

# DXN Range

Ice Maker & Dispensers Technical Service

**Scotsman®**  
Ice Systems

Introducing the products

Installation

Initial settings

Start-up and operation

Maintenance

Diagnostics



Cubelet Ice

# DXN 100

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Daily Production 66 Kg  
Storage bin 5 Kg  
Touch or Touch Free Version  
Servings in peak time 100  
Servings per day 1200



# DXN 107

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Daily Production 72 Kg  
Storage bin 5 Kg  
Touch or Touch Free Version  
Servings in peak time 100  
Servings per day 1200



# DXN 200

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Daily Production 110 Kg  
Storage bin 10 Kg  
Touch or Touch Free Version  
Servings in peak time 200  
Servings per day 2400



# DXN 207

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Daily Production 120 Kg  
Storage bin 10 Kg  
Touch or Touch Free Version  
Servings in peak time 200  
Servings per day 2400





# DXN Range

Installation-standard equipment

Water hoses

Grids

Snorkel key

Water spout closing plug

User Manual

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# DXN Range



## Installation-operating limits

Check for the correct water and ambient conditions that should be:

- Min. ambient temperature 10°C (50F)
- Max. ambient temperature 38°C (100F)
- Min. water temperature 5°C (40F)
- Max. water temperature 32°C (90F)
- Min. water pressure 1 bar (14 PSI)
- Max. water pressure 5 bar (70 PSI)



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## Installation-utilities electrical

Check the data plate of the machine located on the rear panel for correct voltage as well as for the proper wiring/fuse size and install on the cable supplied with the machine, an adequate electrical plug according to the local standards and regulations.



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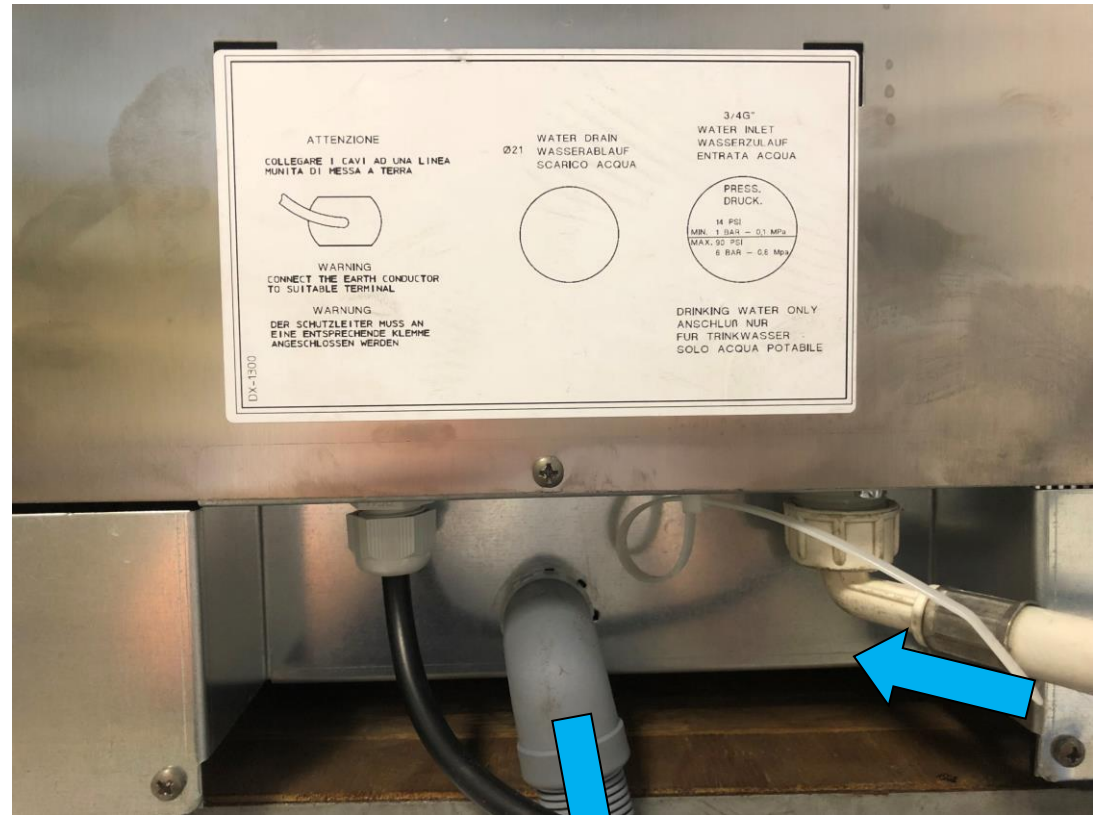


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Installation-utilities water

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Downside or backside water connections available



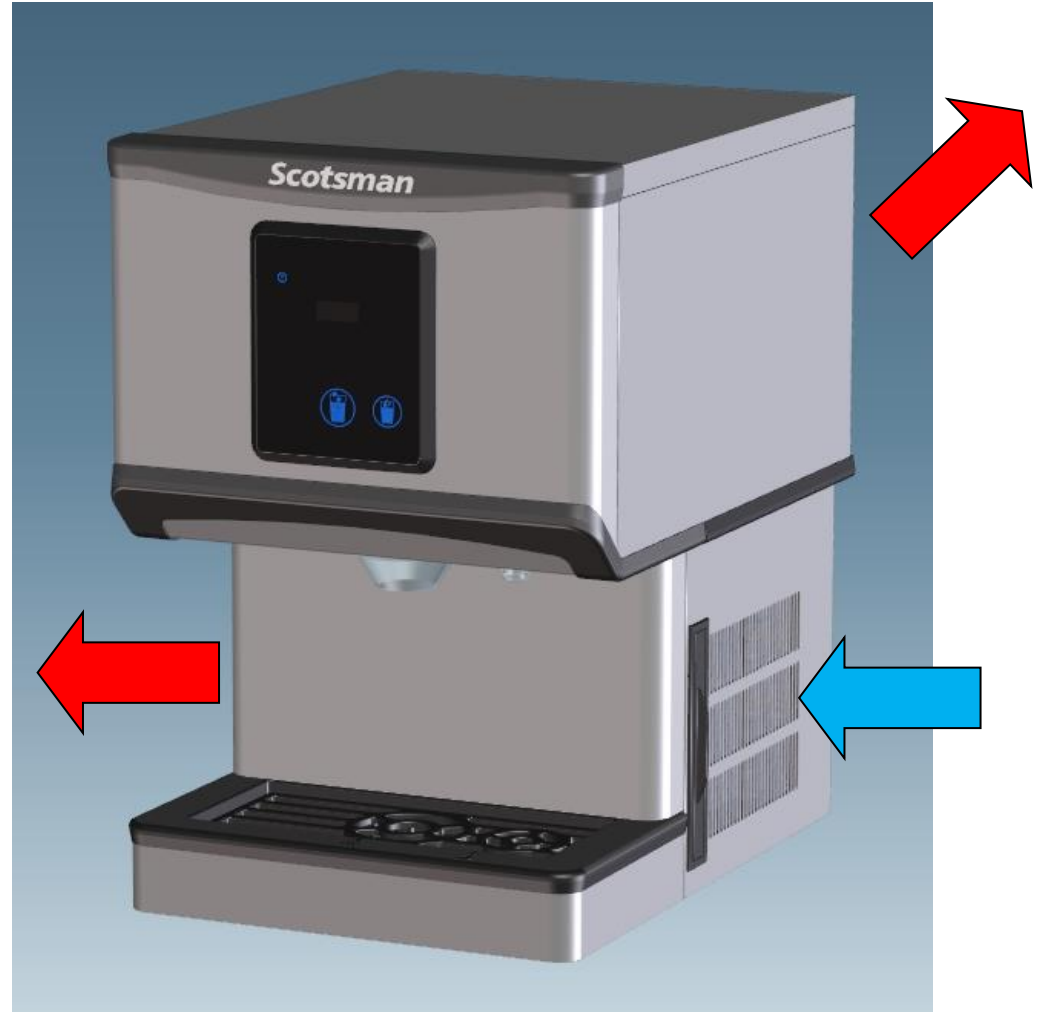
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## Installation-air circulation

Adequate space must be left for proper water and electrical connections on the rear side of the machine.

A minimum clearance of 15 cm on left side for best routing air.

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## DXN 107/207 R290-Installation safety requirements

- The Refrigerant R290 (Propane) is heavier of the air so, in case of refrigerant leak, it moves to the floor
- NEVER INSTALL THE MACHINE IN THE BASEMENT
- Such a distance ensures that the gas and air mixture is below the ignition point
- Even if not required, we suggest to install the ice machine in a ventilated room with a minimum volume of 20 cubic meters
- The minimun clearance required from any source of heat is 1,5 meters
- The room is a strictly no-smoking area
- **DO NOT** install the ice machine closed to ovens, fryeres, grills or other equipments that can cause sparks and fire



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## DXN 107/207 R290-Installation safety requirements

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For safety reason the plug - with external ON/OFF switch must be positioned higher than the ice machine.

This plug must be located at a minimum distance of 1,5 meters from the ice machine (this to ensure that, in case of a leak, the gas dissipates in the air before reaching the plug).



