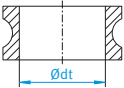
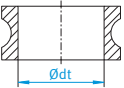
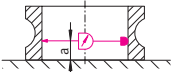
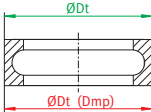
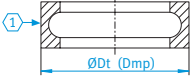
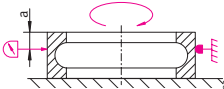
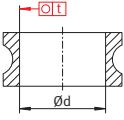
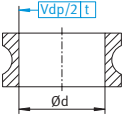
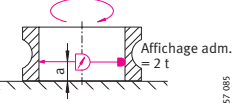

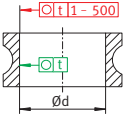
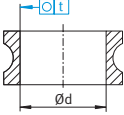
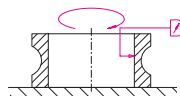

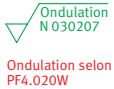
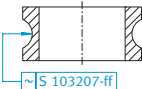
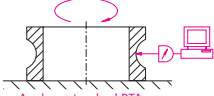
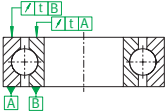
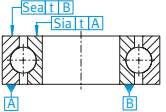
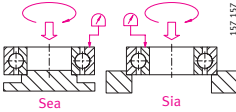
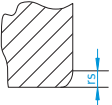
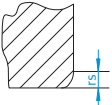
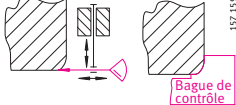
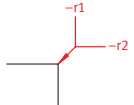
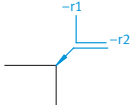
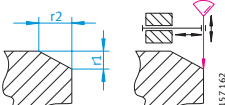

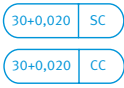
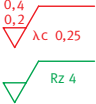
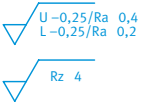



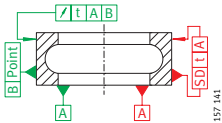
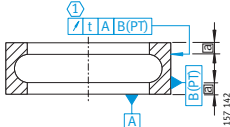
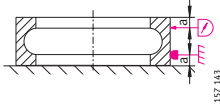
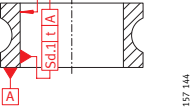
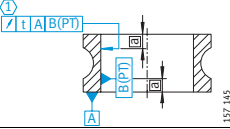
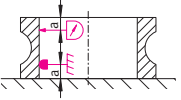
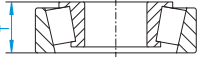
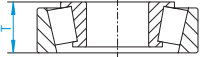
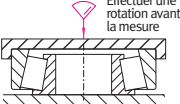
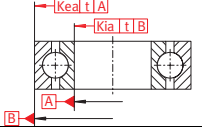
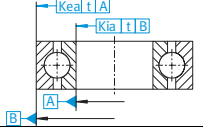
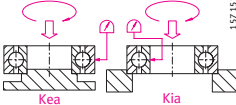
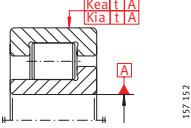
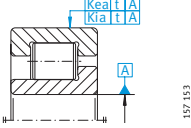
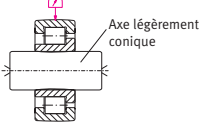


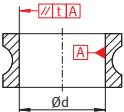
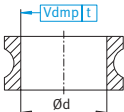
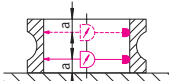

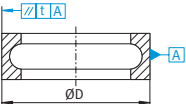
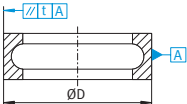
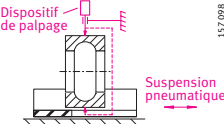

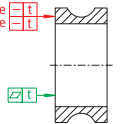
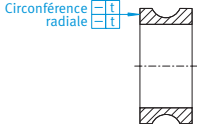
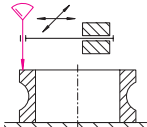

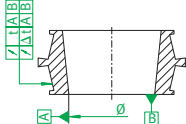
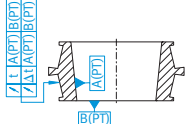
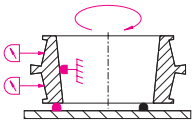
# Tolérances des roulements

Définitions/principes de mesure


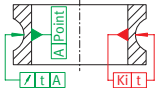
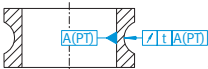
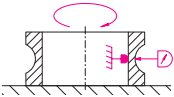

