



FLEXIBLE SHAFTS SERIES 228

With centralbearing





Our products and technology deliver the power to harvest crops, move earth, mine resources and handle material. Increasingly there is a need to focus on energy efficiency, increased productivity and safety as well as enabling operators to be continually connected and well informed to avoid downtime.

The Walterscheid Powertrain Group (WPG) is committed to providing products and services that support these requirements, and to demonstrating our position in developing technologies and solutions for the challenges of tomorrow, supporting our customers in meeting the demands of a crowded planet.



The Walterscheid Powertrain Group is a truly global business with 10 manufacturing facilities and 22 service centres in 16 countries across five continents.



This strong global presence positions us to:

- ▶ Be well placed to access fast-growing markets
- ▶ Build partnerships with market-leading customers
- ▶ Deliver product and service suited to the local markets
- ▶ Optimise our position in supply chains
- ▶ Develop technologies in partnership with global customers

Key facts

Number of employees: 2,200

Locations: 10 manufacturing plants and 22 service locations across 16 countries

The Walterscheid Powertrain Group – the global supplier of power management products, systems and service solutions for the world's leading off-highway and industrial equipment manufacturers.

Technology and services at the heart of our success

- ▶ We are continuously developing new technologies and customer solutions which deliver efficiency in the agricultural, construction, mining, utility vehicle and industrial markets
- ▶ We service all powertrain products and systems between power source and power applied





Allgemeine Informationen

1. Walterscheid Powertrain Group beliefert Fahrzeughersteller weltweit als Erstaurüster.
2. Walterscheid GmbH ist die weltweite Handelsmarke der Walterscheid Powertrain Group für Gleichlaufgelenkwellen im Industrie-, Nutz- und Sonderfahrzeugbereich
3. Walterscheid steht für Qualität, Zuverlässigkeit und Wirtschaftlichkeit.
4. Durch technischen Fortschritt bedingte Konstruktionsänderungen vorbehalten. Da die Anwendung unserer Erzeugnisse außerhalb unseres Einflusses liegt, übernehmen wir nur für gleichbleibende Qualität eine Haftung.
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6. Druckfehler vorbehalten.

General Information

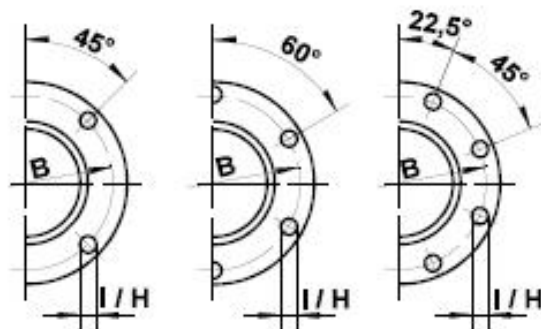
1. As a producer of original equipment Walterscheid Powertrain Group supplies vehicle manufacturers of an world-wide basis.
2. Walterscheid GmbH is the world-wide trademark of Walterscheid Powertrain Group for constant velocity drive shafts in Industrial commercial and special-type vehicles application.
3. Walterscheid stands for quality, service reliability and profitability.
4. In line with our policy of continued technical improvement we reserve the right to make construction alternations. Since the use made of our products is outside our control we do only accept liability for consistency of quality.
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[illegible]

