Astava Safety Manifolds

Astava Safety Manifolds replace standard pressure instrumentation manifolds when it comes to avoid human failures. Humans make failures and can cause unsafe situations and un-planned process shutdowns when a manifold is not operated correctly. This has negative consequences for us, our environment, our assets and income. Astava Safety Manifolds help to avoid these RISKS.

Astava Safety Manifolds:
- Operational safe, operating failures are excluded, human failures are avoided
- The manifold's valves can only be opened or closed in the right, safe and determined sequence
- Proven in use since 40 years (number of operational failures: 0)
- For personal safety and process availability during operations and maintenance
- Forced mechanical procedure (sliding key principle)

Data integrity:
- Proximity switches on valves
- Ensure integrity of the measured pressure
- Valve position indication for system-controls
- Redundancy for continues measurement availability
- Avoid to "Forget" bringing back the pressure measurement into the system-controls

In practice:
- The bleed valve can be opened after closing the block valve
- The block valve remains closed as long as the bleed valve is open
- Only one valve can be opened (or closed) at a time
- Visual confirmation of valve position, open or closed

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Facts:
- The manifold's valves are inside a stainless steel cover to protect against conditions
- No mechanical parts can be touched inside
- Single-piece body
- Wide variety of alloys for manifold and trim (AISI316, Duplex, Super Duplex, C-276, Alloy 625, etc.)
- Wide variety of flow schematics (Block-Bleed, Block-Block-Bleed, Block-Bleed-Block, etc.)
- Wide variety of process and instrument connections (flanged, threaded, welded, etc.)
- For pressure (P), differential pressure (DP), level (DP), flow (DP) measurements
- Enclosure protection available (against cold, heat, dust, etc.)
- Valve heating available (tracing, steam, electrical)

Technical and certification:
- Pressure rating up to 10000psig (680 barg)
- Temperature range -55 °C / 316 °C
- Fire Safe to API 607
- SIL certification when used in SIS (IEC61508/ IEC61511)
- Compliant to NACE MR0175
- Compliant to Pressure Equipment Directive

Applications:
- In oil, gas, process, chemical, power and other markets
- Safeguarding
- Toxic media (like H_2S)
- High pressure
- Pressure peaks
- Compressors, turbines, boilers, heat-exchangers, tanks, separators, instrument panels, etc.
- SIS

Flow schematics:
- Wide variety of flow schematics (Block-Bleed, B lock -Block-Bleed, Block-Bleed-Block, etc.)
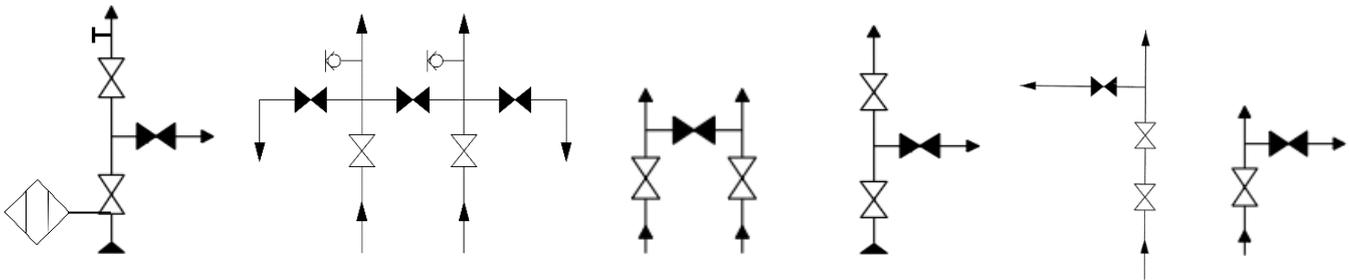
Example Pressure (PT):

The key has left the neutral position.
The first isolate is blocked.
The key cannot slide back to the neutral position before the first isolate is de-blocked.
The key cannot slide to the second isolate before the first isolate is blocked.
Proximity switch (optional) signals: "measurement is NOT INTEGER".

The second isolate is blocked.
The key cannot slide back to the first isolate before the second isolate is de-blocked again.
The key cannot slide to the vent before the second isolate is blocked.

De vent is de-blocked. The pressure has left the manifold.
The transmitter can be tested, calibrated or replaced safely.
The key cannot slide to the isolates before the vent is blocked again.
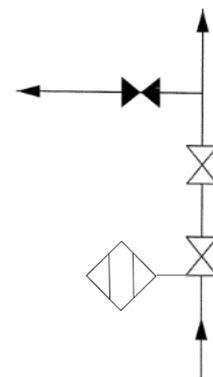
The vent is blocked again so the key can slide back to the second isolate.
De-block the second isolate and the key can slide further to the first isolate.

The first isolate is de-blocked.
Proximity switch signals: "measurement is INTEGER".
The key can slide to the neutral position.

Flow schematic applicable for this example: DBB.
Including symbol for (optional) proximity switch.

Heated manifold for heating the medium

Example Differential Pressure (DPT):

Key in neutral position.
DP is measured.
Proximity switch (optional) signals:
"measurement is integer".

HP side is isolated/blocked. Key cannot go back to neutral position before de-blocking HP again. Key can only slide to LP side as long as HP is blocked.
Proximity switch signals:
"measurement is NOT integer".

LP side is isolated/blocked. Key cannot go back to HP side before un-blocking LP again. Key cannot slide to equalize or vents as long as LP (and HP) is not blocked.

Both HP and LP are blocked.
From now on the equalizing, venting and testing can be done safely.
The key can de-block/block the equalize OR slide directly to the vents.

Venting LP side.
Key cannot slide to other position before blocking the vent again.

Venting HP side.
Key cannot slide to other position before blocking the vent again.

Transmitter can be tested, calibrated or replaced.

Sliding key back in neutral position.
LP, HP side de-blocked. DP is measured.
Proximity switch signals:
"measurement is integer".
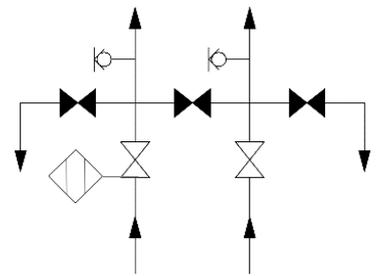
Flow schematic applicable for this example.
Including symbol for (optional) proximity switch.

FLOW VALVE
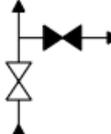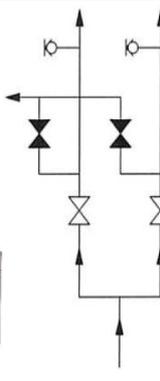
BLOCK-BLEED

Redundancy for guaranteed measurement availability.

2x BLOCK-BLEED (1oo2)
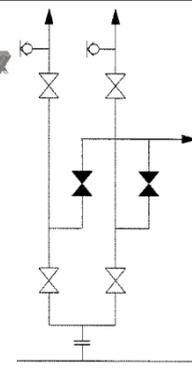
Redundancy for guaranteed measurement availability.

AISI316 instrument enclosure.

2x BLOCK-BLOCK-BLEED (1oo2)
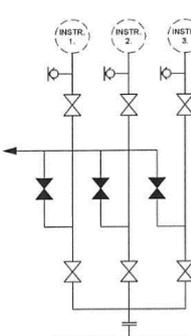
1x common process tapping
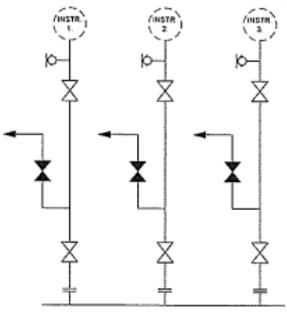
3x separate process tapping

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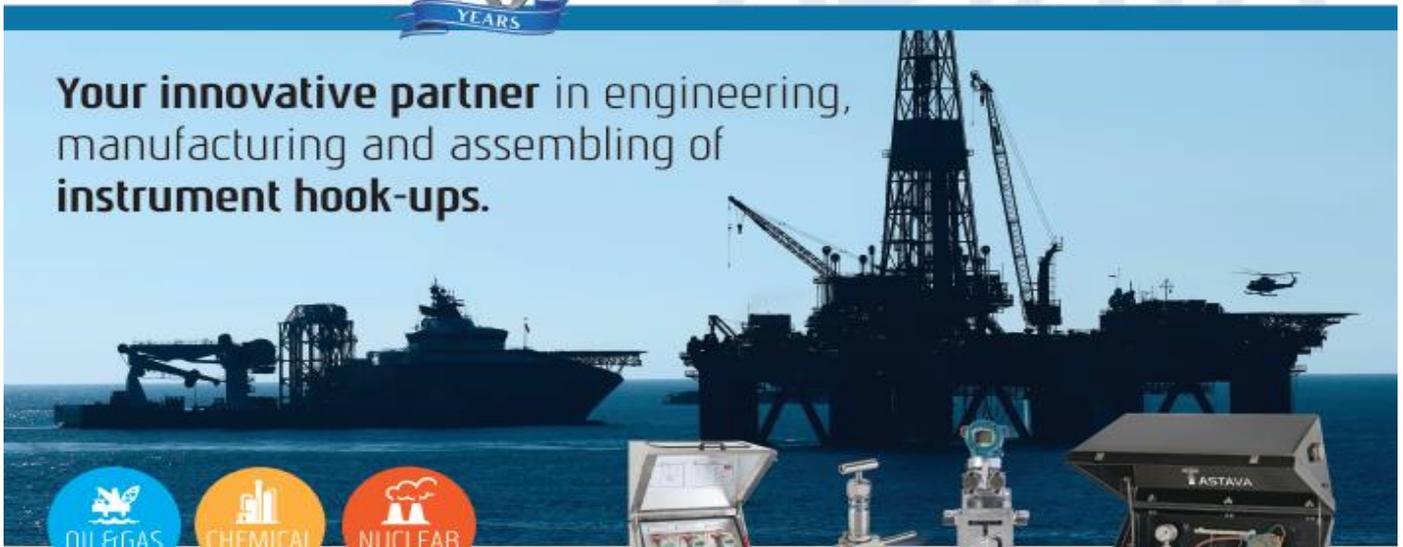
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ASTAVA B.V. is approved by the following notified bodies: