

TIE-ROD CYLINDERS

Double acting tie-rod cylinders for agricultural, mobile and light industrial use — standard, with stroke adjuster, or with shaft extension.



STANDARD

Medium pressure hydraulic cylinder for agricultural, mobile and light industrial applications.



WITH STROKE ADJUSTER

Cylinder with stroke adjuster to vary the required retracting stroke of the cylinder e.g. depth control of a planter or plough.



WITH SHAFT EXTENSION

Cylinder with shaft extension to fit between existing mounting clevises of a machine or application.

Upgraded
Working Pressure
21 MPa

HOW TO SPECIFY

TIE-ROD CYLINDER ORDERING CODE



TECHNICAL SPECIFICATIONS

21 MPa Normal pressure	25 MPa Test pressure	Mineral oil Hydraulic fluid	-10 to +80 °C Fluid temperature	≤ 0,5 m/s Stroking speed
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ORDERING CODE — example DB 300 08 – 125 A

DB TYPE	300 BORE	08 STROKE	–	125 SHAFT DIA.	A SHAFT EXT.
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TYPE (note 1)

Code	Description
DB	Without stroke adjuster
DE	With stroke adjuster

SHAFT EXTENSION (only for 8" stroke units)

Code	Description
–	Without shaft extension
A	With 2" shaft extension

CYLINDER BORE

Code	Barrel size
200	2" diameter
300	3" diameter
400	4" diameter

SHAFT DIAMETER

Code	Shaft size	For barrel sizes
106	1 $\frac{1}{16}$ "	2"
125	1 $\frac{1}{4}$ "	3" & 4"
150	1 $\frac{1}{2}$ "	3"
200	2"	4"

STROKE (note 2)

Code	06	08	10	12	14	16	18	20	24	28	30	36
Stroke (inch)	6	8	10	12	14	16	18	20	24	28	30	36
Stroke (mm)	152	203	254	305	356	406	457	508	610	711	762	914

NOTES

1. Type DE is only possible with a shaft extension. Adjustment range 0" to 2".
2. Check the permissible buckling load (next page), especially when specifying long strokes.
3. Stroke lengths up to 160" (4 m) are available on request. Specify according to the code above.

BUCKLING LOADS & STANDARD RANGE

SELECT BORE, SHAFT AND STROKE



BUCKLING LOADS

Bore	Shaft	36"	30"	28"	24"	20"	18"	16"	14"	12"	10"	8A"	8"	6"
2"	1 $\frac{1}{16}$ "													
3"	1 $\frac{1}{4}$ "													
3"	1 $\frac{1}{2}$ "													
4"	2"													

Safety factor 1
 Safety factor 2
 Stable region — safety factor 3:1

Safe buckling loading shown at a maximum pressure of 17,5 MPa and at full stroke extension.

