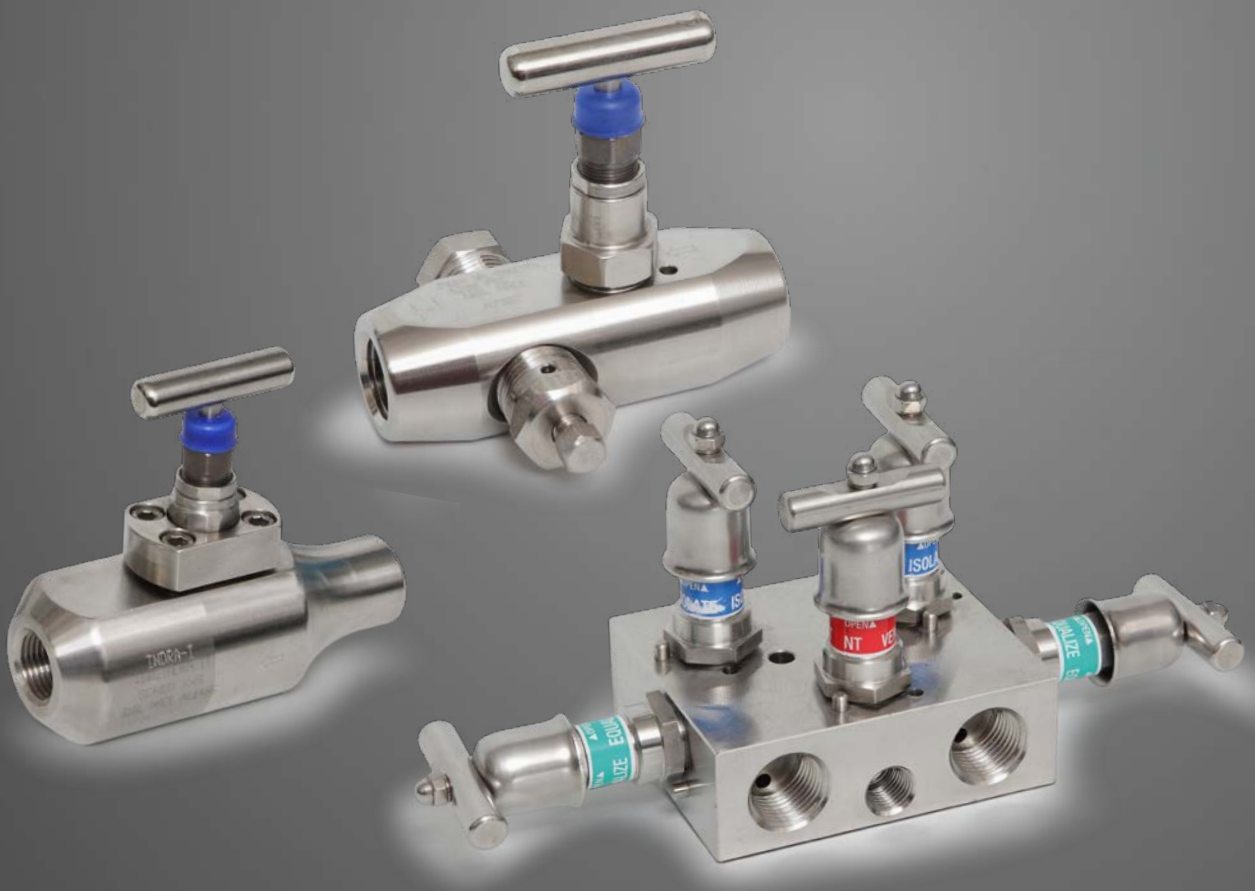
indra
VALVES - ITALY

NEEDLE VALVES & MANIFOLDS



EXCELLENCE, RELIABILITY, PERFORMANCE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VENT
INDRA
6000 PSI

INDEX

COMPANY

WHO WE ARE

Set up in 1987 in Italy, near Milan, INDRA is 100% Italian manufacturer of valves, mainly ball and needle, instrumentation manifold and interlocking manifold SIL 4 for HIPPS systems.

1987
Year of Foundation

80.000 UNITS
Yearly Production

90
Employees

460
Projects acquired in recent years

- **1987** — Establishment date
- **2019** — Bunker for high pressure test
- **2020** — Cryogenic test tank
- **2021** — New machinery & equipment
- **2022** — 35th Company Anniversary
- **2023** — New machinery & equipment
- **2024** — New test bench

IN HOUSE
PRODUCTION PROCESS

All the production phases are carried out
in-house assuring a total process control.

ENGINEERING & DESIGN

01

MACHINING

02

QUALITY CONTROL & NDT's

03

ASSEMBLING

04

HIGH PRESSURE TEST BUNKER

05

SYSTEM CERTIFICATIONS

UNI EN ISO 9001:2015
UNI ISO 45001:2018
UNI EN ISO 14001:2015

BONNET TECHNOLOGY

The **bonnet** is a critical component of a needle valve or instrument manifold , It must guarantee smooth, safe, and leakage-free operation.

