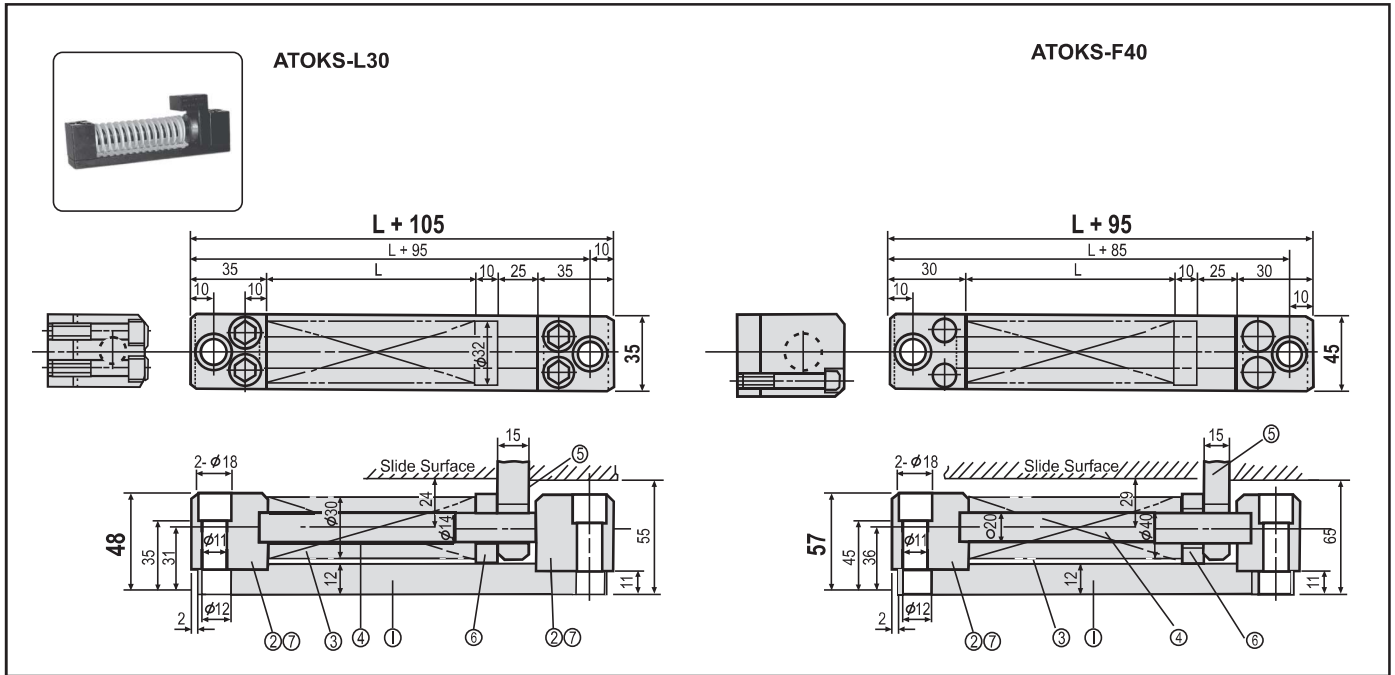


Section C
SPRING UNIT &
SPRING PLUNGER



Spring Unit



Components of ATOKS

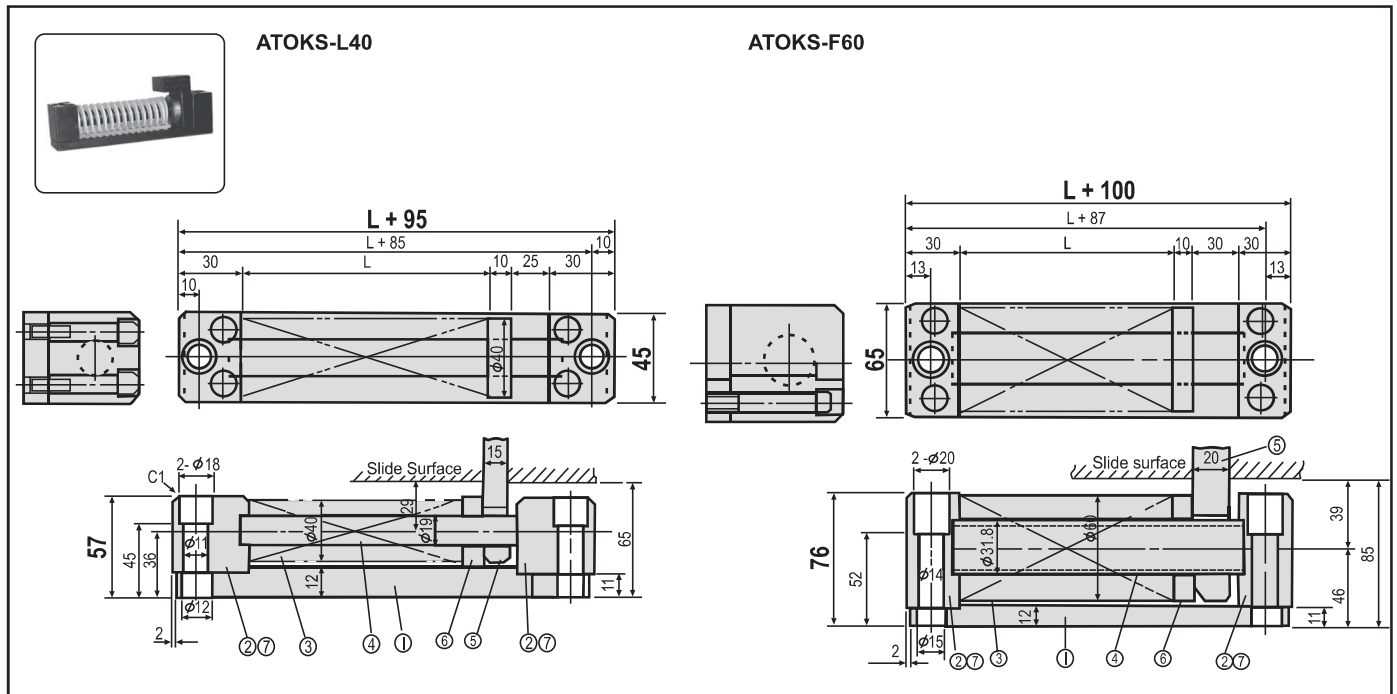
No.	Description	Q'ty	Material
1	Plate	1	MS
2	Spring block	2	MS
3	Spring	1	STD
4	Spring Guide Pin	1	EN-8
5	Return Plate	1	TRP Std.
6	Washer	1	FG260
7	Hex Socket Bolt	4	SCM435

