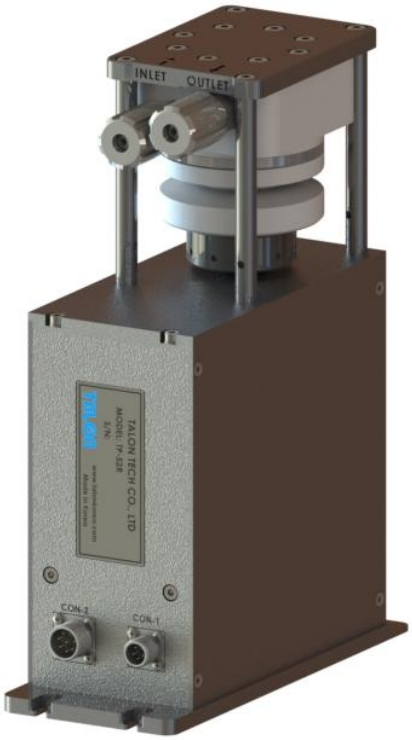
COLOR PR PUMP(CIS) **RRC Signal Pump**

PUMP MANUAL

MODEL : TP-52R



TALON TECH CO. LTD.

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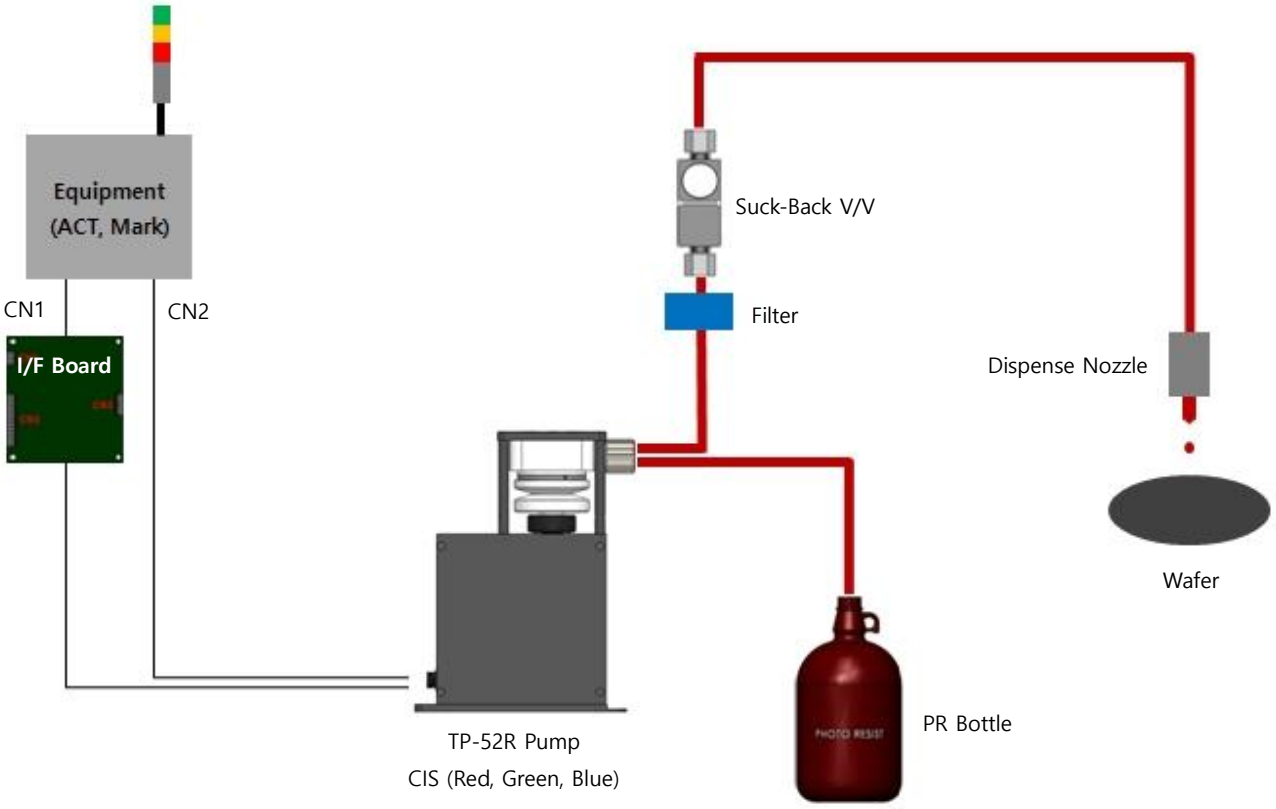
1 System Configurations



TP-52R pump can be used as the above configuration and has been developed conveniently to be compatible with Mark & ACT series systems.

