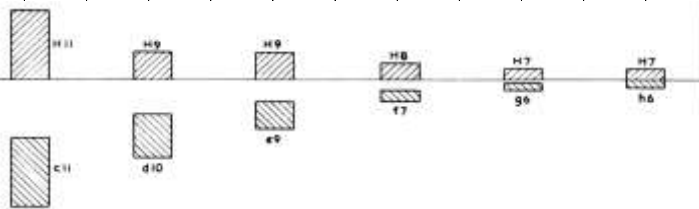
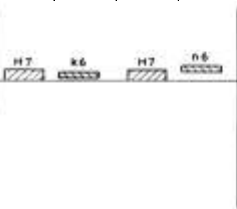
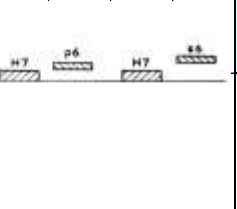


| <div></div> <div>Holes</div>  |     | Clearance Fits                                                                    |              |           |             |           |             |            |            |           |           | Transition Fits                                                                    |          |           |          | Interference Fits                                                                   |          |           |          | <div></div> <div>Holes</div>  |            |      |     |
|---------------------------------------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------|--------------|-----------|-------------|-----------|-------------|------------|------------|-----------|-----------|------------------------------------------------------------------------------------|----------|-----------|----------|-------------------------------------------------------------------------------------|----------|-----------|----------|------------------------------------------------------------------------------------------------------------------|------------|------|-----|
|                                                                                                               |     |  |              |           |             |           |             |            |            |           |           |  |          |           |          |  |          |           |          |                                                                                                                  |            |      |     |
| <div></div> <div>Shafts</div> |     |  |              |           |             |           |             |            |            |           |           |                                                                                    |          |           |          |                                                                                     |          |           |          | <div></div> <div>Shafts</div> |            |      |     |
|                                                                                                               |     |                                                                                   |              |           |             |           |             |            |            |           |           |                                                                                    |          |           |          |                                                                                     |          |           |          |                                                                                                                  |            |      |     |
| Nominal Sizes                                                                                                 |     | Tolerance                                                                         |              | Tolerance |             | Tolerance |             | Tolerance  |            | Tolerance |           | Tolerance                                                                          |          | Tolerance |          | Tolerance                                                                           |          | Tolerance |          | Tolerance                                                                                                        |            |      |     |
| Over                                                                                                          | To  | H11                                                                               | c11          | H9        | d10         | H9        | e9          | H8         | f7         | H7        | g6        | H7                                                                                 | h6       | H7        | k6       | H7                                                                                  | n6       | H7        | p6       | H7                                                                                                               | s6         | Over | To  |
| mm                                                                                                            | mm  | 0.001 mm                                                                          | 0.001 mm     | 0.001 mm  | 0.001 mm    | 0.001 mm  | 0.001 mm    | 0.001 mm   | 0.001 mm   | 0.001 mm  | 0.001 mm  | 0.001 mm                                                                           | 0.001 mm | 0.001 mm  | 0.001 mm | 0.001 mm                                                                            | 0.001 mm | 0.001 mm  | 0.001 mm | 0.001 mm                                                                                                         | 0.001 mm   | mm   | mm  |
| -                                                                                                             | 3   | 60<br>0                                                                           | -60<br>-120  | 25<br>0   | -20<br>-60  | 25<br>0   | -14<br>-39  | 14<br>0    | -6<br>-16  | 10<br>0   | -2<br>-8  | 10<br>0                                                                            | -6<br>0  | 10<br>0   | 6<br>0   | 10<br>0                                                                             | 10<br>4  | 10<br>0   | 12<br>6  | 10<br>0                                                                                                          | 20<br>14   | -    | 3   |
| 3                                                                                                             | 6   | 75<br>0                                                                           | -70<br>-145  | 30<br>0   | -30<br>-78  | 30<br>0   | -20<br>-50  | 18<br>0    | -10<br>-22 | 12<br>0   | -4<br>-12 | 12<br>0                                                                            | -8<br>0  | 12<br>0   | 9<br>1   | 12<br>0                                                                             | 16<br>8  | 12<br>0   | 20<br>12 | 12<br>0                                                                                                          | 27<br>19   | 3    | 6   |
| 6                                                                                                             | 10  | 90<br>0                                                                           | -80<br>-170  | 36<br>0   | -40<br>-98  | 36<br>0   | -25<br>-61  | 22<br>0    | -13<br>-28 | 15<br>0   | -5<br>-14 | 15<br>0                                                                            | -9<br>0  | 15<br>0   | 10<br>1  | 15<br>0                                                                             | 19<br>10 | 15<br>0   | 24<br>15 | 15<br>0                                                                                                          | 32<br>23   | 6    | 10  |
| 10                                                                                                            | 18  | 110<br>0                                                                          | -95<br>-205  | 43<br>0   | -50<br>-120 | 43<br>0   | -32<br>-75  | 27<br>0    | -16<br>-34 | 18<br>0   | -6<br>-17 | 18<br>0                                                                            | -11<br>0 | 18<br>0   | 12<br>1  | 18<br>0                                                                             | 23<br>12 | 18<br>0   | 29<br>18 | 18<br>0                                                                                                          | 39<br>28   | 10   | 18  |
| 18                                                                                                            | 30  | 130<br>0                                                                          | -110<br>-240 | 52<br>0   | -65<br>-149 | 52<br>0   | -40<br>-92  | 33<br>0    | -20<br>-41 | 21<br>0   | -7<br>-20 | 21<br>0                                                                            | -13<br>0 | 21<br>0   | 15<br>2  | 21<br>0                                                                             | 28<br>15 | 21<br>0   | 35<br>22 | 21<br>0                                                                                                          | 48<br>35   | 18   | 30  |
| 30                                                                                                            | 40  | 160<br>0                                                                          | -120<br>-280 | 62<br>0   | -80<br>-180 | 62<br>0   | -50<br>-112 | 39<br>0    | -25<br>-50 | 25<br>0   | -9<br>-25 | 25<br>0                                                                            | -16<br>0 | 25<br>0   | 18<br>2  | 25<br>0                                                                             | 33<br>17 | 25<br>0   | 42<br>26 | 25<br>0                                                                                                          | 59<br>7    | 30   | 40  |
| 40                                                                                                            | 50  | 160<br>0                                                                          | -130<br>-290 | 0         | -180        | 0         | -112        | 0          | -50        | 0         | -25       | 0                                                                                  | 0        | 0         | 2        | 0                                                                                   | 17       | 0         | 26       | 0                                                                                                                | 7          | 40   | 50  |
| 50                                                                                                            | 65  | 190<br>0                                                                          | -140<br>-330 | 74<br>0   | -100        | 74<br>0   | -60         | 46<br>0    | -30        | 30<br>0   | -10       | 30<br>0                                                                            | -19      | 30<br>0   | 21<br>0  | 30<br>0                                                                             | 39<br>0  | 30<br>0   | 51<br>0  | 30<br>0                                                                                                          | 72<br>53   | 50   | 65  |
| 65                                                                                                            | 80  | 190<br>0                                                                          | -150<br>-340 | 0         | -220        | 0         | -134        | 0          | -60        | 0         | -29       | 0                                                                                  | 0        | 0         | 2        | 0                                                                                   | 20       | 0         | 32       | 30<br>0                                                                                                          | 78<br>59   | 65   | 80  |
| 80                                                                                                            | 100 | 220<br>0                                                                          | -170<br>-390 | 87<br>0   | -120        | 87<br>0   | -72         | 54<br>0    | -36        | 35<br>0   | -12       | 35<br>0                                                                            | -22      | 35<br>0   | 25<br>3  | 35<br>0                                                                             | 45<br>23 | 35<br>0   | 59<br>37 | 35<br>0                                                                                                          | 93<br>91   | 80   | 100 |
| 100                                                                                                           | 120 | 220<br>0                                                                          | -180<br>-400 | 0         | -260        | 0         | -159        | 0          | -71        | 0         | -34       | 0                                                                                  | 0        | 0         | 3        | 0                                                                                   | 23       | 0         | 37       | 35<br>0                                                                                                          | 101<br>79  | 100  | 120 |
| 120                                                                                                           | 140 | 250<br>0                                                                          | -200<br>-450 | 100<br>0  | -145        | 100<br>0  | -84         | 63<br>0    | -43        | 40<br>0   | -14       | 40<br>0                                                                            | -25      | 40<br>0   | 28<br>0  | 40<br>0                                                                             | 52<br>0  | 40<br>0   | 68<br>0  | 40<br>0                                                                                                          | 117<br>92  | 120  | 140 |
| 140                                                                                                           | 160 | 250<br>0                                                                          | -210<br>-460 | 0         | -305        | 0         | -185        | 0          | -83        | 0         | -39       | 0                                                                                  | 0        | 0         | 3        | 0                                                                                   | 27       | 0         | 43       | 40<br>0                                                                                                          | 125<br>100 | 140  | 160 |
| 160                                                                                                           | 180 | 250<br>0                                                                          | -230<br>-480 | 0         | -305        | 0         | -185        | 0          | -83        | 0         | -39       | 0                                                                                  | 0        | 0         | 3        | 0                                                                                   | 27       | 0         | 43       | 40<br>0                                                                                                          | 133<br>108 | 160  | 180 |
| 180                                                                                                           | 200 | 290<br>0                                                                          | -240<br>-530 | 115<br>0  | -170        | 115<br>0  | -100        | 72<br>0    | -50        | 46<br>0   | -15       | 46<br>0                                                                            | -29      | 46<br>0   | 33<br>0  | 46<br>0                                                                             | 60<br>0  | 46<br>0   | 79<br>0  | 46<br>0                                                                                                          | 151<br>122 | 180  | 200 |
| 200                                                                                                           | 225 | 290<br>0                                                                          | -260<br>-550 | 0         | -355        | 0         | -215        | 0          | -96        | 0         | -44       | 0                                                                                  | 0        | 0         | 4        | 0                                                                                   | 31       | 0         | 50       | 46<br>0                                                                                                          | 159<br>130 | 200  | 225 |
| 225                                                                                                           | 250 | 290<br>0                                                                          | -280<br>-570 | 0         | -355        | 0         | -215        | 0          | -96        | 0         | -44       | 0                                                                                  | 0        | 0         | 4        | 0                                                                                   | 31       | 0         | 50       | 46<br>0                                                                                                          | 169<br>140 | 225  | 250 |
| 250                                                                                                           | 280 | 320<br>0                                                                          | -300<br>-620 | 130<br>0  | -190        | 130<br>0  | -110        | 81<br>0    | -56        | 52<br>0   | -17       | 52<br>0                                                                            | -32      | 52<br>0   | 36<br>0  | 52<br>0                                                                             | 66<br>0  | 52<br>0   | 88<br>0  | 52<br>0                                                                                                          | 190<br>158 | 250  | 280 |
| 280                                                                                                           | 315 | 320<br>0                                                                          | -330<br>-650 | 0         | -400        | 0         | -240        | 0          | -108       | 0         | -49       | 0                                                                                  | 0        | 0         | 4        | 0                                                                                   | 34       | 0         | 56       | 52<br>0                                                                                                          | 202<br>170 | 280  | 315 |
| 315                                                                                                           | 355 | 360<br>0                                                                          | -360<br>-720 | 140<br>0  | -210        | 140<br>0  | -125        | 89<br>0    | -62        | 57<br>0   | -18       | 57<br>0                                                                            | -36      | 57<br>0   | 40<br>0  | 57<br>0                                                                             | 73<br>0  | 57<br>0   | 98<br>0  | 57<br>0                                                                                                          | 226<br>190 | 315  | 355 |
| 355                                                                                                           | 400 | 360<br>0                                                                          | -400<br>-760 | 0         | -440        | 0         | -265        | 0          | -119       | 0         | -54       | 0                                                                                  | 0        | 0         | 4        | 0                                                                                   | 37       | 0         | 62       | 57<br>0                                                                                                          | 244<br>208 | 355  | 400 |
| 400                                                                                                           | 450 | 400<br>0                                                                          | -440<br>-840 | 155<br>0  | -230        | 155<br>0  | -135        | 97<br>0    | -68        | 63<br>0   | -20       | 63<br>0                                                                            | -40      | 63<br>0   | 45<br>0  | 63<br>0                                                                             | 80<br>0  | 63<br>0   | 108<br>0 | 63<br>0                                                                                                          | 272<br>232 | 400  | 450 |
| 450                                                                                                           | 500 | 400<br>0                                                                          | -480<br>-880 | 0         | -480        | 0         | -290        | 0          | -131       | 0         | -60       | 0                                                                                  | 0        | 0         | 5        | 0                                                                                   | 40       | 0         | 68       | 63<br>0                                                                                                          | 292<br>252 | 450  | 500 |
|                                                                                                               |     | Slack Fit                                                                         |              | Loose Fit |             | Easy Fit  |             | Normal Fit |            | Close Fit |           | Slide Fit                                                                          |          | Push Fit  |          | Drive Fit                                                                           |          | Press Fit |          | Force Fit                                                                                                        |            |      |     |