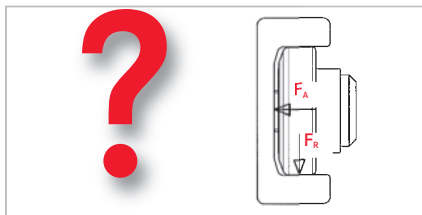




WINKEL-Rollen | WINKEL Bearings



20 Berechnung Rollenbelastung
Calculation bearing forces



22 WINKEL-Rollen axial fest (PR)
WINKEL Bearings axial fixed (PR)



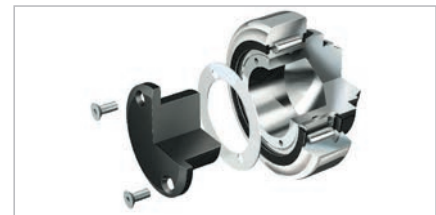
26 Hochtemperatur-WINKEL-Rollen
High temperature WINKEL Bearings



28 WINKEL-Rollen axial über Exzenter
justierbar (PR)
WINKEL Bearings eccentric adjustable (PR)



32 WINKEL-Rollen axial über Scheiben
justierbar (PR)
WINKEL Bearings adjustable by shims (PR)



36 WINKEL-Rollen mit OILAMID-Einsatz (PR)
WINKEL Bearings, OILAMID insert (PR)



40 WINKEL-Rollen mit Kombibolzen (P)+(PR)
WINKEL Bearings+combined bolt (P)+(PR)



48 WINKEL-Jumbo-Rollen
WINKEL Jumbo Bearings



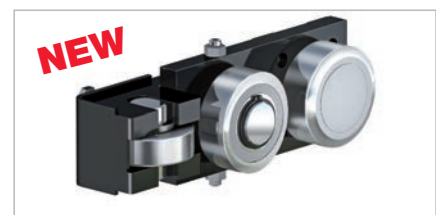
50 WINKEL-Radiallager (PR)
WINKEL Radial Bearings (PR)



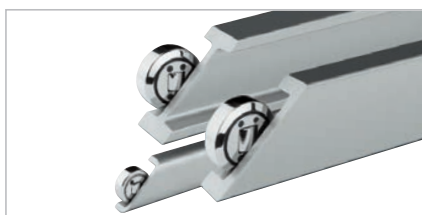
54 WINKEL-Rollen Heavy Duty (PR)
WINKEL Bearing Heavy Duty (PR)



64 Justierbare WINKEL-Rolleneinheit JC
Adjustable WINKEL Bearing Unit JC



66 Justierbare WINKEL-Rolleneinheit JT
Adjustable WINKEL Bearing Unit JT



68 U-Profil/I-Profil
U-Profiles/I-Profiles



84 Anschraubplatten AP/AP-LUB
Flange plates AP/AP-LUB



94 Abstreifsystem für AP-LUB
Wiper system for AP-LUB

WINKEL-Rollen | WINKEL Bearings



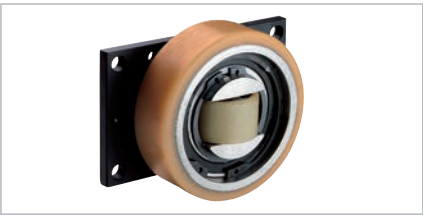
106 Profile in Edelstahl
Profiles in stainless steel



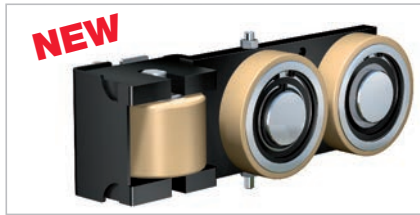
107 WINKEL-Rollen in Edelstahl,
Gleitlagerausführung
WINKEL Bearings in INOX,
friction bearing



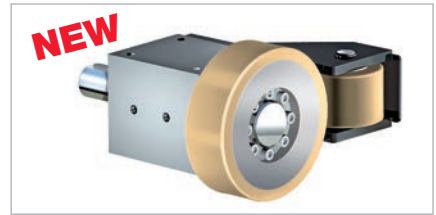
108 WINKEL-Rollen in Edelstahl, kugelgelagert
WINKEL Bearings in INOX, ball bearing



110 VULKOLLAN WINKEL-Rollen
VULKOLLAN WINKEL Bearings



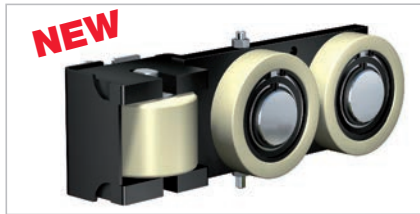
116 Justierbare WINKEL VULKOLLAN
Rolleneinheiten
Adjustable WINKEL VULKOLLAN
Bearing Unit



120 Angetriebene VULKOLLAN-WINKEL-Rollen
Driven VULKOLLAN WINKEL Bearings



122 POLYAMID WINKEL-Rollen
POLYAMIDE WINKEL Bearings



130 Justierbare WINKEL POLYAMID
Rolleneinheiten
Adjustable WINKEL POLYAMID Bearing
Unit



132 Profile für VULKOLLAN + POLYAMID
WINKEL-Rollen
Profiles for VULKOLLAN + POLYAMIDE
WINKEL Bearings



134 Profile Typ L für VULKOLLAN +
POLYAMID WINKEL-Rollen
Profiles type L for VULKOLLAN +
POLYAMIDE WINKEL Bearings



136 Klemmflansche
Clamp flanges



138 Zahnräder und Zahnstangen/Rollenketten
Racks and pinions/Roller chain



142 Korrosionsschutz und Nachschmier-
systeme
Corrosion protection and lubrication
systems



146 Anwendungsbeispiele
Application examples



16 Allgemeine Hinweise
General advices



Allgemeine Hinweise

Mit unseren WINKEL-Rollen können Vertikal- und Horizontalbewegungen an Maschinen und Hubvorrichtungen wirtschaftlich gelöst werden.

Vorteile der WINKEL-Rolle:

- Das WINKEL-Rollensystem senkt Ihre Konstruktions- und Produktionskosten
- Das WINKEL-Rollensystem kann hohe Radial- und Axialbelastungen aufnehmen
- Starkwandige Führungsprofile für hohe stat. und dynamische Belastungen
- Optimale Krafteinleitung in die Führungsprofile
- Höhere Lebensdauer von Rolle und Profil
- Montagezeitersparnis durch Einschweißbolzen
- Lagerkomponenten sind leicht tauschbar

Technische Daten:

- Die Außenringe sind aus Einsatzstahl UNI 16 CrNi 4 gehärtet 62+2 HRC
- Die Innenringe sind aus Stahl DIN 100 Cr 6 gehärtet 62-2 HRC
- Flachköpfige Wälzkörper aus Stahl DIN 100 Cr 6 gehärtet 59 – 64 HRC
- Anschweißbolzen aus C22E (Werkstoffnr. 1.1151)
- Bolzentoleranz -0,05 mm
- Nachschmierbarkeit für Rollen 4.054 – 4.063
- WINKEL-Rollen werden bei der Montage mit Schmierfett Grad 3 (z.B. Shell Alvania 3, Esso Beacon 3) befüllt
- Standardausführungen für -20 °C bis +80 °C Einsatztemperatur
- WINKEL-Rollen für Temperaturen bis 250 °C siehe Serie HT, Seite 26

General advice

For economical designs in machines, lifting and handling systems.

Advantage of the WINKEL Bearing system:

- Reduces your designing and production costs
- Can take up high radial and axial loads
- Strong profiles for high stat. and dynamic loads
- Best dispersion of forces in the profiles
- Longer lifetime for bearings and profiles
- Economical assembling by welding bolt
- Bearing components are easily exchangeable

Technical characteristics:

- Outer rings are made from case-hardened steel UNI 16 CrNi 4 hardened at 62+2HRC
- Inner rings are made from bearing steel En 31-SAE 52100 hardened at 62-2 HRC
- Cylindrical rollers have flat ground heads, made from En 31-SAE 52100 steel hardened at 59 – 64 HRC
- Welding bolts are made from C22E (Material no. 1.1151)
- Bolt tolerance -0.05 mm
- Bearings from 4.054 to 4.063 are relubricateable
- Bearings are lubricated with grease grade 3 (e.g. Shell Alvania 3, Esso Beacon 3)
- Standard WINKEL Bearings are resistant from -20 °C to +80 °C
- WINKEL Bearings for temperatures up to 250 °C see series HT, page 26





Allgemeine Hinweise

Dimensionierung

- Bei der Dimensionierung von Rolle und Profil ist die maximal zulässige Belastung F [N] max. stat. zu beachten. Siehe Seite 20.

Nachschmierung

- Unsere WINKEL-Rollen sind vollrollige Zylinderrollenlager, welche für den Einschicht- sowie unregelmäßigen Betrieb lebensdauer geschmiert sind. Wir können Ihnen aufgrund unserer langjährigen Erfahrung bestätigen, dass es bei diesen Anwendungen keinerlei Einschränkung der Lebensdauer bei normalen Applikationen gibt.
- Bei Einsatzfällen wie z.B. in Lager- und Maschinenhallen genügt eine leichte Oberflächenkonservierung mit handelsüblichem Sprühöl, sowie eine regelmäßige Abschmierung alle 6 Monate.
- Die WINKEL-Rollen 4.054 bis 4.063 sind zur Verlängerung der Lebensdauer nachschmierbar. Generell sind die Nachschmierbohrungen mit Gewindestopfen M6 verschlossen. Die Auslieferung erfolgt ohne Schmiernippel.
- Bei besonderen Umwelteinflüssen, wie Staub, Schmutzanfall, Feuchtigkeit, Betrieb im Freien, Temperaturen über 40 Grad, häufige Lastwechsel (Dauerbetrieb) und hohen Beanspruchungen sollte mindestens 1 mal im Monat nachgeschmiert werden. Hierzu empfehlen wir Ihnen den Einsatz unseres Schmiersystems WINKEL Combi-Lub 1.

Verarbeitung

- Beim Einschweißen von WINKEL-Rollen deren Außendurchmesser kleiner als 100 mm ist, müssen die Lagerteile demontiert werden.
- Nach der Lagermontage oder Justierung müssen die Befestigungsschrauben wieder mit Loctite gesichert werden.
- Um Spannungsrisse beim Einschweißen zu vermeiden, sollten ausschließlich Stabelektroden für unlegierte Stähle bzw. Fülldraht verwendet werden. z.B. Stabelektrode E 42 5 B 42 H 10 nach DIN EN 499 z.B. Fülldraht T 42 4 B C 3 H5 / 7 42 4 B M 3 H5 nach DIN EN 758.
- Jumbo WINKEL-Rollen sollten am Bolzen beidseitig festgeschweißt werden.
- Die Laufflächen der Profile sollten nicht lackiert werden, leichtes Einfetten ist ausreichend.

Sonderausführungen

- Bei WINKEL-Rollen der Reihe (PR) 4.072 (P) bis (PR) 4.080 (P) sind Sonderbolzen möglich.

Systemlösungen

- Wir konstruieren und bauen komplette Hub- und Fahrheiten nach Ihren Angaben. CAD-unterstützte Konstruktion und moderne Fertigungsanlagen erlauben eine hohe Flexibilität in der Realisierung von Systemlösungen der Handhabungs- und Automatisierungstechnik.

CAD Download

- Über unsere Internetseite: www.winkel.de

General advice

Dimensions

- For the dimension of bearing and profile, the maximum allowable load F [N] max. stat. should be confirmed. See page 20.

Relubrication

- Our Winkel bearings are full complement cylindrical rollers which are lifetime lubricated for one shift and unsteady operation. Due to many years of experience we can assure you that for these kinds of use there will be no reduction of lifetime at normal applications.
- For applications such as for example in warehouses and machine halls a light surface conservation with commercial spray oil will be sufficient and in addition, a regular relubrication every 6 months.
- For extension of life-time the Winkel bearings 4.054 up to 4.063 are relubricateable. Generally, the relubrication holes are closed with threaded plugs M6. The bearings are delivered without grease nipple.
- In case of special environmental conditions such as dust, incur of dirt, moisture, outdoor operations, temperatures over 40 degrees, frequent load changes (continuous operation) and heavy duty the bearings should be relubricated at least one time per month. For this we would recommend to you to use our lubrication system Winkel Combi-Lub 1.

Working up

- For welding operations on WINKEL Bearings with a diameter less than 100 mm, all bearing components must be disassembled.
- After the assembling of the bearings, or after the adjusting operation, the front side screws should be secured with loctite.
- To avoid cracks in the welded joints please use welding electrodes and cored wire for unalloyed steel. For example electrode: E 42 5 B 42 H 10 according DIN EN 499. For example cored wire: T 42 4 B C 3 H5 / 7 42 4 B M 3 H5 according DIN EN 758.
- Jumbo WINKEL Bearings should be welded on both sides of the bolt.
- The guide ways in the profiles should be lightly greased and not painted.

Special designs

- Special bolts are available for WINKEL Bearings of type (PR) 4.072 (P) to (PR) 4.080 (P).

System solutions

- We construct and manufacture complete lift- and handling units according to customer needs. Constructions with CAD and a progressive production enables high flexibility in achieving complete solutions in the field of handling systems and automation.

CAD Download

- Vvia our webpage is available at: www.winkel.de



WINKEL-Rollen | WINKEL Bearings

Vorab-Auswahl der WINKEL-Führungssysteme Preselection of WINKEL Linear Systems		4.053 4.063	PR 4.054 PR 4.063	4.053 HT 4.063 HT	4.454 4.463	PR 4.454 PR 4.463	4.072 P 4.080 P
Seite / page		22	24	26	28 / 32	30 / 34	36
Spiel Rolle/Profil Clearance Bearing/Profile	0,1 - 0,3 mm 0,1 - 0,3 mm						
Spiel Rolle/Profil Clearance Bearing/Profile	0,3 - 1,0 mm 0,3 - 1,0 mm						
Geschwindigkeit Speed	> 1,5 m/sec > 1,5 m/sec						
Geschwindigkeit Speed	< 1,5 m/sec < 1,5 m/sec						
Einstellbarkeit Adjustment		²⁾	²⁾	²⁾			
Verschmutzungsresistenz Dirt resistance							
Nachschmierbarkeit ohne 4.053 Relubrication except 4.053					Lebensdauergeschmiert Lubricated for life		
Korrosionsschutz Corrosion resistance		Duralloy-Beschichtung auf Anfrage Duralloy coating on request					
Laufruhe Running smoothness							
Temperatur Temperature	< 250 °C < 250 °C						
Temperatur Temperature	< 80 °C < 80 °C						

1) In Verbindung mit Profil Std. V-L – Std. X-L
1) By using profile Std. V-L – Std. X-L

2) In Verbindung mit AP
2) By using AP

3) Einstellbarkeit über Steckbleche
3) Adjustment by washers

WINKEL-Rollen | WINKEL Bearings



4.085 4.093	3.054 3.063	PR 3.054 PR 3.063	JC 4.054 JC 4.063	JT 2.055 JT 2.058	4.053 Inox 4.074 Inox	I 525 APS I 780 AP2	V 4000 V 1792 AP PA 4000 PA 1800 AP	JT-V 1012 JT-V 1792 JT-PA 1012 JT-PA 1792
48	54	59	64	66	107	108	110 / 122	116 / 130



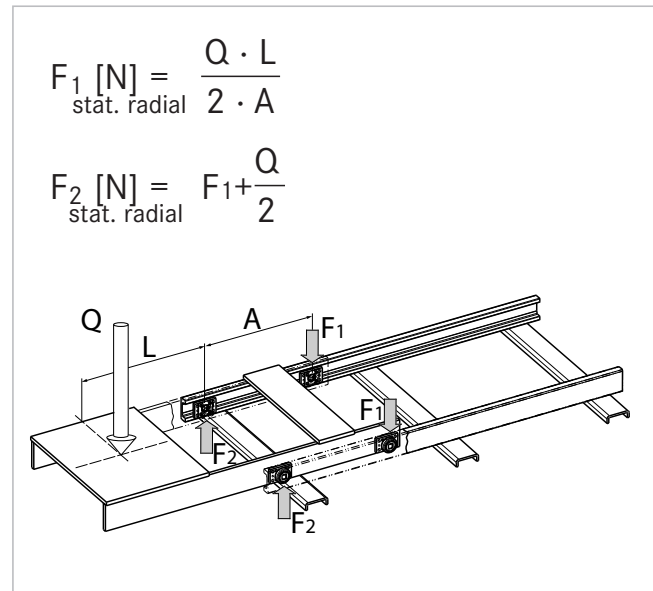
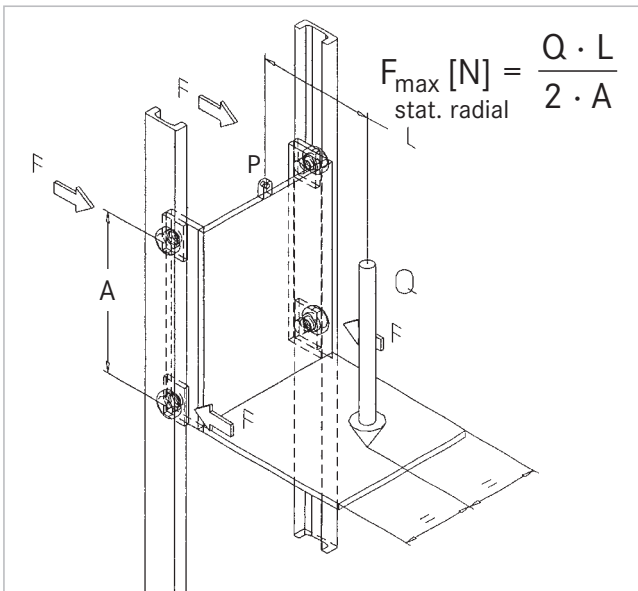
WINKEL-Rollen | WINKEL Bearings

Berechnung der Rollenbelastung

Q = Nutzlast (N)
 L = Lastabstand vom Aufhängepunkt (mm)
 P = Aufhängepunkt
 A = Rollenabstand (mm) empfohlen 500-1000 mm

Calculation of the bearing forces

Q = Load capacity (N)
 L = Load distance to suspension point (mm)
 P = Suspension point
 A = Bearing distance (mm) recommended 500-1000 mm



Um Einwalzungen am nicht gehärteten Profil zu vermeiden sollte die Pressung maximal

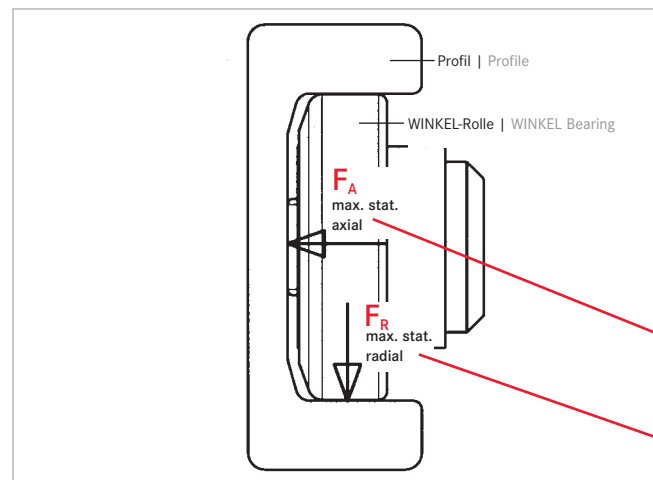
NEU

$P_{zul} = 900 \text{ N/mm}^2$ für NbV-Profile,
 $P_{zul} = 750 \text{ N/mm}^2$ für alle restlichen Profile betragen.
 $F_{max_{stat}}$ radial + axial sind für die jeweiligen Lager in der Tabelle angegeben.

To avoid wear out in the profile, which is not hardened, the pressure between bearing and profile should be max.

NEW

$P_{zul} = 900 \text{ N/mm}^2$ for NbV-profiles,
 $P_{zul} = 750 \text{ N/mm}^2$ for all profiles except NbV-series.
 Here indicated are $F_{max_{stat}}$ radial+axial for each bearing.



Beispiel | Example

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
4.054	200.001.000	62,5	42	30	37,5	30,5	20	2,5	20	3
4.055	200.002.000	70,1	48	35	44,0	36,0	23	2,5	22	4
4.056	200.003.000	77,7	54	40	48,0	36,5	23	3,0	26	4
4.057	200.004.002	77,7	53	40	40,0	29,0	23	3,0	26	4
4.058	200.005.000	88,4	59	45	57,0	44,0	30	3,5	26	3
4.059	200.006.000	101,2	67	50	46,0	33,0	28	3,0	30	3
4.060	200.007.000	107,7	71	55	53,0	39,0	31	3,0	34	5
4.061	200.008.000	107,7	71	60	69,0	55,0	31	4,0	34	5
4.062	200.009.000	123,0	80	60	72,3	56,0	37	5,0	40	5
4.063	200.010.000	149,0	103	60	78,5	58,5	45	5,5	50	3

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Auswahl der Wälzlager über die Hertz'sche Pressung

Selection of bearings over the Hertzian pressure

Profile		F_R kN		F_A kN		WINKEL-Rolle Axialrolle fest	WINKEL-Rolle Axialrolle über Exzenter einstellbar	WINKEL-Rolle Axialrolle über Scheiben einstellbar	WINKEL-Radiallager	WINKEL-Rolle mit Oilamid-einsatz	Heavy Duty WINKEL-Rolle	Justierbare WINKEL-Rollen-einheit	WINKEL-Rolle mit Kombibolzen
Profile		max. stat. radial		max. stat. axial		WINKEL Bearing with fixed axial Bearing	WINKEL Bearing eccentric adjustable axial Bearing	WINKEL Bearing adjustable with shims	WINKEL Radial Bearing	WINKEL Bearing with Oilamide insert	Heavy Duty WINKEL Bearing	Adjustable WINKEL Bearing unit	WINKEL Bearing with combined bolt
U-Profil	Doppel T-Profil	U-Profil	Doppel T-Profil	U-Profil	Doppel T-Profil								
U-Profile	I-Profile	U-Profile	I-Profile	U-Profile	I-Profile								
A	-	0,80	-	3,10	-	-	-	-	-	4.052 P	-	-	-
S	-	5,23	-	1,68	-	4.053	-	-	-	-	-	-	-
(PR) 0 NbV	-	10,30	-	3,20	-	(PR) 4.054	(PR) 4.454	(PR) 4.072	(PR) 2.054	(PR) 4.072 P*	(PR) 3.054*	JC 4.054	KB (PR) 4.072 (P*)
(PR) 1 NbV	3018 NbV	12,40	12,40	3,87	3,87	(PR) 4.055	(PR) 4.455	(PR) 4.073	(PR) 2.055	(PR) 4.073 P*	(PR) 3.055*	JC 4.055	KB (PR) 4.073 (P*)
(PR) 2 NbV	-	12,90	-	4,00	-	(PR) 4.056	(PR) 4.456	(PR) 4.074	(PR) 2.056	(PR) 4.074 P*	(PR) 3.056*	JC 4.056	KB (PR) 4.074 (P*)
-	3019 NbV	-	12,90	-	4,00	4.057	4.457	4.075	-	-	-	-	-
(PR) 3 NbV	3020 NbV	22,40	22,40	7,00	7,00	(PR) 4.058	(PR) 4.458	(PR) 4.076	(PR) 2.058	(PR) 4.076 P*	(PR) 3.058*	JC 4.058	KB (PR) 4.076 (P*)
-	2912 NbV	-	22,00	-	7,00	4.059	4.459	4.077	-	-	-	-	-
-	3100 NbV	-	23,80	-	7,44	4.060	4.460	4.078	-	-	-	-	-
(PR) 4 NbV	-	23,80	-	7,44	-	(PR) 4.061	(PR) 4.461	(PR) 4.0784	(PR) 2.061	(PR) 4.0784 P*	(PR) 3.061*	JC 4.061	KB (PR) 4.0784 (P*)
(PR) 5 NbV	-	33,90	-	10,60	-	(PR) 4.062	(PR) 4.462	(PR) 4.079	(PR) 2.062	(PR) 4.079 P*	(PR) 3.062*	JC 4.062	KB (PR) 4.079 (P*)
-	3353 NbV	-	26,00	-	10,60	4.062	4.462	4.079	-	-	-	-	-
(PR) 6 NbV	-	59,20	-	18,50	-	(PR) 4.063	(PR) 4.463	-	(PR) 2.063	(PR) 4.080 P*	(PR) 3.063*	JC 4.063	KB (PR) 4.080 P*
(PR) 6 NbV	-	39,50	-	18,50	-	-	-	(PR) 4.080	-	-	-	-	KB (PR) 4.080
(PR) 8 NbV	-	91,80	-	23,70	-	-	(PR) 4.085	-	-	(PR) 4.085 P*	-	-	-
-	10	-	41,71	-	13,91	-	4.089	-	-	-	-	-	-
-	16	-	58,00	-	19,40	-	4.090	-	-	-	-	-	-
-	18	-	84,00	-	28,00	-	4.091	-	-	-	-	-	-
-	28	-	101,50	-	33,90	-	4.092	-	-	-	-	-	-
-	36 / 42	-	139,40	-	46,50	-	4.093	-	-	-	-	-	-
-	50	-	192,00	-	57,70	-	4.094	-	-	-	-	-	-

* max. stat. Axialbelastung der WINKEL-Rollen bitte dem jeweiligen Rollendatenblatt entnehmen
 * for max. static axial load of WINKEL bearing please refer to the respective data sheet

Typ	F_R kN	F_A kN	C kN	C_0 kN	C_A kN	C_{0A} kN	u/min max.	Gewicht kg	Anschraubplatten	Profile Standard
Type	F_R kN	F_A kN	C kN	C_0 kN	C_A kN	C_{0A} kN	r/pm max.	Weight kg	Flange plates	Profiles standard
4.054	10,30	3,20	31,0	35,5	11	11	900	0,53	AP0 AP0-Q	0 NbV
4.055	12,40	3,87	45,5	51,0	13	14	900	0,80	AP1 AP1-Q	1 NbV/3018 NbV
4.056	12,90	4,00	48,0	56,8	18	18	800	1,00	AP2 AP2-Q	2 NbV
4.057	12,90	4,00	48,0	56,8	18	18	800	0,87	-	3019 NbV
4.058	22,40	7,00	68,0	72,0	23	23	750	1,62	AP3.1 AP3-Q	3 NbV/3020 NbV
4.059	22,00	7,00	73,0	82,0	25	27	700	1,74	-	2912 NbV
4.060	23,80	7,44	81,0	95,0	31	36	650	2,27	-	3100 NbV
4.061	23,80	7,44	81,0	95,0	31	36	650	2,82	AP4 AP4-Q	4 NbV
4.062	33,90 (26,00)	10,60	110,0	132,0	43	50	550	3,89	AP4 AP4-Q	5 NbV (3353 NbV)
4.063	59,20	18,50	151,0	192,0	68	71	450	6,52	AP6 AP6-Q	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C_0 = Static load capacity radial bearing (ISO 76)
 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)
 F_R = Load capacity radial bearing max. allowable force between bearing and profile
 F_A = Load capacity axial bearing max. allowable force between bearing and profile



WINKEL-Rollen | WINKEL Bearings



WINKEL-Rolle Axialrolle fest

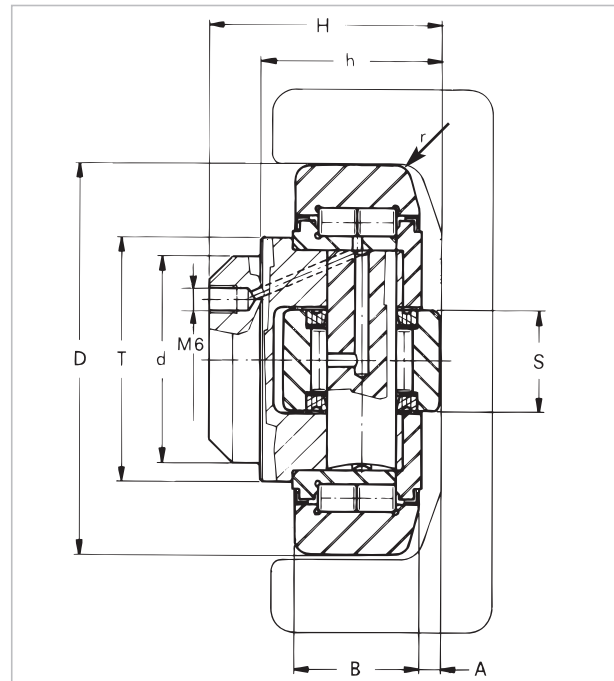
Nachschmierbarkeit für Rollen 4.054 - 4.063



Abdichtung 2 RS/ZRS | Sealings 2 RS/ZRS

WINKEL Bearing axial bearing fixed

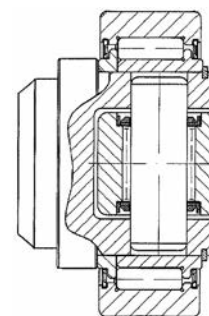
Relubrication only for types 4.054 - 4.063



CAD Download in 2D/3D unter www.winkel.de

CAD download in 2D/3D at www.winkel.de

nur 4.053
only 4.053



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
4.053	200.024.000	52,5	40	30	33,0	27,0	17	5,0	15	2
4.054	200.001.000	62,5	42	30	37,5	30,5	20	2,5	20	3
4.055	200.002.000	70,1	48	35	44,0	36,0	23	2,5	22	4
4.056	200.003.000	77,7	54	40	48,0	36,5	23	3,0	26	4
4.057	200.004.002	77,7	53	40	40,0	29,0	23	3,0	26	4
4.058	200.005.000	88,4	59	45	57,0	44,0	30	3,5	26	3
4.059	200.006.000	101,2	67	50	46,0	33,0	28	3,0	30	3
4.060	200.007.000	107,7	71	55	53,0	39,0	31	3,0	34	5
4.061	200.008.000	107,7	71	60	69,0	55,0	31	4,0	34	5
4.062	200.009.000	123,0	80	60	72,3	56,0	37	5,0	40	5
4.063	200.010.000	149,0	103	60	78,5	58,5	45	5,5	50	3

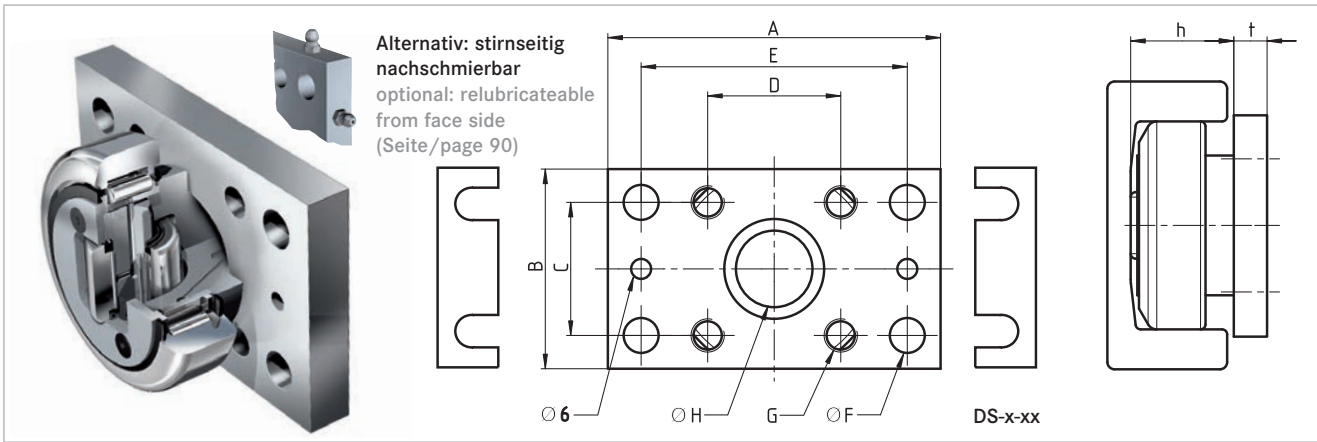
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76),
C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76),
F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil,
F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

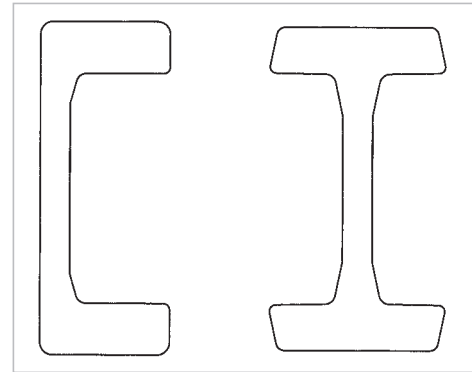
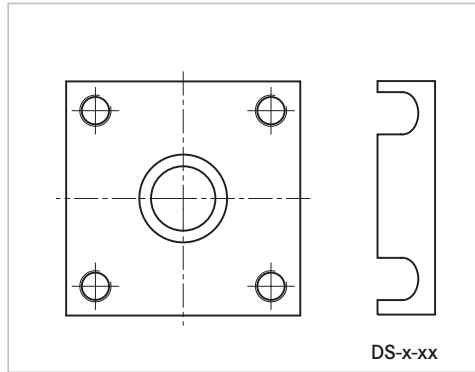


Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	Ø F	G	Ø H	t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
											DS-S-0,5	238.025.000	DS-S-1,0	238.025.001
AP S	212.014.000	90	50	30	40	70	8,5	M8	30	10	DS-S-0,5	238.025.000	DS-S-1,0	238.025.001
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Abstreifer Seite 94
Wiper page 94

Anschraubplatten quadratisch Reihe AP-Q S. 96
Flange plates square series AP-Q page 96

Profile Seite 68 / 76
Profiles page 68 / 76



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Standard Profiles standard
4.053	5,23	1,68	24,0	32,0	7	7	800	0,46	APS APS-Q	S
4.054	10,30	3,20	31,0	35,5	11	11	900	0,53	AP0 AP0-Q	0 NbV
4.055	12,40	3,87	45,5	51,0	13	14	900	0,80	AP1 AP1-Q	1 NbV / 3018 NbV
4.056	12,90	4,00	48,0	56,8	18	18	800	1,00	AP2 AP2-Q	2 NbV
4.057	12,90	4,00	48,0	56,8	18	18	800	0,87	-	3019 NbV
4.058	22,40	7,00	68,0	72,0	23	23	750	1,62	AP3.1 AP3-Q	3 NbV / 3020 NbV
4.059	22,00	7,00	73,0	82,0	25	27	700	1,74	-	2912 NbV
4.060	23,80	7,44	81,0	95,0	31	36	650	2,27	-	3100 NbV
4.061	23,80	7,44	81,0	95,0	31	36	650	2,82	AP4 AP4-Q	4 NbV
4.062	33,90 (26,00)	10,60	110,0	132,0	43	50	550	3,89	AP4 AP4-Q	5 NbV (3353 NbV)
4.063	59,20	18,50	151,0	192,0	68	71	450	6,52	AP6 AP6-Q	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76),
 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76),
 F_R = Load capacity radial bearing max. allowable force between bearing and profile,
 F_A = Load capacity axial bearing max. allowable force between bearing and profile

WINKEL-Rollen | WINKEL Bearings



Präzisions-WINKEL-Rolle

Typ PR

Axialrolle fest

Vorteil:

- weniger Spiel zwischen Rolle und Profil

Nachschmierbarkeit für Rollen PR 4.054 - PR 4.063



Precision WINKEL Bearing

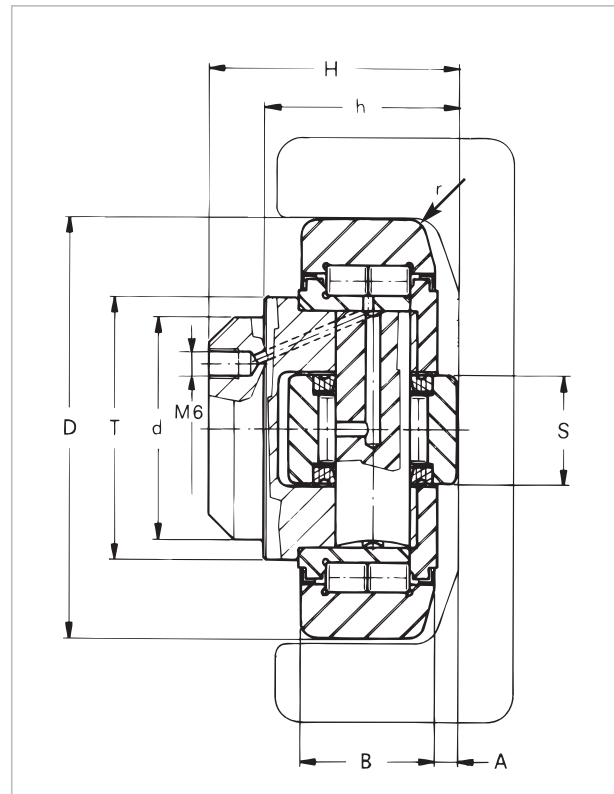
Type PR


Axial Bearing fixed

Advantage:

- less clearance between bearing and profile

Relubrication for types PR 4.054 - PR 4.063



 Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
PR 4.054	200.100.000	64,8	42	30	37,5	30,5	20	2,5	20	3
PR 4.055	200.101.000	73,8	48	35	44,0	36,0	23	2,5	22	4
PR 4.056	200.102.000	81,8	54	40	48,0	36,5	23	3,0	26	4
PR 4.058	200.103.000	92,8	59	45	57,0	44,0	30	3,5	26	3
PR 4.061	200.104.000	111,8	71	60	69,0	55,0	31	4,0	34	5
PR 4.062	200.105.000	127,8	80	60	72,3	56,0	37	5,0	40	5
PR 4.063	200.106.000	153,8	103	60	78,5	58,5	45	5,5	50	3

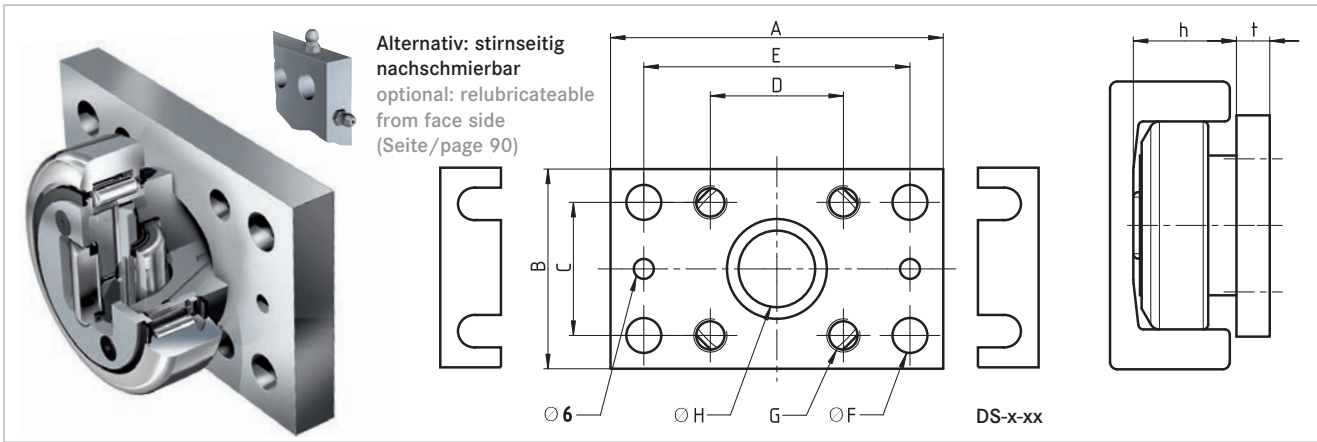
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und ProfilF_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

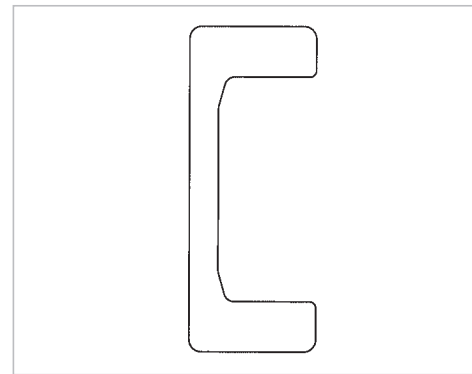
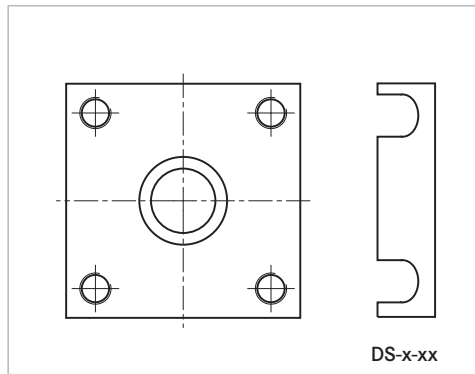


Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	Ø F	G	Ø H	t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Abstreifer Seite 94
Wiper page 94

Anschraubplatten quadratisch Reihe AP-Q S. 96
Flange plates square series AP-Q page 96

Profile Seite 72
Profiles page 72



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Profiles
PR 4.054	10,30	3,20	31,0	35,5	11	11	900	0,55	AP0 AP0-Q	PR 0 NbV
PR 4.055	12,40	3,87	45,5	51,0	13	14	900	0,85	AP1 AP1-Q	PR 1 NbV
PR 4.056	12,90	4,00	48,0	56,8	18	18	800	1,10	AP2 AP2-Q	PR 2 NbV
PR 4.058	22,40	7,00	68,0	72,0	23	23	750	1,70	AP3.1 AP3-Q	PR 3 NbV
PR 4.061	23,80	7,44	81,0	95,0	31	36	650	2,95	AP4 AP4-Q	PR 4 NbV
PR 4.062	33,90	10,60	110,0	132,0	43	50	550	4,10	AP4 AP4-Q	PR 5 NbV
PR 4.063	59,20	18,50	151,0	192,0	68	71	450	6,85	AP6 AP6-Q	PR 6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)
 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)
 F_R = Load capacity radial bearing max. allowable force between bearing and profile
 F_A = Load capacity axial bearing max. allowable force between bearing and profile



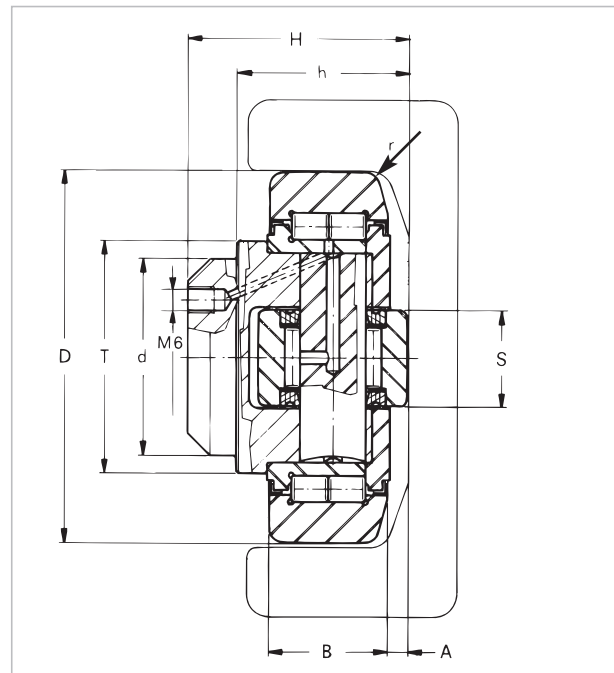
Hochtemperatur-WINKEL-Rolle Typ HT

- WINKEL-Rollen der Baureihe HT in Hochtemperaturausführung sind geeignet für Einsatztemperaturen bis 250°C
- Die WINKEL-Rollen verfügen über Lagerluft C3, Hochtemperaturfett sowie Viton-Dichtungen
- Nachschmierbarkeit nur für Rollen 4.054 HT - 4.063 HT



High temperature WINKEL Bearing Type HT

- WINKEL Bearings of range HT are made for high temperature applications up to 250°C
- The WINKEL Bearings are made with tolerance C3, high temperature grease and viton sealings
- Relubrication only for types 4.054 HT - 4.063 HT



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

CAD Download in 2D/3D unter www.winkel.de

CAD download in 2D/3D at www.winkel.de

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
4.053 HT	200.024.011	52,5	40	30	33,0	27,0	17	5,0	15	2
4.054 HT	200.001.019	62,5	42	30	37,5	30,5	20	2,5	20	3
4.055 HT	200.002.020	70,1	48	35	44,0	36,0	23	2,5	22	4
4.056 HT	200.003.018	77,7	54	40	48,0	36,5	23	3,0	26	4
4.058 HT	200.005.014	88,4	59	45	57,0	44,0	30	3,5	26	3
4.061 HT	200.008.007	107,7	71	60	69,0	55,0	31	4,0	34	5
4.062 HT	200.009.021	123,0	80	60	72,3	56,0	37	5,0	40	5
4.063 HT	200.010.031	149,0	103	60	78,5	58,5	45	5,5	50	3

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

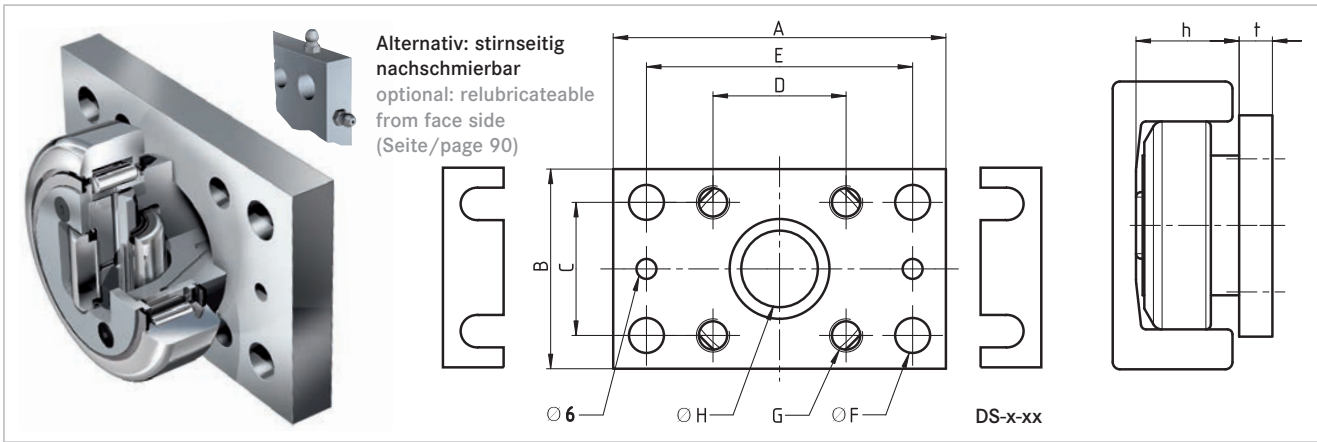
F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

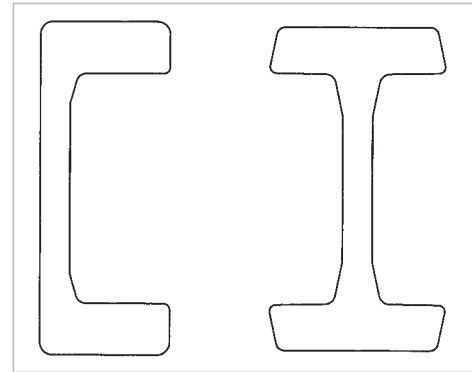
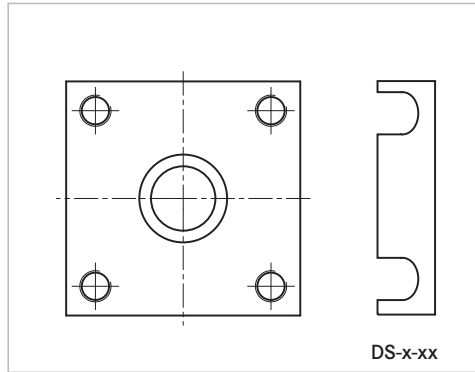


Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	Ø F	G	Ø H	t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
											DS-S-0,5	238.025.000	DS-S-1,0	238.025.001
AP S	212.014.000	90	50	30	40	70	8,5	M8	30	10	DS-S-0,5	238.025.000	DS-S-1,0	238.025.001
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Abstreifer Seite 94
Wiper page 94

Anschraubplatten quadratisch Reihe AP-Q S. 96
Flange plates square series AP-Q page 96

Profile Seite 68 / 76
Profiles page 68 / 76



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/µm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates		Profile Profiles
4.053 HT	5,23	1,68	24,0	32,0	7	7	800	0,46	APS	APS-Q	S
4.054 HT	10,30	3,20	31,0	35,5	11	11	900	0,55	AP0	AP0-Q	0 NbV
4.055 HT	12,40	3,87	45,5	51,0	13	14	900	0,85	AP1	AP1-Q	1 NbV/3018 NbV
4.056 HT	12,90	4,00	48,0	56,8	18	18	800	1,10	AP2	AP2-Q	2 NbV
4.058 HT	22,40	7,00	68,0	72,0	23	23	750	1,70	AP3.1	AP3-Q	3 NbV/3020 NbV
4.061 HT	23,80	7,44	81,0	95,0	31	36	650	2,95	AP4	AP4-Q	4 NbV
4.062 HT	33,90 (26,00)	10,60	110,0	132,0	43	50	550	4,10	AP4	AP4-Q	5 NbV (3353 NbV)
4.063 HT	59,20	18,50	151,0	192,0	68	71	450	6,85	AP6	AP6-Q	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)
C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)
F_R = Load capacity radial bearing max. allowable force between bearing and profile
F_A = Load capacity axial bearing max. allowable force between bearing and profile

WINKEL-Rollen | WINKEL Bearings



WINKEL-Rolle axial über Exzenter justierbar

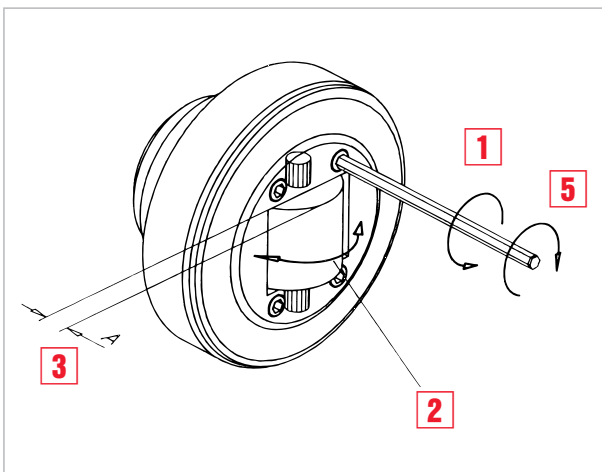
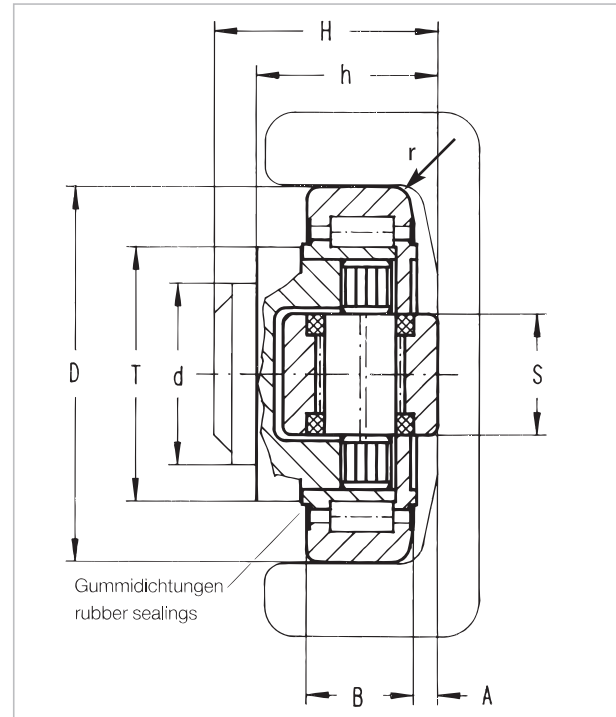
■ Rollen lebensdauer geschmiert



Abdichtung 2 RS/ZRS | Sealings 2 RS/ZRS

Axial Bearing eccentric adjustable

■ bearings are lubricated for life



CAD Download in 2D/3D unter www.winkel.de

Justierung der Axialrolle

- 1 Deckelschrauben lösen
- 2 Exzenterachse drehen (Axialrolle wird verdreht)
- 3 Maß A überprüfen (ggf. Punkt 2 wiederholen)
- 4 Schrauben mit Loctite sichern
- 5 Deckelschrauben festziehen

Adjusting of the Axial Bearing

- 1 loosen screws
- 2 turn eccentric axle (Axial Bearing will be turned)
- 3 check measure A (if necessary repeat Pos.2)
- 4 secure screws with loctite
- 5 lock screws

CAD download in 2D/3D at www.winkel.de

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
4.454	201.031.000	62,5	42	30	37,5 - 39,0	30,5 - 32,0	20	4,0 - 5,5	20	3
4.455	201.032.000	70,1	48	35	44,0 - 45,5	36,0 - 37,5	23	4,0 - 5,5	20	4
4.456	201.033.000	77,7	54	40	48,0 - 49,5	37,0 - 38,5	23	3,5 - 5,0	26	4
4.457	201.034.000	78,3	54	40	40,0 - 41,5	29,0 - 30,5	23	3,5 - 5,0	26	4
4.458	201.035.000	88,4	59	45	57,0 - 58,5	44,0 - 45,5	30	4,0 - 5,5	26	4
4.459	201.036.000	101,6	69	50	46,0 - 48,0	33,0 - 35,0	26	4,5 - 6,5	30	3
4.460	201.037.000	108,5	69	55	54,0 - 56,0	40,0 - 42,0	31	4,0 - 6,0	30	5
4.461	201.038.000	107,7	69	60	69,0 - 71,0	55,0 - 57,0	31	4,0 - 6,0	30	5
4.462	201.039.000	123,0	80	60	72,3 - 76,3	56,0 - 60,0	37	5,0 - 9,0	34	5
4.463	201.040.000	149,4	108	60	78,5 - 82,5	58,5 - 62,5	45	6,0 - 10,0	34	3

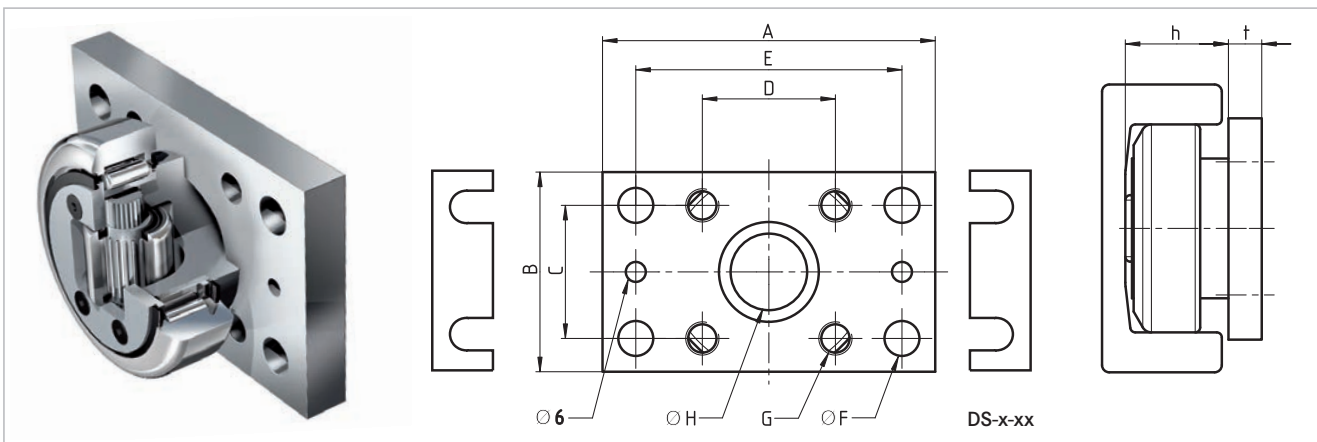
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)
 C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)
 F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil
 F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

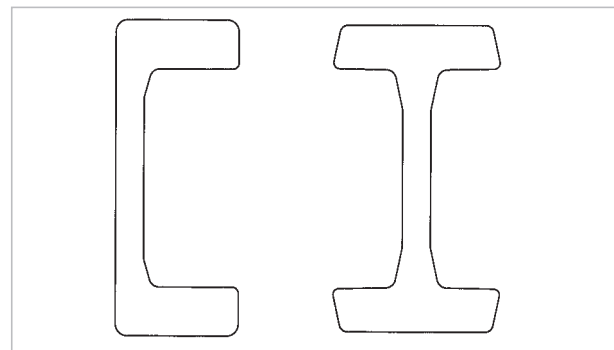
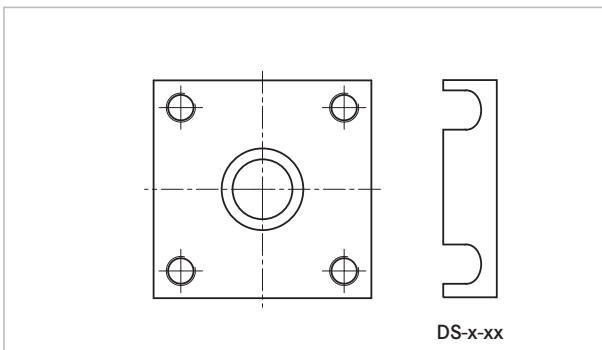
Suitable flange plates



Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	Ø F	G	Ø H	t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
											DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Anschraubplatten quadratisch Reihe AP-Q S. 96
Flange plates square series AP-Q page 96

Profile Seite 68 / 76
Profiles page 68 / 76



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Standard Profiles standard
4.454	10,30	3,20	31,0	35,5	11	11	900	0,53	AP0 AP0-Q	0 NbV
4.455	12,40	3,87	45,5	51,0	13	14	900	0,80	AP1 AP1-Q	1 NbV / 3018 NbV
4.456	12,90	4,00	48,0	56,8	18	18	800	1,00	AP2 AP2-Q	2 NbV
4.457	12,90	4,00	48,0	56,8	18	18	800	0,87	-	3019 NbV
4.458	22,40	7,00	68,0	72,0	23	23	750	1,62	AP3.1 AP3-Q	3 NbV / 3020 NbV
4.459	22,00	7,00	73,0	82,0	25	27	700	1,74	-	2912 NbV
4.460	23,80	7,44	81,0	95,0	31	36	650	2,27	-	3100 NbV
4.461	23,80	7,44	81,0	95,0	31	36	650	2,82	AP4 AP4-Q	4 NbV
4.462	33,90 (26,00)	10,60	110,0	132,0	43	50	550	3,60	AP4 AP4-Q	5 NbV (3353 NbV)
4.463	59,20	18,50	151,0	192,0	68	71	450	6,30	AP6 AP6-Q	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)
C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)
F_R = Load capacity radial bearing max. allowable force between bearing and profile
F_A = Load capacity axial bearing max. allowable force between bearing and profile

WINKEL-Rollen | WINKEL Bearings



Präzisions-WINKEL-Rolle
Typ PR
Axialrolle über Exzenter justierbar

Vorteil:

- weniger Spiel zwischen Rolle und Profil
- Rollen lebensdauer geschmiert

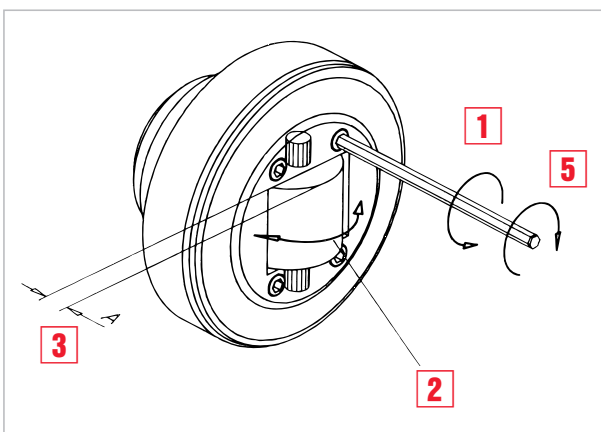
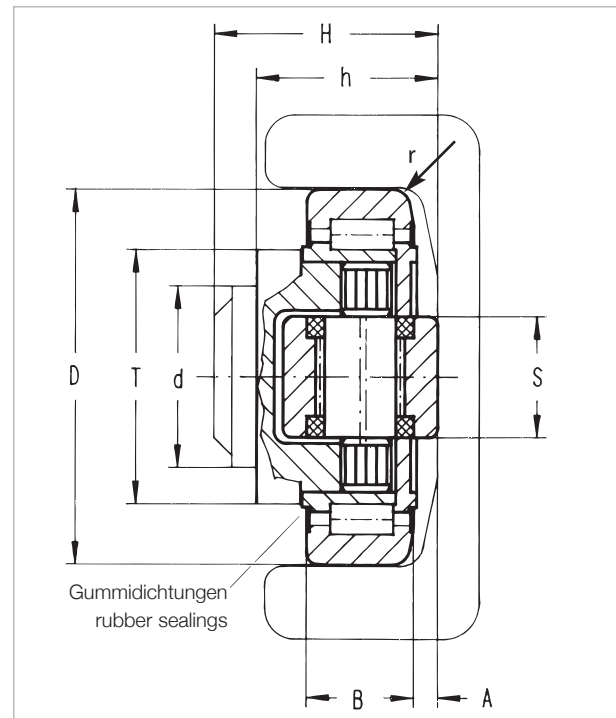


Abdichtung 2 RS/ZRS | Sealings 2 RS/ZRS

Precision WINKEL Bearing
Type PR
Axial Bearing eccentric adjustable

Advantage:

- less clearance between bearing and profile
- bearings are lubricated for life



Justierung der Axialrolle

- 1 Deckelschrauben lösen
- 2 Exzenterachse drehen (Axialrolle wird verdreht)
- 3 Maß A überprüfen (ggf. Punkt 2 wiederholen)
- 4 Schrauben mit Loctite sichern
- 5 Deckelschrauben festziehen

Adjusting of the Axial Bearing

- 1 loosen screws
- 2 turn eccentric axle (Axial Bearing will be turned)
- 3 check measure A (if necessary repeat Pos.2)
- 4 secure screws with loctite
- 5 lock screws

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
PR 4.454	200.114 .000	64,8	42	30	37,5 - 39,0	30,5 - 32,0	20,0	4,0 - 5,5	20	3
PR 4.455	200.115 .000	73,8	48	35	44,0 - 45,5	36,0 - 37,5	23,0	4,0 - 5,5	20	4
PR 4.456	200.116 .000	81,8	54	40	48,0 - 49,5	37,0 - 38,5	23,0	3,5 - 5,0	26	4
PR 4.458	200.117 .000	92,8	59	45	57,0 - 58,5	44,0 - 45,5	30,0	4,0 - 5,5	26	4
PR 4.461	200.118 .000	111,8	69	60	69,0 - 71,0	55,0 - 57,0	31,0	4,0 - 6,0	30	5
PR 4.462	200.119 .000	127,8	80	60	72,3 - 76,3	56,0 - 60,0	37,0	5,0 - 9,0	34	5
PR 4.463	200.120 .000	153,8	108	60	78,5 - 82,5	58,5 - 62,5	45,0	6,0 - 10,0	34	3
PR 4.085	201.049.001	184,8	124	100	95,7 - 98,7	76,3 - 79,3	57,3	6,5 - 9,5	60	3

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

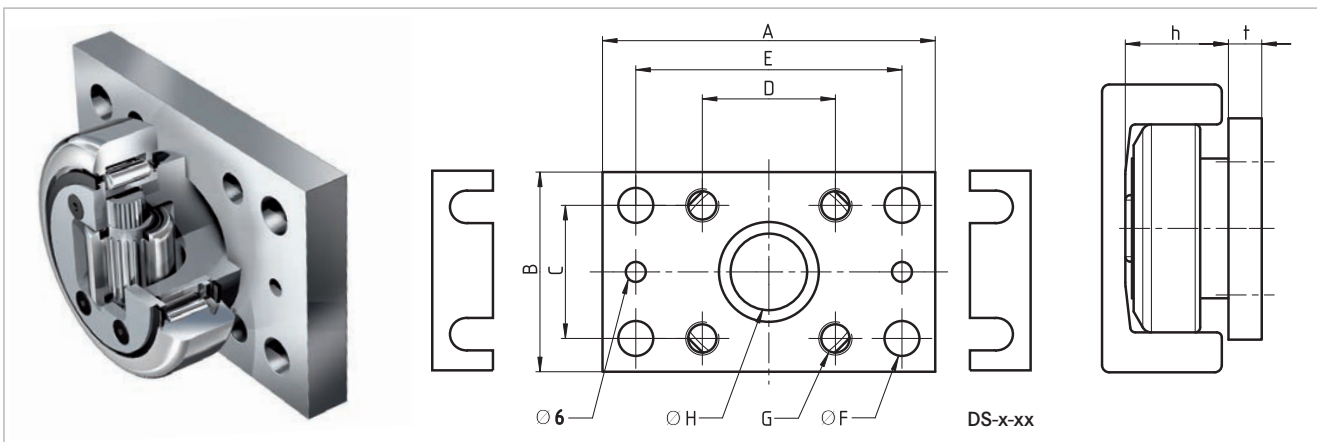
F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

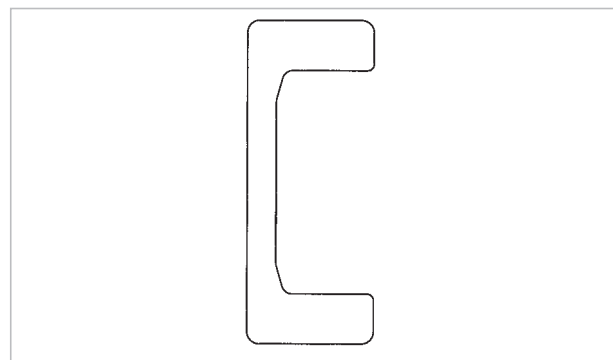
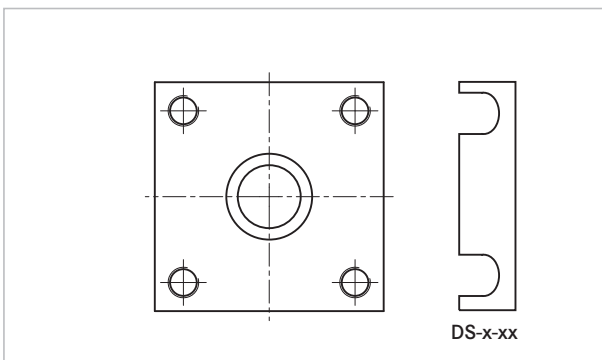
Suitable flange plates



Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	Ø F	G	Ø H	t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
											DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Anschraubplatten quadratisch Reihe AP-Q S. 96
Flange plates square series AP-Q page 96

Profile Seite 72
Profiles page 72



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Profiles
PR 4.454	10,30	3,20	31,0	35,5	11	11	900	0,55	AP0 AP0-Q	PR 0 NbV
PR 4.455	12,40	3,87	45,5	51,0	13	14	900	0,80	AP1 AP1-Q	PR 1 NbV
PR 4.456	12,90	4,00	48,0	56,8	18	18	800	1,05	AP2 AP2-Q	PR 2 NbV
PR 4.458	22,40	7,00	68,0	72,0	23	23	750	1,65	AP3.1 AP3-Q	PR 3 NbV
PR 4.461	23,80	7,44	81,0	95,0	31	36	650	2,85	AP4 AP4-Q	PR 4 NbV
PR 4.462	33,90	10,60	110,0	132,0	43	50	550	4,00	AP4 AP4-Q	PR 5 NbV
PR 4.463	59,20	18,50	151,0	192,0	68	71	450	6,70	AP6 AP6-Q	PR 6 NbV
PR 4.085	91,80	23,70	207,0	243,0	73	83	100	12,50	AP90-Q	PR 8 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)
C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)
F_R = Load capacity radial bearing max. allowable force between bearing and profile
F_A = Load capacity axial bearing max. allowable force between bearing and profile



WINKEL-Rolle axial über Scheiben justierbar



Justierung der Axialrolle

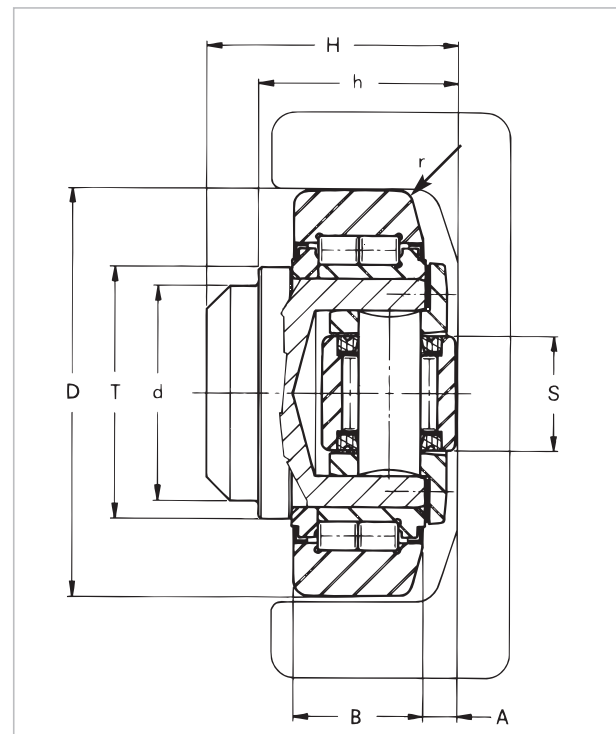
Die Einstellung des Maßes (A) erfolgt durch Distanzscheiben zwischen Hauptkörper und Bolzen der Seitenführungsrolle.

- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm

Sonderbolzen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

WINKEL Bearing axial bearing adjustable by shims



Adjusting of the Axial Bearing

The adjustment of dimension (A) is obtained by means of an insert positioned between the main body of the bearing and the housing of the side guide roller.

- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm

Special bolts on request.

CAD download in 2D/3D at www.winkel.de

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H* mm H* mm	h* mm h* mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
4.072	200.011.000	62,5	42	30	43,0	33,0	20	5,5	16	3
4.073	200.012.000	70,1	48	35	48,0	40,0	23	6,5	16	4
4.074	200.013.007	78,1	54	40	50,5	39,5	23	7,0	21	4
4.075	200.014.000	77,7	54	40	45,0	34,0	23	7,0	21	4
4.076	200.015.000	88,4	59	45	61,0	48,0	30	7,0	21	3
4.077	200.017.000	101,2	67	50	50,5	37,5	28	7,0	21	3
4.078	200.020.000	107,7	71	55	58,5	44,5	31	8,0	33	5
4.0784	200.016.000	107,7	71	60	69,0	55,0	31	8,0	33	5
4.079	200.018.000	123,0	80	60	75,5	59,5	37	8,0	33	5
4.080	200.019.000	149,0	103	60	89,0	69,0	45	15,0	50	5

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

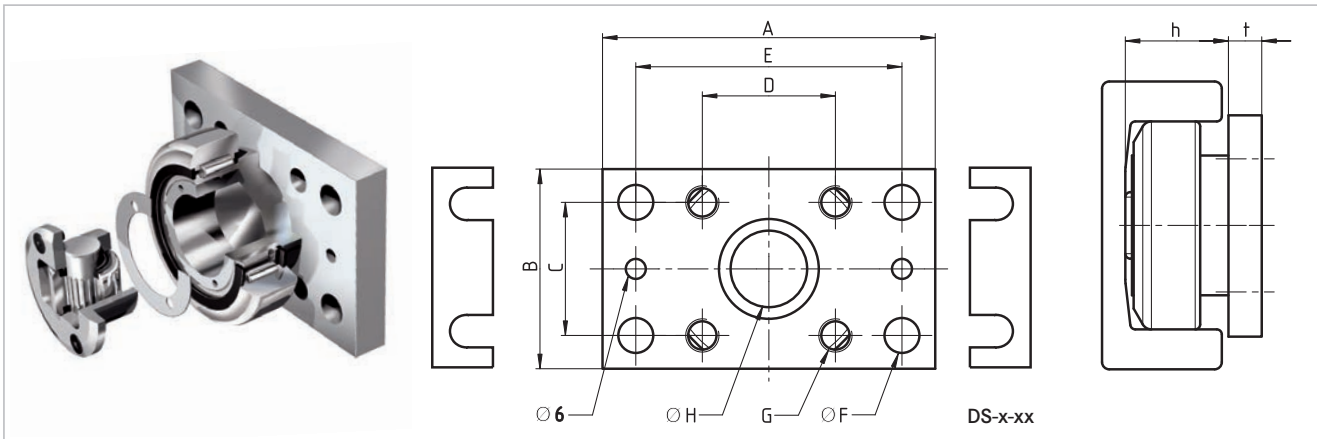
* Maße H und h ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

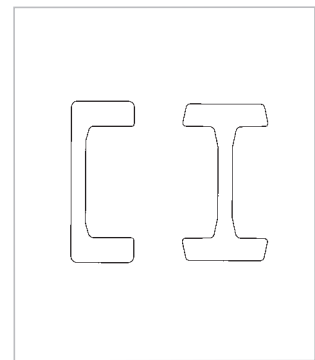
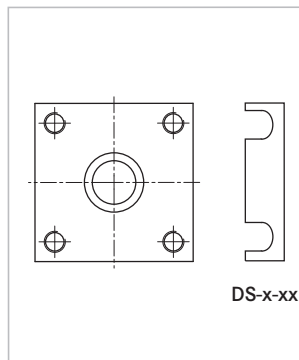


Typ Type	Artikel-Nr. Article no.	A A	B B	C C	D D	E E	Ø F Ø F	G G	Ø H Ø H	t t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Anschraubplatten
quadratisch Reihe AP-Q S. 96
Flange plates
square series AP-Q page 96

Profile Seite 68 / 76
Profiles page 68 / 76

Typ Type	Distanzscheiben Shims	
	0,5 mm	1,0 mm
	4.072 - 4.073	S-4.072-0,5 200.900.000
4.074 - 4.077	S-4.074-0,5 200.901.000	S-4.074-1,0 200.901.001
4.078 - 4.079	S-4.078-0,5 200.902.000	S-4.078-1,0 200.902.001
4.080	S-4.080-0,5 200.903.000	S-4.080-1,0 200.903.001



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Standard Profiles standard
4.072	10,30	3,20	31,0	35,5	8	8	900	0,56	AP0 AP0-Q	0 NbV
4.073	12,40	3,87	45,5	51,0	14	14	800	0,85	AP1 AP1-Q	1 NbV / 3018 NbV
4.074	12,90	4,00	48,0	56,8	14	14	700	1,02	AP2 AP2-Q	2 NbV
4.075	12,90	4,00	48,0	56,8	14	14	700	0,92	-	3019 NbV
4.076	22,40	7,00	68,0	72,0	15	15	600	1,69	AP3.1 AP3-Q	3 NbV / 3020 NbV
4.077	22,00	7,00	73,0	82,0	18	19	600	1,85	-	2912 NbV
4.078	23,80	7,44	81,0	95,0	31	36	500	2,38	-	3100 NbV
4.0784	23,80	7,44	81,0	95,0	31	36	500	2,80	AP4 AP4-Q	4 NbV
4.079	33,90 (26,00)	10,60	110,0	132,0	35	38	500	4,08	AP4 AP4-Q	5 NbV (3353 NbV)
4.080	39,50	18,50	151,0	192,0	68	71	400	6,70	AP6 AP6-Q	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76),
C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)
F_R = Load capacity radial bearing max. allowable force between bearing and profile
F_A = Load capacity axial bearing max. allowable force between bearing and profile
* Dimension H and h without washers; max. + 2 mm

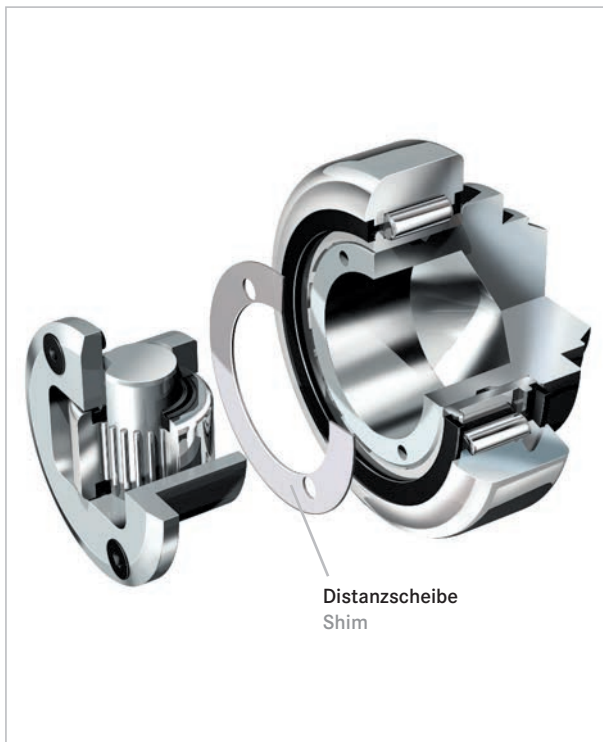
WINKEL-Rollen | WINKEL Bearings



Präzisions-WINKEL-Rolle

Typ PR

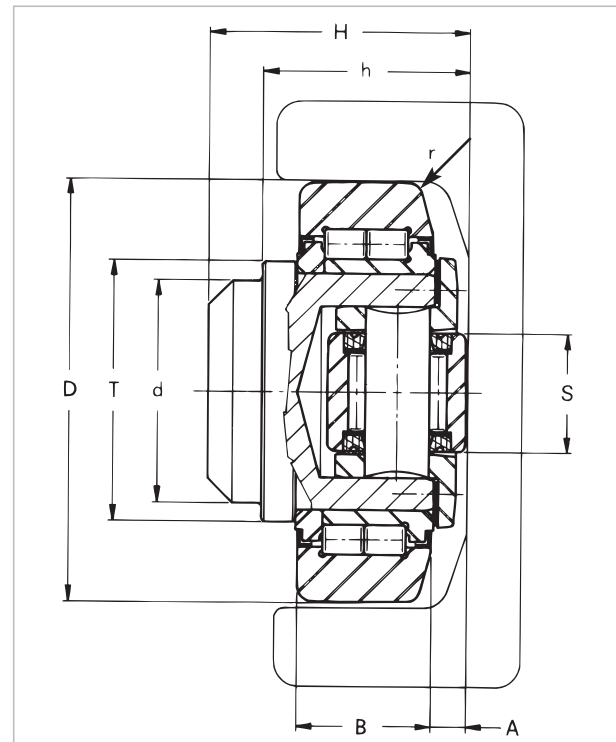
Axialrolle über Scheiben justierbar



Precision WINKEL Bearing

Type PR

Axial Bearing adjustable by shims



Justierung der Axialrolle

Die Einstellung des Maßes (A) erfolgt durch Distanzscheiben zwischen Hauptkörper und Bolzen der Seitenführungsrolle.

- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm

Sonderbolzen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

Adjusting of the Axial Bearing

The adjustment of dimension (A) is obtained by means of an insert positioned between the main body of the bearing and the housing of the side guide roller.

- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm

Special bolts on request.

CAD download in 2D/3D at www.winkel.de

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H* mm H* mm	h* mm h* mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
PR 4.072	200.107 .000	64,8	42	30	43,0	33,0	20	5,5	16	3
PR 4.073	200.108 .000	73,8	48	35	48,0	40,0	23	6,5	16	4
PR 4.074	200.109 .000	81,8	54	40	50,5	39,5	23	7,0	21	4
PR 4.076	200.110 .000	92,8	59	45	61,0	48,0	30	7,0	21	3
PR 4.0784	200.111 .000	111,8	71	60	69,0	55,0	31	8,0	33	5
PR 4.079	200.112 .000	127,8	80	60	75,5	59,5	37	8,0	33	5
PR 4.080	200.113 .000	153,8	103	60	89,0	69,0	45	15,0	50	5

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

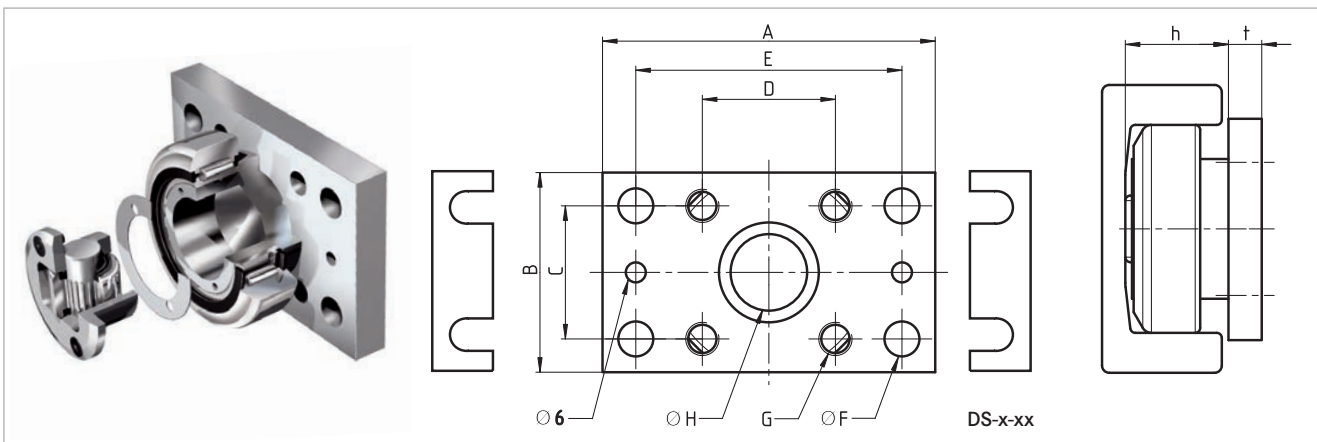
* Maße H und h ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

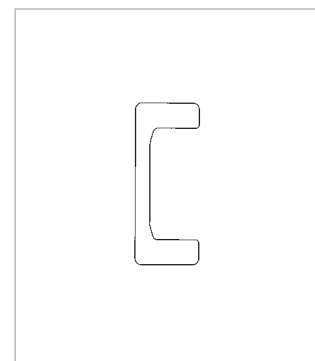
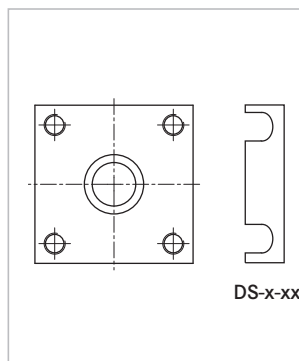


Typ Type	Artikel-Nr. Article no.	A A	B B	C C	D D	E E	Ø F Ø F	G G	Ø H Ø H	t t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Anschraubplatten
quadratisch Reihe AP-Q S. 96
Flange plates
square series AP-Q page 96

Profile Seite 72
Profiles page 72

Typ Type	Distanzscheiben Shims	
	0,5 mm	1,0 mm
PR 4.072 -	S-4.072-0,5	S-4.072-1,0
PR 4.073	200.900.000	200.900.001
PR 4.074 -	S-4.074-0,5	S-4.074-1,0
PR 4.077	200.901.000	200.901.001
PR 4.078 -	S-4.078-0,5	S-4.078-1,0
PR 4.079	200.902.000	200.902.001
PR 4.080	S-4.080-0,5 200.903.000	S-4.080-1,0 200.903.001



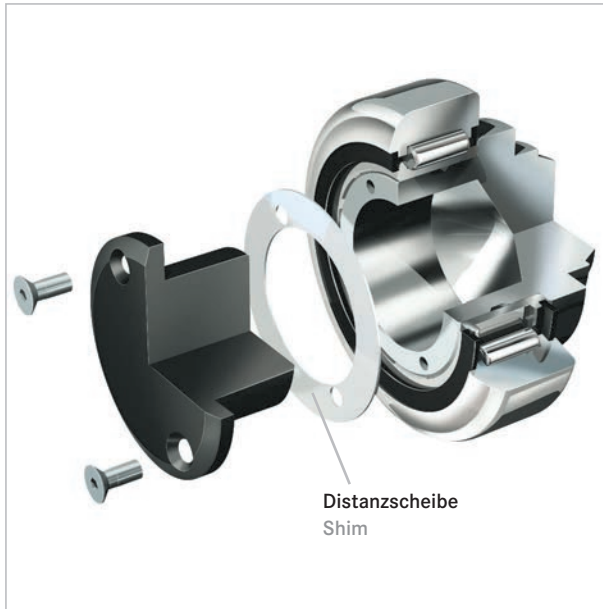
Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Standard Profiles standard
PR 4.072	10,30	3,20	31,0	35,5	8	8	900	0,56	AP0 AP0-Q	PR 0 NbV
PR 4.073	12,40	3,87	45,5	51,0	14	14	800	0,85	AP1 AP1-Q	PR 1 NbV
PR 4.074	12,90	4,00	48,0	56,8	14	14	700	1,02	AP2 AP2-Q	PR 2 NbV
PR 4.076	22,40	7,00	68,0	72,0	15	15	600	1,69	AP3.1 AP3-Q	PR 3 NbV
PR 4.0784	23,80	7,44	81,0	95,0	31	36	500	2,80	AP4 AP4-Q	PR 4 NbV
PR 4.079	33,90	10,60	110,0	132,0	35	38	500	4,08	AP4 AP4-Q	PR 5 NbV
PR 4.080	39,50	18,50	151,0	192,0	68	71	400	6,70	AP6 AP6-Q	PR 6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)
 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)
 F_R = Load capacity radial bearing max. allowable force between bearing and profile
 F_A = Load capacity axial bearing max. allowable force between bearing and profile
 * Dimension H and h without washers; max. + 2 mm

WINKEL-Rollen | WINKEL Bearings



WINKEL-Rolle justierbar mit OILAMID*-Einsatz



Die Einstellung des Maßes (A) erfolgt durch Distanzscheiben zwischen Hauptkörper und Oilamid-Einsatz.

- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm
- Sonderbolzen auf Anfrage.

Hinweis: Bei hoher axialer Belastung ist eine Bearbeitung der Gleitfläche zu empfehlen.

CAD Download in 2D/3D unter www.winkel.de

*Oilamid ist ein hochabriebfester selbstschmierender Polyamid.

The adjustment of dimension (A) is obtained by means of an insert positioned between the main body of the bearing and the oilamid insert.

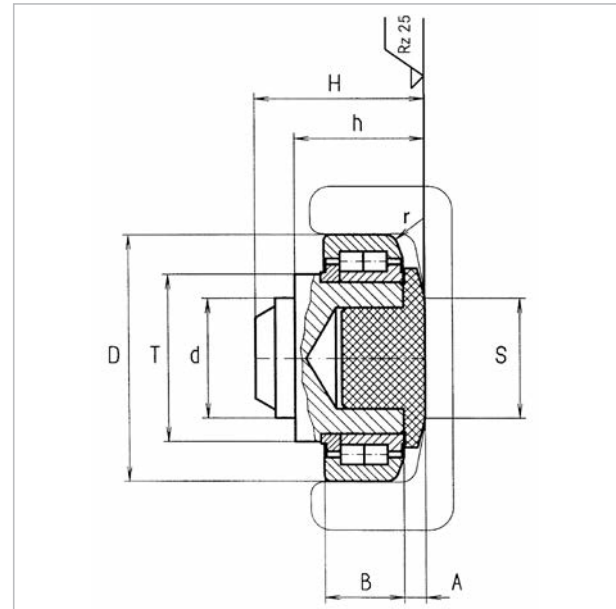
- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm
- Special bolts on request.

Notice: At high axial forces we recommend to mill the axial raceway of the profile.

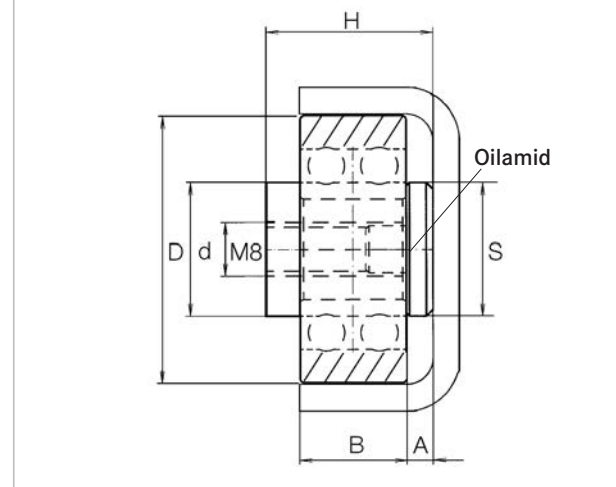
CAD download in 2D/3D at www.winkel.de

*Oilamid is a high resistant, self lubricant Polyamide

WINKEL Bearing adjustable with OILAMID* insert



nur 4.052 P | only 4.052 P



Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H* mm H* mm	h* mm h* mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
4.052 P	200.143.000	40,0	-	20	25,0	-	16	4,0	∅ 20	-
4.072 P	200.011.002	62,5	42	30	43,0	33,0	20	5,5	∅ 25	3
4.073 P	200.012.002	70,1	48	35	48,0	40,0	23	6,5	∅ 33	4
4.074 P	200.013.002	78,1	54	40	50,5	39,5	23	7,0	∅ 40	4
4.076 P	200.015.002	88,4	59	45	61,0	48,0	30	7,0	∅ 45	3
4.0784 P	200.016.002	107,7	71	60	69,0	55,0	31	8,0	∅ 60	5
4.079 P	200.018.002	123,0	80	60	75,5	59,5	37	8,0	∅ 70	5
4.080 P	200.019.001	149,0	103	60	82,0	62,0	45	8,0	∅ 100	5
4.085 P	201.049.002	180,0	124	100	99,2	79,8	57,3	10,0	∅ 112	5

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

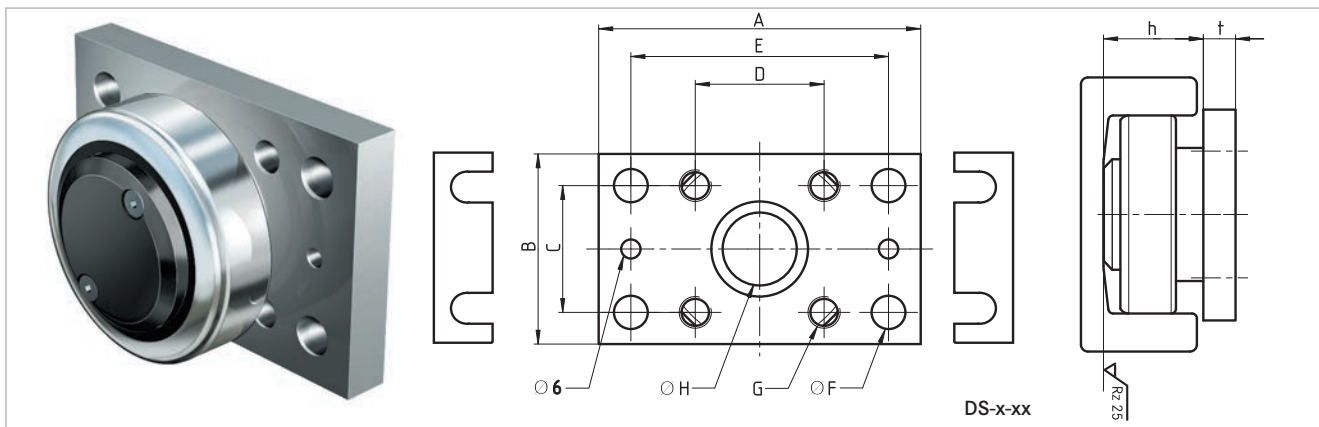
* Maße H und h ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

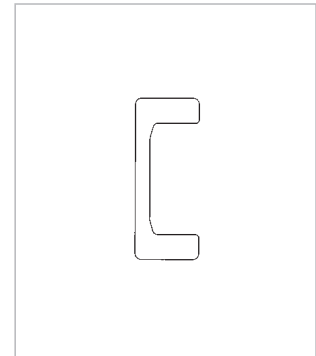
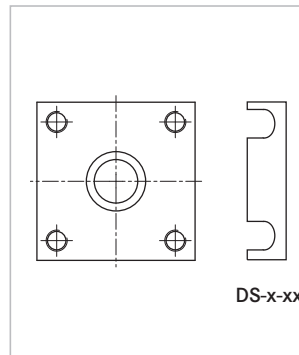


Typ	Artikel-Nr.	A	B	C	D	E	Ø F	G	Ø H	t	Distanzsteckblech t=0,5mm		Distanzsteckblech t=1,0mm	
Type	Article no.	A	B	C	D	E	Ø F	G	Ø H	t	Washer	t=0.5mm	Washer	t=1.0mm
AP A	212.042.000	65	45	30	30	50	6,5	M 6	15	5	DS-A-0,5	238.026.000	DS-A-1,0	238.026.001
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Anschraubplatten
quadratisch Reihe AP-Q S. 96
Flange plates
square series AP-Q page 96

Profile Seite 68
Profiles page 68

Typ	Distanzscheiben	
	Shims	
Type	0,5 mm	1,0 mm
4.072 P -	S-4.072-0,5	S-4.072-1,0
4.073 P	200.900.000	200.900.001
4.074 P -	S-4.074-0,5	S-4.074-1,0
4.077 P	200.901.000	200.901.001
4.078 P -	S-4.078-0,5	S-4.078-1,0
4.079 P	200.902.000	200.902.001
4.080 P	S-4.080-0,5	S-4.080-1,0
	200.903.000	200.903.001



Typ	F _R kN	F _A kN	C kN	C ₀ kN	u/min max.	Gewicht kg	Anschraubplatten		Profile
Type	F _R kN	F _A kN	C kN	C ₀ kN	r/pm max.	Weight kg	Flange plates		Profiles
4.052 P	0,80	3,1	10,0	5,7	800	0,15	APA	APA-Q	A
4.072 P	10,30	4,0	31,0	35,5	900	0,49	AP0	AP0-Q	0 NbV
4.073 P	12,40	6,7	45,5	51,0	800	0,74	AP1	AP1-Q	1 NbV
4.074 P	12,90	7,2	48,0	56,8	700	0,94	AP2	AP2-Q	2 NbV
4.076 P	22,40	8,9	68,0	72,0	600	1,57	AP3.1	AP3-Q	3 NbV
4.0784 P	23,80	14,4	81,0	95,0	500	2,63	AP4	AP4-Q	4 NbV
4.079 P	33,90	38,4	110,0	132,0	500	3,90	AP4	AP4-Q	5 NbV
4.080 P	59,20	41,6	151,0	192,0	400	6,50	AP6	AP6-Q	6 NbV
4.085 P	91,80	41,6	207,0	243,0	200	11,50	AP90Q		8 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)

F_R = Load capacity radial bearing max. allowable force between bearing and profile,

F_A = Load capacity axial bearing max. allowable force between bearing and profile

* Dimension H and h without washers; max. 2 mm

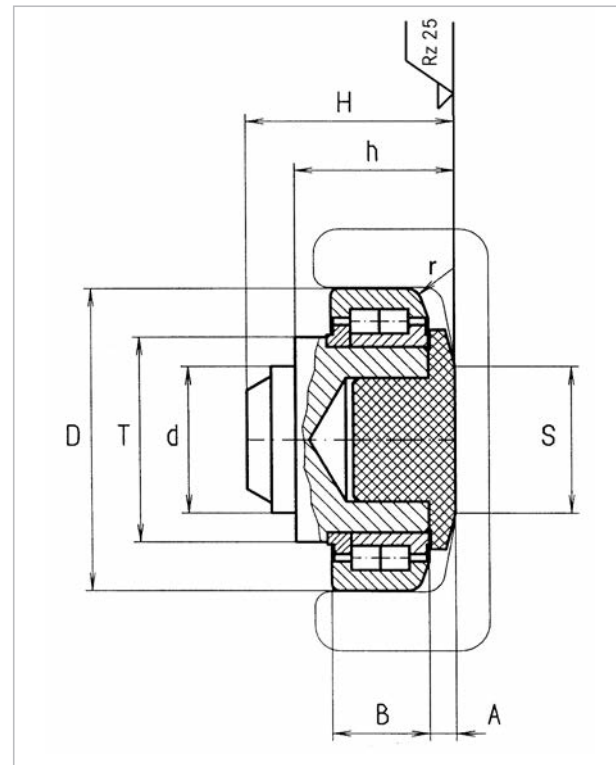
WINKEL-Rollen | WINKEL Bearings



Präzisions-WINKEL-Rolle
Typ PR-P
WINKEL-Rolle justierbar mit
Oilamid*-Einsatz



Precision WINKEL Bearing
Type PR-P
WINKEL Bearing adjustable with
Oilamid* insert



Die Einstellung des Maßes (A) erfolgt durch Distanzscheiben zwischen Hauptkörper und Oilamid-Einsatz.

- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm
- Sonderbolzen auf Anfrage.

Hinweis: Bei hoher axialer Belastung ist eine Bearbeitung der Gleitfläche zu empfehlen.

CAD Download in 2D/3D unter www.winkel.de

*Oilamid ist ein hochabriebfester selbstschmierender Polyamid.

The adjustment of dimension (A) is obtained by means of an insert positioned between the main body of the bearing and the oilamid insert.

- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm
- Special bolts on request.

Notice: At high axial forces we recommend to mill the axial raceway of the profile.

