

Tension Springs

Extra Light / Light / Light to Medium / Medium Load

Springs / Shock Absorbers / Gas Springs

Tension Springs – Extra Light Load
– Light Load
– Light to Medium Load
– Medium Load

AW_
AU_ Stainless Steel

BW_
BU_ Stainless Steel

Type	Material
AW_	Spring Steel (ASTM A228)
BW_	304 Stainless Steel-WPB

Free Length Tolerance L
D = 18 or less ±1.0
D over 18 ±1.5

Ultra Light Load Type

Part Number	Type	D - L	Wire Dia. dmm	Dynamic Load		Initial Tension N	(Springs Constant) N/mm
				Max. Deflection F max. mm	Max. Load N		
AWA AUA	2 - 10	15	0.2	6.7	0.69	0.13	0.083
				11.8			0.047
				17.2			0.032
				22.8			0.025
				28.5			0.020
AWA AUA	3 - 10	20	0.25	10.4	1.27	0.15	0.11
				23.0			0.049
				35.9			0.031
				47.9			0.024
				57.5			0.020
AWA AUA	4 - 15	25	0.35	14.6	2.26	0.25	0.14
				24.1			0.083
				32.5			0.062
				42.7			0.047
				51.2			0.039
AWA AUA	5 - 15	30	0.45	8.2	3.24	0.49	0.33
				15.5			0.18
				21.5			0.13
				29.4			0.093
				35.0			0.078
AWA AUA	6 - 20	35	0.55	16.2	6.08	0.64	0.34
				25.2			0.22
				34.7			0.16
				42.7			0.13
				50.4			0.11
AWA AUA	8 - 25	40	0.7	18.1	8.53	1.08	0.41
				27.1			0.28
				36.2			0.21
				44.7			0.17
				54.2			0.14
AWA AUA	10 - 30	45	0.9	13.4	10.8	2.06	0.65
				18.5			0.47
				24.0			0.36
				29.6			0.29
				35.6			0.25
AWA AUA	12 - 35	50	1.1	17.8	19.6	2.94	0.94
				25.0			0.67
				31.0			0.54
				37.7			0.44
				44.7			0.37

Part Number Example: AWY10-50

Initial tension and spring constant are for reference only. Load (kgf) = Load N x 0.101972

Light Load *marked dimensions are for AWY / AUU only

Part Number	Type	D - L	Wire Dia. dmm	Dynamic Load		Initial Tension N	(Springs Constant) N/mm
				Max. Deflection F max. mm	Max. Load N		
AWY AUU	2 - 10	15	0.25	5.7	1.86	0.34	0.27
				10.3			0.15
				14.0			0.11
				18.2			0.08
				22.1			0.07
AWY BWY AUU BUY	3 - 10	20	0.3	8.7	2.25	0.29	0.23
				16.6			0.12
				25.0			0.08
				33.3			0.06
				40.0			0.05
AWY BWY AUU BUY	4 - 15	25	0.4	10.0	3.24	0.59	0.26
				16.8			0.16
				22.5			0.12
				28.4			0.09
				33.7			0.08
AWY BWY AUU BUY	5 - 15	30	0.5	6.8	4.22	0.88	0.49
				11.7			0.28
				17.0			0.20
				21.2			0.16
				26.1			0.13
AWY BWY AUU BUY	6 - 20	35	0.6	14.0	8.14	1.27	0.49
				21.2			0.32
				28.0			0.25
				35.0			0.20
				41.1			0.17
AWY BWY AUU BUY	8 - 25	40	0.8	15.1	12.75	2.35	0.69
				21.2			0.49
				26.5			0.39
				33.1			0.31
				39.2			0.26
AWY BWY AUU BUY	10 - 30	45	1.0	11.5	15.00	3.73	0.98
				15.3			0.74
				19.8			0.57
				23.9			0.47
				28.7			0.39
AWY BWY AUU BUY	12 - 35	50	1.2	12.0	31.37	5.39	1.18
				17.8			0.93
				23.8			0.74
				35.3			0.52
				42.0			0.62
AWY AUU	14 - 40	55	1.5	15.4	38.24	8.43	1.94
				21.0			1.42
				25.4			1.17
				30.8			0.97
				37.0			0.8
AWY AUU	16 - 45	60	1.6	15.8	43.15	9.12	2.16
				21.0			1.62
				25.7			1.32
				31.5			1.08
				35.8			0.95
AWY AUU	18 - 50	65	1.8	17.8	52.96	9.81	2.05
				25.0			1.66
				31.0			1.39
				36.0			1.03
				42.0			0.94
AWY AUU	20 - 60	70	2.0	19.1	78.45	12.75	2.26
				23.2			1.57
				27.0			1.23
				30.9			0.98
				36.1			0.83

*marked dimensions are for AWY / AUU only.

*AUU and BUU are not available for D18 and D20.

