

# 316 STAINLESS STEEL TORSION SPRINGS

## Stock sizes in 316 stainless steel

Associated Spring Raymond now offers a complete line of 316 Stainless Steel torsion springs. 316 Stainless steel provides superior temperature and corrosion resistance, which makes it particularly suitable for:

- Medical, surgical, veterinary and pharmaceutical applications
- Food and food preparation machinery and equipment
- Marine, aircraft and aerospace uses
- Harsh environment projects

## Materials

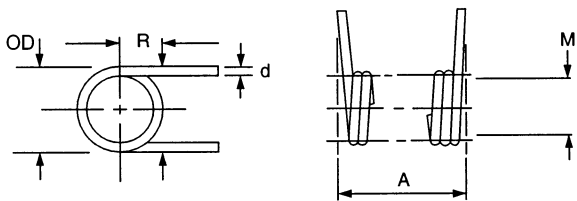
Stainless Steel: Type 316 per ASTM A313 (Chemical and Physical only)

Stainless steel is not recommended above 300 degrees C. (570 degrees F).

Stainless steel 316 is **slightly magnetic** due to cold working during manufacturing. Stainless steel springs may have a slight residue of nickel on the surface of the wire. This is normal and will not affect the function of the part.

## Wire diameter is prior to forming.

No charge for certificate of compliance when requested.



## Position of Legs

### STAINLESS STEEL SPRINGS

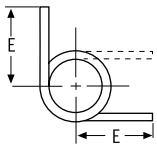


Fig 1. 90° Deflexion

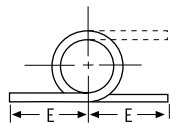


Fig 2. 180° Deflexion

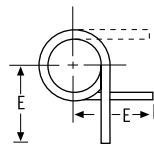


Fig 3. 270° Deflexion

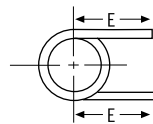


Fig 4. 360° Deflexion

SPEC Extension springs are also available in various materials such as:

- Hard Drawn Steel
- Oil Tempered Wire
- Chrome Vanadium
- Chrome Silicon
- Phosphor Bronze
- Inconel®
- Monel®
- Beryllium Copper
- Elgiloy®
- Zinc Coated Music Wire

Please contact Associated Spring Raymond's engineering team for design and application assistance.

## Ends

Straight torsion ends are standard. Special end treatment available. Allow additional time.

## Finish

Plain wire, passivated per ASTM A967  
Special finishes available upon request.

## Direction of Helix

Must be specified by adding a suffix to the catalog number. Use L for left-hand wound, or R for right-hand wound. **See illustration below.** Coil count if for reference only.

## Tolerances

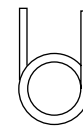
Torque is for reference only and should not be specified.  
O.D.  $\pm 2\%$  316 Stainless Steel

For inspection purposes, the load should be applied at 1/2 leg length (E). Using other lengths appreciably alters the active length of wire and affects the test results.

The reference torque values listed can be translated to the approximate direct load by use of the formula  $P = M/En$  where P is the load applied at the new length En. Example: for part T012-090-055-X, what is the load when  $E_n = 0.187$ ?  $P = M/En = 0.025/0.187 = 0.134lb$ .

Torque values at intermediate deflections can be computed by direct proration. Example: For part T030-180-250-X, the torque at 90° deflection is 0.373 in-lb (42.19 N-mm)

- d = Wire diameter
- OD = Outside diameter
- T = Torque
- R = Loaded position all parts
- M = Recommended Mandrel Size
- E = Leg length (from centerline)
- A = Min Axial Length (Axial space)
- Fig = Position of legs
- Deg° = Degrees deflection



LEFT-HAND WOUND RIGHT-HAND WOUND

\* Direction of Helix must be specified by adding a suffix to catalog number. Use L for left-hand wound, R for right-hand wound.



