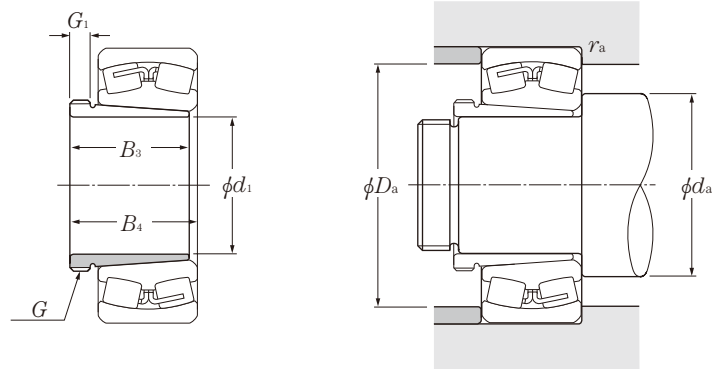


(For spherical roller bearings)



$d_1$  35 ~ 70mm

| Boundary dimensions |                             |       |       |                     | Bearing numbers |      | Abutment and fillet dimensions |      |       |       |     | Mass <sup>3)</sup> | Appro- <sup>4)</sup> |
|---------------------|-----------------------------|-------|-------|---------------------|-----------------|------|--------------------------------|------|-------|-------|-----|--------------------|----------------------|
| mm                  |                             |       |       |                     |                 |      | mm                             |      |       |       |     | kg                 | nut no.              |
| $d_1$               | thread <sup>1)</sup><br>$G$ | $B_3$ | $G_1$ | $B_4$ <sup>2)</sup> |                 |      | $d_a$                          |      | $D_a$ | $r_a$ |     | (approx.)          |                      |
|                     |                             |       |       |                     |                 |      | min                            | max  | min   | max   |     |                    |                      |
| 35                  | M45 × 1.5                   | 29    | 6     | 32                  | LH-22208CK ;AH  | 308  | 47                             | —    | —     | 73    | 1   | 0.09               | AN09                 |
|                     | M45 × 1.5                   | 29    | 6     | 32                  | 21308CK ;AH     | 308  | 48.5                           | —    | —     | 81.5  | 1.5 | 0.09               | AN09                 |
|                     | M45 × 1.5                   | 40    | 7     | 43                  | 22308CK ;AH     | 2308 | 48.5                           | —    | —     | 81.5  | 1.5 | 0.128              | AN09                 |
| 40                  | M50 × 1.5                   | 31    | 6     | 34                  | LH-22209CK ;AH  | 309  | 52                             | —    | —     | 78    | 1   | 0.109              | AN10                 |
|                     | M50 × 1.5                   | 31    | 6     | 34                  | 21309CK ;AH     | 309  | 53.5                           | —    | —     | 91.5  | 1.5 | 0.109              | AN10                 |
|                     | M50 × 1.5                   | 44    | 7     | 47                  | 22309CK ;AH     | 2309 | 53.5                           | —    | —     | 91.5  | 1.5 | 0.164              | AN10                 |
| 45                  | M55 × 2                     | 35    | 7     | 38                  | LH-22210CK ;AHX | 310  | 57                             | —    | —     | 83    | 1   | 0.137              | AN11                 |
|                     | M55 × 2                     | 35    | 7     | 38                  | 21310CK ;AHX    | 310  | 60                             | —    | —     | 100   | 2   | 0.137              | AN11                 |
|                     | M55 × 2                     | 50    | 9     | 53                  | 22310CK ;AHX    | 2310 | 60                             | —    | —     | 100   | 2   | 0.209              | AN11                 |
| 50                  | M60 × 2                     | 37    | 7     | 40                  | LH-22211EK ;AHX | 311  | 63.5                           | 67   | 89.5  | 91.5  | 1.5 | 0.161              | AN12                 |
|                     | M60 × 2                     | 37    | 7     | 40                  | LH-22211BK ;AHX | 311  | 63.5                           | —    | —     | 91.5  | 1.5 | 0.161              | AN12                 |
|                     | M60 × 2                     | 37    | 7     | 40                  | 21311K ;AHX     | 311  | 65                             | —    | —     | 110   | 2   | 0.161              | AN12                 |
|                     | M60 × 2                     | 54    | 10    | 57                  | 22311BK ;AHX    | 2311 | 65                             | —    | —     | 110   | 2   | 0.253              | AN12                 |
| 55                  | M65 × 2                     | 40    | 8     | 43                  | LH-22212EK ;AHX | 312  | 68.5                           | 72   | 98    | 101.5 | 1.5 | 0.189              | AN13                 |
|                     | M65 × 2                     | 40    | 8     | 43                  | LH-22212BK ;AHX | 312  | 68.5                           | —    | —     | 101.5 | 1.5 | 0.189              | AN13                 |
|                     | M65 × 2                     | 40    | 8     | 43                  | 21312K ;AHX     | 312  | 72                             | —    | —     | 118   | 2   | 0.189              | AN13                 |
|                     | M65 × 2                     | 58    | 11    | 61                  | 22312BK ;AHX    | 2312 | 72                             | —    | —     | 118   | 2   | 0.297              | AN13                 |
| 60                  | M75 × 2                     | 42    | 8     | 45                  | LH-22213EK ;AH  | 313  | 73.5                           | 78.5 | 107   | 111.5 | 1.5 | 0.253              | AN15                 |
|                     | M75 × 2                     | 42    | 8     | 45                  | LH-22213BK ;AH  | 313  | 73.5                           | —    | —     | 111.5 | 1.5 | 0.253              | AN15                 |
|                     | M75 × 2                     | 42    | 8     | 45                  | 21313K ;AH      | 313  | 77                             | —    | —     | 128   | 2   | 0.253              | AN15                 |
|                     | M75 × 2                     | 61    | 12    | 64                  | 22313BK ;AH     | 2313 | 77                             | —    | —     | 128   | 2   | 0.395              | AN15                 |
| 65                  | M80 × 2                     | 43    | 8     | 47                  | LH-22214EK ;AH  | 314  | 78.5                           | 83.5 | 112.5 | 116.5 | 1.5 | 0.28               | AN16                 |
|                     | M80 × 2                     | 43    | 8     | 47                  | LH-22214BK ;AH  | 314  | 78.5                           | —    | —     | 116.5 | 1.5 | 0.28               | AN16                 |
|                     | M80 × 2                     | 43    | 8     | 47                  | 21314K ;AH      | 314  | 82                             | —    | —     | 138   | 2   | 0.28               | AN16                 |
|                     | M80 × 2                     | 64    | 12    | 68                  | 22314BK ;AHX    | 2314 | 82                             | —    | —     | 138   | 2   | 0.466              | AN16                 |
| 70                  | M85 × 2                     | 45    | 8     | 49                  | LH-22215EK ;AH  | 315  | 83.5                           | 89   | 117.5 | 121.5 | 1.5 | 0.313              | AN17                 |
|                     | M85 × 2                     | 45    | 8     | 49                  | LH-22215BK ;AH  | 315  | 83.5                           | —    | —     | 121.5 | 1.5 | 0.313              | AN17                 |
|                     | M85 × 2                     | 45    | 8     | 49                  | 21315K ;AH      | 315  | 87                             | —    | —     | 148   | 2   | 0.313              | AN17                 |
|                     | M85 × 2                     | 68    | 12    | 72                  | 22315BK ;AHX    | 2315 | 87                             | —    | —     | 148   | 2   | 0.534              | AN17                 |

