

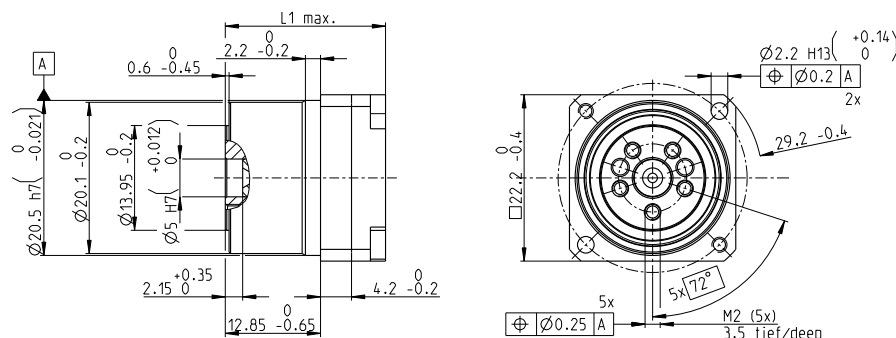
## GSW 20 HP Ø20 mm, strain wave gearheads

## Zero backlash

NEW



**M 1:1**



|                             |                                           |                          |                          |        |  |  |  |  |  |  |  |
|-----------------------------|-------------------------------------------|--------------------------|--------------------------|--------|--|--|--|--|--|--|--|
| <div><div></div></div>      | Stock program                             | Part numbers             |                          |        |  |  |  |  |  |  |  |
| <div><div></div></div>      | Standard program                          |                          |                          |        |  |  |  |  |  |  |  |
| <div><div></div></div>      | Special program (on request)              | 910896                   | 878757                   |        |  |  |  |  |  |  |  |
| Gearhead data (provisional) |                                           |                          |                          |        |  |  |  |  |  |  |  |
| 1                           | Reduction                                 |                          | 50:1                     | 100:1  |  |  |  |  |  |  |  |
| 2                           | Max. continuous torque                    | Nm                       | 0.6                      | 1.2    |  |  |  |  |  |  |  |
| 3                           | Max. intermittent torque                  | Nm                       | 1.1                      | 1.8    |  |  |  |  |  |  |  |
| 4                           | Max. overload torque                      | Nm                       | 2.2                      | 3.5    |  |  |  |  |  |  |  |
| 5                           | Max. continuous input speed               | rpm                      | 6500                     | 6500   |  |  |  |  |  |  |  |
|                             | Max. intermittent input speed             | rpm                      | 10 000                   | 10 000 |  |  |  |  |  |  |  |
| 6                           | Max. efficiency                           | %                        | 72                       | 74     |  |  |  |  |  |  |  |
| 7                           | Weight                                    | g                        | 32                       | 32     |  |  |  |  |  |  |  |
| 8                           | Mass moment of inertia                    | gcm <sup>2</sup>         | 0.75                     | 0.75   |  |  |  |  |  |  |  |
| 9                           | Gearhead length L1                        | mm                       | 21.5                     | 21.5   |  |  |  |  |  |  |  |
|                             |                                           |                          |                          |        |  |  |  |  |  |  |  |
| 10                          | Mech. positioning accuracy                | arcmin                   | 2.4                      | 2.4    |  |  |  |  |  |  |  |
| 11                          | Mech. repeatability                       | arcmin                   | 0.3                      | 0.3    |  |  |  |  |  |  |  |
| 12                          | Hysteresis loss                           | arcmin                   | 3.0                      | 3.0    |  |  |  |  |  |  |  |
| 13                          | Torsional rigidity C1                     | 10 <sup>4</sup> Nm/rad   | 0.013                    | 0.020  |  |  |  |  |  |  |  |
|                             | Torsional rigidity C2                     | 10 <sup>4</sup> Nm/rad   | 0.018                    | 0.027  |  |  |  |  |  |  |  |
|                             | Torsional rigidity C3                     | 10 <sup>4</sup> Nm/rad   | 0.025                    | 0.030  |  |  |  |  |  |  |  |
| 14                          | Torque M1                                 | Nm                       | 0.075                    | 0.075  |  |  |  |  |  |  |  |
|                             | Torque M2                                 | Nm                       | 0.220                    | 0.220  |  |  |  |  |  |  |  |
| 15                          | Starting torque, no load                  | mNm                      | 4.0                      | 3.0    |  |  |  |  |  |  |  |
| 16                          | Backdriving torque, no load               | Nm                       | 0.21                     | 0.27   |  |  |  |  |  |  |  |
| 17                          | Ratcheting torque                         | Nm                       | 3.8                      | 4.6    |  |  |  |  |  |  |  |
| 18                          | Buckling torque                           | Nm                       | 9.8                      | 9.8    |  |  |  |  |  |  |  |
|                             |                                           |                          |                          |        |  |  |  |  |  |  |  |
| Technical data              |                                           |                          | Modular system           |        |  |  |  |  |  |  |  |
| 19                          | Bearing at output                         | Deep groove ball bearing | BLDC Motors              |        |  |  |  |  |  |  |  |
| 20                          | Tilting rigidity                          | 0.2 Nm/arcmin            | 133-134_ECX FLAT 22      |        |  |  |  |  |  |  |  |
| 21                          | Max. tilting torque                       | 0.9 Nm/arcmin            | 182_ECX PRIME 16 M       |        |  |  |  |  |  |  |  |
| 22                          | Max. radial load                          | 100 N                    | 184_ECX PRIME 16 L       |        |  |  |  |  |  |  |  |
| 23                          | Max. axial load                           | 300 N                    | 213_ECX FLAT 22 S        |        |  |  |  |  |  |  |  |
| 24                          | Dynamic load rating                       | 1456 N                   | 214-215_ECX FLAT 22 S HT |        |  |  |  |  |  |  |  |
| 25                          | Static load rating                        | 1060 N                   | 216-217_ECX FLAT 22 L HT |        |  |  |  |  |  |  |  |
| 26                          | Distance rolling bearing center to output | 4.5 mm                   |                          |        |  |  |  |  |  |  |  |
| 27                          | Pitch diameter                            | 15 mm                    | DC Motors                |        |  |  |  |  |  |  |  |
| 28                          | Ambient temperature                       | -40...+100 °C            | 279-280_DCX 19 S         |        |  |  |  |  |  |  |  |
|                             |                                           |                          | 281-282_DCX 22 S         |        |  |  |  |  |  |  |  |

### Additional information

Explanation of the line numbers and additional information on page 358.