

Release Notes

Axel 7

Axel Systems Ltd

The screenshot displays the Axel 7 software interface. The main window shows a 3D model of a part being machined by a tool. The interface includes a menu bar (CAD Model, Alignment, Measure, Calculate, Results, CNC Program, CNC Feature, View, Setup, Desktop, Help), a toolbar with various features (Extrusion, Continue, Arc Point, Circle, Line, Arc, Plane, Round Slot, Rectangular Slot, Sphere, Cylinder, Cone, Set, Cloud, Profile, SuperFeature, Surface, Edge Point, Surface, Pipe), and a Data Property SPC panel on the right. The Data Property SPC panel shows a list of features (Plane_1, Line_1, Line_2, Feature_1, Circle_1, Circle_2, Arc_1, Plane_2, Circle_3) and their properties. The Feature Properties panel shows the parameters for the selected feature (Circle_2), including Diameter (12.940), Position (X: 38.0937, Y: 79.4794, Z: -10.3457), and Direction (0.000100, 0.000000, 0.703000). The Data Points Deviations panel shows a table of measured data points and a bar chart. The bottom status bar displays the current part name (PH107(1)), units (mm), and other system information.

Measured	Nominal	Deviation	Up-Tol	Lim Tol	Info	Out	Out-Tol
12.9503	12.9400	-0.0052	0.0000	-0.0050	out		0.0000
38.0937	38.0937	0.0000	0.1000	-0.1000	n		0.0000
79.3991	79.4794	-0.0843	0.0250	-0.0250	out		0.0000
-10.2758	-10.3457	0.0699	0.0250	-0.0250	out		0.0000

X: 35.978
Y: 85.422
Z: 1.901

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Release Notes

Release notes for each minor or major release include new features, improvements and bug fixes implemented from last documented release.

Please note each release also contains extract from our internal file **changeslog_7.txt** with additional list of changes and fixes.

Release	Date	Notes
7.05.27	25 November 2018	New Intersection Method, bug fixes and other improvements.
7.05.25	8 February 2018	New hardware supported: SP25 scanning support with Deva; RPS arm interface with fork probe support for pipe measurements; Deva031 customized joystick support, Royal Arm supported. New Features: Image Filter; BLM, STARTechnology, Numalliancepipe pipe bender format supported; Image Grid Calibration; Flat Pipe DXF export; Image Video quality setup dialog; Symmetry construction of two slots; STEP format import;
7.05.23	20 April 2017	New 3D ROI for STL Cloud; New temporary safety plane in learn mode; New cloud view measure window with new ribbon menu; New grid error mapping for video measurement.
7.05.17	7 March 2016	New feature: CAD batch import. Other improvements and bug fixes.
7.05.16	26 October 2015	Axel RDS driver for Hexagon Absolute Arm ver. 1.0.9.0 released; Feature List window large font option in RB button menu; Status bar default Working Plane and Projection options modification; One click camera move to a position; Gauge data extended by case of line+line=circle, and plane+plane=cylinder; Many bug fixes.
7.05.15	20 January 2015	New features: DRO window temporary datum

7.05.14	6 December 2014	New Canvas feature to use with camera probe for scanning rectangular area. New Image option for automatic ROI definition during camera calibration. Image graticules selection. Other improvements and bug fixes.
7.05.13	3 September 2014	Image new AutoFeature mode; New result window toolbar button for result monitor; New type of probe correction; Image new profile detection.
7.05.12	24 June 2014	Autofocus data point measurement, new options in general options dialog, pipe wizard and image configuration dialog, new history tables print and pdf export option.
7.05.11	24 April 2014	
7.05.10	12 March 2014	
7.05.09	28 February 2014	Undelete feature, 2D profile, dxf nominal cad profile selection added, new camera probe added
7.05.06	4 October 2013	New Image ROI For Rectangular Slot (Gap Measurement)
7.05.05	11 September 2013	Ruler Functionality Introduced, New Image Options and New Best Fit Alignment Button.
7.05.01	7 May 2013	Major new release of Axel Video module
7.04.17	17 January 2013	
7.04.15	2 January 2013	
7.04.14	27 November 2012	Camera AutoZoom function added
7.04.07	30 August 2012	Introduced Torus Feature
7.04.01	16 May 2012	
7.03.07	9 March 2012	Axel 2D for Optical Projectors released
7.03.04	26 November 2011	
7.02.03	4 April 2011	
7.02.01	16 March 2011	Extract from changeslog_7.txt file included in each release
7.01.25	11 November 2010	First documented release

Version 7.05.27

Release Date: 25 November 2018

New Features

New Intersection Method [ALL]



Intersection feature, cylinder(or cone) + point case added. The result is a circle with the point projected onto the axis as the centre.

Other changes and Bug Fixes

Geometric alignment, plane+nothing+plane case recovered (Worked in Axel5) [ALL]

IGES import tabulated cylinder corrected [ALL/Fix]

Results window correction shows 'none' when the feature correction has been disabled [ALL/Fix]

Correction in learn mode for use with remote control delete last point option [ALL/Fix]

User edit of feature probe correction for Point feature corrected [ALL/Fix]

Angle feature tolerances input fixed [ALL/Fix]

Pipe 180-degree bend detection when switching from xyz to ybc when editing pipe wizard nominal table [Pipe]

CNC program Start From Feature no longer starts as paused [ALL]

File changeslog_7.txt

7.02.18

IM Geometric alignment, plane+nothing+plane case recovered (worked in ver 5)

9.02.18

BF IGES import tabulated cylinder corrected

13.02.18

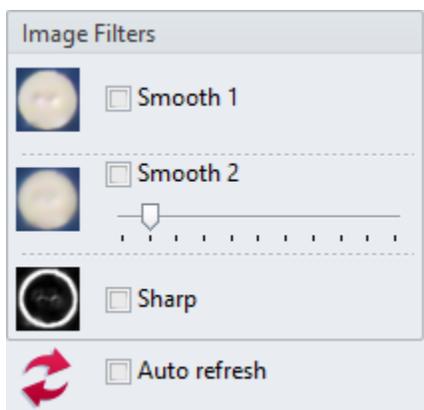
- BF Results window correction shows 'none' when the feature correction has been disabled
24.02.18
- BF Correction in learn mode for use with remote control delete last point option.
27.02.18
- BF User edit of feature probe correction for Point feature corrected.
10.03.18
- BF Angle feature tolerances input fixed
- IM Pipe 180 deg bend detection when switching from xyz to ybc when editing pipe wizard nominal table.
18.03.18
- NF Intersection feature, cylinder(or cone) + point case added. The result is a circle with the point projected onto the axis as the centre.
13.11.18
- IM Cnc program Start From Feature no longer starts as paused.

Version 7.05.25

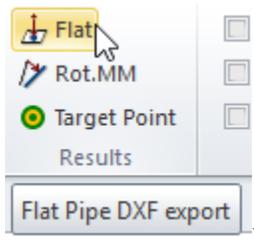
Release Date: 7 February 2018

New Features

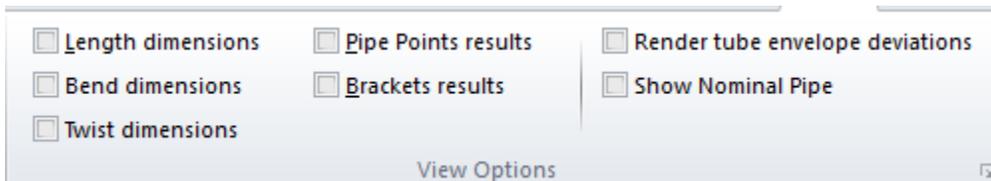
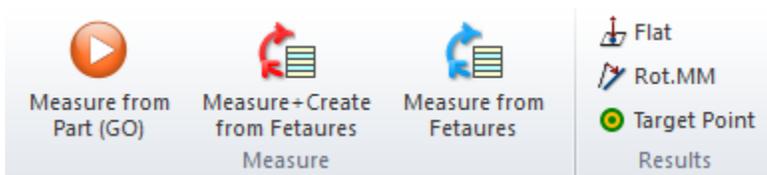
Image Filter [Vision]



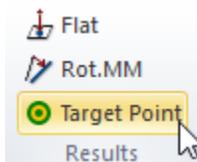
Flat Pipe DXF export option [ALL]



Separate Tube ribbon tab [ALL]



Target Point feature for use with pipes [ALL]



SP25 scanning support with Deva [ALL]

BLM, STARTechnology, Numalliance pipe benders formats supported [ALL]

Symmetry construction of two slots case added



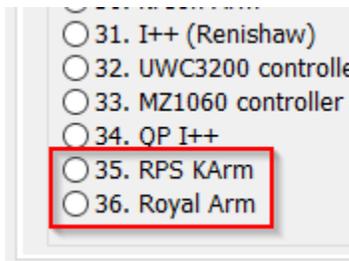
Result object type:

- point
- line
- line+90deg
- plane
- circle
- Arc

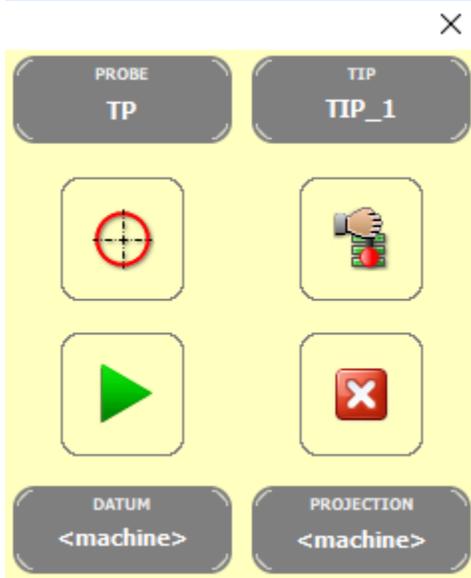
Symmetry

STEP format import supported [ALL]

RPS arm interface with fork probe and Royal arm interface supported for pipe measurements [ALL]



Deva031 customized joystick support [ALL]



DDE export new header and continue options [ALL]

DDE

Program name

Document

First cell : Row Col

Cell name format "A1"
 "R1C1" Row letter :
 Col letter :

Add results header

Continue from last row (1,1)

Image video quality setup dialog [Vision]

Video quality settings ⌵

brightness		default	<input checked="" type="checkbox"/> auto
contrast		default	<input checked="" type="checkbox"/> auto
hue		default	<input type="checkbox"/> auto
saturation		default	<input checked="" type="checkbox"/> auto
sharpness		default	<input checked="" type="checkbox"/> auto
gamma		default	<input type="checkbox"/> auto
white bal.		default	<input type="checkbox"/> auto
backlight comp.		default	<input checked="" type="checkbox"/> auto
gain		default	<input checked="" type="checkbox"/> auto
color enable		default	<input type="checkbox"/> auto
flip vertically	<input type="checkbox"/>		
flip horizontally	<input type="checkbox"/>		

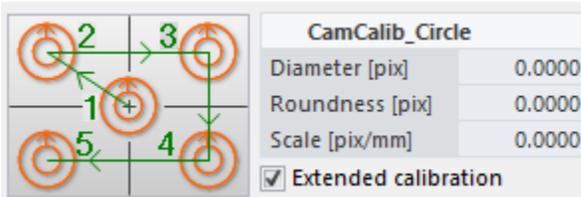
Close

Improvements

Image zooming improved with some cameras (frame grabbers) [Vision]

Added cylinder construction calculated from single line or plane feature [ALL]

Extended 5-position camera size calibration option [Vision]



Improvement of the Profile feature best fit calculation [Vision]

Other changes and Bug Fixes

Report, pipe results in/out table colours corrected [ALL/Fix]

Report, printing styles corrected [ALL/Fix]

Image calculation improvement, ROI doesn't need to be completely inside frame [Vision]

Profile feature probe correction calculation improved [ALL]

File changeslog_7.txt

01.17

NF Image Filter

NF BLM pipe bender format

NF Image Grid calibration

02.17

NF Flat Pipe DXF export option

IM Image zooming improved with some cameras (frame grabbers)

BF Report, pipe results in/out table colours corrected

03.17

NF SP25 scanning support with Deva

NF Separate Tube ribbon tab

NF Target Point feature for use with pipes

IM Added cylinder construction calculated from single line or plane feature

05.17

NF Image video quality setup dialog

06.17

BF Report printing styles corrected

07.17

NF Symmetry construction of two slots case added
IM Extended 5-position camera size calibration option
IM Pipe remeasure Results Window messages updated
NF Excel results export, another format of surface points table added
IM Improvement of the Profile feature best fit calculation
IM Image calculation improvement, ROI doesn't need to be completely inside frame
08.17
NF RPS arm interface with fork probe support for pipe measurements
10.17
NF New pipe benders formats, STARTechnology, Numalliance
11.17
NF STEP import
NF DDE export new header and continue options
12.17
IM Profile feature probe correction calculation improved
01.18
NF Deva031 customized joystick support
02.18
NF Royal Arm support added.

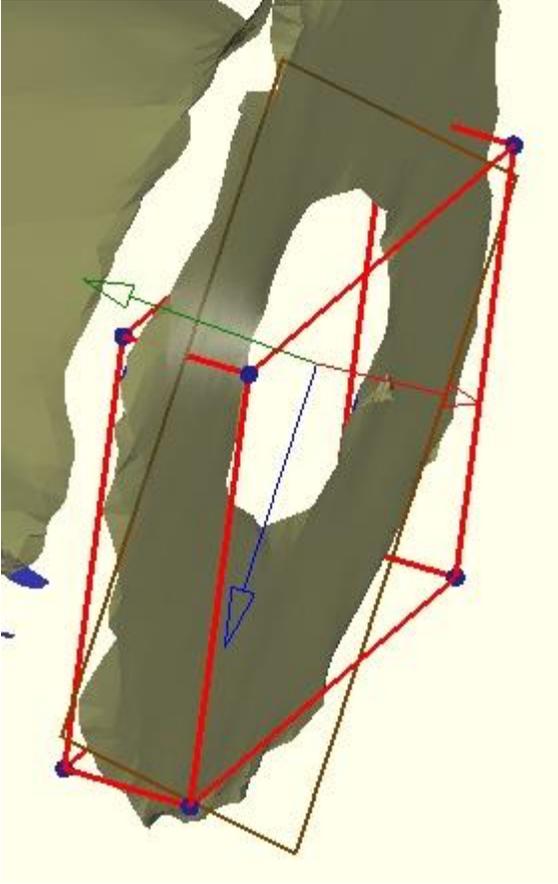
Version 7.05.23

Release Date: 20 April 2017

New Features

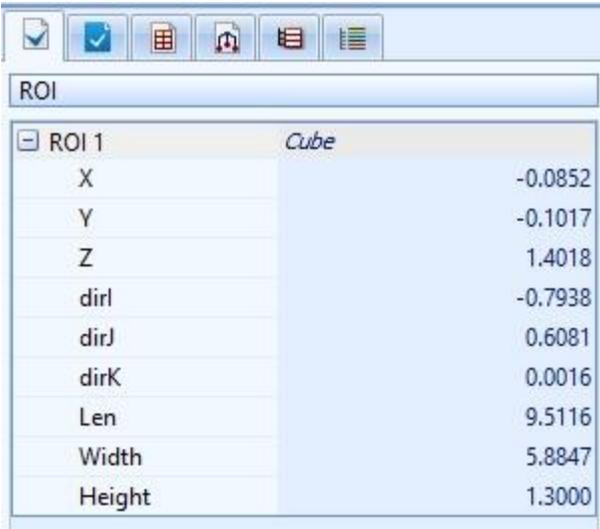
New 3D ROI property [Cloud]

Cloud + Plane intersection



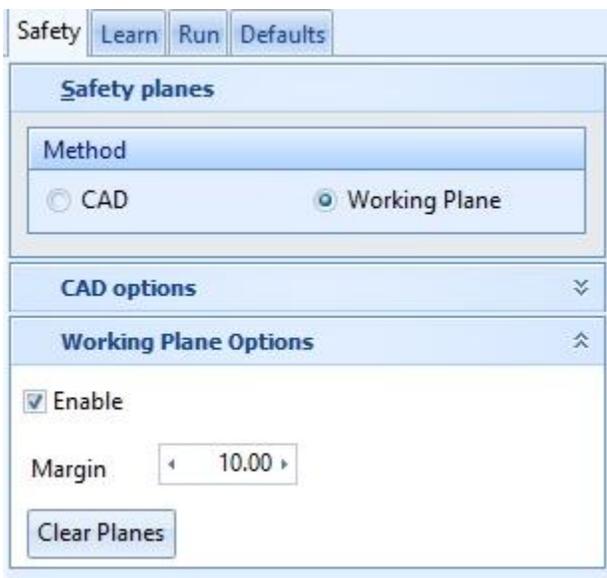
Properties : Plane_1

Name	Plane_1
Layer	default
Coordinate Syst...	<machine>
Probe Correction	+X / d=0.00
Note	
Message	Open
No of data	1890
Size and dir.	
Probe	Current
3D ROI	ROI Plane Open



ROI	
ROI 1	<i>Cube</i>
X	-0.0852
Y	-0.1017
Z	1.4018
dirI	-0.7938
dirJ	0.6081
dirK	0.0016
Len	9.5116
Width	5.8847
Height	1.3000

Temporary working planes in learn mode created for safety moves and probe changes [ALL]



Safety | Learn | Run | Defaults

Safety planes

Method

CAD Working Plane

CAD options ▾

Working Plane Options ▲

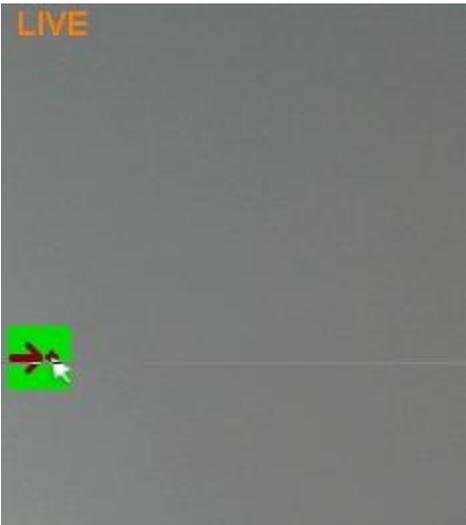
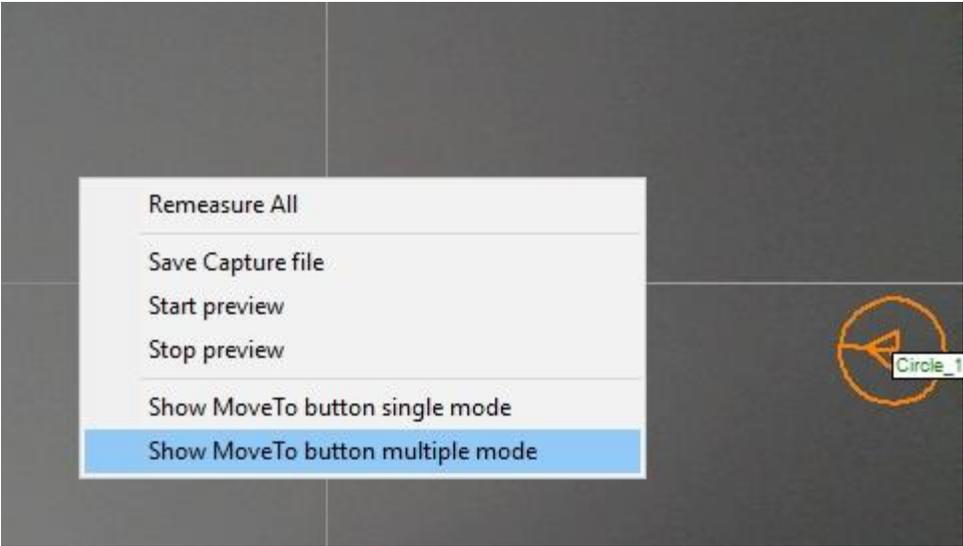
Enable

Margin

Clear Planes

Image window, RB menu options for moving the machine to the position clicked with mouse [Vision]

Two options, single move or multiple moves.



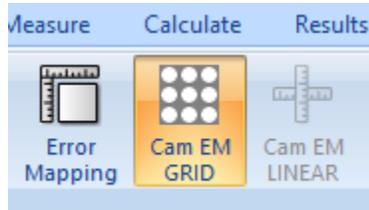
Special Cloud view in the Measure Window for cloud specific operations, new ribbon toolbar for cloud functions [Cloud]



Image graticule, added an option for displaying dxf cad shape [Vision]



Error Mapping with grid of circles [Vision]



Grid Calibration Program

	Count	Step
Columns (X)	5	10.000
Rows (Y)	5	10.000
Repeat	1	

Grid nominal data

Run

Runs count 0
Current Grid Position()

Disable EM during Run

Manual

Show last measured area

Current DRO Correction :
X= 0.000000 Y= 0.000000

Show current calibration error

X Y magn. 100

Error Mapping X

Data file:
Not initialized

Errors:

Pitch			
Yaw			
Roll			
Strnss hor.			
Strnss vert.			
Linear			
Squareness			

Grid Error Mapping

Enabled

Corrected area: X (0.00...0.00) Y (0.00...0.00)
Status: ok

Improvements

New probe 3d model added, PH20MT [ALL]



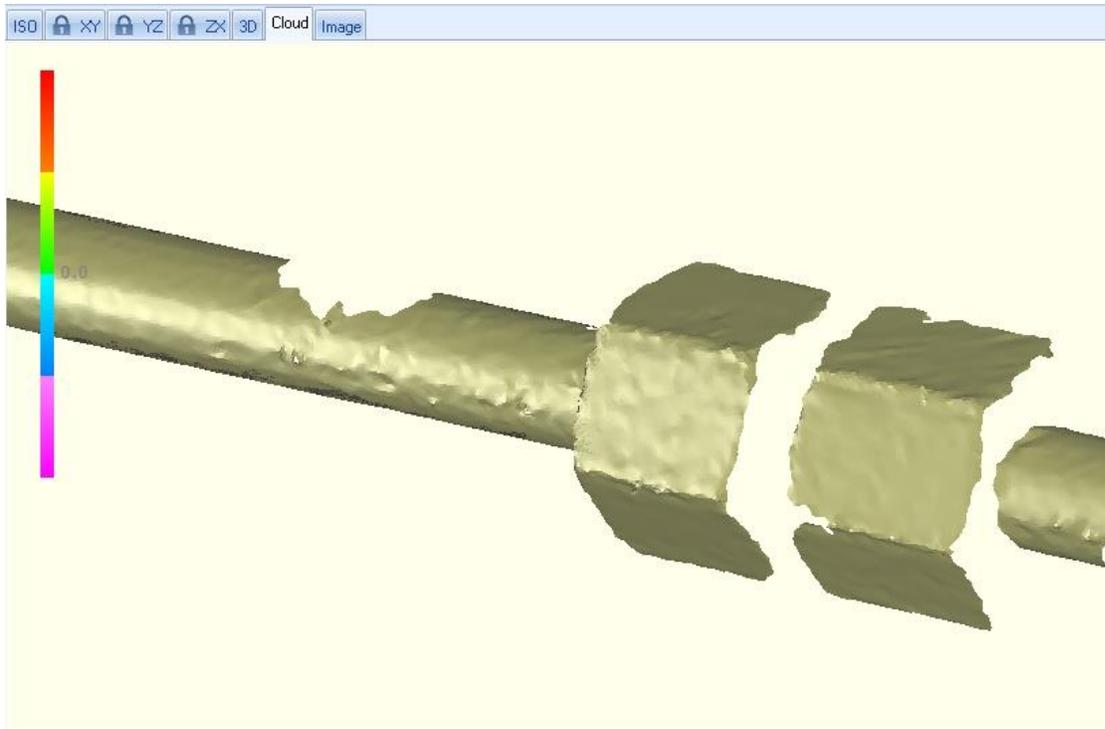
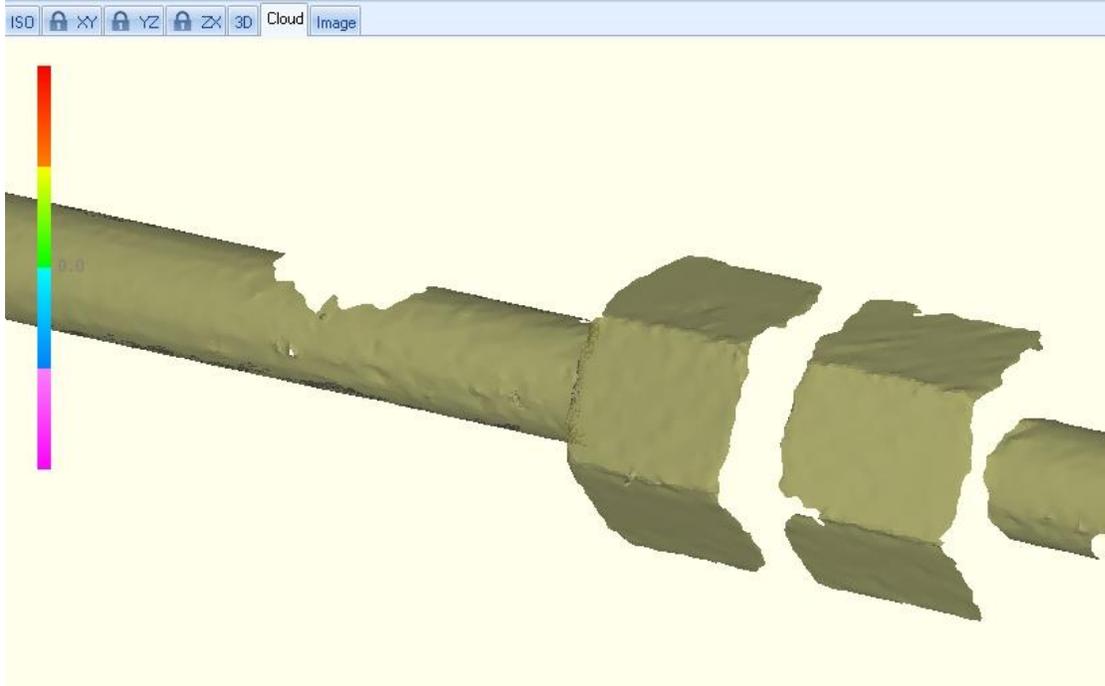
Display safety planes also without cad loaded [ALL]

Project SavaAs dialog, improvement in performance [ALL]

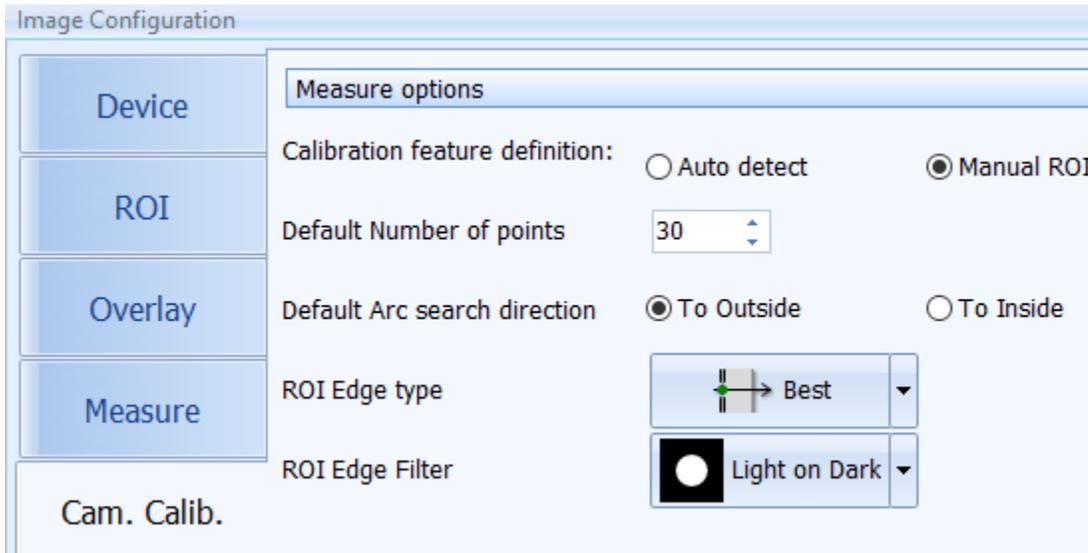
Improvements in 3d view scene lightning [Cloud]

Added '/' button switch for the specular light (shining)

