DIVA2 - Inspiration
Auto Door Opener

Thinking of you

Electrolux

New Design Is Premium, Modern And Distinctive

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Electrolux

ACRYLIC ONLAY

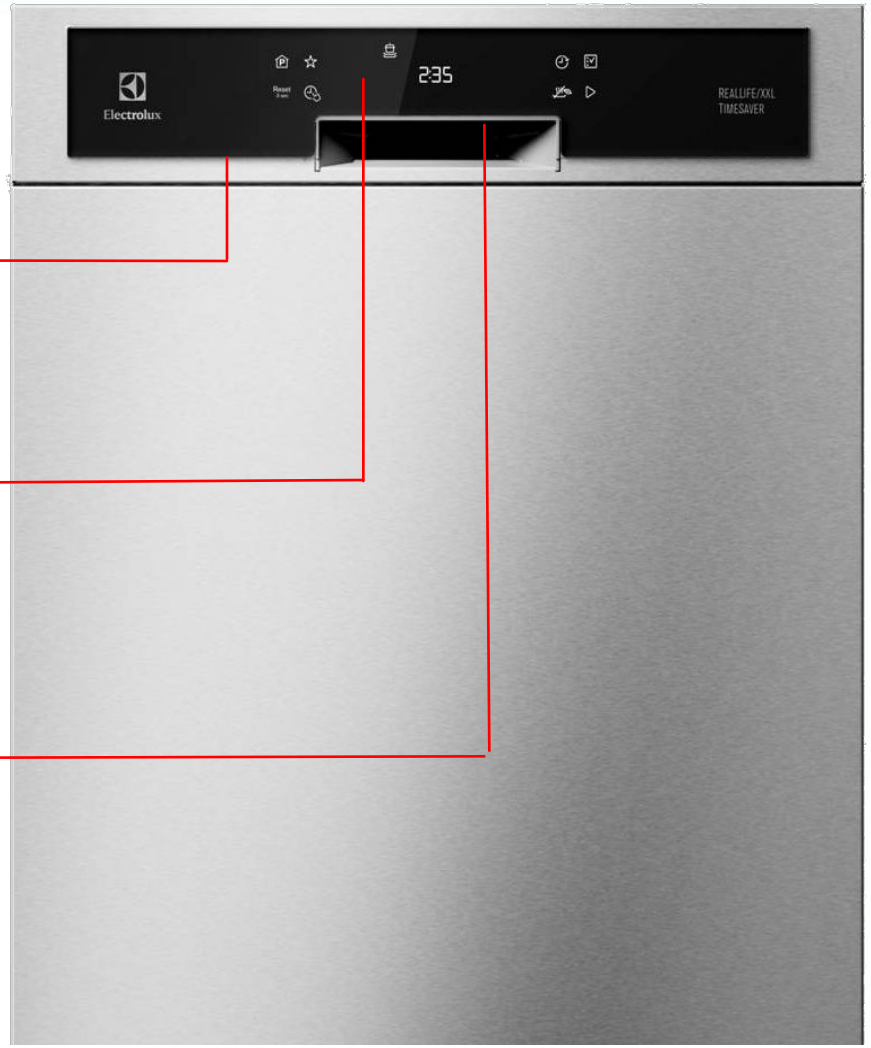
Gives distinction and aligns with other Inspiration range appliances.

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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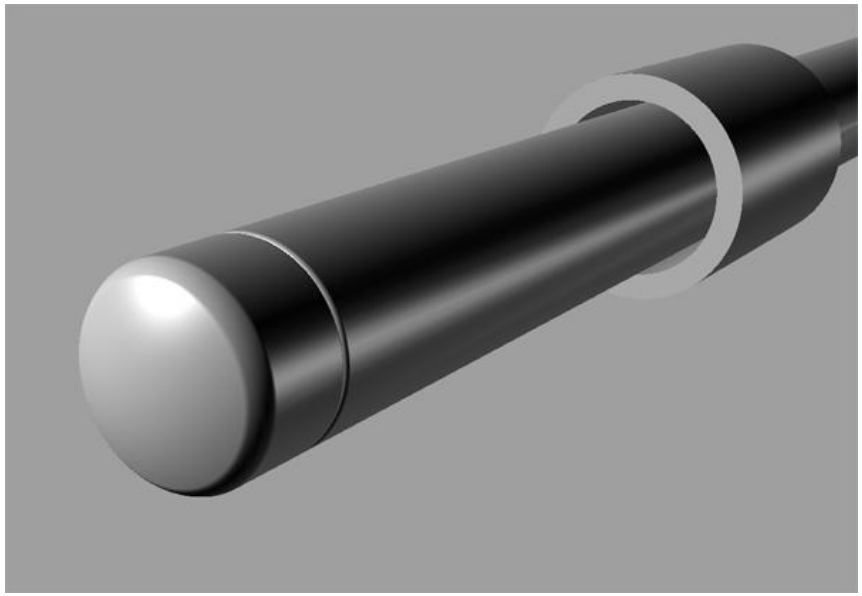
The door opener is part of a dishwasher. In the drying phase the dish washer door is pushed open by the door opener rod and is holding the door open for a period of time before it retracts in the end of the drying phase. The pin is driven by a motor. The (rear) end-position of the pin is indicated by 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

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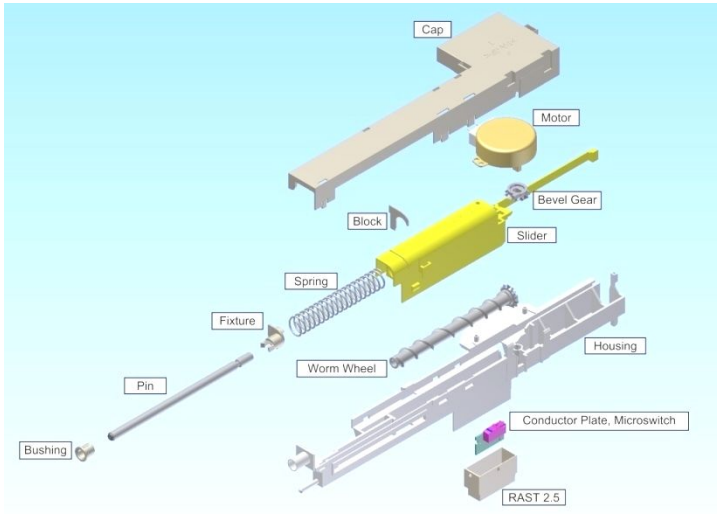
By introducing an automatic door opener (=ADO) there is a possibility to reduce the energy consumption with 0,2kWh reaching below 0,82kWh

A+++



Auto Door Opener - Assembling

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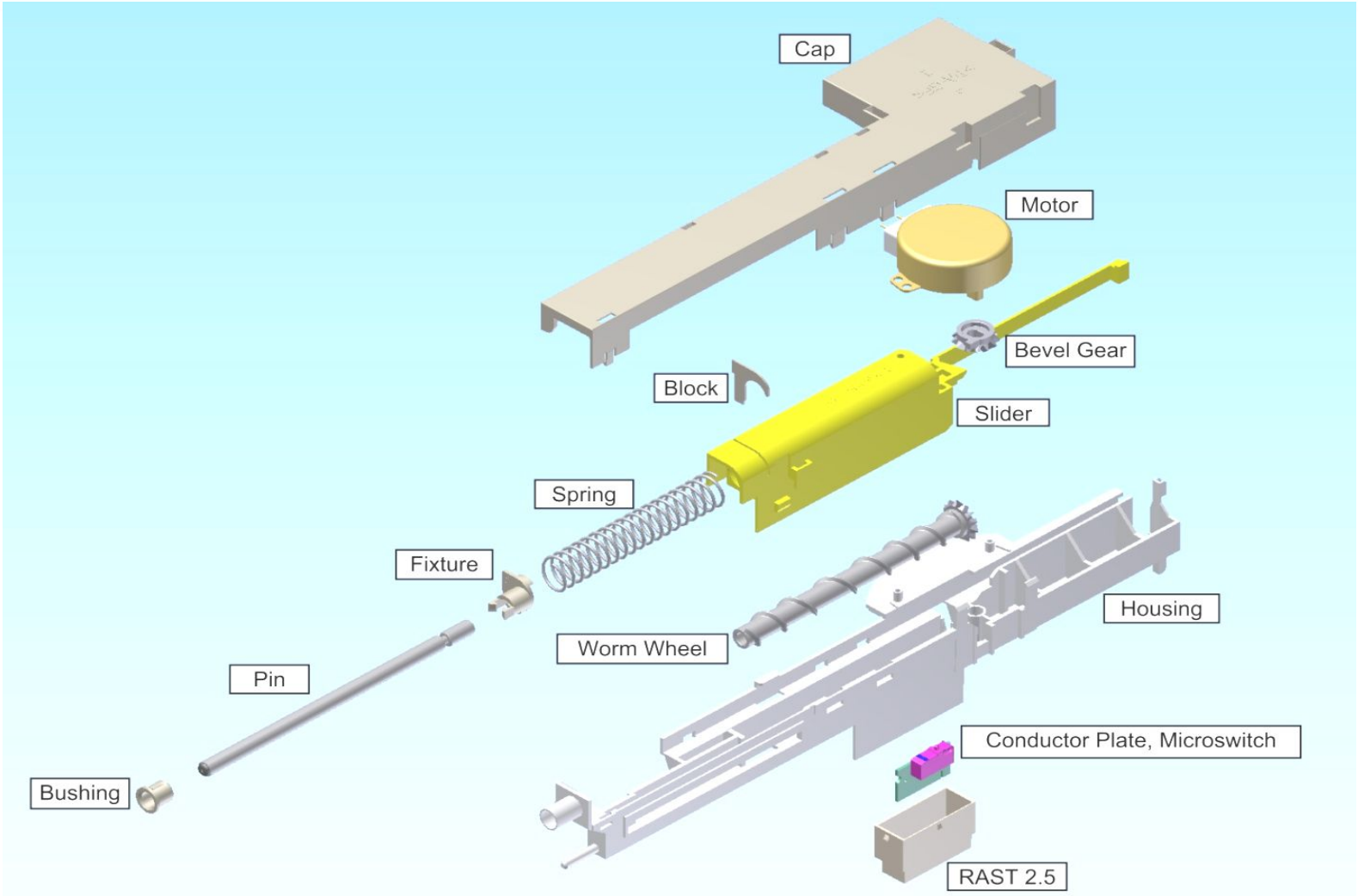

