



TE 523199-3 Hydraulic Foot Pump

Part number 523199-3



Original instructions



SUPPORT CENTER

CALL TOLL FREE +1 800 522 6752 (CONTINENTAL UNITED STATES AND PUERTO RICO ONLY)

The **Support Center** offers a means of providing technical assistance when required. In addition, Field Service Specialists are available to provide assistance in the adjustment or repair of the application equipment when problems arise that your maintenance personnel cannot correct.

INFORMATION REQUIRED WHEN CONTACTING THE SUPPORT CENTER

When calling the Support Center regarding service to equipment a person familiar with the device should be present with a copy of the manual (and drawings) to receive instructions. Many difficulties can be avoided in this manner.

When calling the Support Center, be ready with the following information:

- Customer name
- Customer address
- Person to contact (name, title, telephone number, and extension)
- Person calling
- Equipment number (and serial number, if applicable)
- Product part number (and serial number, if applicable)
- Urgency of request
- Nature of problem
- Description of inoperative components
- Additional information that may be helpful

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PRODUCT INFORMATION +1 800 522 6752

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SAFETY PRECAUTIONS — AVOID INJURY — READ THIS FIRST!



NOTE

Keep all decals clean and legible. Replace them when necessary.



DANGER ELECTRIC SHOCK HAZARD

This tool is not insulated. When using this unit near energized electrical lines, use proper personal protective equipment.

Failure to observe this warning could result in severe injury or death.



DANGER

Denotes an imminent hazard that can result in moderate or severe injury.



SKIN INJECTION HAZARD

Do not use hands to check for oil leaks. Highly pressurized oil punctures the skin, causing serious injury, gangrene, or death. If injured, seek immediate medical help to remove the oil.



DANGER FIRE HAZARD

Do not use solvents or flammable liquids to clean the crimping tool. Solvents or flammable liquids could ignite and cause serious injury or property damage.

Failure to heed these warnings could result in severe injury from harmful fumes or burns from flying debris.



DANGER

Inspect the tool and jaws/dies before each use. Replace any worn or damaged parts. A damaged or improperly assembled tool can break and strike nearby personnel.

Failure to observe this warning could result in severe injury or death.



CAUTION

Do not place the tool in a vise. The crimping tool is designed for hand-held operation.

Protect the crimping tool from rain and moisture. Water damages the crimping tool and battery.

Failure to observe these precautions can result in injury or property damage.



CAUTION

Do not perform any service or maintenance other than as described in this manual. Injury or damage to the tool can result.

Failure to observe these precautions can result in injury or property damage.

Safeguards are designed into this application equipment to protect operators and maintenance personnel from most hazards during equipment operation. However, certain safety precautions must be taken by the operator and repair personnel to avoid personal injury, as well as damage to the equipment. For best results, application equipment must be operated in a dry, dust-free environment. Do not operate equipment in a gaseous or hazardous environment.

Carefully observe the following safety precautions before and during operation of the equipment:



Always wear approved eye protection while operating equipment.



Always wear appropriate ear protection while using equipment.



Moving parts can crush and cut. Always keep guards in place during normal operation.



Electrical shock hazard.



Always turn off the main power switch and disconnect the electrical cord from the power source when performing repair or maintenance on the equipment.



Always turn off the main power switch and disconnect the electrical cord from the power source when performing repair or maintenance on the equipment.



Never alter, modify, or misuse the equipment.



Do not operate equipment if the guards are removed.



Read and understand this entire document before using equipment.

1 Description

NOTE

The 523199-3 is a two-speed pump which can be used to power single-acting cylinders and tools with a hydraulic fluid capacity up to 490 cm³. It has an internal pressure relief valve for overload protection. For dimensions, see Figure 1. Table 1 shows the specifications of the pump.



Dimensions are in millimeters with [inches in brackets]. Figures are for reference only and are not drawn to scale.







NOTE

The height of the lever when raised is 433 mm [17.05"].

Table 1: Specifications

Specification	Value		
Cylinder type	Single-acting		
Hydraulic fluid capacity (usable)	492 cm ³ [30 in ³]		
Model number	523199-3		
Brocourc roting	Stage 1	15 bar [220 psi]	
Flessure rating	Stage 2	565.5 bar [8200 psi] ± 13 bar [200 psi]	
Eluid diaplacement (per stroke)	Stage 1	11.26 cm ³ [.687 in ³]	
Fluid displacement (per stroke)	Stage 2	2.47 cm ³ [.151 in ³]	
Handle effort (max)	42 kg [93 lb]		
Piston stroke	2.54 mm [1.00 in]		
Force	7.0 kg [15.4 lb]		



Figure 2 shows the components of the pump.

Figure 2: Pump components



- Pressure gauge 1
- 2 Female coupling
- 3 Dust cap Adapter piece pressure gauge

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- Pressure adjusting screw 5 Pump lever 6
- Oil fill cap 7
- 8 Release valve handle

The pump is used to actuate hydraulic crimping heads that operate at a pressure of 8,000 to 8,400 psi [552 to 579 bar] only. Use hydraulic hose assembly 523237-8.

Part number	Instruction sheet
69051	<u>408-2450</u>
69065	<u>408-2452</u>
69066	<u>408-2453</u>
69067	<u>408-2454</u>
69069	<u>408-1745</u>
69082	<u>408-2456</u>
69099	<u>408-2458</u>
58422-1	<u>408-9535</u>
58445-1	408-9598
2161730-1	408-9535

Table 2: 8,200	psi	[565	bar]	hydraulic	heads
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2 Safety

When reading this manual, pay particular attention to DANGER, CAUTION, and NOTE statements.



Denotes an imminent hazard that can result in moderate or severe injury.



CAUTION Denotes a condition that can result in product or equipment damage.



NOTE Highlights special or important information.

Read all instructions, warnings, and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. TE Connectivity cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance, or incorrect product operation. Contact TE Connectivity when in doubt as to the safety precautions and operations. Failure to comply with the following cautions and warnings can cause injury and equipment damage.

2.1 Safety precautions



DANGER

DANGER

To avoid injury, keep hands and feet away from the cylinder and work piece during operation.

Always wear approved personal protective gear while operating hydraulic equipment.



DANGER

Do not exceed equipment ratings. Never attempt to lift a load that exceeds the capacity of the cylinder. Overloading can cause injury and equipment failure. The cylinders are designed for a maximum pressure of 700 bars. The nominal pressure is set to 565 bar. Do not connect a cylinder to a pump with a higher pressure rating.



DANGER

To prevent over-pressurizing the system, the pump is equipped with a relief valve. This valve is set at the factory. Do not adjust or remove the relief valve. Doing so can cause injury or equipment damage.



CAUTION

The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. These gauges tell you what is happening in the system.



CAUTION

Do not damage the hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose causes severe backpressure that internally damages the hose, leading to premature hose failure.



CAUTION

Do not drop heavy objects on the hose. A sharp impact can damage the hose wire strands. Applying pressure to a damaged hose can cause it to rupture.



CAUTION Do not lift hydraulic equipment by the hoses or swivel couplers. Use only the carrying handle or other means of safe transport.

CAUTION

Keep hydraulic equipment away from flames and heat. Excessive heat softens fillings and seals, resulting in fluid leaks. Heat also weakens hose materials and fillings. For optimum performance, do not expose equipment to temperatures of 65 °C [150 °F] or higher. Protect hoses and cylinders from weld spatter.



DANGER

Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.



DANGER

Use hydraulic cylinders only in a coupled system. Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe injury.



CAUTION

Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact TE Connectivity (see section 8, **Replacement and repair**). To protect your warranty, use only the hydraulic fluid specified in section 6.2.



DANGER

Replace worn or damaged parts only with genuine original parts. Standard grade parts can break, causing injury and equipment damage. Original parts are designed to fit properly and withstand high loads.



CAUTION

Carry the pump only by the pump frame. Lifting the pump by the hose can damage the hose or the pump.



DANGER

To avoid injury, **never** try to return more hydraulic fluid to the reservoir than it can hold. The pump has a non-vented reservoir. High pressure in the reservoir can rupture the casing, causing injury and equipment damage.



DANGER

Make sure all hose connections are tightened, but not over-tightened. Connections must be secure and leak-free. Overtightening can cause permanent thread failure, or cause high-pressure fittings to split at pressures lower than their rated capacities. These failures can cause injury.



