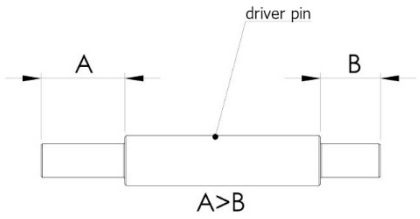
## Assembly rules for PL-type pin couplings

- **Preventive security**

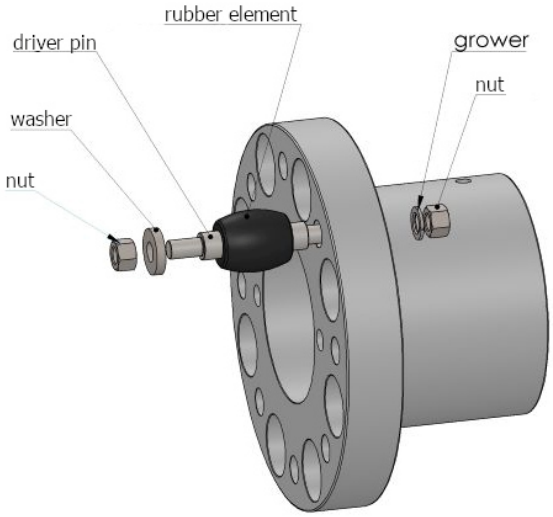
1- Before carrying out any coupling assembly operations, make sure that the machines are stopped and disconnected from the power supply.
2- The assembly must be carried out exclusively by qualified and specially trained personnel.
3- The use of lifting equipment for the positioning and assembly of the couplings requires the full compliance with the safety regulations in force.
4- Any tampering or modification of the couplings from its original state, automatically releases the manufacturer from any liability for direct or indirect damage caused to people, animals or property.
5- When starting the system for the first time, make sure that no dangerous conditions occur for the people involved in the assembly. It is therefore essential to maintain a certain safety distance from the coupling installation area and possibly in a sheltered area.
6- The couplings, being rotating parts, must have suitable protective guards.
7- Finally, please remember that the coupling must never exceed the torque, speed and angle misalignment values indicated by the manufacturer.

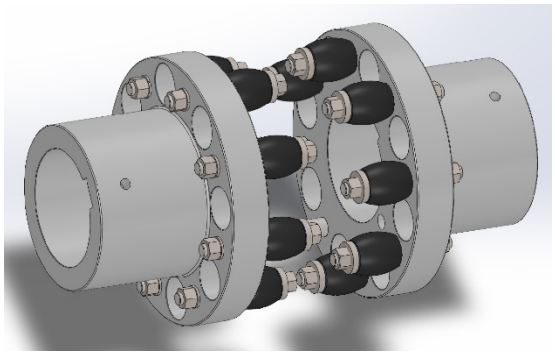
- **Assembly**

1- Fit the two half-couplings on their relevant shafts. Depending on the coupling tolerances, it may be necessary to heat the hubs to help fit them. In any case, never exceed the temperature of 200°C (half-joint without shims).
2- Assemble all the pins complete with plugs and fix them as in the figures below. Depending on the version, nuts (as in the figure below) or seeger rings are used.




The longer side of the pin (A) must be inserted into the corresponding hole on the hub. Side B remains free.+



Pre-assembled coupling.

3- This is usually done on both sides before joining the half-couplings. However, there are **special versions** (letter S after the code) for which it is necessary to **fix all the pins on one side only**, while, on the other side, it is possible to proceed only after the two hubs have been approached at the distance S (see **Fig. 2**).

In the case of special couplings with a high number of pins, it is not possible to proceed with the standard assembly due to the gouging between the shims. Therefore, proceed as in figure 2:

a) Mount all pins on one side only.
b) Bring the two half-couplings closer to dimension S.
c) Insert the other pins from the opposite side and fix them in their seats with the supplied nuts and growers.

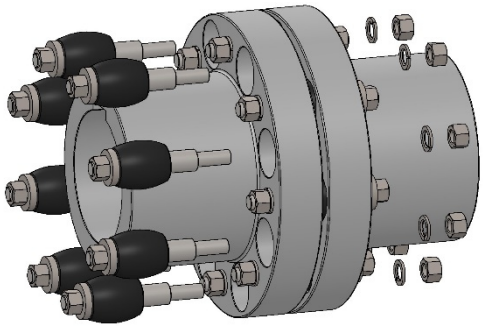
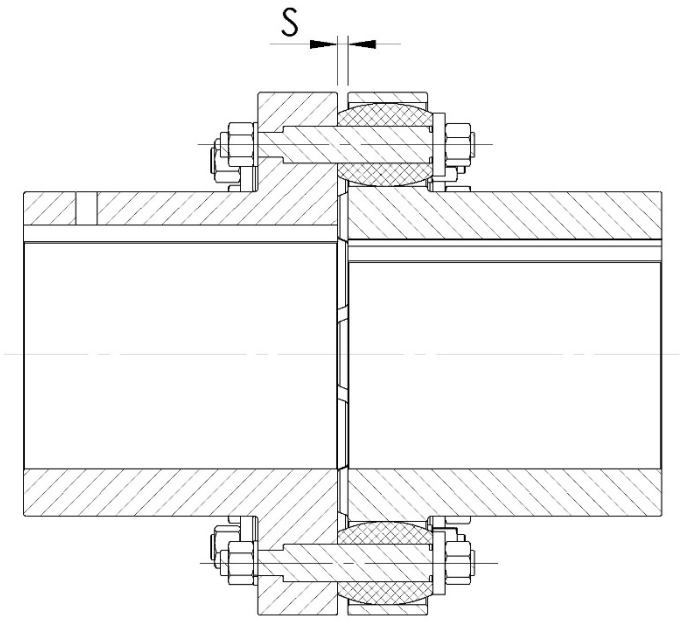


Fig.2

4- The half-couplings must be joined up to the distance S, as per **Table 1**.

**TABLE 1**

| NOMINAL VALUES OF THE 'S' DIMENSION | Size | S |
|---|---|---|
| | | *mm* |
| | PL088 | 3 |
| | PL098 | 3 |
| | PL118 | 3 |
| | PL138 | 3 |
| | PL158 | 3 |
| | PL178 | 4 |
| | PL198 | 4 |
| | PL228 | 4 |
| | PL248 | 5 |
| | PL298 | 5 |
| | PL348 | 6 |
| | PL398 | 6 |
| | PL445 | 7 |
| | PL495 | 7 |
| | PL545 | 7 |
| | PL625 | 7 |
| | PL675 | 7 |
| | PL790 | 7 |




5- When approaching the half-couplings, check that there are no excessive stress points, an aspect which, if present, indicates a high shaft alignment error. In this case, it is recommended to reduce the error to avoid excessive stress on the pins.

6- It is important that the internal plane of the flange is aligned with the end plane of the shaft head.

7- Once the coupling is installed, check the alignment. The reference values are shown in **Table 2**. The alignment of the joints is the main aspect to be taken care of during the assembly phase in order to maximize not only the lifespan of the coupling but also that of the other components of the gearbox. Accurate alignment also allows the coupling to absorb any changes in position between the two shafts during operation.

**TABLE 2**

**MAXIMUM PERMITTED MISALIGNMENT VALUES**

| Size | Nominal torque | Parallel misal. | Angular misal. | Axial misal. |
|---|---|---|---|---|
| | ***Nm*** | ***mm*** | **°** | ***±mm*** |
| PL088 | 100 | 0.085 | 0.3 | 0.5 |
| PL098 | 230 | 0.1 | 0.3 | 0.5 |
| PL118 | 360 | 0.12 | 0.3 | 0.5 |
| PL138 | 610 | 0.14 | 0.3 | 0.5 |
| PL158 | 950 | 0.16 | 0.3 | 0.5 |
| PL178 | 1300 | 0.18 | 0.3 | 1 |
| PL198 | 1850 | 0.2 | 0.3 | 1 |
| PL228 | 2700 | 0.22 | 0.3 | 1 |
| PL248 | 4700 | 0.25 | 0.3 | 1 |
| PL248S | 5260 | 0.25 | 0.3 | 1 |
| PL298 | 6500 | 0.3 | 0.3 | 1 |
| PL348 | 11000 | 0.35 | 0.3 | 1 |
| PL398 | 15000 | 0.4 | 0.3 | 1 |
| PL445 | 21500 | 0.45 | 0.3 | 1 |
| PL495 | 29000 | 0.5 | 0.3 | 1 |
| PL545 | 38000 | 0.55 | 0.3 | 1 |
| PL625 | 77000 | 0.6 | 0.3 | 1 |
| PL675 | 96000 | 0.7 | 0.3 | 1 |
| PL790 | 140000 | 0.8 | 0.3 | 1 |

8- Once the coupling is correctly mounted, carry out some short-term start-ups to check for vibrations and the invariability of the alignment values.

9- After the final commissioning of the plant, it is very important to perform a first check after about 100 hours of operation (alignment and condition of the shims) and a second check after 500 hours of operation.

10- Please keep in mind that, due to the presence of rubber shims, the maximum working temperature must respect the following range:

**-20°C < T < +130°C**

- **Maintenance**

1- The coupling works without the need for any lubrication and, in the case of the second inspection at 500 hours of operation, it is possible to provide for the subsequent checks as per the maintenance schedule of the machines.
2- If you notice excessive vibrations or black dust in the vicinity of the machine, stop the gear and check the status of the rubber elements. In case of premature wear, check the alignment values. Alignment values beyond the limits often cause the plug to overheat with consequent rapid wear, heating both the surface and the interior of the elastic elements making them fragile.
3- The replacement of the shims is very simple and is possible without retracting the two half-couplings.
4- Just remove the two nuts and slide out the pin. Then remove the worn rubber element and insert the new one.
5- It is not necessary to fit the shim in the precise position on the pin; then the tightening of the nuts will bring it into the correct position.
6- The nuts supplied are commercial grade. The nut (class 8.8) positioned above the grower must be tightened according to the standard tightening torques, while the nut on the shim side must be tightened only until the gap is zeroed and the shim has a minimum crushing in its seat.
7- If it is also necessary to remove the half-couplings, please use the 2 extraction holes that are equipped with.

- **Materials**

The hubs, in the standard versions, are made of C45 carbon steel.
The driver pins are made of 39NiCrMo3.
The rubber elements are made of 80Sh-A, oil-resistant NBR rubber.
The small parts supplied (nuts and washers) are commercial.