



penta s.r.l.



MODELLO / MODEL

MULTIPOINT

MULTIPOINT



97/23/CE "PED"



II 2 GD c TEX

94/9/CE "ATEX"



MULTIPOINT

Basandosi su una costruzione con sfera vincolata, (Trunnion mounted) PENTA realizza valvole a sfera a sedi metalliche a 3 vie, con passaggio a L oppure a T. Queste valvole usufruiscono di soluzioni tecniche uniche tipiche dei modelli SAT, che ancora oggi non trovano eguali nel mercato delle valvole.

Come tutta la produzione PENTA le valvole serie MULTI-PORT sono progettate per essere equipaggiate con seggi metallici in PENTAFITE permettendo la realizzazione di valvole a seggi metallici con PERDITA ZERO per servizi con temperature di esercizio continuo da -100°C a -400°C.

Le caratteristiche elasto-plastiche della PENTAFITE e la costruzione interamente bullonata permettono facili interventi di manutenzione, non necessitando di lavoro di adattamento tra sedi di ricambio e sfere.

Tutte le valvole Multipoint sono equipaggiate con sfere Trunnion mounted e con seggi indipendenti su ogni via precaricati con molle.

Basing on a trunnion mounted ball construction, PENTA can manufacture a range of 3-way metal seated ball valves, with "L" port or "T" port. The advanced solutions typical for SAT model are used on these valves that still has no equal on the market at present.

Like all PENTA production, MULTIPOINT valves are equipped with metallic seats in PENTAFITE to allow the manufacturing of metal seated ball valves with absolutely ZERO LEAKAGE suitable for a wide range of services with working temperatures from -100°C a -400°C.

The typical elastic properties of PENTAFITE seats and the fully bolted construction allow an easy maintenance without necessity of additional lapping of the seats against the ball.

All valves Multipoint model are equipped with Trunnion mounted ball and with independent spring loaded seats on each way .

Dimensionamenti <i>Design</i>	ANSI B16.34 / API 608 / EN12569 / EN17292 ASME VIII Div.1 / EN 12516-1
Estremità* <i>Valve ends</i>	Flangiate ANSI B16.5 / EN 1092-1 / DIN <i>Flanged</i> A saldare ANSI B16.25 <i>Butt weld</i>
Collaudo <i>Testing</i>	ANSI B16.104 / API 598 API 598 EN 12266-1 ISO 5208 BS 6755-1

* Altre estremità disponibili a richiesta.
Other end connections are available on request.



VALVOLE A SFERA A SEGGI METALLICI METAL SEATED BALL VALVES

Stelo

Gli steli sono 100% sovradimensionati rispetto alla coppia attesa al max. DP di rating.

Stem

Stem are 100% oversized against expected torque at max. rated DP.

Guarnizioni

Sono utilizzate esclusivamente guarnizioni in Grafoil® resistenti alle alte temperature; nessun materiale polimerico è impiegato.

Gasket

Only Grafoil® gasket are used, inherently resistant to high temperatures; no polymers are used.

Tenuta stelo

Tenuta stelo di progetto unico (brevettato). La molla posta all'estremità superiore dello stelo fornisce il precarico per la tenuta alle basse pressioni, recupera usura e giochi dovuti a dilatazioni differenziali tra stelo e coperchio.

Stem tightness

Unique stem seal design (patented). The spring placed at stem top gives the contact load for low pressure tightness and the adjustment for wearing and clearance for different dilatation between stem and cover.

Coperchio superiore

Tutte le valvole 3 VIE sono dotate di un coperchio superiore bullonato per una rapida sostituzione del gruppo stelo/guarnizioni.

Upper cover

All 3 WAY valves are provided with bolted upper cover for quick and easy stem assembly maintenance.

Sfera

Sfere rettificata ad alta precisione sono prodotte internamente e quindi indurite superficialmente con riporti a tecnologia avanzata. Tutte le sfere sono "trunnion mounted" per evitare carichi laterali alle sedi di tenuta.

Ball

Very high precision grounded balls are produced inside and then hard coated with most advanced system. All balls are "trunnion mounted" in order to avoid lateral load against the seats.

