

# DIVA2 - Inspiration Auto Door Opener



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 **Electrolux**

# New Design Is Premium, Modern And Distinctive

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## **ACRYLIC ONLAY**

Gives distinction and aligns with other Inspiration range appliances.

## **WHITE USER INTERFACE**

Premium user interface with DirectAccess controls and text & icon display.

## **ICONIC FLOWLINE**

Shaped around the pocket handle for seamless integration with other appliances of the range.



# Semi Integrated

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## Kitchen Retail Eclipse line



White LCD display with  
DirectAccess touch controls



LCD Glass Inlay with White LED display  
DirectAccess touch controls



Small LED display and LEDs in White,  
push button controls

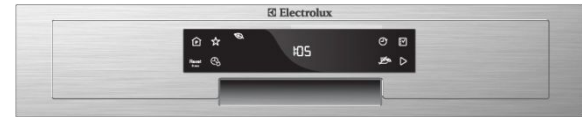


Small LED display and white LEDs  
push button controls



White LEDs, knob controls

## Electrical Retail Open range



White LCD, DirectAccess



Small LED display and LEDs in amber,  
push button controls



Small LED display and LEDs in amber  
push button controls



Amber LEDs, knob controls

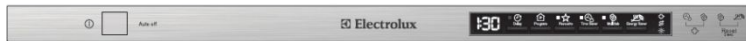
# Fully Integrated

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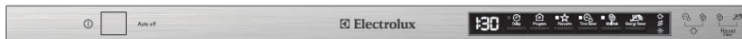
## Kitchen Retail Eclipse line



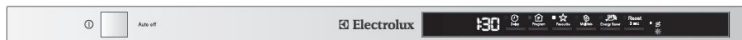
Full graphic white display, touch control



White LED display, touch control



White LED display, push buttons controls



White LED display, push button controls



White LEDs, push button controls

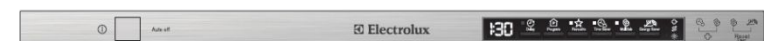


White LEDs, 2 key control

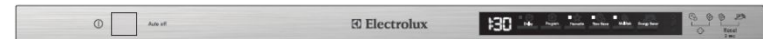
## Electrical Retail Open range



Full graphic white display, touch control



White LED display, touch control



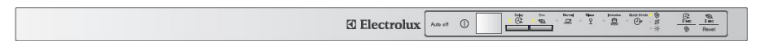
White LED display, push buttons controls



Amber LED display, push button controls



Amber LEDs, push button controls



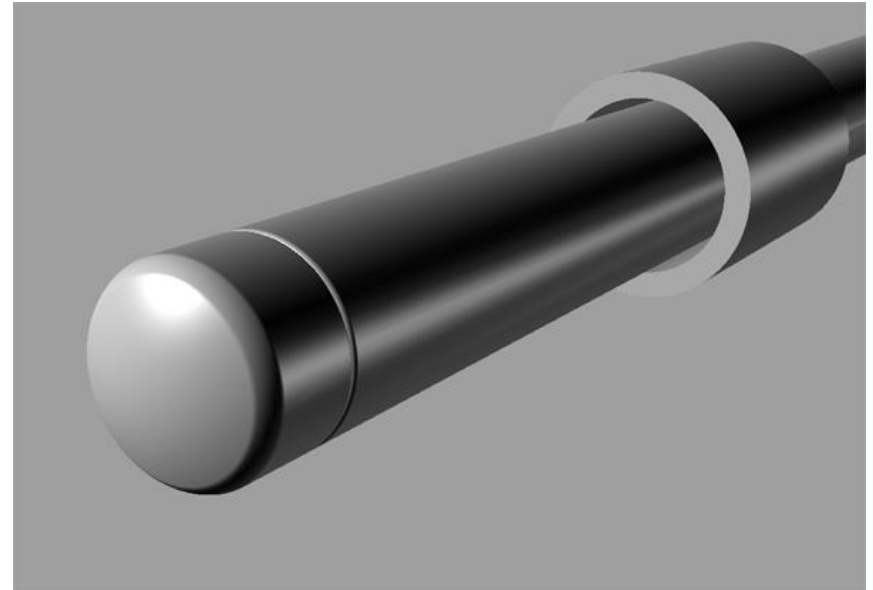
Amber LEDs, 2 key control

# Introduction

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The door opener is part of a dishwasher. In the drying phase the dish washer door is pushed open by the door opener rod and is holding the door open for a period of time before it retracts in the end of the drying phase. The pin is driven by a motor. The (rear) end-position of the pin is indicated by a micro switch. When retracted and micro switch is activated the motor needs to stay energized for 3 seconds to assure good actuation.

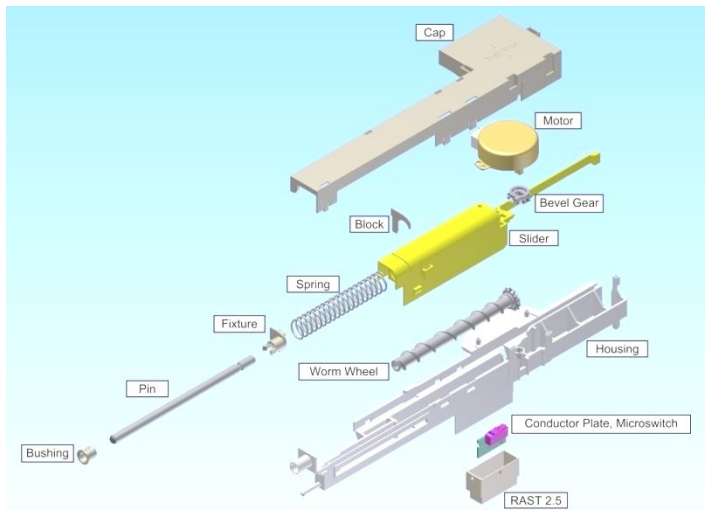
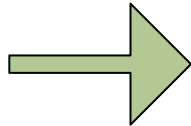




# Major project content

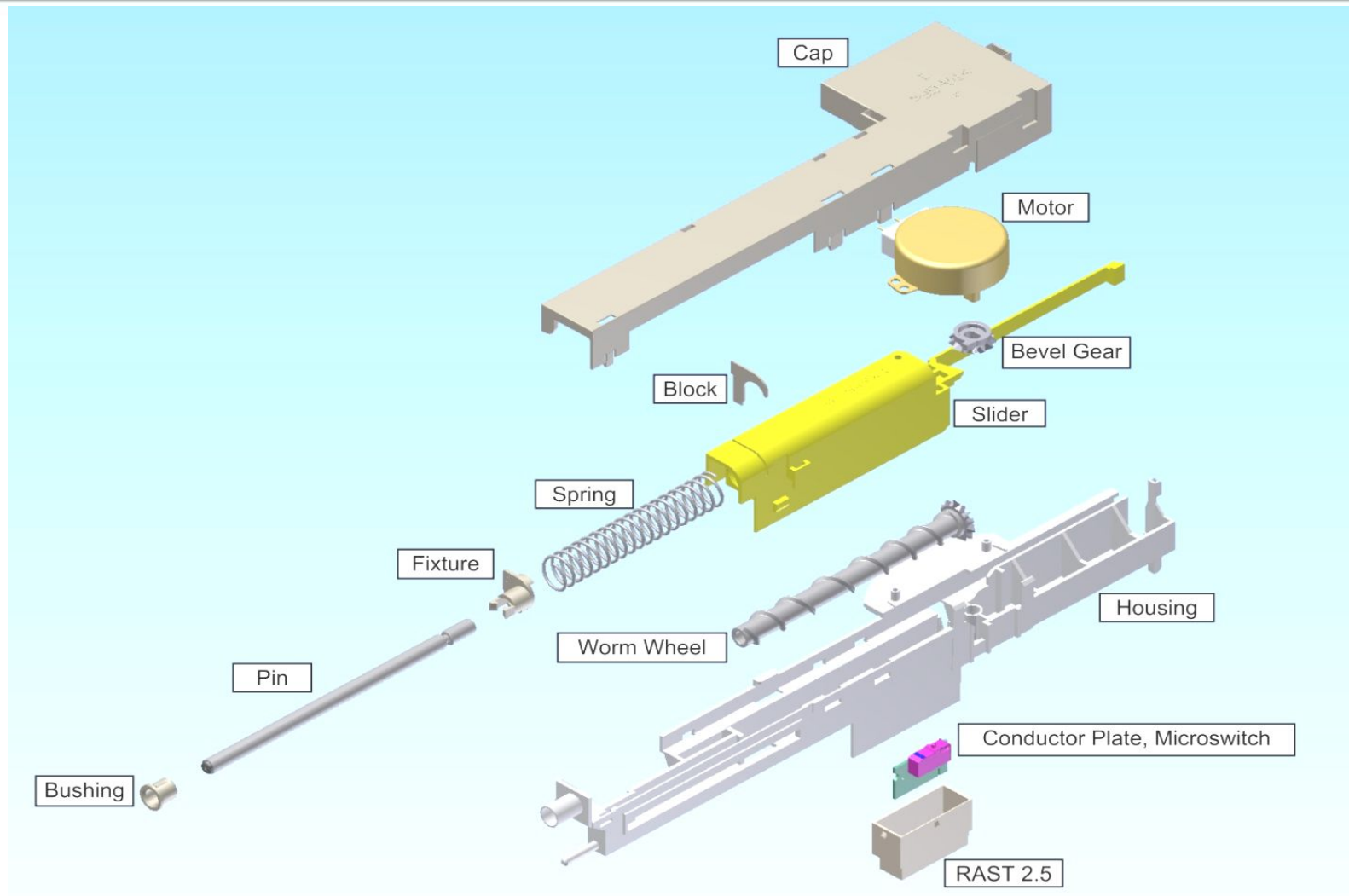
By introducing an automatic door opener (=ADO) there is a possibility to reduce the energy consumption with 0,2kWh reaching below 0,82kWh

A+++



# Auto Door Opener - Assembling

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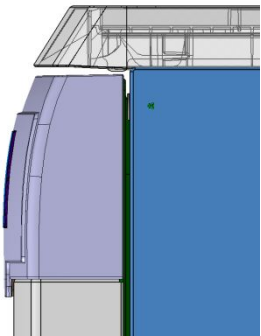


# Main ADO Concept – Keep at 5cm

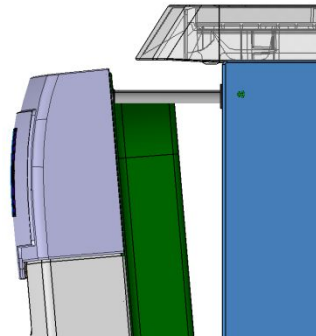
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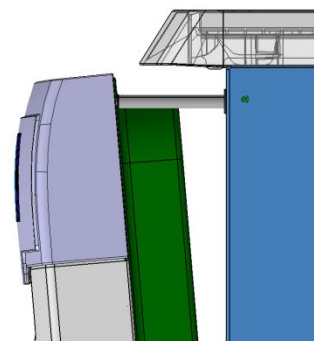
Final rinse  
done drying  
starts with  
closed door



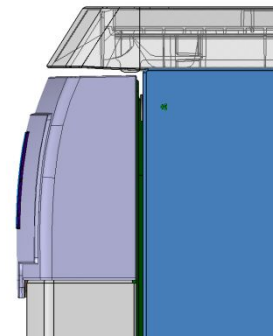
ADO pushes  
door to 5 cm.



ADO keeps  
the door at 5  
cm for the  
remaining  
time for drying



ADO retracts.  
Door falls back  
(but does not  
close)





# Working Conditions

The ADO has two different end positions; a closed position at 0 mm travel and an opened position at 60 mm travel.

Initially (0-20 mm of opening) the ADO needs to provide an opening force of 70 N. From 20-50 mm a maximum opening force of 35 N is required.

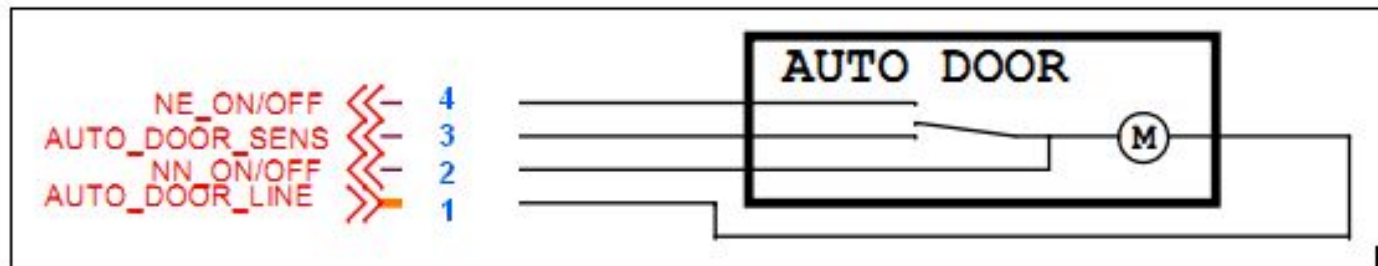
When a force  $> 70$  N is applied the spring will compress and eventually the motor will change rotating direction and the rod will retract.

The time for opening the door is approximately 144 sec for 59mm (TBD with soft tools, depending on stroke and force). The same time the motor need to pull back the pin in the closed position.

# Components

## Internal connection layout:

1. ADO out (Line from relay)
2. Neutral (through main switch)
3. Sense input (input at neutral potential)
4. Neutral (connected directly - bypass electronics)



## Motor:

Synchronous motor, 16 mm height,  
Voltage: 230 Volt +/- 10% (207 V to 253 V)  
Power: 3,5 W nominal  
Rotating direction: various

# E-Label Cycle Profile for ADO

## Today

MW	47°C	CR	HR 62°C	Drying Closed door
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## ADO

MW	53°C	CR	HR 48°C	Drying Closed Door	Drying Open Door
				24min	30min

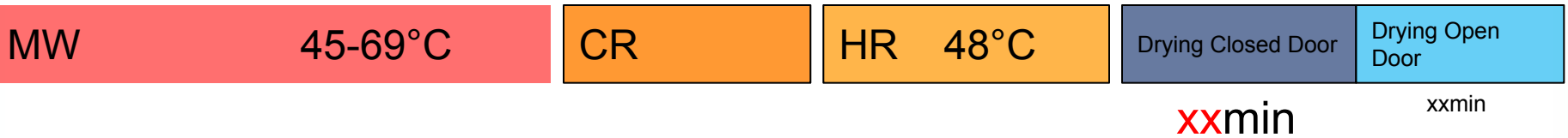
- No increase/decrease of overall cycle time in E-label
- Decrease Hot Rinse temp for energy saving and minimize steam output
- Increase Main Wash temp and time for keeping good cleaning
- Open door half way through the drying
  - To allow for internal condensation
  - Regeneration phase to be finalized
- If ADO is turned off by consumer the HR temp will increase to 62° C
- Other programs with ADO are the Auto & Intensive, i.e. programs tested by test houses. (next slide)
- ADO can not be combined with sanitize programs like Intensive Care

# Cycle profile for Auto and Intensive

## Today Auto



## ADO Auto



## Today Intensive



## ADO Intensive\*



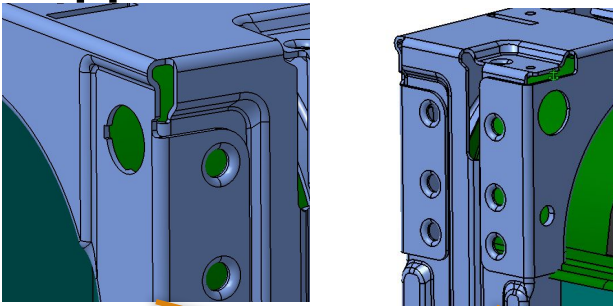
\*not intensive care

# Structural Changes to the DIVA2 Platform

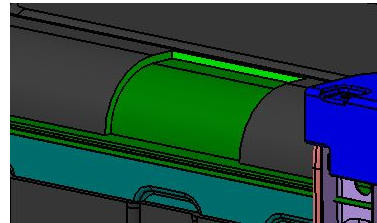
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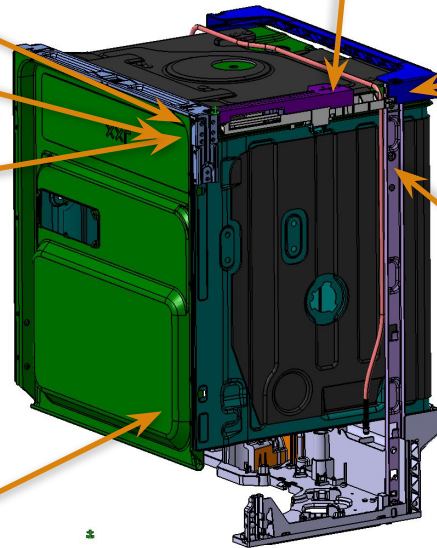
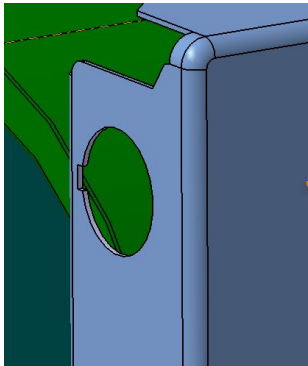
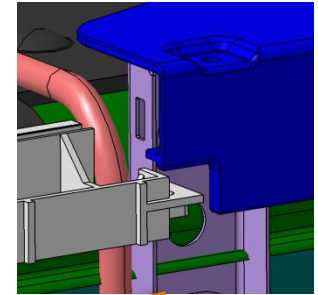
### Upper front cross bar



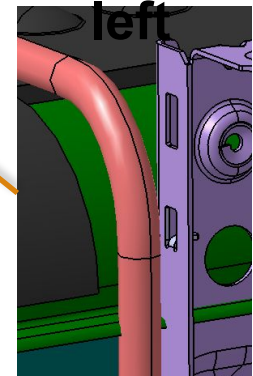
### Bitumen



### Upper rear cross bar



### Rear upright bar left



- Harness
- SW update
- E-label, Auto, Intensive\*

\*Not intensive care