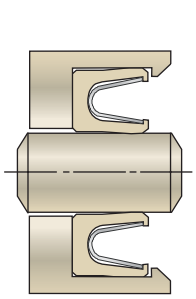
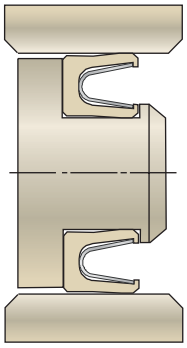
FlexiSeal® Rod & Piston Seals
Introduction

Contents

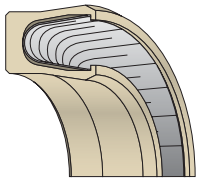
FlexiSeals



Rod Gland



Piston Gland



Chamfered Rod/Piston Seal with Cantilever Spring

Where can the reciprocating FlexiSeal be found?

The Parker FlexiSeal was not specifically designed for just one industry or application. The chemical and physical properties of its compounds make it a powerful problem-solver in many situations. The seals always seem to gravitate toward certain difficult applications which include:

- Harsh chemicals and solvents
- High temperatures up to 600 °F
- Cryogenic temperatures down to -450 °F
- Unlubricated applications
- Where low friction is required
- High pressures up to 10,000 psi
- High surface speeds when other seals overheat
- Where there's no margin for tooling cost
- Where there are custom, "in-between" sizes

Applications

The FlexiSeal's versatility makes it suitable for a wide range of applications including:

- Compressors
- Cryogenics
- FDA Clean Grade
- Jet Engines
- Hydraulic Cylinders
- Paint Sprayers
- Pressure Washers
- Robotics
- Steering Cylinders
- Valves
- Vapor Recovery Systems
- Many more

Markets

Since the FlexiSeal solves problems along several parameters, it can be found in virtually every market including:

- Aerospace
- Automotive
- Chemical Processing
- Appliances
- Machine Tools
- Marine
- Medical
- Pharmaceutical
- Military
- Heavy Machinery
- Pulp & Paper
- Hydraulic
- Food & Beverage
- Electronic
- Oil & Gas
- Semiconductor
- Plastics

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Choosing the Right Design

While choosing the right rod or piston FlexiSeal for your application, you need to consider the gland's configuration and intended installation, the finish and hardness of the mating surface, the pressure it will be subjected to, and the advantages of different spring choices and lip shapes.

Hardware Configuration and Installation

FlexiSeals are available for two-piece, stepped and closed gland configurations. We recommend a two-piece gland design for rod and piston applications for its ease of installation. The step-cut design may be used when the seal sees pressure from the open or spring side of the seal. A closed gland may only be used if it is possible to stretch or compress the seal into position. For details on these configurations and installation considerations, see **Page 2-3**.

Surface Finish

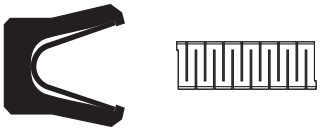
The optimum surface finish for FlexiSeals depends on the media to be sealed. To maximize seal performance and life, follow our recommendations on **Page 2-9**.

Pressure

The standard FlexiSeal is rated to 3000 psi when used in glands conforming to recommended dimensions and using the materials that meet the temperature requirements of the application, while a FlexiSeal with an extended heel can hold up to 10,000 psi. See **Page 2-10** for more detailed recommendations regarding pressure ratings.

Spring Choices

FlexiSeal Rod and Piston Seals are available with three different spring types to energize the jacket: V-shaped cantilever springs (V Series), canted-coil springs (C Series) and helical wound-ribbon springs (H Series). Details on each of their features can be found beginning on **Page 2-12**. An O-ring energizer can easily be substituted as a custom design.



V Series / Cantilever

C Series / Canted Coil

H Series / Helical

Table 5-1. Recommended Applications for FlexiSeal Rod and Piston Springs

V Series	C Series	H Series
reciprocating rod and piston	reciprocating rod and piston	static rod and piston
wide tolerance and misaligned glands (static)	wide tolerance and misaligned glands (static)	very slow dynamic seals (<150 sfpm)
abrasive media (when scraper lip is designated)	friction critical and very small diameter applications	applications where sealability is critical

Lip Shapes

FlexiSeals can be optimized by changing their lip shapes. Chamfered lips contact the mating surface at a single point. Scraper lips prevent particles from accumulating. Beaded lips yield an even thicker film than chamfered lips, advantageous for rapid reciprocating applications. More information is available on **Page 2-16**.

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Common Materials Used in this Product

The most popular PTFE fillers used for FlexiSeal rod & piston products are carbon fiber, fiberglass, aromatic polyester and graphite. Virgin PTFE is also popular for these products when conditions are mild.

A number of other fillers are used in combination with PTFE. Non-PTFE compounds are also available. More information on these materials and their properties is available in **Tab 3**. For best results consult the EPS Division PTFE Application Engineering team at (801) 972-3000.

0502 — Carbon Fiber Filled

Carbon fiber lowers creep, increases flex and compressive modulus and raises hardness. Coefficient of thermal expansion is lowered and thermal conductivity is higher for compounds of carbon fiber filled PTFE. Ideal for automotive applications in shock absorbers and water pumps.

0203 — Fiberglass Filled

Glass fiber has a positive impact on creep performance of PTFE. It also adds wear resistance and offers good compression strength.

0601 — Aromatic Polyester Filled

Aromatic polyester is excellent for high temperatures and has excellent wear resistance against soft, dynamic surfaces. Not recommended for sealing applications involving steam.

0301 — Graphite Filled

Since graphite is often used as a lubricant, it does not significantly increase the coefficient of friction of PTFE when used as a filler. The low friction allows the compound to be used when both shaft speed and pressure are high. Graphite also is chemically inert which enables its use in corrosive medias.

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There are two decision trees in this section. The first one deals with static and slow reciprocating applications where the seals are being squeezed radially between their ID and OD. Face seals, which are usually static or slow rotary, are covered on **Page 6-4**. The second decision tree on **Page 5-5** deals with radial seals that experience regular dynamic motion.

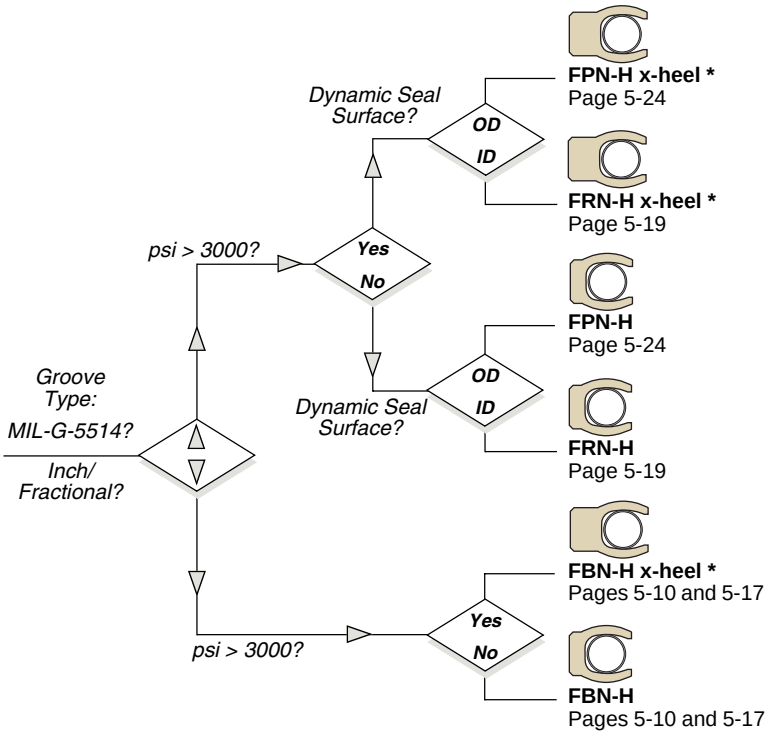
The key application considerations for static & intermittent dynamic rod & piston FlexiSeals are gland configuration and pressure. Pressures above 3000 psi call for the extended heel option, which is further explained on **Page 5-10**.

The key application considerations for dynamic reciprocating applications are pressure, media abrasiveness, friction requirements, and gland configuration.

The decision trees in this guide are to be used as an engineering guide only. Often several other parameters must be considered to optimize seal design. Contact Parker's PTFE Engineering Team for confirmation of your choice or further recommendations. Parker also recommends that any seal be tested in the application conditions before releasing for production.

Decision Trees

Static & Intermittent Dynamic Rod & Piston Applications



* See Extended Heel Options on **Page 5-10**.

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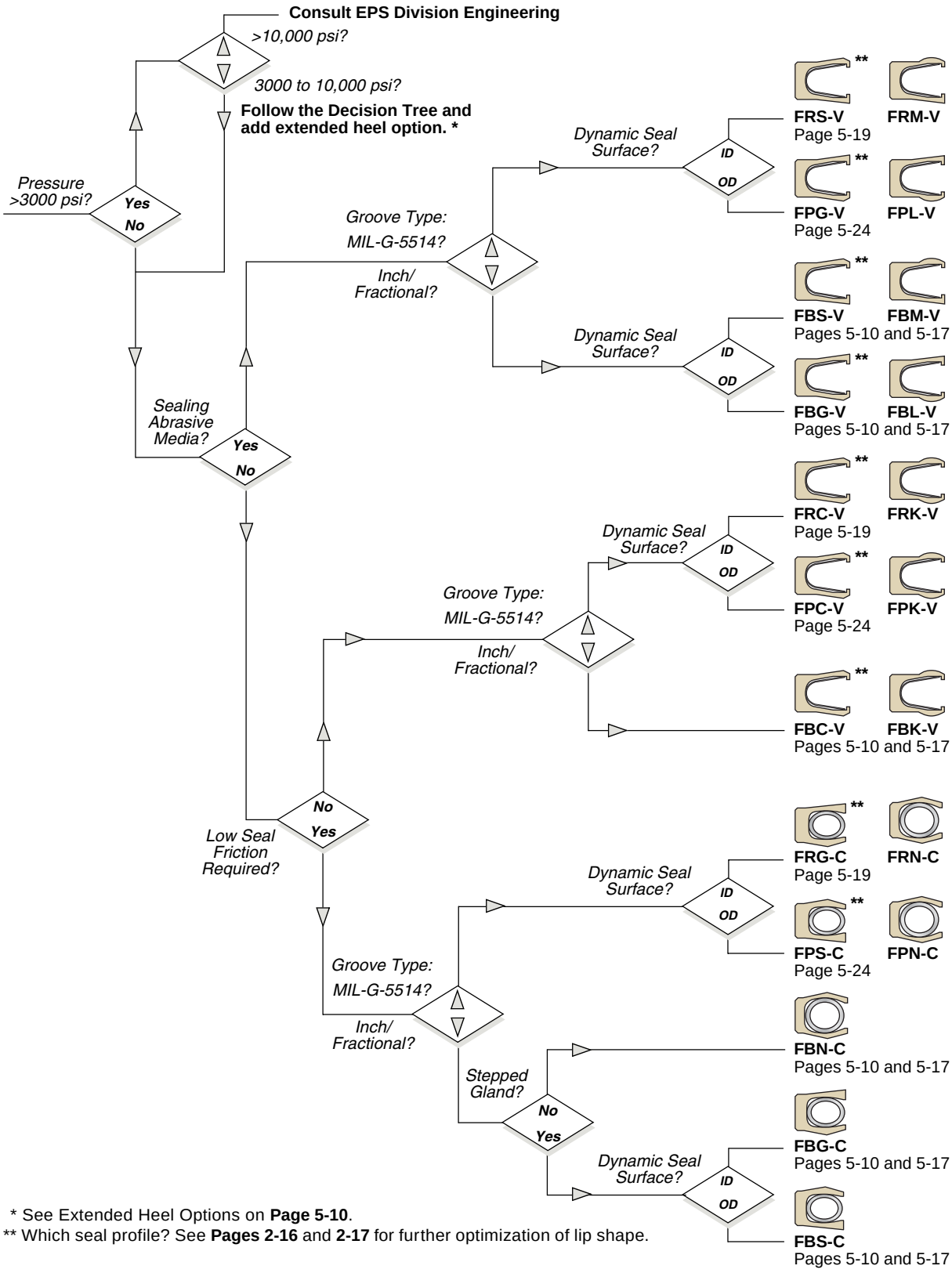
Dynamic Reciprocating Applications



* See Extended Heel Options on **Page 5-10**.
** Which seal profile? See **Pages 2-16** and **2-17** for further optimization of lip shape.

