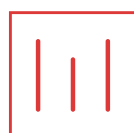


# Sealing Solution for Food & Pharma Industry



**MAX SPARE**

**L I M I T E D**

QUALITY. PRECISION. SPEED.



## Sealing Solutions in the field of Food & Pharmaceutical Industry

Max Spare, as India's leading seal manufacturer providing standard & customized sealing solutions to clients across industries. Having more than five decades of experience and expertise in serving the industrial clients. Max Spare with its wide range of seal profile and elastomers is fully capable of serving the Food, Beverage and Pharmaceutical Industries.

In these industries, processing environments are demanding in different stages & applications, hence many requirements to be met by sealing components.

- Sealing Material Compliance
- Application Fluids - CIP & SIP process
- High Temperature Solutions in bakery product
- Pressurized conditions in dairy equipments
- Speed & heavy duty challenges in Meat Process Units
- Non-Lubricated & Leakages free solution in Pharma Industry

As a manufacturer of high quality product, Max Spare thus understand these field demands and with its perfect sealing technology can deliver its sealing solutions across the globe. So whether you are an OEM or into maintenance of equipment, you can place your trust in Max Spare to provide top quality seals and solutions quickly at an economical cost.

Max Spare have an ability to produce standard as well as customize products for small quantity orders also. Thanks to the in-house CNC base mould making facility & rubber compounding in accordance with FDA norms, Max Spare can deliver seals faster than anybody else.

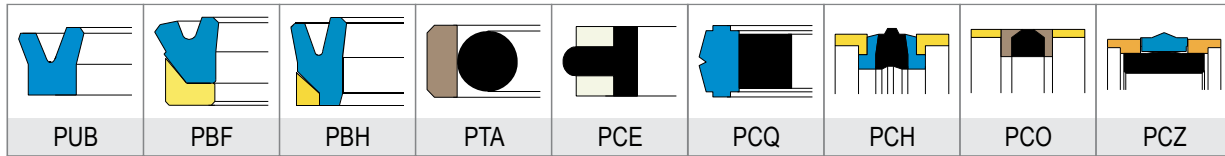
Hence in short, Max Spare with its Technical expertise, field support, wide network can be your reliable source to cater your needs for this segment.



