



Cilindri Pneumatici DNC

DNC Series
Standard Cylinder
(Conforms to ISO15552 Standard)

ISO9001:2015 CE

Features

1. The cylinder is in accordance with the ISO15552.
2. The piston seal adopts two NBR+PA material as Y type one-way sealing structure with compensation function, long service life and low starting pressure.
3. The rod seal uses PU material with the characteristics of high strength, good toughness, wear resistance, oil resistance and aging resistance.
4. The piston rod material is made by 45C Carbon Steel with hard chrome plating on the surface, and the roughness Ra<0.4, with good wear resistance and rust resistance.



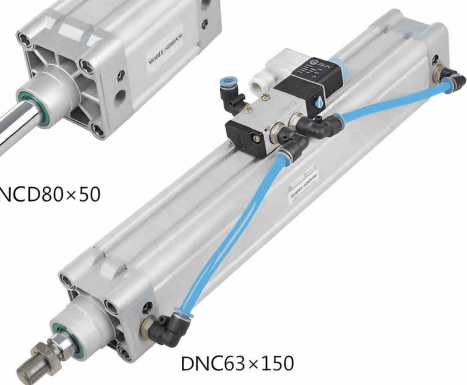
DNC50x150-CA



DNC80x50-FA










DNC80x50-FA



DNC63x150

Ordering Code

DNC	D	50	x	50	10	S	LB	MT
Series	Series Code	Bore	Stroke	Adjustable Stroke	Magnet	Mountings	Sensor	
SI: ISO 15552 Standard cylinder	Blank: Standard double acting	32		10: 10mm	S: With magnet	Blank: Basic mountings	JEL-30R type	
	D: Double-shaft double acting	40		20: 20mm	Blank: Without magnet	LB: Front and back mounting		
		50		30: 30mm			* Standard wire length is 1 meter, please specify for other length	
	J: Double-shaft with adjustable stroke	63		50: 50mm		FA: Front mounting flange		
		80		75: 75mm		FB: Back mounting flange		
		100		100: 100mm				
		125				CA: Back clevis (Single earring)		
								
						CB: Back hinge (Double earring)		
								
						YB: Back hinge		
								



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Specification

Bore (mm)	32	40	50	63	80	100	125
Operation	Double Acting						
Working Medium	Air						
Mountings	Basic FA FB CA CB LB YB						
Operating Pressure Range	1 ~ 9.0 Kg/cm ²						
Proof Pressure	13.5 Kg/cm ²						
Operating Temperature Range	-20 ~ 80°C						
Operating Speed Range	50 ~ 800mm/s						
Cushion	Adjustable Cushion						
Adjustable Cushion Stroke	20 mm				26 mm		
Port Size	G1/8"	G1/4"		G3/8"		G1/2"	

Stroke

Bore	Standard Stroke																Max. Stroke	Allowable Stroke					
32	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	1000	2000					
40	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	1200	2000		
50	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1200	2000
63	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000
80	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000
100	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000
125	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	600	700	800	900	1000	1500	2000



