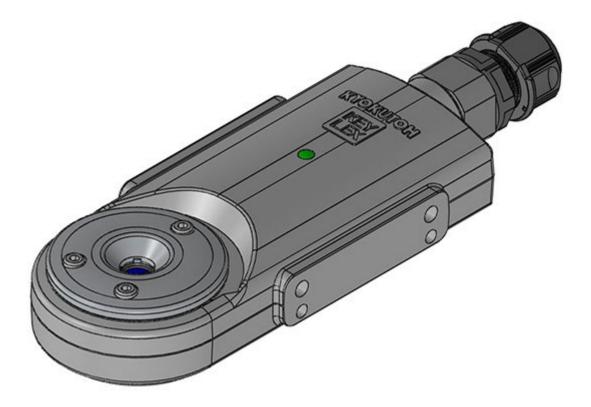


First Edition 2018.07.26 Revised Edition 2023.11.30 Ver.4.13.06

Tip Monitor (TMN-01)

Instruction Manual

Please read this instruction manual carefully, before using the device.





ATTENTION TO SAFETY

%Please be sure to read ATTENTION TO SAFETY before using the tip monitor.

The purpose of the tip monitor is to judge whether the cap tip passes the criteria set in advance to enable automatic manufacturing environment.

The tip monitor must be used with the tip dresser of KYOKUTOH.

Please do not use the tip monitor other than that which is specified within. We will not be responsible for any trouble, repair, accidents caused when used in a way other than that which is specified within.

XAfter reading the manual, please keep it to the place where it can be checked easily.

- Please do not disassemble or reconfigure this machine or its parts.
- If the stickers on the back of the monitor has been removed, no warranty or repair service may be recieved.
- When working in the assembly line, please make sure the welding gun is OFF, and the safety from other machines.
- Please turn OFF the power, when replacing the parts or maintenancing.
- When the monitor is not set in a proper way, the monitor may not collect enough information to maintain good condition in the welding process.
- When using the monitor, please be sure to turn OFF the welding current.



This product is not to be used in any manner other than that which is specified within. We will not be held responsible for damage or injury caused as a result of this product.

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1. Product Description

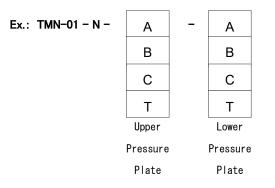
1.1. Specifications

Electricity Consumption		Under 120mA
	Dust Resistance	Please keep away from dust.
Environmental	Water Resistance	Please keep away the device from water.
Resistance	Temp. of the set place	−0~+40°C (No freezing)
	Humidity of the set place	Below 90% (No Condensation)
	Time	About 1 sec.(Depends on the spec of PC)
Judging Spec.	Diameter Detection	± 0.3 mm(When clumped vertically with a C-Gun)
	Dia. REM Detection	Within 5%(When clumped vertically with a C-Gun)

1.2. Function Explanation

- Tip monitor automatically judges the condition of the cap tip. (OK/NG)
- Take a photo of the upper/lower cap tip and from the photo, the system judges the cap tip from its diameter and the % of spots that are not properly dressed.
- When using the tip monitor, the pressure must be under 3000N.
- The threshold value may be set by the purchaser.
- <u>Tip monitor requires a periodical maintenance.</u>

1.3. TIP MONITOR Model



[Pressure Plate Type]

A : Standard	Tip Dia.(ϕ 13• ϕ 16•19)Top Dia. (ϕ 5 \sim 8) / 8R				
	Tip Dia.(ϕ 13·16) / With flat tip				
B:For ϕ 13 DR	Tip Dia.(ϕ 13)Top Dia. (ϕ 5 \sim 8) / 6.5R				
C:CF120°	Tip Dia.(ϕ 13·16·19)Top Dia.(ϕ 5~8) 120°				
T: Special Types of tips other than A, B, C.					

[About Pressure Plate of the Monitor]

Pressure Plate

No.		Туре	Shape
A	Standard (ТМ01-КР-00А	
в	Standard (¢ 13−6.5R)	ТМ01-КР-00В	
С	For CF (CF120°)	ТМ01-КР-00С	

Plate Correspondence to the Tip

Tip Dia.	Top Dia.	Shape	Correspondence
φ13		8R	
φ16	ϕ 5 ~ ϕ 8	оп	Α
φ19		9.5R	
φ13	ϕ 5 ~ ϕ 6	6.5R	В
φ13	φ5 ~ φ8		
φ16		CF120°	С
φ19			
φ13		R20	
φ16	_	RZU	A
φ13		F	Α
<i>ф</i> 16		ſ	A

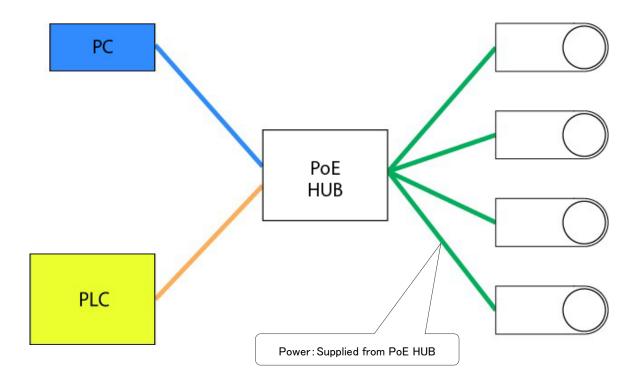
XIf there is a usage of cap tips other than the listed above (A, B, C), please contact our sales department.

XThe above table is a correspondence table for polishing with our KTW cutter.

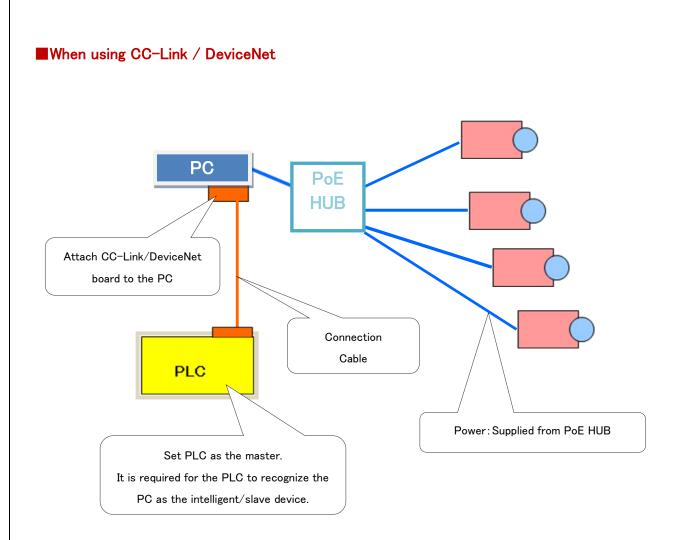
If you are using a cutter other than KTW and you are using a tip with a tip radius of 20R or less, please contact our sales department.

1.4. System Outline

When using Ethernet



- System Configuration is as shown above.
- Up to 50 cameras can be connected to each computer.
- There must be a power supply from the PoE HUB to the tip monitor.



- System Configuration is as shown above.
- Up to 15 cameras can be connected to each computer.
- There must be a power supply from the PoE HUB to the tip monitor.

1.5. Things to be Prepared by the Customer

[When using Ethernet]

Items	QTY	Model • Spec	Note
		[Recommend]	X Currently, we have
		●RAM: More than 8GB	not confirmed the
		●Storage: More than 256GB	operation of Windows 11
		●LAN port installed	on anything other than
		●OS	Pro Ver.
		Windows 11 Professional	
		Windows 10 Professional 32bit•64bit	
		Windows 7 Professional 32bit•64bit	
PC to control the		Windows XP Professional (SP3) 32bit	
device	1	●Framework V4.61 (Microsoft .NET Framework)	
		Above must be installed	
		Screen Resolution	
		More than1024*768	
		※Required reference specifications when connecting 50	
		units.	
		●CPU: More than 4 Cores, 4 threads, Freq 2.30GHz	
		●RAM: More than 16GB	
		Compatible with Type A、Type B	Prepare the amount of
			PoE to supply power for
PoE HUB	_	[Operation Confirmed Model]	the entire tip monitor.
		●EHB-UG2B16F-PL(ELECOM)	
		●BS-GS2016P/HP(BUFFALO)	
		●AT-x230-28GP-Z1(Allied Telesis)	
		●Twisted pair cable, Straight Through LAN Cable、Gauge	XPlease do not use the
		EIA/TIA-568A,568B	handmade cables.
		●At least Category 5 (100BASE-TX)	
LAN Cable	-	●No shield(UTP)	
		The connecter width must be under 12mm.	
		On 14mm cables, the connecter cover	
		(rubber cover attached) will not be able to fit.	
		[Operation Confirmed Model]	
		●MITSUBISHI	
		Q series iQ-R series	
		● OMRON	
		CJ2M series	
		●Allen-Bradley	
PLC(Ethernet/IP)	1	CompacLogix series	
		● SHARP	
		JW300 series	
		●JTEKT	
		TOYOPUC PC10G series	
		●KEYENCE	
		KV-7500, KV-8000 series	
	1	For PC/For Display/For PoE HUB	
Power	-		

[When using CC-Link]

Items	QTY	Model • Spec	Note
PC to control the device	1	 [Recommend] RAM: More than 8GB Storage: More than 256GB OS Windows 10 Professional 64bit Windows 7 Professional 32bit 64bit Windows XP Professional (SP3) 32bit Framework V2 (Microsoft .NET Framework) Above must be installed With Full Height PCI Slot or Full Height PCI Express Slot (Able to attach the PC interface board) Screen Resolution More than1024*768 	
CC–Link Board (Attached to PC)	1	Mitsubishi Electric Q80BD-J61BT11N (PCI) Mitsubishi Electric Q81BD-J61BT11 (PCI Express)	
PoE HUB	_	Compatible with Type A, Type B [Operation Confirmed Model] •EHB-UG2B16F-PL(ELECOM) •BS-GS2016P/HP(BUFFALO) •AT-x230-28GP-Z1(Allied Telesis)	 Prepare the amount of PoE to supply power for the entire tip monitor. Using a slow speed of PoE hub, may not be able to communicate properly. Recommended speed 1,000Mbps. Please choose the PoE hub with the recommended speed.
LAN Cable	_	 Twisted pair cable, Straight Through LAN Cable, Gauge EIA/TIA-568A,568B At least Category 5 (100BASE-TX) No shield (UTP) The connecter width must be under 12mm. On 14mm cables, the connecter cover (rubber cover attached) will not be able to fit. 	☆ Please do not use the handmade cables.
PLC(CC-Link)	1	●Set the PLC as the master ●Able to recognize the PC as the Intelligent Device 【Recommend】Mitsubishi Electric Q Series	
CC-Link Cable	1 -		
Power	_	For PC/For Display/For PoE HUB	

[When using DeviceNet]

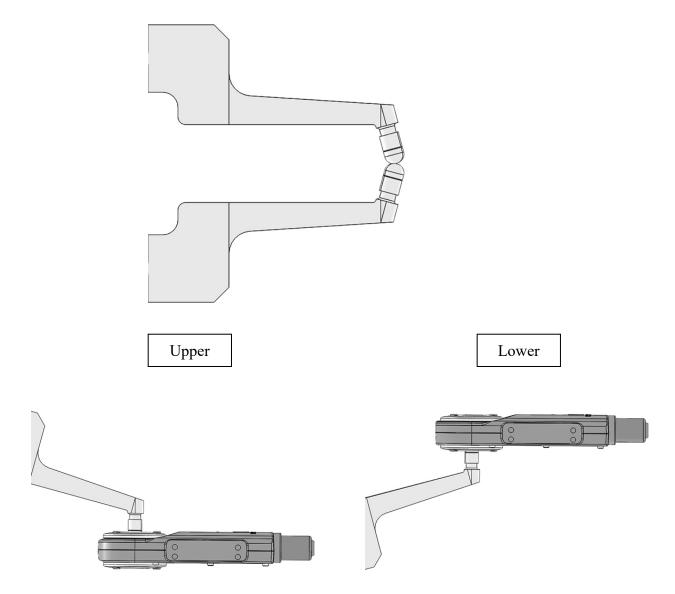
Items	QTY	Model • Spec	Note
PC to control the device	1	 [Recommend] RAM: More than 8GB Storage: More than 256GB OS Windows 7 Professional 32bit Windows XP Professional (SP3) 32bit Framework V2 (Microsoft .NET Framework) Above must be installed With Full Height PCI Slot or Full Height PCI Express Slot (Able to attach the PC interface board) Screen Resolution More than1024*768 	
DeviceNet Board (Attached to PC)	1	Omron 3G8F7-DRM21	
PoE HUB	_	Compatible with Type A、Type B 【Recommend】EHB-UG2B08-PL2(ELECOM) 【Recommend】LAN-SW08ES4/MA(Logitec)	 ※Prepare the amount of PoE to supply power for the entire tip monitor. ※Using a slow speed of PoE hub, may not be able to communicate properly. Recommended speed 1,000Mbps. Please choose the PoE hub with the recommended speed.
LAN Cable	_	 Twisted pair cable, Straight Through LAN Cable, Gauge EIA/TIA-568A,568B At least Category 5(100BASE-TX) No shield(UTP) The connecter width must be under 12mm. On 14mm cables, the connecter cover (rubber cover attached) will not be able to fit. 	XDo not use custom-made cables
PLC (DeviceNet)	1	 Set PLC as the master Able to recognize PC as the slave 	
DeviceNet Cable	-		
Power	-	For PC/For Display/For PoE HUB	

1.6. Available Gun

Guns with special geometry (such as X-Gun, inclined-gun, offset-gun) may not be available to check both upper / lower side at the same time.

For gun teaching, checking upper / lower tips separately will be required.

[Ex.]Small Inclined X-Gun



• Image is exaggerated to make the description easy to understand.

2. How to Install

The tip monitor must not be use with a Tip Dresser made by companies other than KYOKUTOH. A cap tip dressed by dressers from another company may not be discriminated properly by the monitor. Please check the manual of the dresser before installing.

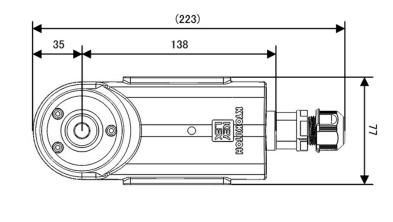
- When installing the tip monitor to the dresser, please be sure it is being done in a proper way.
 Also, to protect the tip monitor from the shock caused during gun pressure, we recommend the usage of EQUALIZINGS.
- Please do not place the monitor in which it can be interfered by cables, hoses, welding robots, etc.
- Please make sure the welding gun does not interfere with the monitor's LAN cable.
 It can be a cause of cable damage.

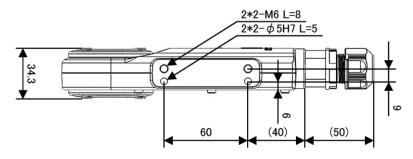
[Place to install the monitor]

- Please set the monitor to places where there is no contact with water.
- Please set the monitor to places where there is no contact with the cooling water during the replacement of the tip.
- If possible, please set the monitor to place far from the spatter.
- Please protect the LAN cable by things such as flexible conduit tubes, etc.



[Main body of the monitor Drawing]





Refer to the picture above and fix it using 2-M6 $\,$ (2- $\phi\,5h7$ Pin).

To protect the sensor from a shock, the usage of an equalizer is recommended.

[Example of assembling TMN to CDK-R dresser]



Bracket Part No. ••• BR-K-EZ-P-001

3. System Setting

3.1. Prior Confirmations

When setting up the system, the data entry of the following items is required. Please be sure to check the following items listed below.

- The number of cameras
- Name of the robot
- Shape of the cap tip, Diameter of the cap tip
- Way to connect with the PLC, Setting Parameters
- Serial numbers

It is recommended to write the information to the "TIP MONITOR SYSTEM INFORMATION CHART" on the next page.

[TIP MONITOR SYSTEM INFORMATION CHART]

Label 1					
Label 2					
No.	Robot Name	Upper Tip Shape	Lower Tip Shape	IP Address	SN
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
:					

<SUMMARY>

Label 1 : Shown on the software screen (Label 1)

Label 2 : Shown on the software screen (Label 2)

No. : Number used to connect with the PLC

Robot Name : Name used in the software

XNumber of letters must be more than 4, less than 8.

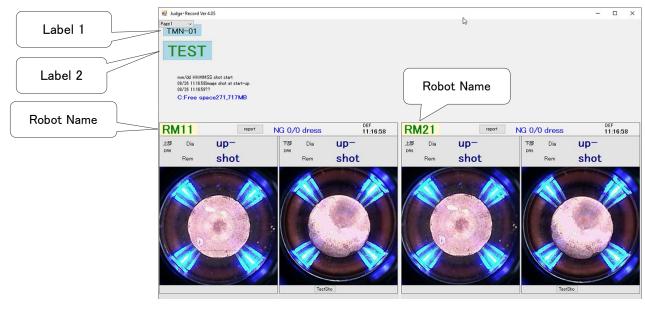
%Special Characters may not be used. (Hyphen is OK)

Shape of Tip : Set the parameter according to the shape

IP Address : Setting of camera and the connection with PC

XDuplicate IP Address is usable.

 $\mathsf{SN}~:~\mathsf{Write}$ down the Serial No written on the back of the monitor.



3.2. Computer Setting

The system conducts Ethernet communication between the camera and the PC. Therefore, PC network adapter setup is required. Please set as written below. **XIF the PC has multiple Ethernet adapters, determine one adapter to use with TMN.**

Refer to "4.2. Installation of the Software"

① IP address setting for PC.

IP Address : 192.168.0.1 (Initial setting) Subnet Mask : 255.255.255.0 **※The IP address can be set arbitrarily.** The subnet mask cannot be changed.

[For Windows XP]

Control Panel (View by Small icons) \rightarrow Network and Sharing Center \rightarrow Change adapter setting \rightarrow Right Click Local Area Connections \rightarrow Select Properties \rightarrow Internet Protocol Version 4 (TCP/IPv4) Properties

nternet	Protocol (TCP/IP) Prop	erties	?		
General	Alternate Configuration				
this cap the app		omalically if your network supp o ask your network administrat ally			
OU	e the following IP address: -				
IP address 192 . 168 . 0 . 1					
Subr	iet mask:	255 . 255 . 255 . 0			

[For Windows 7/Windows 10/Windows 11]

Control Panel (View by Small icons) \rightarrow Network and Sharing Center \rightarrow

Change adapter setting $\rightarrow\,$ Right Click Local Area Connections $\,\rightarrow\,$ Select Properties $\,\rightarrow\,$

Internet Protocol Version 4 (TCP/IPv4) Properties

Internet Protocol V	ersion 4 (TCP/IPv4) Propertie	s ×
General		
	tings assigned automatically if y nerwise, you need to ask your n e IP settings.	
Obtain an IP	address automatically	
Use the follo	wing IP address:	
IP address:	192 . 16	58.0.1
Subnet mask:	255 . 25	55 . 255 . 0

2 Turn off the power saving setting.

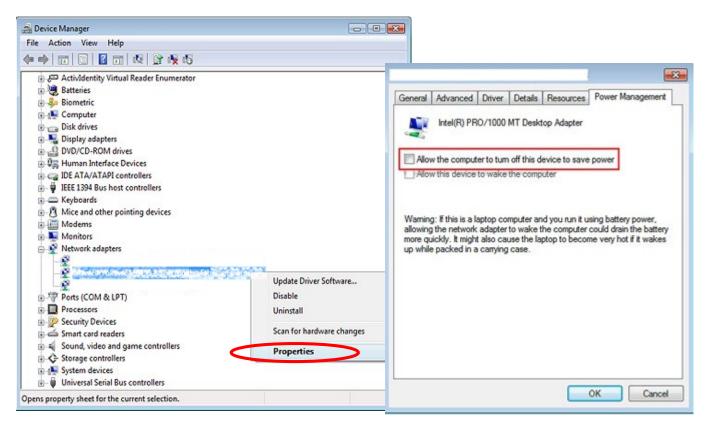
When using Windows 7or10, you will need to turn off the power saving setting.

%This is to avoid the device to turn OFF automatically with PC.

[How to set power saving setting]

My Computer \rightarrow Right Click \rightarrow Property \rightarrow Device Manager \rightarrow Network adaptors \rightarrow Click

 \rightarrow Click the name \rightarrow Unselect "Allow the computer to turn off this device to save power"



3 Background software setting.

Do not set the PC to activate background software.

※If things such as security software and Windows Update activate, the system may not work properly.
Please try not to install other software to the using PC.
There are cases when the system did not work properly from interference by other software.
(EX: AutoCAD activated in the background and the system did not work properly)

3.3. PLC Control Interface Setting

[In the case of Ethernet]

When using MITSUBISHI PLC (Q Series / R Series)

Set communication parameter with PC by MELSOFT "GxWorks2" or "GxWorks3".

① Put check mark on "Enable online change (FTP, MC protocol)".

