



SPARTAN® CYLINDERS

A Division of FIMIC Corporation



Visit our website: www.fimicimplement.com or call: 1-865-755-1101



SPARTAN® CYLINDERS

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Our test protocols assure that our products meet the most stringent customer requirements!!

In-process Testing Includes:

- ✓ *Cylinders 100% Tested at 1.5 Times Normal Working Pressure for Leaks and Performance*
- ✓ *Corrosion Protection of Chrome & Paint Verified via Salt Spray Testing*
- ✓ *Chrome Plating Thickness Verification*
- ✓ *Surface Finishes Verified*



Endurance Testing Equipment

Routine Cycle Testing on Production Cylinders to Confirm 50,000 Life Cycles



Chemical Analysis Equipment

Chemical Composition of Raw Castings Verified Each Pour



Tensile Testing Equipment

Mechanical Strength Verifications on Incoming Raw Materials



Performance Testing Equipment



Salt Spray Equipment



Cylinder Cleaning Equipment

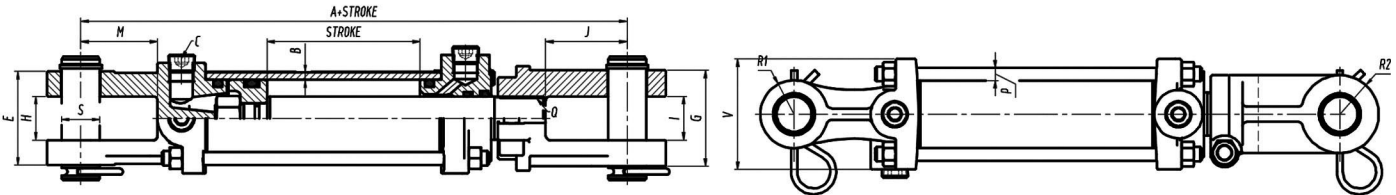
Components, ID Tube Washers and Exterior Cleaning After Assembly

TIE-ROD CYLINDERS 2500 PSI / 3000 PSI

Spartan® 2500 PSI / 3000 PSI hydraulic cylinders are constructed of high strength steel, durable chrome plated rods, endurance tested seal packages to 50,000 cycles, and are 100% performance tested to assure leak free use in any industry. All Spartan cylinders are able to be used in double and single acting applications. Spartan cylinders are painted black.

Specifications

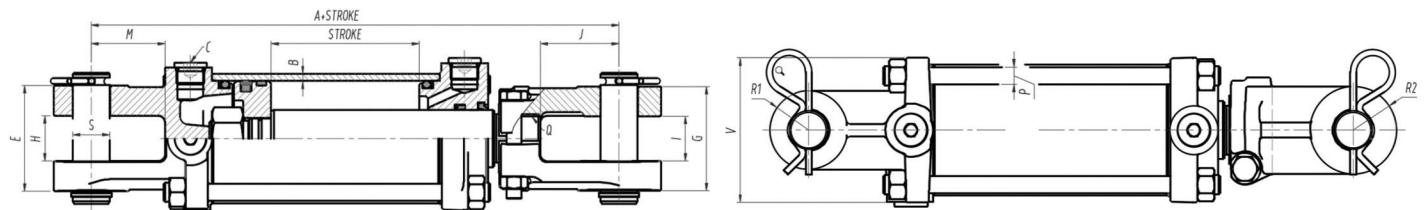
- Intended Use: Double-acting applications
- Gland: Ductile iron, drilled oil passages
- Rod: Hard chrome plated
- Tube Seals: Buna O-ring
- Rod Wiper: Urethane, snap-in
- Ports: NPT
- Packaging: Individually poly bagged
- Piston: Ductile iron
- Tube: Precision honed steel
- End Mounts: Ductile iron female clevises with pins and clips included
- Rod Seal: Deep polypak with B lip design
- Piston Seal: Double-acting piston seal designed to meet NFPA standards.
- Painted black. Custom colors are available



TIE-ROD CYLINDERS 2500 PSI Dimensional Data in Inches (Millimeters)