Standard No.	L	Spring (Type OD X length)	Normal value (1X10 ⁵ stroke)		Max. value (3X10 ⁵ stroke)		Spring Constant K N/mm
			Deflection mm	Load N	Deflection mm	Load N	
ATOKS - L30 (A) X 100	100	AL30X100	32	970	40	1210	30.2
ATOKS - L30 (B) X 100							
ATOKS - L30 (C) X 100							
ATOKS - L30 (A) X 125	125	AL30X125	40	970	50	1210	24.2
ATOKS - L30 (B) X 125							
ATOKS - L30 (C) X 125							
ATOKS - L30 (A) X 150	150	AL30X150	48	970	60	1210	20.1
ATOKS - L30 (B) X 150							
ATOKS - L30 (C) X 150							
ATOKS - L30 (A) X 175	175	AL30X175	56	970	70	1210	17.2
ATOKS - L30 (B) X 175							
ATOKS - L30 (C) X 175							
ATOKS - F40 (A) X 90	90	AF40X 90	36	1020	45	1280	28.4
ATOKS - F40 (B) X 90							
ATOKS - F40 (C) X 90							
ATOKS - F40 (A) X 125	125	AF40X125	50	1020	62.5	1280	20.4
ATOKS - F40 (B) X 125							
ATOKS - F40 (C) X 125							
ATOKS - F40 (A) X 150	150	AF40X150	60	1020	75	1280	17.0
ATOKS - F40 (B) X 150							
ATOKS - F40 (C) X 150							



ORDERING CODE	CATALOG NO.	L
		ATOKS-L30 150

Spring Unit



Components of ATOKS

No.	Description	Q'ty	Material
1	Plate	1	MS
2	Spring block	2	MS
3	Spring	1	STD
4	Spring Guide Pin	1	EN-8
5	Return Plate	1	TRP Std.
6	Washer	1	FG260
7	Hex Socket Bolt	4	SCM435

Standard No.	L	Spring (Type OD X length)	Normal value (1X10 ⁶ stroke)		Max. value (3X10 ⁵ stroke)		Spring Constant K N/mm
			Deflection mm	Load N	Deflection mm	Load N	
ATOKS - L40 (A) X 125	125	AL40X125	40	1730	50	2160	43.2
ATOKS - L40 (B) X 125							
ATOKS - L40 (C) X 125							
ATOKS - L40 (A) X 150	150	AL40X150	48	1730	60	2160	36.0
ATOKS - L40 (B) X 150							
ATOKS - L40 (C) X 150							
ATOKS - L40 (A) X 175	175	AL40X175	56	1730	70	2160	30.8
ATOKS - L40 (B) X 175							
ATOKS - L40 (C) X 175							
ATOKS - L40 (A) X 200	200	AL40X200	64	1730	80	2160	27.0
ATOKS - L40 (B) X 200							
ATOKS - L40 (C) X 200							
ATOKS - L40 (A) X 250	250	AL40X250	80	1730	100	2160	21.6
ATOKS - L40 (B) X 250							
ATOKS - L40 (C) X 250							
ATOKS - F60 (A) X 125	125	AL60X125	50	2300	62.5	2880	46.0
ATOKS - F60 (B) X 125							
ATOKS - F60 (C) X 125							
ATOKS - F60 (A) X 150	150	AL60X150	60	2300	75	2880	38.4
ATOKS - F60 (B) X 150							
ATOKS - F60 (C) X 150							
ATOKS - F60 (A) X 175	175	AL60X175	70	2300	87.5	2880	32.9
ATOKS - F60 (B) X 175							
ATOKS - F60 (C) X 175							
ATOKS - F60 (A) X 200	200	AL60X200	80	2300	100	2880	28.8
ATOKS - F60 (B) X 200							
ATOKS - F60 (C) X 200							
ATOKS - F60 (A) X 250	250	AL60X250	100	2300	125	2880	23.0
ATOKS - F60 (B) X 250							
ATOKS - F60 (C) X 250							
ATOKS - F60 (A) X 300	300	AL60X300	120	2300	150	2880	19.2
ATOKS - F60 (B) X 300							
ATOKS - F60 (C) X 300							



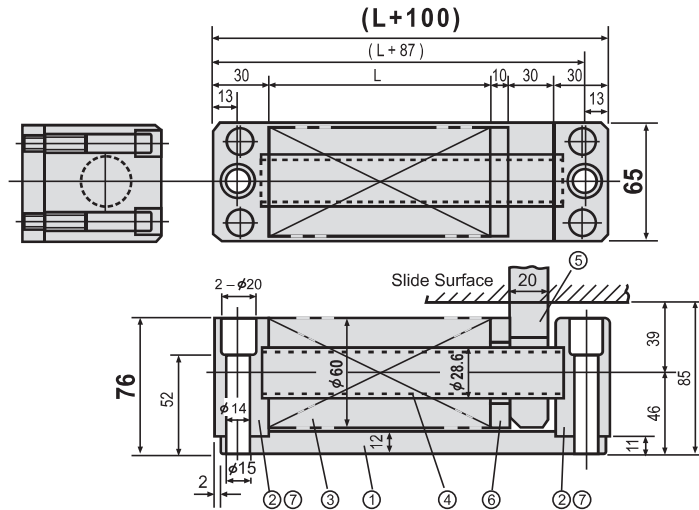
ORDERING
CODE

CATALOG NO. L
ATOKS-L40 175

Spring Unit



ATOKS- L60



Components of ATOKS

No.	Description	Q'ty	Material
1	Plate	1	MS
2	Spring block	2	MS
3	Spring	1	STD
4	Spring Guide Pin	1	EN-8
5	Return Plate	1	TRP Std.
6	Washer	1	FG260
7	Hex Socket Bolt	4	SCM435