2 Select "Open Setting" and add items in the Opening window.

- Protocol … TCP
- Open System … MC Protocol
- Host Station Port No. … Customer's port number

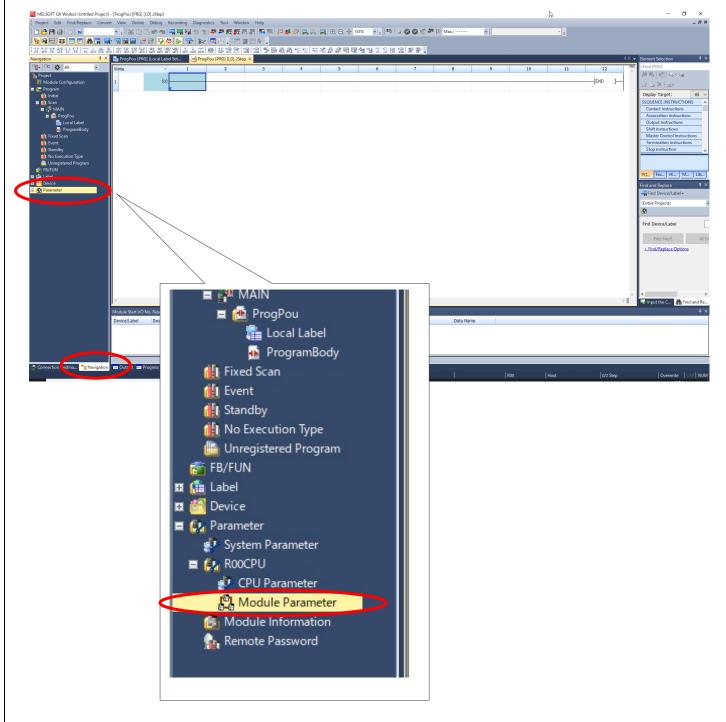
Qパラメータ設定			×
PCネーム設定 PCシステム設定 I/O割付設定	PCファイル設定 PC RAS設定 マルチCPU設定	ブートファイル設定 プログラム設定 SFC設定 内蔵Ethernetポート設定	デバイス設定
IP Address Setting IP Address Subnet Mask Pattern Default Router IP Address	Input Format DEC	Open Setting FTP Setting Time Setting	
Communication Data Code © Binary Code © ASC II Code Enable online change(F	TP, MC Protocol)		
Disable direct connection Do not respond to sear	on to MELSOFT ch for CPU (Built-in Ethernet port) on	network	

	Proto	col	Open System		TCP Connection	Host Station Port No.	Destination IP Address	Destination Port No.
1	LIDP	-	MELCORE C. MILLION	-		T OKTIO.	11 11001000	- i on ite
2	TCP	-	MC Protocol	-	•	6001		
3	UUP		Incloser Connocion	1000				
4	TCP	-	MELSOFT Connection	-	•			
5	TCP	-	MELSOFT Connection	-	•			
6	TCP	-	MELSOFT Connection	-	-			
7	TCP	-	MELSOFT Connection	-	•			
8	TCP	-	MELSOFT Connection	-	•			
9	TCP	-	MELSOFT Connection	-	-			
10	TCP	-	MELSOFT Connection	-	•			
11	TCP	-	MELSOFT Connection	-	-			
12	TCP	-	MELSOFT Connection	-	•			
13	TCP	-	MELSOFT Connection	-	•			
14	TCP	-	MELSOFT Connection	-				
15	TCP	-	MELSOFT Connection	-	-			
16	TCP	-	MELSOFT Connection	-	-			

When using MITSUBISHI PLC (Q Series / R Series) When using MELSOFT "GxWorks3"

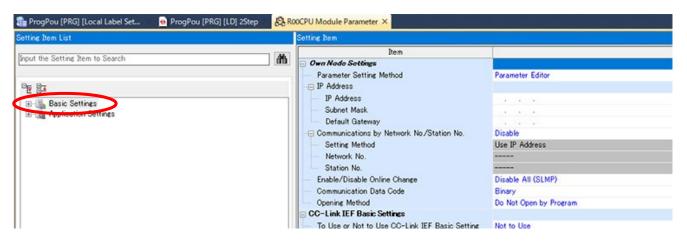
Set up the communication parameter by following process.

① Select "Module Parameter" on the Navigation Tab which is on located on the left side of the screen.



The center part of your screen will change.

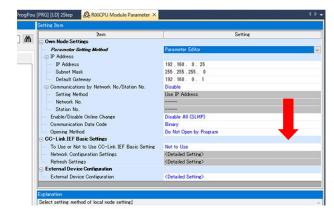
2 Select "Basic Setting" located on the left side of your screen, then open the column of IP Address Setting.



- 3 Set up the following items.
 - IP Address
 - Subnet Mask
 - Default Gateway (if necessary)
 - Enable/Disable Online Change → Enable ALL(SLMP)

Setting Item	4
Item	Setting
Own Node Settings	
- Parameter Setting Method	Parameter Editor
- IP Address	
IP Address	192.168.0.25
- Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
- Communications by Network No./Station No.	Disable
- Setting Method	Use IP Address
- Network No.	
Station No.	
- Enable/Disable Online Change	Disable All (SLMP)
- Communication Data Code	Binary
- Opening Method	Do Not Open by Program
CC-Link IEF Basic Settings	
- To Use or Not to Use CC-Link IEF Basic Setting	Not to Use
 Network Configuration Settings 	<detailed setting=""></detailed>
Refresh Settings	<detailed setting=""></detailed>

(4) Scroll down.



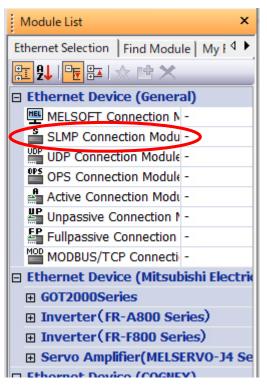
(5) Select "External Device Configuration" on the bottom of window, click "…" icon on the right side.

6

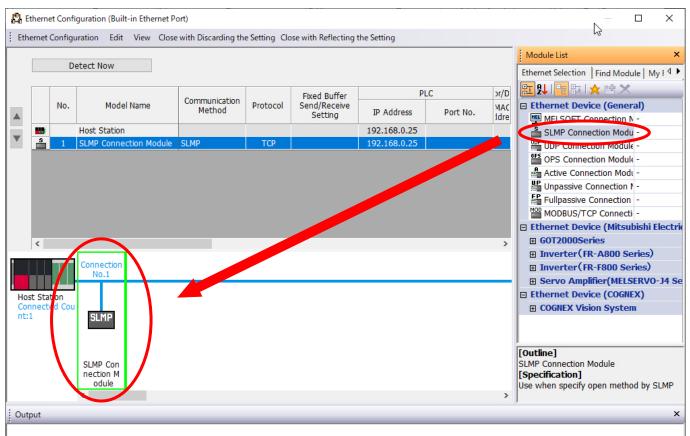
6 "Ethernet Configuration (Built-in Ethernet Port)" window will open by clicking "…".

😫 Ethernet Configuration (Built-in Ethernet Po	ort)				[à	_		×
Ethernet Configuration Edit View Close	with Discarding the Setting Clo	se with Reflecting	the Setting						
Detect Now						Module List Ethernet Selection			× y⊦∢ ►
No. Model Name	Communication Method Protocol	Fixed Buffer Send/Receive Setting	P IP Address 192.168.0.25	PLC Port No.	or/D MAC idre	Ethernet Dev	ice (Gene ice (Mits	eral)	lectric
•						 Inverter(F Inverter(F Servo Amp Ethernet Dev 	R-A800 S R-F800 S lifier(MEL ice (COGI	eries) SERVO NEX)	-J4 Se
٢					>	COGNEX Vis	ion Syste	em	
Host Station Connected Cou nt:0									
<					>				
Output							_		×

⑦ Click "Ethernet Device (General)". Make sure that "SLMP Connection Module" is displayed.



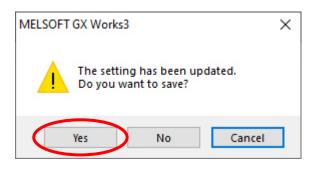
(8) Drag-and-drop "SLMP Connection Module" next to "Host Station" icon. A new icon and a configuration menu will be added on the screen.



(9) Enter "Customer's port number" on the "PLC -Port No." column.

		D	etect Now						
						Fixed Buffer	PL	с	ensor/Devic
		No.	Model Name	Communication Method	Protocol	Send/Receive Setting	IP Address	Port No.	MAC Address
_	-		Host Station				192.168.0.25		
•	S	1	SLMP Connection Module	SLMP	TCP		192.168.0.25	6001	>

1 If the setting is completed, close the window by clicking "×" icon. Save the setting by clicking "YES" when the save confirmation window appears.



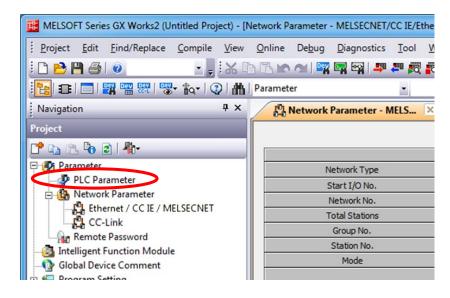
1 Click "Apply" icon on the bottom of the window. The setting will be applied.

m to Search 🛛 👫	Item	Setting
m to Search	😑 Own Node Settings	
	Parameter Setting Method	Parameter Editor
	IP Address	
igs	IP Address	192.168.0.25
de Settings	Subnet Mask	255.255.255.0
IEF Basic Settings	Default Gateway	192.168.0.1
Device Configuration	Communications by Network No/Station No.	Disable
ettings	Setting Method	Use IP Address
	Network No.	
	Station No.	
	Enable/Disable Online Change	Disable All (SLMP)
	Communication Data Code	Binary
	Opening Method	Do Not Open by Program
	CC-Link IEF Basic Settings	
	 To Use or Not to Use CC-Link IEF Basic Setting 	Not to Use
	Network Configuration Settings	<detailed setting=""></detailed>
	Refresh Settings	<detailed setting=""></detailed>
	External Device Configuration	
	External Device Configuration	<detailed setting=""></detailed>
	Explanation Set external devices to be used for communications.	
ult	Check Restore the Default Set	tings

1 Finally, run "Write to PLC" and the process will be completed.

When using MITSUBISHI PLC (Q Series) External Ethernet Unit When using MELSOFT "GxWorks2"

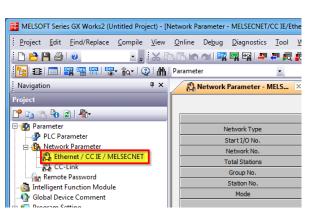
① Open the settings window in "Parameter" \rightarrow "PLC Parameter".



2 Register the device on the \H{I}/O allocation settings $\H{}$ tab.

割付	設定	フステム設定		N設定 PC RAS設定 マルチCPU設定		netポート設定	
(/O봄! No.	付(*1) スロット	種別		形名	点数	先頭XY	入イッチ設定
0	CPU	CPU	-		.		
1	0(*-0)	インテリ	-	QJ71E71-100	32点 🔻	0000	詳細設定
2	1(*-1)	_	•				PCタイプ選択
3	2(*-2) 3(*-3)					<u> </u>	
	4(*-4)						ユニット追加
	5(*-5)		-				
			-		-	· · · · ·	-
先頭		合PCが自動で割り1 はチェックでエラーとな	 付けます。				-
先頭 先頭	XYは未入力の場 XYが未入力の時 設定 (*1)	はチェックでエラーとた	 付けます。	合があります。			
先頭 先頭 基本	xY(は未入力の場 XYが未入力の時 設定 (*1)		 付けます。		増設ケーブル形名	スロット数	
先頭 先頭 基本 基本	xyは未入力の場 xyが未入力の時 設定 (*1)	はチェックでエラーとた	 付けます。	合があります。		-	☞ 自動
先頭 先頭 基本 基本 基 港設	XYは未入力の場 XYが未入力の時 設定 (*1)	はチェックでエラーとた	 付けます。	合があります。			
先頭頭本 基 基 基 基 基 基 基 普 謝 計	XYは未入力の場 XYが未入力の時 設定 (*1) S S (1	はチェックでエラーとた	 付けます。	合があります。			● 自動○ 詳細
先現一日 一年二月 一年二月 一日 二月 二日	xyは未入力の場 xyが未入力の時 設定 (*1) 5 5 5 11 22 (3	はチェックでエラーとた	 付けます。	合があります。			 ● 自動 ○ 詳細 8枚固定
先頭頭本 基 基 基 基 基 基 基 普 謝 計	XY(は未入力の場 XY(が未入力の時 設定 (*1)	はチェックでエラーとた	 付けます。	合があります。		* * *	● 自動○ 詳細
先頭 本 基 基 地 基 地 地 地 地 地 地 地 一 地 一 地 一 一 一 一 一	xy(は未入力の場 xyが未入力の時 設定 (*1) 1 1 2 3 3 5	はチェックでエラーとた	 付けます。	合があります。		* * * *	 ● 自動 ○ 詳細 8枚固定
先日 基 基 地 地 地 地 地 地 地 地 地 地 地 地 地 地 地 地 地	xy(は未入力の場 xyが未入力の時 設定 (*1) x x 11 12 13 13 15 15	はチェックでエラーとた	 付けます。	合があります。		* * * * * * *	 ● 自動 ○ 詳細 8枚固定 12枚固定

③ Select Ethernet below "Network Parameter" on the Navigation Tab.



④ Select the unit and click "Operation Setting".

aranneter	-	· L3	
🔒 Network	Parameter - MELS 🗵	4	۵.
			^
		Module 1	
N	letwork Type	Ethernet	-
5	Start I/O No.	00	00
I	Network No.		1
Г	Total Stations		E
	Group No.		0
	Station No.		1
	Mode	Online	-
		Operation Setting	
		Initial Setting	
		Open Setting	
		Router Relay Parameter	

(5) IP Address of PLC must be same as "Ethernet/IP Setting Tool". Put a check mark on "Enable Write at RUN time".

Ethernet Operation Setting	X
Communication Data Code	_ Initial Timing
Binary Code	O Do not wait for OPEN (Communications impossible at STOP time)
C ASCII Code	 Always wait for OPEN (Communication possible at STOP time)
IP Address Setting	Send Frame Setting
Input Format DEC 💌	Ethernet(V2.0)
IP Address 192 168	3 220 249 IEEE802.3
Finable Online Change	TCP Existence Confirmation Setting © Use the KeepAlive
	C Use the Ping
End	Cancel

※If the PLC is always running, "Always wait for OPEN" is not necessary.※Specify the IP address set here in the TMN software.

6 Set like the image below.

/					s "Ethernet/IP メータ Ethernet/CC			hernet 🛛	1	
							IPアド	レス / ポート番号	入力形式	10進数 🔻
		プロトコル	オープン方式	固定バッファ	固定バッファ 交信手順	ペアリング オープン	生存確認	自局 ポー番号	交信相手 IPアドレス	交信相手 ポート番号
	1	TCP 🔻	Unpassive 🗸	· 送信 🛛 👻	手順あり 🗸 🗸	ペアにしない 👻	確認しない 👻	6000		
	2	•	-	· ·	•	•	•		,	
	3	-		·	-	-	-			
	4	•		·	-	-	-			
	5	-		· -	-	•	-			
	6	•		· -	-	-	-			
	7	•		· -		•	-			
	8	•		·	-	•	•			
	9	-		·	•	•	•			
	10	•		·	•		-			
	11	•			•	•	-			
	12	•			•	-	-			
	13	•				•	-			
	14	-				-	-			
	15	•			•	-	•			
	16	•	-		-	•				
	<mark>(*)</mark> IP 選択	アドレスとポー した進数形式	・ト番号はIPアドレス/ で入力してください。	ボート番号入力)形式で選択した進数	牧形式で表示されま	す。 設定終了	- Aru	1	
									いセル	

 $\ensuremath{\texttt{XSpecify}}$ the Port address set here in the TMN software.

Finally, start "Write to Sequencer" process.
 Finished if the setting is reflected to the PLC.

When using OMRON PLC (CJ2M Series)

Set communication parameter with PC by Omron "CX-Programmer".

• Communication is available by default.

CJ2M-EIP21 [バラメータの編集]	×
CZM-EI221 (* パークの編集) TCP/IP Ethernet FINS/UDP FINS/TCP FTP 時計自動 (* 次の7ドレスを使用する (* 次の7ドレスを使用する (* 次の7ドレスを使用する ディルドブ ジャーマスク 255 ・ ジャーマスク 255 ・ ジャーマスク ジャーマスク ジャーマントウェイ 0 ・ 0 ・ ジャーマントウェイ 0 ・ <td></td>	
BOOTP設定は次回のユニットリスタート(電源再投入)で1回 のみ有効です。 その後、BOOTP設定は解消されます。 取得できた)P7ドレスは、システム設定としてユニット内に自動 保存します。 一斉同報 で すべて1(4.3BSD) で すべて0(4.2BSD)	IPルーダテーブ ルー IPアド レス ゲートウェイフド レス 挿入 自印余
転送[ユニット→バソコン](F) 転送[バソコン→ユニット](T) 照合 デ゙フォルト設定に戻す(E)	(C) リスタート(R) OK キャンセル

 $\ensuremath{\texttt{WUse}}$ PLC which is available to FINS/TCP.

This software is unavailable to FINS/UDP.

When using Allen-Bradley PLC

Create a tag with Rockwell "Studio5000"

1 Double-click "Controller Tag" in the window "Controller Organizer" on the left side.

Controller Organizer 🗾 👻 🕂 🗙
a =
🔺 🛁 Controller PLC1
Controller Tags
Controller Fault Handler
🛑 Power-Up Handler
🔺 🛁 Tasks
🔺 🛟 MainTask
🕨 🔓 MainProgram
Unscheduled
🔺 <u> Motion Groups</u>
📕 Ungrouped Axes
🕨 💼 Alarm Manager
Assets
he Logical Model
🔺 <u> </u>
🔺 📼 5069 Backplane
[0] 5069-L306ER PLC1
🔺 💑 A1, Ethernet
5069-L306ER PLC1
▲ 器 A2, Ethernet
5069-L306ER PLC1

(2) Create 3 kinds of tags "Camera Input", "Camera Output" and "Camera Alive".

Controller Tags - PLC1(controller) ×					
Scope: 🕎 PLC1 🗸 Show: All Ta	ags			✓ Enter Name Filte	91
Name 📰 🔺 Alias For	Base Tag	Data Type	Description	External Access	Constant
Cameralnput		UINT[16]		Read/Write	
▶ CameraOutput		UINT[16]		Read/Write	
CameraAlive		UINT[16]		Read/Write	
INT[16]	Cancel Help				
Vray Dimensions	¥				
0 16					
Show Data Types by Groups					

- DataType … Select from UNIT / DINT / LINT
- Dim0 … Select a number at least the number of cameras being connected.

When using SHARP PLC (JW-300 Series)

Set communication for SHARP "JW-300SP".

