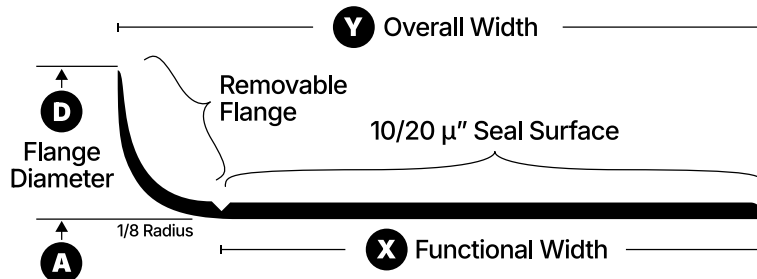


Table ① ② ③ ④

| Part # | Nominal Shaft Dia. | A Shaft Diameter Range |          | X Func. Width<br>± .031" | Y Overall Width<br>± .031" | D Flange Diameter<br>± .062" | Tool length |
|--------|--------------------|------------------------|----------|--------------------------|----------------------------|------------------------------|-------------|
|        |                    | Min Dia.               | Max Dia. |                          |                            |                              |             |
| 99058  | 0.625              | 0.626                  | 0.630    | 0.312                    | 0.437                      | 0.750                        | 1.500       |
| 99062  | 0.625              | 0.623                  | 0.627    | 0.312                    | 0.406                      | 0.750                        | 1.500       |
| 99076  | 0.750              | 0.748                  | 0.752    | 0.312                    | 0.437                      | 0.938                        | 1.500       |
| 99078  | 0.787              | 0.785                  | 0.789    | 0.315                    | 0.433                      | 0.930                        | 1.312       |
| 99085  | 0.863              | 0.861                  | 0.866    | 0.315                    | 0.472                      | 1.155                        | 1.500       |
| 99087  | 0.875              | 0.873                  | 0.877    | 0.312                    | 0.437                      | 1.093                        | 1.500       |
| 99098  | 0.984              | 0.982                  | 0.986    | 0.315                    | 0.433                      | 1.300                        | 1.500       |
| 99100  | 1.000              | 0.998                  | 1.002    | 0.312                    | 0.437                      | 1.220                        | 1.500       |
| 99101  | 1.000              | 0.998                  | 1.002    | 0.312                    | 0.437                      | 1.220                        | 1.500       |
| 99112  | 1.125              | 1.123                  | 1.127    | 0.312                    | 0.437                      | 1.500                        | 0.875       |
| 99116  | 1.125              | 1.123                  | 1.127    | 0.375                    | 0.500                      | 1.500                        | 0.875       |
| 99114  | 1.181              | 1.179                  | 1.184    | 0.315                    | 0.433                      | 1.400                        | 0.875       |
| 99118  | 1.188              | 1.185                  | 1.190    | 0.312                    | 0.437                      | 1.400                        | 0.875       |
| 99125  | 1.250              | 1.247                  | 1.253    | 0.312                    | 0.437                      | 1.500                        | 0.875       |
| 99128  | 1.260              | 1.257                  | 1.263    | 0.312                    | 0.437                      | 1.500                        | 0.875       |
| 99131  | 1.312              | 1.310                  | 1.316    | 0.500                    | 0.625                      | 1.594                        | 1.000       |
| 99138  | 1.375              | 1.371                  | 1.377    | 0.512                    | 0.630                      | 1.637                        | 1.000       |
