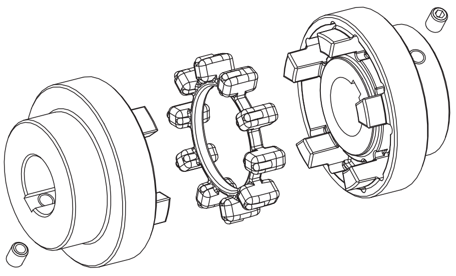
Coupling description

General description

POLY-NORM® – couplings are designed to transmit torque between drive and driven components via encapsulated elastomeric elements within flat jaw hubs. The combination of these components provides dampening and accommodation for misalignments. This product is available in materials and elements that are optimized for close coupled applications.



Function and Design

POLY-NORM® - couplings suitable for horizontal or vertical applications are constructed from a variety of ferrous materials providing a torsionally flexible platform optimizing the balance between coupling performance and application requirements. The flat jaw dampens shock and vibration while providing failsafe torque transmission. The symmetrical relationship of the hubs and length to diameter ratio is ideal for close coupled systems.

The unique geometry of the enclosed hubs contains the expansion of the elastomer resulting in higher speed characteristics while providing system dampening. In contrast to other flexible couplings with elastomeric elements in shear, POLY-NORM® coupling elastomers are in compression, defining the torque of the coupling.

Interlocking flat jaws with a variety of standard mounting options accommodate shafts up to 6.875 inches and a maximum nominal torque of 118,600 lb-in while still accommodating blind assembly. As defined by the elastomer, POLY-NORM® couplings are suitable for moderate industrial temperature ranges. Together these features reduce the maintenance required during the lifecycle of the coupling.

Explosion-proof use

POLY-NORM® couplings are suitable for power transmission in hazardous areas. The couplings are certified and conform to EC standard 94/9/EC (ATEX 95) as units of category 2G/2D and are suitable for use in hazardous areas of zone 1, 2, 21 and 22. Please read through our information included in our Type Examination Certificate and the operating and installation instructions at www.ktr.com.

Variety of Options

The POLY-NORM® can be adapted to many applications with its optional configurations and building block arrangement. The POLY-NORM® components of any given model can be mixed and matched with each other to yield different shaft distances while using the same basic components. KTR can provide customized POLY-NORM® designs to fit your needs.

Coupling selection

The POLY-NORM® coupling must be sized so that the coupling rated normal torque is not exceeded in any operating conditions. A comparison must be made between the application torque versus the rating of the coupling. The selection process for torsionally flexible shaft couplings is described in detail in the ROTEX® catalog which can be used for POLY-NORM® couplings as well.

Temperature factor S_t

	−86 °F +86 °F	+104 °F	+140 °F	+176 °F
S_t	1.0	1.2	1.4	1.8

Starting factor S_Z

Starting frequency/h	100	200	400	800
S_Z	1.0	1.2	1.4	1.6

Shock factor S_A/S_L

	S_A/S_L
mild shocks	1.5
medium shocks	1.8
heavy shocks	2.5

Example of selection

Pump drive with three-phase motor

Driver power data:
Power $P = 100$ HP
Speed $n = 1{,}480$ RPM
Mass moment of inertia $J_A = 9.38$ lb-in-sec²

Performance data of pump:
Nominal torque $T_{LN} = 3{,}540$ lb-in
Peak torque [1] $T_{LS} = 2{,}655$ lb-in
Mass moment of inertia $J_L = 20.36$ lb-in-sec²

1) Peak value with shock load

General data:
Ambient temperature $t = +140$ °F thus $S_t = 1.4$
Starting frequency $z = 6\ ^1/_h$ thus $S_Z = 1.0$
Normal operation with mild shocks thus S_A or $S_L = 1.5$

Calculation engine torque T_{AN}:

$$T_{AN}\ [\text{lb-in}] = 63{,}025 \cdot \frac{P}{n}$$

$$T_{AN}\ [\text{lb-in}] = 63{,}025 \cdot \frac{100\ \text{HP}}{1{,}480\ \text{RPM}} = 4{,}258\ \text{lb-in}$$

Calculation engine peak torque T_{AS}:

T_{AS} [lb-in] = $2 \cdot T_{AN}$
T_{AS} [lb-in] = $2 \cdot 4{,}258$ lb-in = 8,516 lb-in

Factor 2: Peak value with drive-side shock load, e. g. as in full voltage motor starting

Calculation nominal torque of coupling T_{KN}:
T_{KN} [lb-in] $\geq T_{AN} \cdot S_t$
T_{KN} [lb-in] $\geq$ 4,258 lb-in $\cdot$ 1.4 = 5,961 lb-in

Selected coupling:
POLY-NORM AR Size 75
Transmittable torques of the coupling:
Nominal torque T_{KN} = 7523 lb-in (≥ 6,001 lb-in)
Maximum torque T_{Kmax} = 15,045 lb-in

Checking of the maximum torque T_{Kmax} / drive side:

Calculation mass factor of the drive side M_A:

$$M_A = \frac{J_L}{J_A + J_L}$$

$$M_A = \frac{20.36\ \text{lb-in-sec}^2}{9.38\ \text{lb-in-sec}^2 + 20.36\ \text{lb-in-sec}^2} = 0.68$$

Calculation of the peak torque of the unit – drive-side T_{SA}:
T_{SA} [lb-in] = $T_{AS} \cdot M_A \cdot S_A$
T_{SA} [lb-in] = 8,516 lb-in $\cdot$ 0.68 $\cdot$ 1.5 = 8,686 lb-in

Calculation of the maximum permissible torque T_{Kmax}:
T_{Kmax} [lb-in] $\geq T_{SA} \cdot S_Z \cdot S_t + T_{LN} \cdot S_t$
T_{Kmax} [lb-in] = 8,686 lb-in $\cdot$ 1.0 $\cdot$ 1.4 + 0 lb-in $\cdot$ 1.4 = 12,160 lb-in
T_{Kmax} of selected coupling $\geq T_{Kmax}$ of the drive side
(mathematically) 15,047 lb-in $\geq$ 12,160 lb-in

T_{LN} = 0: when motor is switched on the pump has no load torque

Checking of the maximum torque T_{Kmax} / driven-side:

Calculation of mass factor of the driven side M_L:

$$M_L = \frac{J_A}{J_L + J_A}$$

$$M_L = \frac{9.38\ \text{lb-in-sec}^2}{20.36\ \text{lb-in-sec}^2 + 9.38\ \text{lb-in-sec}^2} = 0.32$$

Calculation of peak torque of the unit – load side T_{SL}:
T_{SL} [lb-in] = $T_{LS} \cdot M_L \cdot S_L$
T_{SL} [lb-in] = 2,655 lb-in $\cdot$ 0.32 $\cdot$ 1.5 = 1,274 lb-in

Calculation of the maximum permissible torque T_{Kmax}:
T_{Kmax} [lb-in] $\geq T_{SL} \cdot S_Z \cdot S_t + T_{LN} \cdot S_t$
T_{Kmax} [lb-in] = 1,275 lb-in $\cdot$ 1.0 $\cdot$ 1.4 + 3,540 lb-in $\cdot$ 1.4 = 6,741 lb-in
T_{Kmax} of selected coupling $\geq T_{Kmax}$ of the drive side
(mathematically) 15,047 lb-in $\geq$ 6,741 lb-in

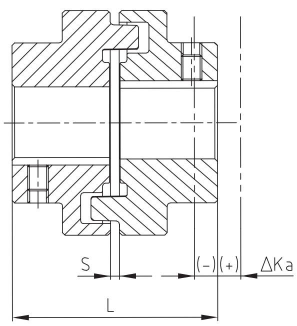
Technical data

POLY-NORM® Technical data														
Size	Torque [lb-in]			Max. speed [rpm] at V=98 ft/s	Windup		Torsion stiffness C_{dyn} [lb-in/rad]				Max. allowable misalignment [in] [1)]		
	Nominal T_{KN}	Max. $T_{Kmax.}$	Alternating T_{KW}		T_{KN}	T_{Kmax}	1,0 T_{KN}	0,75 T_{KN}	0,5 T_{KN}	0,25 T_{KN}	Axial ΔKa	Parallel ΔKr	Angular ΔKw
28	350	700	140	8,300			46,020	29,360	16,520	7,930	± 0.04	0.01	0.05
32	530	1,060	210	7,300	4.5°	6°	69,210	44,150	24,960	11,930	± 0.04	0.01	0.06
38	790	1,590	310	6,500			119,840	76,460	43,230	20,670	± 0.04	0.01	0.06
42	1,320	2,650	530	5,900			232,330	148,230	83,820	40,070	± 0.04	0.01	0.07
48	1,940	3,890	770	5,400			264,600	168,820	95,460	45,640	± 0.06	0.01	0.07
55	2,650	5,310	1,060	4,800			340,760	217,400	122,940	58,770	± 0.06	0.01	0.08
60	3,620	7,250	1,450	4,400	4°	5.5°	598,320	381,730	205,340	103,210	± 0.06	0.01	0.09
65	4,860	9,730	1,940	4,100			724,010	461,910	238,920	124,890	± 0.06	0.01	0.09
75	7,520	15,040	3,000	3,600			1,087,780	694,000	358,970	187,640	± 0.06	0.02	0.11
85	11,940	23,890	4,770	3,150			2,151,190	1,372,460	662,560	371,070	± 0.06	0.02	0.12
90	17,700	35,400	7,080	2,900			3,200,260	2,041,760	985,680	552,040	± 0.06	0.02	0.13
100	25,660	51,330	10,260	2,600			4,852,110	3,095,650	1,494,450	836,990	± 0.12	0.02	0.15
110	34,510	69,030	13,800	2,300			7,012,640	4,474,060	2,159,890	1,209,680	± 0.12	0.02	0.17
125	48,680	97,360	19,470	2,050	2.5°	3.5°	9,056,690	5,778,170	2,789,460	1,562,280	± 0.12	0.02	0.19
140	63,720	127,450	25,490	1,825			14,519,440	9,263,400	4,501,020	2,504,600	± 0.12	0.02	0.22
160	88,510	177,020	35,400	1,625			18,506,820	11,807,340	5,737,110	3,192,420	± 0.12	0.03	0.24
180	118,600	237,200	47,440	1,425			23,638,360	15,081,280	7,327,890	4,077,620	± 0.12	0.03	0.24

1) Misalignment at n = 1,500 RPM.
Angular and parallel misalignment can occur at the same time. The sum of all misalignments must not exceed the figures listed in the table. Couplings may be dynamically balanced on request.

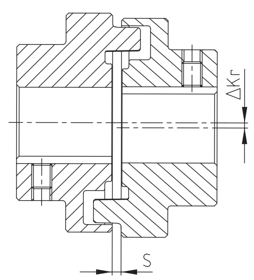
Misalignment

Axial misalignment ΔKa

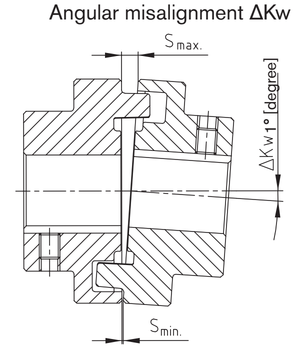


$L_{max./min} = L + \Delta Ka$ [in]

Parallel misalignment ΔKr



Angular misalignment ΔKw



$\Delta Kw = S_{max.} - S_{min.}$ [in]

Assembly Guidelines

During assembly, the coupling halves must be mounted so that the coupling hub faces are flush to the end of the shafts. The alignment of the shafts must be adjusted so that parallel and angular misalignments are minimal. The life of the coupling and bearings can be increased with accurate alignment. Steps must be taken to ensure that the alignment will not change during all operating conditions. Shaft misalignments which cannot be avoided must not exceed misalignment capacities. Angular and parallel misalignments can occur at the same time, but the sum of these misalignments must not exceed those shown in the table above. See the KTR installation instructions at www.ktr.com.

Elastomer material, characteristics and properties

Material	Perbunan [NBR]/78 Shore A
Hardness	78 Shore A
Permanent temperature range [°F]	- 22 to + 176
Max. temperature (short time) [°F]	- 58 to + 248
Applications	general machinery and hydraulics standard couplings applications
Resistant to	Gasoline, diesel Acids, bases Tropical climates (Salt-) Water (hot/cold) Oils, greases Propane, butane Natural gas

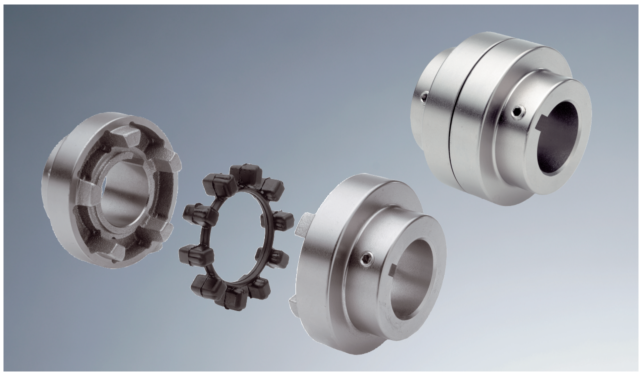
Elastomer ring

Elastomer ring Viton

Additional elastomers available for higher temperature ranges

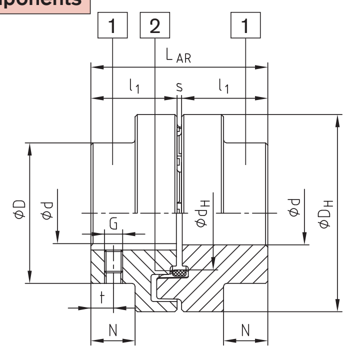
Made for Motion KTR

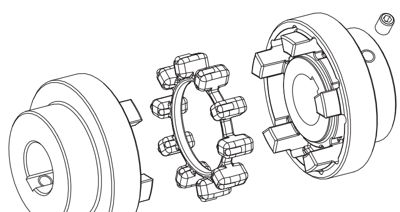
Design AR



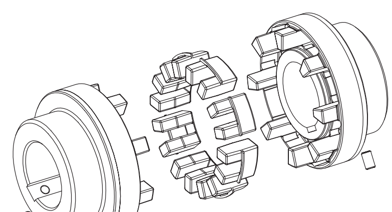
- Failsafe, reduced maintenance, blind assembly
- Torsionally flexible / vibration-damping
- Compact design for short shaft gaps
- ⟨Ex⟩ approved according to EU standard 94/9/EC
- Installation instructions available at www.ktr.com

Components





Size 28-125



Size 140-180

1 = Standard hub
2 = Elastomer ring

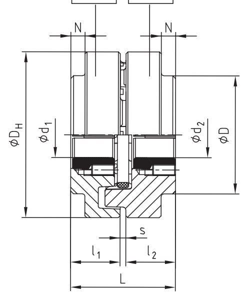
Componets:
Design AR
(EN-GJL-250)
(NBR 78 ShA)

