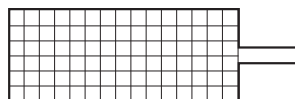




FUJIKURA COMPOSITES

Fujikura BF Cylinders

FC *SERIES*

FCS Single Action Push Type

FCD Double Action Type

Fujikura
Cylinder

FUJIKURA RUBBER LTD.



Fujikura BF Cylinders

DESIGN CONCEPTION :

"No Leakage and Less Friction"

— *The main Design conception that lies extended at the basis of **BF Cylinders**.*

"Precision Control rather than Power"

— *The main object of developing **BF Cylinders**.*

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General Description of BF Cylinders

TYPES

FC Series : Single/Double Action Standard Cylinders

FEATURES IN COMMON

BF Cylinders are bound together by unique unrivaled common features, which are all attributable to the rolling action of **BF Diaphragms**.

- Perfect Leak-proof No Blow-By Leakage.
- Very Low Friction : Responsive to minute pressure variations.
: Virtually no hysteresis-loss in movement.
: Low start up pressure as low as 0.01MPa.
: Smooth "Non-Jarring" action.
: Ready to start even after long interval.
- Lubrication-Free No Lubricator required in the air line.
- Excellent resistance to pressure ... Assured by the rolling principle of **BF Diaphragms**.
(Molded products of durable fabric-reinforced NBR)

PREFERRED APPLICATIONS

BF Cylinders find its best applications in such cases where air leakage is not allowed and/or sensitive response is desired to minute pressure variations.

- Sensitive Actuators in Automatic Controllers & Instruments, Pressure rollers and Dancer rollers.
- Air line equipment in the clean factories disliking oil mist contamination.
- Polishing equipment for Lenses and Jewels.
- Precision actuators of constant output force. (Spot welder etc.)
- Actuator for emergency use.



Model FCS: Single Action (push)

Model FCD: Double Action

■ SPECIFICATIONS

Operating Style	Single Action (Push)/ Double Action	
Cylinder Diameter	mm	10 to 200
Stroke	mm	6 to 320
Working Fluid	Compressed Air (Non-Lubricated)	
Working Pressure Range	MPa	0.01~0.7
Working Temperature Range	°C	0 to 60
Rod Bearing	Dry Bearing	
Mounting	Direct, L, Front Flange, Rear Flange, Trunnion, Pivot-Mounting	

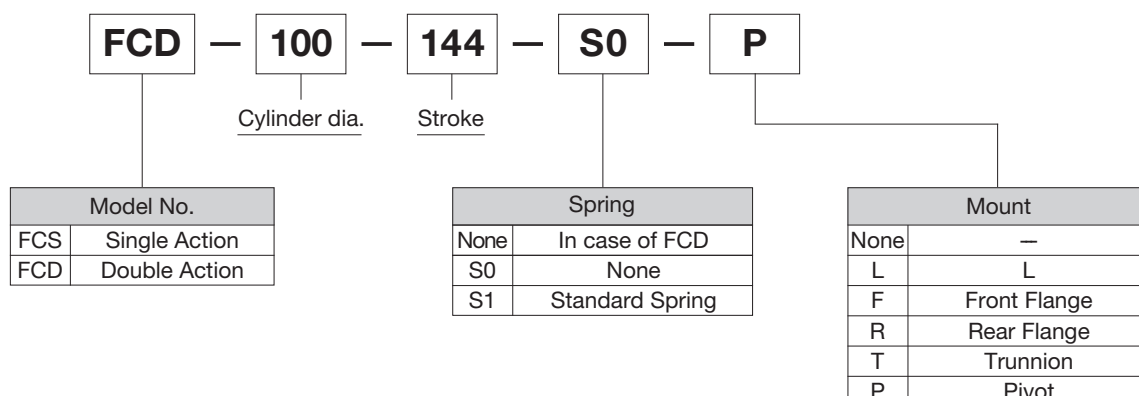
■ FEATURES

- FC Series are standard type of **BF Cylinders**. They are designed in a variety of sizes from 10 to 200.
- Each size is available in both a single action and a double action style.
- A variety of mounts is provided.

■ NOTE

- Customers are requested to follow the " **BF Cylinders** Handling Manual " (KS-569E) before installing and putting in service.
- Large size **BF Cylinders** of 112mm and over in diameter are customized only for individual requirement.
Customers are kindly advised to check up the delivery time.
- Consult Fujikura for any special requirements.

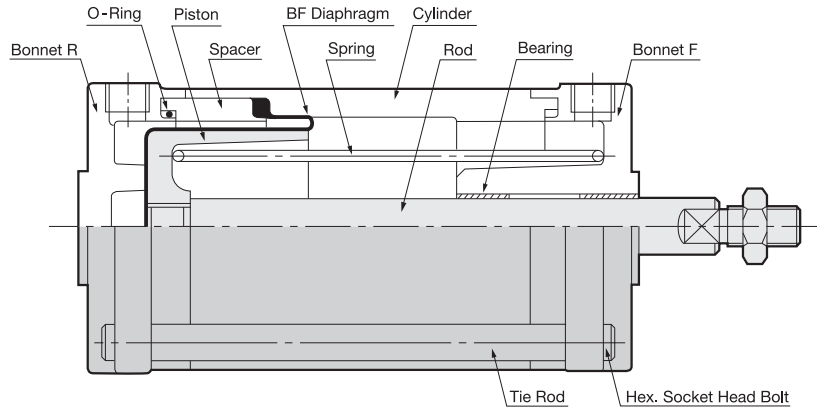
■ ORDERING DATA [Example]



INTERNAL CONSTRUCTION/PARTS DESCRIPTION

(For Cylinders of 40mm and over in diameter)

SINGLE ACTION TYPE Model FCS-40 to-200

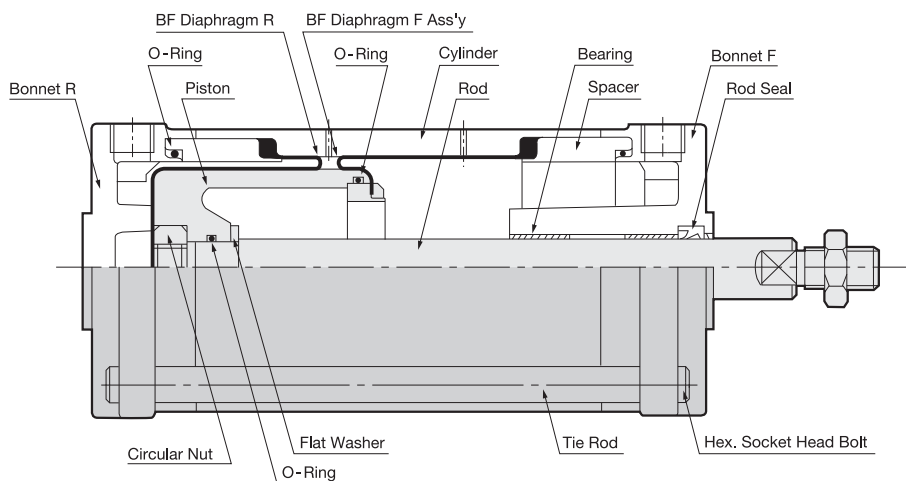


■ PARTS LIST

DESCRIPTION	MATERIAL
Bonnet F/R	A ℓ Alloy Die-Casting A ℓ Alloy Casting (FCS-160 & over)
O-Ring	NBR
Piston	A ℓ Alloy Casting
Cylinder/Spacer	A ℓ Alloy
Rod	Stainless Steel Hard Steel, Hard Chrome Plated (FCS-80 & over)
BF Diaphragm	Fabric Reinforced NBR
Return Spring	Spring Steel Wire
Bearing	Dry Bearing
Tie Rod	Carbon Steel

Note : 1. A ℓ parts are anodic treated.
2. Unless otherwise specified, steel parts are galvanized.
3. A ℓ die-casting parts are bake painted.

DOUBLE ACTION TYPE Model FCD-40 to-100

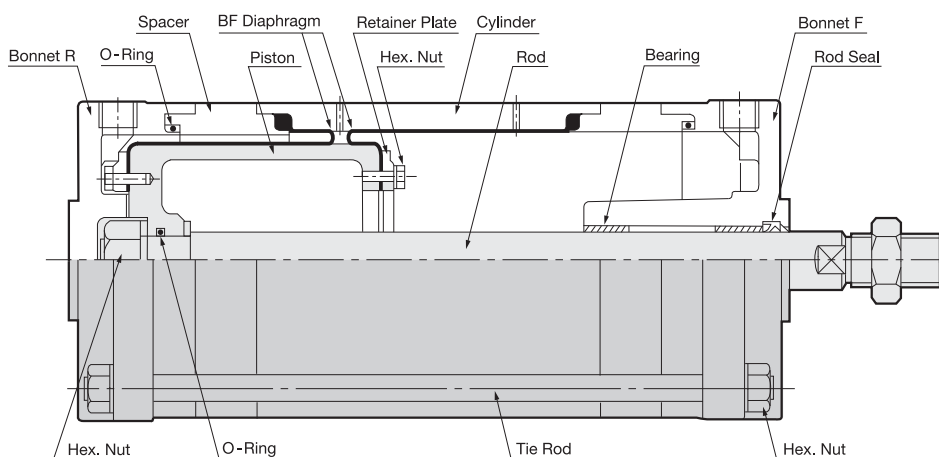


■ PARTS LIST

DESCRIPTION	MATERIAL
Bonnet F/R	A ℓ Alloy Die-Casting
Circular Nut	Carbon Steel
O-Ring	NBR
Piston	A ℓ Alloy Casting
BF Diaphragm R	Fabric Reinforced NBR
BF Diaphragm F Ass'y	Fabric Reinforced NBR with Fitting Caulked
Cylinder/Spacer	A ℓ Alloy
Rod	Stainless Steel Hard Steel, Hard Chrome Plated (FCD-80 & -100)
Bearing	Dry Bearing
Rod Seal	NBR
Tie Rod	Carbon Steel

Note : 1. A ℓ parts are anodic treated.
2. Unless otherwise specified, steel parts are galvanized.
3. A ℓ die-casting parts are bake painted.

