

# RESTRICTION ORIFICE

## RO Series

### DESCRIPTION

Restriction Orifice (RO / FO) are applied for Pressure reduction or Flow limitation. The operating principles are the same as Orifice plate, the sizing is focused on the applications and/or project requests.

Based on functionality and plant requirements, the device is designed in cooperation with the customer, evaluating the application of a Restriction Orifice Single or Multistage. Also the type of fluid GAS or LIQ, due to different behaviour, assumes a fundamental importance for the sizing

For Restriction Orifice, normally is required only the orifice, but Restriction Orifice Assembly can be supplied complete with Flanges, Bolts and Gaskets.

For RO Multistage and GAS applications, sometimes it may be necessary to increase line downstream pipe dimension, then will be designed a RO Multistage enlarged.

### FEATURES

- Complete production control fully integrated inside the company and highly competent local suppliers.
- Qualified welders and welding procedures compliant with ASME IX and EN ISO 15614.
- Completely customizable on client's needs thanks to the support of our technical and sales departments.
- Over 60 years company experience with instruments installed in the entire world.
- Long working life ensured by high quality materials.

### APPLICATIONS

- Oil & Gas plants, Refineries
- Chemical and petrochemical plants
- WATER / GAS treatment and distribution
- Power generation

### TECHNICAL SPECIFICATIONS

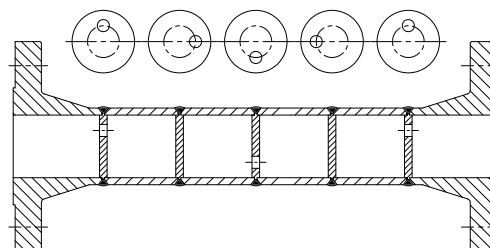
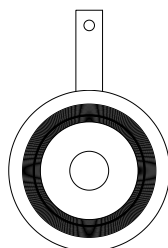
USE	Liquids, Gases, Vapors	
DIMENSIONS	Single	ND 1/2" ÷ 24" / DN 15 ÷ 600
	Multistage	ND 1/2" ÷ 12" / DN 15 ÷ 300 or higher on request
DESIGN	Single	ASME standard / R.W. Miller Engineering Handbook
	Multistage	ASME or our standard
ARRANGEMENTS	Flange ANSI B16.5, API 6B – 6BX, EN-1092-1 / UNI 2223 / DIN	
RATING	ANSI/ASME - 150, 300, 600, 1500 / EN-PN - 10, 16, 25, 40, 63, 100	
PROCESS CONNECTION	Single	Flanged: ANSI/ASME - RF, FF, (RTJ) – AARH 125 ÷ 250, 63 EN-PN - Type 01, 11, 12 – seal. surface Type A, B1 or B2
	Assembly	ANSI/ASME - WN, SO, SW / EN-PN - Type 01, 11, 12
	Multistage	Flanged: ANSI/ASME - RF, FF, (RTJ) – AARH 125 ÷ 250, 63 EN-PN - Type 01, 11, 12 – seal. surface Type A, B1 or B2
OTHER OPTIONS	Our technical and commercial departments are available to discuss any variation or customization not mentioned in this catalogue	



## MODELS

SINGLE	Single Hole
	Multi Hole
	Assembly

MULTISTAGE	Single Hole
	Multi Hole
	Enlarged Single Hole
	Enlarged Multi Hole



## MATERIALS

GENERAL	As per project specifications, however mainly according to ANSI/ASME/AISI code or according to EN/UNI/DIN codes. Certificates with requirements like NACE MR-0175 e MR-0103 /ISO 15156, Dual grade, and PED. Others on request.
FLANGE	A105N, A350-LF2, A182-F11 -F22 -F5 -F9 -F91, A182-F316 -F304 -F321 -F347, Monel, Duplex – Super Duplex, Alloy 825 /625 and others on request
PIPE	As line material: A106 Gr.B, A333 Gr.6, A335 P11 -P22 -P5 -P91, Monel, A312 Tp.316 -304 -321 -347, Duplex - Super Duplex, Alloy 825/625. Others on request
ORIFICE PLATE	AISI 316 /304 /321 /347, Duplex – Super Duplex, Monel, Hastelloy B/C, Alloy 825/625. Others on request. In case of RO single – RTJ type, we offer male (M) o female (F) options.
BOLTS & NUTS for RO assembly	A194-B7/2H, A320-L7/7, A193-B16/7, A193-B8/8, Monel, Nichel Alloy. Others on request Coatings: PTFE coated, Galvanizing / Hot Dip Galvanizing
GASKET for RO assembly	Spiral Wound: according to project specifications Flat: Aramidic Fiber / PTFE / Graphite RTJ - octagonal: Soft iron / St. Steel, or according to project specifications Others on request
ADDITIONAL SUPPLIES	Spacer Ring; Stellite on orifice bore



## DESIGN DATA

LIQUID	GAS / VAPOR
Line data	Line data
Physical data of the fluid + vapor pressure	Physical data of the fluid + isentropic coefficient
Required Pressure drop and/or Flow limit	Required Pressure drop and/or Flow limit
Type of service: occasional, intermittent, continuous	Type of service: occasional, intermittent, continuous
Type of operation, noise level limit	Type of operation, noise level limit



**Officine Orobiche S.r.l.**

Via Paglia, 22 - 24050 Zanica (Bergamo) - Italy  
Tel. +39 035 4530 211



[www.officineorobiche.it](http://www.officineorobiche.it)  
[info@officineorobiche.it](mailto:info@officineorobiche.it)