**SPEC**

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**316 STAINLESS STEEL TORSION SPRINGS**

Catalog Number	Wire Diameter (D)		Outside Diameter (OD)		Pos. of Ends Fig.	Sugg* (MAX) Deflection in Degrees	Torque @ MAX (DEF)		Test Point 1/2 E		Suggested Mandrel Size		Leg Length (E)		Min. Axial Space (A) **	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
T012-090-055-X			0.093	2.36	1	27	0.022	2.49			0.055	1.40			0.054	1.37
T012-180-067-X			0.109	2.77	2	73	0.023	2.54	0.187	4.75	0.067	1.70	0.375	9.52	0.090	2.29
T012-270-062-X	0.012	0.30	0.102	2.59	3	118	0.022	2.52			0.062	1.57			0.139	3.53
T012-180-109-X			0.166	4.22	2	72	0.023	2.64			0.109	2.77			0.066	1.68
T012-270-109-X			0.170	4.32	3	118	0.023	2.64			0.109	2.77			0.090	2.29
T012-360-109-X			0.174	4.42	4	165	0.023	2.65	0.250	6.35	0.109	2.77	0.500	12.70	0.114	2.90
T014-090-063-X			0.124	3.15	1	32	0.036	4.01			0.063	1.60			0.067	1.70
T014-180-078-X			0.133	3.38	2	77	0.036	4.04			0.078	1.98			0.105	2.67
T014-270-063-X	0.014	0.36	0.124	3.15	3	124	0.036	4.01			0.063	1.60			0.161	4.09
T014-180-109-X			0.194	4.93	2	72	0.037	4.18			0.109	2.77			0.077	1.96
T014-270-125-X			0.201	5.11	3	119	0.037	4.18	0.375	9.52	0.125	3.18	0.750	19.05	0.105	2.67
T014-360-125-X			0.204	5.18	4	165	0.037	4.19			0.125	3.18			0.133	3.38
T015-090-062-X			0.110	2.79	1	25	0.042	4.80			0.062	1.57			0.068	1.71
T015-180-078-X			0.130	3.30	2	69	0.043	4.91	0.250	6.35	0.078	1.98	0.500	12.70	0.113	2.86
T015-270-078-X	0.015	0.38	0.124	3.15	3	113	0.043	4.88			0.078	1.98			0.173	4.39
T015-180-109-X			0.183	4.65	2	62	0.045	5.08			0.109	2.77			0.083	2.10
T015-270-109-X			0.199	5.05	3	108	0.045	5.11	0.375	9.52	0.109	2.77	0.750	19.05	0.113	2.86
T015-360-109-X			0.207	5.26	4	155	0.045	5.12			0.109	2.77			0.143	3.62
T017-090-093-X			0.160	4.06	1	34	0.064	7.19			0.093	2.36			0.081	2.06
T017-180-093-X			0.172	4.37	2	83	0.064	7.24	0.250	6.35	0.093	2.36	0.500	12.70	0.128	3.24
