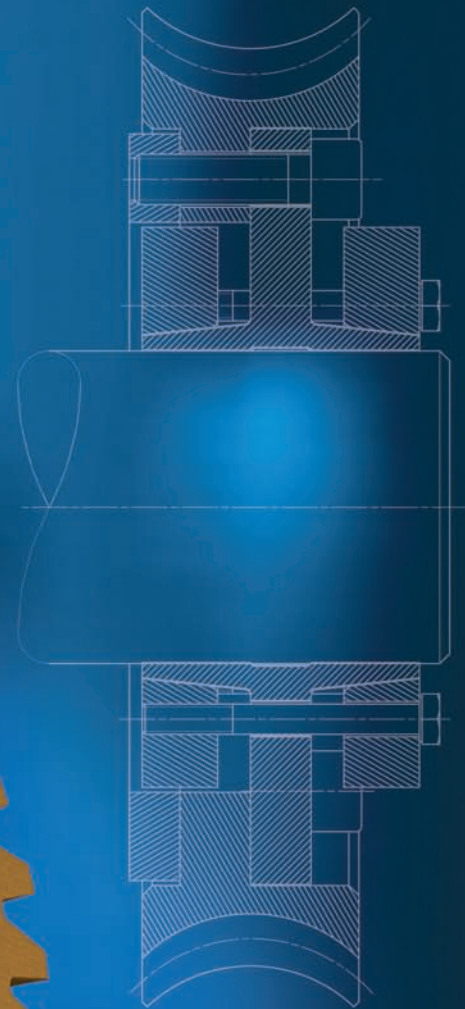


# SHRINK DISCS RIGID COUPLINGS



we connect **e**motions

Locking Assemblies ■ Mini ■ Shrink Discs ■ Couplings



[www.mav.it](http://www.mav.it)

## our company

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MAV is an Italian company, world renowned for its creativity and ethics. Established in 1989, MAV has been rapidly building a reputation for its professionalism, for its reliable and comprehensive service and for its wide product range. MAV is located in Bosentino, Northern Italy, at the foot of the Dolomites, one of the most beautiful areas of the Alps.

## our mission

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Just as our products connect mechanical components in motion, our purpose is to connect our partners through their goals, feelings, wishes and emotions. Together with our partners we want to raise the standard of quality, safety and environmental protection in our field.

## our vision

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We see the market as a huge mosaic. The single parts of this mosaic are manufacturers, suppliers and customers. All together we form a global partnership sharing common goals and seeking mutual benefits. We like to see MAV as the center of the mosaic, a strong reference for all the other parts.

*Sandro Zamboni (MAV S.p.A. President)*

**COMPANY  
WITH QUALITY SYSTEM  
CERTIFIED BY DNV  
=ISO 9001/2000=**

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This catalogue contains complete information for the MAV Shrink Discs and Rigid Couplings Standard Series.

The following pages will help you to find the perfect solution for your application.

Should you require assistance with an application, please feel free to contact MAV technical support.

Our engineers will be pleased to provide any information you might need.

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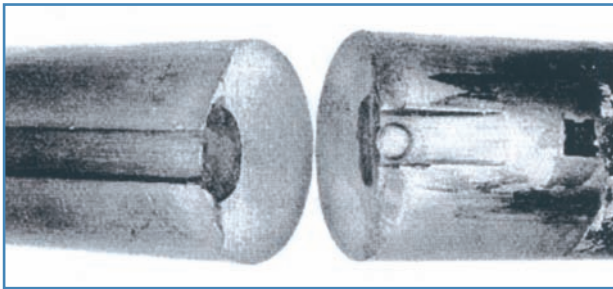
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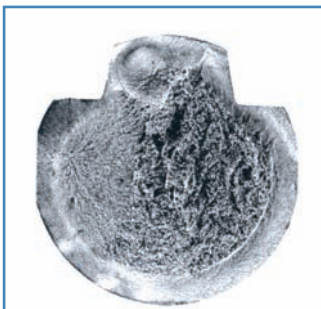


# Shaft-Hub Connections

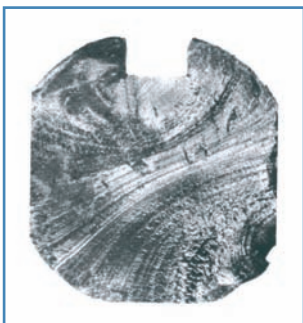
## Traditional Methods



**Fig. 1:** shaft failure due to fatigue crack (heat treated steel C45)



**Fig. 2:** fatigue problem caused by torsion



**Fig. 3:** typical fatigue fracture

Keyway and splined locking systems show important disadvantages, in particular under overload and frequent torque reversal conditions. Connected parts undergo micro movements which cause them damage. The notch of keyway seat is a stress concentrator which reduces the fatigue strength. The figures show some fatigue failures fractographs of notched shafts (courtesy of ASM International, Metals Handbook, vol 9).

Keyways and splines are eliminated by forced fit systems (pressing, heating), where high radial pressures are generated due to shaft - hub interference. A backlash free coupling is obtained. In addition, sections of shafts and bearings can be reduced and, as a consequence, also costs. But this kind of connection shows difficulties during the mounting-dismantling steps.

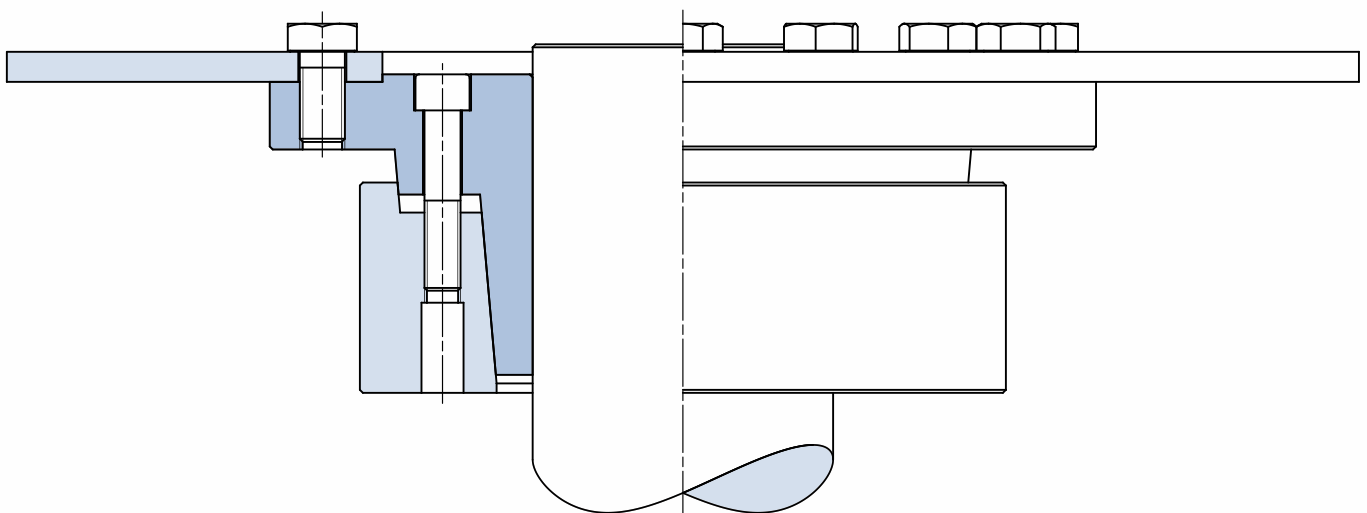
# Shaft-Hub Connections

## The MAV System

MAV Locking Devices meet both the advantages of forced fit systems and simplified installation-removal. It is based on the wedge principle: the axial load of the screws generates through the tapers a high radial force that locks the parts by friction.

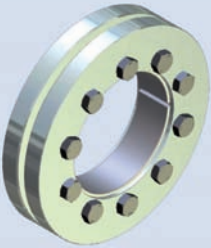
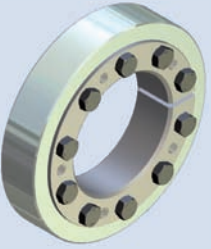
### Main features of MAV Locking Devices:

- shaft - locking device - hub tolerances are sufficient for easy mounting and correct positioning
- high manufacturing precision permits close geometrical tolerances, leading to a well balanced coupling, also for high speed conditions
- high pressures let high torque to be transmitted, also in addition with bending moment; fretting corrosion is eliminated
- absence of notches results in enhanced static and dynamical strength, leading to lighter and more cost-effective designs
- the large variety of standard units and the possibility of designing and manufacturing customized units allow MAV to find the best solution for any kind of specifications



# MAV Shrink Discs

## Main Characteristics

MAV SERIES		torque capacity	bending capacity	self-locking	
	<b>MAV2008</b>	medium	medium	no	also available in SPLIT and HALF HC & HT designs.
	<b>MAV2108</b>	low	medium	no	
	<b>MAV2208</b>	high	medium	no	
	<b>MAV3008</b> <b>MAV3009</b>	medium	low	no	
	<b>MAV3108</b>	low	low	no	
	<b>MAV3208</b> <b>MAV3209</b>	high	low	no	

MAV has more than 20 years of experience in the power transmission field. These years have been characterized by a deep collaboration with Customers. Thanks to this enrichment, our technical department can now provide innovative and alternative solutions for the various problems and applications.

Another instrument that leads to an improvement of the performances of MAV's products is the FEM analysis, with verifications that allow increase in safety and strength.

Checking the static and dynamic stress of a part through the FEM analysis allow an improvement in efficiency during production. FEM is based on advanced technologies such as the 100 CPU cluster computing and ultimate software.

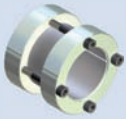
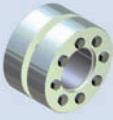

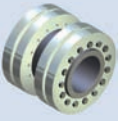
MAV is also able to design and produce special products according to Customer's specifications, using also different types of materials (aluminium, stainless steel, copper, etc.) or surface treatments (chemical or galvanic deposition, special paintings, etc.).

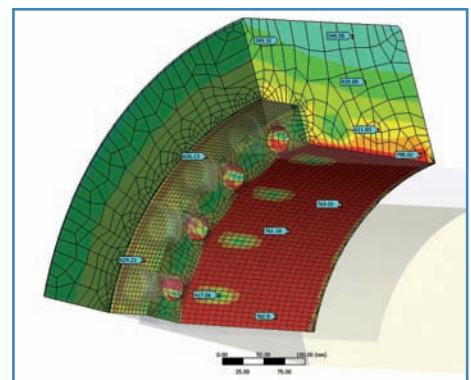
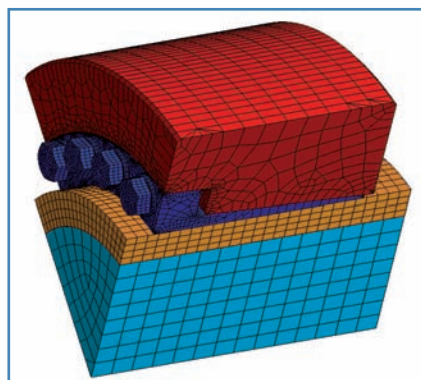
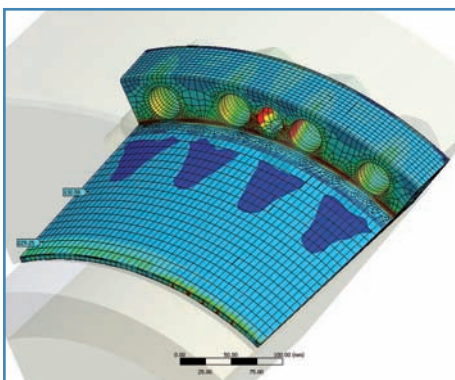
For further informations or technical and commercial inquiries please feel free to visit our web-site [www.mav.it](http://www.mav.it) or contact us at the following numbers:

tel +39 0461 845151 – fax +39 0461 845150

# MAV Rigid Shaft Couplings

## Main Characteristics

MAV SERIES		torque capacity	bending capacity	self-locking
	MAV1004	low	-	yes
	MAV1204	medium	medium	no
	MAV FC2008	medium	medium	no
	MAV SC2008	medium	medium	no
	MAV SC2208	high	medium	no





## Selection

MAV shrink discs are external locking devices, which provide a rigid, zero-backlash frictional connection between hollow shaft (hub) and shaft (example: hollow shaft gearboxes). Shrink discs are installed on the hub, which is mounted on the connected shaft.

MAV rigid shaft couplings are external locking devices, which provide a rigid, zero-backlash frictional connection between two shafts.

Shrink discs and rigid shaft couplings are well suited to transmit torque, thrust loads and bending moments, separately or simultaneously. The locking devices act as interference fits, but the difficulties of installation and removal of press or shrink fits are eliminated.

Performances listed in this catalogue are calculated without safety factor. The user must consider the specific safety factor, which depends on each application.

The following criteria are used for the selection of the right unit. The selection should be also based on specific requirements, as dimensional restrictions, precision of the connection, and others.

## Torque

Where **T** is the peak torque, select a unit where:

**Mt > T**, where **Mt** = torque capacity.

Torque capacities for shrink discs MAV 2008 – MAV 2108 – MAV 2208 HALF HC and HT =  $Mt / 2$ .

In case of shrink disc connection, transmissible torque decreases if bored shafts are used.

In case of shrink disc connection, transmissible torque varies if shaft / hub clearance is different from listed values.

## Combined loads

When the following loads apply:

**T** = peak torque

**B** = peak bending moment

**F** = peak thrust load

Calculate a resultant torque, according to:

$$M_{tc} = \sqrt{T^2 + \left(F \cdot \frac{d}{2}\right)^2 + (2 \cdot B)^2}$$

where **d** = shaft diameter

The selected unit has to meet both requirements:

**Mt > Mtc**

**Mb > B**, where **Mb** = bending capacity

**Mb** depends on each application. Consult our Technical Dept. for specific information.

Torque capacities for shrink discs MAV 2008 – MAV 2108 – MAV 2208 HALF HC and HT =  $Mt / 2$ .

In case of shrink disc connection, transmissible torque decreases if bored shafts are used.

In case of shrink disc connection, transmissible torque varies if shaft / hub clearance is different from listed values.



## Shaft and hollow shaft (hub) verification

Size and material of shaft and hollow shaft (hub) must be selected in order to resist the stress generated by the locking device and by the applied loads.

The following criteria are valid by considering only the contact pressures exerted by the locking device. The verification of connected components is based on thick walled cylinder theory.

- External hollow shaft (hub) - shrink disc connection. The hub must be considered as a thick walled cylinder, subject to external pressure  $P_h$  and internal pressure  $P_s$ .
- Solid shaft – shrink disc or rigid shaft coupling connection. The material yield strength must be greater than shaft contact pressure  $P_s$ .
- Internal hollow shaft - shrink disc or rigid shaft coupling connection. The hollow shaft must be considered as a thick walled cylinder, subject to external shaft contact pressure  $P_s$ .

The material of hollow shaft (hub) for shrink disc connection should have a minimum yield strength of 400 N/mm<sup>2</sup>. Anyway, the designer of each application is responsible for correct sizing and material choice of connected components.

## Material

The stress applied on shrink discs and rigid shaft couplings requires carbon and heat treated alloy steel. Shrink disc series MAV 2008 – MAV 2108 – MAV 2208 feature zinc plated outer collars (all sizes) and are assembled with an O-Ring between them (from size  $d = 140$  mm and above).

For oxidizing or corrosive operating conditions, stainless steel (reduced performances) as well as surface coated units are available (zinc plated, nickel plated, phosphate treated).

## Lubrication

MAV locking devices are supplied already lubricated. All shrink discs series and rigid shaft coupling series MAV 1204 are greased on screws and tapers with molybdenum disulfide based lubricants (friction coefficients:  $\mu = 0.05$  for tapers;  $\mu = 0.10$  for screws). Rigid shaft coupling series MAV 1004 is lubricated with ordinary machine oil (friction coefficient:  $\mu = 0.12$ ). Detailed lubricant specifications are available on installation instructions (see our website [www.mav.it](http://www.mav.it) or send a request to our Technical Dept.).