Key Functions

Blow-out Proof Stem: The design of Indra bonnet prevents the stem from being ejected during operation. This is crucial to ensure **operator safety.**

Non-Rotating Stem Tip: The stem tip (obturation mechanism) is designed to be free from rotation relative to the stem itself. This design prevents wear on the seat, avoiding leaks that are a very frequent issue when the stem and tip are manufactured as a single, piece.

Multiple Sealing Points Against Leaks: The design features primary and secondary sealing points, which provide absolute assurance of zero leakage.

Common Indra bonnet Designs

The choice of bonnet design is critical for safety and operational integrity, especially in high-pressure systems:

Screwed Bonnet: The bonnet is screwed into the valve body. This design is simple and common for general service. It relies on the threads and usually a gasket for sealing.

OS & Y (outside screw & yoke) : The yoke is a rigid structure fixed to the bonnet that supports the stem nut and houses the external threads of the stem. When the operator turns the handle the stem raises or lowers (opening or closing the valve) without the threaded section ever coming into contact with the process fluid. This design, with the threading external to the pressure zone, prevents corrosion, erosion, and contamination by the fluid, ensuring extended valve life and consistently smoother operations.

Bolted Bonnet: The bonnet is secured to the body by a separate union bolted bracket. This design provides maximum body joint strength and is preferred for applications involving high temperatures, high pressure, or thermal cycling, as it ensures the integrity of the pressure boundary even under stress.

For **cryogenic applications**, or high temperature service a special **Extended Bonnet** design is used, which acts as a thermal barrier by placing the stem packing away from the extreme cold or heat, ensuring the packing operates at a functional temperature (see earlier description).

BONNET DESIGN

INDRA MAIN BONNET TYPES


SCREWED BONNET STANDARD

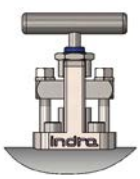

SCREWED BONNET ANTITAMPER


SCREWED BONNET LOCKABLE


BOLTED BONNET STANDARD


BOLTED BONNET EXTENDED


OS&Y COMPACT



OS&Y API602


OS&Y INSULATION 50MM


OS&Y INSULATION 80MM LOCKABLE


OS&Y LOCKABLE CRYOGENIC

BONNET COLOR FUNCTION

BLUE (isolating)

RED (venting)

GREEN (equalizing)

NEEDLE VALVES

Needle valves are precision-engineered components essential in the Oil & Gas, Power Generation , Chemical , Petro Chemical and Water Treatment industries for pressure instrument isolation. Indra needle valves are **machined from solid bar stock**, or forged providing a **robust, compact, and high-integrity construction that ensures superior performance design**.

High Pressure Capability: Designed to safely operate under extreme conditions, with standard ratings up to 10000 or 15000 PSI.

Non rotating tip: Guarantee and preservation from deterioration of the point of tightness due to the continuous operation.

Superior Materials: Manufactured from high-quality Stainless Steel 316/316L, Duplex, Alloys 625, 825, Hastelloy, Titanium, 6Mo, Monel 400 etc. to ensure excellent resistance to corrosion and harsh service environments. All materials can comply with NACE MR0175 for sour service.

Reliable Sealing: Features durable metal-to-metal seating, optionally Stellite-coated, or soft-seat options for long-lasting, leak tight shutoff.

Flexible Configurations: Available in in-line, angle, multi-port, and panel-mounted **designs**.

NEEDLE VALVES
PRODUCT OVERVIEW

IN-LINE NEEDLE VALVE
is a type of precision valve designed to be installed directly within a straight run of piping or tubing. The term “in-line” specifies the valve’s configuration and method of installation, meaning the inlet and outlet ports are on the same axis (180 degrees apart), allowing the fluid to enter and exit along a straight path.

