

SUSTECH Precision - Design

Sustech Manufacturing's entire product range is designed and manufactured to recognized engineering standards exclusively. Past and future design verification is conducted by TÜV Rheinland whilst performance validation is an ongoing process.

Design verification includes testing to yield point, of all devices produced by Sustech, whilst production testing is 100% of all valves prior to delivery, the test medium being Nitrogen gas. Yield Point Testing is such that bursting at yield is not tolerated, this only being possible because of Sustech's unique "Dual Pressure Activated Stuffing Box" design.

Manufacturing and marking is carried out exclusively on (CNC) machinery with raw materials being purchased from recognized manufacturers only. All components are gauged for conformance whilst assembly is carried out strictly in accordance with a set of customized Quality Control Plans and Work Instructions.

100% gas testing and carefully designed packing ensures Sustech's high quality product is delivered as a fully competent product, to your door.

All equipment utilized in Sustech's production enjoys full maintenance support and staff are trained in the necessary skills required to carry out their duties. Congenial working conditions and a matchless record for industrial safety, contributes to motivation, productivity and low staff turnover.

Traceability plays an integral part in Sustech's Quality Control Program with each stage of manufacture fully documented to ensure a trail of each and every component, back to origin. This coupled to intrinsic design, exacting manufacture, rigorous assembly controls, pressure compliance and 100% testing ensures the best quality, every time.

Sustech's value for money pricing, high quality products and good service is now seen on most continents and the company remains dedicated to its clients through continuous maintenance of its Quality Management Systems and on going R & D.



sales@sustech.com

Design Criterion

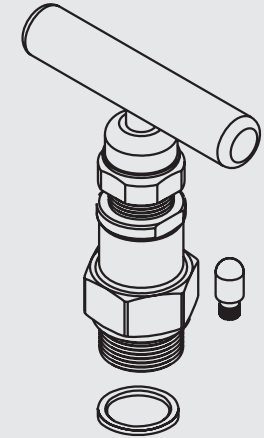
ASME	B31.1/B31.3
NACE	MR 01 75
PED	97/23 EC
ASME	B1.20.1
DIN	19213
ASME	B16.5
Materials	3.1B
CSA	B51



SUSTECH Precision

Secondary Valvehead

ASME B31.1 & ASME B31.3

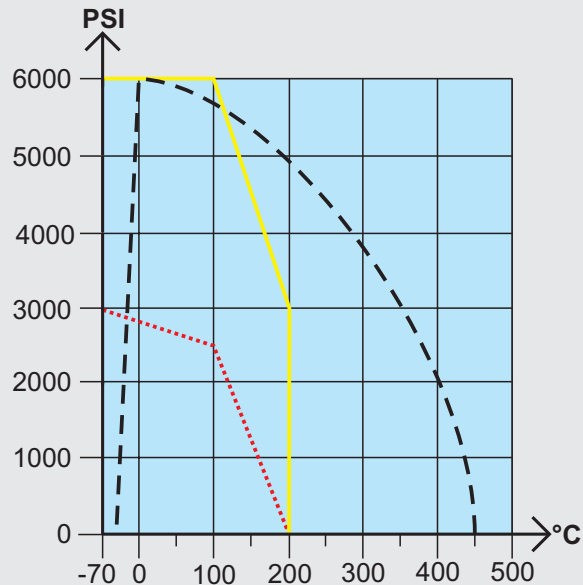


Pressure vs Temperature Ratings

SUSTECH Precision

Pressure vs Temperature - Austenitic SS
ASME Boiler & Pressure Vessel Code VIII Div 1

Packing Material	
— PTFE	UG 101 (m)(2)
- - Graphite	UG 101 (k)(m)(2)
... Air Header	



PTFE Packing

MAWP 6000 PSI (41.4 MPa) at 100° C
3000 PSI (20.7 MPa) at 200° C

PTFE packed valves must not be used at temperatures higher than 200° C

Graphite Packing

MAWP 6000 PSI (41.4 MPa) at 200° C
3000 PSI (20.7 MPa) at 430° C

All valves have an over pressure rating safety margin of 4 times.

Austenitic valves must not be used at temperatures higher than 450° C because the material will become sensitized. Sensitized material needs to be solution annealed again and this is impractical for assembled components.

SUSTECH Precision

Primary Valvehead

ASME B31.1 & ASME B31.3



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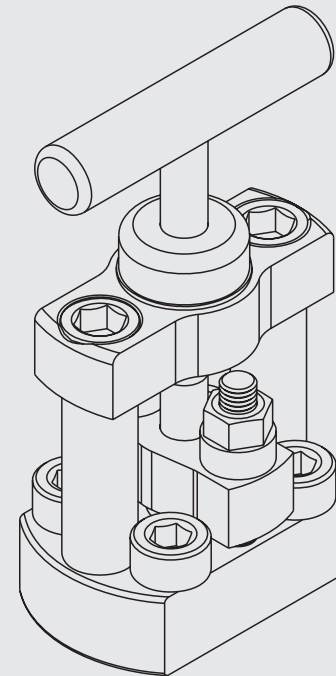
Valve rating will be as per flange or manifold markings. Over pressure rating of the SUSTECH Precision Primary Valvehead is 4 and the unit is of Firesafe design to BS 6755 II.

The stuffing box is self adjusting and requires no maintenance. In low pressure applications the pusher may need to be tightened by loosening the Lock-nut and turning the pusher clockwise one or two flats only, making sure that the **valve is in the open** position.

Pressure rating see flange or manifold details. Maximum operating pressure of the 316 PRECISION OS&Y valve is 41.4 MPa @ 100°C with 4 times over pressure safety rating.

Material of construction for the Primary Valvehead and associated flange body may be ordered in either bar stock or forged material. Where forged valves are necessary the Secondary Isolation Valveheads would also be of forged material.

Austenitic ss manifolds are suitable for temperature applications up to 400°C maximum when supplied with Graphite seals. For NACE option order the 'L' (316L) version.



Design Criterion

ASME	B31.1/B31.3
NACE	MR 01 75
PED	97/23 EC
ASME	B1.20.1
BS	6755 II
ASME	B16.5
Materials	3.1B
CSA	B51

Scope of validity of the approval as manufacturer of Needle Valves, Gauge Valves, Instrument Manifolds & Fittings with PTFE Seals

Annex to log BPV-D-04-05362.

Annex to Cert No : 01 202

As found in Power Stations, oil-field and associated refineries, cryogenic and gas producing plants.


Manufactured to ASME B31.1 and ASME B31.3 requirements and in accordance with CSA B51.03.

Manufacturer's Head Office		Test Date	QC Surveillance, Acceptance & Release Form
Physical Address	Postal Address	03 August, 2005	
29 Mopedi Road	PO Box 9042	Temperature	TÜV 25358
Sebenza, Edenvale,	Edenglen, 1613	28°C	
Gauteng Province	Gauteng Province	Gauge No G441 (0 to 50,000 PSI)	Materials
South Africa	South Africa	Next Cal Date - 09 June, 2006	

Materials for **SUSTECH Precision** Valves are to ASTM A182, ASTM A276 & ASTM A479. Seals are Virgin PTFE as denoted by T in the part number.

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Valve Group See Appendix T Attached	MAWP ASME VIII Div 1 UG-101 (m)(2)	Bursting Test Pressure ASME VIII Div 1 UG-101 (m)(1)	Type of Connection	Material	Inspector Approval
Accessories	6,000 PSI @ 100°C	30000 PSI	Threaded	UNS31600/UNS31603	
Mini Needle Valves	6,000 PSI @ 100°C	27600 PSI	Threaded, Tube ends	UNS31600/UNS31603/PTFE	
Mini Gauge Valves	6,000 PSI @ 100°C	27600 PSI	Threaded, Tube ends	UNS31600/UNS31603/PTFE	
Maxi Needle Valves	6,000 PSI @ 100°C	28750 PSI	Threaded, Tube ends	UNS31600/UNS31603/PTFE	
Maxi Gauge Valves	6,000 PSI @ 100°C	28750 PSI	Threaded, Tube ends	UNS31600/UNS31603/PTFE	
P & S Series Transmitter Manifolds	6,000 PSI @ 100°C	30000 PSI	Remote & Direct Mount*	UNS31600/UNS31603/PTFE	
Airheaders	3,000 PSI @ 100°C	13715 PSI	Threaded	UNS31600/UNS31603/PTFE	

P & S Series Transmitter Manifolds Connections		Government Approved Inspection Authority Stamp	Test Result	All results found to be acceptable according to 2004 ASME Boiler & Pressure Vessel Code VIII Div 1, UG-101 (m)(1) Bursting Test Pressure 
* Remote Mount	Threaded Inlet			
	Threaded Outlet			
*Direct Mount	Threaded Inlet or Tx Flange Inlet			
	Transmitter (Tx) Flange Outlet			

Scope of validity of the approval as manufacturer of Needle Valves, Gauge Valves, Instrument Manifolds & Fittings with Graphite Seals

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As found in Power Stations, oil-field and associated refineries, cryogenic and gas producing plants.			
Manufactured to ASME B31.1 and ASME B31.3 requirements and in accordance with CSA B51.03.			
Manufacturer's Head Office		Test Date	QC Surveillance, Acceptance & Release Form
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29 Mopedi Road	PO Box 9042	Temperature	TÜV 25358
Sebenza, Edenvale,	Edenglen, 1613	28°C	
Gauteng Province	Gauteng Province	Gauge No G441 (0 to 50,000 PSI)	Materials
South Africa	South Africa	Next Cal Date - 09 June, 2006	

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Valve Group See Appendix G Attached	MAWP @ Hi Temp ASME VIII Div 1 UG-101 (k)	Proof Test Calc Value as per ASME VIII Div 1 UG-101 (m)(1)	Type of Connection	Material	Inspector Approval
Mini Needle Valves	5,000 PSI @ 200°C	27600 PSI	Threaded	UNS31600/UNS31603/Graphite	
Mini Gauge Valves	5,000 PSI @ 200°C	27600 PSI	Threaded	UNS31600/UNS31603/Graphite	
Maxi Needle Valves	5,000 PSI @ 200°C	28750 PSI	Threaded	UNS31600/UNS31603/Graphite	
Maxi Gauge Valves	5,000 PSI @ 200°C	28750 PSI	Threaded	UNS31600/UNS31603/Graphite	
P & S Series Transmitter Manifolds	5,000 PSI @ 200°C	30000 PSI	Remote & Direct Mount*	UNS31600/UNS31603/Graphite	
P & S Series Transmitter Manifolds Connections		Government Approved Inspection Authority Stamp		Test Result	All results found to be acceptable according to 2004 ASME Boiler & Pressure Vessel Code VIII Div 1, UG-101 (m)(1) Bursting Test Pressure including UG-101 (k); MAWP @ higher temperatures.
* Remote Mount	Threaded Inlet				
	Threaded Outlet				
*Direct Mount	Threaded Inlet or Tx Flange Inlet				
	Transmitter (Tx) Flange Outlet				

