



Profiled flange ANSI B16.5 class 150


Spring return flange designed to prevent the loosening of the bolts under any weather conditions. Extremely light and durable, thanks to the cast iron coated fiberglass-reinforced polypropylene (PP-GF30). It can be used on tap water piping systems.

Features

Materials

- Internal core in ductile cast iron EN-GJS-500-7.
- External coating made of 30% glass reinforced polypropylene (PP-GF30).

Technical data

 PN 16 bar

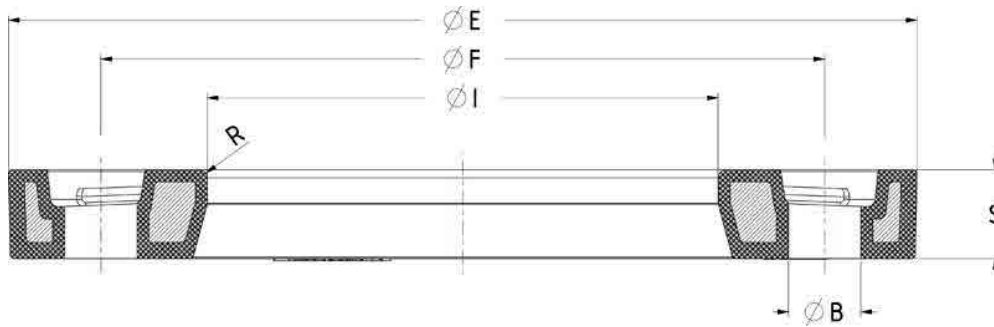
Applications



Standards

ANSI B16.5 class 150

Certifications



Dimensional

| Cod | DE (mm) | DN (inch) | Operating Pressure (bar) | ØE (mm) | ØF (mm) | ØI (mm) | ØB (mm) | S (mm) | N bolts | Bolts | R (mm) | Preload min (Nm) | Preload max (Nm) | Weight (kg) |
|------------|---------|-----------|--------------------------|---------|---------|---------|---------|--------|---------|-------|--------|------------------|------------------|-------------|
| 1760063050 | 63 | 2" | 16 | 164 | 121 | 78 | 18 | 19 | 4 | M16 | 1 | 30 | 40 | 0.74 |
| 1760090080 | 90 | 3" | 16 | 195 | 152 | 108 | 18 | 19 | 4 | M16 | 1 | 40 | 50 | 1.00 |
| 1760110100 | 110 | 4" | 16 | 238 | 191 | 128 | 18 | 23 | 8 | M16 | 2 | 40 | 60 | 1.84 |
| 1756125100 | 125 | 5" | 16 | 226 | 180 | 134 | 18 | 23 | 8 | M16 | 2 | 40 | 60 | 1.40 |
| 1760160150 | 160 | 6" | 16 | 296 | 241 | 178 | 22 | 29 | 8 | M20 | 1 | 60 | 80 | 3.00 |
| 1760180150 | 180 | 6" | 16 | 296 | 241 | 186 | 22 | 29 | 8 | M20 | 2 | 60 | 80 | 2.78 |
| 1756200200 | 200 | 8" | 16 | 346 | 295 | 238 | 22 | 29 | 8 | M20 | 1 | 80 | 100 | 3.40 |
| 1760225200 | 225 | 8" | 16 | 355 | 298 | 238 | 22 | 33 | 8 | M20 | 1 | 80 | 100 | 4.66 |
| 1760250250 | 250 | 10" | 16 | 429 | 362 | 288 | 26 | 36 | 12 | M20 | 1 | 90 | 120 | 6.46 |
| 1760315300 | 315 | 12" | 16 | 497 | 432 | 338 | 26 | 49 | 12 | M20 | 2 | 100 | 150 | 11.38 |

- "C" shaped section with anti-loosening spring effect.
- Designed to withstand 4 times the recommended bolt preload.
- Weight reduced by 70% compared to normal steel flanges.
- High corrosion resistance thanks to the high thickness of the coating (min3mm).
- Dimensions according to B16.47 class 150
- Connection holes according to ANSI ASME B16.5 class 150

MAIN TECHNICAL SPECIFICATIONS

The main characteristics of the flange are determined by the same factors: profile design and materials used.

By combining these factors and a safety factor of 4 (unquestionable essential criteria in Macplast's view), we were able to provide the flange with several features that are closely dependent on each other:

Load distribution

The profile section has been thoroughly studied to enhance load distribution from the bolt to the head of the stub flange, reducing the stress level of the flange and eliminating any critical points.

