



THE 3000

TIE ROD CYLINDER SERIES

UPGRADED PREMIUM 21ST CENTURY SEALING TECHNOLOGY FOR BOTH SINGLE AND DOUBLE ACTING APPLICATIONS

FULLY CUSTOMIZABLE DESIGNS AND STOCKED STANDARD WITH 90 DEGREE ORB PORTS

STANDARD LION1000 INDUCTION HARDENED RODS FOR PREMIUM CORROSION PROTECTION

30 MONTH LIMITED WARRANTY

TOLL-FREE: 1-800-665-0247

EMAIL: ORDERS@MONARCHINDUSTRIES.COM



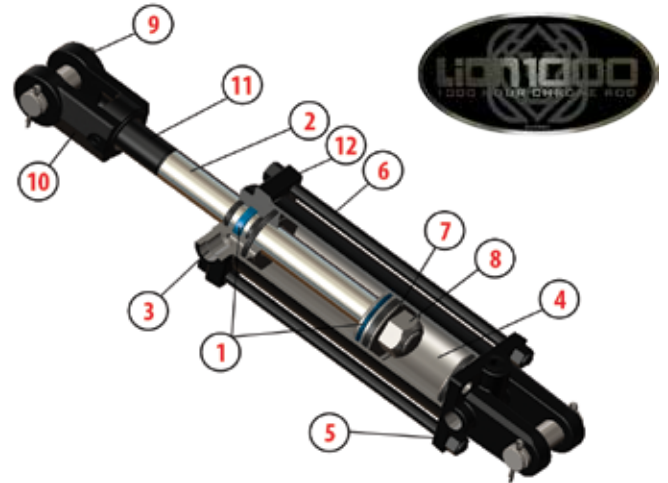
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VALUE ENGINEERED HYDRAULIC SOLUTIONS



LION HYDRAULICS TH13000 TIE ROD SERIES CYLINDERS ARE DESIGNED WITH UPGRADED PREMIUM 21ST CENTURY SEALING TECHNOLOGY FOR EXTENDED SERVICE AND DURABILITY AND ARE PERFECT FOR BOTH SINGLE AND DOUBLE ACTING APPLICATIONS. STANDARD LION1000 RODS PROVIDE SUPERIOR CORROSION PROTECTION AND THE ABILITY TO HANDLE TODAY'S MOST DEMANDING AGRICULTURAL AND INDUSTRIAL APPLICATIONS. PINS AND COTTERS ARE INCLUDED FOR EASY INSTALLATION.

- 1** Upgraded premium 3000 PSI sealing kits for extended service life, reduced downtime, reduced friction, and leak free performance:
 - Premium rod wiper seals, removes debris from rod, and excludes contaminants in an easy to service design
 - New dual acting seals provide improved performance with higher operating pressures, greater extrusion resistance, and easy to service designs
- 2** Standard Lion1000 chrome rod on 2 inch bore sizes; Lion1000 chrome induction hardened rod standard on 2.5 to 5 inch bore sizes:
 - Offers superior corrosion resistance and durability
 - Standard 7 year limited rod corrosion warranty
- 3** Customizable port options: available with 90 degree ORB or inline ORB ports. Double ported ORB ports provide greater assembly flexibility with configurable porting options. Leak free ORB o-ring ports provide a simple connection.
- 4** Precision-finished skived and burnished heavy wall steel tubing for extended seal and cylinder life
- 5** High Grade Ductile iron caps come with drilled oil passages and increased bearing surface for high shock and side load applications
- 6** High-tensile steel tie rods prevent failure at high pressure and provide a long service life
- 7** Precision-machined, ductile iron piston provides a forgiving bearing surface for extended life



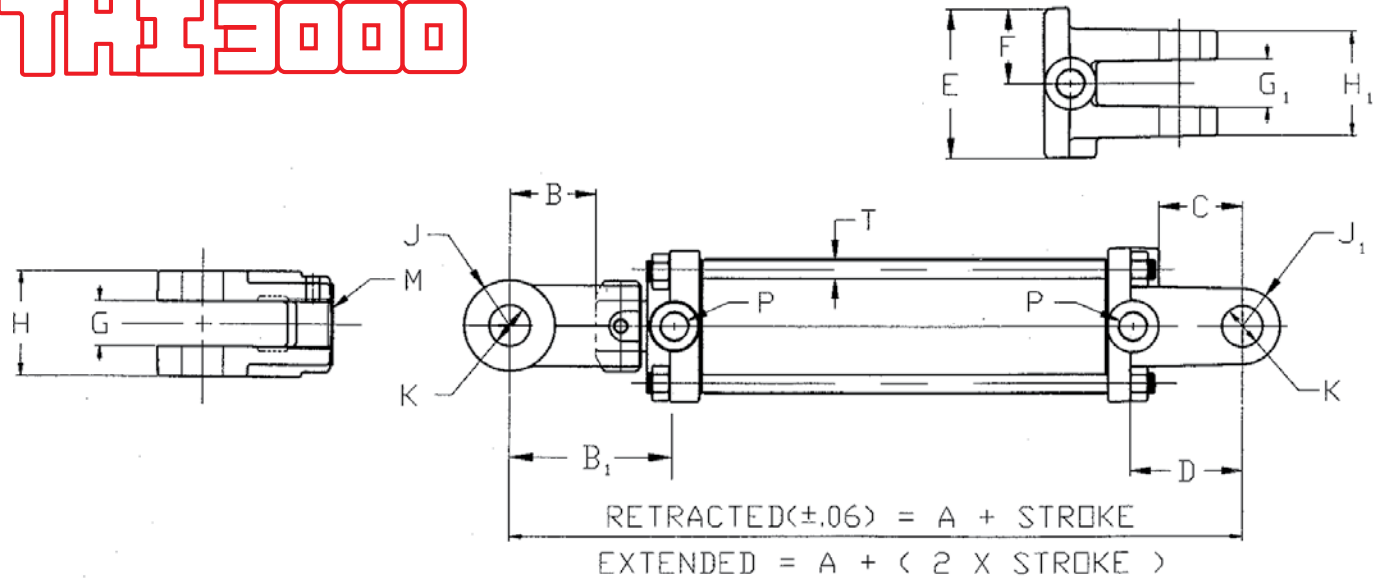
- 8** Heavy-duty steel, torqued, self-locking piston nut holds piston firm under high-cycle loading
- 9** Hardened pins on all 4 and 5 inch bore sizes. Standard high-tensile steel, zinc plated pins and cotter pin retainers provide long lasting protection against corrosion
- 10** Heavy Duty Ductile Iron Rod Clevis with 360° thread contact area and positive set screw locking device, able to withstand continuous high loads
- 11** Threaded Shaft (on ASAE Cylinders) to accept optional mechanical stroke control on 8in. stroke ASAE cylinders only
- 12** State of the art paint application of epoxy primer and two component black topcoats. Provides excellent chip resistance, adhesion, color and gloss retention for a long lasting durable finish

AVAILABLE STANDARD CONFIGURATIONS

MODEL	BORE	STROKE	ROD DIA	SHIP WT.	RETRACTED PIN TO PIN LENGTH	PINS	PIN TYPE	ROD MATERIAL	ALLOWABLE PRESSURE (PSI) (*Maximum column load pressure at full extension)	3/4-16 ORB 90 ORDER NUMBER (Standard Stocked)	3/4-16 ORB INLINE ORDER NUMBER (Available at lead time)
ASAE - 3000 psi 8" Stroke cylinders											
20THI08-112 ASAE	2.0	8.0	1.125	16.0	20.25	1.00	Std	Lion1000 Chrome	3000	662528	662608
25THI08-125 ASAE	2.5	8.0	1.250	20.3	20.25	1.00	Std	Lion1000 IHCP	3000	662529	662609
30THI08-137 ASAE	3.0	8.0	1.375	28.4	20.25	1.00	Std	Lion1000 IHCP	3000	662530	662610
35THI08-137 ASAE	3.5	8.0	1.375	35.8	20.25	1.00	Std	Lion1000 IHCP	3000	662531	662611
40THI08-175 ASAE	4.0	8.0	1.750	44.9	20.25	1.00	Hardened	Lion1000 IHCP	3000	662532	662612
50THI08-200 ASAE	5.0	8.0	2.000	75.0	20.25	1.25	Hardened	Lion1000 IHCP	3000	662533	662613
ASAE - 3000 psi 16" Stroke cylinders											
30THI16-150 ASAE	3.0	16.0	1.500	41.6	31.50	1.25	Std	Lion1000 IHCP	3000	662534	662614
35THI16-150 ASAE	3.5	16.0	1.500	50.9	31.50	1.25	Std	Lion1000 IHCP	3000	662535	662615
40THI16-175 ASAE	4.0	16.0	1.750	62.5	31.50	1.25	Hardened	Lion1000 IHCP	3000	662536	662616
50THI16-200 ASAE	5.0	16.0	2.000	97.8	31.50	1.25	Hardened	Lion1000 IHCP	3000	662537	662617
2in Bore 3000 psi cylinders											
20THI06-112	2.0	6.0	1.125	15.4	16.25	1.00	Std	Lion1000 Chrome	3000	662538	662618
20THI08-112	2.0	8.0	1.125	16.9	18.25	1.00	Std	Lion1000 Chrome	3000	662539	662619
20THI10-112	2.0	10.0	1.125	18.3	20.25	1.00	Std	Lion1000 Chrome	3000	662540	662620
20THI12-112	2.0	12.0	1.125	19.8	22.25	1.00	Std	Lion1000 Chrome	3000	662541	662621
20THI14-112	2.0	14.0	1.125	21.3	24.25	1.00	Std	Lion1000 Chrome	3000	662542	662622
20THI16-112	2.0	16.0	1.125	22.8	26.25	1.00	Std	Lion1000 Chrome	3000	662543	662623
20THI18-112	2.0	18.0	1.125	24.3	28.25	1.00	Std	Lion1000 Chrome	3000	662544	662624
20THI20-112	2.0	20.0	1.125	25.8	30.25	1.00	Std	Lion1000 Chrome	2930*	662545	662625
20THI24-112	2.0	24.0	1.125	28.8	34.25	1.00	Std	Lion1000 Chrome	2180*	662546	662626