Standard No.	L	Spring (Type OD X length)	Normal value (1X10 ⁵ stroke)		Max. value (3X10 ⁵ stroke)		Spring Constant K N/mm
			Deflection mm	Load N	Deflection mm	Load N	
ATOKS - L60 (A) X 125	125	AL60X125	40	3890	4860	50	97.2
ATOKS - L60 (B) X 125		AL60X125					
ATOKS - L60 (C) X 125		AL60X125					
ATOKS - L60 (A) X 150	150	AL60X150	48	3890	4860	60	81.0
ATOKS - L60 (B) X 150		AL60X150					
ATOKS - L60 (C) X 150		AL60X150					
ATOKS - L60 (A) X 175	175	AL60X175	56	3890	4860	70	69.4
ATOKS - L60 (B) X 175		AL60X175					
ATOKS - L60 (C) X 175		AL60X175					
ATOKS - L60 (A) X 200	200	AL60X200	64	3890	4860	80	60.7
ATOKS - L60 (B) X 200		AL60X200					
ATOKS - L60 (C) X 200		AL60X200					
ATOKS - L60 (A) X 250	250	AL60X250	80	3890	4860	100	48.6
ATOKS - L60 (B) X 250		AL60X250					
ATOKS - L60 (C) X 250		AL60X250					
ATOKS - L60 (A) X 300	300	AL60X300	96	3890	4860	120	40.5
ATOKS - L60 (B) X 300		AL60X300					
ATOKS - L60 (C) X 300		AL60X300					

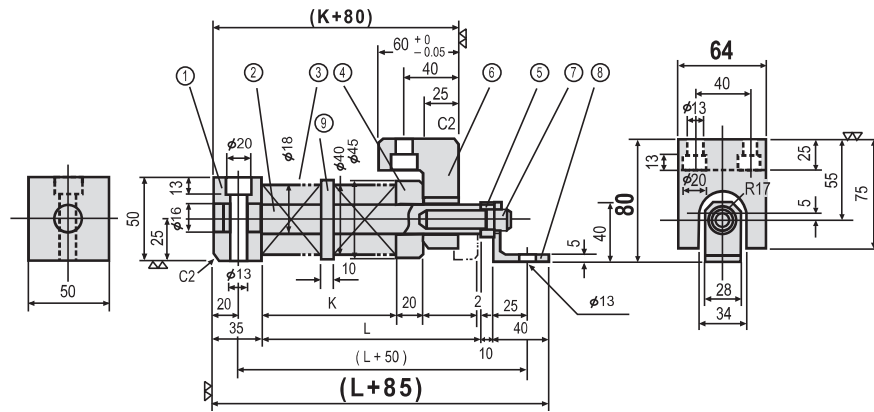


ORDERING CODE	CATALOG NO.	L
	ATOKS-L60	300

Spring Unit



ASHSU-AL40



Components of ATOKS

No.	Description	Q'ty	Material
1	Spring block	1	MS
2	Spring Guide Pin	1	EN-8
3	Spring	1(2*)	STD
4	Spring holder	1	FG260 + Gr.
5	Washer	1	MS
6	Return Plate	1	MS
7	Hex Socket Bolt	1	SCM435
8	Angle	1	MS
9	Collar	1	FG260

Note. : Item with * applies to ASHSU-AL40 X (60 - 110)

Standard No.	Stroke S	K	L	Spring size (Q'ty)	Initial pressure N	Final pressure N
ASHSU - AL40 X 20	20	68	110	AL40 X 100	635	1695
ASHSU - AL40 X 25	25	85	132	AL40 X 125	632	
ASHSU - AL40 X 30	30	102	154	AL40 X 150	635	
ASHSU - AL40 X 35	35	102	159	AL40 X 150	459	
ASHSU - AL40 X 40	40	119	181	AL40 X 175	485	
ASHSU - AL40 X 45	45	136	203	AL40 X 200	503	
ASHSU - AL40 X 50	50	170	242	AL40 X 250	647	
ASHSU - AL40 X 55	55	170	247	AL40 X 250	539	
ASHSU - AL40 X 60	60	214	296	AL40 X 150(2)	627	
ASHSU - AL40 X 65	65	214	301	AL40 X 150(2)	547	
ASHSU - AL40 X 70	70	248	340	AL40 X 175(2)	633	
ASHSU - AL40 X 75	75	248	345	AL40 X 175(2)	562	
ASHSU - AL40 X 80	80	282	384	AL40 X 200(2)	635	
ASHSU - AL40 X 85	85	282	389	AL40 X 200(2)	568	
ASHSU - AL40 X 90	90	282	394	AL40 X 200(2)	503	
ASHSU - AL40 X 95	95	282	399	AL40 X 200(2)	436	
ASHSU - AL40 X 100	100	350	472	AL40 X 250(2)	647	
ASHSU - AL40 X 105	105	350	477	AL40 X 250(2)	593	
ASHSU - AL40 X 110	110	350	482	AL40 X 250(2)	539	

The unit is designed to apply initial pressure at the cam return position.

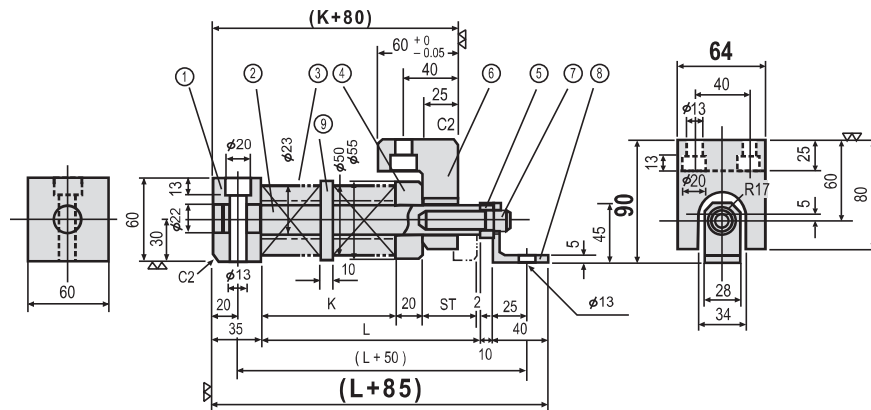


ORDERING CODE	CATLOG NO.	S
	ASHSU-AL40	50

Spring Unit



ASHSU-AL50



Components of ATOKS

No.	Description	Q'ty	Material
1	Spring block	1	MS
2	Spring Guide Pin	1	EN-8
3	Spring	1(2*)	STD
4	Spring holder	1	FG260 + Gr.
5	Washer	1	MS
6	Return Plate	1	MS
7	Hex Socket Bolt	1	SCM435
8	Angle	1	MS
9	Collar	1	FG260

Note. : Item with * applies to ASHSU-AL50 X (75 - 150)