DOUBLE ACTION TYPE Model FCD-112 to-200



■ PARTS LIST

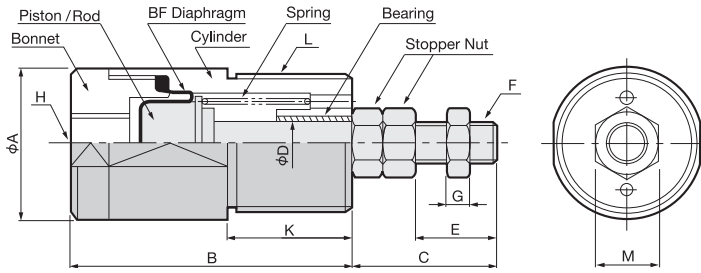
DESCRIPTION	MATERIAL
Bonnet F/R	A ℓ Alloy Die-Casting A ℓ Alloy Casting (FCD-160 & over)
Cylinder/Spacer	A ℓ Alloy Casting
Piston	A ℓ Alloy Casting
BF Diaphragm	Fabric Reinforced NBR
Retainer Plate	A ℓ Alloy Casting
Rod	Hard Steel, Hard Chrome Plated
Bearing	Dry Bearing
Rod Seal	NBR
Tie Rod	Carbon Steel

Note : 1. A ℓ parts are anodic treated.
2. Unless otherwise specified, steel parts are galvanized.
3. A ℓ die-casting parts are bake painted.

Model FCS-10-6 to 20-22



**Internal Construction
Outline Dimensions**



■ PARTS LIST

DESCRIPTION	MATERIAL
Piston/Rod	Stainless Steel
BF Diaphragm	Fabric Reinforced NBR
Bonnet	Brass
Cylinder	Brass
Spring	Spring Steel Wire
Bearing	Dry Bearing
Stopper Nut	Carbon Steel

F₀/F₁ : Spring force at zero/full stroke (N)
A_e : Effective area (mm²)

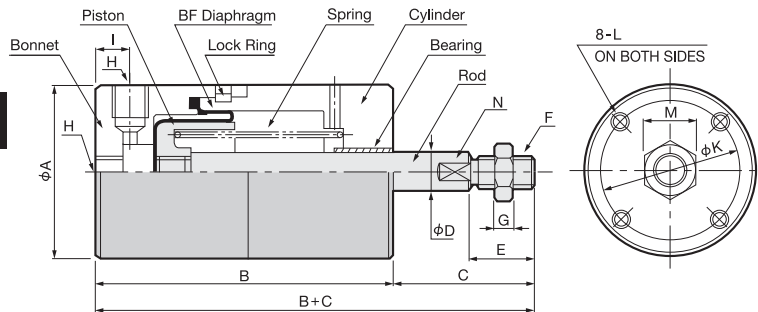
■ OUTLINE DIMENSIONS

Dc-STROKE	A	B	C	D	E	F	G	H	K	L	M	Ae	SPRING FORCE		
													F ₀	F ₁	
10 - 6	18	35	18	5	10	M5×0.5	3.2	Rc 1/8	16	M16×1.5	8	57	0.3	0.9	
12.5 - 11	20	45	20		12				20	M18×1.5		95	0.8	2	
16 - 10	24	45	23	7	13	M6×0.75	3.6		20	M22×1.5	10	165	1.5	2.9	
16		58							25	M26×1.5					
20 - 8	28	44	26	8	16				20						
22		72							30						

Model FCS-25-6 to 31.5-35



**Internal Construction
Outline Dimensions**



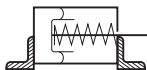
■ PARTS LIST

DESCRIPTION	MATERIAL
Bonnet	Al Alloy
Piston	Al Alloy
BF Diaphragm	Fabric Reinforced NBR
Lock Ring	Brass Wire
Spring	Spring Steel Wire
Cylinder	Al Alloy
Bearing	Dry Bearing
Rod	Stainless Steel

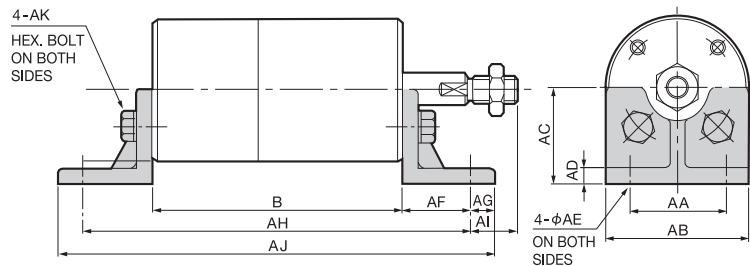
F₀/F₁ : Spring force at zero/full stroke (N)
A_e : Effective area (mm²)
N : Wrench flat width

■ OUTLINE DIMENSIONS

Dc-STROKE	A	B	C	B+C	D	E	F	G	H	I	K	L	M	N	A _e	SPRING FORCE	
																F ₀	F ₁
25 - 6	38	46	30	76	8	12	M6 P=0.75	3.6	Rc 1/8	9	30	M4 DP6	10	6	400	3.4	6.9
16		63		93													
26		79		109													
31.5 - 14	45	61	36	97	10	16	M8 P=1	5	Rc 1/8	10	35	M5 DP7.5	13	8	660	4.9	11.8
24		78		114													
35		97		133													