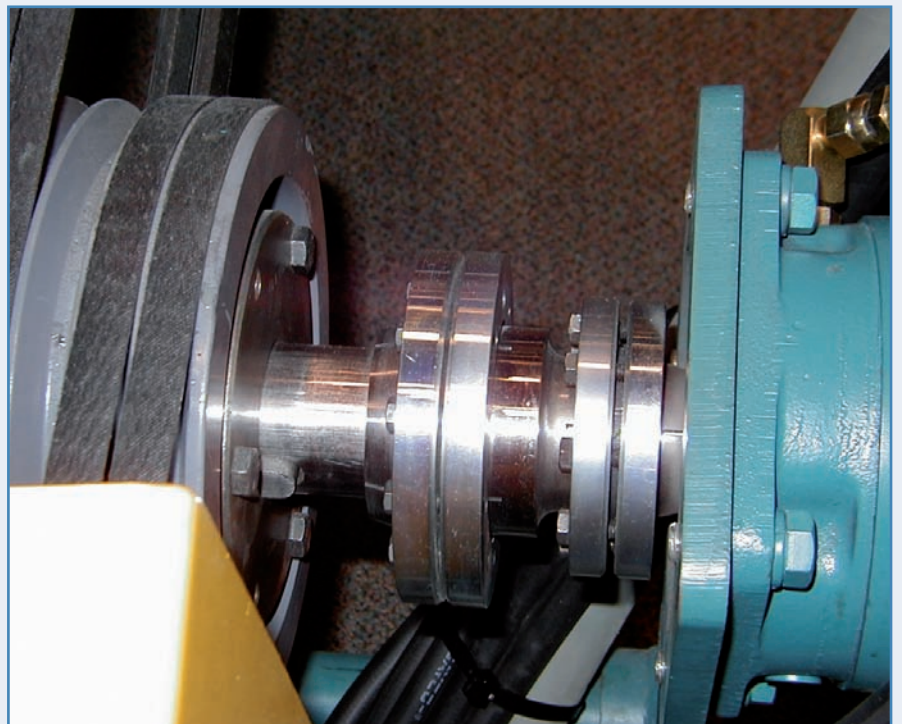
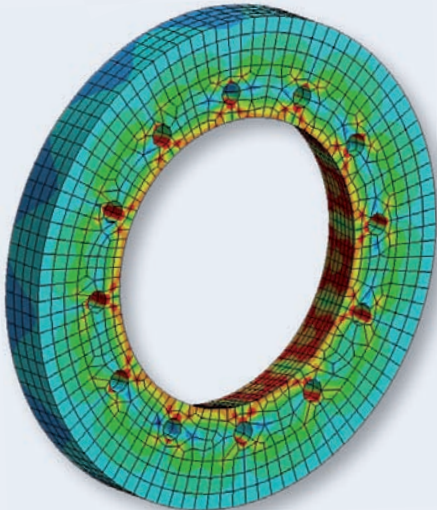
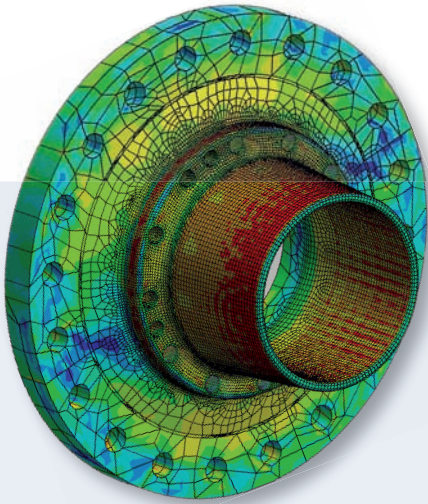
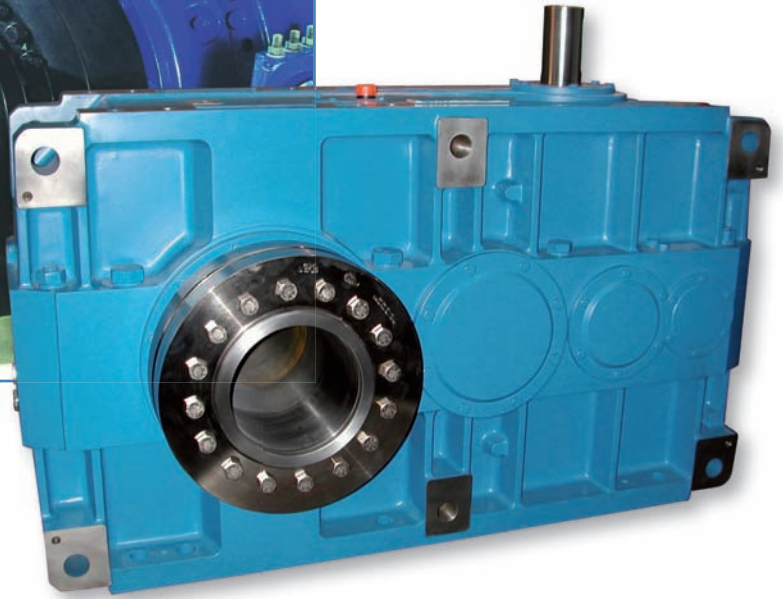
If locking devices are made of stainless steel, the user is kindly asked to specify whether molybdenum disulfide is admitted or not for the specific application. If not admitted, screws and tapers will be lubricated with food grade oil, quality H-1 according to FDA.

- Connection with shrink disc (all series), flange coupling MAV FC2008, sleeve couplings MAV SC2008 and MAV SC2208: hollow shaft (hub) – shaft fitting surface must be free of any lubricant and dry (friction coefficient:  $\mu = 0.15$ ).
- Connection with rigid shaft couplings MAV 1204 and MAV 1004: shaft – coupling fitting surface must be oiled (friction coefficient:  $\mu = 0.12$ ).

## Temperature influence

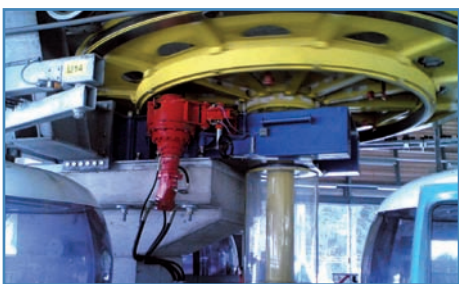
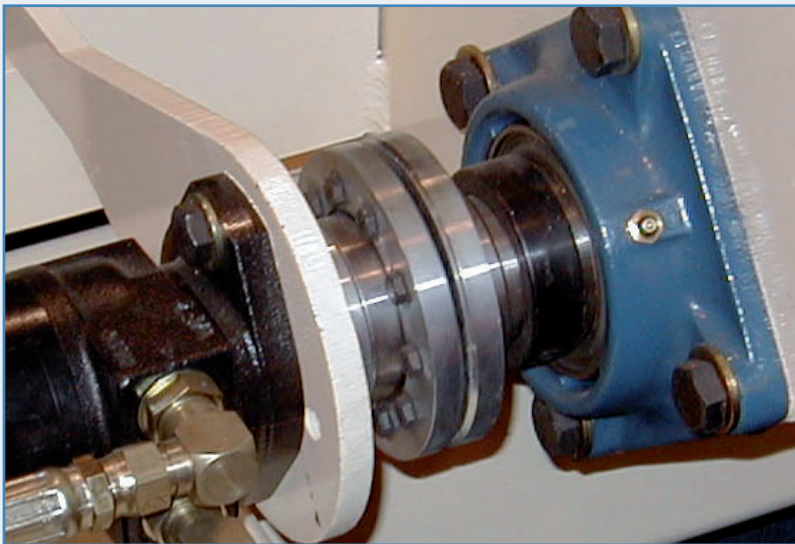
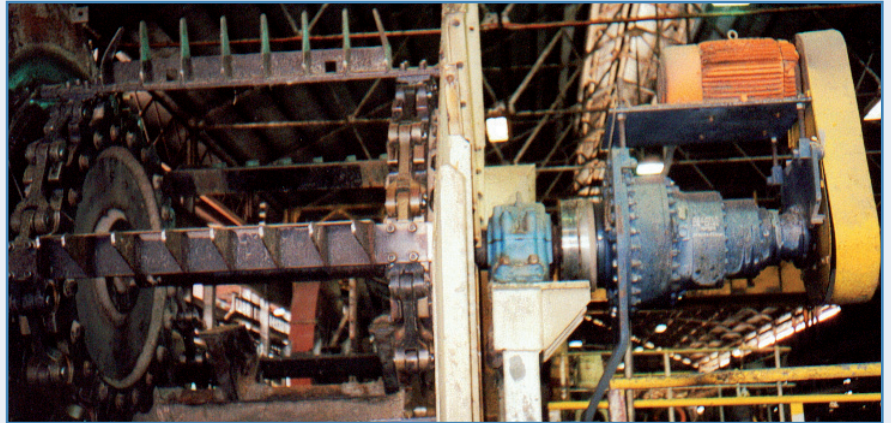
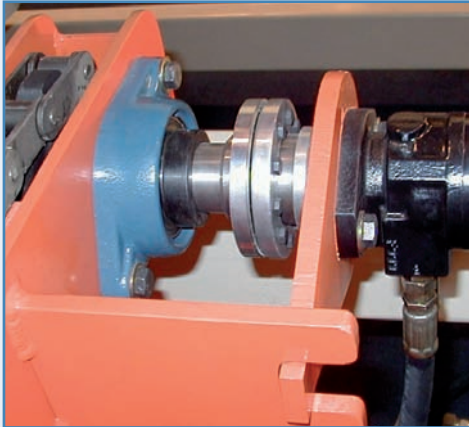
Working temperature ranges from  $-20^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$ . Locking devices work correctly as long as temperature of connected components and locking units is approximately the same. Different materials must be used if the connection works in temperatures out of the above mentioned range.

# Applications

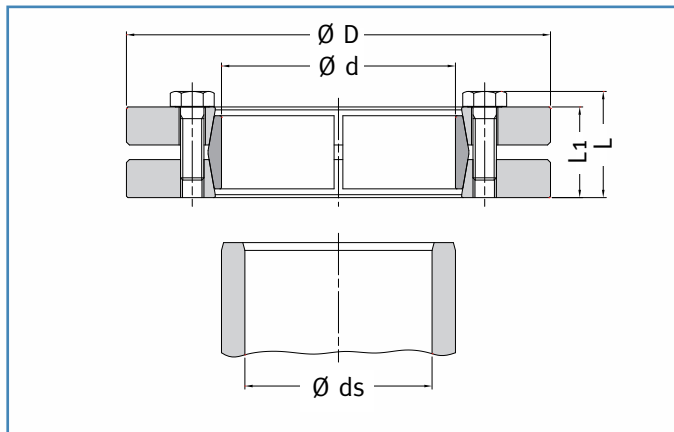




# Applications







Example of order: MAV 2008 68 x 115

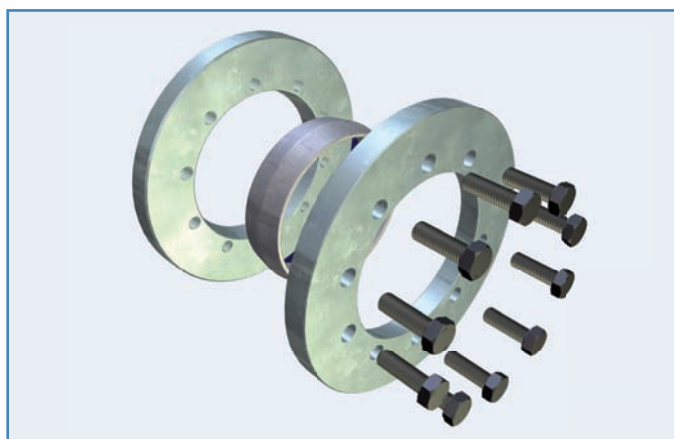
## Composition

- Slotted inner ring
- Front outer ring
- Rear outer ring
- Set of hexagonal head cap screws, grade 10.9 (size < M6 of grade 8.8)

## Features

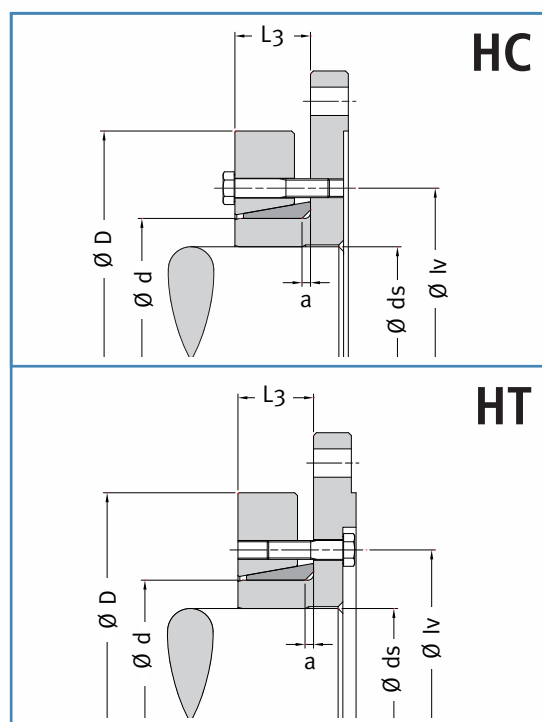
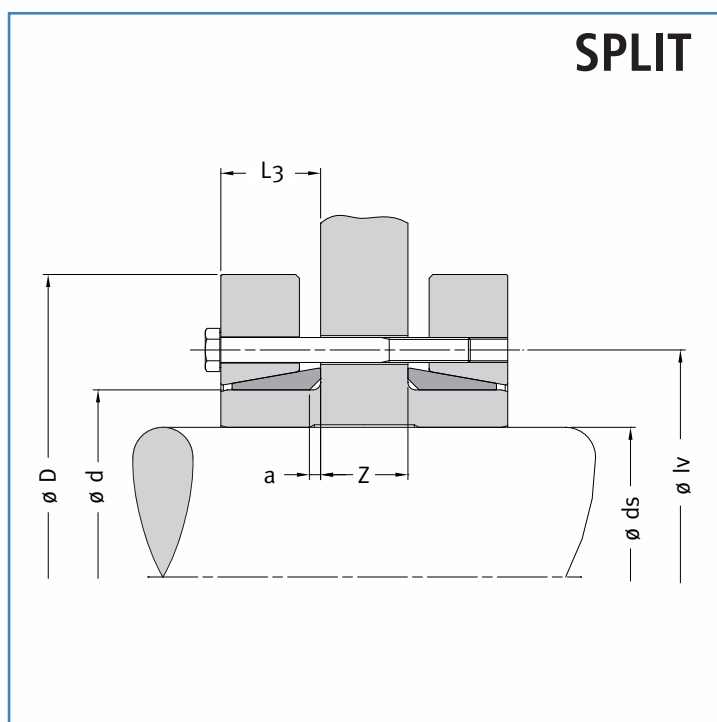
- External locking device for hollow shaft (hub) - shaft connection
- Three-part design
- Self-releasing tapers, greased with MoS<sub>2</sub> ( $\mu = 0.05$ )
- Screws greased with MoS<sub>2</sub> ( $\mu = 0.10$ )
- Zinc plated outer rings
- O-Ring between outer rings from size  $d = 140$  mm and above
- MAV 2008: standard series, medium capacity
- MAV 2108: light series, low capacity
- MAV 2208: heavy series, high capacity
- SPLIT and HALF HC and HT versions also available (for HALF versions, performances are reduced of 50%)
- Tolerances of shaft and hub bore: see table
- Tolerance of hub outer diameter: h8
- Surface finish of shaft and hub  $Ra < 3.2 \mu\text{m}$
- Shaft - hub bore contact surface grease-free and dry ( $\mu = 0.15$ )

Shaft Diameter ds		ISO Tollerances	Max Clearance
from	to		
6	10	H6 - j6	0,011
11	18		0,014
19	30		0,017
31	50	H6 - h6	0,032
51	80	H6 - g6	0,048
81	120	H7 - g6	0,069
121	180		0,079
181	250		0,09
251	315		0,101
316	400		0,111
401	500		0,123





DIMENSIONS										SCREWS			FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	L2 mm	L3 mm	lv mm	a x 45° mm	n.	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
10													36	7	154	335	0,10
11	14	x	38	18,5	15,0	6,0	8,7	25	1,2	3	M 5	4	54	10	191	335	
12													82	14	243	335	
12													38	6	93	244	0,10
13	16	x	41	20,5	17,0	7,0	9,7	27	1,2	3	M 5	4	65	10	136	244	
14													97	14	175	244	
14													96	14	172	289	0,14
15	18	x	44	20,5	17,0	7,0	9,7	29	1,2	4	M 5	4	130	17	205	289	
16													170	21	235	289	
15													130	17	205	325	0,15
16	20	x	46	20,5	17,0	7,0	9,7	32	1,2	5	M 5	4	170	21	232	325	
17													210	25	258	325	
19													220	24	189	279	0,19
20	24	x	50	21,5	18,0	7,8	11,5	36	2,1	6	M 5	4	280	28	209	279	
21													330	32	228	279	
24													350	29	159	228	0,29
25	30	x	60	23,5	20,0	8,5	12,5	44	2,1	7	M 5	4	400	32	172	228	
26													470	36	184	228	
28													770	55	232	297	0,47
30	36	x	72	26,0	22,0	9,5	13,5	52	2,1	5	M 6	12	960	64	250	297	
31													980	63	240	297	
34													1.200	72	225	306	0,59
35	44	x	80	28,0	24,0	10,5	14,5	61	2,1	7	M 6	12	1.400	77	235	306	
36													1.500	83	244	306	
38													1.500	80	204	280	0,81
40	50	x	90	31,0	27,0	11,5	16,0	70	2,1	8	M 6	12	1.800	91	219	280	
42													2.100	101	232	280	
42													1.700	80	176	243	1,1
45	55	x	100	33,0	29,0	12,5	17,0	75	2,9	8	M 6	12	2.100	94	193	243	
48													2.600	110	210	243	
48													2.700	110	213	270	1,3
50	62	x	110	33,0	29,0	12,5	17,0	86	2,9	10	M 6	12	3.000	120	222	270	
52													3.200	120	218	270	
50													2.500	100	184	246	1,3
55	68	x	115	33,0	29,0	12,5	17,0	86	2,9	10	M 6	12	3.100	110	188	246	
60													4.100	140	212	246	



DIMENSIONS										SCREWS			FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	L2 mm	L3 mm	lv mm	a x 45° mm	n.	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
55	75	x	138	36,3	31,0	13,0	20,5	100	3,7	7	M 8	30	3.500	130	199	276	2,2
60													4.700	160	221	276	
65													6.000	180	241	276	
60	80	x	145	36,3	31,0	13,0	20,5	100	4,0	7	M 8	30	4.100	140	192	259	2,4
65													5.200	160	211	259	
70													6.600	190	228	259	
60	85	x	155	43,3	38,0	16,5	24,0	114	4,0	10	M 8	30	5.400	180	213	290	3,4
65													6.900	210	231	290	
70													8.600	250	248	290	
65	90	x	155	43,3	38,0	16,5	24,0	114	4,0	10	M 8	30	6.200	190	206	274	3,3
70													7.700	220	222	274	
75													9.400	250	236	274	
65	95	x	170	48,3	43,0	19,0	26,5	124	4,0	12	M 8	30	6.800	210	200	274	4,6
70													8.400	240	215	274	
75													10.300	270	228	274	
70	100	x	170	48,3	43,0	19,0	26,5	124	4,0	12	M 8	30	7.600	220	194	261	4,4
75													9.300	250	207	261	
80													11.300	280	220	261	
70	105	x	185	55,4	49,0	21,5	29,5	136	4,0	9	M 10	59	8.100	230	180	253	6,2
75													10.000	270	193	253	
80													12.100	300	205	253	
75	110	x	185	55,4	49,0	21,5	29,5	136	4,0	9	M 10	59	9.100	240	176	242	5,9
80													11.000	280	188	242	
85													12.200	290	183	242	
80	115	x	200	56,4	50,0	22,0	30,0	150	4,0	10	M 10	59	11.500	290	191	250	7,2
85													12.600	300	185	250	
90													15.100	340	198	250	
85	120	x	200	56,4	50,0	22,0	30,0	150	4,0	10	M 10	59	11.400	270	168	240	7,0
90													13.800	310	180	240	
95													16.300	340	192	240	
85	125	x	215	59,4	53,0	23,0	31,5	160	4,0	12	M 10	59	13.300	310	186	263	8,7
90													15.800	350	198	263	
95													18.600	390	209	263	
90	130	x	215	59,4	53,0	23,0	31,5	160	4,0	12	M 10	59	14.600	320	182	253	8,4
95													17.200	360	193	253	
100													20.100	400	203	253	
95	140	x	230	65,5	58,0	25,0	34,0	175	6,0	10	M 12	100	18.600	390	190	259	10
100													21.600	430	199	259	
105													24.900	470	208	259	
105	155	x	263	69,5	62,0	26,0	36,0	192	6,0	12	M 12	100	25.400	480	195	259	15
110													29.000	530	203	259	
115													32.800	570	211	259	
115	165	x	290	78,0	68,0	29,0	39,0	210	5,0	8	M 16	250	38.900	680	223	278	21
120													43.600	730	230	278	
125													47.600	760	231	278	
125	175	x	300	78,0	68,0	29,0	39,0	220	6,0	8	M 16	250	42.900	690	208	262	21
130													47.800	740	215	262	
135													53.100	790	221	262	
135	185	x	330	95,0	85,0	36,0	47,5	236	6,0	10	M 16	250	60.000	890	197	244	34
140													66.400	950	202	244	
145													73.100	1.000	208	244	
140	195	x	350	95,0	85,0	36,0	47,5	246	6,0	12	M 16	250	75.600	1.100	231	278	38
150													90.600	1.200	241	278	
155													98.700	1.300	245	278	
150	200	x	350	95,0	85,0	36,0	47,5	246	6,0	12	M 16	250	87.000	1.200	231	271	37
155													94.800	1.200	236	271	
160													103.000	1.300	240	271	
160	220	x	370	114,0	104,0	45,0	59,5	270	8,0	15	M 16	250	110.000	1.400	208	249	50
165													120.000	1.500	212	249	
170													129.000	1.500	216	249	
170	240	x	405	120,5	108,0	47,0	61,5	295	8,0	12	M 20	490	146.000	1.700	233	273	63
180													168.000	1.900	239	273	
190													190.000	2.000	243	273	

DIMENSIONS										SCREWS			FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	L2 mm	L3 mm	lv mm	a x 45° mm	n.	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
180													186.000	2.100	236	273	82
190	250	x	430	131,5	119,0	53,0	67,0	321	8,0	14	M 20	490	209.000	2.200	239	273	
200													238.000	2.400	245	273	
190													197.000	2.100	225	262	78
200	260	x	430	131,5	119,0	53,0	67,0	321	8,0	14	M 20	490	224.000	2.200	231	262	
210													254.000	2.400	237	262	
210													260.000	2.500	220	252	97
220	280	x	460	144,5	132,0	58,0	76,0	346	9,0	16	M 20	490	292.000	2.700	225	252	
230													327.000	2.800	230	252	
230													334.000	2.900	219	247	113
240	300	x	485	152,5	140,0	63,0	80,0	364	9,0	18	M 20	490	371.000	3.100	224	247	
250													410.000	3.300	228	247	
240													380.000	3.200	229	257	131
250	320	x	520	152,5	140,0	63,0	80,0	386	9,0	20	M 20	490	419.000	3.400	233	257	
260													457.000	3.500	235	257	
250													465.000	3.700	232	261	186
260	340	x	570	168,5	156,0	72,0	88,0	408	9,0	24	M 20	490	506.000	3.900	233	261	
270													555.000	4.100	237	261	
260													483.000	3.700	217	246	193
270	350	x	580	172,5	160,0	73,0	90,0	432	9,0	24	M 20	490	530.000	3.900	220	246	
280													580.000	4.100	224	246	
280													556.000	4.000	215	239	197
290	360	x	590	172,5	160,0	73,0	90,0	432	9,0	24	M 20	490	606.000	4.200	219	239	
295													632.000	4.300	220	239	
290													682.000	4.700	239	263	255
300	380	x	645	179,0	164,0	76,0	92,0	458	9,0	20	M 24	840	739.000	4.900	242	263	
310													799.000	5.200	245	263	
310													813.000	5.200	249	269	266
315	390	x	660	179,0	164,0	76,0	94,5	468	11,0	21	M 24	840	844.000	5.400	251	269	
320													871.000	5.400	251	269	
315													806.000	5.100	210	231	314
320	400	x	680	199,0	184,0	84,0	104,5	480	11,0	21	M 24	840	831.000	5.200	210	231	
330													896.000	5.400	213	231	
330													967.000	5.900	230	251	311
340	420	x	690	199,0	184,0	84,0	104,5	504	11,0	24	M 24	840	1.040.000	6.100	232	251	
350													1.110.000	6.400	235	251	
340													970.000	5.700	207	229	392
350	440	x	750	207,0	192,0	86,0	108,5	527	11,0	24	M 24	840	1.040.000	5.900	209	229	
360													1.110.000	6.200	212	229	
360													1.040.000	5.800	199	219	405
370	460	x	770	207,0	192,0	86,0	108,5	547	11,0	24	M 24	840	1.120.000	6.000	201	219	
380													1.190.000	6.300	203	219	
380													1.420.000	7.500	221	240	485
390	480	x	800	228,0	213,0	96,0	121,5	570	14,0	30	M 24	840	1.510.000	7.700	224	240	
400													1.600.000	8.000	225	240	
400													1.620.000	8.100	228	245	560
410	500	x	850	230,0	213,0	96,0	121,5	590	14,0	24	M 27	1.250	1.700.000	8.300	229	245	
420													1.800.000	8.600	231	245	

**Code:**

Ma: screws tightening torque  
 Mt: transmissible torque with Fax=0 kN  
 Fax: transmissible axial load with Mt=0 Nm  
 Ps: contact pressure on shaft  
 Ph: contact pressure on hub outer diameter

web clearance Holes (diameter in mm)									
SCREWS size	M5	M6	M8	M10	M12	M16	M20	M24	M27
split shrink disc	7	8	10	13	15	19	23	27	30
shrink disc HALF HT	6	7	9	11	13	18	22	26	30

DIMENSIONS										SCREWS			FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	L2 mm	L3 mm	lv mm	a x 45° mm	n.	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
95													11.000	230	130	184	5,6
100	125	x	190	58,4	52,0	22,0	31,0	158	4,0	8	M 10	59	13.200	260	140	184	
105													15.600	300	150	184	
110													18.600	340	163	206	7,9
120	140	x	220	58,4	52,0	22,0	31,0	175	4,0	10	M 10	59	24.200	400	179	206	
125													27.000	430	183	206	
130													30.500	470	192	223	9,9
135	155	x	245	58,4	52,0	22,0	31,0	192	4,0	12	M 10	59	34.100	500	198	223	
140													37.800	540	205	223	
135													36.800	550	186	220	13
140	165	x	260	69,5	62,0	26,0	36,0	210	5,5	10	M 12	100	40.900	580	193	220	
145													45.200	620	198	220	
145													40.500	560	178	207	15
150	175	x	275	69,5	62,0	26,0	36,0	220	5,5	10	M 12	100	44.700	600	183	207	
155													49.000	630	188	207	
155													54.400	700	209	235	17
160	185	x	295	69,5	62,0	26,0	36,0	225	5,5	12	M 12	100	59.300	740	214	235	
165													64.500	780	218	235	
165													73.900	900	206	229	24
170	195	x	315	79,5	72,0	31,0	41,0	237	5,5	15	M 12	100	80.100	940	210	229	
175													86.500	990	214	229	
180													98.600	1.100	196	221	32
190	220	x	345	94,0	84,0	36,0	47,0	265	5,5	10	M 16	250	113.000	1.200	200	221	
200													129.000	1.300	208	221	
200													137.000	1.400	220	243	36
210	240	x	370	94,0	84,0	36,0	49,5	290	8,0	12	M 16	250	155.000	1.500	226	243	
215													165.000	1.500	229	243	
220													152.000	1.400	180	200	44
230	260	x	395	102,0	92,0	40,0	53,5	310	8,0	12	M 16	250	171.000	1.500	186	200	
235													181.000	1.500	188	200	
230													206.000	1.800	197	218	58
240	280	x	425	114,0	104,0	46,0	59,5	333	8,0	16	M 16	250	229.000	1.900	201	218	
250													255.000	2.000	206	218	
250													260.000	2.100	210	229	69
260	300	x	460	114,0	104,0	46,0	59,5	358	8,0	18	M 16	250	285.000	2.200	213	229	
270													313.000	2.300	217	229	
270													284.000	2.100	197	215	85
280	320	x	495	116,0	106,0	48,0	60,5	378	8,0	18	M 16	250	311.000	2.200	201	215	
290													340.000	2.300	204	215	
290													347.000	2.400	209	225	101
300	340	x	535	116,0	106,0	48,0	60,5	402	8,0	20	M 16	250	378.000	2.500	212	225	
310													410.000	2.600	215	225	
310													473.000	3.100	209	223	120
320	360	x	555	134,5	122,0	54,0	71,0	423	9,0	16	M 20	490	509.000	3.200	211	223	
330													549.000	3.300	214	223	
330													570.000	3.500	198	212	148
340	380	x	585	148,5	136,0	60,0	78,0	442	9,0	18	M 20	490	614.000	3.600	201	212	
350													660.000	3.800	204	212	
350													710.000	4.100	220	230	151
360	390	x	595	148,5	136,0	60,0	78,0	452	9,0	20	M 20	490	760.000	4.200	222	230	
370													812.000	4.400	225	230	
370													728.000	3.900	188	199	175
380	420	x	630	156,5	144,0	64,0	82,0	485	9,0	20	M 20	490	777.000	4.100	190	199	
390													828.000	4.200	193	199	
380													822.000	4.300	183	198	226
390	460	x	685	170,5	158,0	71,0	91,5	527	11,0	24	M 20	490	875.000	4.500	185	198	
410													982.000	4.800	188	198	
420													1.160.000	5.500	183	198	310
430	500	x	750	190,5	178,0	80,0	101,5	572	11,0	30	M 20	490	1.230.000	5.700	185	198	
440													1.300.000	5.900	187	198	

**Code:**

Ma: screws tightening torque

Mt: transmissible torque with Fax=0 kN

Fax: transmissible axial load with Mt=0 Nm

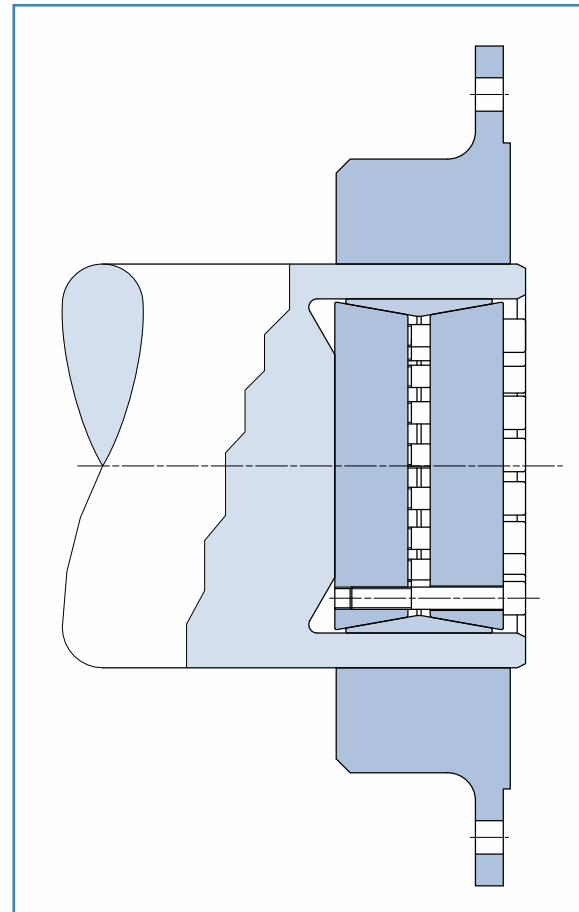
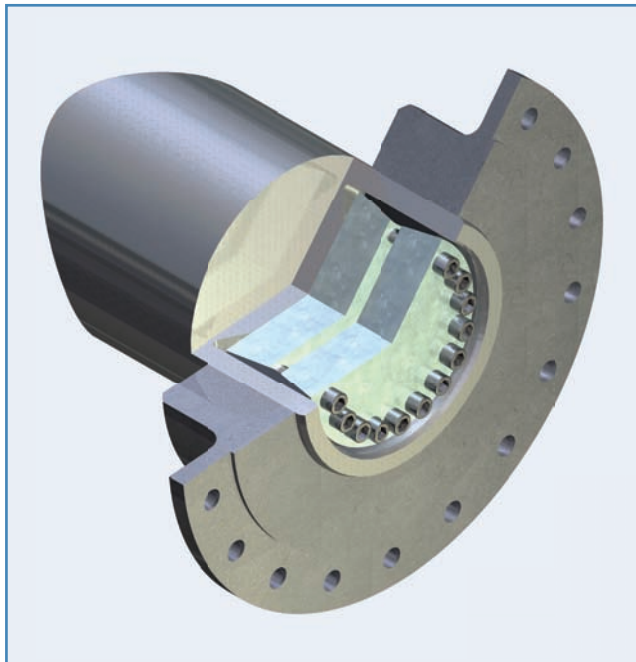
Ps: contact pressure on shaft

Ph: contact pressure on hub outer diameter



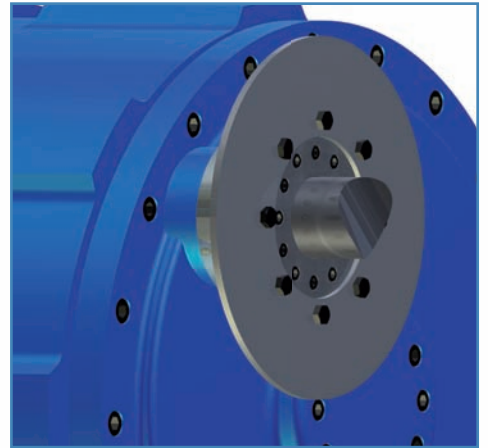
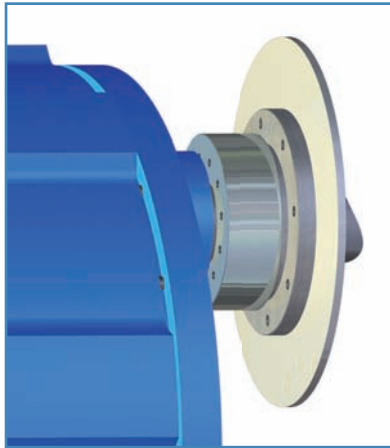
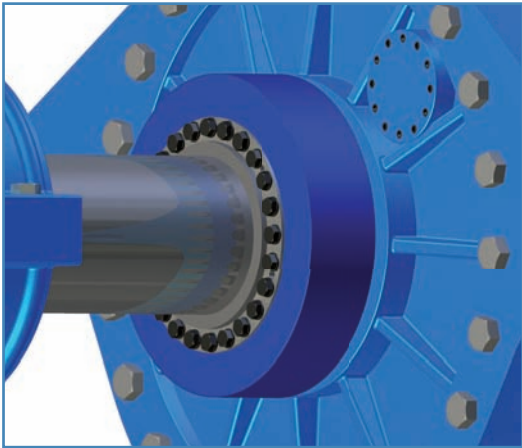
DIMENSIONS										SCREWS			FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	L2 mm	L3 mm	lv mm	a x 45° mm	n.	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
30	40	x	80	37,3	32,0	13,5	18,5	62	2,1	4	M 8	30	1.210	80	229	296	0,9
32													1.320	80	219	296	
34	44	x	85	39,3	34,0	14,5	19,5	66	2,1	5	M 8	30	1.650	100	209	290	1,0
36													2.010	110	227	290	
38	50	x	95	44,3	39,0	16,5	22,0	73	2,1	7	M 8	30	2.750	140	269	345	1,4
40													3.210	160	283	345	
42	55	x	105	44,3	39,0	16,5	22,0	78	2,1	7	M 8	30	3.070	150	246	313	1,7
44													3.530	160	258	313	
46	62	x	115	44,3	39,0	16,5	22,0	85	2,1	7	M 8	30	3.160	140	211	278	2,0
48													3.600	150	221	278	
50	68	x	120	44,3	39,0	16,5	22,0	92	2,9	8	M 8	30	4.010	160	227	290	2,0
52													4.140	160	216	290	
55	75	x	145	52,4	46,0	20,0	25,5	105	2,9	7	M 10	59	5.680	210	221	299	3,8
58													6.700	230	235	299	
60	80	x	145	52,4	46,0	20,0	25,5	105	2,9	7	M 10	59	6.500	220	213	280	3,7
63													7.560	240	225	280	
65	90	x	160	56,4	50,0	22,0	30,0	116	3,7	8	M 10	59	7.500	230	188	256	4,9
68													8.630	250	198	256	
65													7.890	240	180	262	5,7
70	100	x	170	60,4	54,0	24,0	32,0	126	4,0	10	M 10	59	9.900	280	195	262	
75													12.100	320	208	262	7,2
75													12.300	330	186	251	
80	110	x	185	66,4	60,0	26,0	35,0	138	4,0	12	M 10	59	14.900	370	197	251	7,2
85													16.400	390	193	251	
85													20.100	470	219	297	11
90	125	x	215	73,5	66,0	28,0	38,0	160	6,0	12	M 12	100	23.800	530	231	297	
95													27.800	590	242	297	13
95													21.500	450	169	239	
100	140	x	230	81,5	74,0	32,0	42,0	175	6,0	12	M 12	100	25.200	500	178	239	13
105													29.200	560	187	239	
105													31.100	590	182	245	20
110	155	x	263	87,5	80,0	35,0	45,0	198	6,0	15	M 12	100	35.600	650	189	245	
115													40.500	700	197	245	27
115													48.300	840	215	270	
120	165	x	290	98,0	88,0	38,0	49,0	210	6,0	10	M 16	250	54.200	900	222	270	27
125													59.200	950	223	270	
125													53.200	850	201	255	28
130	175	x	300	98,0	88,0	38,0	49,0	220	6,0	10	M 16	250	59.400	910	207	255	
135													66.000	980	213	255	46
135													92.900	1.400	235	283	
140	185	x	330	122,0	112,0	50,0	61,0	236	6,0	15	M 16	250	102.000	1.500	241	283	46
145													112.000	1.500	246	283	
145													103.000	1.400	226	268	51
150	195	x	350	122,0	112,0	50,0	63,5	246	8,0	15	M 16	250	113.000	1.500	231	268	
155													123.000	1.600	236	268	51
145													99.000	1.400	217	262	
150	200	x	350	122,0	112,0	50,0	63,5	246	8,0	15	M 16	250	108.000	1.400	221	262	51
155													118.000	1.500	226	262	
160													148.000	1.900	215	256	66
165	220	x	370	144,0	134,0	60,0	74,5	270	8,0	20	M 16	250	160.000	1.900	219	256	
170													173.000	2.000	223	256	86
170													181.000	2.100	221	261	
180	240	x	405	157,0	144,0	65,0	79,5	295	8,0	15	M 20	490	205.000	2.300	224	261	86
190													236.000	2.500	231	261	
190													252.000	2.700	218	255	105
200	260	x	430	173,0	160,0	72,0	87,5	321	8,0	18	M 20	490	287.000	2.900	224	255	
210													325.000	3.100	230	255	129
210													323.000	3.100	210	242	
220	280	x	460	185,0	172,0	78,0	96,0	346	9,0	20	M 20	490	364.000	3.300	215	242	129
230													407.000	3.500	220	242	