BORE	DIMENSIONS														
	A*	B	C	E	G	H	I	J	M	P	Q	R1	R2	S	V
2.000 (50.8)	10.250 (260.35)	0.189 (4.8)	3/8"-18NPT	2.44 (62)	2.44 (62)	1.14 (29)	1.14 (29)	2.13 (54)	2.00 (50.8)	0.331 (8.4)	1 1/8"-12UNF	0.886 (22.5)	1.016 (25.8)	1.000 (25.4)	2.87 (73)
2.500 (63.5)	10.250 (260.35)	0.189 (4.8)	3/8"-18NPT	2.44 (62)	2.44 (62)	1.14 (29)	1.14 (29)	2.13 (54)	2.00 (50.8)	0.331 (8.4)	1 1/8"-12UNF	0.984 (25.0)	1.016 (25.8)	1.000 (25.4)	3.23 (82)
3.000 (76.2)	10.250 (260.35)	0.189 (4.8)	1/2"-14NPT	2.72 (69)	2.72 (69)	1.14 (29)	1.14 (29)	2.13 (54)	2.00 (50.8)	0.445 (11.3)	1 1/4"-12UNF	1.016 (25.8)	1.016 (25.8)	1.000 (25.4)	3.78 (96)
3.500 (88.9)	10.250 (260.35)	0.190 (4.85)	1/2"-14NPT	2.72 (69)	2.72 (69)	1.14 (29)	1.14 (29)	2.13 (54)	2.00 (50.8)	0.524 (13.3)	1 1/4"-12UNF	1.016 (25.8)	1.016 (25.8)	1.000 (25.4)	4.17 (106)
4.000 (101.6)	10.250 (260.35)	0.250 (6.35)	1/2"-14NPT	2.72 (69)	2.72 (69)	1.14 (29)	1.14 (29)	2.13 (54)	2.12 (53.8)	0.583 (14.8)	1 1/4"-12UNF	1.063 (27.0)	1.016 (25.8)	1.000/1.250 (25.4/31.75)	5.04 (128)

*The retracted length is 12.25" (311.15) for 8" (203.2) stroke ASAE cylinders and 15.5" (393.7) for 16" (406.4) stroke cylinders.



