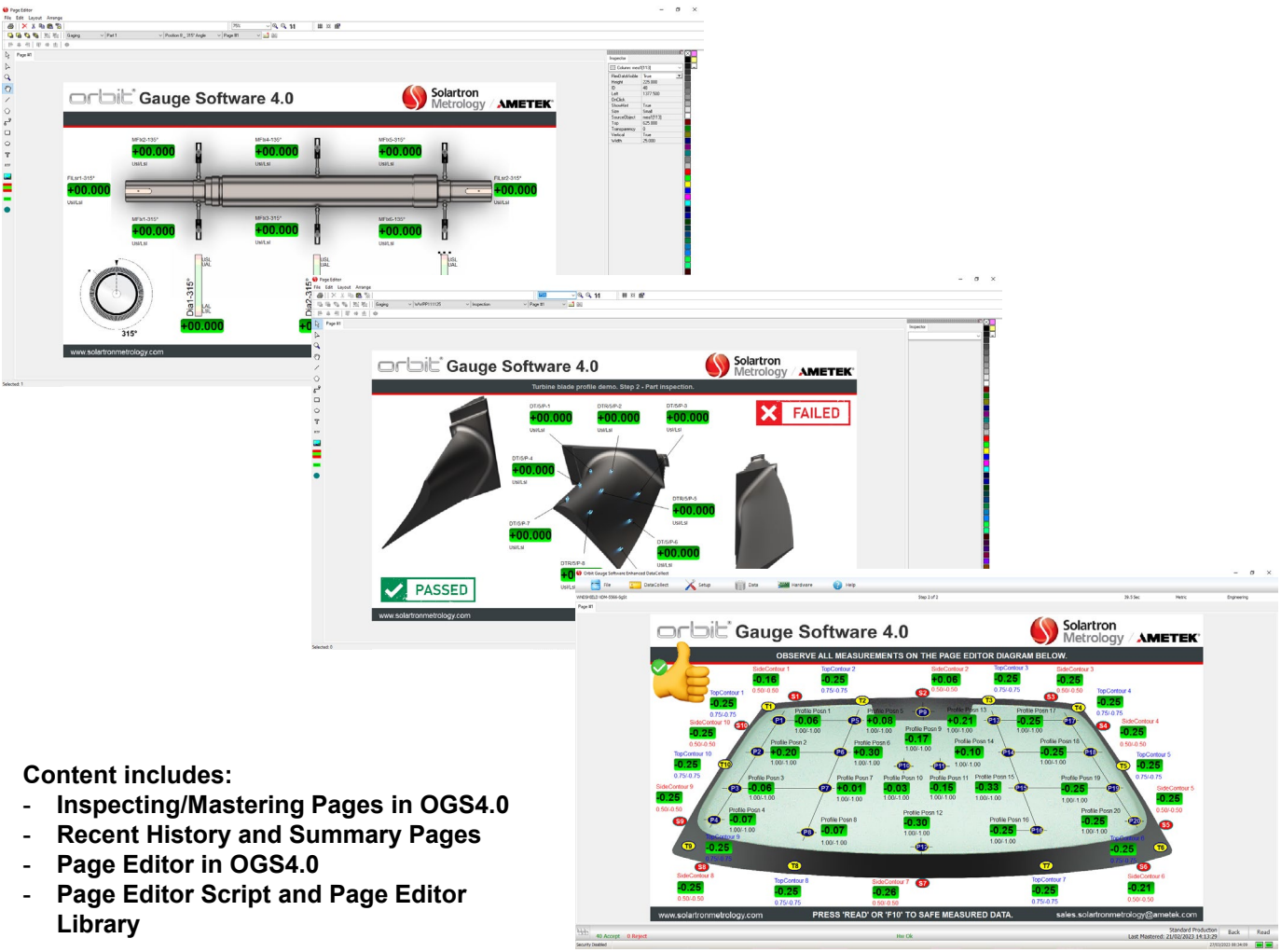
orbit® Gauge Software 4.0

Solartron Metrology / AMETEK

Intuitive User Interface in OGS4.0



Content includes:

- **Inspecting/Mastering Pages in OGS4.0**
- **Recent History and Summary Pages**
- **Page Editor in OGS4.0**
- **Page Editor Script and Page Editor Library**

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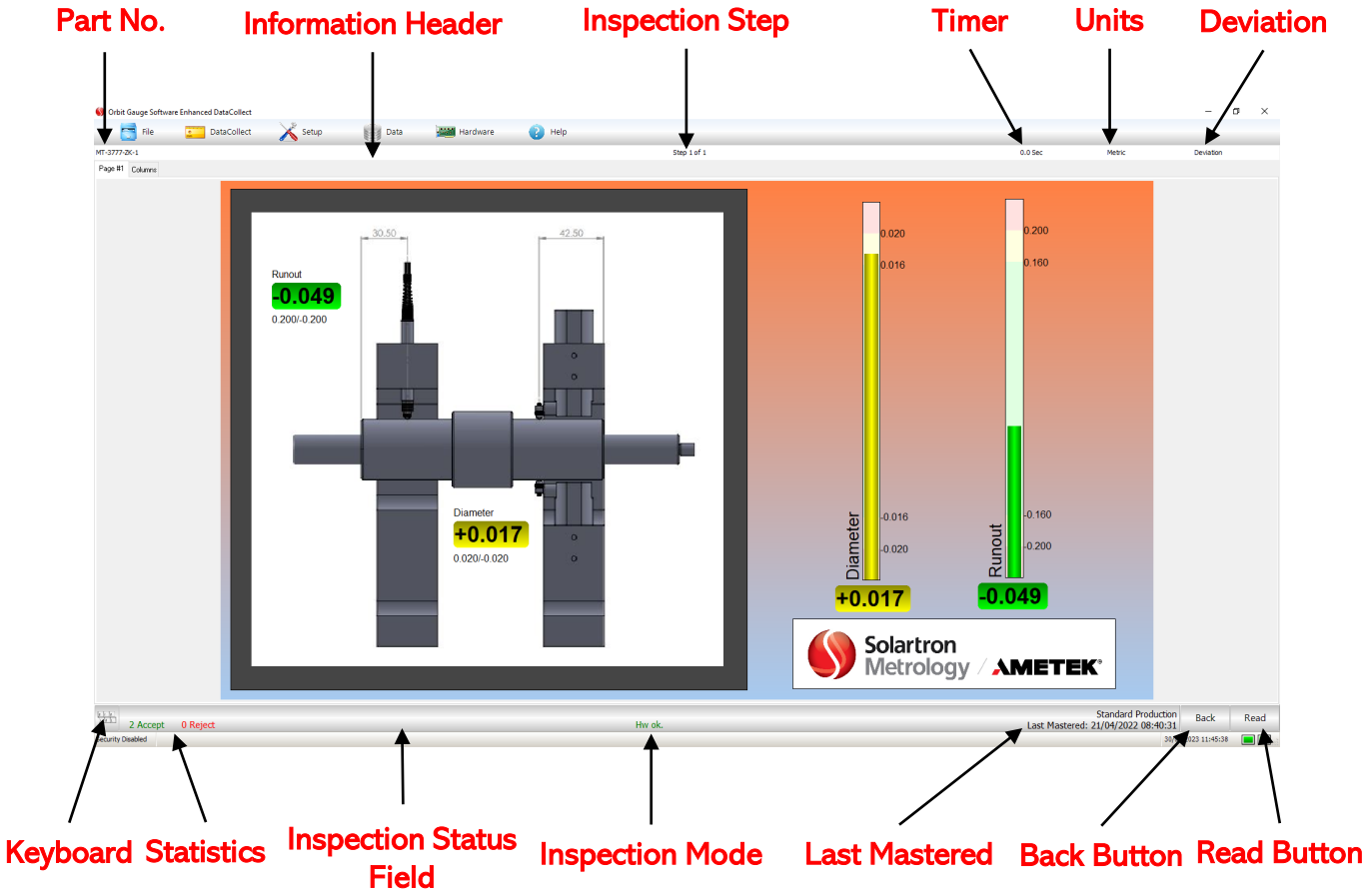
Inspection/Mastering Pages in OGS4.0

The Page Editor is used to create screens providing measurement results and inspections to users. The editor provides an easy interactive method for creating intuitive interfaces to inspection equipment.



User Interface is one of the most complicated tasks when creating inspection sequences for any of gauge equipment. It must be simple, user friendly and intuitive so that the user understands its behavior and effect without the use of reason, experimentation, assistance or special training. Solartron Metrology's software design team considered to include some standard functionality which allows for controlling each part inspection, monitoring program status and traceability of the parts during/after inspection.

The Part Number is in the information header field. The Serial Number, if exists, can be added to the label. The label value will be displayed in the Inspection Status field of the Summary Page and stored in the database with the other collected during inspection data and can be exported at any time.

The Inspection Step allows for monitoring which sequence step is currently displayed. Note some applications require multiple steps and some steps can be skipped from the inspection sequence. Cycle timer, units and deviation status are displayed in the Information Header.

The Internal Keyboard can be accessed directly from the inspection page if touch screen display is used.

The Statistics displayed in Inspection Status field shows current number of accept and reject measurements.