DANGER

System might be pressurized. To avoid injury, always release the pressure from the system before changing the crimping head or die assembly or before disconnecting any connections from the pump.



DANGER

Never operate the pump without a hose assembly and crimping head attached to the pump. Doing so can cause injury.

2.2 Restriction on hazardous substances

For Information on the occurrence and location of all substances subject to the Restriction of Hazardous Substances (RoHS) Directive, refer to the TE Connectivity <u>Product Environmental Compliance</u> page.

Enter part numbers in the Search by part # or keyword field at the top of the page.

3 Receiving and inspection

The pump is inspected before shipment. When it arrives at your facility, inspect it immediately to ensure that it was not damaged during shipping.

- 1. In a well-lighted area, carefully uncrate the pump and inspect each component as it is removed from the crate.
- Thoroughly inspect each component for evidence of damage that might have occurred in transit. If any
 of the components are damaged, file a claim against the carrier and notify TE Connectivity
 immediately.
- 3. Keep this manual and all drawings and product samples with the kit for the benefit of operation and maintenance personnel.

4 Installation



NOTE

For a double-acting cylinder, use two hoses. One hose connects the pressure ports of the pump and cylinder, and the other hose connects the retract ports.

1. Apply Teflon tape (or another suitable sealant) to the thread of the hose fitting. Wrap the tape around the fitting 1¹/₂ times.



CAUTION

Trim loose ends from the tape. Leave the first thread free of tape so that it does not shed into the hydraulic system.

- 2. Insert the male coupling of the hydraulic hose into the female coupling on the pump.
- 3. Tighten the cap nut on the pump (Figure 3).



Figure 3: Tightening the cap nut

4. For improved safety and control, install a pressure gauge in-line from the pump.

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5. Connect the other end of the hose to your tool or cylinder. If the tool is equipped with a male coupling, use an adapter (Figure 4).



Adapter

Figure 4: Hose adapter

5 Operation



DANGER

To avoid injury, keep your body to the side of the pump, away from the line of force of the lever. In some situations, the lever can "kick back."



CAUTION Do not atta

Do not attach any extensions to the lever. These cause unstable pump operation.



NOTE

At high pressure, use short strokes to reduce effort. Maximum leverage occurs during the last 5° of the stroke.

5.1 Before using the pump

- 1. Verify that all system fittings and connections are tight and free of leaks.
- 2. Check the fluid level in the reservoir. Add hydraulic fluid if necessary (see section 6.2).

5.2 Using a two-speed pump

Initially, the pump has no load and can operate in a high-flow, rapid-advance mode. When a load is detected, the pump switches to a lower-flow mode to build pressure.



NOTE

Operate the pump lever at moderate speed while the pump is in the high-flow mode If you operate the lever rapidly, the pump cannot deliver a full volume of hydraulic fluid in this mode.



5.3 Single-acting application with a release valve

1. Using your fingers **only**, rotate the handle clockwise to close the release valve (Figure 5).



CAUTION

Do **not** use any tools on the release valve handle. Doing so can damage the pump and cause it to malfunction.

Figure 5: Closing the release valve



- 2. Operate the lever to generate hydraulic power for the system. The pressure is maintained as long as the release valve is closed.
- 3. To release the pressure, open the valve by rotating the handle counter-clockwise. The hydraulic fluid flows back into the reservoir.

6 Maintenance

6.1 Removing air

Removing air from the hydraulic system helps the cylinder to extend and retract smoothly.



DANGER

The pump has an unvented reservoir. High pressure in the reservoir can rupture the casing, causing injury and equipment damage. **Never** try to return more hydraulic fluid to the reservoir than it can hold.

- 1. Vent the pump reservoir (for vented pumps only).
- 2. Close the release valve (see Figure 5).
- 3. Position the pump at a higher elevation than the crimping head (Figure 6).



Figure 6: Removing air

- Air
 Direction of air flow
- 4. Position the crimping head with the plunger end down (up if using a tool with pull cylinder).
- 5. Operate the lever to fully extend the cylinder (retract if using a pull cylinder).
- 6. Open the release valve to retract the cylinder (extend if using a pull cylinder). This forces the trapped air to move up to the pump reservoir.
- 7. Repeat steps 1-6 as needed.
- 8. Add hydraulic fluid if necessary (see section 6.2).