1) Standard thread shapes and dimensions are as per JIS B0207 (metric thread).

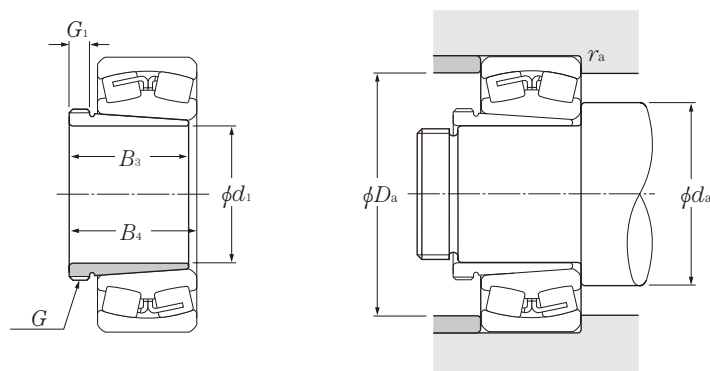
2) Indicates reference dimensions before attachment of withdrawal sleeve.

3) Indicates withdrawal sleeve mass.

4) Indicates number of nut to be used at time of disassembly. See pages C-2 to C-10 for nut dimensions.

Note: 1. Please refer to page B-222, B-225 for bearing dimensions, rated loads, and mass.

(For spherical roller bearings)



$d_1$  75 ~ 115mm

| Boundary dimensions |                             |       |       |                     | Bearing numbers |       | Abutment and fillet dimensions |              |              |              |                 | Mass <sup>3)</sup> | Appro- <sup>4)</sup> |
|---------------------|-----------------------------|-------|-------|---------------------|-----------------|-------|--------------------------------|--------------|--------------|--------------|-----------------|--------------------|----------------------|
| $d_1$               | mm                          |       |       |                     |                 |       | mm                             |              |              |              |                 | kg<br>(approx.)    | priate<br>nut no.    |
|                     | thread <sup>1)</sup><br>$G$ | $B_3$ | $G_1$ | $B_4$ <sup>2)</sup> |                 |       | $d_a$<br>min                   | $d_a$<br>max | $D_a$<br>min | $D_a$<br>max | $r_{as}$<br>max |                    |                      |
| 75                  | M90×2                       | 48    | 8     | 52                  | LH-22216EK;AH   | 316   | 90                             | 94.5         | 125.5        | 130          | 2               | 0.365              | AN18                 |
|                     | M90×2                       | 48    | 8     | 52                  | LH-22216BK;AH   | 316   | 90                             | —            | —            | 130          | 2               | 0.365              | AN18                 |
|                     | M90×2                       | 48    | 8     | 52                  | 21316K ;AH      | 316   | 92                             | —            | —            | 158          | 2               | 0.365              | AN18                 |
|                     | M90×2                       | 71    | 12    | 75                  | 22316BK;AHX     | 2316  | 92                             | —            | —            | 158          | 2               | 0.597              | AN18                 |
| 80                  | M95×2                       | 52    | 9     | 56                  | LH-22217EK;AHX  | 317   | 95                             | 100.5        | 135          | 140          | 2               | 0.429              | AN19                 |
|                     | M95×2                       | 52    | 9     | 56                  | LH-22217BK;AHX  | 317   | 95                             | —            | —            | 140          | 2               | 0.429              | AN19                 |
|                     | M95×2                       | 52    | 9     | 56                  | 21317K ;AHX     | 317   | 99                             | —            | —            | 166          | 2.5             | 0.429              | AN19                 |
|                     | M95×2                       | 74    | 13    | 78                  | 22317BK;AHX     | 2317  | 99                             | —            | —            | 166          | 2.5             | 0.67               | AN19                 |
| 85                  | M100×2                      | 53    | 9     | 57                  | LH-22218EK;AHX  | 318   | 100                            | 107.5        | 144          | 150          | 2               | 0.461              | AN20                 |
|                     | M100×2                      | 53    | 9     | 57                  | LH-22218BK;AHX  | 318   | 100                            | —            | —            | 150          | 2               | 0.461              | AN20                 |
|                     | M100×2                      | 63    | 10    | 67                  | 23218BK;AHX     | 3218  | 100                            | —            | —            | 150          | 2               | 0.576              | AN20                 |
|                     | M100×2                      | 53    | 9     | 57                  | 21318K ;AHX     | 318   | 104                            | —            | —            | 176          | 2.5             | 0.461              | AN20                 |
|                     | M100×2                      | 79    | 14    | 83                  | 22318BK;AHX     | 2318  | 104                            | —            | —            | 176          | 2.5             | 0.779              | AN20                 |
| 90                  | M105×2                      | 57    | 10    | 61                  | 22219BK;AHX     | 319   | 107                            | —            | —            | 158          | 2               | 0.532              | AN21                 |
|                     | M105×2                      | 57    | 10    | 61                  | 21319K ;AHX     | 319   | 109                            | —            | —            | 186          | 2.5             | 0.532              | AN21                 |
|                     | M105×2                      | 85    | 16    | 89                  | 22319BK;AHX     | 2319  | 109                            | —            | —            | 186          | 2.5             | 0.886              | AN21                 |
| 95                  | M110×2                      | 59    | 10    | 63                  | 22220BK;AHX     | 320   | 112                            | —            | —            | 168          | 2               | 0.582              | AN22                 |
|                     | M110×2                      | 73    | 11    | 77                  | 23220BK;AHX     | 3220  | 112                            | —            | —            | 168          | 2               | 0.767              | AN22                 |
|                     | M110×2                      | 59    | 10    | 63                  | 21320K ;AHX     | 320   | 114                            | —            | —            | 201          | 2.5             | 0.582              | AN22                 |
|                     | M110×2                      | 90    | 16    | 94                  | 22320BK;AHX     | 2320  | 114                            | —            | —            | 201          | 2.5             | 0.998              | AN22                 |
| 105                 | M120×2                      | 68    | 11    | 72                  | 23122BK ;AHX    | 3122  | 120                            | —            | —            | 170          | 2               | 0.76               | AN24                 |
|                     | M115×2                      | 82    | 13    | 91                  | 24122BK30 ;AH   | 24122 | 120                            | —            | —            | 170          | 2               | 0.73               | AN23                 |
|                     | M120×2                      | 68    | 11    | 72                  | 22222BK ;AHX    | 3122  | 122                            | —            | —            | 188          | 2               | 0.76               | AN24                 |
|                     | M125×2                      | 82    | 11    | 86                  | 23222BK ;AHX    | 3222  | 122                            | —            | —            | 188          | 2               | 1.04               | AN25                 |
|                     | M120×2                      | 63    | 12    | 67                  | 21322K ;AHX     | 322   | 124                            | —            | —            | 226          | 2.5             | 0.663              | AN24                 |
|                     | M125×2                      | 98    | 16    | 102                 | 22322BK ;AHX    | 2322  | 124                            | —            | —            | 226          | 2.5             | 1.35               | AN25                 |
| 115                 | M130×2                      | 60    | 13    | 64                  | 23024BK ;AHX    | 3024  | 130                            | —            | —            | 170          | 2               | 0.75               | AN26                 |
|                     | M125×2                      | 73    | 13    | 82                  | 24024BK30 ;AH   | 24024 | 130                            | —            | —            | 170          | 2               | 0.65               | AN25                 |
|                     | M125×2                      | 73    | 13    | 82                  | 24024CK30 ;AH   | 24024 | 130                            | —            | —            | 170          | 2               | 0.65               | AN25                 |
|                     | M130×2                      | 75    | 12    | 79                  | 23124BK ;AHX    | 3124  | 130                            | —            | —            | 190          | 2               | 0.95               | AN26                 |