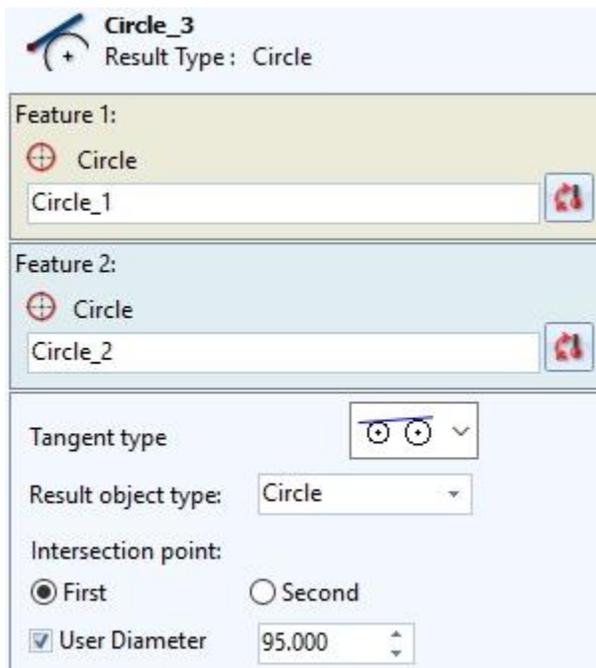
'-' and '+' buttons to adjust brightness

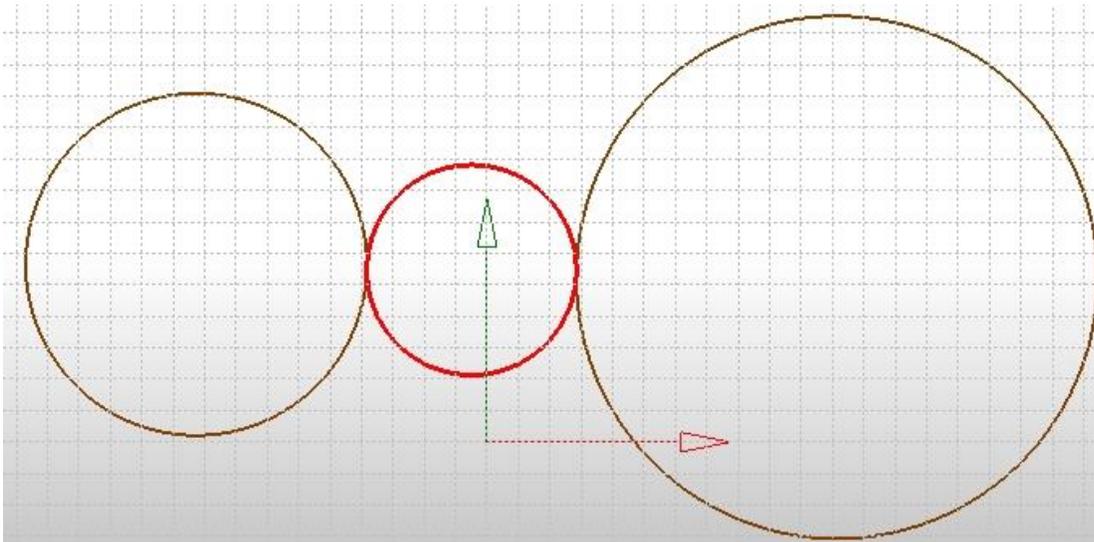
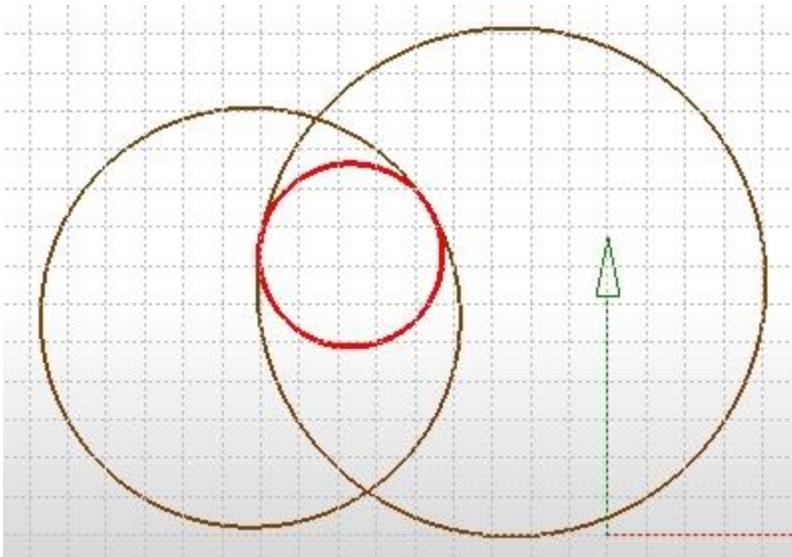


Camera calibration, separate edge properties for the calibration, new tab in the Image Config dialog [Vision]



Tangent feature extended data options for a circle tangent to two data circles [ALL]





Symmetry feature, new option for symmetry line orientation [ALL]

Function



Line_3

Result Type: Line

Feature 1:



Line

Line_1



Feature 2:



Line

Line_2

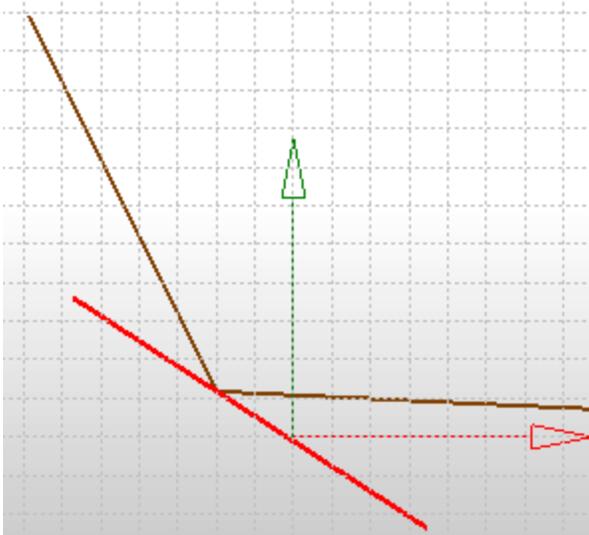


Result object type:

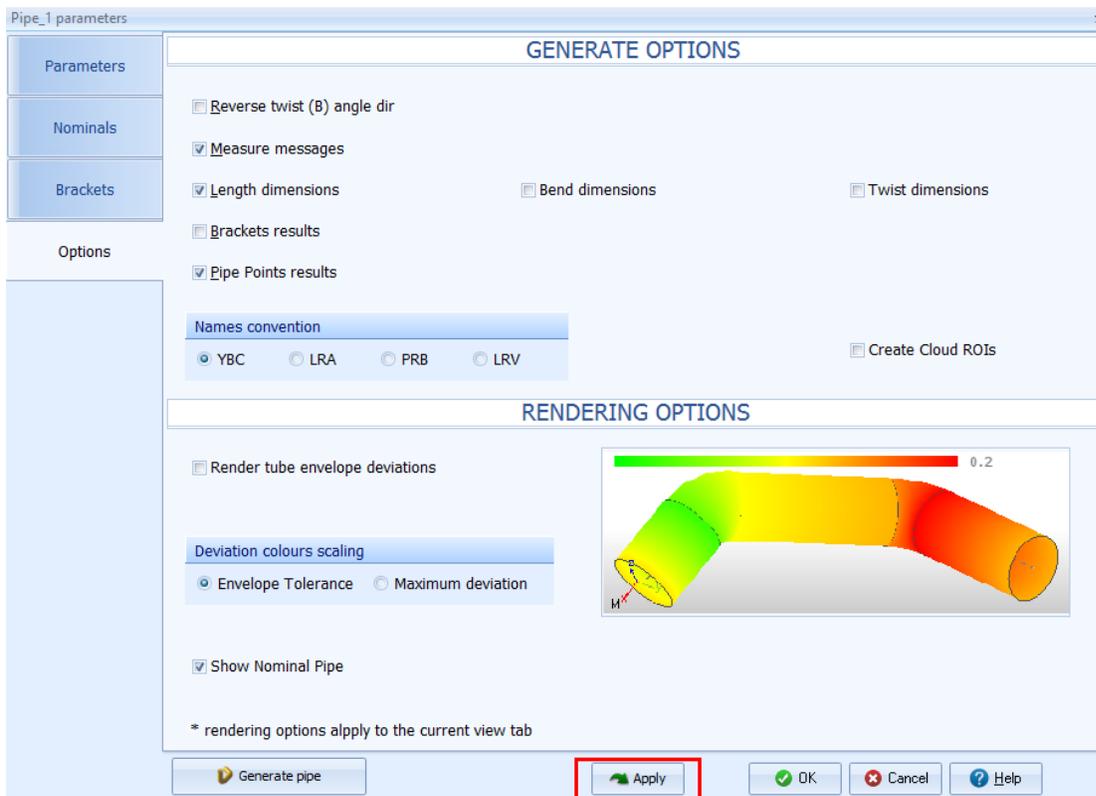
- point
- line
- line+90deg
- plane
- circle
- Arc

Symmetry 0.500





Apply button added in Pipe Wizard dialog, Options tab [ALL]



New possible constructions as measured feature [ALL]

Plane = Line + Point, a plane perpendicular to the line

Line = Plane + Point, a line perpendicular to the plane

DMIS programs import improvements

Other changes and Bug Fixes

Probe autocalibration, managing the calibration sphere position corrected [ALL/Fix]

Image ROI property table editing corrected [Vision/Fix]

Generating cnc path around Safety planes corrected [ALL/Fix]

Discard old report pages after loading different part project [ALL/Fix]

Corrections in importing i++ server tools [ALL/Fix]

Some corrections of Pattern feature calculations [ALL/Fix]

Cone, Torus calculation fixed. In some cases, it couldn't calculate without given nominal values, even if the initial data points distribution was correct (3+3, or 3+3+3) [ALL/Fix]

File changeslog_7.txt

22.03.16

NF 420. 3D ROI property
Cloud + Plane intersection
Cloud points selection tools

18.03.16

BF 421. Probe autocalibration, managing the calibration sphere position corrected

13.04.16

IM 422. New probe 3d model added, PH20MT

27.03.16

BF 423. Image ROI property table editing corrected

6.04.16

IM 424. Display safety planes also without cad loaded.

3.04.16

BF 425. Generating cnc path around Safety planes corrected

4.04.16

BF 426. Discard old report pages after loading different part project.

IM 427. Project SavaAs dialog, improvement in performance

10.04.16

BF 428. Corrections in importing i++ server tools.

25.04.16

NF 429. Temporary working planes in learn mode created for safety moves and probe changes

11.06.16

NF 430. Image window, RB menu options for moving the machine to the position clicked with mouse. Two options, single move or multiple moves.

25.07.16

NF 431. Special Cloud view in the Measure Window for cloud specific operations, new ribbon toolbar for cloud functions.

12.07.16

IM 432. Improvements in 3d view scene lightning, added '/' button switch for the specular light (shining)

NF 433. 3D Roi objects added to plane, cylinder, torus features for automatic remeasuring on cloud data points.

13.08.16 434. Image graticule, an option for displaying dxf cad shape

1.08.16

BF 435. Some corrections of Pattern feature calculations

18.09.16

IM 436. Camera calibration, separate edge properties for the calibration, new tab in the Image Config dialog.

11.11.16

IM 437. Tangent feature extended data options for a circle tangent to two data circles.

12.11.16

IM 438. Symmetry feature, new option for symmetry line orientation

13.11.16

NF 439. Error Mapping with grid of circles

17.11.16

IM 440. Apply button added in Pipe Wizard dialog, Options tab

23.11.16

IM 441. New possible constructions as measured feature (red icon)

Plane = Line + Point, a plane perpendicular to the line

Line = Plane + Point, a line perpendicular to the plane

28.11.16

IM 442. DMIS programs import improvements

23.12.16, 7.5.23.51

BF 443. Cone, Torus calculation fixed. In some cases, it couldn't calculate without given nominal values, even if the initial data points distribution was correct (3+3, or 3+3+3).

Version 7.05.17

Release Date: 7 March 2016

New Features

CAD batch import [ALL]

CAD batch import can be done by selecting multiple files in the open dialog.

Improvements

F3 added as duplicate for the F2 key on-line/off-line switch [ALL]



The projection of features measured before any alignment or plane feature [ALL]

Features measured before any alignment or plane feature get its projection property set to OFF, so it is not projected to the machine plane.

Other changes and Bug Fixes

F2 key is sometimes blocked by dialog editors, where its standard function is to enter editing mode [ALL/Fix]

File changeslog_7.txt

416. F3 added as duplicate for the F2 key on-line/off-line switch.

417. F2 key is sometimes blocked by dialog editors, where its standard function is to enter editing mode.

13.01.16

418. Features measured before any alignment or plane feature get its projection property set to OFF, so its is not projected to the machine plane.

13.01.16

419. CAD batch import can be done by selecting multiple file selection in the open dialog.
6.03.16

Version 7.05.16

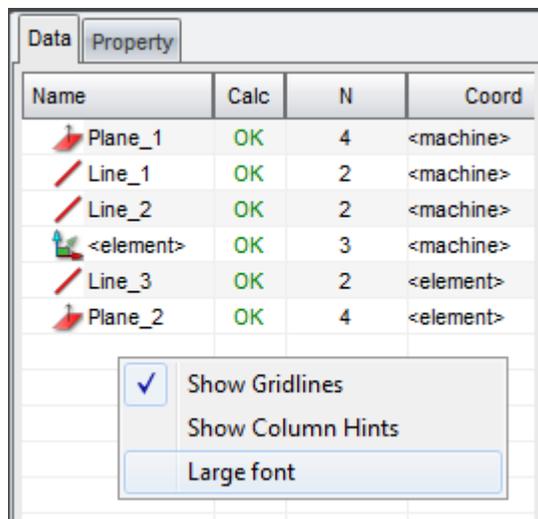
Release Date: 26 October 2015

New Features

Axel RDS driver for Hexagon Absolute Arm ver. 1.0.9.0 released [ALL]

Axel driver for latest Hexagon Absolute Arm.

Feature List window large font option in RB button menu [ALL]



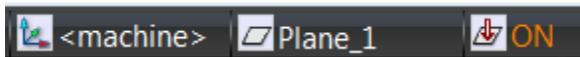
Data		Property			
Name	Calc	N	Coord	i	
 Plane_1	OK	4	<machine: 1	1	
 Line_1	OK	2	<machine: 2	2	
 Line_2	OK	2	<machine: 3	3	
 <element>	OK	3	<machine: 4	4	
 Line_3	OK	2	<element: 5	5	
 Plane_2	OK	4	<element: 6	6	

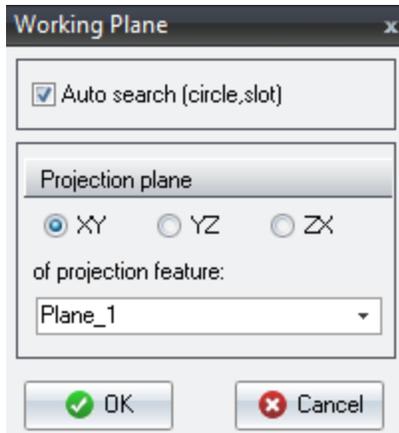
One click camera move to a position, button in the probe window [Vision]



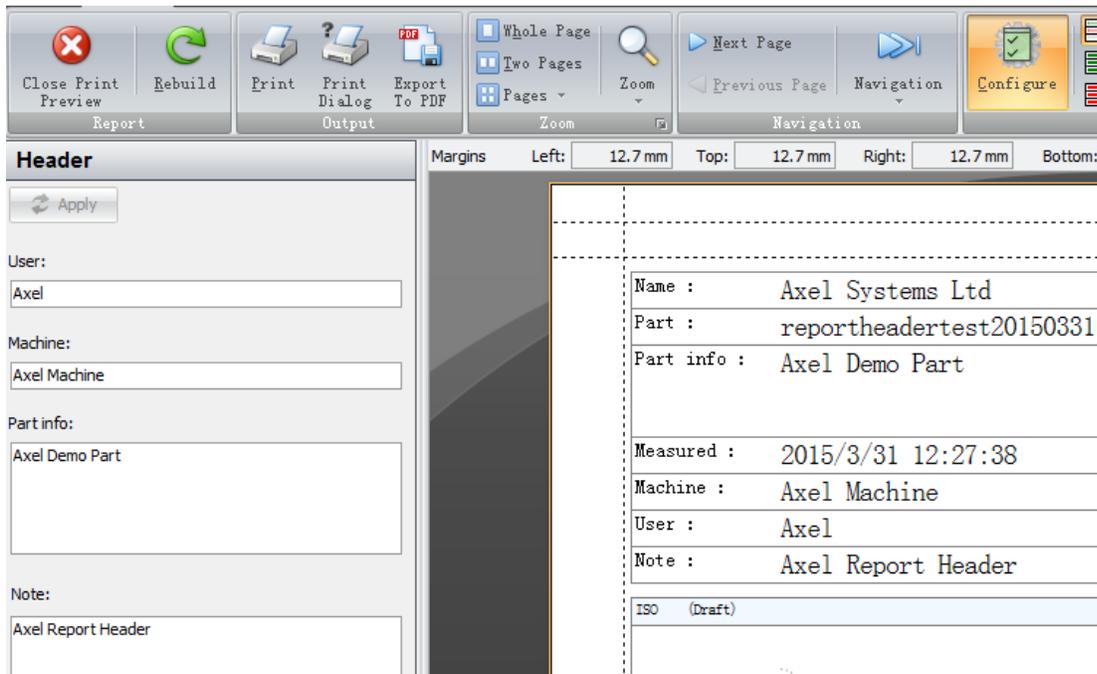
Improvements

Status bar default Working Plane and Projection options modification [ALL]

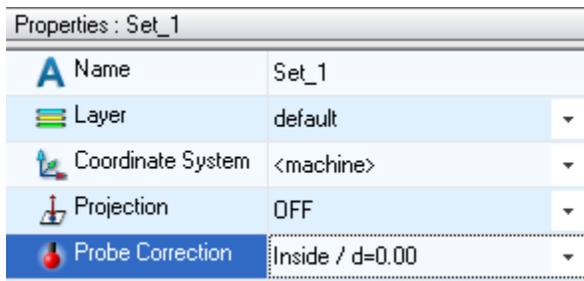




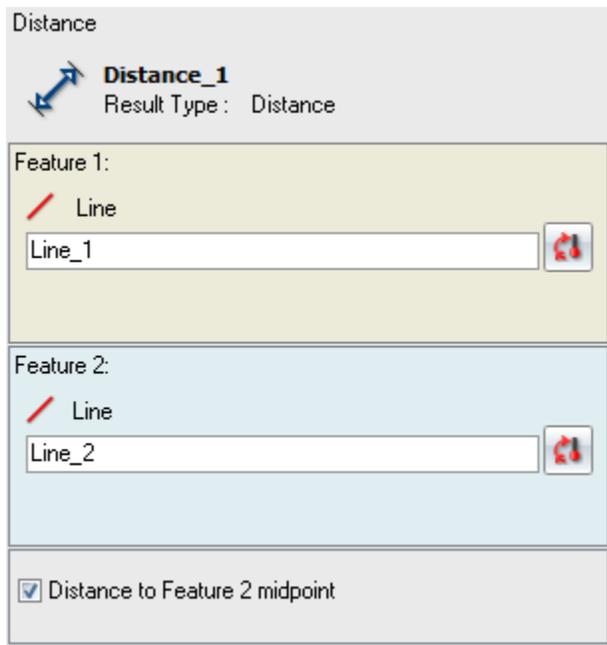
Report Page Setup header is now saved and restored when modified by user [ALL]



Set feature, projection property and probe diameter correction is working [ALL]



Distance between lines (or cylinders), change of the 'Distance to Feature 2 midpoint' option is now saved and used as default for a new Distance [ALL]



Features connection, calculation of line and arc intersection changed

Image Add Frames mode with space bar, now the space bar is working also when in XY view

Image manual measurement or calibration, program is now checking if the machine is stationary before accepting space bar measurement

Profile feature dimensions added.

Cnc Line feature path edit mode, moving touch points on plane modified so they move strictly along the line only.

Gauge data extended by case of line+line=circle, and plane+plane=cylinder.



Name	Calc	N	Coord
Line_1	OK	2	<machine>
Line_2	OK	2	<machine>
Circle_1	OK	2	<machine>

Gauge

Circle_1
Result Type: Circle

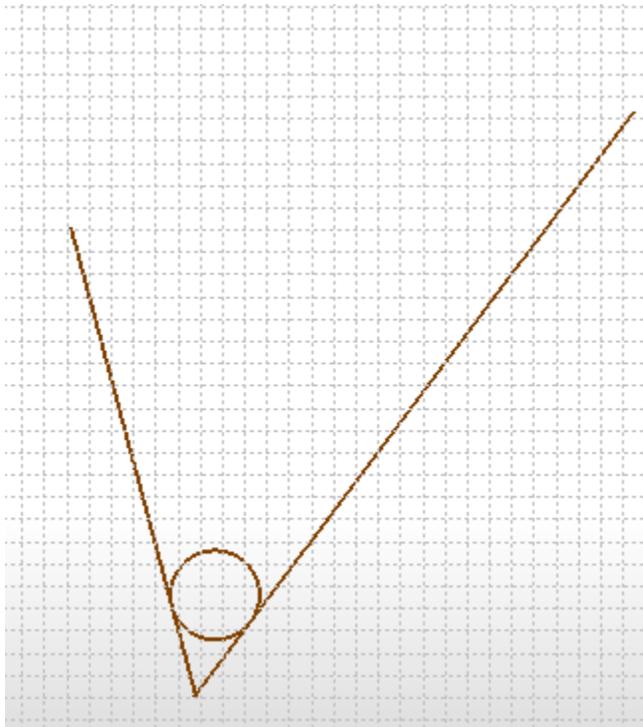
Feature 1:
 Line
Line_1

Feature 2:
 Line
Line_2

Gauge size feature:

Size source:
 Feature User input

Size value:



Intersection feature case (set + line = point) added [ALL]

Feature CNC Create function, if the feature has a plane projection enabled, depth parameter of the program is calculated on the data points average level. Applies to circle, arc, line, slot features. [ALL]

Cnc Create plane or line path with CAD, program will contain additional moves to avoid part collision between touch moves.

Other changes and Bug Fixes

IGES import correction for some of tabulated cylinder entity cases [ALL/Fix]

Application error when closing/loading new part, error related to some graphics drivers on Windows 8/8.1 [ALL/Fix]

Result boxes arrange option, automatic creation of new view tab fixed [ALL/Fix]

Changing feature name, program is asking whether to change reference to the new name if it was previously used as a construction data [ALL/Fix]

Result boxes are updated after changing Coordinate System property of the feature [ALL/Fix]

Image Profile Roi measurement, there was no measurement when the Element alignment origin was far from the machine datum (in different camera frames) [Vision/Fix]

Camera probe calibration corrected with Auto Detect mode [Vision/Fix]

Possible wrong calculation of cone-line intersection in some cases of wide-angled cone (Ang > 90 deg) [ALL/Fix]

CNC Learn mode corrected with use of Continue feature option, for both camera and contact probe types

Starting off-line Learn mode showed incorrectly the pink collision line, if cad model existed at 0,0,0 coordinates

Error in Recalculate Offsets right button menu options for PH pprobes, in the auto calibration grid dialog.

Calculate feature expression, when using distance feature result like Distance_1('dx'), now it is modified to absolute value, if general option 'Distance absolute results' is checked.

Image autofocus function was unusable in certain user operations sequence.

Possible wrong type of probe correction (inside/outside) calculated for small cylinder, sphere, cone (dia < 5 mm). [ALL/Fix]

Fixed Cnc Create outside circle path with DP based distribution option. [ALL/Fix]

File changeslog_7.txt

16.01.15

NF 386. Axel RDS driver for Hexagon Absolute Arm ver. 1.0.9.0 released.

9.02.15

NF 387. Feature List window large font option in RB button menu.

26.02.15

IM 388. Status bar default Working Plane and Projection options modification.

BF 389. IGES import correction for some of tabulated cylinder entity cases.

3.03.15

IM 390. Report Page Setup header is now saved and restored when modified by user.

IM 391. Set feature, projection property and probe diameter correction is working.

6.03.15

BF 392. Application error when closing/loading new part, error related to some graphics drivers on Windows 8/8.1

IM 393. Distance between lines (or cylinders), change of the 'Distance to Feature 2 midpoint' option is now saved and used as default for a new Distance.

BF 394. Result boxes arrange option, automatic creation of new view tab fixed.

BF 395. Changing feature name, program is asking whether to change reference to the new name if it was previously used as a construction data.

BF 396. Result boxes are updated after changing Coordinate Sstem property of the feature.

IM 397. Features connection, calculation of line and arc intersection changed.

BF 398. Image Profile Roi measurement, there was no measurement when the Element alignemnt origin was far from the machine datum (in different camera frames).

18.03.15

BF 399. Camera probe calibration corrected with Auto Detect mode

BF 400. Possible wrong calculation of cone-line intersection in some cases of wide-angled cone (ang > 90 deg).

IM 401. Image Add Frames mode with spacebar, now the space bar is working also when in XY view.

IM 402. Image manual measurement or calibration, program is now checking if the machine is stationary before accepting space bar measurement.

NF 403. One click camera moves to a position, button in the probe window.

BF 404. Cnc Learn mode corrected with use of Continue feature option, for both camera and contact probe types.

BF 405. Starting off-line Learn mode showed incorrectly the pink collision line, if cad model existed at 0,0,0 coordinates.

v.7.5.16.12

IM 406. Profile feature dimensions added.

5.06.15

BF 407. Error in Recalculate Offsets right button menu options for PH probes, in the auto calibration grid dialog.

IM 408. Cnc Line feature path edit mode, moving touch points on plane modified so they move strictly along the line only.

30.06.15

BF 409. Calculate feature expression, when using distance feature result like Distance_1('dx'), now it is modified to absolute value, if general option 'Distance absolute results'is checked.

30.07.15

BF 410. Image autofocus function was unusable in certain user operations sequence.

IM 411. Gauge data extended by case of line+line=circle, and plane+plane=cylinder.

28.08.15

BF 412. Possible wrong type of probe correction (inside/outside) calculated for small cylinder, sphere, cone (dia < 5 mm).

IM 413. Intersection feature case (set + line = point) added.

10.10.15

IM 413. Feature CNC Create function, if the feature has a plane projection enabled, depth parameter of the program is calculated on the data points average level. Applies to circle, arc, line, slot features.

26.10.15

IM 414. Cnc Create plane or line path with CAD, program will contain additional moves to avoid part collision between touch moves.

BF 415. Fixed Cnc Cerate outside circle path with DP based distribution option.

Version 7.05.15

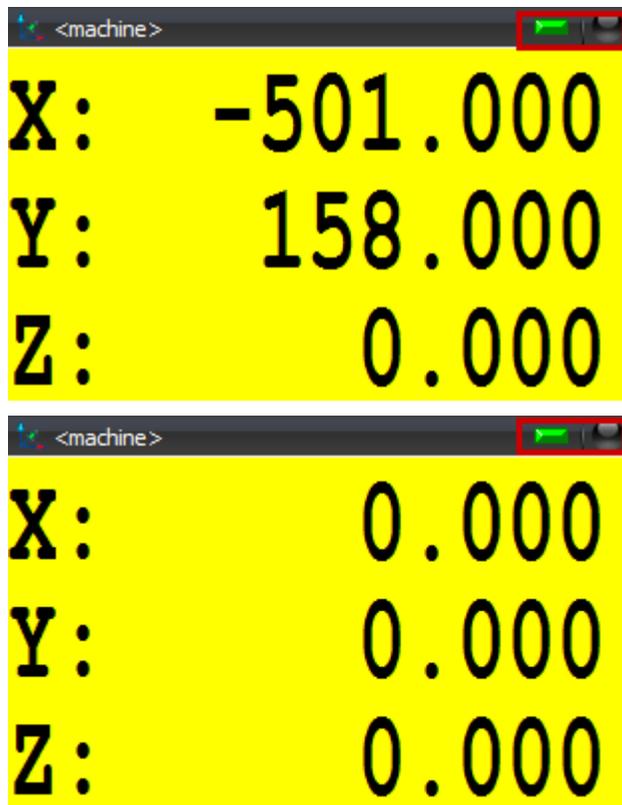
Release Date: 20 January 2015

New Features

DRO window temporary datum [Vision]

Two new buttons placed in the DRO window title bar, one for enable/disable datum mode, second for setting temporary origin in the current position.





Improvements

Image quality for video grabber corrected [Vision]

Analog camera with capture grabber, image quality corrected.

File changeslog_7.txt

28.12.14

NF 348. DRO window temporary datum. Two new buttons placed in the DRO window title bar
One for enable/disable datum mode, second for setting temporary origin in the current position.

16.01.15

IM 385. Analog camera with capture grabber, image quality corrected.

