

# **Installation and Maintenance Instructions**

## **SAMIFLEX Couplings Type A & C**





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1. Technical Data

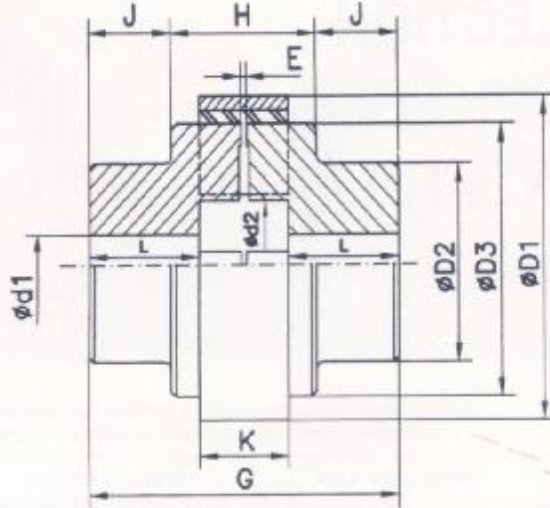


TABLE 1

TECHNICAL DETAIL AND DIMENSIONS (mm.)																	
COUPLING TYPE	A00	A0	A1	A2	A3	A3B	A4	A4B	A45	A5	A55	A6	A7	A8	A9	A10	A11
NOMINAL KW PER 1.000 RPM	0,70	2	5,5	10,5	21	21	42	42	74	105	157	210	420	785	1.310	2.620	3.670
NOM. TORQUE (TKn) Nm	6,5	20	50	100	200	200	400	400	700	1.000	1.500	2.000	4.000	7.500	12.500	25.000	35.000
MAX. TORQUE (TKmax.) Nm	20	50	90	250	500	500	1.000	1.000	1.750	2.500	3.000	4.000	8.000	15.000	25.000	40.000	56.000
MAX. SPEED R.P.M.	9.000	9.000	8.000	6.500	4.800	4.800	3.500	3.500	3.100	2.900	2.600	2.500	2.200	1.850	1.600	1.250	1.250
TORSIONAL STIFFNESS (OTdyn) 10 <sup>9</sup> Nm. rad <sup>-1</sup>	0,21	0,32	0,95	2,1	4,2	4,2	9,5	9,5	11,2	16	42	65	112	200	214	460	580
RELATIVELY DAMPING (γ)	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65	0,65
MOMENT OF INERTIA J(Kg-m <sup>2</sup> )	-	-	0,001	0,005	0,012	0,02	0,05	0,075	0,102	0,155	0,275	0,437	0,825	2,325	4,95	12	16
Weight Kg	0,2	1,0	1,8	3,8	6,2	8,5	12,5	16	19	26	36	47	74,5	137	218	350	410

COUPLING TYPE	A00	A0	A1	A2	A3	A3B	A4	A4B	A45	A5	A55	A6	A7	A8	A9	A10	A11
MAX. BORE d1	16	23	38	42	50	55	65	70	75	85	95	110	130	150	180	210	210
PRE BORE	4	8	14	17	19	19	24	24	25	29	30	39	48	63	73	96	96
G	51	73	91	127	156	156	180	180	198	216	246	260	310	382	420	482	512
L	19	28	34	47	56	56	63	63	70	77	90	95	116	147	162	188	190
d2	22	32	39	45	52	52	70	70	90	89	115	112	135	157	188	218	216
D2	35	52	65	80	85	105	110	135	125	140	155	180	205	242	280	330	350
D3	35	52	65	86	116	116	150	150	170	190	215	233	267	326	385	483	458
K	12	16	22	32	42	42	51	51	56	59	64	67	75	85	92	102	128
J	-	-	-	36	45	45	47	47	52	57	68	70	88	114	129	145	148
H	-	-	-	55	65	65	85	85	93	101	109	119	134	154	162	192	216
E	1,5	1,5	1,5	2,5	2,5	2,5	3,5	3,5	3,5	3,5	3,5	3,5	4	5	5	6	6

1. Technical Data

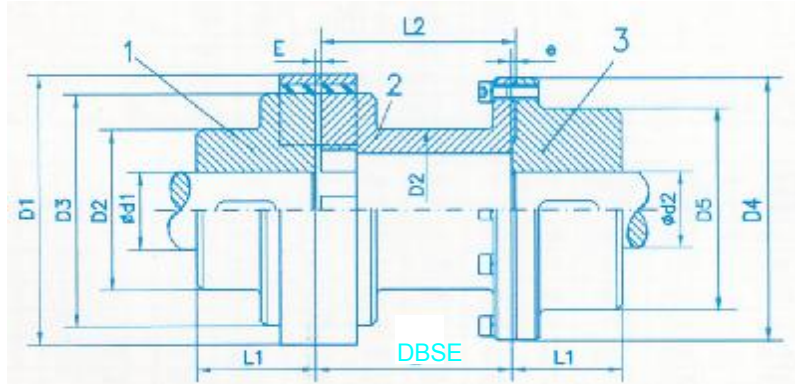


TABLE 2

TYPE	NOMINAL TORQUE Nm	MAXIMUM TORQUE Nm	MAX. DIAM. d1 mm.	MAX. DIAM. d2 mm.	MAX. SPEED R.P.M.	D1 mm	D2 mm	D3 mm	D4 mm	D5 mm	E mm	e mm	L1 mm	L2 mm	DBSE mm.
A1C	50	90	28	42	5.500	83	65	65	100	67	3.0	2.0	45	L-1	100 120 140
A2C	100	250	35	48	5.000	111	80	86	120	83	3.0	2.0	62	L-1	100 120 140
A3C	200	500	42	65	4.500	144	85	116	140	107	3.5	2.5	76	L-1	100 120 140 180
A4C	400	1.000	55	85	3.500	182	110	150	178	140	3.5	2.5	88	L-1	100 120 140 180
A45C	700	1.750	65	90	3.100	202	125	170	200	150	3.5	2.5	97	L-1	100 120 140 180
A5C	1.000	2.500	75	110	2.900	225	140	190	225	179	3.5	2.5	106	L-1	140 180 200 250
A55C	1.500	3.000	75	110	2.600	250	155	215	245	180	4.0	3.0	121	L-1	140 180 200 250
A6C	2.000	4.000	90	120	2.500	265	180	233	265	198	4.0	3.0	128	L-1	180 200 250 280
A7C	4.000	8.000	110	130	2.200	306	205	267	290	230	4.0	3.0	153	L-1	180 200 250 280

