



WESPO
WESTERN POLYRUB INDIA PVT. LTD.

WESPOAIRSEAL™

INFLATABLE SEAL



PRODUCT
CATALOUGE

INDEX

SR NO	INDEX	PAGE NO
1.	INTRODUCTION / APPLICATION	1
2.	EXAMPLES OF APPLICATION	2
3.	ENGINEERING ACTION FOR INFLATABLE SEAL	3
4.	CONSTRUCTION OF INFLATABLE SEAL	4
5.	TYPES OF INFLATABLE SEAL	5,6
6.	SEAL CONFIGURATION	7
7.	AIR CONNECTIONS (WESTERN AIRSEAL™)	8,9
8.	FABRIC REINFORCEMENT	10
9.	HANDLING INSTRUCTIONS	11
10.	OUR PRODUCTS	12,13,14
11.	CONTACT US	15

INTRODUCTION

Western inflator-seals are an inflatable silicone or other polymer seal with or without fabric that can be inflated to accommodate a variable sealing gap. We manufacture inflatable seals in a relaxed/deflated attitude but when air pressure is applied, the seal either expands or rises up to meet the sealing face.

When the pressure is released, the seal returns to its relaxed position.

West Polyrub Products Pvt. Ltd. seals are made from high strength FDA approved silicone and are supplied in transparent & red favoured by the food industry.or in other polymer as per customer specification.

APPLICATION

Western polyrub specializes in the custom design and manufacture of inflatable seals with or without reinforcement as per the required pressure



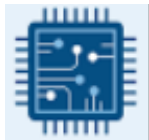
Powder & Bulk Solids Processing Equipment:
Mixers, Blenders, Screeners, Dryers, Chutes, Hoppers, Valves



TRANSPORTATION:
High speed trains, Tailgate seals, Automobile emission control test sheds



NUCLEAR:
Door & hatch seals, pool gate seals, refueling seals, nozzle dam seals



Electronic/Wafers Semiconductor Processing:
Washers, soldering equipment, furnaces, filters, load locks, measuring equipment, actuators



Medical:
Virology laboratories, clean rooms, sterilizers



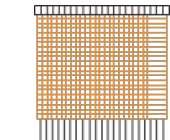
Wineries:
Lid seals for variable capacity wine tanks



Paper Machinery:
Seals for the wet end of paper machinery, doctor blade bladders, inflatable bladders for expanding mandrels for slitters and scorers



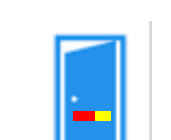
Aerospace/Aircraft:
Wind tunnels, jet engine test cells, bladders for



Textile Machinery:
Pressure chambers, inflatable clamps



Conveyors:
Conveyor stops, brakes & bumpers



Converting Equipment:
Access way seals



Flood Protection:
Gate and door seals



Food Processing Equipment:
Smokehouse door seals



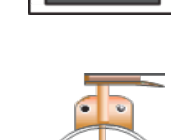
Robotics Material Handling:
Clamps, grips, actuators



Wood Processing:
Drying kilns, log preparation chambers



Marine:
Cargo hatches, elevator platforms, maintenance or shut down seals on propeller shafts, personnel hatches



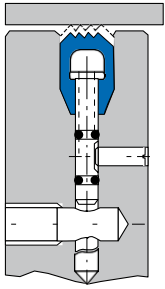
Fluid Sealing:
Isolation valve seals, follower plate seals, Maintenance shutdown shaft seals



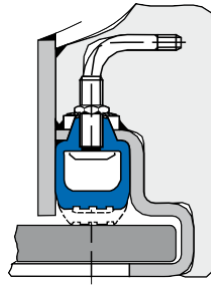
Commercial Laundry Machinery:
Door seals



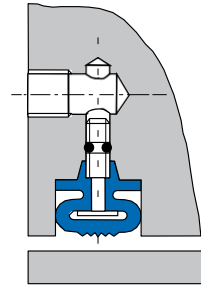
EXAMPLES OF WESPOAIRSEAL SEALING APPLICATION:



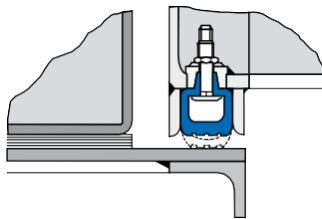
MOBILE BULKHEAD SEALING



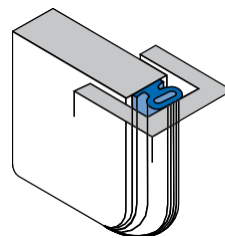
STERILISER DOOR SEALING



NUCLEAR POWER STATION SEALING DOOR



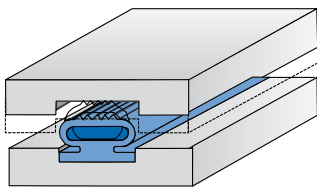
SEAL ON ISOTHERMAL BULKHEAD SEALING



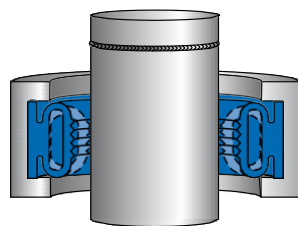
COFFERDAM SEALING

EXAMPLES OF APPLICATIONS: "Handling"

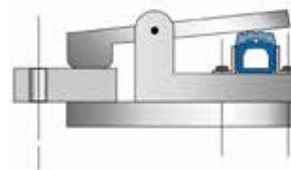
Western airseal™ inflatable seals can also be used for the moving, handling, holding or clamping, particularly for fragile or complex geometry objects. (see following sketch).