POLY-NORM® Design AR														
Size	Elastomer ring (part 2) [1)] Torque [lb-in]		Bore	Dimensions [in]									Mass moment of inerrtia	AR [3)] Weight
				General							Setscrew [2)]			
	T_{KN}	$T_{K\ max.}$	Ø d_{max} [2)]	L_{AR}	l_1	s	D_H	D	d_H	N	G	t	[lb-in-sec²] [3)]	[lbs]
28	350	700	1.125	2.32	1.10	0.12	2.72	1.81	1.44	0.47	M5	0.28	0.00354	1.98
32	530	1,060	1.250	2.68	1.26	0.16	3.07	2.09	1.63	0.55	M8	0.28	0.00708	3.09
38	790	1,590	1.438	3.15	1.50	0.16	3.43	2.44	1.97	0.77	M8	0.39	0.0142	4.41
42	1,320	2,650	1.563	3.46	1.65	0.16	3.78	2.72	2.19	0.79	M8	0.39	0.0230	5.95
48	1,940	3,890	1.813	3.98	1.89	0.20	4.17	3.07	2.52	0.94	M8	0.59	0.0372	8.16
55	2,650	5,310	2.125	4.53	2.17	0.20	4.65	3.54	2.87	1.14	M8	0.55	0.0620	12.1
60	3,620	7,250	2.313	4.92	2.36	0.20	5.08	3.82	3.19	1.30	M8	0.59	0.0991	15.2
65	4,860	9,730	2.500	5.31	2.56	0.20	5.51	4.13	3.39	1.42	M10	0.79	0.154	19.4
75	7,520	15,040	2.813	6.10	2.95	0.20	6.22	4.84	3.94	1.67	M10	0.79	0.248	29.8
85	11,940	23,890	3.250	6.89	3.35	0.20	7.17	5.47	4.57	1.91	M10	0.98	0.460	43.0
90	17,700	35,400	3.438	7.28	3.54	0.20	7.87	5.83	5.04	1.93	M12	0.98	0.797	51.2
100	25,660	51,330	3.875	8.11	3.94	0.24	8.82	6.50	5.63	2.17	M12	0.98	1.42	70.3
110	34,510	69,030	2.000-4.250	8.90	4.33	0.24	9.84	7.28	6.22	2.36	M16	1.18	2.81	83.8
125	48,680	97,360	2.188-4.813	10.08	4.92	0.24	11.02	8.27	7.01	2.76	M16	1.38	5.05	122
140	63,720	127,450	2.563-5.375	11.26	5.51	0.24	12.40	9.25	8.50	3.01	M20	1.38	9.12	204
160	88,510	177,020	3.000-6.188	12.83	6.30	0.24	13.78	10.43	9.69	3.72	M20	1.77	15.5	280
180	118,600	237,200	3.000-6.875	14.41	7.09	0.24	15.75	11.81	11.42	4.39	M20	1.97	28.7	401

1) Standard material Nitrile rubber also known as Buna-N, Perbunan or (NBR) 78 Shore A, size 140 - 180 double tooth elastomers For selection, please see page 52.
2) Inch bores machined to AGMA Class 1, Metric bores machined to H7
3) Calculated with minimum bore

Components

TB1 TB2



POLY-NORM® with taper clamping sleeve															
Size	Taper-clamp sleeve	Dimensions [in]		Set screws [1)] for taper sleeve				Size	Taper-clamp sleeve	Dimensions [in]		Set screws [1)] for taper sleeve			
		max. d_1; d_2	l_1; l_2	Size [in]	Length [in]	SW [in]	T_A [lb-in]			max. d_1; d_2	l_1; l_2	Size [in]	Length [in]	SW [in]	T_A [lb-in]
32	1108	1.000	1.00	1/4"	0.51	0.12	50	**75**	2517	2.313	2.07	1/2"	0.98	0.24	434
42	1210	1.250	1.22	3/8"	0.63	0.20	177	**85**	2517	2.313	1.83	1/2"	0.98	0.24	
48	1610	1.500	1.18	3/8"	0.63	0.20	177	**85**	3030	2.813	3.23	5/8"	1.26	0.31	797
	1615	1.500	1.67	3/8"	0.63	0.20	177	**90**	3020	2.813	2.05	5/8"	1.26	0.31	814
60	2012	1.875	1.52	7/16"	0.87	0.24	274	**100**	3535	3.438	3.86	1/2"	1.50	0.39	1018
65	2517	2.313	2.46	1/2"	0.98	0.24	434	**125**	4040	3.875	4.39	5/8"	1.77	0.47	1522

1) 2 fixing screws per hub exceept 3535/4040 3 set screws are standard.

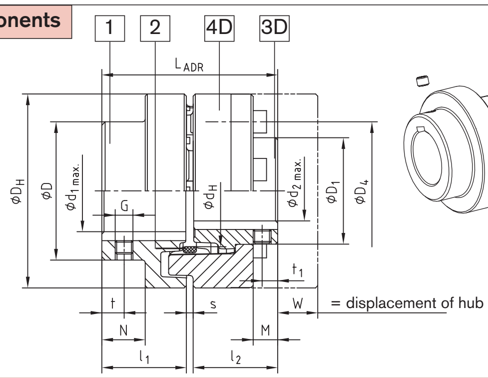
Order form:

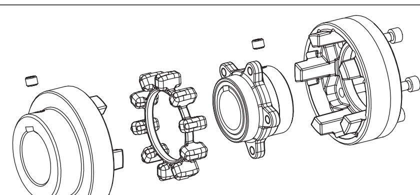
POLY-NORM® 65	AR	∅38	∅30
Coupling size	Design	Bore	Bore

Design ADR (3-part design)

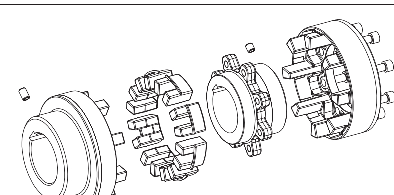
- Failsafe, reduced maintenance, blind assembly
- Torsionally flexible / vibration-damping
- Compact design for short shaft gaps
- Element can by replaced while coupling is installed
- ⟨Ex⟩ approved according to EU standard 94/9/EC
- Installation instructions available at www.ktr.com

Components





Size 28-125



Size 140-180

Components:

Design ADR (3-part)

1	=	Standard hub	(EN-GJL-250)
2	=	Elastomer ring	(NBR 78 ShA)
3D	=	Flange hub	(EN-GJS-400-15)
4D	=	Jaw ring	(EN-GJL-250)

POLY-NORM® Design ADR

Size	Insert torque [lb-in] 1)		Bore 2)		Dimensions [in] General										Setscrew			
	T_{KN}	T_{Kmax}	$d_{1\ max.}$	$d_{2\ max.}$	L_{ADR}	l_1/l_2	s	D_H	D	D_1	d_H	N	M	W	G	t	t_1	T_A [lb-in]
[redacted]																		
42	1,320	2,650	1.563	1.313	3.46	1.65	0.16	3.78	2.72	2.13	2.19	0.79	0.47	0.63	M8	0.39	0.28	89
[redacted]																		
55	2,650	5,310	2.125	1.813	4.53	2.17	0.20	4.65	3.54	2.83	2.87	1.14	0.74	0.59	M8	0.55	0.55	89
[redacted]																		
65	4,860	9,730	2.500	2.313	5.31	2.56	0.20	5.51	4.13	3.39	3.39	1.42	1.05	0.43	M10	0.79	0.79	150
[redacted]																		
85	11,940	23,890	3.250	2.813	6.89	3.35	0.20	7.17	5.47	4.41	4.57	1.91	1.33	0.71	M10	0.98	0.98	150
[redacted]																		
100	25,660	51,330	3.875	3.438	8.11	3.94	0.24	8.82	6.50	5.35	5.63	2.17	1.48	1.10	M12	0.98	0.98	350
[redacted]																		
125	48,680	97,360	4.813	4.250	10.08	4.92	0.24	11.02	8.27	6.61	7.01	2.76	1.89	1.38	M16	1.38	1.38	700
[redacted]																		
160	88,510	177,020	3.000-6.188	2.563-5.750	12.83	6.30	0.24	13.78	10.43	8.86	9.69	3.72	2.56	1.69	M20	1.77	1.77	1,230
[redacted]																		

1) Standard material Nitrile rubber also known as Buna-N, Perbunan or (NBR) 78 Shore A, size 140 - 180 double tooth elastomers. For selection, please see page 52.
2) Inch bores machined to AGMA Class 1, Metric bores machined to H7

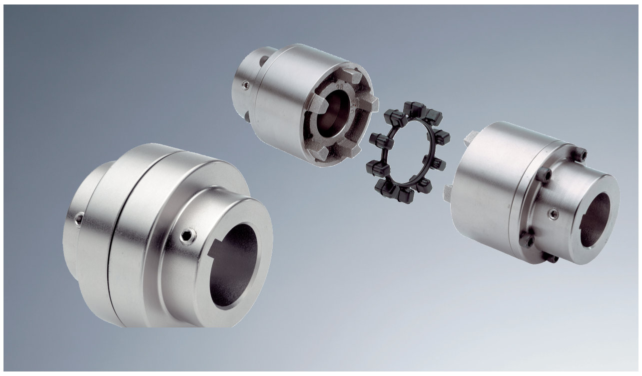
Design ADR Fastener Dimensions DIN EN ISO 4762–12.9

Size	M x l [mm]	Number z	Separation z x angle	D_4 [in]	T_A [lb-in] 3)	Size	M x l [mm]	Number z	Separation z x angle	D_4 [in]	T_A [lb-in] 3)
38	M6x16	5	5x72	2.44	89	**90**	M16x30	6	6x60	5.87	1,850
42	M8x16	5	5x72	2.72	220	**100**	M16x30	6	6x60	6.42	1,850
48	M8x20	6	6x60	3.07	220	**110**	M16x40	8	8x45	7.20	1,850
55	M8x20	6	6x60	3.46	220	**125**	M20x40	8	8x45	7.95	3,620
60	M8x20	6	6x60	3.86	220	**140**	M20x50	8	8x45	9.33	3,620
65	M10x20	6	6x60	4.09	430	**160**	M20x55	9	9x40	10.51	3,620
75	M10x25	6	6x60	4.72	430	**180**	M20x60	10	10x36	11.97	3,620
85	M12x25	6	6x60	5.43	760						

Order form:

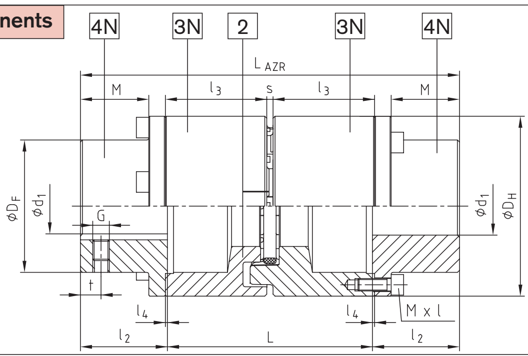
POLY-NORM® 65	ADR	$d_1 = \varnothing 55$	$d_2 = \varnothing 60$
Coupling size	Design	Bore part 1	Bore part 3D

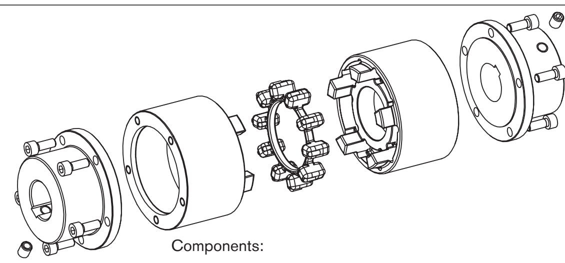
Design AZR



- Failsafe, reduced maintenance, blind assembly
- Torsionally flexible / vibration-damping
- Connects applications with large shaft gaps
- Element can by replaced while coupling is installed
- Drop-out spacer eliminates the need to move components (e.g. motor and pump)
- Ex approved according to EU standard 94/9/EC
- Installation instructions available at www.ktr.com

Components





Components:
Design AZR

2	=	Elastomer ring	(NBR 78 ShA)
3N	=	Driving flange	(EN-GJS-400-15)
4N	=	Coupling flange	(S355J2G3)