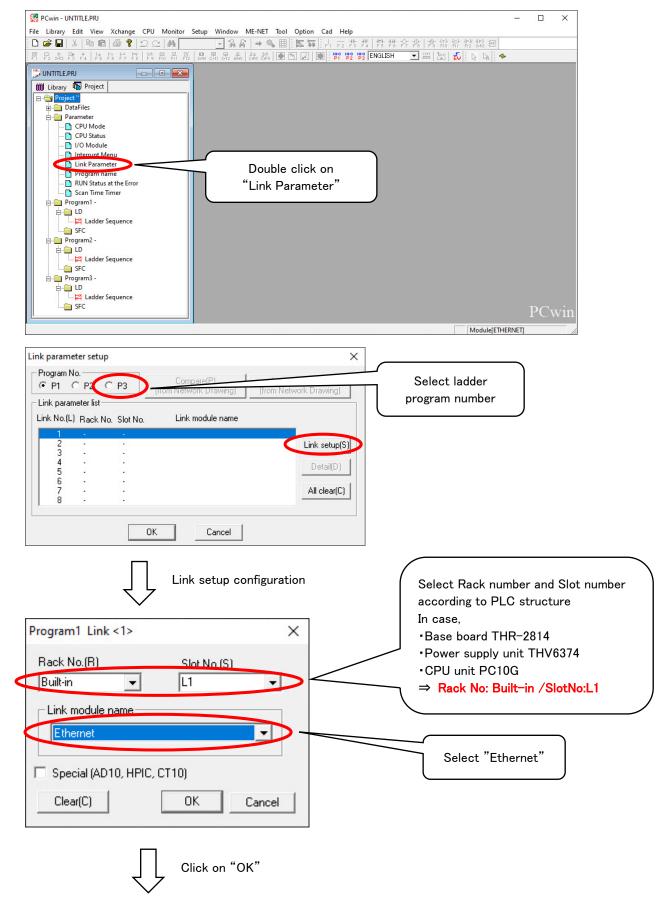
基本 IPアトレス設 IPアト	定 レス <u>192</u> .	CEIVE共通	2	CEIVE個別 コンピュータリンク共通 再送タイムアウト時間設定 最小値 0 ms
コネクション言会	-	255 . 255 .	0	最大値 240000 ms 初期値 3000 ms
番号	オーフシ方法 TCP Passive	自局ポート番号 9600	ポート設定	特別な理由がない限り、初期値で ご使用ください。
1 2 3 4 5	TCP_Passive TCP_Passive TCP Passive TCP_Passive UDP	• 0 • 0 • 0	© DCML	特別な理由におし、初期値から変更す る場合は、IAB規定のRFC793の内容 を十分に理解した上で設定してくださ い。
6	TCP_Passive			- キーフグライフ設定
🗆 ንንንዝ	膨監視フラケ設定 ビカ ルNo0 アド	レス <u>]00000</u> 1パイ	仆占有	キーフアライフ [*] タイムアクト時間設定 7200000 ms 設定値が0の時、7200000msです。 初期値は FFFFFFF(H)=4294967295(10)で、 この時未使用になります。

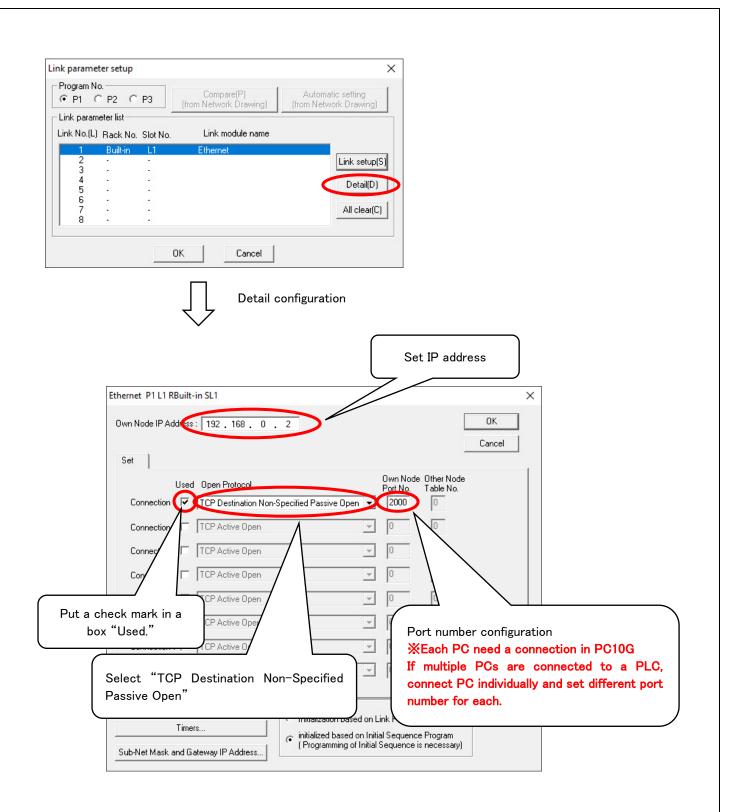
Set the items of the Connection Setting to following below.

- Opening Method … TCP_Passive
- Port Number … Customer's port number

When using JTEKT PLC(TOYOPUC PC10G series)

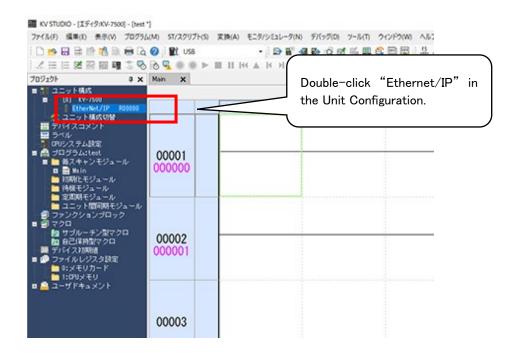
Configuration :CPU parameter link in JTEKT[[]PCwin]



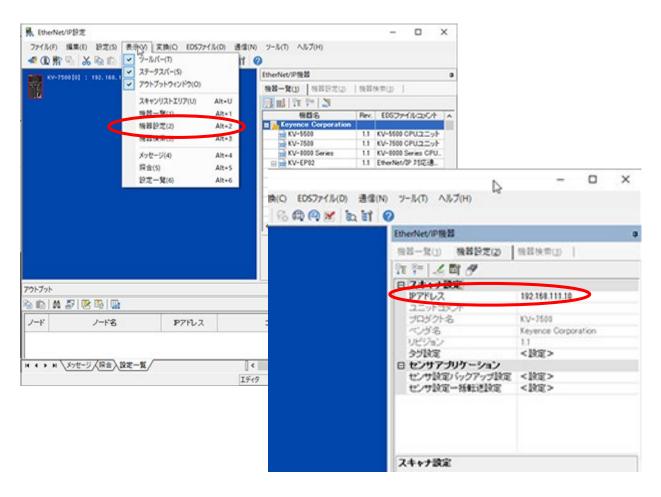


For KEYENCE PLC(KV-7500, KV-8000 Series)

Set communication unit parameters in the Unit Configuration on JTEKT "KV STUDIO".



The following screen will appear. Set the IP address.



📰 ユニットエディタ - 編集モード			×
		- 0	~
ファイル(F) 編集(E) 変換(P) 表示(V) オプション(D) ウィンドウ(W) ヘルプ(H)		
- 📲 🔐 🎜 X 🖻 💼 🗹 💷 🚳 🛒 😿 (5 🔜 🖹 🖻 💼 🕅 🔧 🍓 🕜		
0	ユニット		џ
0 幅:55mm KV-7500	ユニット選択(1) ユニット設定(2	2)	
高さ:90mm 奥行き:95mm	PE P= 🖂 🖷 🖬 📷 🔜	י ניט נ	KV-7500
消费電流:200mA			
重重:270g	ポート番号(KVS.KV COM+.D	8500	
R30000	ボート番号(上位リンク)	8501	
-33915	ポート番号(VT)	8502	
	ポート番号(システム拡張)	8504	
	ポート番号(システム拡張2)	8506	
	簡易PLCリンクポート番号(1)		
	MCプロトコルボート番号(TC	P) 5000	
	MCフロトコルボート番号(UD	5000	_
	日 ルーティング設定	t dat (m)	
	ルーティング設定	しない(*)	_
	□ EtherNet/IP設定 自動割付設定	有効(米)	
	自動者内部など		
	割付ワードデバイス先頭番号		
	リケット機能		
	ソケット機能を使用すると以下の	D機能・設定が精	利用でき
	ます。 『シンケット0』~『シケット15』、『KV	シケット共通コ	
 メッセージ			
			д
- 処理 行 番号 コード	メッセージ		
H + + H メッセージ	<		>
	エディタ 1行, 1列 OK キャン	ルル 適用	
			<i> //</i>

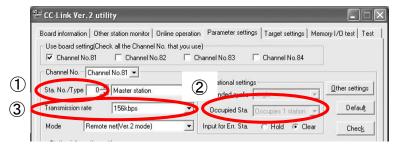
Use "MC Protocol Port No. (TCP)" for the port.

[In the case of CC-Link]

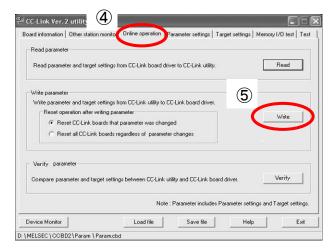
The system requires control interfaces such as CC-Link. Please follow the manual to set up as shown below.

- Installation of attached software.
- Attaching interface board, installation of drive.
- Connection setting of the attached software and the PLC. (Confirm the setting which will be used for the PLC)

[CC-Link Set Up](Mitsubishi Electric Q80BD-J61BT11N)



- ① Set the allotment of Station No. /Type.
- ② Set the Occupied Sta. as "Occupied 4 stations".
- ③ Set the Transmission Rate the same as the PLC.



- (4) Click the "Online Operation" tab.
- ⑤ Click "Write".

%When setting up the PLC, please set the I/F Board as the intelligent device. For more information, please refer to the manual of Mitsubishi Electric.

[In the case of DeviceNet]

The system requires control interfaces such as DeviceNet. Please follow the manual to set up as shown below.

- Installation of attached software.
- Attaching interface board, installation of drive.
- Connection setting of the attached software and the PLC. (Confirm the setting which will be used for the PLC)

DeviceNet Set Up (Omron 3G8F7-DRM21)

The system requires control interfaces such as DeviceNet. Please follow the manual to set up as shown below.

By using devNetSetting_slave.exe, set up the DeviceNet slaves.

To connect the PCI and I/F board, the setting of $\textcircled{1}{\sim}\textcircled{3}$ is required.

💀 Setting Slave station	
① open Handle=	(S) close
the number of I/O byte 4 - Ø reg Slave MacID 62 0: 125K	⑤ ⑥ are not mandatory if you do ⑤Offline, then master station will detects error of Slave station (here).
BaudRate 0 1: 250K 2: 500K ③ Online	© Offline
at master station, enabl	e Network when successful above
send data 0-FFFF 100 F00E @ Refres CH_n+1 CH_n com status	rcv data(hex) h 255 255F CH_s+1 CH_s

The Byte rate of I/O depends on the amount of using monitors. **The software acts** $(1 \sim 3)$ when starting up the system.

3.4. Timing Chart

- ① Pressurize right after dressing the tip. (Recommended Pressure: 1500N Maximum: 3000N)
- ② When the PC is ON and the data strobe is OFF, turn ON the shoot command. (Keep the shoot command)
- 3 By receiving the command, the software takes a photo, process the photo, and send back the judgement result back to the PLC.
- 4 The PLC processes the result and turn OFF the shoot command.
- (5) The judge software receives the signal of the command turning OFF and turns OFF the result.
- 6 Release the pressure.

%For "Camera Connect" TMN connection setting will be updated regardless of the command "photograph every 10 sec".

[CAUTIONS]

The camera signal will turn ON/OFF at the same time as data strobe signal if the system is properly working.

Amount of time it takes from receiving the command to turning OFF the result output is approx. 1 sec.

(But, it may depends on the spec of PC and LAN)

When the shooting is done in plural cameras, the total time to process will be cumulative.

(EX: When using 3 cameras, total time will be about 3 sec.)

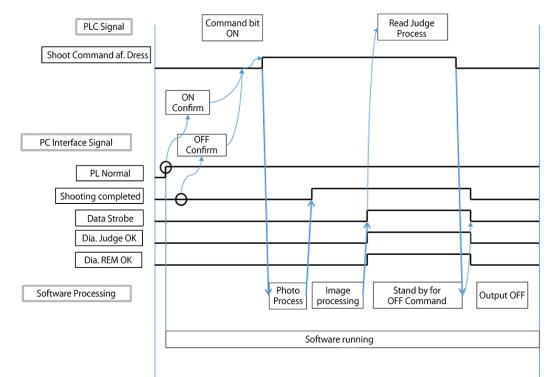
Release the gun after the data strobe turns ON (after shooting is done).

The interval between shooting instructions is 2 seconds.

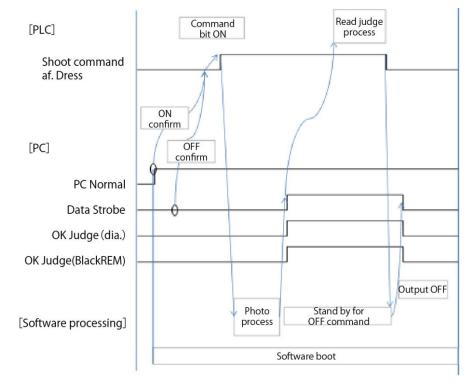
Please be sure to leave an interval of 2 seconds between the first shooting instruction and the second shooting instruction. The interval for test shooting, shooting instructions, and event signals is all 2 seconds.

When OK judge was made

[Ethernet]

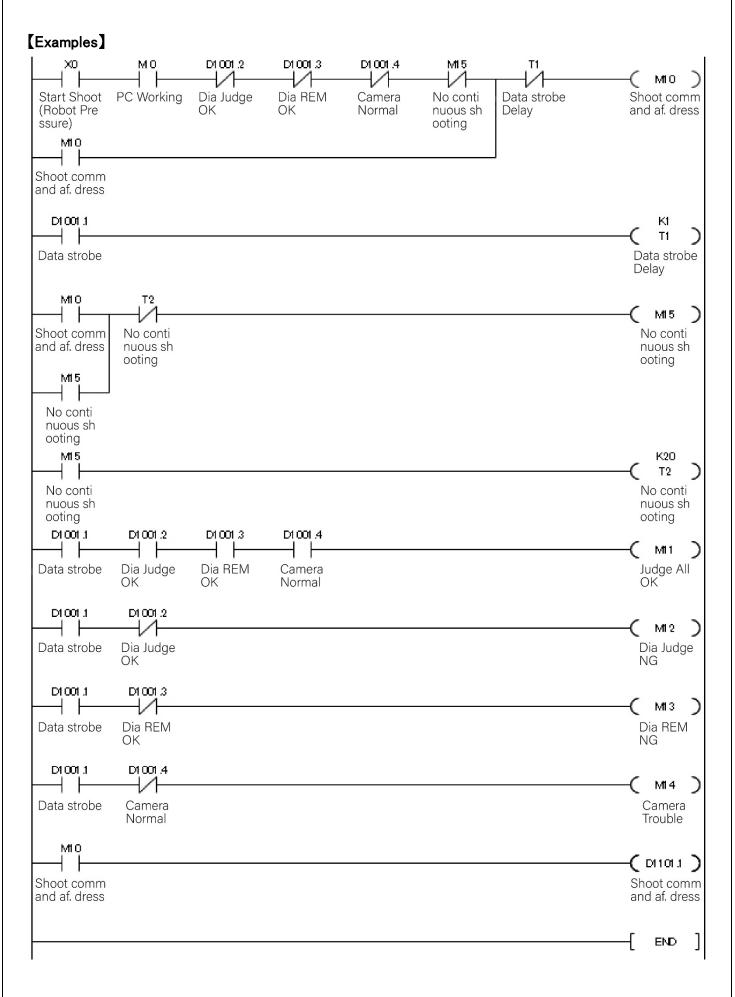






When NG judge was made

- Dia. Judge NG \rightarrow Signal Dia. Judge is OFF
- REM. Judge NG \rightarrow Signal REM. Judge is OFF



[How to confirm the active state of the "Judge-Record Software".]

It is possible to confirm the operating condition of Judge-Record Software by checking the numeric data of address which set on [PC_ALIVE].

While the Judge-Record Software is running, set 10 as [PC_ALIVE] data value every 500m/sec.

After the setting, the PLC will reduce I every 100m/sec.

If the data value is over 0, the Judge-Record Software is operating accurately.

*Please refer to "4.4 IP Address Setting Tool" for the PC_ALIVE address.

[Examples]



4. Software Setting

4.1. System Software Structure

The software is structured with four software listed below.

① IP Address Setting Tool

A set up tool for the IP address of the tip monitor.

② System Setting Tool

A set up tool for the system of the tip monitor.

- ③ Camera Parameter Setting ToolA set up tool for each tip monitor.
- ④ Judge-Record Software

The software to judge / memorize the photo taken by the tip monitor.

4.2. Installation of the Software

X "3.2. Computer Setting" must be completed before starting this process.

XIF the PC has multiple Ethernet adapters, connect LAN cable into one certain adapter to use before starting this installation. Reinstallation will be necessary if connected to other adapters.

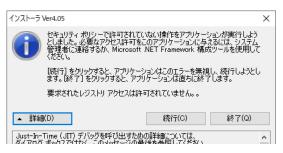
① Insert the installing disk or other media into the PC.

② Start the "SETUP.exe".

%Right Click "SETUP.exe" → "Run as administrator". Do not double-click, or an error message will appear.

🍌 bin	2013/03/26 16:00	ファイル	
퉳 sys	2013/03/26 16:00	ファイル	
LangPack.dll	2013/02/26 9:08	アプリケ	
SETUP.exe	2013/03/13 16:26	アプリケ	
SETUP.exe.manifest	2013/02/26 16:42	MANIFES	

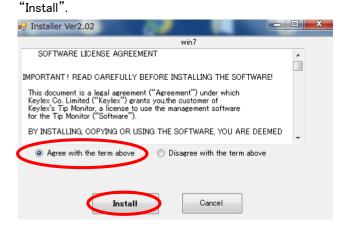
<Image of error message>

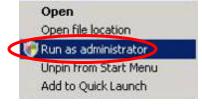


③ Select language and click "OK".



(4) Read SOFTWARE LICENCE AGREEMENT carefully and when agreed, choose "Agree with the term above" and click





(5) The IP address used for communication will be asked. Select the IP address set in "3.2 Computer Setting" and click "OK".

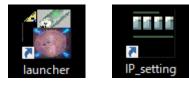
🖳 [IP address]	_	
Set IP address.		
192.168.0.1	```	~
ОК		Cancel .::

(

(6) When it finishes installing, a message below will pop up. Click "OK".



 \bigcirc Short-cut icons of "launcher" and "IP_setting" will be generated on desktop when the installation is completed.



4.3. Setting the IP Address of Tip Monitor

[Setting Method]

Here, the IP address of the tip monitor will be set.

To set up, the PC and the tip monitor must be connected through PoE HUB.

%Caution

- When starting, only connect one monitor.
- <u>5 minutes after the connection, the setting will be invalid. Please reconnect.</u>
- <u>No duplicate IP address is usable.</u>
 (When connecting more than one monitor to a specific PC, different IP address must be set to each tip monitor)
- ① Activate the "IP_setting".

(Will be listed on the desktop)

🖓 IP setting tool
Connect only one tip monitor.
P address of connected device Connect MAC addres Input setting value
[]P address]
192 168 0 101 - Set
[subnetmask]

Warning message may pop up. Please permit the access.

2 Once you click the "Connect", the default setting will be shown. (Default setting: 192.168.0.253)

P IP setting tool						x
Set IP addres	55.					
				2		
IP add	iress of co	nnected	device	Conr	nect	
192	168	0	101	ノー		

(3) Set the number and click the "Set". (Set from 2 \sim 254)

^o addre	ss]		\frown	\sim
192	168	0	101 -	Set
ubneti	nask]		\smile	\sim
255	255	255	0	Check

④ When the dialog below pops up, unplug the LAN cable from the tip monitor.



5 Reconnect the LAN cable and confirm the setting.

📲 IP setting tool
Turn the power on and click [Check] button.
IP address of connected device Connect 192 168 0 101 MAC addres 00:04:A3:64:12:F9 Input setting value [IP address]
192 168 0 101 - Set
[subnetmask]
255 255 255 0 Check

(6) Do the same to the other tip monitors and the IP setting is finished.(You may leave the LAN cable connected if you are moving on to the system setting.)

	Х
Confirmation completed. Remove device before setting other devices.	
ОК	

O Repeat the operation $\textcircled{O}\sim\textcircled{O}$ the same number of times as the number of units to finish the IP setting.

4.4. Setting the System Setting Tool

[Setting Method]

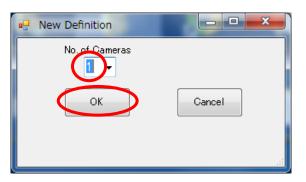
Activate the "System Setting Tool".
 (The icon will be in the TMN launcher)



2 Type in the master password "0000000" then click "OK".

Password		
*****	ок [Cancel

③ Select the No. of cameras, then click "OK".



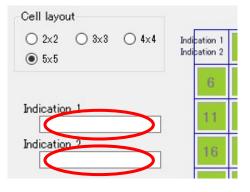
(4) The system setting tool will show up.

[Blue Field] required Page1 Page2 Page3 Page4	PLC connection			
O Page3				
O Parel				
O Page5 O Page5				
O Page 7 O Page 8				
O Page 9 O Page 10				5
1 5 6 7 8 9 10 11 12 13 14 15 16 1	17 18 18 20 21 22	23 24	25 26	
	42 43 44 45 46 47	48 49	50	
ddress 192.168.0. 101 ~	Sav	,		
	O Page7 O Page8 O Page9 O Page10 1 5 6 7 8 9 10 11 12 12 14 15 16 8 30 31 32 32 34 35 36 37 38 38 40 41 3 t Name RM11	O Page7 O Page8 O Page8 O Page10 5 6 7 8 9 10 11 12 12 14 15 16 17 18 19 20 21 22 6 30 31 32 32 34 35 36 37 38 39 40 41 42 43 44 45 46 47] ot Name RM11 ddress 192.168.0. 101 ~	O Page 7 O Page 8 O Page 8 O Page 10 1 5 6 7 8 9 10 11 12 13 14 15 16 17 18 15 20 21 22 23 24 6 30 31 32 33 34 35 36 37 38 35 40 41 42 43 44 45 46 47 48 45 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	O Page? O Page

%From here, please refer to the "TIP MONITOR SYSTEM INFORMATION CHART".

(5) Here you will need to decide how Indication 1, 2 is going to be shown and the places where the photograph data is going to appear in the software.

(The green square is the place where photograph data will be shown)



Setting of Indication 1, 2 is optional. It can be left blank.