**20 cm**



**150 cm**



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## Initial settings

Once turned ON the unit by the green push button, you can configure the standard dispenser operating features entering in the Menu Program pushing Red Alarm button for 10 seconds

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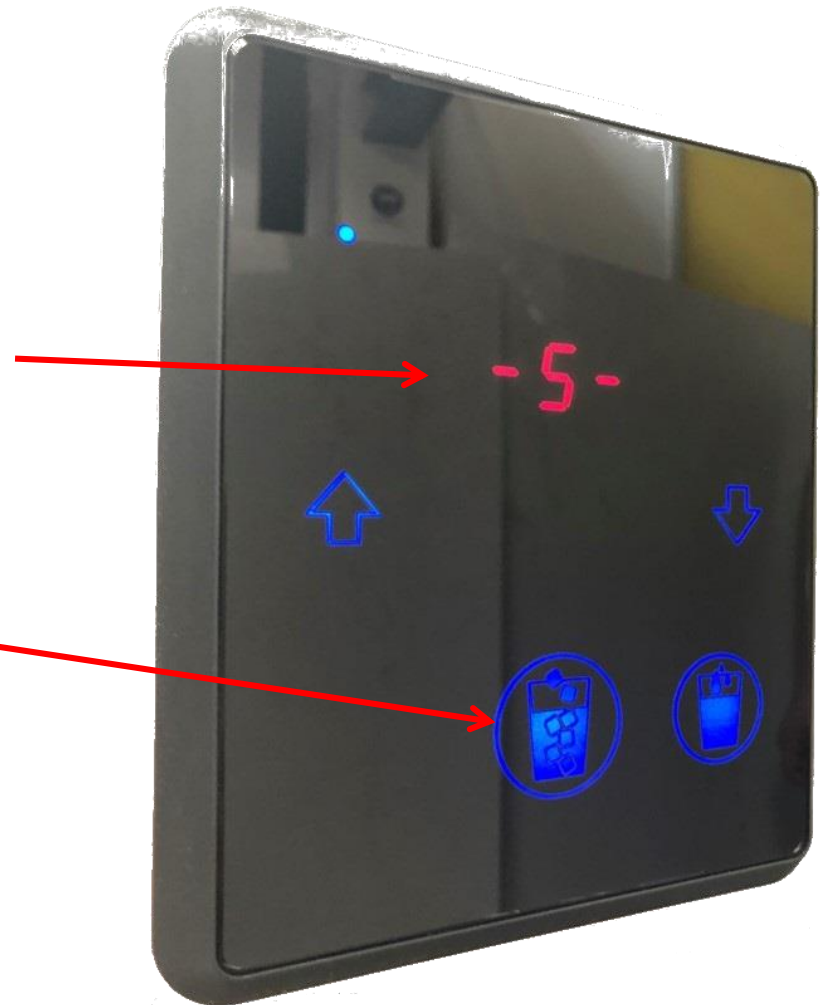
Initial settings – Ice dispensing time

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Factory set at 3 seconds can be changed choosing between:

- From 1 to 15 seconds
- Continuous

Push Red Alarm button for 10 seconds to enter in Menu Program, use arrows to select “**S**” on display then press ICE button to confirm



# DXN Range

Initial settings – Ice dispensing time

Push arrows to select time **1..2..3**  
up to **15** seconds or **CON** for  
continuous, then push ICE to  
confirm.

Push WATER button for 5  
second to ESC

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Initial settings – Dispensing mode

Factory set for ice only or ice and water dispensing mode can be changed choosing only ice

Once in the Menu Program, use arrows to select “H” on display then press ICE button to confirm

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# DXN Range

Initial settings – Dispensing mode

Push arrow to select “**on**” for dispensing water activated or “**off**” for dispensing water disabled, then push ICE to confirm.

Push WATER button for 5 second to ESC

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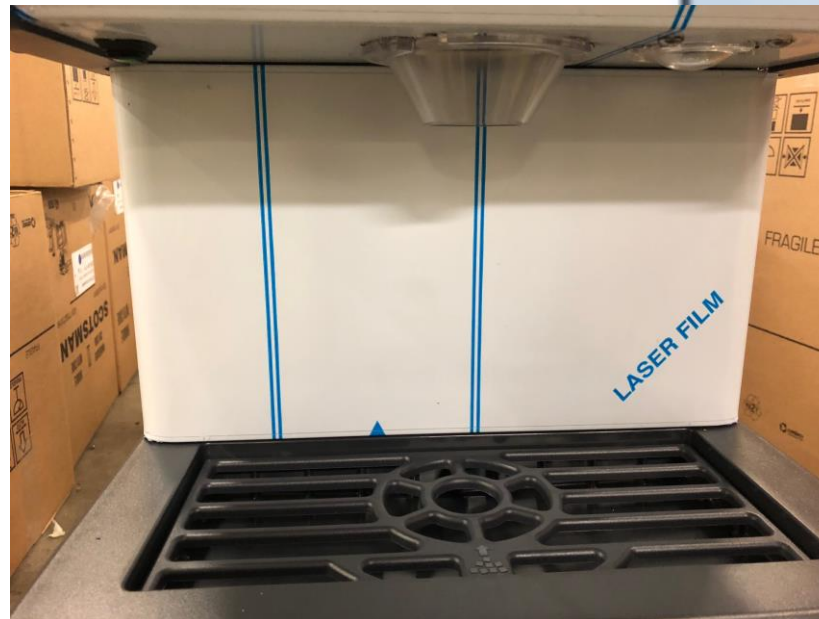


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Initial settings – Dispensing mode

Choosing “Only Ice mode” install the second grid and the water spout closing plug provided

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## Initial settings – Dispensing operation

DXN Range can be provided with two different factory set versions :

- **Touch** (No Optical Dispensing Devices installed)
- **Touchless** (With Optical Dispensing Devices installed)

In case of replacement of the main P.C. Board perform the following procedure to set the dispensing operation accordingly



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## Initial settings – Dispensing operation

Push Red Alarm button for 10 seconds to enter in Menu Program, use arrows to select “**F**” on display then press ICE button to confirm

Press arrows to select “**tch**” for Touch version or “**tcL**” for Touchless version, then push ICE to confirm.

Push WATER button for 5 seconds to ESC



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## Start-up

Open water tap and turn the unit ON through the ON/OFF green button, the machine enters in the starting delay time with two complete purge and refill of the water reservoir, **d01** (purge time) and **d02** (refill time) code monitor this condition on display



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## Start-up

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During the start-up which takes 15 minutes only the gear reducer is energized; elapsed this time the unit starts the operation (**F04** code appears on display) with the activation of the following components:

COMPRESSOR

FAN MOTOR (after compressor starting)



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## Start up

Orange Bin Empty Light is ON during all start-up/delay time and for the first minutes of operation

Five minutes after the compressor start up, ice begins dropping in the storage bin and can be dispensed.

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## Start up

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If necessary, to by-pass the start up delay perform the following procedure:

- During the delay time press and hold for 5 seconds ICE and WATER buttons concurrently then release
- As soon as “**tSt**” will appear on display keep pressed the same buttons until the unit start the operation



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## Operation-Making Ice

The machine remains in operation producing continuously Cubelet ice till the storage bin is completely full of ice and it breaks the Infrared beam of the Optical Ice Level control. After about 10" of steady interruption of the light beam the unit stops and the **bF1** glows on display



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## Operation-Making ice

Allow the resumption of the light beam previously interrupted and after 10 seconds the unit will resume ice making process through the 3 minutes starting delay showing **bF2** code on display

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## Dispensing operation



### Touchless Version

- Place a glass or carafe in front of one of the two Optical Dispensing Devices (Ice and/or Water)
- Dispensing drive motor and/or the water solenoid valve starts to operate with ice and/or water discharged through the bottom plastic spouts and ICE or WATER button blinks
- Drive motor remains in operation as per setting dispensing time; the water inlet solenoid valve remains in continuous operation unless the glass or carafe is removed



# DXN Range

## Dispensing operation

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### Touch Version

- Place a glass or carafe under the plastic spouts (Ice and/or Water)
- Push ICE or WATER button, dispensing drive motor and/or the water solenoid valve starts to operate with ice and/or water discharged through the bottom plastic spouts
- Drive motor remains in operation as per setting dispensing time; water inlet solenoid valve remains in continuous operation unless the WATER button is released