MOD. 050 – 052
MOD. 060 - 062

MOD. 050 BW

MOD. 050 SW

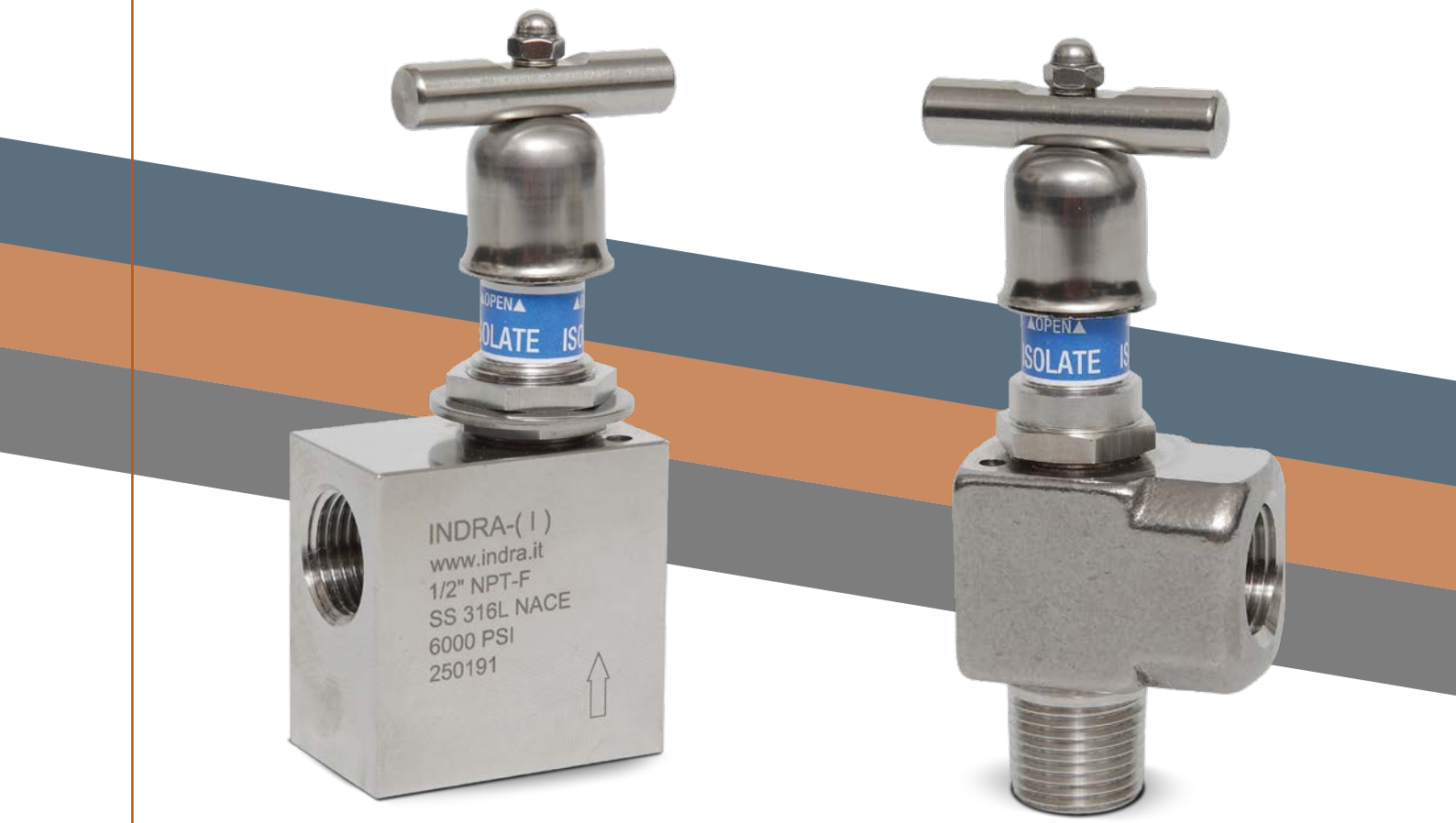
MOD. 051 – 053
MOD. 061 - 063

MOD. 150 - 151
“with venting screw”

NEEDLE VALVES
PRODUCT OVERVIEW

ANGLE BODY NEEDLE VALVE

is a variation of the standard needle valve distinguished by the **90-degree flow pattern**. Instead of the fluid entering and exiting along a straight line (in-line configuration), the flow is diverted within the valve body itself.



MOD. 070 – 072

MOD. 071 - 073

Space Saving: The angle design eliminates the need for a separate pipe elbow or 90-degree fitting, significantly reducing the overall footprint and weight of the assembly. This is crucial for crowded panels and skids.

Simplified Piping: It reduces the number of connections and weld points, which enhances **system safety and reliability** by limiting potential leak sources.

Accessibility: The stem and handwheel assembly are often oriented for easier operator access and maintenance compared to in-line designs, especially when mounted on panels.

NEEDLE VALVES
PRODUCT OVERVIEW

MULTIPORT NEEDLE VALVE

is a specialized type of needle valve designed to control or distribute fluid flow to or from several different points within a system. Unlike standard two-way valves (in-line or angle), a multiport valve features **more than two connections** (ports) on its body.

It is an economical solution for pressure instruments mounting, including vent and additional connections or drainage channels, in the piping or systems where they are applied.

It is especially suited for simultaneous use of standard gauge and pressure gauge or pressure gauge with transmitter.

