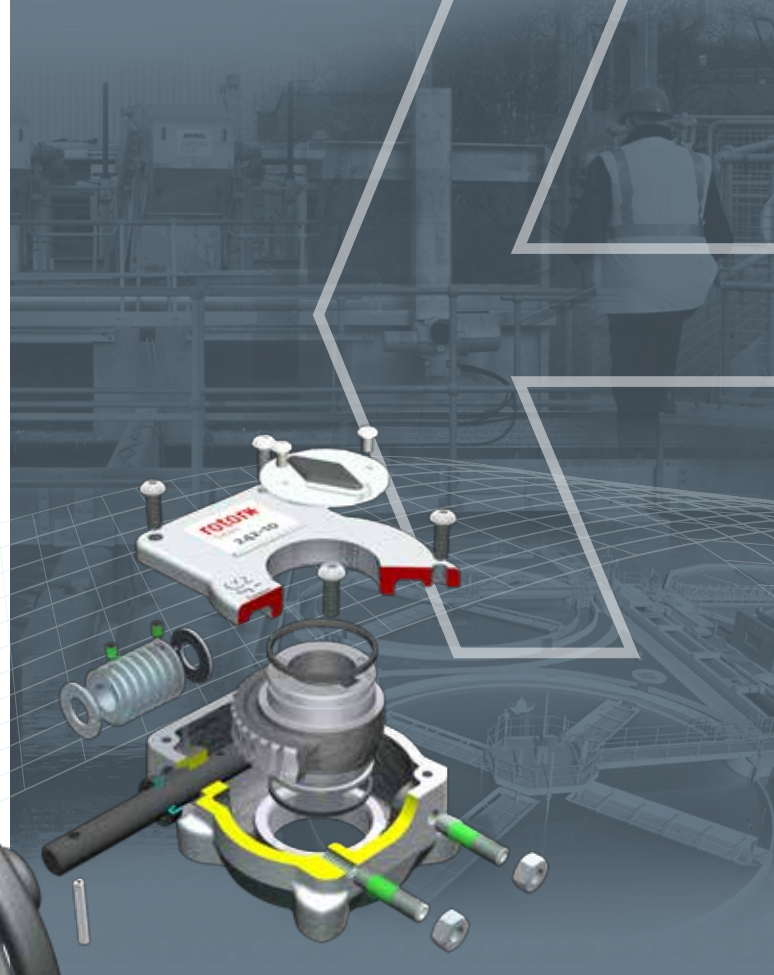


rotork®

Gears

242 Series

Manual Quarter-turn Gear Operators



Manual Quarter-turn Gear Operators

The 242 range has been designed to optimise robustness and durability, whilst minimising non-structural mass and reducing the overall gearbox envelope by using the latest lean engineering principles and analytical design tools. The 242 series is based on the design and quality of the FB series which was designed to meet strict specifications. The 242's simple, rugged construction makes it the gearbox of choice for low torque applications.

Application

The 242 series quarter-turn worm gearboxes are intended for the operation of ball, butterfly, plug and any other quarter-turn valves. They are well suited for applications in power, waterworks, gas pipelines, HVAC and most general industrial applications.

Features

- Cast handwheels (on smaller sizes).
- PTFE thrust washers.
- Cast iron housing.
- Ductile iron quadrant.
- Stroke 0-90° ($\pm 5^\circ$ adjustable at open and closed).
- Pre-applied silicon seal on stop bolts.
- Special protection of the input shaft.
- Stainless Steel position indicator.
- Zinc plated fasteners.

Environmental Specification

- Sealed to IP67
- Temperature range: -40 °C to 120 °C

Options

- Padlockable flange
- Stainless steel input shaft & fasteners
- Namur mounting
- Memory stop
- Westlock mounting
- IP68

