



MagTecta™

Magnetic Double Seal Bearing Protector



- IMPROVE YOUR PLANT UPTIME
- REDUCE PREMATURE BEARING FAILURES
- REDUCE YOUR MAINTENANCE COSTS
- PATENT PENDING DESIGN



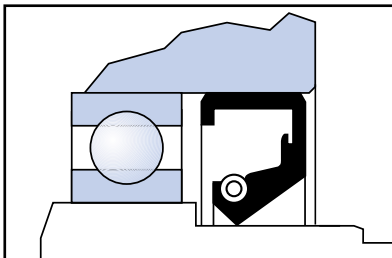
- magnetic double seal bearing protector

AESSEAL® is one of the leading specialists in the design and manufacture of mechanical seals and support systems.

The AESSEAL® Global Technology Centre is the largest of over 35 branches worldwide.



MagTecta™ - why a mechanical seal instead of a lip seal or labyrinth?



Typical Lip Seal arrangement

Limitations of Lip Seals

Lip seals have a limited life and this is often significantly less than the life of the bearing. The major problems occur when sealing oil filled equipment but even greased applications can cause problems.

When lip seals leak, loss of lubrication causes catastrophic bearing and equipment failure.

Lip seals are ineffective at keeping contamination from bearing housings and can seriously wear shafts.



Shaft Damage from a Lip Seal

Limitations of the Labyrinth Design

Labyrinth arrangements have, for many decades, replaced Lip Seals, as users desperately required an alternative.

The typical Labyrinth design relies on a tortuous path, which, in theory, prevents the ingress of fluid.

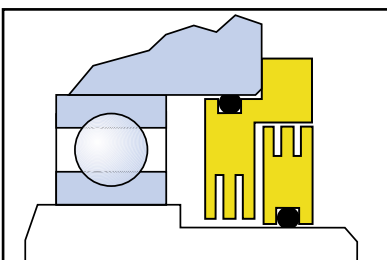
This type of design requires close radial and axial clearances between rotating and stationary components. Such clearances can clog when operating in certain dust and dirt environments leading to a whole host of further problems. Unfortunately, Labyrinth designs have many further weaknesses.

Labyrinths can not hold fluid (oil), which lies above the shaft level, especially when the item of rotating equipment is static.

Labyrinths can not easily be applied to vertical applications such as mixing vessels, since the fluid has to fight the effects of gravity.

Some suppliers offer contacting or rubbing elastomers, in conjunction with a Labyrinth arrangement, in an attempt to overcome these inherent weaknesses.

Unfortunately, no matter how sophisticated the design may claim to be, these contacting elastomers wear. This creates further inconvenience and expense to the user as well as loss of the sealed fluid. If this loss of fluid is not monitored, the equipment can soon seize. Enter the mechanical seal bearing protector!



Typical Labyrinth Seal arrangement



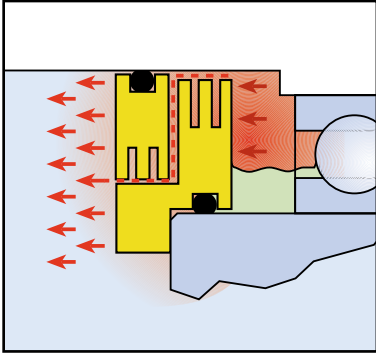
Shaft Damage from a Labyrinth Seal

Bearing Chamber Breathing - moisture contamination

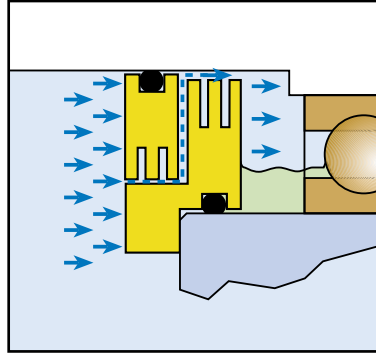
During dynamic operation the lubrication fluid in the bearing chamber generally expands as it warms. In a typical Labyrinth arrangement, as the fluid expands, air is expelled through the Labyrinth and out of the bearing chamber.

