

# Spring Unit For Cam Return

## SELECTION METHOD

For spring unit CRUV and CRFV series, customer can determine parameters such as return force according to the die specification.

The table on the following page shows L size and final pressure (return force) of the spring guide pin for a standard travel. Please refer to this table for using the unit.

### ●Simplified Chart



Example

Initial Load : 150kg(1470N)  
Travel : 50mm

From 300,000 strokes in the table, find the type that gives 1470 N or more for initial pressure. Then, find the type that gives the travel of 50 mm. The applicable name of the spring unit, free length FL and spring guide pin L can be obtained.

### ■CRUVL

D	Free Length FL	Spring Constant N/mm	Standard Travel S	Reference Value for Standard Travel (300,000 strokes) Free Length×40%			
				Compression	L	Initial Load N	Final Load N
50	90	91.98	20	36.0	89	1472	3310
	100	82.78	25	40.0	100	1242	
	125	66.22	30	50.0	120	1324	
	150	55.19	35	60.0	140	1380	
	175	47.30	40	70.0	160	1419	
	200	41.39	45	80.0	180	1449	
	225	36.79	50	90.0	200	1472	
	250	33.11	55	100.0	220	1490	
	275	30.10	60	110.0	240	1505	
	300	27.59	70	120.0	265	1380	
350	23.65	80	140.0	305	1419		

From the table, the spring unit that meets the conditions is CRUVL50-225-200.

### ■ CRUVF

D	Free Length FL	Spring Constant N/mm	Standard Travel S	Reference Value for Standard Travel (one million strokes)Free Length×40%				Reference Value for Standard Travel (500,000 strokes) Free Length×45%				Reference Value for Standard Travel (300,000 strokes) Free Length×50%			
				Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N
40	90	27.85	20	36.0	89	446		40.5	85	571		45.0	80	696	
	100	25.07	25	40.0	100	376		45.0	95	501		50.0	90	627	
	125	20.05	30	50.0	120	401		56.3	114	527		62.5	108	652	
	150	16.71	35	60.0	140	418		67.5	133	543		75.0	125	668	
	175	14.32	40	70.0	160	430		78.8	151	556		87.5	143	680	
	200	12.53	45	80.0	180	439		90.0	170	564		100.0	160	689	1255
	225	11.14	50	90.0	200	446		101.3	189	571		112.5	178	696	
	250	10.03	55	100.0	220	451		112.5	208	577		125.0	195	702	
	275	9.12	65	110.0	245	410		123.8	231	536		137.5	218	661	
	300	8.36	70	120.0	265	418		135.0	250	543		150.0	235	669	
50	100	39.22	20	40.0	95	784		45.0	90	981		50.0	85	1177	
	125	31.38	25	50.0	115	785		56.3	109	982		62.5	103	1177	
	150	26.15	30	60.0	135	785		67.5	128	981		75.0	120	1177	
	175	22.41	35	70.0	155	784		78.8	146	982		87.5	138	1177	
	200	19.61	40	80.0	175	784		90.0	165	981		100.0	155	1177	
	225	17.43	45	90.0	195	784		101.3	184	981		112.5	173	1177	1961
	250	15.69	50	100.0	215	785		112.5	203	981		125.0	190	1177	
	275	14.26	55	110.0	235	784		123.8	221	981		137.5	208	1176	
	300	13.07	60	120.0	255	784		135.0	240	980		150.0	225	1176	
	350	11.21	70	140.0	295	785		157.5	278	981		175.0	260	1177	
60	100	56.44	20	40.0	95	1129		45.0	90	1411		50.0	85	1693	
	125	45.16	25	50.0	115	1129		56.3	109	1414		62.5	103	1694	
	150	37.63	30	60.0	135	1129		67.5	128	1411		75.0	120	1693	
	175	32.25	35	70.0	155	1129		78.8	146	1413		87.5	138	1693	
	200	28.22	40	80.0	175	1129		90.0	165	1411		100.0	155	1693	
	225	25.09	45	90.0	195	1129		101.3	184	1413		112.5	173	1694	2820
	250	22.58	50	100.0	215	1129		112.5	203	1411		125.0	190	1694	
	275	20.53	55	110.0	235	1129		123.8	221	1412		137.5	208	1694	
	300	18.81	60	120.0	255	1129		135.0	240	1411		150.0	225	1693	
	350	16.13	70	140.0	295	1129		157.5	278	1411		175.0	260	1694	
400	14.11	80	160.0	335	1129		180.0	315	1411		200.0	295	1693		