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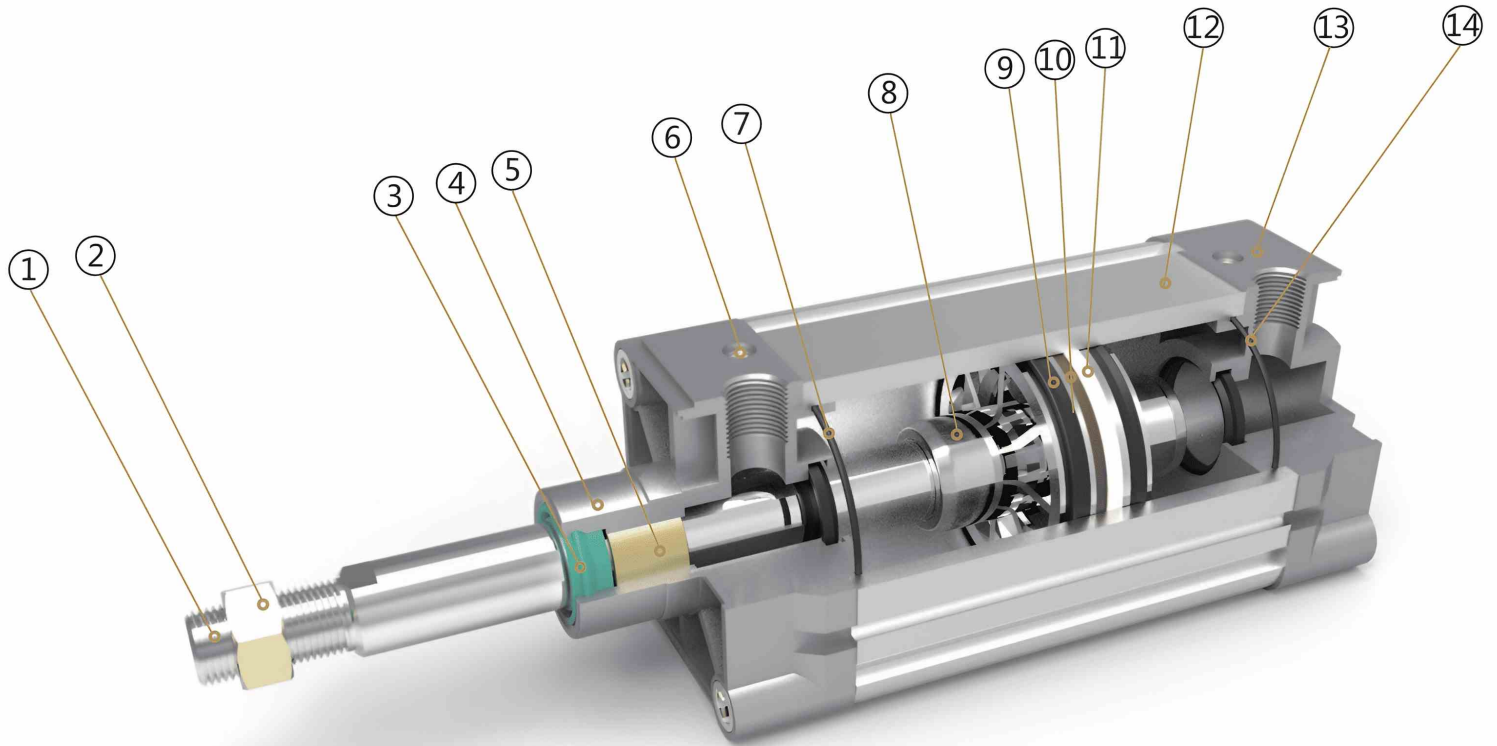


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Internal Structure



Parts

Number	Name	Number	Name
1	Piston rod	8	Piston
2	Hexagon nut	9	Y ring
3	Shaft seal	10	Magnet
4	Front cover	11	Anti-friction ring
5	Copper tube	12	Barrel
6	Cushion adjust screw	13	Back cover
7	Cushion seal	14	O ring



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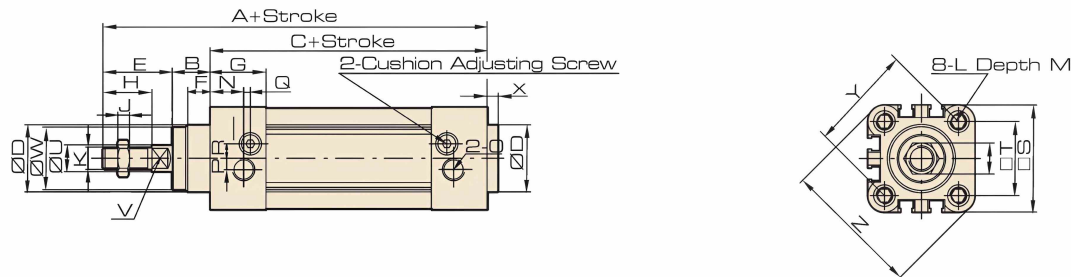