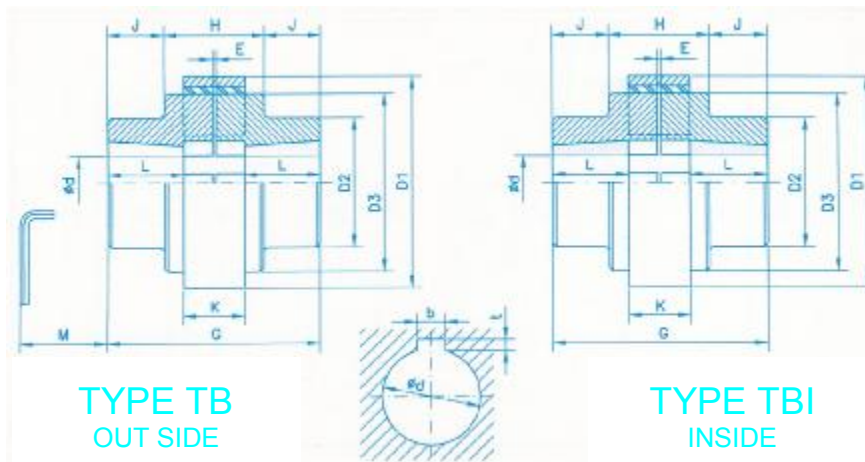


TABLE 3

TYPE	TAPER BUSH	MINIMUM DIAM. Ød mm.	MAX. DIAM. Ød mm.	L mm.	G mm.	E mm.	K mm.	H mm.	D1 mm.	D2 mm.	D3 mm.	J mm.	M mm.
A1 – TB/TBI	1108	9	28	27	77	1,5	22	-	83	65	65	-	29
A2 – TB/TBI	1210	11	32	32	97	2,5	32	55	111	80	86	21	38
A3 – TB/TBI	1610	14	42	32	107	2,5	42	65	144	85	116	21	38
A4 – TB/TBI	2012	14	50	38	130	3,5	51	85	182	110	150	22	42
A45 – TB/TBI	2517	16	60	50	158	3,5	55	93	202	125	170	32	50
A5 – TB/TBI	3020	25	75	56	173	3,5	59	101	225	140	190	36	55
A6 – TB	3535	35	90	95	259	3,5	67	119	265	180	233	70	67
A7 - TB	4545	55	110	120	318	4	75	134	306	205	267	92	70

## 2. Hints

### 2.1 General Hints

Please read the assembly instructions carefully before starting to operate the coupling. Pay particular attention to the safety instructions.



The Samiflex coupling is approved for use in hazardous areas.

When using the coupling in hazardous areas, pay special attention to the Safety Instructions in our Section A.

The assembly instructions are part of your product, and should be kept with the coupling at all times until it is assembled.

Keep these instructions in a safe place, so they can be referred to by maintenance personnel.

### 2.2 2 Safety and Advise Hints



Danger !

Danger of injury to persons.



Caution !

Damages on the machine possible.



Attention !

Pointing to important items.



Caution !

Hints concerning explosion protection.

### 2.3 General Hints of Danger



Danger !

With assembly, operation and maintenance of the coupling, make sure that the entire drive train is protected against unintentional engagement. Serious injuries can occur from rotating parts. Likewise, make sure to read through and observe the following safety instructions:

- All operations on and with the coupling must be performed with “safety first” being the primary consideration.
- Make sure to disengage the power pack before you perform your work.
- Protect the power pack against unintentional engagement, for example, by providing hints at the place of engagement, or removing the power supply fuse.
- Do not touch the coupling’s working area while it is operating.
- Protect the coupling against unintentional touch. Provide the necessary protective covers and devices.

#### 2.4. Proper Use

Assembly, operation and maintenance work may be performed on the coupling only if:

- The assembly instructions are read carefully and understood.
- The personnel is technically qualified.
- Are authorized to do so by the company.

The coupling may only be used in accordance with the technical data (see table 1 to 8)

Unauthorized modifications to the coupling are not admissible. We decline any warranty due to consequent damage. For future development of the product, we reserve the right to make technical modifications.

The Samiflex coupling described here corresponds to the technical status at the time of printing these assembly instructions.

#### 3. Storage

The couplings' hubs and rings are supplied in storable conditions, and can be stored in a dry, covered place for an indefinite time.

The elastic inserts remain unchanged for an indefinite time, retaining their mechanical and hardness characteristics. Light causes a colour change in the elastic inserts following a prolonged period of storage (over 3 years).

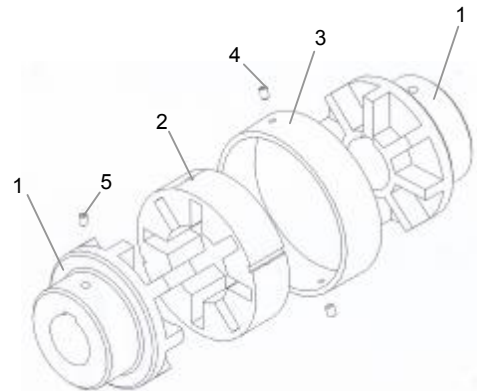
#### 4. Assembly

Basically, the coupling is supplied assembled in boxes with type identification. If the coupling is supplied in separate parts, a check should be made prior to assembly, to ensure it is complete.

##### 4.1. Coupling components

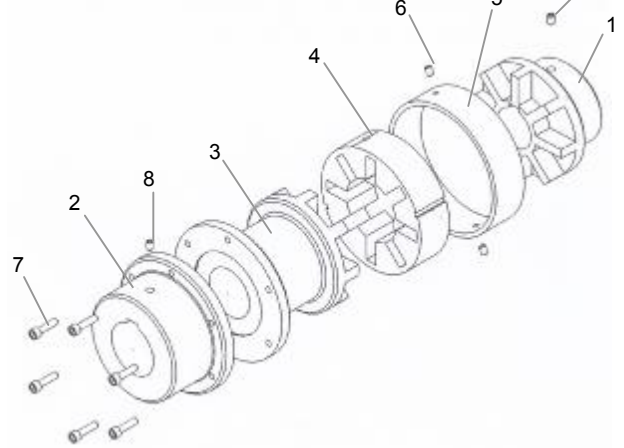
Components of Samiflex coupling type A y C.

<b>Component</b>	<b>Quantity</b>	<b>Designation</b>
1	2	Hub
2	1	Elastic insert
3	1	Ring
4	2	Locking set screw
5	2	Set screw



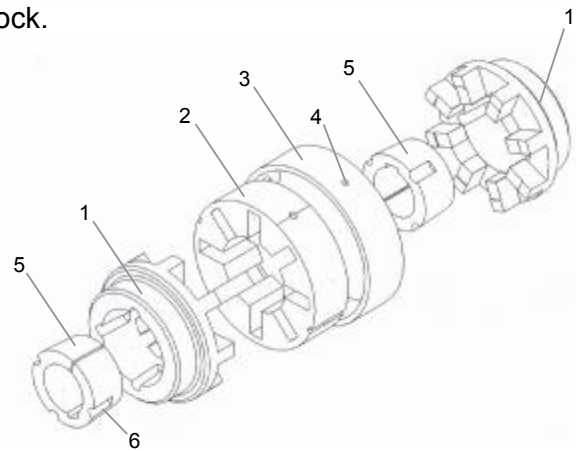
Component	Quantity	Designation
1	1	Hub
2	1	Flange Hub
3	1	Spacer body
4	1	Elastic Insert
5	1	Ring
6	2	Locking set screw
7	6-8	Cap Screw
8	2	Set Screw

Components of Samiflex coupling type C with Spacer



Components of Samiflex coupling type A with taper lock.

