

MGS22 - MGS 32

VERY HIGH PRESSURE

SOLID-FRONT PRESSURE GAUGES

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1. MAIN CHARACTERISTICS AND APPLICATIONS

This gauges are designed to measure the extreme pressure generated by machinery using the "water jet" technology.

They are available with ranges up to 4000 bar (60,000 psi) exclusively with solid front casing and with dial diameter 100 - 125 - 150 (4" - 4"1/2 - 6").

The process connections are typical of this sector and are M16x1,5 female and 9/16-18 UNF-2B (1/4 HIGH PRESSURE).

The high pressure (>1000 bar / 15000 psi) water jet technology is mainly employed on water jet cutting machine, Hydro-blasting, Hydro-cleaning and Hydro-demolition.

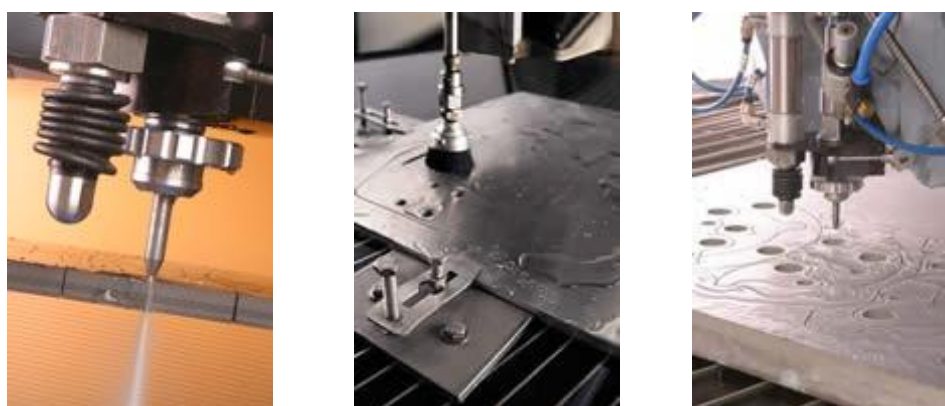
2. HIGH PRESSURE PUMPS

They are the heart of all the machinery using the water jet technology. Some model are able to generate pressure up to 7.000 bar (100,000 psi).



3. WATER JET CUTTING MACHINE

By adding some abrasive to the water jet it permits the cutting plastics, glasses, stones and metals up to 15 cm (6") thickness.



4. HYDRO-BLASTING AND HYDRO-CLEANING

With the addition of abrasive to the water jet it also permits the removal of paints, rust, plasters and grease from any surface.



Risanamento di facciate, rimozione di intonaci



Risanamento di calcestruzzo



Pulizia di armature e casseri



Pulizia di macchine movimento terra



Eliminazione di graffiti agricole



Pulizia di navi, rimozione di ruggine



Sverniciatura



Pulizia di macchine

5. HYDRO-DEMOLITION

With the help of dedicated "robot" water at very high pressure (approx 2500 bar) is used to remove the concrete preserving the reinforcement armor that with traditional methods, would be destroyed instead.

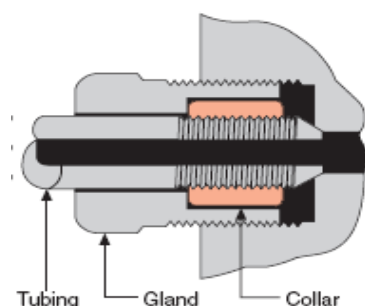


6. PROCESS CONNECTION

The std. $\frac{1}{2}$ NPT or BSP pressure connection are not suitable to withstand the enormous force exercised by the very high pressure of these applications.

