



PENCYL

Stainless Steel Cylinders

Areas, Performance Data & Weights

Cylinder sizes

SERIES	BORE mm	ROD mm	BORE		AREA ROD		ANNULUS	
			cm ²	in ²	cm ²	in ²	cm ²	in ²
6	10	6	0.785	0.175	0.283	0.044	0.502	0.131
10	16	10	2.011	0.312	0.785	0.175	1.226	0.137
14	20	14	3.142	0.487	1.539	0.239	1.603	0.248
17	25	18	4.909	0.761	2.545	0.394	2.364	0.367

Conversions

1 cm² = 0.155 in²
 1 in² = 6.452 cm²
 1 bar = 1.020 Kg/cm² = 14.504 lb/in²
 1 Kg/cm² = 0.980 bar = 14.233 lb/in²
 1 atm = 1.033 Kg/cm² = 14.700 lb/in²
 1 lbf = 4.450N
 1 bar = 0.100 Mega Pascals (MPa)

Forces

PUSH FORCE (tonnes) = $\frac{\text{BORE AREA (cm}^2\text{)} \times \text{PRESSURE (bars)}}{1000}$
 PULL FORCE (tonnes) = $\frac{\text{ANNULAR AREA (cm}^2\text{)} \times \text{PRESSURE (bars)}}{1000}$
 PUSH FORCE (tons) = $\frac{\text{BORE AREA (in}^2\text{)} \times \text{PRESSURE (lb/in}^2\text{)}}{2240}$
 PULL FORCE (tons) = $\frac{\text{ANNULAR AREA (in}^2\text{)} \times \text{PRESSURE (lb/in}^2\text{)}}{2240}$

Weights

SERIES	BORE	ROD	MAX BASE WT ZERO STROKE Kgs	SPHERICAL REAR EYE Kgs	SPHERICAL ROD EYE Kgs	SCREWED CLEVIS Kgs	ADD PER MM OF STROKE Kgs
6	10	6	0.37	0.012	0.014	0.014	0.002
10	16	10	0.55	0.035	0.038	0.050	0.003
14	20	14	0.86	0.087	0.167	0.080	0.005
17	25	18	1.22	0.17	0.20	0.110	0.007

Maximum base weights of Pencyl Lite hard anodised aluminium cylinders are 50% of above



Subsea and industrial hydraulic manufacturers

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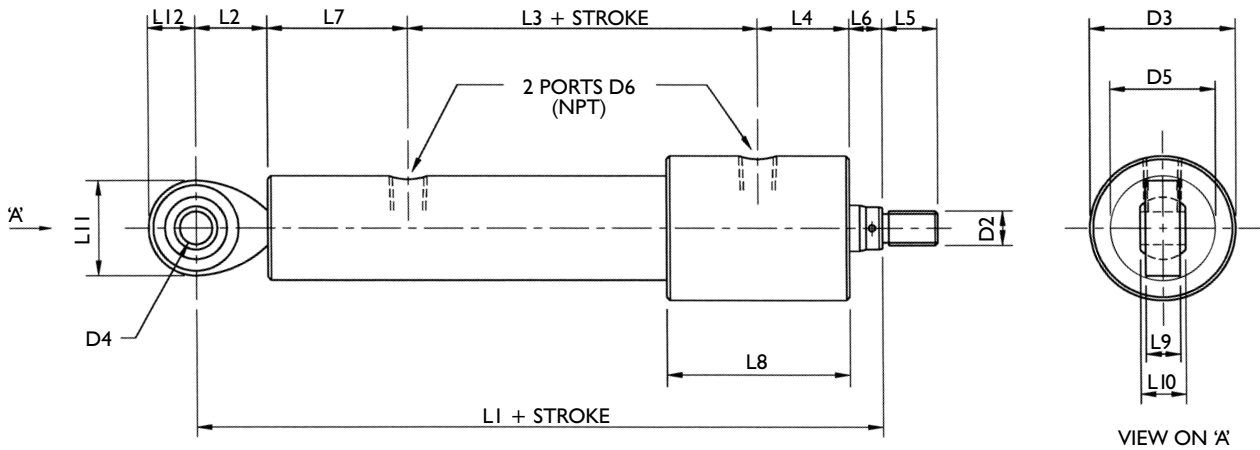