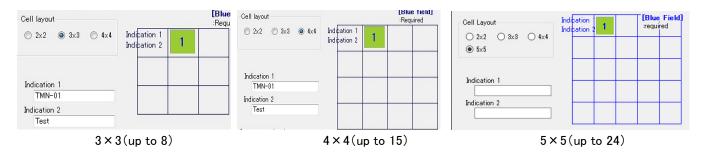


Indication 1, 2 will be shown as the picture below.

5-1. Cell Layout

To show the picture, segmentation of the cell is needed.

When first set, the cell allocation will be set automatically according to the number of cameras.



5-2. Page allocation



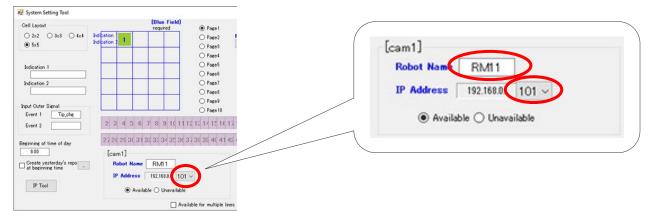
If the camera image does not fit on one screen, you can divide the display into up to 10 pages.

5-3. Photograph Arrangement

By moving the green squares in the cell, which was set in (5-1), the photograph of the cap tip can be arranged freely. Drag the green box to where you want it to appear.

6 Set robot name and IP address for each camera.

Left-click the green box and the camera information will be displayed.



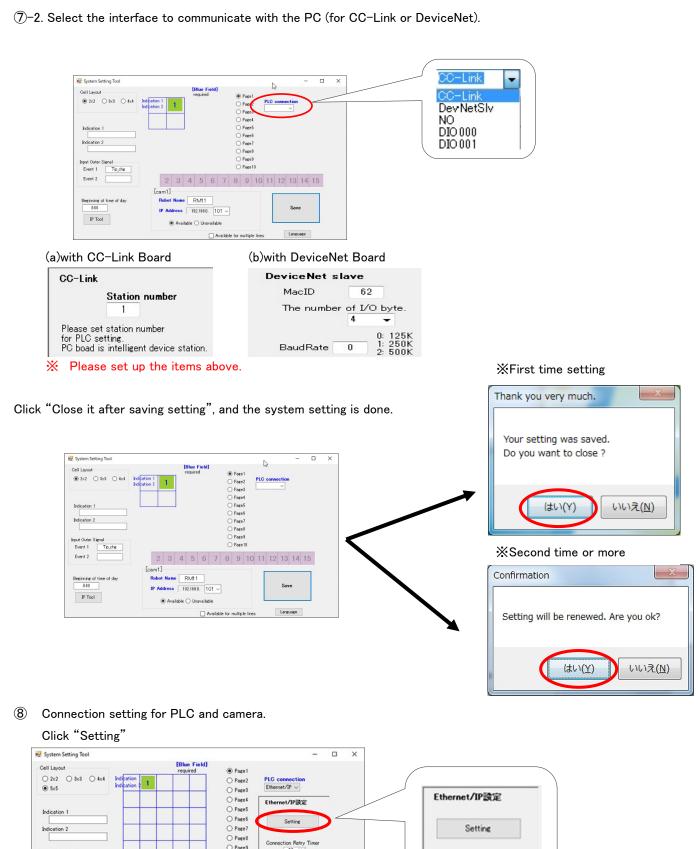
XAt the initial setting, it is allocated automatically.

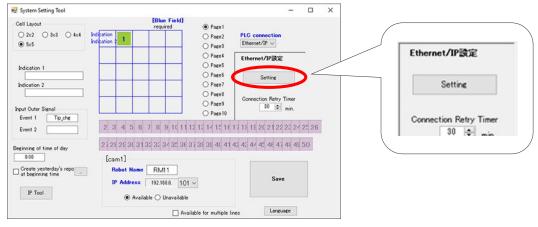
%The robot name is used to identify on the system and it is recommended not to change after setting.

XPLC Auto Reconnection Software will have connection error if all cameras are invalid. (Refer to "4.9 PLC Auto Reconnection Software")

- \bigcirc Set up the connection with the PLC.
- \overline{O} -1. Select the interface to communicate with the PC.(for Ethernet)

System Setting Tool		- 🗆 X	(
Cell Layout ○ 2x2 ○ 3x8 ○ 4x4 ● 5x5	Indication 2 O Page 3	PLC connection NO ~ Etherrat/IP	PLC connection
Indication 1		NO DOOD DOOD	NO Di0000 Di0001
Input Outer Signal Event 1 Tip_chg Event 2	2 3 4 5 6 7 8 9 10 11 12 10 12 10 12 10 12	18 18 20 21 22 23 24 25 26	
Beginning of time of day	27 28 28 30 31 32 33 34 35 36 37 38 38 40 41 42 [cam1]	42 44 45 46 47 48 48 50	
Create yesterday's repo at beginning time	Robet Name RMI1 IP Address 192.168.0. 101 ~ 	Save	
	Available for multiple lines	Language	





Ethernet/IP Setting Ver4.08.02 × _ DEC ~ PLC Setting Camera Setting PLC No. PLC Type IP Address Port PC_ALIVE CAM No. PLC No. Output Input 9600 Camera1 PLC1 V DM ~ 5000 DM v 5010 √ 192.168.0.2 PLC1 Omron CJ2M Series DM v 0 Camera2 PLC2 V D ~ 100 D ~ 200 PLC2 MELSEC Q Series 192.168.0.10 6001 D ~ 0 ~ PLC3 v 100 200 PLC3 AllenBradley Series ~ 192.168.0.12 0 Config **Camera**3 0 Camera4 0 ----V PLC4 Omron CJ2M Series 9600 DM 🗸 0 Camera5 ---- ~ 0 0 PLC5 9600 Omron CJ2M Series 0 PLC6 Camera6 ----¥ 0 Omron C-J2M Series 9600 DM ~ 0 Camera7 0 PLC7 Omron GJ2M Series 9600 DM ~ 0 ---v 0 0 0 Camera8 ----~ PLC8 Omron CJ2M Series 9600 DM 0 era9 -~ 0 0 Car PLC9 9600 DM - 0 Omron CJ2M Series 0 0 Camera10 ---v PLC10 9600 DM ~ 0 Omron CJ2M Series 0 0 Camera11 ~ PLC11 Omron CJ2M Series 9600 DM ~ 0 PLC12 Omron CJ2M Series 0 0 Camera12 ----~ 9600 DM 0 0 Camera18 ----~ 0 PLC13 Omron GJ2M Series 9600 DM 0 0 Camera14 0 PLC14 Omron GJ2M Series 9600 ----~ DM ~ 0 Camera15 0 0 ---- v PLC15 Omron CJ2M Series 9600 DM - 0 PLC Singnals Save & Exit

(8)-1. Set the IP address and port number of PLC and memory to determine the soft activating condition.

(8)-2. Please make sure to set the input and output memory of using PLC for each camera.

(8)-3. PC_Alive memorysurrounded with green line on the image above will be used at 【How to confirm the active state of the "Judge-Record Software"】.

(8)-4. When using Allen Bradley PLC, TAG Name for input-output must be specified.

Click "Config" and input the TAG Name and the Data Type as same as you have specified in "3.3 PLC Control Interface Setting".

PLC1 設定		
	Tag Name	
Input(PC->PLC)	KLXTMN_IN	UINT ~
Output(PLC->PC)	KLXTMN_OUT	DINT ~
PC_ALIVE	KLXTMN_WDT	LINT ~
PO_ALIVE	KLATMN_WDT	
	ОК	Cancel

(8)-5. For SHARP PLC, select from two models, "JW300 series" and "JW30H series".

*Enter the address in "File Address".

By changing "DEC" to "OCT" on top of the screen, display and write will be available in octal.

File address allocation differs by model. Read "Programiming Manual – Ladder Instruction Version" which can be downloaded from SHARP Corp.'s website.

🚽 Ethernet/I	IP Setting Ver4.08.02				6				- 🗆 X
					OCT ~				
PLC Setting	l .					Camera Setti	ng		
PLC No.	PLC Type	IP Add	ess Port	PC_ALIVE		CAM No.	PLC No.	Input	Output
PLC1	SHARP JW300 Series	✓ 192.168.0.2	9600	0		Camera1	PLC1 🗸	153777	163777 ^
PLG2	Omron CJ2M Series MELSEC Q Series		9600	DM 🗸 0		Camera2	~		<u> </u>
PLC3	MELSEC iQ R Series AllenBradley Series		9600	DM 🗸 0		Camera3	~		0
PLC4	SHARP JW300 Series SHARP JW30H Series		9600	$DM \sim 0$		Camera4	~		0
PLC5	Omron CJ2M Series	~	9600	DM 🗸 0		Camera5	~		0
PLC6	Omron CJ2M Series	\sim	9600	DM \sim 0		Camera6	~	F	ile address
PLC7	Omron CJ2M Series	~	9600	DM ~ 0		Camera7	~		
PLC8	Omron CJ2M Series	~	9600	$DM \sim 0$		Camera8	~	0	0
PLC9	Omron CJ2M Series	~	9600	$DM \sim 0$		Camera9	~	0	0
PLC10	Omron CJ2M Series	\sim	9600	DM 🗸 0		Camera10	~	0	0

(8)-6. For TOYOPUC PC10G, the Ethernet computer link method is used

for communication between TMN and PC10G.

Commands are sent and received in word units to the address specified in the word area.

Note the PC10G specific addressing method which differs from usual. The following is an excerpt from the address list in the PC10G instruction manual. When accessing the D0100 register with the "I/O Register Word" read or write command, Specify the address to "[1000H(D0000 Register word address) + 100H] = 1100H" (lower digit:00H, upper digit:11H)

								HEX 🗸						
PLC設定									カメラ設定					
PLC番号	PLC種別		IPアドレス	ポート	I	PC_AI	LIVE		カメラ番号	PLC番号	入力	出力		
PLC1	TOYOPUC PC10Gシリーズ	\sim	192.168.0.2	9600]	[0		Camera1	PLC1 🗸	1000		1100	1
PLG2	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera2	~	0		0	
PLC3	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera3	~	0		0	
PLC4	Omron CJ2Mシリーズ	\sim		9600	DM		0		Camera4	~	0		0	
PLC5	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera5	~	0		0	
PLC6	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera6	~	0		0	
PLC7	Omron CJ2Mシリーズ	\sim		9600	DM		0		Camera7	~	0		0	
PLC8	Omron CJ2Mシリーズ	\sim		9600	DM	~	0		Camera8	~	0		0	
PLC9	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera9	~	0		0	
PLC10	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera10	~	0		0	
PLC11	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera11	~	0		0	
PLC12	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera12	~	0		0	
PLC13	Omron CJ2Mシリーズ	\sim		9600	DM		0		Camera13	~	0		0	
PLC14	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera14	~	0		0	
PLC 15	Omron CJ2Mシリーズ	\sim		9600	DM	\sim	0		Camera15	~	0		0	
					PL	C信景	設定		~ ~~		[*]	_	。 保存して終	

(8)-7. Click "PLC Signals" button, and allocate bits of input and output memory.

tput(PLC->PC)			Input(PC->PLC)		
hooting before Dressing	bit0	~	Shooting completed	bit0	~
hooting after Dressing	bit1	~	Data Strobe	bit1	~
ventA	bit2	~	Dia OK	bit2	~
iventB	bit3	~	Rem OK	bit3	~
			Cam Normal	bit4	~
			力对接续		~

⑧-8. After all set up is completed, click the "Save and Exit" button to sasve.
 ※If using SHARP Corp.'s PLC, only bit0[~]bit7 are available.
 Do NOT use bit8[~]bit16.

(9) Set up for Periodical Reports generation.

9-1. To generate report automatically

eginning of time of	f day
8:00	
Treate yesterda	v's repo

To generate reports automatically, put a check mark on "Create yesterday's repo at beginning time". Inspection report file for all robots can be saved once a day.

Tick "At the activating time, create a report to see result by the day before".

All data for 24 hours in the past will be output as a report file with the data of one day before.

9-2. To generate report manually

To generate reports manually, do NOT put a check mark on "Create yesterday's repo at beginning time".

9-3. Assign download location

Assigning download location is necessary for both auto / manual settings.

Download locations can be selected to anywhere for both auto / manual settings.

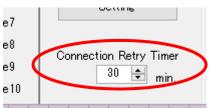
By clicking "...", a window "Browse For Folder" will pop up.

Select your favorable file for to dwonload report datas and click "OK".

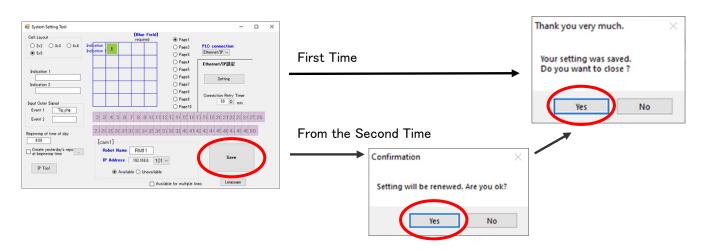
Desiration of time of deal	フォルダーの参照	×
Beginning of time of day 8:00		
☑ Create yesterday's rep at beginning time	デスクトップ > Creative Cloud Files > ジ Dropbox	^
	> 🔷 OneDrive	
	> 🤱 My Name > 💻 PC	
	> こ ライブラリ > こ USB ドライブ (E:)	
	>	
	> 🛃 コントロール パネル	
	🤷 ごみ箱	×
	新しいフォルダーの作成(N) OK	キャンセル

1 Set the "Connection Retry Timer".

%For details, see Setting the "4.9 PLC Auto Reconnection Software".



1 Click "Save" and finish set up system.



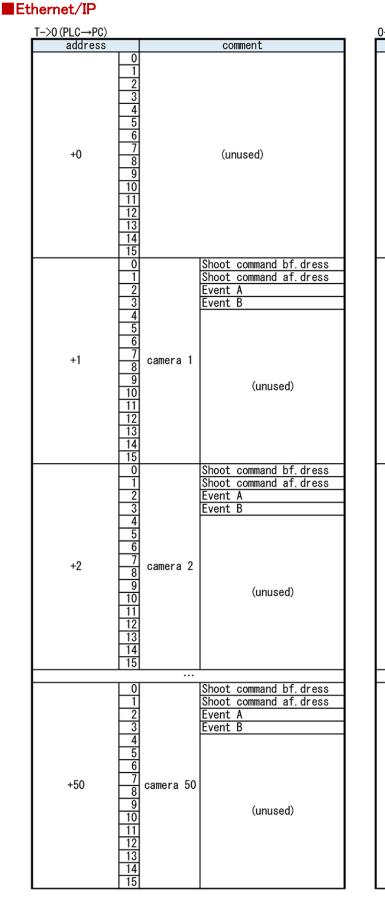
[Signal Allotment (Example)]

