High Pressure Technology

High Pressure Components for critical service application

Keeping tight at pressures ranging from 7'000 – 150'000 psi / 500 – 10'000 bar: Valves, fittings and tubing

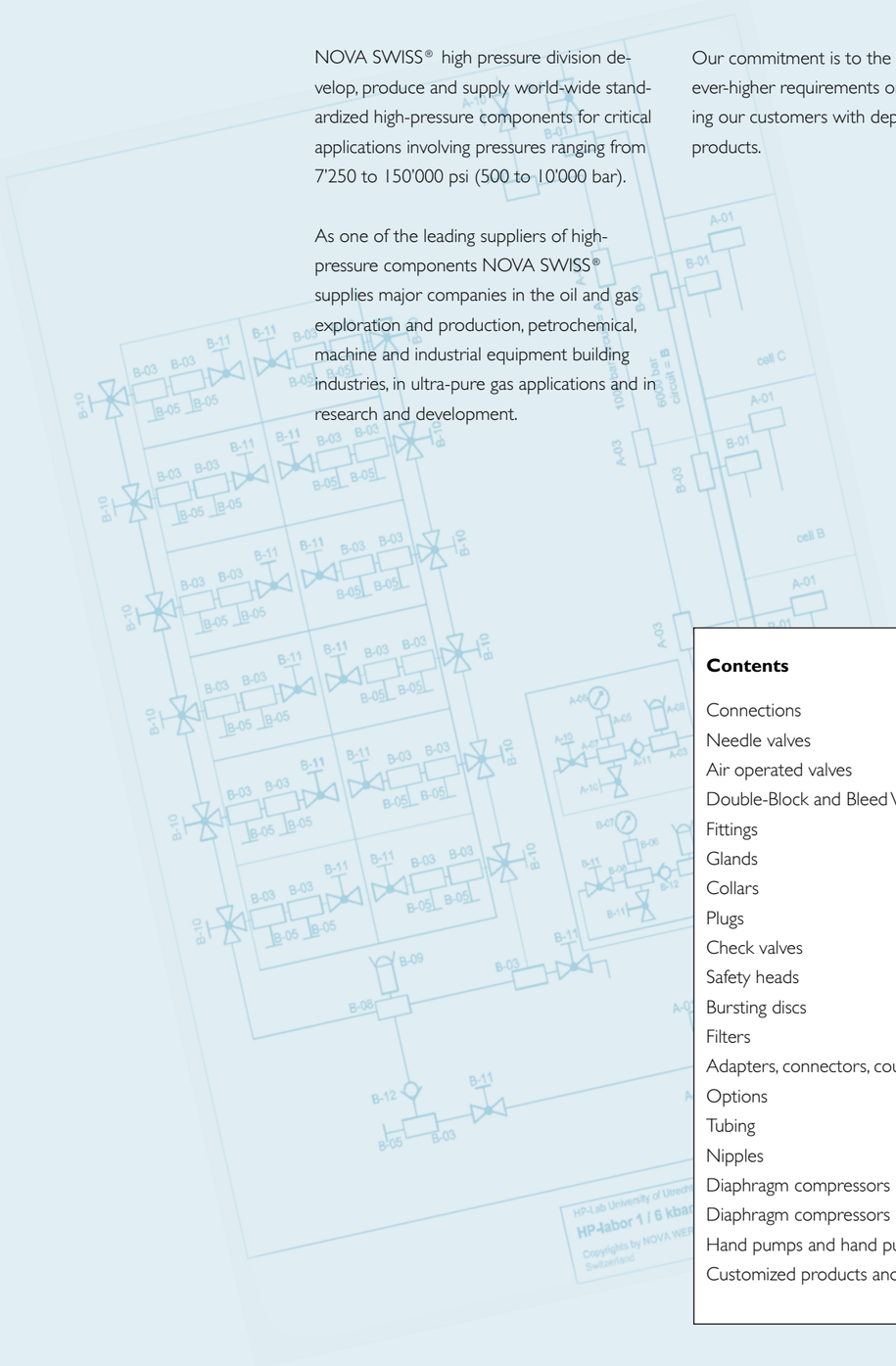
NOVA SWISS

www.novaswiss.com

NOVA SWISS® high pressure division develop, produce and supply world-wide standardized high-pressure components for critical applications involving pressures ranging from 7'250 to 150'000 psi (500 to 10'000 bar).

As one of the leading suppliers of high-pressure components NOVA SWISS® supplies major companies in the oil and gas exploration and production, petrochemical, machine and industrial equipment building industries, in ultra-pure gas applications and in research and development.

Our commitment is to the fulfillment of the ever-higher requirements on safety by serving our customers with dependable quality products.



Contents

We offer you a comprehensive safety system

High functional reliability in extreme environments

Our products are based on state-of-the-art technology. Their distinguishing features are mature product development and design, high precision, made-to-fit connection geometries and ease of use. NOVA SWISS® high-pressure components have proven their service-worthiness under adverse environmental conditions and high physical strain.

High operating reliability

NOVA SWISS® high-pressure components are designed and manufactured in compliance with the European machine directives (89/392/EEC). Our integrated management system according to ISO 9001 is your assurance of top quality, as well as user-friendly and safety-oriented designs.

Longevity of highly-stressed products.

NOVA SWISS® high-pressure components are made of high-grade, corrosion-resistant materials. Material pairings are designed to suit individual application requirements.

The pressure retaining parts of valves, fittings and adapters which are rated up to 2,070 bar (30 kpsi) comply with standard NACE MR0175.

