



Wear Rings Sealing Guide



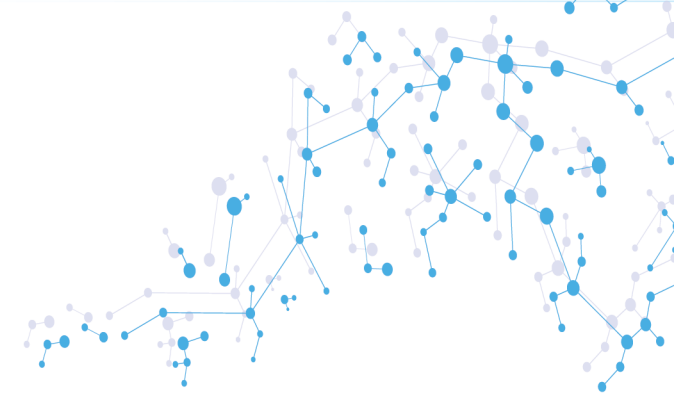
#SealingExcellence



Important Information

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TTIPL strongly urge its customers and associates to validate the products that are being offered, to ensure its suitability and performance, based on their applications, hardware & operating conditions, through their own analysis and testing.



Wear Rings



#SealingExcellence



Description

Piston & Piston Rod Guide Rings (Wear Rings), plays a vital role in the successful performance and also in ensuring a long service life of any Hydraulic Actuator. Triada Technologies is proud to offer a wide range of options in these Wear Rings, both in terms of Materials as well as in the Designs. These Wear Rings are sourced from World renowned facilities and are available ex-stock for most of the standard dimensions as Machined Rings, Net Molded Rings, Spiral Coils or as Strips. Machined Rings facilitates easy assembling of the Wear Rings on to Piston or Gland assemblies and also can help to maintain close tolerances. Molded rings, mostly in POM & PA, address the cost concerns, while at the same time available as molded and subsequently Machined to maintain close tolerances and also to take care of the warping effect in Molding. Of course, these have certain limitations in terms of physical characteristics compared to other materials. Wear Rings in PEEK is always available in machined form and is mostly used in highly demanding applications.

Wear Rings/ Bearings have the primary task to precisely guide the Piston or Piston Rod of a Hydraulic Linear Actuator, at the same time absorbing the radial forces and any shocks. Usage of Wear Rings prevents the metal to metal contact, which is highly essential to improve friction characteristics and these also lower the drag pressure as low as possible, a major concern while using metallic or any other metallic Bearing Bushes. Depending on the material, these Bearings are also responsible for the housekeeping of the cylinder inside, by absorbing the contaminants in the media, to a certain extent. The material characteristic of these Wear Rings also protect the main sealing elements and even the hardware during Cavitation, taking the brunt of high temperatures, thereby making the need only to replace these low cost elements (compared to main sealing elements), while overhauling the Cylinder.

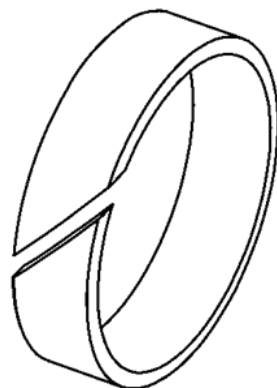
These Wear Rings are available in various forms (of course depending on material) like Machined Ring, Strips, Spiral or Spool form. Finds its applications in Mining, Construction, Material Handling, Fluid Power, Marine, Aerospace etc. Selection of the Wear Ring material, size, cut type, extrusion gaps etc. are totally depending on the application and the experienced team at TTipl can assist on this aspect.

Wear Ring Material Details

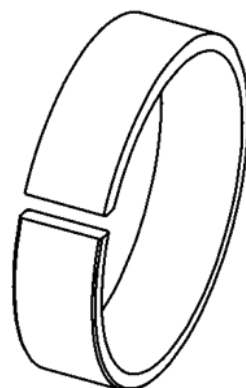
TRIALON®								
Sl. No.	Material Code	Tensile Strength ASTM D4894	Compressive Strength, ISO 604	Temperature Resistance ISO 75-3	Density (g/cm ³) ASTM D792	Speed (m/sec)	Co-efficient of Friction 'μ'	Water Absorption ISO 62:2008 '%'
1	T414S/ T414R	28.00 N/mm ²	15.00 N/mm ² @ 25°C	-60°C to +150°C	3.07	15.00	0.11	0.01
2	T416S/ T416R	12.00 N/mm ²	15.00 N/mm ² @ 25°C	-60°C to +200°C	2.08	15.00	0.07	0.05

TRIATEX®								
Sl. No.	Material Code	Tensile Strength ASTM D4894	Compressive Strength, ISO 604	Temperature Resistance ISO 75-3	Density (g/cm ³) ASTM D792	Speed (m/sec)	Co-efficient of Friction 'μ'	Water Absorption ISO 62:2008 '%'
1	T431	50.00 N/mm ²	270.00 N/mm ²	-40°C to +120°C	1.25	0.80	0.25	1 to 2
2	T432	35.00 N/mm ²	355.00 N/mm ²	-40°C to +130°C	1.20	0.80	0.05	below measured limits
3	T434	50.00 N/mm ²	330.00 N/mm ²	-40°C to +120°C	1.21	1.00	0.05	< 0.10
4	T435	60.00 N/mm ²	325.00 N/mm ²	-40°C to +130°C	>1.25	1.00	0.05	< 0.20

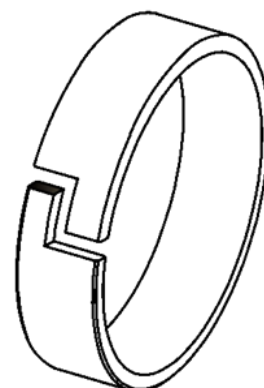
TRIAMIDE®								
Sl. No.	Material Code	Tensile Strength	Compressive Strength	Temperature Resistance ISO 75-3	Density (g/cm ³) ASTM D792, 53479	Speed (m/sec)	Co-efficient of Friction 'μ'	Water Absorption '%'
1	T484	76.00 N/mm ² (ASTM D638)	75.00 N/mm ² @ 60°C	-40°C to +130°C	1.16	1.00	0.25	0.30 (ASTM D570)
2	T485	62.00 N/mm ² (DIN 53455)	40.00 N/mm ² @ 25°C	-40°C to +110°C	1.56	0.80	0.25	0.20 (DIN 53495)
3	T486	172.00 N/mm ² (ASTM D638)	75.00 N/mm ² @ 60°C	-40°C to +130°C	1.48	1.00	0.20	1.00 (ASTM D570)
4	T487	175.00 N/mm ² (ASTM D638)	75.00 N/mm ² @ 60°C	-40°C to +130°C	1.61	2.00	0.20	0.65 (ASTM D570)
5	T489	96.00 N/mm ² (ASTM D638)	75.00 N/mm ² @ 60°C	-70°C to +250°C	1.32	1.00	0.25	0.10 (ASTM D570)



Angle "A" Cut



Straight "B" Cut



Step "C" Cut

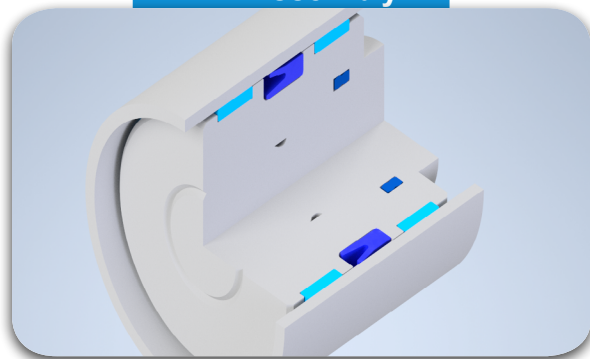
Sl. No.	TRIADA® Part Number			Wear Ring Width	Groove Width	Wear Ring Thickness
	For Rod	For Piston	Rolls in mts.			
1	TRR xxxx xxxx 025	TRP xxxx xxxx 025	TRX 025 xxxx xxxx	2.40 -0.15	2.50 +0.20	1.55 -0.02 /-0.07
2	TRR xxxx xxxx 040	TRP xxxx xxxx 040	TRX 040 xxxx xxxx	3.90 -0.15	4.00 +0.20	1.55 -0.02 /-0.07
3	TRR xxxx xxxx 056	TRP xxxx xxxx 056	TRX 056 xxxx xxxx	5.50 -0.15	5.60 +0.20	2.50 -0.02 /-0.07
4	TRR xxxx xxxx 097	TRP xxxx xxxx 097	TRX 097 xxxx xxxx	9.50 -0.20	9.70 +0.20	2.50 -0.02 /-0.07
5	TRR xxxx xxxx 097	TRP xxxx xxxx 097	TRX 097 xxxx xxxx	9.50 -0.20	9.70 +0.20	4.00 -0.02 /-0.07
6	TRR xxxx xxxx 150	TRP xxxx xxxx 150	TRX 150 xxxx xxxx	14.80 -0.30	15.00 +0.20	2.50 -0.02 /-0.07
7	TRR xxxx xxxx 250	TRP xxxx xxxx 250	TRX 250 xxxx xxxx	24.50 -0.40	25.00 +0.20	2.50 -0.02 /-0.07
8	TRR xxxx xxxx 250	TRP xxxx xxxx 250	TRX 250 xxxx xxxx	24.50 -0.40	25.00 +0.20	4.00 -0.02 /-0.07

