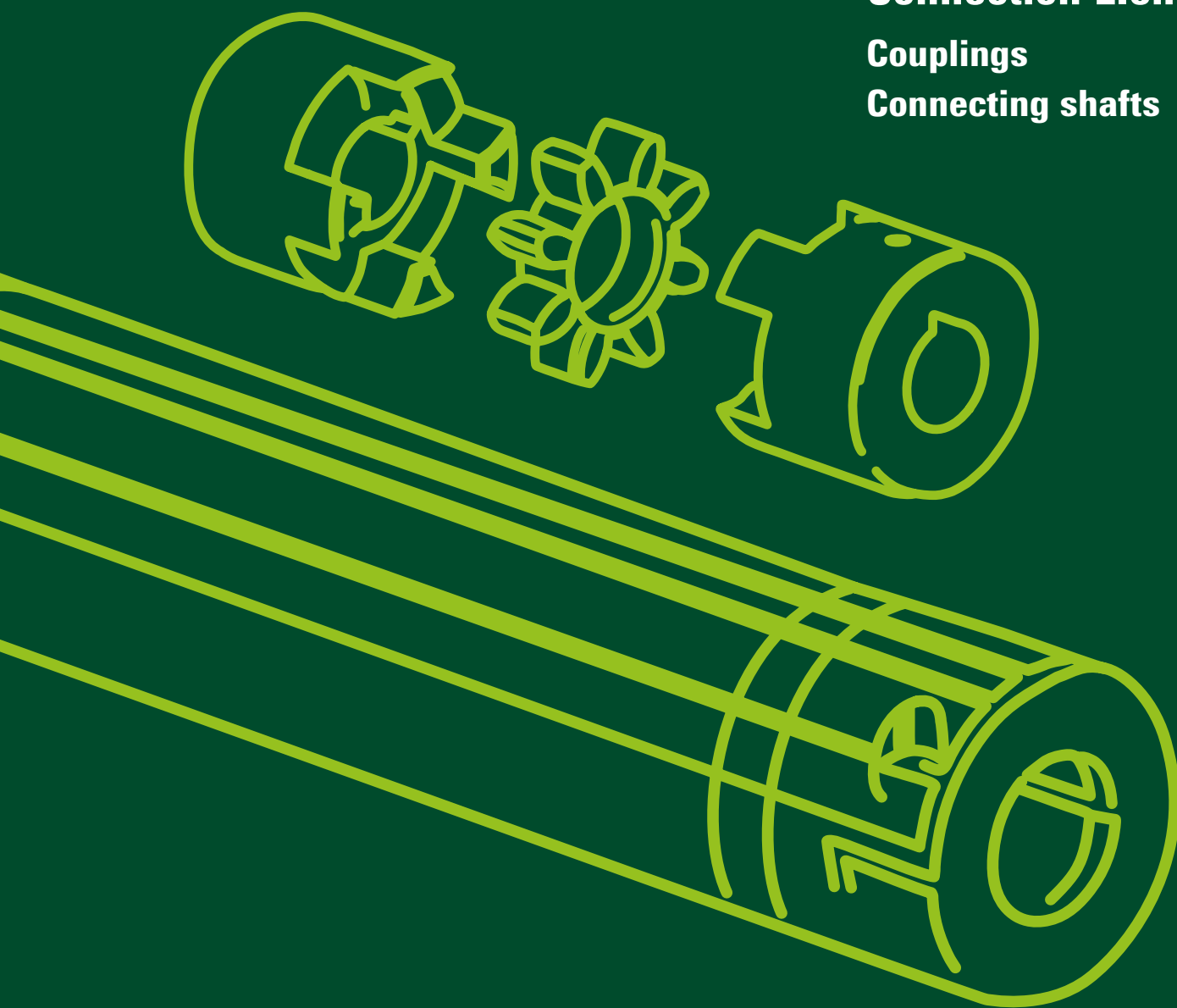

Connection Elements

Couplings

Connecting shafts





Connection Elements

Couplings

Connecting shafts



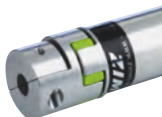
Standard coupling KUZ

2



Clamp coupling KUZ-KK

3



Connecting shaft VWZ

4



Accessories for connecting shaft
Pedestal bearing STL, Shaft extension WZ

6



Technical information
for connecting shaft

7

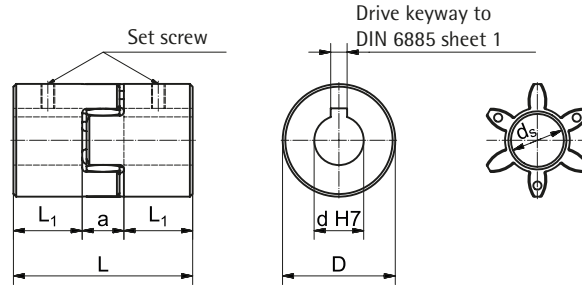
Standard coupling KUZ

Coupling with keyway and set screw:

Material: as shown in the table,
Provides rotational resilience and
maintenance-free,
Drive keyway: DIN 6885/1-P9,
Bore U = not drilled

Elastomer – Star "red":

Material: Polyurethane,
Medium to good damping,
Very good long-term strength,
Temperature range: -20°C to +70°C
reduced to -30°C up to +100°C (Mx0,55)



Dimensions

Coupling size	D	L	L1	a	ds _{Star}	L1 _{Long hub}	Set screw	Tightening torque Nm
KUZ-09	20	30	10	10	-	-	M4	1.5
KUZ-14	27.5	44	16	12	-	-	M6 (M4)	4.8 (1.5)
KUZ-19	34.5	51	19	13	12	-	M6	4.8
KUZ-24	40	66	25	16	17	40	M5	2
KUZ-28	55	78	30	18	26	-	M5	2
KUZ-38	65	90	35	20	29	60	M6	4.8
KUZ-45	80	114	45	24	37	-	M8	10
KUZ-55	95	126	50	26	45	-	M8	10
KUZ-60	105	140	56	28	50	-	M8	10
