

Dipl.-Ing. Herwarth Reich GmbH

**D2C**  
Designed to Customer

## RCT

Torsionally stiff  
flange couplings  
for pump drives



Your drive is our strength. Your strength is our drive.



## General technical description

With the newly developed RCT couplings, REICH-KUPPLUNGEN offers an optimal drive solution for the connection of diesel engines to hydraulic pumps. The torsionally stiff design of the RCT coupling allows for shifting critical resonances to the range above the operating speed range and thus enables a subcritical operation of the drive without passing through detrimental torsional vibration amplitudes. The new RCT coupling, like the decade-long proven REICH ARCUSAFLEX coupling, is designed as an axially pluggable flange coupling. Its external teeth, however, have a robust metallic inner body with a thin-walled rubber coating so that torque shocks are dampened effectively. In addition, small axial, radial and angular offsets which are common to flanged hydraulic drives can be compensated for. Numerous standardized tooth profiles ensure a backlash-free clamping connection between the RCT coupling and the pump shaft. The coupling flanges are matched to SAE flywheel dimensions. As a supplementary service, REICH-KUPPLUNGEN also offers a multitude of bellhousing flanges through which the vast majority of internal combustion engines and hydraulic pumps can be connected. REICH-KUPPLUNGEN will be pleased to develop an optimal solution in line with the principle ‚D2C - Designed to Customer‘ for special types as well.

### Essential features and advantages of the RCT coupling:

- Subcritical operation through high torsional stiffness
- Vibration and torque shock damping through flexible rubber coating
- High torque transmission capacity, fail-safe
- Suited for ambient temperatures from -25°C to +100°C
- Compact, robust, maintenance-free
- Easy assembly thanks to the plug-in type design
- Backlash-free shaft-hub connection
- Compensation of axial, radial and angular offsets
- Multiple spline options for the connection to the pump shaft
- Bellhousing flanges for almost any mounting situation



## D2C – Designed to Customer



The principle of Designed to Customer describes the recipe for success of REICH-KUPPLUNGEN: Utilizing our product knowledge, our customers are supplied with couplings which are developed and tailor-made to their specific requirements. The designs are mainly based on modular components to provide effective and efficient customer solutions. The unique form of close cooperation with our partners includes consultation, design, calculation, manufacture and integration into existing environments. Adapting our manufacturing to customer-specific production and utilizing global logistics concepts provides better after sales service - worldwide. This customer-oriented concept applies to both standard products and production in small batch sizes.

The company policy of REICH-KUPPLUNGEN embraces, first and foremost, principles such as customer satisfaction, flexibility, quality, prompt delivery and adaptability to the requirements of our customers.

REICH-KUPPLUNGEN supplies not only a coupling, but a solution: Designed to Customer.

*Edition March 2016*

*The present RCT catalogue renders parts of the previous RCT catalogues obsolete. All dimensions in millimeters. We reserve the right to change dimensions and/or design details without prior notice.*

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# Technical Details

| RCT-Coupling size | Nominal torque      | Maximum torque  | Permissible continuous vibratory torque | Dynamic torsional stiffness <sup>2)</sup> |                             | Relative damping coefficient <sup>2)</sup> | Flange size SAE J620 | Max. speed           | Max. shaft offset |                          |
|-------------------|---------------------|-----------------|---|---|-----------------------------|--|----------------------|----------------------|-------------------|--------------------------|
|                   | $T_{KN}^{(1)}$ [Nm] | $T_{Kmax}$ [Nm] | $T_{KW}$ (10 Hz) [Nm]                   | $C_{Tdyn}$ [kNm/rad]                      | $0.5 T_{KN}$   $1.0 T_{KN}$ |  |                      |                      | $n_{max}$ [rpm]   | radial $\Delta K_r$ [mm] |
| 30                | 300                 | 900             | 150                                     | 40  | 50                          | 3.8  | 6.5<br>7.5<br>8      | 4200<br>4200<br>4200 | ±0.5              | ±0.5                     |
| 65                | 650                 | 1950            | 325                                     | 115                                       | 140                         | 3.8  | 8<br>10<br>11.5      | 4200<br>3600<br>3500 | ±0.5              | ±0.5                     |
| 120               | 1200                | 3600            | 600                                     | 350                                       | 440                         | 3.8  | 10<br>11.5           | 3600<br>3500         | ±0.5              | ±0.5                     |
| 230               | 2300                | 6900            | 1150                                    | 720                                       | 890                         | 3.8  | 10<br>11.5<br>14     | 3600<br>3500<br>3000 | ±0.5              | ±0.5                     |
| 500               | 5000                | 15000           | 2500                                    | 2350                                      | 2900                        | 3.8  | 14                   | 3000                 | ±0.5              | ±0.5                     |

- 1) A general safety factor of 1.3 to 1.5 should be applied to RCT couplings for the approximate layout of the design based on the drive torque
- 2) Preliminary values

| RCT Coupling size | Fig. | Flange connection |            |            |            |       |      | D max. [mm] | $D_A$ [mm] | $D_4$ [mm] | $L_1$ [mm] | $L_2$ [mm] | $L_3$ [mm] | $L_4$ [mm]   | $L_F$ [mm]           | $L_G$ [mm]                 | $J_1$ outside [kgm <sup>2</sup> ] | $J_2$ inside [kgm <sup>2</sup> ] | Total mass [kg] |
|-------------------|------|-------------------|------------|------------|------------|-------|------|-------------|------------|------------|------------|------------|------------|--------------|----------------------|----------------------------|-----------------------------------|----------------------------------|-----------------|
|                   |      | SAE J620          | $D_1$ [mm] | $D_2$ [mm] | $D_3$ [mm] | $Z_1$ |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
| 30                | 1    | 6.5               | 215.9      | 200.0      | 8.5        | 6     | 40.0 | 141.0       | 61.0       | 42.0       | 10.0       | 28.0       | -          | 49.0<br>±2.0 | 30.2<br>30.2<br>62.0 | 0.0062<br>0.0095<br>0.0135 | 0.0018                            | 2.2<br>2.5<br>2.7                |                 |
|                   |      | 7.5               | 241.3      | 222.3      | 8.5        | 8     |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
|                   |      | 8                 | 263.5      | 244.5      | 10.5       | 6     |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
| 65                | 1    | 8                 | 263.5      | 244.5      | 10.5       | 6     | 46.0 | 171.0       | 75.0       | 50.0       | 10.0       | 32.0       | -          | 56.0<br>±2.0 | 62.0<br>53.8<br>39.6 | 0.0138<br>0.0275<br>0.0431 | 0.0062                            | 4.1<br>4.8<br>5.3                |                 |
|                   |      | 10                | 314.3      | 295.3      | 10.5       | 8     |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
|                   |      | 11.5              | 352.4      | 333.4      | 10.5       | 8     |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
| 120               | 1    | 10                | 314.3      | 295.3      | 10.5       | 8     | 51.0 | 216.0       | 85.0       | 54.0       | 10.0       | 34.0       | -          | 61.0<br>±2.0 | 53.8<br>39.6         | 0.0275<br>0.0431           | 0.0199                            | 6.7<br>7.3                       |                 |
|                   |      | 11.5              | 352.4      | 333.4      | 10.5       | 8     |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
| 230               | 2    | 10                | 314.3      | 295.3      | 10.5       | 8     | 51.0 | 250.0       | 110.0      | 47.0       | 16.5       | 37.0       | 10.0       | 45.5<br>±1.5 | 53.8<br>39.6<br>25.4 | 0.0235<br>0.0392<br>0.1230 | 0.0396                            | 8.0<br>8.6<br>10.6               |                 |
|                   |      | 11.5              | 352.4      | 333.4      | 10.5       | 8     |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
|                   |      | 14                | 466.7      | 438.2      | 13.0       | 8     |      |             |            |            |            |            |            |              |                      |                            |                                   |                                  |                 |
| 500               | 2    | 14                | 466.7      | 438.2      | 13.0       | 8     | 51.0 | 357.0       | 110.0      | 47.0       | 16.5       | 40.0       | 10.0       | 47.0<br>±3.0 | 25.4                 | 0.1030                     | 0.1664                            | 15.1                             |                 |

Coupling sizes 30, 65, 120 with clamping hub (fig. 1), coupling sizes 230, 500 with taper bush (fig. 2)

## Standard hub splines

| RCT Coupling size | ANSI B92.1  |              |              |              |              |             |
|-------------------|-------------|--------------|--------------|--------------|--------------|-------------|
|                   | 9T<br>16/32 | 13T<br>16/32 | 15T<br>16/32 | 14T<br>12/24 | 17T<br>12/24 | 13T<br>8/16 |
| 30                | X           | X            | X            | X            | X            |             |
| 65                |             | X            | X            | X            | X            | X           |
| 120               |             |              | X            | X            | X            | X           |
| 230               |             |              |              | X            | X            | X           |
| 500               |             |              |              |              |              |             |

| RCT Coupling size | DIN 5480   |         |         |         |         |         |
|-------------------|------------|---------|---------|---------|---------|---------|
|                   | 25x1.25x18 | 30x2x14 | 35x2x16 | 40x2x18 | 45x2x21 | 50x2x24 |
| 30                | X          | X       | X       | X       |         |         |
| 65                |            | X       | X       | X       | X       |         |
| 120               |            |         | X       | X       | X       | X       |
| 230               |            |         |         | X       | X       | X       |
| 500               |            |         |         |         | X       | X       |

Alternative tooth profiles on request

## Ordering example:

Coupling designation **RCT 230.F2.14.17T1224**

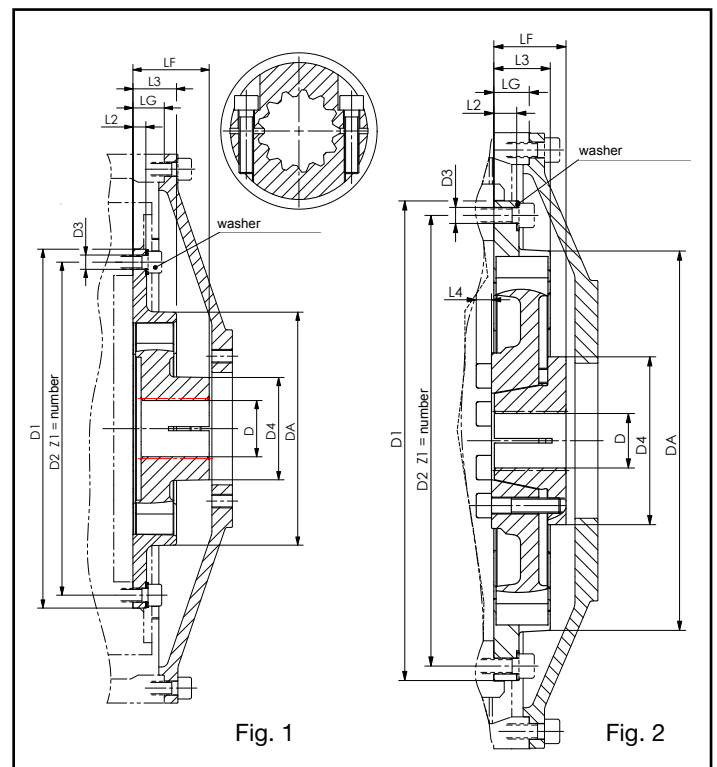
RCT Coupling size

Flange connection SAE J620

Hub spline

Note:

For the dimensions of the matching bellhousing flanges, see the separate product information.





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