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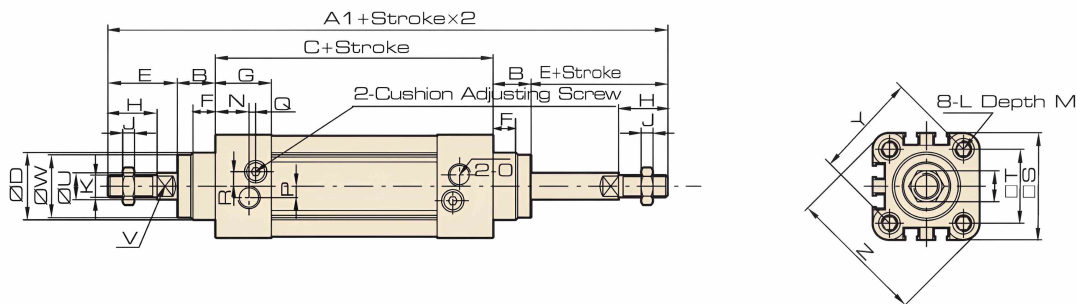


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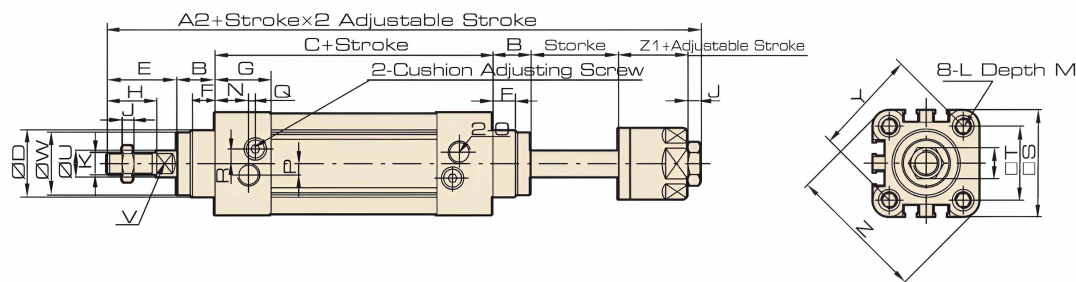
DNC



DNC-D



DNC-J



Dimension

Bore/ Symbol	A	A1	A2	B	C	D	E	F	G	H	I	J	K	L
32	142	190	185	16	94	30	33	10	25	22	17	6	M10x1.25	M6
40	159	213	207	20	105	35	34	10	29.5	24	17	7	M12x1.25	M6
50	175	244	233	27	106	40	42.5	10	32	32	23	8	M16x1.5	M8
63	190	258	247	26	122	45	42	10	36	32	23	8	M16x1.5	M8
80	214	301	288	35	126	45	53	10	37	40	26	10	M20x1.5	M10
100	229	321	308	40	137	55	52	10	39	40	26	10	M20x1.5	M10
125	277	394	378	47	160	60	71	10	43	54	40	10	M27x2	M12

Bore/ Symbol	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Z1
32	12	15	G1/8	5	3	6.5	45	32.5	12	10	28	4	46	58.7	21
40	12	17.5	G1/4	7	3	7	52	38	16	13	33	4	53.7	68	21
50	12	20	G1/4	7	3	9	65	46.5	20	17	38	4	65.8	84.5	23
63	12	22	G3/8	8	5	9	76	56.5	20	17	38	4	79.9	99.6	23
80	15	23	G3/8	10	5	12	94	72	25	22	43.5	4	101.8	123.8	29
100	15	26	G1/2	10	5	14	112	89	25	22	47	4	125.9	148.9	29
125	20	29	G1/2	10	5	14	134	110	32	27	53	6	156.9	179.6	40.5



