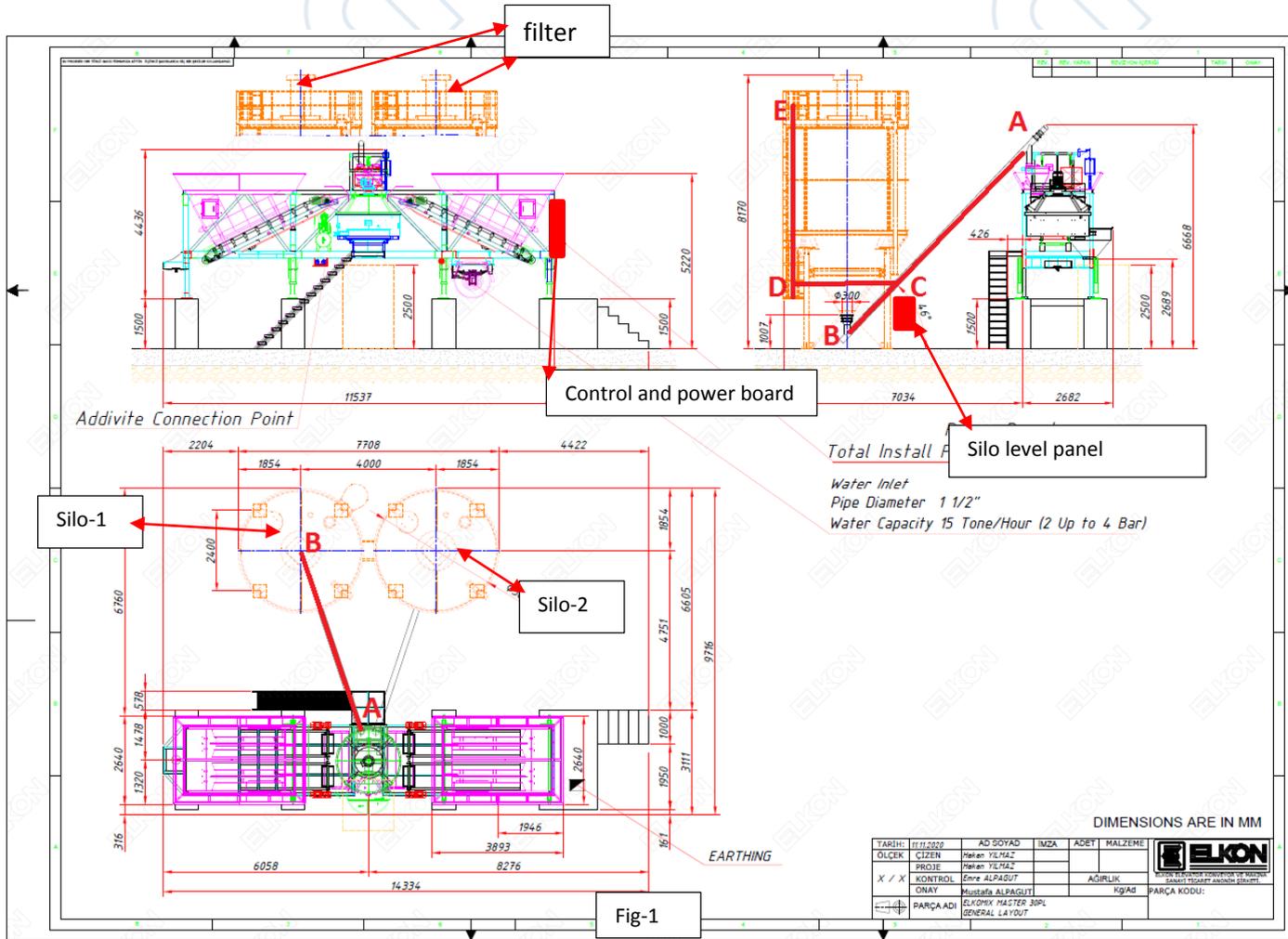


## 2020-293-E MIXMASTER-30 Start-up Instruction

After the batching plant mechanical assembly is completed, install the batching plant cable tray.



According to the information in the image-1 image;

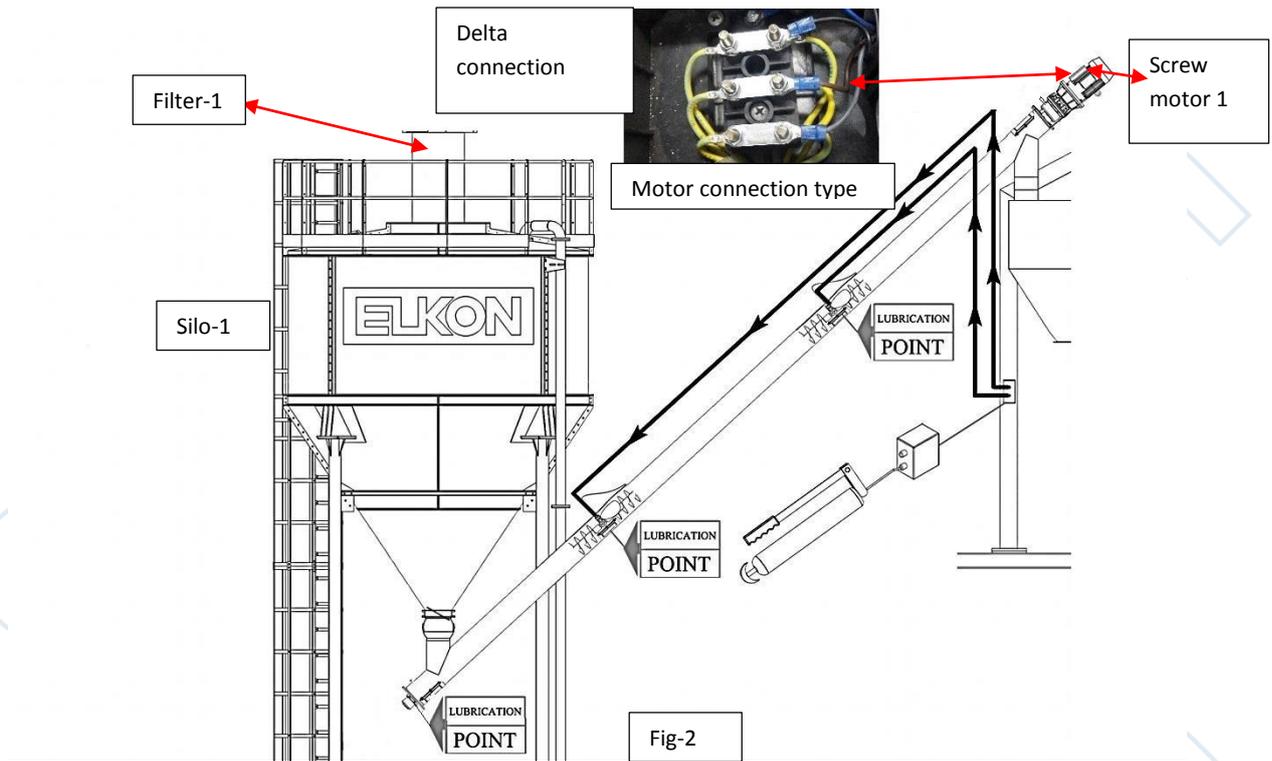
- Mixmaster Concrete Plant power and control panel is a single panel and is located at the back of the concrete plant. It is shipped with preinstalled cable connections.
- For the cement silo filter and the projectors to be installed on the silo, install a cable tray on the ladder exit of any of the silo-1 or silo-2 (whichever silo has a ladder). Install the cable tray on screw-1. The cable tray to be used is 60 \* 60 mm.

**After the cable tray installation, start the cable pulling works.**

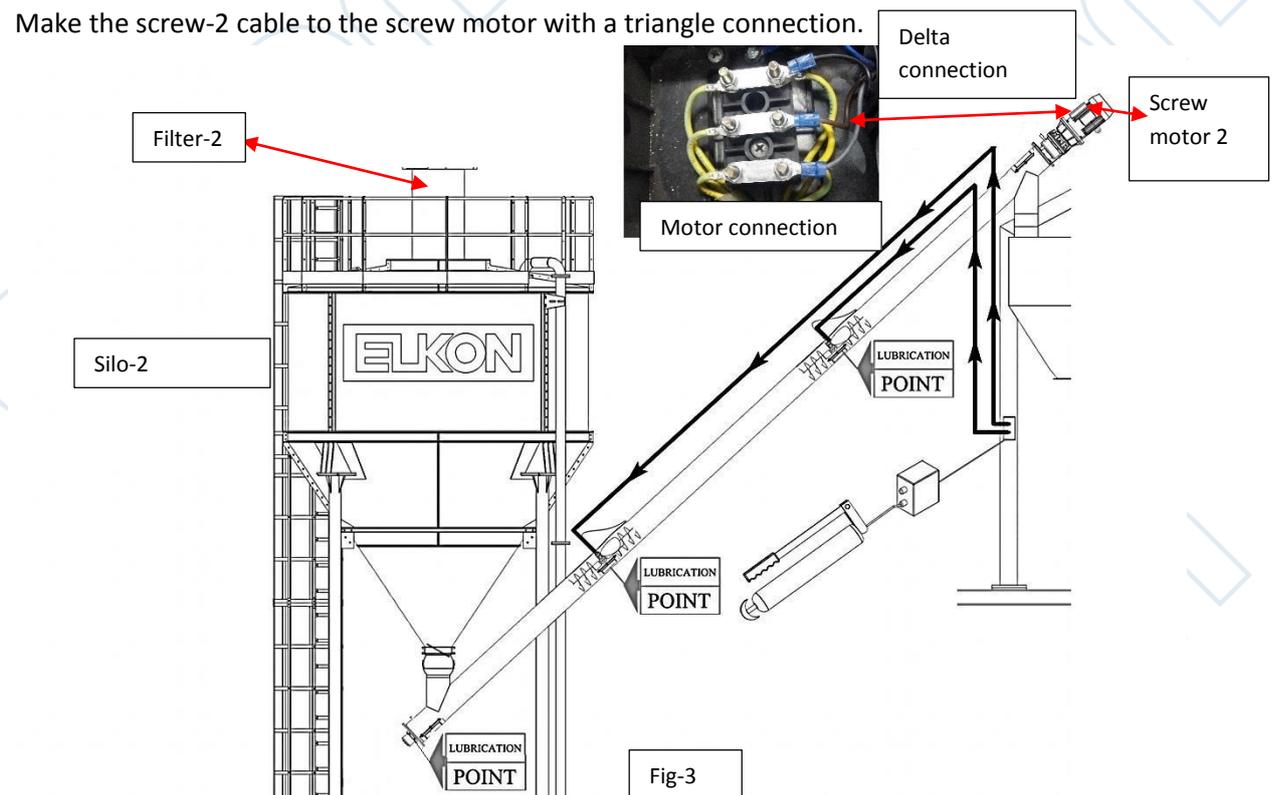
- Connect the 1st cement screw cable on the weigh hopper floor to the 1st cement screw motor and the 2nd cement screw cable to the 2nd cement screw. Cement Screw motor cable cross sections are 4x2.5 mm<sup>2</sup>..
- Connect cement silo level feed, projector, filter-1, filter-2 cables to the relevant silo. Draw the cement silo level feeding (4x1 mm<sup>2</sup> cross-sectioned cable) cable to the panel that is installed on the silo-1 leg (figure-1 silo level panel). Pull the cable for the Projector onto the desired silo..
- Pull the water intake valve cable next to the water intake valve.
- Connect additive take, additive discharge, additive flushing cables to additive weigh hopper.

**After cable pulling, continue with the cable connections step.**

- Make the screw-1 cable to the screw motor with a triangle connection..



8. Make the screw-2 cable to the screw motor with a triangle connection.



9. For the filters on the silos from inside the cable tray (through the spiral) drawn for the silo line and from the side of the exit ladder to the silo, pull a 2x1 mm<sup>2</sup> cross-section cable separately and connect the filters (Figure -4). Also, for the projector to be mounted on the silo, pull a 2x1 mm<sup>2</sup> cross-section cable and connect it. Besides, pull the m12 pneumatic hose on silo and connect to the each filter with using additional connection element.