CAD download in 2D/3D at www.winkel.de

*Oilamid is a high resistant, self lubricant Polyamide

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H* mm H* mm	h* mm h* mm	B mm B mm	A mm A mm	S mm S mm	r mm r mm
PR 4.072 P	200.011.003	64,8	42	30	43,0	33,0	20,0	5,5	∅ 25	3
PR 4.073 P	200.013.005	73,8	48	35	48,0	40,0	23,0	6,5	∅ 33	4
PR 4.074 P	200.013.004	81,8	54	40	50,5	39,5	23,0	7,0	∅ 40	4
PR 4.076 P	200.015.003	92,8	59	45	61,0	48,0	30,0	7,0	∅ 45	3
PR 4.0784 P	200.067.000	111,8	71	60	69,0	55,0	31,0	8,0	∅ 60	5
PR 4.079 P	200.154.000	127,8	80	60	75,5	59,5	37,0	8,0	∅ 70	5
PR 4.080 P	200.155.000	153,8	103	60	82,0	62,0	45,0	8,0	∅ 100	5
PR 4.085 P	201.049.010	184,8	124	100	99,2	79,8	57,3	10,0	∅ 112	5

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

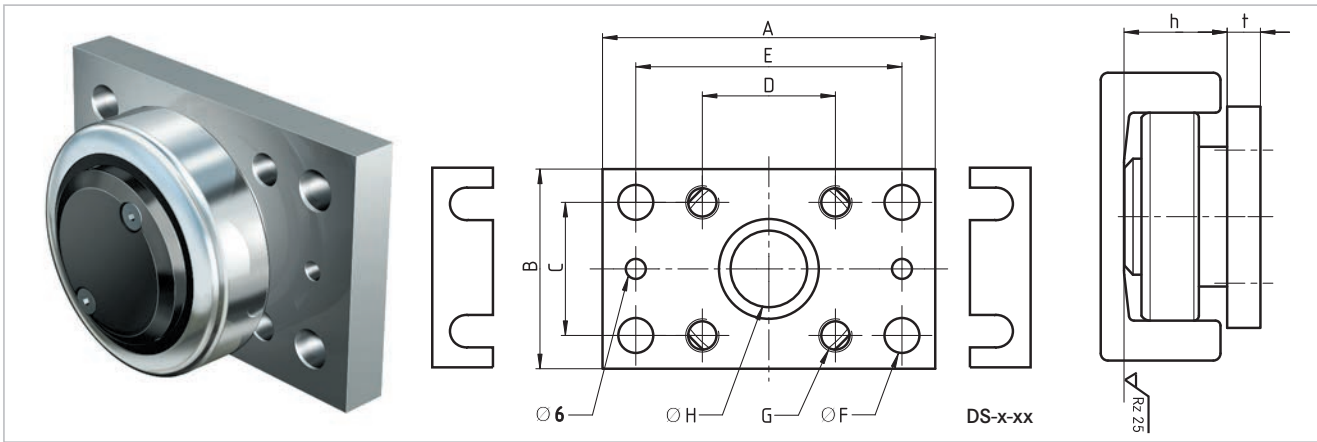
* Maße H und h ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

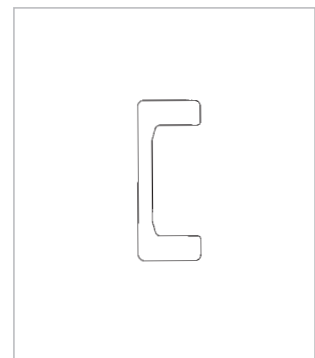
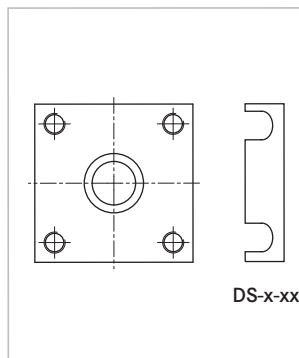


Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	Ø F	G	Ø H	t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
											Washer	t=0.5mm	Washer	t=1.0mm
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Anschraubplatten
quadratisch Reihe AP-Q S. 96
Flange plates
square series AP-Q page 96

Profile Seite 72
Profiles page 72

Typ Type	Distanzscheiben Shims	
	0,5 mm	1,0 mm
PR 4.072 P -	S-4.072-0,5	S-4.072-1,0
PR 4.073 P	200.900.000	200.900.001
PR 4.074 P -	S-4.074-0,5	S-4.074-1,0
PR 4.077 P	200.901.000	200.901.001
PR 4.078 P -	S-4.078-0,5	S-4.078-1,0
PR 4.079 P	200.902.000	200.902.001
PR 4.080 P	S-4.080-0,5	S-4.080-1,0
	200.903.000	200.903.001



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Profiles
PR 4.072 P	10,30	4,0	31,0	35,5	900	0,49	AP0 AP0-Q	PR 0 NbV
PR 4.073 P	12,40	6,7	45,5	51,0	800	0,74	AP1 AP1-Q	PR 1 NbV
PR 4.074 P	12,90	7,2	48,0	56,8	700	0,94	AP2 AP2-Q	PR 2 NbV
PR 4.076 P	22,40	8,9	68,0	72,0	600	1,57	AP3.1 AP3-Q	PR 3 NbV
PR 4.0784 P	23,80	14,4	81,0	95,0	500	2,63	AP4 AP4-Q	PR 4 NbV
PR 4.079 P	33,90	38,4	110,0	132,0	500	3,90	AP4 AP4-Q	PR 5 NbV
PR 4.080 P	59,20	41,6	151,0	192,0	400	6,50	AP4 AP4-Q	PR 5 NbV
PR 4.080 P	59,20	41,6	151,0	192,0	400	6,50	AP6 AP6-Q	PR 6 NbV
PR 4.085 P	91,80	41,6	207,0	243,0	200	11,50	AP90-Q	PR 8 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)

F_R = Load capacity radial bearing max. allowable force between bearing and profile

F_A = Load capacity axial bearing max. allowable force between bearing and profile

* Dimension H and h without washers; max. 2 mm

WINKEL-Rollen | WINKEL Bearings



WINKEL-Rolle mit Kombibolzen Typ KB

Vorteile:

- universelle Befestigungsmöglichkeit
- wahlweise Anschrauben oder Anschweißen des Befestigungsbolzens
- keine Anschraubplatte erforderlich

WINKEL Bearing with combined bolt Type KB

Advantages:

- free choice of mounting
- the bolt can be welded or screwed to your design
- no flange necessary



- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm

CAD Download in 2D/3D unter www.winkel.de

- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm

CAD download in 2D/3D at www.winkel.de

Typ Type	Artikel-Nr. Article no.	B B	A* A*	C C	D D	E E	F F	G G
KB 4.072	200.162.000	62,5	43,0	50	17,5	20	M 10x13	30
KB 4.073	200.163.000	70,1	55,0	60	25,5	23	M 12x18	40
KB 4.074	200.164.000	78,1	54,5	60	24,5	23	M 12x18	40
KB 4.076	200.165.000	88,4	68,0	70	31,0	30	M 14x20	44
KB 4.0784	200.166.000	107,7	75,0	80	36,0	31	M 14x22	54
KB 4.079	200.167.000	123,0	79,2	100	34,2	37	M 16x23	60
KB 4.080	200.168.000	149,0	89,0	120	29,0	45	M 16x23	80

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

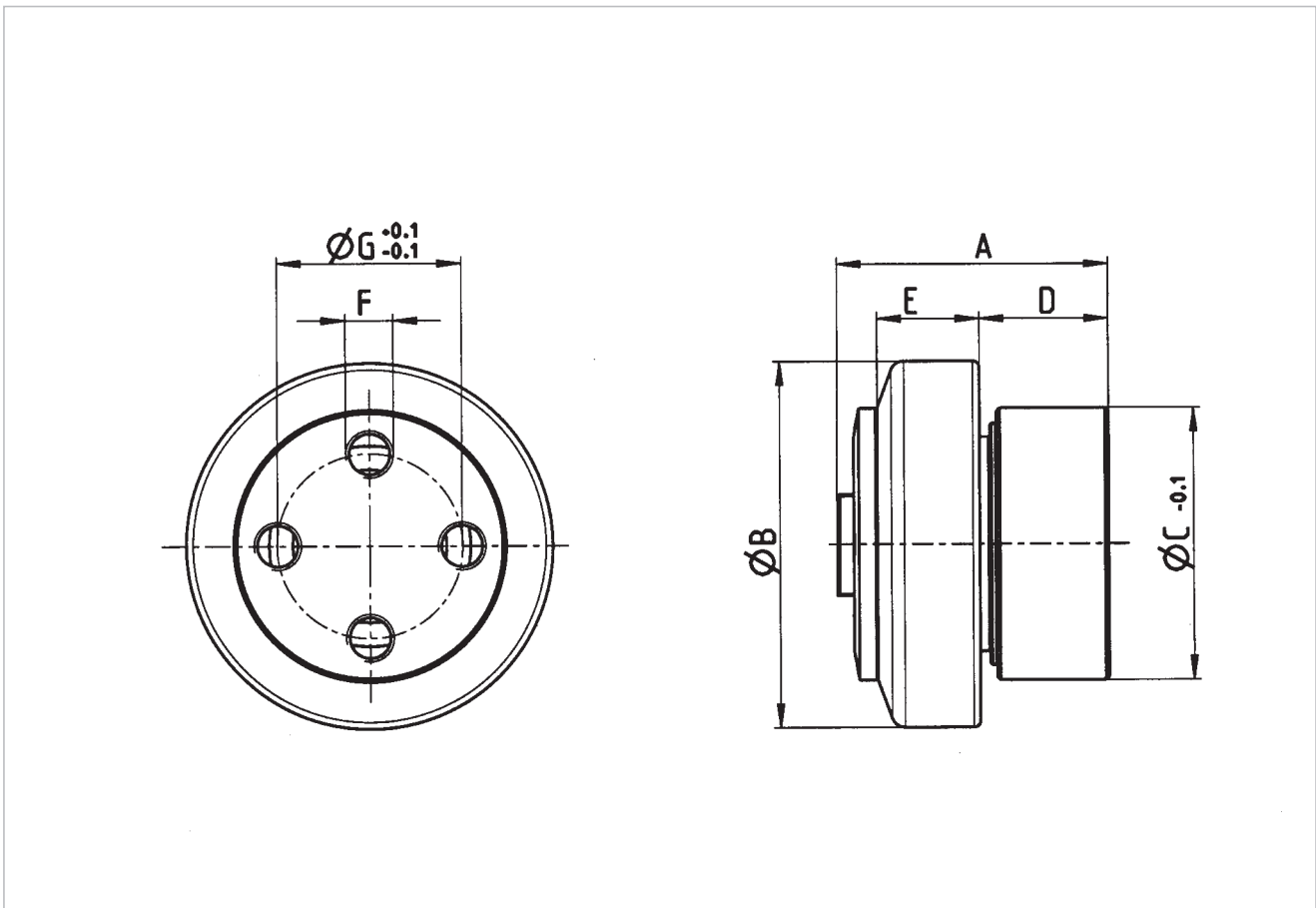
C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

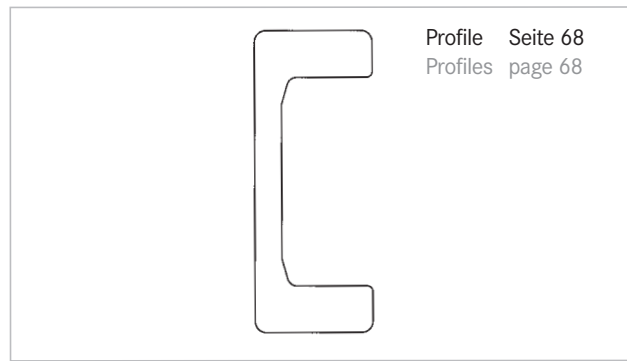
F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

*Maß A ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings



Typ Type	Distanzscheiben Shims	
	0,5 mm	1,0 mm
KB 4.072 -	S-4.072-0,5	S-4.072-1,0
KB 4.073	200.900.000	200.900.001
KB 4.074 -	S-4.074-0,5	S-4.074-1,0
KB 4.077	200.901.000	200.901.001
KB 4.078 -	S-4.078-0,5	S-4.078-1,0
KB 4.079	200.902.000	200.902.001
KB 4.080	S-4.080-0,5	S-4.080-1,0
	200.903.000	200.903.001



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C _o kN C _o kN	C _A kN C _A kN	C _{oA} kN C _{oA} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Profile Profiles
KB 4.072	10,30	3,20	31,0	35,5	8	8	900	0,65	0 NbV
KB 4.073	12,40	3,87	45,5	51,0	14	14	800	1,10	1 NbV
KB 4.074	12,90	4,00	48,0	56,8	14	14	700	1,20	2 NbV
KB 4.076	22,40	7,00	68,0	72,0	15	15	600	2,05	3 NbV
KB 4.0784	23,80	7,44	81,0	95,0	31	36	500	3,20	4 NbV
KB 4.079	33,90	10,60	110,0	132,0	35	38	500	4,90	5 NbV
KB 4.080	39,50	18,50	151,0	192,0	68	71	400	8,00	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C_o = Static load capacity radial bearing (ISO 76)
 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{oA} = Static load capacity axial bearing (ISO 76)
 F_R = Load capacity radial bearing max. allowable force between bearing and profile
 F_A = Load capacity axial bearing max. allowable force between bearing and profile
 *Dimension A without washers; max. 2 mm

WINKEL-Rollen | WINKEL Bearings



Präzisions-WINKEL-Rolle mit Kombibolzen Typ KB PR

Vorteile:

- universelle Befestigungsmöglichkeit
- wahlweise Anschrauben oder Anschweißen des Befestigungsbolzens
- keine Anschraubplatte erforderlich

Precision WINKEL Bearing with combined bolt Type KB PR

Advantages:

- free choice of mounting
- the bolt can be welded or screwed to your design
- no flange necessary



- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm

CAD Download in 2D/3D unter www.winkel.de

- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm

CAD download in 2D/3D at www.winkel.de

Typ Type	Artikel-Nr. Article no.	B B	A* A*	C C	D D	E E	F F	G G
KB PR 4.072	200.202.000	64,8	43,0	50	17,5	20	M 10x13	30
KB PR 4.073	200.203.000	73,8	55,0	60	25,5	23	M 12x18	40
KB PR 4.074	200.204.000	81,8	54,5	60	24,5	23	M 12x18	40
KB PR 4.076	200.205.000	92,8	68,0	70	31,0	30	M 14x20	44
KB PR 4.0784	200.206.000	111,8	75,0	80	36,0	31	M 14x22	54
KB PR 4.079	200.207.000	127,8	79,2	100	34,2	37	M 16x23	60
KB PR 4.080	200.208.000	153,8	89,0	120	29,0	45	M 16x23	80

C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76),

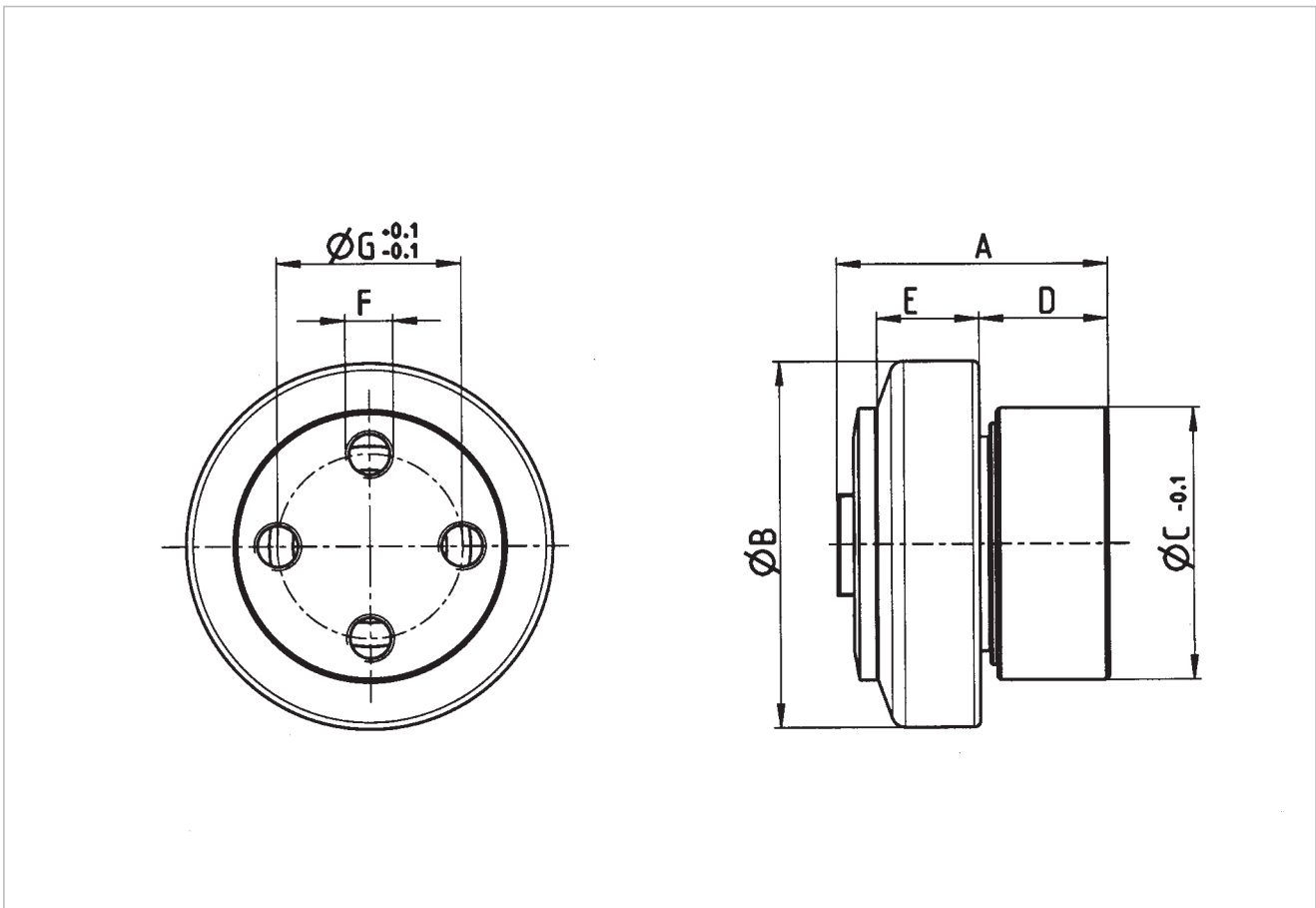
C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76),

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil,

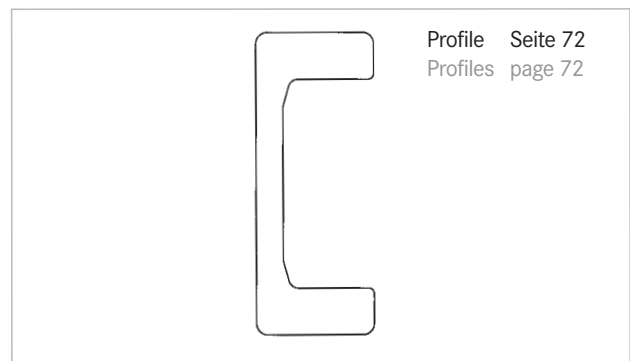
F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

*Maß A ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings



Typ Type	Distanzscheiben Shims	
	0,5 mm	1,0 mm
KB PR 4.072 -	S-4.072-0,5	S-4.072-1,0
KB PR 4.073	200.900.000	200.900.001
KB PR 4.074 -	S-4.074-0,5	S-4.074-1,0
KB PR 4.077	200.901.000	200.901.001
KB PR 4.078 -	S-4.078-0,5	S-4.078-1,0
KB PR 4.079	200.902.000	200.902.001
KB PR 4.080	S-4.080-0,5	S-4.080-1,0
	200.903.000	200.903.001



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C _o kN C _o kN	C _A kN C _A kN	C _{oA} kN C _{oA} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Profile Profiles
KB PR 4.072	10,30	3,20	31,0	35,5	8	8	900	0,68	PR 0 NbV
KB PR 4.073	12,40	3,87	45,5	51,0	14	14	800	1,15	PR 1 NbV
KB PR 4.074	12,90	4,00	48,0	56,8	14	14	700	1,30	PR 2 NbV
KB PR 4.076	22,40	7,00	68,0	72,0	15	15	600	2,13	PR 3 NbV
KB PR 4.0784	23,80	7,44	81,0	95,0	31	36	500	3,34	PR 4 NbV
KB PR 4.079	33,90	10,60	110,0	132,0	35	38	500	5,10	PR 5 NbV
KB PR 4.080	39,50	18,50	151,0	192,0	68	71	400	8,30	PR 6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C_o = Static load capacity radial bearing (ISO 76),
 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{oA} = Static load capacity axial bearing (ISO 76),
 F_R = Load capacity radial bearing max. allowable force between bearing and profile,
 F_A = Load capacity axial bearing max. allowable force between bearing and profile
 *Dimension A without washers; max. 2 mm

WINKEL-Rollen | WINKEL Bearings



WINKEL-Rolle mit Kombibolzen und Oilamid* Einsatz

Typ KB P

Vorteile:

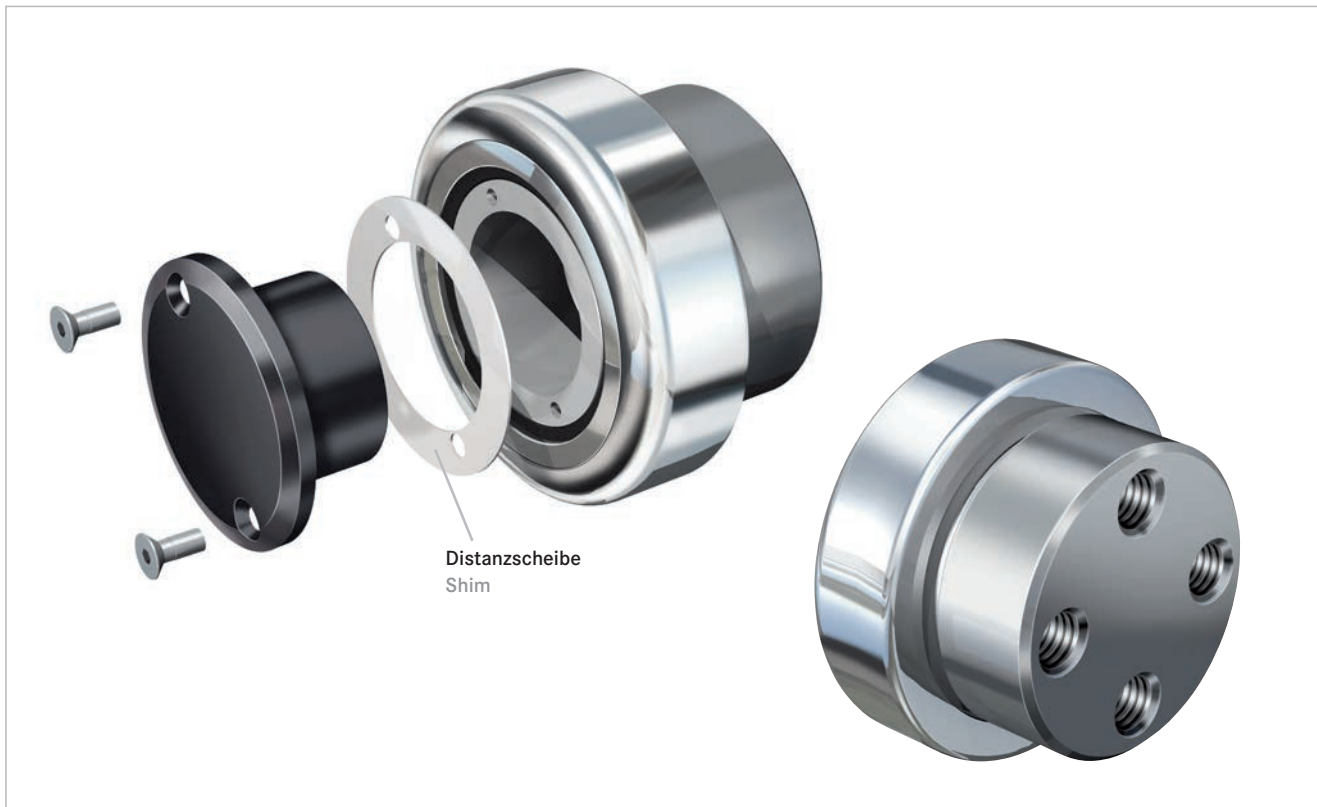
- universelle Befestigungsmöglichkeit
- wahlweise Anschrauben oder Anschweißen des Befestigungsbolzens

WINKEL Bearing with combined bolt and oilamid* insert

Type KB P

Advantages:

- free choice of bolt assembly
- the bolt can be welded or screwed to your design



Die Einstellung des Maßes (A) erfolgt durch Distanzscheiben zwischen Hauptkörper und Oilamid-Einsatz.

- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm
- Sonderbolzen auf Anfrage.

Hinweis: Bei hoher axialer Belastung ist eine Bearbeitung der Gleitfläche zu empfehlen.

CAD Download in 2D/3D unter www.winkel.de

*Oilamid ist ein hochabriebfester selbstschmierender Polyamid.

The adjustment of dimension (A) is obtained by means of an insert positioned between the main body of the bearing and the oilamid insert.

- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm
- Special bolts on request.

Notice: At high axial forces we recommend to mill the axial raceway of the profile.

CAD download in 2D/3D at www.winkel.de

*Oilamid is a high resistant, self lubricant Polyamide

Typ Type	Artikel-Nr. Article no.	B B	A* A*	C C	D D	E E	F F	G G
KB 4.072 P	200.222.000	62,5	43,0	50	17,5	20	M10x13	30
KB 4.073 P	200.223.000	70,1	55,0	60	25,5	23	M12x18	40
KB 4.074 P	200.224.001	78,1	54,5	60	24,5	23	M12x18	40
KB 4.076 P	200.225.000	88,4	68,0	70	31,0	30	M14x20	44
KB 4.0784 P	200.226.000	107,7	75,0	80	36,0	31	M14x22	54
KB 4.079 P	200.227.000	123,0	79,2	100	34,2	37	M16x23	60
KB 4.080 P	200.228.000	149,0	82,0	120	29,0	45	M16x23	80

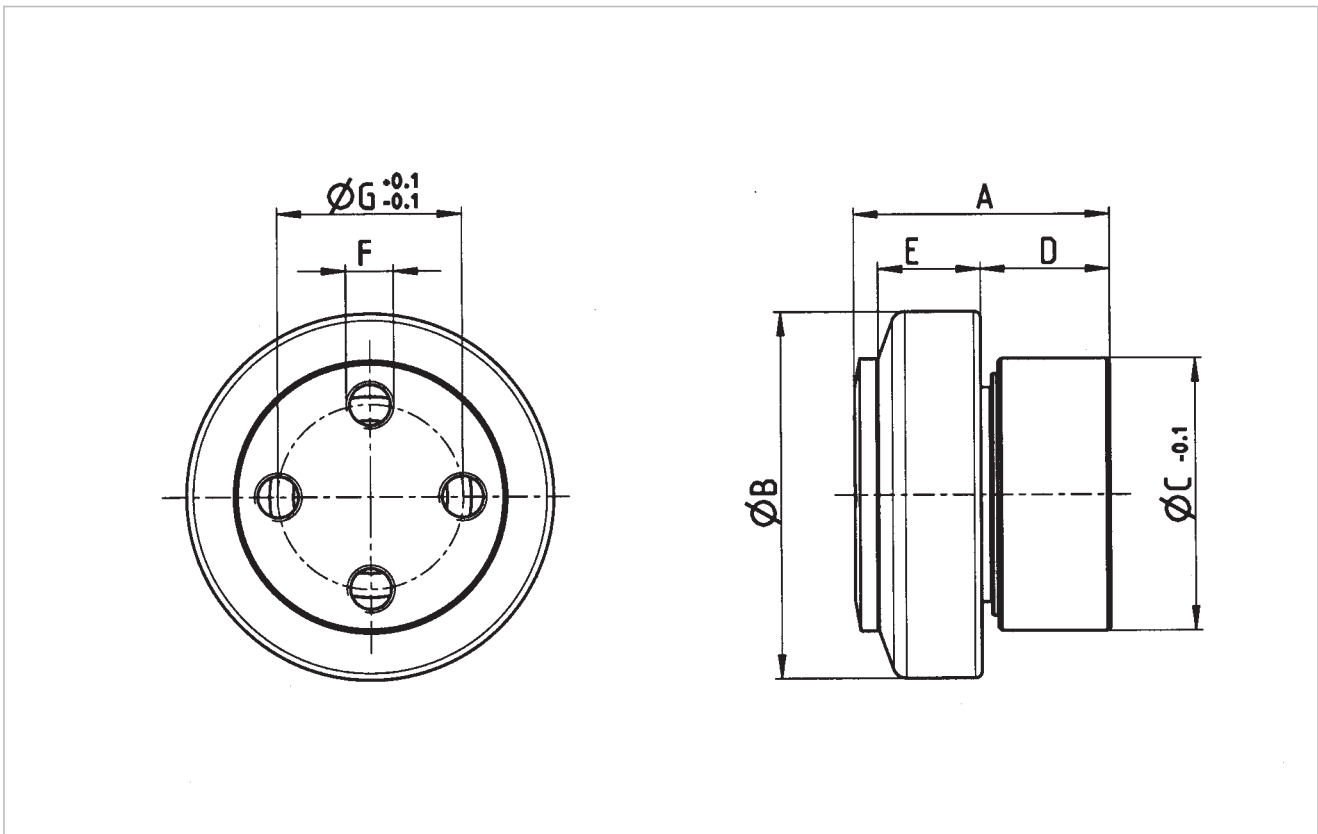
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

F_r = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_a = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

*Maß A ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings

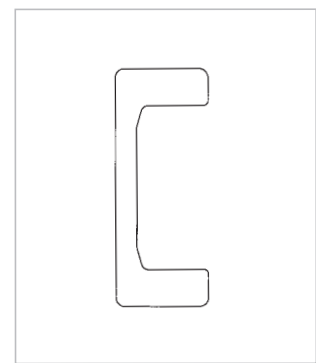
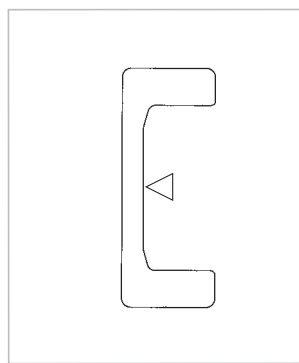


Hinweis: Bei hoher axialer Belastung ist eine spanende Bearbeitung der Gleitfläche zu empfehlen.

Notice: At high axial forces we recommend to mill the axial raceway of the profile.

Profile Seite 68
Profiles page 68

Typ Type	Distanzscheiben Shims	
	0,5 mm	1,0 mm
KB 4.072 P -	S-4.072-0,5	S-4.072-1,0
KB 4.073 P	200.900.000	200.900.001
KB 4.074 P -	S-4.074-0,5	S-4.074-1,0
KB 4.077 P	200.901.000	200.901.001
KB 4.078 P -	S-4.078-0,5	S-4.078-1,0
KB 4.079 P	200.902.000	200.902.001
KB 4.080 P	S-4.080-0,5	S-4.080-1,0
	200.903.000	200.903.001



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	u/min max. r/pm max.	Gewicht kg Weight kg	Profile Profiles
KB 4.072 P	10,30	4,0	31,0	35,5	900	0,53	0 NbV
KB 4.073 P	12,40	6,7	45,5	51,0	800	1,00	1 NbV
KB 4.074 P	12,90	7,2	48,0	56,8	700	1,10	2 NbV
KB 4.076 P	22,40	8,9	68,0	72,0	600	1,93	3 NbV
KB 4.0784 P	23,80	14,4	81,0	95,0	500	3,00	4 NbV
KB 4.079 P	33,90	38,4	110,0	132,0	500	4,72	5 NbV
KB 4.080 P	59,20	41,6	151,0	192,0	400	7,80	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)

F_R = Load capacity radial bearing max. allowable force between bearing and profile

F_A = Load capacity axial bearing max. allowable force between bearing and profile

*Dimension A without washers; max. 2 mm

WINKEL-Rollen | WINKEL Bearings



Präzisions-WINKEL-Rolle mit Kombibolzen und Oilamid* Einsatz Typ KB PR P

Vorteile:

- universelle Befestigungsmöglichkeit
- wahlweise Anschrauben oder Anschweißen des Befestigungsbolzens

Precision WINKEL Bearing with combined bolt and oilamid* insert Type KB PR P

Advantages:

- free choice of bolt assembly
- the bolt can be welded or screwed to your design



Die Einstellung des Maßes (A) erfolgt durch Distanzscheiben zwischen Hauptkörper und Oilamid-Einsatz.

- Scheiben mit 0,5 und 1,0 mm sind lieferbar.
- Max. Einstellbereich + 2 mm
- Sonderbolzen auf Anfrage.

Hinweis: Bei hoher axialer Belastung ist eine Bearbeitung der Gleitfläche zu empfehlen.

CAD Download in 2D/3D unter www.winkel.de

*Oilamid ist ein hochabriebfester selbstschmierender Polyamid.

The adjustment of dimension (A) is obtained by means of an insert positioned between the main body of the bearing and the oilamid insert.

- Shims with 0.5 and 1.0 mm thickness are available.
- Max. adjusting + 2 mm
- Special bolts on request.

Notice: At high axial forces we recommend to mill the axial raceway of the profile.

CAD download in 2D/3D at www.winkel.de

*Oilamid is a high resistant, self lubricant Polyamide

Typ Type	Artikel-Nr. Article no.	B B	A* A*	C C	D D	E E	F F	G G
KB PR 4.072 P	200.242.000	64,8	43,0	50	17,5	20	M10x13	30
KB PR 4.073 P	200.243.000	73,8	55,0	60	25,5	23	M12x18	40
KB PR 4.074 P	200.244.000	81,8	54,5	60	24,5	23	M12x18	40
KB PR 4.076 P	200.245.000	92,8	68,0	70	31,0	30	M14x20	44
KB PR 4.0784 P	200.246.000	111,8	75,0	80	36,0	31	M14x22	54
KB PR 4.079 P	200.247.000	127,8	79,2	100	34,2	37	M16x23	60
KB PR 4.080 P	200.248.000	153,8	82,0	120	29,0	45	M16x23	80

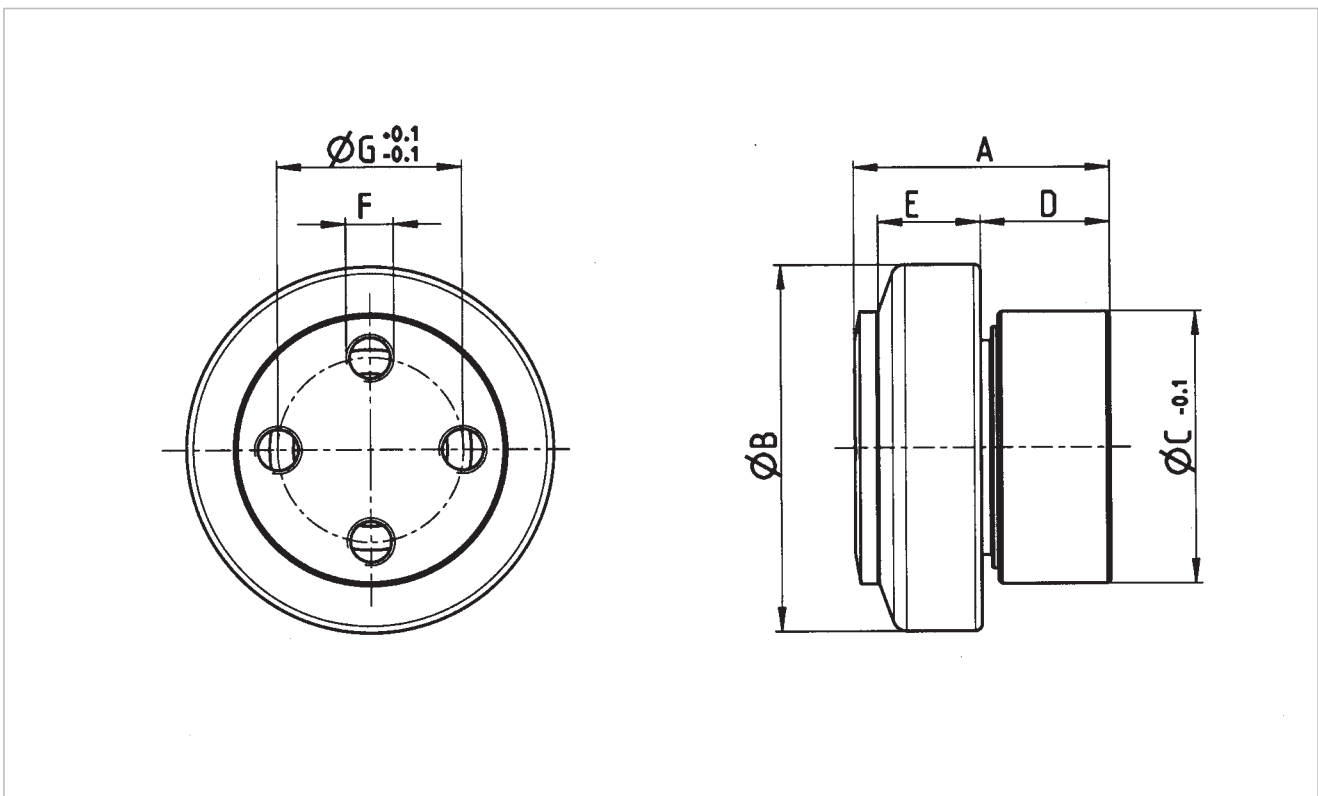
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

*Maß A ohne Distanzscheiben; max. +2 mm

WINKEL-Rollen | WINKEL Bearings

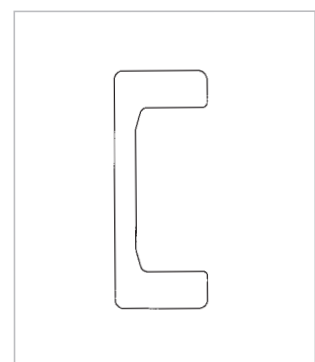
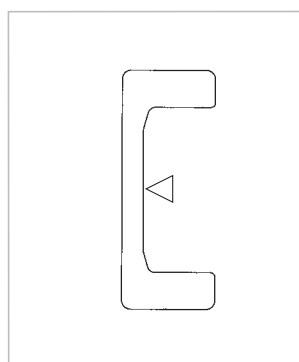


Hinweis: Bei hoher axialer Belastung ist eine spanende Bearbeitung der Gleitfläche zu empfehlen.

Notice: At high axial forces we recommend to mill the axial raceway of the profile.

Profile Seite 72
Profiles page 72

Typ Type	Distanzscheiben Shim	
	0,5 mm	1,0 mm
KB PR 4.072 P -	S-4.072-0,5	S-4.072-1,0
KB PR 4.073 P	200.900.000	200.900.001
KB PR 4.074 P -	S-4.074-0,5	S-4.074-1,0
KB PR 4.077 P	200.901.000	200.901.001
KB PR 4.078 P -	S-4.078-0,5	S-4.078-1,0
KB PR 4.079 P	200.902.000	200.902.001
KB PR 4.080 P	S-4.080-0,5	S-4.080-1,0
	200.903.000	200.903.001



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	u/min max. r/pm max.	Gewicht kg Weight kg	Profile Profiles
KB PR 4.072 P	10,30	3,0	31,0	35,5	900	0,56	PR 0 NbV
KB PR 4.073 P	12,40	6,7	45,5	51,0	800	1,05	PR 1 NbV
KB PR 4.074 P	12,90	7,2	48,0	56,8	700	1,20	PR 2 NbV
KB PR 4.076 P	22,40	8,9	68,0	72,0	600	2,00	PR 3 NbV
KB PR 4.0784 P	23,80	14,4	81,0	95,0	500	3,14	PR 4 NbV
KB PR 4.079 P	33,90	38,4	110,0	132,0	500	4,90	PR 5 NbV
KB PR 4.080 P	59,20	41,6	151,0	192,0	400	8,10	PR 6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)

F_R = Load capacity radial bearing max. allowable force between bearing and profile

F_A = Load capacity axial bearing max. allowable force between bearing and profile

*Dimension A without washers; max. 2 mm

WINKEL-Rollen | WINKEL Bearings



Jumbo WINKEL-Rolle Axialrolle justierbar



Die Einstellung der Axialrolle (Maß A) erfolgt durch Verdrehen des Bolzens der Axialrolle. Der Bolzen ist exzentrisch und hat 8 Stellpositionen. Das Radiallager ist nachschmierbar.

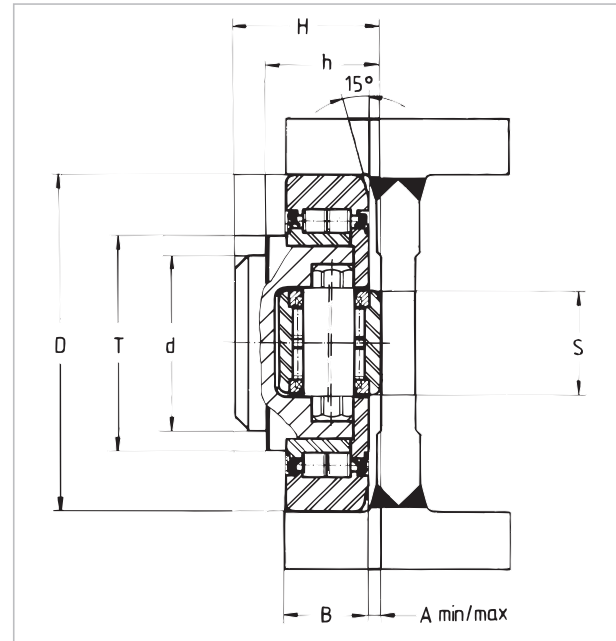
Jumbo-Rollen mit Oilamid-Einsatz auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Jumbo WINKEL Bearing Axial Bearing adjustable



The adjustment of dimension (A) is obtained by turning the bolt of the side guide roller. The bolt is eccentric and has 8 adjustment positions. The radial bearing can be relubricated.

Jumbo rolls of Oilamid use on request.

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NEU
NEW

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	S mm S mm
4.085	201.049.000	180	124	100	95,7 - 98,7	76,3 - 79,3	57,3	6,5 - 9,5	60
4.089	201.050.000	165	113	80	69,0 - 72,0	53,0 - 56,0	40,0	5,0 - 8,0	50
4.090	201.051.000	190	124	100	84,5 - 87,5	64,5 - 67,5	48,0	6,5 - 9,5	60
4.091	201.052.000	220	146	110	94,5 - 97,5	74,5 - 77,5	58,0	6,5 - 9,5	75
4.092	201.053.000	250	168	120	102,0 - 105,0	77,0 - 80,0	60,0	7,0 - 10,0	75
4.093	201.054.000	280	188	150	119,5 - 123,5	89,5 - 93,5	72,0	7,5 - 11,5	90
4.094	201.055.000	320	218	150	135,0 - 139,0	110,0 - 114,0	85,0	10,0 - 14,0	90

NEU
NEW

C = Dyn. Tragzahl Radiallager (ISO 281/1), C_0 = Stat. Tragzahl Radiallager (ISO 76)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

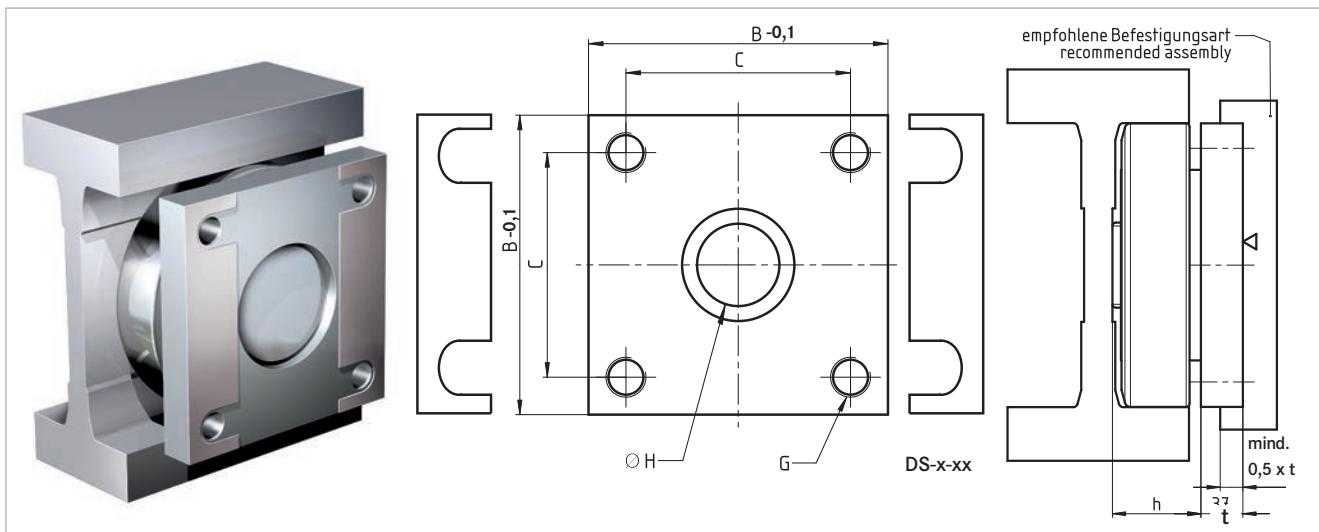
F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



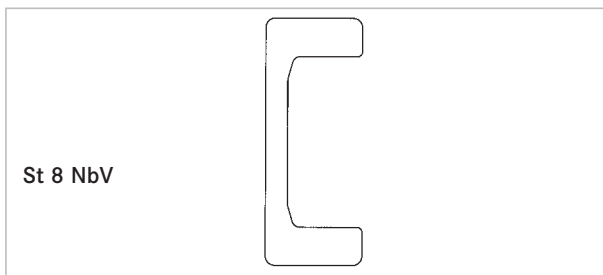
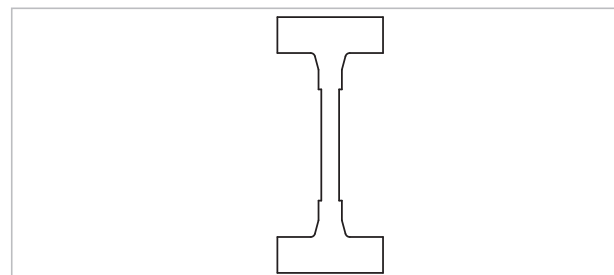
Passende Anschraubplatten

Suitable flange plates



Typ Type	Artikel-Nr. Article no.	B-0,1 B-0,1	C C	G G	Ø H Ø H	h h	t t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
								DS-89-0,5	238.033.000	DS-89-1,0	238.033.001
AP 89-Q	212.200.001	165	125	M20	80	53,0 - 56,0	23	DS-89-0,5	238.033.000	DS-89-1,0	238.033.001
AP 90-Q (4.085 + AP 90-Q)	212.200.002	190	150	M20	100	64,5 - 67,5 (76,0 - 79,3)	28	DS-90-0,5	238.034.000	DS-90-1,0	238.034.001
AP 91-Q	212.200.003	220	176	M24	110	74,5 - 77,5	33	DS-91-0,5	238.035.000	DS-91-1,0	238.035.001
AP 92-Q	212.200.004	250	206	M24	120	77,0 - 80,0	37	DS-92-0,5	238.036.000	DS-92-1,0	238.036.001
AP 93-Q (4.094 + AP 93-Q)	212.200.005	280	220	M30	150	89,5 - 93,5 (110,0 - 114,0)	37	DS-93-0,5	238.037.000	DS-93-1,0	238.037.001

 NEU
NEW

 Profile S. 70
Profiles page 70

 Profile S. 80
Profiles page 80


Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Profiles
4.085	91,80	23,70	207	243	73	83	100	11,5	AP 90-Q	Standard 8 NbV
4.089	41,71	13,91	213	388	85	133	120	9,2	AP 89-Q	Standard 10
4.090	58,00	19,40	266	500	100	180	100	10,6	AP 90-Q	Standard 16
4.091	84,00	28,00	326	681	138	257	90	17,3	AP 91-Q	Standard 18
4.092	101,50	33,90	369	748	138	257	75	23,9	AP 92-Q	Standard 28
4.093	139,40	46,50	489	1066	182	488	50	36,0	AP 93-Q	Stand. 36 + 42
4.094	192,00	57,70	542	1370	210	422	50	50,0	AP 93-Q	Standard 50

 C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)

 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76)

 F_R = Load capacity radial bearing max. allowable force between bearing and profile

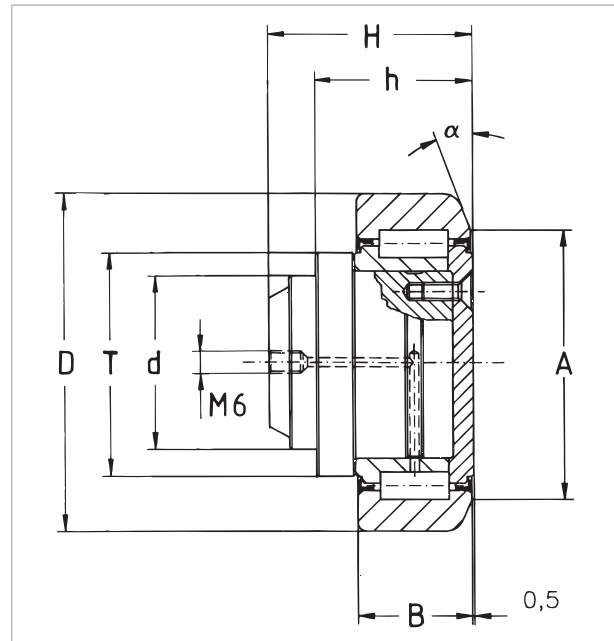
 F_A = Load capacity axial bearing max. allowable force between bearing and profile



WINKEL-Radiallager



WINKEL Radial Bearing



Technische Daten:

- die Außenringe sind aus Einsatzstahl
UNI 16 CrNi 4 gehärtet 62+2 HRC
- die Innenringe sind aus Stahl
DIN 100 Cr 6 gehärtet 62-2 HRC
- flachköpfige Rollen aus Stahl
DIN 100 Cr 6 gehärtet 59 - 64 HRC
- Anschweißbolzen aus Stahl C22E (Werkstoff-Nr. 1.1151)
- Bolzentoleranz -0,05 mm
- Nachschmierbarkeit für Rollen 2.054 - 2.063
- Radiallager werden bei der Montage mit Schmierfett
Grad 3 (z.B. Shell Alvania 3, Esso Beacon 3) befestet

Technical characteristics:

- outer rings are made from case-hardened steel
UNI 16 CrNi 4 hardened at 62+2HRC
- inner rings are made from bearing steel
En 31-SAE 52100 hardened at 62-2 HRC
- cylindrical rollers have flat ground heads, made from
En 31-SAE 52100 steel hardened at 59 - 64 HRC
- welding bolts are made from C22E (Material no. 1.1151)
- bolt tolerance -0.05 mm
- bearings from 2.054 to 2.063 are relubricateable
- bearings are lubricated with grease grade 3
(e.g. Shell Alvania 3, Esso Beacon 3)

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Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	α mm α mm
2.054	205.061.000	62,5	42	30	34,5	26,5	20	50	20°
2.055	205.062.000	70,1	48	35	42,0	34,0	23	57	20°
2.056	205.063.000	77,7	53	40	45,5	34,0	23	61	20°
2.058	205.064.000	88,4	59	45	54,0	41,0	30	68	20°
2.061	205.065.000	107,7	71	60	65,5	51,5	31	82	20°
2.062	205.066.000	123,0	80	60	67,8	51,5	37	92	20°
2.063	205.067.000	149,0	103	60	74,0	54,0	45	116	15°

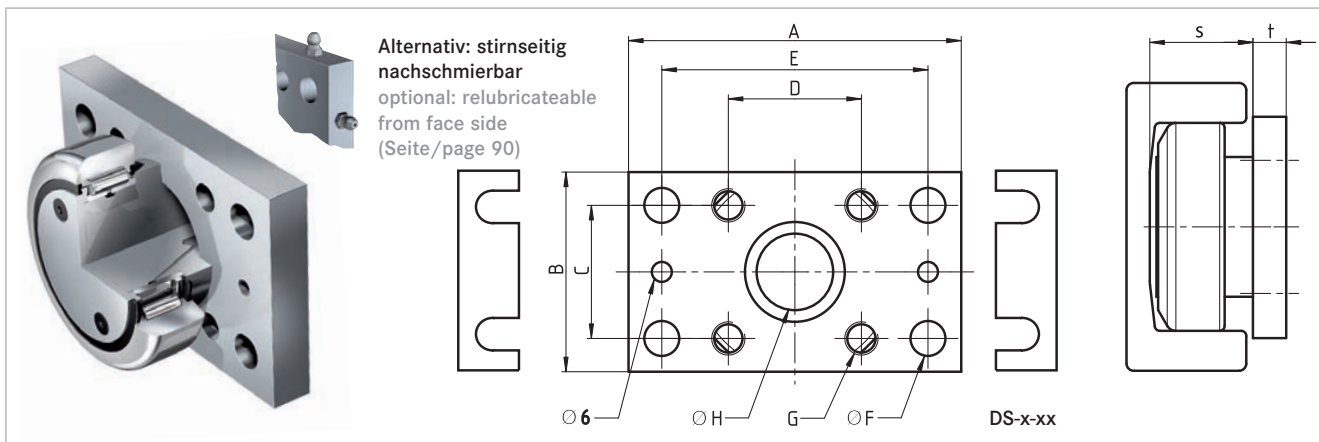
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76),
F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