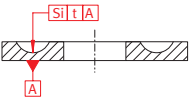
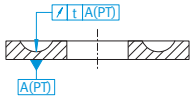
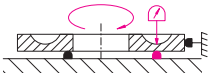

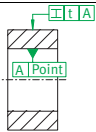
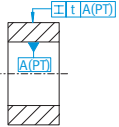
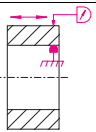
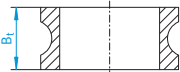
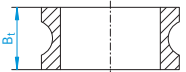
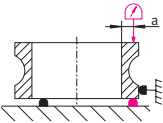

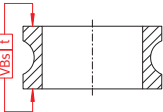
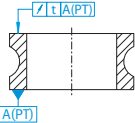
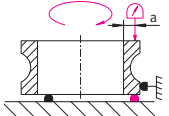
Symbole	Exemples de cotation		Principe de mesure	Caractéristiques
	INA/FAG (état)	Schaeffler Group (est)		
$\Delta ds$ (Ads) $\Delta Ds$ (ADs)	 157 078	 157 078	 157 079	<ul style="list-style-type: none"> <li>Ecart d'un diamètre isolé par rapport au nominal (<math>ds - d, Ds - D</math>)</li> </ul>
$\Delta dmp$ (Admp) $\Delta Dmp$ (ADmp)	 157 080	 157 081	 157 082	<ul style="list-style-type: none"> <li>Ecart du diamètre moyen par rapport au nominal dans un plan isolé (<math>dmp - d, Dmp - D</math>)</li> <li>① = circularité ou plutôt circularité par deux points</li> </ul>
$Vdp/2$ $Vp/2$ $VDp/2$	 157 083	 157 084	 157 085	<ul style="list-style-type: none"> <li>Variation du diamètre divisé par deux dans un plan radial (circularité par deux points)</li> </ul>
	 157 086	 157 087	 157 088 Filtre standard : 1 - 500 Type de filtre : gaussien	<ul style="list-style-type: none"> <li>La circularité – suivant MZCI (Minimum Zone Circle) – est la distance minimale au rayon entre deux cercles concentriques d'un même plan délimitant le profil.</li> </ul>
	 157 089	 157 090	 157 091 Analyse standard RTA	<ul style="list-style-type: none"> <li>Ondulation</li> </ul>

Symbole	Exemples de cotation		Principe de mesure	Caractéristiques
	INA/FAG (état)	Schaeffler Group (est)		
<b>Sia</b> <b>Sea</b>	 157 155	 157 156	 157 159	<ul style="list-style-type: none"> <li>Battement axial des bagues intérieure et extérieure sur roulement assemblé</li> </ul>
<b>rs</b> <b>rs min</b> <b>rs max</b>	 157 158	 157 158	 157 159	<ul style="list-style-type: none"> <li>Dimension isolée d'un arrondi</li> </ul>
<b>r1</b> <b>r2</b>	 157 160	 157 161	 157 162	<ul style="list-style-type: none"> <li>Cotation des arêtes avec directions définies</li> </ul>
<b>SC</b> <b>CC</b>	 157 163	 157 164	<p>SC = Significant Characteristic (caractéristique significative)</p> <p>CC = Critical Characteristic (caractéristique critique)</p> 157 165	<ul style="list-style-type: none"> <li>Caractéristiques hiérarchisées</li> </ul>
<b>Ra</b> <b>Rz</b> <b>Rpk</b> <b>Rk</b> <b>Rvk</b>	 157 166	 157 167	<p>U = limite supérieure</p> <p>L = limite inférieure</p> <p>-0,25 = longueur de base (<math>\lambda c</math>)</p> <p>Ra, Rz = critère d'évaluation</p> 157 168	<ul style="list-style-type: none"> <li>Critères d'état de surface</li> </ul>
-	<p>Eht = Einsatzhärtungstiefe</p> <p>Nht = Nitrierhärtungstiefe</p> <p>Rht = Einhärtungstiefe nach dem Randschichthärten</p> 157 169	<p>CHD = Case hardening depth</p> <p>NHD = Nitriding hardness depth</p> <p>SHD = Surface hardening depth</p> 157 170		<ul style="list-style-type: none"> <li>Paramètre de traitement thermique</li> </ul>

