

The Ultimate in Hydraulic Cylinder Performance

Call us today: 800.837.4668  
Info@CustomHoists.com



Search Catalog :

By Keyword

Use trailing wildcard (\*) for broader results.

- Home
- Company Profile
- Technical Service
- Products
- Single-Acting Telescopic Cylinders
- Double-Acting Telescopic Cylinders
- Piston Rods
- General Information
- Specifications
- Request Information
- Contact Us
- Distributor Finder
- Employment Opportunities
- Request Literature

4000 Series Single-Acting Telescopic Cylinder Product Information

Specifications

Cylinder Tube O.D.	6 1/8"
# of Stages	3
Largest Moving Stage Diameter	5"
Stroke (A)	71.81"
Closed (B)	36.62"
Ext. (C)	108.44"
Base Mount (D)	7.00"
Base Mount (E)	2.06"
Plunger Mount (F)	1.50"
Plunger Mount (G)	2.06"
Gal. Fill	1.8
Gal. Ext.	4.1
Dry Weight	153 Pound

Lifting Capacities

Single-Acting Telescopic Cylinders - 4000 Series					
Specific Operating Pressures					
Plunger Diameter (in.)	Cross Sectional Area (Sq. In.)	1,500 PSI (lbs.)	1,800 PSI (lbs.)	2,000 PSI (lbs.)	2,500 PSI (lbs.)
2	3.14	4,710	5,672	6,280	7,850
3	7.06	10,590	12,708	14,120	17,650
4	12.56	18,840	22,608	25,120	31,400
5	19.63	29,445	35,334	39,260	49,075
6	28.27	42,405	50,886	56,540	70,675
7	38.48	57,720	69,264	76,960	Consult Factory
8	50.26	75,390	90,468	100,520	Consult Factory
8-1/4	53.50	80,250	96,300	107,000	Consult Factory
9-1/8	65.40	98,100	117,720	130,800	Consult Factory
9-3/4	74.50	111,750	134,100	149,000	Consult Factory

[Back to Top](#)

Model and Serial Number

<p><b>MN Single-Acting Telescopic</b></p>	<p>The following is an <b>example</b> of Custom Hoists, Inc. model numbers:</p> <p> </p> <p> </p>
<p><b>Locator</b></p>	<p>Custom Hoists, Inc. model numbers and serial numbers are either stamped on the O.D. of the cylinder body (manufactured prior to 8-99) or stamped on a metal plate which is welded to the O.D. of the cylinder body (manufactured after 8-99). Using these model numbers will eliminate misunderstandings when placing orders or requesting information.</p> <p>Model number and serial number stamped in body or on a name plate.</p>

[Back to Top](#)

**Fluid Displacements**

**Fluid Capacity Factors, sizes 32 thru 86**

Cylinder Size	Fill	Extend	Retract
32	.023	.032	.010
42	.032	.043	.013
43	.015	.032	.011
52	.043	.071	.016
53	.025	.057	.014
54	.015	.044	.013
62	.063	.105	.019
63	.036	.087	.018
64	.025	.073	.016
72	.088	.145	.023
73	.050	.125	.021
74	.035	.106	.019
75	.025	.091	.018
82	.111	.192	.026
83	.068	.169	.025
84	.046	.147	.023
85	.033	.128	.021
86	.025	.112	.020

**Fluid Capacity Factors, sizes 8-1/4 thru 9-3/4**

Cylinder Size	Fill	Extend	Retract
8 1/4 3	.061	.150	.029
8 1/4 4	0.49	.134	.027
8 1/4 5	0.37	.115	.024
8 1/4 6	.024	.097	.022
92	.153	.251	.034
93	.073	.222	.031
94	.059	.197	.029
95	.046	.174	.026
96	.033	.155	.024
9 3/4 2	.159	.277	.048
9 3/4 3	.079	.240	.040
9 3/4 4	.065	.210	.035
9 3/4 5	.052	.185	.032
9 3/4 6	.039	.163	.029

To determine fluid displacement (in gallons) to fill a particular cylinder size, multiply desired cylinder stroke and "fill" factor from below chart. For fully extended displacement, multiply desired cylinder stroke and "extend" factor from below chart.

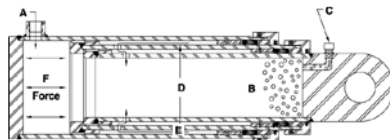
**Telescopic Fluid Displacement Formula**

**Example:**  
 Model No. 85-4402-250  
 Fill: .033 x 250 = 8.3 gal.  
 Extend: .128 x 250 = 32.0 gal.

Note: Same formula used for single-acting and double-acting telescopic cylinders.

[Back to Top](#)

**Cylinder Operation**



**To Extend:** High pressure oil from the pump is directed by the control valve through port (A) to fill the cylinder. Any air in the hydraulic system will be trapped in the end of the cylinder (B) and may be bled off through the bleeder valve (C). It is advisable to bleed air from the cylinder on initial start up and on a weekly basis thereafter.

As the system pressure rises, the oil pushes on the bottom of the largest plunger (F) forcing it to move out. The outside diameter or sealing area of the plunger (D) determines the effective area.

As the plunger extends, the oil trapped between the plunger wall (E) is released through internal port holes in the plunger. When the largest stage is fully extended, the next largest will proceed to extend, etc.

**To Retract:** A single-acting telescopic cylinder must be retracted by gravity or mechanical means.

[Back to Top](#)

**Normal Service Items**

Packing, wipers and bushings are considered normal service or replacement items. These items are subject to contamination from external and internal foreign materials, many of which are abrasive in nature, causing abnormal wear or damage to the parts, to the extent replacements are required.

