



Manufacturer and supply of Neonatal Resuscitation Systems

Neonatal Resuscitator 082

Operating manual



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Preface

The company of Manufacturing Neonatal Resuscitation Systems (Tosan) is a research, Production, industrial unit in neonatal medical equipment field, works about designing, producing, and installation and after sales service of this equipment. The company has worked in this field since 1360 until now and products of this company are as follow:

Infant incubator	Model 110a
Infant portable incubator	Model 120
Neonatal Resuscitator	Model 082
8 lamps cylindrical phototherapy	Model 022
12 lamps cylindrical phototherapy	Model 024
16 lamps cylindrical phototherapy	Model 025
Neonatal table phototherapy	Model 023
Neonatal Radiant simple warmer	Model 051
Neonatal Radiant servo warmer	Model 052
Oxygen tent	Model 100
Neonatal simple cot	Model 031
Neonatal cot with variable degree	Model 032
Head holder	Model 048
Average Oxygen Hood	Model 044
Adult Oxygen Hood	Model 047
Neonatal Oxygen Hood	Model 041
Neonatal Oxygen Hood	Model 042
Neonatal height measurement	Model 070

Preface

Tosan company, first designer and producer of infant medical equipment in IRAN, besides of making use of systems as circuital customer and producing on the basis of demands of customer, with standardizing and immunizing of equipment according to the updated standards of world, provides safety conditions of users and patients .

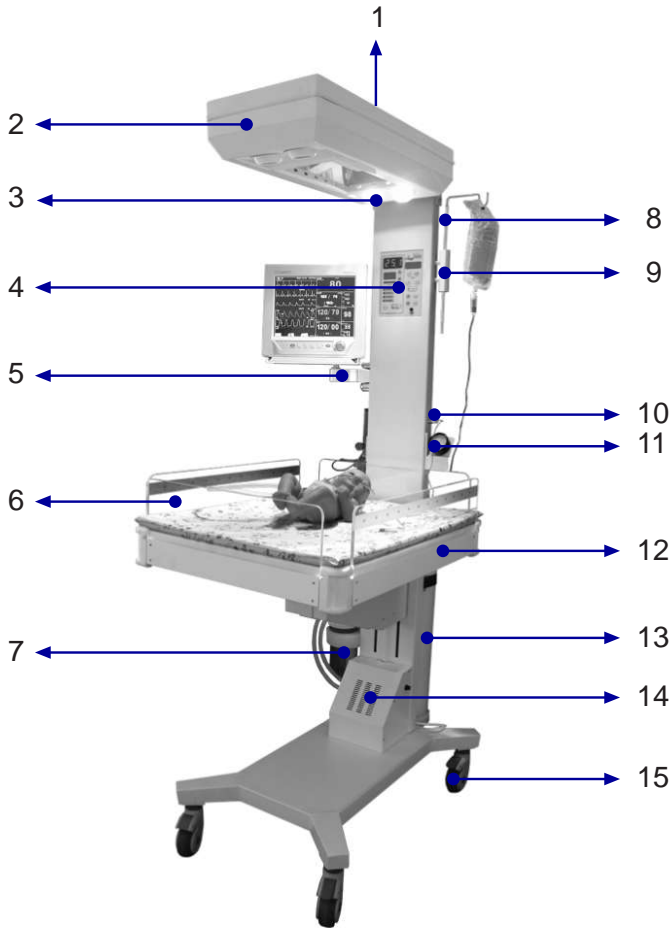
Summaries of these accomplishments are as follow:

- Having certification ISO 9001 : 2000 from Associated Partners Germany
- Having certification ISO 13486 : 2003 from Associated Partners Germany
- Having certification ISO 13485 : 2003 from QS Swiss
- Having CE from QS Swiss
- Having operating license standard for Incubator from institute of standards and industrial research of IRAN (ISIRI)
- Having wide sales agency and after sales service in the country and also abroad.

