



**KAPPA 250 SERIES PRODUCT BROCHURE**

**250**

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A PRECISION ENGINEERED SERIES OF HYDRAULIC CYLINDERS

# KAPPA 250 SERIES PRODUCT BROCHURE

## PRECISION HYDRAULIC CYLINDERS FROM KAPPA ENGINEERING

Kappa Engineering's tried, tested and trusted product range is focused on precision hydraulic cylinders. Within the hydraulic field, there is virtually no cylinder we cannot manufacture or repair. We can design any custom hydraulic cylinder to fit any project you can throw at us. Kappa cylinders are manufactured to the highest quality standards. Our production facility is serviced by state-of-the-art machinery, and our artisans are well renowned for their precision and accuracy.

We deliver high-quality cylinders on time!

## KAPPA ENGINEERING 250 SERIES

The Kappa 250 Series is a range of welded body type hydraulic cylinders able to withstand high pressures for the toughest applications. This cylinder is a high quality product that will lift massive loads with ease. You can order the 250 Series with any mounting type or port position you require. We manufacture every component of the cylinder in-house and we will save the drawings for when you need more. All of our cylinders are supported by our repairs department and a fleet of vehicles to convey parts at your convenience.

- The Kappa 250 Series of hydraulic cylinders has been designed to give a high level of reliability in the earth moving, open-cast mining, underground mining, excavation, exploration and waste removal applications.
- Only the highest grade chrome bar is used to ensure that rods have a longer life and reduced friction on gland seals.
- Only DIN 2391 ST52 precision honed tube is used to increase seal life.
- Induction hardened chrome rods available, depending on the application.
- Alternative post and port positions available, depending on the application.
- Any cylinder manufactured to any design or requirement and according to customer specification.

## KAPPA 250 SERIES TECHNICAL DATA

Nominal Pressure	• 25.0 Mpa (250 BAR - 3625psi)
Static Mounting Pressure	• 37.5 Mpa (375 BAR - 5440psi)
Mounting Position	• Optional
Hydraulic Fluid	• Mineral Oil to DIN51524
Fluid Temp. Range	• -30°C to +100°C
Stroking Speed	• Up to 1.0 m/s

## HYDRAULIC CYLINDER FORMULA

### CYLINDER CAPACITY FLOW RATE IN LITERS PER MINUTE

- $L/min = AREA \times SPEED = \varnothing (CM) \times \varnothing (CM) \times SPEED (m/s) \times 4.71$
- $L/min = 10.1 \text{ CM} \times 10.1 \text{ CM} \times .02 \text{ m/s} \times 4.71 = 9 \text{ L/min}$

### CYLINDER STROKE TIME IN SECONDS PER STROKE

- $SECONDS = \frac{STROKE \text{ LENGTH (CM)}}{SPEED (m/s)} / 100$
- $SECONDS = \frac{10 \text{ CM}}{.02 \text{ m/s}} / 100 = 5 \text{ SECONDS}$

### CYLINDER FORCE IN KG

- $KG = AREA \times PRESSURE = \varnothing (CM) \times \varnothing (CM) \times PRESSURE (BAR) \times \frac{3.14}{4}$
- $KG = 10.1 \text{ CM} \times 10.1 \text{ CM} \times 180 \text{ BAR} \times \frac{3.14}{4} = 14 \text{ 414 KG}$
- $KG = \frac{KG}{1000}$
- $\frac{14 \text{ 414 KG}}{1000} = 14.41 \text{ TONS}$

