



MULTI MONT OCTA

Flexible Flange Coupling for Combustion Engines

www.reich-kupplungen.com



SIMPLY **POWERFUL.**





D2C – Designed to Customer

The guiding principle of Designed to Customer is the recipe for success behind REICH. In addition to the catalogue products, we supply our customers with couplings developed to their specific requirements. The designs are mainly based on modular components to provide effective and efficient customer solutions. The special nature of our close cooperation with our partners ranges from; consulting, development, design, manufacture and integration to existing environments, to customer-specific production, logistics concepts and after-sales service - worldwide.

This customer-oriented concept applies to both standard products and production in small batch sizes.

The company policy at REICH embraces, first and foremost, principles such as customer satisfaction, flexibility, quality, prompt delivery and adaptability to the requirements of our customers.

REICH provides you with not only a coupling, but a solution:

Designed to Customer – SIMPLY **POWERFUL**.

D2C
Designed to Customer



MULTI MONT OCTA

Contents

Coupling Information

- 04** General Technical Description

- 05** Advantages

- 06** General Technical Data

- 07** Materials

- 08** Selection of the Coupling Size

- 09** Mounting Instructions/Mounting Examples

Dimension Tables

- 10** Standard Types with Flanges acc. to SAE J 620

MULTI MONT OCTA

General Technical Description

MULTI MONT OCTA

Flexible Flange Coupling for Combustion Engines

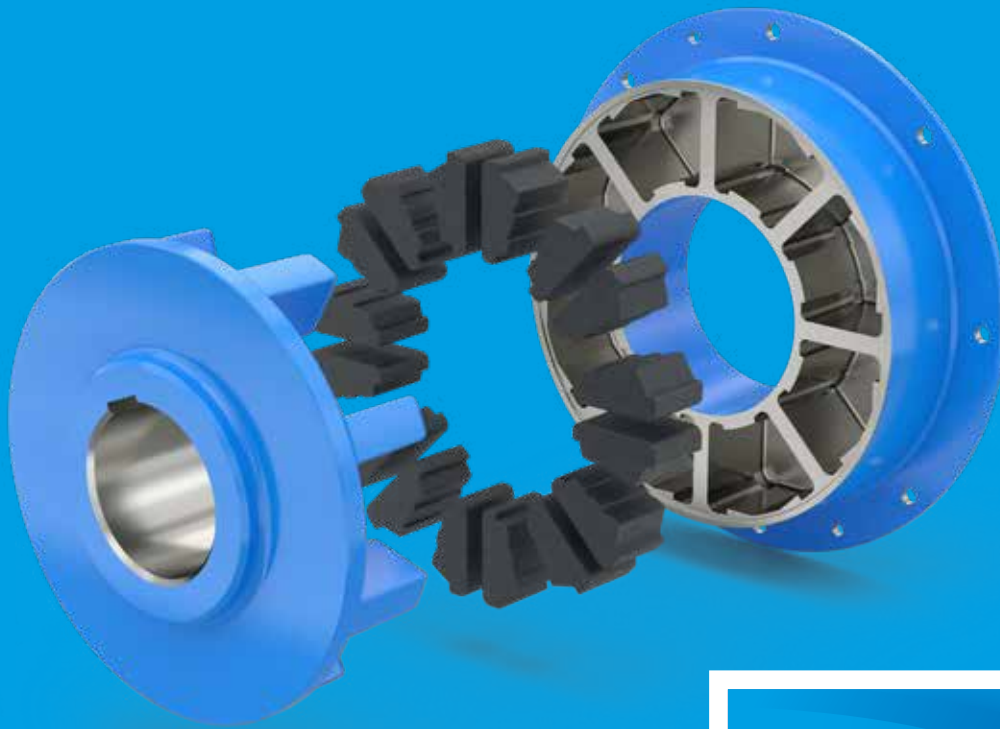
The MULTI MONT OCTA flywheel coupling (short form: MMO) is designed specifically as a torsionally flexible drive coupling for units with internal combustion engines. It is used to dampen torsional vibrations and to compensate for misalignments.

The series comprises 6 different sizes covering a nominal torque range from 340 Nm to 20 000 Nm.