Redefining Flow Control

rotork® Gears

Material specification for Rotork Gears 242 Series

| Description | Material Description | UK Standard | International Standard | Japanese Standard |
|-------------------------|-------------------------------------|--|-------------------------|-------------------|
| Gearcase and cover | Cast iron (Grey) | BS EN 1563 EN-GJL-250 | ISO 185 JL/250 | JIS G5501 FC250 |
| Quadrant | Ductile iron (SG / Nodular) | BS EN 1563 EN-GJS-400-15 | ISO 683 36CrNiMo6 | JIS G5502 FCD400 |
| Worm | Carbon steel | BS EN 10083 C45 | ISO 683 C45 | JIS G3102 S45C |
| Input shaft | Electrophoretic coated carbon steel | BS EN 10083 C45 | ISO 683 C45 | JIS G3102 S45C |
| Seals | Nitrile rubber | - | ISO 1629 NBR 70 Shore A | - |
| Fasteners | Zinc plated alloy steel | - | ISO 898 10.9 | - |
| Indicator | Stainless steel | BS970 304S11 | ISO16143-2 X2CrNi18-9 | JIS G4303 SUS 304 |
| Handwheel (up to 200mm) | Ductile iron | BS EN 1563 EN-GJS-400-15 | ISO 683 36CrNiMo6 | JIS G5502 FCD400 |
| Handwheel (over 200mm) | Fabricated structural steel | BS EN 10277-2 1.0122 | ISO 4997 CR220 | JIS G3101/6 SM41A |
| Handwheel pin | Carbon steel | BS1449 CS70 | ISO 4960 CS70 | JIS G4802 CS70 |
| Input shaft bearings | Low friction bush | Proprietary: Polytetrafluoroethylene steel-backed | | |
| Lubricant | Grease | Proprietary: Calcium soap base with extreme pressure additives | | |
