

INTERNATIONAL
STANDARD

ISO
3228

Third edition
1993-09-01

**Rolling bearings — Cast and pressed
 housings for insert bearings**

Roulements — Logements coulés et emboutis pour roulements "insert"

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Reference number
ISO 3228:1993(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 3228 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*, Sub-Committee SC 6, *Insert bearings and accessories*.

This third edition cancels and replaces the second edition (ISO 3228:1977), which has been technically revised.

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Rolling bearings — Cast and pressed housings for insert bearings

1 Scope

This International Standard specifies boundary dimensions and tolerances for cast and pressed housings for insert bearings for which boundary dimensions are given in ISO 9628.

It applies to plummer block housings, flanged housings and take-up housings.

The inclusion of relubrication features is optional, but when provided they should intersect the zone specified in ISO 9628 in such a way that lubricant will satisfactorily feed from the housing through this zone. The exact design of the relubrication features is not otherwise covered by this International Standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5593:1984, *Rolling bearings — Vocabulary*.

ISO 9628:1992, *Rolling bearings — Insert bearings and eccentric locking collars*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 5593 apply.

4 Symbols

NOTE 1 The symbols (except those for tolerances) shown in the figures and given in the tables denote nominal dimensions unless otherwise specified.

4.1 Cast plummer block housings (see figure 1)

| | |
|-------|-------------------------------------------------------------------------|
| A | width of base |
| D_a | spherical seating diameter of housing |
| H | distance from mounting base to centreline of spherical seating diameter |
| H_1 | height of feet |
| J | centre distance between bolt holes |
| L | length of base |
| N | width of bolt hole |
| N_1 | length of bolt hole |

4.2 Cast flanged housings, square (see figure 2)

| | |
|-------|-------------------------------------------------------------------------|
| A | width (overall) |
| A_1 | width of flange |
| A_2 | distance from mounting face to centreline of spherical seating diameter |
| D_a | spherical seating diameter of housing |
| J | centre distance between bolt holes |
| L | length |
| N | diameter of bolt hole |

4.3 Cast flanged housings, oval (see figure 3)

| | |
|-------|-------------------------------------------------------------------------|
| A | width (overall) |
| A_1 | width of flange |
| A_2 | distance from mounting face to centreline of spherical seating diameter |
| D_a | spherical seating diameter of housing |
| H | height of flange |
| J | centre distance between bolt holes |
| L | length (overall) |
| N | diameter of bolt hole |

4.4 Pressed plummer block housings (see figure 4)

| | |
|-------|-------------------------------------------------------------------------|
| A | width of base |
| D_a | spherical seating diameter of housing |
| H | distance from mounting base to centreline of spherical seating diameter |
| H_1 | height of feet |
| J | centre distance between bolt holes |
| L | length of base |
| N | diameter of bolt hole |

4.5 Pressed flanged housings, round, triangular and oval (see figure 5)

| | |
|-------|-------------------------------------------------------------------------|
| A | width (overall) |
| A_1 | width of flange |
| D_a | spherical seating diameter of housing |
| H | height (round, triangular, oval) |
| H_1 | distance from straight edge to centreline of spherical seating diameter |

| | |
|-------|-------------------------------------------------------------------------------------------------------|
| H_2 | limit diameter of flat surface |
| J | pitch circle diameter of bolt holes (round and triangular); centre distance between bolt holes (oval) |
| L | length of flange (oval) |
| N | side of bolt hole (square) |

4.6 Cast take-up housings (see figure 6)

| | |
|-------|-------------------------------------------------------------------------------|
| A | width (attachment end) |
| A_1 | width of location slot |
| A_2 | width over location-slot flanges |
| D_a | spherical seating diameter of housing |
| H | height (overall) |
| H_1 | distance between bottoms of location slots |
| H_2 | height (attachment end) |
| L | length (overall) |
| L_1 | distance from attachment end face to centreline of spherical seating diameter |
| L_2 | length (attachment end) |
| L_3 | length of location slot |
| N | diameter of attachment hole |
| N_1 | length of attachment slot |
| N_2 | height of attachment slot |

5 Boundary dimensions and tolerances

NOTE 2 Where the subscript "max" is shown in tables 1 to 6, this indicates that the value is both the nominal and the largest actual value permitted. Where the subscript "min" is shown in tables 1 to 6, this indicates that the value is both the nominal and the smallest actual value permitted.

