TRI-FLO INC.

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FLOW NOZZLES

Tri-Flo Flow Nozzles are calculated, designed and manufactured to ASME recommendations to provide high accuracy flow measurement.

The flow nozzle offers some distinct advantages over the thin plate orifice in that it produces less differential pressure for a given beta ratio resulting in an overall lower permanent pressure loss. Conversely, the flow nozzle will allow maximum flows nearly twice as great as a thin plate orifice with the same differential pressure.

Accuracy is also sustained indefinitely since there are no sharp edges or protrusions to wear.

ACCURACY

The completeness of published research data permits Tri-Flo to provide the ASME type nozzle with an accuracy of \pm 1% without the need of flow calibration. Flow calibration is available to provide nozzles with \pm 0.25% accuracy when necessary.

OPTIMIZED DESIGN

Optimum design is provided on each Tri-Flo Flow Nozzle since it is manufactured for a specific beta ratio or throat diameter necessary to produce the desired differential pressure consistent with minimum pressure loss, piping requirements and accuracy of measurement.



MATERIALS of CONSTRUCTION

Tri-Flo Flow Nozzles are built of various carbon and stainless steels, Inconel, nickel, alloy 20 and other materials to suit specific applications.

ORDERING INFORMATION

After selecting the configuration best suited to your application, please fill in the appropriate model number as well as the following information on the flowing conditions:

For all fluids spec	ify:
Model number	
Materials of const	ruction:
	or
Line size	& Pipe Schedule
Fluid	
Units of flow	**************************************
Max flow	Normal flow
Specific gravity:	_
Operating	Base
Temperature:	
Operating	Base
Pressure: Operati	ng
If liquid specify:	
Viscosity @ Operation	ating temperature
If gas specify:	
Molecular weight	

wolecular weight	
Base pressure	
Gas composition	
Specific heat ratio	and
Compressibility ratio (Zf)	



TRI-FLO NOZZLES ARE:

Manufactured to the recommendations of ASME and ISO.

Conform to the ASME long radius configuration, both high and low beta styles

Available in all standard forms – Flange type, weld-in type, holding ring type, throat tap type, as well as special shapes for unusual applications

Normally supplied in carbon steel, 304 stainless steel, 316 stainless steel or chromemoly steel. PVC, monel, inconel, hastelloy C or B, fiberglass or other materials available for special applications

Special coatings (i.e. tungsten carbide, aluminum oxide, stellite, etc.) and/or special surface finish are available



FLOW NOZZLE COEFFICIENT OF DISCHARGE VS. BORE REYNOLDS NUMBER

THIS INFORMATION REQUIRED WHEN ORDERING

- 1. Series number
- 2. Nominal line size
- 3. Flange ASA rating (flange type only)
- 4. Actual line I.D.

- 5. Nozzle material
- 6. Holding ring material, when required
- 7. Quantity
- 8. Bore size,

INFORMATION REQUIRED FOR NOZZLE BORE CALCULATION

- 1. Meter differential
- 2. Nominal line size
- 3. Pipe schedule or actual bored I.D.
- 4. Flowing fluid
- 5. Flow units
- 6. Maximum flow
- 7. Normal flow
- 8. Pressure at max. flow

- 9. Temperature at max. flow
- 10. S.G. (or density) at base conditions
- 11. S.G. (or density) at flowing conditions
- 12. Supercompressibility factor at flowing conditions
- 13. Expansion factor
- 14. Molecular weight
- 15. Viscosity