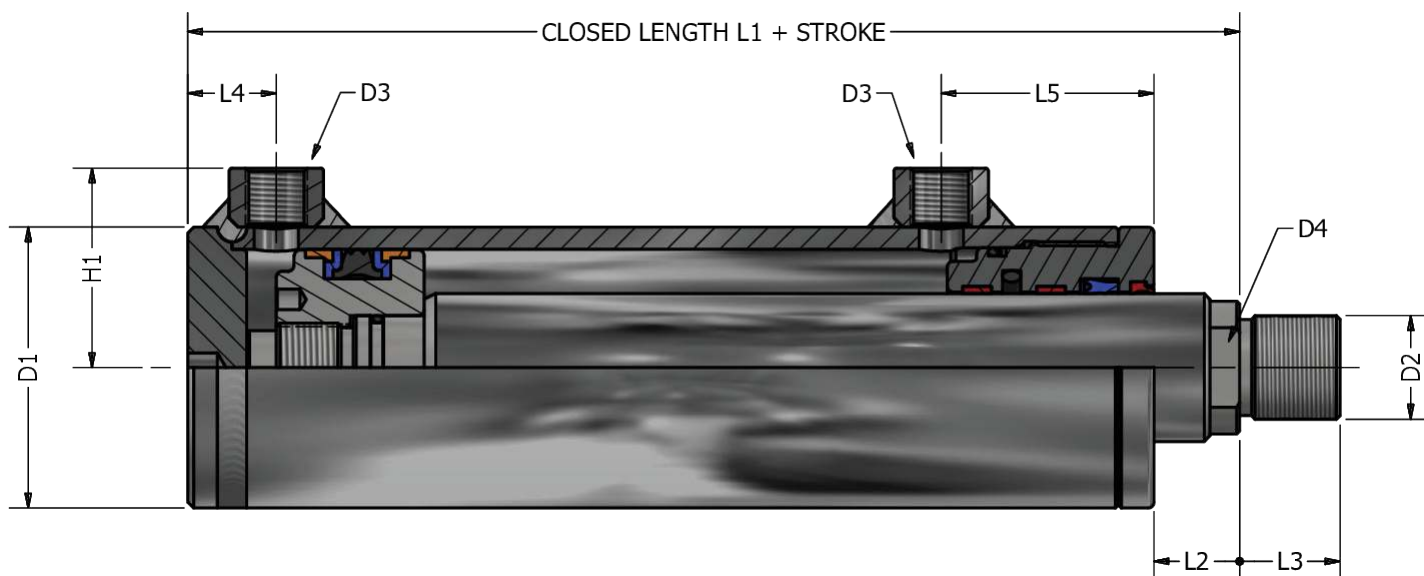
### CYLINDER FORCE IN KG'S

- $KG = AREA \times PRESSURE = \varnothing (CM) \times \varnothing (CM) \times PRESSURE (BAR) \times \frac{3.14}{4}$
- $KG = 10.1 \text{ cm} \times 10.1 \text{ cm} \times 180 \text{ BAR} \times \frac{3.14}{4} = 14 \text{ 414 KG}$
- $TONS = \frac{KG}{1000}$
- $\frac{14 \text{ 414 KG}}{1000} = 14.41 \text{ TONS}$

# KAPPA 250 SERIES BROCHURE

## HYDRAULIC CYLINDER BASIC DIMENSIONS

	D1	D2	D3	D4	H1	L1	L2	L3	L4	L5
40/20   40/25	Ø 50	M16 x1.5P	G 3/8-19	17 A/F	37	116	10	15	25	45
50/25   50/32	Ø 60	M16 x1.5P	G 3/8-19	19 A/F	42	123	13	15	27	49
63/32   63/40	Ø 75	M22 x1.5P	G 3/8-19	24 A/F	50	140	16	21	34	53,5
80/40   80/50	Ø 92	M35 x1.5P	G 1/2-14	36 A/F	61	156	16	34	36	64
100/50   100/65	Ø 115	M45 x1.5P	G 1/2-14	46 A/F	72	173	20	44	38	69
125/65   125/80	Ø 145	M58 x1.5P	G 3/4-14	60 A/F	90	199	20	55	52	75
160/80   160/100	Ø 185	M65 x1.5P	G 3/4-14	70 A/F	110	249	25	64	62	82
200/100   200/125	Ø 230	M80 x2P	G 1-11	90 A/F	133	277	25	68	76	85

