
 <b>Industrie Mécanique pour les Fluides</b> ZI des Cures, 15 avenue des Cures 95580 ANDILLY Tél : 01 34 27 16 16 Fax : 01 39 59 20 62	USE NOTICE		Identifier	Revision	Brought up to	Page
	<b>OPERATING AND MAINTENANCE OF DOME LOADED REGULATOR D166</b>		<b>DE 36</b>	<b>B</b>	<b>12 febr.02</b>	<b>1/4</b>
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NT 1194 GB Rev. B

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#### Reference documents:

- Drawings and bills of materials D166550 (DN10) and D166552 (DN12)
- General advises for the maintenance, disassembly, reassembly and tests of our valves NT1001GB).

## **I. OPERATING AND CHARACTERISTICS**

#### *Working principle :*

The dome must be loaded with a non-aggressive gas at the pressure which is required at the outlet.

To increase the downstream pressure, it is sufficient to increase the pressure in the dome ; in order to reduce it, it is sufficient to reduce the pressure in the dome (this last operation must be carried out under flow conditions or after having purged the outlet pipe).

#### *Characteristics :*

Standard embossed brass construction,  
Balanced valve-assembly diameter 12 DN 10,diameter 15 DN12, complete tightness in closing position,  
1" cylindrical gas tapped connection orifices,  
¼" cylindrical gas tapped piloting orifice of the dome,  
Maximum upstream pressure 100 bar,  
Downstream pressure : from 0,5 to 100 bar.

It also exists a version for oxygen.  
There is a completely stainless steel version.

## **II. FITTING TO PIPES**

The device must be fitted to pipes by respecting the sense of the fluid flow indicated by an arrow on the device body.

The inlet and outlet orifices are tapped 1" cylindrical gas.


The used assembly connections must be imperatively sealed on the countersinks at the orifices inlet with rings BS or o-rings (a tightness in the threading would risk to obturate the pressure tapping orifice in case of dome load by the upstream pressure).

IMF recommends the use of his adjustable brass T1552 connections with stainless steel or steel welding ends.

## **III. DIFFERENT METHODS OF DOME LOAD**

#### *From the upstream pressure :*

- a) slightly open the upstream valve, in order the reducing valve is in subpressure.
- b) slightly open the load centre punch rep. 16 by means of an hexagon key of 4 mm, until reading on the downstream manometer of the decreased pressure required. Shut the centre punch.
- c) If the downstream pressure is over the required pressure, open the discharge centre punch rep. 19 or 16 by means of an hexagon key of 4 mm., while making discharge the regulator downstream (or while draining the outlet pipe). When the required pressure is reached, shut the centre punch.

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The device is ready to work.

In case of hydraulic application, the dome load must be obligatorily carried out with a gas.  
*From an outer pressure source which must be connected to the 1/4" cylindrical gas orifice :*

The load-pressure can be reached :

- By means of a control reducing valve with manual adjustment (type D083 or D131), according to the pressure ranges.
- By means of a control reducing valve electrically controlled (motorization DIV 188 mounted on the D083 or D131).
- By means of our loading block DIV152, incorporating a load valve, a discharge valve, a manometer.


*In order to ensure the dome load with a control reducing valve :*

- Open slightly the upstream valve,
- Remove the plug rep. 17 to have access to the 1/4" gas tapped orifice
- Connect the control reducing-valve outlet to the control orifice, adjust the control reducing-valve to the required decreased pressure.

The device is ready to work, open the downstream valve to obtain the flow.

#### IV. PARTICULAR PRECAUTIONS

- It is harmful to apply to the load and discharge centre punches an excessive squeeze couple during their closing. The maximum couple to be applied is 0,3 m.kg.
- It is not recommended to keep the dome under pressure, when there is no pressure upstream the reducing valve.
- Before eventual replacement, check on the technical passport enclosed with the device, the materials of the o-rings and the diaphragm.