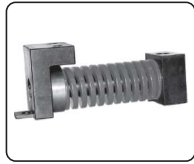
Standard No.	Stroke S	K	L	Spring size (Q'ty)	Initial pressure N	Final pressure N
ASHSU - AL50 X 20	20	68	110	AL50 X 100(1)	1020	2700
ASHSU - AL50 X 25	25	85	132	AL50 X 125(1)	1020	
ASHSU - AL50 X 30	30	102	154	AL50 X 150(1)	1080	
ASHSU - AL50 X 35	35	102	159	AL50 X 150(1)	728	
ASHSU - AL50 X 40	40	119	181	AL50 X 175(1)	768	
ASHSU - AL50 X 45	45	136	203	AL50 X 200(1)	798	
ASHSU - AL50 X 50	50	170	242	AL50 X 250(1)	1020	
ASHSU - AL50 X 55	55	170	247	AL50 X 250(1)	850	
ASHSU - AL50 X 60	60	204	286	AL50 X 300(1)	1010	
ASHSU - AL50 X 65	65	204	291	AL50 X 300(1)	868	
ASHSU - AL50 X 70	70	204	296	AL50 X 300(1)	728	
ASHSU - AL50 X 75	75	248	345	AL50 X 175(2)	888	
ASHSU - AL50 X 80	80	282	384	AL50 X 200(2)	1010	
ASHSU - AL50 X 85	85	282	389	AL50 X 200(2)	903	
ASHSU - AL50 X 90	90	282	394	AL50 X 200(2)	798	
ASHSU - AL50 X 95	95	282	399	AL50 X 200(2)	693	
ASHSU - AL50 X 100	100	350	472	AL50 X 250(2)	1020	
ASHSU - AL50 X 105	105	350	477	AL50 X 250(2)	935	
ASHSU - AL50 X 110	110	350	482	AL50 X 250(2)	850	
ASHSU - AL50 X 115	115	350	487	AL50 X 250(2)	765	
ASHSU - AL50 X 120	120	418	560	AL50 X 300(2)	1010	
ASHSU - AL50 X 125	125	418	565	AL50 X 300(2)	938	
ASHSU - AL50 X 130	130	418	570	AL50 X 300(2)	868	
ASHSU - AL50 X 135	135	418	575	AL50 X 300(2)	798	
ASHSU - AL50 X 140	140	418	580	AL50 X 300(2)	728	
ASHSU - AL50 X 145	145	418	585	AL50 X 300(2)	658	
ASHSU - AL50 X 150	150	418	590	AL50 X 300(2)	588	

The unit is designed to apply initial pressure at the cam return position.

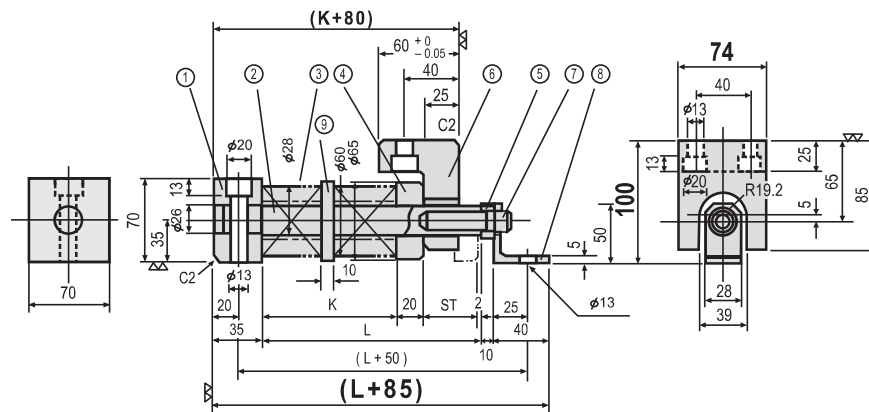


ORDERING CODE	CATALOG NO.	S
	ASHSU-AL50	50

Spring Unit



ASHSU-AL60



Components of ATOKS

No.	Description	Q'ty	Material
1	Spring block	1	MS
2	Spring Guide Pin	1	EN-8
3	Spring	1(2*)	STD
4	Spring holder	1	FG260 + Gr.
5	Washer	1	MS
6	Return Plate	1	MS
7	Hex Socket Bolt	1	SCM435
8	Angle	1	MS
9	Collar	1	FG260

Note. : Item with * applies to ASHSU-AL60 X (70 - 150)

Standard No.	Stroke S	K	L	Spring size (Q'ty)	Initial pressure N	Final pressure N
ASHSU - AL60 X 20	20	68	110	AL60 X 100(1)	1464	3890
ASHSU - AL60 X 25	25	85	132	AL60 X 125(1)	1455	
ASHSU - AL60 X 30	30	102	154	AL60 X 150(1)	1458	
ASHSU - AL60 X 35	35	102	159	AL60 X 150(1)	1053	
ASHSU - AL60 X 40	40	119	181	AL60 X 175(1)	1104	
ASHSU - AL60 X 45	45	136	203	AL60 X 200(1)	1159	
ASHSU - AL60 X 50	50	170	242	AL60 X 250(1)	1470	
ASHSU - AL60 X 55	55	170	247	AL60 X 250(1)	1225	
ASHSU - AL60 X 60	60	204	286	AL60 X 300(1)	1476	
ASHSU - AL60 X 65	65	204	291	AL60 X 300(1)	1271	
ASHSU - AL60 X 70	70	204	296	AL60 X 300(1)	1066	
ASHSU - AL60 X 75	75	248	345	AL60 X 175(2)	1276	
ASHSU - AL60 X 80	80	282	384	AL60 X 200(2)	1464	
ASHSU - AL60 X 85	85	282	389	AL60 X 200(2)	1331	
ASHSU - AL60 X 90	90	282	394	AL60 X 200(2)	1159	
ASHSU - AL60 X 95	95	282	399	AL60 X 200(2)	1006	
ASHSU - AL60 X 100	100	350	472	AL60 X 250(2)	1470	
ASHSU - AL60 X 105	105	350	477	AL60 X 250(2)	1347	
ASHSU - AL60 X 110	110	350	482	AL60 X 250(2)	1225	
ASHSU - AL60 X 115	115	350	487	AL60 X 250(2)	1103	
ASHSU - AL60 X 120	120	418	560	AL60 X 300(2)	1476	
ASHSU - AL60 X 125	125	418	565	AL60 X 300(2)	1373	
ASHSU - AL60 X 130	130	418	570	AL60 X 300(2)	1271	
ASHSU - AL60 X 135	135	418	575	AL60 X 300(2)	1168	
ASHSU - AL60 X 140	140	418	580	AL60 X 300(2)	1066	
ASHSU - AL60 X 145	145	418	585	AL60 X 300(2)	963	
ASHSU - AL60 X 150	150	418	590	AL60 X 300(2)	861	

The unit is designed to apply initial pressure at the cam return position.