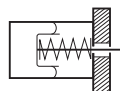


L Type Mount

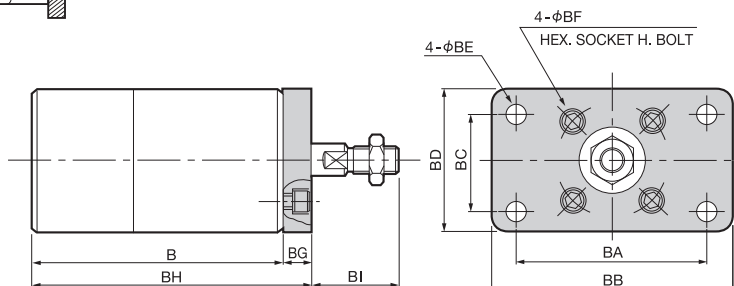


Dc-STROKE	B	AH	AJ
25 - 6	46	84	96
16	63	101	113
26	79	117	129
31.5 - 14	61	105	121
24	78	122	138
35	97	141	157

Dc	AA	AB	AC	AD	AE	AF	AG	AI	AK
25	25	38	25	4	6	19	6	11	M4×10
31.5	30	45	30	5	6	22	8	14	M5×12

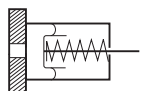


Front Flange Type Mount

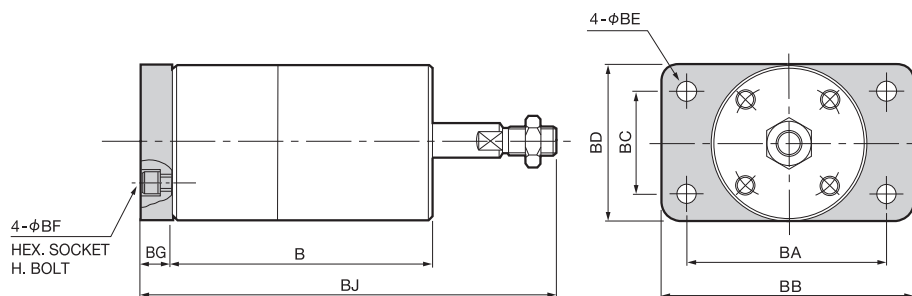


Dc-STROKE	B	BH
25 - 6	46	52
16	63	69
26	79	85
31.5 - 14	61	69
24	78	86
35	97	105

Dc	BA	BB	BC	BD	BE	BF	BG	BI
25	50	65	25	38	5	M4×6	6	24
31.5	60	75	30	45	6	M5×8	8	28

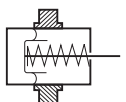


Rear Flange Type Mount

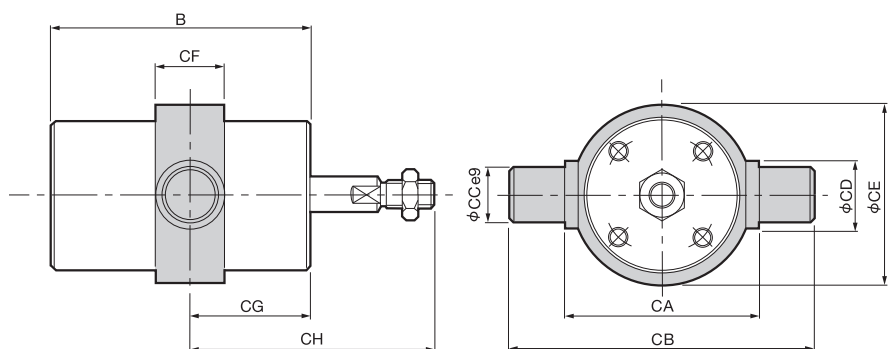


Dc-STROKE	B	BJ
25 - 6	46	82
16	63	99
26	79	115
31.5 - 14	61	105
24	78	122
35	97	141

Dc	BA	BB	BC	BD	BE	BF	BG
25	50	65	25	38	5	M4×6	6
31.5	60	75	30	45	6	M5×8	8

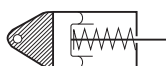


Trunnion Type Mount

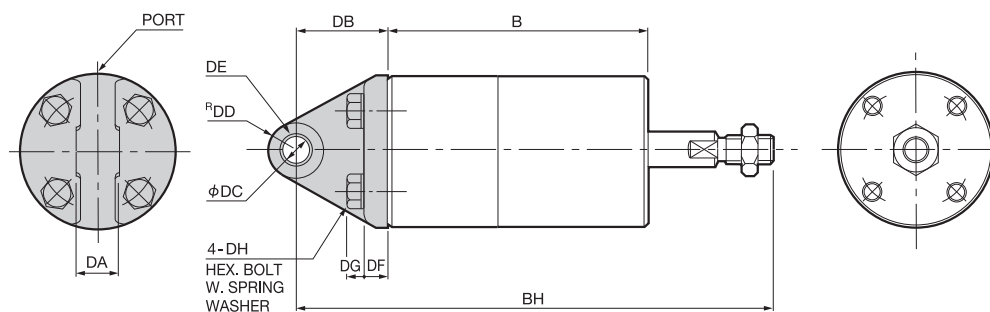


Dc-STROKE	B	CG	CH
25 - 6	46	12	42
16	63	24	54
26	79	40	70
31.5 - 14	61	24	60
24	78	36	72
35	97	48	84

Dc	CA	CB	CC	CD	CE	CF
25	46	66	10	15	46	16
31.5	54	78	12	16	53	17



Pivot Type Mount

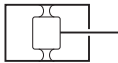


Dc-STROKE	B	BH
25 - 6	46	101
16	63	118
26	79	134
31.5 - 14	61	124
24	78	141
35	97	160

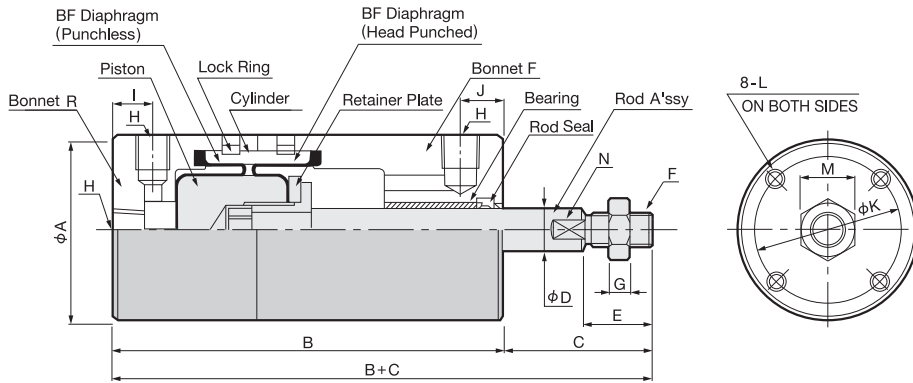
Dc	DA	DB	DC	DD	DE	DF	DG	DH
25	12	25	8	8	0812	6	3.8	M4×12
31.5	13	27	8	8	0812	7	4.8	M4×14

DE : Bearing Size No.

Model FCD-25-6 to 31.5-35



Internal Construction Outline Dimensions



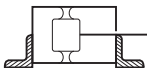
PARTS LIST

DESCRIPTION	MATERIAL
Bonnet	Al Alloy
Piston	Al Alloy
BF Diaphragm	Fabric Reinforced NBR
Lock Ring	Brass Wire
Cylinder	Al Alloy
Retainer Plate	Al Alloy
Bearing	Dry Bearing
Rod Seal	NBR
Rod Ass'y	Stainless Steel/Carbon Steel

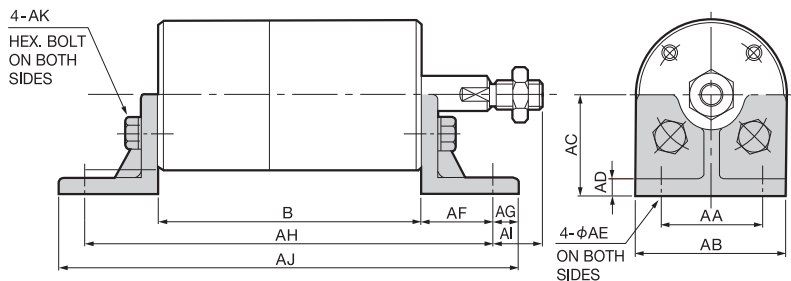
OUTLINE DIMENSIONS

Ae : Effective area (mm²)
N : Wrench flat width

Dc-STROKE	A	B	C	B+C	D	E	F	G	H	I	J	K	L	M	N	Ae	
																PUSH	PULL
25 - 6	38	71	30	101	8	12	M6 P=0.75	3.6	Rc1/8	9	9	30	M4 DP6	10	6	400	350
		86		116													
		101		131													
31.5 - 14	45	85	36	121	10	16	M8 P=1	5	Rc1/8	10	10	35	M5 DP7.5	13	8	660	580
		101		137													
		118		154													