Be careful to use the pump by following this manual or Talon Tech's acceptance. Or, other defects should be paid even under the warranty period.

※ Features & Merits

1. All the PR contacting points are made by Teflon.
2. Driving Method : Simple Diaphragm, Supply Additional Diaphragm
3. Signal is same as RRC Pump : No need the extra controller. (ACT/MARK)
4. Save Maintenance Time : Easy to dis/assemble the diaphragm
5. Useful PR : normal PR & CMOS IMAGE SENSOR (Color PR)

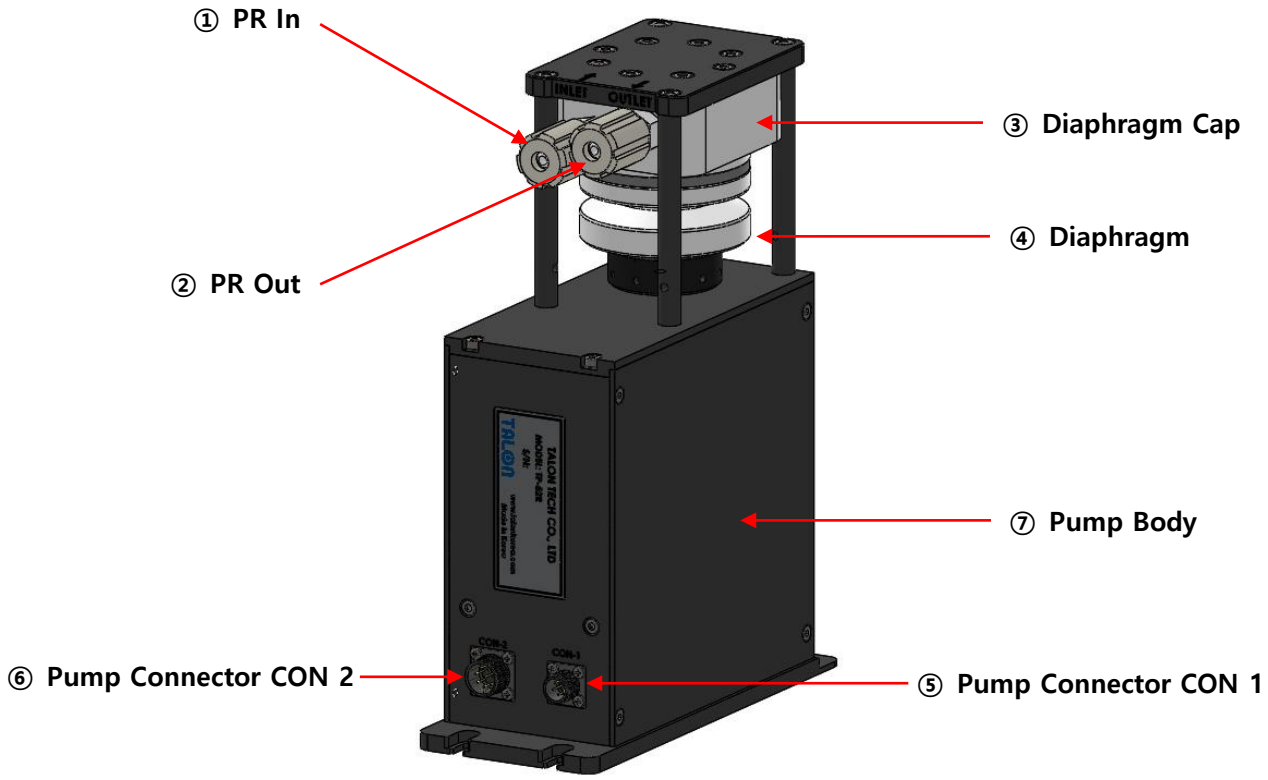
2 System Specifications

2-1 Pump [TP-52]

ITEM	SPEC	REMARKS
Dispense Volume Range	0.5cc ~ 7.0cc	
Dispense Pressure	0.2Mpa (2kgf/cm²)	
Dispense Volume Resolution	±0.05cc	
Dispense / Reload Rate	0.5cc/sec ~ 4.0cc/sec	
Dispense Repeatability	≤±0.05 (0.8cc, 23℃)	
Viscosity	Max : 500cp	
Driver System	DC Servo Motor Driver Current : 300~500mA/Cycle	
Control System Power	Motor Power : DC24V, Home Sensor : DC5V	
Input Pulse VS Dispense Volume	812 pulse (Full Step) / 1cc	
Input Pulse VS Encoder Output Pulse	Full Step-1:1	
Resist In/Out	1/4 Inch Teflon	
Ambient Temperature	0 ~ 40℃	
Weight	3.3kg	
Pump Dimension	W : 72mm, L : 175mm, H : 230mm	

3 System In/Exterior Names

3-1 Pump In/Exterior Names



3-1-1 Pump Name Explanation

① PR In

- Chemical Supply. (¼ Inch Teflon)

② PR Out

- Chemical Dispense. (¼ Inch Teflon)

③ Diaphragm Cap

- Container for chemical divided to In/Outlet.