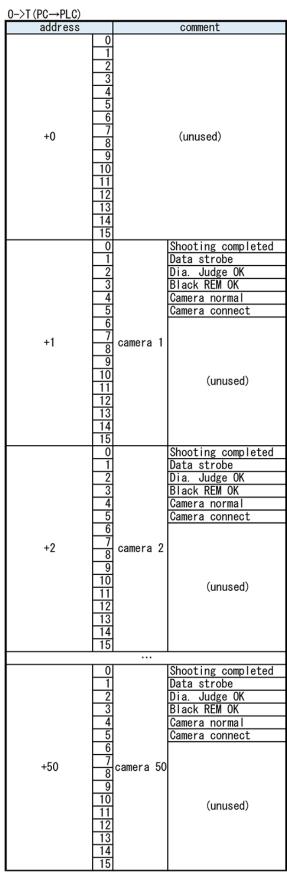
Ethernet

IP tradition control control control 0 1000 - - 0 0 - 0 - 0 - 0 <t< th=""><th></th><th>mot</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>		mot							
0 1000 -	[#]	r 7	n			F ··· 7	D 117		
1 100 0 Can1 Shoot Command Dires 3 - <th>\vdash</th> <th></th> <th>[bit]</th> <th>[cam no]</th> <th></th> <th>[address]</th> <th>[bit]</th> <th>[cam no]</th> <th>[comment]</th>	\vdash		[bit]	[cam no]		[address]	[bit]	[cam no]	[comment]
2 1 1 Da. Jolg OK 2 3 State Sta	-		-	-		-	<u> </u>	_	-
3 2 Data SAU OK 3 Even 8 5 4 Camera NOSMAL 4		1001		Cam1		1101		Cam1	
4 3 Even B									
5 4 Carrent NORMAL 4	3								
6	4		3		Dia. REM OK		3		Event B
1 1002 0 Canal Should command all Dress. 8 2 Data Stroke 2 Should command all Dress. 11 4 Data Stroke 2 Should Command all Dress. 11 4 Data Stroke 2 Should Command all Dress. 11 4 Data Stroke 4 - Should Command all Dress. 11 5 Cameral Connect. 1103 0 Gamad Should Command all Dress. 15 2 Data Stroke 1103 0 Cameral Stroke 2 -	5		4		Camera NORMAL		4		-
8 1 Data Stroke 1 Store A Store A 10 3 Data Aude OK 3	6		5		Camera Connect		5		—
9 2 De. Auge OK 2 Even A Even A 11 4 Cannea NORMAL 4 - - 13 1003 0 Canna S Shoot connead M Dress. Shoot Connead M Dress. 14 1 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 15 2 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 16 3 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 17 2 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 20 1 Da. Age OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 21 2 Shoot Connead M Dress. Shoot Connead M Dress. Shoot Connead M Dress. 22 3 Da. Age OK 3 - - 23 0 Came S Shoot Connead M Dress. Shoot Connead M Dress. 24 3 Da. Age OK 3 - -	7	1002	0	Cam2	Shooting completed	1102	0	Cam2	Shoot Command bf. Dress
9 2 De. Auge OK 2 Even A Even A 11 4 Cannea NORMAL 4 - - 13 1003 0 Canna S Shoot connead M Dress. Shoot Connead M Dress. 14 1 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 15 2 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 16 3 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 17 2 Da. REM OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 20 1 Da. Age OK 2 Shoot Connead M Dress. Shoot Connead M Dress. 21 2 Shoot Connead M Dress. Shoot Connead M Dress. Shoot Connead M Dress. 22 3 Da. Age OK 3 - - 23 0 Came S Shoot Connead M Dress. Shoot Connead M Dress. 24 3 Da. Age OK 3 - -	8		1				1		
10 3 10 6 10 6 10 <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
11 4 Convert NORMAL 4									
12									_
13 1003 0 Cana3 Planeting completed 1103 0 Cana3 Shoot Command & Dress 15 2 3 Dia, RBM OK 3 Shoot Command & Dress Event A 17 4 Dia, RBM OK 3 - - - 18 5 Camme NORMAL 4 - - - 19 1004 0 Camme NORMAL 4 - - - 21 2 3 Booting completed 1104 . Camme NORMAL -<	12								_
14 1 2 Data Stroke 1 2 Short Command & Dress 16 3 Camera NORMAL 4	-	1003		Cam3		1103		Cam3	Shoot Command of Dress
15 2 3 10 Joil and go CK 2 3 Even A 17 4 0 0 0 0		1000		Gamo		1100	••••••	Ganio	
16 3 Da. REM OK 3 Event 8 18 0 0 Camera OKIMAL 4									
17 4									
18									Event B
19 1004 0 Carrat Shochray completed 1104 Carrat Shoch Command & Dress 21 2 3									
221 2 3 Shot Command 4: Dress 222 3 Shot Command 4: Dress Event 6 23 4	-	1004		<u> </u>		1101	5	<u> </u>	-
22 2 3 Da. Judge OK 3 2 Event A Event B 23 1005 0 Cames NORMAL 4		1004		Cam4		1104		Cam4	
22 3 Jair RM 0K 3 Event B 24 5 Camera Dormat. 5									
23 4 Camera NOFMAL 4									
24 5 Carrers Connect 6									
28 1005 0 Cam5 Shoot Command M. Dress. 27 2 3 1 0.5 <	23		4		Camera NORMAL		4		
28 1 Data Stroke 1 Shoot Command af. Dress 29 3 Camera NORMAL 4	24		5		Camera Connect		5		_
22 2 Dis. Judge OK 2 Event A 23 3 Carrers NOPMAL. 4	25	1005	0	Cam5	Shooting completed	1105	0	Cam5	Shoot Command bf. Dress
28 3 Da. REM OK 3 Event B 29 4 Camera NORMAL. 4	26		1		Data Strobe		1		Shoot Command af. Dress
29 4 Camera NORMAL 4	27		2		Dia. Judge OK		2		Event A
30 5 Camera Connect. 5	28		3		Dia. REM OK		3		Event B
31 1006 0 Cam6 ShootIncompleted 1106 0 1 Shoot Command & Dress 32 2 Dia ABrobe 1 2 Shoot Command & Dress Shoot Command & Dress 33 3 Dia REM OK 3 4	29		4		Camera NORMAL		4		—
31 1006 0 Cam6 ShootIncompleted 1106 0 1 Shoot Command & Dress 32 2 Dia ABrobe 1 2 Shoot Command & Dress Shoot Command & Dress 33 3 Dia REM OK 3 4	30		5		Camera Connect		5		—
32 1 Data Strobe 1 Shoot Command af Dress 33 3 Camera NORMAL 3 Event 8 36 5 Camera NORMAL 4		1006	0	Cam6		1106	0	Cam6	Shoot Command bf. Dress
33 2 Dis. Judge OK 2 3 34 3 Camera NGRMAL 3 Event A 36 4 Camera Connect 5 Event A 37 1007 0 Camera Connect 5 Shoot Command bf Dress 38 2 Dis. Judge OK 2 Shoot Command bf Dress 38 2 Dis. Judge OK 2 Shoot Command af Dress 40 3 Camera NORMAL 4 Event A Event A 42 5 Camera Connect 10 Event A Event A 43 1008 0 Camera NORMAL 4 Event A Event A 44 1 Dis. Judge OK 2 Dis. Addge OK 2 Shoot Command af Dress 44 1 Dis. Judge OK 2 Dis. Dudge OK 2 Shoot Command af Dress 51 2 Dis. Addge OK 2 Shoot Command af Dress Shoot Command af Dress 51 2 3 Camera NORMAL									Shoot Command af. Dress
34 3 3 4 Camera NORMAL 3 Event B 36 5 Camera Connect 5 Shoot Command bf. Dress Shoot Command bf. Dress 38 1 Dia. REM OK 2 Shoot Command af. Dress Shoot Command af. Dress 39 2 Dia. ARM OK 2 Shoot Command af. Dress Shoot Command af. Dress 40 3 Dia. Judge OK 2 Shoot Command af. Dress Shoot Command af. Dress 41 4 Camera Connect 1 5 Came Shoot Command af. Dress 44 1 Daia. Judge OK 2 Dia. Judge OK 2 Event A 45 2 Dia. Judge OK 2 Shoot Command af. Dress Shoot Command af. Dress 46 3 Camera ORMAL 4			2						
35 4 Camera NOFMAL 4									
33 5 Camera Connect 5									_
37 1007 0 Gam7 Shooting completed 1107 0 Cam7 Shoot Command bf. Dress 38 2 Dia. Judge OK 2 Shoot Command af. Dress Shoot Command af. Dress 40 3 Camra NORMAL 4 3							••••••		
38 1 Data Strobe 1 Shoot Command af. Dress 39 2 Dia. REM OK 3 Event A 40 3 Camera NORMAL 4		1007		Cam7		1107		Cam7	Shoot Command of Dress
39 2 Dia. Judge OK 2 Event A 40 4 Camera NORMAL 4		1007		Gain/		1107		Gain/	
40 3 Dia. REM OK 3 Event B 41 4									
41 4 Camera NORMAL 4									
42 5 Camera Connect 5									
43 1008 0 Cam8 Shooting completed 1108 Cam8 Shoot Command bf. Dress 44 1 Data Strobe 1 1 Shoot Command bf. Dress Shoot Command df. Dress 46 3 Dia. Judge OK 2 3 Event A 47 4 Camera NORMAL 4									
44 1 Data Strobe 1 Shoot Command af. Dress 45 2 Dia. Judge OK 2 Event A Event A 46 3 Camera NORMAL 4		1000		0 0		1100	5	0 0	
45 2 Dis. Judge OK 2 Event A 46 3 Dia. REM OK 3 Event B 47 4 Camera NORMAL 4		1008		Came		1108		Came	
46 3 Dia. REM OK 3 Event B 47 5 Camera NORMAL 5			·····						
47 4 Camera NORMAL 4 48 5 Camera Connect 5 49 1009 0 Cam9 Shooting completed 1109 0 Cam9 Shoot Command bf. Dress 51 2 3 Dia. Judge OK 2 Shoot Command af. Dress Event A 53 4 Camera NORMAL 4 - - - 54 5 Camera Connect 5 - - - 56 1 Shoot Command bf. Dress Shoot Command bf. Dress Shoot Command bf. Dress 57 2 Dia. REM OK 3 Event A - 58 3 Dia. Strobe 1 1 Shoot Command bf. Dress 59 4 Camera Connect 5 - - 61 1011 0 Cam11 Shooting completed 1111 0 Cam11 Shoot Command bf. Dress 63 2 1 Shooting completed 111 <									
48 5 Camera Connect 5									Event B
49 1009 0 Cam9 Shooting completed Data Strobe 1109 0 Cam9 Shoot Command af. Dress 51 2 3 Dia. Judge OK 3 2 Shoot Command af. Dress Event A 52 3 4 Camera NORMAL 4 - - 53 4 Camera Connect 5 - - 56 1 Oata Strobe 1 0 Cam10 Shoot Command af. Dress 56 1 Data Strobe 110 0 Cam10 Shoot Command af. Dress 57 2 Dia. Judge OK 2 Shoot Command af. Dress 58 3 Dia. REM OK 3 Event A 60 5 Camera Onnect 5 - 61 1011 0 Cam11 Shoot Command af. Dress 63 2 Dia. REM OK 3 Event A 64 3 Dia. Judge OK 2 Event A 64 3 Dia. Judge	47								
501Data Strobe1Shoot Command af. Dress512Dia, Judge OK3Event A534Camera NORMAL4-545Camera Connect5-561Shoot Command bf. DressShoot Command bf. Dress561Dia, Judge OK2Event A561Dia, Judge OK2Event A583Dia, Judge OK2Event A583Dia, REM OK3Event A594Camera NORMAL4-605Camera NORMAL4-6110110Cam11Shooting completed11110621Dia, Judge OK2Event A632Dia, Judge OK2Event A643Dia, EM OK3Event A652Dia, Judge OK2Event A665Camera Connect5-6710120Cam12Shoot Command bf. Dress681Dia, Auge OK3Event A681Dia, Judge OK2Shoot Command bf. Dress692Dia, Judge OK2Event A703Dia, Judge OK2Event A714Camera NORMAL4-725Camera NORMAL4-7310130Cam13Shooting completed1113071					Camera Connect				-
512Dia. Judge OK3Event A5234Camera NORMAL4	49	1009	0	Cam9	Shooting completed	1109	0	Cam9	Shoot Command bf. Dress
523Dia. REM OK3Event B534Camera NORMAL545Camera Connect5-5510100Cam10Shooting completed11100Cam10Shoot Command bf. Dress561Data Strobe10Cam10Shoot Command af. DressShoot Command af. Dress572Dia. Judge OK2Event A583Dia. REM OK3Event B6110110Cam11Shooting completed11110Cam11Shoot Command af. Dress6110110Cam11Shooting completed11110Cam11Shoot Command af. Dress632Dia. Judge OK2Shoot Command af. DressShoot Command af. Dress632Dia. Judge OK2Event AShoot Command af. Dress643Dia. Judge OK2Event AShoot Command af. Dress654Dia. Judge OK3Event A-665Camera NORMAL46710120Cam12Shooting completed11120Cam12681Dia. Judge OK3Event AShoot Command af. Dress692Dia. Judge OK3Event AEvent A703Dia. Judge OK3Event AEvent A714Camera NORMAL4 <th>50</th> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td>Shoot Command af. Dress</td>	50		1				1		Shoot Command af. Dress
534Camera NORMAL4-545Camera Connect5-5510100Cam10Shooting completed11100Cam10Shoot Command bf. Dress561Data Strobe111Shoot Command af. DressShoot Command af. Dress572Dia. Judge OK3Event A5Event A583Dia. REM OK3Event A-605Camera NORMAL4605Camera Connect56110110Cam11Shooting completed11110Cam11621Data Strobe11Shoot Command bf. Dress632Dia. Judge OK2Shoot Command af. Dress643Dia. REM OK3Event A654Camera NORMAL4-665Camera NORMAL4-6710120Cam12Shooting completed11120681Dia. Judge OK3Event A692Dia. Judge OK3Event A703Dia. Judge OK3Event A714Camera NORMAL4725Camera Connect57310130Cam13Shooting completed11130Cam13	51								Event A
545Camera Connect5-5510100Cam10Shooting completed11100Cam10Shoot Command bf. Dress561Data Strobe112Shoot Command af. DressEvent A572Dia. Judge OK33Event B-594Camera NORMAL4605Camera Connect56110110Cam11Shooting completed11110Cam11621Data Strobe11Shoot Command bf. Dress632Dia. Judge OK2Shoot Command af. Dress632Dia. Judge OK2Event A643Dia. Judge OK3Event B654Camera NORMAL4-665Camera Connect5-6710120Cam12Shooting completed11120714Camera Connect11Event B692Dia. Judge OK3Event BEvent A703Dia. Judge OK3Event BEvent B714Camera Connect57310130Cam13Shooting completed11130Cam137310130Cam13Shooting completed11130Cam13	52		3				3		Event B
5510100Cam10Shooting completed11100Cam10Shoot Command bf. Dress561Data StrobeDia. Judge OK32Shoot Command af. DressEvent A583Camera NORMAL34	53						4		
561Data Strobe1Shoot Command af. Dress572Dia. Judge OK3Event A583Camera NORMAL4	54		5		Camera Connect		5		-
57 2 Dia. Judge OK 2 Event A 58 3 Camera NORMAL 4	55	1010	0	Cam10	Shooting completed	1110	0	Cam10	Shoot Command bf. Dress
58 3 Jia. REM OK 3 Event B 59 4 Camera NORMAL 4 - 60 5 Camera Connect 5 - 61 1011 0 Cam11 Shooting completed 1111 0 Cam11 Shoot Command bf. Dress 63 2 Dia. Judge OK 2 Shoot Command af. Dress Event A 64 3 Camera NORMAL 4 - - 66 5 Camera NORMAL 4 - - 67 1012 0 Cam12 Shoot Command bf. Dress - 68 1 Camera NORMAL 4 - - 68 1 Data Strobe 11112 0 Cam12 Shoot Command bf. Dress 68 1 Data Strobe 11112 0 Cam12 Shoot Command af. Dress 69 2 Data Strobe 1 1 Shoot Command af. Dress Event A 69 2 Data Strobe 1 1 - - - 70 <td< th=""><th>56</th><td></td><td>1</td><td></td><td>Data Strobe</td><td></td><td>1</td><td></td><td>Shoot Command af. Dress</td></td<>	56		1		Data Strobe		1		Shoot Command af. Dress
59 4 Camera NORMAL Camera Connect 4	57		2		Dia. Judge OK		2		Event A
59 4 Camera NORMAL Camera Connect 4	58		3		Dia. REM OK		3		Event B
60 5 Camera Connect 5 61 1011 0 Cam11 Shooting completed 1111 0 Cam11 Shoot Command bf. Dress 62 1 1 0 Cam11 Data Strobe 1 1 1 63 2 Dia. Judge OK 3 2 Event A Event A 64 3 Camera NORMAL 4 66 5 Camera Connect 5 67 1012 0 Cam12 Shooting completed 1112 0 Cam12 Shoot Command bf. Dress 68 1 Data Strobe 1 0 Cam12 Shooting completed 1112 0 Cam12 Shoot Command af. Dress 68 1 Data Strobe 1 1 0 Cam12 Shoot Command af. Dress 69 2 Data Strobe 1 1 0 Cam12 Shoot Command af. Dress 68 1 Data Strobe 3 2 Shoot Command af. Dress Event A 69 2 Dia. Judge OK 3 2 Event B 70 3 Dia. REM OK 3 -	59				Camera NORMAL				—
61 1011 0 Cam11 Shooting completed 1111 0 Cam11 Shoot Command bf. Dress 62 1 1 Data Strobe 1 1 1 1 Shoot Command bf. Dress 63 2 Dia. Judge OK 3 2 Shoot Command bf. Dress Event A 64 3 Camera NORMAL 4 - - - 66 5 Camera Connect 5 - - - 67 1012 0 Cam12 Shooting completed 1112 0 Cam12 Shoot Command bf. Dress 68 1 Data Strobe 1 1 - - - 69 2 Data Strobe 1 1 2 Shoot Command af. Dress Shoot Command af. Dress 69 2 Data Strobe 1 1 2 Shoot Command af. Dress 70 3 Dia. Judge OK 3 2 Event A - 71 4 Camera Connect 3 Event B - - 73									[
62 1 Data Strobe 1 Shoot Command af. Dress 63 2 Dia. Judge OK 2 Event A 64 3 Dia. REM OK 3 Event A 65 4 Camera NORMAL 4	-	1011	0	Cam11		1111	0	Cam11	Shoot Command bf. Dress
63 2 Dia. Judge OK 2 Event A 64 3 Dia. REM OK 3									
64 3 Jia. REM OK 3 Event B 65 4 Camera NORMAL 4 66 5 Camera Connect 5 67 1012 0 Cam12 Shooting completed 1112 0 Cam12 Shoot Command bf. Dress 68 1 Data Strobe 1 2 Shoot Command af. Dress 69 2 Dia. REM OK 3 Event A 70 3 Dia. REM OK 3 Event B 71 4 Camera NORMAL 4 - 72 5 Camera Connect 5 - 73<1013 0 Cam13 Shooting completed 1113 0									
65 4 Camera NORMAL 4 66 5 Camera Connect 5 67 1012 0 Cam12 Shooting completed 1112 0 Cam12 Shoot Command bf. Dress 68 1 Data Strobe 1 1 Shoot Command bf. Dress 69 2 Dia. Judge OK 2 Shoot Command af. Dress 70 3 Dia. REM OK 3 Event A 71 4 Camera NORMAL 4 - 72 5 Camera Connect 5 - 73 1013 0 Cam13 Shooting completed 1113 0 Cam13									
66 5 Camera Connect 5 - 67 1012 0 Cam12 Shooting completed 1112 0 Cam12 Shoot Command bf. Dress 68 1 Data Strobe 1 1 Shoot Command bf. Dress 69 2 Data Strobe 1 2 Shoot Command af. Dress 69 2 Dia. Judge OK 2 Event A 70 3 Dia. REM OK 3 Event B 71 4 Camera NORMAL 4 - 72 5 Camera Connect 5 - 73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress									
67 1012 0 Cam12 Shooting completed 1112 0 Cam12 Shoot Command bf. Dress 68 1 Data Strobe 1 1 1 Shoot Command bf. Dress 69 2 Dia. Judge OK 2 2 Shoot Command af. Dress 70 3 Dia. Judge OK 3 Event A 71 4 Camera NORMAL 4 72 5 Camera Connect 5 - 73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress									_
68 1 Data Strobe 1 Shoot Command af. Dress 69 2 Dia. Judge OK 2 Event A 70 3 Dia. REM OK 3 Event B 71 4 Camera NORMAL 4 - 72 5 Camera Connect 5 - 73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress		1012		Cam12		1119		Cam12	Shoot Command of Dross
69 2 Dia. Judge OK 2 Event A 70 3 Dia. REM OK 3 Event B 71 4 Camera NORMAL 4 - 72 5 Camera Connect 5 - 73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress		1012		Gainiz		1112		Jainiz	
70 3 Dia. REM OK 3 Event B 71 4 Camera NORMAL 4 - 72 5 Camera Connect 5 - 73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress									
71 4 Camera NORMAL 4 72 5 Camera Connect 5 73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress									
72 5 Camera Connect 5 - 73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress									Event B
73 1013 0 Cam13 Shooting completed 1113 0 Cam13 Shoot Command bf. Dress									
									-
74 1 Data Strobe 1 Shoot Command af. Dress		1013		Cam13		1113	0	Cam13	
	74		1		Data Strobe		1	l	Shoot Command af. Dress

CC-Link / DeviceNet

[#]	[PLC inp [device]	[buff]	[hex#]	[00]	mment]	[PLC out [device]	[buff]	[hex#]	[00	mment]
	0 X0E0	0E0	00	PC Worki		YOE0	160	00		
	1 X0E1		01	cam1	Data Strobe	Y0E1		01		
	2 X0E2		02	cam2	Data Strobe	Y0E2		02		
1	3 X0E3		03	cam3	Data Strobe	Y0E3		03		
0	4 X0E4		04	cam4	Data Strobe	Y0E4		04		
	5 X0E5		05	cam5	Data Strobe	Y0E5		05		
	6 X0E6		06	cam6	Data Strobe	Y0E6		06		
	7 X0E7		07	cam7	Data Strobe	Y0E7		07		
	8 X0E8	1	08	cam8	Data Strobe	Y0E8		08		
	9 X0E9	1	09	cam9	Data Strobe	Y0E9		09		
	10 X0EA		0A	cam10	Data Strobe	YOEA		0A		
	11 X0EB		0B	cam11	Data Strobe	YOEB		0B		
	12 X0EC		0C	cam12	Data Strobe	YOEC		0C		
	13 X0ED	1	0D	cam13	Data Strobe	YOED		0D		
	14 XOEE	1	0E	cam14	Data Strobe	YOEE		0E		
	15 X0EF	1	OF	cam15	Data Strobe	YOEF		0F		
-	16 X0F0	0E1	10	cam1	Dia. Judge OK	YOFO	161	10	cam1	Shoot Command bf. Dress
-	17 X0F1		11	Guint	Dia. REM OK	Y0F1		11	- Current - Curr	Shoot Command af. Dress
	18 X0F2	-	12	-	(Reserve)	Y0F2	-	12		Event A
	19 X0F3	-	13		Camera NORMAL	Y0F3	1	13		Event B
	20 X0F4	-	14	cam2	Dia. Judge OK	Y0F4	1	14	cam2	Shoot Command bf. Dress
-	21 X0F5	-	15	Gantz	Dia. REM OK	YOF5	1	15	Gantz	Shoot Command af. Dress
-	22 X0F6	-	16		(Reserve)	YOF6	-	16		Event A
-	23 X0F7	-	17	+	Camera NORMAL	Y0F7	-	17	-	Event B
-		-		0.000 2			-		0.0002	
-	24 X0F8	-	18	cam3	Dia. Judge OK	Y0F8	4	18	cam3	Shoot Command bf. Dress
<u> </u>	25 X0F9	-	19	-	Dia. REM OK	Y0F9	-	19	-	Shoot Command af. Dress
	26 X0FA	-	1A		(Reserve)	YOFA	-1	1A	1	Event A
-	27 XOFB	-	1B	-	Camera NORMAL	YOFB	-	1B	1	Event B
-	28 X0FC	-	10	cam4	Dia. Judge OK	YOFC	-	10	cam4	Shoot Command bf. Dress
<u> </u>	29 X0FD	-	1D		Dia. REM OK	Y0FD		1D		Shoot Command af. Dress
	30 X0FE		1E		(Reserve)	YOFE		1E		Event A
	31 X0FF		1F		Camera NORMAL	YOFF		1F		Event B
	32 X100	0E2	20	cam5	Dia. Judge OK	Y100	162	20	cam5	Shoot Command bf. Dress
	33 X101		21		Dia. REM OK	Y101		21		Shoot Command af. Dress
	34 X102		22		(Reserve)	Y102		22		Event A
	35 X103		23		Camera NORMAL	Y103		23		Event B
	36 X104		24	cam6	Dia. Judge OK	Y104		24	cam6	Shoot Command bf. Dress
Ŭ.	37 X105		25		Dia. REM OK	Y105		25		Shoot Command af. Dress
0	38 X106		26		(Reserve)	Y106		26		Event A
	39 X107	1	27		Camera NORMAL	Y107		27		Event B
	40 X108	1	28	cam7	Dia. Judge OK	Y108		28	cam7	Shoot Command bf. Dress
-	41 X109	1	29		Dia. REM OK	Y109		29	-	Shoot Command af. Dress
<u> </u>	42 X10A	-	2A		(Reserve)	Y10A	-	2A		Event A
	43 X10B		2B		Camera NORMAL	Y10B		2B		Event B
-	44 X10C	1	2C	cam8	Dia. Judge OK	Y10C	-	2C	cam8	Shoot Command bf. Dress
-	45 X10D	-	2D	Journo	Dia. REM OK	Y10D	-	2D	Journe	Shoot Command af. Dress
	46 X10E	-	2E		(Reserve)	Y10E	-	2E		Event A
-	47 X10F	-	2F		Camera NORMAL	Y10F	-	2F		Event B
-	48 X110	0E3	30	10000		Y110	163	30	a a mal	Shoot Command bf. Dress
-	49 X111	023	31	cam9	Dia. Judge OK Dia. REM OK	Y111	103	31	cam9	
-	50 X112	-		_	(Reserve)		-			Shoot Command af. Dress
-		-	32	-	- Sector and the Sector	Y112	-	32		Event A
-	51 X113	-	33	100.10	Camera NORMAL	Y113	-	33	10	Event B
	52 X114	-	34	cam10	Dia. Judge OK	Y114	4	34	cam10	Shoot Command bf. Dress
-	53 X115	-	35	-	Dia. REM OK	Y115	-	35	1	Shoot Command af. Dress
	54 X116	-	36	-	(Reserve)	Y116	-	36		Event A
-	55 X117	-	37		Camera NORMAL	Y117	-	37		Event B
-	56 X118	-	38	cam11	Dia. Judge OK	Y1 18	4	38	cam11	Shoot Command bf. Dress
	57 X119	_	39	_	Dia. REM OK	Y1 19	-	39		Shoot Command af. Dress
	58 X11A	-	3A		(Reserve)	Y11A		3A		Event A
	59 X11B	-	3B		Camera NORMAL	Y118		3B		Event B
	60 X11C	-	3C	cam12	Dia. Judge OK	Y11C		3C	cam12	Shoot Command bf. Dress
	61 X11D		3D		Dia. REM OK	Y11D		3D	1	Shoot Command af. Dress
	62 X11E		3E		(Reserve)	Y11E		3E		Event A
	63 X11F		3F		Camera NORMAL	Y11E		3F		Event B
	64 X120	0E4	40	cam13	Dia. Judge OK	Y120	164	40	cam13	Shoot Command bf. Dress
	65 X121		41		Dia. REM OK	Y121		41		Shoot Command af. Dress
	66 X122		42		(Reserve)	Y122	1	42		Event A
-	67 X123	1	43		Camera NORMAL	Y123	1	43		Event B
-	68 X124	1	44	cam14	Dia. Judge OK	Y124	1	44	cam14	Shoot Command bf. Dress
	69 X125	-	45		Dia. REM OK	Y125	1	45		Shoot Command af. Dress
	70 X128	-	46	-	(Reserve)	Y128	-	46	-	Event A
-	71 X127	-	47	-	Camera NORMAL	Y127	-	47	-	Event B
	71 X127 72 X128	-	47	cam15	Dia. Judge OK	Y127	-	47	com15	Shoot Command bf. Dress
		-		cam 15			-		cam15	
<u> </u>	73 X129	-	49		Dia. REM OK	Y129	-	49	-	Shoot Command af. Dress
	74 X12A	-	4A	-	(Reserve)	Y12A	-	4A	+	Event A
1	75 X12B 76 X12C	-	4B		Camera NORMAL	Y12B	-	4B		Event B
			4C			Y12C		4C	1	





【Other functions】 Language Switching Tool

Language setting is available by clicking the "Language" button on the button right corner.

Indication 1 TMN-01	
Indication 2	O Page7
TEST	O Page 8 Connection Retry Timer
Input Outer Signal	O Page9 30 € min.
Event 1 TMN-01	○ Page 10
Event 2 Test	3 4 5 6 7 8 9 10 11 12 12 14 15 16 17 18 12 22 22 24 25 24
Beginning of time of day	28 28 30 31 32 33 34 35 36 37 38 39 40 41 42 45 44 45 46 47 48 49 50
8:00	[cam1]
□ Create yesterday's repo at beginning time	Robot Name RM11
	IP Address 192.168.0. 101 ~ Save
IP Tool	Available Unavailable
	Available for multiple lines
	<u></u> ,
	💀 TipMonitor 🛛 🕹
	Please select language
	Japanese - 日本語
	Japanese - 日本語 English - US UK
	This tool will be stopped when you push [OK] button. please restart software if you want.
	OKボタンを押すと本ツールは終了します。 必要なら、再起動してくだざい。
	\checkmark
	💀 TipMonitor 🛛 🗙
	🖼 TipMonitor 🛛 🗙
	Please select language
	Japanese - 日本語
	ОК
	This tool will be stopped when you push [OK] button. please restart software if you want.
	OKボタンを押すと本ツールは終了します。 必要なら、再起動してください。

■IP Setting Tool

For the Tip Monitors which completed "4.3 Setting the IP Address of Tip Monitor", changing IP address can be done easily by this screen.

① Click "IP Confirmation Tool".

🖶 System Setting Tool					_		>
Cell Layout		[Blue Field] required					
● 2x2 ○ 3x3 ○ 4x4	Indibation	required	Page1	PLC connection			
O 5×5	Indipation 2		O Page2	Ethernet/IP ~			
0 828			O Page3			_	
	1 2		O Page4	Ethernet/IP設定			
Indication 1			○ Page5				
TMN-01			○ Page6	Setting			
Indication 2			O Page7				
TEST			O Page8	Connection Retry	Timer		
Input Outer Signal			O Page 9	30 🜲	min.		
Event 1 TMN-01			Page 10				
Event 2 Test	3 4 5 6 7	8 9 10 11 12 13	14 15 16 17 1	18 19 20 21 22 23	24 25 2	26 27	
Beginning of time of day	28 29 30 31 32	33 34 35 36 37 38	39 40 41 42 4	13 44 45 46 47 48	49 50		
8:00	[cam1]					_	
Create yesterday's repo at beginning time	Robot Name	RM11					
	IP Address	192.168.0. 101 ~	•	Save	•		
IP Tool	Avail	able () Unavailable	_				
		🗌 Availal	ole for multiple lin	ies Langu	age		

② Select the IP number to change by moving the cursor, then click. The command below will be enabled. Click "Change IP Address".

49 50 5 65 66 6 81 82 8 97 98 8 113 114 1 129 130 1	35 36 51 52 57 68 33 84 39 100 15 116 31 132	37 53 69 83 101 117 133	38 54 70 86 102 118	39 55 71 87 103	40 56 72 88 104	41 57 73 89 105	42 58 74 90	43 59 75 91	44 60 76 92	45 61 77 93	46 62 78 94	47 63 79 95	48 64 80 96
65 66 6 81 82 8 97 98 8 113 114 1 129 130 1	67 68 33 84 99 100 15 116	69 80 101 117	70 86 102	71 87 103	72 88	73 89	74 90	75	76	77	78	79	80
81 82 8 97 98 9 113 114 1 129 130 1	33 84 99 100 15 116	85 101 117	86 102	87 103	88	89	90	_	_		_	_	_
97 98 9 113 114 1 129 130 1	99 100 15 116	101 117	102	103	_		_	91	92	93	94	05	0.0
113 114 1 129 130 1	15 116	117			104	105						00	90
129 130 1	_	-	118	110			106	107	108	109	110	111	112
	31 132	133		119	120	121	122	123	124	125	126	127	128
45 146 1		100	134	135	136	137	138	139	140	141	142	143	144
	47 148	149	150	151	152	153	154	155	156	157	158	159	160
161 162 1	63 164	165	166	167	168	169	170	171	172	173	174	175	176
177 178 1	79 180	181	182	183	184	185	186	187	188	189	190	191	192
193 194 1	95 196	197	198	199	200	201	202	203	204	205	206	207	208
209 210 2	11 212	213	214	215	216	217	218	219	220	221	222	223	224
225 226 2	27 228	229	230	231	232	233	234	235	236	237	238	239	240
241 242 2	43 244	245	246	247	248	249	250	251	252	253	254		

3 A confirmation dialog box will appear. Click "YES".

May I (change it.	×
Your	IP address will	be changed.
	Yes	No

④ If a message below appears, restart the TMN (remove and reinsert the LAN cable).

Click "Update". The green box must be relocated.

	×
Your IP address has been changed. Please reboot the device. When the LED power of the device flashes, please push the updating button.	
ОК	

IP Co	onfirm	Tool											_		×
192.16	i8.0.1							~		P7トレス	の変更		(Upda	te
1	2	3	4	5	6	7		<ex< th=""><th>. > 0</th><th>hang</th><th>e fro</th><th>m NO.</th><th>. 110</th><th>to 10</th><th>1.</th></ex<>	. > 0	hang	e fro	m NO.	. 110	to 10	1.
17	18	19	20	21	22	23	24	20	20	21	28	23			٥Ζ
33	34	35	36	37	38	39	40	41	42	43	44	45		h	48
49	50	51	52	53	54	55	56	57	58	59	60	61		63	64
65	66	67	68	69	70	71	72	73	74	75	76	77		79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128

(5) Check the number is correct and click "Change IP Address". The setting is completed.

IP Co	onfirm	Tool											_		>
192.11	68.0.1							~		የፖትኘレス(の変更	>	I	Upda	ate
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128

** For the details of IP Address setting on PC side, see "4.10 How to change the IP Address of PC".

For Multiple Production Lines

This function is available for connecting multiple tip monitors to multiple PLCs.

% The line name cannot be changed after setting the camera. Also, the function cannot be switched ON / OFF.

If you change the function, it will cause problems such as the camera settings being initialized.

1 Put a check mark on "Available for multiple lines". A list below will appear.

		he setting line am	nount	•	Available 🔿 Ur	navailable	. 1	~			
fror	n above.					Av	ailable for n	nultiple lines		Language	
Line	Name	Annotation	Line	Name	Annotation	Line	Name	Annotation	Line	Name	Annotation
\square	1 DEF	DEF(default)	11								
\square	2		12								
\square	3		13								
\square	4		14								
\square			15								
\square											
\square	7										
\square											
\square	9										

② Put check marks on lines which you are going to use. Create your "Name", "Annotation".

Do NOT use the characters such as $(\%^*()) \to 0$ etc.).

③ Input "Line Number", "Name", and "Note".

8: Cre at b	00 ate yest eginning IP Tool	ne of day erday's repo time me setting line an		cam1] Robot N IP Addro		1	1 ~ Line	40, 41, 42, 44 e Number	44 4:	44 44 44 Save	48.50
from a		ne setting line an	bunt			⊠ Av	ailable for r	nultiple lines		Language	
Line	Name	Annotation	Line	Name	Annotation	Line	Name	Annotation	Line	Name	Annotation
1	DEF	DEF(default)	11								
2			12								
3			13								
4			14								
5			15								
6											
7											
28											

(4) On the "Result Report" of the Judge-Record software, lines (PLCs) will be selectable. The report can be managed by each line.

_		onth 26 vear today	day will r	apor DEE	(defauit) (defauit) (defauit2) RM21	1	7	Repor	-	Summa			Option Start after	dressin	ie	✓ event avera	ge brig	htnes	before o	
	2020		display im		上部 DF	28]		in the ti	me order	Th	e numbe 下部 DF		NG: O	/dres	sing:	0 /e	/ents	: 0		
		month day	hrmin sec	[detail]	dia	rem	dia 1	dia2	rem(%)	ctr(%)	dia dia	rem	dia 1	dia2	rem(%)	ctr(%)				
•	1	08/26	11:26:29		test JNGI	ок	6.82	6.65	24	0	test_OK	ок	_6.89_	7.06	28	0				
	2	08/26	11:26:24		testjingi	ок	6.74	6.67	24	0	test_OK	ок	_6.91_	7.03	28	0				
	3	08/26	11:16:58		🕽 start up															
	4	08/26	11:14:07		test_ING	ок	6.79	6.67	24	0	test_OK	ок	_6.89_	7.03	28	0				
	5	08/26	11:13:54	0	🚺 start up															

User Password Setting

To avoid closing the Judge Software accidentally, user password setting is available.

(1) Select [Settings] \rightarrow [User Password Setting], from the menu on the top of the screen.

ile(F)	Setting(S)	
Cell La	User Password(P)	[Blue Field]
	Indibation 2	1 required
• 2x3	2 O 3x3 O 4x4	
○ 5×	5	

2 Create your password (with 4 characters). Then click "OK".

User Password Setting		×
Possword Re-enter Password		
	ОК	Cancel

*Click "OK" without filling the blanks if you do not need a password.

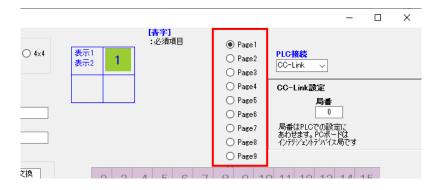
③ Image below will appear when finishing the Judge Software.

User Password			x
	Exit	Cancel	

X "Administrator Password (000000)" and "User Password" are different. Administrator Password could not be changed.

Page Name Setting

The number of pages set in the previous section can be changed to any character.



XEven if you change the settings using the steps below, Page 1, Page 2, etc. will remain on this screen.

① After all setup is complete, open the settings menu from the button shown below on the inspection screen.

esti	RM11
	上部 直径 Des 研磨残
mm/dd HHMMSS shot start 08/01 085948 起動時攝影終了。 08/01 085948 Ethernet i/起動OK	
C.残り容量 239,258MB	

2 When the image below appears, please enter any text.

設定			-		\times
検査ア	ップロード				
ページ名					
page 1	test1				
page2	Page2				
page3	Page3				
page4	Page4				
page5	Page5			7	
page6	Page6				
page7	Page7			7	
page8	Page8			7	
page9	Page 9			7	
page10	Page10]	
				_	
					_
パスワー	-14	キャンセル		保存	
		L			

4.5. Setting the Camera Setting Tool

When setting up, please check the following list.

<u> </u>Caution

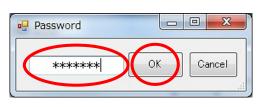
The PC, HUB, and the monitor are properly connected by LAN cable and communicated.
Attachment of the monitor in the assembly line and the setting of the gun position is done.
Usage of a cap tip that has been dressed just before setting up.

1 Activate the "Camera Setting Tool".

(The icon will be in the TMN launcher)



2 Type in the master password "0000000" then click "OK".



③ Before setting up, the cap tip needs to be dressed and kept pressured. (Recommended Pressure 1500N, Maximum 3000N)

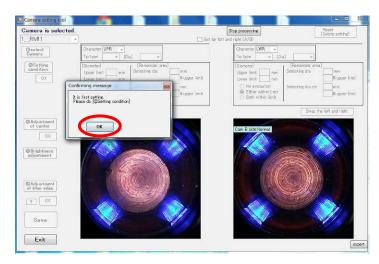
%The setting must be done after the cap tip is dressed. If not, the system will not work properly.

(4) The picture below will appear on the PC.

Follow the order on the left from "①Select Camera \sim ⑤Adjustment of blue edge" to set up. Choose the camera from the pull-down menu and click "①Select Camera".

Camera Setting Tool	
2_RM21 4	era you use after dressing and pressurizing Cap Tip.
@Select Camera	Character UPR V Tip type V [Dia] V
©Setting Condition OK	[Diameter] [Remainder area] Upper limit mm Lower limit mm O bb conduction D to the time in the topological statement of topological statement o

(5) It will correspond with the tip monitor (camera) and the screen will look like the picture below. Click "OK".



XIf the photograph does not show nor has any errors, please recheck the network. Also, please check if any contaminations or shadows are not on the cap tip as well.

6 Click "2 Setting Condition".

💀 Camera Setting Tool				
Please do @Setting	condition]		Stop processing	Reset (Delete setting)
1RM11 -		Set for left an	d right (A/B)	
OSelect Camera OSetting Condition	Character UPR Tip type DR (Dia) Diameter Upper limit mm Lower limit mm No evaluation Either within limit Both within limit	mm % upper limit mm % upper limit	Character [LWR Tip type DR [Diameter] Upper limit	a] [Remainder area] Detecting dia [% upper limit Detecting dia ctr [% upper limit] [% upper l

XIf you prefer to set up Side A and Side B separately, the checkbox must be checked.

	☑ Set for left and right (A/B)
Character UPR 🗸	Character LWR 👻
Tip type 💽 🔹 [Dia]	Go Tip type [Dia]
Diameter] . [Remainder area]	down ↓ [Diameter]

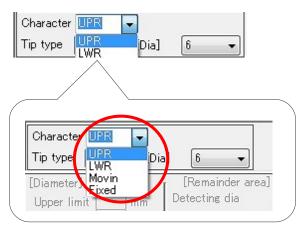


Side A

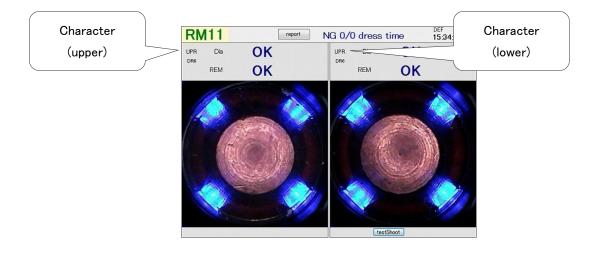


Side B

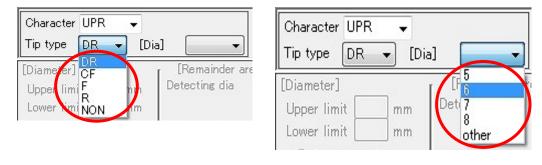
\bigcirc Choose the character.



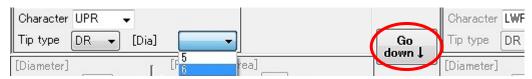
%Character (UPR, LWR, Movin and Fixed) will be shown like it is in the picture.



8 8 Choose the type of cap tip/the diameter of the cap tip.



9 Click "Go down".



10 Set each item of the judging parameter.

Character UPR → Tip type DR → [Di	a] <u>6</u> –		
[Diameter]	[Remainder area]		
Upper limit 7 mm	Detecting dia	5.5	mm
Lower limit 5 mm		30	% upper limit
🔘 No evaluation	Detecting dia ctr	1	mm
Either within limit		50	% upper limit
🔘 Both within limit			

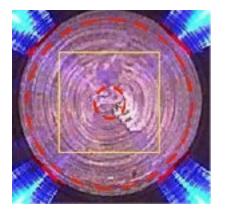
When fixing the cap tip setting, change by clicking "up". When changing, the judging parameter will be formatted.

[Diameter Setting]

- Maximum, Minimum setting: If in between the set value, OK judge
- From the 2 measured length, select the judgment pattern.

No Evaluation	:Diameter judge will be always OK	
Either within limit	: OK judge when either of the tips passes the limit $\ (\mbox{Default})$)
Both within limit	:OK judge when both tips passes the limit	

[Area of BlackREM]



Outer dotted line (Judgment objected to totalarea of the tip top)

- Black REM. Diameter: Select the area for judging the blackREM the tip top.
- Black REM. Threshold Value: Maximum BlackREM permissible in a selected area.

Inner dotted line (Judgement objected to the center of tip top)

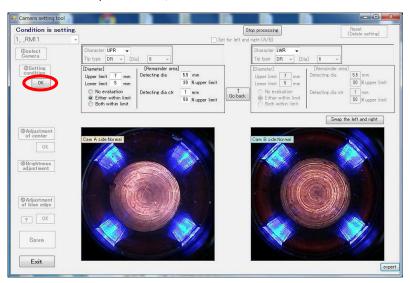
- Center BlackREM. Diameter: Select the area for judging the blackREM of the center of the tip top.
- Center BlackREM. Threshold Value: Maximum BlackREM permissible in a selected area.

- 1 Swap the left and right images as needed.
- %The left and right cannot be swapped after setup.

If you need to switch the left and right after the setup is completed, please initialize the settings.



(1) When the set up is finished, click "OK".

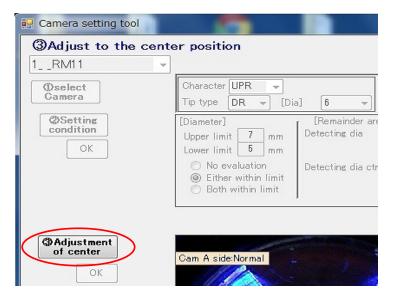


A confirmation message will pop up. Click "OK" and go on.

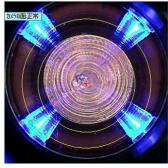


XNow on, please be careful of these listed below.

- Cap tip that has been dressed and pressurizing the monitor.
- Any dust or contaminations are not in the photo.
- No shadows are showing on the cap tip .
- (1) Click "③ Adjustment of center".



(1) Adjust the center of the cap tip to show in the center of the photo, which is shown by a red cross, by using the ways (a) and (b).



Before Adjusting



After Adjusting

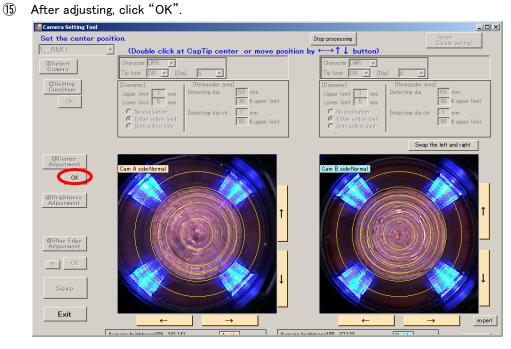
A. Set the cursor on the center of the cap tip and double click.



XCursor will show up when setting the mouse on the photograph.

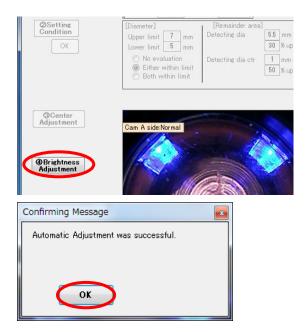
B. Move by using the arrows set on the bottom and right side of the picture.





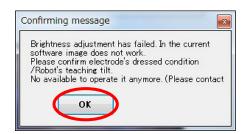
(16) Click "④ Brightness Adjustment".

The brightness will be adjusted automatically.

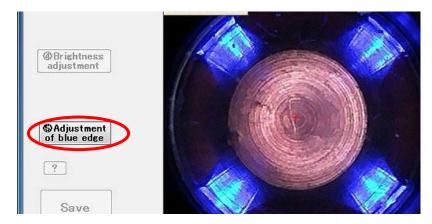


When the message pops up, click "OK".

