

## Technical data

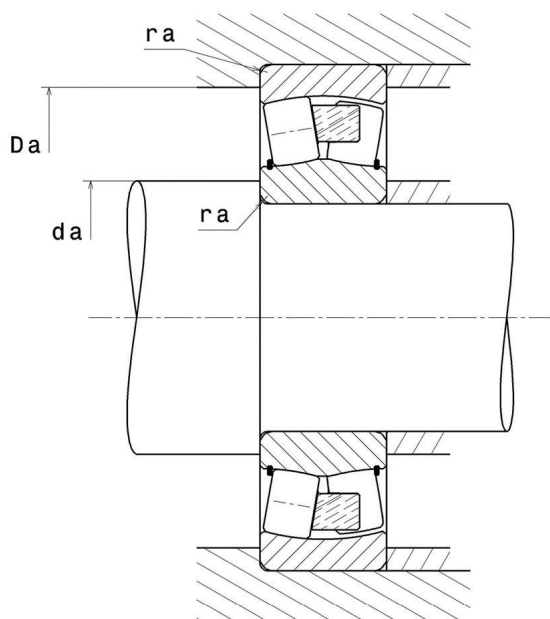
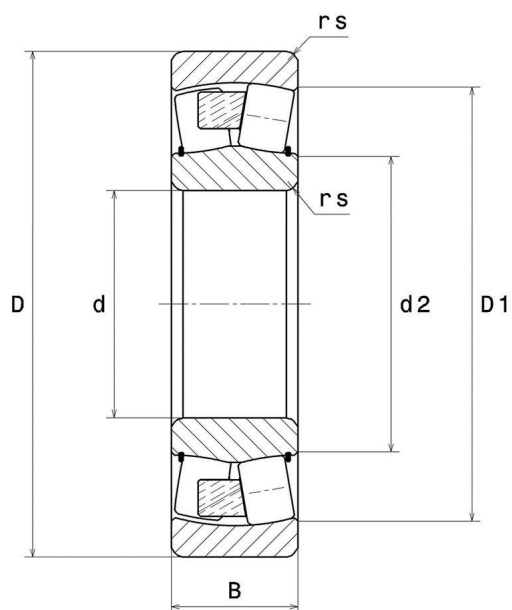
# 21318VM

Spherical roller bearings



Spherical roller bearing, one-piece machined cage

### VISUAL (S)



## PRODUCT DEFINITION

|                                       |          |
|---------------------------------------|----------|
| <b>Brand</b>                          | SNR      |
| <b>d - Internal diameter</b>          | 90 mm    |
| <b>D - External diameter</b>          | 190 mm   |
| <b>B - Bearing/Inner ring width</b>   | 43 mm    |
| <b>D1 - Inner diameter outer ring</b> | 161,5 mm |
| <b>rs - Min fillet radius</b>         | 3 mm     |
| <b>Number of lubrication holes</b>    | 0        |
| <b>b - Groove width</b>               | 0 mm     |
| <b>k - Hole diameter</b>              | 0 mm     |
| <b>Radial clearance class</b>         | CN       |
| <b>Mass</b>                           | 6,03 kg  |

## PRODUCT PERFORMANCE

|                                           |              |
|-------------------------------------------|--------------|
| <b>C - Dynamic load</b>                   | 370000000 mN |
| <b>C0 - Static load</b>                   | 377000000 mN |
| <b>Cu - Fatigue limit load</b>            | 41300000 mN  |
| <b>e - Coefficient</b>                    | 0.22         |
| <b>Y0 - Static axial load coefficient</b> | 2.93         |
| <b>Y1 - Lower axial load coefficient</b>  | 3            |
| <b>Y2 - Upper axial load coefficient</b>  | 4.47         |
| <b>N ref - Reference thermal speed</b>    | 20400 °/s    |
| <b>N lim - Mechanical Limit Speed</b>     | 25800 °/s    |
| <b>Tmin - Min operating temperature</b>   | 233,15 °K    |
| <b>Tmax - Max operating temperature</b>   | 473,15 °K    |



### BEARING FREQUENCIES

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| <b>BPFO - Over rolling frequency on outer ring (60 rpm)</b>     | 6.72 Hz  |
| <b>BPFI - Over rolling frequency on inner (60 rpm)</b>          | 9.28 Hz  |
| <b>BSF - Over rolling frequency on rolling element (60 rpm)</b> | 6.024 Hz |
| <b>BRF - Rotational frequency - rolling element (60 rpm)</b>    | 3.012 Hz |
| <b>FTF - Rotational frequency - cage (60 rpm)</b>               | 0.42 Hz  |

### ABUTMENT

|                                                       |        |
|-------------------------------------------------------|--------|
| <b>da max - Max shoulder diameter IR</b>              | 0 mm   |
| <b>da min - Min shoulder diameter IR</b>              | 104 mm |
| <b>Da max - Max shoulder diameter OR</b>              | 176 mm |
| <b>ra max - Max shaft &amp; housing fillet radius</b> | 2,5 mm |



## INDUSTRY CALCUL FACTORS

### Equivalent dynamic radial load

$$P = X.F_r + Y.F_a$$

| $F_a / F_r \leq e$ |    | $F_a / F_r > e$ |    |
|--------------------|----|-----------------|----|
| X                  | Y  | X               | Y  |
| 1                  | Y1 | 0.67            | Y2 |

### Equivalent static radial load

$$P_0 = X_0.F_r + Y_0.F_a$$

| $X_0$ | $Y_0$ |
|-------|-------|
| 1     | Y0    |

The values for e, Y1, Y2 and Y0 are shown in the above table .



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