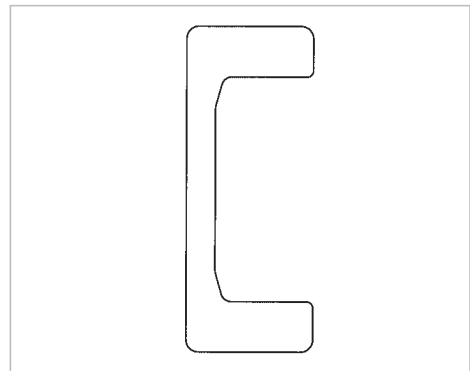
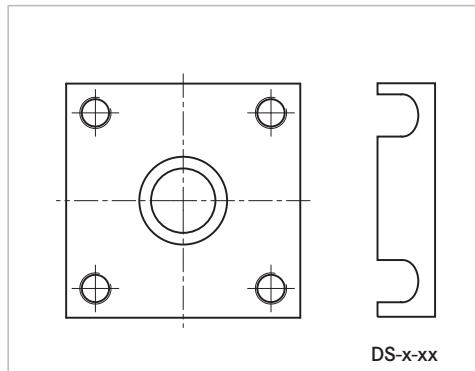


Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	$\varnothing F$	G	$\varnothing H$	s	t	Distanzsteckblech t=0,5mm Washer t=0.5mm	Distanzsteckblech t=1,0mm Washer t=1.0mm		
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	30,5	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	36,0	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	36,5	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	44,0	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	56,0	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	58,5	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Abstreifer Seite 94
Wiper page 94

Anschraubplatten quadratisch Reihe AP-Q S. 96
Flange plates square series AP-Q page 96

Profile Seite 68
Profiles page 68



Typ Type	F_R kN F_R kN	C kN C kN	C_o kN C_o kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates	Profile Profiles
2.054	10,30	31,0	35,5	900	0,55	AP0 AP0-Q	0 NbV
2.055	12,40	45,5	51,0	900	0,80	AP1 AP1-Q	1 NbV
2.056	12,90	48,0	56,8	800	1,05	AP2 AP2-Q	2 NbV
2.058	22,40	68,0	72,0	750	1,70	AP3.1 AP3-Q	3 NbV
2.061	23,80	81,0	95,0	650	2,90	AP4 AP4-Q	4 NbV
2.062	33,90	110,0	132,0	550	4,00	AP4 AP4-Q	5 NbV
2.063	59,20	151,0	192,0	450	6,70	AP6 AP6-Q	6 NbV

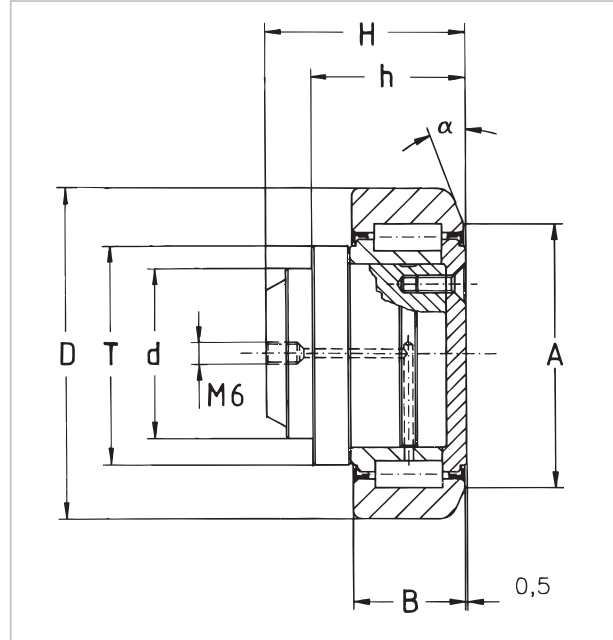
C = Dynamic load capacity radial bearing (ISO 281/1), C_o = Static load capacity radial bearing (ISO 76),
 F_R = Load capacity radial bearing max. allowable force between bearing and profile,



WINKEL-Präzisions-Radiallager Typ PR



WINKEL Precision Radial Bearing Type PR



Technische Daten:

- die Außenringe sind aus Einsatzstahl
UNI 16 CrNi 4 gehärtet 62+2 HRC
- die Innenringe sind aus Stahl
DIN 100 Cr 6 gehärtet 62-2 HRC
- flachköpfige Rollen aus Stahl
DIN 100 Cr 6 gehärtet 59 – 64 HRC
- Anschweißbolzen aus Stahl C22E (Werkstoff-Nr. 1.1151)
- Bolzentoleranz -0,05 mm
- Nachschmierbarkeit für Rollen PR 2.054 - PR 2.063
- Radiallager werden bei der Montage mit Schmierfett
Grad 3 (z.B. Shell Alvania 3, Esso Beacon 3) befüllt

Technical characteristics:

- outer rings are made from case-hardened steel
UNI 16 CrNi 4 hardened at 62+2HRC
- inner rings are made from bearing steel
En 31-SAE 52100 hardened at 62-2 HRC
- cylindrical rollers have flat ground heads, made from
En 31-SAE 52100 steel hardened at 59 – 64 HRC
- welding bolts are made from C22E (Material no. 1.1151)
- bolt tolerance -0.05 mm
- bearings from PR 2.054 to PR 2.063 are relubricateable
- bearings are lubricated with grease grade 3
(e.g. Shell Alvania 3, Esso Beacon 3)



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Typ Type	Artikel-Nr. Article no.	D mm D mm	T mm T mm	d -0.05 mm d -0.05 mm	H mm H mm	h mm h mm	B mm B mm	A mm A mm	α mm α mm
PR 2.054	205.071.000	64,8	42	30	34,5	26,5	20	50	20°
PR 2.055	205.072.000	73,8	48	35	42,0	34,0	23	57	20°
PR 2.056	205.073.000	81,8	53	40	45,5	34,0	23	61	20°
PR 2.058	205.074.000	92,8	59	45	54,0	41,0	30	68	20°
PR 2.061	205.075.000	111,8	71	60	65,5	51,5	31	82	20°
PR 2.062	205.076.000	127,8	80	60	67,8	51,5	37	92	20°
PR 2.063	205.077.000	153,8	103	60	74,0	54,0	45	116	15°

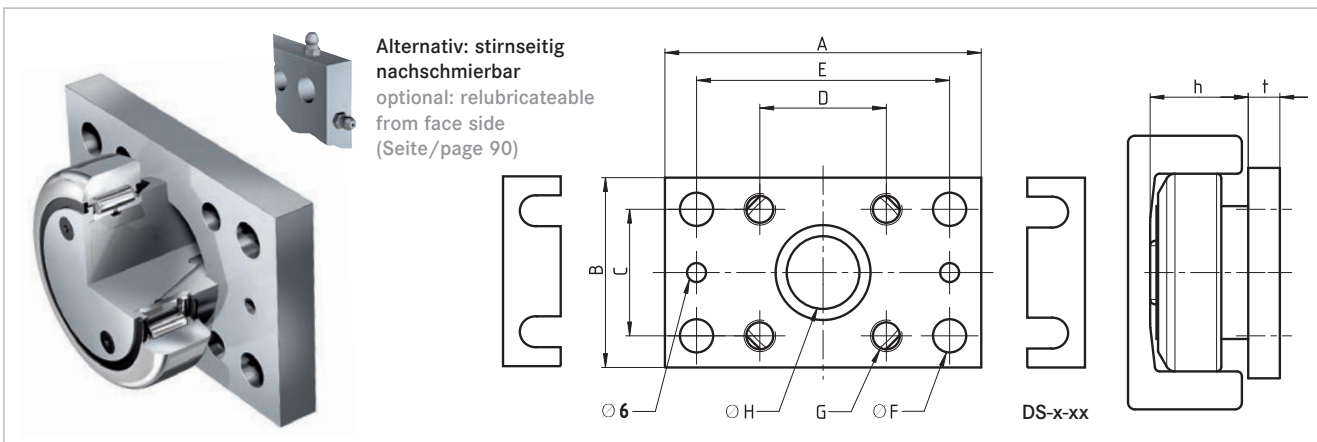
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76)
F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

WINKEL-Rollen | WINKEL Bearings



Passende Anschraubplatten

Suitable flange plates

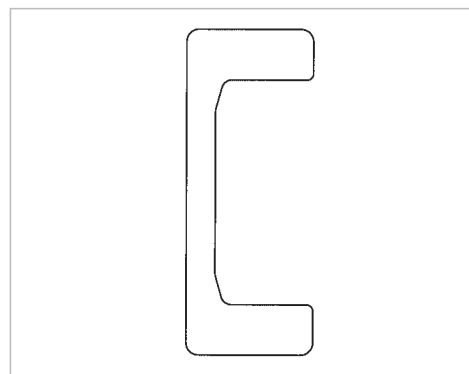
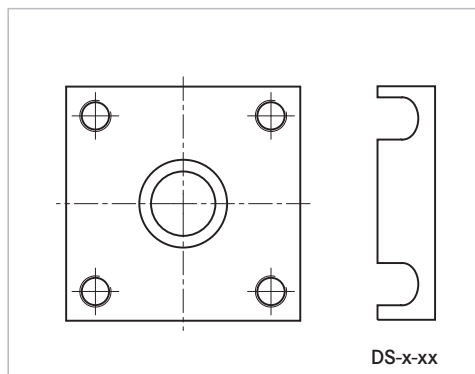


Typ Type	Artikel-Nr. Article no.	A	B	C	D	E	Ø F	G	Ø H	s	t	Distanzsteckblech t=0,5mm Washer t=0.5mm		Distanzsteckblech t=1,0mm Washer t=1.0mm	
AP 0	212.003.000	100	60	40	40	80	10,5	M10	30	30,5	10	DS-0-0,5	238.020.000	DS-0-1,0	238.020.001
AP 1	212.004.000	120	80	50	50	90	12,5	M12	35	36,0	15	DS-1-0,5	238.021.000	DS-1-1,0	238.021.001
AP 2	212.005.000	120	80	50	50	90	12,5	M12	40	36,5	15	DS-2-0,5	238.021.000	DS-2-1,0	238.021.001
AP 3.1	212.006.001	160	100	60	60	120	17,0	M16	45	44,0	20	DS-3.1-0,5	238.105.000	DS-3.1-1,0	238.105.001
AP 4	212.007.001	180	120	80	80	140	17,0	M16	60	56,0	20	DS-4-0,5	238.023.000	DS-4-1,0	238.023.001
AP 6	212.008.000	200	150	100	100	160	17,0	M16	60	58,5	20	DS-6-0,5	238.024.000	DS-6-1,0	238.024.001

Abstreifer Seite 94
Wiper page 94

Anschraubplatten quadratisch Reihe AP-Q S. 96
Flange plates square series AP-Q page 96

Profile Seite 72
Profiles page 72



Typ Type	F _R kN F _R kN	C kN C kN	C ₀ kN C ₀ kN	u/min max. r/pm max.	Gewicht kg Weight kg	Anschraubplatten Flange plates		Profile Profiles
PR 2.054	10,30	31,0	35,5	900	0,60	AP0	AP0-Q	PR 0 NbV
PR 2.055	12,40	45,5	51,0	900	0,90	AP1	AP1-Q	PR 1 NbV
PR 2.056	12,90	48,0	56,8	800	1,10	AP2	AP2-Q	PR 2 NbV
PR 2.058	22,40	68,0	72,0	750	1,80	AP3.1	AP3-Q	PR 3 NbV
PR 2.061	23,80	81,0	95,0	650	3,05	AP4	AP4-Q	PR 4 NbV
PR 2.062	33,90	110,0	132,0	550	4,35	AP4	AP4-Q	PR 5 NbV
PR 2.063	59,20	151,0	192,0	450	7,10	AP6	AP6-Q	PR 6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76)
F_R = Load capacity radial bearing max. allowable force between bearing and profile

WINKEL-Rollen | WINKEL Bearings



Heavy Duty WINKEL-Rolle 3.054 - 3.063

Vorteile:

- Schmutz unempfindliche WINKEL-Rolle für Heavy Duty Einsätze im Bereich Baustoffindustrie, Gießerei, Untertage
- Radiallager stirnseitig nachschmierbar
- Axiallager sind stoßunempfindliche Schwerlast-Kugellager, 2 RS abgedichtet und Lebensdauer geschmiert
- Axialjustierung über Distanzsteckbleche
- Für Einsätze mit höherer Verfahrensgeschwindigkeit bis 2 m/sec
- Lieferung inkl. 1 Schmiernippel M6 x 1, O-Ring sowie 2 Distanzbleche 0,5 mm

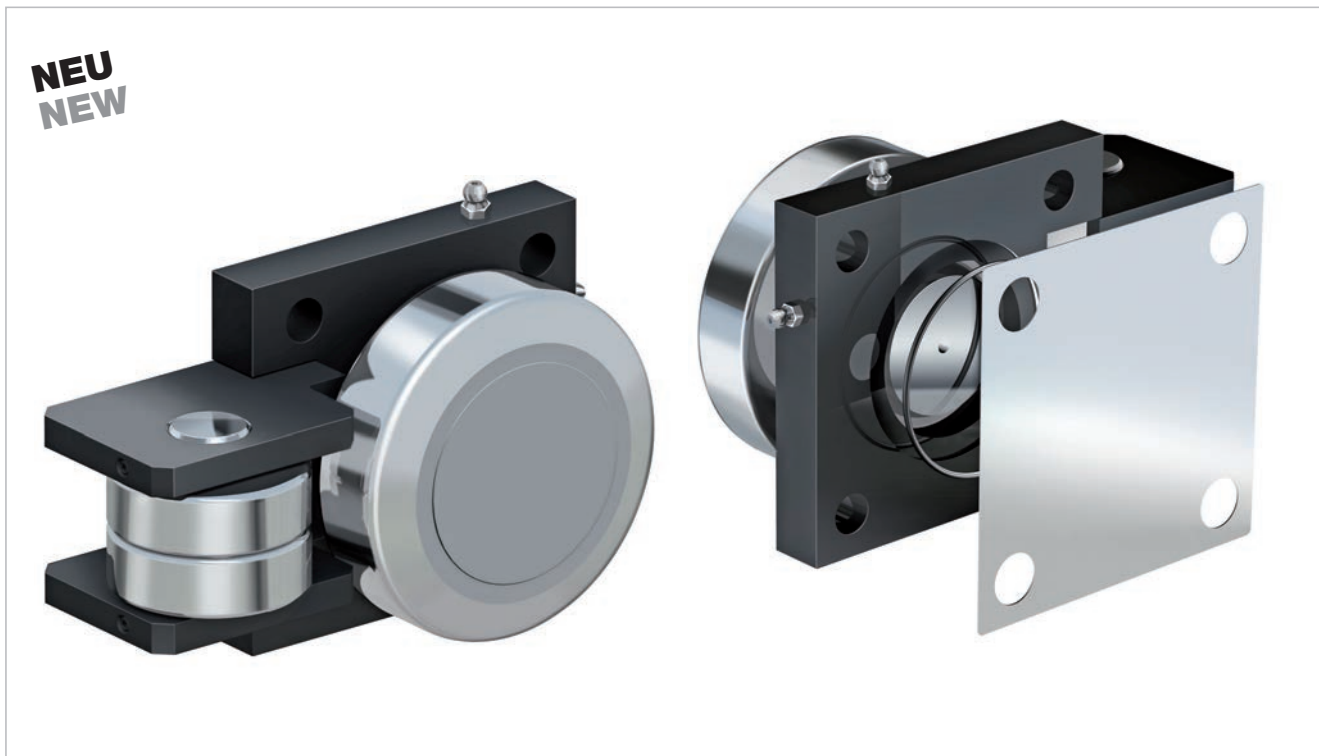
CAD Download in 2D/3D unter www.winkel.de

Heavy Duty WINKEL Bearing 3.054 - 3.063

Advantages:

- Maximum resistance against dirt for heavy duty applications in the building material industry, foundry and mining industry
- Radial bearings relubricateable from face side
- Axial bearings are shock resistant ball bearings with 2 RS seals, lubricated for life
- Axial adjustment with washers
- For high speed application up to 2 m/sec
- Will be delivered 1 pc. grease nipple M6 x 1, O-ring and 2 pcs washers 0,5 mm

CAD download in 2D/3D at www.winkel.de



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Typ Type	Artikel-Nr. Article no.	D mm D mm	F _R kN F _R kN	F _A kN F _A kN	u/min. max. u/min. max.	Gewicht kg Weight kg	Profile Profiles	Distanzbleche 0,5 mm Washers 0,5 mm
3.054	200.216.300	62,5	10,30	3,20	900	1,4	0 NbV	DS-0-Q-LUB-0,5
3.055	200.216.301	70,1	12,40	3,87	900	2,3	1 NbV	DS-1-Q-LUB-0,5
3.056	200.216.302	77,7	12,90	4,00	800	2,6	2 NbV	DS-1-Q-LUB-0,5
3.058	200.216.303	88,4	22,40	7,16	750	5,5	3 NbV	DS-3-Q-LUB-0,5
3.061	200.216.304	107,7	22,80	7,44	650	6,8	4 NbV	DS-3-Q-LUB-0,5
3.062	200.216.305	123,0	33,90	18,50	550	9,6	5 NbV	DS-4-Q-LUB-0,5
3.063	200.216.306	149,0	59,20	18,50	450	13,6	6 NbV	DS-6-Q-LUB-0,5

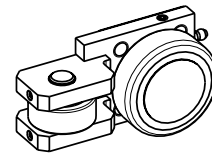
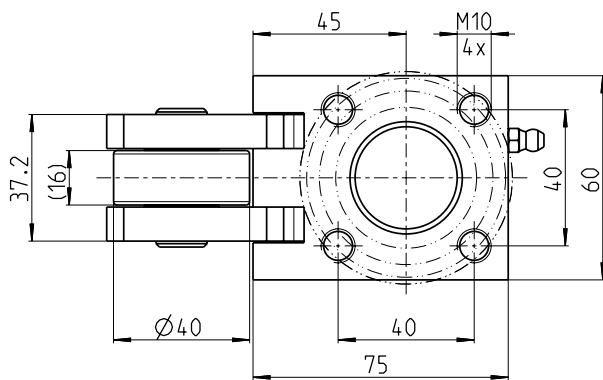
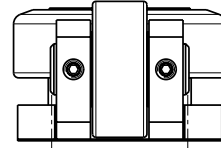
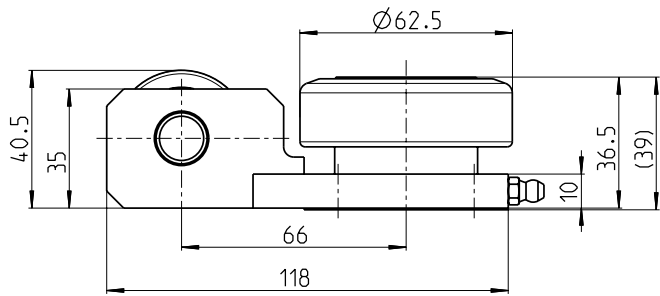
F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

F_R = Load capacity radial bearing max. allowable force between bearing and profile

F_A = Load capacity axial bearing max. allowable force between bearing and profile

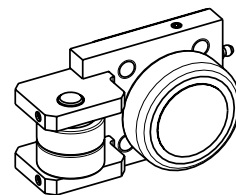
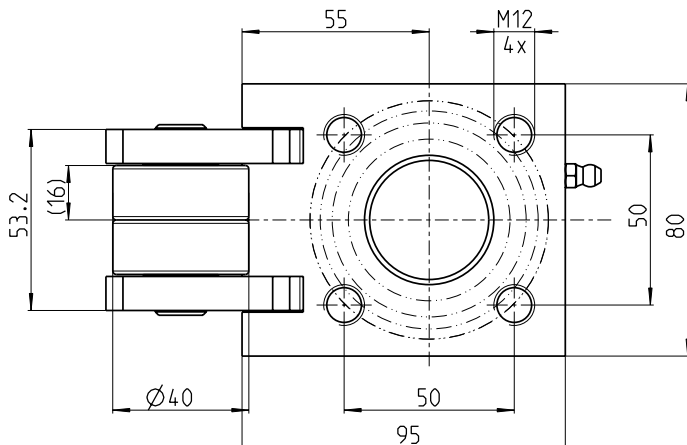
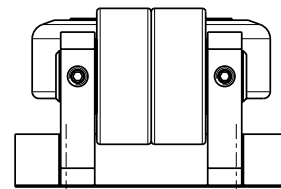
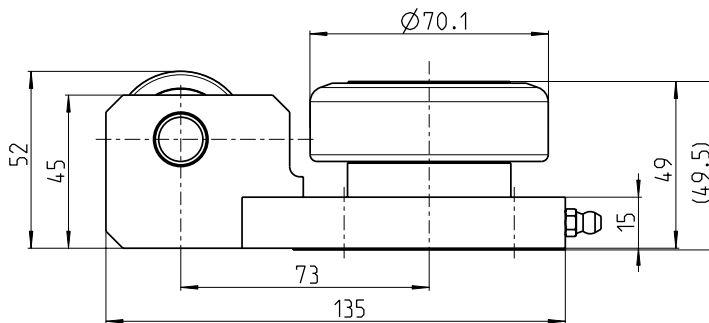
WINKEL-Rollen | WINKEL Bearings



3.054

Artikel-Nr. 200.216.300
Article no.

DS-0-Q-LUB-0,5
Artikel-Nr. 238.020.004
Article no.

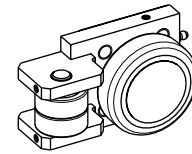
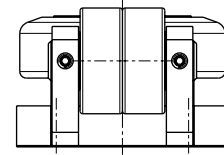
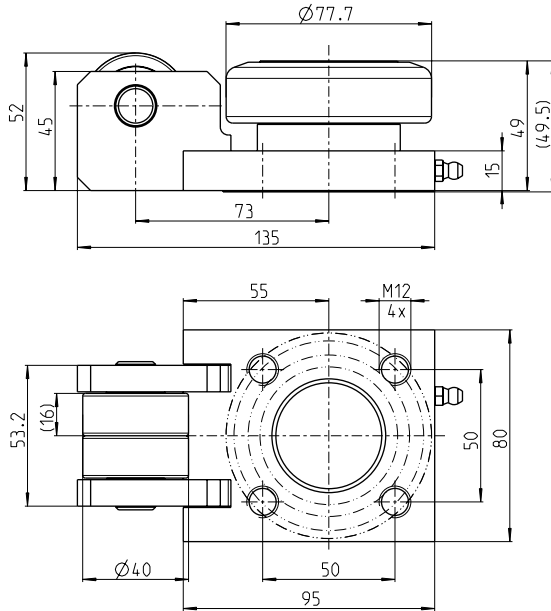


3.055

Artikel-Nr. 200.216.301
Article no.

DS-1-Q-LUB-0,5
Artikel-Nr. 238.021.005
Article no.

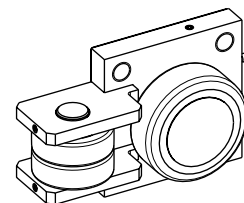
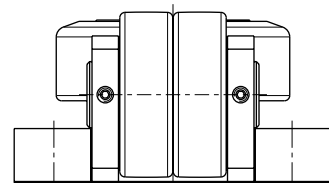
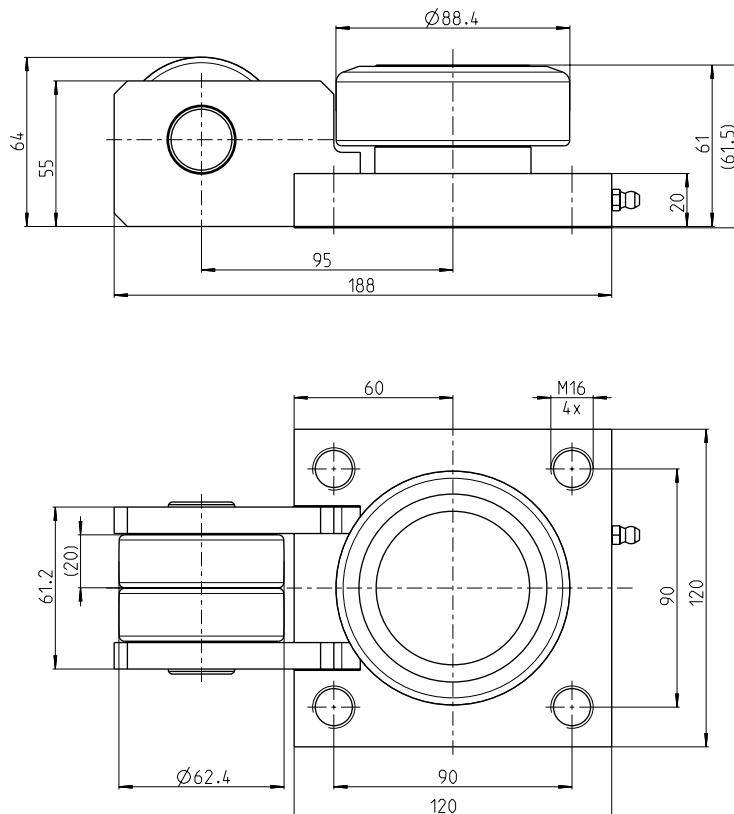
WINKEL-Rollen | WINKEL Bearings



3.056

Artikel-Nr. 200.216.302
Article no.

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Artikel-Nr. 238.021.005
Article no.

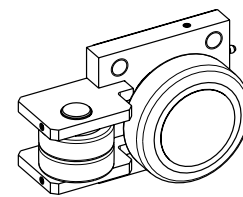
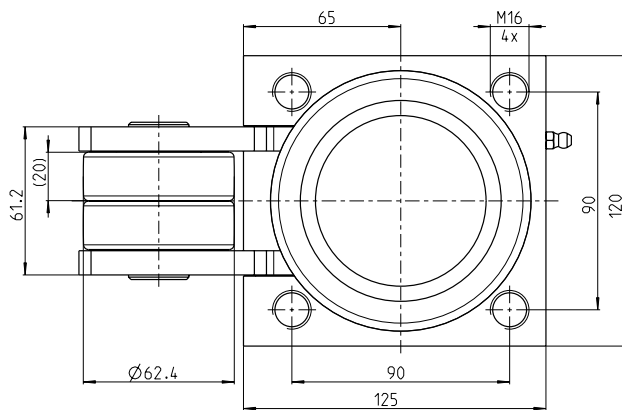
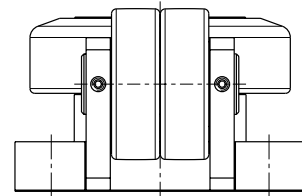
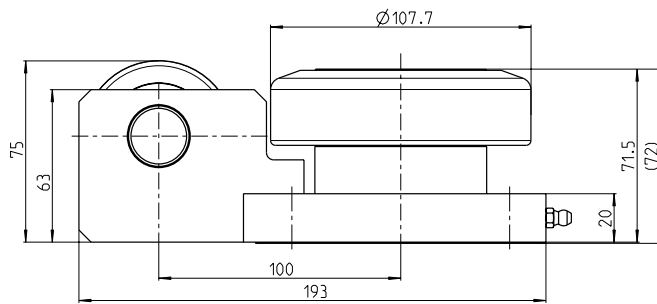


3.058

Artikel-Nr. 200.216.303
Article no.

DS-3-Q-LUB-0,5
Artikel-Nr. 238.022.004
Article no.

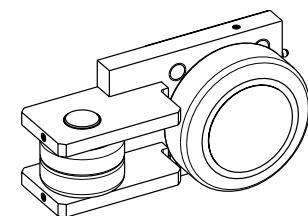
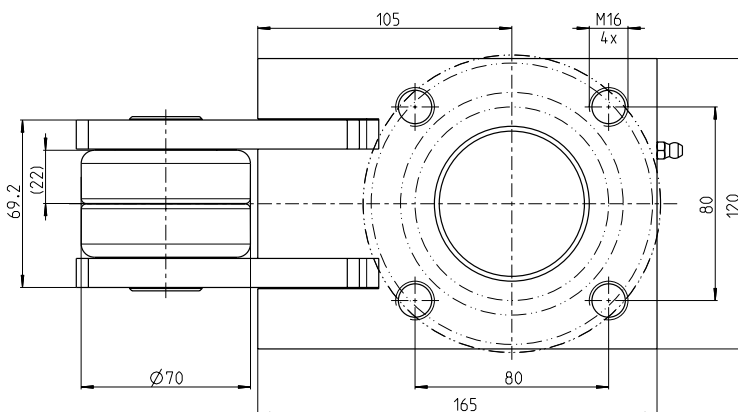
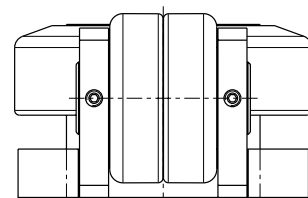
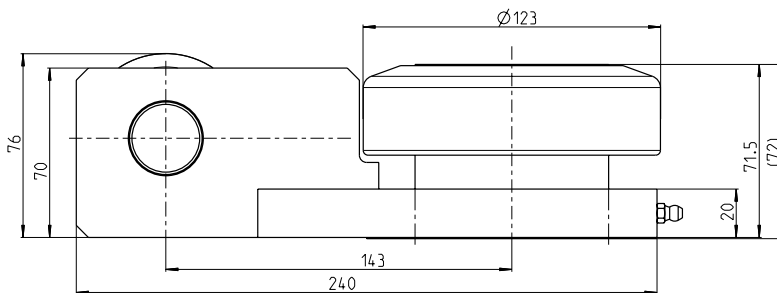
WINKEL-Rollen | WINKEL Bearings



3.061

Artikel-Nr. 200.216.304
Article no.

DS-3-Q-LUB-0,5
Artikel-Nr. 238.022.004
Article no.



3.062

Artikel-Nr. 200.216.305
Article no.

DS-4-Q-LUB-0,5
Artikel-Nr. 238.023.006
Article no.

WINKEL-Rollen | WINKEL Bearings



3.063	
Artikel-Nr.	200.216.306
Article no.	
DS-6-Q-LUB-0,5	
Artikel-Nr.	238.024.004
Article no.	

WINKEL-Rollen | WINKEL Bearings



Heavy Duty Präzisions-WINKEL-Rolle PR 3.054 - PR 3.063

Vorteile:

- Schmutz unempfindliche WINKEL-Rolle für Heavy Duty Einsätze im Bereich Baustoffindustrie, Gießerei, Untertage
- Radiallager stirnseitig nachschmierbar
- Axiallager sind stoßunempfindliche Schwerlast-Kugellager, 2 RS abgedichtet und Lebensdauer geschmiert
- Axialjustierung über Distanzsteckbleche
- Für Einsätze mit höherer Verfahrensgeschwindigkeit bis 2 m/sec
- Lieferung inkl. 1 Schmiernippel M6 x 1, O-Ring sowie 2 Distanzbleche 0,5 mm

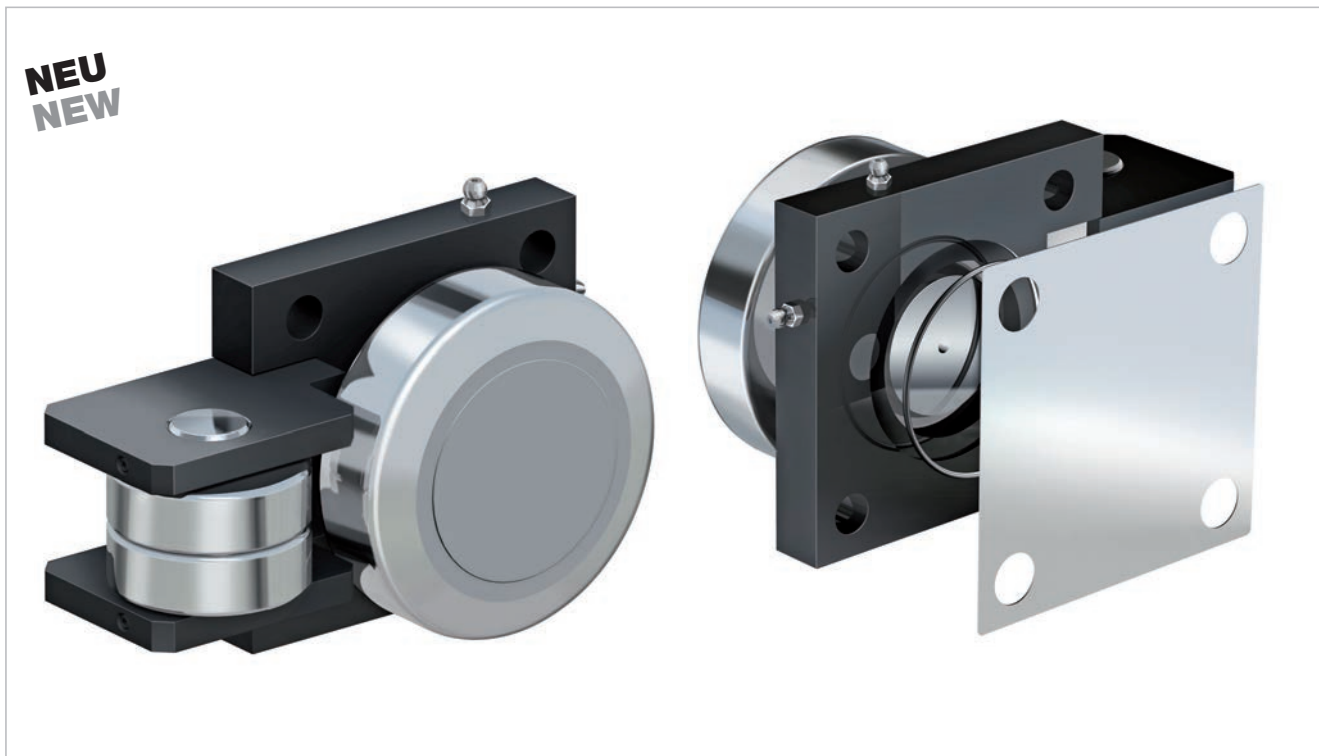
CAD Download in 2D/3D unter www.winkel.de

Heavy Duty Precision WINKEL Bearing PR 3.054 - PR 3.063

Advantages:

- Maximum resistance against dirt for heavy duty applications in the building material industry, foundry and mining industry
- Radial bearings relubricateable from face side
- Axial bearings are shock resistant ball bearings with 2 RS seals, lubricated for life
- Axial adjustment with washers
- For high speed application up to 2 m/sec
- Will be delivered 1 pc. grease nipple M6 x 1, O-ring and 2 pcs washers 0,5 mm

CAD download in 2D/3D at www.winkel.de



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Typ Type	Artikel-Nr. Article no.	D mm D mm	F _R kN F _R kN	F _A kN F _A kN	u/min. max. u/min. max.	Gewicht kg Weight kg	Profile Profiles	Distanzbleche 0,5 mm Washers 0,5 mm
PR 3.054	200.217.300	64,8	10,30	3,20	900	1,4	PR 0 NbV	DS-0-Q-LUB-0,5
PR 3.055	200.217.301	73,8	12,40	3,87	900	2,3	PR 1 NbV	DS-1-Q-LUB-0,5
PR 3.056	200.217.302	81,8	12,90	4,00	800	2,6	PR 2 NbV	DS-1-Q-LUB-0,5
PR 3.058	200.217.303	92,8	22,40	7,16	750	5,5	PR 3 NbV	DS-3-Q-LUB-0,5
PR 3.061	200.217.304	111,8	23,80	7,44	650	6,8	PR 4 NbV	DS-3-Q-LUB-0,5
PR 3.062	200.217.305	127,8	33,90	18,50	550	9,6	PR 5 NbV	DS-4-Q-LUB-0,5
PR 3.063	200.217.306	153,8	59,20	18,50	450	13,6	PR 6 NbV	DS-6-Q-LUB-0,5

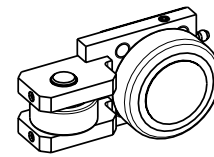
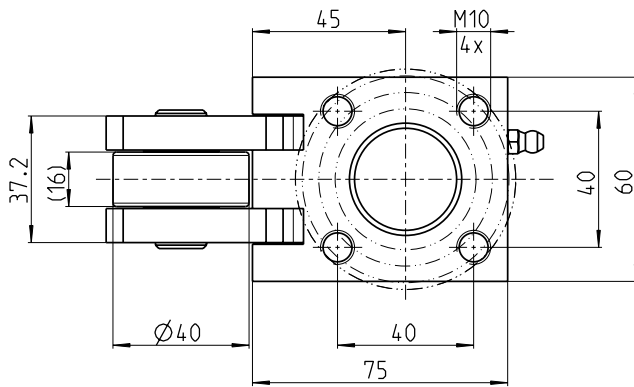
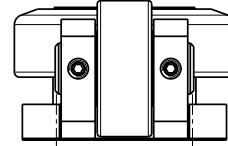
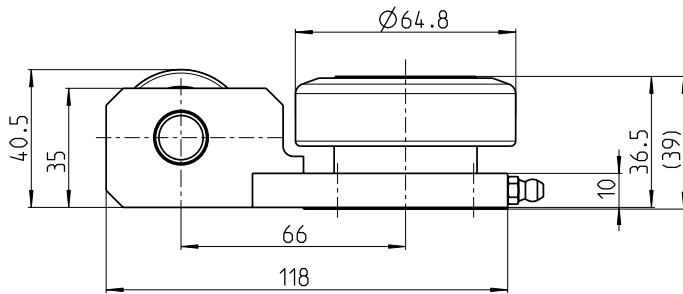
F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil

F_R = Load capacity radial bearing max. allowable force between bearing and profile

F_A = Load capacity axial bearing max. allowable force between bearing and profile

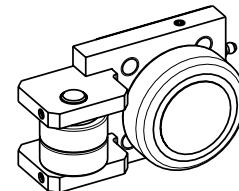
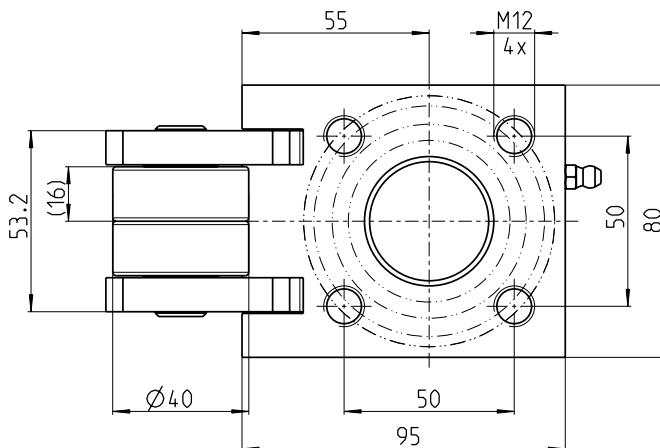
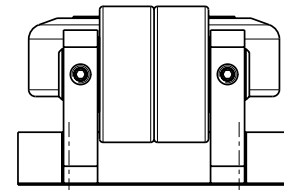
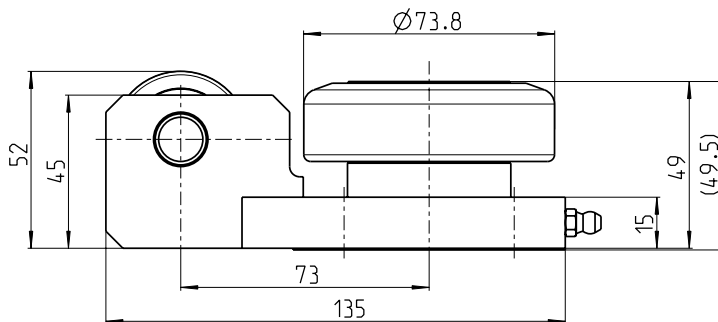
WINKEL-Rollen | WINKEL Bearings



PR 3.054

Artikel-Nr. 200.217.300
Article no.

DS-0-Q-LUB-0,5
Artikel-Nr. 238.020.004
Article no.

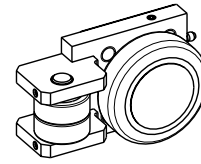
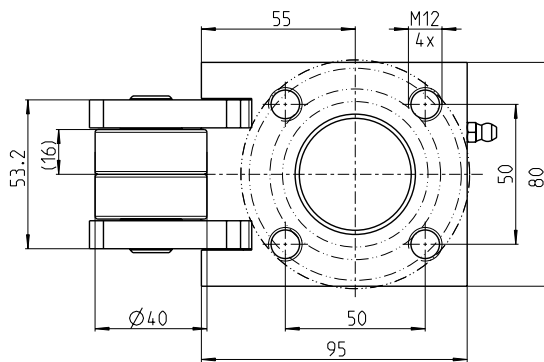
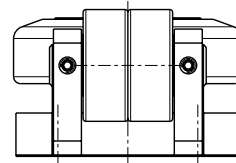
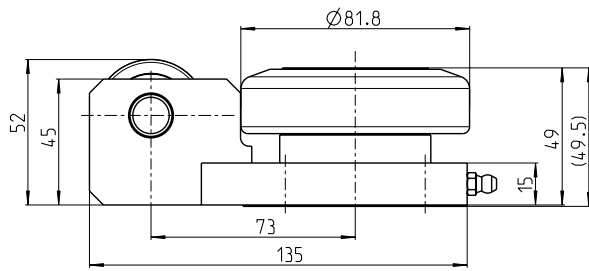


PR 3.055

Artikel-Nr. 200.217.301
Article no.

DS-1-Q-LUB-0,5
Artikel-Nr. 238.021.005
Article no.

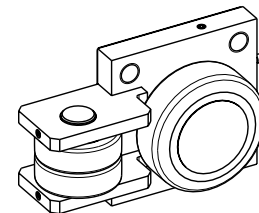
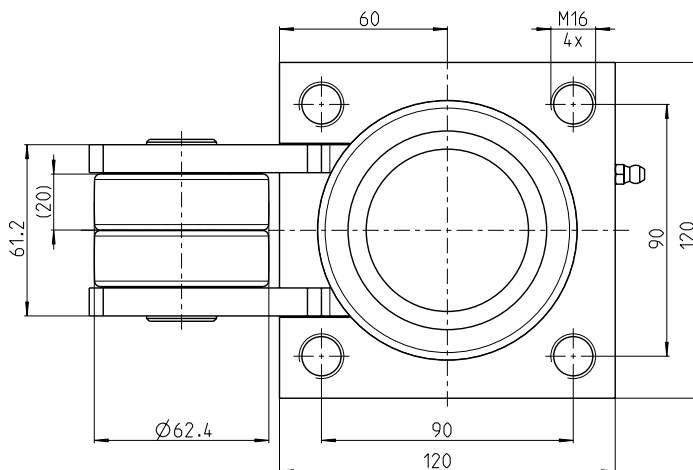
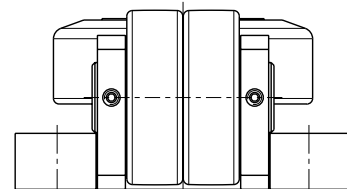
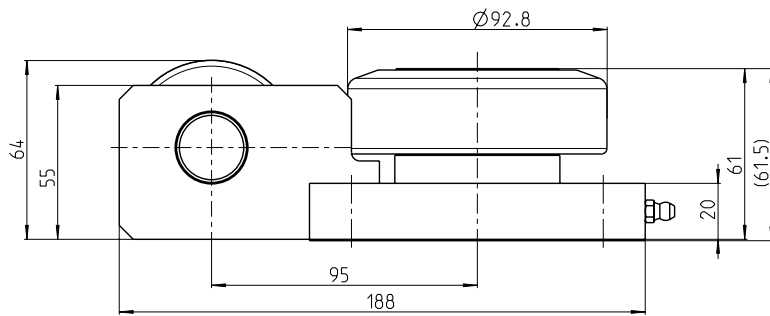
WINKEL-Rollen | WINKEL Bearings



PR 3.056

Artikel-Nr. 200.217.302
Article no.

DS-1-Q-LUB-0,5
Artikel-Nr. 238.021.005
Article no.

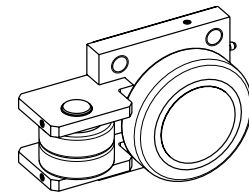
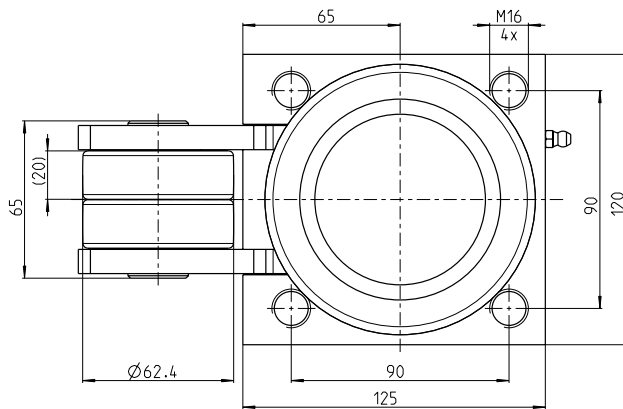
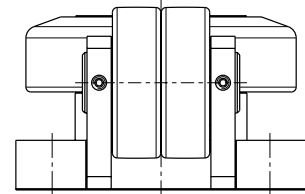
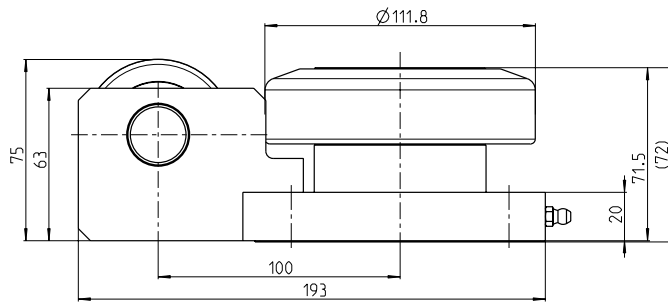


PR 3.058

Artikel-Nr. 200.217.303
Article no.

DS-3-Q-LUB-0,5
Artikel-Nr. 238.022.004
Article no.

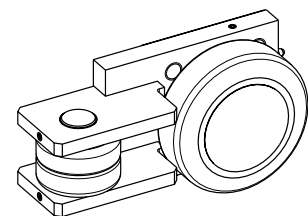
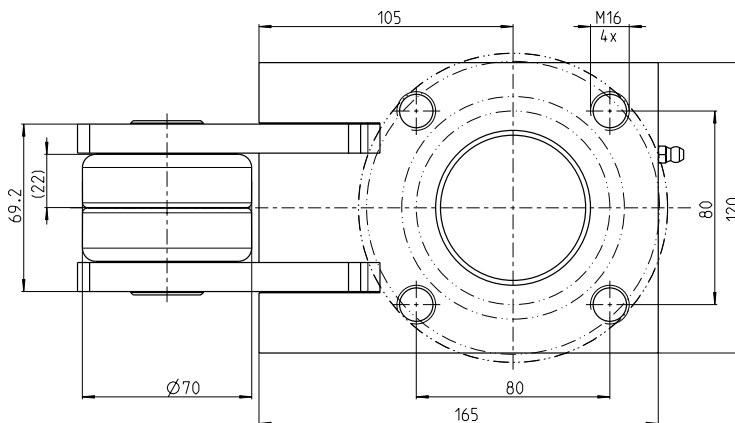
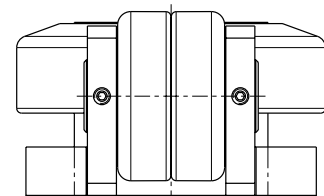
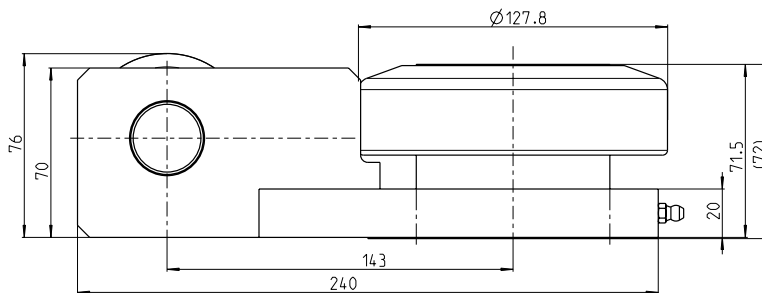
WINKEL-Rollen | WINKEL Bearings



PR 3.061

Artikel-Nr. 200.217.304
Article no.

DS-3-Q-LUB-0,5
Artikel-Nr. 238.022.004
Article no.

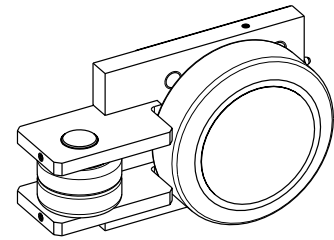
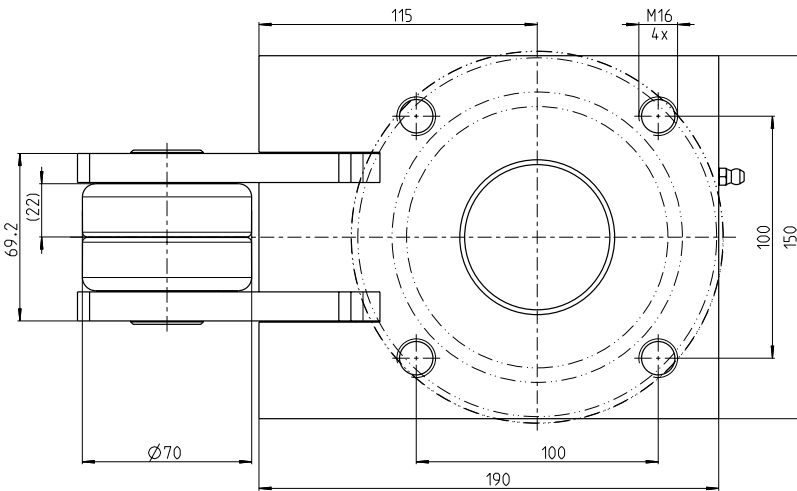
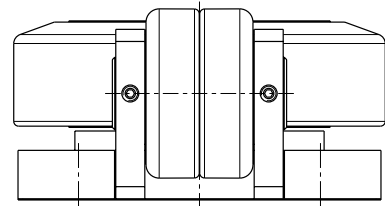
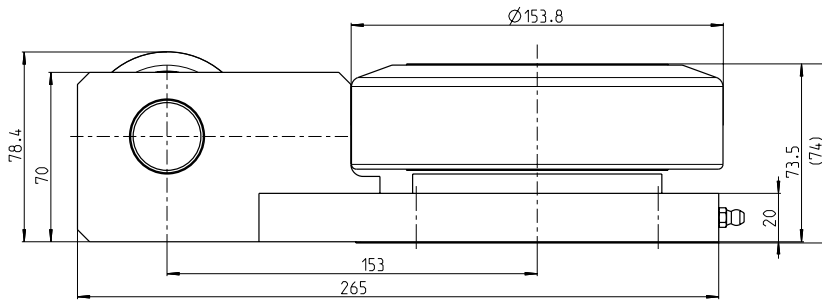


PR 3.062

Artikel-Nr. 200.217.305
Article no.

DS-4-Q-LUB-0,5
Artikel-Nr. 238.023.006
Article no.

WINKEL-Rollen | WINKEL Bearings



PR 3.063

Artikel-Nr. 200.217.306
Article no.

DS-6-Q-LUB-0,5
Artikel-Nr. 238.024.004
Article no.

WINKEL-Rollen | WINKEL Bearings



Justierbare WINKEL-Rolleneinheit Typ JC für alle Standard-Profile

Vorteile:

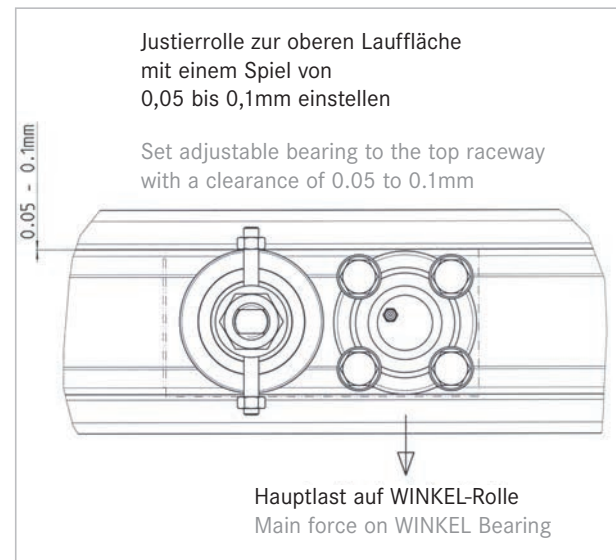
- Spielfreiheit zwischen Rolleneinheit und Profil
- Höhere Positioniergenauigkeit



Adjustable WINKEL Bearing unit Type JC for all standard profiles

Advantages:

- Min. clearance between bearing unit and profile
- Higher positioning accuracy



Einbau/Einstellung

- Die Einheit wird über die Flanschplatte angeschraubt
- Die Position der Justierrolle muss an der entgegengesetzten Seite der Last sein. Die Hauptlast soll auf das Radiallager der WINKEL-Rolle eingeleitet werden
- Das Justierlager wird eingestellt und anschließend gekontert

Vorsicht: Es dürfen keine großen Anpresskräfte auf die Justierrolle kommen, sonst droht die Gefahr von hohen Vorspannkräften die zu Profilbeschädigungen führen können.

Tip: Lassen Sie ein Spiel von 0,05 - 0,1 mm zwischen Justierrolle und Profil.

Test: Der Führungswagen soll sich ohne große Laufwiderstände bewegen können.

CAD Download in 2D/3D unter www.winkel.de

Assembly/Adjusting

- The unit will be assembled by the flange plate
- The position of the adjustable bearing must be at the opposite side of the load. The main forces should be on the radial bearing of the WINKEL bearing
- The adjustable bearing will be adjusted and finally secured

Attention: Avoid high contact pressure to the adjustable bearing. (Risk of profile wear out.)

Advice: Adjust the adjustable bearing with a clearance of 0.05 to 0.1 mm to the profile.

Test: The carriage should run smoothly in the profile without big resistance.

CAD download in 2D/3D at www.winkel.de



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Typ Type	Artikel-Nr. Article no.	A	B	C	D	F	G	H	I	J	K	L	M	N	O
		A	B	C	D	F	G	H	I	J	K	L	M	N	O
JC 4.054	200.250.200	140	60	40	±8	M10	62,4	62,5	64	24	30,5	10	30	72,0	80
JC 4.055	200.250.001	170	80	50	±10	M12	70,0	70,1	82	33	36,0	15	40	83,5	102
JC 4.056	200.250.002	170	80	50	±10	M12	78,0	77,7	82	33	36,5	15	40	83,5	102
JC 4.058	200.250.003	195	120	90	±20	M16	78,0	88,4	82	28	44,0	20	60	90,0	152
JC 4.061	200.250.004	240	120	80	±20	M16	101,6	107,7	98	29	55,0	20	60	120,0	150
JC 4.062	200.250.005	240	120	80	±20	M16	101,6	123,0	98	29	56,0	20	60	120,0	150
JC 4.063	200.250.006	265	150	100	±35	M16	101,6	149,0	98	29	58,5	20	75	130,0	170

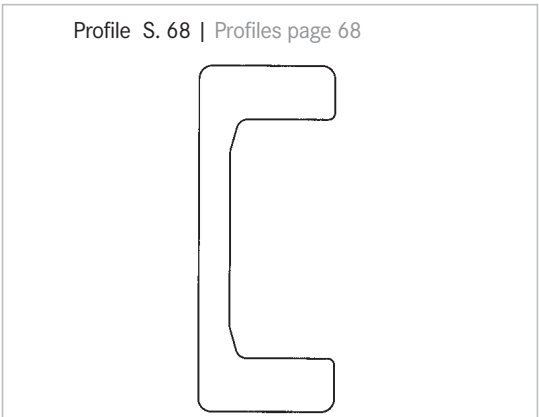
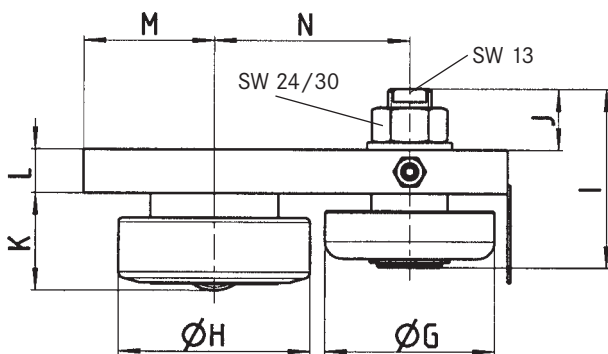
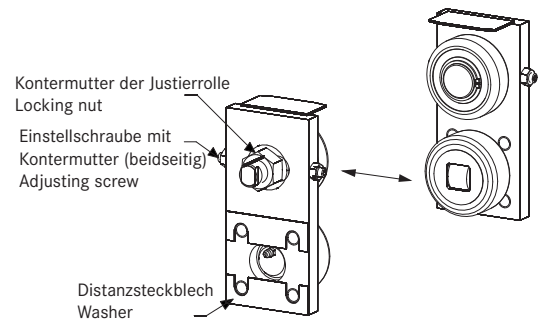
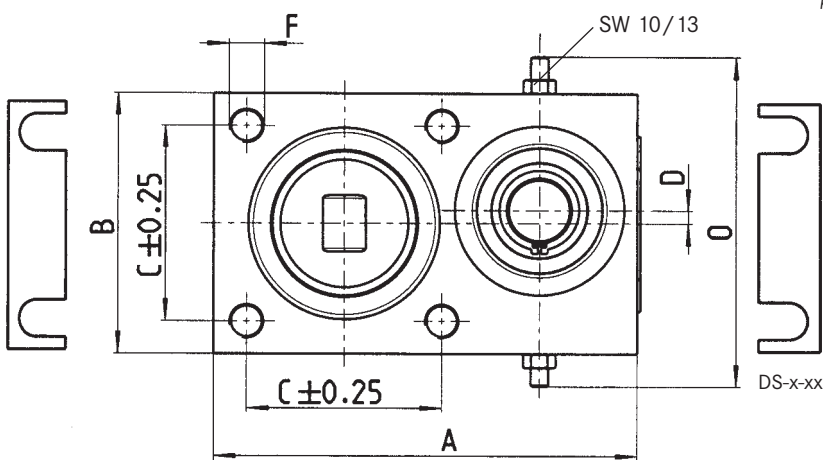
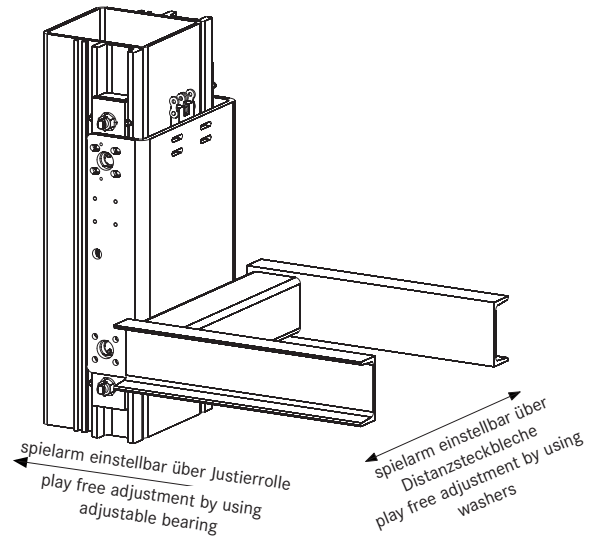
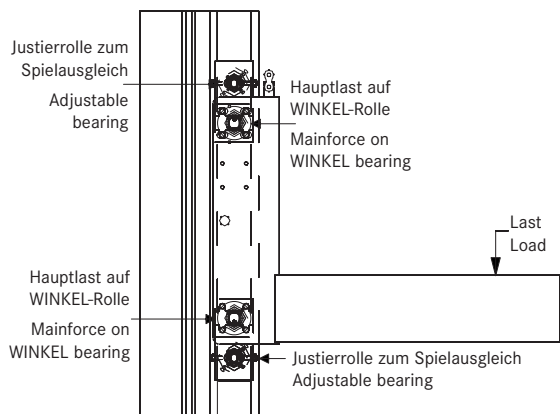
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76), (WINKEL-Rolle)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76), (WINKEL-Rolle)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil (WINKEL-Rolle)

WINKEL-Rollen | WINKEL Bearings



Typ Type	F _R kN F _R kN	F _A kN F _A kN	C kN C kN	C ₀ kN C ₀ kN	C _A kN C _A kN	C _{0A} kN C _{0A} kN	u/min max. r/pm max.	Gewicht kg Weight kg	Profile Profiles
JC 4.054	10,30	3,20	31,0	35,5	11	11	900	1,65	0 NbV
JC 4.055	12,40	3,87	45,5	51,0	13	14	900	2,95	1 NbV
JC 4.056	12,90	4,00	48,0	56,8	18	18	800	3,30	2 NbV
JC 4.058	22,40	7,00	68,0	72,0	23	23	750	5,80	3 NbV
JC 4.061	23,80	7,44	81,0	95,0	31	36	650	8,75	4 NbV
JC 4.062	33,90	10,60	110,0	132,0	43	50	550	9,75	5 NbV
JC 4.063	59,20	18,50	151,0	192,0	68	71	450	13,90	6 NbV

C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76), (WINKEL Bearing)
 C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76), (WINKEL Bearing)
 F_R = Load capacity radial bearing max. allowable force between bearing and profile, (WINKEL Bearing)
 F_A = Load capacity axial bearing max. allowable force between bearing and profile, (WINKEL Bearing)

WINKEL-Rollen | WINKEL Bearings



Justierbare WINKEL-Rolleneinheit Typ JT

Vorteile:

- Radial und axial stufenlos von außen einstellbar
- Höhere radiale und axiale Präzision
- Schmutzunempfindlich
- Für Einsatz von Verfahrensgeschwindigkeiten bis 2 m/sec

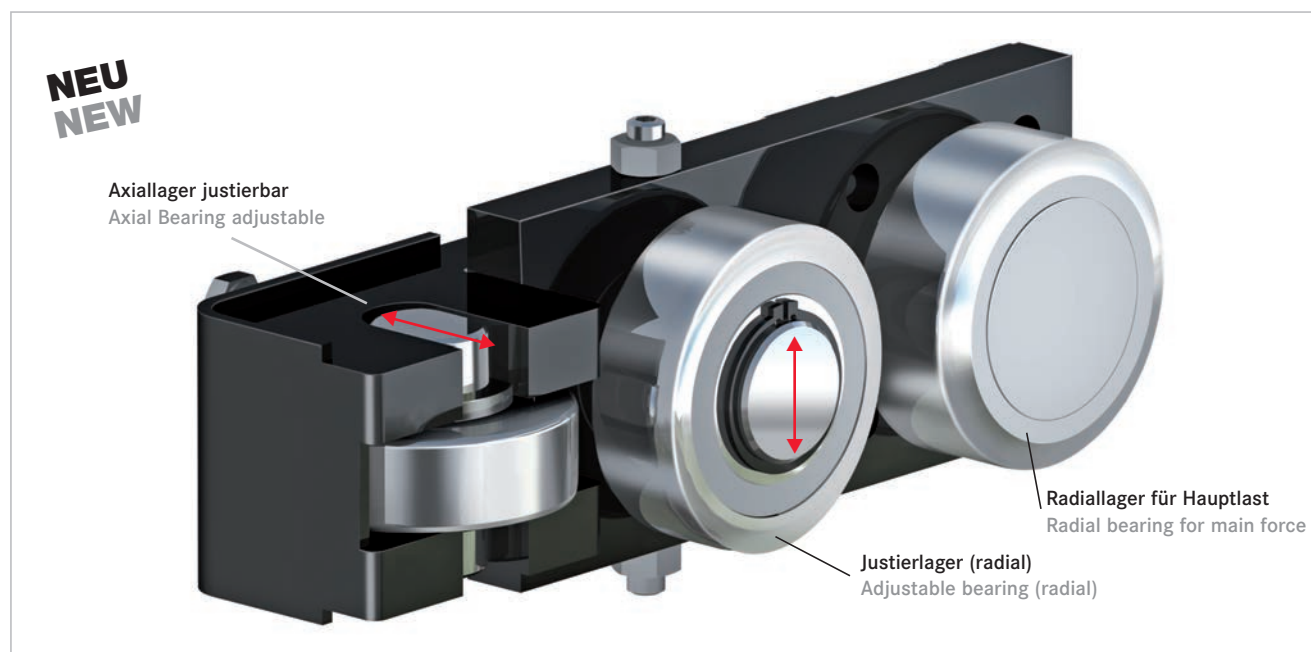
CAD Download in 2D/3D unter www.winkel.de

Adjustable WINKEL Bearing Unit Type JT

Advantages:

- Clearance radial and axial steplessly adjustable by thread bolts
- Higher radial and axial precision
- Higher dirt resistance
- For high speed application up to 2 m/sec

CAD download in 2D/3D at www.winkel.de



Einbau/Einstellung

- Die Einheit wird über die Flanschplatte angeschraubt
- Die Position der Justierlager muss an der entgegengesetzten Seite der Last sein. Die Hauptlast soll auf das Radiallager eingeleitet werden
- Justierlager und Axiallager werden eingestellt und anschließend gekontert

Vorsicht: Es dürfen keine großen Anpresskräfte auf Axiallager und Justierlager kommen, sonst droht die Gefahr von hohen Vorspannkräften die zu Profilbeschädigungen führen können.

Typ: Lassen Sie ein Spiel von 0,05 - 0,1 mm zwischen den Axiallager und Justierlager und Profil.

Test: Der Führungswagen soll sich ohne große Laufwiderstände bewegen können.



Nachschmiersysteme für WINKEL-Rollen
Lubrication systems for WINKEL bearings
(Seite/page 144)

Assembly/Adjusting

- The unit will be assembled by the flange plate
- The position of the adjustable bearings must be at the opposite side of the load. The main forces should be on the radial bearing
- The axial and adjustable bearing will be adjusted and finally locked

Attention: Avoid high contact pressure to the axial and adjustable bearing. (Risk of profile wear out.)

Advice: Adjust the axial and adjustable bearing with a clearance of 0.05 to 0.1 mm to the profile.

Test: The carriage should run smoothly in the profile without resistance.

Typ	Artikel-Nr.	D mm	F _R kN	F _A kN	C kN	C ₀ kN	C _A kN	C _{0A} kN	u/min max	Gewicht kg	Profile
Type	Article no.	D mm	F _R kN	F _A kN	C kN	C ₀ kN	C _A kN	C _{0A} kN	r/μm max.	Weight kg	Profiles
JT 2.055	200.210.301	70,1	12,40	4,2	45,5	51,0	14,3	9,7	900	4,50	1 NbV
JT 2.056	200.192.000	77,7	12,90	4,2	48,0	56,8	14,3	9,7	800	4,85	2 NbV
JT 2.058	200.210.303	88,4	22,40	7,4	68,0	72,0	19,0	12,0	750	5,52	3 NbV

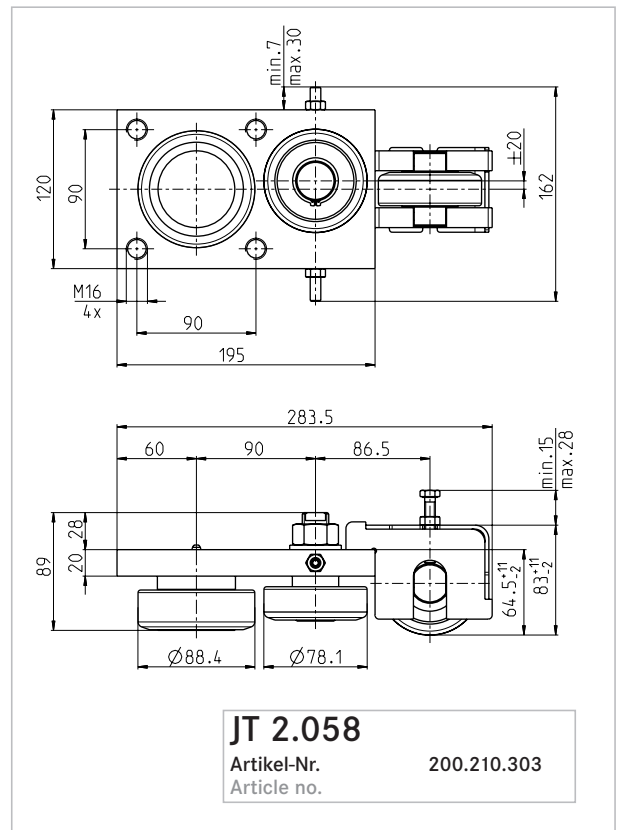
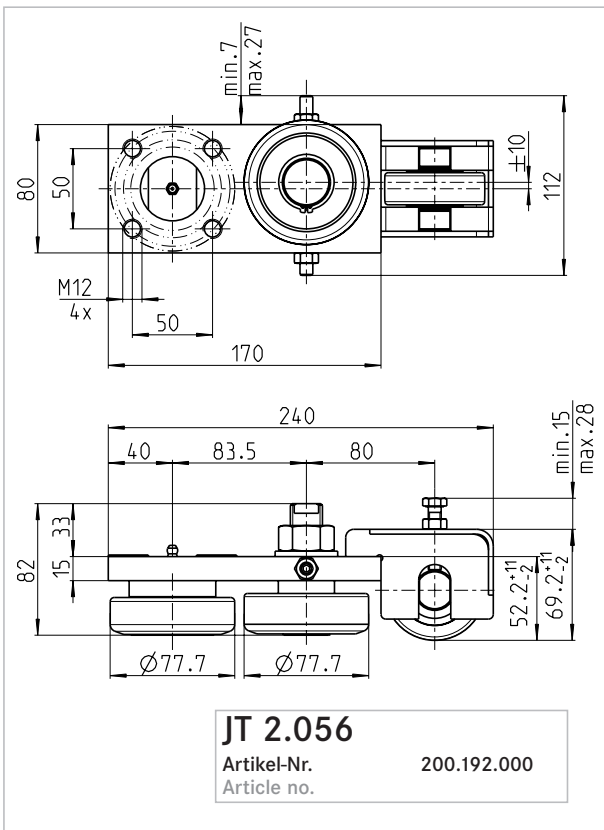
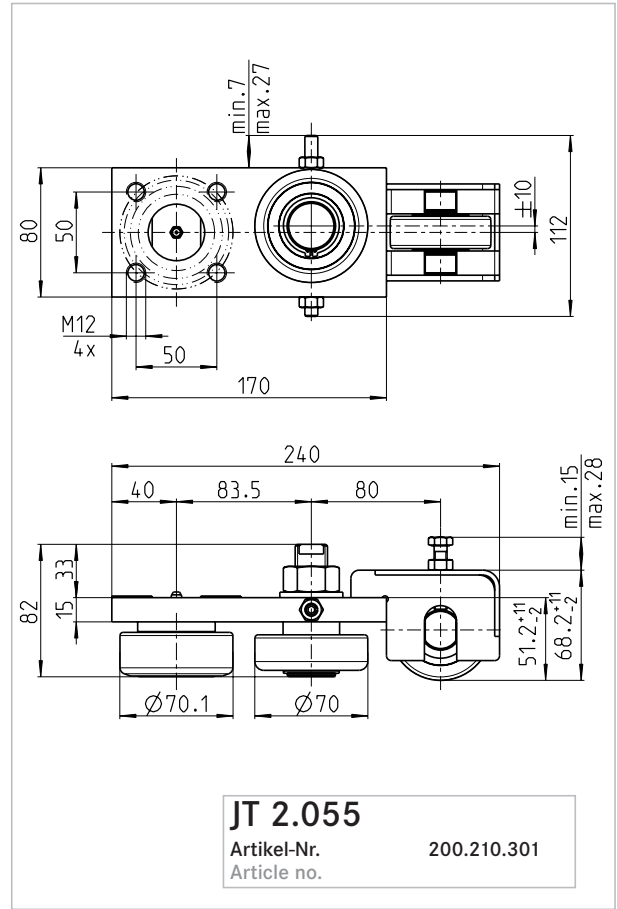
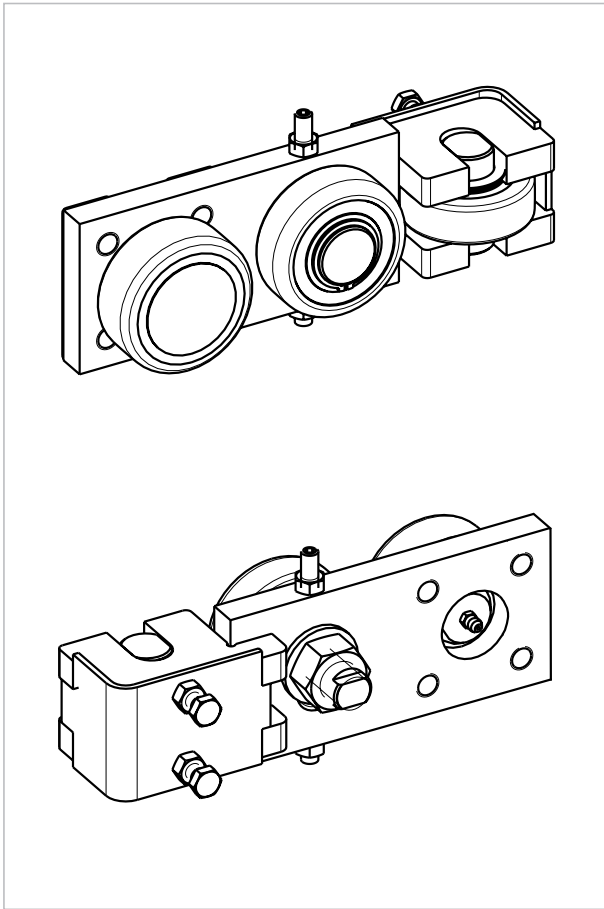
C = Dyn. Tragzahl Radiallager (ISO 281/1), C₀ = Stat. Tragzahl Radiallager (ISO 76), (WINKEL-Rolle)

C_A = Dyn. Tragzahl Axiallager (ISO 281/1), C_{0A} = Stat. Tragzahl Axiallager (ISO 76), (WINKEL-Rolle)

F_R = Tragzahl Radiallager zulässige Belastung zwischen Rolle und Profil

F_A = Tragzahl Axiallager zulässige Belastung zwischen Rolle und Profil (WINKEL-Rolle)

WINKEL-Rollen | WINKEL Bearings



- C = Dynamic load capacity radial bearing (ISO 281/1), C₀ = Static load capacity radial bearing (ISO 76), (WINKEL Bearing)
- C_A = Dynamic load capacity axial bearing (ISO 281/1), C_{0A} = Static load capacity axial bearing (ISO 76), (WINKEL Bearing)
- F_R = Load capacity radial bearing max. allowable force between bearing and profile, (WINKEL Bearing)
- F_A = Load capacity axial bearing max. allowable force between bearing and profile, (WINKEL Bearing)

WINKEL-Rollen | WINKEL Bearings



Standard NbV-Profile

- Alle Profile sind ab Standard 0 NbV aus hochwertigem Stahl in S450 J2 mod. gefertigt und sandgestrahlt.
 $L_{\max} = 12 \text{ m}$
- Passend zu unserem WINKEL-Rollensystem liefern wir alle Profiltypen in Fixlängen sofort ab Lager.
- Auf Wunsch sind alle Profile in feingerichteter Ausführung erhältlich ($\pm 0,3 \text{ mm/lfm.}$)
- Höhere Tragkräfte durch neue NbV-Serie
- *Komplette Profilbearbeitung nach Kundenzeichnungen auf Anfrage*

CAD Download in 2D/3D unter www.winkel.de



Standard NbV-profiles

- All profiles from Standard 0 NbV on are made from high-quality steel S450 J2 mod., in sandblasted version.
 $L_{\max} = 12 \text{ m}$
- Suitable for WINKEL Bearing system, we deliver all profiles in fixed lengths, immediately from stock
- All profiles are available in fine straightened style on request ($\pm 0,3 \text{ mm per meter}$)
- Higher load capacity with new NbV-series
- *Machined profiles according to customer drawings on request*

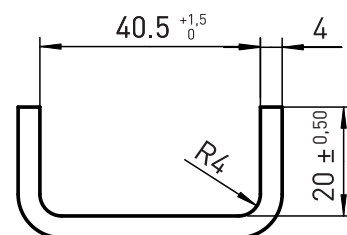
CAD download in 2D/3D at www.winkel.de



Standard A

Artikel-Nr. 113.001.000
Article no.

m	2,62 kg/m
A	3,3 cm ²
I _x	10,6 cm ⁴
W _x	4,4 cm ³
I _y	1,7 cm ⁴
W _y	1,0 cm ³
e _y	0,8 cm

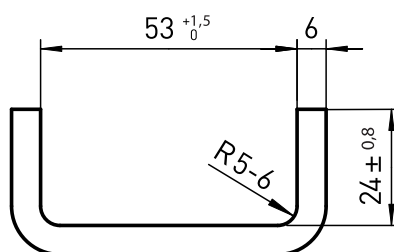


$L_{\max} = 12 \text{ m}$

Standard S

Artikel-Nr. 113.002.000
Article no.

m	5,3 kg/m
A	6,4 cm ²
I _x	35,4 cm ⁴
W _x	10,9 cm ³
I _y	5,0 cm ⁴
W _y	2,5 cm ³
e _y	1,0 cm



$L_{\max} = 12 \text{ m}$

Hinweis: Feingerichtete Profile weisen eine Geradheit von $\pm 0,3 \text{ mm/lfm.}$ auf. Standard $\pm 1,0 \text{ mm/lfm.}$
Notice: The straightness for fine straightened profiles is $\pm 0,3 \text{ mm per meter}$. Standard $\pm 1,0 \text{ mm per meter}$

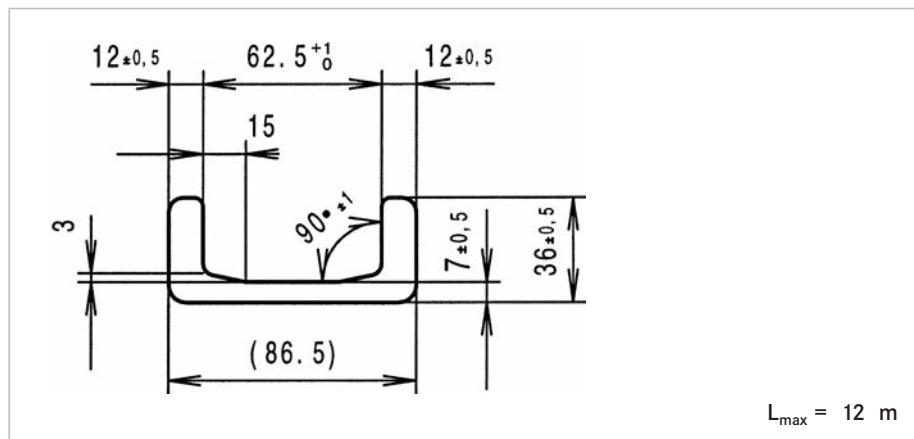
WINKEL-Rollen | WINKEL Bearings



Standard 0 NbV

Artikel-Nr. 113.010.000
Article no.

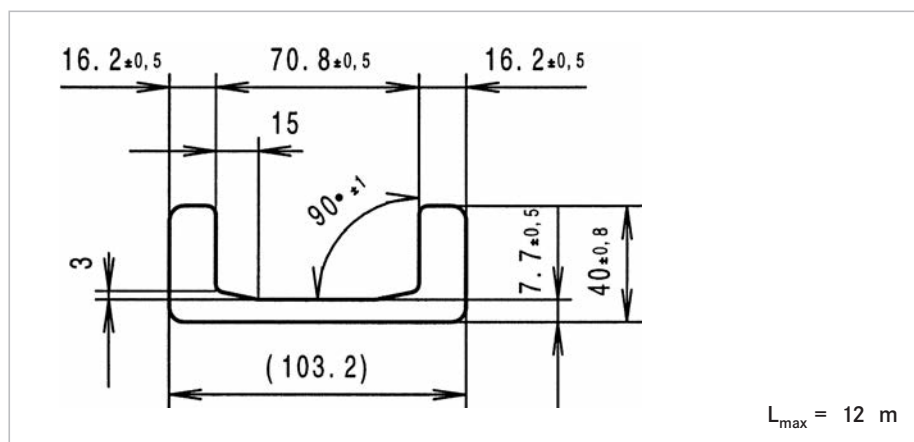
m	10,5	kg/m
A	13,4	cm ²
I _x	136,6	cm ⁴
W _x	31,6	cm ³
I _y	15,4	cm ⁴
W _y	6,7	cm ³
e _y	1,3	cm



Standard 1 NbV

Artikel-Nr. 113.011.000
Article no.

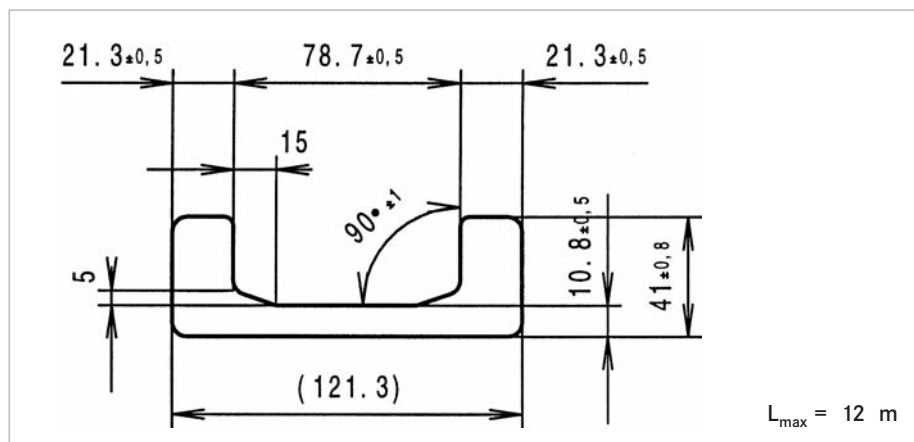
m	14,8	kg/m
A	18,8	cm ²
I _x	272,9	cm ⁴
W _x	52,9	cm ³
I _y	27,3	cm ⁴
W _y	10,9	cm ³
e _y	1,5	cm



Standard 2 NbV

Artikel-Nr. 113.012.000
Article no.

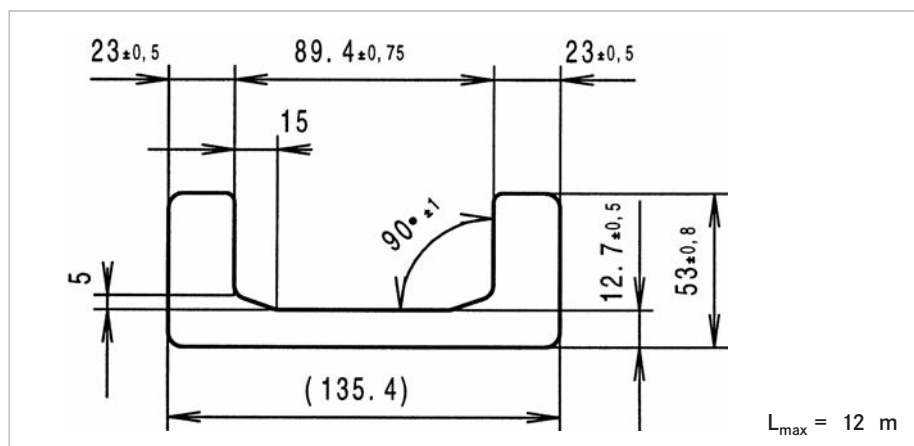
m	20,9	kg/m
A	26,6	cm ²
I _x	492,7	cm ⁴
W _x	81,2	cm ³
I _y	37,9	cm ⁴
W _y	14,8	cm ³
e _y	1,5	cm



Standard 3 NbV

Artikel-Nr. 113.013.000
Article no.

m	28,6	kg/m
A	36,4	cm ²
I _x	864,1	cm ⁴
W _x	127,6	cm ³
I _y	89,5	cm ⁴
W _y	27,1	cm ³
e _y	2,0	cm



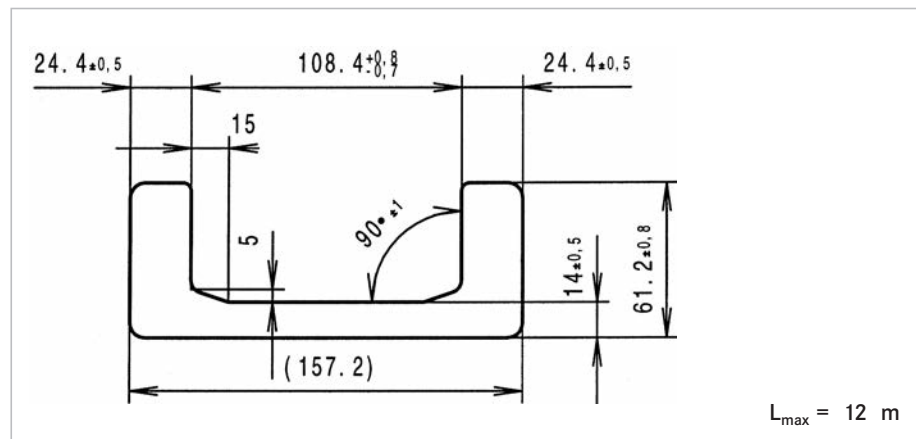


WINKEL-Rollen | WINKEL Bearings

Standard 4 NbV

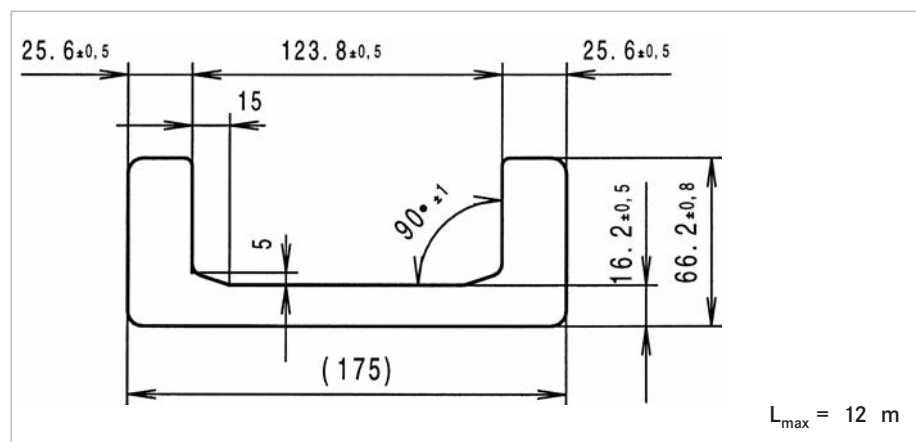
 Artikel-Nr. 113.014.000
 Article no.

m	36,0	kg/m
A	45,7	cm ²
I _x	1490,4	cm ⁴
W _x	189,6	cm ³
I _y	150,3	cm ⁴
W _y	38,8	cm ³
e _y	2,2	cm


Standard 5 NbV

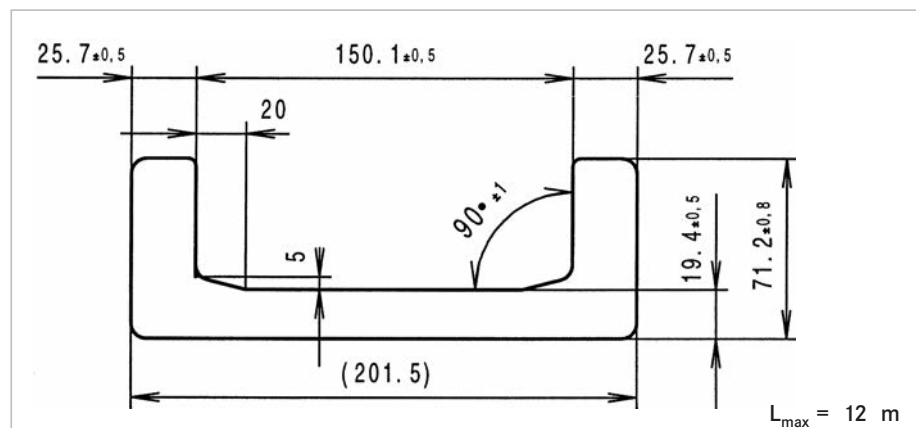
 Artikel-Nr. 113.015.000
 Article no.

m	42,8	kg/m
A	54,6	cm ²
I _x	2180,4	cm ⁴
W _x	249,2	cm ³
I _y	205,0	cm ⁴
W _y	48,2	cm ³
e _y	2,4	cm


Standard 6 NbV

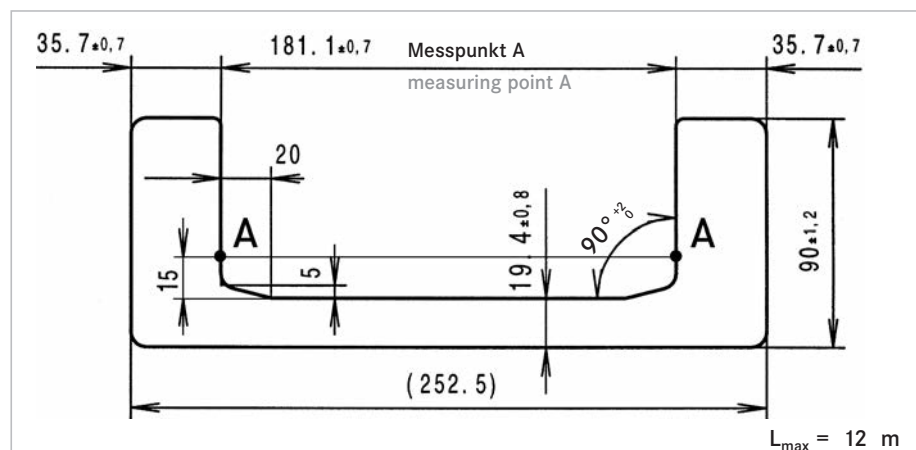
 Artikel-Nr. 113.016.000
 Article no.

m	52,3	kg/m
A	66,6	cm ²
I _x	3430,2	cm ⁴
W _x	340,5	cm ³
I _y	270,0	cm ⁴
W _y	57,2	cm ³
e _y	2,4	cm


**NEU
NEW**
Standard 8 NbV

 Artikel-Nr. 113.018.000
 Article no.

m	78,75	kg/m
A	100,1	cm ²
I _x	8605,4	cm ⁴
W _x	681,6	cm ³
I _y	721,5	cm ⁴
W _y	125,1	cm ³
e _y	3,2	cm


 Hinweis: Feingerichtete Profile weisen eine Geradheit von $\pm 0,3$ mm/lfm. auf. Standard $\pm 1,0$ mm/lfm.
 Notice: The straightness for fine straightened profiles is $\pm 0,3$ mm per meter. Standard $\pm 1,0$ mm per meter

WINKEL-Rollen | WINKEL Bearings



WINKEL U-Profile mit 30% höherer Tragkraft

- Höhere Tragkraft bei gleichen Abmessungen durch Stahl S450 J2 mod.
- Auswahl eventuell kleinerer Baugrößen (Kostenvorteil)
- Höhere Verschleißfestigkeit gegen Auswalzen bei Überlastungen

WINKEL U-Profiles with 30% increased load capacity

- higher load capacity at same sizes by using profiles with steelgrade S450 J2 mod.
- choice of smaller sizes (price advantage)
- higher resistance against wear out effects

Vergleich S355 J2 - S450 J2 mod.

Comparison S355 J2 - S450 J2 mod.

Merkmal Characteristic	S355 J2 S355 J2	S450 J2 mod. S450 J2 mod.
Streckgrenze 1 Yield point 1	min 355 N/mm ²	min 430 N/mm ²
Streckgrenze 2 Yield point 2	min 345 N/mm ²	min 420 N/mm ²
Zugfestigkeit Tensile strength	470 - 630 N/mm ²	550 - 700 N/mm ²
Bruchdehnung Elongation	min 22%	min 19%
max. zul. Hertz'sche Pressung max. hertzian pressure	750 N/mm ²	900 N/mm ²

Hinweis: Streckgrenze 1 gilt für Flanschdicken < 20 mm, Streckgrenze 2 gilt für Flanschdicken ab 20 mm.

Notice: Yield point 1 is only valid for flange thickness < 20 mm, yield point 2 is only valid for flange thickness > 20 mm.

Bedingt durch eine Mikrolegierung mit Vanadium und/oder Niob weist der Stahl S450 J2 mod. deutlich höhere Festigkeitseigenschaften und ein feinkörnigeres Gefüge auf als der herkömmliche Stahl S355 J2.

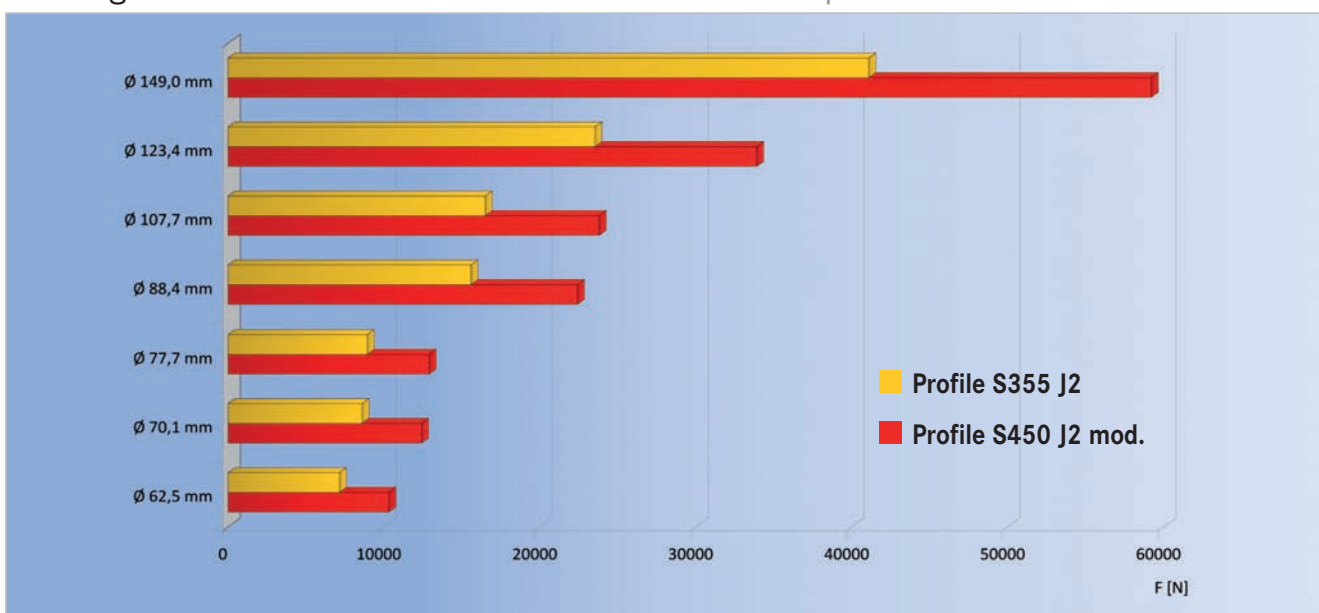
Daraus und aus einer stärkeren Begrenzung der Elemente P und S ergibt sich eine höhere Sprödbrechtsicherheit. Die damit verbundene höhere Flächenpressung zeigt die nachfolgende Grafik.

Because of micro alloying with Vanadium and/or Niobium the steel grade S450J2 mod. has a significantly higher tensile and yield strength and a more fine-grained structure than the customary steel grade S355 J2.

In consequence of this and due to a stronger limitation of the elements P and S the steel shows a higher resistance to brittle fracture. Related to this is an increased bearing pressure which is shown by the diagram below.

Tragzahlen der Radiallager im Vergleich:

Load capacity of radial bearings in comparison:



WINKEL-Rollen | WINKEL Bearings



Präzisions-Profile Typ PR

- Alle Profile sind aus hochwertigem Stahl in S450 J2 mod. gefertigt und sandgestrahlt
- Passend zu unserem WINKEL-Rollensystem liefern wir alle Profiltypen in Fixlängen
- Profile in feingerichteter Ausführung $\pm 0,3$ mm/lfm.
- Maximale Produktionslänge 12 m
- Geringe Lagerluft zwischen Laufrolle und Profil
- Höhere Tragkräfte durch neue NbV-Serie
- *Komplette Profilbearbeitung nach Kundenzeichnungen auf Anfrage*

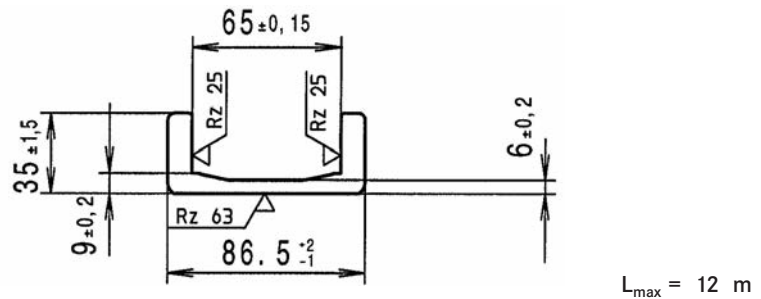
Precision profiles type PR

- All profiles are made from high-quality steel S450 J2 mod., in sandblasted version
- To our WINKEL Bearing system, we deliver all profiles in fixed lengths
- All profiles are fine straightened $\pm 0,3$ mm per meter
- Maximum production length 12 m
- Min clearance between bearing and profile
- Higher load capacity with new NbV-series.
- *Machined profiles according to customer drawings on request*

PR 0 NbV

Artikel-Nr. 113.010.002
Article no.

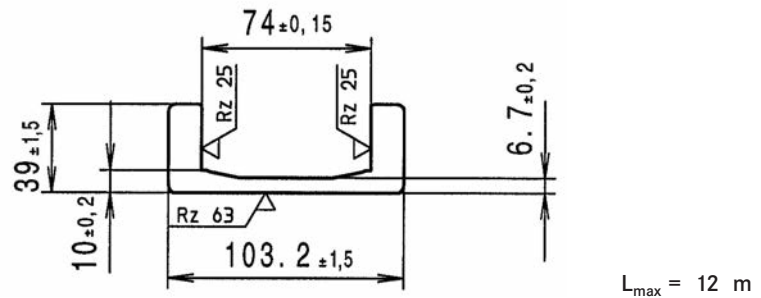
m	9,4	kg/m
A	11,8	cm ²
I _x	122,6	cm ⁴
W _x	28,3	cm ³
I _y	12,5	cm ⁴
W _y	5,2	cm ³
e _y	1,2	cm



PR 1 NbV

Artikel-Nr. 113.011.002
Article no.

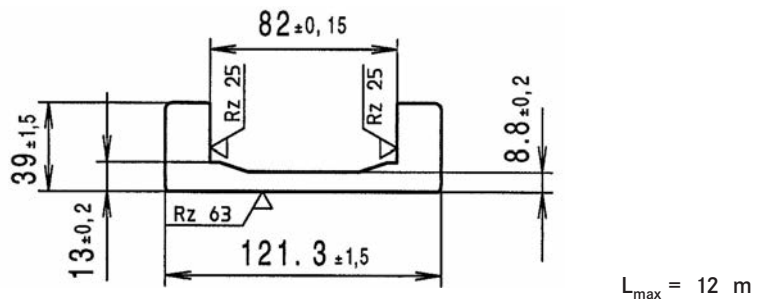
m	13,4	kg/m
A	16,8	cm ²
I _x	248,8	cm ⁴
W _x	48,2	cm ³
I _y	22,9	cm ⁴
W _y	8,9	cm ³
e _y	1,4	cm



PR 2 NbV

Artikel-Nr. 113.012.002
Article no.