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Part Number Nomenclature — FlexiSeal Rod & Piston

Table 5-2. FlexiSeal Rod & Piston Part Number Nomenclature

English

0	5	0	2	FB	S	1	2	5	0	0	5	0	0	1	7	0	S	C	L

4-Digit Material Code
Examples:
0502 = Carbon Fiber Filled PTFE
0203 = Fiberglass Filled PTFE

FlexiSeal
Gland Type Classification
FB = Inch/Fractional or Metric Rod & Piston
FR = MIL-G-5514 Groove — Rod
FP = MIL-G-5514 Groove — Piston

Lip Style Designation
N = Default Lip Style
C = Chamfered ID & OD
S = Scraper ID
G = Scraper OD
D = Dual Scraper
K = Beaded ID & OD
L = Beaded ID & Scraper OD
M = Scraper ID & Beaded OD

Gland Cross-Section
Examples:
062 = 0.062"
093 = 0.093"
125 = 0.125"
187 = 0.187"
250 = 0.250"

Gland Inside Diameter
(Rod or Groove Diameter)
Examples:
00500 = 0.500"
02500 = 2.500"
11000 = 11.000"

Seal Height Designation
Examples:
083 = 0.083"
130 = 0.130"
170 = 0.170"
260 = 0.260"
355 = 0.355"

Spring Material
E = ELGILOY
S = Stainless Steel
H = C-276 alloy

Spring Design
V = Cantilever
C = Canted-Coil Spring
H = Helical Spring
W = White silicone filled Cantilever
R = Red silicone filled Cantilever

Spring Load
Blank = No Option (Helical Only)
L = Light
M = Medium
H = Heavy

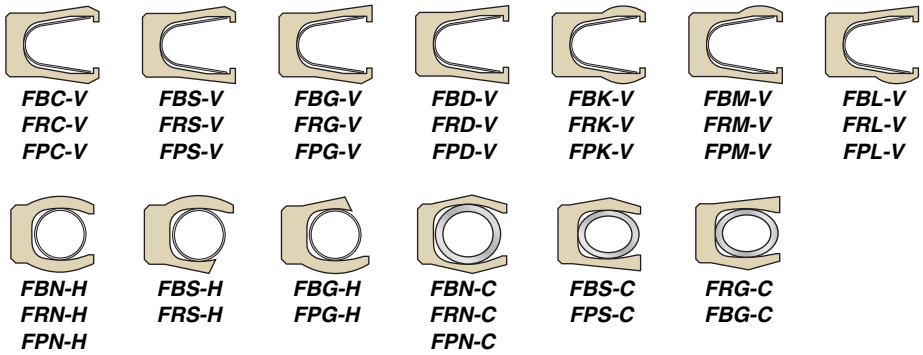

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Table 5-2. FlexiSeal Rod & Piston Part Number Nomenclature (Continued)

Metric

M	5	0	2	FB	S	0	5	0	0	0	1	9	0	0	0	6	6	S	C	L

4-Digit Material Code
Examples:
M502 = Carbon Fiber Filled PTFE
M301 = Graphite Filled PTFE
("M" indicates metric)

FlexiSeal
Gland Type Classification
FB = Inch/Fractional or Metric Rod & Piston

Lip Style Designation
N = Default Lip Style
C = Chamfered ID & OD
S = Scraper ID
G = Scraper OD
D = Dual Scraper
K = Beaded ID & OD
L = Beaded ID & Scraper OD
M = Scraper ID & Beaded OD

Gland Cross-Section
Examples:
0200 = 2.00 mm
0250 = 2.50 mm
0400 = 4.00 mm
0500 = 5.00 mm
0700 = 7.00 mm

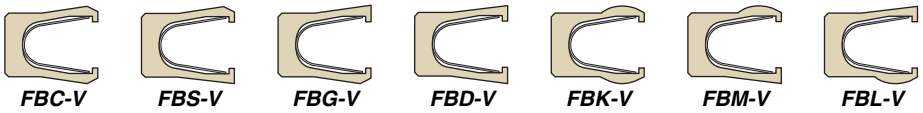
Gland Inside Diameter
(Rod or Groove Diameter)
Examples:
00800 = 8.00 mm
01150 = 11.50 mm
06500 = 65.00 mm

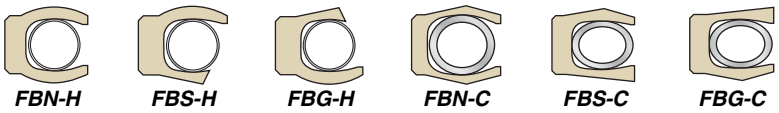
Seal Height Designation
Examples:
021 = 2.1 mm
033 = 3.3 mm
043 = 4.3 mm
066 = 6.6 mm
090 = 9.0 mm

Spring Material
E = ELGILOY
S = Stainless Steel
H = C-276 alloy

Spring Design
V = Cantilever
C = Canted-Coil Spring
H = Helical Spring
W = White silicone filled Cantilever
R = Red silicone filled Cantilever

Spring Load
Blank = No Option (Helical Only)
L = Light
M = Medium
H = Heavy





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Profiles

Table 5-3. Product Profiles

Profile	Features	Recommended Applications	Available as Standard in High Pressure Extended Heel (up to 10,000 psi)	Friction	Low Pressure Sealability	Good in Abrasive Media	Gland Dimension Table Location	Available in Mil-G-5514 Glands
FBC-V, FPC-V, FRC-V 	Chamfered ID & OD, Cantilever Spring	Maximum sealability on ID & OD.	Yes	Medium	Very Good	No	FBC-V — **Pages 5-10, 5-17** FRC-V — **Page 5-19** FPC-V — **Page 5-24**	Yes
FBS-V, FPS-V, FRS-V 	Scraper ID, Chamfered OD, Cantilever Spring	Scrapes contamination from rod surface.	Yes	Medium	Very Good	Yes	FBS-V — **Pages 5-10, 5-17** FRS-V — **Page 5-19** FPS-V — **Page 5-24**	Yes
FBG-V, FPG-V, FRG-V 	Scraper OD, Chamfered ID, Cantilever Spring	Scrapes contamination from bore surface.	Yes	Medium	Very Good	Yes	FBG-V — **Pages 5-10, 5-17** FRG-V — **Page 5-19** FPG-V — **Page 5-24**	Yes
FBD-V, FPD-V, FRD-V 	Scraper ID & OD, Cantilever Spring	Best overall in contaminated media.	Yes	Medium	Very Good	Yes	FBD-V — **Pages 5-10, 5-17** FRD-V — **Page 5-19** FPD-V — **Page 5-24**	Yes
FBK-V, FPK-V, FRK-V 	Beaded ID & OD, Cantilever Spring	Beaded lip similar to O-ring contact area.	Yes	Medium	Very Good	No	FBK-V — **Pages 5-10, 5-17** FRK-V — **Page 5-19** FPK-V — **Page 5-24**	Yes
FBM-V, FPM-V, FRM-V 	Scraper ID, Beaded OD, Cantilever Spring	Scrapes contamination from rod surface.	Yes	Medium	Very Good	Yes	FBM-V — **Pages 5-10, 5-17** FRM-V — **Page 5-19** FPM-V — **Page 5-24**	Yes
FBL-V, FPL-V, FRL-V 	Scraper OD, Beaded ID, Cantilever Spring	Scrapes contamination from bore surface.	Yes	Medium	Very Good	Yes	FBL-V — **Pages 5-10, 5-17** FRL-V — **Page 5-19** FPL-V — **Page 5-24**	Yes

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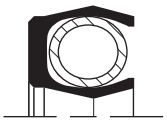
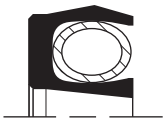
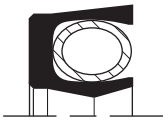
Table 5-3. Product Profiles (Continued)

Profile	Features	Recommended Applications	Available as Standard in High Pressure Extended Heel (up to 10,000 psi)	Friction	Low Pressure Sealability	Good in Abrasive Media	Gland Dimension Table Location	Available in Mil-G-5514 Glands
FBN-H, FPN-H, FRN-H 	Rounded ID & OD, Helical Spring	High radial load increases sealability and friction.	Yes	High	Excellent	No	FBN-H — **Pages 5-10, 5-17** FRN-H — **Page 5-19** FPN-H — **Page 5-24**	Yes
FBS-H, FRS-H 	Scraper ID, Rounded OD, Helical Spring	Scrapes contamination from rod surface.	Yes	High	Excellent	Yes	FBS-H — **Pages 5-10, 5-17** FRS-H — **Page 5-19**	Yes
FBG-H, FPG-H 	Scraper OD, Rounded ID, Helical Spring	Scrapes contamination from bore surface.	Yes	High	Excellent	Yes	FBG-H — **Pages 5-10, 5-17** FPG-H — **Page 5-24**	Yes
FBN-C, FPN-C, FRN-C 	Back-beveled ID & OD, Canted-Coil Spring	Low radial load decreases friction and sealability.	Yes	Low	Good	No	FBN-C — **Pages 5-10, 5-17** FRN-C — **Page 5-19** FPN-C — **Page 5-24**	Yes
FBS-C, FPS-C 	Scraper ID, Chamfered OD, Canted-Coil Spring	Easily snaps into a stepped gland for a piston seal.	Yes	Low	Good	No	FBS-C — **Pages 5-10, 5-17** FPS-C — **Page 5-24**	Yes
FBG-C, FRG-C 	Scraper OD, Chamfered ID, Canted-Coil Spring	Easily snaps into a stepped gland for a rod seal.	Yes	Low	Good	No	FBG-C — **Pages 5-10, 5-17** FRG-C — **Page 5-19**	Yes

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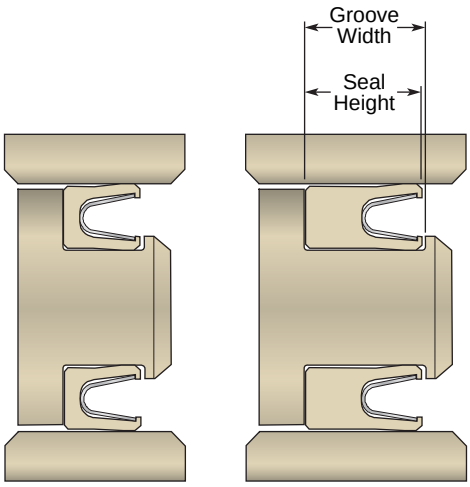

Standard Heel *Extended Heel*

Table 5-4. Seal Height Callouts

Radial Cross-Section	Standard Heel Callout	Extended Heel Callout
062	083	140
093	130	173
125	170	220
187	260	310
250	355	450

FB Profiles

All of these FB profiles will fit into the Industrial Inch/ Fractional gland tables on the following pages. Metric part numbers begin with an “M” and appear on **Page 5-17**.

Design Considerations

- Hardware Configurations/Installation, see **Page 2-3**
- Surface Finish and Hardness, see **Page 2-9**
- Extrusion Gaps and High Pressure, see **Page 2-10**
- Spring Choices, see **Page 2-12**
- Lip Shapes, see **Page 2-16**
- Shaft Misalignment Issues, see **Page 2-19**

Part Number Example

Table 5-5. FB Inch/Fractional Part Number

0 5 0 2 **FB C** 1 2 5 0 0 5 0 0 1 7 0 S **V** M

Inch/Fractional Rod & Piston
Chamfered ID & OD Lip

Cantilever Spring

Extended Heel Option

All part numbers on the following pages call for the standard seal height for pressures below 3000 psi.

The heel of a FlexiSeal can be extended to increase extrusion resistance simply by changing the seal height callout in the part number.

0 5 0 2 F B C 0 6 2 0 1 1 2 5 **0 8 3** S V M

Seal Height

Just find where the G dimension for the groove width is designated in the gland tables and switch to the longer extended heel callout in the part number.

