

Vickers®

Cylinders



Series TQ Agricultural Cylinders

Nominal Pressure: 2500 psi



Released 10-91

4113A

Series TQ Hydraulic Cylinders

Designed for Agricultural Applications

- Working pressure to 2500 psi
- Intermittent surge pressures to 3000 psi
- Pressure tested to 4000 psi

ASAE Standard Cylinders

There are nine Series TQ cylinders designed for use where ASAE 8" and 16" stroke cylinders are required. Part numbers with "ASAE" suffix represent ASAE cylinders. Additional

specifications are provided in the main part number table. There are no available options. ASAE 16" stroke cylinders incorporate 1 1/4" diameter clevis pins.

Features

Pins – High tensile steel, zinc plated to prevent corrosion

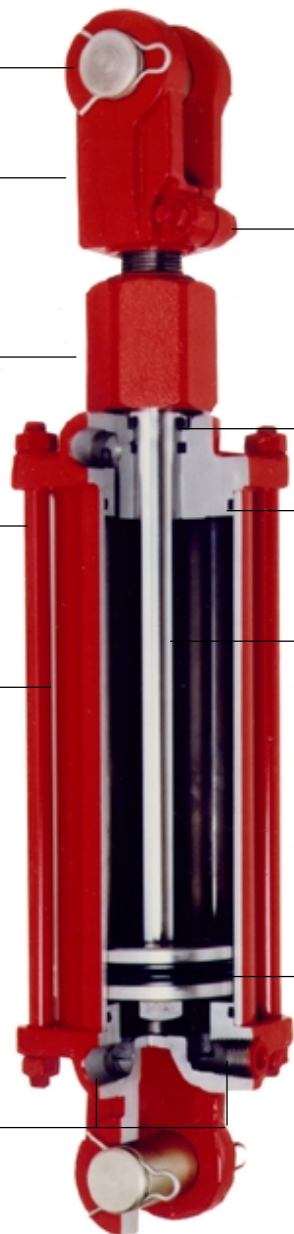
Rod Cap, End Clevis, and Rod Clevis – Ductile iron castings take shock loads without cracking.

Optional Stroke Control – On all ASAE cylinders.

Tie Rods – High tensile steel to prevent stretching under pressure.

Body – Precision finished steel with heavy wall to provide greater wear and strength.

Ports – Double ported end clevis for greater flexibility of assembly. Unless otherwise stated, cylinders are assembled with open port aligned with pin.



Clevis Bolt – Grade 5 for extra strength

Wiper Seal – Nitrile rubber bonded to metal case. Prevents contaminants from entering cylinder.

"O" Rings – To eliminate end leakage

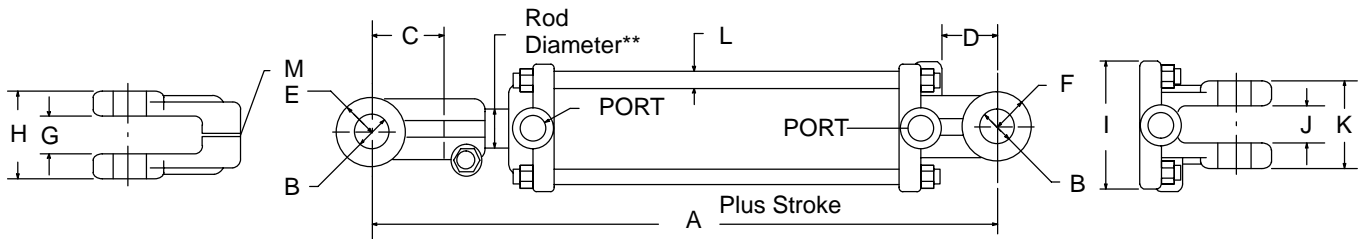
Rod – High tensile strength, precision ground and polished steel. Hard chrome plated for wear and corrosion resistance.

Piston Seal – Nitrile 90 Durometer "O" Ring with anti-extrusion rings for longer life.