### ■ CRUVL

D	Free Length FL	Spring Constant N/mm	Standard Travel S	Reference Value for Standard Travel (one million strokes)Free Length×32%				Reference Value for Standard Travel (500,000 strokes) Free Length×36%				Reference Value for Standard Travel (300,000 strokes) Free Length×40%			
				Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N
40	90	58.73	20	28.8	96.0	517		32.4	93	728		36.0	89	940	
	100	52.86	25	32.0	108	370		36.0	104	581		40.0	100	793	
	125	42.29	30	40.0	130	423		45.0	125	634		50.0	120	846	
	150	35.24	35	48.0	152	458		54.0	146	670		60.0	140	881	
	175	30.21	40	56.0	174	483		63.0	167	695		70.0	160	906	2120
	200	26.43	45	64.0	196	502		72.0	188	714		80.0	180	925	
	225	23.49	50	72.0	218	517		81.0	209	728		90.0	200	940	
	250	21.14	55	80.0	240	529		90.0	230	740		100.0	220	951	
	275	19.22	65	88.0	267	442		99.0	256	653		110.0	245	865	
	300	17.62	70	96.0	289	458		108.0	277	670		120.0	265	881	
50	90	91.98	20	28.8	96	809		32.4	93	1141		36.0	89	1472	
	100	82.78	25	32.0	108	579		36.0	104	911		40.0	100	1242	
	125	66.22	30	40.0	130	662		45.0	125	993		50.0	120	1324	
	150	55.19	35	48.0	152	717		54.0	146	1049		60.0	140	1380	
	175	47.30	40	56.0	174	757		63.0	167	1088		70.0	160	1419	
	200	41.39	45	64.0	196	786		72.0	188	1118		80.0	180	1449	3310
	225	36.79	50	72.0	218	809		81.0	209	1140		90.0	200	1472	
	250	33.11	55	80.0	240	828		90.0	230	1159		100.0	220	1490	
	275	30.10	60	88.0	262	843		99.0	251	1174		110.0	240	1505	
	300	27.59	70	96.0	289	717		108.0	277	1048		120.0	265	1380	
60	350	23.65	80	112.0	333	757		126.0	319	1088		140.0	305	1419	
	90	132.41	20	28.8	96	1165		32.4	93	1642		36.0	89	2119	
	100	119.17	25	32.0	108	834		36.0	104	1311		40.0	100	1788	
	125	95.33	30	40.0	130	953		45.0	125	1430		50.0	120	1907	
	150	79.44	35	48.0	152	1033		54.0	146	1509		60.0	140	1986	
	175	68.10	40	56.0	174	1090		63.0	167	1566		70.0	160	2043	
	200	59.58	45	64.0	196	1132		72.0	188	1609		80.0	180	2085	4770
	225	52.96	50	72.0	218	1165		81.0	209	1642		90.0	200	2118	
	250	47.67	60	80.0	245	953		90.0	235	1430		100.0	225	1907	
	275	43.33	65	88.0	267	997		99.0	256	1473		110.0	245	1950	
300	39.72	70	96.0	289	1033		108.0	277	1509		120.0	265	1986		
350	34.05	80	112.0	333	1090		126.0	319	1566		140.0	305	2043		

# Spring Unit For Cam Return

## SELECTION METHOD

### ■ CRUVM

D	Free Length FL	Spring Constant N/mm	Standard Travel S	Reference Value for Standard Travel (one million strokes) Free Length × 25.6%				Reference Value for Standard Travel (500,000 strokes) Free Length × 28.8%				Reference Value for Standard Travel (300,000 strokes) Free Length × 32%			
				Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N
40	100	97.92	20	25.6	109	548	2510	28.8	106	862	2820	32.0	103	1175	3140
	125	78.33	25	32.0	133	548		36.0	129	862		40.0	125	1175	
	150	65.28	30	38.4	157	548		43.2	152	862		48.0	147	1175	
	175	55.95	35	44.8	180	548		50.4	175	862		56.0	169	1175	
	200	48.96	40	51.2	204	548		57.6	197	862		64.0	191	1175	
	225	43.52	45	57.6	227	548		64.8	220	862		72.0	213	1175	
	250	39.17	50	64.0	251	548		72.0	243	862		80.0	235	1175	
	275	35.61	60	70.4	280	370		79.2	271	684		88.0	262	997	
	300	32.64	70	76.8	308	222		86.4	299	535		96.0	289	849	
50	100	153.13	20	25.6	109	858	3920	28.8	106	1348	4410	32.0	103	1838	4900
	125	122.50	25	32.0	133	858		36.0	129	1348		40.0	125	1838	
	150	102.08	30	38.4	157	857		43.2	152	1347		48.0	147	1837	
	175	87.50	35	44.8	180	858		50.4	175	1348		56.0	169	1838	
	200	76.56	40	51.2	204	857		57.6	197	1347		64.0	191	1837	
	225	68.06	45	57.6	227	858		64.8	220	1348		72.0	213	1838	
	250	61.25	50	64.0	251	858		72.0	243	1348		80.0	235	1838	
	275	55.68	55	70.4	275	857		79.2	266	1347		88.0	257	1837	
	300	51.04	60	76.8	298	857		86.4	289	1347		96.0	279	1837	
60	100	220.49	20	25.6	109	1235	5640	28.8	106	1940	6350	32.0	103	2646	7060
	125	176.39	25	32.0	133	1235		36.0	129	1940		40.0	125	2646	
	150	146.99	30	38.4	157	1235		43.2	152	1940		48.0	147	2646	
	175	125.99	35	44.8	180	1235		50.4	175	1940		56.0	169	2646	
	200	110.24	40	51.2	204	1235		57.6	197	1940		64.0	191	2646	
	225	97.99	45	57.6	227	1235		64.8	220	1940		72.0	213	2646	
	250	88.19	50	64.0	251	1235		72.0	243	1940		80.0	235	2646	
	275	80.18	55	70.4	275	1235		79.2	266	1940		88.0	257	2646	
	300	73.50	60	76.8	298	1235		86.4	289	1940		96.0	279	2646	
350	63.00	70	89.6	345	1235	100.8	334	1940	112.0	323	2646				

### ■ CRUVH

D	Free Length FL	Spring Constant N/mm	Standard Travel S	Reference Value for Standard Travel (one million strokes) Free Length × 19.2%				Reference Value for Standard Travel (500,000 strokes) Free Length × 21.6%				Reference Value for Standard Travel (300,000 strokes) Free Length × 24%			
				Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N	Compression	L	Initial Load N	Final Load N
40	100	196.30	20	19.2			3770	21.6	113	314	4240	24.0	111	785	4710
	125	157.04	25	24.0				27.0	138	314		30.0	135	785	
	150	130.86	30	28.8				32.4	163	314		36.0	159	785	
	175	112.17	35	33.6				37.8	187	314		42.0	183	785	
	200	98.15	40	38.4				43.2	212	314		48.0	207	785	
	225	87.24	45	43.2				48.6	236	314		54.0	231	785	
	250	78.52	50	48.0				54.0	261	314		60.0	255	785	
	275	71.38	55	52.8				59.4	286	314		66.0	279	785	
	300	65.43	60	57.6				64.8	310	314		72.0	303	785	
50	100	306.48	20	19.2			5880	21.6	113	490	6620	24.0	111	1226	7360
	125	245.19	25	24.0				27.0	138	490		30.0	135	1226	
	150	204.32	30	28.8				32.4	163	490		36.0	159	1226	
	175	175.13	35	33.6				37.8	187	490		42.0	183	1226	
	200	153.24	40	38.4				43.2	212	490		48.0	207	1226	
	225	136.21	45	43.2				48.6	236	490		54.0	231	1226	
	250	122.59	50	48.0				54.0	261	490		60.0	255	1226	
	275	111.45	55	52.8				59.4	286	490		66.0	279	1226	
	300	102.16	60	57.6				64.8	310	490		72.0	303	1226	
60	100	441.67	20	19.2			8470	21.6	113	707	9540	24.0	111	1767	10590
	125	353.33	25	24.0				27.0	138	707		30.0	135	1767	
	150	294.44	30	28.8				32.4	163	707		36.0	159	1767	
	175	252.38	35	33.6				37.8	187	707		42.0	183	1767	
	200	220.83	40	38.4				43.2	212	707		48.0	207	1767	
	225	196.30	45	43.2				48.6	236	707		54.0	231	1767	
	250	176.67	50	48.0				54.0	261	707		60.0	255	1767	
	275	160.61	55	52.8				59.4	286	707		66.0	279	1767	
	300	147.22	60	57.6				64.8	310	707		72.0	303	1767	
350	126.19	70	67.2			75.6	359	707	84.0	351	1767				

# Spring Unit For Cam Return

INITIAL PRESSURE AND FINAL PRESSURE TYPE

Addition

CAD FILE

CRUVF

CRFVF (Type without ⑤ and ⑥)

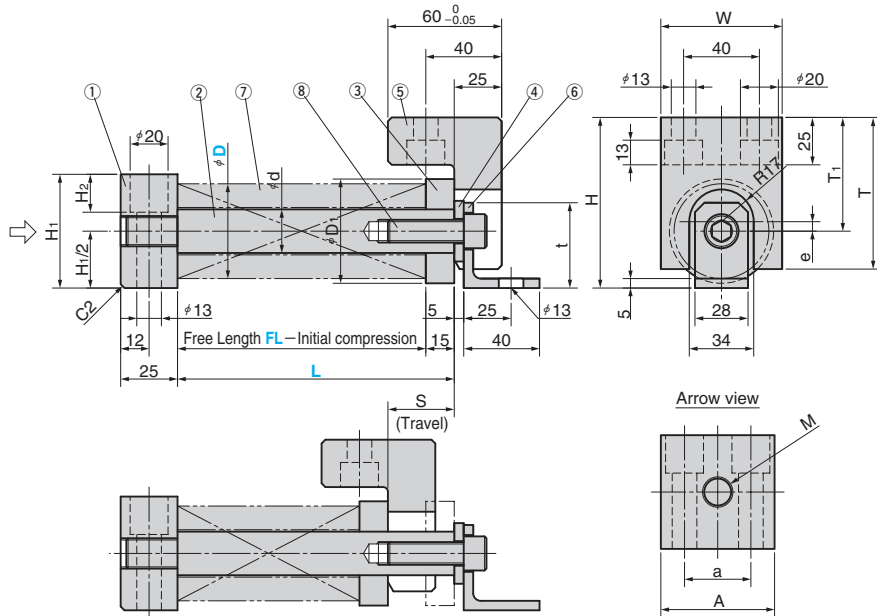
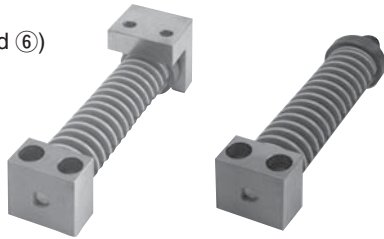