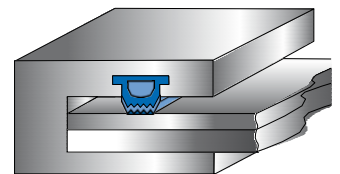
TO LIFT



TO HOLD

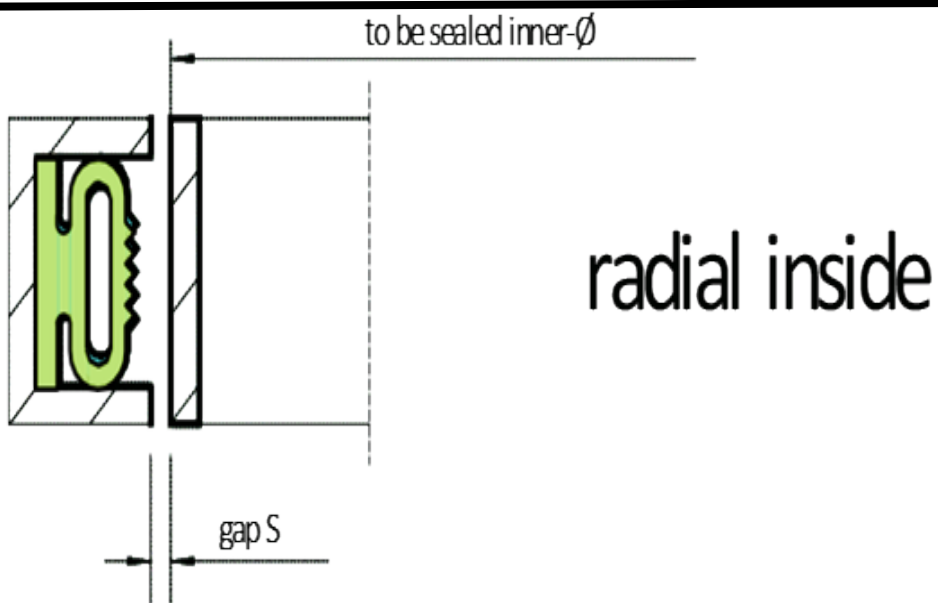
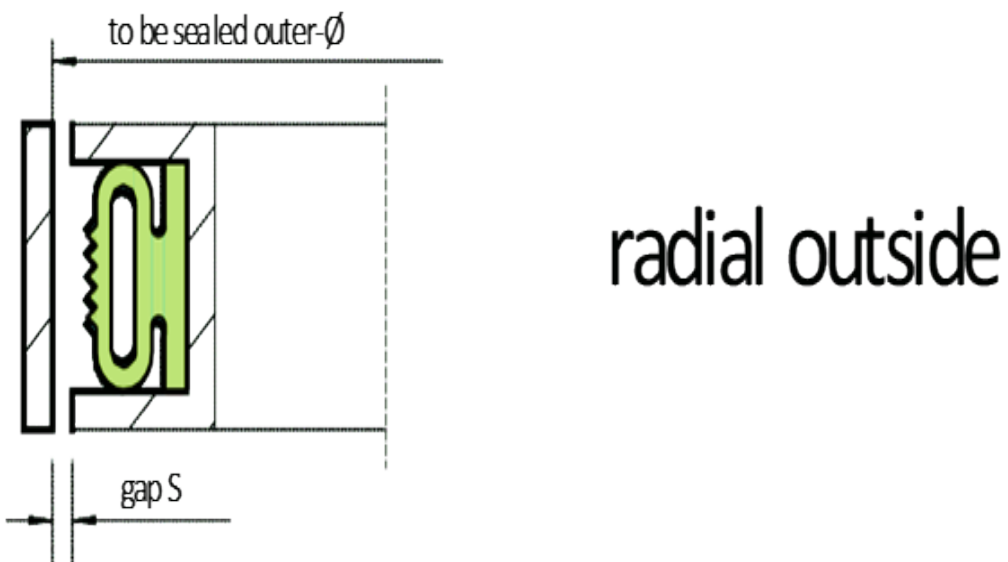
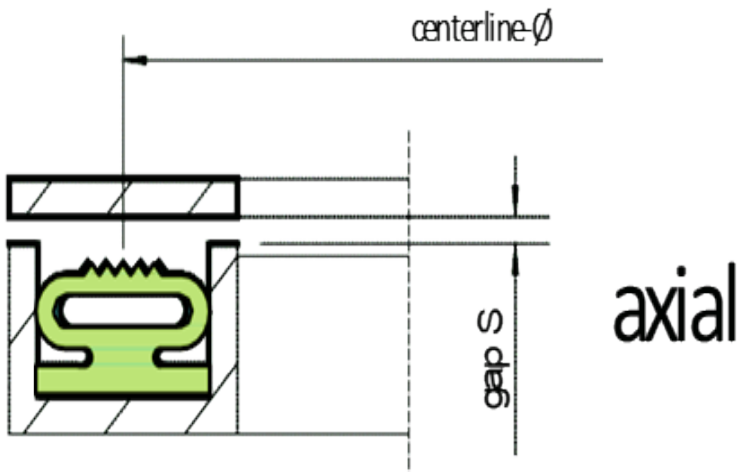