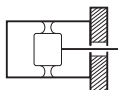


L Type Mount

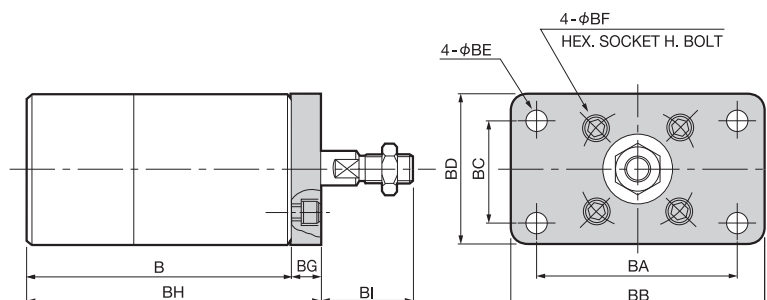


Dc-STROKE	B	AH	AJ
25 - 6	71	109	121
	86	124	136
	101	139	151
31.5 - 14	85	129	145
	101	145	161
	118	162	178

Dc	AA	AB	AC	AD	AE	AF	AG	AI	AK
25	25	38	25	4	6	19	6	11	M4×10
31.5	30	45	30	5	6	22	8	14	M5×12

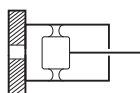


Front Flange Type Mount

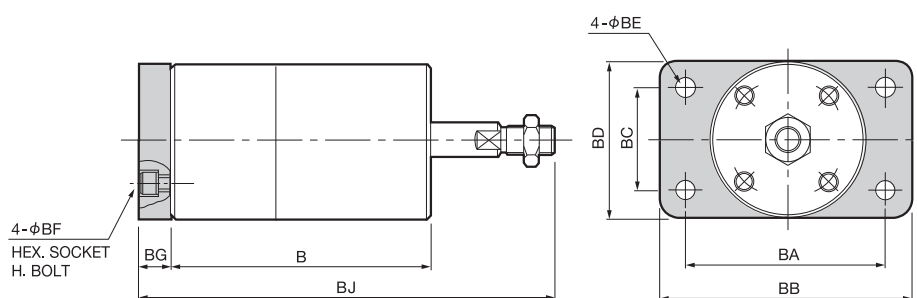


Dc-STROKE	B	BH
25 - 6	71	77
	86	92
	101	107
31.5 - 14	85	93
	101	109
	118	126

Dc	BA	BB	BC	BD	BE	BF	BG	BI
25	50	65	25	38	5	M4×6	6	24
31.5	60	75	30	45	6	M5×8	8	28

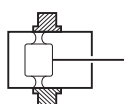


Rear Flange Type Mount

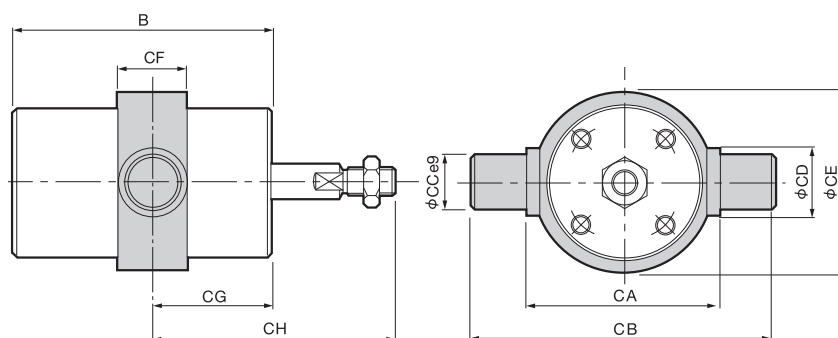


Dc-STROKE	B	BJ
25 - 6	71	107
16	86	122
26	101	137
31.5 - 14	85	129
24	101	145
35	118	162

Dc	BA	BB	BC	BD	BE	BF	BG
25	50	65	25	38	5	M4×6	6
31.5	60	75	30	45	6	M5×8	8

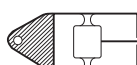


Trunnion Type Mount

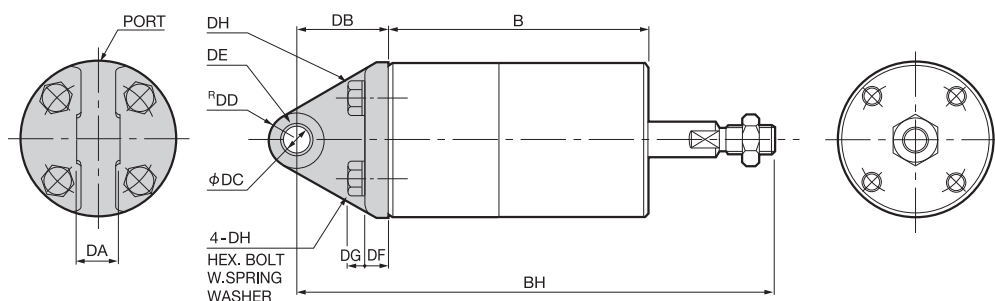


Dc-STROKE	B	CG	CH
25 - 6	71	26	56
16	86	33	63
26	101	38	68
31.5 - 14	85	44	80
24	101	60	96
35	118	67	103

Dc	CA	CB	CC	CD	CE	CF
25	46	66	10	15	46	16
31.5	54	78	12	16	53	17



Pivot Type Mount



Dc-STROKE	B	BH
25 - 6	71	126
16	86	141
26	101	156
31.5 - 14	85	148
24	101	164
35	118	181

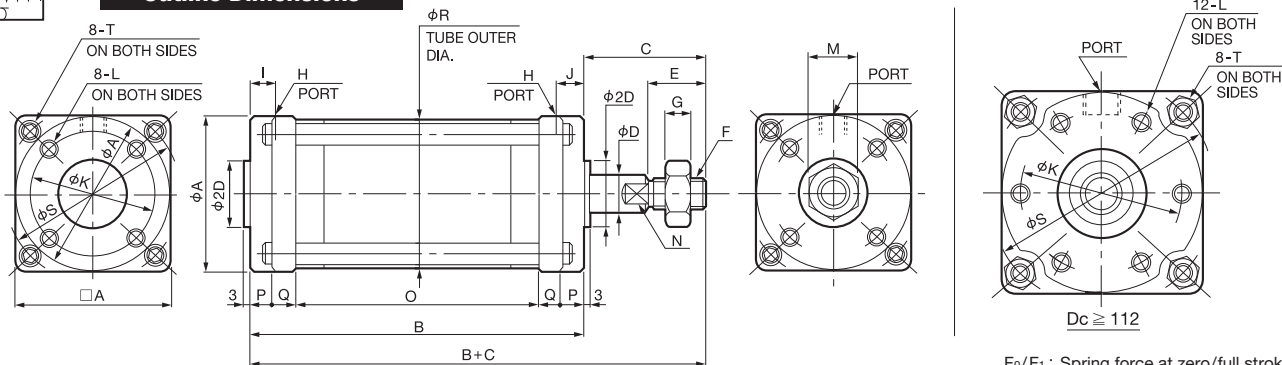
Dc	DA	DB	DC	DD	DE	DF	DG	DH
25	12	25	8	8	0812	6	3.8	M4×12
31.5	13	27	8	8	0812	7	4.8	M4×14

DE : Bearing Size No.

Model FCS-40-8 to 140-204



Outline Dimensions



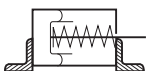
F₀/F₁ : Spring force at zero/full stroke (N)

A_e : Effective area (mm²)

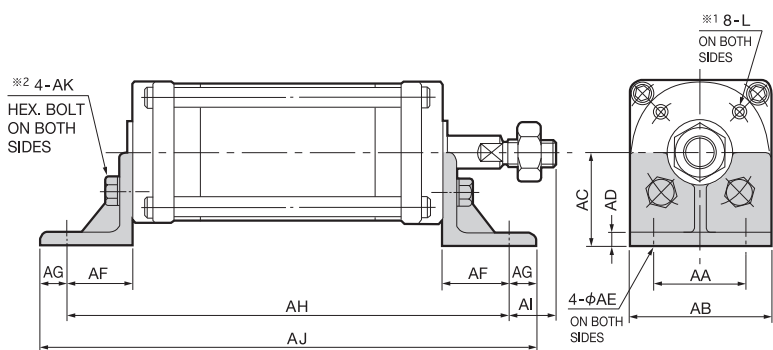
N : Wrench flat width

OUTLINE DIMENSIONS

Dc-STROKE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	Ae	SPRING FORCE	
																						F ₀	F ₁
40 - 8	53	44	42	12	20	M10 × 1.25	6	Rc 1/8	9	—	42	M6 DP 9	17	10	14	8	7	51.5	61	M5	1100	7.8	19.6
		24													38								
		36													57								
		48													75								
50 - 16	63	57	45	12	20	M10 × 1.25	6	Rc 1/8	10	—	50	M6 DP 9	17	10	25	8	8	61.5	73	M6	1770	14.7	29.4
		36													55								
		50													77								
		64													98								
63 - 16	82	66	50	16	24	M12 × 1.5	7	Rc 1/4	12	—	63	M8 DP 12	19	13	26	9	11	78.5	94	M8	2730	23.5	47
		42													65								
		59													91								
		78													120								
80 - 30	100	87	58	20	32	M16 × 1.5	10	Rc 1/4	14	—	80	M8 DP 12	24	17	39	10	14	97	114	M8	4540	39.2	78.4
		62													87								
		87													125								
		108													157								
100 - 46	120	118	65	25	40	M20 × 1.5	12	Rc 1/4	14	—	98	M10 DP 15	30	22	64	11	16	117.5	136	M10	7240	61.7	127.4
		86													124								
		115													169								
		144													214								
112 - 42	137	117	72	25	44	M22 × 1.5	13	Rc 3/8	18	—	112	M10 DP 15	32	22	55	12	19	135	156	M12	8820	76.4	158.8
		88													124								
		122													176								
		156													228								
125 - 52	150	132	76	30	48	M24 × 1.5	14	Rc 3/8	18	—	125	M10 DP 15	36	24	58	16	20	149	170	M14	11100	95.1	198
		102													133								
		140													191								
		178													249								
140 - 62	165	154	84	35	52	M27 × 1.5	16	Rc 3/8	18	—	140	M12 DP 18	41	30	74	16	24	164	190	M14	14100	119.6	254.8
		122													164								
		162													226								
		204													290								



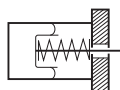
L Type Mount



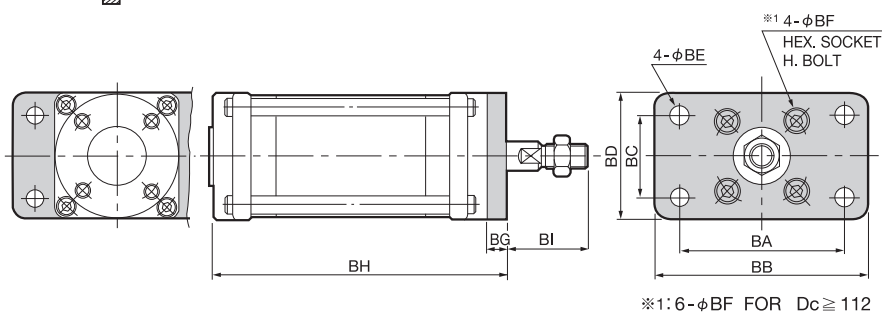
※1 : 12-L FOR Dc ≥ 112 ON BOTH SIDES

※2 : 6-AK FOR Dc ≥ 112 ON BOTH SIDES

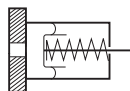
Dc-STROKE	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
40 - 8								94			
								118			
	35	53	35	5	6.5	25	10	137	17	138	M6
								155		157	× 14
50 - 16								109			
								139			
	40	63	40	6	7.5	26	11	161	19	161	M6
								182		183	× 14
63 - 16								128			
								167			
	50	82	50	6	9.5	31	14	193	19	193	M8
								222		204	× 20
80 - 30								157			
								205			
	60	100	60	8	9.5	35	17	243	23	239	M8
								275		277	× 20
100 - 46								198			
								258			
	75	120	70	8	12	40	20	303	25	343	M10
								348		388	× 25
112 - 42								205			
								274			
	85	137	80	8	14	44	23	326	28	320	M10
								378		372	× 25
125 - 52								224			
								299			
	95	150	87	10	14	46	24	357	30	347	M10
								415		405	× 25
140 - 62								246			
								336			
	100	165	95	10	16	46	24	398	38	384	M12
								462		446	× 30



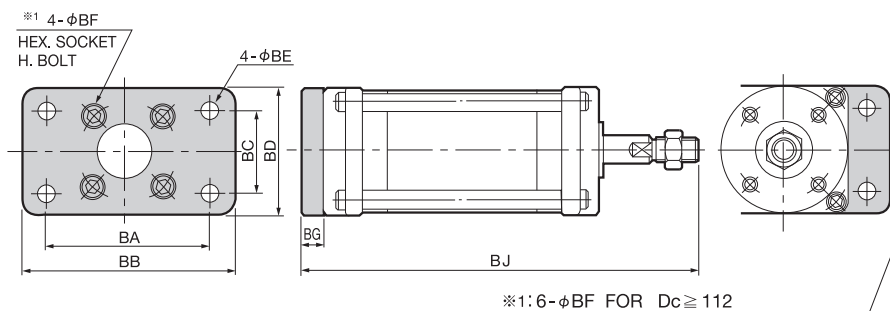
Front Flange Type Mount



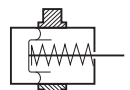
Dc-STROKE	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
40 - 8										
24	70	90	35	53	6.5	M6 × 10	9	53	33	95
36								77		119
48								96		138
								114		156
50 - 16								67		112
36	80	100	40	63	7.5	M6 × 10	10	97	35	142
50								119		164
64								140		185
63 - 16								78		128
42	105	130	55	82	9.5	M8 × 12	12	117	38	167
59								143		193
78								172		222
80 - 30								100		158
62	120	150	70	100	9.5	M8 × 12	13	148	45	206
87								186		244
108								218		276
100 - 46								132		197
86	150	180	85	120	11.5	M10 × 16	14	192	51	257
115								237		302
144								282		347
112 - 42								132		204
88	166	195	100	137	14	M10 × 16	15	201	57	273
122								253		325
156								305		377
125 - 52								148		224
102	180	210	115	150	14	M10 × 16	16	223	60	299
140								281		357
178								338		414
140 - 62								173		257
122	195	225	125	165	16	M12 × 20	19	263	65	347
162								325		409
204								389		473