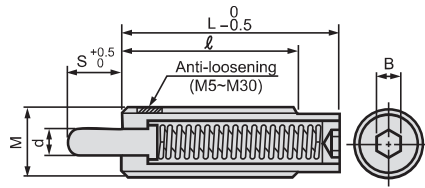


ORDERING CODE	CATALOG NO.	S
	ASHSU-AL60	100

Spring Plungers



**ASPL
ASPH
ASPX**



Type	Main body			Pin		
	M	H	S	M	H	S
For light load	ASPL	M S45C				Unichrome plating
For heavy load	ASPH	H 29 ~ 35 HRC			57 ~ 63HRC	
For extremely heavy load	ASPX	S Fe ₃ O ₄ (Blackening) Nickel plating (ASPX)	S45C		(Case Hardening)	Fe ₃ O ₄

M X P (Coarse thread)	d	s	ℓ		L		B	ASPL		ASPH		ASPX		Catalog No.	
			ASPL ASPH	ASPX	ASPL ASPH	ASPX		min. N{kgf}	Load max.	min. N{kgf}	Load max.	min. N{kgf}	Load max.	Type	M - S
5 X 0.8	2.0	3	20		20		1.5	2.0 {0.2}	9.8 {1.0}	4.9 {0.5}	19.6 {2.0}				5 - 3
5 X 0.8	2.0	5	27		27		1.5	2.0 {0.2}	9.8 {1.0}	2.9 {0.3}	19.6 {2.0}				5 - 5
6 X 1.0	2.5	3	25		25		2	5.9 {0.6}	9.8 {1.0}	7.8 {0.8}	29.4 {3.0}				6 - 3
6 X 1.0	2.5	5	30		30		2	2.0 {0.2}	9.8 {1.0}	4.9 {0.5}	29.4 {3.0}				6 - 5
8 X 1.25	3.1	3	25	27	25	27	2.5	5.9 {0.6}	9.8 {1.0}	14.7 {1.5}	29.4 {3.0}				* 8 - 3
8 X 1.25	3.1	5	27	30	27	35	2.5	2.9 {0.3}	9.8 {1.0}	7.8 {0.8}	29.4 {3.0}				* 8 - 5
10 X 1.5	3.8	5	30	30	30	35	3	5.9 {0.6}	14.7 {1.5}	8.8 {0.9}	49.0 {5.0}				* 10 - 5
10 X 1.5	3.8	10	30	30	43	53	3	2.9 {0.3}	14.7 {1.5}	7.8 {0.8}	49.0 {5.0}				* 10 - 10
12 X 1.75	5.5	5	30	35	30	43	4	5.9 {0.6}	14.7 {1.5}	18.6 {1.9}	49.0 {5.0}	35.3 {3.6}	41.2 {4.2}		* 12 - 5
12 X 1.75	5.5	10	35	35	43	58	4	2.9 {0.3}	19.6 {2.0}	7.8 {0.8}	49.0 {5.0}	14.7 {1.5}	41.2 {4.2}		* 12 - 10
12 X 1.75	5.5	15	35		51		4	2.9 {0.3}	19.6 {2.0}	4.9 {0.5}	49.0 {5.0}	15.7 {1.6}	62.8 {6.4}		12 - 15
16 X 2.0	8	10	35	35	60	60	5	5.9 {0.6}	39.2 {4.0}	12.7 {1.3}	78.5 {8.0}	12.7 {1.3}	62.8 {6.4}		* 16 - 10
16 X 2.0	8	15	35	35	60	70	5	3.9 {0.4}	39.2 {4.0}	12.7 {1.3}	78.5 {8.0}	37.2 {3.8}	98.1 {10.0}		* 16 - 15
16 X 2.0	8	20	35	35	85	90	5	4.9 {0.5}	39.2 {4.0}	9.8 {1.0}	78.5 {8.0}	14.7 {1.5}	98.1 {10.0}		* 16 - 20
16 X 2.0	8	30	35	35	125	125	5	2.9 {0.3}	39.2 {4.0}	6.9 {0.7}	78.5 {8.0}				* 16 - 30
16 X 2.0	8	40	35		125		5	4.9 {0.5}	39.2 {4.0}	6.9 {0.7}	78.5 {8.0}	23.5 {2.4}	147.2 {15.0}		16 - 40
16 X 2.0	8	50	35		155		5	19.6 {2.0}	49.0 {5.0}	29.4 {3.0}	78.5 {8.0}	21.6 {2.2}	147.2 {15.0}		16 - 50
16 X 2.0	8	60	35		159		5	2.9 {0.3}	49.0 {5.0}	3.9 {0.4}	78.5 {8.0}	12.7 {1.3}	147.2 {15.0}		16 - 60
16 X 2.0	8	70	35		185		5	3.4 {0.35}	49.0 {5.0}	5.5 {0.56}	78.5 {8.0}	19.6 {2.0}	147.2 {15.0}		16 - 70
16 X 2.0	8	80	35		185		5	19.6 {2.0}	49.0 {5.0}	29.4 {3.0}	93.2 {9.5}				16 - 80
20 X 2.5	10	15	45	45	60	80	6	12.7 {1.3}	78.5 {8.0}	24.5 {2.5}	147.1 {15.0}				* 20 - 15
20 X 2.5	10	20	45		72		6	11.7 {1.2}	78.5 {8.0}	22.6 {2.3}	147.1 {15.0}				20 - 20
20 X 2.5	10	30	45		96		6	11.7 {1.2}	78.5 {8.0}	22.6 {2.3}	147.1 {15.0}				20 - 30
20 X 2.5	10	40	45		120		6	11.7 {1.2}	78.5 {8.0}	22.6 {2.3}	147.1 {15.0}				20 - 40
24 X 3.0	10	7	45		60		8	19.6 {2.0}	98.1 {10.0}	44.1 {4.5}	196.1 {20.0}	12.7 {1.3}	245.3 {25.0}		24 - 7
24 X 3.0	10	15	45	45	60	84	8	19.6 {2.0}	98.1 {10.0}	47.1 {4.8}	215.7 {22.0}				* 24 - 15
24 X 3.0	10	20	45		75		8	17.7 {1.8}	98.1 {10.0}	44.1 {4.5}	215.7 {22.0}				24 - 20
24 X 3.0	10	30	45		100		8	17.7 {1.8}	98.1 {10.0}	44.1 {4.5}	215.7 {22.0}				24 - 30
24 X 3.0	10	40	45		124		8	17.7 {1.8}	98.1 {10.0}	44.1 {4.5}	215.7 {22.0}				24 - 40
30 X 3.5	14	15	45		66		12	27.5 {2.8}	117.7 {12.0}	44.1 {4.5}	274.6 {28.0}	24.5 {2.5}	314.0 {32.0}		30 - 15
30 X 3.5	14	20	45		78		12	27.5 {2.8}	117.7 {12.0}	53.0 {5.4}	274.6 {28.0}				30 - 20
30 X 3.5	14	30	45		100		12	27.5 {2.8}	117.7 {12.0}	45.1 {4.6}	274.6 {28.0}				30 - 30
30 X 3.5	14	40	45		123		12	27.5 {2.8}	117.7 {12.0}	47.1 {4.8}	274.6 {28.0}				30 - 40


ASPX is available only in sizes marked with *.



