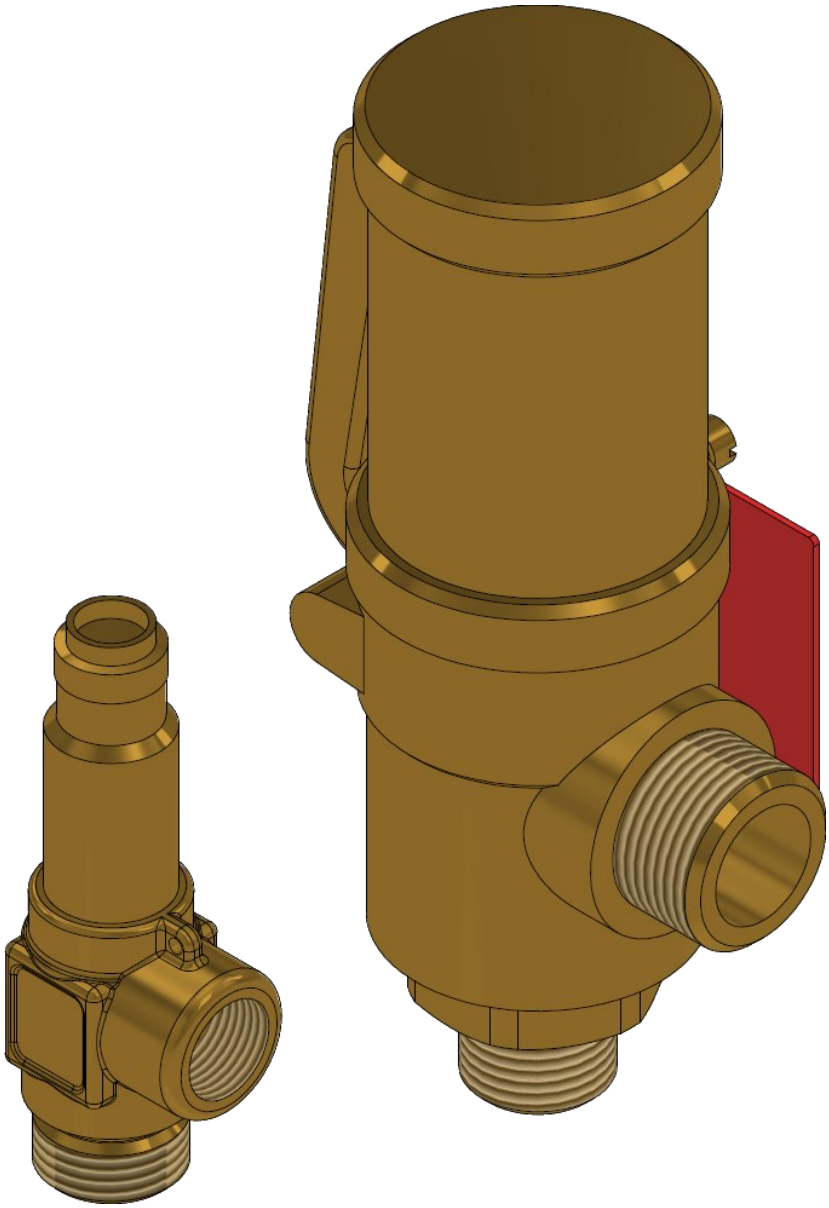
INSTRUCTION FOR USE

Safety release valve



Thank you for choosing Safety release valve from QMT-Tech ab.

Your new Safety release valve is an advanced medical device with high-quality components and features for safe operation and high performance.

Read the information for use before installation, commissioning and use so that you are well informed about how it is installed, commissioned and used safely.

Information on use is supplemented with instructions on installation, operation and maintenance for a long and trouble-free use.

We wish you a long, safe and trouble-free use.

This manual describes the Safety release valve's functions for safe installation, commissioning and use.

The information for use should be read and understood by all intended users.

The following symbols are used in the user manual:

Warning

Note, important information

Read the instruction for use

Digital copy can be downloaded from qmt3.com

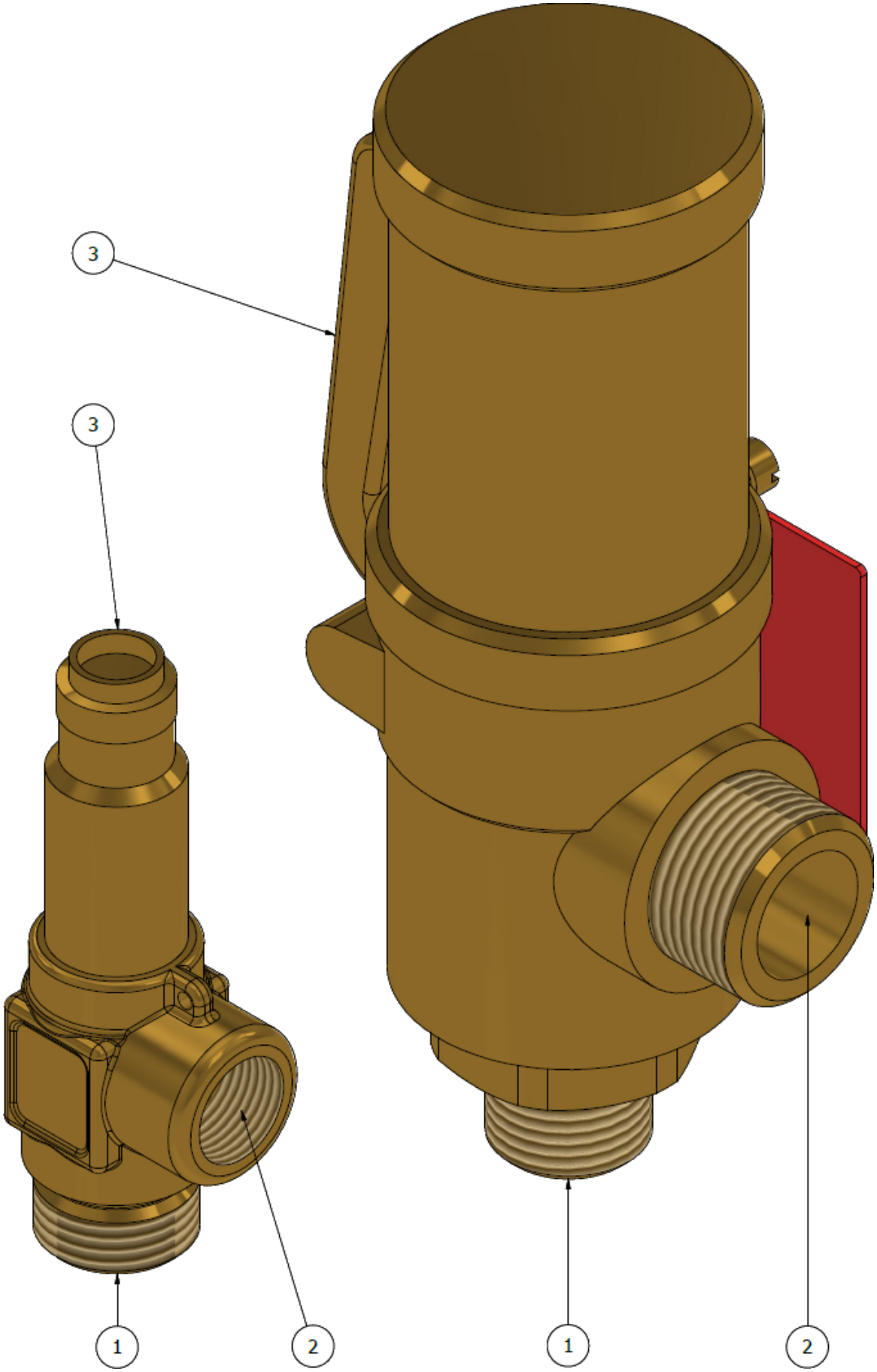
Intended Use:
This is a safety device to prevent excess pressure in the medical gas pipeline system.

Intended User:
Installation - Installer / Pipe fitter
Daily Use - There is no direct user of this device as it opens automatically when reaching set pressure and automatically closes when pressure is reduced below set pressure. Functional testing can be performed by operations technician at the hospital.
Maintenance - Technicians from QMT-Tech or other technicians authorized for the task by QMT-Tech ab.

Target group:
Not limited as the medical gases are used in all places of the hospital.

Indications:
Non-specific as the medical gases are used in all places of the hospital.

Contra indications:
Non-specific as the medical gases are used in all places of the hospital.


3
3
1
2
1
2

1	Inlet connector
2	Outlet connector
3	Manual blow off device (handle or turning knob)

NOTE! The connectors can be of different sizes depending on the size of safety release valve.

Installation:

1. Connect the safety release valve inlet connector [1] at the intended connector in the medical gas pipeline system. Connections for brazing and welding are available as accessories; see the accessories on page 12. Please note that a shut-off valve or similar device must not be installed between the medical gas pipeline system and the safety release valve.
2. Connect the safety release valve outlet connector [2] to the intended evacuation pipe. Connections for brazing and welding are available as accessories; see accessories on page 12. Please note that the evacuation pipe must be routed to the outside of the building in an appropriate manner. NOTE! Air for breathing and Air for driving surgical tools do not require the evacuation pipe to be routed to the outside of the building.

Commissioning:

1. When the medical gas pipeline system is pressurized, check that the inlet connector is leak tight using a suitable leak detection method.
2. Control safety release valve function:
3. Activate the relief valve manual blow off device [3] by pulling the lever or turning the knob counterclockwise, depending on the type of safety release valve installed.
4. Let the safety release valve blow off gas for 2 seconds.
5. Then release the lever or turn the knob clockwise, depending on the type of safety release valve installed.
6. The safety release valve should now be closed and no gas should be blown out.
7. Make a note of all the results of the commissioning tests and archive the documents.

- Pressurized gas has a high energy content! Terminate all pressurization if leaks or shape abnormalities are detected.
- When the system is pressurized, no intervention may be performed for example tightening loose nuts.
- The user is responsible for checking that all connectors are intended for the operating pressures and that the correct function is achieved.
- Please note that a shut-off valve or similar device must not be installed between the medical gas pipeline system and the safety release valve.
- Please note that the evacuation pipe must be routed to the outside of the building in an appropriate manner. NOTE! Breathing air and instrument air do not require the evacuation pipe to be routed to the outside of the building.

- In accordance with EN ISO 7396-1, appropriately sized safety valve shall be fitted downstream of a pressure regulator.
- In accordance with EN ISO 7396-1, no shut-off valves shall be installed between the medical gas pipeline and the safety release valve.
- Installation and commissioning must be carried out by a person with the required knowledge.
- Results from installation and commissioning must be documented and saved after the process has been completed. Documents must be available during final system inspection.
- Keep in mind that pipes must be marked with the medical gas it transports according to current regulations.

Operating instructions:

1. The safety release valve does not need any recurring supervision to function.
2. Wipe and/or wash the safety release valve with mild detergent if necessary.

Recurring tests:

1. Check function of the safety release valve at least annually (see commissioning at page 7).
2. Make a note of the results of the tests and archive them.

- Note that safety release valves for air might not have an installed evacuation pipe. Make sure that nobody is standing at the outlet when the function of the safety release valve is tested,

- Operation and tests on the medical gas pipeline system must be carried out by a person with the required knowledge.
- Results from tests must be documented and saved after the process has been completed.

Maintenance instruction:

1. Check the safety release valve and its connections for leakages at least annually.
2. The safety release valve has no parts that can be repaired; if the safety release valve is defective, it must be replaced in its entirety.

Tests:

1. Functional checks according to the commissioning instructions at page 7 must be carried out at least annually.

- Ensure that the medical gas pipeline system id depressurized before dismantling and replacing the safety release valve.
- Ensure that the safety release valve functions correctly after any replacement.

- Service and maintenance may only be performed by technicians from QMT-Tech ab or technicians accredited by QMT-Tech ab.
- Service and maintenance not performed in accordance with this manual may void any issued warranties.
- Results from tests and maintenance must be documented and saved after the process has been completed.

- Pressurized gas has a high energy content! Interventions in a medical gas pipeline system, such as tightening or loosening components, must not be carried out when the system is pressurized.
- Work on a medical gas pipeline system and its installed components may only be carried out by a person with the required knowledge.
- A safety release valve must not be removed from the medical gas pipeline system without first protecting the medical gas pipeline system against overpressure with another safety release valve or similar protection!
- The medical gases can be fire promoting, suffocating and dissociative.
- The use of shielding gas in a medical gas pipeline systems must be carefully planned and separated from the rest of the system. After brazing / welding and testing are completed, the system shall be flushed with the medical gas (pharmaceutical) that shall be used in the system, to prevent personal injury.
- The safety release valve must not, neither during installation or operation to be exposed to temperatures exceeding 100°C. Should this happen or suspect that it has happened, the safety release valve must be replaced and the system decontaminated.
- In the event of a fire or after a fire, the system must be decontaminated in the affected areas.
- Do not install the device if the sealing plugs are removed, as it may be contaminated and unsafe to install in medical gas pipeline systems.

- Work on a medical gas pipeline system and its installed components must be carried out by a person with the required knowledge.
- Results from service, maintenance, renovation and tests must be documented and saved after the process has been completed.
- Any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user is established.

- Read the entire instruction for use so that you are well acquainted with the product before installation, use, service and maintenance.

Article number	Designation	Number
Q205028	12 brazing connector short	1
Q205028RF	12 welding connector	1
Q213829	15 brazing connector short	1
Q213829RF	15 welding connector	1
Q214320	22 brazing connector short	1
Q214320RF	22 welding connector	1
Q208342	28 brazing connector short	1
Q208342RF	28 welding connector	1
Q250176	35 brazing connector short	1
Q250176RF	35 welding connector	1
Q250177	42 brazing connector short	1
Q250177RF	42 welding connector	1
Q250178	54 brazing connector short	1
Q250178RF	54 welding connector	1
Q216395	Teflon gasket 12	1
Q215141	Teflon gasket 15	1
Q215140	Teflon gasket 22	1
Q215139	Teflon gasket 28	1
Q215138	Teflon gasket 35	1
Q216396	Teflon gasket 42	1
Q216397	Teflon gasket 54	1
Q205030	Union nut 12	1
Q205544	Union nut 15	1
Q207958	Union nut 22	1
Q215313	Union nut 28	1
Q215314	Union nut 35	1
Q200160	Union nut 42	1
Q205045	Union nut 54	1

Manufacturer:	QMT-Tech ab Amerikavägen 6 39354 Kalmar
Basic UDI-DI:	734020611MG
UDI-DI:	7340206100818
Product Name:	Safety release valve
Part number:	QMT76SÄKXXYYY (Part number key on page 18)

Inlet pressure:	Max 20 bar
Opening pressure:	0,5 up to 20,0 bar
Flow:	From approximately 25 l/s up to 1100 l/s depending on size and opening pressure, see flow charts on page x to x.
Material:	Brass, EPDM, Teflon
Cleanliness:	Cleaned for Oxygen service
Dimensions:	See below
Storage:	-20 to 80 °C dry indoors
Operating conditions:	-20 to 80 °C dry indoors
Technical lifespan:	20 years provided maintenance is carried out in accordance with this information for use

Connection IN	Connection UT	Opening pressure	Height (mm)
15	20	0,5-20	160-180
20	25	0,5-20	165-207
25	32	0,5-20	165-185
32	40	0,5-20	175-195
40	50	0,5-20	250
50	65	0,5-16	300

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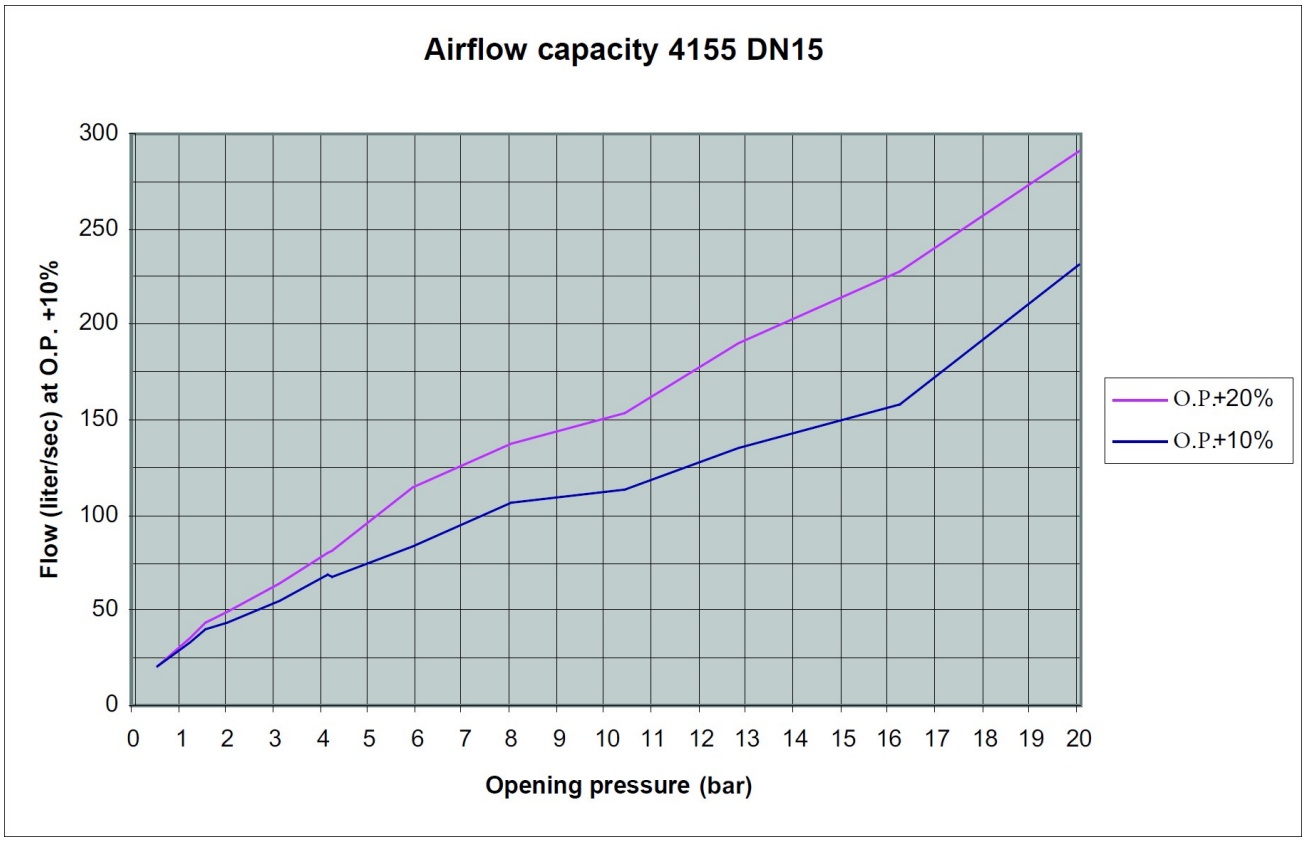
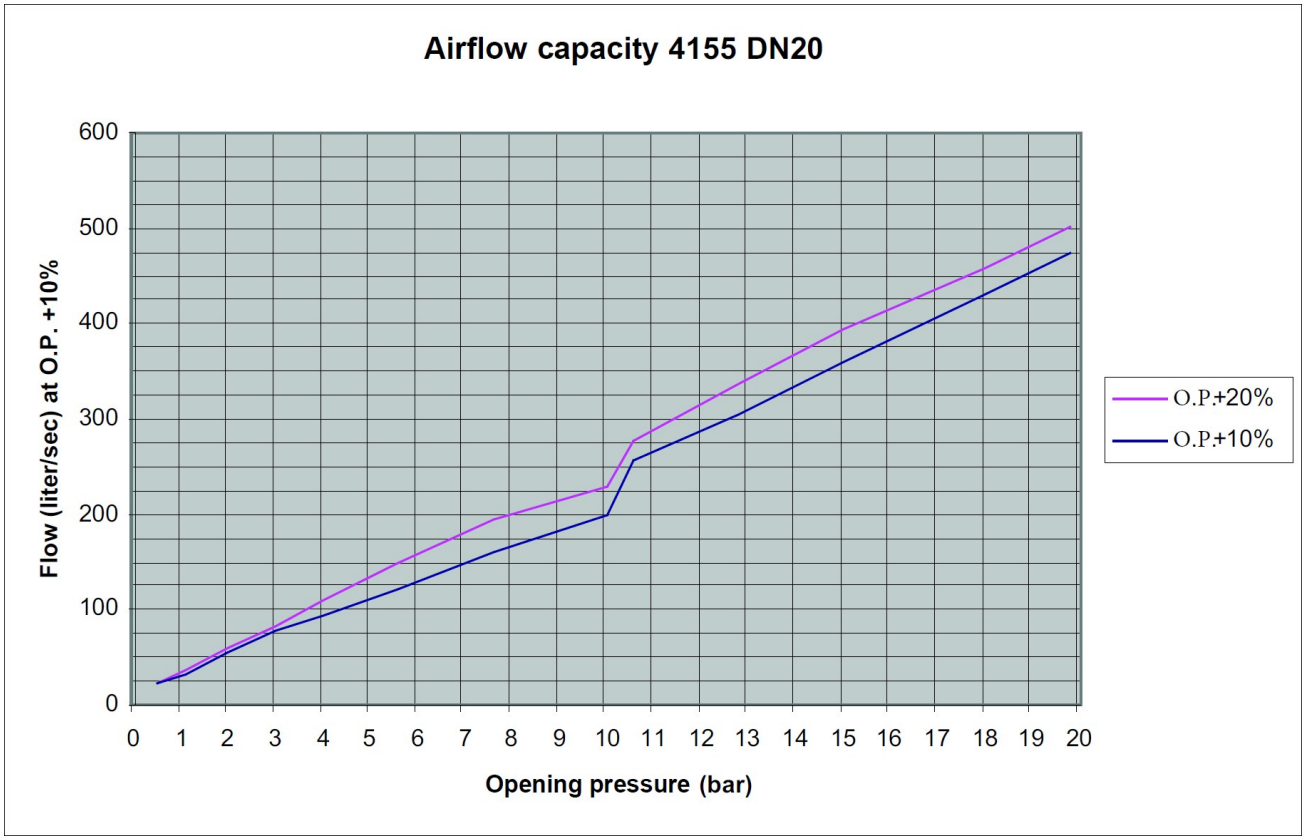
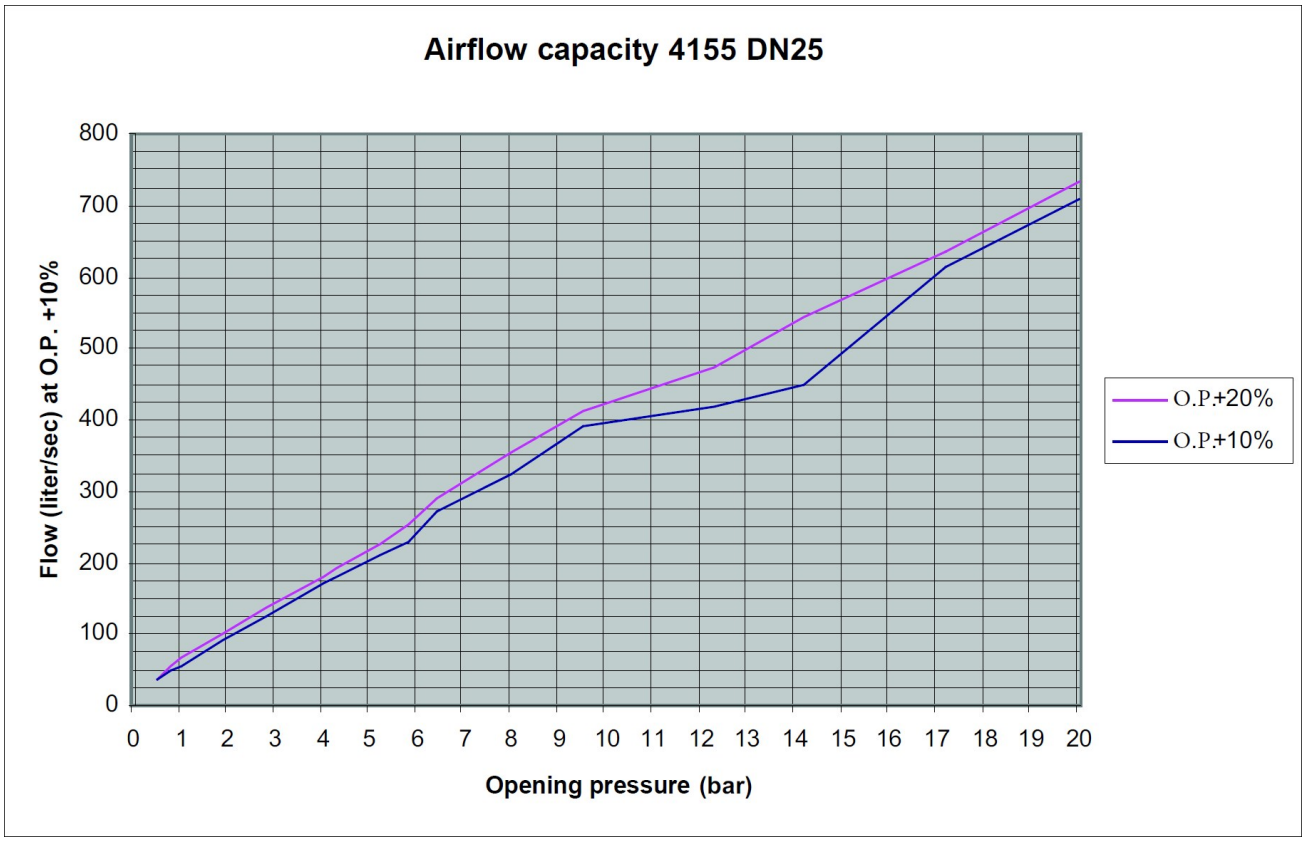
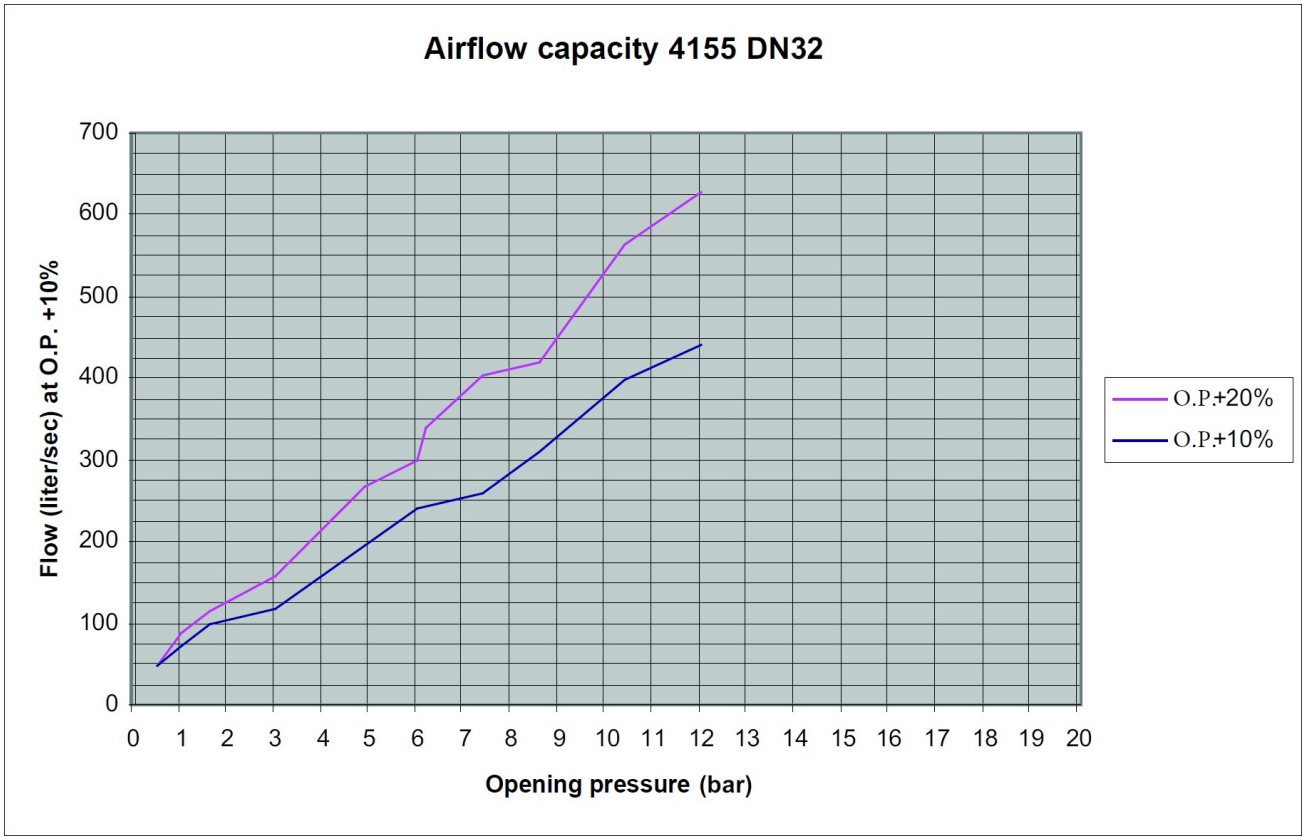
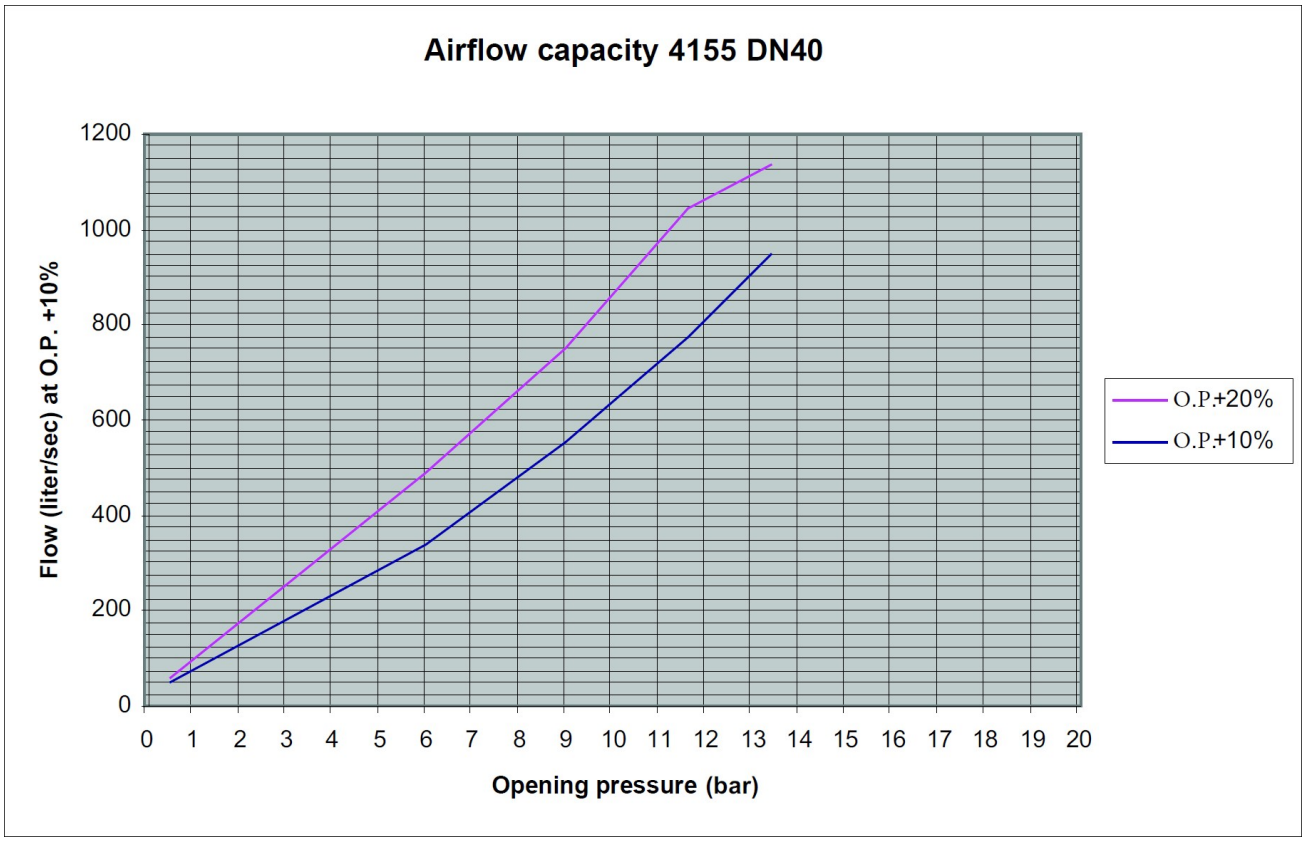
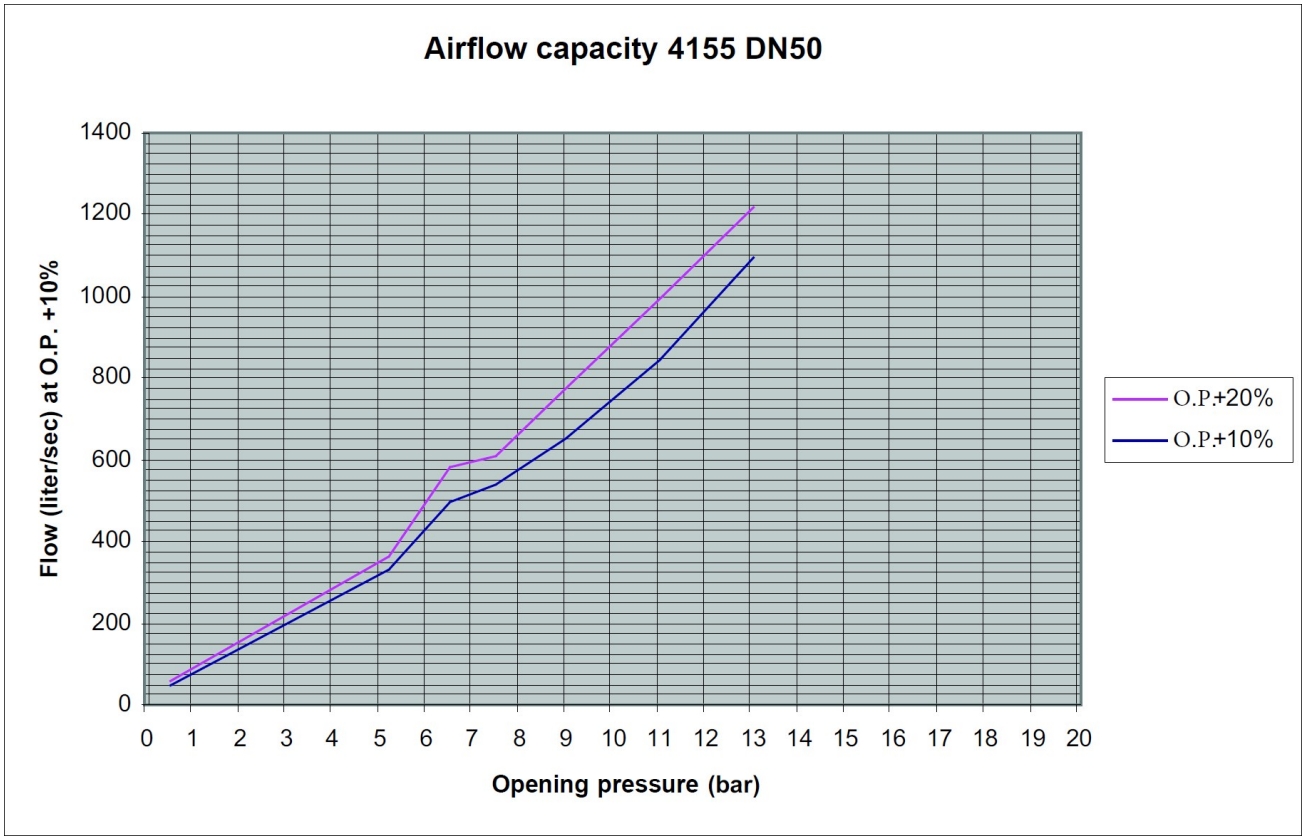

Airflow capacity 4155 DN15
Flow (liter/sec) at O.P. +10%
300
250
200
150
100
50
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Opening pressure (bar)
O.P.+20%
O.P.+10%


Airflow capacity 4155 DN20
Flow (liter/sec) at O.P. +10%
600
500
400
300
200
100
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Opening pressure (bar)
O.P.+20%
O.P.+10%


Airflow capacity 4155 DN25
Flow (liter/sec) at O.P. +10%
0
100
200
300
400
500
600
700
800
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Opening pressure (bar)
O.P.+20%
O.P.+10%


Airflow capacity 4155 DN32
Flow (liter/sec) at O.P. +10%
0
100
200
300
400
500
600
700
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Opening pressure (bar)
O.P.+20%
O.P.+10%


Airflow capacity 4155 DN40
Flow (liter/sec) at O.P. +10%
0
200
400
600
800
1000
1200
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Opening pressure (bar)
O.P.+20%
O.P.+10%


Airflow capacity 4155 DN50
Flow (liter/sec) at O.P. +10%
0
200
400
600
800
1000
1200
1400
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Opening pressure (bar)
O.P.+20%
O.P.+10%

Safety Valves
Type 06002, Type 06006

Discharge capacities
Calculation of flow rate acc. to AD2000-Merkblatt A2 / DIN EN ISO 4126-1

Medium:
Air in m^3/h at 0°C and 1013.25 mbar

The capacity indicated below is for a fully opened valve.

d_0 - orifice
A_0 - flow area

Set pressure in bar (g)	GW	1/4, 3/8 & 1/2
	d_0(mm)	6.0
	A_0(mm^2)	28.3
	Medium	**Air**
1.0		15.5
2.0		26.0
3.0		35.0
4.0		43.9
5.0		52.9
6.0		61.8
7.0		70.8
8.0		80.0
9.0		88.9
10.0		98.1
12.0		116.1
14.0		134.0
16.0		152.0
18.0		169.9
20.0		189.7
22.0		207.8
24.0		226.0
26.0		244.1
28.0		262.2
30.0		283.0
32.0		301.3
34.0		319.6
36.0		337.9
38.0		356.2
40.0		377.8
42.0		396.2
44.0		414.7
46.0		433.2
48.0		451.6
50.0		474.1
52.0		492.7
54.0		511.3
55.0		520.6

Safety release valve		
QMT76SÄK	XX	YYY
Dim 12	12	
Dim 15	15	
Dim 22	22	
Dim 28	28	
Dim 35	35	
Dim 42	42	
Dim 54	54	
Opening pressure 00,0 bar		YYY

Opening pressure 5,5 bar is written	055	**EXAMPLE!**
Opening pressure 5,0 bar is written	050	
Opening pressure 12,0 bar is written	120	
Opening pressure 10,5 bar is written	105	

Manufacturer:	QMT-Tech ab Amerikavägen 6 39354 Kalmar
SRN:	SE-MF-000007550
Basic UDI-DI:	734020611MG
UDI-DI:	7340206100818
Product name:	Safety release valve
Article number:	QMT78501XXYZ
EMDN code	Z120309

Meets the requirements of:

MDR 2017/745	Class IIb
EN ISO 7396-1	2016

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- All metals in the unit can be recycled, shall be handed over to an authorized recycling company.
- Rubber gaskets are handed in to an authorized recycling company.
- Teflon gaskets are handed in to an authorized recycling company.
- In normal use, the product is not contaminated by residues that are hazardous to health or the environment.