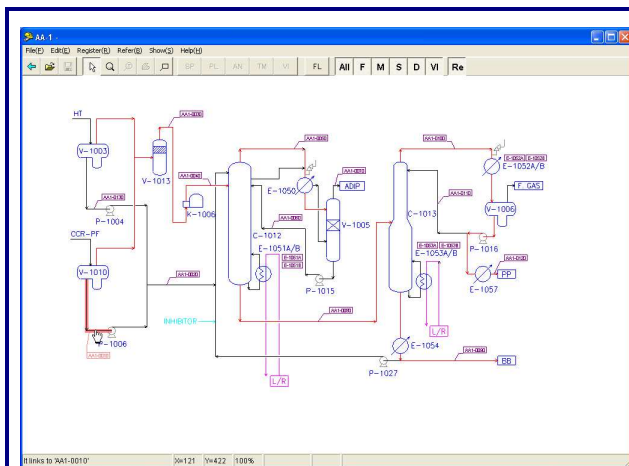


Inspection Management System DOG-Level 2

-Equipment management support series-

For Windows 2000 / XP

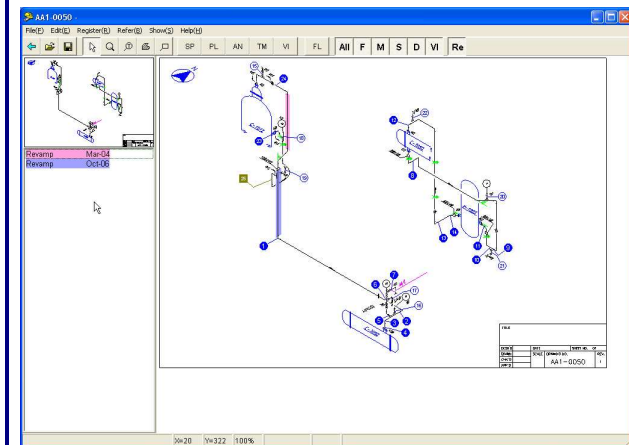


【Flow diagram reference part】

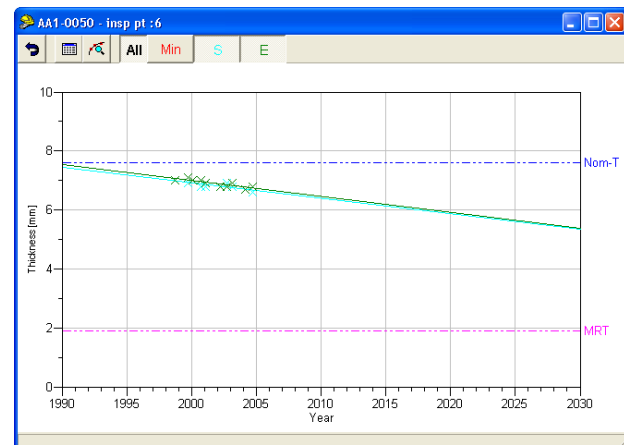
This screenshot displays a data table titled 'Result of Thickness Measurement'. The table lists inspection points (Insp Pt) with columns for Insp Method, Size, Norm-T, MRT, Purpose, Latest date, and a series of data points for different dates from 2001 to 2011.

Insp Pt	Ch	Insp Method	Size	Sch	Norm-T [mm]	MRT [mm]	Purpose	Latest date	Latest Data	200102	200111	200204	200210	200303	200310	200403	200410	200910	201010	201101
1M	UTM	1B	40		9.3	5.7	Fixed-PI	200410	8.8											
2E	UTM	1B	40		9.3	5.7	Fixed-PI	200410	8.8	8.6		8.8	8.8	8.8		8.8	8.8			
3M	UTM	1B	40		9.3	5.7	Fixed-PI	200410	8.7	8.7	8.8	8.9	8.9		8.8	8.7				
4S	UTM	1B	40		9.3	5.7	Fixed-PI	200410	8.8	8.8	8.8	8.7	8.9		8.7	8.8				
5U	UTM	3B	40		5.5	1.9	Fixed-PI	200410	5.3	5.2	5.4	5.4	5.5	5.4	5.4	5.4	5.4	5.3	5.3	
6S	UTM	3B	40		5.5	1.9	Fixed-PI	200410	5.3	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.3	5.3	
8S	UTM	3B	80		7.6	1.9	Fixed-PI	200410	6.6	6.8	6.8	6.9	6.8	6.8	6.8	6.8	6.7	6.6		
9E	UTM	4B	40		6.0	2.4	Fixed-PI	200410	5.4	5.4	5.5	5.5	5.4		5.4	5.4				
7E	UTM	4B	40		6.0	2.4	Fixed-PI	200410	5.3	5.4	5.5	5.5	5.4		5.3	5.3				
8B	UTM	BB	40		8.2	3.9	Fixed-PI	200410	7.5	7.2	7.3	7.3	7.5		7.3	7.5				
9B	UTM	BB	40		8.2	3.9	Fixed-PI	200410	8.0	7.2	7.8	8.8	7.8		8.0	8.0				
10B	UTM	BB	40		8.2	3.9	Fixed-PI	200410	8.8	6.9	7.8	6.9	6.9		6.8	6.8				
11U	UTM	BB	40		7.1	3.0	Fixed-PI	200410	5.3	5.4	5.8	5.5	5.5		5.4	5.3				
11B	UTM	BB	40		7.1	3.0	Fixed-PI	200410	5.3	5.2	5.3	5.5	5.3		5.3	5.2				
12M	UTM	4B	40		6.0	2.5	Fixed-PI	200410	4.2	4.1	4.2	4.2	4.2	4.3	4.3	4.3	4.2			
13E	UTM	4B	40		6.0	2.5	Fixed-PI	200410	4.7	4.9	4.8	4.7	4.7		4.7	4.7				
14M	UTM	4B	40		6.0	2.5	Fixed-PI	200410	5.2	5.2	5.2	5.1	5.2		5.2	5.2				
13E	UTM	3B	40		3.9	1.3	Monitor	200410	5.1						5.1	5.1				
15W	UTM	2B	40		3.9	1.3	Monitor	200410	5.0						5.2	5.1	5.2			
16N	RTM	1B	80		4.5	0.7	Monitor	200010	3.8											
16S	RTM	1B	80		4.5	0.7	Monitor	200010	3.8											
17U	RTM	34B	80		3.9	0.8	Monitor	200303	2.9						2.9					
17B	RTM	34B	80		3.9	0.8	Monitor	200303	2.9						2.9					
18E	RTM	1B	80		4.5	0.7	Monitor	200303	3.2						3.2					
18W	RTM	1B	80		4.5	0.7	Monitor	200303	3.2						3.2					

【Database reference part】



【Registering part of Measurement point】



【Graphing part of measurements】



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Plant maintenance guide : Dog-Level2 is a system for inspection management of the equipment and the piping of the plant. The data can be managed visually with this system, because it combines isometric drawing and equipment outline drawing with the database. And it aims to manage history, plan and thickness measurement uniformly.

User's request can be reflected to this system, because it can be customized based on basic system.

◆◆◆ Feature of DOG-Level2 ◆◆◆

- Thickness and visual inspection data can be managed collectively.
- Data can be registered and be referred to from two or more person in charge by LAN correspondence.
- Data related to thickness measurement and visual inspection can be referred on isometric drawing and equipment outline drawing.
- Data related to thickness measurement and visual inspection can be reflected in process flow diagram.
- Retrieval based on drawing information, thickness information and history plan information is possible.
- Various documents can be printed.

◆ System requirements ◆

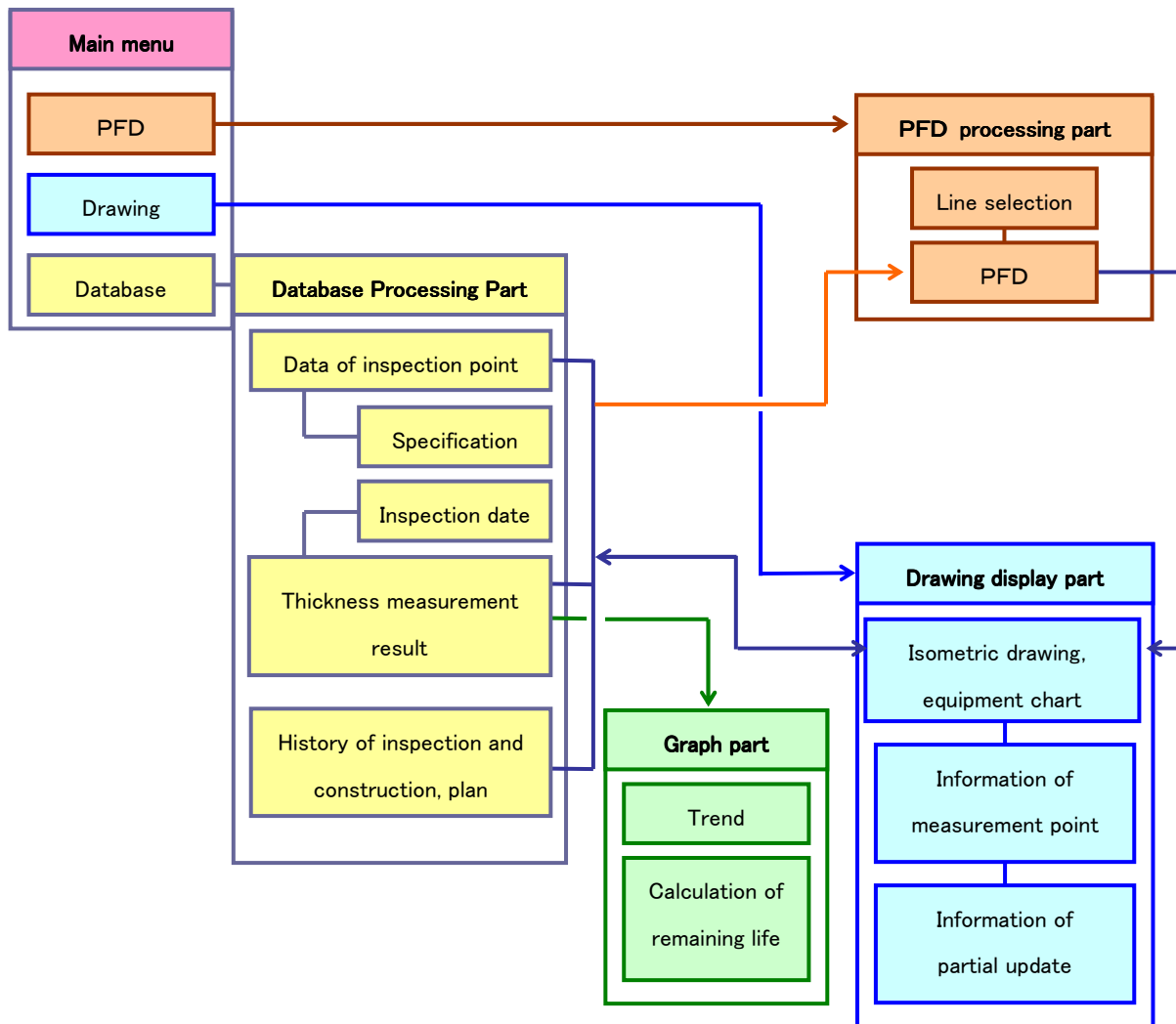
Hardware

- Server for multiple users.
Environment that can operate Oracle 8.1.7 or newer. (In Windows system, Windows2000 server or Windows2003 server are available)
- Client
Computer operating on Windows2000 or WindowsXP.

Basic software

Basic softwares shown in table below are used.

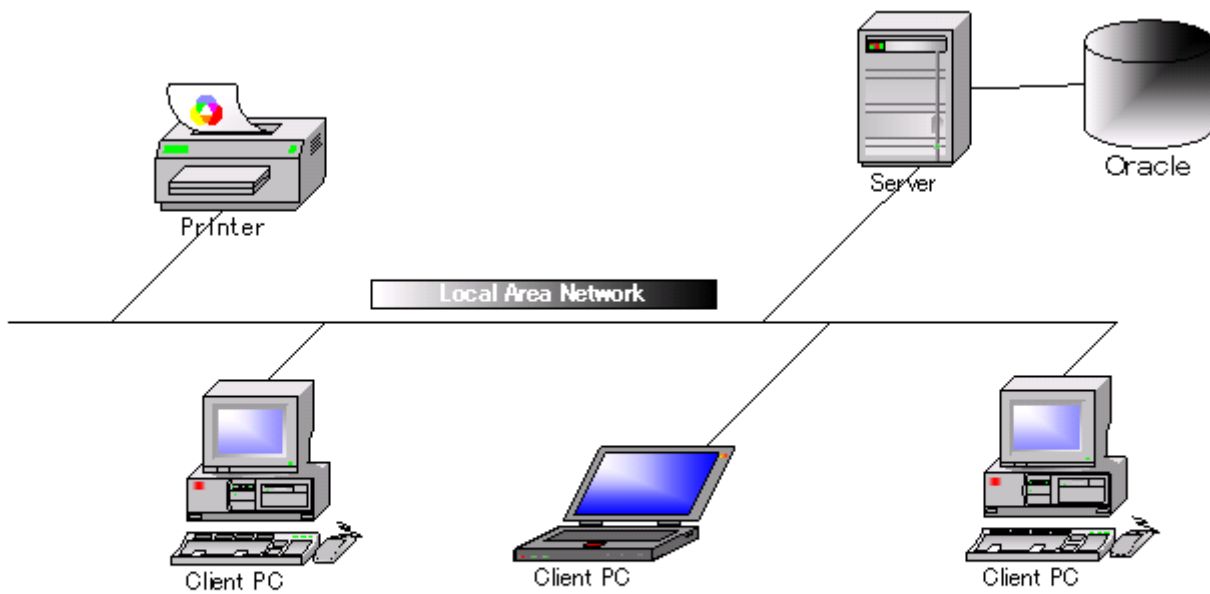
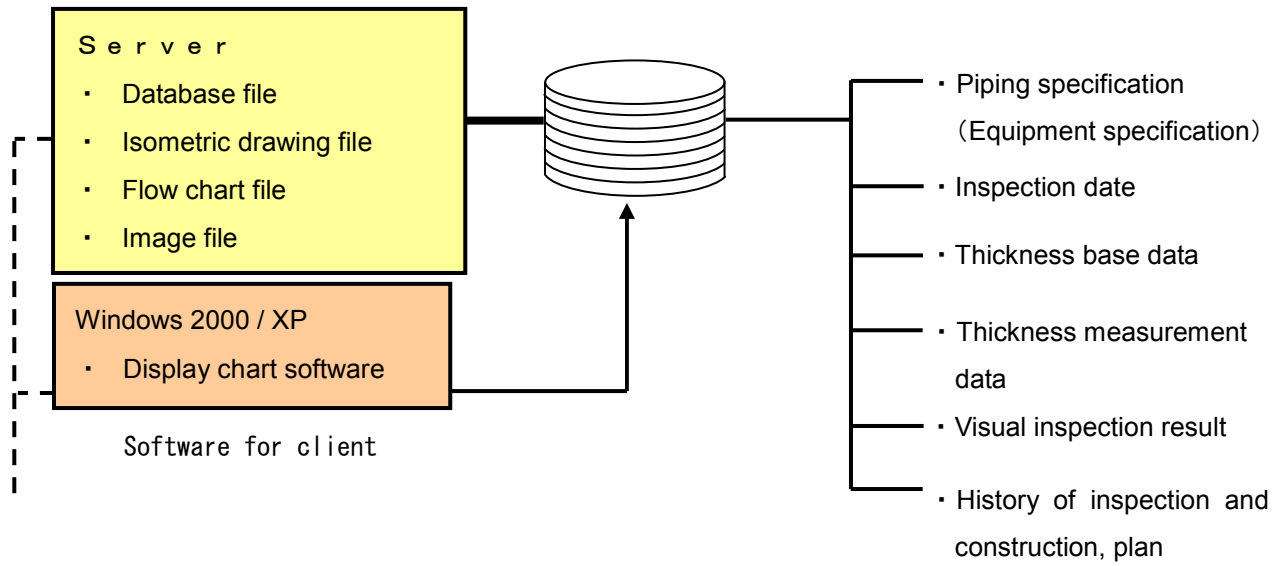
No.	Function	Basic software	Remark
1	Database processing	Data processing part. Application for Level2 system.	Part where related information on thickness measurement (location, measurement result, history and plan, etc.) is managed. The list for reference and print is made.
2	Drawing display	Reference software of drawing display and thickness measurement information Application for Level2 system	Part where display isometric drawing, information related on thickness measurement and partial update position are registered, referred and printed. This has also function that show trend graph of thickness measurement.
3	Graph processing	Application for Level2 system.	Part where calculate remaining life based on the least squares method of the thickness measurement.



◇ System configuration example ◇

Links are created for various processing parts.

Processing part	Content
Database part	Management of data related to thickness, and the reference and output of the data list chiefly.
Drawing display part	Display in piping isometric drawing and equipment outline chart, etc., registration of data, and references.
Graph processing part	Linear regression by graphing and least squares method of thickness measurement result.
PFD processing part	Reflection of thickness information in process flow seat.

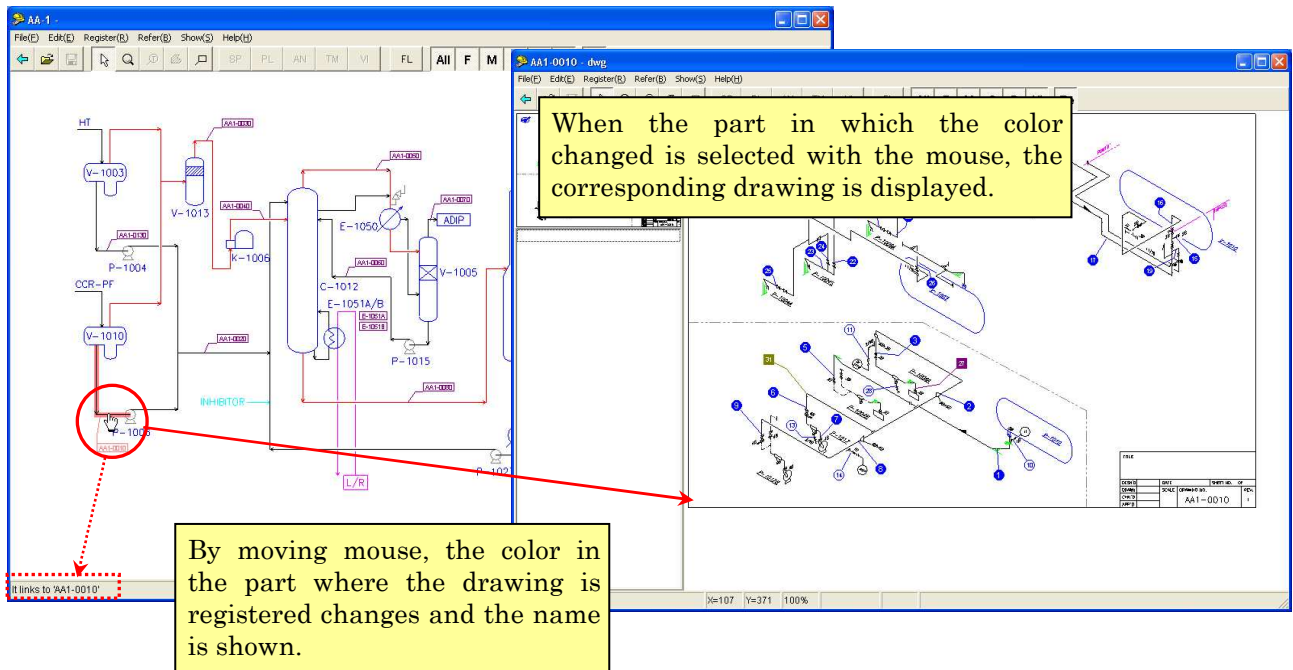


Server OS: Windows2000 server
 Database: Oracle8i 8.1.7
 Client OS: Windows95/98/2000Professional
 Printer: Printer corresponding to each OS

◇ Client server configuration example ◇

◆ Development from process flow diagram to equipment drawing and piping diagram

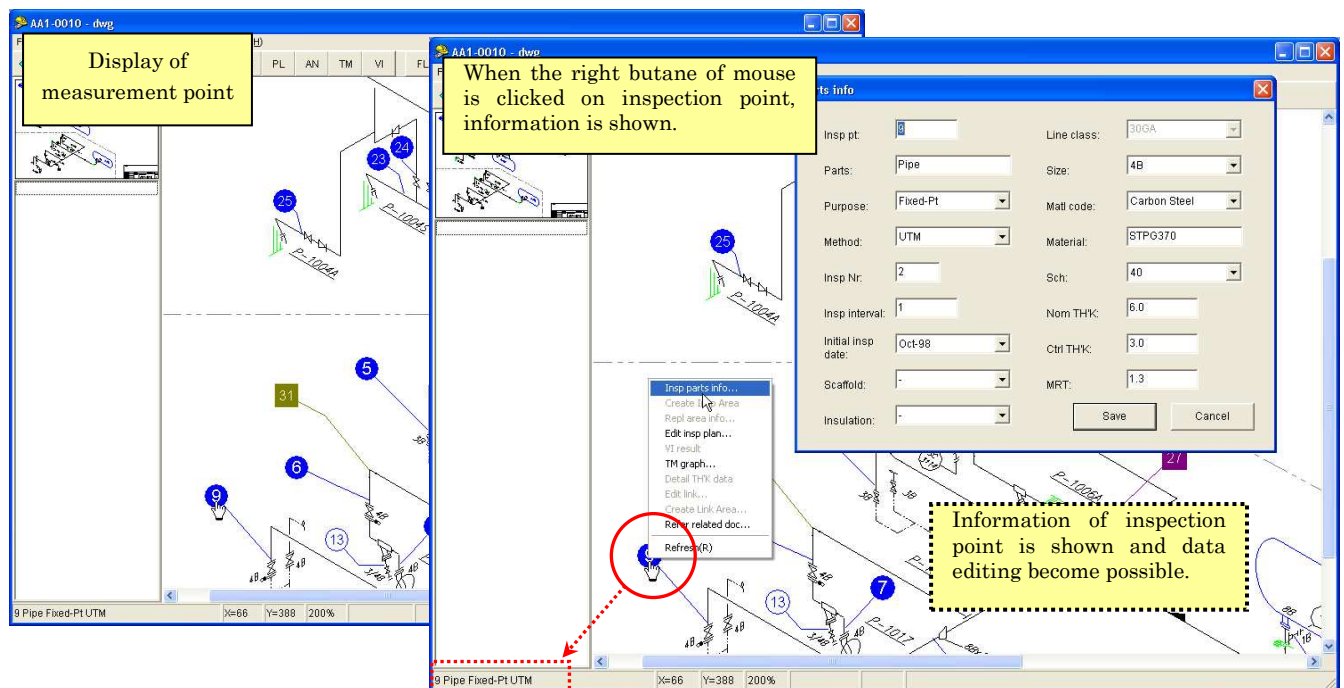
Applicable drawing can be referred by selecting equipment or piping on PFD with mouse.



◆ Measurement point is classified rank, registered, and displayed.

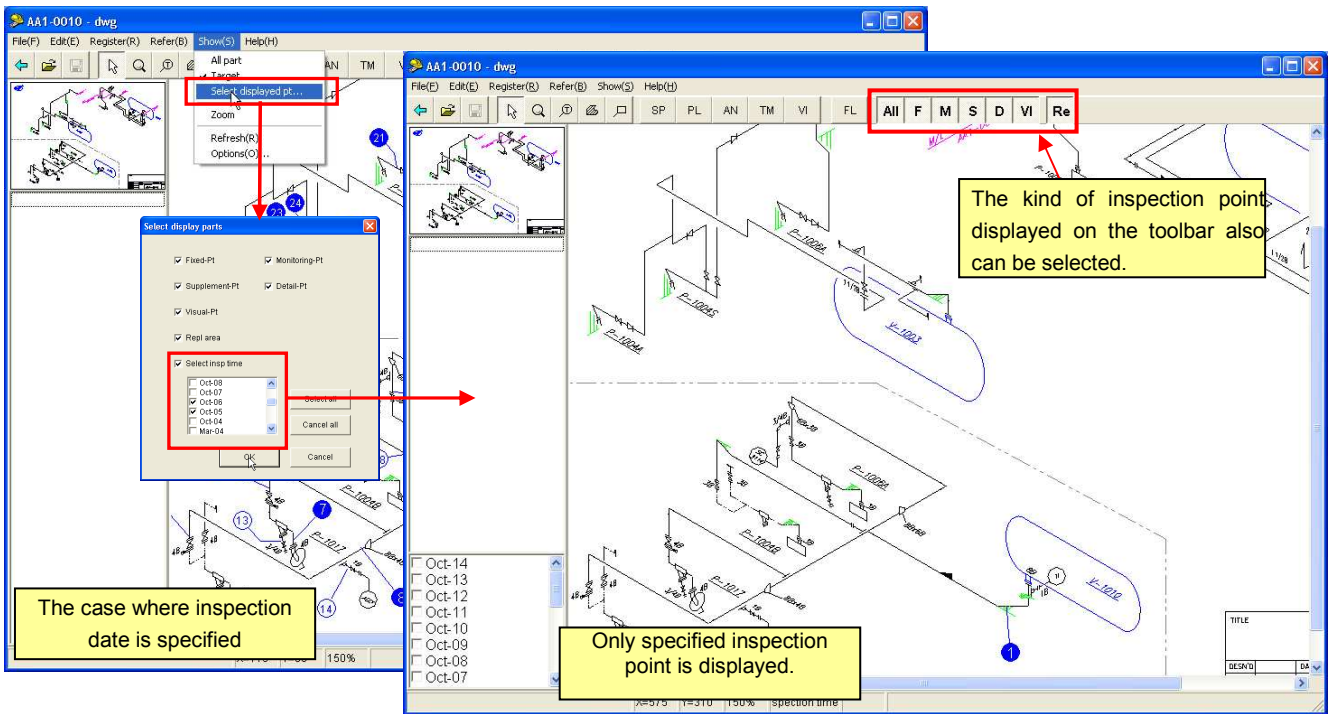
Measurement point can be disposed by only mouse operation.

Five kind of inspection point that has different purpose can be registered, and display or non-display can be set to each point.



◆ Display setting of measurement point.

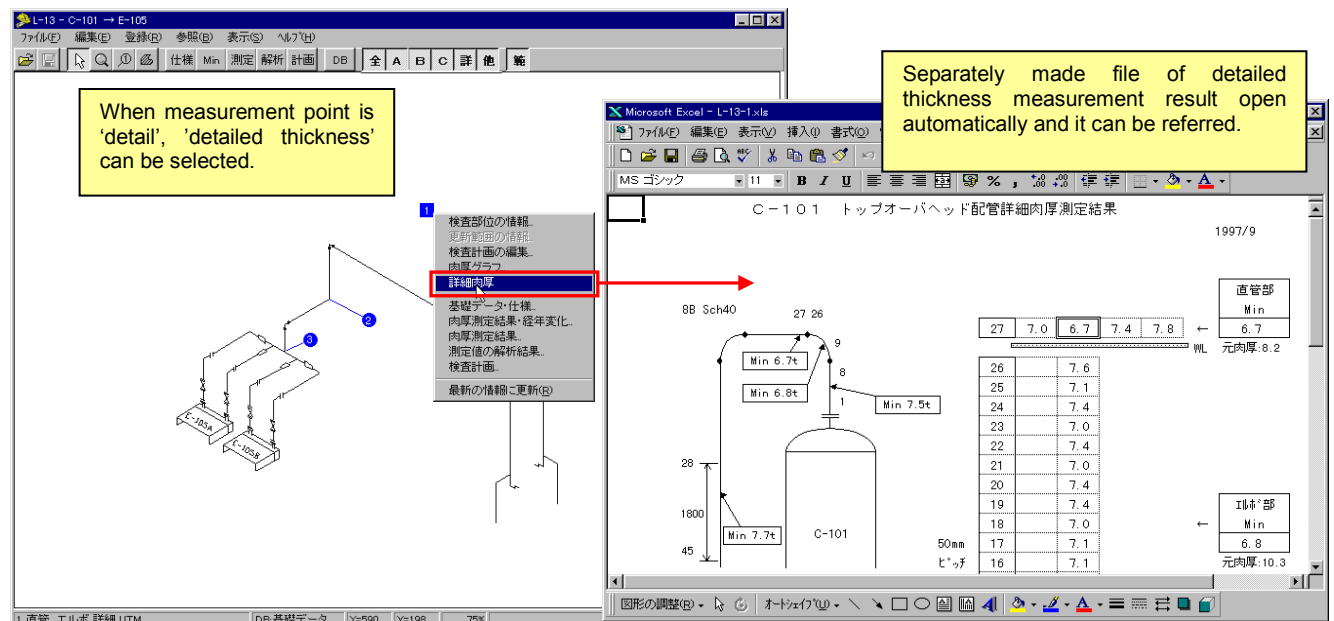
Inspection point can be extracted and displayed it by specifying the date when the inspection was carried out or be planned.



◆ Reference to detailed thickness measurement result.

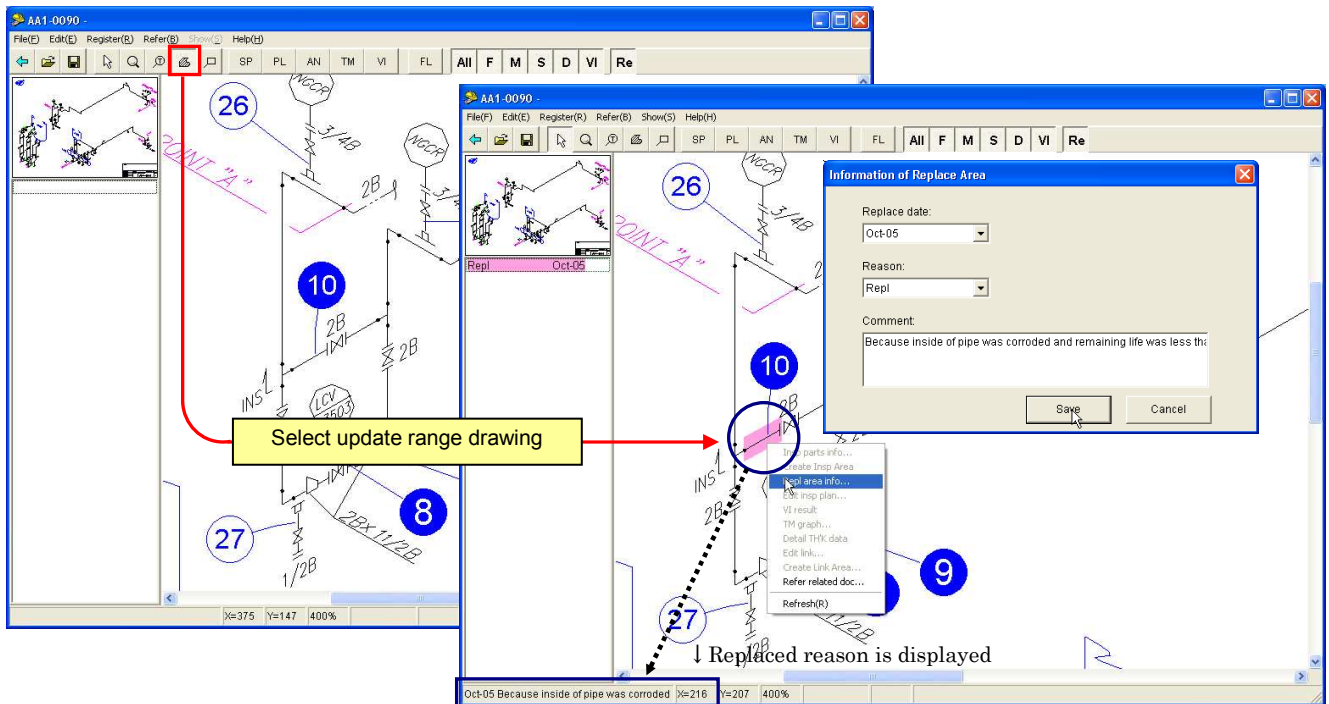
About detailed thickness measurement result, documents that are made by other software, for example Excel of Microsoft Corporation, can be referred. Similarly, non destructive testing results other than visual inspection and thickness measurement can be referred.

Corresponding software boots up when the inspection point is specified, and related document opens automatically.



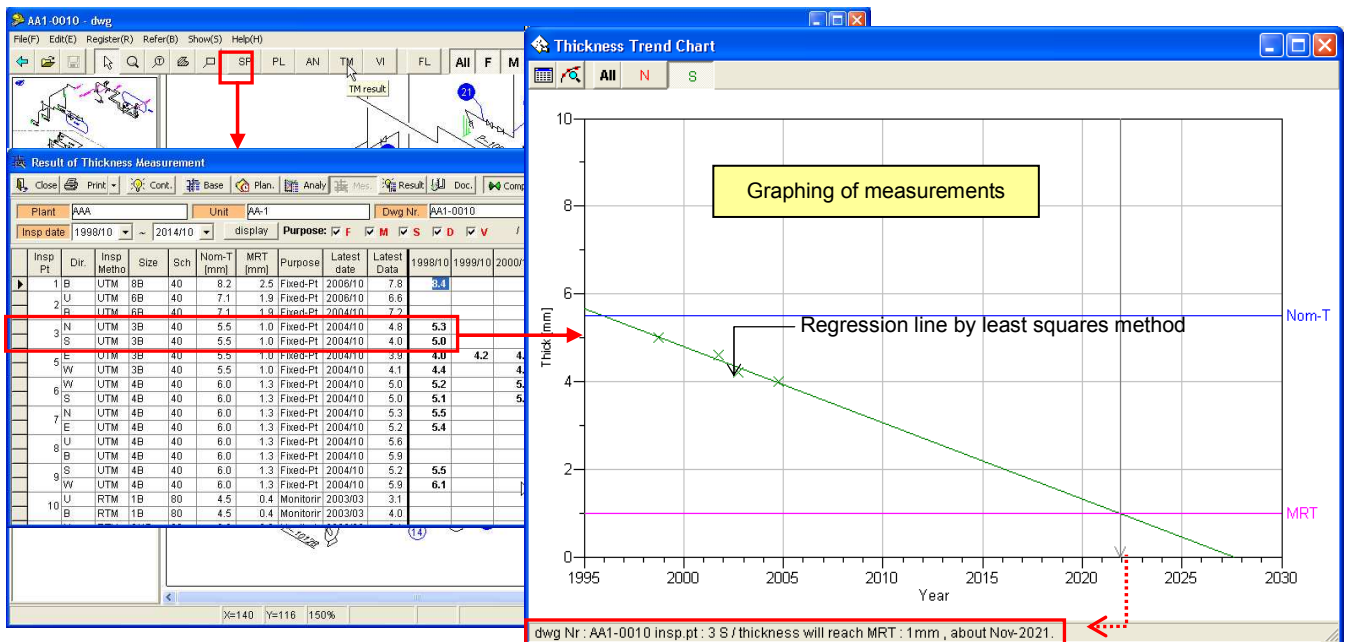
◆ Partial update range can be registered in drawing.

Range of partial update can be registered directly on drawing. Because date of update is displayed in color and pattern, and update reason can be registered in text, update date and reason can be referred on drawing easily.



◆ Graphing thickness measurement result.

Thickness measurement result is graphed and the progress of thickness reduction is presumed by least squares method, the year when thickness reaches the management thickness can be calculated.



Windows 2000/XP is product of Microsoft Corporation in America.
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