



Mounting Instructions

Buffer tank st./w. model 150

Buffer tank st./w. model 250

Buffer tank st./w. model 350

Buffer tank st./w. model 500

Buffer tank st./w. model 650

Buffer tank st. model 800

Buffer tank st. model 1000

Buffer tank st. model 1200

Buffer tank st. model 1600



BUFFER TANK

We thank you for choosing our product. These mounting instructions assist you in mounting (and operating) the product safely. Product images are for illustrative purposes only and may differ from the actual product.

Before you start the installation, make sure all supplied parts are present and have the right measurements. This product has been manufactured under rigid inspection and quality management. We ask you to contact your sales department in case of a lack of clarity.

The type and the serial number of the buffer tank system are attached to the buffer valve system. Always include the type and the serial number of your product, when you contact your local Lely service provider or when ordering spare parts.

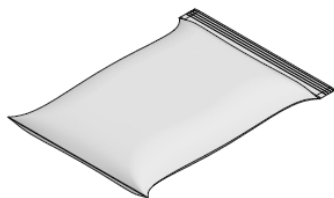
We suggest that you complete the table below with the type and the serial number of your buffer tank system. Making your find the information easily.

Type number	
Serial number	

V3



1



2

CONTENT

PARTS

Amount	Article nr.	Nr.	Description
1x		1	Buffer tank + valve system
1x	2144...	2	Mounting set

SPARE PARTS

Article nr.	Description
100051	Actuator standard buffer system without bracket
100012	Spray nozzle for buffer tank

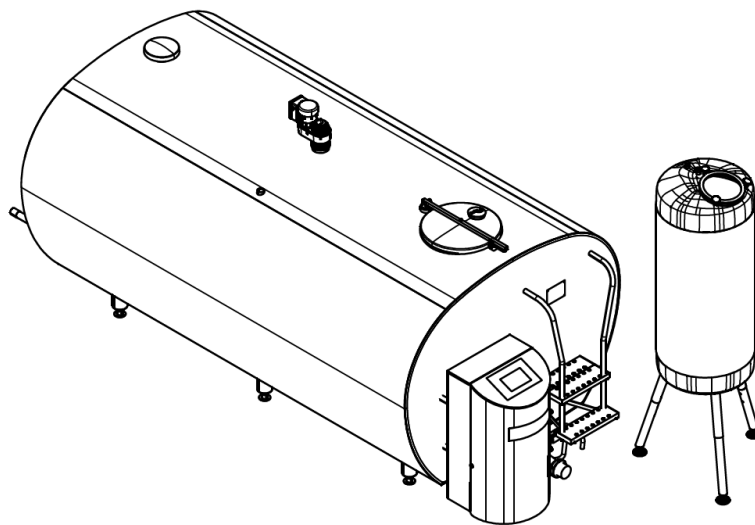
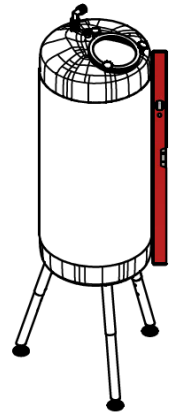
Sealing set	Contains	
214515	3 x EPDM seal 1"	100121
	1 x EPDM seal 1,5"	100122
	3 x Tri-Clamp seal DN 20	201079
	1 x Tri-Clamp seal 2"	201072
214513	3 x EPDM seal 1"	100121
	1 x EPDM seal 1,5"	100122
	3 x Tri-Clamp seal DN 20	201079
	1 x Tri-Clamp seal 2"	201072
	1 x Silicone seal (levelsensor)	203021
214517	5 x EPDM seal 1"	100121
	1 x EPDM seal 1,5"	100122
	5 x Tri-Clamp seal DN 20	201079
	1 x Tri-Clamp seal 2"	201072
	1 x Silicon seal (levelsensor)	203021
214514	3 x EPDM seal DN25	100123
	1 x EPDM seal 1,5"	100122
	3 x Tri-Clamp seal DN25	720201
	1 x Tri-Clamp seal 2"	201072
	1 x Silicon seal (levelsensor)	203021
214518	5 x EPDM seal DN25	100123
	1 x EPDM seal 1,5"	100122
	5 x Tri-Clamp seal DN25	720201
	1 x Tri-Clamp seal 2"	201072
	1 x Silicon seal (levelsensor)	203021



MOUNTING INSTRUCTIONS

TANK PLACEMENT

1. Make sure the buffer tank is on a solid foundation. Use a level measuring instrument.
2. When a milk pipeline is placed at 30cm above the ground, there must be no walking space between the buffer and the main tank.
3. The buffer tank should be located nearby or above the drain.
4. The best position to install your buffer tank is in front of the main tank. The distance between the main tank and the buffer tank should be as short as possible. This will reduce operating costs and contributes to the deflate process.



AIR SUPPLY

A 6mm airline should be connected from the compressor to the valve block in the CRS+. 4mm airlines must be connected to the butterfly valves underneath the buffer tank. The air pressure should be between 6 and 8 bars, to control the butterfly valves.



N.B. The air pressure to the butterfly valves should not be more than 8bar.

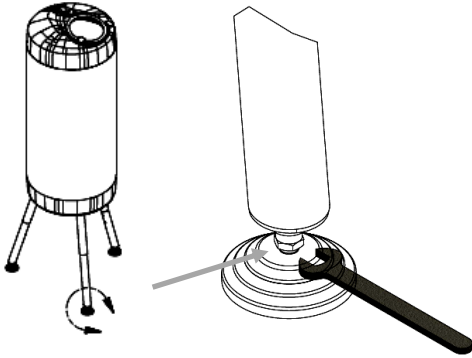
CLEANING

Clean the robot a couple of hours before using the buffer tank. When you do not do this, the robot may proceed with the main cleaning process when the milk tank driver empties to the main tank.

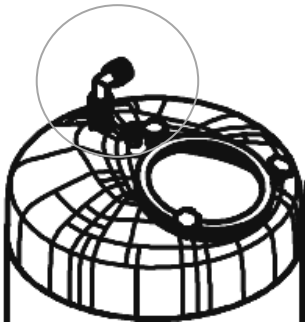
MOUNTING INSTRUCTIONS

INSTALLATION METHOD

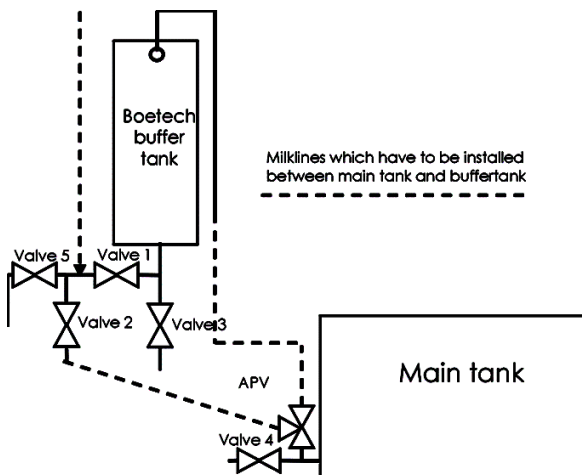
1. Put the buffer tank into position.
2. Loosen all the lock nuts with the wrench.
3. Level your buffer tank by turning the leveling feet in and out as necessary.



4. When your buffer tank is level, tighten the lock nuts using the wrench. Do not move your buffer tank unless you tighten the locknuts. This may result in damage to the leveling feet. Ensure that the buffer tank is stable.



5. Mount the air in/outlet (white elbow) on the top of the buffer tank. Make sure this part is open and clean at all times.



To make sure the buffer tank will not fall over, **we recommend attaching the cleaning pipe to a wall.**

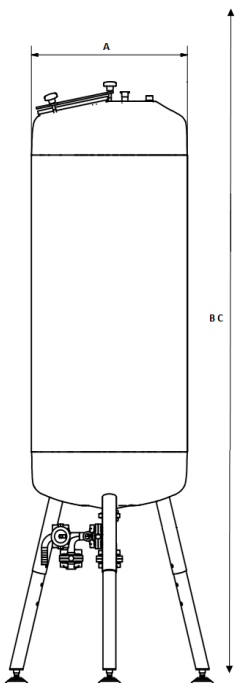
6. Make the tube/pipe connections according to the illustration beside. Connections can be made with Pex or stainless steel.

INTEDED USE

Incorrect use of the buffer tank can be dangerous to people, nearby equipment and the environment. Before reaching into the buffer tank, disconnect the air tubes of the CRS.

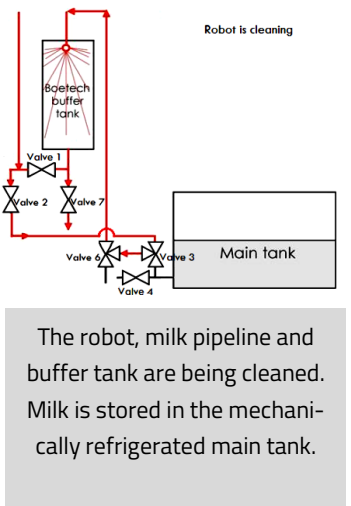
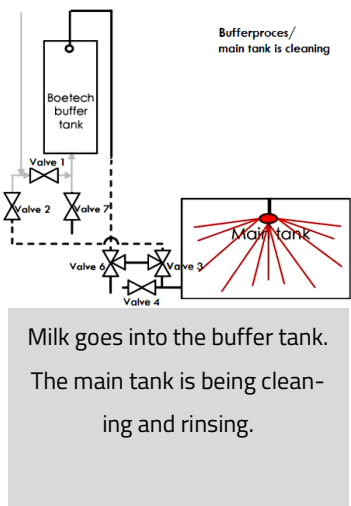
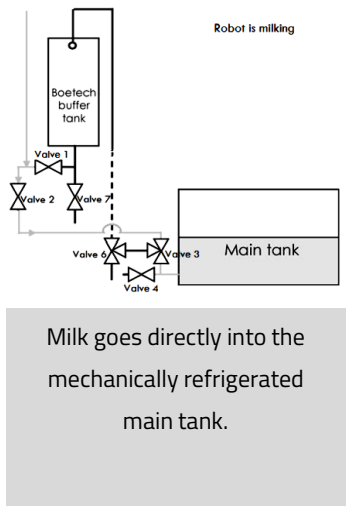
TROUBLESHOOTING

Issue	Cause	Action
Valve does not open or close properly	Valve is broken	Disassemble and replace part.
	No voltage, no air pressure	Check power supply, use air pressure to check the valve
Buffer tank does not discharge water properly	No pressure	Disassemble and check the air valve block, increase the pressure.
High bacteria-count number	Insufficient cleaning of the robot, main tank or buffer tank	First check your robot cleaning, then sprinkle ball. Check for congestion in the tank valve system.



Description	A	B	C
150 Standing model	60 cm	150 cm	180 cm
150 Wall model	50 cm	150 cm	180 cm
250 Standing model	60 cm	230 cm	260 cm
250 Wall model	50 cm	230 cm	260 cm
350 Standing model	60 cm	220 cm	250 cm
350 Wall model	60 cm	220 cm	250 cm
500 Standing model	98 cm	190 cm	220 cm
500 Wall model	60 cm	290 cm	320 cm
650 Standing model	98 cm	230 cm	260 cm
800 Standing model	98 cm	230 cm	260 cm
1000 Standing model	98 cm	250 cm	280 cm
1200 Standing model	95 cm	280 cm	310 cm
1600 Standing model	140 cm	240 cm	300 cm

A = Diameter tank
 B = Minimum height ceiling milk storage room
 C = Advised height ceiling milk storage room. Note: Minimum distance between the top of the buffer tank and the ceiling should be 30 cm, for inspections.



APPENDIX A: CRS+/ CRS M3 BUFFER TANK SETTINGS

Connect the valves of the buffer tank with 4 air tubes (4mm, black PA) into the CRS+. Use the predefined cluster configurations in the Lely CRS+ manual for the right settings and connections.

Menu item	Description	Min	Max	Default	Unit
Maximum contents	The maximum content of the buffer tank is used for an internal calculation to make sure the buffer tank does not overflow.	200	2500	500	Kg
	An alarm is generated when the buffer tank is full (based on yield calculation of the milking robots). All milking robots in the cluster will be taken out of operation.	-441	-5511	-1102	(lb)
Maximum buffer time	The maximum time the milk is stored in the buffer tank. When this time is expired, the milk will get drained to the sewer. An alarm is generated when the set time is exceeded.	4	360	90	min
Buffer emptying time	The maximum time to allow the buffer tank to transport the milk to the milk tank. This is based on a full buffer tank. The drain time depends on: <ul style="list-style-type: none"> The location of the buffer tank concerning the milk tank. The amount of milk in the milk tank. A sensor can be connected to the CRS+ indicating when the buffer is empty. If this sensor is installed, an alarm is generated when the set time is exceeded. The drainage pauses when a milking robot pumps milk to the milk tank. The drain timer takes this pause time into account.	3	60	60	min
Pre-rinse delay *	During pre-rinse valve V6 or V6b switches to buffer after the set delay time. This is to prevent milk residue to enter the buffer tank.	30	600	30	s

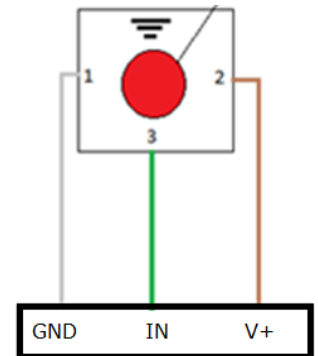
* Applicable for USA / Canada only.

APPENDIX B: LEVEL SENSOR (IF PRESENT)

Until May 2019 Valve plug connection

The level sensor is mounted at the lowest possible position in the tank valve system of the buffer tank. The figure shows the correct wiring between the level sensor and the CRS+ (3x 0,75mm²).

Note: When the red and green led lights are on, the buffer tank is empty.



From May 2019 M12 connector

A 3 or 4-wire cable is delivered with the system (colors brown, blue, black, [white])

CONNECTION LEVEL SENSOR TO CRS+ OR CRS M3

The sensor can be connected to an input of the CRS+ or CRS M3. Configure the setting: **"BV is EMPTY (BV1)"** at 'configuration inputs'. At 'test inputs' the state of the level sensor can be checked.

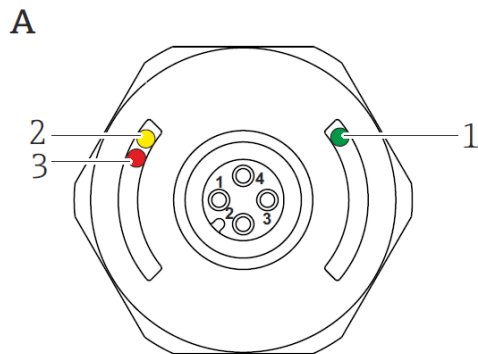
Level high	24V on input CRS+/CRS M3 (black wire)	Test inputs: BV is empty (BV1): full
No level	0V on input CRS+/CRS M3 (black wire)	Test inputs: BV is empty (BV1): empty

Valve plug	M12	CRS+ / CRS M3
1	Blue	- /GND
2	Brown	+
3	Black	Level high

Check the functioning of the system at the first milk collection! Check the wiring if the "empty tank" procedure does not work well.

APPENDIX B: LEVEL SENSOR (IF PRESENT)

LED DISPLAY LEVEL SENSOR M12 CONNECTOR (FROM MAY 2019)



A M12 connector, (cable without graphic)

Item	Fuction	Description
1	Green LED (gn) Lit	Device is operational
2	Yellow LED (ye) Lit	M12 connector Indicates the sensor state: tuning fork is covered by liquid
3	Red LED (rd) Flashing Lit	Warning/maintenance required: error can be rectified, e.g. incorrect wiring Fault/device failure: error cannot be rectified, e.g. electronic error

TROUBLESHOOTING

Malfunction	Possible cause	Corrective action
Green LED Unlit	No power supply	Check connector, cable and power supply
Red LED Flashing	Overload or short-circuit in load circuit	<ul style="list-style-type: none"> Rectify short-circuit Reduce maximum load current to below 250 mA
Red LED Lit	Internal sensor failure or sensor corroded	Replace device

APPENDIX C: PRESSURE SYSTEM

There are two options that you can choose:

- **203001 Electrical acted 3/2 valve**
- **203008 Pneumatic acted 3/2 valve**

The Pressure Reduce Valve should be adjusted as high as possible. In this situation the system will work optimal.

MAX PRESSURE 1 - 1,2 bar!

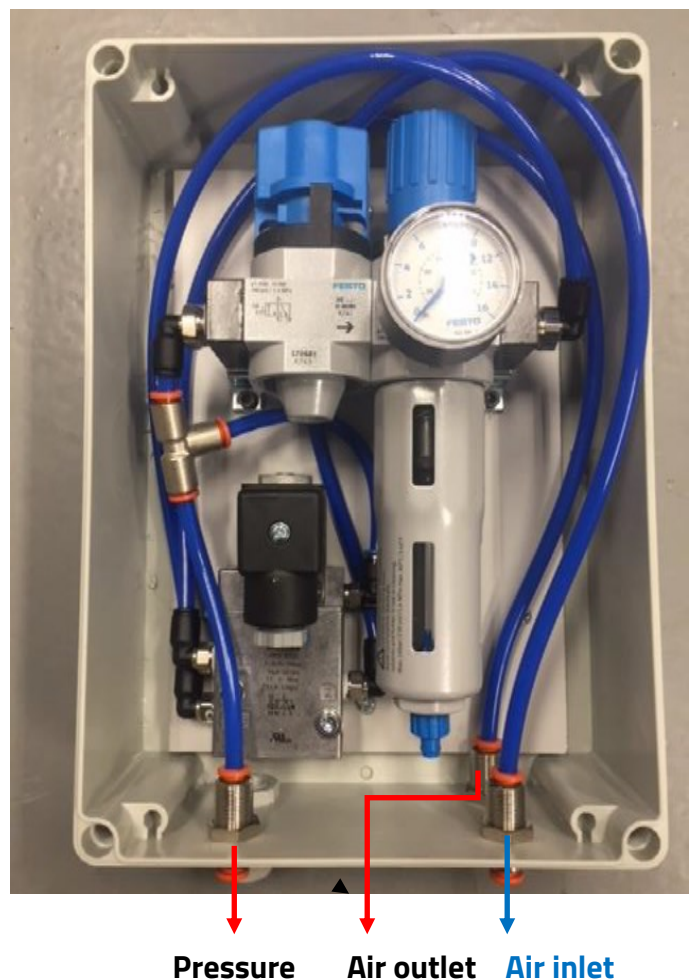
203001 - Electrical acted 3/2 valve

This switchbox can be used for:

- Boetech switchbox
- CRS+
- CRS M3

With a Boetech switchbox the blow valve is connected on terminals 37 + 38.

With CRS+ and CRS M3 a digital output 'Boetech air' has to be configured.



Pressure Air outlet Air inlet

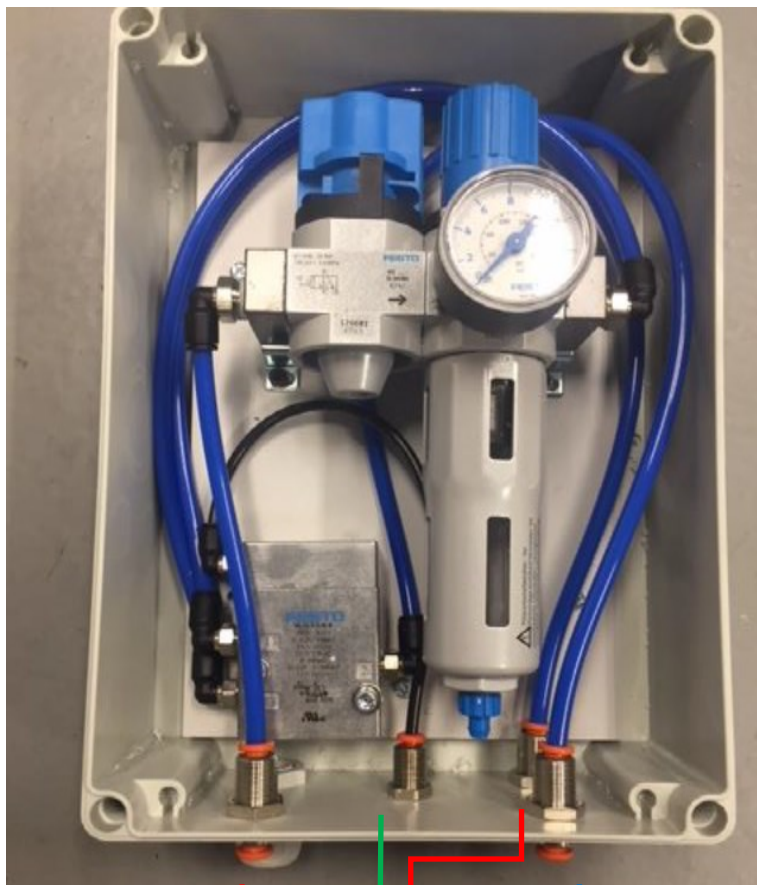
APPENDIX C: PRESSURE SYSTEM

203008 - Pneumatic acted 3/2 valve

This switchbox can be used for:

- CRS M3

With CRS M3 a pneumatic output 'Boetech air' has to be configured



Pressure

Air outlet

Air inlet

4mm air output CRS 'Boetech air'

PERSONAL NOTES

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