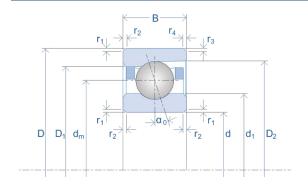


# Data Sheet High Precision Ball Bearings





Part Number	HY S 61903 E TA
Bearing Size	61903

# **Bearing Dimensions**

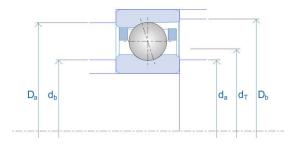
Bore Diameter	d [mm]	17
Outer Diameter	D [mm]	30
Bearing Width	B [mm]	7
Pitch Circle	d <sub>m</sub> [mm]	23.5
Ball Diameter	D <sub>w</sub> [mm]	3.969
OD Inner Ring	d <sub>1</sub> [mm]	21.0
ID Outer Ring	D <sub>1</sub> [mm]	26.6
ID Outer Ring (Open Side)	D <sub>2</sub> [mm]	27.7
Chamfer	r <sub>1,2</sub> [mm]	0.3
Chamfer (Open Side)	r <sub>3,4</sub> [mm]	0.3

## **Bearing Load Ratings**

Dynamic Radial Load Rating	C [N]	4,450
Static Radial Load Rating Steel Balls	C <sub>0</sub> [N]	2,600
Static Radial Load Rating Si <sub>3</sub> N <sub>4</sub> balls	C <sub>0 HY</sub> [N]	1,810

## **Bearing RPM Ratings**

Speed Value with Oil Lubrication	n <sub>oil</sub> [1/min]	76,250
Speed Value with Grease Lubrication	n <sub>grease</sub> [1/min]	57,500



Bearing Series	S
Hybrid (Si <sub>3</sub> N <sub>4</sub> Balls)	Yes

#### **Geometrical Data**

Number of Balls	Z [Qty.]	14
Contact Angle	α <sub>0</sub> [°]	25
Bearing Weight	m [kg]	0.017

## **Mating Part Dimensions**

Abutment Diameter Inner Ring	d <sub>a</sub> min. [mm]	19.5
Abutment Diameter Outer Ring	D <sub>a</sub> max. [mm]	27.5
Chamfer Associated Component	r <sub>a</sub> max. [mm]	0.3
Chamfer Associated Component (Open Side)	r₀ max. [mm]	0.1

## **Bearing Preload Data**

Light Pre-Load	Fv [N]	40
Light Axial Rigidity	C <sub>ax</sub> [N/µm]	49
Medium Pre-Load	F <sub>v</sub> [N]	120
Medium Axial Rigidity	C <sub>ax</sub> [N/µm]	73
Heavy Pre-Load	F <sub>v</sub> [N]	240
Heavy Axial Rigidity	C <sub>ax</sub> [N/µm]	96
Minimum Spring Pre-Load	F <sub>f</sub> [N]	165

### Notes:

- 1. Position of the oiling Nozzle  $(d_T)$  for bearings with TA cage/ TXM cage upon request
- 2. The stated load and speed values are given for a spring preloaded single bearing with oil/air or oil mist lubrication. If specific applications differ, please consult correction factors and/or GMN USA engineers.