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## V. EVENTUAL BREAKDOWNS, CAUSES, REMEDIES

EFFECTS	CAUSES	REMEDIES
1° No downstream pressure when the dome is under pressure	a) Damaged diaphragm rep. 12	- Replace the diaphragm
2° Leakage upstream / downstream when the reducing valve is closed.	a) Foreign matter between the valve-assembly rep. 4 and the seat rep. 3 b) Damaged valve-assembly or seat c) Rubberised valve-assembly (failure due to a long non-working period) d) Seat o-ring rep. 2 or valve-assembly o-ring rep. 5 damaged.	- Dismount the set valve-assembly / seat by removing the lantern rep. 8 - Inspect the parts, clean them, replace them if needs be.
3° Dome leakage	a) Leak at one of the centre punches or through the diaphragm.	- Locate the leakage with a foaming product kind "Mille bulles". - Replace the defective part.

## VI. SYSTEMATICAL MAINTENANCE AFTER LONG STORAGE

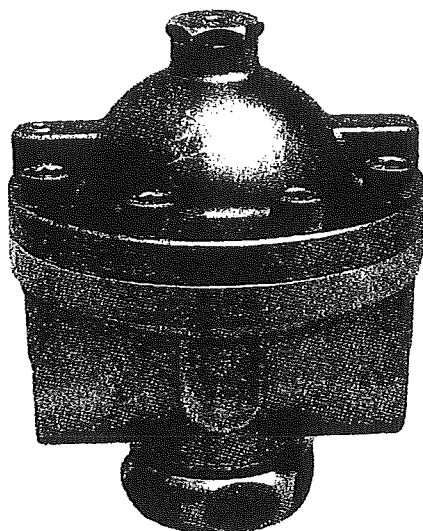
In case of storage over 12 months, dismount the device, and lubricate slightly its o-rings, with a grease compatible with the fluid (Oxygenoex for oxygen).

## VII. CHECKING AND TESTS AFTER INTERVENTION

- Do not forget to lubricate slightly the o-rings and more particularly the dynamic o-rings.
- Check the tightness of the overflow valve.
- Check at the "Mille bulles" the tightness to the outside.

# Dom-Druckminderer Type D 166

für Luft, Gase und Flüssigkeiten



## Anwendung

Dieser Druckminderer im Mitteldruckbereich ist ohne Austausch von Teilen für einen weiten Ausgangsbereich einsetzbar. Für besonders niedrige Drücke unter 1 bar gibt es eine spezielle Niederdruckausführung (BP), die auch in diesem Bereich eine hohe Regelgenauigkeit erreicht. Abhängig von verwendeten Werkstoffen ist das Reduzierventil für verschiedene Gase und Flüssigkeiten bis 100 bar einsetzbar.

## Technische Daten

### Anschlüsse

Eingang/Ausgang G 1" IG, oder Flansch DN 25

Steueranschluß im Dom G 1/4" IG

### Dichtheit:

Standard 10-3 mb//sec. Höhere Dichtheit auf Anfrage mit Sonderprüfung möglich.

### Ausführung:

Ventilkegel druckentlastet

Ventilsitz-Ø 9 mm

Ventilsitz-Ø 12,5 mm

D 166/L/22/OXY - PN 64 BAM geprüft für den Einsatz in Sauerstoff

## Besonderheiten

Durch den druckentlasteten Ventilkegel wird eine weitgehende Unabhängigkeit von Vordruckschwankungen und Änderungen der Durchflußmengen erreicht. Das Ventil arbeitet nach dem bewährten Prinzip des Druckgleichgewichts, das den Minderdruck automatisch auf den eingestellten Wert hält und bei Druck- und Volumenschwankungen verzögerungsfrei reagiert.

Bei Einsatz des Druckminderers in Gasen kann der Domdruck über Nadelventile aus der Vordruckseite abgeleitet werden. Bei Reduzierung von Flüssigkeiten muß der Dom über Druckluft oder Stickstoff-Flasche extern gefüllt werden.