| 99139  | 1.378              | 1.375                  | 1.381    | 0.512                    | 0.630                      | 1.637                        | 1.000       |
| 99143  | 1.437              | 1.432                  | 1.438    | 0.562                    | 0.688                      | 1.780                        | 1.200       |
| 99144  | 1.437              | 1.435                  | 1.441    | 0.375                    | 0.500                      | 1.780                        | 1.200       |
| 99147  | 1.496              | 1.490                  | 1.496    | 0.512                    | 0.669                      | 1.780                        | 1.200       |
| 99149  | 1.500              | 1.497                  | 1.503    | 0.562                    | 0.688                      | 1.800                        | 1.200       |
| 99150  | 1.500              | 1.497                  | 1.503    | 0.375                    | 0.500                      | 1.800                        | 1.200       |
| 99152  | 1.523              | 1.520                  | 1.526    | 0.438                    | 0.563                      | 1.800                        | 1.200       |
| 99155  | 1.552              | 1.549                  | 1.555    | 0.438                    | 0.563                      | 1.800                        | 1.190       |
| 99156  | 1.563              | 1.559                  | 1.565    | 0.562                    | 0.688                      | 1.800                        | 1.190       |
| 99157  | 1.575              | 1.572                  | 1.578    | 0.512                    | 0.630                      | 1.800                        | 1.190       |
| 99162  | 1.625              | 1.622                  | 1.628    | 0.562                    | 0.688                      | 1.875                        | 1.190       |
| 99169  | 1.650              | 1.647                  | 1.654    | 0.562                    | 0.688                      | 1.875                        | 1.190       |
| 99168  | 1.688              | 1.684                  | 1.690    | 0.562                    | 0.688                      | 1.906                        | 1.090       |
| 99171  | 1.719              | 1.715                  | 1.721    | 0.562                    | 0.688                      | 2.062                        | 1.090       |
| 99170  | 1.739              | 1.736                  | 1.742    | 0.375                    | 0.500                      | 2.062                        | 1.090       |
| 99172  | 1.750              | 1.747                  | 1.753    | 0.375                    | 0.500                      | 2.062                        | 1.090       |
| 99174  | 1.750              | 1.747                  | 1.753    | 0.562                    | 0.688                      | 2.062                        | 1.090       |
| 99175  | 1.750              | 1.747                  | 1.753    | 0.750                    | 0.875                      | 2.062                        | 1.090       |
| 99176  | 1.764              | 1.761                  | 1.767    | 0.562                    | 0.688                      | 2.062                        | 1.090       |
| 99177  | 1.772              | 1.769                  | 1.775    | 0.550                    | 0.670                      | 2.062                        | 1.090       |