Neonatal Resuscitator

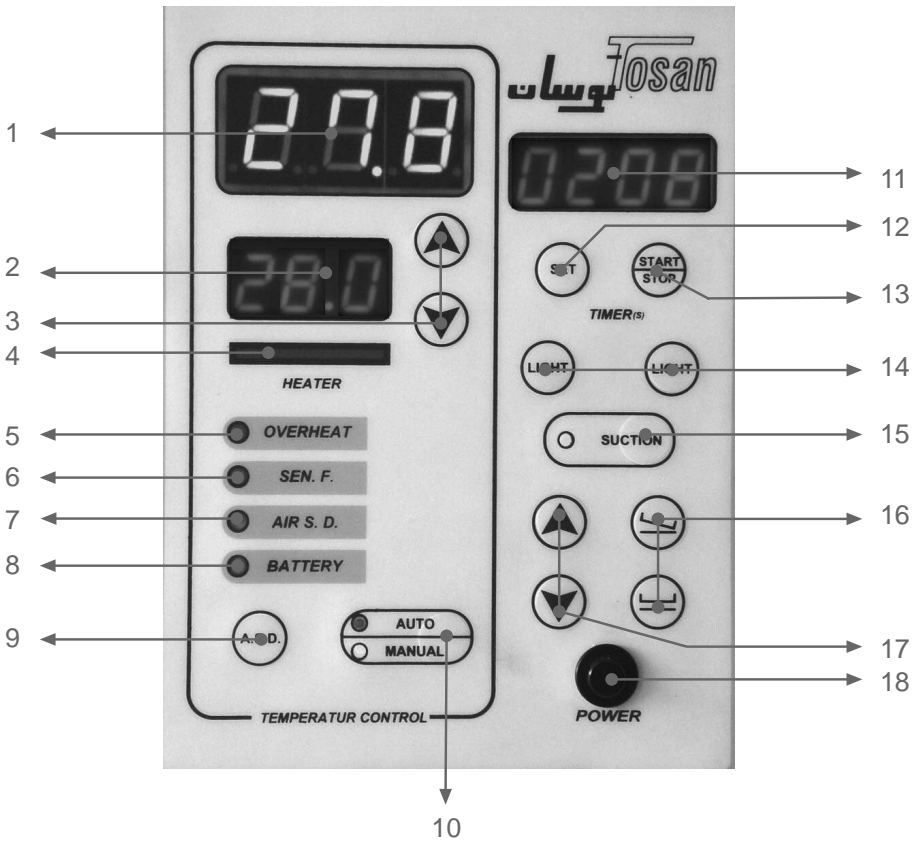
Is an instrument to infants operating, blood replacement, taking care of infant initially birth near the delivery table.

This equipment includes manometer and flow meter oxygen capsule to give infant oxygen, suction to operation or care at the time of birth, top thermal system to increase infant temperature, lighting system and different alarms to notify user of disorder in equipment controller or in infant temperature.



- 1. Fan
- 2. Equipment head
- 3. Halogen lamp
- 4. Keyboard of equipment
- 5. Monitor stand (made – to – order)
- 6. Talc divider (movable)
- 7. Suction glass

- 8. IV pole
- 9. IV pole upright
- 10. Sensor connection to equipment
- 11. Pressure gauge of suction
- 12. Table
- 13. Oxygen capsule
- 14. Suction
- 15. Wheel



1. Sensor temperature display
2. Adjusted temperature display
3. Temperature adjustment key (up – down)
4. Heater activation display
5. Alarm for temperature more than allowed value
6. Sensor fault alarm
7. Temperature deviation fault alarm
8. Low battery alarm
9. Temperature deviation key
10. Key and display of selection kind of equipment Operation (Auto – manual)
11. Timer display
12. Timer activate key
13. Beginning and ending key of timer
14. Halogen lamps controller keys
15. Suction activate key and intended lamp
16. Table tilt adjustment keys
17. Table height adjustment keys
18. On/off key

Installation and starting

Tosan's neonatal resuscitator, packaging to three parts, to facilitate transport: (equipment head, column, down part of equipment)

Also starting of equipment must be done by after sales service representatives of Tosan.

If equipment is installed by nonresponsible persons it won't have 1 year warranty.

Before installation, make sure of existence of all instruments. These instruments have been illustrated at equipment accompanied paper

(list of accompanied instrument).

1. Equipment upright
2. Equipment top column
3. Equipment heater enclosure
4. Capsule (made – to – order)
5. IV pole (made – to – order)
6. Flow meter (made – to – order)
7. Monometer (made – to – order)
8. Installation bolts
9. Pressure gauge installation upright (made – to – order)
10. Flow meter upright (made – to – order)
11. Pressure gauge (made – to – order)
12. Pressure gauge hose
13. Oxygen hose (made – to – order)
14. Temperature sensor
15. Suction hose (made – to – order)
16. Plastic joint

Installation and starting

Attention

If there isn't one of these items, please contact with sales unit or representatives of Tosan.

Do installation and starting of equipment, after controlling instrument inside the boxes.

Operator of equipment must be familiar with operation before equipment starting. Training could be done by after sales representatives who have the charge of starting the equipment and training the user, or by studying this operation instruction.

Do the following stages to install equipment.

1. Remove upper column from box, then place it on down column, so that installation strap place inside upper column.

Attention

Connect electronic jacks, which are connections between upper and down column, at their position.

2. Install pressure gauge upright to the right of column by two Allen bolt. (The side that IV upright connected to column.)
3. Connect monometer upright to other side of column by other two Allen bolt 6.
4. Connect the other point of hose, connected to pressure gauge to down column hose and fasten in with one of the fasteners.
5. Open the nut of flow meter and pass through flow meter upright hole, so that point of hose would place at the back of equipment, then fasten its nut.
6. Place heater enclosure of warmer on upper column, so that four hole of enclosure upright would settle at four hole of bolt side of upright. Nd fasten enclosure with four bolt, accompanied with equipment.

Attention

Before fastening bolts, keep enclosure top to up.

- Connect jack which is intended to heater enclosure, to jack at upper column.
- Place plastic cap at top of the upright, on its position.
- Place IV pole at its position.
- After installation by representatives of company to make sure of proper installation, control different parts of equipment to prevent of happening any problem at the time of using equipment.
- Now equipment is ready to start, and do the following stages.
- Place temperature sensor jack at its position on upper upright and fasten its bolt.
- Open belt of capsule and place it on its position then fasten the belt.
- Connect monometer to capsule and fasten its bolt.

Proper temperature of installation environment is between 25 to 30 centigrade degree. Increasing temperature more than 30°C or exceeding decreasing will influence on thermal adjustment of equipment.

Attention

- Never put the equipment under direct radiant of the sun.
- Don't put equipment near cooler or heater instrument.
- Minimum proper distance between equipment and cooler or heater instrument should be 60 centimeter.
- At the time of equipment operation, the head of equipment is too hot to touch or place something on it.
- Maximum allowed weight on IV upright is 2 kilogram.
- Air movement could disorder infant thermal balance.
- To keeping fix equipment, wheels lock of equipment could be used.

To prevent occurrence of any event, please observe the following items about electrical cases:

1. Connect plug to a plug which is closed to equipment.
2. Use a separate plug for each of the equipment.
3. Plug must have ground wire.

After installation, connect plug of equipment to plug, and then turn on on/off key of it.

Adjust the intended temperature with keys.

At this state, indicator will show the percent of turning on the sensor.

Green indicator indicates the sensed temperature by temperature sensor.

Equipment could be used at two moods.

1. Automatic mood
2. Manual mood

1. Automatic mood

If press automatic / manual key, so that automatic indicator will turn on. Equipment will operate automatically and green indicator indicates sensed temperature by sensor. Red indicator indicates adjusted temperature by user. At this state temperature control to sensed temperature will be accomplished by sensor.

- If temperature deviates by ± 2 C Air.S.D indicator will turn on with alarm. With pressing A.S.D key audible alarm will stop for 20 minutes and if after passing this time equipment couldn't again reach infant temperature to adjusted temperature, audible alarm will start again and all keys will be passive. Therefore turn off equipment and after trouble – shooting, turn on equipment again.
- If temperature deviates by ± 2 C Air.S.D indicator will turn on with alarm. With pressing A.S.D key audible alarm will stop for 20 minutes and if after passing this time equipment couldn't again reach infant temperature to adjusted temperature, audible alarm will start again and all keys will be passive. Therefore turn off equipment and after trouble – shooting, turn on equipment again.

Recommended that temperature sensor places on infant's belly at liver region. When equipment operates automatically, if for any reason temperature sensor stopped, equipment would operate manually so stopped sensor and manual display would continue flashing to notify the nurse. And green display because of lacking or damaging sensor would indicate 45 numbers.

2. Manual mood

If press automatic/ manual key, so that manual indicator turned on. Equipment will be controlled manually and green display just would indicate infant temperature and temperature will be controlled according to adjusted degree by user. So in order to attend the user, manual indicator will flash.

Attention

To use timer of equipment, you should press set key and timer will be zero. With pressing start/stop, timer will begin to work. With pressing start/stop key again, time will stop.

- Press light key, to use lamp of equipment.
- Press suction key, to activate suction of equipment, and indicator of suction activeness will turn on.
- To change the angle of table, press keys.
- To adjust height of table, press keys.
- Height of desk is adjustable up to 18 centimeters and the angle of desk surface to horizontal is adjustable up to 12 degrees. Lighting system is used to recognize blood vessel of infant or surgery operation. Beside suction and Oxygen are used to resuscitate the infant.
- Nurse can adjust infant temperature of 28 to 32 degrees by adjusting temperature and installing sensor to infant skin.
- Nurse can adjust the flow of oxygen by flow meter. In order to comfort nurse and doctor, the walls of desk are folding. Nurse can also use of central oxygen.
- If sensed temperature by sensor is more than $39/3^{\circ}\text{C}$, equipment will give audible and visible alarm and over heat indicator will turn on and heater of equipment will stop.
- If thermal sensor stops or its circuit has problem:
While equipment indicates alarm (sensor interruption) on display, will give audible alarm for 5 times and will continue to operate manually.
- If back up battery is low, intended display will flash that battery should be changed.
- If main electricity interrupted for any reason while equipment was operating, electricity interruption alarm would activate.

Attention

1. Never place temperature sensor outside of table region.
2. Recommended that temperature sensor places on infants belly (liver region). If sensor doesn't place on infant body, sensor will sense ambient temperature and won't have exact control.

Attention

- Don't put something on heater enclosure.
- Prevent of liquid splash on equipment heater.
- Prevent of exceeding pressure on in front of desk.
- For cleaning use of a cloth saturated with disinfectant.

Effective life

Effective life of equipment is 10 years that instruments and accessories device will be calibrated by lawful representatives of Tosan.

Trouble – shooting

Attention

Attention if there is any disorder at equipment operation, please inspect following items, before contact with Tosan company repair service group.



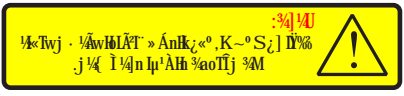
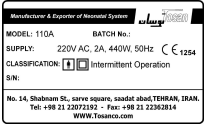

<i>Symptom of disorder</i>	<i>Possible cause(s) and recommended action(s)</i>
Equipment doesn't turn on	On/off key doesn't turn on Plug doesn't connect to plug The electricity of equipment Settlement is interrupted
Equipment gives A.S.D alarm	Equipment couldn't adjust the temperature for any reason

Technical specifications

Power supply	220 to 240 volts – AC – 50 hertz, 450 watt 3A
Classification	Class I- BF- Normal equipment Alternative operation
Temperature range	28 to 37 centigrade degrees
Height of table	98 Maximum 80 Minimum
Tray tilting	12 degrees
Power of suction	0.6 Bar
Lamps	4, 20 watt halogen lamps
Weight of equipment	120 kg
Life time of equipment	10 years

- Life time of equipment is determined by Tosan Company according to power of accessories instruments.

Technical specifications

<i>Label sign</i>	<i>Label description</i>
	Indicates maximum weight tolerance of monitor stand
	A warning of hot surface
	A warning that before installation starting and using, study instruction manual
	Technical specifications label, serial number, equipment power producing date and ...
	A warning of maximum weight tolerance of I.V.Stand

Address and specifications of European representative

European representative:

Atta Motedayen NO. 27A Kaiser Str. 44135 Dortmund,
Deutschland

