bolts (3), if equipped.
3. Loosen jam nut (2) and turn adjusting screw (1) clockwise to increase and counterclockwise to decrease chain tension.
4. Tighten jam nut.
5. Tighten trencher boom clamp bolts to 78 ft•lb (106 N•m).

To adjust chain with sprocket boom:



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1. Lower boom to ground and stop engine.
2. Adjust chain tension by tightening or loosening adjustment screw (2) and jam nut (1). Digging chain tension is correct when 1-1.5" (25-40 mm) of slide and stop is exposed (3).
3. Tighten jam nut.

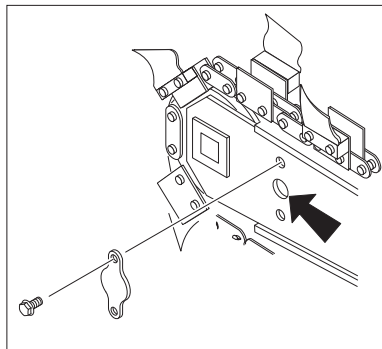


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To adjust chain with grease cylinder:

With boom horizontal, measure distance from bottom of boom to chain. When properly tensioned, distance should be 0.5" (13 mm).



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

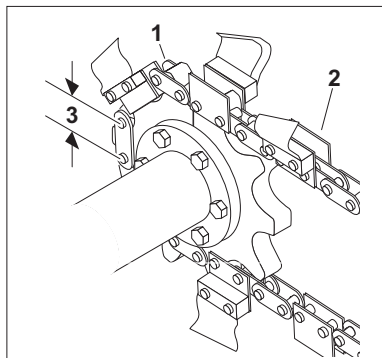
NOTICE: Do **not** overtighten chain. Overtightening will cause chain stretch, loss of machine performance, and possible premature chain failure.

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

As Needed

Check Digging Chain Rollers, Sidebars, Pins, and Bushings

Perform periodic visual inspections of digging chain. Check for wear on rollers (1) and sidebars (2). Check pins and bushing wear by measuring distance (3) between chain pins and comparing it to new chain.



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NOTICE:

- If sidebars are bending or getting loose on chain pins, use chain spacers to join sidebars.
- Replace worn or broken chains.
- Replace sprockets when new chain is installed.

Check Digging Chain Teeth and Bits

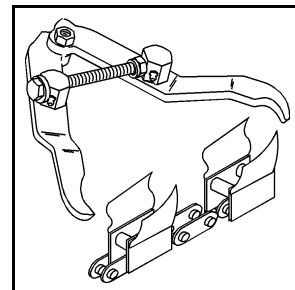
Inspect digging chain teeth for wear as needed. Replace worn teeth with new Ditch Witch® teeth. Each unit is equipped with a standard tooth configuration. When replacing teeth, maintain original tooth pattern. Depending on soil conditions and type of chain, a different configuration might produce better results. Contact your authorized Ditch Witch dealer for more information about digging teeth patterns.

Alligator chain bits, like teeth, wear out. When tungsten cap or insert is gone, bit will wear quickly. Replace it before bit adapter is damaged.

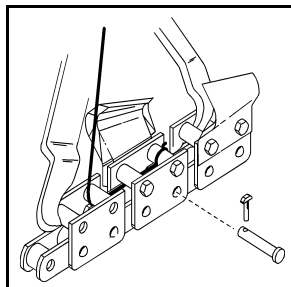
Replace Digging Chain

To remove digging chain:

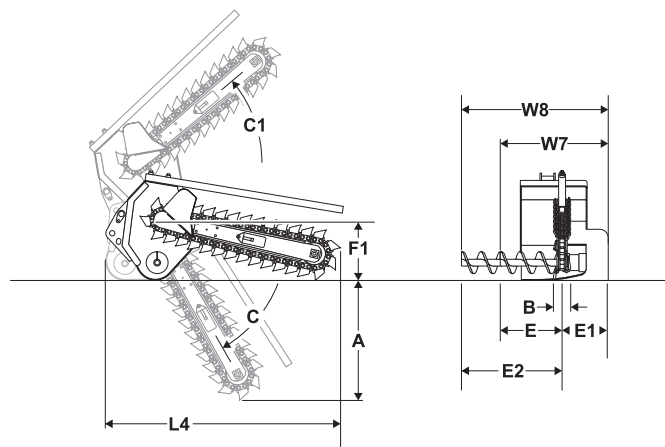
1. Start engine.
2. Position digging chain with connector pin at top of boom.
3. Lower boom to ground.
4. Stop engine.
5. Secure chain.
 - With sprocket booms, lock rear idler sprocket.
 - With roller booms, clamp links on either side of connector pin with chain jaws (shown). Squeeze jaws to reduce pressure on connector pin.