All pressures indicated in this brochure apply for maximum quasi-static load at room temperature.

Traceability

All pressure retaining parts are manufactured and marked according to exactly specified manufacturing instructions. All of these parts are fully traceable, starting from the finished product and reaching all the way back to the raw material.

Broad product range

As a leading manufacturer of high-pressure components we offer a large selection of products for a diversity of applications.

High on-time delivery performance

Just-in-time delivery directly to customer's assembly lines is standard. We have adopted the modern Kanban manufacturing approach and maintain our own modern production and procurement logistics organization. The on-going measurement of our performance factors such as quality, delivery accuracy and customer satisfaction provides the customer the assurance that their high requirements will be met.

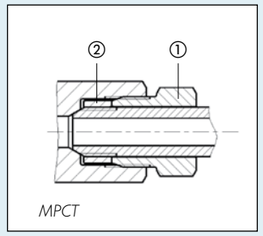
Cost reduction is the objective

NOVA SWISS® products are easy to install and designed to facilitate the maintenance at a later time. For this purpose we supply repair instructions with the respective safety information in multiple languages.

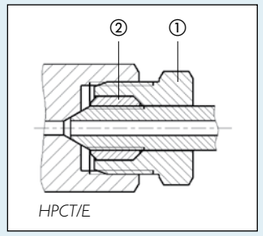
Accident prevention is an integral part of our product concept

NOVA SWISS® high-pressure components are the embodiment of a modern, ergonomic product design. The products are easy to install and to handle. In the development phase systematic risk analysis were performed and measures implemented for the purpose of excluding risks for the user as much as humanly possible. The safe and dependable assembly and operation of our components is enhanced by detailed operating manuals.

Connections



MPCT



HPCT/E

Connections

Medium-pressure connections (MPCT). This coned and threaded connection can be fitted and disconnected several times. The gland and the collar are arranged in line, thereby allowing minimum thickness of the components.

High-pressure connections (HPCT). Coned and threaded connection for high pressures and repeated fitting/unfitting. The gland encloses the collar and reinforces it at the point of maximum load.

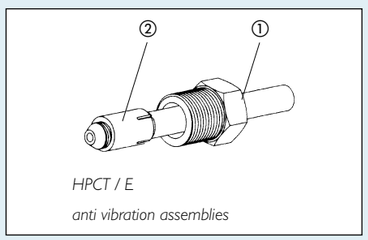
«E» high-pressure connections are of the same concept as the «HPCT» high-pressure connections. Only the threads of the glands and female ports are different.

«HPCT» Imperial thread UNF
«E» Metric thread according to ISO

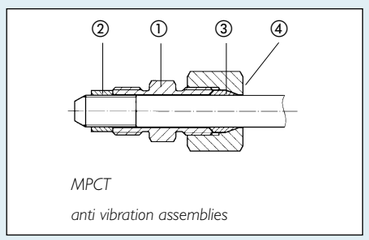
Anti vibration assemblies

Extensive insusceptibility to vibrations by the clamping action between collar 2 or collet 3 and the tube. The gland is effectively prevented from loosening by the additional radial seizure forces.

Tightness thanks to precision. The tightness of NOVA SWISS® high- and medium-pressure components is achieved by a metal-to-metal seal, without gasket or sealing ring. Two slightly offset tapers are forced onto one another. Leakage-free connections are assured by precision surface machining and fitting accuracy of the connection components.



HPCT / E
anti vibration assemblies



MPCT
anti vibration assemblies

① *Gland*
② *Collar*
③ *Collet*
④ *Gland nut*

Needle valves

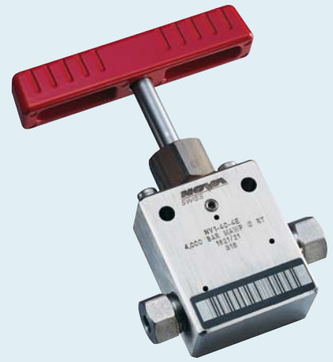
Dependability and durability.

NOVA SWISS® needle valves afford a maximum of safety and reliability, even under adverse operating conditions. The valves can be installed in either direction and will effectively seal both gaseous and liquid media.

The heart of the valve is the specially shaped seat and the two-piece non-rotating stem. The longevity and dependability of the valves are increased by the fact that the stem will not seize against the seat. Pressure-containing parts are made of high-grade corrosion-resistant stainless steel.

Documented reliability thanks to individual serial numbers. We certify every single valve body. For applications with particularly stringent quality standards we offer you a certificate affording the complete traceability of all pressure-retaining parts.

NOVA SWISS® high- and medium-pressure valves are delivered complete with glands and collars.