Once the rotating equipment stops, the fluid cools. Unfortunately this cooling action sucks moist air past the Labyrinth arrangement and back into the bearing chamber.

With the MagTecta™ it is possible to hermetically seal the bearing chamber preventing breathing and thus extending equipment life.



As the shaft turns heat is generated and warm air is expelled



As the shaft stops turning and cools down cold air is sucked in and the bearing fails



Contaminated Bearings



- a 21st century solution to an age-old problem

After many months of research and development, AESSEAL® are proud to offer a product which, in their opinion, is probably the most technologically advanced bearing protector in the world.



AESSEAL® Test facilities

This helps industry reduce its maintenance costs. The design combines the latest AESSEAL® "pure innovation" with their world-leading, customer orientated, "modularity" concept.

From the company who brought to market probably the first modular cartridge mechanical seal range, there is now another world first – a modular bearing protector seal range.

After many thousands of hours conducting competitor benchmark test results, AESSEAL® are confident that the MagTecta™ is the ultimate solution for practically all rotating equipment bearing sealing problems.

MagTecta™ - rotating equipment applications

The AESSEAL® MagTecta™ can be applied to many types of rotating equipment and configurations in every industrial sector. Some examples follow:

Pumps	Gear Boxes	Pillow Blocks	Fans	Coal Pulverizers
Mixers	Generators	Machine Tool Spindles	Steam Turbines	Compressors
Agitators	Pulpers	Electronic Motors	Conveyer Rollers	
Reactors	Sleeve Bearings	Wire Return Rolls	Rotary Valves	...and many more



- bearing protector design features

Safe by Design

The MagTecta™ is a magnetically energized mechanical seal, with magnetic attraction between two stationary components. Since the magnetic field is stationary the magnet life is maximized and the likelihood of spark generation is reduced.

Due to this inherently "safe design", the universal MagTecta™ can therefore be more readily applied to all types of industrial applications.

The Most Reliable Bearing Protector in the World?

The MagTecta™ will work perfectly in both static and dynamic rotating equipment applications whether they are vertically or horizontally orientated.

There are no rubbing elastomers to wear and replace. Rubbing elastomers damage and wear mating components, whilst simultaneously increasing equipment power consumption.

Furthermore, the design does not include a complex Labyrinth arrangement which could clog or seize parts with close radial and axial running clearances.

Double Faces – Double the Protection?

The MagTecta™ includes two sets of modular mechanical seal faces.

The world's first modular double bearing protector, in the opinion of AESSEAL®, therefore has double the protection of that of a conventional single seal face design.

The Most Universal Bearing Protector in the World!

The MagTecta™ incorporates a universal and reversible outer body.

At any given shaft size, the reversible body will fit multiple bearing chamber radial cross sections. For example, one 1.250" MagTecta™ will fit a shaft to housing radial cross section of either 0.375" or 0.437". Equally one metric 35mm MagTecta™ will fit a shaft to housing radial cross section of either 10mm or 12.5mm, etc.

The universal MagTecta™ reduces customer and supplier inventory levels, thereby allowing AESSEAL® to maximize customer service levels.

Compact Design

The MagTecta™ has no setting clips or axially floating components, which can move or be damaged during installation.

The robust, compact construction is therefore very installation / operator friendly.