Table of Components

No.	Description	Qty	Material and Remark	No.	Description	Qty	Material and Remark
①	Spring Block	1	SS400	⑤	Return Plate	1	SS400
②	Spring Guide Pin	1	S45C(Polished)	⑥	Angle	1	SS400
③	Spring Retainer	1	FC250	⑦	Spring	1	TF(Tohatsu)
④	Washer	1	SS400	⑧	Hexagon Socket Head Bolt	1	SCM435 M12x40

D	d	D <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	t	A	a	M	W	H	T	T <sub>1</sub>	e
40	18	45	50	15	40	55	30	M12	64	80	75	55	2.5
50	23	55	60	20	45	60	35	M16		90	80	60	
60	28	65	70	25	50	70	40	M20	74	100	85	65	5

Coil spring TF load table and reference value for standard travel (Standard value: 500,000 strokes)

D	Free Length		Free Length x 40% (one million strokes)		Free Length x 45% (500,000 strokes)		Free Length x 50% (300,000 strokes)		Reference Value for Standard Travel (500,000 strokes)			
	FL	N/mm	Compression	Load N	Compression	Load N	Compression	Load N	S	L	Initial Load N	Final Load N
40	90	27.85	36.0		40.5		45.0		20	85	571	
	100	25.07	40.0		45.0		50.0		25	95	501	
	125	20.05	50.0		56.3		62.5		30	114	527	
	150	16.71	60.0		67.5		75.0		35	133	543	
	175	14.32	70.0		78.8		87.5		40	151	556	
	200	12.53	80.0	1000	90.0	1128	100.0	125.5	45	170	564	1128
	225	11.14	90.0		101.3		112.5		50	189	571	
	250	10.03	100.0		112.5		125.0		55	208	577	
	275	9.12	110.0		123.8		137.5		65	231	536	
	300	8.36	120.0		135.0		150.0		70	250	543	
50	100	39.22	40.0		45.0		50.0		20	90	981	
	125	31.38	50.0		56.3		62.5		25	109	982	
	150	26.15	60.0		67.5		75.0		30	128	981	
	175	22.41	70.0		78.8		87.5		35	146	982	
	200	19.61	80.0		90.0		100.0		40	165	981	
	225	17.43	90.0	1569	101.3	1765	112.5	1961	45	184	981	1765
	250	15.69	100.0		112.5		125.0		50	203	981	
	275	14.26	110.0		123.8		137.5		55	221	981	
	300	13.07	120.0		135.0		150.0		60	240	980	
	350	11.21	140.0		157.5		175.0		70	278	981	
60	400	9.81	160.0		180.0		200.0		80	315	981	
	100	56.44	40.0		45.0		50.0		20	90	1411	
	125	45.16	50.0		56.3		62.5		25	109	1414	
	150	37.63	60.0		67.5		75.0		30	128	1411	
	175	32.25	70.0		78.8		87.5		35	146	1413	
	200	28.22	80.0		90.0		100.0		40	165	1411	
	225	25.09	90.0	2260	101.3	2540	112.5	2820	45	184	1413	2540
	250	22.58	100.0		112.5		125.0		50	203	1411	
	275	20.53	110.0		123.8		137.5		55	221	1412	
	300	18.81	120.0		135.0		150.0		60	240	1411	
350	16.13	140.0		157.5		175.0		70	278	1411		
400	14.11	160.0		180.0		200.0		80	315	1411		

Catalog No.	D	Free Length FL	Spring Guide Pin L (in increments of 1 mm, Fractions to be rounded)
CRUVF CRFVF	40	Select the value from the table above.	FL - Initial compression + 15
	50	Note) Please note, a size not in the	
	60	table may be specified.	



