

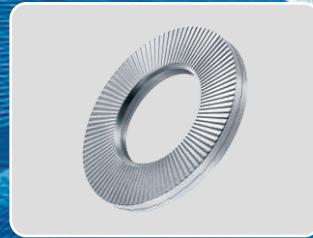


- COMPRESSION SPRINGS • SPIRAL SPRINGS
- TENSION SPRINGS • CONSTANT FORCE SPRINGS
- TORSION SPRING • CONICAL SPRINGS
- WIRE FORMING SPRINGS



VISHAL SPRINGS

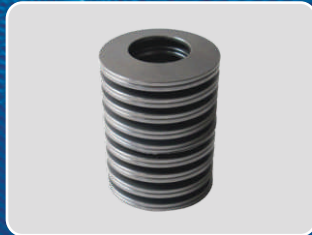
ALL TYPES OF COIL SPRINGS, SHEET METAL SPRINGS
AND WIRE FORM SPRINGS



Carbon Steel Lock Washer



Disc Lock Washer



Circular Disc Washer



Disc Spring Washer



Ht Disc Washer



Spring steel disc washer



SS Disc Washer

About Company :

The Company was Formed in 1996. A product catalogue is to illustrate one's complete products, which is almost an impossible task in our case, due to the vast range of types and sizes, through generally can be termed as short as springs and allied items. So we have compiled the particulars of a very few of our speciality products.

Two decades means a lot of time, and we are in the trade for these many years, now having a number of sophisticated import - substitutions to our credit and a very huge number Of esteemed clientele.

Our own Tool Room and Quality Control Department with Wall - versed technicians and a well equipped works give us confidence to shoulder development of any challenging complicated items, and that is where we have proved our mark.

We would like to introduce ourselves as a team of experienced professional and technical people involved in manufacturing of specialized engineering products.

We Specialize in:

Constant Force Spring Stud, Sheet Metal, Wire Forming, Spiral Springs, Torsion Springs, Taper Springs, Dowel Pin, Press Components, Machine Components, Industrial Products for Spares and Maintenance Coil Springs, Helical Springs, Disc Springs, Compression Springs.

We have a well equipped manufacturing unit situated at Thane to cater the demands of the ever growing industry. Our products are manufactured according to the specification and designs provided by the customers keeping in mind the stringent quality control. We also cater OEM Spares as per customer's requirement.

Please feel free to get in touch with us so as to enable us to provide you with the best quality and service. Looking forward to our long business relationship with you and awaiting your positive reply in this regard of any challenging complicated items, and that is where we have proved our mark.



VISHAL SPRINGS

ALL TYPES OF COIL SPRINGS, SHEET METAL SPRINGS AND WIRE FROM SPRINGS

Disc Spring as per DIN2093

D_0 : Outside Diameter

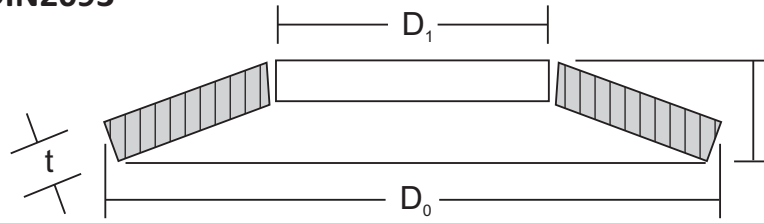
D_1 : Inside Diameter

t : Thickness

l_0 : Overall Height

F : Force (N)

