

3.5MPa Double acting hydraulic cylinders

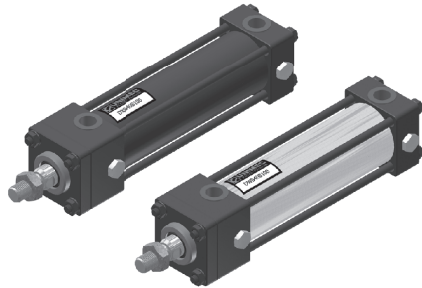
DXB

Double Acting - Standard Type (Piston with magnet)



DWB

Double Acting - Standard Type



- Hydro-cylinders of this series can be added with cushions.

Specification

Type	DXB	DWB
Bore sizes of cylinder (mm)	φ 32, φ 40, φ 50, φ 63, φ 80, φ 100	
Power fluid	Filtered oil	
Material of cylinder barrel	SUS304 Stainless steel	STKM 13C Carbon steel
The range of pressure (MPa)	3.5	
Proof pressure (MPa)	5	
The range of speed (mm/sec)	0.5~300	
The range of temperature (°C)	-10~+60	

How to order

2 DXB 50 B 100 (B C) - LB - Y - LN01P × 2

Seal material	Type	Bore	Cushion	Stroke	Cushion adjustment location	Accessory	Sensor switch	Quantity
	 DXB DWB	32—φ 32mm 40—φ 40mm 50—φ 50mm 63—φ 63mm 80—φ 80mm 100—φ 100mm	R: Rod cover with cushion H: End cap with cushion B: Both end with cushion N: No cushion	50—50mm 100—100mm 150—150mm 200—200mm 250—250mm 300—300mm 350—350mm 400—400mm 450—450mm 500—500mm		FA FB LA LB CA CB TC Y I	 LN01P: Suited for φ 32~φ 80 LN02P: Suited for φ 100	1: 1pc 2: 2pcs

Symbol	Seal material	Kind of fluid				
		Petroleum-Based fluid	Water - Glycol fluid	Phosphate - Ester fluid	W/O Water in of fluid	O/W Oil in water fluid
1	NBR	○	○	×	○	○
2	PU	○	×	×	△	△
3	VITON	○	×	○	○	○

Note: ○: allowable ×: unallowable △: consult us

※Cushion position adjustment: B C

Ports Location — Cushion adjustment location

Those without marks are in standard type, and its positions are described as followed.

(A) Ports Location
(B) Cushion adjustment location
(C) Nothing
(D) Nothing

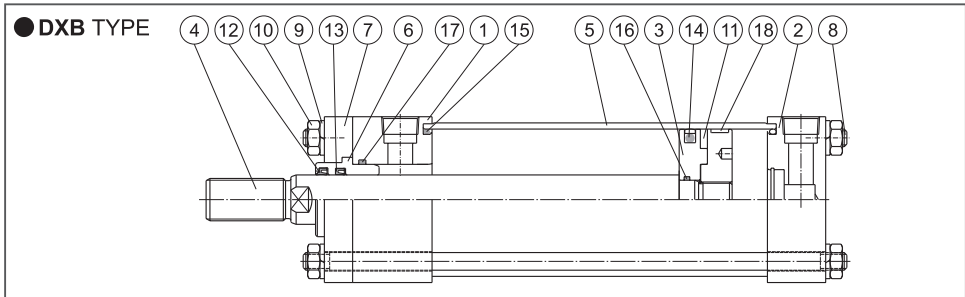
- Note:
- Can choose NPN or PNP type (3-Wire type, 24VDC).
 - Can choose plug-in cable.
 - For details see page 4-1.4.