T017-270-093-X	0.017	0.43	0.160	4.06	3	132	0.064	7.19			0.093	2.36			0.196	4.97
T017-180-156-X			0.249	6.32	2	76	0.066	7.45			0.156	3.96			0.094	2.39
T017-270-156-X			0.259	6.58	3	126	0.066	7.47	0.375	9.52	0.156	3.96	0.750	19.05	0.128	3.24
T017-360-140-X			0.235	5.97	4	179	0.066	7.43			0.140	3.56			0.170	4.32
T018-090-109-X			0.177	4.50	1	36	0.076	8.55			0.109	2.77			0.081	2.06
T018-180-109-X			0.164	4.17	2	87	0.075	8.48	0.250	6.35	0.109	2.77	0.500	12.70	0.153	3.89
T018-270-109-X	0.018	0.46	0.160	4.06	3	137	0.075	8.46			0.109	2.77			0.228	5.79
T018-180-140-X			0.216	5.49	2	81	0.077	8.71			0.140	3.56			0.117	2.97
T018-270-156-X			0.245	6.22	3	111	0.078	8.79			0.156	3.96			0.150	3.81
T018-360-156-X			0.233	5.92	4	187	0.078	8.76	0.375	9.52	0.156	3.96	0.750	19.05	0.210	5.33
T020-090-109-X			0.191	4.85	1	34	0.103	11.65			0.109	2.77			0.095	2.41
T020-180-109-X			0.179	4.55	2	85	0.102	11.57			0.109	2.77			0.170	4.32
T020-270-093-X	0.020	0.51	0.175	4.45	3	134	0.102	11.53			0.093	2.36			0.250	6.35
T020-180-140-X			0.242	6.15	2	81	0.105	11.90			0.140	3.56			0.130	3.30
T020-270-172-X			0.268	6.81	3	109	0.106	11.99	0.500	12.70	0.172	4.37	1.000	25.40	0.165	4.19
T020-360-156-X			0.254	6.45	4	183	0.106	11.95			0.156	3.96			0.250	6.35
T021-090-109-X			0.186	4.72	1	31	0.118	13.34			0.109	2.77			0.095	2.40
T021-180-109-X			0.185	4.70	2	83	0.118	13.34	0.375	9.52	0.109	2.77	0.750	19.05	0.179	4.53
T021-270-109-X	0.021	0.53	0.184	4.67	3	134	0.118	13.33			0.109	2.77			0.266	6.76
T021-180-156-X			0.247	6.27	2	78	0.121	13.72			0.156	3.96			0.137	3.47
T021-270-187-X			0.283	7.19	3	132	0.123	13.86	0.500	12.70	0.187	4.75	1.000	25.40	0.179	4.53
T021-360-187-X			0.271	6.88	4	186	0.122	13.82			0.187	4.75			0.242	6.15
T023-090-109-X			0.204	5.18	1	31	0.155	17.46			0.109	2.77			0.109	2.77
T023-180-109-X	0.023	0.58	0.191	4.85	2	77	0.153	17.32	0.375	9.52	0.109	2.77	0.750	19.05	0.196	4.98
T023-270-109-X			0.187	4.75	3	121	0.153	17.27			0.109	2.77			0.288	7.30

