



# HHX Series Ride-On Trowels

## Hydraulic Steering Cylinder Installation Instructions

The following instructions are intended to assist the user with the installation of the Hydraulic Steering Cylinder Kit to be used on Multiquip Ride-On Trowel models EHHXG5, HHXG5, HHXD5, HHXDF4, HHXDF5, and DHHX. Please read all assembly instructions before installing the kit.

### REQUIRED TOOLS

- Compressed air
- 3/4" open-end wrench
- Ratchet with 3/4" socket

### PARTS

Verify that all parts are accounted for. See Figure 1 and Table 1.

Table 1. Hydraulic Steering Cylinder Kit				
Item No.	Part No.	Description	Qty.	Remarks
1	23262-SK	Service Kit, Cylinder, Steering, Hyd.	1	Includes Items 2–12
2	10176	Nut, Nyloc 1/2-13	2	
3	23260	Rod End, 1/2-20 M RH w/ Custom Ball	2	
4	12318	Screw, HHC 1/2-13 x 2-3/4"	2	
5	11146	Nut, Hex Jam 1/2-20 Plated	2	
6	12056	Cylinder, 2.5" Bore x 1.5" Str. x .75" Rod	1	
7	32619	Fitting 90° 4MORFS x 4MNPT	2	
8	32350	Fitting, 6MORFS x 04MP Str.	2	
9	30710	Instructions, Steering Cylinder Setup	1	
10	23261	Spacer, HHX Steering Cylinder	1	
11	1477	Loctite 242 Blue .5cc	1	
12	32593	Loctite, Thread Sealant, Pouch .5mL	1	