MOD. 160
MOD. 161

MOD. 162
MOD. 163

MOD. 165 BW

MOD. 166 BW

MOD. 169 SW

DATA ROOM
NEEDLE VALVES

PRODUCT	DESIGN			RATING				CONNECTIONS TYPE					CONNECTIONS SIZE					SEAT		SEAL		MOUNTING	
	In-Line	Angle Body	Multiport	6000 Psi	10000 Psi	15000 Psi (1)	Pipe rating (2)	F/T - F/T	BW - F/T (2)	SW - F/T	M/T - F/T	M/T - M/T	1/4 " NPT - F	3/8 " NPT - F	1/2 " NPT - F	3/4 " NPT - F	1 " NPT - F	METAL	SOFT	PTFE	GRAPHITE	STANDARD	PANEL
050	X			X	X			X					X	X	X	X	X	X		X	X	X	
052	X			X	X			X					X	X	X	X	X	X		X	X		X
050BW	X						X		X						X	X		X			X	X	
050SW	X						X			X					X	X		X			X	X	
051	X			X	X	X					X		X	X	X	X	X	X		X	X	X	
053	X			X	X						X		X	X	X	X	X	X		X	X		X
054	X			X	X							X	X	X	X	X	X	X		X	X	X	
056	X			X	X							X	X	X	X	X	X	X		X	X		X
060	X			X				X					X	X	X	X	X		X	X		X	
062	X			X				X					X	X	X	X	X		X	X			X
061	X			X							X		X	X	X	X	X		X	X		X	
063	X			X							X		X	X	X	X	X		X	X			X
064	X			X								X	X	X	X	X	X		X			X	
066	X			X								X	X	X	X	X	X		X				X
150 Vented	X			X	X			X					X	X	X	X	X	X		X	X	X	X
151 Vented	X			X	X						X		X	X	X	X	X	X		X	X	X	X
070		X		X	X			X					X	X	X	X	X	X		X	X	X	
071		X		X	X	X					X		X	X	X	X	X	X		X	X	X	
072		X		X	X			X					X	X	X	X	X	X		X	X		X
073		X		X	X						X		X	X	X	X	X	X		X	X		X
074		X		X	X							X	X	X	X	X	X	X		X	X	X	
076		X		X	X							X	X	X	X	X	X	X		X	X		X
160 (L 110 cm)			X	X	X			X					X		X	X		X		X	X	X	
161 (L 110 cm)			X	X	X						X		X		X	X		X		X	X	X	
162 (L 194 cm)			X	X	X			X					X		X	X		X		X	X	X	
163 (L 194 cm)			X	X	X						X		X		X	X		X		X	X	X	
165BW (L 110 cm)			X				X		X				X		X	X		X			X	X	
166BW (L 194 cm)			X				X		X				X		X	X		X			X	X	
168SW (L 110 cm)			X				X			X			X		X	X		X			X	X	
169BW (L 194 cm)			X				X		X				X		X	X		X			X	X	

Connections Type
F/T - F/T = Female Threaded/Female Threaded
BW - F/T = But Weld Inlet/Female Threaded Outlet
SW - F/T = Socked Weld Inlet/Female Threaded Outletlet
M/T - F/T = Male Threaded/Female Threaded
M/T - M/T = Male Threaded/Male Threaded
T = Thread compliants to ANSI-ASME B1.20.1 ISO 228-ISO 7/1

(1)Well head application with autoclave connection

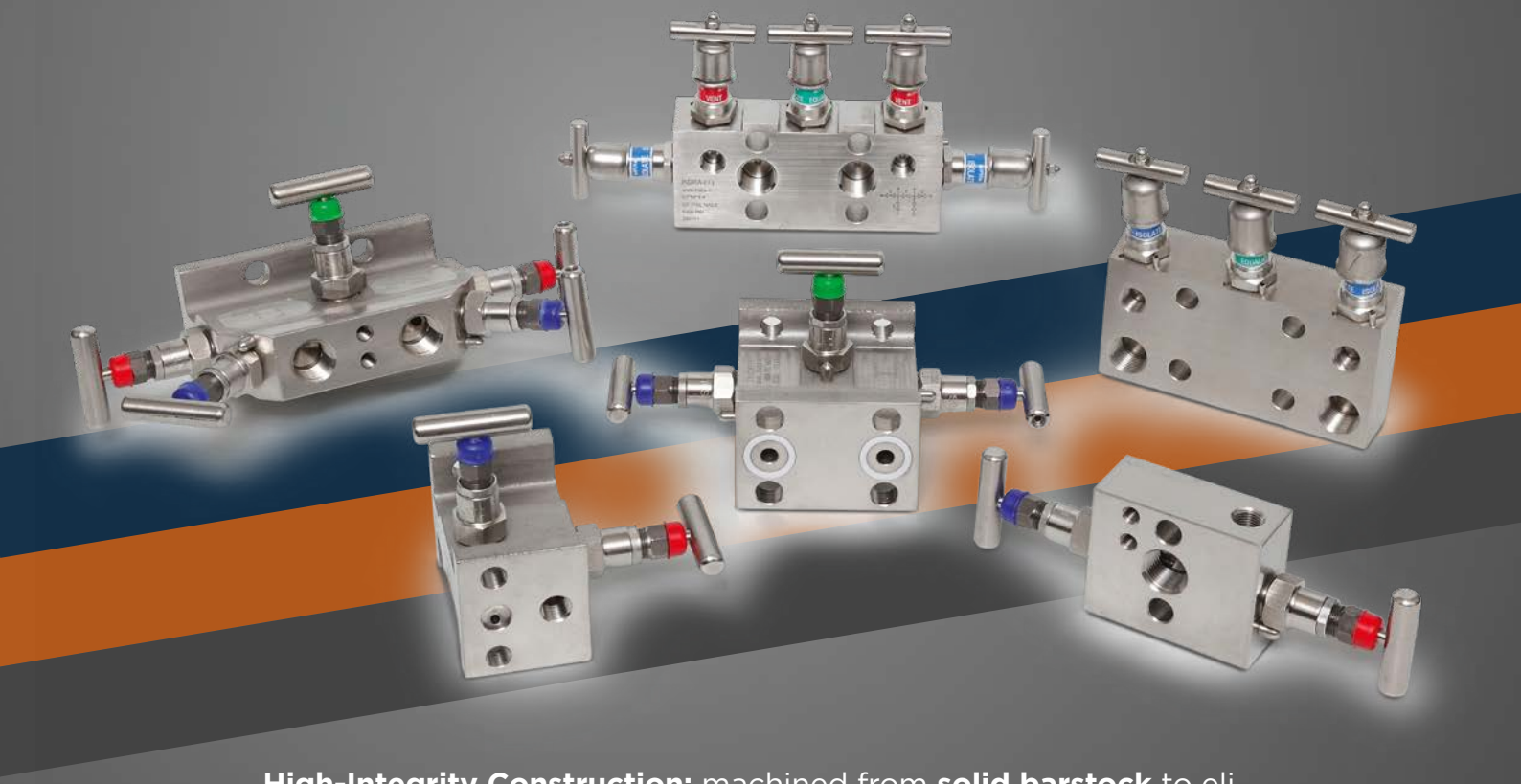
(2)BW ENDS are determinated by the pipe schedule and rating (40.80.805,160.xxs)

MANIFOLDS

The **INDRA Manifold** is a single, integrated block of metal **(machined from barstock, or forged)** that incorporates **multiple valves (2-3-4-5)** to control the flow, pressure, and measurement of proces media.

It is a crucial component in Oil & Gas instrumentation, transforming a complex, potentially hazardous assembly of valves and pipes into a single, compact, high-pressure-rated unit that ensures **safety, efficiency, and precise process measurement**.

It is available with different types of connections, **pipe to flange or flange to flange, seal type** (PTFE or Graphite) and with **Direct or Remote Mounting**.



High-Integrity Construction: machined from **solid barstock** to eliminate internal defects and weld points inherent in fabricated assemblies. This construction ensures the integrity of the pressure boundary under extreme conditions (often up to 10,000 PSI or higher).

Material Compliance: They are constructed from highly durable, corrosion-resistant materials (e.g., **Stainless Steel 316, Duplex, Monel, etc.**) that comply with industry standards, such as **NACE MR0175/ISO 15156** for sour gas service (H2S).

Reduced Leak Paths: By integrating multiple components (valves, fittings) into one block, manifolds drastically reduce the number of potential leak points, thereby improving safety and minimizing harmful **fugitive emissions.**

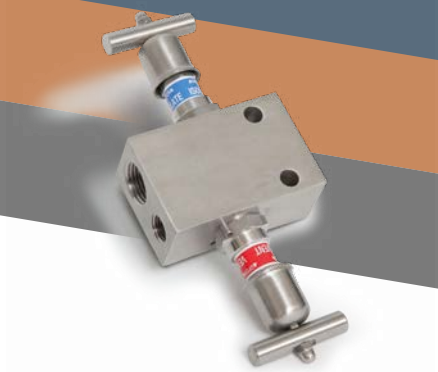
MANIFOLDS
PRODUCT OVERVIEW

2 VALVES MANIFOLDS

combines **one isolation valve and one vent valve.** It is used to isolate a static pressure instrument (like a pressure gauge) from the process line and safely vent the instrument before removal.

MOD.222
FLANGED

MOD.252
THREADED



MOD .254
THREADED

MOD. 260
FLANGED

MOD.262
FLANGED

MOD. 280-281-282
THREADED

MANIFOLDS
PRODUCT OVERVIEW

2 VALVES MANIFOLDS

MOD. 290-291 THREADED
WITH INTEGRAL SWIVEL ADAPTER

MOD. 293 THREADED

MOD. 294 THREADED

MOD. 295 THREADED

MOD. 295M THREADED
COMPACT

MOD. 295 BW-PIPE BUTT-WELD

MANIFOLDS
PRODUCT OVERVIEW

3 VALVES MANIFOLDS

combines **two isolation valves and one equalization valve.**
Used with differential pressure instruments (DP) to isolate the impulse lines and allow the equalization of high and low pressures for zero calibration.

MOD.300
THREADED
WITHOUT VENTS

MOD.302
THREADED
DOUBLE VENT

MOD.305
FLANGED
WITHOUT VENTS

MOD.306
FLANGED
DOUBLE VENT

MOD. 315-316-317
FLANGED
WITHOUT VENTS

MOD. 322
"H" TYPE
WITHOUT VENTS

MANIFOLDS
PRODUCT OVERVIEW

4-5 VALVES MANIFOLD

Combines **two isolation valves, one or two vents valves, and one or two equalization valves.** The most comprehensive type for DP instruments, allowing for full isolation, venting of both high and low sides, and equalization.