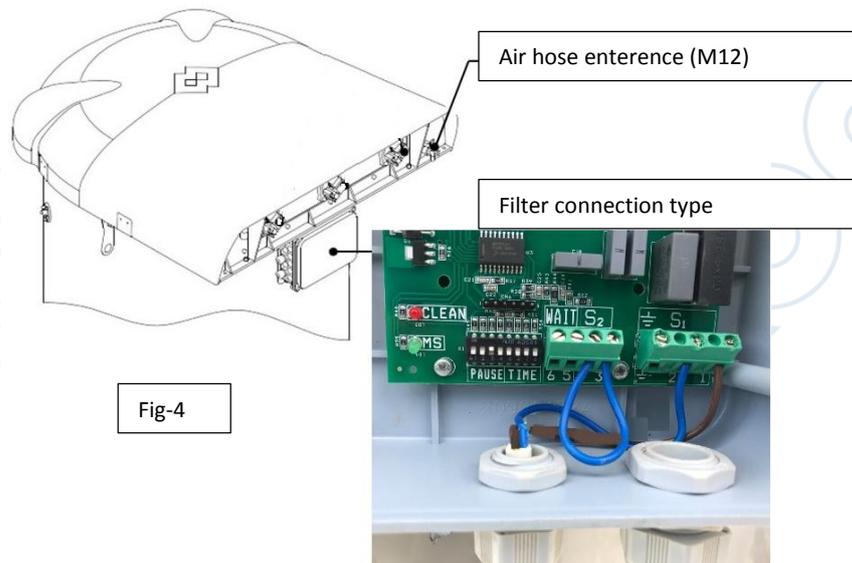
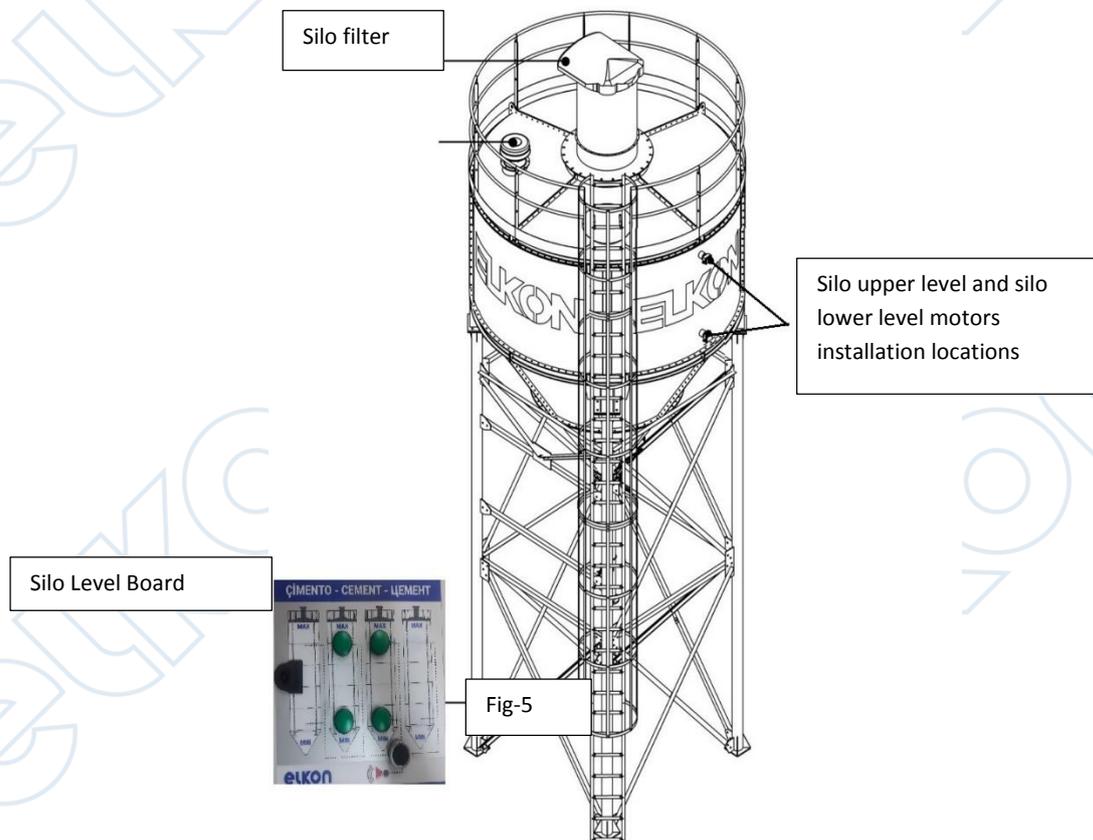
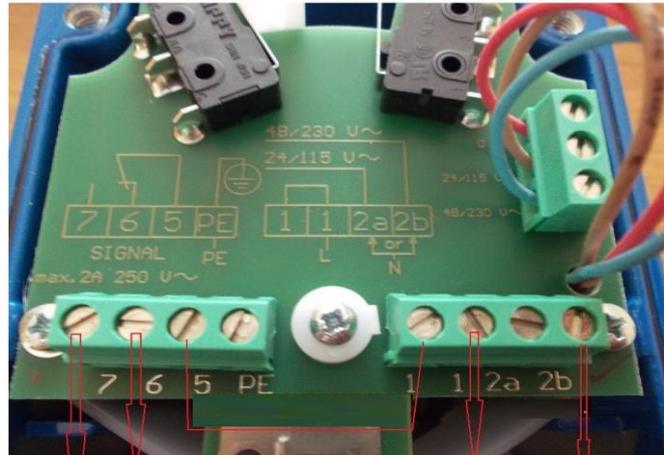
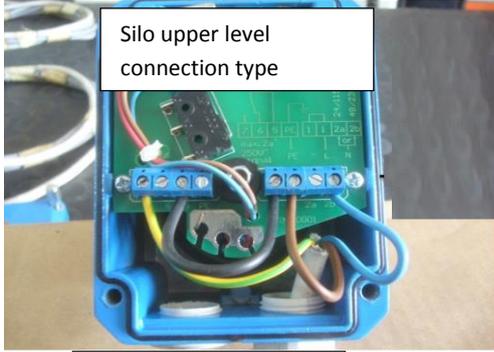


Fig-4

10. Cement silo level board is installed (mount a panel on the leg of silo-1ilo). Pull the silo level feeding cable (4x1 mm<sup>2</sup> cross-sectioned cable) from the cable tray drawn on the silo-1 screw and connect it to the silo level panel (according to the project inside the panel). For silo level alarm, horn mounting is made next to the panel and its connection is made (with a 2x1 mm<sup>2</sup> cross section cable). Cement silo (upper and lower level) indicators are assembled and cable connections are made (use 3x1 mm<sup>2</sup> cross section cable for connection of lower and upper level motors).



11. Connect the level motors to be installed on the silo.



For 3x1 mm<sup>2</sup> cable connection, it will be blue-neutral and will be connected to the connector no. 2b, the brown colored cable will be connected to the terminal no. 1, the cable will be connected to the terminal no. Yellow-green colored cable is connected to terminal 7 for silo upper level signal return information and to terminal 6 for silo lower level signal return information.

Şekil-6

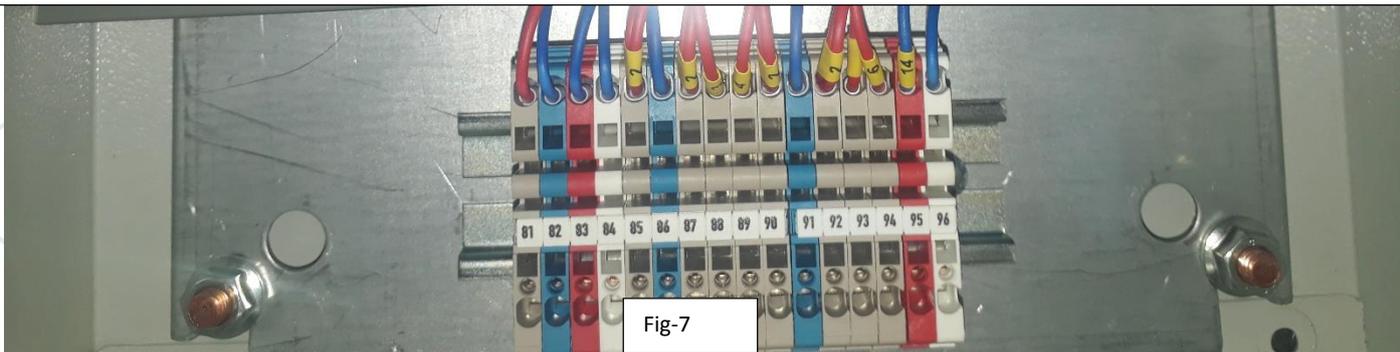
12. Pull the lower and upper level motor cables of the silos that have been connected to the panel on the silo-1 leg. Connect the 3x1 mm<sup>2</sup> cross-sectioned cables to the panel according to the project.



- Silo level supply cable is 4x1mm<sup>2</sup> cross section and there is brown, blue, black and gray cable inside the cable. The brown cable is connected to the No:81. The blue cable to the No:82, The black cable to the No:83 connector, , and the gray cable to the 84 no Connector..

1.silo upper level supply cable connect to No:85 terminal, neutral cable No:86 terminal, Upper level signal return No:88 cable, 1. Silo lower level supply cable no.87 terminal, Neutral cable no.86 terminal, Signal return cable connects to no.89.

2.silo upper level supply cable connect to No:90 terminal, neutral cable No:91 terminal, Upper level signal return No:93 cable, 2. Silo lower level supply cable no.92 terminal, Neutral cable no.91 terminal, Signal return cable connects to no.94.



- Aggregate(mixer), water, additive and cement weigh hopper loadcells are installed and cable connected.
13. Make the assembly of aggregate / mixer load cell and cable connections. take the mixer to the jack. Remove the 4 pieces of loadcell support and loadcell safety parts under the mixer. Install Loadcell to the mixer. Lower the mixer with the help of the jack and assemble the loadcells to the chassis. After installing the loadcell, make the laodcell connections in the junction box according to the connection information below. Four load cells should be connected in parallel.