Nomenclature						
Part No	TRP	0500	0450	097	T434	R
	Seal profile	Rod Dia x 10	Groove Dia x 10	Groove Width x 10	Material Code	Wear Ring form

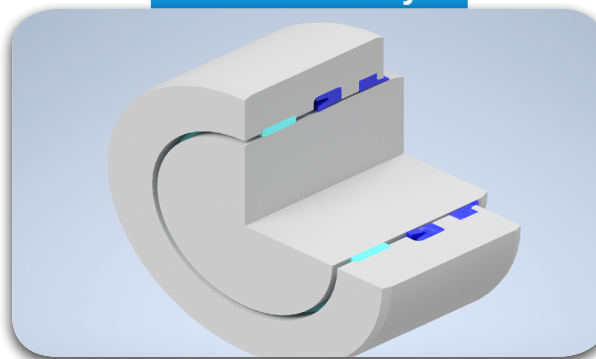
Nomenclature						
Part No	TRR	0600	0650	150	T414	S
	Seal profile	Rod Dia x 10	Groove Dia x 10	Groove Width x 10	Material Code	Wear Ring form

Nomenclature						
Part No	TRX	0250	0600	0480	T414	S
	Seal profile	Wear Ring thickness x 1	Wear Ring Width x 10	Wear Ring Length x 10	Material Code	Wear Ring form

TRP Assembly



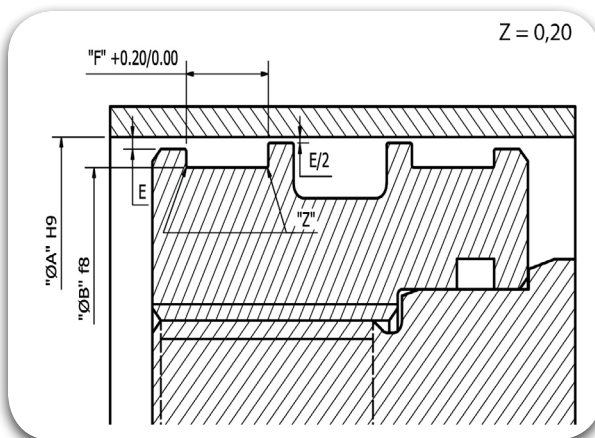
TRR Assembly



Wear Ring Form	Code
Ring	R
Strip	S

Bore Dia. ØA	Radial Clearance "E" Min.	Radial Clearance "E" Max.
8 - 20	0.20	0.30
20 - 100	0.25	0.40
101 - 250	0.30	0.60
251 - 500	0.40	0.80
501 - 1000	0.50	1.10
> 1000	0.60	1.20

Rod Dia. ØA	Radial Clearance "E" Min.	Radial Clearance "E" Max.
8 - 20	0.20	0.30
20 - 100	0.25	0.40
101 - 250	0.30	0.60
251 - 500	0.40	0.80
501 - 1000	0.50	1.10
> 1000	0.60	1.20



8.00

Part No

TRP 0080 0049 025

Groove Dimension

ØA	x	ØB	x	F
8.00		4.90		2.50

10.00

Part No

TRP 0100 0069 025

Groove Dimension

ØA	x	ØB	x	F
10.00		6.90		2.50

10.00

Part No

TRP 0100 0069 040

Groove Dimension

ØA	x	ØB	x	F
10.00		6.90		4.00

12.00

Part No

TRP 0120 0089 040

Groove Dimension

ØA	x	ØB	x	F
12.00		8.90		4.00

14.00

Part No

TRP 0140 0109 040

Groove Dimension

ØA	x	ØB	x	F
14.00		10.90		4.00

15.00

Part No

TRP 0150 0119 040

Groove Dimension

ØA	x	ØB	x	F
15.00		11.90		4.00

16.00

Part No

TRP 0160 0129 040

Groove Dimension

ØA	x	ØB	x	F
16.00		12.90		4.00

16.00

Part No

TRP 0160 0110 056

Groove Dimension

ØA	x	ØB	x	F
16.00		11.00		5.60

18.00

Part No

TRP 0180 0149 040

Groove Dimension

ØA	x	ØB	x	F
18.00		14.90		4.00

18.00

Part No

TRP 0180 0130 056

Groove Dimension

ØA	x	ØB	x	F
18.00		13.00		5.60

20.00

Part No

TRP 0200 0169 040

Groove Dimension

ØA	x	ØB	x	F
20.00		16.90		4.00

20.00

Part No

TRP 0200 0150 056

Groove Dimension

ØA	x	ØB	x	F
20.00		15.00		5.60

22.00

Part No

TRP 0220 0170 056

Groove Dimension

ØA	x	ØB	x	F
22.00		17.00		5.60

25.00

Part No

TRP 0250 0219 040

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
25.00		21.90		4.00

25.00

Part No

TRP 0250 0200 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
25.00		20.00		5.60

25.00

Part No

TRP 0250 0200 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
25.00		20.00		9.70

27.00

Part No

TRP 0270 0220 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
27.00		22.00		5.60

27.00

Part No

TRP 0270 0220 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
27.00		22.00		9.70

28.00

Part No

TRP 0280 0230 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
28.00		23.00		5.60

30.00

Part No

TRP 0300 0269 040

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
30.00		26.90		4.00

30.00

Part No

TRP 0300 0250 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
30.00		25.00		5.60

30.00

Part No

TRP 0300 0250 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
30.00		25.00		9.70

32.00

Part No

TRP 0320 0289 040

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
32.00		28.90		4.00

32.00

Part No

TRP 0320 0270 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
32.00		27.00		5.60

32.00

Part No

TRP 0320 0270 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
32.00		27.00		9.70

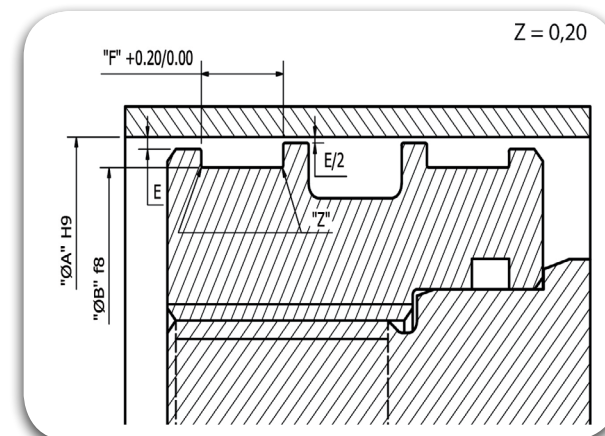
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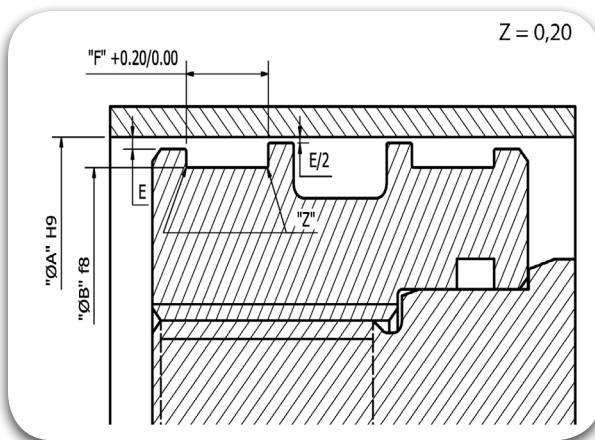
Part No

TRP 0330 0280 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
33.00		28.00		5.60





35.00

Part No

TRP 0350 0300 056

Groove Dimension

ØA	x	ØB	x	F
35.00		30.00		5.60

35.00

Part No

TRP 0350 0300 097

Groove Dimension

ØA	x	ØB	x	F
35.00		30.00		9.70

36.00

Part No

TRP 0360 0319 040

Groove Dimension

ØA	x	ØB	x	F
36.00		31.90		4.00

37.00

Part No

TRP 0370 0320 056

Groove Dimension

ØA	x	ØB	x	F
37.00		32.00		5.60

37.00

Part No

TRP 0370 0320 097

Groove Dimension

ØA	x	ØB	x	F
37.00		32.00		9.70

40.00

Part No

TRP 0400 0369 040

Groove Dimension

ØA	x	ØB	x	F
40.00		36.90		4.00

40.00

Part No

TRP 0400 0350 056

Groove Dimension

ØA	x	ØB	x	F
40.00		35.00		5.60

40.00

Part No

TRP 0400 0350 097

Groove Dimension

ØA	x	ØB	x	F
40.00		35.00		9.70

41.00

Part No

TRP 0410 0360 056

Groove Dimension

ØA	x	ØB	x	F
41.00		36.00		5.60

41.00

Part No

TRP 0410 0360 097

Groove Dimension

ØA	x	ØB	x	F
41.00		36.00		9.70

42.00

Part No

TRP 0420 0370 056

Groove Dimension

ØA	x	ØB	x	F
42.00		37.00		5.60

45.00

Part No

TRP 0450 0400 056

Groove Dimension

ØA	x	ØB	x	F
45.00		40.00		5.60

45.00

Part No

TRP 0450 0400 097

Groove Dimension

ØA	x	ØB	x	F
45.00		40.00		9.70

48.00

Part No

TRP 0480 0430 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
48.00		43.00		5.60