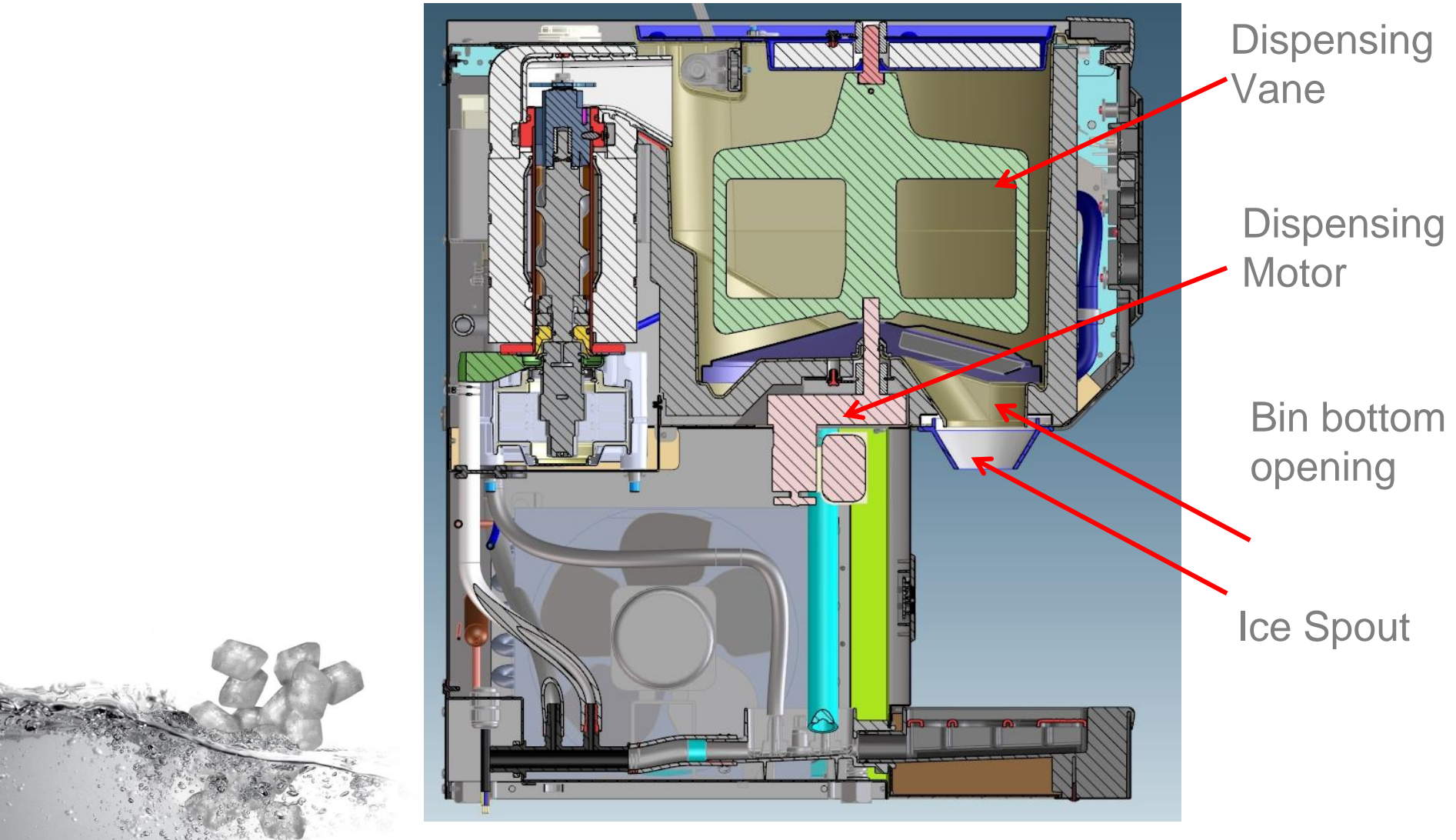




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Dispensing operation

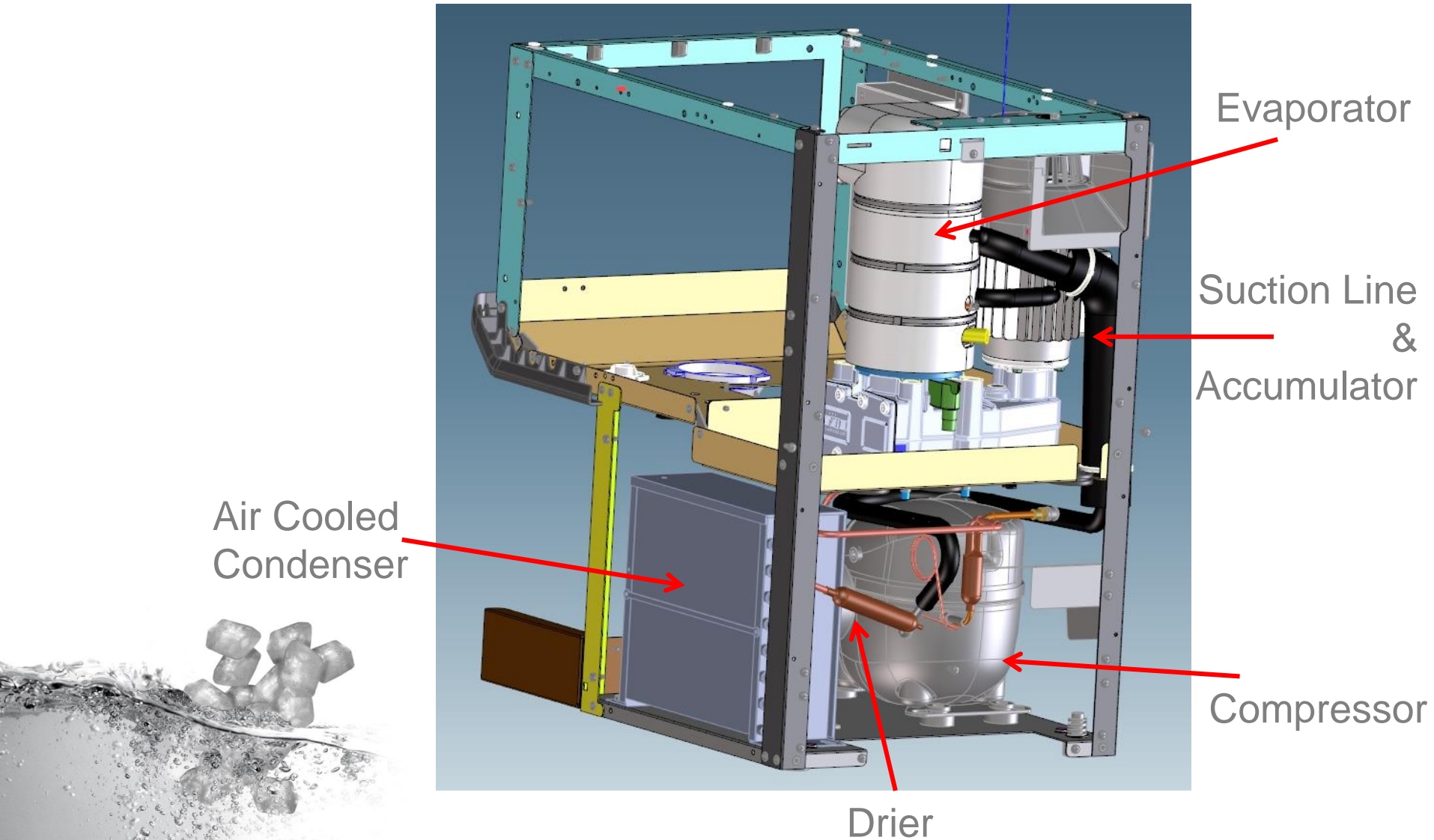
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## Operation-Refrigerant circuit

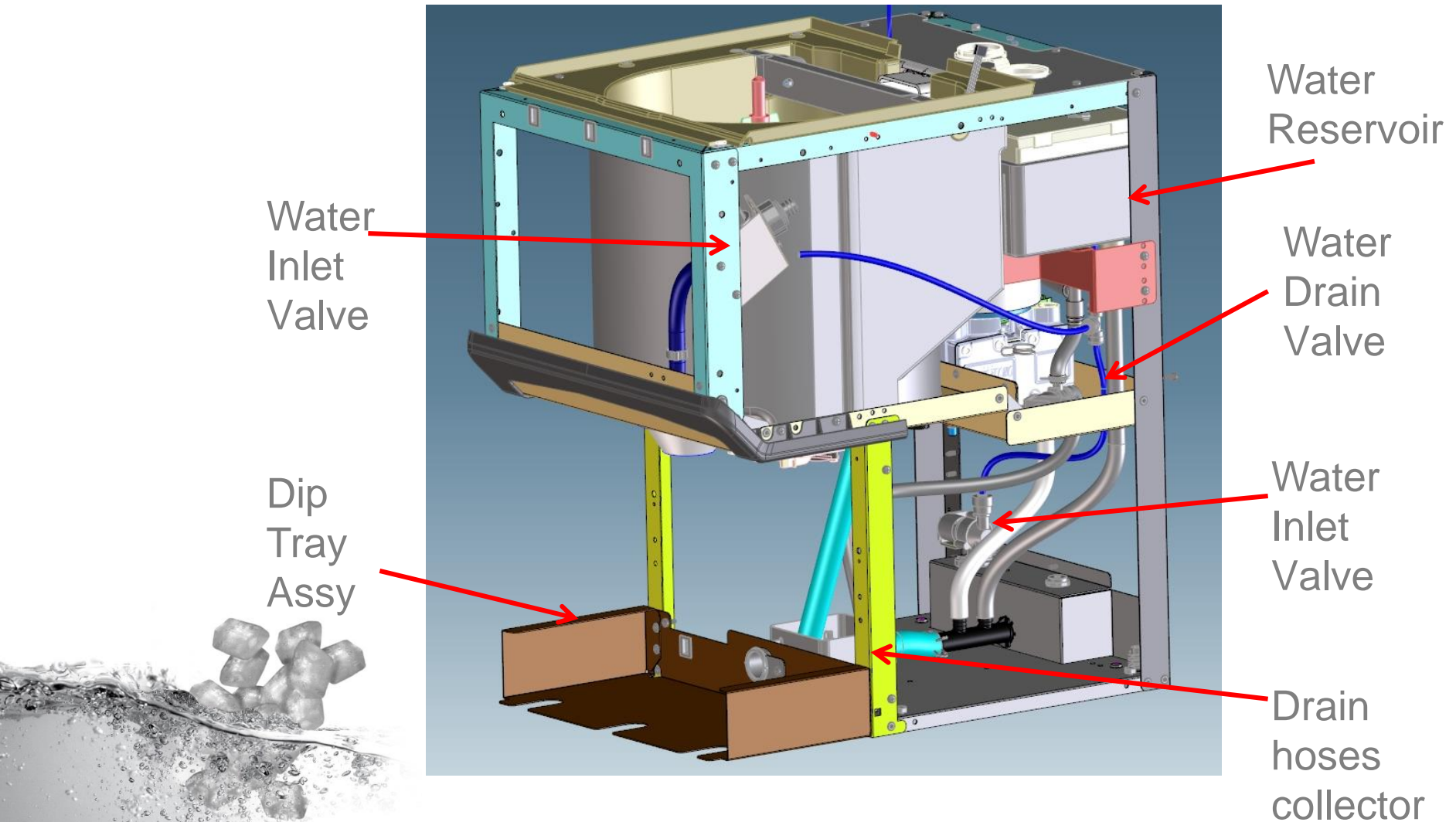
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## Operation-Water circuit

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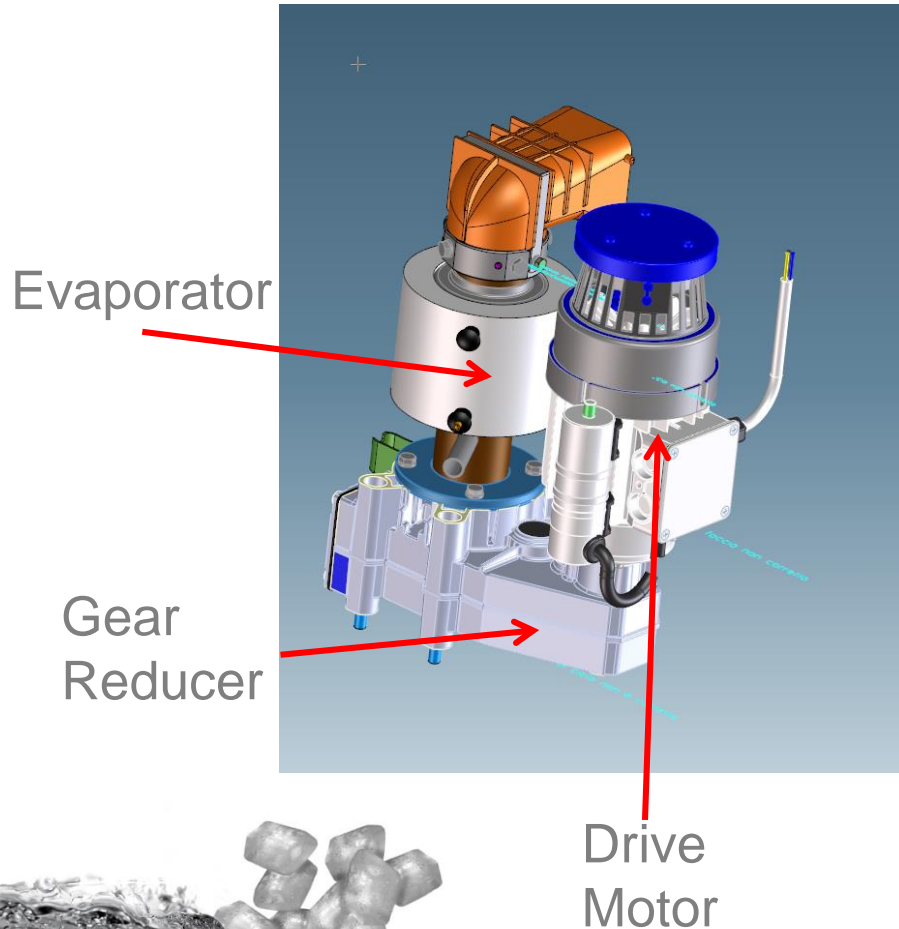




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Operation-Mechanical system

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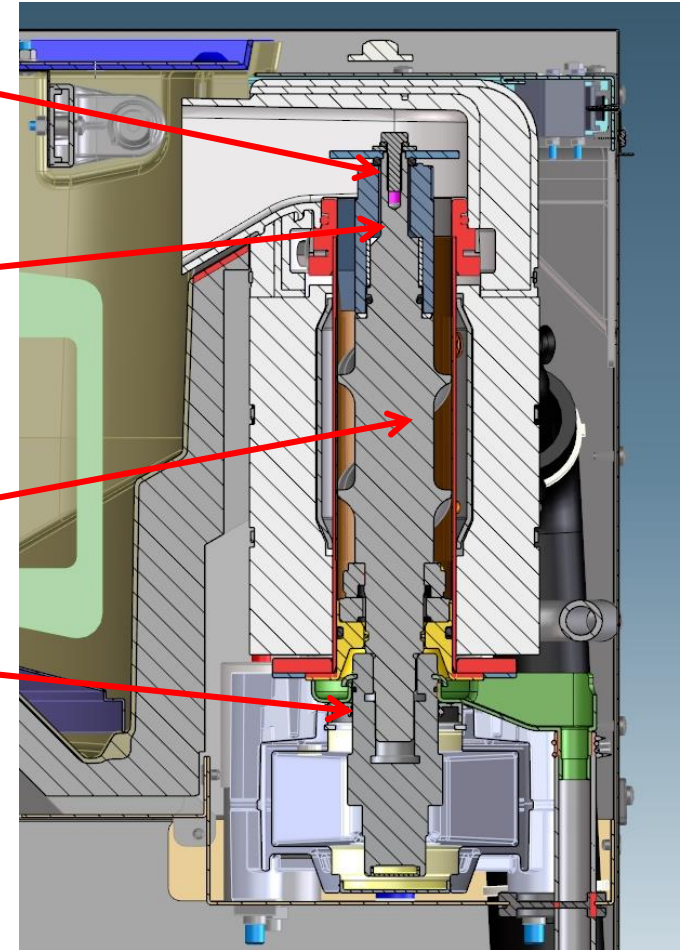


Ice  
Breaker

Bearing  
&  
Bushing

Auger

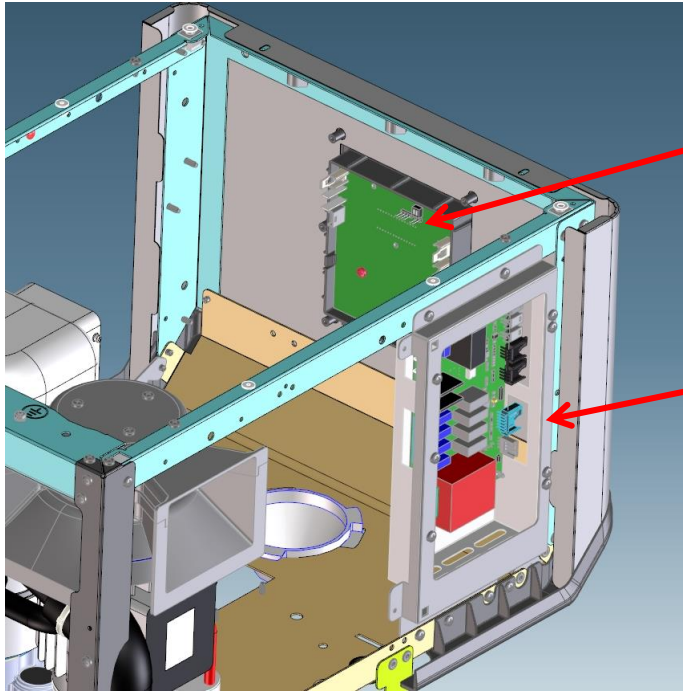
Water  
Seal



# DXN Range

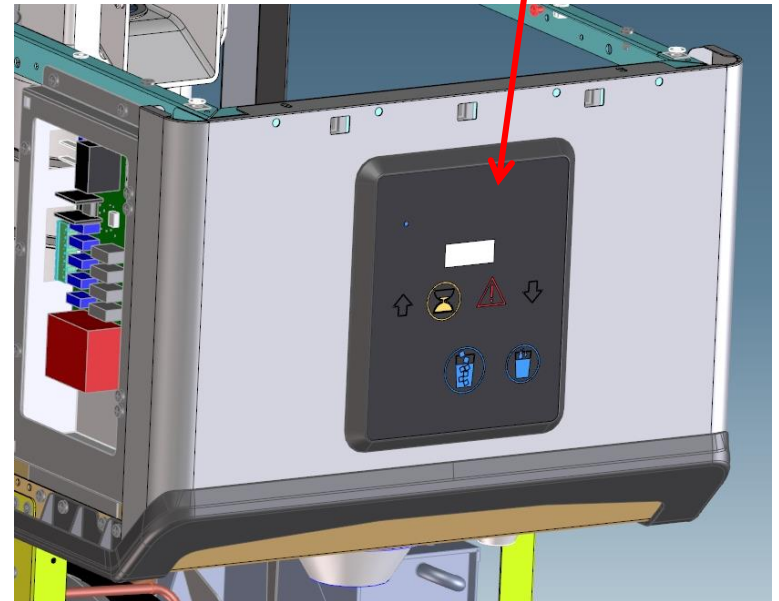
## Operation-Electronic Circuit

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Control Panel Board and Touch Display

Main PC Board





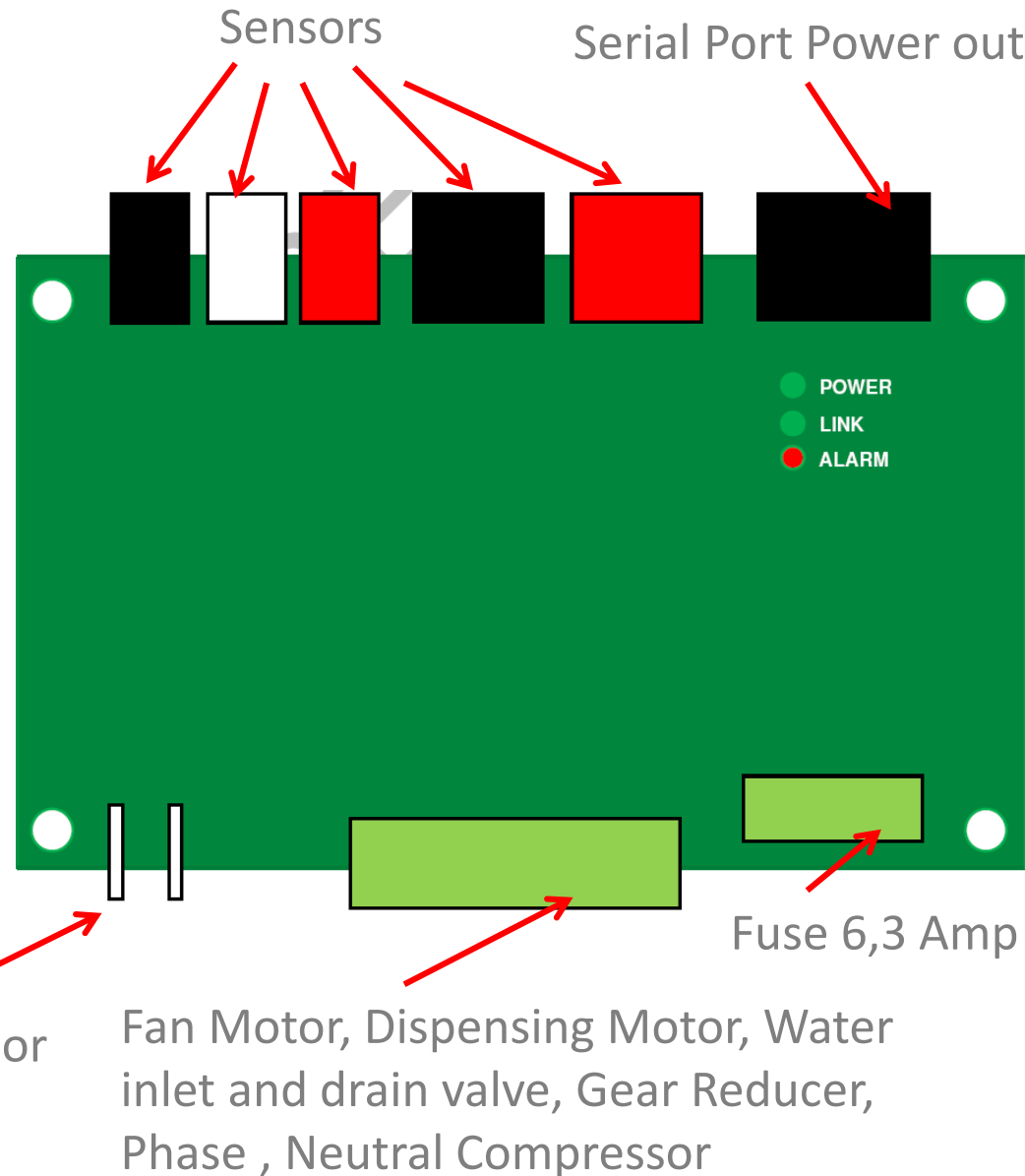
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## Operation-Main PC Board

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Three LEDS meaning:

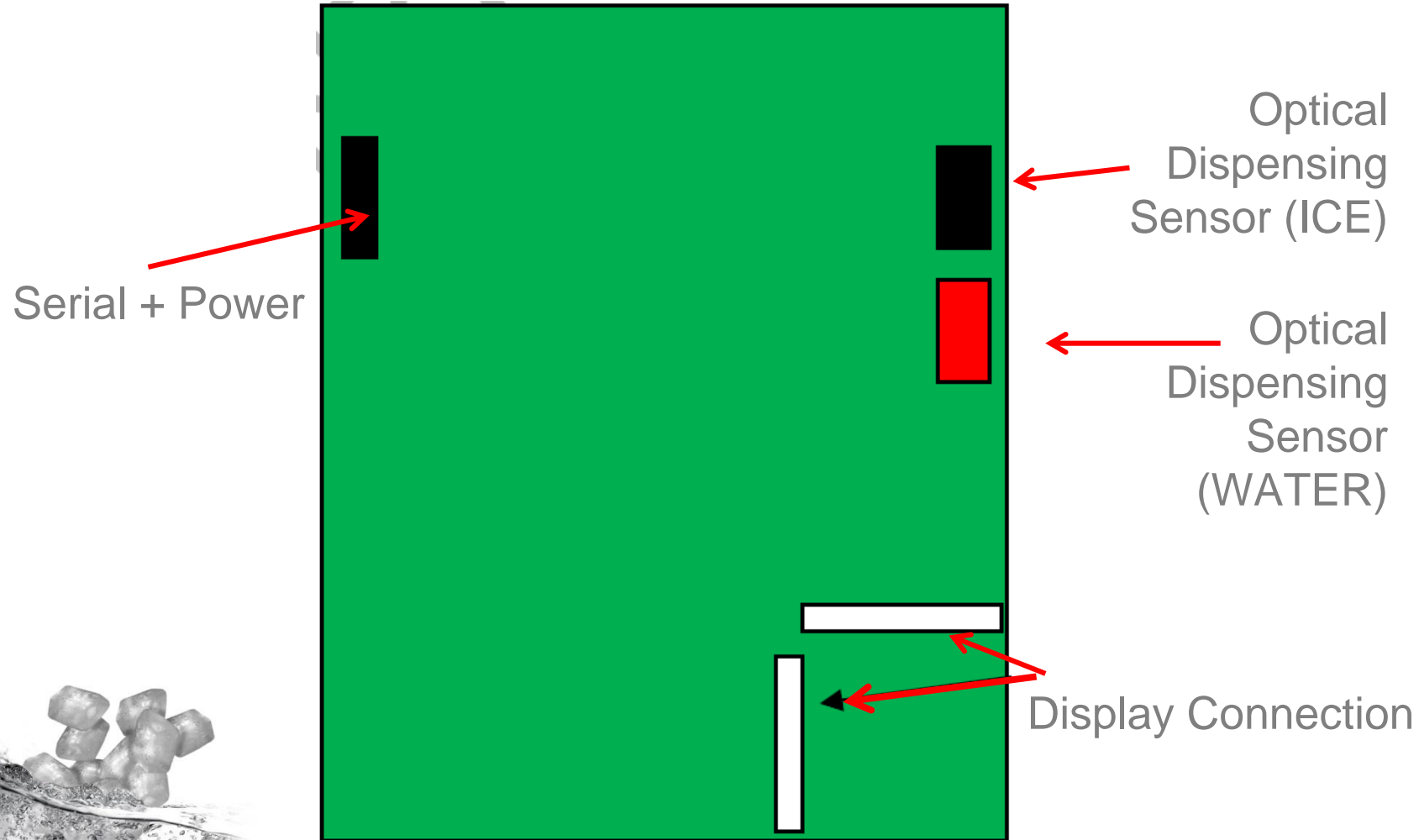
- Green ON/OFF = Power ON or OFF
- Green LINK = Normally ON; detects the connection with the control panel interface board
- Red ALARM = Normally OFF; will be ON in case of any alarm



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## Operation-Control Panel Board

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## Operation- Touch Display

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Pos.	Description	Touch version	Touchless version	Menu program
1	ON-OFF Light	ON	ON	ON
2	7 segment-3 digit display	OFF	OFF	ON
3	Bin Empty Light	ON during the first 15" and when the bin is empty	ON during the first 15" and when the bin is empty	ON
4	Alarm Capacitive key	Normally OFF - ON in case of alarm	Normally OFF - ON in case of alarm	ON
5	Up Arrow Capacitive key	OFF	OFF	ON Used to move up in Menu Program
6	Down Arrow Capacitive key	OFF	OFF	ON Used to move down in Menu Program
7	Ice Dispensing Capacitive key	Normally ON It blinks when unit dispenses ICE	Normally OFF It blinks when unit dispenses ICE	ON Used to confirm (enter)
8	Water Dispensing Capacitive key	Normally ON It blinks when unit dispense WATER	Normally OFF It blinks when unit dispense WATER	ON Used to cancel (ESC)



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## Operation-Menu Program

Through the Menu Program it is possible set the operating parameters, view/clear some counters and check the current operating status of the machine. To enter in MENU program, press the ALARM button, even if it is OFF for 10 seconds. Entering in the programme mode the display will turn ON all LEDs.



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## Operation-Menu Program

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Use the UP and DOWN capacitive keys to navigate through the main menu and choose the parameter values, ICE key is used to select and confirm and WATER key to cancel or ESC.

Pushing the ICE key the selected value will flash and will be saved as the current value for the parameter and return to the list main parameters.

Push WATER key for more than 5 seconds to return in operating mode.





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## Operation-Menu Program

Menu Program Description	Display	Option 1	Option 2	Default Setting
Dispensing Water	H	On: water dispensed	Off: water disabled	On
Touch or Touchless version	F	Tch : Touch	TcL : Touchless	tch
Dispensing time	S	1 up to 15 seconds	CON= continuos	3 sec.
Machine model	-d-	100 = DXN 100	200 = DXN 200	100 *
Menu Program Description	Display	Meaning and reset mode		
Compressor working hours	C	Shows the current working hours of compressor Push ICE key to reset the counter		
PC Board working hours	P	Shows the current working hours of main PC Board Push ICE key to reset the counter		
Dispensing drive motor working hours	I	Shows the current working hours of dispensing drive motor Push ICE key to reset the counter		
Cleaning Remind	C L E	Push ICE key to reset the counter before the cleaning time is elapsed		
Firmware version	-U-	Shows the current version of the firmware installed on the main PC Board of the machine		

\* There is a third option choosing "000" the bin empty function will be disabled



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## Operation-Status



Using the capacitive keys on display is possible to know at what stage the machine is operating, except during an active warning alarm.

To do it, push the Red Alarm Key for **5 seconds** when it is OFF, the display will show the code of the current status of the machine



Status	Display Code
Firmware version	Pxx
Start-up Delay (purge time)	d01
Start-up Delay ( fill up time)	d02
Water Error (when no water is detected)	F06
Ice level control beam interrupted	F05
Bin Full	bF1
Ice level control beam resumed	bF2
Start-up	F03
Start-up checks	F01
Making ice	F04
Ice level control auto calibration	F02
Water reservoir drain	Pur

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## Operation-Alarm Condition

All the alarm codes are signaled by the ALARM RED key; push it for more than 5 seconds to turn ON the display, which shows the code alarm in progress. After 5" the display will turn off and only the keys of the standard operation will remain lighted



Alarm	Code
No Water	A01
Evaporator Sensor out of order	A02
Condenser Sensor out of order	A03
Optical dispensing Sensor out of order (ICE)	A04
Optical dispensing Sensor out of order (WATER)	A05
Too High Evaporator Temperature (> 0°C)	A06
Too Low Evaporator Temperature (< - 30°C)	A07
Too High Condensing Temperature (> 70°C)	A08
Too Low Condensing/Ambient Temperature (<3°C)	A09
No /Wrong Rotation Alarm	A10
Too High Condensing Temperature at start-up (> 55°C)	A11
Test Alarm	A14
Ice level control out of order	A15
Cleaning Remind (6 months)	CLE

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## Operation- Display Counter Working Hours

To check the current operating hours of the following components of the machine enter in Menu Program then select :

**C** for Compressor

**P** for Main PC Board

**I** for Dispensing Motor

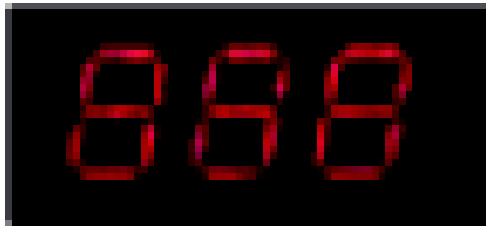


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## Operation-Display Counter Reading Mode



Compressor, PC Board and Dispensing Drive Motor current working hours can be read on display through its three digits and dots.



As per following meaning:

- Digits are working hours
  - Dots are decimals to add
- I.e.

999 = 999 working hours

999. = 9990 working hours

99.9. = 99900 working hours

Then push ICE button to reset the counter





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## Operation-Cleaning Remind



The need to clean the machine is signaled with “**CLE**” on display after 6 months of operation. When this remind appear, the machine nevertheless continue to function normally. To reset the remind, go into alarm (by pressing the ALARM key for 5”) and while displaying the “**CLE**” condition simply press the ALARM button for more than 5”. The completion of the reset signal is confirmed by 3 flashes of “**rES**” on display.

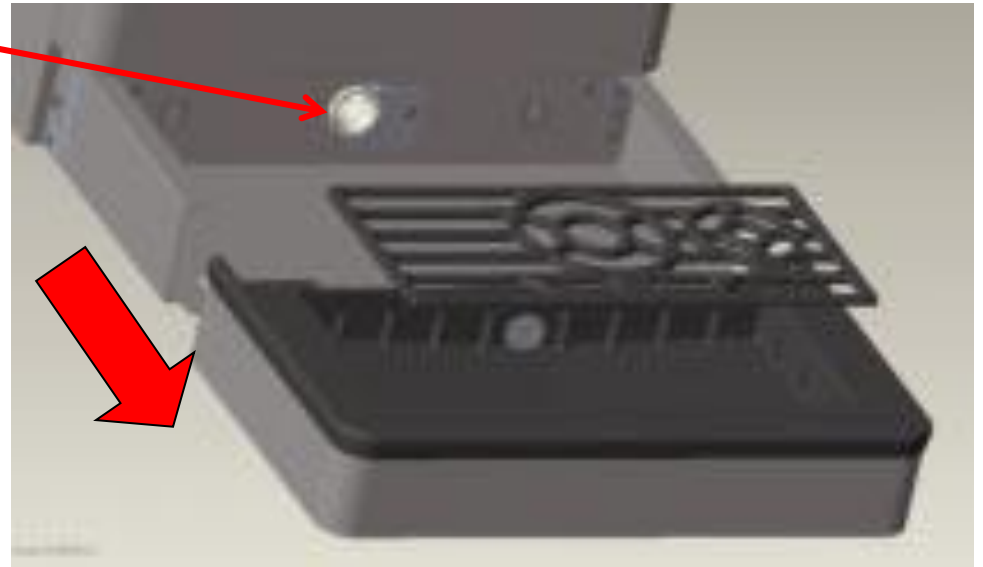
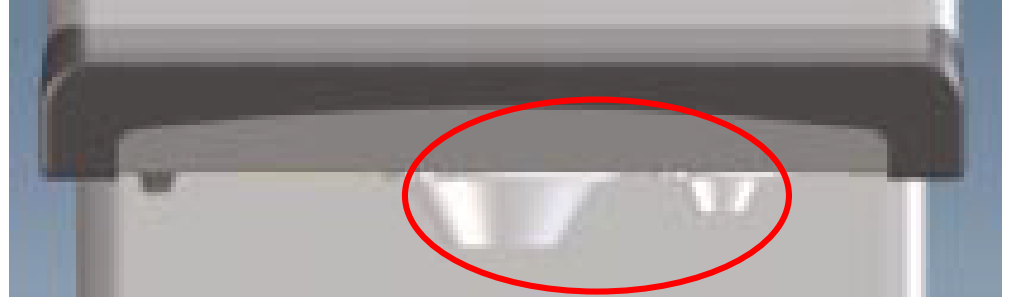


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Maintenance-Daily (performed by end user)

It consists of remove, clean, sanitize with specific product and re-install the dispensing parts of the unit as ice/water spout, water dip tray and grid. If necessary, use a sanitized brush, carefully insert into the drain hole to clear any solidified build-up of debris from drain tube.



# DXN Range

Maintenance-Monthly (performed by end user)

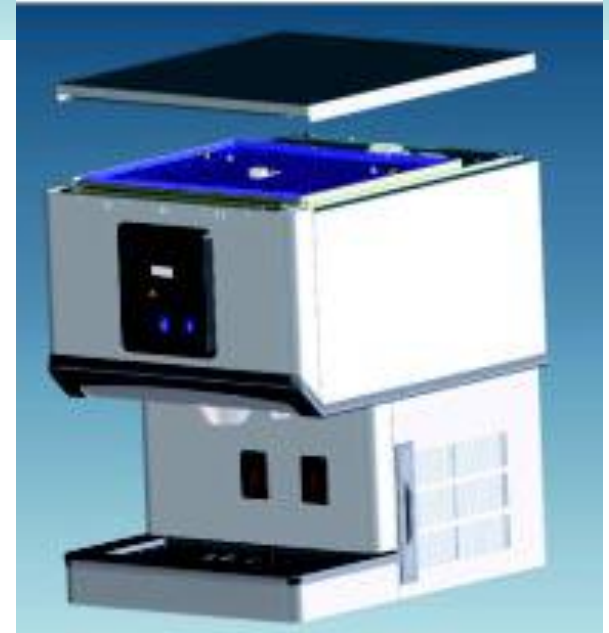
It consists of cleaning and sanitizing Ice bin area; tools required: **Scotsman Sanitizer, safety gloves, carafe.**

Close the water tap first; through the ON/OFF push button turn OFF the machine; wait 30 seconds then switch ON again.

Machine starts to purge the water from the reservoir, wait 2 minutes, then extract the upper section of the front panel, unscrew the two fastening screws and remove the top panel, the machine will automatically switch OFF.



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# DXN Range

Maintenance-Monthly (performed by end user)

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In a carafe, prepare **500 ml** of warm water (40-50°C) and **15 ml** of Scotsman Sanitizing product. Open the plug of the funnel and pour the sanitizing solution in the reservoir and wait at least 10 minutes.



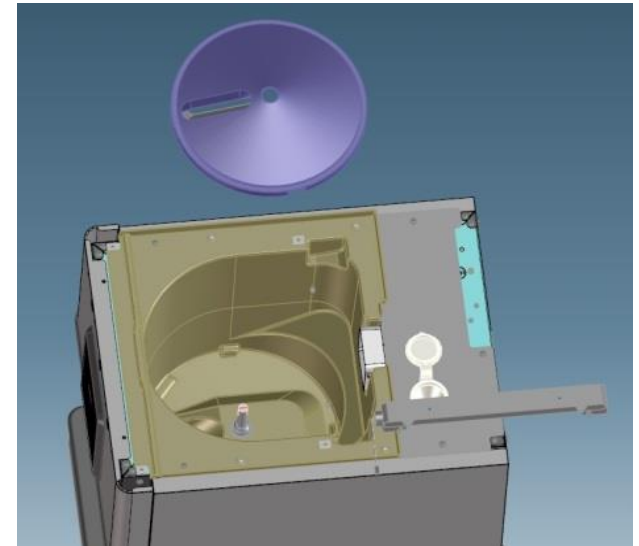
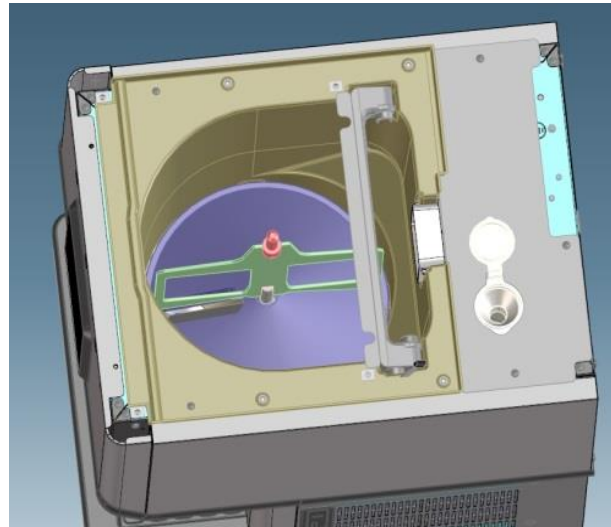
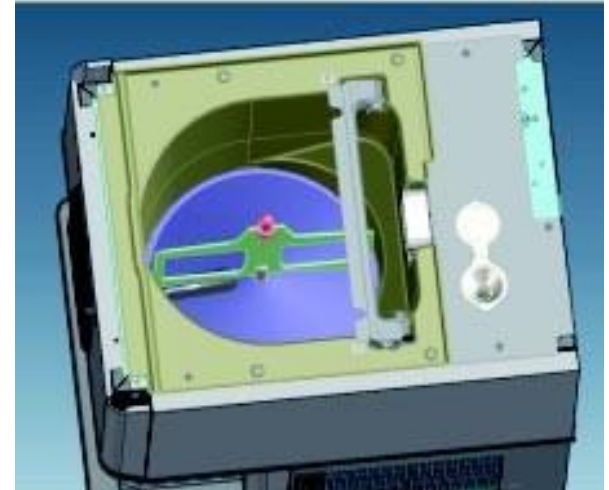
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Maintenance-Monthly (performed by end user)

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Unscrew the two fastening screws  
and remove the bin cover

Lift up the ice level control and its  
bracket from its housing and  
carefully stand it on the frame of the  
unit, then remove ice, distribution  
vane and steel bottom from the  
storage bin





# DXN Range

Maintenance-Monthly (performed by end user)

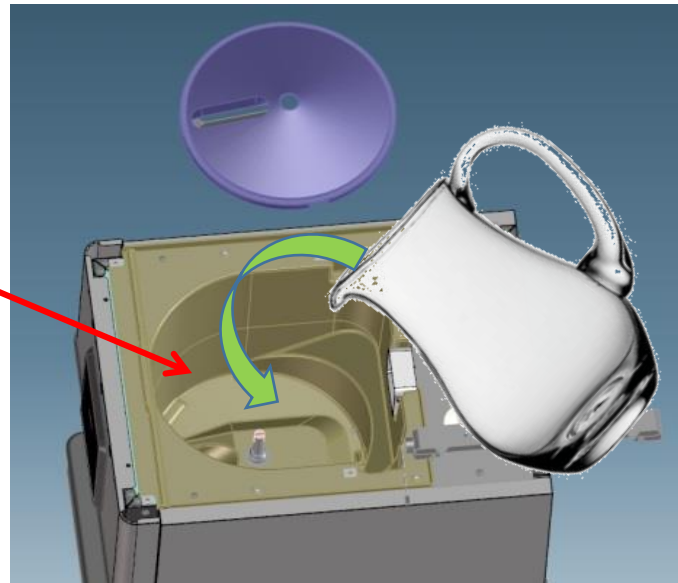
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Using the same carafe, prepare again  
**500 ml** of warm water (40-50°C) and  
**15 ml** of Scotsman Sanitizing product  
and pour of the solution on the internal  
sides of the storage bin

Using a sanitised disposable cloth,  
clean the ice bin and rinse with clean  
water.



**CLEAN - SANITIZE**



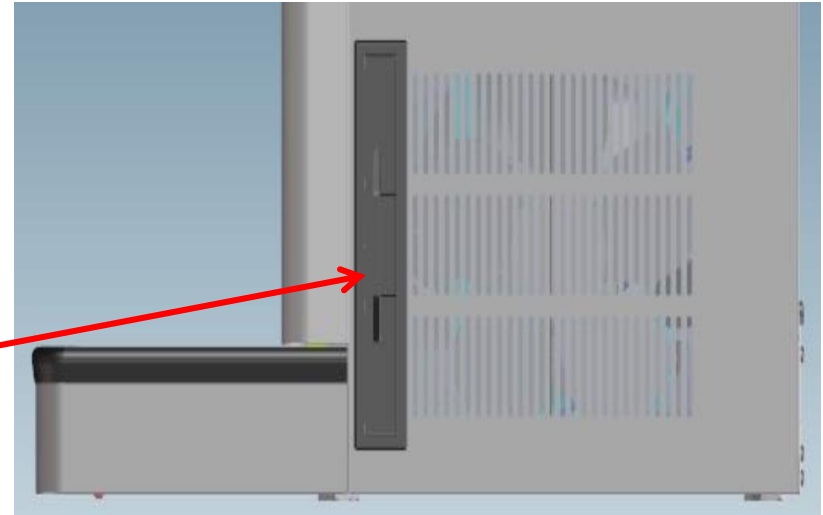
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Maintenance-Monthly (performed by end user)

Close the funnel plug and reinstall all the previously removed panels and parts by following the procedure in reverse order, paying attention that both the steel bottom and the upper shaft of the blade are properly seated

Remove, clean and reinstall the air filter located on the right side panel, then open the water tap



**NOTE.** Once the cleaning operations are completed, switch on the equipment; the ice production process will start after a delay of 15 minutes.

Make sure that the first produced ice doesn't taste slightly acid; in any case empty the bin by pressing the dispensing button and dispose of the ice produced during the first 10 minutes.