DIMENSIONS										SCREWS			FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	L2 mm	L3 mm	lv mm	a x 45° mm	n.	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
230	300	x	485	189,0	176,0	80,0	98,0	364	9,0	20	M 20	490	365.000	3.200	193	220	144
240													406.000	3.400	197	220	
245													428.000	3.500	199	220	
240	320	x	520	197,0	184,0	84,0	102,0	386	9,0	24	M 20	490	450.000	3.700	207	235	174
250													492.000	3.900	209	235	
260													543.000	4.200	213	235	
250	340	x	570	215,0	200,0	92,0	110,0	420	9,0	20	M 24	840	544.000	4.400	210	241	237
260													600.000	4.600	214	241	
270													659.000	4.900	218	241	
270	350	x	580	215,0	200,0	92,0	110,0	425	9,0	21	M 24	840	667.000	4.900	221	246	242
280													729.000	5.200	224	246	
290													794.000	5.500	228	246	
280	360	x	590	219,0	204,0	92,0	114,5	432	11,0	20	M 24	840	661.000	4.700	199	223	248
290													721.000	5.000	202	223	
295													753.000	5.100	204	223	
300	390	x	660	227,0	212,0	96,0	118,5	468	11,0	24	M 24	840	850.000	5.700	213	236	335
310													920.000	5.900	216	236	
320													986.000	6.200	217	236	
330	420	x	690	253,0	238,0	109,0	131,5	504	11,0	30	M 24	840	1.210.000	7.300	220	241	400
340													1.300.000	7.600	222	241	
350													1.390.000	7.900	225	241	
360	460	x	770	269,0	252,0	116,0	141,0	547	14,0	28	M 27	1.250	1.650.000	9.100	241	261	540
370													1.760.000	9.500	243	261	
380													1.870.000	9.800	245	261	
380	500	x	850	291,0	274,0	127,0	152,0	590	14,0	32	M 27	1.250	1.890.000	10.000	226	250	750
390													2.010.000	10.000	229	250	
400													2.140.000	11.000	231	250	

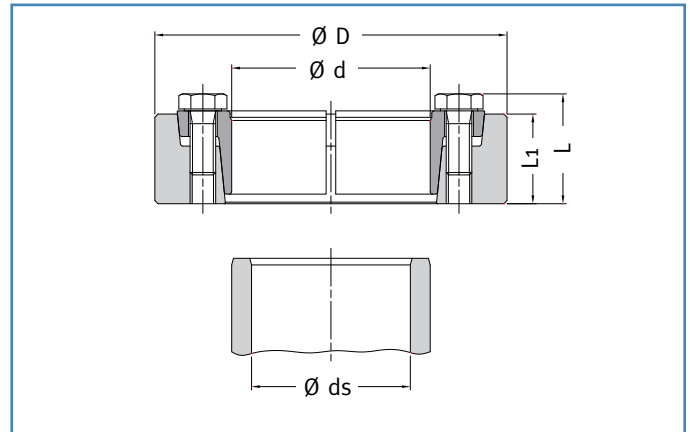
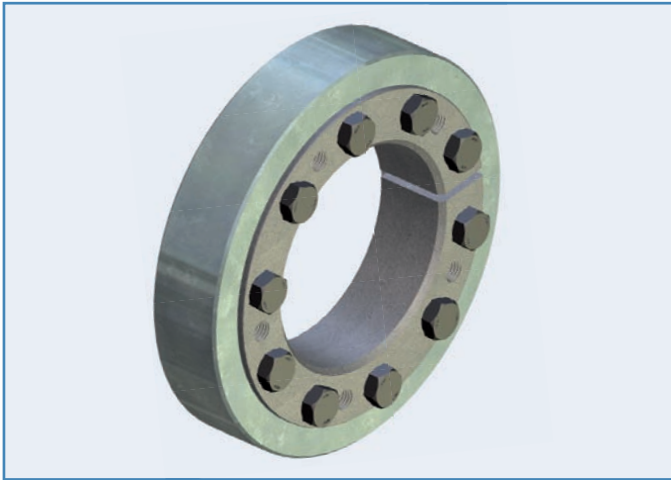


**Code:**

Ma: screws tightening torque  
 Mt: transmissible torque with Fax=0 kN  
 Fax: transmissible axial load with Mt=0 Nm  
 Ps: contact pressure on shaft  
 Ph: contact pressure on hub outer diameter







Example of order: MAV 3008 100 x 170

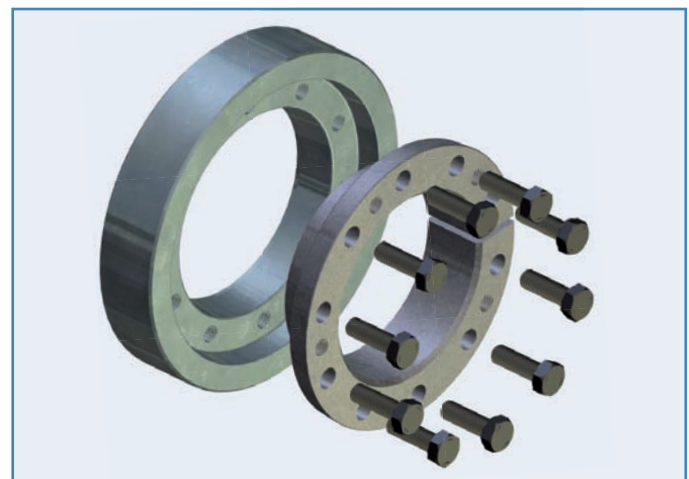
## Composition

- Slotted inner ring, with integrated push-off threads
- Outer ring
- Set of hexagonal head cap screws, grade 10.9 (size <math>< \text{M}6</math> of grade 8.8) for series MAV 3008 - MAV 3108 - MAV 3208; grade 12.9 for series MAV 3009 - MAV 3209
- Hardened washers DIN 6916 for units with screw size  $\geq \text{M}16$

## Features

- External locking device for hollow shaft (hub) - shaft connection
- Two-part design
- Self-releasing tapers, greased with MoS<sub>2</sub> ( $\mu = 0.05$ ). Series MAV 3008 – MAV 3009 feature oiled tapers (self-locking) up to size 68x115
- Screws greased with MoS<sub>2</sub> ( $\mu = 0.10$ )
- MAV 3008 – MAV 3009: standard series, medium capacity
- MAV 3108: light series, low capacity
- MAV 3208 – MAV 3209: heavy series, high capacity
- Tolerances of shaft and hub bore: see table
- Tolerance of hub outer diameter: h8
- Surface finish of shaft and hub  $R_a < 3.2 \mu\text{m}$
- Shaft – hub bore contact surface grease-free and dry ( $\mu = 0.15$ )

Shaft Diameter $ds$		ISO Tolerances	Max Clearance
from	to		mm
6	10	H6 - j6	0,011
11	18		0,014
19	30		0,017
31	50	H6 - h6	0,032
51	80	H6 - g6	0,048
81	120	H7 - g6	0,069
121	180		0,079
181	250		0,09
251	315		0,101
316	400		0,111
401	500		0,123





DIMENSIONS						SCREWS		FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
9	12	x	35	14,5	11	M 5	5	21	4,6	122	301	0,07
10								40	7,9	188	301	
11	14	x	38	14,5	11	M 5	5	29	5,3	114	258	0,08
12								51	8,4	167	258	
13	16	x	41	19	15	M 6	12	96	14	200	308	0,13
14								132	18	239	308	
15	18	x	44	19	15	M 6	12	121	16	190	274	0,14
16								159	19	220	274	
17	20	x	47	19	15	M 6	12	146	17	179	247	0,15
18								186	20	203	247	
19								172	18	145	235	
20	24	x	50	22	18	M 6	12	218	21	165	235	0,20
21								267	25	184	235	
24								297	24	137	205	
25	30	x	60	24	20	M 6	12	352	28	150	205	0,31
26								412	31	162	205	
28								563	40	169	234	
30	36	x	72	27,3	22	M 8	30	714	47	187	234	0,49
31								722	46	177	234	
34								734	43	135	215	
35	44	x	80	29,3	24	M 8	30	831	47	144	215	0,62
36								933	51	153	215	
38								1.230	65	166	241	
40	50	x	90	31,3	26	M 8	30	1.490	74	180	241	0,83
42								1.760	84	193	241	
42								1.640	78	172	240	
45	55	x	100	34,3	29	M 8	30	2.080	92	190	240	1,2
48								2.560	107	206	240	
48								1.940	81	156	213	
50	62	x	110	34,3	29	M 8	30	2.230	89	165	213	1,4
52								2.340	90	160	213	
50								1.810	72	134	218	
55	68	x	115	34,3	29	M 8	30	2.620	95	160	218	1,4
60								3.590	119	184	218	
55								2.770	100	156	233	
60	75	x	138	37,4	31	M 10	59	3.760	125	178	233	2,3
65								4.910	151	197	233	
60								3.200	106	151	218	
65	80	x	145	37,4	31	M 10	59	4.230	130	170	218	2,5
70								5.400	154	187	218	
65								4.730	145	159	226	
70	90	x	155	44,4	38	M 10	59	6.030	172	174	226	3,4
75								7.500	200	189	226	
70								6.440	184	164	231	
75	100	x	170	49,4	43	M 10	59	7.990	213	177	231	4,7
80								9.720	243	190	231	
75								8.810	234	170	236	
80	110	x	185	56,5	49	M 12	100	10.600	267	182	236	6,2
85								11.700	277	178	236	
80								11.200	280	177	236	
85	115	x	197	60,5	53	M 12	100	12.200	286	170	236	7,6
90								14.700	326	183	236	
85								11.000	259	154	226	
90	120	x	197	60,5	53	M 12	100	13.300	296	166	226	7,3
95								15.900	334	178	226	
85								11.600	274	163	241	
90	125	x	215	60,5	53	M 12	100	14.000	312	175	241	9,2
95								16.600	350	186	241	
85								10.600	250	149	232	
90	130	x	215	60,5	53	M 12	100	12.800	286	161	232	8,8
95								15.300	322	171	232	
90								13.000	289	148	224	
95	135	x	230	66,8	58	M 14	160	15.200	326	159	224	11
100								18.200	365	169	224	
95								14.300	301	146	216	
100	140	x	230	66,8	58	M 14	160	16.800	337	156	216	11
105								19.600	375	165	216	

DIMENSIONS					SCREWS		FEATURES				WEIGHT kg	
ds mm	d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa		Ph MPa
105								20.900	398	161	224	16
110	155	x	263	70,8	62	M 14	160	24.000	437	169	224	
115								27.400	477	176	224	
115								31.700	551	182	237	22
120	165	x	290	78	68	M 16	250	35.800	597	189	237	
125								39.100	626	190	237	
125								40.000	640	194	248	23
130	175	x	300	78	68	M 16	250	44.700	688	201	248	
135								49.700	737	207	248	
135								56.000	829	184	228	34
140	180	x	320	95	85	M 16	250	62.100	887	189	228	
145								68.500	945	195	228	
135								53.100	787	174	222	33
140	185	x	320	95	85	M 16	250	59.000	843	180	222	
145								65.200	899	185	222	
150								75.100	1.000	200	240	37
155	200	x	340	95	85	M 16	250	82.000	1.050	204	240	
160								89.300	1.110	209	240	
160								103.000	1.290	195	236	53
165	220	x	370	115,5	103	M 20	490	112.000	1.360	199	236	
170								121.000	1.430	203	236	
170								125.000	1.470	201	241	66
180	240	x	405	119,5	107	M 20	490	145.000	1.610	208	241	
190								164.000	1.730	211	241	
190								165.000	1.740	189	227	81
200	260	x	430	131,5	119	M 20	490	189.000	1.890	196	227	
210								215.000	2.050	202	227	
210								215.000	2.050	182	214	104
220	280	x	460	144,5	132	M 20	490	243.000	2.210	188	214	
230								273.000	2.370	193	214	
230								299.000	2.600	197	224	120
240	300	x	485	155	140	M 24	840	333.000	2.770	201	224	
250								369.000	2.950	205	224	
240								301.000	2.510	182	210	139
250	320	x	520	155	140	M 24	840	334.000	2.670	186	210	
260								365.000	2.800	188	210	
250								410.000	3.280	208	236	191
260	340	x	570	170	155	M 24	840	445.000	3.430	209	236	
270								489.000	3.630	213	236	
260								432.000	3.320	194	223	200
270	350	x	580	174	159	M 24	840	475.000	3.520	198	223	
280								520.000	3.710	201	223	
280								527.000	3.760	204	228	205
290	360	x	590	174	159	M 24	840	575.000	3.960	207	228	
300								625.000	4.160	211	228	
300								640.000	4.270	210	233	252
310	390	x	650	183	166	M 27	1250	693.000	4.470	213	233	
320								743.000	4.640	214	233	
330								809.000	4.900	192	214	288
340	420	x	670	203	186	M 27	1250	871.000	5.120	195	214	
350								935.000	5.340	198	214	
340								909.000	5.350	194	216	392
350	440	x	740	211	194	M 27	1250	976.000	5.580	197	216	
360								1.046.000	5.810	199	216	
360								1.035.000	5.750	197	217	423
370	460	x	770	211	194	M 27	1250	1.106.000	5.980	199	217	
380								1.179.000	6.210	202	217	
380								1.302.000	6.850	204	222	498
390	480	x	800	231,7	213	M 30	1700	1.386.000	7.100	206	222	
400								1.472.000	7.360	208	222	
400								1.391.000	6.950	196	213	575
410	500	x	850	231,7	213	M 30	1700	1.465.000	7.140	197	213	
420								1.553.000	7.390	199	213	

**Code:**

Ma: screws tightening torque

Mt: transmissible torque with Fax=0 kN

Fax: transmissible axial load with Mt=0 Nm

Ps: contact pressure on shaft

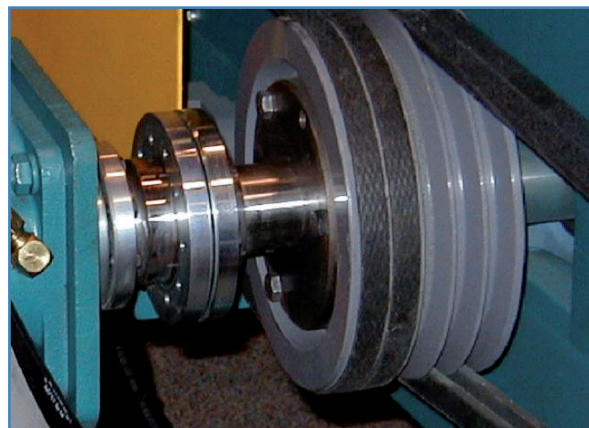
Ph: contact pressure on hub outer diameter

DIMENSIONS					SCREWS		FEATURES				WEIGHT kg	
ds mm	d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa		Ph MPa
38								1.540	81	206	281	0,83
40	50	x	90	31,3	26	M 8	35	1.820	91	220	281	
42								2.130	102	233	281	
42								2.030	96	212	279	1,2
45	55	x	100	34,3	29	M 8	35	2.520	112	229	279	
48								3.070	128	246	279	
48								2.390	99	191	248	1,4
50	62	x	110	34,3	29	M 8	35	2.710	109	200	248	
52								2.870	110	196	248	
50								2.300	92	170	254	1,4
55	68	x	115	34,3	29	M 8	35	3.220	117	197	254	
60								4.300	143	220	254	
55								3.540	129	199	276	2,3
60	75	x	138	37,4	31	M 10	70	4.680	156	221	276	
65								5.990	184	241	276	
60								4.070	136	192	259	2,5
65	80	x	145	37,4	31	M 10	70	5.250	161	211	259	
70								6.580	188	228	259	
65								6.000	185	201	268	3,4
70	90	x	155	44,4	38	M 10	70	7.500	214	217	268	
75								9.180	245	231	268	
70								8.130	232	207	274	4,7
75	100	x	170	49,4	43	M 10	70	9.930	265	220	274	
80								11.900	298	233	274	
75								11.400	303	220	285	6,2
80	110	x	185	56,5	49	M 12	121	13.600	340	232	285	
85								15.100	355	227	285	
80								14.300	358	226	285	7,6
85	115	x	197	60,5	53	M 12	121	15.700	370	220	285	
90								18.600	414	232	285	
85								14.400	339	201	273	7,3
90	120	x	197	60,5	53	M 12	121	17.100	381	214	273	
95								20.100	423	225	273	
85								15.300	360	214	292	9,2
90	125	x	215	60,5	53	M 12	121	18.100	402	226	292	
95								21.200	446	237	292	
85								14.100	332	198	280	8,8
90	130	x	215	60,5	53	M 12	121	16.700	373	209	280	
95								19.600	414	220	280	
90								16.700	372	191	267	11
95	135	x	230	66,8	58	M 14	193	19.700	415	201	267	
100								22.900	458	211	267	
95								18.300	386	187	257	11
100	140	x	230	66,8	58	M 14	193	21.300	427	197	257	
105								24.600	469	206	257	
105								26.500	504	204	267	16
110	155	x	263	70,8	62	M 14	193	30.200	549	212	267	
115								34.100	594	219	267	
115								39.200	682	225	280	22
120	165	x	290	78	68	M 16	295	44.000	733	232	280	
125								48.000	768	233	280	
125								49.300	789	239	293	23
130	175	x	300	78	68	M 16	295	54.800	843	246	293	
135								60.500	897	252	293	
135								68.600	1.020	225	270	34
140	180	x	320	95	85	M 16	295	75.600	1.080	231	270	
145								83.100	1.150	236	270	
135								65.500	970	215	262	33
140	185	x	320	95	85	M 16	295	72.300	1.030	220	262	
145								79.400	1.100	226	262	
150								91.500	1.220	243	283	37
155	200	x	340	95	85	M 16	295	99.600	1.280	248	283	
160								108.000	1.350	252	283	