50.00

Part No

TRP 0500 0469 040

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
50.00		46.90		4.00

50.00

Part No

TRP 0500 0450 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
50.00		45.00		5.60

50.00

Part No

TRP 0500 0450 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
50.00		45.00		9.70

52.00

Part No

TRP 0520 0470 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
52.00		47.00		5.60

55.00

Part No

TRP 0550 0500 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
55.00		50.00		5.60

55.00

Part No

TRP 0550 0500 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
55.00		50.00		9.70

60.00

Part No

TRP 0600 0550 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
60.00		55.00		5.60

60.00

Part No

TRP 0600 0550 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
60.00		55.00		9.70

61.00

Part No

TRP 0610 0560 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
61.00		56.00		5.60

62.00

Part No

TRP 0620 0560 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
62.00		56.00		9.70

63.00

Part No

TRP 0630 0580 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
63.00		58.00		5.60

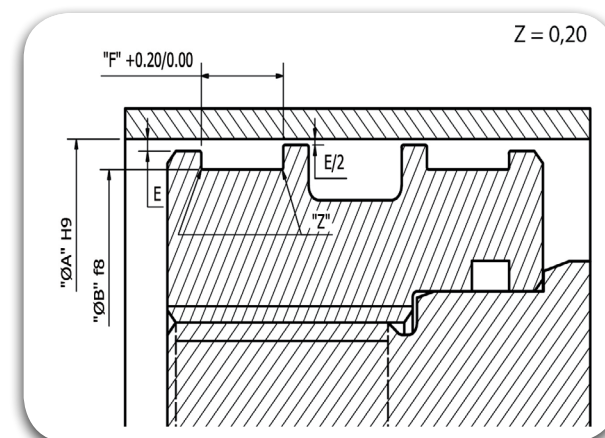
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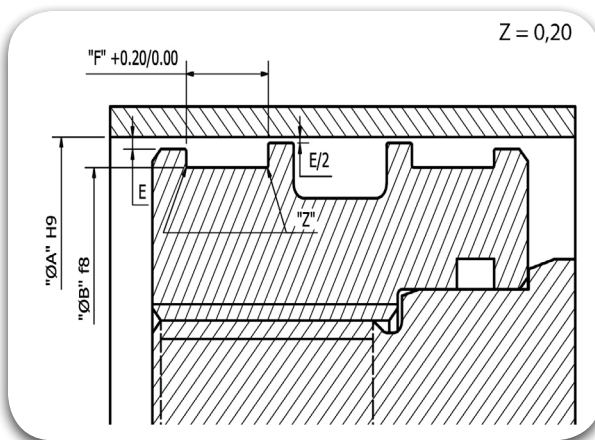
Part No

TRP 0630 0580 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
63.00		58.00		9.70





65.00

Part No

TRP 0650 0600 056

Groove Dimension

ØA	x	ØB	x	F
65.00		60.00		5.60

65.00

Part No

TRP 0650 0600 097

Groove Dimension

ØA	x	ØB	x	F
65.00		60.00		9.70

68.00

Part No

TRP 0680 0630 056

Groove Dimension

ØA	x	ØB	x	F
68.00		63.00		5.60

68.00

Part No

TRP 0680 0630 097

Groove Dimension

ØA	x	ØB	x	F
68.00		63.00		9.70

70.00

Part No

TRP 0700 0650 056

Groove Dimension

ØA	x	ØB	x	F
70.00		65.00		5.60

70.00

Part No

TRP 0700 0650 097

Groove Dimension

ØA	x	ØB	x	F
70.00		65.00		9.70

72.00

Part No

TRP 0720 0670 056

Groove Dimension

ØA	x	ØB	x	F
72.00		67.00		5.60

75.00

Part No

TRP 0750 0700 056

Groove Dimension

ØA	x	ØB	x	F
75.00		70.00		5.60

75.00

Part No

TRP 0750 0700 097

Groove Dimension

ØA	x	ØB	x	F
75.00		70.00		9.70

80.00

Part No

TRP 0800 0750 056

Groove Dimension

ØA	x	ØB	x	F
80.00		75.00		5.60

80.00

Part No

TRP 0800 0750 097

Groove Dimension

ØA	x	ØB	x	F
80.00		75.00		9.70

85.00

Part No

TRP 0850 0800 056

Groove Dimension

ØA	x	ØB	x	F
85.00		80.00		5.60

85.00

Part No

TRP 0850 0800 097

Groove Dimension

ØA	x	ØB	x	F
85.00		80.00		9.70

90.00

Part No

TRP 0900 0850 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
90.00		85.00		5.60

90.00

Part No

TRP 0900 0850 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
90.00		85.00		9.70

95.00

Part No

TRP 0950 0900 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
95.00		90.00		5.60

95.00

Part No

TRP 0950 0900 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
95.00		90.00		9.70

100.00

Part No

TRP 1000 0950 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
100.00		95.00		5.60

100.00

Part No

TRP 1000 0950 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
100.00		95.00		9.70

105.00

Part No

TRP 1050 1000 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
105.00		100.00		9.70

110.00

Part No

TRP 1110 1050 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
110.00		105.00		9.70

105.00

Part No

TRP 1050 1000 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
105.00		100.00		5.60

115.00

Part No

TRP 1150 1100 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
115.00		110.00		9.70

120.00

Part No

TRP 1200 1150 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
120.00		115.00		9.70

125.00

Part No

TRP 1250 1200 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
125.00		120.00		5.60

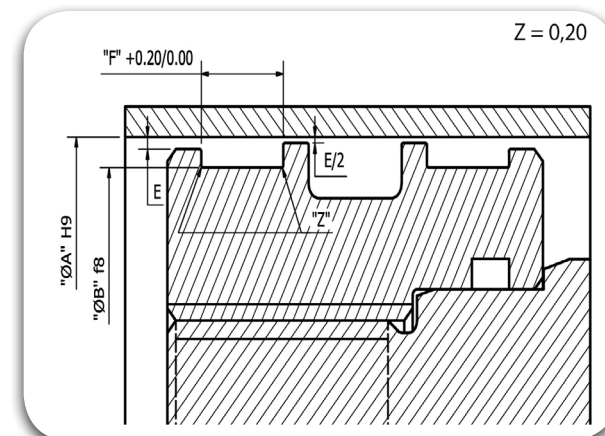
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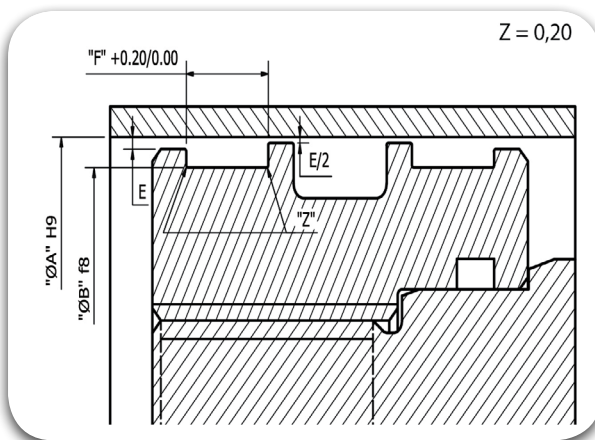
Part No

TRP 1250 1200 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
125.00		120.00		9.70





130.00

Part No

TRP 1300 1250 097

Groove Dimension

ØA	x	ØB	x	F
130.00		125.00		9.70

130.00

Part No

TRP 1300 1250 150

Groove Dimension

ØA	x	ØB	x	F
130.00		125.00		15.00

135.00

Part No

TRP 1350 1300 097

Groove Dimension

ØA	x	ØB	x	F
135.00		130.00		9.70

135.00

Part No

TRP 1350 1300 150

Groove Dimension

ØA	x	ØB	x	F
135.00		130.00		15.00

140.00

Part No

TRP 1400 1350 097

Groove Dimension

ØA	x	ØB	x	F
140.00		135.00		9.70

140.00

Part No

TRP 1400 1350 150

Groove Dimension

ØA	x	ØB	x	F
140.00		135.00		15.00

150.00

Part No

TRP 1500 1450 150

Groove Dimension

ØA	x	ØB	x	F
150.00		145.00		15.00

160.00

Part No

TRP 1600 1550 097

Groove Dimension

ØA	x	ØB	x	F
160.00		155.00		9.70

160.00

Part No

TRP 1600 1550 150

Groove Dimension

ØA	x	ØB	x	F
160.00		155.00		15.00

170.00

Part No

TRP 1700 1650 150

Groove Dimension

ØA	x	ØB	x	F
170.00		165.00		15.00

180.00

Part No

TRP 1800 1750 097

Groove Dimension

ØA	x	ØB	x	F
180.00		175.00		9.70

180.00

Part No

TRP 1800 1750 150

Groove Dimension

ØA	x	ØB	x	F
180.00		175.00		15.00

190.00

Part No

TRP 1900 1850 150

Groove Dimension

ØA	x	ØB	x	F
190.00		185.00		15.00

200.00

Part No

TRP 2000 1950 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
200.00		195.00		9.70