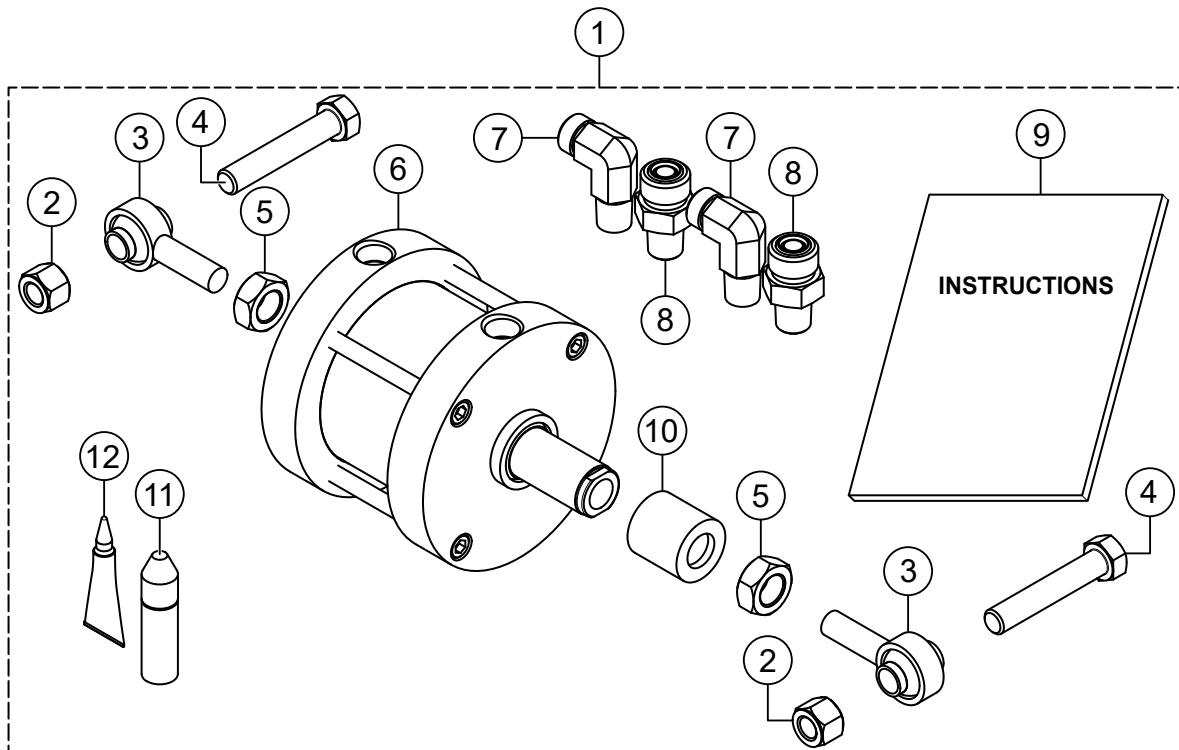


Figure 1. Hydraulic Steering Cylinder Kit

## WORK SAFELY!

Only a **qualified service technician** with proper training should perform this installation. Follow all shop safety rules when performing this installation.

### TROWEL SAFETY

#### WARNING

■ **NEVER** use your hand to find hydraulic leaks. Use a piece of wood or cardboard. Hydraulic fluid injected into the skin must be treated by a knowledgeable physician immediately or **severe injury or death** can occur.



■ **NEVER** disconnect any **emergency or safety devices**. These devices are intended for operator safety. Disconnection of these devices can cause **severe injury, bodily harm or even death**. Disconnection of any of these devices will void all warranties.

#### CAUTION

■ **NEVER** attempt service on a running machine.

### ENGINE SAFETY

#### CAUTION

■ **NEVER** touch the **hot** exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing the equipment.



■ **ALWAYS** disconnect the **NEGATIVE battery cable** before performing service on the equipment.

## LIFTING SAFETY

#### CAUTION

■ **NEVER** allow any person or animal to stand underneath the equipment while lifting.



■ Ride-on trowels are very heavy and awkward to move around. Use proper heavy lifting procedures and **DO NOT** attempt to lift the trowel by the guard rings.

■ **NEVER** lift the trowel with the operator on the machine.

#### NOTICE

■ Before lifting, make sure that the lift loops are not damaged.

■ **ALWAYS** make sure the crane or lifting device has been properly secured to the lift loops of the equipment.

■ **ALWAYS** shut down the engine before lifting.

■ Use adequate lifting cable (wire or rope) of sufficient strength.

■ **DO NOT** lift the machine to unnecessary heights.

## PREPARATION

1. Make sure the trowel is turned **OFF** and the engine is cool.
2. Disconnect the negative (**BLACK**) battery cable from the negative (-) terminal on the battery.

## LIFTING PROCEDURE

**WARNING**  
**ALWAYS** inspect lifting slings **before** each use.

**NOTICE**  
**MAKE SURE** the forklift has adequate lifting capacity to lift the trowel.

The proper sling hitch method for connecting lifting slings to the ride-on trowel is the **choker hitch**. The rated capacity of the slings for this method is indicated on the sling labels. **DO NOT** use any other type of sling hitch!