How to order the seal kit

D BSK

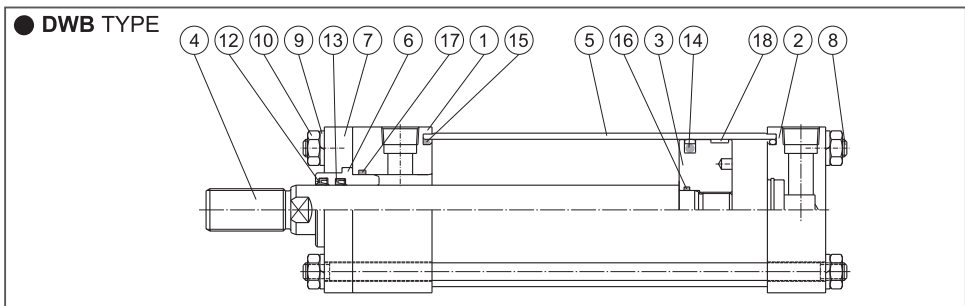
W

Bore	Seal kit
32	DXBSK32 - Including No.12,13,14,15,16,17
40	DXBSK40 - Including No.12,13,14,15,16,17
50	DXBSK50 - Including No.12,13,14,15,16,17
63	DXBSK63 - Including No.12,13,14,15,16,17
80	DXBSK80 - Including No.12,13,14,15,16,17
100	DXBSK100 - Including No.12,13,14,15,16,17



Parts List

No.	Part name	Quantity	No.	Part name	Quantity	No.	Part name	Quantity
1	Rod cover	1	7	End plate	1	13	Rod packing	1
2	Head cover	1	8	Tie bolt	4	14	Piston packing	1
3	Piston	1	9	Spring washer	8	15	Cylinder gasket	2
4	Piston rod	1	10	Nut	8	16	Piston gasket	1
5	Cylinder tube	1	11	Magnet	1	17	O-ring	1
6	Rod bush	1	12	Dust wiper	1	18	Wearing ring	1



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5	Cylinder tube	1	11	Magnet	1	17	O-ring	1
6	Rod bush	1	12	Dust wiper	1	18	Wearing ring	1

TC

TS

RP

HC

HC_M

HCK

TH

DO

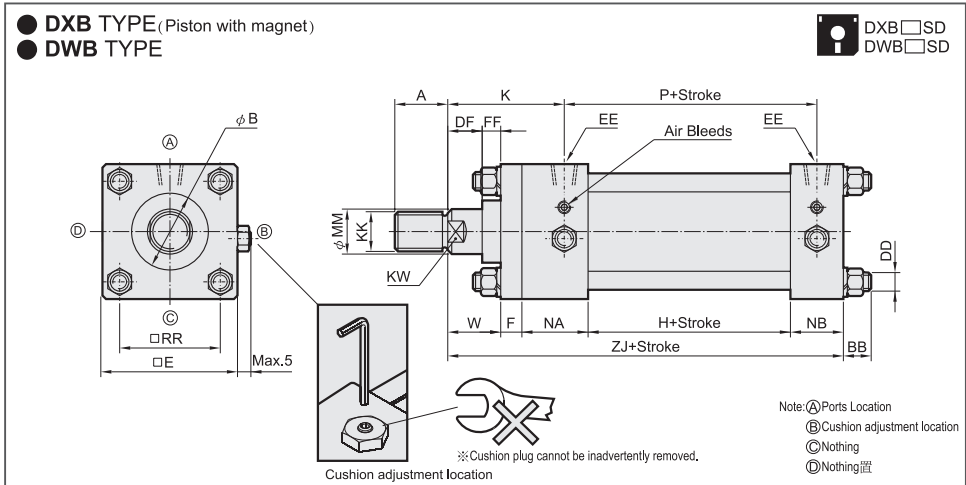
DX
DW

DM

DH

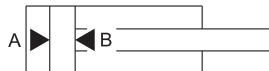
DK

Dimensional features



Dimensional Table

Bore	A	B	BB	DD	DF	E	EE	F	FF	H	K	KK	KW	MM	NA	NB	P	RR	W	ZJ
φ 32	24	30	7	M6 × 1.0	10	44.4	PT 1/4	10	5	29	49	M12 × 1.25	14	16	38	26	58	33	15	118
φ 40	24	30	7	M6 × 1.0	10	50	PT 3/8	10	5	29	49	M12 × 1.25	14	16	38	26	58	37	15	118
φ 50	36	34	7	M6 × 1.0	10	62	PT 3/8	10	5	29	49	M18 × 1.5	19	22.4	38	26	58	47	15	118
φ 63	36	34	10	M8 × 1.25	10	76	PT 3/8	10	5	29	49	M18 × 1.5	19	22.4	40	27	61	56	15	121
φ 80	48	42	12	M10 × 1.25	14	94	PT 1/2	16	5	30	62	M24 × 2.0	24	28	45	33	67	70	19	143
φ 100	60	50	14	M12 × 1.5	18	114	PT 1/2	16	5	30	66	M30 × 2.0	30	35	45	33	67	89	23	147



Theoretic force

Unit : N

Bore (mm)	Rod (mm)	Pressure area (mm ²)	Operating pressure (MPa)							
			0.5	1.0	1.5	2.0	2.5	3.0	3.5	
φ 32	φ 16	A	804	402	804	1206	1609	2011	2413	2815
		B	603	302	603	905	1206	1508	1810	2111
φ 40	φ 16	A	1256	628	1256	1885	2513	3142	3770	4398
		B	1056	528	1056	1583	2111	2639	3167	3695
φ 50	φ 22.4	A	1963	982	1963	2945	3927	4909	5891	6872
		B	1569	785	1569	2354	3139	3924	4708	5493
φ 63	φ 22.4	A	3116	1559	3116	4676	6234	7793	9352	10910
		B	2723	1362	2723	4085	5446	6808	8170	9531
φ 80	φ 28	A	5024	2513	5024	7540	10053	12566	15080	17593
		B	4411	2205	4411	6616	8822	11027	13232	15483
φ 100	φ 35	A	7850	3927	7850	1178	15708	19635	23562	27489
		B	6892	3445	6892	110337	13784	17229	20675	24122

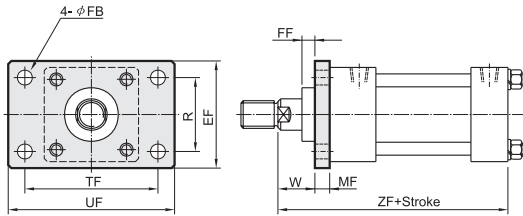
The method of calculation (Hydraulic cylinders' force)

F : Cylinders' force (N)
 P : Operating pressure (MPa)
 A : Piston area (mm²)
 f : Friction drag (N)

$$F = P \times A - f$$

Dimensional features

● FA TYPE - Front Flange



Dimensional Table



Bore	EF	FB	FF	MF	R	TF	UF	W	ZF
φ 32	47	7	5	10	33	58	72	15	118
φ 40	52	7	5	10	36	70	84	15	118
φ 50	65	9	5	10	47	86	104	15	118
φ 63	76	9	5	10	56	98	116	15	121
φ 80	95	12	5	16	70	119	143	19	143
φ 100	115	14	5	16	84	140	166	23	147

TC

TS

RP

HC

HC_M

HCK

TH

DO

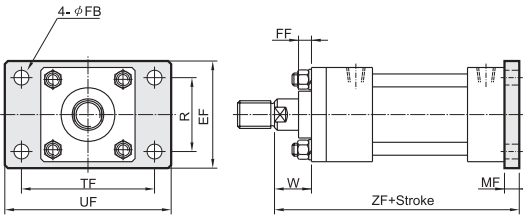
DX
DW

DM

DH

DK

● FB TYPE - Rear Flange

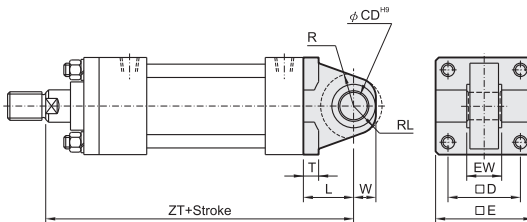


Dimensional Table



Bore	EF	FB	FF	MF	R	TF	UF	W	ZF
φ 32	47	7	5	10	33	58	72	15	128
φ 40	52	7	5	10	36	70	84	15	128
φ 50	65	9	5	10	47	86	104	15	128
φ 63	76	9	5	10	56	98	116	15	131
φ 80	95	12	5	16	70	119	143	19	159
φ 100	115	14	5	16	84	140	166	23	163

● CA TYPE - Male Pivot

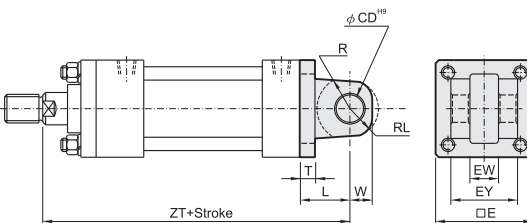


Dimensional Table



Bore	CD	D	E	EW	R	RL	L	T	W	ZT
φ 32	12	33	44	16	17	14	19	8	12	137
φ 40	14	37	50	20	17	16	19	8	14	137
φ 50	14	47	62	20	19	16	19	10	14	137
φ 63	14	56	76	20	19	16	19	13	14	140
φ 80	20	70	94	32	26	22	32	18	20	175
φ 100	25	89	114	40	32	30	53	16	25	200