Series TQ Hydraulic Cylinders – Part numbers and specifications

Part Number	Bore x Stroke	Rod Diameter	Dim. between pin centers Retracted – Extended	Clevis Pin Diameter	Cylinder Weight Lbs.
TQ2008	2" x 8"	1 1/8"	18 1/4" x 26 1/4"	1"	17
TQ2008ASAE	2" x 8"	1 1/8"	20 1/4" x 28 1/4"	1"	18
TQ2010	2" x 10"	1 1/8"	20 1/4" x 30 1/4"	1"	20
TQ2012	2" x 12"	1 1/8"	22 1/4" x 34 1/4"	1"	21
TQ2014	2" x 14"	1 1/8"	24 1/4" x 38 1/4"	1"	22
TQ2016	2" x 16"	1 1/8"	26 1/4" x 42 1/4"	1"	23
TQ2018	2" x 18"	1 1/8"	28 1/4" x 46 1/4"	1"	24
TQ2020	2" x 20"	1 1/8"	30 1/4" x 50 1/4"	1"	25
TQ2024	2" x 24"	1 1/8"	34 1/4" x 58 1/4"	1"	27
TQ2508	2 1/2" x 8"	1 1/8"	18 1/4" x 26 1/4"	1"	20
TQ2508ASAE	2 1/2" x 8"	1 1/8"	20 1/4" x 28 1/4"	1"	21
TQ2510	2 1/2" x 10"	1 1/8"	20 1/4" x 30 1/4"	1"	22
TQ2512	2 1/2" x 12"	1 1/8"	22 1/4" x 34 1/4"	1"	24
TQ2514	2 1/2" x 14"	1 1/8"	24 1/4" x 38 1/4"	1"	25
TQ2516	2 1/2" x 16"	1 1/8"	26 1/4" x 42 1/4"	1"	27
TQ2518	2 1/2" x 18"	1 1/8"	28 1/4" x 46 1/4"	1"	28
TQ2520	2 1/2" x 20"	1 1/8"	30 1/4" x 50 1/4"	1"	30
TQ2524	2 1/2" x 24"	1 1/8"	34 1/4" x 58 1/4"	1"	33
TQ3008	3" x 8"	1 1/4"	18 1/4" x 26 1/4"	1"	25
TQ3008ASAE	3" x 8"	1 1/4"	20 1/4" x 28 1/4"	1"	26
TQ3010	3" x 10"	1 1/4"	20 1/4" x 30 1/4"	1"	27
TQ3012	3" x 12"	1 1/4"	22 1/4" x 34 1/4"	1"	29
TQ3014	3" x 14"	1 1/4"	24 1/4" x 38 1/4"	1"	31
TQ3016	3" x 16"	1 1/4"	26 1/4" x 42 1/4"	1"	33
TQ3016ASAE	3" x 16"	1 1/4"	31 1/2" x 47 1/2"	1 1/4"	34
TQ3018	3" x 18"	1 1/4"	28 1/4" x 46 1/4"	1"	35
TQ3020	3" x 20"	1 1/4"	30 1/4" x 50 1/4"	1"	37
TQ3024	3" x 24"	1 1/4"	34 1/4" x 58 1/4"	1"	41
TQ3508	3 1/2" x 8"	1 1/4"	18 1/4" x 26 1/4"	1"	29
TQ3508ASAE	3 1/2" x 8"	1 1/4"	20 1/4" x 28 1/4"	1"	29
TQ3510	3 1/2" x 10"	1 1/4"	20 1/4" x 30 1/4"	1"	30
TQ3512	3 1/2" x 12"	1 1/4"	22 1/4" x 34 1/4"	1"	33
TQ3514	3 1/2" x 14"	1 1/4"	24 1/4" x 38 1/4"	1"	35
TQ3516	3 1/2" x 16"	1 1/4"	26 1/4" x 42 1/4"	1"	36
TQ3516ASAE	3 1/2" x 16"	1 1/4"	31 1/2" x 47 1/2"	1 1/4"	37
TQ3518	3 1/2" x 18"	1 1/4"	28 1/4" x 46 1/4"	1"	40
TQ3520	3 1/2" x 20"	1 1/4"	30 1/4" x 50 1/4"	1"	42
TQ3524	3 1/2" x 24"	1 1/4"	34 1/4" x 58 1/4"	1"	51
TQ4008	4" x 8"	1 1/4"	18 1/4" x 26 1/4"	1"	34
TQ4008ASAE	4" x 8"	1 1/4"	20 1/4" x 28 1/4"	1"	35
TQ4010	4" x 10"	1 1/4"	20 1/4" x 30 1/4"	1"	37
TQ4012	4" x 12"	1 1/4"	22 1/4" x 34 1/4"	1"	40
TQ4014	4" x 14"	1 1/4"	24 1/4" x 38 1/4"	1"	42
TQ4016	4" x 16"	1 1/4"	26 1/4" x 42 1/4"	1"	45
TQ4016ASAE	4" x 16"	2"	31 1/2" x 47 1/2"	1 1/4"	46
TQ4018	4" x 18"	1 1/2"	28 1/4" x 46 1/4"	1"	49
TQ4020	4" x 20"	1 1/2"	30 1/4" x 50 1/4"	1"	53
TQ4024	4" x 24"	1 1/2"	34 1/4" x 58 1/4"	1"	61
TQ5008	5" x 8"	1 1/2"	20 1/4" x 28 1/4"	1"	65
TQ5010	5" x 10"	1 1/2"	22 1/4" x 32 1/4"	1"	68
TQ5012	5" x 12"	2"	24 1/4" x 36 1/4"	1"	77
TQ5014	5" x 14"	2"	26 1/4" x 40 1/4"	1"	82
TQ5016	5" x 16"	2"	28 1/4" x 44 1/4"	1"	86
TQ5016ASAE	5" x 16"	2"	31 1/2" x 47 1/2"	1 1/4"	87
TQ5018	5" x 18"	2"	30 1/4" x 48 1/4"	1"	92
TQ5020	5" x 20"	2"	32 1/4" x 52 1/4"	1"	96
TQ5024	5" x 24"	2"	36 1/4" x 60 1/4"	1"	106
TQ5030	5" x 30"	2"	42 1/4" x 72 1/4"	1"	120

