

## DESIGN ENGINEER'S O-RING SIZE GUIDE

### INTRODUCTION:

Substantially all O-ring manufacturers present their catalog data in the rotation of groupings" or "families" of cross-sectional thickness first, then followed by dimensions of inside diameter. All sizes with 1/16" nominal wall are listed first, followed by rings with 3/32" wall, then 1/8" wall, etc. This is the same mode of presentation found in the ARP 568 Uniform-Numbering Systems, published as the Aeronautical Recommended Practice Report of the Society of Automotive Engineer's. The same practice of detailing sizes by cross-sectional "families" is found in government specifications (AN 6227, AN 6230, MS 9021, MS 28775, MS 29513, etc.)

### HEADACHE FOR DESIGN ENGINEERS:

A frequent result of this established mode of O-ring size presentation is the laborious task of "plowing through" several sections of specification data. In actuality, the design engineers usually are involved first with the outside or inside diameter in a sealing application before they want to make a determination as to what wall thickness or cross-sectional diameter of rubber seal they wish to consider in their design.

### RESCUE OPERATIONS:

Many O-ring applications, of course, involve metal parts turned out on lathes and screw machines. Inevitably, some large production runs are found beyond tolerance. The established O-ring size will not perform its sealing function. Many dollars worth of expensive metal and material go down the drain. However, the resourceful design engineer can rescue the situation by the use of a special size O-ring.

### CIRCLE SIZE ROTATION:

We acknowledge gratefully the advice given to us by many design engineers that circle diameters are much more significant to them as their first level of consideration. In this GUIDE we have listed all Precision Associates' O-rings, for which high production tooling is available, in progressive order by INSIDE Diameter, followed next by CROSS-SECTION and finally OUTSIDE Diameter. The first three columns are in the English inch system to the nearest thousandth of an inch. In the same order, the data is repeated in the metric system. The final right-hand column gives the catalog number for ordering purposes. A listing of tolerances for O-ring sizes can be found in the Dimensions and Tolerances section of the catalog.

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
0.015	0.095	0.205	0.381	2.362	5.105	93-15ES
0.017	0.020	0.057	0.432	0.508	1.448	20-17
0.017	0.040	0.097	0.432	1.016	2.464	40-17
0.022	0.029	0.080	0.559	0.737	2.032	29-22
0.023	0.030	0.083	0.584	0.762	2.108	30-23
0.024	0.040	0.104	0.610	1.016	2.642	40-23SS
0.028	0.048	0.124	0.711	1.219	3.150	48-28
0.029	0.040	0.109	0.737	1.016	2.769	1-001
0.029	0.121	0.271	0.737	3.073	6.858	121-029
0.030	0.017	0.064	0.762	0.432	1.626	17-30
0.030	0.020	0.070	0.762	0.508	1.778	20-30
0.032	0.027	0.086	0.813	0.686	2.184	27-32
0.035	0.045	0.125	0.889	1.143	3.175	45-35
0.037	0.086	0.209	0.940	2.184	5.309	86-37
0.038	0.019	0.076	0.965	0.483	1.930	19-38
0.039	0.032	0.103	0.991	0.813	2.616	32-39
0.040	0.073	0.186	1.016	1.854	4.724	73-40
0.041	0.023	0.087	1.041	0.584	2.210	23-41
0.042	0.042	0.126	1.067	1.067	3.200	42-42
0.042	0.050	0.142	1.067	1.270	3.607	1-002
0.043	0.031	0.105	1.092	0.787	2.667	31-43
0.044	0.017	0.078	1.118	0.432	1.981	17-44
0.044	0.031	0.106	1.092	0.787	2.667	31-43SS
0.045	0.020	0.085	1.143	0.508	2.159	20-45
0.045	0.043	0.131	1.143	1.092	3.327	43-45VS
0.046	0.034	0.114	1.168	0.864	2.896	34-46
0.047	0.016	0.079	1.194	0.406	2.007	16-47
0.050	0.103	0.256	1.270	2.616	6.502	1-102
0.050	0.106	0.262	1.270	2.692	6.655	106-50
0.053	0.064	0.181	1.346	1.626	4.597	64-53
0.054	0.080	0.214	1.372	2.032	5.436	80-54
0.055	0.032	0.119	1.397	0.813	3.023	32-55
0.055	0.042	0.139	1.397	1.067	3.531	42-55
0.056	0.060	0.176	1.422	1.524	4.470	1-003
0.057	0.040	0.137	1.448	1.016	3.480	40-57
0.057	0.094	0.245	1.448	2.388	6.223	94-57
0.060	0.040	0.140	1.499	1.016	3.531	40-59SS
0.060	0.056	0.172	1.524	1.422	4.369	56-60
0.060	0.076	0.212	1.524	1.930	5.385	76-60
0.061	0.066	0.193	1.549	1.676	4.902	65-60SS
0.062	0.032	0.126	1.575	0.813	3.200	32-62
0.062	0.047	0.156	1.575	1.194	3.962	47-62
0.062	0.056	0.174	1.575	1.422	4.420	56-61 VS
0.062	0.067	0.196	1.575	1.702	4.978	66-61 VS
0.063	0.022	0.107	1.600	0.559	2.718	22-63
0.065	0.017	0.099	1.651	0.432	2.515	17-65
0.065	b.035	0.135	1.651	0.889	3.429	35-65
0.065	0.044	0.153	1.651	1.118	3.886	44-65
0.070	0.025	0.120	1.778	0.635	3.048	25-70
0.070	0.030	0.130	1.778	0.762	3.302	30-70
0.070	0.034	0.138	1.778	0.864	3.505	34-70
0.070	0.040	0.150	1.778	1.016	3.810	40-70
0.070	0.070	0.210	1.778	1.778	5.334	1-004
0.070	0.109	0.288	1.778	2.769	7.315	109-70
0.074	0.021	0.116	1.880	0.533	2.946	21-74
0.074	0.053	0.180	1.880	1.346	4.572	53-74

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
0.075	0.035	0.145	1.905	0.889	3.683	35-75
0.076	0.029	0.134	1.930	0.737	3.404	29-76
0.078	0.030	0.138	1.981	0.762	3.505	30-78
0.078	0.056	0.190	1.981	1.422	4.826	56-78
0.080	0.034	0.148	2.007	0.838	3.734	33-78SS
0.080	0.085	0.250	2.032	2.159	6.350	85-80
0.081	0.103	0.287	2.057	2.616	7.290	1-103
0.082	0.018	0.118	2.083	0.457	2.997	18-81ES
0.084	0.023	0.130	2.134	0.584	3.302	23-84
0.084	0.048	0.180	2.134	1.219	4.572	48-84
0.085	0.055	0.195	2.159	1.397	4.953	55-85
0.085	0.075	0.235	2.159	1.905	5.969	75-85
0.085	0.093	0.271	2.159	2.362	6.883	93-085
0.086	0.034	0.154	2.184	0.864	3.912	34-86
0.087	0.040	0.167	2.210	1.016	4.242	40-87
0.087	0.047	0.181	2.210	1.194	4.597	47-87
0.087	0.081	0.249	2.210	2.057	6.325	81-87
0.087	0.602	0.776	2.210	15.291	19.710	87-602
0.088	0.071	0.230	2.210	1.778	5.766	70-87
0.089	0.036	0.161	2.261	0.914	4.089	36-89
0.090	0.020	0.130	2.286	0.508	3.302	20-90
0.090	0.025	0.140	2.286	0.635	3.556	25-90
0.094	0.028	0.150	2.388	0.711	3.810	28-94
0.094	0.050	0.194	2.388	1.270	4.928	50-94
0.094	0.063	0.220	2.388	1.600	5.588	63-94
0.097	0.026	0.149	2.464	0.660	3.785	26-97
0.097	0.044	0.185	2.464	1.118	4.699	44-97
0.098	0.023	0.144	2.489	0.584	3.658	23-98
0.098	0.030	0.158	2.489	0.762	4.013	30-98
0.099	0.071	0.241	2.515	1.803	6.121	70-98SS
0.100	0.038	0.176	2.540	0.965	4.470	38-100
0.100	0.060	0.220	2.540	1.524	5.588	60-100
0.101	0.070	0.241	2.565	1.778	6.121	1-005
0.102	0.051	0.204	2.591	1.295	5.182	5T102
0.103	0.030	0.163	2.616	0.762	4.140	30-103
0.105	0.045	0.195	2.677	1.143	4.953	45-105
0.106	0.034	0.174	2.692	0.864	4.420	34-106
0.108	0.070	0.248	3.743	1.778	6.299	70-108
0.109	0.040	0.189	2.769	1.016	4.801	40-109
0.109	0.133	0.375	2.769	3.378	9.525	133-109
0.109	0.139	0.387	2.769	3.531	9.830	139-109
0.110	0.028	0.166	2.794	0.711	4.216	28-110
0.110	0.051	0.212	2.794	1.295	5.385	51-110
0.111	0.032	0.175	2.794	0.813	4.420	32-11 OVS
0.111	0.060	0.231	2.819	1.524	5.867	60-111
0.112	0.103	0.318	2.845	2.616	8.077	1-104
0.114	0.047	0.208	2.896	1.194	5.283	47-114
0.114	0.070	0.254	2.896	1.778	6.452	1-006
0.117	0.040	0.197	2.972	1.016	5.004	40-117
0.118	0.042	0.202	2.972	1.067	5.105	42-117
0.120	0.030	0.180	3.048	0.762	4.572	30-118VS
0.120	0.035	0.190	3.150	0.864	4.877	34-118SS
0.120	0.050	0.220	3.048	1.270	5.588	50-120
0.120	0.080	0.280	3.048	2.032	7.112	80-120
0.124	0.064	0.252	3.150	1.626	6.401	63-122VS
0.125	0.031	0.187	3.175	0.787	4.750	31-1251

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
0.125	0.062	0.249	3.175	1.575	6.325	62-125
0.125	0.070	0.265	3.175	1.778	6.731	70-125
0.127	0.040	0.207	3.251	1.016	5.283	40-126SS
0.127	0.057	0.241	3.200	1.448	6.096	56-125VS
0.129	0.050	0.229	3.277	1.270	5.817	50-129
0.130	0.025	0.180	3.302	0.635	4.572	25-130
0.130	0.095	0.320	3.302	2.413	8.128	95-130
0.130	0.188	0.506	3.302	4.750	12.802	187-130ES
0.134	0.029	0.192	3.404	0.737	4.877	29-134
0.134	0.060	0.254	3.404	1.524	6.452	60-134
0.135	0.088	0.311	3.429	2.235	7.899	88-135
0.136	0.040	0.216	3.454	1.016	5.486	40-136
0.136	0.059	0.254	3.454	1.499	6.452	58-133SS
0.138	0.025	0.188	3.505	0.635	4.775	25-137SS
0.138	0.036	0.210	3.505	0.914	5.334	36-138
0.138	0.059	0.256	3.505	1.499	6.502	59-138
0.140	0.048	0.236	3.556	1.129	5.994	48-140
0.140	0.050	0.240	3.556	1.270	6.096	50-140
0.141	0.030	0.201	3.607	0.762	5.131	30-140SS
0.142	0.094	0.330	3.607	2.388	8.382	94-142
0.143	0.027	0.197	3.632	0.686	5.004	27-143
0.143	0.103	0.349	3.632	2.616	8.865	1-105
0.144	0.025	0.194	3.658	0.635	4.928	25-144
0.145	0.023	0.191	3.658	0.584	4.826	23-144
0.145	0.070	0.285	3.683	1.778	7.239	1-007
0.145	0.076	0.297	3.683	1.930	7.544	76-145
0.145	0.080	0.305	3.683	2.032	7.747	80-145
0.146	0.031	0.208	3.708	0.787	5.283	31-146
0.146	0.151	0.448	3.708	3.835	11.379	150-145SVS
0.147	0.040	0.227	3.734	1.016	5.766	40-147
0.150	0.020	0.190	3.810	0.508	4.826	20-150
0.150	0.043	0.236	3.810	1.092	5.994	43-150
0.151	0.023	0.197	3.835	0.584	5.004	23-150ES
0.152	0.036	0.224	3.861	0.914	5.690	36-152
0.152	0.046	0.244	3.861	1.168	6.198	46-152
0.152	0.073	0.298	3.912	1.829	7.569	70-145SS
0.152	0.139	0.430	3.861	3.531	10.922	139-152
0.154	0.032	0.218	3.912	0.813	5.537	32-154
0.154	0.050	0.254	3.912	1.270	6.452	50-154
0.155	0.160	0.475	3.937	4.064	12.065	160-155
0.157	0.038	0.233	3.988	0.965	5.918	38-157
0.158	0.054	0.266	4.013	1.372	6.756	54-158
0.158	0.059	0.276	4.013	1.499	7.010	59-158
0.161	0.089	0.339	4.089	2.261	8.611	87-158SS
0.165	0.075	0.315	4.191	1.905	8.001	75-165
0.165	0.178	0.521	4.191	4.521	13.233	178-165
0.166	0.060	0.286	4.216	1.524	7.264	60-166
0.166	0.093	0.352	4.216	2.362	8.941	93-166
0.169	0.024	0.217	4.293	0.610	5.512	24-169
0.170	0.020	0.210	4.318	0.508	5.334	20-170'
0.170	0.046	0.262	4.191	1.143	6.477	45-165SS
0.170	0.048	0.266	4.318	1.219	6.756	48-170
0.171	0.016	0.203	4.343	0.406	5.156	16-171
0.171	0.139	0.449	4.343	3.531	11.405	1-201
0.172	0.020	0.212	4.318	0.508	5.334	20-170VS
0.172	0.037	0.246	4.369	0.940	6.248	37-172

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
0.175	0.103	0.381	4.445	2.616	9.677	1 - 106
0.176	0.030	0.236	4.470	0.762	5.994	30-176
0.176	0.040	0.256	4.470	1.016	6.502	40-176
0.176	0.050	0.276	4.470	1.270	7.010	50-176
0.176	0.056	0.288	4.470	1.422	7.315	56-176
0.176	0.068	0.312	4.470	1.727	7.925	68-176
0.176	0.070	0.316	4.470	1.778	8.026	1-008
0.180	0.040	0.260	4.572	1.016	6.604	40-180
0.182	0.073	0.328	4.623	1.854	8.331	73-182
0.185	0.048	0.281	4.699	1.219	7.137	48-185
0.185	0.056	0.297	4.699	1.422	7.544	1-901
0.186	0.040	0.266	4.724	1.016	6.756	40-184SS
0.187	0.031	0.249	4.750	0.787	6.325	31-187
0.187	0.050	0.287	4.750	1.270	7.290	50-187
0.187	0.070	0.327	4.750	1.778	8.306	70-187
0.187	0.139	0.465	4.750	3.531	11.811	139-187
0.188	0.062	0.312	4.775	1.575	7.925	62-188
0.190	0.035	0.260	4.826	0.889	6.604	35-188VS
0.190	0.035	0.260	4.826	0.889	6.604	35-190
0.191	0.023	0.237	4.851	0.584	6.020	23-191
0.195	0.055	0.305	4.953	1.397	7.747	55-195
0.195	0.070	0.335	4.953	1.778	8.509	70-195
0.196	0.025	0.246	4.877	0.635	6.798	25-190SS
0.197	0.098	0.393	5.004	2.489	9.982	98-197
0.200	0.040	0.280	5.080	1.016	7.112	40-200
0.200	0.122	0.444	5.080	3.099	11.278	122-200
0.202	0.023	0.248	5.105	0.584	6.121	23-200
0.202	0.070	0.342	5.131	1.778	8.687	70-202
0.203	0.060	0.323	5.131	1.524	8.179	59-250VS
0.205	0.024	0.253	5.207	0.610	6.426	24-205
0.2b5	0.140	0.485	5.156	3.531	12.217	139-203
0.206	0.103	0.412	5.232	2.616	10.465	1-107
0.208	0.030	0.268	5.283	0.762	6.807	30-208
0.208	0.039	0.286	5.283	0.991	7.264	39-208
0.208	0.050	0.308	5.283	1.270	7.823	50-208
0.208	0.070	0.348	5.283	1.778	8.839	1-009
0.210	0.033	0.276	5.334	0.838	7.010	33-210
0.210	0.081	0.372	5.334	2.032	9.398	80-208VS
0.210	0.091	0.392	5.359	2.286	9.931	90-208VS
0.212	0.071	0.354	5.359	1.803	8.966	71-211 ES
0.213	0.028	0.269	5.410	0.711	6.833	28-210SS
0.214	0.030	0.274	5.436	0.762	6.960	30-212SS
0.215	0.060	0.335	5.461	1.524	8.509	60-215
0.216	0.053	0.322	5.486	1.346	8.179	53-216
0.218	0.025	0.268	5.537	0.635	6.807	25-218
0.218	0.156	0.530	5.537	3.962	13.462	156-218
0.218	0.188	0.594	5.537	4.775	15.088	188-218
0.219	0.061	0.341	5.563	1.549	8.661	60-217ES
0.219	0.070	0.359	5.563	1.778	9.119	70-219
0.219	0.125	0.469	5.563	3.175	11.913	125-219
0.220	0.032	0.284	5.588	0.813	7.214	32-220
0.220	0.037	0.294	5.588	0.940	7.468	37-220
0.224	0.046	0.316	5.690	1.168	8.026	46-224
0.224	0.074	0.372	5.690	1.880	9.449	74-224
0.228	0.040	0.308	5.791	1.016	5.283	40-228
0.229	0.052	0.333	5.817	1.321	8.458	52-229