Flange - Bulloneria

Tutti gli accoppiamenti flangiati sono dimensionati secondo ASME VIII Div. 1.

Bolting and Flanges

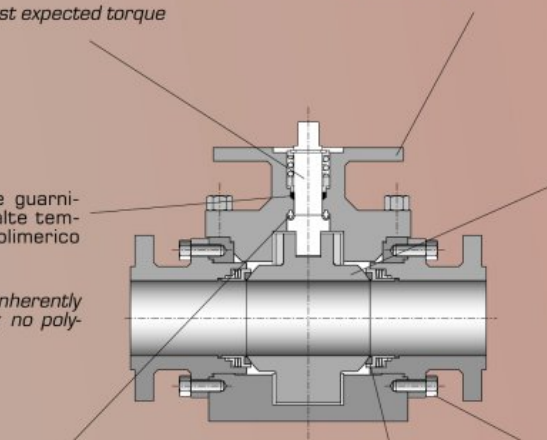
All flanges connections are designed according to ASME VIII Div. 1

Seggi

Ogni via è predisposta con sede di tenuta indipendente. Le sedi metalliche sono precaricate con molle in entrambi i lati della valvola, anche nella versione flottante, per una completa bi-direzionalità.

Seats

Every way is predisposed with independent seat. Metallic seats are loaded with springs on both valve side, also for floating ball construction, for a full bi-directionality.





MATERIALI DISPONIBILI PER I SEGGI - AVAILABLE SEAT MATERIAL

Codice Code	Materiale Material	Durezza Hardness	Temperature di lavoro Working temperature	Pressioni di lavoro Working pressure	Servizio Service Limits
S01	SILVER PENTAFITE (Nickel + Graphite)	120 HB	-100°C / +780°C (-148°F / +1436°F)	ANSI 150 - 600 PN 10 - 100	For clean services both liquid or gas. For use with HTC, HTCEN, HCR, WC, CRC, ST6 ball coated
R01	RED PENTAFITE (Cu + Graphite)	100 HB	-100°C / +500°C (-148°F / +932°F)	ANSI 150 - 600 PN 10 - 100	For clean services both liquid or gas. Lower friction factors in dry gas or steam service. For use with HTC, HTCEN, HCR, ST6 ball coated
B01	BLACK PENTAFITE (Carbon + Graphite)	80 HB	Amb. / +400°C (Amb. / +752°F)	ANSI 150 - 300 PN 10 - 40	For low pressure specific services where S01 and R01 cannot be used due to corrosion problems. A ball coat is not strictly necessary and should be evaluated time to time
WC	CARBURO DI TUNGSTENO Tungsten Carbide Coat (Detonation Gun/HVOF)	1100 HV	Amb. / +350°C (Amb. / +662°F)	ANSI 150 - 300 PN 10 - 40	For liquid or gas services with high presence of solids. Not suitable when small presence of caustic soda is expected. For use with WC ball coat
ST6	STELLITE Gr.6 (Detonation Gun/HVOF)	1000 HV	Amb. / +350°C (Amb. / +662°F)	ANSI 150 - 300 PN 10 - 40	For liquid or gas services with small presence of solids. Suitable when small presence of caustic soda is expected. Best on dry gas or steam services. For use with WC, CRC ball coat
PK1	PEEK (Polietheretherketone)		-100°C. / +240°C (-148°F / +464°F)	ANSI 150 - 600 PN 10 - 100	For liquid or gas services with high frequency of valve operation.

