

As mentioned at the beginning, the versatile application possibilities of a precision shaft coupling are not limited to the catalogue series.

Customer-specific solutions are our speciality. Beam Couplings have even been used for very smallest of couplings, such as those used in microdevices implanted in the human body. This is where the advantage of the free selection of materials for RINGSPANN Beam Couplings comes to the fore.

Customer benefit

The function integration (e.g. coupling/pinion) can increase the service life and safety of the component. At the same time, the overall costs (component costs, assembly, procurement) are also optimised.

Advantages

Reduction in overall costs

- Fewer components for one function
- Shorter assembly times
- Minimised procurement work

Increased safety

- Only one component – clear interfaces
- A point of contact for several functions
- Increased system safety and quality standard

The storage and administration costs are optimised

- Fewer components in the warehouse
- Reduction in orders and suppliers

Reduced development workload

- We can compile design proposals on request, free of charge
- Use of our calculation software



Industry: Food industry

Application: Corrosion-resistant coupling with an integrated pinion for an adjustment unit

Design parameters

As described in the technical principles, the Beam Coupling can also be machined according to your specific requirements. The following parameters influence the properties of the coupling and can be taken into account for the application:

- Beam design
- Beam length
- Number of beams (multistart)
- Bore diameter
- Different coil crosssections
- Material

Coil thickness

By changing the beam pitch, the altered thickness of the coil influences the torque, torsional stiffness, and the axial motion.



22-1

Beam length

If the beam length is changed, the torque remains constant, while all other characteristics may vary depending on the configuration.



22-2

Number of beam starts

Depending on the design requirements, Beam Couplings can also be created

- with a single beam (standard version)
- with a double beam (start offset by 180°)
- with a triple beam (start offset by 120°)

When a so called multistart beam is used, the torque, torsional stiffness, and concentricity are increased. While misalignment capabilities are reduced compared to singlestart beams.



22-3

Bore diameter

Different bore diameters with the same beam configuration and the same external diameter can result in changes to the torque, torsional stiffness, and spring action.



22-4

Material

The Beam Couplings are machined in series production from aluminium alloys (3.4365) with an anodised surface, or from corrosion-resist-

ant chromium nickel steel (1.4542). For specific applications, the customer can also select their own material, such as plastic or titanium. The

only prerequisite is that the material has to be suitable for machining.

Questionnaires for customized Beam Couplings

Please photocopy or use the technical query from our website (www.ringspann.com)!

Company:

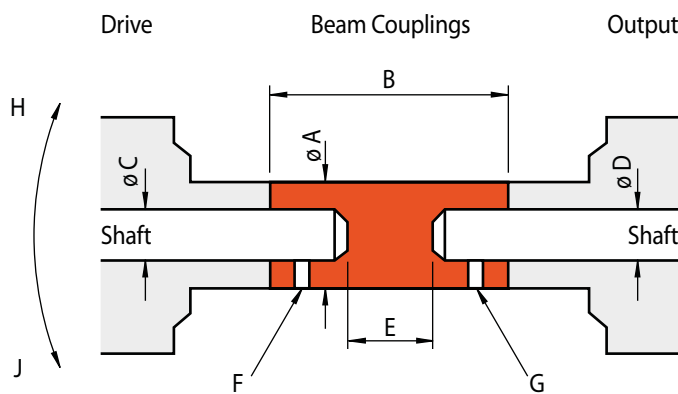
Phone:

Name:

E-Mail:

Date:

1. Coupling and shaft dimensions



Permissible outside diameter A _____ [mm]

Permissible total length B _____ [mm]

Shaft diameter (drive) C _____ [mm]

Bore tolerance (normal) + 0.05
0.00 mm

Bore tolerance (precise) + 0.015
0.00 mm

Shaft diameter (output) D _____ [mm]

Bore tolerance (normal) + 0.05
0.00 mm

Bore tolerance (precise) + 0.015
0.00 mm

Shaft distance E _____ [mm]

2. Description of drive/output

Drive:

Output:

Direction of rotation H J

continuous reversing operation

Stop/Start _____ [x/sec.]

Revolutions _____ [min⁻¹] by hand

3. Fastening

Drive side F Output side G

Integrated clamps

2 locking screws 120°

2 locking screws 90°

1 locking screw

Cylindrical pins _____ [mm]

Dowel pins _____ [mm]

Key groove _____ [mm]

Other _____ [mm]

4. Operating data

Torque Nominal torque _____ [Nm]

Max. torque _____ [Nm]

Misalignment Angular misalignment _____ [°]

(see p. 20/21) Radial misalignment _____ [mm]

Axial comp./Extension _____ [mm]

No overlap (drawing enclosed)

Torsional stiffness < = > _____ [Nm/rad]

Moment of inertia < = > _____ [kg/cm²]

Weight < = > _____ [g]

Operating conditions Temperature _____ [°C]

Corrosion Dirt

5. Appendices

Specifications

Data sheet

Sketch/drawing

Examples of various customized Beam Couplings

Industry

Aerospace

Application

Beam Coupling with square shaft and gear wheel. Fuel pump control for small aircraft.



24-1

Industry

Food & Packaging

Application

Coupling set with spline tooting for high axial compensation and easy plug-in assembly.



24-2

Industry

Pulp and Paper

Application

Beam Coupling with integrated external and internal thread. Used in clamping clutches for radial and axial compensation to the pressure roller.



24-3

Industry

Medical

Application

Beam Coupling with half-shell on one side and integrated output shaft. Used in foot pedal actuation to control the speed of a surgical instrument.



24-4