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
0.232	0.041	0.314	5.893	1.041	7.976	40-228SS
0.232	0.063	0.358	5.893	1.600	9.093	62-230SS
0.234	0.139	0.512	5.944	3.531	13.005	1-202
0.235	0.034	0.303	5.969	0.864	7.696	34-232SS
0.235	0.195	0.625	5.969	4.953	15.875	195-235
0.237	0.025	0.287	6.020	0.635	7.290	25-237
0.237	0.103	0.443	6.020	2.616	11.303	1-108
0.238	0.031	0.300	6.045	0.787	7.620	31-238
0.238	0.040	0.318	6.045	1.016	8.077	40-238
0.239	0.040	0.319	6.071	1.016	8.103	40-239
0.239	0.042	0.323	6.071	1.067	8.204	42-239
0.239	0.048	0.335	6.071	1.219	8.509	48-239
0.239	0.051	0.341	6.071	1.295	8.661	51-239
0.239	0.064	0.367	6.071	1.626	9.322	1-902
0.239	0.070	0.379	6.071	1.778	9.627	1-010
0.239	0.174	0.587	6.071	4.420	14.910	174-239
0.240	0.077	0.394	6.096	1.956	10.008	77-240
0.240	0.095	0.430	6.096	2.413	10.922	904-300
0.241	0.030	0.301	6.121	0.762	7.645	30-239VS
0.241	0.074	0.389	6.121	1.880	9.881	73-239SS
0.242	0.164	0.570	6.147	4.166	14.478	164-242
0.243	0.057	0.357	6.172	1.448	9.068	56-239VS
0.245	0.045	0.335	6.223	1.143	8.509	45-245
0.246	0.060	0.366	6.248	1.524	9.296	60-246
0.246	0.068	0.382	6.248	1.727	9.703	68-246
0.247	0.125	0.497	6.274	3.175	12.624	125-247
0.248	0.020	0.288	6.299	0.508	7.315	20-248
0.248	0.048	0.344	6.299	1.219	8.738	48-248
0.248	0.071	0.390	6.299	1.803	9.906	71-248
0.249	0.051	0.351	6.325	1.295	8.915	51-249
0.250	0.032	0.314	6.350	0.813	7.976	32-250
0.250	0.035	0.320	6.350	0.889	8.128	35-250
0.250	0.080	0.410	6.350	2.032	10.414	80-250
0.250	0.093	0.436	6.350	2.362	11.074	93-250
0.251	0.095	0.441	6.375	2.413	11.201	94-248VS
0.253	0.032	0.317	6.426	0.813	8.052	32-250SS
0.253	0.041	0.335	6.401	1.041	8.484	40-248SS
0.255	0.078	0.411	6.477	2.007	10.490	77-250SS
0.256	0.034	0.324	6.502	0.864	8.230	34-256
0.257	0.046	0.349	6.528	1.168	8.788	46-257
0.258	0.040	0.338	6.553	1.016	8.585	40-258
0.259	0.072	0.403	6.553	1.803	10.160	71-256VS
0.259	0.090	0.439	6.579	2.286	11.151	89-255SS
0.260	0.021	0.302	6.604	0.533	7.671	21-260
0.262	0.071	0.404	6.655	1.803	10.262	70-258SS
0.264	0.110	0.484	6.731	2.794	12.319	110-265NS
0.265	0.060	0.385	6.731	1.524	9.779	60-265
0.266	0.076	0.418	6.756	1.930	10.617	75-262SS
0.270	0.053	0.376	6.858	9.550	1.346	53-270
0.270	0.070	0.410	6.858	1.778	10.414	70-270
0.275	0.030	0.335	6.985	0.762	8.509	30-272ES
0.275	0.030	0.335	6.909	0.762	8.433	30-272SS
0.275	0.070	0.415	6.985	1.778	10.541	70-275
0.275	0.071	0.417	6.985	1.803	10.592	70-270SS
0.275	0.105	0.485	6.985	2.667	12.319	104-272
0.276	0.197	0.670	7.010	5.004	17.018	197-276

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
0.277	0.037	0.351	7.036	0.940	8.915	36-272SS
0.277	0.044	0.365	7.036	1.118	9.270	44-277
0.277	0.044	0.365	7.036	1.118	9.271	44-278
0.277	0.076	0.429	7.036	1.930	10.897	76-277
0.279	0.041	0.361	7.087	1.016	9.119	40-275SS
0.280	0.190	0.660	7.112	4.826	16.764	190-280
0.281	0.140	0.561	7.137	3.556	14.249	140-281
0.283	0.047	0.377	7.188	1.194	9.576	46-278VS
0.285	0.025	0.335	7.239	0.635	8.509	25-285
0.287	0.050	0.387	7.290	1.270	9.830	50-287
0.290	0.045	0.380	7.366	1.143	9.652	45-290
0.290	0.071	0.432	7.366	1.803	10.973	70-285SS
0.290	0.086	0.462	7.366	2.184	11.735	86-290
0.291	0.070	0.431	7.391	1.778	10.947	70-291
0.291	0.095	0.481	7.391	2.413	12.217	94-287VS
0.295	0.039	0.373	7.493	0.991	9.474	39-295
0.295	0.059	0.413	7.493	1.499	10.490	59-295
0.299	0.103	0.505	7.595	2.616	12.878	1-109
0.300	0.050	0.400	7.620	1.270	10.160	50-300
0.301	0.025	0.351	7.645	0.635	8.915	25-301
0.301	0.038	0.377	7.645	0.965	9.576	38-301
0.301	0.042	0.385	7.645	1.067	9.779	42-301
0.301	0.060	0.421	7.645	1.524	10.693	60-301
0.301	0.064	0.429	7.645	1.626	10.897	1-903
0.301	0.070	0.441	7.645	1.778	11.201	1-011
0.301	0.139	0.579	7.645	3.531	14.707	1-203
0.304	0.055	0.414	7.722	1.397	10.516	54-301 VS
0.305	0.020	0.345	7.747	0.508	8.763	20-305
0.305	0.108	0.521	7.747	2.743	13.233	108-305
0.306	0.034	0.374	7.772	0.950	8.864	34-306
0.306	0.052	0.410	7.772	1.321	10.414	52-306
0.307	0.046	0.399	7.798	1.168	10.135	46-307
0.310	0.150	0.610	7.874	3.810	15.494	150-310
0.312	0.031	0.374	7.925	0.787	9.500	31-312
0.312	0.078	0.468	7.925	1.981	11.887	78-312
0.312	0.097	0.506	7.925	2.464	12.852	97-312
0.312	0.103	0.518	7.925	2.616	13.157	103-312
0.312	0.135	0.582	7.925	3.429	14.783	135-312
0.313	0.051	0.415	7.950	1.295	10.541	51-313
0.315	0.043	0.401	8.001	1.092	10.185	43-315
0.315	0.070	0.455	8.001	1.778	11.557	70-313ES
0.317	0.071	0.459	8.052	1.803	11.659	70-313VS
0.317	0.074	0.465	8.052	1.880	11.811	74-317
0.320	0.070	0.460	8.128	1.778	11.684	70-320
0.322	0.035	0.392	8.179	0.889	9.957	35-322
0.322	0.064	0.450	8.204	1.626	11.455	63-319VS
0.322	0.064	0.450	8.179	1.626	11.405	64-322
0.323	0.028	0.379	8.230	0.711	9.652	28-320VS
0.323	0.036	0.395	8.204	0.889	9.982	35-318VS
0.326	0.097	0.520	8.280	2.464	13.208	95-320SS
0.326	0.103	0.532	8.280	2.616	13.513	103-326
0.327	0.039	0.405	8.306	0.991	10.287	39-327
0.327	0.125	0.577	8.306	3.175	14.148	125-327
0.328	0.091	0.510	8.331	2.311	12.954	90-324VS
0.330	0.050	0.430	8.382	1.270	10.922	50-330
0.331	0.140	0.611	8.331	3.531	15.392	139-328

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
0.332	0.031	0.394	8.433	0.787	10.008	31-332
0.334	0.070	0.474	8.484	1.778	12.040	70-334
0.335	0.042	0.419	8.509	1.067	10.643	42-335
0.336	0.086	0.508	8.534	2.184	12.903	86-336
0.340	0.060	0.460	8.636	1.524	11.684	60-340
0.340	0.285	0.910	8.636	7.239	23.114	285-340
0.341	0.081	0.503	8.661	2.057	12.776	79-335SS
0.346	0.045	0.436	8.788	1.143	11.074	45-346
0.348	0.125	0.598	8.839	3.175	15.189	125-348
0.349	0.071	0.491	8.865	1.803	12.471	70-344SS
0.350	0.074	0.498	8.890	1.880	12.649	74-350
0.350	0.210	0.770	8.890	5.334	19.558	1-308
0.351	0.028	0.407	8.915	0.711	10.338	28-346VS
0.351	0.055	0.461	8.915	1.397	11.709	54-344SS
0.351	0.072	0.495	8.915	1.829	12.573	1-904
0.352	0.118	0.588	8.941	2.997	14.935	118-352
0.352	0.126	0.604	8.941	3.200	15.342	125-343SS
0.357	0.073	0.503	9.068	1.854	12.776	73-357
0.358	0.057	0.472	9.093	1.448	11.989	56-355VS
0.359	0.139	0.637	9.119	3.531	16.180	1-204
0.359	0.156	0.671	9.119	3.962	17.043	156-359
0.360	0.060	0.480	9.144	1.524	12.192	59-354SS
0.361	0.035	0.431	9.169	0.889	10.947	35-361
0.361	0.035	0.431	9.169	0.889	10.947	35-362
0.361	0.081	0.523	9.169	2.057	13.284	79-354SS
0.362	0.103	0.568	9.195	2.616	14.427	1-110
0.364	0.045	0.454	9.246	1.143	11.532	45-364
0.364	0.070	0.504	9.246	1.778	12.802	1-012
0.364	0.080	0.524	9.246	2.032	13.310	80-364
0.365	0.063	0.491	9.271	1.600	12.471	62-358SS
0.366	0.026	0.418	9.119	0.635	10.389	25-356SS
0.367	0.052	0.471	9.398	1.346	12.090	52-364SS
0.367	0.069	0.505	9.322	1.753	12.827	68-364SS
0.367	0.075	0.517	9.322	1.905	13.132	74-362VS
0.369	0.050	0.469	9.296	1.270	11.836	50-366SS
0.369	0.081	0.531	9.373	2.057	13.487	80-364VS
0.369	0.095	0.559	9.373	2.413	14.199	94-3-6SS
0.370	0.040	0.450	9.398	1.016	11.430	40-370
0.370	0.061	0.492	9.398	1.549	12.497	60-364SS
0.373	0.030	0.433	9.347	0.762	10.871	30-368VS
0.374	0.119	0.612	9.500	3.023	15.545	119-374
0.375	0.046	0.467	9.525	1.168	11.862	46-375
0.375	0.062	0.499	9.525	1.575	12.675	62-375
0.375	0.080	0.535	9.525	2.032	13.589	79-370SS
0.375	0.093	0.561	9.525	2.362	14.249	93-375
0.375	0.106	0.587	9.525	2.692	14.910	106-375
0.375	0.125	0.625	9.525	3.175	15.875	125-375
0.375	0.180	0.735	9.525	4.572	18.669	180-375
0.377	0.038	0.453	9.576	0.965	11.506	38-377
0.378	0.104	0.586	9.500	2.642	14.732	103-374VS
0.379	0.075	0.529	9.652	1.880	13.411	74-375VS
0.380	0.091	0.562	9.652	2.311	14.275	91-380
0.382	0.076	0.534	9.703	1.930	13.564	76-382
0.386	0.039	0.464	9.804	0.991	11.786	39-386
0.389	0.142	0.673	9.906	3.607	17.12b	142-39ONS
90	0.051	0.492	9.906	1.270	12.449	50-386SS

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
0.391	0.103	0.597	9.931	2.616	15.164	103-391
0.394	0.054	0.502	10.008	1.372	12.751	54-394
0.394	0.140	0.674	9.906	3.531	16.967	139-390
0.395	0.040	0.475	10.033	1.016	12.065	40-395
0.395	0.070	0.535	10.033	1.778	13.589	70-395
0.400	0.062	0.524	10.160	1.575	13.310	62-400
0.400	0.080	0.560	10.160	2.032	14.224	80-400
0.400	0.092	0.584	10.160	2.337	14.834	92-400
0.401	0.050	0.501	10.135	1.295	12.725	50-397SS
0.405	0.045	0.495	10.287	1.143	12.573	45-405
0.405	0.075	0.555	10.312	1.905	14.122	74-401 VS
0.406	0.080	0.566	10.312	2.032	14.376	80-406
0.406	0.174	0.754	10.312	4.420	19.152	174-406
0.408	0.039	0.486	10.363	0.991	12.344	39-408
0.409	0.092	0.593	10.389	2.337	15.062	90-401SS
0.410	0.031	0.472	10.414	0.787	11.989	31-410
0.410	0.210	0.830	10.414	5.334	21.082	1-309
0.414	0.072	0.558	10.516	1.829	14.148	1-905
0.417	0.059	0.535	10.592	1.499	13.589	59-416ES
0.417	0.139	0.695	10.592	3.531	17.653	139-417
0.417	0.184	0.785	10.594	4.674	19.939	184-417
0.418	0.057	0.532	10.719	1.422	13.564	56-414SS
0.418	b.095	0.608	10.617	2.413	15.443	95-418
0.421	0.105	0.631	10.795	2.667	15.875	104-417VS
0.421	0.139	0.699	10.693	3.531	17.755	1-205
0.424	0.103	0.630	10.770	2.616	16.002	1-111
0.425	0.071	0.567	10.795	1.803	14.402	70-418SS
0.425	0.130	0.685	10.795	3.302	17.399	130-425
o.426	0.040	0.506	10.820	1.016	12.852	40-426
0.426	0.045	0.516	10.820	1.143	13.106	45-426
0.426	0.050	0.526	10.820	1.270	13.360	50-426
0.426	0.070	0.566	10.820	1.778	14.376	1-013
0.429	0.180	0.789	10.897	4.572	20.041	180-429
0.432	0.034	0.500	10.973	0.864	12.700	34-432
0.432	0.076	0.584	10.973	1.930	14.834	76-432
0.433	0.039	0.511	10.998	0.991	12.979	39-433
0.435	0.031	0.497	11.049	0.787	12.624	31-435
0.437	0.070	0.577	11.100	1.778	14.656	70-437
0.438	0.093	0.624	11.201	2.362	15.926	93-437ES
0.438	0.110	0.658	11.125	2.794	16.713	110-438
0.440	0.040	0.520	11.176	1.016	13.208	40-440
0.440	0.360	1.160	11.176	9.144	29.464	360-440
0.444	0.069	0.582	11.278	1.778	18.136	68-438SS
0.445	0.120	0.685	11.303	3.048	17.399	120-445
0.445	0.132	0.709	11.303	3.353	18.009	132-445
0.447	0.052	0.551	11.354	1.321	13.995	52-447
0.450	0.046	0.542	11.430	1.168	13.767	46-450
0.451	5.095	0.641	11.455	2.413	16.281	94-445VS
0.452	0.082	0.616	11.481	2.083	15.646	80-443SS
0.453	0.118	0.689	11.506	2.997	17.501	118-453
0.455	0.070	0.595	11.557	1.778	15.113	70-455
0.456	0.084	0.624	11.582	2.134	15.850	84-456
0.456	0.103	0.662	11.582	2.616	16.815	103-456
0.456	0.140	0.736	11.481	3.531	18.542	139-452
0.456	0.165	0.786	11.582	4.191	19.964	165-456
0.4	0.028	0.513	11.608	0.711	13.030	28-457

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
0.457	0.060	0.577	11.633	1.524	14.681	59-453VS
0.458	0.053	0.564	11.633	1.346	14.326	53-458
0.459	0.040	0.539	11.659	1.016	13.691	40-459
0.459	0.081	0.621	11.659	2.057	15.773	79-45OSS
0.460	0.060	0.580	11.684	1.524	14.732	60-460
0.460	0.070	0.600	11.684	1.778	15.240	70-460
0.463	0.028	0.519	11.760	0.711	13.183	28-457VS
0.465	0.036	0.537	11.811	0.914	13.640	36-465
0.465	0.169	0.803	11.811	4.293	20.396	169-465
0.466	0.070	0.606	11.836	1.778	15.392	70-466
0.468	0.030	0.528	11.887	0.762	13.411	30-468
0.468	0.050	0.568	11.887	1.270	14.427	50-468
0.468	0.078	0.624	11.887	1.981	15.850	1-906
0.469	0.250	0.969	11.913	6.350	24.613	250-469
0.470	0.270	1.010	11.938	6.858	25.654	270-470
0.472	0.059	0.590	11.989	1.499	14.986	59-472
0.472	0.071	0.614	12.014	1.778	15.570	70-468SS
0.472	0.160	0.792	11.989	4.064	20.117	160-472
0.475	0.210	0.895	12.065	5.334	22.733	1-310
0.477	0.113	0.703	12.166	2.870	17.856	113-477
0.478	0.079	0.636	12.141	2.007	16.154	77-468SS
0.480	0.106	0.692	12.192	2.692	17.577	106-480
0.480	0.172	0.824	12.192	4.369	20.930	172-480
0.482	0.071	0.624	12.268	1.803	15.875	70-478VS
0.484	0.040	0.564	12.294	1.016	14.326	40-484
0.484	0.050	0.584	12.167	1.270	14.707	50-475SS
0.484	0.139	0.762	12.294	3.531	19.355	1-206
0.485	0.121	0.727	12.319	3.073	18.466	121-485
0.487	0.103	0.693	12.370	2.616	17.602	1-112
0.487	0.106	0.699	12.395	2.692	17.780	105-485PL
0.487	0.110	0.707	12.370	2.794	17.958	110-487
0.489	0.055	0.599	12.421	1.397	15.215	55-489
0.489	0.070	0.629	12.421	1.778	15.977	1-014
0.490	0.041	0.572	12.446	1.041	14.529	41-490
0.490	0.070	0.630	12.548	1.803	16.154	70-487VS
0.492	0.039	0.570	12.497	0.991	14.478	39-492
0.496	0.048	0.592	12.446	1.194	14.732	47-49OSS
0.497	0.043	0.583	12.624	1.092	14.808	43-495TS
0.498	0.076	0.650	12.649	1.930	16.510	75-489SS
0.500	0.093	0.686	12.700	2.362	17.424	93-500
0.500	0.125	0.750	12.700	3.175	19.050	125-500
0.500	0.234	0.968	12.700	5.944	24.587	234-500
0.500	0.243	0.986	12.700	6.172	25.044	243-500
0.503	0.071	0.645	12.776	1.803	16.383	70-495SS
0.505	0.070	0.645	12.827	1.778	16.383	70-505
0.507	0.025	0.557	12.878	0.635	14.148	25-507
0.507	0.060	0.627	12.878	1.524	15.926	60-507
0.5T8	0.049	0.606	12.903	1.245	15.392	49-508
0.508	0.063	0.634	12.903	1.600	16.104	62-501SS
0.508	0.073	0.654	12.903	1.854	16.612	70-489SS
0.510	0.020	0.550	12.954	0.508	13.970	20-510
0.512	0.098	0.708	13.005	2.489	17.983	98-512
0.520	0.100	0.720	13.208	2.540	18.288	100-520
0.520	0.140	0.800	13.081	3.531	20.142	139-515
0.523	0.094	0.711	13.284	2.388	18.059	94-523
0.523	0.138	0.799	13.284	3.505	20.295	138-523