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Catalog Number	Wire Diameter (D)		Outside Diameter (OD)		Pos. of Ends Fig.	Sugg*(MAX) Deflection in Degrees	Torque @ MAX (DEF)		Test Point 1/2 E		Suggested Mandrel Size		Leg Length (E)		Min. Axial Space (A) **	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
T023-180-156-X			0.259	6.58	2	74	0.158	17.88			0.156	3.96			0.150	3.81
T023-270-156-X	0.023	0.58	0.251	6.38	3	121	0.158	17.84	0.500	12.70	0.156	3.96	1.000	25.40	0.219	5.55
T023-360-172-X			0.271	6.88	4	166	0.159	17.95			0.172	4.37			0.265	6.72
T025-090-140-X			0.235	5.97	1	33	0.199	22.48			0.140	3.56			0.113	2.86
T025-180-140-X			0.224	5.69	2	84	0.198	22.35	0.375	9.52	0.140	3.56	0.750	19.05	0.213	5.40
T025-270-140-X	0.025	0.64	0.219	5.56	3	133	0.197	22.30			0.140	3.56			0.316	8.03
T025-180-203-X			0.304	7.72	2	81	0.204	23.01			0.203	5.16			0.163	4.13
T025-270-218-X			0.340	8.64	3	132	0.205	23.20			0.218	5.54			0.213	5.40
T025-360-218-X			0.324	8.23	4	185	0.205	23.12			0.218	5.54			0.288	7.32
T028-090-156-X			0.267	6.78	1	34	0.278	31.43			0.156	3.96			0.133	3.38
T028-180-140-X			0.249	6.32	2	83	0.276	31.18			0.140	3.56			0.238	6.05
T028-270-140-X	0.028	0.71	0.245	6.22	3	132	0.275	31.12			0.140	3.56			0.350	8.89
T028-180-203-X			0.340	8.64	2	80	0.284	32.13			0.203	5.16			0.182	4.62
T028-270-203-X			0.329	8.36	3	130	0.284	32.04			0.203	5.16			0.266	6.76
T028-360-218-X			0.355	9.02	4	200	0.285	32.23			0.218	5.54			0.350	8.89
T030-090-172-X			0.281	7.14	1	33	0.340	38.41			0.172	4.37			0.135	3.43
T030-180-172-X			0.272	6.91	2	84	0.339	38.27	0.500	12.70	0.172	4.37	1.000	25.40	0.255	6.48
T030-270-172-X	0.030	0.76	0.270	6.86	3	136	0.338	38.24			0.172	4.37			0.380	9.65
T030-180-250-X			0.394	10.01	2	87	0.350	39.58			0.250	6.35			0.195	4.95
T030-270-250-X			0.377	9.58	3	119	0.349	39.45			0.250	6.35			0.280	7.11
T030-360-250-X			0.410	10.41	4	194	0.351	39.68			0.250	6.35			0.346	8.79
T032-090-172-X			0.288	7.32	1	31	0.409	46.22			0.172	4.36			0.152	3.86
T032-180-156-X			0.270	6.86	2	77	0.406	45.86			0.156	3.96			0.272	6.91
T032-270-156-X	0.032	0.81	0.264	6.71	3	134	0.405	45.73			0.156	3.96			0.432	10.97
T032-180-218-X			0.366	9.30	2	74	0.419	47.32			0.218	5.54			0.208	5.28
T032-270-218-X			0.354	8.99	3	120	0.418	47.19			0.218	5.54			0.304	7.72
T032-360-234-X			0.382	9.70	4	166	0.420	47.49			0.234	5.95			0.368	9.35
T035-090-187-X			0.315	8.00	1	31	0.532	60.09			0.187	4.75			0.158	4.00
T035-180-187-X			0.303	7.70	2	79	0.529	59.81			0.187	4.75			0.298	7.56
T035-270-187-X	0.035	0.89	0.311	7.90	3	132	0.531	60.00			0.187	4.75			0.442	11.23
T035-180-281-X			0.450	11.43	2	84	0.550	62.09			0.281	7.14			0.228	5.78
T035-270-281-X			0.435	11.05	3	137	0.548	61.93			0.281	7.14			0.333	8.45
T035-360-312-X			0.471	11.96	4	189	0.551	62.29			0.312	7.92			0.405	10.29
T038-090-234-X			0.386	9.80	1	36	0.685	77.40			0.234	5.94			0.180	4.57
T038-180-218-X			0.368	9.35	2	90	0.682	77.03	0.625	15.88	0.218	5.54	1.250	31.75	0.323	8.20
T038-270-218-X	0.038	0.97	0.353	8.97	3	139	0.679	76.68			0.218	5.54			0.475	12.07
T038-180-312-X			0.487	12.37	2	84	0.699	78.94			0.318	8.08			0.247	6.27
T038-270-312-X			0.477	12.12	3	138	0.698	78.81			0.312	7.92			0.361	9.17
T038-360-328-X			0.514	13.06	4	211	0.701	79.24			0.328	8.33			0.475	12.07
T040-090-187-X			0.309	7.85	1	37	0.770	87.02			0.187	4.75			0.220	5.59
T040-180-218-X			0.348	8.84	2	91	0.782	88.39			0.218	5.54			0.380	9.65
T040-270-218-X	0.040	1.02	0.358	9.09	3	146	0.785	88.68			0.218	5.54			0.550	13.97
T040-180-343-X			0.518	13.16	2	84	0.812	91.74			0.343	8.71			0.260	6.60
T040-270-343-X			0.511	12.98	3	140	0.811	91.65	1.000	25.40	0.343	8.71	2.000	50.80	0.380	9.65
T040-360-343-X			0.507	12.88	4	175	0.811	91.60			0.343	8.71			0.508	12.90



