



GRQ HYGIENIC CLAMP

The Engineered Clamp Solution



. And Sealing 1 0 1





Sealing 101 and the Hygienic Clamp Connection.....

FlowSmart is the first company in the industry to take an engineered approach to address the entire clamp connection. It's important to understand the principle of both sealing and the design of the connection before you can understand our comprehensive approach to correct the problem.

The principles of sealing

To establish a seal, the pressure at the seal point has to be greater than the pressure of the process flow. Therefore if the pressure in the line is 40 psi for example, then the pressure on the ferrule face to the gasket face must be greater than 40 psi to achieve a seal. The sealing pressure that is required must be imparted to the entire area of the seal point. To accomplish this you must have the correct geometry to achieve a discreet sealing point.

What is the seal point of a hygienic gasket?

The seal point of any hygienic clamp gasket is the corner of the ID at the gasket face. The o-ring bead is often confused as the seal point with a clamp gasket but is actually a locator. If fluid reaches the o-ring bead, the critical seal point has already been breached and bacteria growth can occur. FlowSmart's clamps and gaskets are designed to put the loading on the ID of the gasket.

How does FlowSmart Engineer their components to address these issues?

FlowSmart has created a clamp assembly that places the clamp load directly onto the face of the seal point. We have also designed our gaskets to direct the load onto the seal point as well by tapering the gaskets and making the ID larger so that the gasket compresses to the ID and not beyond.

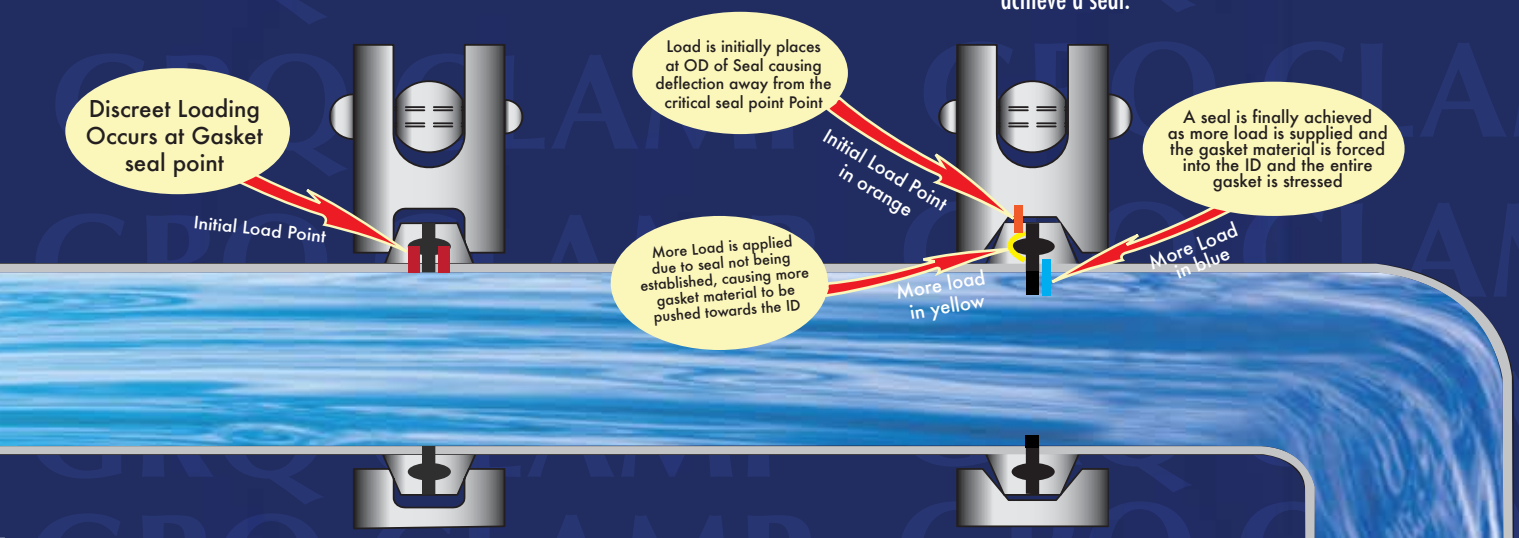
What is discreet sealing?

A discreet seal point is a point in a gasket that is geometrically designed to emphasize the load of the components to occur at the seal point more than any other area of the seal.

GRQ vs Conventional Clamps

GRQ Hygienic Clamp geometry creates an efficient seal without forcing material into the ID of the pipeline and diminishing the risk of the entrapment.

Conventional Clamps that don't fit properly on the ferrule cause the initial load that is imparted by the clamp to stress the gasket at the OD. This requires the operator to continue to tighten the nut and apply increased pressure to achieve a seal.



Cast Hinges and Double Pin

The GRQ clamps utilize an investment cast hinge and two pivot point pins per clamp to vastly improve the strength and uniformity of the clamping pressure as compared to single pin designs. Single pin designs pivot at one point creating uneven load on the connection which effects gasket intrusion and performance. The double pin design allows the clamp to float into place, compensating for misaligned piping and position the pipes into proper alignment.