0 5 0 2 F B C 0 6 2 0 1 1 2 5 **1 4 0** S V M

Seal Height

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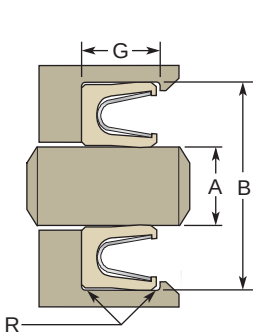
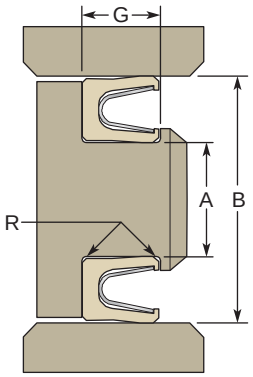
Gland Dimensions — FB Profiles

Table 5-6. FB Inch/Fractional Gland Dimensions

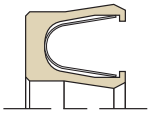


Rod Seal

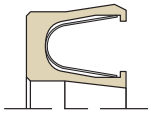


Piston Seal

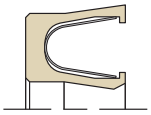
Each of these FlexiSeal profiles were designed to fit into either the Inch/Fractional glands on the following pages or the Metric glands on **Page 5-17**.



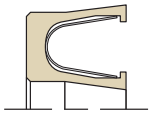
FBC-V



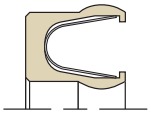
FBS-V



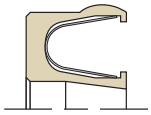
FBG-V



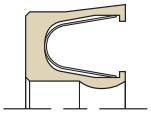
FBD-V



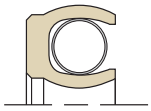
FBK-V



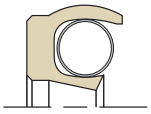
FBM-V



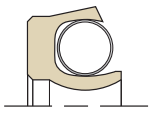
FBL-V



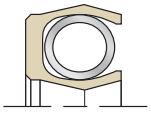
FBN-H



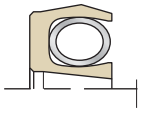
FBS-H



FBG-H



FBN-C



FBS-C

FBG-C

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number

R = 0.007" max. radius

G for Standard heel groove = 0.094/0.104" (083 callout)
G for Extended heel groove = 0.149/0.159" (140 callout)

	+.000/ -.001	+.001/ -.000	
-006	0.125	0.250	**xxxxFBx06200125083xxx**
-007	0.156	0.281	**xxxxFBx06200156083xxx**
-008	0.187	0.312	**xxxxFBx06200187083xxx**
-009	0.218	0.343	**xxxxFBx06200218083xxx**
-010	0.250	0.375	**xxxxFBx06200250083xxx**
-011	0.312	0.437	**xxxxFBx06200312083xxx**
-012	0.375	0.500	**xxxxFBx06200375083xxx**
-013	0.437	0.562	**xxxxFBx06200437083xxx**
-014	0.500	0.625	**xxxxFBx06200500083xxx**
-015	0.562	0.687	**xxxxFBx06200562083xxx**
-016	0.625	0.750	**xxxxFBx06200625083xxx**
-017	0.687	0.812	**xxxxFBx06200687083xxx**
-018	0.750	0.875	**xxxxFBx06200750083xxx**
-019	0.812	0.937	**xxxxFBx06200812083xxx**
-020	0.875	1.000	**xxxxFBx06200875083xxx**
-021	0.937	1.062	**xxxxFBx06200937083xxx**
-022	1.000	1.125	**xxxxFBx06201000083xxx**
-023	1.062	1.187	**xxxxFBx06201062083xxx**
-024	1.125	1.250	**xxxxFBx06201125083xxx**
-025	1.187	1.312	**xxxxFBx06201187083xxx**
-026	1.250	1.375	**xxxxFBx06201250083xxx**
-027	1.312	1.437	**xxxxFBx06201312083xxx**
-028	1.375	1.500	**xxxxFBx06201375083xxx**
-029	1.500	1.625	**xxxxFBx06201500083xxx**
-030	1.625	1.750	**xxxxFBx06201625083xxx**
-031	1.750	1.875	**xxxxFBx06201750083xxx**
-032	1.875	2.000	**xxxxFBx06201875083xxx**
-033	2.000	2.125	**xxxxFBx06202000083xxx**
-034	2.125	2.250	**xxxxFBx06202125083xxx**

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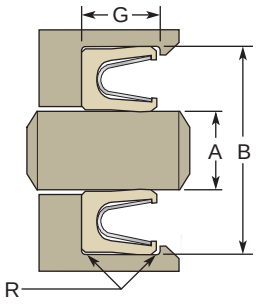
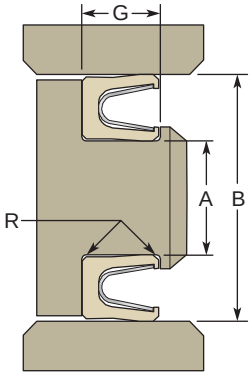
Table 5-6. FB Inch/Fractional Gland Dimensions (Continued)



Rod Seal



Piston Seal

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number

R = 0.007" max. radius

G for Standard heel groove = 0.094/0.104" (083 callout)
G for Extended heel groove = 0.149/0.159" (140 callout)

	+.000/ -.001	+.001/ -.000	
-035	2.250	2.375	**xxxxFBx06202250083xxx**
-036	2.375	2.500	**xxxxFBx06202375083xxx**
-037	2.500	2.625	**xxxxFBx06202500083xxx**
-038	2.625	2.750	**xxxxFBx06202625083xxx**
-039	2.750	2.875	**xxxxFBx06202750083xxx**
-040	2.875	3.000	**xxxxFBx06202875083xxx**
-041	3.000	3.125	**xxxxFBx06203000083xxx**
-042	3.250	3.375	**xxxxFBx06203250083xxx**
-043	3.500	3.625	**xxxxFBx06203500083xxx**
-044	3.750	3.875	**xxxxFBx06203750083xxx**
-045	4.000	4.125	**xxxxFBx06204000083xxx**

R = 0.010" max. radius

G for Standard heel groove = 0.141/0.151" (130 callout)
G for Extended heel groove = 0.183/0.193" (173 callout)

	+.000/ -.002	+.002/ -.000	
-106	0.187	0.375	**xxxxFBx09300187130xxx**
-107	0.219	0.406	**xxxxFBx09300219130xxx**
-108	0.250	0.437	**xxxxFBx09300250130xxx**
-109	0.312	0.500	**xxxxFBx09300312130xxx**
-110	0.375	0.562	**xxxxFBx09300375130xxx**
-111	0.437	0.625	**xxxxFBx09300437130xxx**
-112	0.500	0.687	**xxxxFBx09300500130xxx**
-113	0.562	0.750	**xxxxFBx09300562130xxx**
-114	0.625	0.812	**xxxxFBx09300625130xxx**
-115	0.687	0.875	**xxxxFBx09300687130xxx**
-116	0.750	0.937	**xxxxFBx09300750130xxx**
-117	0.812	1.000	**xxxxFBx09300812130xxx**
-118	0.875	1.062	**xxxxFBx09300875130xxx**
-119	0.937	1.125	**xxxxFBx09300937130xxx**
-120	1.000	1.187	**xxxxFBx09301000130xxx**
-121	1.062	1.250	**xxxxFBx09301062130xxx**

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number
-122	1.125	1.312	**xxxxFBx09301125130xxx**
-123	1.187	1.375	**xxxxFBx09301187130xxx**
-124	1.250	1.437	**xxxxFBx09301250130xxx**
-125	1.312	1.500	**xxxxFBx09301312130xxx**
-126	1.375	1.562	**xxxxFBx09301375130xxx**
-127	1.437	1.625	**xxxxFBx09301437130xxx**
-128	1.500	1.687	**xxxxFBx09301500130xxx**
-129	1.562	1.750	**xxxxFBx09301562130xxx**
-130	1.625	1.812	**xxxxFBx09301625130xxx**
-131	1.687	1.875	**xxxxFBx09301687130xxx**
-132	1.750	1.937	**xxxxFBx09301750130xxx**
-133	1.812	2.000	**xxxxFBx09301812130xxx**
-134	1.875	2.062	**xxxxFBx09301875130xxx**
-135	1.937	2.125	**xxxxFBx09301937130xxx**
-136	2.000	2.187	**xxxxFBx09302000130xxx**
-137	2.062	2.250	**xxxxFBx09302062130xxx**
-138	2.125	2.312	**xxxxFBx09302125130xxx**
-139	2.187	2.375	**xxxxFBx09302187130xxx**
-140	2.250	2.437	**xxxxFBx09302250130xxx**
-141	2.312	2.500	**xxxxFBx09302312130xxx**
-142	2.375	2.562	**xxxxFBx09302375130xxx**
-143	2.437	2.625	**xxxxFBx09302437130xxx**
-144	2.500	2.687	**xxxxFBx09302500130xxx**
-145	2.562	2.750	**xxxxFBx09302562130xxx**
-146	2.625	2.812	**xxxxFBx09302625130xxx**
-147	2.687	2.875	**xxxxFBx09302687130xxx**
-148	2.750	2.937	**xxxxFBx09302750130xxx**
-149	2.812	3.000	**xxxxFBx09302812130xxx**
-150	2.875	3.062	**xxxxFBx09302875130xxx**
-151	3.000	3.187	**xxxxFBx09303000130xxx**
-152	3.250	3.437	**xxxxFBx09303250130xxx**
-153	3.500	3.687	**xxxxFBx09303500130xxx**
-154	3.750	3.937	**xxxxFBx09303750130xxx**
-155	4.000	4.187	**xxxxFBx09304000130xxx**
-156	4.250	4.437	**xxxxFBx09304250130xxx**
-157	4.500	4.687	**xxxxFBx09304500130xxx**

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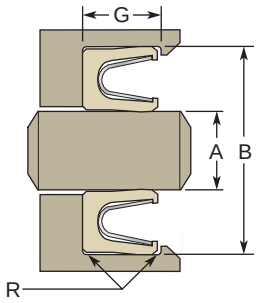
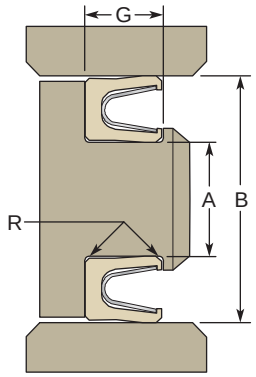
Table 5-6. FB Inch/Fractional Gland Dimensions (Continued)



Rod Seal



Piston Seal

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number

R = 0.010" max. radius

G for Standard heel groove = 0.141/0.151" (130 callout)
G for Extended heel groove = 0.183/0.193" (165 callout)

	+.000/ -.002	+.002/ -.000	
-158	4.750	4.937	**xxxxFBx09304750130xxx**
-159	5.000	5.187	**xxxxFBx09305000130xxx**
-160	5.250	5.437	**xxxxFBx09305250130xxx**
-161	5.500	5.687	**xxxxFBx09305500130xxx**
-162	5.750	5.928	**xxxxFBx09305750130xxx**
-163	6.000	6.187	**xxxxFBx09306000130xxx**

R = 0.010" max. radius

G for Standard heel groove = 0.188/0.198" (170 callout)
G for Extended heel groove = 0.235/0.245" (220 callout)

	+.000/ -.002	+.002/ -.000	
-202	0.250	0.500	**xxxxFBx12500250170xxx**
-203	0.312	0.562	**xxxxFBx12500312170xxx**
-204	0.375	0.625	**xxxxFBx12500375170xxx**
-205	0.437	0.687	**xxxxFBx12500437170xxx**
-206	0.500	0.750	**xxxxFBx12500500170xxx**
-207	0.562	0.812	**xxxxFBx12500562170xxx**
-208	0.625	0.875	**xxxxFBx12500625170xxx**
-209	0.687	0.937	**xxxxFBx12500687170xxx**
-210	0.750	1.000	**xxxxFBx12500750170xxx**
-211	0.812	1.062	**xxxxFBx12500812170xxx**
-212	0.875	1.125	**xxxxFBx12500875170xxx**
-213	0.937	1.187	**xxxxFBx12500937170xxx**
-214	1.000	1.250	**xxxxFBx12501000170xxx**
-215	1.062	1.312	**xxxxFBx12501062170xxx**
-216	1.125	1.375	**xxxxFBx12501125170xxx**
-217	1.187	1.437	**xxxxFBx12501187170xxx**
-218	1.250	1.500	**xxxxFBx12501250170xxx**
-219	1.312	1.562	**xxxxFBx12501312170xxx**
-220	1.375	1.625	**xxxxFBx12501375170xxx**
-221	1.437	1.687	**xxxxFBx12501437170xxx**

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number
-222	1.500	1.750	**xxxxFBx12501500170xxx**
-223	1.625	1.875	**xxxxFBx12501625170xxx**
-224	1.750	2.000	**xxxxFBx12501750170xxx**
-225	1.875	2.125	**xxxxFBx12501875170xxx**
-226	2.000	2.250	**xxxxFBx12502000170xxx**
-227	2.125	2.375	**xxxxFBx12502125170xxx**
-228	2.250	2.500	**xxxxFBx12502250170xxx**
-229	2.375	2.625	**xxxxFBx12502375170xxx**
-230	2.500	2.750	**xxxxFBx12502500170xxx**
-231	2.625	2.875	**xxxxFBx12502625170xxx**
-232	2.750	3.000	**xxxxFBx12502750170xxx**
-233	2.875	3.125	**xxxxFBx12502875170xxx**
-234	3.000	3.250	**xxxxFBx12503000170xxx**
-235	3.125	3.375	**xxxxFBx12503125170xxx**
-236	3.250	3.500	**xxxxFBx12503250170xxx**
-237	3.375	3.625	**xxxxFBx12503375170xxx**
-238	3.500	3.750	**xxxxFBx12503500170xxx**
-239	3.625	3.875	**xxxxFBx12503625170xxx**
-240	3.750	4.000	**xxxxFBx12503750170xxx**
-241	3.875	4.125	**xxxxFBx12503875170xxx**
-242	4.000	4.250	**xxxxFBx12504000170xxx**
-243	4.125	4.375	**xxxxFBx12504125170xxx**
-244	4.250	4.500	**xxxxFBx12504250170xxx**
-245	4.375	4.625	**xxxxFBx12504375170xxx**
-246	4.500	4.750	**xxxxFBx12504500170xxx**
-247	4.625	4.875	**xxxxFBx12504625170xxx**
-248	4.750	5.000	**xxxxFBx12504750170xxx**
-249	4.875	5.125	**xxxxFBx12504875170xxx**
-250	5.000	5.250	**xxxxFBx12505000170xxx**
-251	5.125	5.375	**xxxxFBx12505125170xxx**
-252	5.250	5.500	**xxxxFBx12505250170xxx**
-253	5.375	5.625	**xxxxFBx12505375170xxx**
-254	5.500	5.750	**xxxxFBx12505500170xxx**
-255	5.625	5.875	**xxxxFBx12505625170xxx**
-256	5.750	6.000	**xxxxFBx12505750170xxx**
-257	5.875	6.125	**xxxxFBx12505875170xxx**

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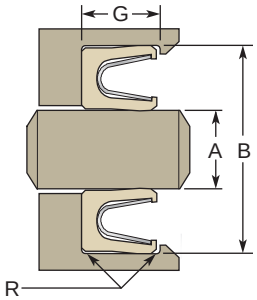
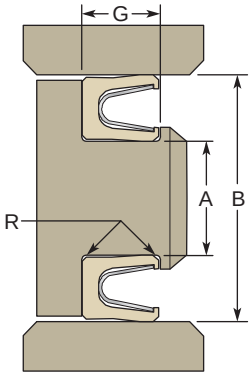
Table 5-6. FB Inch/Fractional Gland Dimensions (Continued)



Rod Seal



Piston Seal

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number

R = 0.010" max. radius

G for Standard heel groove = 0.188/0.198" (170 callout)
G for Extended heel groove = 0.235/0.245" (220 callout)

	+.000/ -.002	+.002/ -.000	
-258	6.000	6.250	**xxxxFBx12506000170xxx**
-259	6.250	6.500	**xxxxFBx12506250170xxx**
-260	6.500	6.750	**xxxxFBx12506500170xxx**
-261	6.750	7.000	**xxxxFBx12506750170xxx**
-262	7.000	7.250	**xxxxFBx12507000170xxx**
-263	7.250	7.500	**xxxxFBx12507250170xxx**
-264	7.500	7.750	**xxxxFBx12507500170xxx**
-265	7.750	8.000	**xxxxFBx12507750170xxx**
-266	8.000	8.250	**xxxxFBx12508000170xxx**
-267	8.250	8.500	**xxxxFBx12508250170xxx**
-268	8.500	8.750	**xxxxFBx12508500170xxx**
-269	8.750	9.000	**xxxxFBx12508750170xxx**
-270	9.000	9.250	**xxxxFBx12509000170xxx**
-271	9.250	9.500	**xxxxFBx12509250170xxx**
-272	9.500	9.750	**xxxxFBx12509500170xxx**
-273	9.750	10.000	**xxxxFBx12509750170xxx**
-274	10.000	10.250	**xxxxFBx12510000170xxx**
-275	10.500	10.750	**xxxxFBx12510500170xxx**
-276	11.000	11.250	**xxxxFBx12511000170xxx**
-277	11.500	11.750	**xxxxFBx12511500170xxx**
-278	12.000	12.250	**xxxxFBx12512000170xxx**
-279	12.500	12.750	**xxxxFBx12512500170xxx**
-280	13.000	13.250	**xxxxFBx12513000170xxx**
-281	13.500	13.750	**xxxxFBx12513500170xxx**

R = 0.015" max. radius

G for Standard heel groove = 0.281/0.291" (260 callout)
G for Extended heel groove = 0.334/0.344" (310 callout)

	+.000/ -.002	+.002/ -.000	
-310	0.500	0.875	**xxxxFBx18700500260xxx**
-311	0.562	0.937	**xxxxFBx18700562260xxx**
-312	0.625	1.000	**xxxxFBx18700625260xxx**
-313	0.687	1.062	**xxxxFBx18700687260xxx**

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number
-314	0.750	1.125	**xxxxFBx18700750260xxx**
-315	0.812	1.187	**xxxxFBx18700812260xxx**
-316	0.875	1.250	**xxxxFBx18700875260xxx**
-317	0.937	1.312	**xxxxFBx18700937260xxx**
-318	1.000	1.375	**xxxxFBx18701000260xxx**
-319	1.062	1.437	**xxxxFBx18701062260xxx**
-320	1.125	1.500	**xxxxFBx18701125260xxx**
-321	1.187	1.562	**xxxxFBx18701187260xxx**
-322	1.250	1.625	**xxxxFBx18701250260xxx**
-323	1.312	1.687	**xxxxFBx18701312260xxx**
-324	1.375	1.750	**xxxxFBx18701375260xxx**
-325	1.500	1.875	**xxxxFBx18701500260xxx**
-326	1.625	2.000	**xxxxFBx18701625260xxx**
-327	1.750	2.125	**xxxxFBx18701750260xxx**
-328	1.875	2.250	**xxxxFBx18701875260xxx**
-329	2.000	2.375	**xxxxFBx18702000260xxx**
-330	2.125	2.500	**xxxxFBx18702125260xxx**
-331	2.250	2.625	**xxxxFBx18702250260xxx**
-332	2.375	2.750	**xxxxFBx18702375260xxx**
-333	2.500	2.875	**xxxxFBx18702500260xxx**
-334	2.625	3.000	**xxxxFBx18702625260xxx**
-335	2.750	3.125	**xxxxFBx18702750260xxx**
-336	2.875	3.250	**xxxxFBx18702875260xxx**
-337	3.000	3.375	**xxxxFBx18703000260xxx**
-338	3.125	3.500	**xxxxFBx18703125260xxx**
-339	3.250	3.625	**xxxxFBx18703250260xxx**
-340	3.375	3.750	**xxxxFBx18703375260xxx**
-341	3.500	3.875	**xxxxFBx18703500260xxx**
-342	3.625	4.000	**xxxxFBx18703625260xxx**
-343	3.750	4.125	**xxxxFBx18703750260xxx**
-344	3.875	4.250	**xxxxFBx18703875260xxx**
-345	4.000	4.375	**xxxxFBx18704000260xxx**
-346	4.125	4.500	**xxxxFBx18704125260xxx**
-347	4.250	4.625	**xxxxFBx18704250260xxx**
-348	4.375	4.750	**xxxxFBx18704375260xxx**
-349	4.500	4.875	**xxxxFBx18704500260xxx**

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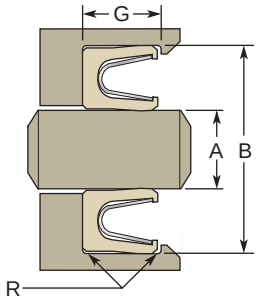
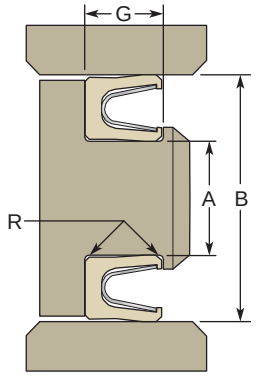
Table 5-6. FB Inch/Fractional Gland Dimensions (Continued)



Rod Seal



Piston Seal

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number

R = 0.015" max. radius

G for Standard heel groove = 0.281/0.291" (260 callout)
G for Extended heel groove = 0.334/0.344" (310 callout)

	+.000/ -.002	+.002/ -.000	
-350	4.625	5.000	**xxxxFBx18704625260xxx**
-351	4.750	5.125	**xxxxFBx18704750260xxx**
-352	4.875	5.250	**xxxxFBx18704875260xxx**
-353	5.000	5.375	**xxxxFBx18705000260xxx**
-354	5.125	5.500	**xxxxFBx18705125260xxx**
-355	5.250	5.625	**xxxxFBx18705250260xxx**
-356	5.375	5.750	**xxxxFBx18705375260xxx**
-357	5.500	5.875	**xxxxFBx18705500260xxx**
-358	5.625	6.000	**xxxxFBx18705625260xxx**
-359	5.750	6.125	**xxxxFBx18705750260xxx**
-360	5.875	6.250	**xxxxFBx18705875260xxx**
-361	6.000	6.375	**xxxxFBx18706000260xxx**
-362	6.250	6.625	**xxxxFBx18706250260xxx**
-363	6.500	6.875	**xxxxFBx18706500260xxx**
-364	6.750	7.125	**xxxxFBx18706750260xxx**
-365	7.000	7.375	**xxxxFBx18707000260xxx**
-366	7.250	7.625	**xxxxFBx18707250260xxx**
-367	7.500	7.875	**xxxxFBx18707500260xxx**
-368	7.750	8.125	**xxxxFBx18707750260xxx**
-369	8.000	8.375	**xxxxFBx18708000260xxx**
-370	8.250	8.625	**xxxxFBx18708250260xxx**
-371	8.500	8.875	**xxxxFBx18708500260xxx**
-372	8.750	9.125	**xxxxFBx18708750260xxx**
-373	9.000	9.375	**xxxxFBx18709000260xxx**
-374	9.250	9.625	**xxxxFBx18709250260xxx**
-375	9.500	9.875	**xxxxFBx18709500260xxx**
-376	9.750	10.125	**xxxxFBx18709750260xxx**
-377	10.000	10.375	**xxxxFBx18710000260xxx**
-378	10.500	10.875	**xxxxFBx18710500260xxx**
-379	11.000	11.375	**xxxxFBx18711000260xxx**
-380	11.500	11.875	**xxxxFBx18711500260xxx**
-381	12.000	12.375	**xxxxFBx18712000260xxx**

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number
-382	13.000	13.375	**xxxxFBx18713000260xxx**
-383	14.000	14.375	**xxxxFBx18714000260xxx**
-384	15.000	15.375	**xxxxFBx18715000260xxx**
-385	16.000	16.375	**xxxxFBx18716000260xxx**
-386	17.000	17.375	**xxxxFBx18717000260xxx**
-387	18.000	18.375	**xxxxFBx18718000260xxx**
-388	19.000	19.375	**xxxxFBx18719000260xxx**
-389	20.000	20.375	**xxxxFBx18720000260xxx**
-390	21.000	21.375	**xxxxFBx18721000260xxx**
-391	22.000	22.375	**xxxxFBx18722000260xxx**
-392	23.000	23.375	**xxxxFBx18723000260xxx**
-393	24.000	24.375	**xxxxFBx18724000260xxx**
-394	25.000	25.375	**xxxxFBx18725000260xxx**
-395	26.000	26.375	**xxxxFBx18726000260xxx**

R = 0.015" max. radius

G for Standard heel groove = 0.375/0.385" (355 callout)
G for Extended heel groove = 0.475/0.485" (450 callout)