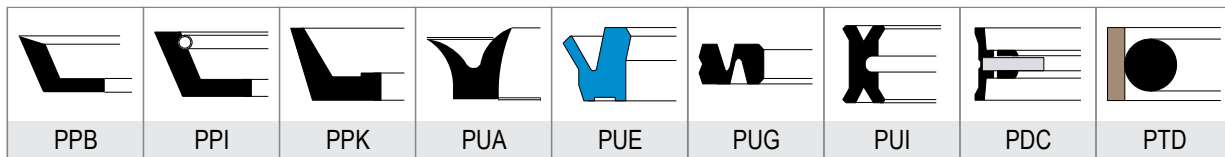
# Seal Profiles

## Max Spare Product Line for Food & Pharma Industry -

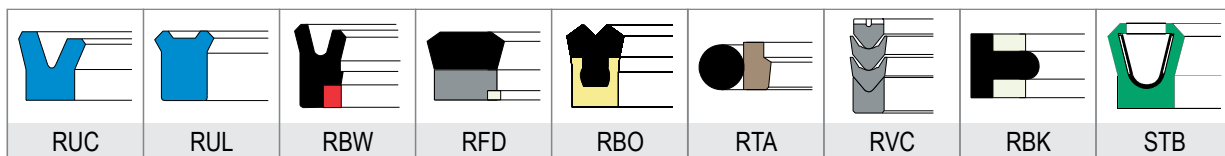
### Piston Seal - Hydraulic



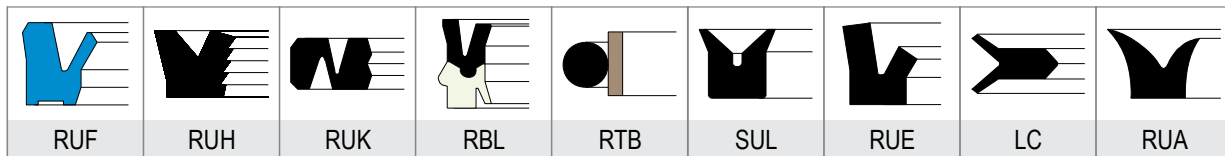
### Piston Seal - Pneumatic



### Rod Seal - Hydraulic

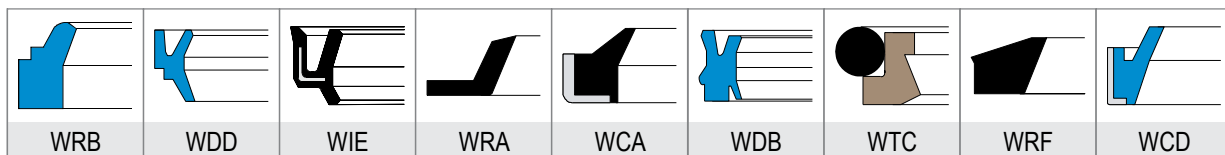


### Piston / Rod Seal - Pneumatic

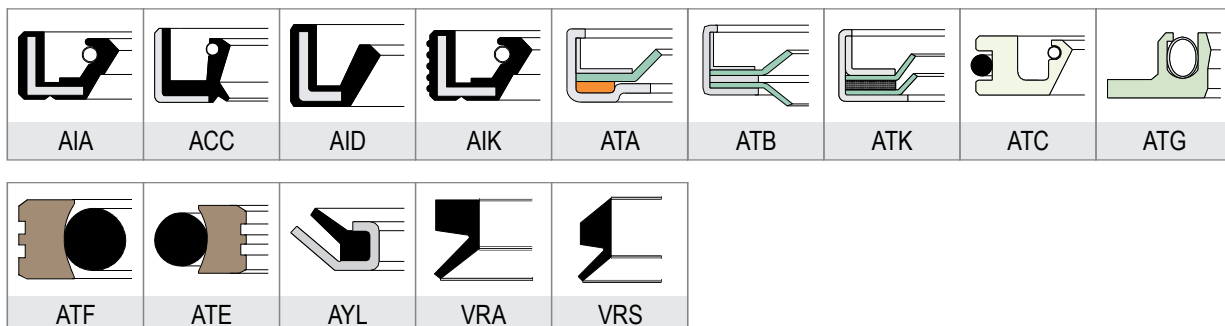


### Piston / Rod Seal - Hydraulic

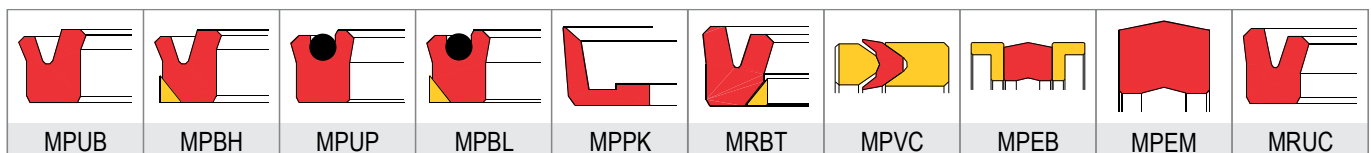
### Wiper Seals - Hydraulic & Pneumatic



### Rotary Seals



### Jet Express Seals



# Material Overview

## Food Compliant Material

Sealing material plays an important role in food, beverages & pharma industries application. As seals may come into contact with products that are intended for human consumption. Therefore, sealing material ingredients and process should be comply with the FDA regulations & norms.

Max Spare had developed special compounds which are compliant with FDA and had been approved & certified by an government testing laboratory.