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
0.524	0.168	0.860	13.310	4.267	21.844	168-524
0.526	0.031	0.588	13.360	0.787	14.935	31-526
0.529	0.072	0.673	13.462	1.778	17.018	70-518SS
0.530	0.055	0.640	13.462	1.397	16.256	55-530
0.530	0.082	0.694	13.462	2.083	17.628	1-907
0.530	0.100	0.730	13.462	2.540	18.542	98-52OSS
0.533	0.072	0.677	13.538	1.829	17.196	71-525SS
0.535	0.039	0.613	13.589	0.991	15.570	39-535
0.537	0.052	0.641	13.640	1.321	16.281	51-531 ES
0.539	0.113	0.765	13.691	2.870	19.431	113-539
0.539	0.210	0.959	13.691	5.334	24.359	1-311
0.547	0.051	0.649	13.894	1.295	16.485	51-547
0.549	0.103	0.755	13.945	2.616	19.177	1-113
0.549	0.139	0.827	13.945	3.531	21.006	1-207
0.550	0.040	0.630	13.970	1.016	16.002	40-550
0.550	0.112	0.774	13.995	2.845	19.685	11 2-549ES
0.551	0.070	0.691	13.995	1.778	17.551	1-015
0.551	0.079	0.709	13.995	2.007	18.009	79-551
0.557	0.040	0.637	14.148	1.016	16.180	39-55OVS
0.557	0.052	0.661	14.173	1.295	16.764	51-547VS
0.562	0.082	0.726	14.275	2.083	18.440	80-551SS
0.562	0.109	0.780	14.275	2.769	19.812	109-562
0.570	0.106	0.782	14.478	2.692	19.863	106-570
0.575	0.060	0.695	14.605	1.524	17.653	60-575
0.576	0.139	0.854	14.630	3.531	21.692	139-576
0.577	0.030	0.637	14.656	0.762	16.180	30-577
0.578	0.218	1.014	14.681	5.537	25.756	218-578
0.580	0.345	1.270	14.732	8.763	32.258	345-580
0.580	0.415	1.410	14.732	10.541	35.814	415-580
0.583	0.070	0.723	14.808	1.778	18.364	70-583
0.583	0.140	0.863	14.681	3.531	21.742	139-578
0.585	0.071	0.727	14.859	1.803	18.466	70-575SS
0.589	0.079	0.747	14.961	2.007	18.974	79-591 NS
0.590	0.050	0.690	14.986	1.270	17.526	50-590
0.590	0.092	0.774	14.986	2.337	19.660	92-590
0.590	0.103	0.796	14.986	2.616	20.218	103-590
0.591	0.098	0.787	15.011	2.489	19.990	98-591
0.595	0.020	0.635	15.113	0.508	16.129	20-595
0.595	0.171	0.937	15.113	4.343	23.800	171-595
0.596	0.071	0.738	15.240	1.778	18.796	70-59OVS
0.598	0.068	0.734	15.189	1.727	18.644	68-598
0.601	0.094	0.789	15.265	2.388	20.041	92-59OSS
0.601	0.097	0.795	15.265	2.464	20.193	95-59OSS
0.602	0.210	1.022	15.291	5.334	25.959	1-312
0.605	0.064	0.733	15.367	1.626	18.618	63-594SS
0.605	0.105	0.815	15.367	2.667	20.701	105-605
0.605	0.158	0.921	15.367	4.013	23.393	158-605
0.606	0.083	0.772	15.392	2.108	19.609	83-606
0.609	0.139	0.887	15.469	3.531	22.530	1-208
0.609	0.187	0.983	15.469	4.750	24.968	187-609
0.610	0.058	0.726	15.494	1.473	18.440	58-610
0.612	0.040	0.692	15.545	1.016	17.577	40-612
0.612	0.103	0.818	15.545	2.616	20.777	1-114
0.612	0.166	0.944	15.545	4.216	23.978	166-612
0.612	0.170	0.952	15.545	4.318	24.181	170-612
0.614	b.070	0.754	15.596	1.778	19.152	1-016

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
0.614	0.074	0.762	15.596	1.880	19.355	74-614
0.614	0.077	0.768	15.596	1.956	19.507	77-614
0.617	0.034	0.685	15.672	0.864	17.399	34-611 ES
0.618	0.095	0.808	15.697	2.413	20.523	95-618
0.619	0.104	0.827	15.723	2.642	21.006	104-619
0.622	0.030	0.682	15.799	0.762	17.323	30-622
0.622	0.105	0.832	15.799	2.667	21.133	103-612SS
0.624	0.096	0.816	15.850	2.438	20.726	94-614SS
0.625	0.050	0.725	15.875	1.270	18.415	50-625
0.625	0.125	0.875	15.875	3.175	22.225	125-625
0.631	0.030	0.691	16.129	0.787	17.704	30-622SS
0.634	0.080	0.794	16.104	2.032	20.168	79-623SS
0.637	0.080	0.797	16.205	2.032	20.269	79-630SS
0.638	0.062	0.762	16.205	1.575	19.355	62-638
0.638	0.190	1.018	16.205	4.826	25.857	190-638
0.640	0.251	1.142	16.256	6.375	29.007	249-635SS
0.643	0.031	0.705	16.332	0.787	17.907	31-643
0.643	0.103	0.849	16.332	2.616	21.565	103-643
0.644	0.087	0.818	16.358	2.210	20.777	1-908
0.644	0.087	0.818	16.358	2.210	20.777	87-644
0.644	0.093	0.830	16.358	2.362	21.082	92-635SS
0.645	0.122	0.889	16.383	3.073	22.530	120-636SS
0.646	0.070	0.786	16.408	1.778	19.964	70-646
0.646	0.140	0.926	16.256	3.531	23.317	139-640
0.648	0.095	0.838	16.459	2.413	21.285	93-634SS
0.652	0.070	0.792	16.561	1.778	20.117	70-652
0.655	0.070	0.795	16.637	1.778	20.193	70-650SS
0.656	0.046	0.748	16.662	1.168	18.999	46-656
0.658	0.057	0.772	16.713	1.448	19.609	57-658
0.658	0.071	0.800	16.713	1.803	20.142	70-646SS
0.660	0.040	0.740	16.764	1.016	18.796	40-660
0.660	0.064	0.788	16.764	1.626	20.015	64-660
0.664	0.210	1.084	16.866	5.334	27.534	1-313
0.669	0.059	0.787	16.993	1.499	19.990	59-669
0.672	0.139	0.950	17.069	3.531	24.130	1-209
0.673	0.080	0.833	16.993	2.007	21.006	79-669VS
0.674	0.103	0.880	17.120	2.616	22.352	1-115
0.674	0.107	0.888	17.120	2.718	22.504	106-665VS
0.674	0.113	0.900	17.120	2.870	22.860	113-674
0.675	0.086	0.847	17.145	2.184	21.514	86-675
0.676	0.057	0.790	17.170	1.448	20.066	56-670SS
0.676	0.070	0.816	17.170	1.778	20.726	1-017
0.681	0.104	0.889	17.297	2.642	22.581	104-681
0.687	0.275	1.237	17.450	6.985	31.420	275-687
0.688	0.159	1.006	17.475	4.039	25.552	159-688
0.690	0.030	0.750	17.526	0.762	19.050	30-690
0.690	0.085	0.860	17.577	2.134	21.844	83-676SS
0.691	0.046	0.783	17.551	1.168	19.888	46-691
0.691	0.046	0.783	17.907	1.168	20.244	46-691SS
0.700	0.058	0.816	17.780	1.473	20.726	57-690VS
0.700	0.103	0.906	17.780	2.616	23.012	103-700
0.701	0.040	0.781	17.805	1.016	19.837	40-701
0.701	0.142	0.985	17.805	3.607	25.019	140-692SS
0.702	0.091	0.884	17.831	2.311	22.454	91-702
0.703	0.072	0.847	17.475	1.778	21.031	70-688SS
0.705	0.046	0.797	17.907	1.168	20.269	46-705

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
0.705	0.087	0.879	17.907	2.210	22.327	87-705
0.706	0.070	0.846	17.932	1,778	21.488	70-706
0.706	0.097	0.900	17.932	2.464	22.860	1-909
0.708	0.138	0.984	17.983	3.505	24.994	138-708
0.709	0.118	0.945	18.009	2.997	24.003	118-709
0.710	0.075	0.860	18.034	1.905	21.844	75-710
0.710	0.140	0.990	17.856	3.531	24.917	139-703
0.720	0.050	0.820	18.288	1.270	20.828	50-720
0.720	0.070	0.860	18.288	1.778	21.844	70-720
0.722	0.159	1.040	18.161	3.988	26.137	157-715VS
0.724	0.070	0.864	18.390	1.778	21.946	70-724
0.725	0.040	0.805	18.415	1.016	20.447	40-725
0.727	0.210	1.147.	18.466	5.334	29.134	1-314
0.730	0.036	0.802	18.593	0.914	20.422	36-732
0.730	0.051	0.832	18.542	1.295	21.133	50-72OSS
0.730	0.158	1.046	18.542	4.013	26.568	158-730
0.734	0.103	0.940	18.644	2.616	23.876	103-734PL
0.734	0.139	1.012.	18.644	3.531	25.705	1-210
0.735	0.073	0.881	18.669	1.854	22.377	73-735
0.735	0.119	0.973	18.669	3.023	24.714	118-728SS
0.737	0.103	0.943	18.720	2.616	23.952	1-116
0.739	0.070	0.879	18.771	1.778	22.327	1-018
0.750	0.040	0.830	19.050	1.016	21.082	40-750
0.750	0.062	0.874	19.050	1.575	22.200	62-750
0.750	0.082	0.914	19.050	2.083	23.216	82-750
0.750	0.250	1.250	19.050	6.350	31.750	250-750
0.750	0.281	1.312	19.050	7.137	33.325	281-750
0.755	0.097	0.949	19.177	2.464	24.105	1-910
0.755	0.119	0.993	19.279	3.023	25.248	118-748VS
0.760	0.072	0.904	19.329	1.829	22.987	70-739SS
0.760	0.100	0.960	19.304	2.540	24.384	100-760
0.765	0.139	1.043	19.431	3.531	26.492	139-765
0.767	0.178	1.123	19.482	4.521	28.524	178-767
0.768	0.103	0.974	19.507	2.616	24.740	103-768
0.769	0.070	0.909	19.533	1.778	23.089	70-769
0.769	0.081	0.931	19.431	2.032	23.495	80-758SS
0.773	0.093	0.959	19.634	2.362	24.359	91-760SS
0.779	0.031	0.841	19.787	0.787	21.361	31-779
0.785	0.040	0.865	19.939	1.016	21.971	40-785
0.789	0.210	1.209	20.041	5.334	30.709	1-315
0.790	0.155	1.100	20.066	3.937	27.940	155-790
0.794	0.045	0.884	20.269	1.143	22.555	45-787VS
0.794	0.105	1.004.	20.269	2.642	25.552	104-787VS
0.794	0.119	1.032	20.295	3.048	26.391	118-787VS
0.796	0.080	0.956	20.218	2.032	24.282	80-796
0.796	0.139	1.074	20.218	3.531	27.280	1-211
0.797	0.050	0.897	20.244	1.270	22.784	49-782SS
0.799	0.103	1.005	20.295	2.616	25.527	1-117
0.799	0.179	1.157	20.295	4.547	29.388	176-787SS
0.799	0.210	1.219	20.295	5.334	30.963	210-799
0.801	6.070	0.941	20.345	1.778	23.901	1-019
0.810	0.071	0.952	20.574	1.803	24.181	71-810
0.810	0.120	1.050	20.574	3.048	26.670	118-795SS
0.812	0.030	0.872	20.625	0.762	22.149	30-810
0.813	0 T6-3	0.939	20.650	1.600	23.851	63-813
0.814	0.103	1.020	20.676	2.616	25.908	103-814

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
0.815	0.224	1.263	20.701	5.664	32.029	223-813SS
0.817	0.087	0.991	20.752	2.210	25.171	87-817
0.820	0.040	0.900	20.828	1.016	22.860	40-820
0.825	0.040	0.905	20.955	1.016	22.987	40-825
0.825	0.150	1.125	20.955	3.810	28.575	150-825
0.840	0.030	0.900	21.336	0.762	22.860	30-840
0.840	0.185	1.210	21.336	4.699	30.734	185-840
0.841	0.059	0.959	21.361	1.499	24.359	59-836SS
0.843	0.105	1.053	21.438	2.642	26.721	104-835VS
0.844	0.156	1.156	21.438	3.962	29.362	156-844
0.844	0.406	1.656	21.438	10.312	42.062	406-844
0.848	0.103	1.054	21.590	2.616	26.822	103-850
0.850	0.045	0.940	21.590	1.143	23.876	45-850
0.850	0.072	0.994	21.615	1.829	25.273	70-831SS
0.852	0.210	1.272	21.641	5.334	32.309	1-316
0.856	0.069	0.994	21.742	1.753	28.372	68-843SS
0.856	0.151	1.158	21.590	3.810	29.210	150-85OVS
0.858	0.071	1.000	21.742	1.778	25.298	70-85OVS
0.858	0.159	1.176	21.793	4.039	29.870	158-855SS
0.859	0.135	1.129	21.819	3.429	28.677	135-859
0.859	0.139	1.137	21.819	3.531	28.880	1-212
0.859	0.275	1.409	21.819	6.985	35.789	275-859
0.860	0.032	0.924	21.844	0.813	23.470	32-860
0.860	0.081	1.022	21.793	2.032	25.857	80-850SS
0.862	0.103	1.068	21.895	2.616	27.127	1-118
0.863	0.116	1.095	21.920	2.946	27.813	1-911
0.864	0.052	0.968	21.946	1.321	24.587	52-864
0.864	0.070	1.004	21.946	1.778	25.502	1-020
0.866	0.059	0.984	21.996	1.499	24.994	59-866
0.866	0.072	1.010	21.615	1.778	25.171	70-843SSS
0.870	0.079	1.028	22.098	2.006	26.111	79-866ES
0.872	0.092	1.056	22.149	2.337	26.822	90-854SS
0.875	0.050	0.975	22.225	1.270	24.765	50-875
0.875	0.203	1.281	22.225	5.156	32.537	203-875
0.875	0.312	1.499	22.225	7.925	38.075	312-875
0.879	0.040	0.959	22.327	1.016	24.359	40-879
0.886	0.150	1.186	22.504	3.810	30.124	150-886
0.887	0.194	1.275	22.530	4.928	32.385	190-87OSS
0.896	0.071	1.038	22.835	1.778	26.391	70-879SS
0.898	0.031	0.960	22.809	0.787	24.384	31-898
0.900	0.125	1.150	22.860	3.175	29.210	125-900
0.905	0.059	1.023	22.987	1.499	25.984	59-905
0.905	0.141	1.187	22.987	3.581	30.150	141-905
0.906	0.083	1.072	23.012	2.108	27.229	83-906
0.910	0.052	1.014	23.114	1.321	25.756	52-910
0.914	0.210	1.334	23.216	5.334	33.884	1-317
0.915	0.031	0.977	23.241	0.787	24.816	31-915
0.917	0.055	1.027	23.292	1.397	26.086	54-908SS
0.921	0.139	1.199	23.393	3.531	30.455	1-213
0.924	0.103	1.130	23.470	2.616	28.702	1-119
0.924	0.116	1.156	23.470	2.946	29.362	1-912
0.924	0.123	1.170	23.470	3.124	29.718	123-924
0.925	0.081	1.087	23.495	2.057	27.610	81-925
0.926	0.070	1.066	23.520	1.778	27.076	1-021
0.926	0.072	1.070	23.520	1.829	27.178	72-926
0.929	0.040	1.009	23.597	1.016	25.629	40-929

