

# ***DENSO***

## **OPERATION MANUAL**

**EQUIPMENT NAME :** Data Saving Function Version 1.0.0~1.5.0

**LINE NAME :** GDI Project

**EQUIPMENT No. :**

MC1:Solenoid Housing Welding Line 1

MC2:Solenoid Housing Welding Line 2

**DENSO (THAILAND) CO., LTD.**

DRAWING No. \_\_\_\_\_

WRITTEN ANUCHIT AREE MAY19,2014

CHECKED \_\_\_\_\_

APPROVED \_\_\_\_\_

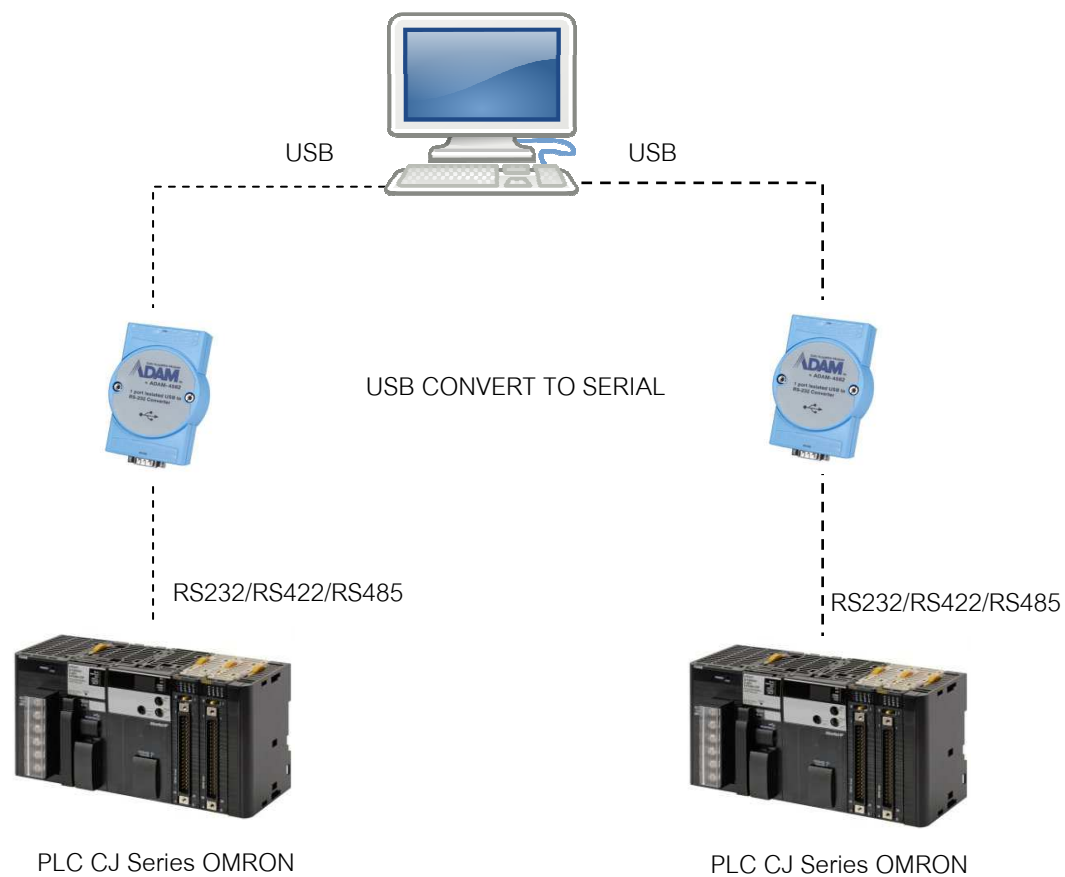
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OPREATION MANUALS FOR COMPONENT UNITS (ATTACHED VOLUME)			
No.	TITLE	REFERENCE No.	No. OF SHEETS
1			
2			
3			
4			

MANUFACTURED BY	SUPPLIER / REPRESENTATIVE	TEL. No.	REMARKS
DNTH MACHINE AND TOOL	MACHINE AND TOOL DEPARTMENT MACHINE AND TOO DESIGN SECTION	5061-4724	

## System outline



- 1 Install the Net Framework 4.0
- 2 Installation the DATA SAVING FUNCTION
  - 1 Copy the folder "GDI\_DataLog" to "C:\Program Files\GDI\_DataLog"  
  
C:\Program Files\GDI\_DataLog\Head  
C:\Program Files\GDI\_DataLog\Setup  
C:\Program Files\GDI\_DataLog\Release
    - 1 Create shortcut from "C:\Program Files\GDI\_DataLog\Release\GDI\_DataLog.exe"
    - 1 Copy shortcut to "start" --> " All Program" --> " Startup"
    - 1 Copy the "SavingFile folder" into C:\
- 3 Install USB to RS232 ATEN driver    \*\*
- 4 install CX-compolet
  - 4 setup communication port and FIN number  
  
MC1 : FIN 1.11.0           COM 1 ,115200, 7, 2, E  
  
MC2 : FIN 2.12.0           COM 3 ,115200, 7, 2, E   (COM3 is physical port )
- 4.2 Test communication  
  
see 3-2 , 3-3 page

\*\* depend on the brand of hardware

## OVERVIEW

### 1 Main page of the data log software version 1.0.0

No	Description	Data
1		0
2	Height O/P 1 step 1 (first half)	-0.006
3	Height O/P 2 step 1 (first half)	-0.023
4	Height O/P 1 step 2 (second half)	-0.007
5	Height O/P 2 step 2 (second half)	-0.019
6	Energy	1790
7	Welding Time	1798
8	Rotation	2058
9	Welding Time(sec)(PLC)	2.12
10		0
11		0
12		0
13		0
14		0
15		0
16		0
17		0
18	Counter work piece	744
19	WORK OK/NG	OK
20	WELD OK/NG	OK
21	RUNOUT OK/NG	OK
22	N2 OK/NG	OK
23	PROCESS OK/NG	OK
24	RUNOUT STEP 1 OK	OK
25	RUNOUT STEP 2 OK	OK
26	information	OK
27	uWelder respond	OK
28		NG
29		NG

No	Description	Data
1	C/D HEIGHT #1 OUT1(P-H)	0.024
2	C/D HEIGHT #1 OUT2(B-H)	0
3	C/D HEIGHT #2 OUT1(P-H)	0
4	C/D HEIGHT #2 OUT2(B-H)	0
5	C/D HEIGHT #3 OUT1(P-H)	0
6	C/D HEIGHT #3 OUT2(B-H)	0
7	S/U HEIGHT OUT1(P-H)	0.025
8	S/U HEIGHT OUT2(P-H)	0.009
9	S/U RUNOUT OUT3(P-P)	0.042
10	S/U RUNOUT OUT4(P-H)	0.061
11	C/D ENERGY	2032
12	C/D WELDING TIME	2571
13	C/D ROTATION	1850
14	S/U ENERGY	1318
15	S/U WELDING TIME	3691
16	S/U ROTATION	3542
17		0
18	Counter work piece	759
19	C/D HEIGHT #1 OUT1(P-H)	OK
20	C/D HEIGHT #1 OUT2(B-H)	OK
21	C/D HEIGHT #2 OUT1(P-H)	NG
22	C/D HEIGHT #2 OUT2(B-H)	NG
23	C/D HEIGHT #3 OUT1(P-H)	NG
24	C/D HEIGHT #3 OUT2(B-H)	NG
25	C/D WELD	OK
26	C/D uWELDER RESPOND	OK
27		NG
28		NG
29	S/U HEIGHT OUT1(P-H)	OK

- ① A lamp show status. The lamp is orange when getting a data.
- ② MC1's name. The green lamp is normal. If it is red, it cannot connect the PLC.
- ③ A log data
- ④ A lamp show status. The lamp is orange when getting a data.
- ⑤ MC2's name. The green lamp is normal. If it is red, it cannot connect the PLC.
- ⑥ A log data
- ⑦ Exit program

## OVERVIEW

### 2 Main page of the data log software version 1.5.0

Data Saving version 1.5.0 by AISA KOKI (5/17/2014 12:41:01 PM)

File Help

Status: Normal

Exit

①

②

MC No.1

③

④

⑤

MC No.2

⑥

It's work NG

It's work OK

Status	Number	Work	Production	Date	Time	CD1 P-HOLD (mm)	CD1 B-HOLD (mm)	CD2 P-HOLD (mm)	CD2 B-HOLD (mm)	CD3 P-HOLD (mm)	CD3 B-HOLD (mm)	SU HEIGHT1 P-H(mm)	SU HEIGHT2 P-H(mm)	SU RUNOUT3 P-P(mm)	SU RUNOUT4 P-H(mm)	CD ENERGY (W)	CD WELD TIME(sec)	RC
①	00000000	0000	000000000000000000	1752014	12:41:00	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:58	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:56	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:54	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:52	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:50	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:48	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:45	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:43	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:41	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:39	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:37	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:35	2.14398	0	0	0	0	0	0	0	0	0	0	0	
	00000000	0000	000000000000000000	1752014	12:40:34	2.14398	0	0	0	0	0	0	0	0	0	0	0	

Step	Number	Work	Production	Date	Time	Spare	STEP1 PEAKHOLD (mm)	STEP1 BOTTOMHOLD (mm)	STEP2 PEAKHOLD (mm)	STEP2 BOTTOMHOLD (mm)	ENERGY (W)	WLED TIME (SEC)	ROTATION (RPM)	WORK OK/NG	WELD OK/NG	RUN-OUT OK/NG	N2 OK/NG	P C
④	00000000	0000	000000000000000000	1752014	12:41:00	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:58	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:56	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:54	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:52	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:50	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:48	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:46	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
	00000000	0000	000000000000000000	1752014	12:40:44	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	

#### MC1

- ① A lamp show status. The lamp is orange when getting a data.
- ② MC1's name. The green lamp is normal. If it is red, it cannot connect the PLC.
- ③ A log data

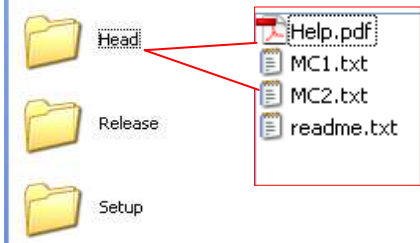
#### MC2

- ④ A lamp show status. The lamp is orange when getting a data.
- ⑤ MC2's name. The green lamp is normal. If it is red, it cannot connect the PLC.
- ⑥ A log data
- ⑦ Exit program

2 Area management

2.1 Area for header logging file

C:\Program File\GDI\_DataLog\Head



```
MC1.txt - Notepad
File Edit Format View Help
DATE
TIME
Height O/P 1 step 1 (fist half)
Height O/P 2 step 1 (fist half)
Height O/P 1 step 2 (second half)
Height O/P 2 step 2 (second half)
Energy
Welding Time
Rotation
Welding Time(sec) (PLC)

Counter work piece
WORK OK/NG
WELD OK/NG
RUNOUT OK/NG
N2 OK/NG
PROCESS OK/NG
RUNOUT STEP 1 OK
RUNOUT STEP 2 OK
information
uWelder respond
```

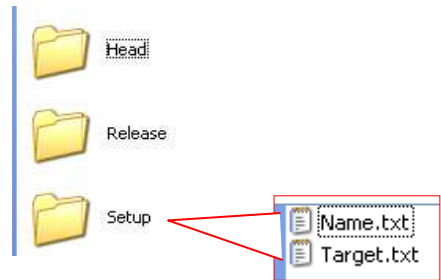
```
MC2.txt - Notepad
File Edit Format View Help
DATE
TIME
C/D HEIGHT #1 OUT1(P-H)
C/D HEIGHT #1 OUT2(B-H)
C/D HEIGHT #2 OUT1(P-H)
C/D HEIGHT #2 OUT2(B-H)
C/D HEIGHT #3 OUT1(P-H)
C/D HEIGHT #3 OUT2(B-H)
S/U HEIGHT OUT1(P-H)
S/U HEIGHT OUT2(P-H)
S/U RUNOUT OUT3(P-P)
S/U RUNOUT OUT4(P-H)
C/D ENERGY
C/D WELDING TIME
C/D ROTATION
S/U ENERGY
S/U WELDING TIME
S/U ROTATION

Counter work piece
C/D HEIGHT #1 OUT1(P-H)
C/D HEIGHT #1 OUT2(B-H)
C/D HEIGHT #2 OUT1(P-H)
C/D HEIGHT #2 OUT2(B-H)
C/D HEIGHT #3 OUT1(P-H)
C/D HEIGHT #3 OUT2(B-H)
C/D WELD
C/D uWELDER RESPOND

S/U HEIGHT OUT1(P-H)
S/U HEIGHT OUT2(P-H)
S/U RUNOUT OUT3(P-P)
S/U RUNOUT OUT4(P-H)
S/U WELD
S/U uWELDER RESPOND
```

2.2 Area for initial data

C:\Program File\GDI\_DataLog\Setup



You can decide it by yourself.

```
Name.txt - Notepad
File Edit Format View Help
Solenoid Welding
Cover and Seat welding
```

MC No.1

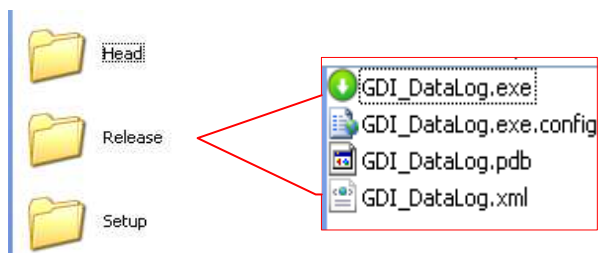
MC No.2

for defin machine's name  
You can change by yourself.

```
Target.txt - Notepad
File Edit Format View Help
E:\SavingFile
```

If you want backup data to other drive, you decide the folder.  
If you don't decide, it doesn't backup data.

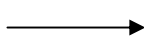
## 2.3 Area for program



Run the "GDI\_DataLog.exe"

## 2.4 Area keep data logging

C:\Saving Files\MC1

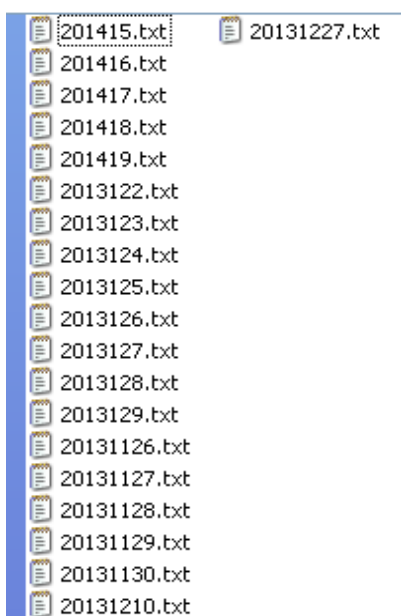


MC1 is solenoid welding

C:\Saving Files\MC2



MC2 is cover and seat welding



A file name is created by automatic depend on Year.month.day

such as 20131012 is 2013 year 10 month 12 day

20131013 is 2013 year 10 month 13 day

The file name will change when day change.

① revised

20131012.txt ----> 2013\_10\_12.txt

Format of data

Header									
	A	B	C	D	E	F	G	H	
1	DATE	TIME	blank	C/D #1	HeC/D #1	HeC/D #2	HeC/D #2	HeC/D #3	HeC/D #3
2	18102013	8:47:40	56.29	45.646	-1725554	0	0	211.111	
3	18102013	8:47:41	56.291	45.646	-1725508	0	0	211.111	

date

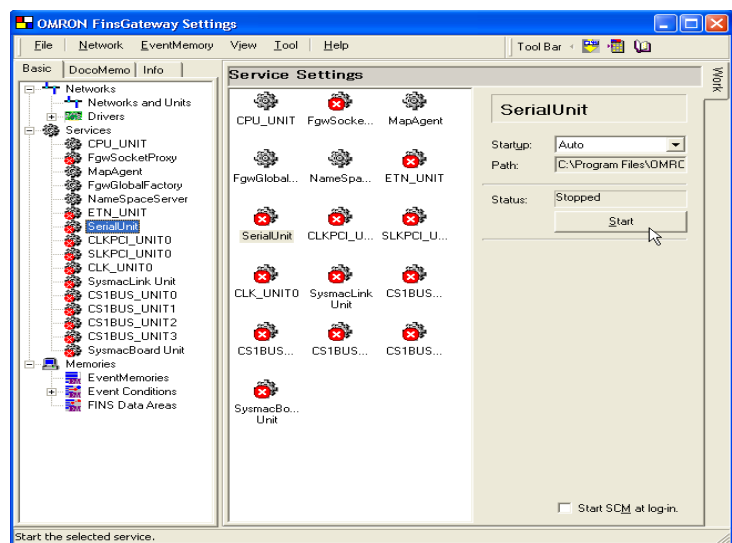
time

Data



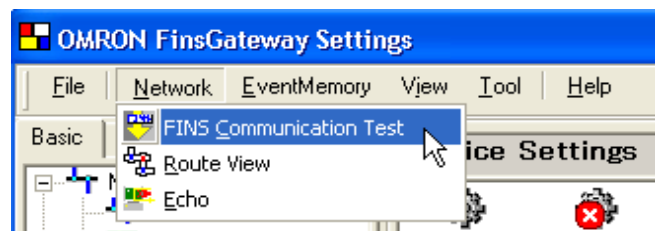


if any service is stop .  
use mouse click at unit ,then press "start"  
like this.

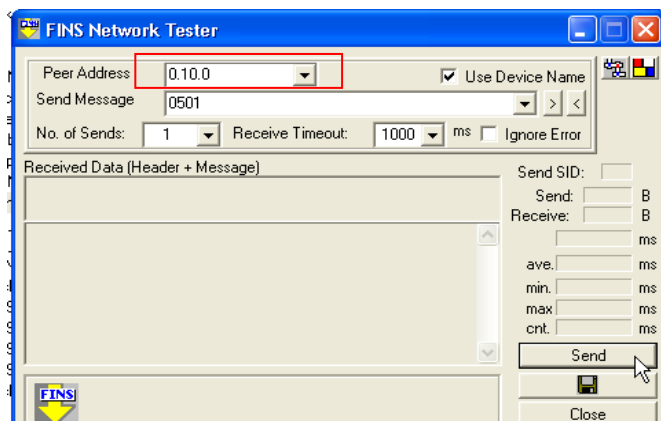


How to test communication

Run FINS Communication Test

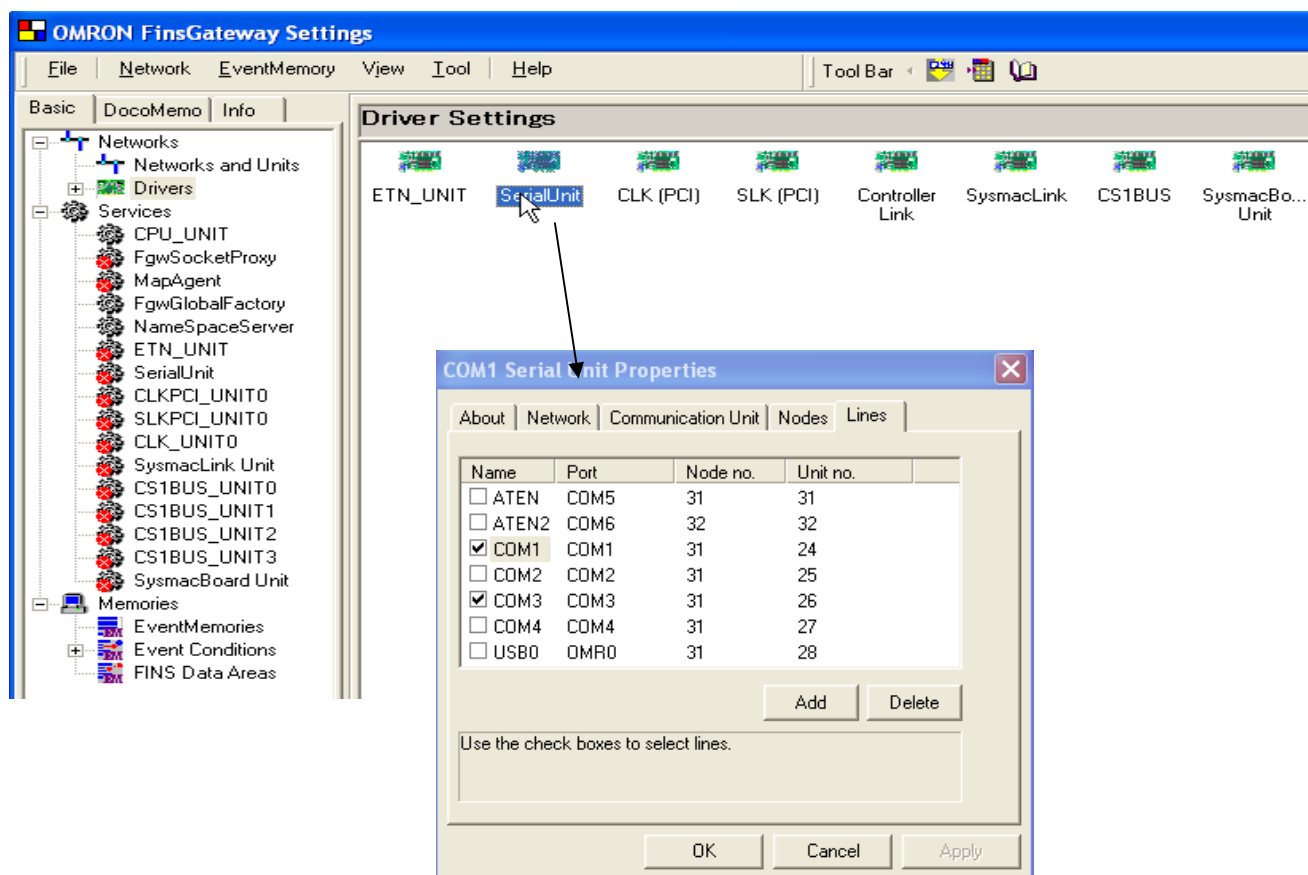


Input Peer Address 1.11.0  
then press the "Send"  
or  
Input Peer Address 2.12.0  
then press the "Send"  
or





## Setting FIN GATEWAY



detail each ports

COM1      1.11.0

COM3      2.12.0

COM1 Serial Unit Properties

About

Network

Communication Unit

Nodes

Lines

COM port:

COM1

Line name:

COM1

Network number:

1

Network type:

SerialUnit

User-defined:

Node no.	Unit no.	Protocol	Model
11	0	SYSWAY	CJ1-CPU1

Add

Delete

Property

Explore

Export

OK

Cancel

Apply

COM3 Serial Unit Properties

About

Network

Communication Unit

Nodes

Lines

COM port:

COM3

Line name:

COM3

Network number:

2

Network type:

SerialUnit

User-defined:

Node no.	Unit no.	Protocol	Model
12	0	SYSWAY	CJ1-CPU1

Add

Delete

Property

Explore

Export

OK

Cancel

Apply

COM1 Serial Unit Properties

About

Network

Communication Unit

Nodes

Lines

Line name:

COM1

COM port:

COM1

COM1 serial unit properties

Baud rate:

38400

Data length:

7

Stop bits:

2

Parity:

Even

No. of retries:

0

Timeout:

5000

ms

Explore

OK

Cancel

Apply

COM3 Serial Unit Properties

About

Network

Communication Unit

Nodes

Lines

Line name:

COM3

COM port:

COM3

COM3 serial unit properties

Baud rate:

38400

Data length:

7

Stop bits:

2

Parity:

Even

No. of retries:

0

Timeout:

5000

ms

Explore

OK

Cancel

Apply

COM1 Serial Unit Properties

About

Network

Communication Unit

Nodes

Lines

Line name:

COM1

Network number:

1

Local node number:

31

Communication unit number:

24

User-defined:

☐ Exclusive

Protocol:

Type:

OK

Cancel

Apply

COM3 Serial Unit Properties

About

Network

Communication Unit

Nodes

Lines

Line name:

COM3

Network number:

2

Local node number:

31

Communication unit number:

26

User-defined:

☐ Exclusive

Protocol:

Type:


OK

Cancel

Apply

## PLC communication ports setting

**Communications Port Settings** [?] [X]

Port 1 

Unit Ver.

