

## THE HARD-KOR™ HOLLOW CYLINDER

### ■ Wide Variety.

Hard-Kor™ Hollow Cylinders are available from 12 through 600 tons with a variety of strokes to meet every requirement.

### ■ Built Solid For Maximum Durability.

Hard-Kor™ cylinders are manufactured from solid alloy steel, **eliminating sloppy threaded and welded tolerances**, potential leak points, and weak spots that cause base blowout.

### ■ Fast Retraction For Speed & Efficiency.

Simultaneous machining of the center tube & cylinder bore provides Hard-Kor™ cylinders with precision alignment that significantly **improves retraction time** and minimizes seal extrusion.

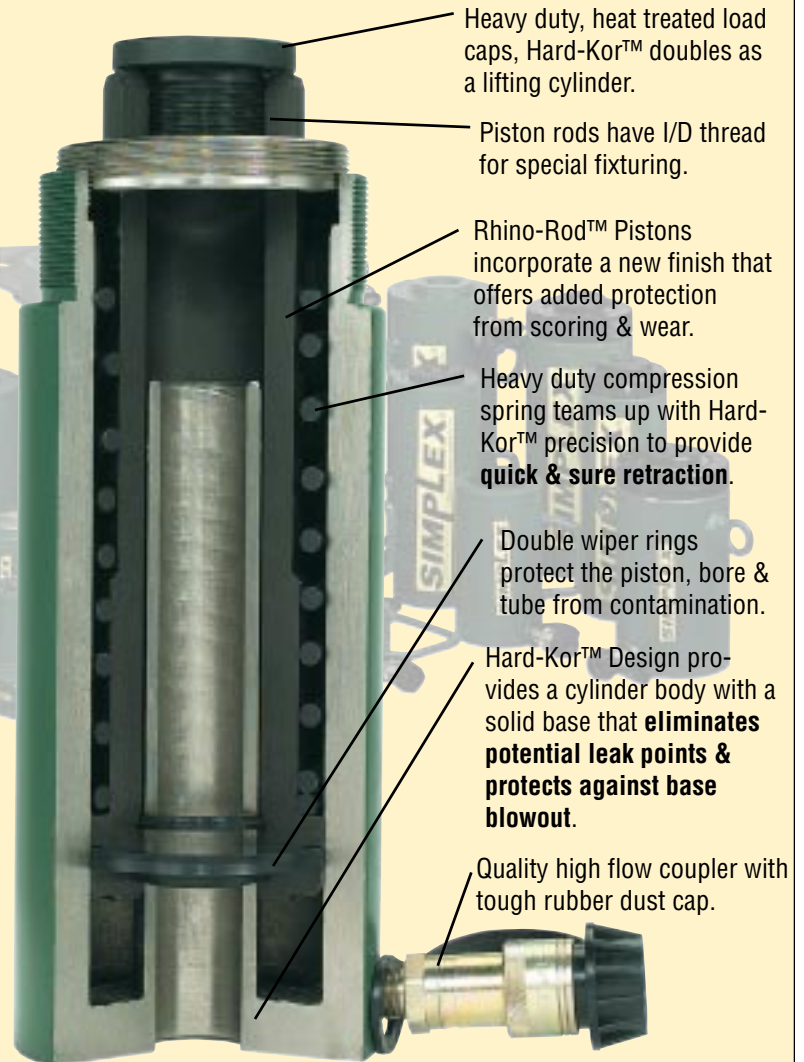
### ■ Low Profile For Greater Flexibility.

With lower profile & longer strokes, Hard-Kor™ cylinders fit in the tightest spaces.

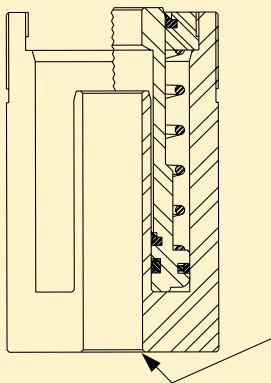
### ■ Reserve Power For The Toughest Jobs.

Most Hard-Kor™ cylinders develop their cataloged capacity below their maximum pressure rating. This provides Hard-Kor™ with reserve power that can be used for the toughest of jobs. The lower operating pressure extends pump life and reduces handle force and operator fatigue.

### ■ Exceeds ANSI/ASME B30.1 Safety Standards.

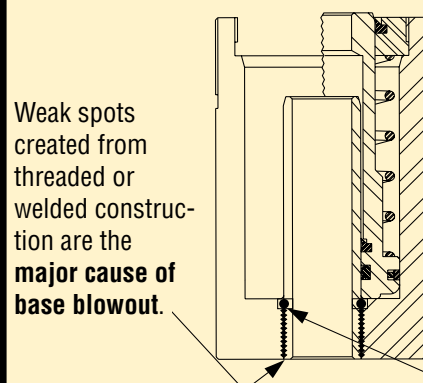


## SIMPLEX HARD-KOR™ CYLINDERS



A **one piece, unified body** is significantly stronger than standard hollow cylinders. Special manufacturing eliminates potential leak points at the base, enhancing the integrity & alignment of the base and center tube.