● CB TYPE - Female Pivot



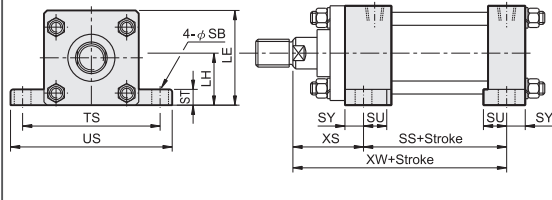
Dimensional Table



Bore	CD	E	EW	EY	R	RL	L	T	W	ZT
φ 32	12	44	16	32	18	15	19	8	13	137
φ 40	14	50	20	44	18	15	19	8	13	137
φ 50	14	62	20	52	19	17	19	8	15	137
φ 63	14	76	20	52	19	17	19	8	15	140
φ 80	20	94	32	64	32	23	32	11	21	175
φ 100	25	114	40	80	32	30	53	16	25	200

Accessories

● LA TYPE - Side lugs

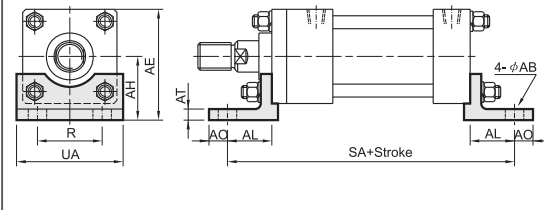


Dimensional Table



Bore	LE	LH	SB	SS	ST	TS
φ 32	44	22	9	73	8	69
φ 40	50	25	12	73	8	80
φ 50	62	31	12	73	12	92
φ 63	76	38	12	76	12	108
φ 80	94	47	14	82	19	128
φ 100	114	57	18	72	24	154

● LB TYPE - Foot Mounting

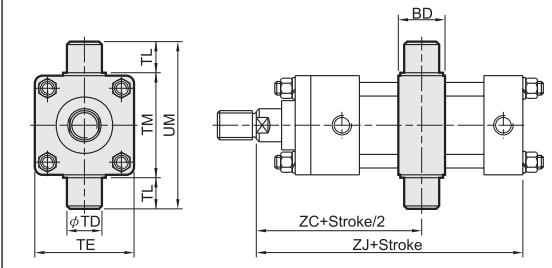


Dimensional Table



Bore	AB	AE	AH	AL	AO	AT	R	SA	UA
φ 32	9	55.2	33	23	10	5	33	149	54
φ 40	12	60	35	25	12	5	37	153	60
φ 50	12	72	41	26	12	6	47	155	70
φ 63	12	86	48	28	12	6	56	162	80
φ 80	14	106	59	34	14	8	70	192	97
φ 100	18	127	70	40	18	8	89	204	120

● TC TYPE - Intermediate Pivot



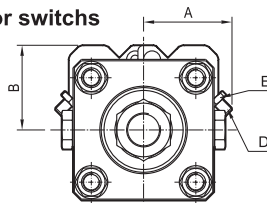
Dimensional Table



Bore	BD	TE	TD	TL	TM	UM	ZC	ZJ
φ 32	30	51	16	16	55	87	78	118
φ 40	30	57	25	25	63	113	78	118
φ 50	30	69	25	25	76	126	78	118
φ 63	30	84	25	25	88	138	79.5	121
φ 80	35	104	25	25	114	164	95.5	143
φ 100	40	130	32	32	140	204	99.5	147

