

NEEDLE VALVES & MANIFOLDS



EXCELLENCE, RELIABILITY, PERFORMANCE





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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}

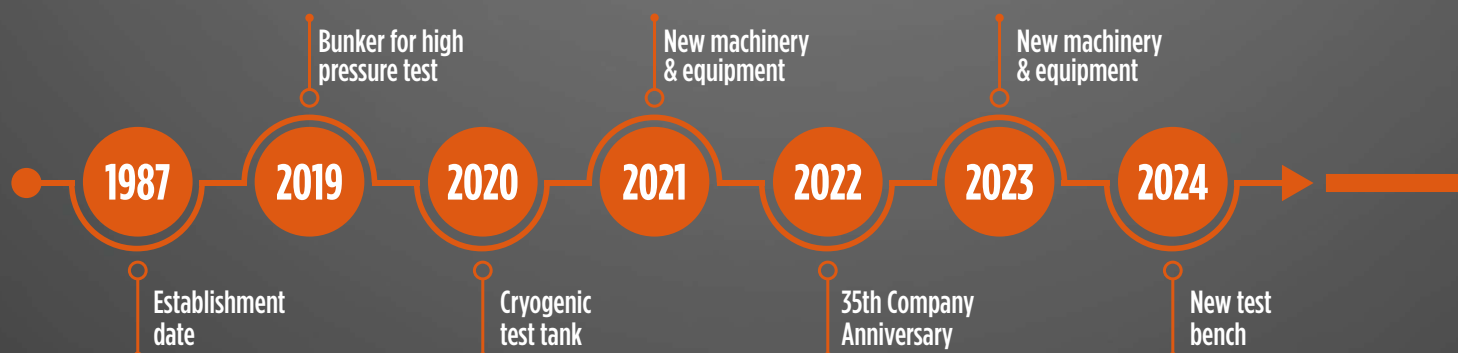
Yearly Production

90

Employees

460

Projects acquired in recent years



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.

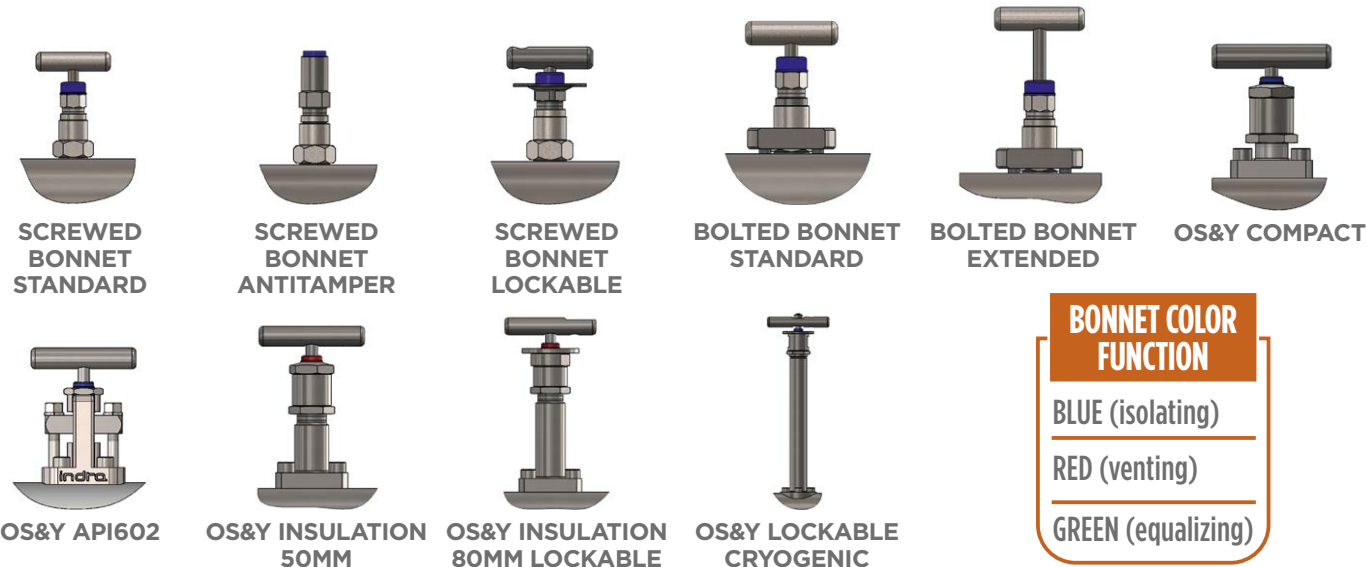
OS & Y (outside screw & yoke) : The yoke is a rigid structure fixed to the bonnet that supports the stem nut and houses the external threads of the stem. When the operator turns the handle the stem raises or lowers (opening or closing the valve) without the threaded section ever coming into contact with 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).