200.00

Part No

TRP 2000 1950 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
200.00		195.00		15.00

210.00

Part No

TRP 2100 2050 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
210.00		205.00		15.00

220.00

Part No

TRP 2200 2150 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
220.00		215.00		9.70

220.00

Part No

TRP 2200 2150 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
220.00		215.00		15.00

230.00

Part No

TRP 2300 2250 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
230.00		225.00		15.00

240.00

Part No

TRP 2400 2350 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
240.00		235.00		15.00

250.00

Part No

TRP 2500 2450 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
250.00		245.00		9.70

250.00

Part No

TRP 2500 2450 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
250.00		245.00		15.00

280.00

Part No

TRP 2800 2750 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
280.00		275.00		15.00

280.00

Part No

TRP 2800 2750 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
280.00		275.00		25.00

280.00

Part No

TRP 2800 2720 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
280.00		272.00		25.00

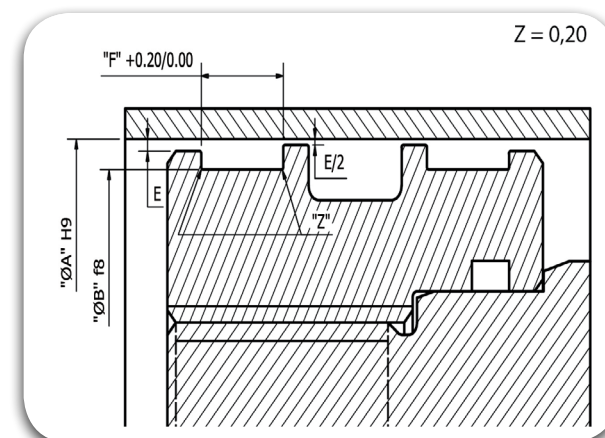
300.00

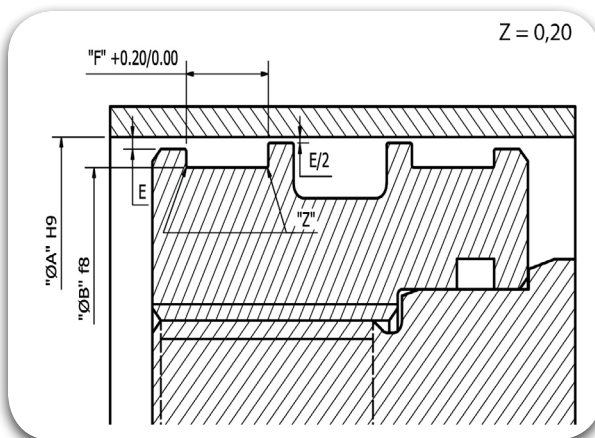
Part No

TRP 3000 2950 015

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
300.00		295.00		15.00





320.00

Part No

TRP 3200 3150 150

Groove Dimension

ØA	x	ØB	x	F
320.00		315.00		15.00

320.00

Part No

TRP 3200 3150 250

Groove Dimension

ØA	x	ØB	x	F
320.00		315.00		25.00

320.00

Part No

TRP 3200 3120 250

Groove Dimension

ØA	x	ØB	x	F
320.00		312.00		25.00

350.00

Part No

TRP 3500 3450 250

Groove Dimension

ØA	x	ØB	x	F
350.00		345.00		25.00

360.00

Part No

TRP 3600 3550 150

Groove Dimension

ØA	x	ØB	x	F
360.00		355.00		15.00

360.00

Part No

TRP 3600 3550 250

Groove Dimension

ØA	x	ØB	x	F
360.00		355.00		25.00

360.00

Part No

TRP 3600 3520 250

Groove Dimension

ØA	x	ØB	x	F
360.00		352.00		25.00

400.00

Part No

TRP 4000 3950 150

Groove Dimension

ØA	x	ØB	x	F
400.00		395.00		15.00

400.00

Part No

TRP 4000 3950 250

Groove Dimension

ØA	x	ØB	x	F
400.00		395.00		25.00

400.00

Part No

TRP 4000 3920 250

Groove Dimension

ØA	x	ØB	x	F
400.00		392.00		25.00

450.00

Part No

TRP 4500 4450 150

Groove Dimension

ØA	x	ØB	x	F
450.00		445.00		15.00

450.00

Part No

TRP 4500 4450 250

Groove Dimension

ØA	x	ØB	x	F
450.00		445.00		25.00

450.00

Part No

TRP 4500 4420 250

Groove Dimension

ØA	x	ØB	x	F
450.00		442.00		25.00

500.00

Part No

TRP 5000 4950 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
500.00		495.00		15.00

500.00

Part No

TRP 5000 4950 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
500.00		495.00		25.00

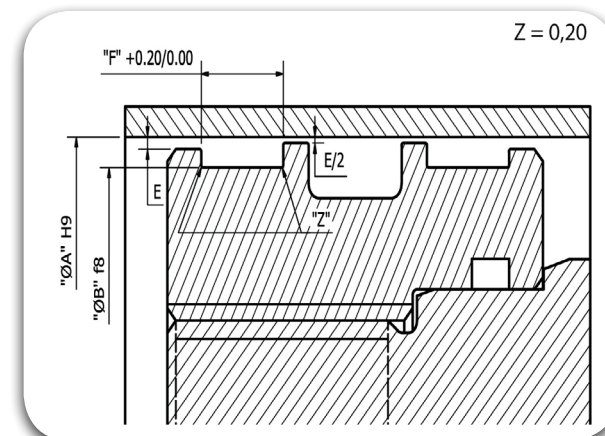
500.00

Part No

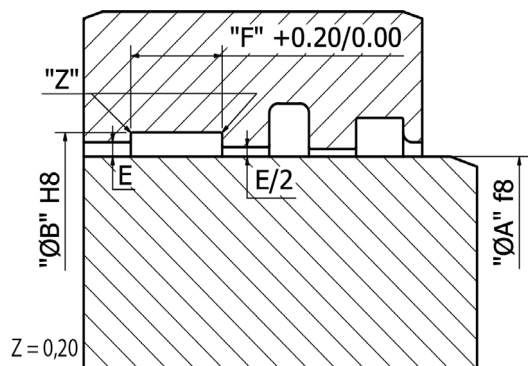
TRP 5000 4920 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
500.00		492.00		25.00



Wear ring



8.00

Part No

TRR 0080 0111 025

Groove Dimension

 $\frac{\text{ØA}}{8.00} \times \frac{\text{ØB}}{11.10} \times \frac{\text{F}}{2.50}$

10.00

Part No

TRR 0100 0131 025

Groove Dimension

 $\frac{\text{ØA}}{10.00} \times \frac{\text{ØB}}{13.10} \times \frac{\text{F}}{2.50}$

10.00

Part No

TRR 0100 0131 040

Groove Dimension

 $\frac{\text{ØA}}{10.00} \times \frac{\text{ØB}}{13.10} \times \frac{\text{F}}{4.00}$

12.00

Part No

TRR 0120 0151 040

Groove Dimension

 $\frac{\text{ØA}}{12.00} \times \frac{\text{ØB}}{15.10} \times \frac{\text{F}}{4.00}$

14.00

Part No

TRR 0140 0171 040

Groove Dimension

 $\frac{\text{ØA}}{14.00} \times \frac{\text{ØB}}{17.10} \times \frac{\text{F}}{4.00}$

15.00

Part No

TRR 0150 0181 040

Groove Dimension

 $\frac{\text{ØA}}{15.00} \times \frac{\text{ØB}}{18.10} \times \frac{\text{F}}{4.00}$

16.00

Part No

TRR 0160 0191 040

Groove Dimension

 $\frac{\text{ØA}}{16.00} \times \frac{\text{ØB}}{19.10} \times \frac{\text{F}}{4.00}$

16.00

Part No

TRR 0160 0210 056

Groove Dimension

 $\frac{\text{ØA}}{16.00} \times \frac{\text{ØB}}{21.00} \times \frac{\text{F}}{5.60}$

18.00

Part No

TRR 0180 0211 040

Groove Dimension

 $\frac{\text{ØA}}{18.00} \times \frac{\text{ØB}}{21.10} \times \frac{\text{F}}{4.00}$

18.00

Part No

TRR 0180 0230 056

Groove Dimension

 $\frac{\text{ØA}}{18.00} \times \frac{\text{ØB}}{23.00} \times \frac{\text{F}}{5.60}$

20.00

Part No

TRR 0200 0231 040

Groove Dimension

 $\frac{\text{ØA}}{20.00} \times \frac{\text{ØB}}{23.10} \times \frac{\text{F}}{4.00}$

20.00

Part No

TRR 0200 0250 056

Groove Dimension

 $\frac{\text{ØA}}{20.00} \times \frac{\text{ØB}}{25.00} \times \frac{\text{F}}{5.60}$

20.00

Part No

TRR 0200 0250 097

Groove Dimension

 $\frac{\text{ØA}}{20.00} \times \frac{\text{ØB}}{25.00} \times \frac{\text{F}}{9.70}$

22.00

Part No

TRR 0220 0251 040

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 22.00 × 25.10 × 4.00

22.00

Part No

TRR 0220 0270 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 22.00 × 27.00 × 5.60

