



709 ACE/HCP4A Bearing 2D drawings and 3D CAD models

9 mm x 24 mm x 7 mm SKF 709 ACE/HCP4A angular contact ball bearings

Bearing No. 709 ACE/HCP4A

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| Size | 24x9x7 mm |
| Bore Diameter | 9 mm |
| Outer Diameter | 24 mm |
| Width | 7 mm |
| d | 9 mm |
| D | 24 mm |
| B | 7 mm |
| d ₁ | 13.6 mm |
| d ₂ | 13 mm |
| D ₁ | 19.4 mm |
| r _{1,2} - min. | 0.3 mm |
| r _{3,4} - min. | 0.15 mm |
| a | 7.4 mm |
| d _a - min. | 11 mm |
| d _b - min. | 11 mm |
| D _a - max. | 22 mm |
| D _b - max. | 22.6 mm |
| r _a - max. | 0.3 mm |
| r _b - max. | 0.15 mm |
| d _n | 14.8 mm |
| Basic dynamic load rating - C | 2.5 kN |
| Basic static load rating - C ₀ | 0.9 kN |
| Fatigue load limit - P _u | 0.038 kN |
| Limiting speed for grease | 106000 r/min |



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| Lubrication | |
| Limiting speed for oil lubrication | 165000 mm/min |
| Ball - D_w | 3.969 mm |
| Ball - z | 9 |
| G_{ref} | 0.19 cm ³ |
| Calculation factor - e | 0.68 |
| Calculation factor - Y_2 | 0.87 |
| Calculation factor - Y_0 | 0.38 |
| Calculation factor - X_2 | 0.41 |
| Calculation factor - Y_1 | 0.92 |
| Calculation factor - Y_2 | 1.41 |
| Calculation factor - Y_0 | 0.76 |
| Calculation factor - X_2 | 0.67 |
| Preload class A - G_A | 23 N |
| Preload class B - G_B | 65 N |
| Preload class C - G_C | 130 N |
| Calculation factor - f | 1.02 |
| Calculation factor - f_1 | 0.99 |
| Calculation factor - f_{2A} | 1 |
| Calculation factor - f_{2B} | 1.03 |
| Calculation factor - f_{2C} | 1.06 |
| Calculation factor - f_{HC} | 1.01 |
| Preload class A | 29 N/micron |
| Preload class B | 42 N/micron |
| Preload class C | 55 N/micron |
| d_1 | 13.6 mm |
| d_2 | 13 mm |
| D_1 | 19.4 mm |
| $r_{1,2}$ min. | 0.3 mm |



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| $r_{3,4}$ min. | 0.15 mm |
| d_a min. | 11 mm |
| d_b min. | 11 mm |
| D_a max. | 22 mm |
| D_b max. | 22.6 mm |
| r_a max. | 0.3 mm |
| r_b max. | 0.15 mm |
| d_n | 14.8 mm |
| Basic dynamic load rating C | 2.51 kN |
| Basic static load rating C_0 | 0.9 kN |
| Fatigue load limit P_u | 0.038 kN |
| Attainable speed for grease lubrication | 106000 r/min |
| Attainable speed for oil-air lubrication | 165000 r/min |
| Ball diameter D_w | 3.969 mm |
| Number of balls z | 9 |
| Reference grease quantity G_{ref} | 0.19 cm ³ |
| Preload class A G_A | 23 N |
| Static axial stiffness, preload class A | 29 N/ μ m |
| Preload class B G_B | 65 N |
| Static axial stiffness, preload class B | 42 N/ μ m |
| Preload class C G_C | 130 N |
| Static axial stiffness, preload class C | 55 N/ μ m |
| Calculation factor f | 1.02 |
| Calculation factor f_1 | 0.99 |
| Calculation factor f_{2A} | 1 |
| Calculation factor f_{2B} | 1.03 |
| Calculation factor f_{2C} | 1.06 |
| Calculation factor f_{HC} | 1.01 |



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| Calculation factor e | 0.68 |
| Calculation factor (single, tandem) Y_2 | 0.87 |
| Calculation factor (single, tandem) Y_0 | 0.38 |
| Calculation factor (single, tandem) X_2 | 0.41 |
| Calculation factor (back-to-back, face-to-face) Y_1 | 0.92 |
| Calculation factor (back-to-back, face-to-face) Y_2 | 1.41 |
| Calculation factor (back-to-back, face-to-face) Y_0 | 0.76 |
| Calculation factor (back-to-back, face-to-face) X_2 | 0.67 |
| Mass bearing | 0.013 kg |