④ Diaphragm

- To dispense Chemical

⑤ Pump Connector CON1

- CN1(Motor) : Connector for Pump Operation (Round Panel Mount 5P Female)

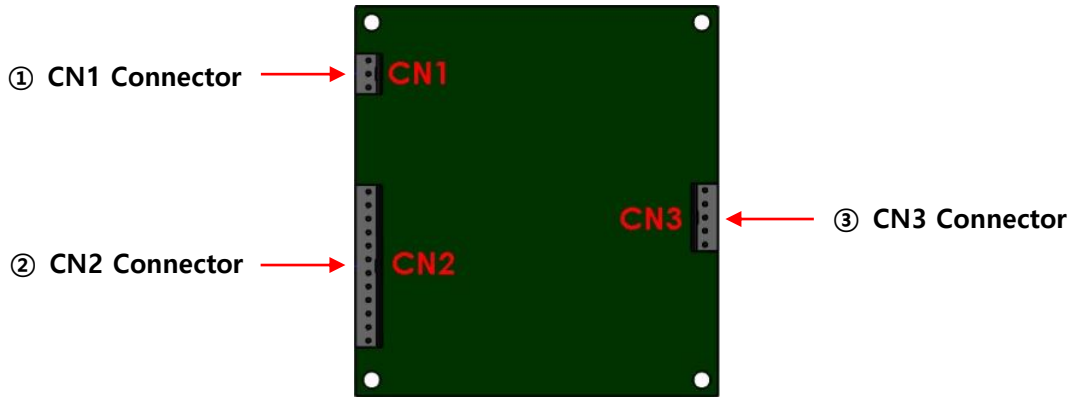
⑥ Pump Connector CON2

- CN2(Track) : Connector for Pump Operation (Round Panel Mount 8P Female)

⑦ Pump Body

- Container to include motor, Ball screw, etc.

3-2 I/F Board Exterior Names



3-2-1 I/F Board Name Explanation

① **CN1 Connector**

- 3P Connector linked to Pump I/O Conn Board CN130

② **CN2 Connector**

- 12P Connector linked to Pump I/O Conn Board CN1~9

③ **CN3 Connector**

- 5P Connector linked to the existing RRC Pump(TP-34R Pump) CN1

4 Wiring & Signal Interface

4-1 ACT Type CON1 Pin Assign [Motor Cable]

ACT Type Pin Assign			
Pin NO.	**Signal Name**	**Color**	**Description**
A	CW+/CCW+	White/Gray	DC Servo Motor
B	CW-	Black	
C	CCW-	Brown	
D	+24V/ACT	Orange	
E	G24V/ACT	Black	

4-2 ACT Type CON2 Pin Assign [Track Cable]

ACT Type Pin Assign			
Pin NO.	**Signal Name**	**Color**	**Description**
A	EA+	Sky-Blue	Encoder A Phase Output
B	EA-	Green	
C	EB+	Yellow	Encoder B Phase Output
D	EB-	Orange	
E	G5/LGC	Black	GND
F	Home Sensor	Black	Output(Open Collector), 5VDC, 1c=100mA
G	+5V/LGC	Red	5V ±0.25V / 0.2A
H	TH S/W	Green	GND

4-3 Mark Type CON1 Pin Assign [Motor Cable]

Mark Type Pin Assign			
Pin NO.	**Signal Name**	**Color**	**Description**
A	CCW+	Gray	DC Servo Motor
B	CW-	Black	
C	CCW-	Brown	
D	+24V/ACT	Orange	
E	G24V/ACT	Black	

4-4 Mark Type CON2 Pin Assign [Track Cable]

Mark Type Pin Assign			
Pin NO.	**Signal Name**	**Color**	**Description**
A	EA+	Sky-Blue	Encoder A Phase Output
B	EA-	Green	
C	EB+	Yellow	Encoder B Phase Output
D	EB-	Orange	
E	G5/GLC	Black	GND
F	Home Sensor	Black	Output(Open Collector), 5VDC, 1c=100mA
G	+5V/GLC	Red	5V ±0.25V / 0.2A
H	CCW+	Gray	DC Servo Motor