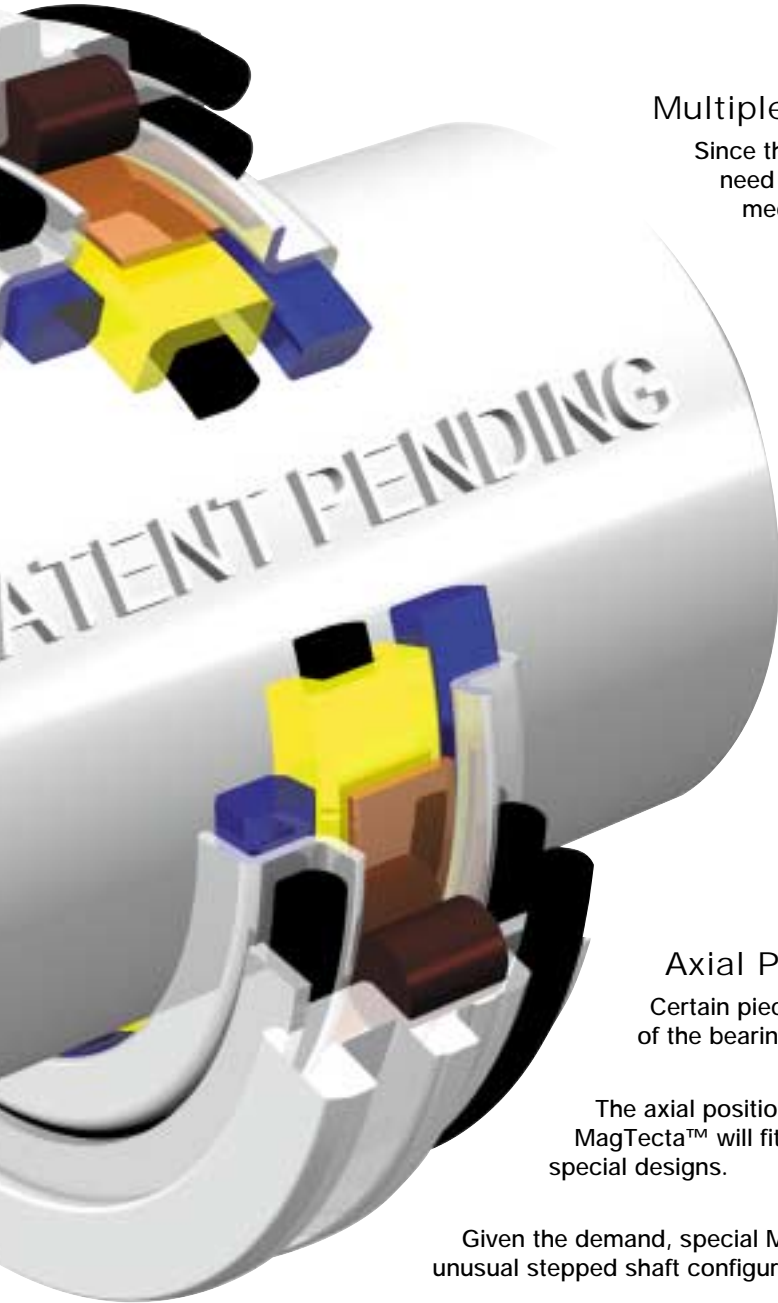
Furthermore, the short inboard and outboard length means that the MagTecta™ can be installed in just about all physical spaces, which were previously occupied by Lip / oil seals.



Sacrificial Shroud

The MagTecta™ incorporates a phosphor bronze shroud, which equally spaces the magnets to ensure uniform seal face loading.

Furthermore, the shroud acts as a sacrificial component reducing the possibility of equipment seizure and / or metallic component spark generation given excessive radial shaft movement.



Multiple Seal Face Material Selection

Since the MagTecta™ seal faces are not limited to materials which need to be magnetic, the product can be supplied in standard mechanical seal face materials.

Standard MagTecta™ seal face materials are Antimony Carbon versus solid Tungsten Carbide. Other seal faces can be made to order only.

Original Equipment Manufacturer (OEM) Specific Designs

The MagTecta™ is available to suit standard and popular OEM specific equipment.

Where a standard MagTecta™ is unable to fit a specific piece of rotating equipment, AESSEAL® have inventoried OEM specific designs. Some of these designs and stockcodes are listed on the AESSEAL® website in the Applications section.

Axial Position of the Rotary Elastomer

Certain pieces of equipment have stepped shafts adjacent to the axial face of the bearing chamber.

The axial position of the rotary elastomer helps to ensure that the standard MagTecta™ will fit both plain and stepped shafts alike, without resorting to unique special designs.