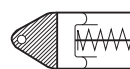
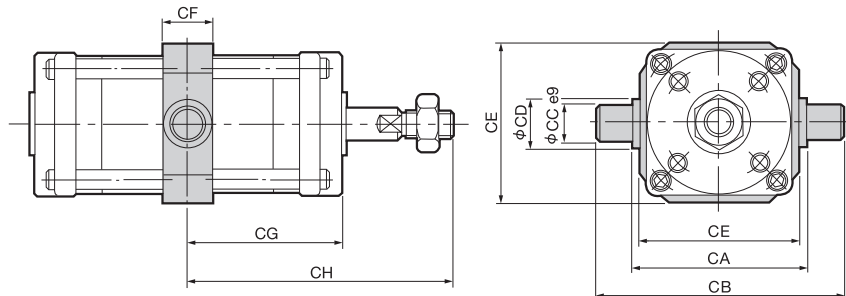
Rear Flange Type Mount



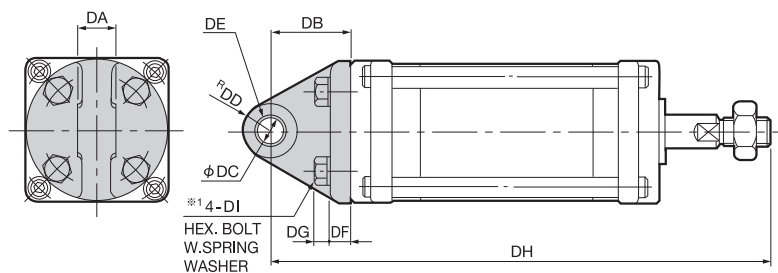
Dc-STROKE	CA	CB	CC	CD	CE	CF	CG	CH
40 - 8								
24	64	92	14	18	60	18	34	76
36							43.5	85.5
48							52.5	94.5
50 - 16							28.5	73.5
36	74	106	16	20	70	20	43.5	88.5
50							54.5	99.5
64							65	110
63 - 16							33	83
42	94	134	20	25	88	25	52.5	102.5
59							65.5	115.5
78							80	130
80 - 30							43.5	101.5
62	114	168	25	30	108	30	67.5	125.5
87							86.5	144.5
108							102.5	160.5
100 - 46							59	124
86	134	194	30	35	128	35	89	154
115							111.5	176.5
144							134	199
112 - 42							58.5	130.5
88	156	216	30	35	150	35	93	165
122							119	191
156							145	217
125 - 52							66	142
102	170	234	32	38	164	38	103.5	179.5
140							132.5	208.5
178							161	237
140 - 62							77	161
122	190	260	35	42	184	42	122	206
162							153	237
204							185	269



Trunnion Type Mount



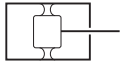
Pivot Type Mount



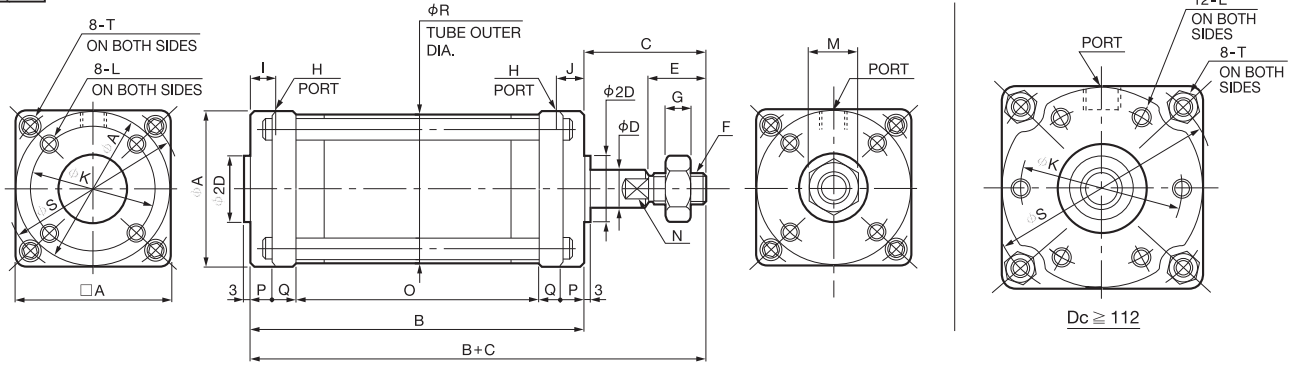
Dc-STROKE	DA	DB	DC	DD	DE	DF	DG	DH	DI
40 - 8									
24	15	30	10	14	1015	8	5.5	116	M6 × 18
36								140	
48								159	
50 - 16								177	
36	15	33	10	14	1015	9	5.5	135	M6 × 18
50								165	
64								187	
63 - 16								208	
42	20	38	12	15	1220	10	7.5	154	M8 × 22
59								193	
78								219	
80 - 30								248	
62	20	44	15	16.5	1520	12	7.5	189	M8 × 22
87								237	
108								275	
100 - 46								307	
86	25	50	18	18	1825	15	9.5	233	M10 × 30
115								293	
144								338	
112 - 42								383	
88	28	54	18	20	1810	16	9.5	243	M10 × 30
122								312	
156								364	
125 - 52								416	
102	30	59	20	23	2010	17	9.5	267	M10 × 30
140								342	
178								400	
140 - 62								457	
122	34	64	22	25	2210	19	11	302	M12 × 35
162								392	
204								454	
								518	

DE : Bearing Size No.

Model FCD-40-8 to 140-204



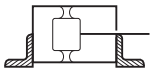
Outline Dimensions



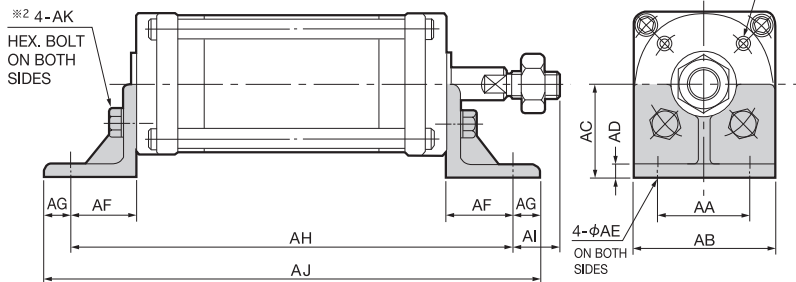
OUTLINE DIMENSIONS

Ae : Effective area (mm²)
N : Wrench flat width

Dc-STROKE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	Ae	
																					PUSH	PULL
40 - 8		54													24							
		78				M10		Rc 1/8	9	9	42	M6	17	10	48	8	7	51.5	61	M5	1100	980
	53	97	42	12	20	× 1.25	6					DP 9			67							
	36	116													86							
50 - 16		67													35							
		97				M10		Rc 1/8	10	10	50	M6	17	10	65	8	8	61.5	73	M6	1770	1650
	63	119	45	12	20	× 1.25	6					DP 9			87							
	36	141													109							
63 - 16		79													39							
		118				M12		Rc 1/4	12	12	63	M8	19	13	78	9	11	78.5	94	M8	2730	2530
	82	145	50	16	24	× 1.5	7					DP 12			105							
	42	175													135							
80 - 30		100													52							
		148				M16		Rc 1/4	14	14	80	M8	24	17	100	10	14	97	114	M8	4540	4230
	100	187	58	20	32	× 1.5	10					DP 12			139							
	62	220													172							
100 - 46		132													78							
		192				M20		Rc 1/4	14	14	98	M10	30	22	138	11	16	117.5	136	M10	7240	6750
	120	239	65	25	40	× 1.5	12					DP 15			185							
	86	284													230							
112 - 42		138													76							
		207				M22		Rc 3/8	18	18	112	M10	32	22	145	12	19	135	156	M12	8820	8330
	137	260	72	25	44	× 1.5	13					DP 15			198							
	88	313													251							
125 - 52		153													81							
		228				M24		Rc 3/8	18	18	125	M10	36	24	156	16	20	149	170	M14	11100	10400
	150	287	76	30	48	× 1.5	14					DP 15			215							
	102	346													274							
140 - 62		173													93							
		263				M27		Rc 3/8	18	18	140	M12	41	30	183	16	24	164	190	M14	14100	13300
	165	326	84	35	52	× 1.5	16					DP 18			246							
	122	392													312							



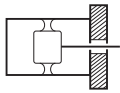
L Type Mount



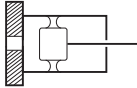
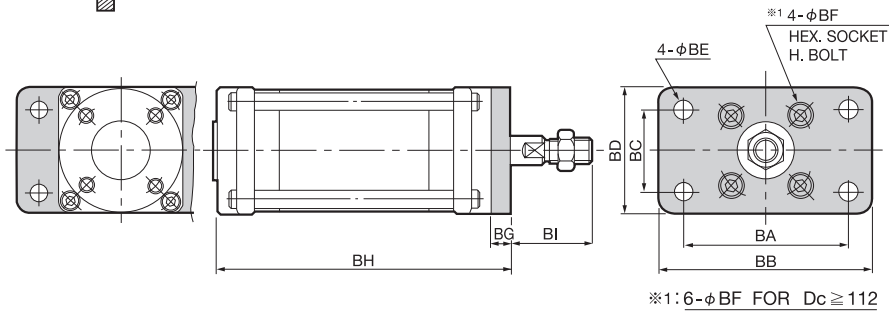
※1 : 12-L FOR Dc ≥ 112 ON BOTH SIDES