5 Maintenance

5-1 Pump Parts Dis/Assembly

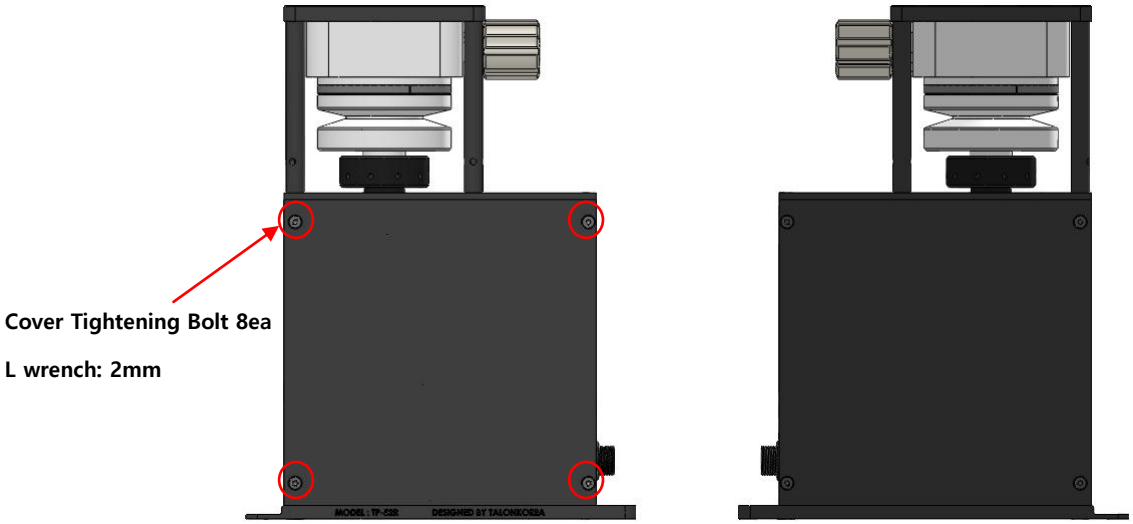
5-1-1 Pump Cover Dis/Assembly

1. Open the cover by loosening the pump cover mounting screw (8ea) with screw driver (+) as the below [PIC 1].

[Notice]

Be careful not to cut the fingers on cover open.

Don't disassemble the drive shaft parts inside the pump.



5-1-2 Driving Shaft Condition Check & Grease up on Ball Screw

1. Check the motor's vibration & noise when the pump works.
2. Check the bolts tightening condition and ball screw worn-out condition.
3. Check any interruption between cables & moving parts.
4. Check the conditions of linear bushing /shaft when the pump works.
5. Grease up on ball screw & LM linear bushing.
6. Grease up every 6 months.

5-1-3 Diaphragm Ass'y Dis/Assembly

Refer to the attached manual for diaphragm dis/assembly.

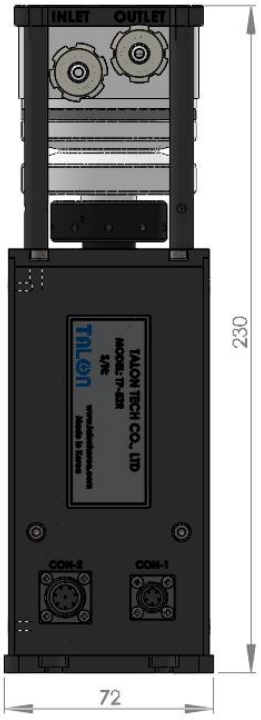
6 Recommended Spares / Mechanical Dimensions

6-1 TP-52R Spare Parts

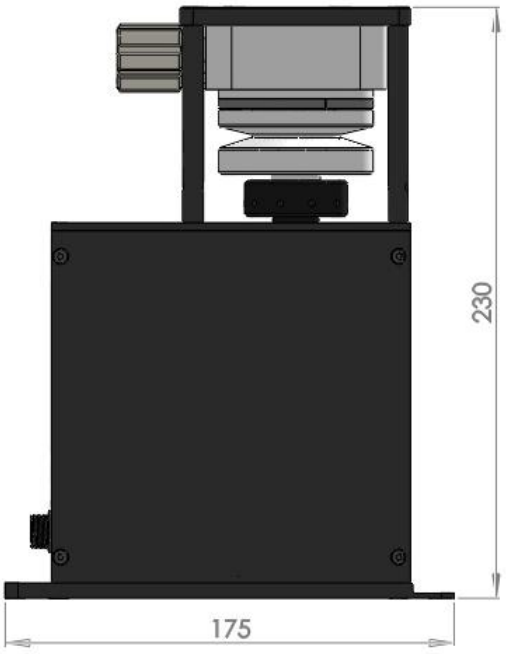
Division	Part NO.	Description	Qty
Pump	TL-52R-TA-001	Diaphragm Cap	1
	TL-52R-TA-002	Blank Cover	2
	TL-52R-TA-003	Inner Nipple	1
	TL-52R-TA-004	Diaphragm (7cc)	1
	TL-52R-TA-005	PFA Tube Fitting	2
	TL-52R-TA-006	PFA Nut	2
	TL-52R-MA-001	Ball Screw (7cc)	1
	TL-52R-MA-002	Support Unit	1
	TL-52R-MA-003	Linear Shaft (Straight)	2
	TL-52R-MA-004	Linear Ball Bushing (Straight)	2
	TL-52R-EB-001	DC Servo Motor	1
	TL-52R-EB-002	Encoder	1
	TL-52R-ET-001	O-Ring (028)	1
	TL-52R-ET-002	O-Ring (014)	2
	TL-52-ET-003	Ball Screw Pulley	1
	TL-52R-ET-004	Motor Pulley	1
	TL-52R-ET-005	Timing Belt	1
	TL-52R-EA-001	Photo Sensor	2
Assembly	TL-52R-TA-003	Diaphragm Assembly	1
I/F Board	TL-52R-EB-003	I/F Board	1