Given the demand, special MagTectas, to suit very small radial cross sectional spaces or unusual stepped shaft configurations, can be supplied. See back page for further details.

Exceptional Customer Service

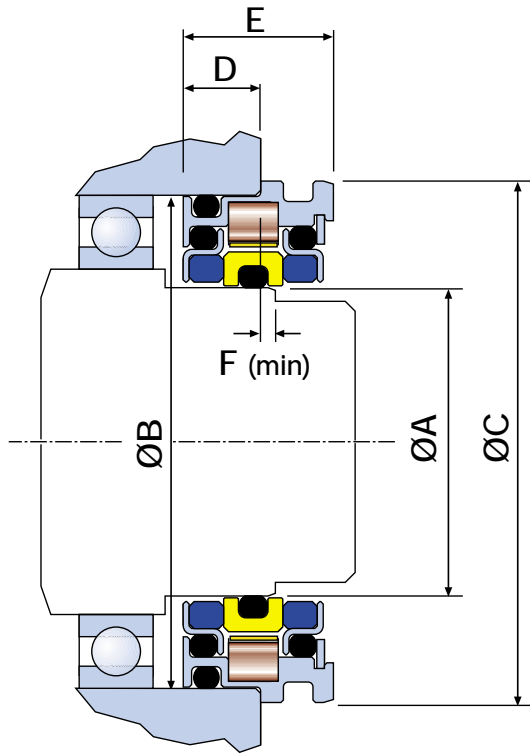
Exceptional customer service is a result of "elegant design", "modularity" and "standard inventoried products".

The standard MagTecta™ has all three of these key elements and is therefore truly an exceptional product for bearing protection.

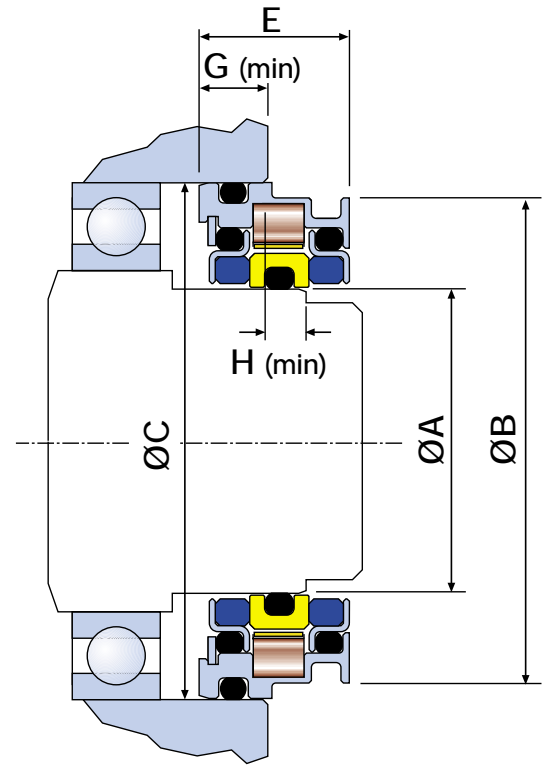


- (I-TXS) imperial and (M-TXS) metric dimensions

MagTecta™ shown in normal orientation



MagTecta™ shown in reverse orientation (larger radial cross section)