Material	Max Spare Code	Hardness (Min. to Max.)	Colour	Complies With
NBR	NT2/b (FG) to NT6/a (FG)	50 Shore 'A' to 90 Shore 'A'	Green	177-2600.Cla.(F)
FKM (Viton®)	VT1/a (FG) to VT4/a (FG)	55 Shore 'A' to 90 'A'	Green	177-2600.Cla.(F)
EPDM	EP2/b (FG) to EP6/a (FG)	50Shore 'A' to 90 Shore 'A'	Green	177-2600.Cla.(F)
Silicon	SL3/b (FG) to SL4/b (FG)	60 Shore 'A' to 75 Shore 'A'	Green	177-2600.Cla.(F)
Polyurethane	PU 5 FG)	90 Shore 'A'	Red	177-2600.Cla.(F)
PTFE	PFT	65 D	White	--
UHMWPE	UHMW	65 D	White	--
ACETAL	ACT	M 84	White	--

Viton® is a registered trademark of Dupont.



**IRMRA**  
INDIAN RUBBER MANUFACTURERS RESEARCH ASSOCIATION  
Affiliated to Ministry of Commerce & Industry (Government of India)  
(A NABL, ISO - 17025:2005 Accredited Laboratory)  
E-mail: info@irmra.org • Website: www.irmra.org

TECHNICAL REPORT / C & I Page 2 of 3

RPT / 2011 / 7114 - CL Rubber Test Stat. Specn. IS-254-177-2006.Cla.(F)

Test / Condition	Method	Unit	Specified Value	Observed Value
*Extraction (Leakage)@Reflux temp (Hot Test)	Cause-F	mg/ml*2	175 Max	43.48
*Extraction (Leakage)@Reflux temp (Successing Test)	Cause-F	mg/ml*2	4 Max	3.98

\*Note: Sample passes the test.

Prepared and checked By: [Signature] Authorized Signatory: [Signature] 08.12.2011

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INDIAN RUBBER MANUFACTURERS RESEARCH ASSOCIATION  
Affiliated to Ministry of Commerce & Industry (Government of India)  
(A NABL, ISO - 17025:2005 Accredited Laboratory)  
E-mail: info@irmra.org • Website: www.irmra.org

EVALUATION REPORT Page 1 of 2

Report No.: RPT / 2011 / 7114 28-Dec-2011

Customer Name & Address: Spangula Seals Ltd., Old Seal House, Plot no. A-403, Road no. 28, Wagle Ind. Estate, Thane-400604.

Contact Person: J.M.

Telephone No.: 2000077

Customer Letter Ref No with Date: SCL/AB/01/11/01/12/2011

Date of Receipt: 15-Dec-2011

Any Other Information like website / third party information etc: Nil-Spangula Seal Grade Series EPDM Rubber (EP FG Series compound)

--- SAMPLE DETAILS ---

Sample Code: Product Specification: 177-2600.Cla.(F)

Rubber Test Stat: IS-254-177-2006.Cla.(F)

--- REPORT DETAILS ---

Description of Report: Page No: 2 of 2

RPT / 2011 / 7114 - MTL -

RPT / 2011 / 7114 - CL -

Terms and Conditions:  
1. Sample was not drawn by IRMRA, unless otherwise stated.  
2. The result enclosed are only related to the sample submitted to us.  
3. The report shall not be reproduced except in full without prior written permission of laboratory.  
4. Information contained in this letter / or enclosed reports shall purely meant for your guidance and should not be used for litigation or advertisement, without your permission from laboratory.

Prepared and Checked By: [Signature] Authorized Signatory: [Signature]

**IRMRA**  
INDIAN RUBBER MANUFACTURERS RESEARCH ASSOCIATION  
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(A NABL, ISO - 17025:2005 Accredited Laboratory)  
E-mail: info@irmra.org • Website: www.irmra.org

TECHNICAL REPORT / C & I Page 1 of 2

RPT / 2011 / 7008 - CL 09 DEC 2011 Rubber Test Stat. Specn. IS-254-177-2006.Cla.(F)

Test / Condition	Method	Unit	Specified Value	Observed Value
*Extraction (Leakage)@Reflux temp (Hot Test)	Cause-F	mg/ml*2	175 Max	8.76
*Extraction (Leakage)@Reflux temp (Successing Test)	Cause-F	mg/ml*2	4 Max	3.37

\*Note: Sample passes the test.