## TRADITIONAL HOLLOW CYLINDER



Weak spots created from threaded or welded construction are the **major cause of base blowout.**

The additional base seals are potential leak points that contribute to early failure.

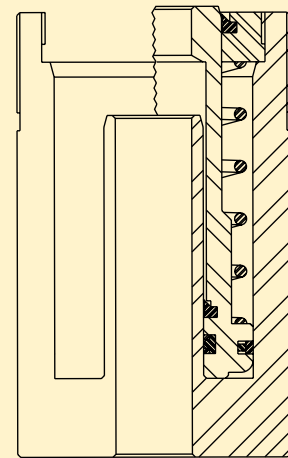
# CYLINDERS

# SINGLE-ACTING HOLLOW

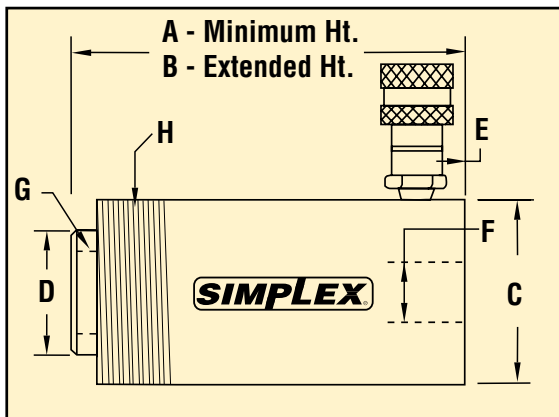
Simplex Hard-Kor™ Cylinders Make Light Work Of Rolling Mill Maintenance.



### SIMPLEX HARD-KOR™ DESIGN



Only Simplex Hard-Kor™ cylinders incorporate a solid, one piece body design. No one else comes close in safety, strength, reliability and long life.



### Base Mounting Holes

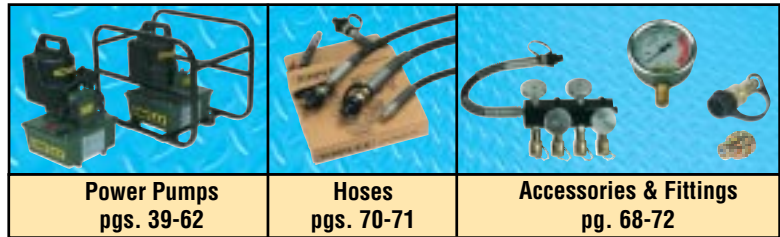
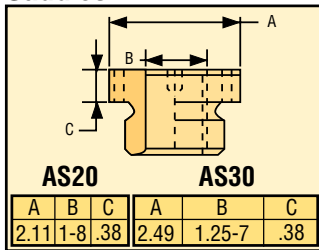
Capacity	Thread		Bolt Circle Dia. (in)
	Size (in)	Dpth. (in)	
12 Ton	5/16-18	5/16	2
20 Ton	3/8-16	7/16	3 1/4
30 Ton	3/8-16	3/8	3 5/8
60 Ton	1/2-13	7/16	5 1/8
100 Ton	5/8-11	3/4	7

### Single-Acting Hollow Cylinders 12 Through 100 Ton Capacities

Model Number	Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	D Piston O.D. (in)	E Base To Port C/L (in)	F Center Hole Dia. (in)	G		H		Wgt. (lbs)
												Collar Thrds. (in)	Collar Thrd. Lgth. (in)	Piston Thrds. (in)	Piston Thrd. Lgth. (in)	
RC120	12	5/16	2 3/16	2 1/2	2.36	8,690	.90	2 3/4	1 3/8	7/16	49/64	2 3/4 - 16	1 13/16	3/4 - 16	5/8	3.5
RCQ120		3/4 - 10	----	----												
RC121		1 5/8	4 3/4	6 3/8										3/4 - 16	5/8	
RC1211		3	7 1/4	10 1/4										----	----	
RC123	20	2	6 3/16	8 3/16	5.30	7,545	11	4	2 1/8	51/64	1 1/16	3 7/8 - 12	1 1/2	1 9/16 - 16	3/4	17
RC202	6	11 3/16	17 3/16	32	6	5	51/64	1 1/16	3 7/8 - 12	1 1/2	1 9/16 - 16	3/4	31			
RC206	30	2 1/2	7	9 1/2	8.64	6,950	22	5	2 1/2	13/16	1 5/16	4 1/2 - 12	1 3/4	1 13/16 - 16	7/8	26
RC302	6 1/8	12 1/4	18 3/8	64	5	2 1/2	64	1 5/16	4 1/2 - 12		1 3/4	1 13/16 - 16	7/8	52		
RC306	3	8 21/32	11 21/32	44	6 3/4	4	44	2 1/8	6 1/4 - 12		2	2 3/4 - 16	3/4	68		
RC603	60	6	12 21/32	18 21/32	14.58	8,230	88	6 3/4	4	1	2 1/8	6 1/4 - 12	2	2 3/4 - 16	3/4	80
RC606	3	9	12	62	8 1/4	5	62	3 1/8	----		----	4 - 16	1	99		
RC1003	100	3	9	12	20.60	9,700	62	8 1/4	5	1	3 1/8	----	----	4 - 16	1	99

- 12 standard models.
- **HARD-KOR™ DESIGN!**
- No potential leak points at base.
- Extra protection against base blow-out.
- Lower profiles for more versatility.
- Double wipers protect against contamination.
- Faster retraction increases productivity.
- Large center holes for greater flexibility.
- Rhino-Rod™ pistons resist scoring & corrosion.
- Lower operating pressures.
- Doubles as lifting cylinder.
- High flow coupling with tough rubber dust cap.
- Precision construction that prevents seal extrusion.