KUZ-70	120	160	65	30	59	-	M10	17
KUZ-75	135	185	75	35	67	-	M10	17
KUZ-90	160	210	85	40	79	-	M10	17

Tab.29

Standard bores "d" mm

KUZ-09	U, 5*, 6, 7, 8, 9
KUZ-14	U, 9, 11, 14
KUZ-19	U, 11, 14, 16, 19
KUZ-24	U, 11, 14, 16, 19, 19L, 20, 24
KUZ-28	U, 14, 16, 19, 20, 24, 25, 28
KUZ-38	U, 25, 28, 28L, 32, 38
KUZ-45	U, 25, 28, 32, 38, 42, 45
KUZ-55	U, 28, 42, 48, 55

U = not drilled (KUZ-14 and KUZ-19
pre-drilled Ø6.3 mm)

L = long hub

*Coupling with set screw, without keyway
Other diameter available on request

Technical data

Coupling size	Rated torque Nm	max. torque Nm	max. speed rpm	Shore hardness star	Material*	Weight drilled kg	Torsional stiffness C _{tdyn} Nm/rad	Moment of inertia 10 ⁻³ kgm ²
KUZ-09	3	6	28000	92A	A	0.05	-	-
KUZ-14	4.5	4.5	20000	55D	S	0.14	254	0.02
KUZ-19	7.3	7.3	14000	55D	S	0.27	274	0.03
KUZ-24	17	34	14000	98A	S	0.34	2920	0.1
KUZ-28	60	120	10600	98A	S	0.9	9930	0.4
KUZ-38	160	320	8500	98A	S	1.5	26770	1.4
KUZ-45	325	650	7100	98A	G	2.35	48570	2.5
KUZ-55	450	900	6000	98A	G	3.55	54500	6.1
KUZ-60	525	1050	5600	98A	G	4.85	65290	10.2
KUZ-70	625	1250	4750	98A	G	7.4	94970	20.3
KUZ-75	900	1300	4250	98A	G	10.8	129510	37.1
KUZ-90	1500	3000	3550	98A	G	17.7	197500	84

