



ESCO EQUIPMENT SUPPLY COMPANY

# Manual & Parts List

## Single Acting Aluminum Lock Nut Cylinder

### Models #10808 & #10809



### **WARNING:**

THIS PRODUCT, AS WELL AS ALL TIRE TOOLS, SHOULD NEVER BE USED BY PERSONS UNLESS THEY HAVE BEEN TRAINED PROPERLY ACCORDING TO OSHA REGULATIONS 29CFR 1910.177 ENTITLED "SERVICING SINGLE-PIECE & MULTIPIECE RIM WHEELS".

FOR THE SAFE USE OF THIS PRODUCT, PLEASE READ INSTRUCTIONS. FAILURE TO DO SO CAN LEAD TO A VOID IN WARRANTY OR SERIOUS INJURY. PLEASE USE THIS TOOL AND OTHER TIRE SERVICE TOOLS WITH THE UPMOST SAFETY





## ESCO EQUIPMENT SUPPLY COMPANY

**Manual**

NOTE PLEASE READ AND FOLLOW THIS INSTRUCTION BEFORE YOU USE ESCO LOCK NUT CYLINDERS.

Carefully inspect all components for shipping damage, if shipping damage is found. Please notify carrier at once. The carrier is responsible for any damage resulting from shipment.

**01** **SAFETY**

To avoid personal injury or property damage, please follow all safety precautions. ESCO cannot be responsible for injury or damage resulting from unsafe and incorrect products use or system operation, or lack of maintenance.

DANGER is only used when your action or lack of action may cause serious injury or even death.

WARNING indicates potential danger that requires correct action to avoid personal injury.

IMPORTANT indicates correct action to prevent damage or equipment failure.

**DANGER**

- The hydraulic equipment operator must be a qualified operator must have correct training and work experience with hydraulic equipment. Lack of knowledge in any of these areas can lead to equipment damage or personal injury.
- Carefully inspect cylinder, coupler, hose and hand pump before using hydraulic equipment, if you find any damage, please contact with your nearest Authorized ESCO Service Center or Sales office. Any damage can cause personal injury when you use the cylinder.
- To avoid personal injury, please do not modify or weld hydraulic equipment without approval of ESCO.
- Please never lift a more than the rated capacity of the cylinder, overloading causes equipment failure and serious personal injury.
- The cylinder is a load lifting device, not a load holding device. After the load has been raised or lowered, it must always be held mechanically, never work under a load supported by a hydraulic unit.
- Keep hands and feet away from cylinder and workplace during operation to avoid personal injury.
- NEVER put unbalanced or off-center loads on cylinders. The incorrect load can result in equipment failure and serious personal injury.

**WARNING**

- Please wear safety glasses, helmet and other necessary personal protective equipment when operating hydraulic equipment.
- NEVER remove the plug or substitute a conventional pipe plug from the piston rod travel restriction port (See Figure 1).
- Load must be lifted on a solid lifting surface like steel or wood.
- Please carefully inspect the cylinder and coupler before use. NEVER connect the cylinder with a





## ESCO EQUIPMENT SUPPLY COMPANY

damaged coupler or damaged port threads. The damaged coupler or damaged port thread may cause equipment failure and possible personal injury.

- Change the coupler in a clean place; prevent dirt or other debris from getting into the body or tube. Dirt or other debris will damage the cylinder and result in equipment failure and possible personal injury.
- Before removing or tightening hose or coupler, fully release the hydraulic pressure in the system.
- Never handle pressurized hoses; escaping oil under high pressure can puncture the skin and possibly cause serious injury. Seek medical aid immediately if injured.
- Please use ESCO oil or other approved hydraulic oil.
- For Hydraulic technical help or repair service, please contact the authorized ESCO Service Center in your area. ESCO has no obligations under any warranty with respect to products that have been repaired by unauthorized personnel, modified, or damaged through the misuse, abuse, accident, neglect, or mishandling.

### **IMPORTANT**

- Please keep the cylinder clean at all times.
- Keep hydraulic equipment away from flames and heat. Overheating will soften seals and weaken hose material, resulting in oil leaking or other equipment failure. Do not use equipment in temperatures of 65c (150f) or higher.
- When the cylinder is not in use, please keep the piston rod fully retracted, remove hose and use rubber cap to cover the coupler.
- Please do not drop heavy duty on hose. (tehe)
- Before load, please fix a saddle into piston rod, saddle will protect the piston rod.