POLY-NORM® Design AZR

Size	Drop out center length L [in] *	Elastomer ring (p. 2) [1] torque [lb-in] T_{KN}	T_{Kmax}	Bore[2] Ø d_1 max	Dimensions [in] General L_{AZR}	l_2	l_3	s	l_4	D_H	D_F	M	Mxl	T_A [lb-in]	Thread for setscrew [2] G	t	Mass moment of inertia [3] [lb-in-sec²]	AZR Weight [3] [lbs]
28	3.94	350	700	1.188	6.69	1.38	1.95	0.12	0.04	2.72	1.81	1.02	M6x18	120	M5	0.28	0.0177	5.29
	5.51				8.27		2.74										0.0266	6.39
32	3.94	530	1,060	1.313	6.69	1.38	1.93	0.16	0.04	3.07	2.09	1.02	M6x18	120	M8	0.28	0.0372	7.06
	5.51				8.27		2.72										0.0549	8.60
38	3.94	790	1,590	1.500	7.24	1.65	1.93	0.16	0.04	3.43	2.44	1.30	M6x20	120	M8	0.39	0.0425	9.48
	5.51				8.82		2.72										0.0602	11.2
42	3.94	1,320	2,650	1.688	7.48	1.77	1.93	0.16	0.04	3.78	2.72	1.38	M6x20	120	M8	0.39	0.0832	11.2
	5.51				9.06		2.72										0.113	13.2
48	3.94	1,940	3,890	1.875	8.03	2.05	1.93	0.20	0.06	4.17	3.07	1.63	M6x20	120	M8	0.59	0.150	14.6
	5.51				9.61		2.72										0.191	16.5
	3.94				8.27		1.93										0.166	20.7
55	5.51	2,650	5,310	2.313	9.84	2.17	2.72	0.20	0.06	4.65	3.46	1.71	M8x25	300	M8	0.55	0.212	23.8
	7.09				11.42		3.50										0.205	26.9
	3.94				8.66		1.93										0.289	24.7
60	5.51	3,620	7,250	2.500	10.24	2.36	2.72	0.20	0.06	5.08	3.82	1.87	M8x25	300	M18	0.59	0.366	28.7
	7.09				11.81		3.50										0.446	32.2
	3.94				9.06		1.93										0.499	30.9
65	5.51	4,860	9,730	2.625	10.63	2.56	2.72	0.20	0.06	5.51	4.13	2.03	M8x25	300	M10	0.79	0.646	34.8
	7.09				12.20		3.50										0.791	38.6
	5.51				11.42		2.72										0.729	51.2
75	7.09	7,520	15,040	3.000	12.99	2.95	3.50	0.20	0.06	6.22	4.84	2.38	M10x30	610	M10	0.79	0.892	56.4
	9.84				15.75		4.88										1.18	65.7
	5.51				12.20		2.72										1.39	70.8
85	7.09	11,940	23,890	3.438	13.78	3.35	3.50	0.20	0.06	7.17	5.47	2.74	M10x30	610	M10	0.98	1.47	77.6
	9.84				16.54		4.88										1.60	89.7
	5.51				12.60		2.72										2.18	84.2
90	7.09	17,700	35,400	3.875	14.17	3.54	3.50	0.20	0.06	7.87	5.83	2.89	M12x35	1,060	M12	0.98	2.55	93.1
	9.84				16.93		4.88										3.16	109
	5.51				13.39		2.72										3.53	110
100	7.09	25,660	51,330	4.250	14.96	3.94	3.50	0.24	0.08	8.82	6.50	3.27	M12x35	1,060	M12	0.98	3.94	121
	9.84				17.72		4.88										4.84	139

1) Standard material Nitrile rubber also known as Buna-N, Perbunan or (NBR) 78 Shore A. For selection, please see page 52.
2) Inch bores machined to AGMA Class 1, Metric bores machined to H7
3) Calculated to minimum bore *For other extendable lengths (L=4.72/6.30/7.68/8.46) it is possible to combine two different driving flanges 3N with various lengths (for example: POLY-NORM® 85 drive flanges 5.51 and 9.84 results in a length of 7.68 in (5.51 in + 9.84 in = 15.35 in 15.35 in/2 = 7.68 in).

Order form:

POLY-NORM® 42	AZR	140	Ø38	Ø42
Coupling size	Design	Drop-out center lenght L	Bore	Bore