Prepared and checked By: [Signature] Authorized Signatory: [Signature]

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E-mail: info@irmra.org • Website: www.irmra.org

EVALUATION REPORT Page 1 of 2

Report No.: RPT / 2011 / 7008 09-Dec-2011

Customer Name & Address: Spangula Seals Ltd., Old Seal House, Plot no. A-403, Road no. 28, Wagle Ind. Estate, Thane-400604.

Contact Person: J.M.

Telephone No.: 2000077

Customer Letter Ref No with Date: SCL/AB/01/11/01/12/2011

Date of Receipt: 01-Dec-2011

Any Other Information like website / third party information etc: Nil-Spangula Seal Grade Series Nitrile Rubber (N7 FG Series Compound)

--- SAMPLE DETAILS ---

Sample Code: Product Specification: 177-2600.Cla.(F)

Test Stat: IS-254-177-2006.Cla.(F)

--- REPORT DETAILS ---

Description of Report: Page No: 2 of 2

RPT / 2011 / 7008 - MTL -

RPT / 2011 / 7008 - CL -

Terms and Conditions:  
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2. The result enclosed are only related to the sample submitted to us.  
3. The report shall not be reproduced except in full without prior written permission of laboratory.  
4. Information contained in this letter / or enclosed reports shall purely meant for your guidance and should not be used for litigation or advertisement, without your permission from laboratory.

Prepared and Checked By: [Signature] Authorized Signatory: [Signature]



## Agressive Fluids

CIP (Cleaning in Place) and SIP (Sterilization in Place) are the general method for cleaning processing systems. This process ensures safety and toxic contamination of products and minimize recontamination of the process.

Sealing material should be compatible with the chemicals used in CIP & SIP process. Max Spare thus take care of this while selecting an appropriate sealing material.

## Compatibility Chart

Chemical	Content	NBR	FKM	EPPM	SILICON	PU	PTFE
Chlorinated Alkalies	Caustic Soda (Mild)	+	0	0	-	+	+
Strong Alkalies	Caustic Soda (Strong)	+	0	0	-	+	+
Strong Acid	Nitric Acid	-	0	0	-	+	+
Sanitizer	Sodium Hypochlorite	x	0	0	x	+	+
Hot Water	-	+	0	+	+	+	+
Steam	-	-	-	+	x	-	+

**Legend:** (+) Excellent (0) Moderate  
 (-) Not Recommended (x) Insufficient Data

\* The above data mention is within specific limits.  
 Please contact our Technical Department for more details.

\* Please refer Max Spare Technical Handbook for more material compatibility.



# Beverages

Max Spare is involved in manufacturing static, dynamic & customised elastomeric & plastic components in different stages of beverage industry. Due to continuous online process, stoppage of the line is a costly issue. High performance & functionality are the need of sealing systems in this area.