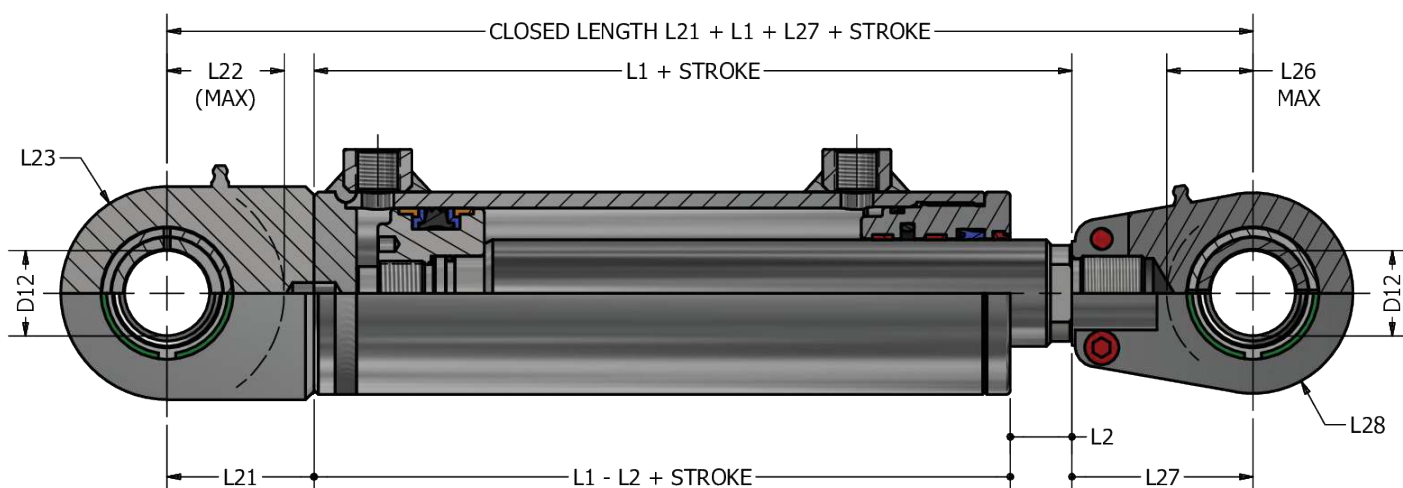


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# KAPPA 250 SERIES BROCHURE

## HYDRAULIC CYLINDER (SPHERICAL BEARING) BASIC DIMENSIONS

	D12	L1	L2	L21	L22	L23	L26	L27	L28
40/20   40/25	Ø 20	116	10	38	32	25	25	50	28
50/25   50/32	Ø 25	123	13	45	38	27.5	25	50	28
63/32   63/40	Ø 30	140	16	51	43	32.5	30	60	32
80/40   80/50	Ø 40	156	16	69	59	50	45	85	47
100/50   100/65	Ø 50	173	20	88	78	61.5	55	105	58
125/65   125/80	Ø 60	199	20	100	85	70	65	130	65
160/80   160/100	Ø 70	249	25	115	100	82	75	150	77
200/100   200/125	Ø 80	277	25	141	126	90	80	170	88