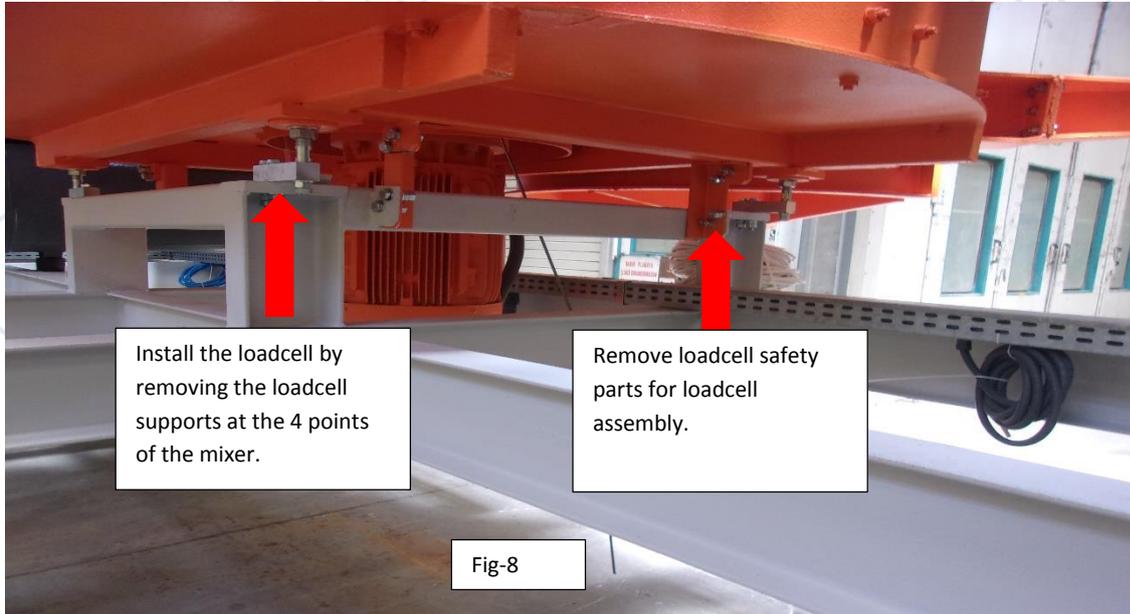


Fig-8

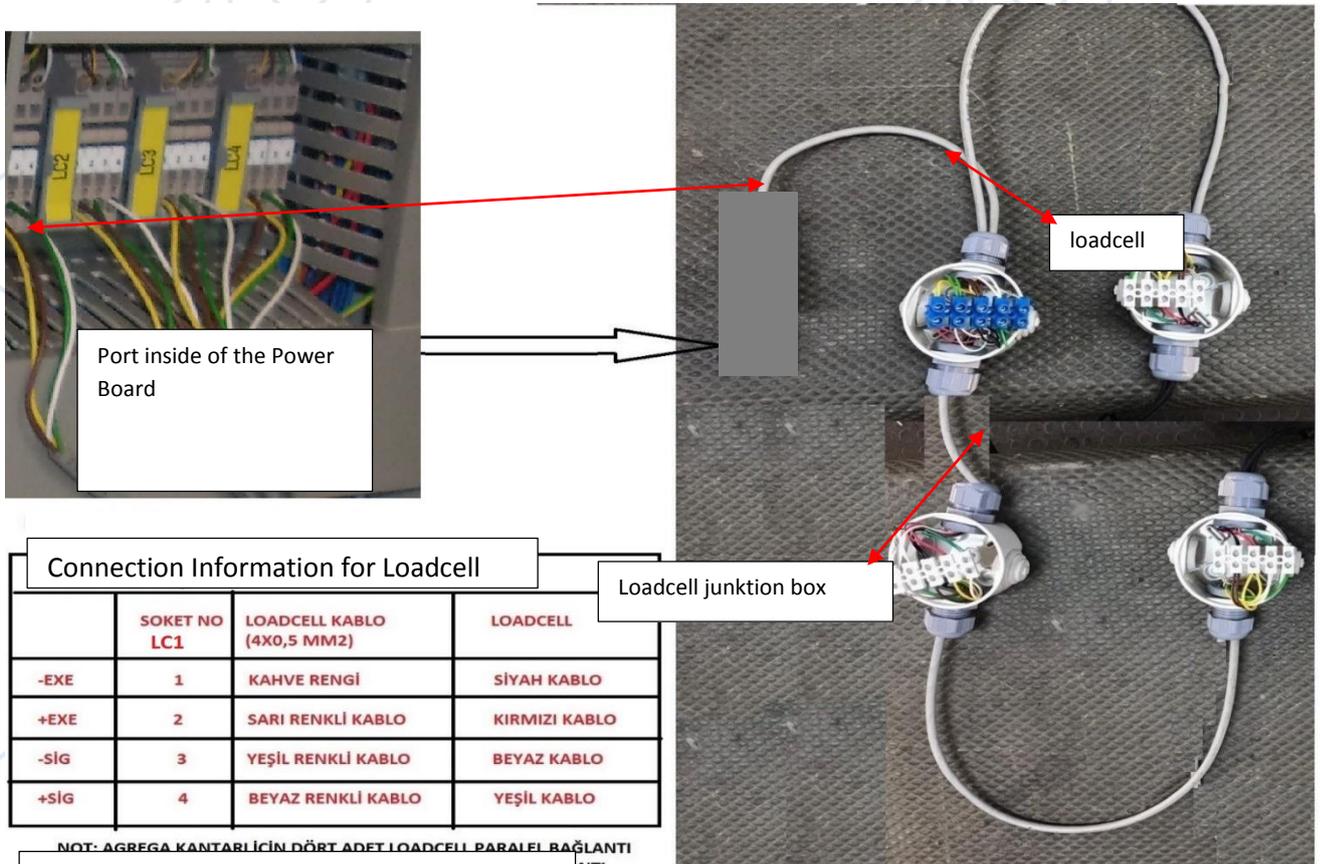


Fig-9

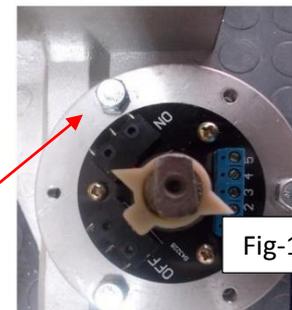
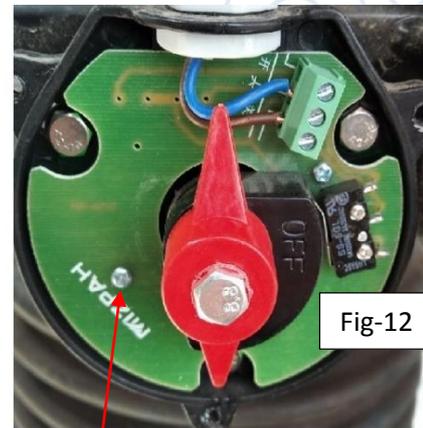
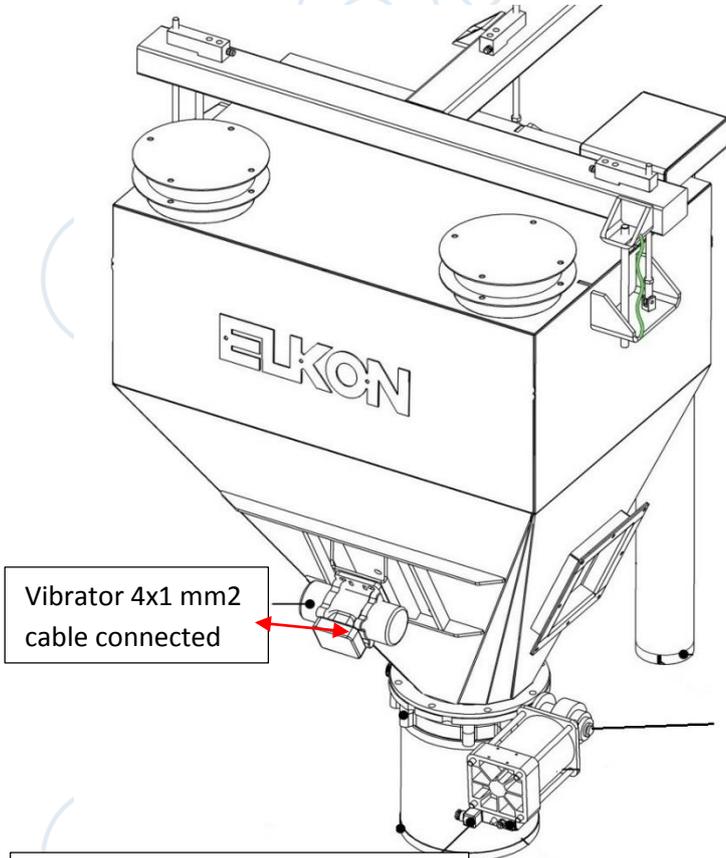
Connection Information for Loadcell

	SOKET NO LC1	LOADCELL KABLO (4X0,5 MM2)	LOADCELL
-EXE	1	KAHVE RENĞİ	SİYAH KABLO
+EXE	2	SARI RENKLİ KABLO	KIRMIZI KABLO
-SIG	3	YEŞİL RENKLİ KABLO	BEYAZ KABLO
+SIG	4	BEYAZ RENKLİ KABLO	YEŞİL KABLO

NOT: AGREGA KANTARLI İÇİN DÖRT ADET LOADCELL PARALEL BAĞLANTI İNTİ MANDA -

Make parallel connection for 4 loadcell of aggregate weigh hoppers as above chart. Cable colors are indicated Fig-14.

14. In the box panel, connect the 2x1 mm<sup>2</sup> cable drawn for the cement weigh hopper discharge flap switch, the 2x1 mm<sup>2</sup> cable drawn for the discharge flap valve (according to figure-11) and the 4x1 mm<sup>2</sup> section cable drawn for the cement weigh hopper vibrator. Cement weigh hopper vibrator (according to the label information for the vibrator connection / make a star connection) and discharge valve and switch connections (if there is a switch in the figure-12 because 2 kinds of actuators are used in the cement weigh hopper discharge, the connection is according to figure-12, if there is a switch in figure 13. make the connection according to figure-13 explanation).



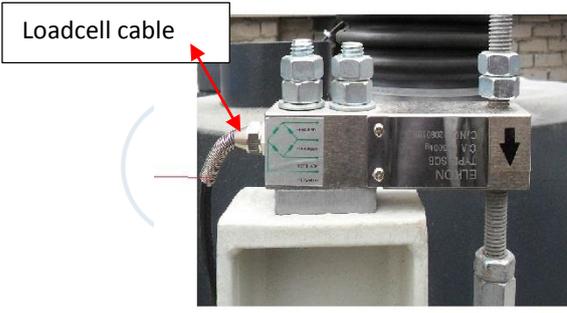
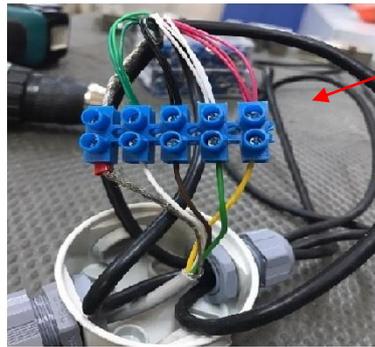
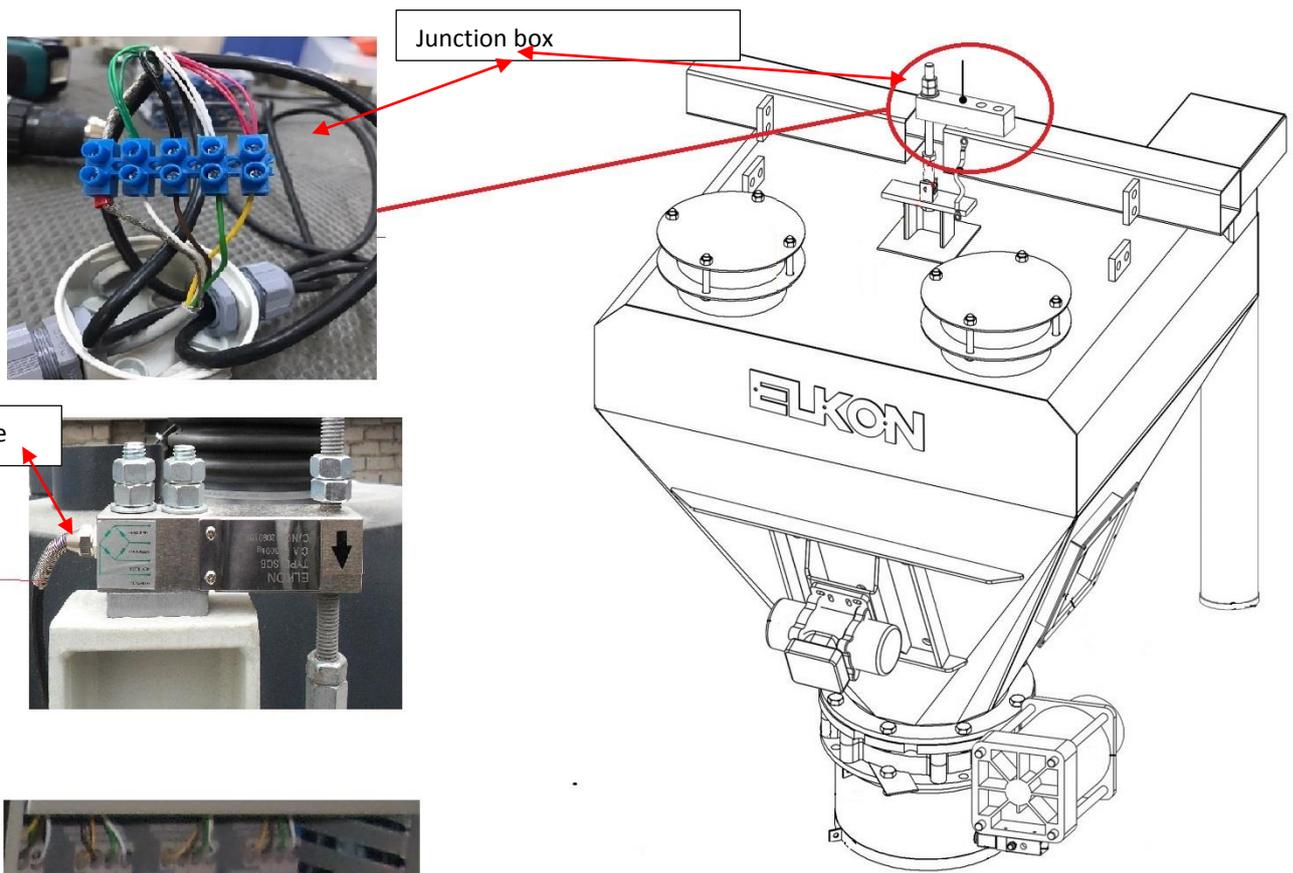
Weigh hopper discharge valve-2x1 mm<sup>2</sup> cable is used and connection is made according to figure-10.



Cement weigh hopper discharge switch-2x1 mm<sup>2</sup> cross-section cable is used. The cables are connected to the 3 and 5 terminals on the switch

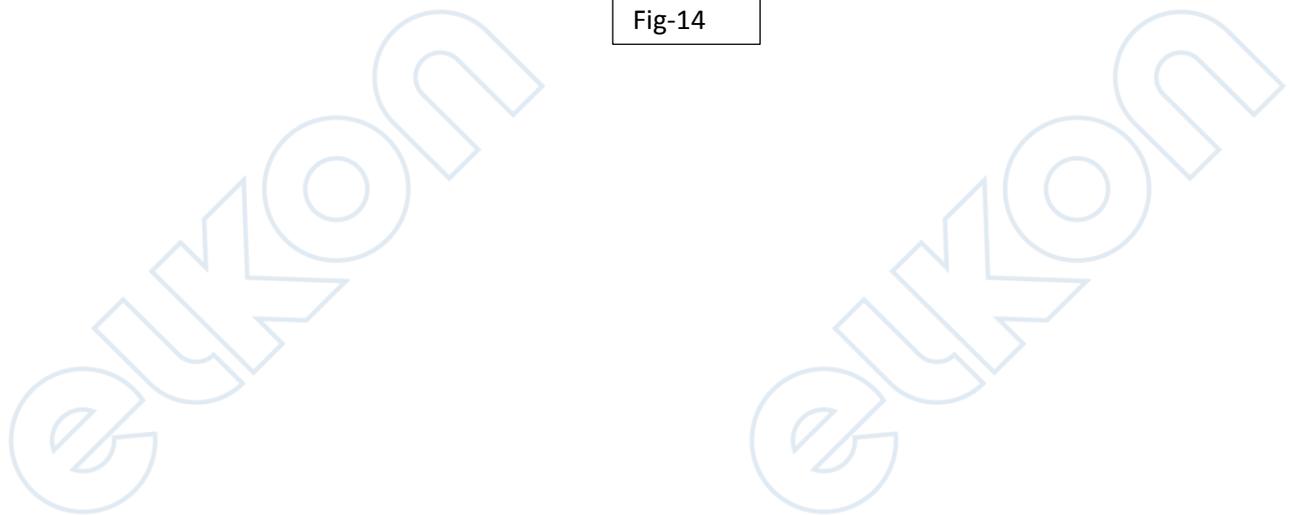
Fig-11

15. Make the load cell electrical connection of the cement weigh hopper. When connecting, add the cables behind the loadcell and the 4x0,5 mm<sup>2</sup> cross-sectioned load cell cable inside the junction box. There are 3 flat type load cells in the cement weigh hopper and loadcells connect to each other by parallel connection.

