
VALVE PACKINGS FOR FUGITIVE EMISSIONS SERVICES



Garlock
SEALING TECHNOLOGIES®

an EnPro Industries company

Valve Packings for Fugitive Emissions Service

EVSP

Garlock's Emissionless Valve Stem Packing or EVSP is the ideal solution for applications where fugitive emissions have to be less than 100 PPM. This fire safe, chemically resistant packing preserves our environment while improving process yield.



EVSP's outstanding sealing characteristics surpass the emission standards of today and will meet the standards of tomorrow. This allows customers to avoid fines and penalties and to make a positive impact on air quality.

As compared to traditional flat ring sets, the angled design and radial expansion of EVSP allows for multiple adjustments over the life of the packing. This means that EVSP will provide low emissions service for a greater length of time, helping to save money by reducing the need for expensive compliance alternatives like on line leak sealing.

The low friction design of EVSP allows for easy actuation and results in a more efficient use of instrument air plant resources, saving money and saving energy.

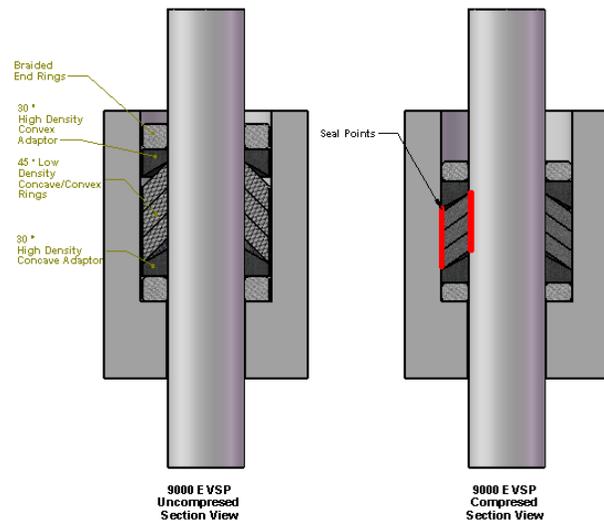
EVSP's superior radial expansion characteristics will seal even older, worn valves. This means that emissions compliance can be achieved throughout the plant without the capital cost of replacing valves or the maintenance expense of bringing valves back into manufacturer's specifications.

In addition to making the seal fire safe and chemically resistant, the densified graphite construction resists volume loss, meaning that a valve packed with EVSP will be in service for years to come.

Specifications

Construction:	GRAPH-LOCK [®] rings of high-purity diamond texturized graphite tape, in cup and cone configuration; end rings made from Garlock Style 98
Temperature:	-328°F (-200°C) to +850°F (+455°C) atmosphere; to +1,200°F (+650°C) steam
pH Range:	0-14 (except strong oxidizers)
Pressure:	To 10,000 psi plus (690 bar)

* Patent #4,328,974



QUICKSET® Emissions Compliant Valve Packing

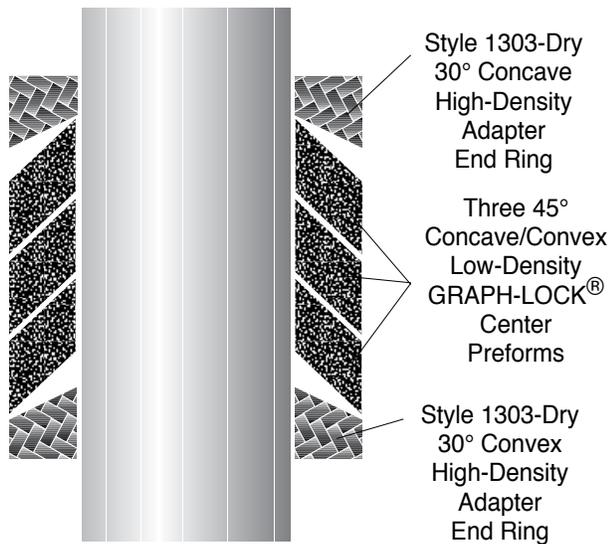
Garlock QUICKSET is a low emissions alternative specifically designed for shallow stuffing boxes. Like EVSP, QUICKSET offers less than 100 ppm service and exceptionally long life.



