ICETRO
Soft Serve Freezers Installation Guide

Revision Date: 7/21/24

Table of Contents

1. Model number breakdown
2. Serial number breakdown
3. Name / Data plate information
4. Hopper and Barrel capacity
5. Clearance requirements for installation
6. Electrical and Refrigerant Information
7. Supply voltage setting
8. Supply voltage setting guide if supply voltage is below 200V
9. Water supply connection –ISI-161TH and ISI-300TA
10. Viscosity Control Theory
11. Viscosity Setting
12. Viscosity Setting Tips
13. How to disable audible sound and beep sound
14. How to disactivate Mix Low?
15. Clock set for Heat Treatment Models
16. Priming for ISI-163TT, 300TA, ISI-203, ISI-303
17. Priming for ISI-161 and ISI-271
18. Icetro Soft Serve Equipment Operation YouTube site

1. Model Number Breakdown

ISI-161TH

- **ISI** stands for **I**cetro **S**oft serve **I**ce cream machine.
- **16** indicates barrel capacity.
  It was named by 16 even though actual barrel capacity is 1.4 liters.
- **3** means number of nozzles under freezer door.
- T stands for tabletop / countertop
- H means that it is a heat treatment model.

Model Number								
I	**S**	**I**	**-**	**1st and 2nd digit**	**3rd digit**	**1st letter**	**2nd letter**	**3rd letter**
Icetro	Softserve	Ice cream machine	Dash	Barrel capacity	Number of nozzles	Tabletop/Floor, freestanding	Inverter, Heat treatment, New ect.	Agitator, Water-cooled

2. Serial number Breakdown

Year	Month	Factory BOM#	Serial#
W	G	FA1631005300	001

Year

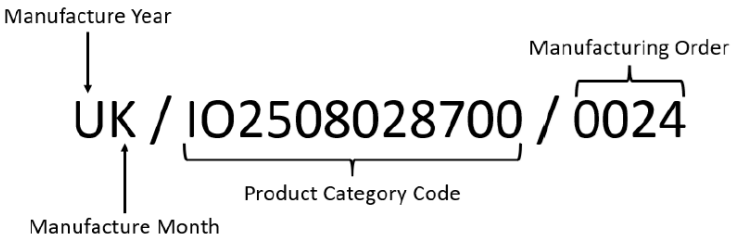
2001:A 2010:J 2020:T
2002:B 2011:K 2021:U
2003:C 2013:M 2022:V
2023:W
2024:X
2025:Y
2026:Z
2027:?

First Letter	O	P	Q	R	S	T	U	V	W	X	Y	Z
Manufacture Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026

Second Letter	A	B	C	D	E	F	G	H	I	J	K	L
Manufacture Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Month

A: January G: July
B: February H: August
C: March I: September
D: April J: October
E: May K: November
F: June L: December



3. Name / Data Plate Information

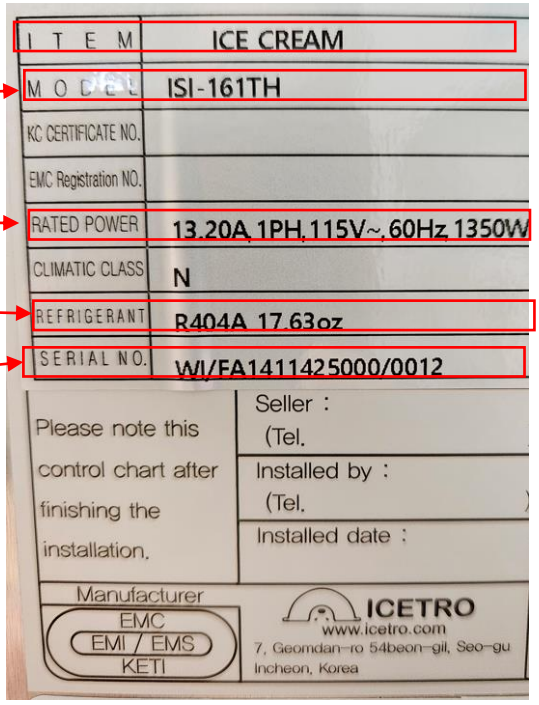
Item
Ice cream machine or ice maker or slush machine

Model
Model#

Electrical information
Voltage, Hertz, Operational amperage, Power consumption

Refrigerant Quantity
This exact charge musted be weighed in

Serial #
Please refer to serial break down section



3. Name / Data Plate Information

Model
Model # of soft serve machine

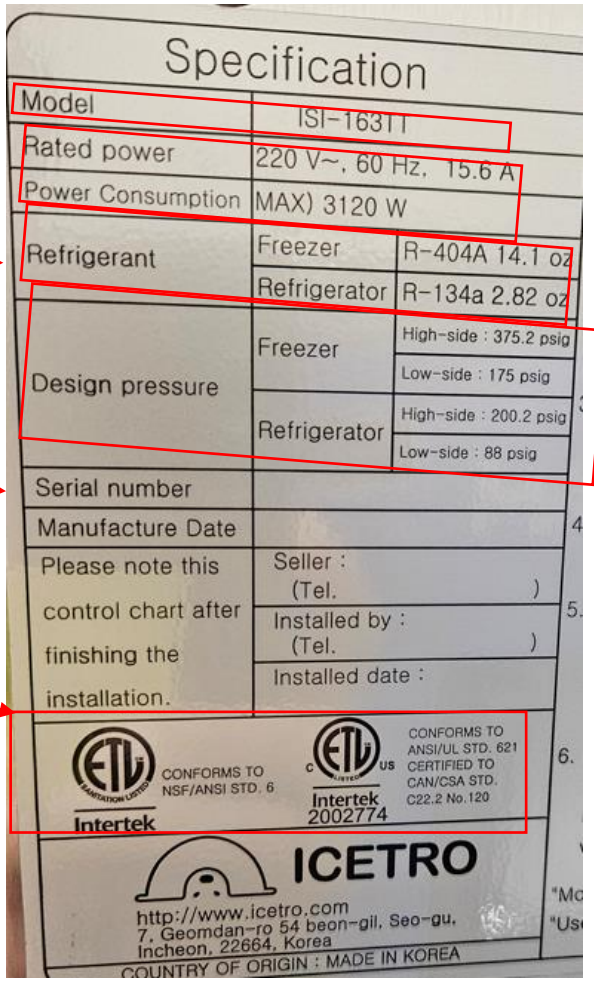
Electrical information
Voltage, Hertz, Operational amperage, Power consumption

Refrigerant Quantity
This exact charge musted be weighed in

Refrigerant Pressures

Serial#
Serial # label can be placed out of the Data Plate

Certification logo and standard
ETL safety equivalent with UL
ETL Sanitation equivalent with NSF



4. Hopper and Barrel capacity

Model/Part Number	*Hopper Capacity (gal.)*	*Hopper Capacity (qt.)*	*Cylinder Capacity (gal.)*	*Cylinder Capacity (qt.)*
ISI-161TH	0.8	3.2	0.37	1.5
ISI-161TI	0.8	3.2	0.37	1.5
ISI-163TT	1.46	5.9	0.43	1.7
ISI-163ST	1.46	5.9	0.43	1.7
ISI-203SN	2.51	10.1	0.72	2.9
ISI-300TA	4.63	18.5	0.85	3.4
ISI-303SNA	4.73	19	0.9	3.6
ISI-303SNW	4.73	19	0.9	3.6
ISI-271THSN	3.31	13.3	0.72	2.9
ISI-271SHSN	3.31	13.3	0.72	2.9

5. Clearance requirements for installation

Model	Clearance (Inch)
ISI-161TI	0” all around, 15”~20” for top
ISI-161TH	0” all around, 15”~20” for top
ISI-163TT/ST	6”- 7” all around
ISI-300TA	6”- 7” all around
ISI-203SN	7”- 8” all around
ISI-303SNA	7”- 8” all around
ISI-303SNW	N/A (Water cooled)
ISI-271THSN	6”- 7” all around
ISI-271SHSN	6”- 7” all around

6. Electrical and Refrigerant Information – ISI-161TI

Row	Item	Specification	Requirement
1	Electricity	115V/60Hz/1phase	
2	Amp	Max. 14A, Operation: 11~12A	Minimum 15 Amp circuit breaker is required.
3	Power consumption	1320W	
4	Power plug	NEMA 5-15	
5	Main(Freezer) compressor BTU	2163 Btu/h(0.85HP) per 1 compressor	
6	Refrigerant	Freezer(Cylinder) : R404A	17.64oz.
		Single compressor is in charge of barrel and hopper	
7	Time for initial consistency	7 minutes at 80F	
8	Recovery time after full draw	2 minutes at 80F	

6. Electrical and Refrigerant Information – ISI-161TH

Row	Item	Specification	Requirement
1	Electricity	115V/60Hz/1phase	
2	Amp	Max. 14A, Operation: 11~12A	Minimum 15Amp circuit breaker is required.
3	Power consumption	1350W	
4	Power plug	NEMA 5-15	
5	Main(Freezer) compressor BTU	2163 Btu/h(0.85HP) per 1 compressor	
6	Refrigerant	Freezer(Cylinder) : R404A	17.64oz.
		Single compressor is in charge of barrel and hopper	
7	Time for initial consistency	7 minutes 30 seconds at 80F	
8	Recovery time after full draw	2 minutes 40 seconds at 80F	

6. Electrical and Refrigerant Information – ISI-163TT/ST

Row	Item	Specification	Requirement
1	Electricity	208~230V/60Hz/1phase	
2	Amp	Max. 16A, Operation: 13~14A	Minimum 20 Amp circuit breaker is required.
3	Power consumption	3120W	
4	Main(Freezer) compr essor BTU	2163 Btu/h(0.85HP) per 1 compressor	
5	Refrigerant	Freezer(Cylinder) : R404A	14.11oz.
		Refrigeration(Hopper) : R 134A	2.82oz.
6	Time for initial consis tency	11 minutes at 80F	
7	Recovery time after f ull draw	3 minutes at 80F	

*Power cord plug: Direct hardwired

6. Electrical and Refrigerant Information – ISI-300TA

Row	Item	Specification	Requirement
1	Electricity	208~230V/60Hz/1phase	
2	Amp	Max. 15A, Operation: 11~12A	Minimum 20 Amp circuit breaker is required.
3	Power consumption	2500W	
4	Main(Freezer) compressor BTU	3817 Btu/h(1.5HP) per 1 compressor	
5	Refrigerant	Freezer(Cylinder) : R404A	14.11oz.
		Refrigeration(Hopper) : R134A	2.82oz.
6	Time for initial consistency	10 minutes at 80F	
7	Recovery time after full draw	5 minutes at 80F	

*Power cord plug: Direct hardwired

6. Electrical and Refrigerant Information – ISI-271THSN/SHSN

Row	Item	Specification	Requirement
1	Electricity	208~230V/60Hz/1phase	
2	Amp	Max. 13A, Operation: 11~12A	Minimum 20 Amp circuit br eaker is required.
3	Power consumptio n	2560W	
4	Main(Freezer) com pressor BTU	3817 Btu/h(1.5HP) per 1 compressor	
5	Refrigerant	Freezer(Cylinder) : R404A	33.51oz.
		Single compressor is in cha rge of barrel and hopper	
6	Time for initial con sistency	10 minutes at 80F	
7	Recovery time afte r full draw	3 minutes at 80F	

*Power cord plug: Direct hardwired

6. Electrical and Refrigerant Information – ISI-203SN

Row	Item	Specification	Requirement
1	Electricity	208~230V/60Hz/3phase	
2	Amp	Max. 18A, Operation: 14~16A	Minimum 25~30 Amp circuit breaker is required.
3	Power consumption	4390W	
4	Main(Freezer) compressor BTU	3308 Btu/h(1HP) per 1 compressor	
5	Refrigerant	Freezer(Cylinder) : R404A	28.22oz.
		Refrigeration(Hopper) : R134A	6oz.
6	Time for initial consistency	11 minutes at 80F	
7	Recovery time after full draw	4 minutes at 80F	

*Power cord plug: Direct hardwired

6. Electrical and Refrigerant Information – ISI-303SNA/SNW

Row	Item	Specification	Requirement
1	Electricity	208~230V/60Hz/3phase	
2	Amp	Max. 25A, Operation: 21~22A	Minimum 30 Amp circuit br eaker is required.
3	Power consumptio n	7400W	
4	Main(Freezer) com pressor BTU	5089 Btu/h(2HP) per 1 compressor	
5	Refrigerant	Freezer(Cylinder) : R404A	28.22oz.(SNW:45.86oz.)
		Refrigeration(Hopper) : R1 34A	6oz.(SNW6.7oz.)
6	Time for initial con sistency	9 minutes at 80F	
7	Recovery time afte r full draw	3 minutes 40 seconds at 80F	

*Power cord plug: Direct hardwired

7. Supply voltage setting

1. It is not necessary for ISI-161TI, ISI-161TH, 271THSN, SHSN
2. It is also not necessary for ISI-163TT/ST, ISI-300TA, ISI-203SN ISI-303SNA/SNW if supply voltage is more than 200V

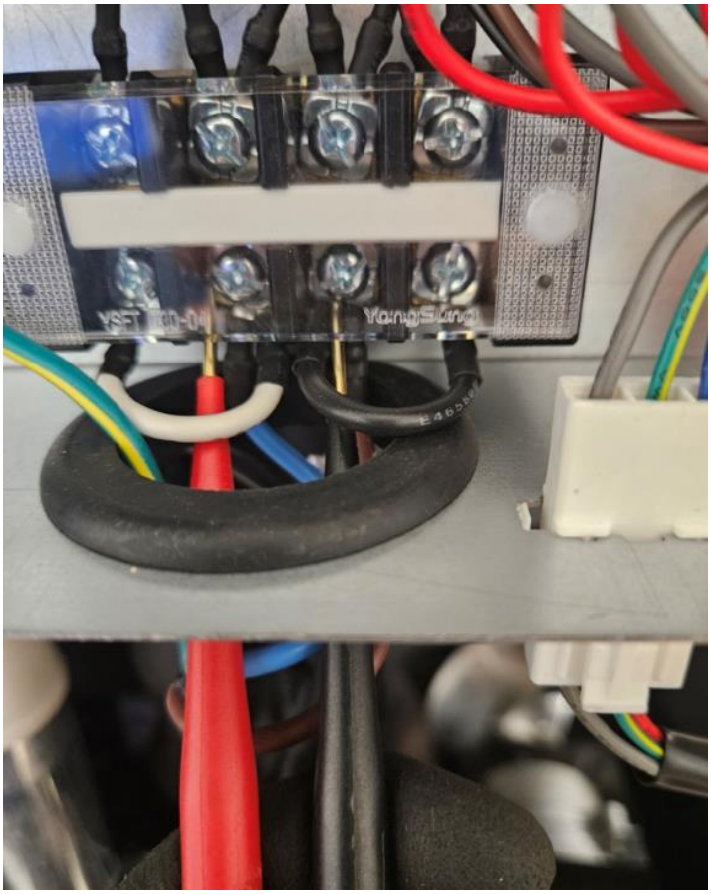
3. Voltage setting is needed for ISI-163TT/ST, ISI-300TA, ISI-203SN ISI-303SNA/SNW if supply voltage is below 200V

8. Supply voltage setting guide if supply voltage is below 200V

Step 1. Remove a panel where control board is located.
ISI-163TT/ST: Rear panel
ISI-300TA: Right side panel
ISI-203SN & ISI-303SNA/SNW: Front lower panel

Step 2. Dismantle inner panel for control board

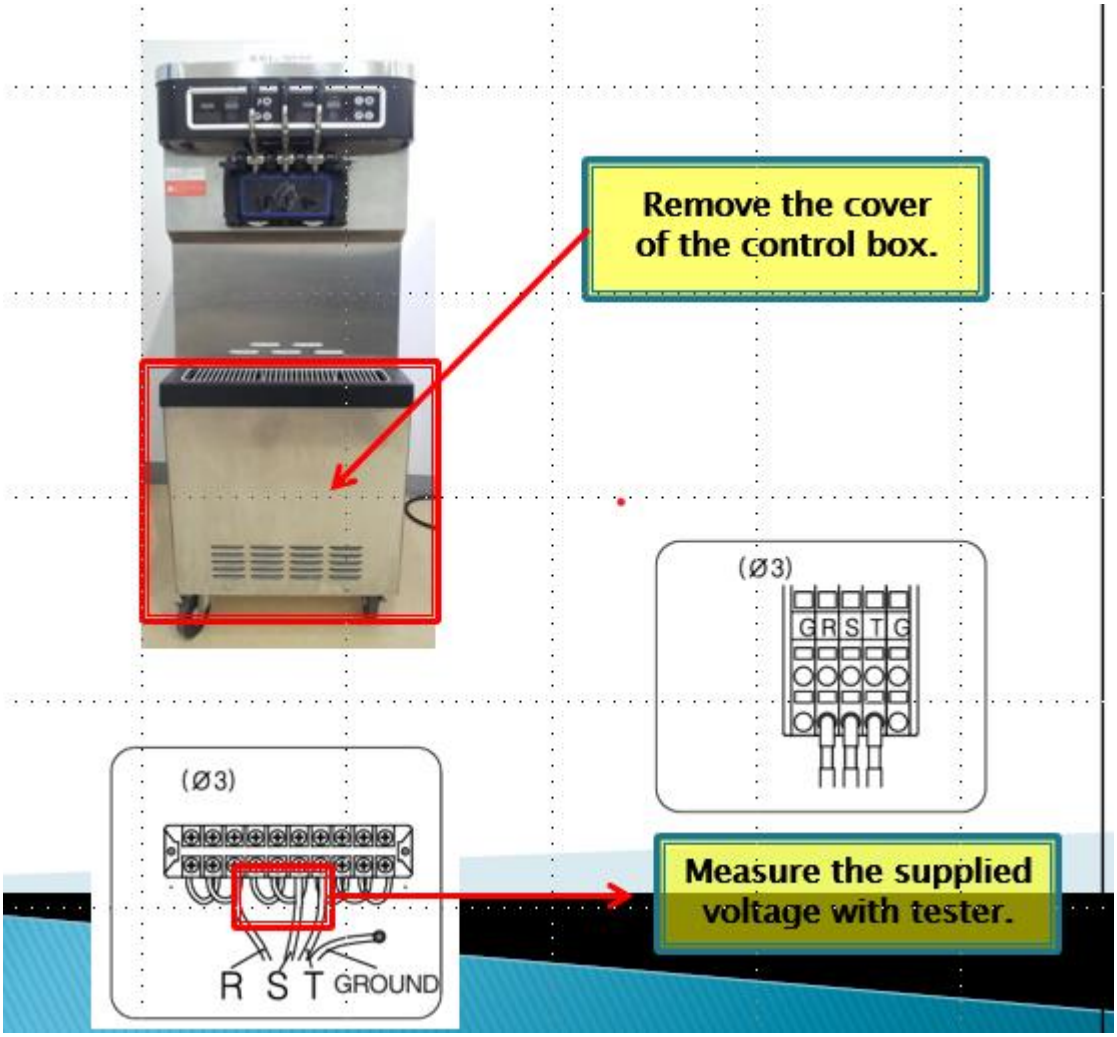
Step 3. Measure L and N power lines at terminal block by Using clamp meter or multi-tester



209V is good to go, however it is for a case when it is low voltage Such as 190V

8. Supply voltage setting guide if supply voltage is below 200V

Step 3. Measure R,S and T power lines at terminal block by Using clamp meter or multi-tester if model is ISI-203 and ISI-303 (They are 3 phase 203~230V models)



8. Supply voltage setting guide if supply voltage is below 200V

Step 4. Go to Section 4 setting

-Press SET and SELECT at the same time for 3 seconds.
-Pass code 1111 for entry of the section 4 menu.
-Press SET to navigate or move in menu
-Press up and down arrow while change setting
-Press SET to save a setting change.
-Switch off and back on to implement the change.

-If a mistake is made in setting change, don't press SET and just leave menu for a few seconds. Then it exits

Or switch off and on, then go in section 4 again.

8. Supply voltage setting guide if supply voltage is below 200V

Step 5. Move to 4-13-1 by pressing SET button

4-13-1 Voltage standard setting
-Default setting: 210V
-Decrease it to 200 when supply voltage is 190V~199V by using down arrow.

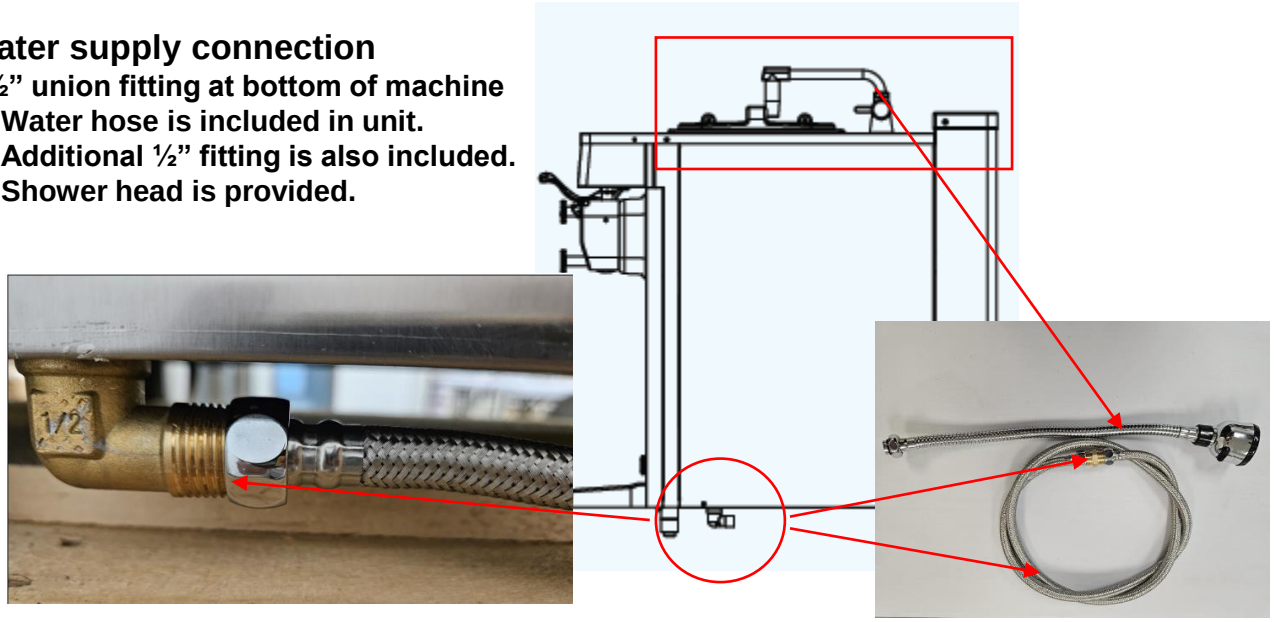
Step 6. Turn main switch OFF and back ON

9. Water supply connection for ISI-161TH

Water supply connection

*** ½" union fitting at bottom of machine**

- **Water hose is included in unit.**
- **Additional ½" fitting is also included.**
- **Shower head is provided.**

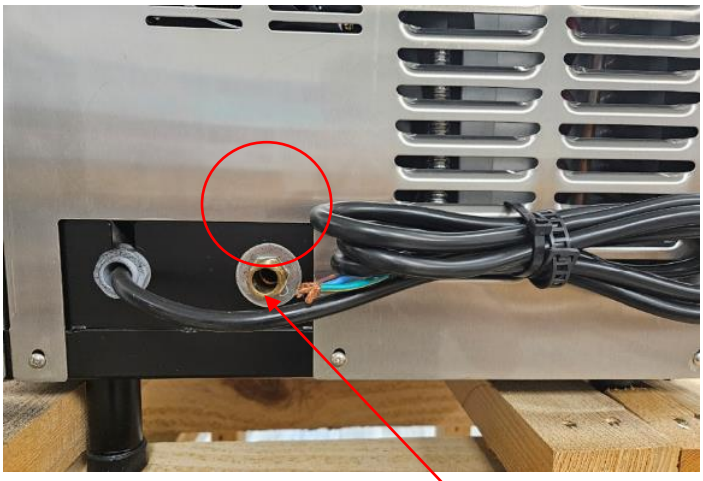


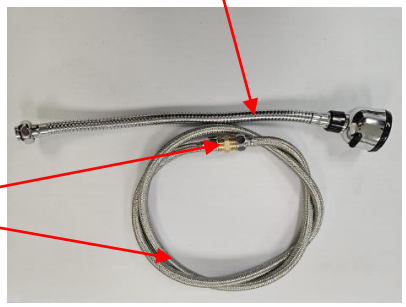
9. Water supply connection for ISI-300TA

Water supply connection

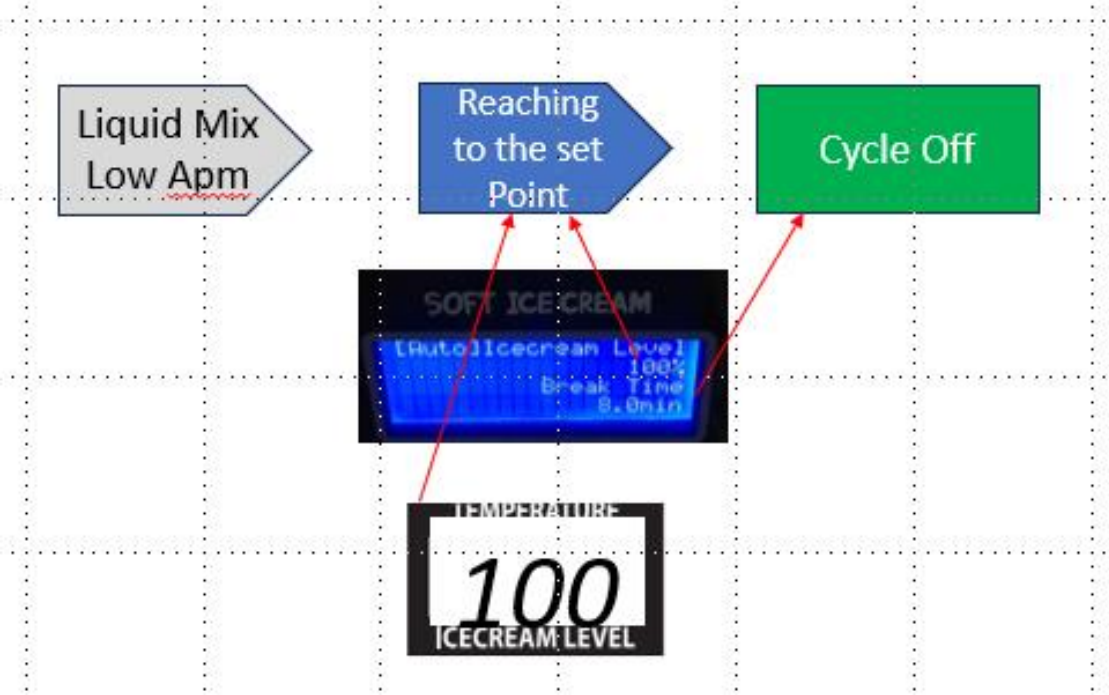
*** ½” union fitting at bottom of machine**

- **Water hose is included in unit.**
- **Additional ½” fitting is also included.**
- **Shower head is provided.**



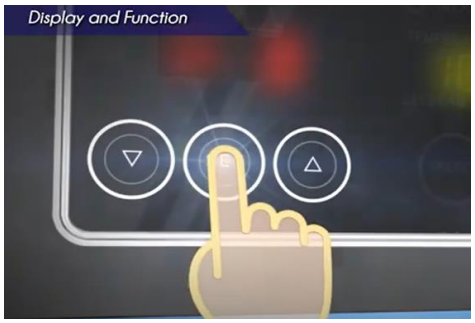


10. Viscosity Control Theory



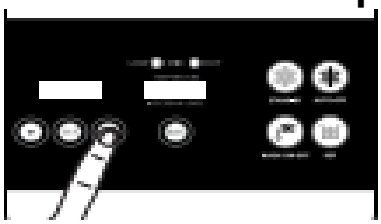
11. Viscosity Setting – Non Heat treatment models

Step 1. Press SET for three seconds and press SET to move in 3-1



Pass code: 0000

Step 2. Press up arrow increase or press down arrow to decrease



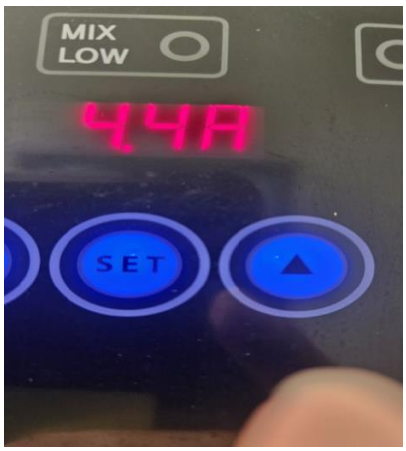
Step 3. Press SET to save and press SET again for three seconds

Viscosity set points

No load amp + the differentials in below table = full load amp = 3-1 viscosity set points

Model	ISI-163TT	ISI-300TA	ISI-203SN	ISI-303
3-1 Amp differentials	1.1A	3.1A	2.0A	1.8A

+ 3.1A =



No load amp **+ Differential =** **Set point**

Icetro Soft serve Viscosity Setting – Set point

Section 1-1 = Section 3-1 : Set point

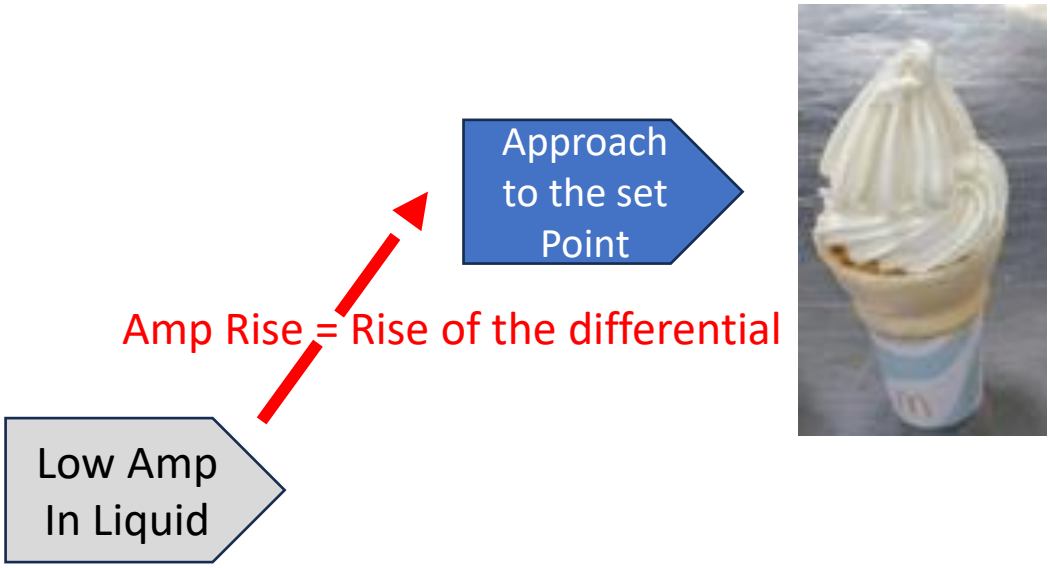
Section 1-2 = No load Amp

1

Differential = Section 3-1 (Section 1-1) - Section 1-2

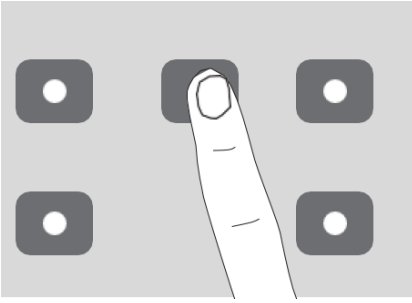
Differential = Set point Amp – No load Amp

Model	ISI-163TT	ISI-300TA	ISI-203SN	ISI-303
3-1 Amp Setting	1.1A	3.1A	2.0A	1.8A



11. Viscosity Setting – Heat treatment models and ISI-161TI

Step 1. Press SET for three seconds **Pass code: 0000 or No Pass code**



Step 2. 3-1 Menu comes up. Hit SET twice to enter Run menu. Amp value in Run will be blinking. Increase or decrease Run value by pressing INC or DEC button

```
[3-1]Setting Current
First  :  1.0A
Run    :  1.2A
Draw   :  1.8A
```

Step 3. Press SET to save and press SET again for three seconds

Set points (Setting Current) of 3-1 in Heat treatment units and ISI-161TI are the differentials.

Simply adjust Run value by 0.1A ~0.3A
Higher milk fat is, Lower Run value should be

Frost line powder base : decrease Run 0.1A ~0.2A
Heritage Vanilla Ice cream mix liquid 5% milk fat
: decrease Run 0.2 ~ 0.3A

Adjust Run, Draw two to three cups, then check texture with Third or fourth draw to compare previous setting.

12. Viscosity Setting Tips for Non-Heat Treatment units

- **Milk fat rate 5%: No change**
- **Milk fat rate 10%: decrease 0.2A to 0.3A**
- **Lower sugar rate: decrease**

13. How to disable audible sound and beep sound ?

Step 1. Press SET for three seconds
Step 2. Press SET to move in 3-5
Step 3. Press up or down arrow to set S.OFF from S.ON
Step 4. Press SET and press SET again for three seconds to exit

14. How to disactivate Mix Low?

Step 1. Move to 4-31 by pressing SET
Step 2. Change L.On to L.OFF by pressing SELECT
Step 3. Press SET to save, and press SET again to exit
Step 4. Turn main switch on and off

Or Open front panel, Find volume switch marked with volume on display PCB, then adjust it with screwdriver.

15. Real time clock set for Heat treatment models

Icetro Heat treatment models are set to start heat treatment cycle at 4:00AM.

Clock of unit must be set at local time where the unit is installed.

Otherwise, heat treatment cycle may begin in working hour.

Step 1. Press SET for three seconds
If it doesn't ask pass code, go ahead.
If it asks pass code, input 0000

Step 2. Press INC button to move in 3-6

Step 3. Press SET to move ahead

Step 4. Change date, time, minute to local time by using INC and DEC button

Step 5. Press SET to save and exit

16. Priming for ISI-163TT, 300TA, ISI-203, ISI-303

Step1

- **Prepare liquid mix as per hopper and barrel capacity**
- **Make sure freezer door closed and screws fastened.**
- **Open the draw valve.**
- **Pour the liquid mix into the hopper.**
- **Let the liquid mix flows into the freezing cylinder so that the remaining sanitizing solution will be forced out of the draw port.**

Step2

- **Close the draw valve when the remaining sanitizing solution flows out completely from the draw port.**
- **Continue pouring mix into the hopper until air bubbles disappear over feed tube hole on hopper.**
- **Insert the feed tube device in the hopper feed hole.**
- **Match proper feed tube hole size**
- **Press AUTO**

Model	Part Name	Part#	Small		Mideum		Large	
			mm	Inch	mm	Inch	mm	Inch
ISI-161	ASSY CARBURETOR TUBE	729003500	3	0.12	3.5	0.14	4	0.16
ISI-163	CARBURETOR TUBE	234003800	2.6	0.10	3.7	0.15	8	0.31
ISI-300TA	ASSY CARBURETOR TUBE	729002511	3.5	0.14	4.8	0.19	6	0.24
ISI-203SN	CARBURETOR ADJUST	234000400	2.6	0.10	3.7	0.15	8	0.31
ISI-303SN	CARBURETOR ADJUST	234000600	2.6	0.10	3.7	0.15	8	0.31
ISI-271THSN	CARBURETOR TUBE	234002310	3.5	0.14	4.5	0.18	5	0.20

Manufacturer's recommended orifice size: Medium
Approximate overrun with Medium size orifice: 35%~40%
**** Overrun drop down without draw for a long time.**

17. Priming for ISI-161 and ISI-271

Step1

- **Prepare liquid mix as per hopper and barrel capacity**
- **Make sure freezer door closed and screws fastened.**
- **Open the draw valve.**
- **Pour the liquid mix into the hopper.**
- **Let the liquid mix flows into the freezing cylinder so that the remaining sanitizing solution will be forced out of the draw port.**

Step2

- **Close the draw valve when the remaining sanitizing solution flows out completely from the draw port.**
- **Continue pouring mix into the hopper until air bubbles disappear over feed tube hole on hopper.**
- **Insert the feed tube device in the hopper feed hole.**
- **Close feed tube by turning outer tube to close position**
- **If no hole is seen below inner tube tip, feed tube is closed.**

Step3

- **Dispense liquid up to 300cc(0.08gal.)**
- **Return the 300cc liquid to hopper**
- **Press AUTO**
- **Make sure to open the outer feed tube before draw**

Otherwise, it starves barrel.

18. Icetro Soft Serve Equipment Operation YouTube site

ISI-161TH

https://youtu.be/Zqr27HvzVb0

ISI-163TT: Similar with ISI-300TA

https://youtu.be/yhWxz90Hld0

ISI-203SN: Similar with ISI-303

http://youtu.be/-Nw7qi4XYxE

BTS with Icetro Soft Serve Machine – Promotion video

https://youtu.be/5LfN6_5fEMU