## **02** **DESCRIPTION**

ESCO Aluminum Lock Nut Cylinders are Single-acting, low weight with a spring return and a stop ring for stroke restriction. ESCO cylinders are provided with a fully threaded piston rod and a safety lock nut for positive load holding operations.

## **03** **CONNECTION**

Before using any cylinder, please visually check all units to make sure there is no damage on the cylinder, port threads, coupler or hose. Check for oil leaks and missing parts. If you find any problems, please stop immediately and contact your nearest authorized ESCO Service Center or Sales office.

Use a pump with a release valve or 3-way valve and one hose to connect with the lock nut cylinder. After all parts are connected, please hand-tighten all couplers. If all couplers are not fully tightened, oil will leak during operation.

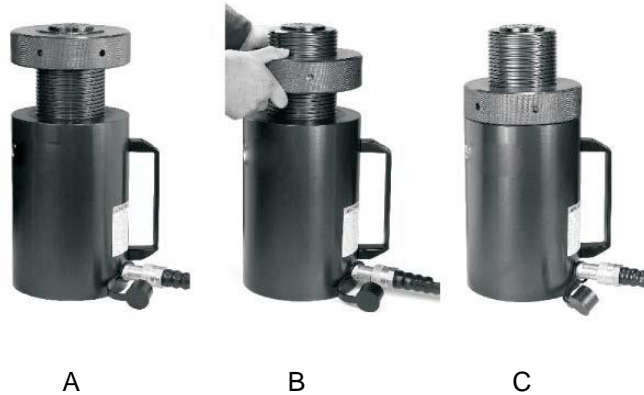




## ESCO EQUIPMENT SUPPLY COMPANY

**04** OPERATION

Figure 2



- 4.1 Operate hydraulic pump to advance (see A in figure 2).
- 4.2 To hold the piston rod, clockwise rotate the Lock nut (see B in figure 2) until reach to the top of cylinder (see C in figure 2)
- 4.3 To release the piston rod, Anticlockwise rotate the lock nut until reach to the top of piston rod
- 4.4 After finish the work, release the pressure and fully return the piston rod, remove the hose and cover the coupler by rubber cap.



**IMPORTANT:** ESCO Lock Nut Cylinder is load return. To reduce the wear and risk, please use less than the full stroke, and use less than full capacity when possible. Do not allow piston rod to rotate when installing adapters or during work, rotating piston rod could damage seals.

**06** MAINTENANCE

- Please always use clean ESCO oil or other approved hydraulic oil. Use of dirty, other or unapproved oil will damage cylinders.
- Always keep cylinder clean, use dust cap to protect coupler.
- After work is done, cylinder must be fully retracted, cleaned and stored in ventilated, moist-proof, and corrosion-proof environment.

**07** TROUBLE-SHOOTING

**WARNING:** ESCO Cylinders should be repaired only by a qualified operator or authorized ESCO Service Center. Repairing cylinders without special tools and knowledge may result in personal injury. Please release pressure and disconnect hose(s) before making any repairs.





## ESCO EQUIPMENT SUPPLY COMPANY

Problem	Cause	Solution
Cylinder will not extend or fully extend	<ol style="list-style-type: none"> <li>1.Pump release valve open</li> <li>2.Couplers not fully tightened</li> <li>3.Oil level in pump reservoir is low</li> <li>4.Pump or valve malfunctioning</li> <li>5.Overload for cylinder</li> <li>6.Cylinder piston rod binding</li> </ol>	<ol style="list-style-type: none"> <li>1. Fully tighten pump release valve</li> <li>2. Fully tighten couplers</li> <li>3. Fill oil in pump</li> <li>4. Repair or use another pump and valve</li> <li>5. Change another cylinder with appropriate capacity</li> <li>6. Check for dirt or leaks, change the damage parts</li> </ol>
Cylinder can not maintain pressure	<ol style="list-style-type: none"> <li>1. Leaky connection</li> <li>2. Cylinder seals leaking</li> <li>3. Release valve not fully closed</li> <li>4. Pump or valve malfunctioning</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean and reseal thread, tighten connection</li> <li>2. Replace worn seals. Clean inside cylinder and use clean hydraulic oil</li> <li>3. Fully tightening the release valve</li> <li>4. Repair, or use another pump and valve</li> </ol>
Cylinder extends slower than normal	<ol style="list-style-type: none"> <li>1. Leaky connection</li> <li>2. Coupler not fully tightened</li> <li>3. Pump malfunctioning</li> </ol>	<ol style="list-style-type: none"> <li>1.Clean and reseal thread, tighten connection</li> <li>2. Fully tighten couplers</li> <li>3. Repair or use another pump and valve</li> </ol>
Cylinder extend in dithering	<ol style="list-style-type: none"> <li>1. Air in system</li> <li>2. Cylinder piston rod binding</li> </ol>	<ol style="list-style-type: none"> <li>1. Bleeding air in the system</li> <li>3. Check for dirt or leaks. Check for bent, misaligned and worn parts</li> </ol>
Cylinder leaks hydraulic oil	<ol style="list-style-type: none"> <li>1. Leaky connection</li> <li>2. Worn or damaged seals</li> <li>3. Cylinder damage</li> </ol>	<ol style="list-style-type: none"> <li>1.Clean and reseal thread, tighten connection</li> <li>2.Replace worn seals, clean inside cylinder and use clean hydraulic oil</li> <li>3. Use new cylinder of contact with your nearest Authorized ESCO Hydraulic Service Center.</li> </ol>
Cylinder will not retract or Retracts slower than normal	<ol style="list-style-type: none"> <li>1.Pump release valve closed</li> <li>2. Couplers are not fully tightened</li> <li>3. Pump reservoir is full</li> <li>4. Hose is blocked</li> <li>5.ESCO cylinders are load return</li> <li>6. Cylinder damaged</li> </ol>	<ol style="list-style-type: none"> <li>1. Open release valve</li> <li>2.Tightening the couplers</li> <li>3. Drain hydraulic oil to correct level</li> <li>4. Clean or change hose</li> <li>5. Retract cylinder by load</li> <li>6. Use new cylinder or contact your nearest Authorized ESCO Hydraulic Service Center</li> </ol>



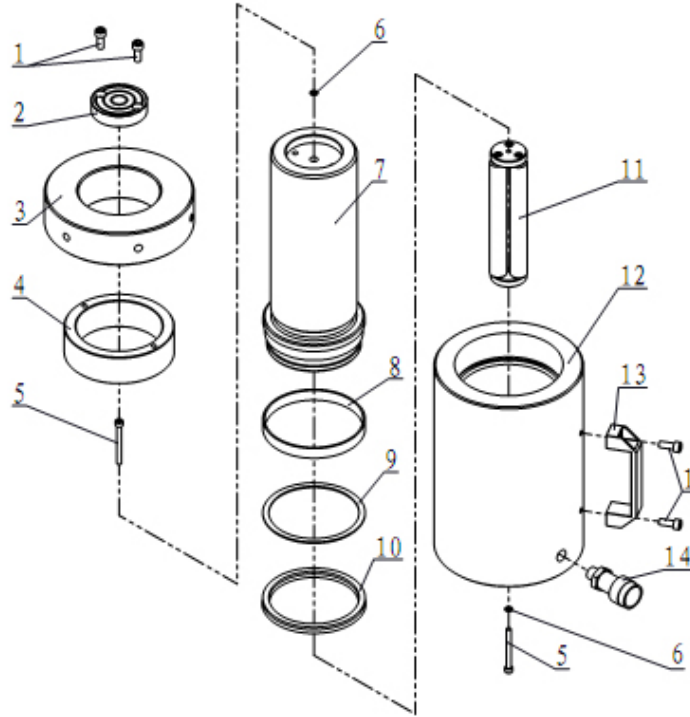
ESCO Cylinders should be repaired only by a qualified operator or Authorized ESCO Service Centers. Use only ESCO or other approved hydraulic oil. Release pressure in hydraulic system and disconnect hose(s) before making repair.





ESCO EQUIPMENT SUPPLY COMPANY

Parts List



Item No.	Part Number	Description	Quantity
1	13003	Bolt	4
2	ESA100T-01	Saddle	1
3	ELA1006-01	Nut	1
4	ELA1006-03	Guide Ring	1
5	11015	Bolt	2
6	QY2-13	Copper Washer	2
7	ELA1006-05	Piston Rod	1
8	ELA1006-06	Anti-wear Ring	1
9*	21096	Gasket	2
10*	24309	Y-ring	1
11	31034	Return Spring Assembly	1
12	ELA1006-04	Cylinder	1
13	ESA100T-05	Handle	1
14	EAB201A	Coupler	1

\* Items included in Repair Kit, Repair Kit order number:

