

# **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 \_\_\_\_\_

## CONTENTS

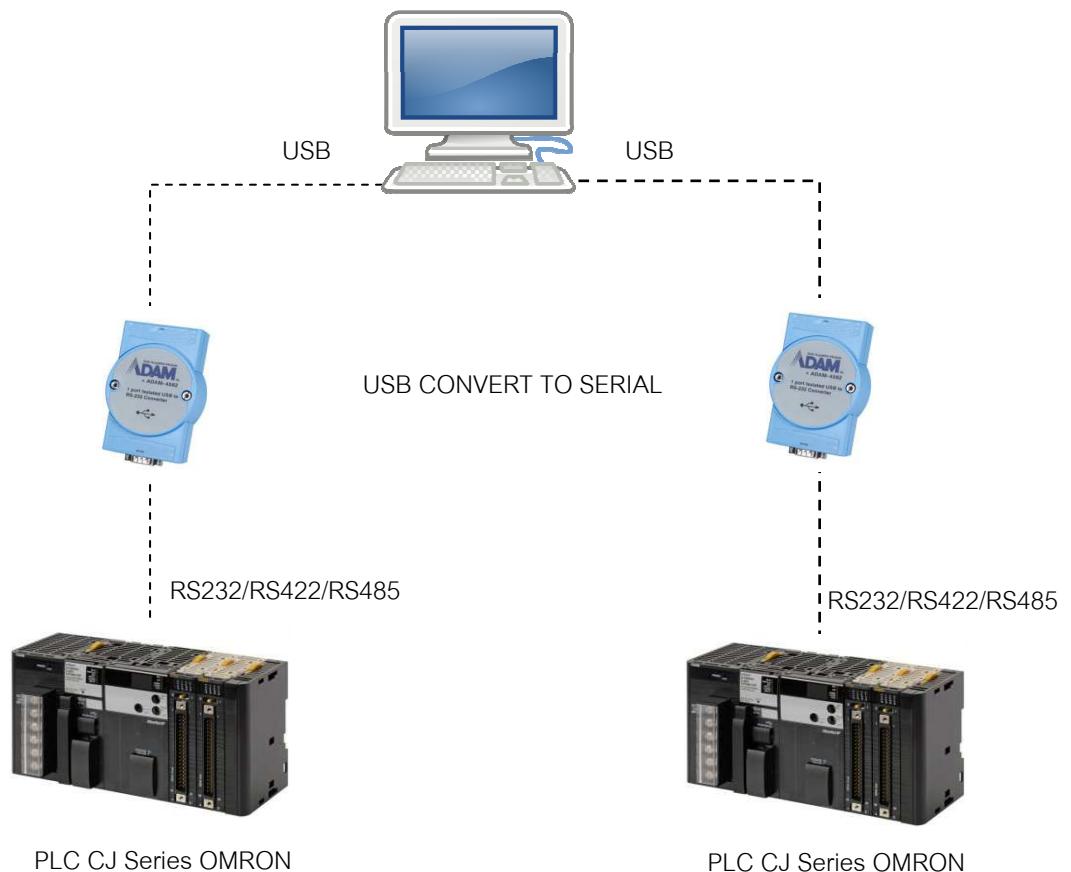
	PAGE
1. SYSTEM OUTLINE	1-1
2. INSTALLATION	2-1
3. OVERVIEW	3-1
4 TROUBLE SHOOTING	4-1
5. APPENDIC	5-1

### 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

The screenshot shows a software window titled "Data Saving version 1.0.0 by AISA KOKI (9/1/2557 11:51:01)". The window has a menu bar with "File" and "Help". Below the menu is a status bar showing "Status : Normal". The main area contains two data tables side-by-side.

**Left Table (MC No.1):**

No	Description	Data
1	Height O/P 1 step 1 (first half)	-0.006
2	Height O/P 2 step 1 (first half)	-0.023
3	Height O/P 1 step 2 (second half)	-0.007
4	Height O/P 2 step 2 (second half)	-0.019
5	Energy	1790
6	Welding Time	1798
7	Rotation	2058
8	Welding Time(sec)(PLC)	2.12
9		0
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

**Right Table (MC No.2):**

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 ENERGEY	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 AISI KOKI (5/17/2014 12:41:01 PM)**

**Status: Normal**

**1** Status

**2** Solenoid Working

**3** MC No.1

**4** Start

**5** Cover and Seat welding

**6** MC No.2

**7** Exit

**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-H(mm)	SU RUNOUT4 P-H(mm)	CD ENERGY (W)	CD WELD TIME(sec)	RC
Normal	00000000	0000	0000000000000000	1752014	12:41:00	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:58	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:56	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:54	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:52	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:50	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:48	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:45	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:43	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:41	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:39	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:37	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:35	2.14398	0	0	0	0	0	0	0	0	0	0	0	
Normal	00000000	0000	0000000000000000	1752014	12:40:34	2.14398	0	0	0	0	0	0	0	0	0	0	0	

Status	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.
Normal	00000000	0000	0000000000000000	1752014	12:41:00	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	1752014	12:40:58	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	1752014	12:40:56	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	1752014	12:40:54	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	1752014	12:40:52	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	1752014	12:40:50	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	1752014	12:40:48	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	1752014	12:40:46	0	12.325	0	0	0	0	0	0	OK	OK	OK	OK	
Normal	00000000	0000	0000000000000000	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

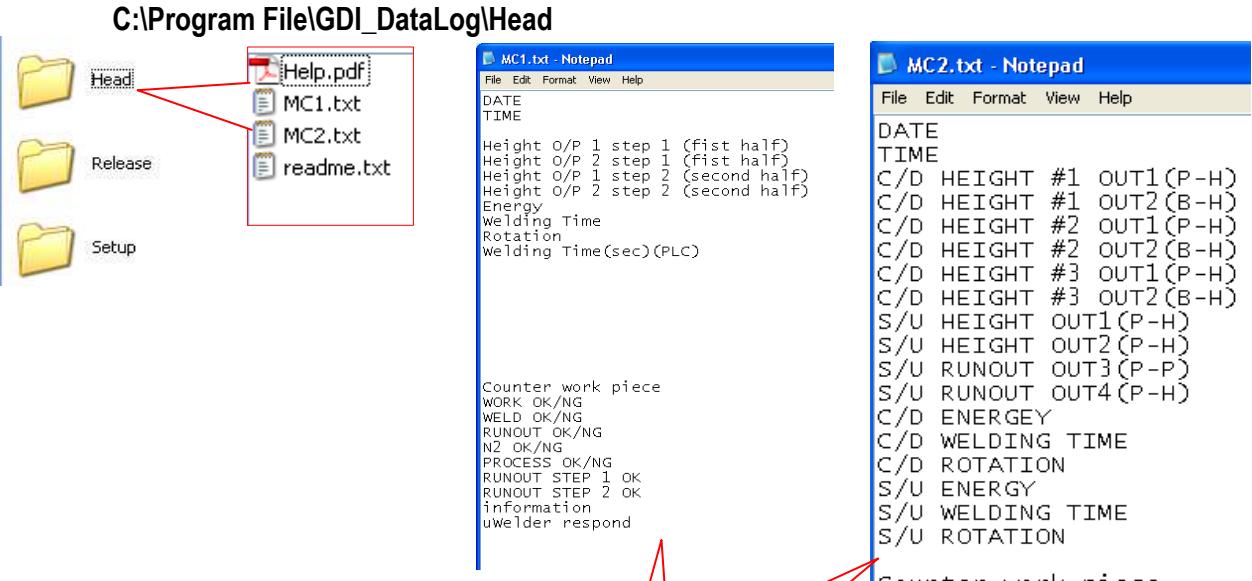
#### MC2

- 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

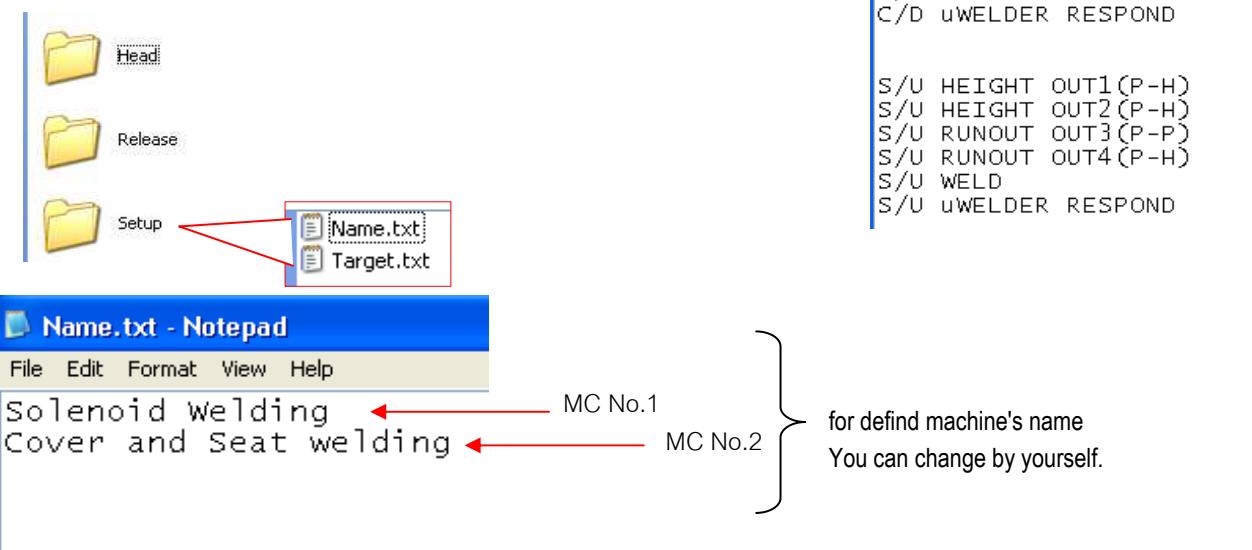
## 2 Area management

### 2.1 Area for header logging file

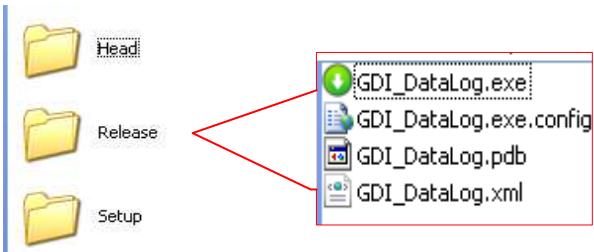


### 2.2 Area for initial data

C:\Program File\GDI\_DataLog\Setup

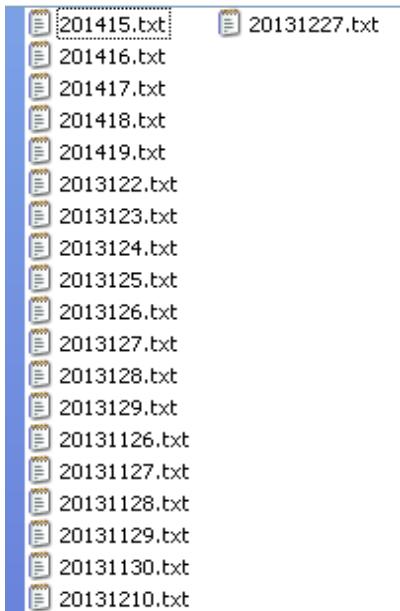
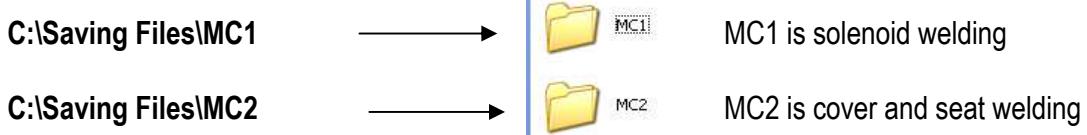


### 2.3 Area for program



Run the "GDI\_Datalog.exe"

### 2.4 Area keep data logging



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.

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 #3 HeC/D #4				
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

## Trouble shooting

- 1 Cannot communicate PC <<-->> PLC  
Lamp communicatie stop is red.

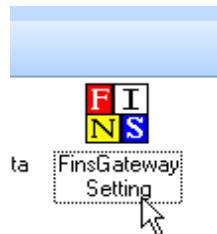
**Solenoid Welding Connecting 1.11.0**

No	Decrp	Data
1		0
2	Height	-0.006
3	Height	0.023
4	Height	0.007
5	Height	0.19
6	Energy	
7	Weldin	
8	Rotatio	
9	Weldin	
10	(o)PLC	
11		0
12		
13		
14		
15		
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

**Cover and Seat welding Connecting 2.12.0**

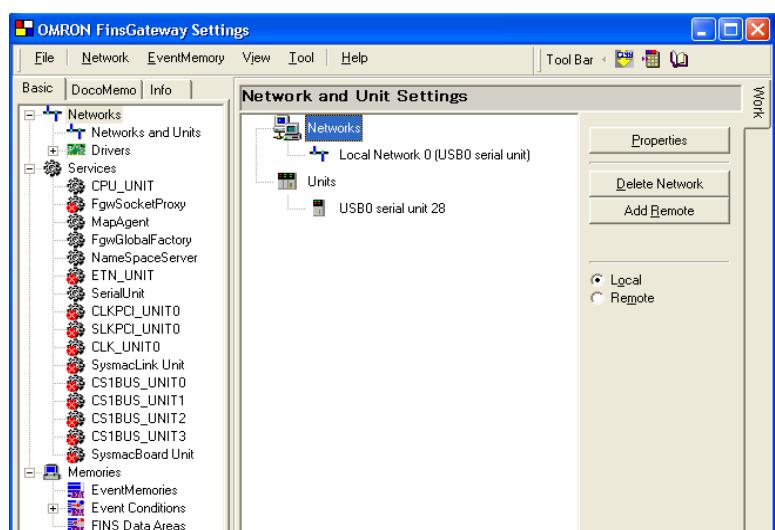
No	Decrp	Data
1	C/D HEIGHT #1 OUT1(P-H)	0.024
2	C/D HEIGHT #1 OUT2(B-H)	0
3	C/D HEIGHT #2 OUT1(P-H)	0
4	C/D HEIGHT #2 OUT2(B-H)	0
5	C/D HEIGHT #3 OUT1(P-H)	0
6	C/D HEIGHT #3 OUT2(B-H)	0
7	S/U HEIGHT OUT2(P-H)	0.009
8	S/U RUNOUT OUT3(P-P)	0.042
9	S/U RUNOUT OUT4(P-H)	0.061
10	C/D ENERGY	2032
11	C/D WELDING TIME	2571
12	C/D ROTATION	1850
13	S/U ENERGY	1318
14	S/U WELDING TIME	3691
15	S/U ROTATION	3542
16		0
17		
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

- 2 Open the FinGateway Setting

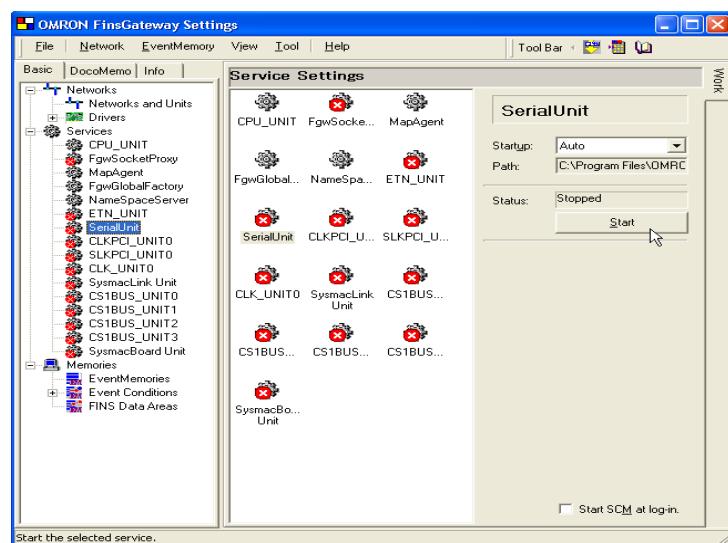


- 3 Check the Services must run

CPU\_UNIT  
MapAgent  
FgwGlobalFactory  
NampSpaceServer  
SerialUnit



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



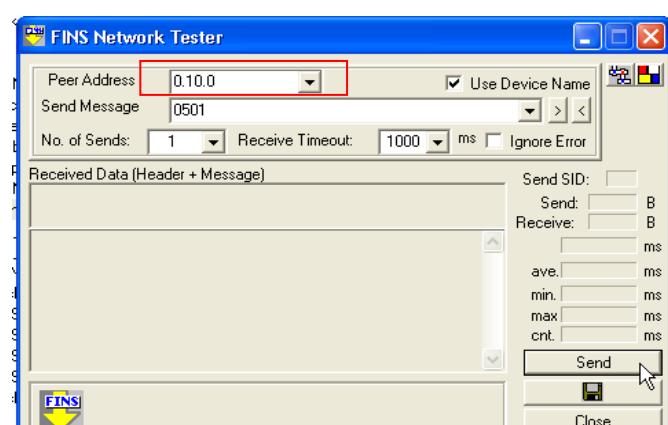
How to test communication

Run FINS Communication Test

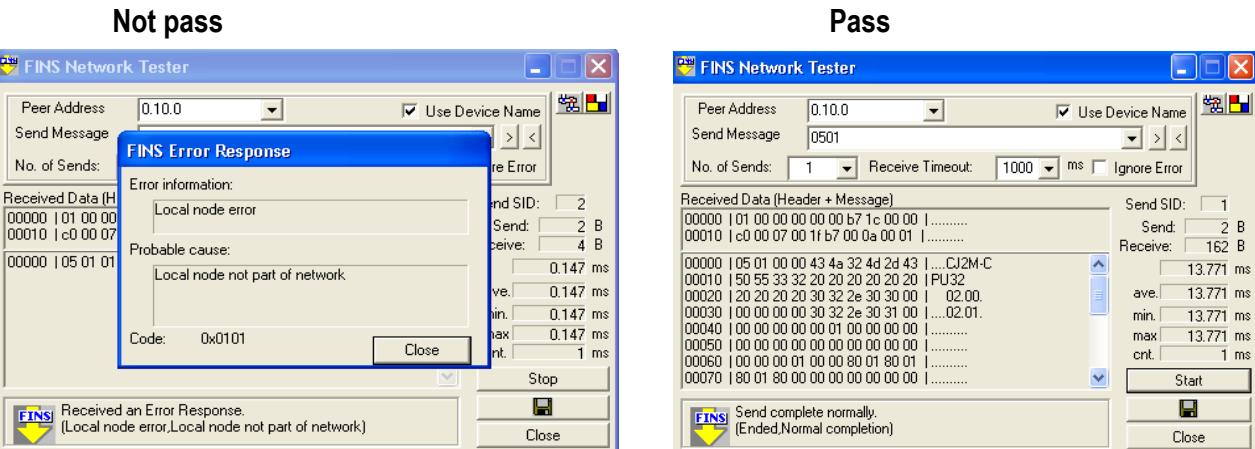


Input Peer Address 1.11.0  
then press the "Send"  
or

Input Peer Address 2.12.0  
then press the "Send"  
or



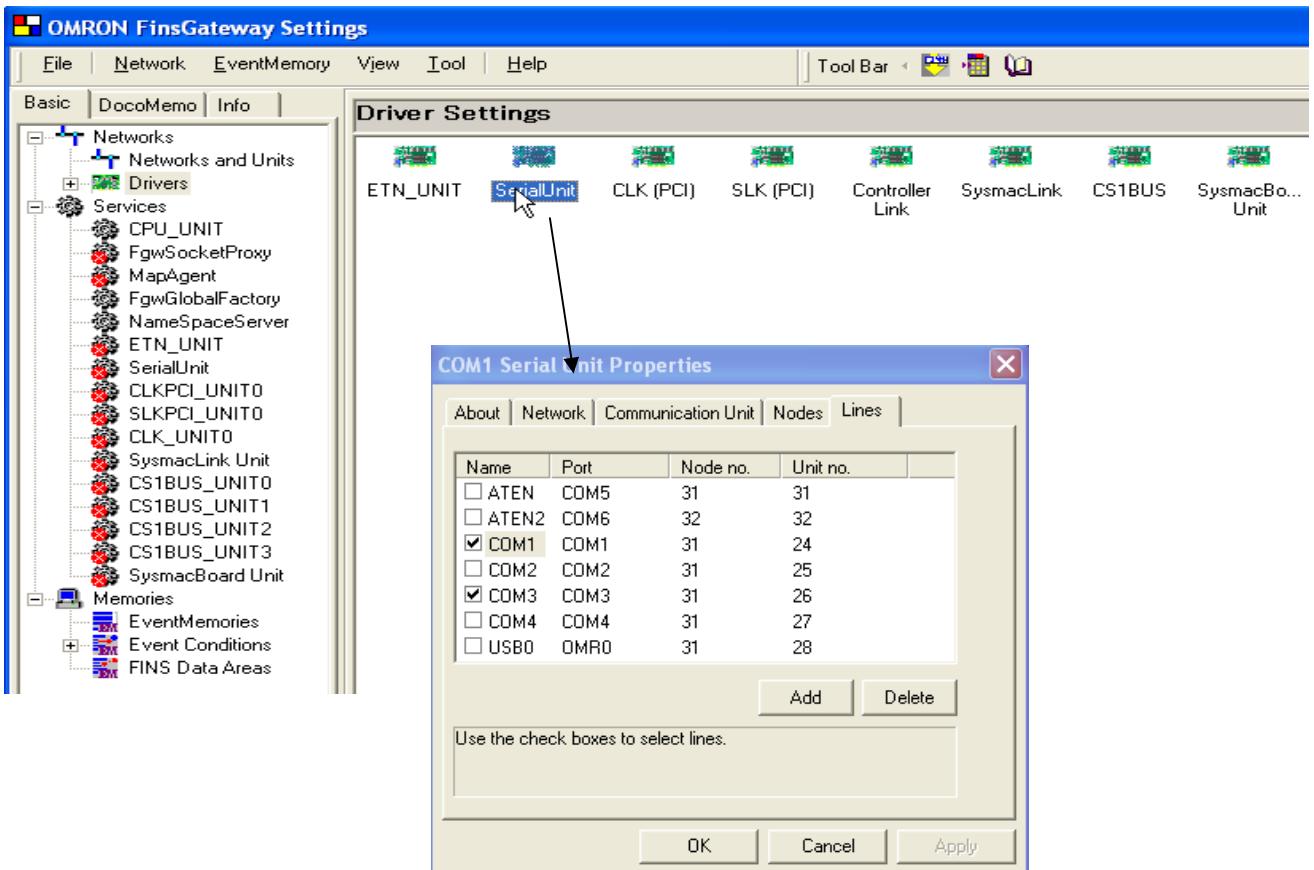
## Test result



How to solve the problem.

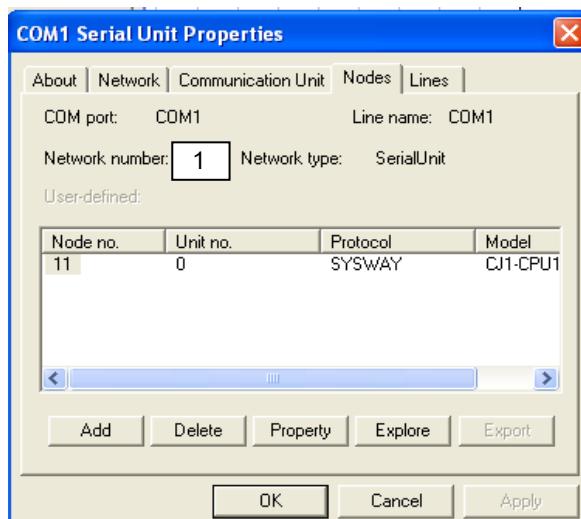
1. Do communication cable loosen ? -> Tightening
2. Is the port damaged ? -> repair
3. Setting FIN value is not correct. -> restore backup data

## Setting FIN GATEWAY

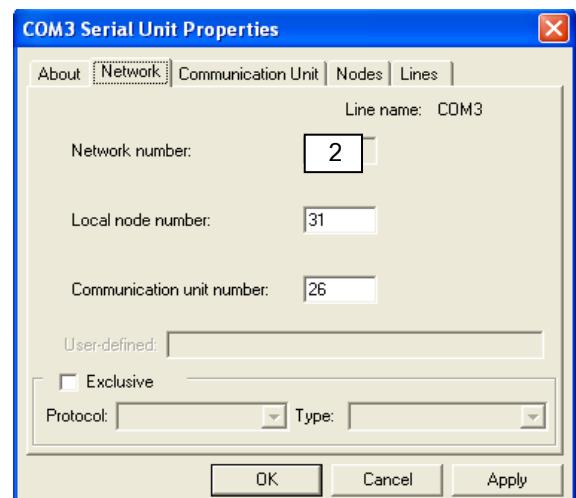
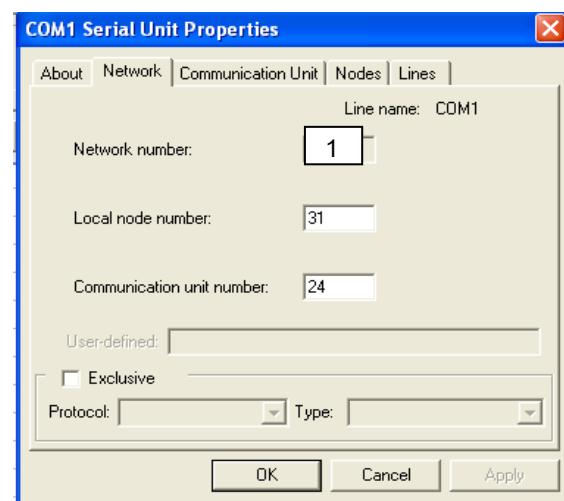
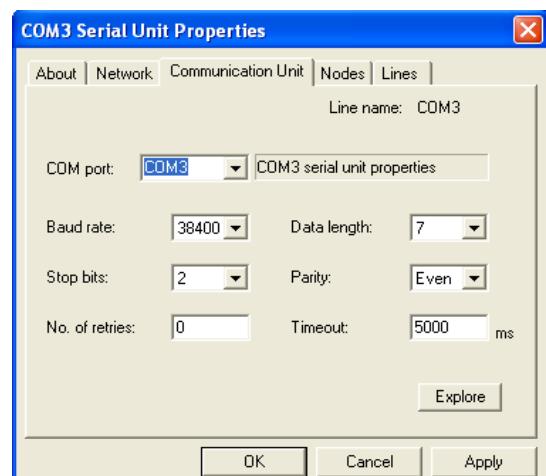
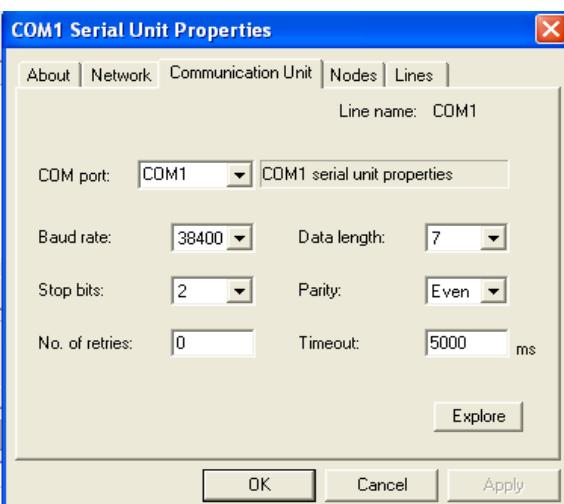
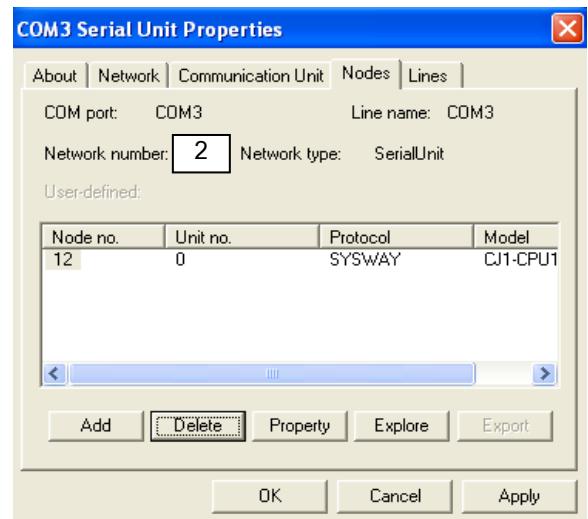


detail each ports

COM1 1.11.0



COM3 2.12.0



## PLC communication ports setting

**Communications Port Settings**

Port 1

Unit Ver.

Communication Method: Default(Host Link)

Communication Format:

- Standard Comms Format

Baud Rate: 38400

Parity: Even

Data Length: 7 Bits

Stop Bits: 2 Bits

Host Link, Non-procedural, Protocol Macro, Serial Gateway

CTS Enable

Delay [0-30000] 0 x 10 ms

Host Link

Unit # [0-31] 0

Frame Format: Default(A mode)

1:N/1:1

1:N

1:1

NT Link

Max. PT Unit # 0

Protocol Macro

Transmission Method: Half Duplex

Maximum Length [200-1000] 200 Byte

Link Channel Access: Immediate Refresh

Receive Buffer: Clear at Startup

Non-procedural

Start Code:

- None
- Set Start Code [00-FF] 00 HEX

End Code:

- Received Bytes [1-256] 256 Byte
- CR+LF
- Set End Code [00-FF] 00 HEX

Protocol Macro, Serial Gateway

Gateway Watch Time

Send Start TimeOut [0-255] [0: Default (5000ms)] 0 x 100ms

Response TimeOut [0-255] [0: Default (5000ms)] 0 x 100ms

OK

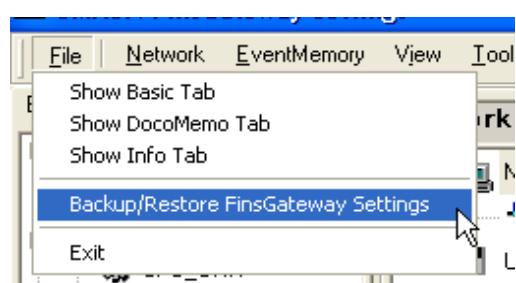
Cancel

## How to restor backup file.

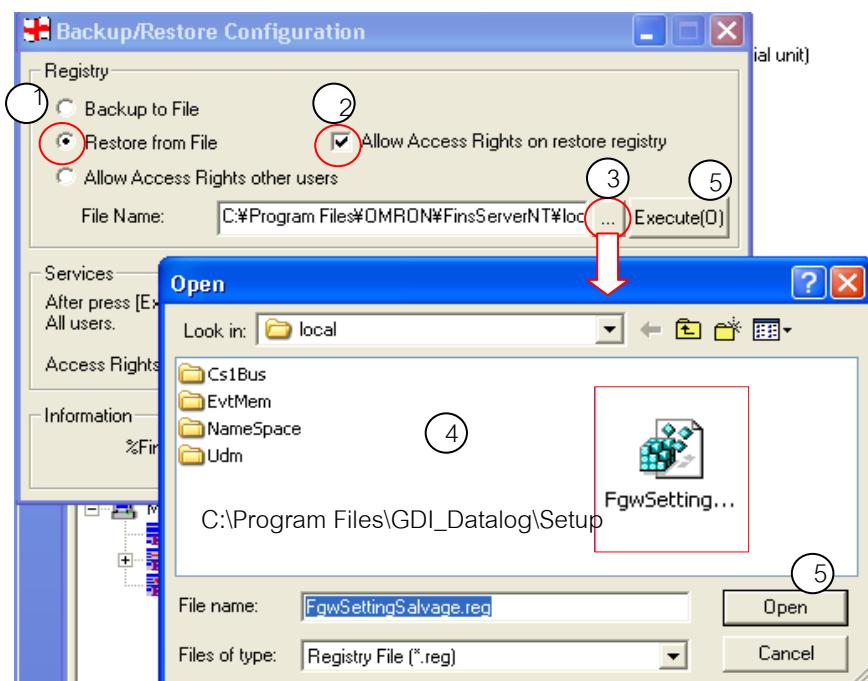
1. Run " FinGateway Setting"



2. Click at File and Backup/Restore FinGateway Setting



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



## Appendix 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
	D101			
1	D102	Floating 32bit	C/D HEIGHT #1 OUT1(P-H)	SPARE
	D103			
2	D104	Floating 32bit	C/D HEIGHT #1 OUT2(B-H)	O/P 1 step 1 PEAKHOLD (first half) (mm)
	D105			R-HEIGHT (mm)
3	D106	Floating 32bit	C/D HEIGHT #2 OUT1(P-H)	O/P 2 step 1 BOTTOMHOLD (first half) (mm)
	D107			R-HEIGHT (mm)
4	D108	Floating 32bit	C/D HEIGHT #2 OUT2(B-H)	O/P 1 step 2 PEAKHOLD (second half) (mm)
	D109			L-HEIGHT (mm)
5	D110	Floating 32bit	C/D HEIGHT #3 OUT1(P-H)	O/P 2 step 2 BOTTOMHOLD (second half) (mm)
	D111			Energy 1 (W)
6	D112	Floating 32bit	C/D HEIGHT #3 OUT2(B-H)	Energy (W)
	D113			Energy 2 (W)
7	D114	Floating 32bit	S/U HEIGHT OUT1(P-H)	Welding Time (sec)
	D115			Energy 3 (W)
8	D116	Floating 32bit	S/U HEIGHT OUT2(B-H)	Rotation (RPM)
	D117			Energy 4 (W)
9	D118	Floating 32bit	S/U RUNOUT OUT3(P-P)	
	D119			Welding Time (sec)
10	D120	Floating 32bit	S/U RUNOUT OUT4(P-H)	
	D121			Rotation (RPM)
11	D122	Floating 32bit	C/D ENERGY	
	D123			
12	D124	Floating 32bit	C/D WELDING TIME	
	D125			
13	D126	Floating 32bit	C/D ROTATION	
	D127			
14	D128	Floating 32bit	S/U ENERGY	
	D129			
15	D130	Floating 32bit	S/U WELDING TIME	
	D131			
16	D132	Floating 32bit	S/U ROTATION	
	D133			
17	D134	BCD	Work	Work
	D135			
18	D136	BCD	Year-year fix	Year-year fix
	D137	BCD	Month-Day	Month-Day
19	D138	BCD	Series 1 -series 2	Series 1 -series 2
	D139	BCD	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
	D143			

## Appendix 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			