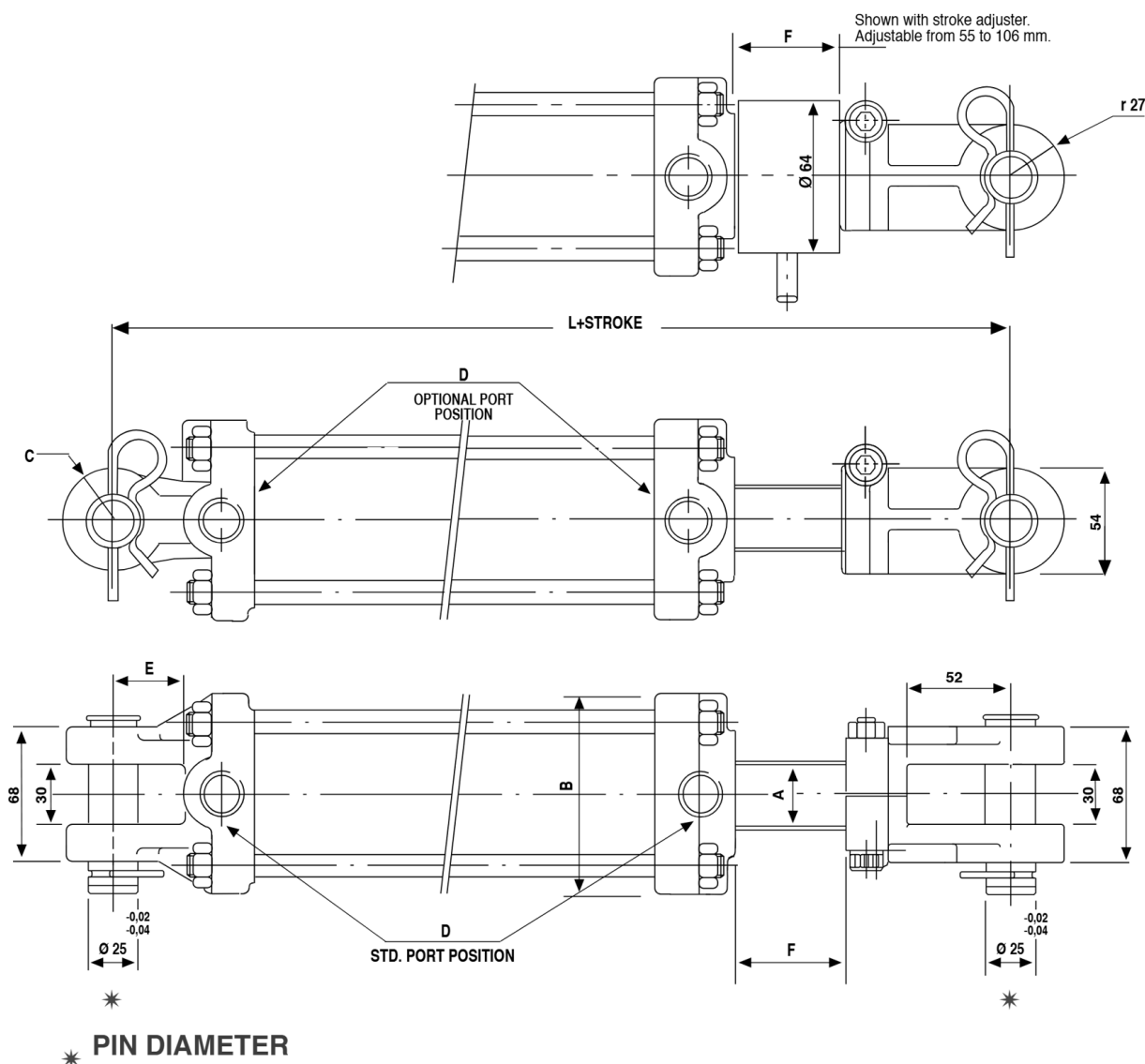
STANDARD RANGE — full part numbers

Stroke	Closed centres (mm)	Bore 2"	Bore 3"	Bore 4"
		Shaft 1 $\frac{1}{16}$ "	Shaft 1 $\frac{1}{4}$ "	Shaft 1 $\frac{1}{2}$ "
6"	412	DB20006-106	DB30006-125	
8"	463	DB20008-106		
8"-A	514	DB20008-106A	DB30008-125A	DB40008-125A
DE8 A	514		DE30008-125A	
10"	514	DB20010-106	DB30010-125	DB30010-150
12"	565	DB20012-106	DB30012-125	DB30012-150
14"	616	DB20014-106	DB30014-125	DB30014-150
16"	666	DB20016-106	DB30016-125	DB30016-150
18"	717	DB20018-106	DB30018-125	DB30018-150
20"	768		DB30020-125	DB30020-150
24"	870	DB20024-106	DB30024-125	DB30024-150
28"	971			DB30028-150
30"	1022			DB30030-150
36"	1174			DB30036-150

Contact Hydraulic Squad to confirm availability and lead time on any size.