1. Secure two lifting slings to the lift loops located on the left and right side of the trowel (Figure 2).

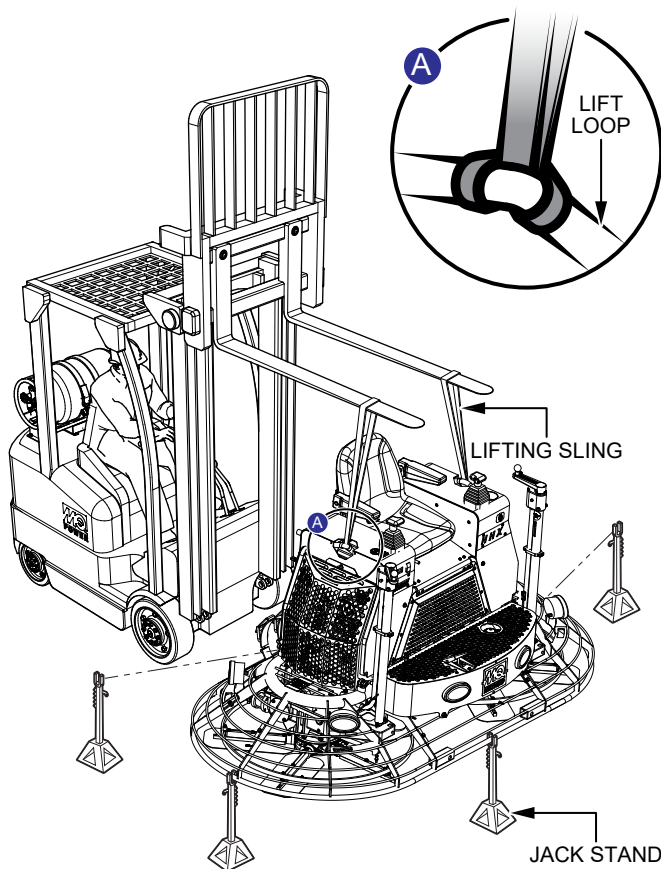


Figure 2. Lifting the Trowel

2. Insert forklift forks through the loops at the ends of the lifting slings (Figure 2). Keep the slings as close to vertical as possible. If the choke angle (Figure 3) is 120 degrees or less, the lifting strength of the slings must be de-rated as shown in Table 2, in accordance with ASME Standard B30.9.

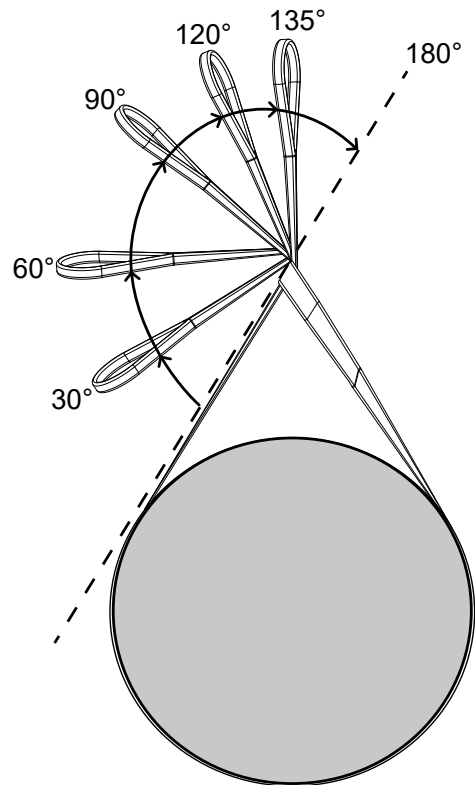


Figure 3. Choke Angle

Table 2. Choker Hitch Sling Capacity	
Choke Angle (°)	Rated Capacity (%)
Over 120	100
90–120	87
60–89	74
30–59	62
0–29	49

3. Place the trowel on heavy-duty jack stands (Figure 2) on secure, level ground in an area that is free of dirt and debris.

## EXISTING HYDRAULIC CYLINDER REMOVAL

1. Disconnect hydraulic hoses (Figure 4) from the hydraulic cylinders. Mark or tag each hose to ensure correct reconnections later.

### NOTICE

Be sure to have a container ready to catch any hydraulic fluid that may escape during disconnection of the hoses.