Order

Catalog No.	D	FL	L
CRUVF	40	125	114
CRFVF	40	125	114

For your order

Determine the specification with the steps below:

- Determine the Initial Load, travel and Final Load per unit.
  - Select the outer diameter (D) and the free length (FL) of the coil spring satisfying ① and other conditions.
  - With the calculation formula in L of the table, obtain the length of the spring guide pin.
- Now, the steps for the specification are completed. The order codes are determined by ② and ③.

# Spring Unit For Cam Return

INITIAL PRESSURE AND FINAL PRESSURE TYPE

Addition

CAD FILE

CRUVL

CRFVL (Type without ⑤ and ⑥)

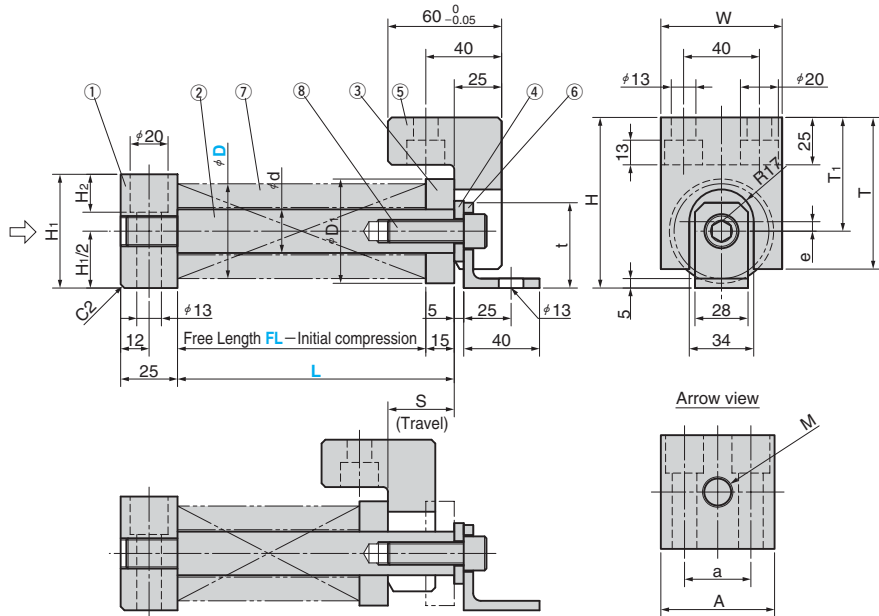
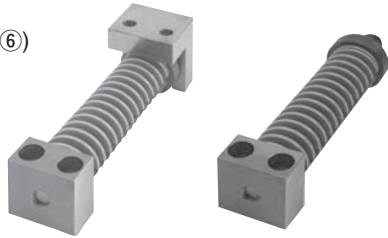


Table of Components

No.	Description	Qty	Material and Remark	No.	Description	Qty	Material and Remark
①	Spring Block	1	SS400	⑤	Return Plate	1	SS400 (Only CRUVL)
②	Spring Guide Pin	1	S45C(Polished)	⑥	Angle	1	SS400 (Only CRUVL)
③	Spring Retainer	1	FC250	⑦	Spring	1	TL(Tohatsu)
④	Washer	1	SS400	⑧	Hexagon Socket Head Bolt	1	SCM435 M12×40

D	d	D <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	t	A	a	M	W	H	T	T <sub>1</sub>	e
40	18	45	50	15	40	55	30	M12	64	80	75	55	2.5
50	23	55	60	20	45	60	35	M16		90	80	60	
60	28	65	70	25	50	70	40	M20	74	100	85	65	5

Coil spring TL load table and reference value for standard travel (Standard value: 500,000 strokes)

D	Free Length FL	Spring Constant N/mm	Free Length x 32% (one million strokes)		Free Length x 36% (500,000 strokes)		Free Length x 40% (300,000 strokes)		Reference Value for Standard Travel (500,000 strokes)				
			Compression	Load N	Compression	Load N	Compression	Load N	S	L	Initial Load N	Final Load N	
40	90	58.73	28.8		32.4		36.0		20	93	728		
	100	52.86	32.0		36.0		40.0		25	104	581		
	125	42.29	40.0		45.0		50.0		30	125	634		
	150	35.24	48.0		54.0		60.0		35	146	670		
	175	30.21	56.0	1697	63.0	1903	70.0	2120	40	167	695	1903	
	200	26.43	64.0		72.0		80.0		45	188	714		
	225	23.49	72.0		81.0		90.0		50	209	728		
	250	21.14	80.0		90.0		100.0		55	230	740		
	275	19.22	88.0		99.0		110.0		65	256	653		
	300	17.62	96.0		108.0		120.0		70	277	670		
50	90	91.98	28.8		32.4		36.0		20	93	1141		
	100	82.78	32.0		36.0		40.0		25	104	911		
	125	66.22	40.0		45.0		50.0		30	125	993		
	150	55.19	48.0		54.0		60.0		35	146	1049		
	175	47.30	56.0	2650	63.0	2980	70.0	3310	40	167	1088	2980	
	200	41.39	64.0		72.0		80.0		45	188	1118		
	225	36.79	72.0		81.0		90.0		50	209	1140		
	250	33.11	80.0		90.0		100.0		55	230	1159		
	275	30.10	88.0		99.0		110.0		60	251	1174		
	300	27.59	96.0		108.0		120.0		70	277	1048		
60	90	132.41	28.8		32.4		36.0		20	93	1642		
	100	119.17	32.0		36.0		40.0		25	104	1311		
	125	95.33	40.0		45.0		50.0		30	125	1430		
	150	79.44	48.0		54.0		60.0		35	146	1509		
	175	68.10	56.0	3810	63.0	4290	70.0	4770	40	167	1566	4290	
	200	59.58	64.0		72.0		80.0		45	188	1609		
	225	52.96	72.0		81.0		90.0		50	209	1642		
	250	47.67	80.0		90.0		100.0		60	235	1430		
	275	43.33	88.0		99.0		110.0		65	256	1473		
	300	39.72	96.0		108.0		120.0		70	277	1509		
350	34.05	112.0		126.0		140.0		80	319	1566			