GRQ Nuts

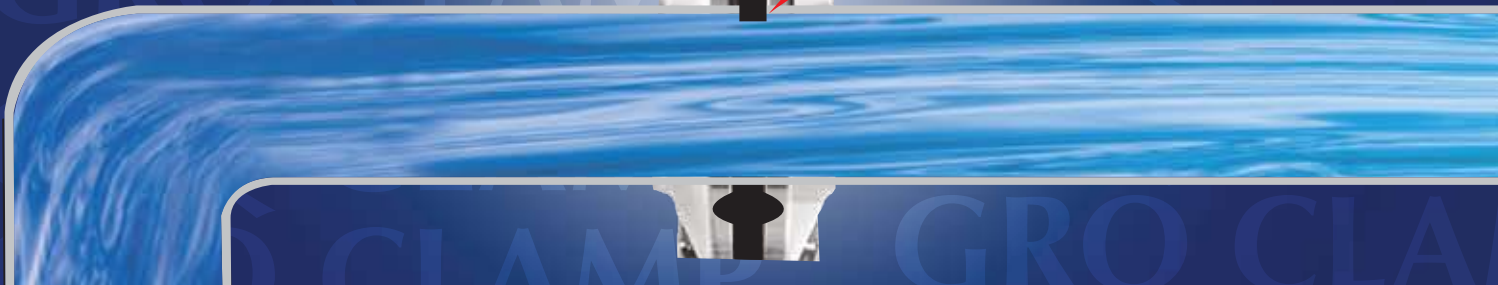
The GRQ Wing Nuts have an ergonomic taper which is wider at the top of the nut. The tapered feature helps keep the operator's hand from slipping off the nut when tightening. The arm of the clamp is recessed so that the contact ring of the nut seats consistently into a pocket. This improves the accuracy and the consistency of the clamping pressure. The seat and nut also help prevent the clamp from swinging open if it should loosen in service.



The geometry of the GRQ Hygienic Clamp features a focused discreet load point that places the energy at the ID of the fitting resulting in efficient seal performance. No added stress is placed on the gasket, assuring uniform compression with less chance of extrusion into the pipeline and extending the life of the seal.

Larger throat clearance area ensures that no incidental contact occurs at the clamp radius and outside diameter of the ferrule.

Discreet, uniform loading occurs at the gasket seal point



CLAMPS for NEW 1" Type A - ASME-BPE Fitting

NEW



FlowSmart stocks the new 1" Clamps and Gaskets that meet the new ASME-BPE design! The ASME-BPE Standards Committee has designed the next degeneration of the 1" clamp fitting that is engineered to control the compression of the gasket and provide a process line that is virtually free of gasket intrusion.

GRQ HYGIENIC CLAMP PART NUMBERS:

Clamp Size	Part Number	Description	Maximum Working Pressure in bar (PSIG)	
			ROOM TEMP.	150 ⁰ C (302 ⁰ F)
1/2" - 3/4"	FSCL-0075	3/4" Double Pin Single Bolt Clamp	50 (725)	50 (725)
1" - 1 1/2"	FSCL-0150	1" - 1 1/2" Double Pin Single Bolt Clamp	50 (725)	50 (725)
2"	FSCL-0200	2" Double Pin Single Bolt Clamp	50 (725)	50 (725)
2 - 1/2"	FSCL-0250	2 - 1/2" Double Pin Single Bolt Clamp	50 (725)	50 (725)
3"	FSCL-0300	3" Double Pin Single Bolt Clamp	40 (580)	40 (580)
3" SCH 5	FSCL-0350	3" SCH 5 Double Pin Single Bolt Clamp	30 (435)	30 (435)
4"	FSCL-0400	4" Double Pin Single Bolt Clamp	25 (363)	25 (363)
4" SCH 5	FSCL- 0450	4" SCH 5 Double Pin Single Bolt Clamp	25 (363)	25 (363)
5"	FSCL-0500	5" Double Pin Single Bolt Clamp	25 (363)	25 (363)
5" SCH 5	FSCL-0550	5" SCH 5 Double Pin Single Bolt Clamp	25 (363)	25 (363)
6"	FSCL-0600	6" Double Pin Single Bolt Clamp	20 (290)	20 (290)
6" SCH 5	FSCL-0650	6" SCH 5 Double Pin Single Bolt Clamp	20 (290)	20 (290)
8"	FSCL-0800	8" Double Pin Single Bolt Clamp	15 (218)	15 (218)
8" SCH 5	FSCL-0850	8" SCH 5 Pin Single Bolt Clamp	15 (218)	15 (218)
10"	FSCL-1000	10" Double Pin Single Bolt Clamp	12 (174)	12 (174)
10" SCH 5	FSCL- 1050	10" SCH 5 Double Pin Single Bolt Clamp	12 (174)	12 (174)
12"	FSCL-1200	12" Double Pin Single Bolt Clamp	10 (145)	10 (145)
12" SCH 5	FSCL-1275	12" SCH 5 Double Pin Single Bolt Clamp	9 (130)	9 (130)
DN10/15/20	FSCL-DIN101520	DIN 10, 15, 20 Double Pin Single Bolt Clamp	00 (000)	00 (000)
1" TYPE A	FSCL-0000	12" SCH 5 Double Pin Single Bolt Clamp	00 (000)	00 (000)

Patent Pending

TÜV Certified!

The GRQ Clamps have been tested and certified to meet the requirements of the Pressure Equipment Directive (PED), attachment 1, AD200-Sheet A4 and HP100R for the indicated table. Further, the GRQ Clamps are applicable for the application range as a connecting component subject to the PED 97/23/EG, attachment 1, paragraph 2.2, designed pipe and pressure vessel parts.



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