Tab.30

*A=Aluminium, S=Sintered steel, G=Cast iron

Ordering example:

	KUZ-24-20/24
Coupling size	↑↑↑
Bore d end 1	↑
Bore d end 2	↑

Permissible assembly errors

Coupling size	max. axial offset in mm	max. axis offset in mm	Angular error in degrees
KUZ-09	0.8	0.15	1.0°
KUZ-14	0.75	0.4	0.5°
KUZ-19	0.75	0.4	0.5°
KUZ-24	1.2	0.2	0.9°
KUZ-28	1.4	0.22	0.9°
KUZ-38	1.5	0.25	0.9°
KUZ-45	1.8	0.28	1.0°
KUZ-55	2	0.32	1.0°
KUZ-60	2.1	0.36	1.1°
KUZ-70	2.2	0.38	1.1°
KUZ-75	2.6	0.42	1.2°
KUZ-90	3	0.48	1.2°

Tab.31

Potential assembly errors

Assembly instruction: Check the angle and radial offset using straight edges in two planes	Axial offset A axial	Axis offset R lateral	Angular error β angular
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Clamp coupling KUZ-KK

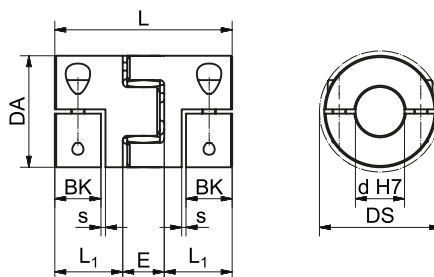
Coupling with split shells:

Material: high-tensile aluminium,
Split shells permit easy radial insertion,
High concentricity, High clamping forces,
Low moment of inertia, Stepless adjustment facility
thanks to the clamp hub rather than a fitted drive key,
Drive keyway available on request

Elastomer – Star "ZIMM green":

Permanently free of play and dampens vibration,
Shore hardness 64D,

Temperature range: 0°C to +70°C
reduced to -20°C up to +100°C (Mx0,55)



Dimensions, technical data

Coupling size	DA mm	DS mm	L mm	L1 mm	BK* mm	s mm	E mm	M 10.9	Tightening torque Nm	Moment of inertia 10 ⁻³ kgm ²	Torsional stiffness C _{Tdyn} Nm/rad	Weight kg
KUZ-KK-16	32	32	54	21	15	1.5	12	M4	4	0.01	1375	0.1
KUZ-KK-24	42	44.5	66	25	17	1.5	16	M5	8	0.08	3700	0.2
KUZ-KK-32	56	57	98	40	30	2	18	M6	15	0.24	9917	0.55
KUZ-KK-35	67	68	114	47	35	2	20	M8	35	0.51	24417	0.9
KUZ-KK-45	82	85	134	55	40	2	24	M10	70	2.4	33667	1.6
KUZ-KK-60	102	105	156	65	50	2	26	M12	120	6	67667	2.7

*BK=Shaft extension clamping length

Standard bores "d" mm

KUZ-KK-16	8, 9, 10, 11, 12, 14, 15, 16
KUZ-KK-24	9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 22
KUZ-KK-32	10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32
KUZ-KK-35	12, 15, 16, 18, 20, 22, 24, 25, 28, 30, 32, 35
KUZ-KK-45	16, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45
KUZ-KK-60	25, 28, 32, 38, 40, 42, 45, 48, 50, 55

Other diameter available on request

Torques

Elastomer star		max. transmittable torque of clamp hub depending on the bore diameter (clamp force)																		
Coupling size	Rated torque Nm	max. torque Nm	Ø9 Nm	Ø11 Nm	Ø14 Nm	Ø16 Nm	Ø19 Nm	Ø20 Nm	Ø22 Nm	Ø24 Nm	Ø25 Nm	Ø28 Nm	Ø30 Nm	Ø32 Nm	Ø38 Nm	Ø40 Nm	Ø42 Nm	Ø45 Nm	Ø48 Nm	Ø55 Nm
KUZ-KK-16	16	32	21	26	33	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KUZ-KK-24	21	42	-	41	52	60	70	74	81	-	-	-	-	-	-	-	-	-	-	-
KUZ-KK-32	75	150	-	60	76	87	104	109	120	131	136	153	164	175	-	-	-	-	-	-
KUZ-KK-35	200	400	-	-	-	120	-	188	206	-	235	-	-	301	-	-	-	-	-	-
KUZ-KK-45	405	810	-	-	-	325	386	406	447	488	508	568	610	650	772	-	854	915	-	-
KUZ-KK-60	660	1350	-	-	-	-	-	-	-	-	570	638	-	730	866	914	960	1029	1097	1250

Tab.33

Ordering example:

KUZ-KK-32-20/24

Coupling size

Bore d end 1

Bore d end 2

Permissible assembly errors

Coupling size	max. axial offset in mm	max. axis offset in mm	Angular error in degrees
KUZ-KK-16	±1	0.08	1°
KUZ-KK-24	±2	0.08	1°
KUZ-KK-32	±2	0.1	1°
KUZ-KK-35	±2	0.15	1°
KUZ-KK-45	±2	0.12	1°
KUZ-KK-60	±2	0.14	1°

Tab.34

Potential assembly errors

Axial offset A axial	Axis offset R lateral	Angular error β angular
---------------------------------	----------------------------------	------------------------------------

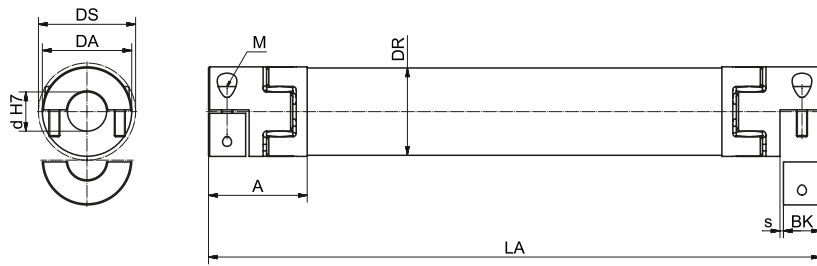
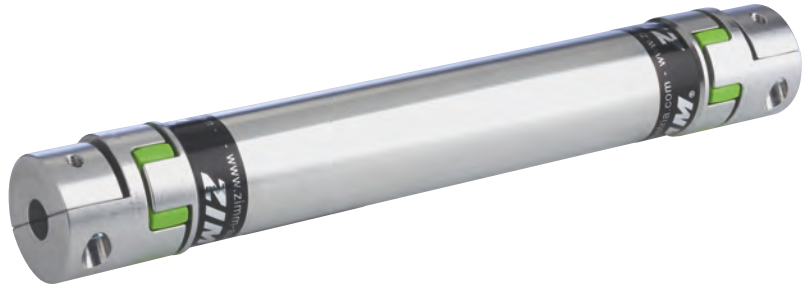
Connecting shafts VWZ

Shafts with split shells:

Material: high-tensile aluminium (stainless steel on request),
Split shells permit easy radial insertion,
High concentricity and clamping forces,
Low moment of inertia, Stepless adjustment facility
thanks to the clamp hub rather than a fitted drive key,
Drive keyway available on request

Elastomer – Star "ZIMM green":

Permanently free of play and dampens vibration,
Shore hardness 64D,
Temperature range: 0°C to +70°C
reduced to -20°C up to +100°C (Mx0,55)



Standard bores "d" mm

VWZ-30	8, 9, 10, 11, 12, 14, 15, 16
VWZ-40	9, 10, 11, 12, 14, 15, 16, 18, 19, 20, 22
VWZ-60	10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32
VWZ-60V	12, 15, 16, 18, 20, 22, 24, 25, 28, 30, 32, 35
VWZ-80	16, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45
VWZ-100	25, 28, 32, 38, 40, 42, 45, 48, 50, 55
Other diameter available on request	

Dimensions, Technical data

Size	Dimensions							Clamping screw		Moment of inertia		Torsional stiffness		Weight	
	DA mm	DS mm	DR mm	BK* mm	s mm	A mm	LA min mm	M 10.9	Tightening torque Nm	Per coupling 10 ⁻³ kgm ²	Tube/m 10 ⁻³ kgm ²	Per star C _{Tdyn} Nm/rad	Per tube/m C _{Tdyn} Nm/rad	Both couplings kg	Tube/m kg
VWZ-30	32	32	30	15	1.5	34	99	M4	4	0.01	0.11	1375	1104	0.14	0.58
VWZ-40	42	44.5	40	17	1.5	46	133	M5	8	0.08	0.2	3700	2332	0.36	0.76
VWZ-60	56	57	60	30	2	63	177	M6	15	0.24	0.8	9917	8292	0.94	0.97
VWZ-60V	67	68	60	35	2	73	205	M8	35	0.46	0.8	24417	8292	1.42	0.97
VWZ-80	82	85	80	40	2	84	249	M10	70	2.4	3	33667	29102	2.98	2
VWZ-100	102	105	100	50	2	97	283	M12	120	6	5.8	67667	58178	4.62	2.47

*BK=Shaft extension clamping length

Tab.35

Torques

Size	Elastomer star		max. transmittable torque of clamp hub depending on the bore diameter (clamp force)																		Coupling type
	Rated torque Nm	max. torque Nm	Ø9 Nm	Ø11 Nm	Ø14 Nm	Ø16 Nm	Ø19 Nm	Ø20 Nm	Ø22 Nm	Ø24 Nm	Ø25 Nm	Ø28 Nm	Ø30 Nm	Ø32 Nm	Ø38 Nm	Ø40 Nm	Ø42 Nm	Ø45 Nm	Ø48 Nm	Ø55 Nm	
VWZ-30	16	32	21	26	33	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	KUZ-KK-16
VWZ-40	21	42	-	41	52	60	70	74	81	-	-	-	-	-	-	-	-	-	-	-	KUZ-KK-24
VWZ-60	75	150	-	60	76	87	104	109	120	131	136	153	164	175	-	-	-	-	-	-	KUZ-KK-32
VWZ-60V	200	400	-	-	-	120	-	188	206	-	235	-	-	301	-	-	-	-	-	-	KUZ-KK-35
VWZ-80	405	810	-	-	-	325	386	406	447	488	508	568	610	650	772	-	854	915	-	-	KUZ-KK-45
VWZ-100	660	1350	-	-	-	-	-	-	-	570	638	-	730	866	914	960	1029	1097	1250	-	KUZ-KK-60

The max. torque is limited either by the star or by the clamping force

Tab.36



ZIMM VWZ shafts of 500 mm length and more
are checked for concentricity as standard!



Ordering example:

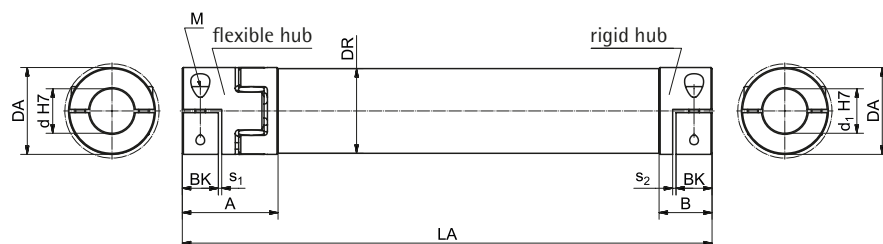
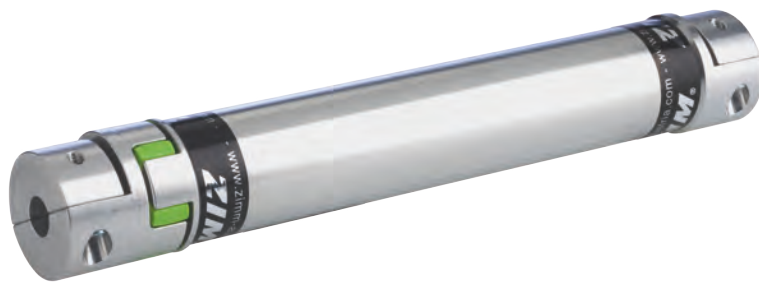
VWZ-60-LA1800-20/25

Size
Length
Bores for couplings

n=1500 rpm (specify the speed)

Connecting shaft VWZ with rigid hub for pedestal bearing use

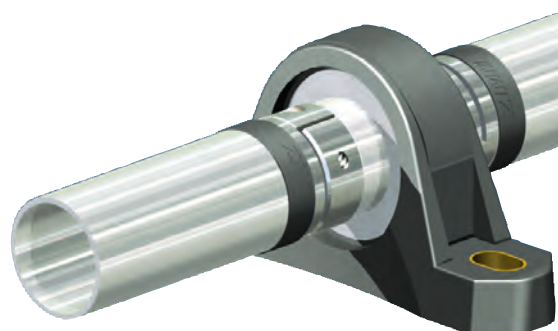
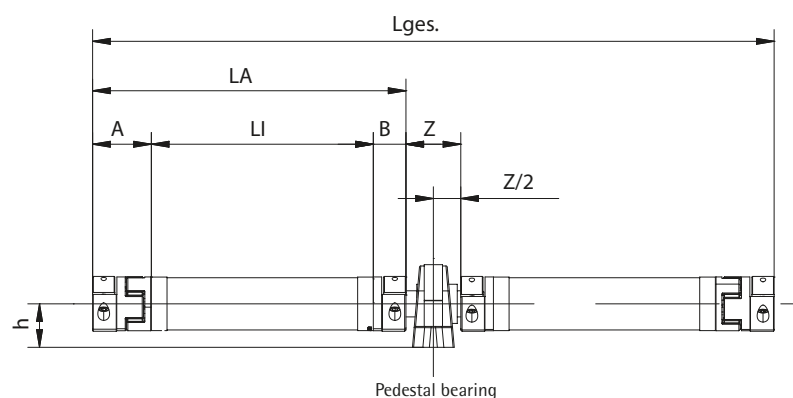
The installation situation is very important when selecting shaft dimensions. For example, the cost of a larger diameter connecting shaft not requiring additional pedestal bearing support can be considerably less than the cost of a smaller connecting shaft requiring costly sub-structures for the additional pedestal bearing. For this version we use the rigid hub version so that no radial misalignment can occur in the pedestal bearing.



Size	A	B	s1	s2	Bk*	d1	LA min
VWZ-30	34	20	2	1.2	15	15	85
VWZ-40	46	25	2	1.6	17	20	112
VWZ-60	63	40	2	2	30	20	154
VWZ-60V	73	42	2	2	35	30	175
VWZ-80	84	55	2	2	40	30	220
VWZ-100	97	65	2	2	50	50	251

*BK=Shaft extension clamping length

Tab.37



Size	A	B	Z	L _{WZ}	d1	h
VWZ-30	34	20	44	74	15	30.2
VWZ-40	46	25	42	76	20	33.3
VWZ-60	63	40	42	102	20	33.3
VWZ-30	34	20	44	74	15	30.2
VWZ-40	46	25	42	76	20	33.2
VWZ-60	63	40	42	102	20	33.2
VWZ-40	46	25	42	76	20	33.2
VWZ-60	63	40	42	102	20	33.2
VWZ-80	84	55	50	130	30	42.9
VWZ-40	46	25	42	76	20	33.2
VWZ-60	63	40	42	102	20	33.2
VWZ-60V*	73	42	60	130	30	42.9
VWZ-80*	84	55	50	130	30	42.9
VWZ-60	63	40	42	102	20	33.3
VWZ-60V	73	42	60	130	30	42.9
VWZ-80*	84	55	50	130	30	42.9
VWZ-60	63	40	42	102	20	33.2
VWZ-60V	73	42	60	130	30	42.9
VWZ-80	84	55	50	130	30	42.9
VWZ-60	63	40	42	102	20	33.2
VWZ-60V	73	42	60	130	30	42.9
VWZ-80	84	55	50	130	30	42.9
VWZ-100	97	65	70	170	50	57.2
VWZ-80	84	55	50	130	30	42.9
VWZ-100	97	65	70	170	50	57.2
VWZ-80	84	55	50	130	30	42.9
VWZ-100	97	65	70	170	50	57.2