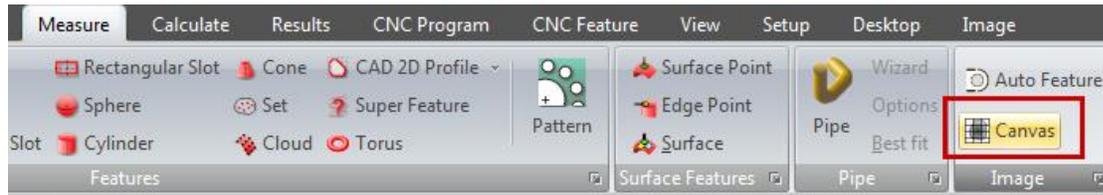
Version 7.05.14

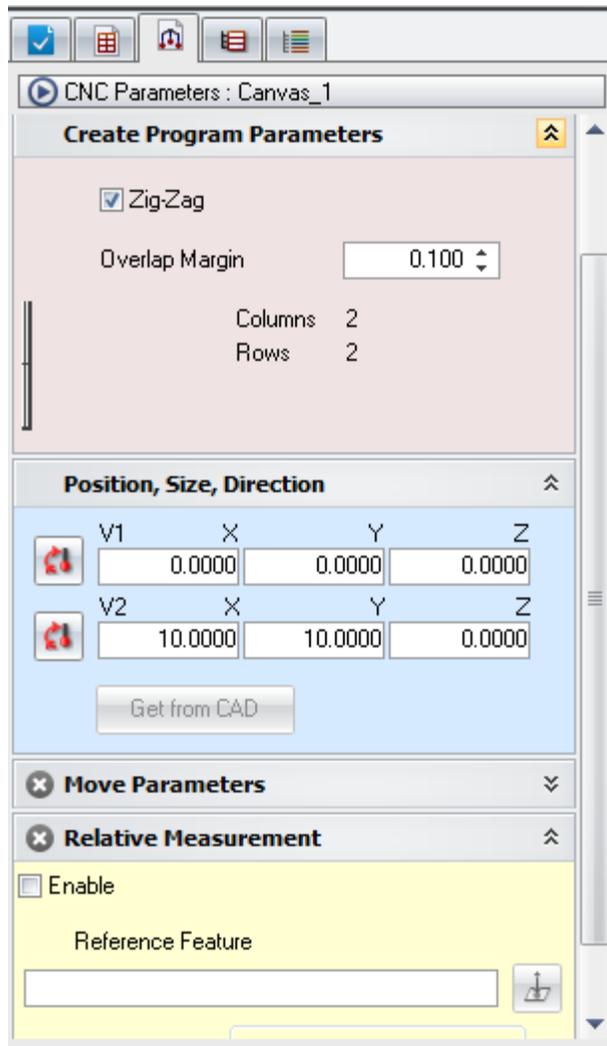
Release Date: 6 December 2014

New Features

New Canvas feature [Vision]

New Canvas feature to use with camera probe for scanning rectangular area..





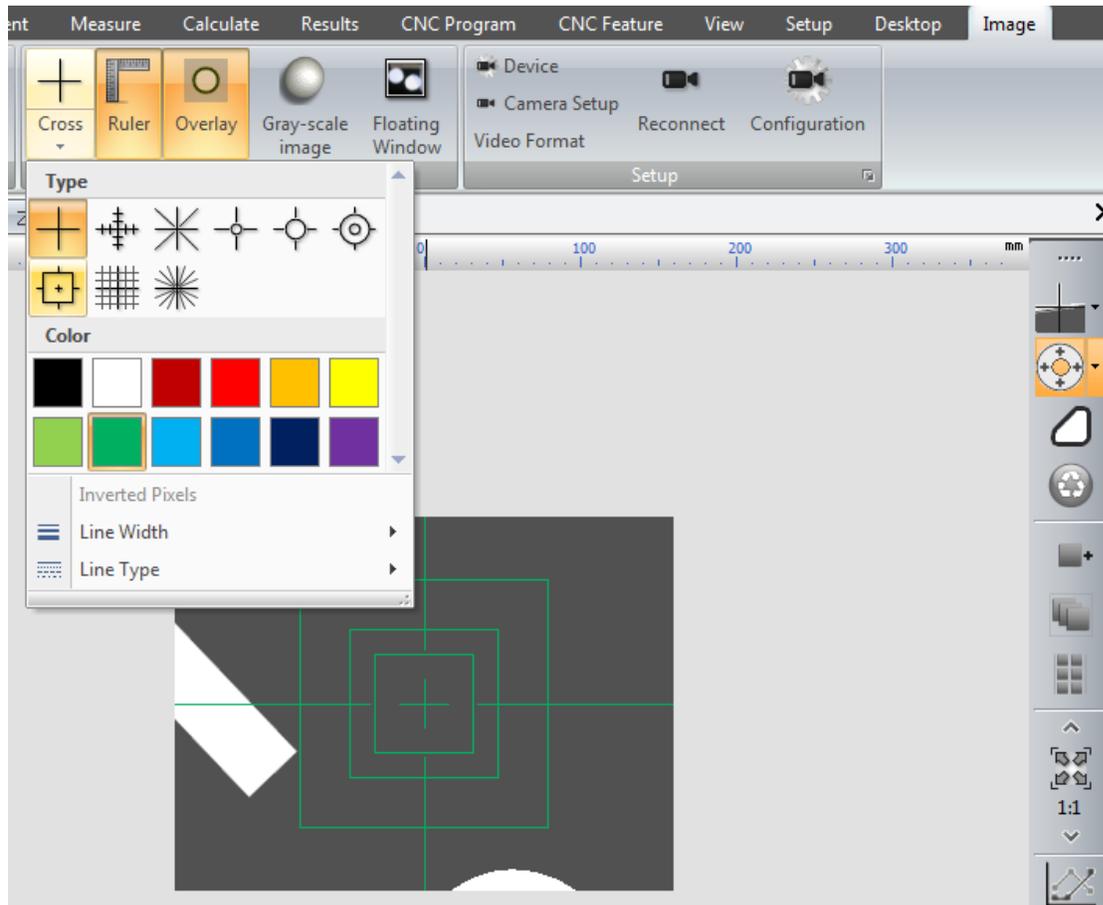
New Image option during camera calibration [Vision]

New Image option for automatic ROI definition during camera calibration.

Manually enter probe offset allowed in Probes Managers dialog [ALL/Vision]

Probes Manager dialog, double click on probe offset column allows to enter probe offset manually, required for systems with camera as the main probe.

Image graticules selection [Vision]



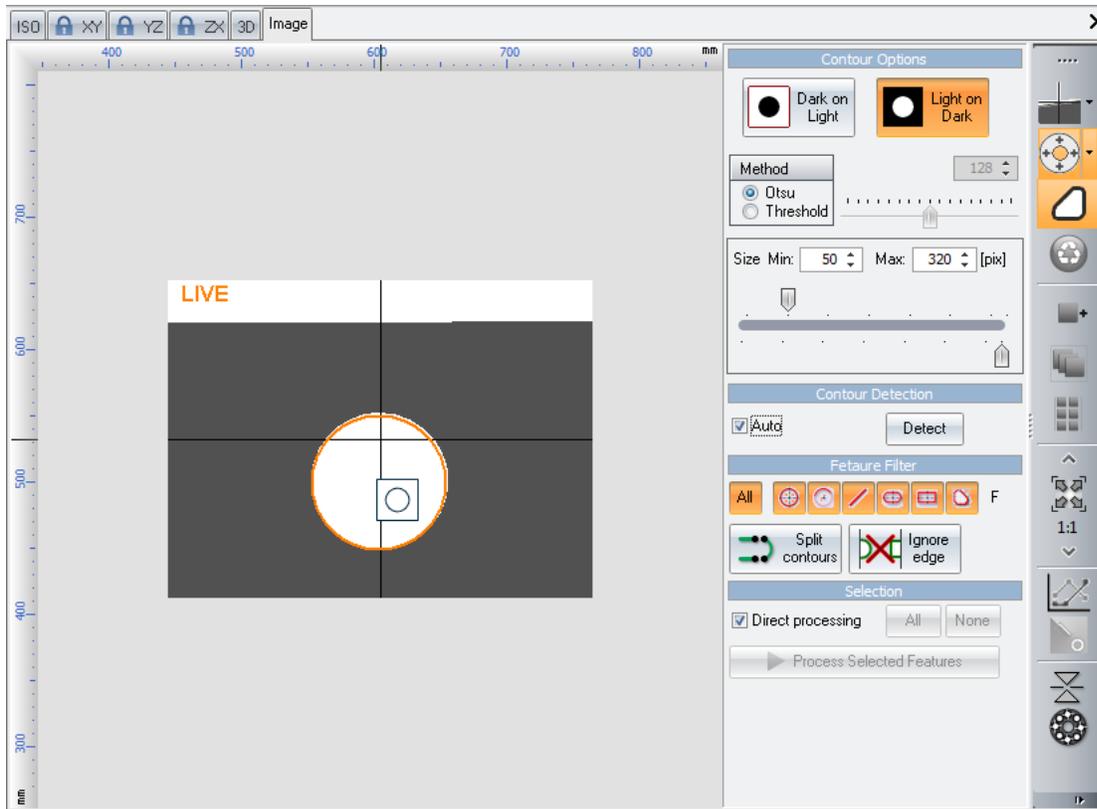
Improvements

New Line feature has its Projection property set to 2D [ALL]

New Line feature has its Projection property set to 2D, regardless of status line default setup.

Circles detection improved in Image auto feature. [Vision]

Image automatic feature recognition, circles detection improved.



Other changes and Bug Fixes

Dialog fixed in Alignment definition [ALL/Fix]

Alignment definition, there was a question box "Do you want to automatically add following features?"

Appearing incorrectly.

There only two cases when it shows up:

plane + line + point

plane + line + line

Opening Calibration Sphere setup dialog fixed [ALL/Fix]

Opening Calibration Sphere setup dialog error, if system decimal symbol set other than?(dot).

Pattern feature data points position corrected [ALL/Fix]

Pattern feature, positions of data points of created circles corrected (by probe ball radius).

File changeslog_7.txt

13.09.14

BF 329. Alignment definition, there was a question box "Do you want to automatically add following features?"

Appearing incorrectly.

There only two cases when it shows up:

plane + line + point

plane + line + line

11.10.14

BF 330. Opening Calibration Sphere setup dialog error, if system decimal symbol set other than?(dot).

16.10.14

IM 331. New Line feature has its Projection property set to 2D, regardless of status line default setup.

BF 332. Pattern feature, positions of data points of created circles corrected (by probe ball radius).

30.10.14

NF 333. New Canvas feature to use with camera probe for scanning rectangular area.

14.11.14

IM 334. Image automatic feature recognition, circles detection improved

NF 335. New Image option for automatic ROI definition during camera calibration

NF 346. Probes Manager dialog, double click on probe offset column allows to enter probe offset manually, required for systems with camera as the main probe.

4.12.14

NF 347. Image graticules selection.

Version 7.05.13

Release Date: 3 September 2014

New Features

New result window toolbar button [ALL]

Result window toolbar button for Results Monitor window for display GO mode feature results.

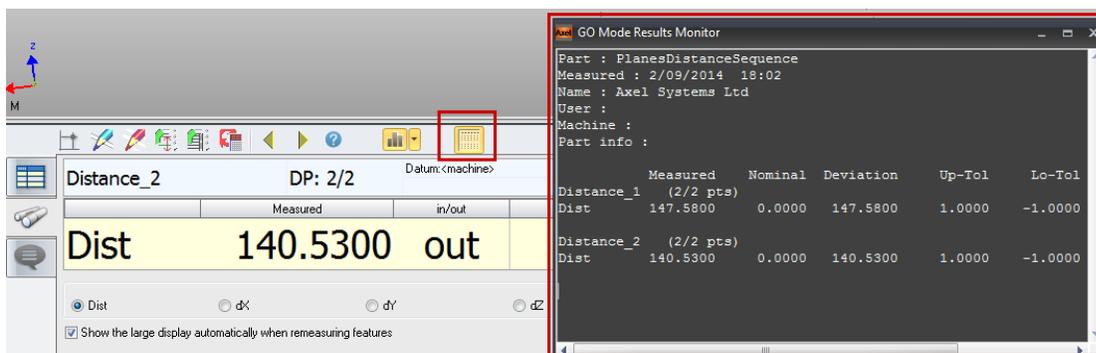
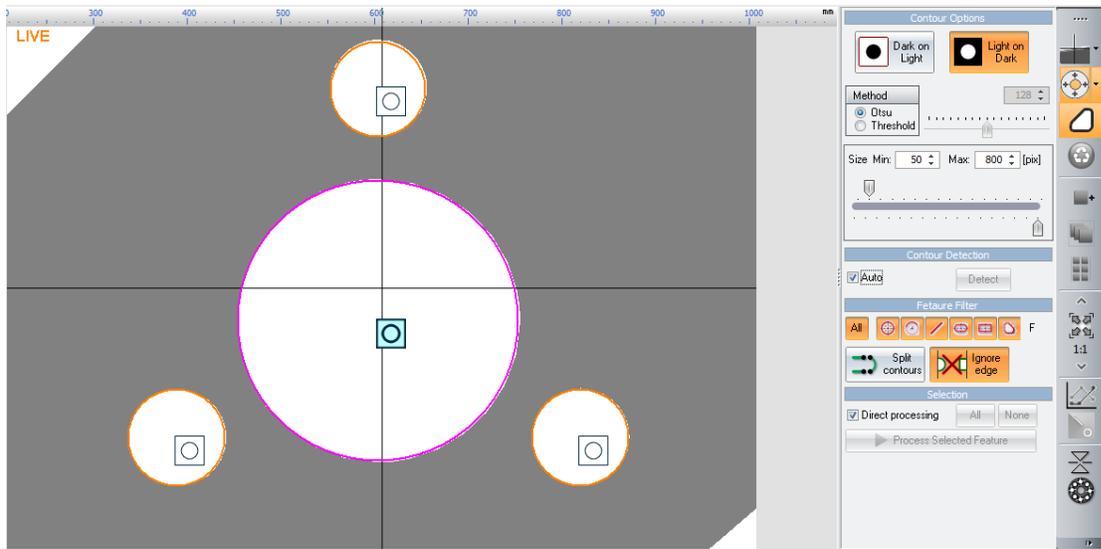


Image new Auto Feature mode [Vision]

Image new Auto Feature mode, with its operation panel inside the image window.

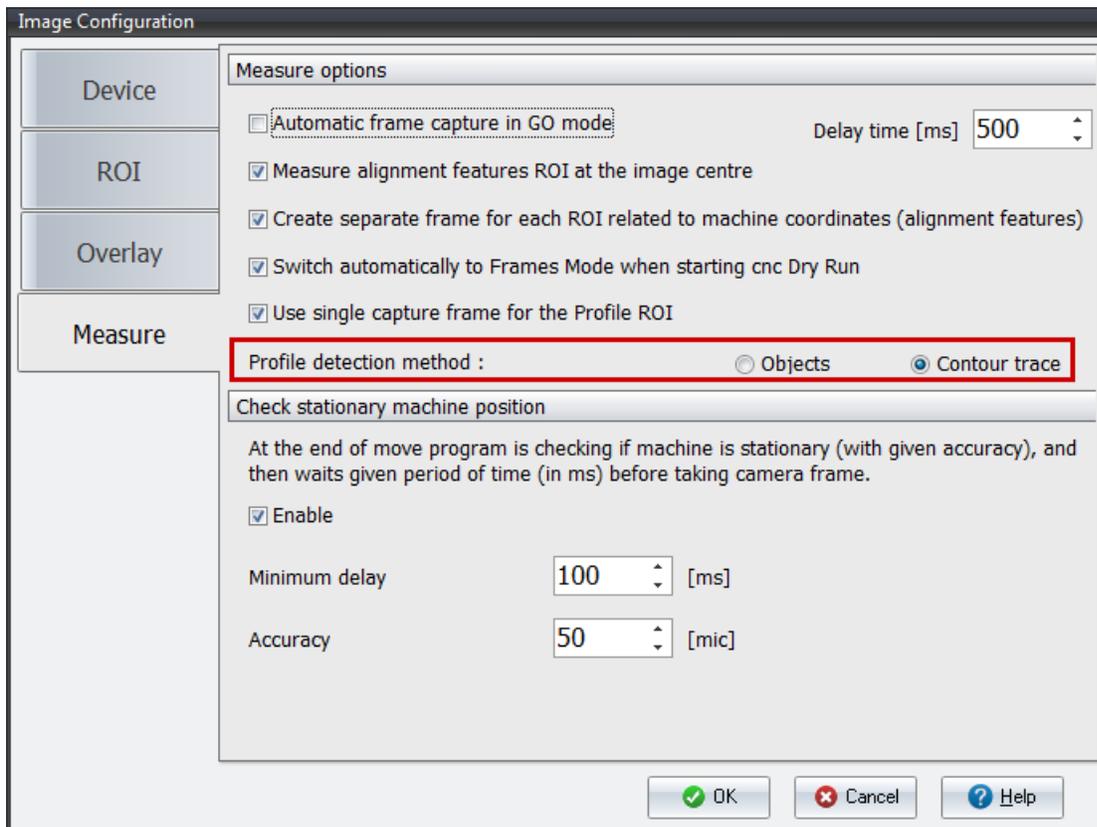


New type of probe correction [ALL]

New type of probe correction "Last Data Point" added.

Image new profile detection method [Vision]

Image new profile detection method (Objects option in Image Configuration-Measurement dialog)



Improvements

DXF export of Set feature [ALL]

DXF export of Set feature with shape none now writes independent dxf Point entities.

Other changes and Bug Fixes

Image default ROI Width [Vision]

Image default ROI Width setup changed from mm to pixels

File changeslog_7.txt

6.08.14

- 322. Result window toolbar button for Results Monitor window for display GO mode feature results.
- 323. Image new Auto Feature mode, with its operation panel inside the image window.
- 324. New type of probe correction "Last Data Point" added.

16.08.14

- 325. Image default ROI Width setup changed from mm to pixels.

30.08.14

- 326. Image new Auto Feature Mode
- 327. Image new profile detection method (Objects option in Image Configuration-Measurement dialog)
- 328. DXF export of Set feature with shape none now writes independent dxf Point entities.

Version 7.05.12

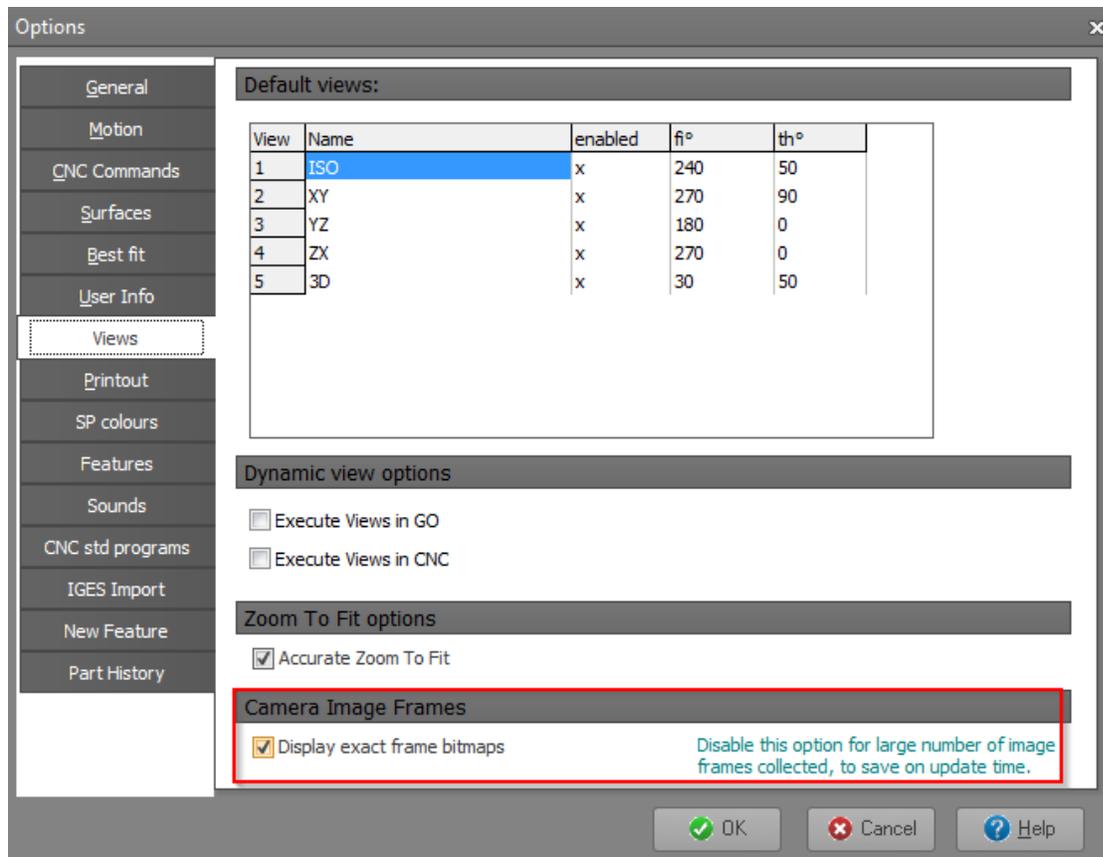
Release Date: 24 June 2014

New Features

New option in general options dialog, view tab [ALL]

General options dialog, Views tab, new option: "Display exact frame bitmaps".

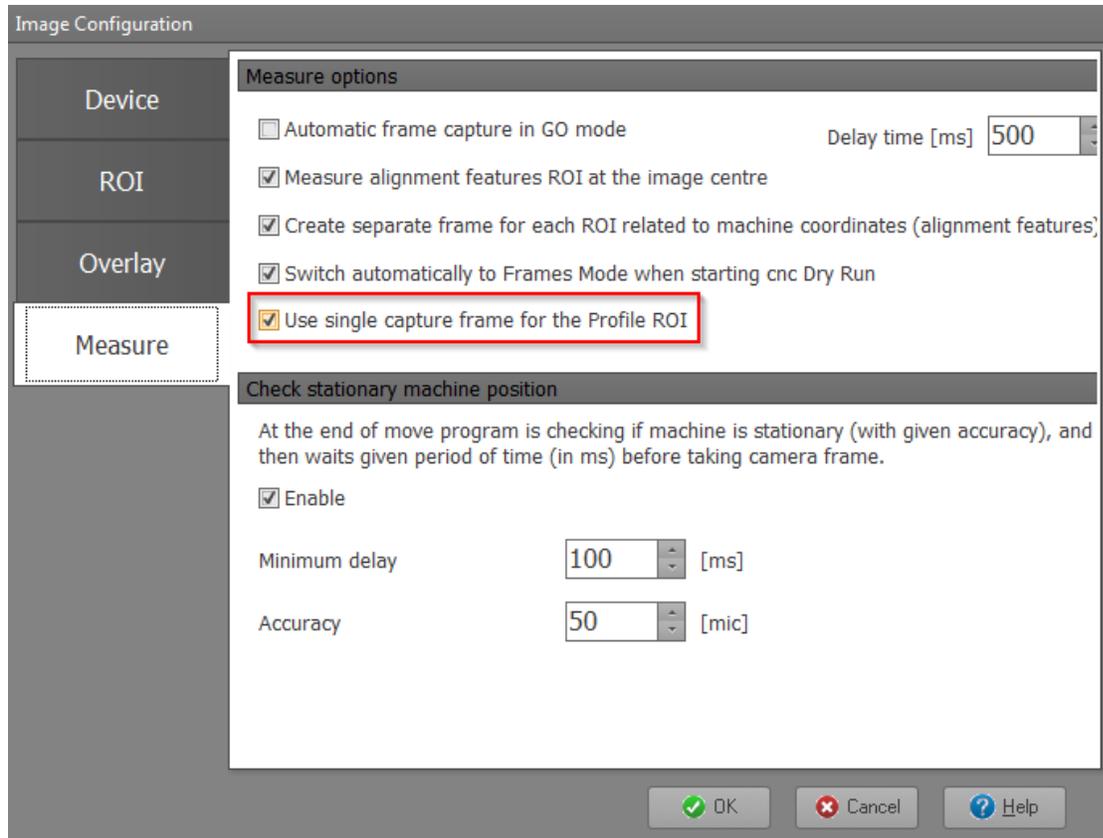
Disable this option when collecting large number of camera frames (profiles) to save on processing time when displaying the frames in 3d views.



New option in Image configuration dialog, Measure tab [ALL]

Image Configuration dialog, Measure tab, new option: "Use single capture frame for the Profile ROI".

When disabled, program doesn't store each captured frame when measuring a profile ROI.



New history tables options [ALL]

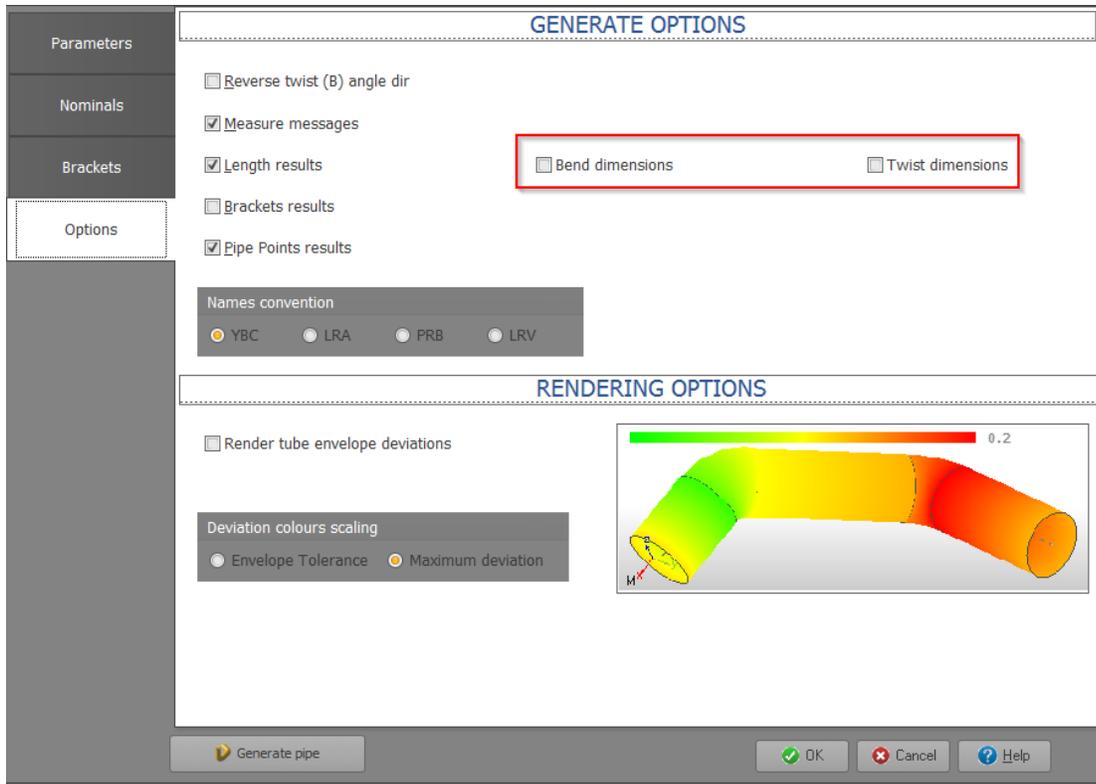
History tables print and pdf export options.

Autofocus data point measurement [Vision]

When measuring a feature using the AutoFocus ROI, program automatically changes the feature projection property to 3D (in case the status default projection is set to 2d)

New options in Pipe Wizard [ALL]

Pipe wizard, additional options to enable bend and twist dimensions, also length results changed to dimensions rather than boxes.



Other changes and Bug Fixes

Direction of probe correction in 3D CAD points mode [ALL/Fix]

3D CAD Points Mode, direction of probe correction of selected points has been corrected.

MCP probe model corrected [ALL/Fix]

File changeslog_7.txt

23.04.14

315. 3D CAD Points Mode, direction of probe correction of selected points has been corrected.

11.05.14

316. General options dialog, Views tab, new option: "Display exact frame bitmaps".

Disable this option when collecting large number of camera frames (profiles) to save on processing time when displaying the frames in 3d views.

317. Image Configuration dialog, Measure tab, new option: "Use single capture frame for the Profile ROI".

When disabled, program doesn't store each captured frame when measuring a profile ROI.

17.05.14

318. History tables print and pdf export options.

23.05.14

319. Autofocus data point measurement. When measuring a feature using the AutoFocus ROI, program Automatically changes the feature projection property to 3D (in case the status default projection is set to 2d)

04.06.14

320. MCP probe model corrected.

18.06.14

321. Pipe wizard, additional options to enable bend and twist dimensions, also length results changed to dimensions rather than boxes.

Version 7.05.11

Release Date: 24 April 2014

Improvements

CNC path create for Profile feature [CNC]

CNC path create for Profile feature with unknown option selected

Probe selection window [ALL]

Probe selection window, camera probe setups selection boxes are now in vertical layout and with the setup names instead of just a numbers.

Translation feature, data, new option [ALL]

Translation feature data, new option for centre/near/far translation destination position, when the second data feature is circle/arc feature.

Importing solid manifold iges entities [ALL]

Iges cad import upgrade to read solid manifold iges entities.

