

BENDER

A R M A T U R E N

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Made in Germany



long-life 

// TECHNICAL PRODUCT INFORMATION FOR RED-BRASS FREE-FLOW VALVES type 3501



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Red-brass Free-flow valve type: 3501

Technical Productinformation (TPI)



picture 1: type 3501

functional description

The red-brass free-flow valves are only usable to shut off pipe-systems for potable water in case of maintenance or repairs. In delivery status the valves are fully open. To stop the water supply, the handwheel must turn in clockwise. To get the fully flow rate, it's required to turn the handwheel in counterclockwise until limit stop.

product features

- inlet: Rp-female-thread according to DIN EN 10226-1
- outlet: Rp-female-thread according to DIN EN 10226-1
- pressure stage: PN16
- noise-class: class 1 (for dimension DN15 – DN32)
- DIN-DVGW certificate: DN15 – DN50
- non-rising spindle
- with plugs on both sides
- with EPDM flat seal
- dead storage free **long-life B** red-brass upper-part with grease chamber

Materials

- medium touched red-brass parts:
 - o red-brass (CC499K)
 - to be used for potable water according to DIN 50930-6 rather currently valid UBA positive list
- medium touched plastic parts:
 - o flat seals: EPDM; O-Rings: EPDM
 - to be used for potable water according to elastomer-guideline of UBA + W270 approval
- other materials:
 - o handwheel: PA 6.6 + 30% glass-fibre
 - o nut: corrosion-resistant material

Packaging unit

Dimension	DN15	DN20	DN25	DN32	DN40	DN50
Packaging unit	20	10	5	5	5	5

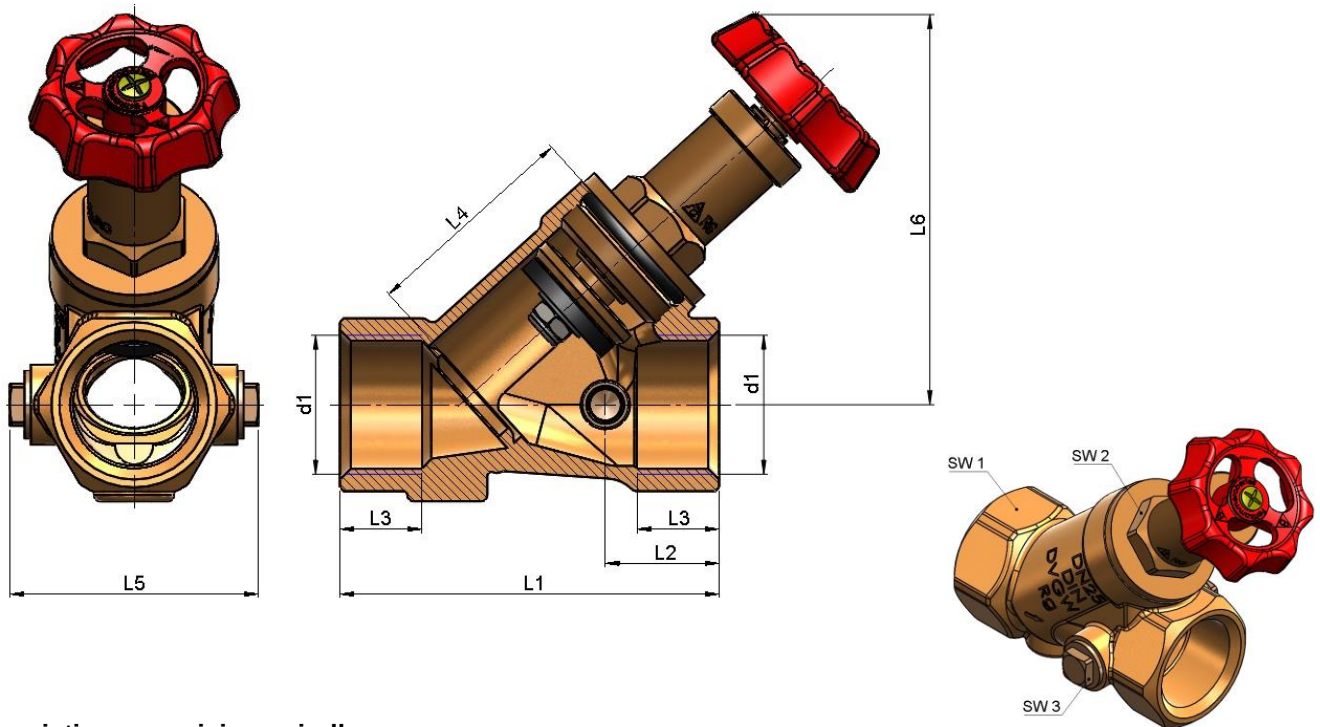


Red-brass Free-flow valve type: 3501

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sketch & dimension



variation: non-rising spindle (with plugs on both sides [w.p.])

