## Supporti per viti a ricircolo di sfere Supports of ball screws



Tabella - Diametri foro del cuscinetto

| Dimensions Dimensions | Tipologia supporto Support type |  | Cuscinetto Bearings | Carico assiale dinamico (kN) Axial dynamic load (kN) | Carico radiale dinamico (kN) Axial dynamic load (kN) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\varnothing 6$ | ad incastro fixed | $\begin{array}{ll} \hline \text { FK } 6 \\ \hline \text { EK } & 6 \\ \hline \end{array}$ | 706 DFA |  |  |
|  | ad appoggio supported | $\begin{array}{ll}  & \\ \hline \text { EF } & 6 \\ \hline \text { EF } & 8 \end{array}$ | 606 ZZ | / | 2,31 |
| $\varnothing 8$ | ad incastro fixed | $\begin{array}{ll} \hline \text { FK } & 8 \\ \hline \text { EK } & 8 \\ \hline \end{array}$ | 708 DFA |  |  |
|  | ad appoggio supported | $\begin{array}{lll} \hline \text { FF } & 10 \\ \text { BF } & 10 \\ \hline \end{array}$ | 608 ZZ | / | 3,35 |
| $\varnothing 10$ | ad incastro fixed | FK 10 BK 10 | 7000 DFA | 6,7 | 2,78 |
|  | ad appoggio supported | $\begin{array}{ll} \hline \text { FF } & 12 \\ \hline \text { BF } 12 \\ \hline \end{array}$ | 6000 ZZ | / | 4,65 |
| $\varnothing 12$ | ad incastro fixed | $\begin{aligned} & \hline \text { FK } 12 \\ & \hline \text { BK } 12 \\ & \hline \end{aligned}$ | 7001 DFA | 7,25 | 3,1 |
|  | ad appoggio supported | / | / | / |  |
| $\varnothing 15$ | ad incastro fixed | $\begin{aligned} & \hline \text { FK } 15 \\ & \hline \text { BK } 15 \\ & \hline \end{aligned}$ | 7002 DFA | 7,75 | 4,07 |
|  | $\begin{aligned} & \text { ad appoggio } \\ & \text { supported } \\ & \hline \end{aligned}$ | $\begin{array}{ll} \hline \text { FF } & 15 \\ \hline \text { BF } & 15 \\ \hline \end{array}$ | 6002 ZZ | 1 | 5,7 |
| $\varnothing 17$ | ad incastro fixed | BK 17 | 7203 DFA | 14 | 5,95 |
|  | ad appoggio supported | BF 17 | 6203 ZZ | 1 | 9,75 |
| $\varnothing 20$ | ad incastro fixed | $\begin{aligned} & \hline \text { FK } 20 \\ & \hline \text { BK } 20 \end{aligned}$ | 7204 DFA | 18,3 | 9,7 |
|  | ad appoggio | FF 20 | 6204 ZZ | 1 | 13 |
|  | supported | BF 20 | 6004 ZZ | 1 | 9,55 |
| $\varnothing 25$ | ad incastro fixed | $\begin{aligned} & \hline \text { FK } 25 \\ & \hline \text { BK } 25 \\ & \hline \end{aligned}$ | 7205 DFA | 20,6 | 11,7 |
|  | ad appoggio supported | $\begin{aligned} & \text { FF } 25 \\ & \text { BF } 25 \\ & \hline \end{aligned}$ | 6205 ZZ | / | 14,3 |
| $\varnothing 30$ | ad incastro fixed | $\begin{aligned} & \text { FK } 30 \\ & \hline \text { BK } 30 \\ & \hline \end{aligned}$ | 7206 DFA | 28,6 | 16,6 |
|  | ad appoggio supported | $\begin{aligned} & \text { FF } 30 \\ & \text { BF } 30 \\ & \hline \end{aligned}$ | 6206 ZZ | / | 19,8 |
| $\varnothing 35$ | ad incastro fixed | BK 35 | 7207 DFA |  |  |
|  | ad appoggio supported | BF 35 | 6207 ZZ | / | 25,5 |
| $\varnothing 40$ | $\begin{aligned} & \text { ad incastro } \\ & \text { fixed } \\ & \hline \end{aligned}$ | BK 40 | 7208 DFA | 45 | 27,7 |
|  | ad appoggio supported | BF 40 | 6208 ZZ | / | 29,7 |

NOTA: I supporti a incastro EK montano gli stessi cuscinetti dei supporti FK della medesima dimensione. I supporti ad appoggio EF montano gli stessi cuscinetti dei supporti ad appoggio FF della medesima dimensione.

NOTE: In the fixed supports EK there are the same bearings of the same size of fixed supports FK.
In the floated supports EF there are the same bearings of the same size of floated supports FF.

## 1. Codoli raccomandati

Per supporti di tipologia ad incastro FK, BK e EK.

## 1. Recommended shaft and shape

For fixed-side support unit types FK, BK and EK.