Series TQ Hydraulic Cylinders Dimensional Data in (mm)



Bore Dia	A*	B*	C	D	E	F	G	H	I	J	K	L	M UNF	Ports NPTF
2.00 (51)	10.25 (260)	1.015 (25.8)	2.125 (53.9)	1.625 (41.3)	1.000 (25.4)	1.000 (25.4)	1.125 (28.6)	2.500 (63.5)	2.750 (69.8)	1.125 (28.6)	2.500 (63.5)	.375 (9.5)	1 1/8 - 12	3/8
2.50 (64)	10.25 (260)	1.015 (25.8)	2.125 (53.9)	1.625 (41.3)	1.000 (25.4)	1.000 (25.4)	1.125 (28.6)	2.500 (63.5)	3.125 (79.4)	1.125 (28.6)	2.500 (63.5)	.375 (9.5)	1 1/8 - 12	3/8
3.00 (76)	10.25 (260)	1.015 (25.8)	2.125 (53.9)	1.625 (41.3)	1.125 (28.6)	1.000 (25.4)	1.125 (28.6)	2.625 (66.7)	3.750 (95.3)	1.125 (28.6)	2.500 (63.5)	.500 (12.7)	1 1/4 - 12	1/2
3.50 (89)	10.25 (260)	1.015 (25.8)	2.125 (53.9)	1.625 (41.3)	1.125 (28.6)	1.125 (28.6)	1.125 (28.6)	2.625 (66.7)	4.125 (104.8)	1.125 (28.6)	2.500 (63.5)	.500 (12.7)	1 1/4 - 12	1/2
4.00 (102)	10.25 (260)	1.015 (25.8)	2.125 (53.9)	1.625 (41.3)	1.125 (28.6)	1.125 (28.6)	1.125 (28.6)	2.625 (66.7)	4.625 (117.5)	1.125 (28.6)	2.625 (66.7)	.500 (12.7)	1 1/4 - 12	1/2
5.00 (127)	12.25 (311)	1.015 (25.8)	2.125 (53.9)	2.250 (57.2)	1.250 (31.8)	1.500 (38.1)	1.250 (31.8)	2.625 (66.7)	6.000 (152.4)	1.250 (31.8)	3.500 (88.9)	.625 (15.9)	1 1/4 - 12	1/2

* Expect 8" & 16" ASAE cylinders listed on page 3

** See page 3 for rod diameters

Cylinders Size Selection

To select a cylinder for an application, first determine the maximum push and/or pull force required to do the job. Then use the chart below to select the cylinder that gives the necessary force. Please note that although the force requirements derived by formula are theoretically correct, other factors must be considered. One factor is pressure

drop. Working pressure at the cylinder port will be less than at the pump outlet. This should be allowed for in your calculations. A margin for overcoming friction in the cylinder must also be added.

