

Technical service manual Basic sprayers iXter B



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Subject	Basic sprayers iXter B
Place	Kverneland Group Nieuw-Venep Hoofdweg 1278 2153 LR Nieuw Venep The Netherlands
Details	Technical Service Manual

1. Model overview / Technical information	3
1.1 Tank sizes	3
1.2 Control boxes	4
1.3 Spraybooms	5
2. Frame and basic machine adjustments	6
2.1 Main frame / parking legs (iXter)	6
2.2 Quick hitch	8
2.3 Chemical inductor adjustment	11
2.4 Pump plate	12
3. Water system and component	13
3.1 Flow schedule section valves	13
3.2 Flow schedule iXflow E	22
3.3 Water components	26
3.3.1 Pumps	26
3.3.2 Filters (suction/press)	32
3.3.3 Changes colour filters	33
3.3.4 Regulator section valves	34
3.3.5 Regulator iXflow E	35
3.5.6 Section valves	37
3.5.8 Adjusting EVM 3 way (EC)	53
3.5.9 Section valve EVM 2 way (FMC / FMA)	55
3.5.10 Repairing EVM section valves	57

4. Hydraulics system	46
4.1 Pre-selection schedule	46
4.2 Oil circulation schedule	47
4.3 Load sensing schedule	48
4.4 Hydraulic components	49
4.4.1 Oil function block	49
4.4.2 Oil circulation block	50
4.4.3 Load sensing valve block	51
	72
5. iXflow-E	73
5.1 System overview	73
5.2 Electrical valve	74
5.3 Cable	76
6. Boomlights	77

1.1 Tank sizes

The Ixter sprayer is available in 4 different tank sizes.
The pictures below will show you the types.

B 10 (1000 L)



B 13 (1300 L)



B 16 (1600 L)



B 18 (1800 L)



1.2 Control boxes

ISOBUS (FMA/iXspray)



IMTellus/ Tellus Pro/ Go ISO Configuration

- Task controller, GPS.
- Data- transfer
- ISO bus Joystick connection possible



ISOBUS terminals

- For compatibility please check AEF database



Accessories:
Switchbox
IMGrip

FMC



FMC: Flowmate Control

- Flow regulation (speed +flow input)
- Simple computer
- GPS section switching possible icw Starguide

1.3 Spraybooms

The Ixter can be equipped with 2 different types of spraybooms.

- HC Boom (Vertical folding steel boom)
- HOSA (Z folding alu-boom)



HC Boom.

- Steel boom compact folding
- Working wide 18/21/24/27/28/30M

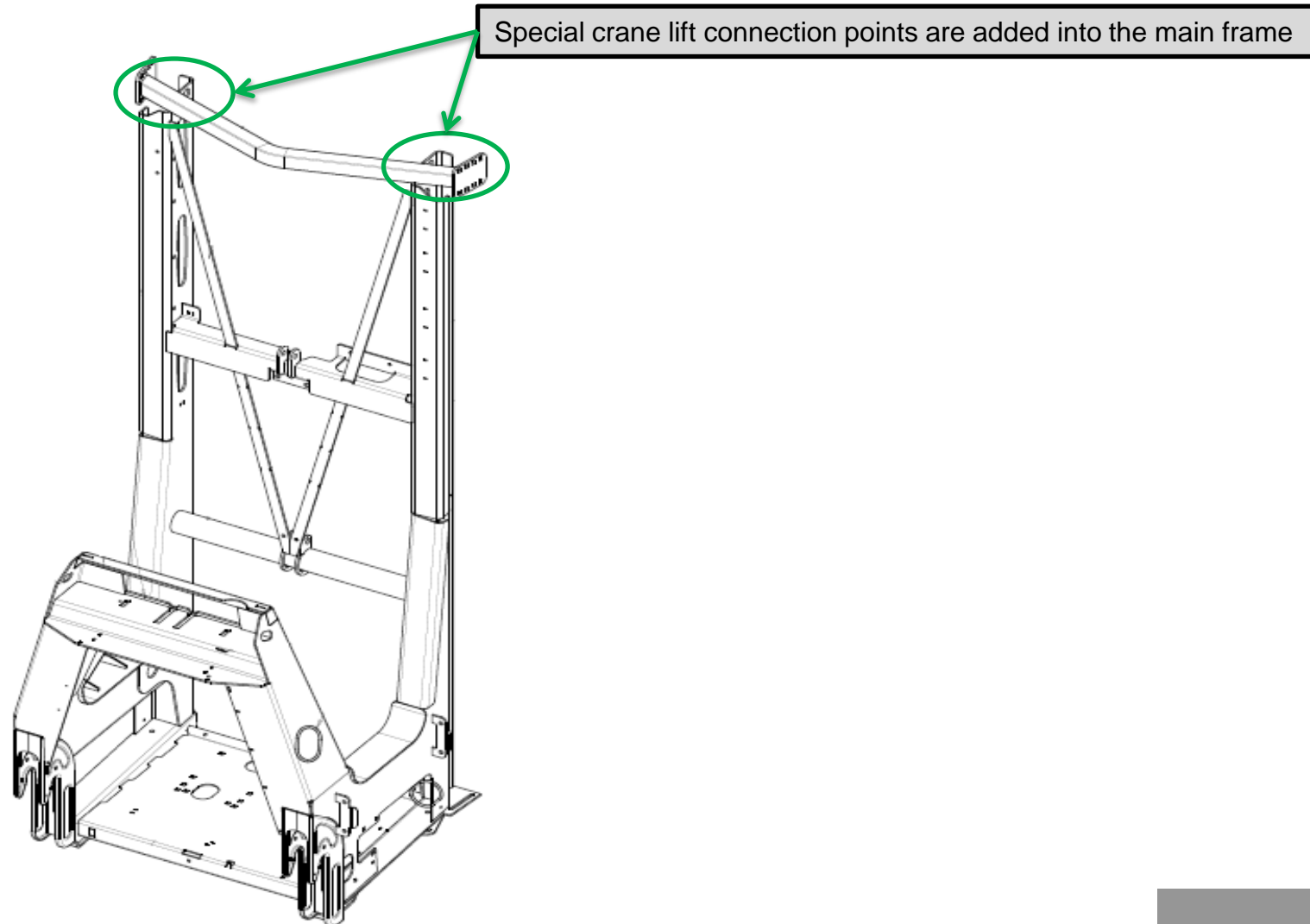


HOSA Boom.

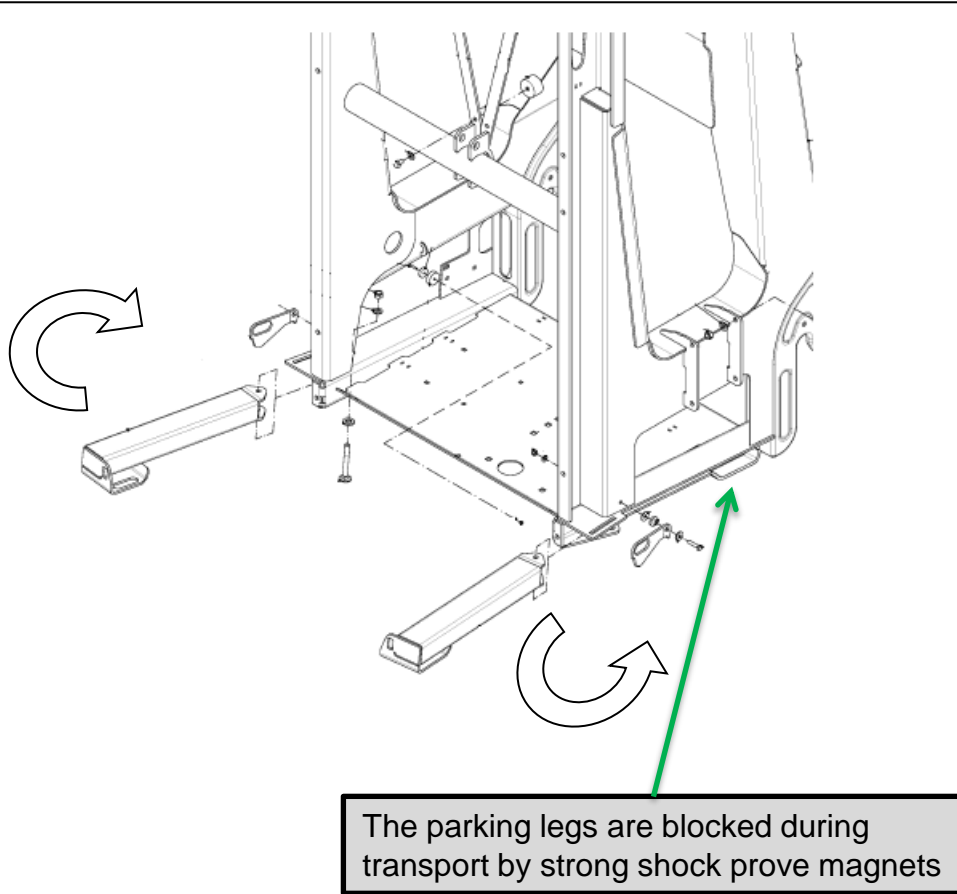
- Aluminium profile side folding
- Working wide 15

2.1 Main frame/parking legs (iXter)

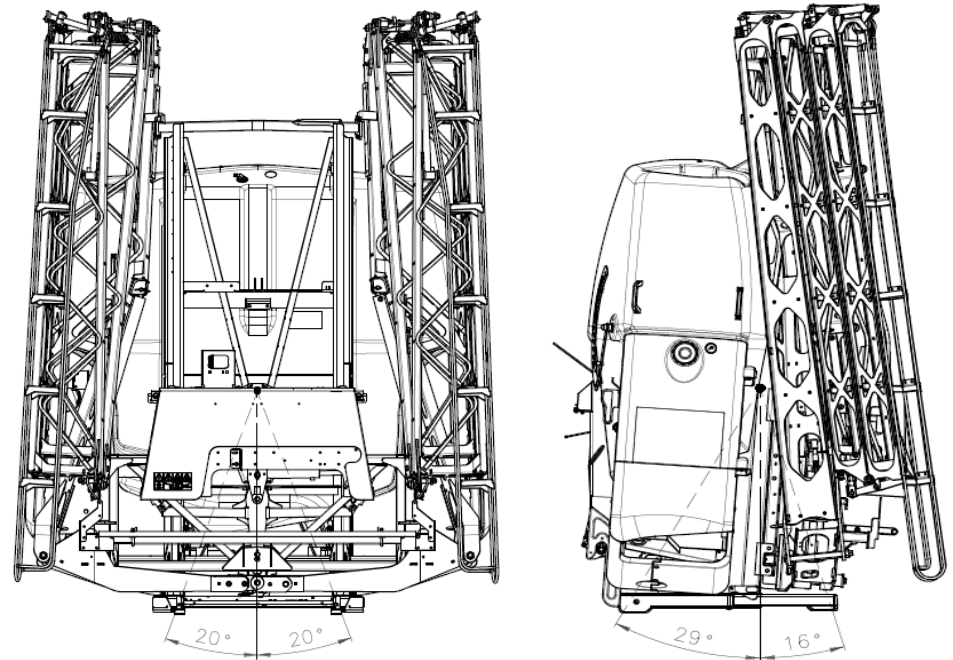
The main frame is produced out of special high strength steel this to reduce the weight and to give it a high stability.



2.1 Main frame/parking legs (iXter)

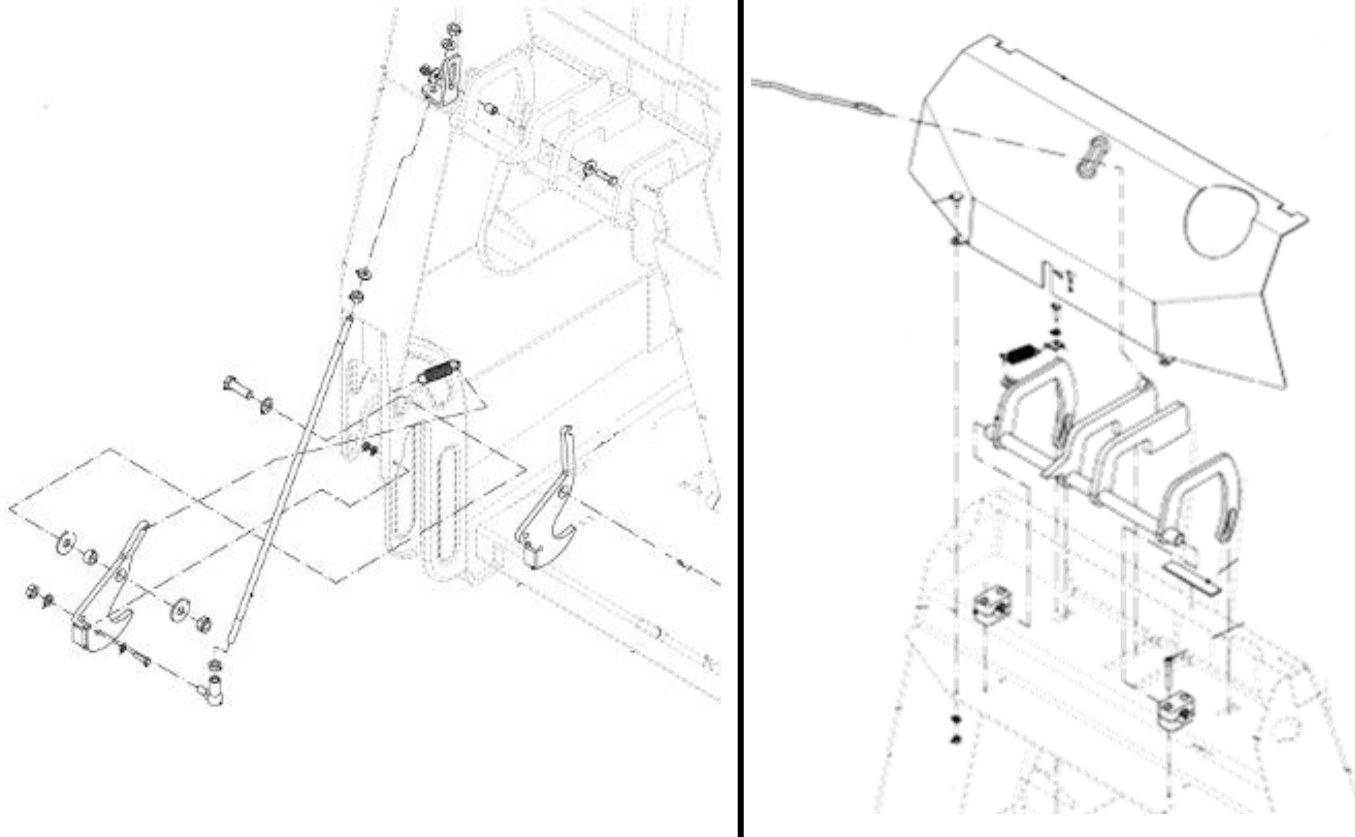


When the machine is parked on a solid ground the stability below can be given.



2.2 Quick hitch

The quick hitch system is invented to make a customer friendly hitching of the machine possible. To insure a good operation of this quick hitch it is necessarily to adjust the system in a correct way.



For correct adjustment of the quick hitch please follow up the steps on the next page.

2.2 Quick hitch



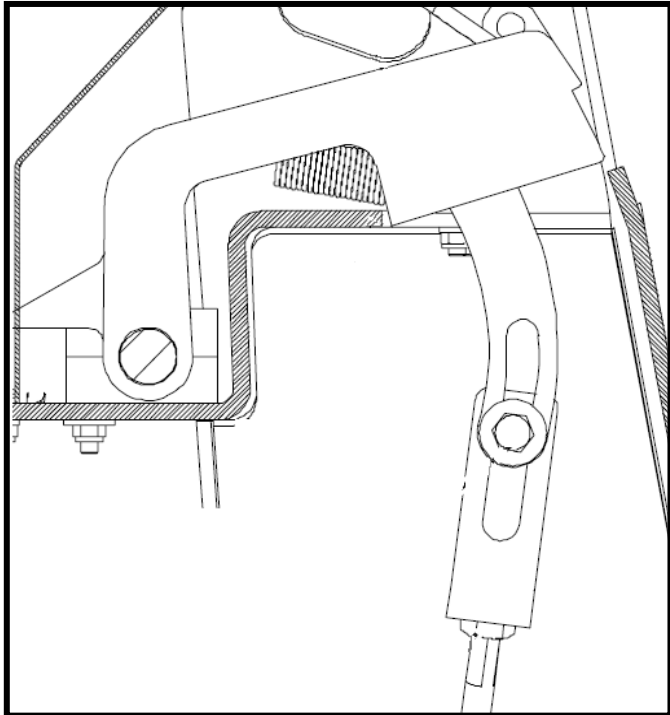
Make sure the hooks are touching the frame plate (see white circle)



As a double check the cover can be removed and the white part must rest completely on the main frame at the circled position (See circle)



Make sure that the arrow is pointing to the locking sign.



- Lift up with the rope the white part.
- As soon as the 2 top hooks are free. The slot hole in the white part should be at its end.

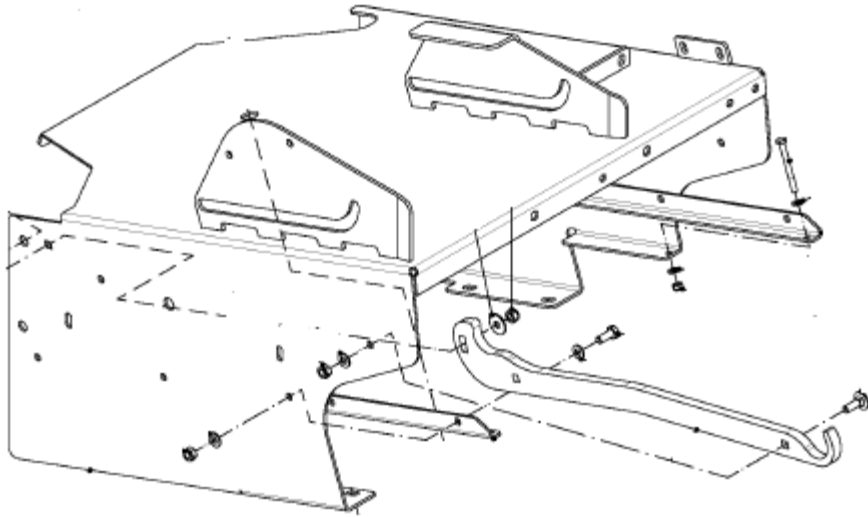
See drawing and picture

- From this point the bottom hooks must also be lifted.
- If the bottom hooks start to lift to early make the 2 steel bars (B) longer
- If the bottom hooks start to lift to late make the 2 steel bars (B) shorter



2.3 Chemical inductor adjustment

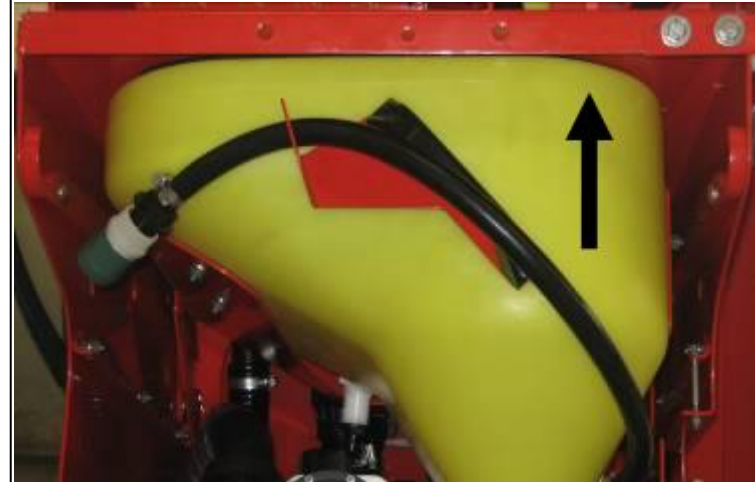
The sealing of the chemical inductor on the top side is adjustable on the frame. The sealing can be adjusted by the 2 bars pointed in the drawing below.



How to adjust:

- Unscrew nut A
- Unscrew nut B
- Adjust steel bar C till the chemical inductor is sealed to the top plate

See picture below



With the adjustment above the Chemical inductor will be pushed harder to the top which provides a good sealing

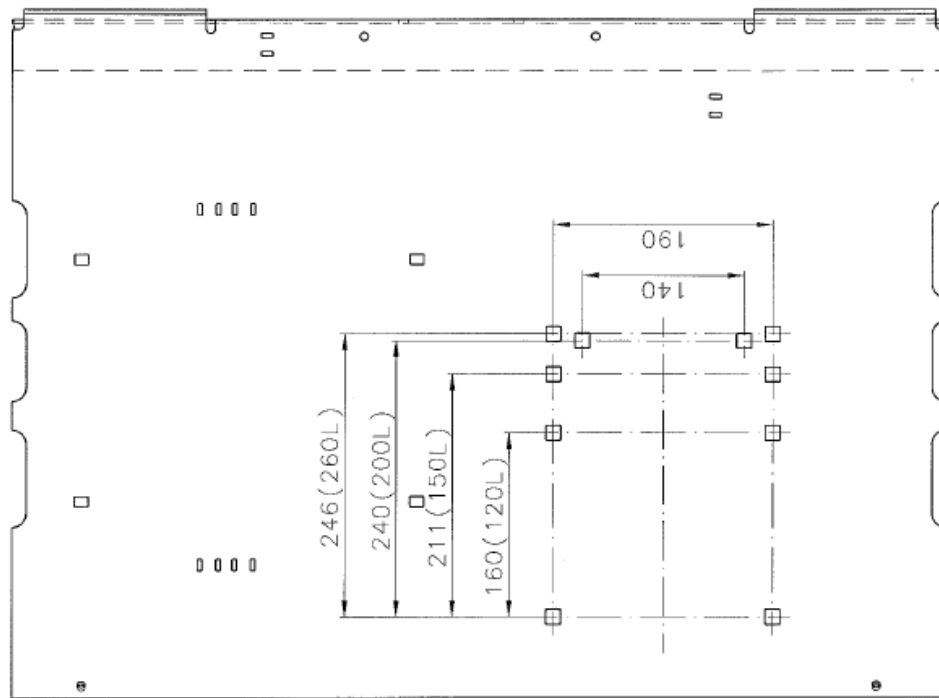
2.4 Pump plate

The iXter sprayer can be equipped with three different pumps:

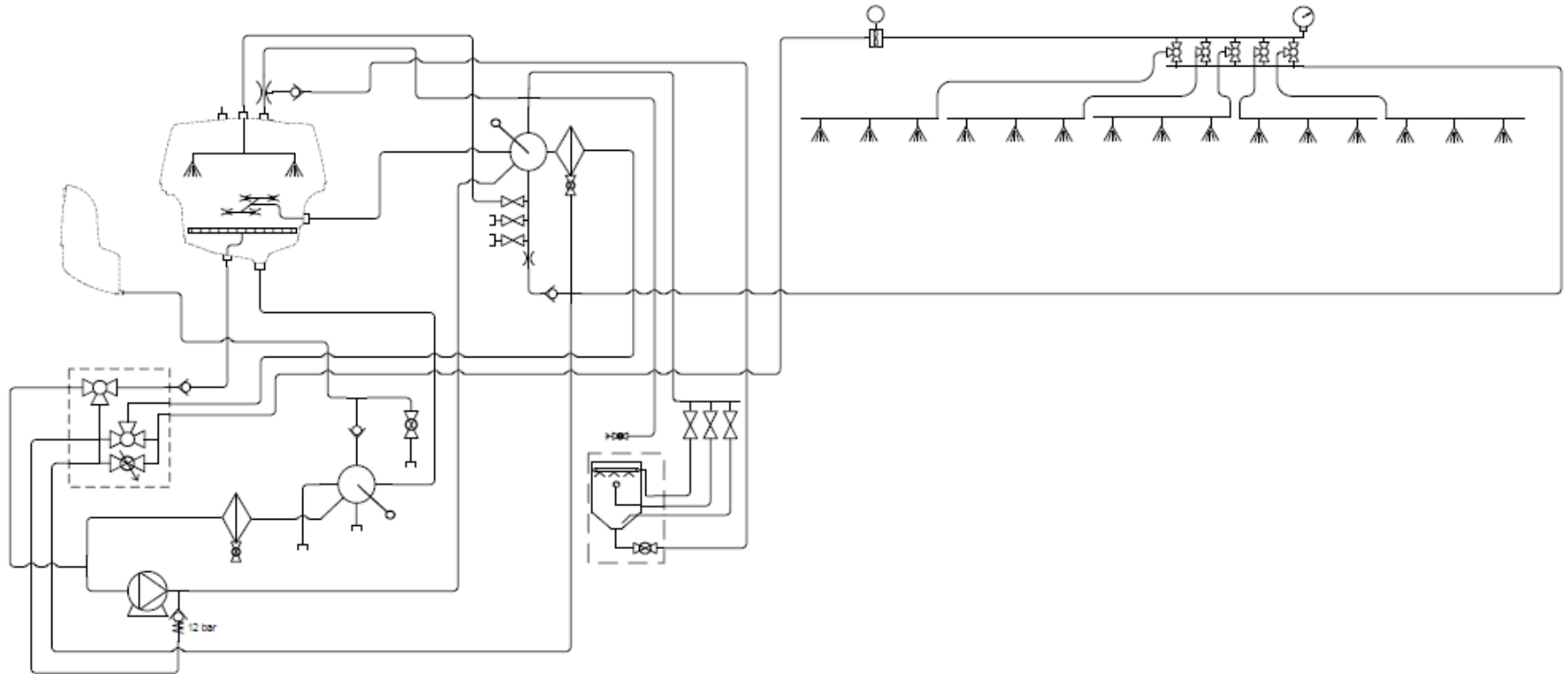
- Altek 150 L pump
- Altek 200L pump
- Altek 250L pump

Because of the different dimensions of these pumps every pump has its own connection plate on the frame.

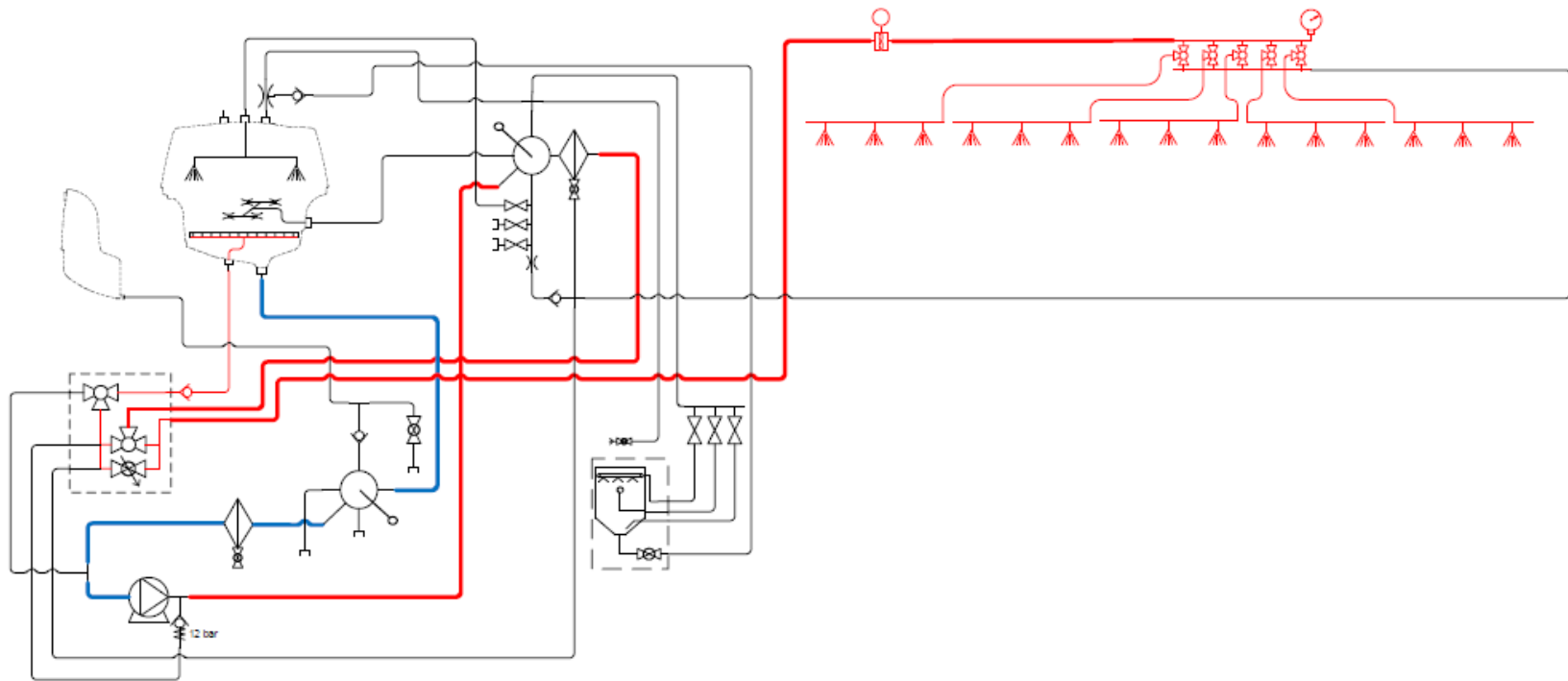
Tractor side



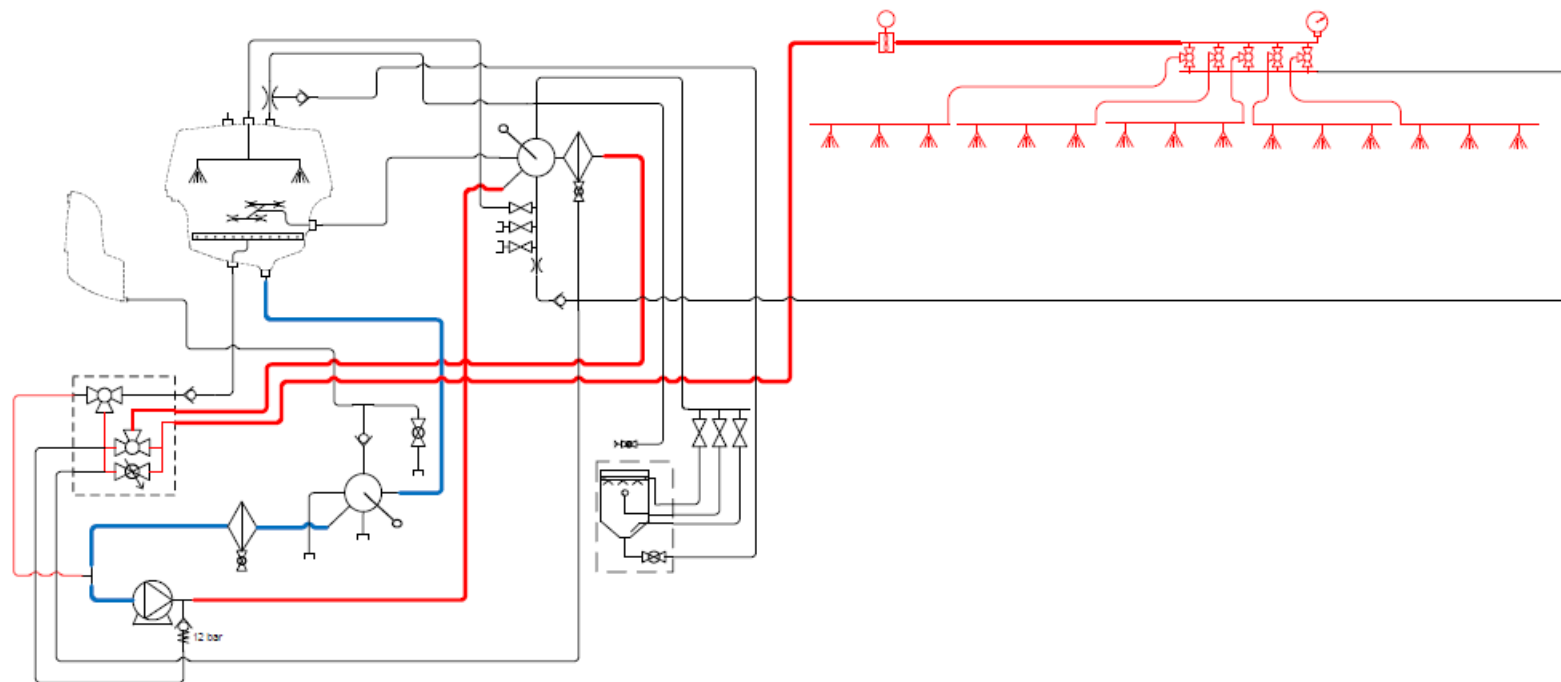
3.1 Flow schedule section valves



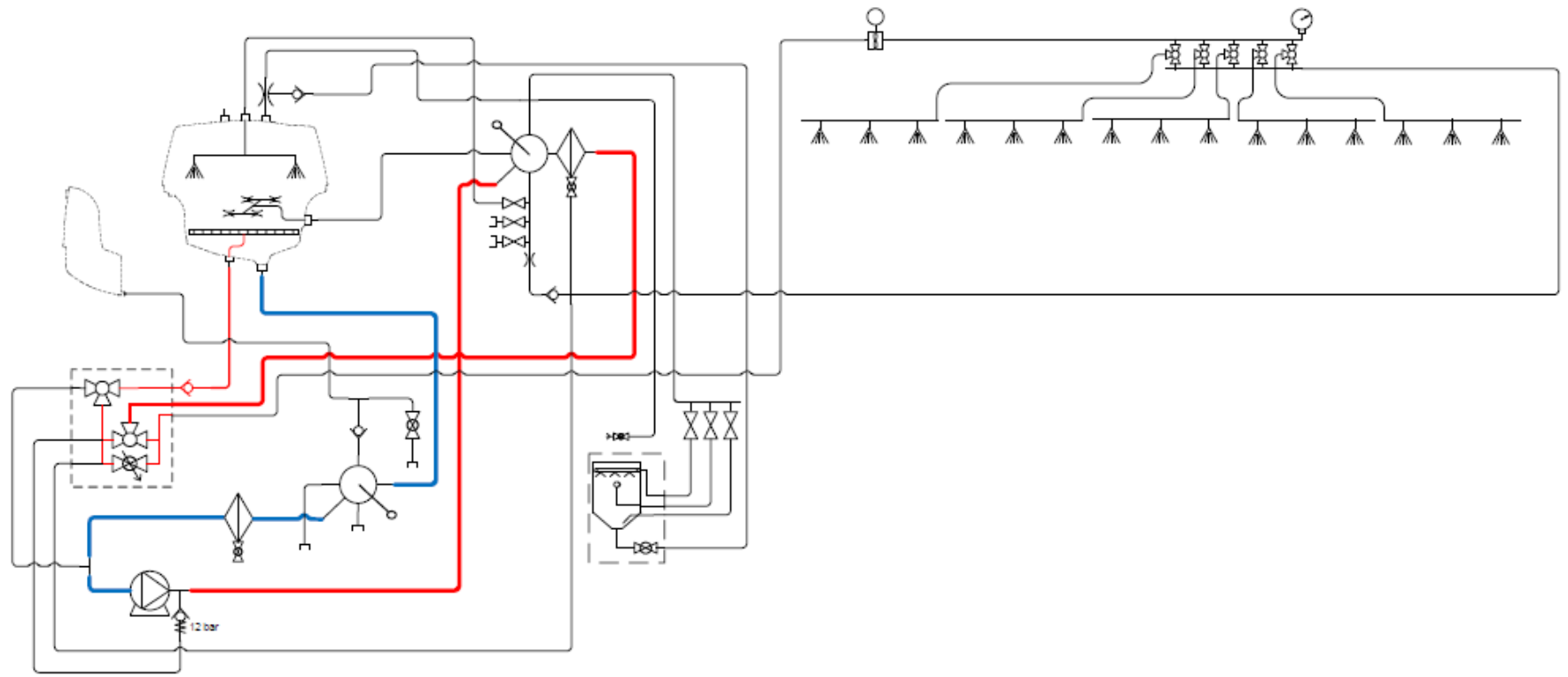
3.1.1 Spraying+return agitation



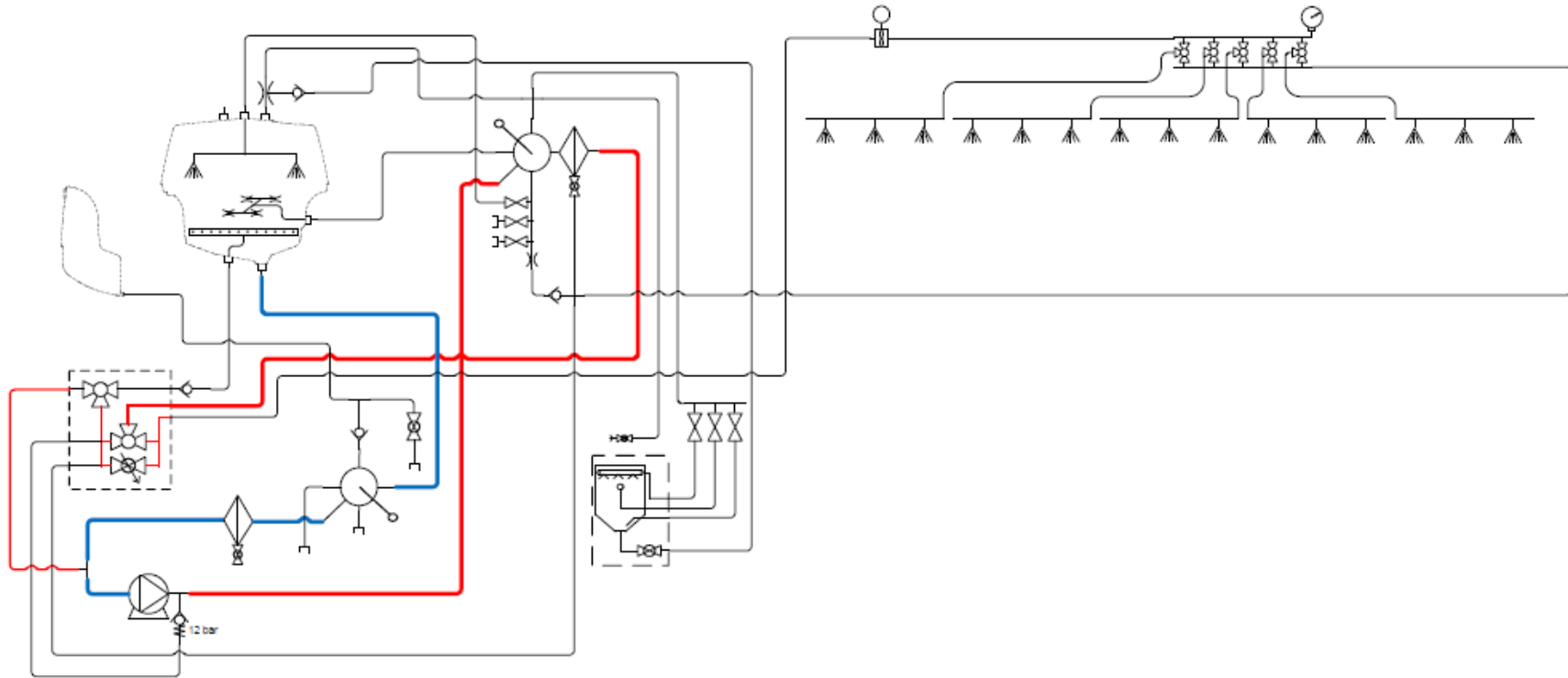
3.1.2 Spraying return agitator off



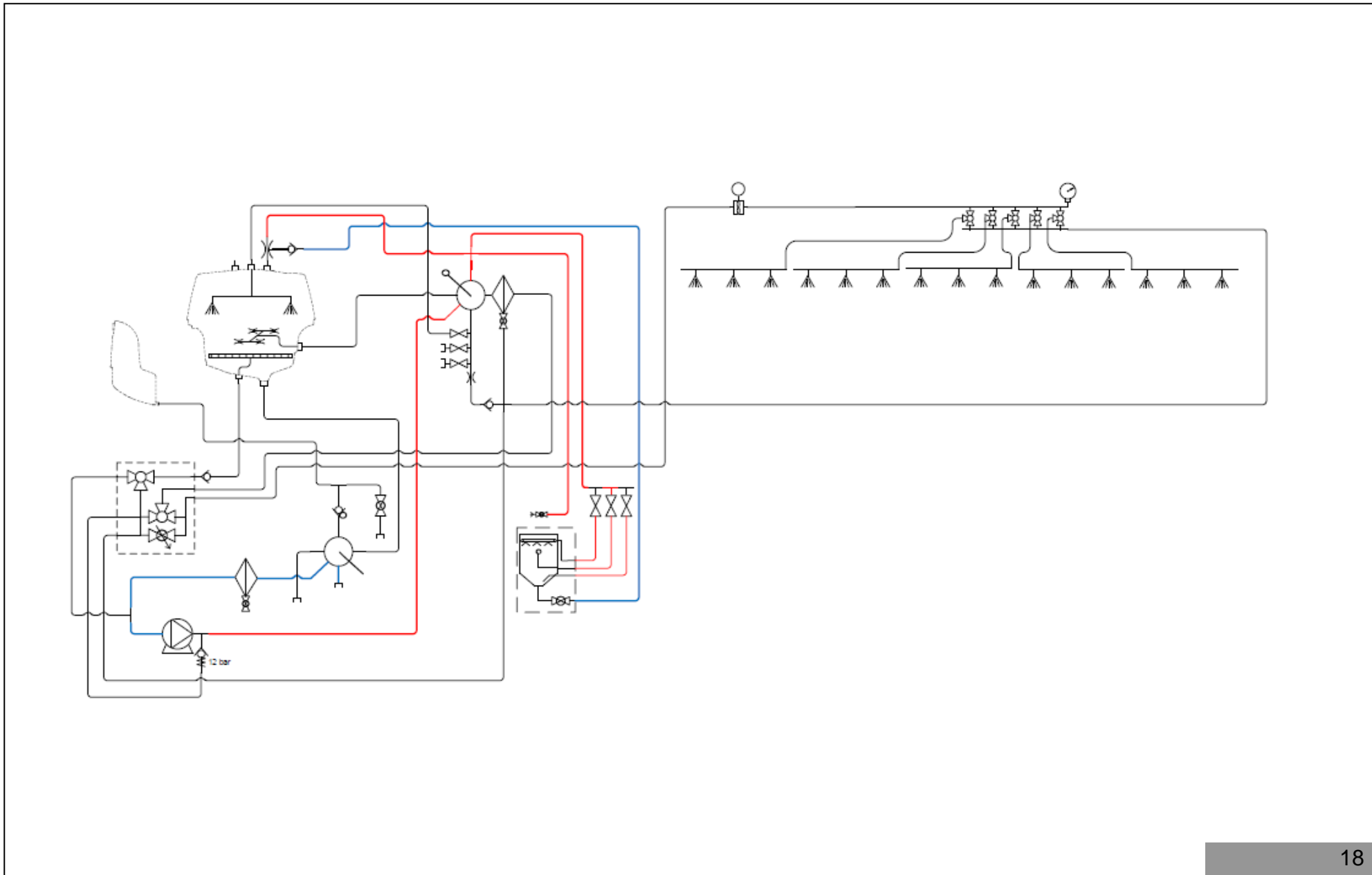
3.1.3 Spraying off+return agitation



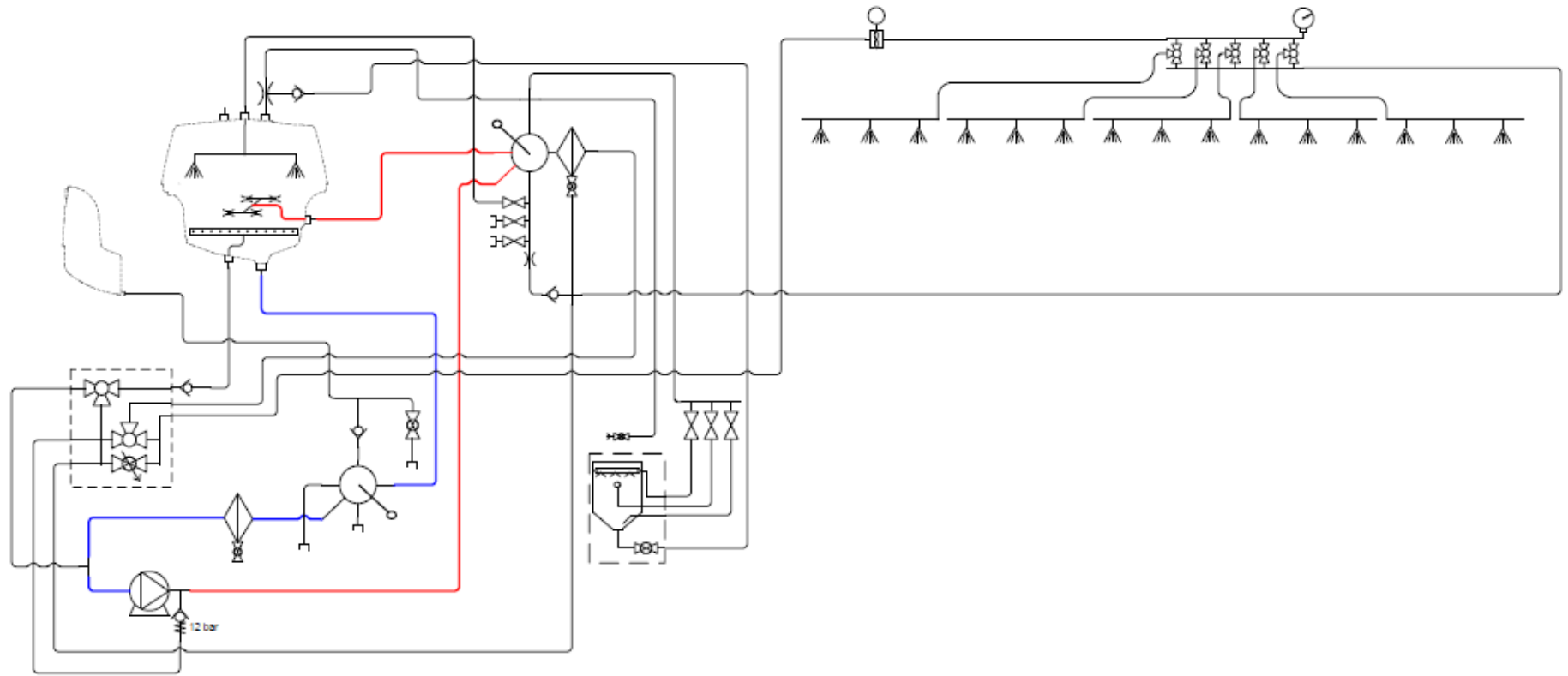
3.1.4 Spraying off return agitation off



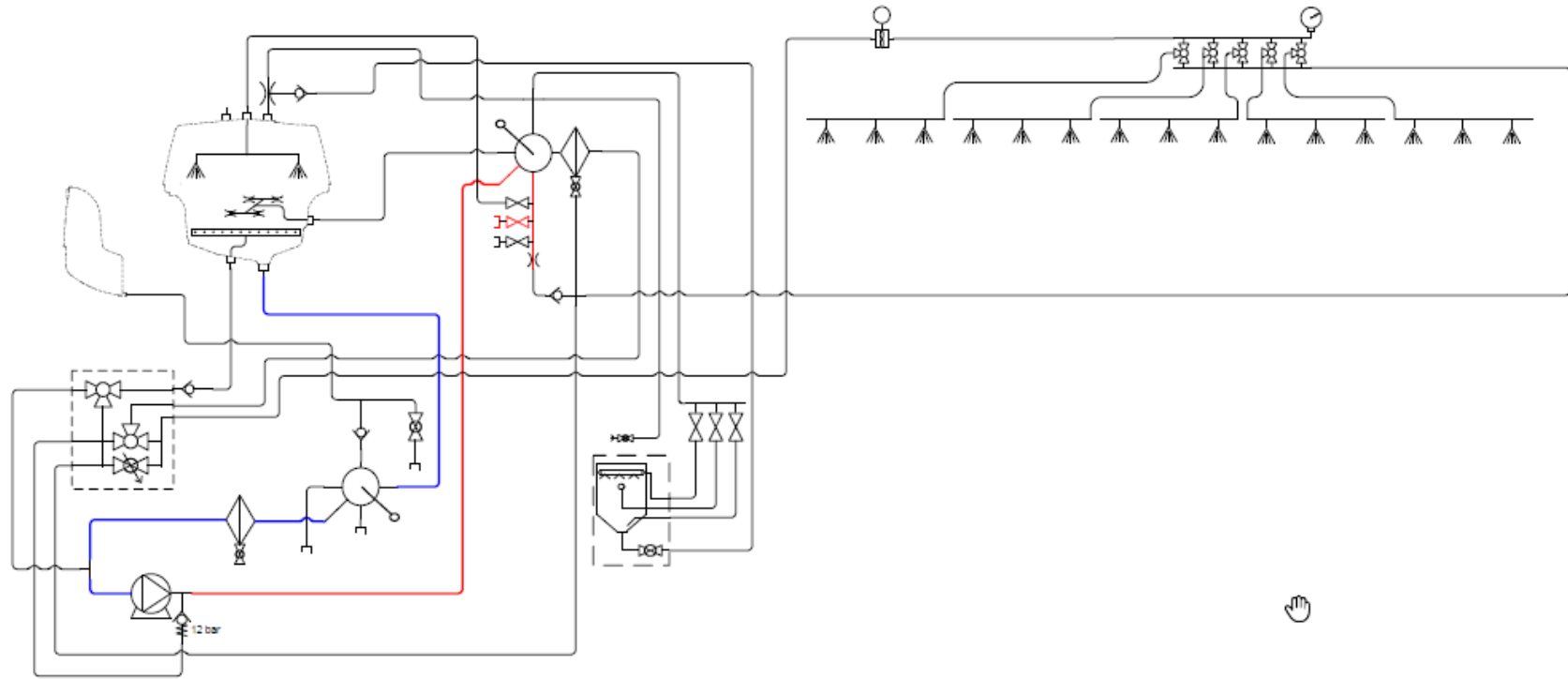
3.1.5 Filling with mixtank



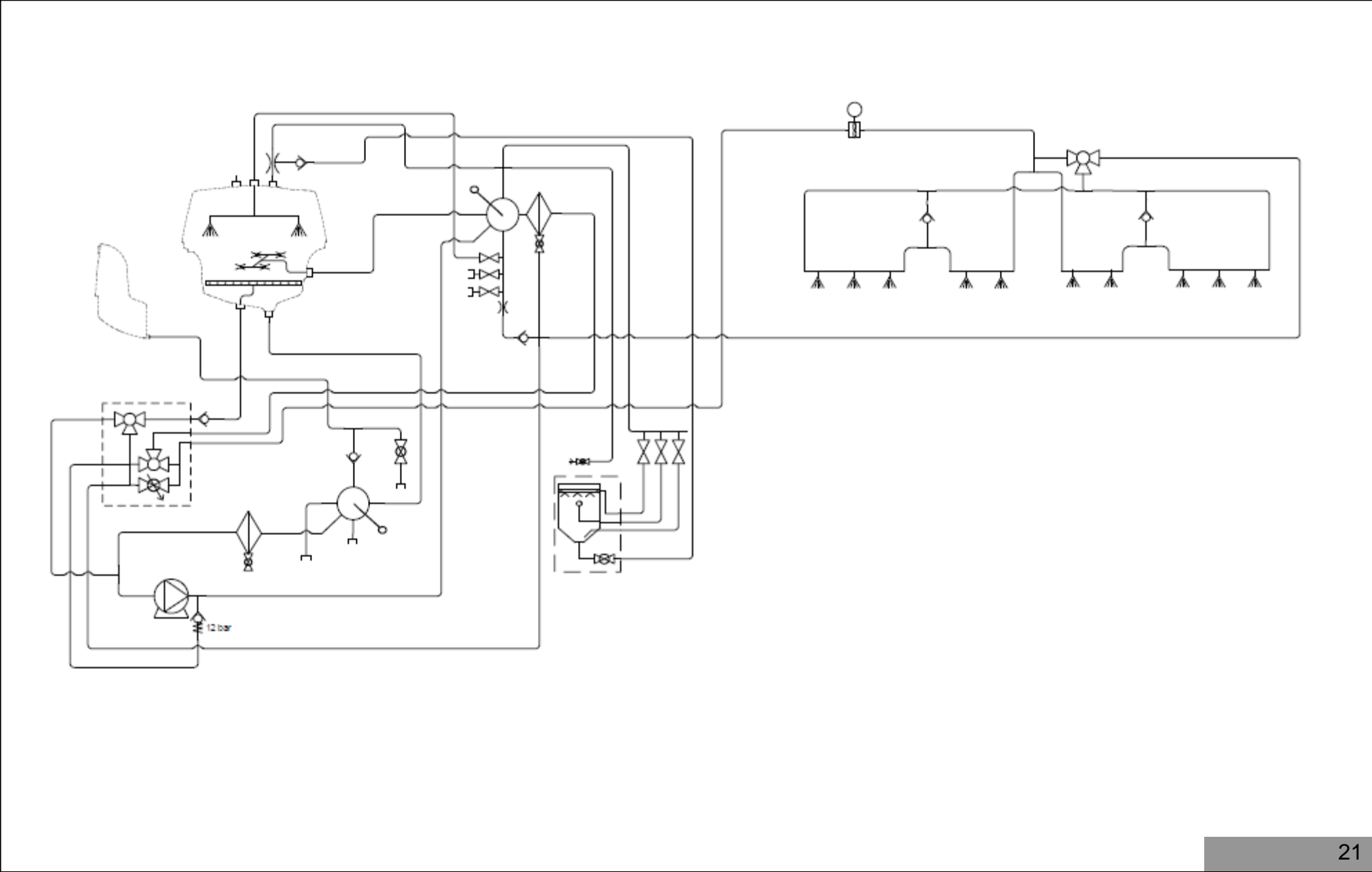
3.1.6 High press agitator



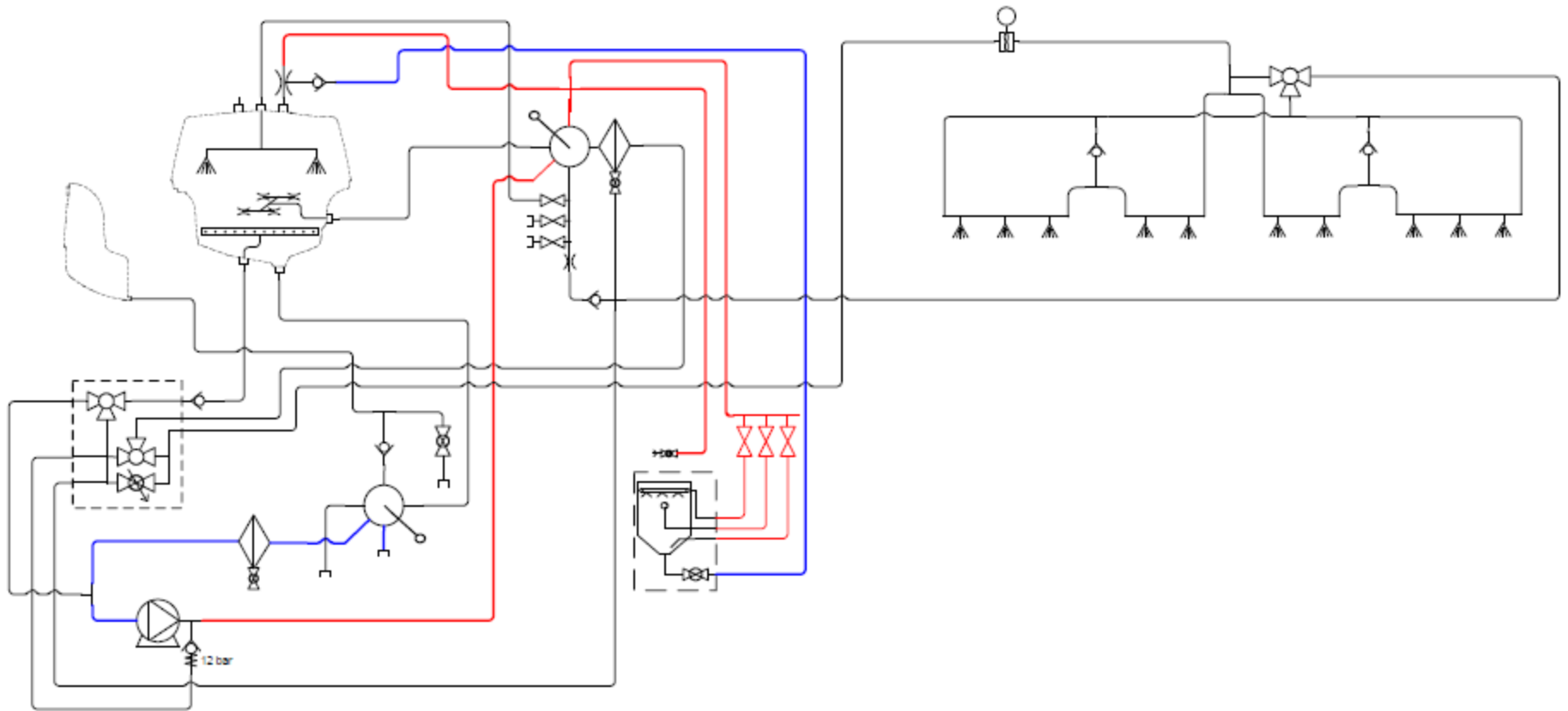
3.1.7 Pump drain



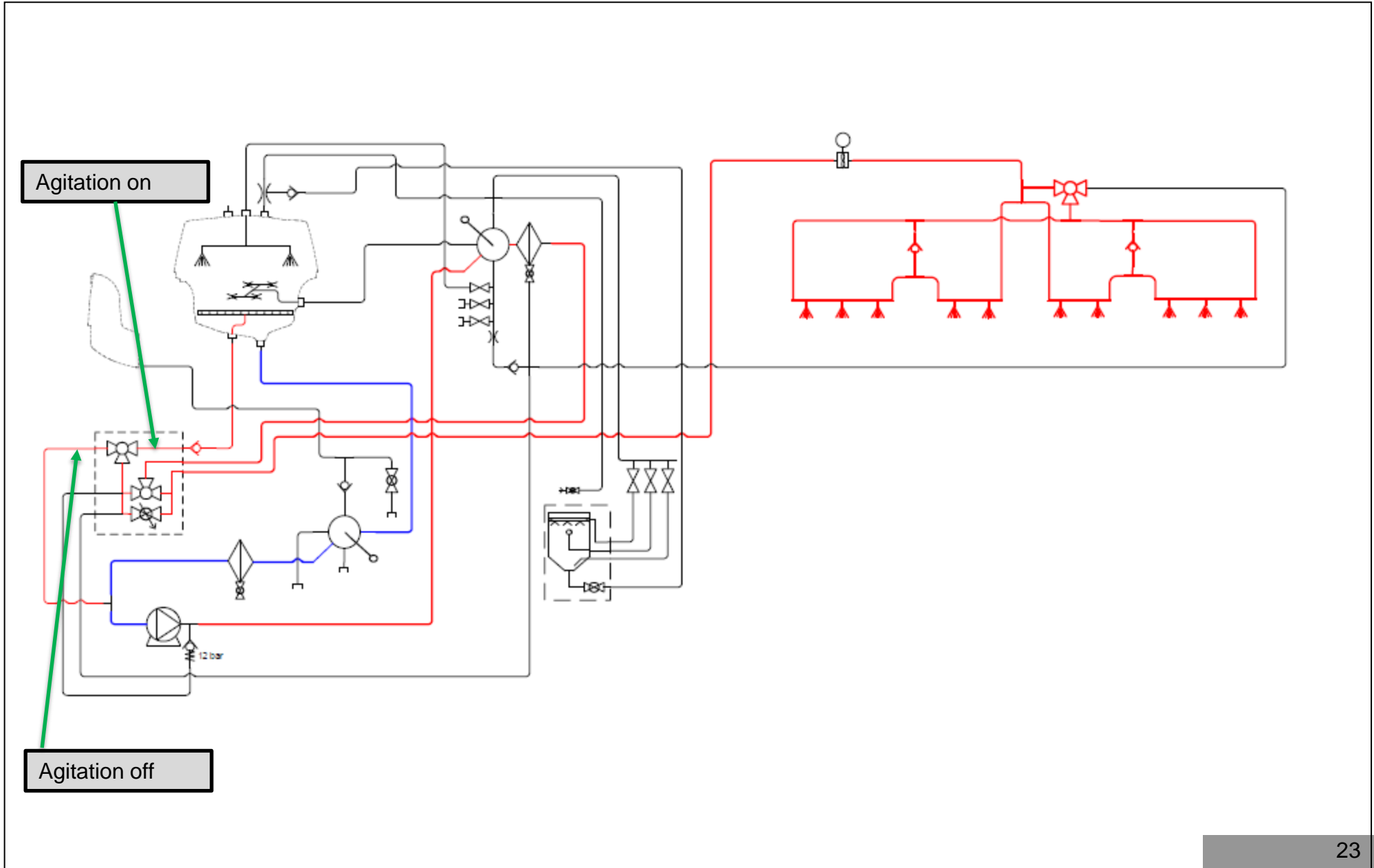
3.2 Flow schedule iXflow



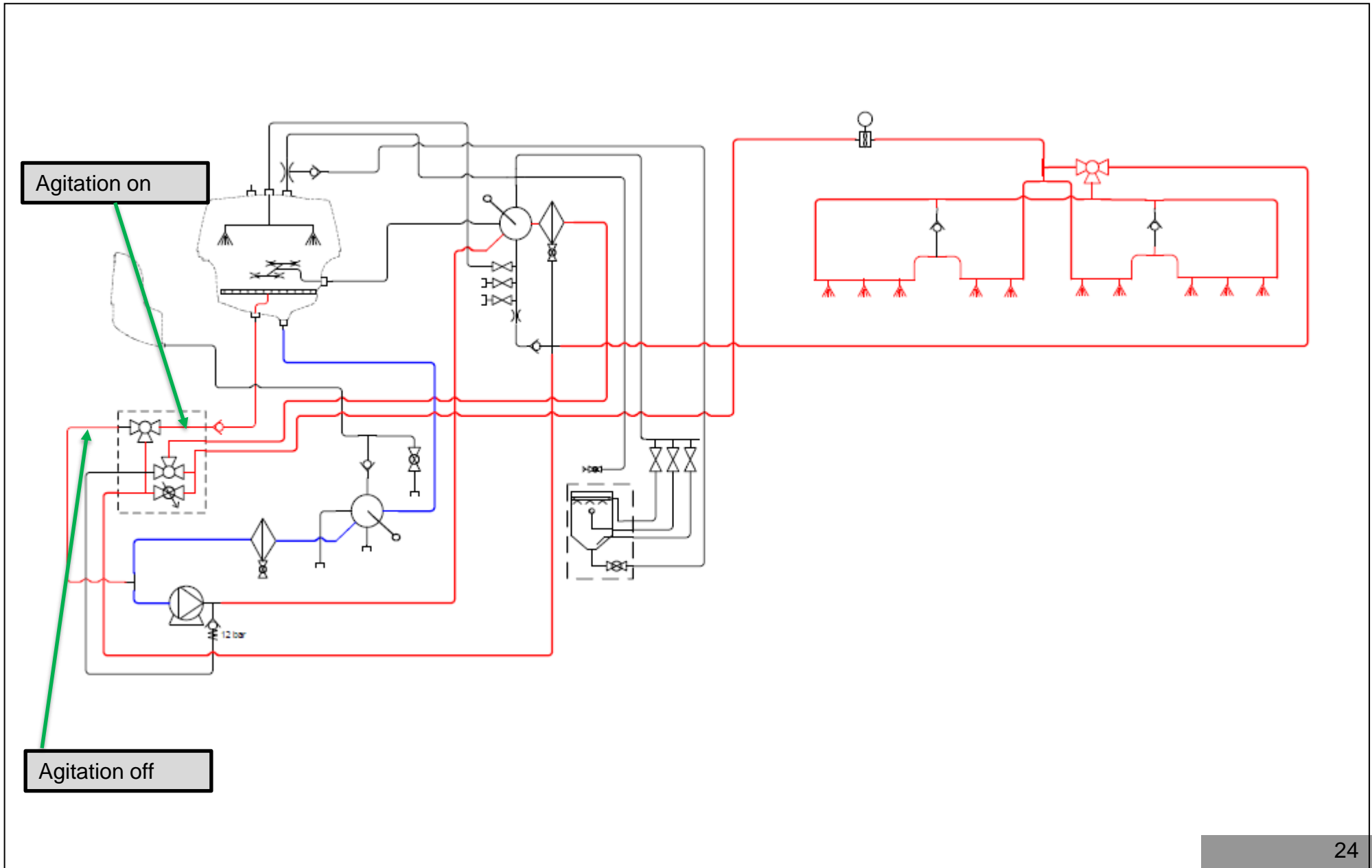
3.2.1 Filling main tank



3.2.2 Spraying on



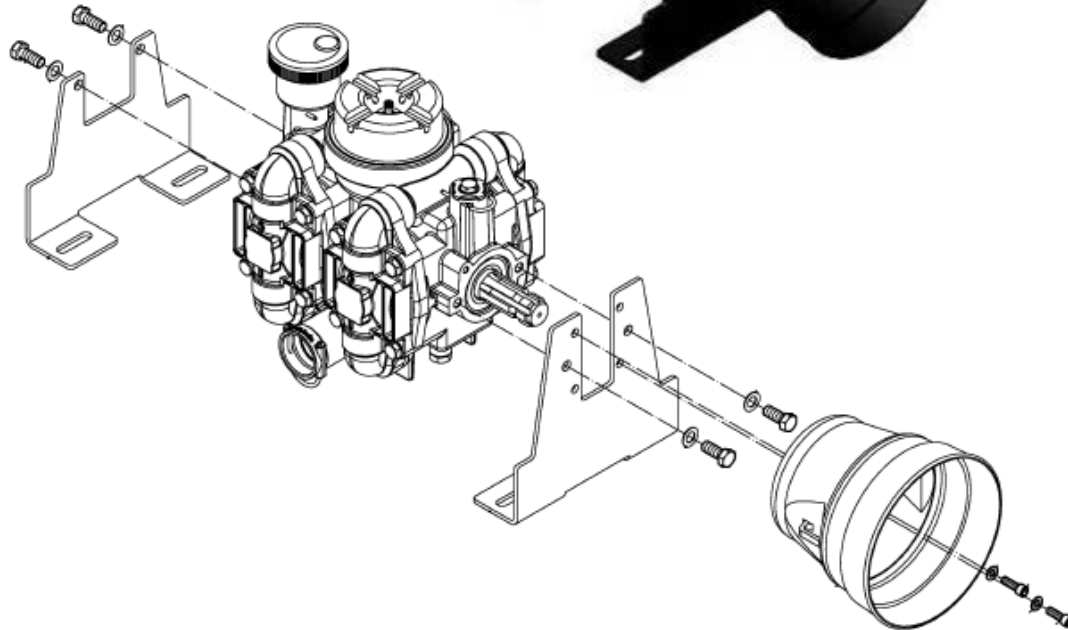
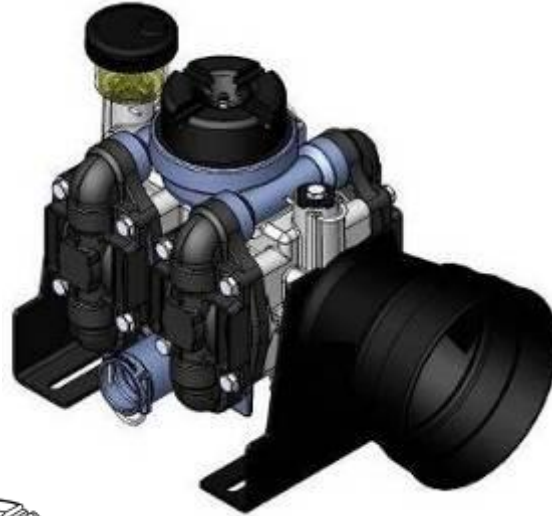
3.2.3 Spraying off/circulation



3.3.1 Pumps

The following pumps are available on our sprayers:

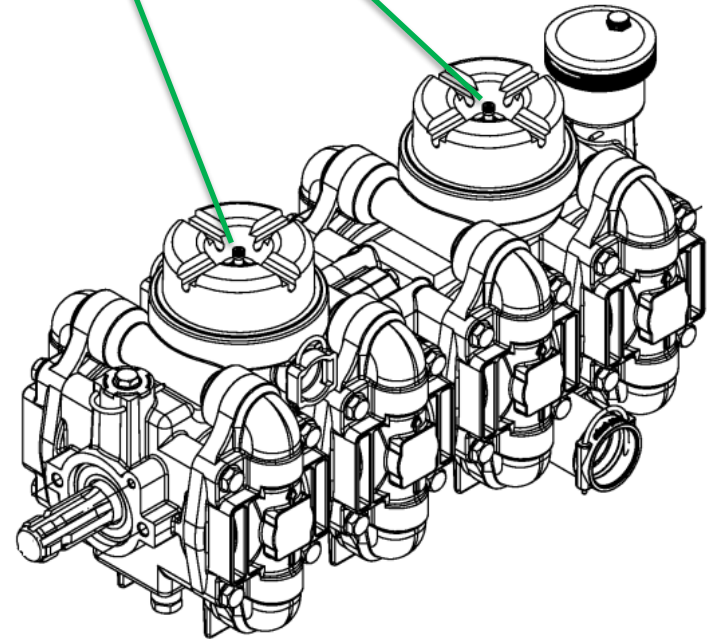
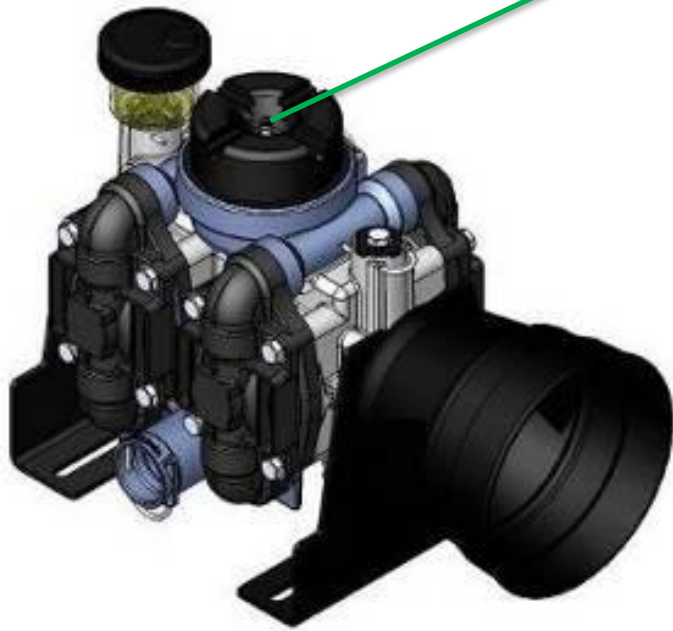
- Atek 150 L
- Atek 200 L
- Atek 260 L



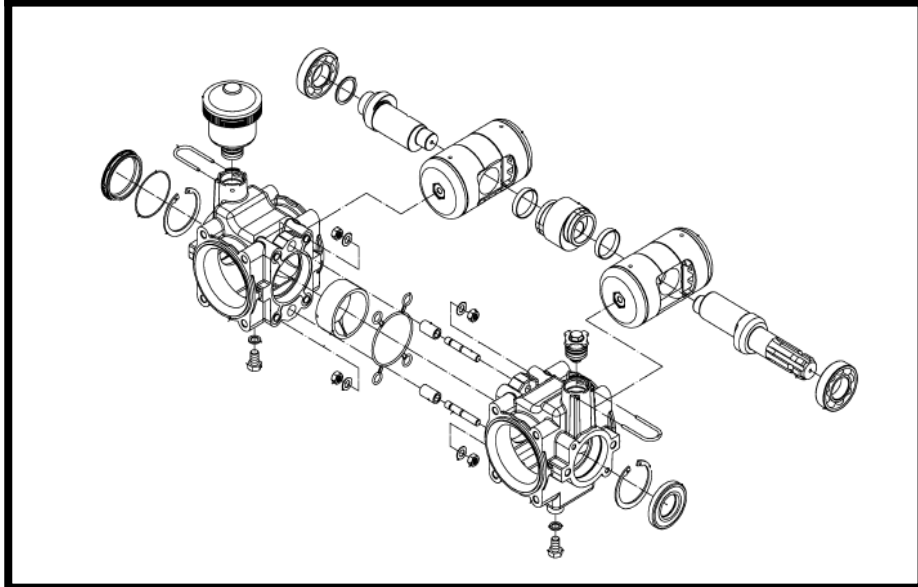
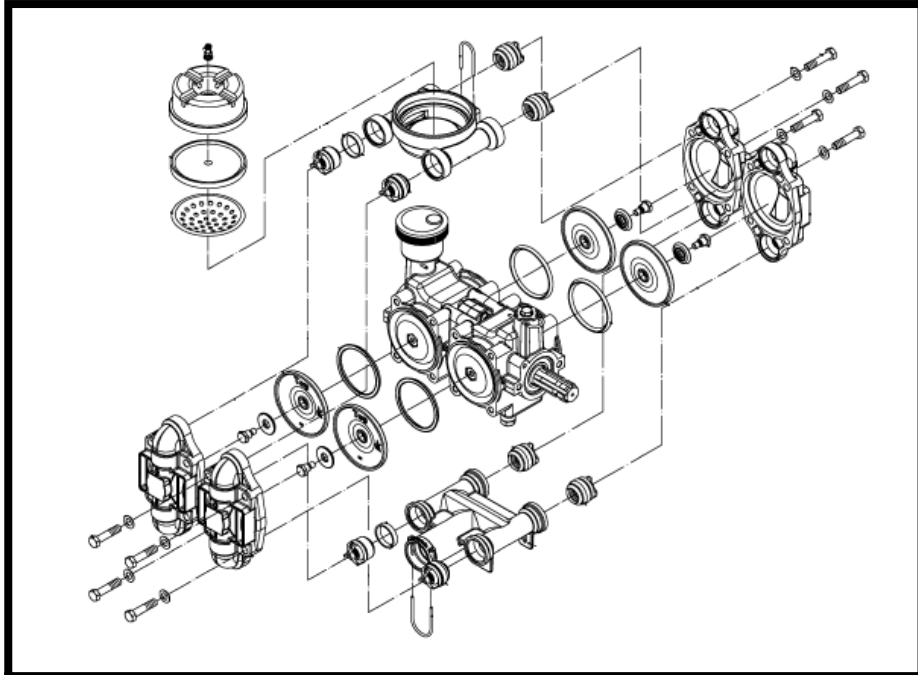
Pumps are equipped with:

- Oil level indicator and reservoir
- The used oil is 15W40
- Available membrane :
 - Perbunan
 - Viton
 - Desmopan (standard)
- Sound reducing valves
- Improved lubrication channels
- Fixed connection between piston and membrane on all models

The air- pressure on top of the pump has to be in-between 75% and 100% of the sprayer pressure. If needed this pressure can be adapted



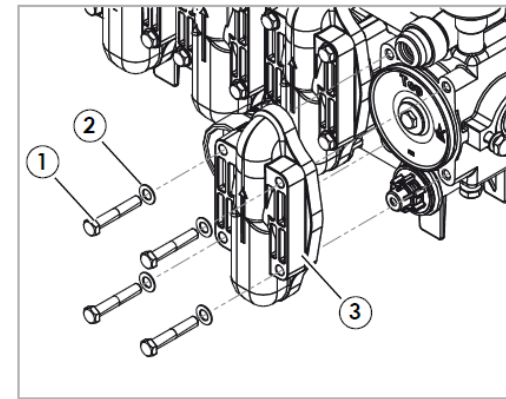
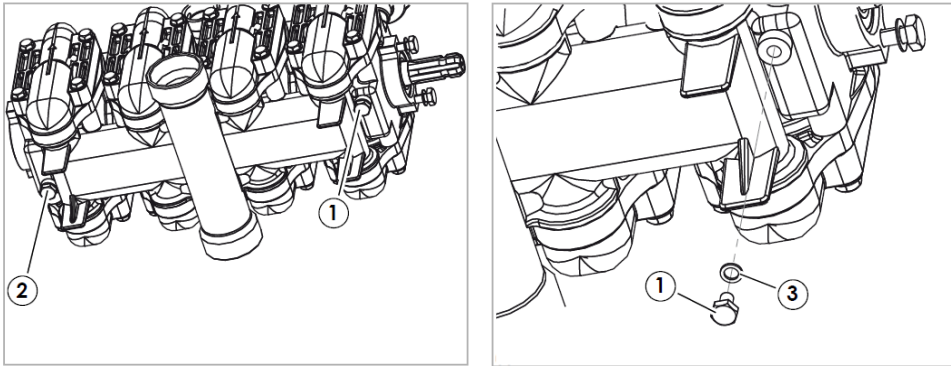
3.3.1 Pumps



	Altek 150L	Altek 200L	Altek 260
Perbunan	VNB4589378	VNB4590878	VNB4458178
Viton	VNB4607078	VNB4607278	VNB4458278
Desmopan (standard from factory)	VNB4607178	VNB4607378	VNB4458378

For more detailed information please check the spare parts manual.

Membrane change

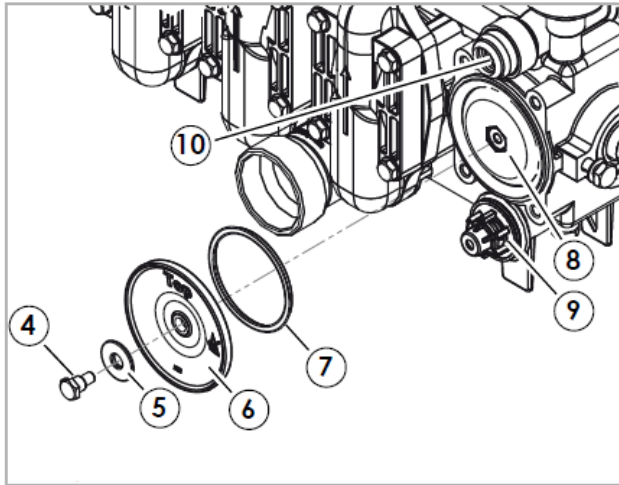


1) Remove the oil from the pump

- Let the pump run for 5 minutes
- Remove oil plug(1) on the bottom side of the pump, 400/500 ltr pups has 2 oil plugs (1+2)
- When all oil is drained mount back the plug with new ring (3).
Dimensions 12 X 8 X 2 mm (RG00002628)

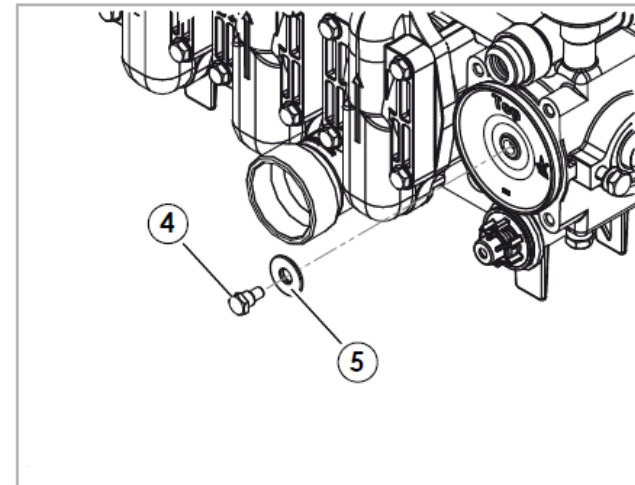
2) Remove valve cover (3)

- Remove the 4 bolts (1) and rings (2)



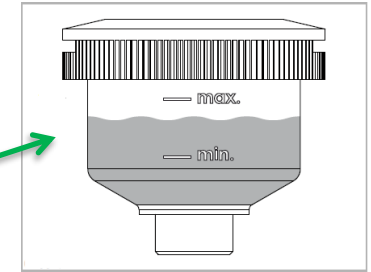
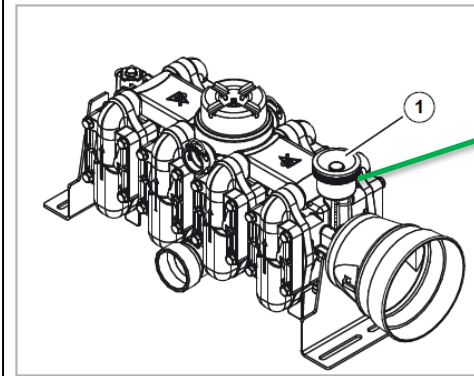
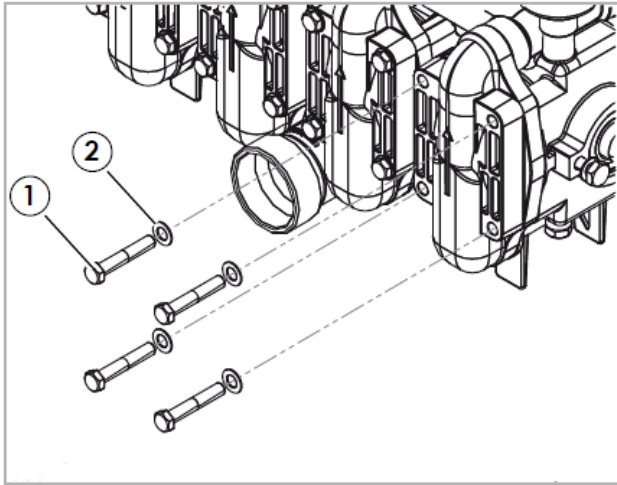
3) Remove the old membrane (6)

- Loose the membrane bolt (4). The membrane bolt is tightened with Loctite
- Remove the membrane bolt (4), ring(5), membrane(6) and seal-ring(7)
- Clean and check seal-ring (7)
- Clean the piston crown (8)
- Remove and clean/check the suck/pressure valve (9/10)



4) Mount the new membrane

- Turn PTO shaft of the pump till the piston is in most "outer" position
- Mount the suck/pressure valve
- Mount the seal ring
- Mount the new membrane. (Check top/bottom side om membrane)
- Secure the new membrane with bolt(4) and ring(5).
- The bolt (5) has be mounted with Loctite.
- The bolt (5) has to be tightened with 35 Nm.



5) Mount the valve cover

- Turn PTO shaft of the pump till the piston is in most “inner” position
- Mount back the valve cover (check the top/bottom side of the valve cover)
- Tighten the valve cover with the 4 bolts(1) and rings(2)
- The bolts (1) has to be tightened with 70 Nm.

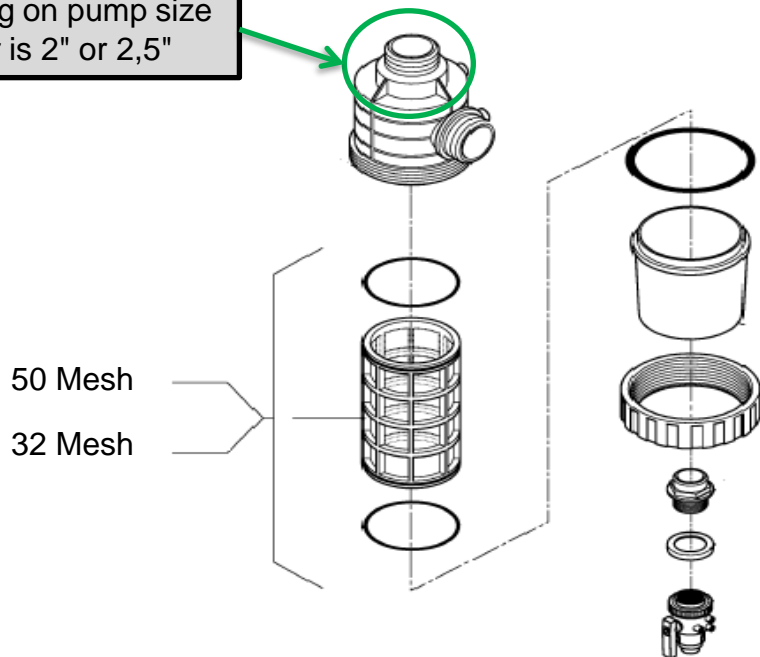
6) Fill up the pump oil

- Fill up the oil reservoir on top (1) of the pump till the oil level is in-between the *min* and *max* level.
- Let the pump run for 1 minute on 540 rpm
- Check the oil level, if needed fill up again and let it run for 1 minute.

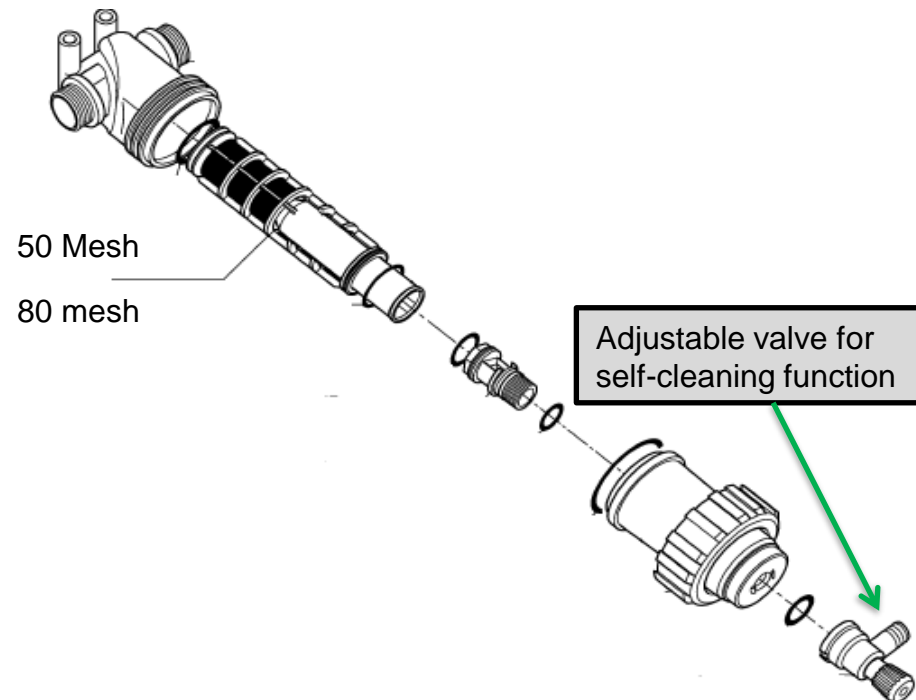
3.3.2 Filters (Suction/press)

The sprayers are standard equipped with a big transparent suction Filter. You can use two types of suction filters.

Depending on pump size connector is 2" or 2,5"



To prevent blockage of the nozzles all the iXter and Ikarus sprayers are standard equipped with a press filter. You can choose the filters in two sizes. The return hose on the bottom of this filter is for self-cleaning. By opening or closing this bottom valve you regulate the self cleaning function.



3.3.3 Changes colour filters

Suction filter 50 Mesh

Old (light blue)

New (Blue)



Pressure filter mounted standard (80 mesh)

Old (Grey)

New (Yellow)



Suction filter optional (32 mesh)

Old (White)

New (Red)



Pressure filter optional (50 mesh)

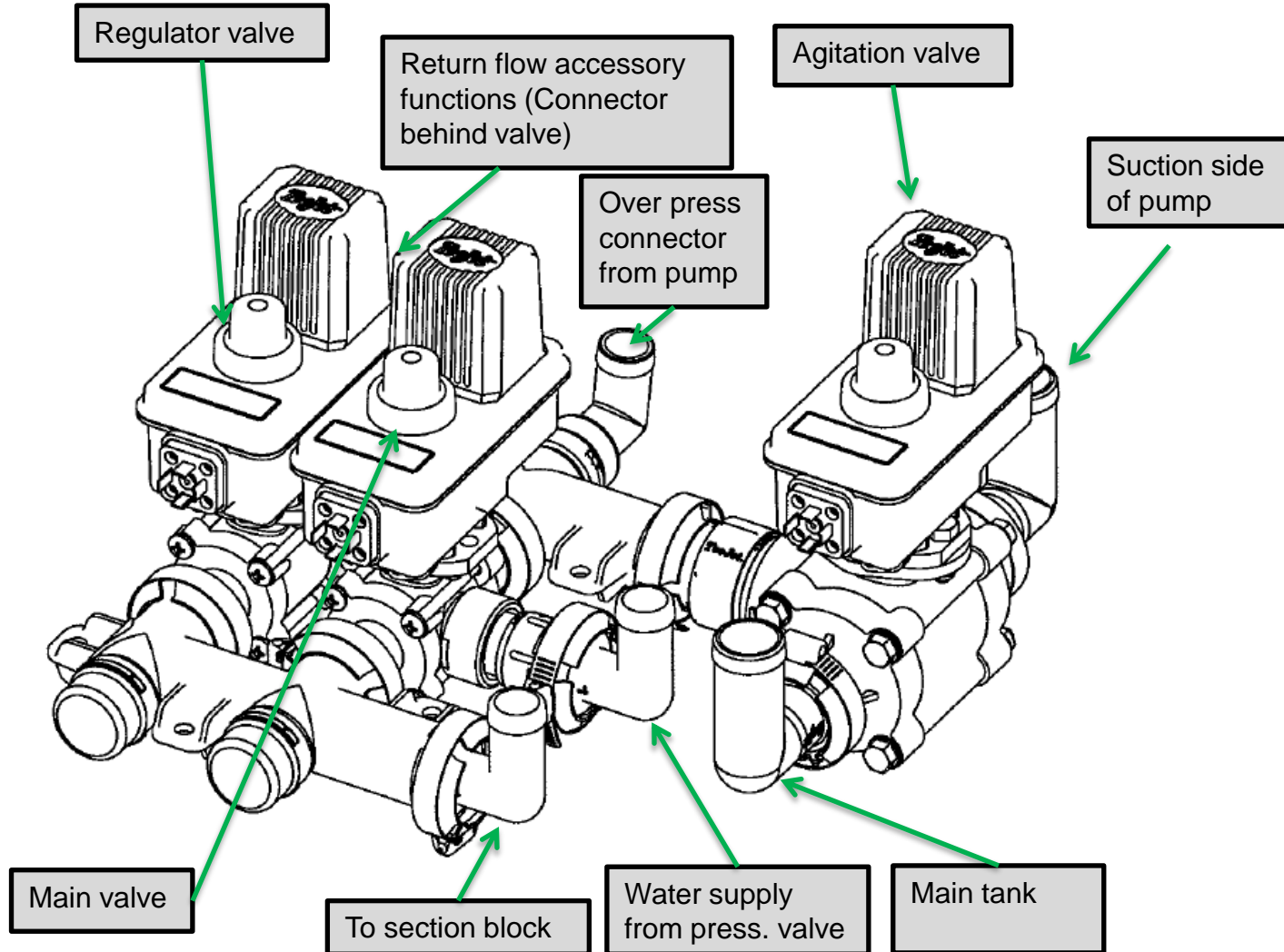
Old (light blue)

New (dark blue)



Regulator

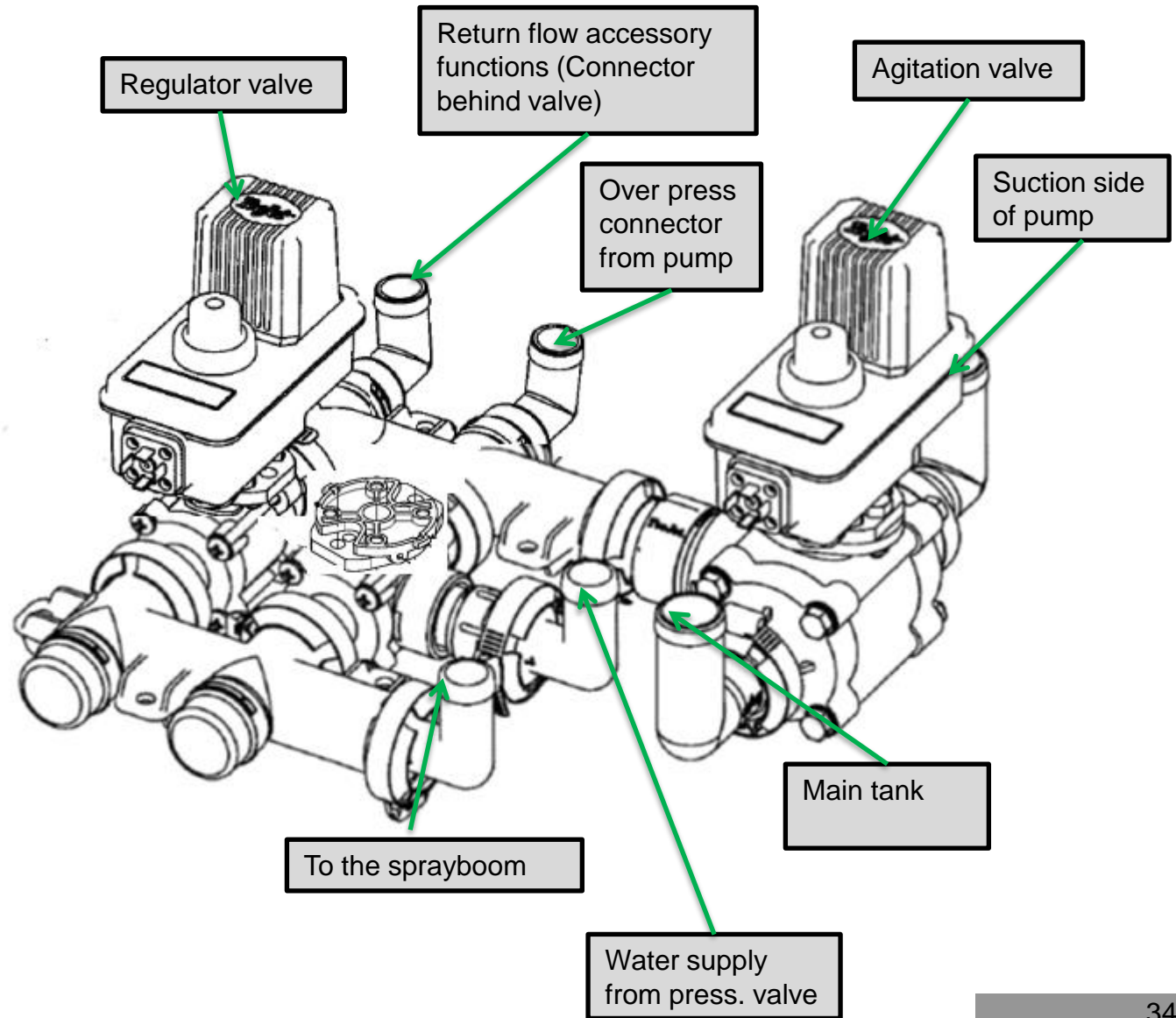
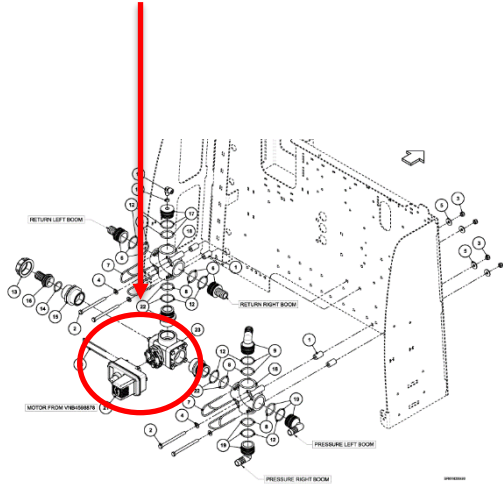
Section valves



4. Water components

iXflow(E)

The main valve from machines with iXflow (E) are mounted at the back cover

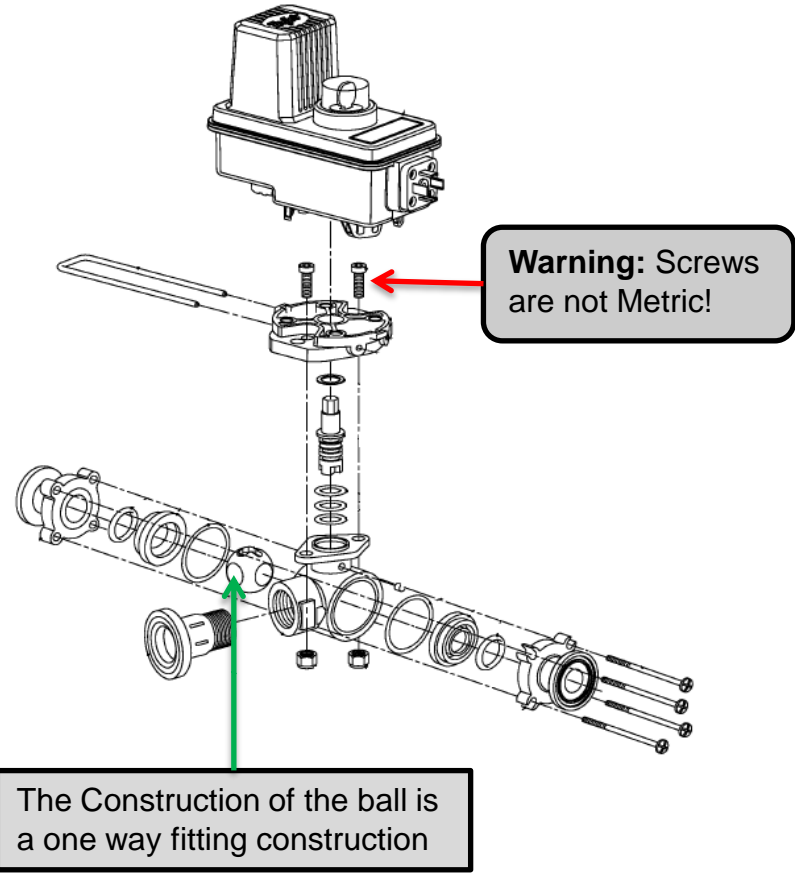
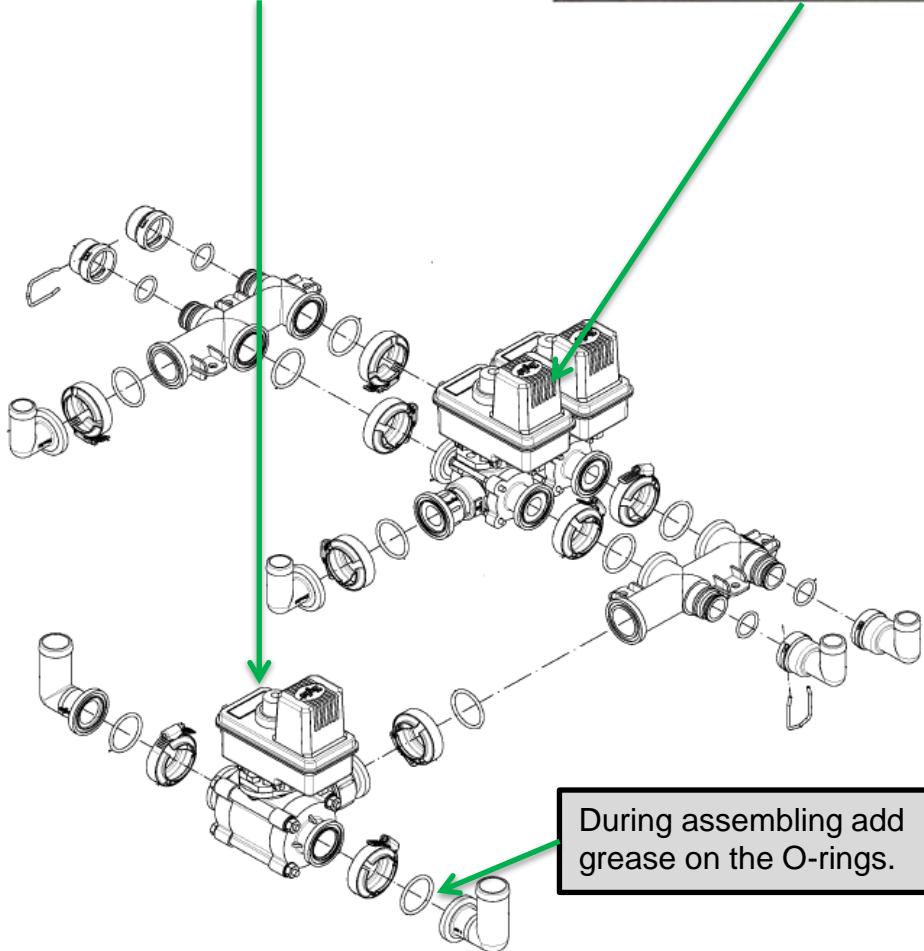


4. Water components

The main-valve and the agitation-valve are both different valves see also the sticker on the valves

Bypass (EC-N.O.) www.teejet.com
Constant +12vdc - Terminal 1 or Red Wire
Switched +12vdc - Terminal 2 or White Wire
Ground - Flat Terminal or Black Wire
To reset internal fuse, unplug motor from power for 20 secs

Shutoff (EC) www.teejet.com
Constant +12vdc - Terminal 1 or Red Wire
Switched +12vdc - Terminal 2 or White Wire
Ground - Flat Terminal or Black Wire
To reset internal fuse, unplug motor from power for 20 secs



Section valves

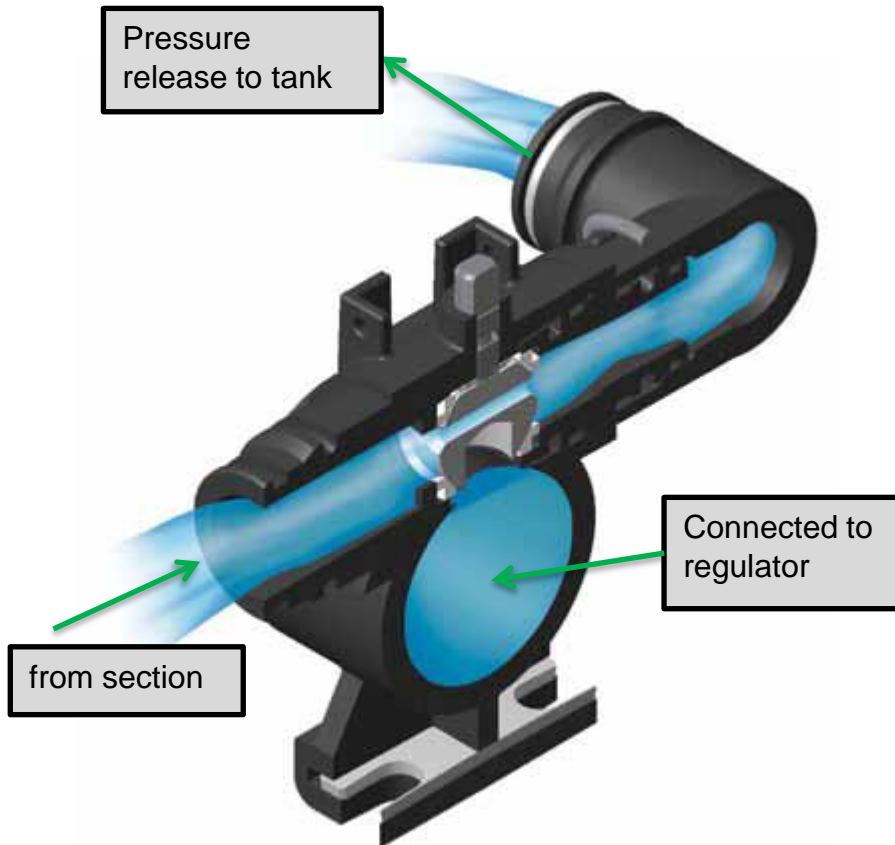


4. Water components

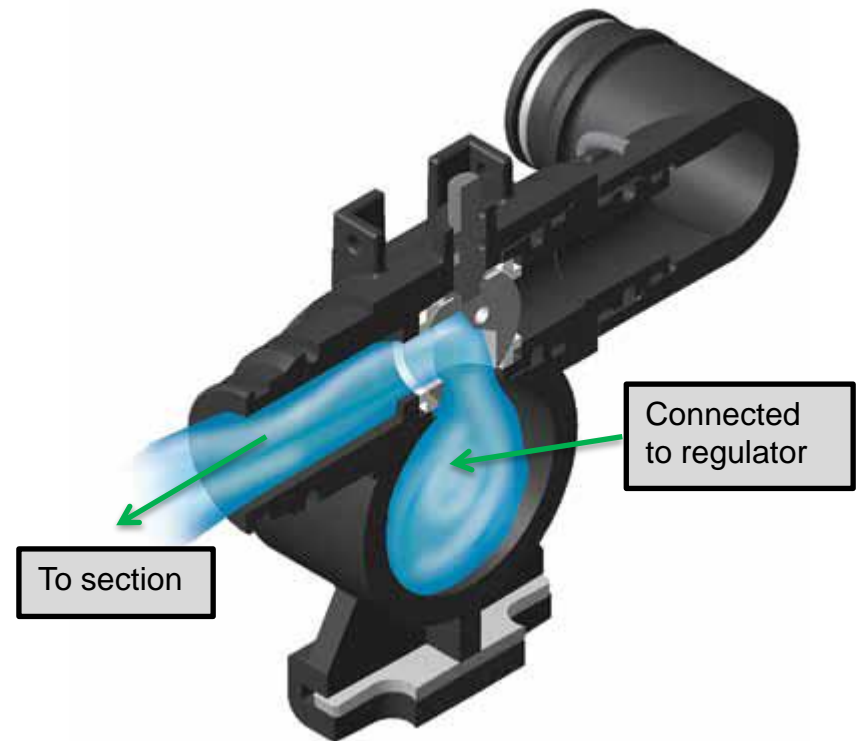
Sections performed with two-way-valves

- The pressure site is coming from the regulator
- When you switch of the sections the pressure will release to main tank

Section closed



Section open



Repair

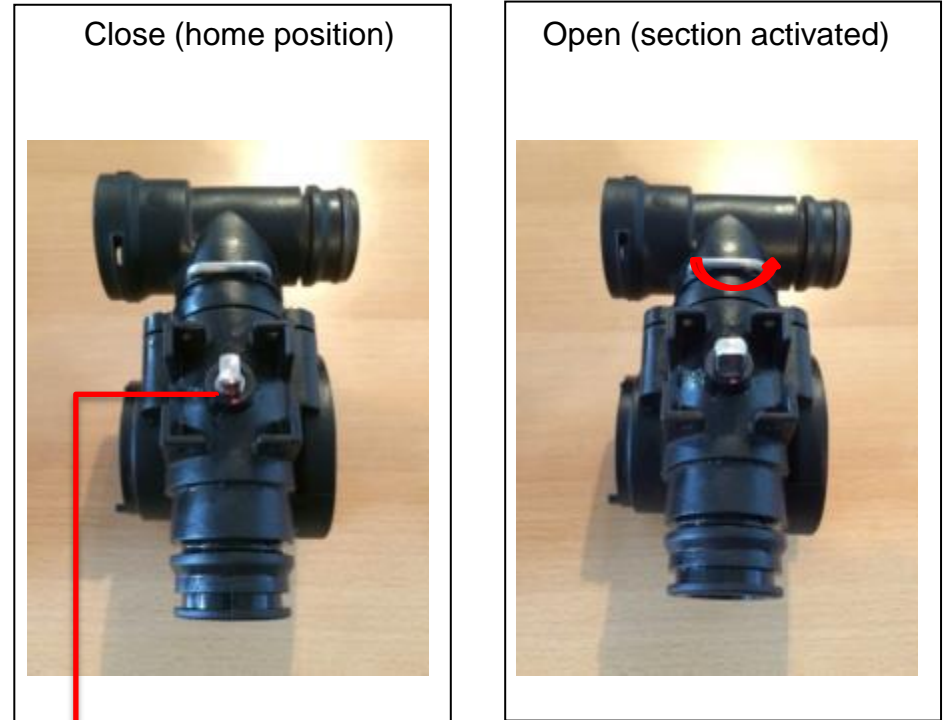
Step 1 Remove electromotor

If the valve is not working well you can check the valves one by one. Remove the red circled clip from the valve how is not functioned well and remove the electromotor.



Step 2 Check valve

Check if the ball valve is moving smoothly by using an pliers (be careful do not damaged the valve). (if not, go to Step 4)



Be aware of the red marks! Install the valve always on the right direction.

Step 3 Check electromotor

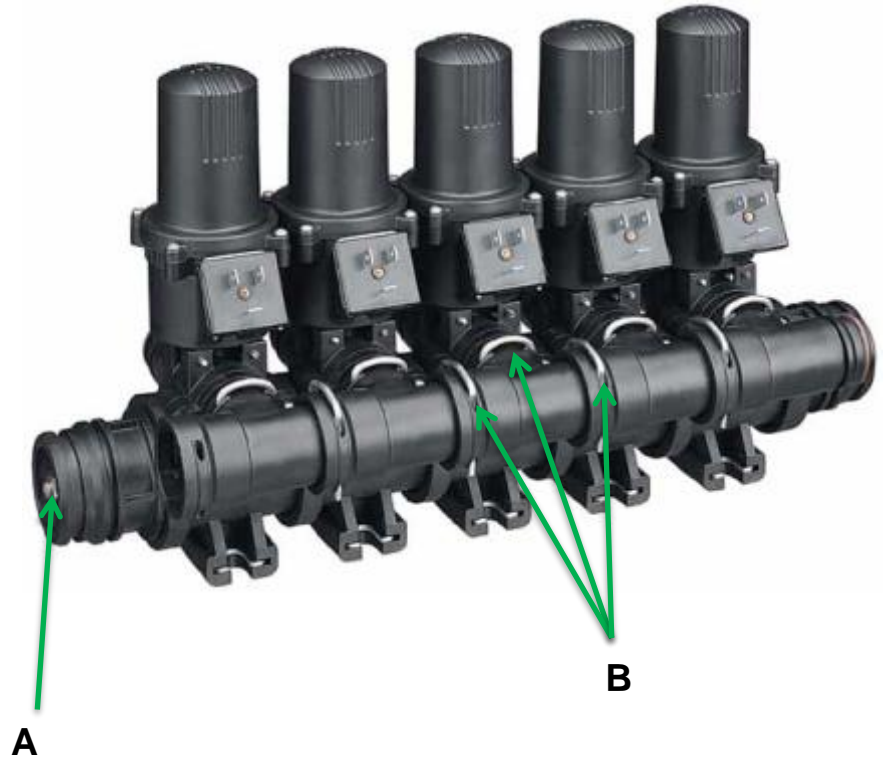
Check if the electromotor is moving when you switch the section. If not, check wiring, output of PCB or replace electromotor.

Note: There is no fuse inside



Step 4 Check ball-valve

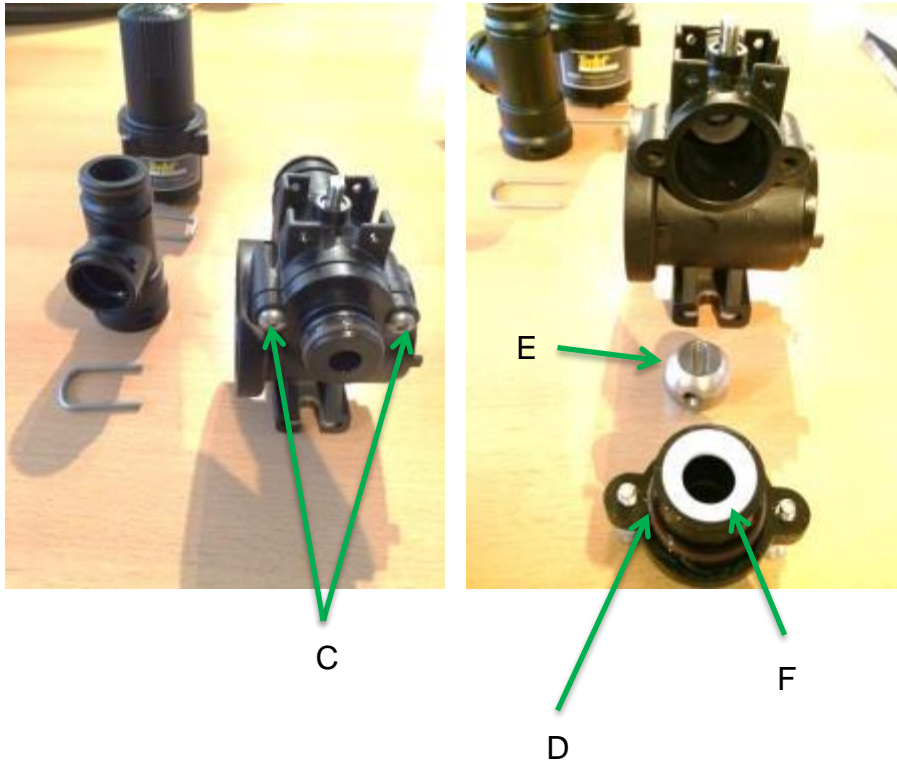
If the ball valve is not turning smoothly you can check the valve on dirt or damage. Removing the nut and tread rod (A). Remove the clips (B) from the valve how is not working well, and remove the valve.



4. Water components

Step 5 Check ball-valve

Remove the screws (C), nozzle (D) and ball (E). Check the parts on dirt or damage and specially the ball and the white seats (F). Replace what is necessary.



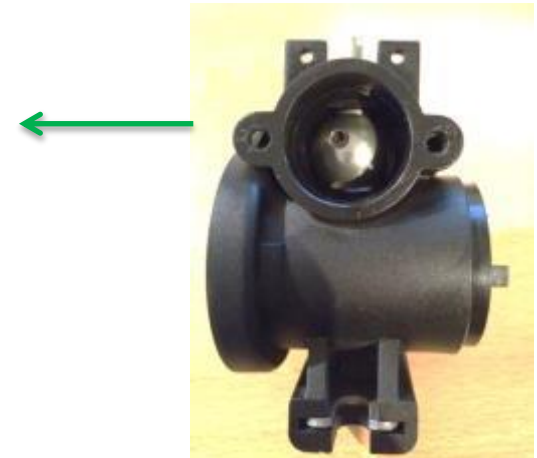
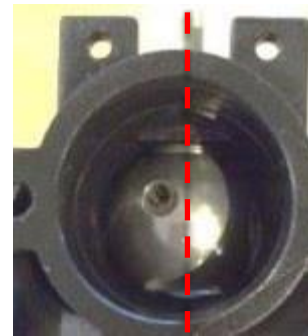
Step 6 Re-install ball-valve again

Install the parts with grease on the right position see next steps:

Set the red marks on the right position



Install the ball (include grease) with the small hole on the **left** position (see picture)



Install the nozzle again.



4. Water components

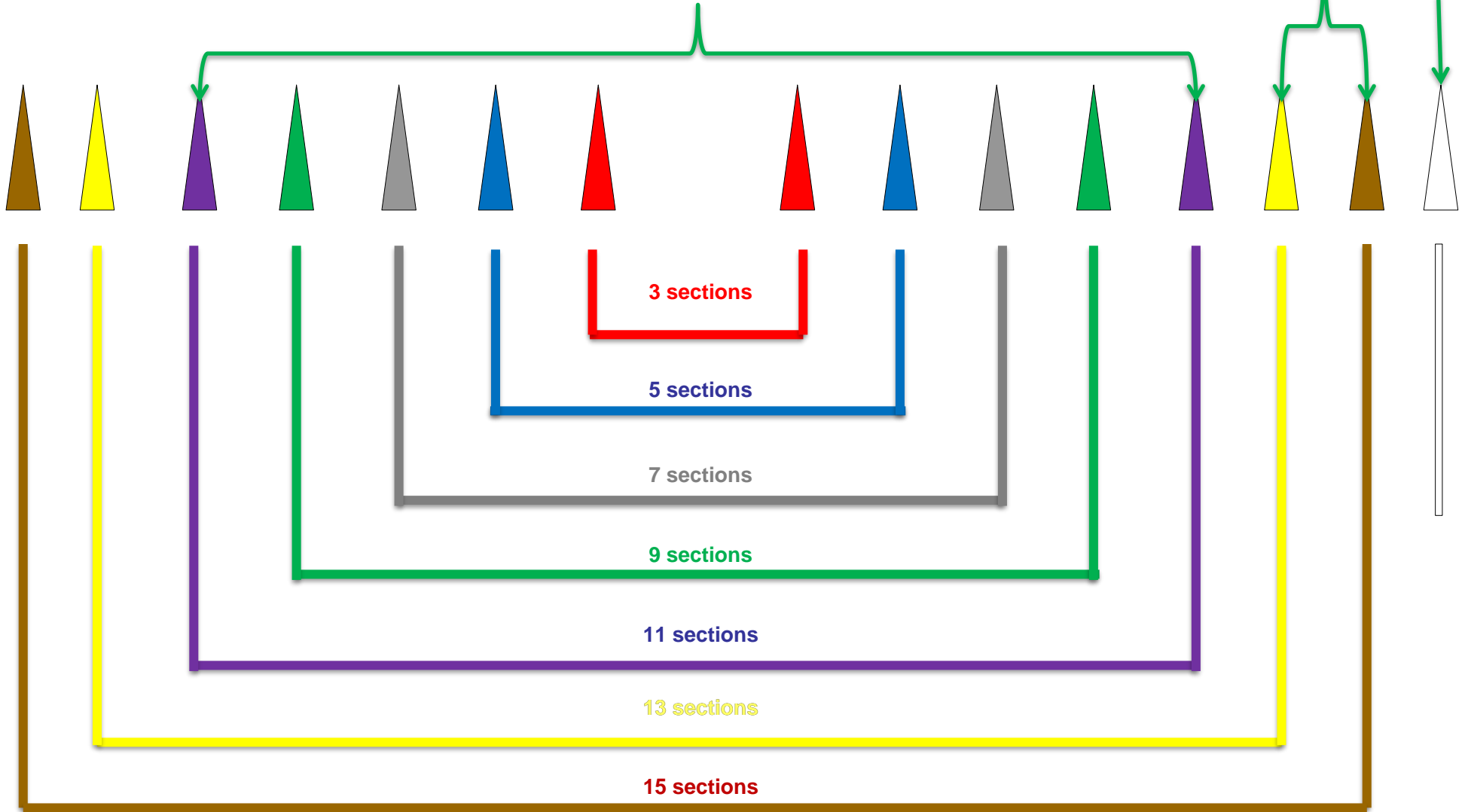
Section hoses colouring

Section hoses are always marked with colored strips:

Normal section valves maximum of 11 sections possible

iXflow air four sections extra

Border nozzle



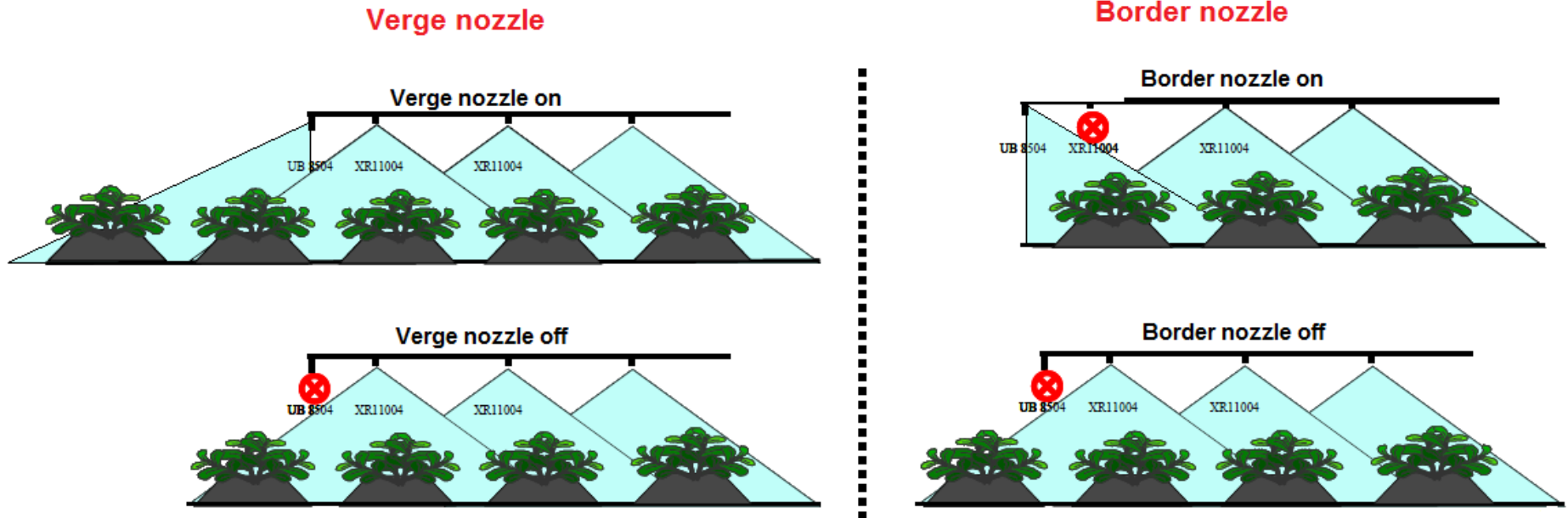
Section valves with border/verge nozzle

Border nozzle

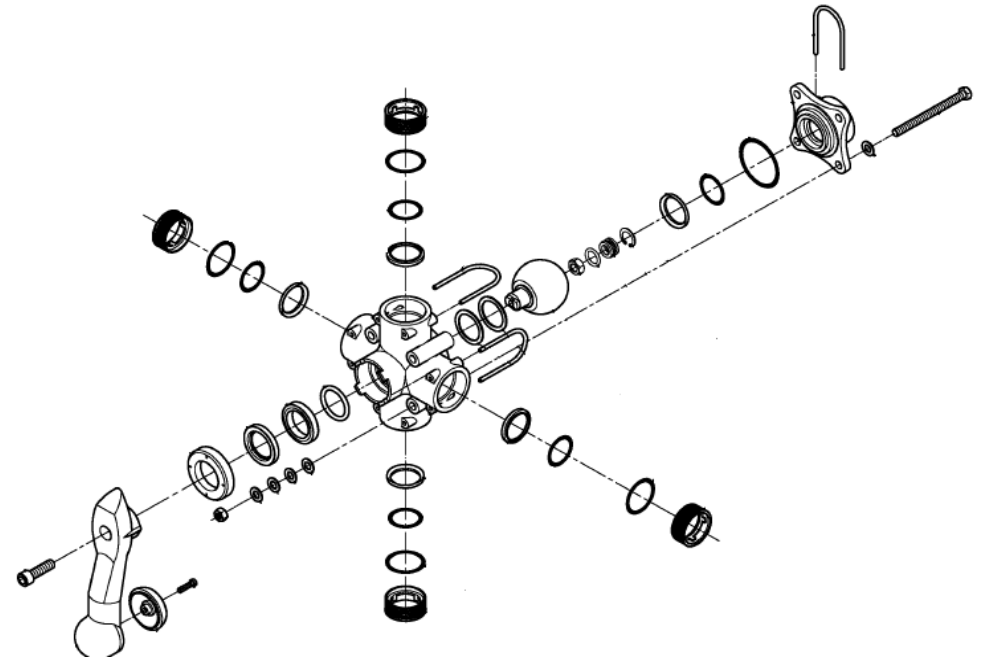
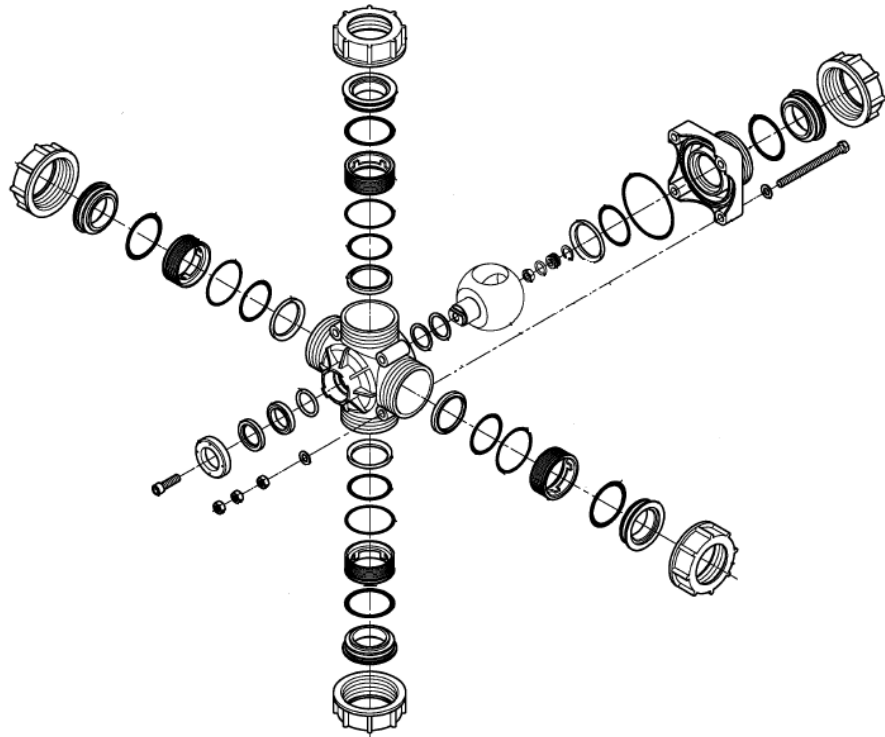
Sprayers with normal sections valves and border nozzles, have two electrical steered nozzles (per side) on the last section. That means the last two nozzles (border nozzle and the last nozzle from the last sections) are electrical controlled by an Hyprovalve (see picture below).

Verge nozzle

If the sprayers equipped with an verge nozzle, the last section is normal and only the verge nozzle is electrical steered.



For more details please check our Electronics iXspray book



When an press/suction valve have internal leakage they can be adjusted.

By this adjustment the sealing will be adjusted more close to the ball.

When the valves needs to be adjusted make sure the adjustment will be done on all 5 sides. If the adjustment will be done only on 1 side the ball is not in the middle any more and the leakage will increase.



Adjusting suction valve

Depending on the diameter of the connection the adaptor has to be removed with a screwdriver before adjusting. After removing the adaptor the valve can be adjusted. For adjustment take a flat part of iron of 58mm wide. (see red line)

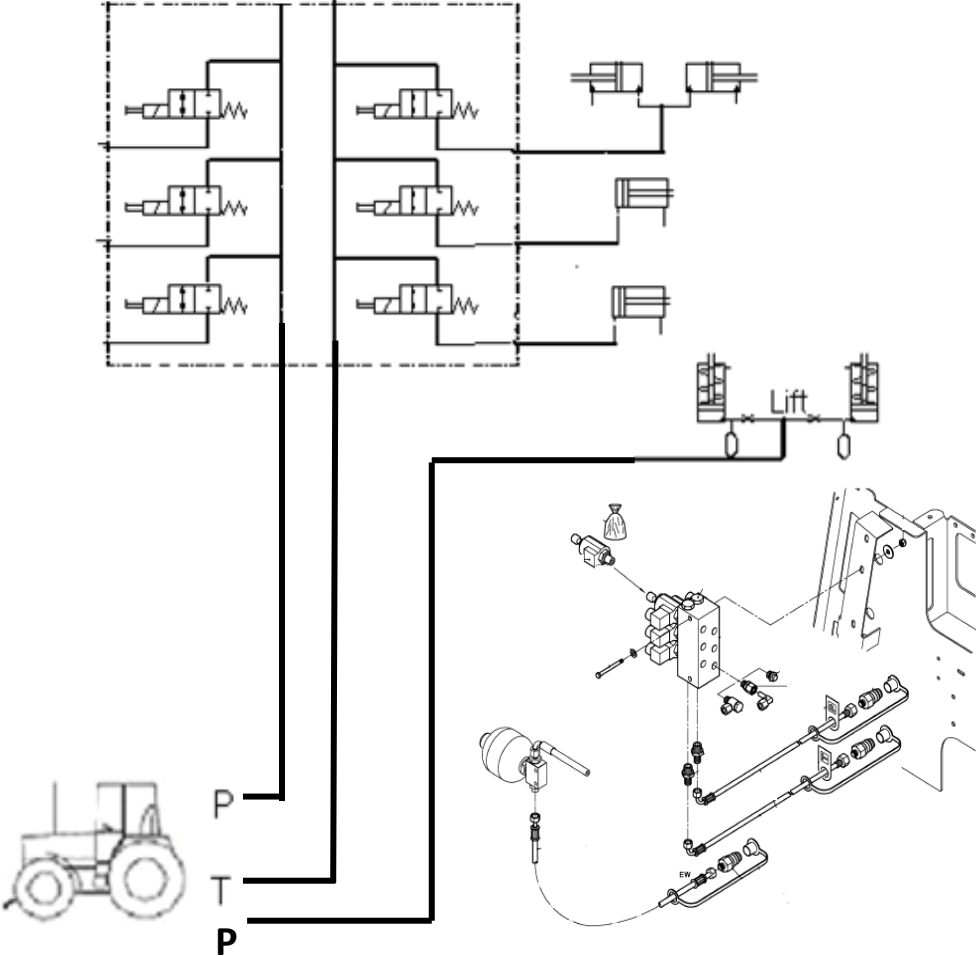


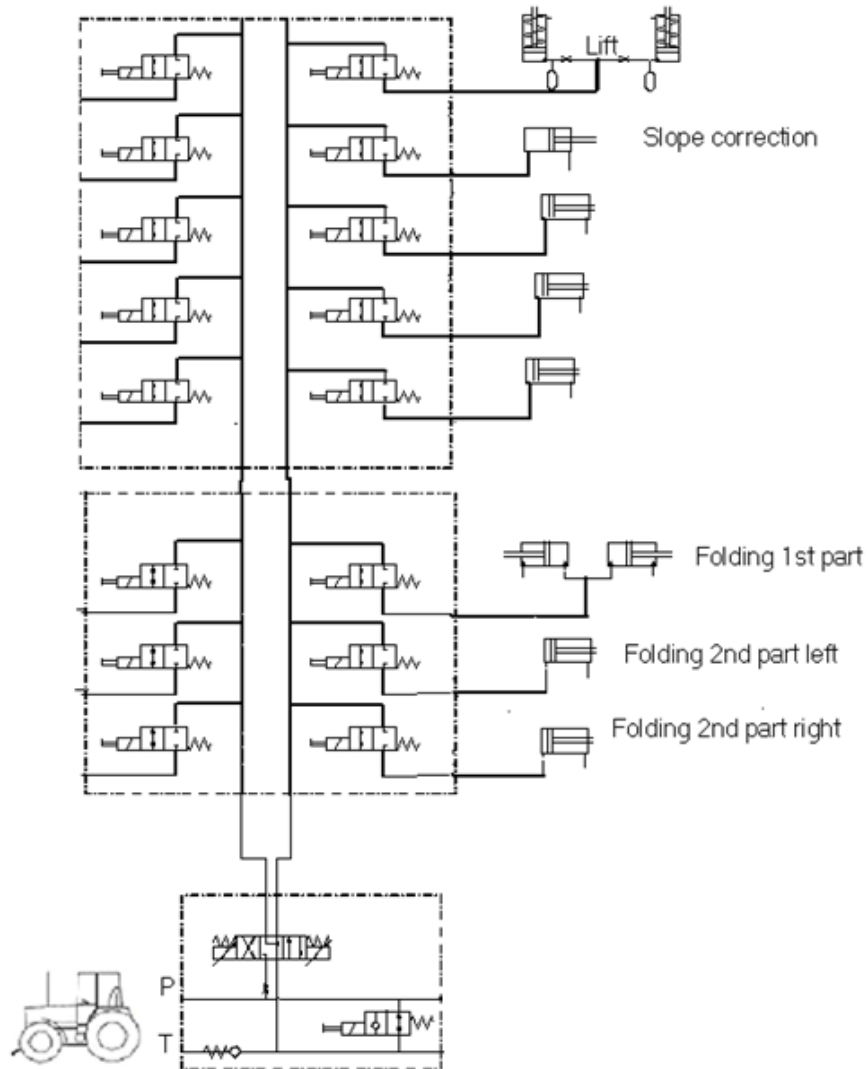
Adjusting pressure valve

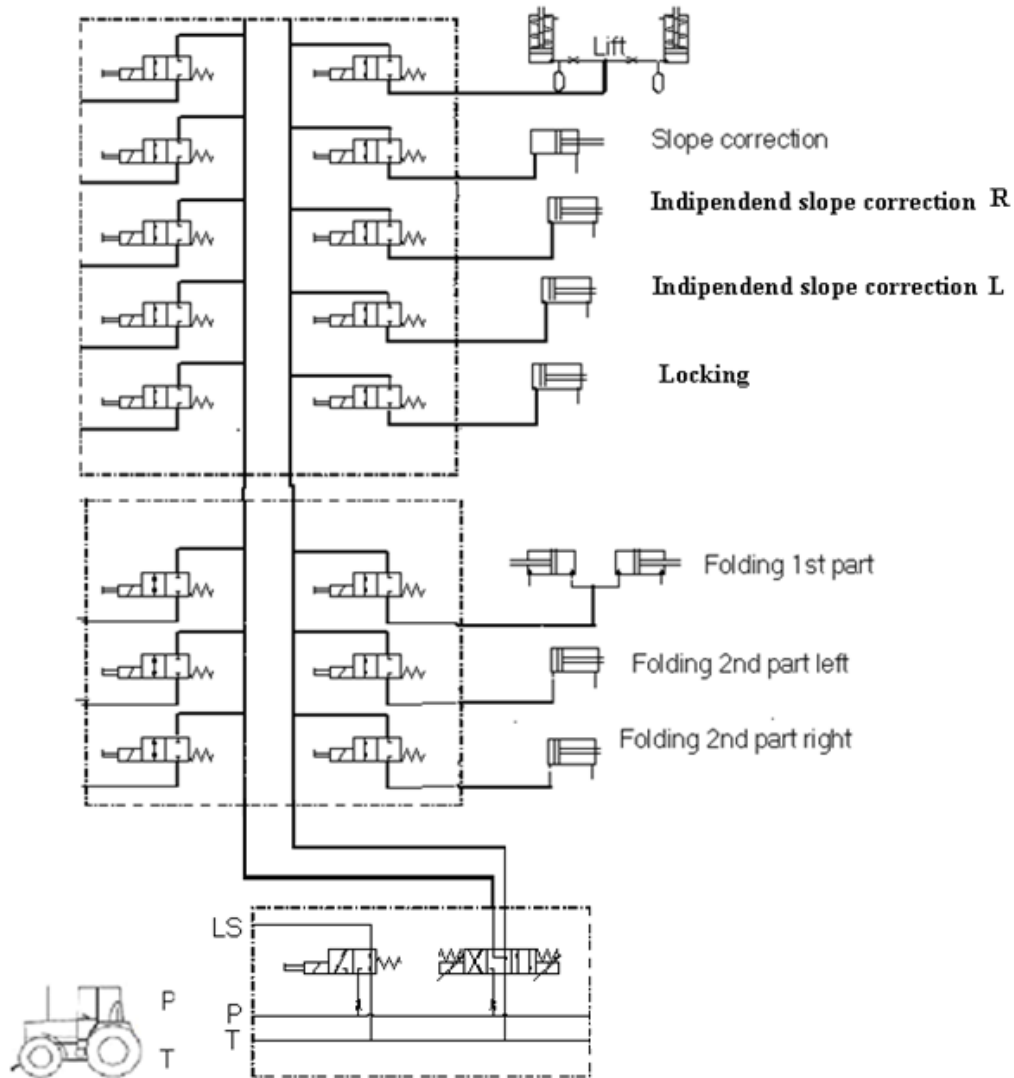
For adjusting take a flat part of iron of 32mm wide. (see red line)



5.1 Pre-selection Schedule





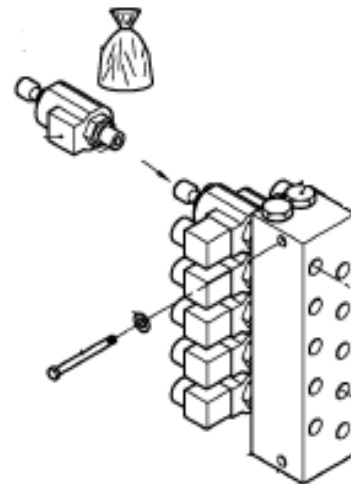
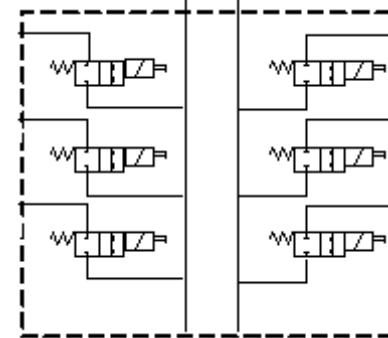
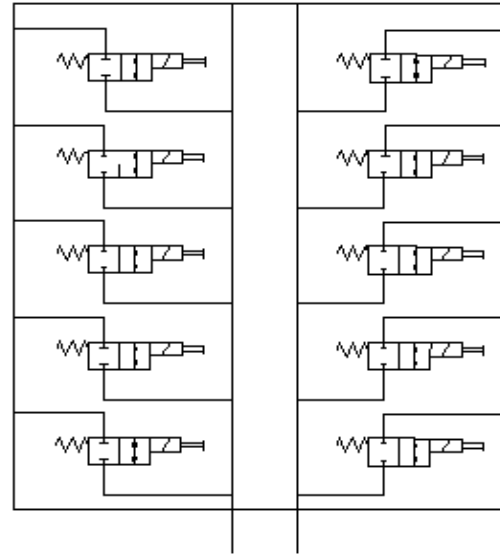


4.4.1 Oil function block

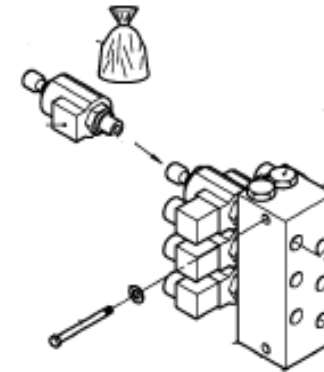
The oil function block can have the following functions:

- 3 function
- 5 Function

These valves close the P and the T side of a function. The blocks are equipped with an 100% close function.



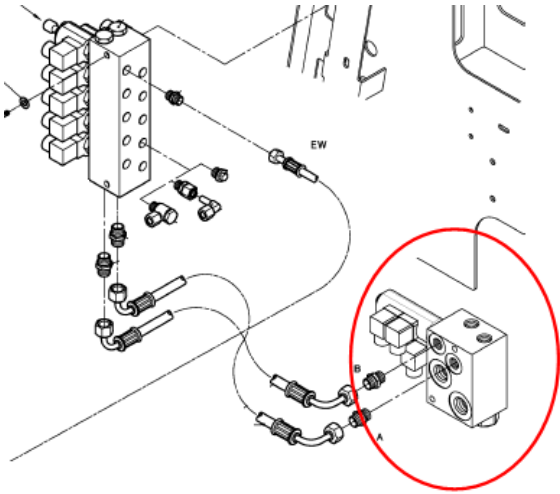
5 way block



3 way block

5.4.2 Oil Circulation block

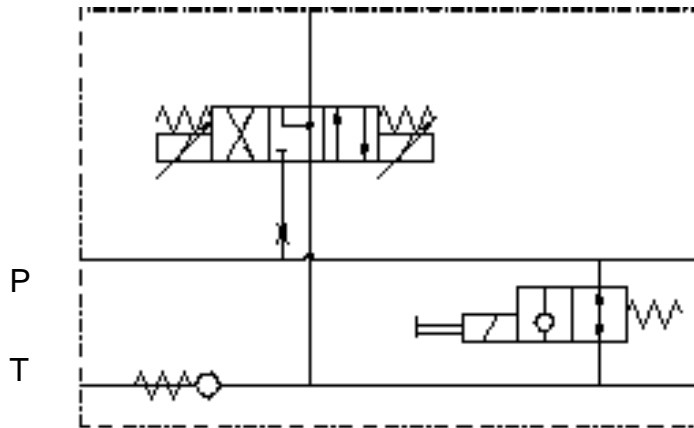
The oil circulation block will change the oil direction on the machine side.



Emergencies nuts:
The valve can be controlled by hand in case of an electrical failure.



Measurements Block (LxBxH) 125x68x88 (mm)

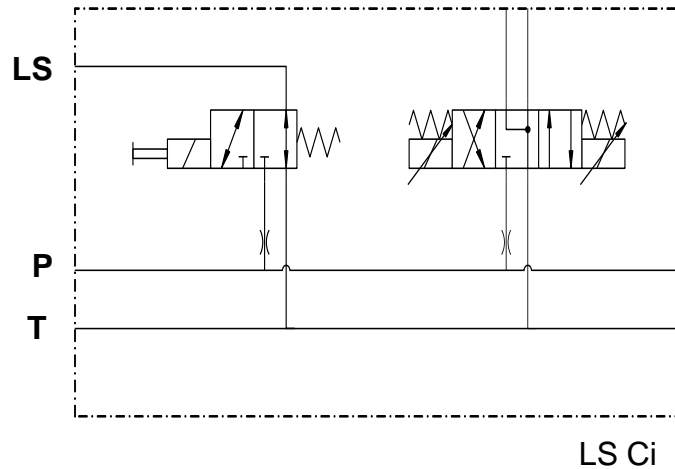


Load sensing valve

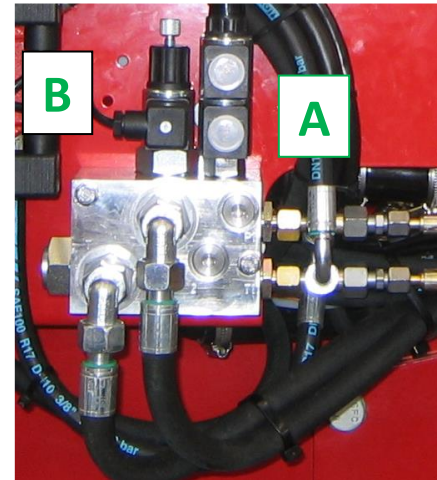
When function is operated:

- Function is operated via control box.
- Valve B will be operated, pressure goes to the LS hose. The system pressure of the chosen function will enter the LS line and this is the command for the pump.

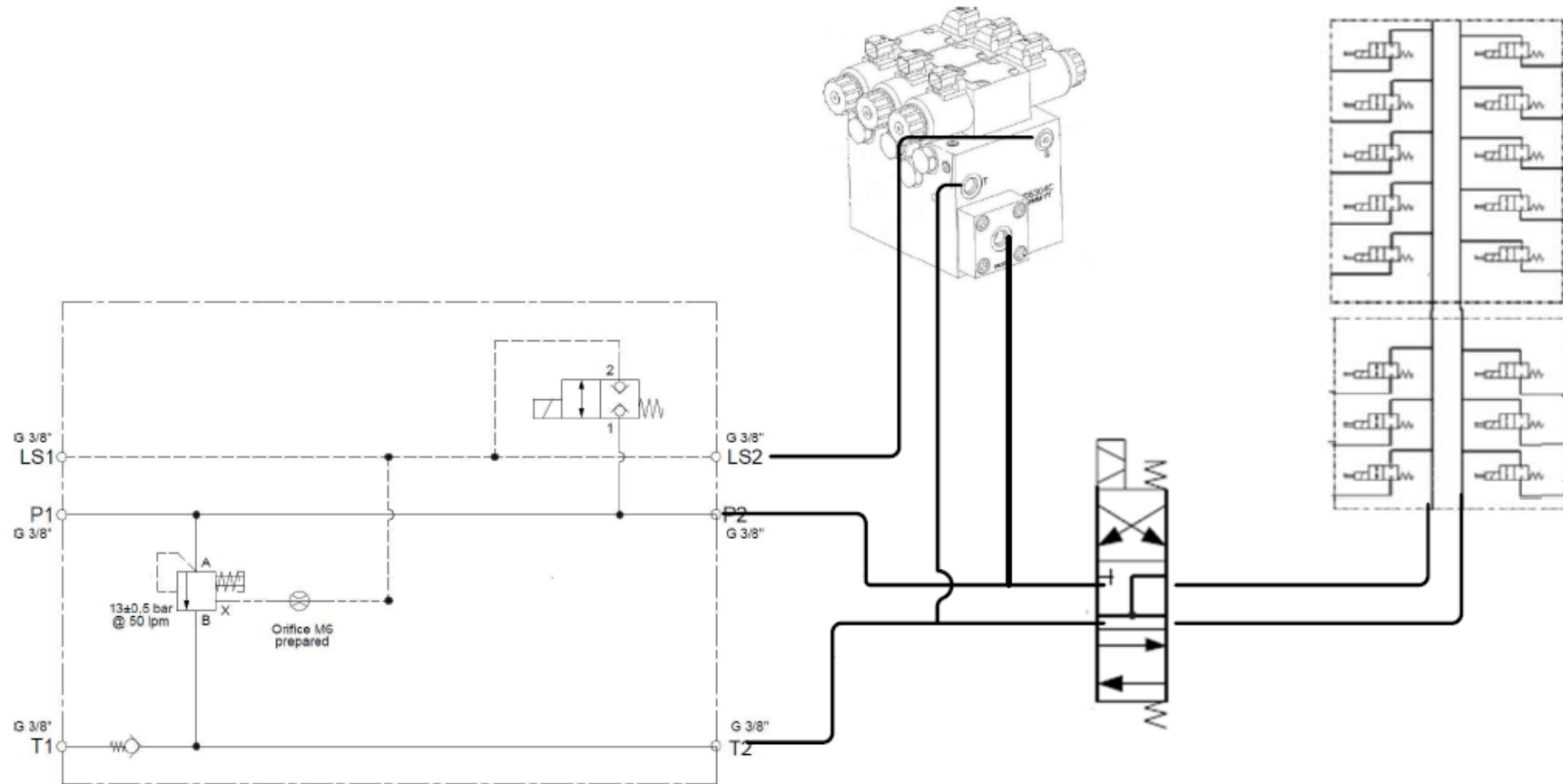
Valve A will choose direction.



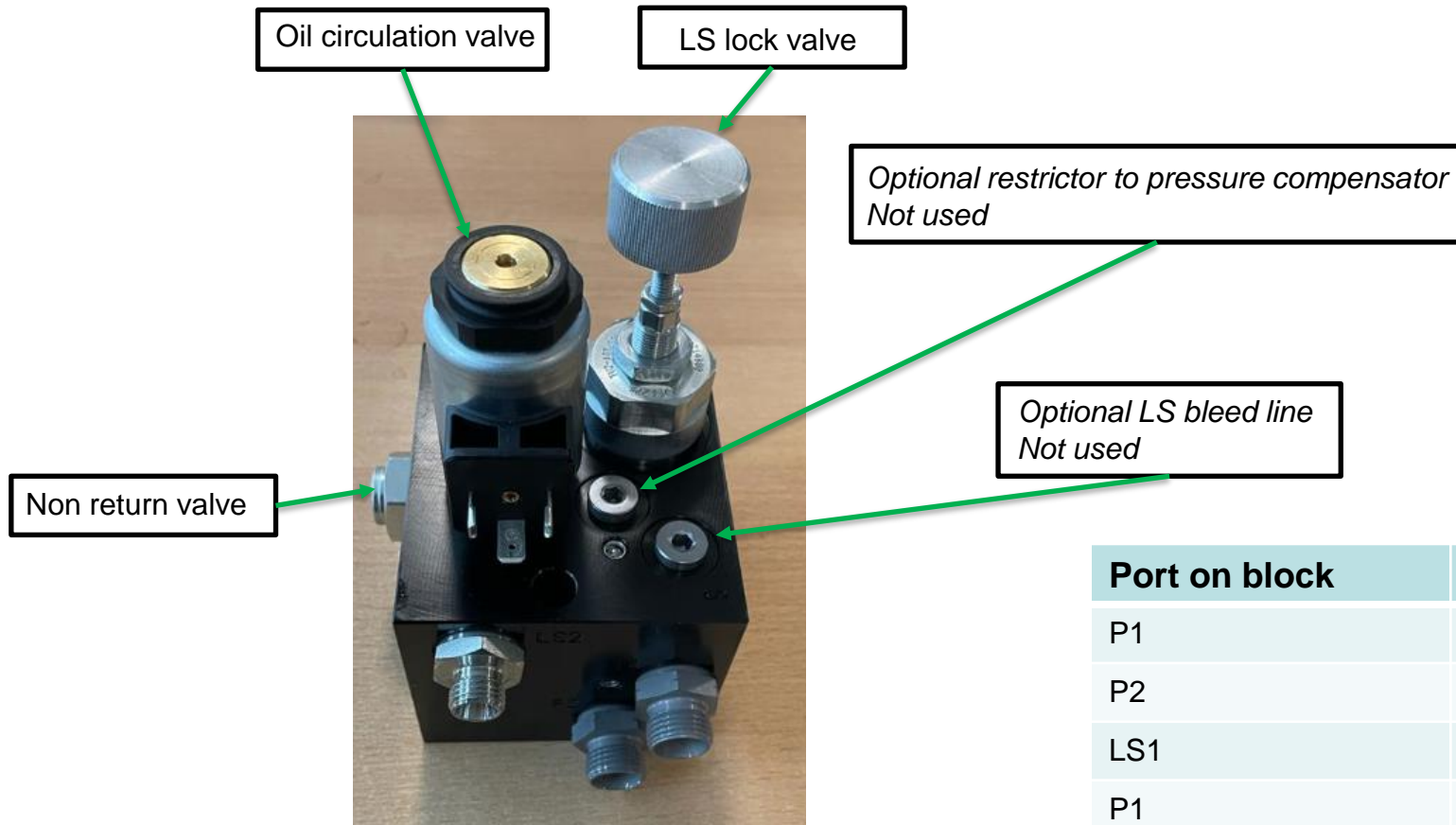
Measurements block (LxBxH) 100x68x88(mm)



New hydraulic set-up iXter B

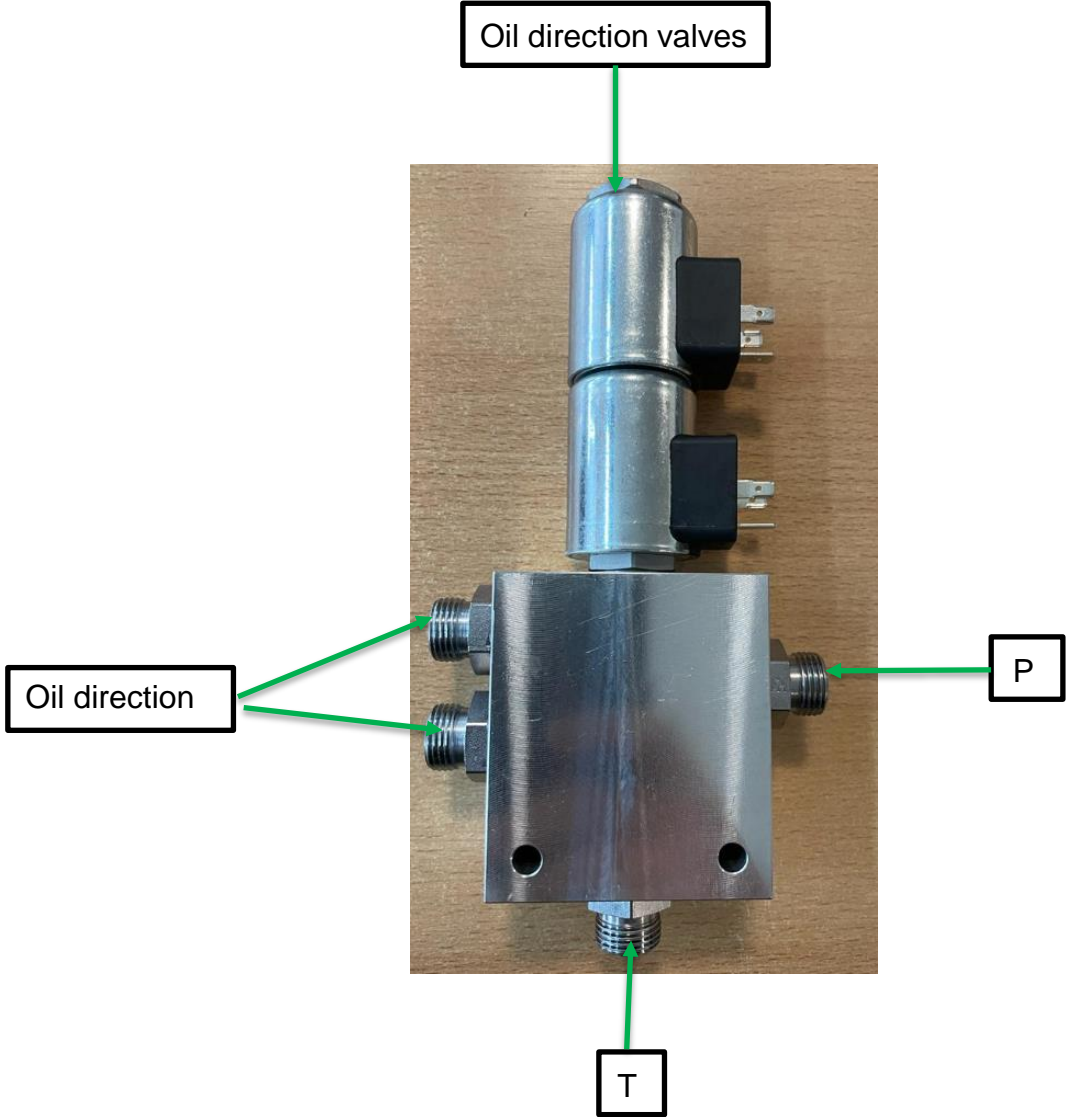


Oil circulation valve

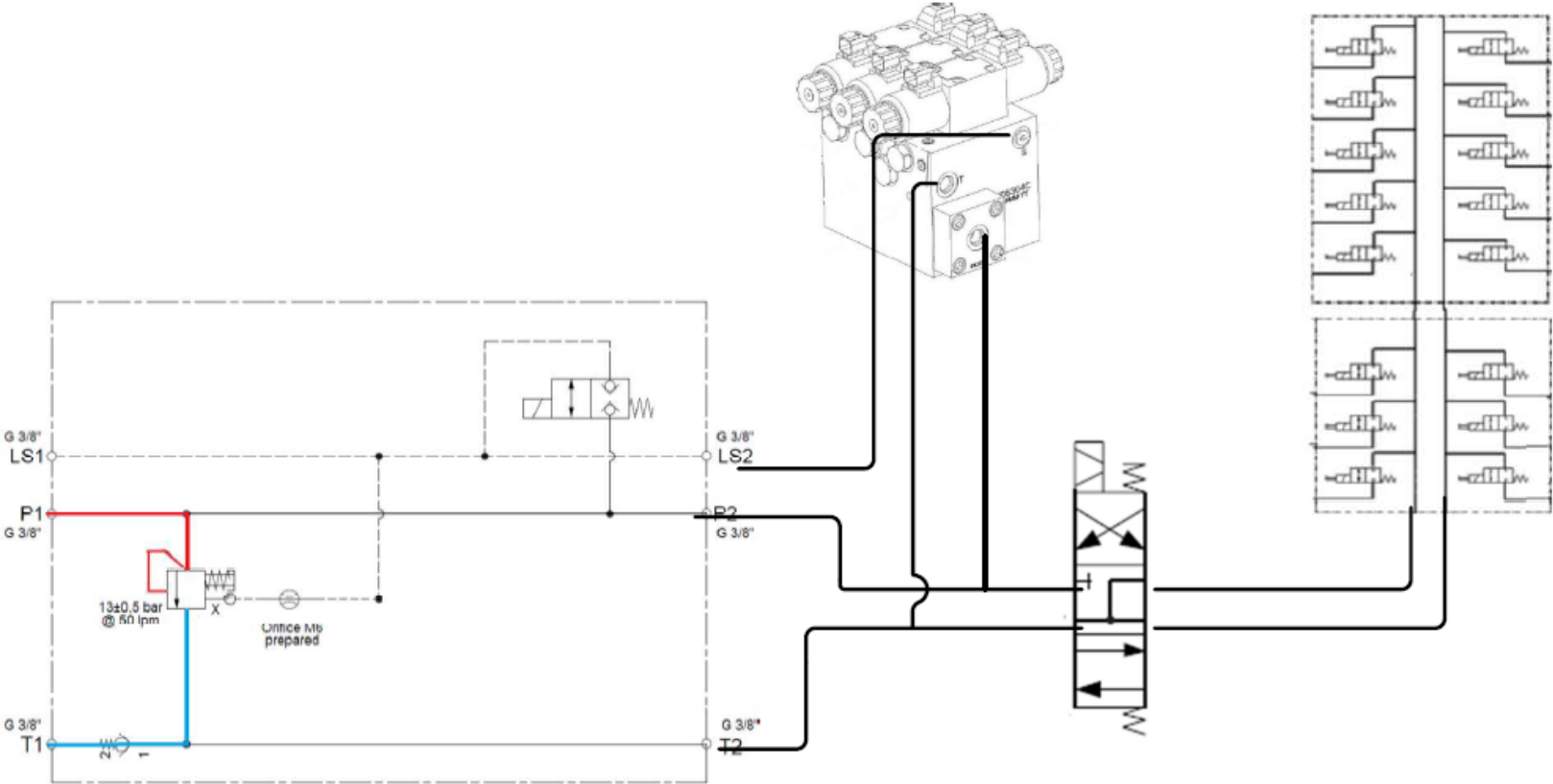


Port on block	Connected to
P1	Pressure from tractor
P2	Return to tractor
LS1	LS hose to tractor
P1	Pressure to oil direction
P2	Return from oil direction
LS2	LS to Boomguide

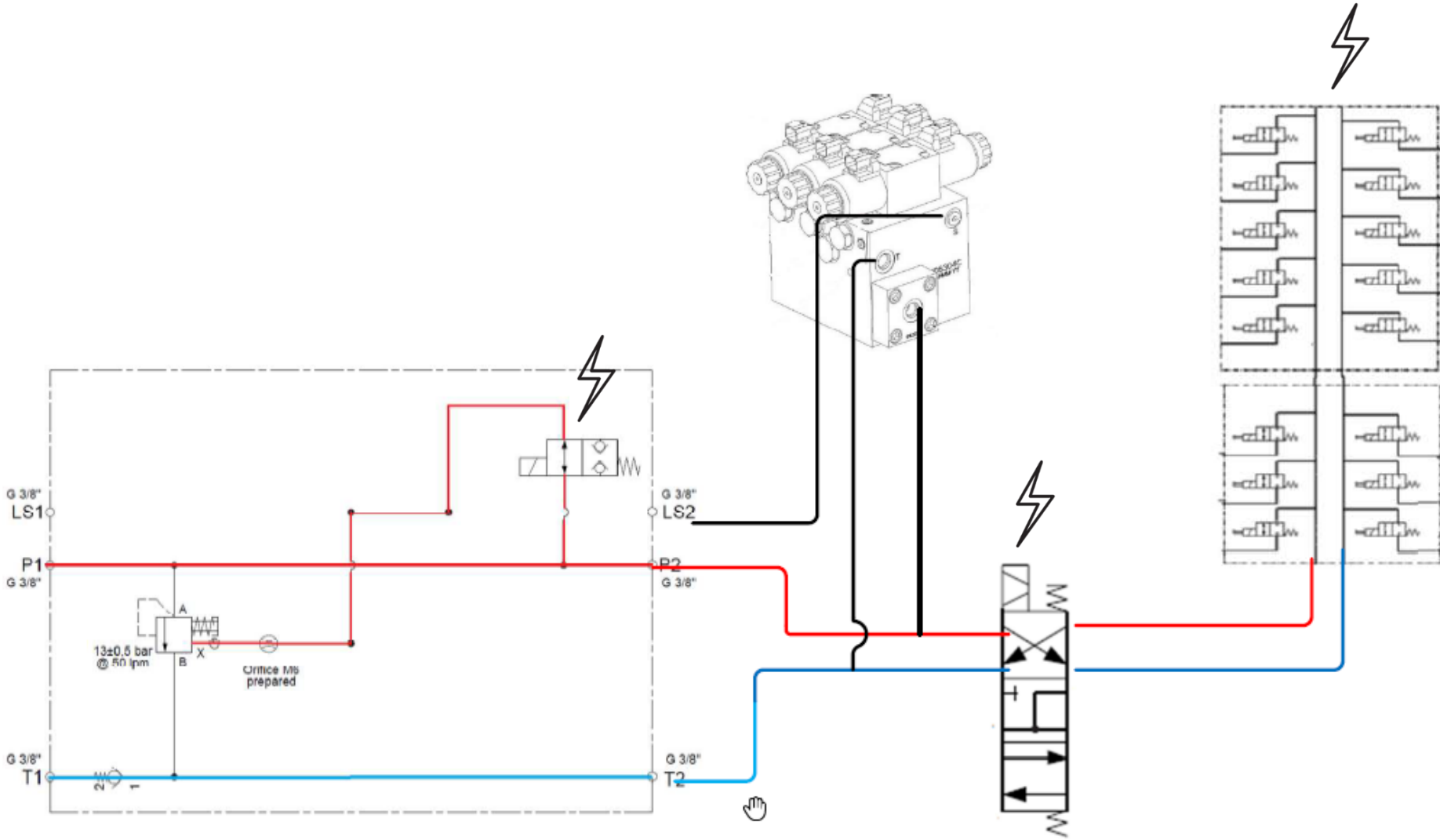
Oil direction valve



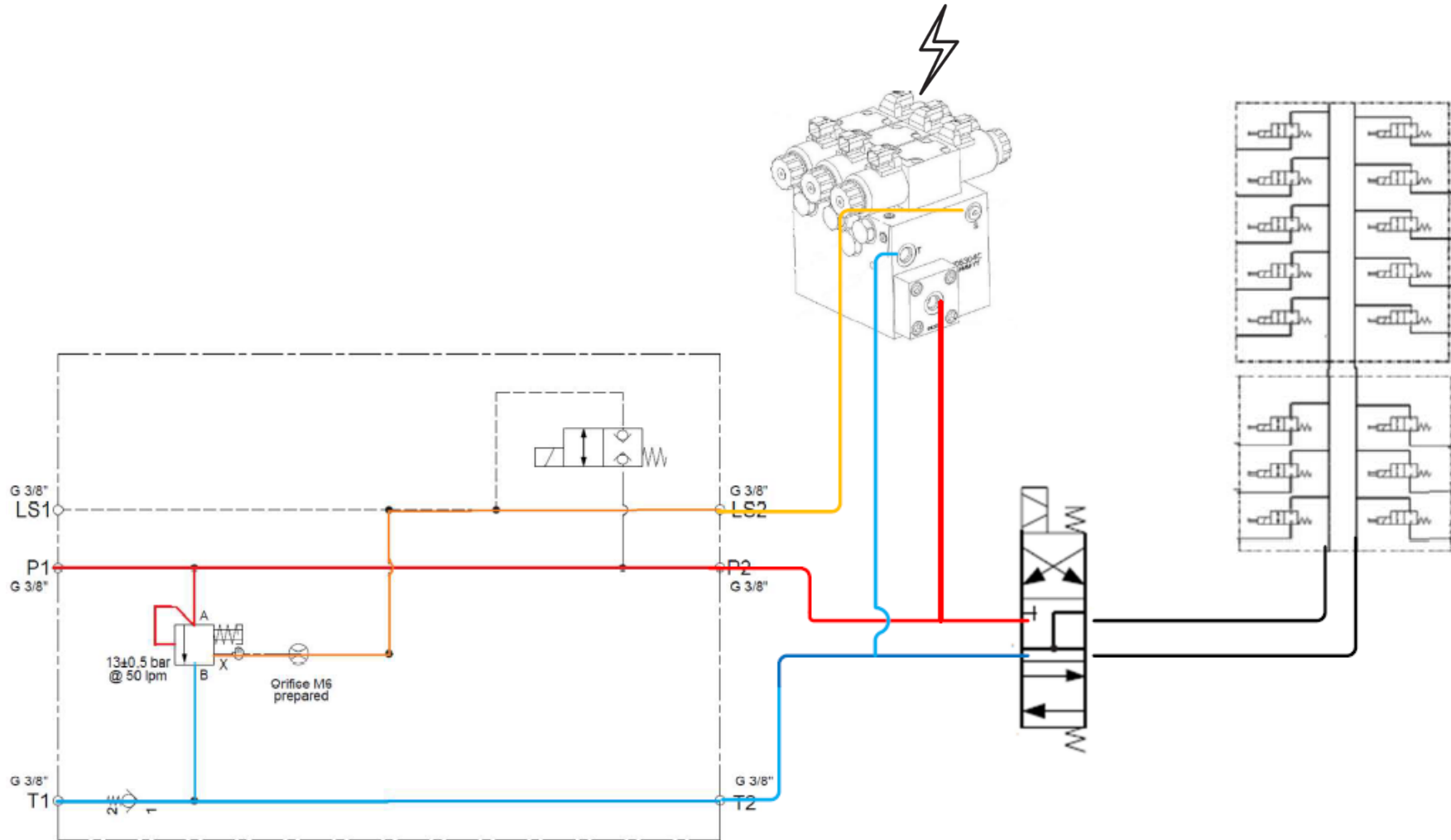
Oil circulation



Pressure to function block



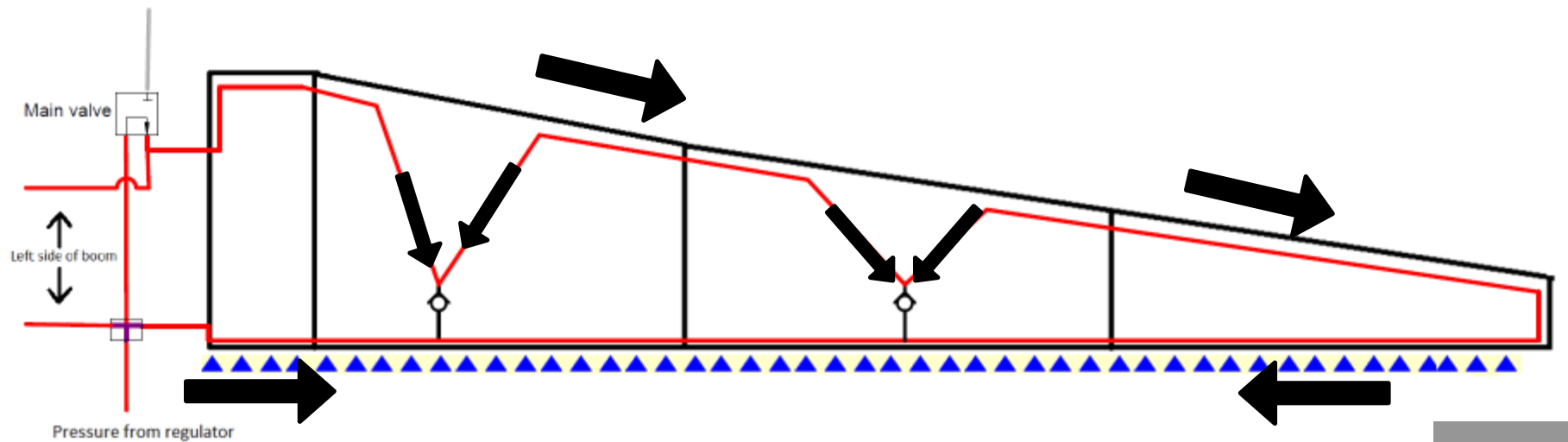
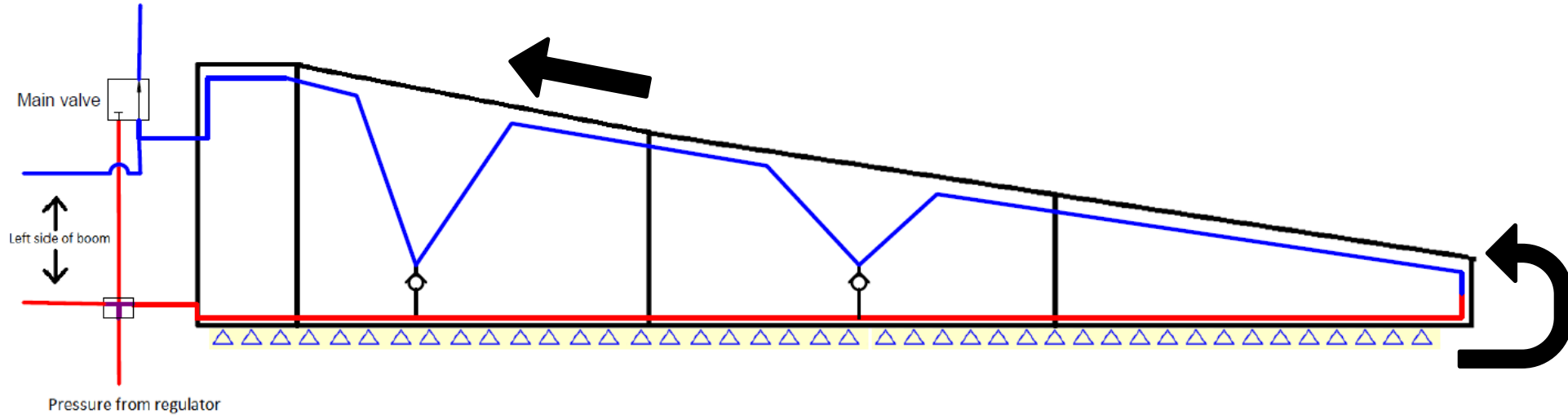
Boomguide block requires oil



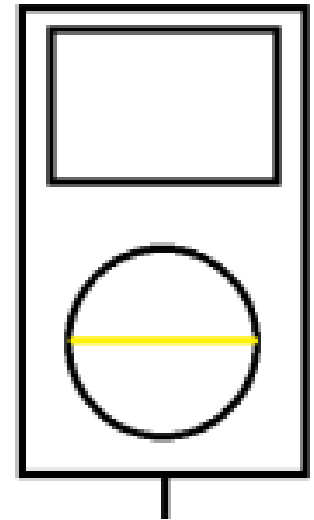
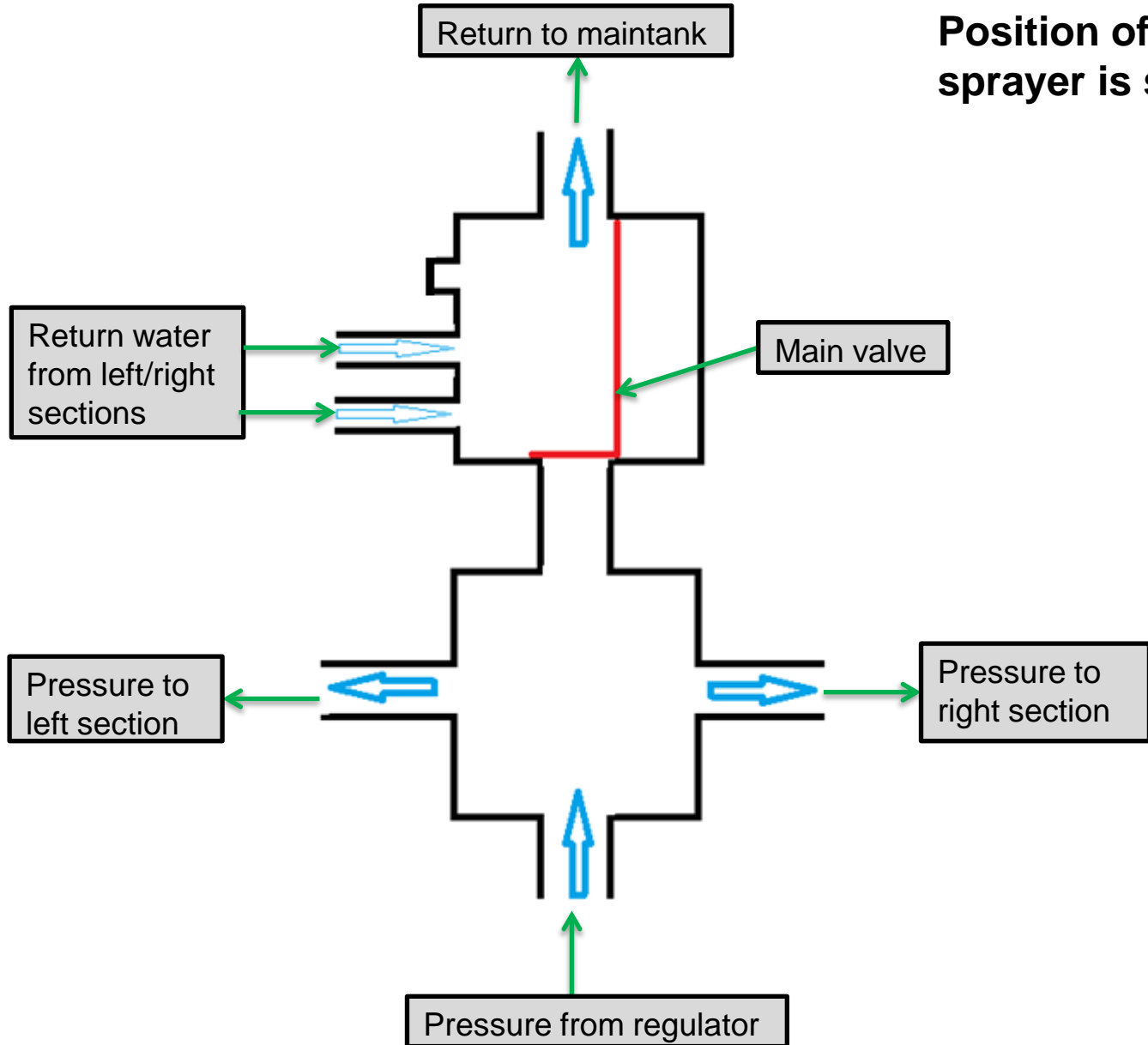
7. iXflow (E) system

7.1 Circulation system

With a iXflow (E) system the main valve is on the back of the sprayer mounted on the parallelogram. In this case the water is constantly flowing through the complete boom without dead ends.

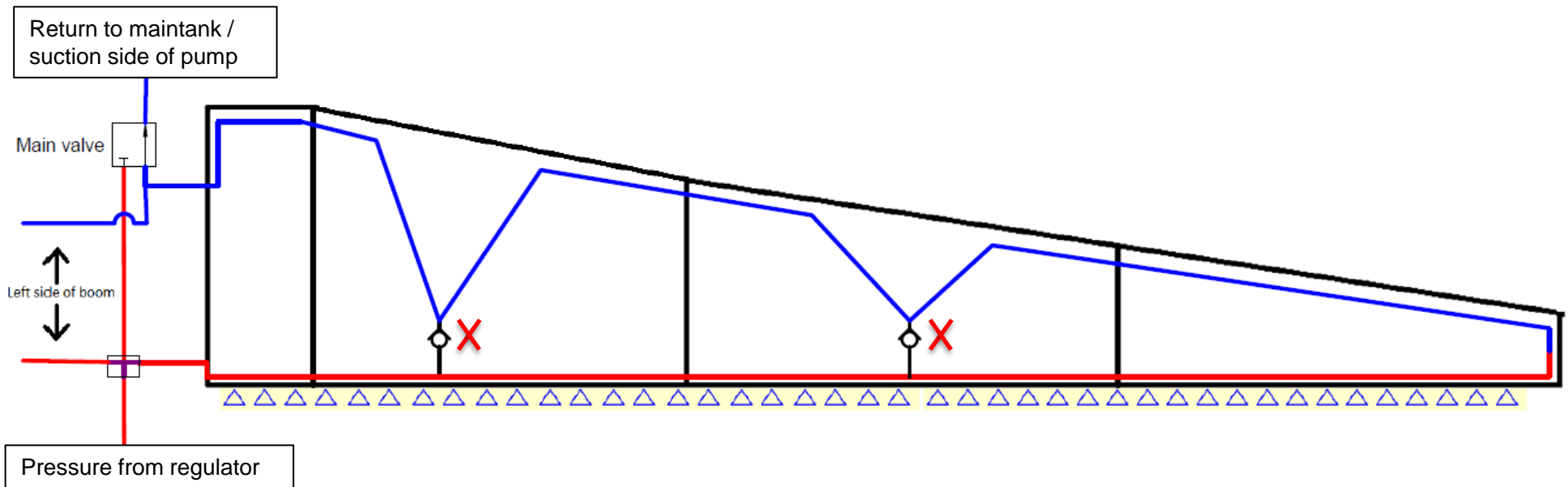


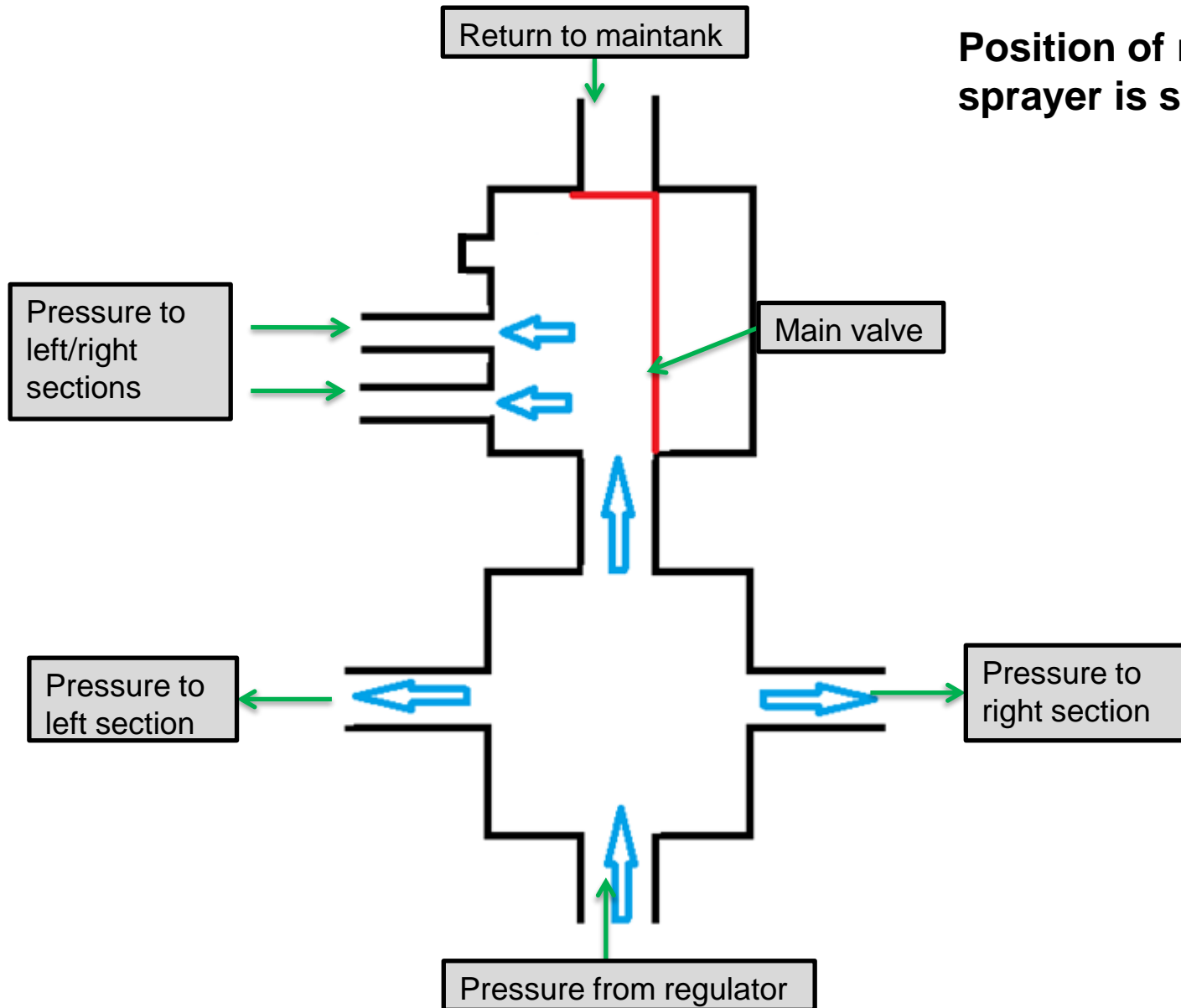
Position of main valve when sprayer is switched off



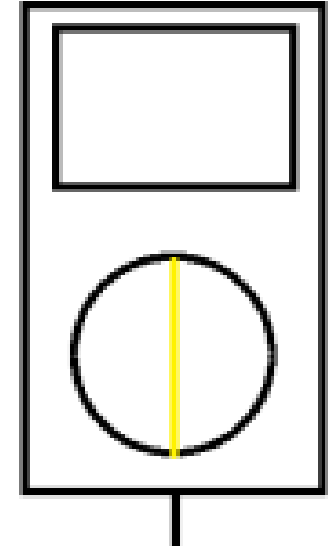
Spraying off

When the main valve is off the water system from the complete boom is split up in two rings. The water is pumped through the complete boom and is returned to the main tank



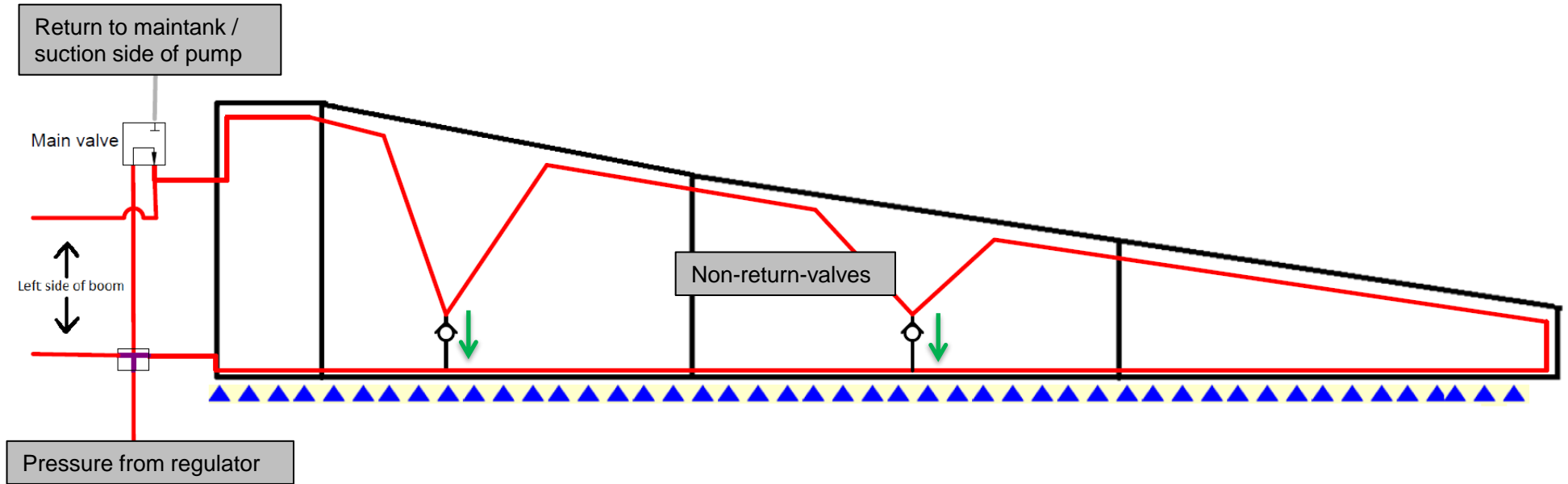


Position of main valve when sprayer is switched on



Spraying on

During spraying the return to the main tank is blocked and all sections are “supplied” with water from the pressure side, return side and from the non-return-valves.



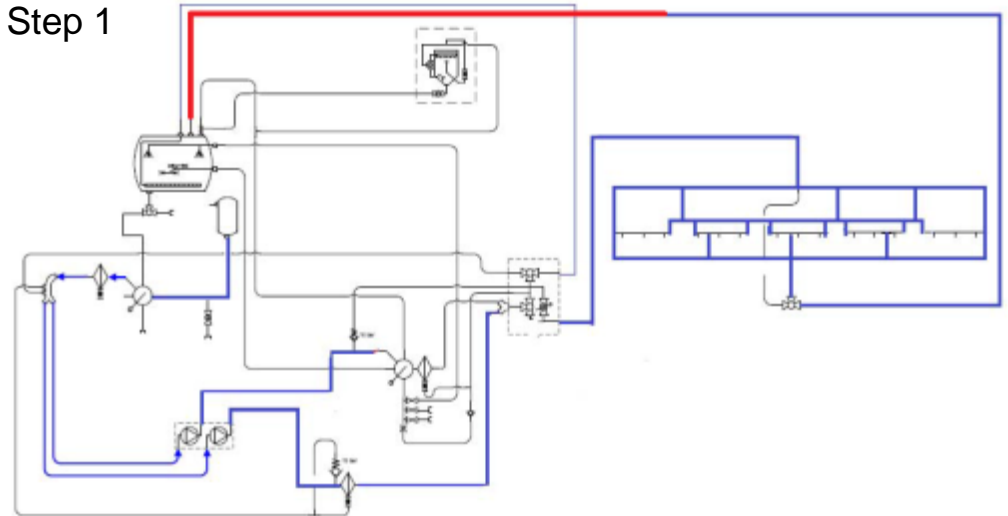
7.2 ENFO on iXflow

Enfo cleaning.

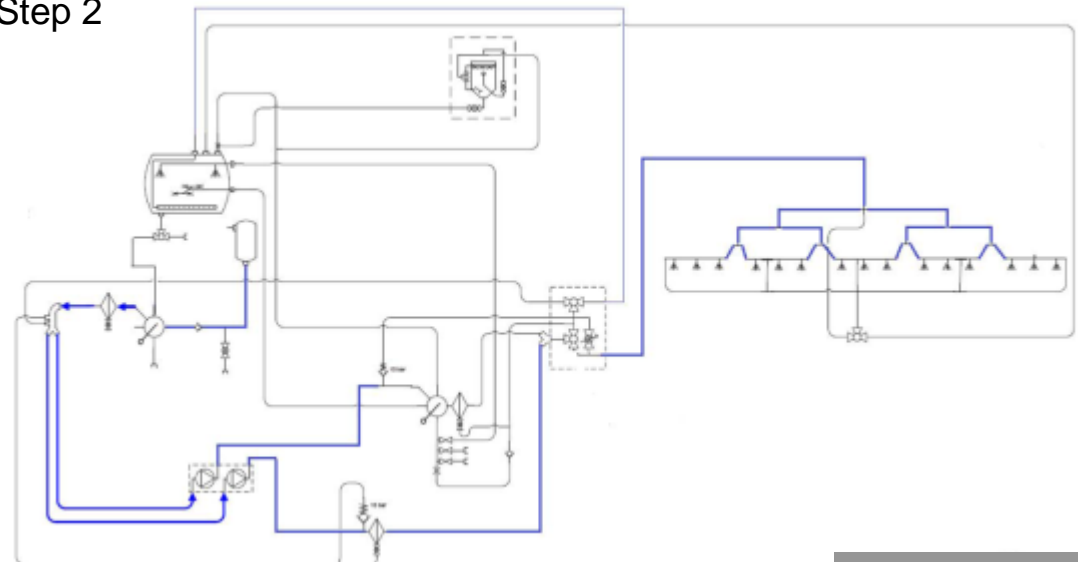
- 1) Clean water is pressed through the system until it reach the main tank
- 2) Clean water will be spraying out for 15 seconds
- 3) Alarm in main screen: "PTO off, after that main valve off"

- 1) **Enfo filling** cannot be selected with an iXflow system. Because of the constant circulation the booms are filled up automatically with water from the main tank when the PTO shaft is running.

Step 1



Step 2



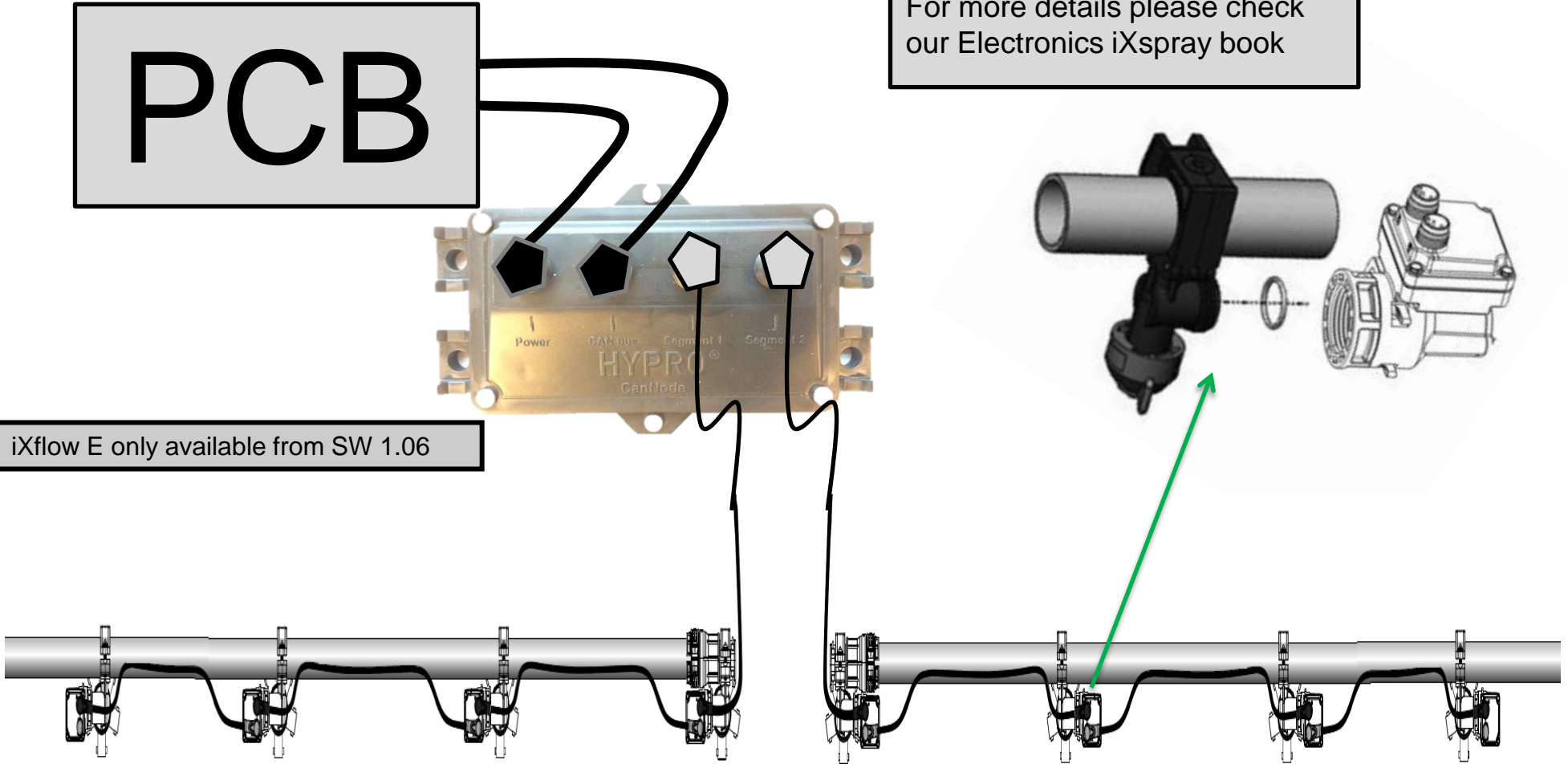
7.4 iXflow E

iXflow E works on can bus signal, this means that every individual nozzle is connected to one can bus system. The system consist of two different components, the 'Node' how is directly connected to the PCB and the nozzle holder how is connected (in serial connection) to the 'Node'.

PCB

For more details please check our Electronics iXspray book

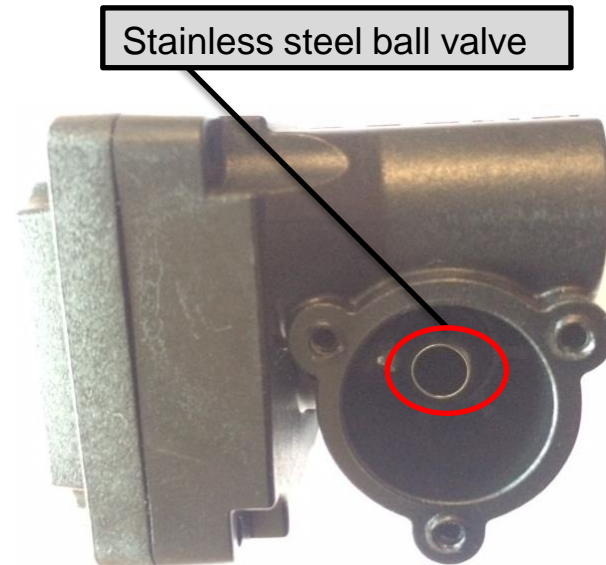
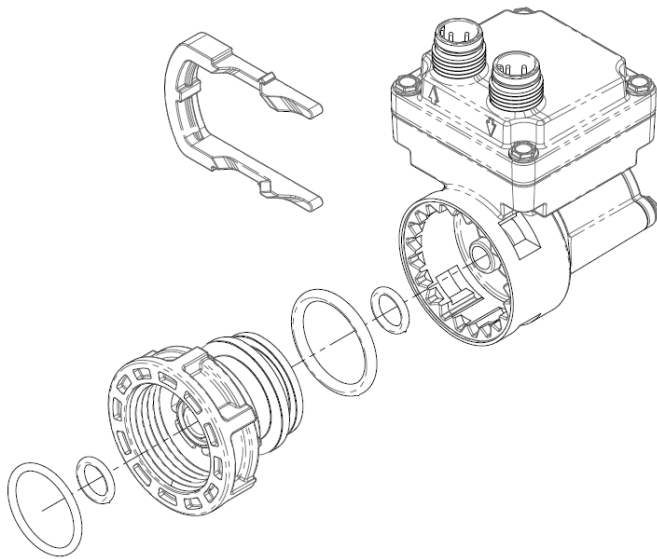
iXflow E only available from SW 1.06



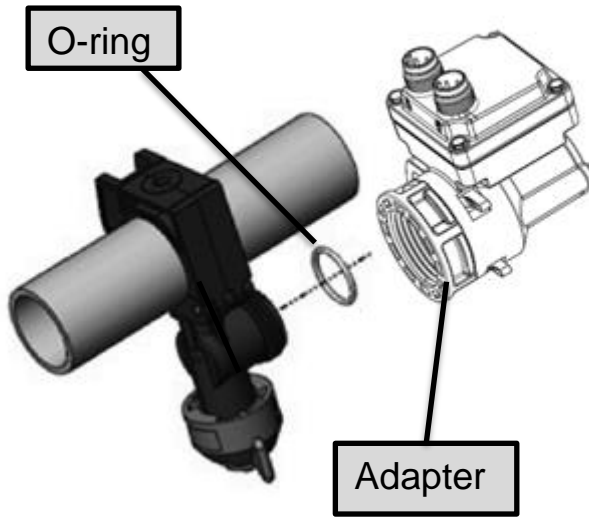
7. iXflow (E) system

Inside the electrical valve is the stainless steel ball valve.
By removing the back cover, the stainless steel ball valve can be reached.

Make sure the ball valve is clean to ensure a good ball valve switching



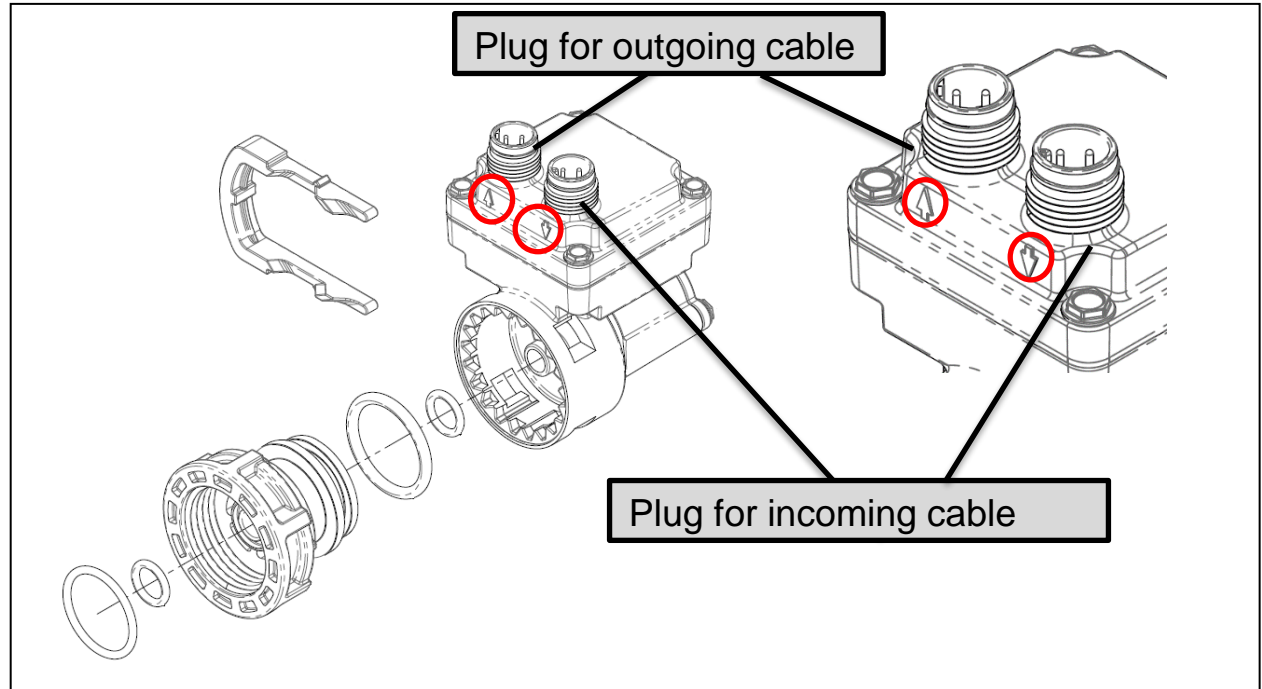
Electrical valve



The electrical valve is connected with a adapter screw to the nozzle holder

The adapter should be tightened with 2.8 nM

Between the valve and nozzle holder is an O-ring. This O-ring should be clean and in good shape to prevent external leakages.



On top of the electrical valve are 2 plugs.

- One plug is for incoming signal/power/ground cable. Marked with arrow down
- One plug is for outgoing signal/power/ground cable. Marked with arrow up

8. Boomlights



The boomlight set is available for HSS on the Ikarus sprayers.

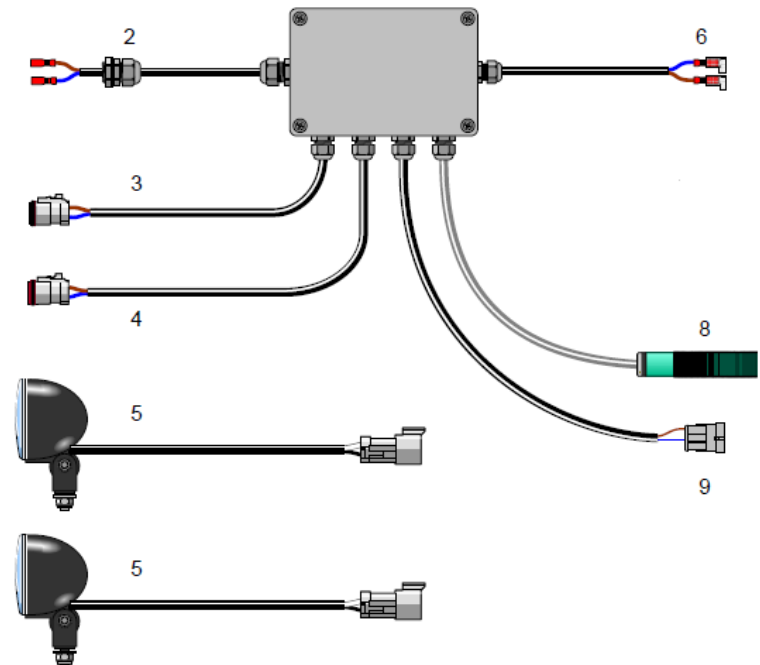
And HC booms on Ikarus S and iXter B

The boomlightset contains:

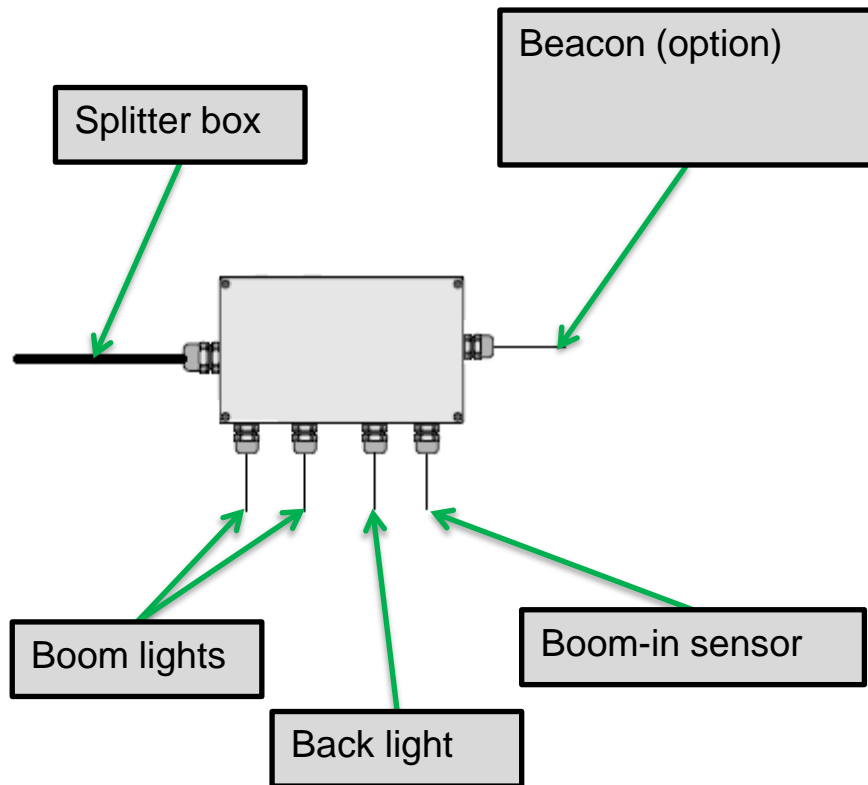
- 2 boom lights
- Beacon (optional)

There is an extra box mounted on the back of the sprayer for switching the boom lights and beacon. When the booms are folded in the beacon is switched on and when the booms are folded out the boom lights are switched on.

There is an extra boom in sensor mounted who switch between beacon and boom lights



8. Boomlights



The power and ground for the boom lights and the ground for the beacon is coming from the splitterbox.

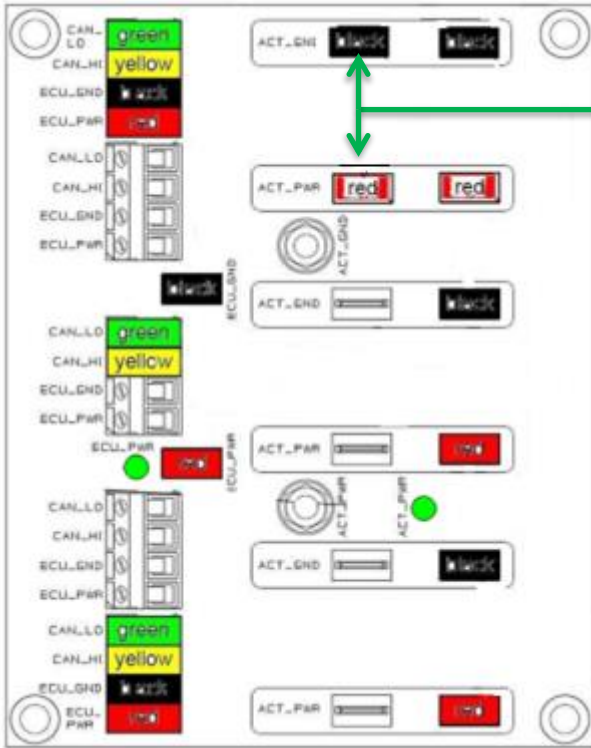
The power for the beacon is coming from the sprayers backlight.

The trigger for the system is coming from the sprayers back light. So the system only works when the roadlights of the sprayer are on.

The beacon is an option, and only available for Ikarus S sprayers.

When there is no beacon connected the wire to the beacon is wrapped up at the box.

8. Boomlights



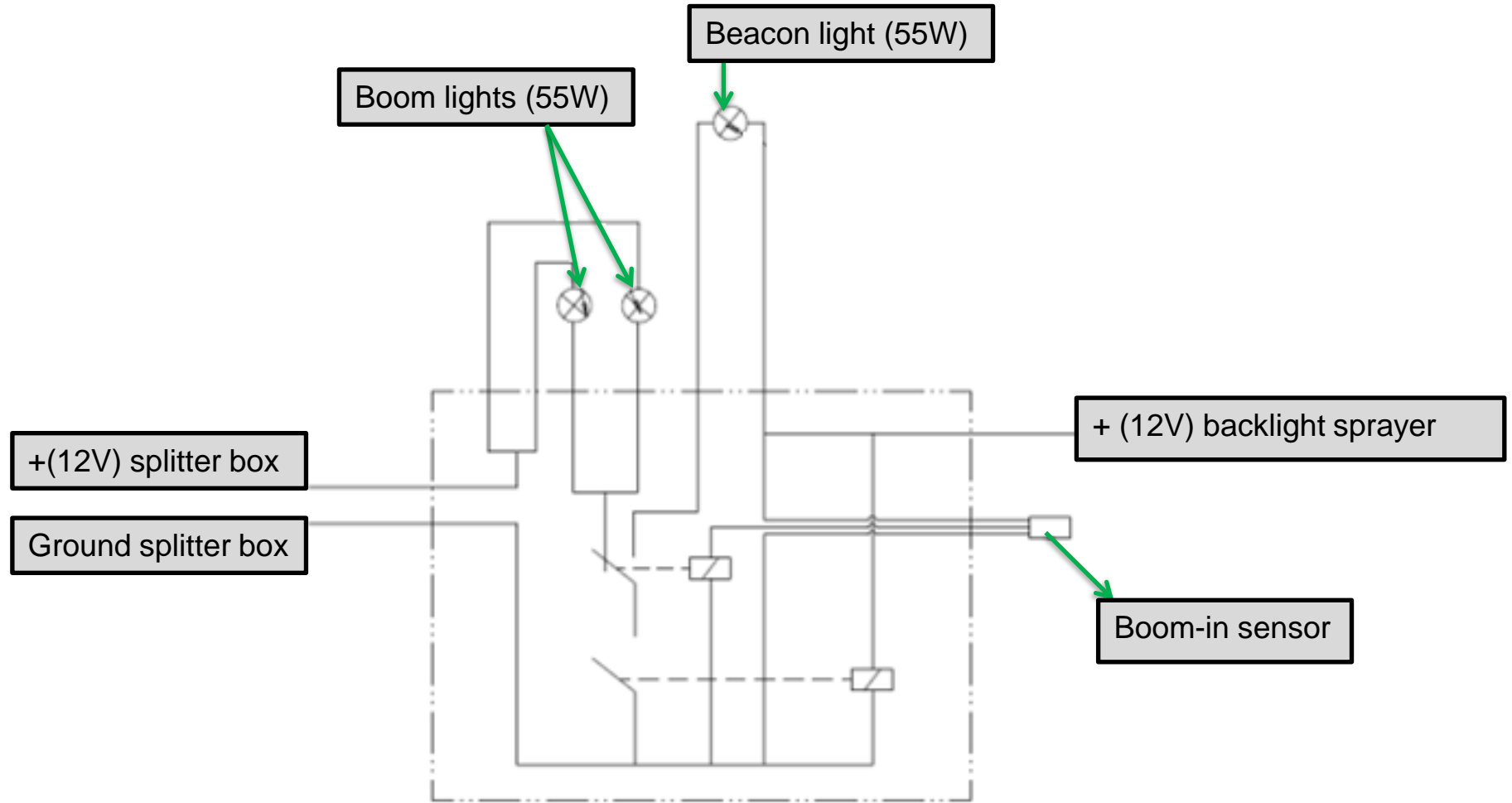
Connection to splitterbox

Power and trigger wire (1 wire) to backlight of sprayer



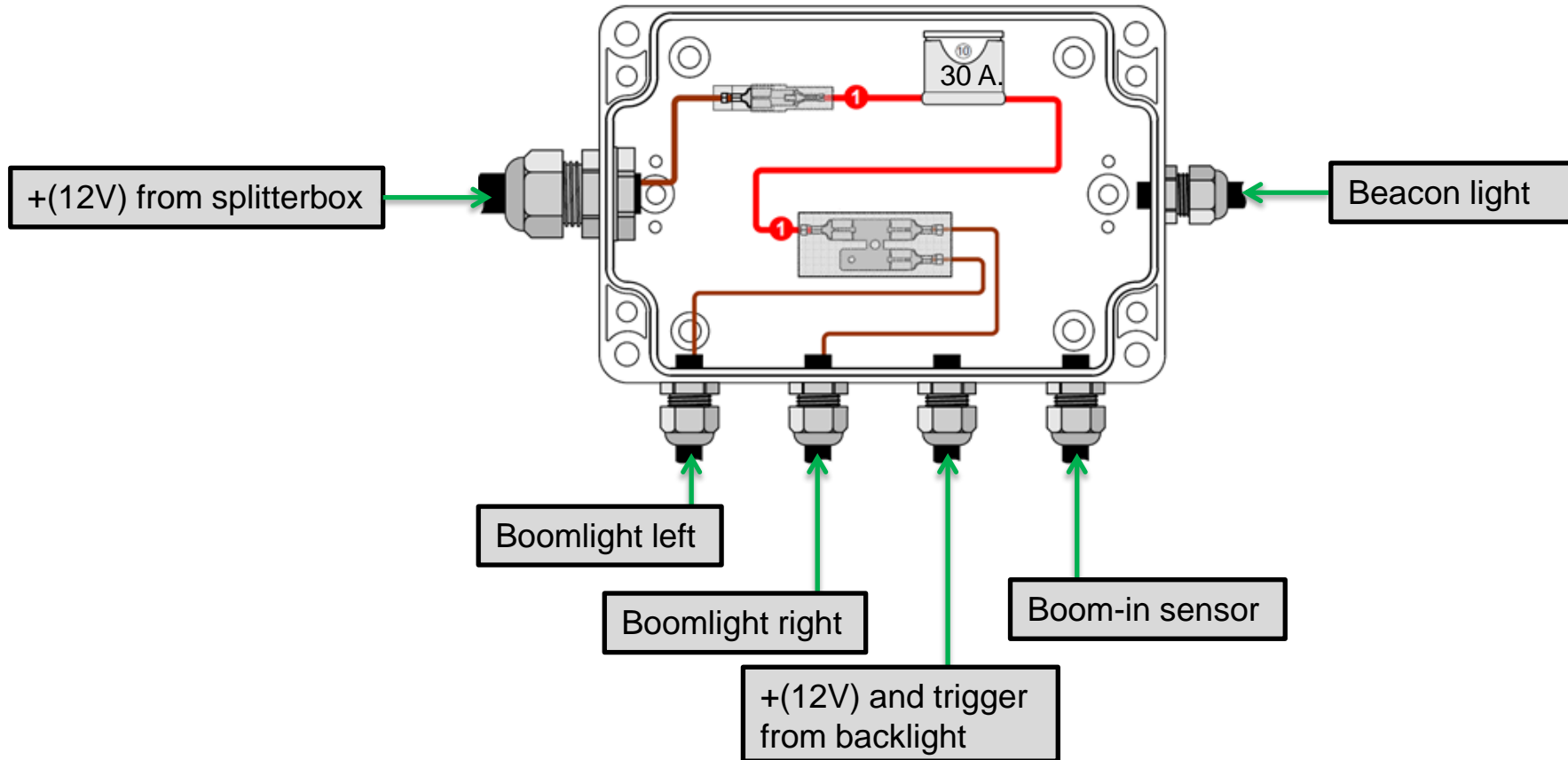
Boom-in sensor

8. Boomlights

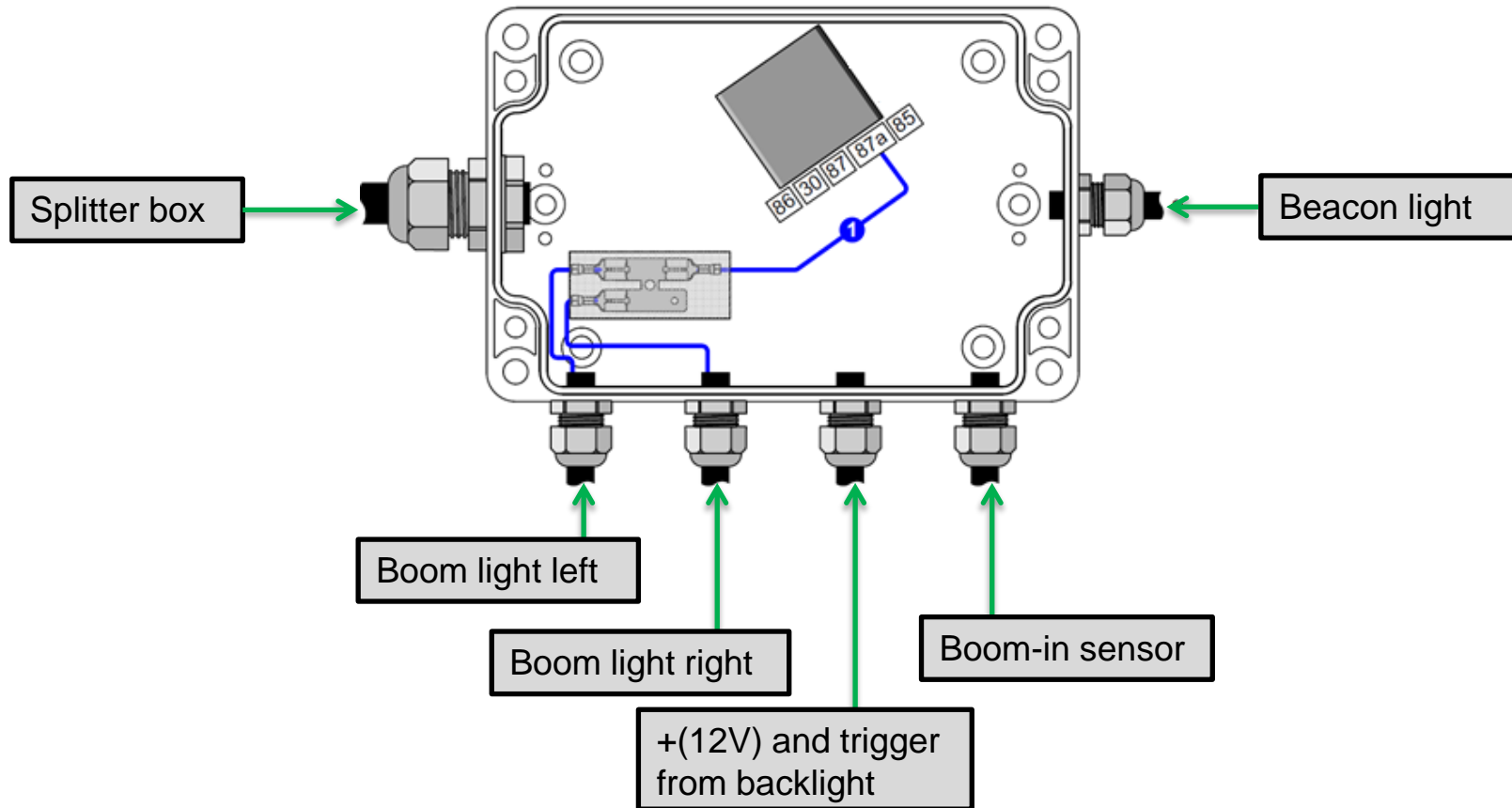


8. Boomlights

+(12V) wire from the splitter box



Ground wire from the Boom lights



Signal wire from the Boom-in sensor