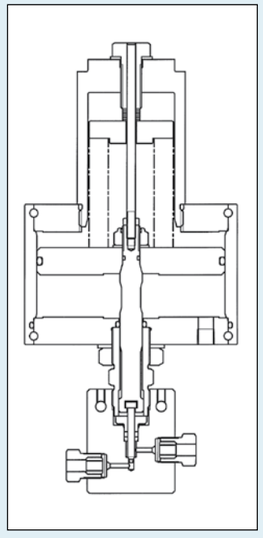
Imperial connections

Pressure	Connection	Tube-Ø		Orifice		Straight valve	Angle valve	T-valve	Replaceable-seat	3-way/2-stem manifold
10 kpsi	BSPP	1/4"	6,4 mm	0,18"	4,5 mm	NV1-10-4B	NV2-10-4B	NV3-10-4B	–	–
690 bar		3/8"	9,5 mm	0,26"	6,5 mm	NV1-10-6B	NV2-10-6B	NV3-10-6B	–	–
		1/2"	12,7 mm	0,30"	7,5 mm	NV1-10-8B	NV2-10-8B	NV3-10-8B	–	–
10 kpsi	NPT	1/4"	6,4 mm	0,18"	4,5 mm	NV1-10-4N	NV2-10-4N	NV3-10-4N	–	–
690 bar		3/8"	9,5 mm	0,26"	6,5 mm	NV1-10-6N	NV2-10-6N	NV3-10-6N	–	–
		1/2"	12,7 mm	0,30"	7,5 mm	NV1-10-8N	NV2-10-8N	NV3-10-8N	–	–
20 kpsi	MPCT	1/4"	6,4 mm	0,11"	2,8 mm	NV1-20-4M	NV2-20-4M	NV3-20-4M	NV5-20-4M	–
1'380 bar		3/8"	9,5 mm	0,20"	5,0 mm	NV1-20-6M	NV2-20-6M	NV3-20-6M	NV5-20-6M	–
		9/16"	14,3 mm	0,30"	7,5 mm	NV1-20-9M	NV2-20-9M	NV3-20-9M	NV5-20-9M	–
		3/4"	19,1 mm	0,44"	11,1 mm	NV1-20-12M	NV2-20-12M	NV3-20-12M	NV5-20-12M	–
		1"	25,4 mm	0,56"	14,3 mm	NV1-20-16M	NV2-20-16M	NV3-20-16M	NV5-20-16M	–
30 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	NV1-30-4H	NV2-30-4H	NV3-30-4H	NV5-30-4H	–
2'070 bar		3/8"	9,5 mm	0,12"	3,0 mm	NV1-30-6H	NV2-30-6H	NV3-30-6H	NV5-30-6H	–
		9/16"	14,3 mm	0,12"	3,0 mm	NV1-30-9H	NV2-30-9H	NV3-30-9H	NV5-30-9H	–
60 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	NV1-60-4H	NV2-60-4H	NV3-60-4H	NV5-60-4H	–
4'140 bar		3/8"	9,5 mm	0,12"	3,0 mm	NV1-60-6H	NV2-60-6H	NV3-60-6H	NV5-60-6H	–
		9/16"	14,3 mm	0,12"	3,0 mm	NV1-60-9H	NV2-60-9H	NV3-60-9H	NV5-60-9H	–

Metric connections

Pressure	Connection	Tube-Ø		Orifice		Straight valve	Angle valve	T-valve	Replaceable-seat	3-way/2-stem manifold
4000 bar	E	1/4"	6,4 mm	0,09"	2,4 mm	NV1-40-4E	NV2-40-4E	NV3-40-4E	NV5-40-4E	NV6-40-4E
		3/8"	9,5 mm	0,12"	3,0 mm	NV1-40-6E	NV2-40-6E	NV3-40-6E	NV5-40-6E	NV6-40-6E
		9/16"	14,3 mm	0,12"	3,0 mm	NV1-40-9E	NV2-40-9E	NV3-40-9E	NV5-40-9E	
7000 bar	E	1/4"	6,4 mm	0,06"	1,6 mm	NV1-70-4E	–	–	NV5-70-4E	–

Air operated valves



Automation and monitoring

High-pressure systems can be automated easily and effectively with NOVA SWISS® valves with pneumatic actuators. The valve bodies and the sealing system are identical to those of the hand-operated valves, and afford the same advantages.

The very rugged and dependable pneumatic piston actuator is available in two different versions:

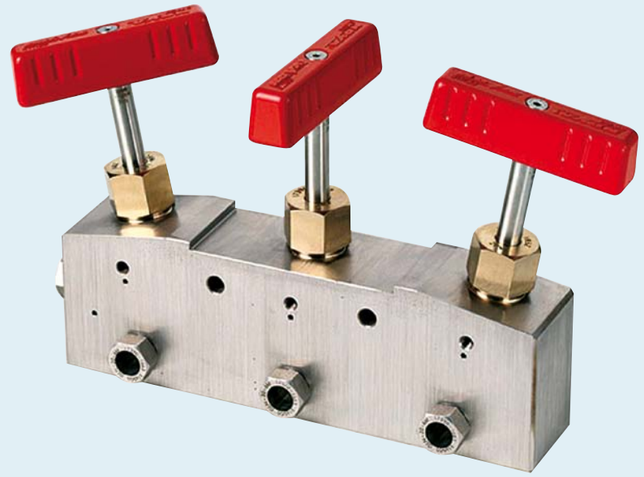
- ATO (air to open), opening with compressed air, i.e. normally closed
- ATC (air to close), closing with compressed air, i.e. normally open.

A mechanical position indicator gives certain indication as to whether the valve is in the actuated condition or not. For electronic monitoring and control, if desired the valves can be equipped with proximity switches or electrical contacts. Combined visual and electronic position indicating devices contribute substantially to high operating reliability.

When ordering air operated valves, we recommend the following procedure: Specify the valve you need with the suffix ATO or ATC. For example: NVI-40-4E-ATO.

Please contact us for 1" and 3/4" valves.

Double-Block and Bleed Valve



Block and Bleed Valve – BBV and DBV

Safety on small space available with NOVA SWISS® Block and Bleed valves (BBV) as well as Double Block and Bleed valves (DBV)

Allows dissassamblicg of instrumentation and/or manometers without pressure in the line.