MULTI MONT OCTA flange couplings give positive torque transmission with rubber elements under compression. These rubber elements can be supplied in different Shore hardnesses for optimizing the torsional vibration range. Any occurring torsional vibrations and peak torques are dampened and absorbed efficiently.

Overload protection

The manufacture of the coupling flange as a composite casting results in a positive connection between the steel plate flange and the cast-on aluminium coupling part, which acts as a rated break point. This disconnects the power transmission if the coupling is overloaded far beyond the permissible maximum torque. Thereby protecting important system components from possible damage.



MULTI MONT OCTA

Nominal torques from 340 Nm to 20 000 Nm

MULTI MONT OCTA

Advantages

Salient features and advantages of the MULTI MONT OCTA flange coupling:

- Efficient torsional vibration and peak torque dampening and absorbing capability
- Ease of assembly thanks to the plug-in type design
- Compensation of axial, radial and angular displacements
- Coupling hub of spheroidal cast iron as a standard
- Fail safe design and high load carrying capability, yet with overload breakage protection due to an existing rated break point
- Simple, compact coupling design

MULTI MONT OCTA

General Technical Data



Standard Types

Coupling size	Element version	Nominal torque T_{KN} [Nm]	Maximum torque $T_{K max}$ [Nm]	Continuous fatigue torque $T_{KW (10 Hz)}$ [Nm]	Dynamic torsional stiffness ¹⁾				Maximum speed [min ⁻¹]
					$C_{T dyn}$ [Nm/rad]				
					0.25 T_{KN}	0.5 T_{KN}	0.75 T_{KN}	1.0 T_{KN}	
MMO-65	WP	340	1300	170	5250	5750	8000	10000	5500
	NP	430	1500	200	6500	9100	12500	15700	
	SP	650	1940	325	8750	10600	18000	25500	
MMO-125	WP	600	2200	300	11000	11500	15000	18500	4900
	NP	840	2900	390	17500	21000	29400	38800	
	SP	1250	3750	625	20800	34200	45700	60000	
MMO-260	WP	1300	4800	650	23500	31000	35000	41000	4200
	NP	1700	5900	810	30000	36000	47500	59000	
	SP	2600	7800	1300	62000	71500	95000	110000	
MMO-500	WP	2500	9000	1250	54000	56000	93000	115000	3500
	NP	3300	11500	1600	69000	80000	115000	152000	
	SP	5000	15000	2500	103000	120000	183000	214000	
MMO-1100	WP	5600	22000	2800	80000	90000	156000	228000	2600
	NP	7300	25000	3100	115000	154000	190000	260000	
	SP	11000	33000	5000	160000	200000	300000	390000	
MMO-2000	WP	10000	40000	5000	160000	180000	260000	340000	2400
	NP	13000	45000	6300	248000	300000	455000	600000	
	SP	20000	60000	10000	332000	460000	620000	840000	

i 1) The specified dynamic torsional stiffness values take into account a temperature of +60 °C to +80 °C in the immediate vicinity of the coupling

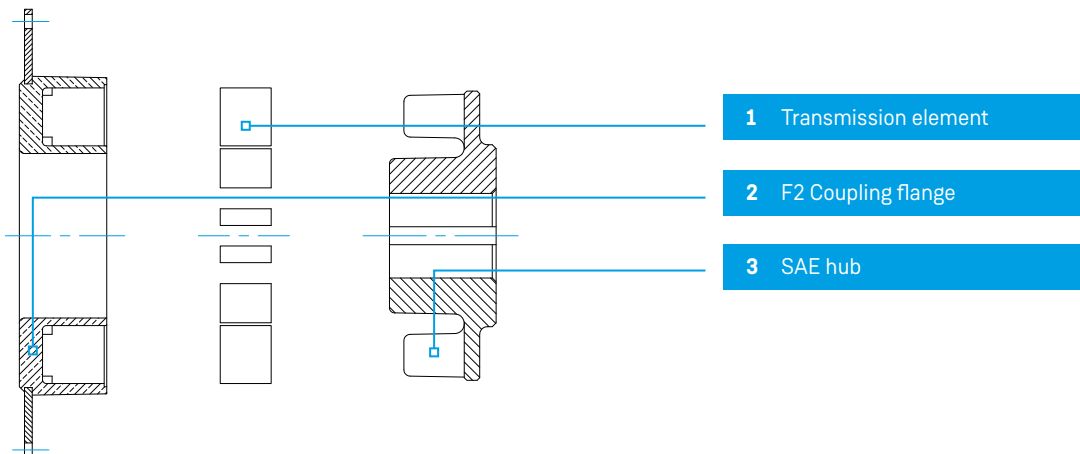
Shore hardness Sh A and relative damping Ψ

Element version	Sh A	Ψ
WP	55	0.8 - 0.9
NP	65	0.9 - 1.0
SP	75	1.0 - 1.1

i Due to the physical properties of the rubber material, the measurable rubber hardness is subject to a variation that is defined as $\pm 5^\circ$ Shore A according to DIN 53505. However, this variation is minimized by our own rubber production.

MULTI MONT OCTA

Materials



Material Overview

Part No.	Designation	Materials
1	Transmission element	Perbunan NBR (16 pieces = 1 set)
2	F2 Coupling flange	Aluminium gravity die casting, steel plate St 37
3	SAE hub	Spheroidal cast iron GGG 40

i The flange for size MMO-2000 is made of GGG 40

In the design with finished bore, the required bore and keyway dimensions must be specified

Technical Note

The technical data applies only to the complete coupling or the corresponding coupling elements. It is the customer's/user's responsibility to ensure there are no inadmissible loads acting on any of the components. In particular, existing connections, e.g. bolted connections, must be checked with regard to the torques to be transmitted. If necessary, further measures, such as additional reinforcement with pins, may be necessary. It is the customer's/user's responsibility to make sure the dimensioning of the shaft and keyed or other connection, e.g. shrinking or clamping connection,

is correct. All components that can rust are protected against corrosion as standard.

REICH have an extensive range of couplings and coupling systems to cover nearly every drive configuration. Customized solutions can be developed and manufactured even in small batches or as prototypes. In addition calculation programs are available for all necessary dimensioning.

MULTI MONT OCTA

Selection of the Coupling Size

The coupling size to be used in conjunction with combustion engines shall be dimensioned and selected taking torsional vibration into consideration. For a rough estimate based on the engine drive torque T_{AN} , a general safety factor of $S = 1.3 - 1.5$ should be allowed for.

In selecting the coupling size the following should be satisfied:

- The **nominal torque of the coupling T_{KN}** must be taken into account at every temperature and operating load of the coupling, whilst observing the service factors S (e.g. temperature factor S_t) shall be at least equal to the maximum nominal torque on the drive side T_{AN} ; the temperature in the immediate vicinity of the coupling must be taken into account.

$$T_{KN} \geq T_{AN} \cdot S_t$$

- The **nominal torque on the drive side T_{AN}** is calculated with the driving power P_{AN} and the coupling speed n_{AN} .

$$T_{AN} [\text{Nm}] = 9550 \frac{P_{AN} [\text{kW}]}{n_{AN} [\text{min}^{-1}]}$$

- The **temperature factor S_t** allows for the decreasing load capacity of the coupling when affected by elevated ambient temperatures in the vicinity of the coupling.

Temperature t	60 °C	70 °C	80 °C	90 °C
S_t	1.0	1.2	1.4	1.6

- For all temperatures in the immediate vicinity of the coupling, the **maximum torque capacity of the coupling $T_{K \max}$** must be at least as high as the maximum torque T_{\max} occurring during operation.

$$T_{K \max} \geq T_{\max}$$

- A continuous torsional vibration analysis to verify the coupling selection should confirm that the permissible **continuous fatigue torque T_{KW}** is at least equal to the highest fatigue torque T_W under reversing stresses encountered throughout the operating speed range while taking into account the temperature and frequency.

$$T_{KW} (10 \text{ Hz}) \geq T_W \cdot S_t \cdot S_f$$

- The **frequency factor S_f** allows for the frequency dependence of the permissible continuous fatigue torque under reversing stresses $T_{KW} (10 \text{ Hz})$ with an operating frequency f_x .

$$S_f = \sqrt{\frac{f_x}{10}}$$

The coupling size selection should be verified for the permissible coupling load by a torsional vibration analysis, which will be conducted by us on request. For demanding applications in terms of torsional vibration or drives with 1-3 cylinder diesel engines we recommend using our highly torsionally flexible ARCUSAFLEX® flange couplings.

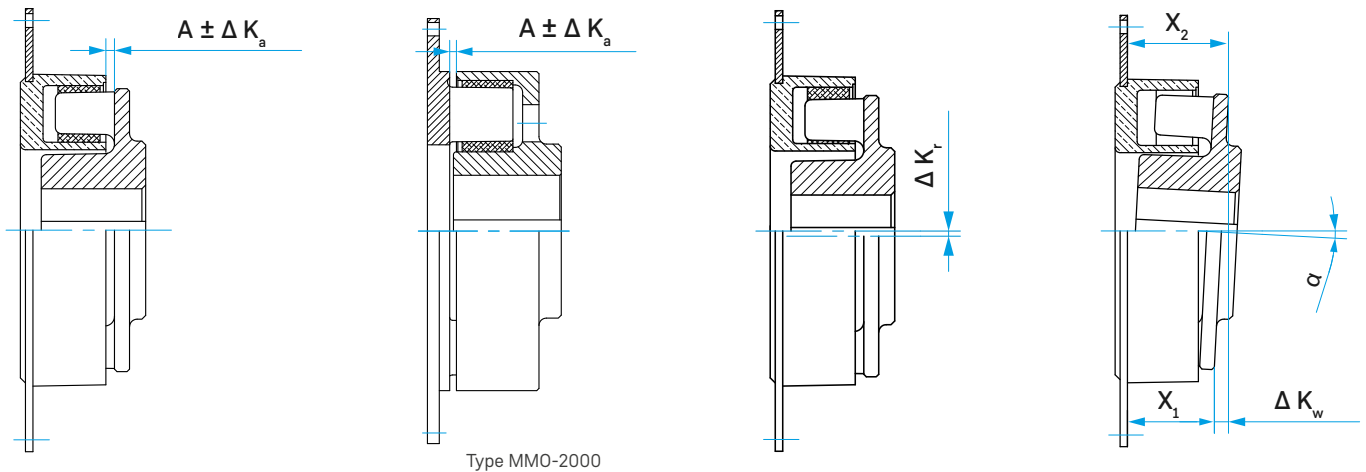
MULTI MONT OCTA

Mounting Instructions

The permissible displacement tolerances¹⁾ should not be exceeded in order to ensure proper operation of the MULTI MONT OCTA coupling. When used with flange mounted generators, the housing allows co-axial assembly of the coupling so that the only dimension

to be checked is the distance A between the coupling flange and the hub flange.

Caution! In the case of improper installation (too narrow) increased axial forces are generated.

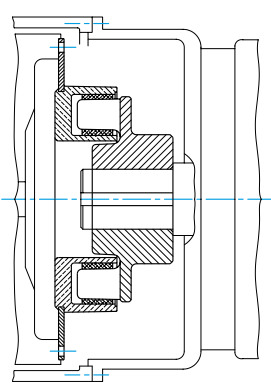


Coupling details

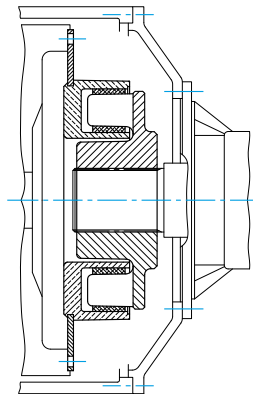
Size			MMO-65	MMO-125	MMO-260	MMO-500	MMO-1100	MMO-2000
Distance A	$\pm \Delta K_a$	[mm]	5±1	6±1	6±1	7±1.5	8±2	9±2
Max. permissible radial displacement	ΔK_r	[mm]	0.4	0.4	0.4	0.5	0.5	0.6
Max. permissible angular displacement	ΔK_w	[mm]	0.4	0.5	0.6	0.7	0.8	1.0

ⁱ 1) Reference values for $n = 1500 \text{ min}^{-1}$

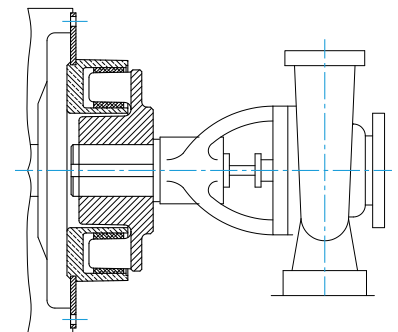
MULTI MONT OCTA flange coupling mounting examples



Mounted between diesel engine and generator.