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
0.930	0.040	1.010	23.622	1.016	25.654	40-930
0.937	0.321	1.579	23.800	8.153	40.107	321-937
0.938	0.195	1.328	23.825	4.953	33.731	195-938
0.940	0.103	1.146	23.876	2.616	29.108	105-940
0.943	0.070	1.083	23.952	1.778	27.508	70-943
0.945	0.024	0.993	24.003	0.610	25.222	24-945
0.945	0.079	1.103	24.003	2.007	28.016	79-945
0.945	0.275	1.495	24.003	6.985	37.973	275-945
0.950	0.040	1.030	24.130	1.016	26.162	40-950
0.950	0.215	1.380	24.130	5.261	35.052	215-950
0.953	0.118	1.189	24.206	2.997	30.201	118-953
0.953	0.139	1.231	24.206	3.531	31.267	139-953
0.954	0.060	1.074	24.384	1.524	27.432	59-945SS
0.957	0.300	1.557	24.308	7.620	39.548	300-957
0.959	0.035	1.029	24.359	0.889	26.137	35-950SS
0.962	0.063	1.088	24.435	1.600	27.635	63-962
0.975	0.176	1.327	24.765	4.470	33.706	176-975
0.975	0.210	1.395	24.765	5.334	35.433	1-318
0.975	0.235	1.445	24.765	5.969	36.703	235-975
0.976	0.046	1.068	24.816	1.168	27.153	46-967VS
0.979	0.064	1.107	24.867	1.626	28.118	63-970ES
0.980	0.250	1.480	24.892	6.350	37.592	250-980
0.984	0.050	1.084	24.994	1.270	27.534	50-984
0.984	0.100	1.184	24.994	2.540	30.074	100-984
0.984	0.139	1.262	24.994	3.531	32.055	1-214
0.986	0.116	1.218	25.044	2.946	30.937	1-913
0.987	0.103	1.193	25.070	2.616	30.302	1-120
0.988	0.198	1.384	25.095	5.029	35.154	197-984VS
0.989	0.058	1.105	25.121	1.473	28.067	58-989
0.989	0.070	1.129	25.121	1.778	28.677	1-022
0.990	0.045	1.080	25.146	1.143	27.432	45-990
0.992	0.071	1.134	25.222	1.803	33.909	70-985SS
0.994	0.030	1.054	25.121	0.762	26.645	30-980SS
0.995	0.032	1.059	25.273	0.813	26.899	32-995
1.000	0.055	1.110	25.400	1.397	28.194	55-1.000
1.005	0.141	1.287	25.527	3.581	32.690	141-1.005
1.010	0.080	1.170	25.654	2.032	29.718	80-1.000SS
1.012	0.059	1.130	25.705	1.499	28.702	59-1.012
1.019	0.030	1.079	25.908	0.762	27.432	30-1.010VS
1.020	0.174	1.368	25.908	4.420	34.747	174-1.020
1.030	0.065	1.160	26.162	1.651	29.464	65-1.030
1.037	0.210	1.457	26.340	5.334	37.008	1-319
1.039	0.032	1.103	26.391	0.813	28.016	32TO39
1.040	0.040	1.120	26.416	1.016	28.448	40-1.040
1.040	0.093	1.226	26.416	2.362	31.140	93-1.040
1.046	0.139	1.324	26.568	3.531	33.630	1-215
1.047	0.032	1.111	26.594	0.813	28.219	32-1.047
1.047	0.116	1.279	26.594	2.946	32.512	1-914
1.049	0.103	1.255	26.645	2.616	31.877	1-121
1.050	0.032	1.114	26.670	0.813	28.296	32-1.050
1.050	0.275	1.600	26.670	6.985	40.640	275-1.050
1.051	0.060	1.171	26.695	1.524	29.743	60-1.051
1.051	0.070	1.191	26.695	1.778	30.251	1-023
1.057	0.213	1.483	26.848	5.410	37.668	213-1.057
1.062	0.040	1.142	26.975	1.016	29.007	40-1.062
1.063	0.063	1.189	27.000	1.600	30.201	63-1.063

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
1.063	0.098	1.259	27.000	2.489	31.979	98-1.063
1.065	0.072	1.209	26.949	1.854	30.658	71-1.046SS
1.065	0.093	1.251	27.051	2.362	31.775	93-1.065
1.065	0.213	1.491	27.051	5.410	37.871	212-1.06OVS
1.069	0.062	1.193	27.153	1.575	30.302	62-1.069
1.071	0.031	1.133	27.203	0.787	28.778	31-1.071
1.077	0.176	1.429	27.356	4.470	36.297	176-1.077
1.080	0.026	1.132	27.432	0.660	28.753	26-1.080
1.082	0.037	1.156	27.432	0.940	29.312	37-1.080
1.086	0.040	1.166	27.584	1.016	29.616	40-1.086
1.087	0.090	1.267	27.610	2.286	32.182	90-1.09iss
1.088	0.187	1.462	27.635	4.750	37.135	187-1.088
1.100	0.032	1.164	27.940	0.813	29.566	32-1.100
1.100	0.071	1.242	27.940	1.803	31.547	70-1.082SS
1.100	0.176	1.452	27.940	4.470	36.881	176-1.100
1.100	0.210	1.520	27.940	5.334	38.608	1-320
1.100	0.275	1.650	27.940	6.985	41.910	275-1.100
1.101	0.043	1.187	27.965	1.092	30.150	43-1.101
1.102	0.078	1.258	27.991	1.981	31.953	78-1.102
1.102	0.157	1.416	27.991	3.988	35.966	157-1.102
1.105	0.040	1.185	28.067	1.016	30.099	40-1.105
1.105	0.167	1.439	28.067	4.242	36.576	167-1.105
1.109	0.116	1.341	28.169	2.946	34.061	1-915
1.109	0.139	1.387	28.169	3.531	35.230	1-216
1.109	0.159	1.427	28.169	4.039	36.246	158-1.105SS
1.110	0.025	1.160	28.194	0.635	29.464	25-1.110
1.110	0.043	1.196	28.219	1.092	30.404	43-1.101SS
1.112	0.103	1.318	28.245	2.616	33.477	1-122
1.114	0.070	1.254	28.296	1.778	31.852	1-024
1.114	0.081	1.276	28.296	2.057	32.410	81-1.114
1.114	0.275	1.664	28.296	6.985	42.266	275-1.10OVS
1.115	0.025	1.165	28.321	0.635	29.591	25-1.115
1.119	0.146	1.411	28.448	3.708	35.865	145-1.109VS
1.120	0.036	1.192	28.397	0.914	28.397	36-1.118
1.121	0.380	1.881	28.473	9.677	47.828	374-1.102VS
1.126	0.040	1.206	28.626	1.016	30.658	40-1.116VS
1.130	0.049	1.228	28.702	1.245	31.191	49-1.130
1.130	0.071	1.272	28.702	1.803	32.309	70-1.114SS
1.138	0.151	1.440	28.905	3.835	36.576	151-1.138
1.147	0.149	1.445	29.134	3.785	36.703	149-1.136SS
1.147	0.215	1.577	29.134	5.461	40.056	215-1.147
1.148	0.056	1.260	29.159	1.422	32.004	56-1.148
1.149	0.047	1.243	29.540	1.194	31.928	46-1.130SS
1.153	0.045	1.243	29.286	1.143	31.572	45-1.153
1.153	0.054	1.261	29.286	1.372	32.029	54-1.153
1.156	0.176	1.508	29.362	4.470	38.303	176-1.156
1.158	0.193	1.544	29.413	4.902	39.218	193-1.158
1.159	0.066	1.291	29.439	1.676	32.791	65-1.140SS
1.162	0.210	1.582	29.515	5.334	40.183	1-321
1.168	0.070	1.308	29.693	1.778	33.249	69-1.157VS
1.168	0.126	1.420	29.667	3.200	36.068	125-1.160ES
1.171	0.116	1.403	29.743	2.946	35.636	1-916
1.171	0.139	1.449	29.743	3.531	36.805	1-217
1.173	0.060	1.293	29.794	1.524	32.842	60-1.173
1.174	0.103	1.380	29.820	2.616	35.052	1-123
1.176	0.062		29.870	1.575	33.020	62-1.176

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
1.176	0.070	1.316	29.870	1.778	33.426	1-025
1.176	0.140	1.456	29.870	3.556	36.985	140-1.176
1.180	0.149	1.478	29.972	3.785	37.541	149-1.180
1.181	0.028	1.237	29.997	0.711	31.420	28-1.181
1.187	0.210	1.607	30.150	5.334	40.818	210-1.187
1.188	0.076	1.340	30.175	1.930	34.036	76-1.188
1.188	0.094	1.376	30.175	2.388	34.950	94-1.188
1.189	0.039	1.267	30.201	0.991	32.182	39-1.189
1.190	0.030	1.250	30.226	0.762	31.750	30-1.190
1.194	0.053	1.300	30.353	1.346	33.045	52-1.176SS
1.200	0.210	1.620	30.480	5.334	41.148	210-1.200
1.213	0.149	1.511	30.810	3.785	38.379	149-1.213
1.214	0.060	1.334	30.836	1.524	33.884	60-1.190SS
1.220	0.040	1.300	30.988	1.016	33.020	40-1.220
1.220	0.157	1.534	30.988	3.988	38.964	157-1.220
1.220	0.300	1.820	30.988	7.620	46.228	300-1.220
1.222	0.104	1.430	31.039	2.642	36.322	104-1.222
1.225	0.173	1.571	31.115	4.394	39.903	173-1.225
1.225	0.176	1.577	31.115	4.470	40.056	176-1.225
1.225	0.210	1.645	31.115	5.334	41.783	1-322
1.225	0.275	1.775	31.155	6.985	45.085	275-1.225
1.226	0.031	1.288	31.140	0.787	32.715	31-1.226
1.226	0.141	1.508	31.140	3.581	38.303	141-T-2-26
1.230	0.197	1.624	31.242	5.004	41.250	197-1.230
1.234	0.078	1.390	31.344	1.981	35.306	78-1.234
1.234	0.139	1.512	31.344	3.531	38.405	1-218
1.236	0.176	1.588	31.394	4.470	40.335	176-1.236
1.237	0.103	1.443	31.420	2.616	36.652	1-124
1.239	0.070	1.379	31.471	1.778	35.027	1-026
1.240	0.055	1.350	31.496	1.397	34.290	54-1.228SS
1.240	0.250	1.740	31.496	6.350	44.196	250-1.240
1.245	0.052	1.349	31.623	1.321	34.265	52-1.245
1.250	0.050	1.350	31.750	1.270	34.290	50-1.250
1.256	0.282	1.820	31.902	7.163	46.228	281-1.250NS
1.257	0.047	1.351	31.928	1.194	34.315	47-1.245SS
1.257	0.053	1.363	31.928	1.346	34.620	53-1.257
1.259	0.092	1.443	31.979	2.337	36.652	92-1.259
1.260	0.210	1.680	32.004	5.334	42.672	210-1.260
1.261	0.040	1.341	32.029	1.016	34.061	40-1.249VS
1.267	0.072	1.411	32.207	1.778	35.763	70-1.240SS
1.272	0.030	1.332	32.309	0.762	33.833	30-1.272
1.274	0.060	1.394	32.360	1.524	35.408	60-1.274
1.280	0.120	1.520	32.512	3.048	38.608	120-1.280
1.283	0.141	1.565	32.588	3.581	39.751	139-1.265SS
1.287	0.210	1.707	32.690	5.334	43.358	1-323
1.290	0.039	1.368	32.766	0.991	34.747	39-1.290
1.290	0.055	1.400	32.766	1.397	35.560	55-1.290
1.293	0.072	1.437	32.868	1.829	36.525	71-1.280VS
1.296	0.139	1.574	32.918	3.531	39.980	1-219
1.299	0.103	1.505	32.995	2.616	38.227	1-125
1.301	0.070	1.441	33.045	1.778	36.601	1-027
1.304	0.060	1.424	33.122	1.524	36.170	60-1.304
1.310	0.040	1.390	33.274	1.016	35.306	40-1.310
1.325	0.050	1.425	33.655	1.270	36.195	50-1.325
1.330	0	1.518	33.680	2.362	38.405	93-1.320SS
1.331	0.031	1.393	33.807	0.787	35.382	31-1.331

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
1.334	0.210	1.754	33.909	5.334	44.577	210-1.335
1.335	0.041	1.417	33.934	1.041	36.017	40-1.31OSS
1.338	0.092	1.522	33.985	2.337	38.659	92-1.338
1.340	0.039	1.418	34.036	0.991	36.017	39-1.340
1.340	0.045	1.430	34.036	1.143	36.322	45-1.340
1.350	0.176	1.702	34.290	4.470	43.231	176-1.350
1.350	0.210	1.770	34.290	5.334	44.958	1-324
1.350	0.275	1.900	34.290	6.985	48.260	1-400
1.352	0.238	1.828	34.341	6.045	46.431	237-1.347SS
1.355	0.116	1.587	34.417	2.946	40.310	1-918
1.359	0.139	1.637	34.519	3.531	41.580	1-220
1.362	0.103	1.568	34.595	2.616	39.827	1-126
1.364	0.070	1.504	34.646	1.778	38.202	1-028
1.364	0.215	1.794	34.646	5.461	45.568	215-1.364
1.370	0.080	1.530	34.798	2.032	38.862	80-1.370
1.371	0.041	1.453	34.823	1.041	36.855	40-1.35OSS
1.372	0.213	1.798	34.849	5.410	45.669	213-1.372
1.375	0.048	1.471	34.925	1.219	37.363	48-1.375
1.375	0.259	1.893	34.925	6.579	48.082	259-1.375
1.379	0.030	1.439	35.052	0.762	36.576	30-1.377ES
1.379	0.211	1.801	35.052	5.359	45.771	210-1.373VS
1.380	0.156	1.692	34.036	3.835	41.732	157-1.388SS
1.385	0.148	1.681	35.179	3.759	42.012	148-1.385
1.387	0.078	1.543	35.230	1.981	39.192	77-1.362VS
1.395	0.045	1.485	35.433	1.143	37.719	45-1.395
1.397	0.071	1.539	35.509	1.803	39.116	70-1.378VS
1.402	0.180	1.762	35.611	4.572	44.755	180-1.402
1.406	0.264	1.934	35.712	6.706	49.124	264-1.406
1.407	0.286	1.979	35.738	7.264	50.267	286-1.407
1.408	0.064	1.536	35.763	1.626	39.015	63-1.394SS
1.410	0.299	2.008	35.814	7.595	51.003	299-1.410
1.411	0.050	1.511	35.839	1.270	38.379	50-1.406
1.411	0.092	1.595	35.839	2.337	40.513	90-1.387SS
1.414	b.075	1.564	35.916	1.905	39.726	75-1.414
1.415	0.060	1.535	35.941	1.524	38.989	60-1.415
1.415	0.093	1.601	35.941	2.362	40.665	93-1.415
1.417	0.078	1.573	35.992	1.981	39.954	78-1.417
1.421	0.139	1.699	36.093	3.531	43.155	1-221
1.424	0.070	1.564	36.170	1.778	39.726	70-1.424
1.424	0.103	1.630	36.170	2.616	41.402	1-127
1.424	0.111	1.646	36.170	2.819	41.808	111-1.424
1.427	0.070	1.567	36.246	1.778	39.802	70-1.427
1.437	0.039	1.515	36.500	0.991	38.481	39-1.437
1.437	0.094	1.625	36.450	2.388	41.275	94-1.437
1.438	0.250	1.938	36.525	3.175	49.225	250-1.438
1.438	0.430	2.298	36.525	10.922	58.369	430-1.438
1.453	0.047	1.547	36.906	1.194	39.294	47-1.453
1.454	0.071	1.596	36.500	1.778	40.056	70-1.437SS
1.460	0.168	1.796	37.084	4.267	45.618	168-1.460
1.465	0.070	1.605	37.211	1.778	40.767	70-1.465
1.466	0.080	1.626	37.236	2.032	41.300	79-1.457ES
1.475	0.118	1.711	37.465	2.997	43.459	1-920
1.475	0.176	1.827	37.465	4.470	46.406	176-1.475
1.475	0.210	1.895	37.465	5.334	48.133	1-325
1.475	0.275	2.025	37.465	6.985	51.435	1-401
1.484	0.139	1.762	37.694	3.531	44.755	1-222

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
1.485	0.039	1.563	37.744	0.991	39.726	38-1.463SS
1.485	0.062	1.609	37.719	1.575	40.869	62-1.485
1.485	0.234	1.953	37.719	5.944	49.606	234-1.485
1.486	0.064	1.614	37.745	1.626	40.996	63-1.472ES
1.487	0.103	1.693	37.770	2.616	43.002	1-128
1.489	0.070	1.629	37.821	1.778	41.377	1-029
1.489	0.081	1.651	37.821	2.057	41.935	81-1.489
1.491	0.031	1.553	37.871	0.787	39.446	31-1.491
1.493	0.138	1.769	37.922	3.505	44.933	138-1.491 ES
1.493	0.234	1.961	37.922	5.944	49.809	234-1.493
1.500	0.050	1.600	38.100	1.270	40.640	50-1.500
1.500	0.055	1.610	38.100	1.397	40.894	55-1.500
1.500	0.437	2.374	38.100	11.100	60.300	437-1.500
1.500	0.500	2.500	38.100	12.700	63.500	500-1.500
1.501	0.048	1.597	38.151	1.194	40.538	47-1.484SS
1.510	0.045	1.600	38.354	1.143	40.640	45-1.510
1.515	0.125	1.765	38.481	3.175	44.831	125-1.515
1.519	0.234	1.987	38.583	5.944	50.470	231-1.50OVS
1.520	0.057	1.634	38.608	1.448	41.504	56-1.506SS
1.537	0.210	1.957	39.040	5.334	49.708	210-1.537
1.540	0.045	1.630	39.116	1.143	41.402	45-1.540
1.54~	0.070	1.685	39.243	1.778	42.799	70-1.545
1.546	0.139	1.824	39.268	3.531	46.330	139-1.546
1.549	0.103	1.755	39.345	2.616	44.577	1-129
1.550	0.092	1.734	39.370	2.337	44.044	92-1.550
1.550	0.176	1.902	39.370	4.470	48.311	176-1.550
1.560	0.055	1.670	39.624	1.397	42.418	55-1.560
1.562	0.250	2.062	39.675	6.350	52.375	250-1.562
1.563	0.119	1.801	39.700	3.023	45.745	11 8-1.543VS
1.574	0.068	1.710	39.980	1.727	43.434	67-1.541SS
1.575	0.047	1.669	39.624	1.397	42.418	47-1.575
1.575	0.125	1.825	40.005	3.175	46.355	125-1.575
1.575	0.157	1.889	40.005	3.988	47.981	157-1.575
1.580	0.076	1.732	40.132	1.930	43.993	76-1.580
1.593	0.119	1.831	40.462	3.023	46.507	11 8-1.583SS
1.594	0.312	2.218	40.488	7.925	56.337	312-1.594
1.595	0.225	2.045	40.513	5.715	51.943	225-1.595PL
1.600	0.045	1.690	40.640	1.143	42.926	45-1.600
1.600	0.176	1.952	40.640	4.470	49.581	176-1.600
1.600	0.180	1.960	40.640	4.572	49.784	180-1.600
1.600	0.210	2.020	40.640	5.334	51.308	1-326
1.600	0.275	2.150	40.640	6.985	54.610	1-402
1.602	0.119	1.840	40.640	2.997	46.634	118-1.595VS
1.603	0.238	2.079	40.716	6.045	52.807	237-1.597SS
1.609	0.078	1.765	40.869	1.981	44.831	78-1.609
1.609	0.139	1.887	40.869	3.531	47.930	1-223
1.612	0.103	1.818	40.945	2.616	46.177	1-130
1.614	0.070	1.754	40.996	1.778	44.552	1-030
1.623	0.059	1.741	41.224	1.499	44.221	59-1.623
1.625	0.375	2.375	41.275	9.525	60.325	375-1.625
1.628	0.104	1.836	41.351	2.642	46.634	104-1.628
1.635	0.030	1.695	41.529	0.762	43.053	30-1.635
1.637	0.105	1.847	41.580	2.642	46.863	103-1.612SS
1.639	0.073	1.785	41.631	1.854	45.339	73-1.639
1.650	0.045	1.740	41.910	1.143	44.196	45-1.650
1.655	0.275	2.205	42.037	6.985	56.007	275-1.655

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
1.660	0.250	2.160	42.164	6.350	54.86T	250-1.660
1.662	0.070	1.802	42.215	1.778	45.771	70-1.662
1.665	0.105	1.875	42.291	2.667	47.600	105-1.665
1.670	0.070	1.810	42.418	1.778	45.974	70-1.670
1.672	0.047	1.766	42.469	1.194	44.856	47-1.672
1.674	0.103	1.880	42.520	2.616	47.752	1-1.31
1.674	0.108	1.890	42.520	2.743	48.006	108-1.674
1.675	0.050	1.775	42.545	1.270	45.085	50-1.675
1.686	0.062	1.810	42.824	1.575	45.974	62-1.686
1.687	0.070	1.827	42.850	1.778	46.406	70-1.687
1.688	0.125	1.938	42.875	3.175	49.225	125-1.688
1.690	0.050	1.790	42.926	1.270	45.466	50-1.690
1.690	0.750	3.190	42.926	19.050	75.870	750-1.690
1.693	0.167	2.027	43.002	4.242	51.486	167-1.693
1.718	0.103	1.924	43.637	2.616	48.870	103-1.718
1.719	0.357	2.433	43.663	9.068	61.798	357-1.719
1.720	0.118	1.956	43.688	2.997	49.682	1-924
1.724	0.031	1.786	43.790	0.787	45.364	31-1.718
1.725	0.176	2.077	43.815	4.470	52.756	176-1.725
1.725	0.210	2.145	43.815	5.334	54.483	1-327
1.725	0.275	2.275	43.815	6.985	57.785	1-403
1.732	0.039	1.810	43.993	0.991	45.974	39-1.732
1.732	0.059	1.850	43.993	1.499	46.990	59-1.732
1.734	0.139	2.012	44.044	3.531	51.105	1-224
1.737	0.103	1.943	44.120	2.616	49.352	1-132
1.739	0.070	1.879	44.171	1.778	47.727	1-031
1.740	0.062	1.864	44.196	1.575	47.346	62-1.740
1.741	0.286	2.313	44.145	7.239	58.623	285-1.735VS
1.744	0.093	1.930	44.450	2.362	49.174	93-1.750
1.745	0.225	2.195	44.323	5.715	55.753	225-1.745
1.747	0.176	2.099	44.374	4.470	53.315	176-1.747
1.750	0.250	2.250	44.450	6.350	57.150	250-1.750
1.751	b.276	2.303	44.501	7.010	58.522	275-1.745VS
1.761	0.071	1.903	44.577	1.803	49.124	70-1.738VS
1.772	0.062	1.896	45.009	1.575	48.158	62-1.772
1.772	0.079	1.930	43.739	2.007	49.022	79-1.772
1.772	0.098	1.968	45.009	2.489	49.987	98-1.772
1.772	0.210	2.192	45.009	5.334	55.677	210-1.772
1.775	0.051	1.877	45.085	1.270	47.625	50-1.750SS
1.775	0.055	1.885	45.085	1.397	47.879	55-1.775
1.775	0.070	1.915	45.085	1.778	48.641	70-1.775
1.787	0.039	1.865	45.390	0.991	47.371	39-1.772SS
1.787	b.21 0	2.207	45.390	5.334	56.058	210-1.787
1.790	0.032	1.854	45.466	0.813	47.092	32-1.790
1.790	0.139	2.068	45.466	3.531	52.527	139-1.790
1.796	0.050	1.896	45.618	1.270	48.158	50-1.796
1.799	0.070	1.939	45.695	1.778	49.251	70-1.799
1.799	0.103	2.005	45.695	2.616	50.927	1-133
1.807	0.046	1.899	45.822	1.168	48.158	46-1.800
1.812	0.103	2.018	46.025	2.616	51.257	103-1.812
1.812	0.125	2.062	46.025	3.175	52.375	125-1.812
1.828	0.040	1.908	46.431	1.016	48.463	40-1.828
1.830	0.070,	1.970	46.482	1.778	50.038	70-1.830
1.840	0.075	1.990	46.736	1.905	50.546	75-1.840
1.848	0.237	2.322	46.939	6.020	58.979	237-1.848
1.850	0.079	2.008	46.990	2.007	51.003	79-1.850

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
1.850	0.176	2.202	46.990	4.470	55.931	176-1.850
1.850	0.210	2.270	46.990	5.334	57.658	1-328
1.850	0.275	2.400	46.990	6.985	60.960	1-404
1.856	0.040	1.936	47.142	1.016	49.174	40-1.856
1.859	0.139	2.137	47.219	3.531	54.280	1-225
1.860	0.040	1.940	47.244	1.016	49.276	40-1.860
1.860	0.250	2.360	47.244	6.350	59.944	250-1.860
1.862	0.103	2.068	47.295	2.616	52.527	1-134
1.864	0.050	1.964	47.346	1.270	49.886	50-1.864
1.864	0.070	2.004	47.346	1.778	50.902	1-032
1.869	0.238	2.345	47.473	6.045	59.563	235-1.845SS
1.875	0.500	2.875	47.625	12.700	73.025	500-1.875
1.888	0.093	2.074	47.955	2.362	52.680	93-1.888
1.888	0.119	2.126	47.955	3.023	54.000	119-1.888
1.891	0.047	1.985	48.031	1.194	50.419	47-1.891
1.900	0.071	2.042	48.260	1.803	51.867	70-1.864SS
1.906	0.375	2.656	48.412	9.525	67.462	375-1.906
1.909	0.104	2.117	48.489	2.642	53.772	103-1.889SS
1.910	0.094	2.098	48.514	2.388	53.289	93-1.888ES
1.912	0.210	2.332	48.565	5.334	59.233	210-1.912
1.921	0.080	2.081	48.793	2.032	52.857	80-1.921
1.925	0.103	2.131	48.895	2.616	54.127	1-135
1.927	0.070	2.067	48.946	1.778	52.502	70-1.927
1.934	0.043	2.020	49.124	1.092	51.308	43-1.934
1.934	0.047	2.028	49.124	1.194	51.511	47-1.934
1.937	0.450	2.837	49.200	11.430	72.060	4501.937
1.950	0.125	2.200	49.530	3.175	55.880	125-1.950
1.950	0.210	2.370	49.530	5.334	60.198	210-1.950
1.958	0.040	2.038	49.733	1.016	51.765	40-1.958
1.959	0.226	2.411	49.759	5.740	61.240	224-1.941 VS
1.961	0.047	2.055	49.809	1.194	52.197	47-1.954
1.961	0.047	2.055	49.809	1.194	52.197	47-1.954SS
1.968	0.103	2.174	49.987	2.616	55.220	103-1.968
1.968	0.157	2.282	49.987	3.988	57.963	157-1.968
1.968	0.178	2.324	50.013	4.521	59.055	176-1.944SS
1.969	0.039	2.047	50.013	0.991	51.994	39-1.969
1.969	0.063	2.095	50.013	1.600	53.213	63-1.969
1.975	0.176	2.327	50.165	4.470	59.106	176-1.975
1.975	0.210	2.395	50.165	5.334	60.833	1-329
1.975	0.210	2.395	50.165	5.334	60.833	210-1.975PL
1.975	0.275	2.525	50.165	6.985	64.135	1-405
1.976	0.147	2.270	50.190	3.734	57.658	147-1.976
1.977	0.039	2.055	50.216	0.991	52.197	39-1.969SS
1.984	0.139	2.262	50.394	3.531	57.455	1-226
1.985	0.038	2.061	50.394	0.965	52.324	38-1.980ES
1.986	0.119	2.224	50.444	3.023	56.490	11 8-1.969SS
1.987	0.103	2.193	50.470	2.616	55.702	1-136
1.989	0.070	2.129	50.521	1.778	54.007	1-033
1.995	0.283	2.561	50.698	7.188	65.075	282-1.986VS
1.996	0.142	2.280	50.724	3.607	57.937	139-1.954SS
1.998	0.060	2.118	50.775	1.524	53.823	60-1.993ES
2.000	0.025	2.050	50.800	0.635	52.070	25-2.000
2.000	0.080	2.160	50.800	2.032	54.864	80-2.000
2.000	0.156	2.312	50.800	3.962	58.725	156-2.000
2.021	0.061	2.143	51.359	1.524	54.407	60-1.993SS
2.027	0.285	2.597	51.486	7.239	65.964	285-2.027

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
2.027	0.335	2.697	51.486	8.509	68.504	335-2.027
2.030	0.070	2.170	51.562	1.778	55.118	70-2.030
2.046	0.139	2.324	51.968	3.531	59.030	139-2.046
2.050	0.070	2.190	52.070	1.778	55.626	70-2.050
2.050	0.103	2.256	52.070	2.616	57.302	1-137
2.052	0.224	2.500	52.121	5.690	63.500	224-2.052
2.066	0.075	2.216	52.476	1.905	56.286	75-2.066
2.070	0.050	2.170	52.578	1.270	55.118	50-2.070
2.077	0.245	2.567	52.756	6.274	65.303	243-2.06OVS
2.085	0.176	2.437	52.959	4.470	61.900	176-2.085
2.087	0.041	2.169	53.035	1.041	55.118	40-2.044SS
2.089	0.041	2.171	53.111	1.016	55.143	36-2.05OSS
2.090	0.118	2.326	53.086	2.997	59.080	1-928
2.100	0.176	2.452	53.340	4.470	6T281	176-2.100
2.100	0.210	2.520	53.340	5.334	64.008	1-330
2.100	0.275	2.650	53.340	6.985	67.310	1-406
2.102	0.070	2.242	53.391	1.778	56.950	70-2.093SS
2.109	0.139	2.387	53.569	3.531	60.630	1-227
2.112	0.103	2.318	53.645	2.616	58.877	1-138
2.114	0.070	2.254	53.696	1.778	57.252	1-034
2.124	0.047	2.218	53.950	1.194	56.337	47-2.115SS
2.125	0.187	2.499	53.975	4.750	63.475	187-2.125
2.126	0.059	2.244	54.000	1.499	56.998	59-2.126
2.140	0.079	2.298	54.534	2.007	58.547	79-2.135ES
2.140	0.125	2.390	54.356	3.175	60.706	125-2.140
2.141	0.047	2.235	54.381	1.194	56.769	47-2.141-
2.152	0.040	2.232	54.661	1.016	56.693	40-2.152
2.156	0.070	2.296	54.762	1.778	58.318	70-2.156
2.162	0.210	2.582	54.915	5.334	65.583	210-2.162
2.169	0.178	2.525	55.321	4.470	64.262	176-2.145VS
2.175	0.070	2.315	55.245	1.778	58.801	70-2.175
2.175	0.103	2.381	55.245	2.616	60.477	1-139
2.177	0.040	2.257	55.296	1.016	57.328	40-2.177
2.187	0.062	2.311	55.550	1.575	58.699	62-2.187
2.187	0.185	2.557	55.550	4.699	64.948	185-2.187
2.199	0.042	2.283	55.855	1.067	57,988	42-2.199
2.200	0.250	2.700	55.880	6.350	68.580	250-2.200
2.201	0.119	2.439	56.210	3.023	62.255	118-2.175VS
2.225	0.176	2.577	56.515	4.470	65.456	176-2.225
2.225	0.210	2.645	56.515	5.334	67.183	1-331
2.225	0.275	2.775	56.515	6.985	70.485	1-407
2.226	0.083	2.392	56.540	2.108	60.757	83-2.226
2.234	0.139	2.512	56.744	3.531	63.805	1-228
2.235	0.245	2.725	56.769	6.223	69.215	245-2.235
2.237	0.103	2.443	56.820	2.616	62.001	1-140
2.239	0.070	2.379	56.871	1.778	60.427	1-035
2.241	0.216	2.673	56.947	5.486	67.920	215-2.231 ES
2.249	0.040	2.329	57.125	1.016	59.157	40-2.249
2.250	0.070	2.390	57.150	1.778	60.706	70-2.250
2.250	0.125	2.500	57.150	3.175	63.500	125-2.250
2.250	0.275	2.800	57.150	6.985	71.120	275-2.250
2.250	0.625	3.500	57.150	15.875	88.900	625-2.250
2.272	0.187	2.646	57.709	4.750	67.208	187-2.272
2.277	0.093	2.463	57.836	2.362	62.560	93-2.277
2.283	0.098	2.479	57.98~8	2.489	62.967	98-2.283
2.287	0.060	2.407	58.090	1.524	61.138	60-2.287

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
2.300	0.103	2.506	58.420	2.616	63.652	1-141
2.304	0.080	2.464	58.522	2.032	62.586	79-2.283ES
2.304	0.311	2.926	58.725	7.925	74.574	312-2.312
2.307	0.070	2.447	58.598	1.778	62.154	70-2.307
2.328	0.168	2.664	59.131	4.267	67.666	168-2.328
2.337	0.118	2.573	59.360	2.997	65.354	1-932
2.340	0.103	2.546	59.436	2.616	64.668	103-2.340
2.342	0.040	2.422	59.487	1.016	61.519	40-2.342
2.342	0.118	2.578	59.487	2.997	65.481	118-2.342
2.350	0.047	2.444	59.690	1.194	62.078	47-2.350
2.350	0.176	2.702	59.690	4.470	68.631	176-2.350
2.350	0.210	2.770	59.690	5.334	70.358	1-332
2.350	0.275	2.900	59.690	6.985	73.660	1-408
2.350	0.313	2.976	59.690	7.950	75.590	313-2.350
2.359	0.139	2.637	59.919	3.531	66.980	1-229
2.362	0.103	2.568	59.995	2.616	65.227	1-142
2.362	0.217	2.796	59.995	5.512	71.019	217-2.362
2.362	0.224	2.810	59.995	5.690	71.374	224-2.362
2.364	0.070	2.504	60.046	1.778	63.602	1-036
2.375	0.187	2.749	60.325	4.750	69.825	187-2.375
2.375	0.375	3.125	60.325	9.525	79.375	375-2.375
2.391	0.281	2.953	60.731	7.137	75.006	281-2.391
2.400	0.017	2.434	60.960	0.432	61.824	17-2.400
2.400	0.040	2.480	60.960	1.016	62.992	40-2.400
2.400	0.150	2.700	60.960	3.810	68.580	150-2.400
2.411	0.319	3.049	61.239	8.103	77.445	319-2.411
2.425	0.070	2.565	61.595	1.778	65.151	70-2.425
2.425	b. 103	2.631	61.595	2.616	66.827	1-143
2.425	0.139	2.703	61.595	3.531	68.656	139-2.425
2.447	0.071	2.589	62.154	1.803	65.761	70-2.410SS
2.450	0.103	2.656	62.230	2.616	67.462	103-2.450
2.458	0.238	2.934	62.433	6.045	74.524	238-2.458
2.459	0.179	2.817	62.459	4.547	71.552	179-2.459
2.473	0.260	2.993	62.890	6.604	76.098	260-2.476
2.475	0.176	2.827	62.865	4.470	71.806	176-2.475
2.475	0.210	2.895	62.865	5.334	73.533	1-333
2.475	0.275	3.025	62.865	6.985	76.835	1-409
2.482	0.030	2.542	63.043	0.762	64.567	30-2.472SS
2.484	0.139	2.762	63.094	3.531	70.155	1-230
2.487	0.103	2.693	63.170	2.616	68.402	1-144
2.487	0.108	2.703	63.170	2.743	68.656	108-2.487
2.489	0.070	2.629	63.221	1.778	66.777	1-037
2.499	0.283	3.065	63.551	7.188	77.927	282-2.490VS
2.500	0.105	2.710	63.500	2.667	68.834	105-2.500
2.500	0.375	3.250	63.500	9.525	82.550	375-2.500
2.508	0.080	2.668	63.957	2.007	67.970	79-2.480SS
2.524	0.032	2.588	64.120	0.813	65.735	32-2.500SS
2.524	0.048	2.620	64.160	1.219	66.599	47-2.495SS
2.534	0.050	2.634	64.389	1.270	66.929	50-2.520VS
2.550	0.040	2.630	64.770	1.016	66.802	40-2.550
2.550	0.103	2.756	64.770	2.616	70.002	1-145
2.551	0.120	2.791	64.643	3.023	70.688	118-2.520VS
2.560	0.070	2.700	65.024	1.778	68.580	70-2.560
2.562	0.187	2.936	65.075	4.750	74.574	187-2.562
2.573	0.179	2.931	65.380	4.547	74.473	176-2.534SS
2.585	0.080	2.745	65.659	2.032	69.723	80-2.58-5

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
2.592	0.209	3.010	65.837	5.309	76.454	209-2.592
2.596	0.119	2.834	65.989	2.997	71.984	118-2.584ES
2.596	0.176	2.948	65.938	4.470	74.879	176-2.596
2.600	0.210	3.020	66.040	5.334	76.708	1-334
2.600	0.275	3.150	66.040	6.985	80.010	1-410
2.601	0.139	2.879	66.065	3.531	73.127	139-2.601
2.608	b.375	3.358	66.243	9.525	85.293	375-2.608
2.609	b.139	2.887	66.269	3.531	73.330	1-231
2.612	0.103	2.818	66.345	2.616	71.577	1-146
2.614	0.070	2.754	66.396	1.778	69.952	1-038
2.622	0.178	2.978	66.624	4.521	75.667	176-2.600SS
2.625	0.375	3.375	66.675	9.525	85.725	375-2.625
2.629	0.144	2.917	66.777	3.658	74.092	144-2.629
2.641	0.047	2.735	67.081	1.194	69.469	47-2.641
2.666	0.048	2.762	67.716	1.219	70.155	48-2.666
2.666	0.072	2.810	67.742	1.829	71.349	71-2.638VS
2.671	0.139	2.949	67.843	3.531	74.905	139-2.671
2.675	0.103	2.881	67.945	2.616	73.177	1-147
2.677	0.070	2.817	67.996	1.778	71.552	70-2.677
2.683	0.115	2.913	68.148	2.921	73.990	115-2.683
2.702	0.085	2.872	69.342	2.159	73.660	84-2.661SS
2.715	0.071	2.857	69.063	1.829	72.720	70-2.690VS
2.719	0.050	2.819	69.063	1.270	71.603	50-2.719
2.725	0.176	3.077	69.215	4.470	78.156	176-2.725
2.725	0.210	3.145	69.215	5.334	79.883	1-335
2.725	0.250	3.225	69.215	6.350	81.915	250-2.725
2.725	0.275	3.275	69.215	6.985	83.185	1-411
2.726	0.105	2.936	69.241	2.667	74.574	103-2.675SS
2.734	0.139	3.012	69.444	3.531	76.505	1-232
2.737	-b.103	2.943	69.520	2.616	74.752	1-148
2.739	0.070	2.879	69.571	1.778	73.127	1-039
2.750	0.250	3.250	69.850	6.350	82.550	250-2.750
2.754	0.070	2.894	70.256	1.778	73.812	70-2.750ES
2.766	0.063	2.892	70.256	1.600	73.457	63-2.766
2.767	0.268	3.303	70.282	6.807	83.896	268-2.763
2.769	0.179	3.127	70.358	4.547	79.451	176-2.725VS
2.776	0.126	3.028	71.247	3.175	77.597	125-2.750SS
2.782	0.126	3.034	70.688	3.200	77.089	125-2.756SS
2.792	0.071	2.934	70.917	1.803	74.524	70-2.739SS
2 ' 800	0.070	2.940	71.120	1.778	74.676	70-2.800
2.800	0.103	3.006	71.120	2.616	76.352	1-149
2.803	0.311	3.425	71.425	7.925	87.274	312-2.812
2.83b	0.103	3.036	71.882	2.616	77.114	103-2.830
2.832	0.090	3.012	71.933	2.286	76.505	90-2.832
2.839	0.059	2.957	72.161	1.499	75.159	59-2.835ES
2.850	0.176	3.202	72.390	4.470	81.331	176-2.850
2.850	0.210	3.270	72.390	5.334	83.058	1-336
2.850	0.275	3.400	72.390	6.985	86.360	1-412
2.859	0.139	3.137	72.619	3.531	79.680	1-233
2.859	0.148	3.155	72.619	3.759	80.137	148-2.859
2.859	0.158	3.175	72.619	4.013	80.645	157-2.835VS
2.862	0.103	3.068	72.695	2.616	77.927	1-150
2.864	0.070	3.004	72.746	1.778	76.302	1-040
2.874	0.141	3.156	73.000	3.581	80.162	141-2.874
2.875	0.040	2.955	73.025	1.016	75.057	40-2.875
2.875	0.085	3.045	73.025	2.159	77.343	85-2.875

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	Catalog Reference
2.875	0.437	3.749	73.025	11.100	95.225	437-2.875
2.905	0.315	3.535	73.787	8.001	89.789	312-2.875SS
2.913	0.118	3.149	73.990	2.997	79.984	118-2.913
2.919	0.078	3.075	74.143	1.981	78.105	78-2.919
2.921	0.070	3.061	74.193	1.778	77.749	70-2.921
2.921	0.197	3.315	74.193	5.004	84.201	197-2.921
2.925	0.177	3.279	74.295	4.496	83.287	177-2.925
2.930	0.375	3.680	74.422	9.525	93.472	375-2.930
2.935	0.147	3.229	74.549	3.734	82.017	147-2.935
2.950	0.079	3.108	74.981	2.007	78.994	79-2.943ES
2.965	0.152	3.269	75.311	3.861	83.033	152-2.965
2.975	0.176	3.327	75.565	4.470	84.506	176-2.975
2.975	0.210	3.395	75.565	5.334	86.233	1-337
2.975	0.275	3.525	75.565	6.985	89.535	1-413
2.984	0.139	3.262	75.794	3.531	82.555	1-234
2.987	0.103	3.193	75.870	2.616	81.102	1-151
2.989	0.070	3.129	75.921	1.778	79.477	1-041
3.000	0.040	3.080	76.200	1.016	78.232	40-3.000
3.000	0.103	3.206	76.200	2.616	81.432	103-3.000
3.003	0.222	3.447	76.327	5.639	87.605	220-2.975VS
3.062	0.130	3.322	77.775	3.302	84.379	130-3.062
3.087	0.083	3.253	78.308	2.108	82.525	83-3.083
3.088	0.070	3.228	78.359	1.778	81.915	70-3.085
3.100	0.176	3.452	78.740	4.470	87.681	176-3.100
3.100	0.210	3.520	78.740	5.334	89.408	1-338
3.100	0.275	3.650	78.740	6.985	92.710	1-414
3.109	0.103	3.315	78.969	2.616	84.201	103-3.109
3.109	0.139	3.387	78.969	3.531	86.030	1-235
3.112	0.048	3.208	79.604	1.219	82.042	47-3.053SS
3.115	0.176	3.467	79.121	4.470	88.062	176-3.115
3.122	0.045	3.212	79.375	1.143	81.661	44-3.038SS
3.130	0.118	3.366	79.502	2.997	85.497	118-3.130
3.145	0.030	3.205	79.883	0.762	81.407	30-3.145
3.146	0.071	3.288	79.909	1.803	83.515	70-3.114VS
3.147	0.103	3.353	79.934	2.616	85.166	103-3.147
3.156	0.060	3.276	80.162	1.524	83.210	60-3.156
3.165	0.313	3.791	80.442	7.950	96.342	310-3.136SS
3.175	0.061	3.297	80.670	1.549	85.268	60-3.115SS
3.222	0.104	3.430	81.890	2.642	87.173	103-3.185SS
3.225	0.176	3.577	81.915	4.470	90.856	176-3.225
3.225	0.210	3.645	81.915	5.334	92.583	1-339
3.225	0.275	3.775	81.915	6.985	95.885	1-415
3.230	0.040	3.310	81.280	1.016	83.312	40-3.200SS
3.234	0.139	3.512	82.144	3.531	89.205	1-236
3.237	0.103	3.443	82.220	2.616	87.452	1-152
3.239	0.065	3.369	82.271	1.651	85.573	65-3.239
3.239	0.070	3.379	82.271	1.778	85.827	1-042
3.250	0.250	3.750	82.550	6.350	95.250	250-3.250
3.253	0.170	3.593	82.626	4.318	91.262	170-3.253
3.257	0.080	3.417	82.626	2.007	86.639	79-3.-1 8VS
3.260	0.185	3.630	82.804	4.699	92.202	185-3.260
3.282	0.141	3.564	83.363	3.581	90.526	141-3.282
3.290	0.103	3.496	83.566	2.616	88.798	103-3.290
3.307	0.087	3.481	83.998	2.210	88.417	87-3.307
3.312	0.187	3.686	84.125	4.750	93.624	187-3.312
3.331	0.315	3.961	83.820	7.925	99.670	312-3.300SS

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
3.346	0.377	4.100	85.039	9.525	104.089	375-3.325SS
3.350	0.176	3.702	85.090	1.470	94.031	176-3.350
3.350	0.210	3.770	85.090	5.334	95.758	1-340
3.350	0.275	3.900	85.090	6.985	99.060	1-416
3.359	0.103	3.565	85.319	2.616	90.551	103-3.359
3.359	0.139	3.637	85.319	3.531	92.380	1-237
3.362	0.103	3.568	85.395	2.616	90.627	103-3.362
3.375	0.080	3.535	85.725	2.032	89.789	80-3.375
3.384	0.204	3.792	85.954	5.182	96.317	203-3.375
3.402	0.040	3.482	87.046	1.041	89.129	40-3.370VS
3.422	0.111	3.644	86.919	2.819	92.558	111-3.422
3.440	0.070	3.580	87.376	1.778	90.932	70-3.440
3.455	0.046	3.547	87.757	1.168	90.094	46-3.455
3.474	0.070	3.614	88.240	1.778	91.796	70-3.474
3.475	0.176	3.827	88.265	4.470	97.206	176-3.475
3.475	0.210	3.895	88.265	5.334	98.933	1-341
3.475	0.275	4.025	88.265	6.985	102.235	1-417
3.475	0.300	4.075	88.265	7.620	103.505	300-3.475
3.484	0.139	3.762	88.494	3.531	95.555	1-238
3.487	0.103	3.693	88.570	2.616	93.802	1-153
3.489	0.070	3.629	88.621	1.778	92.177	1-043
3.500	0.080	3.660	88.900	2.032	92.964	80-3.500
3.500	0.156	3.812	88.900	3.962	96.825	156-3.500
3.500	0.500	4.500	88.900	12.700	114.300	500-3.500
3.506	0.084	3.674	89.052	2.134	93.320	84-3.506
3.510	0.178	3.866	89.459	4.547	98.552	179-3.522
3.520	0.122	3.764	89.408	3.099	95.606	122-3.520
3.521	0.233	3.987	89.484	5.918	101.321	230-3.475VS
3.522	0.176	3.874	89.459	4.470	98.400	176-3.522
3.562	0.070	3.702	90.475	1.778	94.031	70-3.562
3.562	0.125	3.812	90.475	3.175	96.825	125-3.562
3.575	0.248	4.071	90.805	6.299	103.403	248-3.575
3.597	0.127	3.851	91.415	3.226	97.866	125-3.543SS
3.600	0.075	3.750	91.440	1.905	95.250	75-3.600
3.600	0.176	3.952	91.440	4.470	100.381	176-3.600
3.600	0.210	4.020	91.440	5.334	102.108	1-342
3.600	0.275	4.150	91.440	6.985	105.410	1-418
3.609	0.139	3.887	91.669	3.531	98.730	1-239
3.612	0.103	3.818	91.745	2.616	96.977	103-3.612
3.622	0.375	4.372	91.999	9.525	111.049	375-3.622
3.640	0.125	3.890	92.456	3.175	98.806	125-3.640
3.640	0.210	4.060	92.456	5.334	103.124	210-3.640
3.645	0.058	3.761	92.583	1.473	95.529	58-3.645
3.656	0.147	3.950	92.862	3.734	100.330	147-3.656
3.658	0.141	3.940	92.913	3.581	100.076	141-3.658
3.661	0.050	3.761	93.218	1.270	95.758	50-3.670
3.661	0.090	3.841	92.989	2.286	97.561	90-3.661
3.675	0.500	4.675	93.345	12.700	118.745	500-3.675
3.678	0.212	4.102	93.421	5.385	104.191	210-3.640SS
3.704	0.050	3.804	94.412	1.270	96.952	50-3.670SS
3.724	0.224	4.172	94.590	5.690	105.969	224-3.724
3.725	0.176	4.077	94.615	4.470	103.556	176-3.725
3.725	0.210	4.145	94.615	5.334	105.283	1-343
3.725	0.275	4.275	94.615	6.985	108.585	1-419
3.734	0.139	4.012	94.814	3.531	101.905	1-240
3.734	0.150	4.034	94.844	3.810	102.464	150-3.734

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
3.737	0.103	3.943	94.920	2.616	100.152	1-154
3.739	0.070	3.879	94.971	1.778	98.527	1-044
3.744	0.095	3.934	95.098	2.413	99.924	95-3.744
3.819	0.118	4.055	97.003	2.997	102.997	118-3.819
3.837	0.103	4.043	97.460	2.616	102.692	103-3.837
3.844	0.281	4.406	97.638	7.137	111.912	281-3.844
3.850	0.176	4.202	97.790	4.470	106.731	176-3.850
3.850	0.210	4.270	97.790	5.334	108.458	1-344
3.850	0.275	4.400	97.790	6.985	111.760	1-420
3.850	0.400	4.650	97.790	10.160	118.110	400-3.850
3.859	0.139	4.137	98.019	3.531	105.080	1-241
3.859	0.150	4.159	98.019	3.810	105.639	150-3.859
3.860	0.070	4.000	98.044	1.778	101.600	70-3.860
3.881	0.103	4.087	98.578	2.616	103.810	103-3.875
3.910	0.139	4.188	99.314	3.531	106.375	139-3.910
3.937	0.070	4.077	100.000	1.778	103.556	70-3.937
3.937	0.500	4.937	100.000	12.700	125.400	500-3.937
3.938	0.105	4.148	98.095	2.616	103.327	103-3.862
3.975	0.176	4.327	100.965	4.470	109.906	176-3.975
3.975	0.210	4.395	100.965	5.334	111.633	T-345
3.975	0.275	4.525	100.965	6.985	114.935	1-421
3.984	0.139	4.262	101.194	3.531	108.255	1-242
3.984	0.156	4.296	101.194	3.962	109.118	156-3.984
3.987	0.103	4.193	101.270	2.616	106.502	1-155
3.989	0.070	4.129	101.321	1.778	104.877	1-045
4.006	0.375	4.756	101.752	9.525	120.802	375-4.006
4.036	0.139	4.314	102.768	3.531	109.830	139-4.046
4.037	0.103	4.243	102.540	2.616	107.772	103-4.037
4.0~7	0.140	4.317	102.540	3.556	109.652	139-4.02OSS
4.093	0.103	4.299	103.962	2.616	109.195	103-4.093
4.098	0.224	4.546	104.089	5.690	115.468	224-4.098
4.100	0.176	4.452	104.140	4.470	113.081	176-4.100
4.100	0.210	4.520	104.140	5.334	114.808	1-346
4.100	0.275	4.650	104.140	6.985	118.110	1-422
4.107	0.186	4.479	104.318	4.724	113.767	186-4.095SS
4.109	0.103	4.315	104.369	2.616	109.601	103-4.109
4.109	0.125	4.359	104.369	3.175	110.719	125-4.109
4.109	0.139	4.387	104.369	3.531	111.430	1-243
4.139	0.155	4.449	105.121	3.937	113.005	155-4.139
4.165	0.140	4.445	105.791	3.556	112.903	140-4.125SS
4.169	0.103	4.375	105.893	2.616	111.125	103-4.169
4.175	0.103	4.381	106.045	2.616	111.277	103-4.175
4.179	0.040	4.259	106.528	1.041	108.610	40-4.14OVS
4.225	0.176	4.577	107.315	4.470	116.256	176-4.225
4.225	0.210	4.645	107.315	5.334	117.983	1-347
4.225	0.275	4.775	107.315	6.985	121.285	1-423
4.226	0.083	4.392	107.340	2.108	111.557	83-4.226
4.234	0.139	4.512	107.544	3.531	114.605	1-244
4.237	0.103	4.443	107.620	2.616	112.852	1-156
4.239	0.070	4.379	107.671	1.778	111.227	1-046
4.244	0.374	4.992	107.950	9.525	127.000	375-4.250
4.294	0.379	5.052	109.703	9.703	129.108	375-4.25OVS
4.295	0.150	4.595	109.093	3.810	116.713	150-4.295
4.300	0.070	4.440	109.220	1.778	112.776	70-4.300
4.304	0.210	4.724	109.322	5.334	119.990	210-4.304
4.322	0.111	4.544	109.779	2.819	115.418	111-4.322

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
4.343	0.047	4.437	110.312	1.194	112.700	47-4.343
4.348	0.079	4.506	110.515	2.007	114.529	78-4.266SS
4.350	b.103	4.556	110.490	2.616	115.722	103-4.350
4.350	0.176	4.702	110.490	4.470	119.431	176-4.350
4.350	0.210	4.770	110.490	5.334	121.158	1-348
4.350	0.275	4.900	110.490	6.985	124.460	1-424
4.359	0.103	4.565	110.719	2.616	115.951	103-4.359
4.359	0.139	4.637	110.719	3.531	117.780	1-245
4.375	0.250	4.875	111.125	6.350	123.825	250-4.375
4.390	0.044	4.478	111.506	1.118	113.741	44-4.390
<b>4.397</b>	0.103	4.603	111.684	2.616	116.916	103-4.397
4.449	0.376	5.201	113.640	9.576	132.791	375-4.438ES
4.455	0.072	4.599	113.208	1.829	116.865	71-4.409VS
4.475	0.176	4.827	113.665	4.470	122.606	176-4.475
4.475	0.210	4.895	113.665	5.334	124.333	1-349
4.475	0.220	4.915	113.665	5.588	124.841	220-4.475
4.475	0.241	4.957	113.665	6.121	125.908	241-4.475
4.475	0.275	5.025	113.665	6.985	127.635	1-425
4.484	0.139	4.762	113.894	3.531	120.955	1-246
4.487	0.103	4.693	113.970	2.616	119.202	1-157
4.488	0.181	4.850	113.995	4.597	123.190	181-4.488
4.489	0.070	4.629	114.021	1.778	117.577	1-047
4.500	0.500	5.500	114.300	12.700	139.700	500-4.500
4.507	0.030	4.567	114.884	0.762	116.408	30-4.523
4.562	0.070	4.702	115.951	1.778	119.431	70-4.562
4.586	0.060	4.706	116.485	1.524	119.533	60-4.500S.5
4.600	0.210	5.020	116.840	5.334	127.508	1-350
4.600	0.275	5.150	116.840	6.985	130.810	1-426
4.609	0.139	4.887	117.069	3.531	124.130	1-247
4.612	0.103	4.818	117.145	2.616	122.377	103-4.612
4.645	0.178	5.001	117.983	4.521	127.025	176-4.600SS
4.654	0.104	4.862	118.212	2.642	123.495	103-4.609SS
4.654	0.141	4.936	118.212	3.581	125.374	141-4.654
4.672	0.070	4.812	118.669	1.778	122.225	70-4.672
4.725	0.176	5.077	120.015	4.470	128.956	176-4.725
4.725	0.210	5.145	120.015	5.334	130.683	1-351
4.725	0.275	5.275	120.015	6.985	133.985	1-427
4.734	0.117	4.968	120.650	2.972	126.594	117-4.750
4.734	0.139	5.012	120.244	3.531	127.305	1-248
4.737	0.103	4.943	120.320	2.616	125.552	1-158
4.739	0.070	4.879	120.371	1.778	123.927	1-048
4.750	0.219	5.188	120.650	5.563	131.775	219-4.750
4.754	0.316	5.386	120.828	8.001	136.830	312-4.700ES
4.776	0.315	5.406	121.312	8.001	137.313	315-4.776
4.812	0.625	6.062	122.225	15.875	153.975	625-4.812
4.850	0.159	5.168	123.190	4.039	131.267	159-4.850
4.850	0.176	5.202	123.190	4.470	132.131	176-4.850
4.850	0.210	5.270	123.190	5.334	133.858	1-352
4.850	0.241	5.332	123.190	6.121	135.433	241-4.850
4.850	0.275	5.400	123.190	6.985	137.160	1-428
4.859	0.103	5.065	123.419	2.616	128.651	103-4.859
4.859	0.139	5.137	123.419	3.531	130.480	1-249
4.864	0.070	5.004	123.546	1.778	127.102	70-4.864
4.866	0.455	5.776	123.596	11.557	146.710	455-4.866
4.890	0.070	5.030	124.206	1.778	127.762	70-4.890
4.921	0.197	5.315	124.993	5.004	135.001	197-4.921

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outsi-cFe- Diameter	Inside Diameter	Cross Section	Outs-id-e Diameter	
4.930	0.103	5.136	125.222	1.616	130.454	103-4.930
4.932	0.141	5.214	125.273	3.581	132.436	141-4.932
4.937	0.140	5.217	125.451	3.556	132.563	139-4.91 OES
4.938	0.438	5.814	125.425	11.125	147.676	4384.938
4.968	0.255	5.478	126.187	6.477	139.141	252-4.96-5-VS
4.975	0.210	5.395	126.365	5.334	137.033	1-353
4.975	0.275	5.525	126.365	6.985	140.335	1-429
4.984	b.139	5.262	126.594	3.531	133.655	1-250
4.984	0.147	5.278	126.594	3.734	134.061	147-4.984
4.987	0.103	5.193	126.670	2.616	131.902	1-159
4.989	0.070	5.129	130.277	1.778	130.277	1-049
5.000	0.500	6.000	127.000	12.700	152.400	500-5.000
5.023	0.377	5.777	127.635	9.576	146.787	375-5.000SS
5.031	0.148	5.327	128.143	3.759	135.661	147-4.984SS
5.057	0.170	5.397	127.991	4.343	136.677	168-5.005VS
5.100	0.210	5.520	129.540	5.334	140.208	1-354
5.100	0.275	5.650	129.540	6.985	143.510	1-430
5.106	0.103	5.312	129.692	2.616	134.925	103-5.106
5.109	0.139	5.387	129.769	3.531	136.830	1-251
5.114	0.070	5.254	129.896	1.778	133.452	70-5.114
5.117	0.103	5.323	129.972	2.616	136.728	103-5.117
5.125	1.062	7.249	130.175	26.975	184.125	1.062-5.125
5.191	0.172	5.535	131.902	4.369	140.640	170-5.118SS
5.197	0.197	5.591	132.004	5.004	142.011	197-5.197
5.212	0.050	5.312	132.817	1.295	135.407	50-5.163VS
5.214	0.141	5.496	132.436	3.581	139.598	141-.5.-714
5.225	0.210	5.645	132.715	5.334	143.383	1-355
5.225	0.275	5.775	132.715	6.985	146.685	1-431
5.234	0.139	5.512	132.944	3.531	140.005	1-252
5.237	0.103	5.443	133.020	2.616	138.252	1-160
5.239	0.070	5.379	133.071	1.778	136.627	1-050
5.250	0.062	5.374	133.350	1.575	136.500	62-5.250
5.270	0.125	5.520	133.858	3.175	140.208	125-5.270
5.305	0.104	5.513	134.747	2.642	140.030	104-5.305
5.350	0.210	5.770	135.890	5.334	146.558	1-356
5.350	0.275	5.900	135.890	6.985	149.860	1-432
5.359	0.139	5.637	136.119	3.531	143.180	1-253
5.360	0.070	5.500	136.144	1.778	139.700	70-5.360
5.365	0.051	5.467	136.093	1.295	138.430	50-5.302VS
5.379	0.070	5.519	136.627	1.778	140.183	70-5.379
5.394	0.208	5.810	137.744	5.309	148.361	210-5.450
5.396	0.080	5.556	137.846	2.057	141.961	79-5.315VS
5.466	0.142	5.750	138.836	3.607	146.050	142-5.466
5.475	0.210	5.895	139.065	5.334	149.733	1-357
5.475	0.275	6.025	139.065	6.985	153.035	1-433
5.484	0.139	5.762	139.294	3.531	146.355	1-254
5.487	0.103	5.693	139.370	2.616	144.602	1-161
5.489	0.070	5.629	139.421	1.778	142.977	1-051
5.492	0.118	5.728	139.497	2.997	145.491	118-5.492
5.500	0.162	5.824	139.700	4.115	147.930	162-5.500
5.531	0.125	5.781	140.487	3.175	146.837	125-5.531
5.562	0.121	5.804	141.275	3.073	147.422	121-5.562
5.562	0.500	6.562	141.275	12.700	166.675	500-5.562
5.566	0.105	5.776	141.376	2.667	146.710	105-5.566
5.6001	0.210	6.020	142.240	5.334	152.908	1-358
5.600	0.275	6.150	142.240	6.985	156.210	1-434

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
5.602	0.103	5.808	142.291	2.616	147.523	103-5.602
5.607	0.160	5.927	142.697	3.988	150.673	157-5.512VS
5.609	0.139	5.887	142.469	3.531	149.650	1-255
5.631	0.188	6.007	143.510	4.801	153.111	189-5.650
5.689	0.118	5.925	144.501	2.997	150.495"	118-5.689
5.703	0.070	5.843	144.856	1.778	148.412	70-5.700
5.723	0.097	5.917	145.364	2.464	150.292	97-5.723
5.725	0.210	6.145	145.415	5.334	156.083	1-359
5.725	0.241	6.207	145.415	6.121	157.658	241-5.725
5.725	0.275	6.275	145.415	6.985	159.385	1-435
5.734	0.139	6.012	145.644	3.531	152.705	1-256
5.737	0.103	5.943	145.720	2.616	150.952	1-162
5.739	0.070	5.879	145.771	1.778	149.327	1-052
5.750	0.375	6.500	146.050	9.525	165.100	375-5.750
5.781	0.200	6.181	146.837	5.080	156.972	197-5.708VS
5.849	0.509	6.867	148.615	12.929	174.473	500-5.750VS
5.850	0.210	6.270	148.590	5.334	159.258	1-360
5.850	0.275	6.400	148.590	6.985	162.560	1-436
5.859	0.139	6.137	148.819	3.531	155.880	1-257
5.905	0.118	6.141	149.987	2.997	155.981	118-5.905
5.950	0.381	6.712	151.232	9.703	170.637	375-5.850VS
5.968	0.070	6.108	151.587	1.778	155.143	70-5.968
5.975	0.210	6.395	151.765	5.334	162.433	1-361
5.975	0.275	6.525	151.765	6.985	165.735	1-437
5.984	0.139	6.262	151.994	3.531	159.055	1-258
5.987	0.103	6.193	152.070	2.616	157.302	17163
5.989	0.070	6.129	152.121	1.778	155.677	1-053
5.996	0.179	6.354	152.375	4.547	161.468	176-5.906SS
6.000	0.500	7.000	152.400	12.700	177.800	500-6.000
6.015	0.245	6.505	152.781	6.223	165.227	245-6.015
6.075	0.224	6.523	154.305	5.690	165.685	224-6.075
6.097	0.103	6.303	154.864	2.616	160.096	103-6.097
6.125	0.103	6.331	155.575	2.616	160.807	103-6.125
6.172	0.256	6.684	156.997	6.502	170.002	256-6.181
6.180	0.070	6.320	156.972	1.778	160.528	70-6.180
6.187	0.060	6.307	157.150	1.524	160.198	60-6.187
6.225	0.210	6.645	158.115	5.334	168.783	1-362
6.225	0.241	6.707	158.115	6.121	170.358	241-6.225
6.225	0.275	6.775	158.115	6.985	172.085	1-438
6.225	0.497	7.219	158.115	12.624	183.363	500-6.264
6.234	0.139	6.512	158.344	3.531	165.405	1-259
6.237	0.103	6.443	158.420	2.616	163.652	1-164
6.239	0.070	6.379	158.471	1.778	162.027	1-054
6.250	0.080	6.410	158.750	2.032	162.814	80-6.250
6.258	0.261	6.780	158.954	6.629	172.212	258-6.179VS
6.299	0.157	6.613	159.995	3.988	167.970	157-6.299
6.306	0.070	6.446	160.122	1.829	163.779	70-6.284ES
6.308	0.455	7.218	160.223	11.557	183.337	455-6.308
6.309	0.070	6.449	160.249	1.778	163.830	70-6.309
6.325	0.112	6.549	163.297	2.870	169.037	112-6.378SS
6.325	0.260	6.845	160.655	6.604	173.863	260-6.325
6.349	0.070	6.489	161.341	1.803	163.881	70-6.31 OVS:
6.350	0.210	6.770	161.290	5.334	171.958	210-6.350,
6.380	0.103	6.586	162.055	2.616	167.284	103-6.380
6.395	0.167	6.729	162.509	4.242	170.993	164-6.299SS
6.424	0.103	6.630	163.170	2.616	168.402	103-6.424

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
6.460	0.064	6.588	165.506	1.651	168.808	63-6.40OVS
6.460	0.120	6.700	164.059	3.023	170.129	118-6.378VS
6.460	0.125	6.710	164.084	3.175	170.434	125-6.460
6.469	0.141	6.751	166.548	3.556	173.660	139-6.40OVS
6.475	0.210	6.895	164.465	5.334	175.133	1-363
6.475	0.275	7.025	164.465	6.985	178.435	1-439
6.484	0.139	6.762	164.694	3.531	171.755	1-260
6.487	0.103	6.693	164.770	2.616	170.002	1-165
6.489	0.070	6.629	164.821	1.778	168.377	1-65-5
6.500	0.080	6.660	165.100	2.032	169.164	80-6.500
6.500	0.094	6.688	165.100	2.388	169.875	94-6.500
6.510	0.093	6.696	165.430	2.362	170.053	91-6.394SS
6.519	0.520	7.559	165.583	13.208	191.999	520-6.519
6.520	0.070	6.660	165.608	1.778	169.164	70-6.520
6.520	0.261	7.042	165.608	6.629	178.867	258-6.437VS
6.600	0.275	7.150	167.640	6.985	181.610	275-6.600
6.609	0.139	6.887	167.869	3.531	174.930	139-6.609
6.625	0.500	7.625	168.275	12.700	193.675	500-6.625
6.629	0.050	6.729	168.910	1.346	171.602	50-6.567-VS
6.640	0.380	7.400	168.656	9.652	187.960	380-6.640
6.666	0.210	7.086	169.316	5.334	179.984	210-6.666
6.667	0.045	6.757	169.926	1.143	172.212	45-6.690
6.687	0.070	6.827	169.850	1.778	173.406	70-6.687
6.688	0.380	7.448	169.875	9.652	189.179	380-6.688
6.725	0.210	7.145	170.815	5.334	181.483	1-364
6.725	0.275	7.275	170.815	6.985	184.785	1-440
6.734	0.070	6.874	171.044	1.778	174.600	70-6.734
6.734	0.139	7.012	171.044	3.531	178.105	1-261
6.737	0.103	6.943	171.120	2.616	176.352	1-166
6.739	0.070	6.879	171.171	1.778	174.727	1-056
6.763	0.381	7.525	171.907	9.703	191.313	375-6.650VS
6.770	0.315	7.400	172.009	8.001	188.011	312-6.70OVS
6.778	0.153	7.084	172.212	3.886	179.984	150-6.65OSS
6.783	0.224	7.231	172.288	5.690	183.667	224-6.783
6.785	0.071	6.927	170.739	1.778	174.295	70-6.722SS
6.812	0.047	6.906	173.025	1.194	175.413	47-6.812
6.830	0.157	7.144	173.482	3.988	181.458	157-6.830
6.975	0.210	7.395	177.165	5.334	187.833	1-365
6.975	0.241	7.457	177.165	6.121	189.408	241-6.975
6.975	0.275	7.525	177.165	6.985	191.135	1-441
6.984	0.139	7.262	177.394	3.531	184.455	1-262
6.987	0.103	7.193	177.470	2.616	182.702	1-167
6.989	0.070	7.129	177.521	1.778	181.077	1-057
7.000	0.060	7.120	177.800	1.524	180.848	60-7.000
7.006	0.160	7.326	177.952	4.064	186.080	160-7.006
7.157	0.377	7.911	181.788	9.576	200.940	375-7.125SS
7.225	0.210	7.645	183.515	5.334	194.183	1-366
7.225	0.241	7.707	183.515	6.121	195.758	241-7.225
7.225	0.275	7.775	183.515	6.985	197.485	1-442
7.234	0.139	7.512	183.744	3.531	190.805	1-263
7.237	0.103	7.443	183.820	2.616	189.052	1-168
7.239	0.070	7.379	183.871	1.778	187.427	1-058
7.339	0.506	8.351	187.401	12.929	213.258	500-7.250ES
7.409	0.379	8.167	188.316	9.627	207.543	375-7.324SS
7.416	0.045	7.506	188.366	1.143	190.652	45-7.416
7.435	0.103	7.641	188.849	2.616	194.082	103-7.41

