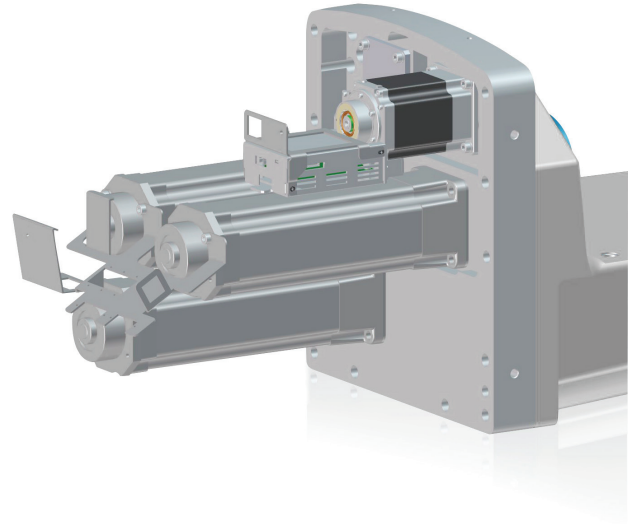


## Paint Upgrades

### Add I-Drive or Upgrade from “DMC” to I-Drive

ABB’s new Integrated Drive System (I-Drive) technology will enable you to reap the many benefits from superior paint control. Now the I-Drive can be used with older robots, thus securing future availability of spare parts.



#### General

The ABB gear pump system design ensures constant and consistent fluid regulation for automatic coating applications.

The efficient gear pump allows precise paint dosage. Fluid flow is automatically regulated according to input given from the Integrated Process System (IPS).

The electrical servo motor driven pump can be used for paint, catalyst and clear coat.

#### Full control with reduced cycle time

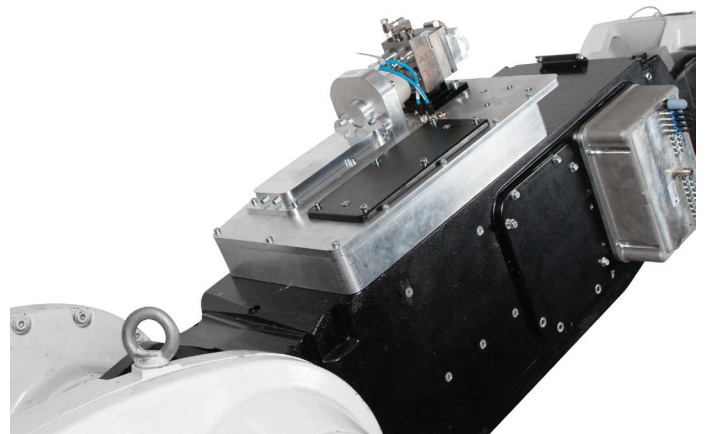
The IPS integrates high-speed process control with superior motion technology. This tight synchronization gives both full control of the paint process and reduces cycle time.

#### Replacing old obsolete systems, like DMC-Drives

The new I-Drive package can be installed or used to replace old obsolete DMC drive systems. It lets you continue to use the IPS and pump solution for the foreseeable future. Now you will be able to maintain a constant and precise paint dosage to secure you achieve the highest quality when painting objects. New robot spare parts will be available to fill all your needs.

#### Optimizing program, trig points

When using the I-Drive with delay compensation to control the brush, you can optimize the program for minimum over-spray. This will save paint and will result in cleaner booth with lower paint destruction cost.



### Calculating savings, Trig Points

		A	B
Production data		Unit	Example Your data
a	No. of prod. days / year	Prod.d/y	240
b	No. of hours of prod./day	Prod.h/d	15
c	No. of jobs/hour	Parts/h	60
d	Average paint flow	cc/min	300
e	No. of strokes/prog	stroke/prog	25
f	Average spray speed	mm/sec	800
g	Paint cost/liter	\$/liter	10
h	Paint disposal cost	\$/liter	1
i	Trigger on/off reduction	mm	20

#### Savings

j	Annual paint saving	Liter	*
k	Annual saving	\$	**

\* Formula =  $d/60000 \cdot (i/f) \cdot 2 \cdot e \cdot c \cdot b \cdot a$

\*\* Formula =  $j \cdot (g+h)$

### Calculating savings, shortening hose length

		A	B
Production data		Unit	Example Your data
a	No. of prod. days / year	Prod.d/y	240
b	No. of hours of prod./day	Prod.h/d	15
c	No. of color change/hour	C.Ch/h	5
d	Meter of hose reduction	m	5
e	Volume per meter (6x8)	cc/m	28.3
f	Paint cost/liter	\$/liter	10
g	Solvent cost/liter	\$/liter	1
h	Paint disposal cost	\$/liter	1

#### Savings

i	Annual paint saving	\$	*
j	Annual solvent saving	\$	**
k	Annual destruction saving	\$	***
<b>l</b>	<b>Total Savings, annual</b>	<b>\$</b>	<b>****</b>

\* Formula =  $a \cdot b \cdot c \cdot d \cdot e / 1000 \cdot f$

\*\* Formula =  $a \cdot b \cdot c \cdot d \cdot e / 1000 \cdot 3 \cdot g$

\*\*\* Formula =  $(i/f + j/g) \cdot h$

\*\*\*\* Formula =  $i + j + k$

### Paint overspray, calculating savings

Overspray in a paint program can be optimized to a minimum when using the I-Drive. The response time is so accurate that you can open/close the brush very close to object. The table above shows the savings you will get in a general production where you shorten the brush length by 2 cm for each stroke. The savings are calculated per robot annually. Using the formula shown below the table you can calculate the potential savings based on your production data.

### Quality improvements

ABB's IPS system is designed to save paint. High acceleration painting robots, combined with fast process regulation provide optimum use of paint material. With a precise volume gear pump system the paint quality, during the first run, will increase. With less time spent on repairs and repaint you will save both time and money.

### Shortening hose length

If your paint dosage system is mounted outside the paint booth, you will get huge cost savings by instead installing the dosage system on the robot. Based on today's production data, calculations will show the potential savings.

### Key drivers and benefits

- Paint savings, overspray per product
- Paint savings, shorter distance to applicator
- Less booth contamination, reduced waste
- Higher quality with quicker response
- Less spare parts required
- Improved production uptime
- Improved compliance with the Environmental Protection Act (EPA)

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