S : Deflection



ITEM CODE	Metric Dimensions					Defl. $S=0.75l_0$	Force N
	D_0	D_1	t	h	l_0		
VDS060303	6	3.2	0.3	0.15	0.45	0.11	119
VDS080302	8	3.2	0.2	0.2	0.4	0.15	26
VDS080303	8	3.2	0.3	0.25	0.55	0.19	104
VDS080304	8	3.2	0.4	0.2	0.6	0.15	186
VDS080305	8	3.2	0.5	0.2	0.7	0.15	357
VDS080402	8	4.2	0.2	0.25	0.45	0.19	39
VDS080403	8	4.2	0.3	0.25	0.55	0.19	118
VDS080404	8	4.2	0.4	0.2	0.6	0.15	210
VDS100303	10	3.2	0.3	0.35	0.65	0.26	98
VDS100304	10	3.2	0.4	0.3	0.7	0.23	179
VDS100305	10	3.2	0.5	0.25	0.75	0.19	279
VDS100404	10	4.2	0.4	0.3	0.7	0.23	189
VDS100405	10	4.2	0.5	0.25	0.75	0.19	294
VDS100406	10	4.2	0.6	0.25	0.85	0.19	502
VDS100502	10	5.2	0.25	0.3	0.55	0.23	58
VDS00504	10	5.2	0.4	0.3	0.7	0.23	209
UDS100505	10	5.2	0.5	0.25	0.75	0.19	325
VDS120404	12	4.2	0.4	0.4	0.8	0.3	178
VDS120405	12	4.2	0.5	0.35	0.85	0.26	284
VDS120406	12	4.2	0.6	0.4	1	0.3	557
VDS120505	12	5.2	0.5	0.4	0.9	0.3	350
VDS120506	12	5.2	0.6	0.35	0.95	0.26	506
VDS20605	12	6.2	0.5	0.35	0.85	0.26	326
VDS120606	12	6.2	0.6	0.35	0.95	0.26	552
VDS130505	12.5	5.2	0.5	0.35	0.85	0.26	272
VDS130603	12.5	6.2	0.35	0.45	0.8	0.34	151
VDS130605	12.5	6.2	0.5	0.35	0.85	0.26	293
VDS130607	12.5	6.2	0.7	0.3	1	0.26	660
VDS140703	14	7.2	0.35	0.45	0.8	0.34	123
VDS140705	14	7.2	0.5	0.4	0.9	0.3	279
VDS140708	14	7.2	0.8	0.3	1.1	0.23	797
VDS150504	15	5.2	0.4	0.55	0.95	0.41	176
VDS150505	15	5.2	0.5	0.5	1	0.38	278
VDS150506	15	5.2	0.6	0.45	1.05	0.34	407
VDS150507	15	5.2	0.7	0.4	1.1	0.3	555
VDS150605	15	6.2	0.5	0.5	1	0.38	289
VDS150606	15	6.2	0.6	0.45	1.05	0.34	424
VDS150607	15	6.2	0.7	0.4	1.1	0.3	578
VDS150807	15	8.2	0.7	0.4	1.1	0.38	666
VDS150808	15	8.2	0.8	0.4	1.2	0.3	982
VDS160804	16	8.2	0.4	0.5	0.9	38	154

Disc Spring as per DIN2093

D_o : Outside Diameter

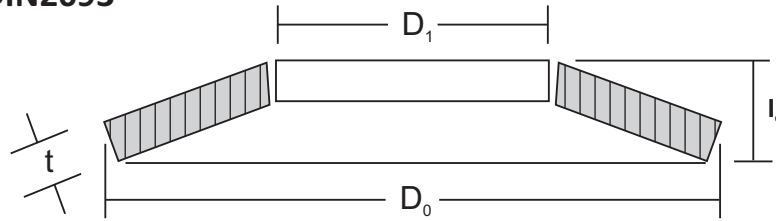
D_i : Inside Diameter

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ITEM CODE	Metric Dimensions					Defl. $S=0.75l_o$	Force N
	D_o	D_i	t	h	l_o		
VDS160806	16	8.2	0.6	0.45	1.05	0.34	410
VDS160807	16	8.2	0.7	0.45	1.15	0.34	637
VDS160808	16	8.2	0.8	0.4	1.2	0.3	825
VDS160809	16	8.2	0.9	0.35	1.25	0.26	1013
VDS180604	18	6.2	0.4	0.6	1	0.45	139
VDS180605	18	6.2	0.5	0.6	1.1	0.5	245
VDS180606	18	6.2	0.6	0.6	1.2	0.45	400
VDS180607	18	6.2	0.7	0.55	1.25	0.41	553
VDS180608	18	6.2	0.8	0.5	1.3	0.38	726
VDS180805	18	8.2	0.5	0.6	1.1	0.45	265
VDS180807	18	8.2	0.7	0.55	1.25	0.41	596
VDS180808	18	8.2	0.8	0.5	1.3	0.38	783
VDS180810	18	8.2	1	0.4	1.4	0.3	1181
VDS180904	18	9.2	0.45	0.6	1.05	0.45	214
VDS180907	18	9.2	0.7	0.5	1.2	0.38	566
VDS180910	18	9.2	1	0.4	1.4	0.3	1254
VDS200806	20	8.2	0.6	0.7	1.3	0.53	412
VDS200807	20	8.2	0.7	0.65	1.35	0.49	569
VDS200808	20	8.2	0.8	0.6	1.4	0.45	751
VDS200809	20	8.2	0.9	0.55	1.45	0.41	954
VDS200810	20	8.2	1	0.55	1.55	0.41	1294
VDS201005	20	10.2	0.5	0.65	1.15	0.49	254
VDS201008	20	10.2	0.8	0.55	1.35	0.41	748
VDS201009	20	10.2	0.9	0.55	1.45	0.41	1050
VDS201010	20	10.2	1	0.55	1.55	0.41	1425
VDS201011	20	10.2	1.1	0.45	1.55	0.34	1521
VDS201012	20	10.2	1.2	0.35	1.55	0.38	2477
VDS201015	20	10.2	1.5	0.3	1.8	0.23	2521
VDS221106	22.5	11.2	0.6	0.8	1.4	0.6	425
VDS221108	22.5	11.2	0.8	0.65	1.45	0.49	707
VDS221112	22.5	11.2	1	0.65	1.65	0.49	1335
VDS221112	22.5	11.2	1.25	0.5	1.75	0.38	1929
VDS230807	23	8.2	0.7	0.8	1.5	0.6	544
VDS230808	23	8.2	0.8	0.75	1.55	0.5	6719
VDS230809	23	8.2	0.9	0.7	1.6	0.53	919
VDS230810	23	8.2	1	0.7	1.7	0.53	1240
VDS231009	23	10.2	0.9	0.75	1.65	0.56	1058
VDS231010	23	10.2	1	0.7	1.7	0.53	1315
VDS231012	23	10.2	1.25	0.65	1.9	0.49	2310
VDS231210	23	12.2	1	0.6	1.6	0.45	1217
VDS231212	23	12.2	1.25	0.6	1.85	0.45	2331
VDS231215	23	12.2	1.5	0.6	2.1	0.38	3297
VDS251207	25	12.2	0.7	0.9	1.6	0.68	600