22.00

Part No

TRR 0220 0270 097

Groove Dimension

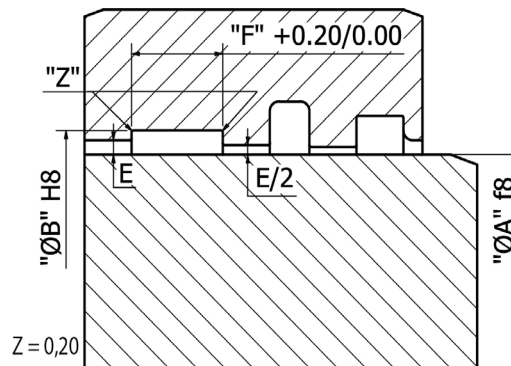
 $\varnothing A \times \varnothing B \times F$
 22.00 × 27.00 × 9.70

25.00

Part No

TRR 0250 0281 040

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 25.00 × 28.10 × 4.00


25.00

Part No

TRR 0250 0300 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 25.00 × 30.00 × 5.60

25.00

Part No

TRR 0250 0300 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 25.00 × 30.00 × 9.70

27.00

Part No

TRR 0270 0320 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 27.00 × 32.00 × 5.60

27.00

Part No

TRR 0270 0320 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 27.00 × 32.00 × 9.70

28.00

Part No

TRR 0280 0311 040

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 28.00 × 31.10 × 4.00

28.00

Part No

TRR 0280 0330 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 28.00 × 33.00 × 5.60

28.00

Part No

TRR 0280 0330 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 28.00 × 33.00 × 9.70

30.00

Part No

TRR 0300 0350 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 30.00 × 35.00 × 5.60

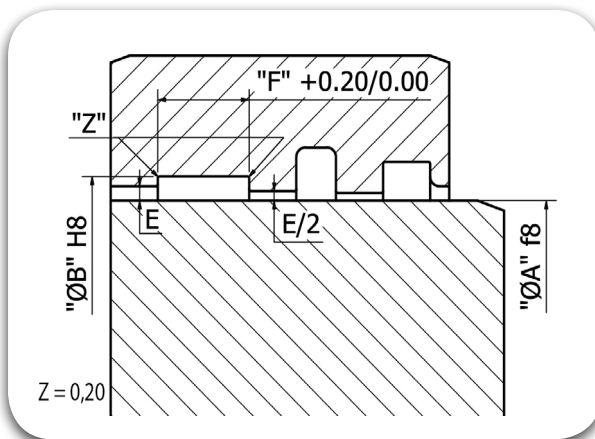
30.00

Part No

TRR 0300 0350 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 30.00 × 35.00 × 9.70



32.00

Part No

TRR 0320 0370 056

Groove Dimension

 $\frac{\text{ØA}}{32.00} \times \frac{\text{ØB}}{37.00} \times \frac{\text{F}}{5.60}$

32.00

Part No

TRR 0320 0370 097

Groove Dimension

 $\frac{\text{ØA}}{32.00} \times \frac{\text{ØB}}{37.00} \times \frac{\text{F}}{9.70}$

35.00

Part No

TRR 0350 0400 056

Groove Dimension

 $\frac{\text{ØA}}{35.00} \times \frac{\text{ØB}}{40.00} \times \frac{\text{F}}{5.60}$

35.00

Part No

TRR 0350 0400 097

Groove Dimension

 $\frac{\text{ØA}}{35.00} \times \frac{\text{ØB}}{40.00} \times \frac{\text{F}}{9.70}$

36.00

Part No

TRR 0360 0410 056

Groove Dimension

 $\frac{\text{ØA}}{36.00} \times \frac{\text{ØB}}{41.00} \times \frac{\text{F}}{5.60}$

36.00

Part No

TRR 0360 0410 097

Groove Dimension

 $\frac{\text{ØA}}{36.00} \times \frac{\text{ØB}}{41.00} \times \frac{\text{F}}{9.70}$

40.00

Part No

TRR 0400 0450 056

Groove Dimension

 $\frac{\text{ØA}}{40.00} \times \frac{\text{ØB}}{45.00} \times \frac{\text{F}}{5.60}$

40.00

Part No

TRR 0040 0450 097

Groove Dimension

 $\frac{\text{ØA}}{40.00} \times \frac{\text{ØB}}{45.00} \times \frac{\text{F}}{9.70}$

40.00

Part No

TRR 0400 0450 150

Groove Dimension

 $\frac{\text{ØA}}{40.00} \times \frac{\text{ØB}}{45.00} \times \frac{\text{F}}{15.00}$

42.00

Part No

TRR 0420 0470 056

Groove Dimension

 $\frac{\text{ØA}}{42.00} \times \frac{\text{ØB}}{47.00} \times \frac{\text{F}}{5.60}$

43.00

Part No

TRR 0430 0480 056

Groove Dimension

 $\frac{\text{ØA}}{43.00} \times \frac{\text{ØB}}{48.00} \times \frac{\text{F}}{5.60}$

45.00

Part No

TRR 0450 0500 056

Groove Dimension

 $\frac{\text{ØA}}{45.00} \times \frac{\text{ØB}}{50.00} \times \frac{\text{F}}{5.60}$

45.00

Part No

TRR 0450 0500 097

Groove Dimension

 $\frac{\text{ØA}}{45.00} \times \frac{\text{ØB}}{50.00} \times \frac{\text{F}}{9.70}$

48.00

Part No

TRR 0480 0530 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
48.00		53.00		5.60

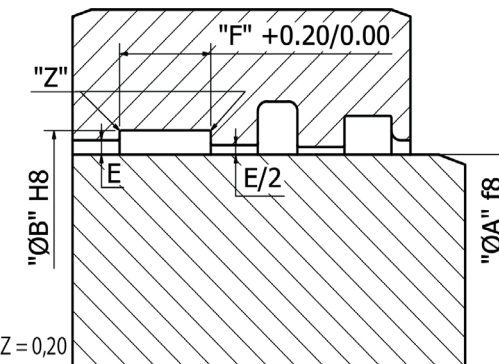
48.00

Part No

TRR 0480 0530 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
48.00		53.00		9.70



50.00

Part No

TRR 0500 0550 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
50.00		55.00		5.60

50.00

Part No

TRR 0500 0550 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
50.00		55.00		9.70

52.00

Part No

TRR 0520 0570 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
52.00		57.00		5.60

52.00

Part No

TRR 0520 0570 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
52.00		57.00		9.70

55.00

Part No

TRR 0550 0600 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
55.00		60.00		5.60

55.00

Part No

TRR 0550 0600 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
55.00		60.00		9.70

56.00

Part No

TRR 0560 0610 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
56.00		61.00		5.60

56.00

Part No

TRR 0560 0610 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
56.00		61.00		9.70

58.00

Part No

TRR 0580 0630 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
58.00		63.00		5.60

58.00

Part No

TRR 0580 0630 097

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
58.00		63.00		9.70

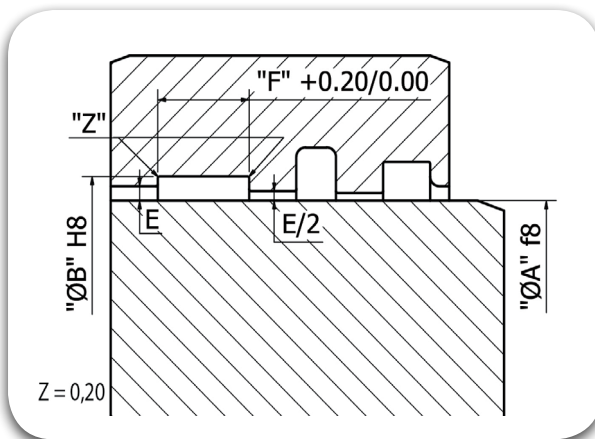
60.00

Part No

TRR 0600 0650 056

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
60.00		65.00		5.60



60.00

Part No

TRR 0600 0650 097

Groove Dimension

 $\frac{\text{ØA}}{60.00} \times \frac{\text{ØB}}{65.00} \times \frac{\text{F}}{9.70}$

63.00

Part No

TRR 0630 0680 056

Groove Dimension

 $\frac{\text{ØA}}{63.00} \times \frac{\text{ØB}}{68.00} \times \frac{\text{F}}{5.60}$

63.00

Part No

TRR 0630 0680 097

Groove Dimension

 $\frac{\text{ØA}}{63.00} \times \frac{\text{ØB}}{68.00} \times \frac{\text{F}}{9.70}$

63.00

Part No

TRR 0630 0680 150

Groove Dimension

 $\frac{\text{ØA}}{63.00} \times \frac{\text{ØB}}{68.00} \times \frac{\text{F}}{15.00}$

65.00

Part No

TRR 0650 0700 056

Groove Dimension

 $\frac{\text{ØA}}{65.00} \times \frac{\text{ØB}}{70.00} \times \frac{\text{F}}{5.60}$

65.00

Part No

TRR 0650 0700 097

Groove Dimension

 $\frac{\text{ØA}}{65.00} \times \frac{\text{ØB}}{70.00} \times \frac{\text{F}}{9.70}$