In addition, a certain amount of force exerted by a cylinder is counteracted by

friction developed through the seals and, to a lesser extent, by the weight of the piston itself. The amount of force required to counteract these forces in TQ cylinders has been reduced to 5% or less of the cylinder's theoretical power, without sacrificing sealing quality.

Cylinder Bore	Rod Diameter	HYDRAULIC PRESSURE (psi)							
		250	500	750	1000	1250	1500	2000	2500
2"	Push	785	1570	2355	3141	3926	4711	6281	7851
	1 1/8"	536	1073	1610	2147	2684	3221	4295	5363
2 1/2"	Push	1227	2454	3681	4908	6135	7362	9816	12270
	1 1/8"	978	1957	2936	3914	4893	5872	7829	9786
	1 1/4"	920	1840	2761	3681	4601	5522	7363	9203
3"	Push	1767	3534	5301	7068	8835	10602	14136	17670
	1 1/4"	1460	2920	4380	5841	7301	8761	11681	14601
	1 1/2"	1325	2650	3975	5301	6626	7951	10601	13251
3 1/2"	Push	2405	4810	7215	9621	12026	14431	19241	24051
	1 1/4"	2098	4196	6294	8394	10492	12590	16786	20982
	1 1/2"	1963	3926	5889	7854	9617	11780	15706	19632
4"	Push	3141	6282	9423	12566	15707	18848	25130	31412
	1 1/4"	2834	5668	8502	11339	14173	17007	22675	28343
	1 1/2"	2699	5398	8097	10799	13498	16197	21595	26993
5" *	Push	4908	9616	14724	19635	24543	29451	*	*
	1 1/2"	4467	8934	13401	17868	22335	26802		
	2"	4123	8246	12369	16494	20617	24720		

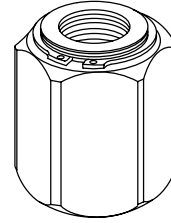
* 5" bore size is limited to 1500 psi maximum operating pressure.

Series TQ Hydraulic Cylinders Accessories

Adjustable Stroke Control Kits

Provide approximately 3" of stroke adjustment

Part Number	Piston Rod Diameter	Shipping Weight (lbs.)
5111-F	1 1/8"	2
5111-G	1 1/4"	3
5111-J	1 1/2"	4



Stroke Control Spacer Kits

Each kit consists of the following

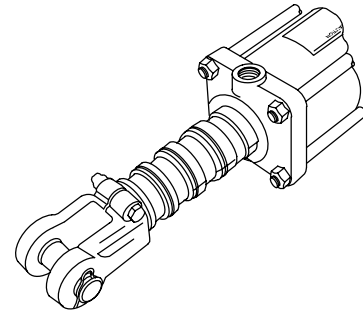
One 3/4" wide spacer

Two 1" wide spacer

One 1 1/4" wide spacer

One 1 1/2" wide spacer

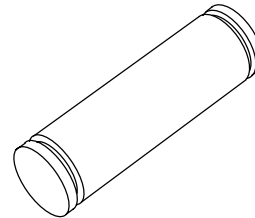
Part Number (Unplated)	Part Number (Plated)	Piston Rod Diameter	Shipping Weight (lbs.)
5112-F	5112-F-P	1 1/8"	4
5112-G	5112-G-P	1 1/4"	4
5112-J	5112-J-P	1 1/2"	4



Clevis Pins

Package of 2 pins and 4 hair pin retainers

Part Number	Size
TQ830100	1" x 3 1/16"
TQ830140	1 1/4" x 3 1/16"



Hair Pin Retainers

Package of 12 retainers. Used on TQ830100

Part Number	Size
5113-0100	For 1" clevis pin