MODEL	BORE	STROKE	ROD DIA	SHIP WT.	RETRACTED PIN TO PIN LENGTH	PINS	PIN TYPE	ROD MATERIAL	ALLOWABLE PRESSURE (PSI) (*Maximum column load pressure at full extension)	3/4-16 ORB 90 ORDER NUMBER (Standard Stocked)	3/4-16 ORB INLINE ORDER NUMBER (Available at lead time)
2in Bore 3000 psi cylinders											
20THI30-112	2.0	30.0	1.125	33.2	40.25	1.00	Std	Lion1000 Chrome	1499*	662547	662627
20THI36-112	2.0	36.0	1.125	37.7	46.25	1.00	Std	Lion1000 Chrome	1093*	662548	662628
20THI48-112	2.0	48.0	1.125	46.7	58.25	1.00	Std	Lion1000 Chrome	655*	662549	662629
2.5in Bore 3000 psi cylinders											
25THI06-125	2.5	6.0	1.250	17.8	16.25	1.00	Std	Lion1000 IHCP	3000	662550	662630
25THI08-125	2.5	8.0	1.250	19.5	18.25	1.00	Std	Lion1000 IHCP	3000	662551	662631
25THI10-125	2.5	10.0	1.250	21.3	20.25	1.00	Std	Lion1000 IHCP	3000	662552	662632
25THI12-125	2.5	12.0	1.250	23.1	22.25	1.00	Std	Lion1000 IHCP	3000	662553	662633
25THI14-125	2.5	14.0	1.250	24.9	24.25	1.00	Std	Lion1000 IHCP	3000	662554	662634
25THI16-125	2.5	16.0	1.250	26.7	26.25	1.00	Std	Lion1000 IHCP	3000	662555	662635
25THI18-125	2.5	18.0	1.250	28.4	28.25	1.00	Std	Lion1000 IHCP	3000	662556	662636
25THI20-125	2.5	20.0	1.250	30.2	30.25	1.00	Std	Lion1000 IHCP	2858*	662557	662637
25THI24-125	2.5	24.0	1.250	33.8	34.25	1.00	Std	Lion1000 IHCP	2127*	662558	662638
25THI30-125	2.5	30.0	1.250	39.1	40.25	1.00	Std	Lion1000 IHCP	1462*	662559	662639
25THI36-125	2.5	36.0	1.250	44.5	46.25	1.00	Std	Lion1000 IHCP	1067*	662560	662640
25THI48-125	2.5	48.0	1.250	55.2	58.25	1.00	Std	Lion1000 IHCP	639*	662561	662641
3in Bore 3000 psi cylinders											
30THI06-137	3.0	6.0	1.375	25.4	16.25	1.00	Std	Lion1000 IHCP	3000	662562	662642
30THI08-137	3.0	8.0	1.375	27.7	18.25	1.00	Std	Lion1000 IHCP	3000	662563	662643
30THI10-137	3.0	10.0	1.375	30.0	20.25	1.00	Std	Lion1000 IHCP	3000	662564	662644
30THI12-137	3.0	12.0	1.375	32.2	22.25	1.00	Std	Lion1000 IHCP	3000	662565	662645
30THI14-137	3.0	14.0	1.375	34.5	24.25	1.00	Std	Lion1000 IHCP	3000	662566	662646
30THI16-137	3.0	16.0	1.375	36.8	26.25	1.00	Std	Lion1000 IHCP	3000	662567	662647
30THI18-137	3.0	18.0	1.375	39.1	28.25	1.00	Std	Lion1000 IHCP	3000	662568	662648
30THI20-137	3.0	20.0	1.375	41.4	30.25	1.00	Std	Lion1000 IHCP	2906*	662569	662649
30THI24-137	3.0	24.0	1.375	45.9	34.25	1.00	Std	Lion1000 IHCP	2162*	662570	662650
30THI30-137	3.0	30.0	1.375	52.8	40.25	1.00	Std	Lion1000 IHCP	1487*	662571	662651
30THI36-137	3.0	36.0	1.375	59.6	46.25	1.00	Std	Lion1000 IHCP	1084*	662572	662652
30THI48-137	3.0	48.0	1.375	73.3	58.25	1.00	Std	Lion1000 IHCP	650*	662573	662653
3.5in Bore 3000 psi cylinders											
35THI06-137	3.5	6.0	1.375	32.0	16.25	1.00	Std	Lion1000 IHCP	3000	662574	662654
35THI08-137	3.5	8.0	1.375	34.8	18.25	1.00	Std	Lion1000 IHCP	3000	662575	662655