※2 : 6-AK FOR Dc ≥ 112 ON BOTH SIDES

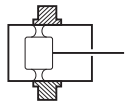
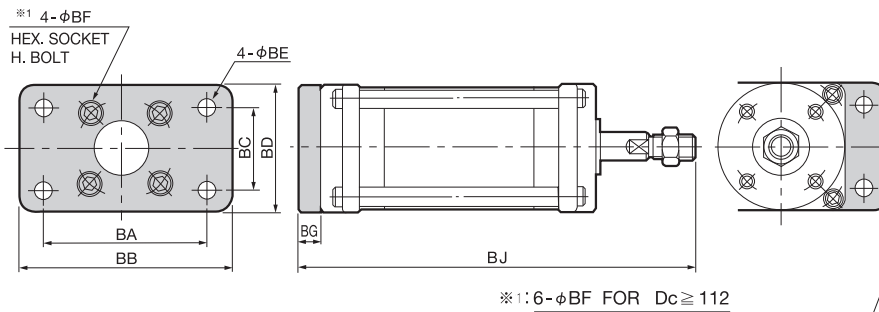
Dc-STROKE	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
40 - 8								104		124	
								128	17	148	M6
		35	53	35	5	6.5	25	147		167	× 14
		36						166		186	
50 - 16								119		141	
								149	19	171	M6
		40	63	40	6	7.5	26	171		193	× 14
		36						193		215	
63 - 16								141		169	
								180	19	208	M8
		50	82	50	6	9.5	31	207		235	× 20
		42						237		265	
80 - 30								170		204	
								218	23	252	M8
		60	100	60	8	9.5	35	257		291	× 20
		87						290		324	
100 - 46								212		252	
								272	25	312	M10
		75	120	70	8	12	40	319		359	× 25
		115						364		404	
112 - 42								226		272	
								295	28	341	M10
		85	137	80	8	14	44	348		394	× 25
		122						401		447	
125 - 52								245		293	
								320	30	368	M10
		95	150	87	10	14	46	379		427	× 25
		140						438		486	
140 - 62								265		313	
								355	38	403	M12
		100	165	95	10	16	46	418		466	× 30
		122						484		532	



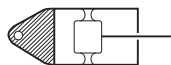
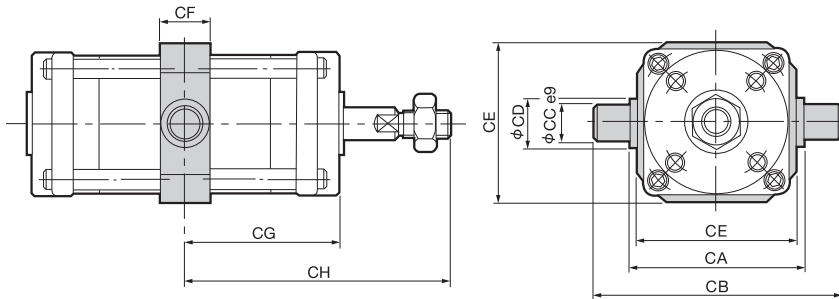
Front Flange Type Mount



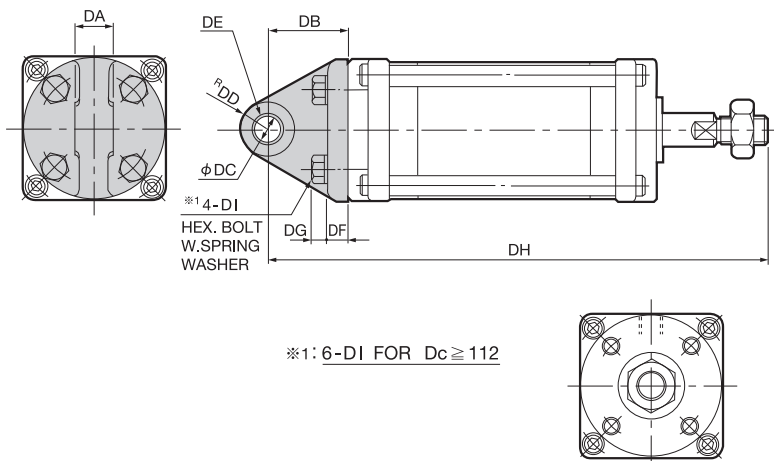
Rear Flange Type Mount



Trunnion Type Mount



Pivot Type Mount



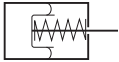
Dc-STROKE	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
40 - 8										
24	70	90	35	53	6.5	M6	9	63	33	105
36						× 10		87		129
48								106		148
50 - 16								125		167
36	80	100	40	63	7.5	M6	10	77		122
50						× 10		107	35	152
64								129		174
63 - 16								151		196
42	105	130	55	82	9.5	M8	12	91		141
59						× 14		130	38	179
78								157		207
80 - 30								187		237
62								113		171
87	120	150	70	100	9.5	M8	13	161	45	219
108						× 14		200		258
100 - 46								233		291
86	150	180	85	120	11.5	M10	14	146		211
115						× 16		206	51	271
144								253		318
112 - 42								298		363
88	166	195	100	137	14	M10	15	153		225
122						× 16		222	57	294
156								275		347
125 - 52								328		400
102	180	210	115	150	14	M10	16	169		245
140						× 16		244	60	320
178								303		379
140 - 62								362		438
122	195	225	125	165	16	M12	19	192		276
162						× 20		282	65	366
204								345		429
								411		495

Dc-STROKE	CA	CB	CC	CD	CE	CF	CG	CH
40 - 8								
24	64	92	14	18	60	18	27	69
36							39	81
48							48.5	90.5
50 - 16							58	100
36	74	106	16	20	70	20	33.5	78.5
50							48.5	93.5
64							59.5	104.5
63 - 16							70.5	115.5
42	94	134	20	25	88	25	39.5	89.5
59							59	109
78							72.5	122.5
80 - 30							87.5	137.5
62	114	168	25	30	108	30	50	108
87							74	132
108							93.5	151.5
100 - 46							110	168
86	134	194	30	35	128	35	66	131
115							96	161
144							119.5	184.5
112 - 42							142	207
88	156	216	30	35	150	35	69	141
122							103.5	175.5
156							130	202
125 - 52							156.5	228.5
102	170	234	32	38	164	38	76.5	152.5
140							114	190
178							143.5	219.5
140 - 62							173	249
122	190	260	35	42	184	42	86.5	170.5
162							131.5	215.5
204							163	247
							196	280

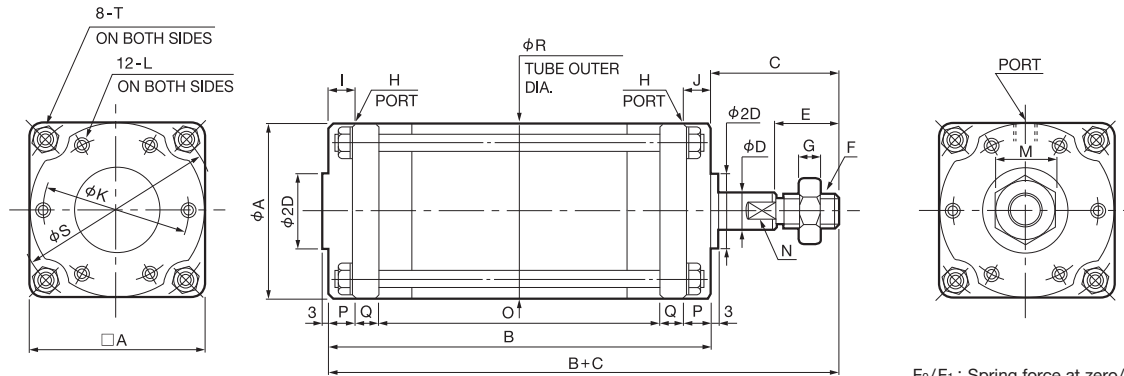
Dc-STROKE	DA	DB	DC	DD	DE	DF	DG	DH	DI
40 - 8									
24	15	30	10	14	1015	8	5.5	126	M6
36								150	× 18
48								169	
50 - 16								188	
36	15	33	10	14	1015	9	5.5	145	M6
50								175	× 18
64								197	
63 - 16								219	
42	20	38	12	15	1220	10	7.5	167	M8
59								206	× 22
78								233	
80 - 30								263	
62	20	44	15	16.5	1520	12	7.5	202	M8
87								250	× 22
108								289	
100 - 46								322	
86	25	50	18	18	1825	15	9.5	247	M10
115								307	× 30
144								354	
112 - 42								399	
88	28	54	18	20	1810	16	9.5	264	M10
122					2pcs.			333	× 30
156								386	
125 - 52								439	
102	30	59	20	23	2010	17	9.5	288	M10
140					2pcs.			363	× 30
178								422	
140 - 62								481	
122	34	64	22	25	2210	19	11	321	M12
162					2pcs.			411	× 35
204								474	
								570	

DE: Bearing Size No.