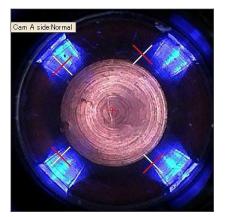
XIf the auto adjustment fails, an error message will appear. Please check whether the cap tip is dressed properly and set again.



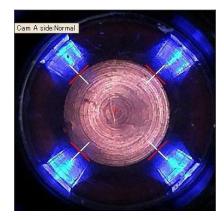
1 Click "(5) Adjustment of blue edge".



Drag the 4 markers on the borderline of the blue light and the tip of a cap tip.

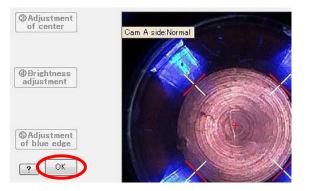


Before Adjusting



After Adjusting

(18) When finished, click "OK".



(1) Select the position of the blackREM judgment circle.



[Select Center Position]

If DiaNG, center of the image

<example>

As shown in the figure on the right, if either diameter judgment is larger or smaller than the threshold, the judgment circle is set at the center of the image.

※This is the default setting of TMN-01.

• Diameter intersection of ① and ②

<example>

As shown in the figure on the right, even if the diameter judgment value exceeds the threshold, the judgment circle will always be the intersection point of the diameter judgment.

XIt may be effective for guns such as X-guns where the tip is tilted.

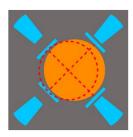
• Center of the image

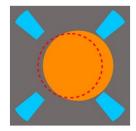
<example>

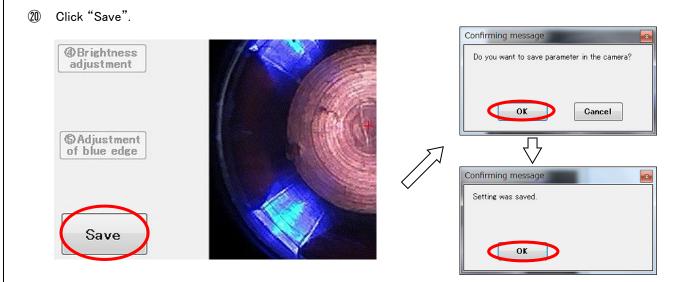
Even if the chip is not at the center position as shown in the figure on the right, the judgment circle will always be at the center of the image set in "Center adjustment" in the previous section. **XIn this case, the black part on the left side is determined to be black residue.**

XIn either mode, you need to find the optimal solution while actually shooting. Basically, we recommend using the default settings.









XIf you click "Cancel Process" before saving, an error message below may appear. If this happens, restart the Tip Monitor and do the same process from the first step once again. Click "Reset (delete setting)" before you operate the process from the first step.

		Х					
Camera connection ERROR!							
	OK						

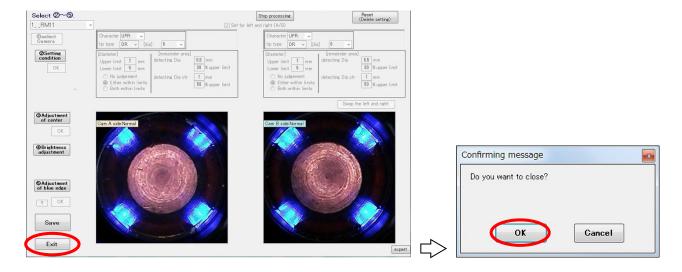
21 If there are multiple cameras, a message will pop up.



22 Release the gun.

Conduct process $(3 \sim 0)$ to all of the tip monitors.

After finishing all of the settings, click "Exit".

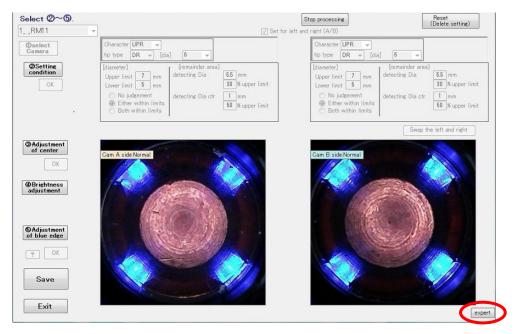


[Other functions] Expert Mode

<u>∧</u> Caution

%"Expert" is a function available under customer support.

This is only for developers and must not be used in general.



4.6. Judge-Record Software Validation

"Judge-Record Software" is the system's main software.

It will be able to activate after finishing the system setting and the camera parameter setting correctly.

1 Activate the "Judge-Record Software".

(The icon will be in the TMN launcher)



When the "Judge-Record Software" is activated, the camera will take a test shot to make sure the camera is connected properly. (The test shot is set to take brighter photos than the usual photos)

👷 Judge-Record Ver 4.05				53		-	o x
Page1 TMN-01				G.			
TEST							
mm/dd HH:MM:SS shot start							
08/26 11:16:58Image shot at start-up. 08/26 11:16:58??							
C:Free space271,717MB							
RM11 report	NG 0/0 dress	DEF 11:16:58	RM21	report	lG 0/0 dress	DEF 11:	16:58
Las Dia UP-	下部 Dia	-qu	上部 Dia DR8	up-	下部 Dia DR8	up-	
Rem shot	Rem	shot	Rem	shot	Rem	shot	
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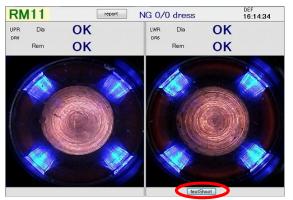
When the setting is incorrect or the camera is disconnected, a message "Camera Error" will appear. If this happens, check to see if the camera connection and settings are done properly.

When the setting is incorrect or the control device is disconnected, a message "Error" will appear. If this happens, check to see if the cable connection and settings are done properly.

XWhen the camera error remains even if the connection is done properly, restart the Tip Monitor.

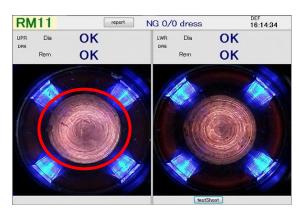
Please follow the order below and confirm the camera setting parameter.

- (2) Keep the cap tip pressurizing. (Recommend 1500N, Maximum 3000N)
- 3 Click "Testshoot".

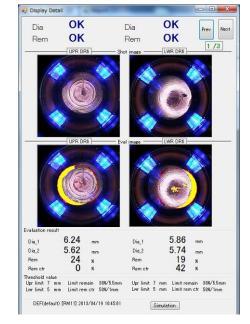


XIn test shots, no judgment signal will be sent to the PLC.

When photo of the cap tip is taken, click the photo.A detail of the photo will appear.



5 Confirm the value of diameter • REM.



NG case with the diameter

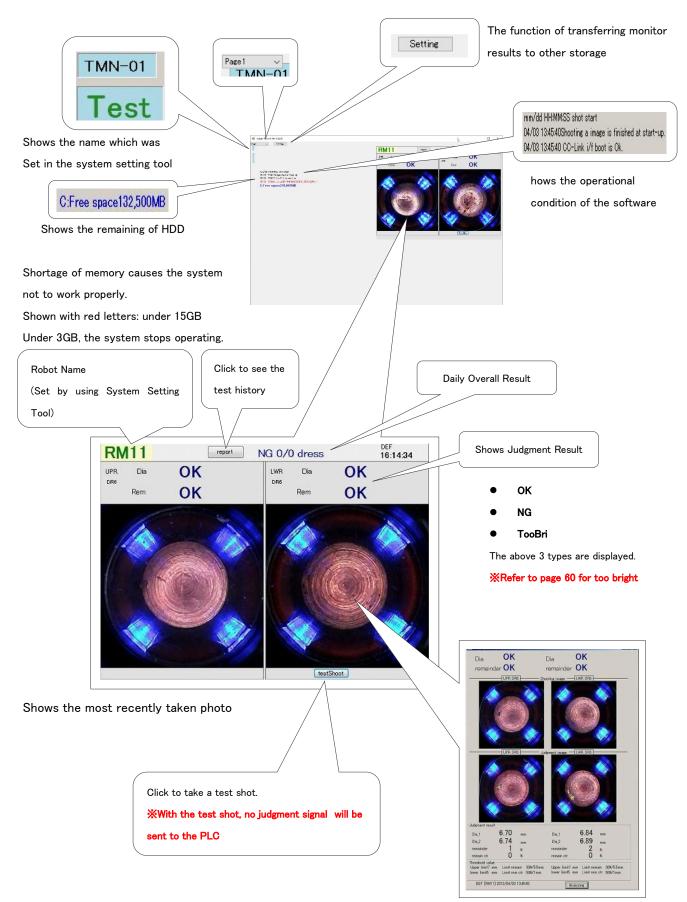
 \rightarrow Things concerned: The threshold value set too severe, not enough pressure, not adjusted properly to the center, blue light not adjusted properly. Please recheck the teaching pressure and follow the order written in ch.4.5 and reset.

• NG case with the BlackREM

 \rightarrow Things concerned: The threshold value set too severe, tilt of a cap tip, dust adhesion of dust, lack of tip dressing. Please recheck the teaching dressing condition and follow the order written in "4.5 Setting the Camera Setting Tool" and reset.

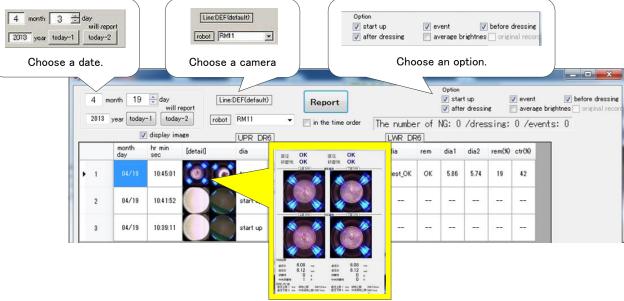
6 Confirm if the shots are taken correctly by checking the signal from the PLC.

4. 7. Explanation of "Judge-Record Software"



Click the photo for detailed information

UPR DBS Shooting image TWR DBS Red Line (Near Blue Light) : Indicates Tip Dia. Detection Spot (Blue Edges - 4) When not detected, it will not appear. Red dotted line (outer): Inside of the red-dotted line indicates the remaining part which was not dressed properly.	Dia OK Dia OK remainder OK remainder OK	Judgement Photo
KWhen not detected, it will not appear. Red dotted line (outer): Inside of the red-dotted line indicates the remaining part which was not dressed properly. Red dotted line (innor): Inside of the red-dotted line indicates the remaining part which was not dressed properly. Red dotted line (innor): Inside of the red-dotted line indicates the remaining part which was not dressed properly. Red dotted line (innor): Inside of the red-dotted line indicates the remaining part which was not dressed properly. Red dotted line (innor): Inside of the upper-left and lower-left blue edges. Dimetral Schows the length of the upper-left and lower-left blue edges. Dimetral Schows the length of the upper-left and lower-left blue edges. Dimetral Schows the length of the upper-left and lower-left blue edges. Dimetral Schows the length of the upper-left and lower-left blue edges. Dimetral Schows the length of the upper-left and lower-left blue edges. Dimetral Schows the length of the upper-left and lower-left blue edges. Dimetral Schows the length of the upper-left and lower-left blue edges. Dimetral Schows the % of which was recognized black in the center of the cap tip. Auge Threshold Value Value set to judge. </td <td></td> <td>Red Line(Near Blue Light) : Indicates Tip Dia. Detection Spot</td>		Red Line(Near Blue Light) : Indicates Tip Dia. Detection Spot
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Upper limit? min Limit reason: 30%/55min Upper limit? min Limit remain: 40%/55min Upper limit. Analyzing is available under a supervision of the manufacturer. Min Limit remain: 40%/55min Upper limit? min Limit remain upper limit. Min Limit remain upper limi	Dia.2 6.74 mm Dia.2 6.89 mm remainder 1 x remainder 2 x	Remain ctr. : Shows the % of which was recognized black in the center of the cap tip.
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By clicking the "Result Report", you will be able to see the history of the test results.	LIFE DB OK LIFE DA OK	Analyzing
		"Analyzing" is available under a supervision of the manufacturer.
If any changes are preferred in the contents displayed, change referring to the picture below and click "Show".	By clicking the "Result Report", you will be able to se	ee the history of the test results.
	If any changes are preferred in the contents displayed	d, change referring to the picture below and click "Show".



Click the photo for detailed information



tooBri (too Bright) Appears when the captured image is too bright.

XIn the case of a chip that becomes too bright when photographed (Example: When did camera setting with a blackened cap tips)

When the type of cutter is changed in the middle and the surface roughness is improved too much

(Example: If you set the KTW cutter, but then changed the cutter type and did not camera setting again)

if the timing of pressure release is too early and the camera shoots the lighting equipment on the ceiling, etc.

Displayed under the above or other conditions.

4.8. Functions in Setting Menu

Page Name Settig

Refer to P.58

pege2	Page2	
Pogo 8	Page 8	
page4	Paget	
page8	Page5	
paga6	Paget	
pege7	Page7	
Page 8	Page 8	
Page9	Page'i	
page 10	Page 10	

Transfer to external storage / automatically delete old data

- 🗆 X

The function of transferring monitor results to storage and automatic deletion of old monitor results can be configured. **%Can use it as a backup by saving it in an external storage on the network.**

Setting	_	
Upload monitoring results		
Upload destination folder		
		Modify
Auto upload Automatic uploading at the time of inspection 60 Minutes interval		
Manual upload 2022年05月26日 圓▼ ~ 2022年05月26日 圓▼		Upload
Periodic deletion of monitored results		
Deletion period 30 Image: state sta		
Password Cancel		Save

If you want to transfer the monitoring results automatically, please turn on the "Auto Upload" checkbox.

If the transfer does not complete successfully due to network problems, etc., the results monitored up to the previous day will be attempted to be transferred again at the set time interval.

For unsent data older than 2 days, please upload manually by specifying the date.

If you want to delete old monitor results, check ON the "Delete monitor results periodically" checkbox. Data prior to the specified number of days is automatically deleted when the software is started or when the date changes.

If a user password has been set in "4.4. User Password Setting", operations other than "Manual Upload" are prohibited when the menu is displayed.

Press the "Password" button and enter the user password to use all functions.

4.9. PLC Auto Reconnection Software

Auto Reconnection Function is equipped in "Verify/Record Software".

It is selectable to use the auto reconnection function.

It reconnects every time as set in "Connection Retry Timer".

Please remover check mark in "Automatic Reconnection" Box when it is not necessary.

XPLC Auto Reconnection Software will appear with a minimized window above the start icon when starting up for the first time.

XIf connected cameras are invalid or disconnected, PLC Auto Reconnection Software will have connection error (PLC disconnection).

R PLC Monitoring _Ethernet/IP 4.07	× 💀 System Setting Tool			×
PLC Status 1 Transmittine Label_Di Label_Do	Cell Layor Carling occ Cell Layor Carling occ Cell Layor Carling occ Cell Layor Carling of the Cell Layor Carling of the Cell	Indexton 1 Pace1 Pace2 indexton 1 Pace3 Pace4 Pace4 Pace4 Pace4 Pace5 Pace4 Pace5 Pace6 Pace6 Pace6 Pace7 Pace6 Pace6 Pace7 Pace6 Pace6 Pace7 Pace6 Pace7 Pace7 Pace6 Pace7 Pace7 Pace7 <	Connection Efferrer/IP Efferr	
15	at Test Create yesterday's report at begraning time IP Tool		Save Language	

[Under PLC Disconnection]

A window "Connection Error" pop up when it disconnects to PLC.

R PLC Monitoring _Ethernet/IP 4.07	×	Ethernet/IP Connecterror
	Label_Di 07/21 15:41:50 Strobo was shut	Connecterror : PLC1
		OK Cancel

Press "OK" and the pop-up window is closed.

Press "Cancel" and reconnect as set up in "Reconnection Retry Timer".

🚽 System Setting Tool			Þ	<u> </u>		×
Cell Layout	[Blue Field] required	Page 1	G			
	Indication	O Page2	PLC connection			
0 809		O Page 3	Ethernet/IP=		- 1	
Indication 1		O Page5	Ethernet/Irag)E			
Indication 2		O Page6 O Page7	Setting			
		O Page8	Connection Retry	Timor		
Input Outer Signal		O Page 9	1 ÷	min.)	
Event 1 予ヮプ交換	2 3 4 5 6 7 8 9 10 11 1	-	17 18 18 20 21 22	0: 00	25.20	
Event 2			1.1.1.1.1.1.1.1			
Beginning of time of day	27 28 28 30 31 32 33 34 35 36 3	7 38 39 40 41	12 43 44 45 46 47	48 48	50	
8.00	[cam1]					
at beginning time	Robot Name RM11		Sav	B		
IP Tool	IP Address 192.168.0. 101	~				
	Available O Unavailable					
	Availe	able for multiple lin	nes Lanet	age		

※Please keep in mind that frequent reconnection may become load on PC.

4. 10. How to change the IP address of PC

After installation, if the IP address of the PC changes due to changes in the network configuration, etc., change the software settings according to the following procedure.

- X System Setting Tool -[Blue Field] Cell Layout Page1
 Page2
 Page3
 Page4 Indication 1 PLC ce O Page5 Indication 1 O Page6 Ind O Page7 O Page8 O Page9 Input Outer Sig Event 1 [O Page 10 Tip_che 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 Event 2 27 28 29 30 31 32 33 34 35 36 37 38 38 40 41 42 43 44 45 46 47 48 48 50 Beginning of time of day [cam1] Robot Name RM11 Create yesterday's repo Save IP Address 192.168.0. 101 ~ IP Tool Available
 Unavailable Language Available for multiple lines
- ① Start System Setting Tool from TMN Launcher and click "IP Tool".

② Select the IP address to use and click "Change IP Address".

🖳 IP Co	onfirm	Tool											_		×
								N N		ማትъ	の変更	>	[Upda	ite
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128
129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144
145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176

3 A confirmation dialog will be displayed. Click "Yes".

May I change it.	×
Your IP address	will be changed.
Yes	No

*For the details of changing the Tip Monitor's IP address, see "4.4 Setting the System Setting Tool".

5. Instruction of Report

Screen image

Repor	t															<u> </u>		×
2022,	/08/09	💵 will re	eport DEF(de	fault)			Repor	t	Summa	ry Pre EX(pare DEL	Option star afte	t up rdressi		∠ event _ averag		before di s 🔄 origin	
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▶ 1	08/09	08:42:37		test_ING!	!BRI	.*		0	0	test_OK	ок	5.65	6.39	6	5			
2	08/09	08:42:35		test_ING!	!NG!	.2		39	44	test_OK	ок	5.65	6.01	5	7			
3	08/09	08:42:00	0 0	test_OK	ок	5.31	5.19	13	2	test_OK	ок	5.67	6.41	7	8			
4	08/09	08:41:59	0 0	test_OK	ок	5.29	5.24	14	1	test_OK	ок	5.67	6.15	6	8			
5	08/09	08:41:57	00	test_OK	ок	5.31	5.17	13	1	test_OK	ок	5.81	6.41	8	8			
6	08/09	08:41:56	0	start up														

*Click "Report" after when updating the date, TMN channel, or other indications. The screen will NOT automatically switch to latest information.

Summary Sheet

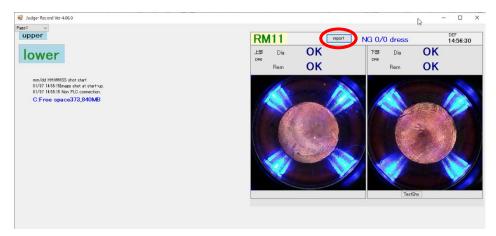
A function to display the number of errors that occurred per day in the past week.

💀 the number of	items				Ν	_	
line DEF(default)	~	Show	<prev next=""></prev>		umber of items ber of [NG / dr		;e
	1/1 Fri	1/2 Sat	1/3 Sun	1/4 Mon	1/5 Tue	1/6 Wed	1/7 Thu
RM11	1	/	/	/	/	/	/
total NG							
i.							

Export to EXCEL Format

A function to export Result Report to Excel format.

① Click "Report" of Judge-Record Software.



2 When the screen below opens, click "Prepare EXCEL".

-	Report														à		-	- 🗆	×
1 month 7 Image: Constraint of the second se								eport	5	Gummary	/ Preps EXCE	re E	Option ☑ start ☑ after	•] event] averag	e brigh		re dressing riginal recor
	2021 yı	ear today-	1 today- display imag] 🗌 in	the tim	e order	The	number 下部 DR		G: 0 /	/dress	ing:	0 /eve	ents:	: 0			
		month day	hrmin sec	[detail]	dia	rem	dia 1	dia2	rem(%)	ctr(%)	dia	rem	dia 1	dia2	rem(%)	ctr(%)			
Þ	1	01/07	14:56:30	0.0	test_OK	ок	6.03	6.08	0	0	test_OK	ОК	6.12	6.17	0	2			

③ The report will be downloaded in the folder which was selected at "P.34 ⑨-3. Assign download location". The window below will appear if succeeded. Click "OK".

Report	×
1	Report created successfully
	ОК

(4) Downloaded EXCEL file will be like the image below.

*The Excel of the report is saved in the "temp" folder in the C drive.

XSince the file path of the software cannot be changed, this folder cannot be moved or renamed.

RB-R	# 💬	同 9-				2020113	O_DEF_R	Millade	. •		9	検索						3	
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1113D4	1283	0.0	A042	2	10	1	2	-	100		-		ಿಗೆ	-	- 20	- 29	:30	-	

Sort Function 1

It is a function to sort by clicking the title.

Click again to toggle between ascending and descending order.

%The default sort oder is "hours, minutes, seconds", so if you want to return to the default, click "hr, min, sec".

Report												_			6		-		Х
2022/0	08/04	💵 will re	port DEF(de	fault)	~	F	eport		Summary	Prej	101	Option start after			event			efore dr	
⊿ displa	today- ny image	1 today		RM11			OK NG tooBri			numbe		√G: 2	/dres:	sing:	23 /e	vent	s: 0		
	month day	hr min sec	[detail]	dia	rem	dia 1	dia2	rem(%)	ctr(%)	dia	rem	dia 1	dia2	rem(%)	ctr(%)	^			
28	08/04	10:39:54	0 0	🔋 ок	ок	5.86	5.74	23	29	ок	ок	6.10	5.48	17	5				
32	08/04	10:39:15	0.0	ок	OK	5.74	5.29	29	8	ок	ок	6.08	5.48	17	6				
10	08/04	10:56:49	0.0	ок	OK	5.65	6.01	18	2	ок	ок	6.10	5.50	17	6				
31	08/04	10:39:24	0 0	ок	OK	5.62	5.27	12	2	ок	ок	6.05	5.48	16	5				
24	08/04	10:40:15	0.0	ок	ОК	5.58	5.46	26	27	ок	ок	6.08	5.48	17	5				
33	08/04	10:39:10	0	ок	ОК	5.55	5.53	24	18	ок	ок	6.08	5.48	17	5				
				8												1			

Sort Function 2

The data to be displayed can be only the content of the checkbox.

Check OK, NG, and too bright (BR), and click Display.

											Option		6	2		-		×
8/04	💵 will re	port DEF(de	fault)	~	R	eport		Summary	Prepi EXO	re	🗹 start							
today	1 today-	2 robot	RM11	Ý				The	number	of N	lG: 2	/dress	sing:	23 /e	ven	ts: O		
y image	in the ti	me order		-)		-	-								
month day	hr min sec	[detail]	dia	rem	dia 1	dia2	rem(%)	ctr(%)	dia	rem	dia 1	dia2	rem(%)	ctr(%)	^			
08/04	15:41:02	00	test_OK	ок	5.00	5.46	11	6	test_OK	ок	6.39	5.43	13	2	-0			
08/04	15:40:57	0.0	test_OK	ок	5.03	5.43	11	7	test_OK	ок	6.43	5.29	12	2				
08/04	15:40:51	0	start up	-														
08/04	13:24:37	0	test, ING	!BR			0	0	test_OK	ок	6.15	5.70	15	6				
08/04	13:24:05		test_ING	!BR			0	0	test_ING	ING			100	100				
08/04	13:23:59		testUNG	!NG!	12		68	91	test_ING	!NG!		12	100	100				
	today- y image month day 08/04 08/04 08/04 08/04	today-1 today- y image in the till month hr min day 15:41:02 08/04 15:40:57 08/04 15:40:51 08/04 13:24:37 08/04 13:24:05	orday-1 today-2 robot today-1 today-2 robot y image in the time order in the time order month hr min [detail] 08/04 15:41:02 000000000000000000000000000000000000	today-1 today-2 robot RM11 y image in the time order month hr min sec [detail] dia 08/04 15:41:02 08/04 15:40:57 test_OK 08/04 15:40:51 start up 08/04 13:24:37 test_IND 08/04 13:24:05 test_IND	COULD Will report today-1 today-2 robot RM11 y image in the time order In the time order EBB DR6 month hr min 08/04 15:41:02 08/04 15:40:57 08/04 15:40:57 08/04 15:40:51 08/04 15:40:51 08/04 15:40:51 08/04 15:40:51 08/04 13:24:37 08/04 13:24:05	color will report today-1 today-2 robot RM11 y image in the time order EBS DR6 month hr min day 15:41:02 08/04 15:40:57 08/04 15:40:57 08/04 15:40:51 08/04 15:40:51 08/04 15:40:51 08/04 15:40:51 08/04 13:24:37 08/04 13:24:05 test_NX3 !BR! 08/04 13:24:05	color will report today-1 today-2 robot RM11 will report will report y image in the time order EBS DR6 NG month hr min day 15:41:02 08/04 15:40:57 08/04 15:40:57 08/04 15:40:51 08/04 15:40:51 08/04 13:24:37 08/04 13:24:05 13:24:05 test_INCH 18:24:05 test_INCH	color will report today-1 today-2 robot RM11 y image in the time order	color will report robot RM11 OK MG y image in the time order Image In the time order MG MG month hr min [detail] dia rem dia1 dia2 rem(%) ctr(%) 08/04 15:41:02 Image test_OK OK 5.00 5.46 11 6 08/04 15:40:57 Image test_OK OK 5.03 5.43 11 7 08/04 15:40:57 Image test_OK OK 5.03 5.43 11 7 08/04 15:40:51 Image test_ING IBR . . 0 0 08/04 13:24:37 Image test_ING IBR . . 0 0 08/04 13:24:05 Image test_ING IBR . . 0 0	today-1 today-2 robot RM11 ✓ OK The number y image in the time order If the time order If tooBri If tooBri If tooBri month hr min sec [detail] dia rem dia1 dia2 rem(%) ctr(%) dia 08/04 15:41:02 If test_OK OK 5.00 5.46 11 6 test_OK 08/04 15:40:57 If test_OK OK 5.03 5.43 11 7 test_OK 08/04 15:40:57 If test_OK OK 5.03 5.43 11 7 test_OK 08/04 15:40:51 If test_OK OK 5.03 5.43 11 7 test_OK 08/04 15:40:51 If test_OK If test_OK 0K 5.03 0 0 test_OK 08/04 13:24:37 If test_INCK IBR . . 0 0 test_OK 08/04 13:24:05 If test_INCK IBR . . 0 0 test_OK	B/O4 will report DEF(default) Report Summary Prepare EXCEL today-1 today-2 robot RM11 OK OK NG The number of N y image in the time order In the time order EBB DR6 The number of N month hr min sec [detail] dia rem dia1 dia2 rem(%) ctr(%) dia rem 08/04 15:41:02 Image test_OK OK 5.00 5.46 11 6 test_OK OK 08/04 15:40:57 Image test_OK OK 5.03 5.43 11 7 test_OK OK 08/04 15:40:51 Image start up <	today-1 today-2 robot RM11 OK OK The number of NG: 2 y image in the time order in the time order Image In the time order Image In the time order Image Im	B/O4 will report DEF(default) Report Summary Prepare EXCEL Start up Start up Start up robay-1 today-2 robay-2 robay-1 robay-2 robay-1 robay-2 robay-2 robay-1 robay-2 robay-2 <td>8/04 will report DEF(default) Report Summary Prepare EXCEL Start up Start up</td> <td>B DEF(default) Report Summary Prepare EXCEL Start up Secure at the average of the start up of the sta</td> <td>8/04 will report DEF(default) Report Summary Prepare EXCEL Summary Prepare EXCEL Summary Prepare EXCEL Summary Prepare EXCEL Summary Prepare Summary Summary The number of NG: 2 /dressing: 23 /even month hr min sec [detail] dia rem dia1 dia2 rem(00 ctr(00 The number of NG: 2 /dressing 13 2 08/04 15:41:02 test_OK OK 5.03 5.46 11 6 test_OK 0K 6.43 5.29 12 2 08/04 15:40:51 start u</td> <td>8/04 will report DEF(default) Report Summary Prepare EXCEL Summary Prepare EXCEL Start up Sevent In today-1 today-2 robot RM11 NG NG The number of NG: 2 /dressing: 23 /events: 0 y image in the time order In the time order TSB DR6 TSB DR6 TSB DR6 month hr min day fdefault dia rem dia1 dia2 rem(X) ctr(X) fdefault fdefault dia rem dia1 dia2 rem(X) ctr(X) fdefault fdefault dia fdefault dia fdefault dia fdefault fdefault fdefault fdefault fdefaul</td> <td>B/04 will report DEF(default) Report Summary Prepare EXCEL Option Start up after dressing event before dn average brightness today-1 today-2 robot RM11 Image Image</td>	8/04 will report DEF(default) Report Summary Prepare EXCEL Start up Start up	B DEF(default) Report Summary Prepare EXCEL Start up Secure at the average of the start up of the sta	8/04 will report DEF(default) Report Summary Prepare EXCEL Summary Prepare EXCEL Summary Prepare EXCEL Summary Prepare EXCEL Summary Prepare Summary Summary The number of NG: 2 /dressing: 23 /even month hr min sec [detail] dia rem dia1 dia2 rem(00 ctr(00 The number of NG: 2 /dressing 13 2 08/04 15:41:02 test_OK OK 5.03 5.46 11 6 test_OK 0K 6.43 5.29 12 2 08/04 15:40:51 start u	8/04 will report DEF(default) Report Summary Prepare EXCEL Summary Prepare EXCEL Start up Sevent In today-1 today-2 robot RM11 NG NG The number of NG: 2 /dressing: 23 /events: 0 y image in the time order In the time order TSB DR6 TSB DR6 TSB DR6 month hr min day fdefault dia rem dia1 dia2 rem(X) ctr(X) fdefault fdefault dia rem dia1 dia2 rem(X) ctr(X) fdefault fdefault dia fdefault dia fdefault dia fdefault fdefault fdefault fdefault fdefaul	B/04 will report DEF(default) Report Summary Prepare EXCEL Option Start up after dressing event before dn average brightness today-1 today-2 robot RM11 Image Image

For Multiple Production Lines

You can now select the set line name from the pull-down menu.

You can browse line by line.

*Please refer to Support for "Multiple Production lines".

8 ma	onth 26 year today	day will r −1 today		(default) (default) (default2) RM21		- 9	Repor in the ti	t me order	Summa	y Prep exc		Option Start after	dressin	e [_	ge bri	ghtnes	before	
		display im	age	上部 DF	88				1	下部 DF		nu. v	7 an ea	51116.	0 / 0	/ Grite	3. 0		
	month day	hrmin sec	[detail]	dia	rem	dia 1	dia2	rem(%)	ctr(%)	dia dia	rem	dia 1	dia2	rem(%)	ctr(%)				
1	08/26	11:26:29		test_!NG!	ок	6.82	6.65	24	0	test_OK	ок	_6.89_	7.06	28	0				
2	08/26	11:26:24		test_ING!	ок	6.74	6.67	24	0	test_OK	ок	_6.91_	7.03	28	0				
3	08/26	11:16:58		🗴 start up															
4	08/26	11:14:07) ()	test_ING!	ок	6.79	6.67	24	0	test_OK	ок	_6.89_	7.03	28	0				
5	08/26	11:13:54	6	🐧 start up															

6. Maintenance

XThis product needs maintenance.

Parts

- Pressure Plate · · · Needs to be changed when deformed by gun pressure.
- Protection Lens ••• Needs to be changed when it has a damage which may cause misjudgments.

Way to Replace

1. Remove the 3 screws.

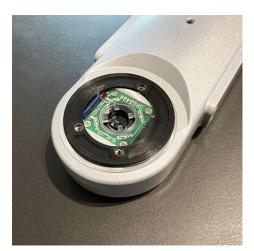
Screws attached on Pressure Plate are special screws that have a function of anti-loosening. These screws will be reused. Be careful not to lose it. Do not replace with ordinary screws. Contact us if you lost the screws.



2. Remove the Pressure Plate.

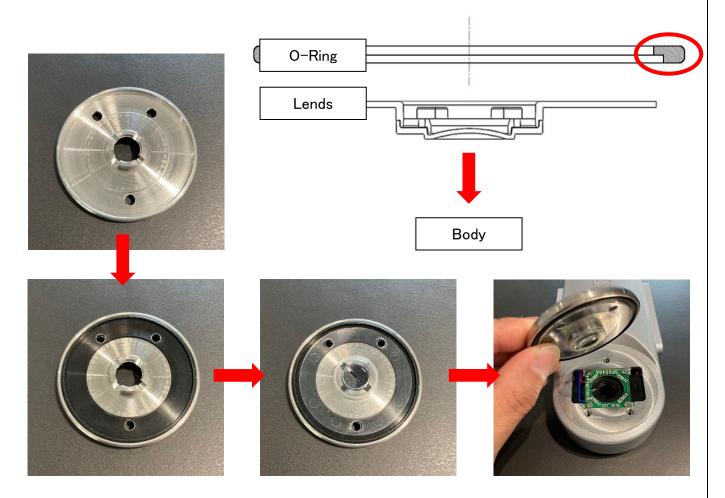
%Pressure Plate and Protection Lens are tightened together.

When disassembling the monitor, make sure any contaminations or water drops DO NOT enter inside of the monitor.



3. Change the Protection Lens and O-ring

※The part should be assembled this way. From the bottom; Tip Monitor, Protection Lens, O Ring, Pressure Plate.※There is a bump on one side of the O-ring. Careful with the facing way and attach to the monitor.



A Caution

%Protection Lens are combined with three parts that are glued together.It may be dismantled like the image below by aging degradation or strong pushing.If the lens is dismantled, we recommend replacing with new Protection Lens to maintain the quality.

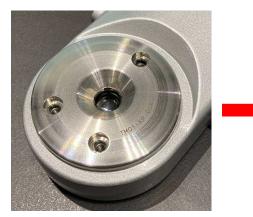


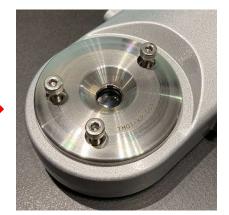
4. Assembled the Pressure Plate with the recycle bolt.

%Tightening torque is 3.0 N/m.

Screws attached on the Pressure Plate are special screws that have a function of anti-loosening. Do not replace with ordinary screws.

Contact us if you lost the screws.





5. Complete.



Daily Maintenance

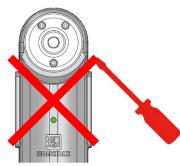
Dusts and water drops can be a cause of miss judgments. To prevent this, remove them softly from the lens without damaging the lens.

※Please DO NOT rub the lens hard. It is recommended to use soft cloth or cotton swab when removing.※Please DO NOT use Oil Removal Spray on the lens.

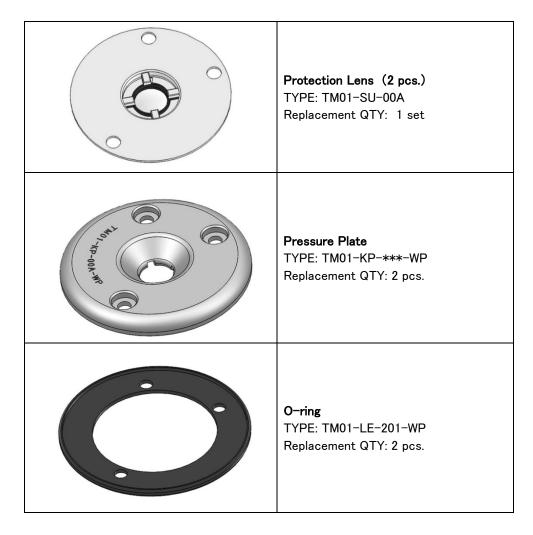
Attention at Working

- When removing the pressure plate, absolutely do not work method to remove the pressure plate by inserting the driver etc. from the gap as shown on the right. There is a risk of damaging the inside base and the waterproof seal.
- 2 Please DO NOT disassemble any parts except the parts above.

XIf the stickers on the back of the monitor has been removed, any warranties or repair services are no longer available.



7. List of Consumption Parts



8. Troubleshooting

- Please read the safety manual before using the tip monitor.
- To simplify the repairing progress, please record any problems that have been caused to the monitor. (Type, Date, Place)
- If the same problem occurs repeatedly, it is considered there is a big problem. (ex. consumption of parts)

	Abnormal Condition	Cause	Countermeasure
		•Damaged Lens (Some parts in the window are shown white)	•Please replace the old lens with a new lens.
		• Spatter on the lens.	•Please replace the old lens with a new lens.
		•Dust on the lens.	•Clean the lens softly without damaging the lens. If the lens is damaged, Please replace the old lens with a new lens.
(1)	The cap tip is in good condition, but the tip monitor judges not dressed (NG).	• Chip on the lens.	•Remove the chip.
		• The tip is tilted.	•Please revise the teaching.
		•Water drops on the lens.	•Please remove the water drops.
		 The timing of releasing the welding gun is too fast. 	•Please refer to the "timing chart" in P.16.
		•The pressure is not enough	•Please reset the pressure setting. (Recommended:1500N)

	Abnormal Condition	Cause	Countermeasure
		•Cap tip which has not been dressed is used.	•The monitor can only detect tips which has been dressed. Please dress the tip before using.
		•Measuring of a flat tip	 The monitor cannot measure the diameter of the flat tips. Use the "Camera Setting Tool", please reset the tip setting to "F".
	The condition of the cap	•The value of the tip diameter which was set using "Camera Setting Tool" and the actual tip diameter are different.	 If there is a big difference with the set values and the actual value, the calculation error will be larger. Use the "Camera Setting Tool" and reset the tips diameter.
(2)	tip is fine, but the tip monitor judges Diameter NG.	 Using a different type of tip from the tip which was set in "Camera Setting Tool". 	•In "Camera Setting Tool" please reset the type of the tip as the same type as the using tip.
		•The tip is tilted.	•More the tip tilts, more the error gets larger.
			Please teach to set the tip as vertical as possible to the monitor.
		•The timing of releasing the welding gun is too fast.	•Please refer to the "timing chart" in P.16.
		•The pressure is not enough	•Please reset the pressure setting. (Recommended:1500N)

	Abnormal Condition	Cause	Countermeasure
		• "Test Shoot" is in action.	•There will be no signal going to the PLC on test shots.
(3)	Judged "OK" on the PC, but the PLC does not receive the "OK signal".	•The connection with the controlling device such as the ethernet is not right.	 Please recheck the connection with the controlling device. Please refer to the "Controlling Interface Setting" in 3.3. Please check the "Setting of System Setting Tool" in 4.4.
		•The allotment of the I/O is wrong.	•Please refer to the "Controlling Interface Setting" in 3.3.
(4)	There is a connection error shown when the software is activated.	 The PoE HUB is turned OFF. The tip monitor is connected to the port of the PoE HUB without power supply. The LAN cable is not connected in a right way. Usage of a burned out LAN cable. The tip monitor is broken down. The PC is not correctly set. 	 Please turn ON the PoE HUB. Please connect the monitor to the port with power supply. Please connect the LAN cable properly. Please replace the LAN cable with a new LAN cable. Repair is needed. (Please do not disassemble. Contact the dealer for repair information) Please recheck the "PC Setting" on 3.2.
		 The IP address of the tip monitor and the IP set in the "Camera Parameter Setting Tool "differ. 	- Fiedse recrieck 4.3.

	Abnormal Condition	Cause	Countermeasure
(5)	There is connection error shown when the software is activated.	•There is a connection problem with the controlling device.	 Recheck the connection with the controlling device. Please refer 3.3. "Controlling Interface Setting" Please refer 4.4 "Setting of System Setting Tool" Please check the connection cable connected to the controlling device.

[CAUTIONS]

<u>The monitor is strictly factory-inspected.</u> However, in the event of a failure, please contact the dealer for details of the <u>failure</u>.

If the stickers on the back of the monitor has been removed, any warranties or repair services will no longer be available.

9. Warranty

1 Target product

The warranty does not cover the consumption parts listed in the "Consumption Parts List". (Ch.6)

2 Warranty Period

The warranty period shall be for one year from the date that the product has been delivered to the location specified by the purchaser.

3 Warranty Coverage

If a failure attributable to us occurs within the abovementioned warranty period, we will repair the product without charge. After the replacement or repair, the starting day of the warranty period will still be the day the product was first delivered. However, the following cases shall be excluded from the warranty coverage.

- Any failure resulting from improper conditions, improper environments, improper handling, or improper usage other than described in the instruction manual.
- When the stickers on the back of the monitor has been removed.
- Any failure resulting from factors other than a defect of our product, such as the purchaser's equipment or the design of the purchaser's software.
- Any failure that can be certainly be prevented when the consumption part(s) is maintained or replaced correctly as described in the instruction manual.
- Any failure caused by factors which could not be foreseen at a technological/scientific level at the time when the product has been shipped from us.
- Any failure caused by natural disasters such as fire, earthquake, and flood or any other external factor, such as abnormal voltage, for which we are not liable.
- KYOKUTOH assumes no liability for any purchaser's secondary damage (damage of equipment, loss of opportunities, loss of profits, etc.) or any other damage resulting from a failure of our product.

MEMO

Contact us

Please contact us if there is any damage to or mechanical malfunction with our products.



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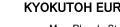
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