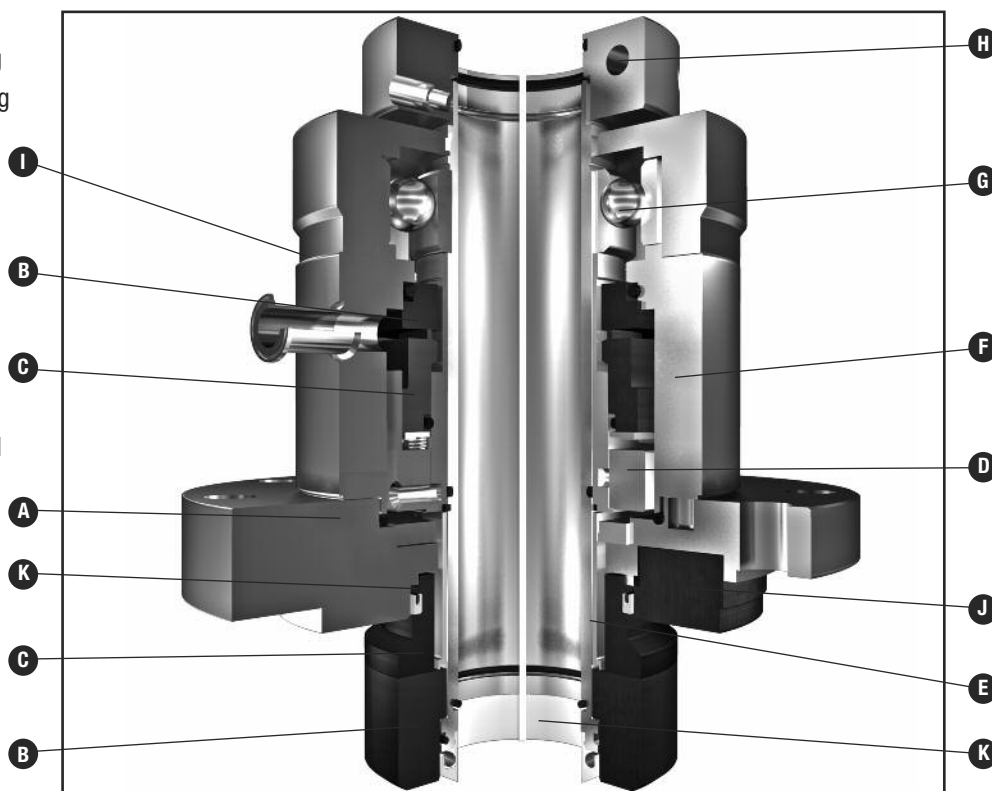


# TYPE 5280/5281/5282

## HYGIENIC VESSEL, MIXER AND AGITATOR SEALS

Technical Specification

- A – Flange
- B – Seat/Mating Ring
- C – Face/Primary Ring
- D – Retainer
- E – Sleeve
- F – Housing
- G – Bearing
- H – Clamp Ring
- I – Gauging Edge
- J – Type 5281 SiC Flange Insert
- K – Special PTFE Seal



### Product Description

The first choice for ultra-clean pharmaceutical and biochemical applications, these seals meet Qualified Hygienic Design (QHD) requirements to enable the cleaning and sterilisation of the product wetted process area with the seal in place (CIP, SIP). Different versions of the Type 5280 family are suitable for different vessel materials: Type 5280 for steel, Type 5281 for glass-lined and Type 5282 for special alloy vessels. Each version is available in liquid lubricated (W), gas lubricated (G), dry running (D) and a unique gas/dry face combination (GD) version. Although mostly used in top-entry vessels, the inboard rotating seat design perfectly suits side and bottom-entry vessels.

### Performance Capabilities\*

- Speed: 0 to 570 rpm
- Vessel pressure: vacuum to 6 bar(g)
- Barrier pressure: maximum 9 bar(g)
- Temperature: -40°C to +200°C  
-100°C special design
- Shaft run out: axial: +/- 2.0 mm

\*Maximum values (dependant on combination of operating conditions).  
For operating conditions outside these limits consult John Crane.