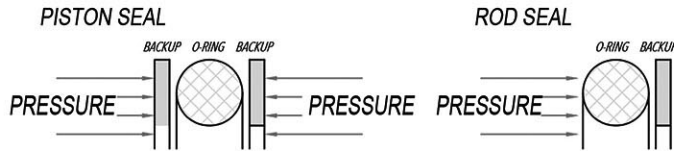
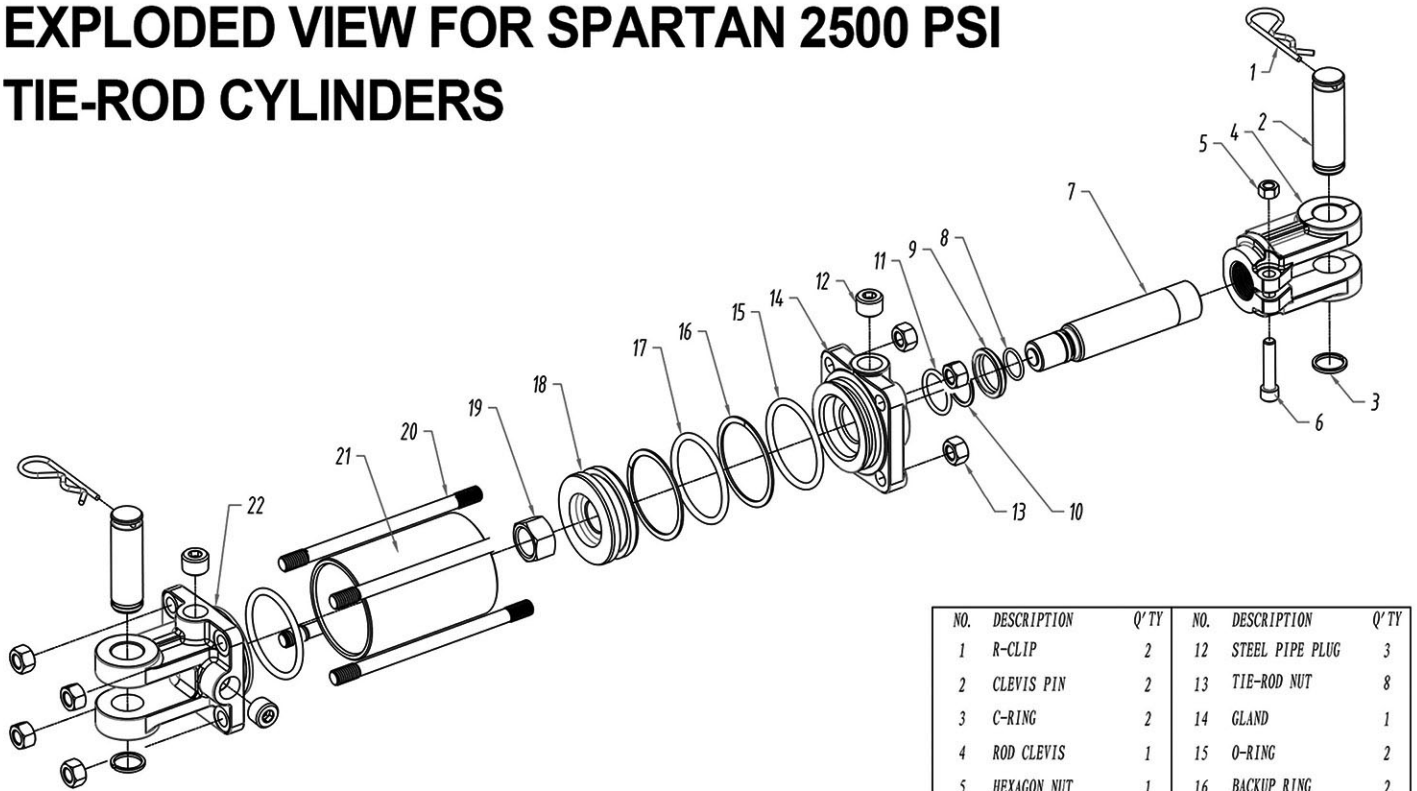
TIE-ROD CYLINDERS 3000 PSI Dimensional Data in Inches (Millimeters)

BORE	DIMENSIONS														
	A*	B	C	E	G	H	I	J	M	P	Q	R1	R2	S	V
2.000 (50.8)	10.250 (260.35)	0.189 (4.8)	SAE 8 (3/4-16UNF)	2.44 (62)	2.44 (62)	1.14 (29)	1.17 (29.6)	2.13 (54)	2.00 (50.8)	0.331 (8.4)	1 1/8"-12UNF	0.886 (22.5)	1.000 (25.4)	1.000 (25.4)	2.87 (73)
2.500 (63.5)	10.250 (260.35)	0.189 (4.8)	SAE 8 (3/4-16UNF)	2.44 (62)	2.44 (62)	1.14 (29)	1.17 (29.6)	2.13 (54)	2.00 (50.8)	0.331 (8.4)	1 1/8"-12UNF	0.984 (25.0)	1.000 (25.4)	1.000 (25.4)	3.23 (82)
3.000 (76.2)	10.250 (260.35)	0.189 (4.8)	SAE 8 (3/4-16UNF)	2.76 (70)	2.72 (69)	1.18 (30)	1.17 (29.6)	2.13 (54)	2.00 (50.8)	0.445 (11.3)	1 1/4"-12UNF	1.016 (25.8)	1.132 (28.75)	1.000/1.250 (25.4/31.75)	3.74 (95)
3.500 (88.9)	10.250 (260.35)	0.190 (4.85)	SAE 8 (3/4-16UNF)	2.76 (70)	2.72 (69)	1.18 (30)	1.17 (29.6)	2.13 (54)	2.00 (50.8)	0.524 (13.3)	1 1/4"-12UNF	1.016 (25.8)	1.132 (28.75)	1.000/1.250 (25.4/31.75)	4.17 (106)
4.000 (101.6)	10.250 (260.35)	0.250 (6.35)	SAE 8 (3/4-16UNF)	2.87 (73)	2.72 (69)	1.24 (31.5)	1.17 (29.6)	2.13 (54)	2.00 (50.8)	0.583 (14.8)	1 1/4"-12UNF	1.280 (32.5)	1.132 (28.75)	1.000/1.250 (25.4/31.75)	5.00 (127)
5.000 (127.0)	12.250 (311.15)	0.250 (6.35)	SAE 12# (1 1/16-12UN)	2.95 (75)	2.95 (75)	1.17 (29.6)	1.21 (30.6)	2.13 (54)	2.05 (52.0)	0.719 (18.26)	1 1/2"-12UNC	1.575 (40)	1.378 (35)	1.000/1.250 (25.4/31.75)	6.22 (158)