## Application

**Valve - Static Seal - 'O' Ring**

Custom Designed - Rod Seal

Valve Seat Seal - Custom Designed

**Valve Stem - Rotary Seal**

Wear Ring

**Filling Valve - Piston Seal**

Rod Seal

Wear Ring

Scrappers

**Rotary Distributors - Rotary Seals**

**Other Related applications & its related Seals**

**Couplings - Static Seals**

**Feed Pump - Rotary Seal**

**Rotary Slide Valve - Rotary Seal**

**Compensator Piston - Piston Seal**

Rod Seal

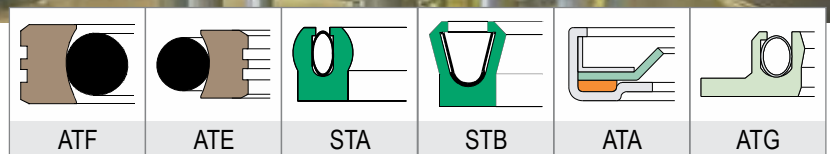
Wear Ring

Scrappers

**Piston Metering Pump - Piston Seal**

Rod Seal

Wear Ring

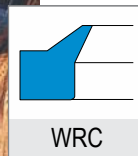




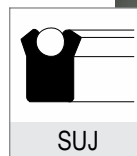
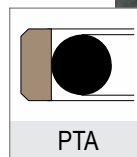
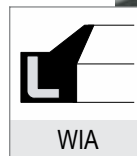
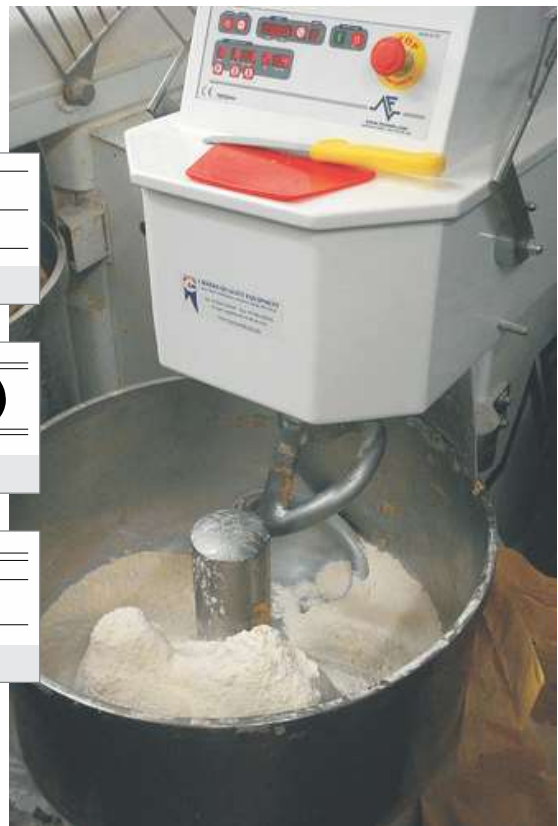
# Bakery Product

## High Temperature

Temperature is a most common factor in food industry. Especially in Bakery Production Units. Low temperature during frizzing process and rising high during heating process. Seals material should be capable to resist the effects in these variable temperature factors.



Bakery Products



Kneading Machine



# Dairy

## Pressure

Many processes in dairy products are applied under vacuum or high pressure. Hence seals used in such application are bound to seals vacuum or under high pressure.

Static Seals, Dynamic Seals, Gaskets & Customized are rubber products use in these equipments.



**Dairy Products**



**Pressure System**



**High Pressure Seal**



# Meat Processing

High sliding speed & pressure are the demand in the Meat Cutting Processing Units. Hydraulic & Rotary Equipments are used in this process.

Hydraulic & Pneumatic Seals are used in -

- Hide puller machine
- Charet pushing machine
- Meat cutting machine
- Moving platform
- Lifting Jack
- Stubbing Machine

Rotary Seals are used in -

- Dehairing Machine
- Karkass Splitting
- Tripe Cleaning



**Meat Products**



**Meat cutting machines**

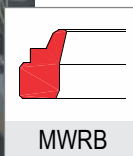
# Pharma

The production in pharmaceuticals industries are done under strict hygienic conditions and regulations of cleanliness, in order to prevent contamination.

Hence the machine lubrication for the moving parts is a concern. Max Spare, supplies self lubricated sealing material for the dynamic application to work under non-lubricated condition at a very high process frequency.