35THI10-137	3.5	10.0	1.375	37.6	20.25	1.00	Std	Lion1000 IHCP	3000	662576	662656
35THI12-137	3.5	12.0	1.375	40.5	22.25	1.00	Std	Lion1000 IHCP	3000	662577	662657
35THI14-137	3.5	14.0	1.375	43.3	24.25	1.00	Std	Lion1000 IHCP	3000	662578	662658
35THI16-137	3.5	16.0	1.375	46.1	26.25	1.00	Std	Lion1000 IHCP	3000	662579	662659
35THI18-137	3.5	18.0	1.375	48.9	28.25	1.00	Std	Lion1000 IHCP	2520*	662580	662660
35THI20-137	3.5	20.0	1.375	51.7	30.25	1.00	Std	Lion1000 IHCP	2135*	662581	662661
35THI24-137	3.5	24.0	1.375	57.3	34.25	1.00	Std	Lion1000 IHCP	1589*	662582	662662
35THI30-137	3.5	30.0	1.375	65.8	40.25	1.00	Std	Lion1000 IHCP	1092*	662583	662663
35THI36-137	3.5	36.0	1.375	74.2	46.25	1.00	Std	Lion1000 IHCP	797*	662584	662664
35THI48-137	3.5	48.0	1.375	91.1	58.25	1.00	Std	Lion1000 IHCP	477*	662585	662665
4in Bore 3000 psi cylinders											
40THI06-175	4.0	6.0	1.750	39.9	16.25	1.00	Hardened	Lion1000 IHCP	3000	662586	662666
40THI08-175	4.0	8.0	1.750	43.5	18.25	1.00	Hardened	Lion1000 IHCP	3000	662587	662667
40THI10-175	4.0	10.0	1.750	47.2	20.25	1.00	Hardened	Lion1000 IHCP	3000	662588	662668
40THI12-175	4.0	12.0	1.750	50.8	22.25	1.00	Hardened	Lion1000 IHCP	3000	662589	662669
40THI14-175	4.0	14.0	1.750	54.4	24.25	1.00	Hardened	Lion1000 IHCP	3000	662590	662670
40THI16-175	4.0	16.0	1.750	58.1	26.25	1.00	Hardened	Lion1000 IHCP	3000	662591	662671
40THI18-175	4.0	18.0	1.750	61.7	28.25	1.00	Hardened	Lion1000 IHCP	3000	662592	662672
40THI20-175	4.0	20.0	1.750	65.3	30.25	1.00	Hardened	Lion1000 IHCP	3000	662593	662673
40THI24-175	4.0	24.0	1.750	72.6	34.25	1.00	Hardened	Lion1000 IHCP	3000	662594	662674
40THI30-175	4.0	30.0	1.750	83.5	40.25	1.00	Hardened	Lion1000 IHCP	2194*	662595	662675
40THI36-175	4.0	36.0	1.750	94.4	46.25	1.00	Hardened	Lion1000 IHCP	1601*	662596	662676
40THI48-175	4.0	48.0	1.750	116.1	58.25	1.00	Hardened	Lion1000 IHCP	959*	662597	662677
5in Bore 3000 psi cylinders											
50THI10-200	5.0	10.0	2.000	80.0	20.25	1.25	Hardened	Lion1000 IHCP	3000	662598	662678
50THI12-200	5.0	12.0	2.000	85.0	22.25	1.25	Hardened	Lion1000 IHCP	3000	662599	662679
50THI14-200	5.0	14.0	2.000	89.9	24.25	1.25	Hardened	Lion1000 IHCP	3000	662600	662680
50THI16-200	5.0	16.0	2.000	94.9	26.25	1.25	Hardened	Lion1000 IHCP	3000	662601	662681
50THI18-200	5.0	18.0	2.000	99.9	28.25	1.25	Hardened	Lion1000 IHCP	3000	662602	662682
50THI20-200	5.0	20.0	2.000	104.9	30.25	1.25	Hardened	Lion1000 IHCP	3000	662603	662683
50THI24-200	5.0	24.0	2.000	114.8	34.25	1.25	Hardened	Lion1000 IHCP	3000	662604	662684
50THI30-200	5.0	30.0	2.000	129.8	40.25	1.25	Hardened	Lion1000 IHCP	2265*	662605	662685
50THI36-200	5.0	36.0	2.000	144.7	46.25	1.25	Hardened	Lion1000 IHCP	1666*	662606	662686
50THI48-200	5.0	48.0	2.000	174.6	58.25	1.25	Hardened	Lion1000 IHCP	1009*	662607	662687

