

ORIFICE FLOW METERS

Restriction Orifice (Pressure-Reducing Orifice)

Restriction Orifice

MODEL : DHRO-SH / DHRO-MH / DHRO-MS



DHRO-SH

DHRO-MH

DHRO-MS

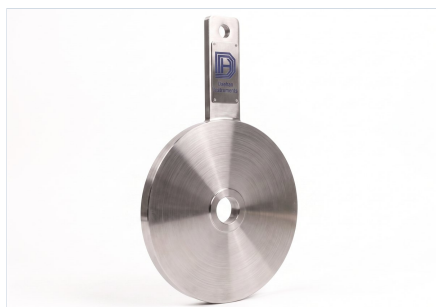
Restriction orifices are used to reduce fluid pressure and are designed somewhat differently from orifice plates for flow measurement.

Restriction orifices come in several types: a plate with a single hole, a multi-hole plate with several distributed holes, and a multi-stage orifice (Multistage Orifice) with several orifice plates welded together for high-pressure, high-temperature fluids.

The bore edge of a restriction orifice can be surface-hardened by Stellite (Stellite) welding or nitriding (Nitriding).

Single / Multi Hole / Multi Stage 1/2B ~ 24B (15A ~ 600A) ANSI 150 ~ 2500LB RTJ
Stellite · nitride hardening

Types · model configuration



DHRO-SH

Single hole — one bore at the center of a thick plate



DHRO-MH

Multi hole — several small bores to reduce noise and vibration



DHRO-MS Cutaway rendering for illustration

Multi stage — stacked plates inside a spool, cutaway image

The DHRO-MS image is a cutaway rendering to show the multi-stage plates inside the spool; the actual product is a closed flanged spool.

Item	DHRO-SH Single hole (Single Hole)	DHRO-MH Multi-hole (Multi Hole)	DHRO-MS Multi-stage (Multi Stage)
Features	Single-hole plate for pressure reduction	Multi-hole plate for pressure reduction (ordering code table: Multi Hole)	Multi-stage plate that resolves the long pressure recovery zone that occurs when a single-hole plate is used for pressure reduction
Materials	STS304, STS316, Inconel, Monel, Hastelloy, Teflon	STS304, STS316, Inconel, Monel, Hastelloy, Teflon	STS304, STS316, Inconel, Monel, Hastelloy
Connection	Flange 150#, 300#, 600#, 900#, 1500#, 2500#	Flange 150#, 300#, 600#, 900#, 1500#, 2500#	Flange 150#, 300#, 600#, 900#, 1500#, 2500#
Applicable piping	1/2B ~ 36B (15A ~ 900A) Pipe	1/2B ~ 36B (15A ~ 900A) Pipe	1/2B ~ 36B (15A ~ 900A) Pipe

Technical Specifications

Item	Value
Type	Single Hole (DHRO-SH), Multi Hole (DHRO-MH), Multi Stage (DHRO-MS)
Connection (Mounting)	Flange, Union, Butt Weld etc
Nominal pipe size	1/2B ~ 24B (15A ~ 600A)

Item	Value
Flow calculation standard	ISO5167, JIS Z 8762, ASME, KS A 0612
Flange rating (Flange Rating)	ANSI 150, 300, 600, 900, 1500, 2500LB RTJ Oval Type or Octagonal Type
Materials	Carbon Steel · 304SS, 304L SS, 316SS, 316L SS · Ni, Cr, Mo Alloy Steel (A182 F11 to 91) · Monel, Hastelloy, Inconel etc
Material codes (special alloys)	I5 Inconel 625 · M0 Monel 400 · HC Hastelloy-C276
Bore edge surface hardening	Stellite welding or nitriding (Nitrification)
Multi-stage orifice application	High-pressure, high-temperature fluids (set of several orifice plates welded together)
With / without flanges	F: Flange Include / N: Flange Exclude

Standards · ISO 5167 · JIS Z 8762 · ASME · KS A 0612

Installation requirements

- The connection method — between flanges, union, butt weld, etc. — is selected to suit the piping conditions. It can be ordered with flanges (F) or without (N).
- If the downstream pressure recovery zone becomes long when reducing pressure with a single-hole plate, consider the multi-stage (DHRO-MS) type.
- For high-pressure, high-temperature fluids or where wear is a concern, bore edge surface hardening (Stellite welding · nitriding) can be included in the specification.

Ordering information (How to Order)

1 Model	
DHRO-SH	Single Hole
DHRO-MH	Multi Hole
DHRO-MS	Multi Stage

2 Type	
F	Flange Include
N	Flange Exclude

3 Nominal Pipe Size	
(size)	Pipe size in inch or mm

4 Material : Plate / Flange	
CS	Carbon Steel
4S	304SS
4L	304L SS
6S	316SS
6L	316L SS
11	A182 F11
22	A182 F22
51	A182 F51
91	A182 F91
I5	Inconel 625
M0	Monel 400
HC	Hastelloy-C276
OP	Option

5 Mounting Connection	
015	ASME(ANSI) Class 150 LB
030	ASME(ANSI) Class 300 LB
060	ASME(ANSI) Class 600 LB
090	ASME(ANSI) Class 900 LB
150	ASME(ANSI) Class 1500 LB
250	ASME(ANSI) Class 2500 LB
000	Option