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DNC Series

Standard Cylinder Accessory

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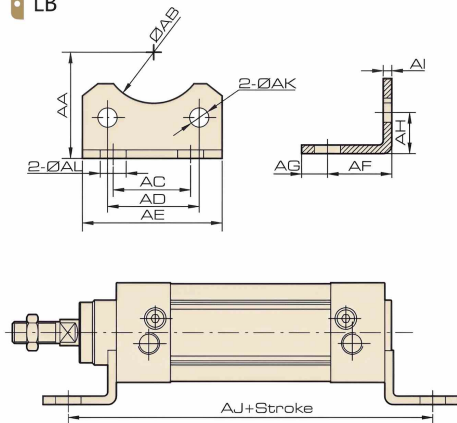


LB Foot

Overall Dimension

Dimension

LB

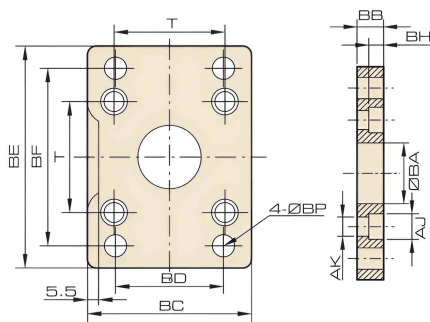


Bore/Symbol	32	40	50	63	80	100	125
AA	32	36	45	50	63	71	90
AB	30	35	40	45	45	55	60
AC	32	36	45	50	63	75	90
AD	32.5	38	46.5	56.5	72	89	110
AE	45	52	65	75	95	115	140
AF	24	28	32	32	41	41	45
AG	11	8	15	13	14	16	18
AH	15.8	17	21.8	21.8	27	26.5	35
AI	4	4	5	5	6	6	8
AJ	142	161	170	186	208	219	250
AK	7	7	9	9	11	11	12.5
AL	7	10	10	10	12	14.5	16.5

FA / FB Flange

Overall Dimension

FA, FB



Bore/Symbol	32	40	50	63	80	100	125
BA	30.3	35.3	40.3	45.3	45.3	55.3	60.3
BB	10	10	12	12	16	16	20
BC	45	52	65	76	94	112	140
BD	32	36	45	50	63	75	90
BE	80	90	110	120	150	175	224
BF	64	72	90	100	126	150	180
BH	6.5	6.5	8.5	8.5	10.5	10.5	15
AJ	10.5	10.5	13.5	13.5	16.5	16.5	19
AK	6.5	6.5	8.5	8.5	10.5	10.5	12.5
BP	7	9	9	9	12	14	16
T	32.5	38	46.5	56.5	72	89	110



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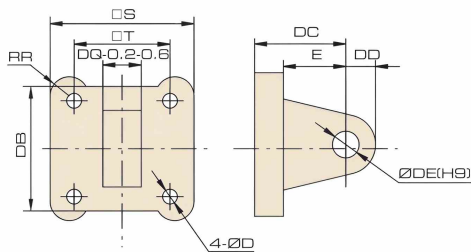
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CA Hinge

Overall Dimension

Dimension

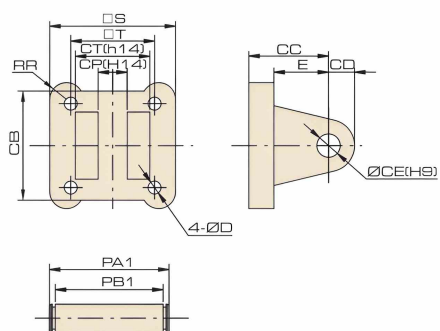
CA



Bore/Symbol	32	40	50	63	80	100	125
S	45	52	65	76	94	112	140
T	32.5	38	46.5	56.5	72	89	110
RR	6.5	6.5	9	9.5	11	11.5	12
DB	34	41	54	65	83	101	123
DC	22	25	27	32	36	41	50
DD	10	11	13	16	16	20	25
DE	10	12	12	16	16	20	25
DQ	26	28	32	40	50	60	70
D	6.5	6.5	8.5	8.5	10.5	10.5	12.5
E	14	17	17	22	24	25	30