Table ① ② ③ ④

| Part # | Nominal Shaft Dia. | A Shaft Diameter Range |          | X Func. Width<br>± .031" | Y Overall Width<br>± .031" | D Flange Diameter<br>± .062" | Tool length |
|--------|--------------------|------------------------|----------|--------------------------|----------------------------|------------------------------|-------------|
|        |                    | Min Dia.               | Max Dia. |                          |                            |                              |             |
| 99181  | 1.813              | 1.809                  | 1.815    | 0.562                    | 0.688                      | 2.090                        | 1.250       |
| 99187  | 1.875              | 1.872                  | 1.878    | 0.562                    | 0.688                      | 2.203                        | 1.250       |
| 99189  | 1.890              | 1.887                  | 1.893    | 0.562                    | 0.688                      | 2.203                        | 1.250       |
| 99192  | 1.912              | 1.909                  | 1.915    | 0.375                    | 0.500                      | 2.220                        | 1.230       |
| 99193  | 1.938              | 1.934                  | 1.940    | 0.562                    | 0.688                      | 2.220                        | 1.230       |
| 99196  | 1.969              | 1.965                  | 1.971    | 0.551                    | 0.668                      | 2.224                        | 1.230       |
| 99199  | 2.000              | 1.997                  | 2.003    | 0.562                    | 0.688                      | 2.406                        | 1.230       |
| 99200  | 2.000              | 1.997                  | 2.003    | 0.875                    | 1.000                      | 2.406                        | 1.230       |
| 99205  | 2.063              | 2.057                  | 2.063    | 0.781                    | 0.938                      | 2.469                        | 1.420       |
| 99210  | 2.125              | 2.123                  | 2.128    | 0.500                    | 0.750                      | 2.442                        | 1.420       |
| 99212  | 2.125              | 2.124                  | 2.130    | 0.780                    | 0.937                      | 2.422                        | 1.420       |
| 99215  | 2.165              | 2.162                  | 2.168    | 0.787                    | 0.905                      | 2.441                        | 1.295       |
| 99218  | 2.188              | 2.186                  | 2.192    | 0.780                    | 0.938                      | 2.500                        | 1.295       |
| 99220  | 2.202              | 2.198                  | 2.205    | 0.500                    | 0.625                      | 2.500                        | 1.295       |
| 99225  | 2.250              | 2.249                  | 2.255    | 0.780                    | 0.938                      | 2.530                        | 1.295       |
| 99227  | 2.250              | 2.249                  | 2.255    | 0.312                    | 0.438                      | 2.530                        | 1.295       |
| 99235  | 2.362              | 2.359                  | 2.365    | 0.787                    | 0.905                      | 2.785                        | 1.610       |
| 99241  | 2.362              | 2.359                  | 2.365    | 0.370                    | 0.450                      | 2.785                        | 1.610       |
| 99237  | 2.375              | 2.374                  | 2.380    | 0.780                    | 0.938                      | 2.750                        | 1.610       |
| 99240  | 2.375              | 2.374                  | 2.380    | 0.526                    | 0.638                      | 2.750                        | 1.610       |
| 99238  | 2.375              | 2.372                  | 2.378    | 0.593                    | 0.750                      | 2.750                        | 1.610       |
| 99242  | 2.437              | 2.435                  | 2.441    | 0.500                    | 0.625                      | 2.828                        | 1.610       |
| 99243  | 2.437              | 2.434                  | 2.440    | 0.780                    | 0.938                      | 2.828                        | 1.610       |
| 99244  | 2.441              | 2.434                  | 2.441    | 0.500                    | 0.625                      | 2.828                        | 1.610       |
| 99249  | 2.492              | 2.489                  | 2.495    | 0.781                    | 0.938                      | 2.820                        | 1.610       |
| 99250  | 2.500              | 2.500                  | 2.506    | 0.780                    | 0.938                      | 2.820                        | 1.610       |
| 99248  | 2.500              | 2.500                  | 2.506    | 0.500                    | 0.656                      | 2.820                        | 1.610       |
| 99253  | 2.500              | 2.497                  | 2.503    | 0.555                    | 0.656                      | 2.820                        | 1.610       |
| 99251  | 2.513              | 2.510                  | 2.516    | 0.780                    | 0.938                      | 2.820                        | 1.610       |
| 99254  | 2.559              | 2.556                  | 2.562    | 0.787                    | 0.938                      | 2.850                        | 1.610       |
| 99256  | 2.563              | 2.560                  | 2.566    | 0.780                    | 0.938                      | 2.850                        | 1.610       |
| 99255  | 2.563              | 2.560                  | 2.566    | 1.000                    | 1.100                      | 2.850                        | 1.610       |
| 99259  | 2.598              | 2.595                  | 2.601    | 0.780                    | 0.938                      | 2.990                        | 1.610       |
| 99261  | 2.625              | 2.618                  | 2.624    | 0.780                    | 0.938                      | 2.990                        | 1.610       |
| 99262  | 2.625              | 2.625                  | 2.631    | 0.780                    | 0.938                      | 3.047                        | 1.610       |
| 99264  | 2.625              | 2.621                  | 2.627    | 0.780                    | 0.906                      | 3.047                        | 1.610       |
| 99272  | 2.750              | 2.750                  | 2.756    | 0.406                    | 0.563                      | 3.125                        | 1.437       |