Catalog No.	D	Free Length FL	Spring Guide Pin L (in increments of 1 mm, Fractions to be rounded)
CRUVL CRFVL	40	Select the value from the table above.	FL - Initial compression + 15
	50	Note) Please note, a size not in the	
	60	table may be specified.	



Order

Catalog No.	D	FL	L
CRUVL	50	175	167
CRFVL	50	175	167

For your order

Determine the specification with the steps below:

- Determine the Initial Load, travel and Final Load per unit.
  - Select the outer diameter (D) and the free length (FL) of the coil spring satisfying ① and other conditions.
  - With the calculation formula in L of the table, obtain the length of the spring guide pin.
- Now, the steps for the specification are completed. The order codes are determined by ② and ③.

# Spring Unit For Cam Return

INITIAL PRESSURE AND FINAL PRESSURE TYPE

Addition

CAD FILE

CRUVM

CRFVM (Type without ⑤ and ⑥)

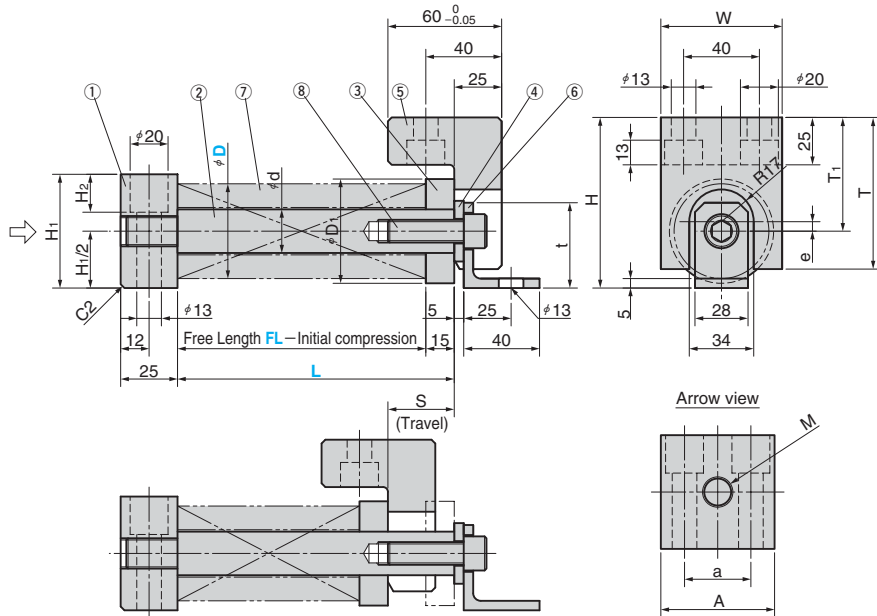
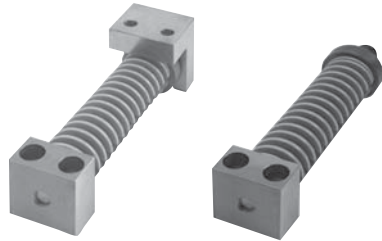


Table of Components

No.	Description	Qty	Material and Remark
①	Spring Block	1	SS400
②	Spring Guide Pin	1	S45C(Polished)
③	Spring Retainer	1	FC250
④	Washer	1	SS400

No.	Description	Qty	Material and Remark
⑤	Return Plate	1	SS400 (Only CRUVM)
⑥	Angle	1	SS400 (Only CRUVM)
⑦	Spring	1	TM(Tohatsu)
⑧	Hexagon Socket Head Bolt	1	SCM435 M12×40

D	d	D <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	t	A	a	M	W	H	T	T <sub>1</sub>	e
40	18	45	50	15	40	55	30	M12	64	80	75	55	2.5
50	23	55	60	20	45	60	35	M16		90	80	60	
60	28	65	70	25	50	70	40	M20	74	100	85	65	5

Coil spring TM load table and reference value for standard travel (Standard value: 300,000 strokes)

D	Free Length FL	Spring Constant N/mm	Free Length x 25.6% (one million strokes)		Free Length x 28.8% (500,000 strokes)		Free Length x 32% (300,000 strokes)		Reference Value for Standard Travel (300,000 strokes)				
			Compression	Load N	Compression	Load N	Compression	Load N	S	L	Initial Load N	Final Load N	
40	100	97.92	25.6		28.8		32.0		20	103	1175		
	125	78.33	32.0		36.0		40.0		25	125	1175		
	150	65.28	38.4		43.2		48.0		30	147	1175		
	175	55.95	44.8		50.4		56.0		35	169	1175		
	200	48.96	51.2	2510	57.6	2820	64.0	3140	40	191	1175	3140	
	225	43.52	57.6		64.8		72.0		45	213	1175		
	250	39.17	64.0		72.0		80.0		50	235	1175		
	275	35.61	70.4		79.2		88.0		60	262	997		
50	300	32.64	76.8		86.4		96.0		70	289	849		
	100	153.13	25.6		28.8		32.0		20	103	1838		
	125	122.50	32.0		36.0		40.0		25	125	1838		
	150	102.08	38.4		43.2		48.0		30	147	1837		
	175	87.50	44.8		50.4		56.0		35	169	1838		
	200	76.56	51.2	3920	57.6	4410	64.0	4900	40	191	1837	4900	
	225	68.06	57.6		64.8		72.0		45	213	1838		
	250	61.25	64.0		72.0		80.0		50	235	1838		
60	275	55.68	70.4		79.2		88.0		55	257	1837		
	300	51.04	76.8		86.4		96.0		60	279	1837		
	350	43.75	89.6		100.8		112.0		70	323	1838		
	100	220.49	25.6		28.8		32.0		20	103	2646		
	125	176.39	32.0		36.0		40.0		25	125	2646		
	150	146.99	38.4		43.2		48.0		30	147	2646		
	175	125.99	44.8		50.4		56.0		35	169	2646		
	200	110.24	51.2	5640	57.6	6350	64.0	7060	40	191	2646	7060	
60	225	97.99	57.6		64.8		72.0		45	213	2646		
	250	88.19	64.0		72.0		80.0		50	235	2646		
	275	80.18	70.4		79.2		88.0		55	257	2646		
	300	73.50	76.8		86.4		96.0		60	279	2646		
	350	63.00	89.6		100.8		112.0		70	323	2646		

Catalog No.	D	Free Length FL	Spring Guide Pin L (in increments of 1 mm, Fractions to be rounded)
CRUVM CRFVM	40	Select the value from the table above.	FL - Initial compression + 15
	50	Note) Please note, a size not in the table may be specified.	
	60		



Order

Catalog No.	D	FL	L
CRUVM	50	150	147
CRFVM	50	150	147

For your order

Determine the specification with the steps below:

- Determine the Initial Load, travel and Final Load per unit.
  - Select the outer diameter (D) and the free length (FL) of the coil spring satisfying ① and other conditions.
  - With the calculation formula in L of the table, obtain the length of the spring guide pin.
- Now, the steps for the specification are completed. The order codes are determined by ② and ③.

# Spring Unit For Cam Return

INITIAL PRESSURE AND FINAL PRESSURE TYPE

Addition CAD FILE

CRUVH  
CRFVH (Type without ⑤ and ⑥)

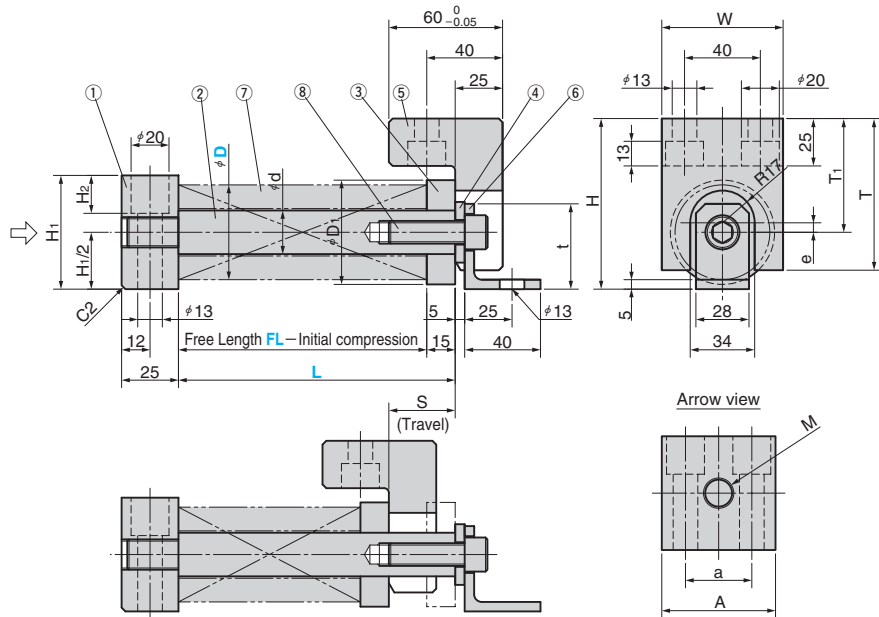
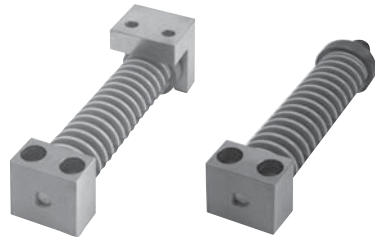