THI=0000



DIMENSIONS IN INCHES

BORE	2"	2 1/2"	3"	3 1/2"	4"	5"
A	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	12 1/4
B	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8
B ₁	4 3/16	4 3/16	3 15/16	3 15/16	3 7/8	4 11/16
C	2 1/16	2 1/16	2 1/16	2 1/16	2 1/16	2 1/4
D	2 7/8	2 7/8	2 3/4	2 3/4	2 3/4	2 7/8
E	2 3/4	3 1/8	3 3/4	4 1/2	5 1/8	6
F	1 3/8	1 9/16	1 7/8	2 1/4	2 9/16	3
G	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 3/16
G ₁	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 5/16
H	2 1/2	2 1/2	2 5/8	2 5/8	2 5/8	3
H ₁	2 3/8	2 1/2	2 9/16	2 9/16	2 5/8	3 1/2
J	1	1	1 1/8	1 1/8	1 1/8	1 5/16
J ₁	1	1	1	1 1/8	1 1/8	1 7/16
K	1 1/64	1 1/64	1 1/64	1 1/64	1 1/64	1 17/64
M	1 1/8 - 12	1 1/8 - 12	1 1/4 - 12	1 1/4 - 12	1 1/4 - 12	1 1/2 - 12
P	3/4 - 16	3/4 - 16	3/4 - 16	3/4 - 16	3/4 - 16	3/4 - 16
T	3/8	3/8	1/2	5/8	5/8	3/4
ASAE Cylinders						
A _{ASAE-8}	12 1/4	12 1/4	12 1/4	12 1/4	12 1/4	12 1/4
A _{ASAE-16}	15 1/2	15 1/2	15 1/2	15 1/2	15 1/2	15 1/2
B _{1 ASAE-8}	6 3/16	6 3/16	5 15/16	5 15/16	5 7/8	4 11/16
B _{1 ASAE-16}	9 7/16	9 7/16	9 3/16	9 3/16	9 1/8	7 15/16
K _{ASAE-8}	1 1/64	1 1/64	1 1/64	1 1/64	1 1/64	1 1/64
K _{ASAE-16}	1 17/64	1 17/64	1 17/64	1 17/64	1 17/64	1 17/64

* Cylinder Column Load - Column strength loading normally affects all types of longer stroke cylinders. Affected cylinders should not be operated beyond these limits as the cylinder rod may buckle or bend causing failure.. Stroke limitation applies to compressive loading only. Applications that fall outside the noted parameters, contact LION HYDRAULICS directly for further assistance.

LION HYDRAULICS IS A DIVISION OF MONARCH INDUSTRIES INC

For placing orders or for further product information contact your local LION HYDRAULICS sales representative, or contact:

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