INDRA MAIN BONNET TYPES



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

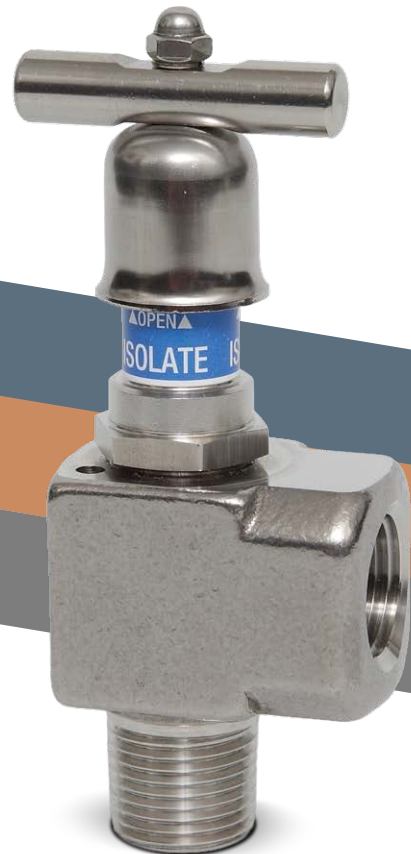
PRODUCT OVERVIEW

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

MULTIPOINT 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	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

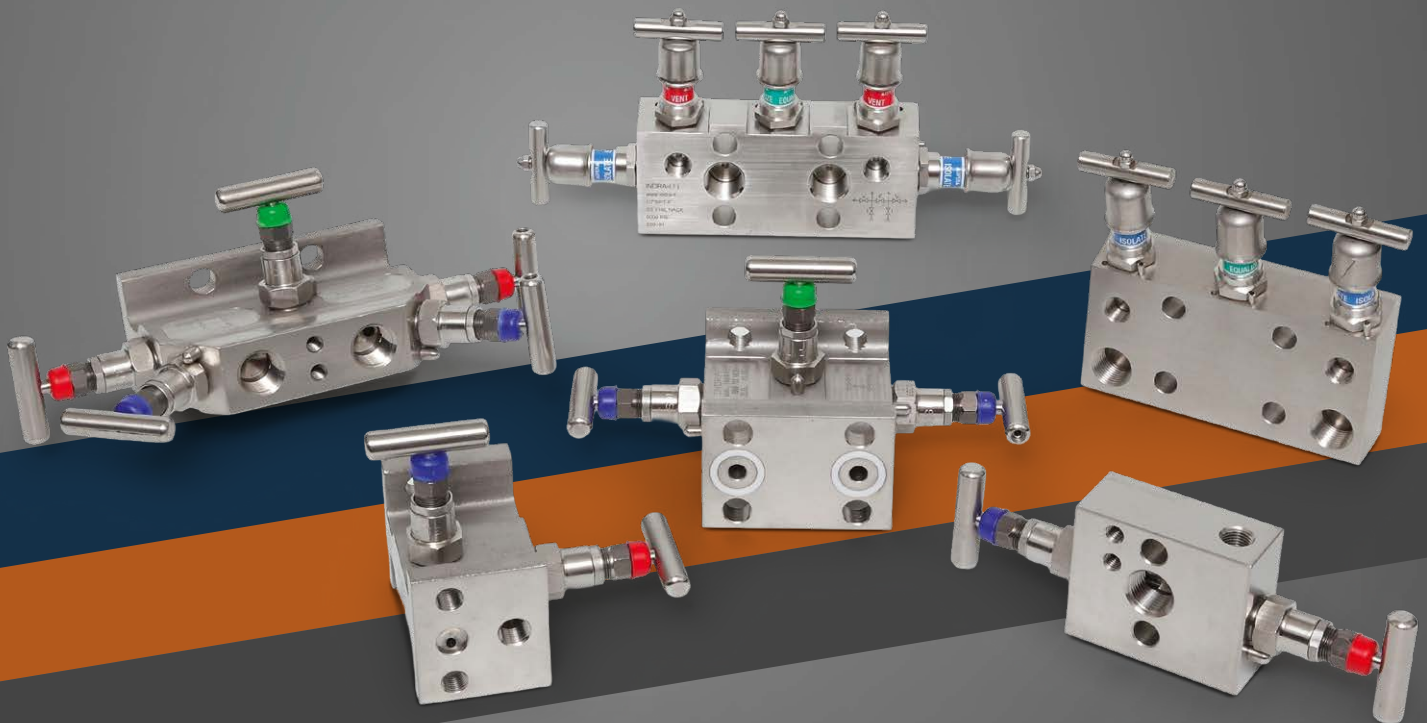
(2)BW ENDS are determined by the pipe schedule and rating (40.80.805,160.xxs)

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.**

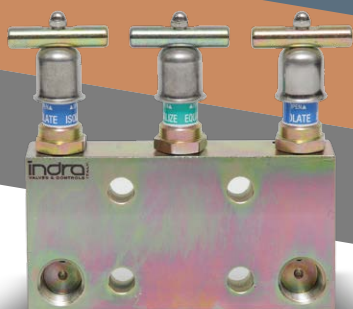
Used with differential pressure instruments (DP) to isolate the impulse lines and allow the equalization of high and low pressures for zero calibration.



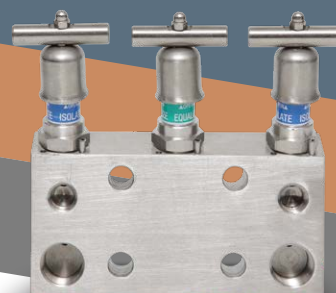
**MOD.300
THREADED
WITHOUT VENTS**



**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

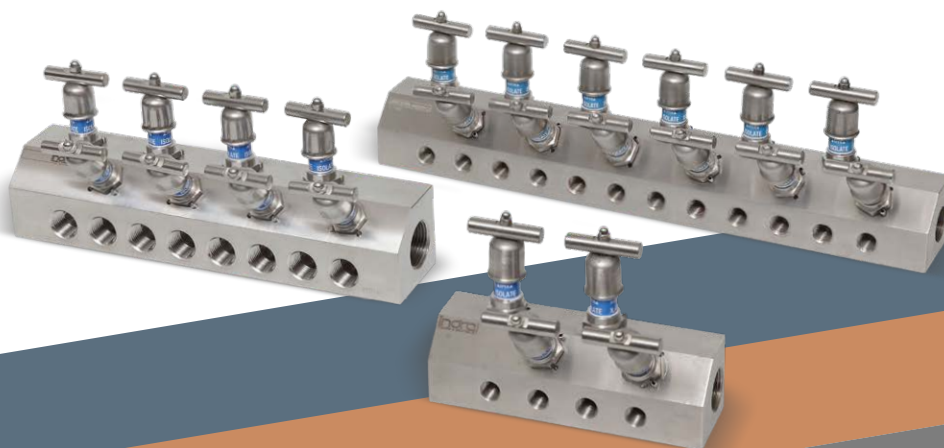
A **Distribution Manifold** is a high-integrity, centralized block used to efficiently and safely split a primary utility fluid or gas stream into multiple, individually controlled lines.

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



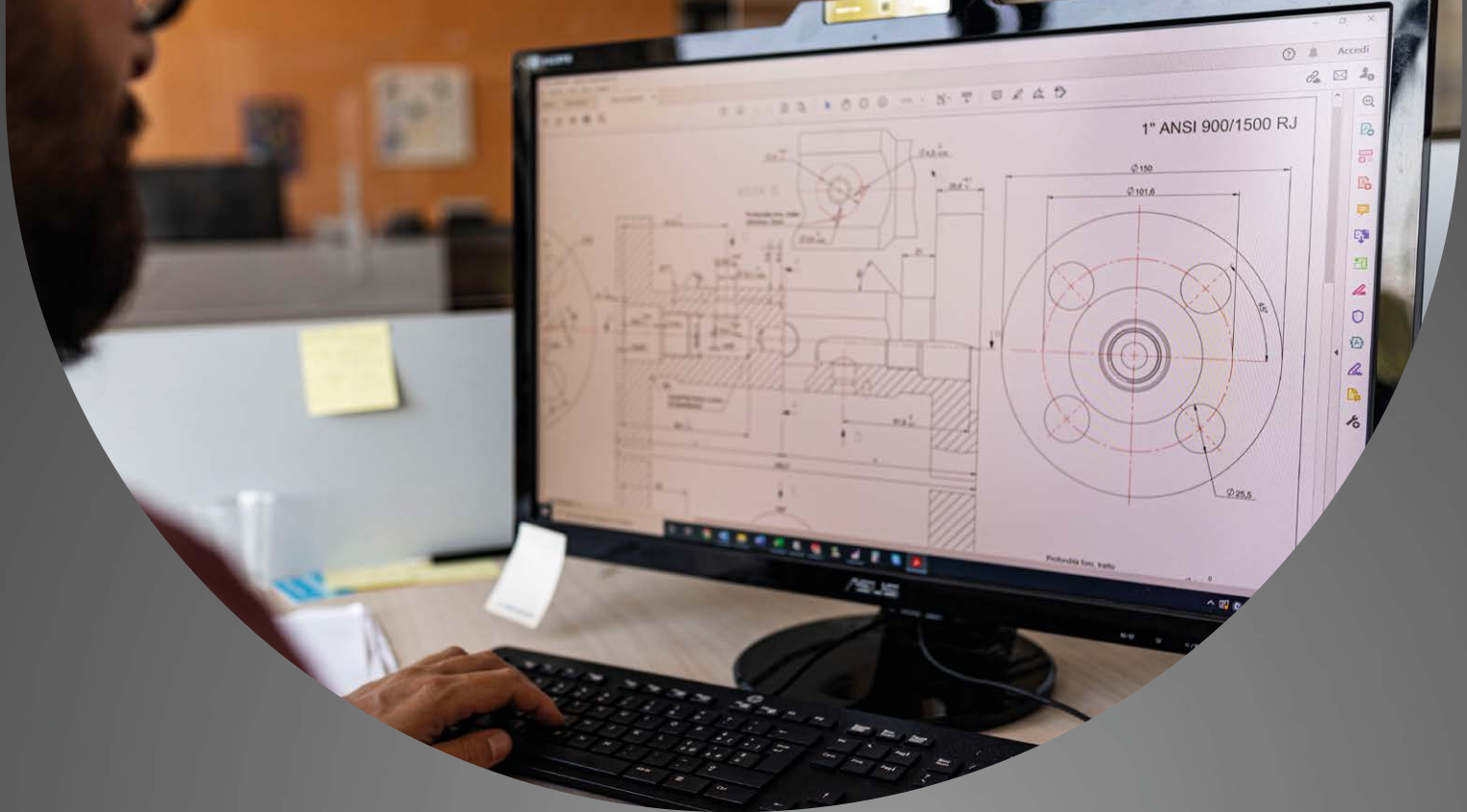
MOD. 210-220 DRAIN COLLECTORS FROM 10 TO 20 45 °ANGLED INLET

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	THREADED/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 **F** = Female **Center Lines** = Instruments Fixing Centers
M/F = Male/Female **M** = Male
F/M = Female/Male
M/M = Male/Male



TAILOR MADE

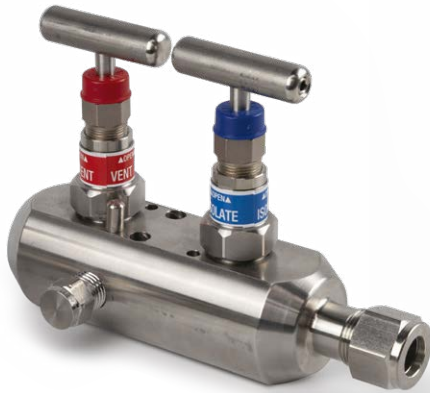
INDRA “Taylor-Made” refers to the design , engineering , and manufacturing of Needle Valves and Manifolds that are specifically adapted to the unique requirements of a customer or a particular application.

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



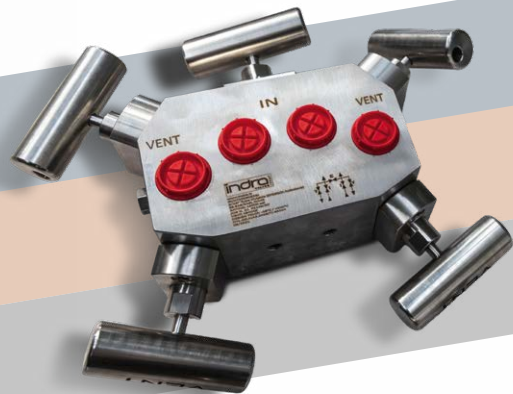
**2 VALVES MANIFOLD WITH
INTEGRAL COMPRESSION
PIPE FITTING**



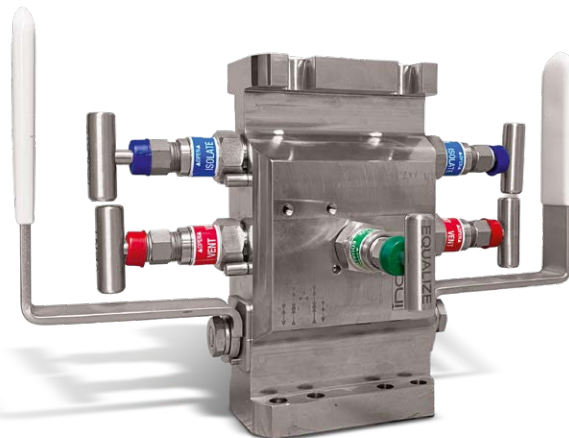
**NEEDLE VALVE OS&Y
BOLTED BONNET**



**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



VISIT THE SITE

