



LT GASETECHNIK
beyond standards

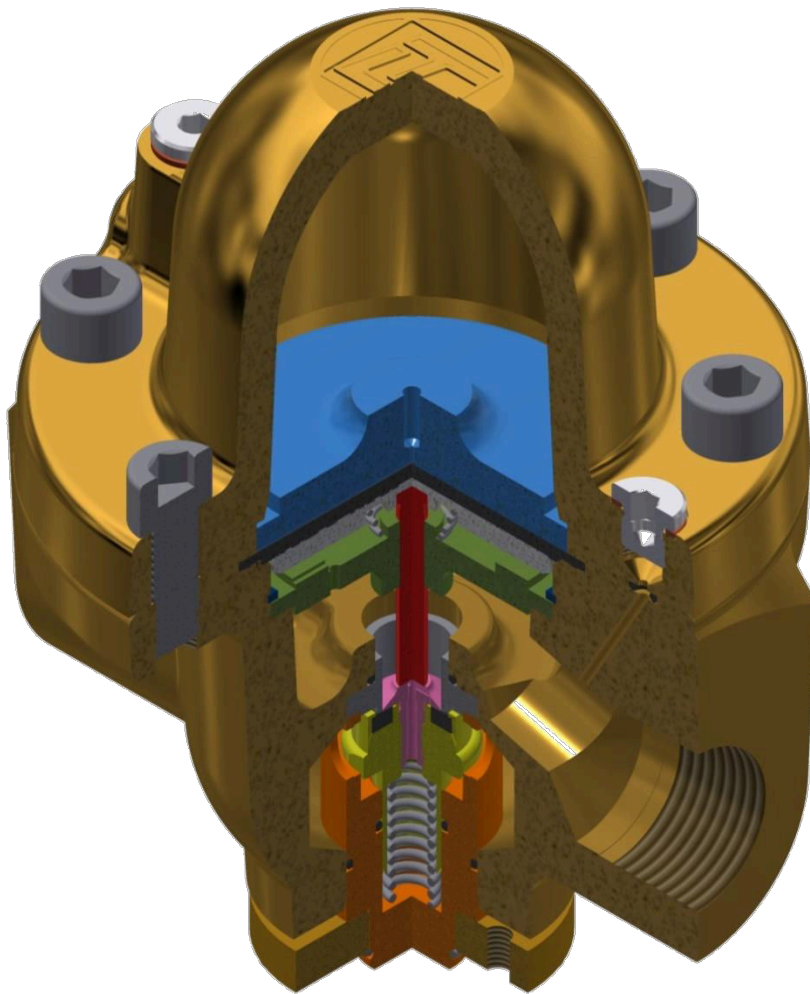


Pressure Control

LT pressure controller

LT pressure control

units and LT panels



Pressure control

beyond standards



Pressure controller from LT GASETECHNIK

Process gas supply with high pressure consistency even when the inlet pressures and flow rates vary as well as with low pressure differences.

Features and advantages

- Defined, uniform outlet pressure, unaffected by fluctuations in inlet, outlet pressure or flow rate.
- No "fluttering", even with large inlet pressure fluctuations due to the **particularly large dome chamber** with large compressible **gas pressure accumulator**
- For pipe installation or as a manifold
- **Wide performance range:** 10... 2,500 Nm³/h due to minimal Δp
- Large working pressure range and no two-stage pressure control necessary due to adapted pressure ranges: low pressure, medium pressure, high pressure
- Flexible operation:
 - Locally with own or external medium
 - Remotely controlled with electronically controllable pilot controller
- Short delivery times - standards available from stock
- Complete solutions, assembled and tested ex works:
 - Pressure control unit with manometer and pilot pressure controller
 - Pressure control system with bypass and shut-off valves
 - Remote controllable dome loaded pressure controller
 - Individual configuration

***Precise and und instantaneous pressure control
Without fluttering, even at large variations***

Application areas

When it comes down to the **particularly uniform outlet pressure**, dome loaded pressure controllers show their strengths. In contrast to the simple pressure controller with steel spring, the dome loaded pressure controller uses a compressible gas (own or external medium). This gas pressure accumulator achieves a sensitive response without self-damping and without spring characteristic curve.

That is why LT dome pressure controllers have a particularly **large dome chamber**.

Large dome chamber = high control accuracy

Versions type specific, associated details in the corresponding data sheet:

Media

- Technical gases, flammable and non-flammable, e.g. N₂, O₂, CO₂, H₂, Ar, etc.
- Hydrocarbons like Natural Gas, Propane, and Butane etc.
- Technical air
- Liquids

Media-dependent use of sealing materials made of EPDM or Viton.

Pressure

- Low pressure:
 - Inlet pressure 25 barg
 - Outlet pressure: 0.1 ... 24 barg
- Middle pressure:
 - Inlet pressure to 100 barg
 - Outlet pressure 0.5...99 barg
- High pressure:
 - Inlet pressure to 414 barg
 - Outlet pressure 28...138 barg

Temperature

- Viton: -20°C ... 100 °C
for O₂, and all gases except acetylene and CO₂
- EPDM in LTD-1: -40°C ... 130 °C
for CO₂ and all neutral gases
- EPDM in LTD-2 and LTD-3: -20°C ... 70 °C
for CO₂ and all neutral gases



LTD-1 MD Brass



Design

- Brass, Stainless Steel, Brass Nickel plated or Alumina
- Threaded connection 1" BSP, 2" BSP or 3" BSP or flange connection

Certificates

LT GASETECHNIK is certified according to DIN ISO 9001:2015 and DGRL 2014/68/EU Module A2.

LT Dome loaded pressure controllers

- Are depending on the application, according to DIN EN 1127-1, DIN EN ISO 80079-36 and GUV-R 132 suitable for flammable gases
- Comply with the European Framework Regulations (EG) 1935/2004 and (EG) 2023/2006
- Comply with the regulation DGRL 2014/68/EU
- meet optionally the requirements of the Food, Consumer Goods and Feed Code (LFGB)
- are suitable for usage with O₂, have BAM approved non-metallic materials



Design principle dome loaded pressure controller

Illustrated at the example of the LTD-1 MD, Brass.

Analogue design principle with other dome loaded pressure controllers from LT.

Needle valve

- For setting the pressure in the dome chamber and thus the back pressure
- Prevents unintentional back pressure adjustment
- Fills the dome chamber from the inlet pressure or via external connection

Dome chamber

Pneumatic valve control by compressible gas

Back pressure

Connection for back pressure gauge and/or feed-back

Membrane

- Gas type specific material
- Seals between dome chamber gas and process gas
- Allows for broad pressure control range and precise control even at small pressure differences

Pressure plate

The diaphragm's movement is transmitted through the pressure plate to the valve piston via the pressure pin

Valve

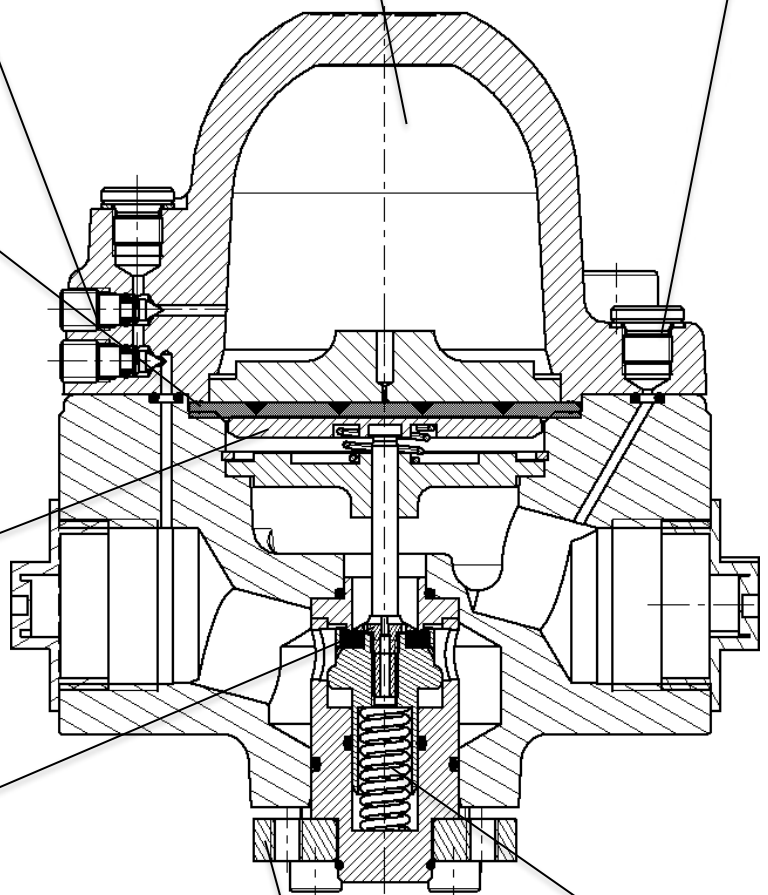
The valve is opened or closed by membrane movements and passes the gas through in the amount required to keep the back pressure constant. A change in back pressure causes a valve movement. There is equilibrium of forces between the dome chamber pressure and the back pressure (and springs) via the membrane, which controls the stroke of the valve and thus ensures a constant back pressure.

Tension disc

- Holds cage, piston and valve seat
- Easy access for maintenance with the small maintenance kit

Spring

Moves the piston upwards so that it contacts the pressure pin. Safety function closing by spring force and "positive sealing". The valve seat is tight when there is no gas withdrawal.



Supply range

Material	Con- nection	Inlet pres- sure [barg]	Outlet pressure range [barg]	Kv	Install- ation length	Weight	Elas- tomers	Art-No
Brass	1"	25	0.1...24	2.9	127 mm	6 kg	Viton	3-7020
	1"	25	0.1...24	2.9	127 mm	6 kg	EPDM	3-7060
	1"	100	0.5...99	2.9	127 mm	6 kg	Viton	3-7010
	1"	100	0.5...99	2.9	127 mm	6 kg	EPDM	3-7050
Brass f. O₂, cleaned	1"	25	0.1...24	2.9	127 mm	6 kg	Viton	3-7252
	1"	40	0.5...39	2.9	127 mm	6 kg	Viton	3-7003
Nickel plat- ed	1"	100	0.5...99	2.9	127 mm	6 kg	Viton	3-7000
	1"	100	0.5...99	2.9	127 mm	6 kg	EPDM	3-7001
Stainless Steel	1"	25	0.1...24	2.9	127 mm	13 kg	Viton	3-7040
	1"	25	0.1...24	2.9	127 mm	13 kg	EPDM	3-7080
	1"	100	0.5...99	2.9	127 mm	13 kg	Viton	3-7030
	1"	100	0.5...99	2.9	127 mm	13 kg	EPDM	3-7070
Stainless Steel High pressure	1"	414	28...138	1.8	110 mm	9.9 kg	Viton	3-7610
Alumina- alloy	2"	69	0,7...65	8.3	222 mm	6.4 kg	EPDM	3-7600

- LTD-1: Acetylene outlet max. 1.5 barg
- Connection inlet and outlet: G 1" BSP RH female
- The performance diagram can be found in the respective data sheet





Dome loaded pressure controller out of Brass

Oxygen	Acetylene	Natural-CO	Other technical gases	Max. performance	Max. Inlet pressure	Outlet pressure adjustable	Pressure range	Elastomer	Art-No.
X				$p_2/p_1 < 0.5$: at $p_2 = 40$ barg: 2100 Nm ³ /h	Oxygen: 40 barg	Oxygen: 0.5...39 barg			3-7003
			X	$p_2/p_1 < 0.5$: at $p_2 = 40$ barg: 2100 Nm ³ /h	100 barg	other gases: 0.5..99 barg	MD	Viton	3-7010
X				$p_2/p_1 < 0.5$: at $p_2 = 12$ barg: 700 Nm ³ /h	25 barg	0.1...24 barg			3-7252
			X	$p_2/p_1 < 0.5$: at $p_2 = 12$ barg: 700 Nm ³ /h	25 barg	0.1...24 barg	ND	Viton	3-7020
		X	X	$p_2/p_1 < 0.5$: at $p_2 = 40$ barg: 2100 Nm ³ /h	100 barg	0.5...99 barg	MD	EPDM	3-7050
	X	X	X	$p_2/p_1 < 0.5$: at $p_2 = 12$ barg: 700 Nm ³ /h	25 barg	0.1...24 barg	ND	EPDM	3-7060

Maintenance sets for dome loaded pressure controller out of Brass

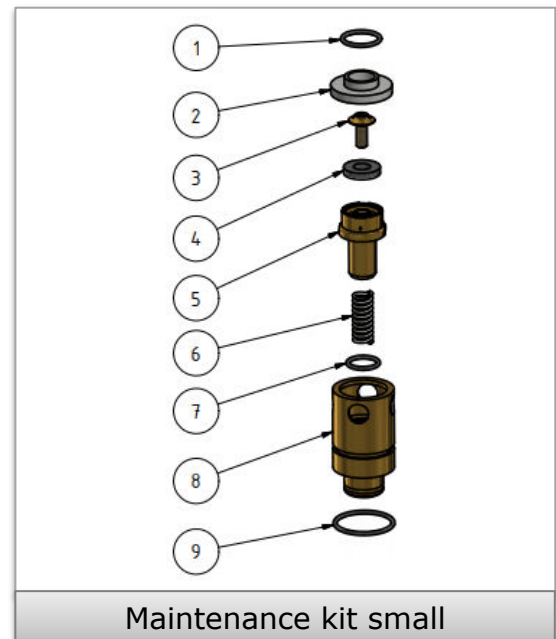
Product	Oxygen	Acetylene	Natural-CO	Other technical gases	Pressure range	Elastomers	Art-No.
Maintenance kit small				X	MD	Viton	3-7041
				X	ND	Viton	3-7059
			X	X	MD	EPDM	3-7065
		X	X	X	ND	EPDM	3-7066
	X			X	MD	Viton	3-7226
	X			X	ND	Viton	3-7259
Maintenance kit large				X	MD	Viton	3-7016
				X	ND	Viton	3-7044
			X	X	MD	EPDM	3-7043
		X	X	X	ND	EPDM	3-7067
	X			X	MD	Viton	3-7061
	X			X	ND	Viton	3-7258

Note: Scope of delivery of maintenance kits on the next page.

The moving parts of the LTD-1 are combined in the maintenance kit and should be replaced regularly. We recommend checking for leaks and maintenance with the "maintenance kit small" at least **once a year**. We recommend replacing the membrane after 5 years with the „maintenance kit large"

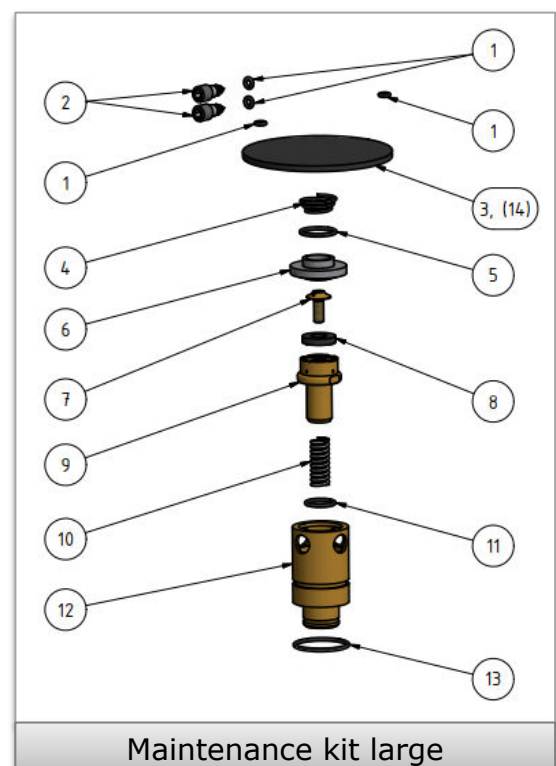
Maintenance kit small for LTD-1,
consists of

- 1: Seal ring
- 2: Valve seat
- 3: Valve screw
- 4: Flat seal
- 5: Valve piston
- 6: Valve compression spring
- 7: Seal ring
- 8: Valve guide
- 9: Seal ring



Maintenance kit large for LTD-1,
consists of

- 1: Seal ring
- 2: Needle valve
- 3: Membrane
- 4: Spring conical (only for MD)
- 5: Seal ring
- 6: Valve seat
- 7: Valve screw
- 8: Flat seal
- 9: Valve piston
- 10: Valve compression spring
- 11: Seal ring
- 12: Valve guide
- 13: Seal ring
- 14: Support ring for Membrane (only for at ND)
- 15: 2 Seal rings (not shown)



LTD-1 Dome loaded pressure controller can be maintained in our works, for a small maintenance charge including suitable maintenance kit. Dome loaded pressure controllers of other producers, e.g. Buschjost/IMI/GHR Types C1 and C31, can as well be maintained by LT for a lump sum including suitable maintenance set. Please contact us.



Dome loaded pressure controller out of Stainless Steel

Oxygen	Acetylene	Natural-CO	Other technical gases	Max. performance	Max. Inlet pressure	Outlet pressure adjustable	Pressure range	Elastomer	Art.-no.
X			X	$p_2/p_1 < 0.5$: at $p_2 = 40$ barg: 2100 Nm ³ /h	Oxygen: 40 barg Other gases: 100 barg	Oxygen: 0.5...39 barg other gases: 0.5...99 barg	MD	Viton	3-7030
X			X	$p_2/p_1 < 0.5$: at $p_2 = 12$ barg: 700 Nm ³ /h	25 barg	0.1...24 barg	ND	Viton	3-7040
		X	X	$p_2/p_1 < 0.5$: at $p_2 = 40$ barg: 2100 Nm ³ /h	100 barg	0.5...99 barg	MD	EPDM	3-7070
	X	X	X	$p_2/p_1 < 0.5$: at $p_2 = 12$ barg: 700 Nm ³ /h	25 barg	0.1...24 barg	ND	EPDM	3-7080

Maintenance sets for pressure controller out of Stainless Steel

Product	Oxygen	Acetylene	Natural-CO	Other technical gases	Pressure range	Elastomers	Art.-no.
Maintenance kit small :	X			X	MD	Viton	3-7071
	X			X	ND	Viton	3-7072
			X	X	MD	EPDM	3-7073
		X	X	X	ND	EPDM	3-7074
Maintenance kit large :	X			X	MD	Viton	3-7075
	X			X	ND	Viton	3-7076
			X	X	MD	EPDM	3-7077
		X	X	X	ND	EPDM	3-7078

Note: Scope of delivery of maintenance kits on the previous page.

Accessories LTD-1

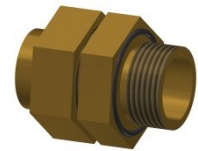
For dome loaded pressure controller LTD-1 Stainless Steel or Brass, middle pressure or low pressure (up to the maximum inlet pressure of 100 barg) we offer the following accessories:

- Screw-in connection DN25/PN40,
G1" - D 28 mm, Brass
 - for pipe outer diameter= 28 mm
 - Material Brass
 - Incl. seal ring Viton with Oxygen-service
 - Art.-no. 3260503

- Double threaded joint
 - Both sides G1" RH external thread
 - PN 100
 - Stainless Steel incl. suiting seal ring
 - Art.-no. 3-7401

- Wall holder
 - For safe and tension-free mounting
 - Steel, coated, 100x140x80 mm
 - Art.-no. 3-7015

- Loose type flange DN25 PN40
Stainless Steel/Brass:
 - Flange, rotating DN25 PN40, Stainless Steel 1.4571
 - Mounting boss G1", Brass including suiting seal ring
 - Art.-no. 1-4070



Screw-in connection



Double threaded joint

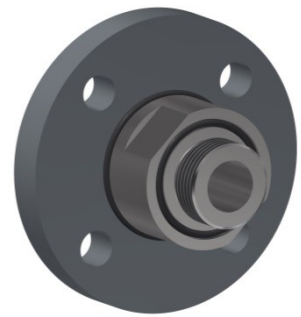


Wall holder



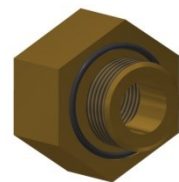
Loose flange SS/B

- Loose type flange DN25 PN40
 Stainless Steel/Stainless Steel:
 - Flange, rotating DN25 PN40,
 - Stainless Steel 1.4571
 - Mounting boss G1",
 Stainless Steel including suiting seal ring
 - Art.-no. 1500018



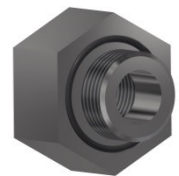
Loose flange SS/SS

- Extension Brass
 - Thread extension G1" BSP RH, Brass
 - including suiting seal ring
 - Art.-no. 3-7257



Extension B

- Extension Stainless Steel
 - Thread extension G1" BSP RH,
 1.4404 or 1.4571
 - including suiting seal ring
 - Art.-no. 2048011



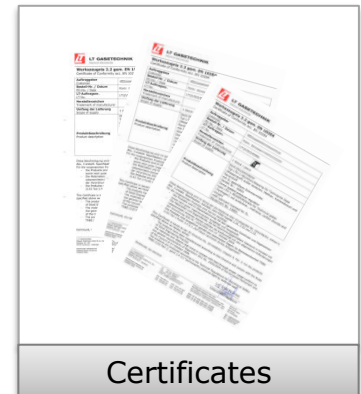
Extension SS

- Gas filter GR 40
 - Housing: Brass or Stainless Steel
 - Filter: Microplast 20 µm, Stainless Steel 80 µm,
 Bronze 100 µm or 200 µm
 - Connections G1" IG RH,
 inlet and outlet
 - PN25 20 µm: 3-0853
 - PN40 200 µm: 3-0864



Gas filter B

- Certificates
 - Factory certificate Type 2.1 acc. EN 10204:
Art.-no. 6-2100
 - Test report Type 2.2 acc. EN 10204:
Art.-no. 6-2200
 - Inspection certificate 3.1 acc. EN 10204:
Art.-no. 6-3100



Accessories LTD-2

- Lose flange DN50 PN40 Stainless Steel/Brass:
 - Flange, rotating DN50 PN40,
Stainless Steel 1.4571
 - Mounting boss G1",
Brass including suiting seal ring
 - Art.-no. 3-7700
- Maintenance set for LTD-2
 - Art.-no. 3-7700
- Certificates
 - Factory certificate Type 2.1 acc. EN 10204:
Art.-no. 6-2100



Industry of things - IOT

- Pressure control unit type 3 with outlet pressure transmitter with local display



Transmitter

- Pressure control unit type 4, completely in Stainless Steel and outlet pressure transmitter with local display



SS w/ transmitter

- Dome loaded pressure controller with electronic controllable proportional valve for easy setting from the distance e.g. with a process control system. Configuration according to individual specifications



Electronic controllable

***LT develops with you the perfect solution!
Use our competence from the last 5 decades***



Modular system for LT pressure control panels

LT offers a modular system for easy compilation of your perfect solution. LT designs compact and completely ready for connection and operation. Your pressure control system is individually priced, offered, manufactured, and documented including certificate and operating instructions. This way you get a finished, 100% pressure-tested, and CE-compliant solution directly to your construction site to reduce installation and working time.

LT modular system:

- a) Piping: Soldered Copper or welded Stainless Steel
- b) Nominal size e.g. DN25, DN40, or DN50
- c) Dome loaded pressure controller 1", 2" or 3" BSP
- d) Gas type and pressure specific
- e) Connections: Soldering screw joint, flange, open pipe end, or compression fitting
- f) Connection positions: top, down, or sideways
- g) Flow direction: To the right or to the left
- h) Ball valve(s): Inlet/outlet/bypass
- i) Gas filter/dirt trap – w/wo contamination indication
- j) Single or parallel pressure control units type 1-8 or bypass
- k) Inlet pressure and/or outlet pressure gauge in defined diameter w/wo shut-off valve
- l) Pressure transmitter w/wo local display
- m) Temperature transmitter w/wo sleeve
- n) Safety valve(es) per pressure controller/collective
- o) W/wo panel and/or stand for floor installation, w/wo roof
- p) Other options: pressure-relief valve, gas analyzer connection, emergency feed point, certificate(s)

***Modular system for the individual compilation,
tailor-made, finished and tested delivery***

Versions LTD-1

LTD-1 pressure control unit

- Dynamic control of the dome chamber pressure on basis of the LTD-1
- Compensation for temperature-related pressure fluctuations in the dome pressure chamber at type 1 to 8
- The outlet pressure has a regulating effect on the membrane of the pilot pressure controller, so that the valve seat opens or closes. Due to this the pressure control unit with external back pressure control (types 5 to 8) reacts faster and more sensible to demand fluctuations.

1

2

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4

P1 max barg	Art-Nr	P2 max barg
25	3-8011	16
40	3-8012	25
50	3-8013	49

P1 max barg	Art-Nr	P2 max barg
25	3-8021	16
40	3-8022	25
50	3-8023	49

P1 max barg	Art-Nr	P2 max barg
25	3-8031	16
40	3-8032	25
50	3-8033	49

P1 max barg	Art-Nr	P2 max barg
25	3-8041	16
40	3-8042	25
50	3-8043	49

5

6

7

8

P1 max barg	Art-Nr	P2 max barg
40	3-8052	25
50	3-8053	49

P1 max barg	Art-Nr	P2 max barg
40	3-8062	25
50	3-8063	49

P1 max barg	Art-Nr	P2 max barg
40	3-8072	25
50	3-8073	49

P1 max barg	Art-Nr	P2 max barg
40	3-8082	25
50	3-8083	49

- Comfortable adjustment with extremely stable outlet pressure
- At types 1-4 of the LTD-1 based pressure control units the pilot pressure controller has a drilling in the housing to allow for a relief of the dome chamber to the set value in the case of a pressure relief. The escaping gas exhausts uncontrolled to the environment.
- Types 5-8 (design with external feedback, deliverable from PN40) are for unmatched control accuracy even at variable volume flows. Nonetheless

PN40 and PN50 can be used for lower pressures as well (including suitable pressure gauges).

- During pressure relief the dome chamber is relieved by the throttle valve which is installed at the pilot pressure regulator. Additionally a small amount of gas is always escaping from this throttle valve – thus the pilot pressure controller is forced to permanently control a little bit to grant a constant dome chamber pressure. The escaping gas can be guided to safe areas with a (not included) blow off pipe; alternatively the throttle valve can be closed completely and permanently with an (included) inboard grub screw.
- Optionally:
 - Factory certificate Type 2.1
 - Suitable for food gases (FDA)
 - Suitable for medical gases and for medical oxygen
 - Versions in Stainless Steel



Configuration

Each pressure control unit is configured individually. Please name gas type, upstream and downstream pressure.

Depending on this the components are chosen:

- Dome loaded pressure controller LTD-1 low pressure or middle pressure
- Elastomer Viton or EPDM
- Pilot pressure controller depending on the adjustable range
- Pressure gauge with optimal readability of the adjustable range
- Compliance with specific rules (O₂, medicine etc.)

***Pressure control unit: Highest outlet pressure stability
especially for fluctuating demands***

Retrofit kits LTD-1

- Retrofit kits for existing dome loaded pressure controller are usually deliverable from stock.
- Retrofit kits with outlet pressure gauge for LTD-1 dome loaded pressure controller with manufacturing year before 2015 can only be installed by us. Please contact us.

1

2

3

4

P1 max barg	Art-Nr	P2 max barg
25	3-8216	16
40	3-8217	25
50	3-8218	49

P1 max barg	Art-Nr	P2 max barg
25	3-8226	16
40	3-8227	25
50	3-8228	49

P1 max barg	Art-Nr	P2 max barg
25	3-8236	16
40	3-8237	25
50	3-8238	49

P1 max barg	Art-Nr	P2 max barg
25	3-8246	16
40	3-8247	25
50	3-8248	49

5

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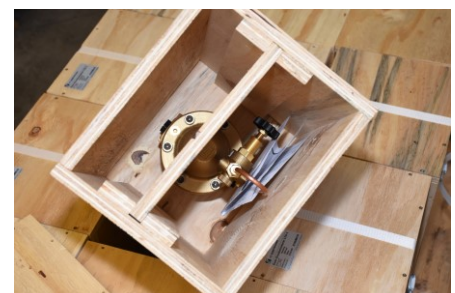
P1 max barg	Art-Nr	P2 max barg
40	3-8257	25
50	3-8258	49

P1 max barg	Art-Nr	P2 max barg
40	3-8267	25
50	3-8268	49

P1 max barg	Art-Nr	P2 max barg
40	3-8277	25
50	3-8278	49

P1 max barg	Art-Nr	P2 max barg
40	3-8287	25
50	3-8288	49

- Retrofit kits for O₂ only up to 40 barg
- These retrofit kits are often as well deliverable for dome loaded pressure controllers of other producers, e.g. Buschjost / IMI / GHR types C1 and C31. Please contact us.
- Environment friendly wooden box for the safe shipping
 - For 1 pressure control unit:
Art.-no.: 9-000324
 - For 2 pressure control units:
Art.-no.: 9-000326



LTD-1 pressure control panels – bespoke solutions

The proven dome loaded pressure controller LTD 1 is available in different standard versions as pressure control panel:

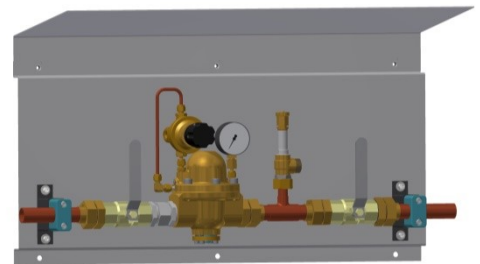
- Pressure control station with bypass with pressure control unit type 8, without panel



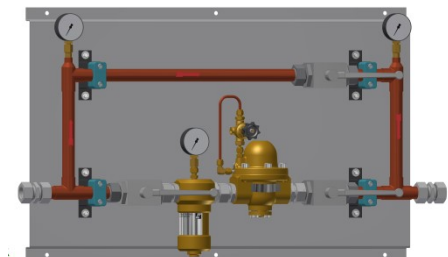
- Pressure control panel with bypass with pressure control unit type 1, mounted on stainless steel panel:



- Pressure control panel with pressure control unit type 3 with safety valve without bypass mounted on stainless steel panel with roof

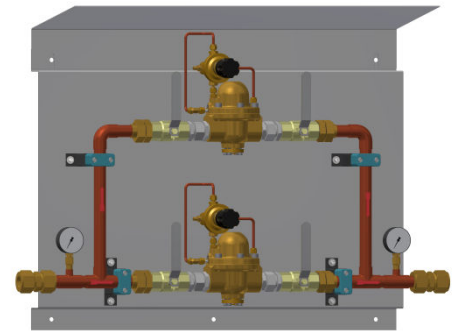


- Pressure control panel with pressure control unit type 1 with filter (contamination degree indicated with pressure gauge) with bypass, in- and outlet pressure gauge

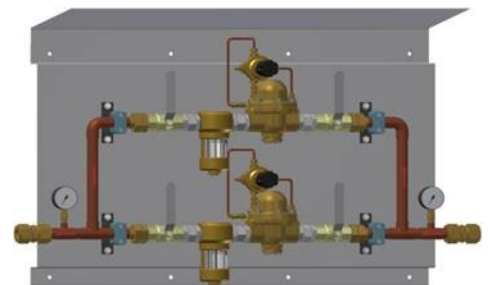


***Cut in half assembly time with our pressure control panels!
LT pressure control panels for particularly quick assembly***

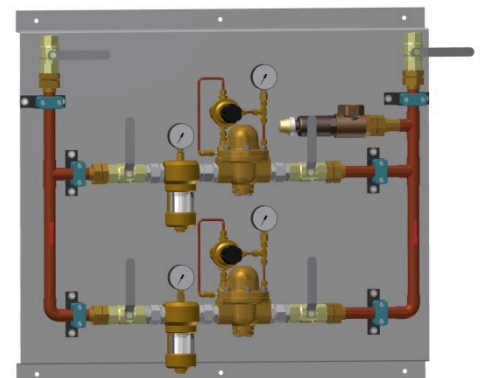
- Redundant pressure control panel with pressure control unit type 5 with in- and outlet pressure gauge, mounted on stainless steel panel with roof



- Redundant pressure control panel with pressure control unit type 5 with in- and outlet pressure gauge with filter mounted on stainless steel panel with roof



- Redundant pressure control panel with pressure control unit type 7 with filter, in- and outlet pressure gauge mounted on stainless steel panel with safety valve – connection top

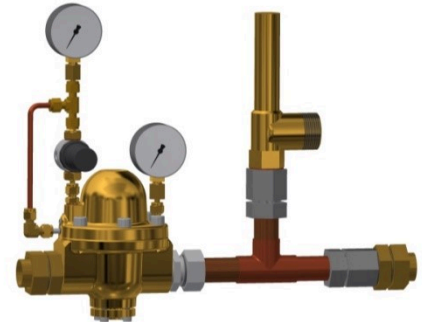


***Assembled and tested, ready for connection and operation,
delivered to your construction site - for quick and easy installation***

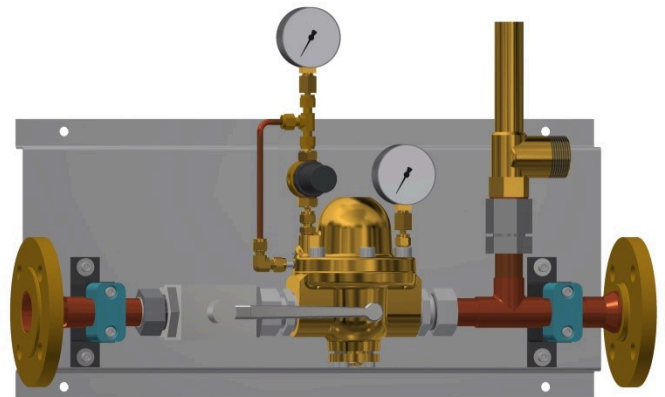
LTD-1 with safety valve

Pressure control units can as well be delivered with suitable safety valve **examples:**

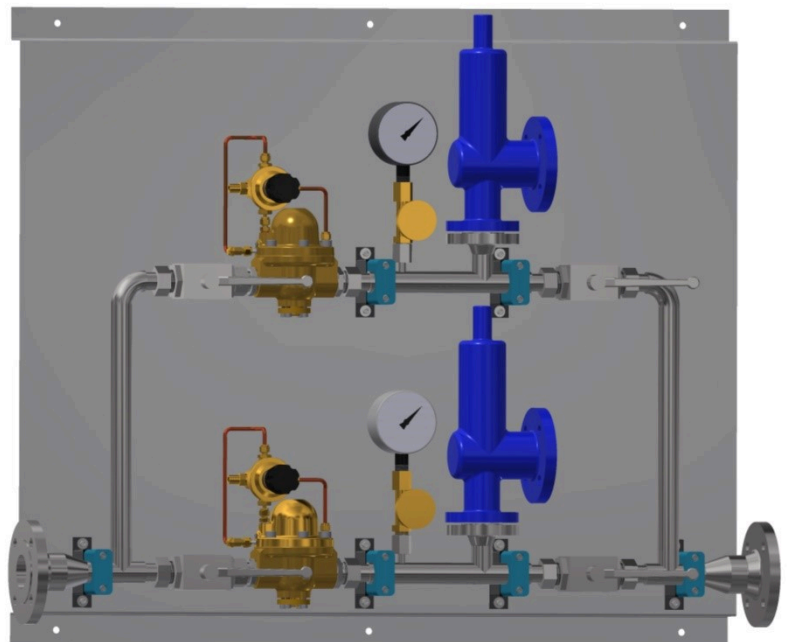
- Pressure control unit type 8 with suitable safety valve and soldering screw joint at in- and outlet



- Pressure control unit type 8 with safety valve mounted on stainless steel panel and flange connection



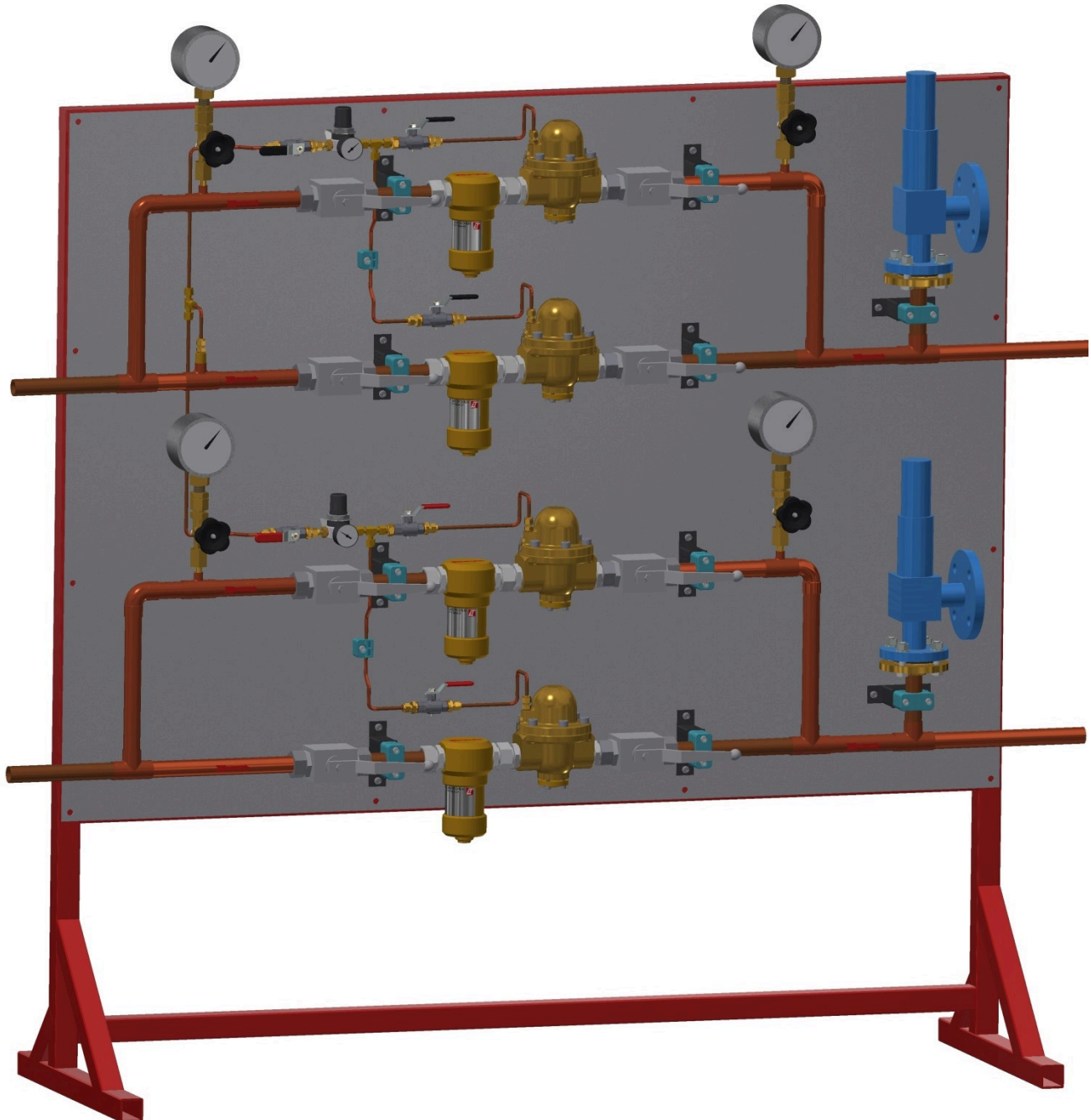
- Redundant pressure control system on stainless steel panel with two 1" pressure control units type 5 and two safety valves, piping and connection flange in stainless steel.



***LT pressure control panels are tailor-made solutions
based on a modular selection concept***

Special versions

We would be happy to manufacture your special version. Below picture shows an example of a configuration for two different gases (hydrogen and nitrogen) on a panel, redundant, with safety valves, filters and pressure common control

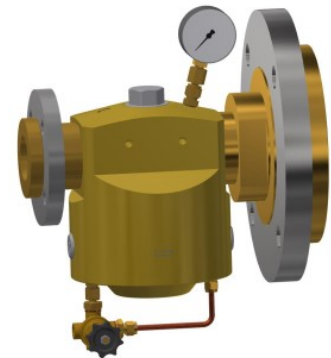


Lots of examples about pressure control units and panels on
www.lt-gasetechnik.com

Versions LTD-2

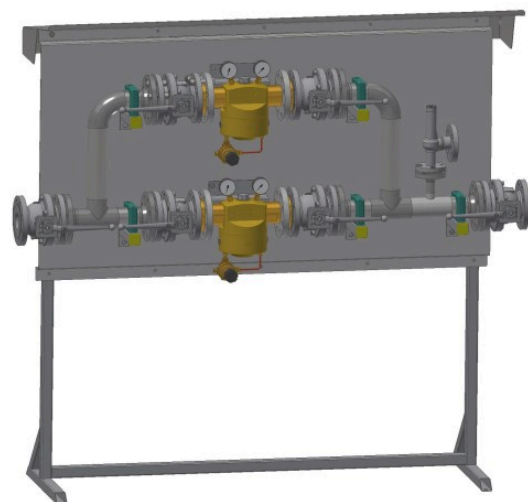
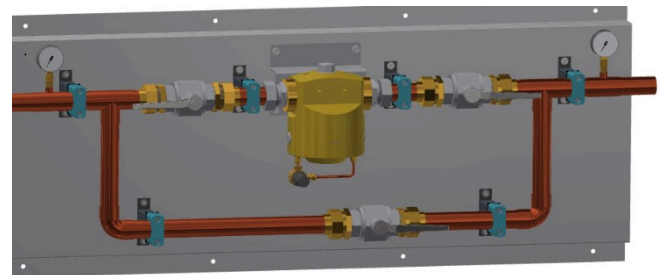
LTD-2 pressure control unit

- Common version of the 2" pressure control unit as shown, with pilot pressure controller, outlet pressure gauge including loose flange with mounting boss
pressure control unit LTD-2 type 1, PN25:
Art.-no.3-7533
pressure control unit LTD-2 type 1, PN40:
Art.-no. 3-7532



LTD-2 pressure control panels

- 2" pressure control panel with bypass with pressure control unit type 1, with in- and outlet gauge, mounted on stainless steel panel
- Redundant 2" pressure control panel with pressure control unit with safety valve, mounted on stainless steel panel with frame

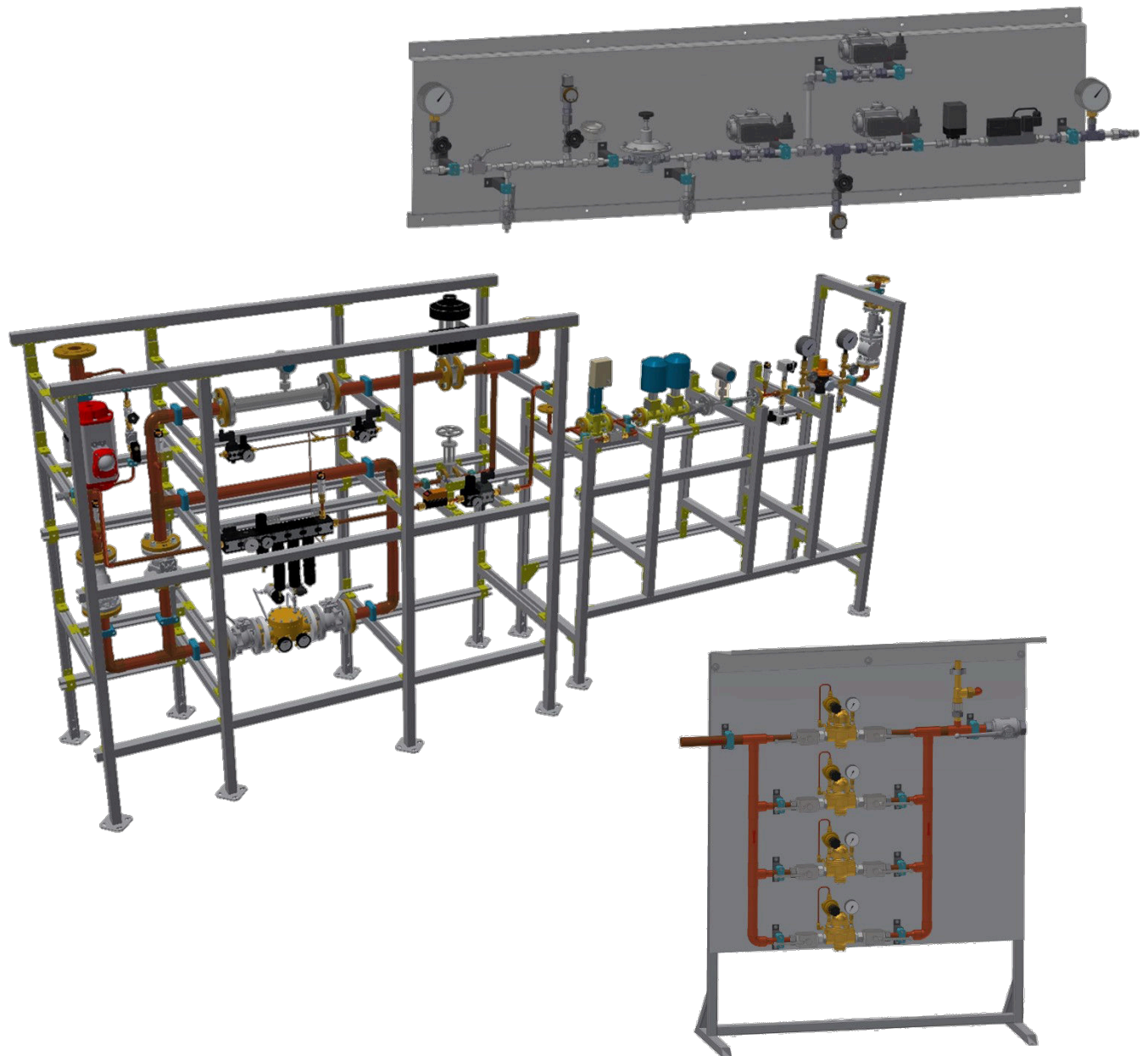


***Impressive: With these pressure control panels
you cut in half setup time and costs!***



Bespoke pressure control solutions

We manufacture your individual solution! Pressure control systems according to customer requirements, for example with mass flow measurement, controllable valves, in SIL design, stainless steel design; also for large volume flows.



*Only a few possible variants are shown here;
contact us for your individual solution!*



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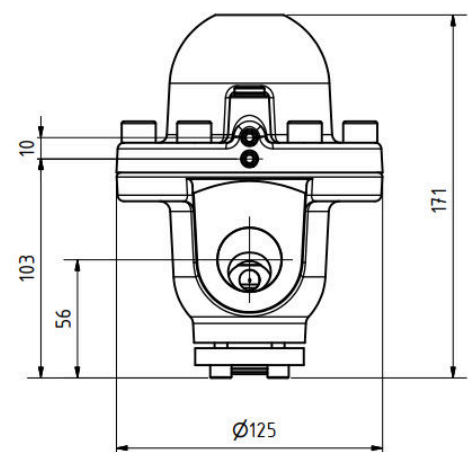
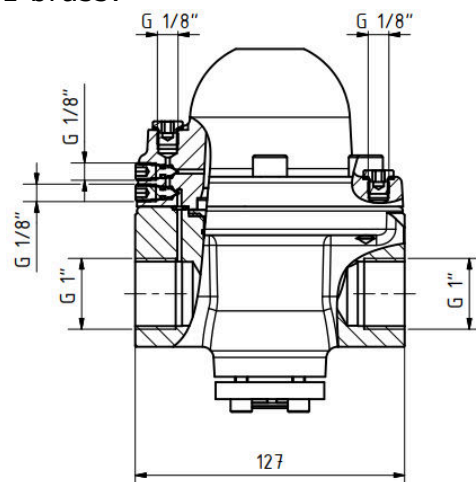
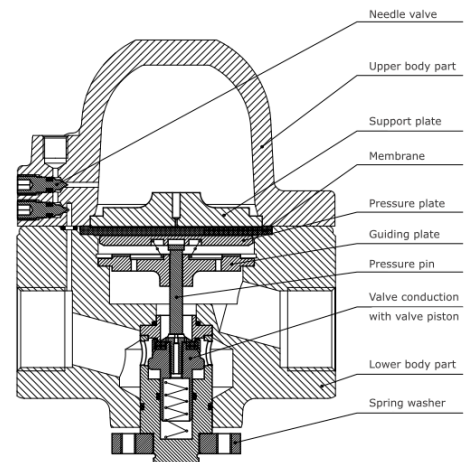


Datasheets

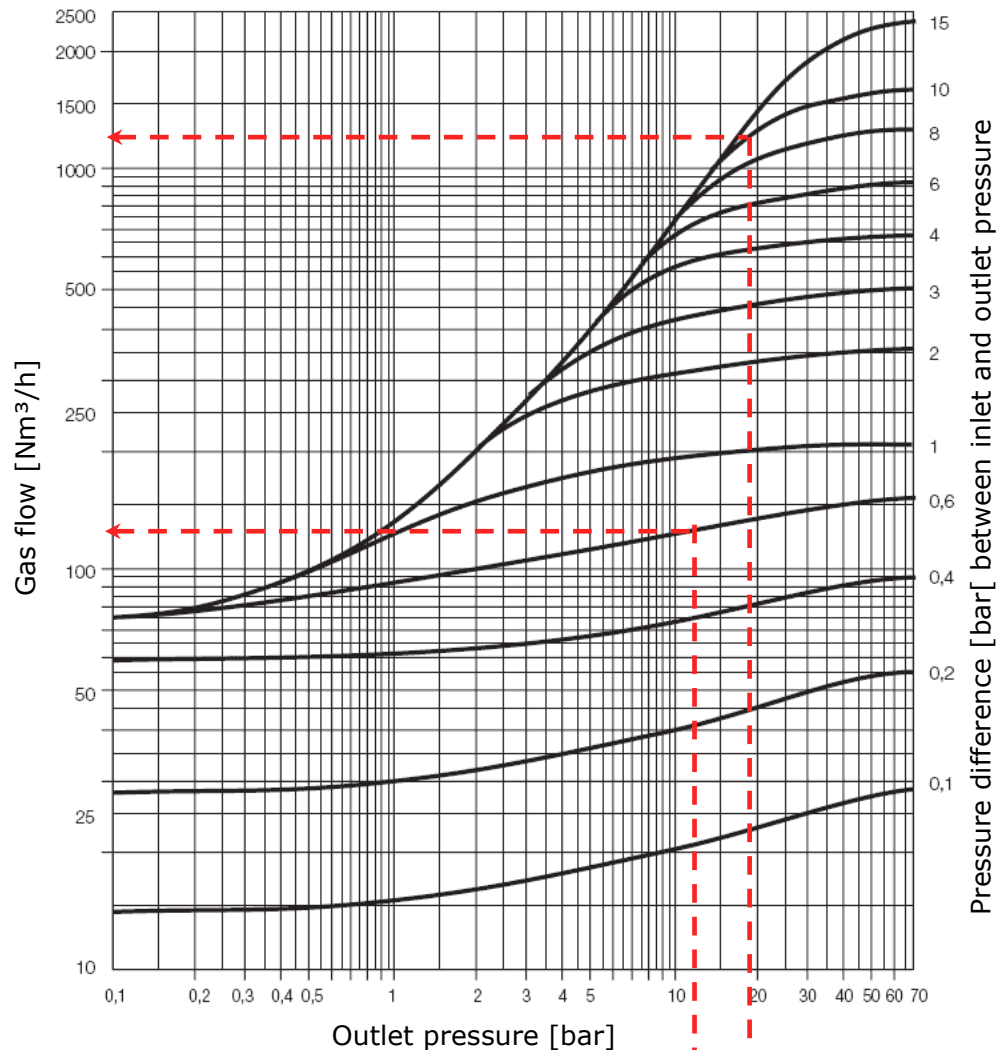
Data sheet dome loaded pressure regulator LTD-1

Precise and instantaneous pressure control without “wobbling” even with large variations

- For almost all technical gases, air and liquids
- Performance: 10 ... 2,500 Nm³/h
- Maximum inlet pressure:
 - ND: Inlet: 25 barg Outlet: 0.1 .. 24 barg
 - MD: Inlet: O₂ 40 barg, other gases 100 barg
Outlet: O₂: 0.5 ... 39 barg, other gases 0.5 ... 99 barg
 - HD: Inlet: 414 barg Outlet: 28...138 barg
- Sealing material:
 - Viton: -20°C ...100 °C for O₂, and all technical gases except acetylene and CO₂
 - EPDM: -40°C ... 130 °C for CO₂ and all neutral gases (not for O₂)
- Weight: Brass: 6 kg; Stainless Steel: 13 kg; SS high pressure 9.9 kg
- Connection inlet and outlet: G 1" BSP RH - female
- Safety function: closed by spring force and positive tightening
- Materials: Brass; brass nickel plated; stainless steel
- Options:
 - Suitable for food (acc. to Regulation (EC) No. 1935/2004)
 - Suitable for medical applications (according to the requirements of DIN EN ISO 15001:2012-06)
 - pressure control units or pressure control systems
- Dimensions LTD-1 brass:



Performance diagram LTD-1 brass



Conversion factors:

- Oxygen: 0.95
- Hydrogen: 3.80
- Propane: 0.80
- Carbon dioxide: 0.81
- Dinitrogen monoxide: 0.80
- Nitrogen: 1.00
- Argon: 0.85
- Helium: 2.70

Example 1:

Pressure reduction from 13.6 bar to 13.0 barg. The gas flow amounts to approx 130 Nm³/h Air = 494 Nm³/h Hydrogen

Example 2:

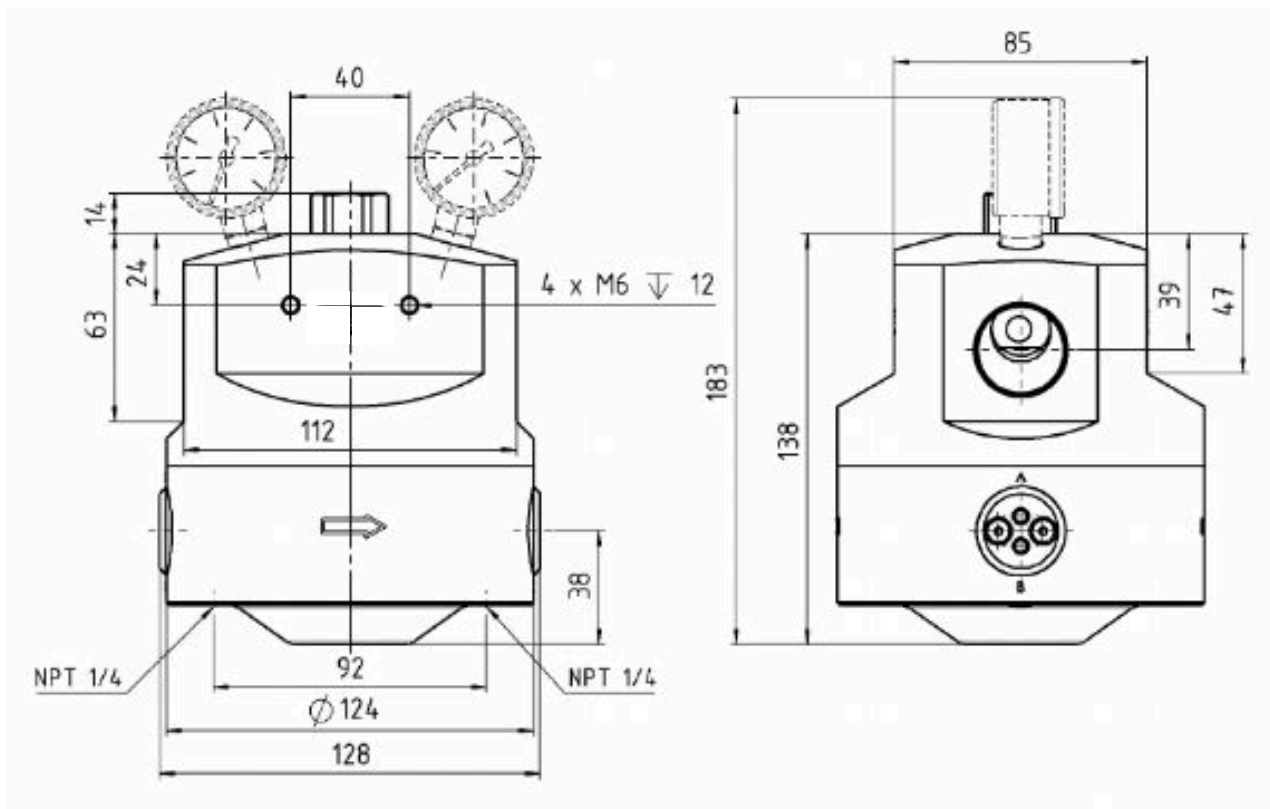
Pressure reduction from 30 to 20 barg. Gas flow approx. 1,240 Nm³/h air, equal to 1,000 Nm³/h Propane

Kv-coefficient = 2.9

Note: Performance values for the LTD-1 can only be calculated approximately using the Kv coefficient (results are higher than the reading from the diagram), since the diagram includes the special properties of the housing and the Kv coefficient considers only the diameter of the valve seat.

Data sheet

dome loaded pressure controller LTD-1 HD



Item numbers: 5002670

- Available materials: brass or stainless steel (1.4404)
- Sealing materials:
EPDM or FKM for O-rings and membrane
- Suitable for almost all technical gases, air and liquids
- Maximum inlet pressure up to 320 bar brass
 up to 420 bar stainless steel
- Control range up to 300 bar brass
 up to 400 bar stainless steel
- Flow coefficient $C_v = 3.0$
- Standard temperature range: $-40 + 150 \text{ } ^\circ \text{C}$
- Weight: approx. 9.3 kg
- Installation length approx. 128 mm, height approx. 183 mm
- Connection inlet and outlet: internal thread G1 "RH

The dome loaded pressure controller LTD-1 HD is a pneumatically controlled, single-stage pressure regulator that was developed for use with compressed gases and gas mixtures. Permissible gases are all technical gases except acetylene.

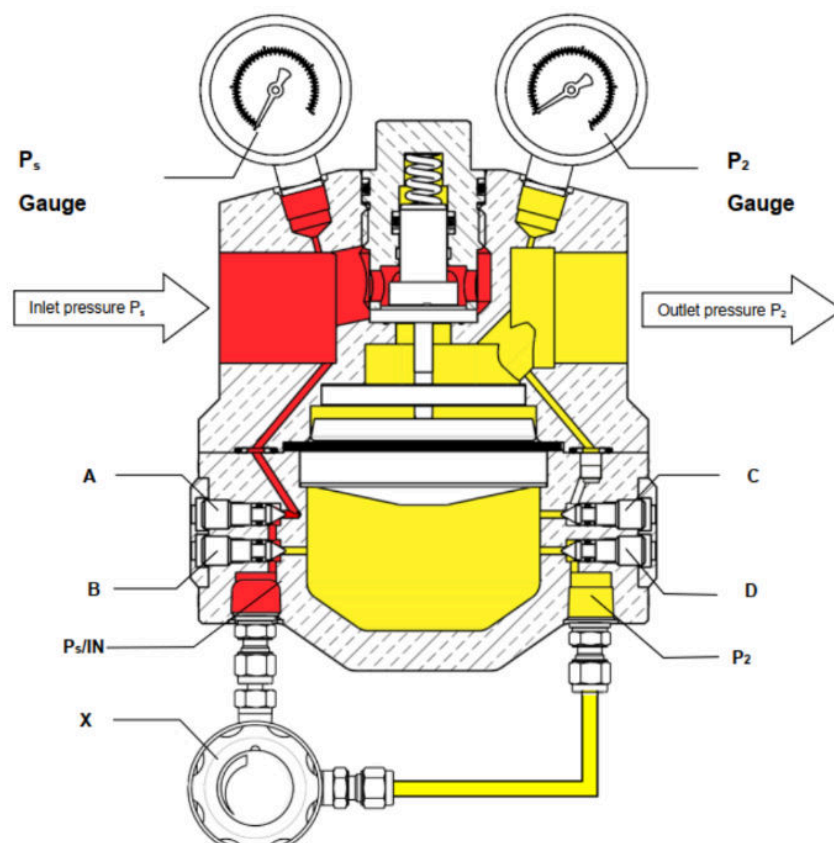
We recommend a fine filter upstream. If the pressure level changes, the downstream components must be protected by safety valve(s)

The dome pressure can be derived from the upstream pressure side through needle valves.

A pilot valve or a proportional valve can be used for convenient adjustment. Further details in the operating instructions.

Optionally available with

- Fine filter
- Factory certificate according to EN 10204 (item no. 6220000)
- Pressure gauges for inlet pressure and outlet pressure, also as a pressure transmitter
- Pressure control unit controlled by a pilot pressure regulator, also with external back pressure feedback



Datasheet Dome loaded pressure regulator LTD-3/4 HD

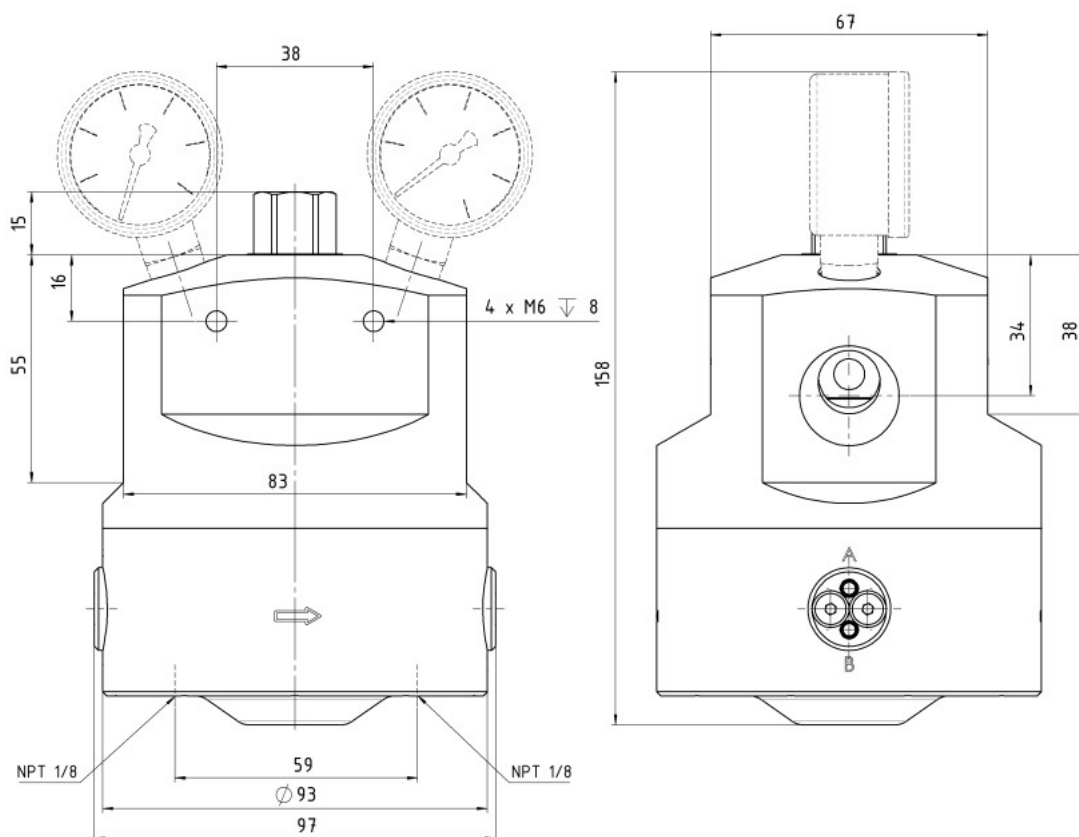
- Dome loaded pressure regulator for high pressures typically used as line pressure regulator
- Suitable for almost all technical gases, air and liquids
- Available materials: brass or stainless steel
- Sealing materials:
EPDM or FKM for O-rings
and diaphragm
seat seal PCTRE
- Maximum inlet pressure: 320 bar brass
420 bar stainless steel
- Outlet pressure range:
up to 300 bar brass
up to 400 bar stainless steel
- Operating temperatures: -40
+150°C
- Weight: approx. 4.6 kg
- Dimensions:
diameter 93 mm x 158 mm height
- Connections: Inlet and outlet: NPT
3/4" or G 3/4"; Gauge NPT 1/4"
- Recommendations:
 - Protect the pressure controller with an upstream fine filter;
 - Protect downstream parts of the system with safety valve(s) if the pressure level(s) change(s)
 - If adjustment is made frequently, a pilot pressure regulator or proportional valve can be used instead of the screw plug



The dome loaded pressure regulator LTD-3/4 - HD is characterized by high control quality and high throughput. An equilibrium pressure is created between the dome chamber pressure and the outlet pressure. The pressure-relieved valve cone largely compensates for fluctuations in the inlet pressure.

We recommend the upstream connection of a fine filter. If the pressure stage changes, the following components must be protected by safety valve(s).

For more frequent adjustment of the outlet pressure use a spring-loaded pilot pressure regulator (available as option). With this option a dynamic pressure control is achieved. The pressure in the dome can be held constant even with temperature changes or flow variations. A small amount of control medium escaping into the process gas line means that control medium is continuously replenished.



Optionally available with:

- Upstream filter
- Certificate in accordance with EN 10204 (item no. 6220000)
- Screw-in socket with loose flange DN50 PN40 (item no. 3770000)
- Manometer for inlet pressure and outlet pressure, also as a pressure transmitter
- Pressure control unit controlled by pilot pressure regulator, also with external pressure feedback
- Pressure control system with shut-off on the inlet and outlet side, bypass, safety valve, gas filter. Mounted on panel or frame, also with roof

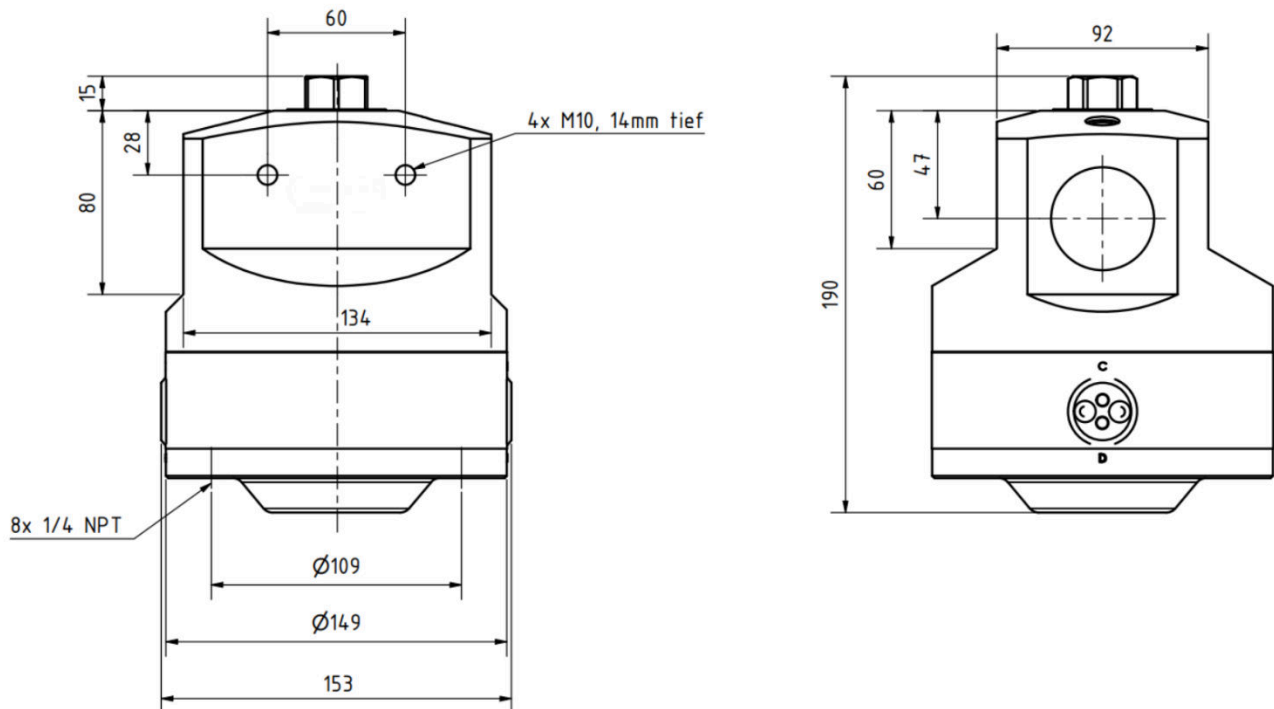
Datasheet Dome loaded pressure regulator LTD -1 1/2

- Dome loaded pressure regulator typically used as line pressure regulator
- Suitable for almost all technical gases, air and liquids
- Available materials: brass or stainless steel (1.4404)
- Sealing materials: O-rings and diaphragm
EPDM: (Art.-No.: 3762400)
FKM (for O₂): (Art.-No.: 3762500)
- Maximum inlet pressure: 110 bar
- Cv Value 7.3
- Outlet pressure ranges:
1-12 bar
1-100 bar
- Operating temperatures: -40 +150°C
- Weight: approx. 17 kg
- Dimensions:
diameter 149 mm x 190 mm height
- Connections: Inlet and outlet: G 1 1/2"
Pressure gauges NPT 1/4",
Dome connection NPT 1/4"
- Recommendations:
 - Protect the pressure controller with an upstream fine filter
 - Protect subsequent system components with safety valve(s) when the pressure level changes
 - If adjustment is made frequently, a pilot pressure regulator or proportional valve can be used instead of the screw plug



The dome loaded pressure regulator LTD-1 ½" is characterized by high control quality and high throughput. An equilibrium pressure is created between the dome chamber pressure and the outlet pressure. The pressure-relieved valve cone largely compensates for fluctuations in the inlet pressure.

We recommend the upstream connection of a fine filter. If the pressure stage changes, the following components must be protected by safety valve(s).



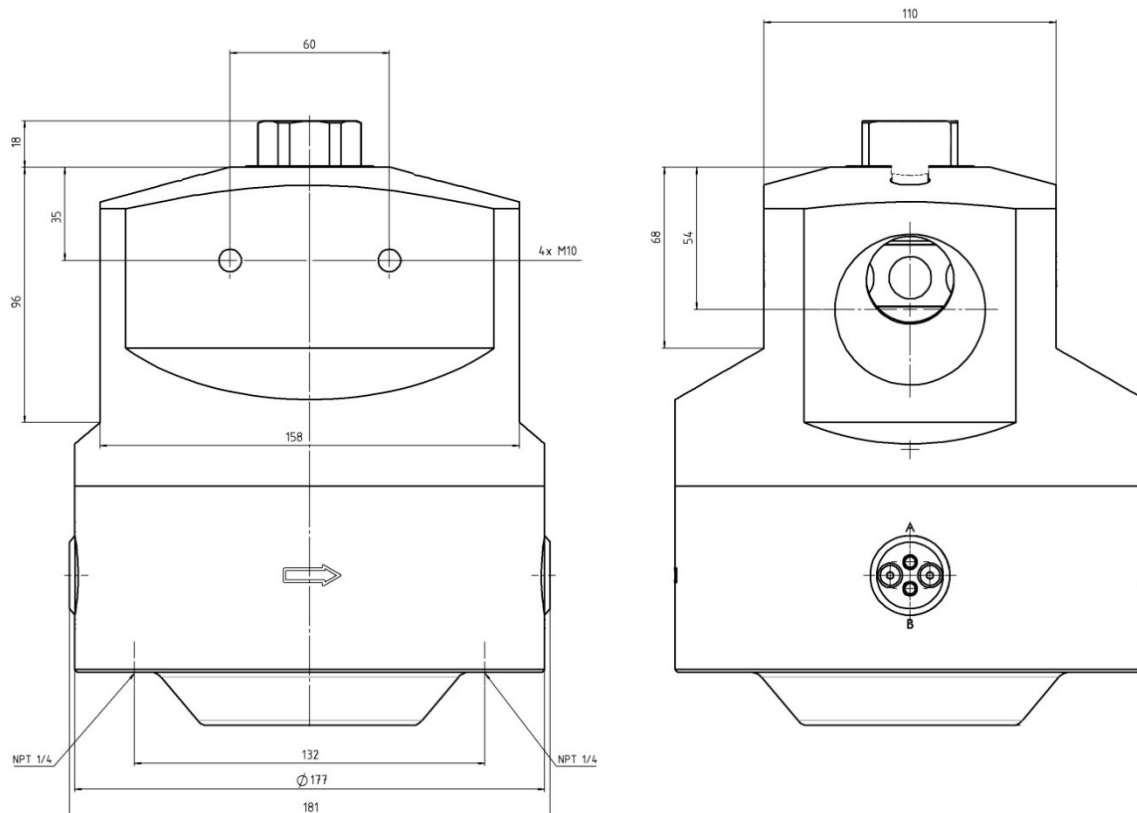
The dome chamber pressure can be reduced with needle valves. A dynamic pressure control is achieved. Control medium is continuously replenished by a small amount of control medium escaping into the process gas line. This creates a high level of pressure constancy in the dome chamber, even in the event of temperature fluctuations and changes in flow.

Optionally available with:

- Pressure gauges for inlet pressure and outlet pressure also as pressure transmitter
- Maintenance set 1 ½" EPDM
Maintenance set ½" FKM (Art.-Nr.: 3762600)
- Upstream filter
- Certificate in accordance with EN 10204 (item no. 6220000)
- Screw-in socket with loose flange DN50 PN40
- Pressure control unit controlled by pilot pressure regulator
- Pressure control system with pressure control unit and with shut-off on the inlet and outlet side, filter, bypass, safety valve. Mounted on panel or frame, also with roof

Data sheet

dome loaded pressure controller LTD-2



Item numbers: 3762000, 3762100, 3762200

- Available materials: brass or stainless steel
- Sealing materials:
EPDM or FKM for O-rings and membrane
- Suitable for almost all technical gases, air and liquids
- Maximum inlet pressure 110 bar
- Control range ND up to 12 bar
Control range MD up to 100 bar
- Flow coefficient $C_v = 17.7$
- Standard temperature range: $-40 + 150\text{ }^{\circ}\text{C}$
- Weight: approx. 27 kg31.
- Installation length approx. 181 mm, height approx. 228 mm
- Connection inlet and outlet: internal thread G2 "RH

The dome loaded pressure controller LTD-2 is a pneumatically controlled, single-stage pressure regulator that was developed for use with compressed gases and gas mixtures. Permissible gases are all technical gases except acetylene.

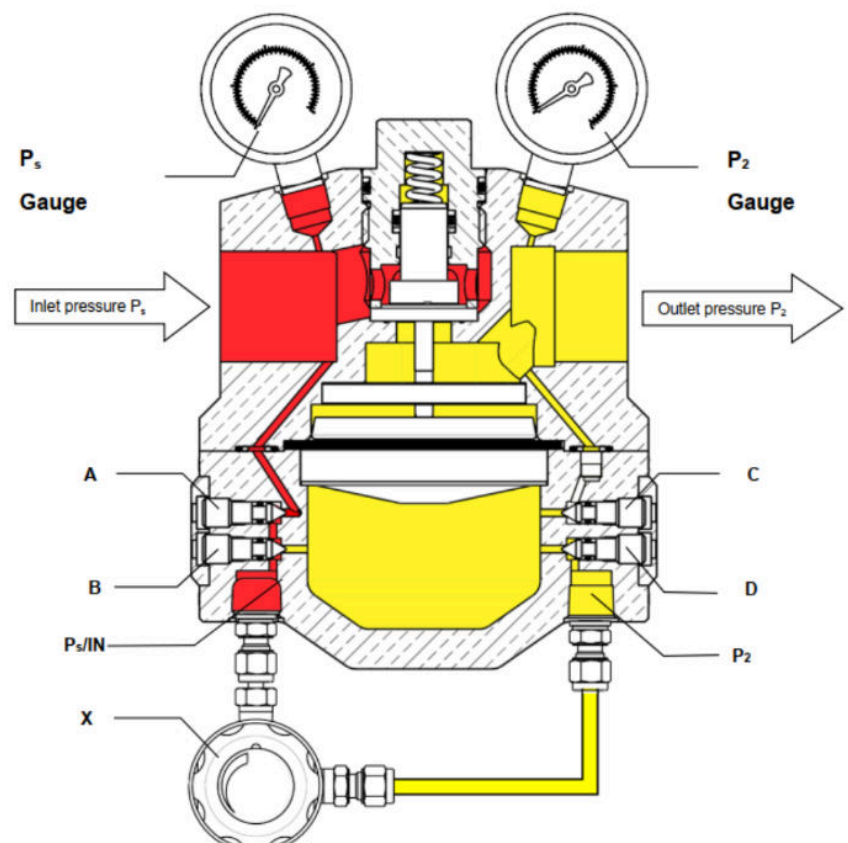
We recommend a fine filter upstream. If the pressure level changes, the downstream components must be protected by safety valve(s)

The dome pressure can be derived from the upstream pressure side through needle valves.

A pilot valve or a proportional valve can be used for convenient adjustment. Further details in the operating instructions.

Optionally available with

- Fine filter
- Factory certificate according to EN 10204 (item no. 6220000)
- Screw-in socket with loose flange DN50 PN40 (item no.3770000)
- Pressure gauges for inlet pressure and outlet pressure, also as a pressure transmitter
- Wall bracket
- Pressure control unit controlled by a pilot pressure regulator, also with external back pressure feedback
- Pressure control system with shut-off on the inlet and outlet side, bypass, safety valve, gas filter. On wall panel and/or stand for floor installation, w/wo roof





LT GASETECHNIK
beyond standards



Several information

Information
beyond standards

Unique selling propositions

Gas process plants

- Engineering, production and commissioning of gas mix and gas supply systems according to customer specifications
- High-performance systems with measurement+control equipment and gas analysis
- Customized gas process plants

Gas mixing technology

- Gas mixer for flammable and non-combustible gases
- Static gas mixers with and without buffer vessel
- Dynamic, MFC-based, fully automated gas mixer
- Gas analysis systems

Gas related equipment

- Pressure regulators, pressure regulating stations and pressure control units
- Bottle and bundle battery systems
- Valves and gas filters
- Gas safety devices

E/C&I + analysis tech

- Individual solutions for control and regulation tasks
- Engineering, design, PLC-software design
- Technical process engineering C&I
- Gas analyzers
- Standard equipment for gas applications

From one **SINGLE** source:

1. Consulting (URS/FRS)
2. Concept and detail engineering for the **mechanical part** (DQ/FDS)
3. Engineering, design and programming for the **electrical part**: Measuring, control and automation system, including gas analyzing technology
4. Manufacturing, testing (FAT) and **commissioning** (SAT) of the systems
5. Documentation including **CE**-Marking, **Risk-Analysis**, **HAZOP**-Study, **SIL**-Classification if so desired



About LT GASETECHNIK

Integrated in the weyer group and based in Dortmund, Germany, since 1971, approximately 25 specialists develop and supply high-performance gas mixing equipment, serial gas mixers, serial valves and tailor-made control solutions in a yearly volume of 2...2.5 Mio. €. We manufacture standard equipment, as well as custom-designed systems with the highest standards of engineering, safety and quality. Complex technical requirements are at the same time for us stimulation and incentive – just beyond standards

Our customers

We supply plants and fittings for a wide variety of industries and industrial applications. We deliver and service worldwide. Our customers include not only all the world's leading manufacturers of industrial gases, but also many companies from the following sectors:

- Machine and plant engineering
- Automotive industry
- Chemical and Pharmaceutical industry
- Electronics, Measurement, Control and Analysis technology
- Ferrous / Non-Ferrous Metals
- Energy supply
- Liquefied gases
- Glass industry (float glass and flacons)
- High-tech industry
- Industrial gases
- Food industry

Competency from LT GASETECHNIK – worldwide since 1971

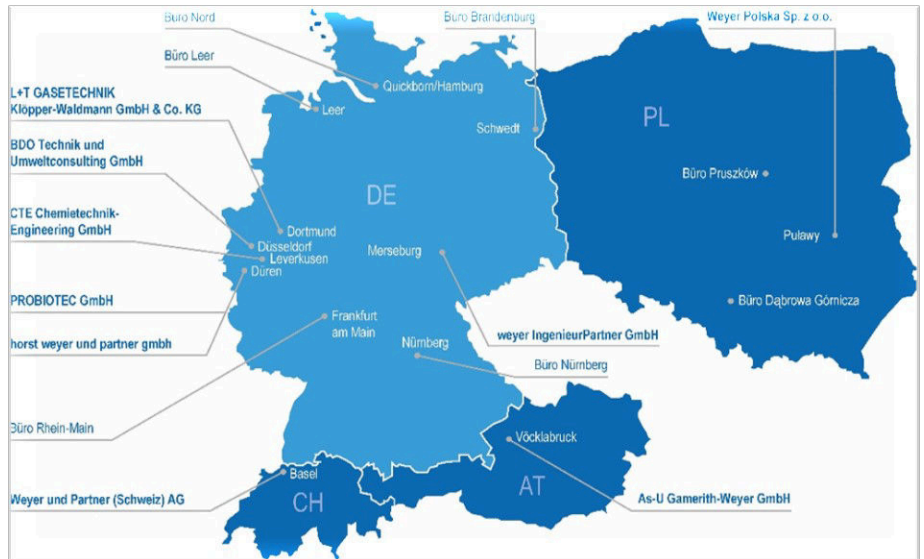
They all rely – typically since many decades - on our experience and our extensive and well-founded know-how. Our team of engineers from the fields of process engineering, design/planning and C&I-technology develops a practical and efficient solution in every single case, which, of course, also meets special requirements.

Member of the weyer group

LT GASETECHNIK is a member of the weyer group. Klaus Weyer is Managing Director at horst weyer and partner GmbH as well as at L+T GASETECHNIK Klöpfer-Waldmann GmbH & Co. KG.

Overview of the weyer group:

- Founded 1976
- 4 countries
- 10 companies
- 17 sites
- More than 160 employees (plus employees of GASETECHNIK)
- More than 900 projects per year (plus LT GASETECHNIK projects)
- Customer industries: Chemical, Pharma, Oil, Supply and Disposal, as well as organizations and public authorities
- Services: Engineering and consulting in and around industrial plants
- Approx. 35 experts in the areas of waste, fire protection, explosion protection, imission control, water protection, business valuation, old loads, evaluation of machinery and industrial equipment, accident and radiation protection



LT GASETECHNIK – integrated in a strong group

The weyer group covers all aspects of engineering and consulting in the area of process and environmental technology. The team of experienced process engineers, natural scientists, process control technicians and business consultants develops, plans and implements individual projects in process and safety engineering and computer engineering. The extensive portfolio of the weyer group, thematic specializations on individual subject areas, references and information about the members of the weyer group can be found on www.weyer-gruppe.com



Supply range LT GASETECHNIK

This supply range only gives in an overview. Please contact us if you cannot find what you are looking for. We will be more than happy to work out your **individual solution** beyond standards together with you – just **beyond standards**:

Gas Process Plants

- Engineering, production and commissioning of Gas Mix, Gas Supply and Test Systems according to customer specifications
- Dynamic high-performance systems with associated electrical, measurement, control equipment and gas analysis systems.
- Customized Gas Process Plants

Gas Mixing Technology

- Gas mixer for flammable and non-combustible gases
- Static gas mixers with and without buffer vessel
- Dynamic, MFC-based, fully automated gas mixer
- Gas analysis systems

Gas related equipment

- Pressure regulators, pressure regulating stations and pressure control units
- Bottle and bundle battery systems
- Valves and gas filters
- Gas safety devices

E/C&I and analysis technology

- Individual solutions for control and regulation tasks
- Engineering, field cabinet design, PLC-software design
- Technical process engineering C&I
- Gas analyzers
- Standard equipment and systems for gas applications

Individually configurable – custom-fit for your needs



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Your contact:

Miroslav Popovic

Mail: m.popovic@lt-gasetechnik.com

Extension: +49 231 96 10 70-42



LT GASETECHNIK

beyond standards

Martener Str. 535 – 44379 Dortmund – Deutschland
Tel +49 231 / 96 10 70-0 Fax +49 231 / 61 38 44
www.lt-gasetechnik.de mail@lt-gasetechnik.com