*Retracted length IS 12.250" (311.15) for 8.000" (203.2) stroke ASAE cylinders and 15.500" (393.70) for 16.000" (406.4) stroke ASAE cylinder.

TIE-ROD CYLINDERS 2500 PSI

EXPLODED VIEW FOR SPARTAN 2500 PSI TIE-ROD CYLINDERS



NO.	DESCRIPTION	Q'TY	NO.	DESCRIPTION	Q'TY
1	R-CLIP	2	12	STEEL PIPE PLUG	3
2	CLEVIS PIN	2	13	TIE-ROD NUT	8
3	C-RING	2	14	GLAND	1
4	ROD CLEVIS	1	15	O-RING	2
5	HEXAGON NUT	1	16	BACKUP RING	2
6	BOLT	1	17	O-RING	1
7	PISTON ROD	1	18	PISTON	1
8	O-RING	1	19	PISTON NUT	1
9	ROD WIPER	1	20	TIE ROD	4
10	BACKUP RING	1	21	TUBE	1
11	O-RING	1	22	BASE CLEVIS	1

Bore Diameter	Recommended Piston Nut Torque		Recommended Tie-Bolt Nut Torque		
	Inch	Piston Rod Thread Size	Ft. Lbs. (Nm)	Tie-Bolt Thread Size	Ft. Lbs. (Nm)
2"	3/4"-16UNF	157 (213)	3/8"-16UNC	29 (40)	4" - 48"
2-1/2"	3/4"-16UNF	157 (213)	3/8"-16UNC	29 (40)	4" - 48"
3"	1"-12UNF	317 (430)	1/2"-13UNC	61 (83)	4" - 48"
3-1/2"	1"-12UNF	317 (430)	9/16-18UNF	81 (110)	4" - 48"
4"	1-1/8"-12UNF	465 (630)	5/8-18UNF	103 (140)	4" - 48"