MOD. 434
THREADED
FOR NOT MIXABLE FLUIDS
DOUBLE VENT
4 VALVES

MOD. 533
THREADED
DOUBLE EQUALIZING
SINGLE VENT

MOD. 534
THREADED
ONE EQUALIZING
DOUBLE VENT

MOD. 560-563
FLANGED
ONE EQUALIZING
DOUBLE VENT
DOUBLE EQUALIZING
SINGLE VENT

MOD. 562-522
FLANGED
"T" TYPE- ONE EQUALIZING
DOUBLE VENT

"H" TYPE- ONE EQUALIZING
DOUBLE VENT

MOD. 569
THREADED
ONE EQUALIZING
DOUBLE VENT

MANIFOLDS
PRODUCT OVERVIEW

DISTRIBUTION MANIFOLDS and DRAIN COLLECTORS

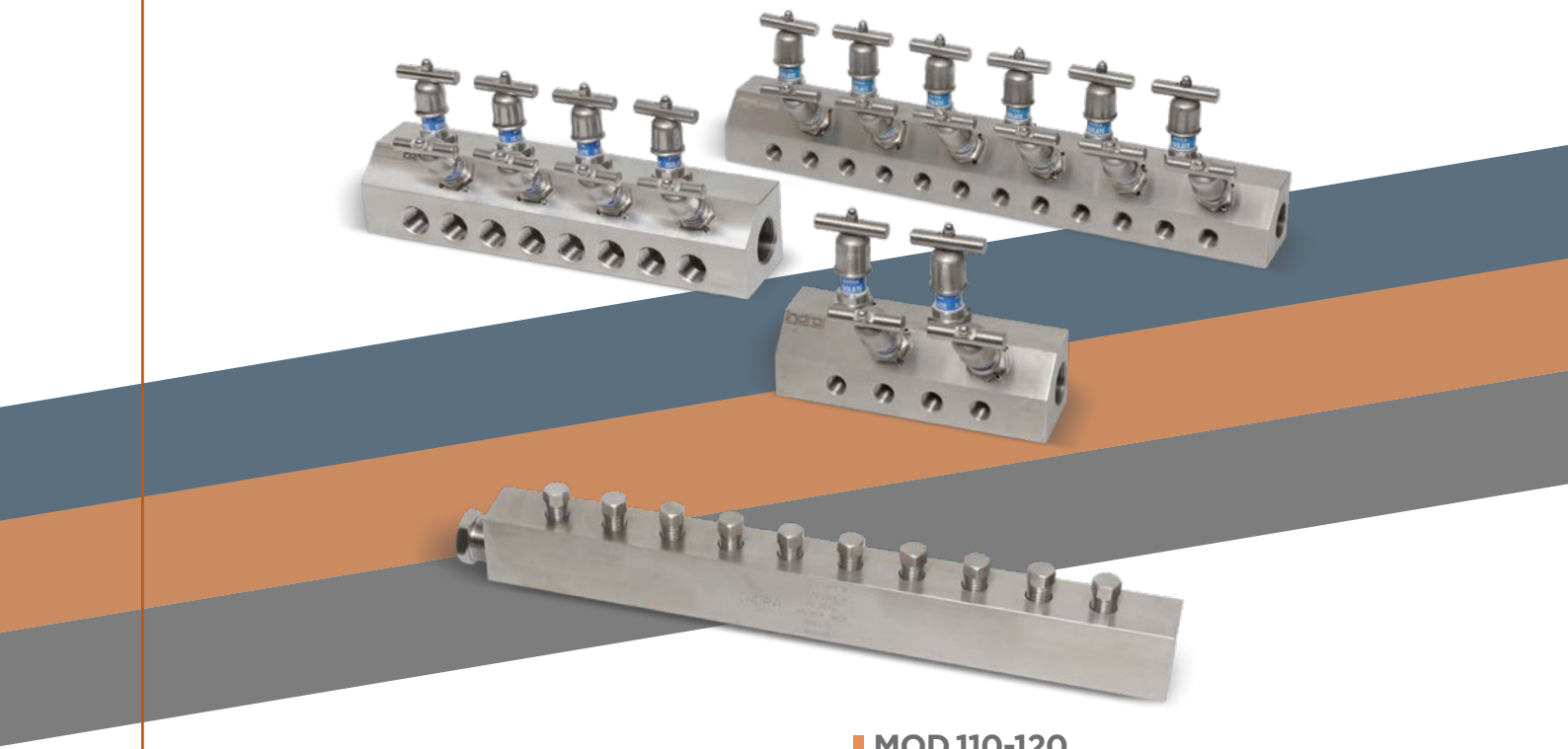
A **Distribution Manifold** is a high-integrity, centralized block used to efficiently and safely split a primary utility fluid or gas stream into multiple, individually controlled lines.

These Manifold are essential for pressure instruments isolation (gauges, switches, transmitters, etc.); made from one single body with 4 to 12 independent ways to the service.

To meet the rigorous safety industries Standards, Indra Distribution Manifolds are machined from a single piece of **barstock material** (e.g., Stainless Steel 316 and Exotics). This construction minimizes connections and weld points, drastically reducing the risk of leaks and enhancing the overall **pressure integrity.**

The **Drain Collectors** are essential for pressure instruments drain (gauges, switches, transmitters, etc.); made from one single body with 10 to 20 independent inlets from the service.