Disc Spring as per DIN2093

D_0 : Outside Diameter

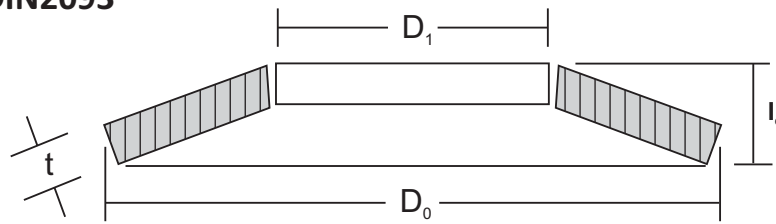
D_1 : Inside Diameter

t : Thickness

I_0 : Overall Height

F : Force (N)

S : Deflection



ITEM CODE	Metric Dimensions					Defl. $S=0.75I_0$	Force N
	D_0	D_1	t	h	I_0		
VDS251209	25	12.2	0.9	0.7	1.6	0.53	862
VDS251210	25	12.2	1	0.8	1.8	0.6	1359
VDS251212	25	12.2	1.25	0.7	1.95	0.53	2214
VDS251215	25	12.2	1.5	0.55	2.05	0.41	2926
VDS281008	28	10.2	0.8	0.95	1.75	0.71	662
VDS281010	28	10.2	1	0.9	1.9	0.68	1130
VDS281012	28	10.2	1.25	0.8	2.05	0.6	1853
VDS281015	28	10.2	1.5	0.7	2.2	0.56	2723
VDS281210	28	12.2	1	0.95	1.95	0.71	1268
VDS281212	28	12.2	1.25	0.85	2.1	0.64	2083
VDS281215	28	12.2	1.5	0.75	2.25	0.56	3077
VDS281408	28	14.2	0.8	1	1.8	0.75	801
VDS281410	28	14.2	1	0.8	1.8	0.6	1107
VDS281412	28	14.2	1.25	0.85	2.1	0.64	2240
VDS281415	28	14.2	1.5	0.65	2.15	0.49	2841
VDS311608	31.5	16.3	0.8	1.05	1.85	0.79	687
VDS311612	31.5	16.3	1.25	0.9	2.15	0.68	1913
VDS311615	31.5	16.3	1.5	0.9	2.4	0.68	3230
VDS311617	31.5	16.3	1.75	0.7	2.45	0.53	3871
VDS311620	31.5	16.3	2	0.75	2.75	0.56	6173
VDS341412	34	14.3	1.25	1.15	2.4	0.86	1989
VDS341415	34	14.3	1.5	1.05	2.55	0.79	2984
VDS341615	34	16.3	1.5	1.05	2.55	0.79	3155
VDS341620	34	16.3	2	0.85	2.85	0.64	5783
VDS351809	35.5	18.3	0.9	1.15	2.05	0.86	832
VDS351812	35.5	18.3	1.25	1	2.05	0.75	1699
VDS351820	35.5	18.3	2	0.8	2.8	0.6	5187
VDS401412	40	14.3	1.25	1.4	2.65	1.05	1778
VDS401415	40	14.3	1.5	1.25	2.75	0.94	2542
VDS401420	40	14.3	2	1.05	3.05	0.79	4763
VDS401615	40	16.3	1.5	1.3	2.8	0.79	2140
VDS401620	40	16.3	2	1.1	3.1	0.83	5169
VDS401820	40	18.3	2	1.15	3.15	0.86	5656
VDS402010	40	20.4	1	1.3	2.3	0.98	1017
VDS402015	40	20.4	1.5	1.15	2.65	0.86	2621
VDS402020	40	20.4	2	1.1	3.1	0.83	5701
VDS402022	40	20.4	2.25	0.9	3.15	0.68	6500
VDS402025	40	20.4	2.5	0.95	3.45	0.71	9390
VDS452212	45	22.4	1.25	1.6	2.85	1.2	1891
VDS452217	45	22.4	1.75	1.3	3.05	0.98	3646
VDS452225	45	22.4	2.5	1	3.5	0.75	7716