PENCYL

Stainless Steel Cylinders

Rear Swivel Eye Mounting

Series 6-17



SERIES	BORE	ROD	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
6	10	6	M5-0.80	32	5	20	1/16	98	13	33	19	8	6	27	40	6	8	16	8
10	16	10	M8-1.25	38	8	25	1/8	125	17	40	25	12	8	35	50	9	12	22	11
14	20	14	M10-1.50	44	12	31.75	1/8	149	21	49	26	18	10	43	54	12	16	30	15
17	25	18	M12-1.75	50	16	38	1/8	168	26	48	32	22	13	50	60	15	21	38	19

Stainless steel swivel eyes and fork clevises c/w pins available for all sizes of Pencyl

Specifications

- Cylinder externals** - BS970 316 S16 Stainless steel
- Cylinder internals** - DGS 1043 Aluminium bronze
- Piston rod** - BS970 431 S29-'T' Stainless steel hard chrome plated
- Working pressure** - 350 bar max
- Temperature range** - -40°C to +80°C



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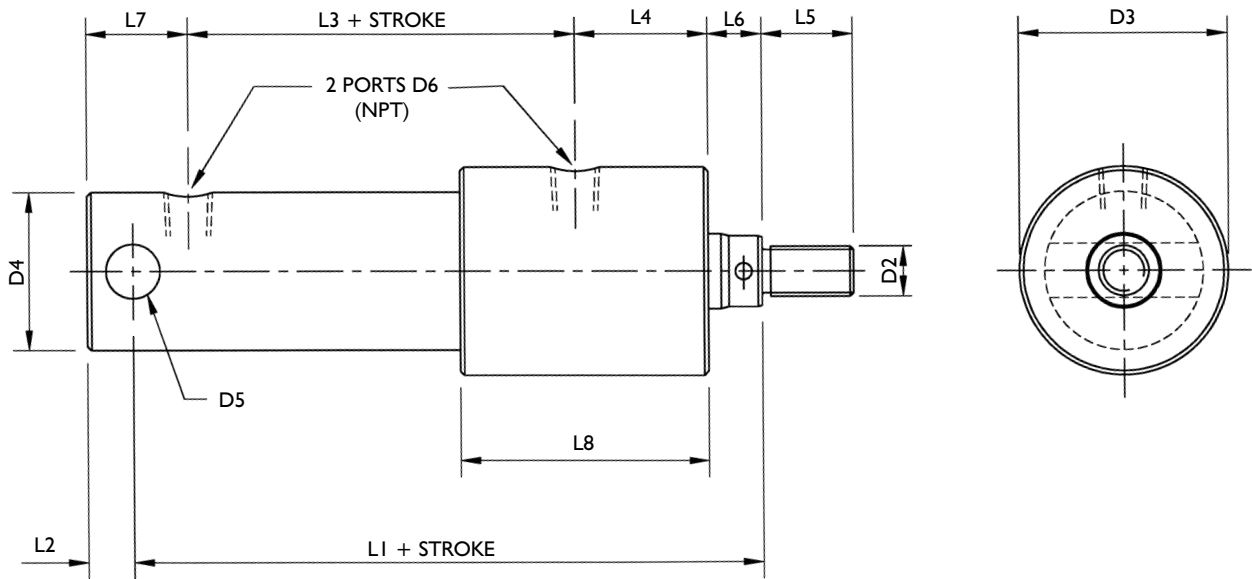


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Stainless Steel Cylinders

Rear Eye Mounting

Series 6-17



SERIES	BORE	ROD	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6	L7	L8
6	10	6	M5-0.80	32	20	5	1/16	68	6	33	19	8	6	16	40
10	16	10	M8-1.25	38	25	8	1/8	85	8	40	25	12	8	20	50
14	20	14	M10-1.50	44	31.75	10	1/8	97	9	49	26	18	10	21	54
17	25	18	M12-1.75	50	38	12	1/8	107	12	48	32	22	13	25	60

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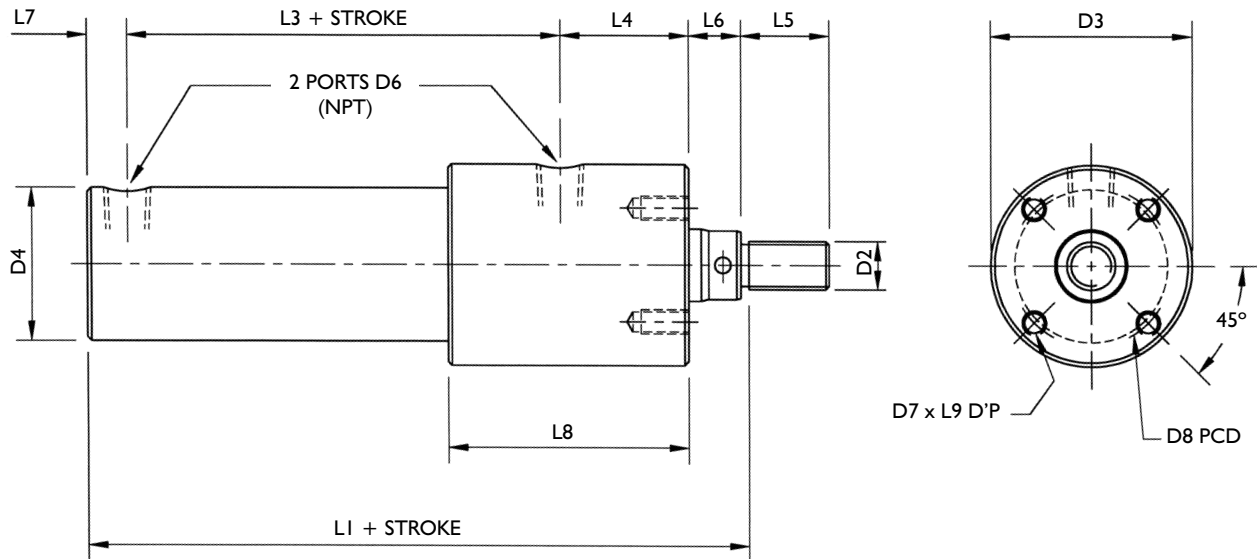


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Stainless Steel Cylinders

Front Face Mounting

Series 6-17



SERIES	BORE	ROD	D2	D3	D4	D6	D7	D8	L1	L3	L4	L5	L6	L7	L8	L9
6	10	6	M5-0.80	32	20	1/16	M4-0.7	24	65	33	19	8	6	7	40	8
10	16	10	M8-1.25	38	25	1/8	M5-0.8	29	83	40	25	12	8	10	50	10
14	20	14	M10-1.50	44	31.75	1/8	M6-1.0	34	95	49	26	18	10	10	54	12
17	25	18	M12-1.75	50	38	1/8	M6-1.0	40	102	48	32	22	13	10	60	12

