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HYDRAULIC CYLINDER

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Note: The all details of the products including drawing and efficiency curve, please contact with us for more details. Email to guoke107@hotmail.com or Whatsapp +8613299042234

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DG Hydraulic Cylinders for Vehicle



DG - J 40 C - E₁ * - Y₃

Design number

Piston rod connecting type

L- threaded E-eye

Attachment: single eye

Pressure range: 8~16MPa

Bore size: 40mm

Piston rod: heavy duty

Double acting hydraulic cylinder with single piston rod

This is a double-acting hydraulic cylinder with single piston rod. Operating pressure is 16MPa, bore from 40~200mm, stroke ≤ 2000mm.

Technical Date

Model	Bore size (mm)	Piston area(cm ²)		Thrust(N)		Pull		Max. stroke(mm)
		Piston side	Rod end side	16MPa	16MPa	16MPa	16MPa	
DG-J40C-E ₄ *	40	12.57	8.63	20160	13800	1200	1200	
DG-J50C-E ₄ *	50	19.64	13.48	31410	21560	1200	1200	
DG-J63C-E ₄ *	63	31.17	21.17	49870	33870	1600	1600	
DG-J80C-E ₄ *	80	50.27	34.27	80430	54980	1600	1600	
DG-J90C-E ₄ *	90	63.62	43.98	101790	70360	2000	2000	
DG-J100C-E ₄ *	100	78.54	53.91	125660	86260	2000	2000	
DG-J110C-E ₄ *	110	94.99	63.38	151980	101410	2000	2000	
DG-J125C-E ₄ *	125	122.72	83.13	196350	133010	2000	2000	
DG-J140C-E ₄ *	140	153.86	103.62	246300	165870	2000	2000	
DG-J150C-E ₄ *	150	176.72	119.97	282750	191940	2000	2000	
DG-J160C-E ₄ *	160	200.96	136.38	321540	218210	2000	2000	
DG-J180C-E ₄ *	180	254.34	175.84	406940	281340	2000	2000	
DG-J200C-E ₄ *	200	314.16	219.23	502660	350770	2000	2000	

HSG*01 Series Hydraulic Cylinder

Connecting type



HSG * 01 -D / d E - □ □ □ □

Port connection: 1-Female thread

Cushion (see Table 3)

Piston rod end attachment (see Table 2)

Cylinder head and body connection (see Table1)

Pressure range: 16 MPa

Piston rod dia. (mm)

Bore size (mm)

Design number

Cylinder cover attachment: L-thread K-clip ring

Double-acting and single piston rod hydraulic cylinder

HSG*01 series cylinder is a double-acting and single rod cylinder which piston rod driven by pressure oil move in two opposite direction and enable other moving parts reciprocating.

Technical Date

Model	Normal pres. (MPa)	Bore size D (mm)	Velocity ratio						Min. stroke of non-trunnion attachment cylinder S (mm)
			1.33		1.46		2		
			Rod dia. d (mm)	Max. stroke S (mm)	Rod dia. d (mm)	Max. stroke S (mm)	Rod dia. d (mm)	Max. stroke S (mm)	
HSG*01-40/dE	16	40	20	320	22	400	25	480	
HSG*01-50/dE		50	25	400	28	500	32	600	
HSG*01-63/dE		63	32	500	35	630	45	750	
HSG*01-80/dE		80	40	640	45	800	55	950	
HSG*01-80/dE		80	40	640	45	800	/	/	30
HSG*01-90/dE		90	45	720	50	900	63	1080	40
HSG*01-100/dE		100	50	800	55	1000	70	1200	40
HSG*01-110/dE		110	55	880	63	1100	80	1320	40
HSG*01-125/dE		125	63	1000	70	1250	90	1500	35
HSG*01-140/dE		140	70	1120	80	1400	100	1680	45
HSG*01-150/dE		150	75	1200	85	1500	105	1800	50
HSG*01-160/dE		160	80	1280	90	1600	110	1900	40
HSG*01-180/dE		180	90	1450	100	1800	125	2150	45
HSG*01-200/dE		200	100	1600	110	2000	140	2400	45
HSG*01-220/dE		220	110	1760	125	2200	160	2640	50
HSG*01-250/dE		250	125	2000	140	2500	180	3000	55

★Cylinder Head and Body Attachment

Table 1

Order	Attachment	Remark
1	Eye attachment with bush	For cylinder $D \geq \Phi 80$
2	Eye attachment with oscillating bearing	
3	Trunnion attachment	
4	Front flange attachment	
5	Mid-body flange attachment	

★Piston Rod End Attachments

Table 2

Order	Attachment	Remark
1	Rod end male thread attachment	
2	Rod end female thread attachment	For bore $D \geq \Phi 63$
3	Rod end male thread and eye with bush	
4	Rod end female thread and eye with bush	For bore $D \geq \Phi 63$
5	Rod end male thread and eye with oscillating bearing	
6	Rod end female thread and eye with bush	For bore $D \geq \Phi 63$
7	Integral rod end eye with bush	
8	Integral rod end eye with oscillating bearing	Only for $\Phi 40$ and $\Phi 50$ cylinders

★Cushioning

Table 3

Order	Location of cushioning	Remark
0	Without cushioning	Without cushioning for bores $\Phi 40$, $\Phi 50$ and $\Phi 63$ At velocity ratio $\varphi=2$, only cylinder head has cushioning
1	At both ends of piston rod	
2	At head of cylinder	
3	At end of piston rod	

Note: 1. Velocity φ ratio is ratio of effective area of piston to that of rod chamber

2. Max. stroke:

when $\varphi=1.33$, $S=8D$ (bore size)

when $\varphi=1.46$, $S=10D$ (bore size)

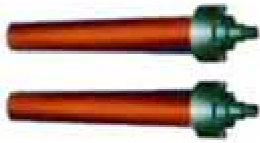
when $\varphi=2$, $S=12D$ (bore size)

3. For bore size of $\Phi 63$, $\Phi 80$, $\Phi 100$, $\Phi 125$, $\Phi 150$ and $\Phi 160$, when velocity ratio $\varphi=1.46$, cylinder cover adopts clip ring attachment.

4. If $S >$ max. stroke specified in Table is needed, contact with us.

5. For min. stroke of cylinder with trunnion attachment, see Table 5,6,7 and 8.

6. $\Phi 250 \sim \Phi 700$ cylinder can be available



Y – HG₁ - * D / dx * ** ***

Operating fluid:

O- mechanical oil and hydraulic oil
W- high water-base emulsion

End of rod: L₁-male thread L₂-female thread

Attachment: H- with cushion

J: basic type

F₁: front rectangle flange (for D≤125)

F₂: rear square flange (for D≤125)

F₃: front round flange

F₄: rear round flange

F₅: front square flange (for D≤125)

Installation F₆: rear square flange (for D≤125)

E: Rear single eye: E₁: with an oscillating bearing

E₂: with a bush Z₁:

front body trunnion (for D≤100) Z₂:

(1) Mid-body trunnion

Z₃: Rear body trunnion

J₁: Axial foot

J₂: ▲ Radial foot

Connection: L: threaded (for D≤100) F: flanged (for D≤100)

Stroke (mm)

Rod dia. (mm)

Bore (mm)

C 6.3MPa ▲

Pressure E 16MPa

G 25MPa ▲

No. 1 type of double-acting piston cylinder

Hydraulic cylinder in conformity with the metallurgical industrial standard

This series cylinder is double-acting piston type hydraulic actuator which can push its piston rod to move in both directions so that its piston will drive other working parts to reciprocate in line. With features, as well as integral damper and air bleeder, it is suitable for metallurgical industry and is in conformity with the specification on mounting and connecting ISO 6020/1 – 1981.

Order Procedure:

1. If the cylinders of 6.3~16MPa are needed, please fill "E" in your order
2. Mounting dimension are according to the codes in the table except that of mid-body trunnion attachment type; For connecting dimensions, refer to tables 5~17
3. "H" code represents types with cushioning; omit without cushioning
4. For stroke, refer to table 4
5. Specify your special requirements for operating fluid, temperature, test, painting and packing.
6. End rod eye should be separately ordered.

Technical Date:

Table 1: Bore diameter D and rod diameter d series.

$\frac{D}{\Phi d}$	40*	50*	63*	80*	90	100*	110	125*	140	150	160*	180	200*	220	250*	280	320*
1.46	22*	28*	36*	45*	50	56*	63	70*	80	85	90*	100	110*	125	140*	160	180*
2	28*	36	45*	56*	63	70*	80	90*	100	105	110*	125	140*	160	180*	200	220*

Note: "*" indicates bore dia. D and rod dia. d in conformity with that specified ISO 6020/1 standard.

Table 2: Port series.