| Finish | Grey primer paint | Proprietary: Polyvinyl butyral, phenolic epoxy resin | | |

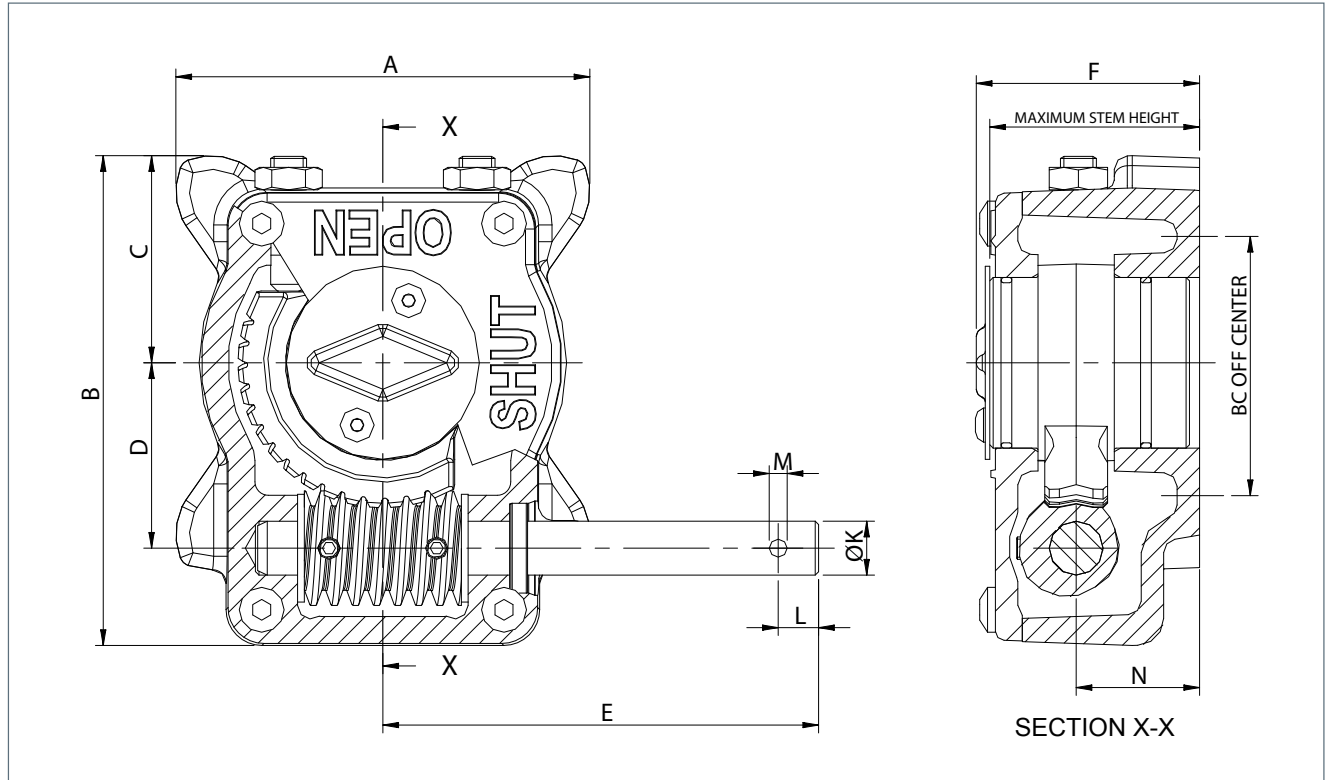
| Type | Output Torque Nm | Ratio:1 | M.A.* ±10% | Weight exl. Handwheel Kg | Max Stem Bore BS4235 Key mm | Max Square mm | Max DD mm | Max Stem Height mm | ISO Base Options | |
|--------|------------------|---------|------------|--------------------------|-----------------------------|---------------|-----------|--------------------|------------------|------------------|
| 242-10 | S | 165 | 40 | 10 | 0.9 | Ø20 + 6K | 19AF | Ø26 x 19AF | 36.5 | F05 |
| | M | | | | 1 | | | | | F05 + F07 |
| | L | | | | - | | | | | Max PCD 83mm |
| 242-20 | S | 300 | 40 | 10 | 1.5 | Ø24 + 8K | 22AF | Ø31 x 22AF | 40 | F07 |
| | M | | | | 1.9 | | | | | F07 + F10 |
| | L | | | | 2.1 | | | | | F12 ONLY |
| 242-30 | S | 650 | 40 | 10 | 3.4 | Ø36 + 10K | 31AF | Ø44 x 31AF | 50.5 | F07 + F10 |
| | M | | | | 3.9 | | | | | F07 + F10 + F12 |
| | L | | | | 4.1 | | | | | F14 ONLY |
| 242-40 | S | 1200 | 40 | 10 | 5.7 | Ø47 + 14K | 40AF | Ø56 x 40AF | 62.5 | F10 + F12 |
| | M | | | | 5.9 | | | | | F10 + F12 OR F14 |
| | L | | | | 6.4 | | | | | F16 ONLY |
| 242-45 | S | 2000 | 50 | 13 | 7.9 | Ø60 + 18K | 50AF | Ø70 x 50AF | 70.5 | F12 |
| | M | | | | 9 | | | | | F14 |
| | L | | | | 9 | | | | | F16 |
| 242-50 | S | 2100 | 60 | 15 | 10.5 | Ø70 + 20K | 58AF | Ø82 x 58AF | 70.5 | F14 |
| | M | | | | 12.3 | | | | | F14 OR F16 |
| | L | | | | 14.2 | | | | | F25 ONLY |