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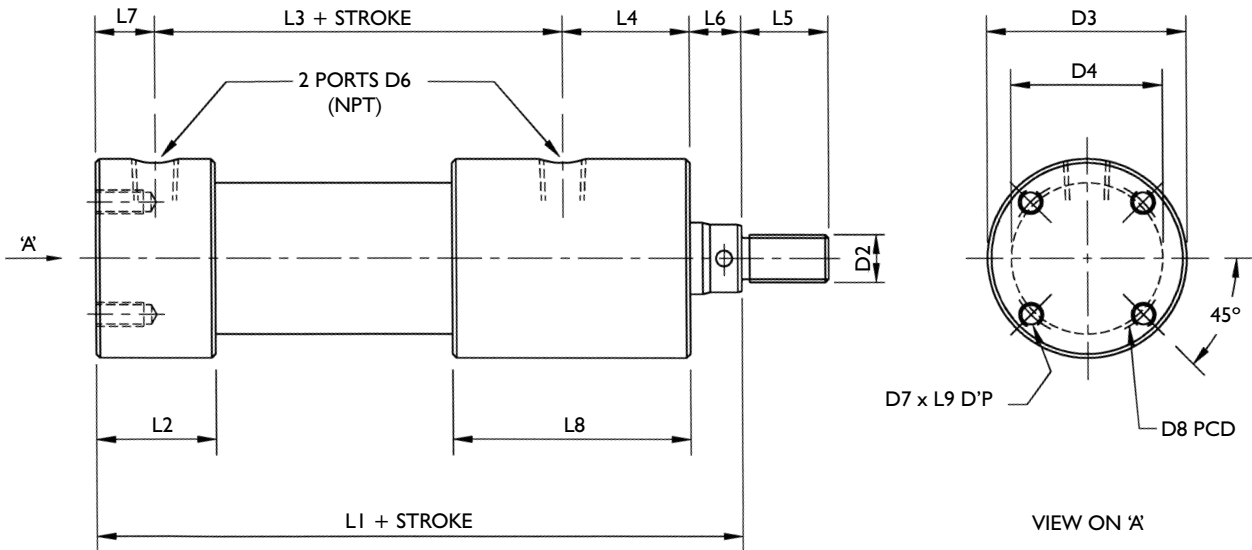


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Stainless Steel Cylinders

Rear Face Mounting

Series 6-17



SERIES	BORE	ROD	D2	D3	D4	D6	D7	D8	L1	L2	L3	L4	L5	L6	L7	L8	L9
6	10	6	M5-0.80	32	20	1/16	M4-0.7	24	65	15	33	19	8	6	7	40	8
10	16	10	M8-1.25	38	25	1/8	M5-0.8	29	83	22	40	25	12	8	10	50	10
14	20	14	M10-1.50	44	31.75	1/8	M6-1.0	34	95	22	49	26	18	10	10	54	12
17	25	18	M12-1.75	50	38	1/8	M6-1.0	40	102	22	48	32	22	13	10	60	12