Current Inspection Mode and when the part was Last Mastered can be observed on the same OGS4.0 field.

The Back Button which on the Click backups one inspection step.

The Read Button or F10 which on the click will compete current inspection step and proceed on to the next step.

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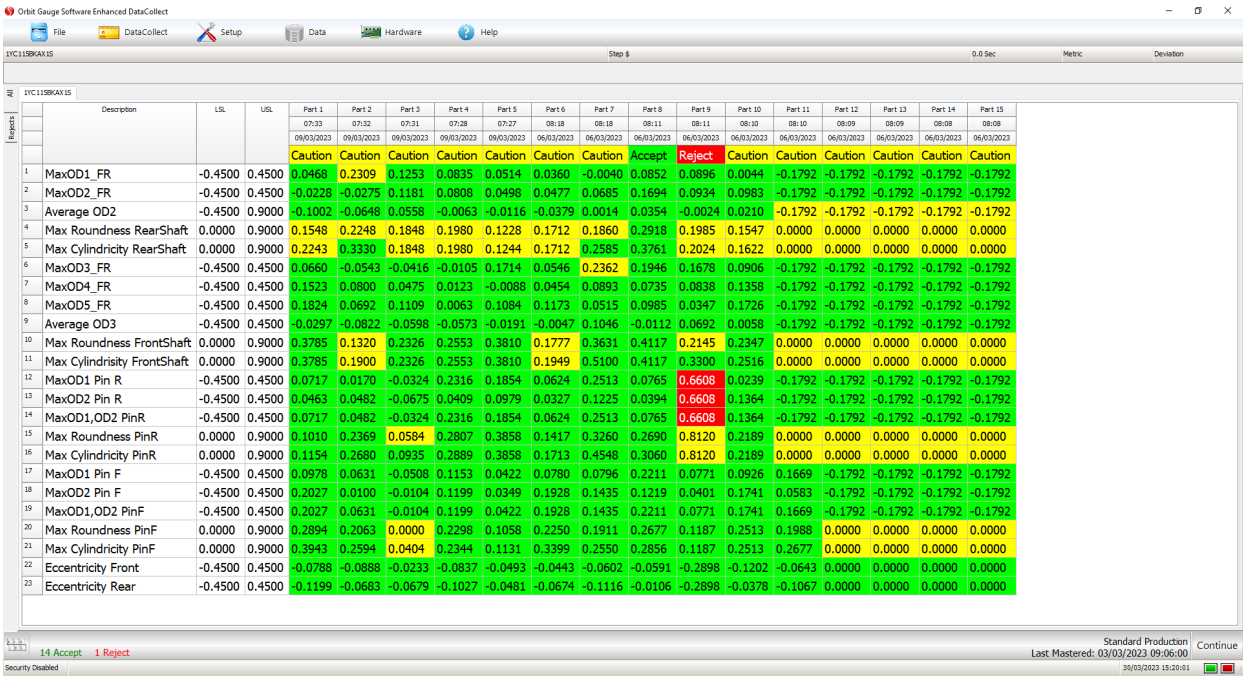
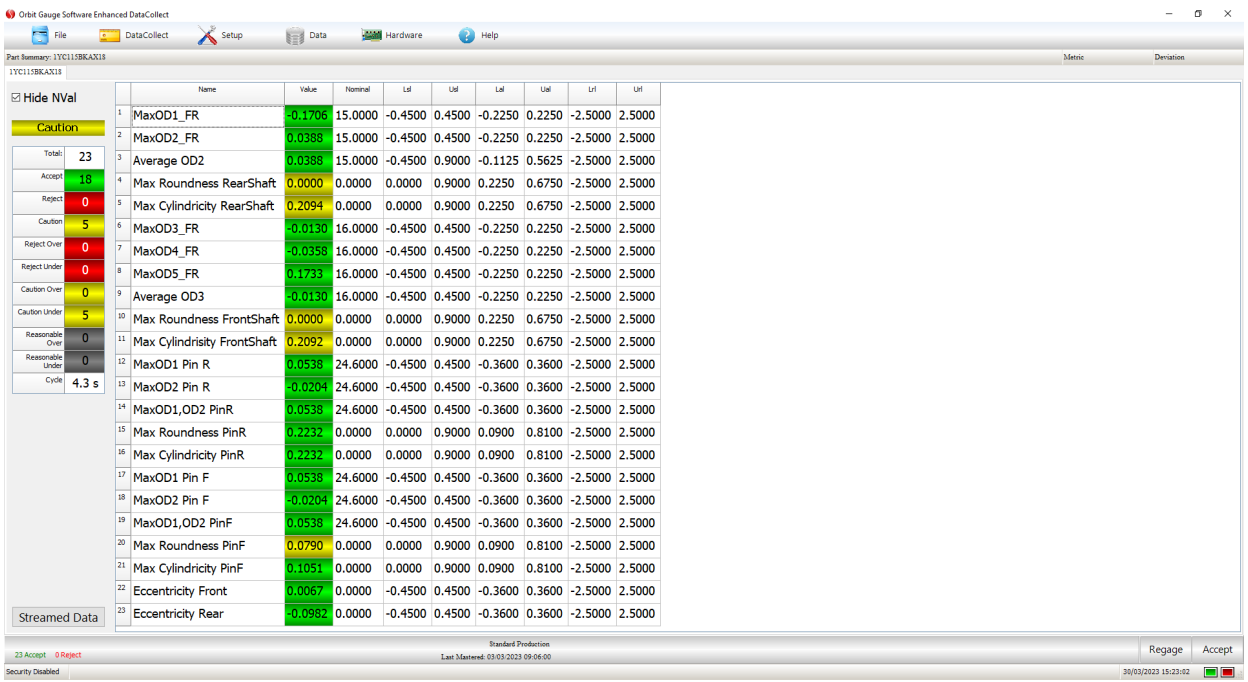
Recent History and Summary Pages in OGS4.0

The Recent History display shows recently inspected parts before inspecting a new part. The color coding of the screen makes it easy for an operator to recognise consecutive limit faults so action can be taken in a timely manner. The Continue Button will start pat inspection. Also, Recent History page includes an area for display of script-controlled messages on automatic or semi-automatic systems.



	Description	LSL	USL	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9	Part 10	Part 11	Part 12	Part 13	Part 14	Part 15
				07:33	07:32	07:31	07:28	07:27	08:18	08:18	08:11	08:11	08:10	08:10	08:09	08:09	08:08	08:08
				09/03/2023	09/03/2023	09/03/2023	09/03/2023	09/03/2023	06/03/2023	06/03/2023	06/03/2023	06/03/2023	06/03/2023	06/03/2023	06/03/2023	06/03/2023	06/03/2023	06/03/2023
				Caution	Caution	Caution	Caution	Caution	Caution	Caution	Accept	Reject	Caution	Caution	Caution	Caution	Caution	Caution
1	MaxOD1_FR	-0.4500	0.4500	0.0468	0.2309	0.1253	0.0835	0.0514	0.0360	-0.0040	0.0852	0.0896	0.0044	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
2	MaxOD2_FR	-0.4500	0.4500	-0.0228	-0.0275	0.1181	0.0808	0.0498	0.0477	0.0685	0.1694	0.0934	0.0983	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
3	Average OD2	-0.4500	0.9000	-0.1002	-0.0648	0.0558	-0.0063	-0.0116	-0.0379	0.0014	0.0354	-0.0024	0.0210	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
4	Max Roundness RearShaft	0.0000	0.9000	0.1548	0.2248	0.1848	0.1980	0.1228	0.1712	0.1860	0.2918	0.1985	0.1547	0.0000	0.0000	0.0000	0.0000	0.0000
5	Max Cylindricity RearShaft	0.0000	0.9000	0.2243	0.3330	0.1848	0.1980	0.1244	0.1712	0.2585	0.3761	0.2024	0.1622	0.0000	0.0000	0.0000	0.0000	0.0000
6	MaxOD3_FR	-0.4500	0.4500	0.0660	-0.0543	-0.0416	-0.0105	0.1714	0.0546	0.2362	0.1946	0.1678	0.0906	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
7	MaxOD4_FR	-0.4500	0.4500	0.1523	0.0800	0.0475	0.0123	-0.0088	0.0454	0.0893	0.0735	0.0838	0.1358	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
8	MaxOD5_FR	-0.4500	0.4500	0.1824	0.0692	0.1109	0.0063	0.1084	0.1173	0.0515	0.0985	0.0347	0.1726	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
9	Average OD3	-0.4500	0.4500	-0.0297	-0.0822	-0.0598	-0.0573	-0.0191	-0.0047	0.1046	-0.0112	0.0692	0.0058	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
10	Max Roundness FrontShaft	0.0000	0.9000	0.3785	0.1320	0.2326	0.2553	0.3810	0.1777	0.3631	0.4117	0.2145	0.2347	0.0000	0.0000	0.0000	0.0000	0.0000
11	Max Cylindrisity FrontShaft	0.0000	0.9000	0.3785	0.1900	0.2326	0.2553	0.3810	0.1949	0.5100	0.4117	0.3300	0.2516	0.0000	0.0000	0.0000	0.0000	0.0000
12	MaxOD1 Pin R	-0.4500	0.4500	0.0717	0.0170	-0.0324	0.2316	0.1854	0.0624	0.2513	0.0765	0.6608	0.0239	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
13	MaxOD2 Pin R	-0.4500	0.4500	0.0463	0.0482	-0.0675	0.0409	0.0979	0.0327	0.1225	0.0394	0.6608	0.1364	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
14	MaxOD1,OD2 PinR	-0.4500	0.4500	0.0717	0.0482	-0.0324	0.2316	0.1854	0.0624	0.2513	0.0765	0.6608	0.1364	-0.1792	-0.1792	-0.1792	-0.1792	-0.1792
15	Max Roundness PinR	0.0000	0.9000	0.1010	0.2369	0.0584	0.2807	0.3858	0.1417	0.3260	0.2690	0.8120	0.2189	0.0000	0.0000	0.0000	0.0000	0.0000
16	Max Cylindricity PinR	0.0000	0.9000	0.1154	0.2680	0.0935	0.2889	0.3858	0.1713	0.4548	0.3060	0.8120	0.2189	0.0000	0.0000	0.0000	0.0000	0.0000
17	MaxOD1 Pin F	-0.4500	0.4500	0.0978	0.0631	-0.0508	0.1153	0.0422	0.0780	0.0796	0.2211	0.0771	0.0926	0.1669	-0.1792	-0.1792	-0.1792	-0.1792
18	MaxOD2 Pin F	-0.4500	0.4500	0.2027	0.0100	-0.0104	0.1199	0.0349	0.1928	0.1435	0.1219	0.0401	0.1741	0.0583	-0.1792	-0.1792	-0.1792	-0.1792
19	MaxOD1,OD2 PinF	-0.4500	0.4500	0.2027	0.0631	-0.0104	0.1199	0.0422	0.1928	0.1435	0.2211	0.0771	0.1741	0.1669	-0.1792	-0.1792	-0.1792	-0.1792
20	Max Roundness PinF	0.0000	0.9000	0.2894	0.2063	0.0000	0.2298	0.1058	0.2250	0.1911	0.2677	0.1187	0.2513	0.1988	0.0000	0.0000	0.0000	0.0000
21	Max Cylindricity PinF	0.0000	0.9000	0.3943	0.2594	0.0404	0.2344	0.1131	0.3399	0.2550	0.2856	0.1187	0.2513	0.2677	0.0000	0.0000	0.0000	0.0000
22	Eccentricity Front	-0.4500	0.4500	-0.0788	-0.0888	-0.0233	-0.0837	-0.0493	-0.0443	-0.0602	-0.0591	-0.2898	-0.1202	-0.0643	0.0000	0.0000	0.0000	0.0000
23	Eccentricity Rear	-0.4500	0.4500	-0.1199	-0.0683	-0.0679	-0.1027	-0.0481	-0.0674	-0.1116	-0.0106	-0.2898	-0.0378	-0.1067	0.0000	0.0000	0.0000	0.0000