Disc Spring as per DIN2093

D_o : Outside Diameter

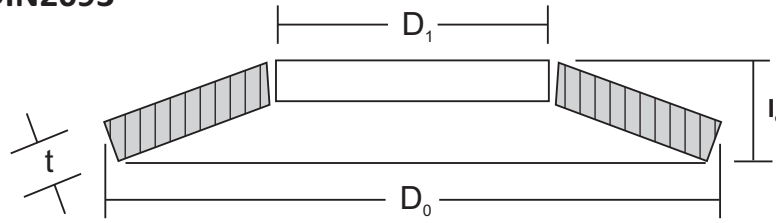
D_i : Inside Diameter

t : Thickness

l_o : Overall Height

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S : Deflection



ITEM CODE	Metric Dimensions					Defl. $S=0.75l_o$	Force N
	D_o	D_i	t	h	l_o		
VDS501812	50	18.3	1.25	1.6	2.85	1.2	1373
VDS501815	50	18.3	1.5	1.8	3.3	1.35	2603
VDS501820	50	18.3	2	1.5	3.5	1.13	4567
VDS501825	50	18.3	2.5	1.35	3.85	1.2	9305
VDS501830	50	18.3	3	1	4	1.05	13763
VDS502020	50	20.4	2	1.5	3.5	1.13	4687
VDS502025	50	20.4	2.5	1.35	3.85	1.01	7919
VDS502220	50	22.4	2	1.6	3.6	1.2	5222
VDS502225	50	22.4	2.5	1.4	3.9	1.05	8510
VDS502512	50	25.4	1.25	1.6	2.85	1.2	1550
VDS502515	50	25.4	1.5	1.6	3.1	1.2	2512
VDS502520	50	25.4	2	1.4	3.4	1.05	4762
VDS502522	50	25.4	2.25	1.5	3.75	1.13	7217
VDS502525	50	25.4	2.5	1.4	3.9	1.05	9063
VDS502530	50	25.4	3	1.1	4.1	0.83	11976
VDS562815	56	28.5	1.5	1.95	3.45	1.46	2622
VDS562820	56	28.5	2	1.6	3.6	1.2	4438
VDS562825	56	28.5	2.5	1.7	4.2	1.28	8978
VDS562830	56	28.5	3	1.3	4.3	0.98	11388
VDS602020	60	20.4	2	2.1	4.1	1.58	4727
VDS602025	60	20.4	2.5	1.8	4.3	1.35	7297
VDS602030	60	20.4	3	1.7	4.7	1.26	11569
VDS602525	60	25.5	2.5	1.9	4.4	1.43	8164
VDS602530	60	25.5	3	1.65	4.65	1.24	11768
VDS603025	60	30.5	2.5	2	4.5	1.35	8432
VDS603027	60	30.5	2.75	2	4.75	1.5	12356
VDS603030	60	30.5	3	1.7	4.7	1.28	13226
VDS603035	60	30.5	3.5	1.5	5	1.13	18153
VDS633118	63	31	1.8	2.35	4.15	1.76	4238
VDS633125	63	31	2.5	1.75	4.25	1.31	7189
VDS633130	63	31	3	1.8	4.8	1.35	12536
VDS633135	63	31	3.5	1.4	4.9	1.05	15025
VDS702520	70	25.5	2	2.5	4.5	1.88	4437
VDS703025	70	30.5	2.5	2.4	4.9	1.8	8031
VDS703030	70	30.5	3	2.1	5.1	1.58	11426
VDS703530	70	35.5	3	2.1	5.1	1.58	12287
VDS703540	70	35.5	4	1.8	5.8	1.35	23923
VDS704040	70	40.5	4	1.6	5.6	1.2	23351
VDS704050	70	40.5	5	1.2	6.2	0.9	33672
VDS713620	71	36	2	2.6	4.6	1.95	5144
VDS713625	71	36	2.5	2	4.5	1.5	6725