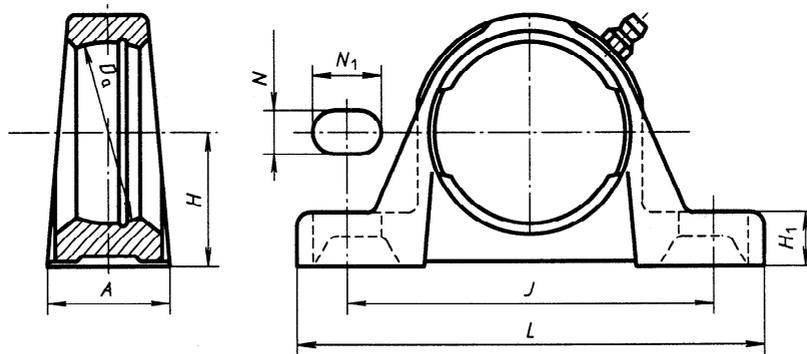


Figure 1 — Cast plummer block housings

Table 1 — Cast plummer block housings

Dimensions in millimetres

| D_a | L_{max} | A_{max} | J | H $\pm IT12$ | $H_{1 max}$ | N_{min} | N_{max} | $N_{1 min}$ |
|-------|-----------|-----------|-----|-------------------|-------------|-----------|-----------|-------------|
| 40 | 129 | 39 | 96 | 30,2 | 17 | 10,5 | 12,43 | 16 |
| 47 | 134 | 39 | 96 | 33,3 | 17 | 10,5 | 12,43 | 16 |
| 52 | 142 | 39 | 105 | 36,5 | 17 | 10,5 | 12,43 | 16 |
| 62 | 167 | 48 | 121 | 42,9 | 20 | 13 | 14,93 | 19 |
| 72 | 172 | 48 | 126 | 47,6 | 20 | 13 | 14,93 | 19 |
| 80 | 186 | 55 | 136 | 49,2 | 20 | 13 | 14,93 | 19 |
| 85 | 192 | 55 | 146 | 54 | 22 | 13 | 14,93 | 19 |
| 90 | 208 | 61 | 159 | 57,2 | 23 | 17 | 19,02 | 20,5 |
| 100 | 233 | 61 | 172 | 63,5 | 25 | 17 | 19,02 | 20,5 |
| 110 | 243 | 71 | 186 | 69,9 | 27 | 17 | 19,02 | 22 |
| 120 | 268 | 73 | 203 | 76,2 | 34 | 21 | 24,52 | 24 |
| 125 | 274 | 74 | 210 | 79,4 | 34 | 21 | 24,52 | 24 |
| 130 | 300 | 83 | 217 | 82,6 | 35 | 21 | 24,52 | 24 |
| 140 | 305 | 84 | 232 | 88,9 | 38 | 21 | 24,52 | 24 |
| 150 | 330 | 95 | 247 | 95,2 | 41 | 21 | 24,52 | 24 |
| 160 | 356 | 100 | 262 | 101,6 | 44 | 25 | 28,52 | 34 |
| 180 | 390 | 111 | 308 | 115 | 46 | 25 | 28,52 | 34 |

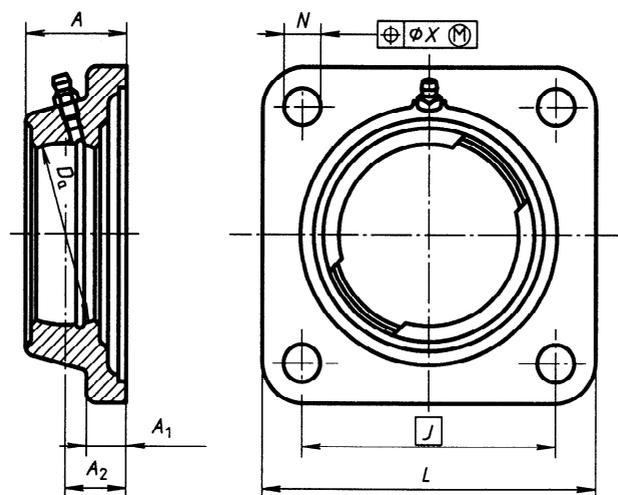
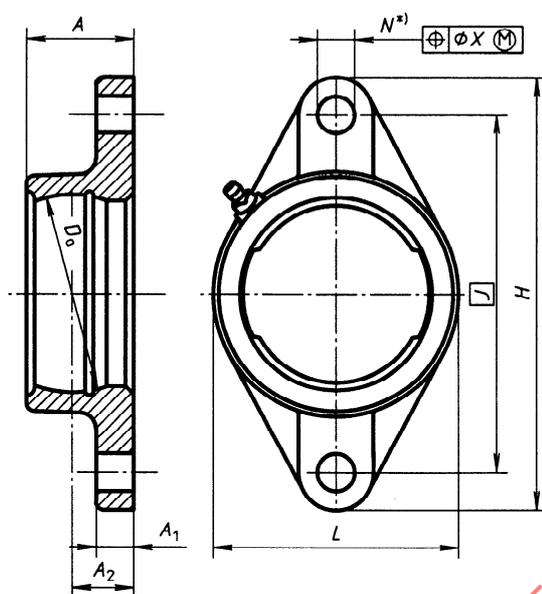