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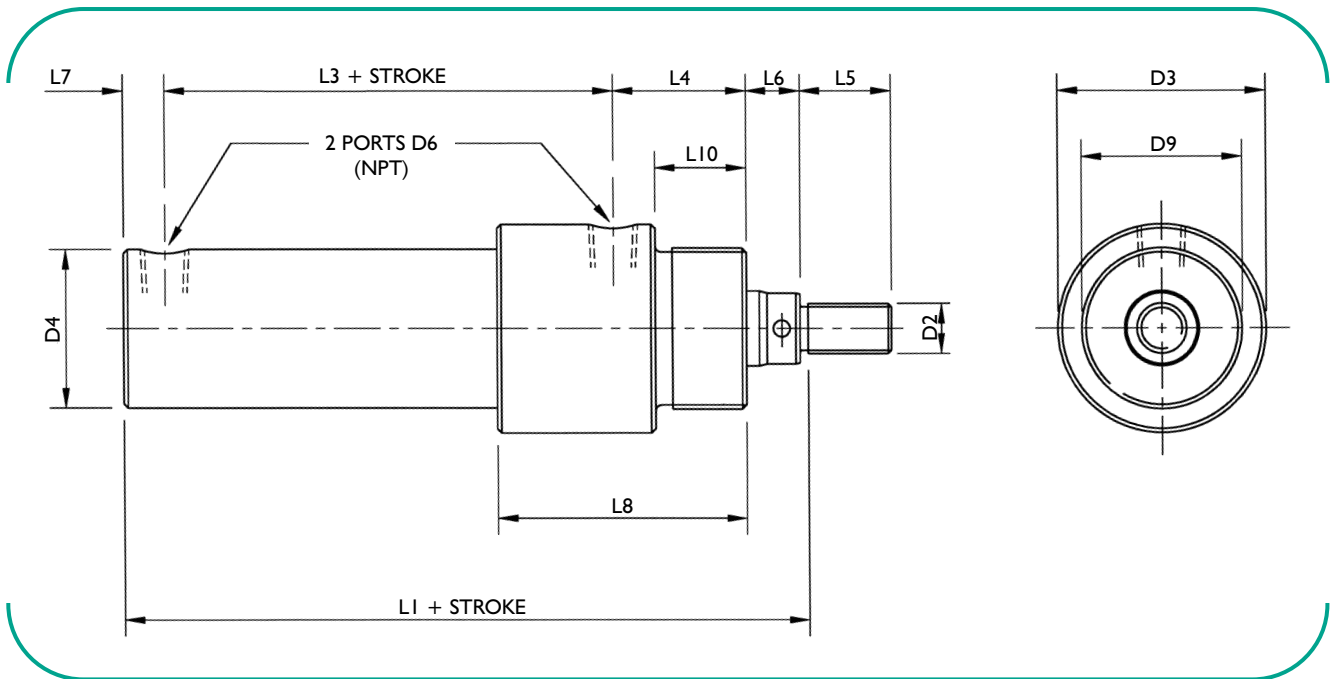


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Stainless Steel Cylinders

Nose Thread Mounting

Series 6-17



SERIES	BORE	ROD	D2	D3	D4	D6	D9	L1	L3	L4	L5	L6	L7	L8	L10
6	10	6	M5-0.80	32	20	1/16	M22-1.5	65	33	19	8	6	7	40	10
10	16	10	M8-1.25	38	25	1/8	M30-1.5	83	40	25	12	8	10	50	13
14	20	14	M10-1.50	44	31.75	1/8	M36-2.0	95	49	26	18	10	10	54	16
17	25	18	M12-1.75	50	38	1/8	M42-2.0	102	48	32	22	13	10	60	20

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Rod End Mountings

<p>CLEVIS SCREWED (PIN & CLIPS SUPPLIED)</p>	SERIES	A	B	C	D	E	F	G	H
	6	M5-0.8	20	26	5	10	10	5	10
	10	M8-1.25	32	42	8	16	16	8	16
	14	M10-1.50	40	52	10	20	20	10	20
	17	M12-1.75	48	62	12	24	24	12	24
<p>SWIVEL EYE SCREWED (PIN NOT SUPPLIED)</p>	SERIES	A	B	C	D	E	F	G	H
	6	M5-0.8	27	35	8	6	16	5	8
	10	M8-1.25	36	47	12	9	22	8	13
	14	M12-1.75	50	65	16	12	30	12	18
	17	M16-2.0	64	83	21	15	38	16	24
<p>PAD EYE SCREWED (PIN NOT SUPPLIED)</p>	SERIES	A	B	C	D	E	F		
	6	M5-0.8	18	25.5	10	15	5		
	10	M8-1.25	24	34	12	20	8		
	14	M10-1.5	26	38.5	15	25	10		
	17	M12-1.75	30	45	20	30	12		
<p>PAD EYE WELDED (PIN NOT SUPPLIED)</p>	SERIES	B	C	D	E	F			
	6	18	25.5	10	15	5			
	10	24	34	12	20	8			
	14	26	38.5	15	25	10			
	17	30	45	20	30	12			