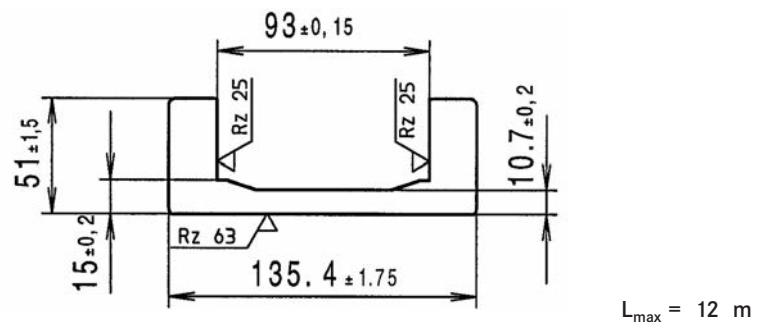
m	18,3	kg/m
A	23,3	cm ²
I _x	445,9	cm ⁴
W _x	73,5	cm ³
I _y	30,3	cm ⁴
W _y	11,4	cm ³
e _y	1,4	cm



PR 3 NbV

Artikel-Nr. 113.013.002
Article no.

m	25,4	kg/m
A	32,4	cm ²
I _x	794,4	cm ⁴
W _x	117,3	cm ³
I _y	74,4	cm ⁴
W _y	21,8	cm ³
e _y	1,9	cm



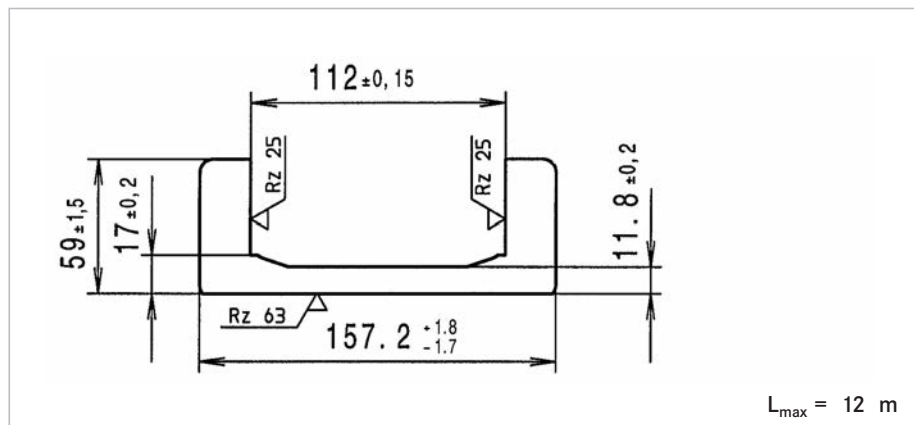


WINKEL-Rollen | WINKEL Bearings

PR 4 NbV

Artikel-Nr. 113.014.002
Article no.

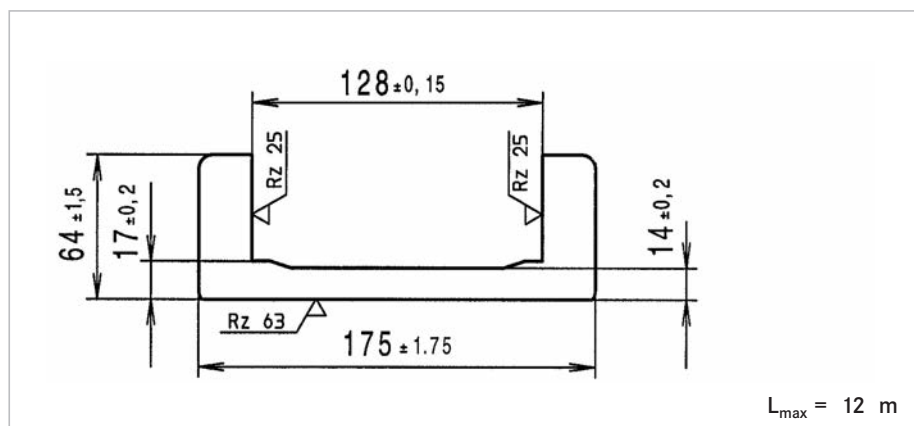
m	32,1	kg/m
A	40,7	cm ²
I _x	1372,7	cm ⁴
W _x	174,6	cm ³
I _y	126,6	cm ⁴
W _y	31,8	cm ³
e _y	2,1	cm



PR 5 NbV

Artikel-Nr. 113.015.002
Article no.

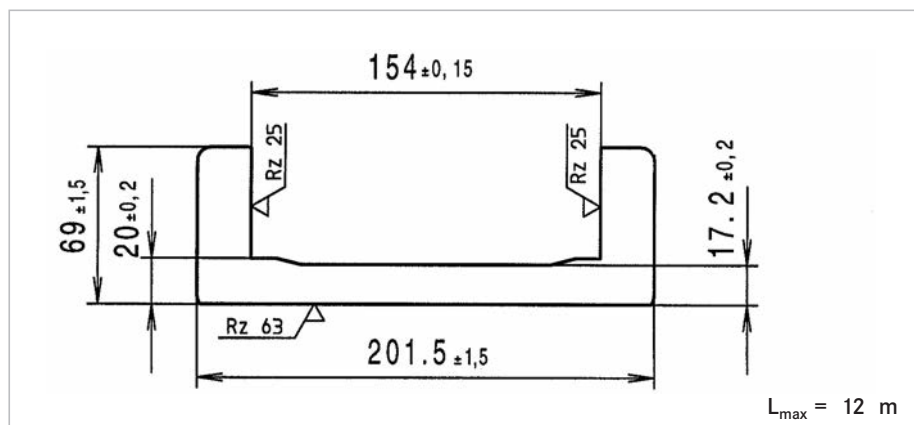
m	38,1	kg/m
A	48,6	cm ²
I _x	1996,0	cm ⁴
W _x	228,1	cm ³
I _y	173,5	cm ⁴
W _y	39,7	cm ³
e _y	2,2	cm



PR 6 NbV

Artikel-Nr. 113.016.002
Article no.

m	47,1	kg/m
A	60,0	cm ²
I _x	3148,0	cm ⁴
W _x	312,5	cm ³
I _y	231,5	cm ⁴
W _y	47,8	cm ³
e _y	2,3	cm

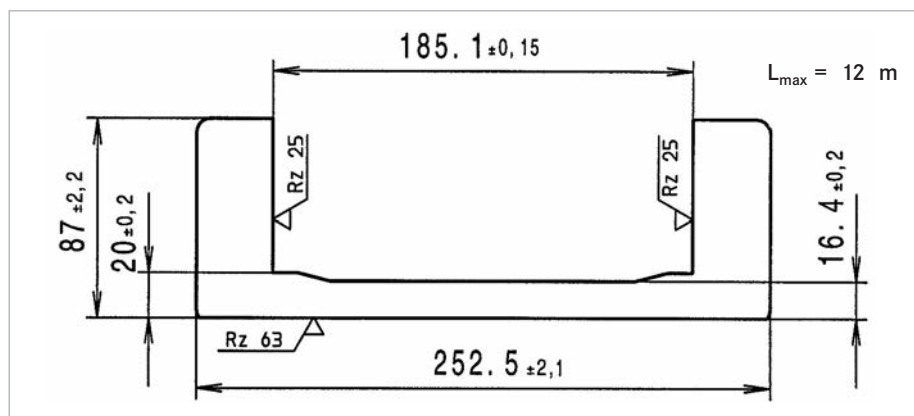


**NEU
NEW**

PR 8 NbV

Artikel-Nr. 113.018.011
Article no.

m	70,6	kg/m
A	89,9	cm ²
I _x	8000,0	cm ⁴
W _x	633,7	cm ³
I _y	623,0	cm ⁴
W _y	111,9	cm ³
e _y	3,1	cm



WINKEL-Rollen | WINKEL Bearings



Standard U-Profil gebohrt Typ PG

Vorteile:

- Einbaufertige Profile passend zu den Standard WINKEL-Rollen mit standardisierten Befestigungsbohrungen
- Alle Profile feingerichtet $\pm 0,3$ mm/lfm

Max. Länge 12 m. Sonderlängen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

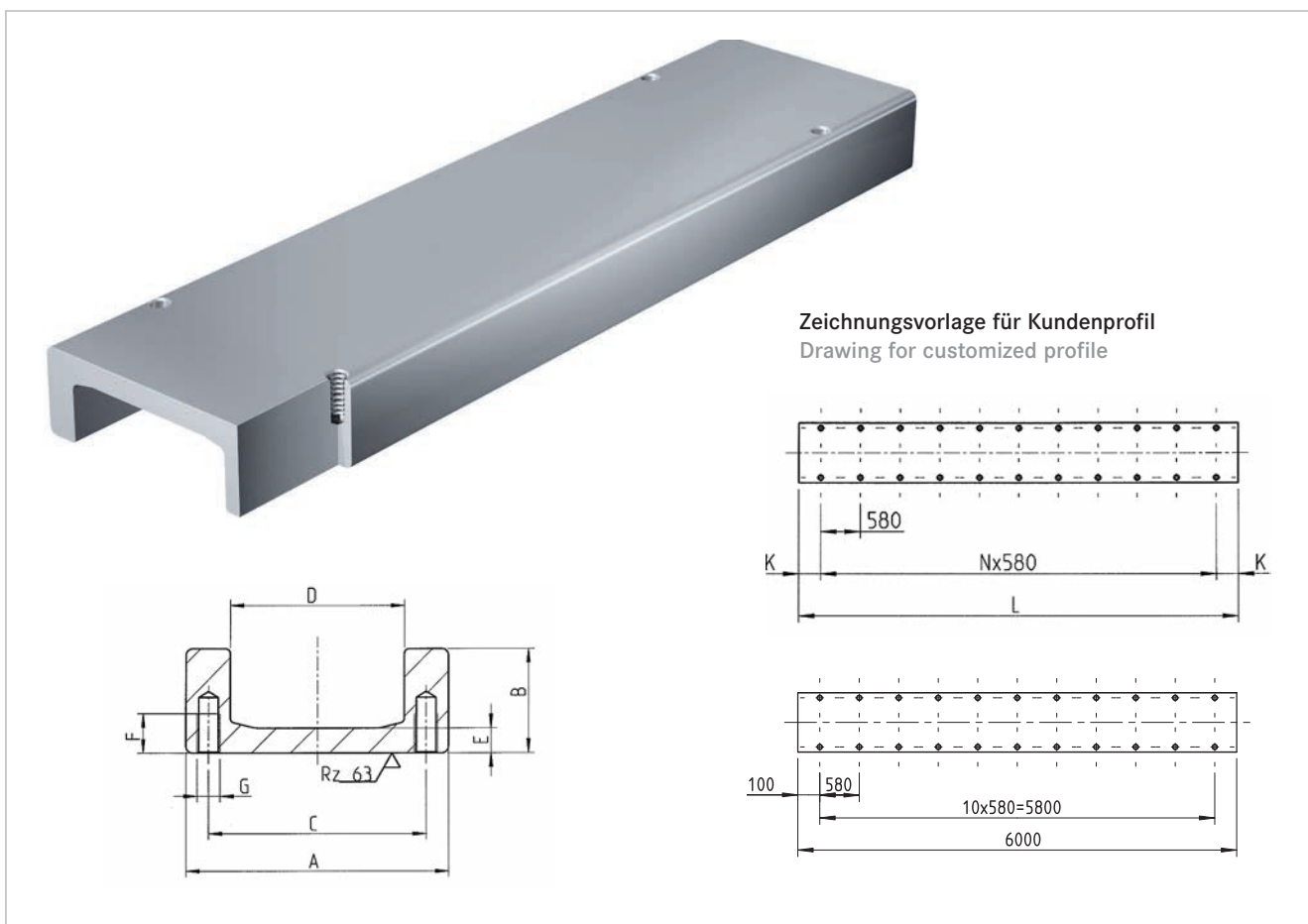
Standard U-profile drilled type PG

Advantages:

- Ready to mount profiles suitable for standard WINKEL Bearing with standardized thread holes
- All profiles fine straightened $\pm 0,3$ mm/m

Max. length 12 m. Special lengths on request.

CAD download in 2D/3D at www.winkel.de



Profil Profile	Artikel-Nr. Article no.	A* mm A* mm	B* mm B* mm	C mm C mm	D mm D mm	E* mm E* mm	F mm F mm	G
PG 0 NbV	113.021.000	86,5	35	75,8	62,5 + 1,00	6,0	15	M 8
PG 1 NbV	113.021.001	103,2	39	89,0	70,8 \pm 0,50	6,7	18	M 10
PG 2 NbV	113.021.002	121,3	39	101,7	78,7 \pm 0,50	8,8	20	M 12
PG 3 NbV	113.021.003	135,4	51	114,2	89,4 \pm 0,75	10,7	20	M 12
PG 4 NbV	113.021.004	157,2	59	134,6	108,4 \pm 0,80	11,8	20	M 12
PG 5 NbV	113.021.005	175,0	64	151,5	123,8 \pm 0,50	14,0	30	M 16
PG 6 NbV	113.021.006	201,5	69	177,8	150,1 \pm 0,50	17,2	30	M 16
PG 8 NbV	113.021.008	252,5	87	217,0	181,1 \pm 0,70	16,4	40	M 20

*Toleranzen gem. Profilen siehe Seite 69

*Tolerances according profiles see page 69

WINKEL-Rollen | WINKEL Bearings



Präzisions-U-Profile gebohrt Typ PG - PR

Vorteile:

- Einbaufertige Profile passend zu den Präzisions-WINKEL-Rollen mit standardisierten Befestigungsbohrungen
- Alle Profile feingerichtet $\pm 0,3$ mm/lfm
- Geringe Lagerluft zwischen Laufrolle und Profil

Max. Länge 12 m. Sonderlängen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

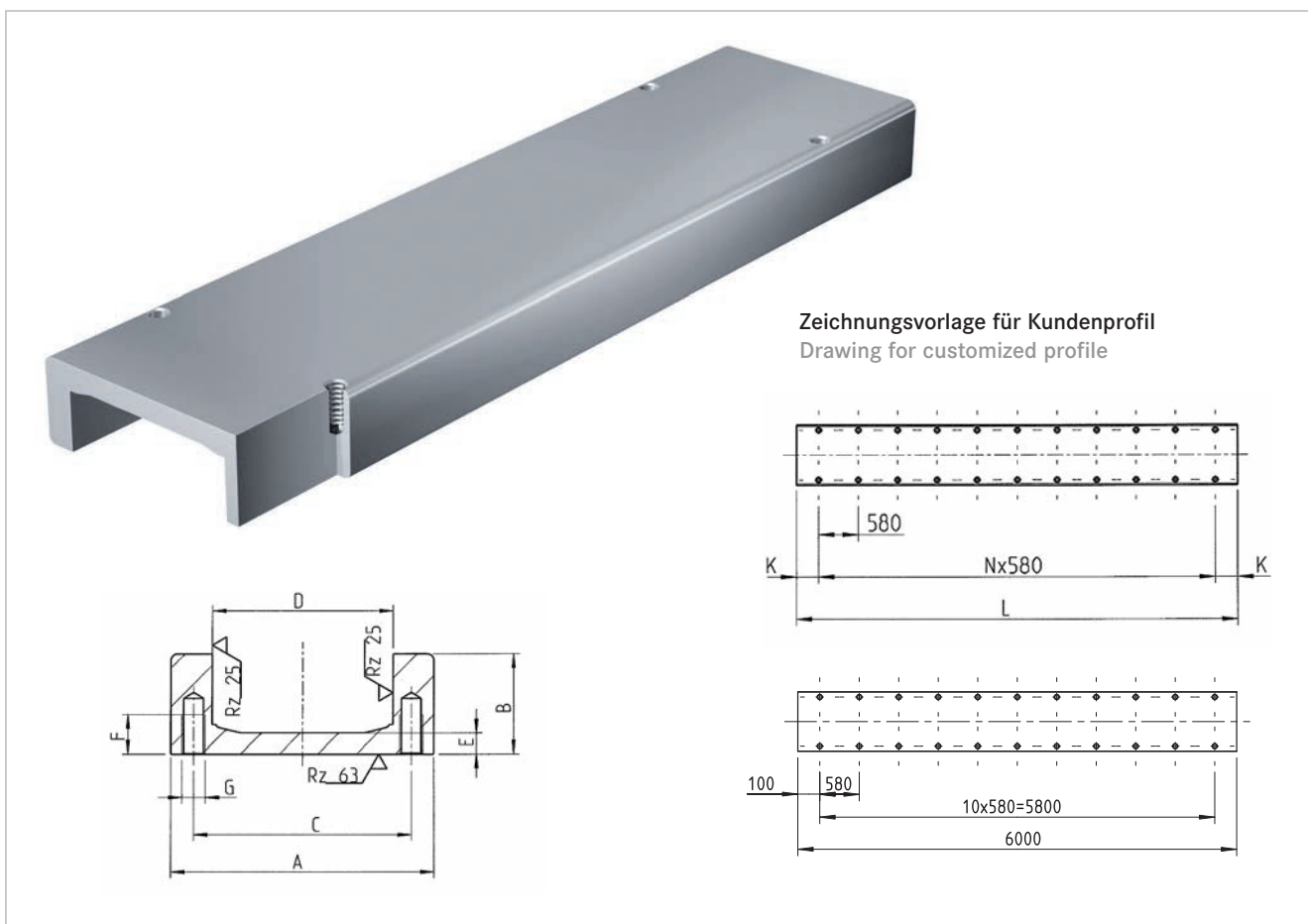
Precision U-profiles drilled type PG - PR

Advantages:

- Ready to mount profiles suitable for precision WINKEL Bearing with standardized thread holes
- All profiles fine straightened $\pm 0,3$ mm/m
- Min. clearance between bearing and profil

Max. length 12 m. Special lengths on request.

CAD download in 2D/3D at www.winkel.de



Profil Profile	Artikel-Nr. Article no.	A* mm A* mm	B* mm B* mm	C mm C mm	D mm D mm	E* mm E* mm	F mm F mm	G G
PG-PR 0 NbV	113.022.000	86,5	35	75,8	65,0 \pm 0,15	6,0	15	M 8
PG-PR 1 NbV	113.022.001	103,2	39	89,0	74,0 \pm 0,15	6,7	18	M 10
PG-PR 2 NbV	113.022.002	121,3	39	101,7	82,0 \pm 0,15	8,8	20	M 12
PG-PR 3 NbV	113.022.003	135,4	51	114,2	93,0 \pm 0,15	10,7	20	M 12
PG-PR 4 NbV	113.022.004	157,2	59	134,6	112,0 \pm 0,15	11,8	20	M 12
PG-PR 5 NbV	113.022.005	175,0	64	151,5	128,0 \pm 0,15	14,0	30	M 16
PG-PR 6 NbV	113.022.006	201,5	69	177,8	154,0 \pm 0,15	17,2	30	M 16
PG-PR 8 NbV	113.022.008	252,5	87	217,0	185,1 \pm 0,15	16,4	40	M 20

*Toleranzen gem. PR-Profilen siehe Seite 72

*Tolerances according PR profiles see page 72

**NEU**

Doppel T-Profil NbV

- Alle Profile aus hochwertigem Stahl S450 J2 mod. gefertigt. $L_{\max} = 12 \text{ m}$
- Höhere Tragkräfte durch neue NbV-Serie
- Profile in walzblanker Ausführung
- Passend zu unserem WINKEL-Rollensystem liefern wir alle Profiltypen in Fixlängen sofort ab Lager
- Auf Wunsch sind alle Profile in feingerichteter und sandgestrahlter Ausführung erhältlich ($\pm 0,3 \text{ mm/lfm.}$)
- Komplette Profilbearbeitung nach Kundenzeichnungen auf Anfrage

CAD Download in 2D/3D unter www.winkel.de

NEW

I-profiles NbV

- All profiles are made from high-quality steel S450 J2 mod. $L_{\max} = 12 \text{ m}$
- Higher load capacity with new NbV-series
- Profiles not sandblasted
- To our WINKEL Bearing system we deliver all profiles in fixed lengths, immediately from stock
- All profiles are available in fine straightened style and sandblasted on request ($\pm 0,3 \text{ mm per meter}$)
- Machined profiles according to customer drawings on request

CAD download in 2D/3D at www.winkel.de



Hinweis: Feingerichtete Profile weisen eine Geradheit von $\pm 0,3 \text{ mm/lfm.}$ auf. Standard $\pm 1,0 \text{ mm/lfm.}$
 Notice: The straightness for fine straightened profiles is $\pm 0,3 \text{ mm per meter}$. Standard $\pm 1,0 \text{ per meter}$

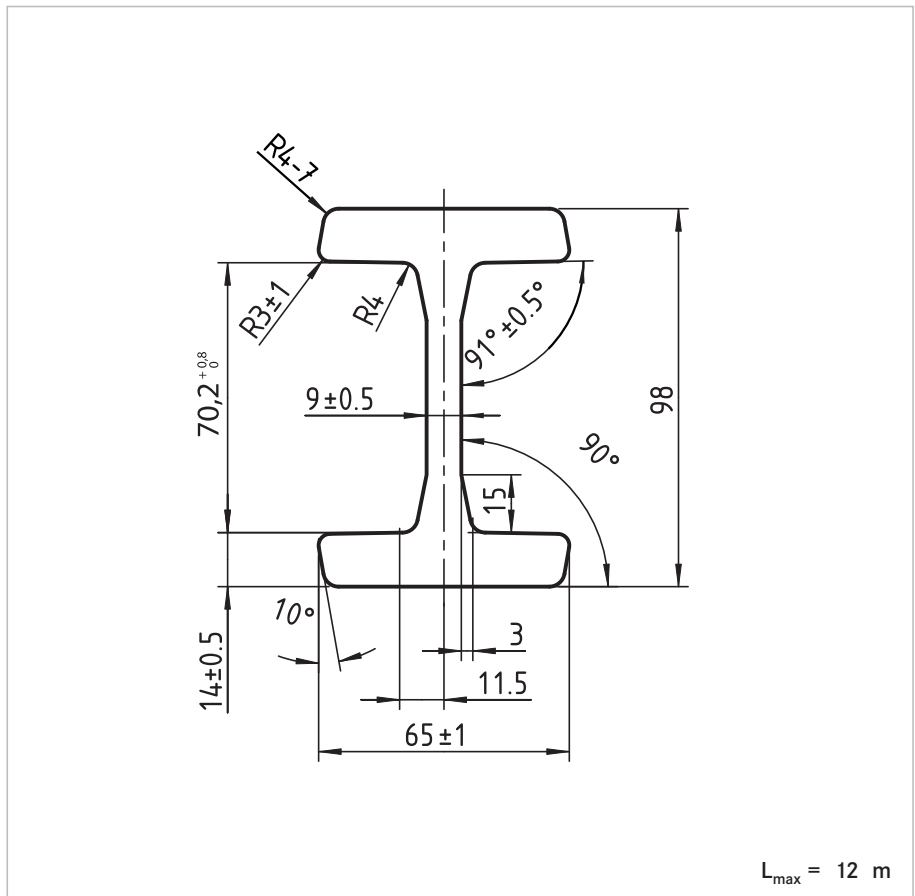
WINKEL-Rollen | WINKEL Bearings



3018 NbV

Artikel-Nr. 112.001.000
Article no.

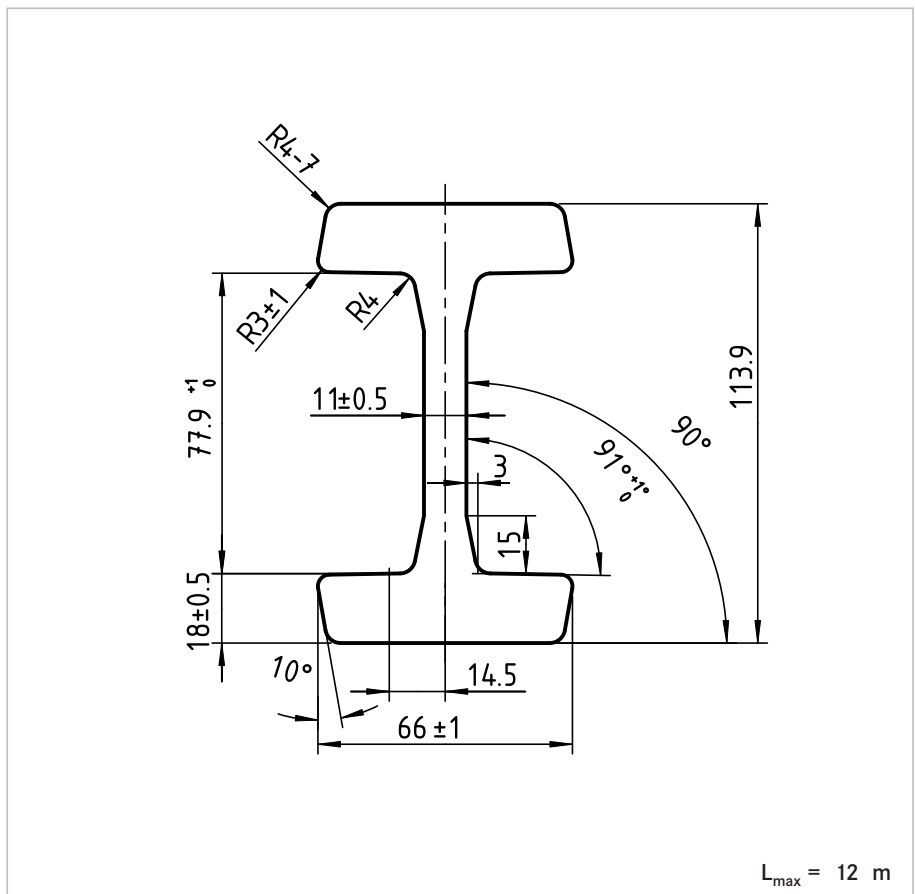
m	19,4	kg/m
A	24,8	cm ²
I _x	345,9	cm ⁴
W _x	70,6	cm ³
I _y	58,3	cm ⁴
W _y	18,0	cm ³



3019 NbV

Artikel-Nr. 112.002.000
Article no.

m	25,3	kg/m
A	32,2	cm ²
I _x	582,0	cm ⁴
W _x	102,2	cm ³
I _y	77,5	cm ⁴
W _y	23,5	cm ³



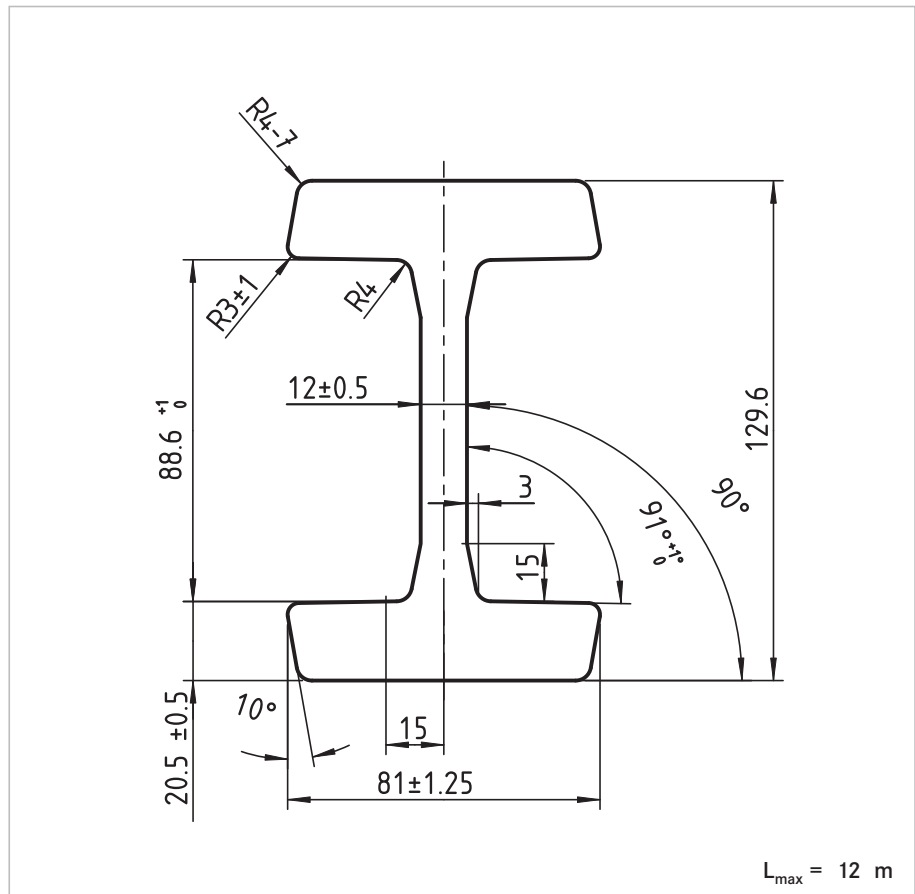
WINKEL-Rollen | WINKEL Bearings



3020 NbV

Artikel-Nr. 112.003.000
Article no.

m	34,0	kg/m
A	43,4	cm ²
I _x	1037,2	cm ⁴
W _x	160,1	cm ³
I _y	161,9	cm ⁴
W _y	40,0	cm ³



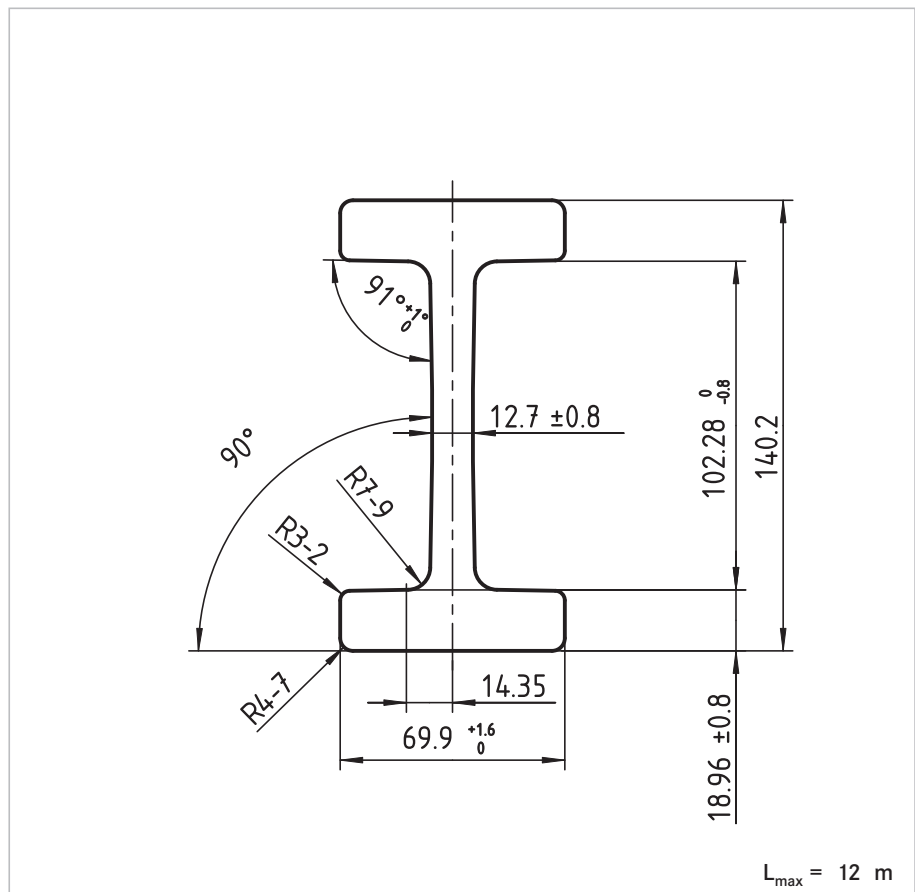
2912 NbV

Artikel-Nr. 112.004.000
Article no.

m	31,17	kg/m
A	39,5	cm ²
I _x	1088,7	cm ⁴
W _x	155,5	cm ³
I _y	105,3	cm ⁴
W _y	30,2	cm ³

Hinweis:
Materialgüte SAE 1027 mod.
Werkstoffnummer 1.9426.100

Please note:
Material SAE 1027 mod.
Material number 1.9426.100



Hinweis: Feingerichtete Profile weisen eine Geradheit von $\pm 0,3$ mm/lfm. auf. Standard $\pm 1,0$ mm/lfm.
Notice: The straightness for fine straightened profiles is $\pm 0,3$ mm per meter. Standard $\pm 1,0$ per meter

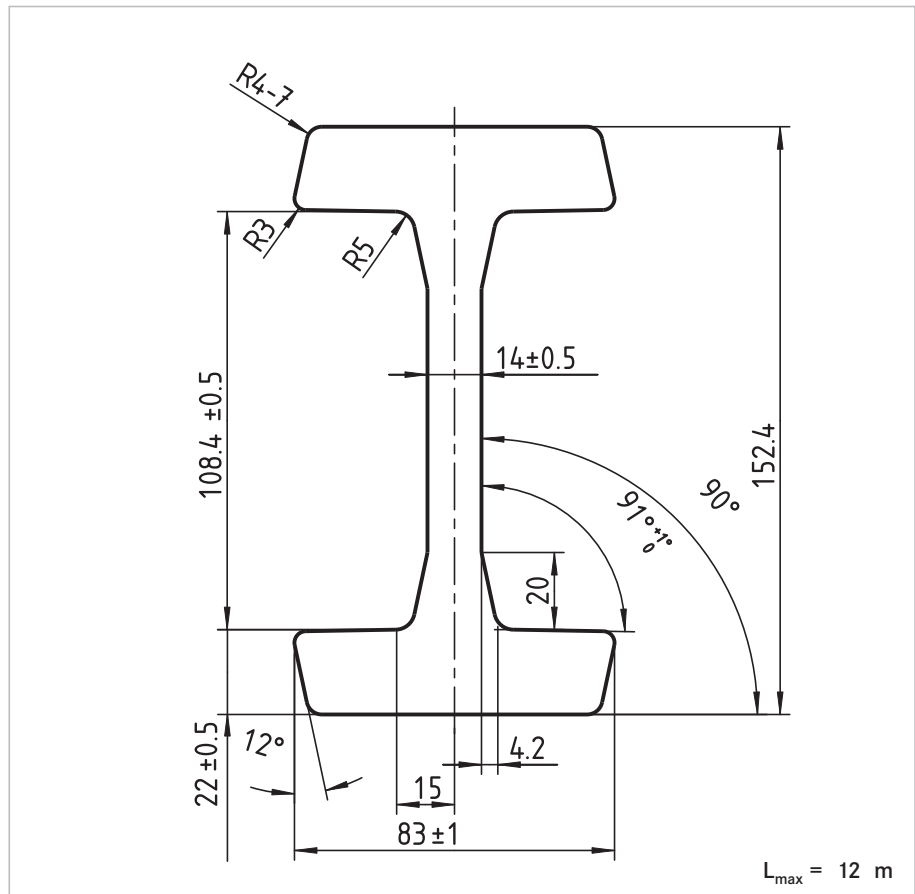
WINKEL-Rollen | WINKEL Bearings



3100 NbV

Artikel-Nr. 112.005.000
Article no.

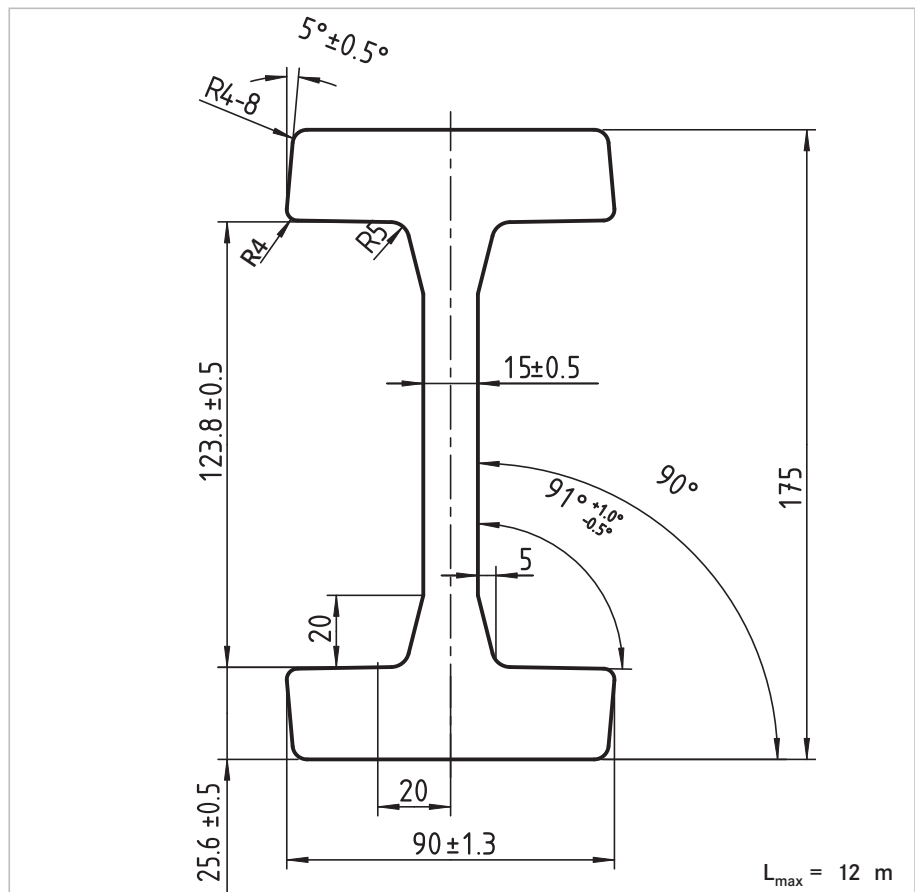
m	40,8	kg/m
A	51,1	cm ²
I _x	1656,9	cm ⁴
W _x	217,4	cm ³
I _y	184,1	cm ⁴
W _y	44,4	cm ³



3353 NbV

Artikel-Nr. 112.006.000
Article no.

m	51,4	kg/m
A	65,5	cm ²
I _x	2825,7	cm ⁴
W _x	322,9	cm ³
I _y	293,2	cm ⁴
W _y	65,2	cm ³





WINKEL-Rollen | WINKEL Bearings

Jumbo-Profile, geschweißt und gefräst

- Alle Profile sind aus hochwertigem Stahl in S355 J2 gefertigt
- Passend zu unserem WINKEL-Rollensystem werden alle Profile in Fixlänge auftragsbezogen produziert
- Auf Wunsch ist eine einseitige Laufbahnbearbeitung möglich
- Maximale Produktionslänge 12 m

U-Profile und Sonderausführungen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

Jumbo-profiles, welded and milled

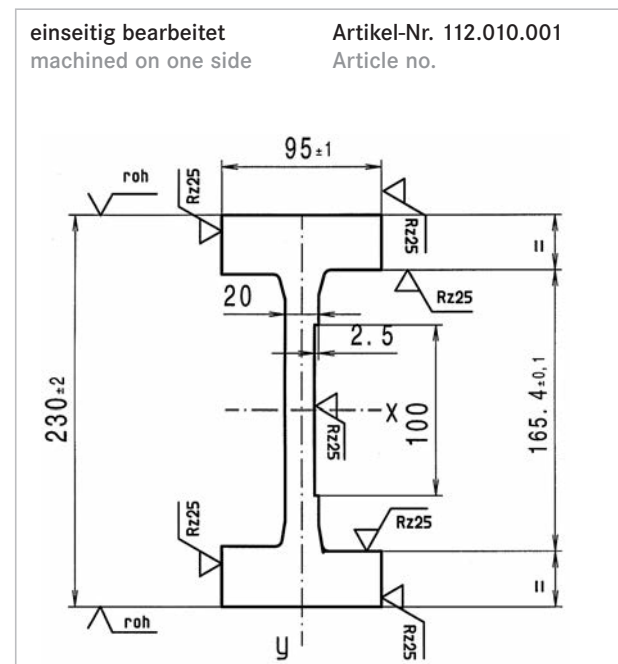
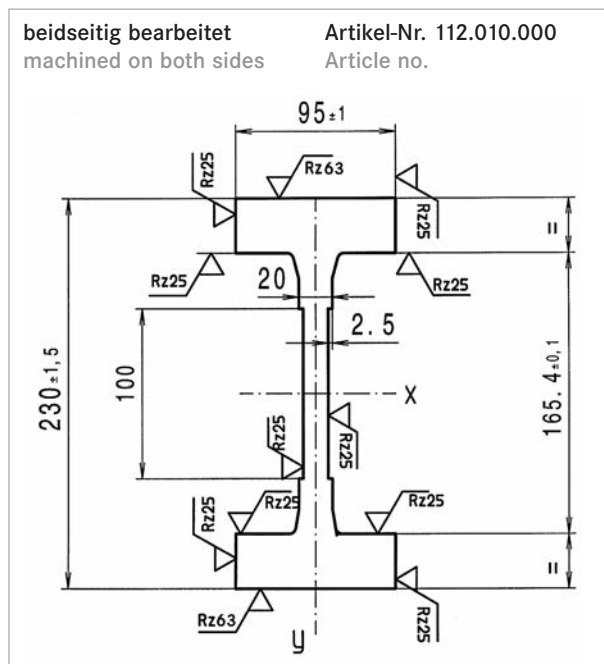
- All profiles are made from high-quality steel S355 J2
- To our WINKEL Bearing system, we produce all profiles in fixed lengths, according to customers order
- Low cost version with profile machined only on one side on request
- Maximum production length 12 m

U-profiles and special designs on request.

CAD download in 2D/3D at www.winkel.de

Standard 10

m	71,0	kg/m
A	90,7	cm ²
I _x	6825,0	cm ⁴
W _x	593,0	cm ³
I _y	475,0	cm ⁴
W _y	100,0	cm ³

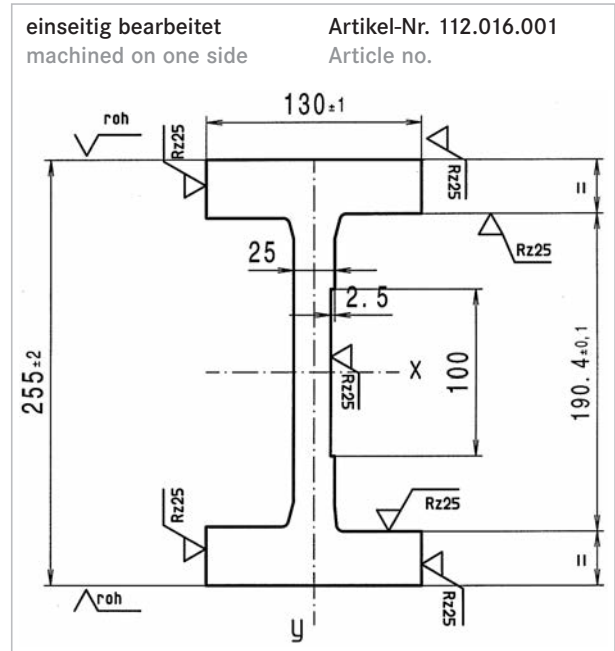
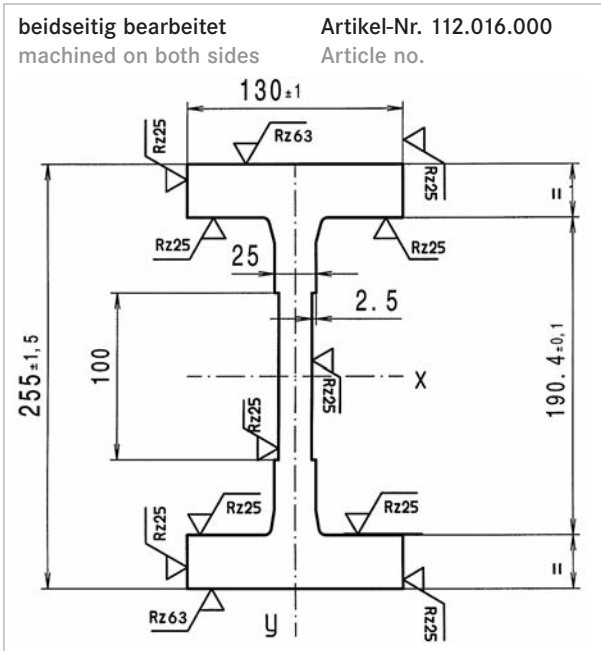


WINKEL-Rollen | WINKEL Bearings



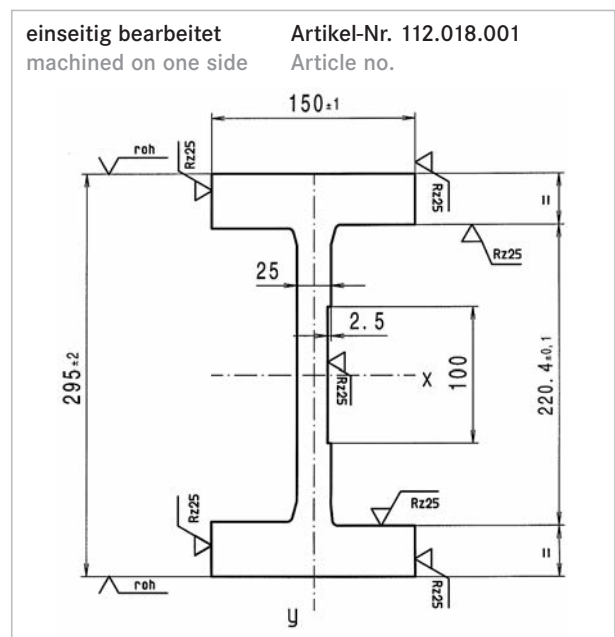
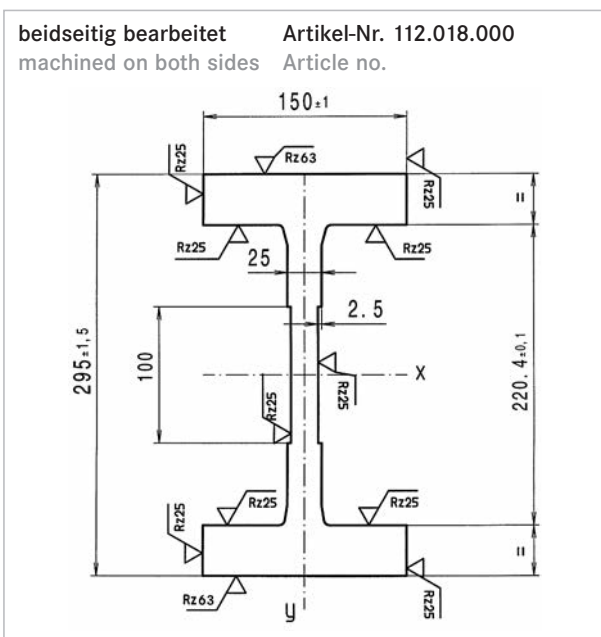
Standard 16

m	100,0	kg/m
A	127,8	cm ²
I _x	11983,0	cm ⁴
W _x	940,0	cm ³
I _y	1203,0	cm ⁴
W _y	185,0	cm



Standard 18

m	128,0	kg/m
A	163,0	cm ²
I _x	21035,0	cm ⁴
W _x	1426,0	cm ³
I _y	2123,0	cm ⁴
W _y	283,0	cm ³



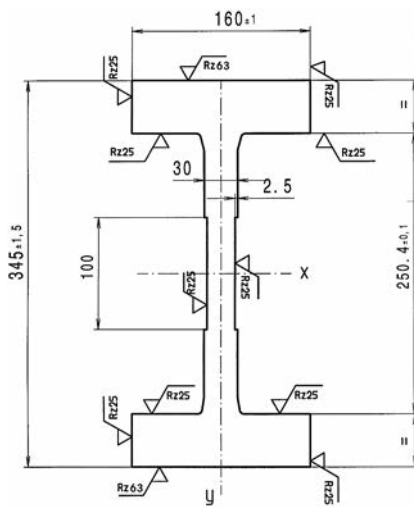
WINKEL-Rollen | WINKEL Bearings



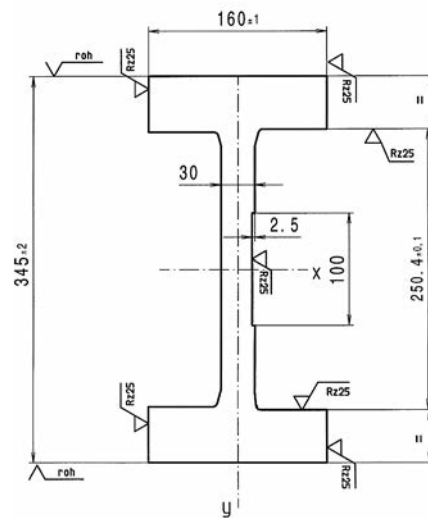
Standard 28

m	175,0	kg/m
A	222,8	cm ²
I _x	37883,0	cm ⁴
W _x	2196,0	cm ³
I _y	3279,0	cm ⁴
W _y	410,0	cm

beidseitig bearbeitet Artikel-Nr. 112.028.000
 machined on both sides Article no.



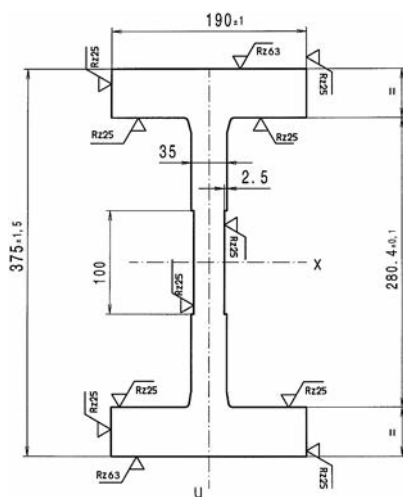
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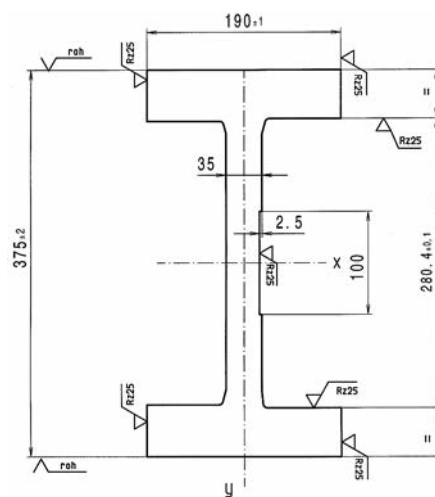
Standard 36

m	215,0	kg/m
A	274,2	cm ²
I _x	55210,0	cm ⁴
W _x	2945,0	cm ³
I _y	5498,0	cm ⁴
W _y	578,0	cm ³

beidseitig bearbeitet Artikel-Nr. 112.036.000
 machined on both sides Article no.



einseitig bearbeitet Artikel-Nr. 112.036.001
 machined on one side Article no.