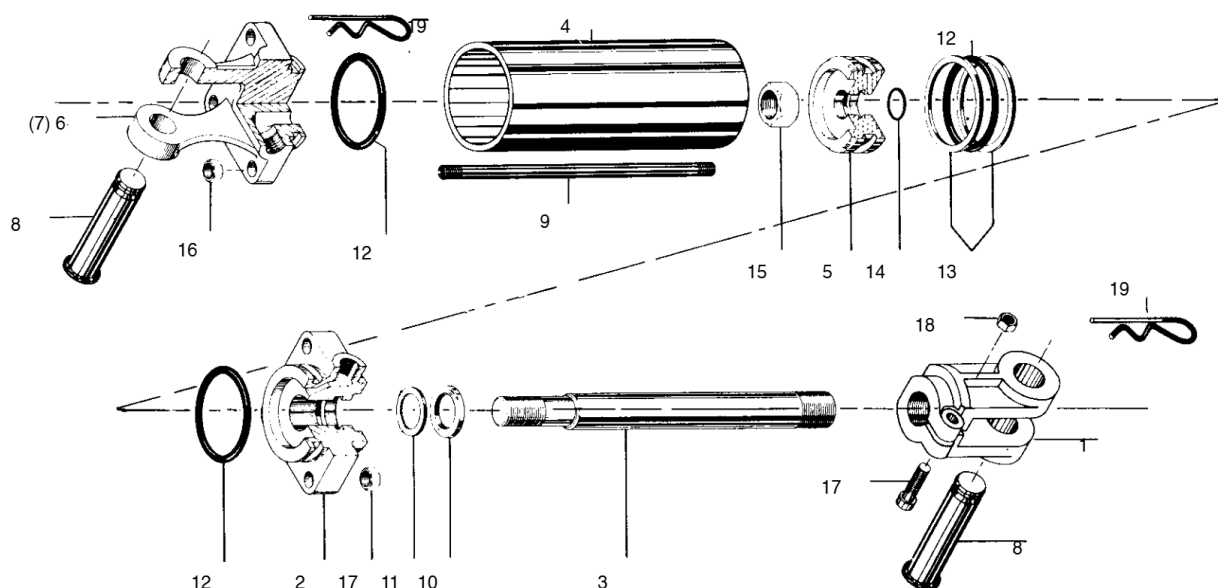
DIMENSIONS

ALL DIMENSIONS IN MM UNLESS STATED



Bore		2" (50,8 mm)	3" (76,2 mm)		4" (101,6 mm)	
Dimension	Rod diameter	1 ¹ / ₁₆ " (27 mm)	1 ¹ / ₄ " (31,75 mm)	1 ¹ / ₂ " (38,1 mm)	1 ³ / ₄ " (31,75 mm)	2" (50,8 mm)
A	UNF thread form	1 ¹ / ₁₆ "-12UNF	1 ¹ / ₄ "-12UNF	1 ¹ / ₄ "-12UNF	1 ¹ / ₄ "-12UNF	1 ¹ / ₄ "-12UNF
B		78		105		128
C		25		26		30
D	Port	3 ³ / ₈ " NPT		1 ¹ / ₂ " NPT		
E			36		44	
F	Without shaft extension			4		
	With shaft extension			55		
L	Without shaft extension			260		
	With shaft extension			311		

Overall closed length = L + stroke. Pin diameter Ø25 (-0,02 / -0,04). Stroke adjuster adjustable from 55 to 106 mm.



Ref.	Description	Qty	Bore 2"	Bore 3"		Bore 4"	
			Rod 1 1/16"	Rod 1 1/4"	Rod 1 1/2"	Rod 1 3/4"	Rod 2"
1	Shaft clevis	1	TR3003	TR3006	TR3006	TR3006	TR3006A
2	Head	1	TR3102	TR3122	TR3124	TR3152	TR3154
3	Shaft (note 1)	1	TR00XX	TR01XX	TR02XX	TR1008B	TR03XX
4	Barrel (note 1)	1	TR10XX	TR12XX		TR1508	TR15XX
5	Piston	1	TR3202	TR3222		TR3252	
6	Base clevis (1 port) STD	1	TR3302	TR3322		TR3352	
7	Base clevis (2 ports)	1	TR3304	TR3323		TR3353	
8	Anchor pin	2			TR5100		
9	Tie rod (note 1)	4	TR20XX	TR21XX		TR22XX	TR22XX
10	Wiper	1					
11	Gland seal	1					
12	O-ring	3	All items are part of the seal kit TRSK... (ref. 20)				
13	Back-up ring	2					
14	O-ring (piston)	1					
15	Nut (piston)	1		TR5200		TR5205	
16	Nut (tie rod)	8	TR5300	TR5302		TR5305	
17	Cap screw	1			TR5400		
18	Nut (clevis)	1			TR5300		
19	R clip	2			TR5500		
20	Seal kit (items 10-14)	1	TRSK200 106	TRSK300 125	TRSK300 150	TRSK400 125	TRSK400 200

Note 1: when ordering, replace XX with the stroke in inches as per the ordering code. E.g. the spare shaft for a 3" cylinder with a 1 1/4" shaft and 10" stroke is **TR0110**.



CONTACT US

For quotations, sizing, availability and spares on tie-rod cylinders, contact Hydraulic Squad.

Telephone +27 87 822 1376

Mobile +27 71 377 9364

Email sales@hydraulicsquad.co.za

Web www.hydraulicsquad.co.za

Address Unit 2B, 22 Mulder Street, Bronkhorstspuit, 1020, Gauteng