6-2 Pump Dimensions

6-2-1 Front View



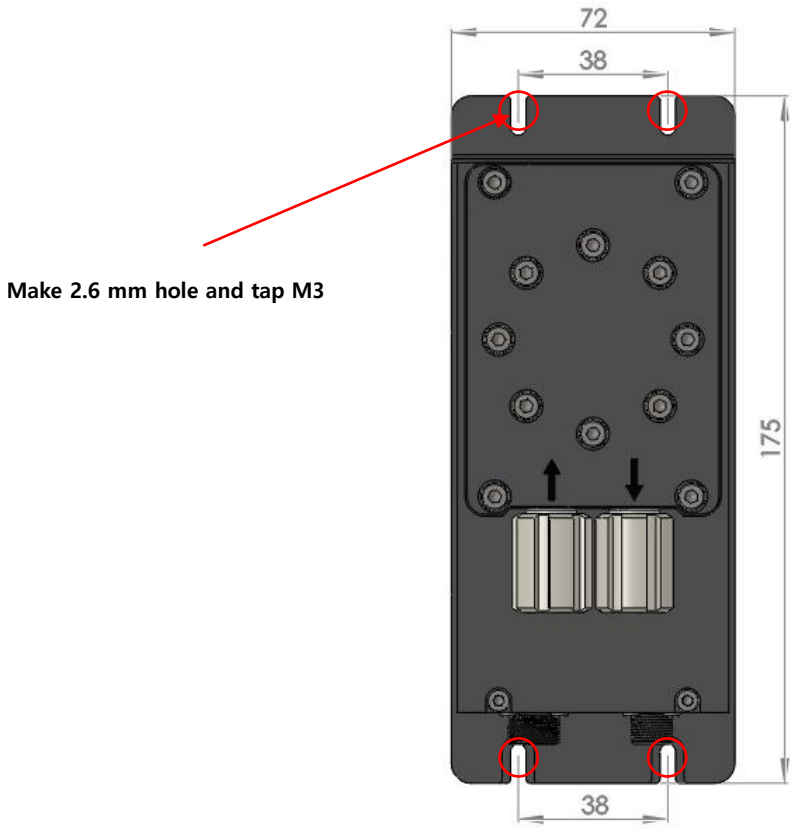
6-2-2 Side View



6-3 Installation Method

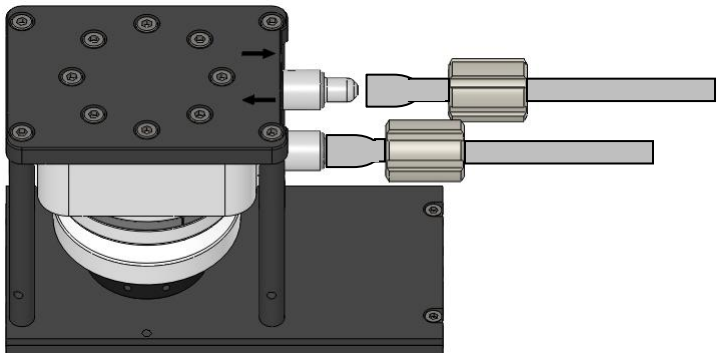
6-3-1 Pump Installation Sequense

1. Prepare the space for the pump installation.
2. Tighten the panel base plate with 4 pieces of M3 screw.

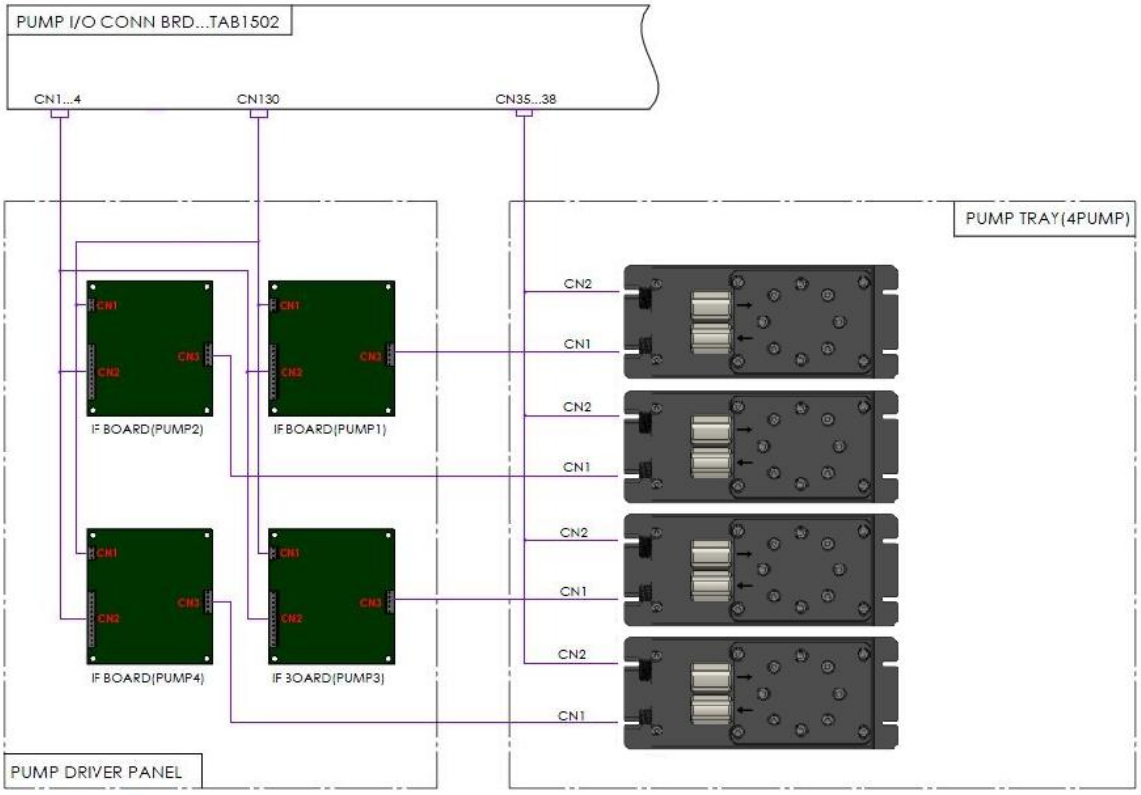


6-3-2 Piping Method

1) Insert ¼" union nuts on tube at PR In/Out areas.
2) Insert ¼" sleeve into tube after enlarging tube with the tube expansion tool and then tighten nut.



6-3-3 CON1, 2 Connection Method [ACT-8 Type]