Figure 2 — Cast flanged housings (square)

Table 2 — Cast flanged housings (square)

Dimensions in millimetres

| D_a | L_{max} | A_{max} | J | $A_{1\ max}$ | A_2 $\pm IT14$ | N_{min} | N_{max} | X |
|-------|-----------|-----------|-------|--------------|---------------------|-----------|-----------|-----|
| 40 | 78 | 32 | 54 | 13 | 17 | 10,5 | 12,43 | 0,6 |
| 47 | 88 | 34 | 63,5 | 15 | 19 | 10,5 | 12,43 | 0,6 |
| 52 | 97 | 35 | 70 | 15 | 19 | 11,5 | 12,43 | 0,6 |
| 62 | 110 | 38 | 82,5 | 16 | 20 | 11,5 | 12,43 | 0,6 |
| 72 | 119 | 38 | 92 | 17 | 21 | 13 | 14,93 | 0,8 |
| 80 | 132 | 43 | 101,5 | 17 | 24 | 13 | 14,93 | 0,8 |
| 85 | 139 | 45 | 105 | 18 | 24 | 13 | 16,93 | 0,8 |
| 90 | 145 | 48 | 111 | 20 | 28 | 17 | 19,02 | 0,8 |
| 100 | 164 | 51 | 130 | 21 | 31 | 17 | 19,02 | 0,8 |
| 110 | 177 | 60 | 143 | 21 | 34 | 17 | 19,02 | 0,8 |
| 120 | 189 | 52 | 149,5 | 24 | 34 | 17 | 19,02 | 0,8 |
| 125 | 195 | 57 | 152 | 24 | 35 | 17 | 19,93 | 0,8 |
| 130 | 202 | 58 | 159 | 24 | 35 | 17 | 24,52 | 0,8 |
| 140 | 213 | 65 | 165 | 24 | 35 | 21 | 24,52 | 0,8 |
| 150 | 222 | 75 | 175 | 26 | 36 | 21 | 24,52 | 0,8 |
| 160 | 240 | 75 | 187 | 27 | 42 | 21 | 24,52 | 0,8 |
| 180 | 270 | 80 | 210 | 29 | 44 | 25 | 28,52 | 0,8 |



*) The holes may alternatively be square with sides equal to N .

Figure 3 — Cast flanged housings (oval)

Table 3 — Cast flanged housings (oval)

Dimensions in millimetres

| D_a | H_{\max} | L_{\max} | A_{\max} | J | $A_{1 \max}$ | A_2 $\pm IT14$ | N_{\min} | N_{\max} | X |
|-------|------------|------------|------------|-------|--------------|---------------------|------------|------------|-----|
| 40 | 99 | 61 | 32 | 76,5 | 13 | 17 | 10,5 | 12,43 | 0,6 |
| 47 | 113 | 62 | 34 | 90 | 15 | 19 | 10,5 | 12,43 | 0,6 |
| 52 | 125 | 70 | 35 | 99 | 15 | 19 | 11,5 | 12,43 | 0,6 |
| 62 | 142 | 83 | 38 | 116,5 | 16 | 20 | 11,5 | 12,43 | 0,6 |
| 72 | 156 | 96 | 38 | 130 | 17 | 21 | 13 | 14,93 | 0,8 |
| 80 | 172 | 105 | 43 | 143,5 | 17 | 24 | 13 | 14,93 | 0,8 |
| 85 | 180 | 112 | 45 | 148,5 | 18 | 24 | 13 | 16,93 | 0,8 |
| 90 | 190 | 117 | 48 | 157 | 20 | 28 | 17 | 19,02 | 0,8 |
| 100 | 222 | 134 | 51 | 184 | 21 | 31 | 17 | 19,02 | 0,8 |
| 110 | 238 | 142 | 60 | 202 | 21 | 34 | 17 | 19,02 | 0,8 |

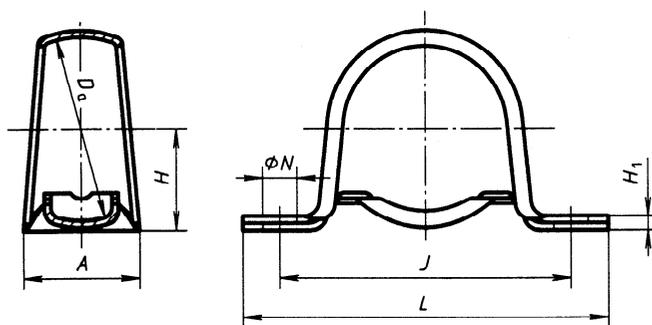
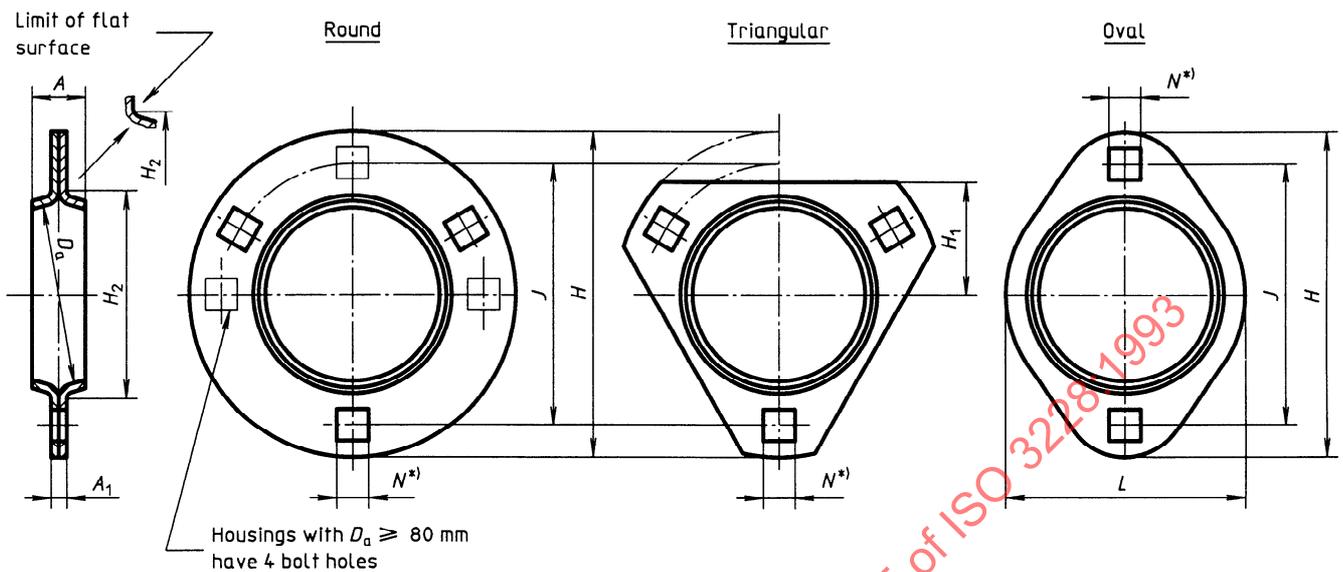


Figure 4 — Pressed plummer block housings

Table 4 — Pressed plummer block housings

Dimensions in millimetres

| D_a | L_{max} | A_{max} | J $\pm 0,4$ | $H_{1\ max}$ | H | N $\pm 0,5$ |
|-------|-----------|-----------|------------------|--------------|------|------------------|
| 40 | 87 | 26 | 68 | 4 | 22,2 | 9,5 |
| 47 | 99 | 33 | 76 | 4 | 25,4 | 9,5 |
| 52 | 109 | 33 | 86 | 4,5 | 28,6 | 11,5 |
| 62 | 119 | 39 | 95 | 4,5 | 33,3 | 11,5 |
| 72 | 130 | 43 | 106 | 5 | 39,7 | 11,5 |
| 80 | 148 | 43 | 120 | 5 | 43,7 | 13 |
| 85 | 156 | 45 | 128 | 6 | 46,8 | 13 |



*) The holes may alternatively be round with diameter equal to N .

Figure 5 — Pressed flanged housings (round, triangular and oval)

Table 5 — Pressed flanged housings (round, triangular and oval)

Dimensions in millimetres

| D_a | H_{max} | L_{max} | A_{max} | J $\pm 0,4$ | $A_{1 max}$ | $H_{1 max}$ | $H_{2 max}$ | N $\pm 0,25$ |
|-------|-----------|-----------|-----------|------------------|-------------|-------------|-------------|-------------------|
| 40 | 82 | 60 | 15 | 63,5 | 4,5 | 29 | 49 | 7,1 |
| 47 | 91 | 68 | 17 | 71,5 | 4,5 | 34 | 56 | 9 |
| 52 | 96 | 72 | 19 | 76 | 4,5 | 36 | 61 | 9 |
| 62 | 114 | 85 | 20 | 90,5 | 5,5 | 41 | 72 | 11 |
| 72 | 127 | 95 | 23 | 100 | 5,5 | 45 | 81 | 11 |
| 80 | 149 | — | 23 | 119 | 7 | — | 91 | 13,5 |
| 85 | 150 | — | 23 | 120,5 | 7 | — | 98 | 13,5 |
| 90 | 157 | — | 25 | 127 | 8 | — | 102 | 13,5 |
| 100 | 168 | — | 26 | 138 | 8 | — | 113 | 13,5 |
| 110 | 177 | — | 28 | 148 | 8 | — | 122 | 13,5 |