Eliminates numerous potential leak paths. Reduced quantity of connecting parts, therefore easy assembling.
BBV available in 1/4", 3/8" and DBV in 1/4", 3/8", 9/16".

BBV

Pressure	Connection	Tube-Ø	Orifice	Type
20 kpsi	MPTC	1/4"	3 mm	BBV-20-4M
1'380 bar		3/8"	3 mm	BBV-20-6M

DBV

Pressure	Connection	Tube-Ø	Orifice	Type
20 kpsi	MPTC	1/4"	3 mm	DBV-20-4M
1'380 bar		3/8"	5 mm	DBV-20-6M
		9/16"	7.5 mm	DBV-20-9M

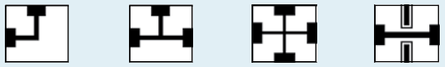
Fittings

Cross and connect leakage-free

NOVA SWISS® fittings guarantee the leakage-free connection of tubing and components. They assure you a simple and dependable connection system. Connections can be made and disconnected an arbitrary number of times. Chamfered edges facilitate handling and reduces the risk of injury.

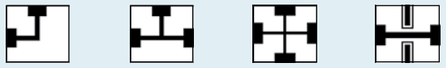
All fittings are supplied complete with glands and collars.

Imperial connections



Pressure	Connection	Tube-Ø		Orifice		Elbow	Tee	Cross	Bulk head
20 kpsi	MPCT	1/4"	6,4 mm	0,11"	2,8 mm	ELB-20-4M	TEE-20-4M	CRS-20-4M	BLK-20-4M
1'380 bar		3/8"	9,5 mm	0,20"	5,2 mm	ELB-20-6M	TEE-20-6M	CRS-20-6M	BLK-20-6M
		9/16"	14,3 mm	0,35"	9,0 mm	ELB-20-9M	TEE-20-9M	CRS-20-9M	BLK-20-9M
		3/4"	19,1 mm	0,52"	13,1 mm	ELB-20-12M	TEE-20-12M	CRS-20-12M	BLK-20-12M
		1"	25,4 mm	0,69"	17,5 mm	ELB-20-16M	TEE-20-16M	CRS-20-16M	BLK-20-16M
30 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	ELB-30-4H	TEE-30-4H	CRS-30-4H	BLK-30-4H
2'070 bar		3/8"	9,5 mm	0,13"	3,2 mm	ELB-30-6H	TEE-30-6H	CRS-30-6H	BLK-30-6H
		9/16"	14,3 mm	0,18"	4,5 mm	ELB-30-9H	TEE-30-9H	CRS-30-9H	BLK-30-9H
60 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	ELB-60-4H	TEE-60-4H	CRS-60-4H	BLK-60-4H
4'140 bar		3/8"	9,5 mm	0,13"	3,2 mm	ELB-60-6H	TEE-60-6H	CRS-60-6H	BLK-60-6H
		9/16"	14,3 mm	0,18"	4,5 mm	ELB-60-9H	TEE-60-9H	CRS-60-9H	BLK-60-9H

Metric connections



Pressure	Connection	Tube-Ø		Orifice		Elbow	Tee	Cross	Bulk head
4'000 bar	E	1/4"	6,4 mm	0,09"	2,4 mm	ELB-40-4E	TEE-40-4E	CRS-40-4E	BLK-40-4E
		3/8"	9,5 mm	0,13"	3,2 mm	ELB-40-6E	TEE-40-6E	CRS-40-6E	BLK-40-6E
		9/16"	14.3 mm	0,18"	4,5 mm	ELB-40-9E	TEE-40-9E	CRS-40-9E	BLK-40-9E
7'000 bar	E	1/4"	6,4 mm	0,06"	1,6 mm	ELB-70-4E	TEE-70-4E	CRS-70-4E	BLK-70-4E
10'000 bar on request									

Glands, Collars, Plugs

Leakage-free connecting and sealing

High- and medium-pressure connections ensure the tight connection of NOVA SWISS® high-pressure components under pressure. The connections have no sealing rings and can be released and fitted with ease an arbitrary number of times. The sealing effect is achieved by forcing two slightly offset tapers against one another.

For connections or NOVA SWISS® high-pressure components which are subjected to constant vibrations we recommend the anti vibration assemblies. These assemblies will maximize the dependability and tightness of your high-pressure system.

Imperial connections

Pressure	Connection	Tube-Ø		Gland	Collar	Plug	Anti vibration assemblies	
20 kpsi	MPCT	1/4"	6,4 mm	GLN-20-4M	COL-20-4	PLG-20-4	AVA-20-4M	*
1'380 bar		3/8"	9,5 mm	GLN-20-6M	COL-20-6	PLG-20-6	AVA-20-6M	*
		9/16"	14,3 mm	GLN-20-9M	COL-20-9	PLG-20-9	AVA-20-9M	*
		3/4"	19,1 mm	GLN-20-12M	COL-20-12	PLG-20-12	AVA-20-12M	*
		1"	25,4 mm	GLN-20-16M	COL-20-16	PLG-20-16	AVA-20-16M	*
30–60 kpsi	HPCT	1/4"	6,4 mm	GLN-60-4H	COL-60-4	PLG-60-4	AVA-60-4H	**
2'070–4'140 bar		3/8"	9,5 mm	GLN-60-6H	COL-60-6	PLG-60-6	AVA-60-6H	**
		9/16"	14,3 mm	GLN-60-9H	COL-60-9	PLG-60-9	AVA-60-9H	**