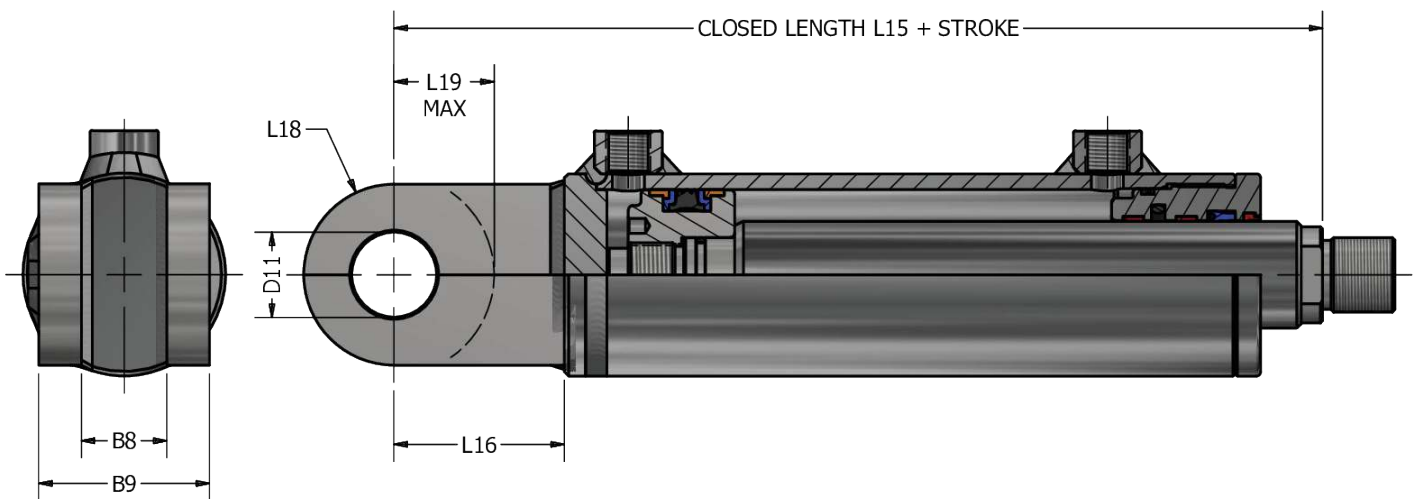


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# KAPPA 250 SERIES BROCHURE

## FEMALE CLEVIS MOUNTING CYLINDER BASIC DIMENSIONS

	B8	B9	D11	L15	L16	L18	L19
40/20   40/25	22	50	Ø 20	156	37	25	32
50/25   50/32	26	55	Ø 25	163	42	30	32
63/32   63/40	33	72	Ø 30	185	50	37.5	37
80/40   80/50	41	90	Ø 40	216	61	45	50
100/50   100/65	51	111	Ø 50	243	72	50	60
125/65   125/80	61	131	Ø 60	279	90	65	65
160/80   160/100	71	151	Ø 70	339	110	70	75
200/100   200/125	81	171	Ø 80	377	133	80	85

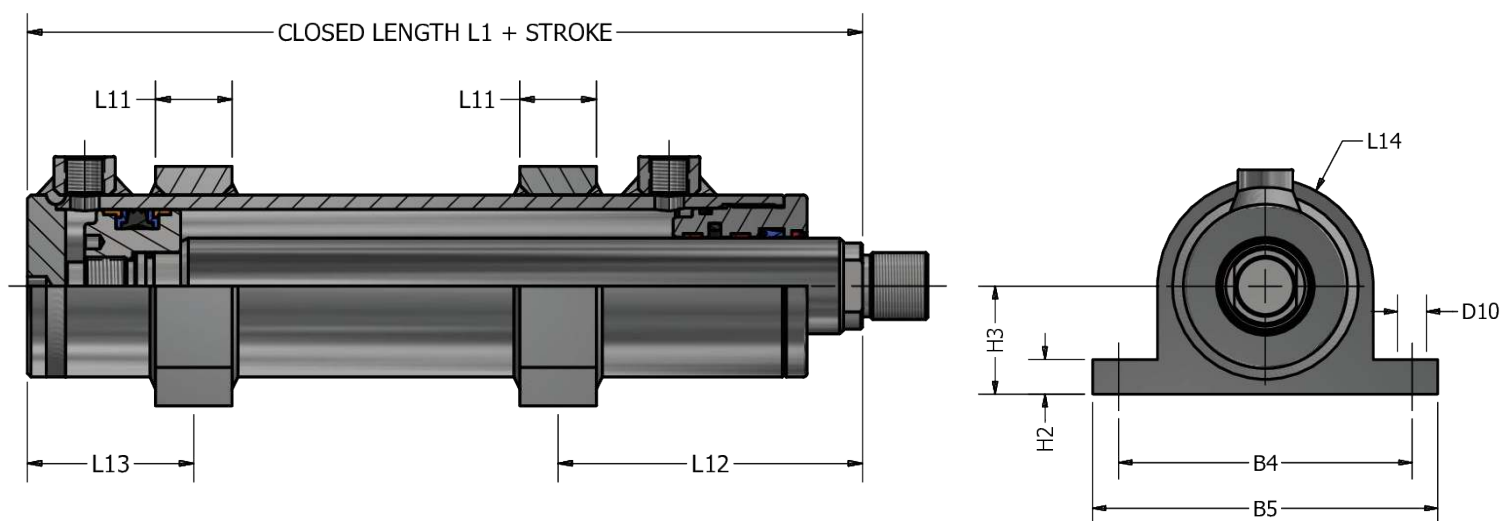


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# KAPPA 250 SERIES BROCHURE

## FEMALE CLEVIS MOUNTING CYLINDER BASIC DIMENSIONS

	B4	B5	D10	H2	H3	L1	L11	L12	L13	L14
40/20   40/25	110	140	Ø 13	12	35	116	25	90	60	33
50/25   50/32	115	145	Ø 13	15	40	123	25	98	60	38
63/32   63/40	135	165	Ø 13	15	50	140	30	105	70	45
80/40   80/50	150	185	Ø 17	20	55	156	40	126	80	55
100/50   100/65	190	225	Ø 17	20	70	173	50	140	90	68
125/65   125/80	235	275	Ø 21	25	85	199	60	155	110	85
160/80   160/100	280	320	Ø 21	25	110	249	70	195	130	109
200/100   200/125	340	385	Ø 25	35	140	277	80	205	160	135