Feature connection toolbar improved [ALL]

Features Connection toolbar option for disable drawing an arrow of the line feature, now applied to all line features, not only those modified with connection.

Other changes and Bug Fixes

[Options – Motion – “Ignore ‘Expected data point not detected’ Error” \[ALL/Fix\]](#)

Options-Motion- "Ignore 'Expected data point not detected' error" option, corrected filtration of this error with itp interface.

Translation feature, data options corrected [ALL/Fix]

Translation feature, data options corrected when there is a second data feature added.

Protection added against wrong file format of the title page logo picture [ALL/Fix]

Report preview options, protection added against wrong file format of the title page logo picture.

File changeslog_7.txt

14.03.14

207. Cnc path Create for Profile feature with unknown option selected.

25.03.14

208. Options-Motion- "Ignore 'Expected data point not detected' error" option, corrected filtration of this error with itp interface.

15.04.14

209. Probe selection window, camera probe setups selection boxes are now in vertical layout and with the setup names instead of just a numbers.

210. Translation feature, data options corrected when there is a second data feature added.

211. Translation feature data, new option for centre/near/far translation destination position, when the second data feature is circle/arc feature.

212. Report preview options, protection added against wrong file format of the title page logo picture.

23.04.14

213. Iges cad import upgrade to read solid manifold iges entities.

214. Features Connection toolbar option for disable drawing an arrow of the line feature, now applied to all line features, not only those modified with connection.

Version 7.05.10

Release Date: 12 March 2014

New Features

CNC EdgePoint feature path added [CNC]

Features List window, program column, Add/Remove RB menu items added to add or remove features from the main program [ALL]

When a feature is not in the program yet, double click on the program column will do all. Create feature path, add to program, and create approach path if required. This is the best way of adding feature to the program, if it was created with Cnc Auto option switched off.

Other changes and Bug Fixes

CNC Parameters dialog Run tab options modified [CNC]

File changeslog_7.txt

10.03.14

204. Cnc EdgePoint feature path added

205. Features List window, program column, Add/Remove RB menu items added to add or remove features from the main program.

When a feature is not in the program yet, double click on the program column will do all. Create feature path, add to program, and create approach path if required. This is the best way of adding feature to the program, if it was created with Cnc Auto option switched off.

206. Cnc Parameters dialog Run tab options modified.

Version 7.05.09

Release Date: 28 February 2014

New Features

Undo Button [ALL]

Test version of Undo button (undelete feature)

2D Profile [Vision]

2D profile, dxf nominal cad profile selection added.

New camera probe [Vision]

New Camera probe "Locked axis coordinate" was enabled for a new probe created, changed to disabled by default.

New profile feature property [CNC]

Profile feature new property "Nominal profile" opening separate dialog.

Profile and Set features scan options [CNC]

Profile and Set features, CNC path create option, both known (nominal) and unknown scan options available

Improvements

Camera Rotation Calibration procedure extended [Vision]

Camera rotation calibration procedure extended to measure in 4 positions.

Camera probe nominal calibration size [Vision]

Camera probe nominal calibration size saved with each camera setup individually.

2D deviations gradient colour [Vision]

2D deviations gradient colouring added, corrected colouring output to report (also the pipe colours).

Ribbon Icons [ALL]

Some ribbon buttons icons changed.

Edge Point feature definition [ALL]

Edge Point feature definition on CAD with mouse right button, program re-replaces two data points so they are in default separation from edge (General Options-Surfaces-Edge Point parameters).

Edge Point (mm)	
Separation along edge	5.000
Separation from edge	5.000
Touch depth lower	5.000
Touch depth upper	1.000
EP type	
<input checked="" type="radio"/>	2 points
<input type="radio"/>	4 points

Other changes and Bug Fixes

Slot calculations error [ALL/Fix]

Error in slot calculations corrected.

Error when closing result window dialog [ALL/Fix]

Error when closing Results Window feature options dialog (Feature Results Options) corrected.

Home status check [Fix]

Home status check corrected (itp interface).

Lights Control [Vision]

Lights control, calculation of enabled segments corrected for a given direction angle.

Wrong surface detection fixed [ALL/Fix]

Occasional wrong surface detected during probe-cad collision detection in dry run, (Especially touching narrow surface, like and side edge of a sheet metal).

Wrong CAD surface assignment fixed [ALL/Fix]

Some occurrences of wrong cad surface assignment to the imported Surface Points from a text file.

File changeslog_7.txt

14.10.13

189. Error in slot calculations corrected (from ver 7.05.06).

23.10.13

190. Test version of Undo button (undelete feature).

191. Error when closing Results Window feature options dialog (Feature Results Options) corrected.

28.10.13

192. Camera rotation calibration procedure extended to measure in 4 positions.

13.11.13

193. Home status check corrected (itp interface)

16.11.13

193. Camera probe nominal calibration size saved with each camera setup individually.

29.11.13

194. 2D profile, dxf nominal cad profile selection added

195. 2D deviations gradient colouring added, corrected colouring output to report
(Also the pipe colours).

9.12.13

196. Lights control, calculation of enabled segments corrected for a given direction angle.

v.7.05.08.03

11.12.13

197. Some ribbon buttons icons changed.

21.01.14

198. New Camera probe "Locked axis coordinate" was enabled for a new probe created, changed to disabled by default.

199. Profile feature new property "Nominal profile" opening separate dialog

v.7.5.9.0

13.02.14

200. Profile and Set features, cnc path Create option, both known (nominal) and unknown sacn options available.

23.02.14

201. Occasional wrong surface detected during probe-cad collision detection in dry run,
(Especially touching narrow surface, like and side edge of a sheet metal);

202. Some occurrences of wrong cad surface assignment to the imported Surface Points from a text file.

203. Edge Point feature definition on CAD with mouse right button, program re-replaces two data points so they are in default separation from edge (General Options-Surfaces-Edge Point parameters).

Version 7.05.06

Release Date: 4 October 2013

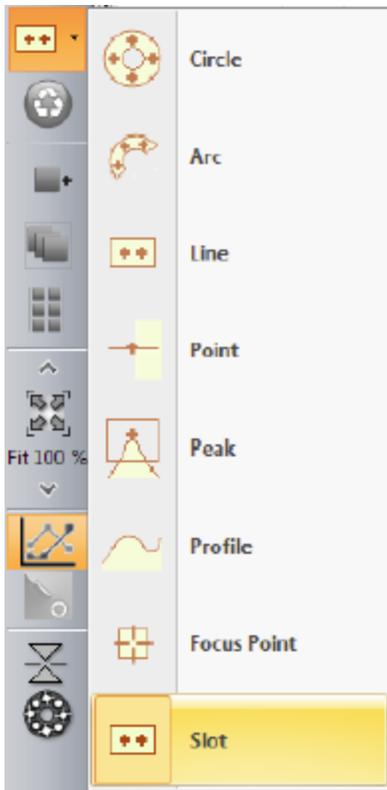
New Features

New Image ROI for Rectangular Slot (Gap Measurement) [Vision]

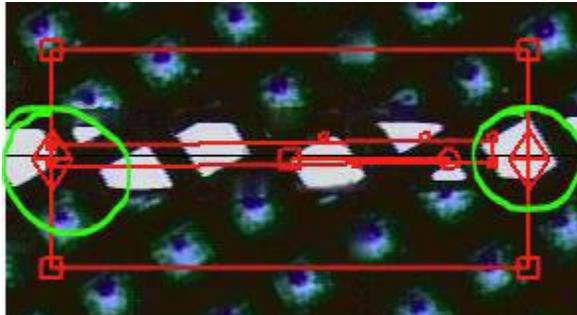
1. Use Rectangular Slot feature.



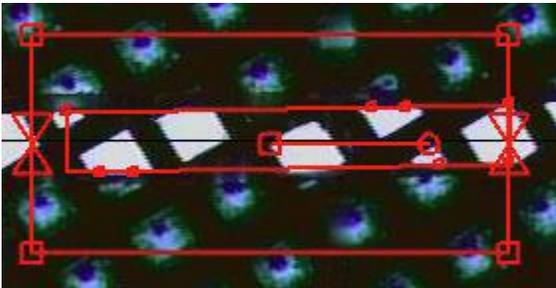
The Slot ROI is automatically selected.



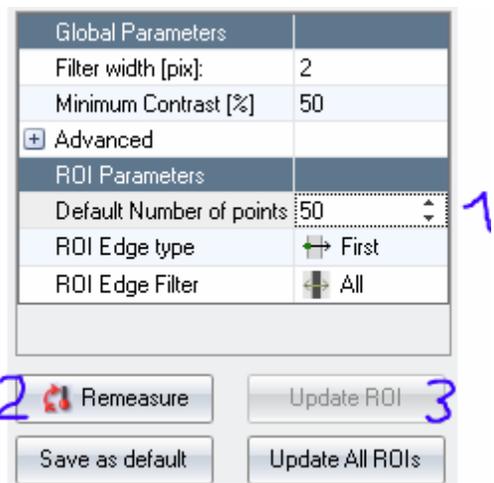
2. Define region similar to the line ROI.



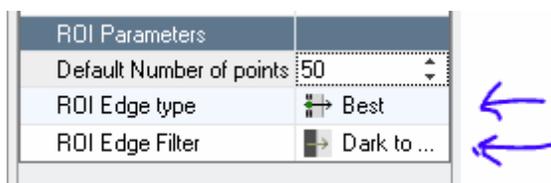
Change the direction of measurement if required, in this case we want to scan from the edge to inside.



3. Adjust number of points, program will try to get this number of points on each side.

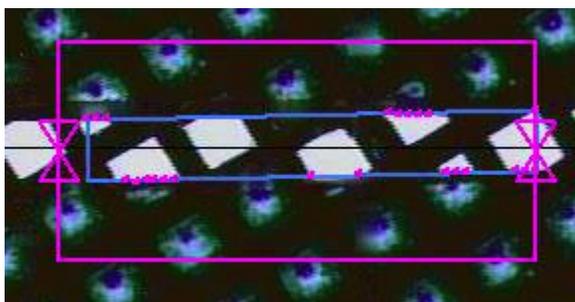


Experiment with best setup of edge type, edge filter parameters and minimum contrast global value.

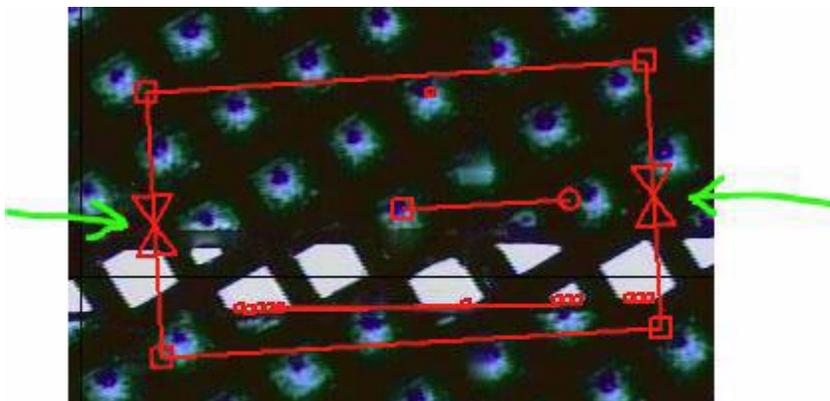


- There is a requirement that centre line of the ROI lies inside the gap.

Correct

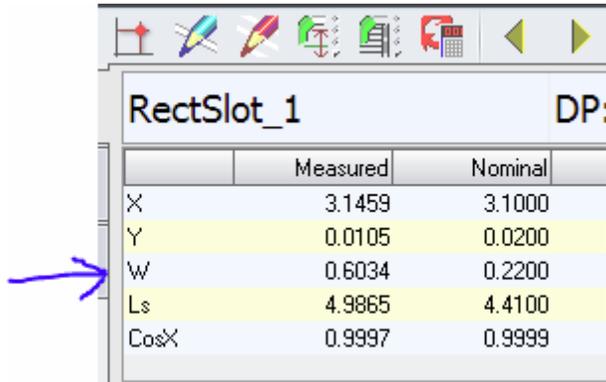


Not correct



- Value of the gap width is represented by the slot W result.

Length of the slot in this case is not measured, it's just the data points range.



	Measured	Nominal
X	3.1459	3.1000
Y	0.0105	0.0200
W	0.6034	0.2200
Ls	4.9865	4.4100
CosX	0.9997	0.9999

Other changes and Bug Fixes

Part File Saved Problem Fixed [CNC/Fix]

Error in part file saved with v7.05.05 fixed.

File changeslog_7.txt

2.10.03

187. Error in part file saved with ver. 7.05.05 (cnc system only).

188. New image ROI for rectangular slot (gap measurement).

Version 7.05.05

Release Date: 28 August 2013

New Features

Ruler Functionality Introduced In Image Window [Vision]

Image window Ruler functionality introduced (except Pan offset).

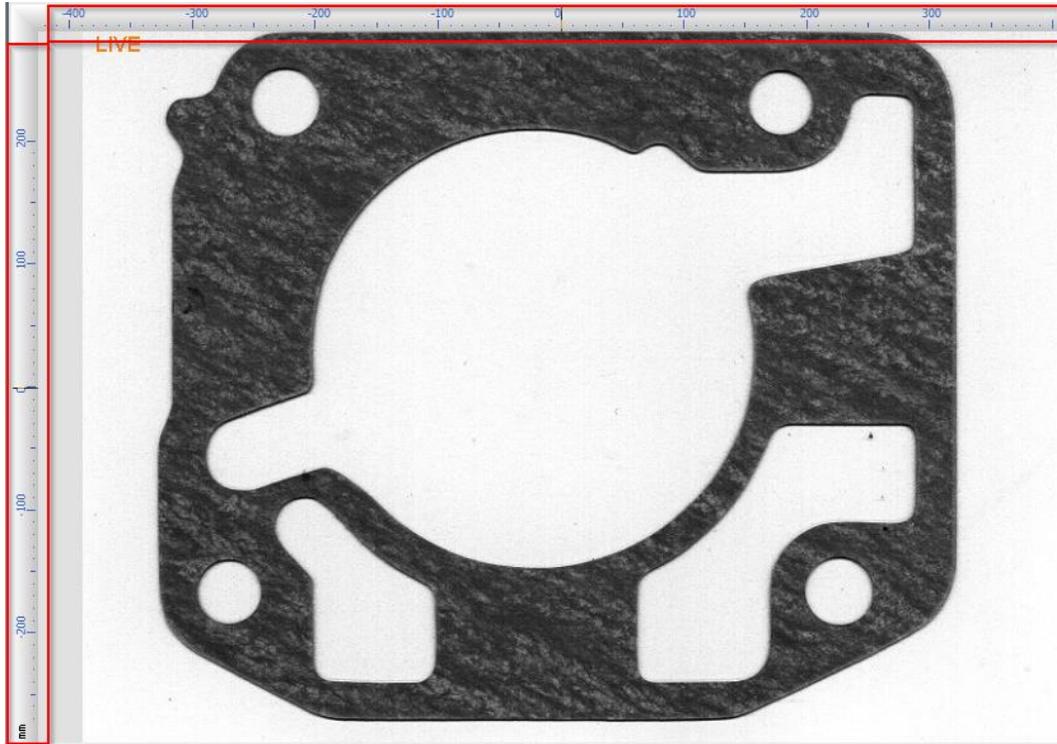
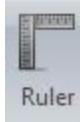


Image New Parameter [Vision]

Image new parameter for minimum edge contrast.

New Best Fit Alignment Button [ALL]

New Best fit alignment button, with special options for use with surface points.

Improvements

Restricted Ring Angle [Vision]

Image Dynamic ring ROI function restricted for ring angle > 270 deg.

Redefined Image Zoom Magnifications Steps [Vision]

Image zoom magnifications steps redefined.

Saving and Restoring Measure Window Grid [ALL]

Measure Window grid visibility saved and restores for a new part and default views.

Go Mode Stop on Element [ALL/CNC]

Go mode stop on Element alignment feature, with condition that any of the following features has cnc command defined.

Line Feature CNC Path Modified [ALL/CNC]

Line feature cnc path parameters modified, added reference plane direction data.

Measure Windows Views Mouse Behaviour [ALL]

Measure Window views mouse wheel used for zoom in/out, and the middle button for zoom all.

Selecting Range Of Commands in CNC Editor [ALL/CNC]

Cnc editor window, an option for selecting range of commands with Shift key pressed.

Repeat Option for Creating New Surface Point [ALL]

Creating new Surface Point feature works like with Repeat option enabled. To finish the surface points sequence need to press Cancel button, or select different feature to measure.

Other changes and Bug Fixes

Image Options Removed From Axel General Options [All]

In the General Options dialog the Image tab has been removed, use Image ribbon tab/Configuration.

Angle Feature Painting Corrected [ALL/Fix]

Angle feature painting corrected and new options added.

Learn Path Fixed [ALL/Fix]

Error in Learn programming, wrong learn path assignment to the feature.

Image Dynamic Ring ROI Corrected [Vision/Fix]

Image dynamic ring ROI function corrected.

Multilanguage [ALL]

Chinese texts translation update

Feature Result Dimensions Option Updated [ALL]

Feature result Dimensions option, separate from result boxes. Option in Results ribbon toolbar and new Dimensions column in the Features list window.

File changeslog_7.txt

8.05.13

170. Image Dynamic ring ROI function restricted for ring angle > 270 deg.

171. In the General Options dialog the Image tab has been removed, use Image ribbon tab/Configuration.

12.05.13

172. Angle feature painting corrected and new options added.

13.05.13

173. Image window Ruler functionality introduced (except Pan offset).

- 174. Image zoom magnifications steps redefined.
- 30.08.10
 - 175. Error in Learn programming, wrong learn path assignment to the feature (error since 15.04.13)
- 15.08.13
 - 176. Measure Window grid visibility saved and restores for a new part and default views.
 - 177. GO mode stop on Element alignment feature, with condition that any of the following features has cnc command defined.
 - 178. Image dynamic ring ROI function corrected.
- 25.08.13 v.7.05.03.30
 - 179. Line feature cnc path parameters modified, added reference plane direction data.
 - 180. Image new parameter for minimum edge contrast.
 - 181. Measure Window views mouse wheel used for zoom in/out, and the middle button for zoom all.
 - 182. Cnc editor window, an option for selecting range of commands with Shift key pressed.
 - 183. Creating new Surface Point feature works like with Repeat option enabled. To finish the surface points sequence need to press Cancel button, or select different feature to measure.
 - 184. New Best fit alignment button, with special options for use with surface points.
 - 185. Feature result Dimensions option, separate from result boxes. Option in Results ribbon toolbar and new Dimensions column in the Features list window.
- 10.09.13
 - 186. Chinese texts translation update.

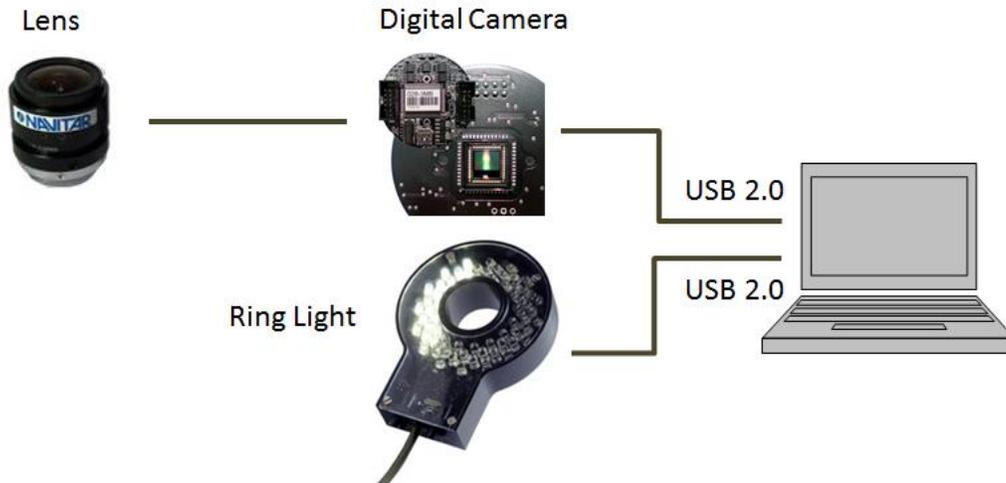
Version 7.05.01

Release Date: 7 May 2013

New Features

Vision System offered with Deva028 Camera [Vision]

Video System Pack released to work with high resolution Deva028 camera and lighting control.

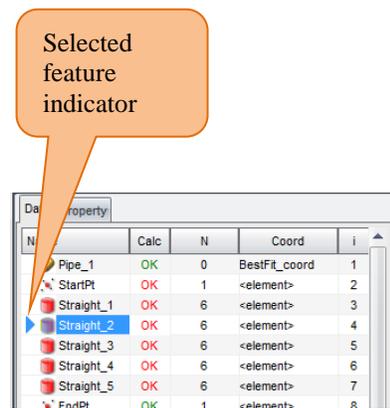


Typical configuration for OEM applications. Recommended for manual and automatic video inspection machines.

Improvements

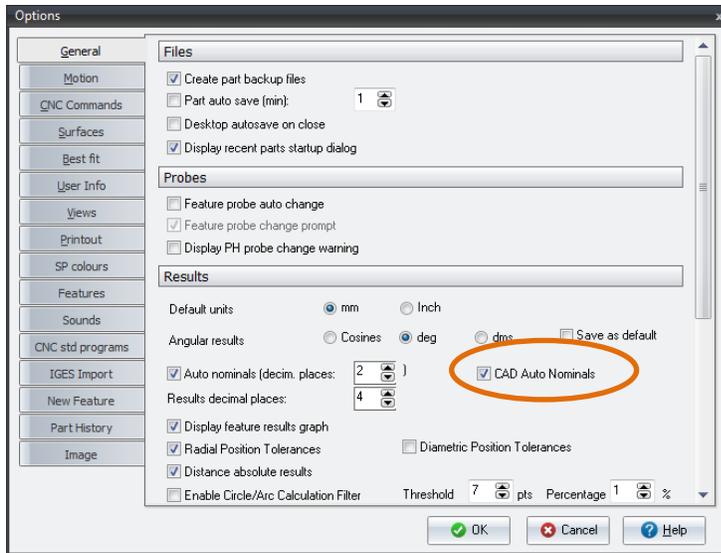
Feature List Selection Indicator [ALL]

Feature List window, a small arrow icon added to the left side of the list that indicates selected feature. This is to help see selected item when the window loses focus (on windows 7)



CAD AutoNominals [ALL]

New option in general tab options, 'CAD Auto Nominals' has been added. If checked, then Axel will try to assign nominal values to the measured feature from the CAD model.



GetFrame at the end of CNC Move [Vision/CNC]

ImageFrame is checking for the machine coordinates stationary state before taking the image frame. Parameters read from the axel.ini file, [stationary] section.

The image frame is taken at the end of CNC move when the machine is stationary.

The machine is regarded to be stationary when it remains for the *minperiod of ms* within *accuracy radius* and confirmed by reading this *mincount times* (dro updates)

[Stationary]

MinPeriod=100

Accuracy=0.05

MinCount=2

Note: If the Stationary section is not present in Axel.ini file axel uses the following default values

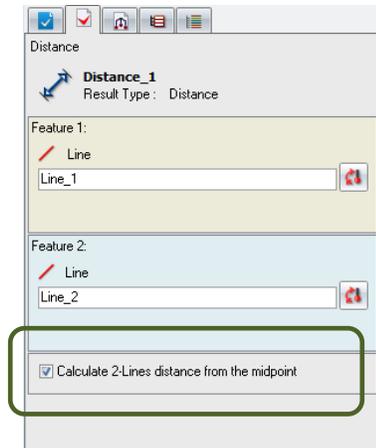
stationary_period : integer = 100;

stationary_accuracy: double = 0.05;

stationary_count : integer = 2;

Distance between 2 Lines [All]

Distance calculation between two lines has been changed. The default result is the distance between the first line and the midpoint of the second line.



AutoFocus Speed [Vision/CNC]

Separate global speed option for the camera autofocus search move added.

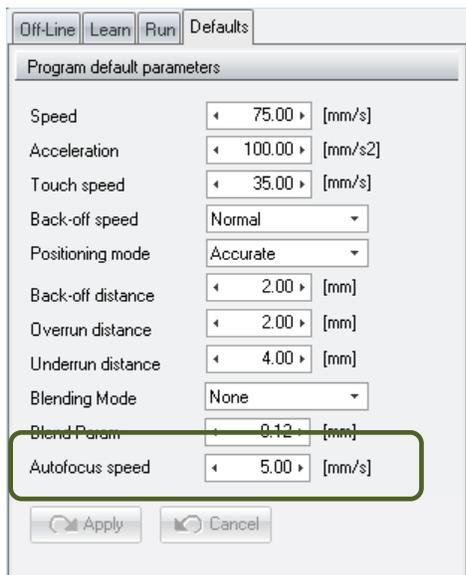


Image Changes [Vision/CNC]

Image Alignment [Vision/CNC]

Image CNC measurement of manual features with use of different image tools (graticule, mouse) has been added.

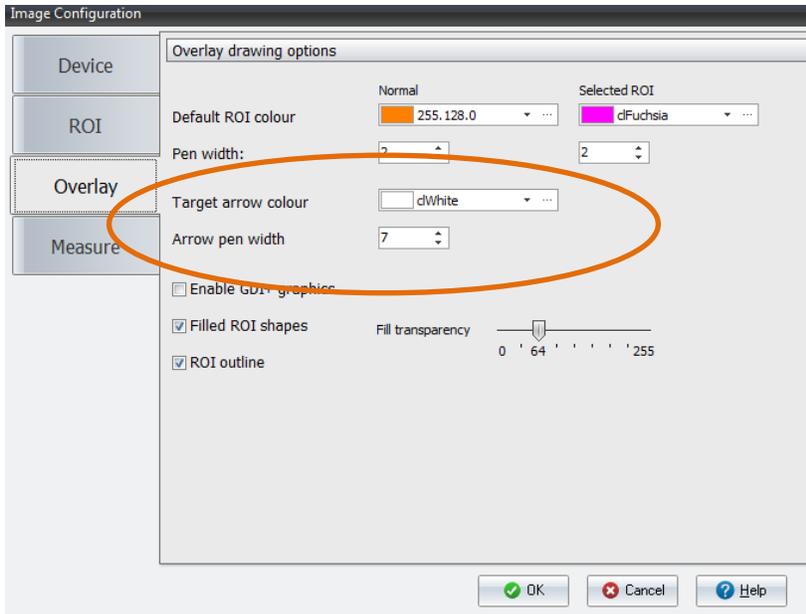
Feature Continue [Vision]

Feature can be measured by defining multiple ROIs. This might be necessary if the feature does not fit entirely into a single field of view (FOV) or simply cannot be measured with a single ROI.

Continue feature, one click ROI creation, the new ROI size is corrected so it won't exceed the image frame.

Target Line display [Vision]

Separate colour and pen width of image target position arrow.

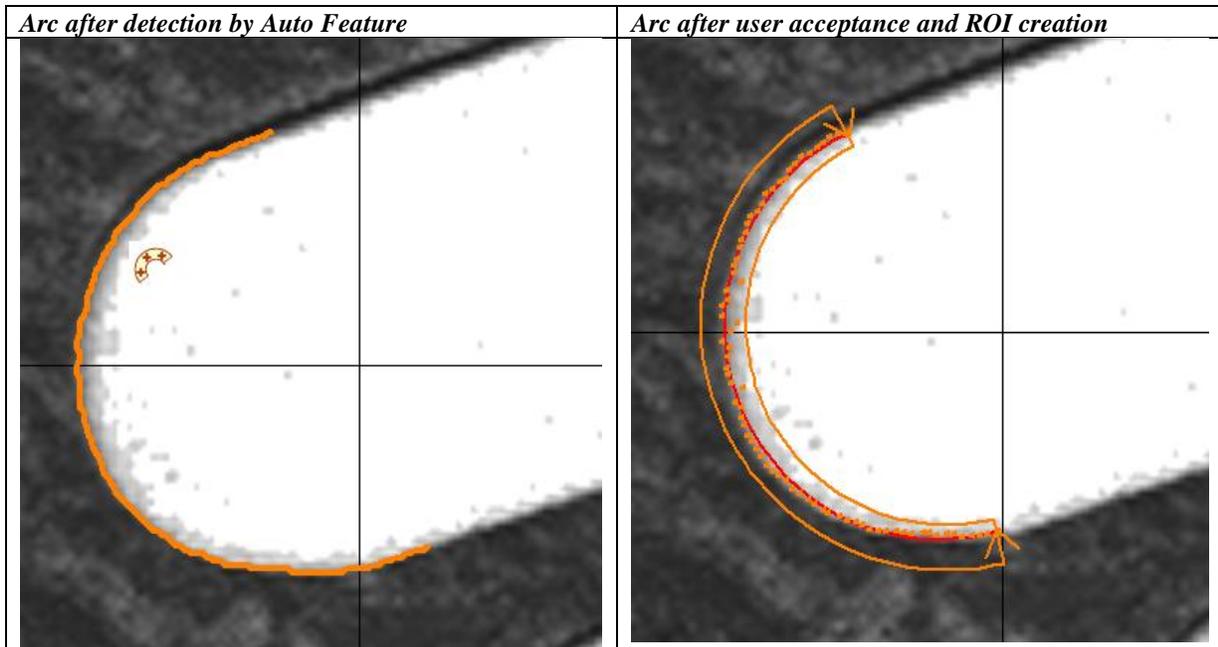


Features Mode create ROI for Line [Vision]

Entry to Feature mode, create Line ROI. Create ROI and frame even if the Auto CNC function is off.

