SAVANT Measurement Corporation

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TECHNICAL BULLETIN

Savant Measurement Corporation is committed to providing the user community with a variety of cost effective solutions. As such, we maintain a broad flow conditioning product line (GFC® and *p*FC™) to fulfill the varied needs of our customers.

The Gallagher® Flow Conditioner (GFC) product line currently consists of the following:

GFC System I is available for nominal line sizes of three-inch and greater (≥ 3") using a flange mounted profile device with the following anti-swirl options –

- VAS – a vane type anti-swirl, multi-bladed, flange mounted component that may be mounted at the meter run valve or inlet flange.
- TAS – a tube type anti-swirl, short 19-tube, flange mounted component that must be mounted with at least three nominal diameters of straight pipe between the TAS and the piping disturbance (i.e., meter run valve, strainer or inlet flange).
- NAS – no anti-swirl component.

The GFC System I NAS option is applicable when the bulk swirl is less than 20° or when the residual swirl is considered insignificant to the primary flow element.

Two out of plane elbows or elbow-tee combinations generate approximately 15° of swirl. In this case, the residual swirl of 1° or less has a negligible impact on most primary elements (orifice, turbine, ultrasonic).

As a rule of thumb, complex out of plane configurations and headers generate more than 20° of swirl. In this case, the residual swirl of 5° does have a significant impact on most primary elements (orifice, turbine, ultrasonic).

GFC System II is a flange mounted profile device with an attached tube type anti-swirl, short 19-tube component that must be mounted with at least three nominal diameters of straight pipe between the anti-swirl inlet and the piping disturbance (i.e., meter run valve, strainer or inlet flange). This design is available for nominal line sizes of two through twelve-inch (2" – 12").

GFC System III is a flange mounted anti-swirl device with an attached profile component that must be mounted with at least three nominal diameters of straight pipe between the anti-swirl inlet and the piping disturbance (i.e., meter run valve, strainer or inlet flange). This design is limited to two-inch schedule 40 orifice meter applications.

GFC System IV is an inline profile device with an attached tube type anti-swirl, short 19-tube component that must be mounted with at least three nominal diameters of straight pipe between the anti-swirl inlet and the piping disturbance (i.e., meter run valve, strainer or inlet flange). This design is limited to laboratory applications or small diameter orifice metering retrofits of two through eight-inch (2" – 8").

GFC System V is a specialty design for orifice, ultrasonic and turbine meter applications.

GFC Systems VI is a specialty design for one through two and one-half inch (1" – 2.5") turbine meter applications.

The *pseudo* Flow Conditioner (*p*FC) product line was developed for small line size orifice meter applications (2-inch through 4-inch).

As always, we will continue to provide technical support and custom solutions to the user community.

At ***Savant*** Measurement Corporation, we are committed to solving 'real world' problems. We will deliver to our customers, and the industry, services and technology of superior, unique, and competitive value.

Sincerely,

James E. Gallagher

James E. Gallagher
Chief Executive Officer

Isolating Flow Conditioner Selection					
Flowmeter	Line Size		Mounting		Savant Priority of Selection
	Min (inches)	Max (inches)	AS	PD	
Orifice					
GFC System I – TAS	3	36	flange	flange	1
GFC System II – TAS	3	12	pin + rods	flange	2
GFC System III – TAS	2	-	flange	pin + rods	3
GFC System IV – TAS	2	8	pin + rods	pin	5
GFC System V – TAS	3	36	pin	flange	4
*p*FC	2	4	-	pin	3
*p*FC-F	2	4	-	flange	3
Turbine					
GFC System I – TAS, VAS	3	36	flange	flange	1
GFC System I – NAS	3	36	-	flange	1
GFC System II – TAS	2	12	pin + rods	flange	2
GFC System III – TAS	2	-	flange	pin + rods	4
GFC System V – TAS	3	12	pin	flange	3
GFC System VI	1	2.5	-	flange	1
Ultrasonic					
GFC System I - VAS	3	36	flange	flange	1
GFC System I – NAS	3	36	-	flange	4
GFC System I – TAS	3	36	-	flange	2
GFC System II – TAS	2	12	pin + rods	flange	3

Notes:

(1) The GFC System – TAS units is applicable for all line sizes, Betas and Reynolds numbers for orifice meters per latest revision of A.G.A. Report No. 3 and ISO 5267 *isolating* flow conditioner requirements.
(2) The GFC System III – TAS is suitable for 2-inch schedule 40 pipe only.
(3) The *p*FC and *p*FC-F are designed for low cost orifice meter applications for 2-inch through 4-inch and are limited to a maximum Beta of 0.670.
(4) The GFC System VI is a special design for turbine meter applications.
(5) The Savant Priority of Selection is based on the cost versus performance for the user community.