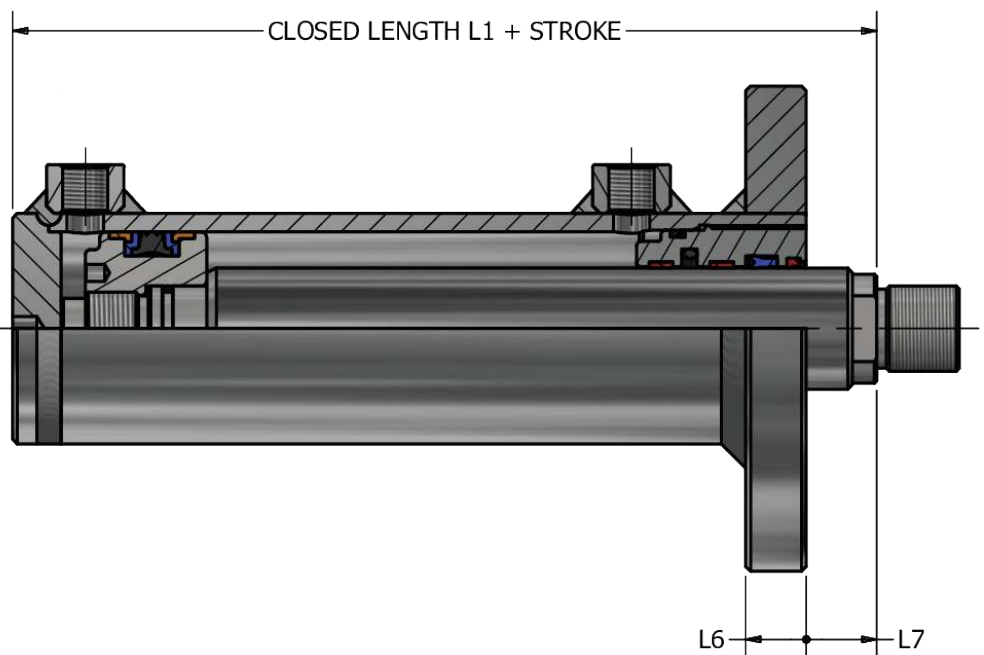
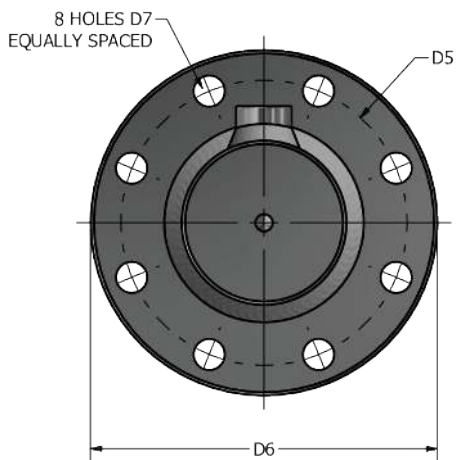


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# KAPPA 250 SERIES BROCHURE

## FRONT FLANGED HYDRAULIC CYLINDER BASIC DIMENSIONS

	D5	D6	D7	L1	L6	L7
40/20   40/25	Ø 120	Ø 140	Ø 11	116	21	18
50/25   50/32	Ø 125	Ø 145	Ø 11	123	21	18
63/32   63/40	Ø 145	Ø 170	Ø 14	140	25	20
80/40   80/50	Ø 165	Ø 200	Ø 18	156	26	24
100/50   100/65	Ø 200	Ø 240	Ø 22	173	29	28
125/65   125/80	Ø 235	Ø 270	Ø 22	199	32	34
160/80   160/100	Ø 280	Ø 320	Ø 22	249	39	38
200/100   200/125	Ø 340	Ø 385	Ø 26	277	48	42