Symbole	Exemples de cotation		Principe de mesure	Caractéristiques
	INA/FAG (état)	Schaeffler Group (est)		
<b>SD</b> 	 157 141	 157 142	 157 143	<ul style="list-style-type: none"> <li>Perpendicularité de la surface extérieure de la bague extérieure par rapport à la face</li> <li>① = mesure par retournement</li> </ul>
<b>Sd.1</b>	 157 144	 157 145	 157 146	<ul style="list-style-type: none"> <li>Perpendicularité de la surface intérieure de la bague intérieure par rapport à la face</li> <li>① = mesure par retournement</li> </ul>
<b>ΔTs (ATs)</b>	 157 147	 157 147	 Effectuer une rotation avant la mesure 157 148	<ul style="list-style-type: none"> <li>Ecart de la largeur réelle d'un roulement et sa largeur nominale (Ts - T)</li> </ul>
<b>Kia Kea</b>	 157 149	 157 150	 Kea, Kia 157 151	<ul style="list-style-type: none"> <li>Faux rond de rotation des bagues intérieure et extérieure sur roulement assemblé</li> </ul>
<b>Kia Kea</b>	 157 152	 157 153	 Axe légèrement conique 157 154	<ul style="list-style-type: none"> <li>Faux rond de rotation des bagues intérieure et extérieure sur roulement assemblé</li> </ul>

Symbole	Exemples de cotation		Principe de mesure	Caractéristiques
	INA/FAG (état)	Schaeffler Group (est)		
<b>Vdmp</b> <b>Vmp</b> <b>VDmp</b>	 157 094	 157 095	 157 096	<ul style="list-style-type: none"> <li>Variation du diamètre moyen dans un plan radial isolé (dmp max – dmp min, Dmp max – Dmp min)</li> </ul>
	 157 097	 157 097	 157 098	<ul style="list-style-type: none"> <li>Parallélisme</li> </ul>
	<p>Circonférence radiale</p>  157 099	<p>Circonférence radiale</p>  157 101	 157 102	<ul style="list-style-type: none"> <li>Rectitude</li> </ul>
	 157 103	 157 104	 157 105	<ul style="list-style-type: none"> <li>Variation de l'épaisseur de paroi</li> <li>Mesure différentielle</li> </ul>

Symbole	Exemples de cotation		Principe de mesure	Caractéristiques
	INA/FAG (état)	Schaeffler Group (est)		
	 157 106	 157 106	 157 107 Mesure par retournement	<ul style="list-style-type: none"> <li>■ Symétrie</li> </ul>
	 157 108	 157 109	 157 110 $t_1$ : défaut de forme/ rayon théorique $t_2$ : défaut du 2e et du 3e ordre	<ul style="list-style-type: none"> <li>■ Tolérance de forme d'une ligne quelconque pour rayon</li> </ul>
<b>NT</b>	 157 111	 157 112	 157 113	<ul style="list-style-type: none"> <li>■ Ecart d'un angle d'inclinaison d'une surface (écart angulaire)</li> </ul>
<b>NTD</b>	 157 114	 157 115	 157 116	<ul style="list-style-type: none"> <li>■ Ecart d'un angle d'inclinaison d'un diamètre</li> </ul>
<b>ATD</b>	 157 117	 157 118	 157 119	<ul style="list-style-type: none"> <li>■ Ecart d'un angle d'un cône (écart angulaire d'un cône)</li> </ul>

Symbole	Exemples de cotation		Principe de mesure	Caractéristiques
	INA/FAG (état)	Schaeffler Group (est)		
<b>Ki</b> <b>Ke</b> 				<ul style="list-style-type: none"> <li>Variation d'épaisseur entre le chemin de roulement et l'alésage (IR) ou la surface extérieure (AU) (battement radial)</li> </ul>
<b>Si</b> <b>Se</b> 				<ul style="list-style-type: none"> <li>Variation d'épaisseur entre le chemin de roulement et la face d'appui d'une rondelle-arbre ou d'une rondelle-logement (battement axial)</li> </ul>
				<ul style="list-style-type: none"> <li>Variation de l'épaisseur de paroi dans le plan de coupe perpendiculaire</li> </ul>
<b>ΔBs</b> <b>ΔCs</b> <b>(ACs)</b>				<ul style="list-style-type: none"> <li>Ecart d'une largeur isolée de bague par rapport au nominal (Bs – B ou Cs – C)</li> </ul>
<b>VBs</b> <b>VCs</b> 				<ul style="list-style-type: none"> <li>Variation de la largeur d'une bague (Bs max – Bs min ou Cs max – Cs min)</li> </ul>

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