Seals for -

- Tablet processing machine
- Drip tray
- Valves
- Pumps
- Gear Boxes



# Win With Max Spare

## STEEL MILL



- » HAGC Cylinder
- » Bending & Balance cylinder
- » Work Roll & Backup Roll chock

## OIL & GAS



- » Extreme Pressure
- » Robust working conditions
- » Long service life

## POWER PLANT



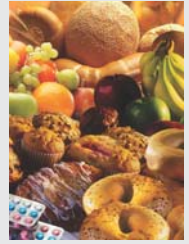
- » Turbines
- » Boilers
- » Coal Pulveriser
- » Roller Journal Assy

## PULP & PAPER



- Pneumatic Valves
- Pneumatic Actuators
- Hydraulic Cylinders
- Pneumatic Cylinders
- Calendar Roll Seals

## FOOD & PHARMA



- » Food Compliant Material
- » Aggressive Fluids – CIP & SIP Process
- » High Temperature Solutions in Bakery products

## TYRE INDUSTRY



- » Tyre Curing Presses
- » Bladder Machine

## EARTH MOVING INDUSTRY



- » Steering Cylinder
- » Boom Lifting Cylinder
- » Bucket Cylinder
- » Telescopic Cylinder
- » Axial Grease Seals

## PRESS FORMING INDUSTRY



- » Heavy Duty Presses
- » Hydraulic Presses
- » Mechanical Stamping
- » Presses
- » Forming Presses

## ALUMINIUM INDUSTRY



- » Crust Breaker Cylinder
- » Point Feeder cylinder
- » Tapping Breaker cylinder
- » Vacuum seals
- » Pneumatic Breaker

## CHEMICAL & FERTILIZER



- » Sealing of a coolant compressor with multiple mechanical seals
- » PTFE gaskets and tapes
- » Metal expansion joints

## SUGAR INDUSTRY



- » There are numerous rotating equipment which require sealing in sugar industry.

## AUTOMOBILE INDUSTRY



- » Transmission Gear Box
- » Axels
- » Shock Absorbers

## VALVE INDUSTRY



- » Petroleum Line Valves
- » Gas Line Valves
- » Valve Seat
- » Butterfly Valve Seat

## WIND MILL



- » Gear Box
- » Pitch Cylinder
- » Pulse Encoder Seals
- » Main Bearing Rotary Seals

## HYD. & PNEU. CYLINDERS



- » All types of Piston single and double acting seals for pressure range start from 0 to 2500 bar.

## ENGG. & FABRICATION



- » Various types seals and customised solutions are available in this segment. From machine tools to maintenance & overhauling work.

## HYDRO POWER



- Keplan Turbine Blades
- Wicket Gates
- Servomotors & Navlock Cylinders

## CEMENT



- » All types of Piston single and double acting seals for pressure range start from 0 to 2500 bar.

## TEXTILE INDUSTRY



- » Motors
- » Spinning

## PUMP MOTOR & GEAR BOX



- » High Speed
- » High Pressure
- » Temperature resistance
- » Media resistance
- » Operating reliability

# Max Spare at a Glance



Corporate Office



OEM Facility

Max Spare, a company that was born in 1959, is India's leading Seal manufacturer having a total workforce of 500 employees. Exporting 60% production to Europe and U.S.

## Sales Dept. & Design Team



Quality Control



Continuous Research, Design & Development for new & improved seals

100,000 moulds of standard and non standard seal designs and 250 rubber and thermoplastic compounds are readily available for production.

## Line Production



Trusted by leading OEMs & replacement market world wide.

## Customised moulding presses



High tonnage presses upto 2500 mm in diameter

Max Spare has the widest range of production activities of tool division, rubber moulding, injection moulding and polymer casting available under one roof.



## Express Seals Production



The oldest & the biggest manufacturer of seals in India with technologically advanced manufacturing facilities. Max Spare, is Trusted by leading OEMs & replacement market.



**Clients -**

Nestle India  
Cadbury India  
Glaxo Smithkline  
Pfizer Ltd.  
Cadila India  
IDMC  
Mother Dairy

**Max Spare Limited**

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Email: [sales@maxspare.com](mailto:sales@maxspare.com)  
Website: [www.maxspare.com](http://www.maxspare.com)



IN TECHNICAL COLLABORATION WITH  
UKSEALS & POLYMERS LTD. (ENGLAND)