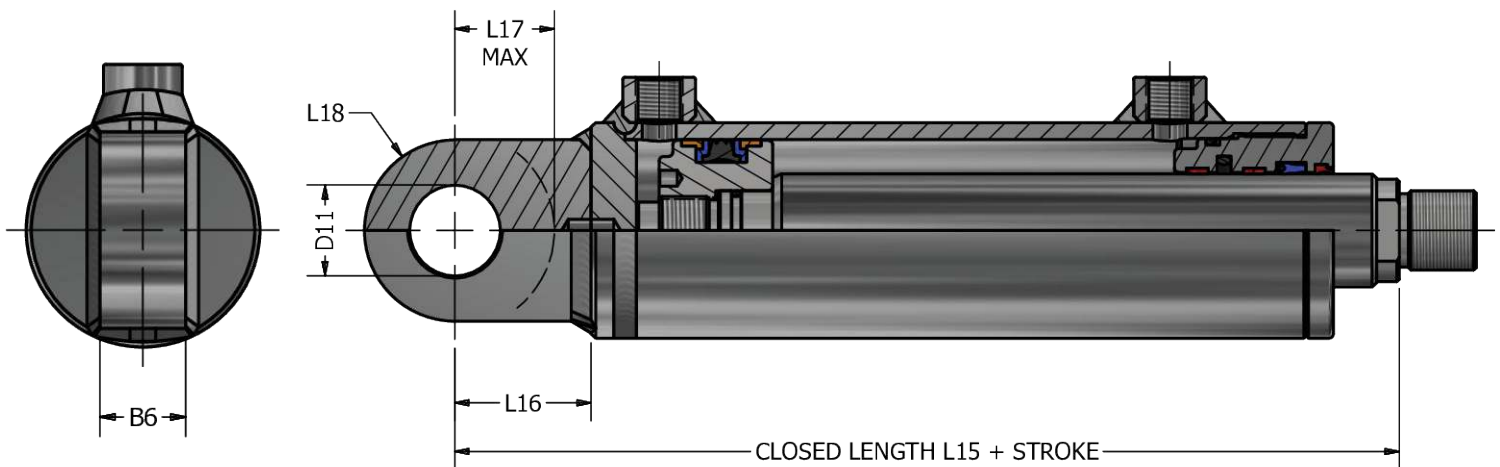


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# KAPPA 250 SERIES **BROCHURE**

## MALE CLEVIS MOUNTED CYLINDER BASIC DIMENSIONS

	B6	D11	L15	L16	L18	L17
40/20   40/25	20	Ø 20	156	37	25	30
50/25   50/32	25	Ø 25	163	42	30	32
63/32   63/40	32	Ø 30	185	50	37.5	37
80/40   80/50	40	Ø 40	216	61	45	50
100/50   100/65	50	Ø 50	243	72	50	60
125/65   125/80	60	Ø 60	279	90	65	65
160/80   160/100	70	Ø 70	339	110	70	75
200/100   200/125	80	Ø 80	377	133	80	85



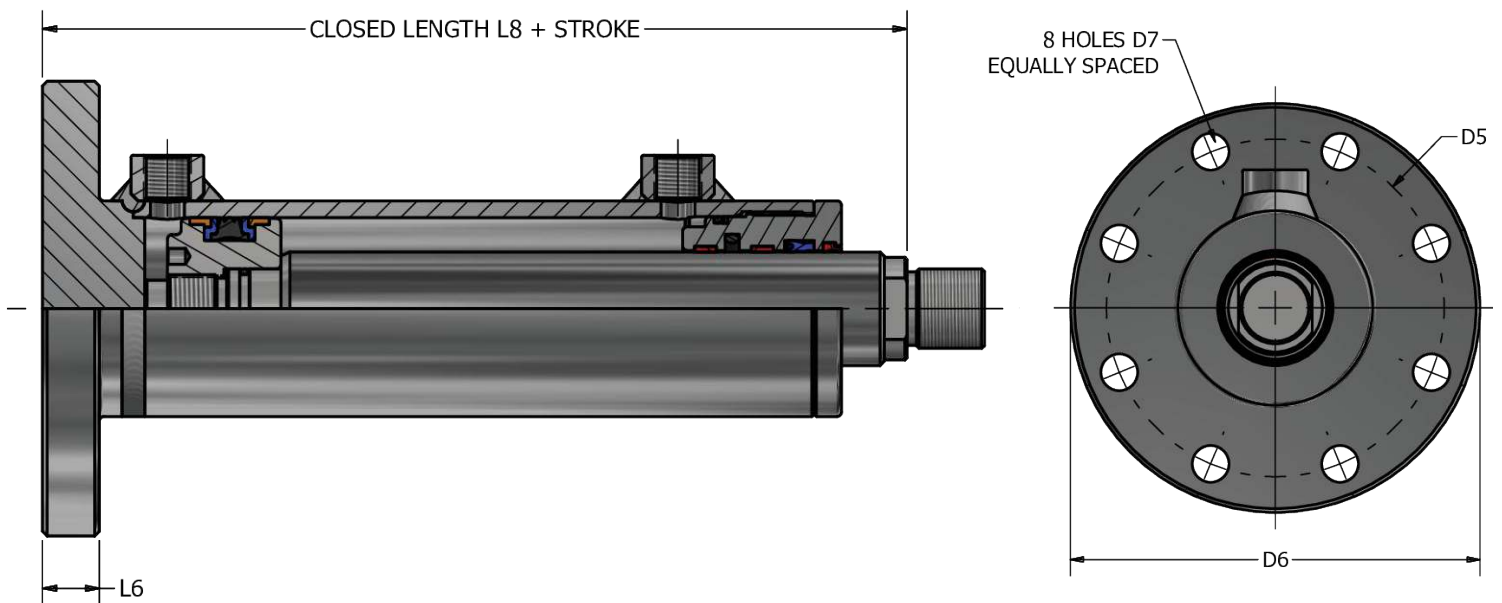
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# KAPPA 250 SERIES BROCHURE