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	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
T045-090-203-X			0.357	9.07	1	37	1.089	123.04			0.203	5.16			0.259	6.58
T045-180-218-X			0.377	9.58	2	86	1.097	123.93	0.625	15.88	0.218	5.54	1.250	31.75	0.428	10.86
T045-270-234-X	0.045	1.14	0.382	9.70	3	135	1.099	124.13			0.234	5.94			0.608	15.43
T045-180-359-X			0.575	14.61	2	82	1.143	129.11			0.359	9.12			0.293	7.44
T045-270-359-X			0.556	14.12	3	133	1.140	128.79	1.000	25.40	0.359	9.12	2.000	50.80	0.428	10.86
T045-360-359-X			0.549	13.94	4	185	1.139	128.66			0.359	9.12			0.563	14.29
T048-090-218-X			0.375	9.53	1	36	1.310	148.04			0.218	5.54			0.264	6.71
T048-180-250-X			0.404	10.26	2	86	1.323	149.52	0.625	15.88	0.250	6.35	1.250	31.75	0.456	11.58
T048-270-250-X	0.048	1.22	0.416	10.57	3	137	1.328	150.06			0.250	6.35			0.660	16.76
T048-180-406-X			0.618	15.70	2	82	1.379	155.77			0.406	10.31			0.312	7.92
T048-270-406-X			0.600	15.24	3	134	1.376	155.43			0.406	10.31			0.456	11.58
T048-360-406-X			0.594	15.09	4	187	1.375	155.31			0.406	10.31			0.610	15.49
T051-090-234-X			0.408	10.36	1	26	1.567	177.01			0.234	5.94			0.293	7.44
T051-180-250-X			0.430	10.92	2	74	1.578	178.23			0.250	6.35			0.485	12.32
T051-270-266-X	0.051	1.30	0.439	11.15	3	135	1.582	178.69			0.266	6.76			0.689	17.49
T051-180-344-X			0.556	14.12	2	84	1.621	183.17			0.344	8.74			0.383	9.72
T051-270-359-X			0.571	14.50	3	134	1.625	183.59			0.359	9.12			0.536	13.60
T051-360-406-X			0.628	15.95	4	184	1.638	185.02			0.406	10.31			0.638	16.19
T054-090-296-X			0.484	12.29	1	30	1.874	211.76			0.296	7.52			0.310	7.87
T054-180-312-X			0.509	12.93	2	84	1.885	212.95			0.312	7.92			0.512	13.00
T054-270-312-X	0.054	1.37	0.514	13.06	3	138	1.887	213.18			0.312	7.92			0.715	18.16
T054-180-421-X			0.654	16.61	2	76	1.929	217.93			0.421	10.69			0.405	10.29
T054-270-437-X			0.664	16.87	3	149	1.931	218.19			0.437	11.10			0.567	14.40
T054-360-453-X			0.694	17.63	4	192	1.938	218.91			0.453	11.51			0.705	17.91
T059-090-296-X			0.499	12.67	1	39	2.401	271.31			0.296	7.52			0.340	8.64
T059-180-328-X			0.526	13.36	2	91	2.417	273.04			0.328	8.33			0.561	14.24
T059-270-328-X	0.059	1.50	0.537	13.64	3	143	2.423	273.69	1.000	25.40	0.328	8.33	2.000	50.80	0.797	20.23
T059-180-437-X			0.681	17.30	2	88	2.479	280.09			0.437	11.10			0.445	11.30
T059-270-453-X			0.699	17.75	3	141	2.484	280.69			0.453	11.51			0.620	15.74
T059-360-459-X			0.709	18.01	4	195	2.487	281.01			0.456	11.66			0.797	20.23
T063-090-343-X			0.560	14.22	1	29	2.916	329.43			0.343	8.71			0.362	9.19
T063-180-359-X			0.591	15.01	2	82	2.934	331.44			0.359	9.12			0.600	15.24
T063-270-375-X	0.063	1.60	0.600	15.24	3	150	2.938	331.98			0.375	9.53			0.851	21.60
T063-180-500-X			0.767	19.48	2	93	3.005	339.50			0.500	12.70			0.475	12.07
T063-270-516-X			0.784	19.91	3	148	3.010	340.07			0.516	13.11			0.662	16.80
T063-360-516-X			0.798	20.27	4	205	3.014	340.52			0.516	13.11			0.851	21.60
T070-090-359-X			0.593	15.06	1	38	3.916	442.43			0.359	9.12			0.400	10.16
T070-180-390-X			0.625	15.88	2	89	3.941	445.25			0.390	9.91			0.665	16.89
T070-270-390-X	0.070	1.78	0.639	16.23	3	140	3.951	446.38			0.390	9.91			0.945	24.00
T070-180-515-X			0.810	20.57	2	87	4.043	456.76			0.515	13.08			0.525	13.34
T070-270-531-X			0.826	20.98	3	137	4.049	457.49			0.531	13.49			0.735	18.67
T070-360-546-X			0.843	21.41	4	190	4.056	458.23			0.546	13.87			0.945	24.00
T075-090-375-X			0.635	16.13	1	38	4.764	538.18			0.375	9.53			0.430	10.92
T075-180-422-X	0.075	1.91	0.675	17.15	2	88	4.799	542.15			0.422	10.72			0.713	18.10
T075-270-500-X			0.700	17.78	3	142	4.818	544.37			0.440	12.70			1.013	25.72