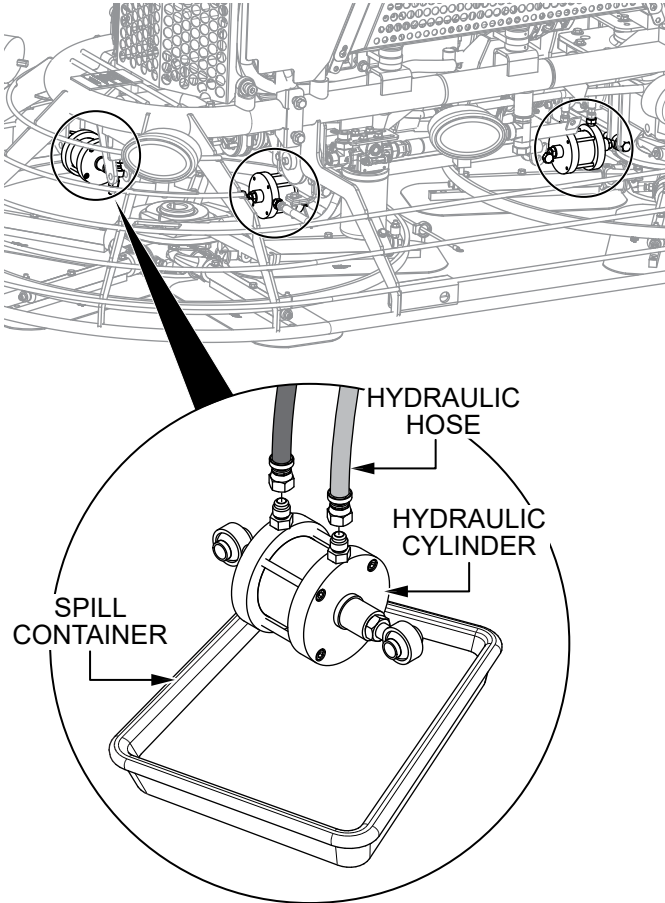


Figure 4. Disconnect Hydraulic Hoses

2. Remove and discard the bolt and nut securing the existing hydraulic cylinder to the gearbox (Figure 5).

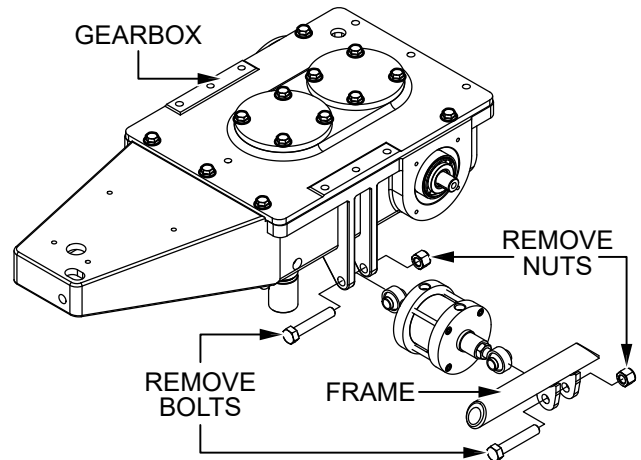


Figure 5. Remove Existing Hydraulic Cylinder

3. Remove and discard the bolt and nut securing the existing hydraulic cylinder to the frame (Figure 5).
4. While removing the hydraulic cylinder, take note of the hydraulic fittings (Figure 6) on the cylinder. When assembling the new cylinder, the same type of fittings (either straight or 90-degree) should be used.

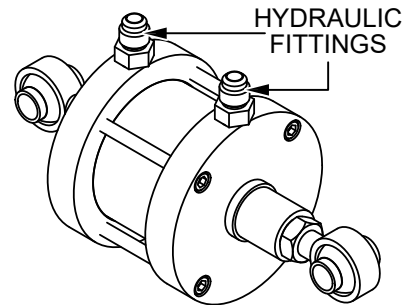
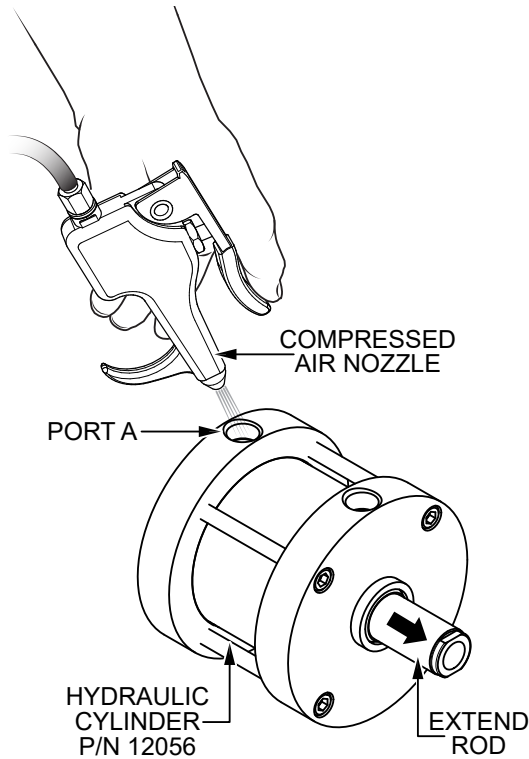