## REAR FLANGED HYDRAULIC CYLINDER BASIC DIMENSIONS

	D5	D6	D7	L6	L8
40/20   40/25	Ø 120	Ø 140	Ø 11	21	134
50/25   50/32	Ø 125	Ø 145	Ø 11	21	141
63/32   63/40	Ø 145	Ø 170	Ø 14	25	160
80/40   80/50	Ø 165	Ø 200	Ø 18	26	180
100/50   100/65	Ø 200	Ø 240	Ø 22	29	201
125/65   125/80	Ø 235	Ø 270	Ø 22	32	233
160/80   160/100	Ø 280	Ø 320	Ø 22	39	287
200/100   200/125	Ø 340	Ø 385	Ø 26	48	319

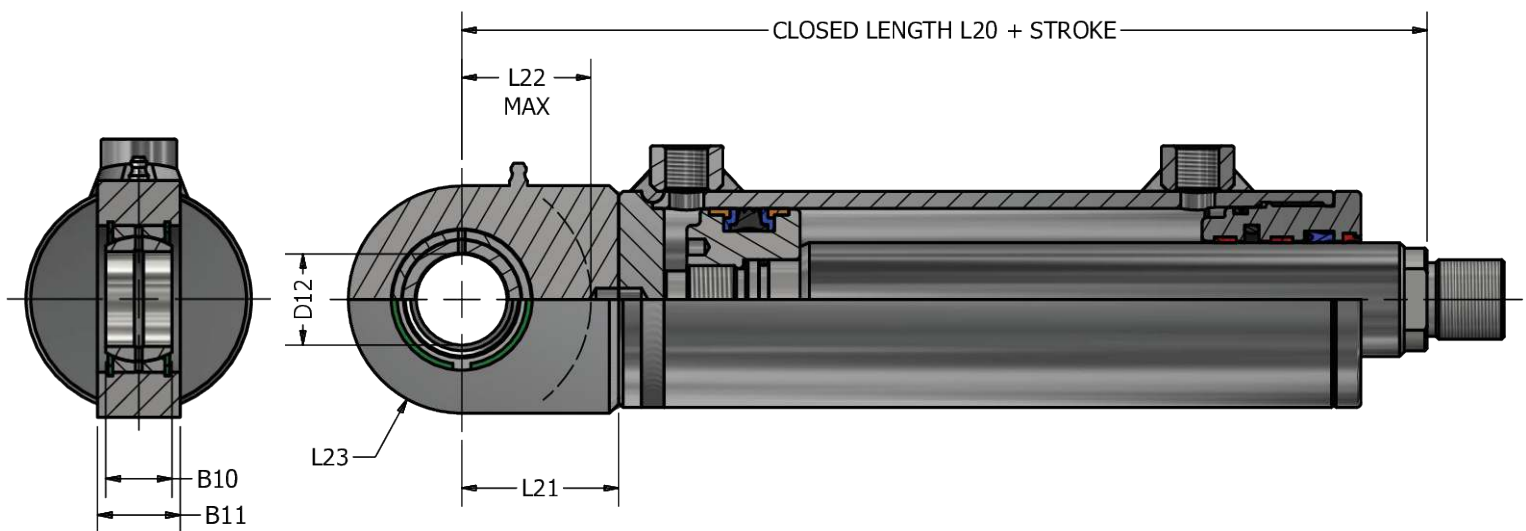


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# KAPPA 250 SERIES **BROCHURE**