1) Standard thread shapes and dimensions are as per JIS B0207 (metric thread).

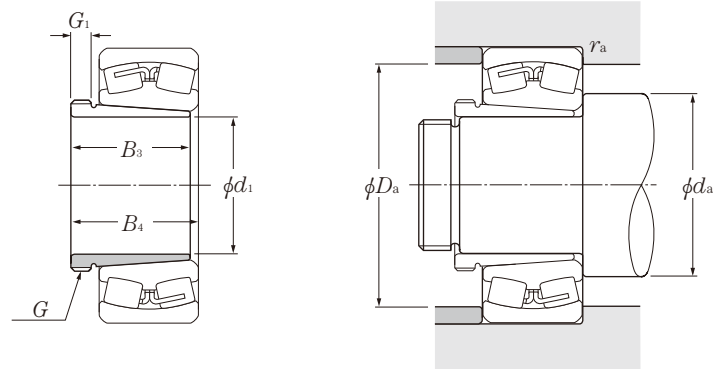
2) Indicates reference dimensions before attachment of withdrawal sleeve.

3) Indicates withdrawal sleeve mass.

4) Indicates number of nut to be used at time of disassembly. See pages C-2 to C-10 for nut dimensions.

Note: 1. Please refer to page B-224, B-227 for bearing dimensions, rated loads, and mass.

(For spherical roller bearings)