Figure 6. Hydraulic Cylinder Fittings

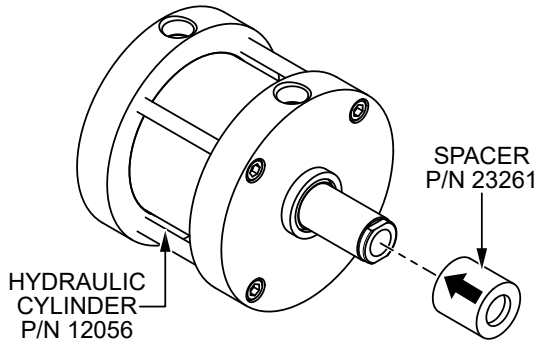
## NEW HYDRAULIC CYLINDER ASSEMBLY

1. Force air into **Port A** on the new hydraulic cylinder (P/N 12056) to extend the cylinder rod. See Figure 7.



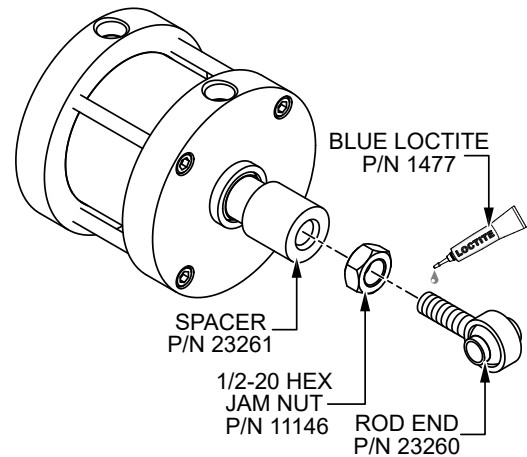
**Figure 7. Extend Cylinder Rod**

2. With the cylinder rod extended, place the spacer (P/N 23261) onto the rod. See Figure 8.



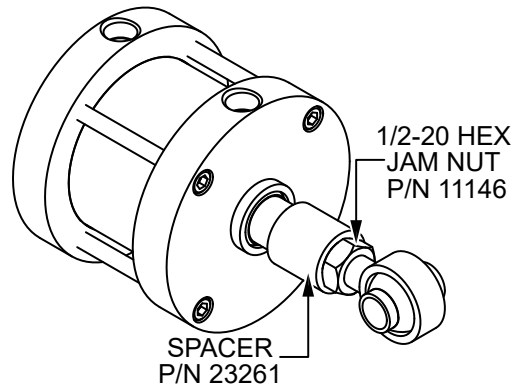
**Figure 8. Install Spacer**

3. Apply Loctite® Blue 242™ thread sealant (P/N 1477) to the threads on a rod end (P/N 23260). See Figure 9.



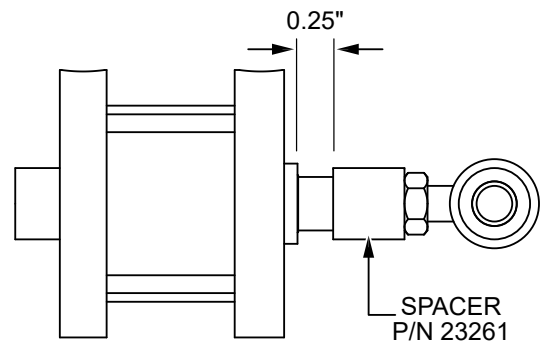
**Figure 9. Install First Rod End**

4. Insert the rod end (P/N 23260) with a 1/2-20 hex jam nut (P/N 11146) into the rod through the spacer (P/N 23261). Tighten the rod end as far as possible into the rod. See Figure 9.
5. Tighten the 1/2-20 hex jam nut (P/N 11146) securely against the spacer (P/N 23261). See Figure 10.



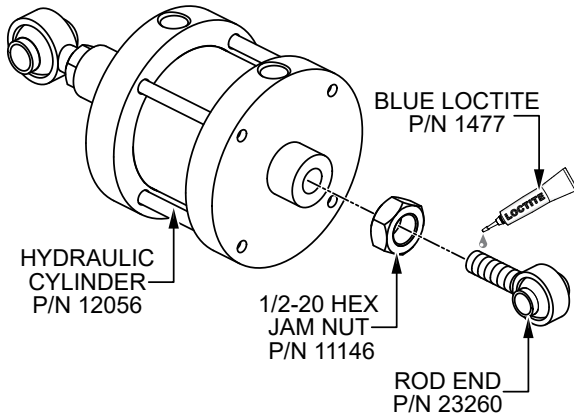
**Figure 10. Tighten Hex Jam Nut**

6. Adjust the spacer so that the dimension shown in Figure 11 is 0.25 inch.



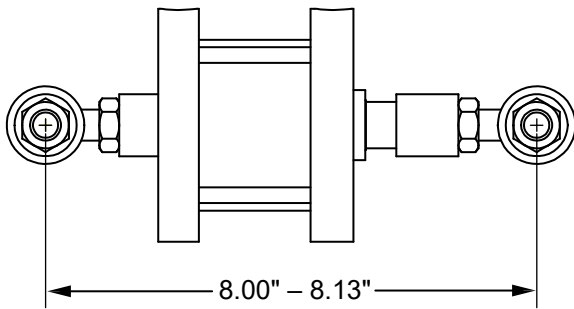
**Figure 11. Adjust Spacer**

- Apply Loctite® Blue 242™ thread sealant (P/N 1477) to the threads on the other rod end (P/N 23260). See Figure 12.



**Figure 12. Install Second Rod End**

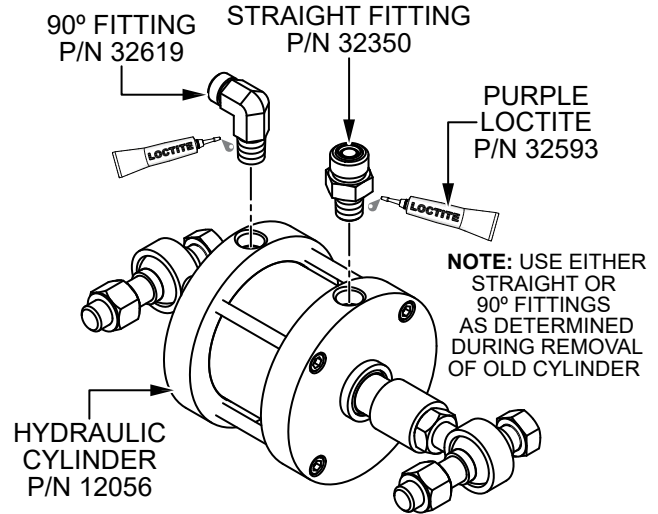
- Install the other rod end (P/N 23260) with 1/2-20 hex jam nut (P/N 11146) into the opposite end of the hydraulic cylinder (P/N 12056) as shown in Figure 12. Adjust so that the center-to-center distance between rod ends is 8.00–8.13 inches (Figure 13), then tighten the jam nut securely.



**Figure 13. Adjust Distance Between Rod Ends**

- Determine which type of hydraulic fittings (straight or 90-degree) should be installed onto the cylinder as noted earlier during removal of the old cylinder.

- Apply Loctite® Purple 545™ thread sealant (P/N 32593) to the threads on the straight fittings (P/N 32350) or the threads on the 90-degree fittings (P/N 32619) as determined in Step #9. See Figure 14.

