



PROFESSIONAL LIFTING EQUIPMENT

## Instruction Sheet

### 910028A Spreader

L- 1989

Rev. 0

02/95

#### IMPORTANT RECEIVING INSTRUCTIONS

Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement costs resulting from damage in shipment.

#### SAFETY INFORMATION

To avoid personal injury or property damage during system operation, read and follow all CAUTIONS, WARNINGS, and INSTRUCTIONS included with or attached to each product. NORCO CANNOT BE HELD RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE, OR INCORRECT PRODUCT AND SYSTEM APPLICATION. Contact Norco when in doubt as to applications and safety precautions.

**⚠ WARNING**

To avoid personal injury, always wear proper personal protective gear when operating hydraulic equipment (i.e. safety glasses, gloves, etc.).

**⚠ WARNING**

The system operating pressure must not exceed the maximum pressure rating of the lowest rated component in the system.

**⚠ WARNING**

Never overload the cylinder. Lifting a load that exceeds the capacity of the cylinder may cause equipment failure and personal injury.

**⚠ WARNING**

Make sure that all system components are protected from external sources of damage, such as flame, moving machine parts, sharp objects, corrosive chemicals. DO NOT expose hydraulic equipment to temperatures above 150°F (65°C).

**⚠ WARNING**

Keep hands clear of the load, away from the jaws of the spreader.

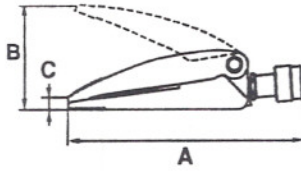
**⚠ CAUTION**

DO NOT use the hydraulic hose to carry a hydraulic component because damage to the hose or the component may occur.

**⚠ CAUTION**

Use less than the maximum rated stroke. Operating the cylinder beyond the limits of its rated stroke can damage the cylinder.

## SPECIFICATIONS



Capacity Tons	Effective Area in <sup>2</sup> (cm <sup>2</sup> )	Stroke in. (cm)	A in (cm)	B in (cm)	C in (cm)	Oil Capacity in <sup>3</sup> (cm <sup>3</sup> )	Weight lbs (kg)
1.00	1.00 (6.45)	3.50 (8.89)	8.78 (22.3)	3.70	0.38	0.61 (10.0)	5.00

## INSTALLATION

Attach hose to  $\frac{3}{8}$ " NPT port. Connect mating coupler halves together hand tight only. Using tools will damage the coupler.

### ⚠ CAUTION

Position hoses to avoid sharp bends, kinks, and sharp impacts from objects because they may cause wear or damage to the hose, leading to premature failure.

### ⚠ CAUTION

Be sure threads are fully engaged. All loads must be transferred to the face of the plunger. Threads will be stripped if loaded.

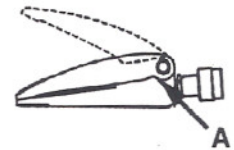
## OPERATION

Refer to the instruction sheet supplied with your pump for information on installing and operating your pump.

1. Check the oil level in the pump.
2. Make sure all connections are tight and leak free.
3. Remove air from the system by placing the cylinder at a lower level than the pump and cycling the cylinder several times until the motion is smooth.
4. Operate the pump to spread the cylinder jaws. The jaws will close automatically when the pressure is released. The speed of retraction is dependent on the length of the hose and other restrictions in the line.

### ⚠ CAUTION

Keep hands away from the pivot point (A) of spreader jaws.



### ⚠ WARNING

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.



## MAINTENANCE

Use dust caps on couplers when cylinders are disconnected to prevent dirt from entering the system. Keep parts clean.

Inspect all components for damage or wear before and after use.

## TROUBLESHOOTING

The following information is intended as an aid in determining if a problem exists. DO NOT disassemble the cylinder. For repair service, contact the Authorized Service Center in your area.

Problem	Possible Cause	Solution
Cylinder does not advance, advances slowly, or advances in spurts.	Oil level in pump reservoir is low.	Add oil according to the pump instructions.
	Pump release valve open.	Close pump release valve.
	Loose hydraulic coupler.	Check that all couplers are fully tightened.
	Load is too heavy.	Do not attempt to lift more than rated tonnage.
	Air trapped in system.	Remove air according to the instructions above.
	Cylinder plunger binding.	Check for damage to cylinder. Have cylinder serviced by a qualified hydraulic technician.
Cylinder advances, but does not hold pressure.	Leaking connection.	Check that all connections are tight and leak free.
	Leaking cylinder seals.	Locate leak(s) and have equipment serviced by a qualified hydraulic technician.
	Internal leakage in pump.	Have pump serviced by a qualified hydraulic technician.
Cylinder does not retract, retracts part way, or retracts more slowly than normal.	Pump release valve closed.	Open pump release valve.
	Pump reservoir is over-filled.	Drain oil level to full mark. See pump instructions for adding oil.
	Loose hydraulic coupler.	Check that all couplers are fully tightened.
	Air trapped in system.	Remove air according to the instructions above.
	Hose I.D. too narrow.	Use larger diameter hydraulic hose.
	Cylinder retraction spring broken or other cylinder damage.	Have cylinder serviced by a qualified hydraulic technician.