

# Spindle ball bearing SM 609 C TA P4+

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## Components

Bearing designation:	SM 609 C TA
Bearing design:	SM
Series / size:	609
Ball material:	Steel 100Cr6
Cage:	TA
Precision:	P4+ (UP+ Upon request)
Main dimensions [d x D x B]:	9 x 24 x 7 mm

## Load data

Static load capacity	$C_{0r}$ : 1160 N
Dynamic load capacity	$C_r$ : 2950 N
Fatigue load limit	$C_U$ : 60 N
Speed limit	$n_{grease}$ : 90000 1/min
Speed limit	$n_{oil}$ : 120000 1/min
Light preload	L: 16 N
Axial rigidity	$C_{ax}$ : 12 N/ $\mu$ m
Medium preload	M: 50 N
Axial rigidity	$C_{ax}$ : 20 N/ $\mu$ m
Heavy preload	S: 100 N
Axial rigidity	$C_{ax}$ : 27 N/ $\mu$ m
Spring preload	Ff: 65 N (for $n_{max}$ )

## Geometrical Data

Bore diameter	d: 9 mm	Oiling nozzle position	$d_T$ : 15.2 mm
Outer diameter	D: 24 mm	Pitch circle diameter	$d_m$ : 16.7 mm
Width of single bearing	B: 7 mm	Inner diameter of outer ring	$D_1$ : 19.9 mm
Ball diameter	$D_w$ : 3.969 mm	Undercut of associated component	$r_{a max}$ : 0.3 mm
Number of balls	Z: 10	Undercut of associated component (open side)	$r_{b max}$ : 0.3 mm
Chamfer (min)	$r_{1,2 min}$ : 0.3 mm	Abutment diameter inner ring	$d_{a,b min}$ : 11.2 mm
Chamfer (min), open side	$r_{3,4 min}$ : 0.3 mm	Abutment diameter outer ring	$D_{a,b max}$ : 22.5 mm
Outer diameter of inner ring	$d_1$ : 13.5 mm	Inner diameter of outer ring (open side)	$D_2$ : 20.7 mm
Outer diameter of inner ring (open side)	$d_2$ : -	Bearing weight	m: 0.014 kg
		Contact angle	Alpha 0: 15°



The given speed limits apply to individual bearings with spring preload. Correction factors must be considered for all properties which deviate from this.