	+.000/ -.003	+.003/ -.000	
-401	1.500	2.000	**xxxxFBx25001500355xxx**
-402	1.625	2.125	**xxxxFBx25001625355xxx**
-403	1.750	2.250	**xxxxFBx25001750355xxx**
-404	1.875	2.375	**xxxxFBx25001875355xxx**
-405	2.000	2.500	**xxxxFBx25002000355xxx**
-406	2.125	2.625	**xxxxFBx25002125355xxx**
-407	2.250	2.750	**xxxxFBx25002250355xxx**
-408	2.375	2.875	**xxxxFBx25002375355xxx**
-409	2.500	3.000	**xxxxFBx25002500355xxx**
-410	2.625	3.125	**xxxxFBx25002625355xxx**
-411	2.750	3.250	**xxxxFBx25002750355xxx**
-412	2.875	3.375	**xxxxFBx25002875355xxx**
-413	3.000	3.500	**xxxxFBx25003000355xxx**
-414	3.125	3.625	**xxxxFBx25003125355xxx**
-415	3.250	3.750	**xxxxFBx25003250355xxx**
-416	3.375	3.875	**xxxxFBx25003375355xxx**

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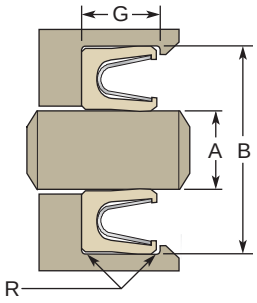
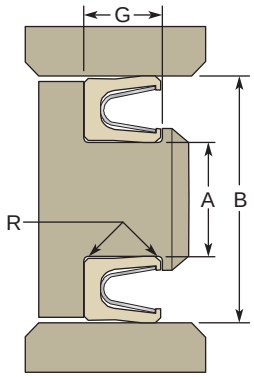
Table 5-6. FB Inch/Fractional Gland Dimensions (Continued)



Rod Seal



Piston Seal

R = 0.015" max. radius

G for Standard heel groove = 0.375/0.385" (355 callout)
G for Extended heel groove = 0.475/0.485" (450 callout)

Dash #	A Rod or Groove Diameter +.000/ -.003	B Bore or Groove Diameter +.003/ -.000	Part Number
-417	3.500	4.000	**xxxxFBx25003500355xxx**
-418	3.625	4.125	**xxxxFBx25003625355xxx**
-419	3.750	4.250	**xxxxFBx25003750355xxx**
-420	3.875	4.375	**xxxxFBx25003875355xxx**
-421	4.000	4.500	**xxxxFBx25004000355xxx**
-422	4.125	4.625	**xxxxFBx25004125355xxx**
-423	4.250	4.750	**xxxxFBx25004250355xxx**
-424	4.375	4.875	**xxxxFBx25004375355xxx**
-425	4.500	5.000	**xxxxFBx25004500355xxx**
-426	4.625	5.125	**xxxxFBx25004625355xxx**
-427	4.750	5.250	**xxxxFBx25004750355xxx**
-428	4.875	5.375	**xxxxFBx25004875355xxx**
-429	5.000	5.500	**xxxxFBx25005000355xxx**
-430	5.125	5.625	**xxxxFBx25005125355xxx**
-431	5.250	5.750	**xxxxFBx25005250355xxx**
-432	5.375	5.875	**xxxxFBx25005375355xxx**
-433	5.500	6.000	**xxxxFBx25005500355xxx**
-434	5.625	6.125	**xxxxFBx25005625355xxx**
-435	5.750	6.250	**xxxxFBx25005750355xxx**
-436	5.875	6.375	**xxxxFBx25005875355xxx**
-437	6.000	6.500	**xxxxFBx25006000355xxx**
-438	6.250	6.750	**xxxxFBx25006250355xxx**
-439	6.500	7.000	**xxxxFBx25006500355xxx**
-440	6.750	7.250	**xxxxFBx25006750355xxx**
-441	7.000	7.500	**xxxxFBx25007000355xxx**
-442	7.250	7.750	**xxxxFBx25007250355xxx**
-443	7.500	8.000	**xxxxFBx25007500355xxx**
-444	7.750	8.250	**xxxxFBx25007750355xxx**

Dash #	A Rod or Groove Diameter	B Bore or Groove Diameter	Part Number
-445	8.000	8.500	**xxxxFBx25008000355xxx**
-446	8.500	9.000	**xxxxFBx25008500355xxx**
-447	9.000	9.500	**xxxxFBx25009000355xxx**
-448	9.500	10.000	**xxxxFBx25009500355xxx**
-449	10.000	10.500	**xxxxFBx25010000355xxx**
-450	10.500	11.000	**xxxxFBx25010500355xxx**
-451	11.000	11.500	**xxxxFBx25011000355xxx**
-452	11.500	12.000	**xxxxFBx25011500355xxx**
-453	12.000	12.500	**xxxxFBx25012000355xxx**
-454	12.500	13.000	**xxxxFBx25012500355xxx**
-455	13.000	13.500	**xxxxFBx25013000355xxx**
-456	13.500	14.000	**xxxxFBx25013500355xxx**
-457	14.000	14.500	**xxxxFBx25014000355xxx**
-458	14.500	15.000	**xxxxFBx25014500355xxx**
-459	15.000	15.500	**xxxxFBx25015000355xxx**
-460	15.500	16.000	**xxxxFBx25015500355xxx**
-461	16.000	16.500	**xxxxFBx25016000355xxx**
-462	16.500	17.000	**xxxxFBx25016500355xxx**
-463	17.000	17.500	**xxxxFBx25017000355xxx**
-464	17.500	18.000	**xxxxFBx25017500355xxx**
-465	18.000	18.500	**xxxxFBx25018000355xxx**
-466	18.500	19.000	**xxxxFBx25018500355xxx**
-467	19.000	19.500	**xxxxFBx25019000355xxx**
-468	19.500	20.000	**xxxxFBx25019500355xxx**
-469	20.000	20.500	**xxxxFBx25020000355xxx**
-470	21.000	21.500	**xxxxFBx25021000355xxx**
-471	22.000	22.500	**xxxxFBx25022000355xxx**
-472	23.000	23.500	**xxxxFBx25023000355xxx**
-473	24.000	24.500	**xxxxFBx25024000355xxx**
-474	25.000	25.500	**xxxxFBx25025000355xxx**
-475	26.000	26.500	**xxxxFBx25026000355xxx**

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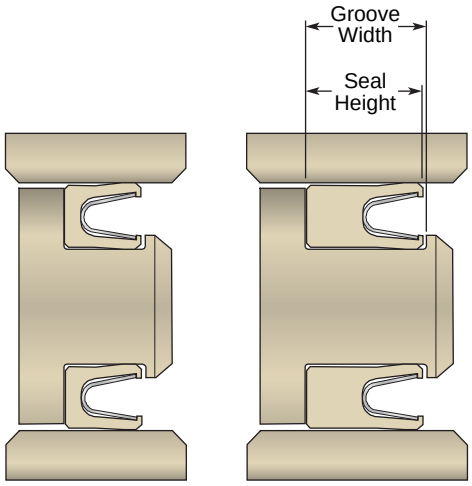


Standard Heel *Extended Heel*

Table 5-7. Seal Height Callouts

Radial Cross-Section	Standard Heel Callout	Extended Heel Callout
0200	021	036
0250	033	042
0400	043	056
0500	066	079
0700	090	114

Metric FB Profiles

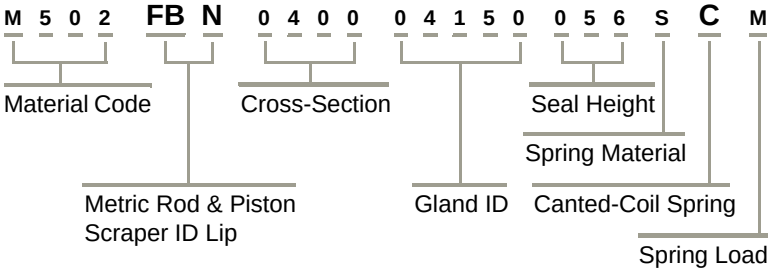
All of these FB profiles will fit into the Metric gland sizes on **Page 5-18**.

Design Considerations

- Hardware Configurations/Installation, see **Page 2-3**
- Surface Finish and Hardness, see **Page 2-9**
- Extrusion Gaps and High Pressure, see **Page 2-10**
- Spring Choices, see **Page 2-12**
- Lip Shapes, see **Page 2-16**
- Shaft Misalignment Issues, see **Page 2-19**

Part Number Example

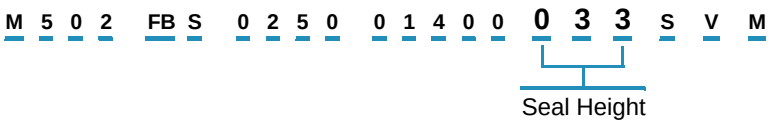
Table 5-8. FB Metric Part Number



Extended Heel Option

All part numbers on the following page call for the standard seal height for pressures below 3000 psi.

The heel of a FlexiSeal can be extended to increase extrusion resistance simply by changing the seal height callout in the part number.



Just find where the G dimension for the groove width is designated in the gland tables and switch to the longer extended heel callout in the part number.

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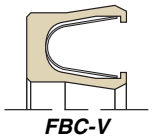
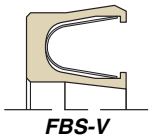
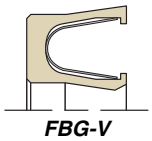
Gland Dimensions — Metric FB Profiles

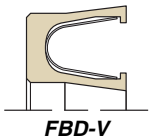
5

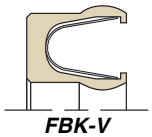
Each of these FlexiSeal profiles were designed to fit into the Metric glands on this page.

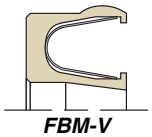

FBC-V

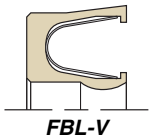

FBS-V

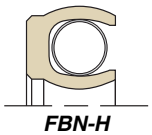

FBG-V

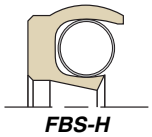

FBD-V

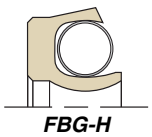

FBK-V

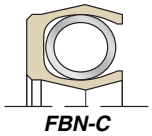

FBM-V

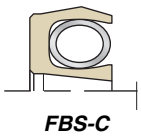

FBL-V


FBN-H


FBS-H


FBG-H


FBN-C


FBS-C

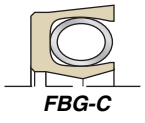
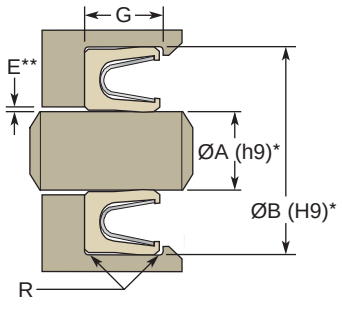
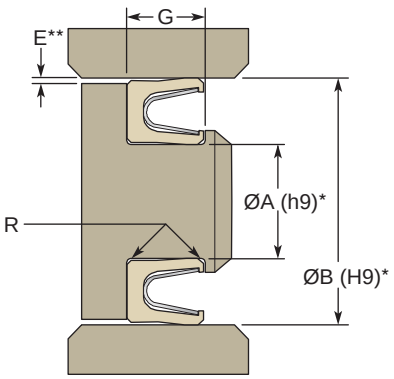

FBG-C

Table 5-9. FB Metric Gland Dimensions



Rod Seal



Piston Seal

Cross-Section Callout	Gland Cross-Section	Std. Heel Height Callout	Ext. Heel Height Callout	Std. Heel Groove Width (G) +0.25/ -0.00 mm	Ext. Heel Groove Width (G) +0.25/ -0.00 mm	Max Radius (R)
0200	2.00 mm	021	036	2.39 mm	3.78 mm	0.18 mm
0250	2.50 mm	033	042	3.58 mm	4.65 mm	0.25 mm
0400	4.00 mm	043	056	4.78 mm	5.97 mm	0.25 mm
0500	5.00 mm	066	079	7.14 mm	8.48 mm	0.38 mm
0700	7.00 mm	090	114	9.53 mm	12.07 mm	0.38 mm

* For ISO Tolerances see **Appendix D**.
** See **Page 2-10** for more on extrusion gap.