*Can't be fitted with pivot mounts LB

Tab.38

Ordering example:

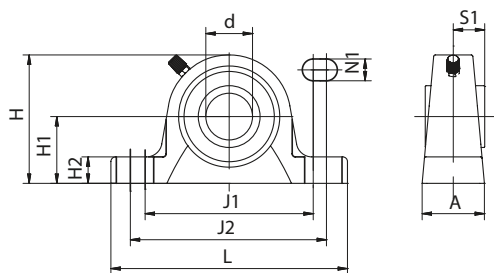
VWZ-60-LA1800-25/20S

Size
Length
Bore 1st side
Bore 2nd side (S=rigid hub)

n=1500 rpm (specify the speed)

Pedestal bearing STL for connecting shaft VWZ

Housing material: Grey cast iron, primed in blue
Bearing material: Roller bearing steel
Temperature range: -30°C to +120°C

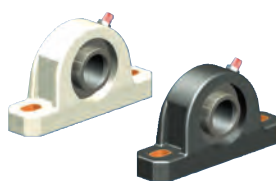


Part no.	d	A	H	H1	H2	J1	J2	L	N1	S1	kg
STL-15-G	15	32	56	30.2	14	88	106	127	11.5	15.3	0.47
STL-20-G	20	32	65	33.3	14	88	106	127	11.5	18.3	0.59
STL-30-G	30	40	82.5	42.9	17	108	127	152	14	22.2	1.1
STL-40-G	40	48	99	49.2	19	125	146	175	14	30.2	1.85
STL-50-G	50	54	114.5	57.2	22	149	165	203	18	32.6	2.7

Tab.39

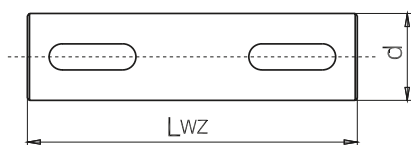


Pedestal bearings of plastic "white" or "black"
(foodstuffs applications) on request.
CAUTION: Dimensions may change!



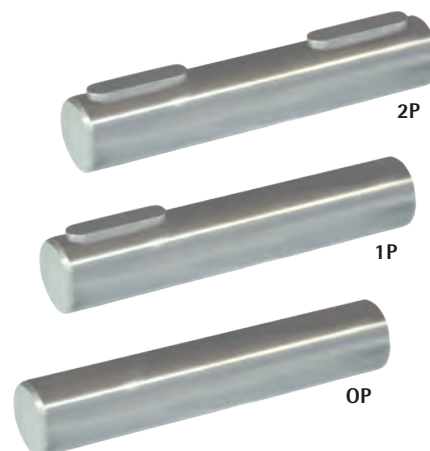
Shaft extension WZ for connecting shaft VWZ

Material: Steel, ground

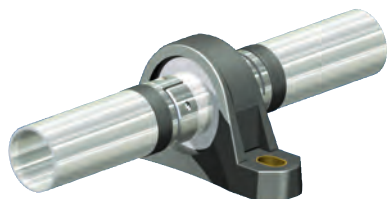


Part no.	d1	LWZ	kg
WZ-15/74-?P	15	74	0.1
WZ-20/76-?P	20	76	0.19
WZ-20/102-?P	20	102	0.25
WZ-30/130-?P	30	130	0.72
WZ-40/170-?P	40	170	1.67
WZ-50/170-?P	50	170	2.61

Tab.40

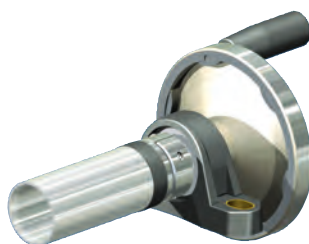


Examples:



VWZ with rigid hub,
for pedestal bearings.