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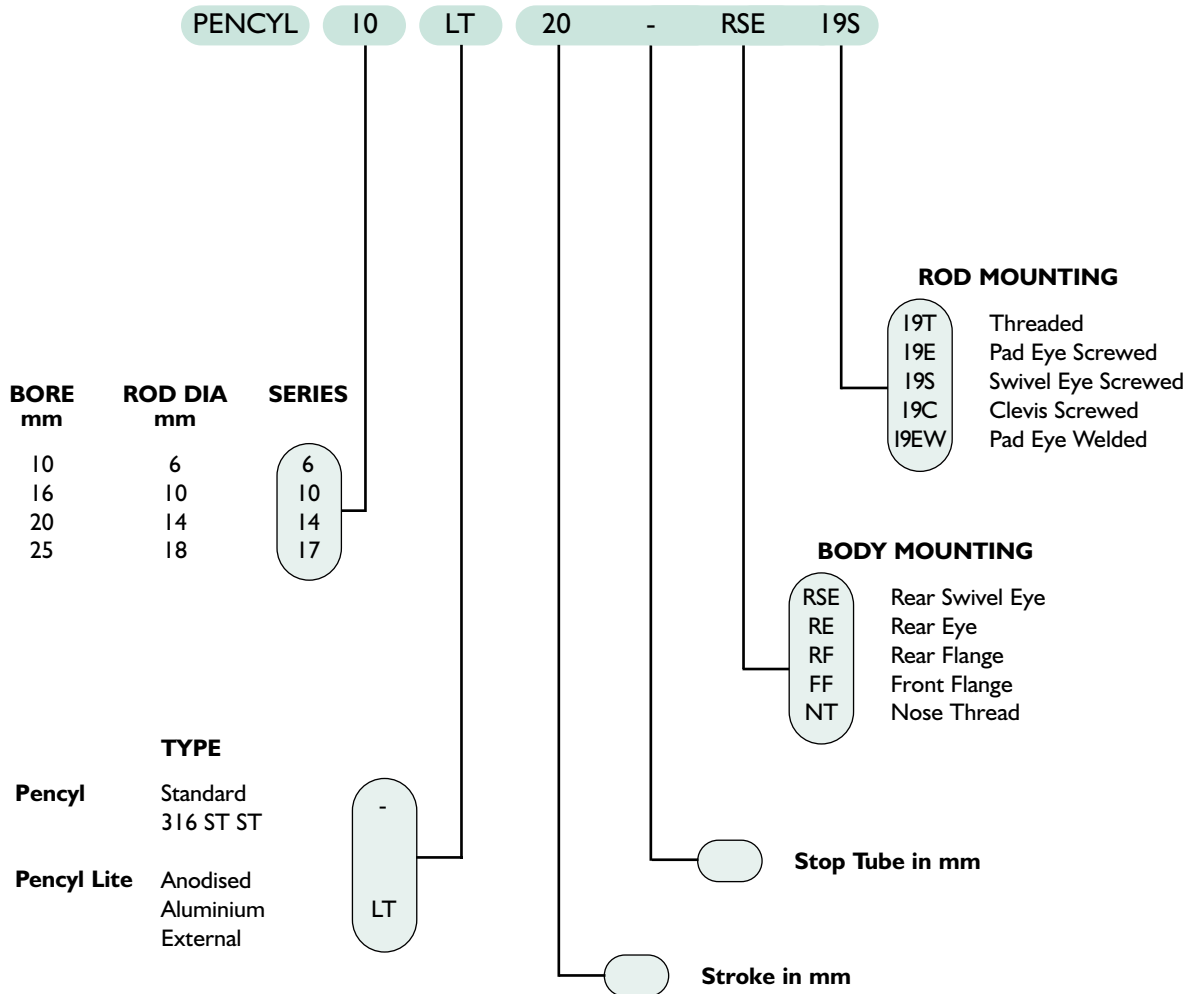


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Ordering Code

Example



Optional extras

1. Through-rod design
2. Internal electronic rod position indication - 17 series only



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