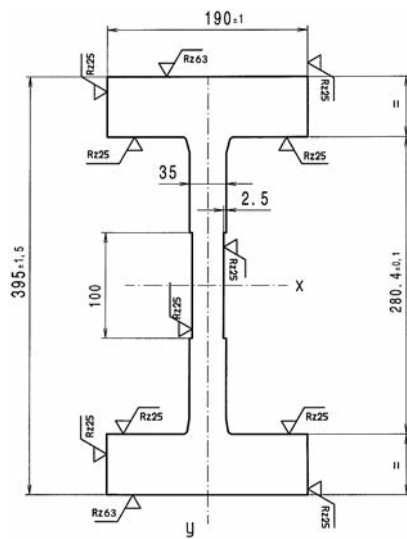
WINKEL-Rollen | WINKEL Bearings



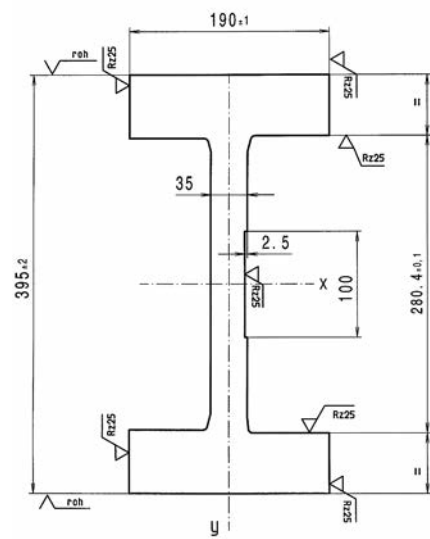
Standard 42

m	245,0	kg/m
A	312,2	cm ²
I _x	69230,0	cm ⁴
W _x	3505,0	cm ³
I _y	6642,0	cm ⁴
W _y	700,0	cm ³

beidseitig bearbeitet Artikel-Nr. 112.042.000
 machined on both sides Article no.



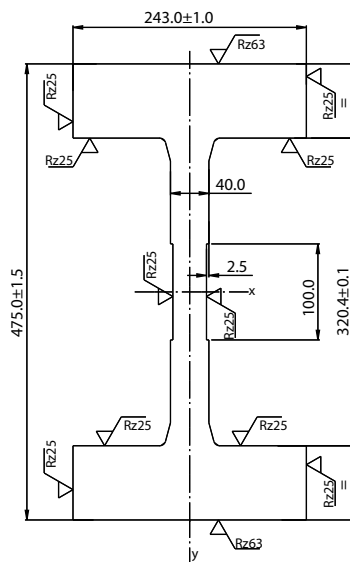
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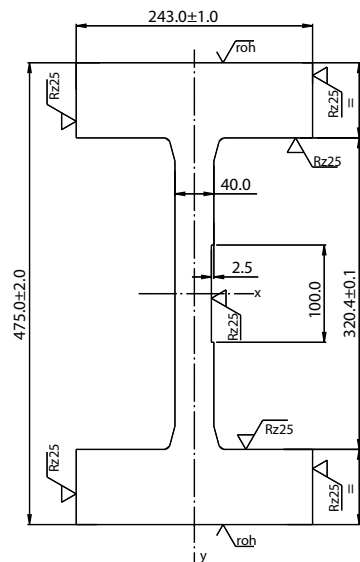
Standard 50

m	382,9	kg/m
A	487,8	cm ²
I _x	160012,0	cm ⁴
W _x	5579,1	cm ³
I _y	18601,0	cm ⁴
W _y	1586,9	cm ³

beidseitig bearbeitet Artikel-Nr. 112.050.000
 machined on both sides Article no.



einseitig bearbeitet Artikel-Nr. 112.050.001
 machined on one side Article no.





Anschraubplatten rechteckig für WINKEL-Rollen und Radiallager

WINKEL-Rollen mit Anschraubplatten sind fertige Systemelemente für schraubbare Verbindungen zwischen Konstruktion und Führungsprofil.

- alle Anschraubplatten mit eingeschweißter WINKEL-Rolle
- axiale Justierung mit Distanzsteckbleche Typ DS
- alle Anschraubplatten in brüniertem Ausführung
- Material: S235 JR

Sonderausführungen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

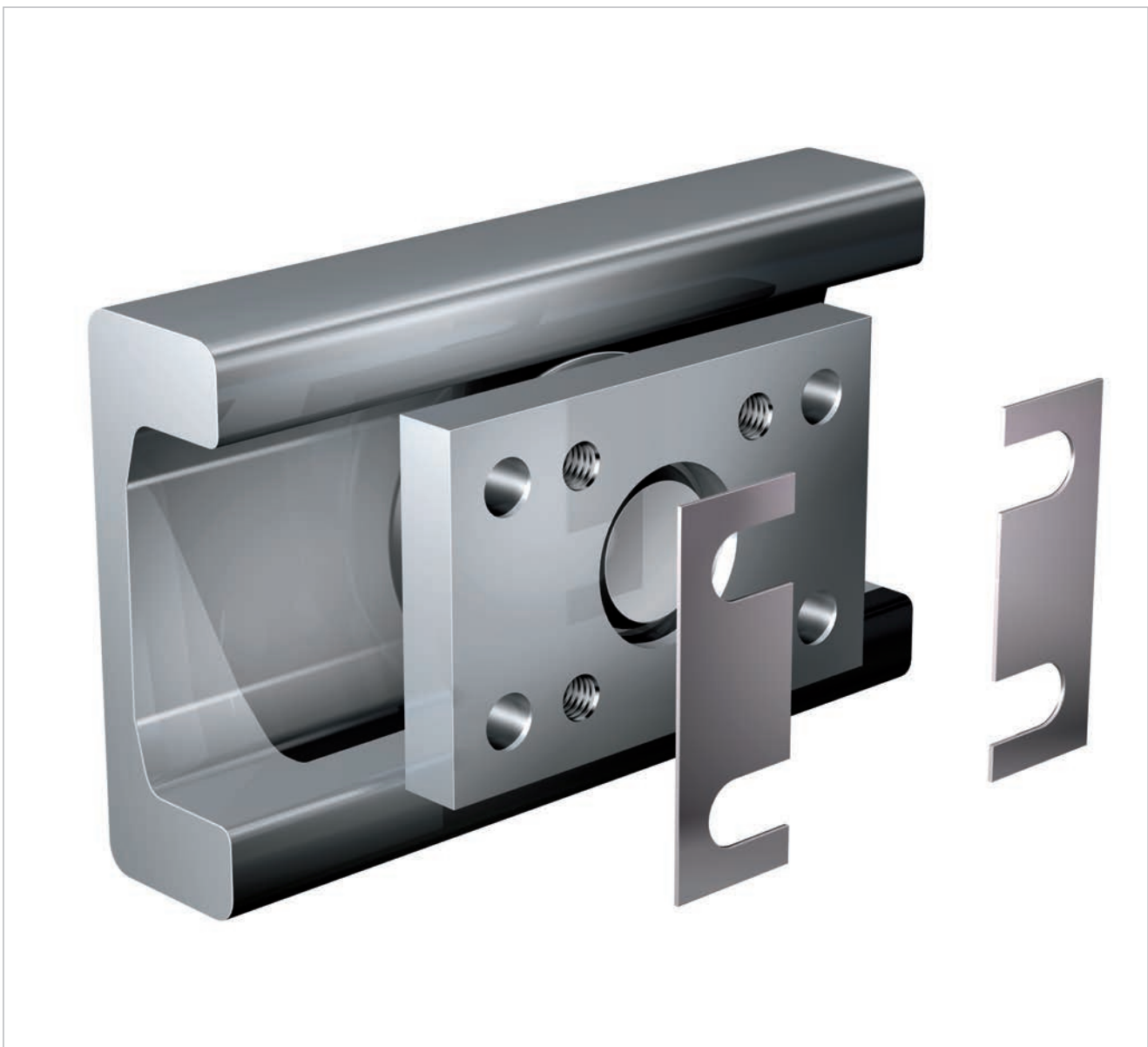
Flange plates rectangular for WINKEL Bearings and Radial Bearings

WINKEL flange plates in combination with WINKEL Bearings are suitable for screw joints between construction and guide profile.

- all flange plates are welded with WINKEL Bearings
- axial adjusting with washers type DS
- all flange plates in corrosion protected version
- material: S235 JR

Special designs on request.

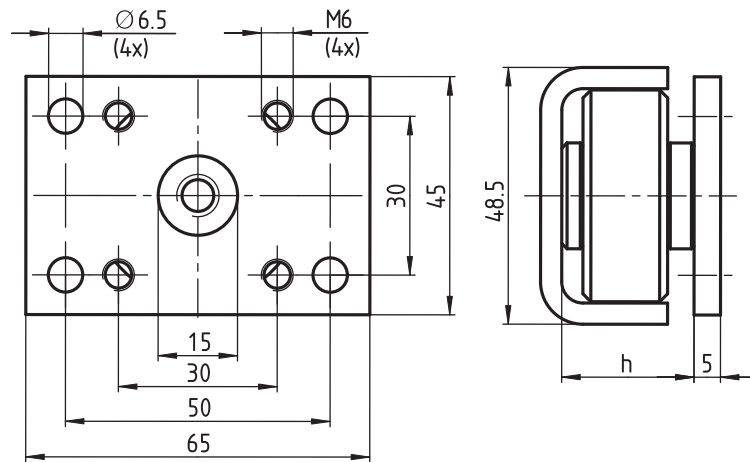
CAD download in 2D/3D at www.winkel.de



WINKEL-Rollen | WINKEL Bearings

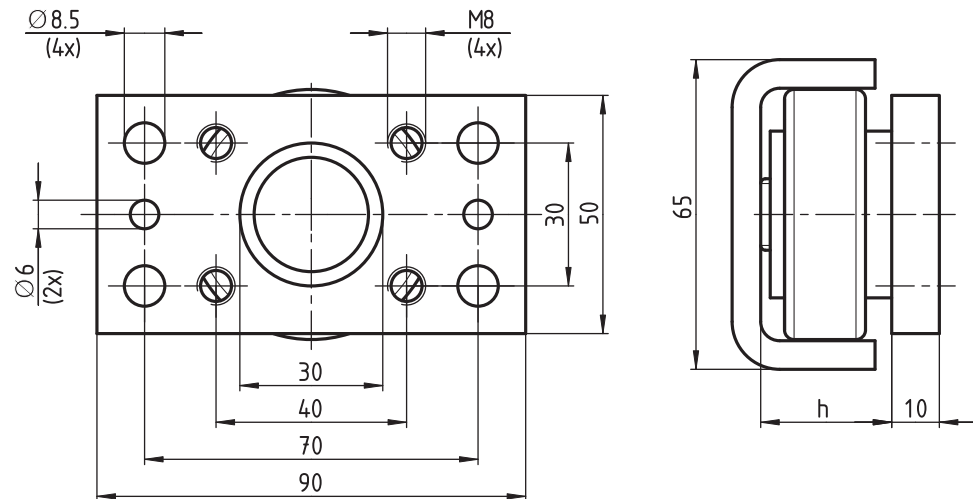


AP A

 Artikel-Nr. 212.042.000
 Article no.


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers	
AP A	4.052 P + AP A	200.132.000	Standard A	25,0	0,10 kg	DS-A-0,5 238.026.000	DS-A-1,0 238.026.001

AP S

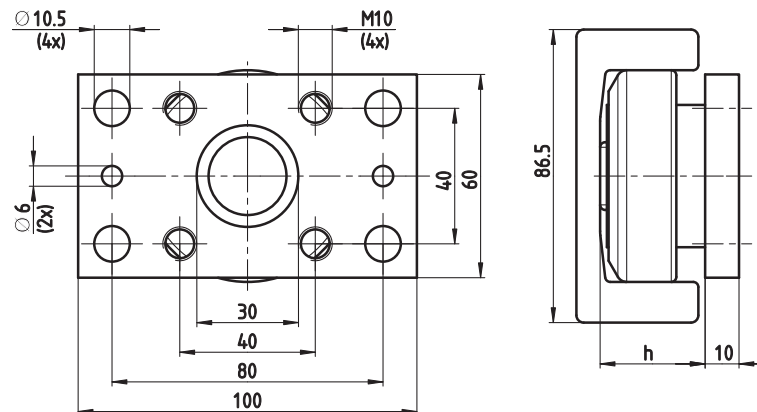
 Artikel-Nr. 212.014.000
 Article no.


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washer	
AP S	4.053 + AP S	200.071.000	Standard S	27,0	0,25 kg	DS-S-0,5 238.025.000	DS-S-1,0 238.025.001
	4.053 HT + AP S	200.024.012	Standard S	27,0			

WINKEL-Rollen | WINKEL Bearings

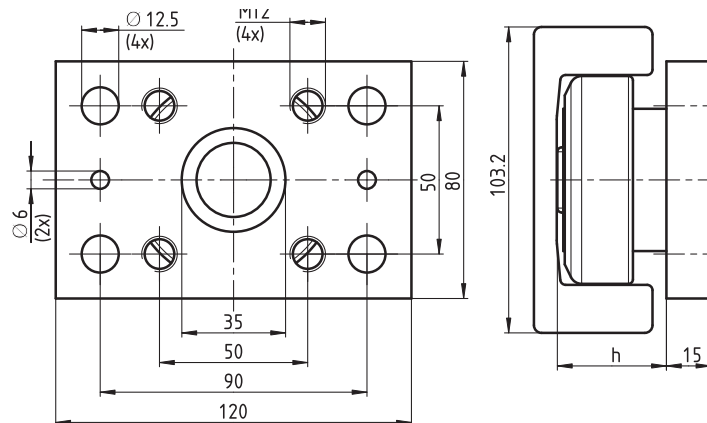


AP 0

 Artikel-Nr. 212.003.000
 Article no.


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 0	2.054 + AP 0	205.061.003	Standard 0 NbV	26,5	0,35 kg	DS-0-0,5 DS-0-1,0 238.020.000 238.020.001
	4.054 + AP 0	200.051.000	Standard 0 NbV	30,5		
	4.054 HT + AP 0	200.001.021	Standard 0 NbV	30,5		
	4.454 + AP 0	201.031.001	Standard 0 NbV	30,5 - 32,0		
	4.072 + AP 0	201.011.000	Standard 0 NbV	33,0		
	4.072 P + AP 0	200.149.000	Standard 0 NbV	33,0		
	PR 2.054 + AP 0	205.071.002	PR 0 NbV	26,5		
	PR 4.054 + AP 0	200.100.002	PR 0 NbV	30,5		
	PR 4.454 + AP 0	200.114.001	PR 0 NbV	30,5 - 32,0		
	PR 4.072 + AP 0	200.107.001	PR 0 NbV	33,0		
PR 4.072 P + AP 0	200.011.008	PR 0 NbV	33,0			

AP 1

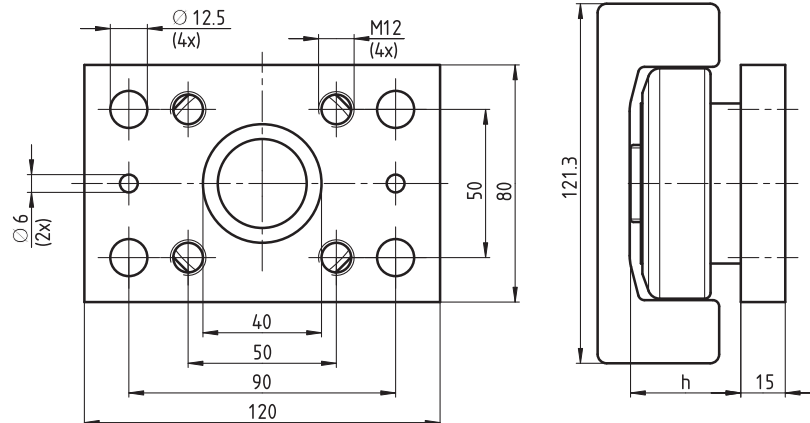
 Artikel-Nr. 212.004.000
 Article no.


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 1	2.055 + AP 1	205.109.000	Standard 1 NbV	34,0	0,90 kg	DS-1-0,5 DS-1-1,0 238.021.000 238.021.001
	4.055 + AP 1	200.052.000	Standard 1 NbV	36,0		
	4.055 HT + AP 1	200.002.021	Standard 1 NbV	36,0		
	4.455 + AP 1	201.032.001	Standard 1 NbV	36,0 - 37,5		
	4.073 + AP 1	200.077.000	Standard 1 NbV	40,0		
	4.073 P + AP 1	200.012.005	Standard 1 NbV	40,0		
	PR 2.055 + AP 1	205.072.001	PR 1 NbV	34,0		
	PR 4.055 + AP 1	200.101.002	PR 1 NbV	36,0		
	PR 4.455 + AP 1	200.115.001	PR 1 NbV	36,0 - 37,5		
	PR 4.073 + AP 1	200.108.001	PR 1 NbV	40,0		
PR 4.073 P + AP 1	200.014.002	PR 1 NbV	40,0			

WINKEL-Rollen | WINKEL Bearings

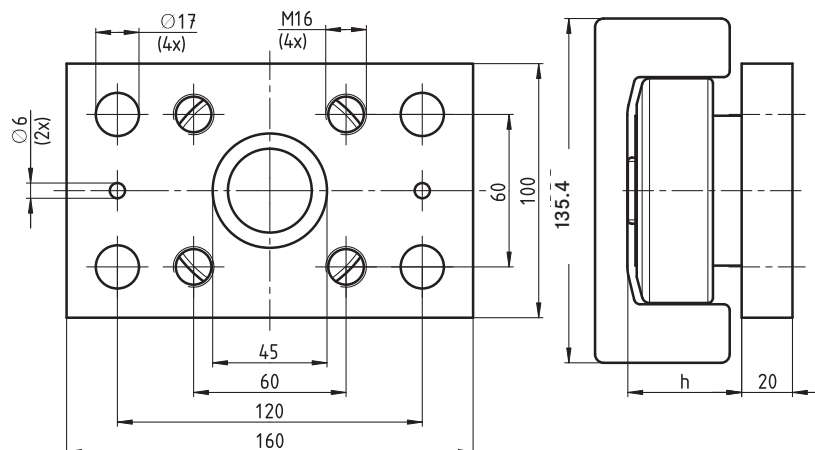


AP 2

 Artikel-Nr. 212.005.000
 Article no.


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 2	2.056 + AP 2	205.107.000	Standard 2 NbV	34,0	0,85 kg	DS-2-0,5 DS-2-1,0 238.021.000 238.021.001
	4.056 + AP 2	200.053.000	Standard 2 NbV	36,5		
	4.056 HT + AP 2	200.003.021	Standard 2 NbV	36,5		
	4.456 + AP 2	201.033.002	Standard 2 NbV	37,0 - 38,5		
	4.074 + AP 2	200.127.000	Standard 2 NbV	39,5		
	4.074 P + AP 2	200.013.008	Standard 2 NbV	39,5		
	PR 2.056 + AP 2	205.073.002	PR 2 NbV	34,0		
	PR 4.056 + AP 2	200.066.000	PR 2 NbV	36,5		
	PR 4.456 + AP 2	200.116.001	PR 2 NbV	37,0 - 38,5		
	PR 4.074 + AP 2	200.109.002	PR 2 NbV	39,5		
PR 4.074 P + AP 2	200.148.000	PR 2 NbV	39,5			

AP 3.1

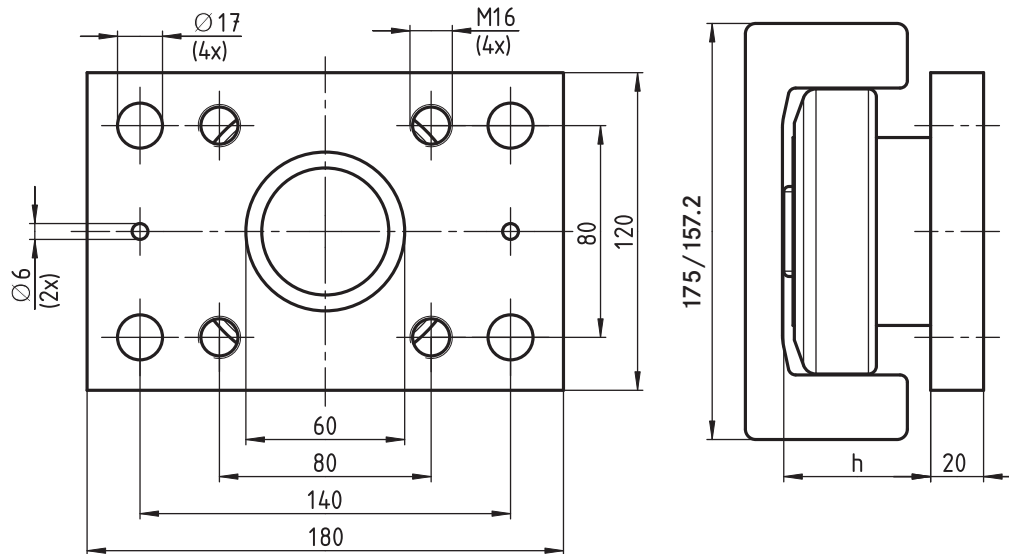
 Artikel-Nr. 212.006.001
 Article no.


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 3.1	2.058 + AP 3.1	205.064.004	Standard 3 NbV	41,0	2,35 kg	DS-3.1-0,5 DS-3.1-1,0 238.105.000 238.105.001
	4.058 + AP 3.1	200.054.001	Standard 3 NbV	44,0		
	4.058 HT + AP 3.1	200.005.017	Standard 3 NbV	44,0		
	4.458 + AP 3.1	201.035.002	Standard 3 NbV	44,0 - 45,5		
	4.076 + AP 3.1	201.014.000	Standard 3 NbV	48,0		
	4.076 P + AP 3.1	200.015.009	Standard 3 NbV	48,0		
	PR 2.058 + AP 3.1	205.075.001	PR 3 NbV	41,0		
	PR 4.058 + AP 3.1	200.140.001	PR 3 NbV	44,0		
	PR 4.458 + AP 3.1	200.117.002	PR 3 NbV	44,0 - 45,5		
	PR 4.076 + AP 3.1	200.110.001	PR 3 NbV	48,0		
PR 4.076 P + AP 3.1	200.015.012	PR 3 NbV	48,0			

WINKEL-Rollen | WINKEL Bearings



AP 4

 Artikel-Nr. 212.007.001
 Article no.


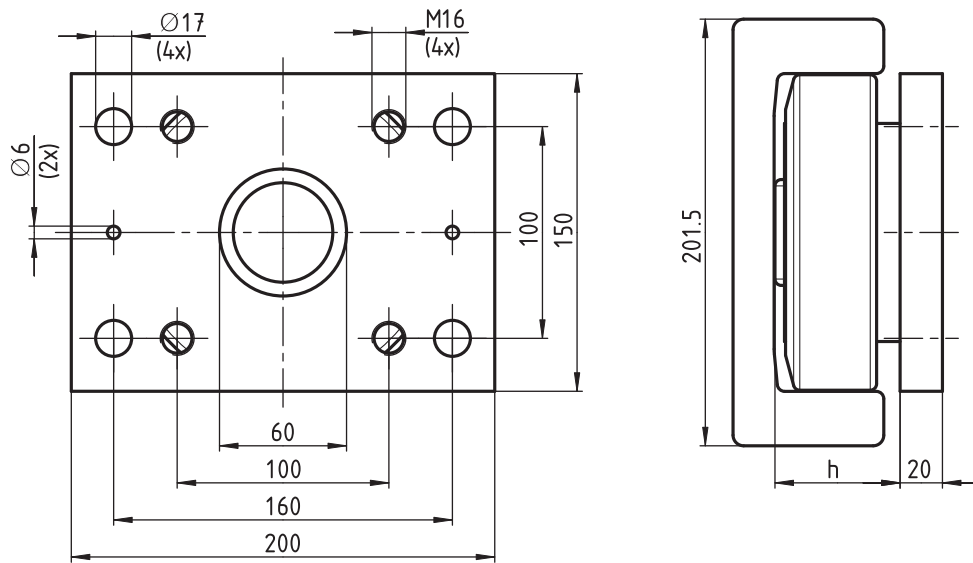
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 4	2.061 + AP 4	205.108.000	Standard 4 NbV	51,5	2,65 kg	DS-4-0,5 DS-4-1,0 238.023.000 238.023.001
	4.061 + AP 4	200.055.000	Standard 4 NbV	55,0		
	4.061 HT + AP 4	200.008.009	Standard 4 NbV	55,0		
	4.461 + AP 4	201.038.001	Standard 4 NbV	55,0 - 57,0		
	4.0784 + AP 4	200.016.001	Standard 4 NbV	55,0		
	4.0784 P + AP 4	200.016.004	Standard 4 NbV	55,0		
	PR 2.061 + AP 4	205.075.003	PR 4 NbV	51,5		
	PR 4.061 + AP 4	200.104.001	PR 4 NbV	55,0		
	PR 4.461 + AP 4	200.118.001	PR 4 NbV	55,0 - 57,0		
	PR 4.0784 + AP 4	200.111.001	PR 4 NbV	55,0		
	PR 4.0784 P + AP 4	200.067.003	PR 4 NbV	55,0		
	2.062 + AP 4	205.066.004	Standard 5 NbV	51,5		
	4.062 + AP 4	200.076.000	Standard 5 NbV	56,0		
	4.062 HT + AP 4	200.009.024	Standard 5 NbV	56,0		
	4.462 + AP 4	201.039.001	Standard 5 NbV	56,0 - 60,0		
	4.079 + AP 4	201.015.000	Standard 5 NbV	59,5		
	4.079 P + AP 4	200.018.004	Standard 5 NbV	59,5		
	PR 2.062 + AP 4	205.076.001	PR 5 NbV	51,5		
	PR 4.062 + AP 4	200.105.001	PR 5 NbV	56,0		
	PR 4.462 + AP 4	200.119.001	PR 5 NbV	56,0 - 60,0		
PR 4.079 + AP 4	200.112.001	PR 5 NbV	59,5			
PR 4.079 P + AP 4	200.154.003	PR 5 NbV	59,5			

WINKEL-Rollen | WINKEL Bearings



AP 6

Artikel-Nr. 212.008.000
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 6	2.063 + AP 6	205.067.002	Standard 6 NbV	54,0	4,0 kg	DS-6-0,5 DS-6-1,0 238.024.000 238.024.001
	4.063 + AP 6	200.056.000	Standard 6 NbV	58,5		
	4.063 HT + AP 6	200.010.036	Standard 6 NbV	58,5		
	4.463 + AP 6	201.040.001	Standard 6 NbV	58,5 - 62,5		
	4.080 + AP 6	200.019.003	Standard 6 NbV	69,0		
	4.080 P + AP 6	201.016.000	Standard 6 NbV	62,0		
	PR 2.063 + AP 6	205.077.001	PR 6 NbV	54,0		
	PR 4.063 + AP 6	200.106.002	PR 6 NbV	58,5		
	PR 4.463 + AP 6	200.120.001	PR 6 NbV	58,5 - 62,5		
	PR 4.080 + AP 6	200.113.001	PR 6 NbV	69,0		
PR 4.080 P + AP 6	200.155.001	PR 6 NbV	62,0			

WINKEL-Rollen | WINKEL Bearings

**NEU**

Anschraubplatten rechteckig mit stirnseitiger Nachschmierung für WINKEL-Rollen und Radiallager

WINKEL-Rollen mit Anschraubplatten sind fertige Systemelemente für schraubbare Verbindungen zwischen Konstruktion und Führungsprofil.

- alle Anschraubplatten mit eingeschweißter WINKEL-Rolle
- axiale Justierung mit Distanzblech Typ DS-LUB
- alle Anschraubplatten in brüniertes Ausführung
- Material: S235 JR
- Lieferung inkl. 1 Schmiernippel M6 x 1, O-Ring sowie 2 Distanzbleche 0,5 mm

Sonderausführungen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

NEW

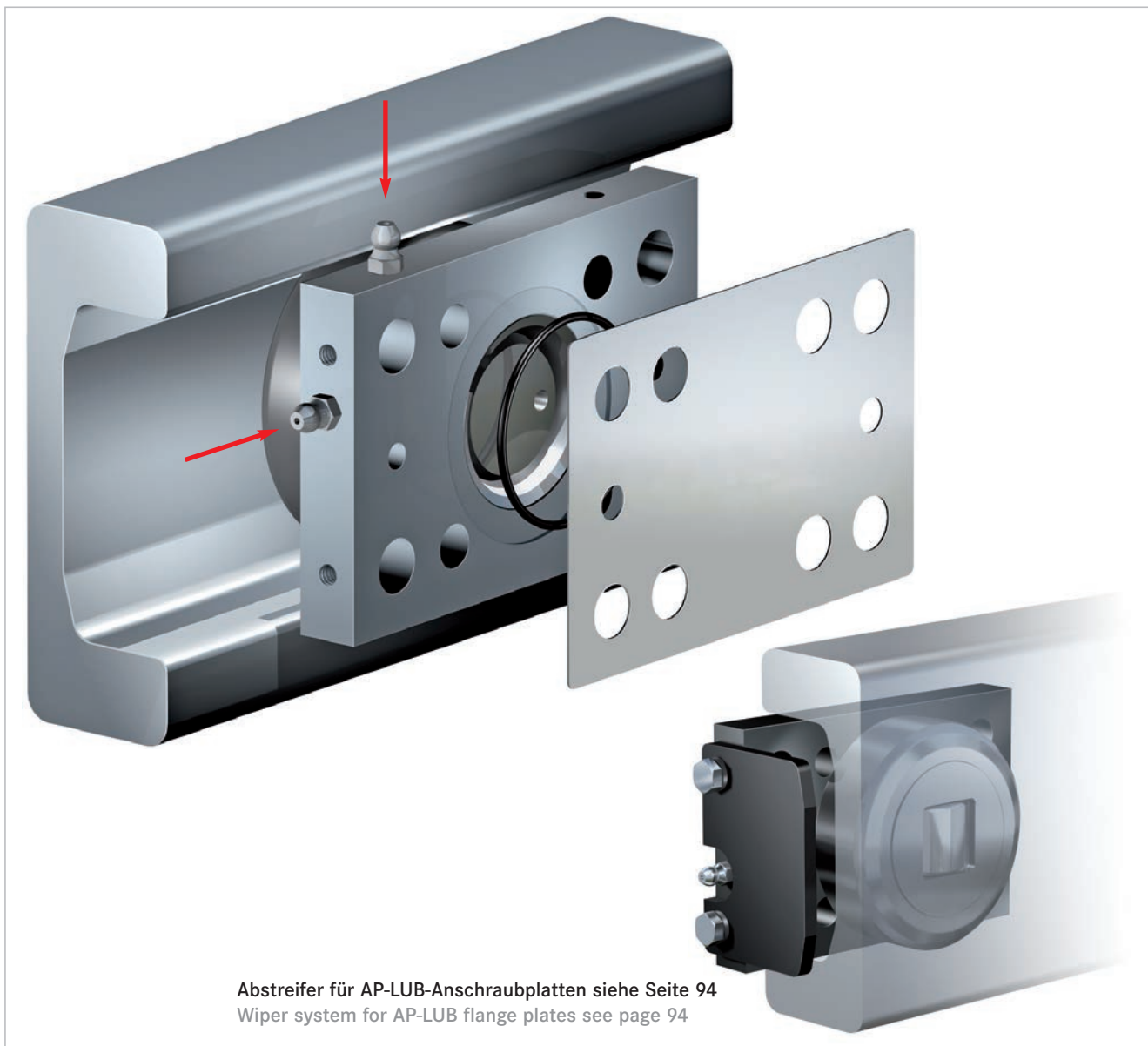
Flange plates rectangular with lubrication access from face side for WINKEL Bearings and Radial Bearings

WINKEL flange plates in combination with WINKEL Bearings are suitable for screw joints between construction and guide profile.

- all flange plates are welded with WINKEL Bearings
- axial adjusting with washer type DS-LUB
- all flange plates in corrosion protected version
- material: S235 JR
- will be delivered 1 pc. grease nipple M6 x 1, O-ring and 2 pcs. washers 0,5 mm

Special designs on request.

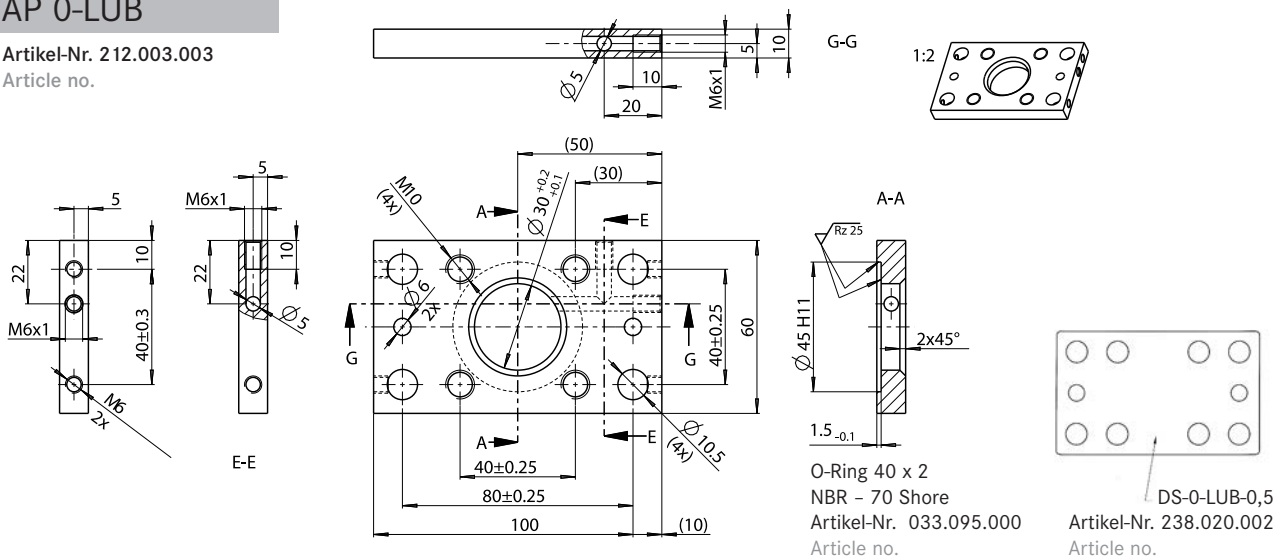
CAD download in 2D/3D at www.winkel.de



WINKEL-Rollen | WINKEL Bearings

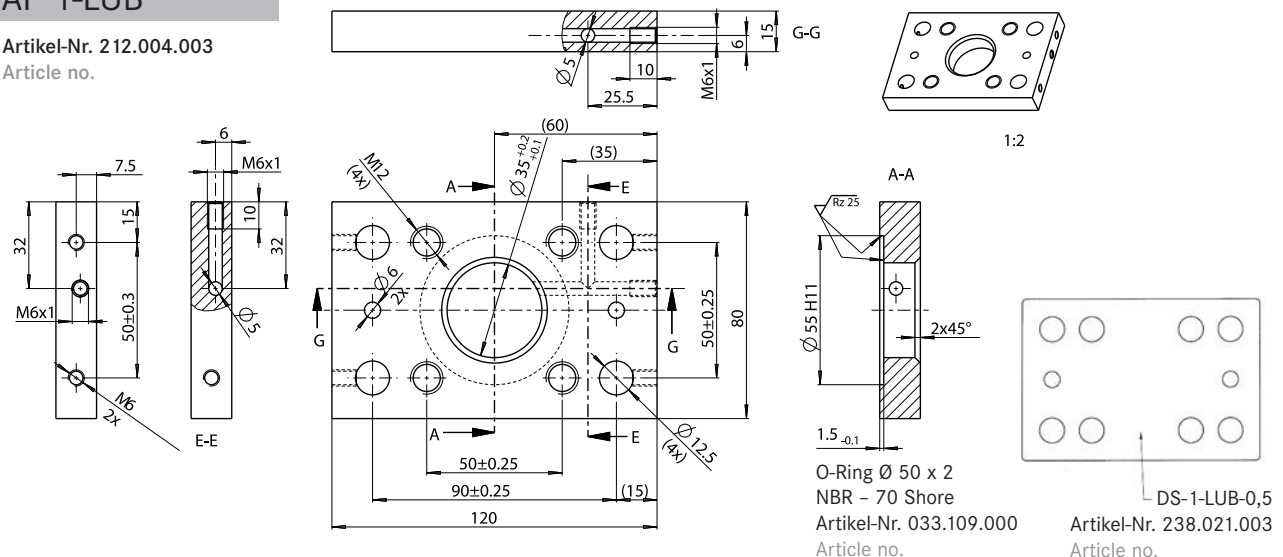


AP 0-LUB

 Artikel-Nr. 212.003.003
 Article no.


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzbleche Washers
AP 0-LUB	2.054 + AP 0-LUB	205.061.015	Standard 0 NbV	26,5	0,35 kg	DS-0-LUB-0,5 238.020.002
	4.054 + AP 0-LUB	200.001.033	Standard 0 NbV	30,5		
	PR 2.054 + AP 0-LUB	205.071.006	PR 0 NbV	26,5		
	PR 4.054 + AP 0-LUB	200.100.013	PR 0 NbV	30,5		

AP 1-LUB

 Artikel-Nr. 212.004.003
 Article no.


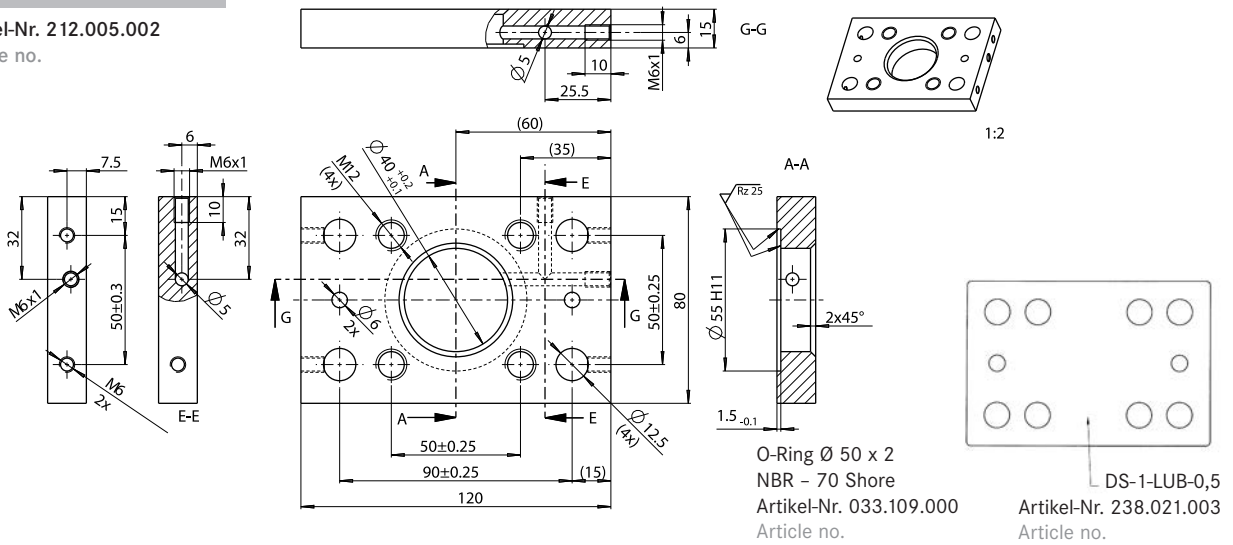
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzbleche Washers
AP 1-LUB	2.055 + AP 1-LUB	205.062.015	Standard 1 NbV	34,0	0,90 kg	DS-1-LUB-0,5 238.021.003
	4.055 + AP 1-LUB	200.002.040	Standard 1 NbV	36,0		
	PR 2.055 + AP 1-LUB	205.072.004	PR 1 NbV	34,0		
	PR 4.055 + AP 1-LUB	200.101.006	PR 1 NbV	36,0		

WINKEL-Rollen | WINKEL Bearings



AP 2-LUB

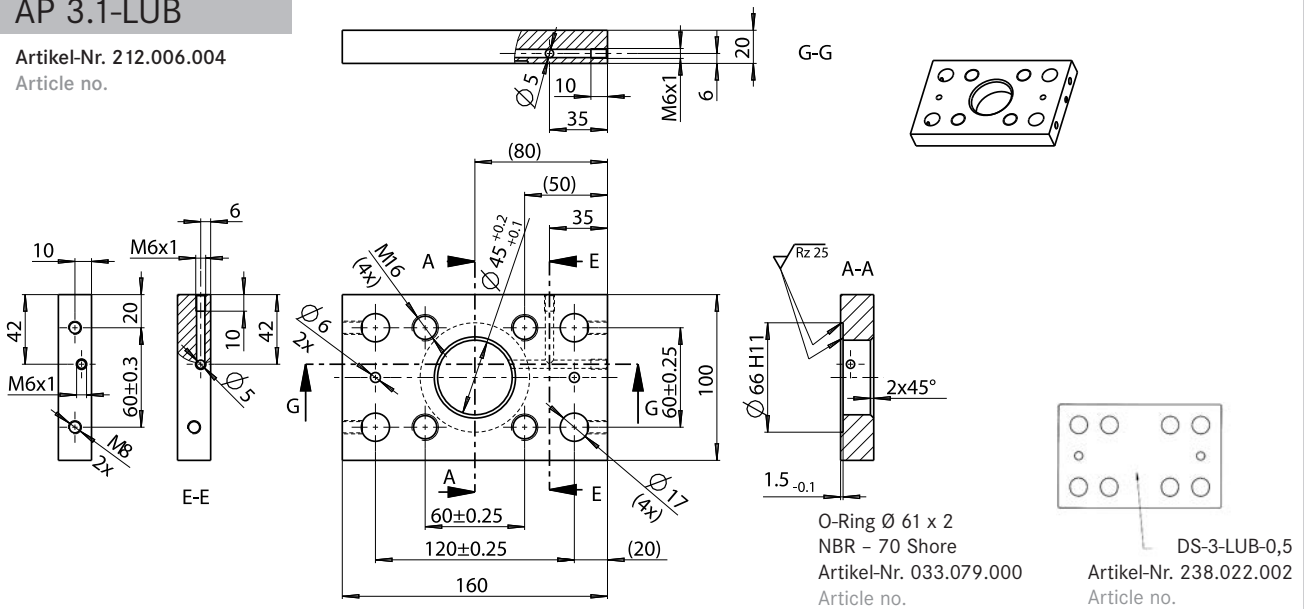
Artikel-Nr. 212.005.002
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzbleche Washers
AP 2-LUB	2.056 + AP 2-LUB	205.063.007	Standard 2 NbV	34,0	0,85 kg	DS-1-LUB-0,5 238.021.003
	4.056 + AP 2-LUB	200.003.027	Standard 2 NbV	36,5		
	PR 2.056 + AP 2-LUB	205.073.005	PR 2 NbV	34,0		
	PR 4.056 + AP 2-LUB	200.102.001	PR 2 NbV	36,5		

AP 3.1-LUB

Artikel-Nr. 212.006.004
Article no.



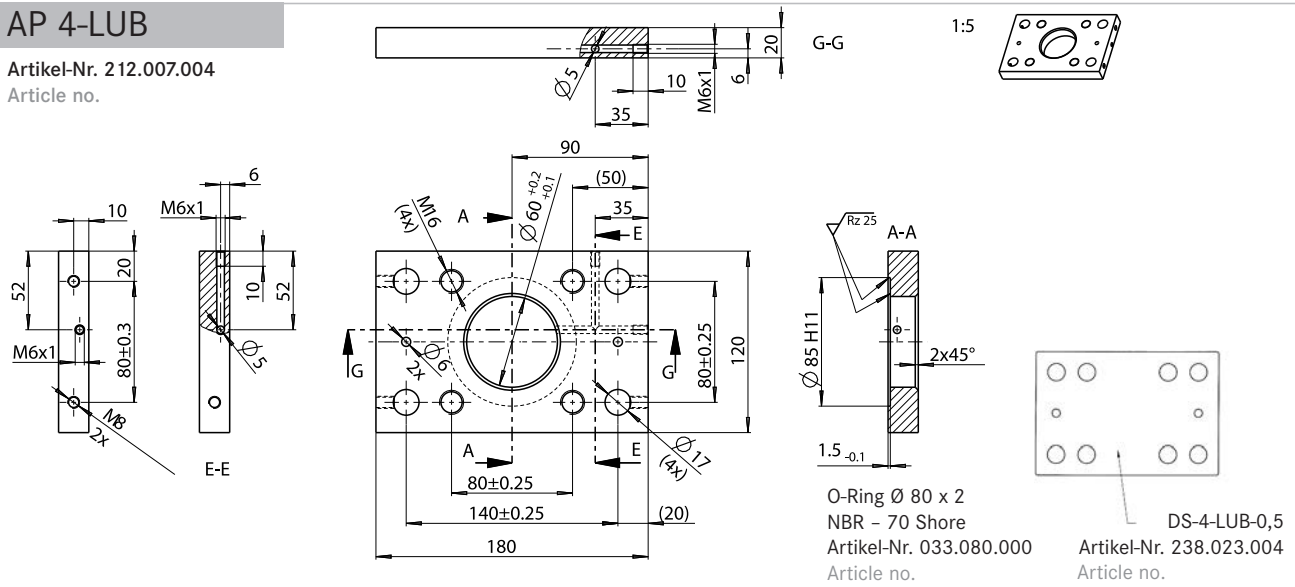
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzbleche Washers
AP 3.1-LUB	2.058 + AP 3.1-LUB	205.064.010	Standard 3 NbV	41,0	2,35 kg	DS-3-LUB-0,5 238.022.002
	4.058 + AP 3.1-LUB	200.005.025	Standard 3 NbV	44,0		
	PR 2.058 + AP 3.1-LUB	205.074.005	PR 3 NbV	41,0		
	PR 4.058 + AP 3.1-LUB	200.103.002	PR 3 NbV	44,0		

WINKEL-Rollen | WINKEL Bearings



AP 4-LUB

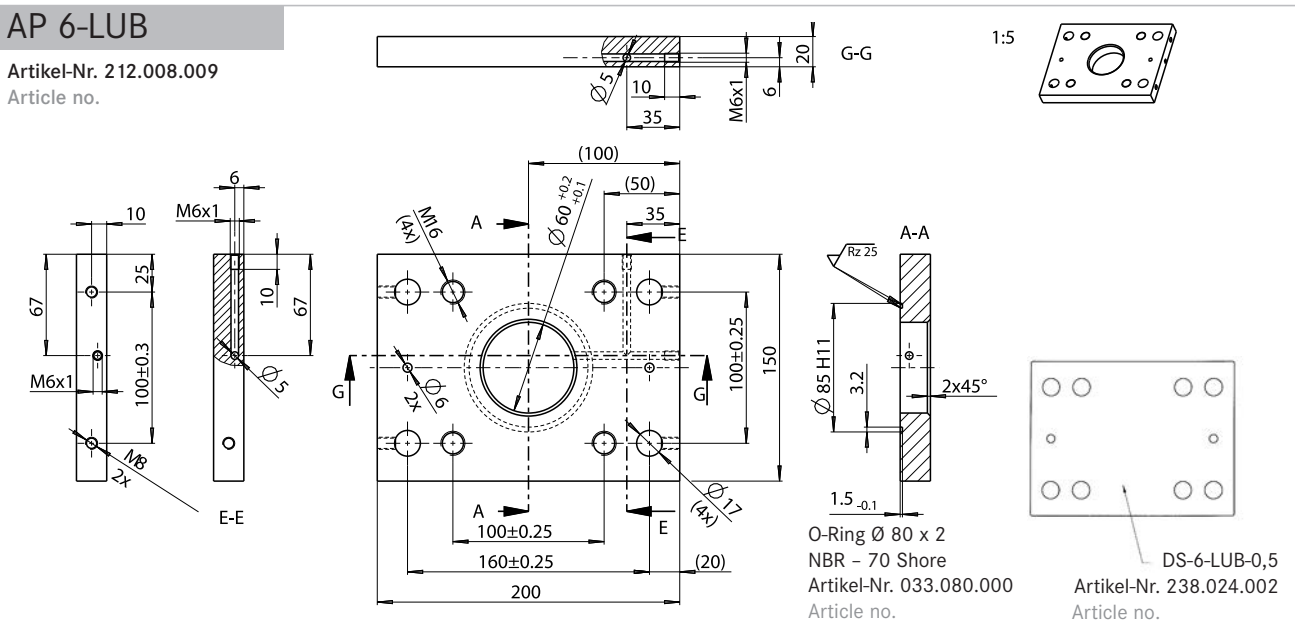
Artikel-Nr. 212.007.004
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzbleche Washers
AP 4-LUB	2.061 + AP 4-LUB	205.065.007	Standard 4 NbV	51,5	2,65 kg	DS-4-LUB-0,5 238.023.004
	4.061 + AP 4-LUB	200.008.017	Standard 4 NbV	55,0		
	PR 2.061 + AP 4-LUB	205.075.005	PR 4 NbV	51,5		
	PR 4.061 + AP 4-LUB	200.104.006	PR 4 NbV	55,0		
	2.062 + AP 4-LUB	205.066.010	Standard 5 NbV	51,5		
	4.062 + AP 4-LUB	200.009.032	Standard 5 NbV	56,0		
	PR 2.062 + AP 4-LUB	205.076.005	PR 5 NbV	51,5		
	PR 4.062 + AP 4-LUB	200.105.007	PR 5 NbV	56,0		

AP 6-LUB

Artikel-Nr. 212.008.009
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzbleche Washers
AP 6-LUB	2.063 + AP 6-LUB	205.067.010	Standard 6 NbV	54,0	4,0 kg	DS-6-LUB-0,5 238.024.002
	4.063 + AP 6-LUB	200.010.048	Standard 6 NbV	58,5		
	PR 2.063 + AP 6-LUB	205.077.004	PR 6 NbV	54,0		
	PR 4.063 + AP 6-LUB	200.106.007	PR 6 NbV	58,5		

**NEU**

Abstreifsystem für Anschraubplatte AP-LUB

Optimaler Schutz für WINKEL-Rollen und Profile. Abstreifsystem verhindert Eindringen von Schmutz und Gegenständen zwischen Rolle und Profil und schützt somit das Führungssystem vor Beschädigungen.