MagTecta™ (I-TXS) Imperial size chart

A	B	C	D	E	Fmin	Gmin	Hmin
0.750	1.500	1.625	0.315	0.610	0.040	0.150	0.265
0.875	1.625	1.750	0.315	0.610	0.040	0.150	0.265
1.000	1.750	1.875	0.315	0.610	0.040	0.150	0.265
1.125	1.875	2.000	0.315	0.610	0.040	0.150	0.265
1.250	2.000	2.125	0.315	0.610	0.040	0.150	0.265
1.375	2.125	2.250	0.315	0.610	0.040	0.150	0.265
1.500	2.250	2.375	0.315	0.610	0.040	0.150	0.265
1.625	2.375	2.500	0.315	0.610	0.040	0.150	0.265
1.750	2.500	2.625	0.315	0.610	0.040	0.150	0.265
1.875	2.625	2.750	0.315	0.610	0.040	0.150	0.265
2.000	2.750	2.875	0.315	0.610	0.040	0.150	0.265
2.125	2.875	3.000	0.315	0.610	0.040	0.150	0.265
2.250	3.000	3.125	0.315	0.610	0.040	0.150	0.265
2.375	3.125	3.250	0.315	0.610	0.040	0.150	0.265
2.500	3.250	3.375	0.315	0.610	0.040	0.150	0.265
2.625	3.375	3.500	0.315	0.610	0.040	0.150	0.265
2.750	3.500	3.625	0.315	0.610	0.040	0.150	0.265
2.875	3.625	3.750	0.315	0.610	0.040	0.150	0.265
3.000	3.750	3.875	0.315	0.610	0.040	0.150	0.265
3.125	3.875	4.000	0.315	0.610	0.040	0.150	0.265
3.250	4.000	4.125	0.315	0.610	0.040	0.150	0.265
3.375	4.125	4.250	0.315	0.610	0.040	0.150	0.265
3.500	4.250	4.375	0.315	0.610	0.040	0.150	0.265
3.625	4.375	4.500	0.315	0.610	0.040	0.150	0.265
3.750	4.500	4.625	0.315	0.610	0.040	0.150	0.265
3.875	4.625	4.750	0.315	0.610	0.040	0.150	0.265
4.000	4.750	4.875	0.315	0.610	0.040	0.150	0.265
4.125	4.875	5.000	0.315	0.665	0.110	0.310	0.170
4.250	5.000	5.125	0.315	0.665	0.110	0.310	0.170
4.375	5.125	5.250	0.315	0.665	0.110	0.310	0.170
4.500	5.250	5.375	0.315	0.665	0.110	0.310	0.170
4.625	5.375	5.500	0.315	0.665	0.110	0.310	0.170
4.750	5.500	5.625	0.315	0.665	0.110	0.310	0.170
4.875	5.625	5.750	0.315	0.665	0.110	0.310	0.170
5.000	5.750	5.875	0.315	0.665	0.110	0.310	0.170

Dimensional Information (inches)

MagTecta™ (M-TXS) Metric size chart

A	B	C	D	E	Fmin	Gmin	Hmin
20.0	40.0	45.0	8.0	15.5	1.0	3.8	6.7
22.0	42.0	47.0	8.0	15.5	1.0	3.8	6.7
24.0	44.0	49.0	8.0	15.5	1.0	3.8	6.7
25.0	45.0	50.0	8.0	15.5	1.0	3.8	6.7
28.0	48.0	53.0	8.0	15.5	1.0	3.8	6.7
30.0	50.0	55.0	8.0	15.5	1.0	3.8	6.7
32.0	52.0	57.0	8.0	15.5	1.0	3.8	6.7
33.0	53.0	58.0	8.0	15.5	1.0	3.8	6.7
35.0	55.0	60.0	8.0	15.5	1.0	3.8	6.7
38.0	58.0	63.0	8.0	15.5	1.0	3.8	6.7
40.0	60.0	65.0	8.0	15.5	1.0	3.8	6.7
43.0	63.0	68.0	8.0	15.5	1.0	3.8	6.7
45.0	65.0	70.0	8.0	15.5	1.0	3.8	6.7
48.0	68.0	73.0	8.0	15.5	1.0	3.8	6.7
50.0	70.0	75.0	8.0	15.5	1.0	3.8	6.7
52.0	72.0	77.0	8.0	15.5	1.0	3.8	6.7
53.0	73.0	78.0	8.0	15.5	1.0	3.8	6.7
55.0	75.0	80.0	8.0	15.5	1.0	3.8	6.7
58.0	78.0	83.0	8.0	15.5	1.0	3.8	6.7
60.0	80.0	85.0	8.0	15.5	1.0	3.8	6.7
63.0	83.0	88.0	8.0	15.5	1.0	3.8	6.7
65.0	85.0	90.0	8.0	15.5	1.0	3.8	6.7
68.0	88.0	93.0	8.0	15.5	1.0	3.8	6.7
70.0	90.0	95.0	8.0	15.5	1.0	3.8	6.7
75.0	95.0	100.0	8.0	15.5	1.0	3.8	6.7
80.0	100.0	105.0	8.0	15.5	1.0	3.8	6.7
85.0	105.0	110.0	8.0	15.5	1.0	3.8	6.7
90.0	110.0	115.0	8.0	15.5	1.0	3.8	6.7
95.0	115.0	120.0	8.0	15.5	1.0	3.8	6.7
100.0	120.0	125.0	8.0	15.5	1.0	3.8	6.7
105.0	125.0	130.0	8.0	16.9	2.8	7.8	4.3
110.0	130.0	135.0	8.0	16.9	2.8	7.8	4.3
115.0	135.0	140.0	8.0	16.9	2.8	7.8	4.3
120.0	140.0	145.0	8.0	16.9	2.8	7.8	4.3
125.0	145.0	150.0	8.0	16.9	2.8	7.8	4.3