TO CLAMP



TO PRESS

Engineering Action Request (EAR) for inflatable seal



CONSTRUCTION OF INFLATABLE SEAL



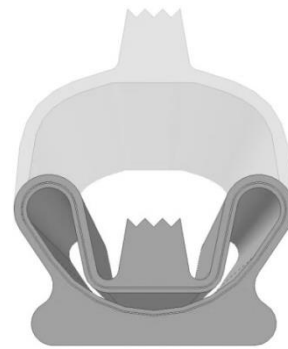
NON – REINFORCED INFLATABLE SEAL

WHAT IS AN INFLATABLE NON-REINFORCED SEAL?

WESTERN Inflatable door seal is a reinforced elastomeric tube or without reinforced (depend on pressure) custom molded in a round concave, convoluted or flat configuration . it is designed to round out with the introduction of an inflation medium to form a tight barrier between a mounting and striking surface.

HOW DOES A NON-REINFORCED INFLATABLE SEAL WORK?

When You Feel Air As Per Pressure (Check Pressure Data). The Seal Quickly Expands To The Striking Surface, affecting A Positive Seal. When The Inflation Medium Is Removed, The Seal Retracts Naturally To Pre-inflated Configuration.

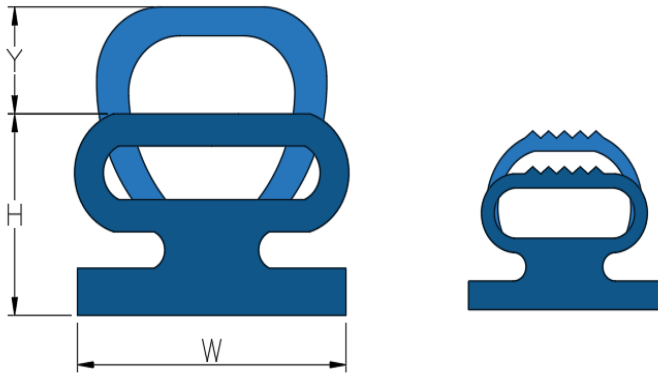


REINFORCED INFLATABLE SEAL

Western airseal™ Fully moulded fabric reinforced Inflatable Seal Reduces Risk Of Failure By Improving The Strength Of Rubber And Size And Ensuring The Entire Seal Performs Consistently Satisfactorily and smoothly . This Translates To Reliable Inflation Across The Entire Strike Surface. Fabric Reinforced Rubber Seals Are Effective Where Moderate- To High-pressure Is Applied (we make seal up to 25bar bursting pressure) , Such As In Heavy Industrial, Environmental, Technical And Laboratory Environments,marine,nuclear Region
A Variety Of Reinforcing Fabrics Are Available And Determined By Factors Such As Temperature And Pressure.
Western Polyrub Offers Technical Guidance To Determine The Appropriate Design, Manufacturing And Material Composition. The Fabric Inflatable Must Withstand Environmental Factors And Perform Using Air Or Gas Controlled Mechanisms Under Pressure.



TYPES OF WESTERN INFLATABLE SEAL

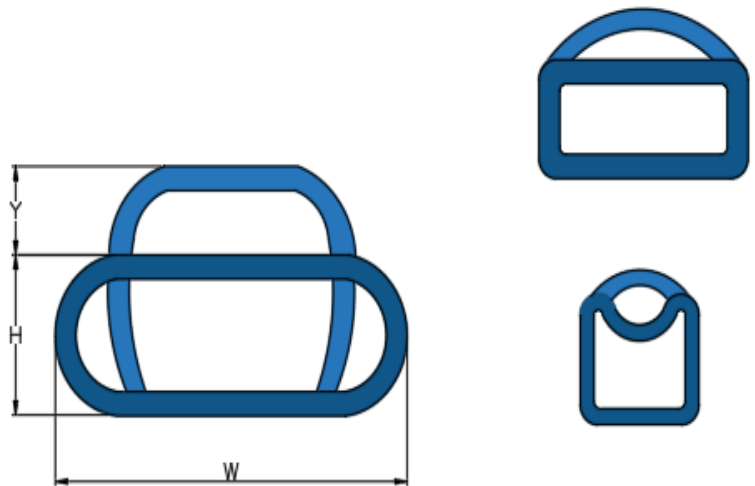


TYPE 1 - W01

WESPO

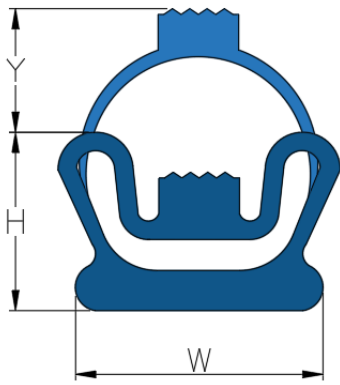
	W (mm)	(mm)	H
W01	0.687 11.1	17.45	0.437
W02	1 12.7	25.4	0.5
W03	1.181 19.99	29.997	0.787
W04	1.25 15.875	31.75	0.625
W05	1.562 25.4	39.675	1
W06	2 22.225	50.8	0.875
W07	2.375 34.925	60.325	1.375
W08	3 31.75	76.2	1.25
W09	4 41.275	101.6	1.625
W10	0.687 11.1	17.45	0.437
W11	1 12.7	25.4	0.5
W12	1.25 15.875	31.75	0.625
W13	2 22.225	50.8	0.875
W14	3 31.75	76.2	1.25
W15	4 41.275	101.6	1.625
W16	5.5 41.275	139.7	1.625
W17	7.25 52.375	184.15	2.062

	W	(mm)	H	(mm)
W21	0.405	10.287	0.187	4.75
W22	0.5	12.7	0.312	7.925
W23	0.655	16.637	0.531	13.48 7
W24	0.703	17.856	0.352	8.941
W25	0.75	19.05	0.25	6.35
W26	0.928	23.571	0.312	7.925
W27	0.938	23.825	0.5	12.7
W28	1.25	31.75	0.375	9.525
W29	1.5	38.1	0.5	12.7
W30	1.5	38.1	0.375	9.525
W31	1.5	38.1	0.75	19.05
W32	2	50.8	0.5	12.7
W33	2.5	63.5	0.5	12.7
W34	3	76.2	0.75	19.05
W35	3.25	82.55	0.5	12.7
W36	5.64	143.256	1.21	30.73 4
W37	1.625	41.275	0.25	6.35
W38	0.75	19.05	0.375	9.525
W39	31.75	0.375	9.525	-
W40	2	50.8	0.5	12.7
W41	3	76.2	0.75	19.05
W42	4	101.6	1	25.4



TYPE 2 - W21

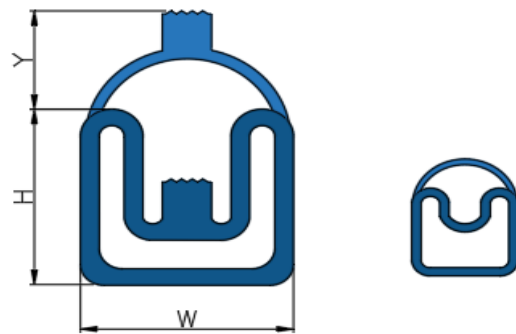
WESPO



TYPE 3 - W301
WESPO

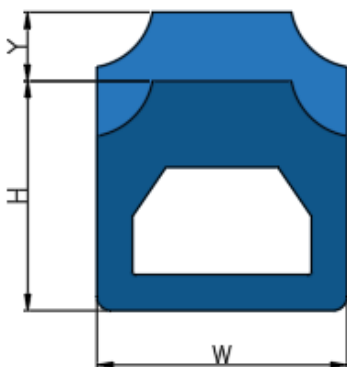
	W (mm)	(mm)	H
W301	0.63 13.487	16.002	0.53 1
W302	0.625 12.7	15.875	0.5
W303	0.687 12.7	17.45	0.5
W304	0.687 12.7	0.687	0.5
W305	1 15.875	25.4	0.625
W306	1 15.24	25.4	0.6
W307	1 15.875	25.4	0.625
W308	2 30.937	50.8	1.218
W309	2 30.937	50.8	1.218

	W (mm)	(mm)	H
W401	0.93	23.62 2	
W402	0.54	13.7164	0.4
W403	11.17 6 0.656 11	166.662 7	0.43



TYPE 4 - W401
WESPO

	W	(mm)	H
W501	0.256 5.004	6.502	0.197
W502	5.004 0.256	6.502	0.197
W503	5.004 0.394	10.008	0.315
W504	0.551 10.008	13.995	0.394
W505	0.551 10.008	13.995	0.394
W506	0.551 10.033	13.995	0.395
W507	0.63 13.995	16.002	0.55
W508	0.63 17.983	16.002	0.708
W509	0.63 11.989	16.002	0.472
W510	0.63 11.989	16.002	0.472
W511	0.787 19.99	19.99	0.787
W512	0.827 24.003	21.006	0.945
W513	0.827 24.003	21.006	0.945
W514	0.866 18.999	21.996	0.748
W515	1.024 18.999	26.01	0.748
W516	1.181 15.977	29.997	0.629
W517	1.378 32.004	35.001	1.26
W518	1.378 32.004	35.001	1.26



TYPE 5 - W501
WESPO

[CLICK HERE TO VIEW WESTERN READY SIZES](#)

[OTHER EXAMPLES](#)

SEAL CONFIGURATION

Inflatable seals can be configured to practically any shape or size. Western seals can be supplied as continuous loops for axial or radial expansion, in strip form with specially sealed ends, in “U” or similar shapes with preformed corners, or as axially expanding rectangles.

RADIAL EXPANSION OUTWARD



STRAIGHT WITH SEALED ENDS



RADIAL EXPANSION INWARD



AXIAL RECTANGULAR



AXIAL CIRCULAR



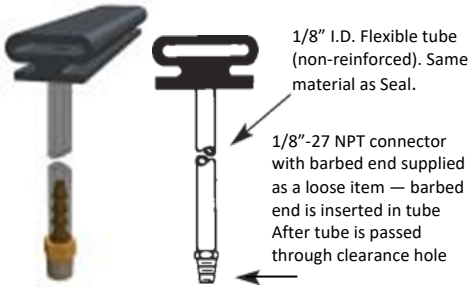
AXIAL U - SHAPED



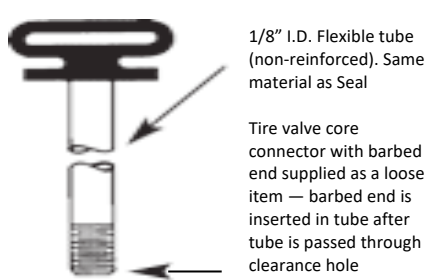
Air Connections for Types 1, 2, 3, 4 & Western Air Seals™

For endless seals, the standard location for the air connection is on the underside that mates with the mounting surface. For seals with closed solid ends, the air connection can either be on the underside or extending out of one end.

Type WP1A, WP1C

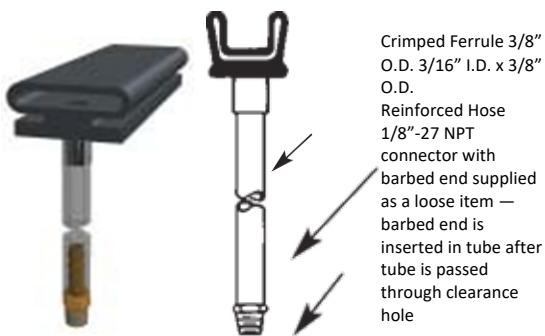


Type WP1B, WP1C



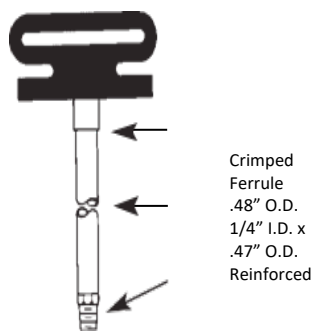
Type 1A: 9/32" diameter clearance hole required (break edge or counter sink).
 Type 1B: 9/32" diameter clearance hole required (break edge or counter sink).
 Type 1C: 11/32" diameter clearance hole required (break edge or counter sink).
 Type 1D: 11/32" diameter clearance hole required (break edge or counter sink).

Type WPC2



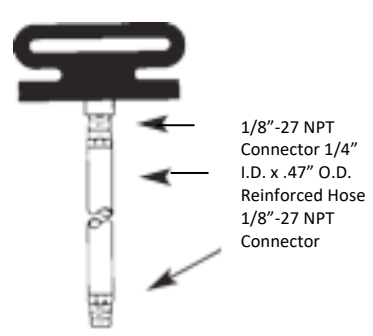
13/32" diameter clearance hole required. Crimped Ferrule is not included on some silicone seals

Type WP3A



1/2" diameter clearance hole required. Crimped Ferrule is not included on some silicone seals

Type WP3B



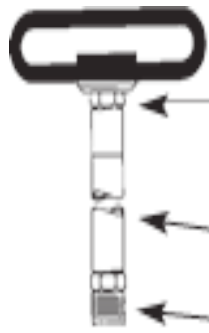
19/32" diameter clearance hole required.

Type WP4A



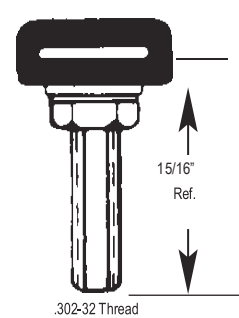
7/16" diameter clearance hole with 31/32" diameter x 5/16" deep counter bore for nut and washer or 31/32" diameter clearance for entire assembly.

Type WP4B



1/2" diameter clearance hole with 31/32" diameter x 5/16" deep counter bore for nut and washer or 31/32" diameter clearance for entire assembly.

Type WP5



For seals requiring automotive type valve cores. 5/16" diameter clearance hole with 5/8" diameter x 7/32" deep counter bore for nut and washer or 5/8" diameter clearance for entire assembly

Type WP6



3/4" diameter clearance hole with 150° countersink x 2" diameter.

