



Pressure Relief Valve 525

Operation Manual

Read this manual completely and keep it!
No warranty in case of damages caused by incorrect operation.

Imprint

**Pressure Relief Valve 525
Operation Manual**

Version 2.0

Publisher

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Subject to change.

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1 General

1.1 Introduction

This operation manual contains all the information required for starting up and handling the described pressure relief valves.

If you require further information or if any problems arise, which are not discussed in detail in this operation manual, contact ALLDOS directly for the information needed.

1.2 Using this Paper

The headings **WARNING**, **CAUTION** and **NOTE** have the following meaning:



Warning

Danger of injuries and accidents!



Caution

Danger of incorrect operation or damage to the product!



Note

There is an exceptional feature.

1.3 Warranty

Warranty in accordance with our general terms of sale and delivery shall only be valid, if:

- the product is used according to the information within this paper,
- the product is not being opened or used improperly,
- maintenance and repair is implemented exclusively by authorized and qualified personnel,
- original spare parts are used for repairs.

The safety instructions specified in this document must be observed at all times!

2 Safety Instructions

The component has left the factory in a safe error-free state. In order to maintain this state and ensure safe operation, the user must observe the instructions and warning notes provided in this technical information.

If safe operation is no longer possible, the component must be shut down and secured against unintentional operation. This is the case:

- If the component is visibly damaged
- If the component no longer seems operational
- Following long periods of storage under unfavourable conditions

2.1 Application of the Product

The pressure relief valve described here is used to protect the dosing line system on the pressure side against an impermissibly high pressure build-up within the scope of the possible applications described here.



Warning

Other applications are not intended and are not permitted. ALLDOS Eichler GmbH accept no responsibility for damages caused by unintended use.

2.2 Obligations of the Operating Authority

The operating authority of the plant is responsible for

- instructing the operation personnel
- arranging regular maintenance

2.3 Averting Dangers



Warning

When dosing dangerous media, observe the corresponding safety precautions!



Warning

Please observe the chemical resistance of dosing media with regard to materials.



Warning

Wear protective gloves and glasses when executing work at the connections or lines!



Warning

***Only use the prescribed line types!
Repair only by authorized personnel!***

3 General description

3.1 Function

The pressure relief valve protects the entire dosing line system on the pressure side against any impermissibly high pressure build-up.

If the pressure rises above the set opening pressure of the valve, the valve opens, and the dosing medium can flow back into the dosing tank.

3.2 Ambient and Operating Conditions

Admissible storage temperature	20 °C to +50 °C
Admissible ambient temperature	0 °C to +40 °C (at an installation height of up to 1000 m above sea level)
Admissible humidity	rel. humidity: 70% at 40 °C, 90% at 35 °C

3.3 Admissible Media

Admissible Mediatemperaturer

Material	Pressure range	
	until 10 bar	until 16 bar
1.4571	-10 °C to 40 °C	-10 °C to 40 °C
PVC	0 °C to 40 °C	0 °C to 20 °C
PP	0 °C to 40 °C	-
PVDF	-10 °C to 40 °C *	-10 °C to 20 °C



Warning

Pressure relief valves must not be used for abrasive or crystallizing media.



Warning

Observe the freezing and boiling point of the dosing medium!



Warning

When dosing dangerous media, always refer to the corresponding safety data sheets!

**Warning**

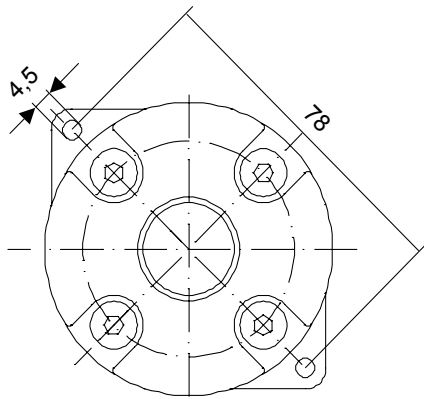
The resistance of the parts that come into contact with the media depends on the media, media temperature and operating pressure.

Additional information with regard to the medium, medium temperature and operating pressure is available on request.

4 Technical Data

4.1 Pressure Relief Valves DN 4 and DN 8

Order No.	Nominal width	Pressure release	Valve body	Gasket	Hose type	Pipe	Connection	Image
525-0579.1	4	10	PVC	EPDM	PVC-SL4/6		G 3/8"	1
525-0580.1	4	10	PVDF	PTFE		RO4/6"	G 5/8"	2
525-0581	4	10	1.4571			RO4/6"	G 1/4"	4
525-0582	4	10	PP	Viton	PE-SL4/6		G 5/8"	1
525-0582.1	4	10	PP	EPDM	PE-SL4/6		G 5/8"	1
525-0585	4	10	PVC	EPDM	PVC-SL4/6		G 3/8"	1
525-0589	4	10	PP	EPDM	PE-SL5/8		G 5/8"	1
525-0583	8	10	PP	Viton		RO12/16"	G 5/8"	3
525-0583.1	8	10	PP	EPDM		RO12/16"	G 5/8"	3
525-0584	4 8	10	PVC	Viton	PE-SL4/6 PVC-SL6/12	RO10/12"	G 5/8"	1
525-0584.1	4 8	10	PVC	EPDM	PE-SL4/6 PVC-SL6/12	RO10/12"	G 5/8"	1
525-0584.2	4 8	10	PVC	PTFE	PE-SL4/6 PVC-SL6/12	RO10/12"	G 5/8"	1
525-0585.1	8	10	PVDF	PTFE		RO12/16"	G 5/8"	3
525-0586	8	10	1.4571			RO1/4"	G 1/4"	5
525-0587	8	10	PVC	Viton	PE-SL1/2"		G 5/8"	1
525-0588	8	10	PP	EPDM	PE-SL9/12		G 5/8"	1
525-0590	8	10	1.4571				1/4" NPT	5
525-1582.1	8	10	PP	EPDM	PVC-SL6/12		G 5/8"	1
525-1584	8	16	PVC	Viton	PVC-SL6/12	RO10/12"	G 5/8"	1
525-1584.1	8	16	PVC	EPDM	PVC-SL6/12	RO10/12"	G 5/8"	1
525-1585.1	8	3	PVDF	PTFE		RO12/16"	G 5/8"	3
525-1586	8	16	1.4571	PTFE		RO1/4"	G 1/4"	5
525-3175	4 8	10	PP	Viton	PE-SL4/6 PE-SL6/9 PE-SL9/12		G 5/8"	1
525-3175.1	4 8	10	PP	EPDM	PE-SL4/6 PE-SL6/9 PE-SL9/12		G 5/8"	1
525-3176	4 8	10	PVC	Viton	PE-SL4/6 PE-SL6/9 PVC-SL6/12	RO10/12"	G 5/8"	1
525-3176.1	4 8	10	PVC	EPDM	PE-SL4/6 PE-SL6/9 PVC-SL6/12	RO10/12"	G 5/8"	1
525-3178	8	10	PVDF	PTFE	PE-SL6/9			1



Drilling scheme for Images 1,2,3

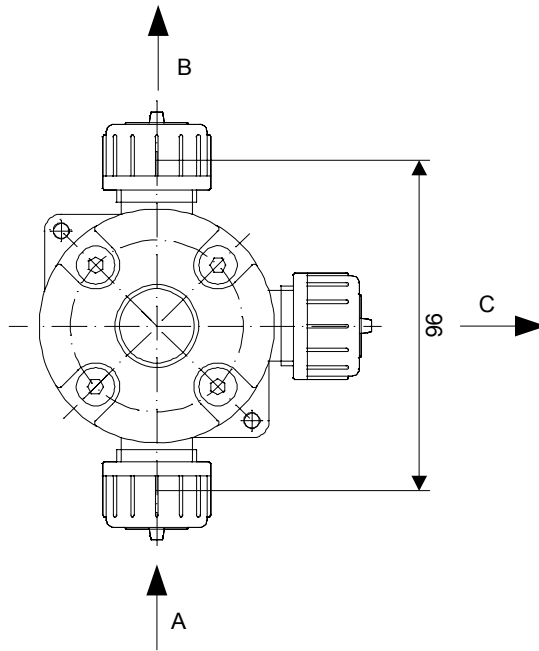


Image 1

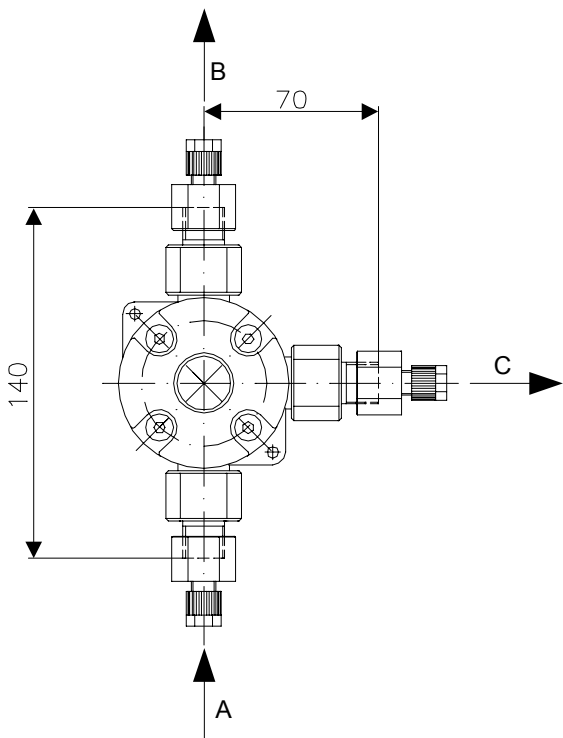


Image 2

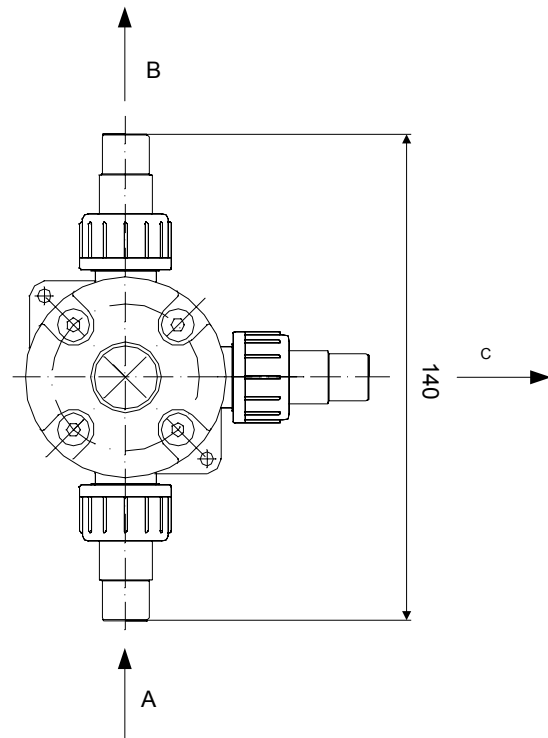


Image 3

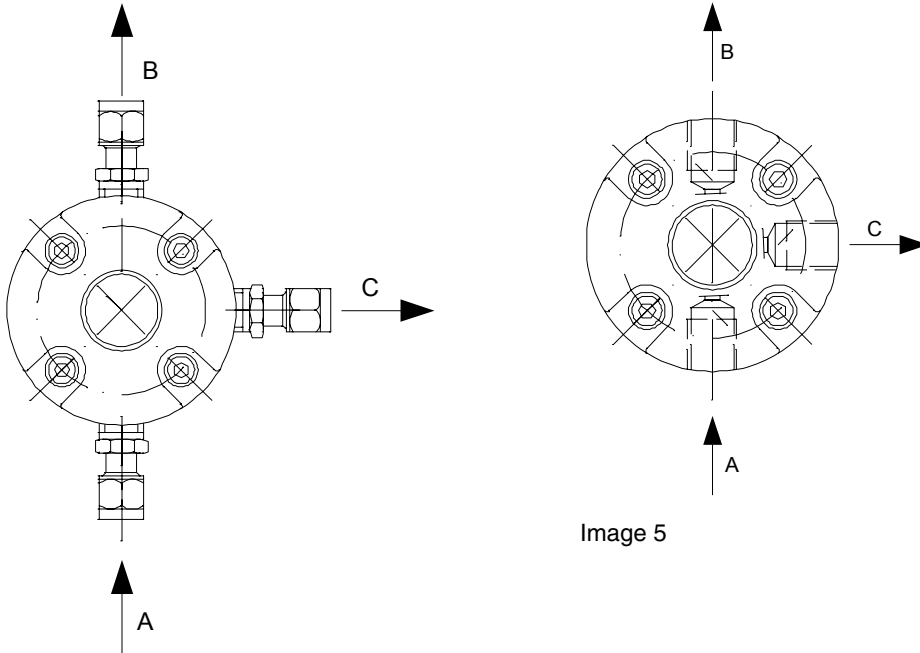
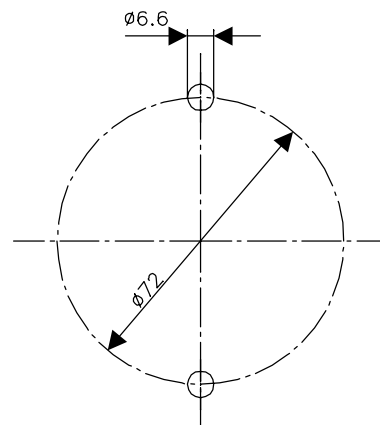


Image 4

Image 5

4.2 Pressure Relief Valves DN20

Order No.	Nominal width	Pressure release	Valve body	Gasket	L	Hose type	Pipe	Connection	Image
525-3023.1	20	10	PVC	EPDM	204	PVC-SL13/20	RO20/25	G 1 1/4"	7
525-3023.4	20	4	PVC	Viton	204	PVC-SL13/20	RO20/25	G 1 1/4"	7
525-3023.401	20	4	PVC	Viton	204	PVC-SL19/27	-	G 1 1/4"	8
525-3023.411	20	4	PVC	EPDM	204	PVC-SL19/27	-	G 1 1/4"	8
525-3073	20	10	1.4571	-	ca. 89	-	-	G3/4	6
525-3073.4	20	4	1.4571	-	ca. 89	-	-	G3/4	6
525-3103.1	20	10	PVDF	PTFE	198,5	-	RO20/25	G 1 1/4"	7
525-3153	20	10	PP	Viton	205,5	-	RO20/25	G 1 1/4"	7
525-3153.1	20	10	PPH	EPDM	205,5	-	RO20/25	G 1 1/4"	7
525-3153.401	20	4	PP	Viton	204	PVC-SL19/27	-	G 1 1/4"	8
525-3153.41	20	4	PP	EPDM	205,5	-	RO20/25	G 1 1/4"	7
525-3153.411	20	4	PP	EPDM	204	PVC-SL19/27	-	G 1 1/4"	8



Drilling scheme

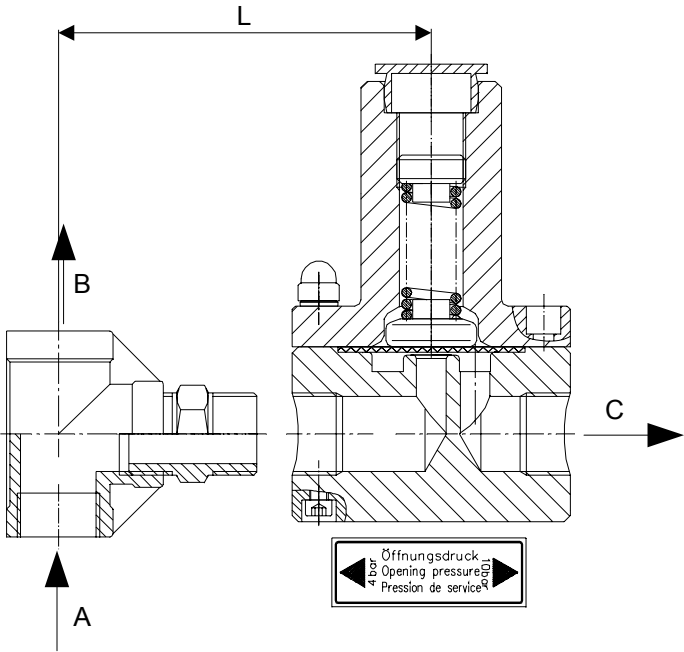


Image 6

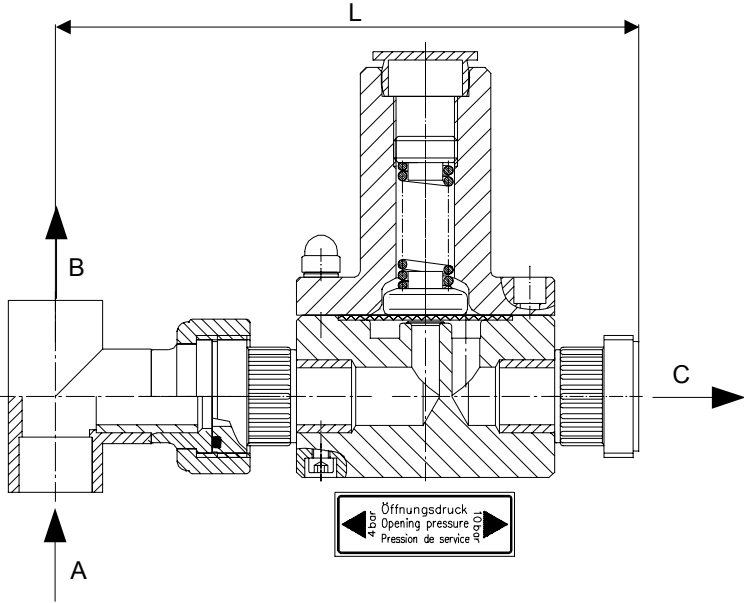


Image 7

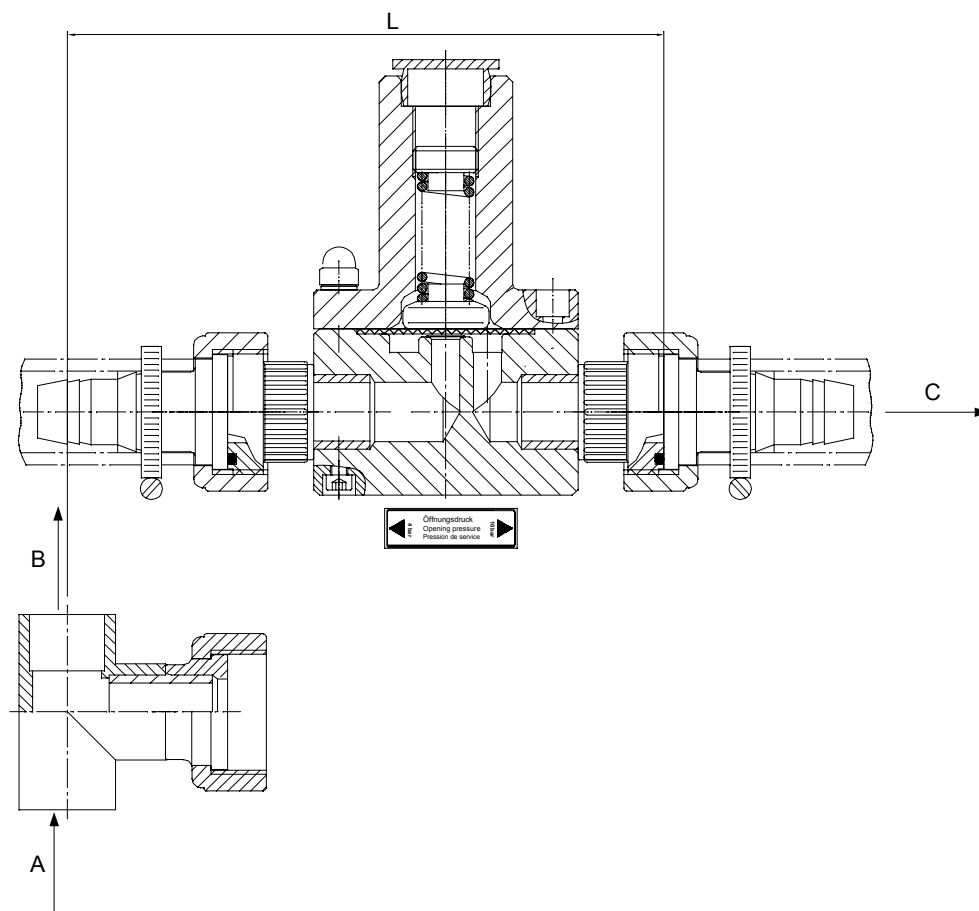
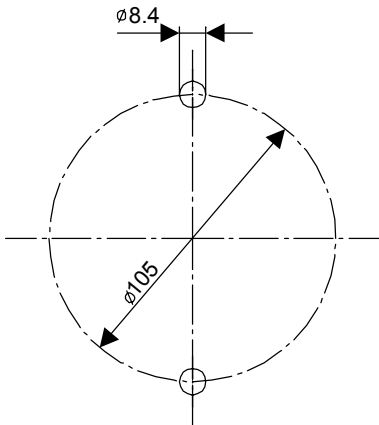


Image 8

4.3 Pressure Relief Valves DN32

Order No.	Nominal width	Pressure release	Valve body	L	Gasket	Pipe	Connection	Image
525-3043	32	10	PVC	283	Viton	RO32/40"	G 2"	11
525-3043.1	32	10	PVC	283	EPDM	RO32/40"	G 2"	11
525-3043.401	32	4	PVC	283	Viton	RO32/40"	G 2"	12
525-3043.411	32	4	PVC	283	EPDM	RO32/40"	G 2"	12
525-3045.401	32	4	PP	283	Viton	RO32/40"	G 2"	12
525-3045.411	32	4	PP	283	EPDM	RO32/40"	G 2"	12
525-3053	32	10	PVC	307	Viton		flange DN32	10
525-3053.1	32	10	PVC	307	EPDM		flange DN32	10
525-3083	32	10	1.4571	185			G 1 1/4"	9
525-3083.4	32	4	1.4571	185			G3/4	9
525-3163	32	10	PPH	343	Viton		flange DN32	10
525-3163.1	32	10	PPH	343	EPDM		flange DN32	10



Drilling scheme

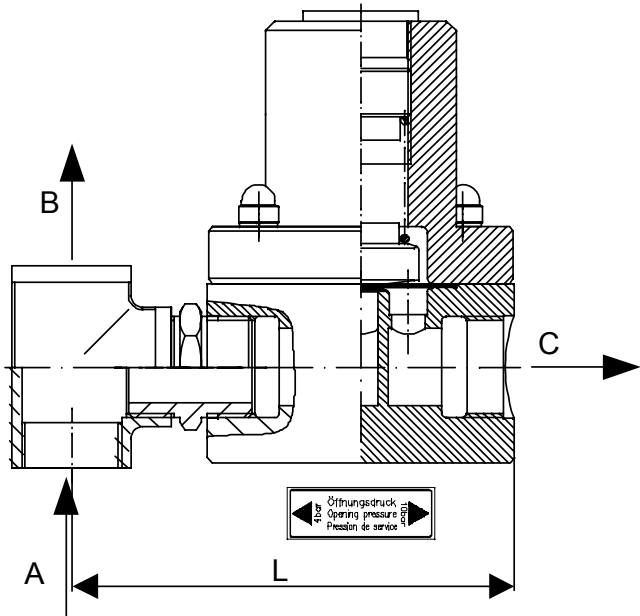


Image 9

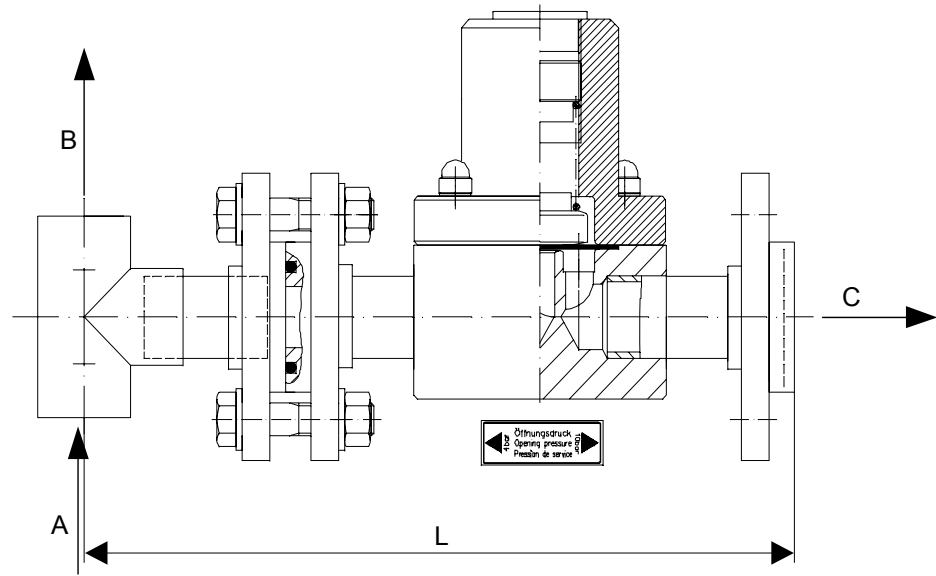


Image 10

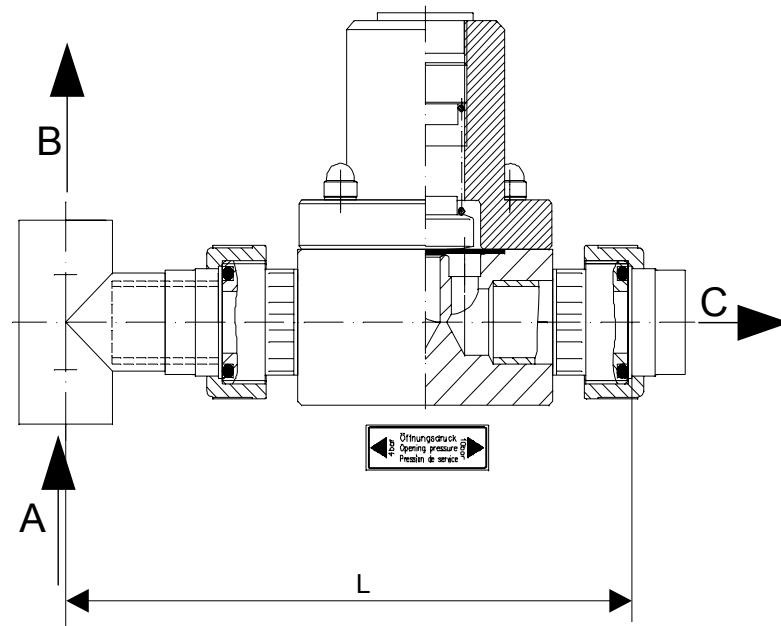


Image 11

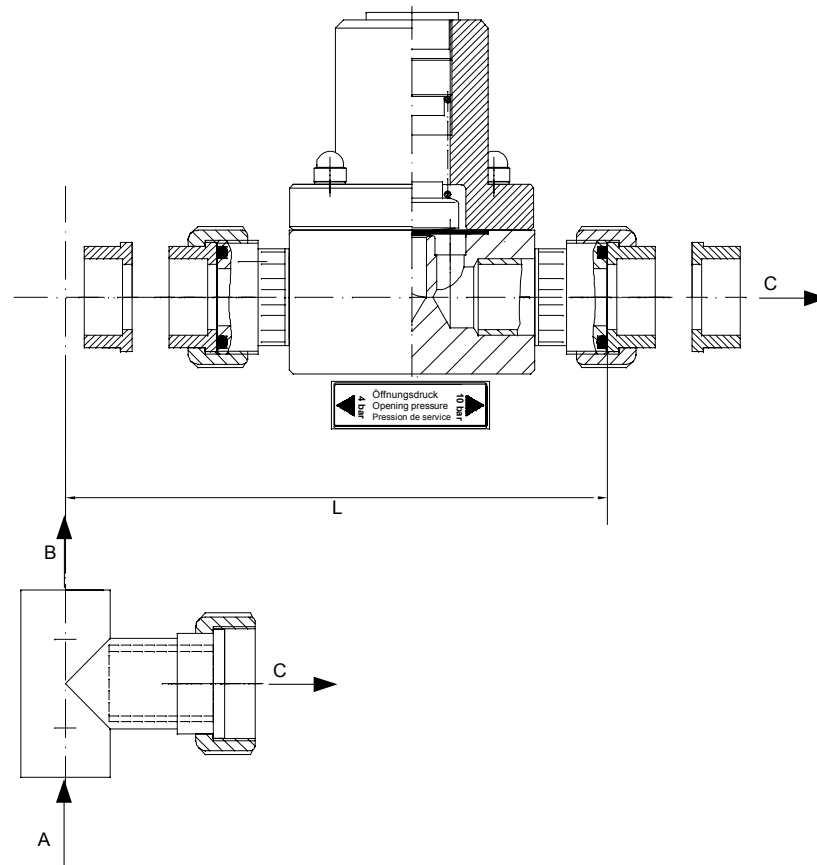
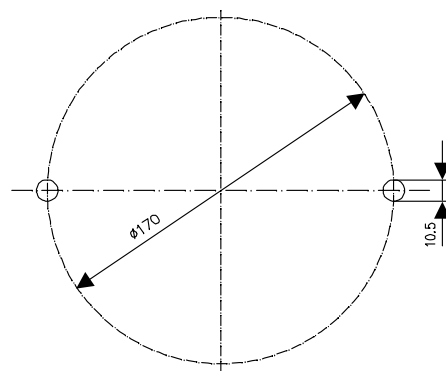


Image12

The standard insertion section is PP; for 525-3045.401 and 525-3045.411 a PVC insertion section is added.

4.4 Pressure Relief Valves DN50 - DN65

Order No.	Nominal width	Pressure release	Valve body	Gasket	L	Connection	Image
525-3143	50	1,5	PPH	Viton	264	flange DN50	14
525-0614	65	3,00	PVC	Viton	266	flange DN65	14
525-0615	65	3,00	PVC	EPDM	266	flange DN65	14
525-0616	50	3,00	PP	Viton	326	flange DN65	14
525-0617	65	4,00	1.4571	PVC soft	394	flange DN65	13



Drilling scheme for image 13

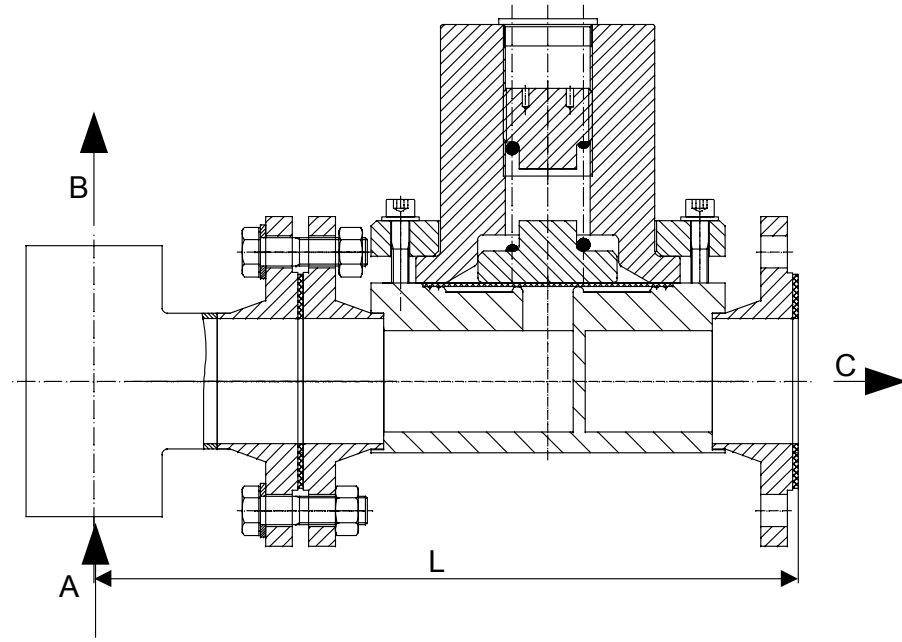


Image 13

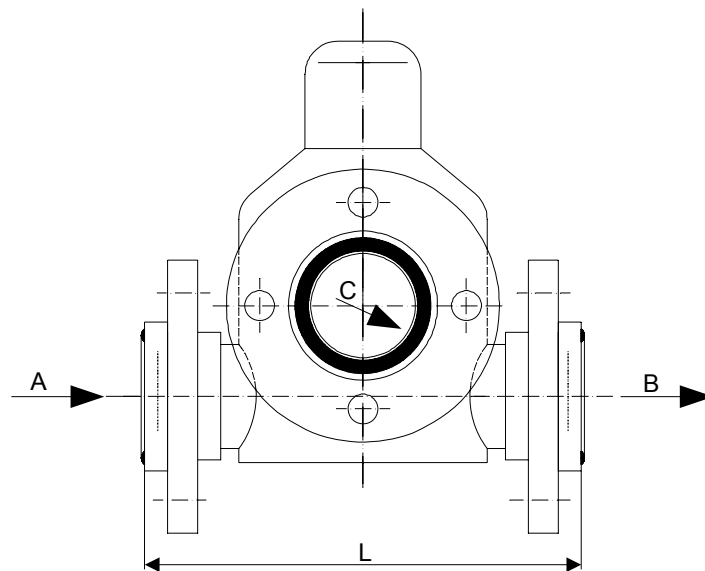


Image 14

5 Installation



Warning

The installation must only be carried out by authorized specialists!



Warning

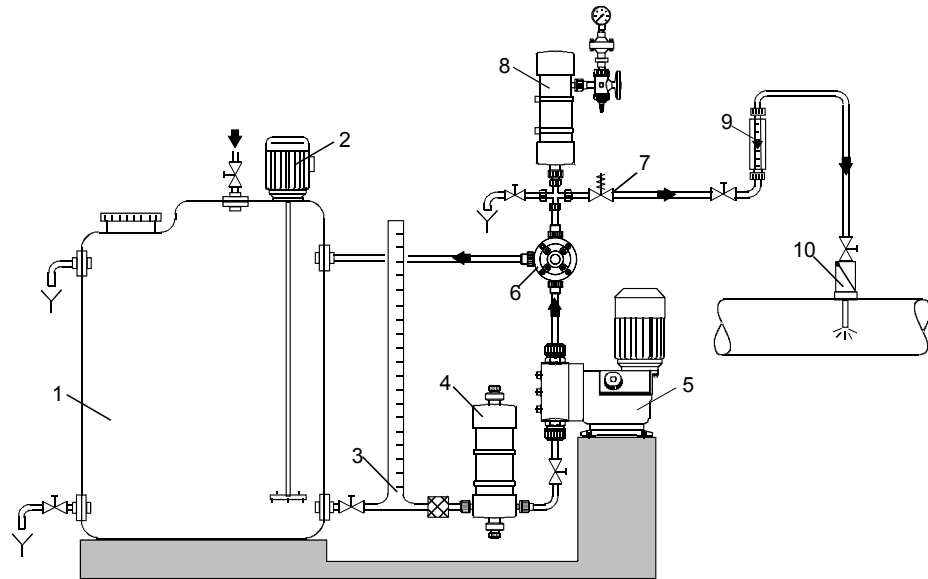
When dosing dangerous media, always refer to the corresponding safety data sheets!



Warning

Wear protective gloves and glasses when executing work at the connections or lines!

5.1 Picture of optimal installation:



- 1 Dosing tank
- 2 Electric agitator
- 3 Extraction device
- 4 Suction pulsation damper
- 5 Dosing pump
- 6 Pressure relief valve
- 7 Pressure retention valve
- 8 Pulsation damper
- 9 Measuring glass
- 10 Injection unit

5.2 Connections

5.2.1 Pressure Relief Valves DN4 and DN 8

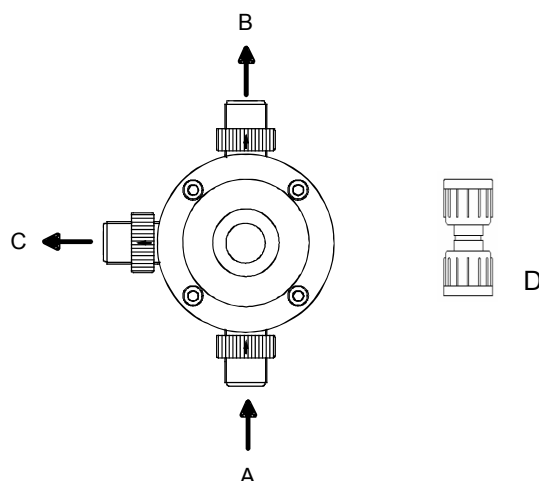
Pressure relief valves DN4 and DN 8 are designed as 3-way valves. They have an input (A), an output on the pressure side (B) and an unpressurised overflow output (C). The input and outputs are fitted with adapters for the desired connection (see section 'technical data').

The pressure relief valves can be installed in the line, or mounted directly on the pressure valve for the dosing pump with an optional adapter (D) (for the adapter for pump installation, see section 'spare parts and accessories').



Warning

During installation, observe the flow direction of the dosing line. (Direction arrow on valve housing)



For line installation

1. Connect the pressure line from the dosing head to the input (A).
2. Connect the outgoing pressure line to the output on the pressure side (B).
3. Connect overflow line to overflow output (C) and direct the unpressurised flow to the tank or a suitable overflow.

For installation directly on the pump

1. Remove connection from the input (A).
2. Screw the adapter (D) for pump installation onto the input (A) and onto the pressure relief valve for the pump.
3. Connect the outgoing pressure line to the output on the pressure side (B).
4. Connect overflow line to overflow output (C) and direct the unpressurised flow to the tank or a suitable overflow.



Warning

Danger of injuries! Never operate the pump if the line is not correctly connected to the pressure relief valve.

5. After 48 operating hours, tighten the screws on the upper part of the valve.
Max. torque: :

DN4	2Nm
DN8	

5.2.2 Pressure Relief Valves DN 20- DN 65

Pressure relief valves DN20 and onwards are usually designed as bypass pressure relief valves with connected T-piece for installation in the dosing line.

They have an input (A), an output on the pressure side (B) and an unpressurised overflow output (C). The input and outputs are fitted with adapters for the desired connection (see section 'spare parts and accessories').



Note

The T-piece is not always supplied as standard. In addition, there are special versions in the form of 3-way valves similar to DN4 and DN8. Please always observe the drawings in section 'technical data'!

1. Install T-piece in the dosing line (pipe).
2. Connect pressure relief valve to the T-piece outlet.
3. Connect overflow line as shown in the drawings and direct the unpressurised flow to the tank or a suitable overflow.

**Warning**

During installation, observe the flow direction of the dosing line. (Direction arrow on valve housing)

**Warning**

Danger of injuries! Never operate the pump if the line is not correctly connected to the pressure loading valve.

4. After 48 operating hours, tighten the screws on the upper part of the valve.
Max. torque: :

DN20	5Nm
------	-----

6 Setting of Opening Pressure

6.1 General

The opening pressure can only be set if a manometer is installed in the system between the pump and the pressure relief valve.

**Warning**

Settings on the pressure relief valve must only be carried out by authorized specialists!

The opening pressure of the pressure relief valve is set in the factory to the value specified in the technical data. The opening pressure during operation depends on various factors, e.g. the flow, the stroke frequency of the pump, or the back-pressure. If an exact setting is required, the pressure loading valve must be adapted to the local conditions.

The opening pressure must only be set to values **below** the maximum permissible operating pressure.

**Warning**

Danger of injury! Never set the opening pressure higher than the maximum permissible operating pressure of the dosing system and dosing pump.

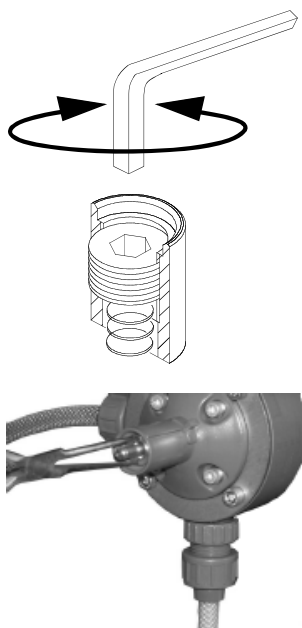
**Warning**

When dosing dangerous media, always refer to the corresponding safety data sheets!

**Warning**

Wear protective gloves and glasses when executing work at the connections or lines!

6.2 Setting Instructions for Opening Pressure



Proceed as follows if the factory-set pressure is to be changed:

With the pump running:

1. Remove the cap from the top part of the pressure relief valve.
2. Close the isolating valve after the pressure retention valve.
3. In the event of (audible) overflows of the dosing medium, read the current opening pressure on the pressure gauge.
4. Read the current opening pressure on the manometer.
5. For DN4 and DN8 use a hexagon wrench, for DN20 - DN65 use a pair of needle-nose pliers:
 - in the clockwise direction to increase the pressure
 - in the counterclockwise direction to reduce the pressure until the desired opening pressure is set.
6. Open the isolating valve after the pressure retention valve.
7. Attach the cap again.

7 Possible Faults

Error	Cause	Remedy
Pressure relief valve continuously releases	Pressure relief valve set incorrectly (too low)	Set pressure relief valve to a higher opening pressure
	Faulty diaphragm	Replace diaphragm with a new one
	Dirt	Clean pressure relief valve
Pressure relief valve does not release	Pressure relief valve set incorrectly (too high)	Set pressure relief valve to a lower opening pressure

8 Maintenance



Warning

When dosing dangerous media, always refer to the corresponding safety data sheets!



Warning

Wear protective clothing (goggles, gloves) when working on the connections and lines!



Warning

Maintenance must only be carried out by authorized specialists!

8.1 Intervals for Cleaning and Maintenance

- at least every 12 months or after 8000 operating hours or
- should faults occur.

Clean the pressure relief valve, and replace the diaphragm und O-rings if necessary.

Spare parts-> see section 'spare parts and accessories'

8.2 Replacing the Diaphragm

1. Shut down the dosing system.
2. Make it impossible for a return flow or overpressure to occur.
3. Loosen the 4 screws on the top part of the pressure relief valve.
4. Remove top part of pressure relief valve.
5. Remove the diaphragm.
6. Insert new diaphragm.
7. Return top part of pressure relief valve and tighten screws diagonally.
Max. torque: :

DN4	2Nm
DN8	
DN20	5Nm

8. Start up the dosing system again.
9. Tighten the screws on the top part of the pressure relief valve again after 48 hours of operation.
Max. torque: :

DN4	2Nm
DN8	
DN20	5Nm

9 Spare Parts and Accessories

9.1 Adapter for installation directly on the pump

Order No.	Nominal width	Material	Connection (pump-valve)
529-057	4	PVC	3/8" an 5/8"
529-058	4	1.4571	3/8" an 1/4"
529-062	4	PP	3/8" an 5/8"
529-064	4	PVDF	3/8" an 5/8"
529-059	8	1.4571	5/8" an 1/4"
529-061	8	PVC	5/8" an 5/8"
529-063	8	PP	5/8" an 5/8"
529-065	8	PVDF	5/8" an 5/8"

* not suitable for pumps with Plus³ System

9.2 Set of counter flanges for Pressure Relief Valves DN 32 and DN 65

Order No.	Nominal width	Material	Description
529-412	DN 32	V4A	Consisting of lapped flange, headed bush, screws, collars and nuts
529-417	DN 32	PVC	
529-420	DN 32	PVDF	
529-443	DN 65	PVC	
529-444	DN 65	PP	
529-421	DN 32	PP	Consisting of welding neck flange, flat gasket, screws, collars and nuts
529-445	DN 65	V4A	Consisting of welding neck flange, screws, collars and nuts

9.3 Spare Parts for Pressure Loading Valves DN4 and DN8

Spare parts - Order No.

Pressure relief valve	Nominal width	Diaphragm	O-Ringe	Amount	Pressure spring	Adjusting screw
525-0579.1	4	10.6243-401	52.298-1	2	10.6247	10.6490-400
525-0580.1	4	10.6243-401	52.344	3	10.6247	10.6490-400
525-0581	4	10.6243-401	-	-	10.6247	10.6490-400
525-0582	4	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-0582.1	4	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-0585	4	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-0589	4	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-0583	8	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-0583.1	8	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-0584	8	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-0584.1	8	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-0584.2	8	10.6243-401	52.344	3	10.6247	10.6490-400
525-0585.1	8	10.6243-401	52.344	3	10.6247	10.6490-400
525-0586	8	10.6243-401	-	-	10.6247	10.6490-400
525-0587	8	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-0588	8	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-0590	8	10.6243-401	-	-	10.6247	10.6490-400
525-1582.1	8	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-1584	8	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-1584.1	8	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-1585.1	8	10.6243-401	52.344	3	10.6247	10.6490-400
525-3175	8	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-3175.1	8	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-3176	8	10.6243-401	52.105-2	3	10.6247	10.6490-400
525-3176.1	8	10.6243-401	52.105-1	3	10.6247	10.6490-400
525-3178	8	10.6243-401	52.344	3	10.6247	10.6490-400

9.4 Spare Parts for Pressure Loading Valves DN20 - DN65

Spare parts - Order No.

Pressure relief valve	Nominal width	Diaphragm	O-rings	Amount	Pressure spring	Adjusting screw
525-3023.1	20	10.6243-402	52.141-1	2	10.6251	10.2617-41
525-3023.4	20	10.6243-402	52.141	2	10.6251	10.2617-41
525-3023.401	20	10.6243-402	52.141	2	10.6251	10.2617-41
525-3023.411	20	10.6243-402	52.141-1	2	10.6251	10.2617-41
525-3073	20	10.6243-402	-	-	10.6251	10.2617-41
525-3073.4	20	10.6243-402	-	-	10.6251	10.2617-41
525-3103.1	20	10.6243-402	52.141-2	2	10.6251	10.2617-41
525-3153	20	10.6243-402	52.141	2	10.6251	10.2617-41
525-3153.1	20	10.6243-402	52.141-1	2	10.6251	10.2617-41
525-3153.401	20	10.6243-402	52.141	2	10.6251	10.2617-41
525-3153.41	20	10.6243-402	52.141-1	2	10.6251	10.2617-41
525-3153.411	20	10.6243-402	52.141-1	2	10.6251	10.2617-41
525-3043	32	10.6243-403	52.154-2	2	10.2663	10.2664-41
525-3043.1	32	10.6243-403	52.393	2	10.2663	10.2664-41
525-3043.401	32	10.6243-403	52.154-2	2	10.2663	10.2664-41
525-3043.411	32	10.6243-403	52.154-1	2	10.2663	10.2664-41
525-3045.401	32	10.6243-403	52.154-2	2	10.2663	10.2664-41
525-3045.411	32	10.6243-403	52.154-1	2	10.2663	10.2664-41
525-3053	32	10.6243-403	52.202	2	10.2663	10.2664-41

Pressure relief valve	Nominal width	Diaphragm	O-rings	Amount	Pressure spring	Adjusting screw
525-3053.1	32	10.6243-403	52.261	2	10.2663	10.2664-41
525-3083	32	10.6243-403	-	-	10.2663	10.2664-41
525-3083.4	32	10.6243-403	-	-	10.2663	10.2664-41
525-3163	32	10.6243-403	52.202	2	10.2663	10.2664-41
525-3163.1	32	10.6243-403	52.261	2	10.2663	10.2664-41
525-3143	50	-	52.258	3	-	-
525-0614	65	-	52.260	3	-	-
525-0615	65	-	52.259	3	-	-
525-0616	65	-	52.260	3	-	-
525-0617	65	10.1572-41	-	-	10.3361	10.3349-402