6. Loop cable through links nearest connector pin (shown).
7. Turn tension bolts counterclockwise to release tension on digging chain.
8. Stand clear of chain. Do not stand behind boom. Keep feet from under boom.
9. Remove pin from connector pin and drive pin out of link.
10. Unclamp links (roller boom). Slowly release cable and lower chain to ground.



Specifications



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To install digging chain:

1. Position digging chain on ground with teeth down and pointed toward unit.
2. Loop cable through end links.
3. Start engine.
4. Back unit up until digging chain extends past headshaft about 12" (30 cm).
5. Lower boom to horizontal position.
6. Stop engine.
7. Secure chain on sprocket booms by locking rear idler sprocket.
8. Pull rear end of chain over tail sprocket or roller. Pull cable until chain is in place on boom.
9. Attach chain jaws to end links and bring links into place.
10. Install connector pin and lock key.

SK4TR		U.S.	Metric
A	Trench depth, max	48 in	1.2 m
B	Trench width, max	12 in	152 mm
C	Boom travel down (recommended)	30°	30°
C1	Boom travel up (recommended)	60°	60°
E	Centerline of trench, left without auger extension	16.7 in	424 mm
E1	Centerline of trench, right	14 in	356 mm
E2	Centerline of trench, left with auger extension	22 in	559 mm
F1	Headshaft height, digging chain down	6.5 in	165 mm
W7	Width, without auger extension	30.6 in	777 mm
W8	Width, with auger extension	35.9 in	912 mm
	Weight with 4-ft (1.2-m) boom w/4-in (102-mm) combo chain	535 lb	243 kg

Chain speed at **max** SK flow/pressure w/11-tooth sprocket

	SK600/SK752/SK800, medium	267 fpm	81 m/min
	SK600/SK752/SK800, low	220 fpm	67 m/min
	SK755, medium	323 fpm	98 m/min
	SK755, low	264 fpm	80 m/min
	SK1050, medium	309 fpm	94 m/min
	SK1050, low	251 fpm	96 m/min

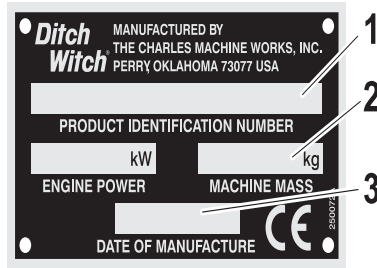


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Serial Number Plate

1. Serial number
2. Attachment weight
3. Date of manufacture



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Support

Procedure

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

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

Return damaged parts to dealer for inspection and warranty consideration if in warranty time frame.

Order genuine Ditch Witch replacement or repair parts from your authorized Ditch Witch dealer. Use of another manufacturer's parts may void warranty consideration.

Resources

Publications

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

Ditch Witch Training

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

Warranty

Ditch Witch® Equipment and Replacement Parts Limited Warranty Policy

Subject to the limitation and exclusions herein, free replacement parts will be provided at any authorized Ditch Witch dealership for any Ditch Witch equipment or parts manufactured by the Ditch Witch factory that fail due to a defect in material or workmanship within one (1) year of first commercial use. Free labor will be provided at any authorized Ditch Witch dealership for installation of parts under this warranty during the first year following "initial commercial" use of the serial-numbered Ditch Witch equipment on which it is installed. The customer is responsible for transporting their equipment to an authorized Ditch Witch dealership for all warranty work.

Exclusions from Product Warranty

- 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).
- Tires, belts, and other 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.

Defects will be determined by an inspection within thirty (30) days of the date of failure of the product or part by Ditch Witch Product Support (DWPS) or its authorized dealer. DWPS will provide the location of its inspection facilities or its nearest authorized dealer upon inquiry. DWPS reserves the right to supply remanufactured replacement parts under this warranty as it deems appropriate.

Extended warranties are available upon request from your local Ditch Witch dealer or the Ditch Witch factory.

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 product owner specific legal rights and the product owner may also have other rights which vary from state to state.

For information regarding this limited warranty, contact the DWPS department, P.O. Box 66, Perry, OK 73077-0066, or contact your local dealer.

First version: 1/91; Latest version: 8/16