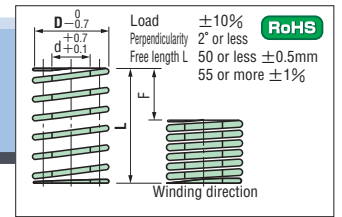
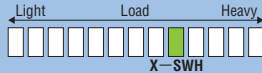


COIL SPRINGS

—X—SWH—



COIL SPRINGS

COIL SPRINGS

D	d	L	Spring constant N/mm (kgf/mm)	F=L×19.2%		F=L×21.6%		Catalog No.		
				Fmm Load N (kgf)	Fmm Load N (kgf)	Fmm Load N (kgf)	Fmm Load N (kgf)			
Operation count										
				1,000,000	500,000					
8	4	10	85.8 (8.8)	1.9	2.2	X—SWH 8—10				
		15	57.2 (5.8)	2.9	3.2	15				
		20	42.9 (4.4)	3.8	4.3	20				
		25	34.3 (3.5)	4.8	5.4	25				
		30	28.6 (2.9)	5.8	6.5	30				
		35	24.5 (2.5)	6.7	7.5	35				
		40	21.5 (2.2)	7.7	8.6	40				
		45	19.1 (1.9)	8.6	9.7	45				
		50	17.2 (1.8)	9.6	10.8	50				
		55	15.6 (1.6)	10.6	11.8	55				
		60	14.3 (1.5)	11.5	13.0	60				
		65	13.2 (1.3)	12.5	14.0	65				
		70	12.3 (1.3)	13.4	15.1	70				
		75	11.4 (1.2)	14.4	16.2	75				
		80	10.7 (1.1)	15.4	17.3	80				
		10	5	10	123.0 (12.5)	1.9	2.2	X—SWH10—10		
15	81.7 (8.3)			2.9	3.2	15				
20	61.3 (6.3)			3.8	4.3	20				
25	49.0 (5.0)			4.8	5.4	25				
30	40.8 (4.2)			5.8	6.5	30				
35	35.0 (3.6)			6.7	7.5	35				
40	30.6 (3.1)			7.7	8.6	40				
45	27.2 (2.8)			8.6	9.7	45				
50	24.5 (2.5)			9.6	10.8	50				
55	22.3 (2.3)			10.6	11.8	55				
60	20.4 (2.1)			11.5	13.0	60				
65	18.8 (1.9)			12.5	14.0	65				
70	17.5 (1.8)			13.4	15.1	70				
75	16.3 (1.7)			14.4	16.2	75				
80	15.3 (1.6)			15.4	17.3	80				
90	13.6 (1.4)			17.3	19.4	90				
12	6	20	87.7 (8.9)	3.8	4.3	X—SWH12—20				
		25	70.2 (7.2)	4.8	5.4	25				
		30	58.5 (6.0)	5.8	6.5	30				
		35	50.1 (5.1)	6.7	7.5	35				
		40	43.9 (4.5)	7.7	8.6	40				
		45	39.0 (4.0)	8.6	9.7	45				
		50	35.1 (3.6)	9.6	10.8	50				
		55	31.9 (3.3)	10.6	11.8	55				
		60	29.2 (3.0)	11.5	13.0	60				
		65	27.0 (2.8)	12.5	14.0	65				
		70	25.1 (2.6)	13.4	15.1	70				
		75	23.4 (2.4)	14.4	16.2	75				
		80	21.9 (2.2)	15.4	17.3	80				
		90	19.5 (2.0)	17.3	19.4	90				
		14	7	20	120.0 (12.3)	3.8	4.3	X—SWH14—20		
				25	96.3 (9.8)	4.8	5.4	25		
30	80.3 (8.2)			5.8	6.5	30				
35	68.8 (7.0)			6.7	7.5	35				
40	60.2 (6.1)			7.7	8.6	40				
45	53.5 (5.5)			8.6	9.7	45				
50	48.2 (4.9)			9.6	10.8	50				
55	43.8 (4.5)			10.6	11.8	55				
60	40.1 (4.1)			11.5	13.0	60				
65	37.1 (3.8)			12.5	14.0	65				
70	34.4 (3.5)			13.4	15.1	70				
75	32.1 (3.3)			14.4	16.2	75				
80	30.1 (3.1)			15.4	17.3	80				
90	26.8 (2.7)			17.3	19.4	90				
100	24.1 (2.5)			19.2	21.6	100				