Example Part Numbers

Part Number	Hardware ID (A) in mm	Hardware OD (B) in mm	Groove Width (G) in mm
FBS-V Profile			
M502FBS025001150042SVM	11.50 +.00/-.04	16.50 +.04/-.00	4.65 +0.25/-.00
FBN-C Profile			
M100FBN050015000066HCL	150.00 +.00/-.10	160.00 +.10/-.00	7.14 +0.25/-.00

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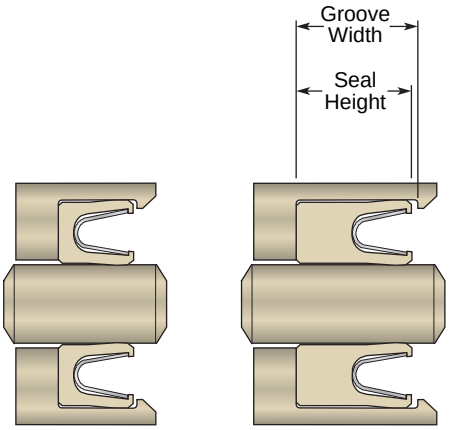

Table 5-10. Seal Height Callouts

Radial Cross-Section	Standard Heel Callout	Extended Heel Callout
062	083	140
093	130	165
125	170	220
187	260	310
250	355	450

FR Profiles

All FR profiles will fit into the MIL-G-5514 rod gland tables on the following page.

Design Considerations

- Hardware Configurations/Installation, see **Page 2-3**
- Surface Finish and Hardness, see **Page 2-9**
- Extrusion Gaps and High Pressure, see **Page 2-10**
- Spring Choices, see **Page 2-12**
- Lip Shapes, see **Page 2-16**
- Shaft Misalignment Issues, see **Page 2-19**

Part Number Example

Table 5-11. FR MIL-G-5514 Rod Part Number

0 5 0 2 **FR C** 1 2 5 0 1 3 1 0 1 7 0 S **V** M

O-Ring Groove — Rod
Chamfered ID & OD Lip

Cantilever Spring

Extended Heel Option

All part numbers on the following pages call for the standard seal height for pressures below 3000 psi.

The heel of a FlexiSeal can be extended to increase extrusion resistance simply by changing the seal height callout in the part number.

0 5 0 2 F R C 0 6 2 0 1 1 2 5 **0 8 3** S V M

Seal Height

Just find where the G dimension for the groove width is designated in the gland tables and switch to the longer extended heel callout in the part number.

0 5 0 2 F R C 0 6 2 0 1 1 2 5 **1 4 0** S V M

Seal Height

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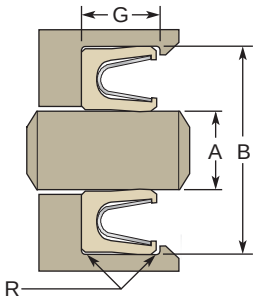
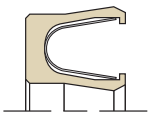
Gland Dimensions — FR Profiles

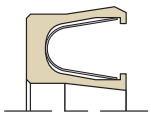
Table 5-12. FR MIL-G-5514 Rod Gland Dimensions

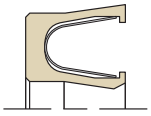


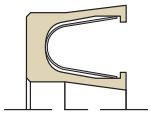
Rod Seal

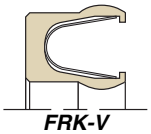
Each of these FlexiSeal profiles were designed to fit into the MIL-G-5514 rod glands on the following pages.

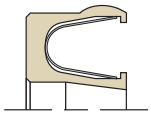

FRC-V

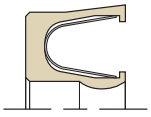

FRS-V

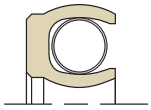

FRG-V

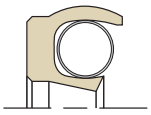

FRD-V

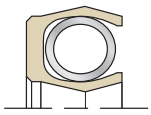

FRK-V

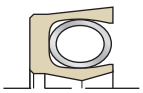

FRM-V


FRL-V


FRN-H


FRS-H


FRN-C


FRG-C

Dash #	A Rod Diameter	B Groove Diameter	Part Number

R = 0.015" max. radius
E = 0.002" max.
G for Standard heel groove = 0.094/0.104" (083 callout)
G for Extended heel groove = 0.149/0.159" (140 callout)

	+.000/ -.001	+.001/ -.000	
-006	0.123	0.235	**xxxxFRx06200123083xxx**
-007	0.154	0.266	**xxxxFRx06200154083xxx**
-008	0.185	0.297	**xxxxFRx06200185083xxx**
-009	0.217	0.329	**xxxxFRx06200217083xxx**
-010	0.248	0.360	**xxxxFRx06200248083xxx**
-011	0.310	0.422	**xxxxFRx06200310083xxx**
-012	0.373	0.485	**xxxxFRx06200373083xxx**
	+.000/ -.002	**+.002/ -.000**	
-013	0.435	0.547	**xxxxFRx06200435083xxx**
-014	0.498	0.610	**xxxxFRx06200498083xxx**
-015	0.560	0.672	**xxxxFRx06200560083xxx**
-016	0.623	0.735	**xxxxFRx06200623083xxx**
-017	0.685	0.797	**xxxxFRx06200685083xxx**
-018	0.748	0.860	**xxxxFRx06200748083xxx**
-019	0.810	0.922	**xxxxFRx06200810083xxx**
-020	0.873	0.985	**xxxxFRx06200873083xxx**
-021	0.935	1.047	**xxxxFRx06200935083xxx**
-022	0.998	1.110	**xxxxFRx06200998083xxx**
-023	1.060	1.172	**xxxxFRx06201060083xxx**
-024	1.123	1.235	**xxxxFRx06201123083xxx**
-025	1.185	1.297	**xxxxFRx06201185083xxx**
-026	1.248	1.360	**xxxxFRx06201248083xxx**
-027	1.310	1.422	**xxxxFRx06201310083xxx**
-028	1.373	1.485	**xxxxFRx06201373083xxx**

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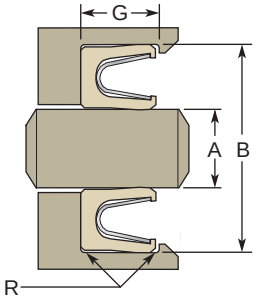
Table 5-12. FR MIL-G_5514 Rod Gland Dimensions (Continued)



Rod Seal

Dash #	A Rod Diameter	B Groove Diameter	Part Number
R = 0.015" max. radius E = 0.002" max. G for Standard heel groove = 0.141/0.151" (130 callout) G for Extended heel groove = 0.183/0.193" (165 callout)			
	+.000/ -.002	+.002/ -.000	
-110	0.373	0.551	**xxxxFRx09300373130xxx**
-111	0.435	0.613	**xxxxFRx09300435130xxx**
-112	0.498	0.676	**xxxxFRx09300498130xxx**
-113	0.560	0.738	**xxxxFRx09300560130xxx**
-114	0.623	0.801	**xxxxFRx09300623130xxx**
-115	0.685	0.863	**xxxxFRx09300685130xxx**
-116	0.748	0.926	**xxxxFRx09300748130xxx**
-117	0.810	0.988	**xxxxFRx09300810130xxx**
-118	0.873	1.051	**xxxxFRx09300873130xxx**
-119	0.935	1.113	**xxxxFRx09300935130xxx**
-120	0.998	1.176	**xxxxFRx09300998130xxx**
-121	1.060	1.238	**xxxxFRx09301060130xxx**
-122	1.123	1.301	**xxxxFRx09301123130xxx**
-123	1.185	1.363	**xxxxFRx09301185130xxx**
-124	1.248	1.426	**xxxxFRx09301248130xxx**
-125	1.310	1.488	**xxxxFRx09301310130xxx**
-126	1.373	1.551	**xxxxFRx09301373130xxx**
-127	1.435	1.613	**xxxxFRx09301435130xxx**
-128	1.498	1.676	**xxxxFRx09301498130xxx**
-129	1.560	1.738	**xxxxFRx09301560130xxx**
-130	1.623	1.801	**xxxxFRx09301623130xxx**
-131	1.685	1.863	**xxxxFRx09301685130xxx**
-132	1.748	1.926	**xxxxFRx09301748130xxx**
-133	1.810	1.988	**xxxxFRx09301810130xxx**
-134	1.873	2.051	**xxxxFRx09301873130xxx**
-135	1.936	2.114	**xxxxFRx09301936130xxx**
-136	1.998	2.176	**xxxxFRx09301998130xxx**
-137	2.061	2.239	**xxxxFRx09302061130xxx**
-138	2.123	2.301	**xxxxFRx09302123130xxx**
-139	2.186	2.364	**xxxxFRx09302186130xxx**
-140	2.248	2.426	**xxxxFRx09302248130xxx**
-141	2.311	2.489	**xxxxFRx09302311130xxx**
-142	2.373	2.551	**xxxxFRx09302373130xxx**
-143	2.436	2.614	**xxxxFRx09302436130xxx**
-144	2.498	2.676	**xxxxFRx09302498130xxx**
-145	2.561	2.739	**xxxxFRx09302561130xxx**
-146	2.623	2.801	**xxxxFRx09302623130xxx**
-147	2.686	2.864	**xxxxFRx09302686130xxx**
-148	2.748	2.926	**xxxxFRx09302748130xxx**
-149	2.811	2.989	**xxxxFRx09302811130xxx**
R = 0.015" max. radius E = 0.003" max. G for Standard heel groove = 0.188/0.198" (170 callout) G for Extended heel groove = 0.235/0.245" (220 callout)			
	+.000/ -.002	+.002/ -.000	
-210	0.748	0.991	**xxxxFRx12500748170xxx**
-211	0.810	1.053	**xxxxFRx12500810170xxx**
-212	0.873	1.116	**xxxxFRx12500873170xxx**
-213	0.935	1.178	**xxxxFRx12500935170xxx**
-214	0.998	1.241	**xxxxFRx12500998170xxx**
-215	1.060	1.303	**xxxxFRx12501060170xxx**
-216	1.123	1.366	**xxxxFRx12501123170xxx**
-217	1.185	1.428	**xxxxFRx12501185170xxx**
-218	1.248	1.491	**xxxxFRx12501248170xxx**
-219	1.310	1.553	**xxxxFRx12501310170xxx**
-220	1.373	1.616	**xxxxFRx12501373170xxx**
-221	1.435	1.678	**xxxxFRx12501435170xxx**
-222	1.498	1.741	**xxxxFRx12501498170xxx**
-223	1.623	1.866	**xxxxFRx12501623170xxx**
-224	1.748	1.991	**xxxxFRx12501748170xxx**
-225	1.873	2.116	**xxxxFRx12501873170xxx**
-226	1.998	2.241	**xxxxFRx12501998170xxx**
-227	2.123	2.366	**xxxxFRx12502123170xxx**
-228	2.248	2.491	**xxxxFRx12502248170xxx**
-229	2.373	2.616	**xxxxFRx12502373170xxx**
-230	2.498	2.741	**xxxxFRx12502498170xxx**
-231	2.623	2.866	**xxxxFRx12502623170xxx**
-232	2.748	2.991	**xxxxFRx12502748170xxx**
-233	2.873	3.116	**xxxxFRx12502873170xxx**
-234	2.997	3.240	**xxxxFRx12502997170xxx**
-235	3.122	3.365	**xxxxFRx12503122170xxx**
-236	3.247	3.490	**xxxxFRx12503247170xxx**
-237	3.372	3.615	**xxxxFRx12503372170xxx**

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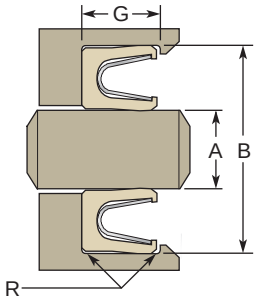
Table 5-12. FR MIL-G-5514 Rod Gland Dimensions (Continued)



Rod Seal

Dash #	A Rod Diameter	B Groove Diameter	Part Number

R = 0.015" max. radius
E = 0.003" max.
G for Standard heel groove = 0.188/0.198" (170 callout)
G for Extended heel groove = 0.235/0.245" (220 callout)

	+.000/ -.002	+.002/ -.000	
-238	3.497	3.740	**xxxxFRx12503497170xxx**
-239	3.622	3.865	**xxxxFRx12503622170xxx**
-240	3.747	3.990	**xxxxFRx12503747170xxx**
-241	3.872	4.115	**xxxxFRx12503872170xxx**
-242	3.997	4.240	**xxxxFRx12503997170xxx**
-243	4.122	4.365	**xxxxFRx12504122170xxx**
-244	4.247	4.490	**xxxxFRx12504247170xxx**
-245	4.372	4.615	**xxxxFRx12504372170xxx**
-246	4.497	4.740	**xxxxFRx12504497170xxx**
-247	4.622	4.865	**xxxxFRx12504622170xxx**