228.00 - 228.65

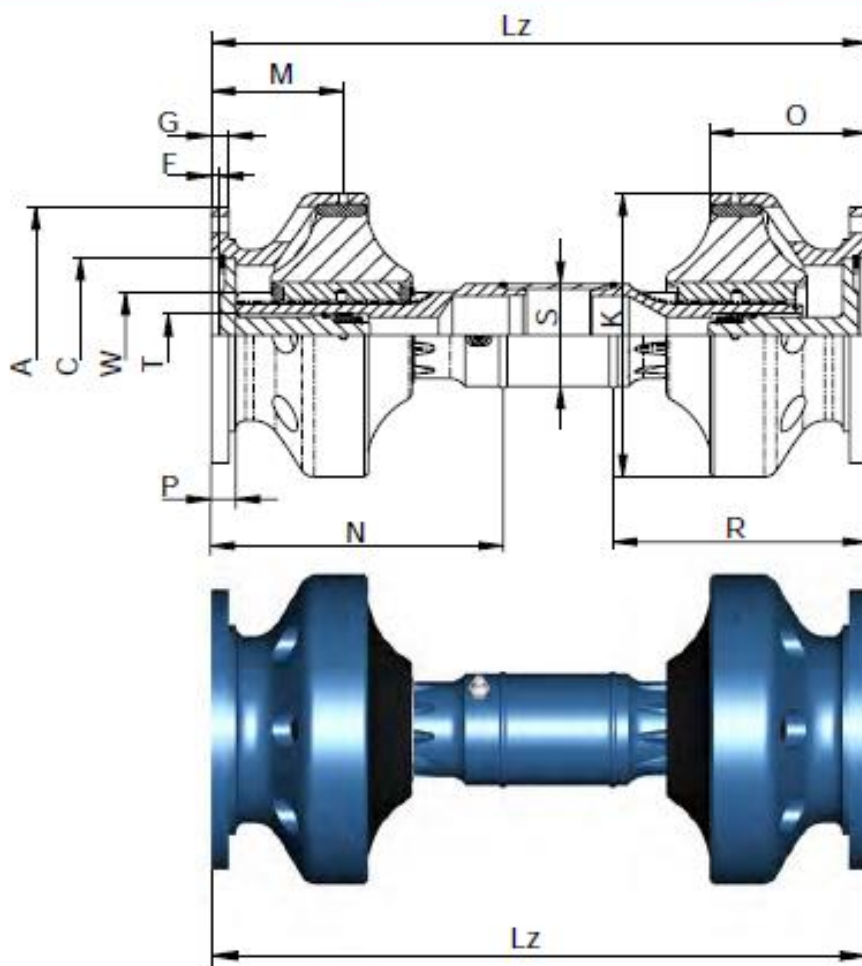
$T_K = 120 \text{ Nm} - 3000 \text{ Nm}$

Anschlussarten / variants of connection



Ausführungsarten / variants of design

0.01

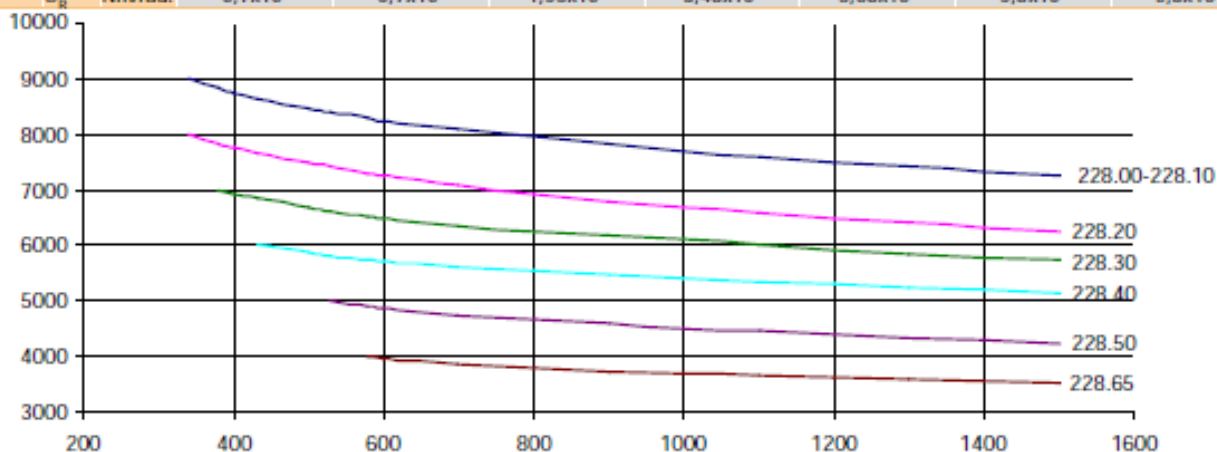


Die dargestellten max. drehzahlen beziehen sich auf die Leistungsfähigkeit der Elastikgelenke
Zur biegekritischen Betrachtung wenden Sie sich bitte an unsere Techniker

The max. rotation speed which is shown in the diagram only refers to the capability of flexible joints
Please consult our engineers for checking the critical bending speed

		228.00	228.10	228.20	228.30	228.40	228.50	228.65
T_k	kNm	120	215	380	680	1200	1800	3000
K	mm	120	120	144	166	200	242	270
A	mm	90	100	120	150	180	180	180
B $\pm 0,1$	mm	74,5	84,0	101,5	130,0	155,5	155,5	155,5
C ¹⁰⁷	mm	47,0	57,0	75,0	90,0	110,0	110,0	110,0
F	mm	2,5	2,2	2,5	2,5	2,5	2,5	2,5
G	mm	7,0	7,5	8,0	10,0	11,0	11,0	11,0
H $\pm 0,2$	mm	8,1	8,1	8,1	10,1	12,1	12,1	12,1
I		4	6	8	8	8	8	8
M	mm	58	61	65	75	85	108	125
N	mm	135	135	150	162	178	225	252
O	mm	72	72	78	89	101	124	150
P	mm	19	19	26	26	30	47	47
R	mm	131	131	140	157	184	226	150
T	mm	19	19	26	26	30	47	47
S	mm	40 x 2	40 x 2	50 x 3	60 x 3	70 x 3	80 x 3,5	80 x 3,5
W		1 $\frac{3}{8}$ "	1 $\frac{3}{8}$ "	1 $\frac{3}{4}$ "	2"	2 $\frac{1}{2}$ "	65x60	65x60

0.01	Lz _{min}	mm	315	315	335	375	430	530	585
	La	mm	16	16	18	20	24	30	40
	La(±)	mm	2	2	2	3	3	3	3
	G _G	kg	5,2	5,4	8,5	13,1	21,2	30,6	45,8
	G _R	kg	1,87	1,87	3,48	4,22	4,96	6,6	6,6
	Jm _G	kgm ²	0,0065	0,0068	0,0091	0,0354	0,0959	0,1676	0,3004
	Jm _R	kgm ²	0,0007	0,0007	0,0020	0,0034	0,0056	0,0097	0,0097
	C _G	Nm/rad.	300	300	600	900	1400	1500	2125
	C _R	Nm/rad.	0,7x10 ⁴	0,7x10 ⁴	1,95x10 ⁴	3,48x10 ⁴	5,68x10 ⁴	9,8x10 ⁴	9,8x10 ⁴



Der mittlere Resonanzfaktor hat einen Wert von 8

The mean resonance factor has a valid of 8

T_k = Katalog Drehmoment

W = 228.50 und 228.65 Evolventenprofil DIN 5482, 228.00 - 228.40 SAE Profil

La1 = Verschiebeweg durch Gummi - Walkarbeit

G_G = Gewicht Gelenkwelle bei Lz_{min}

G_R = Gewicht Rohr für 1000mm

Jm_G = Massenträgheitsmoment Gelenkwelle bei Lz_{min}

Jm_R = Massenträgheitsmoment für 1000 mm Rohr

C_G = Verdrehsteifigkeit Gelenkwelle bei Lz_{min}

C_R = Verdrehsteifigkeit für 1000 mm Rohr

T_k = Catalogue torque

W = 228.50 and 228.65 involute spline DIN 5482, 228.00 - 228.40 SAE spline

La1 = Axial flexibility of rubber couplings

G_G = Weight of shaft for Lz_{min}

G_R = Weight per 1000mm tube

Jm_G = Moment of inertia of shaft for Lz_{min}

Jm_R = Moment of inertia per 1000 mm tube

C_G = Torsional stiffness of shaft for Lz_{min}

C_R = Torsional stiffness per 1000 mm tube

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