

## CSG-2A series component sets Maximum torque density with lifetime precision

Handling systems for production plants place extreme requirements on their drive systems. In order to offer short cycle times and therefore a high degree of efficiency for component handling, drive systems must be able to provide highly dynamic acceleration and deceleration and to quickly traverse paths at high speeds. Furthermore, in the event of a collision any shock loads should cause as little damage as possible to the drive systems. Drive systems must provide maximum precision in order to ensure high reproducible component quality. In order to handle components in a confined machine compartment, a compact design of the handling systems is required.

The CSG-2A Series Component Set is ideal for these highly dynamic applications. As a strain wave gear with lifetime precision, it features zero backlash with very high transmission and positioning accuracy, which is maintained over its entire service life thanks to the inherent preloading principle of the gear.

Compared with standard strain wave gears, this range offers 30% higher torque (peak, nominal, average and momentary peak torque) while keeping the same dimensions. Higher acceleration and deceleration values are therefore possible in the application and cycle times can be reduced. Alternatively, a smaller gear size can also be selected for the same load. This means that the drive system design can be more compact than with standard strain wave gears.

Thanks to the 30% increase in momentary peak torque, the CSG series offers considerably higher resistance to shock loads than standard strain wave gears. The high load capacity of the gear does not adversely affect the service life. In fact, the service life has been increased by 40% compared with the standard gear. The user therefore benefits from greater reliability in his production line.

CSG-2A Series Component Sets are available in ten sizes with gear ratios of 50, 80, 100, 120 and 160 offering repeatable peak torques from 23 to 3419 Nm and a torque density of 260 to 545 Nm/kg. The graduation of the sizes enables users to select the ideal gear size for the application and therefore always dimension the system appropriately.

The component set, comprising the Circular Spline, Flexspline and Wave Generator offers maximum design freedom for integration into the application. Through the use of the existing housing structure, a separate housing for the gear may not be required. In addition, the existing bearing arrangement within the application can often be used as the output bearing for the component set. The system can therefore be optimised to a lightweight design. Thanks to the high torque density

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In over 45 years of operation, **Harmonic Drive AG** has developed into a solution provider for high-precision drive technology. We offer over 25,000 different product versions, more than 80% of which are customer-specific solutions. The bigger the challenge, the better!



of the CSG-2A series component sets, space requirements in the drive system are kept to a minimum.

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