Tabella - Codoli raccomandati.
Table - Recomended shaft and shape.

| Tipologia Type | $\begin{gathered} d_{0} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} d_{\text {vite }} \\ {[\mathrm{mm}]} \end{gathered}$ | $\begin{gathered} B \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{L}_{1} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathbf{L}_{2} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathbf{M} \\ {[\mathrm{mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{L}_{3} \\ {[\mathrm{~mm}]} \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FK 5 | 5 | 6 | 4 | 6 | 20 | M 5x0.75 | 7 |
| FK 6 | 6 | 8 | 4 | 8 | 30 | M 6x0.75 | 8 |
| FK 8 | 8 | 10/12 | 6 | 10 | 35 | M 8x1 | 10 |
| FK 10 | 10 | 12/14 | 8 | 15 | 36 | M 10x1 | 11 |
| FK 12 | 12 | 14/16 | 10 | 15 | 36 | M 12x1 | 11 |
| FK 15 | 15 | 20 | 12 | 20 | 49 | M 15x1 | 13 |
| FK 20 | 20 | 25/32 | 17 | 25 | 64 | M 20xl | 17 |
| FK 25 | 25 | 32 | 20 | 30 | 76 | M 25x1. 5 | 20 |
| FK 30 | 30 | 40 | 25 | 38 | 72 | M 30x1. 5 | 25 |
| BK 10 | 10 | 10/12/14 | 8 | 15 | 39 | M 10x1 | 16 |
| BK 12 | 12 | 16 | 10 | 15 | 39 | M 12x1 | 14 |
| BK 15 | 15 | 20 | 12 | 20 | 40 | M $15 \times 1$ | 12 |
| BK 17 | 17 | 20/25 | 15 | 24 | 53 | M 17x1 | 17 |
| BK 20 | 20 | 25/32 | 17 | 25 | 53 | M 20x1 | 15 |
| BK 25 | 25 | 32 | 20 | 30 | 65 | M 25x1. 5 | 18 |
| BK 30 | 30 | 40 | 25 | 38 | 72 | M 30x1.5 | 25 |
| BK 35 | 35 | 40 | 30 | 50 | 83 | M 35x1.5 | 28 |
| BK 40 | 40 | 50 | 35 | 60 | 98 | M 40x1.5 | 35 |
| EK 5 | 5 | 6 | 4 | 6 | 20 | M 5x0.75 | 7 |
| EK 6 | 6 | 8 | 4 | 8 | 30 | M 6x0.75 | 8 |
| EK 8 | 8 | 10/12 | 6 | 10 | 35 | M 8xı | 10 |
| EK 10 | 10 | 12/14 | 8 | 15 | 36 | M 10x1 | 11 |
| EK 12 | 12 | 14/16 | 10 | 15 | 36 | M 12x1 | 11 |
| EK 15 | 15 | 20 | 12 | 20 | 49 | M 15x1 | 13 |
| EK 20 | 20 | 25/32 | 17 | 25 | 64 | M 20x1 | 17 |

Per supporti di tipologia ad appoggio FF, BF e EF.
For floated-side support unit types FF, BF and EF.


Tabella - Codoli raccomandati.
Table - Recommended shaft and shape.

| Tipologia Type | $\begin{gathered} \mathrm{d}_{0} \\ {[\mathrm{~mm}]} \end{gathered}$ | $d_{\text {vite }}$ [mm] | $\begin{gathered} B \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{C} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{L}_{1} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{L}_{2} \\ {[\mathrm{~mm}]} \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FF 10 | 8 | 10/12 | 7.6 | 0.9 | 11 | 7.9 |
| FF 12 | 10 | 16 | 9.6 | 1.15 | 12 | 9.15 |
| FF 15 | 15 | 20 | 14.3 | 1.15 | 13 | 10.15 |
| FF 20 | 20 | 25/32 | 19 | 1.35 | 19 | 15.35 |
| FF 25 | 25 | 32 | 23.9 | 1.35 | 20 | 16.35 |
| FF 30 | 30 | 40 | 28.6 | 1.75 | 21 | 17.75 |
| BF 10 | 8 | 10/12 | 7.6 | 0.9 | 11 | 7.9 |
| BF 12 | 10 | 16 | 9.6 | 1.15 | 12 | 9.15 |
| BF 15 | 15 | 20 | 14.3 | 1.15 | 13 | 10.15 |
| BF 17 | 17 | 20/25 | 16.2 | 1.15 | 16 | 13.15 |
| BF 20 | 20 | 25/32 | 19 | 1.35 | 16 | 13.35 |
| BF 25 | 25 | 32 | 23.9 | 1.35 | 20 | 16.35 |
| BF 30 | 30 | 40 | 28.6 | 1.75 | 20 | 17.75 |
| BF 35 | 35 | 40 | 33 | 1.75 | 25 | 19.75 |
| BF 40 | 40 | 50 | 38 | 1.75 | 25 | 19.75 |
| EF 6 | 6 | 8 | 5.6 | 0.8 | 9 | 7.0 |
| EF 8 | 6 | 8 | 5.6 | 0.9 | 10 | 7.0 |
| EF 10 | 8 | 10/12 | 7.6 | 0.9 | 11 | 7.9 |
| EF 12 | 10 | 16 | 9.6 | 1.15 | 12 | 9.15 |
| EF 15 | 15 | 20 | 14.3 | 1.15 | 13 | 10.15 |
| EF 20 | 20 | 25/32 | 19 | 1.35 | 19 | 15.35 |