CB Hinge

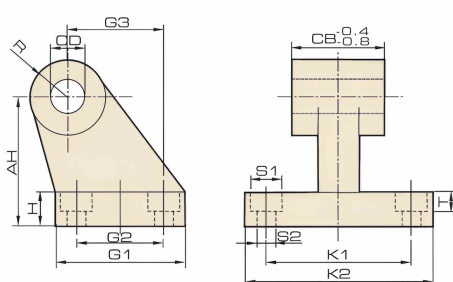
CB



Bore/Symbol	32	40	50	63	80	100	125
S	45	52	65	76	94	112	140
T	32.5	38	46.5	56.5	72	89	110
D	6.5	6.5	8.5	8.5	10.5	10.5	12.5
E	14	17	17	22	24	25	30
RR	6.5	6.5	9	9.5	11	11.5	12
CB	34	41	54	65	83	101	123
CC	22	25	27	32	36	41	50
CD	10	11	13	16	16	20	25
CE	10	12	12	16	16	20	25
CP	26	28	32	40	50	60	70
CT	45	52	60	70	90	110	120
PA1	53	60	68	78	100	120	130
PB1	46.5	53.5	61.5	71.5	91.5	111.5	121.5

YB Hinge

YB



Bore/Symbol	32	40	50	63	80	100	125
AH	32	36	45	50	63	71	90
H	8	10	12	12	14	15	20
CD	10	12	12	16	16	20	25
G1	31	35	45	50	60	70	90
G2	18	22	30	35	40	50	60
G3	21	24	33	37	47	55	70
CB	26	28	32	40	50	60	70
K1	38	41	50	52	66	76	94
K2	51	54	65	67	86	96	124
S1	11	11	14	14	17	17	20
S2	6.6	6.6	9	9	11	11	14
T	1.6	1.6	1.6	1.6	2.5	2.5	3.2
R	10	11	13	15	15	19	22.5



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Calculation of output force for Pneumatic cylinders



Calculations for Air consumption

$$QA = (A1+A2) \times L \times \frac{P+1.033}{1.033} \times 10^{-3}$$

$$QB = 2 \times A3 \times LH \times \frac{P}{1.033} \times 10^{-3}$$

$$Qn = (QA + QB) \times n$$

Qn : Air consumption of Cylinder actuating/ each time (L/min)

QA : Air volume for cylinder actuating to and back/ each time (L/min)

QB : Air Consumption Valume of Accessories (Valve the Cylinder) (L/min)

A1 : Push Side Pressured Area (cm²)

A2 : Pull Side Pressured Area (cm²)

A3 : ID of Connecting tube (cm²)

L : Stroke of cylinder (cm)

LH : Length of tube(cm)

P : Operating Pressure (kgf/cm²)