### Optional Threaded Saddles



Steel company uses the Simplex RC1003 to change worn spindles on large rolling mills. This Hard-Kor™ 100 ton capacity cylinder is mounted horizontally and uses a threaded pull rod to remove the spindle from its roller. The Hard-Kor™ design is right at home in harsh steel mill environments.



These construction crews use Simplex Hard-Kor™ hollow cylinders to pre-tension steel rods in cast concrete forms. "The Hard-Kor™ cylinders, with their leak-proof base and extra power, made a tough job easy."



# CYLINDERS

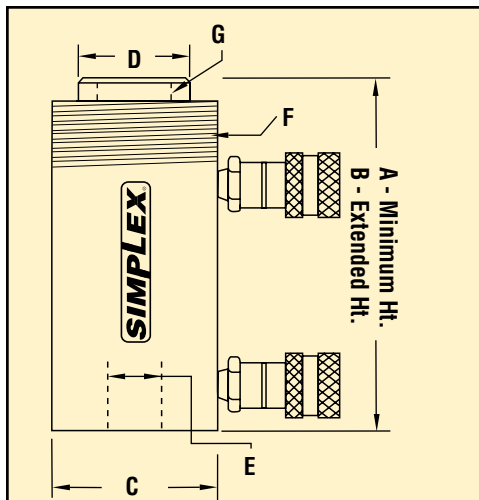
# DOUBLE-ACTING HOLLOW

Simplex Center Hole Cylinders Raise 6,000 Ton Bridge Span 170 Ft.



Engineers from around the world watched as Simplex center hole cylinders raised a 6,000 ton bridge section more than 170 ft. over the Willamette River in Portland, OR. The span was constructed up river and barged into position. Using pull rods and couplings, Simplex RCD200 Series cylinders completed the lift in 40 hours.

- 11 standard models.
- **HARD-KOR™** Design for longer life.
- Relief valves protect against over pressurizing.
- High flow quality couplers.
- Large diameter center holes.
- **Rhino-Rod™** pistons resist scoring & corrosion.
- Stop ring for piston blow-out protection.
- Available in custom strokes.
- Rod wiper protects inner cylinder from dirt.



### Base Mounting Holes

Capacity	Thread		Bolt Circle Dia. (in)
	Size (in)	Dpth. (in)	
30 Ton	3/8-16	3/8	3 5/8
60 Ton	1/2-13	7/16	5 1/8
100 Ton	5/8-11	3/4	7

### Double-Acting Center Hole Cylinders 30 Through 500 Ton Capacities

Model Number	Push Cap. (tons)	Pull Cap. (tons)	Stroke (in)	A Min. Ht. (in)	B Ext. Ht. (in)	Effect Area (sq in)	Pres. @ Cap. (psi)	Oil Cap. Req'd (cu in)	C Body O.D. (in)	D Piston O.D. (in)	E Center Hole Dia. (in)	F		G		Wgt. (lbs)
												Collar Thrds. (in)	Collar Thrd. Lgth. (in)	Piston Thrds. (in)	Piston Thrd. Lgth. (in)	
RCD302	30	30	2	7	9	8.6	6,950	8.6	5	2 1/2	1 5/16	4 1/2 - 12	1 3/4	1 13/16 - 16	7/8	48
RCD307			7	12 1/4	19 1/4			24.75								50
RCD6010	60	45	10	15 1/2	25 1/2	14.5	8,230	55	6 3/4	4	2 1/8	----	----	----	----	95
RCD1001	100	68	1	7	9	20.6	9,700	9.0	8 1/4	5	3 1/8	----	----	----	----	85
RCD1003			3	9	12			21.1				100				
RCD1006			6	12	18			42.3				115				
RCD10010			10	16	26			70.5				150				
RCD1505C	150	----	5	13 1/8	18 1/8	31.60	9,491	78	10	6	3 1/8	----	----	----	----	240
RCD2006C	246	----	6	16 1/4	22 1/4	49.30	10,000	172	12	8	4 1/8	----	----	----	----	385
RCD3006C	434	----		18 3/4	24 3/4	91.50		296	15	9 1/2	4 1/4	----	----	----	----	720
RCD5006C	646	----		21 1/2	27 1/2	129.30		463	17 3/4	12	5 1/4	----	----	----	----	1230

CUSTOM STROKES AND CAPACITIES AVAILABLE  
CONTACT FACTORY