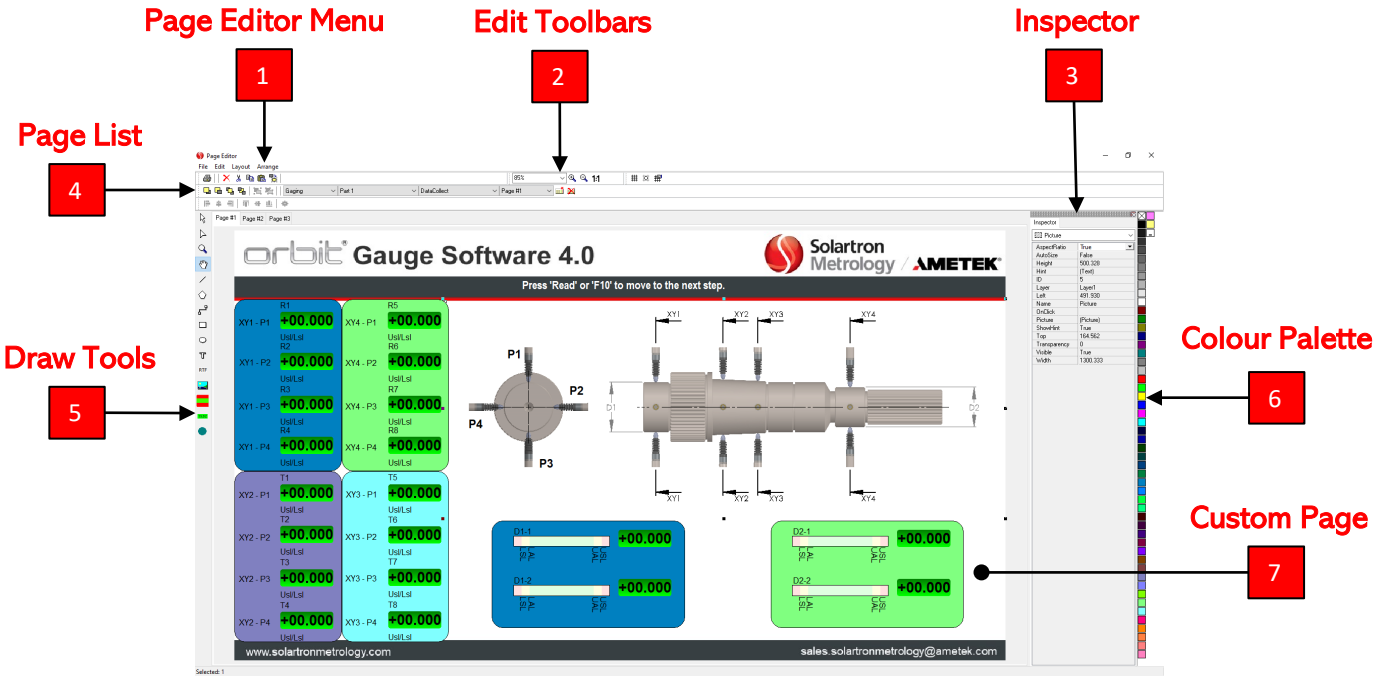
The Part Summary page shows overall part status and the number off measurements exceeding each limit type, measurement results for all inspection steps that were performed. This standard OGS4.0 page usually is the last page in the sequence cycle and has two buttons. One button is Regage which discards current measurement results and regauge part. Second button Accept will store part measurement results. If active, data export will take place at this time also.



	Name	Value	Nominal	Lsl	Usl	Lal	Ual	Lrl	Url
1	MaxOD1_FR	-0.1706	15.0000	-0.4500	0.4500	-0.2250	0.2250	-2.5000	2.5000
2	MaxOD2_FR	0.0388	15.0000	-0.4500	0.4500	-0.2250	0.2250	-2.5000	2.5000
3	Average OD2	0.0388	15.0000	-0.4500	0.9000	-0.1125	0.5625	-2.5000	2.5000
4	Max Roundness RearShaft	0.0000	0.0000	0.0000	0.9000	0.2250	0.6750	-2.5000	2.5000
5	Max Cylindricity RearShaft	0.2094	0.0000	0.0000	0.9000	0.2250	0.6750	-2.5000	2.5000
6	MaxOD3_FR	-0.0130	16.0000	-0.4500	0.4500	-0.2250	0.2250	-2.5000	2.5000
7	MaxOD4_FR	-0.0358	16.0000	-0.4500	0.4500	-0.2250	0.2250	-2.5000	2.5000
8	MaxOD5_FR	0.1733	16.0000	-0.4500	0.4500	-0.2250	0.2250	-2.5000	2.5000
9	Average OD3	-0.0130	16.0000	-0.4500	0.4500	-0.2250	0.2250	-2.5000	2.5000
10	Max Roundness FrontShaft	0.0000	0.0000	0.0000	0.9000	0.2250	0.6750	-2.5000	2.5000
11	Max Cylindrisity FrontShaft	0.2092	0.0000	0.0000	0.9000	0.2250	0.6750	-2.5000	2.5000
12	MaxOD1 Pin R	0.0538	24.6000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000
13	MaxOD2 Pin R	-0.0204	24.6000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000
14	MaxOD1,OD2 PinR	0.0538	24.6000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000
15	Max Roundness PinR	0.2232	0.0000	0.0000	0.9000	0.0900	0.8100	-2.5000	2.5000
16	Max Cylindricity PinR	0.2232	0.0000	0.0000	0.9000	0.0900	0.8100	-2.5000	2.5000
17	MaxOD1 Pin F	0.0538	24.6000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000
18	MaxOD2 Pin F	-0.0204	24.6000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000
19	MaxOD1,OD2 PinF	0.0538	24.6000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000
20	Max Roundness PinF	0.0790	0.0000	0.0000	0.9000	0.0900	0.8100	-2.5000	2.5000
21	Max Cylindricity PinF	0.1051	0.0000	0.0000	0.9000	0.0900	0.8100	-2.5000	2.5000
22	Eccentricity Front	0.0067	0.0000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000
23	Eccentricity Rear	-0.0982	0.0000	-0.4500	0.4500	-0.3600	0.3600	-2.5000	2.5000

Page Editor in OGS4.0

Orbit Gauge Software 4.0 Page Editor contains Page Editor Menu, Edit Toolbars, Page List, Draw Tools, Inspector and Colour Palette.



1 The Page Editor Menu provides options to print or preview the current page, to cut, copy, paste, delete current selected items. Provides options to create a new page or delete the current page. Allows to change selected items display order, group or ungroup selected items etc.

2 The Edit Toolbars is a panel to provide quick access to options for manipulating selected objects. It also provides the means to select which inspection step is currently being viewed.

3 The Object Inspector shows property values for the selected object. Each object has its own set of properties that define its appearance. Clicking an object will display its properties in the inspector so that they can be modified.

4 The Page List defined pages for the current step are shown in the page list. Each page can be selected for viewing by clicking its corresponding tab.

5 The Draw Tools toolbar provides access to supported page editor objects. Clicking a tool on the page objects can be placed on the screen by clicking desired location.

6 The Color Palette can be used to quickly fill boxes, circles, polygons and RTF backgrounds. Additional options for backgrounds can be set using the Brush property of the respective objects.

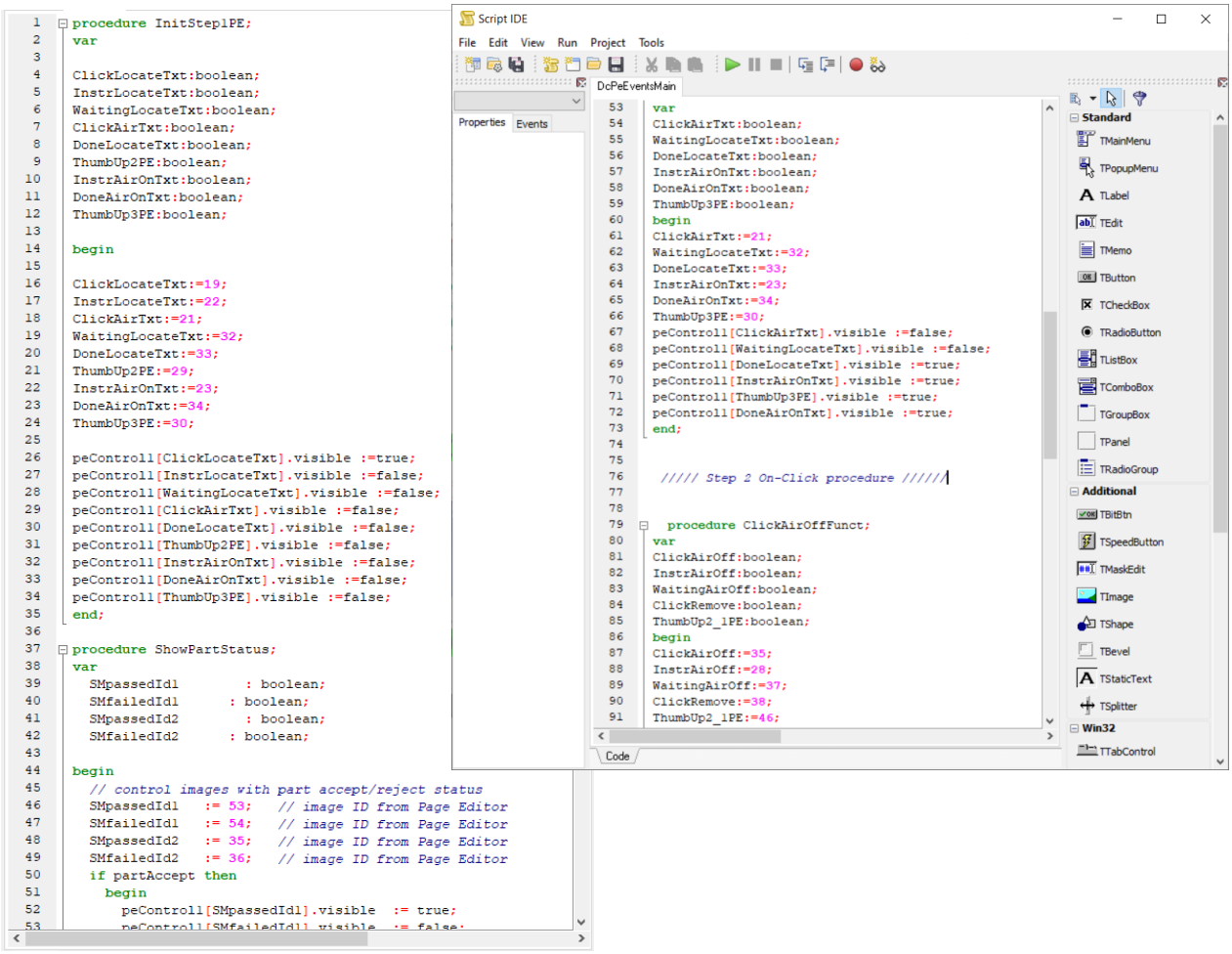
7 The Custom Page is an area to configure a custom interface. These pages will be displayed during the inspection sequence and contain process instructions, inspected part images, floats and scales, faults and fault clear instructions, input and output states, etc.

Page Editor Script and Page Editor Library

Scripting allows the base functionality of Data Collect to be extended to accommodate special setup needs. It is used to automate the inspection sequence and handle other special needs. Scripting can be added to the part inspection sequence and to the computer sequence.

The page script runs during part inspection and will be active while the part is being inspected. It is not active when the part selection screen is displayed or when Data Collect screens are displayed.

The page script is executed as part of the main DataCollect thread. This means that all user interaction, i.e. display of script-based forms or messages should be placed in the script.




```
procedure InitStep1PE;
var

ClickLocateTxt:boolean;
InstrLocateTxt:boolean;
WaitingLocateTxt:boolean;
ClickAirTxt:boolean;
DoneLocateTxt:boolean;
ThumbUp2PE:boolean;
InstrAirOnTxt:boolean;
DoneAirOnTxt:boolean;
ThumbUp3PE:boolean;

begin

ClickLocateTxt:=19;
InstrLocateTxt:=22;
ClickAirTxt:=21;
WaitingLocateTxt:=32;
DoneLocateTxt:=33;
ThumbUp2PE:=29;
InstrAirOnTxt:=23;
DoneAirOnTxt:=34;
ThumbUp3PE:=30;

peControll[ClickLocateTxt].visible :=true;
peControll[InstrLocateTxt].visible :=false;
peControll[WaitingLocateTxt].visible :=false;
peControll[ClickAirTxt].visible :=false;
peControll[DoneLocateTxt].visible :=false;
peControll[ThumbUp2PE].visible :=false;
peControll[InstrAirOnTxt].visible :=false;
peControll[DoneAirOnTxt].visible :=false;
peControll[ThumbUp3PE].visible :=false;
end;

procedure ShowPartStatus;
var
  SMpassedId1        : boolean;
  SMfailedId1      : boolean;
  SMpassedId2        : boolean;
  SMfailedId2      : boolean;

begin
  // control images with part accept/reject status
  SMpassedId1   := 53;   // image ID from Page Editor
  SMfailedId1   := 54;   // image ID from Page Editor
  SMpassedId2   := 35;   // image ID from Page Editor
  SMfailedId2   := 36;   // image ID from Page Editor
  if partAccept then
    begin
      peControll[SMpassedId1].visible  := true;
```

```
var
ClickAirTxt:boolean;
WaitingLocateTxt:boolean;
DoneLocateTxt:boolean;
InstrAirOnTxt:boolean;
DoneAirOnTxt:boolean;
ThumbUp3PE:boolean;
begin
ClickAirTxt:=21;
WaitingLocateTxt:=32;
DoneLocateTxt:=33;
InstrAirOnTxt:=23;
DoneAirOnTxt:=34;
ThumbUp3PE:=30;
peControll[ClickAirTxt].visible :=false;
peControll[WaitingLocateTxt].visible :=false;
peControll[DoneLocateTxt].visible :=true;
peControll[InstrAirOnTxt].visible :=true;
peControll[ThumbUp3PE].visible :=true;
peControll[DoneAirOnTxt].visible :=true;
end;


 ///// Step 2 On-Click procedure //////

 procedure ClickAirOffFunct;
var
ClickAirOff:boolean;
InstrAirOff:boolean;
WaitingAirOff:boolean;
ClickRemove:boolean;
ThumbUp2_1PE:boolean;
begin
ClickAirOff:=35;
InstrAirOff:=28;
WaitingAirOff:=37;
ClickRemove:=38;
ThumbUp2_1PE:=46;
```

The page script is global at the part level. That is, the same script executes the entire time the part is being inspected. The script is executed approximately every 500 ms and should always be designed to function with pass through functionality. That is, it should never enter a loop waiting for something to occur that may never occur. Since it executes in the main thread, endless loops in the script will cause the main thread, including the user interface to appear frozen.

The Page Editor library provides functions allowing scripts to interact with pages created with the Orbit Gauge Software 4.0 Page Editor. For example:

peControl1[25].text := 'Clear Error'; //sets control text to 'Clear Error'
peControl1[18].visible := false; //hides control on screen
glBool1[12].v:= peFlashState; //boolean 12 flashing at the same rate as a page item on the flash layer.

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