n : Operating Frequency

Cylinder Theory Output Sheet

Cylinder Inside Diameter	32	40	50	63	80	100	125	160	200										
External Diameter Piston Rod	12	16	20	20	25	25	32	40	40										
Operation	Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting				
	Extrusion Side	Pull Side	Extrusion Side	Pull Side	Extrusion Side	Pull Side	Extrusion Side	Pull Side	Extrusion Side	Pull Side	Extrusion Side	Pull Side	Extrusion Side	Pull Side	Extrusion Side	Pull Side			
Compression Area (cm ²)	8.04	6.90	12.56	10.55	19.63	16.49	31.17	28.03	50.26	45.36	78.53	73.62	122.70	114.60	201.00	188.40	314.20	301.40	
Air Pressure (Kgf/cm ²)	1	8.04	6.90	12.56	10.55	19.63	16.49	31.17	28.03	50.26	45.36	78.53	73.62	122.70	114.60	201.00	188.40	314.20	301.40
	2	16.08	13.80	25.12	21.10	39.26	32.98	62.34	56.06	100.52	90.72	157.06	147.24	245.40	229.20	402.00	376.80	628.40	602.80
	3	24.12	20.70	37.68	31.65	58.89	49.47	93.51	84.09	150.78	136.08	235.59	220.86	368.10	343.80	603.00	565.20	942.60	904.20
	4	32.16	27.60	50.24	42.20	78.52	65.96	124.68	112.12	201.04	181.44	314.12	294.48	490.80	458.40	804.00	753.60	1256.80	1205.60
	5	40.20	34.50	62.80	52.75	98.15	82.45	155.85	140.15	251.30	226.80	392.65	368.10	613.50	573.00	1005.00	942.00	1571.00	1507.00
	6	48.24	41.40	75.36	63.30	117.78	98.94	187.02	168.18	301.56	272.16	471.18	441.72	736.20	687.60	1206.00	1130.40	1885.20	1808.40
	7	56.28	48.30	87.92	73.85	137.41	115.43	218.19	196.21	351.82	317.52	549.71	515.34	858.90	802.20	1407.00	1318.80	2199.40	2109.80
	8	64.32	55.20	100.48	84.40	157.04	131.92	249.36	224.24	402.08	362.88	628.24	588.96	981.60	916.80	1608.00	1507.20	2513.60	2411.20
	9	72.36	62.10	113.04	94.95	176.67	148.41	280.53	252.27	452.34	408.24	706.77	662.58	1104.30	1031.40	1809.00	1695.60	2827.80	2712.60

Pressure Factors Convertibel Table

Unit	Pa	KPa	MPa	bar	mbar	kgf/cm ²	cmH ₂ O	mmH ₂ O	mmHg	p.s.i
Pa	1	10 ⁻³	10 ⁻⁶	10 ⁻⁵	10 ⁻²	10.2 x 10 ⁻⁶	1.02 x 10 ⁻³	101.97 x 10 ⁻³	7.5 x 10 ⁻³	0.15 x 10 ⁻³
KPa	10 ³	1	10 ⁻³	10 ⁻²	10	10.2 x 10 ⁻³	10.2	101.97	7.5	0.15
MPa	10 ⁶	10 ³	1	10	10 ⁴	10.2	1.02 x 10 ³	101.97 x 10 ³	7.5 x 10 ³	0.15 x 10 ³
bar	10 ⁵	10 ²	10 ⁻¹	1	10 ³	1.02	1.02 x 10 ³	102 x 10 ³	750.06	14.5
mbar	10 ²	10 ⁻¹	10 ⁻⁴	10	1	1.02 x 10 ⁻³	1.02	10.2	0.75	14.5 x 10 ⁻³
kgf/cm ²	98066.5	98.07	98.07 x 10 ⁻³	0.98	980.67	1	1000	10,000	735.56	14.22
cmH ₂ O	98.06	98.07 x 10 ⁻³	98.07 x 10 ⁻⁶	0.98 x 10 ⁻³	0.98	10 ⁻³	1	10	0.74	14.22 x 10 ⁻³
mmH ₂ O	9.806	9.807 x 10 ⁻³	9.807 x 10 ⁻⁶	98.07 x 10 ⁻⁶	98.07 x 10 ⁻³	10 ⁻⁴	0.1	1	73.56 x 10 ⁻³	1.42 x 10 ⁻³
mmHg	133.32	133.32 x 10 ⁻³	133.32 x 10 ⁻⁶	1.33 x 10 ⁻³	1.33	1.36 x 10 ⁻³	1.36	13.6	1	19.34 x 10 ⁻³
p.s.i	6894.76	6.89	6.89 x 10 ⁻³	68.95 x 10 ⁻³	68.95	70.31 x 10 ⁻³	70.31	703.07	51.71	1



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