Unlike EVSP however, QUICKSET provides low emissions benefits with approximately 20% less stem friction. This results in a more efficient, and therefore less costly, use of plant air and electricity in controlling actuated valves.

Specifications

Construction:	Die-formed cup and cone rings combined with die-formed, high-density Style 1303-Dry end rings with zinc
Temperature:	-328°F (-200°C) to +850°F (+455°C) atmosphere; to +1,200°F (+650°C) steam
pH range:	0-14 (except strong oxidizers)
Pressure:	To 10,000 psi plus (690 bar)



QUICKSET® 9001 Typical Ring Arrangement

Style 1303-FEP

Garlock Style 1303-FEP combines the emissions performance of engineered sets with the installation flexibility and speed that comes from braided packing. Style 1303-FEP offers the same fire safety and chemical resistance as EVSP.



The wire jacketed construction makes for a long lasting valve packing that requires minimal adjustment and will deliver superior emissions control from turn around to turn around. What's more, the wire reinforcement will not score the stem and doesn't add excessive stem friction. In a recent independent API-622 test conducted at Yarmouth Research and Technology, Style 1303-FEP not only provide marked improvement in emissions control, but it also required 60% fewer adjustments and 4% less actuation torque as compared to the next best competitive braided emissions packing.

Specifications

Construction:	High-purity GRAPH-LOCK® flexible graphite and 0.004" INCONEL* filament
Temperature:	-328°F (-200°C) to +850°F (+455°C) atmosphere; to +1,200°F (+650°C) steam
pH range:	0-14 (except strong oxidizers)
Pressure:	To 4,500 psi (310 bar)

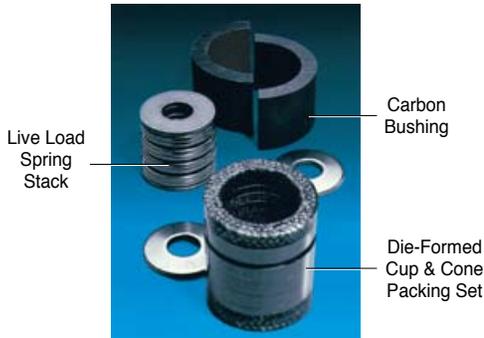
*INCONEL® is a registered trademark of Inco Alloys International, Inc.

Valve Packing Accessories

High Purity Carbon Bushings

Our testing has determined that the optimal number of rings to seal a valve stem is between 5 and 7. Any less than 5 rings increases the chance of leaks, any more than 7 puts too much drag on the stem. Garlock uses high purity carbon bushings to shorten deep stuffing boxes like those that are typically found in older valves. When combined with our radially expanding valve stem solutions, our high purity bushings allow excellent sealing with low actuation force which enables old, manual valves to be fit with air actuators and seal like new. Further, our bushings are made to such exacting material and dimensional standards that they can even be certified for nuclear service.

Bushings can also be made from 1303-DRY. While this approach adds some friction to the stem, it is the ideal choice when the valve stuffing box depth cannot be determined prior to repacking.



Live Loading Hardware

Even with its densified graphite construction, an EVSP seal can consolidate by up to 2% over its service life. While this is not an issue for valves that can be easily monitored and adjusted, it does pose a problem for valves that are off the routine maintenance path. Additionally some service conditions, like severe temperature swings or frequent opening and closing, can accelerate consolidation. Garlock's solution for those types of applications is Live Loading.

Live Loading can compensate for packing consolidation of up to 3% and, when used with EVSP, can virtually eliminate the need for adjustment. It does not however, put a constant compressive force on the seal. If you use live loading with a braided packing like 1303-FEP, it will significantly extend the time between adjustments but adjustments will still be required.

We stock a wide range of spring washers so we can respond to most needs within 48 hours.

AUTHORIZED REPRESENTATIVE

WARNING:

Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult Garlock. Failure to select the proper sealing products could result in property damage and/or serious personal injury.

Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing.

While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications subject to change without notice. This edition cancels all previous issues. Subject to change without notice.

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