Model FCS-160-82 to 200-320



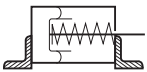
Outline Dimensions



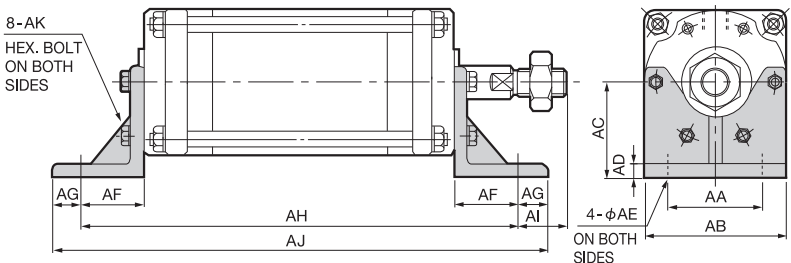
OUTLINE DIMENSIONS

Dc-STROKE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	Ae	SPRING FORCE	
																						F ₀	F ₁
160 – 82	185	184	94	35	60	M30 × 1.5	18	Rc 1/2	22	—	160	M12 DP 18	46	30	86	23	26	185	215	M16	18600	158.8	356.7
		142													176								
		192													253								
		240													327								
180 – 96	205	213	104	40	64	M33 × 1.5	20	Rc 1/2	22	—	176	M14 DP 21	50	36	101	26	30	205	238	M18	23800	205.8	490
		168													209								
		226													298								
		280													381								
200 – 112	225	244	120	45	72	M36 × 1.5	21	Rc 3/4	24	—	194	M16 DP 24	55	41	118	28	35	225	262	M20	29600	254.8	656.6
		192													238								
		256													336								
		320													434								

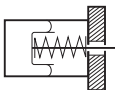
F₀/F₁ : Spring force at zero/full stroke (N)
Ae : Effective area (mm²)
N : Wrench flat width



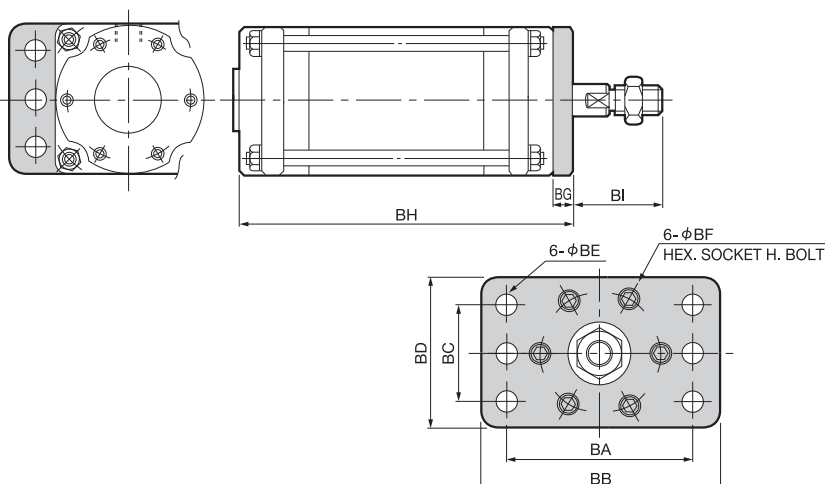
L Type Mount



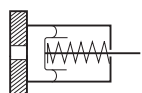
Dc-STROKE	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
160 - 82											
142	115	185	105	13	18	49	26	282	334	M12	
192								372	424	× 30	
240								449	501		
								523	575		
180 - 96											
168	130	205	115	14	18	52	28	317	373	M14	
226								425	481	× 35	
280								514	570		
								597	653		
200 - 112											
192	140	225	125	14	18	52	28	348	404	M16	
256								468	524	× 35	
320								566	622		
								664	720		



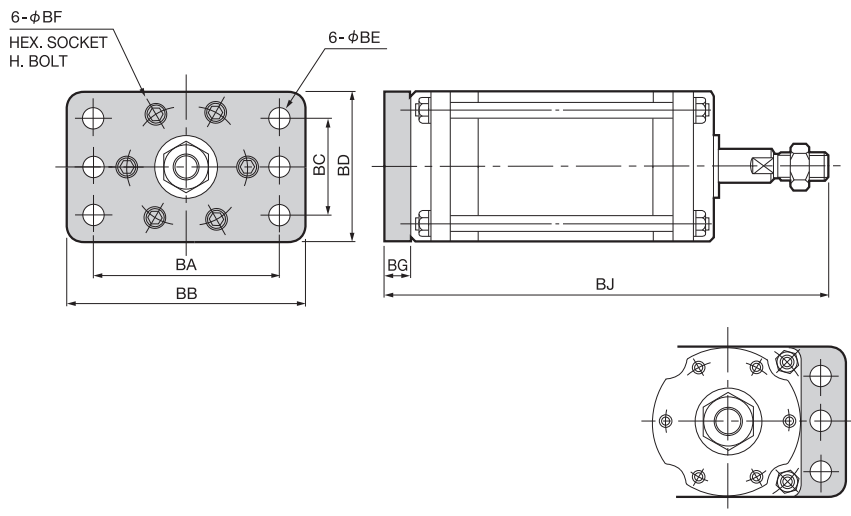
Front Flange Type Mount



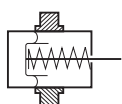
Dc-STROKE	BA	BB	BC	BD	BE	BF	BG	BH	BI
160 - 82									
142	220	260	140	185	16	M12	19	203	75
192						× 20		293	
240								370	
								444	
180 - 96									
168	250	300	160	205	18	M14	22	235	82
226						× 25		343	
280								432	
								515	
200 - 112									
192	275	320	180	225	18	M16	25	269	95
256						× 25		389	
320								487	
								585	



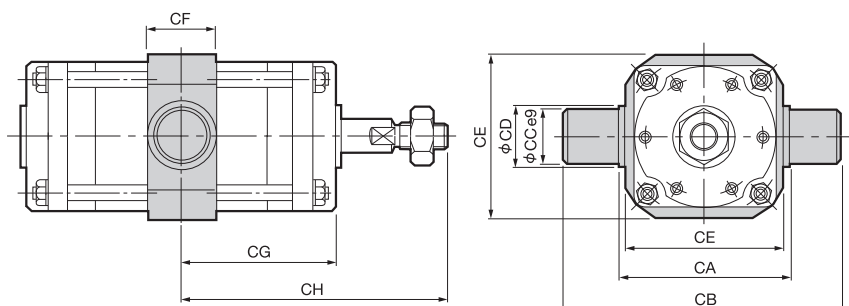
Rear Flange Type Mount



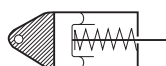
Dc-STROKE	BA	BB	BC	BD	BE	BF	BG	BJ
160 - 82								297
142	220	260	140	185	16	M12 × 20	19	387
192								464
240								538
180 - 96								339
168	250	300	160	205	18	M14 × 25	22	447
226								536
280								619
200 - 112								389
192	275	320	180	225	18	M16 × 25	25	509
256								607
320								705



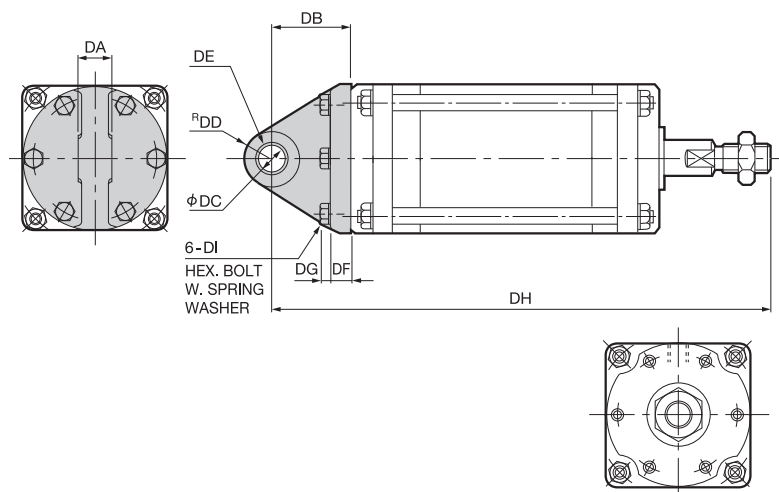
Trunnion Type Mount



Dc-STROKE	CA	CB	CC	CD	CE	CF	CG	CH
160 - 82							92	186
142	215	295	40	60	205	60	137	231
192							175.5	269.5
240							212.5	306.5
180 - 96							106.5	210.5
168	235	325	45	63	225	63	160.5	264.5
226							205	309
280							246.5	350.5
200 - 112							122	242
192	260	350	45	65	250	65	182	302
256							231	351
320							280	400



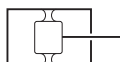
Pivot Type Mount



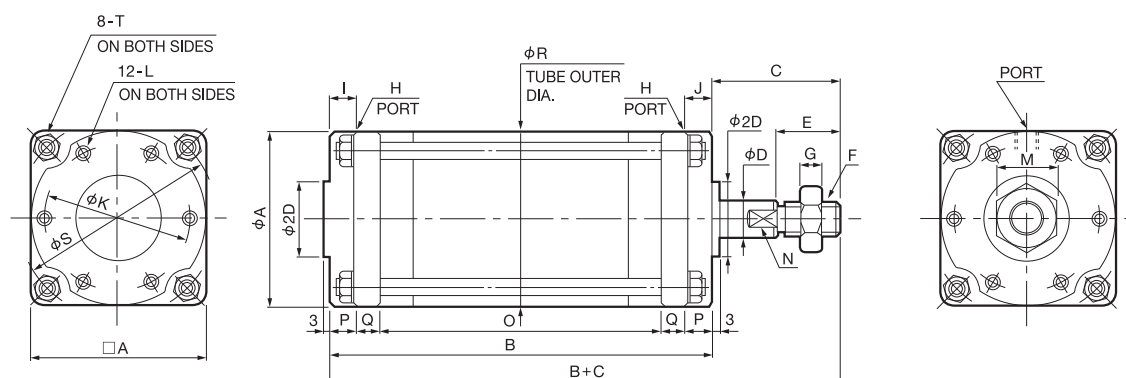
Dc-STROKE	DA	DB	DC	DD	DE	DF	DG	DH	DI
160 - 82								348	M12 × 40
142	38	70	25	28	2510	21	11	438	
192					2pcs.			515	
240								589	
180 - 96								394	M14 × 45
168	42	77	28	32	2812	24	12.5	502	
226					2pcs.			591	
280								674	
200 - 112								449	M16 × 50
192	45	85	30	34	3012	26	14	569	
256					2pcs.			667	
320								765	

DE : Bearing Size No.