MOD.604-606-608-610-612
DISTRIBUTION MANIFOLDS
FROM 4 TO 12 VALVES OR MULTIPLE



MOD.110-120
DRAIN COLLECTORS
FROM 10 TO 20 STRAIGHT INLET

MOD. 210-220
DRAIN COLLECTORS
FROM 10 TO 20 45 °ANGLED INLET

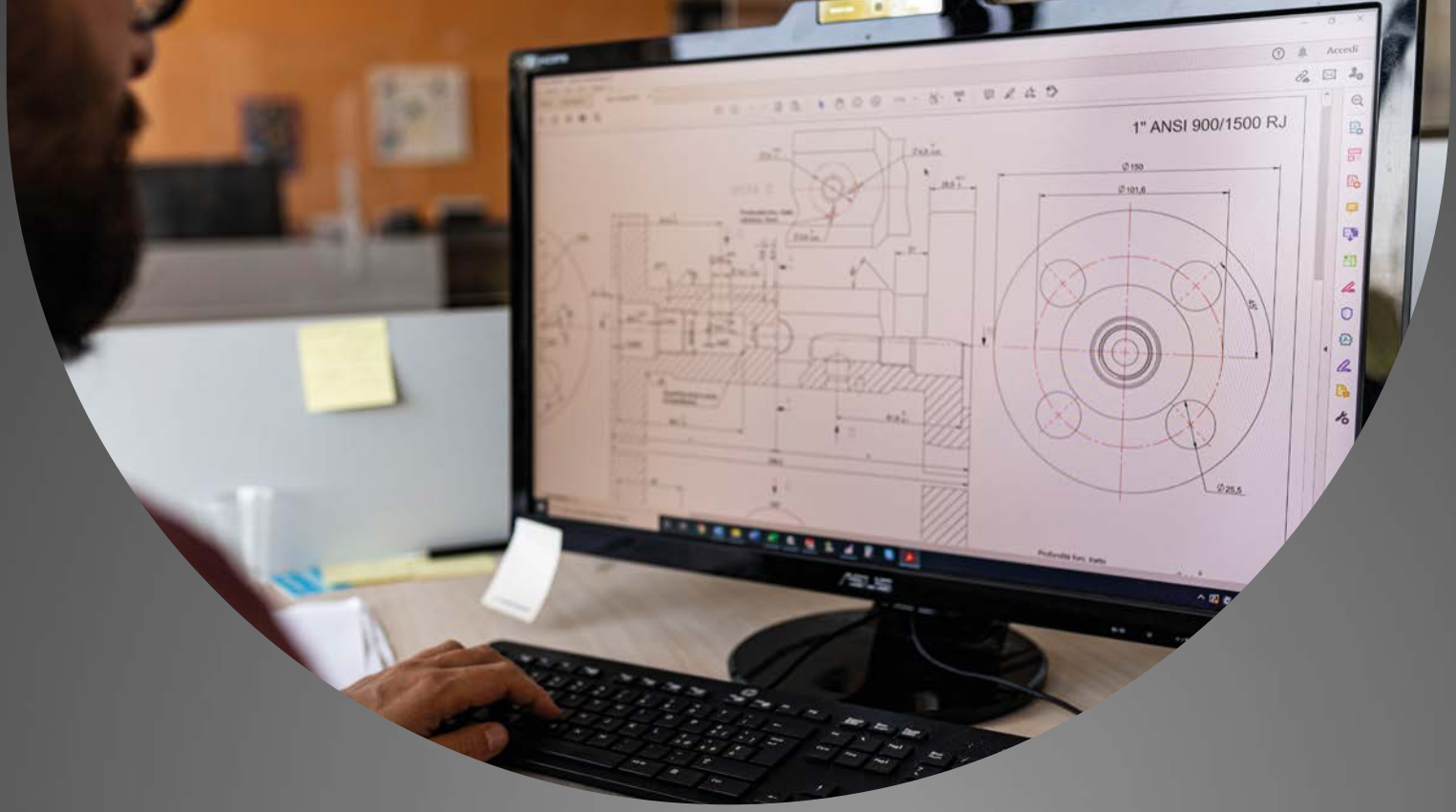
DATA BOX
MANIFOLDS

PRODUCT	DESIGN				MOUNTING		RATING		CONNECTIONS TYPE				CONNECTIONS SIZE					VENTING			CENTRE LINE			SEAL	
	In-Line	H Type	T Type	45° ANGLE Type	DIRECT	REMOTE	6000 Psi	10000 Psi	FLANGED	THREADED	THREADED/FLANGED	THERADED/BUTT-WELD	1/2" NPT-F	1/4" NPT-F	3/4" NPT-F	1" NPT-F	1/8" NPT-F	WITHOUT VENT	SINGLE VENT 1/4" NPT-F	DOUBLE VENT 1/4" NPT-F	41,3 mm	54x41,3 mm	33x41,3 mm Optional	PTFE	GRAPHITE
222		X			X		X	X	X										X		X			X	X
252 F/F				X		X	X	X		X			X	X	X				X					X	X
254 F/F	X					X	X	X		X			X	X	X				X					X	X
260	X				X		X	X			X		X						X		X			X	X
262			X		X		X	X			X		X						X		X			X	X
280 F/F	X					X	X	X		X			X						X					X	X
281 M/F	X					X	X	X		X			X						X					X	X
282 F/M	X					X	X	X		X			X						X					X	X
290 F/F	X					X	X	X		X			X						X					X	X
291 F/F	X					X	X	X		X			X						X					X	X
293 F/F	X					X	X	X		X			X	X	X				X					X	X
294 F/F	X					X	X	X		X			X	X	X				X					X	X
295 F/F	X					X	X	X		X			X	X					X					X	X
295M F/F	X					X	X	X		X			X	X					X					X	X
295BW-Pipe 80 mm	X				X		X	X				X	X	X	X				X					X	X
300 F/F	X					X	X	X		X			X	X				X						X	X
302 F/F	X					X	X	X		X			X	X						X				X	X
305	X				X		X	X			X		X					X				X	X	X	X
306	X				X		X	X			X		X							X		X	X	X	X
315	X				X		X	X			X		X	X				X				X	X	X	X
316	X				X		X	X			X		X	X				X				X	X	X	X
317	X				X		X	X			X		X	X				X				X	X	X	X
322		X			X		X	X	X									X				X	X	X	X
362			X		X		X	X			X		X						X			X	X	X	X
434 F/F	X					X	X	X		X			X	X						X				X	X
522		X			X				X											X		X	X	X	X
533 F/F	X					X	X	X		X			X						X					X	X
534 F/F	X					X	X	X		X			X	X						X				X	X
560	X				X		X	X			X		X							X		X	X	X	X
562			X		X		X	X			X		X							X		X	X	X	X
563	X				X		X	X			X		X						X			X	X	X	X
569 F/F	X					X	X	X		X			X	X						X				X	X
604-606-608 610-612 F/F				X	X		X	X		X			X	X	X	X		X						X	X
110-120 F/F	X				X		X	X		X			X	X	X		X	X						X	X
210-220 F/F				X	X		X	X		X			X	X	X		X	X						X	X