Metric connections

Pressure	Connection	Tube-Ø		Gland	Collar	Plug	Anti vibration assemblies	
7'000 bar	E	1/4"	6,4 mm	GLN-70-4E	COL-70-4E	PLG-70-4E	AVA-70-4E	**
4'000 bar		3/8"	9,5 mm	GLN-40-6E	COL-60-6	PLG-60-6	AVA-40-6E	**
4'000 bar		9/16"	14,3 mm	GLN-40-9E	COL-60-9	PLG-60-9	AVA-40-9E	**
10'000 bar on request								

* *MPCT anti vibration assemblies consist of collar, gland, collet and nut.*

** *HPCT / E anti vibration assemblies consist of gland and collar.*

Check valves

Allowing flow in one direction

NOVA SWISS® check valves are suitable for blocking the passage of a medium in one direction, as well as for allowing the leakage-free passage of the medium under pressure in the other. The combined metal-plastic seat assures optimum sealing for gases and liquids.

The check valves feature excellent flow rates, high leakage tightness and reliability at both low and high pressures. The replaceable seat affords easy and cost-effective maintenance.

High and medium pressure check valves are supplied complete with glands and collars.

Imperial connections

Pressure	Connection	Tube-Ø		Orifice		Check valve
10 kpsi	BSPP	1/4"	6,4 mm	0,18"	4,5 mm	CVP-10-4B
690 bar		3/8"	9,5 mm	0,26"	6,5 mm	CVP-10-6B
		1/2"	12,7 mm	0,35"	9,0 mm	CVP-10-8B
10 kpsi	NPT	1/4"	6,4 mm	0,18"	4,5 mm	CVP-10-4N
690 bar		3/8"	9,5 mm	0,26"	6,5 mm	CVP-10-6N
		1/2"	12,7 mm	0,35"	9,0 mm	CVP-10-8N
20 kpsi	MPCT	1/4"	6,4 mm	0,11"	2,8 mm	CVP-20-4M
1'380 bar		3/8"	9,5 mm	0,20"	5,2 mm	CVP-20-6M
		9/16"	14,3 mm	0,35"	9,0 mm	CVP-20-9M
		3/4"	19,1 mm	0,52"	13,1 mm	CVP-20-12M
		1"	25,4 mm	0,69"	17,5 mm	CVP-20-16M
30 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	CVP-30-4H
2'070 bar		3/8"	9,5 mm	0,13"	3,2 mm	CVP-30-6H
		9/16"	14,3 mm	0,18"	4,5 mm	CVP-30-9H
60 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	CVP-60-4H
4'140 bar		3/8"	9,5 mm	0,13"	3,2 mm	CVP-60-6H
		9/16"	14,3 mm	0,18"	4,5 mm	CVP-60-9H

Metric connections

Pressure	Connection	Tube-Ø		Orifice		Check valve
4'000 bar	E	1/4"	6,4 mm	0,09"	2,4 mm	CVP-40-4E
		3/8"	9,5 mm	0,13"	3,2 mm	CVP-40-6E
		9/16"	14,3 mm	0,18"	4,5 mm	CVP-40-9E

Safety heads, Bursting discs

Effective overpressure protection

NOVA SWISS® safety heads provide the assurance of overpressure protection and safety. The safety heads can be fitted with different bursting discs for different rupture pressures. Changing the bursting discs is easy and cost-effective.

Safety heads are supplied complete with glands and collars.

Imperial connections

Pressure	Connection	Tube-Ø		Orifice		Safety head
20 kpsi	MPCT	1/4"	6,4 mm	0,11"	2,8 mm	SHD-20-4M
1'380 bar		3/8"	9,5 mm	0,13"	3,2 mm	SHD-20-6M
		9/16"	14,3 mm	0,13"	3,2 mm	SHD-20-9M
30 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	SHD-30-4H
2'070 bar		3/8"	9,5 mm	0,13"	3,2 mm	SHD-30-6H
		9/16"	14,3 mm	0,13"	3,2 mm	SHD-30-9H
60 kpsi	HPCT	1/4"	6,4 mm	0,09"	2,4 mm	SHD-60-4H
4'140 bar		3/8"	9,5 mm	0,13"	3,2 mm	SHD-60-6H
		9/16"	14,3 mm	0,13"	3,2 mm	SHD-60-9H

Metric connections

Pressure	Connection	Tube-Ø		Orifice		Safety head
4'000 bar	E	1/4"	6,4 mm	0,09"	2,4 mm	SHD-40-4E
		3/8"	9,5 mm	0,13"	3,2 mm	SHD-40-6E
		9/16"	14,3 mm	0,13"	3,2 mm	SHD-40-9E

Safety and protection through selective rupturing

Bursting discs are manufactured of corrosion-resistant materials according to exacting standards. When designing your system it is important to make sure that the rupture tolerance of the discs is correctly accounted for. To avoid premature rupturing of the disc, the static operating pressure of your system should be about 20% lower than the nominal rupture pressure of the bursting disc.

If desired, bursting discs are available in special materials and for special pressures.

Filters, adapters, connectors, coupling

Clean filtering, easy changing.

NOVA SWISS® high-pressure filters filter highly pressurized gases or liquids. Filter elements can be changed in-situ with ease without the need to first disassemble the filter in front of the tubing. Filter cartridges are made of sintered material with pore sizes of 5 µm or 10 µm.