70.00

Part No

TRR 0700 0750 056

Groove Dimension

 $\frac{\text{ØA}}{70.00} \times \frac{\text{ØB}}{75.00} \times \frac{\text{F}}{5.60}$

70.00

Part No

TRR 0700 0750 097

Groove Dimension

 $\frac{\text{ØA}}{70.00} \times \frac{\text{ØB}}{75.00} \times \frac{\text{F}}{9.70}$

70.00

Part No

TRR 0700 0750 150

Groove Dimension

 $\frac{\text{ØA}}{70.00} \times \frac{\text{ØB}}{75.00} \times \frac{\text{F}}{15.00}$

75.00

Part No

TRR 0750 0800 056

Groove Dimension

 $\frac{\text{ØA}}{75.00} \times \frac{\text{ØB}}{80.00} \times \frac{\text{F}}{5.60}$

75.00

Part No

TRR 0750 0800 097

Groove Dimension

 $\frac{\text{ØA}}{75.00} \times \frac{\text{ØB}}{80.00} \times \frac{\text{F}}{9.70}$

75.00

Part No

TRR 0750 0800 150

Groove Dimension

 $\frac{\text{ØA}}{75.00} \times \frac{\text{ØB}}{80.00} \times \frac{\text{F}}{15.00}$

80.00

Part No

TRR 0800 0850 056

Groove Dimension

 $\frac{\text{ØA}}{80.00} \times \frac{\text{ØB}}{85.00} \times \frac{\text{F}}{5.60}$

80.00

Part No

TRR 0800 0850 097

Groove Dimension

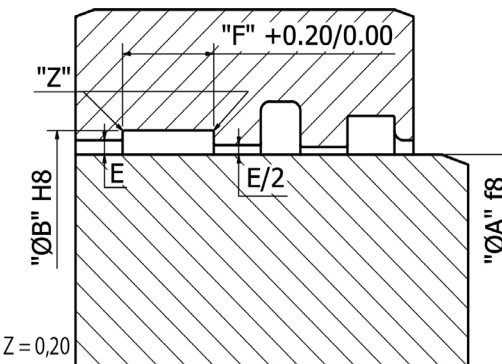
 $\varnothing A \times \varnothing B \times F$
 80.00 x 85.00 x 9.70

80.00

Part No

TRR 0800 0850 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 80.00 x 85.00 x 15.00


85.00

Part No

TRR 0850 0900 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 85.00 x 90.00 x 5.60

85.00

Part No

TRR 0850 0900 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 85.00 x 90.00 x 9.70

90.00

Part No

TRR 0900 0950 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 90.00 x 95.00 x 5.60

90.00

Part No

TRR 0900 0950 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 90.00 x 95.00 x 9.70

90.00

Part No

TRR 0900 0950 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 90.00 x 95.00 x 15.00

95.00

Part No

TRR 0950 1000 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 95.00 x 100.00 x 9.70

95.00

Part No

TRR 0950 1000 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 95.00 x 100.00 x 15.00

100.00

Part No

TRR 1000 1050 056

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 100.00 x 105.00 x 5.60

100.00

Part No

TRR 1000 1050 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 100.00 x 105.00 x 9.70

100.00

Part No

TRR 1000 1050 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 100.00 x 105.00 x 15.00

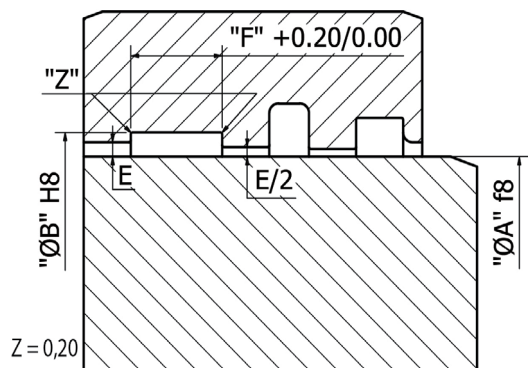
105.00

Part No

TRR 1050 1100 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 105.00 x 110.00 x 9.70



105.00

Part No

TRR 1050 1100 150

Groove Dimension

 $\frac{\text{ØA}}{105.00} \times \frac{\text{ØB}}{110.00} \times \frac{\text{F}}{15.00}$

110.00

Part No

TRR 1100 1150 097

Groove Dimension

 $\frac{\text{ØA}}{110.00} \times \frac{\text{ØB}}{115.00} \times \frac{\text{F}}{9.70}$

110.00

Part No

TRR 1110 1150 150

Groove Dimension

 $\frac{\text{ØA}}{110.00} \times \frac{\text{ØB}}{115.00} \times \frac{\text{F}}{15.00}$

115.00

Part No

TRR 1150 1200 097

Groove Dimension

 $\frac{\text{ØA}}{115.00} \times \frac{\text{ØB}}{120.00} \times \frac{\text{F}}{9.70}$

115.00

Part No

TRR 1150 1200 150

Groove Dimension

 $\frac{\text{ØA}}{115.00} \times \frac{\text{ØB}}{120.00} \times \frac{\text{F}}{15.00}$

120.00

Part No

TRR 1200 1250 056

Groove Dimension

 $\frac{\text{ØA}}{120.00} \times \frac{\text{ØB}}{125.00} \times \frac{\text{F}}{5.60}$

120.00

Part No

TRR 1200 1250 097

Groove Dimension

 $\frac{\text{ØA}}{120.00} \times \frac{\text{ØB}}{125.00} \times \frac{\text{F}}{9.70}$

120.00

Part No

TRR 1200 1250 150

Groove Dimension

 $\frac{\text{ØA}}{120.00} \times \frac{\text{ØB}}{125.00} \times \frac{\text{F}}{15.00}$

125.00

Part No

TRR 1250 1300 097

Groove Dimension

 $\frac{\text{ØA}}{125.00} \times \frac{\text{ØB}}{130.00} \times \frac{\text{F}}{9.70}$

125.00

Part No

TRR 1250 1300 150

Groove Dimension

 $\frac{\text{ØA}}{125.00} \times \frac{\text{ØB}}{130.00} \times \frac{\text{F}}{15.00}$

130.00

Part No

TRR 1300 1350 150

Groove Dimension

 $\frac{\text{ØA}}{130.00} \times \frac{\text{ØB}}{135.00} \times \frac{\text{F}}{15.00}$

135.00

Part No

TRR 1350 1400 150

Groove Dimension

 $\frac{\text{ØA}}{135.00} \times \frac{\text{ØB}}{140.00} \times \frac{\text{F}}{15.00}$

140.00

Part No

TRR 1400 1450 097

Groove Dimension

 $\frac{\text{ØA}}{140.00} \times \frac{\text{ØB}}{145.00} \times \frac{\text{F}}{9.70}$

140.00

Part No

TRR 1400 1450 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 140.00 x 145.00 x 15.00

150.00

Part No

TRR 1500 1550 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 150.00 x 155.00 x 15.00

155.00

Part No

TRR 1550 1600 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 155.00 x 160.00 x 15.00

160.00

Part No

TRR 1600 1650 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 160.00 x 165.00 x 9.70

160.00

Part No

TRR 1600 1650 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 160.00 x 165.00 x 15.00

170.00

Part No

TRR 1700 1750 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 170.00 x 175.00 x 15.00

180.00

Part No

TRR 1800 1850 097

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 180.00 x 185.00 x 9.70

180.00

Part No

TRR 1800 1850 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 180.00 x 185.00 x 15.00

190.00

Part No

TRR 1900 1950 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 190.00 x 195.00 x 15.00

195.00

Part No

TRR 1950 2000 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 195.00 x 200.00 x 15.00

200.00

Part No

TRR 2000 2050 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 200.00 x 205.00 x 15.00

200.00

Part No

TRR 2000 2050 250

Groove Dimension

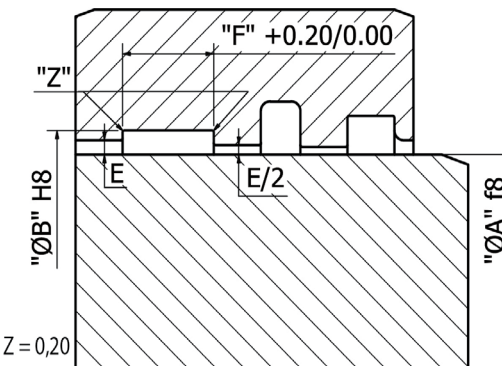
 $\varnothing A \times \varnothing B \times F$
 200.00 x 205.00 x 25.00

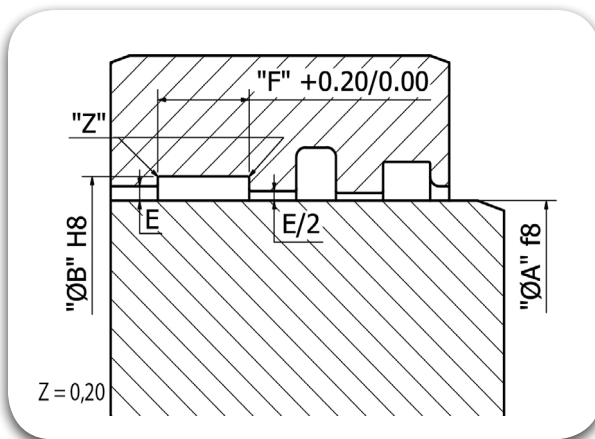
210.00

Part No

TRR 2100 2150 150

Groove Dimension

 $\varnothing A \times \varnothing B \times F$
 210.00 x 215.00 x 15.00




220.00

Part No

TRR 2200 2250 150

Groove Dimension

 $\frac{\text{ØA}}{220.00} \times \frac{\text{ØB}}{225.00} \times \frac{\text{F}}{15.00}$

220.00

Part No

TRR 2200 2250 250

Groove Dimension

 $\frac{\text{ØA}}{220.00} \times \frac{\text{ØB}}{225.00} \times \frac{\text{F}}{25.00}$

230.00

Part No

TRR 2300 2350 250

Groove Dimension

 $\frac{\text{ØA}}{230.00} \times \frac{\text{ØB}}{235.00} \times \frac{\text{F}}{25.00}$

240.00

Part No

TRR 2400 2450 250

Groove Dimension

 $\frac{\text{ØA}}{240.00} \times \frac{\text{ØB}}{245.00} \times \frac{\text{F}}{25.00}$

250.00

Part No

TRR 2500 2550 150

Groove Dimension

 $\frac{\text{ØA}}{250.00} \times \frac{\text{ØB}}{255.00} \times \frac{\text{F}}{15.00}$

250.00

Part No

TRR 2500 2550 250

Groove Dimension

 $\frac{\text{ØA}}{250.00} \times \frac{\text{ØB}}{255.00} \times \frac{\text{F}}{25.00}$

280.00

Part No

TRR 2800 2850 150

Groove Dimension

 $\frac{\text{ØA}}{280.00} \times \frac{\text{ØB}}{285.00} \times \frac{\text{F}}{15.00}$

280.00

Part No

TRR 2800 2850 250

Groove Dimension

 $\frac{\text{ØA}}{280.00} \times \frac{\text{ØB}}{285.00} \times \frac{\text{F}}{25.00}$

280.00

Part No

TRR 2800 2880 250

Groove Dimension

 $\frac{\text{ØA}}{280.00} \times \frac{\text{ØB}}{288.00} \times \frac{\text{F}}{25.00}$

300.00

Part No

TRR 3000 3050 250

Groove Dimension

 $\frac{\text{ØA}}{300.00} \times \frac{\text{ØB}}{305.00} \times \frac{\text{F}}{25.00}$

320.00

Part No

TRR 3200 3250 150

Groove Dimension

 $\frac{\text{ØA}}{320.00} \times \frac{\text{ØB}}{325.00} \times \frac{\text{F}}{15.00}$

320.00

Part No

TRR 3200 3250 250

Groove Dimension

 $\frac{\text{ØA}}{320.00} \times \frac{\text{ØB}}{325.00} \times \frac{\text{F}}{25.00}$

320.00

Part No

TRR 3200 3280 250

Groove Dimension

 $\frac{\text{ØA}}{320.00} \times \frac{\text{ØB}}{328.00} \times \frac{\text{F}}{25.00}$

350.00

Part No

TRR 3500 3550 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
350.00		355.00		25.00

360.00

Part No

TRR 3600 3650 150

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
360.00		365.00		15.00

360.00

Part No

TRR 3600 3650 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
360.00		365.00		25.00

360.00

Part No

TRR 3600 3680 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
360.00		368.00		25.00

400.00

Part No

TRR 4000 4050 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
400.00		405.00		25.00

400.00

Part No

TRR 4000 4080 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
400.00		408.00		25.00

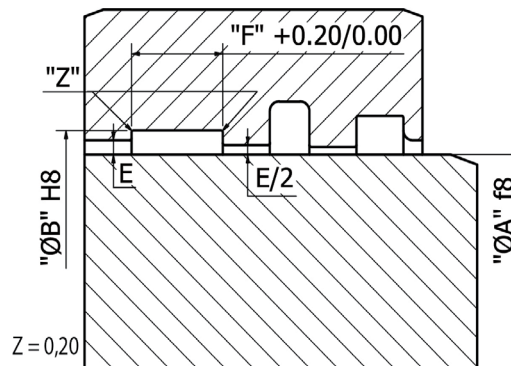
800.00

Part No

TRR 8000 8080 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
800.00		808.00		25.00



800.00

Part No

TRR 8000 8050 250

Groove Dimension

$\varnothing A$	x	$\varnothing B$	x	F
800.00		805.00		25.00

Wear ring

Storage Guidelines

Storage life is the maximum period of time, clocked from the date of manufacture, that an elastomeric component, packed appropriately, may be stored under specific condition, beyond which it is regarded as unserviceable, for the intended purpose it was originally manufactured. The cure date shall be taken as the basis for the thermo-set elastomers and for thermoplastic elastomers, the date of manufacturing of the finished product shall be the basis. Shelf life or storage life shall be different for each compound, even when they are stored under specified conditions. Mostly, longer storage periods are considered for the 10 or 20-year categories of compounds, provided the components are appropriately stored and recommended periodic checks are performed. In general, Polyethylene (PE) bags (UV protected shall be an added advantage) stored in cardboard boxes or PE lined kraft paper bags can insure a decent storage life.

Over the years, the advancements in compounding techniques have helped in improving the storage life of relatively age-sensitive elastomers, even in normal warehousing atmosphere. It has been clearly demonstrated and evident that the storage conditions is the single most critical aspect in determining the useful life of elastomer products, than is the time.

Following parameters/criteria shall assist in ensuring a proper storage condition, which are extracted from ISO 2230:2002 and may be referred for all applications other than related to Aerospace/Military. For Aerospace/ Military, one may refer to SAE-ARP 5361 and MIL-HDBK-695C, for the storage conditions.

Temperature

Preferred storage temperature is below 25°C, away from direct sources of heat. As a thumb rule, it can be stated that a storage temperature 10°C higher than the specified 25°C, can reduce the storage life by at; out 50% and similarly, a storage temperature lower by 10°C from the suggested 25°C, can increase the storage life by about 100%!. In case the storage temperature has been lower than 15°C, there is a risk of distortion due to handling of possible stiffened products and in these cases, it is suggested to warm the products, may be to about 30°C or so.

Humidity

Relative humidity of the storage atmosphere should be less 70% in case of elastomers and less than 65%, in case of Polyurethanes. RH should be such that, given in the variations of storage temperatures, condensation should not occur.

Light

Elastomeric Seals should be protected from light sources, in particular direct sunlight or intense artificial light having an ultraviolet content. The individual storage bags offer the best protection as long as they are UV resistant. (Note: It is advisable that the windows of storage rooms where elastomers are stored in bulk be covered with a red or orange coating).

Radiation

Precautions shall be taken to protect stored articles from all sources of ionizing radiation likely to cause damage to stored articles.

Storage Guidelines

Ozone

As Ozone is particularly damaging to certain elastomeric seals, storage rooms shall not contain any equipment that is capable of generating ozone such as mercury vapor lamps, high voltage electrical equipment giving rise to electric sparks or silent electrical discharges.

Combustion gases and organic vapor shall be excluded from storage rooms as they may give rise to ozone via photochemical processes. bond to such an extent that the seal

Deformation

Elastomeric seals shall be stored free from superimposed tensile and compressive stresses or any other causes of deformation. Where articles are stored in strain-free condition, they shall be stored in their original packaging. O-Rings of large inside diameter shall be formed into at least three superimposed loops so as to avoid creasing or twisting. (Note: It is not possible to achieve this condition by forming just two loops, three are minimum required)

Contact with Liquid & Semi-Solid Materials

Certain Metals and their Alloys (in particular Copper. Manganese & Iron) are known to have deleterious effects on elastomers. Elastomeric Seals shall not be stored in contact with such metals (except when bonded to them), but shall be protected by individual packaging.

Contact with Dusting Powder

Dusting Powder shall be used only for packaging of elastomeric seals in order to prevent blocking or sticking. In such instances, the minimum quantity of powder to prevent adhesion shall be used.

Contact between different Elastomers

Contact between different elastomers and elastomers of different seals shall be avoided.

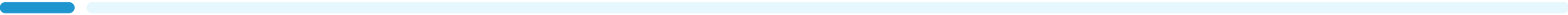
Elastomeric Seals bonded to Metal Parts

The metal parts of bonded seals shall not come in contact with the elastomeric element of another seal. Any presentative used on the metal shall be such that it will not affect the elastomeric element or the bond to such an extent that the seal will not comply with the product specification.

Stock Rotation

Elastomeric Seal stock shall be rotated in FIFO (First In First Out) method.