Shaft Range

| Part # | Nominal Shaft Dia. | A Shaft Diameter Range |          | X Func. Width<br>± .031" | Y Overall Width<br>± .031" | D Flange Diameter<br>± .062" | Tool length |
|--------|--------------------|------------------------|----------|--------------------------|----------------------------|------------------------------|-------------|
|        |                    | Min Dia.               | Max Dia. |                          |                            |                              |             |
| 99274  | 2.750              | 2.745                  | 2.751    | 0.780                    | 0.938                      | 3.125                        | 1.437       |
| 99275  | 2.750              | 2.750                  | 2.756    | 0.780                    | 0.938                      | 3.125                        | 1.437       |
| 99276  | 2.756              | 2.753                  | 2.759    | 0.787                    | 0.945                      | 3.125                        | 1.437       |
| 99284  | 2.835              | 2.828                  | 2.835    | 0.752                    | 0.874                      | 3.225                        | 1.375       |
| 99282  | 2.838              | 2.838                  | 2.844    | 0.500                    | 0.656                      | 3.225                        | 1.375       |
| 99287  | 2.875              | 2.873                  | 2.879    | 0.780                    | 0.938                      | 3.220                        | 1.375       |
| 99290  | 2.937              | 2.937                  | 2.943    | 0.500                    | 0.641                      | 3.344                        | 1.530       |
| 99293  | 2.937              | 2.937                  | 2.943    | 0.780                    | 0.937                      | 3.344                        | 1.530       |
| 99289  | 2.953              | 2.950                  | 2.956    | 0.594                    | 0.688                      | 3.305                        | 1.530       |
| 99294  | 2.953              | 2.950                  | 2.956    | 0.866                    | 1.024                      | 3.305                        | 1.530       |
| 99296  | 3.000              | 2.997                  | 3.003    | 0.813                    | 0.938                      | 3.235                        | 1.530       |
| 99298  | 3.000              | 2.990                  | 2.996    | 0.562                    | 0.688                      | 3.360                        | 1.530       |
| 99299  | 3.000              | 2.990                  | 2.996    | 0.812                    | 1.000                      | 3.360                        | 1.530       |
| 99300  | 3.000              | 3.000                  | 3.006    | 0.812                    | 1.000                      | 3.235                        | 1.530       |
| 99303  | 3.000              | 3.000                  | 3.006    | 0.625                    | 0.812                      | 3.345                        | 1.530       |
| 99307  | 3.125              | 3.124                  | 3.132    | 0.551                    | 0.709                      | 3.531                        | 2.063       |
| 99311  | 3.125              | 3.120                  | 3.126    | 0.688                    | 0.813                      | 3.531                        | 2.063       |
| 99312  | 3.125              | 3.120                  | 3.126    | 0.813                    | 0.970                      | 3.531                        | 2.063       |
| 99313  | 3.150              | 3.142                  | 3.150    | 0.750                    | 0.886                      | 3.531                        | 2.063       |
| 99315  | 3.150              | 3.146                  | 3.153    | 0.813                    | 0.970                      | 3.531                        | 2.063       |
| 99317  | 3.150              | 3.146                  | 3.153    | 0.433                    | 0.591                      | 3.531                        | 2.063       |
| 99322  | 3.250              | 3.247                  | 3.253    | 0.812                    | 1.000                      | 3.575                        | 1.578       |
| 99325  | 3.250              | 3.250                  | 3.256    | 0.812                    | 1.000                      | 3.575                        | 1.578       |
| 99324  | 3.250              | 3.250                  | 3.256    | 0.595                    | 0.720                      | 3.575                        | 1.578       |
| 99331  | 3.310              | 3.307                  | 3.313    | 0.813                    | 1.000                      | 3.688                        | 1.594       |
| 99332  | 3.347              | 3.337                  | 3.347    | 0.669                    | 0.827                      | 3.688                        | 1.594       |
| 99333  | 3.347              | 3.337                  | 3.347    | 0.827                    | 0.984                      | 3.688                        | 1.594       |
| 99337  | 3.375              | 3.373                  | 3.379    | 0.812                    | 1.000                      | 3.695                        | 1.594       |
| 99346  | 3.500              | 3.497                  | 3.503    | 0.625                    | 0.813                      | 3.835                        | 1.594       |
| 99347  | 3.500              | 3.500                  | 3.506    | 0.312                    | 0.500                      | 3.835                        | 1.594       |
| 99350  | 3.500              | 3.500                  | 3.506    | 0.812                    | 1.000                      | 3.835                        | 1.594       |
| 99349  | 3.500              | 3.501                  | 3.507    | 0.625                    | 0.812                      | 3.835                        | 1.594       |
| 99354  | 3.543              | 3.540                  | 3.546    | 0.906                    | 1.102                      | 3.900                        | 1.875       |

| Part # | Nominal Shaft Dia. | A Shaft Diameter Range |          | X Func. Width<br>± .031" | Y Overall Width<br>± .031" | D Flange Diameter<br>± .062" | Tool length |
|--------|--------------------|------------------------|----------|--------------------------|----------------------------|------------------------------|-------------|
|        |                    | Min Dia.               | Max Dia. |                          |                            |                              |             |
| 99351  | 3.543              | 3.540                  | 3.546    | 0.710                    | 0.926                      | 3.900                        | 1.875       |
| 99353  | 3.543              | 3.540                  | 3.546    | 0.526                    | 0.667                      | 3.900                        | 1.875       |
| 99360  | 3.625              | 3.618                  | 3.624    | 0.812                    | 1.000                      | 4.030                        | 1.875       |
| 99362  | 3.625              | 3.622                  | 3.629    | 0.812                    | 1.000                      | 4.030                        | 1.875       |
| 99363  | 3.625              | 3.623                  | 3.629    | 0.500                    | 0.625                      | 4.030                        | 1.875       |
| 99369  | 3.740              | 3.737                  | 3.743    | 0.827                    | 0.945                      | 4.030                        | 1.875       |
| 99374  | 3.740              | 3.740                  | 3.746    | 0.344                    | 0.500                      | 4.030                        | 1.875       |
| 99364  | 3.740              | 3.740                  | 3.746    | 0.469                    | 0.594                      | 4.030                        | 1.875       |
| 99367  | 3.750              | 3.750                  | 3.756    | 0.344                    | 0.500                      | 4.025                        | 1.875       |
| 99372  | 3.750              | 3.750                  | 3.756    | 0.688                    | 0.875                      | 4.030                        | 1.875       |
| 99376  | 3.750              | 3.746                  | 3.752    | 0.563                    | 0.688                      | 4.030                        | 1.875       |
| 99387  | 3.875              | 3.873                  | 3.875    | 0.813                    | 1.000                      | 4.185                        | 2.187       |
| 99393  | 3.937              | 3.935                  | 3.941    | 0.813                    | 1.000                      | 4.312                        | 2.187       |
| 99395  | 4.000              | 3.998                  | 4.006    | 0.600                    | 0.725                      | 4.375                        | 2.187       |
| 99399  | 4.000              | 3.998                  | 4.006    | 0.812                    | 1.000                      | 4.375                        | 2.187       |
| 99400  | 4.000              | 3.998                  | 4.006    | 0.650                    | 0.775                      | 4.375                        | 2.187       |
| 99401  | 4.000              | 3.998                  | 4.006    | 0.500                    | 0.625                      | 4.375                        | 2.187       |
| 99412  | 4.125              | 4.122                  | 4.130    | 0.813                    | 1.000                      | 4.470                        | 1.750       |
| 99413  | 4.134              | 4.130                  | 4.138    | 0.787                    | 0.913                      | 4.470                        | 1.750       |
| 99424  | 4.250              | 4.248                  | 4.256    | 0.812                    | 1.000                      | 4.610                        | 1.750       |
| 99437  | 4.375              | 4.370                  | 4.378    | 0.812                    | 1.000                      | 4.750                        | 1.750       |
| 99450  | 4.500              | 4.496                  | 4.504    | 0.813                    | 0.970                      | 4.900                        | 1.500       |
| 99452  | 4.528              | 4.523                  | 4.531    | 0.813                    | 0.970                      | 4.900                        | 1.500       |
| 99492  | 4.921              | 4.917                  | 4.925    | 1.024                    | 1.260                      | 5.400                        | 1.733       |
| 99498  | 5.000              | 4.998                  | 5.006    | 0.688                    | 0.875                      | 5.390                        | 1.733       |
| 99499  | 5.000              | 4.998                  | 5.006    | 0.812                    | 1.000                      | 5.390                        | 1.733       |
| 99525  | 5.250              | 5.246                  | 5.254    | 0.812                    | 1.000                      | 5.560                        | 1.484       |
| 99549  | 5.500              | 5.498                  | 5.506    | 0.812                    | 1.000                      | 5.938                        | 1.484       |
| 99550  | 5.500              | 5.498                  | 5.506    | 0.518                    | 0.705                      | 5.938                        | 1.484       |
| 99552  | 5.512              | 5.508                  | 5.516    | 0.807                    | 1.000                      | 5.938                        | 1.484       |
| 99599  | 6.000              | 5.995                  | 6.003    | 1.000                    | 1.250                      | 6.375                        | 2.032       |
| 99650  | 6.500              | 6.495                  | 6.505    | 1.000                    | 1.250                      | 7.000                        | 2.000       |
| 99700  | 7.000              | 6.995                  | 7.005    | 1.000                    | 1.250                      | 7.475                        | 2.062       |

## HARD CHROME SERIES

**EXTREME WEAR  
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RESISTANCE**

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