$d_1$  115 ~ 150mm

| Boundary dimensions |                             |       |       |                     | Bearing numbers |       | Abutment and fillet dimensions |              |                 | Mass <sup>3)</sup> | Appro- <sup>4)</sup> |
|---------------------|-----------------------------|-------|-------|---------------------|-----------------|-------|--------------------------------|--------------|-----------------|--------------------|----------------------|
| mm                  |                             |       |       |                     |                 |       | mm                             |              |                 | kg                 | priate               |
| $d_1$               | thread <sup>1)</sup><br>$G$ | $B_3$ | $G_1$ | $B_4$ <sup>2)</sup> |                 |       | $d_a$<br>min                   | $D_a$<br>max | $r_{as}$<br>max | (approx.)          | nut no.              |
| 115                 | M130×2                      | 93    | 13    | 102                 | 24124BK30 ; AH  | 24124 | 130                            | 190          | 2               | 1                  | AN26                 |
|                     | M130×2                      | 75    | 12    | 79                  | 22224BK ; AHX   | 3124  | 132                            | 203          | 2               | 0.95               | AN26                 |
|                     | M135×2                      | 90    | 13    | 94                  | 23224BK ; AHX   | 3224  | 132                            | 203          | 2               | 1.3                | AN27                 |
|                     | M135×2                      | 105   | 17    | 109                 | 22324BK ; AHX   | 2324  | 134                            | 246          | 2.5             | 1.6                | AN27                 |
| 125                 | M140×2                      | 67    | 14    | 71                  | 23026BK ; AHX   | 3026  | 140                            | 190          | 2               | 0.93               | AN28                 |
|                     | M135×2                      | 83    | 14    | 93                  | 24026BK30 ; AH  | 24026 | 140                            | 190          | 2               | 0.84               | AN27                 |
|                     | M135×2                      | 83    | 14    | 93                  | 24026CK30 ; AH  | 24026 | 140                            | 190          | 2               | 0.84               | AN27                 |
|                     | M140×2                      | 78    | 12    | 82                  | 23126BK ; AHX   | 3126  | 140                            | 200          | 2               | 1.08               | AN28                 |
|                     | M140×2                      | 94    | 14    | 104                 | 24126BK30 ; AH  | 24126 | 140                            | 200          | 2               | 1.11               | AN28                 |
|                     | M140×2                      | 78    | 12    | 82                  | 22226BK ; AHX   | 3126  | 144                            | 216          | 2.5             | 1.08               | AN28                 |
|                     | M145×2                      | 98    | 15    | 102                 | 23226BK ; AHX   | 3226  | 144                            | 216          | 2.5             | 1.58               | AN29                 |
|                     | M145×2                      | 115   | 19    | 119                 | 22326BK ; AHX   | 2326  | 148                            | 262          | 3               | 1.97               | AN29                 |
| 135                 | M150×2                      | 68    | 14    | 73                  | 23028BK ; AHX   | 3028  | 150                            | 200          | 2               | 1.01               | AN30                 |
|                     | M145×2                      | 83    | 14    | 93                  | 24028BK30 ; AH  | 24028 | 150                            | 200          | 2               | 0.91               | AN29                 |
|                     | M145×2                      | 83    | 14    | 93                  | 24028CK30 ; AH  | 24028 | 150                            | 200          | 2               | 0.91               | AN29                 |
|                     | M150×2                      | 83    | 14    | 88                  | 23128BK ; AHX   | 3128  | 152                            | 213          | 2               | 1.28               | AN30                 |
|                     | M150×2                      | 99    | 14    | 109                 | 24128BK30 ; AH  | 24128 | 152                            | 213          | 2               | 1.25               | AN30                 |
|                     | M150×2                      | 83    | 14    | 88                  | 22228BK ; AHX   | 3128  | 154                            | 236          | 2.5             | 1.28               | AN30                 |
|                     | M155×3                      | 104   | 15    | 109                 | 23228BK ; AHX   | 3228  | 154                            | 236          | 2.5             | 1.84               | AN31                 |
|                     | M155×3                      | 125   | 20    | 130                 | 22328BK ; AHX   | 2328  | 158                            | 282          | 3               | 2.33               | AN31                 |
| 145                 | M160×3                      | 72    | 15    | 77                  | 23030BK ; AHX   | 3030  | 162                            | 213          | 2               | 1.15               | AN32                 |
|                     | M155×3                      | 90    | 15    | 101                 | 24030BK30 ; AH  | 24030 | 162                            | 213          | 2               | 1.04               | AN31                 |
|                     | M155×3                      | 90    | 15    | 101                 | 24030CK30 ; AH  | 24030 | 162                            | 213          | 2               | 1.04               | AN31                 |
|                     | M165×3                      | 96    | 15    | 101                 | 23130BK ; AHX   | 3130  | 162                            | 238          | 2               | 1.79               | AN33                 |
|                     | M160×3                      | 115   | 15    | 126                 | 24130BK30 ; AH  | 24130 | 162                            | 238          | 2               | 1.56               | AN32                 |
|                     | M165×3                      | 96    | 15    | 101                 | 22230BK ; AHX   | 3130  | 164                            | 256          | 2.5             | 1.79               | AN33                 |
|                     | M165×3                      | 114   | 17    | 119                 | 23230BK ; AHX   | 3230  | 164                            | 256          | 2.5             | 2.22               | AN33                 |
|                     | M165×3                      | 135   | 24    | 140                 | 22330BK ; AHX   | 2330  | 168                            | 302          | 3               | 2.82               | AN33                 |
| 150                 | M170×3                      | 77    | 16    | 82                  | 23032BK ; AH    | 3032  | 172                            | 228          | 2               | 2.06               | AN34                 |
|                     | M170×3                      | 95    | 15    | 106                 | 24032BK30 ; AH  | 24032 | 172                            | 228          | 2               | 2.33               | AN34                 |
|                     | M170×3                      | 95    | 15    | 106                 | 24032CK30 ; AH  | 24032 | 172                            | 228          | 2               | 2.33               | AN34                 |
|                     | M180×3                      | 103   | 16    | 108                 | 23132BK ; AH    | 3132  | 172                            | 258          | 2               | 3.21               | AN36                 |

1) Standard thread shapes and dimensions are as per JIS B0207 (metric thread).

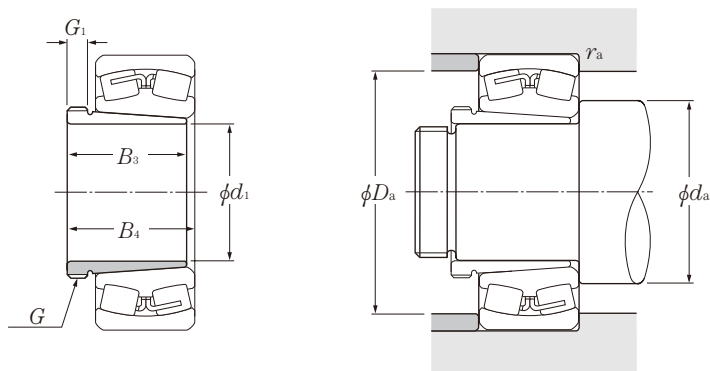
2) Indicates reference dimensions before attachment of withdrawal sleeve.

3) Indicates withdrawal sleeve mass.

4) Indicates number of nut to be used at time of disassembly. See pages C-2 to C-10 for nut dimensions.

Note: 1. Please refer to page B-226, B-229 for bearing dimensions, rated loads, and mass.

(For spherical roller bearings)



$d_1$  150 ~ 190mm

| Boundary dimensions |                             |       |       |                     | Bearing numbers |       | Abutment and fillet dimensions |              |                 | Mass <sup>3)</sup> | Appro- <sup>4)</sup> |
|---------------------|-----------------------------|-------|-------|---------------------|-----------------|-------|--------------------------------|--------------|-----------------|--------------------|----------------------|
| mm                  |                             |       |       |                     |                 |       | mm                             |              |                 | kg                 | prate                |
| $d_1$               | thread <sup>1)</sup><br>$G$ | $B_3$ | $G_1$ | $B_4$ <sup>2)</sup> |                 |       | $d_a$<br>min                   | $D_a$<br>max | $r_{as}$<br>max | (approx.)          | nut no.              |
| 150                 | M170×3                      | 124   | 15    | 135                 | 24132BK30 ;AH   | 24132 | 172                            | 258          | 2               | 3                  | AN34                 |
|                     | M180×3                      | 103   | 16    | 108                 | 22232BK ;AH     | 3132  | 174                            | 276          | 2.5             | 3.21               | AN36                 |
|                     | M180×3                      | 124   | 20    | 130                 | 23232BK ;AH     | 3232  | 174                            | 276          | 2.5             | 4.08               | AN36                 |
|                     | M180×3                      | 140   | 24    | 146                 | 22332BK ;AH     | 2332  | 178                            | 322          | 3               | 4.72               | AN36                 |
| 160                 | M180×3                      | 85    | 17    | 90                  | 23034BK ;AH     | 3034  | 182                            | 248          | 2               | 2.43               | AN36                 |
|                     | M180×3                      | 106   | 16    | 117                 | 24034BK30 ;AH   | 24034 | 182                            | 248          | 2               | 2.8                | AN36                 |
|                     | M180×3                      | 106   | 16    | 117                 | 24034CK30 ;AH   | 24034 | 182                            | 248          | 2               | 2.8                | AN36                 |
|                     | M190×3                      | 104   | 16    | 109                 | 23134BK ;AH     | 3134  | 182                            | 268          | 2               | 3.4                | AN38                 |
|                     | M180×3                      | 125   | 16    | 136                 | 24134BK30 ;AH   | 24134 | 182                            | 268          | 2               | 3.21               | AN36                 |
|                     | M190×3                      | 104   | 16    | 109                 | 22234BK ;AH     | 3134  | 188                            | 292          | 3               | 3.4                | AN38                 |
|                     | M190×3                      | 134   | 24    | 140                 | 23234BK ;AH     | 3234  | 188                            | 292          | 3               | 4.8                | AN38                 |
|                     | M190×3                      | 146   | 24    | 152                 | 22334BK ;AH     | 2334  | 188                            | 342          | 3               | 5.25               | AN38                 |
| 170                 | M190×3                      | 92    | 17    | 98                  | 23036BK ;AH     | 3036  | 192                            | 268          | 2               | 2.81               | AN38                 |
|                     | M190×3                      | 116   | 16    | 127                 | 24036BK30 ;AH   | 24036 | 192                            | 268          | 2               | 3.1                | AN38                 |
|                     | M190×3                      | 116   | 16    | 127                 | 24036CK30 ;AH   | 24036 | 192                            | 268          | 2               | 3.1                | AN38                 |
|                     | M200×3                      | 116   | 19    | 122                 | 23136BK ;AH     | 3136  | 194                            | 286          | 2.5             | 4.22               | AN40                 |
|                     | M190×3                      | 134   | 16    | 145                 | 24136BK30 ;AH   | 24136 | 194                            | 286          | 2.5             | 3.68               | AN38                 |
|                     | M200×3                      | 105   | 17    | 110                 | 22236BK ;AH     | 2236  | 198                            | 302          | 3               | 3.73               | AN40                 |
|                     | M200×3                      | 140   | 24    | 146                 | 23236BK ;AH     | 3236  | 198                            | 302          | 3               | 5.32               | AN40                 |
|                     | M200×3                      | 154   | 26    | 160                 | 22336BK ;AH     | 2336  | 198                            | 362          | 3               | 5.83               | AN40                 |
| 180                 | Tr205×4                     | 96    | 18    | 102                 | 23038BK ;AH     | 3038  | 202                            | 278          | 2               | 3.32               | HNL41                |
|                     | M200×3                      | 118   | 18    | 131                 | 24038BK30 ;AH   | 24038 | 202                            | 278          | 2               | 3.5                | AN40                 |
|                     | M200×3                      | 118   | 18    | 131                 | 24038CK30 ;AH   | 24038 | 202                            | 278          | 2               | 3.5                | AN40                 |
|                     | Tr210×4                     | 125   | 20    | 131                 | 23138BK ;AH     | 3138  | 204                            | 306          | 2.5             | 4.89               | HN42                 |
|                     | M200×3                      | 146   | 18    | 159                 | 24138BK30 ;AH   | 24138 | 204                            | 306          | 2.5             | 4.28               | AN40                 |
|                     | Tr210×4                     | 112   | 18    | 117                 | 22238BK ;AH     | 2238  | 208                            | 322          | 3               | 4.25               | HN42                 |
|                     | Tr210×4                     | 145   | 25    | 152                 | 23238BK ;AH     | 3238  | 208                            | 322          | 3               | 5.9                | HN42                 |
|                     | Tr210×4                     | 160   | 26    | 167                 | 22338BK ;AH     | 2338  | 212                            | 378          | 4               | 6.63               | HN42                 |
| 190                 | Tr215×4                     | 102   | 19    | 108                 | 23040BK ;AH     | 3040  | 212                            | 298          | 2               | 3.8                | HNL43                |
|                     | Tr210×4                     | 127   | 18    | 140                 | 24040BK30 ;AH   | 24040 | 212                            | 298          | 2               | 3.93               | HN42                 |
|                     | Tr220×4                     | 134   | 21    | 140                 | 23140BK ;AH     | 3140  | 214                            | 326          | 2.5             | 5.49               | HN44                 |
|                     | Tr210×4                     | 158   | 18    | 171                 | 24140BK30 ;AH   | 24140 | 214                            | 326          | 2.5             | 5.1                | HN42                 |

1) Standard thread shapes and dimensions are as per JIS B0207 (metric thread).

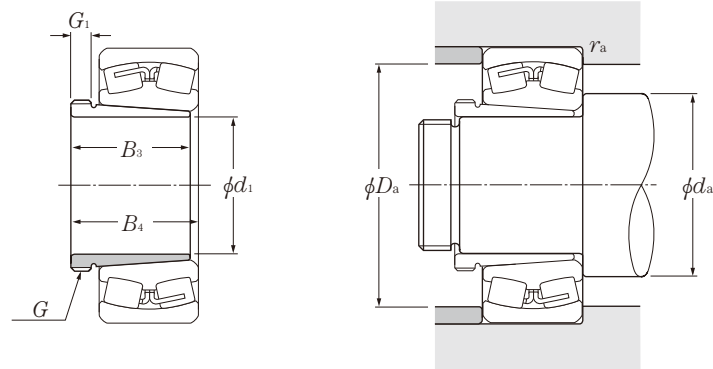
2) Indicates reference dimensions before attachment of withdrawal sleeve.

3) Indicates withdrawal sleeve mass.

4) Indicates number of nut to be used at time of disassembly. See pages C-2 to C-10 for nut dimensions.

Note: 1. Please refer to page B-228, B-231 for bearing dimensions, rated loads, and mass.

(For spherical roller bearings)



$d_1$  190 ~ 260mm

| Boundary dimensions |                      |       |       |                     | Bearing numbers |        | Abutment and fillet dimensions |              |                 | Mass <sup>3)</sup> | Appro- <sup>4)</sup> |
|---------------------|----------------------|-------|-------|---------------------|-----------------|--------|--------------------------------|--------------|-----------------|--------------------|----------------------|
| $d_1$               | thread <sup>1)</sup> | mm    |       |                     |                 |        | mm                             |              |                 | kg                 | appropriate          |
|                     | $G$                  | $B_3$ | $G_1$ | $B_4$ <sup>2)</sup> |                 |        | $d_a$<br>min                   | $D_a$<br>max | $r_{as}$<br>max | (approx.)          | nut no.              |
| 190                 | Tr220 × 4            | 118   | 19    | 123                 | 22240BK ;AH     | 2240   | 218                            | 342          | 3               | 4.68               | HN44                 |
|                     | Tr220 × 4            | 153   | 25    | 160                 | 23240BK ;AH     | 3240   | 218                            | 342          | 3               | 6.68               | HN44                 |
|                     | Tr220 × 4            | 170   | 30    | 177                 | 22340BK ;AH     | 2340   | 222                            | 398          | 4               | 7.54               | HN44                 |
| 200                 | Tr235 × 4            | 111   | 20    | 117                 | 23044BK ;AH     | 3044   | 234                            | 326          | 2.5             | 7.4                | HNL47                |
|                     | Tr230 × 4            | 138   | 20    | 152                 | 24044BK30 ;AH   | 24044H | 234                            | 326          | 2.5             | 8.25               | HN46                 |
|                     | Tr240 × 4            | 145   | 23    | 151                 | 23144BK ;AH     | 3144   | 238                            | 352          | 3               | 10.4               | HN48                 |
|                     | Tr230 × 4            | 170   | 20    | 184                 | 24144BK30 ;AH   | 24144H | 238                            | 352          | 3               | 10.2               | HN46                 |
|                     | Tr240 × 4            | 130   | 20    | 136                 | 22244BK ;AH     | 2244   | 238                            | 382          | 3               | 9.1                | HN48                 |
|                     | Tr240 × 4            | 181   | 30    | 189                 | 23244BK ;AH     | 2344   | 238                            | 382          | 3               | 13.5               | HN48                 |
|                     | Tr240 × 4            | 181   | 30    | 189                 | 22344BK ;AH     | 2344   | 242                            | 438          | 4               | 13.5               | HN48                 |
| 220                 | Tr260 × 4            | 116   | 21    | 123                 | 23048BK ;AH     | 3048   | 254                            | 346          | 2.5             | 8.75               | HNL52                |
|                     | Tr250 × 4            | 138   | 20    | 153                 | 24048BK30 ;AH   | 24048H | 254                            | 346          | 2.5             | 8.98               | HN50                 |
|                     | Tr260 × 4            | 154   | 25    | 161                 | 23148BK ;AH     | 3148   | 258                            | 382          | 3               | 12                 | HN52                 |
|                     | Tr260 × 4            | 180   | 20    | 195                 | 24148BK30 ;AH   | 24148H | 258                            | 382          | 3               | 12.5               | HN52                 |
|                     | Tr260 × 4            | 144   | 21    | 150                 | 22248BK ;AH     | 2248   | 258                            | 422          | 3               | 11.1               | HN52                 |
|                     | Tr260 × 4            | 189   | 30    | 197                 | 23248BK ;AH     | 2348   | 258                            | 422          | 3               | 15.5               | HN52                 |
|                     | Tr260 × 4            | 189   | 30    | 197                 | 22348BK ;AH     | 2348   | 262                            | 478          | 4               | 15.5               | HN52                 |
| 240                 | Tr280 × 4            | 128   | 23    | 135                 | 23052BK ;AH     | 3052   | 278                            | 382          | 3               | 10.7               | HNL56                |
|                     | Tr270 × 4            | 162   | 22    | 178                 | 24052BK30 ;AH   | 24052  | 278                            | 382          | 3               | 11.8               | HN54                 |
|                     | Tr290 × 4            | 172   | 26    | 179                 | 23152BK ;AH     | 3152   | 278                            | 422          | 3               | 16.2               | HN58                 |
|                     | Tr280 × 4            | 202   | 22    | 218                 | 24152BK30 ;AH   | 24152H | 278                            | 422          | 3               | 15.4               | HN56                 |
|                     | Tr290 × 4            | 155   | 23    | 161                 | 22252BK ;AH     | 2252   | 282                            | 458          | 4               | 14                 | HN58                 |
|                     | Tr290 × 4            | 205   | 30    | 213                 | 23252BK ;AH     | 2352   | 282                            | 458          | 4               | 19.6               | HN58                 |
|                     | Tr290 × 4            | 205   | 30    | 213                 | 22352BK ;AH     | 2352   | 288                            | 512          | 5               | 19.6               | HN58                 |
| 260                 | Tr300 × 4            | 131   | 24    | 139                 | 23056BK ;AH     | 3056   | 298                            | 402          | 3               | 12                 | HNL60                |
|                     | Tr290 × 4            | 162   | 22    | 179                 | 24056BK30 ;AH   | 24056H | 298                            | 402          | 3               | 12.8               | HN58                 |
|                     | Tr310 × 5            | 175   | 28    | 183                 | 23156BK ;AH     | 3156   | 302                            | 438          | 4               | 17.5               | HN62                 |
|                     | Tr300 × 4            | 202   | 22    | 219                 | 24156BK30 ;AH   | 24156H | 302                            | 438          | 4               | 16.3               | HN60                 |
|                     | Tr310 × 5            | 155   | 24    | 163                 | 22256BK ;AH     | 2256   | 302                            | 478          | 4               | 15.2               | HN62                 |
|                     | Tr310 × 5            | 212   | 30    | 220                 | 23256BK ;AH     | 2356   | 302                            | 478          | 4               | 21.6               | HN62                 |
|                     | Tr310 × 5            | 212   | 30    | 220                 | 22356BK ;AH     | 2356   | 308                            | 552          | 5               | 21.6               | HN62                 |

1) Standard thread shapes and dimensions are as per JIS B0207 (metric thread).

2) Indicates reference dimensions before attachment of withdrawal sleeve.

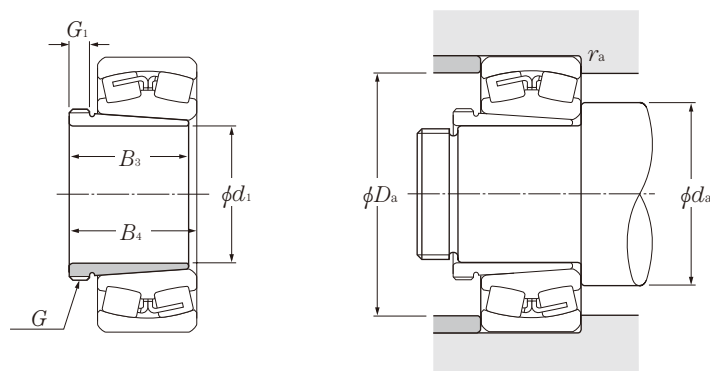
3) Indicates withdrawal sleeve mass.

4) Indicates number of nut to be used at time of disassembly. See pages C-2 to C-10 for nut dimensions.

Note: 1. Please refer to page B-230, B-233 for bearing dimensions, rated loads, and mass.

2. Withdrawal sleeve numbers appended with the suffix "H" signify high pressure oil (hydraulic) design. (See page B-213)

(For spherical roller bearings)



$d_1$  280 ~ 400mm

| Boundary dimensions |                             |       |       |                     | Bearing numbers |        | Abutment and fillet dimensions |              |                 | Mass <sup>3)</sup> | Appro- <sup>4)</sup> |
|---------------------|-----------------------------|-------|-------|---------------------|-----------------|--------|--------------------------------|--------------|-----------------|--------------------|----------------------|
| mm                  |                             |       |       |                     |                 |        | mm                             |              |                 | kg                 | prate                |
| $d_1$               | thread <sup>1)</sup><br>$G$ | $B_3$ | $G_1$ | $B_4$ <sup>2)</sup> |                 |        | $d_a$<br>min                   | $D_a$<br>max | $r_{as}$<br>max | (approx.)          | nut no.              |
| 280                 | Tr320 × 5                   | 145   | 26    | 153                 | 23060BK ;AH     | 3060   | 318                            | 442          | 3               | 14.4               | HNL64                |
|                     | Tr310 × 5                   | 184   | 24    | 202                 | 24060BK30 ;AH   | 24060H | 318                            | 442          | 3               | 15.5               | HN62                 |
|                     | Tr330 × 5                   | 192   | 30    | 200                 | 23160BK ;AH     | 3160   | 322                            | 478          | 4               | 20.8               | HN66                 |
|                     | Tr320 × 5                   | 224   | 24    | 242                 | 24160BK30 ;AH   | 24160H | 322                            | 478          | 4               | 19.5               | HN64                 |
|                     | Tr330 × 5                   | 170   | 26    | 178                 | 22260B ;AH      | 2260   | 322                            | 518          | 4               | 18.1               | HN66                 |
|                     | Tr330 × 5                   | 228   | 34    | 236                 | 23260BK ;AH     | 3260   | 322                            | 518          | 4               | 26                 | HN66                 |
| 300                 | Tr345 × 5                   | 149   | 27    | 157                 | 23064BK ;AH     | 3064   | 338                            | 462          | 3               | 16                 | HNL69                |
|                     | Tr330 × 5                   | 184   | 24    | 202                 | 24064BK30 ;AH   | 24064H | 338                            | 462          | 3               | 16.6               | HN66                 |
|                     | Tr350 × 5                   | 209   | 31    | 217                 | 23164BK ;AH     | 3164   | 342                            | 518          | 4               | 24.5               | HN70                 |
|                     | Tr340 × 5                   | 242   | 24    | 260                 | 24164BK30 ;AH   | 24164H | 342                            | 518          | 4               | 21.4               | HN68                 |
|                     | Tr350 × 5                   | 180   | 27    | 190                 | 22264BK ;AH     | 2264   | 342                            | 558          | 4               | 20.2               | HN70                 |
|                     | Tr350 × 5                   | 246   | 36    | 254                 | 23264BK ;AH     | 3264   | 342                            | 558          | 4               | 30.6               | HN70                 |
| 320                 | Tr365 × 5                   | 162   | 28    | 171                 | 23068BK ;AH     | 3068   | 362                            | 498          | 4               | 19.5               | HN73                 |
|                     | Tr360 × 5                   | 206   | 26    | 225                 | 24068BK30 ;AH   | 24068H | 362                            | 498          | 4               | 21.7               | HNL72                |
|                     | Tr370 × 5                   | 225   | 33    | 234                 | 23168BK ;AH     | 3168   | 362                            | 558          | 4               | 29                 | HN74                 |
|                     | Tr360 × 5                   | 269   | 26    | 288                 | 24168BK30 ;AH   | 24168H | 362                            | 558          | 4               | 27.1               | HN72                 |
| 340                 | Tr385 × 5                   | 167   | 30    | 176                 | 23072BK ;AH     | 3072   | 382                            | 518          | 4               | 21                 | HNL77                |
|                     | Tr380 × 5                   | 206   | 26    | 226                 | 24072BK30 ;AH   | 24072H | 382                            | 518          | 4               | 22.7               | HNL76                |
|                     | Tr400 × 5                   | 229   | 35    | 238                 | 23172BK ;AH     | 3172   | 382                            | 578          | 4               | 33                 | HN80                 |
|                     | Tr380 × 5                   | 269   | 26    | 289                 | 24172BK30 ;AH   | 24172H | 382                            | 578          | 4               | 29.6               | HN76                 |
| 360                 | Tr410 × 5                   | 170   | 31    | 180                 | 23076BK ;AH     | 3076   | 402                            | 538          | 4               | 23.2               | HNL82                |
|                     | Tr400 × 5                   | 208   | 28    | 228                 | 24076BK30 ;AH   | 24076H | 402                            | 538          | 4               | 23.7               | HNL80                |
|                     | Tr420 × 5                   | 232   | 36    | 242                 | 23176BK ;AH     | 3176   | 402                            | 598          | 4               | 35.7               | HN84                 |
|                     | Tr400 × 5                   | 271   | 28    | 291                 | 24176BK30 ;AH   | 24176H | 402                            | 598          | 4               | 31.3               | HN80                 |
| 380                 | Tr430 × 5                   | 183   | 33    | 193                 | 23080BK ;AH     | 3080   | 422                            | 578          | 4               | 27.3               | HNL86                |
|                     | Tr420 × 5                   | 228   | 28    | 248                 | 24080BK30 ;AH   | 24080H | 422                            | 578          | 4               | 27.1               | HNL84                |
|                     | Tr440 × 5                   | 240   | 38    | 250                 | 23180BK ;AH     | 3180   | 428                            | 622          | 5               | 39.5               | HN88                 |
|                     | Tr420 × 5                   | 278   | 28    | 298                 | 24180BK30 ;AH   | 24180H | 428                            | 622          | 5               | 34.4               | HN84                 |
| 400                 | Tr450 × 5                   | 186   | 34    | 196                 | 23084BK ;AH     | 3084   | 442                            | 598          | 4               | 29                 | HNL90                |
|                     | Tr440 × 5                   | 230   | 30    | 252                 | 24084BK30 ;AH   | 24084H | 442                            | 598          | 4               | 29                 | HNL88                |

1) Standard thread shapes and dimensions are as per JIS B0207 (metric thread).

2) Indicates reference dimensions before attachment of withdrawal sleeve.

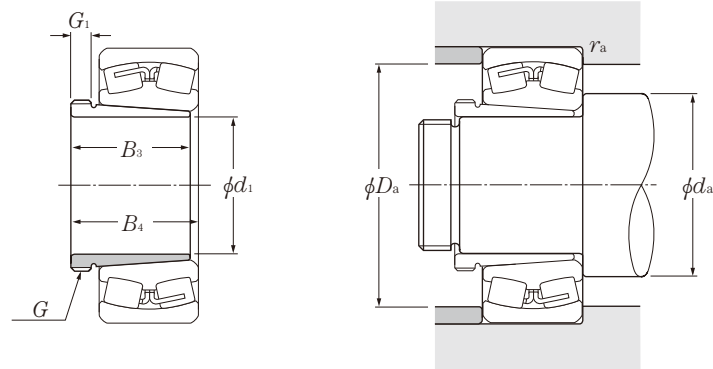
3) Indicates withdrawal sleeve mass.

4) Indicates number of nut to be used at time of disassembly. See pages C-2 to C-10 for nut dimensions.

Note: 1. Please refer to page B-232, B-235 for bearing dimensions, rated loads, and mass.

2. Withdrawal sleeve numbers appended with the suffix "H" signify high pressure oil (hydraulic) design. (See page B-221)

(For spherical roller bearings)



$d_1$  400 ~ 480mm

| Boundary dimensions |                             |       |       |                     | Bearing numbers |              | Abutment and fillet dimensions |              |                 | Mass <sup>3)</sup> | Appro- <sup>4)</sup> |
|---------------------|-----------------------------|-------|-------|---------------------|-----------------|--------------|--------------------------------|--------------|-----------------|--------------------|----------------------|
| mm                  |                             |       |       |                     |                 |              | mm                             |              |                 | kg                 | priate               |
| $d_1$               | thread <sup>1)</sup><br>$G$ | $B_3$ | $G_1$ | $B_4$ <sup>2)</sup> |                 |              | $d_a$<br>min                   | $D_a$<br>max | $r_{as}$<br>max | (approx.)          | nut no.              |
| 400                 | Tr460 × 5                   | 266   | 40    | 276                 | 23184BK         | ;AH 3184     | 448                            | 672          | 5               | 46.5               | HN92                 |
|                     | Tr440 × 5                   | 310   | 30    | 332                 | 24184BK30       | ;AH 24184H   | 448                            | 672          | 5               | 40.3               | HN88                 |
| 420                 | Tr470 × 5                   | 194   | 35    | 205                 | 23088BK         | ;AHX 3088    | 468                            | 622          | 5               | 32                 | HNL94                |
|                     | Tr460 × 5                   | 242   | 30    | 264                 | 24088BK30       | ;AH 24088H   | 468                            | 622          | 5               | 31.9               | HNL92                |
|                     | Tr480 × 5                   | 270   | 42    | 281                 | 23188BK         | ;AHX 3188    | 468                            | 692          | 5               | 49.8               | HN96                 |
| 440                 | Tr460 × 5                   | 310   | 30    | 332                 | 24188BK30       | ;AH 24188H   | 468                            | 692          | 5               | 42.3               | HN92                 |
|                     | Tr490 × 5                   | 202   | 37    | 213                 | 23092BK         | ;AHX 3092    | 488                            | 652          | 5               | 35.2               | HNL98                |
|                     | Tr480 × 5                   | 250   | 32    | 273                 | 24092BK30       | ;AH 24092H   | 488                            | 652          | 5               | 34.7               | HNL96                |
|                     | Tr510 × 6                   | 285   | 43    | 296                 | 23192BK         | ;AHX 3192    | 496                            | 724          | 6               | 57.9               | HN102                |
|                     | Tr480 × 5                   | 332   | 32    | 355                 | 24192BK30       | ;AH 24192H   | 496                            | 724          | 6               | 47.6               | HN96                 |
| 460                 | Tr520 × 6                   | 205   | 38    | 217                 | 23096BK         | ;AHX 3096    | 508                            | 672          | 5               | 39.2               | HNL104               |
|                     | Tr500 × 5                   | 250   | 32    | 273                 | 24096BK30       | ;AH 24096H   | 508                            | 672          | 5               | 36.6               | HNL100               |
|                     | Tr530 × 6                   | 295   | 45    | 307                 | 23196BK         | ;AHX 3196    | 516                            | 754          | 6               | 63.1               | HN106                |
|                     | Tr500 × 5                   | 340   | 32    | 363                 | 24196BK30       | ;AH 24196H   | 516                            | 754          | 6               | 52.6               | HN100                |
| 480                 | Tr540 × 6                   | 209   | 40    | 221                 | 230/500BK       | ;AHX 30/500  | 528                            | 692          | 5               | 42.5               | HNL108               |
|                     | Tr530 × 6                   | 253   | 35    | 276                 | 240/500BK30     | ;AH 240/500H | 528                            | 692          | 5               | 43.9               | HNL106               |
|                     | Tr550 × 6                   | 313   | 47    | 325                 | 231/500BK       | ;AHX 31/500  | 536                            | 794          | 6               | 70.9               | HN110                |
|                     | Tr530 × 6                   | 360   | 35    | 383                 | 241/500BK30     | ;AH 241/500H | 536                            | 794          | 6               | 59                 | HN106                |

1) Standard thread shapes and dimensions are as per JIS B0207 (metric thread).

2) Indicates reference dimensions before attachment of withdrawal sleeve.

3) Indicates withdrawal sleeve mass.

4) Indicates number of nut to be used at time of disassembly. See pages C-2 to C-10 for nut dimensions.

Note: 1. Please refer to page B-234, B-237 for bearing dimensions, rated loads, and mass.

2. Withdrawal sleeve numbers appended with the suffix "H" signify high pressure oil (hydraulic) design. (See page B-213)