(mm)

Bore dia.	40	50	63	80	90	100	110	125	
Nominal size of port	10	10	15	15	15	15	20	20	
Thread for port	M18×1.5	M18×1.5	M27×2	M27×2	M27×2	M33×2	M33×2	M33×2	
Bore dia.	140	150	160	180	200	220	250	280	320
Nominal size of port	25	25	25	32	32	32	40	40	40
Thread for port	M42×2	M42×2	M42×2	M48×2	M48×2	M48×2			

Note: 1. Port dia. is determined basing on the highest flow velocity ($V_0=5\text{mm/sec}$) at the port.

2. If bore $D \geq 250\text{mm}$, flange for port should be split type.

Max. permissible stroke S of the cylinder at rated pressure for different installation types (see Table 3)

S₁-front flange or axial foot attachment, rod end with eye

S₂- front flange or axial foot attachment, rod end without eye

S₃-rear flange attachment and rod end with eye

S₄- rear flange attachment and rod end without eye

S₅-rear trunnion or rear single eye attachment and rod end with eye

S₆-front trunnion attachment and rod end with eye

S₇-mid-body trunnion and rod end with eyes.

Table 3: Stroke series

Stroke	25	50	80	100	125	160	200	250	320	400	500
	630	800	1000	1250	1600	2000	2500	3150	4000	5000	

This series is in conformity with ISO 4393

Table 4: Max. stroke

(mm)

D Bore dia.		40		50		63		80		90		100		110		125	
d Rod dia.		22	28	28	36	36	45	45	56	50	63	56	70	63	80	70	90
Max. stroke	S ₁	540	960	730	1360	990	1640	1240	1990	1370	2080	1550	2320	1700	2660	1850	2980
	S ₂	115	260	180	390	260	490	330	600	370	620	420	700	470	800	520	920
	S ₃	190	420	300	620	430	750	550	920	600	960	680	1070	760	1240	830	1390
	S ₄	90	170	130	240	180	300	230	360	250	380	280	420	310	480	340	540
	S ₅	140	290	210	430	290	520	370	640	450	660	470	740	520	860	570	970
	S ₆	350	650	480	920	560	1120	830	1360	910	1420	1040	1580	1140	1830	1250	2050
140		150		160		180		200		220		250		280		320	
80	100	85	105	90	110	100	125	110	140	125	160	140	180	160	200	280	220
2150	3130	2280	3160	2330	3210	2560	3610	2780	4120	3240	4660	3590	4860	3810	5210	4600	5800
620	970	660	990	670	1000	740	1110	800	1270	940	1440	1040	1490	1100	1590	1350	1780
970	1460	1030	1500	1050	1510	1160	1680	1250	1920	1470	2180	1630	2270	1720	2420	2100	2700
390	560	410	580	420	590	470	650	510	740	590	840	650	880	690	940	840	1050
670	1020	720	1040	730	1050	800	1170	870	1340	1020	1520	1130	1580	1190	1690	1460	1800
1460	2150	1550	2200	1580	2220	1740	2480	1880	2830	2210	3210	2440	3340	2580	3570	3130	3980

Note: Figures in the table are max. strokes calculated depending on their stability and that exceeding these values are non-standard ones which stability should be guaranteed by designers themselves.

Configuration:

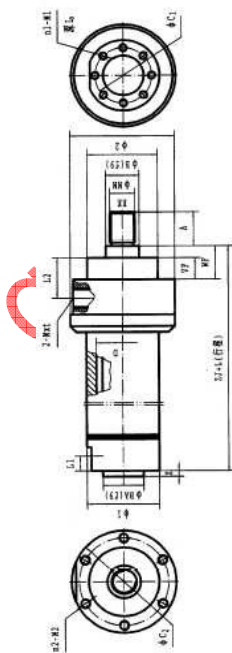


Table 5

(mm)

- Note: 1. Loss caused by pipe resistance and friction in mechanism should be increased by 10% in calculated force when choosing a cylinder
 2. When D≤220, threaded connection at oil port should available; when D≥250, the split type port flange should be selected. The dimension in the table is size of oil port.

缸径 σ Bore	速比 σ Velocity ratio	杆径 Rod dia. ΦMM	推刀 Push P ₁ (kg)	拉力 Pull P ₂ (kg)	ks	A	Mat	ØB	ØBA	ØC ₁	ØC ₂	Ø ₁	Ø ₂	VF	WF	ZJ	X	L ₁	L ₂	L ₀	z ₁ -M ₁	z ₂ -M ₂	重量 Weight (kg)	L 每增加 10mm 重量增加 Increased weight (kg) every 10mm increase (L)
40	1.46 2	22 28	2010 3140	1400 2150	M16 x 1.5 M20 x 1.5	22 28	M14 x 1.5	48	20	42	66	54	80	19	32	190	8	26	44	12	8-M6	6-M6	3.9 3.85	0.111 0.129
50	1.46 2	28 36	3140 4980	1510 3350	M20 x 1.5 M27 x 2	28 36	M18 x 1.5	55	30	50	75	63	90	24	38	205	8	18	61	12	8-M6	6-M6	6.74 6.76	0.142 0.174
63	1.46 2	36 45	4980 8040	2040 5490	M27 x 2 M33 x 2	36 45	M18 x 1.5	70	38	60	90	76	108	29	45	224	10	25	52	12	8-M8	6-M10	8.5 9.78	0.234 0.234
80	1.46 2	45 56	8040 13170	4100 7050	M33 x 2 M42 x 2	45 56	M27 x 2	86	55	75	112	95	134	36	54	250	10	36	58	13	8-M10	6-M12	15.82 18.3	0.293 0.36
90	1.46 2	50 63	13170 2560	5150 8620	M42 x 2 M48 x 2	56 63	M27 x 2	100	55	80	122	108	158	36	55	270	10	43	63	17	8-M12	6-M16	19.3 23.43	0.41 0.37
100	1.46 2	56 70	2560 5200	5400 7160	M48 x 2 M48 x 2	63 63	M42 x 2	118	58	95	150	121	175	37	57	300	10	47	69	18	8-M12	8-M16	33.1 31.5	0.51 0.48
110	1.46 2	63 80	5200 9900	7160 13470	M48 x 2 M48 x 2	63 63	M42 x 2	132	50	95	163	133	195	37	57	310	10	50	73	22	8-M16	8-M16	41.48 40	0.52 0.6
125	1.46 2	70 90	9900 24580	9450 16580	M64 x 2 M48 x 2	85 63	M42 x 2	150	80	115	184	152	212	37	60	325	10	50	85	22	8-M16	8-M16	51 52.48	0.46 0.6
140	1.46 2	80 100	24580 38270	16580 34420	M48 x 2 M80 x 3	63 55	M42 x 2	165	95	132	200	168	230	37	62	335	10	53	74	22	8-M16	8-M16	64.8 67	0.79 0.83
150	1.45 2	85 105	38270 64420	19190 34420	M64 x 2 M80 x 3	85 95	M42 x 2	175	105	140	215	180	245	41	64	350	10	54	85	22	8-M16	8-M16	81.3 83.43	0.89 0.95
160	1.45 2	90 110	64420 12170	21990 36960	M64 x 2 M80 x 3	85 95	M42 x 2	190	110	150	220	194	265	41	66	370	10	59	91	26	8-M20	8-M20	133.25 121.62	1.04 1.05
180	1.45 2	100 125	12170 40710	36960 21080	M80 x 3 M80 x 3	95 95	M48 x 2	200	110	160	250	219	280	41	70	410	15	65	93	27	8-M20	8-M20	102.56 130.94	1.32 1.36
200	1.45 2	110 140	40710 50260	21080 25630	M80 x 3 M100 x 3	95 112	M48 x 2	215	120	170	280	245	310	45	75	450	15	65	115	27	8-M20	8-M20	181.75 183.23	1.53 1.7
220	1.45 2	125 160	60820 78390	30630 55900	M100 x 3 M125 x 4	112 125	M48 x 2	240	140	200	310	272	340	45	80	490	20	75	125	36	8-M24	12-M24	240 259	2.25 2.33
250	1.45 2	140 180	78390 96320	55900 37820	M100 x 3 M125 x 4	112 125	Ø40	260	160	220	340	295	380	64	96	550	25	80	145	36	8-M24	12-M24	321 406.58	2.5 2.5
280	1.46 2	160 200	96320 48250	68320 48250	M125 x 4 M125 x 4	125 125	Ø40	300	180	240	370	325	410	64	100	600	30	80	162	36	8-M24	12-M24	484.5 534.3	2.67 2.87
320	1.46 2	180 220	128680 67850	87960 67850	M125 x 4 M150 x 4	125 160	Ø40	360	200	310	430	377	470	71	103	660	35	80	190	36	12-M24	16-M24	745.5 797.2	2.8 3.1



