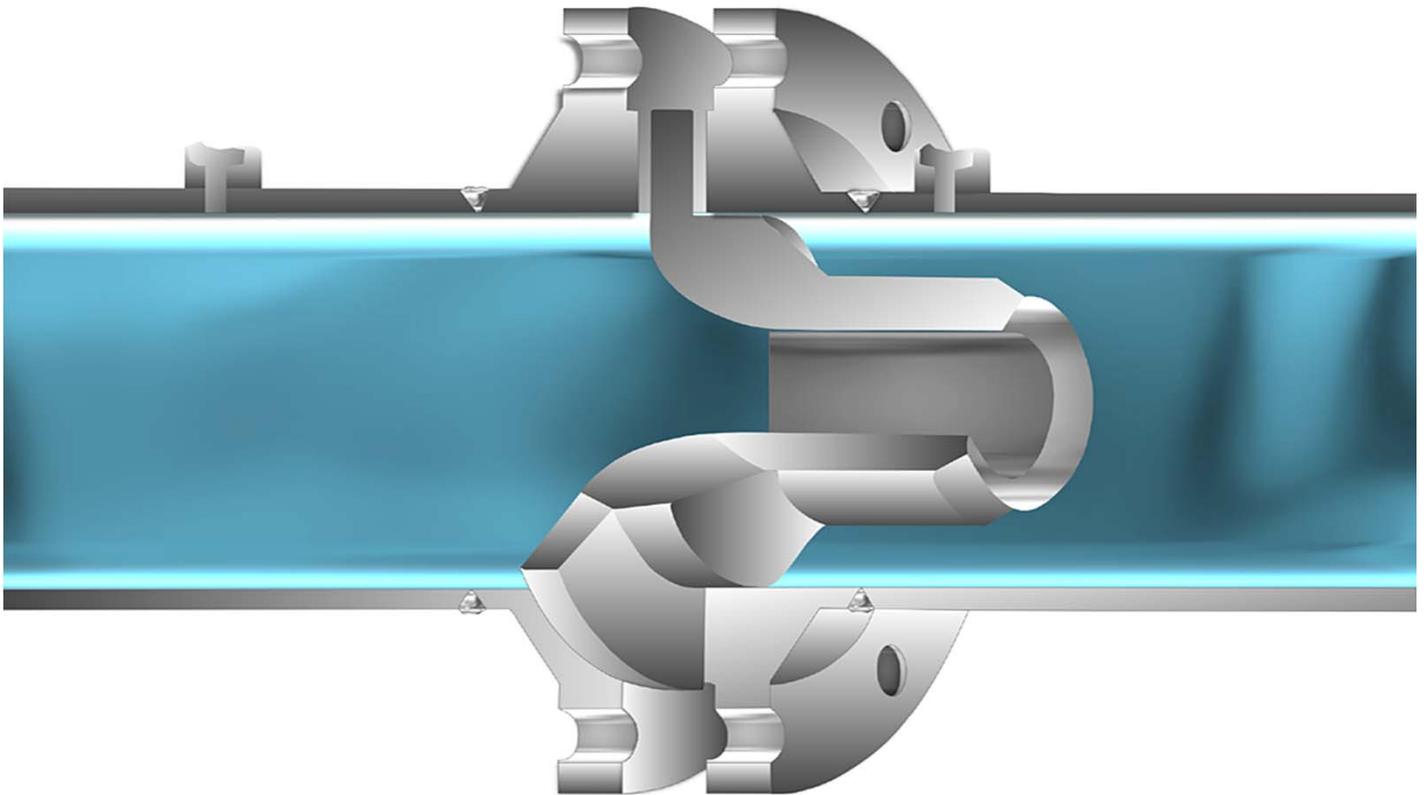


# FLOW NOZZLES



**Energy Flow Corporation, Ltd**

No.153, Xiansheng Rd. Zuoying Dist. Kaohsiung City Taiwan

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## ENERGY FLOW NOZZLES

Energy Flow Nozzles are calculated, designed and manufactured to **ASME** and **ISA** recommendations to provide high accuracy flow measurement. The nozzles are especially serviceable on a high-pressure part of boiler systems and distribution pipes.