DN	d1	L1	L2	L3	L4 (+/- 1,5)	L5	L6	SW1	SW2	SW3	item-number
							open = close				
15	Rp 1/2"	65	18,5	15,0	35	40	73	26	22	10	3501155
20	Rp 3/4"	75	24,5	16,3	43	46	80	32	22	10	3501205
25	Rp 1"	90	27	19,1	52	59	92,5	41	24	10	3501255
32	Rp 1 1/4"	110	33	21,4	63	63	105	50	27	10	3501325
40	Rp 1 1/2"	120	35	21,4	72	66	115,5	54,5	32	10	3501405
50	Rp 2"	150	38	25,7	89	78	128,5	69,5	34	10	3501505

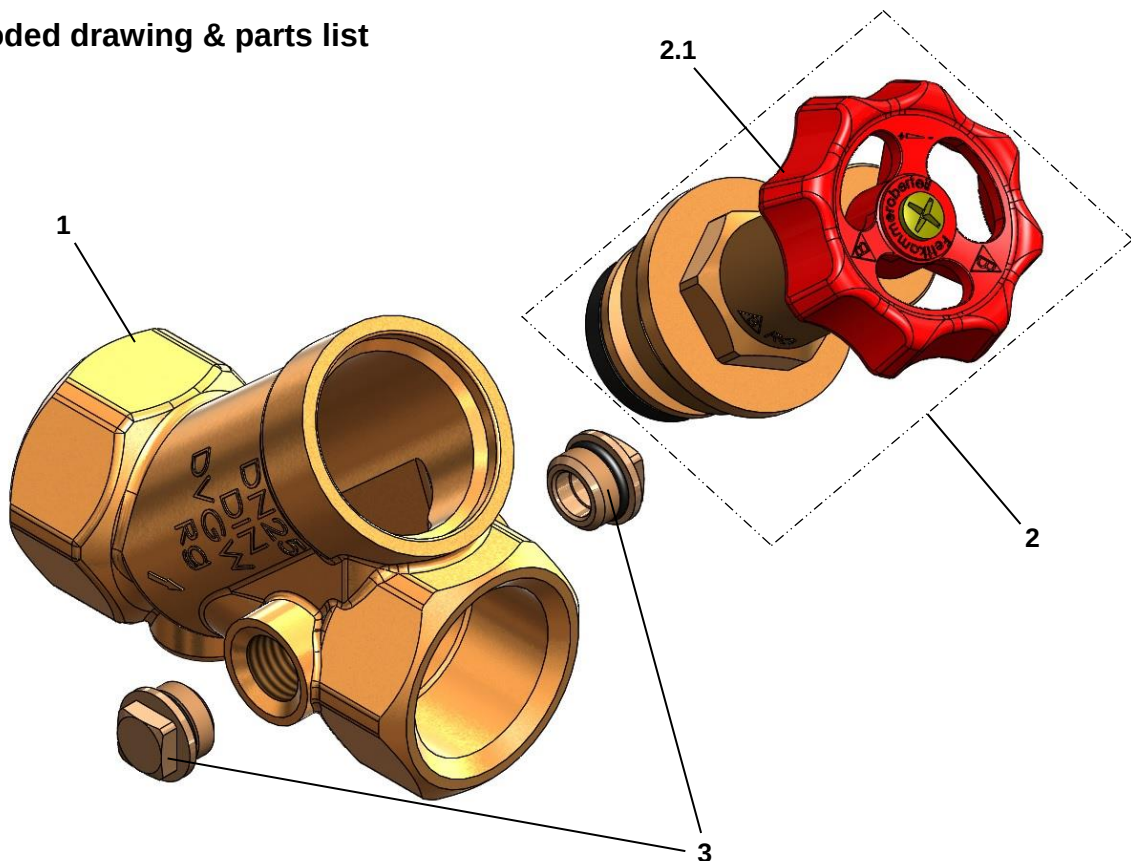


Red-brass Free-flow valve type: 3501

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Exploded drawing & parts list



Pos.	Description	Quantity
1	Red-brass Free-flow valve body	1
2	long-life  Red-brass upper-part (non-rising)	1
.2.1	handwheel, red	1
3	Red-brass plug	2

NOTE: Spare-parts and accessories are listed on the following side.



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Spare-parts & accessories

Pos. 2: Red-brass upper-part (non-rising)	
DN	item-number
15	3214150
20	3214200
25	3214250
32	3214320
40	3214400
50	3214500

Pos. 2.1: handwheel, red			
DN	item-number	Dimension	
-	-	Ø	square
15	3238150	50	6
20	3238200	50	6
25	3238250	50	6
32	3238320	60	7
40	3238400	60	7
50	3238500	60	7

Pos. 3: Red-brass plug	
DN	item-number
08	3225080

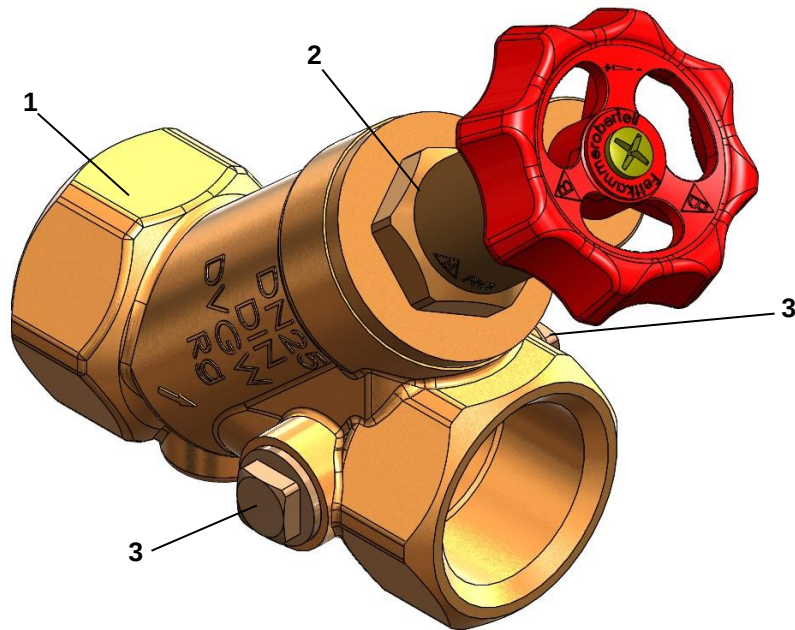


Red-brass Free-flow valve type: 3501

Technical Productinformation (TPI)

long-life 

Scope of delivery



picture 3: type 3501

Pos.	Description	type	Quantity
-	-	3501*	-
1	Red-brass Free-flow valve body	X	1
2	long-life  Red-brass upper-part (non-rising)	X	1
3	Red-brass plug	X	2

* = non-rising spindle

X = contain

O = not contain



Red-brass Free-flow valve type: 3501

Technical Productinformation (TPI)



Generally instruction

- For your own safety and the safety of other persons read the completely Technical Productinformation.
- The Technical Productinformation must be checked at regular intervals of the issue date which is shown in the footer. If your version is no more up-to-date, please contact the company Bender Armaturen GmbH & Co. KG by the contact details in the headline.
- Check the product of completeness and damages in transit according to the drawing shown in „Scope of delivery“. For later customer complaint of the listed aspects we do not assume any liability.
- It is necessary to use the **PPE (personal protective equipment)**. Use inter alia protecting gloves to avoid injury during the installation.
- High pressure-drops in the pipe system must be avoid.
- Spare-parts and accessories must be produced in our company. Otherwise used parts found **no legal claim** in case of damage.
- The installation has to be done in the right flow direction which is shown by an arrow on the body.
- Please note all national and international regulations of installation, accident prevention, hygiene and safety during the installation of pipe-systems and all further instructions of the Technical Productinformation. Also note the regular law, standards, guidelines and regulations (e.g. DIN, EN, ISO, DVGW and VDI) as well as regulations for protection of the environment, social insurance against occupational accidents and the local municipal utility.
- Responsible for the positioning and the installation of our products are planner, building firm and user.
- The removal of our products has to be done by the local environment regulations.



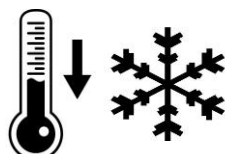
Red-brass Free-flow valve type: 3501

Technical Productinformation (TPI)



product-specific instruction

- mating-threads which are connected with our products must be checked with a gauge and has to be free of burrs. For pipe-threads it is necessary to consider the DIN ISO 228 and DIN EN 10226.
- The listed shut-off valves of the Technical Productinformation are working in two possible positions:
 - o fully open
 - o fully closed
- The valves are only use for shut-off potable water or other neutral liquids. Explicit not for throttling and regulation. Furthermore the valves are covered for using in weatherproof areas.
- Bender Armaturen free-flow valves are normally free of maintenance. The function only can be conserved, if you operate the fitting in regular intervals. Scaling in potable water pipe-systems are possible, which can impair the function of the valve. To ensure a permanent function, the valve must be fully closed and fully open two times per year.
- In horizontal lines all shut-off valves must be installed with the upper-part upwards.
For vertical lines the flow direction of the water must be from the bottom up.
- For hot-water pipes it is required to have an operating temperature of 60°C.
- The inner space of the fitting must be free of foreign particles.
- Only approved sealing materials are allowed.
- Before using sealing material, please check that the pipe-system can be screwed easily into the valve. Liquid sealing materials must be hardening first.
- Please note that sealing materials do not reach into the fitting. Otherwise the function and tightness of the product is not possible.
- The tightening torque must be adjusting, that a damage of the connections will be avoid.
- Tools which increasing the hand torque of the handwheel are not allowed.
- Before you start with the installation please check that the free-flow valve is able for opening and closing.
- Flush the pipe-system according to the general accepted rules and specifications before you start with the installation.
- Please note that the pipe-system is depressurized and cooled down on a reasonable temperature for the installation.
- It's necessary to consider an adequate stabilizing path to avoid turbulences and to reach the fully flow rates. Please note 15 x DN at the inlet-side and 15 x DN at the outlet-side.
- The products are covered for an operating temperature of maximum 90°C. Furthermore, we recommend an operating pressure of 2,5 until 3,5 bar and to forward-space a water softening-plant if the value > 14° dH.



The contents of our Technical Productinformation can be complemented, changed or deleted without prior notice.

The description of the TPI is no contract.

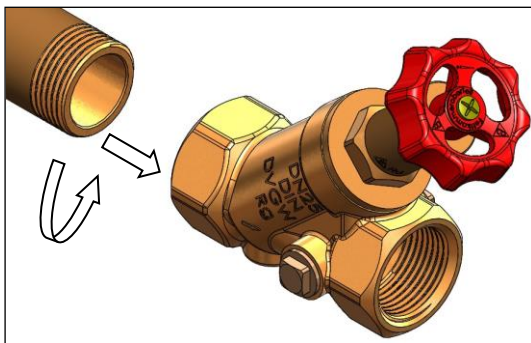


Red-brass Free-flow valve type: 3501

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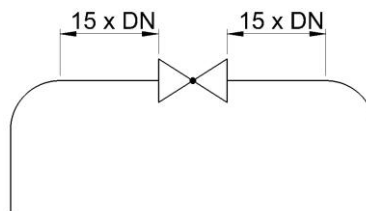
long-life 

assembly

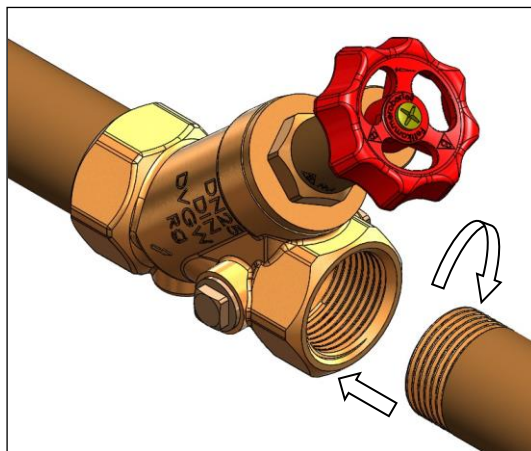


using approved sealing material

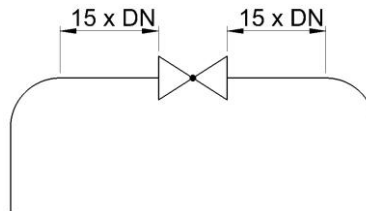
The inner space of the fitting must be free of foreign particles.



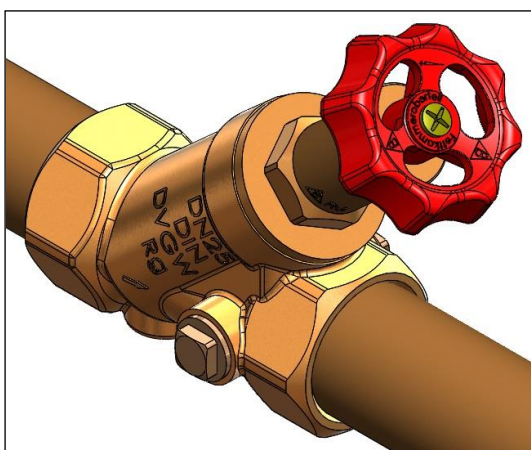
step 1



using approved sealing material



step 2



pressurized



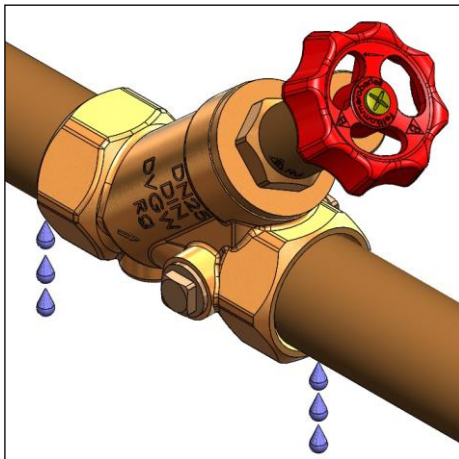
step 3



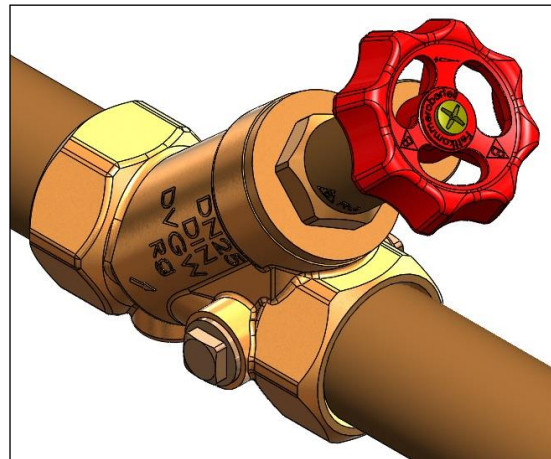
Red-brass Free-flow valve type: 3501

Technical Productinformation (TPI)

Long-life 



final inspection not OK



final inspection OK

A duly pressure test has to be done according to DIN EN 806-4, chapter 6. The test results must be documented on the next page.



Red-brass Free-flow valve type: 3501

Technical Productinformation (TPI)



Pressure test report

test procedure A – Filling and hydrostatic pressure test of installations inside of buildings for potable water for human use.

generally dates	final customer:		company stamp	
	Plumber (name of company):			
	Inspector:			
	Item / Item-No.:			
Tightness	leakage test with potable water			
	1. Hot- or Cold water installation filling up slowly with potable water (<i>particles $\geq$ than 150 μm are not allowed</i>), flushing and deaerating completely.			
	2. Temperature balance for 30 minutes to compensate possible differences between environmental- and water temperature.			
	3. Adjust pressure to 3 bar for 10 minutes.			
	4. Visual check of each connection of tightness:			
	5. Pressure after the end of the test (requirement: $\Delta p = 0$ bar) ^{*1} :			
	Leakage established:	☐ No	☐ Yes – in area:	
action(s):				
The test has done according to this report.				
conclusion	Building owner		Contractor	
	date, location:		date, location:	
	signature:		signature:	

^{*1} - NOTE: By consideration of the termic pressure pulsation it's necessary to stabilize the pressure in the installation system until the leakages will be find.

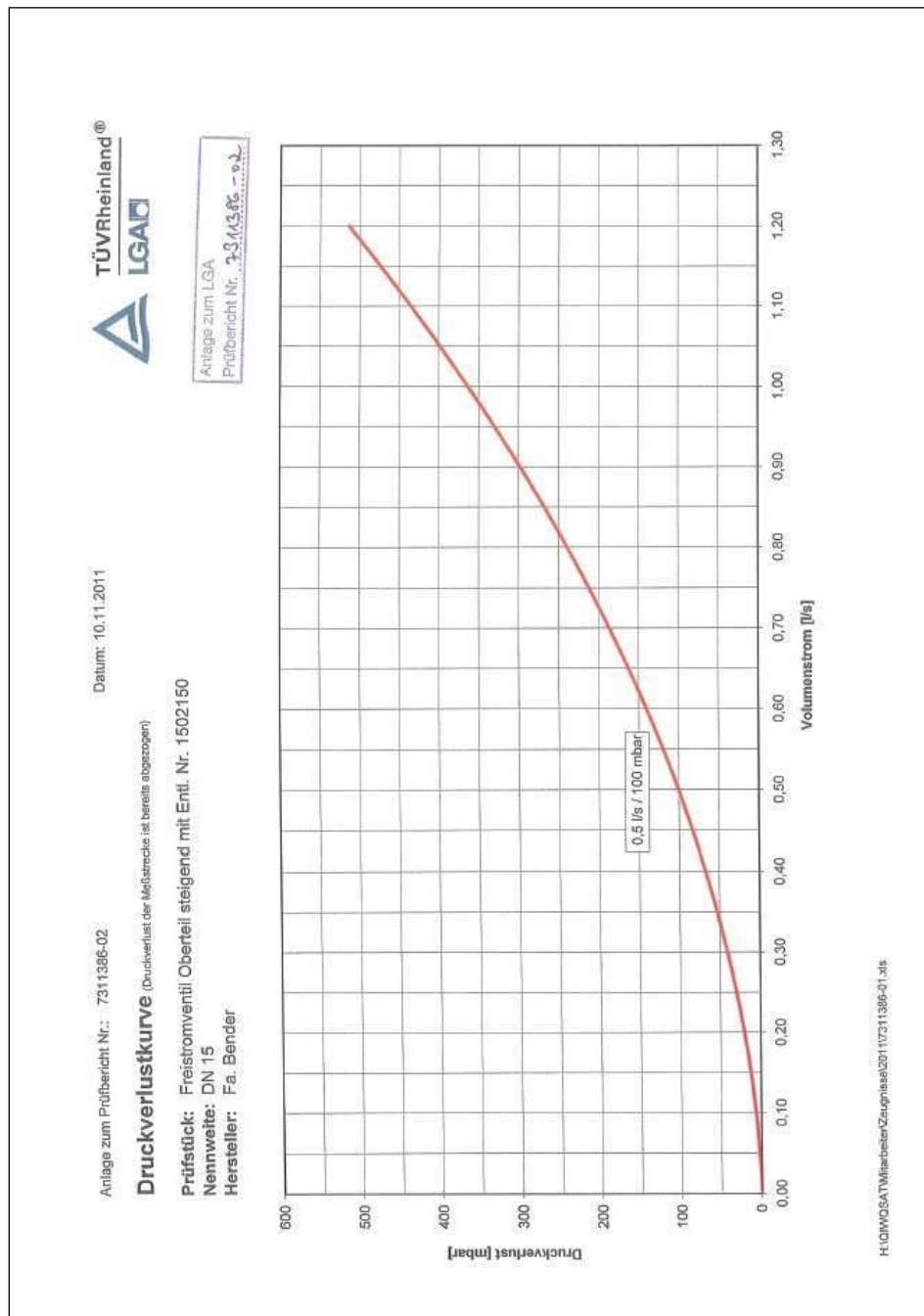


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Technical Productinformation (TPI)

long-life 

pressure drop / kvs-value



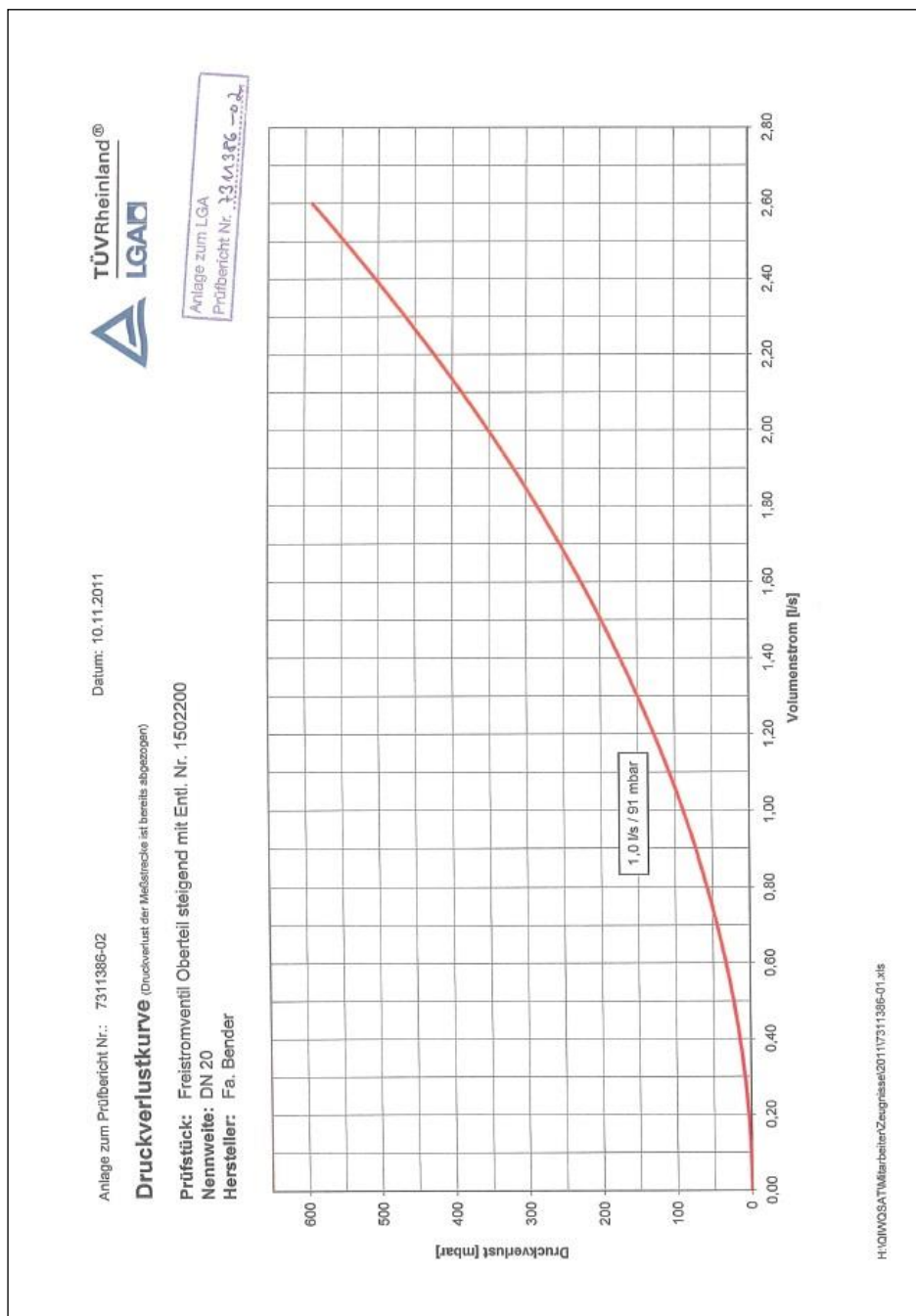
kvs: 5,69 m³ / h



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Long-life 

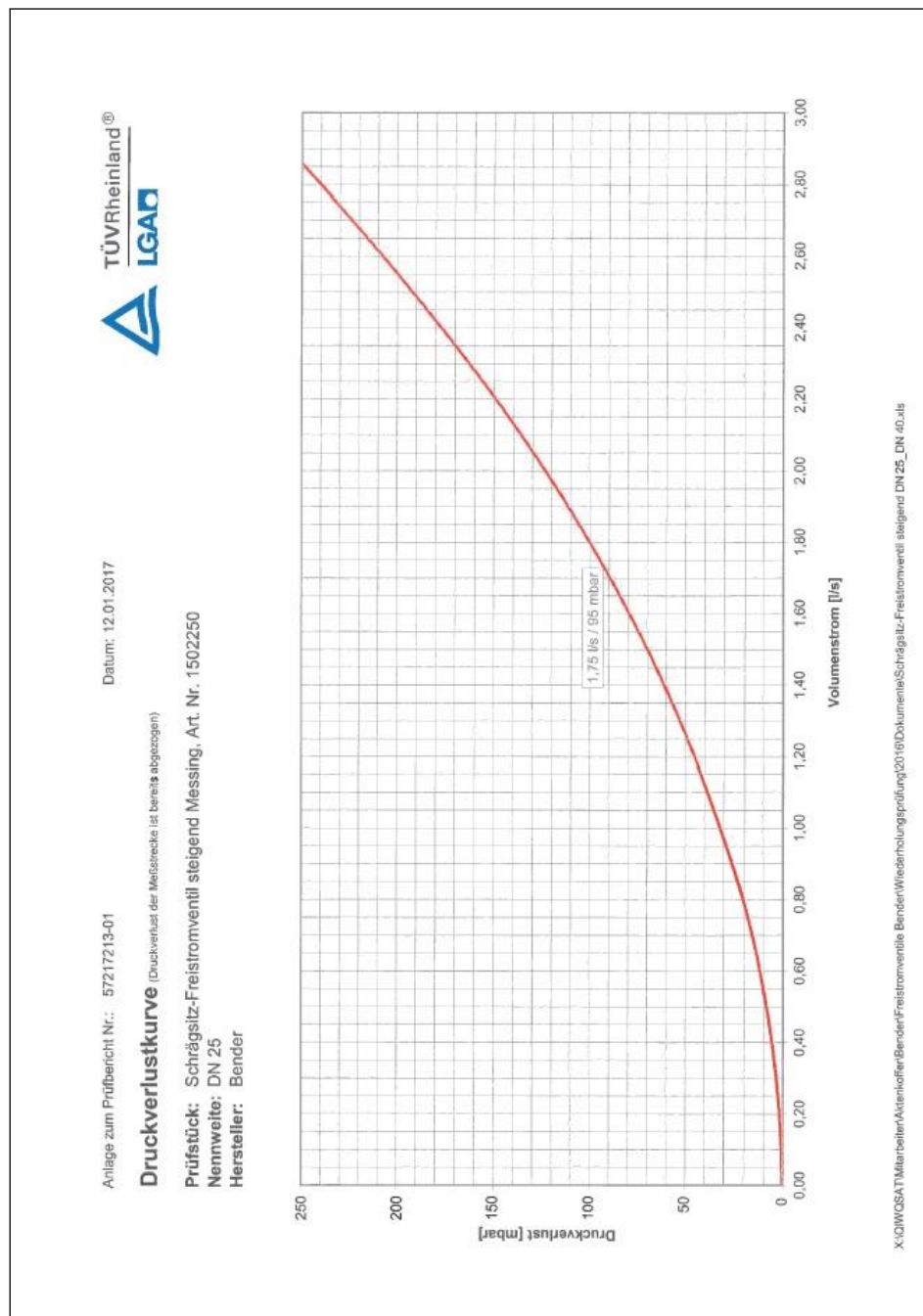


kvs: 11,93 m³ / h



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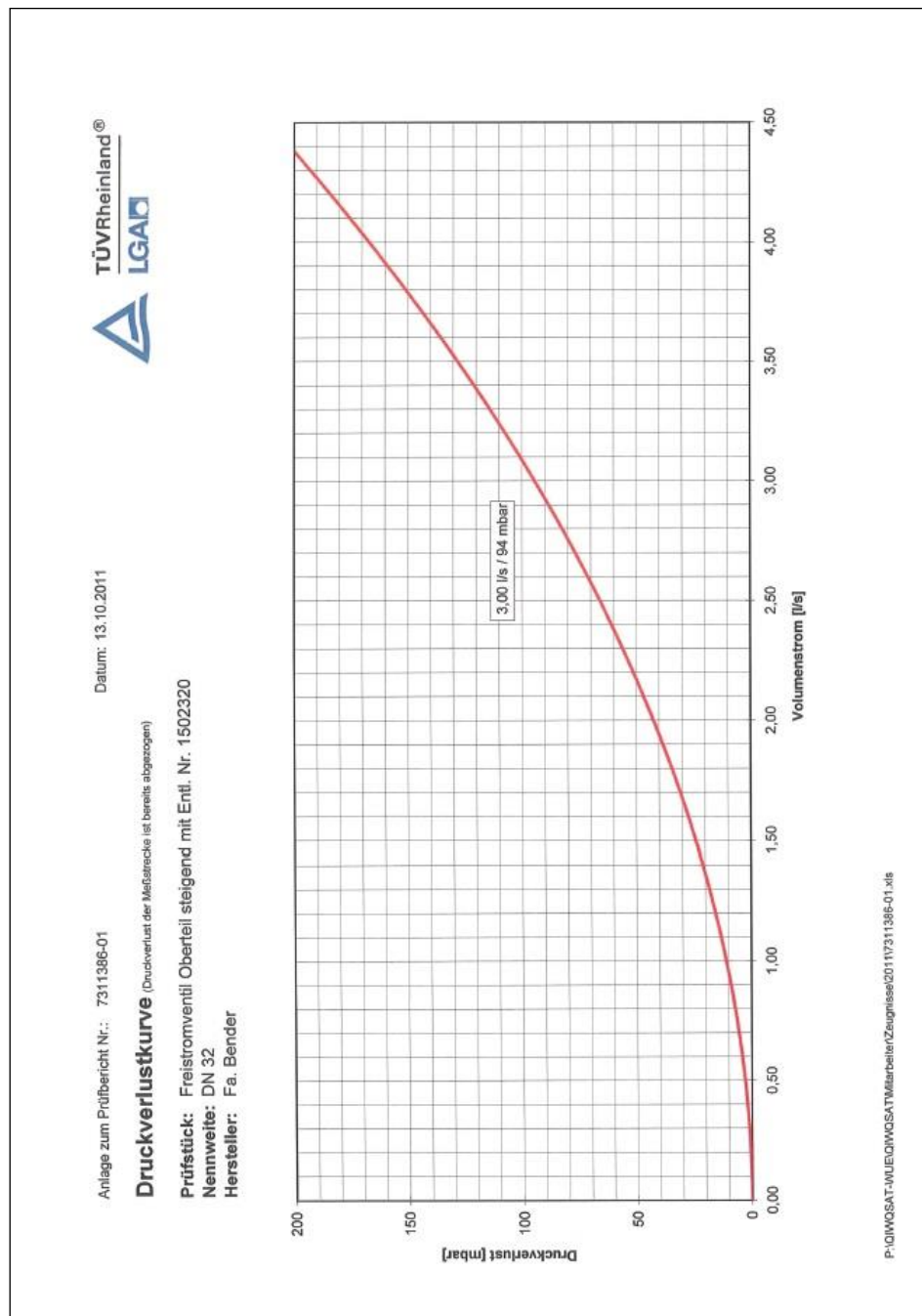
kvs: 20,44 m³ / h



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Long-life 



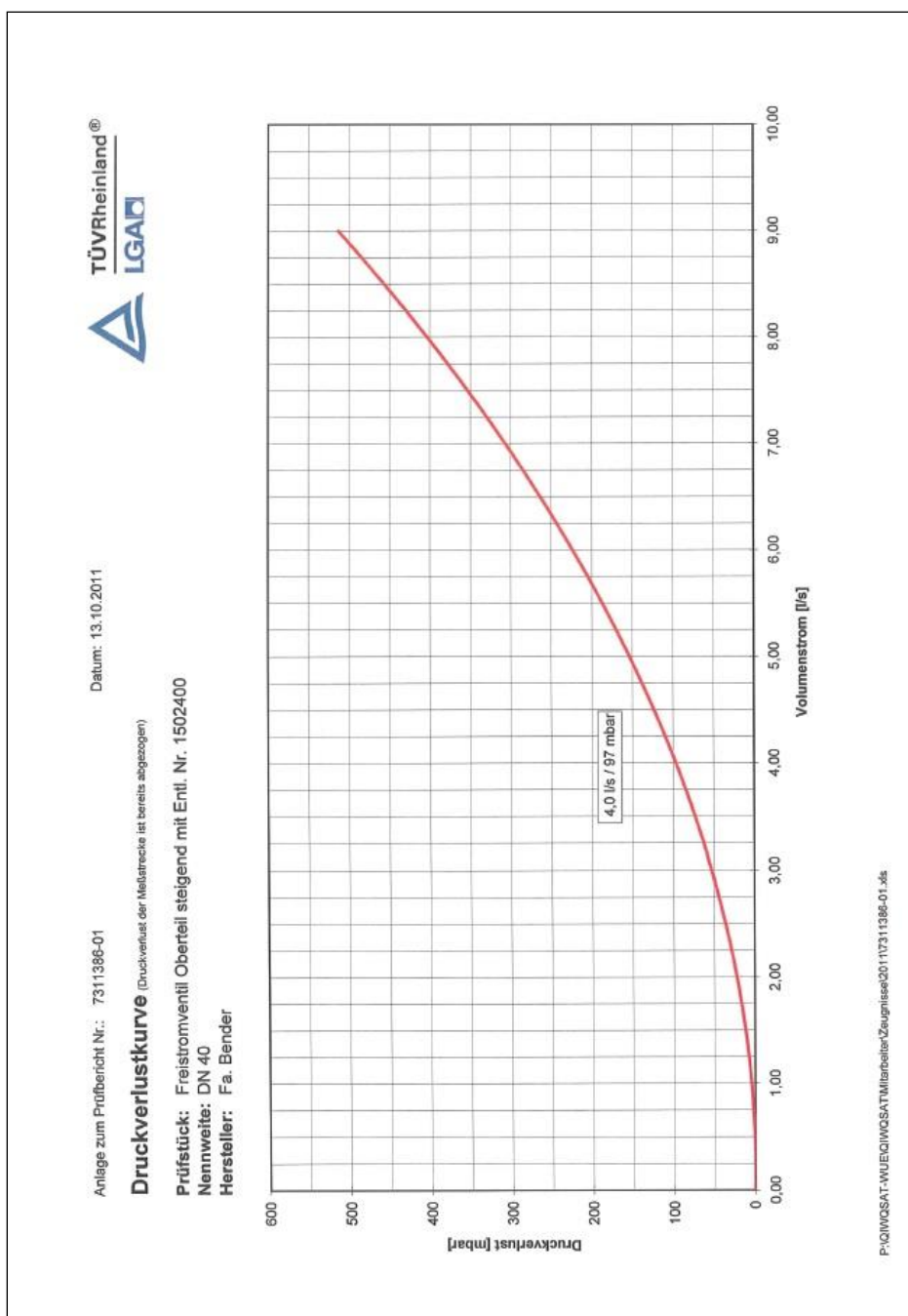
kvs: 35,23 m³ / h



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Long-life 



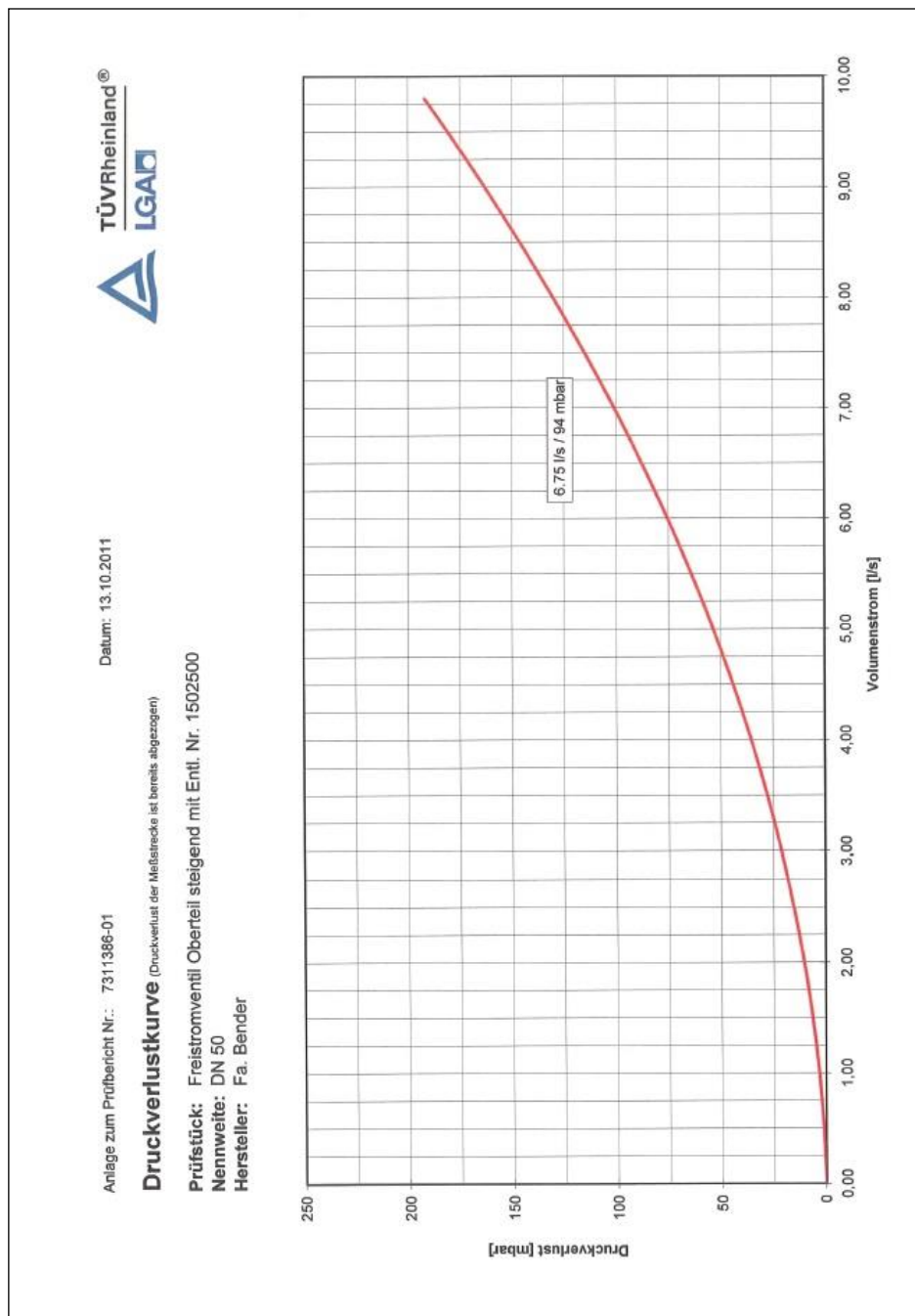
kvs: 46,24 m³ / h



Red-brass Free-flow valve type: 3501

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Long-life 



kvs: 79,26 m³ / h