R = 0.015" max. radius
E = 0.003" max.
G for Standard heel groove = 0.281/0.291" (260 callout)
G for Extended heel groove = 0.334/0.344" (310 callout)

	+.000/ -.002	+.002/ -.000	
-325	1.498	1.870	**xxxxFRx18701498260xxx**
-326	1.623	1.995	**xxxxFRx18701623260xxx**
-327	1.748	2.120	**xxxxFRx18701748260xxx**
-328	1.873	2.245	**xxxxFRx18701873260xxx**
-329	1.998	2.370	**xxxxFRx18701998260xxx**
-330	2.123	2.495	**xxxxFRx18702123260xxx**
-331	2.248	2.620	**xxxxFRx18702248260xxx**
-332	2.373	2.745	**xxxxFRx18702373260xxx**
-333	2.498	2.870	**xxxxFRx18702498260xxx**
-334	2.623	2.995	**xxxxFRx18702623260xxx**
-335	2.748	3.120	**xxxxFRx18702748260xxx**
-336	2.873	3.245	**xxxxFRx18702873260xxx**
-337	2.997	3.369	**xxxxFRx18702997260xxx**
-338	3.122	3.494	**xxxxFRx18703122260xxx**
-339	3.247	3.619	**xxxxFRx18703247260xxx**
-340	3.372	3.744	**xxxxFRx18703372260xxx**

Dash #	A Rod Diameter	B Groove Diameter	Part Number
-341	3.497	3.869	**xxxxFRx18703497260xxx**
-342	3.622	3.994	**xxxxFRx18703622260xxx**
-343	3.747	4.119	**xxxxFRx18703747260xxx**
-344	3.872	4.244	**xxxxFRx18703872260xxx**
-345	3.997	4.369	**xxxxFRx18703997260xxx**
-346	4.122	4.494	**xxxxFRx18704122260xxx**
-347	4.247	4.619	**xxxxFRx18704247260xxx**
-348	4.372	4.744	**xxxxFRx18704372260xxx**
-349	4.497	4.869	**xxxxFRx18704497260xxx**

R = 0.015" max. radius
E = 0.004" max.
G for Standard heel groove = 0.375/0.385" (355 callout)
G for Extended heel groove = 0.475/0.485" (450 callout)

	+.000/ -.003	+.003/ -.000	
-425	4.497	4.974	**xxxxFRx25004497355xxx**
-426	4.622	5.099	**xxxxFRx25004622355xxx**
-427	4.747	5.224	**xxxxFRx25004747355xxx**
-428	4.872	5.349	**xxxxFRx25004872355xxx**
-429	4.997	5.474	**xxxxFRx25004997355xxx**
-430	5.122	5.599	**xxxxFRx25005122355xxx**
-431	5.247	5.724	**xxxxFRx25005247355xxx**
-432	5.372	5.849	**xxxxFRx25005372355xxx**
-433	5.497	5.974	**xxxxFRx25005497355xxx**
-434	5.622	6.099	**xxxxFRx25005622355xxx**
-435	5.747	6.224	**xxxxFRx25005747355xxx**
-436	5.872	6.349	**xxxxFRx25005872355xxx**
-437	5.997	6.474	**xxxxFRx25005997355xxx**
-438	6.247	6.724	**xxxxFRx25006247355xxx**
-439	6.497	6.974	**xxxxFRx25006497355xxx**
-440	6.747	7.224	**xxxxFRx25006747355xxx**
-441	6.997	7.474	**xxxxFRx25006997355xxx**
-442	7.247	7.724	**xxxxFRx25007247355xxx**
-443	7.497	7.974	**xxxxFRx25007497355xxx**
-444	7.747	8.224	**xxxxFRx25007747355xxx**
-445	7.997	8.474	**xxxxFRx25007997355xxx**
-446	8.497	8.974	**xxxxFRx25008497355xxx**

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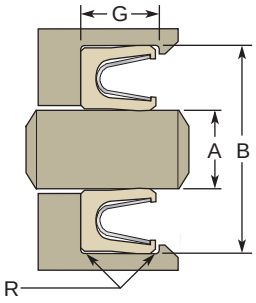
Table 5-12. FR MIL-G-5514 Rod Gland Dimensions (Continued)



Rod Seal

Dash #	A Rod Diameter	B Groove Diameter	Part Number
R = 0.015" max. radius E = 0.004" max. G for Standard heel groove = 0.375/0.385" (355 callout) G for Extended heel groove = 0.475/0.485" (450 callout)			
	+.000/ -.003	**+.004/ -.000**	
-447	8.997	9.474	**xxxxFRx25008997355xxx**
-448	9.497	9.974	**xxxxFRx25009497355xxx**
-449	9.997	10.474	**xxxxFRx25009997355xxx**
-450	10.497	10.974	**xxxxFRx25010497355xxx**
-451	10.997	11.474	**xxxxFRx25010997355xxx**
-452	11.497	11.974	**xxxxFRx25011497355xxx**

Dash #	A Rod Diameter	B Groove Diameter	Part Number
-453	11.997	12.474	**xxxxFRx25011997355xxx**
-454	12.497	12.974	**xxxxFRx25012497355xxx**
-455	12.997	13.474	**xxxxFRx25012997355xxx**
-456	13.497	13.974	**xxxxFRx25013497355xxx**
-457	13.997	14.474	**xxxxFRx25013997355xxx**
-458	14.497	14.974	**xxxxFRx25014497355xxx**
-459	14.997	14.474	**xxxxFRx25014997355xxx**
-460	15.497	15.974	**xxxxFRx25015497355xxx**

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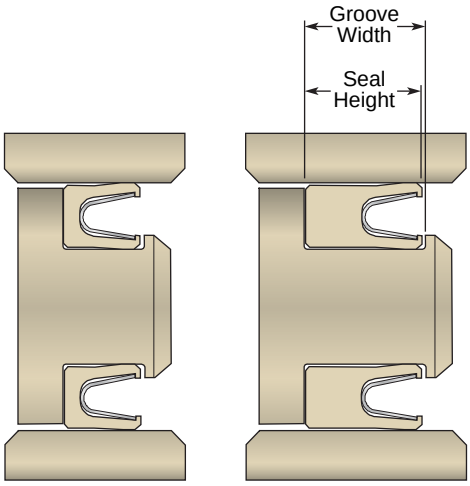
FP Profiles

All FP profiles will fit into the MIL-G-5514 piston gland tables on the following pages.

Design Considerations

- Hardware Configurations/Installation, see **Page 2-3**
- Surface Finish and Hardness, see **Page 2-9**
- Extrusion Gaps and High Pressure, see **Page 2-10**
- Spring Choices, see **Page 2-12**
- Lip Shapes, see **Page 2-16**
- Shaft Misalignment Issues, see **Page 2-19**



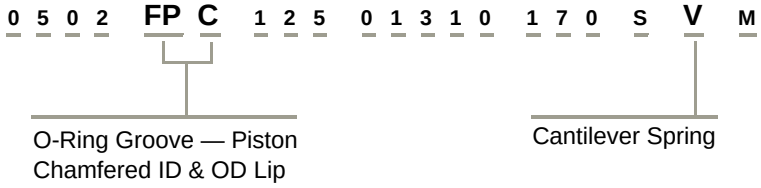
Standard Heel ***Extended Heel***

Table 5-13. Seal Height Callouts

Radial Cross-Section	Standard Heel Callout	Extended Heel Callout
062	083	140
093	130	165
125	170	220
187	260	310
250	355	450

Part Number Example

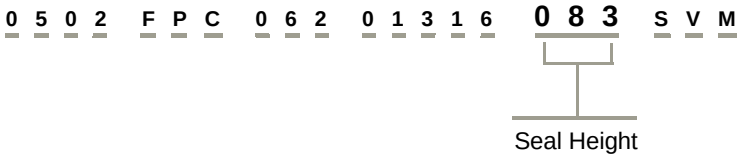
Table 5-14. FP MIL-G-5514 Piston Part Number



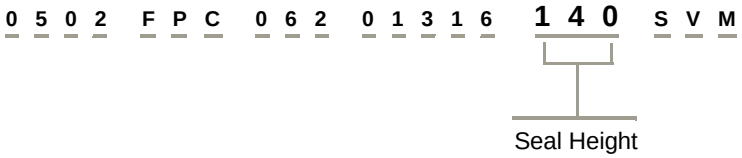
Extended Heel Option

All part numbers on the following pages call for the standard seal height for pressures below 3000 psi.

The heel of a FlexiSeal can be extended to increase extrusion resistance simply by changing the seal height callout in the part number.



Just find where the G dimension for the groove width is designated in the gland tables and switch to the longer extended heel callout in the part number.



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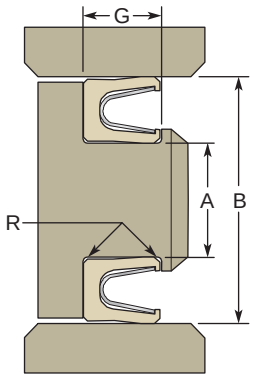
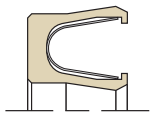
Gland Dimensions — FP Profiles

Table 5-15. FP MIL-G-5514 Piston Gland Dimensions

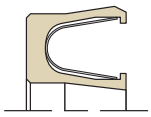


Piston Seal

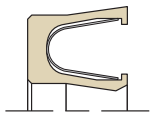
Each of these FlexiSeal profiles were designed to fit into the MIL-G-5514 piston glands on the following pages.



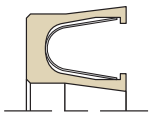
FPC-V



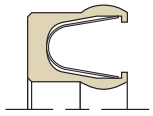
FPS-V



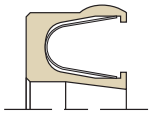
FPG-V



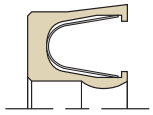
FPD-V



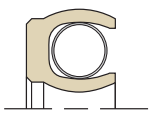
FPK-V



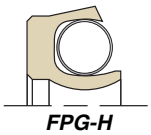
FPM-V



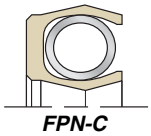
FPL-V



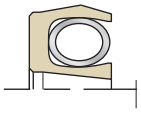
FPN-H



FPG-H



FPN-C



FPS-C

Dash #	A Groove Diameter	B Bore Diameter	Part Number
R = 0.015" max. radius E = 0.002" max. G for Standard heel groove = 0.094/0.104" (083 callout) G for Extended heel groove = 0.149/0.159" (140 callout)			
	+.000/ -.001	**+.001/ -.000**	
-006	0.123	0.235	**xxxxFPx06200123083xxx**
-007	0.154	0.266	**xxxxFPx06200154083xxx**
-008	0.185	0.297	**xxxxFPx06200185083xxx**
-009	0.217	0.329	**xxxxFPx06200217083xxx**
-010	0.248	0.360	**xxxxFPx06200248083xxx**
-011	0.310	0.422	**xxxxFPx06200310083xxx**
-012	0.373	0.485	**xxxxFPx06200373083xxx**
	+.000/ -.002	**+.002/ -.000**	
-013	0.438	0.550	**xxxxFPx06200438083xxx**
-014	0.501	0.613	**xxxxFPx06200501083xxx**
-015	0.563	0.675	**xxxxFPx06200563083xxx**
-016	0.626	0.738	**xxxxFPx06200626083xxx**
-017	0.688	0.800	**xxxxFPx06200688083xxx**
-018	0.751	0.863	**xxxxFPx06200751083xxx**
-019	0.813	0.925	**xxxxFPx06200813083xxx**
-020	0.879	0.991	**xxxxFPx06200879083xxx**
-021	0.941	1.053	**xxxxFPx06200941083xxx**
-022	1.004	1.116	**xxxxFPx06201004083xxx**
-023	1.066	1.178	**xxxxFPx06201066083xxx**
-024	1.129	1.241	**xxxxFPx06201129083xxx**
-025	1.191	1.303	**xxxxFPx06201191083xxx**
-026	1.254	1.366	**xxxxFPx06201254083xxx**
-027	1.316	1.428	**xxxxFPx06201316083xxx**
-028	1.379	1.491	**xxxxFPx06201379083xxx**