Supporti di tipologia ad incastro BK, FK e EK

BK

## Ghiera inclusa <br> Lock nut included



Fixed-side support unit types BK, FK and EK


| Tipologia Type | $\begin{gathered} \mathrm{d}_{0} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{L}_{1} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{L}_{2} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\left\|\begin{array}{c} \mathrm{L}_{3} \\ {[\mathrm{~mm}]} \end{array}\right\|$ | $\begin{aligned} & \mathrm{H}^{ \pm 0.02} \\ & {[\mathrm{~mm}]} \end{aligned}$ | $\begin{gathered} \mathrm{H}_{1} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\underset{[\mathrm{mm}]}{\mathrm{H}_{2}}$ | $\left\lvert\, \begin{gathered} \mathrm{A} \\ {[\mathrm{~mm}]} \end{gathered}\right.$ | $\begin{gathered} B \\ {[\mathrm{~mm}]} \end{gathered}$ | $\begin{gathered} \mathrm{C}_{1} \\ {[\mathrm{~mm}]} \end{gathered}$ | $\left\lvert\, \begin{gathered} \mathrm{C}_{2} \\ {[\mathrm{~mm}]} \end{gathered}\right.$ | $\left\lvert\, \begin{gathered} \mathrm{E} \\ {[\mathrm{~mm}]} \end{gathered}\right.$ | $\binom{\mathrm{e}^{ \pm 0.02}}{[\mathrm{~mm}]}$ | $\underset{[\mathrm{mm}]}{\mathrm{F}}$ | $\underset{[\mathrm{mm}]}{\mathbf{G}}$ | $\underset{[\mathrm{mm}]}{\mathrm{s}}$ | $\left\|\begin{array}{c} \mathrm{S}_{1} \\ {[\mathrm{~mm}]} \end{array}\right\|$ | $\left[\begin{array}{c} \mathbf{S}_{2} \\ {[\mathrm{~mm}]} \end{array}\right.$ | $\underset{[\mathrm{mm}]}{\mathrm{S}_{3}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BK 10 | 10 | 29 | 5 | 25 | 22 | 32.5 | 39 | 34 | 5 | 13 | 6 | 60 | 30 | 46 | 15 | 5.5 | 11 | 6.6 | 5 |
| BK 12 | 12 | 29 | 5 | 25 | 25 | 32.5 | 43 | 35 | 5 | 13 | 6 | 60 | 30 | 46 | 18 | 5.5 | 11 | 6.6 | 6.5 |
| BK 15 | 15 | 32 | 6 | 27 | 28 | 38 | 48 | 40 | 6 | 15 | 6 | 70 | 35 | 54 | 18 | 5.5 | 11 | 6.6 | 6.5 |
| BK 17 | 17 | 44 | 7 | 35 | 39 | 55 | 64 | 50 | 9 | 19 | 8 | 86 | 43 | 68 | 28 | 6.6 | 14 | 9 | 8.5 |
| BK 20 | 20 | 43 | 8 | 35 | 34 | 50 | 60 | 52 | 8 | 19 | 8 | 88 | 44 | 70 | 22 | 6.6 | 14 | 9 | 8.5 |
| BK 25 | 25 | 54 | 9 | 42 | 48 | 70 | 80 | 64 | 12 | 22 | 10 | 106 | 53 | 85 | 33 | 9 | 17.5 | 11 | 11 |
| BK 30 | 30 | 61 | 9 | 45 | 51 | 78 | 89 | 76 | 14 | 23 | 11 | 128 | 64 | 102 | 33 | 11 | 20 | 14 | 13 |
| BK 35 | 35 | 67 | 12 | 50 | 52 | 79 | 96 | 88 | 14 | 26 | 12 | 140 | 70 | 114 | 35 | 11 | 20 | 14 | 13 |
| BK 40 | 40 | 76 | 15 | 61 | 60 | 90 | 110 | 100 | 18 | 33 | 14 | 160 | 80 | 130 | 37 | 14 | 26 | 18 | 17.5 |



| Tipologia <br> Type | $\mathbf{d}_{\mathbf{0}}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{3}}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}^{ \pm 0.02}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}_{2}$ <br> $[\mathbf{m m}]$ | $\mathbf{A}$ <br> $[\mathbf{m m}]$ | $\mathbf{E}$ <br> $[\mathbf{m m}]$ | $\mathbf{e}^{ \pm 0.02}$ <br> $[\mathbf{m m}]$ | $\mathbf{F}$ <br> $[\mathbf{m m}]$ | $\mathbf{G}$ <br> $[\mathbf{m m}]$ | $\mathbf{s}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{2}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{3}$ <br> $[\mathbf{m m}]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BF 10 | 8 | 20 | 22 | 32.5 | 39 | 34 | 60 | 30 | 46 | 15 | 5.5 | 10.8 | 6.6 | 5 |
| BF 12 | 10 | 20 | 25 | 32.5 | 43 | 35 | 60 | 30 | 46 | 18 | 5.5 | 10.8 | 6.6 | 6.5 |
| BF 15 | 15 | 20 | 28 | 38 | 48 | 40 | 70 | 35 | 54 | 18 | 5.5 | 11 | 6.6 | 6.5 |
| BF 17 | 17 | 23 | 39 | 55 | 64 | 50 | 86 | 43 | 68 | 28 | 6.6 | 14 | 9 | 8.5 |
| BF 20 | 20 | 26 | 34 | 50 | 60 | 52 | 88 | 44 | 70 | 22 | 6.6 | 14 | 9 | 8.5 |
| BF 25 | 25 | 30 | 48 | 70 | 80 | 64 | 106 | 53 | 85 | 33 | 9 | 17.5 | 11 | 11 |
| BF 30 | 30 | 32 | 51 | 78 | 89 | 76 | 128 | 64 | 102 | 33 | 11 | 20 | 14 | 13 |
| BF 35 | 35 | 32 | 52 | 79 | 96 | 88 | 140 | 70 | 114 | 35 | 11 | 20 | 14 | 13 |
| BF 40 | 40 | 37 | 60 | 90 | 110 | 100 | 160 | 80 | 130 | 37 | 14 | 26 | 18 | 17.5 |