Compared to the regular "flat" flanges, the profiled flanges reach in fact much lower stress levels at equal preload, allowing you to work on the profile and "polish" the material as necessary, while still ensuring the spring effect that allows keeping the bolts locked and reducing the weight of the flange itself significantly.

Spring effect

By spring-effect we refer to the elastic deformation of the material that allows it to return to its initial shape once the loads are removed. The profile is designed to ensure an anti-loosening effect that allows the flange to keep the bolts tightened even in case of wide temperature variations. The safety factor applied in design phase indicates that plastic deformation begins, or the material reaches its yield point, at a tightening torque 4 times higher than the recommended one.

Reduced weight

The flange is capable of withstanding high tightening torques compared to its size and therefore we were able to lighten the flange by 70% in comparison with traditional steel flanges, while still ensuring complete safety.

Connecting

Connection holes according to ANSI ASME B16.5 Class 150.

MATERIALS

Internal core

Ductile cast iron GJS 500-7 as per UNI EN 1563; ensures greater resistance to corrosion in comparison with regular steel S235JR (FE360B), offering the same mechanical properties.

Outer coating

Hot molded glass fiber reinforced polypropylene (PP-GF 30), minimum thickness 3mm; it ensures high degree of protection against corrosion and gives the flange a more finished appearance.

TECHNICALS SPECIFICATIONS

Dimensions according to B16.47 class 150;

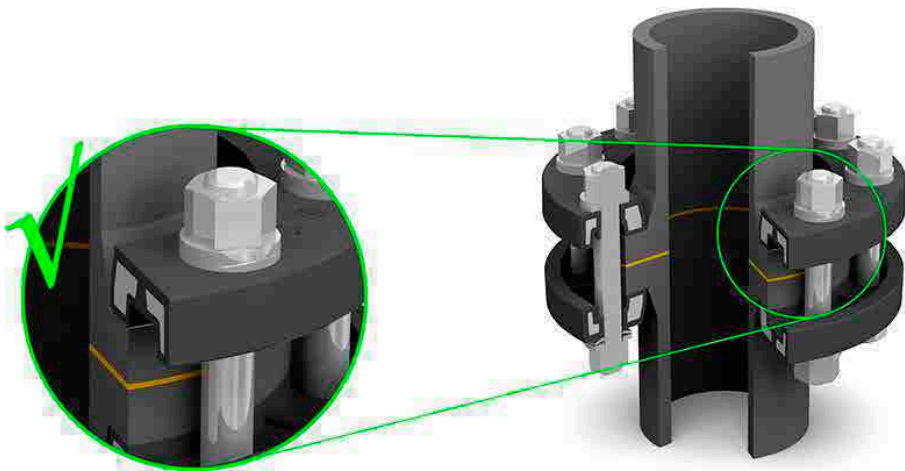
Connection holes ANSI ASME B16.5 class 150;


Field of application WATER SYSTEMS;

Possibility to customize the marking;

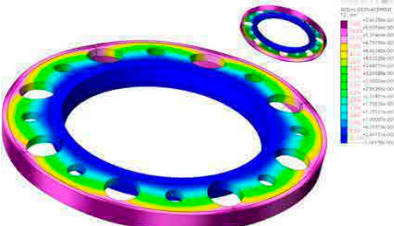
Made in compliance with ISO 9001 quality management system and 14001 environmental management system.

ASSEMBLY INSTRUCTIONS

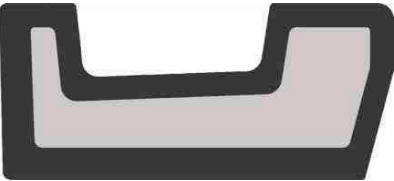




Load distribution



Elastic deformation



Profile section

| CLIMATE | TEMPERATURE | PRELOAD |
|------------------|--------------|---------|
| Polar | -50°C ÷ -5°C | minimum |
| Temperate | -5°C ÷ 30°C | nominal |
| Desert | 30°C ÷ 60°C | maximum |

Tightening depending on temperature

Tightening procedure - step

- 1 -> manual tightening of the nuts
- 2 -> tighten to 20% of recommended torque
- 3 -> tighten to 40% of recommended torque
- 4 -> tighten to 60% of recommended torque
- 5 -> tighten to 80% of recommended torque
- 6 -> tighten to 100% of recommended torque
- 7 -> repeat to 100% of recommended torque
- 8 -> repeat to 100% of recommended torque
- 9 -> repeat to 100% of recommended torque