D	d	L	Spring constant N/mm (kgf/mm)	F=L×19.2%		F=L×21.6%		Catalog No.
				Fmm Load N (kgf)	Fmm Load N (kgf)	Fmm Load N (kgf)	Fmm Load N (kgf)	
Operation count								
				1,000,000	500,000			
16	8	20	157.0 (16.0)	3.8	4.3	X—SWH16—20		
		25	126.0 (12.8)	4.8	5.4	25		
		30	105.0 (10.7)	5.8	6.5	30		
		35	89.9 (9.2)	6.7	7.5	35		
		40	78.6 (8.0)	7.7	8.6	40		
		45	69.9 (7.1)	8.6	9.7	45		
		50	62.9 (6.4)	9.6	10.8	50		
		55	57.2 (5.8)	10.6	11.8	55		
		60	52.4 (5.3)	11.5	13.0	60		
		65	48.4 (4.9)	12.5	14.0	65		
		70	44.9 (4.6)	13.4	15.1	70		
		75	41.9 (4.3)	14.4	16.2	75		
		80	39.3 (4.0)	15.4	17.3	80		
		90	35.0 (3.6)	17.3	19.4	90		
		100	31.5 (3.2)	19.2	21.6	100		
		18	9	20	198.0 (20.2)	3.8	4.3	X—SWH18—20
25	159.0 (16.2)			4.8	5.4	25		
30	132.0 (13.5)			5.8	6.5	30		
35	113.0 (11.5)			6.7	7.5	35		
40	99.1 (10.1)			7.7	8.6	40		
45	88.1 (9.0)			8.6	9.7	45		
50	79.3 (8.1)			9.6	10.8	50		
55	72.0 (7.3)			10.6	11.8	55		
60	66.0 (6.7)			11.5	13.0	60		
65	61.0 (6.2)			12.5	14.0	65		
70	56.6 (5.8)			13.4	15.1	70		
75	52.8 (5.4)			14.4	16.2	75		
80	49.5 (5.1)			15.4	17.3	80		
90	44.0 (4.5)			17.3	19.4	90		
100	39.6 (4.0)			19.2	21.6	100		
20	10			20	245.0 (25.0)	3.8	4.3	X—SWH20—20
		25	196.0 (20.0)	4.8	5.4	25		
		30	163.0 (16.7)	5.8	6.5	30		
		35	140.0 (14.3)	6.7	7.5	35		
		40	123.0 (12.5)	7.7	8.6	40		
		45	109.0 (11.1)	8.6	9.7	45		
		50	98.0 (10.0)	9.6	10.8	50		
		55	89.1 (9.1)	10.6	11.8	55		
		60	81.7 (8.3)	11.5	13.0	60		
		65	75.4 (7.7)	12.5	14.0	65		
		70	70.0 (7.1)	13.4	15.1	70		
		75	65.3 (6.7)	14.4	16.2	75		
		80	61.3 (6.2)	15.4	17.3	80		
		90	54.4 (5.6)	17.3	19.4	90		
		100	49.0 (5.0)	19.2	21.6	100		
		22	11	25	237.0 (24.2)	4.8	5.4	X—SWH22—25
30	197.0 (20.1)			5.8	6.5	30		
35	169.0 (17.3)			6.7	7.5	35		
40	148.0 (15.1)			7.7	8.6	40		
45	132.0 (13.4)			8.6	9.7	45		
50	118.0 (12.1)			9.6	10.8	50		
55	108.0 (11.0)			10.6	11.9	55		
60	98.7 (10.1)			11.5	13.0	60		
65	91.1 (9.3)			12.5	14.0	65		
70	84.6 (8.6)			13.4	15.1	70		
75	78.9 (8.1)			14.4	16.2	75		
80	74.0 (7.5)			15.4	17.3	80		
90	65.8 (6.7)			17.3	19.4	90		
100	59.2 (6.0)			19.2	21.6	100		
125	47.4 (4.8)			24.0	27.0	125		
150	39.5 (4.0)			28.8	32.4	150		

D	d	L	Spring constant N/mm (kgf/mm)	F=L×19.2%		F=L×21.6%		Catalog No.
				Fmm Load N (kgf)	Fmm Load N (kgf)	Fmm Load N (kgf)	Fmm Load N (kgf)	
Operation count								
				1,000,000	500,000			
25	12.5	25	306.0 (31.2)	4.8	5.4	X—SWH25—25		
		30	255.0 (26.0)	5.8	6.5	30		
		35	218.0 (22.3)	6.7	7.6	35		
		40	191.0 (19.5)	7.7	8.6	40		
		45	170.0 (17.3)	8.6	9.7	45		
		50	153.0 (15.6)	9.6	10.8	50		
		55	139.0 (14.2)	10.6	11.9	55		
		60	127.0 (13.0)	11.5	13.0	60		
		65	118.0 (12.0)	12.5	14.0	65		
		70	109.0 (11.1)	13.4	15.1	70		
		75	102.0 (10.4)	14.4	16.2	75		
		80	95.5 (9.7)	15.4	17.3	80		
		90	84.9 (8.7)	17.3	19.4	90		
		100	76.4 (7.8)	19.2	21.6	100		
		125	61.1 (6.2)	24.0	27.0	125		
		150	50.9 (5.2)	28.8	32.4	150		
175	43.6 (4.5)	33.6	37.8	175				
27	13.5	30	298.0 (30.4)	5.8	6.5	X—SWH27—30		
		35	255.0 (26.1)	6.7	7.6	35		
		40	224.0 (22.8)	7.7	8.6	40		
		45	199.0 (20.3)	8.6	9.7	45		
		50	179.0 (18.2)	9.6	10.8	50		
		55	163.0 (16.6)	10.6	11.9	55		
		60	149.0 (15.2)	11.5	13.0	60		
		65	138.0 (14.0)	12.5	14.0	65		
		70	128.0 (13.0)	13.4	15.1	70		
		75	119.0 (12.2)	14.4	16.2	75		
		80	112.0 (11.4)	15.4	17.3	80		
		90	99.4 (10.1)	17.3	19.4	90		
		100	89.4 (9.10)	19.2	21.6	100		
		125	71.5 (7.30)	24.0	27.0	125		
		150	59.6 (6.10)	28.8	32.4	150		
		175	51.1 (5.20)	33.6	37.8	175		
30	15	25	441.0 (45.0)	4.8	5.4	X—SWH30—25		
		30	368.0 (37.5)	5.8	6.5	30		
		35	315.0 (32.1)	6.7	7.6	35		
		40	276.0 (28.1)	7.7	8.6	40		
		45	245.0 (25.0)	8.6	9.7	45		
		50	221.0 (22.5)	9.6	10.8	50		
		55	200.0 (20.4)	10.6	11.9	55		
		60	184.0 (18.7)	11.5	13.0	60		
		65	170.0 (17.3)	12.5	14.0	65		
		70	158.0 (16.1)	13.4	15.1	70		
		75	147.0 (15.0)	14.4	16.2	75		
		80	138.0 (14.1)	15.4	17.3	80		
		90	123.0 (12.5)	17.3	19.4	90		
		100	110.0 (11.2)	19.2	21.6	100		
		125	88.2 (9.0)	24.0	27.0	125		
		150	73.5 (7.5)	28.8	32.4	150		
175	63.0 (6.4)	33.6	37.8	175				
200	55.1 (5.6)	38.4	43.2	200				
35	17.5	40	375.0 (38.2)	7.7	8.6	X—SWH35—40		
		45	333.0 (34.0)	8.6	9.7	45		
		50	300.0 (30.6)	9.6	10.8	50		
		55	273.0 (27.8)	10.6	11.9	55		
		60	250.0 (25.5)	11.5	13.0	60		
		65	231.0 (23.5)	12.5				