Component	Quantity	Designation
1	2	Hub TB / TBI
2	1	Elastic Insert
3	1	Ring
4	2	Locking set screw.
5	2	Taper lock
6	4	Set screw



Elastic Insert / Material : Poliurethane

QUALITY	REF.	HARDNESS	COLOUR	TEMP. RATING
STANDARD	STD	80 SHORE A	CLEAR	- 40 / 80° C
		90 SHORE A	BLUE	
		95 SHORE A	YELLOW	
HIGH TEMP.	HT	95 SHORE A	ORANGE	- 40 / 140° C
HIGH PERFORMANCE	HD	97 SHORE A	OCHRE	- 40 / 80° C
	HDT	97 SHORE A	RED	- 40 / 140° C
	HR	65 SHORE D	GREEN	- 40 / 140° C

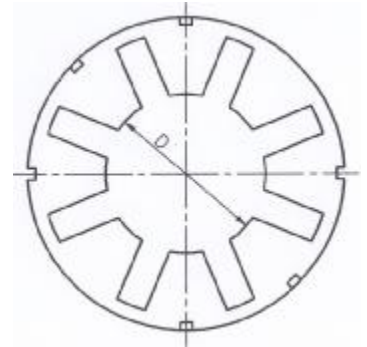


TABLE 4

TYPE	A00	A0	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8	A9	A10	A11
D	22	32	40	48	58.5	76	94	106.5	119	127	162	194	233	275	248

Rings

TYPE	A00	A0	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8	A9	A10	A11
STEEL	●	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
POLYAMIDE	-	●	●	●	●	●	-	-	-	-	-	-	-	-	-

● SUPPLIED AS STANDARD    ▲ SUPPLIED UNDER REQUEST    - NOT AVAILABLE

4.2. Hints regarding the finish bore



**Danger !**

¡ Valid for all materials !

The maximum permissible diameters  $d$  (see table 1 - technical data) must not be exceeded. In the event of failure to keep to these values, the hub may break and the particles dispersed by the rotation may cause serious danger.

Hub bores machined by the customer, have to observe concentric running or axial running respectively (see figure 1)

Secure the set screw with the tightening torque indicated in table 5. For maximum safety against spontaneous loosening, we recommend using medium grade loctite.

$\varnothing d$		TABLE 5	
OVER mm.	TO mm.	G	(Nm) TORQUE
10	24	M4	1.5
24	38	M6	4.8
38	48	M8	10
48	65	M10	17
65	90	M12	40
90	130	M16	80
130	170	M20	140
170	200	M22	210
200	230	M24	300

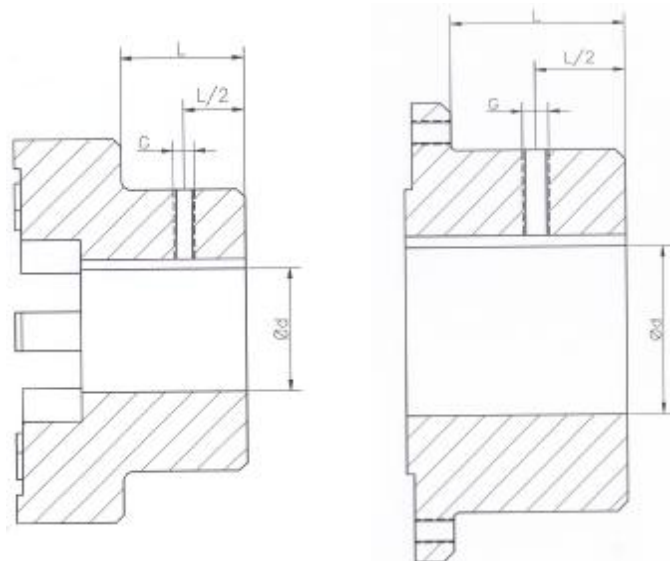


FIGURE 1

4.3. Taper Lock Clamping Sleeve

Assembly of the taper lock-clamping sleeve:

The taper lock clamping sleeve has cylindrical and even pocket holes parallel to the axis. Only half to these holes are in the material of the sleeve. The other half located at the hub has convolutions.

Push the coupling hub and the taper lock clamping sleeve into each other, make holes onto the cover and tighten the grub screw slightly.

TABLE 6

COUPLING TB / TBI	A1	A2	A3	A4	A45	A5	A6	A7
TAPER LOCK	1108	1210	1610	2012	2517	3020	3535	4545
TORQUE (Nm)	5.6	20	20	30	50	90	115	190

#### 4.3. Taper Lock Clamping Sleeve

##### Dissassembly of the taper lock –clamping sleeve:

By removing the grub screws you can detach the taper lock clamping sleeve. Afterwards, one of the grub screws is screwed into the thread of the sleeve as forcing screw and tightened.

The detached coupling hub can be manually taken off the shaft with the taper lock clamping sleeve.

#### 4.4. Assembly of the hubs



##### Attention !

We recommend to check bores, shaft, key-way and the feather key for dimensional accuracy before assembly.

The hubs can be fitted on the shafts by interference (heating up the hubs), or by clearance them, using the appropriate lubricants.



##### Caution !

Take care with the danger of ignition in hazardous areas.



##### Caution !

For the assembly, make sure that distance E (see table 7) is kept, in order to ensure that the elastic insert can be fitted. Respect axial tolerance X (see table 7) of the hubs.

Failure to follow this recommendation may result in damage to the coupling.

- Assemble the hubs onto the shaft of driving and driven side.
- Move the power packs in axial direction until the dimension E is achieved. (respect maximum axial tolerance X).
- If the power packs are already firmly assembled, axial movement of the hubs on the shafts allows for adjusting the dimension E.
- Fasten the hubs by tightening the setscrews DIN 916 with cup point.

##### Attention !

If the shaft diameters with the inserted feather key are smaller than the dimensions D (see table 4) of the elastic insert, one or two shafts ends may protrude into the insert.


4.5. Alignment of the couplings

In order to ensure a long lifetime of the coupling and to avoid dangers regarding the use in hazardous areas, the ends of the shaft must be aligned with precision.

Keep to the alignment measurements and maximum admissible tolerances in table 7.

In case of a use in hazardous areas for the explosion group II C (marked II 2G c T4), assembly measurement E, all the alignment values and the maximum admissible axial tolerance must be kept to with absolute precision.

TABLE 7

															
ASSEMBLY DIMENSIONS AND TOLERANCES IN M.M.															
TYPE	A00	A0	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8	A9	A10	A11
E assembly	1.5	1.5	1.5	2.5	2.5	3.5	3.5	3.5	3.5	3.5	4	5	5	6	6
Axial X	+0.3	+0.3	+0.5	+0.5	+0.7	+0.8	+1.0	+1.0	+1.0	+1.0	+1.0	+1.5	+1.5	+2	+2
Radial Y rpm < 3000	0.2	0.3	0.3	0.5	0.5	0.7	0.7	0.7	0.8	0.8	1.0	1.0	1.0	1.5	1.5
Radial Y rpm > 3000	0.10	0.10	0.10	0.10	0.15	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.40	0.40
Angular Z	0.10	0.10	0.20	0.20	0.30	0.40	0.40	0.50	0.50	0.60	0.90	1.10	1.30	1.70	1.70

The values in table 7 are maximum figures which should not appear at the same time. If radial and angular misalignment are present at the same time, the permissible displacement values can only be used partially (see figure 2).

Example for such a combination of misalignments given in figure 2

Example 1:	Example 2:
Y = 40%	Y = 20%
Z = 60%	Z = 80%

Formula:  $\Delta_{total} = \Delta Y + \Delta Z \leq 100\%$

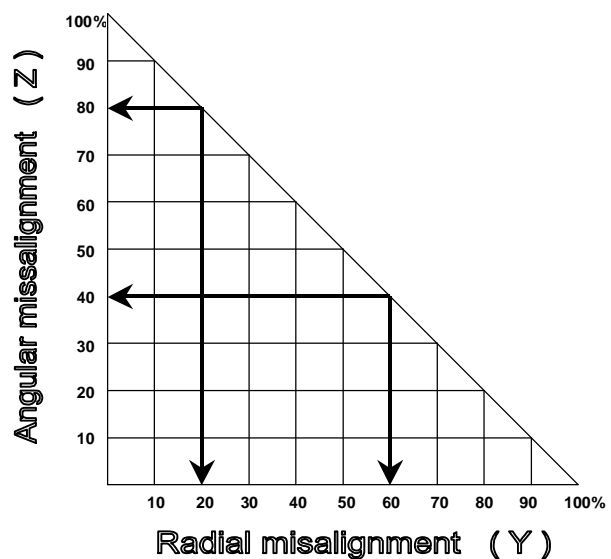


FIGURE 2

**Section A**

**Hints and instructions regarding the use in Ex hazardous areas**

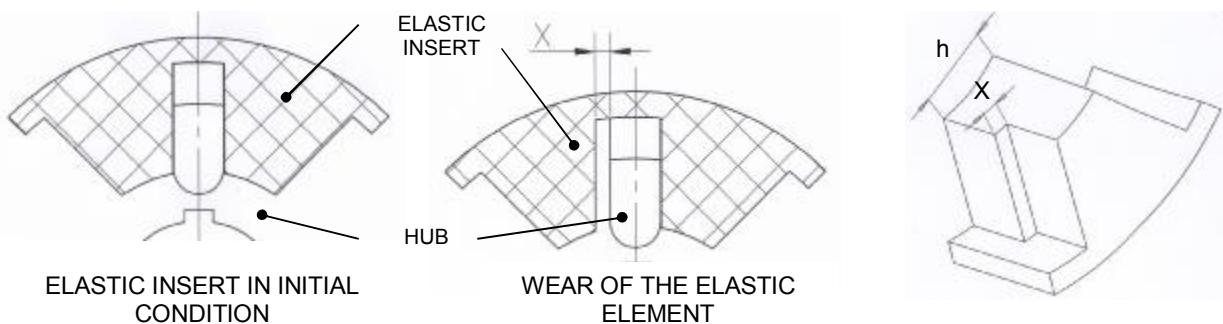


5.1. Control intervals for couplings in Ex. hazardous areas.

explosion group	Control intervals
<b>II 2G c IIB T4</b>	<p>The elastic insert should be checked after 3000 hours of operation the first time, or after 6 months at the latest. If insignificant or no wear and tear is observed in the elastic insert following this first inspection, the following inspections can be carried out, provided the operating parameters are the same, after 6000 hours of operation, or after 18 months at the latest, respectively.</p> <p>If considerable wear and tear is observed during the first inspection, so that it would be advisable to change the elastic insert, the cause should be determined, in accordance with the breakdowns table. Maintenance intervals must be adjusted according to the changed operating.</p>
<b>II 2G c IIC T4</b>	<p>The elastic insert should be checked after 2000 hours of operation the first time, or after 6 months at the latest. If insignificant or no wear is observed in the elastic insert following this first inspection, the following inspections can be carried out, provided the operating parameters are the same, after 4000 hours of operation, or after 12 months at the latest, respectively.</p> <p>If considerable wear is observed during the first inspection, so that it would be advisable to change the elastic insert, the cause should be determined, in accordance with the breakdowns table. Maintenance intervals must be adjusted according to the changed operating.</p>

5.2. Approximate wear values.

The elastic insert can be inspected easily during a stoppage of the equipment, by displacing the ring axially, once the two attachment set screws have been removed.  
The half-life of the elastic insert under normal working conditions is 25,000 hours. As a preventive measure, the elastic insert should be inspected after the first 3000 operating hours (see table 8).



**When the figure X (mm) for wear and tear by friction of the elastic insert reaches the values set out in table 8, it should be replaced with a new one.** In the event it is not replaced, the elastic insert could break due to shearing, leaving the equipment switched off on the drive / power side.

TABLE 8

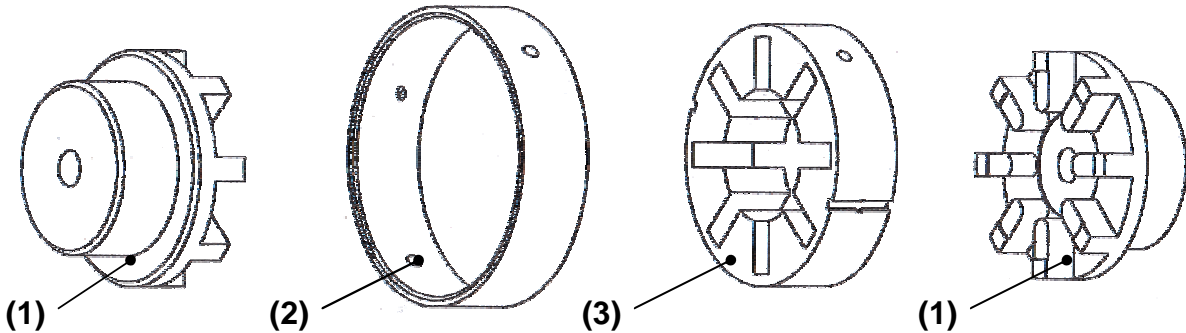
TIPO	A00	A0	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8	A9	A10	A11
h	7	7	8.5	11	14.5	15	21	22	27	28	36	37.5	42	47	60
X (mm)	1.5	1.5	2.0	2.5	3.0	3.0	4.0	4.5	5.5	6.0	7.5	7.5	8.5	9.5	10

**Section A**

**Tips and instructions regarding the use in Ex hazardous areas**



**5.3. Permissible coupling materials in Ex hazardous areas**



TYPE	A00	A0 – A1 – A2 – A3 – A4	A45 – A5 – A55	A6 – A7 – A8 – A9 – A10 – A11
<b>HUB (1)</b>	DURALUMINIO	GG25 GGG40 STEEL F114 INOX AISI 304	GG25 GGG40 STEEL F114	GG25 GGG40
<b>INSERT (2)</b>	POLIURETHANE	POLIURETHANE	POLIURETHANE	POLIURETHANE
<b>RING (3)</b>	STEEL	POLYAMIDE STEEL	STEEL	STEEL

**COUPLING MATERIALS ADMITTED IN HAZARD AREAS**



explosion group	Permissible coupling materials / TYPE
<b>IIB</b>	Samiflex coupling A0 to A4 with polyamide attachment ring
<b>IIC</b>	Samiflex coupling A0 to A3 with polyamide attachment ring Samiflex coupling A0 to A11 with steel attachment ring

**Aluminium as coupling material is generally excluded for explosive areas.**

**5.4. Ex marking of the coupling for Ex. hazardous areas.**

Couplings for use in hazardous areas are marked with regard to the respective permissible conditions of use.

Explosion group IIC: e.g.: II 2G c IIC T4

Explosion group IIB is included in the II 2G c IIC T4 marking.

**5.5 Starting**

**CAUTION !**

The equipment (motor) must not be started up without having first fitted (assembled) the attachment ring to the elastic insert, securing it with the two attachment set screws.

The elastic insert is projected out of the hubs, if the equipment (motor) is started up without the attachment ring having first been fitted (assembled).

**Section A**

**Hints and instructions regarding the use in Ex hazardous areas**



**5.5 Starting**

Before starting up the coupling, the protective cover must be fitted.

Rotary equipment is potentially dangerous and can cause serious injury.

It is the user's responsibility to provide adequate protection, in compliance with standards for the speed and applications in which are used.

**CAUTION**

If you note any irregularities at the coupling during operation, the drive unit must be turned off immediately. The cause of the breakdown must be found out with the table "Breakdowns" and, if possible, be eliminated according to the proposals. The possible breakdowns mentioned can be hints only. To find out the cause all operating factors and machine components must be considered.

**COUPLING PROTECTION IN Ex. HAZARDOUS AREAS**

The coupling must be fitted with firm metal covers protecting it against falling objects. The distance between the cover and the rotating parts must be at least 5 mm. The cover must be an electrical conductor and be included in the equipotential connection. Bellhousing made from aluminium and damping ring (NBR) can be used as connecting elements between the pump and the electric motor, if the magnesium part is below 7.5%. The cover may be removed only after the unit has been stopped.

**Section A**  
**Hints and instructions regarding the use in Ex hazardous areas**



5.6. Breakdowns, Causes and Elimination

BREAKDOWNS	CAUSES	DANGER HINTS FOR HAZARDOUS AREAS	ELIMINATION
Change of the running noises and/or occurring vibrations.	Misalignment micro friction at the toothing of the elastic insert.	Danger of ignition due to hot surfaces.	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Eliminate the reason for the misalignment (e.g.: loose foundation, breakage of motor fastening, heat expansion of the unit's components, change of the assembly dimension E of the coupling).</li> <li>3. Checking of wear. See under point of control.</li> </ol>
	Loose screws for axial securement of hubs.	Danger of ignition due to hot surfaces.	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Check the alignment of the coupling.</li> <li>3. Tighten the screws to fasten the hubs and secure them against self loosening.</li> <li>4. Checking of wear. See under point of control.</li> </ol>
Total breakage due to shearing of the elastic insert in the area on the drive (power) side.	Break of the elastic insert due to high shock energy / overload.	Danger of ignition due to hot surfaces.	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Disassemble the ring and remove the elastic insert.</li> <li>3. Check the parts of the coupling and exchange damaged coupling parts.</li> <li>4. Fit the new elastic insert and re-assemble the parts of the coupling.</li> <li>5. Find out the reason of overload.</li> </ol>
	Operating parameters not corresponding to the coupling's performance.	-	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Check the operating parameters and select a larger coupling (consider installation space).</li> <li>3. Assemble the new coupling size.</li> <li>4. Check the alignment.</li> </ol>
	Mistake in service of the unit.	-	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Disassemble the coupling and remove the elastic insert.</li> <li>3. Check the parts of the coupling and exchange damaged coupling parts.</li> <li>4. Fit the new elastic insert and the parts of the coupling.</li> <li>5. Provide the service staff with instructions and training.</li> </ol>

**Section A**  
**Hints and instructions regarding the use in Ex hazardous areas**



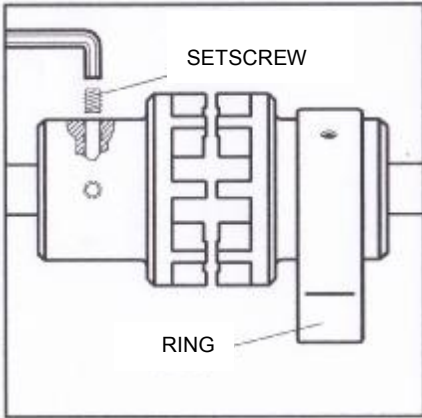
5.6. Breakdowns, Causes and Elimination

BREAKDOWNS	CAUSES	DANGER HINTS FOR HAZARDOUS AREAS	ELIMINATION
Premature wear of the elastic insert	Drive vibrations	Danger of ignition due to hot surfaces.	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Disassemble the ring and remove the elastic insert.</li> <li>3. Check the parts of the coupling and exchange damaged coupling parts.</li> <li>4. Fit the new elastic insert and re-assemble the parts of the coupling.</li> <li>5. Check the alignment and correct if necessary.</li> <li>6. Find out the reason for the vibrations.</li> </ol>
	Ambient / contact temperatures too high for the elastic insert.	Danger of ignition due to hot surfaces.	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Disassemble the ring and remove the elastic insert.</li> <li>3. Check the parts of the coupling and exchange damaged coupling parts.</li> <li>4. Fit the new elastic insert and re-assemble the parts of the coupling.</li> <li>5. Check the alignment and correct if necessary.</li> <li>6. Check and regulate ambient / contact temperature.</li> </ol>
	Contact, e.g., with aggressive fluids / oils, influence of ozone, too high ambient temperatures, etc., affecting a physical change in the elastic insert.	-	<ol style="list-style-type: none"> <li>1. Put the unit out of operation.</li> <li>2. Disassemble the ring and remove the elastic insert.</li> <li>3. Check the parts of the coupling and exchange damaged coupling parts.</li> <li>4. Fit the new elastic insert and re-assemble the parts of the coupling.</li> <li>5. Check the alignment and correct if necessary.</li> <li>6. Ensure any chance of further physical changes of the elastic insert are excluded.</li> </ol>

**ATTENTION!**

**CITSA does not assume any liabilities or guarantees regarding the use of spare parts and accessories which are not provided by CITSA and for the damages resulting here from.**

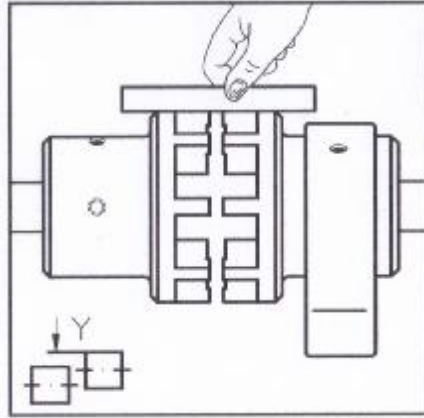
## Type A and C elastic coupling Assembly and alignment instructions



### 1. ASSEMBLING THE HUBS

Once the hubs have been fitted on the shafts, and prior to lining them up, do not forget to leave the attachment ring fastened onto one of the hubs.

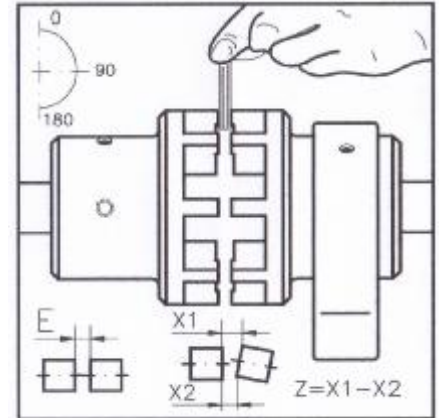
Check the pressure setscrews on the hubs are tight. If the coupling is used in Ex. hazardous areas, the pressure setscrews should be additionally secured against spontaneous loosening in the attachment of the hub to the shaft; for example, using Loctite (medium strength) or similar.



### 2. RADIAL ALIGNMENT

The radial alignment is controlled with a rule or a dial indicator or laser.

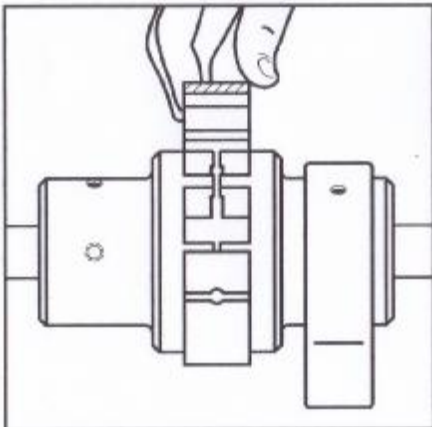
By resting the rule on the periphery of the hubs and matching up two opposite teeth, you will have a sufficiently broad line of contact to check they match up throughout their surface area. Better alignment precision is obtained with the help of a dial indicator or laser (keep to radial tolerance Y).



### 3. AXIAL AND ANGULAR ALIGNMENT

Position the hubs at distance E, as per Table 1. Using the thickness feelers, you can control the gap between hubs, measurement E (keep to axial tolerance X).

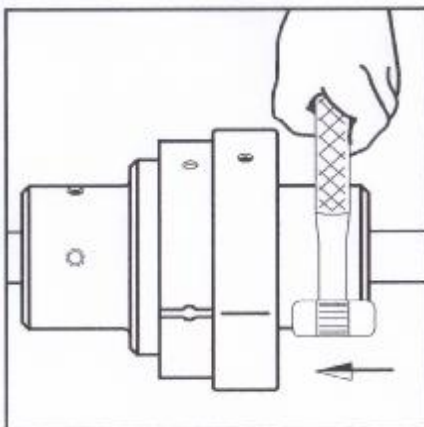
It is advisable to check the values of measurement E in three positions (0 – 90 – 180 degrees), as this will ensure more precise angular alignment (keep to angular alignment Z).



### 4. ASSEMBLING THE ELASTIC INSERT

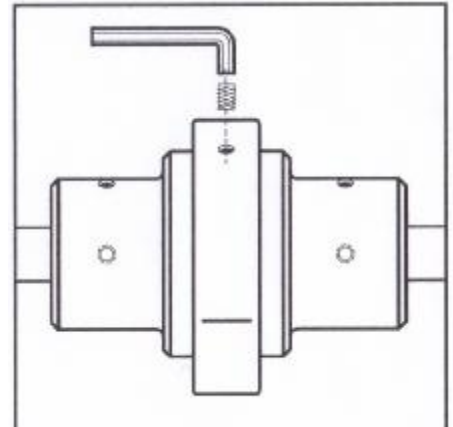
Once the two hubs have been aligned, proceed to assemble the elastic insert in the slots formed by the parallel teeth. If the radial and angular alignment is correct, the ends of the elastic insert, once closed, should match up in their development and width.

The elastic insert has two types of housing: a through housing, with dual inlets, for horizontal work, and a single-inlet housing for vertical work.



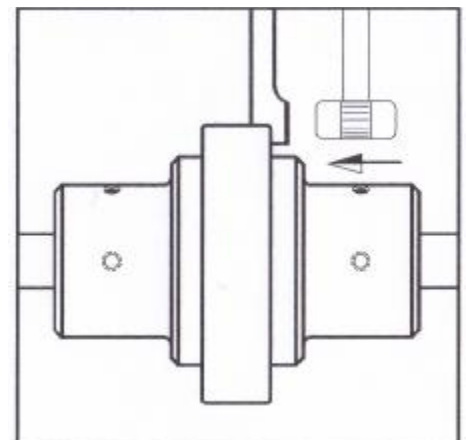
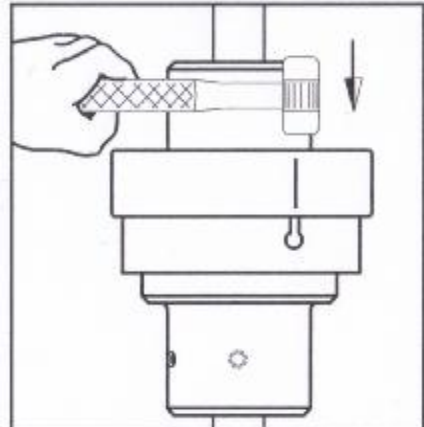
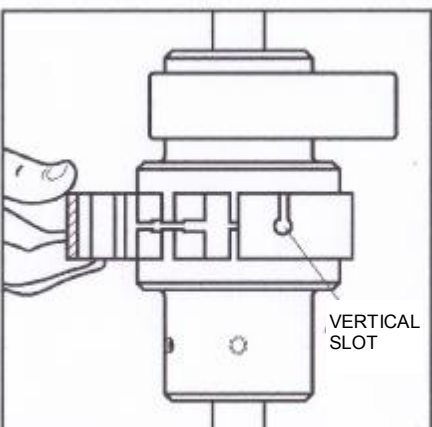
### 5. ASSEMBLING THE RING

Once the elastic insert has been fitted, the retention ring can be inserted manually, by matching up one of the two reference lines on the outside of the ring with the insertion grooves on the elastic insert. Using a nylon mallet, install the retention ring, tapping alternately on each side of the two areas of the reference marks, until the ring's lugs are coupled into the central housings of the elastic insert.



### 6. SECURING THE RING

Once the ring has been installed on the elastic insert, it needs to be fastened by inserting the two setscrews into the threaded housings, which match up with those for the elastic insert. **Any potential axial displacement of the ring, due to misalignment of the equipment, is thereby secured.**



### 7. DISASSEMBLY

Remove the two set screws from the ring. Shift the ring by tapping it on the side with a nylon hammer in the areas the pins (reference lines) are housed.

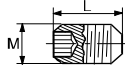
Table 1

= MISALIGNMENT ADMISSABLE = Dimensions (E) and tolerances in mm.															
Type	A00	A0	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8	A9	A10	A11
E	1.5	1.5	1.5	2.5	2.5	3.5	3.5	3.5	3.5	3.5	4	5	5	6	6
Axial X	+0.3	+0.3	+0.5	+0.5	+0.7	+0.8	+1.0	+1.0	+1.0	+1.0	+1.0	+1.5	+1.5	+1.5	+1.5
Radial Y	0.2	0.3	0.3	0.5	0.5	0.7	0.7	0.7	0.8	0.8	1.0	1.0	1.0	1.5	1.5
Angular Z	0.10	0.10	0.20	0.20	0.30	0.40	0.40	0.50	0.50	0.60	0.90	1.10	1.30	1.70	1.70

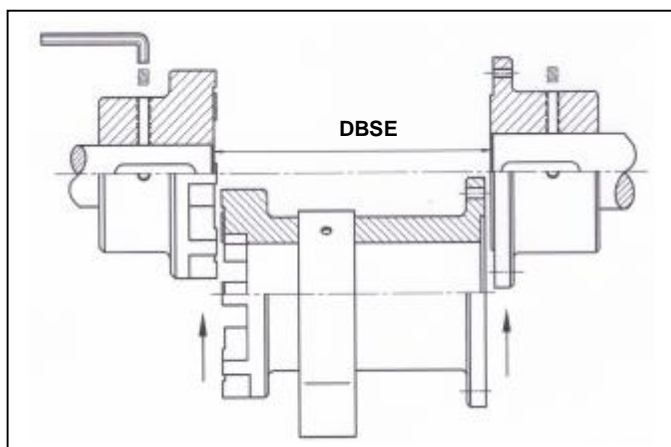
### RETAINING THE RING TO THE ELASTIC INSERT

Before starting up the equipment, you must ensure that the ring's attachment setscrews have been fitted correctly. We recommend securing the tightness of the setscrews by applying Loctite (medium strength) to the screw-threading. The setscrews, when screwed in, should not go deeper than the outer surface of the ring, so that all the ring's threads are in contact with it. The measurements of the setscrews for each ring type are indicated in table 2.

Table 2

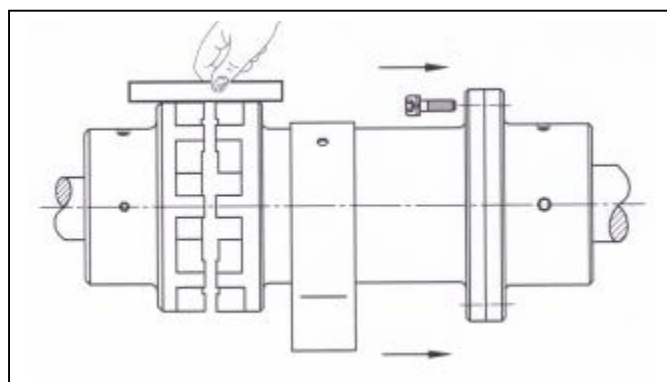
LOCKING SET SCREWS FOR RETAINING RINGS												 DIN 913			
TYPE	A00	A0	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8	A9	A10	A11
DIN 913	-	-	M5	M6	M8	M8	M10	M10	M10	M10	M10	M12	M12	M12	M12
L	-	-	8	12	12	14	14	14	14	14	16	16	16	18	18

## samiflex<sup>®</sup> type "A" and "C" with spacer



#### 1. ASSEMBLING THE HUBS

Once the hubs have been fitted and secured with the setscrews, proceed to line them up, leaving gap DBSE to insert the spacerbody. Do not forget to fit the attachment ring first.



#### 2. ALIGNMENT AND ASSEMBLY

Once the spacerbody has been attached to the flange hub, and the screws secured with their tightening torque (Table 4), position the hub and the spacerbody at distance E, as per Table 3 (keeping to axial tolerance X).

Next, proceed in the same way as for alignment and assembly of coupling A and C.

Table 3

= MISALIGNMENT ADMISSABLE = Dimensions (E) and tolerances in mm.										
Type	A1C	A2C	A3C	A4C	A45C	A5C	A55C	A6C	A7C	A8C
E	3.0	3.0	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0
Axial X	+0.5	+0.5	+0.7	+0.8	+1.0	+1.0	+1.0	+1.0	+1.0	+1.5
Radial Y	0.1	0.1	0.15	0.20	0.20	0.20	0.20	0.20	0.30	0.30
Angular Z	0.20	0.20	0.30	0.40	0.40	0.50	0.50	0.60	0.90	1.1

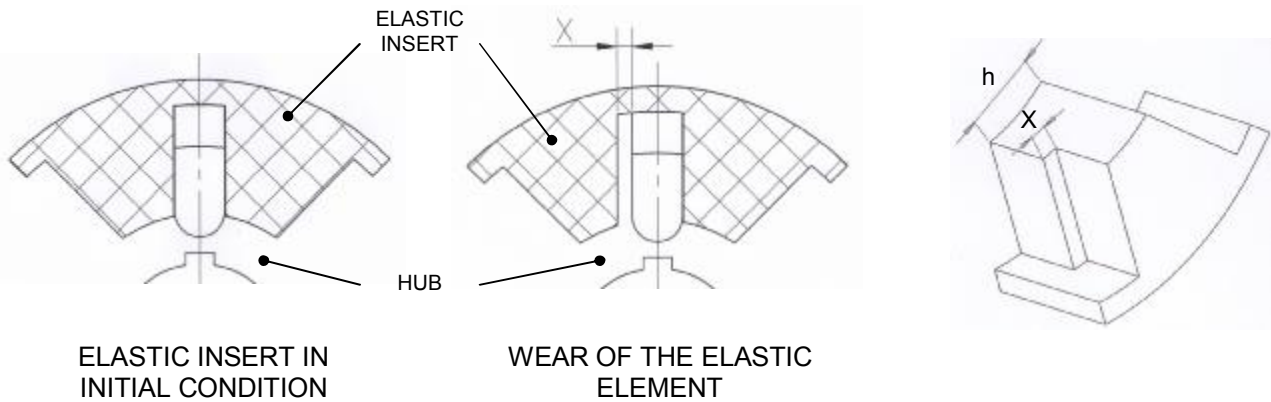
Table 4

FLANGER CAP SCREWS TIGHTENING TORQUES										
TYPE	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8
DIN 912	M6	M6	M8	M8	M10	M10	M10	M10	M12	M14
TQ (Nm.)	14	14	35	35	69	69	69	69	120	205

## CONTROL INTERVALS OF THE ELASTIC INSERT

The elastic insert can be inspected easily during a stoppage of the equipment, by displacing the ring axially, once the two attachment setscrews have been removed.

The lifetime of the elastic insert under normal working conditions is 25,000 hours. As a preventive measure, the elastic insert should be checked after the first 3000 hours of operation (see table 3).



## APPROXIMATE WEAR AND TEAR VALUES OF THE ELASTIC INSERT

When value X (mm) for wear by friction of the elastic insert reaches the values set out in table 5, it should be replaced with a new one. In the event it is not replaced, the elastic insert could break due to shearing (see figure 3), leaving the equipment switched off on the drive / power side.

Table 5

TYPE	A00	A0	A1	A2	A3	A4	A45	A5	A55	A6	A7	A8	A9	A10	A11
h	7	7	8.5	11	14.5	15	21	22	27	28	36	37.5	42	47	60
X (mm)	1.5	1.5	2.0	2.5	3.0	3.0	4.0	4.5	5.5	6.0	7.5	7.5	8.5	9.5	10

## TYPES OF WEAR OF THE ELASTIC INSERT

The different types of wear and tear of the elastic insert are represented in figures 3-4-5-6.

3. Standard wear and tear occurring on the drive side after the lifetime of the elastic insert has passed.
4. Wear occurring on the drive and driven side due to excessive radial misalignment.
5. Total breakage due to shearing on the drive side, caused by a sudden stoppage of the driven side, due to wear over the half-life of the elastic insert, or due to lack of working capacity (the system's torque exceeds the maximum torque admitted by the coupling).
6. Breakage of the elastic insert caused by axial displacement of the drive or driven side. The teeth, by losing surface area in contact with the elastic insert, cause shearing in the zone.

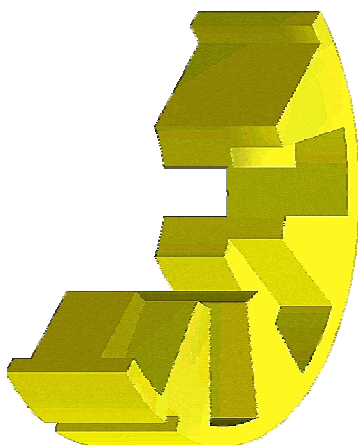


FIGURE 3

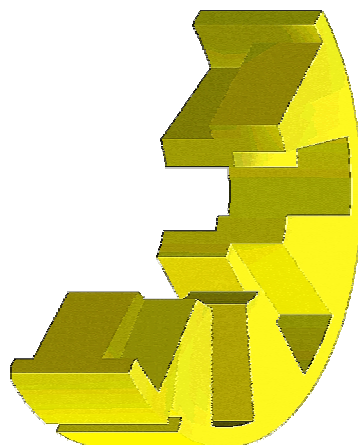


FIGURE 4

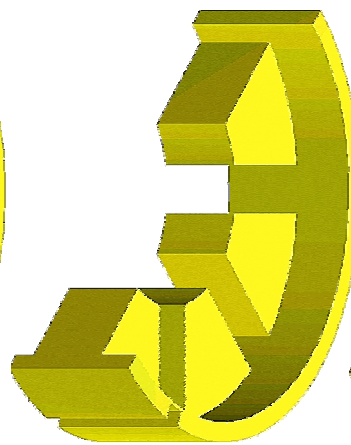
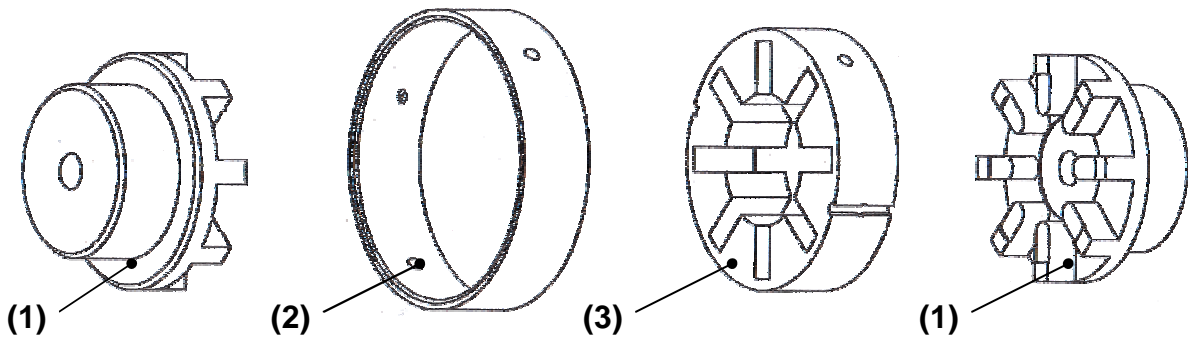


FIGURE 5



FIGURE 6



TYPE	A00	A0 – A1 – A2 – A3 – A4	A45 – A5 – A55	A6 – A7 – A8 – A9 – A10 – A11
HUB (1)	DURALUMINIO	GG25 GGG40 ACERO F114 INOX AISI 304	GG25 GGG40 ACERO F114	GG25 GGG40
INSERT (2)	POLYURETHANE	POLYURETHANE	POLYURETHANE	POLYURETHANE
RING (3)	STEEL	POLYAMIDE STEEL	STEEL	STEEL

## COUPLING MATERIALS ADMISSIBLE IN HAZARDOUS AREAS



explosion group	Permissible coupling materials / TYPE
IIB	Samiflex coupling A0 to A4 with polyamide attachment ring
IIC	Samiflex coupling A0 to A3 with polyamide attachment ring Samiflex coupling A0 to A11 with steel attachment ring

Aluminium as a coupling material is generally excluded for explosive areas.

explosion group	Control intervals for couplings located in hazardous areas Ex
II 2G c IIB T4	The elastic insert should be checked after 3000 hours of operation the first time, or after 6 months at the latest. If insignificant or no wear and tear is observed in the elastic insert following this first inspection, the following inspections can be carried out, provided the operating parameters are the same, after 6000 hours of operation, or after 18 months at the latest, respectively. If considerable wear and tear is observed during the first inspection, so that it would be advisable to change the elastic insert, the cause should be determined, in accordance with the breakdowns table. Maintenance values should be adjusted in line with any modifications to the operating parameters.
II 2G c IIC T4	The elastic insert should be checked after 2000 hours of operation the first time, or after 6 months at the latest. If insignificant or no wear and tear is observed in the elastic insert following this first inspection, the following inspections can be carried out, provided the operating parameters are the same, after 4000 hours of operation, or after 12 months at the latest, respectively. If considerable wear and tear is observed during the first inspection, so that it would be advisable to change the elastic insert, the cause should be determined, in accordance with the breakdowns table. Maintenance values should be adjusted in line with any modifications to the operating parameters.

## COUPLING PROTECTION IN HAZARDOUS AREAS

Coupling protection must be fitted with firm metal covers protecting it against falling objects. The distance between the cover and the rotating parts must be at least 5 mm. The cover must be an electrical conductor and be included in the equipotential bonding connection. Bell housing made from aluminium and damping ring (NBR) can be used as connecting elements between the pump and the electric motor, if the magnesium part is below 7.5%. The cover may be removed only after the unit has been stopped.

## CAUTION

The equipment (motor) must not be started up without having first fitted (assembled) the attachment ring to the elastic insert, securing it with the two attachment setscrews.

The elastic insert is projected out of the hubs, if the equipment (motor) is started up without the attachment ring having first been fitted (assembled).

Before starting up the coupling, the protective cover must be fitted.

Rotary equipment is potentially dangerous and can cause serious injury.

It is the user's responsibility to provide adequate protection, in compliance with standards for the speed and applications in which are used.

If you notice any irregularities at the coupling during operation, the drive unit must be turned off immediately. The cause of the breakdown must be found out with the table "Breakdowns" and, if possible, be eliminated according to the proposals. The possible breakdowns mentioned can be hints only. To find out the cause all operating factors and machine components must be considered.

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