Supporti di tipologia ad incastro FK, BK e EK

FK
Fixed-side support unit types $F K, B K$ and $E K$


| Tipologia <br> Type | $\mathbf{d}_{\mathbf{0}}$ <br> $[\mathbf{m m}]$ | $\mathbf{D}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{D}_{\mathbf{2}}$ <br> $[\mathbf{m m}]$ | $\mathbf{D}_{\mathbf{3}}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{2}}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{3}}$ <br> $[\mathbf{[ m m}]$ | $\mathbf{L}_{\mathbf{4}}$ <br> $[\mathbf{m m}]$ | $\mathbf{A}$ <br> $[\mathbf{m m}]$ | $\mathbf{B}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{\mathbf{2}}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{\mathbf{3}}$ <br> $[\mathbf{[ m m}]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FK 5 | 5 | 34 | 26 | 20 | 18.5 | 3.5 | 6 | 10.5 | 26 | 5.5 | 6.5 | 3.4 | 4 |
| FK 6 | 6 | 36 | 28 | 22 | 22 | 3.5 | 7 | 13 | 28 | 5.5 | 6.5 | 3.4 | 4 |
| FK 8 | 8 | 43 | 35 | 28 | 26 | 4 | 9 | 14 | 35 | 7 | 6.5 | 3.4 | 4 |
| FK 10 | 10 | 52 | 42 | 34 | 29.5 | 5 | 10 | 17 | 42 | 7.5 | 8 | 4.5 | 4 |
| FK 12 | 12 | 54 | 44 | 36 | 29.5 | 5 | 10 | 17 | 44 | 7.5 | 8 | 4.5 | 4 |
| FK 15 | 15 | 63 | 50 | 40 | 36 | 6 | 15 | 17 | 52 | 10 | 9.5 | 5.5 | 6 |
| FK 20 | 20 | 85 | 70 | 57 | 50 | 10 | 22 | 30 | 68 | 8 | 11 | 6.6 | 10 |
| FK 25 | 25 | 98 | 80 | 63 | 60 | 10 | 27 | 30 | 79 | 13 | 14 | 9 | 13 |
| FK 30 | 30 | 117 | 95 | 75 | 61 | 12 | 30 | 32 | 93 | 11 | 17.5 | 11 | 15 |

Supporti di tipologia ad appoggio FF, BF e EF

FF


| Tipologia <br> Type | $\mathbf{d}_{\mathbf{0}}$ <br> $[\mathbf{m m}]$ | $\mathbf{D}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{D}_{\mathbf{2}}$ <br> $[\mathbf{m m}]$ | $\mathbf{D}_{3}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{3}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{4}}$ <br> $[\mathbf{m m} \mathbf{]}$ | $\mathbf{A}$ <br> $[\mathbf{m m} \mathbf{]}$ | $\mathbf{S}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{\mathbf{2}}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{3}$ <br> $[\mathbf{m m}]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FF 10 | 8 | 43 | 35 | 28 | 7 | 5 | 35 | 6.5 | 3.4 | 4 |
| FF 12 | 10 | 52 | 42 | 34 | 7 | 8 | 42 | 8 | 4.5 | 4 |
| FF 15 | 15 | 63 | 50 | 40 | 9 | 8 | 52 | 9.5 | 5.5 | 5.5 |
| FF 20 | 20 | 85 | 70 | 57 | 11 | 9 | 68 | 11 | 6.6 | 6.5 |
| FF 25 | 25 | 98 | 80 | 63 | 14 | 10 | 79 | 14 | 9 | 8.5 |
| FF 30 | 30 | 117 | 95 | 75 | 18 | 9 | 93 | 17.5 | 11 | 11 |

Supporti di tipologia ad incastro EK, BK e FK

EK


## Ghiera inclusa

 Lock nut included

EK 5


EK 6-8


EK 10-20

| Tipologia <br> Type | $\mathbf{d}_{\mathbf{0}}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{2}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{3}}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}^{ \pm 0.02}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}_{2}$ <br> $[\mathbf{m m}]$ | $\mathbf{A}$ <br> $[\mathbf{m m}]$ | $\mathbf{B}$ <br> $[\mathbf{m m}]$ | $\mathbf{E}$ <br> $[\mathbf{m m}]$ | $\mathbf{e}^{ \pm 0.02}$ <br> $[\mathbf{m m}]$ | $\mathbf{F}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{2}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{3}$ <br> $[\mathbf{m m}]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| EK 5 | 5 | 18.5 | 3.5 | 16.5 | 11 | 8 | 21 | 20 | 5.5 | 36 | 18 | 28 | - | 4.5 | - |
| EK 6 | 6 | 22 | 3.5 | 20 | 13 | 20 | 25 | 18 | 5.5 | 42 | 21 | 30 | 9.5 | 5.5 | 11 |
| EK 8 | 8 | 26 | 4 | 23 | 17 | 26 | 32 | 25 | 7 | 52 | 26 | 38 | 11 | 6.6 | 12 |
| EK 10 | 10 | 29.5 | 6 | 24 | 25 | 24 | 43 | 36 | 6 | 70 | 35 | 52 | - | 9 | - |
| EK 12 | 12 | 29.5 | 6 | 24 | 25 | 24 | 43 | 36 | 6 | 70 | 35 | 52 | - | 9 | - |
| EK 15 | 15 | 36 | 5 | 25 | 30 | 25 | 49 | 41 | 6 | 80 | 40 | 60 | - | 11 | - |
| EK 20 | 20 | 50 | 10 | 42 | 30 | 25 | 58 | 56 | 10 | 95 | 47,5 | 75 | - | 11 | - |

## EF



EF 10-20

| Tipologia <br> Type | $\mathbf{d}_{\mathbf{0}}$ <br> $[\mathbf{m m}]$ | $\mathbf{L}_{\mathbf{3}}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}^{ \pm 0.02}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}_{\mathbf{1}}$ <br> $[\mathbf{m m}]$ | $\mathbf{H}_{\mathbf{2}}$ <br> $[\mathbf{m m}]$ | $\mathbf{A}$ <br> $[\mathbf{m m}]$ | $\mathbf{E}$ <br> $[\mathbf{m m}]$ | $\mathbf{e}^{ \pm 0.02}$ <br> $[\mathbf{m m}]$ | $\mathbf{F}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{1}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{\mathbf{2}}$ <br> $[\mathbf{m m}]$ | $\mathbf{S}_{3}$ <br> $[\mathbf{m m}]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| EF 6 | 6 | 12 | 13 | 20 | 25 | 18 | 42 | 21 | 30 | 9.5 | 5.5 | 11 |
| EF 8 | 6 | 14 | 17 | 26 | 32 | 25 | 52 | 26 | 38 | 11 | 6.6 | 12 |
| EF 10 | 8 | 20 | 25 | 24 | 43 | 36 | 70 | 35 | 52 | - | 9 | - |
| EF 12 | 10 | 20 | 25 | 24 | 43 | 36 | 70 | 35 | 52 | - | 9 | - |
| EF 15 | 15 | 20 | 30 | 25 | 49 | 41 | 80 | 40 | 60 | - | 9 | - |
| EF 20 | 20 | 26 | 30 | 25 | 58 | 56 | 95 | 47,5 | 75 | - | 11 | - |

## SUPPORTI PER VITI A RICIRCOLO DI SFERE

SUPPORTS OF BALL SCREWS
Supporti con cuscinetti di precisione assiali a contatto obliquo - Supports with precision axial angular contact bearings


### 3.1 Caratteristiche tecniche

- Materiale Supporto: Acciaio C40 rettificato.
- Cuscinetti: NBS assiali a contatto obliquo della serie dimensionale ISO 02 (codice equivalente: FAG 76020) angolo di contatto $60^{\circ}$.
- Classe di
precisione: Tolleranze ridotte nella classe di precisione ISO P4 corrispondente alla classe ISO P4S.
- Precarico: I cuscinetti sono prodotti in esecuzione universale. I valori di precarico sono indicati nella seguente tabella e corrispondono a valori di precarico elevati. Possono essere forniti coppie e quaterne con valori di precarico a richiesta.


### 3.1 Technical characteristics

- Material
bearing unit: C40 rectified steel.
- Bearings: Angular contact thrust ball bearings NBS of dimensional series ISO 02 (equivalent code: FAG 76020). Contact angle $60^{\circ}$.
- Precision class:

Reduced tolerances in ISO P4 precision class, corresponding to ISO P4S.

- Pre-load: Bearings are produced in universal execution. Preload values are indicated in the following table and correspond to high preload values. Couples and quaternary groups of pre-load values can be provided by specific request.
- Forza di
serraggio: In presenza di una forza di serraggio eccessiva, gli anelli dei cuscinetti subiscono una deformazione elastica che provoca un aumento della forza di precarico ed una diminuzione della durata. Il valore della forza di serraggio può essere calcolata, con l'ausilio della tabella sotto riportata.
- Tolleranze: Le tolleranze di lavorazione e le dimensioni di montaggio sono indicate nelle tabelle a seguire:
- Clamping force:

In case of very strong clamping force, bearings rings are affected by an elastic deformation that causes an increase of the pre-load force together with a shortening of the duration. The value of the clamping force can be calculated by means of the table below.

- Tolerances: The following table reports the working tolerances and the mounting dimensions:



## TOLLERANZE DI LAVORAZIONE DEGLI ALBERI E DELLE PARTI ADIACENTI WORKING TOLERANCES OF SHAFT AND ADJACENT PARTS

| VALEURS INDICATIVES POUR L'USINAGE DES ARBRES |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| VALUES FOR PROCESSING SHAFTS |  |  |  |  |  |  |  |
| Dimensione nominale dell'albero (d) <br> Shaft's nominal dimension (d) | Dimensioni in (mm) / Dimensions in (mm) |  |  |  |  |  |  |
|  | Oltre / Over |  | 10 |  | 18 | 30 | 50 |
|  | fino a / up to | 10 | 18 |  | 30 | 50 | 80 |

Cuscinetti assiali a sfere a contatto obliquo a semplice effetto / Simple effect angular contact axial ball bearings

|  |  | 0 | 0 | 0 | 0 |  |  |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Scostamento (d) <br> (d) deviation |  | -9 | -11 | -13 | -15 |  |  |
| Precisione di forma cilindrica <br> Cylindrical form precision | t 1 | 2,5 | 2,5 | 3 | 4 |  |  |
| Precisione assiale di rotazione <br> Axial rotation precision | t 3 | 2,5 | 2,5 | 3 | 4 |  |  |
| Valore medio di rugosità <br> Roughness mean value | Ra | 0,4 | 0,4 | 0,4 | 0,4 |  |  |



DIMENSIONI DI MONTAGGIO PER CUSCINETTI ASSIALI A SFERE A CONTATTO OBLIQUO MOUNTING DIMENSIONS FOR ANGULAR CONTACT AXIAL BALL BEARINGS

| Albero <br> Shaft | Cuscinetto tipo NBS 2047 14 AC (equivalente Fag 76020) <br> 204714 AC NBS type bearing (Fag 76020 equivalent) |  |  |
| :---: | :---: | :---: | :---: |
| Foro <br> Bore | D1 | D2 | rg |
| $\mathbf{m m}$ | $\min$ | $\min$ | $\max$ |
| 12 | 17 | 27 | 0,6 |
| 15 | 20,5 | 30 | 0,6 |
| 17 | 23 | 34,5 | 0,6 |
| 20 | 27,5 | 39,5 | 0,6 |
| 25 | 32 | 45 | 1 |
| 30 | 39,5 | 52,5 | 1 |
| 35 | 46,5 | 60,5 | 1 |
| 40 | 53,5 | 69,5 | 1 |
| 45 | 57 | 73 | 1 |
| 50 | 63 | 79 | 1 |

- Tenute: I segmenti lamellari fey a 3 anelli espansori singoli, tipo FK3 AS, costruiti in acciaio per molle C75, creano una classica tenuta a labirinto.
- Lubrificazione: Grassi al sapone di litio, con additivi EP come ad esempio il grasso ARCANOL L 135 V , consistenza $2,{ }^{\circ} \mathrm{C}-40+150$. I supporti sono già forniti lubrificati, con la quantità indicata nella tabella seguente.
- Seals: Spathic segments fey with three expander rings, FK3 AS type, made of steel for stainless steel C75 springs, create a typical labyrinth seal.
- Lubrication: Lithium soap greases with EP additives like ARCANOL L $135 V$ grease, consistency $2,{ }^{\circ} \mathrm{C}-40+150$. Bearing units are supplied when already lubrified in the quantity indicated in the next table.

| Quantitativiv di grasso per cuscinetti assiali a sfere a contatto obliquo, ad una corona. <br> Quantitites of grease for angular contact axial ball bearings, single row. |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Sigla Fag / Type Fag | 7602020 TVP | 7602025TVP | 7602030 TVP | 7602035 TVP |
| grasso g. / grease g. | 1,42 | 1,95 | 2,65 | 3,7 |
| Sigla Fag / Type Fag | 7602040 TVP | 7602045 TVP | 7602050 TVP |  |
| grasso g. /grease g. | 4,45 | 5,35 | 6,5 |  |

- Accessori: Ghiere di precisione rettificate con fissaggio a grani, serie ZM.
- Tools: Precision ground lock-nuts with dowel fixing, ZM series.

| ESECUZIONI UNITÁ CARTUCCIA FLANGIATA <br> UNITY EXECUTIONS - FLANGED CARTRIDGE |  |
| :---: | :---: |
| TIPO / TYPE | DESCRIZIONE / SPECIFICATION |
| NBS FD | FLANGIATA CON 2 CUSCINETTI A 'O' <br> FLANGED WITH 2 'O' BEARINGS |
| NBS FQ | FLANGIATA CON 4 CUSCINETTI A 'O' <br> FLANGED WITH 4 'O' BEARINGS |
| NBS FDX | FLANGIATA CON 2 CUSCINETTI A 'X' <br> FLANGED WITH 2 'X' BEARINGS |
| NBS FQX | FLANGIATA CON 4 CUSCINETTI A 'X' <br> FLANGED WITH 4 'X' BEARINGS |


| TABELLA DI CORRISPONDENZA |  |  |  |
| :---: | :---: | :---: | :---: |
| EQUIVALENT TABLE |  |  |  |
| TIPO NBS | SNFA | FAFNIR | RHP |
| NBS TYPE | NBS FD | BSDU DD | BSBU D |
| NBS FQ | BSQU TDT | BSBU Q | BSCU Q |
| NBS FDX | BSDU FF | - | - |
| NBS FQX | BSQU TFT | - | - |


| CODICE DI IDENTIFICAZIONE / SPECIFICATION CODE |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NBS | F | D |  | X | 030 | precarico da $\mathrm{N} /$ pre-load from N |  |
| MARCA BRAND | ESECUZONE FLANGATA FIANGED EXECUITON | D=2 CUSCINETTI Q=4 CUSCINETI। $D=2$ BEARINGS $Q=4$ BEARINGS | Aucun code exécution en ' $O^{\prime}$ X pour exécution en ' X ' | No code of execution ' $\mathrm{O}^{\prime}$ $x$ for execution in ' $X$ ' | FORO CUSCINETTO BEARING BORE | Nessun numero: esecuzione precarico. universale | Without number: execution pre-load. universal |
|  |  |  |  |  | $020=20 \mathrm{MM}$ |  |  |
|  |  |  |  |  | $025=25 \mathrm{MM}$ |  |  |
|  |  |  |  |  | $030=30 \mathrm{MM}$ | Con numero: | With number: |
|  |  |  |  |  | $035=35 \mathrm{MM}$ | precarico | pre-load |
|  |  |  |  |  | $040=40 \mathrm{MM}$ | Speciale X | Special $X$ |
|  |  |  |  |  | $045=45 \mathrm{MM}$ | $360=360$ da N | 360=360 from N |
|  |  |  |  |  | $050=50 \mathrm{MM}$ |  |  |

## NBS AC $60^{\circ}$



204714 AC
Angolo di contatto $\alpha \approx 60^{\circ} /$ Contact Angle $\alpha \approx 60^{\circ}$


| Cuscinetti NBS Bearings | Equivalente <br> FAG FAG equivalent | Dimensioni Dimensions |  |  |  |  | Capacità di carico Load ability din. Stat. |  | Carico assiale Axial load max | Velocità rotazione raggiungibile Achievable rotation speed |  | Forza di pre-carico Pre-load force | Momento d'altrito Friction point | Peso Weight |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tipo | Tipo | d | D | B | rsmin | a | C | Co | din. | Grasso/Grease - Olio /Oil |  | Fv | Mr | Kg |
| Type | Type | mm. |  |  |  |  | KN |  |  | Velocità / Speed |  | kN | Nmm |  |
| 174012AC | 7602017TVP | 17 | 40 | 12 | 0,6 | 31 | 16,6 | 20 | 8,5 | 6000 | 8000 | 1,7 | 30 | 0,075 |
| 204714AC | 7602020TVP | 20 | 47 | 14 | 1 | 6 | 19,3 | 25 | 10,6 | 5000 | 6700 | 2,3 | 50 | 0,130 |
| 255215AC | 7602025TVP | 25 | 52 | 15 | 1 | 41 | 22 | 30,5 | 13,2 | 4500 | 6000 | 2,5 | 65 | 0,160 |
| 306216AC | 7602030TVP | 30 | 62 | 16 | 1 | 48 | 26 | 39 | 17 | 3800 | 5000 | 2,9 | 85 | 0,240 |
| 357217AC | 7602035TVP | 35 | 72 | 17 | 1,1 | 55 | 30 | 50 | 21,2 | 3200 | 4300 | 3,3 | 115 | 0,345 |
| 408018AC | 7602040TVP | 40 | 80 | 18 | 1,1 | 62,5 | 37,5 | 64 | 28 | 2800 | 3800 | 4,3 | 170 | 0,445 |
| 458519AC | 7602045TVP | 45 | 85 | 19 | 1,1 | 66 | 38 | 68 | 28 | 2800 | 3600 | 4,5 | 190 | 0,505 |
| 509020AC | 7602050TVP | 50 | 90 | 20 | 1,1 | 71,5 | 39 | 75 | 31,5 | 2400 | 3400 | 4,9 | 230 | 0,575 |

# SUPPORTI PER VITI A RICIRCOLO DI SFERE 

SUPPORTS OF BALL SCREWS
Supporti con cuscinetti di precisione assiali a contatto obliquo - Supports with precision axial angular contact bearings

## NBS FD



| ALBERO $\varnothing$ mm. SHAFT Ø mm. | TIPO <br> TYPE | SUPPORTI NBS TIPO FD PER CUSCINETTI - DIMENSIONI SENZA TOLLERANZA: $\pm 0.13 \mathrm{~mm}$. NBS UNITS TYPE FD, FOR BEARINGS - DIMENSIONS WITHOUT TOLERANCE: $\pm 0.13 \mathrm{~mm}$. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | A | B | C | D | E | F | G | H | I | K | M | N | P | Q | Rc |
| 17 | $\begin{gathered} \text { NBS FD } \\ 017(17-40-12) \end{gathered}$ | $\begin{gathered} 17 \\ 16.996 \end{gathered}$ | 25 | $\begin{gathered} 60 \\ 59.987 \end{gathered}$ | 90 | 32 | 13 | $\begin{aligned} & 44.260 \\ & 43.240 \end{aligned}$ | 47 | 64 | 6.6 | 76 | 2 | 32 | 4.3 | 0.5 |
| 20 | $\begin{gathered} \text { NBS FD } \\ 020(20-47-14) \end{gathered}$ | $\begin{gathered} 20 \\ 19.669 \end{gathered}$ | 28 | $\begin{gathered} 60 \\ 59.987 \end{gathered}$ | 90 | 32 | 13 | $\begin{aligned} & 44.260 \\ & 43.240 \end{aligned}$ | 47 | 64 | 6.6 | 76 | 2 | 32 | 4.3 | 0.5 |
| 25 | $\begin{gathered} \text { NBS FD } \\ 025(25-52-15) \end{gathered}$ | $\begin{gathered} 25 \\ 24.996 \end{gathered}$ | 35 | $\begin{gathered} 80 \\ 79.987 \end{gathered}$ | 120 | 32 | 15 | $\begin{aligned} & 50.260 \\ & 49.240 \end{aligned}$ | 52 | 88 | 9.2 | 102 | 5 | 44 | 4.3 | 0.5 |
| 30 | $\begin{gathered} \text { NBS FD } \\ 030(30-62-16) \end{gathered}$ | $\begin{gathered} 30 \\ 29.996 \end{gathered}$ | 41 | $\begin{gathered} 80 \\ 79.987 \end{gathered}$ | 120 | 32 | 15 | $\begin{aligned} & 50.260 \\ & 49.240 \end{aligned}$ | 52 | 88 | 9.2 | 102 | 5 | 44 | 4.3 | 0.5 |
| 35 | $\begin{gathered} \text { NBS FD } \\ 035(35-72-17) \end{gathered}$ | $\begin{gathered} 35 \\ 34.995 \end{gathered}$ | 46 | $\begin{gathered} 90 \\ 89.987 \end{gathered}$ | 130 | 32 | 15 | $\begin{aligned} & 50.260 \\ & 49.240 \end{aligned}$ | 52 | 98 | 9.2 | 113 | 5 | 49 | 4.3 | 0.5 |
| 40 | $\begin{gathered} \text { NBS FD } \\ 040(40-80-18) \end{gathered}$ | $\begin{gathered} 40 \\ 39.995 \end{gathered}$ | 55 | $\begin{gathered} 124 \\ 123.982 \end{gathered}$ | 165 | 43,5 | 17 | $\begin{aligned} & 64.260 \\ & 63.240 \end{aligned}$ | 66 | 128 | 11.4 | 146 | 5.5 | 32 | 5.3 | 0.5 |
| 45 | $\begin{gathered} \text { NBS FD } \\ 045(45-85-19) \end{gathered}$ | $\begin{gathered} 45 \\ 44.995 \end{gathered}$ | 66 | $\begin{gathered} 124 \\ 123.982 \end{gathered}$ | 165 | 43,5 | 17 | $\begin{aligned} & 64.260 \\ & 63.240 \end{aligned}$ | 66 | 128 | 11.4 | 146 | 5.5 | 44 | 5.3 | 0.5 |
| 50 | $\begin{gathered} \text { NBS FD } \\ 050(50-90-20) \end{gathered}$ | $\begin{gathered} 50 \\ 49.995 \end{gathered}$ | 66 | $\begin{gathered} 124 \\ 123.982 \end{gathered}$ | 165 | 43,5 | 17 | $\begin{aligned} & 64.260 \\ & 63.240 \end{aligned}$ | 66 | 128 | 11.4 | 146 | 5.5 | 44 | 5.3 | 0.5 |