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Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
7.475	0.210	7.895	189.865	5.334	200.533	1-367
7.475	0.241	7.957	189.865	6.121	202.133	241-7.475
7.475	0.275	8.025	189.865	6.985	203.835	1-443
7.484	0.139	7.762	190.094	3.531	197.155	1-264
7.487	0.103	7.693	190.170	2.616	195.402	1-169
7.489	0.070	7.629	190.221	1.778	193.777	1-059
7.500	0.070	7.640	190.500	1.778	194.056	70-7.500
7.500	0.375	8.250	190.500	9.525	209.550	375-7.500
7.505	0.518	8.541	187.401	12.929	213.258	500-7.25OVS
7.509	0.238	7.985	189.001	5.994	200.990	236-7.441
7.571	0.215	8.001	192.557	5.461	203.479	215-7.581
7.613	0.070	7.753	193.370	1.778	196.926	70-7.613
7.725	0.210	8.145	196.215	5.334	206.883	1-368
7.725	0.241	8.207	196.215	6.121	208.458	241-7.725
7.725	0.275	8.275	196.215	6.985	210.185	1-444
7.733	0.375	8.483	196.419	9.525	215.469	375-7.733
7.734	0.139	8.012	196.444	3.531	203.505	1-265
7.737	0.103	7.943	196.520	2.616	201.752	1-170
7.739	0.070	7.879	196.571	1.778	200.127	1-060
7.862	0.103	8.068	199.695	2.616	204.927	103-7.862
7.870	0.070	8.010	199.898	1.778	203.454	70-7.870
7.975	0.210	8.395	202.565	5.334	213.233	1-369
7.975	0.241	8.457	202.565	6.121	214.808	241-7.975
7.975	0.275	8.525	202.565	6.985	216.535	1-445
7.984	0.139	8.262	202.794	3.531	209.855	1-266
7.987	0.103	8.193	202.870	2.616	208.102	1-171
7.989	0.070	8.129	202.921	1.778	206.477	1-061
8.000	0.625	9.250	203.200	15.875	234.950	625-8.000
8.083	0.200	8.483	205.308	5.080	215.468	199-8.029ES
8.159	0.375	8.909	207.239	9.525	226.289	375-8.159
8.197	0.331	8.859	208.204	8.407	225.019	331-8.197
8.225	0.210	8.645	208.915	5.334	219.583	1-370
8.225	0.275	8.775	208.915	6.985	222.885	275-8.225
8.225	0.379	8.983	209.042	9.627	228.295	375-8.13OSS
8.234	0.139	8.512	209.144	3.531	216.205	1-267
8.237	0.103	8.443	209.220	2.616	214.452	1-172
8.240	0.224	8.688	209.296	5.690	220.676	224-8.240
8.250	0.375	9.000	209.550	9.525	228.600	375-8.250
8.336	0.273	8.882	211.861	6.934	225.730	270-8.24OSS
8.380	0.388	9.156	212.852	9.855	232.562	388-8.380
8.404	0.277	8.958	213.563	7.036	277.635	275-8.350ES
8.475	0.210	8.895	215.265	5.334	225.933	1-371
8.475	0.275	9.025	215.265	6.985	229.235	1-446
8.484	0.139	8.762	215.494	3.531	222.555	1-268
8.487	0.103	8.693	215.570	2.616	220.802	1-173
8.524	0.186	8.896	216.510	4.724	225.959	187-8.553
8.546	0.243	9.032	217.170	6.172	229.514	241-8.475SS
8.569	0.331	9.231	217.653	8.407	234.468	328-8.50OVS
8.584	0.119	8.822	217.500	3.073	223.647	118-8.504VS
8.604	0.379	9.3~2	218.669	9.627	237.922	375-8.505SS
8.625	0.625	9.875	219.075	15.875	250.825	625-8.625
8.641	0.210	9.061	219.481	5.334	230.149	210-8.641
8.725	0.210	9.145	221.615	5.334	232.283	1-372
8.725	0.275	9.275	221.615	6.985	235.585	275-8.725
8.734	0.139	9.012	221.844	3.531	228.905	1-269
8.737	0.103	8.943	221.920	2.616	227.152	1-174

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Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
8.750	0.312	9.374	222.250	7.925	238.100	312-8.750
8.834	0.381	9.596	224.485	9.677	243.840	380-8.812ES
8.898	0.323	9.544	226.009	8.204	242.418	323-8.898
8.975	0.210	9.395	227.965	5.334	238.633	1-373
8.975	0.275	9.525	227.965	6.985	241.935	1-447
8.984	0.139	9.262	228.194	3.531	235.255	1-270
8.987	0.103	9.193	228.270	2.616	233.502	1-175
9.225	0.210	9.645	234.315	5.334	244.983	1-374
9.234	0.139	9.512	234.544	3.531	241.605	1-271
9.237	0.103	9.443	234.620	2.616	239.852	1-176
9.421	0.379	10.179	239.446	9.652	258.724	375-9.312SS
9.464	0.384	10.232	234.950	9.525	254.000	375-9.25OSS
9.475	0.210	9.895	240.665	5.334	251.333	1-375
9.475	0.275	10.025	240.665	6.985	254.635	1-448
9.484	0.139	9.762	240.894	3.531	247.955	1-272
9.487	0.103	9.693	240.970	2.616	246.202	1-177
9.531	0.273	10.077	242.240	6.934	256.108	270-9.421 SS
9.641	0.203	10.047	244.882	5.156	255.194	202-9.598VS
9.690	0.380	10.450	243.840	9.525	262.890	375-9.600
9.700	0.139	9.978	246.380	3.531	253.441	139-9.700
9.713	0.247	10.207	244.196	6.223	256.642	241-9.475SS
9.725	0.210	10.145	247.015	5.334	257.683	1-376
9.734	0.139	10.012	247.244	3.531	254.305	1-273
9.737	0.103	9.943	247.320	2.616	252.552	1-178
9.829	0.140	10.109	249.657	3.556	256.769	140-9.829
9.837	0.215	10.267	249.860	5.461	260.782	215-9.837
9.950	0.159	10.268	252.730	4.039	260.807	159-9.950
9.970	0.070	10.110	253.238	1.778	256.794	70-9.970
9.975	0.210	10.395	253.365	5.334	264.033	1-377
9.975	0.275	10.525	253.365	6.985	267.335	1-449
9.984	0.139	10.262	253.594	3.531	260.655	1-274
9.987	0.103	10.193	253.670	2.616	258.902	1-179
9.996	0.379	10.754	254.076	9.652	273.355	375-9.881 SS
10.060	0.215	10.490	255.525	5.461	266.447	215-10.060
10.112	0.071	10.254	258.216	1.803	261.823	70-9.989VS
10.118	0.244	10.606	257.099	6.223	269.545	241-9.975VS
10.178	0.139	10.456	258.521	3.531	265.582	139-10.178
10.250	0.210	10.670	260.350	5.334	271.018	210-10.250
10.270	0.351	10.972	260.858	8.915	278.689	351-10.270
10.282	0.169	10.620	261.264	4.293	269.850	167-10.186SS
10.296	0.212	10.720	261.772	5.486	272.745	210-10.190SS
10.300	0.210	10.720	261.620	5.334	272.288	210-10.300
10.328	0.071	10.470	262.484	1.803	266.090	70-10.232SS
10.335	0.354	11.043	261.341	8.992	279.324	349-10.199VS
10.372	0.104	10.580	263.449	2.642	264.160	104-10.372
10.459	0.070	10.599	265.786	1.778	269.342	70-10.433ES
10.475	0.210	10.895	266.065	5.334	276.733	1-378
10.475	0 a 275	11.025	266.065	6.985	280.035	1-450
10.484	0.139	10.762	266.294	3.531	273.355	1-275
10.485	0.070	10.625	266.319	1.778	269.875	70-10.485
10.487	0.103	10.693	266.370	2.616	271.603	103-10.450ES
10.523	0.262	11.047	267.386	6.680	280.746	260-10.425SS
10.600	0.159	10.918	269.240	4.039	277.317	159-10.600
10.629	0.071	10.771	267.462	1.778	271.018	70-10.530SS
10.635	0.071	10.777	270.129	1.803	273.736	71-10.635
10.660	0.105	10.870	270.765	2.667	276.099	103-10.500SS

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
10.725	0.275	11.275	272.415	6.985	286.385	275-10.725
10.760	0.139	11.038	173.305	3.531	280.366	139-10.734
10.801	0.255	11.311	274.345	6.477	287.299	256-10.846SS
10.815	0.379	11.573	274.853	9.652	294.157	375-10.69OSS
10.827	0.157	11.141	275.006	3.988	282.982	157-10.827
10.875	0.380	11.635	276.225	9.652	295.529	380-10.875
10.958	0.105	11.168	278.562	2.667	283.896	103-10.71OSS
10.975	0.210	11.395	278.765	5.334	289.433	1-379
10.975	0.275	11.525	278.765	6.985	292.735	1-451
10.984	0.103	11.190	278.994	2.616	284.226	103-10.984
10.984	0.139	11.262	278.994	3.531	286.055	1-276
11.200	0.104	11.408	284.607	2.642	289.890	103-11.096SS
11.368	0.070	11.508	290.170	1.778	293.726	70-11.339ES
11.475	0.210	11.895	291.465	5.334	302.133	1-380
11.475	0.275	12.025	291.465	6.985	305.435	1-452
11.484	0.139	11.762	291.694	3.531	298.755	1-277
11.532	0.291	12.114	293.040	7.442	307.873	290-11.475ES
11.541	0.093	11.727	292.684	2.362	297.409	93-11.500
11.638	0.339	12.316	296.012	8.611	313.233	339-11.654
11.975	0.210	12.395	304.165	5.334	314.833	1-381
11.975	0.275	12.525	304.165	6.985	318.135	1-453
11.984	0.139	12.262	304.394	3.531	311.455	1-278
11.989	0.070	~ 2.129	304.521	1.778	308.077	70-11.989
12.000	0.275	12.550	304.800	6.985	318.770	275-12.000
12.081	0.368	12.817	308.788	9.398	327.584	370-12.157
12.106	b.370	12.846	307.492	9.398	326.288	370-12.106
12.164	0.255	~ 2.674	310.007	6.502	323.012	256-12.205
12.224	0.142	12.508	310.490	3.607	317.678	142-12.224
12.269	0.376	13.021	314.452	9.525	333.502	375-12.25OVS
12.278	0.139	12.556	311.861	3.531	318.922	139-12.278
12.413	0.209	12.831	315.291	5.309	325.908	209-12.413
12.475	0.210	12.895	316.865	5.334	327.533	210-12.475
12.475	0.275	13.025	316.865	6.985	330.835	1-454
12.484	0.139	12.762	317.094	3.531	324.155	139-12.484
12.653	0.141	12.935	321.387	3.581	328.550	139-12.475VS
12.720	0.070	12.860	323.088	1.778	326.644	70-12.720
12.899	0.316	13.531	327.812	8.001	343.814	312-12.75OSS
12.899	0.379	13.657	327.838	9.652	347.116	375-12.75OSS
12.975	0.210	13.395	329.565	5.334	340.233	1-382
12.975	0.275	13.525	329.565	6.985	343.535	1-455
12.984	0.139	13.262	329.794	3.531	336.855	1-279
13.062	0.139	13.340	331.775	3.531	338.836	139-13.062
13.114	0.140	13.394	333.096	3.556	340.208	139-13.114
13.248	0.139	13.526	336.449	3.531	343.560	139-13.248
13.252	0.224	13.700	336.601	5.690	347.980	224-13.252
13.475	0.210	13.895	342.265	5.334	352.933	210-13.475
13.475	0.275	14.025	342.265	6.985	356.235	1-456
13.484	0.139	13.762	342.494	3.531	349.555	139-13.484
13.514	0.212	13.938	343.230	5.486	354.203	210-13.375SS
13.975	0.210	14.395	354.965	5.334	365.633	1-383
13.975	0.275	14.525	354.965	6.985	368.935	1-457
13.984	0.139	14.262	355.194	3.531	362.255	1-280
14.101	0.630	15.361	358.165	16.002	390.169	625-13.875SS
14.101	0.631	15.363	358.165	16.027	390.220	631-14.101
14.128	0.338	14.804	360.401	8.611	377.622	339-14.189
14.146	0.224	14.594	359.308	5.690	370.688	224-14.146

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside Diameter	Cross Section	Outside Diameter	Inside Diameter	Cross Section	Outside Diameter	
14.156	0.500	15.156	359.562	12.700	384.962	500-14.156
14.325	0.993	16.311	366.522	25.400	417.322	1.000-14.430
14.475	0.275	15.025	367.665	6.985	381.635	1-458
14.484	0.139	14.762	367.894	3.531	374.955	139-14.484
14.515	0.293	15.101	368.833	7.442	383.718	288-14.2~O-SS
14.649	0.088	14.825	371.551	2.311	376.174	87-14.47OSS
14.750	0.113	14.976	374.650	2.870	380.390	113-14.750
14.764	0.197	15.158	375.006	5.004	385.013	197-14.764
14.950	0.247	15.444	381.000	6.299	393.598	248-15.000
14.975	0.210	15.395	380.265	5.334	391.033	1-3F4
14.975	0.275	15.525	380.365	6.985	394.335	1-459
14.984	0.139	15.262	380.594	3.531	387.655	1-281
14.990	0.104	15.198	380.746	2.642	386.029	104-14.990
15.410	0.338	16.086	391.414	8.585	408.584	338-15.410
15.475	0.210	15.895	393.065	5.334	403.733	210-15.475
15.475	0.275	16.025	393.065	6.985	407.035	1-460
15.484	0.139	15.762	393.294	3.531	400.355	139-15.484
15.735	1.000	17.735	399.699	25.400	450.469	1.000-15.735
15.955	0.139	16.233	405.257	3.531	412.318	1-282
15.955	0.210	16.375	405.257	5.334	415.925	1-385
15.955	0.275	16.505	405.257	6.985	419.227	1-461
16.186	5.110	16.406	411.124	2.794	416.712	110-16.186
16.455	0.139	16.733	417.957	3.531	425.018	139-16.455
16.455	0.275	17.005	417.957	6.985	431.927	1-462
16.577	0.070	16.717	419.989	1.778	423.545	70-16.535
16.625	0.375	17.375	422.275	9.525	441.325	375-16.625
16.642	0.311	17.264	423.926	7.925	439.776	312-16.690
16.694	0.274	17.242	425.450	6.985	439.420	275-16.750
16.830	0.210	17.250	427.482	5.334	438.150	210-16.830
16.830	0.294	17.418	427.660	7.468	442.595	290-16.625SS
16.955	0.139	17.233	430.657	3.531	437.718	1-283
16.955	0.210	17.375	430.657	5.334	441.325	1-386
16.955	0.275	17.505	430.657	6.985	444.627	1-463
17.455	0.139	17.733	443.357	3.531	450.418	139-17.455
17.455	0.275	18.005	443.357	6.985	457.327	1-464
17.480	0.139	17.758	443.992	3.531	451.053	139-17.480
17.581	0.245	18.071	442.443	6.147	454.736	240-17.25OSS
17.680	0.199	18.078	449.073	5.055	459.182	197-17.52OVS
17.955	0.139	18.233	456.057	3.531	463.118	1-284
17.955	0.210	18.375	456.057	5.334	466.725	1-387
17.955	0.275	18.505	456.057	6.985	470.027	1-465
18.000	0.313	18.626	457.200	7.950	473.100	313-18.000
18.455	0.139	18.733	468.757	3.531	475.818	139-18.455
18.455	0.275	19.005	468.757	6.985	482.727	1-466
18.600	0.125	18.850	472.440	3.175	478.790	125-18.600
18.875	0.139	19.153	479.425	3.531	486.486	139-18.875
18.945	0.583	20.111	481.482	14.808	511.099	577-18.75OVS
18.955	0.210	19.375	481.457	5.334	492.125	1-388
18.955	0.275	19.505	481.457	6.985	495.427	1-467
19.200	0.210	19.620	487.680	5.334	498.348	210-19.200
19.411	0.500	20.411	493.039	12.700	518.439	500-19.411
19.455	0.139	19.733	494.157	3.531	501.218	139-19.455
19.455	0.275	20.005	494.157	6.985	508.127	1-468
19.955	0.210	20.375	506.857	5.334	517.525	1-389
19.955	0275	20.505	506.857	6.985	520.827	1-469
19.960	0.139	20.238	506.984	3.531	514.045	1-286

AMERICAN SYSTEM, INCH			METRIC SYSTEM, MILLIMETER			PSI Catalog Reference
Inside	Cross	Outside	Inside	Cross	Outside	
Diameter	Section	Diameter	Diameter	Section	Diameter	
20.098	0.352	20.802	511.200	8.941	529.082	352-20.126
20.125	0.346	20.817	511.175	8.788	528.752	346-20.125
20.370	0.022	20.4141	517.398	0.559	518.516	22-20.370
20.455	0.139	20.733	519.557	3.531	526.618	139-20.455
20.600	0.196	20.992	524.993	5.004	535.000	197-20.669
20.601	0.196	20.993	525.018	5.004	535.026	197-20.670
20.936	0.199	21.334	531.775	5.055	541.885	197-20.669VS
20.955	0.210	21.375	532.257	5.334	542.925	1-390
20.955	0.275	21.505	532.257	6.985	546.227	1-470
21.000	0.124	21.248	533.400	3.150	539.699	124-21.000
21.077	0.071	21.219	535.357	1.803	538.967	70-20.84OSS
21.455	0.139	21.733	544.957	3.531	552.018	139-21.455
21.512	0.071	21.654	546.406	1.803	550.013	70-21.27OSS
21.953	0.210	22.373	557.606	5.334	569.274	1-391
21.955	0.275	22.505	557.657	6.985	571.627	1-471
22.014	0.140	22.294	559.156	3.556	566.268	139-21.80OSS
22.940	0.210	23.360	582.676	5.334	593.344	1-392
22.940	0.275	23.490	582.676	6.985	596.646	1-472
23.178	0.212	23.6021	588.721	5.385	599.491	210-22.94OVS
23.940	0.210	24.360	608.076	5.334	618.744	1-393
23.940	0.275	24.490	608.076	6.985	622.049	1-473
24.625	0.210	25.045	625.475	5.334	363.143	210-24.625
24.940	0.210	25.360	633.476	5.334	644.144	1-394
24.940	0.275	25.490	633.476	6.985	647.446	1-474
25.599	0.344	26.2871	651.154	8.763	668.680	340-25.275VS
25.614	0.252	26.118	650.951	6.426	663.804	250-25.375VS
25.846	0.212	26.270	656.107	5.385	666.877	210-25.58OVS
25.846	0.339	26.524	659.994	8.661	677.316	341-25.984
25.940	0.210	26.360	658.876	5.334	669.544	1-395
25.940	0.275	26.490	658.876	6.985	672.846	1-475
26.940	0.210	27.3601	684.276	5.334	694.944	210-26.940
26.955	0.275	27.505	684.657	6.985	698.627	1-476
26.965	0.210	27.385	684.276	5.334	695.325	1-396
27.485	0.275	28.035	698.119	6.985	712.089	275-27.485
28.801	0.275	29.351	731.545	6.985	745.515	275-28.801
29.520	0.276	30.072	749.809	7.010	763.830	275-29.331 ES
30.190	0.212	30.614	766.394	5.385	777.164	210-29.88OVS