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TIE-ROD CYLINDERS 2500 PSI

Spartan Part #	Bore	Stroke	Rod Dia.	Pin Dia.	Retracted	Extended	Port Size	Column Load	WT. (lb)	Price
SP012-2004	2"	4"	1.125	1"	14-1/4"	18-1/4"	3/8"NPT	7850	14.74	54.99
SP012-2006	2"	6"	1.125	1"	16-1/4"	22-1/4"	3/8"NPT	7850	16.32	62.49
SP012-2008	2"	8"	1.125	1"	18-1/4"	26-1/4"	3/8"NPT	7850	17.89	64.49
SP012-2008A	2"	8"	1.125	1"	20-1/4"	28-1/4"	3/8"NPT	7850	18.63	64.49
SP012-2010	2"	10"	1.125	1"	20-1/4"	30-1/4"	3/8"NPT	7850	19.58	71.99
SP012-2012	2"	12"	1.125	1"	22-1/4"	34-1/4"	3/8"NPT	7850	21.05	77.49
SP012-2014	2"	14"	1.125	1"	24-1/4"	38-1/4"	3/8"NPT	7850	22.62	81.49
SP012-2016	2"	16"	1.125	1"	26-1/4"	42-1/4"	3/8"NPT	7850	24.20	83.99
SP012-2018	2"	18"	1.125	1"	28-1/4"	46-1/4"	3/8"NPT	7850	25.78	92.49
SP012-2020	2"	20"	1.125	1"	30-1/4"	50-1/4"	3/8"NPT	7190	27.35	93.49
SP012-2024	2"	24"	1.125	1"	34-1/4"	58-1/4"	3/8"NPT	5350	30.51	105.49
SP012-2036	2"	36"	1.125	1"	46-1/4"	82-1/4"	3/8"NPT	2684	36.23	140.99
SP012-2508A	2-1/2"	8"	1.125	1"	20-1/4"	28-1/4"	3/8"NPT	12266	20.92	79.99
SP012-2510	2-1/2"	10"	1.125	1"	20-1/4"	30-1/4"	3/8"NPT	12266	22.07	82.49
SP012-2512	2-1/2"	12"	1.125	1"	22-1/4"	34-1/4"	3/8"NPT	12266	23.83	86.49
SP012-2516	2-1/2"	16"	1.125	1"	26-1/4"	42-1/4"	3/8"NPT	10170	27.32	99.99
SP012-2536	2-1/2"	36"	1.25	1"	46-1/4"	82-1/4"	3/8"NPT	4090	47.70	152.49
SP012-3006	3"	6"	1.25	1"	16-1/4"	22-1/4"	1/2"NPT	17663	23.65	80.99
SP012-3008	3"	8"	1.25	1"	18-1/4"	26-1/4"	1/2"NPT	17663	25.89	82.49
SP012-3008A	3"	8"	1.25	1"	20-1/4"	28-1/4"	1/2"NPT	17663	26.62	84.49
SP012-3010	3"	10"	1.25	1"	20-1/4"	30-1/4"	1/2"NPT	17663	28.16	92.49
SP012-3012	3"	12"	1.25	1"	22-1/4"	34-1/4"	1/2"NPT	17663	30.40	96.99
SP012-3016	3"	16"	1.25	1"	26-1/4"	42-1/4"	1/2"NPT	15501	34.91	106.99
SP012-3020	3"	20"	1.25	1"	30-1/4"	50-1/4"	1/2"NPT	10958	39.42	116.99



TIE-ROD CYLINDERS 2500 PSI

Spartan Part #	Bore	Stroke	Rod Dia	Pin Dia.	Retracted	Extended	Port Size	Column Load	WT. (lb)	Price
SP012-3508A	3-1/2"	8"	1.25	1"	20-1/4"	28-1/4"	1/2"NPT	24041	31.24	99.99
SP012-3512	3-1/2"	12"	1.25	1"	22-1/4"	34-1/4"	1/2"NPT	23588	35.13	116.99
SP012-3516	3-1/2"	16"	1.25	1"	26-1/4"	42-1/4"	1/2"NPT	15501	40.24	116.99
SP012-3516A	3-1/2"	16"	1.50	1"	31-1/2"	47-1/2"	1/2"NPT	24041	44.00	116.99
SP012-3524	3-1/2"	24"	1.5	1"	34-1/4"	58-1/4"	1/2"NPT	16910	55.11	159.49
SP012-4008	4"	8"	1.5	1"	18-1/4"	26-1/4"	1/2"NPT	31400	41.73	121.99
SP012-4008A	4"	8"	1.5	1"	20-1/4"	28-1/4"	1/2"NPT	31400	42.90	121.99
SP012-4010	4"	10"	1.5	1"	20-1/4"	30-1/4"	1/2"NPT	31400	44.00	125.49
SP012-4024	4"	24"	1.5	1"	34-1/4"	58-1/4"	1/2"NPT	16910	71.43	189.49
SP012-4030	4"	30"	2	1"	40-1/4"	70-1/4"	1/2"NPT	31400	96.82	239.99
SP012-4036	4"	36"	2	1"	46-1/4"	82-1/4"	1/2"NPT	26805	110.40	279.99

Spartan Replacement Seal Kits

Spartan Part #	Description	Price
SP992-0001	2" Bore X 1.125 Rod Seal Kit	12.49
SP992-0002	2.5" Bore X 1.125 Rod Seal Kit	14.49
SP992-0003	2.5" Bore X 1.25 Rod Seal Kit	14.49
SP992-0004	3" Bore X 1.25 Rod Seal Kit	16.49
SP992-0005	3" Bore X 1.50 Rod Seal Kit	16.49
SP992-0006	3.5" Bore X 1.25 Rod Seal Kit	19.49
SP992-0007	3.5" Bore X 1.50 Rod Seal Kit	19.49
SP992-0008	4" Bore X 1.50 Rod Seal Kit	22.49
SP992-0009	4" Bore X 2.00 Rod Seal Kit	22.49