AutoFeature – Arc detection [Vision]

Corrections in image autofeature function. Created arc ROI angle is now narrowed to avoid incorrect arc ends.



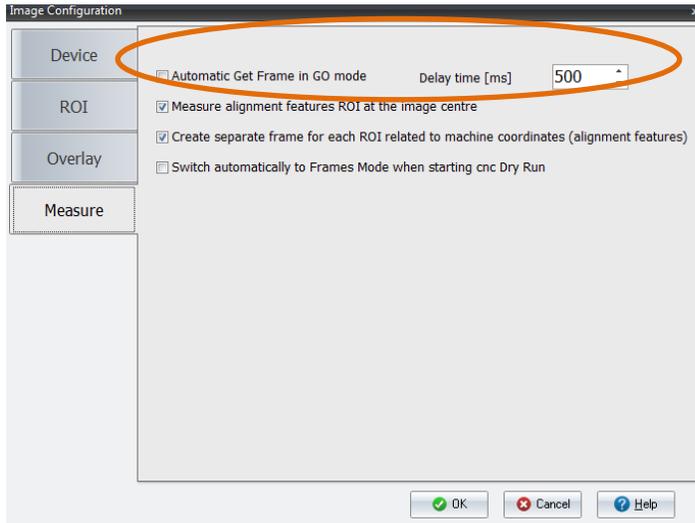
AutoFeature – Arc detection [Vision]

Corrections in image autofeature function. Created arc roi angle is now narrowed to avoid incorrect arc ends.

Manual inspection with Camera [Vision]

Image configuration new options for measuring manual and paused features during program Run.

- Measure alignment features ROI at the image centre
- Create separate frame for each ROI related to machine coordinates (alignment features)



When option checked, Axel will automatically get the frame when running inspection program in Go mode. The frame will be taken after 500ms on reaching the target position.

Alignment – Image Probe [Vision]

When running CNC image program, prevent recalculating Element alignment during measuring alignment features.

Other changes and Bug Fixes

Showing Best-Fit Deviations Table [All/Fix]

Rare, but possible error when the best-fit deviations table window is displayed automatically has been fixed.

Excel Export- decimal point [ALL/Fix]

Excel export, decimal symbol of a number corrected, in case of different than. (DOT) system configuration.

Edge Point Results [Surface/Fix]

Edge point De result corrected.

Report Preview Changes [ALL]

Report preview.

- Configuration panel is opened by default.
- Number of ribbon toolbars reduced, can be accessed by new Advanced Options button.

File changeslog_7.txt

18.01.13

143. Feature List window, a small arrow icon added to the left side of the list that indicates selected feature. This is to help see selected item when the window loses focus (on windows 7)

144. Edge point De result corrected.

23.01.13

145. New option in general tab options, 'CAD Auto Nominals' for assigning nominal values from cad, when measuring a new feature on the machine (test release).

146. Rare, but possible error when the best-fit deviations table window is displayed automatically.

- 147. Super Feature reference system corrected.
- 25.01.13
 - 148. Image, Continue feature, one click ROI creation, and the new ROI size is corrected so it won't exceed the image frame.
- 1.02.13
 - 149. Excel export, decimal symbol of a number corrected, in case of different than. (DOT) system configuration.
- 5.02.13
 - 150. Image Window display in floating mode improvements.
- 20.02.13
 - 151. Image feature with roi, Continue option, and wrong data points assignment to roi index.
Also after delete roi, data points associated with the roi are deleted.
 - 152. Separate global speed option for the camera autofocus search move.
 - 153. Distance with 2 lines modified. Now its 'Calculate 2-lines distance from the midpoint' data option is enabled by default for the new distance. It calculates distance from the 1st line to the 2nd line midpoint.
 - 154. Deva028 camera implementation.
 - 155. Separate colour and pen with of image target position arrow.
- 25.02.13
 - 156. Corrections in image autofeature function. Created arc roi angle is now narrowed to avoid incorrect arc ends.
- 26.02.13
 - 157. Pattern feature, size of arc feature corrected (radius). Size of the circle remain as diameter.
- 28.02.13
 - 158. Report preview.
Configuration panel is opened by default.
Number of ribbon toolbars reduced, can be accessed by new Advanced Options button.
 - 159. Entity to Feature mode, create Line roi.
Create Roi and frame even if the Auto cnc function is off
- 18.03.13
 - 160. Calculation of Arc feature angle corrected when using image rois. Arc Size and Dir property, change of direction switch enabled, which shows 360-ang part of a circle.
- 24.03.13
 - 161. Image, profile ROI measurement corrected in case there is Element alignment defined.
 - 162. Slot feature export to DXF added (as lines and arcs).
- 25.03.13
 - 163. Line calculation modified so now its result point represents middle point (until now it was an average point) of all data points range.
 - 164. Image frames shows now its ref system property (to separate machine referenced feature frames used for the alignment).
 - 165. Image configuration new options for measuring manual and paused features during program Run.
 - Measure alignment features ROI at the image centre
 - Create separate frame for each ROI related to machine coordinates (alignment features)
 - 166. Image cnc measurement of manual features with use of different image tools (graticule, mouse) has been corrected.
- 13.04.13
 - 167. ImageFrame is checking for the machine coordinates stationary state before taking the image frame.
Parameters read from the axel.ini file, [stationary] section.
- 6.05.13
 - 168. Image run cnc program, prevent recalculating Element alignment during measuring alignment features.
 - 169. Some image configurations saved with the part project file

Version 7.04.17

Release Date: 17 January 2013

New Features

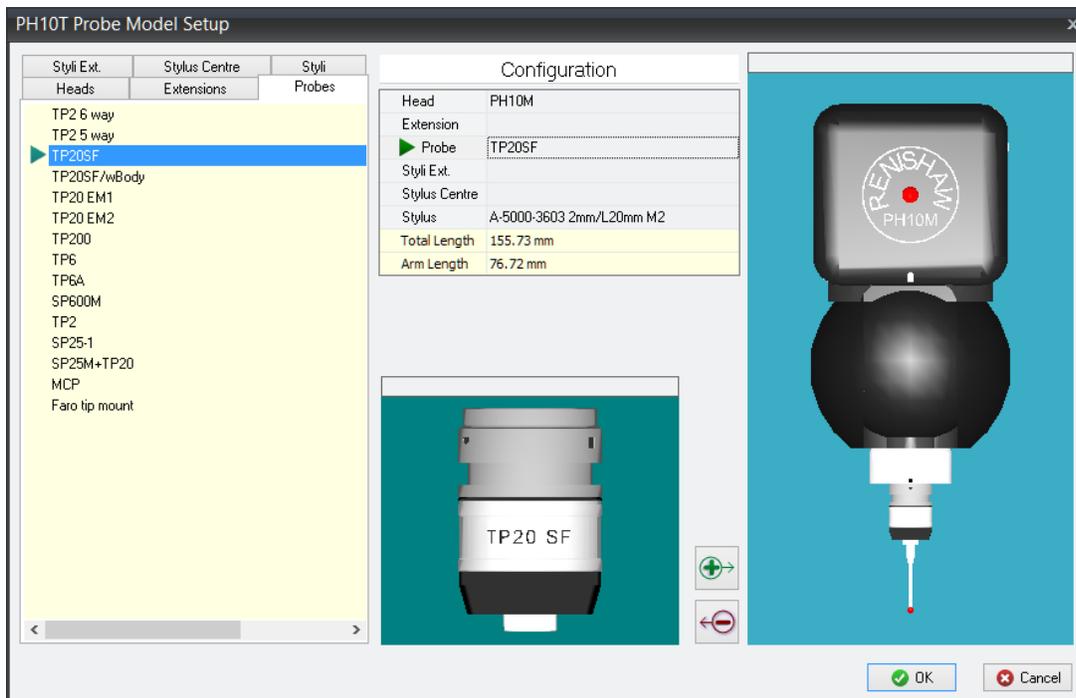
Detection of round and rectangular slots added [ALL]

CAD edge mode, detection of round and rectangular slots added.

Improvements

Probe model dialog modified [ALL]

Probe model dialog modified for better items selections.



History tab switches off automatically [ALL]

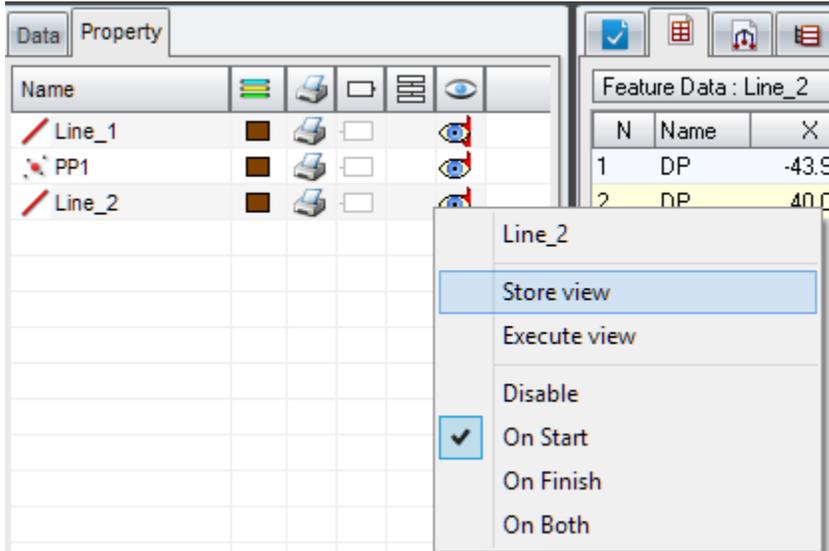
History tab is now automatically switched off before save part, to restore original axel windows layout.

Disabled mouse LB option in feature list [ALL]

Feature List, Property tab, View column, disabled mouse LB option for executing the feature view. There is still F8 key option active which moves view to the feature centre.

Feature store view option improved [ALL]

Feature Store View option (feature list) now allows to do this also on a view with locked rotations.



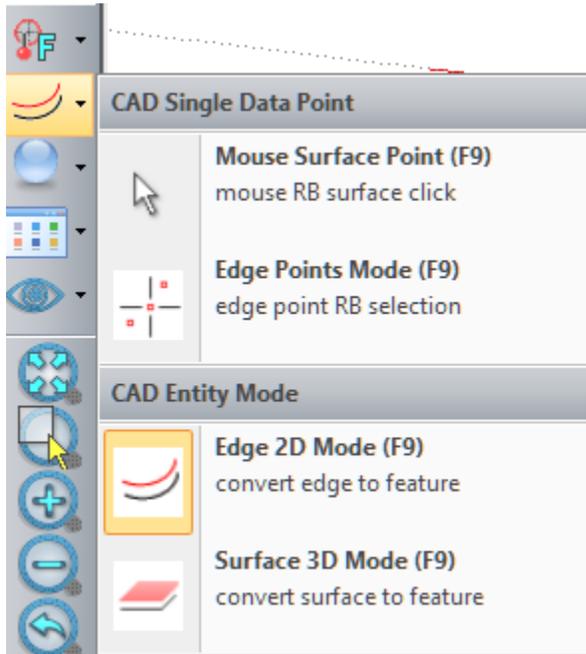
Mouse RB in Probe Selection Window [ALL]

Probe Selection window, mouse RB now opens the tip selection menu, like the left button. The calibration window can be opened using the small toolbar button, or button the left side vertical toolbar.



Separate 'CAD mode' button added [ALL]

Separate 'CAD mode' button added to the left side toolbar (normally the button is hidden).



Other changes and Bug Fixes

Point coordinates corrected for Surface [CNC/Fix]

Wrong point coordinates corrected when Create grid path for Surface feature.

Visibility of liner CAD entities fixed [ALL/Fix]

Wrong visibility of linear cad entities (like lines, arcs), when features On Top 3d display option is selected.

Collecting Line features in CAD edge mode fixed [ALL/Fix]

CAD edge mode, collecting the Line feature is corrected, proper touching direction is set, also added projection plane like for circle and slot.

Ribbon button changed [ALL]

Ribbon button Avr Point changed to Point.



CNC surface feature default option [CNC]

Cnc surface feature, now default option is 'Surface Normal Touch'.

File changeslog_7.txt

1.01.13

- 122. Wrong point coordinates corrected when Create grid path for Surface feature.
- 123. Probe model dialog modified for better items selections.

4.01.13

- 124. Wrong visibility of linear cad entities (like lines, arcs), when features On Top 3d display Option is selected.

8.01.13

- 125. History tab is now automatically switched off before save part, to restore original axel windows layout.
- 126. CAD edge mode, collecting the Line feature is corrected, proper touching direction is set, Also added projection plane like for circle and slot.
- 127. Feature List, Property tab, View column, disabled mouse LB option for executing the feature view. There is still F8 key option active which moves view to the feature centre
- 128. Feature Store View option (feature list) now allows to do this also on a view with locked rotations.
- 129. Probe Selection window, mouse RB now opens the tip selection menu, like the left button. The calibration window can be opened using the small toolbar button, or button the left side vertical toolbar.

12.01.13

- 130. CAD edge mode, detection of round and rectangular sots added.

16.01.13

- 140. Ribbon button Avr Point changed to Point
- 141. Cnc surface feature, now default option is 'Surface Normal Touch'
- 142. Separate 'CAD mode' button added to the left side toolbar (normally the button is hidden)

Version 7.04.15

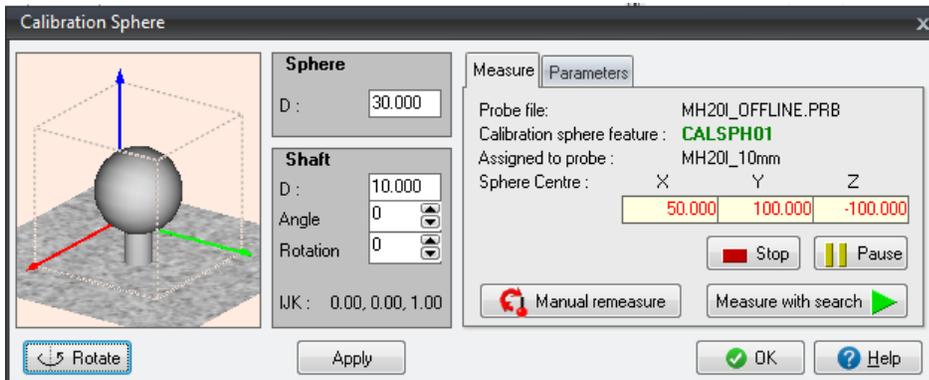
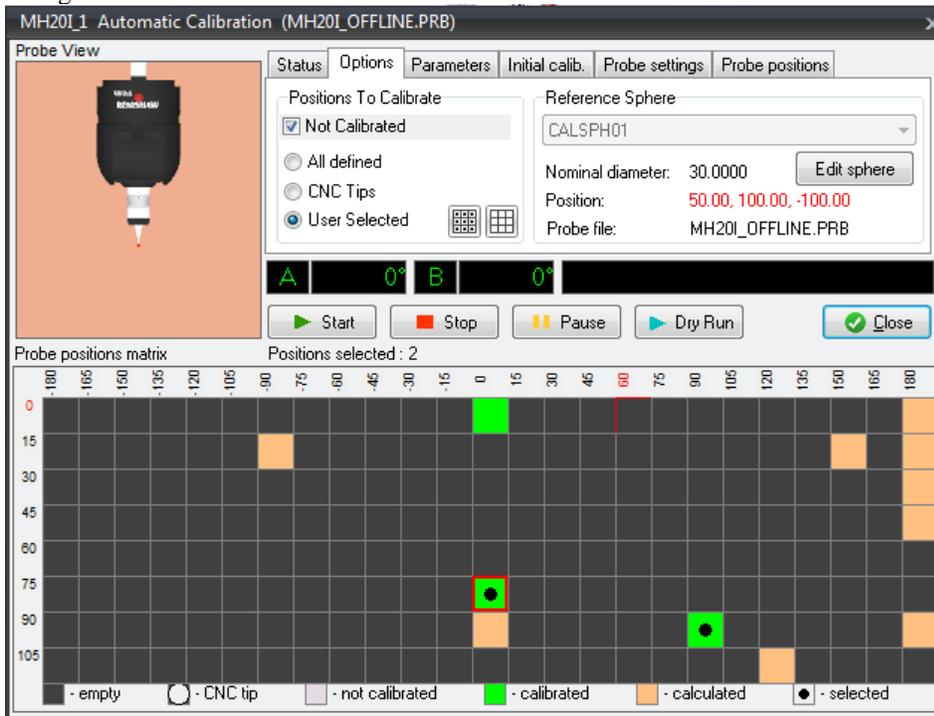
Release Date: 2 January 2013

New Features

Improvements

Calibration Sphere [CNC]

Calibration Sphere centre status is shown by colour of the coordinates, in Calibration Sphere and Autocalibration dialogs.



Calibration Sphere should be measured with calibration tip of the reference probe each time its position is changed within the machine measuring volume.

Other changes and Bug Fixes

Zoom to Limits on Startup [ALL/Fix]

When starting a new part, all Measure Window Tabs will do the Zoom to Limits when opened for the first time. When CAD is loaded, Zoom to Fit is done on first opening of each tab.

Image Auto Focus [Image/Fix]

Image auto focus in cnc mode, first time starting the autofocus showed wrong Z coordinate in the message box. - Corrected

MH20I and CNC Program [CNC/Fix]

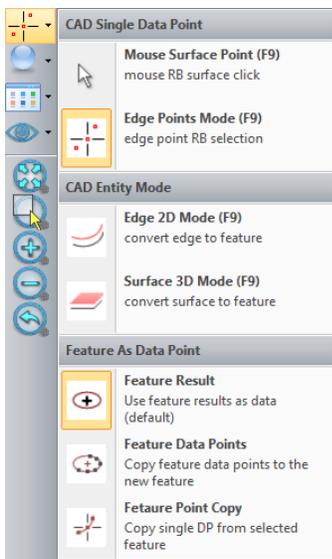
When running CNC program on the machine fitted with manual indexable probe such as MH20i, manual probe change messages are not showing when there is no need to change the probe position.

CNC Test with MH20i probe [CNC/Fix]



Pressing Test option in the CNC feature dialog, will test run currently selected feature. The move sequence will be executed from the EXIT point of the previous feature. On the machine fitted with manual indexable probe such as MH20i, the approach path from the last feature exit point to the current feature entry point will not execute probe change if the current probe location is already equal to the destination feature probe. This is to save two probe changes just for the approach move.

CAD Selection Options – Menu [ALL/Fix]



'Pick Option Tool' in the Measure Window toolbar shows the correct icons when switching the CAD selection options.

Safety Plane Visibility [CNC/Fix]

Safety Planes visibility is now disabled in CAD Points Mode and Edge Mode. Visible Safety Planes were inhibiting CAD feature selection in the above two CAD picking modes.

File changeslog_7.txt

3.12.12

- 111. Alignment cases Plane+Origin+Point(3d) and Origin+Point(2D) data dialogs corrected, so the axis and origin data are placed in right fields. These cases differs from all the others because

the origin feature is entered as the second(3d) or first(2d) selection.

18.12.12

111. Cnc dry run corrected, when running with the 'Simulate touch only' option checked (dropdown next to the Test button in the property cnc tab).

21.12.12

112. Starting a new part, initial zoom to limits corrected.

113. Image auto zoom in cnc mode, first time starting th autozoom showed wrong Z coordinate in the message box.

25.12.12

114. Cnc manual probe change message removed, when there is no need to change probe or position.

115. Cnc Test option, for manual indexable probe now the approach path dosnt execute probe change if the current probe is already equal to the destination feature probe. This is to save two probe changes just for the approach move.

116. 'Pick Option Tool' left side toolbar button icons corrected when switching the cad selection options.

28.12.12

117. Calibration Sphere centre status is shown by colour of the coordinates, in Caliration Sphere and Autocalibration dialogs.

118. Zoom to limits applied to a first time selcted views after New part.

119. Safet Planes visibility disabled in CAD Points Mode and Edge Mode.

30.12.12

120. CNC single feature Test option, added options for execution Measure or Approach part of the feature path only.

121. CNC Dry run (or single feature test) now start program immediately, without a message about created path for avoiding collision and without puting program on pause. The pause and message remains in t

Version 7.04.14

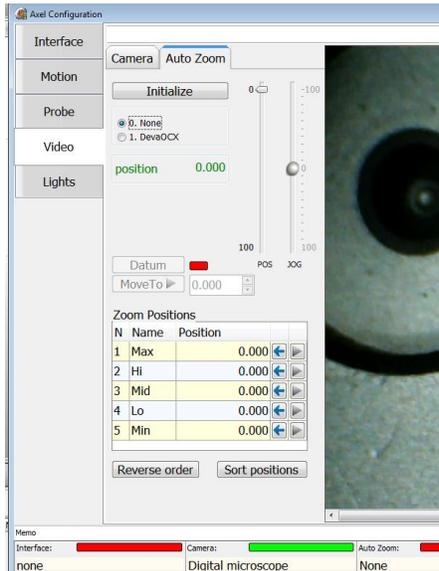
Release Date: 27 November 2012

New Features

Camera AutoZoom [IMAGE]

Camera AutoZoom functions added.

Camera AutoZoom functions added.



Main Features of AutoZoom

Define AutoZoom position to be used in Axel program

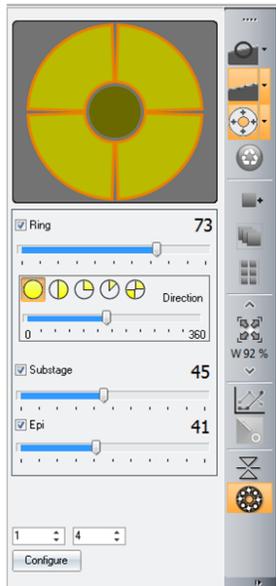
Camera Home

Move to selected home positions

Configuration is used by Axel program

Light Control Dialog [IMAGE]

Light Control dialog added.



New Light Control Dialog

- Configurable number of rows and segments
- Supports Ring, Sub-stage and EPI light
- Interfaces available to various light controllers
- New interfaces under way

Lights Control Button opens the dialog

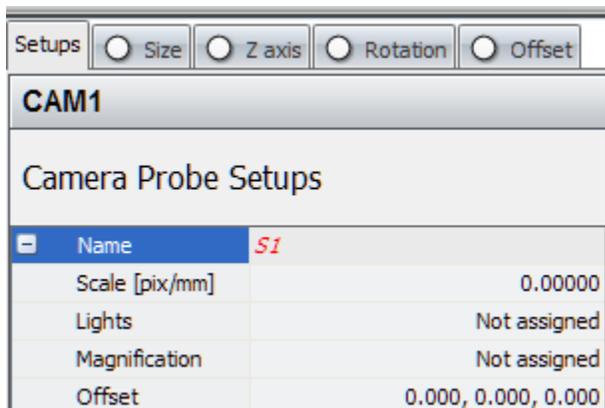
Improvements

IGES import dialog [ALL]

Iges import dialog prevented from close with X during processing the iges file, Axel main form and Mewasure Window prevented from close during cad import.

Camera Probe Calibration Dialog Completed [2D]

Camera Probe calibration dialog completed with offsets and magnifications.



CAD entities window selection improved [ALL]

Now only entities entirely enclosed in the window are being selected.

Pipe end points envelope deviations calculation modified [ALL]

Now the error value is calculated in nominal end position, not the measured end. The difference is when the pipe ends are not cut off to its nominal lengths.

Saving AXD cad file [ALL]

Always save AXD cad file to the projects folder, even if it was loaded from different location.

Other changes and Bug Fixes

Learn mode [ALL/Fix]

Learn mode with camera probe corrected.

Closing dialogs on tabbed panels [ALL/Fix]

Some situations of closing dialogs on tabbed panels corrected, it goes back to a tab which was active when the closing window was opened.

Ribbon Options toolbar [ALL/Fix]

Ribbon Options toolbar removed from Desktop ribbon tab. It was enabled by mistake when 2D version of desktop was introduced.

App Error in Probes Manager Dialog [ALL/Fix]

Possible application error in Probes Manager dialog corrected.

App Error when stopping CNC program [ALL/Fix]

Possible app error when stopping cnc program, when a small 'wait for the move end' box was displayed.

Pattern Feature Corrected [ALL/Fix]

Pattern feature corrected in case its reference datum is different from datum of the Master Feature.

Error when opening new part files [ALL/Fix]

Possible error when opening New part with certain content of a layout file (with no Result Window).

File changeslog_7.txt

15.09.12

198. Learn mode with camera probe corrected

22.09.12

199. Some situations of closing dialogs on tabbed panels corrected, it goes back to a tab which was active when the closing window was opened.

26.09.12

200. Ribbon Options toolbar removed from Desktop ribbon tab. It was enabled by mistake when 2d version of desktop was introduced.

11.10.12

- 101. Possible application error in Probes Manager dialog corrected.
- 102. Possible app error when stopping cnc program, when a small 'wait for the move end' box was displayed.

17.10.12

- 103. Iges import dialog prevented from close with X during processing the iges file, Axel main form and Mewasure Window prevented from close during cad import.
- 104. There was an error loading part containing USerRes features (ie pipe), for Axel versions issued after 12-09-2012 (versions 7.04.08-09)

27.10.12

- 105. Camera AutoZoom functions added
- 106. Camera Probe calibration dialog completed with offsets and magnifications

4.11.12

- 107. Pattern feature corrected in case its reference datum is different from datum of the Master Feature.
- 108. CAD entities window selection (with shift key) changed, so only entities entirely enclosed in the window are being selected.

16.11.12

- 108. Pipe end points envelope deviations calculation modified, so the error value is calculated in nominal end position, not the measured end. The difference is when the pipe ends are not cut off to its nominal lengths.

18.11.12

- 109. Always save AXD cad file to the projects folder, even if it was loaded from different location.

21.11.12

- 110. Possible error when opening New part with certain content of a layout file (with no Result Window).

Version 7.04.07

Release Date: 30 August 2012

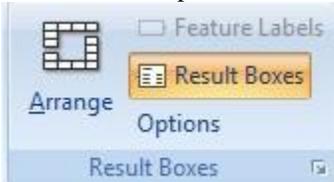
New Features

Circle Feature CNC parameter [CNC]

Circle feature CNC parameters tab, margin parameter value is checked if it's too small considering probe ball diameter. If so, a red exclamation mark is displayed with hint info text.

Feature Labels option added [ALL]

Feature Labels option added as an alternative to regular result boxes, ribbon Results toolbar modified.



Torus Feature [ALL]

Introduced Torus feature.



Improvements

Remeasure button in feature CNC tab [CNC]

Feature CNC tab, Remeasure button only enabled for single feature learn, disabled in global learn mode.

Auto-Disable Points/Edge/Surface mode [ALL]

Disable Points/Edge/Surface mode automatically when starting a new construction/alignment feature.

CNC auto option on in global learn mode [CNC]

CNC auto option set automatically on when starting global learn mode.

Nominal Value Table [ALL]

In Nominal values table, allowed to define nominal torus, cylinder and sphere features.

CAD collisions [ALL]

Disabled cad collisions always for graticule (mouse) and image probe types.

Preview Line Button in Single Move Dialog [ALL]

Single Move dialog, 'Preview Line' button now also toggle the collision cylinder picture.

Other changes and Bug Fixes

Corrected result box text [ALL/Fix]

Corrected 1st line of result box text when rendering to bitmap (report view).

Corrected Off-Line Joystick [ALL/Fix]

Corrected off-line joystick, it was stop working sometimes after creating New part few times.

Corrected feature creation is pattern [ALL/Fix]

Corrected error when creating features in Pattern, with Auto cnc option disabled.

File changeslog_7.txt

Period: 17 May 2012 till 30 August 2012

30.05.12

186. Circle fetuare Cnc parameters tab, margin parameter value is checked if is too small cosidering probe bal diameter. If so, a red exclamatiom mark is displayed with hint info text.

7.06.12

187. Fetaure Cnc tab, Remeasure button only enabled for single feature learn, disabled in global learn mode.

9.06.12

188. Disable Points/Edge/Surface mode automatically when starting a new construction/alignment feature.

11.06.12

189. Cnc auto option set automatically on when starting global learn mode.

190. Feature Labels option added as an alternative to regular result boxes, ribbon Results toolbar modified.

11.07.12

191. Introduced Torus feature

192. In Nominal values table, allowed to define nominal torus,cylinder,sphere feature.

193. Corrected 1st line of result box text when rendering to bitmap (report view).

30.07.12

194. Corrected off-line joystick, it was stop working sometimes after cerating New part few times.

22.08.12

195. Corrected error when creating fetaures in Pattern, with Auto cnc option diabled.

30.08.12

196. Disbaled cad collisions always for graticule (mouse) and image probe types.

197. Single Move dialog, 'Preview Line' button now also toggle the collision cylinder picture.

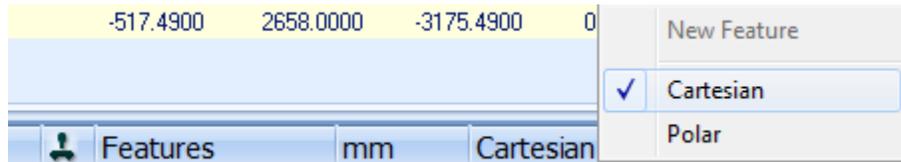
Version 7.04.01

Release Date: 16 May 2012

New Features

Cartesian / Polar Selection in Status Line [ALL]

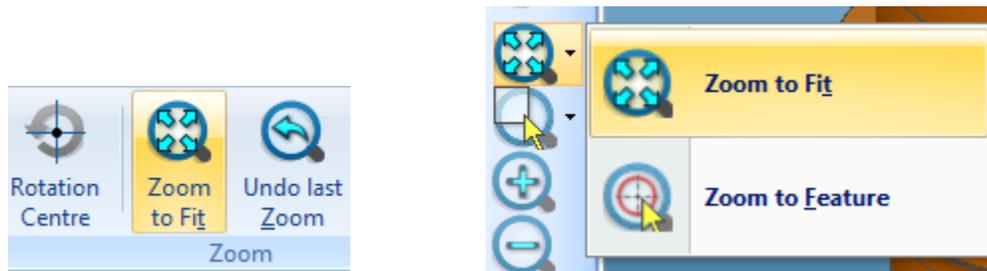
Cartesian / Polar selection added to status line. This setup is applied to a new feature.



New ZoomToFit Function [ALL]

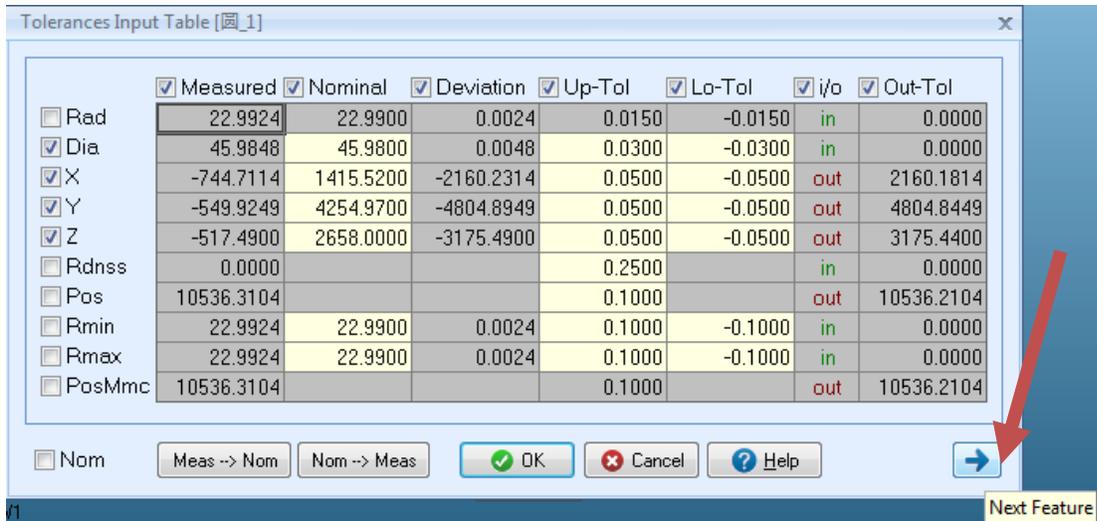
New ZoomToFit function in 3d view, more accurate fit calculation (user enabled option).

Pipe generation, measured features has no data points generated if nominals has not been defined yet. This is for correct zoom to fit calculation during first measurement.



Next Feature Button Added [ALL]

Single feature tolerances edit dialog, Next Feature button added.

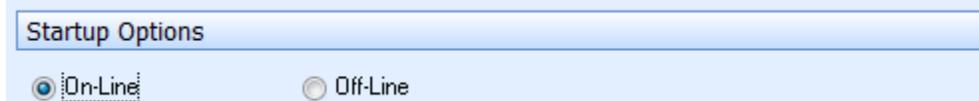


MIH Probe Change Message [ALL]

New MIH probe change message, also the message appears in on-line feature remeasure (not GO mode).

New General Tab Option [ALL]

New General tab option for starting program in on-line or off-line mode. The default setup is ON-Line.



New Selection Filter Dialog Box [ALL]

Selection Filter dialog box added to 3D right button menu. The same box in wire-frame mode shows with left+right mouse buttons press.

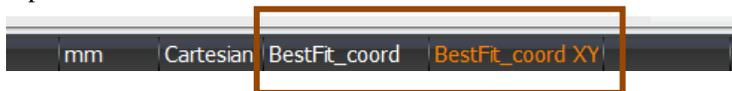
Improvements

Auto-Finish Translation and Rotation Features [ALL]

Translation and Rotation features are now automatically finished after first data point is added.

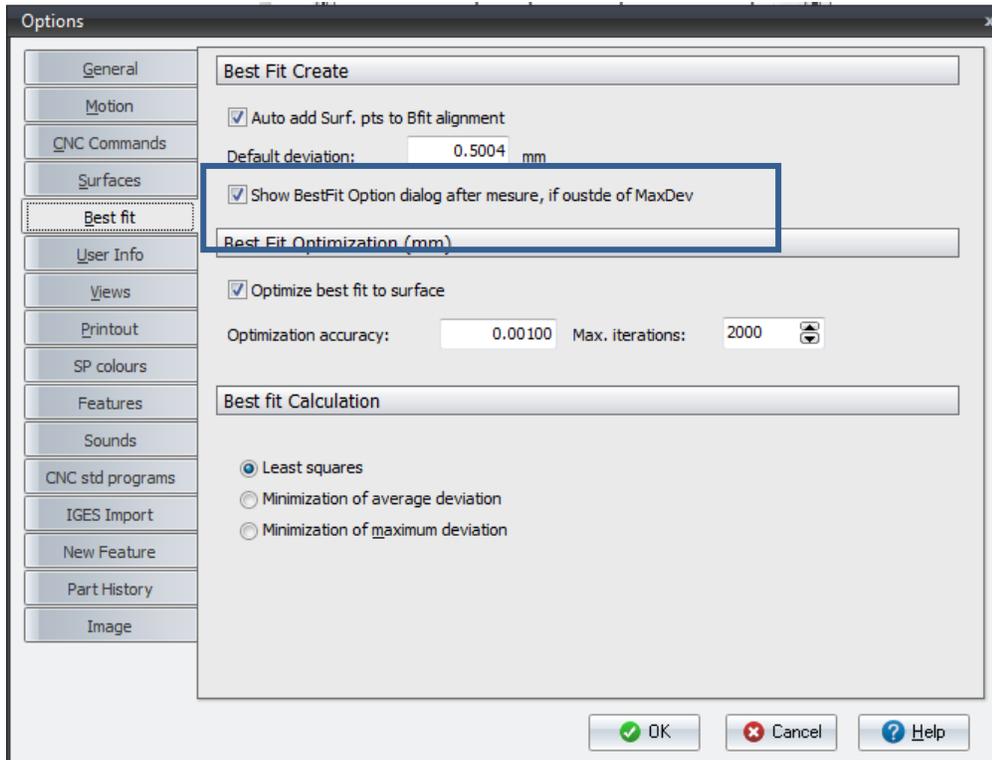
Working Reference System in Pipe Wizard [PIPE]

The working reference system and projection are set to pipe best fit datum after generating a new pipe sequence from Pipe Wizard.



Best Fit Option Added [ALL]

Best fit option added whether to open best fit table window after measure, if deviations are bigger than Max Deviation.



Font of Result Boxes [ALL]

Font of result boxes increased for 100% scale.

Average Point Picture in 3D View [ALL]

Average Point picture in 3d view is now scaled to fixed size in pixels.

Improved MoveTouch Margin Parameter in Learn [ALL]

MoveTouch margin parameter in learn, when reading from the ini it is now checked if it is zero value, if so its assumed 2 mm.

When executing MoveTouch, if the margin is 0 it is assumed 2 mm (was 5mm before).

Importing IGES [ALL]

IGES import arc/circle entity - if angle is 360 deg, create the circle.

Result Window Feature Header [ALL]

Result Window feature header was displaying double probe name when the probe doesn't exist.

Other changes and Bug Fixes

[Touch moves directions in Learn mode \[CNC/Fix\]](#)

CNC Learn mode, touch moves directions were corrected to the feature perpendicular direction, only if the Auto Create Feature Program Path option was enabled (or CNC Automatic Operations button in the left toolbar was on).

Now the directions are corrected always after finishing feature in learn, providing that the feature was calculated correctly.

Deleting Feature Error [All/Fix]

An application error corrected that might occur when opening CNC Parameters dialog after deleting a feature from feature list or command from CNC editor.

Also an error could happen when closing program after deleting manually a command from the CNC editor, which was associated with a feature displayed in the Property Panel.

Size and Direction Property Dialog [All/Fix]

Size and Direction property dialog corrected so it recalculates feature right after any change.

Construction Feature Data Tab in Feature Property Panel [All/Fix]

Feature Property Panel, construction feature data tab (alignment, angle, ..), the panel contents was incorrectly resized inside after change height of the window, now fixed.

Status Bar Resizing [All/Fix]

Status bar fields resizing corrected.

Corrections of operations with Deva interface [All/Fix]

Corrections of operations with Deva interface without probe installed.

- On-line joystick mode in the learn corrected.
- Starting CNC program with mouse (graticule) probe, warning message removed about not calibrated probe.
- CNC paused execution of feature without start point defined corrected.
- Measure Distance feature in GO mode corrected when it has DP points.
- Deva CNC interface corrected in case no probe connected.
- New Deva ini option for learn features with paused execution (separate doc deva_pause.doc)

Cursors Corrected [All/Fix]

View rotation and pan modes cursors corrected.

Symmetry and Runout Tolerance [All/Fix]

Symmetry tolerance in case of two planes calculation corrected.

Symmetry and Runout tolerances, now allows to enter Reference Length = 0, this will eliminate angular error from the result, remaining is just distance influence.

Result Selection [All/Fix]

Results Window feature large result selection and tab size always saved to the ini file. Also corrected result selection with Repeat Mode enabled.

MIH Probe Model Correction [All/Fix]

MIH probe model length calculation corrected.

Calculating Zoom to Average Point [All/Fix]

Calculating zoom to average point features corrected.

Corrected Docking Windows [All/Fix]

Docking windows corrected so no accidental undock should happen. Docking changes can be done only with the Shift key held down.

Corrected SaveAs Dialog [All/Fix]

SaveAs part dialog corrected so project can be saved to a different location than Projects folder.

CAD Initial Alignment Corrected [All/Fix]

CAD Initial Alignment corrected to work with features created from CAD with Add To Features mode option.

CAD Points / Edge Mode [ALL/Fix]

Cad Points/Edge Mode shows points in wrong position in case the element is different from the cad reference (ie. Cad Element has been used). The error was active from Feb 28, 2012.

File changeslog_7.txt

Period: 9 March 2012 till 16 May 2012

12.03.12

147. CNC Learn mode, touch moves directions were corrected to the feature perpendicular dir, only if the Auto Create Feature Program Path option was enabled (or CNC Automatic Operations button in the left toolbar was on).

Now the directions are corrected always after finishing feature in learn, providing that the feature was calculated correctly.

148. An application error corrected that might have occur when opening CNC Parameters dialog after deleting a feature from feature list or command from cnc editor.

Also an error could happen when closing program after deleting manually a command from the cnc editor, which was associated with a feature displayed in the Property Panel.

13.03.12

149. Translation and Rotation features are now automatically finished after first data added.

150. Size and direction property dialog corrected so it recalculates feature right after any change. (error from p.140 modification).

160. Feature Property Panel, construction feature data tab (alignment, angle, ..), the panel contents was incorrectly resized inside after change height of the window.

161. Cartesian / Polar selection added to status line. This setup is applied to a new feature.

162. Status bar fields resizing corrected.

18.03.12

163. Pipe wizard, after generate the pipe, working reference system and projection is set to pipe best fit system.

20.03.12

164. Best fit option added whether to open best fit table window after measure, if deviations are bigger than MaxDev.

22.03.12

165. New ZoomToFit function in 3d view, more accurate fit calculation (user enabled option).

166. Pipe generation, measured features has no data points generated if nominals has not been defined yet. This is for correct zoom to fit calculation during first measurement.

27.03.12

167. Corrections of operations with Deva interface without probe installed.

- on-line joystick mode in the learn corrected
- starting cnc program with mouse (graticule) probe, warning message removed about not calibrated probe
- cnc paused execution of feature without start point defined corrected
- measure Distance feature in GO mode corrected when it has DP points
- Deva cnc interface corrected in case no probe connected
- new Deva ini option for learn features with paused execution (separate doc deva_pause.doc)

30.03.12

168. Font of result boxes increased for 100% scale

169. AvrPoint picture in 3d view is now scaled to fixed size in pixels

4.04.12

170. View rotation and pan modes cursors corrected

13.04.12

171. Single feature tolerances edit dialog, Next Feature button added.

16.04.12

172. Symmetry tolerance in case of two planes calculation corrected.

173. Symmetry and Runout tolerances, now allows to enter Reference Length = 0, this will eliminate angular error from the result, remaining is just distance influence.

24.04.12

174. Results Window feature large result selection and tab size always saved to the ini file.

Also corrected result selection with Repeat Mode enabled.

25.04.12

175. MIH probe model length calculation corrected.

176. New MIH probe change message, also the message appears in on-line feature remeasure (not GO mode).

177. New General tab option for starting program in on-line or off-line mode.

3.05.12

178. MoveTouch margin parameter in learn, when reading from the ini it is now checked if its is zero value, if so its assumed 2 mm.

When executing MoveTouch, if the margin is 0 it is assumed 2 mm (was 5mm before).

9.05.12

179. Iges import arc/circle entity, if angle is 360 deg, create the circle.

180. Calculating zoom to average point features corrected

14.05.12

181. Result Window feature header was displaying double probe name when the probe didn't exist.

182. Docking windows corrected so no accident undock should happen. Docking changes can be done only with the Shift key held down.

16.05.12

183. Cad Points/Edge Mode shows points in wrong position in case the element is different from the cad reference (ie. Cad Element has been used). The error was active from 28.02.12.

184. Selection Filter dialog box added to 3D right button menu. The same box in wire-frame mode shows with left+right mouse buttons press.

185. SaveAs part dialog corrected so project can be saved to a different location than Projects folder.

186. CAD Initial Alignment corrected to work with features created from CAD with Add To Features mode option.

Version 7.03.07

Release Date: 9 March 2012

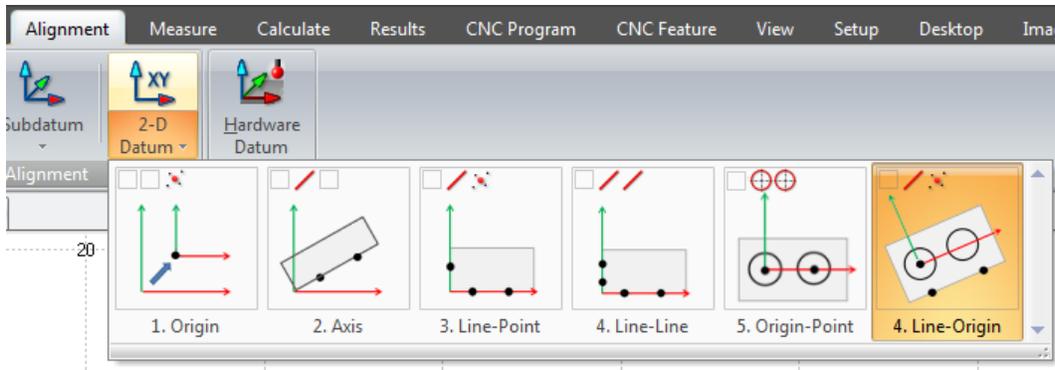
New Features

Axel 2D [ALL]

Axel 7 adapted for 2D applications released.

2D Alignment [2D]

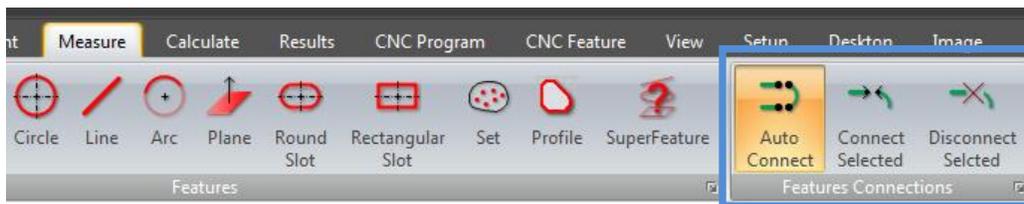
2D alignment added



First release of the DMIS output. Axel measuring program may be now exported in the DMIS file.

Feature Autoconnect [2D]

Feature Autoconnection added. When AutoConnect is switched on, than programs tries to join the consequitive measured features such as lines and arc in order to create part profiles.



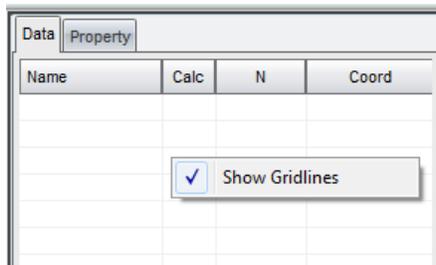
Improvements

Translation [ALL]

Chinese Traditional translation for Report Preview dialog added.

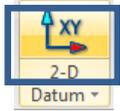
Feature List Gridlines [All]

The Feature List gridlines may be switched on and off from the RB menu on FL. Option is saved with desktop not for individual parts.



2D Alignment [All/2D]

The Generic 2D Alignment button always calls Line-Origin alignment option.

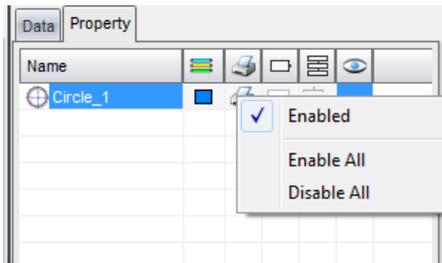


Mouse Probe in 3D [All]

Mouse Probe can now use Mouse coordinates as data source in Solid View. (except Screen Plane option). This was only possibly before in Wireframe view. The feature is mostly used for running the software in simulation mode using Mouse to simulate data points collected from the measuring stage.

New switching options for Print and Result boxes [All]

Feature List RB menu on printout and result boxes column has on/off options for all features.



Mouse Probe can now use Mouse coordinates as data source in Solid View. (except Screen Plane option). This was only possibly before in Wireframe view. The feature is mostly used for running the software in simulation mode using Mouse to simulate data points collected from the measuring stage.

Other changes and Bug Fixes

Short Moves in Learn mode [CNC / Fix]

Learn MoveTouch Margin parameter has been corrected in the CNC-Parameters-Learn Tab. Also the name has changed from Approach to Margin. Now the margin can be set correctly. It will allow to measure small holes in Learn mode.

Pattern Feature [All/Fix]

Data points generated by Pattern Feature have been corrected. Also Pattern Feature is not added as a command box to the CNC program editor anymore.

File changeslog_7.txt

Period: 26 November 2011 till 9 March 2012

30.11.11

- 137. Taiwanese texts for the report translated.
- 138. 2D alignment functions

4.12.11

- 139. View ribbon toolbar, button for view reference datum added.

12.12.11

- 140. Options for connecting arc-line features drawing to have contiguous contour picture

19.12.11

141. Mouse Probe can use now Mouse coordinates source position in solid view, (except Screen Plane option)

6.02.12

142. Learn MoveTouch Margin parameter corrected (CNC Parameters-Learn tab) (name changed from Approach to Margin).

143. Pattern feature, corrected data points of created features. Pattern feature removed from adding to cnc program during learn.

144. Features List RB menu on printout and result boxes has on/off options for all features.

145. Features List gridlines option (enabled with RB menu on empty space), saved with desktop (not each part)

8.03.12

146. Alignment ribbon buttons corrected. Element Datum, Subdatum, Cad Element buttons was starting 2d case if the 2d datum was used before.

2-D Datum main button always start the 4.Line-Origin case.

Version 7.03.04

Release Date: 26 November 2011

New Features

Copy Feature [ALL]

Copy Feature button placed in Calculate ribbon

DMIS Output [ALL]

First release of the DMIS output. Axel measuring program may be now exported in the DMIS file.

Improvements

Dongle code entry [ALL]

The dongle code can now be read by Axel software from the text file placed in the \BIN directory. The file should have extension DGL.

When a dongle dialog is about to be shown, program searches for the *.DGL files in the BIN directory and chooses the one with the latest date. Then it reads its first 22 characters text line. The code is shown in the dingle dialog. The user must only accept it with OK button.

Pattern Feature [CNC]

New additions for the Pattern feature, multiple master features, polar/grid generation.

DMIS Input [All]

- added more DMIS syntax items
- Added feature to import: edgepoint

Start Probe model [All]

Star probe has been introduced. The star prprobe model can be defined and later use during off-line programming. The new option is for the moment restricted to the non indexed probes

CNC Program Editor command boxes [CNC]

In Program Editor border colour of the boxes added during learn is changed from red to green.

Other changes and Bug Fixes

Auto Feature Finish in Go mode [All / Fix]

Corrected automatic finishing of features in Go mode (features constructed in data points source mode or with copy command)

Enter New Code menu option corrected [All/Fix]

Enter New Code menu option corrected when using it before open/new a part.

Measure Window 3D view [All/Fix]

Corrected 3d view after loading part saved with 2d view set.

Standard Sphere CNC program [CNC/Fix]

The standard program to measure the sphere in CNC mode have the following path corrections

- Inside sphere touch margin values
- Arc move to the apex

Pipe EndPoint [Pipe/Fix]

Pipe end point probe correction was not re-set to the last straight cylinder feature, when regenerating with different number of straights.

Best fit Element in Go mode [All/FIX]

The best fit element system will now finish automatically when sequence run in GO mode.

File changeslog_7.txt

Period: 7 April 2011 till 26 November 2011

7.04.11

77. Part SaveAs saves all non-standard program seq files to the project dir. SaveAs copy of the part file corrected.

8.04.11

78. Copy Feature button placed in Calculate ribbon

79. Corrected automatic finishing features in GO mode (features constructed with in data points source mode or copy)

10.04.11

80. New dongle code can be copied to the \BIN directory in *.DGL text file. If a new code dialog is about to be displayed, program will look for the DGL files, find the newaest one, and first 22-charactes text line will be displayed in the dialog. User must only accept it with OK.

81. Enter New Code menu option corrected when using it before open/new a part.

30.04.11

81. New mods for the Pattern, mutiple master features, polar/rid generation todo: move positions table to different tab, file import

3.05.11

82. Corrected 3d view after loading part saved with 2d view set

7.05.11

83. Corrected version of Pattern feature, Pattern Feature.doc

25.05.11

84. AvrPoint correction, in direction feature combobox, selection of planes is allowed as a direction.

02.06.11

85. Sphere Cnc path corrections,

- inside sphere touch margin values,

- arc move to the apex

86.

DMIS input

- added more dmis syntax items

- added feature to import : edgepoint

TODO : - circle, arc, slot : create projection plane feature

- import measure into feature own path

87. DMIS output

- 1st release
- todo: coord system, construction features, tolerances, results output

88. Maintenance, strings types prepared for d2009 unicode (files).

8.07.11

89. Pipe EndPoint probe correction was not re-set to the last straight cylinder feature, when re-generating pipe with different number of straights (8/07/11).

4.08.11

90. Correction of star tips models for use with TP probe type (not indexed heads)

91. Best fit element in GO mode was in not finished state.

7.08.11

92. Report preview app.error, when pipe feature filtered out with the filter buttons

93. Report pipe tables header line black colour.

10.08.11

95. Result boxes options 'Use Dimensions' and 'Hide not visible SP boxes' save as default corrected.

16.08.11

96. Angle feature result box in dimensions mode corrected so it displays Ang- result if selected in the Nominals dialog.

17.08.11

97. Cnc feature Test function, wrong probe selection in case the previous feature had more than one probe command in its cnc path.

20.08.11

98. Error playing a non existing wav file in the options-sounds dialog

24.08.11

99. Learn mode, cnc editor, overlapped boxes drawing when adding new features.

25.08.11

100. Wrong new tip calibration state (since 4.08)

101. Some message boxes in autocalibration changed to newer look.

26.08.11

102. Re-enabled Fetaure List hints with columnn names, displayed at the list top.

103. In Program Editor border colour of the boxes added during learn is changed from red to green.

104. Calibration sphere dialog, removed unneeded operations when measuring calibration sphere with ph/mih probes, ie. question if invalidate all probe positions.

29.08.11-05.09.11

105. Adding start position move to cnc prorgam removed.

106. Recacluation of alignemnt features during program run corrected

107. Corrections in Results Window messages during measuring cnc manual fetaures

108. Corrections in drawing line to the next program position

109. Manual alignment fetaures added during learn has path type generated, and the path can be automatically updated after alignemnt, when changing they execution to auto.

110. Alignment feature transformation is not updated until all its components are calculated correctly. This prevents from moving the cad if the alignment features were not measured correctly.

111. Cylinder path edit and create corrected (axis direction)

112. Property panel, Cnc parameters tab buttons repeated on the path table tab.

113. The Cnc parameters tab, after start Learn single feature, the accept and undo buttons changed to remeasure and cancel, so the required learn operations can be done from this place. The buttons work in the same way as the left toolbar and ribbon buttons.

Orange icon colour (finish/cancel) applies to features and the green to the learn mode.

7.09.11

114. Warning message about no on-line alignment measured when starting on-line program run.

115. Position tolerance data dialog simplified to one datum for the 1st option (with one datum)

116. Restart offline cnc program from pause state after measuring manual feature, current program position updated to the current joystick position.

8.09.11

117. Set offline joystick position to the near cad position when :

- part with cad loaded
- cad file imported (only if the joystick is still at 0,0,0)
- new element system defined
- current probe is touch

The probe is set at one of the upper corners of the safety planes

13.09.11

118. Best fit calculations corrected so the same surface points may be reused in new best fit definition. Element should be defined as last best fit alignment

119. Dongle flag checking for ver 7 corrected.

22.10.11

120. Disabled keyboard keys for offline joystick movements

25.10.11

121. Default tip for a new solid probe is faro pointer (no ball), for non-arm interfaces.

122. Probe selection shows now 3d view of solid probe model

123. Dbl click on DRO window header (if the caption is hidden) switches DRO coordinates to machine and back.

28.10.11

124. When cancel remeasure/continue/go of a feature, its probe name and tip and probe diameter are restored.

29.10.11

125. Reading .DNG file corrected, if the code from file already is in the dongle then it is not shown, an empty input box appears.

3.11.11

126. Cnc off-line automatic options for creating path and add to the program now depends on the probe type. Current scan paths are created and feature Exec is added only for touch probe type.

Image probe creates frame based commands.

15.11.11

127. Possible error when loading new probes file in the probes manager dialog.

128. Lock Rotations of the View Tab option added.

129. Hide wireframe background colour when opening a new part.

22.11.11

130. 2D modifications, additional toolbar buttons

131. Result box options dialog an Apply button added.

132. Arc feature result box attached to the arc midpoint, not the centre point

23.11.11

133. In solid view RB shows property of a selected feature

25.11.11

134. Occasional wrong data point picked with RB on cad in 3d view, if other than surface entities are enabled in the Cad Filter.

26.11.11 release

26.11.11

135. Skip showing layout name in the list if its file has been deleted.

136. Distance to slot calculation option 'shortest' now calculates distance to the slot centre line if the slot is 2nd feature in the distance data

Version 7.02.03

Release Date: 4 April 2011

New Features

Machine Configuration [ALL]

Machine configuration is saved with part file. When loaded on different computer part machine setup can be restored in machine setup dialog, using 'Machine from part file' checkbox.

This option also alters global motion limits set in motion options. Part can be saved with this option set (it will keep the parameters). If the option is cleared, current machine configuration will be saved.

Copy Feature construction [ALL]

Probe collision is checked in manual mode when trying to change the probe from the list displayed by clicking the LB in the Probe Window or in CNC before each probe change.

