

To: Distribution

Date: October 23, 2009

From: Manager of Applications Engineering

Re: STRESS SAVER

BACKGROUND:

It was recently brought to our attention that the preferred torque values currently published for the Garlock STRESS SAVER are higher than those published by competitors that produce a similar molded gasket. To that point we have heard reports that these same competitors are using these values to convince customers that their product is superior to the STRESS SAVER, which is not the case. Keep in mind that Garlock torque values are intentionally conservative (higher than what's need to seal the gasket), and, as the following will show, the gaskets will seal at lower torque values.

DATA COLLECTION:

In response we collected the following torque data on one of the more prominent competitors (Competitor "A"), as well as torque values published by six well known non-metallic flange manufacturers. Those values, by pipe size are as follows:

Pipe Size	Competitor "A"		TORQUE (ft.lbs.)					
	Published Torque (ft.lbs.)	Resulting Gasket Stress (psi)	NIBCO Chemtrol®	Spears Mfg	KWH Pipe	Colonial CPVC	IPEX PVC/CPVC	Georg Fisher
0.5	15	932	---	12	20-30	10-15	15	10-15
0.75	15	752	---	12	20-30	10-15	15	10-15
1	15	629	---	12	20-30	10-15	15	10-15
1.25	16	598	---	12	20-30	10-15	15	10-15
1.5	18	586	---	12	20-30	10-15	15	10-15
2	18	331	20-30	25	40-60	20-30	30	20-30
2.5	25	339	20-30	25	40-60	20-30	30	20-30
3	25	312	20-30	25	40-60	20-30	30	20-30
3.5	---	---	---	25	40-60	20-30	30	20-30
4	25	463	20-30	25	40-60	20-30	30	20-30
5	29	425	---	30	65-100	35-50	---	---
6	29	377	33-50	40	65-100	---	50	33-50
8	36	329	33-50	40	65-100	---	50	33-50
10	36	339	53-75	64	105-150	---	70	53-75
12	44	280	---	95	105-150	---	100	53-75
14	---	---	---	110	150	---	100	---
16	---	---	---	110	150	---	100	---

TESTING:

After calculating the resulting gasket stress based on the published torques values of competitor "A" we decided that the 3", 6" and 8" flange sizes represented three of the worst case scenarios with regard to available gasket stress.

STRESS SAVER 370 gaskets were then installed in these three flange sizes (non-metallic flat face flanges) at the torque value published by competitor “A”; the vessels were filled with water and pressurized to 150 psig. Once pressurized the assemblies were allowed to sit for 30 minutes to allow the media to locate any viable leak paths. After the 30 minute waiting period a pressure reading was taken to verify the remaining internal pressure and visual inspection was performed to check for leaks.

We are happy to report the STRESS SAVER showed no signs of leakage in any of the three size flanges that were tested.

CONCLUSION:

Based on this testing, we feel confident that the STRESS SAVER gaskets will perform when installed using the flange manufacturer’s maximum allowable torque.

In addition, we believe this conclusion is further backed up by the fact that the STRESS SAVER gasket has been the gasket of choice for non-metallic piping systems, like those mentioned above, for over 13 years with no reported issues. Furthermore, Garlock has and continues to recommend that STRESS SAVER gaskets be installed using the flange manufacturer’s torque values when using non-metallic flanges to avoid damaging the equipment.