MATERIALI DISPONIBILI PER RIVESTIMENTO SFERE - AVAILABLE BALL COATING MATERIALS

Codice Code	Materiale Material	Durezza Hardness	Temperature di lavoro Working temperature	Pressioni di lavoro Working pressure	Servizio Service Limits
HTC	NITRURI DI TITANIO Titanium Nitride (PVD)	2500 HV	-100°C / +600°C (-148°F / +1112°F)	ANSI 150 - 600 PN 10 - 100	For clean services both liquid or gas. For gas and steam up to 180°C
HTCEN	CARBO-NITRURI DI TITANIO Carbo-Titanium Nitride (PVD)	3500 HV	-100°C / +400°C (-148°F / +752°F)	ANSI 150 - 600 PN 10 - 100	For liquid or gas services with small presence of solids. For gas and steam up to 180°C
HCR	NITRURI DI CROMO Chrome- Nitride (PVD)	3000 HV	Amb. / +750°C (Amb. / +1382°F)	ANSI 150 - 300 PN 10 - 40	For clean services both liquid or gas. Best on oxidizing services
WC	CARBURO DI TUNGSTENO Tungsten Carbide (Detonation Gun/HVOF)	1100 HV	Amb. / +350°C (Amb. / +662°F)	ANSI 150 - 300 PN 10 - 40	For liquid or gas services with high presence of solids. Not suitable when small presence of caustic soda is expected.
CRC	CARBURO DI CROMO Chrome Carbide (Detonation Gun/HVOF)	800 HV	Amb. / +750°C (Amb. / +1382°F)	ANSI 150 - 300 PN 10 - 40	For liquid or gas services with small presence of solids. Not suitable when small presence of caustic soda is expected.
ST6	STELLITE GR.6 (Detonation Gun/HVOF)	1000 HV	Amb. / +350°C (Amb. / +662°F)	ANSI 150 - 300 PN 10 - 40	For liquid or gas services with small presence of solids. Suitable when small presence of caustic soda is expected. Best on dry or steam services.

GRADO DI TENUTA - TIGHTNESS

Tutte le valvole PENTA modello MULTIPORT sono collaudate per verificarne la TENUTA PERFETTA (perdita zero alla prova idraulica dei seggi secondo ANSI B16.34 e a 6 bar con aria).

All PENTA valves MULTIPORT model are tested to verify their BUBBLE TIGHTNESS (no visible leakage during hydraulic seat test according to ANSI B 16.34 and during low pressure air seats test at 100 psi)

VALVOLE A SFERA A SEGGI METALLICI METAL SEATED BALL VALVES

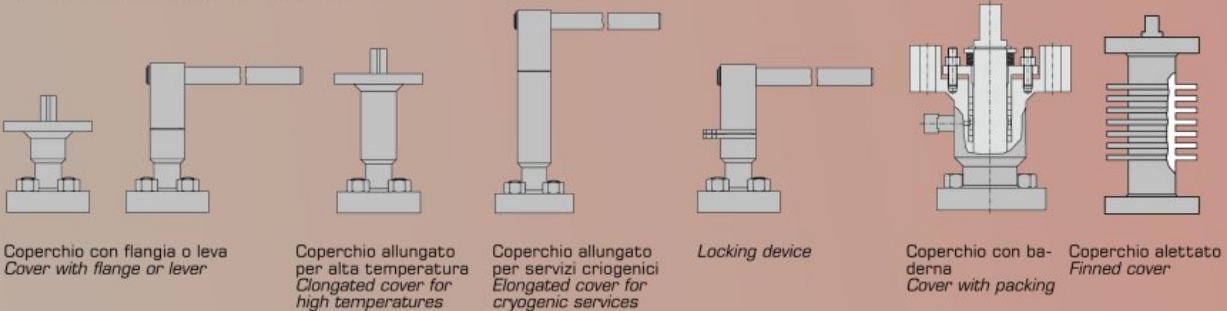
INTERVALLO DI PRODUZIONE - PRODUCTION RANGE

CLASSE - PRESSURE CLASS			
ANSI B 16.34	150	300	600
PN	16 - 25	40 - 50	64 - 100
Diametri Nominali Nominal diameter	T	T	T
1/2"			
3/4"			
1"			
1 1/2"			
2"			
3"			
4"			
6"			
8" Red Port			

T = Sfera vincolata - Trunnion mounted ball

ACCESSORI DISPONIBILI - AVAILABLE ACCESSORIES

Diversi accessori sono disponibili a richiesta
Many accessories are available on request



Coperchio con flangia o leva
Cover with flange or lever

Coperchio allungato
per alta temperatura
Elongated cover for
high temperatures

Coperchio allungato
per servizi criogenici
Elongated cover for
cryogenic services