- Passend für Anschraubplatten AP-LUB mit nachschmierbaren WINKEL-Rollen
- Lieferung inkl. Befestigungsschrauben
- In X- und Y-Richtungen einstellbar
- Abmessungen abgestimmt auf das jeweilige WINKEL U-Profil.
- Werkstoff: POLYAMID

CAD Download in 2D/3D unter www.winkel.de

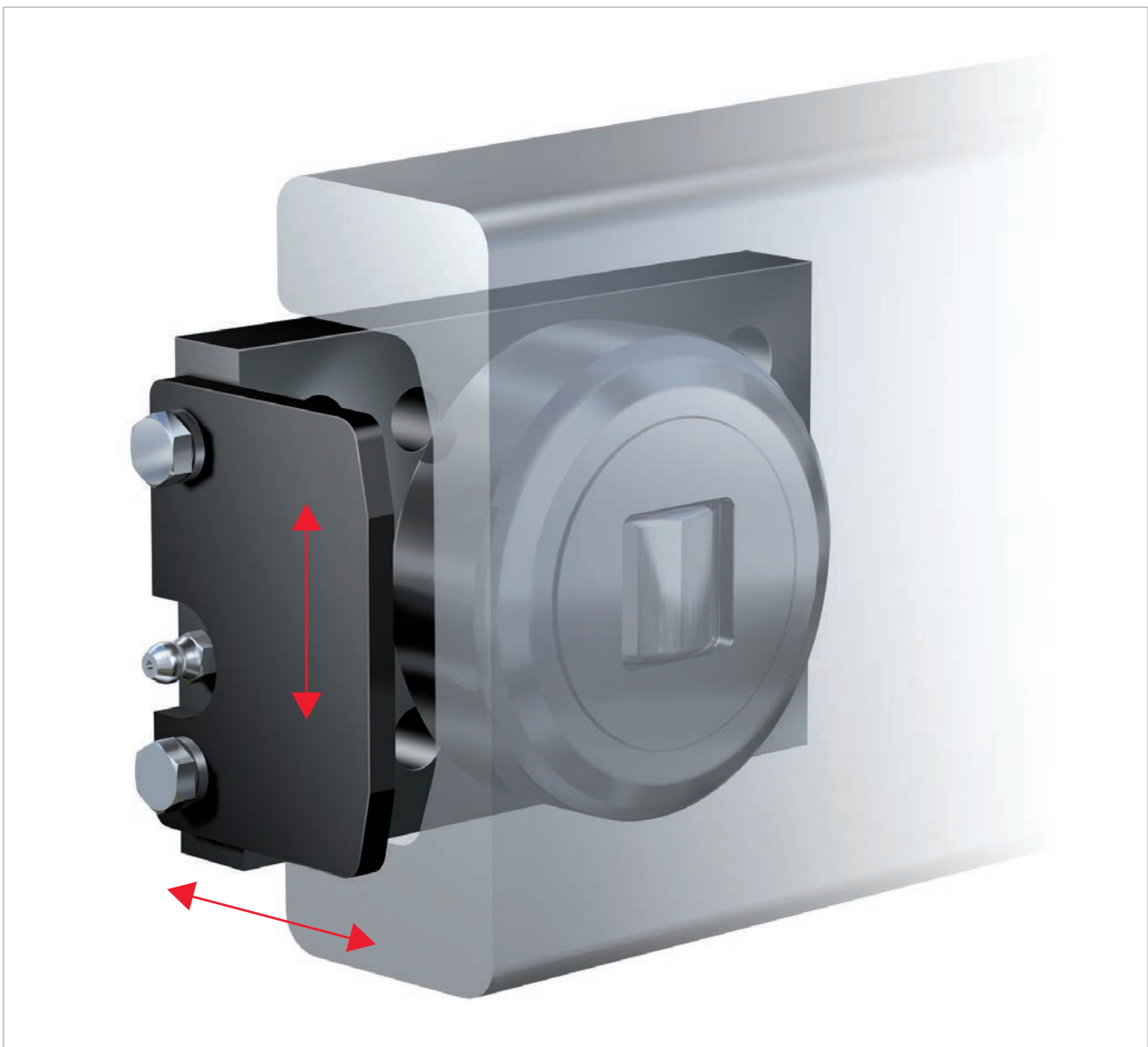
NEW

Wiper system for flange plate AP-LUB

Best protection for WINKEL Bearings and profiles. The wiper system prevent contamination of dust and debris between bearing and rail.

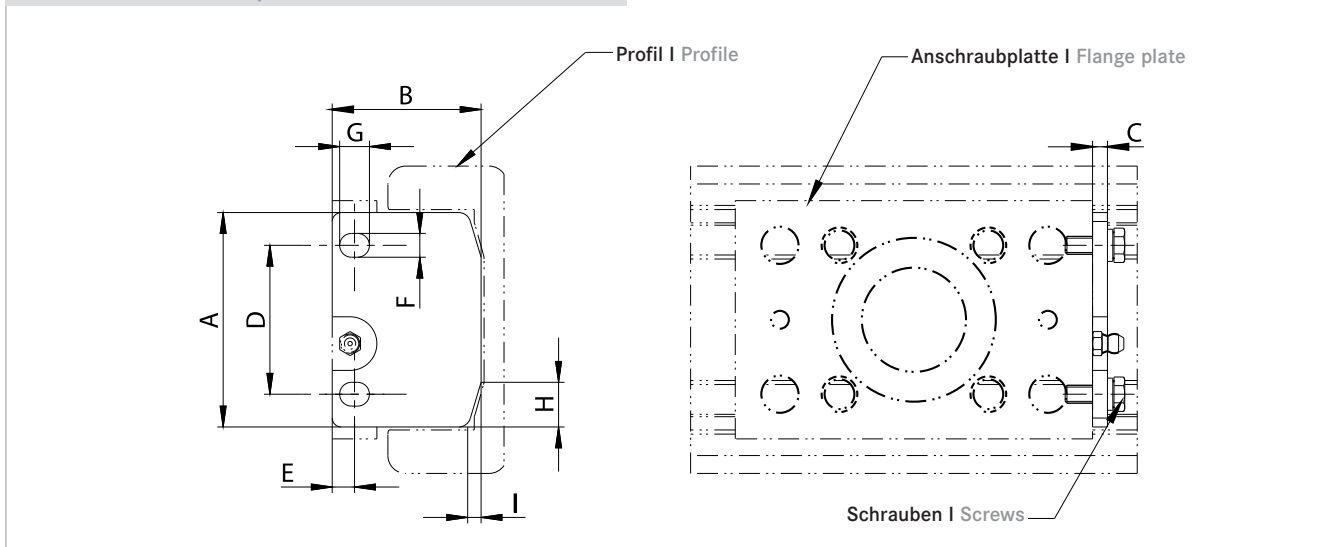
- Suitable for flange plate AP-LUB with relubricateable WINKEL Bearings
- Fastening screws included
- Adjustable in X and Y direction
- Dimensions suitable for the respective WINKEL U profile
- Material: POLYAMIDE

CAD download in 2D/3D at www.winkel.de





Abstreifer | Wiper



Abstreifer für Standardprofile

Wiper for Standard profiles

Typ Type	Artikelnummer Article no.	A	B	C	D	E	F	G	H	I	Anschraubplatte Flange plate	Profil Profile	Schrauben Screws
AS 4.054-LUB	212.510.000	61	40,0	5	38	7,5	7	10	14	3	AP 0-LUB	Std 0 NbV	2x M6 x 16-DIN 603
AS 4.055-LUB	212.510.001	69	50,0	5	50	7,5	8	10	14	5	AP 1-LUB	Std 1 NbV	2x M6 x 16-DIN 603
AS 4.056-LUB	212.510.002	77	50,5	5	50	7,5	8	10	14	5	AP 2-LUB	Std 2 NbV	2x M6 x 16-DIN 603
AS 4.058-LUB	212.510.003	88	63,0	5	60	10	10	15	14	5	AP 3.1-LUB	Std 3 NbV	2x M8 x 16-DIN 603
AS 4.061-LUB	212.510.004	105	73,0	5	80	10	12	15	14	5	AP 4-LUB	Std 4 NbV	2x M8 x 16-DIN 603
AS 4.062-LUB	212.510.005	120	74,0	5	80	10	12	15	14	5	AP 4-LUB	Std 5 NbV	2x M8 x 16-DIN 603
AS 4.063-LUB	212.510.006	146	76,5	5	100	10	12	15	19	5	AP 6-LUB	Std 6 NbV	2x M8 x 16-DIN 603

Abstreifer für Präzisionsprofile

Wiper for Precision profiles

Typ Type	Artikelnummer Article no.	A	B	C	D	E	F	G	H	I	Anschraubplatte Flange plate	Profil Profile	Schrauben Screws
AS PR 4.054-LUB	212.511.000	63	40,0	5	38	7,5	7	10	15	4	AP 0-LUB	PR 0 NbV	2x M6 x 16-DIN 603
AS PR 4.055-LUB	212.511.001	72	50,0	5	50	7,5	8	10	15	4,5	AP 1-LUB	PR 1 NbV	2x M6 x 16-DIN 603
AS PR 4.056-LUB	212.511.002	80	50,5	5	50	7,5	8	10	15	7	AP 2-LUB	PR 2 NbV	2x M6 x 16-DIN 603
AS PR 4.058-LUB	212.511.003	91	63,0	5	60	10	10	15	15	7	AP 3.1-LUB	PR 3 NbV	2x M8 x 16-DIN 603
AS PR 4.061-LUB	212.511.004	108	73,0	5	80	10	12	15	15	7	AP 4-LUB	PR 4 NbV	2x M8 x 16-DIN 603
AS PR 4.062-LUB	212.511.005	124	74,0	5	80	10	12	15	14	7	AP 4-LUB	PR 5 NbV	2x M8 x 16-DIN 603
AS PR 4.063-LUB	212.511.006	150	76,5	5	100	10	12	15	19	7	AP 6-LUB	PR 6 NbV	2x M8 x 16-DIN 603



Anschraubplatten quadratisch für WINKEL-Rollen und Radiallager

WINKEL-Rollen mit Anschraubplatten sind fertige Systemelemente für schraubbare Verbindungen zwischen Konstruktion und Führungsprofil.

- alle Anschraubplatten mit eingeschweißter WINKEL-Rolle
- axiale Justierung mit Distanzsteckbleche Typ DS
- alle Anschraubplatten in brüniertem Ausführung
- Material: S235 JR

Sonderausführungen auf Anfrage.

Flange plates square for WINKEL Bearings and Radial Bearings

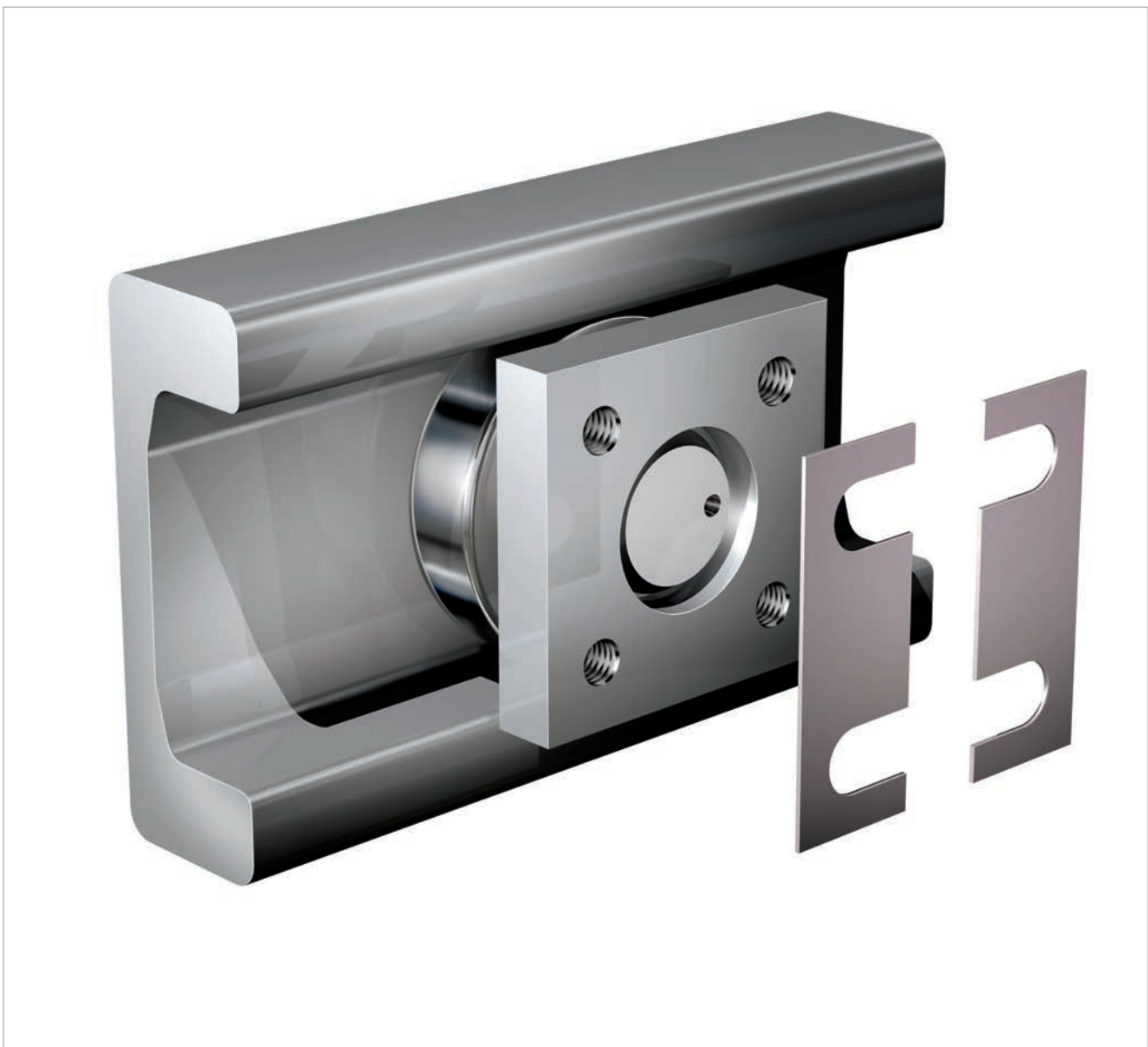
WINKEL flange plates in combination with WINKEL Bearings are suitable for screw joints between construction and guide profile.

- all flange plates are welded with WINKEL Bearings
- axial adjusting with washers type DS
- all flange plates in corrosion protected version
- material S235 JR

Special designs on request.

CAD Download in 2D/3D unter www.winkel.de

CAD download in 2D/3D at www.winkel.de

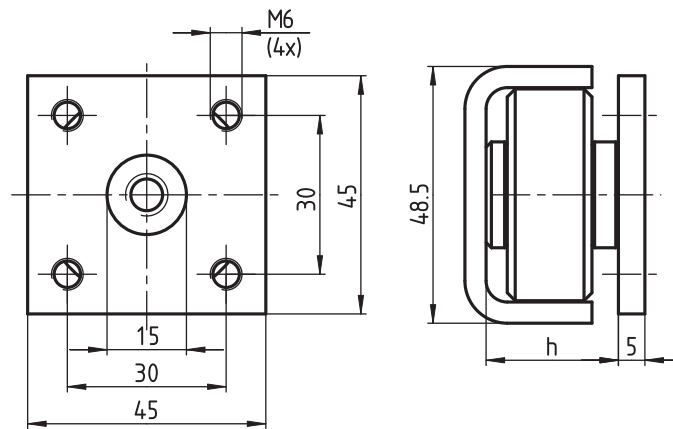


WINKEL-Rollen | WINKEL Bearings



AP A-Q

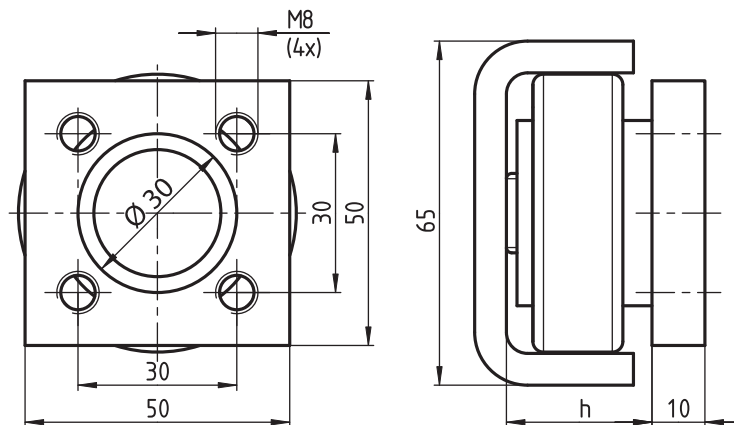
Artikel-Nr. 212.200.101
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers	
AP A-Q	4.052 P + AP A-Q	201.032.003	Standard A	25,0	0,10 kg	DS-A-0,5 238.026.000	DS-A-1,0 238.026.001

AP S-Q

Artikel-Nr. 212.200.102
Article no.



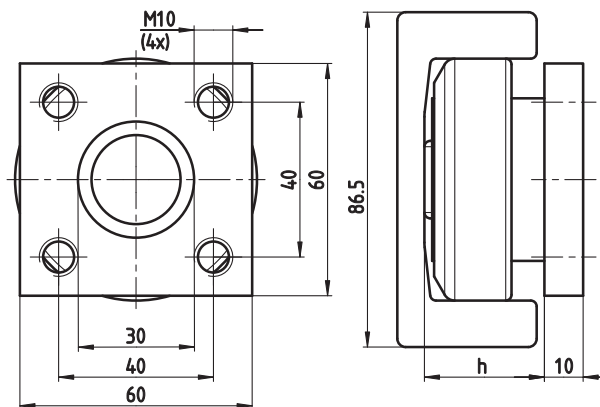
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers	
AP S-Q	4.053 + AP S-Q	200.071.001	Standard S	27,0	0,20 kg	DS-S-0,5	DS-S-1,0
	4.053 HT + AP S-Q	200.024.019	Standard S	27,0		238.025.000	238.025.001

WINKEL-Rollen | WINKEL Bearings



AP 0-Q

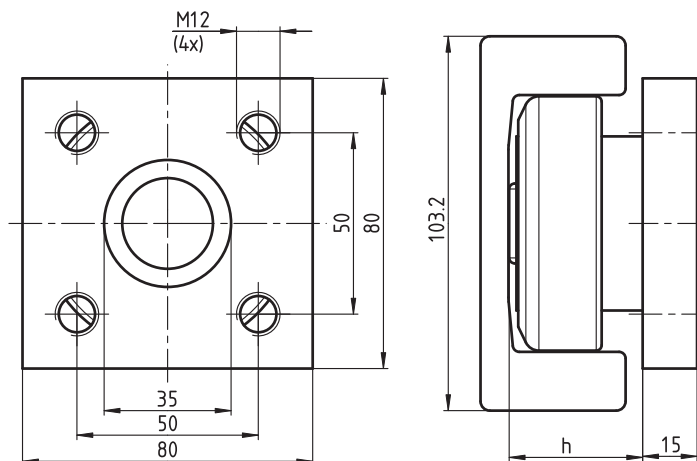
Artikel-Nr. 212.200.010
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 0-Q	2.054 + AP 0-Q	205.061.004	Standard 0 NbV	26,5	0,28 kg	DS-0-0,5 DS-0-1,0 238.020.000 238.020.001
	4.054 + AP 0-Q	200.051.003	Standard 0 NbV	30,5		
	4.054 HT + AP 0-Q	200.001.022	Standard 0 NbV	30,5		
	4.454 + AP 0-Q	201.031.002	Standard 0 NbV	30,5 - 32,0		
	4.072 + AP 0-Q	201.011.002	Standard 0 NbV	33,0		
	4.072 P + AP 0-Q	200.149.001	Standard 0 NbV	33,0		
	PR 2.054 + AP 0-Q	205.071.003	PR 0 NbV	26,5		
	PR 4.054 + AP 0-Q	200.100.003	PR 0 NbV	30,5		
	PR 4.454 + AP 0-Q	200.114.002	PR 0 NbV	30,5 - 32,0		
	PR 4.072 + AP 0-Q	200.107.001	PR 0 NbV	33,0		
PR 4.072 P + AP 0-Q	200.011.007	PR 0 NbV	33,0			

AP 1-Q

Artikel-Nr. 212.200.011
Article no.



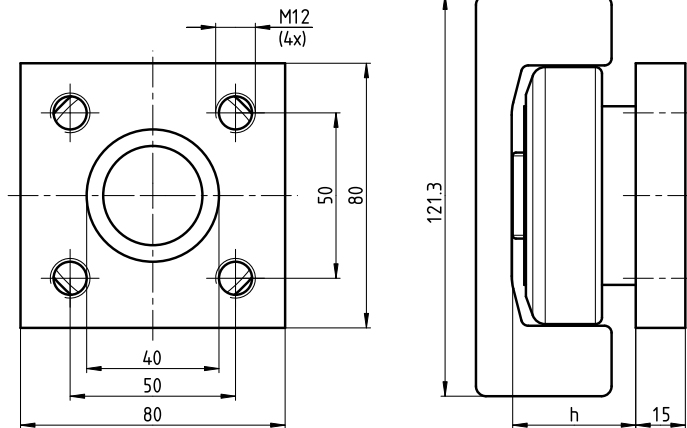
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 1-Q	2.055 + AP 1-Q	205.062.004	Standard 1 NbV	34,0	0,75 kg	DS-1-0,5 DS-1-1,0 238.021.000 238.021.001
	4.055 + AP 1-Q	200.052.001	Standard 1 NbV	36,0		
	4.055 HT + AP 1-Q	200.002.007	Standard 1 NbV	36,0		
	4.455 + AP 1-Q	201.032.002	Standard 1 NbV	36,0 - 37,5		
	4.073 + AP 1-Q	201.012.000	Standard 1 NbV	40,0		
	4.073 P + AP 1-Q	200.012.006	Standard 1 NbV	40,0		
	PR 2.055 + AP 1-Q	205.072.002	PR 1 NbV	34,0		
	PR 4.055 + AP 1-Q	200.101.003	PR 1 NbV	36,0		
	PR 4.455 + AP 1-Q	200.115.002	PR 1 NbV	36,0 - 37,5		
	PR 4.073 + AP 1-Q	200.108.002	PR 1 NbV	40,0		
PR 4.073 P + AP 1-Q	200.014.003	PR 1 NbV	40,0			

WINKEL-Rollen | WINKEL Bearings



AP 2-Q

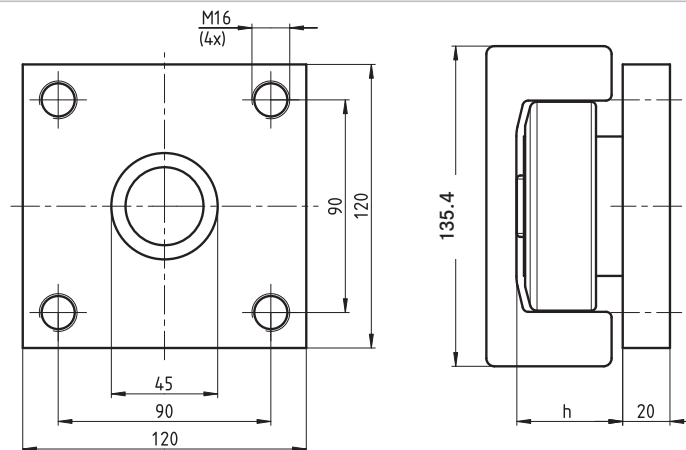
Artikel-Nr. 212.200.012
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 2-Q	2.056 + AP 2-Q	205 .107 .001	Standard 2 NbV	34,0	0,75 kg	DS-2-0,5 DS-2-1,0 238.021.000 238.021.001
	4.056 + AP 2-Q	200 .053.001	Standard 2 NbV	36,5		
	4.056 HT + AP 2-Q	200 .003.022	Standard 2 NbV	36,5		
	4.456 + AP 2-Q	201 .033.003	Standard 2 NbV	37,0 - 38,5		
	4.074 + AP 2-Q	201 .013 .000	Standard 2 NbV	39,5		
	4.074 P + AP 2-Q	200 .013 .009	Standard 2 NbV	39,5		
	PR 2.056 + AP 2-Q	205 .073.003	PR 2 NbV	34,0		
	PR 4.056 + AP 2-Q	200 .066.001	PR 2 NbV	36,5		
	PR 4.456 + AP 2-Q	200 .116 .002	PR 2 NbV	37,0 - 38,5		
	PR 4.074 + AP 2-Q	200 .109 .003	PR 2 NbV	39,5		
PR 4.074 P + AP 2-Q	200 .013 .035	PR 2 NbV	39,5			

AP 3-Q

Artikel-Nr. 212.006.000
Article no.



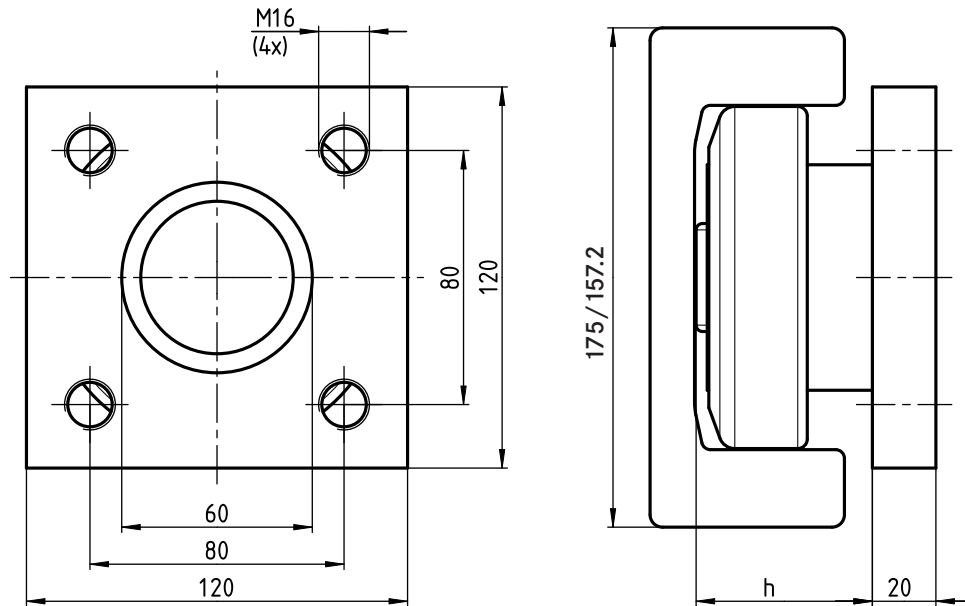
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 3-Q	2.058 + AP 3-Q	205 .064.003	Standard 3 NbV	41,0	1,85 kg	DS-3-0,5 DS-3-1,0 238.022.000 238.022.001
	4.058 + AP 3-Q	200 .054.000	Standard 3 NbV	44,0		
	4.058 HT + AP 3-Q	200 .005.018	Standard 3 NbV	44,0		
	4.458 + AP 3-Q	201 .035.003	Standard 3 NbV	44,0 - 45,5		
	4.076 + AP 3-Q	201 .017 .000	Standard 3 NbV	48,0		
	4.076 P + AP 3-Q	200 .015 .010	Standard 3 NbV	48,0		
	PR 2.058 + AP 3-Q	205 .074 .001	PR 3 NbV	41,0		
	PR 4.058 + AP 3-Q	200 .140 .000	PR 3 NbV	44,0		
	PR 4.458 + AP 3-Q	200 .117 .003	PR 3 NbV	44,0 - 45,5		
	PR 4.076 + AP 3-Q	200 .110 .002	PR 3 NbV	48,0		
PR 4.076 P + AP 3-Q	200 .015 .011	PR 3 NbV	48,0			

WINKEL-Rollen | WINKEL Bearings



AP 4-Q

Artikel-Nr. 212.200.014
Article no.



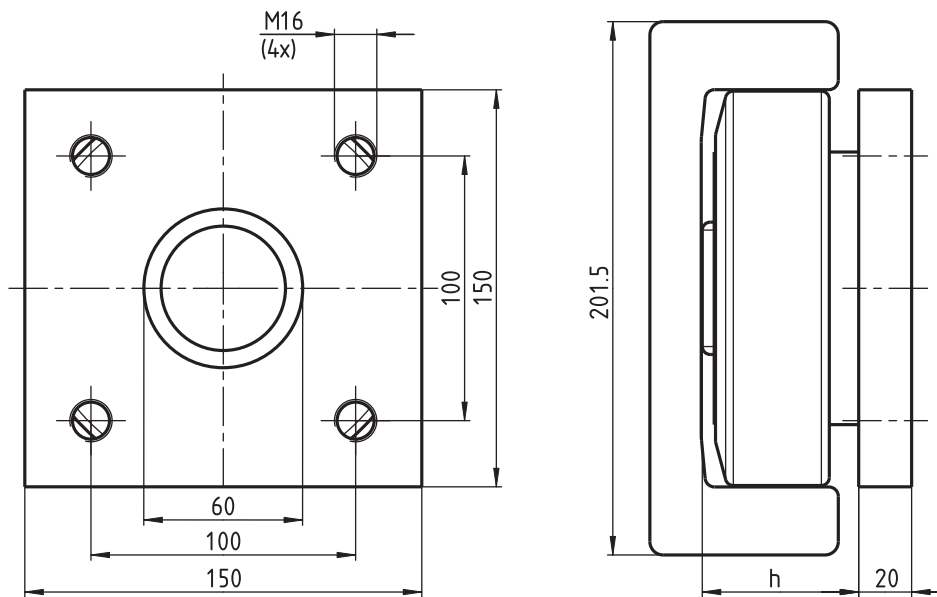
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 4-Q	2.061 + AP 4-Q	205.108.001	Standard 4 NbV	51,5	2,2 kg	DS-4-0,5 DS-4-1,0 238.023.000 238.023.001
	4.061 + AP 4-Q	200.055.001	Standard 4 NbV	55,0		
	4.061 HT + AP 4-Q	200.008.010	Standard 4 NbV	55,0		
	4.461 + AP 4-Q	201.038.002	Standard 4 NbV	55,0 - 57,0		
	4.0784 + AP 4-Q	200.016.003	Standard 4 NbV	55,0		
	4.0784 P + AP 4-Q	200.016.011	Standard 4 NbV	55,0		
	PR 2.061 + AP 4-Q	205.075.002	PR 4 NbV	51,5		
	PR 4.061 + AP 4-Q	200.104.002	PR 4 NbV	55,0		
	PR 4.461 + AP 4-Q	200.118.002	PR 4 NbV	55,0 - 57,0		
	PR 4.0784 + AP 4-Q	200.111.002	PR 4 NbV	55,0		
	PR 4.0784 P + AP 4-Q	200.067.002	PR 4 NbV	55,0		
	2.062 + AP 4-Q	205.066.002	Standard 5 NbV	51,5		
	4.062 + AP 4-Q	200.076.001	Standard 5 NbV	56,0		
	4.062 HT + AP 4-Q	200.009.025	Standard 5 NbV	56,0		
	4.462 + AP 4-Q	201.039.002	Standard 5 NbV	56,0 - 60,0		
	4.079 + AP 4-Q	201.015.001	Standard 5 NbV	59,5		
	4.079 P + AP 4-Q	200.018.005	Standard 5 NbV	59,5		
	PR 2.062 + AP 4-Q	205.076.002	PR 5 NbV	51,5		
	PR 4.062 + AP 4-Q	200.105.002	PR 5 NbV	56,0		
	PR 4.462 + AP 4-Q	200.119.002	PR 5 NbV	56,0 - 60,0		
PR 4.079 + AP 4-Q	200.112.002	PR 5 NbV	59,5			
PR 4.079 P + AP 4-Q	200.154.002	PR 5 NbV	59,5			

WINKEL-Rollen | WINKEL Bearings



AP 6-Q

Artikel-Nr. 212.200.016
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 6-Q	2.063 + AP 6-Q	205.067.003	Standard 6 NbV	54,0	3,4 kg	DS-6-0,5 DS-6-1,0 238.024.000 238.024.001
	4.063 + AP 6-Q	200.056.001	Standard 6 NbV	58,5		
	4.063 HT + AP 6-Q	200.010.037	Standard 6 NbV	58,5		
	4.463 + AP 6-Q	201.040.002	Standard 6 NbV	58,5 - 62,5		
	4.080 + AP 6-Q	200.019.004	Standard 6 NbV	69,0		
	4.080 P + AP 6-Q	201.016.001	Standard 6 NbV	62,0		
	PR 2.063 + AP 6-Q	205.077.002	PR 6 NbV	54,0		
	PR 4.063 + AP 6-Q	200.106.003	PR 6 NbV	58,5		
	PR 4.463 + AP 6-Q	200.120.002	PR 6 NbV	58,5 - 62,5		
	PR 4.080 + AP 6-Q	200.113.002	PR 6 NbV	69,0		
PR 4.080 P + AP 6-Q	200.155.002	PR 6 NbV	62,0			

WINKEL-Rollen | WINKEL Bearings



Anschraubplatten quadratisch für Jumbo-WINKEL-Rollen

WINKEL-Rollen mit Anschraubplatten sind fertige Systemelemente für schraubbare Verbindungen zwischen Konstruktion und Führungsprofil.

- alle Anschraubplatten mit eingeschweißter WINKEL-Rolle
- Axiale Justierung mit Distanzsteckbleche Typ DS
- alle Anschraubplatten in brüniertem Ausführung
- Material: S235 JR

Sonderausführungen auf Anfrage.

CAD Download in 2D/3D unter www.winkel.de

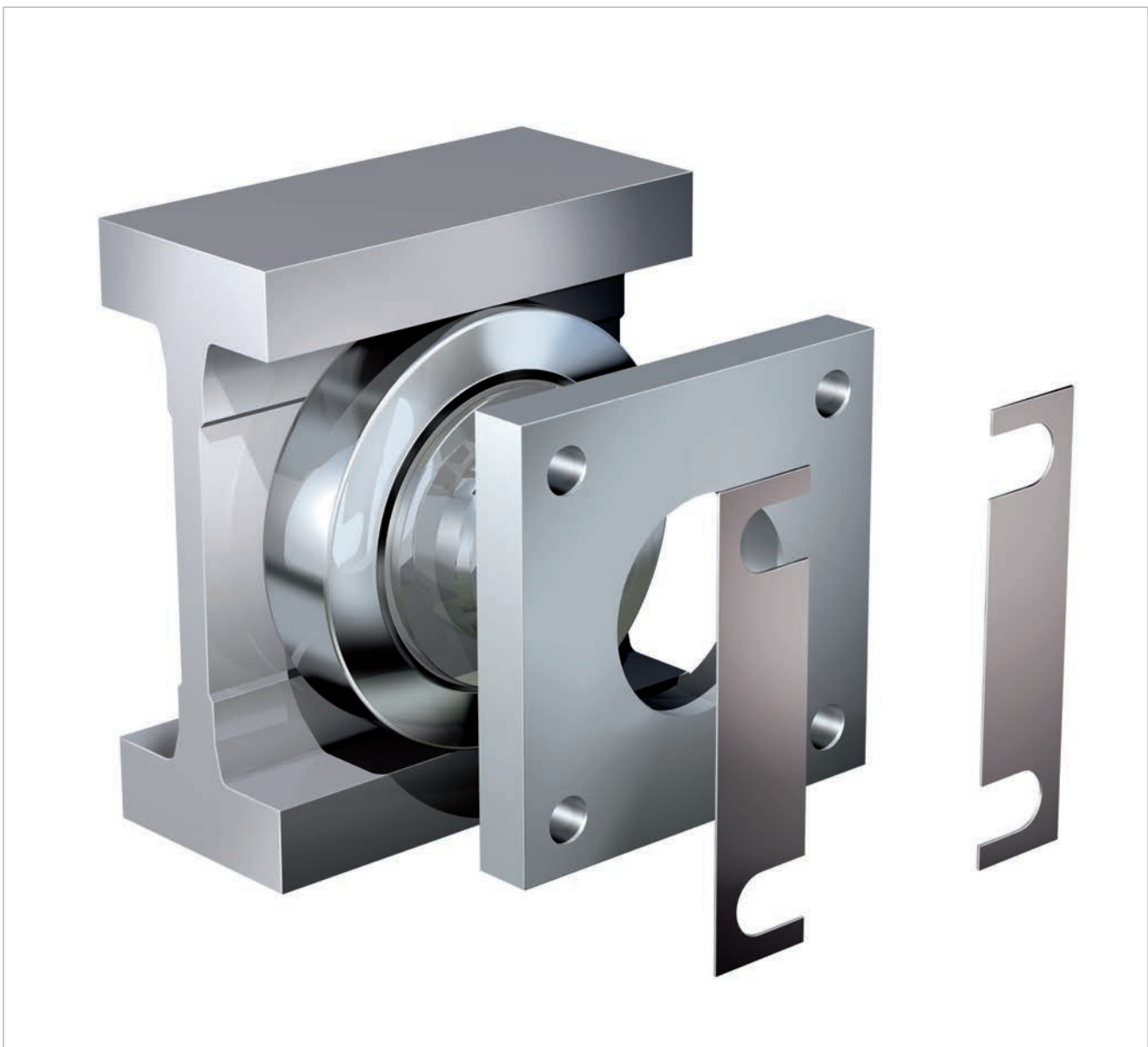
Flange plates square for Jumbo WINKEL Bearings

WINKEL flange plates in combination with WINKEL Bearings are suitable for screw joints between construction and guide profile.

- all flange plates are welded with WINKEL Bearings
- axial adjusting with washers type DS
- all flange plates in corrosion protected version
- material: S235 JR

Special designs on request.

CAD download in 2D/3D at www.winkel.de

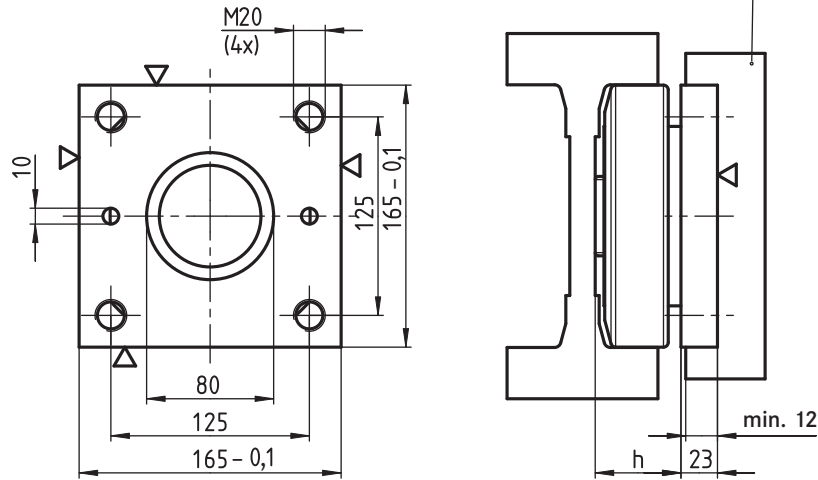


WINKEL-Rollen | WINKEL Bearings



AP 89-Q

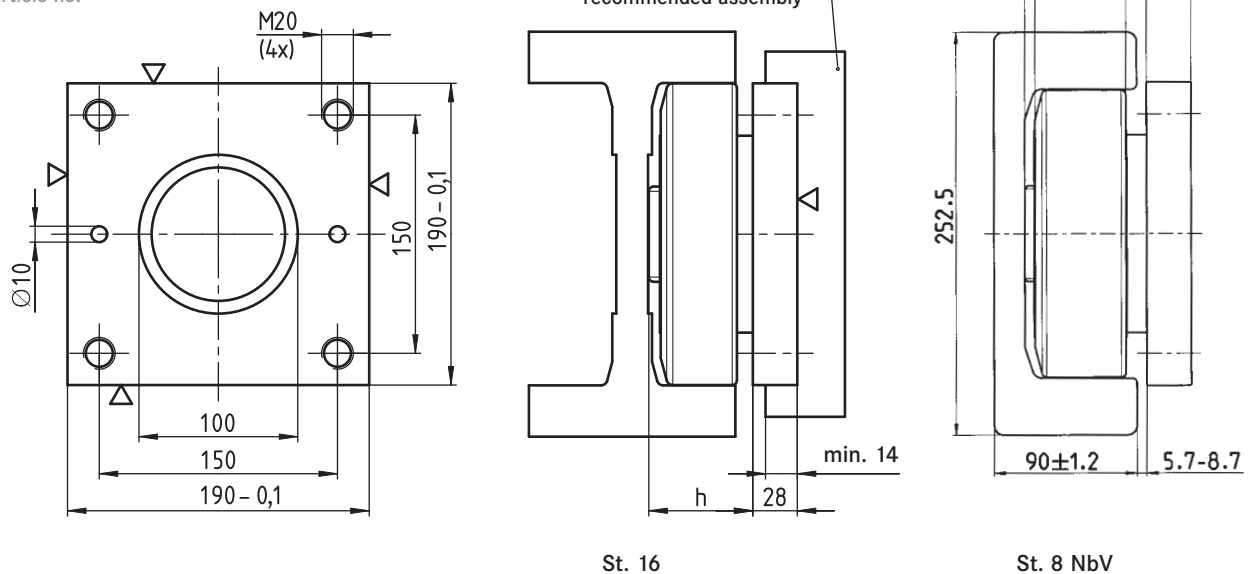
Artikel-Nr. 212.200.001
Article no.



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers	
AP 89-Q	4.089 + AP 89-Q	201.050.002	Standard 10	53-56	4,9 kg	DS-89-0,5 238.033.000	DS-89-1,0 238.033.001

AP 90-Q

Artikel-Nr. 212.200.002
Article no.

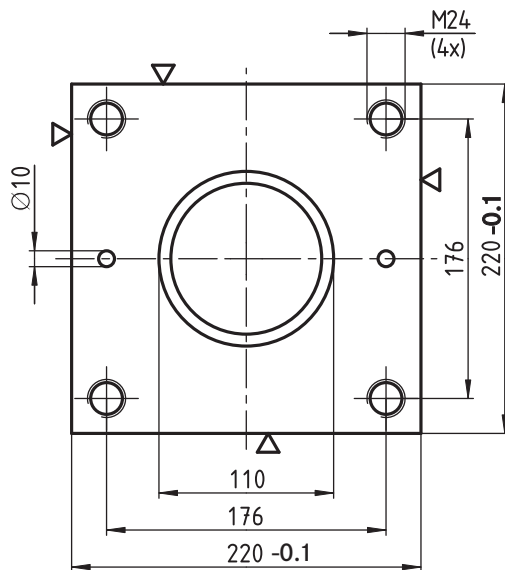
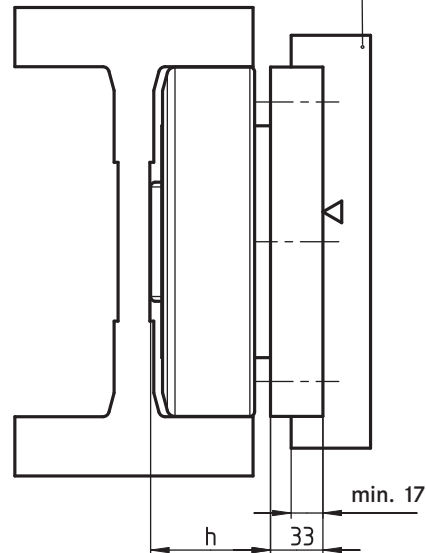


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers	
AP 90-Q	4.085 + AP 90-Q	201.049.004	Standard 8 NbV	76,3-79,3	7,9	DS-90-0,5	DS-90-1,0
	4.090 + AP 90-Q	200.057.000	Standard 16	64,5-67,5	7,9	238.034.000	238.034.001

WINKEL-Rollen | WINKEL Bearings

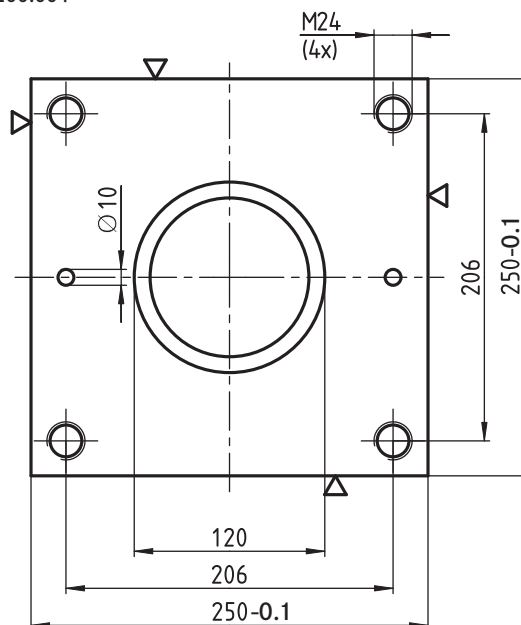
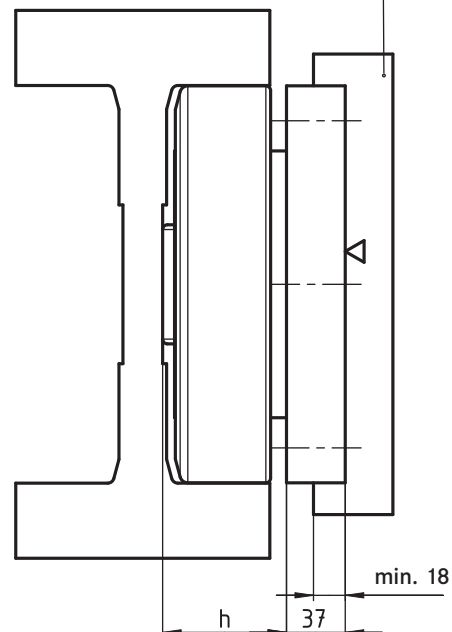


AP 91-Q

 Artikel-Nr. 212.200.003
 Article no.

 empfohlene Befestigungsart
 recommended assembly


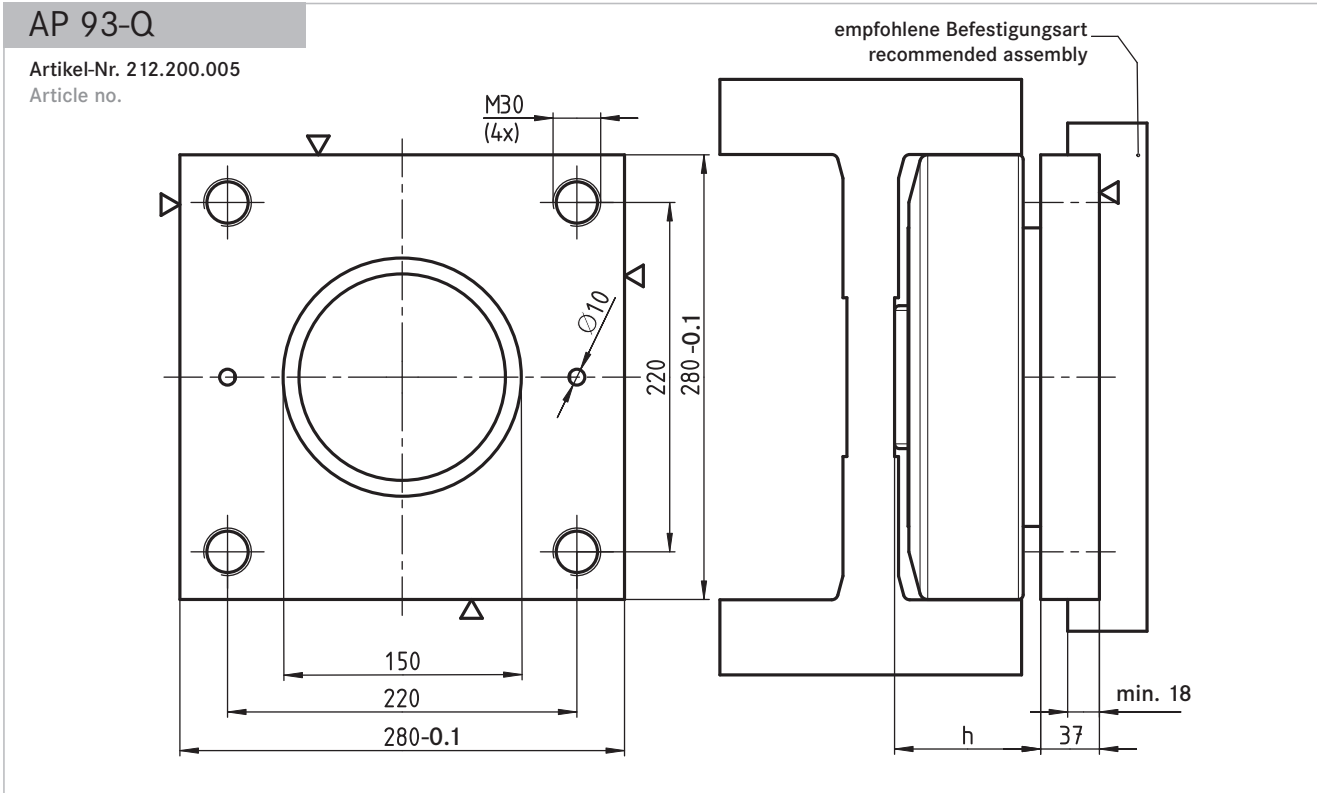
Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers	
AP 91-Q	4.091 + AP 91-Q	201.052.002	Standard 18	74,5-77,5	12,5 kg	DS-91-0,5 238.035.000	DS-91-1,0 238.035.001

AP 92-Q

 Artikel-Nr. 212.200.004
 Article no.

 empfohlene Befestigungsart
 recommended assembly


Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers	
AP 92-Q	4.092 + AP 92-Q	201.053.001	Standard 28	77-80	18,0 kg	DS-92-0,5 238.036.000	DS-92-1,0 238.036.001

WINKEL-Rollen | WINKEL Bearings



Typ Type	WINKEL-Rolle mit AP WINKEL Bearing with AP	Artikel-Nr. Article no.	Profil Profile	h mm h mm	Gewicht AP Weight AP	Distanzsteckbleche Washers
AP 93-Q	4.093 + AP 93 Q	201.054.001	Standard 36 Standard 42	89,5- 93,5	22,0	DS-93-0,5 DS-93-1,0 238.037.000 238.037.001
	4.094 + AP 93 Q	201.055.001	Standard 50	110,0 - 114,0		