Response	Percentage
Yes, the current system is the best way to run the country	55%
No, the current system is not the best way to run the country	45%



Outline Dimensions

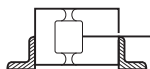


■ OUTLINE DIMENSIONS

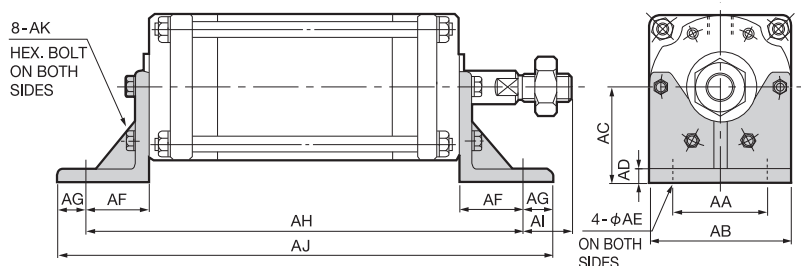
Dc-STROKE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	Ae	
																					PUSH	PULL
160 – 82	185	230	94	35	60	M30 × 1.5	18	Rc 1/2	22	22	160	M12 DP 18	46	30	132	23	26	185	215	M16	18600	17600
		142													222							
		192													301							
		240													377							
180 – 96	205	260	104	40	64	M33 × 1.5	20	Rc 1/2	22	22	176	M14 DP 21	50	36	148	26	30	205	238	M18	23800	22500
		168													256							
		226													347							
		280													432							
200 –112	225	292	120	45	72	M36 × 1.5	21	Rc 3/4	24	24	194	M16 DP 24	55	41	166	28	35	225	262	M20	29600	28000
		192													286							
		256													386							
		320													486							

Ae : Effective area (mm²)

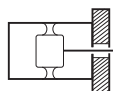
N : Wrench flat width



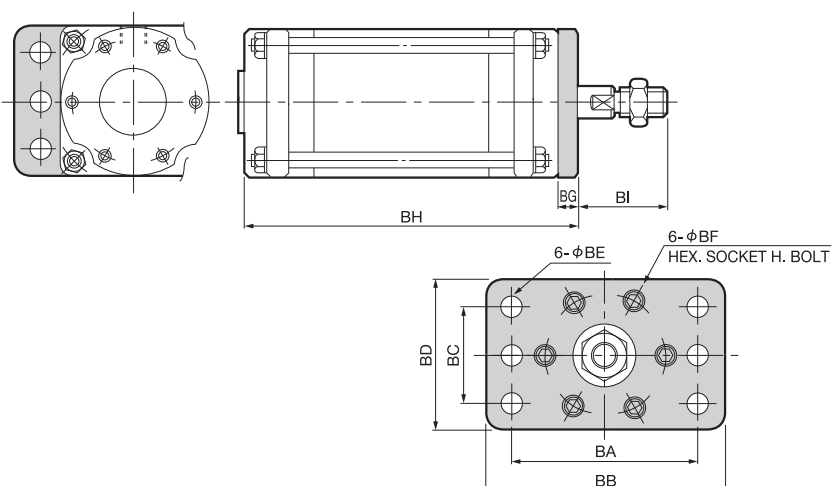
L Type Mount



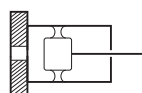
Dc-STROKE	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK
160 –	82	115	185	105	13	18	49	26	328	380	M12 × 30
	142								418	470	
	192								497	549	
	240								573	625	
180 –	96	130	205	115	14	18	52	28	364	420	M14 × 35
	168								472	528	
	226								563	619	
	280								648	704	
200 –	112	140	225	125	14	18	52	28	396	452	M16 × 35
	192								516	572	
	256								616	672	
	320								716	772	



Front Flange Type Mount

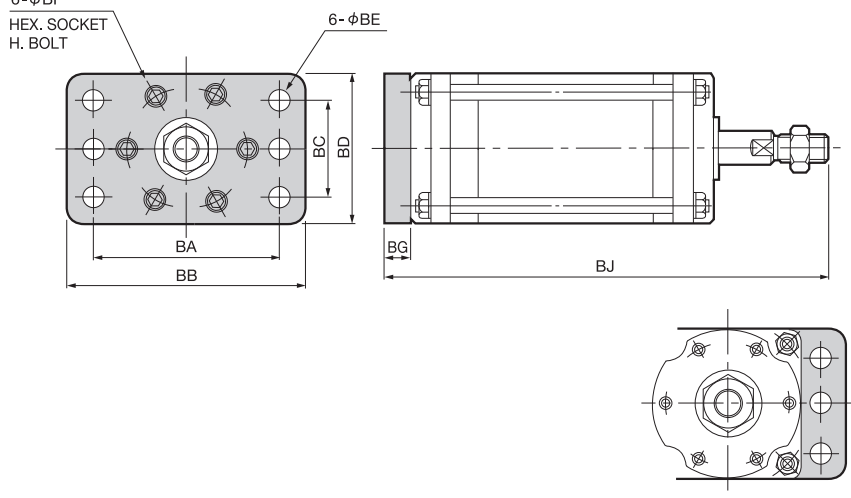


Dc-STROKE	BA	BB	BC	BD	BE	BF	BG	BH	BI
160 – 82								249	
	220	260	140	185	16	M12 × 20	19	339	75
								418	
								494	
180 – 96								282	
	250	300	160	205	18	M14 × 25	22	390	82
								481	
								566	
200 – 112								317	
	275	320	180	225	18	M16 × 25	25	437	95
								537	
								637	

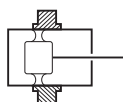


Rear Flange Type Mount

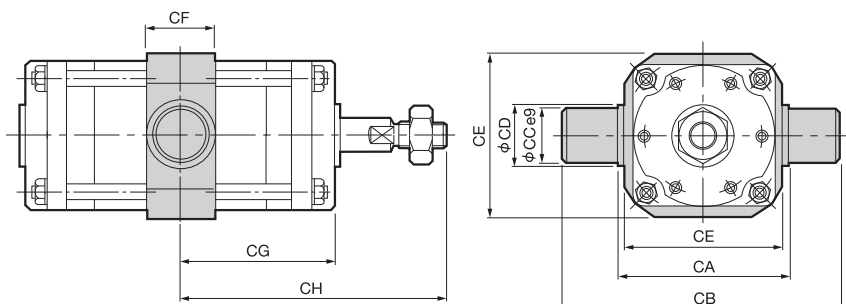
6- ϕ BF
HEX. SOCKET
H. BOLT



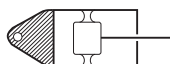
Dc-STROKE	BA	BB	BC	BD	BE	BF	BG	BJ
160 - 82								343
142	220	260	140	185	16	M12 × 20	19	433
192								512
240								588
180 - 96								386
168	250	300	160	205	18	M14 × 25	22	494
226								585
280								670
200 - 112								437
192	275	320	180	225	18	M16 × 25	25	557
256								657
320								757



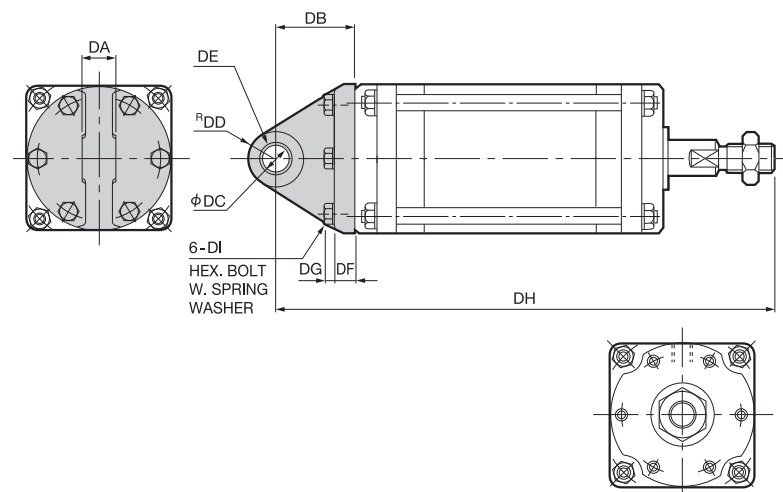
Trunnion Type Mount



Dc-STROKE	CA	CB	CC	CD	CE	CF	CG	CH
160 - 82							115	209
142	215	295	40	60	205	60	160	254
192							199.5	293.5
240							237.5	331.5
180 - 96							130	234
168	235	325	45	63	225	63	184	288
226							229.5	333.5
280							272	376
200 - 112							146	266
192	260	350	45	65	250	65	206	326
256							256	376
320							306	426



Pivot Type Mount



Dc-STROKE	DA	DB	DC	DD	DE	DF	DG	DH	DI
160 - 82								394	M12 × 40
142	38	70	25	28	2510 2pcs.	21	11	484	
192								563	
240								639	
180 - 96								441	M14 × 45
168	42	77	28	32	2812 2pcs.	24	12.5	549	
226								640	
280								725	
200 - 112								497	M16 × 50
192	45	85	30	34	3012 2pcs.	26	14	617	
256								717	
320								817	

DE : Bearing Size No.

[illegible]

[illegible]

Fujikura's Pneumatic Control Products Line

■ General Guide		Cat. No. KS-572E
■ Fujikura BF Cylinder	Series FC	Cat. No. KS-570E
■ Super Precision Air Regulators	Series RS	} Cat. No. KS-128E
■ Super Precision Air Relays	Series RR	
■ Precision Air Regulators	Series RP	Cat. No. KS-129E
■ Precision Vacuum Pressure Regulators	Series RV	Cat. No. KS-131E

[Please request respective catalog for detailed contents of each product.]

Note: Specifications subject to change without notice for improvements and modifications.



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