

Fluorocarbon-Lined Silicone/ Meta-Aramid Charge Air Bellows



Application

Charge air bellows are used on diesel truck engines to deliver pressurized intake air through the charge air intercooler into the intake manifold. Meta-Aramid reinforcement is required since the temperature of the turbocharger outlet is approximately 260C+ (500F+). Fluorocarbon lining is used inside the bellows since exhaust gasses and/or oil vapors are also recycled through the bellows.

FLX 1070 available in Red, Blue, or the New '07 Metallic Gray

Design Features

- **Pilot flare** on the end of the bellows aids in bellows installation to the mating stem.
- Bellows is designed for connection to SAE AS J5131 pipe bead with **internal pockets** on the ID of the cuffs to mate and positively locate the bellows on the mating stem. Hoses can be used with a one or two bead configuration.
- Designed **clamp groove** for positive location of clamp.
- **Fluorocarbon liner** for exhaust gasses and/or oil vapor.
- Premium **silicone bonding layer** and **jacket layer** with low compression set to reduce clamp torque falloff.
- **Bellows tested** at 1 million hot air pulses, 500F internal, 250F external, 5 psig to 60 psia with no delamination of the fluorocarbon liner.
- **Low convolute design** reduces length growth to .30 inches max. at 60 psig and 500F.
- **Blow-off** equal to or greater than 150 psig with clamp torque tolerance range of 60 to 120 inch-pounds using production "T" bolt clamps. 210 psi blow-off minimum with clamp torque of 120 inch-pounds.

Pressure Capability with External Rings

Bellows ID	Max. Working Pressure	Min. Burst Pressure
76mm (3.0 inch)	4.8 bar (70 psi)	20.7 bar (300 psi)
89 mm (3.5 inch)	4.8 bar (70 psi)	20.7 bar (300 psi)
102 mm (4.0 inch)	4.8 bar (70 psi)	20.7 bar (300 psi)
115 mm (4.5 inch)	4.3 bar (62 psi)	18.3 bar (266 psi)

Flexfab Fluorocarbon-Lined Silicone/Meta-Aramid Charge Air Bellows Specifications

ID Sizes:

76mm (3.00 inch), 89mm (3.50 inch), 102mm (4.00 inch), 115mm (4.50 inch).

Length:

152mm (6.00 inch) available in all ID's.

Construction:

High-temperature fluorocarbon elastomer liner, reinforced with a minimum of 4 plies of temperature resistant Meta-Aramid fabric. The bellows has four external convolutions and three stainless steel external pressure retention rings.

Endurance Capability:

1 million pulse cycles at 260 degrees C (500 degrees F), of bellows/pipe/bellows assembly pressurized to 3.1 bar (60 psia) at approximately 20 cycles per minute. Exterior air temperature is at 250F. Hose is flexible and air tight after this dynamic heat aging test when pressurized to 4.8 bar (70 psi) with a constant torque hose clamp.

Life expectancy:

Flexible and air tight for life of vehicle or 1,609,270 kilometers (1 million miles).

Environmental capability:

Resistant to salt spray, engine oil vapors and splash; and fuel splash, ultraviolet light, ozone & flexibility at minus 40 degrees C (minus 40 degrees F).

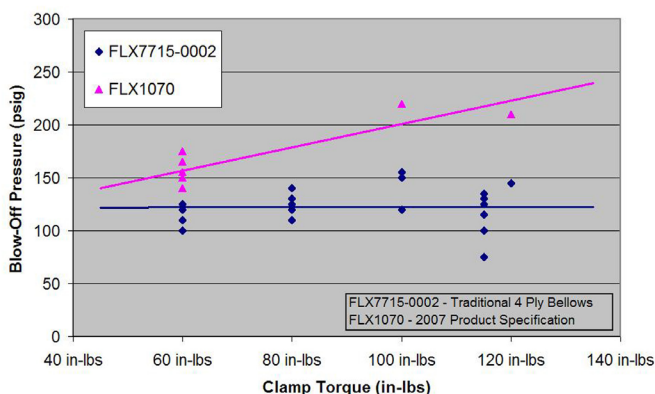
Mating Stem Specifications:

The stem the hose is clamped to must be round, clean, and smooth without flat spots caused by the grinding of casting flash or burrs. The stem must have a bead height and profile equivalent to SAE AS J5131 Style A, with 32.5mm centerline to centerline distance between tube beads. The bead must be continuous for 360 degrees around the OD of the stem for proper sealing of the hose.

Clamp Specifications:

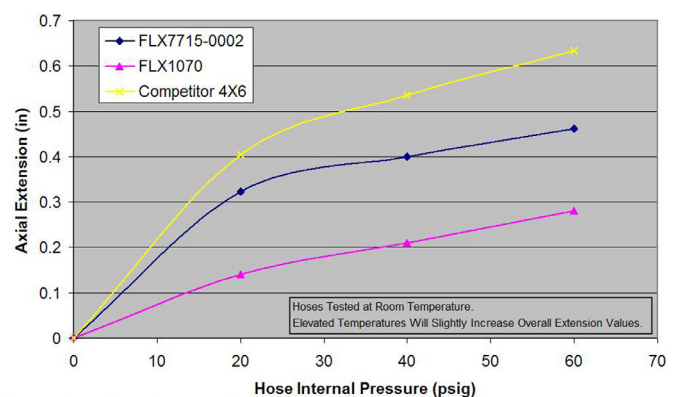
The clamp type and installation must be per the clamp manufacturer, the OEM specifications or TMC RP 332.

Hose Blow-Off Pressure Vs. Clamp Torque



All testing done in Flexfab lab by hydrostatic testing process at room temperature. Clamps used for the test were not previously tightened. Torque readings are dynamic tightening torque. Clamp style either Breeze 9226-0406BMS or 9228-0413-B000BMS.

Unrestrained Axial End Growth Under Internal Pressure Loading



FLX7715-0002 - Traditional 4 Ply Bellows
FLX1070 - 2007 Product Specification

Hoses Tested at Room Temperature. Elevated Temperatures Will Slightly Increase Overall Extension Values.

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