## SUPPORTI PER VITI A RICIRCOLO DI SFERE

 SUPPORTS OF BALL SCREWSSupporti con cuscinetti di precisione assiali a contatto obliquo - Supports with precision axial angular contact bearings

## NBS FQ



| ALBERO $\varnothing$ mm. | TYPE | SUPPORTI NBS TIPO FQ PER CUSCINETTI - DIMENSIONI SENZA TOLLERANZA: $\pm 0.13 \mathrm{~mm}$. NBS UNITS TYPE FQ, FOR BEARINGS - DIMENSIONS WITHOUT TOLERANCE: $\pm 0.13 \mathrm{~mm}$. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\bigcirc \mathrm{mm}$. |  | A | B | C | D | E | F | G | H | I | K | M | N | P | Q | Rc |
| 17 | $\begin{gathered} \text { NBS FQ } \\ 017(17-40-12) \end{gathered}$ | $\begin{gathered} 17 \\ 16.996 \end{gathered}$ | 25 | $\begin{gathered} 60 \\ 59.987 \end{gathered}$ | 90 | 32 | 13 | $\begin{aligned} & 74.260 \\ & 72.740 \end{aligned}$ | 77 | 64 | 6.6 | 76 | 32 | 32 | 4.3 | 0.5 |
| 20 | $\begin{gathered} \text { NBS FQ } \\ 020(20-47-14) \end{gathered}$ | $\begin{gathered} 20 \\ 19.669 \end{gathered}$ | 28 | $\begin{gathered} 60 \\ 59.987 \end{gathered}$ | 90 | 32 | 13 | $\begin{aligned} & 74.260 \\ & 72.740 \end{aligned}$ | 77 | 64 | 6.6 | 76 | 32 | 32 | 4.3 | 0.5 |
| 25 | $\begin{gathered} \text { NBS FQ } \\ 025(25-52-15) \end{gathered}$ | $\begin{gathered} 25 \\ 24.996 \end{gathered}$ | 35 | $\begin{gathered} 80 \\ 79.987 \end{gathered}$ | 120 | 32 | 15 | $\begin{aligned} & 80.260 \\ & 78.240 \end{aligned}$ | 82 | 88 | 9.2 | 102 | 35 | 44 | 4.3 | 0.5 |
| 30 | $\begin{gathered} \text { NBS FQ } \\ 030(30-62-16) \end{gathered}$ | $\begin{gathered} 30 \\ 29.996 \end{gathered}$ | 41 | $\begin{gathered} 80 \\ 79.987 \end{gathered}$ | 120 | 32 | 15 | $\begin{aligned} & 80.260 \\ & 78.740 \end{aligned}$ | 83 | 88 | 9.2 | 102 | 36 | 44 | 4.3 | 0.5 |
| 35 | $\begin{gathered} \text { NBS FQ } \\ 035(35-72-17) \end{gathered}$ | $\begin{gathered} 35 \\ 34.995 \end{gathered}$ | 46 | $\begin{gathered} 90 \\ 89.987 \end{gathered}$ | 130 | 32 | 15 | $\begin{aligned} & 84.260 \\ & 82.740 \end{aligned}$ | 86 | 98 | 9.2 | 113 | 39 | 49 | 4.3 | 0.5 |
| 40 | $\begin{gathered} \text { NBS FQ } \\ 040(40-80-18) \end{gathered}$ | $\begin{gathered} 40 \\ 39.995 \end{gathered}$ | 55 | $\begin{gathered} 124 \\ 123.982 \end{gathered}$ | 165 | 43,5 | 17 | $\begin{aligned} & 104.260 \\ & 102.740 \end{aligned}$ | $6$ | 128 | 11.4 | 146 | 45.5 | 64 | 5.3 | 0.5 |
| 45 | $\begin{gathered} \text { NBS FQ } \\ 045(45-85-19) \end{gathered}$ | $\begin{gathered} 45 \\ 44.995 \end{gathered}$ | 66 | $\begin{gathered} 124 \\ 123.982 \end{gathered}$ | 165 | 43,5 | 17 | $\begin{aligned} & 104.260 \\ & 102.740 \end{aligned}$ | $6$ | 128 | 11.4 | 146 | 45.5 | 64 | 5.3 | 0.5 |
| 50 | $\begin{gathered} \text { NBS FQ } \\ 050(50-90-20) \end{gathered}$ | $\begin{gathered} 50 \\ 49.995 \end{gathered}$ | 66 | $\begin{gathered} 124 \\ 123.982 \end{gathered}$ | 165 | 43,5 | 17 | $\begin{aligned} & 104.260 \\ & 102.740 \end{aligned}$ |  | 128 | 11.4 | 146 | 45.5 | 64 | 5.3 | 0.5 |