Metric connections

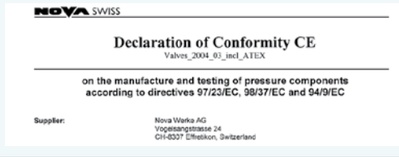
Pressure	Connection	Tube-Ø		Orifice		Filter	Filter insert	Pore size
4'000 bar	E	1/4"	6,4 mm	0,12"	3,0 mm	FIL-40-4E	5.2027.014	5 µm
58 kpsi		3/8"	9,5 mm	0,12"	3,0 mm	FIL-40-6E	5.2027.014	5 µm
4'000 bar	E	1/4"	6,4 mm	0,12"	3,0 mm	FIL-40-4E-10	5.2027.015	10 µm
58 kpsi		3/8"	9,5 mm	0,12"	3,0 mm	FIL-40-6E-10	5.2027.015	10 µm

Adapters, connectors, couplings

NOVA SWISS® offers a wide range of adapters, connectors and couplings which are available in different types of connection to enable almost every conceivable connection and every interface to be realized. For more information please contact our local representative, or Nova Werke AG directly.

Options

NOVA SWISS® is active since decades in the high pressure industry with products up to 10000 bar. Continuous developments result in diversified use and therefore our standard VFT range is available for many different applications. A further option is ATEX certification. With special options our VFT products can be used for hydrogen, high cycling- as well as extreme temperature applications.

-4	**Hydrogen** All parts made of special material which is resistant to hydrogen embrittlement. Manually or pneumatically driven		Special parts for hydrogen use are marked
-7 **-12**	**High cycling** Special stem (not corrosion resistant) and packing Stainless steel so far only for 1" available (-12)		Special finished stem (marked) and packing visible by green colour
-I	**Sensors** Support for inductive position sensors at pneum. valve for indicating end positions (sensors not included)		
- ET	**Extreme (low/high) temperature** manually or pneumatically driven, for gas and liquids temperature of media: -250°C/+450°C also with „-4" option available		
- MV	**Metering valve** dosing spindle – special stem		The special design of lower stem allows accurate metering
ATEX	**ATEX certificate** upon request. Information about final application necessary.		

NOVA SWISS
Declaration of Conformity CE
Valves_2004_03_incl_ATEX
on the manufacture and testing of pressure components according to directives 97/23/EC, 98/37/EC and 94/9/EC
Supplier: Nova Werke AG, Vogelsangstrasse 24, CH-8307 Effretikon, Switzerland

Tubing

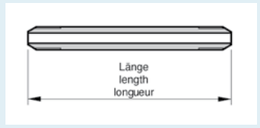
Leakage-free transfer of liquids and gases

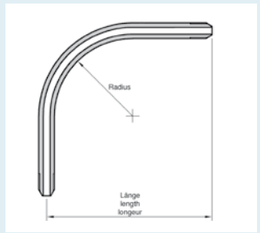
NOVA SWISS® high-pressure tubing is made of high-grade stainless steel. They are seamless, cold-drawn and work-hardened to achieve high strength and corrosion resistance. In the manufacturing process the chemical composition of the material, as well as mechanical values, are tested according to strict criteria.

Tubing marked with «A» is soft-annealed and complies with the NACE MR0175 standard (latest revision). For applications that must comply with this standard, the tubing may not be bent.
Tube end machining tools available.

Pressure	Tube O/D		Tube I/D		Tubing
10 kpsi	9/16"	14,3 mm	0,36"	9,1 mm	TBG-10-9
690 bar	3/4"	19,1 mm	0,52"	13,1 mm	TBG-10-12
	1"	25,4 mm	0,69"	17,5 mm	TBG-10-16
20 kpsi	1/4"	6,4 mm	0,11"	2,8 mm	TBG-20-4
1'380 bar	3/8"	9,5 mm	0,20"	5,2 mm	TBG-20-6
	9/16"	14,3 mm	0,31"	7,9 mm	TBG-20-9
	3/4"	19,1 mm	0,44"	11,1 mm	TBG-20-12
	1"	25,4 mm	0,56"	14,3 mm	TBG-20-16
20 kpsi	1/4"	6,4 mm	0,11"	2,8 mm	TBG-20-4A
1'380 bar	3/8"	9,5 mm	0,19"	4,7 mm	TBG-20-6A
	9/16"	14,3 mm	0,28"	7,0 mm	TBG-20-9A
	3/4"	19,1 mm	0,37"	9,5 mm	TBG-20-12A
	1"	25,4 mm	0,50"	12,6 mm	TBG-20-16A
30 kpsi	1/4"	6,4 mm	0,09"	2,4 mm	TBG-30-4A
2'070 bar	3/8"	9,5 mm	0,13	3,2 mm	TBG-30-6A
	9/16"	14,3 mm	0,19"	4,8 mm	TBG-30-9A
60 kpsi	1/4"	6,4 mm	0,09"	2,4 mm	TBG-60-4
4'140 bar	3/8"	9,5 mm	0,13"	3,2 mm	TBG-60-6
	9/16"	14,3 mm	0,19"	4,8 mm	TBG-60-9
7'000 bar	1/4"	6,4 mm	0,063"	1,6 mm	TBG-100-4
101'500 psi					

Nipples





Straight or bent, complete with tube end machining.

NOVA SWISS® nipples are manufactured from our standard tubing. The threads and tapers at the ends are machined according to exact specifications. The precision surface quality of the tapers provide the assurance of leakage-free connection to NOVA SWISS® components in both gas and liquid applications.

Nipples marked with «A» are soft-annealed and comply with the NACE MR0175 standard (latest revision).

Besides standard nipples, NOVA SWISS® is able to manufacture all froms and bends. Always repeatabel by scanning system.