DIMENSIONS					SCREWS		FEATURES				WEIGHT kg	
ds mm	d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa		Ph MPa
160								124.000	1.560	234	275	53
165	220	x	370	115,5	103	M 20	570	135.000	1.630	238	275	
170								145.000	1.710	242	275	
170								151.000	1.780	241	281	66
180	240	x	405	119,5	107	M 20	570	174.000	1.930	248	281	
190								196.000	2.070	251	281	
190								199.000	2.100	227	265	81
200	260	x	430	131,5	119	M 20	570	227.000	2.270	234	265	
210								256.000	2.440	239	265	
210								258.000	2.460	218	250	104
220	280	x	460	144,5	132	M 20	570	290.000	2.640	223	250	
230								324.000	2.820	228	250	
230								356.000	3.090	234	261	120
240	300	x	485	155	140	M 24	980	395.000	3.290	238	261	
250								436.000	3.490	243	261	
240								359.000	2.990	217	245	139
250	320	x	520	155	140	M 24	980	397.000	3.180	221	245	
260								433.000	3.330	223	245	
250								487.000	3.900	247	275	191
260	340	x	570	170	155	M 24	980	529.000	4.070	248	275	
270								580.000	4.300	252	275	
260								515.000	3.960	231	260	200
270	350	x	580	174	159	M 24	980	565.000	4.180	235	260	
280								617.000	4.400	238	260	
280								625.000	4.470	242	266	205
290	360	x	590	174	159	M 24	980	680.000	4.690	245	266	
300								737.000	4.920	248	266	
300								755.000	5.030	247	270	252
310	390	x	650	183	166	M 27	1450	815.000	5.260	250	270	
320								873.000	5.460	251	270	
330								953.000	5.780	226	248	288
340	420	x	670	203	186	M 27	1450	1.024.000	6.020	229	248	
350								1.097.000	6.270	232	248	
340								1.072.000	6.310	229	251	392
350	440	x	740	211	194	M 27	1450	1.148.000	6.560	231	251	
360								1.228.000	6.820	234	251	
360								1.218.000	6.770	232	252	423
370	460	x	770	211	194	M 27	1450	1.299.000	7.020	234	252	
380								1.383.000	7.280	236	252	
380								1.529.000	8.050	239	257	498
390	480	x	800	231,7	213	M 30	1970	1.624.000	8.330	241	257	
400								1.722.000	8.610	243	257	
400								1.632.000	8.160	230	247	575
410	500	x	850	231,7	213	M 30	1970	1.718.000	8.380	231	247	
420								1.818.000	8.660	233	247	

**Code:**

Ma: screws tightening torque  
 Mt: transmissible torque with Fax=0 kN  
 Fax: transmissible axial load with Mt=0 Nm  
 Ps: contact pressure on shaft  
 Ph: contact pressure on hub outer diameter





DIMENSIONS						SCREWS		FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
110								15.900	291	148	190	7
120	140	x	215	53,5	46	M 12	100	21.000	350	163	190	
125								23.400	376	168	190	
130								24.400	377	162	193	9
135	155	x	245	53,5	46	M 12	100	27.500	408	169	193	
140								30.700	439	175	193	
135								29.500	437	160	194	12
140	165	x	263	61,8	53	M 14	160	32.900	471	166	194	
145								36.600	505	172	194	
145								37.400	516	176	205	13
150	175	x	275	61,8	53	M 14	160	41.200	550	181	205	
155								45.300	585	186	205	
155								55.400	715	192	218	17
160	185	x	290	70,8	62	M 14	160	60.500	756	197	218	
165								65.800	798	201	218	
165								71.300	864	218	242	22
170	195	x	320	70,8	62	M 14	160	77.100	908	222	242	
175								83.300	952	226	242	
180								90.500	1.006	216	241	25
190	220	x	340	80	70	M 16	250	103.000	1.085	220	241	
200								117.000	1.179	227	241	
200								102.000	1.023	197	221	29
210	240	x	370	80	70	M 16	250	116.000	1.108	204	221	
215								123.000	1.151	207	221	
220								136.000	1.242	218	238	35
230	260	x	405	80	70	M 16	250	153.000	1.330	223	238	
235								161.000	1.375	226	238	
230								151.000	1.318	187	209	46
240	280	x	430	92,5	80	M 20	490	169.000	1.410	192	209	
250								187.000	1.504	196	209	
250								205.000	1.647	215	234	53
260	300	x	460	92,5	80	M 20	490	225.000	1.733	218	234	
270								247.000	1.835	222	234	
270								261.000	1.938	198	216	68
280	320	x	485	104,5	92	M 20	490	286.000	2.049	202	216	
290								313.000	2.162	205	216	
290								307.000	2.123	202	218	80
300	340	x	520	104,5	92	M 20	490	335.000	2.234	205	218	
310								363.000	2.345	209	218	
310								401.000	2.592	199	214	116
320	360	x	570	117,5	105	M 20	490	432.000	2.703	201	214	
330								467.000	2.831	205	214	
330								413.000	2.508	181	197	116
340	390	x	590	117,5	105	M 20	490	446.000	2.625	184	197	
350								479.000	2.742	187	197	
350								621.000	3.550	179	195	177
360	420	x	630	155	140	M 24	840	666.000	3.702	182	195	
370								713.000	3.856	184	195	
370								750.000	4.055	176	191	213
380	440	x	660	167	152	M 24	840	801.000	4.219	178	191	
390								854.000	4.383	181	191	
390								800.000	4.105	169	183	233
400	460	x	690	167	152	M 24	840	852.000	4.261	171	183	
410								901.000	4.396	172	183	
410								1.037.000	5.061	172	186	292
420	480	x	720	189	174	M 24	840	1.101.000	5.246	174	186	
430								1.167.000	5.432	176	186	
420								1.138.000	5.423	180	194	310
430	500	x	745	189	174	M 24	840	1.206.000	5.611	182	194	
450								1.348.000	5.992	186	194	

**Code:**

Ma: screws tightening torque

Mt: transmissible torque with Fax=0 kN

Fax: transmissible axial load with Mt=0 Nm

Ps: contact pressure on shaft

Ph: contact pressure on hub outer diameter

# MAV 3208

## Heavy Series

DIMENSIONS						SCREWS		FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
95								20600	434	162	231	14
100	140	x	230	84	74	M 16	240	24100	484	171	231	
105								28000	535	180	231	
105								29800	569	174	237	20
110	155	x	263	90	80	M 16	240	34200	623	182	237	
115								38900	677	189	237	
115								42700	743	190	245	29
120	165	x	290	98	88	M 16	240	48100	803	197	245	
125								52500	842	198	245	
125								57200	916	216	270	29
130	175	x	300	98	88	M 16	240	63700	981	222	270	
135								70600	1047	229	270	
135								90700	1344	286	333	44
140	185	x	320	124,5	112	M 20	490	99500	1422	291	333	
145								109000	1500	297	333	
150								105000	1402	268	308	49
155	200	x	340	124,5	112	M 20	490	114000	1474	273	308	
160								124000	1547	277	308	
160								134000	1676	244	285	69
165	220	x	370	146,5	134	M 20	490	145000	1757	248	285	
170								156000	1838	252	285	
170								165000	1945	231	271	89
180	240	x	405	156,5	144	M 20	490	191000	2120	238	271	
190								215000	2268	241	271	
190								242000	2549	239	277	109
200	260	x	430	172,5	160	M 20	490	275000	2755	246	277	
210								311000	2962	252	277	
210								324000	3083	247	279	134
220	280	x	460	187	172	M 24	840	363000	3299	253	279	
230								404000	3517	258	279	
230								365000	3177	229	257	149
240	300	x	485	191	176	M 24	840	406000	3380	234	257	
250								448000	3586	238	257	
240								435000	3622	235	263	179
250	320	x	520	199	184	M 24	840	480000	3838	240	263	
260								523000	4020	241	263	
250								564000	4515	246	274	256
260	340	x	570	223	206	M 27	1250	613000	4716	247	274	
270								672000	4975	251	274	
280								711000	5082	244	268	265
290	360	x	590	227	210	M 27	1250	774000	5337	247	268	
300								839000	5594	250	268	
300								923000	6152	262	285	343
310	390	x	650	237	220	M 27	1250	996000	6428	265	285	
320								1067000	6669	266	285	
330								1094000	6631	223	245	407
340	420	x	680	263	246	M 27	1250	1175000	6915	226	245	
350								1260000	7200	229	245	
340								1242000	7306	225	247	531
350	440	x	740	276,7	258	M 30	1700	1331000	7605	227	247	
360								1423000	7906	230	247	
360								1338000	7436	216	236	549
370	460	x	760	276,7	258	M 30	1700	1429000	7722	218	236	
380								1522000	8011	220	236	
380								1696000	8928	208	226	711
390	480	x	800	316,7	298	M 30	1700	1804000	9254	210	226	
400								1916000	9581	212	226	
400								1963000	9813	217	234	791
410	500	x	840	318,7	300	M 30	1700	2066000	10079	217	234	
420								2188000	10419	219	234	

**Code:**

Ma: screws tightening torque

Mt: transmissible torque with Fax=0 kN

Fax: transmissible axial load with Mt=0 Nm

Ps: contact pressure on shaft

Ph: contact pressure on hub outer diameter

DIMENSIONS						SCREWS		FEATURES				WEIGHT kg
ds mm	d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	Ph MPa	
95								26000	547	204	273	14
100	140	x	230	84	74	M 16	295	30100	603	213	273	
105								34600	660	222	273	
105								37200	710	217	281	20
110	155	x	263	90	80	M 16	295	42400	771	225	281	
115								47800	833	233	281	
115								52700	918	235	290	29
120	165	x	290	98	88	M 16	295	59000	985	242	290	
125								64400	1032	243	290	
125								70300	1125	265	319	29
130	175	x	300	98	88	M 16	295	77800	1198	272	319	
135								85900	1273	278	319	
135								108000	1606	341	389	44
140	185	x	320	124,5	112	M 20	570	118000	1693	347	389	
145								129000	1780	352	389	
150								125000	1671	319	360	49
155	200	x	340	124,5	112	M 20	570	136000	1752	324	360	
160								147000	1833	329	360	
160								160000	2002	292	332	69
165	220	x	370	146,5	134	M 20	570	173000	2093	296	332	
170								186000	2184	300	332	
170								198000	2325	276	317	89
180	240	x	405	156,5	144	M 20	570	227000	2523	283	317	
190								256000	2694	287	317	
190								289000	3041	285	323	109
200	260	x	430	172,5	160	M 20	570	327000	3272	292	323	
210								368000	3506	298	323	
210								384000	3661	294	326	134
220	280	x	460	187	172	M 24	980	429000	3904	299	326	
230								477000	4150	304	326	
230								433000	3768	272	299	149
240	300	x	485	191	176	M 24	980	480000	3997	276	299	
250								528000	4228	280	299	
240								515000	4294	279	307	179
250	320	x	520	199	184	M 24	980	567000	4538	283	307	
260								617000	4749	285	307	
250								665000	5319	289	318	256
260	340	x	570	223	206	M 27	1450	722000	5553	291	318	
270								789000	5844	294	318	
280								836000	5974	287	311	265
290	360	x	590	227	210	M 27	1450	908000	6261	290	311	
300								983000	6550	293	311	
300								1083000	7222	308	331	343
310	390	x	650	237	220	M 27	1450	1168000	7535	311	331	
320								1250000	7811	312	331	
330								1286000	7793	262	284	407
340	420	x	680	263	246	M 27	1450	1379000	8112	265	284	
350								1476000	8432	268	284	
340								1459000	8582	264	286	531
350	440	x	740	276,7	258	M 30	1970	1561000	8919	266	286	
360								1666000	9257	269	286	
360								1571000	8728	253	273	549
370	460	x	760	276,7	258	M 30	1970	1674000	9051	256	273	
380								1781000	9375	258	273	
380								1990000	10473	244	262	711
390	480	x	800	316,7	298	M 30	1970	2114000	10839	246	262	
400								2241000	11207	248	262	
400								2299000	11494	254	271	791
410	500	x	840	318,7	300	M 30	1970	2420000	11802	255	271	
420								2559000	12185	257	271	

**Code:**

Ma: screws tightening torque

Ps: contact pressure on shaft

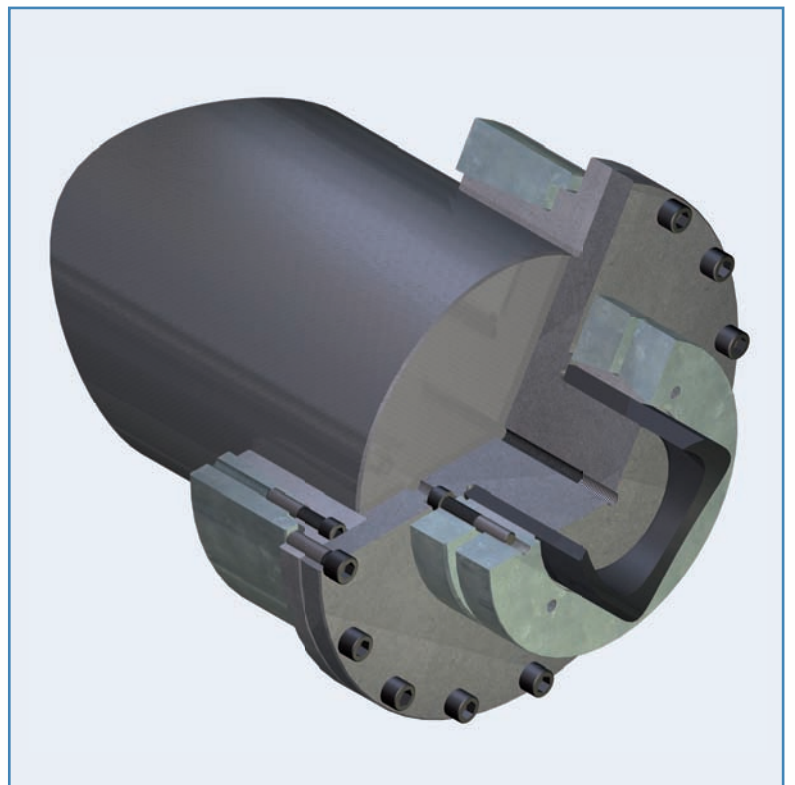
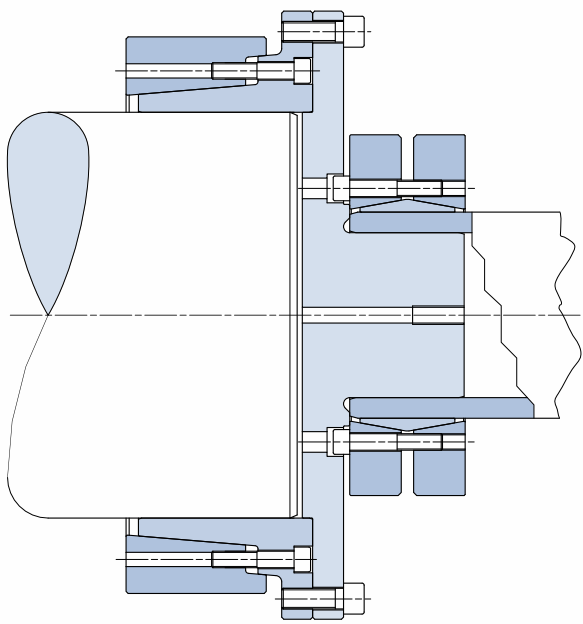
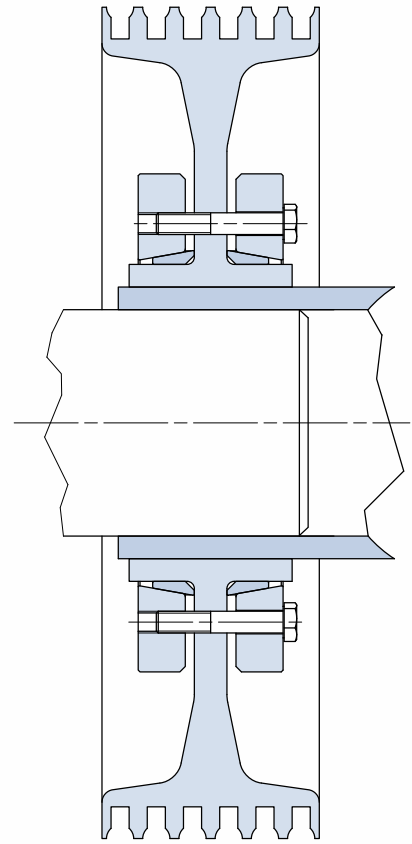
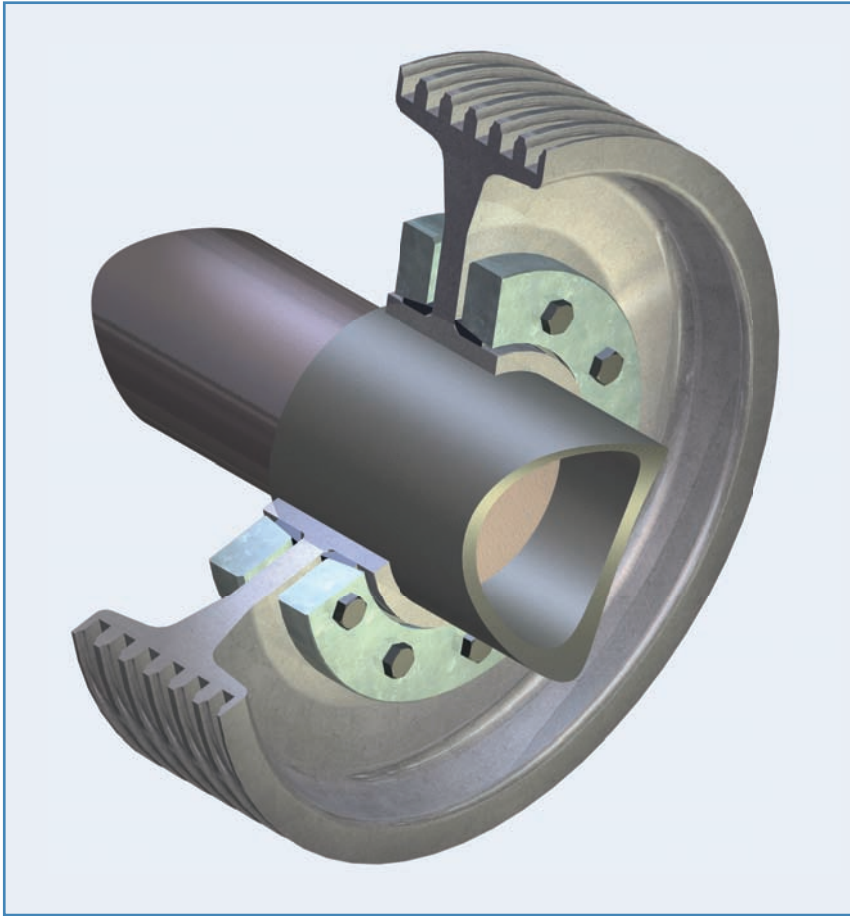
Mt: transmissible torque with Fax=0 kN

Ph: contact pressure on hub outer diameter

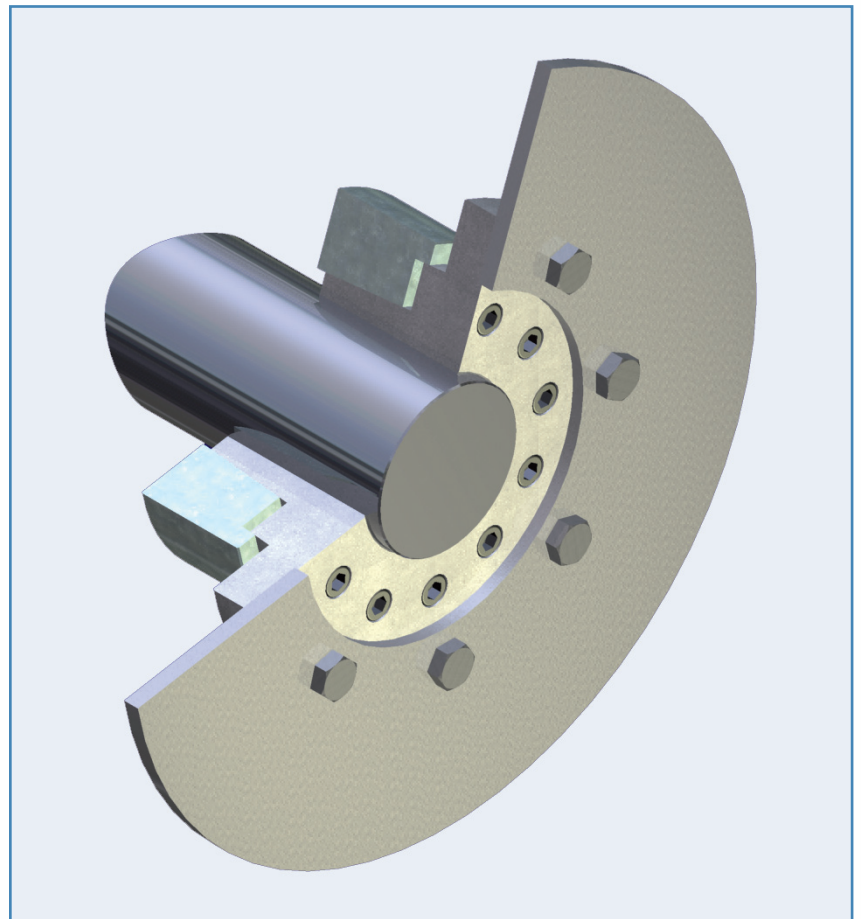
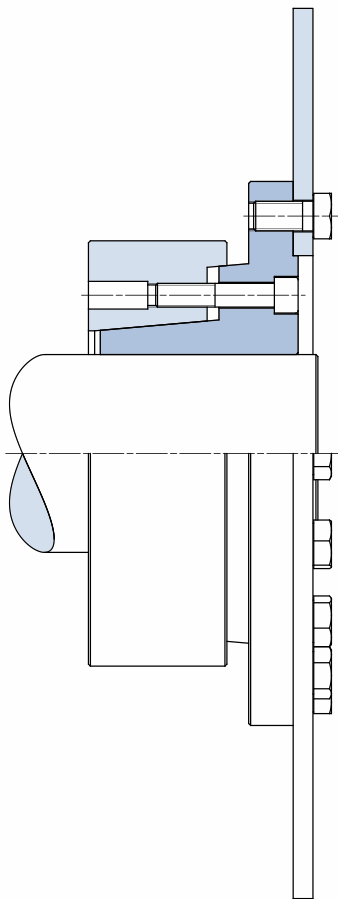
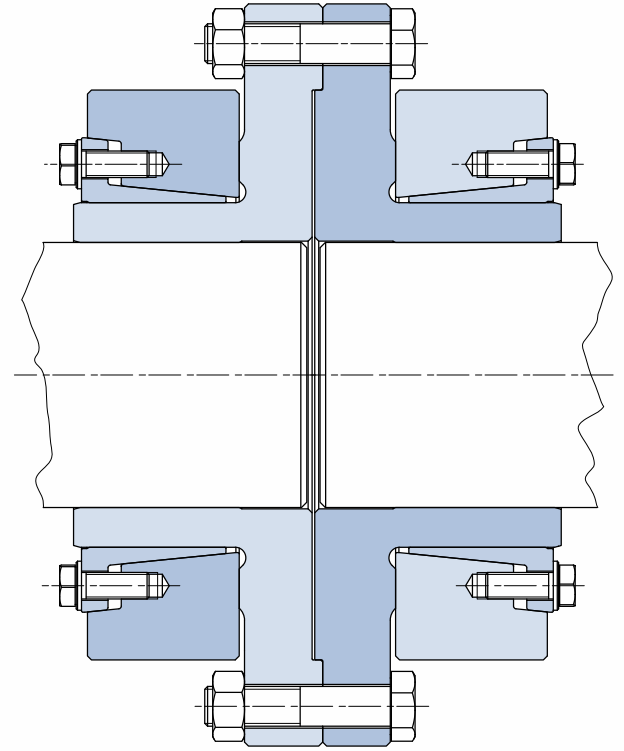
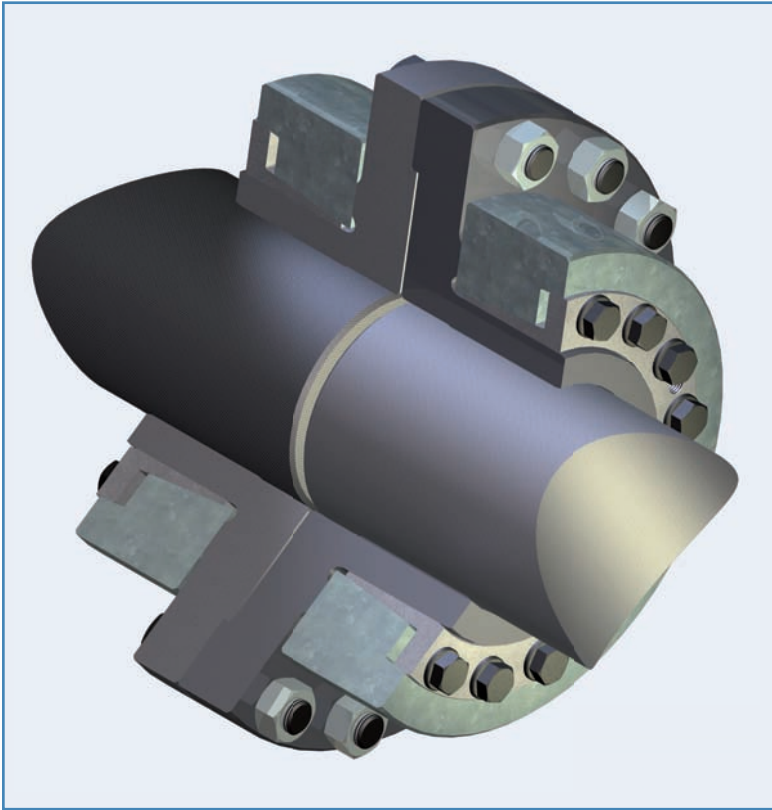
Fax: transmissible axial load with Mt=0 Nm

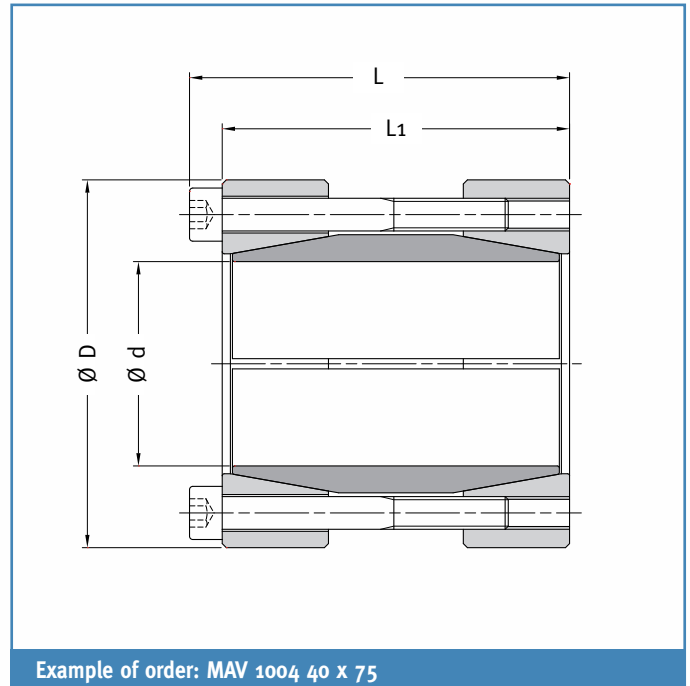
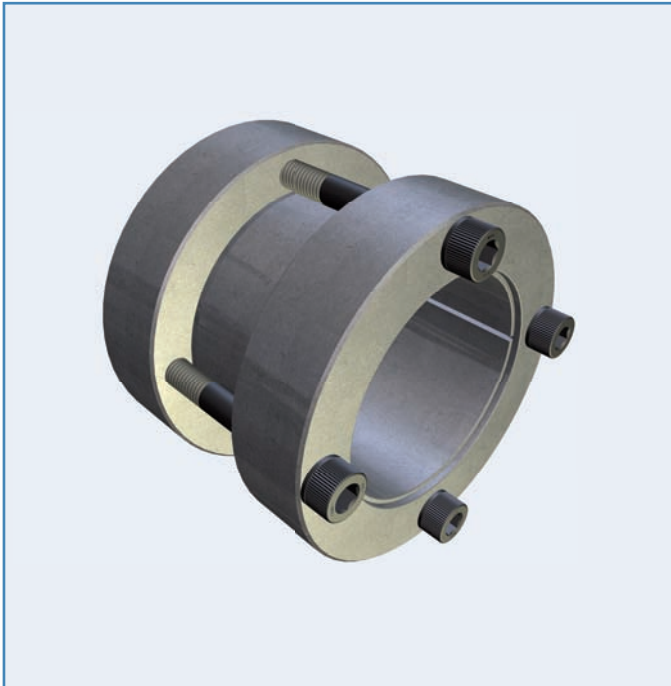


# Applications



# Applications



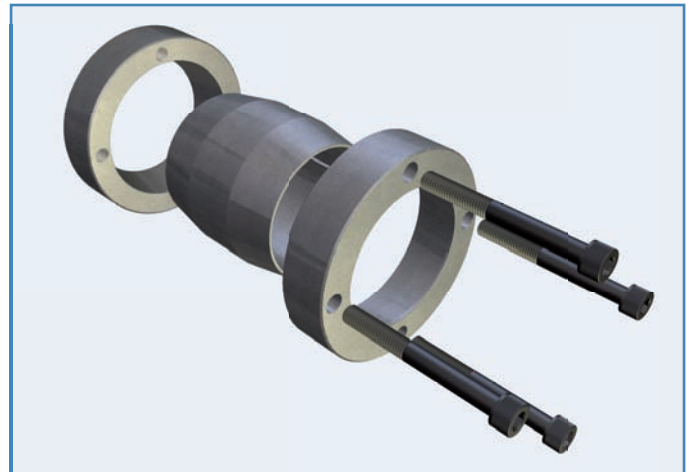


## Features

- Rigid shaft-to-shaft coupling
- Low capacity
- Three-part design
- Oiled tapers (self-locking) and screws
- Connection of shafts with different diameters is possible, through stepped bore inner ring or adapter sleeve
- Shafts tolerance:  $h7 - h9$
- Shafts surface finish  $Ra < 3.2 \mu m$
- Shafts – coupling contact surfaces: oiled ( $\mu = 0.12$ )

## Composition

- Slotted inner ring
- Front outer ring
- Rear outer ring
- Set of socket head cap screws, grade 12.9





DIMENSIONS					SCREWS		FEATURES			WEIGHT kg
d mm	x	D mm	L mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	
15	x	45	56	50	M 6	17	170	23	285	0,41
16	x	45	56	50	M 6	17	190	23	267	0,41
17	x	45	56	50	M 6	17	200	23	251	0,39
18	x	50	56	50	M 6	17	210	23	237	0,49
19	x	50	56	50	M 6	17	220	23	225	0,48
20	x	50	56	50	M 6	17	230	23	213	0,48
22	x	55	66	60	M 6	17	380	35	247	0,70
24	x	55	66	60	M 6	17	420	35	227	0,68
25	x	55	66	60	M 6	17	440	35	218	0,66
26	x	60	66	60	M 6	17	450	35	209	0,83
28	x	60	66	60	M 6	17	490	35	194	0,78
30	x	60	66	60	M 6	17	520	35	181	0,75
32	x	65	66	60	M 6	17	560	35	170	0,87
35	x	75	83	75	M 8	41	660	38	146	1,5
38	x	75	83	75	M 8	41	710	38	134	1,4
40	x	75	83	75	M 8	41	750	38	128	1,3
42	x	78	83	75	M 8	41	790	38	121	1,4
45	x	85	93	85	M 8	41	1.300	56	150	2,0
48	x	90	93	85	M 8	41	1.400	56	141	2,2
50	x	90	93	85	M 8	41	1.400	56	135	2,1
55	x	95	93	85	M 8	41	2.100	75	164	2,3
60	x	100	93	85	M 8	41	2.300	75	150	2,4
65	x	105	93	85	M 8	41	2.400	75	139	2,6
68	x	115	110	100	M 10	83	3.100	93	142	3,9
70	x	115	110	100	M 10	83	3.200	93	138	3,7
75	x	120	110	100	M 10	83	3.500	93	128	3,9
80	x	125	110	100	M 10	83	4.900	120	161	4,2
85	x	130	110	100	M 10	83	5.200	120	151	4,4
90	x	135	110	100	M 10	83	5.600	120	143	4,6
95	x	140	110	100	M 10	83	5.900	120	135	4,8
100	x	155	132	120	M 12	145	9.200	180	160	7,6
110	x	165	132	120	M 12	145	10.100	180	145	8,2
120	x	185	132	120	M 12	145	13.800	230	166	11
130	x	195	132	120	M 12	145	15.000	230	154	12



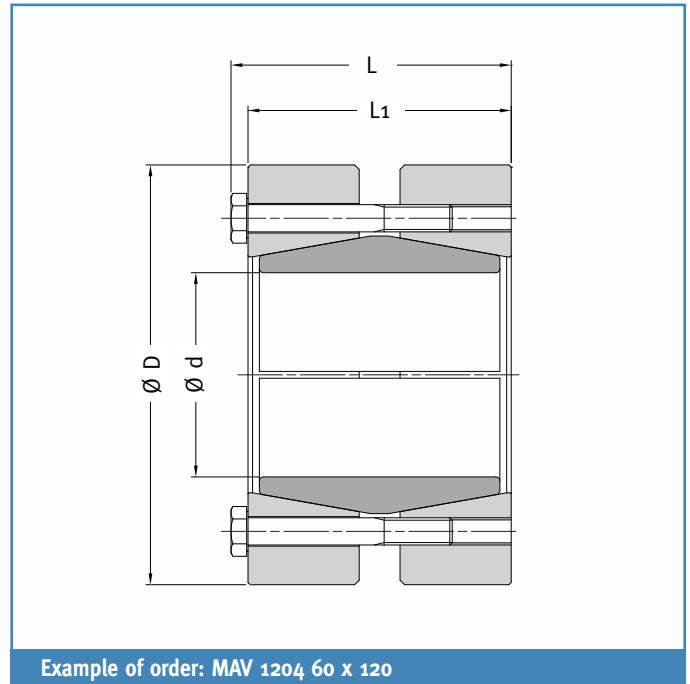
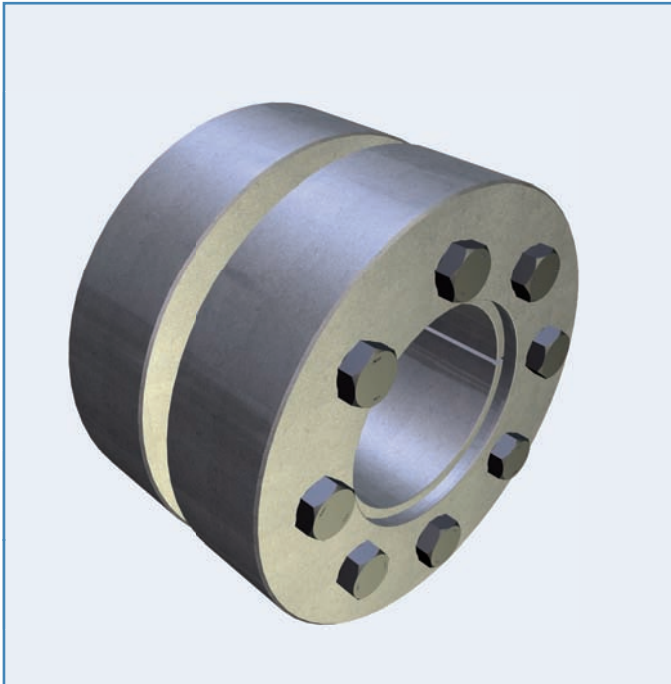
**Code:**

Ma: screws tightening torque

Mt: transmissible torque with Fax=0 kN

Fax: transmissible axial load with Mt=0 Nm

Ps: contact pressure on shaft

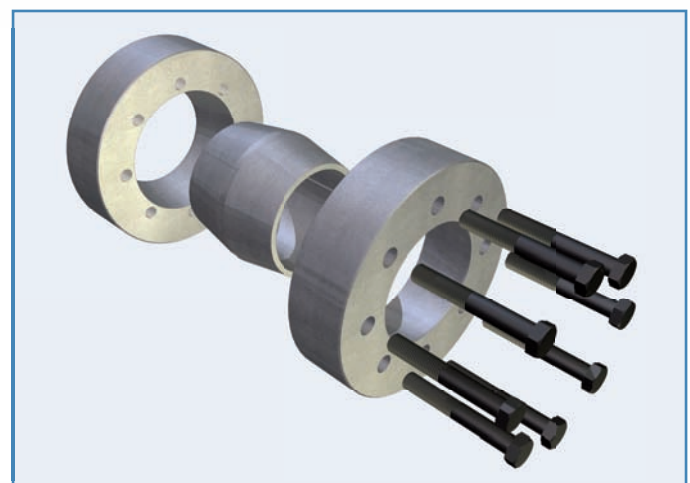


### Features

- Rigid shaft-to-shaft coupling
- Medium capacity
- Three-part design
- Compact design
- Self-releasing tapers, greased with MoS<sub>2</sub> ( $\mu = 0.05$ ). Oiled tapers (self-locking) up to size 14x44
- Screws greased with MoS<sub>2</sub> ( $\mu = 0.10$ )
- Connection of shafts with different diameters is possible, through stepped bore inner ring or adapter sleeve
- Shafts tolerance: h7 – h9
- Shafts surface finish Ra < 3.2  $\mu\text{m}$
- Shafts – coupling contact surfaces: oiled ( $\mu = 0.12$ )

### Composition

- Slotted inner ring
- Front outer ring
- Rear outer ring
- Set of hexagonal head cap screws, grade 10.9 (size < M6 of grade 8.8)



DIMENSIONS					SCREWS		FEATURES			WEIGHT kg
d mm	x	D mm	L1 mm	L mm	size	Ma Nm	Mt Nm	Fax kN	Ps MPa	
6	x	35	19	22,5	M 5	4	27	9	491	0,11
7	x	35	19	22,5	M 5	4	31	9	421	0,11
8	x	35	19	22,5	M 5	4	36	9	368	0,11
9	x	39	23	26,5	M 5	4	50	11	327	0,17
10	x	39	23	26,5	M 5	4	55	11	294	0,17
11	x	39	23	26,5	M 5	4	61	11	268	0,17
12	x	44	30	33,5	M 5	4	80	13	226	0,29
13	x	44	30	33,5	M 5	4	87	13	209	0,29
14	x	44	30	33,5	M 5	4	93	13	194	0,28
15	x	52	34	38	M 6	12	160	22	275	0,43
16	x	52	34	38	M 6	12	170	22	258	0,43
17	x	52	34	38	M 6	12	180	22	242	0,42
18	x	52	34	38	M 6	12	200	22	229	0,42
19	x	52	34	38	M 6	12	210	22	217	0,41
20	x	60	40	44	M 6	12	360	36	301	0,65
22	x	60	40	44	M 6	12	400	36	273	0,63
24	x	60	40	44	M 6	12	440	36	250	0,61
25	x	66	44	48	M 6	12	630	51	299	0,84
28	x	66	44	48	M 6	12	710	51	267	0,80
29	x	66	44	48	M 6	12	740	51	258	0,79
30	x	76	48	52	M 6	12	870	58	256	1,2
32	x	76	48	52	M 6	12	930	58	240	1,2
35	x	76	48	52	M 6	12	1.000	58	220	1,2
36	x	96	56	61,3	M 8	30	1.800	97	312	2,3
40	x	96	56	61,3	M 8	30	1.900	97	281	2,2
44	x	96	56	61,3	M 8	30	2.100	97	256	2,1
50	x	112	68	73,3	M 8	30	3.500	140	264	3,5
51	x	112	68	73,3	M 8	30	3.600	140	259	3,5
54	x	112	68	73,3	M 8	30	3.800	140	244	3,6
55	x	120	78	83,3	M 8	30	4.600	170	244	4,7
60	x	120	78	83,3	M 8	30	5.000	170	224	4,4
63	x	120	78	83,3	M 8	30	5.300	170	213	4,3
65	x	148	88	94,4	M 10	60	8.600	260	284	8,4
68	x	148	88	94,4	M 10	60	9.000	260	272	8,1
70	x	148	88	94,4	M 10	60	9.300	260	264	8,1
73	x	148	88	94,4	M 10	60	9.700	260	253	7,9
74	x	170	104	111,5	M 12	100	11.600	310	262	12,8
76	x	170	104	111,5	M 12	100	12.000	310	256	12,7
80	x	170	104	111,5	M 12	100	12.600	310	243	12,3
85	x	170	104	111,5	M 12	100	13.400	310	228	11,8
86	x	185	116	123,5	M 12	100	16.200	380	238	16,8
90	x	185	116	123,5	M 12	100	17.000	380	227	16,3
92	x	185	116	123,5	M 12	100	17.400	380	222	16,1
96	x	185	116	123,5	M 12	100	18.100	380	213	15,6
100	x	197	126	133,5	M 12	100	23.600	470	232	19,6
106	x	197	126	133,5	M 12	100	25.000	470	219	18,7
108	x	197	126	133,5	M 12	100	25.500	470	215	18,4
110	x	197	126	133,5	M 12	100	26.000	470	211	18,1
120	x	230	152	162	M 16	250	43.600	730	251	31,5
130	x	230	152	162	M 16	250	47.200	730	231	29,4

**Code:**

Ma: screws tightening torque

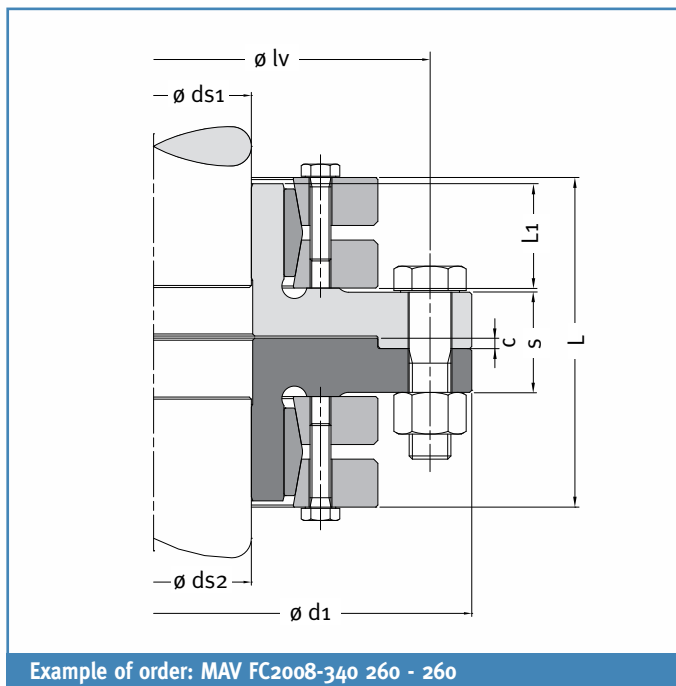
Mt: transmissible torque with Fax=0 kN

Fax: transmissible axial load with Mt=0 Nm

Ps: contact pressure on shaft



# MAV FC2008 Flange couplings

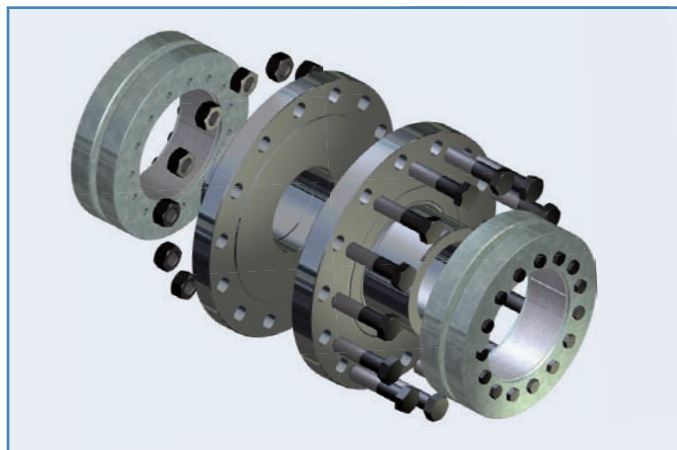


## Features

- Rigid shaft-to-shaft coupling with flanges and shrink discs MAV 2008
- Medium capacity
- Suitable for connection of medium – large diameter shafts
- Decoupling of shafts requires only few millimeters of axial room
- Connection of shafts with different diameters is possible
- Shafts tolerance: see table for shrink discs
- Shafts surface finish  $Ra < 3.2 \mu m$
- Shafts – flange bores contact surfaces: grease-free and dry ( $\mu = 0.15$ )

## Composition

- Two shrink discs MAV 2008
- Male coupling flange
- Female coupling flange
- Set of hexagonal head cap screws, grade 10.9
- Set of hexagonal nuts, grade 10



# Flange couplings **MAV FC2008**

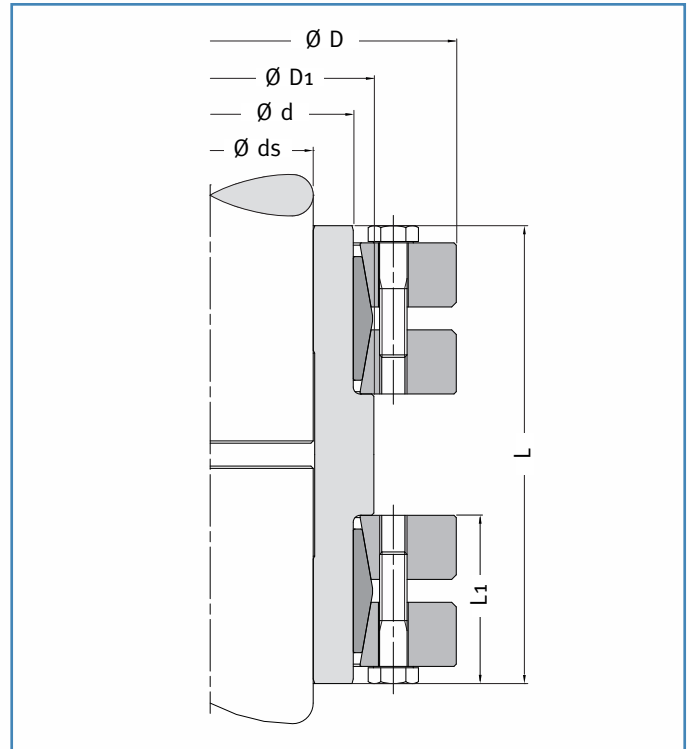
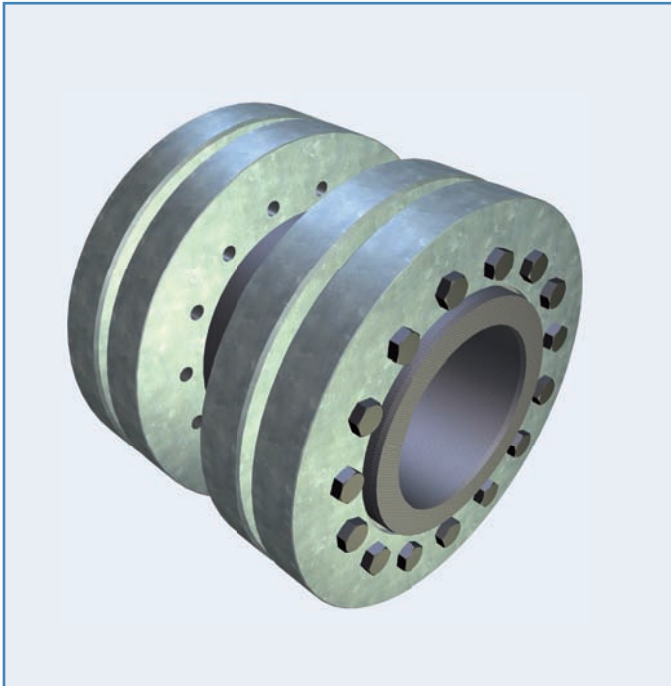
measure	DIMENSIONS								SHRINK DISC SCREWS		FLANGE SCREWS				TRANSMISSIBLE TORQUE	WEIGHT kg
	ds mm	shrink disc MAV 2008 d x D	lv mm	D1 mm	s mm	L mm	L1 mm	c mm	size	Ma Nm	n.	measure	Ma Nm	Mt Nm		
100	70 75 80	100 x 170	210	240	44	136	44	4	M 8	30	6	M 16	210	7.600 9.300 11.300	26	
125	85 90 95	125 x 215	265	305	48	160	54	5	M 10	59	6	M 20	420	13.300 15.800 18.600		
140	95 100 105	140 x 230	286	340	56	190	64	5	M 12	100	5	M 24	720	18.600 21.600 24.900	63	
165	115 120 125	165 x 290	356	400	72	228	75	5	M 16	250	8	M 24	720	38.900 43.600 47.600		
175	125 130 135	175 x 300	356	400	72	228	75	5	M 16	250	8	M 24	720	42.900 47.800 53.100	120	
195	140 150 155	195 x 350	420	475	90	278	90	6	M 16	250	10	M 30	1450	75.600 90.600 98.700		
220	160 165 170	220 x 370	446	510	90	306	108	6	M 16	250	14	M 30	1450	110.000 120.000 129.000	265	
240	170 180 190	240 x 405	475	540	88	322	113	6	M 20	490	16	M 30	1450	146.000 168.000 190.000		
260	190 200 210	260 x 430	500	560	110	368	125	8	M 20	490	16	M 30	1450	197.000 224.000 254.000	395	
280	210 220 230	280 x 460	530	590	104	392	139	8	M 20	490	18	M 30	1450	260.000 292.000 327.000		
300	230 240 250	300 x 485	555	615	104	408	147	8	M 20	490	20	M 30	1450	334.000 371.000 410.000	500	
340	250 260 270	340 x 570	640	710	118	450	161	8	M 20	490	24	M 30	1450	465.000 506.000 555.000		
360	280 290 295	360 x 590	660	720	106	450	167	8	M 20	490	24	M 30	1450	556.000 606.000 632.000	795	

**Code:**

Ma: screws tightening torque

Mt: transmissible torque with Fax=0 kN





Example of order: MAV SC2008-140 95 - 95

## Features

### MAV SC2008

- Rigid shaft-to-shaft coupling with sleeve and shrink discs MAV 2008 – standard duty
- Medium capacity
- Connection of shafts with different diameters is possible
- Shafts tolerance: see table for shrink discs
- Shafts surface finish  $R_a < 3.2 \mu\text{m}$
- Shafts – sleeve bore contact surfaces: grease-free and dry ( $\mu = 0.15$ )

### MAV SC2208

- Rigid shaft-to-shaft coupling with sleeve and shrink discs MAV 2208 – heavy duty
- High capacity
- Connection of shafts with different diameters is possible
- Shafts tolerance: see table for shrink discs
- Shafts surface finish  $R_a < 3.2 \mu\text{m}$
- Shafts – sleeve bore contact surfaces: grease-free and dry ( $\mu = 0.15$ )

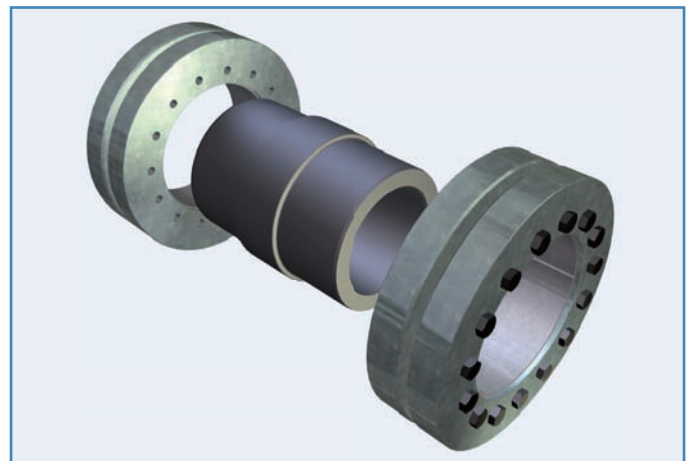
## Composition

### MAV SC2008

- Two shrink discs MAV 2008
- Unslotted coupling sleeve

### MAV SC2208

- Two shrink discs MAV 2208
- Unslotted coupling sleeve





measure	DIMENSIONS					SCREWS		FEATURES		WEIGHT kg
	ds mm	shrink disc MAV 2008 d x D	L mm	D1 mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	
20	15	20 x 46	45	25	21	M 5	4	130	17	0,34
	16							170	21	
	17							210	25	
24	19	24 x 50	50	28	22	M 5	4	220	24	0,44
	20							280	28	
	21							330	32	
30	24	30 x 60	55	34	24	M 5	4	350	29	0,68
	25							400	32	
	26							470	36	
36	28	36 x 72	65	40	26	M 6	12	770	55	1,1
	30							960	64	
	31							980	63	
44	34	44 x 80	70	49	28	M 6	12	1.200	72	1,5
	35							1.400	77	
	36							1.500	83	
50	38	50 x 90	80	55	31	M 6	12	1.500	80	2,1
	40							1.800	91	
	42							2.100	101	
55	42	55 x 100	85	60	33	M 6	12	1.700	80	2,8
	45							2.100	94	
	48							2.600	110	
62	48	62 x 110	90	68	33	M 6	12	2.700	110	3,4
	50							3.000	120	
	52							3.200	120	
68	50	68 x 115	100	74	33	M 6	12	2.500	100	3,8
	55							3.100	110	
	60							4.100	140	
75	55	75 x 138	120	81	37	M 8	30	3.500	130	6,1
	60							4.700	160	
	65							6.000	180	
80	60	80 x 145	130	86	37	M 8	30	4.100	140	6,8
	65							5.200	160	
	70							6.600	190	
85	60	85 x 155	140	96	44	M 8	30	5.400	180	10,0
	65							6.900	210	
	70							8.600	250	
90	65	90 x 155	140	96	44	M 8	30	6.200	190	9,7
	70							7.700	220	
	75							9.400	250	
95	65	95 x 170	160	106	49	M 8	30	6.800	210	14
	70							8.400	240	
	75							10.300	270	
100	70	100 x 170	160	106	49	M 8	30	7.600	220	14
	75							9.300	250	
	80							11.300	280	
105	70	105 x 185	180	116	56	M 10	59	8.100	230	19
	75							10.000	270	
	80							12.100	300	
110	75	110 x 185	180	116	56	M 10	59	9.100	240	19
	80							11.000	280	
	85							12.200	290	
115	80	115 x 200	185	131	57	M 10	59	11.500	290	23
	85							12.600	300	
	90							15.100	340	
120	85	120 x 200	185	131	57	M 10	59	11.400	270	22
	90							13.800	310	
	95							16.300	340	
125	85	125 x 215	200	136	60	M 10	59	13.300	310	28
	90							15.800	350	
	95							18.600	390	
130	90	130 x 215	200	136	60	M 10	59	14.600	320	27
	95							17.200	360	
	100							20.100	400	

# MAV SC2008

## Standard Sleeve couplings

measure	DIMENSIONS					SCREWS		FEATURES		WEIGHT kg
	ds mm	shrink disc MAV 2008 d x D	L mm	D1 mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	
140	95	140 x 230	210	148	66	M 12	100	18.600	390	33
	100							21.600	430	
	105							24.900	470	
155	105	155 x 263	230	167	70	M 12	100	25.400	480	49
	110							29.000	530	
	115							32.800	570	
165	115	165 x 290	240	177	78	M 16	250	38.900	680	63
	120							43.600	730	
	125							47.600	760	
175	125	175 x 300	250	187	78	M 16	250	42.900	690	66
	130							47.800	740	
	135							53.100	790	
185	135	185 x 330	265	201	95	M 16	250	60.000	890	95
	140							66.400	950	
	145							73.100	1.000	
195	140	195 x 350	280	216	95	M 16	250	75.600	1.100	107
	150							90.600	1.200	
	155							98.700	1.300	
200	150	200 x 350	290	216	95	M 16	250	87.000	1.200	106
	155							94.800	1.200	
	160							103.000	1.300	
220	160	220 x 370	310	236	114	M 16	250	110.000	1.400	144
	165							120.000	1.500	
	170							129.000	1.500	
240	170	240 x 405	350	254	121	M 20	490	146.000	1.700	185
	180							168.000	1.900	
	190							190.000	2.000	
250	180	250 x 430	390	274	132	M 20	490	186.000	2.100	237
	190							209.000	2.200	
	200							238.000	2.400	
260	190	260 x 430	390	274	132	M 20	490	197.000	2.100	228
	200							224.000	2.200	
	210							254.000	2.400	
280	210	280 x 460	430	296	145	M 20	490	260.000	2.500	281
	220							292.000	2.700	
	230							327.000	2.800	
300	230	300 x 485	445	316	153	M 20	490	334.000	2.900	323
	240							371.000	3.100	
	250							410.000	3.300	
320	240	320 x 520	460	336	153	M 20	490	380.000	3.200	384
	250							419.000	3.400	
	260							457.000	3.500	
340	250	340 x 570	480	356	169	M 20	490	465.000	3.700	523
	260							506.000	3.900	
	270							555.000	4.100	
350	260	350 x 580	490	376	173	M 20	490	483.000	3.700	552
	270							530.000	3.900	
	280							580.000	4.100	
360	280	360 x 590	500	376	173	M 20	490	556.000	4.000	544
	290							606.000	4.200	
	295							632.000	4.300	
380	290	380 x 645	530	395	179	M 24	840	682.000	4.700	699
	300							739.000	4.900	
	310							799.000	5.200	
390	310	390 x 660	540	415	179	M 24	840	813.000	5.200	729
	315							844.000	5.400	
	320							871.000	5.400	
400	315	400 x 680	540	415	199	M 24	840	806.000	5.100	829
	320							831.000	5.200	
	330							896.000	5.400	
420	330	420 x 690	580	435	199	M 24	840	967.000	5.900	852
	340							1.040.000	6.100	
	350							1.110.000	6.400	

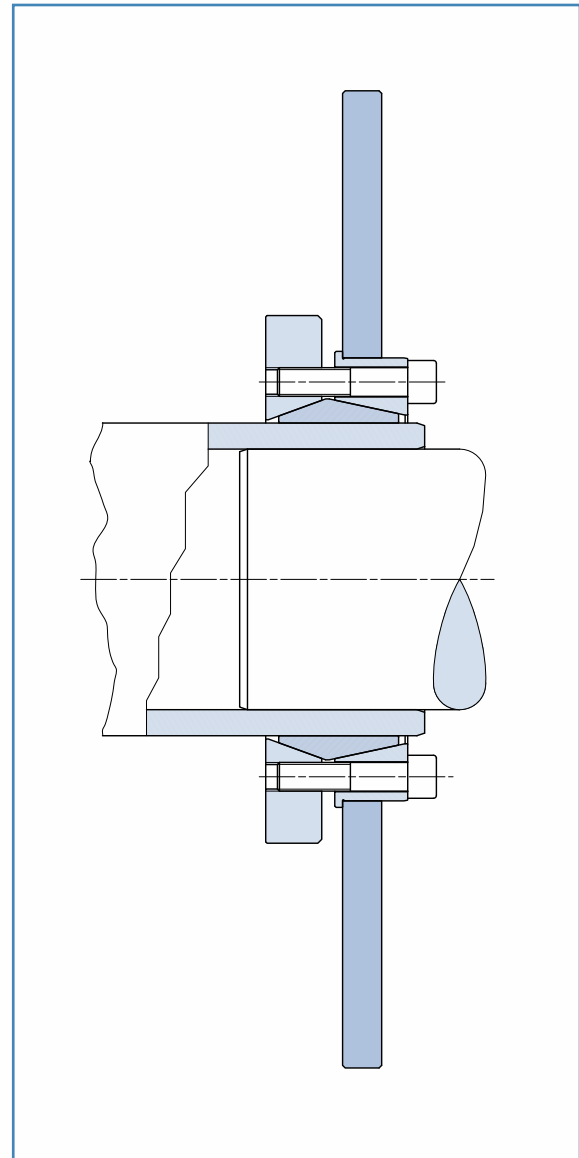
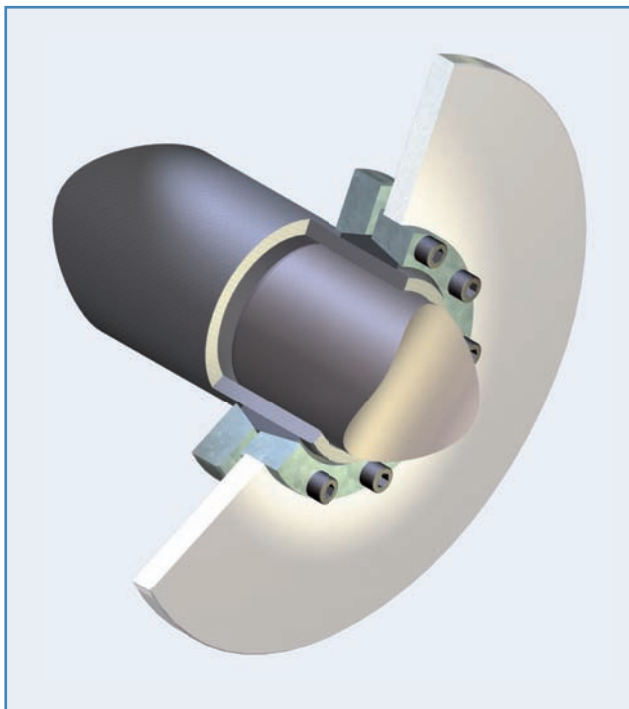
measure	DIMENSIONS					SCREWS		FEATURES		WEIGHT kg
	ds mm	shrink disc MAV 2008 d x D	L mm	D1 mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	
440	340	440 x 750	600	456	207	M 24	840	970.000	5.700	1062
	350							1.040.000	5.900	
	360							1.110.000	6.200	
460	360	460 x 770	620	476	207	M 24	840	1.040.000	5.800	1113
	370							1.120.000	6.000	
	380							1.190.000	6.300	
480	380	480 x 800	645	496	228	M 24	840	1.420.000	7.500	1297
	390							1.510.000	7.700	
	400							1.600.000	8.000	
500	400	500 x 850	670	516	230	M 27	1250	1.620.000	8.100	1477
	410							1.700.000	8.300	
	420							1.800.000	8.600	

**Code:**

Ma: screws tightening torque

Mt: transmissible torque with Fax=0 kN

Fax: transmissible axial load with Mt=0 Nm





# MAV SC2208

## Heavy Sleeve couplings

measure	DIMENSIONS					SCREWS		FEATURES		WEIGHT kg
	ds mm	shrink disc MAV 2208 d x D	L mm	D1 mm	L1 mm	size	Ma Nm	Mt Nm	Fax kN	
125	85	125 x 215	200	136	74	M 12	100	20.100	470	32
	90							23.800	530	
	95							27.800	590	
140	95	140 x 230	210	148	82	M 12	100	21.500	450	39
	100							25.200	500	
	105							29.200	560	
155	105	155 x 263	230	170	88	M 12	100	31.100	590	58
	110							35.600	650	
	115							40.500	700	
165	115	165 x 290	240	177	98	M 16	250	48.300	840	74
	120							54.200	900	
	125							59.200	950	
175	125	175 x 300	250	187	98	M 16	250	53.200	850	78
	130							59.400	910	
	135							66.000	980	
185	135	185 x 330	265	201	122	M 16	250	92.900	1.400	117
	140							102.000	1.500	
	145							112.000	1.500	
195	145	195 x 350	280	216	122	M 16	250	103.000	1.400	131
	150							113.000	1.500	
	155							123.000	1.600	
200	145	200 x 350	290	216	122	M 16	250	99.000	1.400	135
	150							108.000	1.400	
	155							118.000	1.500	
220	160	220 x 370	310	236	144	M 16	250	148.000	1.900	173
	165							160.000	1.900	
	170							173.000	2.000	
240	170	240 x 405	350	254	157	M 20	490	181.000	2.100	228
	180							205.000	2.300	
	190							236.000	2.500	
260	190	260 x 430	390	274	173	M 20	490	252.000	2.700	278
	200							287.000	2.900	
	210							325.000	3.100	
280	210	280 x 460	430	296	185	M 20	490	323.000	3.100	340
	220							364.000	3.300	
	230							407.000	3.500	
300	230	300 x 485	445	316	189	M 20	490	365.000	3.200	380
	240							406.000	3.400	
	245							428.000	3.500	
320	240	320 x 520	460	336	197	M 20	490	450.000	3.700	465
	250							492.000	3.900	
	260							543.000	4.200	
340	250	340 x 570	480	356	215	M 24	840	544.000	4.400	619
	260							600.000	4.600	
	270							659.000	4.900	
350	270	350 x 580	490	366	215	M 24	840	667.000	4.900	621
	280							729.000	5.200	
	290							794.000	5.500	
360	280	360 x 590	500	376	219	M 24	840	661.000	4.700	640
	290							721.000	5.000	
	295							753.000	5.100	
390	300	390 x 660	540	405	227	M 24	840	850.000	5.700	862
	310							920.000	5.900	
	320							986.000	6.200	
420	330	420 x 690	580	435	253	M 24	840	1.210.000	7.300	1022
	340							1.300.000	7.600	
	350							1.390.000	7.900	
460	360	460 x 770	620	476	269	M 27	1250	1.650.000	9.100	1371
	370							1.760.000	9.500	
	380							1.870.000	9.800	
500	380	500 x 850	670	516	291	M 27	1250	1.890.000	10.000	1911
	390							2.010.000	10.000	
	400							2.140.000	11.000	

**Code:**

Ma: screws tightening torque  
 Mt: transmissible torque with  
 Fax=0 kN  
 Fax: transmissible axial load with  
 Mt=0 Nm

## Installation and Removal Instructions

### Installation

Shrink Discs are supplied ready for installation. Remove the spacers that may have been used to keep the rings disengaged. Never tighten locking screws prior to installation. Performances are based on the following conditions:

- indicated maximum shaft - hub clearance
  - shaft - hub contact surface grease-free and dry (friction coefficient  $\mu = 0.15$ )
1. Carefully solvent clean and dry shaft and hub bore. Shaft - hub contact surface to be grease-free and dry.
  2. Position shrink disc onto hub and insert shaft into hub.
  3. After confirming correct position of shaft and hub, hand-tighten locking screws.
  4. Use a torque wrench and set it approx. 5% higher than specified tightening torque. Tighten the screws in a clockwise or counterclockwise pattern in several steps.
  5. Reset the torque wrench to specified tightening torque and make sure no screw can turn, otherwise repeat the procedure from step 4.

### Removal

Prior to initiating the removal procedure, check to ensure that no load is acting on Shrink Disc or mounted components.

**WARNING: DO NOT** completely remove locking screws before rings are disengaged. A sudden separation of locking rings could involve high separation forces that may result in permanent injury or death.

1. Loosen the screws in a clockwise or counterclockwise pattern in several steps, until the rings are disengaged. For series MAV 3008 - MAV 3009 - MAV 3108 - MAV 3208 - MAV 3209 use, if necessary, the push-off threads located on the front face of inner ring.

### Reinstallation

In relatively clean operative conditions, Shrink Discs may be reused without prior cleaning. In all other cases, disassemble the rings, clean them and restore lubrication according to specific instructions for each series.

**NOTE:** download from our website [www.mav.it](http://www.mav.it), or request to our Technical Department, the detailed installation and removal instructions for each MAV Shrink Discs series.

# RIGID COUPLINGS

## Installation and Removal Instructions Rigid Shaft Couplings

### Installation

Rigid Shaft Couplings are supplied ready for installation. Never tighten locking screws prior to installation. Performances are based on the following conditions:

- oiled shafts, friction coefficient  $\mu = 0.12$  (series MAV 1204 and MAV 1004)
- indicated maximum shaft – hub clearance (series MAV FC2008 – MAV SC2008 – MAV SC2208)
- shaft – hub contact surface grease-free and dry, friction coefficient  $\mu = 0.15$  (series MAV FC2008 – MAV SC2008 – MAV SC2208)

1. Install the Coupling onto shafts and, after confirming correct position, hand-tighten locking screws.
2. Use a torque wrench and set it approx. 5% higher than specified tightening torque. Tighten the screws in a clockwise or counterclockwise pattern in several steps.
3. Reset the torque wrench to specified tightening torque and make sure no screw can turn, otherwise repeat the procedure from step 2.

### Removal

Prior to initiating the removal procedure, check to ensure that no load is acting on Coupling or mounted components.

**WARNING: DO NOT** completely remove locking screws before rings are disengaged. A sudden separation of locking rings could involve high separation forces that may result in permanent injury or death.

1. Loosen the screws in a clockwise or counterclockwise pattern in several steps, until the rings are disengaged. For series MAV 1004, tapping with a hammer is required.

#### Reinstallation

In relatively clean operative conditions, Rigid Couplings may be reused without prior cleaning. In all other cases, disassemble the rings, clean them and restore lubrication according to specific instructions for each series.

**NOTE:** download from our website [www.mav.it](http://www.mav.it), or request to our Technical Department, the detailed installation and removal instructions for each series of MAV Rigid Shaft Couplings.



# Technical Support

## Data of application

If you need technical assistance to select the right MAV Locking Device for your application, please fill in this questionnaire and send it by fax including your references at the following number:

**+39 0461 84 51 50**

Peak torque to be transmitted .....T \_\_\_\_\_ [Nm]  
Peak axial force to be transmitted .....F \_\_\_\_\_ [kN]  
Peak bending moment to be transmitted .....B \_\_\_\_\_ [Nm]  
Peak radial force to be transmitted .....Frad \_\_\_\_\_ [kN]  
Maximum speed .....n \_\_\_\_\_ [1/min]  
Operating temperature .....To \_\_\_\_\_ [°C]  
Ambient temperature.....Ta \_\_\_\_\_ [°C]

### SHAFT DATA:

Size .....d \_\_\_\_\_ [mm]  
If hollow-shaft; inner diameter .....di \_\_\_\_\_ [mm]  
Material..... \_\_\_\_\_  
Yield point .....Rp<sub>0,2</sub> \_\_\_\_\_ [MPa]

### HUB DATA:

Outer diameter .....dH \_\_\_\_\_ [mm]  
Length.....L \_\_\_\_\_ [mm]  
Material..... \_\_\_\_\_  
Yield point .....Rp<sub>0,2</sub> \_\_\_\_\_ [MPa]

### Describe your application

(if possible, please attach a sketch or a drawing)

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Your local MAV distributor: