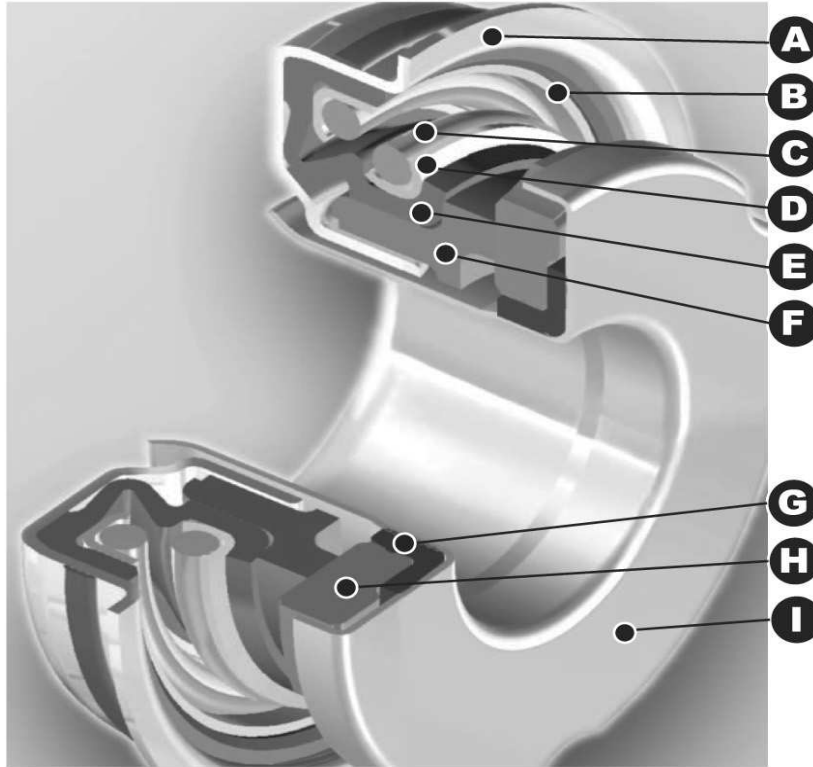




Automotive 12 JME

Classical Design Elastomer Bellows Seal

- A** – Retainer
- B** – OD Ferrule
- C** – Spring
- D** – ID Ferrule
- E** – Bellows
- F** – Primary Ring
- G** – Cup
- H** – Mating Ring
- I** – Sleeve



12 JME

Product Description

Unitized compact seal designed for the automotive waterpumps with a 12 mm shaft. After millions of parts manufactured from its launching, the reliability of this seal is widely proved in different applications, including the hard conditions of the automotive competitions.

Design Features

- **Seal Design :**
Traditional compact seal concept of Cyclam without any glue for the best reliability of the secondary sealing areas. Balance calculated for optimizing the softest friction of the faces. Unitized to preserve the faces from dust or external particles.
- **Spring :**
Allows for controlled mechanical closing force in dry conditions, flexibility for axial movement.
- **Bellows :**
Elastomer bellows provides a secondary sealing and assures the balanced closing force in using conditions. It accepts slight axial and angular movements due to the tolerances of the assembly (in the limits defined on the drawing)
High resistance to the pressure and the temperature of the fluid.
- **Retainer :**
Stainless Steel corrosion-resistant retainer provides positive mechanical drive for the primary ring and assures the fitting of the seal into the pump bore. It also participate to the static sealing

Design Features (Continued)

- **Sleeve :**
Stainless Steel corrosion-resistant sleeve provides positive mechanical drive for the mating ring. It assures the static sealing with the shaft and unitizes the seal.
- **Primary Ring :**
The Carbographe material (obtained with an exclusive process developed and produced by Cyclam) is without any impregnation and so, besides its high dimensional stability, has an excellent behaviour in hard conditions of temperature and pressure, particularly against Porous Silicon Carbide.
- **Mating Ring :**
The Porous Silicon Carbide material and the Carbographe have together excellent tribological properties which results in an increased life of the seal. It accepts also dry-running conditions.

Performances Capabilities

- **Temperature :**
-40°C to +150°C
- **Pressure :**
Up to 4.5 bar.
- **Speed :**
Up to 12.000 rpm.

Compatibility Limits

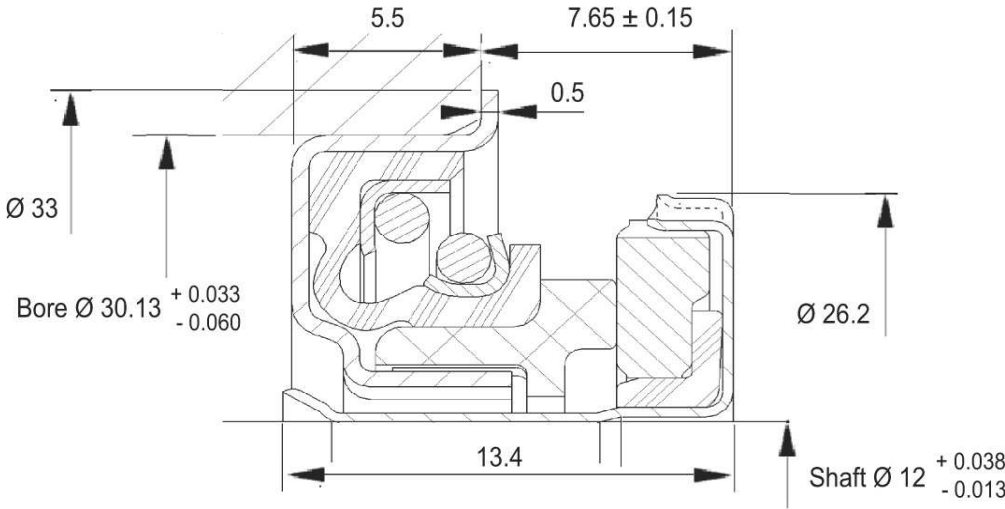
- Compatible in Ethylene Glycol coolant.
- Elastomer withstands excursions to 150°C.



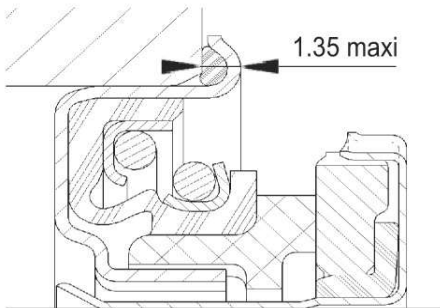
Automotive 12 JME

Classical Design Elastomer Bellows Seal

12 JME Typical Arrangement / Dimensional Data



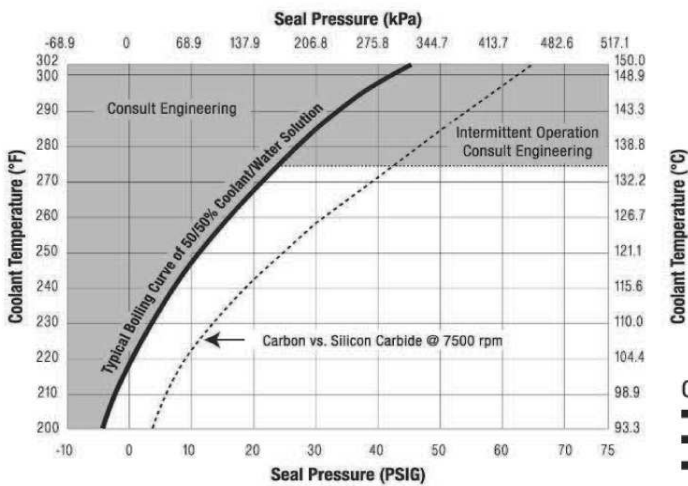
Special Version 12 JME Seal With O-Ring



In the case of high roughness of the housing bore, a special patented version of the 12 JME seal including a O-Ring on the retainer offers a better reliability of the static sealing.

The arrangement and the dimensional data are exactly the same ones than the standard version, except the retainer flange.

Operating Limits



**Defines range of application for
 Carbon vs. Silicon Carbide
 @ 7500 rpm**

█
**For applications within
 this zone contact
 Cyclam Engineering**

Contact Cyclam Automotive Engineering for operating limits when:

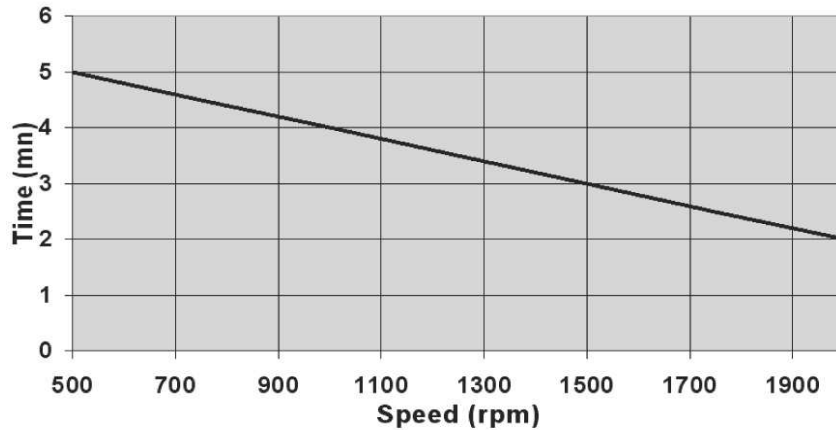
- Applications are greater than 7500 rpm.
- Seal area pressure is less than .34 bar/5 psig or greater than 5 bar/75 psig.
- Vacuum duty services are possible or likely.
- Temperatures are above 135°C/275°F.



Automotive 12 JME

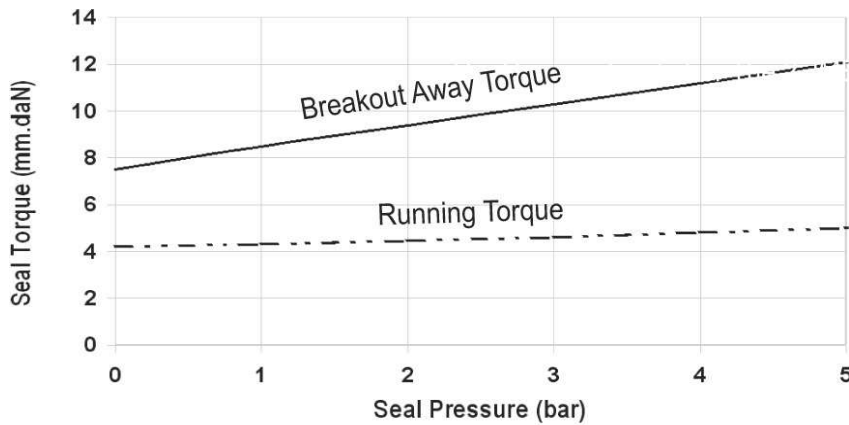
Classical Design Elastomer Bellows Seal

Dry Running Limits For The 2 JME Seal



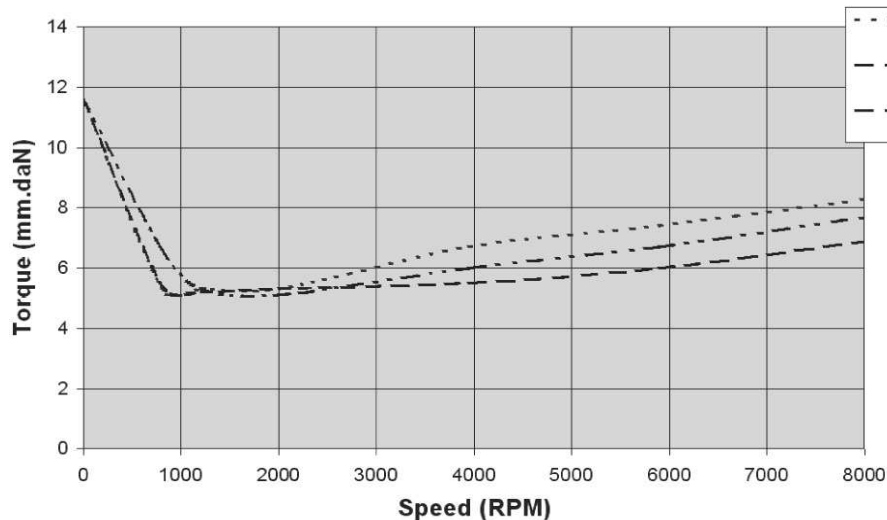
Under dry running conditions, the 12 JME seal offers good performances and no damage on the friction faces, below the graph curve beside.

Energy Consumption



The 12 JME seal is designed and calculated to obtain a very low sensitivity to the pressure variations.

Torque As A Function Of Speed



The friction faces of the 12 JME seal (Carbographite vs specific Porous SiC) have a very low sensitivity to the speed and the temperature.



Automotive 12 JME

Classical Design Elastomer Bellows Seal

Materials of Construction

SEAL COMPONENTS	MATERIALS
Primary Ring	Carbographite
Mating Ring	Porous Silicon Carbide 12%
Retainer	304 or 409 Stainless Steel
Bellows	HNBR
Spring	302 Stainless Steel
Ferrules	409 Stainless Steel
Cup	HNBR
Sleeve	305 Stainless Steel



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