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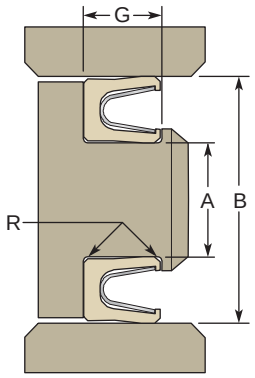
Table 5-15. FP MIL-G-5514 Piston Gland Dimensions (Continued)



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Dash #	A Groove Diameter	B Bore Diameter	Part Number
R = 0.015" max. radius E = 0.002" max. G for Standard heel groove = 0.141/0.151" (130 callout) G for Extended heel groove = 0.183/0.193" (165 callout)			
	+.000/ -.002	+.002/ -.000	
-110	0.372	0.550	**xxxxFPx09300372130xxx**
-111	0.435	0.613	**xxxxFPx09300435130xxx**
-112	0.497	0.675	**xxxxFPx09300497130xxx**
-113	0.560	0.738	**xxxxFPx09300560130xxx**
-114	0.622	0.800	**xxxxFPx09300622130xxx**
-115	0.685	0.863	**xxxxFPx09300685130xxx**
-116	0.747	0.925	**xxxxFPx09300747130xxx**
-117	0.813	0.991	**xxxxFPx09300813130xxx**
-118	0.875	1.053	**xxxxFPx09300875130xxx**
-119	0.938	1.116	**xxxxFPx09300938130xxx**
-120	1.000	1.178	**xxxxFPx09301000130xxx**
-121	1.063	1.241	**xxxxFPx09301063130xxx**
-122	1.125	1.303	**xxxxFPx09301125130xxx**
-123	1.188	1.366	**xxxxFPx09301188130xxx**
-124	1.250	1.428	**xxxxFPx09301250130xxx**
-125	1.313	1.491	**xxxxFPx09301313130xxx**
-126	1.375	1.553	**xxxxFPx09301375130xxx**
-127	1.438	1.616	**xxxxFPx09301438130xxx**
-128	1.500	1.678	**xxxxFPx09301500130xxx**
-129	1.563	1.741	**xxxxFPx09301563130xxx**
-130	1.627	1.805	**xxxxFPx09301627130xxx**
-131	1.689	1.867	**xxxxFPx09301689130xxx**
-132	1.752	1.930	**xxxxFPx09301752130xxx**
-133	1.814	1.992	**xxxxFPx09301814130xxx**
-134	1.877	2.055	**xxxxFPx09301877130xxx**
-135	1.940	2.118	**xxxxFPx09301940130xxx**
-136	2.002	2.180	**xxxxFPx09302002130xxx**
-137	2.065	2.243	**xxxxFPx09302065130xxx**
-138	2.127	2.305	**xxxxFPx09302127130xxx**
-139	2.190	2.368	**xxxxFPx09302190130xxx**
-140	2.252	2.430	**xxxxFPx09302252130xxx**
-141	2.315	2.493	**xxxxFPx09302315130xxx**
-142	2.377	2.555	**xxxxFPx09302377130xxx**
-143	2.440	2.618	**xxxxFPx09302440130xxx**
-144	2.502	2.680	**xxxxFPx09302502130xxx**
-145	2.565	2.743	**xxxxFPx09302565130xxx**
-146	2.627	2.805	**xxxxFPx09302627130xxx**
-147	2.690	2.868	**xxxxFPx09302690130xxx**
-148	2.752	2.930	**xxxxFPx09302752130xxx**
-149	2.815	2.993	**xxxxFPx09302815130xxx**
R = 0.015" max. radius E = 0.003" max. G for Standard heel groove = 0.188/0.198" (170 callout) G for Extended heel groove = 0.235/0.245" (220 callout)			
	+.000/ -.002	+.002/ -.000	
-210	0.748	0.991	**xxxxFPx12500748170xxx**
-211	0.810	1.053	**xxxxFPx12500810170xxx**
-212	0.873	1.116	**xxxxFPx12500873170xxx**
-213	0.935	1.178	**xxxxFPx12500935170xxx**
-214	0.998	1.241	**xxxxFPx12500998170xxx**
-215	1.060	1.303	**xxxxFPx12501060170xxx**
-216	1.123	1.366	**xxxxFPx12501123170xxx**
-217	1.185	1.428	**xxxxFPx12501185170xxx**
-218	1.248	1.491	**xxxxFPx12501248170xxx**
-219	1.310	1.553	**xxxxFPx12501310170xxx**
-220	1.373	1.616	**xxxxFPx12501373170xxx**
-221	1.435	1.678	**xxxxFPx12501435170xxx**
-222	1.498	1.741	**xxxxFPx12501498170xxx**
-223	1.624	1.867	**xxxxFPx12501624170xxx**
-224	1.749	1.992	**xxxxFPx12501749170xxx**
-225	1.875	2.118	**xxxxFPx12501875170xxx**
-226	2.000	2.243	**xxxxFPx12502000170xxx**
-227	2.125	2.368	**xxxxFPx12502125170xxx**
-228	2.250	2.493	**xxxxFPx12502250170xxx**
-229	2.375	2.618	**xxxxFPx12502375170xxx**
-230	2.500	2.743	**xxxxFPx12502500170xxx**
-231	2.625	2.868	**xxxxFPx12502625170xxx**
-232	2.750	2.993	**xxxxFPx12502750170xxx**

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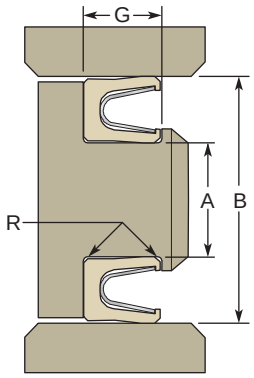
Table 5-15. FP MIL-G-5514 Piston Gland Dimensions (Continued)



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Dash #	A Groove Diameter	B Bore Diameter	Part Number

R = 0.015" max. radius
E = 0.003" max.
G for Standard heel groove = 0.188/0.198" (170 callout)
G for Extended heel groove = 0.235/0.245" (220 callout)

	+.000/ -.002	+.002/ -.000	
-233	2.875	3.118	**xxxxFPx12502875170xxx**
-234	3.000	3.243	**xxxxFPx12503000170xxx**
-235	3.125	3.368	**xxxxFPx12503125170xxx**
-236	3.250	3.493	**xxxxFPx12503250170xxx**
-237	3.375	3.618	**xxxxFPx12503375170xxx**
-238	3.500	3.743	**xxxxFPx12503500170xxx**
-239	3.625	3.868	**xxxxFPx12503625170xxx**
-240	3.750	3.993	**xxxxFPx12503750170xxx**
-241	3.875	4.118	**xxxxFPx12503875170xxx**
-242	4.000	4.243	**xxxxFPx12504000170xxx**
-243	4.125	4.368	**xxxxFPx12504125170xxx**
-244	4.250	4.493	**xxxxFPx12504250170xxx**
-245	4.375	4.618	**xxxxFPx12504375170xxx**
-246	4.500	4.743	**xxxxFPx12504500170xxx**
-247	4.625	4.868	**xxxxFPx12504625170xxx**

R = 0.015" max. radius
E = 0.003" max.
G for Standard heel groove = 0.281/0.291" (260 callout)
G for Extended heel groove = 0.334/0.344" (310 callout)

	+.000/ -.002	+.002/ -.000	
-325	1.495	1.867	**xxxxFPx18701495260xxx**
-326	1.620	1.992	**xxxxFPx18701620260xxx**
-327	1.746	2.118	**xxxxFPx18701746260xxx**
-328	1.871	2.243	**xxxxFPx18701871260xxx**
-329	1.996	2.368	**xxxxFPx18701996260xxx**
-330	2.121	2.493	**xxxxFPx18702121260xxx**
-331	2.246	2.618	**xxxxFPx18702246260xxx**
-332	2.371	2.743	**xxxxFPx18702371260xxx**
-333	2.496	2.868	**xxxxFPx18702496260xxx**
-334	2.621	2.993	**xxxxFPx18702621260xxx**
-335	2.746	3.118	**xxxxFPx18702746260xxx**
-336	2.871	3.243	**xxxxFPx18702871260xxx**

Dash #	A Groove Diameter	B Bore Diameter	Part Number
-337	2.996	3.368	**xxxxFPx18702996260xxx**
-338	3.121	3.493	**xxxxFPx18703121260xxx**
-339	3.246	3.618	**xxxxFPx18703246260xxx**
-340	3.371	3.743	**xxxxFPx18703371260xxx**
-341	3.496	3.868	**xxxxFPx18703496260xxx**
-342	3.621	3.993	**xxxxFPx18703621260xxx**
-343	3.746	4.118	**xxxxFPx18703746260xxx**
-344	3.871	4.243	**xxxxFPx18703871260xxx**
-345	3.996	4.368	**xxxxFPx18703996260xxx**
-346	4.121	4.493	**xxxxFPx18704121260xxx**
-347	4.246	4.618	**xxxxFPx18704246260xxx**
-348	4.371	4.743	**xxxxFPx18704371260xxx**
-349	4.496	4.868	**xxxxFPx18704496260xxx**

R = 0.015" max. radius
E = 0.004" max.
G for Standard heel groove = 0.375/0.385" (355 callout)
G for Extended heel groove = 0.475/0.485" (450 callout)

	+.000/ -.003	+.002/ -.000	
-425	4.497	4.974	**xxxxFPx25004497355xxx**
-426	4.622	5.099	**xxxxFPx25004622355xxx**
-427	4.747	5.224	**xxxxFPx25004747355xxx**
-428	4.872	5.349	**xxxxFPx25004872355xxx**
-429	4.997	5.474	**xxxxFPx25004997355xxx**
-430	5.122	5.599	**xxxxFPx25005122355xxx**
-431	5.247	5.724	**xxxxFPx25005247355xxx**
-432	5.372	5.849	**xxxxFPx25005372355xxx**
-433	5.497	5.974	**xxxxFPx25005497355xxx**
-434	5.622	6.099	**xxxxFPx25005622355xxx**
-435	5.747	6.224	**xxxxFPx25005747355xxx**
-436	5.872	6.349	**xxxxFPx25005872355xxx**
-437	5.997	6.474	**xxxxFPx25005997355xxx**
-438	6.247	6.724	**xxxxFPx25006247355xxx**
-439	6.497	6.974	**xxxxFPx25006497355xxx**
-440	6.747	7.224	**xxxxFPx25006747355xxx**
-441	6.997	7.474	**xxxxFPx25006997355xxx**
-442	7.247	7.724	**xxxxFPx25007247355xxx**

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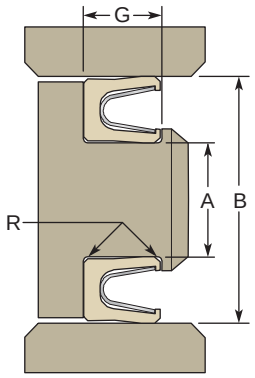
Table 5-15. FP MIL-G-5514 Piston Gland Dimensions (Continued)



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R = 0.015" max. radius
E = 0.004" max.
G for Standard heel groove = 0.375/0.385" (355 callout)
G for Extended heel groove = 0.475/0.485" (450 callout)

Dash #	A Groove Diameter	B Bore Diameter	Part Number
	+.000/ -.003	+.003 /-.000	
-443	7.497	7.974	**xxxxFPx25007497355xxx**
-444	7.747	8.224	**xxxxFPx25007747355xxx**
-445	7.997	8.474	**xxxxFPx25007997355xxx**
-446	8.497	8.974	**xxxxFPx25008497355xxx**
	+.000/-.003	+.004/-.000	
-447	8.997	9.474	**xxxxFPx25008997355xxx**
-448	9.497	9.974	**xxxxFPx25009497355xxx**
-449	9.997	10.474	**xxxxFPx25009997355xxx**
-450	10.497	10.974	**xxxxFPx25010497355xxx**
-451	10.997	11.474	**xxxxFPx25010997355xxx**
-452	11.497	11.974	**xxxxFPx25011497355xxx**
-453	11.997	12.474	**xxxxFPx25011997355xxx**
-454	12.497	12.974	**xxxxFPx25012497355xxx**
-455	12.997	13.474	**xxxxFPx25012997355xxx**
-456	13.497	13.974	**xxxxFPx25013497355xxx**
-457	13.997	14.474	**xxxxFPx25013997355xxx**
-458	14.497	14.974	**xxxxFPx25014497355xxx**
-459	14.997	14.474	**xxxxFPx25014997355xxx**
-460	15.497	15.974	**xxxxFPx25015497355xxx**

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