### Design Features

- Dual cartridge seal designed according to hygienic design criteria (QHD) with inboard rotating seat for optimal cleaning in place
- Squared PTFE-based secondary sealing elements improve cleaning and support a broad application range
- Product wetted materials compliant with FDA requirements
- Special designs and material options such as USP class VI compliant polymers are available on request
- Reverse pressure capabilities inboard
- Available in four variants of lubrication system:
  - 5280/81/82 - W - liquid lubricated wet seal
  - 5280/81/82 - D - dry running contacting seal
  - 5280/81/82 - G - gas lubricated non-contacting seal
  - 5280/81/82 - GD - gas lubricated non-contacting inboard, dry running outboard
- Special carbon materials allow for exceptional operation of gas seals with dry gas of pharmaceutical quality
- Special bearing design for high performance of non-contacting gas seals
- G design advantages include wear-free and particle-free operation, together with an easy supply system. In addition, the GD design reduces barrier gas consumption
- Suitable for application in explosive areas. Certificates of conformity according to European Directive 94/9/EC (ATEX) Cat. 1, 2 and 3 available on request

# TYPE 5280/5281/5282

## HYGIENIC VESSEL, MIXER AND AGITATOR SEALS

Technical Specification

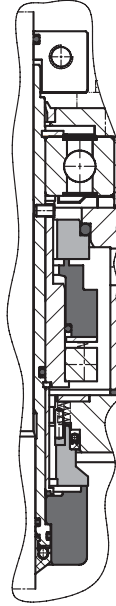
### Additional Configurations

#### Characteristics

- Can be cleaned in place (CIP)
- Can be sterilised in place (SIP)
- FDA-compliant materials, USP Class VI on request
- Primary and mating ring run without wear (G)
- No barrier fluid or wear contamination of the product (G, GD)
- No complex barrier fluid supply system (G, GD, D)

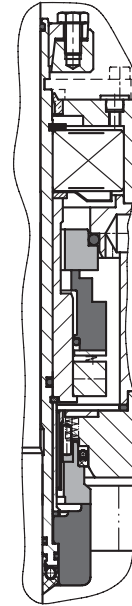
#### 5280 D

gas barrier - contacting  
for steel vessels (dry)



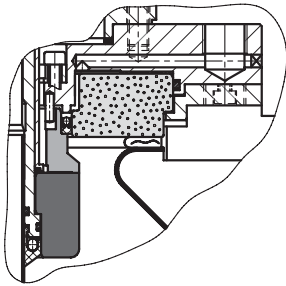
#### 5280 W

fluid barrier for  
steel vessels (wet)



#### 5281 G

gas barrier - non-contacting  
for glass-lined vessels



#### 5281 D

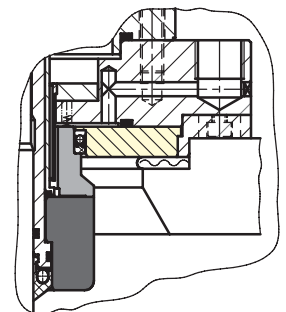
gas barrier - contacting  
for glass-lined vessels

#### 5281 W

fluid barrier -  
for glass-lined vessels

#### 5282 G

gas barrier - non-contacting for  
vessels made of special alloy



#### 5282 D

gas barrier - contacting  
for special alloy

#### 5282 W

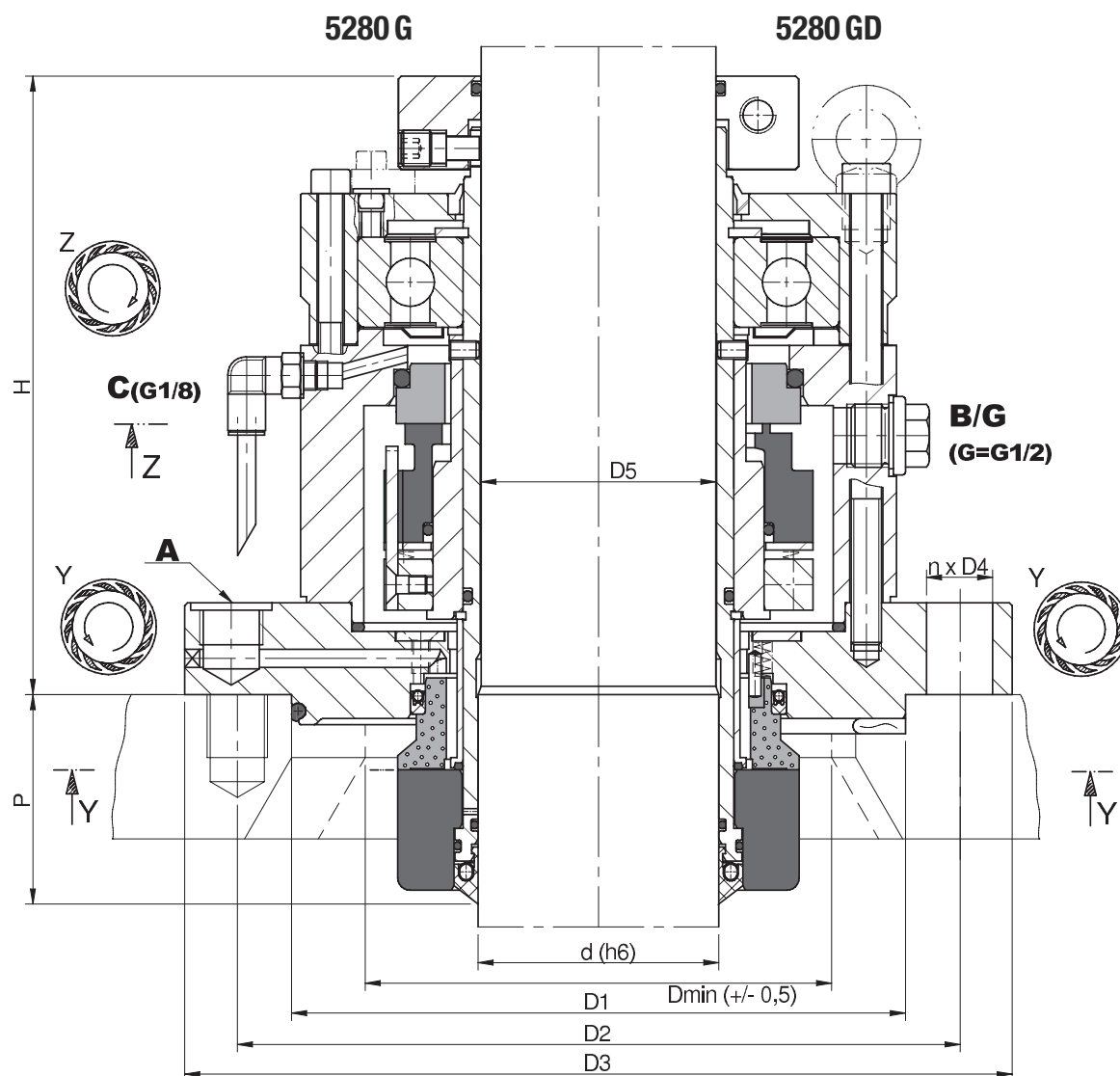
fluid barrier -  
for special alloy

# TYPE 5280/5281/5282

## HYGIENIC VESSEL, MIXER AND AGITATOR SEALS

Technical Specification

### Type 5280/5281/5282 Arrangement/Dimensional Data for Standard Size Range (mm)



Seal Size	Smallest Flange	Maximum Height & Protrusion Bore		Flange Connectivity				
d	Dmin	H	P	D1	D2	D3	n x D4	D5
25	80	180	58	90	129	150	4 x 11	25
40	110	178	70	110	145	175	4 x 18	38
50	120	200	68	176	210	240	8 x 18	48
60	130	185	68	176	210	240	8 x 18	58
80	155	206	70	204	240	275	8 x 22	78
100	175	209	68	234	270	305	8 x 22	98
125	210	225	67	260	295	330	8 x 22	123
140	230	250	72	313	350	395	12 x 22	135
160	255	260	78	313	350	395	12 x 22	150
180	280	270	83	364	400	445	12 x 22	170
200	300	270	83	364	400	445	14 x 22	190
220	320	270	90	422	460	505	16 x 22	210

Values for types 5281 and 5282 may slightly differ - special dimensions and designs possible.

The Type 5280 seal family is usually designed to fit each individual application. The special features of this family are utilized on a variety of equipment such as fermenters, dryers and suction filters. A standard size range is available using the main dimensions adapted from DIN, listed opposite. For further details please consult John Crane.

Qualified Hygienic Design

**QHD**

Authorized by VDMA