Mounted between diesel engine and hydraulic pump.



MMO couplings are available for diesel and gas engines, for drive ratings up to 2100 kW at up to 1500 min^{-1} . For higher drive ratings, our ARCUSAFLEX® couplings are available.

MULTI MONT OCTA

Standard designs with flanges according to SAE J 620

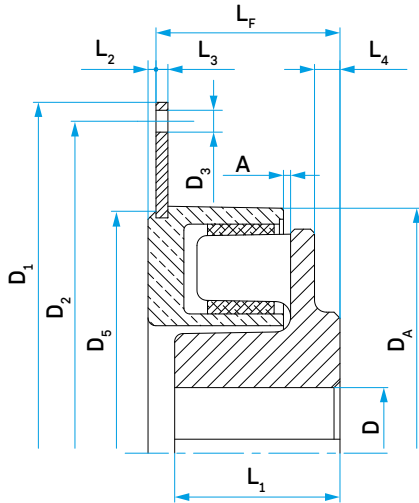


Fig. 1

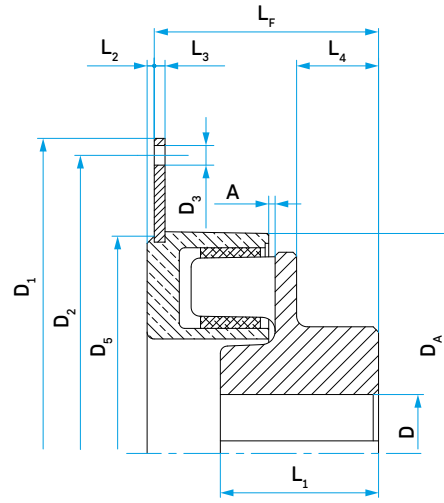


Fig. 2

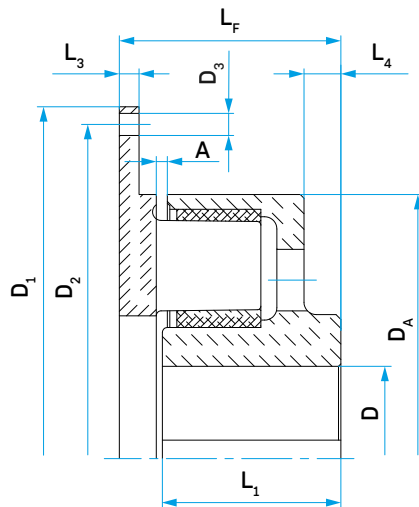


Fig. 3

Ordering example

Coupling size	Element version according to "General Technical Data"	Flange version	Flange connection, size SAE J 620	Coupling mounting length L_F in mm
---------------	---	----------------	-----------------------------------	--------------------------------------

MMO-125	NP.	F2.	14.	92
---------	-----	-----	-----	----

Coupling designation: MMO-125.NP.F2.14.92

Coupling details

Coupling size	Standard flanges							Standard hubs								
	SAE Size	D _A	D ₅	L ₂	L ₃	m [kg]	J ₁ [kgm ²]	Fig.	A	L _F	D		L ₁	L ₄	m [kg]	J ₂ [kgm ²]
											pilot.	max.				
MMO-65 *) F2	6.5	170.0	188	4	6	1.6	0.012	1 1 2	5±1	58.0 73.0 135.0	unbored, precentered	55 60 60	45 60 96	10 25 87	3.2 3.9 5.4	0.007 0.008 0.009
	7.5					2.1	0.016									
	8					2.5	0.023									
	10					3.6	0.047									
	11½					4.6	0.073									
MMO-125 *) F2	8	194.0	213	4	6	3.1	0.033	1 1 2 2	6±1	58.0 73.0 92.4 106.6 150.0		60	60	-	4.6	0.014
	10					4.1	0.055					65	75	14	5.8	0.015
	11½					5.0	0.079					75	71	33	6.3	0.017
	14					8.7	0.230					75	85	47	7.2	0.018
						80	83					12	10.6	0.048		
MMO-260 *) F2	11½	246.0	243	4	6	6.0	0.099	1 1 2	6±1	92.4 106.6 135.0		80	83	26	10.7	0.048
	14					9.5	0.247					85	90	69	12.0	0.051
MMO-500 *) F2	11½	291.0	292	5	6	7.9	0.146	1 1 2	7±1.5	92.4 106.6 150.0		95	95	-	16.5	0.112
	14					11.0	0.293					95	95	14	16.5	0.112
MMO-1100 *) F2	11½	358.5	-	-	10	19.0	0.510	1 2	- 8±2	92.4 ¹⁾ 150.0 ¹⁾		60 60	125 130	105 140	- 53	34.0 40.7
	14	373.0	397	14	6	12.3	0.431									
	18	373.0	403	14	6	17.0	0.704									
	21	373.0	403	14	6	21.5	1.161									
MMO-2000 *) F2	18	429.0	-	-	16	46.1	1.780	3	9±2	180.0	70	150	145	30	63.0	1.410
	21					57.9	2.930									

i *) Element version according to "General Technical Data"

1) With SAE 11½ mounting length L_F 106.6 mm or 164 mm

Flange connection dimensions to SAE J 620

Flanges and hubs of identical sizes can be combined for the respective coupling mounting length L_F.

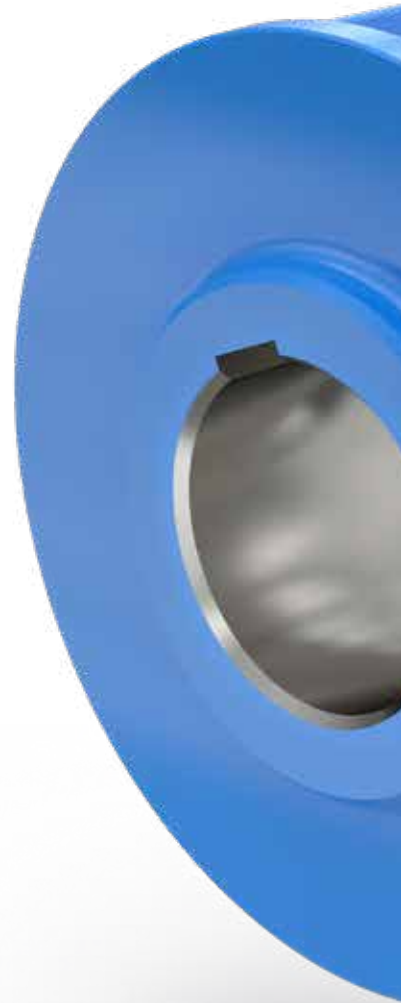
Other flange and length dimensions on request.

Nominal size	D ₁	D ₂	Z	D ₃
6.5	215.9	200.0	6	8.5
7.5	241.3	222.5	8	8.5
8	263.5	244.5	6	11.0
10	314.4	295.3	8	11.0
11½	352.4	333.4	8	11.0
14	466.7	438.2	8	13.0
16	517.5	489.0	8	13.0
18	571.5	542.9	6	17.0
21	673.1	641.4	12	17.0



MULTI MONT OCTA

SIMPLY **POWERFUL.** ————— □



Industrial solutions:

- ⚡ Power generation
- 🚛 Mobile applications
- 🧠 Test benches
- ⚙️ Pumps & compressors
- ⚙️ Industry
- ⚓ Ship & port engineering

Headquarter:

Dipl.-Ing. Herwarth Reich GmbH
Vierhausstrasse 53 · 44807 Bochum

☎ +49 234 95916-0

✉ mail@reich-kupplungen.com

🌐 www.reich-kupplungen.com

Copyright ISO 16016 to be observed:

The reproduction, distribution and utilisation of this document as well as the communication of its contents to others without explicit authorisation is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or design. © REICH - Dipl.- Ing. Herwarth Reich GmbH

March 2020 edition

The present MULTI MONT OCTA catalogue edition renders parts of the previous MULTI MONT OCTA catalogues obsolete. All dimensions in millimetres. We reserve the right to change dimensions and/or design without prior notice. Texts and illustrations, dimensional and performance data have been compiled with the utmost care. There is no guarantee, however, that the information is accurate; in particular, there is no guarantee that products will match the illustrations in terms of technology, colour, shape and configuration or that the products will correspond to the proportions of the illustrations. We also reserve the right to make changes due to printing errors or mistakes.