Main ADO Concept – Keep at 5cm

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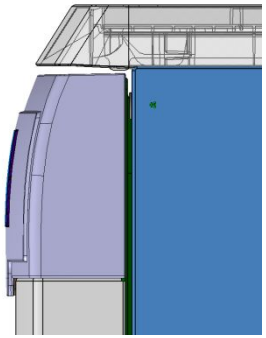
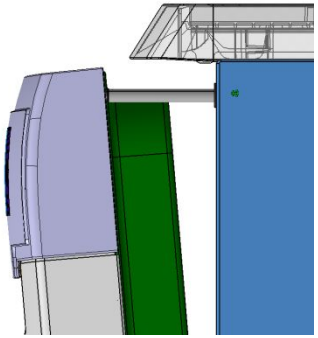
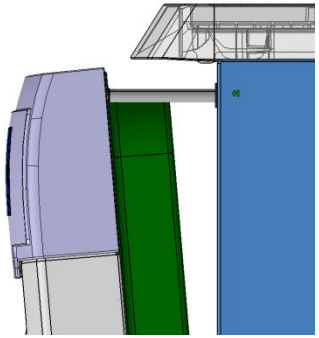
Final rinse done drying starts with closed door



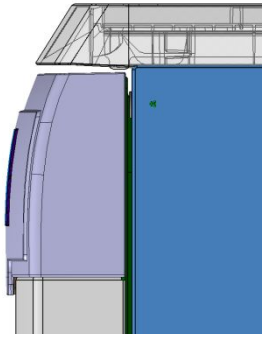
ADO pushes door to 5 cm.



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



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



Working Conditions

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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

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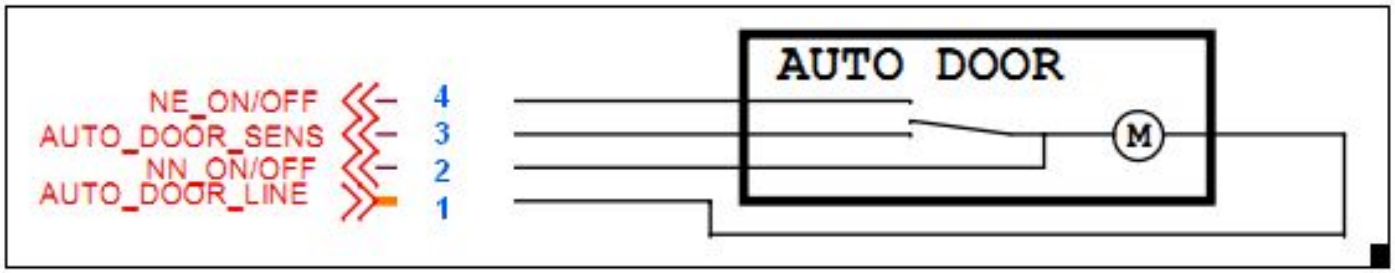
Internal connection layout:

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

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Today

ADO

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
    - Regenaration 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

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Today Auto

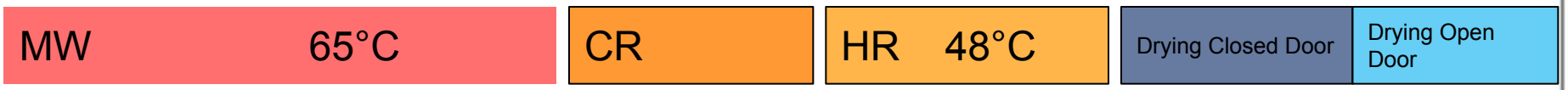
xxmin

ADO Auto

xxmin xxmin

Today Intensive

ADO Intesive* xxmin



xxmin xxmin

*not intensive care

Structual Changes to the DIVA2 Platform

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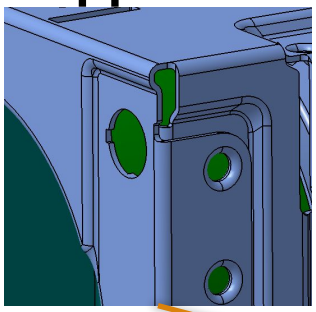
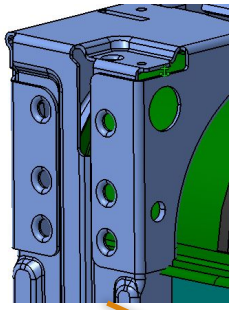
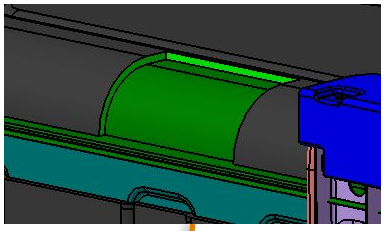
Upper front cross bar

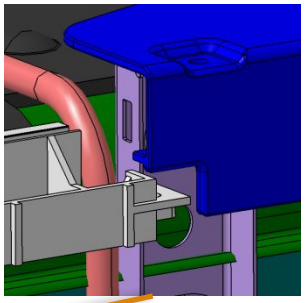


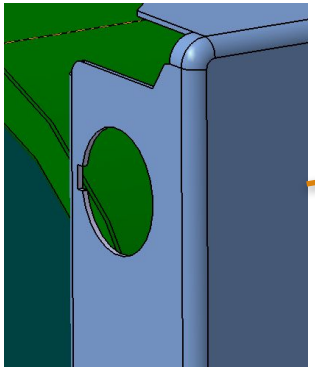


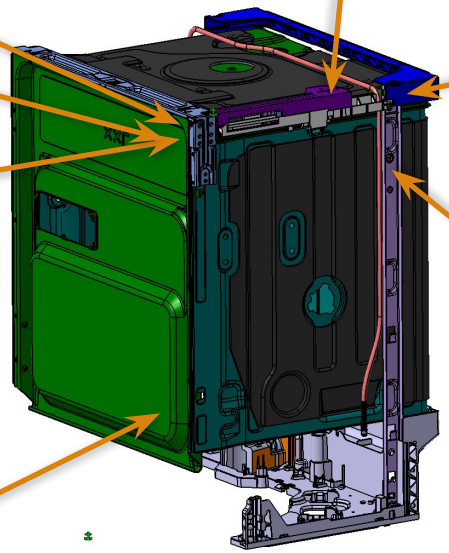
Bitumen



Upper rear cross bar

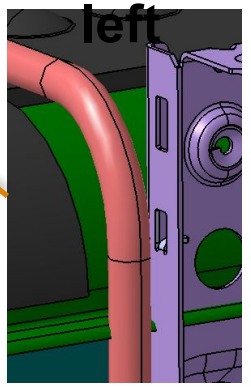






-Harness
- SW update
  E-label, Auto,
  Intensive*

Rear upright bar left



*Not intensive care