Table of Components

No.	Description	Qty	Material and Remark	No.	Description	Qty	Material and Remark
①	Spring Block	1	SS400	⑤	Return Plate	1	SS400 (Only CRUVH)
②	Spring Guide Pin	1	S45C(Polished)	⑥	Angle	1	SS400 (Only CRUVH)
③	Spring Retainer	1	FC250	⑦	Spring	1	TH(Tohatsu)
④	Washer	1	SS400	⑧	Hexagon Socket Head Bolt	1	SCM435 M12×40

D	d	D <sub>1</sub>	H <sub>1</sub>	H <sub>2</sub>	t	A	a	M	W	H	T	T <sub>1</sub>	e
40	18	45	50	15	40	55	30	M12	64	80	75	55	2.5
50	23	55	60	20	45	60	35	M16		90	80	60	
60	28	65	70	25	50	70	40	M20	74	100	85	65	5

Coil spring TH load table and reference value for standard travel (Standard value: 300,000 strokes)

D	Free Length FL	Spring Constant N/mm	Free Length x 19.2% (one million strokes)		Free Length x 21.6% (500,000 strokes)		Free Length x 24% (300,000 strokes)		Reference Value for Standard Travel (300,000 strokes)				
			Compression	Load N	Compression	Load N	Compression	Load N	S	L	Initial Load N	Final Load N	
40	100	196.30	19.2		21.6		24.0		20	111	785		
	125	157.04	24.0		27.0		30.0		25	135	785		
	150	130.86	28.8		32.4		36.0		30	159	785		
	175	112.17	33.6		37.8		42.0		35	183	785		
	200	98.15	38.4	3770	43.2	4240	48.0	4710	40	207	785	4710	
	225	87.24	43.2		48.6		54.0		45	231	785		
	250	78.52	48.0		54.0		60.0		50	255	785		
	275	71.38	52.8		59.4		66.0		55	279	785		
50	100	306.48	19.2		21.6		24.0		20	111	1226		
	125	245.19	24.0		27.0		30.0		25	135	1226		
	150	204.32	28.8		32.4		36.0		30	159	1226		
	175	175.13	33.6		37.8		42.0		35	183	1226		
	200	153.24	38.4	5880	43.2	6620	48.0	7360	40	207	1226	7360	
	225	136.21	43.2		48.6		54.0		45	231	1226		
	250	122.59	48.0		54.0		60.0		50	255	1226		
	275	111.45	52.8		59.4		66.0		55	279	1226		
60	100	441.67	19.2		21.6		24.0		20	111	1767		
	125	353.33	24.0		27.0		30.0		25	135	1767		
	150	294.44	28.8		32.4		36.0		30	159	1767		
	175	252.38	33.6		37.8		42.0		35	183	1767		
	200	220.83	38.4	8470	43.2	9540	48.0	10590	40	207	1767	10590	
	225	196.30	43.2		48.6		54.0		45	231	1767		
	250	176.67	48.0		54.0		60.0		50	255	1767		
	275	160.61	52.8		59.4		66.0		55	279	1767		
300	147.22	57.6		64.8		72.0		60	303	1767			
350	126.19	67.2		75.6		84.0		70	351	1767			

Catalog No.	D	Free Length FL	Spring Guide Pin L (in increments of 1 mm, Fractions to be rounded)
CRUVH CRFVH	40	Select the value from the table above.	FL - Initial compression + 15
	50	Note) Please note, a size not in the table may be specified.	
	60		



Order

Catalog No.	D	FL	L
CRUVH	60	200	207
CRFVH	60	200	207

For your order

- Determine the specification with the steps below:
    - Determine the Initial Load, travel and Final Load per unit.
    - Select the outer diameter (D) and the free length (FL) of the coil spring satisfying ① and other conditions.
    - With the calculation formula in L of the table, obtain the length of the spring guide pin.
- Now, the steps for the specification are completed. The order codes are determined by ② and ③.