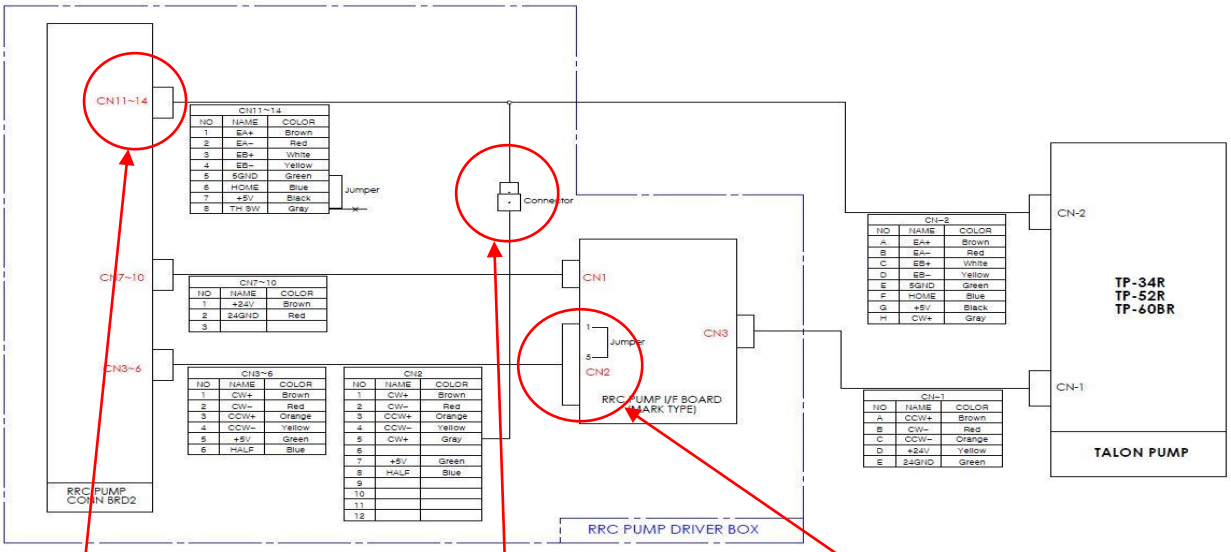


1. De-install RRC pump and install TP-52R Pump.
   (CN1 & CN2 Connectors are connected to TP-34R pump same as RRC pump.)
2. De-install RRC Driver (CSD5807) and install Talon I/F Board (only for TP-52R).
3. RRC Driver's Connector CN1, CN2, & CN3 are connected to the same position of Talon I/F board.

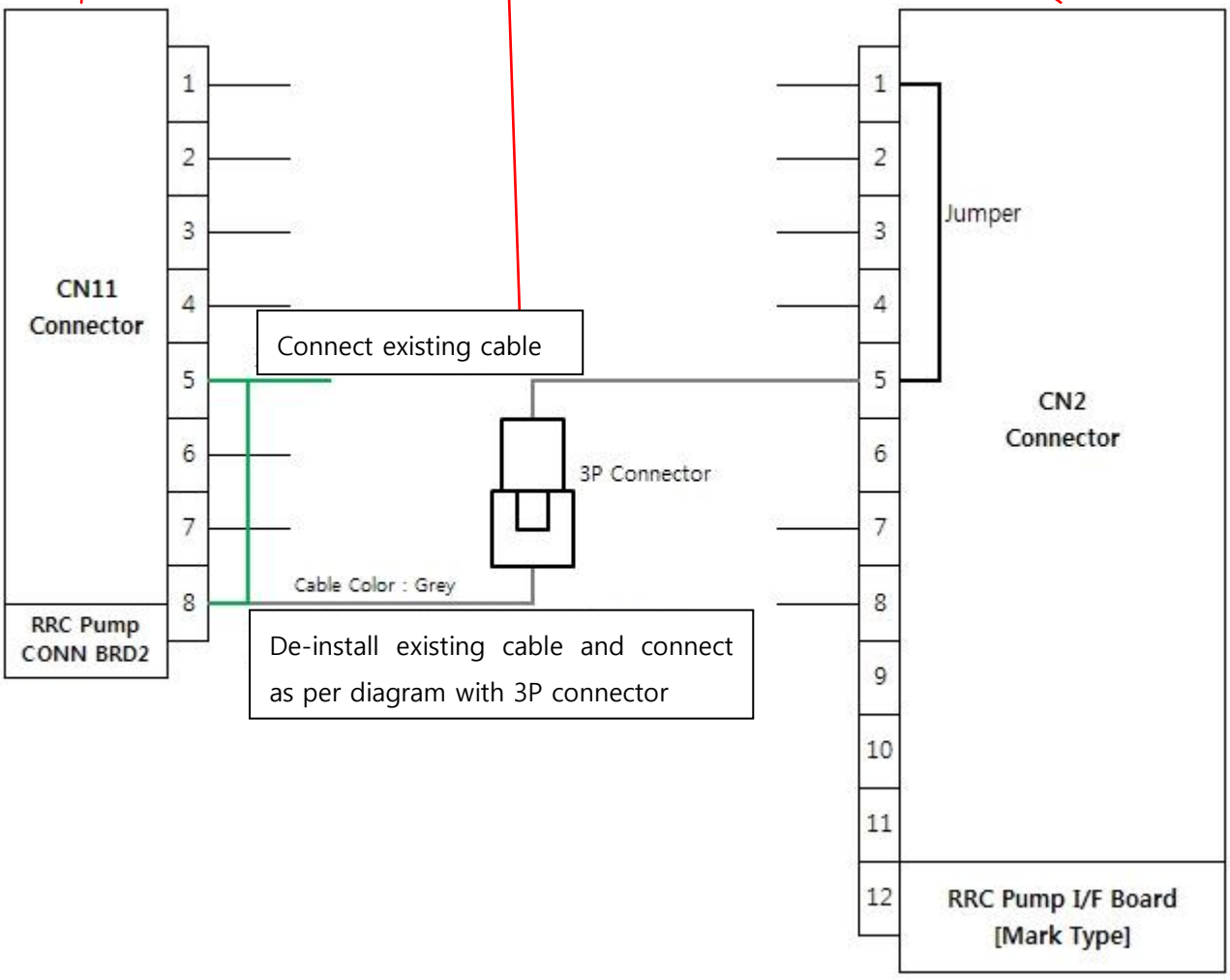
[Notice]

TP-52R Pump uses DC Servo Motor. So, Motor Driver is built-in inside the motor.

6-4-4 CON1, 2 Connection Method [Mark7, 8 Type]



- **Detail diagram on each connector**

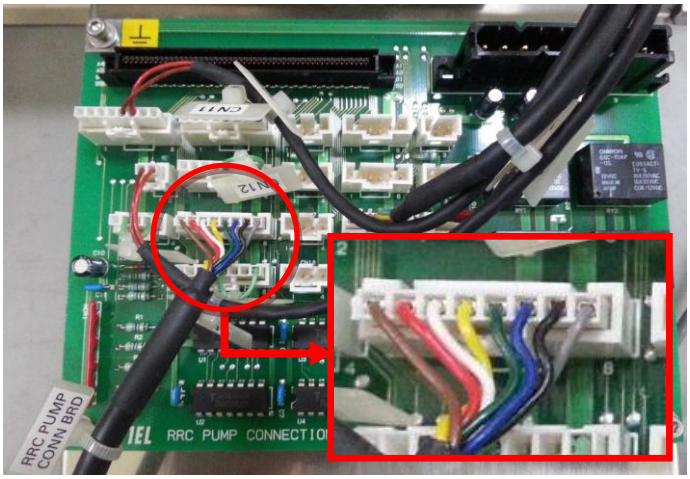


1. De-install RRC pump and install TP-52R Pump.
   (CN1 & CN2 Connectors are connected to TP-60BR pump same as RRC pump.)
2. De-install RRC Driver (CSD5807) and install Talon I/F Board (only for TP-52R Mark type).
3. Disconnect RRC Connection Board CN11 8P Connector.
4. Disconnect CN11 #5 pin (green) Cable and put together the 5th pin cable and the other green cable with pin. Connect it to Connector #5.
5. Disconnect CN11 #8pin (gray). The other green cable, which jumped with #5 pin (green), connect to Connector #8.
6. #5 pin of Mark RRC I/F Board CN2 12P Connector #5 pin attaches RRC Connection Board CN11 8P Connector #8 pin (gray) with Molex 3P Connector.

[Notice]

TP-52R Pump uses DC Servo Motor. So, Motor Driver is built-in inside the motor.

★ How to exchange RRC Driver with Talon I/F board ★



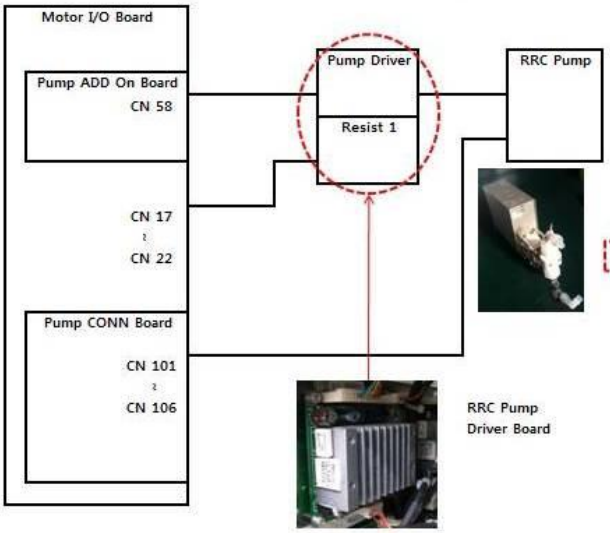
Original RRC Driver Condition

Talon I/F Board Condition

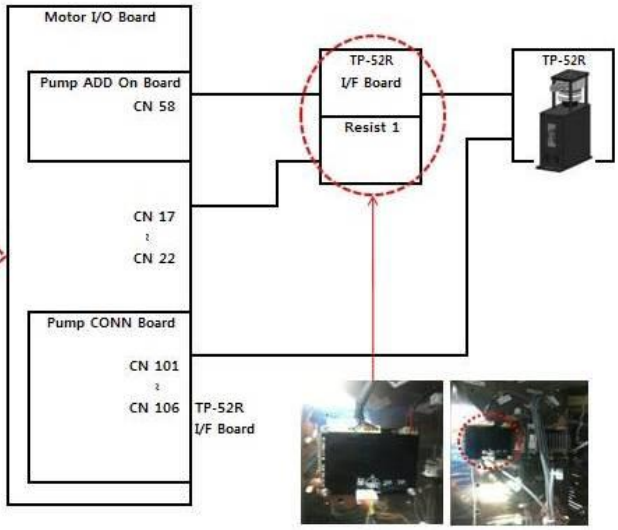
6-3-5 I/F Board Installation Method

◈ TP-52R Pump Modify Method

★ RRC Pump Cable Assignment(Original)



★ TP-52R Pump Cable Assignment



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