Shaft extension without fitted key (OP)

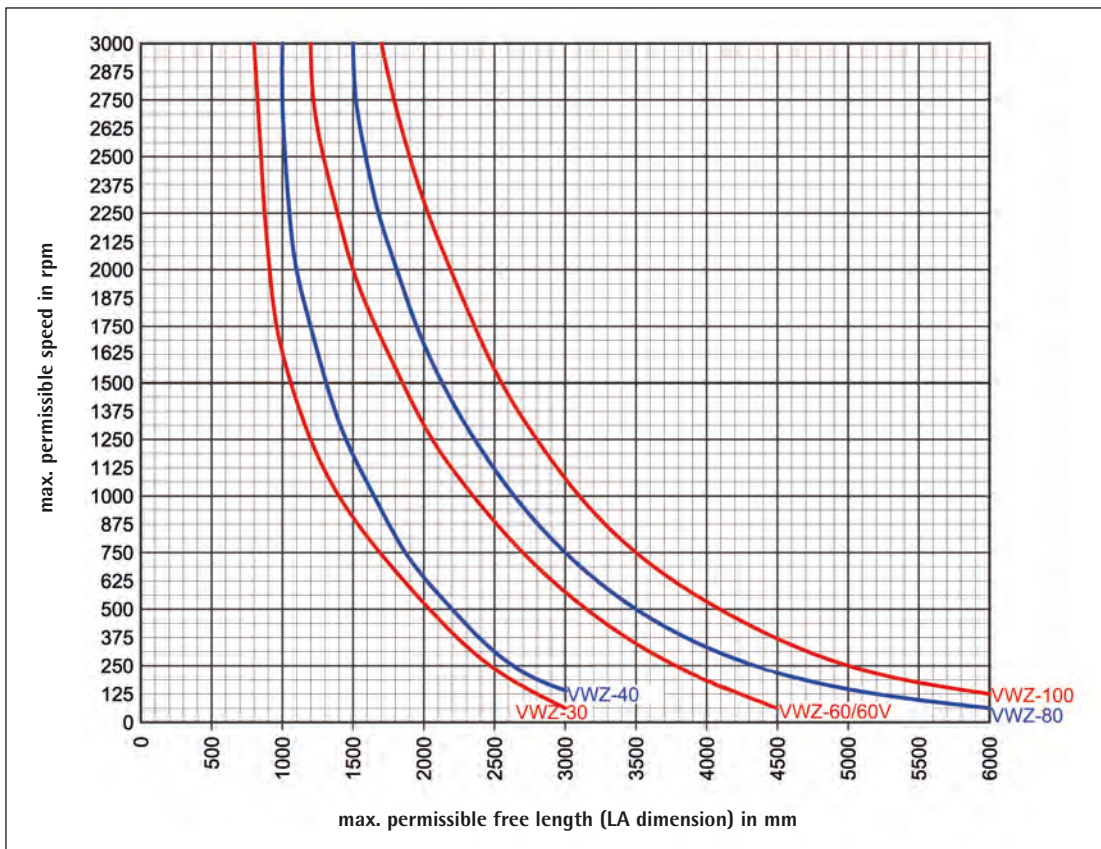


Pedestal bearing with handwheel
for driving the VWZ shaft.

Shaft extensions with fitted key at one end (1P)

Connecting shaft VWZ – Length calculation

maximum length dependent on speed



max. permissible offset

Lateral offset:



Kr max. 1.5 mm per 100 mm LI

Angular offset:



max. 2° (1° per coupling)

Axial offset:



approx. +/- 1 to 2 mm



Installation:

By using split shell couplings connecting shafts can be mounted while drive shafts have already been installed. Simply attach the connecting shafts to the drive shafts using the split shell couplings and fix them with the mounting screw using a torque wrench (no drive key needed).

Screw tightening torque acc. to table.





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