Pressure	Straight nipple	Length		Tube O/D		Radius nipple	Length		90° radius	
10 kpsi	SNP-10-9	3,46"	88 mm	9/16"	14,3 mm	RNP-10-9	4,88"	124 mm	2,62"	67 mm
690 bar	SNP-10-12	4,09"	104 mm	3/4"	19,1 mm	RNP-10-12	6,22"	158 mm	3,50"	89 mm
	SNP-10-16	5,43"	138 mm	1"	25,4 mm	RNP-10-16	8,27"	210 mm	4,62"	117 mm
20 kpsi	SNP-20-4	2,20"	56 mm	1/4"	6,4 mm	RNP-20-4	2,68"	68 mm	1,25"	32 mm
1'380 bar	SNP-20-6	2,83"	72 mm	3/8"	9,5 mm	RNP-20-6	3,54"	90 mm	1,75"	44 mm
	SNP-20-9	3,46"	88 mm	9/16"	14,3 mm	RNP-20-9	4,88"	124 mm	2,62"	67 mm
	SNP-20-12	4,09"	104 mm	3/4"	19,1 mm	RNP-20-12	6,22"	158 mm	3,50"	89 mm
	SNP-20-16	5,43"	138 mm	1"	25,4 mm	RNP-20-16	8,27"	210 mm	4,62"	117 mm
20 kpsi	SNP-20-4A	2,20"	56 mm	1/4"	6,4 mm	–	–		–	
1'380 bar	SNP-20-6A	2,83"	72 mm	3/8"	9,5 mm		–	–		–
	SNP-20-9A	3,46"	88 mm	9/16"	14,3 mm		–	–		–
	SNP-20-12A	4,09"	104 mm	3/4"	19,1 mm		–	–		–
	SNP-20-16A	5,43"	138 mm	1"	25,4 mm		–	–		–
30 kpsi	SNP-30-4A	2,52"	64 mm	1/4"	6,4 mm		–	–		–
2'070 bar	SNP-30-6A	3,23"	82 mm	3/8"	9,5 mm		–	–		–
	SNP-30-9A	4,09"	104 mm	9/16"	14,3 mm		–	–		–
60 kpsi	SNP-60-4	2,52"	64 mm	1/4"	6,4 mm	RNP-60-4	2,83"	72 mm	1,25"	32 mm
4'140 bar	SNP-60-6	3,23"	82 mm	3/8"	9,5 mm	RNP-60-6	3,86"	98 mm	1,75"	44 mm
	SNP-60-9	4,09"	104 mm	9/16"	14,3 mm	RNP-60-9	5,28"	134 mm	2,62"	67 mm

Diaphragm compressors

Compression of ultra-pure gases.

NOVA SWISS® diaphragm compressors are specially suited for compressing ultra-pure gases. The compression compartment is separated from the crank mechanism by diaphragms, thereby avoiding oil contamination of the gas.

Parts which come into contact with the medium are made of corrosion-resistant steel. The compressor features high reliability, user-friendliness and low maintenance effort.

The compressor is secured against overpressure on the oil side. Special models for hydrogen (H2) or oxygen (O2) are available. The compressor is equipped with a diaphragm rupture indicator.

Diaphragm compressors and options

In the meantime these diaphragm compressors have been newly designed and there is a large number of innovations and options which lead to longer lifetime and much easier handling.

For example we have new diaphragm plates which have a much longer lifetime compared to the previous design.

The rupture indication is now integrated and as mechanical design standard. Furthermore it can be used for EEx applications or it can be equipped with a diaphragm rupture switch.

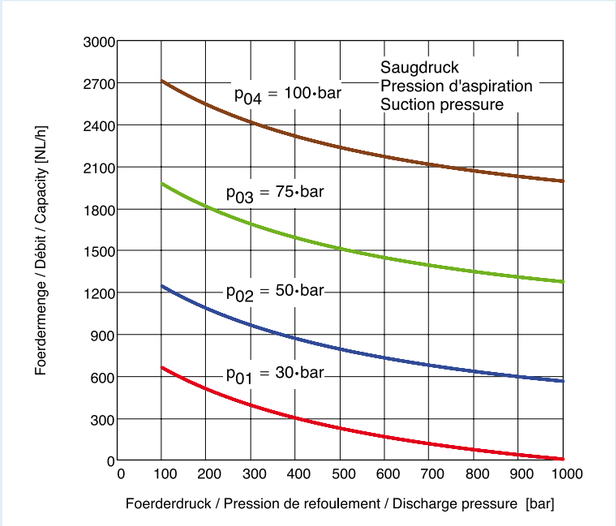
The head is now bigger and the upper part in stainless steel. The former pulsation damper is new replaced by hydraulic accumulator which makes bleeding unnecessary.