Locking device

Coperchio con ba-
derna
Cover with packing

Coperchio alettato
Finned cover

OPERATORI DISPONIBILI - AVAILABLE OPERATORS

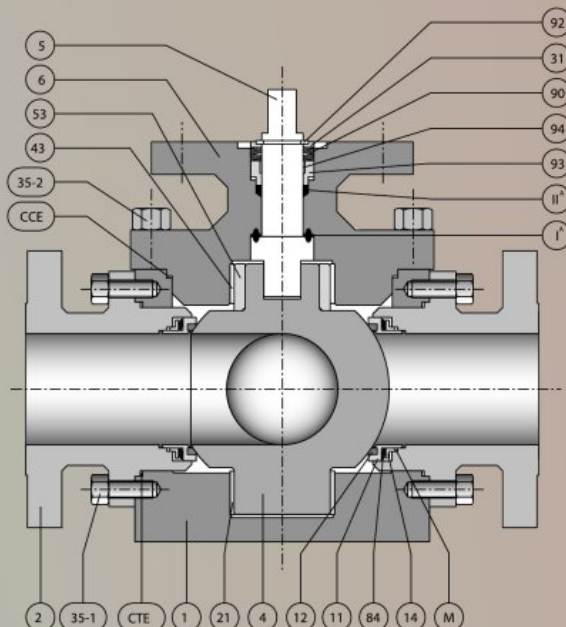
- Riduttori manuali
- Attuatori pneumatici a semplice o doppio effetto
- Attuatori elettrici
- Attuatori idraulici
- Manual gears
- Single or double acting pneumatic actuators
- Electric actuator
- Hydraulic actuators



MULTIPORT

-100 °C +400 °C

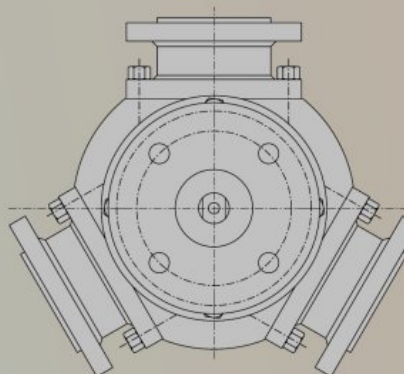
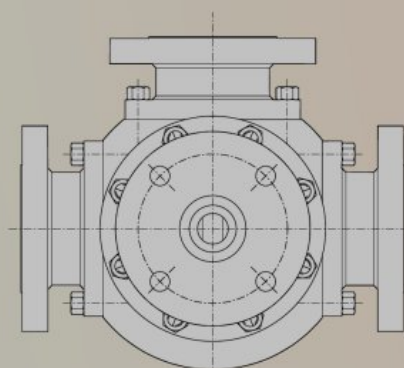
Tipica Valvola 3-VIE 90° Trunnion Typical 3WAY 90° - Trunnion



Componenti - Valve parts

CCE	Guarniz. Coperchio Sup.	Upper cover gasket
CTE	Guarniz. Corpo/Terminale	Body-Connector gasket
M	Guarnizione Seggio	Seat gasket
II ^A	Guarnizione Secondaria	Secondary stem seal
I ^A	Guarnizione Primaria	Primary stem seal
94	Bussola Stelo	Stem plain bearing
93	Premi Baderna	Gland
92	Fermo Anello Stelo	Stem retaining ring
90	Molle Stelo	Stem spring
84	Molle Seggio	Seat spring
53	Manicotto	Coupling
43	Bussola Manicotto	Coupling plain bearing
35-2	Tiranti Coperchio superiore	Upper cover Bolts
35-1	Tiranti Corpo/Terminale	Body/Connector Bolts
31	Anello premi molla Stelo	Stem spring compression ring
21	Bussola Trunnion	Trunnion plain bearing
14	Premigrafoil	Compression ring
13	Cassetto Corpo	Seat holder
12	Seggio	Seat
6	Coperchio superiore	Upper cover
5	Stelo	Stem
4	Sfera	Ball
2	Terminale	Body Connector
1	Corpo	Body

P. No. Parte - Part Name



Le valvole possono essere realizzate in qualsiasi materiale in accordo ai requisiti del Committente purchè in barre, barre o anelli fucinati e forgiati