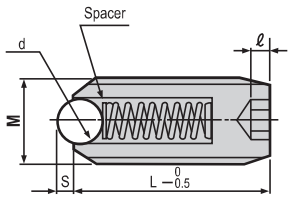
ORDERING CODE	CATALOG NO.	M	S
	ASPH	16	20




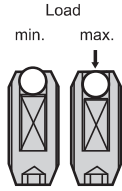
Ball Plungers



**ABPL
ABPH
ABPX**







Main Body
M 20MnCr5
H 29 ~ 35 HRC

Ball
M AISI 52100
H 55HRC


M Material
H Hardness

Metal ball		L	ℓ	B	For light load (ABPL)		For heavy load (ABPH)		For extremely heavy load (ABPX)		Catalog No.	
d	S				Load (N)		Load (N)		Load (N)		Type	M
					min.	max.	min.	max.	min.	max.		
3	0.8	12	2	2.5	2.9	9.8	4.9	19.6	11.7	25.1	ABPL ABPH ABPX	5
3		13	2.5	3	4.9	14.7	9.8	29.4	18.7	35.3		6
4	1	15	2.5	4	6.9	19.6	12.7	39.2	24.5	46.8		8
5	1.2	16	3	5	8.8	24.5	18.6	49	26.7	58.7		10
7	1.8	20	3	6	9.8	29.4	19.6	58.8	26.1	62.3		12
9.5	2.5	25	3	8	15.7	49	29.4	98	55.4	116		16

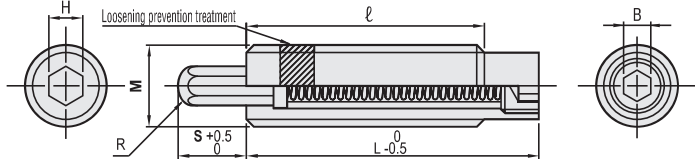


ORDERING CODE **CATALOG NO.**
 ABPL 12

Spring Plunger - Hex-pin Type



**ASPLR
ASPHER**



Type	Main body			Pin			Service Temperature Range
	M	H	S	M	H	S	
For light load ASPLR	S45C	29~35HRC	Fe3O4	S45C	57~63HRC	Unichrome plating	-30°~80°
For heavy load ASPHER					Carburizing	Fe3O4	

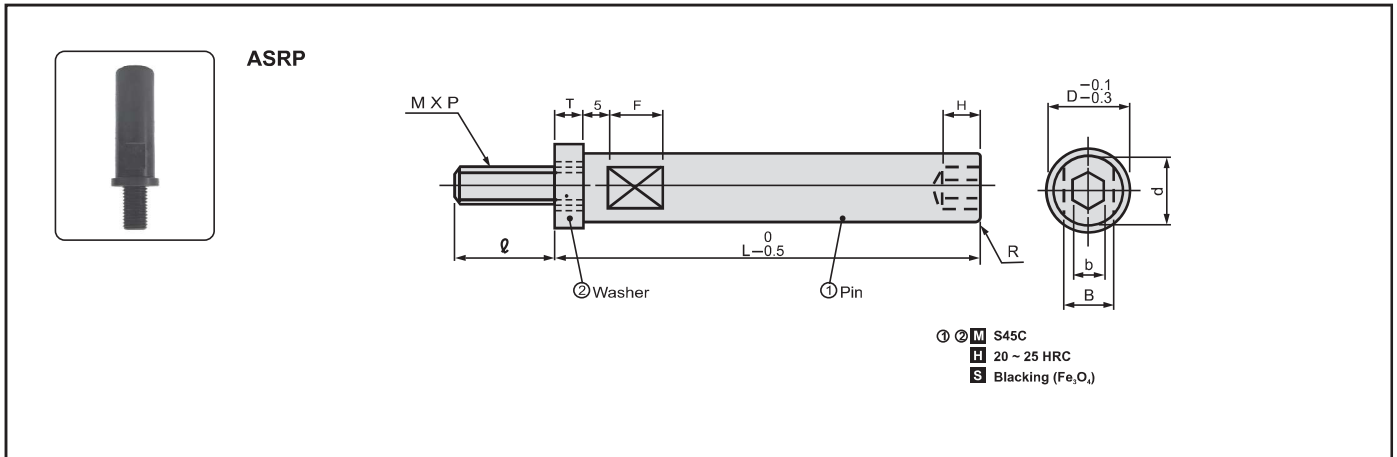
■ **Features of ASPLR & ASPHR** Because the pin shape is hexagonal, the pins can be installed using a wrench. No special wrench is required.

M X P (Coarse Thread)	H	R	S	ℓ	L	B	ASPLR		ASPHER		Catalog No.		
							LOAD				Type	M-S	
							min. N(kgf)	max.	min. N(kgf)	max.			
10×1.5	4	1.9	5	30	30	3	5.9 (0.6)	14.7 (1.5)	8.8 (0.9)	49.0 (5.0)	ASPLR	10 5	
			10				43	7.8 (0.8)	49.0 (5.0)	10 10			
12×1.75	5	2.9	5	35	4	5.9 (0.6)	14.7 (1.5)	18.6 (1.9)	49.0 (5.0)	ASPHER		12 5	
			10			43	2.9 (0.3)	19.6 (2.0)	7.8 (0.8)			49.0 (5.0)	12 10
			15			51	2.9 (0.3)	19.6 (2.0)	4.9 (0.5)			49.0 (5.0)	12 15
			10			60	5.9 (0.6)	39.2 (4.0)	12.7 (1.3)			78.5 (8.0)	16 10
16×2.0	7	4.1	15	45	5	3.9 (0.4)	39.2 (4.0)	12.7 (1.3)	78.5 (8.0)		16 15		
			20			85	4.9 (0.5)	39.2 (4.0)	9.8 (1.0)		78.5 (8.0)	16 20	
			30			125	2.9 (0.3)	39.2 (4.0)	6.9 (0.7)	78.5 (8.0)	16 30		
			50			155	19.6 (2.0)	49.0 (5.0)	29.4 (3.0)	78.5 (8.0)	16 50		
24×3.0	10	15.0	80	45	10	19.6 (2.0)	49.0 (5.0)	29.4 (3.0)	93.2 (9.5)	16 80			
			7			60	19.6 (2.0)	98.1 (10.0)	44.1 (4.5)	196.1 (20.0)	24 7		
30×3.5	13	7.6	15	45	10	19.6 (2.0)	98.1 (10.0)	47.1 (4.8)	215.7 (22.0)	24 15			
			20			78	27.5 (2.8)	117.7 (12.0)	53.0 (5.4)	274.6 (28.0)	30 20		



ORDERING CODE **CATALOG NO.**
 ASPLR 12-10
 ASPHER 10-10

Spring Retainer Pins



M X P	φ	b	H	B	F	R	T	d	Adoptable coil			Adoptable Urethane	Catalog No.		L 5mm increments
									Minimal	Light/Medium Heavy/Extra			Type	D	
4 X 0.7	7	3	3	4	8	1	3	6	φ 14	φ 14	φ 15	ASRP	7	20 ~ 50	
									φ 16	φ 16	φ 20		8		
5 X 0.8	8	4	3	6	8	1.5	4	8	φ 18	φ 18	—		9	20 ~ 75	
									—	φ 20	—		10		
6 X 1.0	10	5	4	8	8	2	5	10	φ 20,22	φ 22	φ 25		11	20 ~ 85	
									—	φ 25	—		12.5		
8 X 1.25	17 (12)	6	4	11	10	2.5	5 (10)	13	φ 25,27	φ 27	φ 30 - 60		13.5	20 ~ 85	
									—	φ 30	—		15	90 ~ 125	
									φ 30	—	—		16		
10 X 1.5	20 (15)	8	5	14	12	3	5 (10)	16	—	φ 35	—		17.5	30 ~ 105	
									φ 35	—	—	19	110 ~ 185		
									—	φ 40	—	20			
12 X 1.75	23 (18)	10	6	17	14	3	5 (10)	20	φ 40	—	φ 80 - 100	22	30 ~ 125		
									—	φ 50	—	25		130 ~ 215	
									φ 50	—	—	27.5			
									—	—	—	30	50 ~ 125		
16 X 2.0	27 (22)	14	8	22	16	3	5 (10)	25	—	φ 60	—	33	130 ~ 215		
									φ 60	—	—				

- ① When length L is 20 for ASRP7 ~12.5, 20~25 for ASRP 13.5~16, or 30~35 for ASRP17.5~27.5, Spanner grooving is not suitable.
- ② When length L for ASRP13.5 to 33 is a size ending with 5 (L=25, 35, 45.....), applicable values for dimensions T are the ones shown in ().
- ③ Sizes of adoptable coil springs & urethane springs are those of outside diameter.

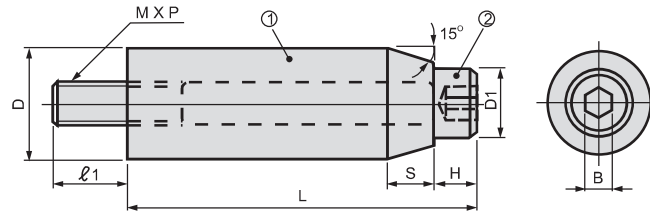


ORDERING CODE	CATALOG NO.	D	L
ASRP	30	125	

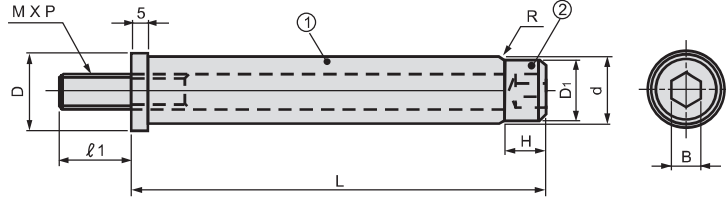
Spring Guide Retainers



ASGC



Size and shape of the spring guide retainers marked with an * on the table below.



M ①FG260 ②SCM435

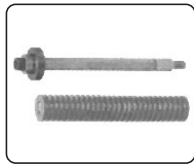
D	d	D1	B	M X P	H	S	l1	Adoptable coil spring		Catalog No.
								Minimal	Light / Medium / Heavy / Extra	
14	—	10	4 5	M6 X P1.0	4 6	4	12	φ 30	φ 30	ASGC 14 - 12 30 60
							11			
16	—	13	6	M8 X P1.25	8	5	15	φ 35	φ 35	ASGC 16 - 18 30 60 80
							13			
19	—	16	8	M10 X P1.5	10	5	17	—	φ 40	ASGC 19 - 28 40 60 80 100*
							20			
20	—	16	8	M10 X P1.5	10	5	17	φ 40	—	ASGC 20 - 23 40 60 80 100*
							20			
23	—	18	10	M12 X P1.75	12	8	22	—	φ 50	ASGC 23 - 30 40 60 80 100 120*
							24			
26	—	18	10	M12 X P1.75	12	8	22	φ 50	—	ASGC 26 - 28 60 80 100 120*
							22			
28	—	18	10	M12 X P1.75	12	12	22	—	φ 60	ASGC 28 - 30 40 60 80 100 120*
							23			
31	—	18	10	M12 X P1.75	12	12	22	φ 60	—	ASGC 31 - 28 40 60 80 100* 120*
							25			
36	—	18	10	M12 X P1.75	12	15	25	φ 70	φ 70	ASGC 36 - 40 60 80 100* 120*
							25			



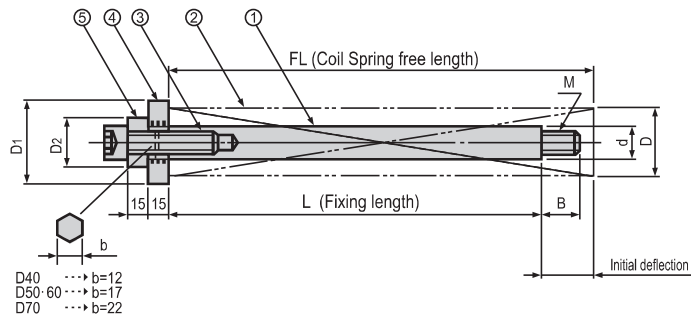
ORDERING CODE

CATALOG NO.	D	L
ASGC	28	80

Spring Guide Units



ASGUK



- ① Guide pin
- ② Coil spring
- ③ Socket head cap screw (D40: M12 D50-60 : M16 D70 : M20)
- ④ Separate disks
- ⑤ Pressure disk
- M** Case hardening Steel
- B** 50HRC~ (High frequency quenching)
- M** FG260 solid lubricant (Embedded)
- M** MS