Dimensional Information (mm)

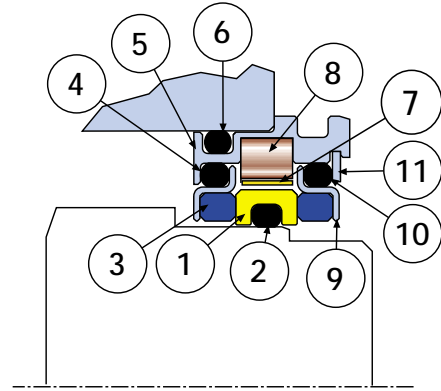
Note:

"H" (min) is directly dependent on the "G" dimension. If "G" increases, "H" (min) reduces.



- (I-LXS) imperial and (M-LXS) metric dimensions

MagTecta™ shown in normal orientation



Item	Description	Material
1	Rotary Seal Face	Tungsten Carbide
2	Rotary Elastomer	Viton® / Aflas® / EPR / Kalrez®
3	Stationary Seal Face Assy	Ant.Car-S/S
4	Stationary Elastomer	Viton® / EPR
5	Outer Body	Stainless Steel
6	Outer Body Elastomer	Viton® / Aflas® / EPR / Kalrez®
7	Shroud	Phosphor Bronze
8	Magnet	Metal
9	Stationary Seal Face Assy	Ant.Car-S/S
10	Stationary Elastomer	Viton® / EPR
11	Circlip	Stainless Steel