MK - diaphragm compressor		
description	**type**	**art.-no.**
"Diaphragm Compressor V 09, 1000 bar, diaphragm rupture indicator"	MK 1000 V09	555.0218
"Diaphragm compressor V09, 1000 bar diaphragm rupture indicator, H2"	MK 1000 V09 H2	555.0218-1
"Diaphragm Compressor V 09, 3000 bar, diaphragm rupture indicator"	MK 3000 V09	555.0221
"Diaphragm Compressor V 09, 3000 bar, diaphragm rupture indicator, H2"	MK 3000 V09 H2	555.0221-1

drive options		
description	**Option-Code**	**art.- no.**
Gear Motor MK, 400 V, 50 Hz, 2.2 KW	1	552.0140
Gear Motor Ex MK, 400 V / 50 Hz, 2.2 KW	2	552.0141
V-Belt Drive with Motor MK, 400 V / 50 Hz, 2.2 KW	3	552.0142
Servo Motor with Converter and Controller	5	552.0144

For further options please contact Nova Werke AG

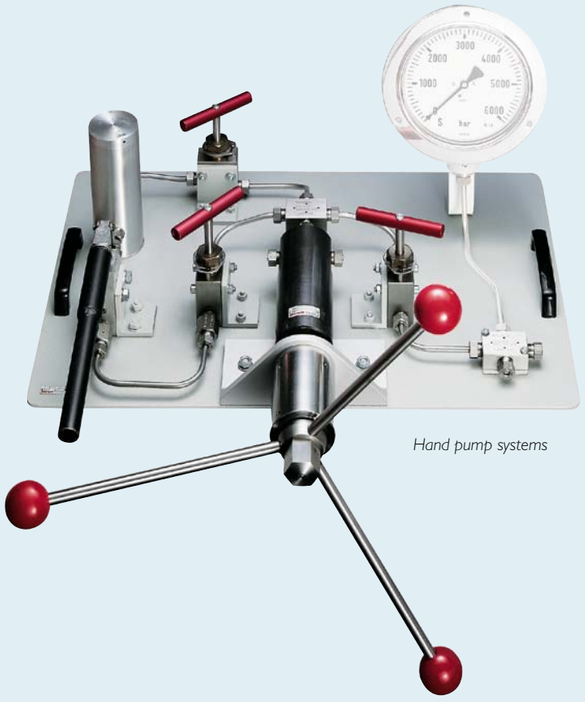
Example: Performance diagram of diaphragm compressor (1000 bar, N2).
For other mediums and pressures please contact Nova Werke AG.



Hand pumps and hand pump systems

Flexible and independent high-pressure generators.

The NOVA SWISS® hand pump with spindle drive is the ideal pressure generator for smaller high-pressure systems. It is suitable for applications with all usual high-pressure fluids, including those with low viscosity. This pump can be used anywhere independent of a compressed air or electrical power supply. With the fine-thread spindle any desired pressure can be fine-adjusted. Operation is facilitated by three long actuating levers. The spindle is non-rotating, thereby substantially increasing the longevity of the seal.



Hand pump systems

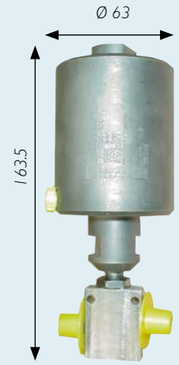
Max. output pressure	Connection	Piston displacement	Per rotation	Hand pumps	hand pump systems (without manometer)
7'000 bar	1 x 1/4" E	2,5 ccm	0,08 ccm	550.0400-2	565.0276
101'500 psi					
4'000 bar	3 x 1/4" E	5 ccm	0,15 ccm	550.0301.1	565.0277
58'000 psi					
2'000 bar	3 x 1/4" E	10 ccm	0,3 ccm	550.0202.1.	565.0275
29'000 psi					

Customized products and systems

www.novaswiss.com

Pressure, volume, material and functions according to clients' specifications

Components



Laboratory valve

Air operated
Connection: 1/8" capillary
Pressure: 1'000 bar
Temperature: 250°C
Environment temperature: up to 250°C

Safety valve, compliant to CE norms and ATEX

Safety valve, compliant to CE norms, ATEX certified possible.

HP side connection: 1/4" tubing
Pressure set-point: 0–2'500 bar
Captured vent connection: 1/4" NPT Temperature: -10°C + 250°C

Flexible hoses up to 10 mtr for high pressure pure gas applications allow easy mounting in installations with limited space.

Available up to 4'000 bar

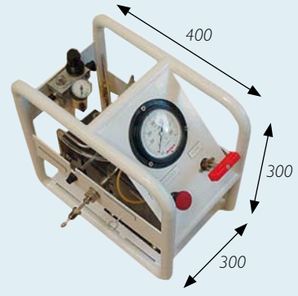
Systems

Isostatic Press

CIP: 0–10'000 bar / 80°C
HIP: 0–2'000 bar / 2'000°C
Pharmaceutical, food, ceramics, powder metallurgy industry

Compression bench

Diaphragm compressor for pure gas 0–1'000 bar



Compression bench

Piston technology
0–1'000 bar (for gas)
compact weight: 25 kg
0–7'000 bar (for liquids)

TCU – Test control unit

The NOVA SWISS® NGV test control unit range was especially developed for leakage testing of natural gas installations and vessels up to 500 bar.

High Pressure Technology

The company

High-Pressure Technology

Engine Components

Surface Technology

Maintenance of Valves

Nova Werke AG is a Swiss high-tech company headquartered in Effretikon with subsidiaries in France and Germany. The company comprises the four divisions:

- High-Pressure Technology
- Engine Components
- Surface Technology
- Maintenance of Valves

Nova Werke AG develop and supply innovative and top quality products and services for high-performance applications

NOVA SWISS® is the trade mark of Nova Werke AG, and is acknowledged worldwide.

The management system

Quality is for all products, production processes and services of vital importance. Nova Werke AG is certified according to ISO 9001:2008 and ISO 14001:2004. The continuous improvement process is a major component of these requirements. It is systematically practiced in all areas.

The division "Engine Components" conforms to the standard of ISO/TS 16949:2002 and thereby meets the highest demands on technical specification, system and process quality and management processes according to the automotive industry.

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