d	D1	D2	M×P	B	Catalog No.	② Type	① D	② FL	L 1mm increments											
									90	100	125	150	175	200	250	300	350	* 400	* 450	* 500
19	50	28	12×1.75	24	ASGUK	AF	40	68 ~ 90	80 ~ 100	90 ~ 125	105 ~ 150	130 ~ 175	145 ~ 200	195 ~ 250	240 ~ 300	—	—	—	—	
24	60	36	16×2.0	28		AL	50	—	—	—	—	—	—	—	—	—	—	—	—	—
29	70	43	16×2.0			AM	60	68 ~ 90	80 ~ 100	95 ~ 125	110 ~ 150	120 ~ 175	135 ~ 200	185 ~ 250	225 ~ 300	275 ~ 350	325 ~ 400	375 ~ 450	425 ~ 500	
35	80	48	20×2.5	33		AH	(70)	—	—	—	—	—	—	—	—	—	—	—	—	

① D=(70) is available only for AF and AL.

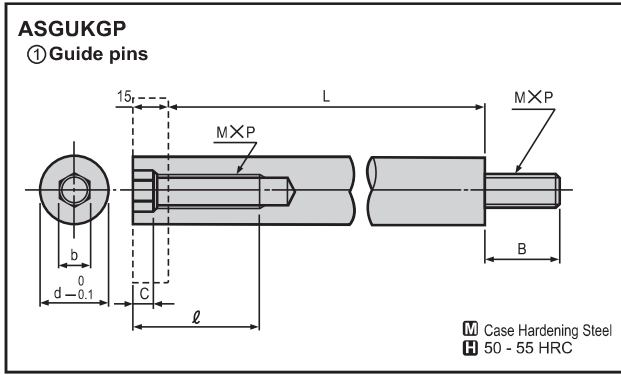
② *FL400 or higher is available only for AF.



ORDERING CODE	CATALOG NO.	SPRING	D-FL	L
ASGUK	AF	50-200	150	



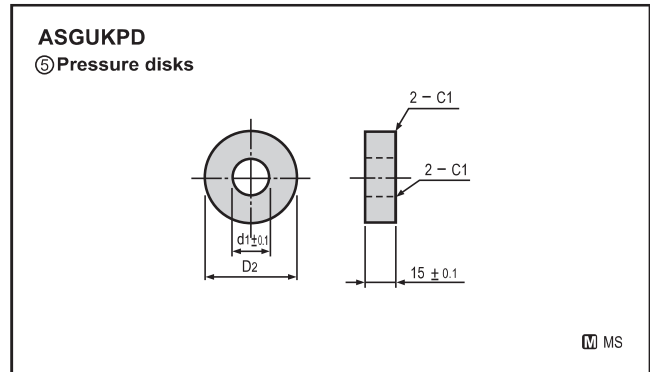
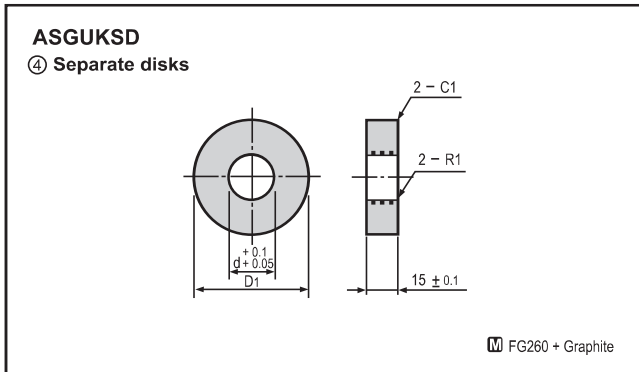
Spring Guide Unit



Applicable coil spring Diameter D	d	b	C	MXP	B	Spring length (FL)											
						90	100	125	150	175	200	250	300	350	400	450	500
40	19	12	7	12×1.75	24	55	65	75	85	85	95	95	110	-	-	-	-
50	24	17	10	16×2.0	28	60	70	80	90	90	100	100	110	110	110	110	110
60	29	17	10	16×2.0	28	60	70	80	90	90	100	100	110	110	110	110	110
70	35	22	10	20×2.5	33	60	70	80	90	90	100	100	110	110	-	-	-

Applicable coil spring Diameter D	Catalog No. Type	No	L 1mm increments												
			90	100	125	150	175	200	250	300	350	400	450	500	
40	① Guide pins ASGUKGP	40	68 90	80 100	90 125	105 150	130 175	145 200	195 250	240 300	-	-	-	-	
50		50	-	-	-	-	-	-	-	-	-	325	375	425	
60		60	68 90	80 100	95 125	110 150	120 175	135 200	185 250	225 300	275 350	-	-	-	-
70		70	-	-	-	-	-	-	-	-	-	-	-	-	-

ORDERING CODE	CATALOG NO.	SPRING FL	L
ASGUKGP 60	250	200	

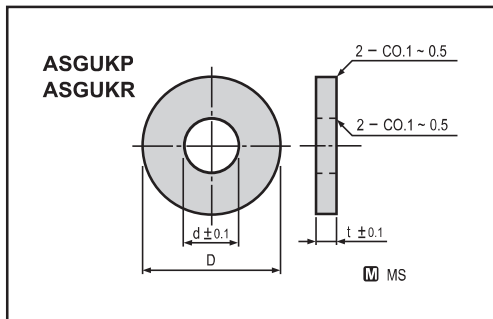


Applicable coil spring Diameter D	D1	d	Catalog No.	
			Type	No
40	50	19	④ Separate disks ASGUKSD	40
50	60	24		50
60	70	29		60
70	80	35		70

Adaptable spring Diameter D	D2	d1	Catalog No.	
			Type	No
40	28	13	⑤ Separate disks ASGUKPD	40
50	36	17		50
60	43	17		60
70	48	21		70

ORDERING CODE	CATALOG NO.
ASGUKSD 60	

ORDERING CODE	CATALOG NO.
ASGUKPD 60	



D	d	Catalog No.		t
		Type	No	
45	20	ASGUKP	40	1
55	25		50	
65	30		60	
75	36		70	

D	d	Catalog No.		t
		Type	No	
45	12.5	ASGUKR	40	5
55	16.5		50	
65	16.5		60	
75	20.5		70	

ORDERING CODE	CATALOG NO.
ASGUKP 60	

ORDERING CODE	CATALOG NO.	t
ASGUKR 60		5