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**SPEC**



**316 STAINLESS STEEL TORSION SPRINGS**

Catalog Number	Wire Diameter (D)		Outside Diameter (OD)		Pos. of Ends Fig.	Sugg*(MAX) Deflection in Degrees	Torque @ MAX (DEF)		Test Point 1/2 E		Suggested Mandrel Size		Leg Length (E)		Min. Axial Space (A) **	
	in	mm	in	mm			in-lb	N-mm	in	mm	in	mm	in	mm	in	mm
T075-180-484-X			0.775	19.69	2	90	4.869	550.08			0.484	12.29			0.640	16.26
T075-270-531-X	0.075	1.91	0.825	20.96	3	141	4.897	553.25			0.531	13.49			0.863	21.91
T075-360-640-X			0.975	24.77	4	206	4.962	560.65			0.640	16.26			1.050	26.67
T078-090-406-X			0.678	17.22	1	39	5.340	603.33			0.406	10.31			0.450	11.43
T078-180-453-X			0.728	18.49	2	92	5.384	608.29	1.000	25.40	0.453	11.51	2.000	50.80	0.741	18.82
T078-270-453-X	0.078	1.98	0.728	18.49	3	141	5.384	608.29			0.453	11.51			1.030	26.16
T078-180-500-X			0.803	20.40	2	89	5.439	614.45			0.500	12.70			0.663	16.84
T078-270-546-X			0.853	21.67	3	139	5.469	617.90			0.546	13.87			0.897	22.78
T078-360-578-X			0.903	22.94	4	196	5.496	620.92			0.578	14.68			1.131	28.73
T085-090-422-X			0.715	18.16	1	37	6.777	765.64			0.422	10.72			0.489	12.42
T085-180-469-X			0.760	19.30	2	86	6.827	771.33			0.469	11.91			0.808	20.52
T085-270-500-X	0.085	2.16	0.790	20.07	3	138	6.857	774.71	1.250	31.75	0.500	12.70	2.500	63.50	1.148	29.15
T085-180-641-X			0.994	25.25	2	85	7.009	791.82			0.641	16.28			0.638	16.21
T085-270-672-X			1.040	26.42	3	138	7.034	794.67			0.672	17.07			0.893	22.67
T085-360-688-X			1.054	26.77	4	191	7.041	795.48			0.688	17.48			1.148	29.15
T095-090-453-X			0.776	19.71	1	35	9.217	1041.32			0.453	11.51			0.546	13.87
T095-180-531-X			0.869	22.07	2	86	9.345	1055.79			0.531	13.49			0.903	22.94
T095-270-578-X	0.095	2.41	0.925	23.50	3	143	9.408	1062.93	1.500	38.10	0.578	14.68	3.000	76.20	1.283	32.58
T095-180-734-X			1.131	28.73	2	85	9.582	1082.58			0.734	18.64			0.713	18.11
T095-270-797-X			1.203	30.56	3	141	9.628	1087.72			0.797	20.24			0.998	25.34
T095-360-813-X			1.225	31.12	4	195	9.640	1089.16			0.813	20.65			1.283	32.58