Storage Guidelines



Initial and Extension Storage Periods for Unassembled components following ISO 2230

Abbreviation	Chemical Name from ISO 1629	Common Name
<u>GROUP A - Initial Storage Period 5 Years, Extension Storage Period 2 Years</u>		
BR	Butadiene Rubber	Polybutadiene
NR	Isoprene Rubber, Natural	Natural Rubber
IR	Isoprene Rubber, Synthetic	Polyisoprene
SBR	Styrene-Butadiene Rubber	SBR
AU	Polyester Urethane Rubber	Polyurethane
EU	Polyether Urethane Rubber	Polyurethane
<u>GROUP B - Initial Storage Period 7 Years, Extension Storage Period 3 Years</u>		
NBR	Acrylonitrile-Butadiene Rubber	Nitrile
XNBR	Carboxylic-Acrylonitrile-Butadiene Rubber	Carboxylated Rubber
HNBR	Hydrogenated NBR (with some unsaturation)	Hydrogenated Nitrile
CO, ECO	Polychloromethyloxiran and Copolymer	Epichlorohydrin
ACM	Copolymer of Ethylacrylate and small amount of Monomer	Acrylic
CR	Chloroprene Rubber	Neoprene
IIR	Isobutene-Isoprene Rubber	Butyl
BIIR	Bromo-Isobutene-Isoprene Rubber	Bromobutyl
CIIR	Chloro-Isobutene-Isoprene Rubber	Chlorobutyl
<u>GROUP C - Initial Storage Period 10 Years, Extension Storage Period 5 Years</u>		
CSM	Chlorosulfonylpolyethylene	Chlorosulfonated Polyethylene
EPDM	Terpolymer of Ethylene.Propylene and Diene (Residual Unsaturated Portion)	EPDM
FKM	Rubber having Fluoro, Perfluoroalkyl or Perfluoroalkoxy Substituent Groups	Fluorocarbon
VMQ	Silicone Rubber having both MEthyl and Vinyl Substituent Group	Silicone
<u>GROUP D - Storage Period is Unlimited</u>		
PTFE	Polytetrafluoroethylene	Teflon

Technical Proposal Request

Email: sales@triada.co.in

Note: Only information provided in this TPR will be considered for the recommended solution

Prepared By: _____
Date Prepared: _____
Answers Required By: _____

Application Engr: _____
Sales Engr: _____
Inside Sales: _____

TTIPL TPR _____
Cust. _____

CUSTOMER DETAILS

Customer No _____
Cust. Seg. Code _____

Name _____
Address _____

Contact _____
Phone _____
Mobile _____
Email _____

APPLICATION DESCRIPTION

Equipment: _____

Component: _____

Problem (if any): _____

Current Seal: _____

System Type

- ☐ Rod
☐ Piston
☐ System (rod+piston)
☐ Shaft
☐ Face

Product

- ☐ Seal
☐ Wiper
☐ Bearing
☐ Other

New Design ☐

Motion

- ☐ Static
☐ Reciprocating
☐ Rotary
☐ Oscillatory

Pressure

- ☐ Unidirectional
☐ Bi-directional
☐ Pulsating
☐ Without Pressure

Demand/Year: _____ Price: _____ @ _____ Pcs.
Quote Qty: _____ Target _____ @ _____ Pcs.

OPERATING CONDITIONS

Media to Seal: _____

Other Media: _____

Contamination: _____

	Units	Minimum	Operating	Maximum
Temperature	_____	_____	_____	_____
Pressure	_____	_____	_____	_____
V acuum	_____	_____	_____	_____
Stroke	_____	_____	_____	_____
Cycle-Rate	_____	_____	_____	_____
Angle of Rotation	_____	_____	_____	_____
RPM	_____	_____	_____	_____
V elocity	_____	_____	_____	_____
Side Load	_____	_____	_____	_____

PERFORMANCE PRIORITY

Most critical: _____

	Units	Value
Expected Life:	_____	_____
Max Leakage:	_____	_____

Planning Test? Yes ☐ No ☐

	Units	Breakout	Dynamic
Friction:	_____	_____	_____
Torque:	_____	_____	_____

HARDWARE

Units ☐ Inch ☐ Metric
Nominal Tolerance Change

Rod Diameter:			☐
Bore Diameter:			☐
Rod Bore:			☐
Piston Diameter:			☐
Gland/Groove Width:			☐
Gland Depth:			☐
Groove Diameter:			☐
Extrusion Gap:			☐
Runout (TIR):			☐
Step Height:			☐
Bearing length:			☐

Type ☐ Split ☐ Open ☐ Solid ☐ Stepped ☐ Recommend
Material Finish Hardness Coating/Treatment

Notes:

Solution Proposed to Customer by TTIPL:

MIL-G-5514 Dash: AS 4716 Dash: B/U Width:

Required: ☐ Installation Dwg ☐ Inspection Dwg ☐ Quote
☐ OtherPrototype Qty:
Production Qty:
Date Proto's

SPECIFICATIONS

Automatic installation? Explain details	No ☐ Yes ☐
Existing Customer spec?	No ☐ Yes ☐
Existing Customer product drawing?	No ☐ Yes ☐
Existing Customer material spec?	No ☐ Yes ☐

Spec.
Ref.
Ref.
Ref.

Other requirements if any :

QUALITY CHARACTERISTICS

Inspection level

According to TTIPL Specification: ☐
Special Request: ☐(e.g. for O Ring, AQL1.0 for surface defects
acc. ISO 3601/3 grade N)

Existing inspection plan, if any?	No ☐ Yes ☐
Certificate required? If yes, specify	No ☐ Yes ☐
Additional Quality guidelines?	No ☐ Yes ☐

Ref.
Ref.
Ref.

ENCLOSURES

Pages – specifications
DrawingsSamples
Others

ADDITIONAL INFORMATION

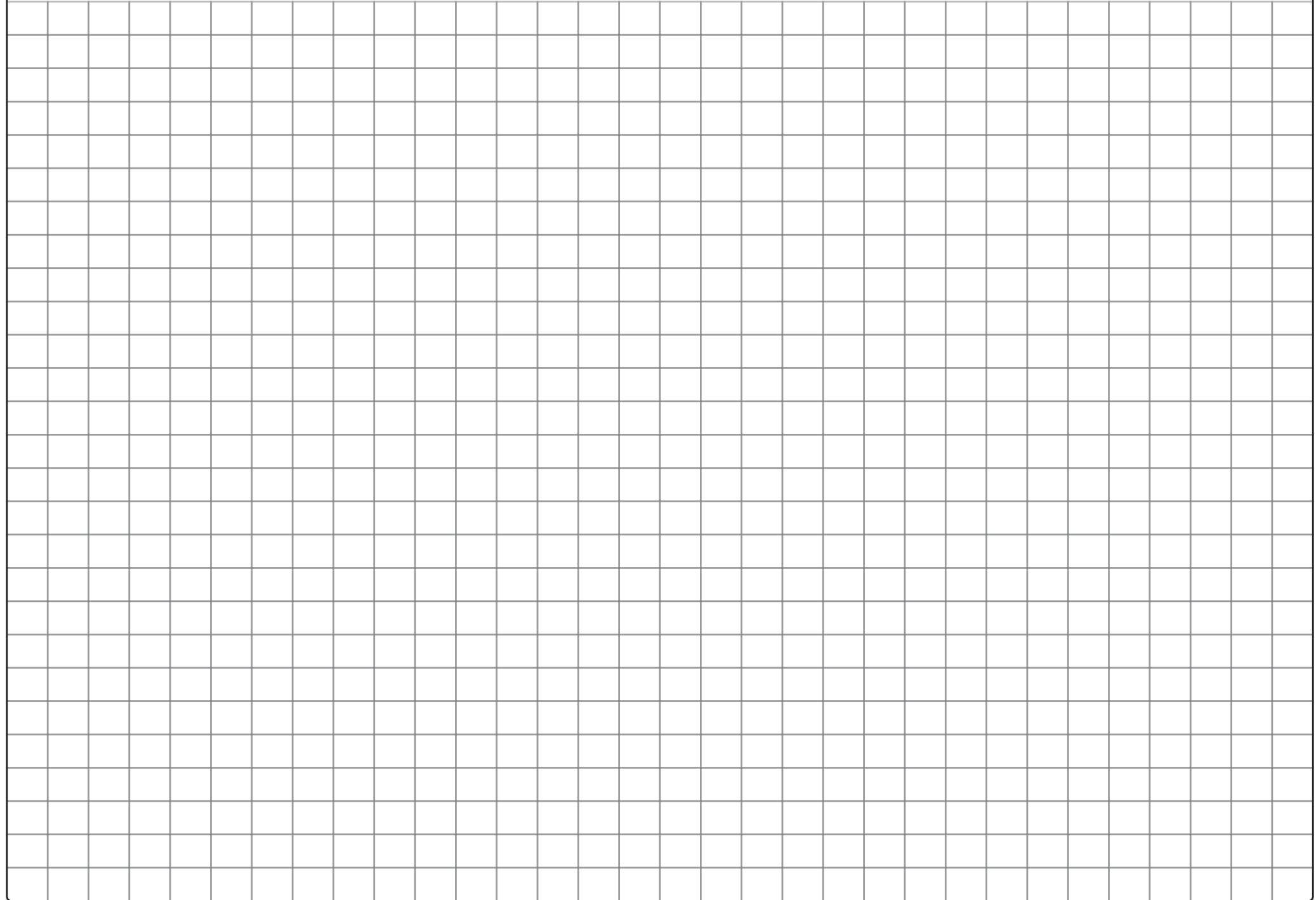
Referring to:

Service Performance (friction, leakage, shelf life, ext/int pollution, etc.):

Use (frequency, cycles, exposure time, etc.)

Logistic / Packaging (any special packaging requirements?):

Sketch/Drawing:





Triada Sealing Guide

#Sealingexcellence

www.triada.co.in



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