Type WP7

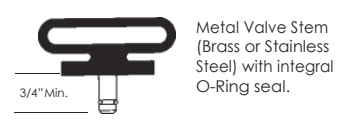


Type WP8



5/8" diameter clearance hole with 150° countersink x 1-1/2" diameter.

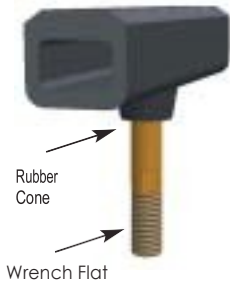
Type WP9



Air Connections for Types 10A and 10B Pneuma-Seals

For endless seals the standard location for the air connection is on the underside that mates with the mounting surface. For seals with closed solid ends the air connection can either be on the underside or extending out of one end. For some profiles, the air connection can be molded to the sidewall. If desired, please consult **Western** for design feasibility. The tables on page 13 define which air connections are available for each profile.

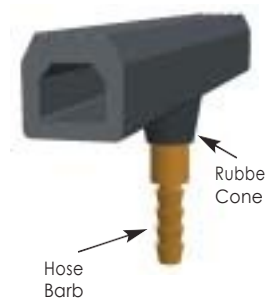
Type WP10



Type WP11



Type WP12



Type WP13



Type WP14



Type WP15



Type WP16



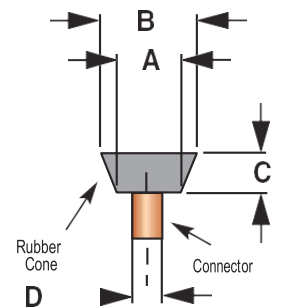
Type WP17



The illustrated Types 10, 11, 12 and 13 air connections are readily available in brass in practically any desired length within a tolerance of +/- 5 mm (+/- 0.197"). Exact lengths can be supplied on special order for an extra charge. Stainless steel can also be supplied instead of brass for an extra charge.

Dimensions A, B and C are both the cone dimensions and the machining dimensions for the cone countersink.

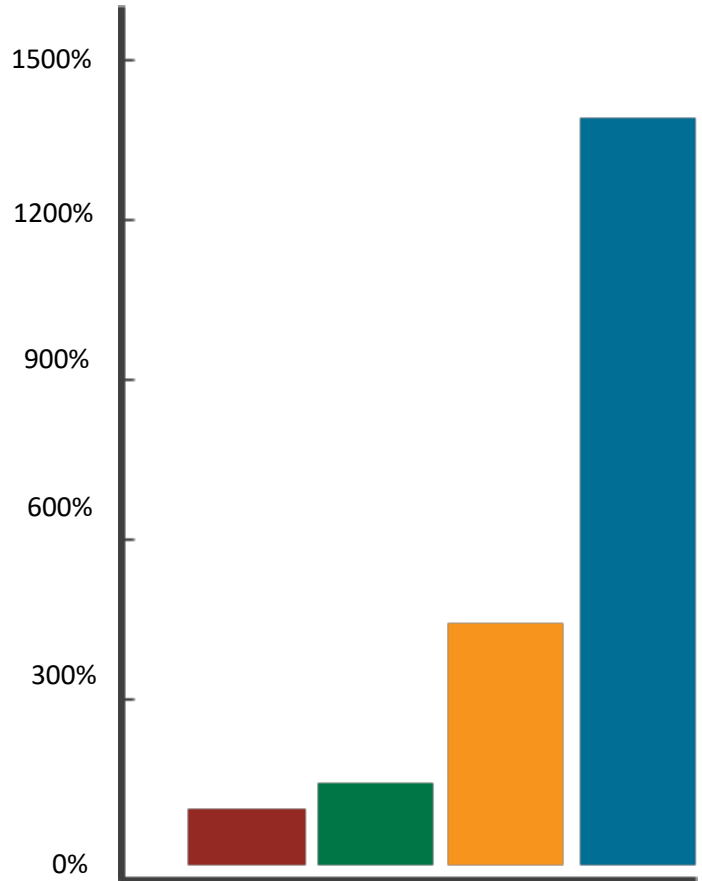
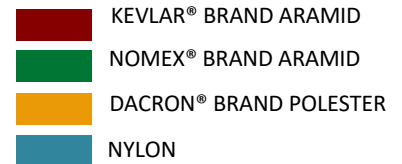
Dimensions of rubber cones are as follows:



Type 10 Thread Size	Type 11 Fits Bore Sizes	Type 12 Fits Hose ID's	Type 13 Air Connector OD
M4, M6, M8, M10, M12, M16, 1/8 NPT, 1/8 BSP, 1/4 NPT, 1/4 BSP	6mm, 8mm, 10mm, 12mm	4mm, 6mm, 8mm, 4mm, 6mm, 8mm 10mm, 12mm, 3/16", 1/4"	10mm, 12mm 14mm, 16mm

FABRIC REINFORCEMENT

FABRIC STRENGTH AS COMPARED TO NYLON



Molded, fabric reinforced seals are recommended when sealing against pressure differentials greater than 14 psig (1 bar) or to exert clamping/actuating forces greater than normal. Use of fabric reinforcement also adds to the seal's overall strength and resilience.