**Communication Method**

**Communication Format**  
☐ Standard Comms Format  
 Baud Rate  Parity   
 Data Length  Stop Bits

**Host Link, Non-procedural, Protocol Macro, Serial Gateway**  
☐ CTS Enable Delay [0-30000]  x 10 ms

**Host Link**  
 Unit # [0-31]  Frame Format  ☒ 1:N/1:1 ☐ 1:N ☐ 1:1

**NT Link**  
 Max. PT Unit #

**Protocol Macro**  
 Transmission Method  Maximum Length [200-1000]  Byte  
 Link Channel Access  Receive Buffer

**Non-procedural**  
**Start Code**  
☒ None  
☐ Set Start Code [00-FF]  HEX  
**End Code**  
☒ Received Bytes [1-256]  Byte  
☐ CR+LF  
☐ Set End Code [00-FF]  HEX

**Protocol Macro, Serial Gateway**  
**Gateway Watch Time**  
 Send Start TimeOut [0-255]  x 100ms  
 [0: Default (5000ms)]  
 Response TimeOut [0-255]  x 100ms  
 [0: Default (5000ms)]

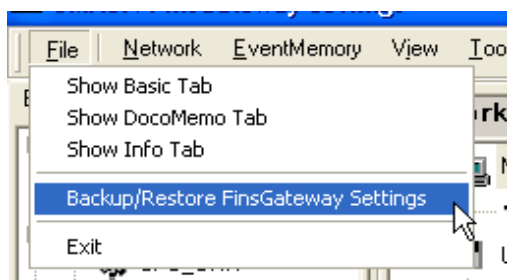
OK Cancel

## How to restor backup file.

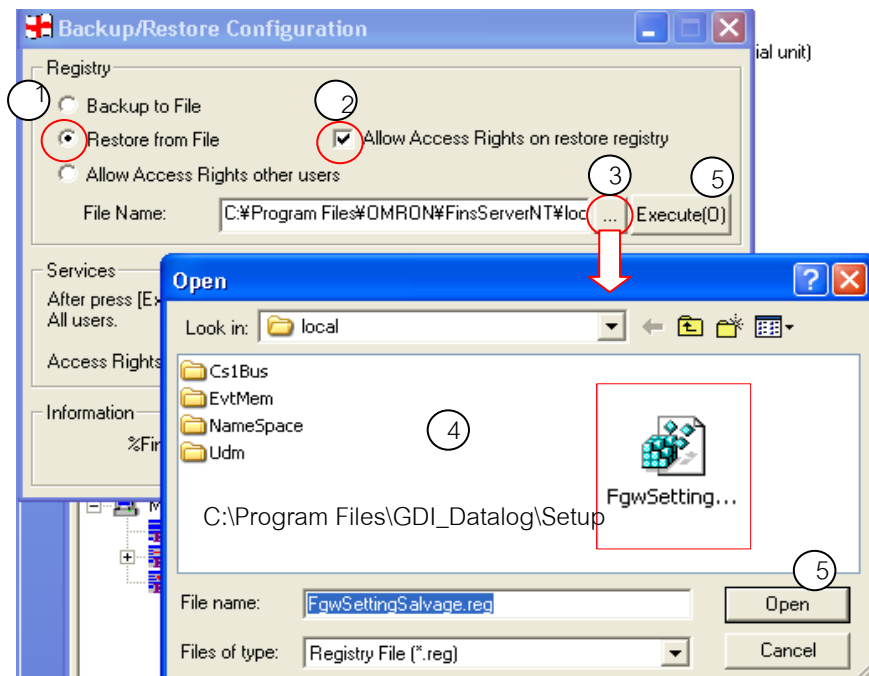
### 1. Run " FinGateway Setting"



### 2. Click at File and Backup/Restore FinGateway Setting



### 3. select " Restore from File " and checkbox at right side hand



## Appendic 1

### GDI : DATA SAVING FUNCTION

MACHINE NAME			Cover Damper & Seat Upper Wedling MC	Solenoid Laser Welding MC	Solenoid Housing Laser Welding MC
	D100	hexcimal	Reserved	Reserved	Reserved
	D101				
1	D102	Floating	C/D HEIGHT #1 OUT1(P-H)	SPARE	
	D103	32bit			
2	D104	Floating	C/D HEIGHT #1 OUT2(B-H)	O/P 1 step 1 PEAKHOLD (fist half)	RUNOUT (mm)
	D105	32bit		(mm)	
3	D106	Floating	C/D HEIGHT #2 OUT1(P-H)	O/P 2 step 1 BOTTOMHOLD (fist half)	R-HEIGHT (mm)
	D107	32bit		(mm)	
4	D108	Floating	C/D HEIGHT #2 OUT2(B-H)	O/P 1 step 2 PEAKHOLD (second half)	L-HEIGHT (mm)
	D109	32bit		(mm)	
5	D110	Floating	C/D HEIGHT #3 OUT1(P-H)	O/P 2 step 2 BOTTOMHOLD (second half)	Energy 1
	D111	32bit		(mm)	(W)
6	D112	Floating	C/D HEIGHT #3 OUT2(B-H)	Energy	Energy 2
	D113	32bit		(W)	(W)
7	D114	Floating	S/U HEIGHT OUT1(P-H)	Welding Time	Energy 3
	D115	32bit		(sec)	(W)
8	D116	Floating	S/U HEIGHT OUT2(B-H)	Rotation	Energy 4
	D117	32bit		(RPM)	(W)
9	D118	Floating	S/U RUNOUT OUT3(P-P)		Welding Time
	D119	32bit			(sec)
10	D120	Floating	S/U RUNOUT OUT4(P-H)		Rotation
	D121	32bit			(RPM)
11	D122	Floating	C/D ENERGY		
	D123	32bit			
12	D124	Floating	C/D WELDING TIME		
	D125	32bit			
13	D126	Floating	C/D ROTATION		
	D127	32bit			
14	D128	Floating	S/U ENERGY		
	D129	32bit			
15	D130	Floating	S/U WELDING TIME		
	D131	32bit			
16	D132	Floating	S/U ROTATION		
	D133	32bit			
17	D134	BCD	Work	Work	Work
	D135				
18	D136	BCD	Year-year fix	Year-year fix	Year-year fix
	D137	BCD	Month-Day	Month-Day	Month-Day
19	D138	BCD	Series 1 -series 2	Series 1 -series 2	Series 1 -series 2
	D139	BCD	Series 3 - Line no.	Series 3 - Line no.	Series 3 - Line no.
20	D140				
	D141				
21	D142	Binary	Result. See more detail below table	Result. See more detail below table	Result. See more detail below table
	D143				



## Appendic 2

D142	0	Boolean	C/D HEIGHT #1 OUT1(P-H)	WORK OK/NG	RUNOUT OK/NG
	1	Boolean	C/D HEIGHT #1 OUT2(B-H)	WELD OK/NG	L-HEIGHT OK/NG
	2	Boolean	C/D HEIGHT #2 OUT1(P-H)	RUNOUT OK/NG	R-HEIGHT OK/NG
	3	Boolean	C/D HEIGHT #2 OUT2(B-H)	N2 OK/NG	WELDER OK/NG
	4	Boolean	C/D HEIGHT #3 OUT1(P-H)	PROCESS OK/NG	N2 OK/NG
	5	Boolean	C/D HEIGHT #3 OUT2(B-H)	RUNOUT STEP 1 P-H OK	WORK OK/NG
	6	Boolean	C/D WELD	RUNOUT STEP 1 B-H OK	uWelder NO RESPOND
	7	Boolean	C/D uWelder NO RESPOND	uWelder NO RESPOND	
	8	Boolean		RUNOUT STEP 2 P-H OK	
	9	Boolean		RUNOUT STEP 2 B-H OK	
	10	Boolean			
	11	Boolean			
	12	Boolean			
	13	Boolean			
	14	Boolean			
	15	Boolean			
D143	0	Boolean	S/U HEIGHT OUT1(P-H)		
	1	Boolean	S/U HEIGHT OUT2(P-H)		
	2	Boolean	S/U RUNOUT OUT3(P-P)		
	3	Boolean	S/U RUNOUT OUT4(P-H)		
	4	Boolean	S/U WELD		
	5	Boolean	S/U uWelder NO RESPOND		
	6	Boolean			
	7	Boolean			
	8	Boolean			
	9	Boolean			
	10	Boolean			
	11	Boolean			
	12	Boolean			
	13	Boolean			
	14	Boolean			
	15	Boolean			