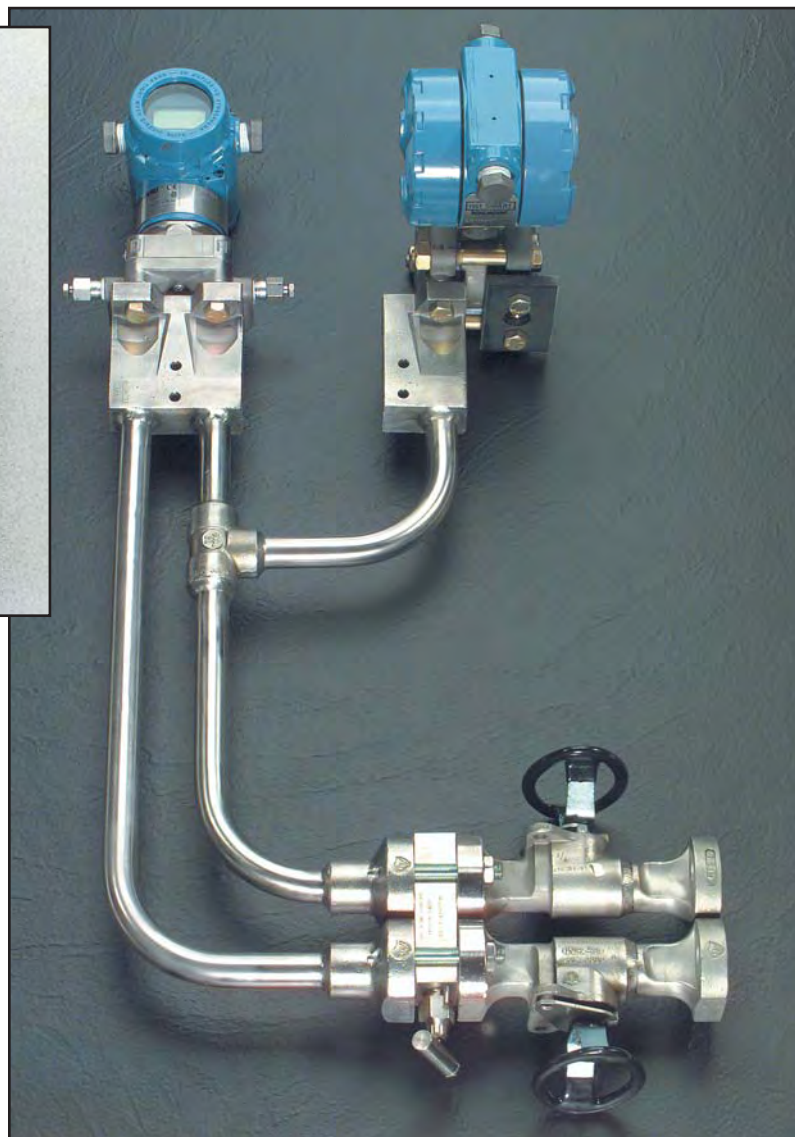
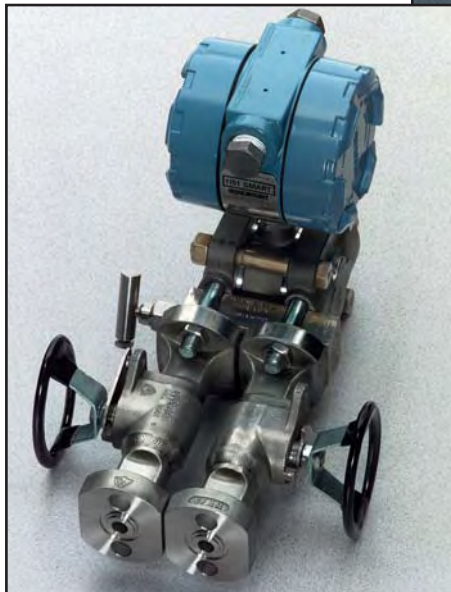


TBV Instrument Installation Details

Revolutionizing the Process Control Industry
with **TOTAL PERFORMANCE SOLUTIONS** for
System Integration



TBV Instrument Installation Details

Standardized Instrument Installations from TBV

Background

The Process Industries are making every effort to reduce the cost of manufacturing and construction of new facilities in order to survive in the fiercely competitive global economy.

Cost studies conducted by leading Chemical and Refining Companies indicate a substantial savings potential in the mounting and maintenance of process transmitters.

Sub-optimal installation was identified as a leading source of instrument maintenance - 60% of the maintenance activity consisted of repetitive work orders due to hydrostatic head error, leaks and impulse line related process/maintenance work. The transmitter was performing to it's specification - but not in the field. **The deliverables of the transmitters were difficult to achieve due to poor installation.**

In one major chemical company, the savings to maintenance, engineering and construction equaled \$100 MM/yr. if this sub-optimization could be reduced, and cost effective, value added solutions implemented.

Many Standards, Little Standardization

Most end user companies have developed instrument installation standards, engineering companies have developed installation standards; projects have developed installation standards.....and so we begin to see it is not a lack of installation standards, but a lack of **Standardized Installation Technology**.

Transmitter Technology

Transmitter Technology has advanced significantly over the past fifteen years. Old paradigm or conventional installation standards have not kept pace with this technology and are in fact, rooted in the technology of the past. Smart Transmitter technology combined with value added, economic and technologically based know-how has produced a paradigm shift in transmitter installation. This is the core of the TBV Instrument Installation Detail System.

Hydrostatic Head - The Number One Source of Error

Although Smart Transmitters currently deliver high value through increased accuracy (.075% of span), increased Mean Time Between Failures (+200 years); and even Measurement Performance Guarantees of over five years without calibration, transmitter installations which induce a hydrostatic head through the installation practice continue to be a costly and ineffective means of connecting the process to the transmitter in order to achieve the desired results: Process Control, Process Optimization, Process Safety and **Increasing The Profit Margin For Both End Users And Contractors.**

***Total Performance Solution: TBV Pre-Engineered, Pre-Tested,
Pre-Fabricated Modular Instrument Installation Details***

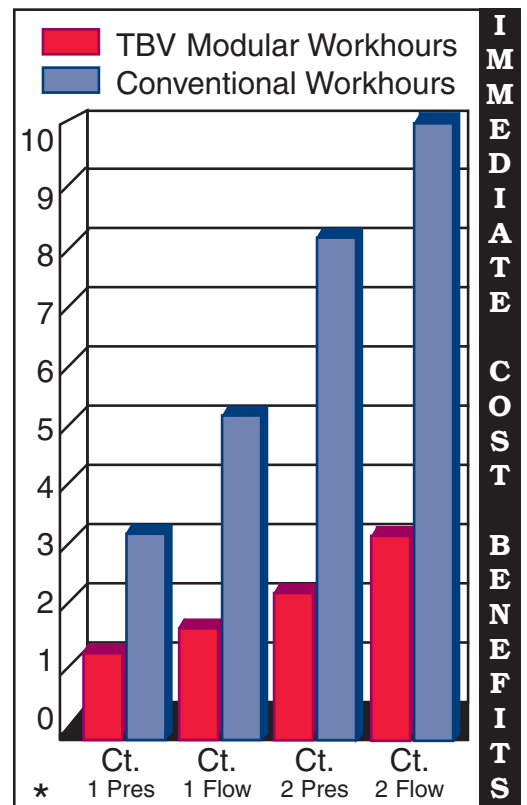
TBV Instrument Installation Details

Eliminate Hydrostatic Error And Reduce Installed Costs Up To 80%

The TBV Instrument Installation Standard Details combine the optimum measurement technology with proven mounting practices (close coupling) and hardware integration to produce not only the specified .075 or .05% accuracy and zero stability, but a low installed cost not equaled in performance and constructability by any other system available on the market today. **The Total Performance Solution** offers a reduction in Installation Costs, by modularizing, pre-engineering, pre-fabricating, and locking in the optimum transmitter installation in a tamper proof, foolproof system that guarantees the rated performance of the transmitter, while lowering the installed cost per instrument loop by 30 to 80%. (Documentation available from TBV).

Benefits of the TBV Total Performance Solution for Process Pressure, D/P Transmitters and Level Measurements

- ❖ Elimination of Hydrostatic Head Error and Subsequent Maintenance
- ❖ Elimination of Threaded Connections and Tubing in the Process
- ❖ Elimination of Fugitive Emissions from Instrument Connections
- ❖ Reduced Variability in the Product and Improved Yields
- ❖ Increased Reliability, Improved Safety
- ❖ **Reduces Installed Costs up to 80% - Immediate ROI On Material Cost!** →
- ❖ No On-Site Assembly or Testing or Calibration - Set and Forget!
- ❖ Reduction of Engineering and Procurement Costs - ONE P.O. for ALL hardware.
- ❖ All Welded and Modular Construction from an ISO-9001 Company. Complete material traceability. Quality consistency and safety.
- ❖ A “cookbook” approach to selection and engineering utilizing **TBV’s Category System.** TBV handles selection, design, documentation, engineering specifications.
- ❖ TBV’s Total Performance Package includes **Contractor Construction Details.** Proven reductions in engineering time: “hook-ups” normally require 15% of the Instrument engineers time. This is reduced to 5%, allowing time to be used on more productive and higher value tasks, such as Process Control Strategies.



* 1 - Simple Pressure and Flow Instrument
* 2 - Complex Pressure and Flow Instrument

TBV’s Total Performance Solution From Selection To Construction

A Technology Based Value For The End User And Contractor All In The Same Box!

TBV Instrument Installation Details

Delivered in reasonable lead time - **In One Box** PER TAG ITEM, bagged, tagged, tested and complete with ALL materials including brackets, bolts, gaskets, stainless steel tags, adapters, flanges and including the root or primary block valve. Even integrated with the transmitter per your specification. Ready for installation, **Set and Forget!**

Designed and Packaged by Instrument Engineers, Piping Specialists and Valve Engineers who understand the E&C environment and needs. **User AND Project Friendly!**

Call TBV's Instrument Detail Experts for more "Detailed" information.

**Tel: 508-887-9400 Fax: 508-887-8612 or
E-mail us at info@pccvalves.com**

Standard Material Specifications - Consult TBV for Additional Specifications

Root Valves	Materials	Piping	Manifolds	Options
3/4" and 1/2" Full Port Ball Valves	Carbon Steel	Sch 40 proc./pipe	Bypass-1 Valve	Extended Handles
3/4" and 1/2" Gate and Globe Valves	Low Temp CS	Sch 80 proc./pipe	2-valve	Fugitive Emissions Bonnets
Hard & Soft Seats	Stainless Steel	Sch 160 proc./pipe	3-valve	Orifice Adapters
Fire Safe to API	Monel	All Std. Materials Listed in "Materials" Column	5-Valve	Flanges to Specification
Class VI Shutoff	Hast C	Die Penetrant Testing	Matched to Spec assemble/transmitter	Direct Weld Connection
Fully Roddable	Alloy 20	Full ANSI/DIN Spec	All Standard Mat'l's	Bolting B7, B8M, SS, Monel, A449 etc.
Customer Specified Valves	Chrome-Moly		Hard & Soft Seals	Gaskets, Glass Filled PTFE, TFE, Graphite
	Other mat'l per customer spec	Other mat'l per customer spec	Full Porting	
			Other mat'l per cust spec	

Certifications:

