



# InkZonePerfect - Manage Press Calibration Curves

Find more information about the product on our website:

<http://www.digiinfo.com>

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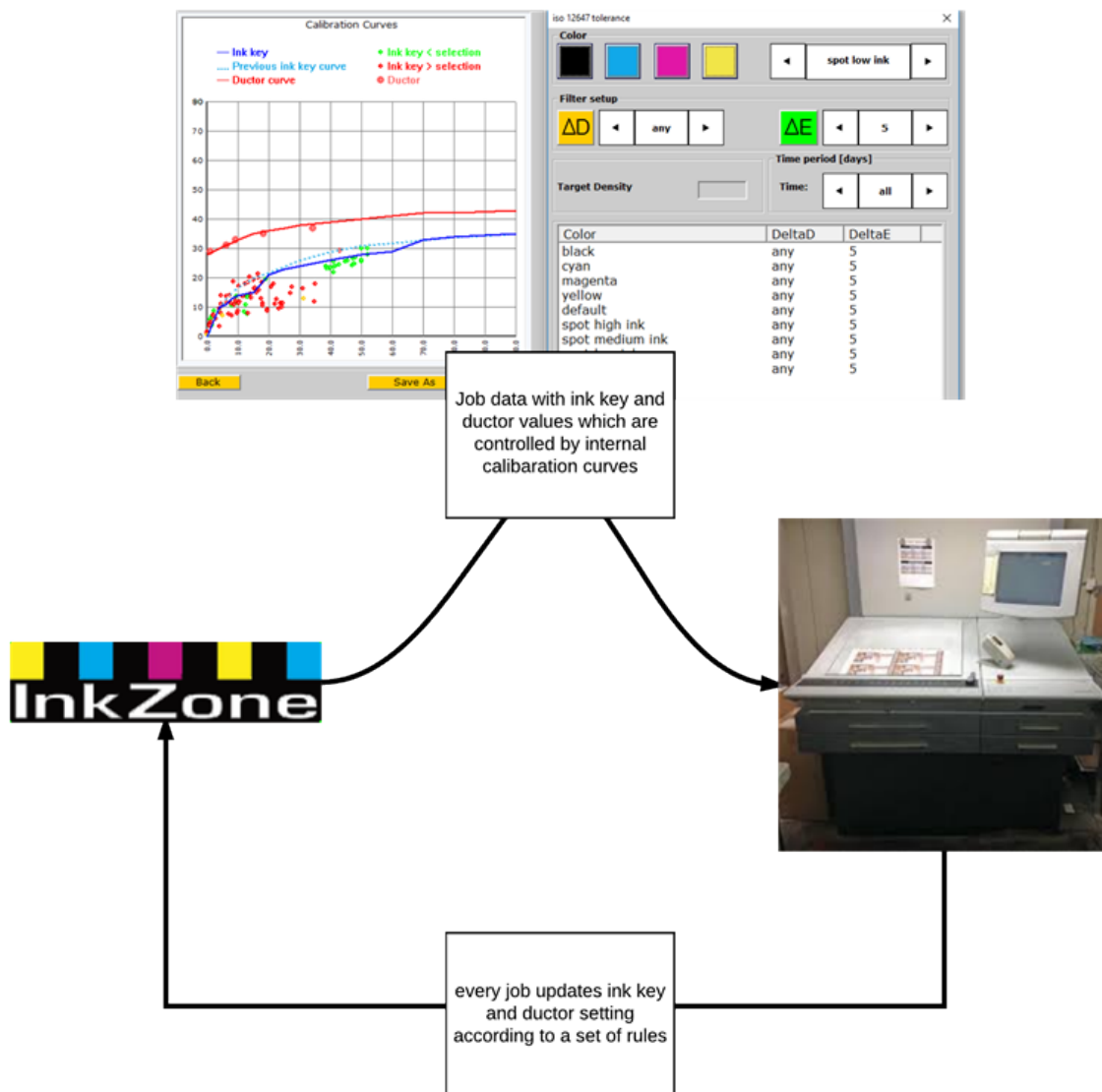
## 1. Introduction

### 1.1. Calibration Curves within InkZonePerfect

One of the main features is InkZone's ability to precisely set the initial ink profile and ductor during job start. InkZone continuously updates these curves with the feedback from printed jobs in order to minimize paper waste and setup time.

#### 1.1.1. Preset Workflow

InkZone uses ink preset calibration curves for ink keys and ductor. Process colors C, M, Y and K are controlled by an individual curve sets. Since version 7, IZP handles spot colors with individual calibration curves too. These curves are optimized with data from printed jobs over time.

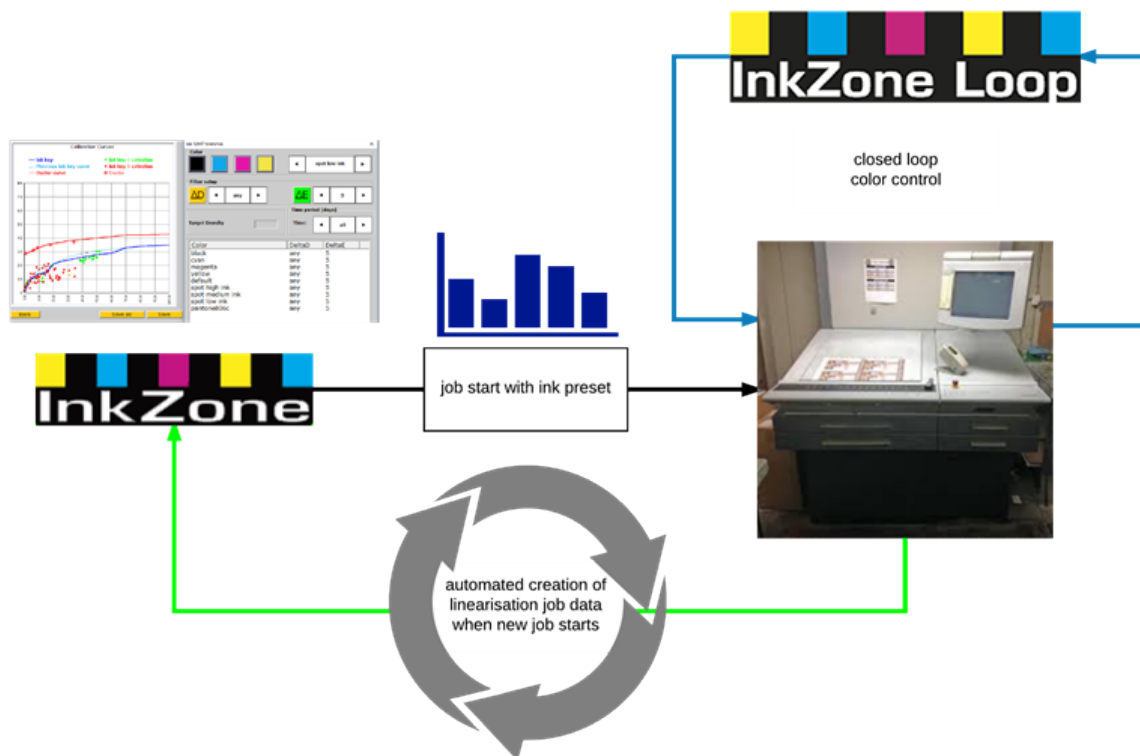


## 1.2. Read Back Job Data

InkZone's press calibration curves are optimized from every job's final ink key and ductor position. Depending on the software configuration the curve adjustment is done either automatically or manually by the press room supervisor.

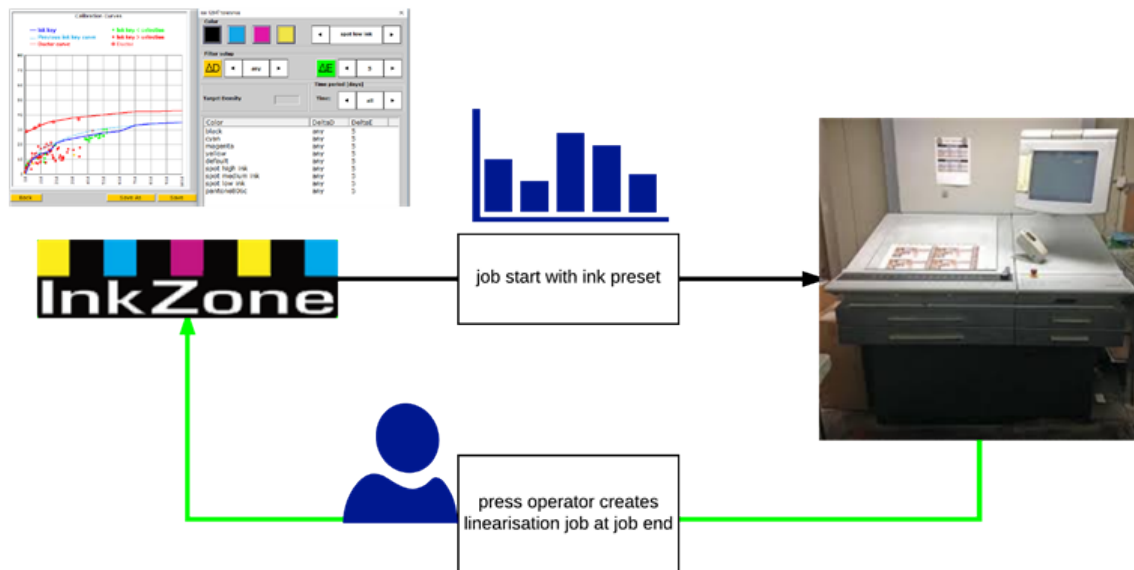
### 1.2.1. Configuration with InkZoneLoop

When using InkZoneLoop nothing needs to be done for storing the job's last ink key settings for the optimization of the calibration curves. When the operator starts a new job the previous job data is stored automatically as a linearization job. A linearization job contains all information necessary to improve the ink preset.



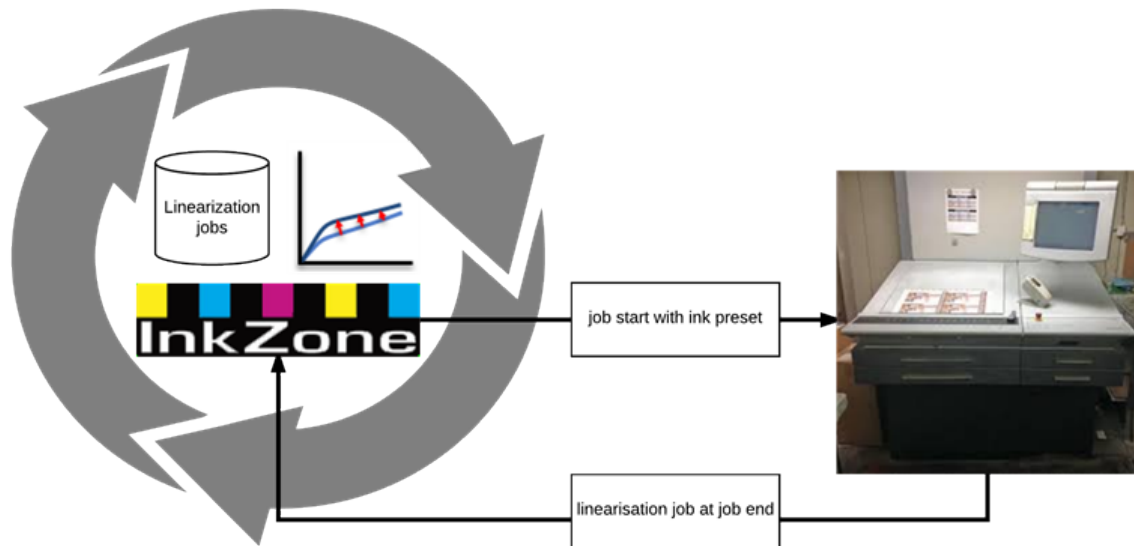
### 1.2.2. Configuration with InkZonePerfect only

When the configuration is "ink-preset only", no InkZoneLoop software is installed, then the job's last ink key setting needs to be stored manually by the press operator to create a linearization job.



### 1.3. Linearization and Optimization

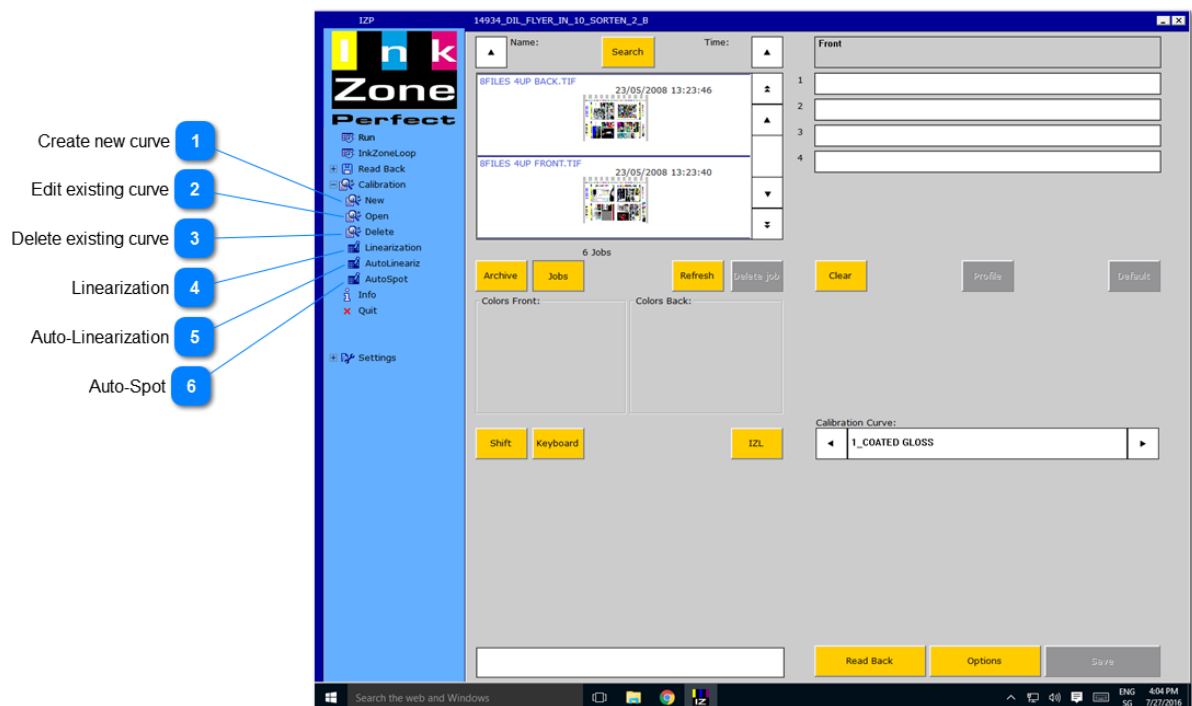
InkZone installs calibration curves for different paper stock including coated and uncoated paper during the initial setup. These base curves give you an easy start with the system. Over time the curves need to be optimized for the customer's paper stock and ink type to gain the best performance.



## 2. Calibration Curves

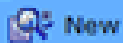
### 2.1. Manage Calibration Curve

From InkZonePerfect's side menu access the calibration curves. From here create new ones or modify existing curves. Start from here a linearization process or configure the automated linearization process.



1

#### Create new curve



Create from here a completely new curve set for a paper-ink combination. A curve set is created either for CMYK or spot colors

2

#### Edit existing curve



Manage from here an existing calibration curve set

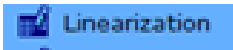
3

#### Delete existing curve



Delete an existing calibration curve set

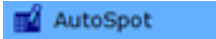


**4****Linearization**

Start the linearization process

**5****Auto-Linearization**

Configure and activate the automated linearization process

**6****Auto-Spot**

Configure the automatic spot color assignment based on the spot color's ink coverage

Access the ink-preset calibration from the menu on the right.

1 Curve selector

2 Paper definition

3 Front / Back activation

4 Low Coverage Setup

5 Coverage to ink key opening

6 Selected calibration curve

7 ClosedLoop regulation parameter

8 Increase / decrease curve shape relative or absolute

9 Ductor / ink sweep curve

10 Ink key curve

11 Ink key opening axis

12 Ink coverage axis

13 Overwrite existing curve set

14 Save curve set

15 JDF setup for 3rd party software

16 Copy curve to another

17 Color selection

**1 Curve selector**

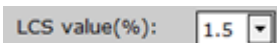
Select the curve to change by selecting either the Ink Key or Ductor button

**2 Front / Back activation**

Activate the checkbox for web or perfecting press setup in order to define an individual ink preset curve each each side

**3 Paper definition**

Set the ISO paper type definition 1 to 8.

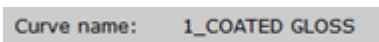
**4 Low Coverage Setup**

Setup the ink key opening for low plate coverage area (coverage on plate is below 2%)

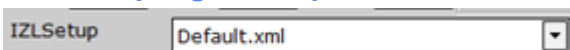
**5 Coverage to ink key opening**

2 =	6.32
4 =	10.85
6 =	13.54

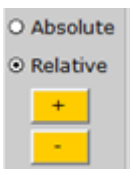
Translation table between ink coverage on plate (left column) and ink key opening (right column)

**6 Selected calibration curve**

Calibration curve name

**7 ClosedLoop regulation parameter**

Each calibration curve set is linked to a InkzoneLoop regulation setup. A InkZoneLoop regulation is setup is created in the IZLoop screen through the button "Job", "Setup".

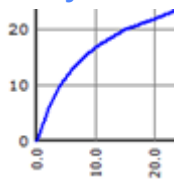
**8 Increase / decrease curve shape relative or absolute**

Change all curve points through the plus and minus button at once. Choose between absolute or relative change

**9 Ductor / ink sweep curve**

Setup the ductor/sweep calibration with the red curve

10

**Ink key curve**

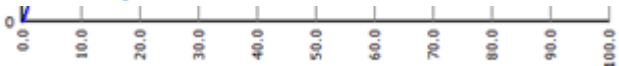
Setup the ink key calibration with the blue curve

11

**Ink key opening axis**

The Y axis represents the transferred ink key opening from 0 to 100%.

12

**Ink coverage axis**

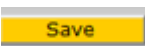
The X axis represents the ink key coverage from 0 to 100 % from the CIP3 data file

13

**Overwrite existing curve set**

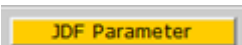
Overwrite an existing calibration curve set.

14

**Save curve set**

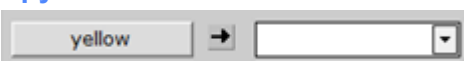
Stores calibration curve set.

15

**JDF setup for 3rd party software**

Link a JDF parameter set to the curve setup. The JDF is used to setup new jobs within X-Rite or Techkon software.

16

**Copy curve to another**

Copies an existing calibration curve, ink-key or ductor, to another color. First select source and target curve. Then press the arrow button in between.

17 Color selection

default

cyan

magenta

yellow

black

spot high ink

spot medium ink

spot low ink

empty

empty

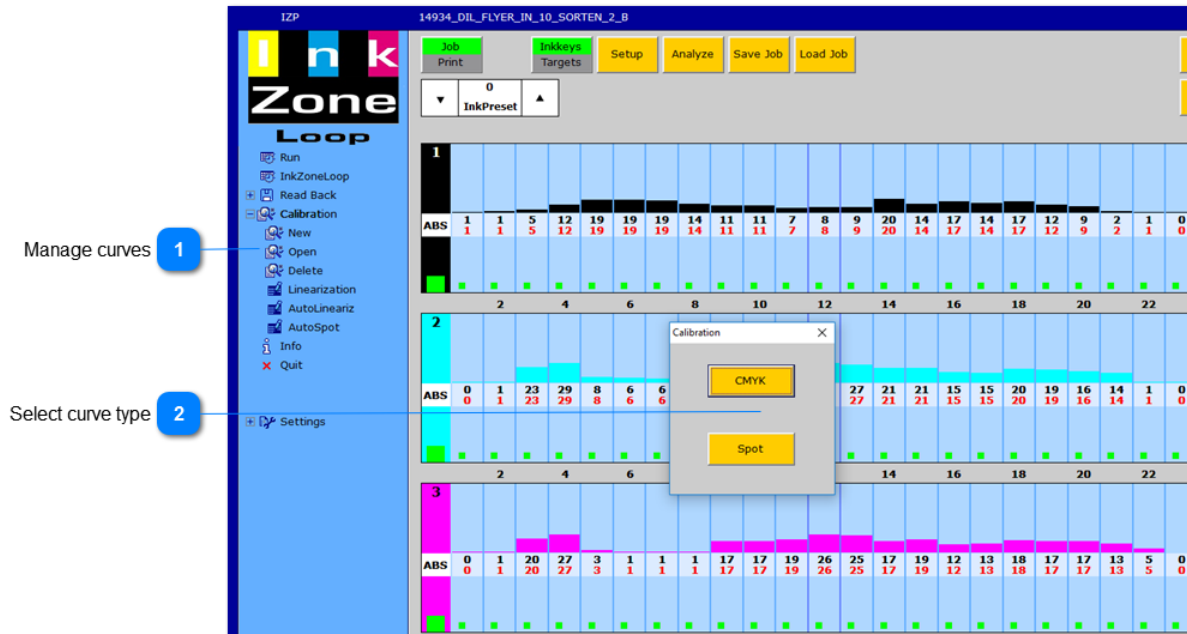
empty

empty

Choose an ink calibration curve from the color list.

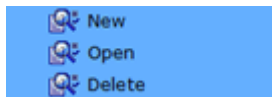
### 2.1.2. Select CMYK or Spot Curve

Before the curve calibration window appears select in the dialog either a CMYK or Spot calibration set.



1

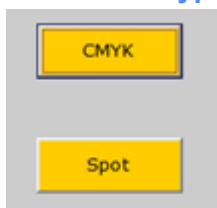
#### Manage curves



Edit, delete or create a new curve set

2

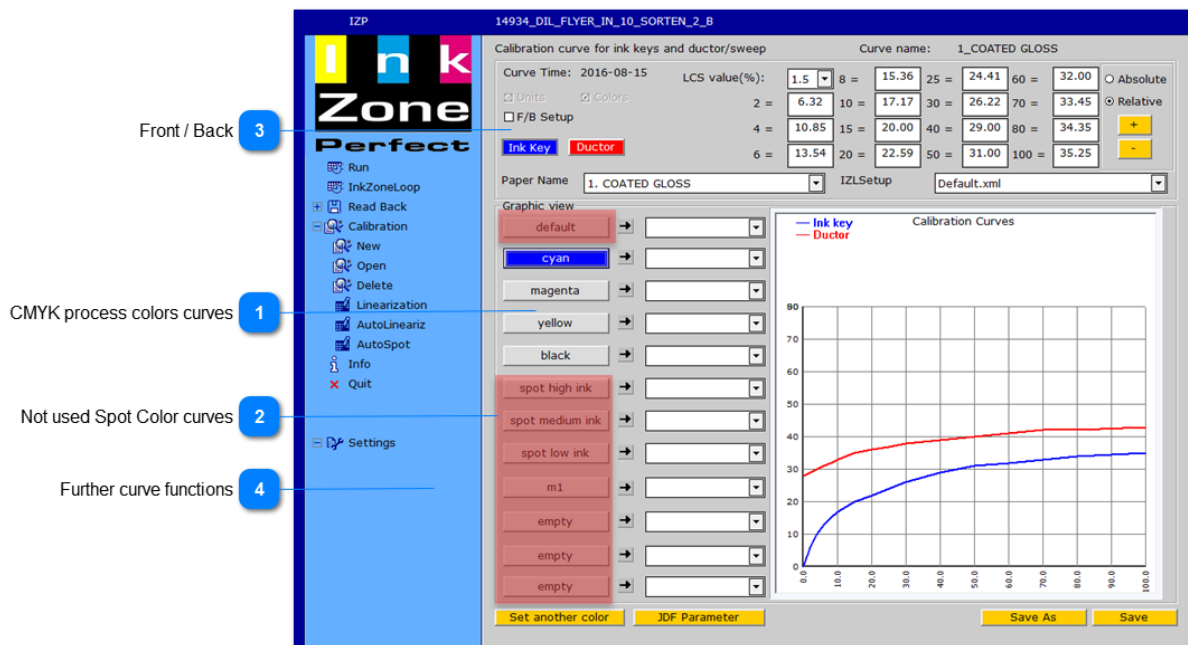
#### Select curve type



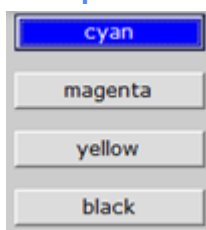
Select which curve type

### 2.1.3. CMYK Curve

Change the calibration for cyan, magenta, yellow and black for one side or for both sides. The curves "default", "spot high, medium and low" are not used anymore in InkzonePerfect 7. It makes no sense to create here a spot color curve since this is handled by spot color calibration sets.

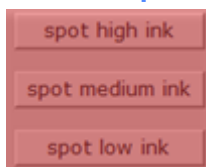


#### 1 CMYK process colors curves



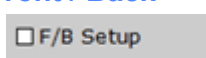
The curves default, spot high - low and medium ink are not used with InkzonePerfect v7.

#### 2 Not used Spot Color curves



This curves become obsolete with InkzonePerfect v7. They are only visible for compatibility reason for older IZ installation

#### 3 Front / Back



Activate the checkbox for defining a front/back curve, see functionality here: [2.1.3.1. Individual Calibration Curves for Front Back Side](#)

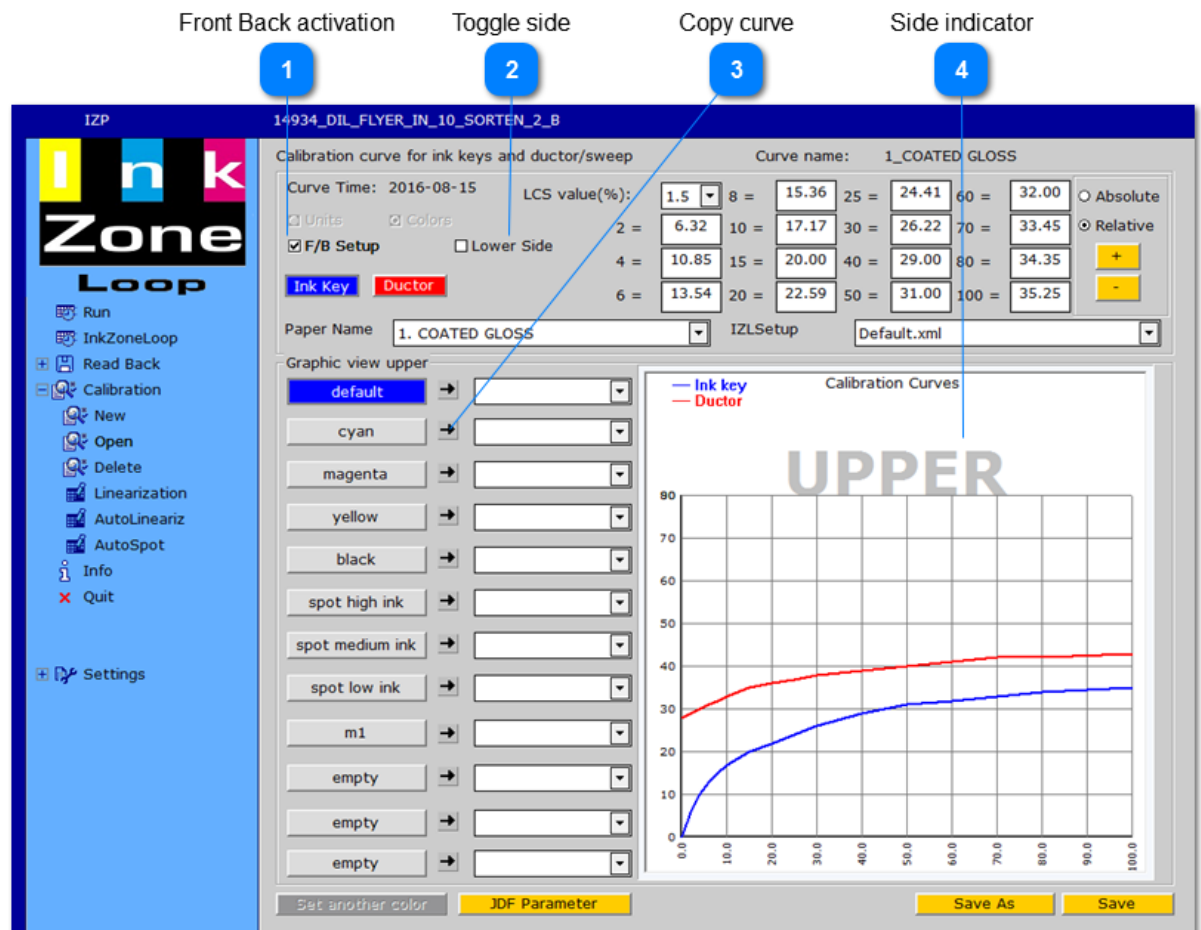
**Further curve functions**

Lookup the functions here : [2.1.1. Calibration Curve - Base Window](#)



### 2.1.3.1. Individual Calibration Curves for Front Back Side

For web or perfecting presses it is useful to setup an own set of calibration curves for each print side. Activate it with the checkbox F/B setup.



1

#### Front Back activation

☒ F/B Setup

Activates individual curves for front and back side

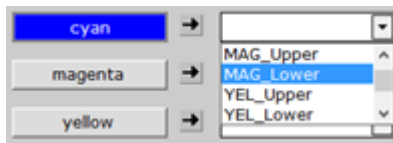
2

#### Toggle side

☐ Lower Side

Toggle between the front and back side through the checkbox. The currently selected side is shown as upper or lower.

### 3 Copy curve



Copy source curve from side X to destination curve side Y

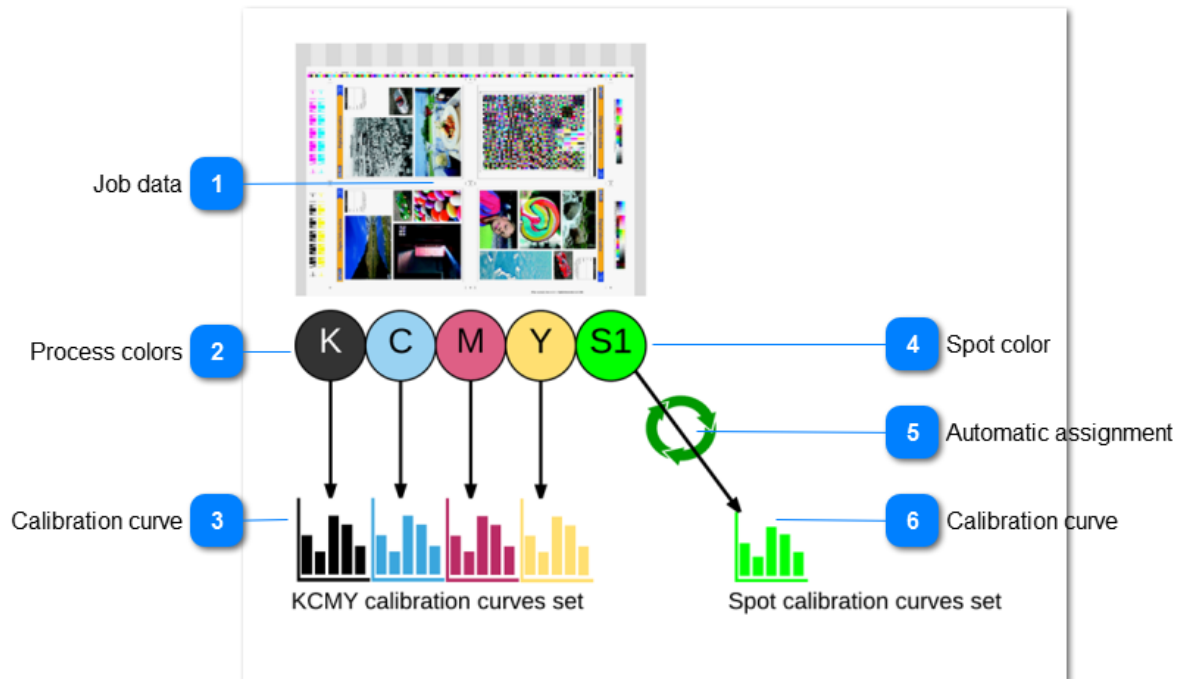
### 4 Side indicator



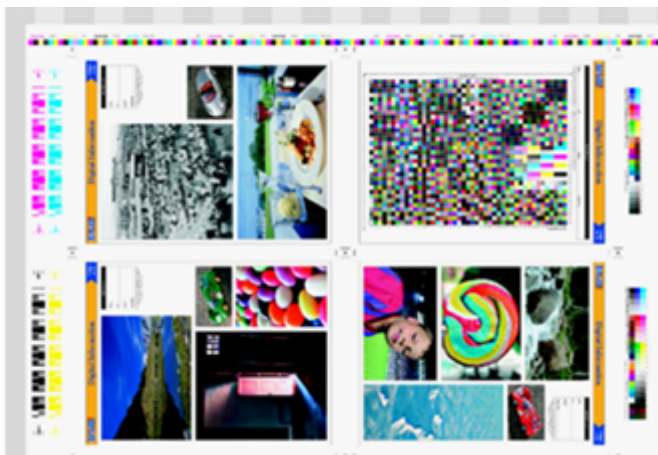
Shows the currently selected side

### 2.1.4. Spot Color Curve

One of InkzonePerfect v7new features is the support for individual spot color calibration curves. Any spot color is now handled by its own calibration curve. During ink preset Inkzone assigns a calibration to any spot colors automatically. When the system detects a new spot color, though the calibration curve is still missing, a new curve is added to the standard spot color curve set called "Spot Color Library".



#### 1 Job data



CIP4 job data from pre-press workflow

#### 2 Process colors



Job with cmyk process colors

3

**Calibration curve**

An individual ink-preset calibration curve is applied to the process colors

4

**Spot color**

Job uses a spot color

5

**Automatic assignment**

For a new spot colors without calibration curve, Inkzone automatically adds a new curve with the spot color's name to the curve set "Spot Color Library".

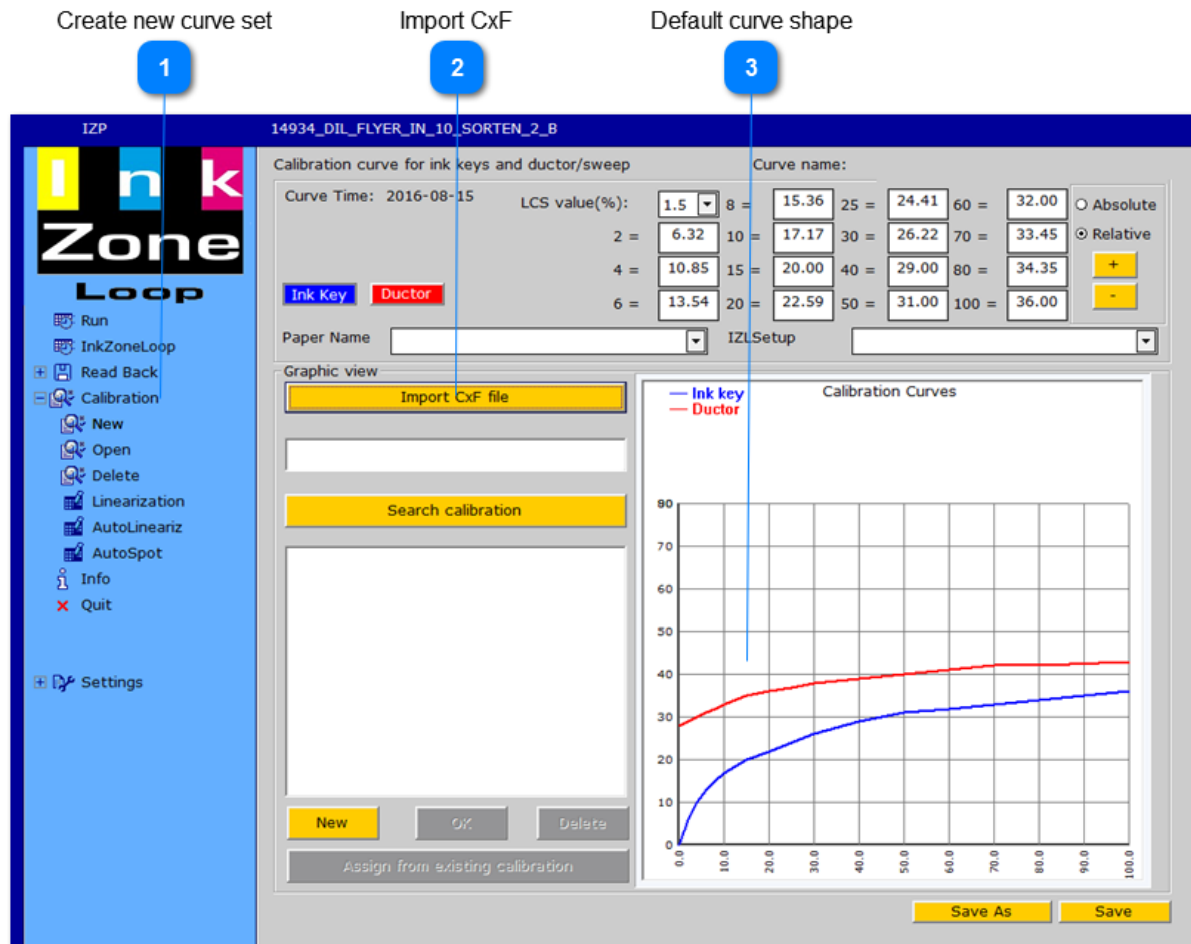
6

**Calibration curve**

An individual spot color calibration curve is applied to the spot color

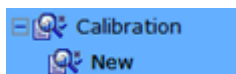
### 2.1.4.1. Import CxF

The spot color names for a calibration curve set are either created manually or by importing a CxF file. The import creates a curve set with from the color names of CxF with a default ink-key and ductor curve shape.



1

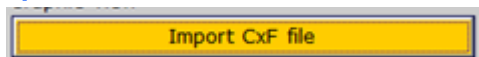
#### Create new curve set



Start from the menu and select Calibration / New

2

#### Import CxF

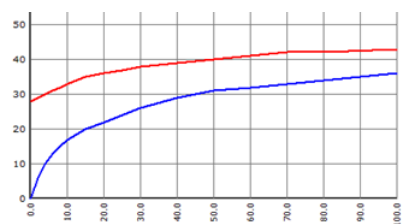


Press the import button and select a CxF file.

Note: there are many different types of CxF available. Don't hesitate to contact us when the import fails.

3

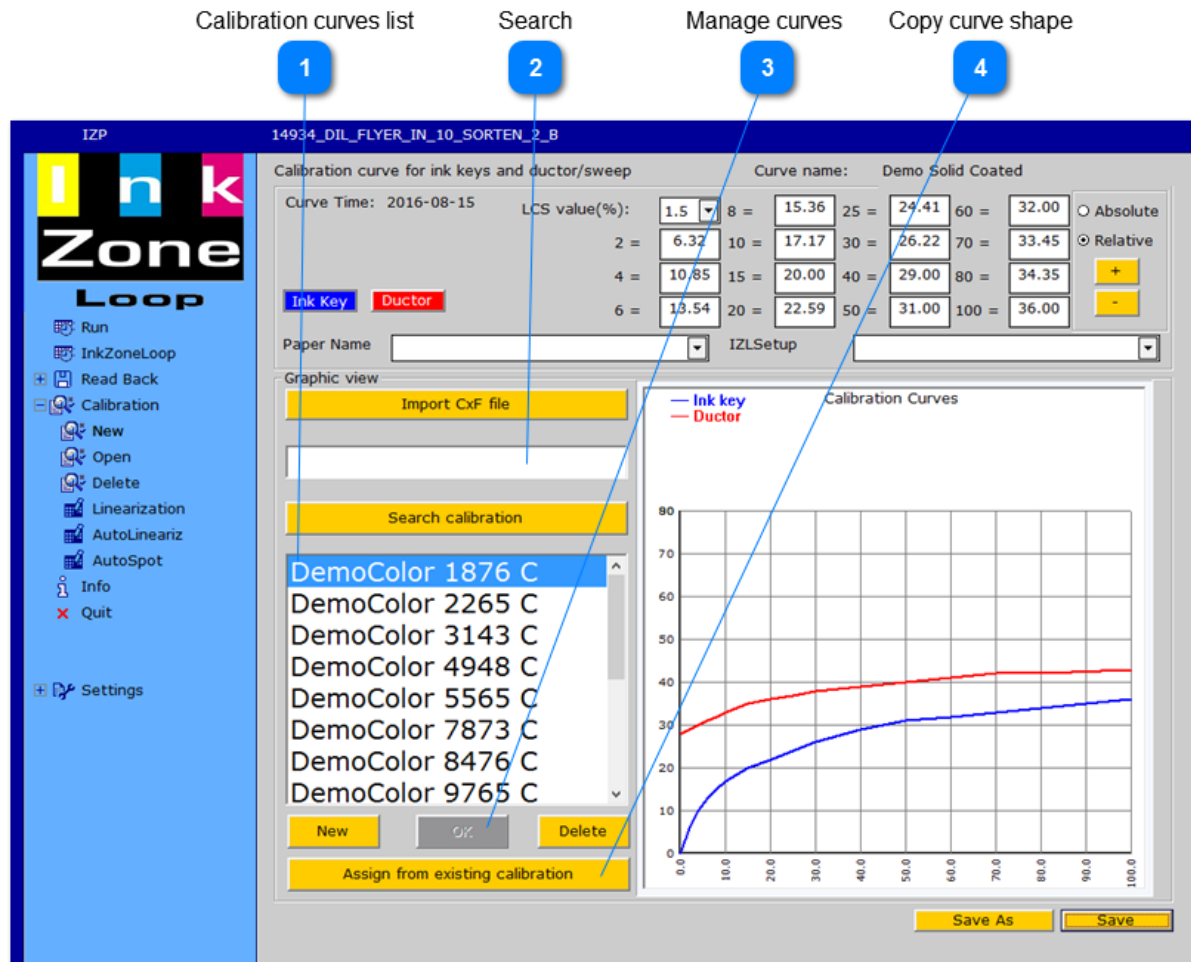
#### Default curve shape



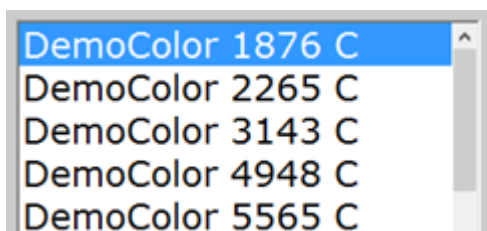
The default curve shape is applied to any imported CxF color.

### 2.1.4.2. Spot Color Editor - Base Window

The spot color names for a calibration curve set are either created manually or by importing a CxF file.

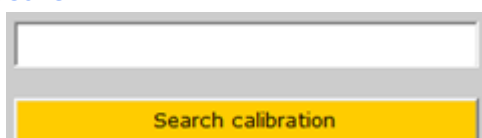


#### 1 Calibration curves list



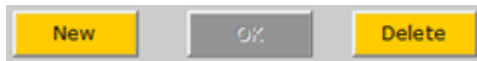
<TODO>: Insert description text here...

#### 2 Search



Enter the calibration curve name and press the search button

#### 3 Manage curves

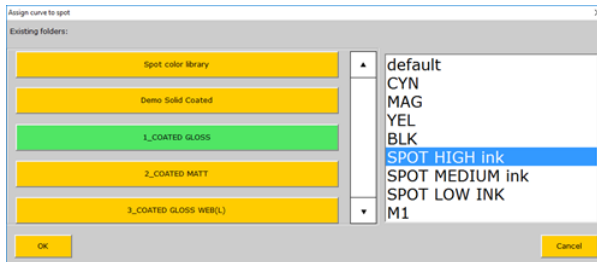


Create calibration curve for a new spot color or delete an existing one

#### 4 Copy curve shape



Select an existing calibration curve and assign it to the currently selected one (highlighted). The dialog displays all curve sets on the left and its calibration curve on the right.

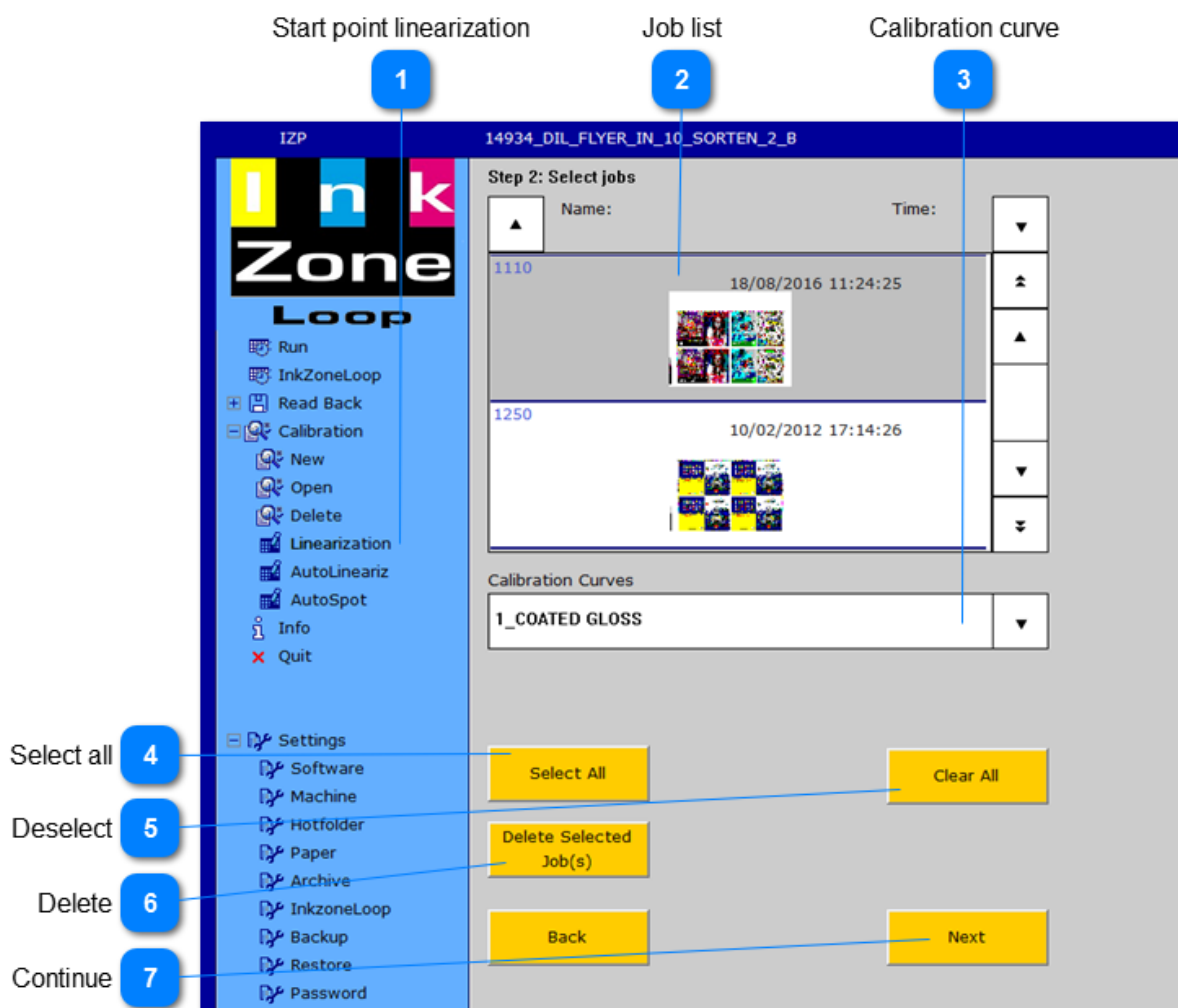




### 3. Linearize Calibration Curves

#### 3.1. Linearization

The program's linearization process improves the ink preset quality on your offset press over time. As more jobs are printed, and hence available for linearization, as better the press calibration curve is adopted to the press characteristic for an ink and substrate combination. As pointed out in the chapter [2.2. Read Back Job Data](#), the linearization job is either created automatically or manually when the software runs in ink-preset only mode.



#### 1 Start point linearization

1

Linearization

Start from the menu on the left the linearization process. After selecting CMYK or Spot choose a calibration curve to get into this window here.

2

#### Job list

Name:	Time:
1110	18/08/2016 11:24:25
1250	10/02/2012 17:14:26

All jobs from the selected calibration curve are listed. Remove jobs from the selection by clicking on the preview. This changes the background to white or then back to grey.

Grey background : selected job

White background: not selected job

3

### Calibration curve

Calibration Curves

1\_COATED GLOSS

Selected calibration curve

4

### Select all

Select All

Selects all jobs in the job list

5

### Deselect

Clear All

Deselect all jobs in the job list

6

### Delete

Delete Selected Job(s)

All selected jobs in the job list are deleted.

7

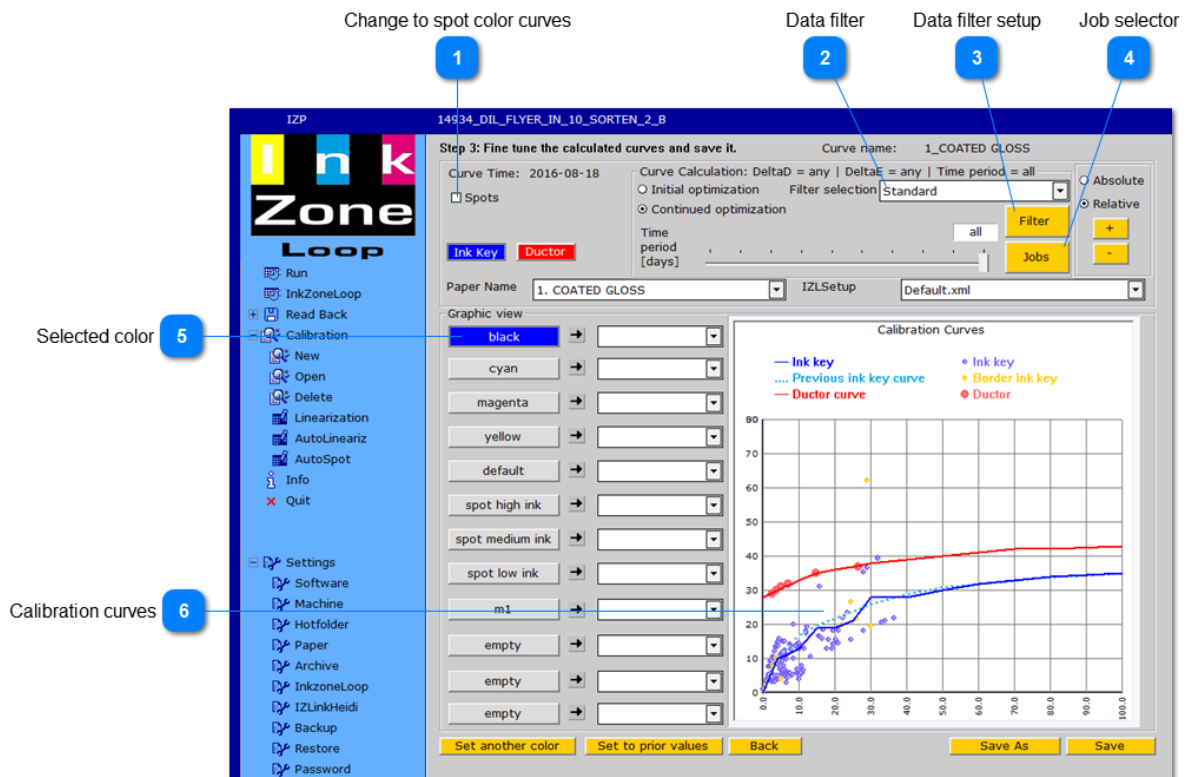
### Continue

Next

After the job selection continue here with the linearization

### 3.1.1. Linearization Curve - Base Window

Access the linearization window from the menu on the right.



#### 1 Change to spot color curves

☐ Spots

Look at the spot color calibration by activating this checkbox. All spot colors from the job selection show up in a new window. [4.1.2. Linearisation Curve for Spot Color](#)

#### 2 Data filter

DeltaD = any | DeltaE = any | Time period = all  
Filter selection: Standard

The selected filter helps to refine the data by the parameters:

1. Density difference"
2. Delta E
3. Production time

#### 3 Data filter setup

Filter

Manage your job data filter. [4.1.3. Data Filter](#)

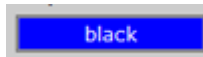
#### 4 Job selector

Jobs

Manage your job selection. [4.1.4. Job Selector](#)

5

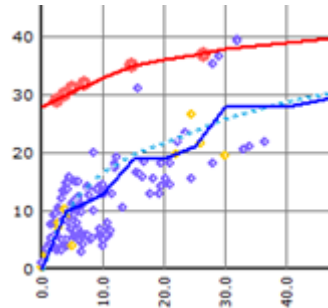
## Selected color



Select from here a color to inspect the calibration curve and its adjustment

6

## Calibration curves



Calibration curves with job data (purple dots).

Dotted light blue line represents the existing curve shape.

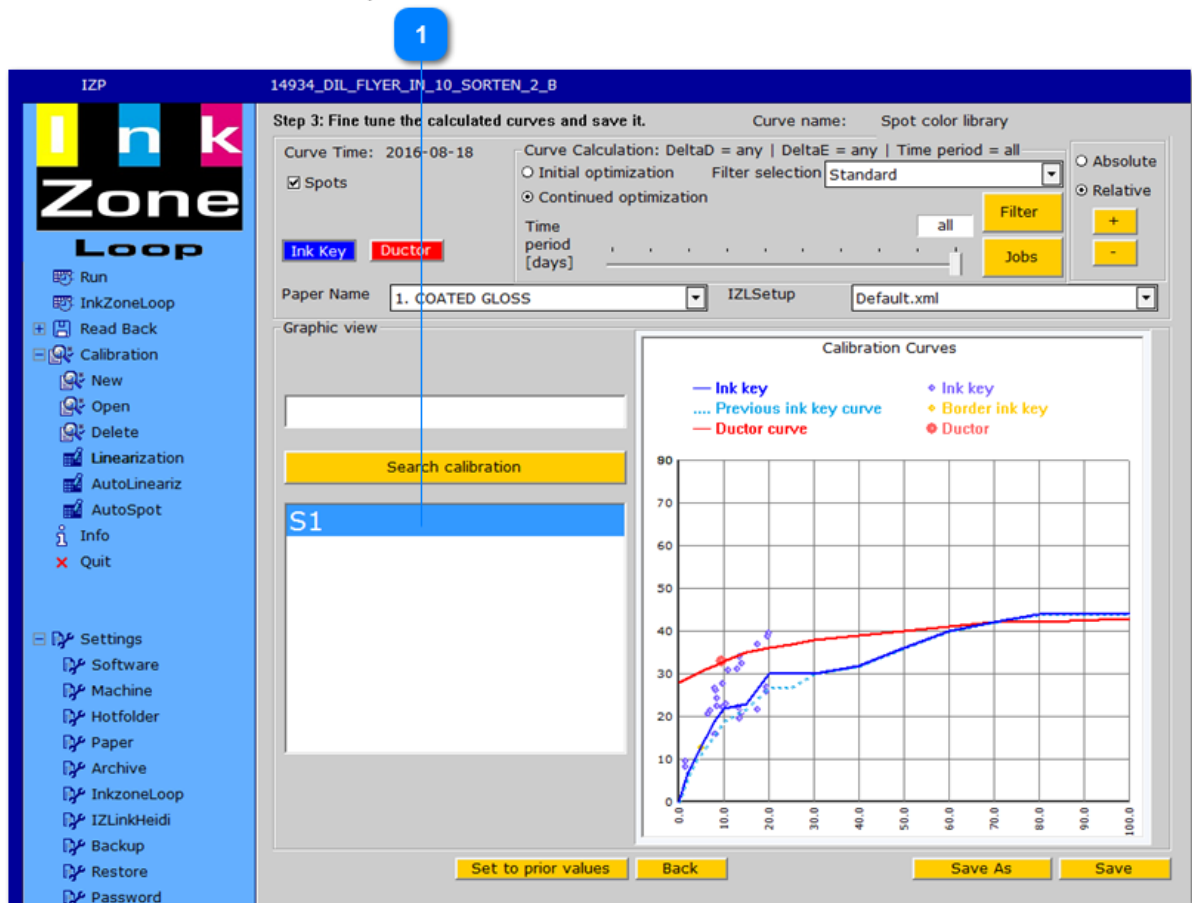
Blue line shows the new curve shape adjusted by job data.

Red curve indicates ductor/sweep.

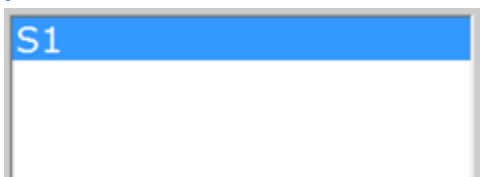
### 3.1.2. Linearization Curve for Spot Color

Access the spot color linearization curve through the checkbox "Spot"

Spot color list



1 Spot color list



All spot colors from the selected jobs are displayed.

3.1.3. Data Filter

Define here a data filter set. Jobs not complying with the selected filter criteria are omitted for the linearization.



1 Time selector

Time period [days]

Time: [◀] [all] [▶]

Set the time frame

2 Color selector

Color	DeltaD	DeltaE
DEFAULT	any	any
CYN	any	any
MAG	any	any
YEL	any	any
BLK	any	any
SPOT HIGH INK	any	any
SPOT MEDIUM INK	any	any
SPOT LOW INK	any	any
M1	any	any
S1	any	any

Change here between the colors curves. The resulting curve is displayed on the right.

**3** Density difference

Filter parameter to setup the density difference between target and measurement.

Note: a value larger than 0.15 may include data not properly printed and therefore alter the calibration curve in an unfavorable way.

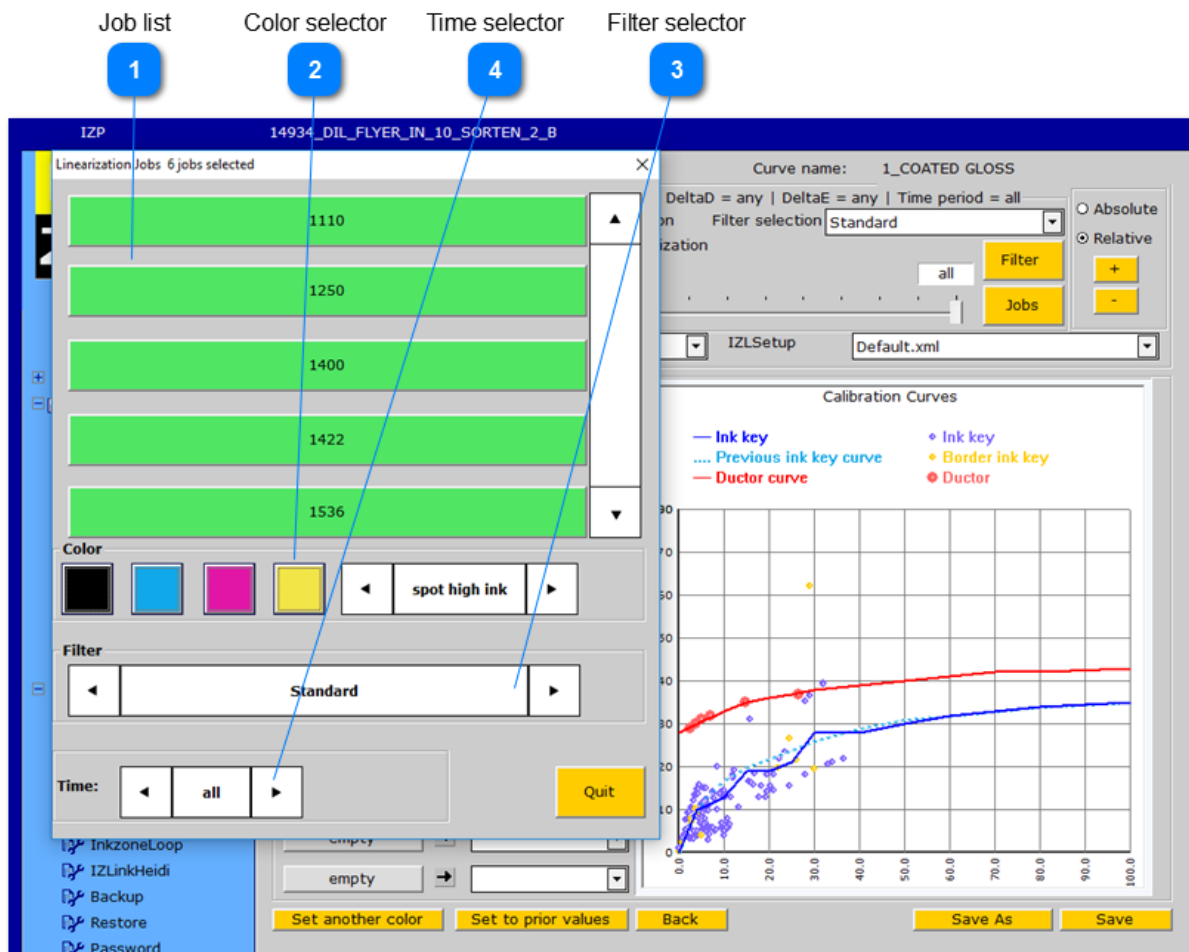
**4** Delta E selector

Filter parameter to setup the DeltaE of target and measurement.

Note: a value larger than 5 may include data not properly printed and therefore alter the calibration curve in an unfavorable way.

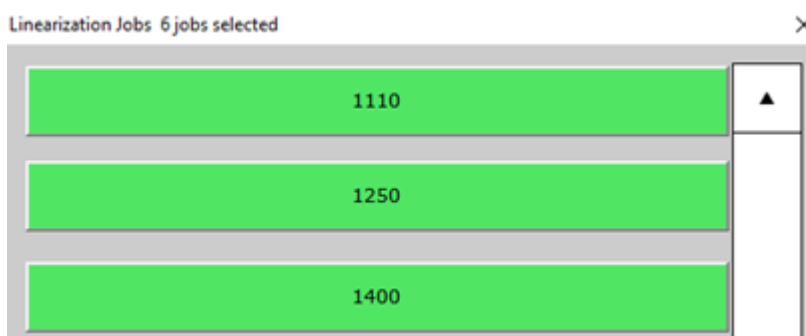
### 3.1.4. Job Selector

Only select jobs are used for the linearization.



1

#### Job list



Make a job selection or simply preview a single job

2

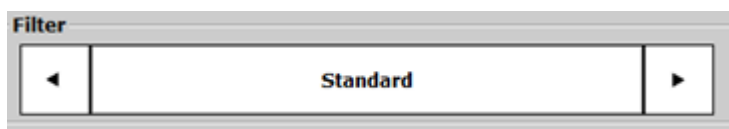
#### Color selector



Toggle between colors

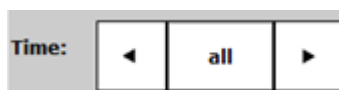


3

**Filter selector**

Choose a predefined filter setup

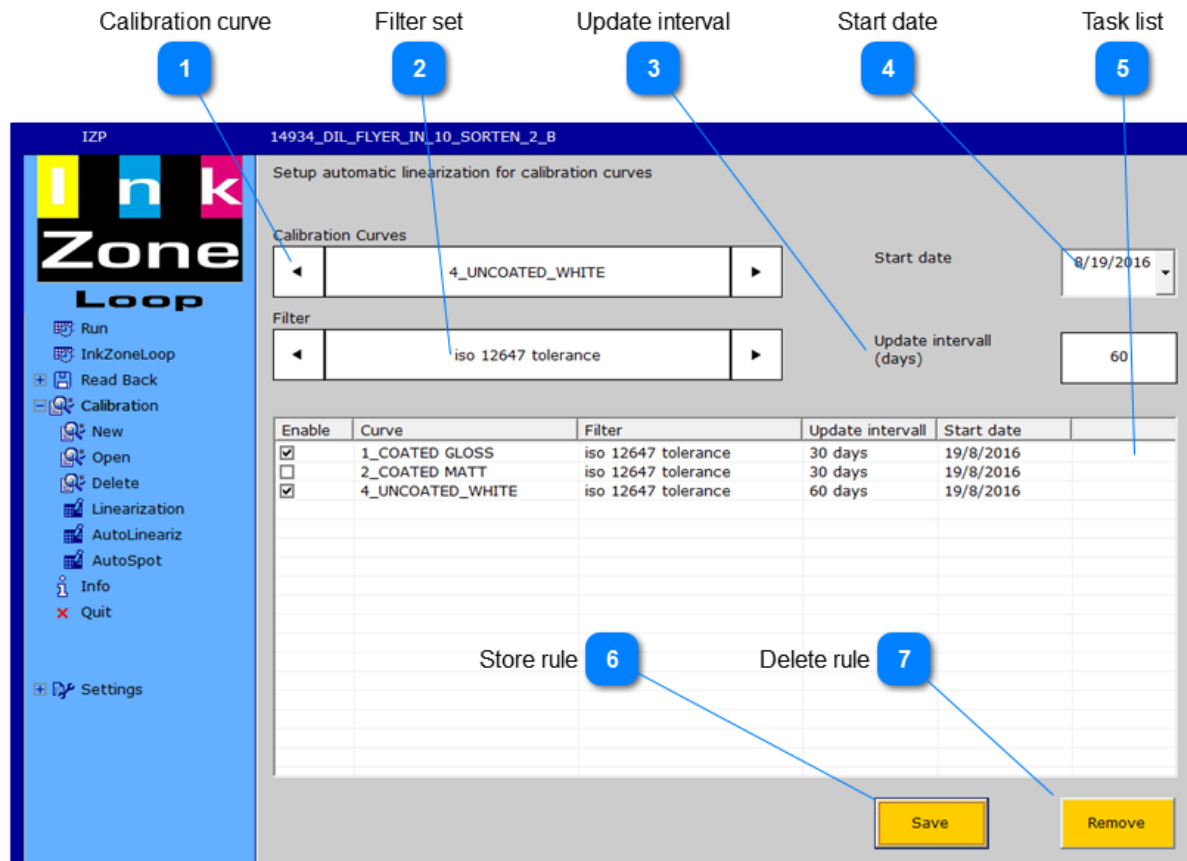
4

**Time selector**

Set a time frame

### 3.2. Automatic Linearization

As its name says ,the feature periodically performs a linearization on selected calibration curves. The best optimization results are achieved by setting up a rule where the filter set has narrow DeltaE's and small density differences.



#### 1 Calibration curve

Calibration Curves

4\_UNCOATED\_WHITE

Select a calibration curve

#### 2 Filter set

Filter

iso 12647 tolerance

Choose a filter set. See how to manage filter sets here [4.1.3 Data Filter](#)

#### 3 Update interval

Update intervall (days)

60

Define the frequency of curve optimization in days

4

**Start date**A grey rectangular box containing the text "Start date" on the left and a date selection dropdown on the right. The dropdown shows "8/19/2016" and a small downward arrow.

Set the start date. Sample:

- start date: 1.1.2016
- interval: 30 days
- first optimization: 31.1.2016

5

**Task list**

Enable	Curve	Filter	Update intervall	Start date	
<input checked="" type="checkbox"/>	1_COATED GLOSS	iso 12647 tolerance	30 days	19/8/2016	
<input type="checkbox"/>	2_COATED MATT	iso 12647 tolerance	30 days	19/8/2016	
<input checked="" type="checkbox"/>	4_UNCOATED_WHITE	iso 12647 tolerance	60 days	19/8/2016	

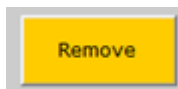
All optimization tasks are listed. Set the checkbox "enable" on each rule to activate the task

6

**Store rule**A yellow rectangular button with the word "Save" in black text, centered within a grey border.

Stores a newly created or modified rule

7

**Delete rule**A yellow rectangular button with the word "Remove" in black text, centered within a grey border.

Deletes an existing rule