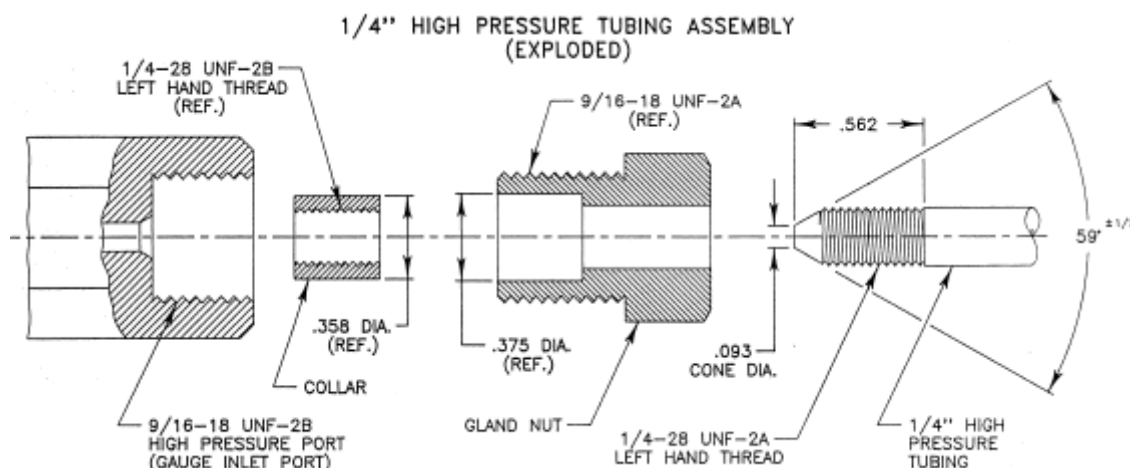
Indeed, the area where the pressure is concentrated, in the case of $\frac{1}{2}$ NPT, is about 3.5 cm² which, multiplied by the pressure, may create a force of about 14.000 kgs.

For very high pressure applications has been designed a special fitting which contains the area where the pressure is present to approximately 0,125 cm² and reducing the force to approximately 500 kgs (which is equivalent to those generated by a 160 bar pressure applied to a $\frac{1}{2}$ NPTM process connection).



These fittings are called "CONED AND THREADED" and consist of a female pressure port (gauge inlet port) appropriately shaped, threaded and adapted to be coupled with:

- o $\frac{1}{4}$ " tubing threaded $\frac{1}{4}$ -28 UNF-2A left hand with 59° cone
- o Threaded Collar $\frac{1}{4}$ -28 UNF-2B left hand
- o Gland nut $\frac{9}{16}$ " 18UNF - 2A



The threaded connection $\frac{9}{16}$ " 18 UNF - 2B chosen for this type of gauges is suitable for pairing with most popular systems connection with $\frac{1}{4}$ " fittings manufacture by:

- o AUTOCLAVE ENGINEERING
- o H.I.P. High pressure
- o BUTECH High pressure fittings
- o NEWPORT (ex Aminco)

For those not too familiar with this type of connections we have prepared a table that can help the user to directly choose the codes of the components needed for the assembly.

Item	Autoclave ¼ F250C	Newport ¼ HP	Butech ¼ HP	HIP HF4
Gland Nut	AGL 40	45-11313 or 45-11314	60G4	60-2HM4
Collar	ACL 40	45-11316 or 45-11317	60C4	60-2H4
Coning Tool	401A	48-15013	60CT4	2-HF4
Threading Tool	402A	48-15025	THT4-H	2-MHF4
Also sells HP Tubing	Yes	Yes	Yes	Yes

7. MAIN COMPETITORS

The following table summarizes hand models and performance of the main competitors.

Competitor	Model	Bourdon tube mater.	Range Min/max	Process conn.	Acc.cy	Price
ASHCROFT	1379	MONEL K500 INCONEL 718	Min 30.000 PSI Max 100.000 PSI	9/16" 18UNF 2B	± 0,5%	
WIKA	22x.30	Ni - Fe	Min 2.000 bar Max 7.000 bar	9/16" 18UNF 2B M16 X 1.5	± 1%	
Armaturenbau Mc Daniel	RSCH(G)	AISI316 TI Ni - Fe	Min 2.500 bar Max 4.000 bar	9/16" 18UNF 2B M16 X 1.5	± 1%	
TECSIS	P1701	Ni - Fe	Min 2.500 bar Max 4.000 bar	9/16" 18UNF 2B M16 X 1.5	± 1%	
AFRISO	D4	Ni - Fe	Min 2.500 bar Max 4.000 bar	9/16" 18UNF 2B M16 X 1.5	± 1%	
BAUMER	MFP7	Ni - Fe	Min 2.000 bar Max 4.000 bar	9/16" 18UNF 2B M16 X 1.5	± 1%	
STIKO	PBX-SF- HP	Ni - Fe	Min 2.000 bar Max 7.000 bar	9/16" 18UNF 2B M16 X 1.5	± 1%	

Apart from Ashcroft, which uses bourdon tune in Inconel 718, all other manufacturers using sensitive elements in Ni-C-Span (Ni-Fe), which is an alloy steel ferritic (not stainless steel).

New Fima is using a DUPLEX ST.ST. ALLOY which is a stainless steel double structure (austenitic-ferritic), which provides a resistance to chloride corrosion even higher than austenitic AISI 316L.

The column price, deliberately empty, is to be filled at you care.