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## Service - Dispensing Motor replacement instruction

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Take out the water drip tray





# DXN Range

## Service- Dispensing Motor replacement instruction

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Unscrew the two screws of the lower front panel and take it out from the frame



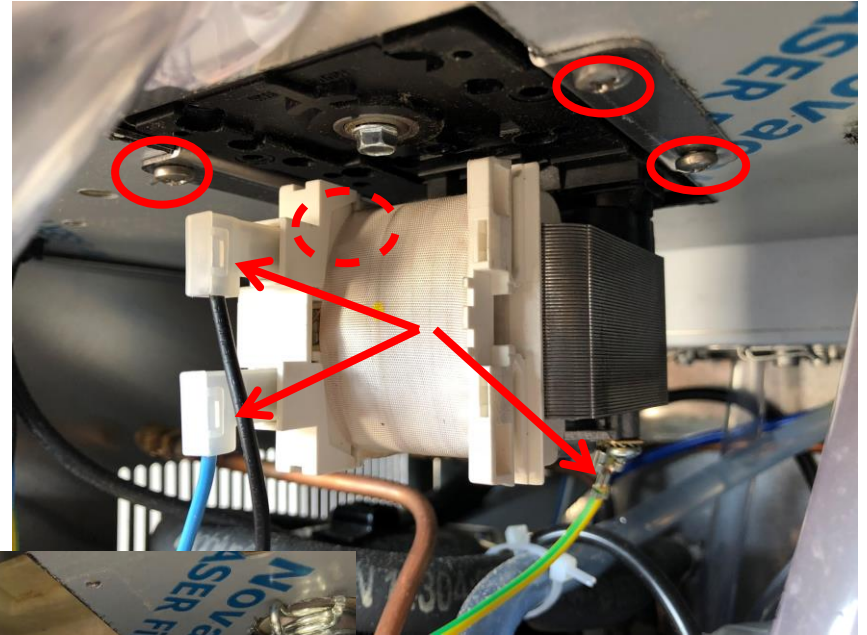


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## Service- Dispensing Motor replacement instruction



Disconnect the spade connectors from the drive motor, unscrew the 4 screws holding of the motor, then take it out from the frame

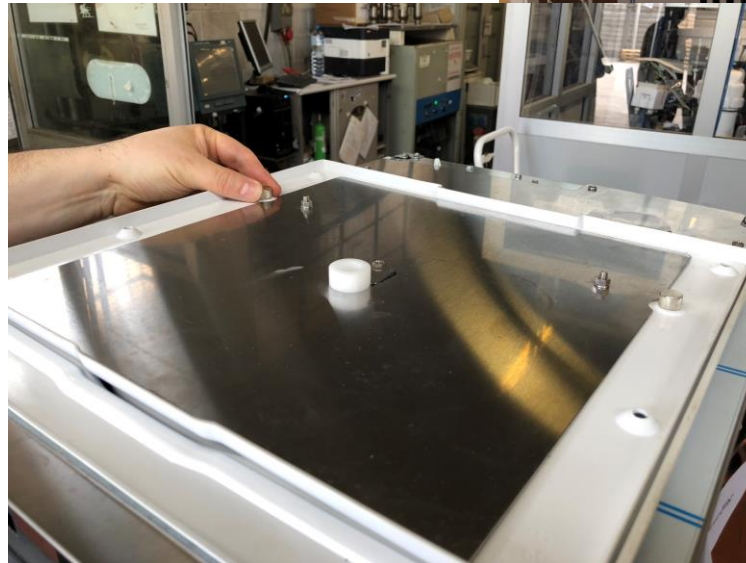


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## Service-Dispensing Motor replacement instruction

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Take out the top panel and the bin cover unscrewing the related screws



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## Service- Dispensing Motor replacement instruction

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Take out the dispensing  
vane, S.S. bin bottom  
and the gasket



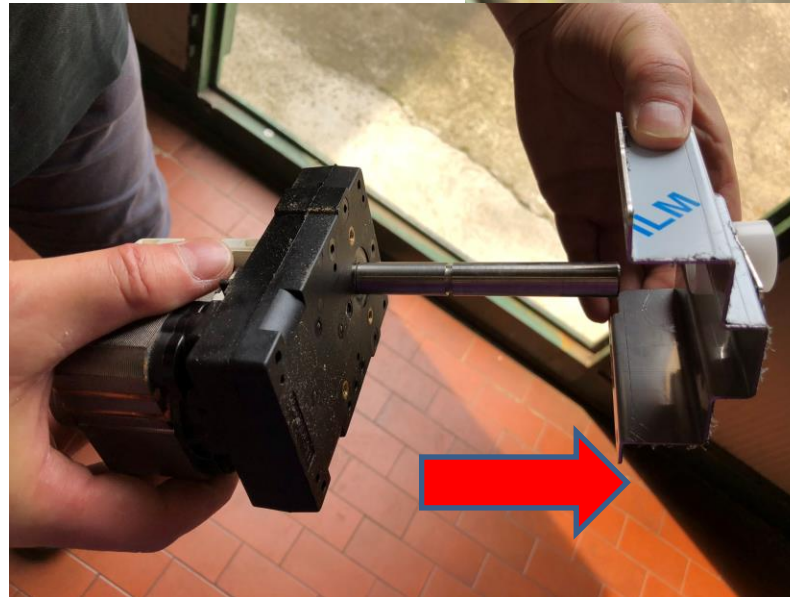
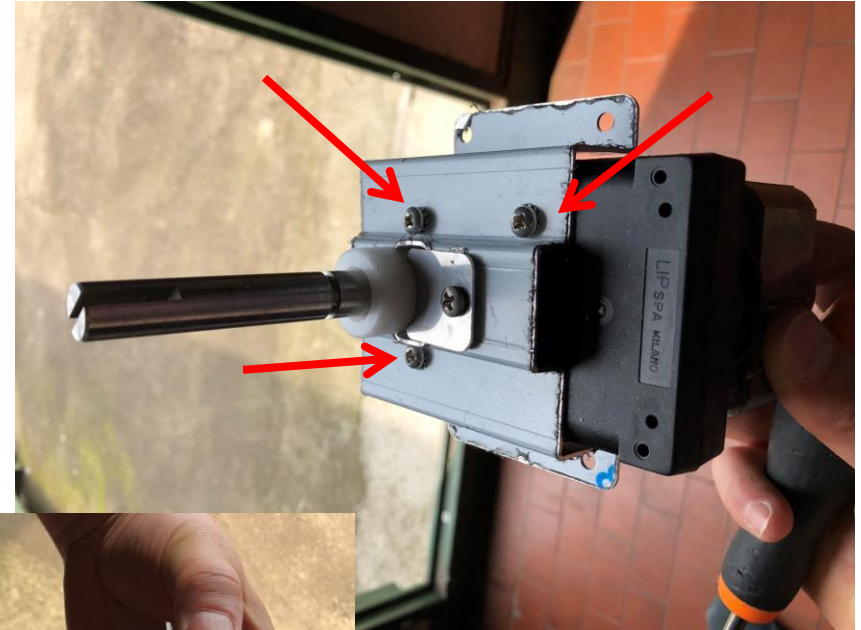


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## Service- Dispensing Motor replacement instruction

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Take out the drive motor from its bracket unscrewing the three holding screws

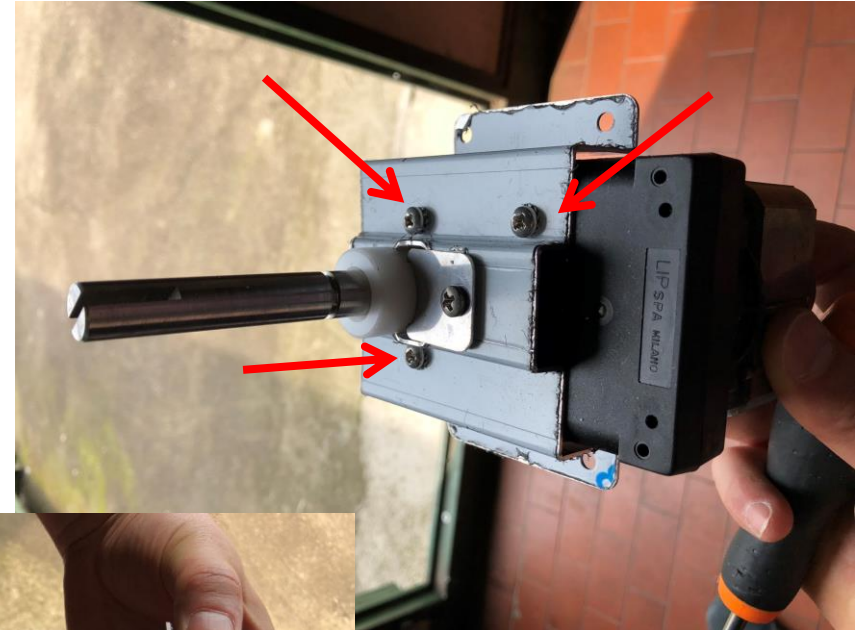


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## Service- Dispensing Motor replacement instruction

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Replace the drive motor with the new one and secure it on its bracket using the same screws previously removed



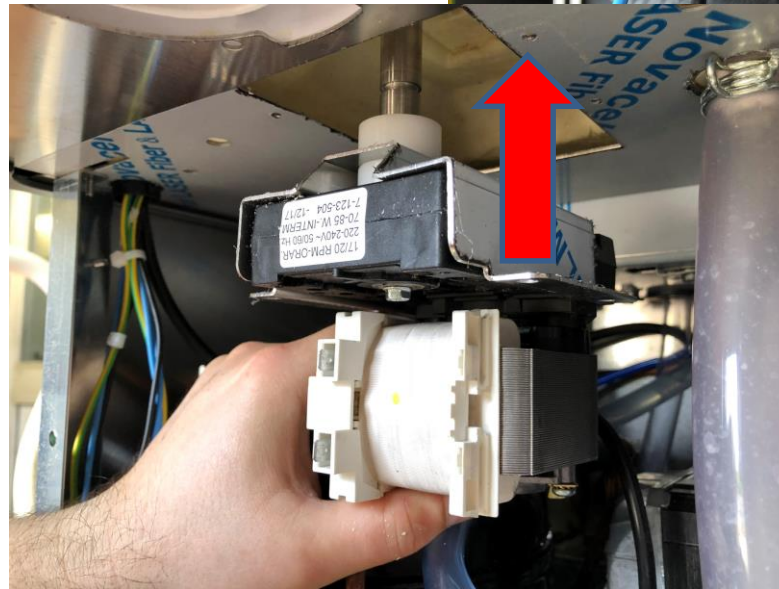


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## Service- Dispensing Motor replacement instruction

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Reinstall the drive motor and fix it with screws and spade connectors previously removed



# DXN Range

## Service- Dispensing Motor replacement instruction

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Re-install the  
gasket of the  
shaft, then bin  
bottom and  
dispensing vane



# DXN Range

## Service- Dispensing Motor replacement instruction

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Riassemble bin cover,  
top panel, lower front  
panel and water dip  
tray using the  
sequence in reverse



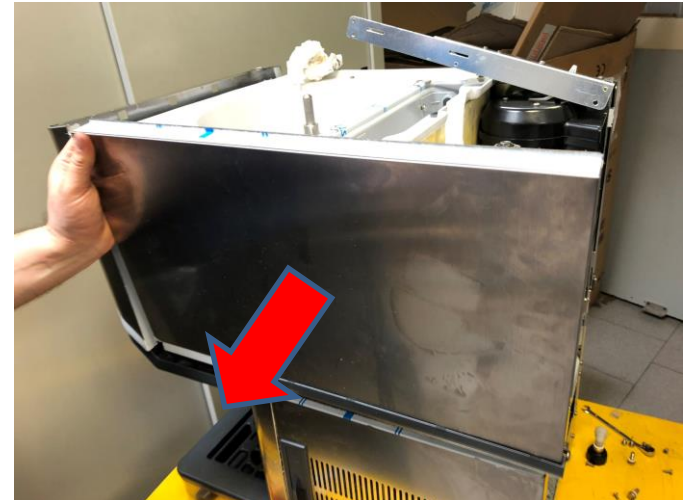


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## Service- Replacement of Auger & Ice breaker assy

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Remove top trim strip, top, rear and right side panel

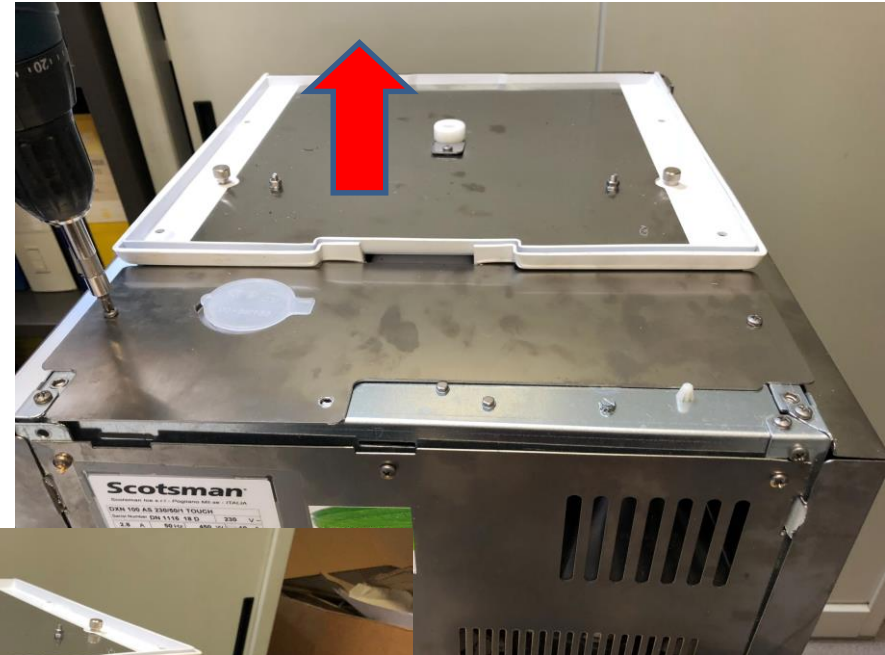


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Service- Replacement of Auger & Ice breaker assy

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Remove  
both rear  
brackets  
and bin  
cover



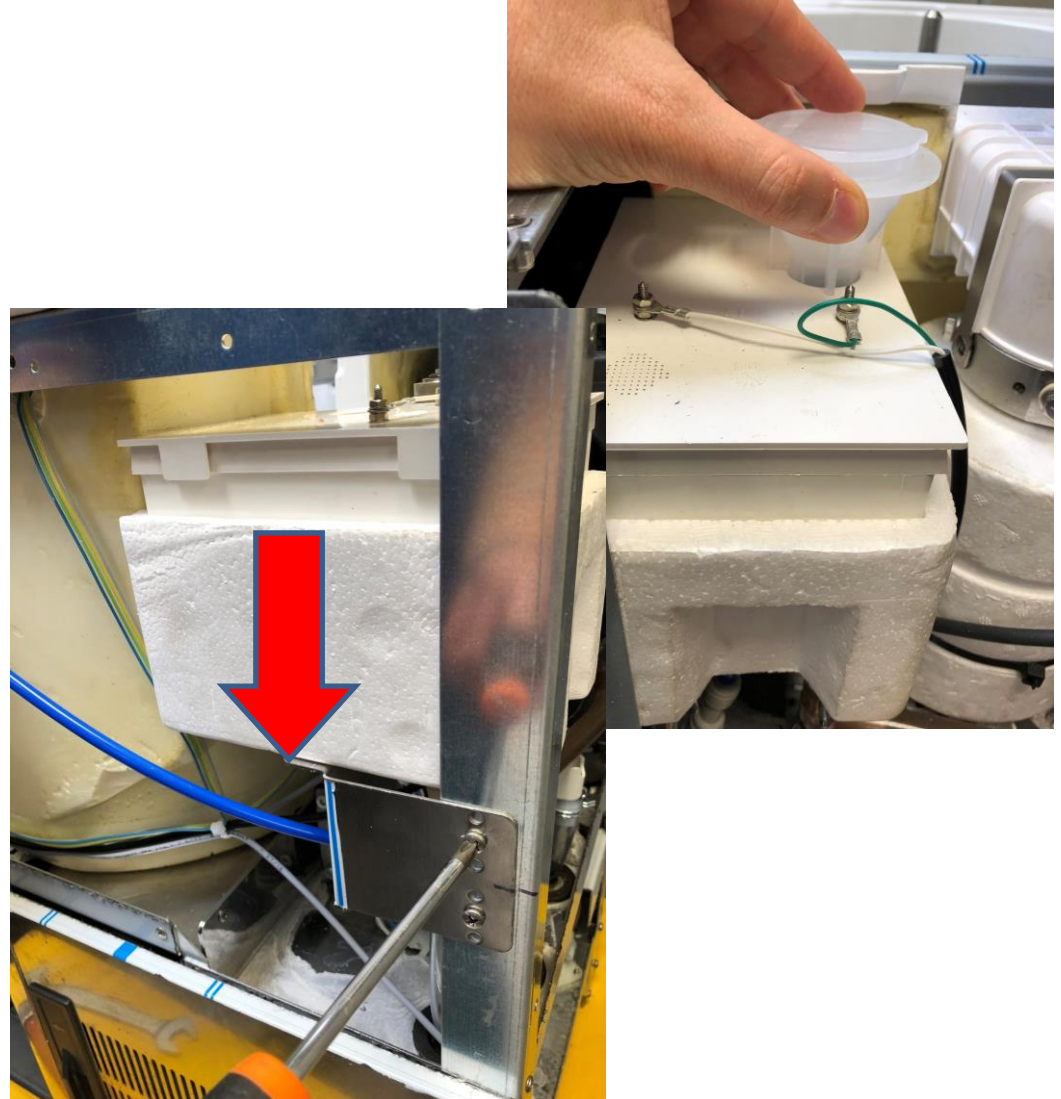


# DXN Range

## Service- Replacement of Auger & Ice breaker assy

**Scotsman**  
Ice Systems

Remove the  
funnel, unscrew  
the screw holding  
the reservoir on  
frame and move it  
down

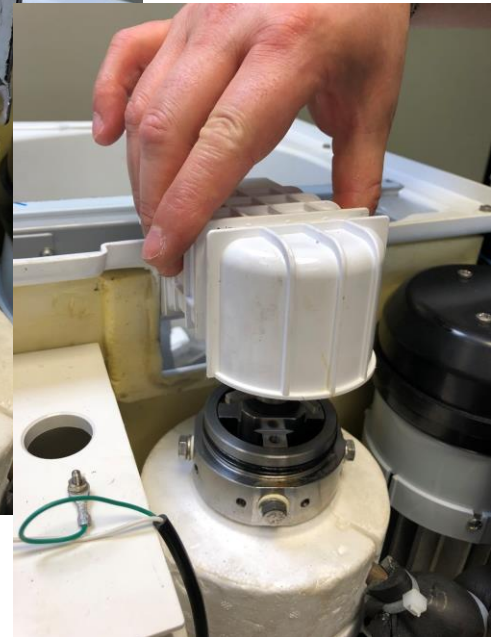
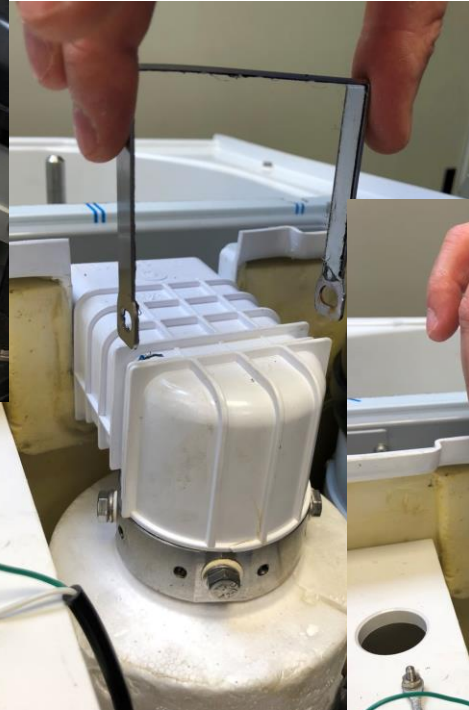


# DXN Range

## Service- Replacement of Auger & Ice breaker assy

**Scotsman**<sup>®</sup>  
Ice Systems

Remove ice  
spout insulation,  
then the plastic  
ice spout and its  
holding spring



# DXN Range

## Service- Replacement of Auger & Ice breaker assy

**Scotsman**  
Ice Systems

Unscrew the four  
holding screws of  
ice breaker and lift  
up the auger&ice  
breaker assy