*The published M.A. is achieved after a few cycles.

Redefining Flow Control

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Manual Quarter-turn Gear Operators



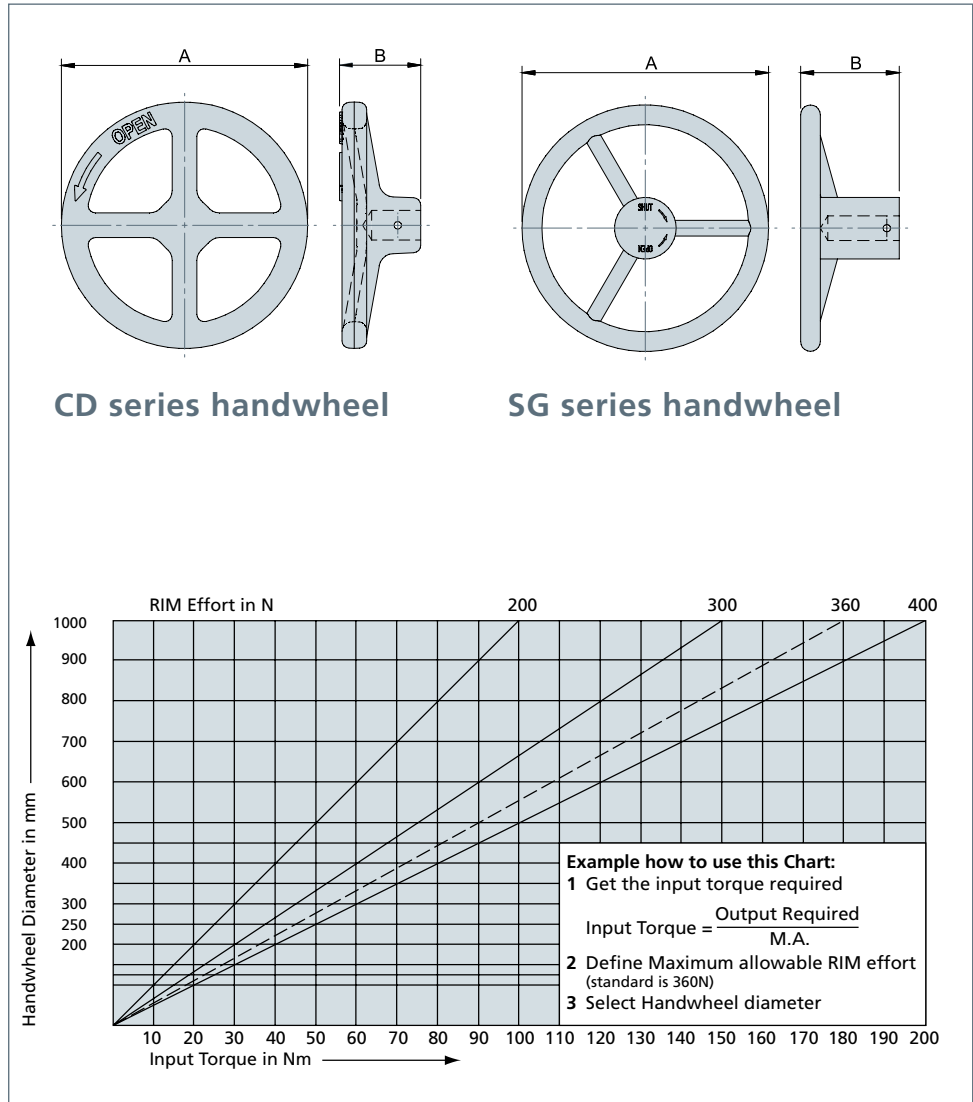
| Type | A Gearbox Width | B Gearbox Length | C | D Centre Distance | E Mid Gearbox - End Shaft | F Height | ØK Shaft Diameter | L Hole Distance | M Diameter Hole | N |
|---------|-----------------------|------------------------|-----|-------------------------|------------------------------------|-------------|-------------------------|-----------------------|-----------------------|----|
| 242-10S | 65 | 82 | 30 | 34 | 78 | 40 | 10 | 9 | 3.5 | 20 |
| 242-10M | 66 | 82 | 30 | 34 | 78 | 40 | 10 | 9 | 3.5 | 20 |
| 242-10L | 78 | 92 | 39 | 34 | 78 | 45 | 10 | 9 | 3.5 | 25 |
| 242-20S | 80 | 100 | 38 | 41 | 97 | 44 | 12 | 9 | 4 | 22 |
| 242-20M | 92 | 101 | 38 | 41 | 97 | 50 | 12 | 9 | 4 | 28 |
| 242-20L | 114 | 101 | 38 | 41 | 97 | 50 | 12 | 9 | 4 | 28 |
| 242-30S | 107 | 131 | 49 | 55 | 119 | 54 | 16 | 14 | 5 | 28 |
| 242-30M | 115 | 132 | 48 | 55 | 119 | 60 | 16 | 14 | 5 | 34 |
| 242-30L | 131 | 149 | 48 | 55 | 119 | 60 | 16 | 14 | 5 | 34 |
| 242-40S | 135 | 163 | 60 | 69 | 159 | 67 | 20 | 24 | 6 | 34 |
| 242-40M | 135 | 163 | 60 | 69 | 159 | 71 | 20 | 24 | 6 | 38 |
| 242-40L | 155 | 163 | 60 | 69 | 159 | 67 | 20 | 24 | 6 | 34 |
| 242-45S | 156 | 180 | 65 | 81 | 159 | 75 | 20 | 24 | 6 | 42 |
| 242-45M | 156 | 180 | 65 | 81 | 159 | 75 | 20 | 24 | 6 | 42 |
| 242-45L | 156 | 192 | 77 | 81 | 159 | 86 | 20 | 24 | 6 | 53 |
| 242-50S | 185 | 199 | 70 | 94 | 159 | 76 | 20 | 24 | 6 | 42 |
| 242-50M | 185 | 207 | 78 | 94 | 159 | 87 | 20 | 24 | 6 | 53 |
| 242-50L | 270 | 270 | 135 | 94 | 159 | 87 | 20 | 24 | 6 | 53 |

All dimensions in millimetres. Tapping depths are not according to ISO5211, minimum tapping depths are 1 x diameter tapping hole.

Handwheel Selection Chart

Input Torque

| Type | M.A. ± 10% |
|--------|------------|
| 242-10 | 10 |
| 242-20 | 10 |
| 242-30 | 10 |
| 242-40 | 10 |
| 242-45 | 13 |
| 242-50 | 15 |



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