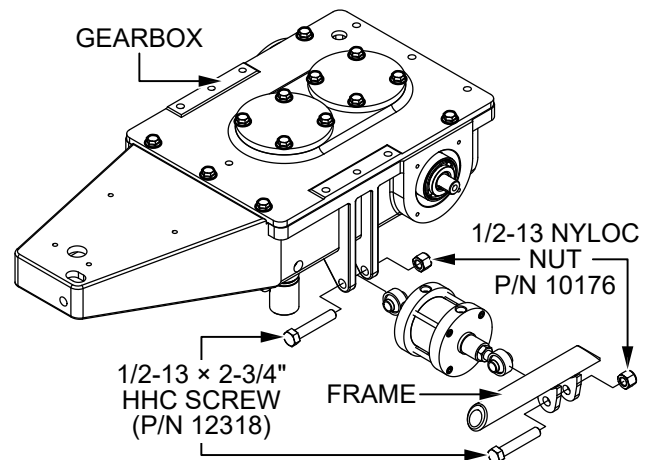


**Figure 14. Install Hydraulic Fittings**

- Install the two hydraulic fittings into the open ports on the hydraulic cylinder (P/N 12056) and tighten securely. See Figure 14.

## NEW HYDRAULIC CYLINDER INSTALLATION

- Secure the new hydraulic cylinder assembly to the gearbox and frame with the two 1/2-13 × 2-3/4" HHC screws (P/N 12318) and two 1/2-13 nyloc nuts (P/N 10176). See Figure 15.





**Figure 15. Install New Hydraulic Cylinder**

- Connect hydraulic hoses to the new hydraulic cylinder as noted earlier during removal of the old cylinder.

## TESTING

1. Start the engine.
2. Allow the hydraulic system to warm up.
3. Test the hydraulic steering for correct operation.
4. Check for hydraulic fluid leaks.

 <b>WARNING</b>	
	<p><b>DO NOT</b> use your hand to find hydraulic leaks. Use a piece of wood or cardboard. Hydraulic fluid injected into the skin must be treated by a knowledgeable physician immediately or <b>severe injury or death</b> can occur.</p>





# HHX Series Ride-On Trowels

## Hydraulic Steering Cylinder Installation Instructions

---

## HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL  
NUMBER ON-HAND WHEN CALLING

### UNITED STATES

#### ***Multiquip Corporate Office***

18910 Wilmington Ave. Tel. (800) 421-1244  
Carson, CA 90746 Fax (310) 537-3927  
Contact: mq@multiquip.com

#### ***Service Department***

(800) 421-1244  
(310) 537-3700

#### ***Technical Assistance***

(800) 478-1244 Fax: (310) 943-2238

#### ***MQ Parts Department***

(800) 427-1244 Fax: (800) 672-7877  
(310) 537-3700

#### ***Warranty Department***

(800) 421-1244 Fax: (310) 943-2249  
(310) 537-3700

---

### CANADA

#### ***Multiquip***

4110 Industriel Boul. Tel: (450) 625-2244  
Laval, Quebec, Canada H7L 6V3 Tel: (877) 963-4411  
Contact: infocanada@multiquip.com Fax: (450) 625-8664

---

### UNITED KINGDOM

#### ***Multiquip (UK) Limited Head Office***

Unit 2, Northpoint Industrial Estate, Tel: 0161 339 2223  
Globe Lane, Fax: 0161 339 3226  
Dukinfield, Cheshire SK16 4UJ  
Contact: sales@multiquip.co.uk

© COPYRIGHT 2019, MULTIQUIP INC.

Multiquip Inc and the MQ logo are registered trademarks of Multiquip Inc. and may not be used, reproduced, or altered without written permission. All other trademarks are the property of their respective owners and used with permission.

The information and specifications included in this publication were in effect at the time of approval for printing. Illustrations, descriptions, references and technical data contained in this document are for guidance only and may not be considered as binding. Multiquip Inc. reserves the right to discontinue or change specifications, design or the information published in this publication at any time without notice and without incurring any obligations.

Your Local Dealer is:



**PN: 30710**