MagTecta™ (I-LXS) Imperial Dimension

A	B	C	D	E	Fmin	Gmin	Hmin
0.750	1.750	1.875	0.315	0.610	0.040	0.150	0.265
0.875	1.875	2.000	0.315	0.610	0.040	0.150	0.265
1.000	2.000	2.125	0.315	0.610	0.040	0.150	0.265
1.125	2.125	2.250	0.315	0.610	0.040	0.150	0.265
1.250	2.250	2.375	0.315	0.610	0.040	0.150	0.265
1.375	2.375	2.500	0.315	0.610	0.040	0.150	0.265
1.500	2.500	2.625	0.315	0.610	0.040	0.150	0.265
1.625	2.625	2.750	0.315	0.610	0.040	0.150	0.265
1.750	2.750	2.875	0.315	0.610	0.040	0.150	0.265
1.875	2.875	3.000	0.315	0.610	0.040	0.150	0.265
2.000	3.000	3.125	0.315	0.610	0.040	0.150	0.265
2.125	3.125	3.250	0.315	0.610	0.040	0.150	0.265
2.250	3.250	3.375	0.315	0.610	0.040	0.150	0.265
2.375	3.375	3.500	0.315	0.610	0.040	0.150	0.265
2.500	3.500	3.625	0.315	0.610	0.040	0.150	0.265
2.625	3.625	3.750	0.315	0.610	0.040	0.150	0.265
2.750	3.750	3.875	0.315	0.610	0.040	0.150	0.265
2.875	3.875	4.000	0.315	0.610	0.040	0.150	0.265
3.000	4.000	4.125	0.315	0.610	0.040	0.150	0.265
3.125	4.125	4.250	0.315	0.610	0.040	0.150	0.265
3.250	4.250	4.375	0.315	0.610	0.040	0.150	0.265
3.375	4.375	4.500	0.315	0.610	0.040	0.150	0.265
3.500	4.500	4.625	0.315	0.610	0.040	0.150	0.265
3.625	4.625	4.750	0.315	0.610	0.040	0.150	0.265
3.750	4.750	4.875	0.315	0.610	0.040	0.150	0.265
3.875	4.875	5.000	0.315	0.610	0.040	0.150	0.265
4.000	5.000	5.125	0.315	0.610	0.040	0.150	0.265
4.125	5.125	5.250	0.315	0.665	0.110	0.310	0.170
4.250	5.250	5.375	0.315	0.665	0.110	0.310	0.170
4.375	5.375	5.500	0.315	0.665	0.110	0.310	0.170
4.500	5.500	5.625	0.315	0.665	0.110	0.310	0.170
4.625	5.625	5.750	0.315	0.665	0.110	0.310	0.170
4.750	5.750	5.875	0.315	0.665	0.110	0.310	0.170
4.875	5.875	6.000	0.315	0.665	0.110	0.310	0.170
5.000	6.000	6.125	0.315	0.665	0.110	0.310	0.170

Dimensional Information (inches)

MagTecta™ (M-LXS) Metric Dimension

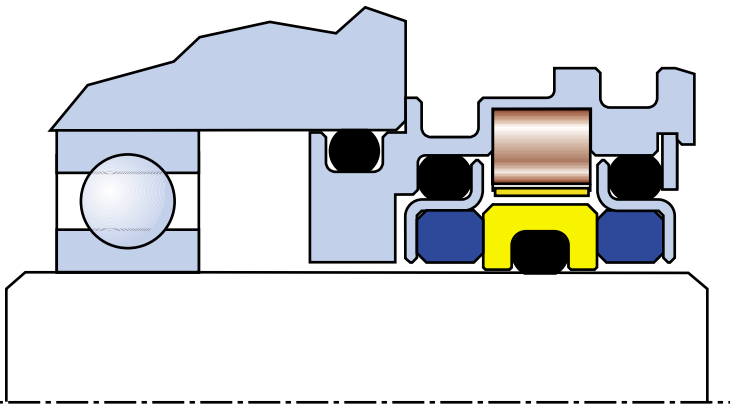
A	B	C	D	E	Fmin	Gmin	Hmin
20.0	38.0	42.0	8.0	15.5	1.0	3.8	6.7
22.0	40.0	44.0	8.0	15.5	1.0	3.8	6.7
24.0	42.0	46.0	8.0	15.5	1.0	3.8	6.7
25.0	43.0	47.0	8.0	15.5	1.0	3.8	6.7
28.0	46.0	50.0	8.0	15.5	1.0	3.8	6.7
30.0	48.0	52.0	8.0	15.5	1.0	3.8	6.7
32.0	50.0	54.0	8.0	15.5	1.0	3.8	6.7
33.0	51.0	55.0	8.0	15.5	1.0	3.8	6.7
35.0	53.0	57.0	8.0	15.5	1.0	3.8	6.7
38.0	56.0	60.0	8.0	15.5	1.0	3.8	6.7
40.0	58.0	62.0	8.0	15.5	1.0	3.8	6.7
43.0	61.0	65.0	8.0	15.5	1.0	3.8	6.7
45.0	71.0	75.0	8.0	15.5	1.0	3.8	6.7
48.0	74.0	78.0	8.0	15.5	1.0	3.8	6.7
50.0	76.0	80.0	8.0	15.5	1.0	3.8	6.7
52.0	78.0	82.0	8.0	15.5	1.0	3.8	6.7
53.0	79.0	83.0	8.0	15.5	1.0	3.8	6.7
55.0	81.0	85.0	8.0	15.5	1.0	3.8	6.7
58.0	84.0	88.0	8.0	15.5	1.0	3.8	6.7
60.0	86.0	90.0	8.0	15.5	1.0	3.8	6.7
63.0	89.0	93.0	8.0	15.5	1.0	3.8	6.7
65.0	91.0	95.0	8.0	15.5	1.0	3.8	6.7
68.0	94.0	98.0	8.0	15.5	1.0	3.8	6.7
70.0	96.0	100.0	8.0	15.5	1.0	3.8	6.7
75.0	101.0	105.0	8.0	15.5	1.0	3.8	6.7
80.0	106.0	110.0	8.0	15.5	1.0	3.8	6.7
85.0	111.0	115.0	8.0	15.5	1.0	3.8	6.7
90.0	116.0	120.0	8.0	15.5	1.0	3.8	6.7
95.0	121.0	125.0	8.0	15.5	1.0	3.8	6.7
100.0	126.0	130.0	8.0	15.5	1.0	3.8	6.7
105.0	131.0	135.0	8.0	16.9	2.8	7.8	4.3
110.0	136.0	140.0	8.0	16.9	2.8	7.8	4.3
115.0	141.0	145.0	8.0	16.9	2.8	7.8	4.3
120.0	146.0	150.0	8.0	16.9	2.8	7.8	4.3
125.0	151.0	155.0	8.0	16.9	2.8	7.8	4.3