Cylinders may be subject to leaking oil past the seal for various reasons requiring adjustment of the head/packing nuts. This is considered a normal installation and field service adjustment to correct the leakage.

**Warning!**

Before making adjustments or repairs to the cylinder when mounted in the unit, use strong, heavy, positive supports to hold the body from accidentally lowering which can cause severe injury or death and/or damage to the unit and cylinder. Place control valve in the lower position to insure the pressure is relieved in the cylinder. High pressure can cause severe injury or death and/or damage to the unit and cylinder.

**Procedure for adjusting headnuts on telescopic cylinders**

**A. For leaking cylinders**

1. Loosen set screw(s) in headnut of leaking stage(s).
2. Tap headnut lightly around circumference with a hammer.
3. Using a chain wrench, back headnut off one half to one full turn. If plunger turns as you are turning the headnut, the plunger will have to be held, preferably with a strap wrench.
4. Cycle cylinder two or three times to reset vee ring packing.
5. Tighten headnut one half turn farther than it was loosened.
6. Tighten set screw(s).

**B. For mis-sequencing cylinders:**

1. Loosen set screw in headnut on stage that is sticking.
2. Tap headnut lightly around circumference with a hammer.
3. Using a chain wrench, back off headnut one half turn.
4. Cycle cylinder. If cylinder still mis-stages, turn headnut another half turn.
5. Cycle cylinder. If cylinder still mis-stages, tighten the headnut on the next stage that is extending. If plunger turns as you are turning the headnut, the plunger will have to be held, preferably with a strap wrench.
6. Tighten set screw(s).

**C. Bleeding air from Single-Acting Telescopic Cylinders**

1. Empty the dump body of any material.
2. Remove the cover plate from the doghouse of the dump body to access the cylinder bleeder valve.
3. Fully extend the cylinder, raising the empty dump bed.
4. Lower the dump bed to within one foot from the frame.
5. Turn the bleeder valve in a counterclockwise direction. This opens the valve and allows the air to escape from the cylinder.
6. When a steady stream of oil comes from the bleeder, turn the valve in a clockwise direction until it is closed.

**NOTE:** For consistent operation of telescopic cylinders, it is advisable to bleed the air from the cylinder weekly.  
If these procedures fail to correct the problem, contact the factory or an authorized service center for further instructions.

[Back to Top](#)

**Safety Precautions**

**WARNING!**

**Rollover or lateral tilt can cause severe injury or death and/or damage to the unit and cylinder.**

- The hydraulic cylinder will not prevent the dump body or trailer from rollover or lateral tilt. The cylinder is strictly a lifting device and is not a structural member of the unit. Cylinders are not to be used as a means of stabilizing the unit.
- The hydraulic cylinder mounted in the unit should be free to find its own trajectory line of extension, free of any lateral loading of the plungers. Misalignment of the top or bottom mountings, or mounting pins too tight, may cause scoring of the plungers, leaking, or improper sequencing which could cause the unit to upset.
- The hydraulic cylinder will not withstand lateral pressure when the unit is leaning. Only activate the cylinder when the tractor and trailer are in a straight line (not jack-knifed). Do not activate the cylinder while on unlevel or soft ground, or during heavy crosswinds. Doing so may cause the unit to upset.
- Do not activate the cylinder while personnel or equipment are alongside or behind the dump body or trailer.
- The operator should stay at the controls during the entire dumping operation. If the body starts to lean, the operator should immediately lower the dump body or trailer. It is important to slowly position the cylinder control valve into the hold position to avoid subjecting the cylinder to high pressure.
- Do not overload the unit. The load must be distributed evenly during loading or unloading to avoid rollover and lateral tilt. Loads stuck while the cylinder is partially or completely extended increases the hazard of rollover and lateral tilt. Lower the dump body or trailer entirely with the cylinder control valve partially open (avoid lowering the dump body or trailer with the cylinder control valve completely open). Then unload the dump body or trailer manually or with an alternative mechanical aid.

**WARNING!**

**Shock pressure can cause severe injury or death and/or damage to the unit and cylinder.**

- Do not use the cylinder to loosen loads stuck in the dump body or trailer. Lower the dump body or trailer entirely with the cylinder control valve partially open (avoid lowering the dump body or trailer with the cylinder control valve completely open). Then unload the dump body or trailer manually or with an alternative mechanical aid.
- Do not move the truck and jam the brakes while the cylinder is partially or fully extended to loosen loads stuck in the dump body or trailer. Lower the dump body or trailer entirely with the cylinder control valve partially open (avoid lowering the dump body or trailer with the cylinder control valve completely open). Then unload the dump body or trailer manually or with an alternative mechanical aid.
- Do not move the truck until the dump body or trailer is lowered completely.

**WARNING!**

Over pressurizing the cylinder can cause severe injury or death and/or damage to the unit and cylinder.

- Do not operate the cylinder at pressures greater than 2000 P.S.I. unless otherwise approved in writing by Custom Hoists, Inc.

**WARNING!**

Worn or damaged hydraulic hoses can cause severe injury or death and/or damage to the unit and cylinder.

- Hydraulic hoses should be checked regularly and replaced if worn out or damaged.

**NOTICE!**

Do not drive the unit while the P.T.O. or hydraulic pump is engaged.

The hydraulic oil should be checked and changed regularly to avoid contamination leading to internal cylinder damage.

A damp to light film of oil on each plunger indicates a good cylinder operation. A small accumulation of oil may be noticed on the plunger at the head nuts after many cycles. This should not be mistaken for packing leakage.

It is advisable to bleed air from the cylinder weekly to free entrapped air. This will result in a smoother operation.

Grease the pin mountings regularly.

[Back to Top](#)