Disc Spring as per DIN2093

D_0 : Outside Diameter

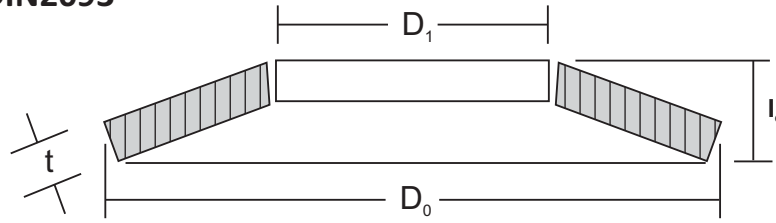
D_1 : Inside Diameter

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ITEM CODE	Metric Dimensions					Defl. $S=0.75I_0$	Force N
	D_0	D_1	t	h	I_0		
VDS713640	71	36	4	1.6	5.6	1.2	20355
VDS803125	80	31	2.5	2.8	5.3	2.1	7239
VDS803130	80	31	3	2.5	5.5	1.88	10352
VDS803140	80	31	4	2.1	6.1	1.58	19394
VDS803630	80	36	3	2.7	5.7	2.03	11919
VDS803640	80	36	4	2.2	6.2	1.65	21400
VDS804122	80	41	2.25	2.95	5.2	2.21	6613
VDS804130	80	41	3	2.3	5.3	1.73	10518
VDS804140	80	41	4	2.2	6.2	1.65	22874
VDS804150	80	41	5	1.7	6.7	2.4	7684
VDS904625	90	46	2.5	3.2	5.7	2.4	7684
VDS904635	90	46	3.5	2.5	6	1.88	14161
VDS904650	90	46	5	2	7	1.5	31354
VDS1004140	100	41	4	3.2	7.2	2.4	20251
VDS1004150	100	41	5	2.75	7.75	2.06	32361
VDS1005127	100	51	2.7	3.5	6.2	2.63	8609
VDS1005135	100	51	3.5	2.8	6.3	2.1	13070
VDS1005140	100	51	4	3	7	2.25	20674
VDS1005150	100	51	5	2.8	7.8	2.1	36339
VDS1005160	100	51	6	2.2	8.2	1.65	48022
VDS1125730	112	57	3	3.9	6.9	2.93	10489
VDS1125740	112	57	4	3.2	7.2	2.4	17752
VDS1125760	112	57	6	2.5	8.5	1.88	43707
VDS1254140	125	41	4	4.2	8.2	3.15	17346
VDS1255140	125	51	4	4.5	8.5	3.38	19847
VDS1255150	125	51	5	3.9	8.9	2.93	30669
VDS1255160	125	51	6	3.4	9.4	2.55	44307
VDS1256150	125	61	5	4	9	3	33965
VDS1256160	125	61	6	3.6	9.6	2.7	50722
VDS1256180	125	61	8	2.9	10.9	2.18	93577
VDS1256435	125	64	3.5	4.5	8	3.38	15416
VDS1256450	125	64	5	3.5	8.5	2.63	29808
VDS1256460	125	64	6	3.6	9.6	2.7	52155
VDS1256470	125	64	7	3	10	2.25	67216
VDS1256480	125	64	8	2.6	10.6	1.95	85926
VDS1257160	125	71	6	3.3	9.3	2.48	5127
VDS1257180	125	71	8	2.4	10.4	1.88	5494
VDS1257110	125	71	10	1.8	11.8	1.35	124124
VDS1407238	140	72	3.8	4.9	8.7	3.68	17195
VDS1407250	140	72	5	4	9	3	27920
VDS1407280	140	72	8	3.2	11.2	2.4	85251