Probe Change checked	Description
Manual Probe Change	When trying to change Probe position manually, Axel checks for possible collision with CAD safety planes and Machine limits. Possible collision is shown in Measure Window and the probe does not change. IN roder to change the probe, move it to safe location and try again.
CNC program	During CNC program, collision is checked before each Probe Change command. If collision detected, the message 'Possible Collision Detected' is shown and program stops with Pause.

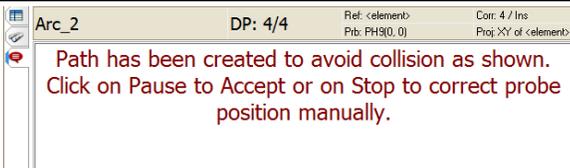
Safety moves collision detection [CNC]

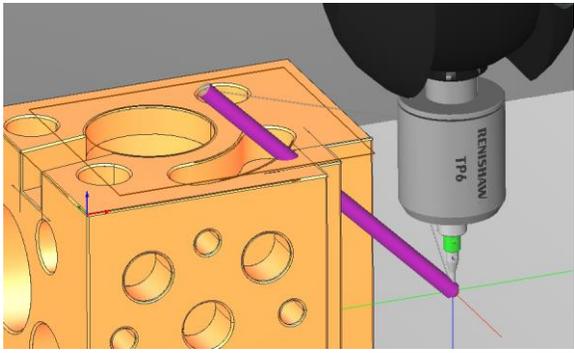
When CAD model is used and safety planes defined, Axel will check the safe passage between the current probe position and the start of the move.

This checke is applied for the Test feature, Run program and Single Move command.

If probe change is required during the move, it is done at current safety plane (normally Z+) and then safe passage is checked between probe position and next move.

The collision is checked between current probe position and the first move of the Feature program. If collision detected, it is shown in Measure window and the safety route is suggested.

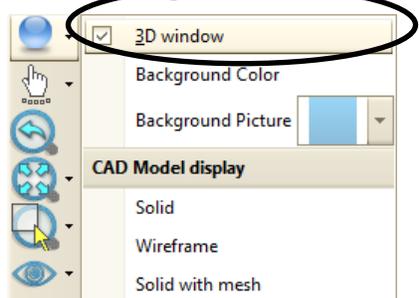
Command	Description
	Press the Test feature button. The collision is checked between current probe position and the first move of the Feature program. If collision detected, it is shown in Measure window and the safety route is suggested.
When collision detected the message shows in the Results Window	
Program goes to Pause state	

<p>Safety Route is shown in Measure Window</p>	
	<p>You can either accept suggested safety passage by depressing Pause and program will continue Feature test or Stop the program by pressing STOP button, moving the probe manually to a safe region and restarting the feature test.</p>

Improvements

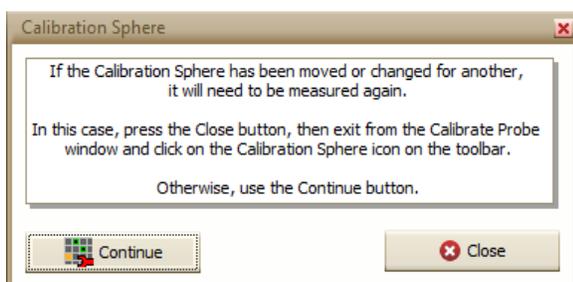
Solid View Button [ALL]

Solid view button changed so it doesn't switch between solid and wireframe modes. This can be done inside the menu. This is made to prevent accidental switching 3d mode while running program.



New Message Box [All]

New message box is displayed before entering probe autocalibration. It reminds to remeasure calibration sphere location in case it has been moved or changed for another.



Note: The Autocalibration is called by clicking the Autocalibration button in the Setup ribbon or from Probe Calibration dialog.

Test Feature in Learn [CNC]

Test single Feature is now enabled during Learn mode. Previously, you would need to switch Learn mode off before Feature test could be executed. Also warning message about un-calibrated probes has been disabled when running single feature or test program.

Other changes and Bug Fixes

Autocalibration touch speed [CNC / Fix]

PH_Cal2 sequence has been corrected. It will use the the system setup for touch probe speed used during auto probe calibration routine.

Break point in Autocalibration program [CNC][Fix]

Error in cnc calibration program with breakpoint set has been corrected.

Remeasure button [All]

Selecting Remeasure operation will now automatically switch from Results to Features Edit Mode.

Auto Projection Plane [All]

The default projection plane is only updated after each plane measurement or creation of the new coordinate system (datum). Measuring slots does not change the projection plane any more.

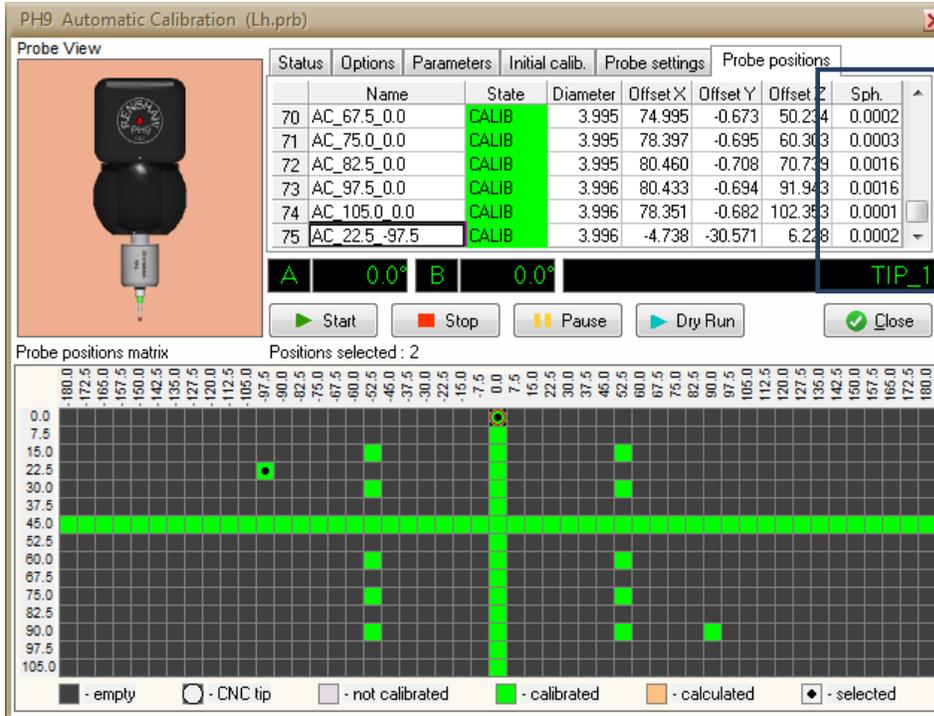
Program Manager [All][Calibration]

New symbols used to distinguish between Learn and Generated feature paths.

Box	Description
 Generated Arc_2	Blue arrow indicates Generated feature path
 Learn Circle_2	Green colour indicates Learn feature path

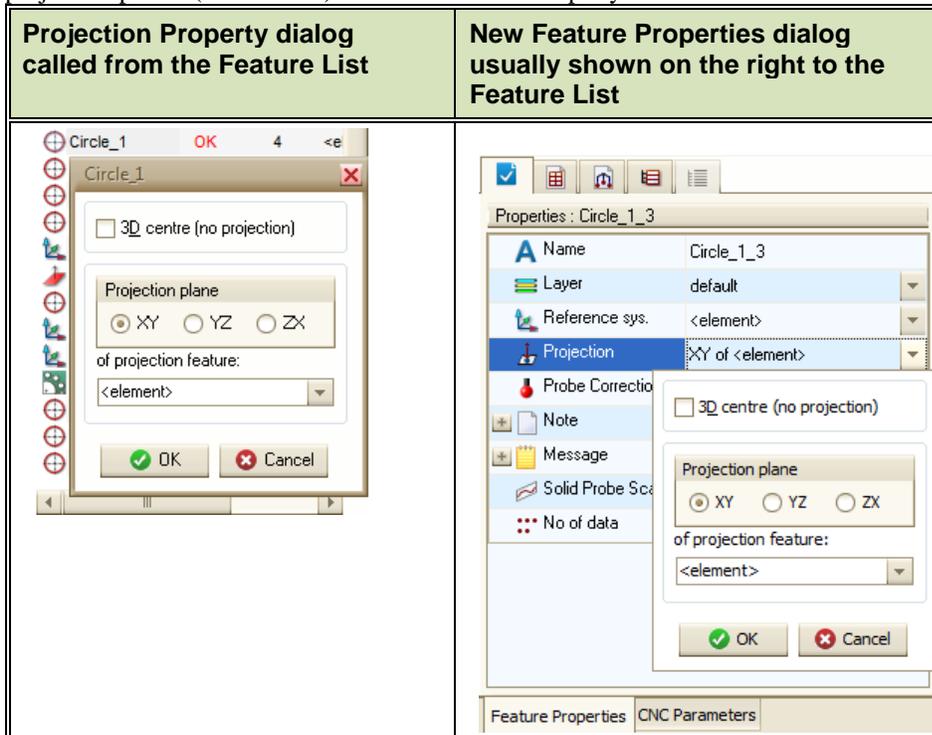
Probe Sphericity Values [All][Calibration]

Sphericity values from manual sphere calibration are now saved with tips. They can be viewed in autocalibration dialog tip positions table. Until now only values measured during autocalibration were saved. This is for checking quality of tip calibration.



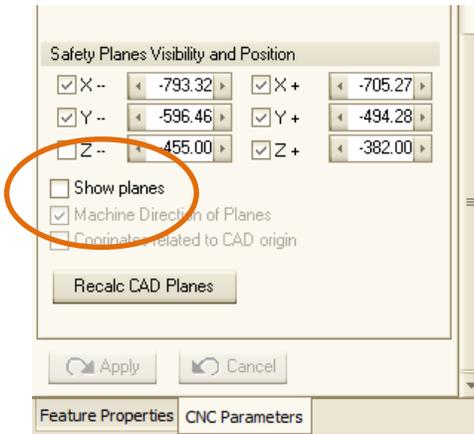
Projection Property dialog called from the Feature List [All / Fix]

The Projection Property dialog called from the Feature List from the RB property pop up menu would show incorrect projection planes (YZ and XZ). The new Feature Property window would show the correct values.



Safety Plane Checkbox added [CNC]

Additional checkbox for showing safety planes in the Measure Window has been added in the CNC Parameters dialog.



File changeslog_7.txt

Period: 17 March 2011 till 10 April 2011

20.03.11

63. Machine configuration saved with part file. When loaded on different computer part machine setup can be restored in machine setup dialog, using 'Machine from part file' checkbox. This option also alters global motion limits set in motion options. Part can be saved with this option set (it will keep the parameters). If the option is cleared, current machine configuration will be saved.

21.03.11

64. Solid view button changed so it doesn't switch between solid and wireframe modes. This can be done inside the menu. This is made to prevent accidental switching 3d mode while running program.

65. Copy of probes file saves together with the part in project dir. Probe file name contains '_copy' added.

66. Put running program into Pause state if History tab has been selected. This is to prevent against running program with collision checking disabled (3d view is hidden). Todo: add some warning, or allow to display history together with 3d viewer enabled.

67. Only coordsys and plane features allowed to go as status working plane. Until now slots were used too.

68. Zoom buttons in View ribbon tab now don't update left side toolbar zoom buttons. todo:confirm.

22.03.11

69. CNC automation operations button added to the left side toolbar. This is negation of 'All off' option of CNC Parameters dialog.

26.03.11

70. Some default options for displaying view elements (ie. safety planes) were not restored for new part. Now the options are saved when 'Save Global Settings'.

30.03.11

71. Remeasure button click now do automatically switch from Results to Features Edit Mode.

31.03.11

72. Error when generating pattern features with cnc automatic options switched off.

1.04.11

73. PH_Cal2 seq corrected so it use default touch speed

74. Error in cnc calibration program with breakpoint set

3.04.11

75. Plane feature data points result boxes to show dp deviation enable : FL , RB menu on resbox column, plane feature only for now resbox options : new autoarrange option for DP boxes (include or not) report config, Features page : show DP table

6.04.11

76. Copy Feature mode, next to the Feature Data Points mode in the left toolbar. Both modes now displays its mouse cursor over MW and FL windows. FDP mode is active while a feature is active (being measured), and Copy when no feature is active. To disable the mode click on the toolbar button and it will change to clean arrow picture.

NOTE: while in Copy mode, any selection made in MW or FL creates new copy of the selected feature and adds to end of the list. todo: At the moment no feature CNC property or path is being copied.

Version 7.02.01

Release Date: 16 March 2011

New Features

Pattern Feature [CNC]

The Pattern feature is designed to multiply a master feature on a common plane on polar or rectangular grid positions.

Any of dp-measured feature can be used as a master feature (red icons).
Process of generating pattern of feature consists of few steps

- Define the master feature
- Set pattern parameters
- Create table of positions
- Manual edit of position (optional)
- Create features from the table icons

Prepare the master feature



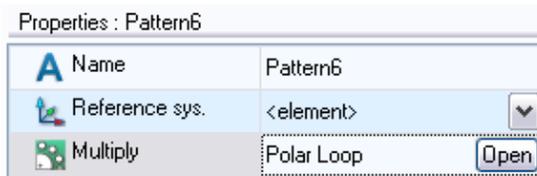
Create master feature, define its all properties and nominal values.
Pattern feature will use nominal values of the master for creating new positions so they must be set correctly.



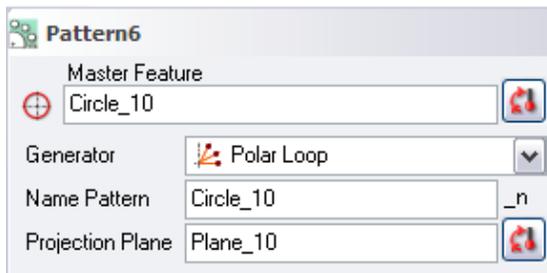
When adding Pattern feature, it will automatically take selected (or last on the list if none) feature as a master. This can be modified later in the Pattern data dialog.

Pattern data

To define pattern data open Multiply property.

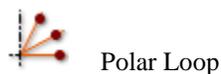


First part of the Pattern data



Master Feature

Generator - type of function for creating new features positions





Grid Loop

File Import (not implemented)
 Cad extraction (not implemented)

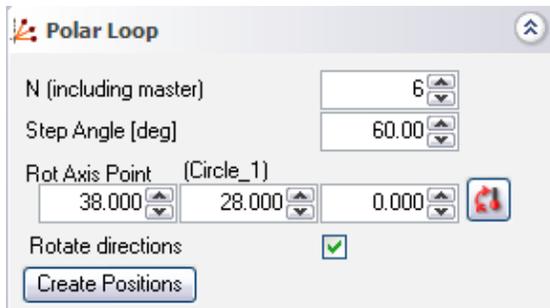
Name Pattern- this name with index number $_n$ will be assigned to the features name
 Projection Plane - a plane feature

Master Feature, Projection Plane feature can be changed using one of the methods:
 edit feature name

drag and drop feature from the feature list

remeasure-like button, after pressing the button next to the editor, select a feature on the feature list or window graphics, similar to selecting data for construction features

Polar Loop parameters



Number of positions is specified including the master feature. Its position will be put first in the table, but feature for this position will not be created. Actual number of features added will be $N-1$.

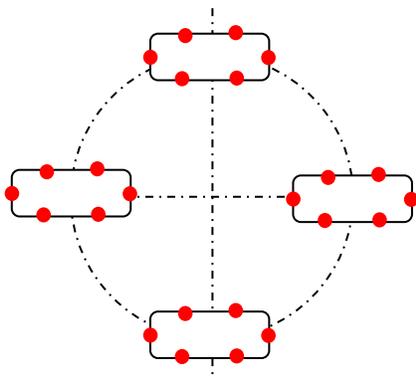
Master feature defines angle=0 position from which the Step Angle is added to calculate next positions.

Rotation Axis Point coordinates defines centre of the polar rotations. The coordinates can be edited manually, feature drag and drop, or using the remeasure button for selecting a feature. By selecting a feature for the centre program takes its nominal values and fill the editors.

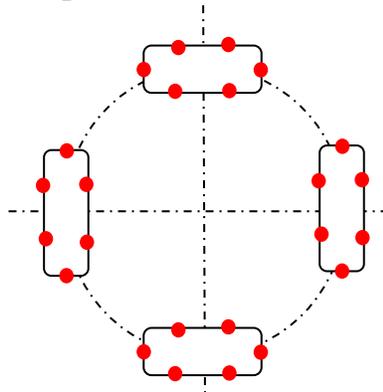
Rotate directions option tells if the new features are rotated comparing to the master (data points, line direction etc.). Without this the new feature will look like the master is just translated to a new position, without change of orientation.

Example of effect of multiplying slot feature with the Rotate Direction options disabled (A) and enabled (B) :

A



B



Create Positions buttons fill the table with calculated coordinates.
This doesn't create features yet.

Grid Loop parameters

File Import parameters

Positions Table

Positions to Generate							
N	En	[deg]	Name	X	Y	Z	Size
0	<input checked="" type="checkbox"/>	0.00	Circle_10	38.000	7.000	0.000	10.000
1	<input checked="" type="checkbox"/>	60.00	Circle_10_1	56.187	17.500	0.000	10.000
2	<input checked="" type="checkbox"/>	120.00	Circle_10_2	56.187	38.500	0.000	10.000
3	<input checked="" type="checkbox"/>	180.00	Circle_10_3	38.000	49.000	0.000	10.000
4	<input checked="" type="checkbox"/>	240.00	Circle_10_4	19.813	38.500	0.000	10.000
5	<input checked="" type="checkbox"/>	300.00	Circle_10_5	19.813	17.500	0.000	10.000

The table shows preview of positions before actual creation of new fetuares.
The values can be modified or enabled / disabled.

Angle value in case of polar generator is filled when creating positions, but can be altered manually. In case of editing the angle, XYZ coordinates are re-calculated.

Editing XYZ does not recalculate the angle.

Size value represents nominal diameter (circle, sphere,cylinder), radius (arc) or width (slots) of the master feature. If modified, it will be assigned to nominal result of the created feature.

First position in the table is occupied by the master feature data.

Names of features to be created must be unique. If they are not, the table row will be written in red.

Positions to Generate						
N	En	[deg]	Name	X	Y	Z
0	<input checked="" type="checkbox"/>	0.00	Circle_10	38.000	7.000	
1	<input checked="" type="checkbox"/>	60.00	Circle_10_1	56.187	17.500	
2	<input checked="" type="checkbox"/>	120.00	Circle_10_2	56.187	38.500	
3	<input checked="" type="checkbox"/>	180.00	Circle_10_3	38.000	49.000	
4	<input checked="" type="checkbox"/>	240.00	Circle_10_4	19.813	38.500	
5	<input checked="" type="checkbox"/>	300.00	Circle_10_4	19.813	17.500	

In case of names conflict the table items are displayed in red.

Possible error situation is duplicated names, or feature with a name already exists on the feature list and is not associated with the Pattern feature. Those associated with the Pattern can exist if they were already generated. Such features are replaced during next generation.

Error message about names is displayed when Create Features button is pressed.

Create Features

This option actually changes the features.

The master feature remains unchanged.

Features once created with the Pattern keeps its reference and they are deleted when creating them for the second time.

Process of creating the features consists of few elements:

Delete all features previously created with this Pattern feature

Create new feature of the master feature type

Set rotated nominal values

Copy and rotate master data and correction points

Create feature cnc path (generated)

Copy and rotate cnc learn path

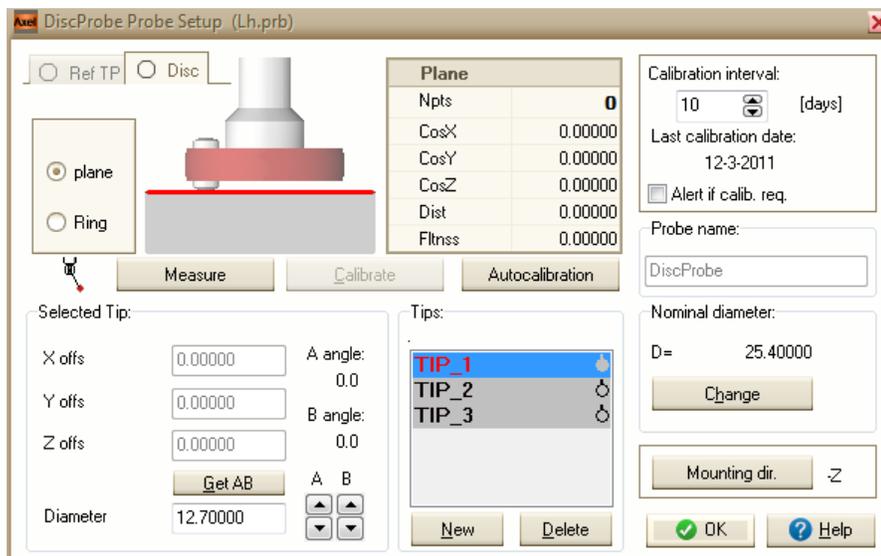
Created features are inserted on the feature list after the Pattern feature or the master feature, whichever is last
Cnc FeatExec command are inserted after the master feature command in the main program.

Whether Feature Cnc paths are created and added to the program it is controlled by the Cnc Parameters – Automatic Operations.

Disc Probe [PROBES]

The Disc Probe needs to be added to the list of available system probes and its model created. The calibration will be carried out with the help of the Ring Gauge of known diameter.

1. Click the RB in the Probe Window. The DiscProbe Probe Setup dialog opens.



2. Enter the nominal ring gauge diameter

Calibrate – Disc Probe is the only probe

3. Make sure you are in the Disc tab and Plane is selected. Click Measure button and measure the top plane of the ring gauge. Press Finish button after last point is measured. touch the top plane of the ring gaugeThe disc probe is calibrated by mesuring the plane on top of the ring gauge and its diameter.
4. Now measure the ring diamter colecting 3 or more data points. When Finished press Calibrate button. The Disc Probe diameter is calculated.

Calibrate Disc Probe as additional probe

5. Measure the Ring Gauge using the disc probe as described in point 3 and 4
6. Now Measure the Ring gauge using the main reference Probe – for example touch Probe. You will need to Measure plane and a circle.
7. Press Calibrate at the end. The diameter of the disc probe as well as the offset between the Disc Probe and Main Touch probe are calculated.

PH probe change collision detection [CNC]

Probe collision is checked in manual mode when trying to change the probe from the list displayed by clicking the LB in the Probe Window or in CNC before each probe change.

Probe Change checked	Description
Manual Probe Change	When trying to change Probe position manually, Axel checks for possible collision with CAD safety planes and Machine limits. Possible collision is shown in Measure Window and the probe does not change. IN roder to change the probe, move it to safe location and try again.
CNC program	During CNC program, collision is checked before each Probe Change command. If collision detected, the message 'Possible Collision Detected' is shown and program stops with Pause.

Safety moves collision detection [CNC]

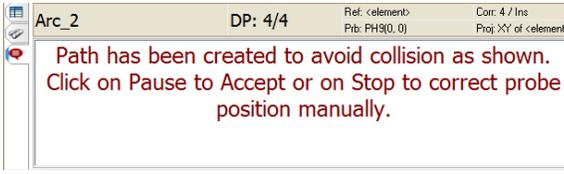
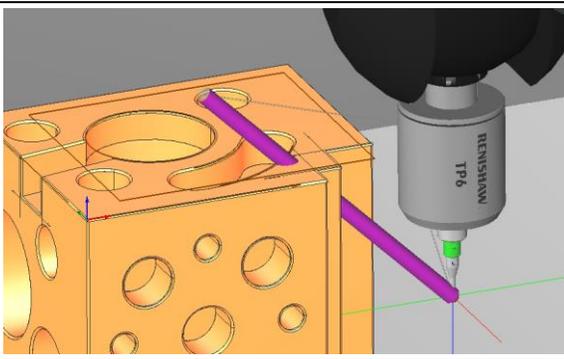
When CAD model is used and safety planes defined, Axel will check the safe passage between the current probe position and the start of the move.

This checke is applied for the Test feature, Run program and Single Move command.

If probe change is required during the move, it is done at current safety plane (normally Z+) and then safe passage is checked between probe position and next move.

The collision is checked between current probe position and the first move of the Feature program. If collision detected, it is shown in Measure window and the safety route is suggested.

Command	Description
	Press the Test feature button. The collision is checked between current probe position and the first move of the Feature program. If collision detected, it is shown in Measure window and the safety route is suggested.

<p>When collision detected the message shows in the Results Window</p>	
<p>Program goes to Pause state</p>	
<p>Safety Route is shown in Measure Window</p>	
	<p>You can either accept suggested safety passage by depressing Pause and program will continue Feature test or Stop the program by pressing STOP button, moving the probe manually to a safe region and restarting the feature test.</p>

Improvements

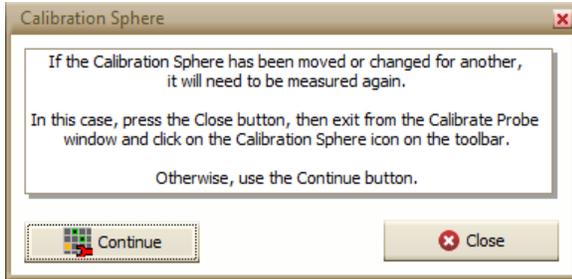
Learn Button [CNC]

Learn button has been added to the Measure Window toolbar displayed on the left hand side. This is in addition to usual Learn button place in the CNC Program ribbon.



New Message Box [All]

New message box is displayed before entering probe autocalibration. It reminds to remeasure calibration sphere location in case it has been moved or changed for another.



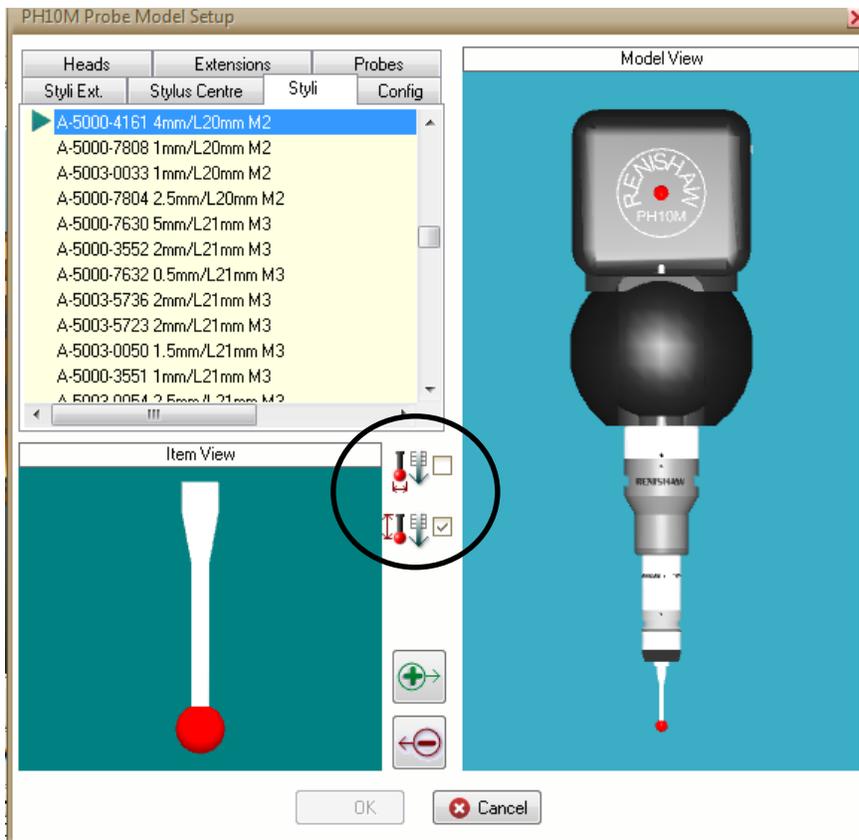
Note: The Autocalibration is called by clicking the Autocalibration button in the Setup ribbon or from Probe Calibration dialog.

Test Feature in Learn [CNC]

Test single Feature is now enabled during Learn mode. Previously, you would need to switch Learn mode off before Feature test could be executed. Also warning message about un-calibrated probes has been disabled when running single feature or test program.

New Styli Sort buttons [All/ Probes]

The new buttons for sorting styli by the tip diameter or styli length have been added in the Probe Manager / Styli dialog.



Button	Description
--------	-------------

	The styli are sorted by the tip diameter .
	The styli are sorted by the probe length

Other changes and Bug Fixes

Message in Result Window [All / Fix]

The error displaying message in the Results Window message tab in Chinese windows has been rectified. New RichEdit component has been used.

Machine Setup Dialog [All][Fix]

Machine Setup dialog, 'Get Limist From Setup' corrected for 90/270 deg.

Creating new plane with cnc options on [CNC]

If the plane is created in cad surface mode, initial path parameter is Grid, if created from single dp (measured or cad RB), initial path parameter is 'DP based distribution'

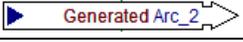
New CNC_MoveToArc command [CNC]

New cnc MoveToArc command, with 2 point parameters : destination, and go thru point.

Implemented to outside Arc/Circle/Sphere feature cnc.

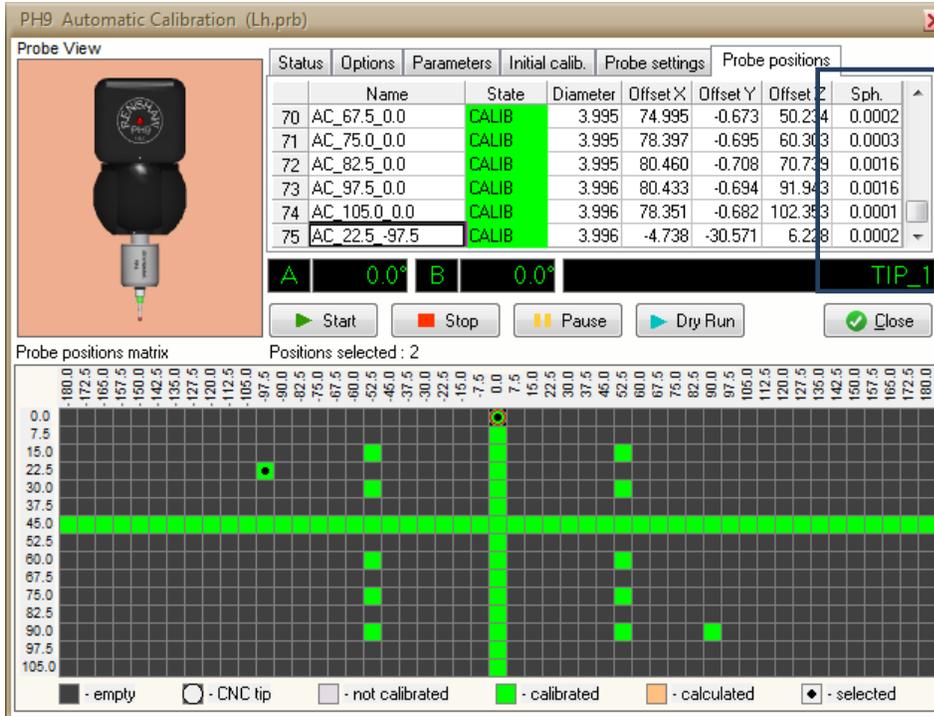
Program Manager [All][Calibration]

New symbols used to distinguis between Learn and Generated feature paths.

Box	Description
	Blue arrow indicates Generated feature path
	Green colour indicates Learn feature path

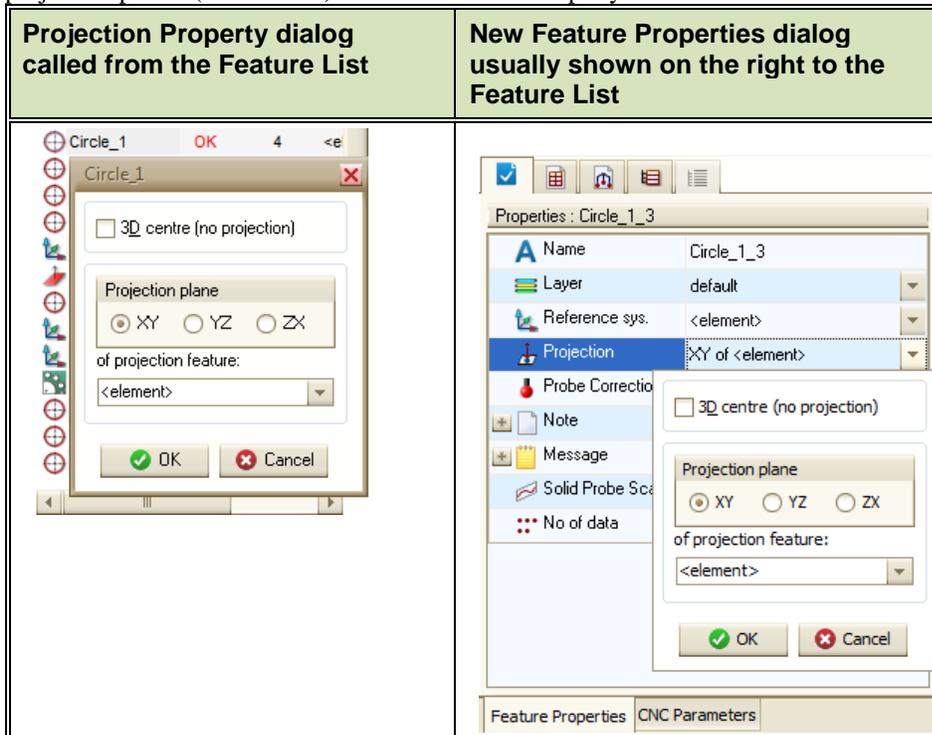
Probe Sphericity Values [All][Calibration]

Sphericity values from manual sphere calibration are now saved with tips. They can be viewed in autocalibration dialog tip positions table. Until now only values measured during autocalibration were saved. This is for checking quality of tip calibration.



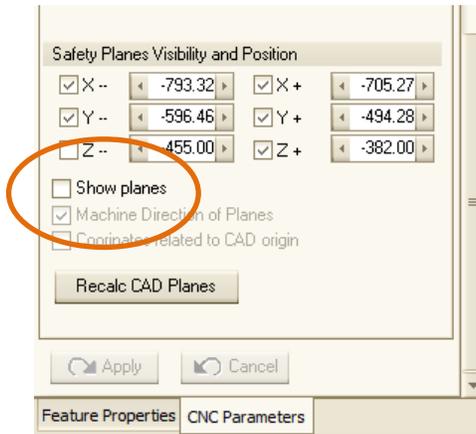
Projection Property dialog called from the Feature List [All / Fix]

The Projection Property dialog called from the Feature List from the RB property pop up menu would show incorrect projection planes (YZ and XZ). The new Feature Property window would show the correct values.



Safety Plane Checkbox added [CNC]

Additional checkbox for showing safety planes in the Measure Window has been added in the CNC Parameters dialog.



File changeslog_7.txt

Period: 13 Nov 2011 till 16 March 2011

13.11.10

- 6. Multiple nominals table diameter.radius selection
- 7. History charts column x rows indicators

14.11.10

- 8. History rows, columns values corrected
- 9. Multiple nominals dialog dia/rad results selection corrected

17.11.10

- 10. Error when closing new report print preview, with some axel views configuration in the report
- 11. Gauge data dialog number editor corrected.
- 12. Gauge number of data indication corrected when define/remeasure.

18.11.10

- 13. History database, single measuremet deviations recalculated after Update Part

20.11.10

- 14. Initial calibration dlg, update transformatins after rotate or offset button used from the dialog.
- 15. Machine model setup, selection and restore of model rotation corrected.
- 16. Geometrical alignment, origin projection for a new aignment is now initialized as X axis for (plane-axis-point) and (plane-plane-point),

for other cases it is XY plane.

17. CAD Element alignment in case of initial alignment active, calculation of translation and rotation corrected.

21.11.10

15. Machine Setup dialog, 'Get Limit From Setup' corrected for 90/270 deg.

23.11.10

16. Drawing white lines for correction direction corrected, in case of Data Points Mode with the Initial Alignment active.

17. Initial state of features created for the alignment is now disabled after creation. They have to be switched on in the program editor to be activated before real measurement.

18. Pattern feature added, its dialog for generating features is prepared, creates and checks table of names to be created. No actual generating yet.

25.11.10

19. Selection removed from all command boxes added automatically to the cnc program when defining new feature with auto cnc options enabled.

20. Creating new plane with cnc options on.

If the plane is created in cad surface mode, initial path parameter is Grid, if created from single dp (measured or cad RB), initial path parameter is 'DP based distribution'

29.11.10

21. Correction of scrolling feature list window after deleting features

22. Cnc editor, triangle mark for Exec feature command changed to filled with color blue for generated path, green for the learn one.

02.12.10

23. Pattern feature with Polar Loop option. (todo: grid option)

06.12.10

24. Cnc feature path edit mode corrected insert/delete moves

23.12.10

25. New cnc MoveToArc command, with 2 point parameters : destination, and go thru point.

Implemented to outside Arc/Circle/Sphere feature cnc.

Todo: outside Cylinder, Cone

inside arc, cyl, cone with use of arc

Deva drv implementation of Mot_MoveArcAbs

12.01.11

26. Probe model 2nd and 3rd stylus extensions were not saved with probe file,

so they didn't appear after reloading a part. Probe file version changed.

18.01.11

27. Star centres and stylus model configuration.

(not fully working for measurements,

todo: star tip selection, calibration, collision detection)

28. TP (not PH) mounting direction setup has added 1st star tip direction to setup probe front side, needed for orientation in case of configurable star tip centre.

31.01.11

29. Manual probe calibration dialog, options for calibrating disc tip diameter on a ring gauge (circle).

There is no disk offsets calculations yet.

02.02.11

30. UCC1 drv implementation of Mot_MoveArcAbs

09.02.11

31. PH50 head model and calibration implementation

32. New report - surface points displayed in general features table (separate).

TODO: separate tables for SP/EP

15.02.11

33. Disc stylus calibration

34. Disc probe height correction for point/plane feature touched in probe direction (with the disc height pin)

TODO: correct DP coordinates taken with cad collision detection

16.02.11

35. Sphericity values from manual sphere calibration saved with tips.

They can be viewed in autocalibration dialog tip positions table.

Until now only values measured during autocalibration were saved.

This is for checking quality of tip calibration.

Todo : maybe some tip colour indication if the value exceed a threshold.

17.02.11

36. Error displaying Results Window message tab on Chinese windows.

(RichEdit component exchanged)

37. New cnc MoveToArc command used in outside cylinder and cone paths

18.02.11

38. Probe model setup dialog, added buttons for sorting stylus list with tip diameter or length.

21.02.11

- 39. Order of Plane-Circle Exec cnc commands added automatically during learn.
- 40. Corrected probe position during learn, after adding touch move.
- 41. Learn Single Feature (approach+measure) mode corrected.

24.02.11

- 42. Learn mode, wrong coordinates of created safety moves, when adding a learn move that is in collision with the cad.

25.02.11

- 43. Background of probe selection window corrected

28.02.11

- 44. Learn button added to the right side toolbar.
- 45. Cnc Test single feature allowed during learn mode, message about uncalibrated probes has been disabled when running single feature or test program.
- 46. ExecFeat cnc commands were always displayed as Generated in the cnc editor right after part loaded.

2.03.11

- 47. Some optimization in switching collision modes, for calculating cnc moves collisions and surface path cad intersections.
- 48. In probes manager name of the probe will not have space characters at the end. Such name was not restored from the ini file properly.

4.03.11

- 48. PH probe change collision detection.
- 49. Additional checkbox for showing safety planes in the CNC Parameters dialog
- 50. In feature property panel, Measuring Alignment or Calculation feature display feature data tab, now after finish it will return to previously visible tab

6.03.11

- 51. Positioning machine for
 - learn: display single move path to execute
 - test : starts immediately, with no pause
- todo:
 - program execution point
 - start from feature option

7.03.11

- 52. Last RW message restored after doing feature Test during learn
- 53. Recalculate safety planes in GO mode and after delete element

8.03.11

- 54. Program Start with collision detection path (p.51)

55. Solid view feature line width saved with desktop options

56. Feature projection dialog called from FL corrected (planes YZ and XY).

10.03.11

57. Correction of safety path calculation for some cases when the destination position was outside the box or below -Z plane.

11.03.11

58. Message box before opening autocalibration dialog.

Version 7.01.25

Release Date: 11 November 2010

New Features

Single Move dialog [CNC]

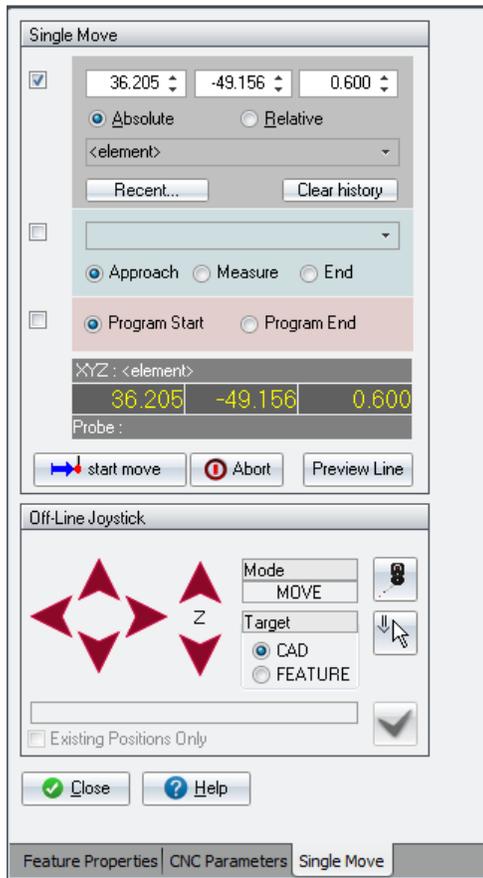
New Single Move dialog has been created. The purpose of the dialog is to move the CNC machine from its current location to selected location.

To open Single Move dialog

8. From the CNC Program Tab, select Single Move



9. The Single Move dialog appears. Initial CAD alignment dialog box opens. The dialog normally opens docked together with Feature Properties and CNC Parameters dialogs.



Single Move Dialog

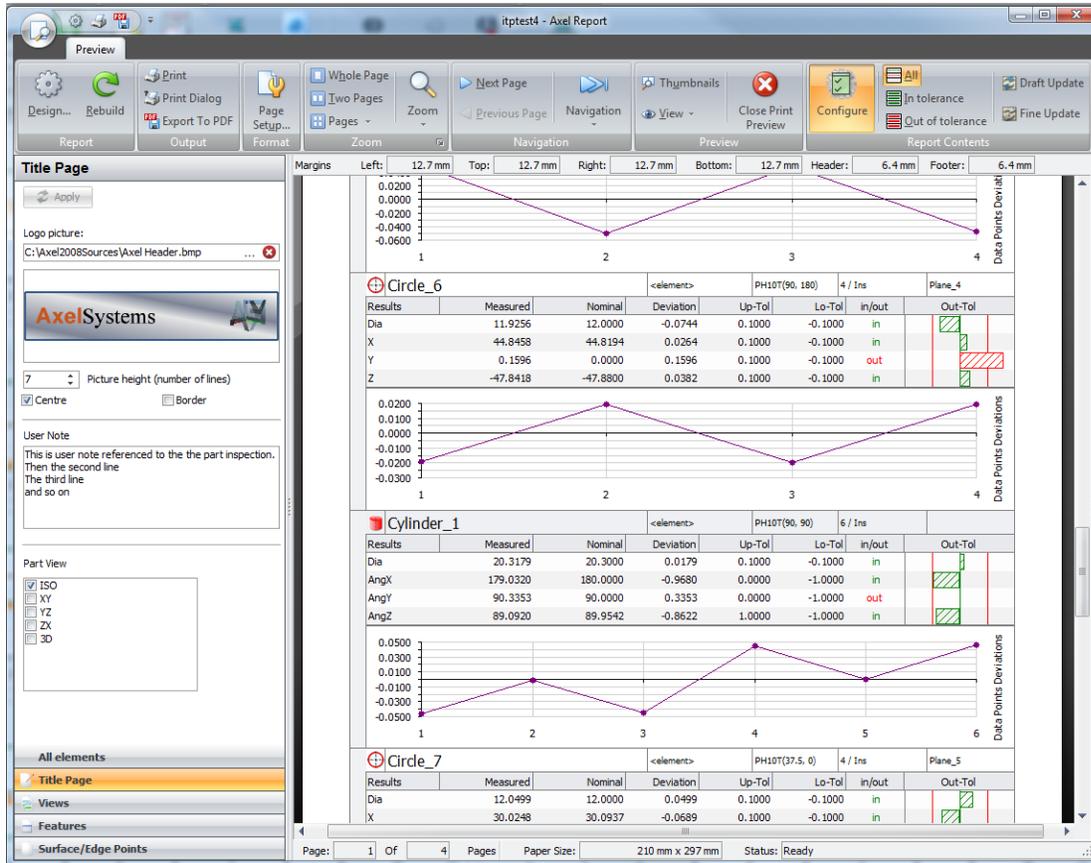
Using Single Move dialog will move the machine in CNC mode from its current position to one of the selected destinations which can be typed in XYZ location, Enter of exit point of the selected feature or beginning or start of the CNC program.

Command	Description
<input checked="" type="checkbox"/> <div style="border: 1px solid gray; padding: 5px; margin: 5px;"> <div style="display: flex; justify-content: space-between;"> 36.205 -49.156 0.600 </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <input checked="" type="radio"/> Absolute <input type="radio"/> Relative </div> <div style="margin-top: 5px;"> <element> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Recent... Clear history </div> </div>	Directs the machine to move from its current location to XYZ coordinates as entered. The XYZ coordinates are referenced to selected Datum and the move can be executed as either relative or absolute.
<input type="checkbox"/> <div style="border: 1px solid gray; padding: 5px; margin: 5px;"> <div style="margin-bottom: 5px;"> <element> </div> <div style="display: flex; justify-content: space-around;"> <input checked="" type="radio"/> Approach <input type="radio"/> Measure <input type="radio"/> End </div> </div>	This option moves from current location to either approach, enter or exit point of selected feature CNC sequence.
<input type="checkbox"/> <div style="border: 1px solid gray; padding: 5px; margin: 5px;"> <div style="display: flex; justify-content: space-around;"> <input checked="" type="radio"/> Program Start <input type="radio"/> Program End </div> </div>	When selected, the machine will move from its current location to Program Start or End point.
<div style="border: 1px solid gray; padding: 5px; margin: 5px;"> <div style="margin-bottom: 5px;"> XYZ : <element> </div> <div style="display: flex; justify-content: space-between; margin-bottom: 5px;"> 36.205 -49.156 0.600 </div> <div style="margin-bottom: 5px;"> Probe : </div> </div>	
<div style="display: flex; justify-content: space-around; margin: 5px;"> start move Abort Preview Line </div>	

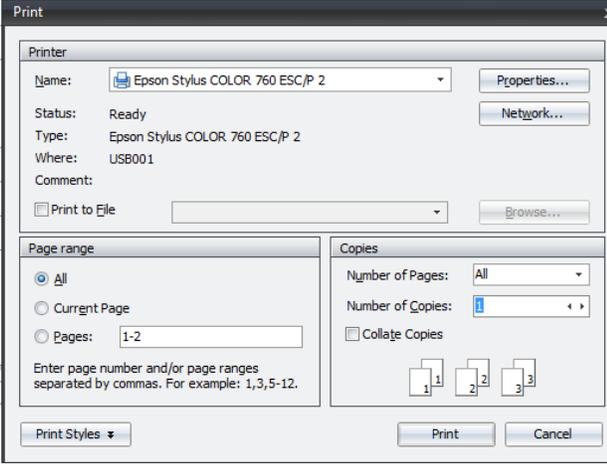
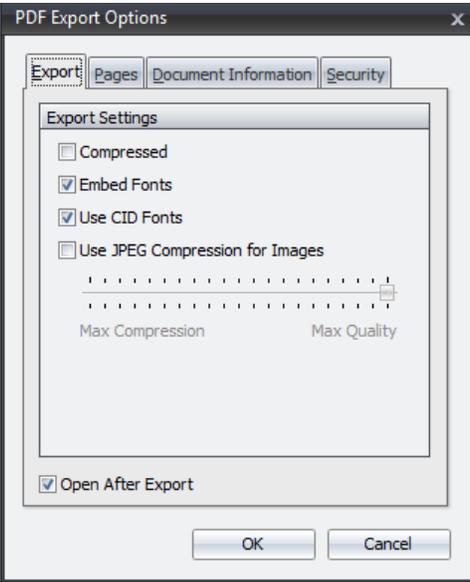
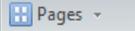
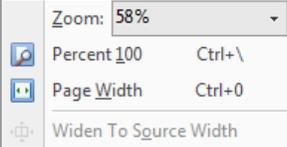
New Report Preview

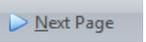
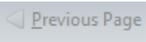
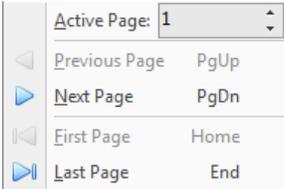
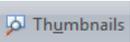
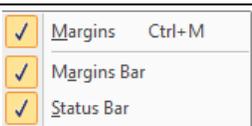
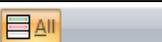
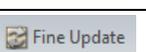
Gauge Feature, by default, will now automatically terminate after selecting the cone. Previously, it was expecting second entry of a circle which would define gauge diameter.

The Axel Report dialog



Ribbon Operation	Description
Report	
Design...	The XYZ coordinates of the CAD surface point at the mouse click location are entered for the feature.
Rebuild	Enter coordinates of the existing feature as the data point
Output	
Print	Start sending report to currently selected printer. Note: Prints immediately without opening Print dialog.
Print Dialog	Opens Print dialog.

	 <p>The Print dialog box shows the printer selection (Epson Stylus COLOR 760 ESC/P 2), page range options (All, Current Page, or Pages: 1-2), and copy options (Number of Pages: All, Number of Copies: 1, Collate Copies). Buttons for Print Styles, Print, and Cancel are visible.</p>
	<p>Opens Export to PDF dialog. Choose PDF export options and press OK button to save.</p>  <p>The PDF Export Options dialog box has tabs for Export, Pages, Document Information, and Security. The Export Settings section includes checkboxes for Compressed, Embed Fonts, Use CID Fonts, and Use JPEG Compression for Images. A slider is present for adjusting quality from Max Compression to Max Quality. The Open After Export checkbox is checked. OK and Cancel buttons are at the bottom.</p>
Format	
	<p>Opens Page Setup dialog.</p>
Zoom	
	<p>Show one report page</p>
	<p>Show two report pages</p>
	<p>Select number of report pages to show</p>
	 <p>The Zoom settings panel includes a dropdown menu set to 58%, and three options: Percent 100 (Ctrl+\), Page Width (Ctrl+0), and Widen To Source Width.</p>
Navigation	

 	Go to next or previous pages of the report
	
Preview	
	Displays Thumbnails pane next to the report
	
	Closes the Report Preview
Report Contents	
	Opens Report configuration dialog next to right of the report
	Show all measured features in the report
	Show features that are in tolerance
	Show all out of tolerance features in the report
	Update Report to the latest Measure Window views – in draft mode
	Update Report to the latest Measure Window views – fine update for printing

Improvements

Gauge Feature [ALL]

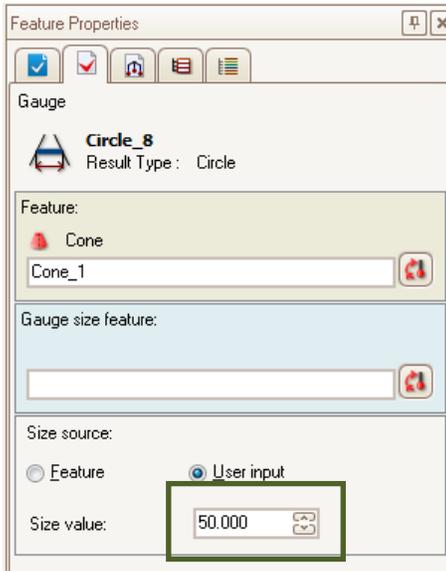
Gauge Feature, by default, will now automatically terminate after selecting the cone. Previously, it was expecting second feature entry to define gauge diameter.

To set a gauge diameter with user input

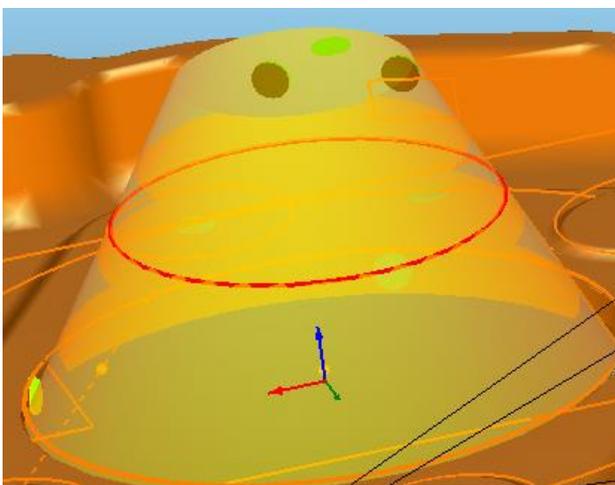
1. Measure a cone for which gauge diameter is to be set
2. From the Calculate Tab, select Gauge.



3. Select the cone for which you want to set the gauge diameter
4. The gauge circle is created and placed onto the feature list.
5. Display data property of the gauge circle by clicking on it with the right button or view it in the Feature property dialog if opened.
6. Choose Data property. The gauge data property dialog box appears.



7. Enter the nominal gauge diameter into the Size Value edit box.
8. Press OK. The gauge circle of entered diameter is created. It will also appear in the Measure Window.

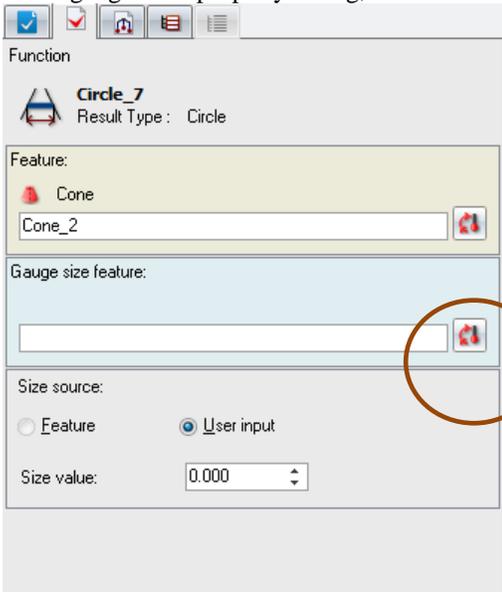


To set a gauge diameter with another feature

1. Measure a cone for which gauge diameter is to be set
2. From the Measure menu, choose Gauge.



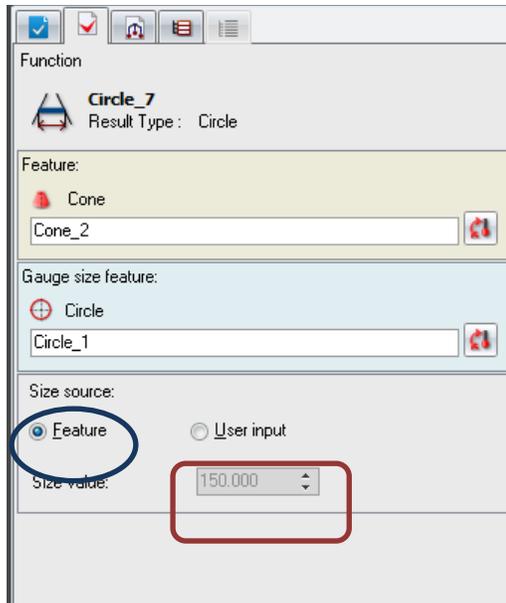
3. Select the cone for which you want to set the gauge diameter
4. The gauge circle is created and placed onto the feature list.
5. In the gauge Data property dialog, click on the red button in the Gauge Size feature as shown below



6. The Gauge size feature waits for the feature entry



7. Now select in the Feature List, the feature result of which will define the value of the gauge diameter. The typical entry might be poreviously measured circle. After entering thefeature its gauge diameter is shown in the Gauge dialog and the source is set to Feature.



Other changes and Bug Fixes

Feature List Docking

Docking of Feature List and other panels on the right side of the desktop has been corrected. Problem was if Feature List or Property Panel was docked together with other windows such as CNC Editor, CNC Parameters or Single Move dialog.

Result Window – Multiple nominals dialog dia.rad selection corrected

Under certain conditions, it was not possible to edit the nominal value for rad/dia in the Tolerance Input Table for Circle feature. Switching between Rad and Dia in the left hand result selection column would normally reenable the edit field. This has now been rectified.

Alignment Data dialog

Plane or axis type can now be selected before defining the plane or line feature from the Feature List or Measure Window.

History – Charts

History rows/columns values are corrected.

File changeslog_7.txt

Period: till 11 November 2011

29.10.10

1. Gauge feature, by default now is finished after selecting a cone

03.11.10

2. Docking of FL and other panels on right side corrected. Problem was if FL or property panel was not independent, butdocked on tabs together with other window (cnc editor, cnc parameters, single move)

04.11.10

3. Single move dialog completed with new functions move to program/feature start/end. Probe change is working for program start, feature approach and measure (not for end at the moment).

08.11.10

4. Alignment data dialog, correction that now a plane or axis type can be set before selecting the plane or line feature from the fl.

5. Error in alignment defifnition, when selecting YZ plane whe there is just the plane (no line feaure)

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