## REAR SPHERICAL CLEVIS HYDRAULIC CYLINDER BASIC DIMENSIONS

	B10	B11	D12	L20	L21	L22	L23
40/20   40/25	15	19	Ø 20	154	38	32	25
50/25   50/32	20	23	Ø 25	168	45	38	27.5
63/32   63/40	22	28	Ø 30	191	51	43	32.5
80/40   80/50	28	35	Ø 40	225	69	59	50
100/50   100/65	35	40	Ø 50	261	88	78	61.5
125/65   125/80	44	50	Ø 60	299	100	85	70
160/80   160/100	49	55	Ø 70	364	115	100	82
200/100   200/125	55	60	Ø 80	418	141	126	90

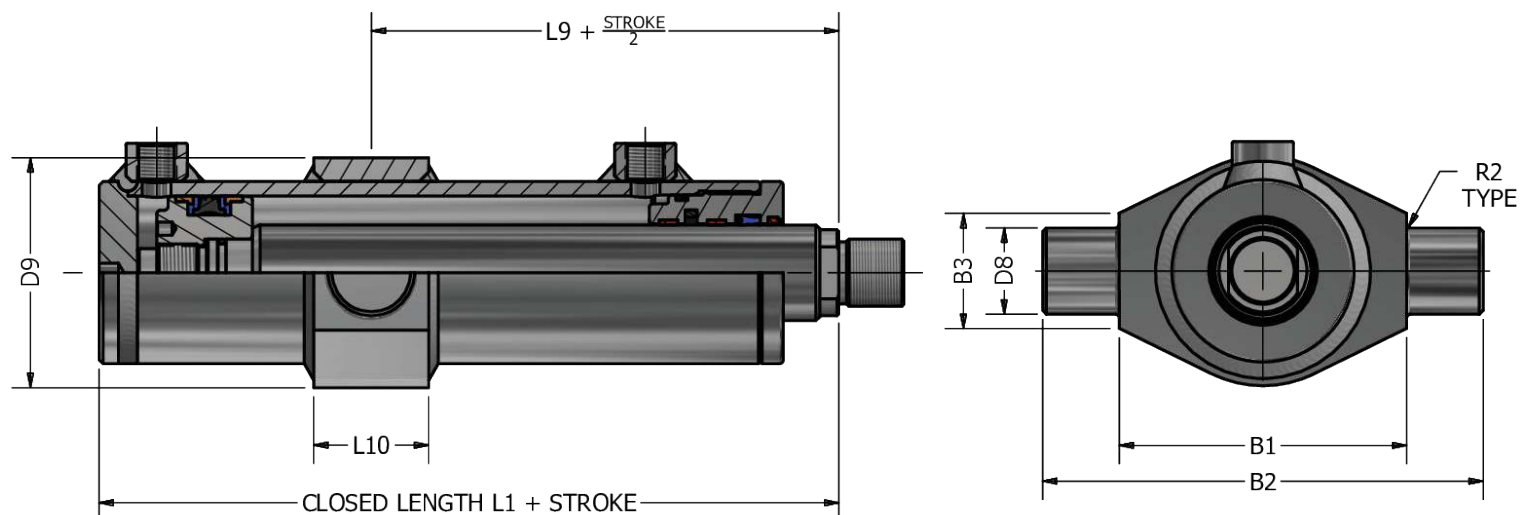


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# KAPPA 250 SERIES BROCHURE

## TRUNNION MOUNTING HYDRAULIC CYLINDER BASIC DIMENSIONS

	B1	B2	B3	D8	D9	L1	L9	L10
40/20   40/25	90	130	25	Ø 20	64	116	100	25
50/25   50/32	105	145	30	Ø 25	74	123	115	30
63/32   63/40	120	170	40	Ø 30	90	140	120	40
80/40   80/50	135	200	50	Ø 40	110	156	135	50
100/50   100/65	160	240	60	Ø 50	135	173	155	60
125/65   125/80	195	295	75	Ø 60	170	199	170	75
160/80   160/100	240	366	100	Ø 70	215	249	185	100
200/100   200/125	295	455	120	Ø 80	270	277	200	110



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## ABOUT KAPPA ENGINEERING

Kappa Engineering was established in 1987 as a general engineering company. Later, the company began specialising in manufacturing, repairing, remanufacturing, assembling, and testing hydraulic cylinders. Kappa Engineering has been synonymous with fast turnaround times and high-quality workmanship in the hydraulic industry for over three decades.

We are proud to say that we support the following industries:



**MINING**



**EARTH  
MOVING**



**DRILLING  
AND  
EXPLORATION**



**WASTE  
REMOVAL**





**TRANSPORT**




**AGRICULTURE**

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