## Optionen:

- Version mit vergrößertem Domvolumen
- Ventilsitz aus Torlon oder Peek
- PTFE-Gleitringe am Ventilkegel und Schubstange
- Mit Rückentlüftung

D 166/X/X/X/X/X

## Bestellschlüssel

### Anschlüsse

- G 1" IG
- 40E eingeschraubte Flansche DN 25, PN 40, Form..., Baulänge DIN 3202-F3
- 100E eingeschraubte Flansche DN 25, PN 100, Form ..., Baulänge DIN 3202-F3

### Ausgangsdruckbereich

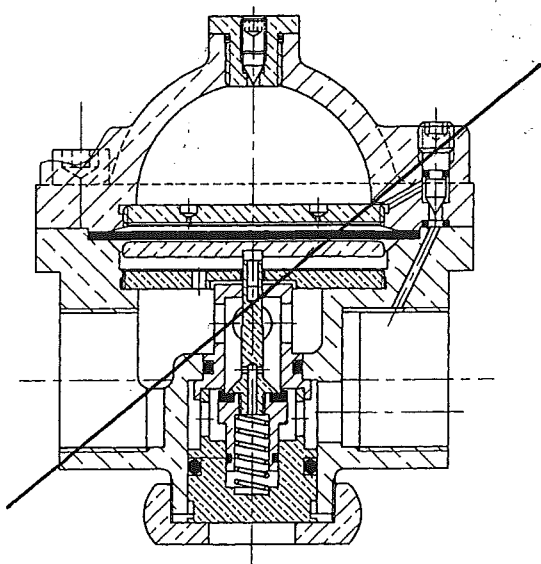
- Standard 0,5 .. 100 bar
- BP Niederdruck 0,05 .. 5 bar PN 15

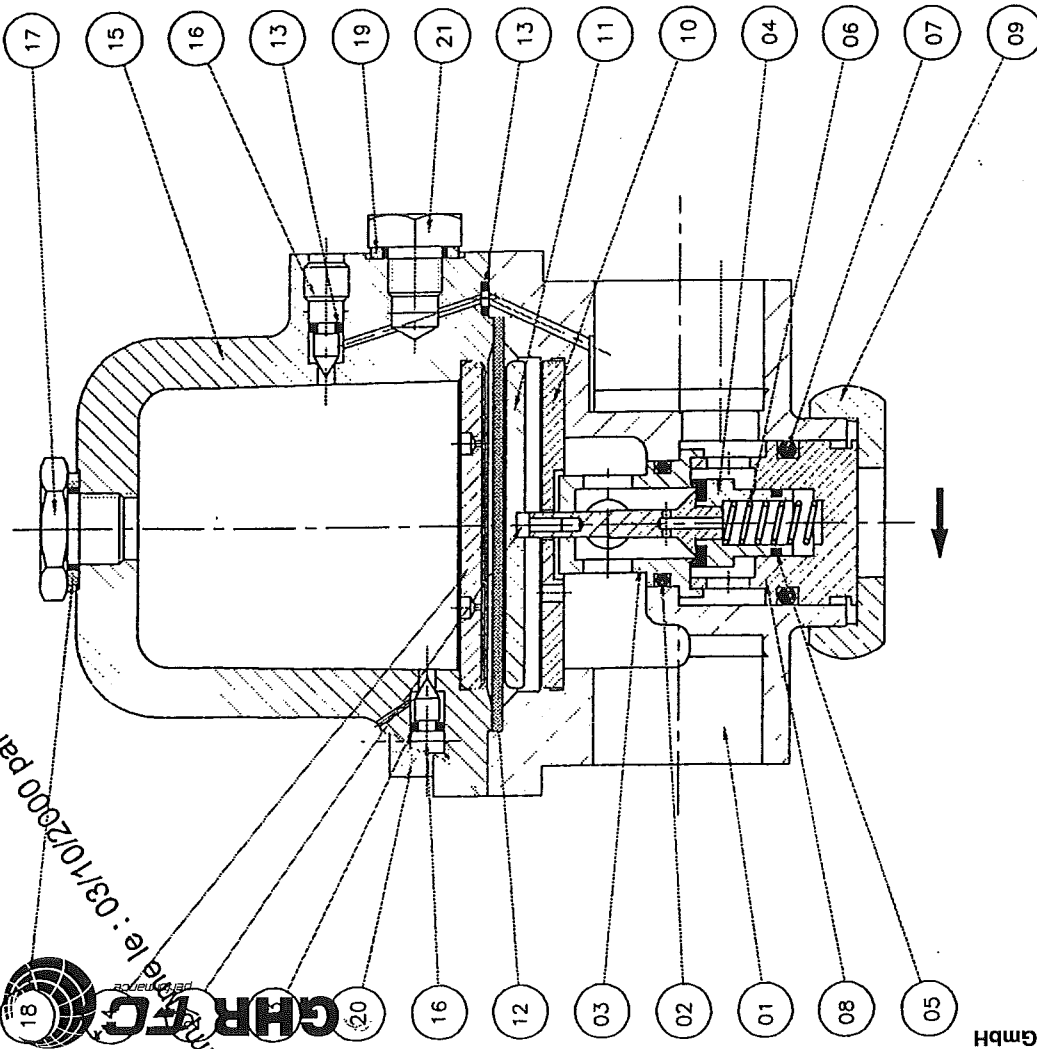
### Dichtungen (O-Ringe u. Membrane)

- 21 NBR (-10° C bis + 80° C)
- 22 Viton (-20° C bis + 100° C)
- 23 EPDM (-40° C bis + 130° C)
- 24 Kalrez
- 25 andere

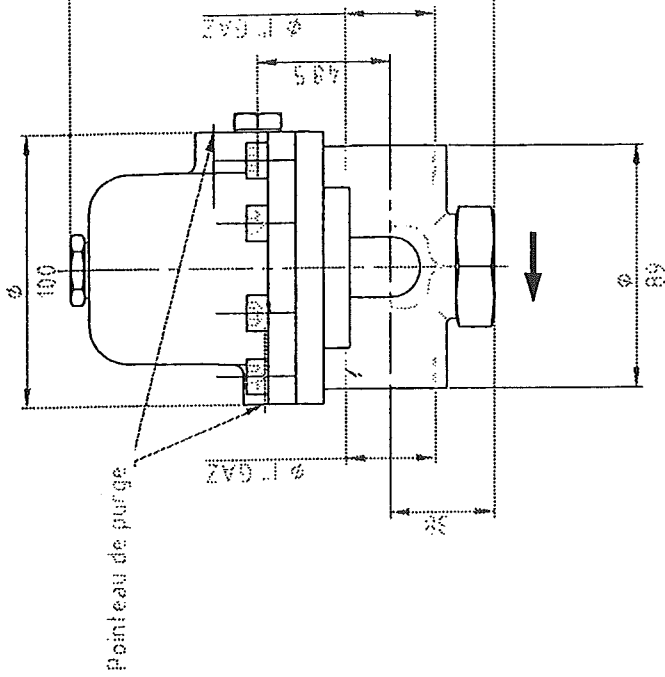
### Ausführungen/Gehäusewerkstoff

- L Messing, PN 100
- I Edelstahl 316L, PN 100
- NC Messing chem. Vernickelt
- CU Alubronze





PRESSION AMONT MAXI : 100 BARS  
PRESSION AVAL : 0 A 100 BARS



Eingetragen im Handelsregister des Amtsgerichts Friedberg, HAB 1416  
Geschäftsführer: John A. Perkins, London; A. Felice Lauriello, Maastricht; Herbert Peters, Ober-Mörlen  
Banken: KBC Bank Deutschland AG, BLZ 301 205 00, Kto. 289 180, IBAN DE60 301 205 00 000 000 289 180  
Volksbank Ober-Mörlen, BLZ 518 618 06, Kto. 700 005 002, IBAN DE02 518 618 06 000 000 050 02  
Bei Anfragen und Aufträgen liegen unsere bekannten Geschäftsbedingungen zugrunde. Eigentümersrecht  
Zeichnungen ausdrücklich vorbehalten. Gerichtsstand: Frankfurt am Main. Erfüllungsort: Ober-Mörlen

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