Disc Spring as per DIN2093

D_0 : Outside Diameter

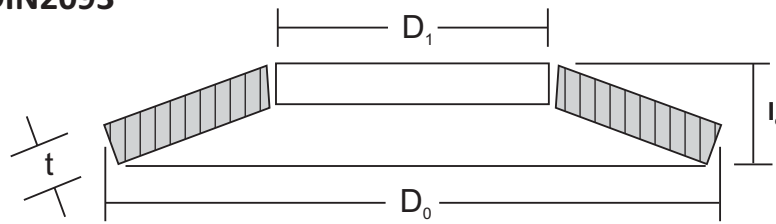
D_1 : Inside Diameter

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ITEM CODE	Metric Dimensions					Defl. $S=0.75l_0$	Force N
	D_0	D_1	t	h	l_0		
VDS1506150	150	61	5	5.3	10.3	3.98	31041
VDS1506160	150	61	6	4.8	10.8	3.6	45456
VDS1507160	150	71	6	4.8	10.8	3.64	8155
VDS1507180	150	71	8	4	12	3	89851
VDS1508180	150	81	8	3.7	11.7	2.78	89352
VDS1508110	150	81	10	3	13	2.25	139128
VDS1608243	160	82	4.3	5.6	9.9	4.2	21843
VDS1608260	160	82	6	4.5	10.5	3.38	41008
VDS1608210	160	82	10	3.5	13.5	2.63	138331
VDS1809248	180	92	4.8	6.2	11	4.65	26442
VDS1809260	180	92	6	5.1	11.1	3.83	37252
VDS1809210	180	92	10	4	14	3	125417
VDS1809213	180	92	13	3.5	16.5	2.63	237883
VDS2008280	200	82	8	6.2	14.2	4.65	78034
VDS2008210	200	82	10	5.5	15.5	4.13	124995
VDS2008212	200	82	12	4.6	16.6	3.45	182737
VDS2009210	200	92	10	5.6	15.6	4.2	137688
VDS2009212	200	92	12	4.8	16.8	3.6	199269
VDS2009214	200	92	14	4.1	18.1	3.08	267227
VDS20010255	200	102	5.5	7	12.5	5.25	36111
VDS20010280	200	102	8	5.6	13.6	4.2	76378
VDS20010210	200	102	10	5.6	15.6	4.2	145357
VDS20010212	200	102	12	4.2	16.2	3.15	183020
VDS20010214	200	102	14	4.2	18.2	3.15	289181
VDS20011212	200	112	12	4.2	16.2	3.15	195830
VDS20011214	200	112	14	3.5	17.5	2.63	256758
VDS20011216	200	112	16	2.8	18.8	21	305100
VDS22511265	225	112	6.5	6.2	13.6	4.88	39775
VDS22511280	225	112	8	7.5	14.5	4.88	70749
VDS22511212	225	112	12	11.3	17	3.75	171016
VDS22511216	225	112	16	15	20.5		
VDS25010210	250	102	10	9.6	18	6	126387
VDS25010212	250	102	12	11.5	19	5.25	182962
VDS25012770	250	127	7	6.7	14.8	5.85	5.85
VDS25012710	250	127	10	9.4	17	5.25	104004
VDS25012712	250	127	12	11.3	19.3	5.48	210806
VDS25012714	250	127	14	13.1	19.6	4.2	248828
VDS25012716	250	127	16	15	21.8	4.35	383017

DISC SPRINGS TOLERANCES

THICKNESS TOLERANCES		
	t or t' [mm]	Tolerance for t [mm]
Group 1	0.2 to 0.6	+0.02 /- 0.06
	> 0.6 to < 1.25	+0.03 /- 0.09
Group 2	1.25 to 3.8	+0.04 /- 0.12
	> 3.8 to 6.0	+0.05 /- 0.15
Group 3	> 6.0 to 16.0	+0.10 /- 0.10

For Springs in group 3 the tolerance is applied to the reduced thickness t'

We use the thickness to ensure that springs loads are within tolerance and therefore will in some cases deviate from the above figures

DIAMETER TOLERANCES		
D _e or D _i [mm]	Permissible deviation in mm	
Over 3 to 6	0 /- 0.12	+0.12 / 0
Over 6 to 10	0 /- 0.15	+0.15 / 0
Over 10 to 18	0 /- 0.18	+0.18 / 0
Over 18 to 30	0 /- 0.21	+0.21 / 0
Over 30 to 50	0 /- 0.25	+0.25 / 0
Over 50 to 80	0 /- 0.30	+0.30 / 0
Over 80 to 120	0 /- 0.35	+0.35 / 0
Over 120 to 180	0 /- 0.40	+0.40 / 0
Over 180 to 250	0 /- 0.46	+0.46 / 0
Over 250 to 315	0 /- 0.52	+0.52 / 0
Over 315 to 400	0 /- 0.57	+0.57 / 0
Over 400 to 500	0 /- 0.63	+0.63 / 0

OVERALL HEIGHT TOLERANCES		
	t [mm]	Tolerance for l ₀ [mm]
Group 1	< 1.25	+ 0.10 /- 0.05
Group 2	1.25 to 2.0	+ 0.15 /- 0.05
	> 2.0 to 3.0	+ 0.20 /- 0.10
	> 3.0 to 6.0	+ 0.30 /- 0.15
Group 3	> 6.0 to 16.0	+ 0.30 /- 0.30

To ensure the specified springs forces. DIN 2093 allows the overall height tolerances to be slightly exceeded.