CD 250 B 100/070 – 100A 10/01 C A D M A

		10	★	
				For further details us , contact with us.
				Piston seals T=1:sliding ring for low friction operation A: V Chevron seals
				M= mineral oils to DIN 51524 and 51525 V= phosphate ester; suitable for fluored seals
				U=without end position cushioning D=with cushioning at both ends
				G=2: threads for spherical rod eye GA or plain rod eye bush SA A= 2: threads for spherical rod eye GAS
				C:CK45(Germany material);hard chrome plated H=4:CK53(Germany material);hardened and hard chrome plated L:X22CrNi 17(Germany material);hard chrome plated
				Line connections 01=(BSP threads) 02=(metric threads system)
				10 series 10-19:mounting and connection dimensions remain the same
				A=screwed construction at both ends of the cylinder B=welded construction at the cylinder bottom and screwed construction connection at the cylinder head.
				750= stroke length (mm)

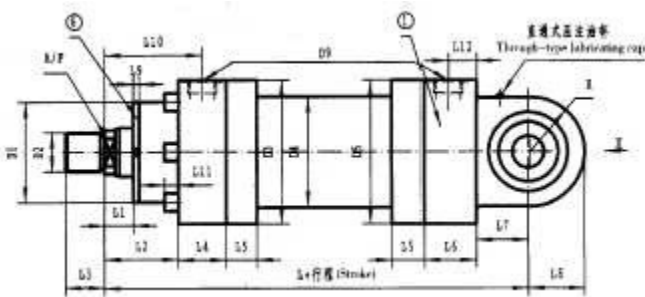
CD-Differential cylinder
 CG-Constant speed cylinder

Series number:
 250 series
 350 series
 For mounting type, contact with us
 Please reference the next page.

1. For series 250
2. For series 250 and 350
3. For piston rod dia. ≤ 100
4. For piston dia. ≤ 100 of series 250 and 350

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The series are single-acting differential cylinder including 14 bore size and 28 specifications combined depending on 4 velocity ratios. Three types of them, front flange mounting, mid-body trunnion and sub-plate mounting type cylinder can be built as double-rod and double-acting constant speed ones. Together with that with or without cushioning at their both ends, total are 28 specifications and 384 kinds of cylinder. The mounting types and dimensions of this series cylinders are in conformity with ISO 3320 and especially suitable for operating under hard working and heavy-loading conditions. They are widely used in steel works, foundry, forging and machine building industries.



series		Piston dia. (mm)	Piston rod dia. (mm)	Area Ratio φ	
250	350				
√		40	20	1.3:1	=40/20
√	√		28	2:1	=40/28
√		50	28	1.4:1	=50/28
√	√		36	2:1	=50/36
√		63	36	1.4:1	=63/36
√	√		45	2:1	=63/45
√		80	45	1.4:1	=80/45
√	√		56	2:1	=80/56
√		100	56	1.4:1	=100/56
√	√		70	2:1	=100/70
√		125	70	1.4:1	=125/70
√	√		90	2:1	=125/90
√		140	90	1.6:1	=140/90
√	√		100	2:1	=140/100
√		160	100	1.6:1	=160/100
√	√		110	2:1	=160/110
√		180	110	1.6:1	=180/110
√	√		125	2:1	=180/125
√		200	125	1.6:1	=200/125
√	√		140	2:1	=200/140
√		220	140	1.6:1	=220/140
√	√		160	2:1	=220/160
√		250	160	1.6:1	=250/160
√	√		180	2:1	=250/180
√		280	90	1.6:1	=280/180
√	√		200	2:1	=280/200
√		320	200	1.6:1	=320/200
√	√		220	2:1	=320/220

Technical Data:

Operating pressure	CD/CG250 series:25 CD/CG350 series:35
Suitable operating fluid	Mineral hydraulic oil, phosphate ester and a water-glycol fluid
Operating temperature	-30 ~ +100
Viscosity of operating fluid	2.8~380
Running speed	0.5(if special seals are used, it could be 15m/s)
Sealing	Dynamic seal: V seal for type A cylinder at high speed and pressure; sliding seal for type T cylinder at low speed and pressure. Static seal: O ring made in China
Connecting type of head and body as well as air bleeder	Type A: thread, flange connecting Type B: welded cylinder bottom, threaded cylinder head; with air release plug at end of cylinder.
Thread for oil connections	For ports of all size cylinders, adopt GB metric fine thread and with worth pipe thread of BSP i.e. cylinder pipe thread G of China
Mounting type	Five type, A,B,C,D, E and F
Material of piston rod	High-tensile steel and stainless steel X ₂₂ CrNi17(hard chrome plating surface)

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