Connections Type
F/F = Female/Female
M/F = Male/Female
F/M = Female/Male
M/M = Male/Male

F = Female
M = Male

Center Lines = Instruments Fixing Centers



TAILOR MADE

INDRA “Taylor-Made” refers to the design , engineering , and manufacturing of Needle Valves and Manifolds that are specifically adapted to the unique requirements of a customer or a particular application.
This process involves close collaboration between the customer and our technical team, which unfolds in the following phases:

- **In-depth Analysis of Customer Requirements**
- **Customized Design**
- **Selection of Specific Materials**
- **Special Configurations**
- **Customized Testing**
- **Integrated Automation Solutions**

Our tailor-made activity in the production of ball valves represents an advanced and customer-oriented engineering approach, which aims to provide valve solutions that not only meet but often exceed the customer expectations in terms of performance, reliability, and safety.

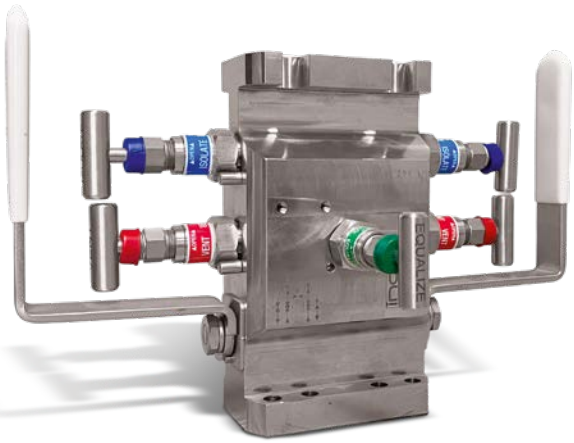
TAILOR MADE

2 VALVES MANIFOLD WITH INTEGRAL COMPRESSION PIPE FITTING

NEEDLE VALVE OS&Y BOLTED BONNET

2 VALVES MANIFOLD 15.000 PSI

5 VALVES MANIFOLD 15.000 PSI



7 VALVES "HYBRID" MANIFOLD

OPTIONS
NEEDLE VALVES/MANIFOLDS

PRODUCT	NEEDLE VALVES	MANIFOLD
Antitamper Operator	X	X
Bolted Bonnet	X	
Bonnet O.S.&Y	X	X
Graphite bonnet seals replacement kit	X	X
PTFE bonnet seals replacement kit	X	X
Locking Device	X	X
Quick Locking Device	X	X
Padlock	X	X
Oval Flange		X
Swivelling Connection	X	X
2” Pipe bracket		X
Rating 15.000 PSI	X*	
Oxygen Service	X	X
Hydrogen Service	X	X
Fire Safe Version	X	X
Fugitive Emission EN 158 48.1 EN 158 42.2	X	X
EAC (TR CU/TR EAEU)	X	X
Painting Treatment	X	X
7/16” UNF L=45 mm screws		X
7/16” UNF L=75 mm screws		X

*Well head application autoclave connection

IN HOUSE TESTS

In-house product testing refers to the practice of INDRA in conducting product validation and performance checks within internal facilities, using internal personnel and equipment.

Indra in-house product testing perform the following tests:

- Fugitive Emission
- TAT test
- PR2F Test
- Cryogenic Test
- High Temperature Test
- High Pressure Gas Test
- NDT's (PMI, UT, DP, MP and HRC tests)

PRODUCT CERTIFICATIONS

Fire Safe
ISO 10497-API 607-API 6FA

Fugitive Emission
ISO 15848-1 & 2

PED 2014/68/EU

ATEX 2014/34/EU

CRN for Canada

CU-TR for EAC Countries

Bunker suitable for High Pressure Gas Tests:
up to 15.000 PSI

Cryogenic Test:
Production and Prototype

High Temperature Test:
up to 650°C

Climatic Chamber suitable
for PR2F and TAT Tests

Fugitive Emission Test:
Production and Prototype

INDRA NVM- ENG - 1000 - 12/25

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