6.2 Hydraulic fluid

6.2.1 Keeping the fluid lines clean

Screw on dust caps whenever the coupler halves are disconnected. screw on dust caps. Take all necessary precautions to keep dirt out of the pump. Any foreign matter inside the unit can cause pump, cylinder, or valve failure.

6.2.2 Adding hydraulic fluid

Check the hydraulic fluid level before each use.



DANGER

Do not add hydraulic fluid unless the cylinder is fully retracted (extended if using a pull cylinder). Failure to do so forces more fluid into the reservoir than it can hold. This can rupture the casing, causing injury and equipment damage.

- 1. Remove the fill cap (Figure 7).
- 2. Fill the reservoir with Enerpac LX101 hydraulic fluid to the line shown on the pump. Do not overfill.



NOTE

An unvented pump must have air in the reservoir to function properly. A full reservoir creates a vacuum, preventing fluid from flowing out of the pump.

- 3. Remove air from the system if needed (see section 6.1).
- 4. Verify that the fluid level is still correct.
- 5. Reinstall the fill cap.





1 Fill cap 2 Fill line



6.2.3 Changing the hydraulic fluid

Change the hydraulic fluid at least once per year. If the pump is used in a dirty environment, change the fluid more often.

- 1. Remove the fill cap (Figure 7).
- 2. Tilt the pump to drain the used fluid into a suitable container.
- 3. Fill the reservoir with Enerpac LX101 hydraulic fluid to the line shown on the pump. Do not overfill.



An unvented pump must have air in the reservoir to function properly. A full reservoir creates a vacuum, preventing fluid from flowing out of the pump.

- 4. Remove air from the system if needed (see section 6.1).
- 5. Verify that the fluid level is still correct.
- 6. Reinstall the fill cap.
- 7. Dispose of the used fluid as required by local environmental regulations.

6.3 Lubrication

To extend pump life and maintain performance, lubricate the pump on a regular basis (see Table 3). Lubricate the cross pin, pump piston, and beam pin (Figure 8) with SAE 20 motor oil or a multi-purpose grease. Wipe excess oil from the pump.

When tool is used	When to lubricate
In daily production	Daily
Daily (occasional)	Weekly
Weekly	Monthly

Table 3: Lubrication schedule



2 Pump piston 4 Beam pin

Figure 8: Lubrication sites



7 Troubleshooting

Use Table 4 to determine whether a problem exists. For repair service, contact TE Connectivity (see section 8).

Problem	Possible causes	Remedy	
	Low hydraulic fluid in reservoir	Add fluid (section 6.2.2)	
	Release valve is open	Close the valve	
Cylindor advances clowly	Loose hydraulic coupler	Tighten all couplers	
ntermittently, or not at all	Excessive load	Reduce load to rated tonnage	
	Air trapped in system	Remove air (section 6.1)	
	Binding cylinder plunger	Check cylinder for damage. Contact TE for service (section 8).	
	Leaking connection	Tighten connections and check for leaks	
Cylinder advances, but does not hold pressure	Leaking seals	Locate leaks and contact TE for service (section 8).	
	Internal leakage in pump	Contact TE for service (section 8).)	
	Release valve is closed	Open the valve	
	Overfilled reservoir	Drain fluid to fill line (Figure 7)	
Cylindor rotracts slowly	Loose hydraulic coupler	Tighten all couplers	
partly, or not at all	Air trapped in system	Remove air (section 6.1)	
	Hose internal diameter too small	Use larger hose	
	Broken cylinder retractions spring or other cylinder damage	Contact TE for service (section 8).)	

Table 4: Troubleshooting guide

8 Replacement and repair



DANGER

To avoid personal injury, always remove the battery from the tool before performing any maintenance on the crimping tool.

Order replacement parts through your TE representative. You can also order parts by the following methods:

- Go to <u>TE.com</u> and click the **Shop TE Store** link at the top of the page.
- Call +1 800 522 6752.

For field service, go to the Service and Repair page on the TE website.

9 Revision summary

Since the last revision of this document, the following changes were made:

• Initial release