T105-090-500-X			0.848	21.54	1	34	12.149	1372.54			0.500	12.70			0.604	15.34
T105-180-609-X			0.982	24.94	2	87	12.366	1397.15			0.609	15.47			0.998	25.35
T105-270-703-X	0.105	2.67	1.090	27.69	3	151	12.499	1412.10	1.750	44.45	0.703	17.86	3.500	88.90	1.418	36.00
T105-180-813-X			1.248	31.70	2	83	12.647	1428.89			0.813	20.65			0.788	20.02
T105-270-891-X			1.342	34.09	3	139	12.718	1436.85			0.891	22.63			1.103	28.00
T105-360-906-X			1.369	34.77	4	193	12.736	1438.92			0.906	23.01			1.418	36.00
T115-090-594-X			0.978	24.84	1	35	15.706	1774.44			0.594	15.09			0.661	16.79
T115-180-641-X			1.043	26.49	2	82	15.827	1788.09			0.641	16.28			1.093	27.76
T115-270-688-X	0.115	2.92	1.086	27.58	3	132	15.898	1796.12			0.688	17.48			1.553	39.43
T115-180-859-X			1.347	34.21	2	79	16.223	1832.83			0.859	21.82			0.863	21.92
T115-270-938-X			1.435	36.45	3	132	16.303	1841.94			0.938	23.83			1.208	30.67
T115-360-969-X			1.465	37.21	4	184	16.328	1844.78			0.969	24.61			1.553	39.43
T125-090-591-X			0.989	25.12	1	41	19.526	2206.00			0.591	15.01			0.844	21.44
T125-180-666-X			1.082	27.48	2	97	19.754	2231.83			0.666	16.92			1.438	36.53
T125-270-751-X	0.125	3.18	1.189	30.20	3	154	19.968	2255.95	2.000	50.80	0.751	19.08	4.000	101.60	1.938	49.21
T125-180-885-X			1.356	34.44	2	99	20.227	2285.21			0.885	22.48			1.188	30.18
T125-270-1013-X			1.516	38.51	3	157	20.417	2306.66			1.013	25.73			1.563	39.69
T125-360-1084-X			1.605	40.77	4	216	20.505	2316.59			1.084	27.53			1.938	49.21
T135-090-666-X			1.102	27.99	1	41	24.134	2726.69			0.666	16.92			0.911	23.14
T135-180-735-X			1.189	30.20	2	97	24.365	2752.74			0.735	18.67			1.553	39.45
T135-270-825-X	0.135	3.43	1.301	33.05	3	153	24.611	2780.55			0.825	20.96			2.093	53.15
T135-180-977-X			1.491	37.87	2	99	24.936	2817.22			0.977	24.82			1.283	32.59
T135-270-1112-X			1.660	42.16	3	156	25.156	2842.16			1.112	28.24			1.688	42.86
T135-360-1188-X			1.755	44.58	4	214	25.260	2853.90			1.188	30.18			2.093	53.15



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