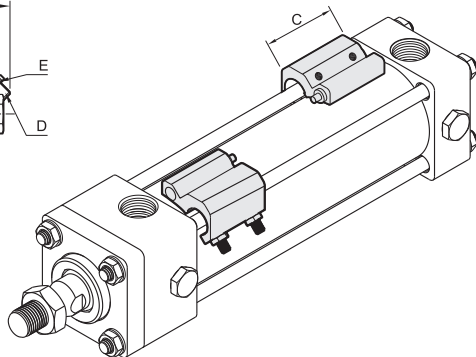
Installation of sensor switches

● DXB TYPE



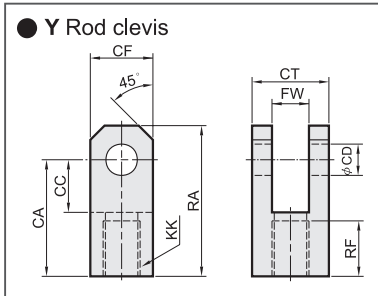
Dimensional Table

Bore	Sensor switch	A	B	C	D	E
φ 32	LN01P	29	28	32	M4 × 12L	M4
φ 40	LN01P	31	30	32	M4 × 12L	M4
φ 50	LN01P	36	35	32	M4 × 12L	M4
φ 63	LN01P	40	39.5	32	M4 × 12L	M4
φ 80	LN01P	48	47	32	M4 × 12L	M4
φ 100	LN02P	59	58.5	32	M4 × 12L	M4



Accessories

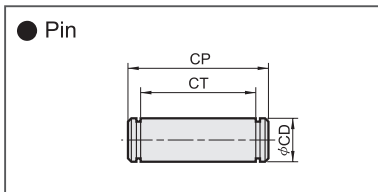
● Y Rod clevis



Dimensional Table

Type	Bore	CA	CC	CD	CF	CT	FW	KK	RA	RF	Filename
Y-M12×1.25	φ 32	55	20	12	24	32	16	M12×1.25	67	25	YM12125H
Y-M12×1.25	φ 40	60	20	14	24	44	20	M12×1.25	72	25	YM12125M
Y-M18×1.5	φ 50	64	18	14	28	44	20	M18×1.5	78	37	YM18150H
Y-M18×1.5	φ 63	64	18	14	28	44	20	M18×1.5	78	37	YM18150H
Y-M24×2.0	φ 80	100	28	20	38	64	32	M24×2.0	119	49	YM24200H
Y-M30×2.0	φ 100	110	35	25	48	80	40	M30×2.0	134	61	YM30200H

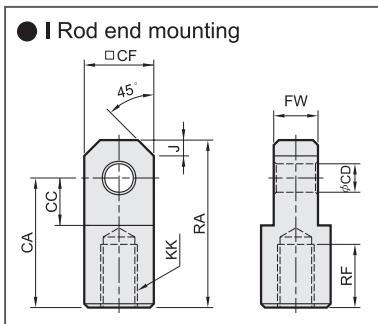
● Pin



Dimensional Table

Type	Bore	CD	CP	CT	Filename
P1243	φ 32	12	43	33	P12043
P1455	φ 40, φ 50, φ 63	14	55	45	P14055
P2075	φ 80	20	75	65	P20075
P2591	φ 100	25	91	81	P25091

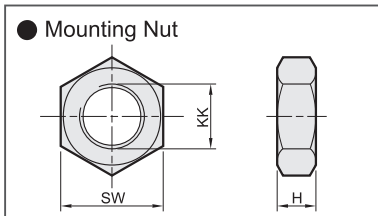
● I Rod end mounting



Dimensional Table

Type	Bore	CA	CC	CD	CF	FW	J	KK	RA	RF	Filename
I-M12×1.25	φ 32	55	20	12	24	16	7	M12×1.25	67	25	IM12125H
I-M12×1.25	φ 40	60	20	14	24	20	7	M12×1.25	72	25	IM12125M
I-M18×1.5	φ 50	64	18	14	28	20	8	M18×1.5	78	37	IM18150H
I-M18×1.5	φ 63	64	18	14	28	20	8	M18×1.5	78	37	IM18150H
I-M24×2.0	φ 80	100	30	20	38	32	10	M24×2.0	119	49	IM24200H
I-M30×2.0	φ 100	110	37	25	48	40	14	M30×2.0	134	61	IM30200H

● Mounting Nut



Dimensional Table

Type	Bore	H	KK	SW	Filename
N-M12×1.25	φ 32, φ 40	7	M12×1.25	19	NM12125
N-M18×1.5	φ 50, φ 63	11	M18×1.5	27	NM18150H
N-M24×2.0	φ 80	14	M24×2.0	36	NM24200H
N-M30×2.0	φ 100	13	M30×2.0	41	NM30200H

Seating torque

Bore	φ 32~50	φ 63	φ 80	φ 100
Bolt nut type	M6×1.0P	M8×1.25P	M10×1.25P	M12×1.5P
Seating torque (N·m)	4	10	20	31