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 Energy Flow 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.

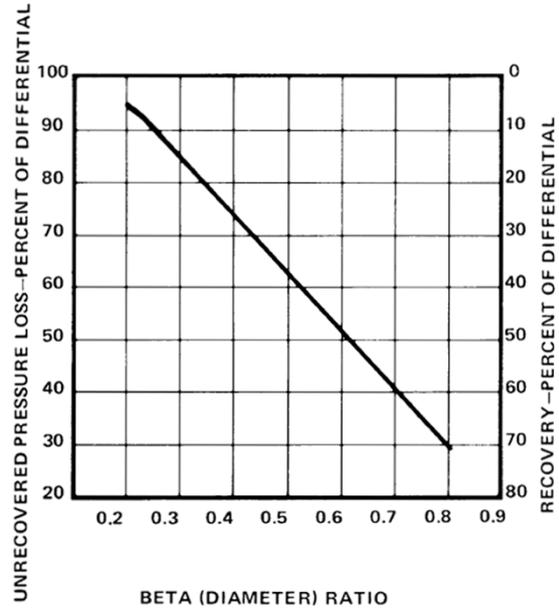
## OPTIMIZED DESIGN

Optimum design is provided on each Energy 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

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

## PRESSURE LOSS CURVES



## 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 specify :

Model number \_\_\_\_\_

Materials of construction : \_\_\_\_\_

Pipe I.D. \_\_\_\_\_ or \_\_\_\_\_

Line size \_\_\_\_\_ & Pipe Schedule \_\_\_\_\_

Fluid \_\_\_\_\_

Units of flow \_\_\_\_\_

Max flow \_\_\_\_\_ Normal flow \_\_\_\_\_

Specific gravity :

Operating \_\_\_\_\_ Base \_\_\_\_\_

Temperature :

Operating \_\_\_\_\_ Base \_\_\_\_\_

Pressure : Operating \_\_\_\_\_

If liquid specify :

Molecular weight \_\_\_\_\_

Base pressure \_\_\_\_\_

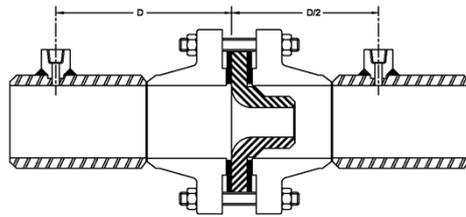
Gas composition \_\_\_\_\_ or \_\_\_\_\_

Specific heat ratio \_\_\_\_\_ and \_\_\_\_\_

Compressibility ratio (Zf) \_\_\_\_\_

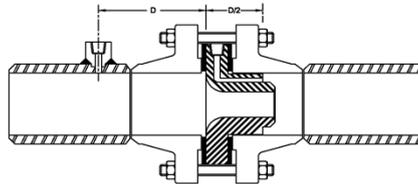
### MODEL FN-P FLANGE TYPE NOZZLE

The Model FN-P is designed for installation between pipe flanges with the high and low pressure taps located in the piping. Both flanged and butt weld ends are available.



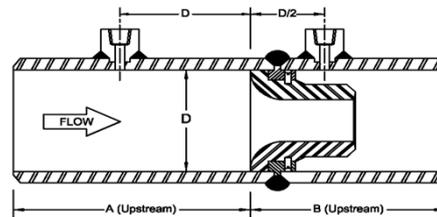
### MODEL FN-T FLANGE TYPE NOZZLE

The Model FN-T is designed for installation between pipe flanges and includes an integral low pressure tap. Both flanged and butt weld ends are available.



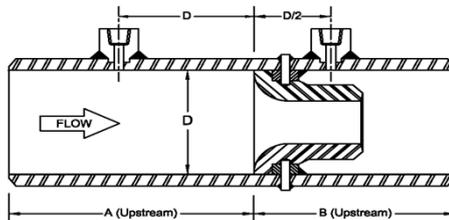
### MODEL FN-HW WELD IN TYPE NOZZLE

The Model FN-HW is designed for weld in installation utilizing a welding ring and locking pins. It can be supplied installed in the necessary upstream and downstream piping as an assembly insuring maximum accuracy. Both flanged and butt weld ends are available.



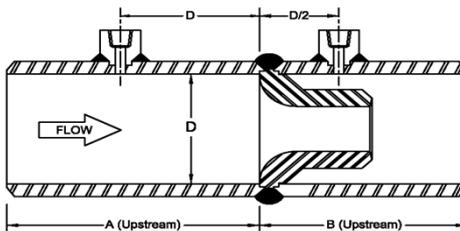
### MODEL FN-BR WELD IN TYPE NOZZLE

The Model FN-BR is designed to be welded in piping sections and can be supplied installed in the necessary upstream and downstream piping as an assembly insuring maximum accuracy. Both flanged and butt weld ends are available.



### MODEL FN-W WELD IN TYPE NOZZLE

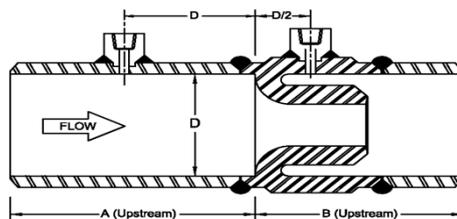
The Model FN-W is designed to be welded in piping sections and can be supplied installed in the necessary upstream and downstream piping as an assembly insuring maximum accuracy. Both flanged and butt weld ends are available.



### MODEL FN-WS WELD IN TYPE NOZZLE

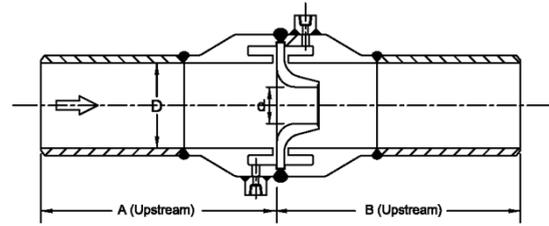
The Model FN-WS is designed to be welded in piping size below 4". This construction can avoid low pressure tap overlapping with piping welding section.

Both flanged and butt weld ends are available.



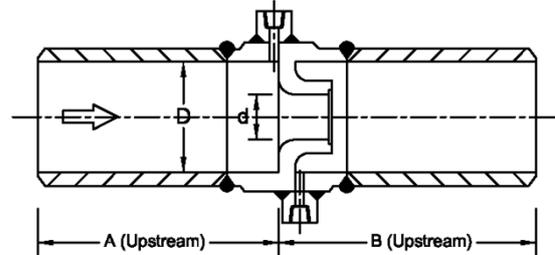
### MODEL IFN-CH TYPE ISA 1932 NOZZLE

The Model IFN-CH assembly is a ISA 1932 designed flow nozzle with annular chamber corner taps. Both flanged and butt weld ends are available.



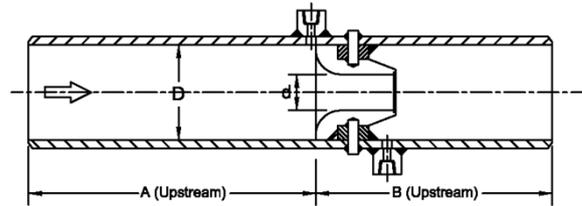
### MODEL IFN-CR TYPE ISA 1932 NOZZLE

The Model IFN-CR is a ISA 1932 designed flow nozzle with corner taps. This is particularly suitable for size 3" and below. Both flanged and butt weld ends are available.



### MODEL IFN-BR TYPE ISA 1932 NOZZLE

The Model IFN-BR is a ISA designed flow nozzle mounted in the pipe with holding ring and pins. This is suitable for large sizes 8" or larger. Both flanged and butt weld ends are available.



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