LOAD TOLERANCES		
	t [mm]	Tolerance for F at the test length _p = l - 0.75 h ₀
Group 1	< 1.25	+ 25% /- 7.5%
Group 2	1.25 to 3.0	+ 15% /- 7.5%
	> 3.0 to 6.0	+ 10% /- 5%
Group 3	> 6.0 to 16.0	+ 5% /- 5%

With a single spring the spring force must be checked at the height (to - l) This should be carried out with the spring pressed between two lubricated, hardened, ground and polished plates. Measurements are always taken in loading direction

Material	Magnetic Permeability	Thermal Conductivity	Field of use	Availability
Carbon Steel C80/CK75	Very good	Low	C 80 is the most inexpensive spring steel for low stress applications.	Regular
Chromium-Vanadium steel 50CrV4	Very good	Low	50CrV4 is the most regularly used disc spring material. 50CrV4 offers the spring characteristics in the temperature range of -150c to +150c, due to high alloy content.	Always in stock
X10 Cr Ni 18-8 stainless steels (AISI 301/1.4310)	Low due to work hardening	Low	SS301 Disc Spring is used non-waterproof housing and subject to even lightly corrosive substances.	Always in stock
X5 Cr Ni 18-10 stainless steels (AISI 304/1.4301)	Low due to work hardening	Low	Disc Spring Washers requiring low elasticity and good corrosion resistance.	Always in stock
X6 Cr Ni MoTi 17-12-2 stainless steels (AISI 316/1.4401)	Low due to work hardening	Low	Disc Spring Washers is used in highly corrosive environments.	Always in stock
Heat Resistant Steel X7 Cr Ni Al 17-7 (17.7 PH)	Good	Low	Disc Spring Washers in corrosive environments but for high temperatures.	Always in stock
Inconel X-750	Zero	Low	Disc Spring Washers, used in high temperature parts.	Always in stock
Inconel X-718	Zero	Low	Disc Spring Washers used in nuclear, aeronautical, space, very high temperature.	Always in stock
Beryllium copper CuBe 2	Zero	Very high	This alloys low modulus of elasticity enables the Disc Spring material to generate a significantly lower spring force when compared to other various material.	Very difficult

Heavy Duty

Safety Washers

(HDS) - DIN6796



Heavy Duty Safety or Load Washers are manufactured as per DIN 6796 and are designed specifically for Heavy Duty Bolted sections.

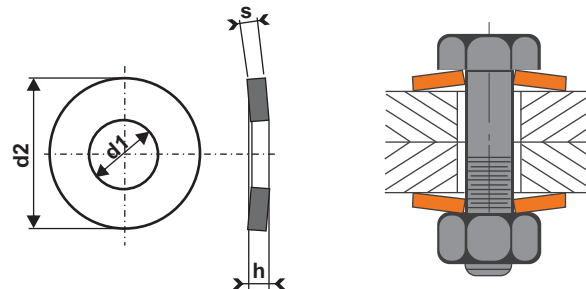
Conical Spring Washers are spring elements whose role is to counteract the loss of force in screwed or bolted connections due to stress relaxation taking place in the components or to counteract heat expansion. These spring elements are compressed in the assembly.

They are configured in accordance with bolts of the property class 8.8 to 10.9. Particularly when used in conjunction with short bolts, their function is to increase the elasticity of the overall assembly. In the case of relaxation of the connection, these elements maintain a creation minimum clamping force. However conical spring washers are not able to prevent parts unscrewing as a result of alternating transverse loads.

It should be noted that conical spring washers are extremely high-stressed components and are there-fore only recommended for static application.

STANDARD APPLICATIONS INCLUDE:

- Bus Bars in Transformers
- Automobile & Heavy Construction
- Agriculture & Heavy Machineries
- Mining & Turbine Construction



PART NO.	Outside Dia (D _e)	Inside Dia (D _i)	Thickness (t)	Overall Height (Max) (io)	Approximate Force to Flat	Bolt Size
HD52204	5.0	2.2	0.40	0.60	628	2.0
HD62705	6.0	2.7	0.50	0.72	946	2.5
HD73206	7.0	3.2	0.60	0.85	1,320	3.0
HD83708	8.0	3.7	0.80	1.06	2,410	3.5
HD9431	9.0	4.3	1.00	1.30	3,770	4.0
HD115312	11.0	5.3	1.20	1.55	5,480	5.0
HD146415	14.0	6.4	1.50	2.00	8,590	6.0
HD1774175	17.0	7.4	1.75	2.30	11,300	7.0
HD18842	18.0	8.4	2.00	2.60	14,900	8.0
HD2310525	23.0	10.5	2.50	3.20	22,100	10.0
HD29133	29.0	13.0	3.00	3.95	34,100	12.0
HD351536	35.0	15.0	3.50	4.65	46,000	14.0
HD39174	39.0	17.0	4.00	5.25	59,700	16.0
HD421945	42.0	19.0	4.50	5.8	74,400	18.0
HD45215	45.0	21.0	5.00	6.4	93,200	20.0
HD492355	49.0	23.0	5.50	7.05	113,700	22.0
HD56256	56.0	25.0	6.00	7.75	131,000	24.0
HD602865	60.0	28.0	6.50	8.35	154,000	27.0
HD70317	70.0	31.0	7.00	9.2	172,000	30.0