Dimensional Information (mm)



- very thin radial cross section special design

The MagTecta™ can be supplied to suit applications in which a standard product cannot to be installed.



Special MagTecta™ for very thin radial cross sectional spaces.

Designs to suit thin radial cross section spaces, as small as 5mm (0.197"), are manufactured to suit customer requirements.

These specials have an adapted outer body which moves the seal faces outboard of the bearing chamber face.

As a guide these special designs require an outboard space and plain shaft which is greater than ((1mm or 0.040") + "Dim E"). See dimensional tables overleaf.

MagTecta™ - multimedia video

The benefits of the AESSEAL® MagTecta™ can be seen in the multimedia video on CD-ROM and on the AESSEAL® website.

Split in to five different sections, the video shows the problems with lip seals, the problems with Labyrinth seals, the problems with single mechanical seal bearing protectors and finally the benefits of the MagTecta™.

This video can be viewed live on the AESSEAL® website at www.aesseal.com under the products section or requested on CD-ROM by email from marketing@aesseeal.com.



Left: The MagTecta™ video on CD-ROM.



Right: The MagTecta™ video on the AESSEAL® website.

THIS DOCUMENT IS DESIGNED TO PROVIDE DIMENSIONAL INFORMATION AND AN INDICATION OF AVAILABILITY. FOR FURTHER INFORMATION AND SAFE OPERATING LIMITS CONTACT OUR TECHNICAL SPECIALISTS AT THE LOCATIONS BELOW.



INVESTOR IN PEOPLE

USE DOUBLE MECHANICAL SEALS WITH HAZARDOUS PRODUCTS. ALWAYS TAKE SAFETY PRECAUTIONS:

- GUARD YOUR EQUIPMENT
- WEAR PROTECTIVE CLOTHING



WARNING

AESSEAL plc
Mill Close
Templeborough
Rotherham
S60 1BZ
United Kingdom

Telephone: +44 (0) 1709 369966
Fax: +44 (0) 1709 720788
E-mail: seals@aesseeal.com
Internet: <http://www.aesseal.com>

Distributed by:

USA Sales & Technical advice:
AESSEAL Inc.
10231 Cogdill Road
Suite 105
Knoxville, TN 37932
USA
Telephone: 865 531 0192
Fax: 865 531 0571