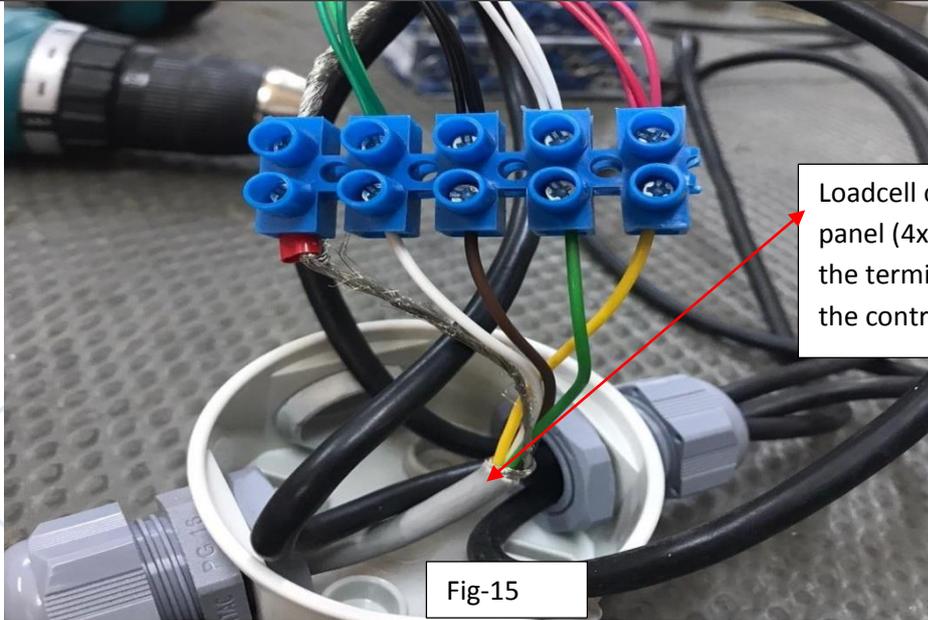


BAĞLAN				Connection Information for Loadcell			
	SOKET NO LC 2	LOADCELL KABLO (4X0,5 MM2)		LOADCELL			
-EXE	1	Brown		Black			
+EXE	2	yellow		red			
-SIG	3	green		white			
+SIG	4	white		green			

Fig-14



Loadcell connection-There are 1 unit loadcell at the cement weigh hopper and connection should make as follows Fig-15.



Loadcell cable to the control panel (4x0.5 mm2) Connect the terminals LC2-1-2-3-4 in the control panel.

Fig-15

16. Make the water weigh hopper load cell electrical connection in the junction box. Connect the load cell cable and the cable going to the control panel inside the junction box. Use the link in figure-16 for connection. Connect the loadcell cables in the terminals(LC3-1-2-3-4) in control panel.

Loadcell cable

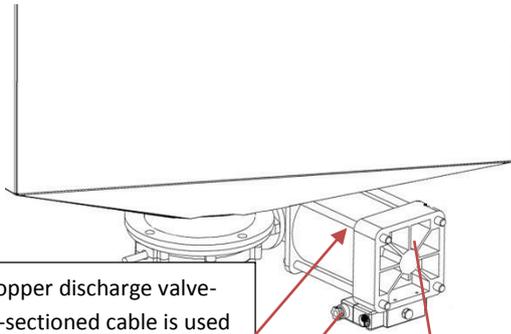
water weighing load cell

Junction box

Connection Information for Loadcell			
BAĞLANTI	SOKET NO LC 2	LOADCELL KABLO (4X0,5 MM2)	LOADCELL
-EXE	1	KAHV Brown	Black
+EXE	2	SARI R yellow	red
-SIG	3	YEŞİL R green	white
+SIG	4	BEYAZ R white	green

Fig-16

17. Water weigh hopper; since the water weigh hopper discharge valve and weigh hopper discharge switch are used in the water weigh hopper discharge switch, if there is a switch in figure-15, make the connection according to figure-17 description, if there is switch in figure 18, make the connection according to fig-18.



Water weigh hopper discharge valve- 2x1 mm2 cross-sectioned cable is used (connect according to figure-19).

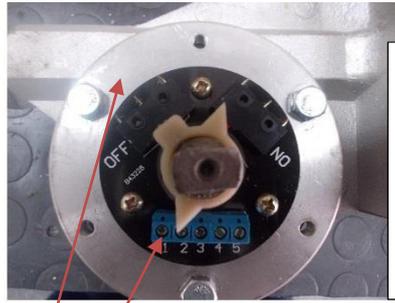


Figure-17 explanation: water weigh hopper discharge switch- 2x1 mm2 cross-section cable is used. The cables are connected to the 3 and 5 terminals on the switch.

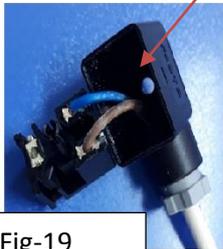


Fig-19

Valve connection



Fig-20

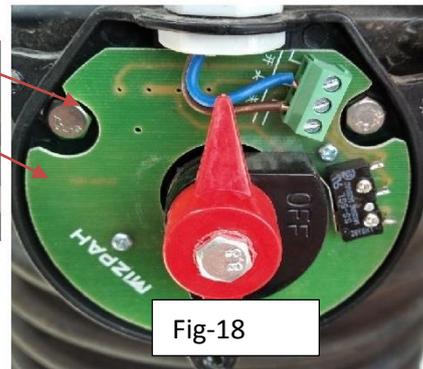


Fig-18

18. Make connection of water weigh hopper and water intake valve according to figure-21, and connect water discharge pump connections according to motor tag information / figure-22. Use a 2x1 mm2 cross-section cable for the water inlet valve.

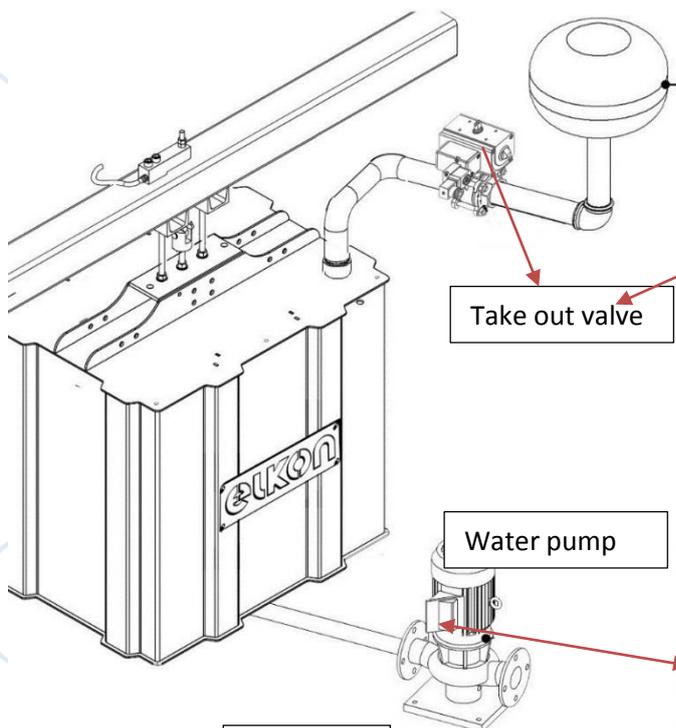


Fig-23



Fig-21

Take out valve

Water pump

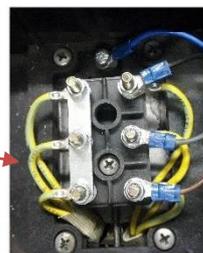


Fig-22-Star connection

19. Install and connect the additive weigh hopper load cell. Connect additive flushing valve, additive discharge valves.

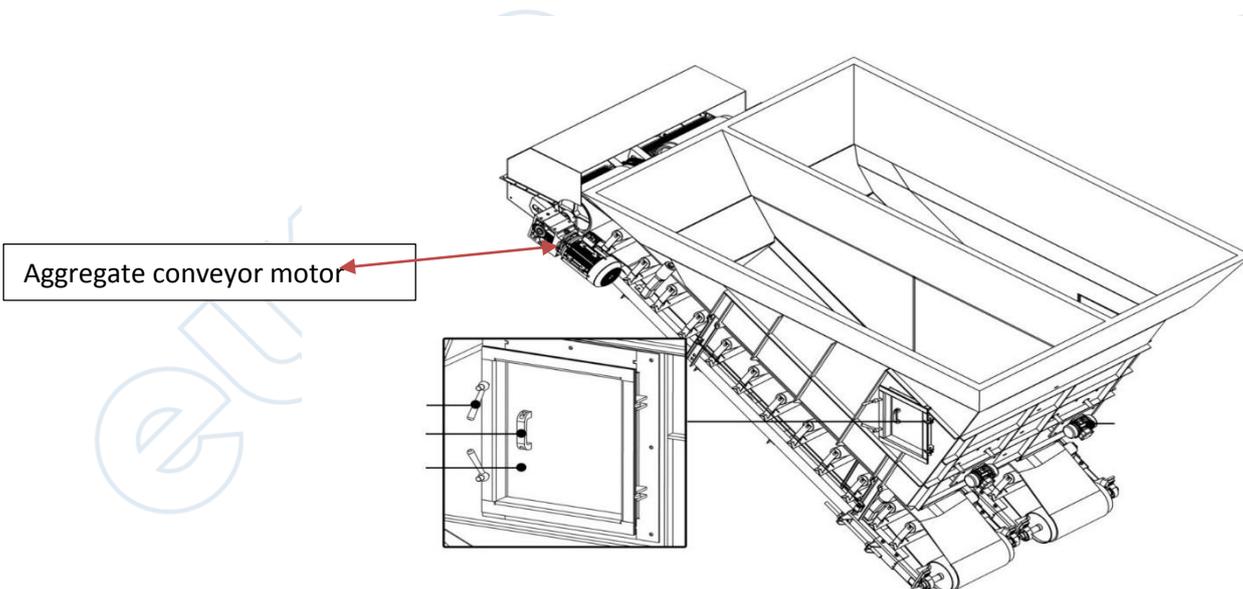
Connection Information for Loadcell; It is same with above chart given in Fig.16

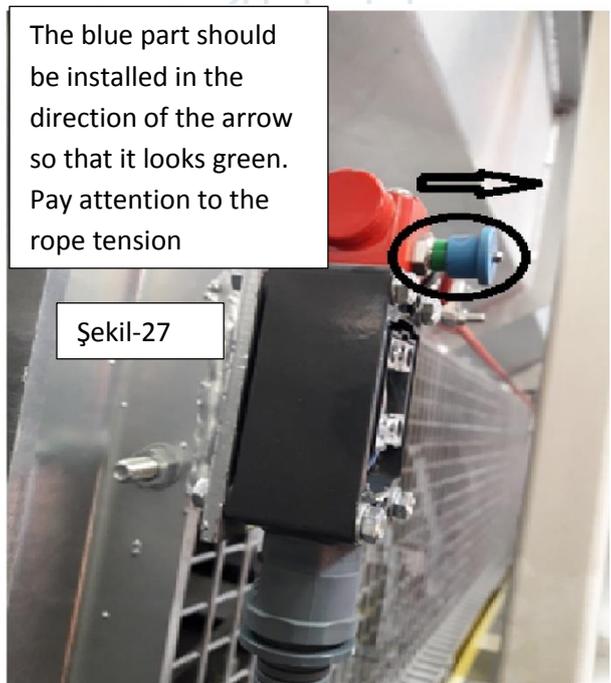
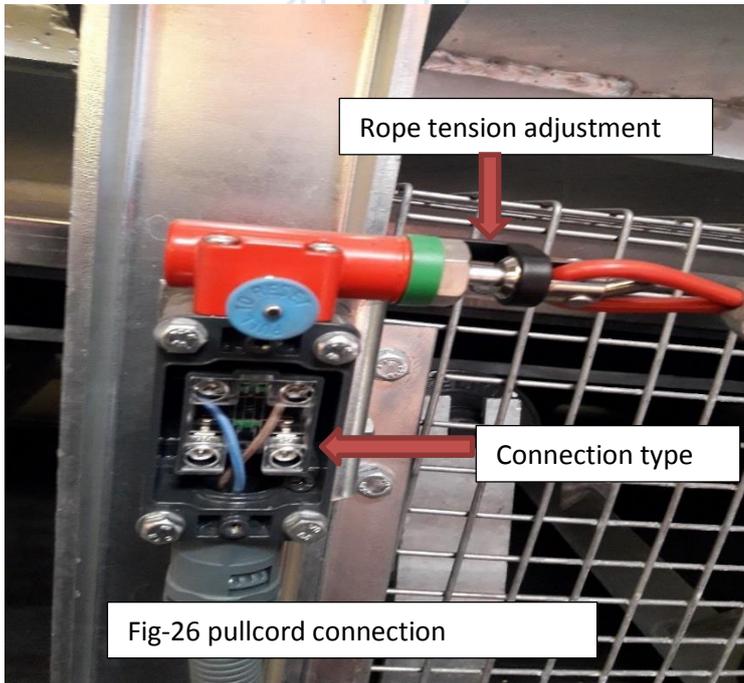
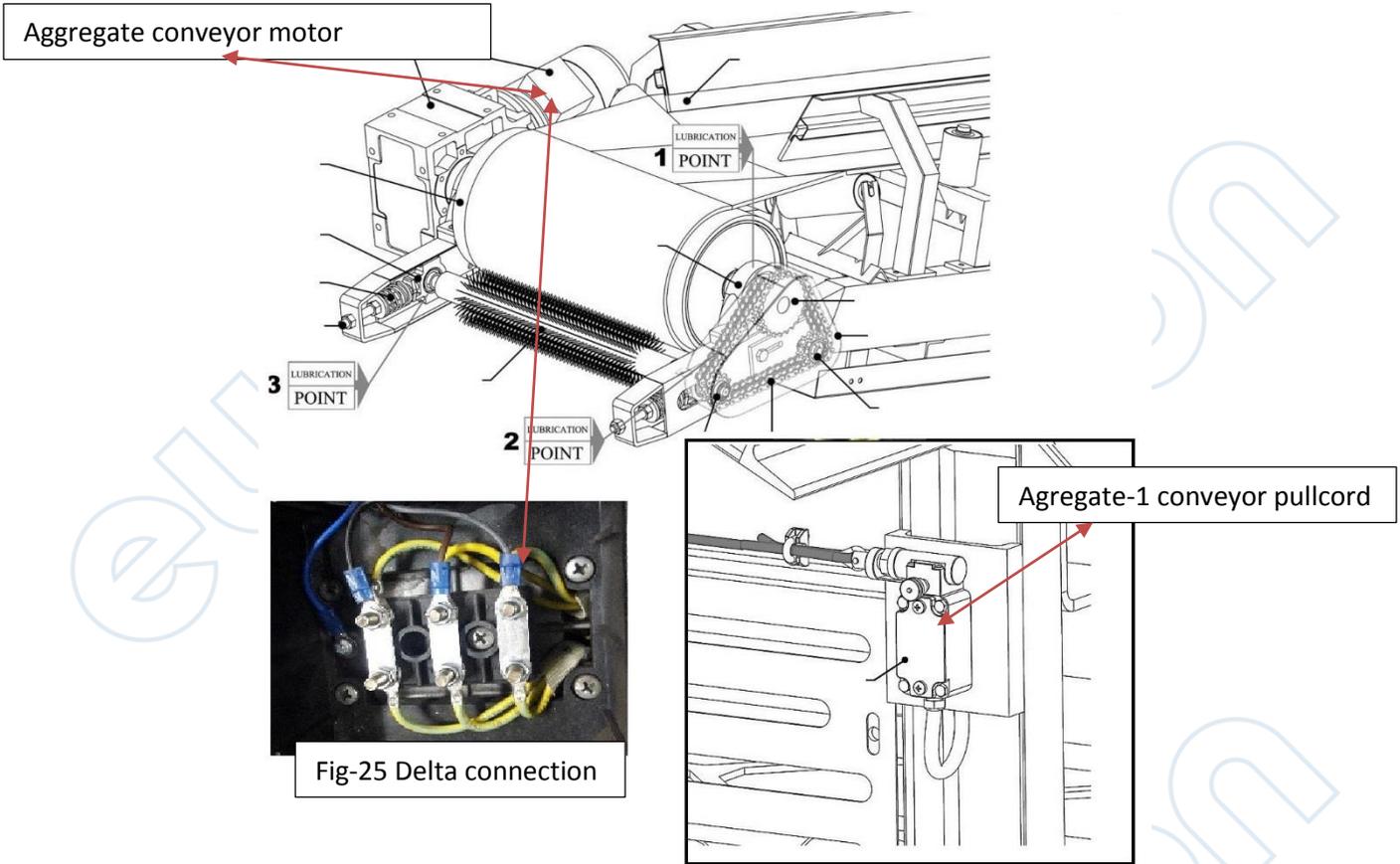
BAĞLANTI BİLGİSİ;			
	LC4	LOADCELL KABLO (4X0,5 MM2)	LOADCELL
-EXE	1	KAHVE RENĞİ	SİYAH KABLO
+EXE	2	SARI RENKLİ KABLO	KIRMIZI KABLO
-SIG	3	YEŞİL RENKLİ KABLO	BEYAZ KABLO
+SIG	4	BEYAZ RENKLİ KABLO	YEŞİL KABLO

Fig-24

Connect the additive pump motor electrical connection with star connection as follows (according to motor label information).

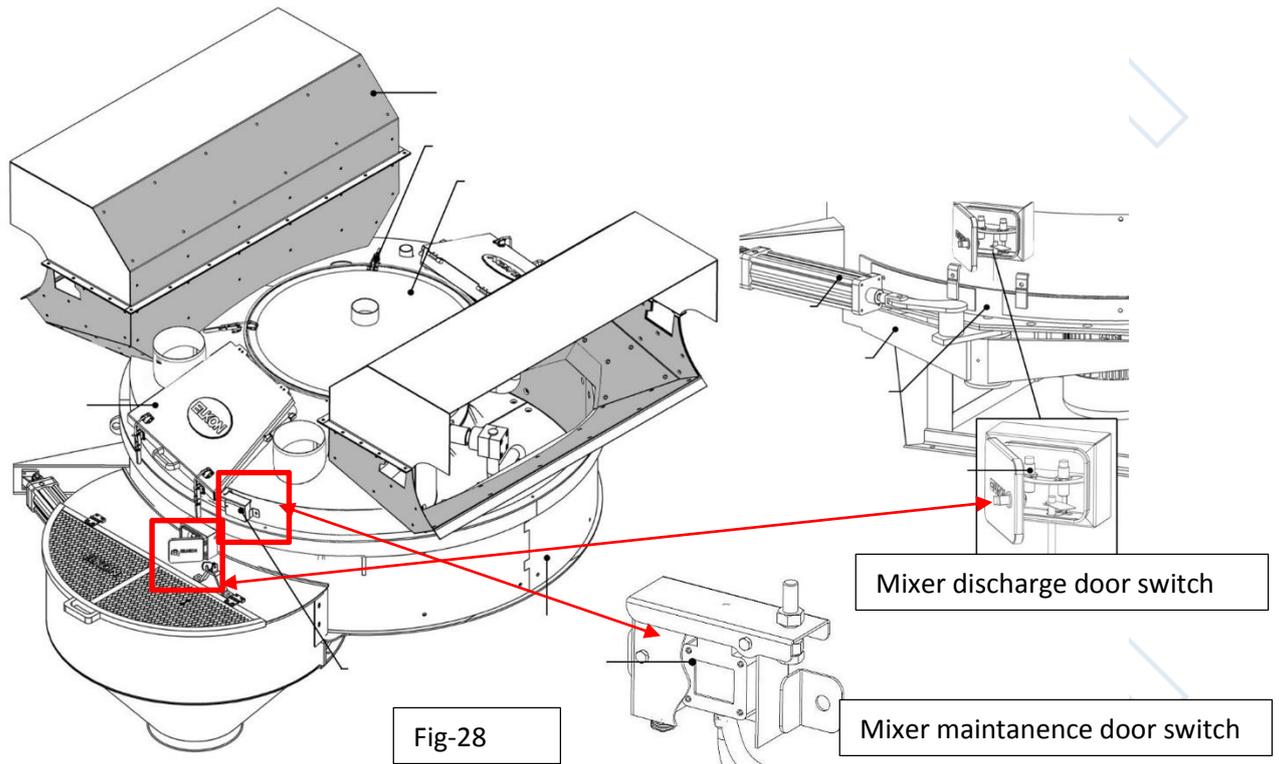
20. Assemble the 4 aggregate band motors of the plant to their place. Connect the cables (cables with a cable cross section of 4x4 mm<sup>2</sup>) drawn separately for each conveyor motor to the conveyor motors. Make the motor connection according to the triangle connection (Figure-25). Check the pullcord / rope switch connection (Figure-26) around both bunker conveyors. Adjust pullcord rope switch rope tension (Figure-26) and install pullcord switch (Figure-27).



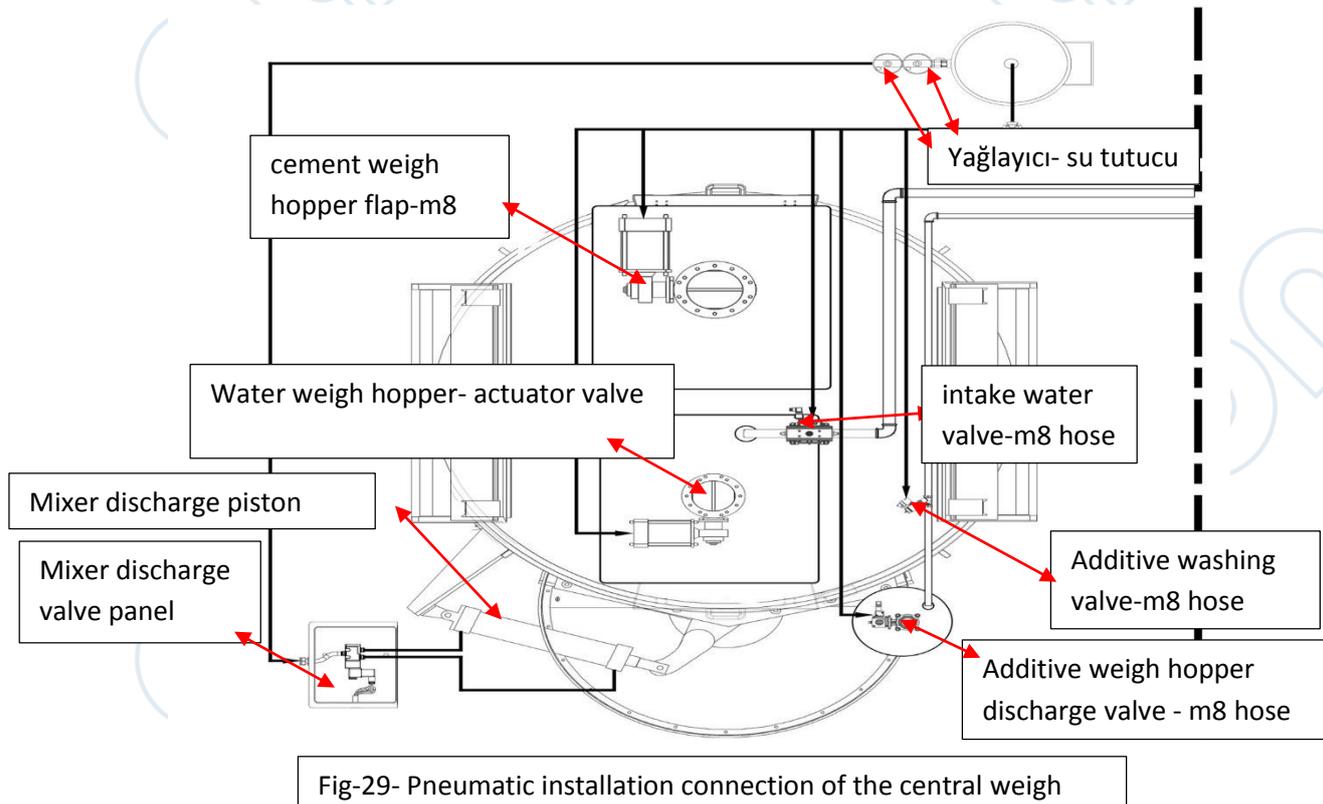


21. Mixer motor cable connections are checked in the concrete plant. Check that the mixer motor connection is delta connection. Check that the maintenance cover switch connection located on the mixer maintenance covers is connected to the NC contacts. Use 2 pieces of m18 proximity switch for the mixer start cover.

Assemble these switches in the discharge cover box and connect them. Use the 4x1 mm<sup>2</sup> cross-section cable drawn for connection.



22. Pull air hose from the compressor to the aggregate weighing conveyor pistons (figure-29), all scales (figure-30), cement silo shocking and cement silo filters. The air hoses to be used are specified in the relevant figures.



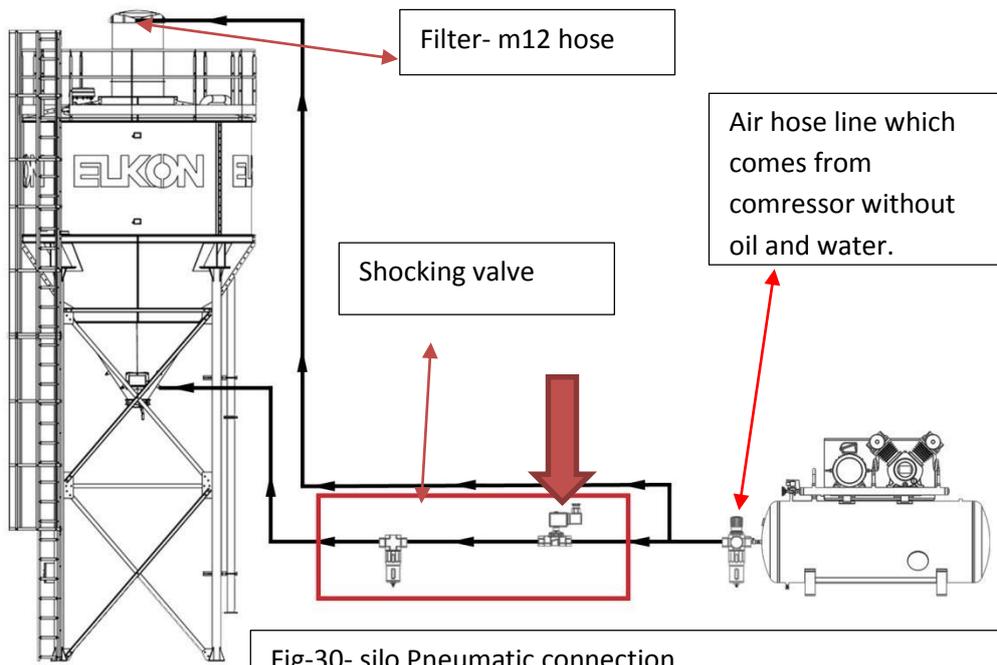


Fig-30- silo Pneumatic connection

23. For the concrete conveyor, draw a 4x4 mm<sup>2</sup> sectioned cable for the engine, 2 x 2x1mm<sup>2</sup> section cables for the water meter and water meter valve mounted next to the concrete conveyor chute from the cable tray installed near the concrete conveyor. Pull the conveyor pullcord cable and make its connection and adjustment..

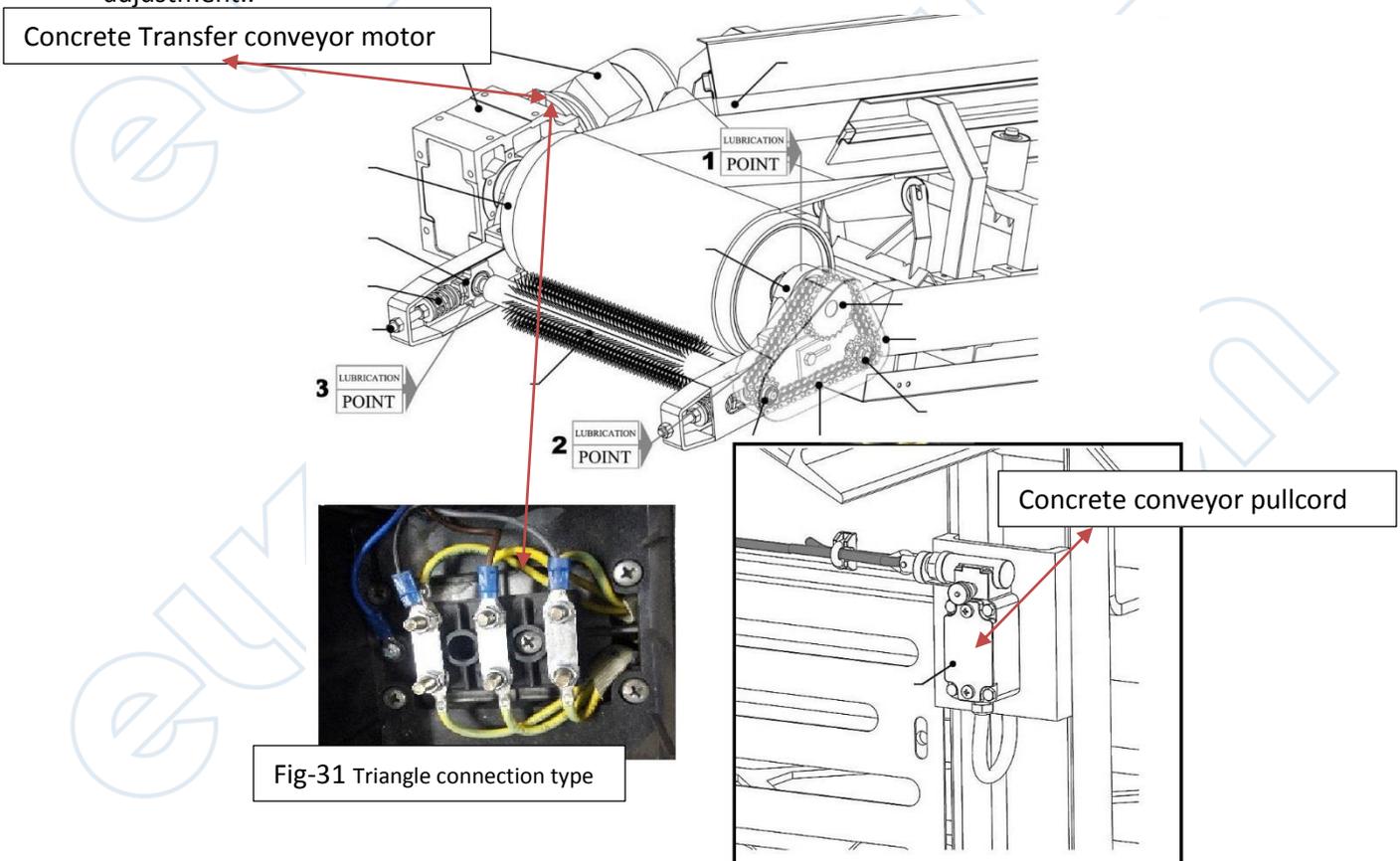


Fig-31 Triangle connection type

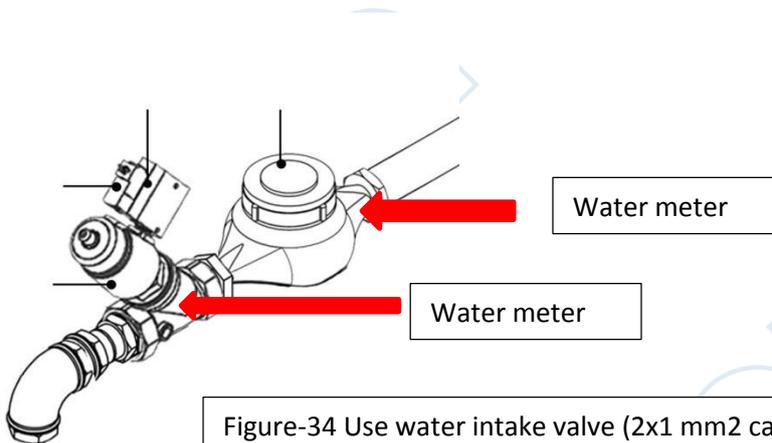
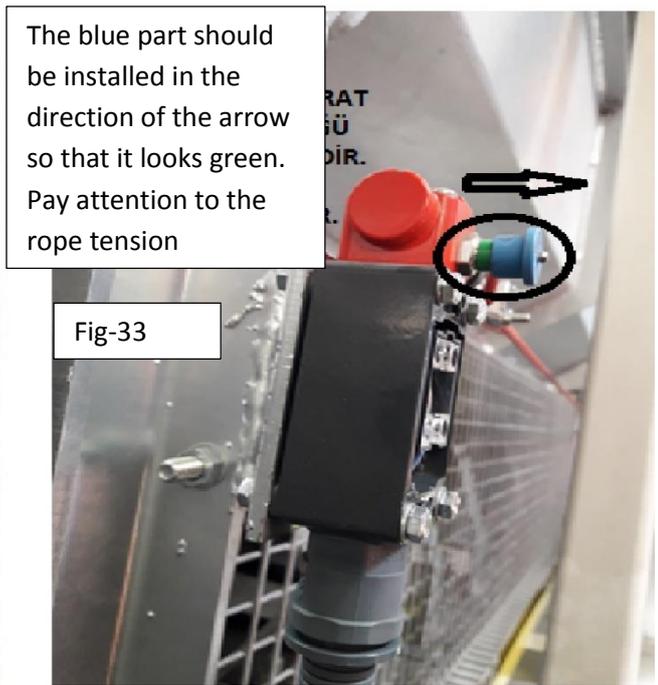
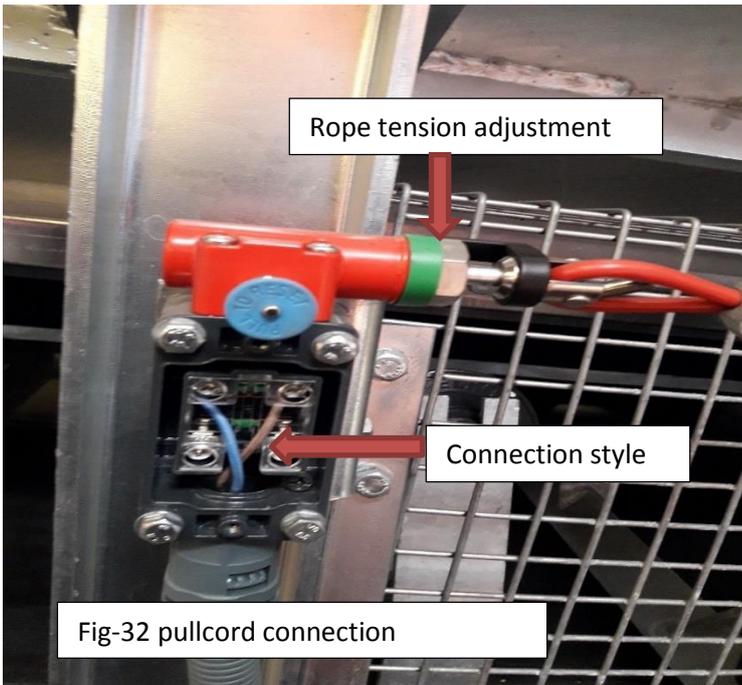


Figure-34 Use water intake valve (2x1 mm<sup>2</sup> cable) and 2x1 mm<sup>2</sup> cross-sectioned cable for water meter connection.

24. All cables in the Concrete Plant are shipped connected to the power board.

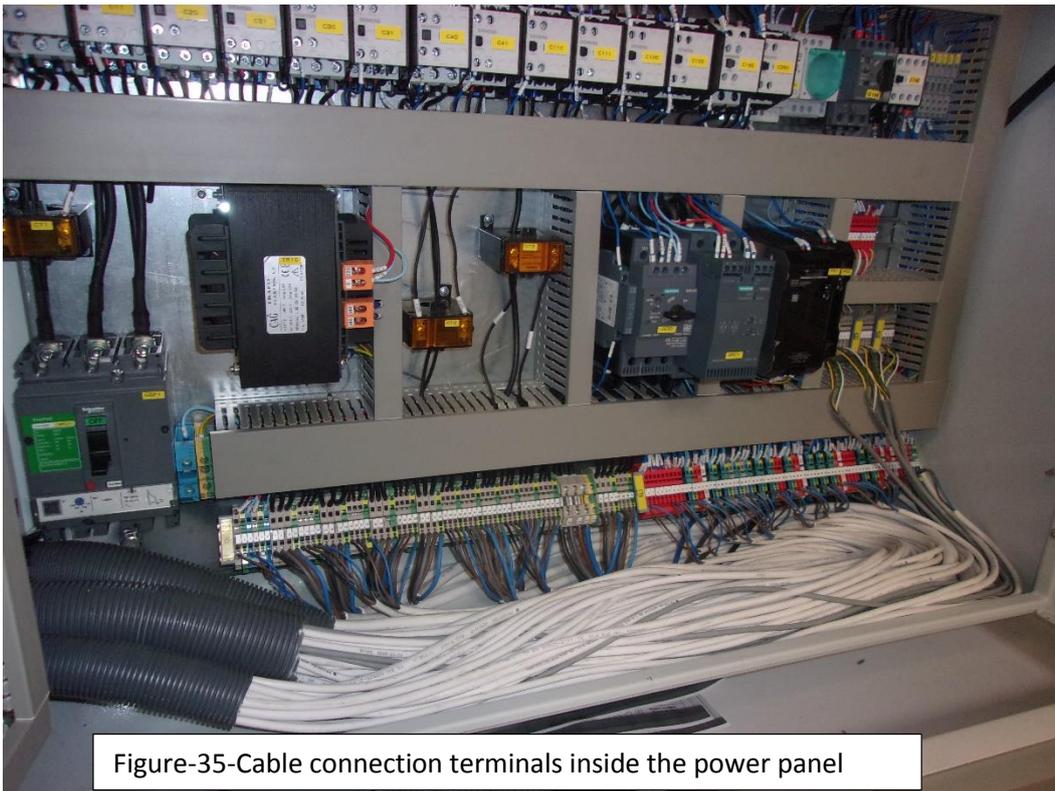


Figure-35-Cable connection terminals inside the power panel

25. For grounding of the concrete plant, bury the grounding plate in the soil and pull the grounding cable to the power panel and connect it..



Figure-36-grounding plate

26. GPower supply cable is connected to the power panel main switch.

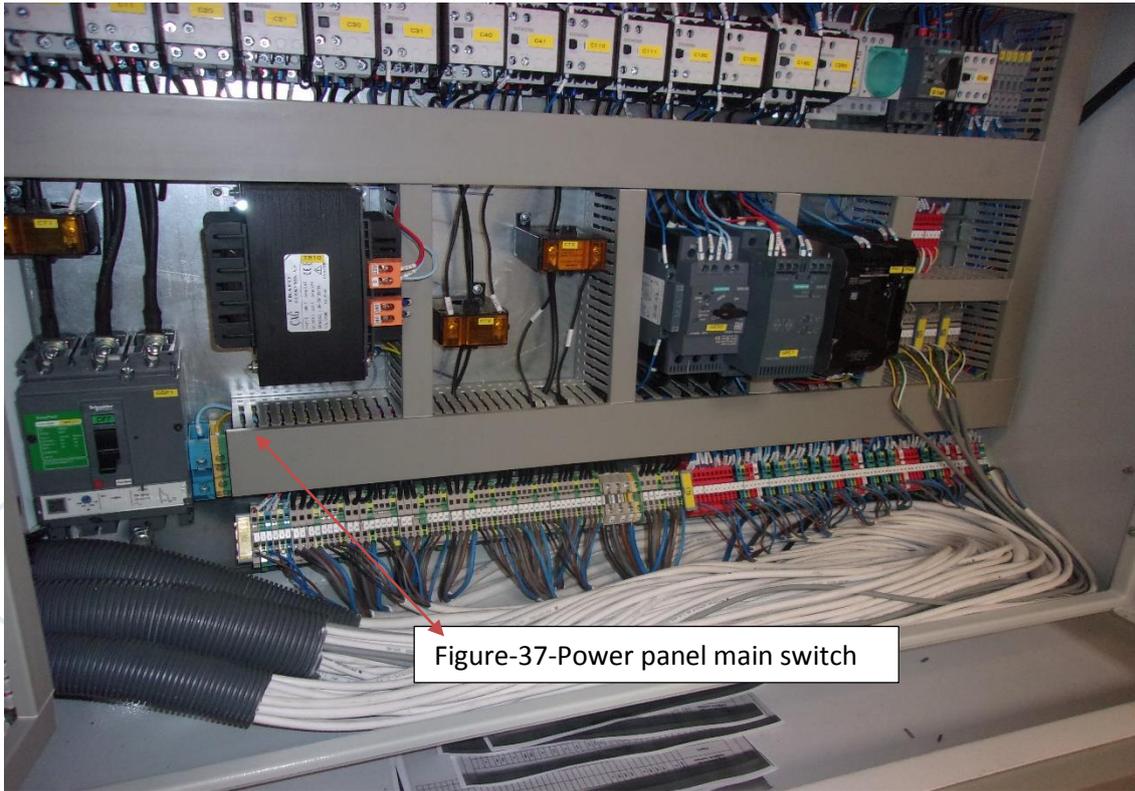


Figure-37-Power panel main switch

27. After all cable pulling works and connections in the concrete plant are completed, energize the power panel. Before energizing the power board, all fuses and thermal magnetic switches in the panel must be in OFF position. Before the power panel main switch is turned ON, check the mains voltage value at the switch input. For Arabia, the mains voltage should be 380 volts and 60 hz. If voltages other than this voltage will cause amperage differences for the motors.

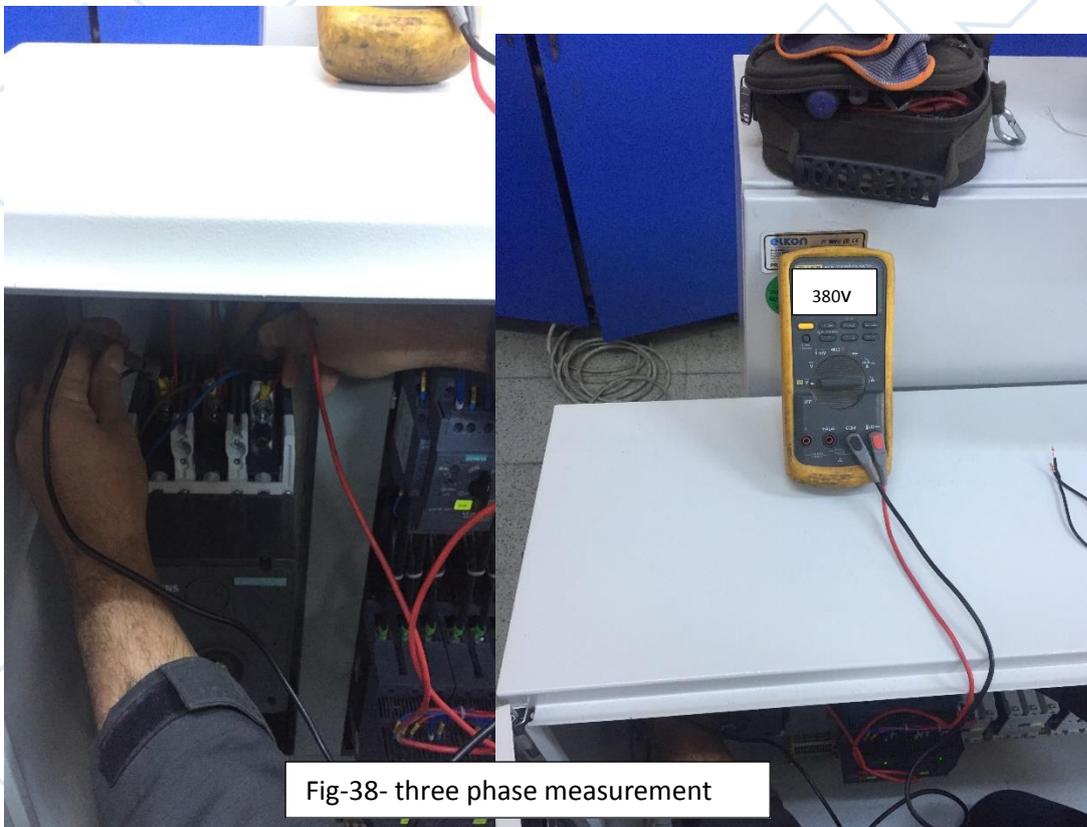


Fig-38- three phase measurement



Fig-39- Mono phase measurement

28. Turn the fuses in the power board to ON position one by one. In the same way, bring TMS to ON position one by one.



Fig-40- Fuse and TMS OFF position

29. By opening the control panel, it will be seen that alarms are received on the HMI screen (Touch panel). These malfunctions will be eliminated by turning the TMS to ON position.
30. Before starting the direction test of the motors in the plant, check inside the conveyors and the mixer. Remove foreign objects (metal parts, etc.) that may damage the mixer and its conveyor.
31. When testing the screw motors, the motors must turn counterclockwise when viewed from the direction of the fan guard. The same process should be done for the other screws. If the motors are rotating in different directions, the phases of that motor must be changed. While adjusting the screw motor directions, check the shocking system at the same time. In other words, it can be controlled by pressing the shocking button while

operating the screw in manual mode on the control panel, it is understood that this control activates the shocking in the correct silo. The same process applies to all silos.

32. While adjusting the direction of the compressor motor, it should rotate clockwise when viewed from the fan guard side, there is already a label on the motor.
33. Set the compressor outlet pressure to 8 bar. The processtat switch on the compressor tank should be switched to automatic mode. After air is supplied to the system, air leaks, if any, should be eliminated.

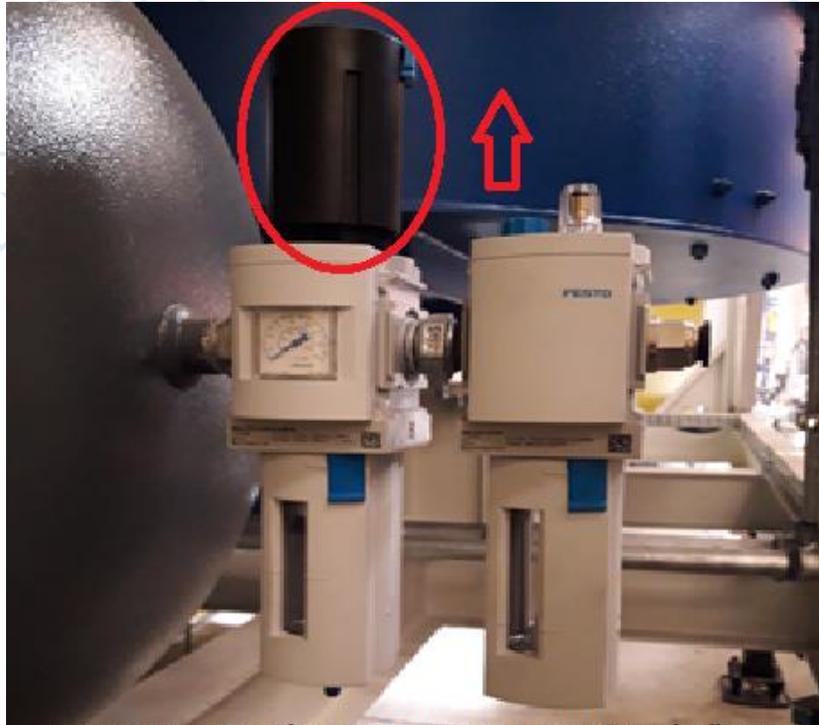


Figure-41- Lift the black part of the conditioner, adjust the pressure by turning the conditioner. pressure 8 bar



Figure-42- Set the compressor start and stop on the processtat. working-stop range will be 5-8 bar

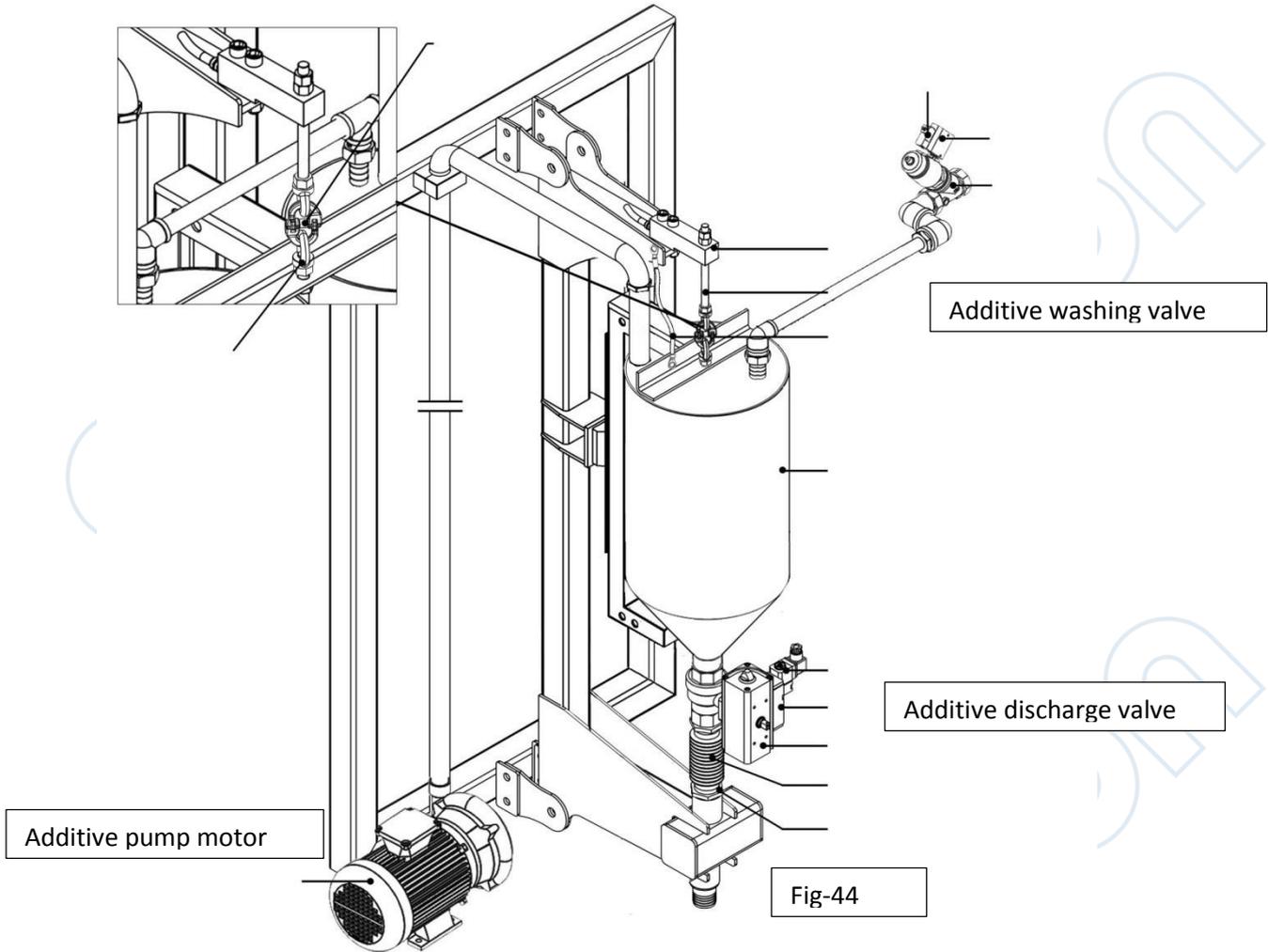
34. The motor directions of the additive pump are indicated with a label on the fan guard and must be operated accordingly. While the additive pump is running, it should be checked whether the additive filling valves are working correctly.



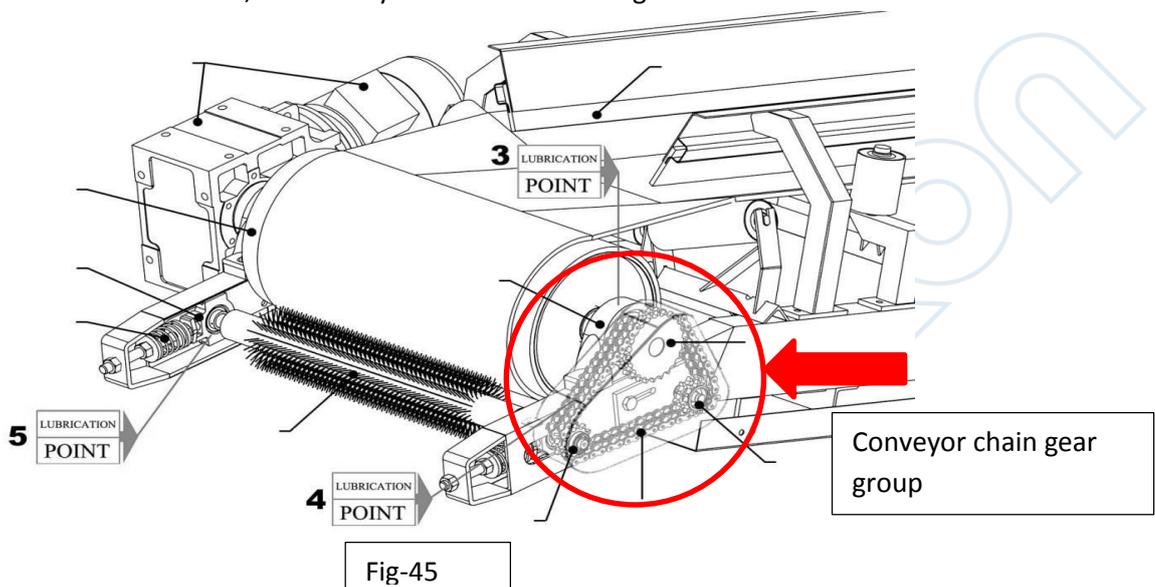
Fig-43- Additive pump rotation

35. The water pump motor direction is indicated on the motor with a label, and it must be operated accordingly. The water filling valve should be operated and controlled.
36. Cement weigh hopper vibrator and discharge valves should be operated and controlled. The open and closed position of the cement weigh hopper flap should be controlled.

37. Additive discharge valves should be operated and checked. Additive flushing valves should also be checked.



38. While the aggregate conveyor motors are being operated, there is an engine lock on the motors of the conveyors. While the engine is running, the vibrator must also work. In addition, before the aggregate conveyor motors are started, the conveyor brush chains and gears should be checked.



39. The current setting of TMŞ in the concrete plant power board should be adjusted according to the label value of the motors specified in the electrical project.

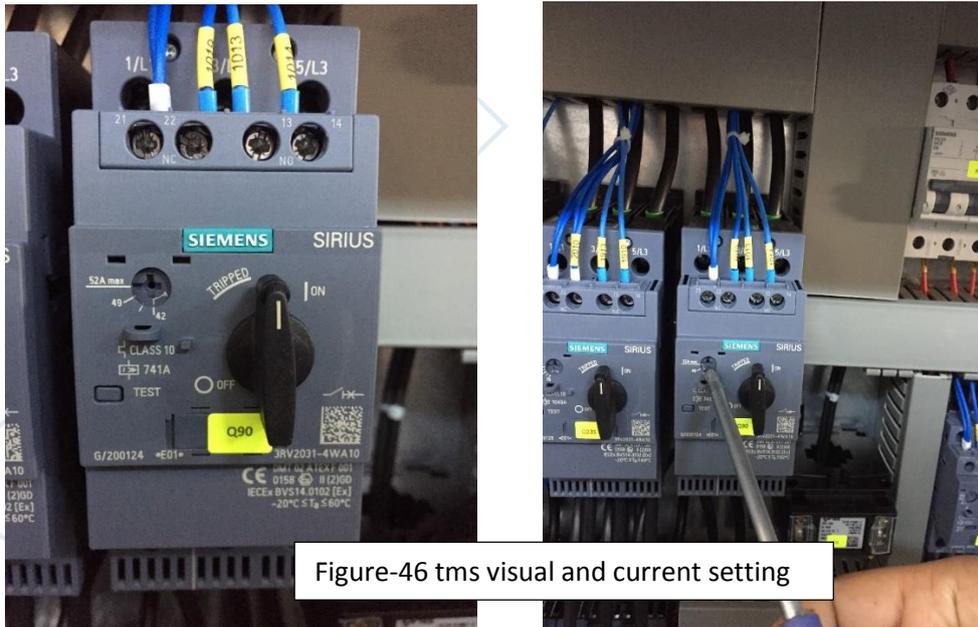


Figure-46 tms visual and current setting

40. Make the motor direction checks. The worksheet is opened on the touch panel, the system is switched to manual mode and each component must be tested manually. Attention should be paid to the directions of the mixer and motors (conveyor, screw) during the test. If the motors rotate in the opposite direction, the phase direction should be changed and the motor directions should be adjusted in the correct direction..



Fig-47

41. Make the weigh hopper calibrations after the motor direction test is done. For the calibration of th weigh hopper , the calibration of the mixer (aggregate) with a weight between 500-750 kg, cement and water-100-150 kg, additive 5 kg weight should be done. For calibration, enter the calibration menu page and select the scale for which weigh hopper will be adjusted and calibrate. For calibration, the scale must be completely empty and the scale must not touch any point. it just needs to be hung with loadcell.

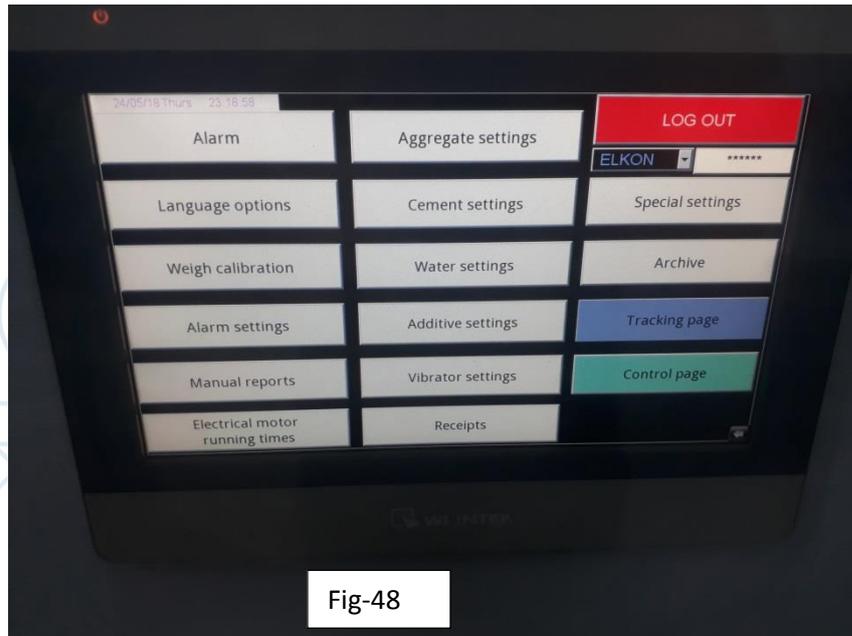


Fig-48

42. When entering the calibration menu, the weigh hopper is zero calibrated first. Then the calibration weight is placed on the weigh hopper and the value placed on the screen is written. Then, send to plc button is clicked and finally calibration is completed by pressing the end calibration button. Accordingly, all weigh hopper should be calibrated.

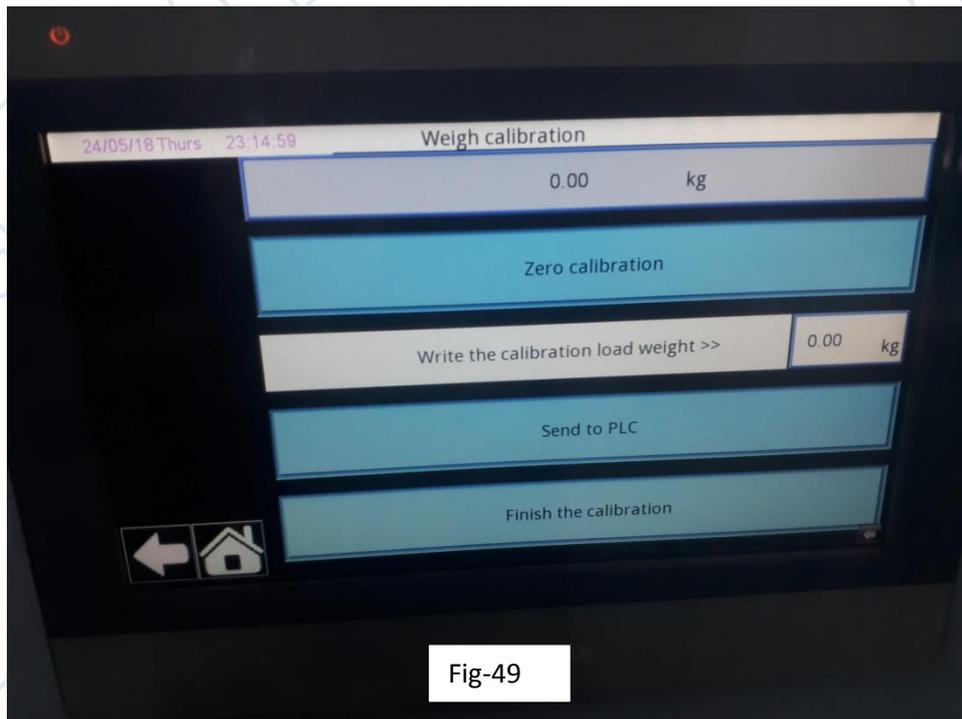


Fig-49

43. Enter the recipe page and enter the recipies..

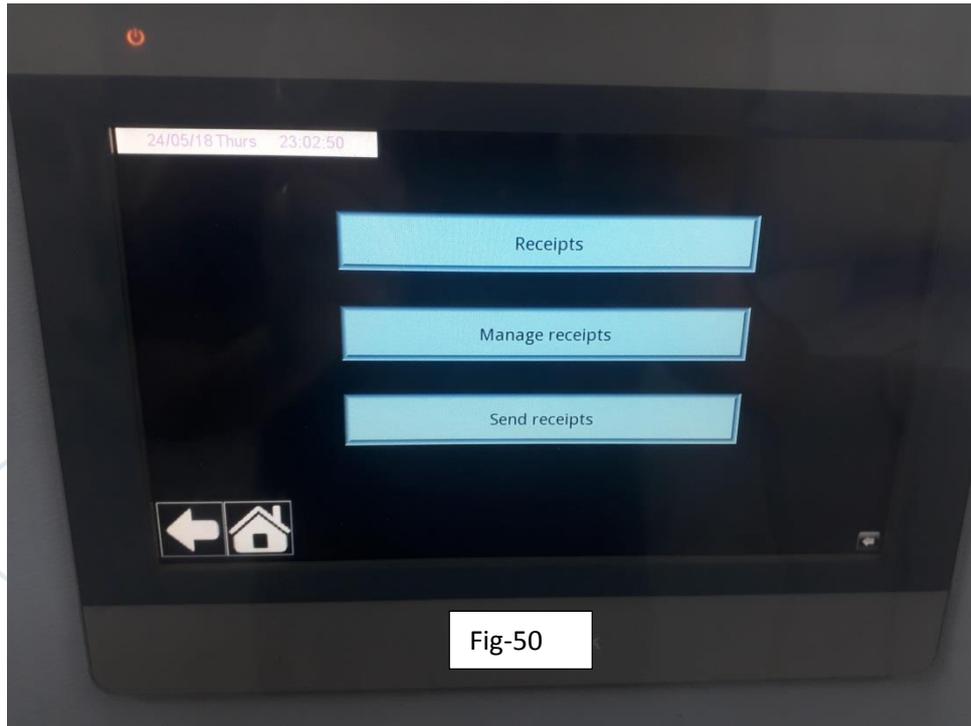


Fig-50

44. Administrator's recipe is entered on the recipe page. Prescriptions are recorded here, however many prescriptions are required. On the recipe page, the received recipe (send receipts) page is entered and the recipe to be assigned to the controller is selected on this page, then the number on that page is pressed, then the recipe is assigned to the controller by clicking the send to plc button..

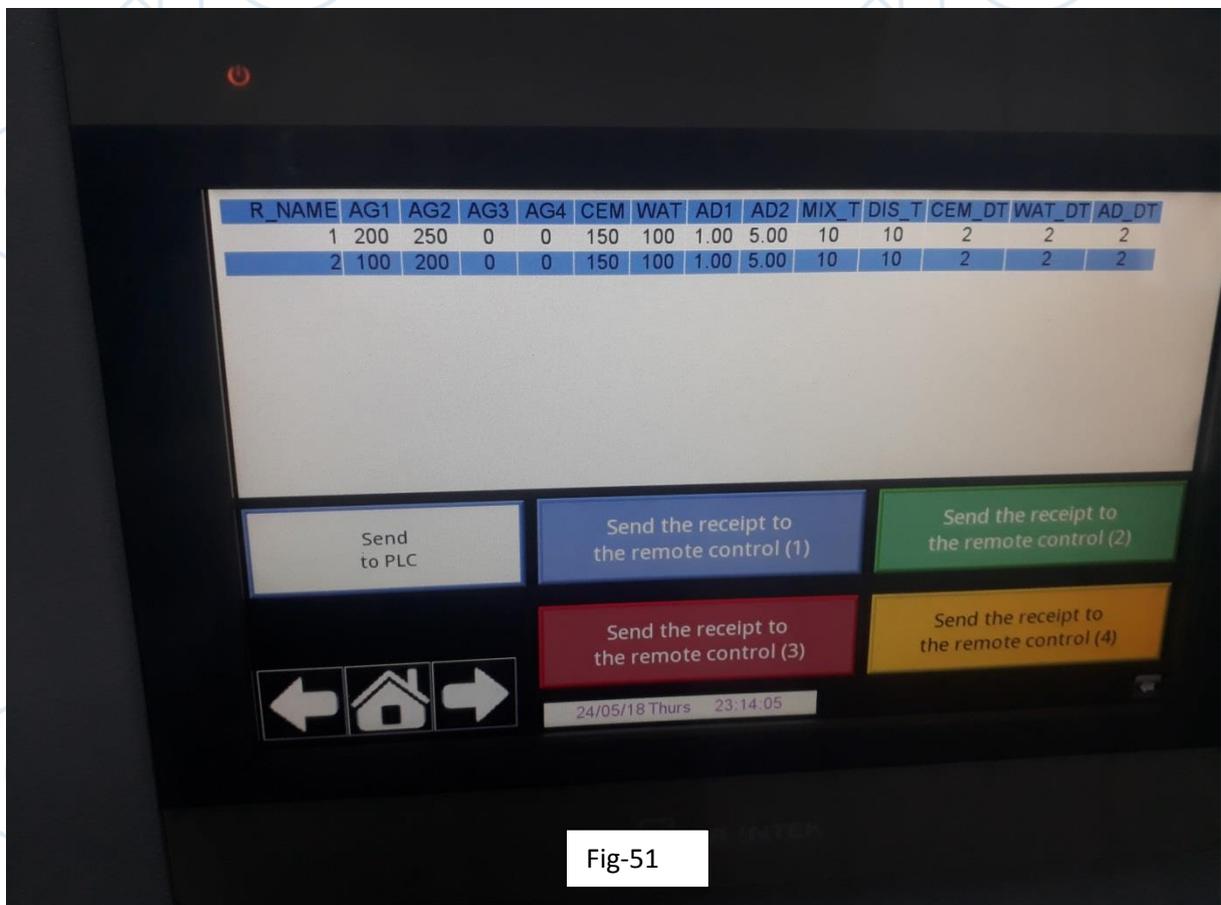


Fig-51

45. After the recipe entries are made, go to the worksheet section..



Fig-52

46. If you want to produce concrete from which recipe, which recipe is pressed from the remote control, that recipe information will be sent to the plc. The amount of concrete to be produced in the worksheet part is entered. In order to start the production and the mixer, production will start by pressing the start button of the remote control for 4-6 seconds..

47. Remote control information is as follows.

<p><b>START</b></p> <p>Svstem</p> <p><b>start</b></p>	<p><b>START</b></p> <p>MIXER START(Press 5-6 Seconds) Production Start</p>
<p><b>STOP</b></p> <p>Svstem</p> <p><b>stop</b></p>	<p><b>STOP</b></p> <p>MIXER STOP (Press 5-6 Seconds) Production StOP</p>
<p>RECIPE <b>-3</b></p>	<p>RECIPE <b>-1</b></p>
<p>RECIPE <b>E-4</b></p>	<p>RECIPE <b>-2</b></p>

Fig-53