PLATING:

- Standard finish is self finish
- Alternative: Phosphate and oil, Mechanical Zinc plate, Deltatone

Safelock Washer

Safelock Washers are used in pairs. Both Washers have Radial Teeth and are assembled opposite to each other.

Safelock Washers eliminate the use of adhesive for locking as it automatically secures the joints.

Safelock Washers can be used with Bolts and Threaded Holes. When using with Bolts and Nuts 1 Pair should be used on either side.

Safelock Washers are widely used in various industries such as Construction, Automotive, Mining, Oil & Natural Gas, Power plants.

1. When maximum safety is desired while tightening Nut/Bolt.
2. Avoids loosening due to vibration and heavy loads.
3. Perfect locking is achieved at any preload levels.
4. Easy to assemble and dismantle.

RANGE : M3 to M130

MATERIAL : High Quality Spring Steel (50CrV4), Stainless Steel 304 & 316

PLATING : Delta Protekt



Contact Washer



RANGE: M3 to M20

MATERIAL: High Quality Spring Steel (50CrV4) & Stainless Steel 304 & 316

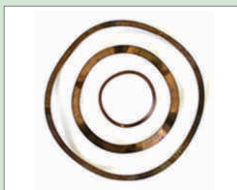
Ball Bearing Disc Spring



TYPE: PLAIN & SLOTTED

MATERIAL: High Quality Spring Steel (50CrV4)

Wave Washer



RANGE: As Per DIN 137A & DIN 137B & also as per customers Specification

MATERIAL: High Quality Spring Steel (50CrV4) & Stainless Steel 304 & 316

Safety Serrated Washer



RANGE: M3 to M40

MATERIAL: High Quality Spring Steel (50CrV4) & Stainless Steel 304 & 316

Coil Spring



TYPE: Compression Spring, Tension Spring & As per customer specification

RANGE: Wire Diameter 0.4mm to 50mm, All other specification as per customer requirement.

MATERIAL: High Quality Spring Steel (50CrV4), Stainless Steel 304 & 316, Inconel X-750, Inconel X-718

Sheet Metal Component



TYPE, RANGE & MATERIAL
AS PER CUSTOMER SPECIFICATION

SPRINGS

We Specialize in Constant Force Spring, Stud, Sheet Metal, Wire Forming, Spiral Springs, Torsion Springs, Taper Springs, Dowel Pin, Press Components, Machine Components, Industrial Products for Spares and Maintenance Coil Springs, Helical Springs, Disc Springs, Compression Springs.

Tepar Tension Spring (Conical Spring)



Taper Tension Spring are made as per Drawing or Specification of Customer.

Wire Range : 0.25 to 8 mm.

Constant Force Spring



Constant Force Spring are made as per Drawing or Specification of Customer.

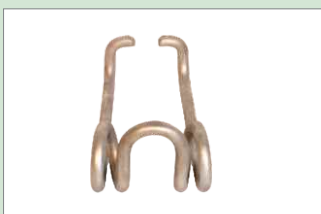
Wire Range : 0.15 to 0.6 mm.

Valve Spring



Valve Spring are made as per Drawing or Specification of Customer.

Retainer Spring



Retainer Spring are made as per Drawing or Specification of Customer.

Range : 0.5 to 11 mm.

Compression Spring



Compression Spring are made as per Drawing or Specification of Customer.

Wire Range : 0.15 mm to 14 mm.

Spiral Spring



Spiral Spring are made as per Drawing or Specification of Customer.

Thickness : 0.2 mm to 3 mm.

Length : 120' to 125'

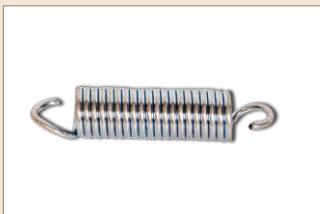
Garter Spring



Garter Spring are made as per Drawing or Specification of Customer.

Wire Range : 0.25 mm to 2 mm.

Tension Spring



Tension Spring are made as per Drawing or Specification of Customer.

Wire Range : 0.2 mm to 10 mm.



VISHAL SPRINGS

ALL TYPES OF COIL SPRINGS, SHEET METAL SPRINGS
AND WIRE FROM SPRINGS

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