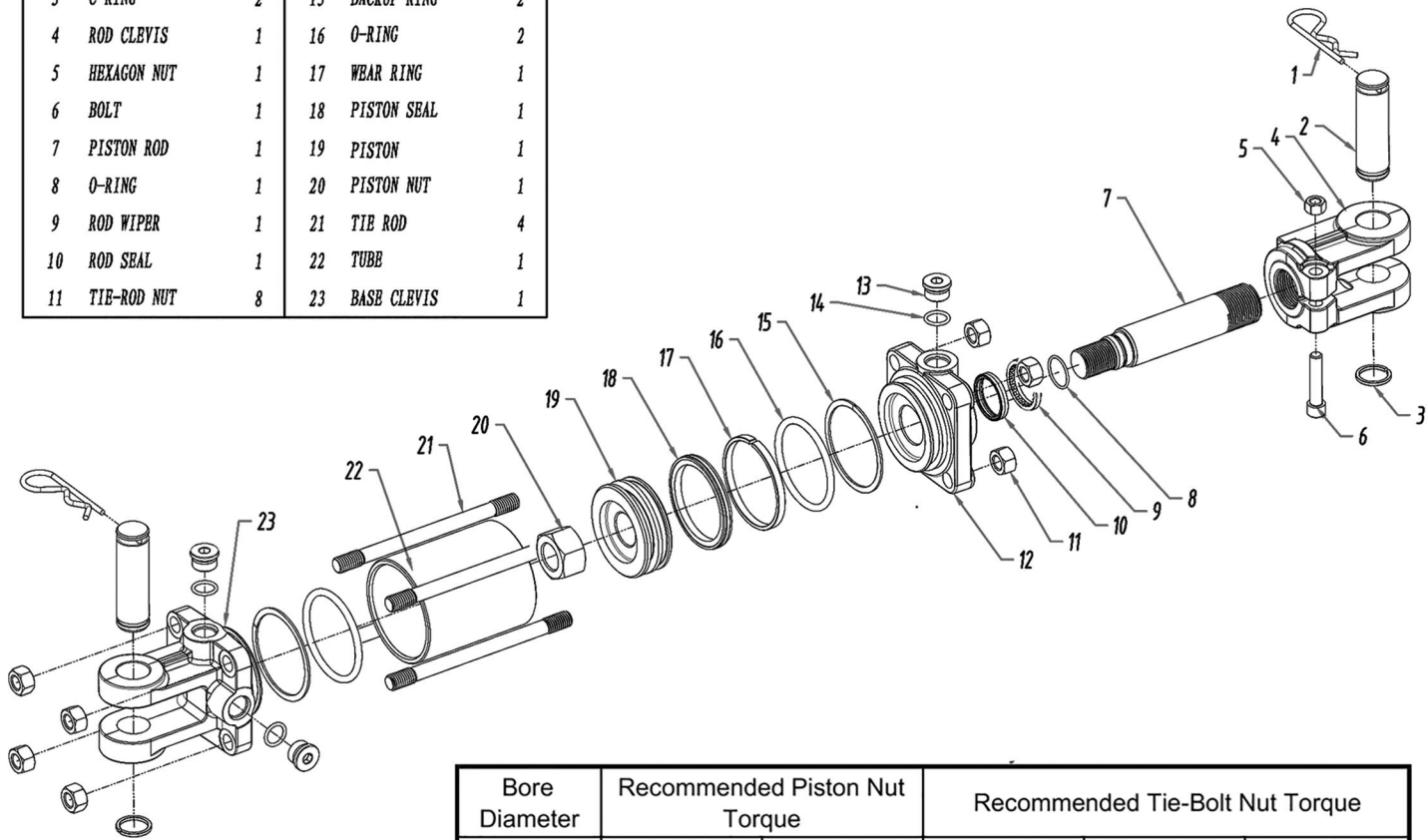


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TIE-ROD CYLINDERS 3000 PSI

EXPLODED VIEW FOR SPARTAN 3000 PSI TIE-ROD CYLINDERS

NO.	DESCRIPTION	Q'TY	NO.	DESCRIPTION	Q'TY
1	R-CLIP	2	12	GLAND	1
2	CLEVIS PIN	2	13	STEEL PIPE PLUG	3
3	C-RING	2	14	O-RING	1
4	ROD CLEVIS	1	15	BACKUP RING	2
5	HEXAGON NUT	1	16	O-RING	2
6	BOLT	1	17	WEAR RING	1
7	PISTON ROD	1	18	PISTON SEAL	1
8	O-RING	1	19	PISTON	1
9	ROD WIPER	1	20	PISTON NUT	1
10	ROD SEAL	1	21	TIE ROD	4
11	TIE-ROD NUT	8	22	TUBE	1
			23	BASE CLEVIS	1



Bore Diameter	Recommended Piston Nut Torque		Recommended Tie-Bolt Nut Torque		
	Piston Rod Thread Size	Ft. Lbs. (Nm)	Tie-Bolt Thread Size	Ft. Lbs. (Nm)	Stroke Range
2"	M18 x 1.5	67 (92)	3/8"-16UNC	29 (40)	4" - 48"
2-1/2"	M20 x 1.5	138 (187)	3/8"-16UNC	29 (40)	4" - 48"
3"	M24 x 2.0	247 (335)	1/2"-13UNC	61 (83)	4" - 48"
3-1/2"	M27 x 2.0	374 (507)	9/16-18UNF	81 (110)	4" - 48"
4"	M30 x 2.0	539 (730)	5/8-18UNF	103 (140)	4" - 48"
5"	M39 x 3.0	1136 (1539)	M20 x 2.5	258 (350)	4" - 48"



TIE-ROD CYLINDERS 3000 PSI

Spartan Part #	Bore	Stroke	Rod Dia	Pin Dia.	Retracted	Extended	Port Size	Column Load	WT. (lb)	Price
SP013-2004	2"	4"	1.125	1"	14-1/4"	18-1/4"	3/4-16UNF	9420	14.56	82.49
SP013-2006	2"	6"	1.125	1"	16-1/4"	22-1/4"	3/4-16UNF	9420	16.08	84.99
SP013-2008	2"	8"	1.125	1"	18-1/4"	26-1/4"	3/4-16UNF	9420	17.60	91.99
SP013-2008A	2"	8"	1.125	1"	20-1/4"	28-1/4"	3/4-16UNF	9420	18.17	92.99
SP013-2010	2"	10"	1.125	1"	20-1/4"	30-1/4"	3/4-16UNF	9420	19.12	94.99
SP013-2012	2"	12"	1.125	1"	22-1/4"	34-1/4"	3/4-16UNF	9420	20.64	102.49
SP013-2014	2"	14"	1.125	1"	24-1/4"	38-1/4"	3/4-16UNF	9420	22.15	109.99
SP013-2016	2"	16"	1.125	1"	26-1/4"	42-1/4"	3/4-16UNF	9420	23.67	110.49
SP013-2504	2-1/2"	4"	1.125	1"	14-1/4"	18-1/4"	3/4-16UNF	14719	16.37	85.49
SP013-2508	2-1/2"	8"	1.125	1"	18-1/4"	26-1/4"	3/4-16UNF	14719	19.76	98.49
SP013-2512	2-1/2"	12"	1.125	1"	22-1/4"	34-1/4"	3/4-16UNF	14719	23.14	104.99
SP013-2514	2-1/2"	14"	1.250	1"	24-1/4"	38-1/4"	3/4-16UNF	14719	26.09	111.99
SP013-2524	2-1/2"	24"	1.250	1"	34-1/4"	58-1/4"	3/4-16UNF	8155	35.22	131.99
SP013-3006	3"	6"	1.250	1"	16-1/4"	22-1/4"	3/4-16UNF	21195	23.69	100.49
SP013-3008	3"	8"	1.250	1"	18-1/4"	26-1/4"	3/4-16UNF	21195	25.76	101.49
SP013-3008A	3"	8"	1.250	1"	20-1/4"	28-1/4"	3/4-16UNF	21195	26.55	105.99
SP013-3010	3"	10"	1.25	1"	20-1/4"	30-1/4"	3/4-16UNF	21195	27.83	110.49
SP013-3014	3"	14"	1.50	1"	24-1/4"	38-1/4"	3/4-16UNF	21195	34.14	135.49
SP013-3016	3"	16"	1.50	1"	26-1/4"	42-1/4"	3/4-16UNF	21195	36.54	139.49
SP013-3024	3"	24"	1.50	1"	34-1/4"	58-1/4"	3/4-16UNF	16910	46.13	162.99
SP013-3036	3"	36"	1.50	1"	46-1/4"	82-1/4"	3/4-16UNF	8481	60.52	199.49
SP013-3508A	3-1/2"	8"	1.50	1"	20-1/4"	28-1/4"	3/4-16UNF	28849	33.00	133.99
SP013-3516	3-1/2"	16"	1.50	1"	26-1/4"	42-1/4"	3/4-16UNF	28849	43.03	165.99



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TIE-ROD CYLINDERS 3000 PSI

Spartan Part #	Bore	Stroke	Rod Dia	Pin Dia.	Retracted	Extended	Port Size	Column Load	WT. (lb)	Price
SP013-3524	3-1/2"	24"	1.50	1"	34-1/4"	58-1/4"	3/4-16UNF	16910	53.77	181.00
SP013-3536	3-1/2"	36"	1.50	1"	46-1/4"	82-1/4"	3/4-16UNF	8481	69.87	246.49
SP013-4008	4"	8"	1.50	1"	18-1/4"	26-1/4"	3/4-16UNF	37680	41.34	158.99
SP013-4008A	4"	8"	1.50	1"	20-1/4"	28-1/4"	3/4-16UNF	37680	42.02	161.49
SP013-4010	4"	10"	1.50	1"	20-1/4"	30-1/4"	3/4-16UNF	37680	44.84	166.99
SP013-4012	4"	12"	1.5	1"	22-1/4"	34-1/4"	3/4-16UNF	37680	48.33	174.99
SP013-4016	4"	16"	2.0	1"	26-1/4"	42-1/4"	3/4-16UNF	37680	61.45	204.99
SP013-4020	4"	20"	2.0	1"	30-1/4" 1	50-1/4"	3/4-16UNF	37680	69.89	227.49
SP013-5008A	5	8	2.0	1-1/4"	20-1/4"	28-1/4"	SAE12	58875	72.29	247.49
SP013-5010	5	10	2.0	1-1/4"	22-1/4"	32-1/4"	SAE12	58875	77.35	283.49
SP013-5012	5	12	2	1-1/4"	24-1/4"	36-1/4"	SAE12	58875	82.41	284.99
SP013-5016	5	16	2	1-1/4"	28-1/4"	44-1/4"	SAE12	58875	92.53	319.49
SP013-5024	5	24	2-1/4"	1-1/4"	36-1/4"	60-1/4"	SAE12	58875	107.71	415.99
SP013-5036	5	36	2-1/4"	1-1/4"	48-1/4"	84-1/4"	SAE12	40922	127.95	484.49

Spartan Replacement Seal Kits

Spartan Part #	Description	Price
SP993-0001	2" Bore X 1.125 Rod Seal Kit	16.99
SP993-0002	2.5" Bore X 1.125 Rod Seal Kit	17.49
SP993-0003	2.5" Bore X 1.25 Rod Seal Kit	18.99
SP993-0004	3" Bore X 1.25 Rod Seal Kit	19.49
SP993-0005	3" Bore X 1.50 Rod Seal Kit	19.99
SP993-0006	3.5" Bore X 1.50 Rod Seal Kit	24.49

Spartan Part #	Description	Price
SP993-0007	4" Bore X 1.50 Rod Seal Kit	25.99
SP993-0008	4" Bore X 2.00 Rod Seal Kit	26.99
SP993-0009	5" Bore X 2.00 Rod Seal Kit	29.49
SP993-0010	5" Bore X 2.25 Rod Seal Kit	29.99



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