Tension Springs

Extra Light / Light / Light to Medium / Medium Load, continued

Light to Medium Load Type *marked dimensions are for AWU / AUU only

Part Number	Type	D - L	Wire Dia. dmm	Dynamic Load		Initial Tension N	(Springs Constant) N/mm
				Max. Deflection F max. mm	Max. Load N		
AWU AUU	2 - 10	15	0.28	4.0	2.45	0.49	0.49
				6.7			0.29
				10.0			0.20
				13.3			0.15
				16.6			0.11
AWU BWU AUU BUU	3 - 10	20	0.35	4.6	3.33	0.66	0.59
				9.1			0.29
				14.3			0.19
				19.5			0.14
				24.8			0.11
AWU BWU AUU BUU	4 - 15	25	0.45	7.5	4.81	0.98	0.51
				12.2			0.31
				16.9			0.23
				21.7			0.18
				26.0			0.15
AWU BWU AUU BUU	5 - 15	30	0.55	5.7	6.37	1.37	0.89
				9.8			0.51
				14.2			0.35
				18.9			0.26
				24.3			0.21
AWU BWU AUU BUU	6 - 20	35	0.7	9.6	12.94	1.67	1.18
				14.4			0.78
				20.2			0.56
				28.8			0.39
				30.3			0.37
AWU BWU AUU BUU	8 - 25	40	0.9	10.0	18.63	3.92	1.47
				14.3			1.03
				18.8			0.78
				23.8			0.62
				28.3			0.52
AWU BWU AUU BUU	10 - 30	45	1.1	14.0	23.24	4.71	1.87
				18.0			1.32
				22.2			1.03
				26.3			0.83
				31.5			0.59
AWU BWU AUU BUU	12 - 35	50	1.4	11.7	47.7	10.49	3.14
				15.5			2.35
				19.6			1.86
				23.3			1.57
				28.7			1.27
AWU AUU	14 - 40	55	1.6	12.8	58.84	13.73	3.53
				16.7			2.7
				21.0			2.16
				25.5			1.77
				28.7			1.57
AWU AUU	16 - 45	60	1.8	13.7	70.61	16.67	3.92
				17.7			3.04
				22.0			2.45
				26.0			2.06
				30.5			1.77
AWU AUU	18 - 50	65	1.9	14.0	81.39	17.65	4.18
				18.0			3.43
				22.2			2.7
				26.3			2.06
				31.5			1.77
AWU AUU	20 - 60	70	2.3	16.0	98.07	22.56	4.72
				22.6			3.34
				28.5			2.65
				36.6			2.06
				42.7			1.77

*marked dimensions are for AWU / AUU only.

*AUU and BUU are not available for D18 and D20.

Medium Load Type *marked dimensions are for AWS / AUS only

Part Number	Type	D - L	Wire Dia. dmm	Dynamic Load		Initial Tension N	(Springs Constant) N/mm
				Max. Deflection F max. mm	Max. Load N		
AWS AUS	2 - 10	15	0.3	3.8	3.53	0.69	0.75
				6.7			0.42
				9.6			0.30
				12.6			0.23
				15.5			0.18
AWS AUS BWS BUSS	3 - 10	20	0.4	3.5	4.41	0.88	0.98
				6.0			0.59
				9.0			0.39
				12.0			0.29
				15.6			0.23
AWS AUS BWS BUSS	4 - 15	25	0.5	6.5	6.37	1.18	0.78
				10.2			0.49
				13.9			0.39
				17.5			0.29
				20.3			0.26
AWS AUS BWS BUSS	5 - 15	30	0.6	5.6	8.53	1.57	1.27
				8.9			0.78
				13.7			0.49
				17.3			0.39
				23.7			0.29
AWS AUS BWS BUSS	6 - 20	35	0.8	6.7	17.26	3.53	2.06
				9.3			1.47
				12.7			1.08
				15.6			0.88
				18.7			0.68
AWS AUS BWS BUSS	8 - 25	40	1.0	7.1	24.52	4.9	2.16
				9.1			1.57
				12.5			1.27
				15.4			0.98
				19.2			0.88
AWS AUS BWS BUSS	10 - 30	45	1.2	10.4	30.99	5.49	2.45
				13.7			1.86
				17.3			1.47
				20.0			1.27
				24.8			0.98
AWS AUS BWS BUSS	12 - 35	50	1.6	11.7	62.76	14.71	3.33
				14.3			2.45
				18.8			1.96
				23.3			1.57
				28.7			1.27
AWS AUS BWS BUSS	14 - 40	55	1.8	12.8	74.53	16.67	3.53
				16.7			2.7
				21.0			2.16
				25.5			1.77
				28.7			1.57
AWS AUS BWS BUSS	16 - 45	60	2.0	13.7	86.3	19.61	3.92
				17.7			3.04
				22.0			2.45
				26.0			2.06
				30.5			1.77
AWS AUS BWS BUSS	18 - 50	65	2.1	14.0	115.72	27.46	4.18
				18.0			3.43
				22.2			2.7
				26.3			2.06
				31.5			1.77
AWS AUS BWS BUSS	20 - 60	70	2.6	16.0	150.04	36.28	4.72
				22.6			3.34
				28.5			2.65
				36.6			2.06
				42.7			1.77
AWS AUS BWS BUSS	24 - 70	80	3.2	17.8	225.55	56.88	5.49
				22.6			3.04
				28.5			2.45
				36.6			2.06
				42.7			1.77

*marked dimensions are for AWS / AUS only.

*AUS and BUSS are not available for D18, D20, and D24.

Springs / Shock Absorbers / Gas Springs