Fabrics are integrally molded into each inflatable seal using special processes. Available fabrics vary by profile. As an example, due to Kevlar's thickness, we are unable to supply this reinforcement in some of the smaller seal profiles.

Nylon

A high tenacity yarn that is tough and abrasion resistant. Nylon is the most common fabric used in our inflatable products, because it is strong and pliant which enhances a seal's dynamic properties.

Dacron® Brand Polyester

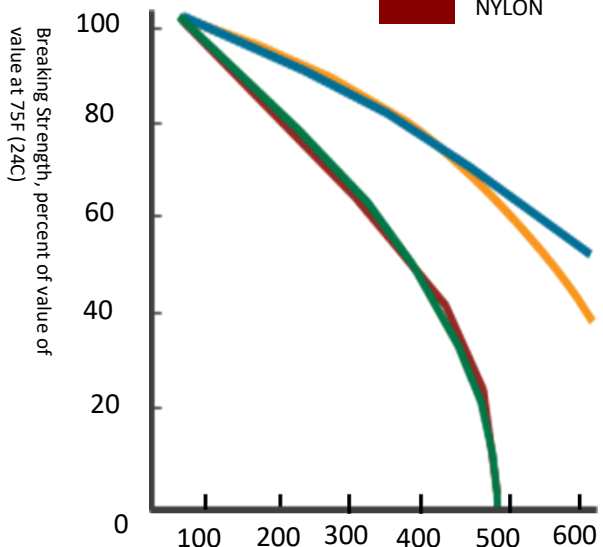
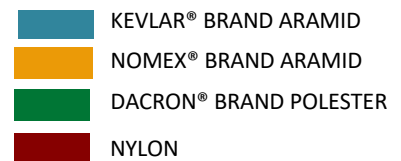
Dacron is another high tenacity; high modulus yarn used primarily when high flexibility is required. Dacron can be used with silicone and organic polymers and is especially effective in applications where heat > 250°F (120°C) is present.

Nomex® Brand Aramid

Nomex is one step above Dacron in its ability to withstand temperatures and chemicals. Nomex is often used in conjunction with silicone as both materials are able to withstand temperatures > 250°F (120°C).

Kevlar® Brand Aramid

Kevlar is by far the strongest fabric Pawling EP uses. It is temperature resistant, tough, and has a high modulus. Kevlar can only be used in larger cross sections due to its thickness and its high cost needs to be weighed against the benefits provided



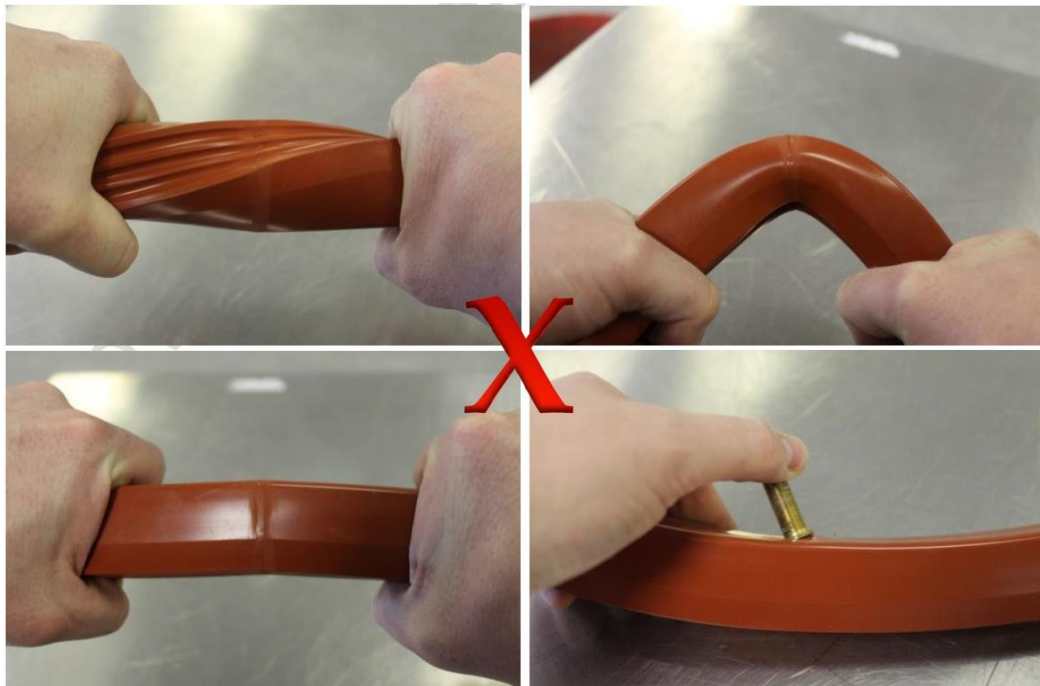
STRENGTH OF TYPICAL INDUSTRIAL YARNS AT ELEVATED TEMPERATURES

Handling instructions

Inspection:

The seal can be visually inspected for damage, dimensionally checked and inflation tested (supported). However, please avoid the following:

- Twisting
- Stretching
- Bending of the profile at the vulcanization joint(s) or valve areas
- Un-supported inflation



WESPO AIR SEAL™



VITON INFLATABLE SEAL



INFLATABLE SEAL FOR LEAK TEST



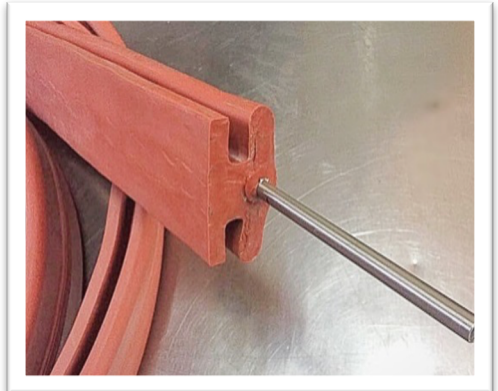
INFLATABLE DOOR SEAL



ANTI-STATIC INFLATABLE SEAL FOR FLUID BED DRYER



INFLATABLE PLUG



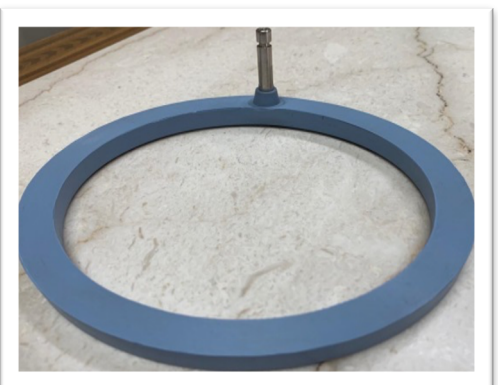
INFLATABLE BLADDER CLAMPS



INFLATABLE SEAL FOR DIVERter VALVE



VACUUM MEMBRANES INFLATABLE SEAL



VACUUM PADDLE DRYER INFLATABLE SEAL



FULLY MOLDED FABRIC REINFORCED INFLATABLE SEAL



GLOVE BOX ISOLATOR INFLATABLE DOOR SEALS



INFLATABLE BELLOW FOR BIG BAG



INFLATABLE DOOR SEAL FOR DEWAXING AUTOCLAVE



INFLATABLE DOOR SEALS FOR TABLET COATERS



INFLATABLE ROBOTIC CLAMPS



INFLATABLE SEAL FOR FRACWATER TREATMENT



INFLATABLE SEAL FOR BULK BAG SEALING



INFLATABLE SEAL FOR ANNEALING FURNACES



INFLATABLE SEAL FOR GARAGE DOOR



INFLATABLE SEAL FOR HYDRO ELECTRICITY



INFLATABLE SEAL FOR LYOPHILIZATION



**INFLATABLE SEAL FOR
MANHOLE COVER**



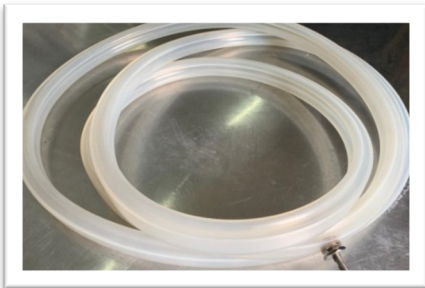
**INFLATABLE SEAL FOR
NUCLEAR POWERPLANT**



INFLATABLE SEAL FOR MARINE



**INFLATABLE SEAL FOR
MATERIAL HAND LING**



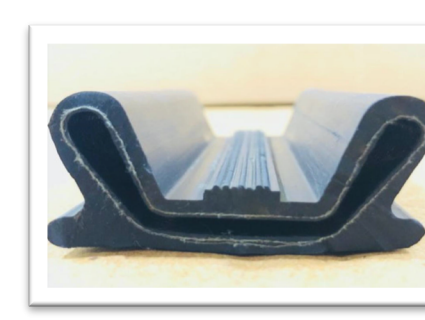
INFLATABLE SEAL FOR FBD



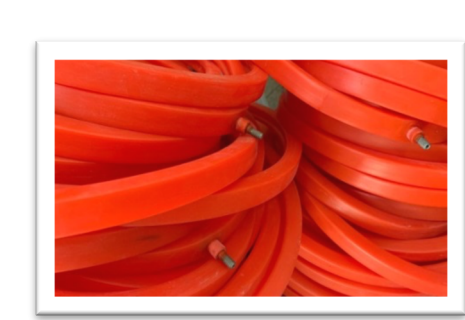
**INFLATABLE SEALS FOR
SEMICONDUCTOR PROCESSING**



**INFLATABLE BELLOW &
BLADDER FOR X-RAY MACHINE**



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