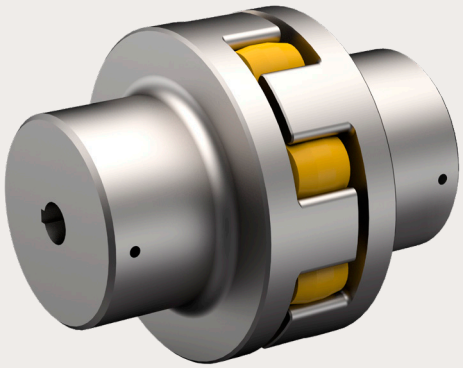
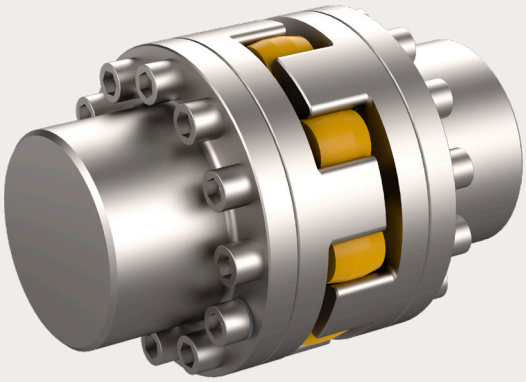
Couplings series SVR / SDR and SVW / SDW Installation and maintenance



SVW 200



SVR 200

SUMMARY

If the instructions in this manual are not adhered to, the performance, correct operation and the safety of the equipment cannot be guaranteed.

Couplings series SVR / SDR and SVW / SDW Installation and maintenance

NOTES AND SYMBOLS

According to EC regulations, we use, facing some paragraphs, symbols defining hazards and informing the user about the consequences of not following the instructions of this installation and maintenance leaflet.

DANGER!

This symbol concerns people's safety. It points out situations which could lead to death or serious injuries.

ATTENTION!

This symbol concerns the use of the equipment. It points out situations which could lead to damage or destroy the equipment.

NOTE!

This symbol concerns information which can ease the installation and the use of the equipment.

If the instructions in this manual are not adhered to, the performance, correct operation and the safety of the equipment cannot be guaranteed.

Couplings series SVR / SDR and SVW / SDW Installation and maintenance

1 - PRESENTATION

1-1 Designation

Elastic couplings		Rubber element
SDR	2 claw-rings	**D**
SVR		**V**
SDW	2 claw-hubs	**D**
SVW		**V**

1-2 Description

Couplings **SVR / SDR** and **SVW / SDW** are elastic and shock-proof couplings, They balance angular, radial and axial shaft misalignment within tolerances.
The torque is transmitted through an exchangeable rubber element (4).
Couplings **SVR** and **SDR** allow to remove the claw-rings and the rubber element radially. This makes the rubber element replacement possible without moving the machines back..

Couplings **SVR / SDR** and **SVW / SDW** can be used in the two directions of rotation.

Rubber elements are made with elastomer :

	Rubber element **V**	93 shore A ±3 shore
	Rubber element **D**	60 shore D ±3 shore.

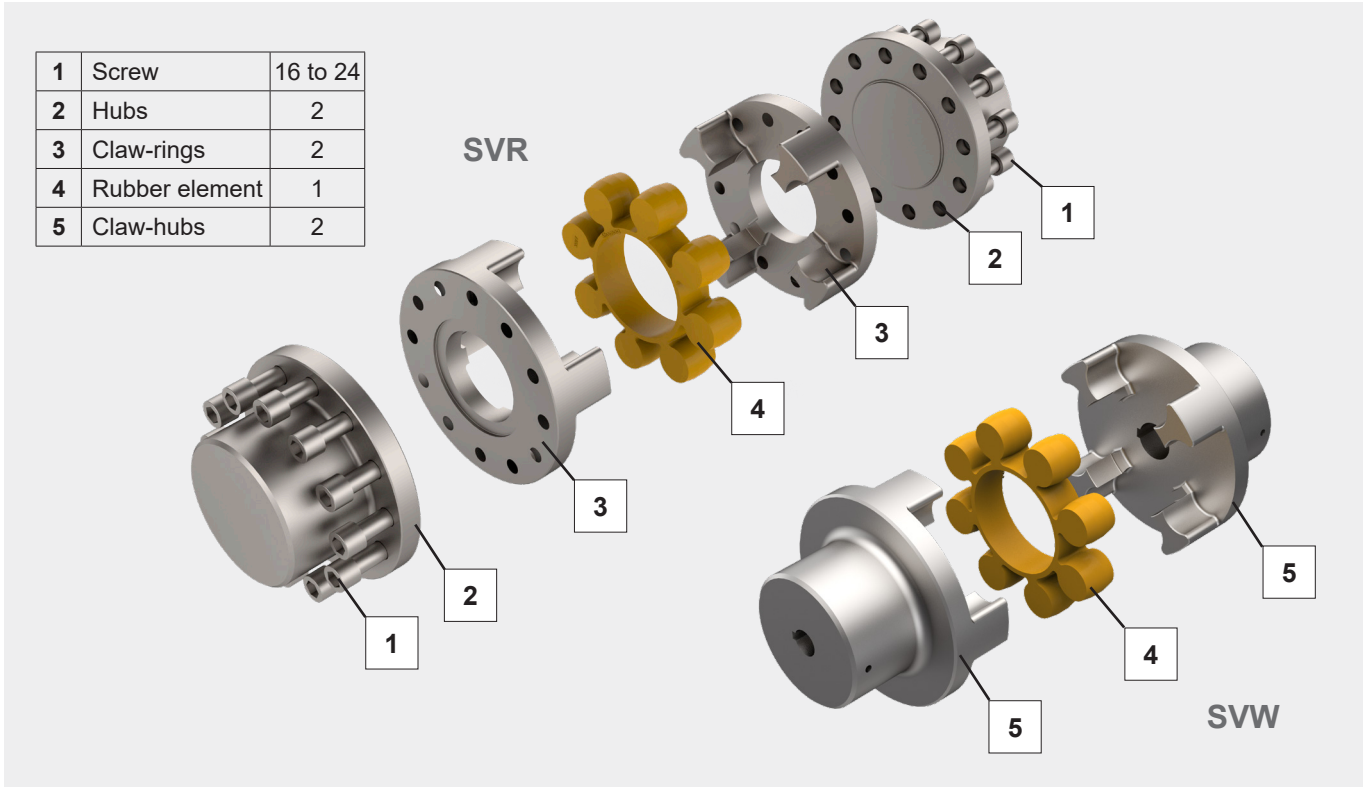
They damp out shocks and torsionnal vibrations. They are oil-proof and can be used at temperatures ranging between -30°C and +80°C.
If no electrical connection exists otherwise, the rubber elements make an electrical insulation between the coupled machines And therefore, they prevent undesirable static charging, among other things.

1-3 Construction

(see fig.1)

Fig.1

1	Screw	16 to 24
2	Hubs	2
3	Claw-rings	2
4	Rubber element	1
5	Claw-hubs	2



If the instructions in this manual are not adhered to, the performance, correct operation and the safety of the equipment cannot be guaranteed.

2 - INSTALLATION OF AN ELASTIC COUPLING

ATTENTION !

Couplings **SVR / SDR** et **SVW / SDW** must be handled, mounted, dismounted, maintained only by qualified, trained and authorized staff. This staff must be informed about this present leaflet and must have received instructions about the accidents risks.

DANGER !

Before performing any work on the coupling, always switch off the motor !
Secure the motor against switching on unintentionally..

- Be sure that the intended rotation speed and the torque as well as the operating temperature do not exceed the allowable values being in the *Technical data* relevant leaflet.
- On the hubs, the maximum allowable bore diameters are according to the *Technical data* relevant leaflet
- Standard tolerances for the bores are according to ISO H7 fit (DIN 7161, sheet 2).
- Standard key groove according to ISO Js9 fit (DIN 6885, sheet 1).
- Fixing screws if necessary.

Couplings series SVR / SDR and SVW / SDW Installation and maintenance

2-1 Mounting

> Remove the rubber element (4) (A-fig.2)
> Before installing, clean the holes of the hubs and the shaft ends
> For larger couplings, use suitable installation aids.
> Fit the claw-hubs (1+2+3 or 5) on the shaft ends (B-fig2), during this operation avoid shocks on the claws (3 or 5).

NOTE !

For easy installation, the uniform warming of the hubs to between 80 and 120°C is completely safe.

DANGER !

Imperatively protect yourself with gloves from the very hot parts of the coupling.

> Slide the hubs onto the shafts to achieve full engagement only.
> The shafts end must be flush with the end of the hubs and not protrude into the drivers (fig.3). Protruding shaft ends prevent the free removal of the rubber element (4).

ATTENTION !

Put the hot hubs to cool before inserting the rubber element.

STOP

> Fit the rubber element on one of the 2 claw-rings (or claw-hubs).
> Join the shafts by mean of the claws (fig.4).
> Check the concentricity of the two coupling parts by following the instructions of § 3-2.
> In the order to increase the service life of the rubber element, the exact alignement of the shafts ends is necessary.

Fig.2

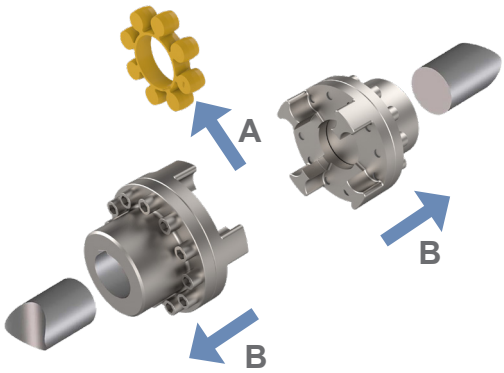
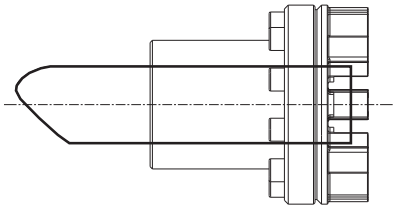
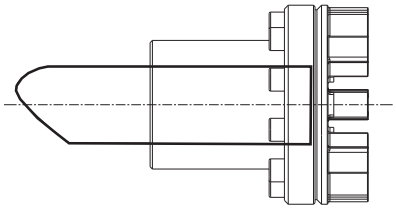


Fig.3

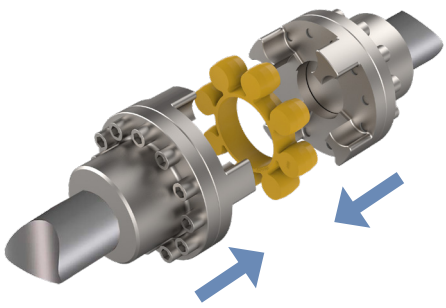


BAD
Protruding shaft



GOOD
Shaft
not protruding

Fig.4



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Couplings series SVR / SDR and SVW / SDW Installation and maintenance

2-2 Coupling alignmentt

DANGER !

Before performing any work on the coupling, always switch off the motor !
Secure the motor against switching on unintentionally.

NOTE !

The maximum allowable misalignment given on tables 1 to 3 are general standard values.
In special cases with increased demands on quiet running or higher rotation speed, alignment precision lower than 0,1 mm in the three displacement planes can be necessary.

a) Angular alignment (fig.5)

- Take measurements on a complete revolution (360°).
- Determine the largest deviation and the smallest deviation.
- Calculate the angular misalignment : Δz
- When alining, comply with the maximum allowable misalignment Δz_{max} given in table 1.

Fig.5

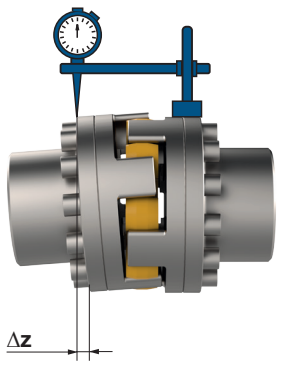


Table 1

Coupling	50	70	85	100	125	145	170	200	230	260	300	400
Δz_{max} (mm) V	0.4	0.6	0.7	0.9	1.1	1.3	1.5	1.7	2.0	2.3	2.6	3.5
Δz_{max} (mm) D	/	/	0.7	0.9	1.1	1.3	1.5	1.7	2.0	2.3	2.6	3.5

b) Radial alignment (fig.6)

- Take measurements on a complete revolution (360°).
- Determine the largest deviation and the smallest deviation.
- Calculate the radial misalignment $y = 0,5 \cdot (y1-y2)$
- When alining, comply with the maximum allowable misalignment y_{max} given in table 2.

Fig.6

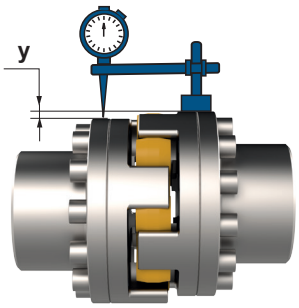


Table 2

Coupling	50	70	85	100	125	145	170	200	230	260	300	400
y_{max} (mm) V	0,4	0,5	0,6	0,6	0,7	0,7	0,7	0,8	0,8	0,9	0,9	1,0
y_{max} (mm) D	/	/	0,6	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0
Speed (rpm)	3000	2000	1500	1250	1250	1250	1000	850	750	600	600	500

y_{max} (mm) V	0.14	0.17	0.18	0.19	0.24	0.24	0.22	0.26	0.26	0.27	0.30	0.36
y_{max} (mm) D	/	/	0.18	0.19	0.24	0.24	0.22	0.26	0.26	0.27	0.30	0.36
Speed (rpm)	8500	6000	5000	4000	3600	3600	3200	2600	2300	2000	1800	1400

If the instructions in this manual are not adhered to, the performance, correct operation and the safety of the equipment cannot be guaranteed.

Couplings series SVR / SDR and SVW / SDW Installation and maintenance

c) Axial alignment (fig.7)

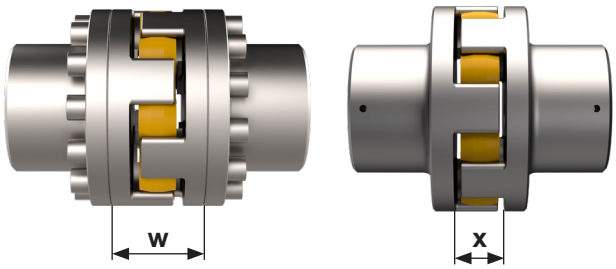
> Measure the claws axial overlapping (table 3).
> When aligning comply with the allowable tolerance given in table 3.

Table 3

Coupling	50	70	85	100	125	145
W (mm) SVR - SDR	/	/	/	/	62	68
O (mm) SVW - SDW	16	23	24	27	33	39
Tolerance	+2	+2	+2	+2	+2	+2

Coupling	170	200	230	260	300	400
W (mm) SVR - SDR	77	92	94	114	121	137
X (mm) SVW - SDW	41	48	50	60	67	73
Tolerance	+2	+2	+2	+2	+2	+2

Fig.7



3 - OPERATION

For **SVR** and **SDR** couplings, before putting the coupling into operation, check the tightening torque of the screws, class 10.9, greased with MoS2 under head and in threads : see values in table 4. Tightening tool dispersion = ±10%.

Table 4

SVR - SDR	125	145	170	200	230	260	300	400
Screws tightening torque	48	84	204	204	285	541	685	1364

DANGER !

Before putting the coupling **SVR/SDR** and **SVW/SDW** into service, check that it is correctly mounted according to the instructions of ch.2.

ATTENTION !

After a long stopping (about 1h) in a temperature lower than -25°C the rubber element must be warmed to a temperature of about -10°C to 0°C. The starting up will be made as far as possible without overload (jolts).

4 - USE CONDITIONS

DANGER !

In operation, safety instructions and local measurements against accidents risks must be applied.

Couplings **SVR/SDR** and **SVW/SDW** must be protected against acids and alkaline detergents. An immersed installation is impossible. The working temperature do not exceed +80°C or be lower than -25°C.

DANGER !

In their working area, the couplings must be equipped with a protection cover in conformity with the applicable preventive safety measure. It must allow a sufficient ventilation of the coupling (use perforated or latticed sheets).

If the instructions in this manual are not adhered to, the performance, correct operation and the safety of the equipment cannot be guaranteed.

5 - MAINTENANCE

- Couplings SVR/SDR et SVW/SDW nrequire little maintenance in operation.
- We recommend to check visually the rubber element (4) annually.
- After a certain operating time, marks of wear due to the conditions and requirements of use can appear on the rubber element.
- Most current are :
  - Hardening of the elastomer (surface porosity)
  - Breaking start
- In case of wear marks (excessive brittleness or hardness of elastomer due to a too high temperature) or cracks, it is necessary to replace the rubber element (see ch.7)

Storage conditions

The rubber elements must be stored in a dry and ventilated place, at a minimum temperature of 20 to 25°C.
By safety measure, the flector should not be used if the storage period is higher than 5 years.

6 - REPLACING THE RUBBER ELEMENT

DANGER !

Before performing any work on the coupling, always switch off the motor !
Secure the motor against switching on unintentionally.

For couplings SVR and SDR , replacement of the rubber element can be carried out without moving back the machines, proceed as follows:

- Unscrew the claw-rings (3).
- Push back the claw-rings together (against the rubber element) out of the hubs centering.
- Get out the claw-rings and the rubber element together (3+4) (fig.8).
- Fit the new rubber element.

ATTENTION !

The contact surfaces of the claw-rings (3+5) and the hubs (2) must be clean and free of oil and grease.

STOP

- Put the claw-rings (3) at their respective places.
- Screw in the same way the screws without forcing.
- Tighten the screws to the torque given in table 4.

DANGER !

Before putting into operation, install all protective devices.

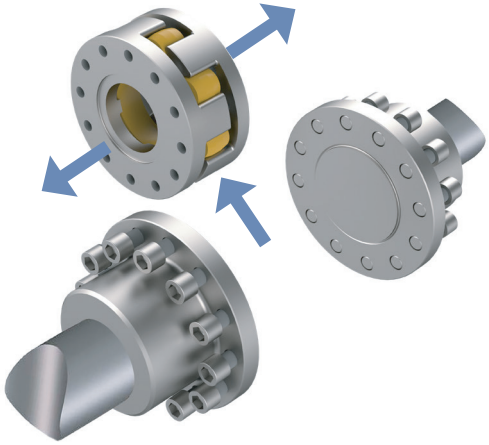
7 - SPARE PARTS

ATTENTION !

IIt is recommended to store the main spare parts to ensure an optimal guarantee and safety of operation.
The wearing part is the rubber element.
Only the use of original Stromag spare parts can guarantee our equipment's reliability.
Using non original parts (not delivered by Stromag), can modified negatively the coupling characteristics and then compromises the safety.

STOP

Fig.8



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