# INSTRUCTION MANUAL

# XmR Micro

# Micro Rework System

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# XmR Micro - Micro Rework System

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## I.    INTRODUCTION



FIG 1. VIEW OF THE SYSTEM

## II.    SAFETY

The purpose of this "SAFETY" section is to inform the users of the heading guidelines used in this manual to indicate special Notes, Cautions, Warnings or Dangers. Also included are precautions, which must be observed when operating or servicing this product.

These "NOTES", "CAUTIONS", "WARNINGS" and "DANGERS" are inserted in this manual whenever deemed necessary. They appear in a blocked off form with outline and a shaded background to highlight the information as shown below.

| NOTE |
| --- |
| xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx |

**NOTE**
Used to indicate a statement of company recommendation or policy. The message may relate directly or indirectly to the safety of personnel or protection of property. NOTE is not associated directly with a hazard or hazardous situation and is not used in place of "CAUTION", "WARNING" or "DANGER".

**CAUTION**
Used to indicate a hazardous situation, which may result in minor or moderate injury. May also be used to alert personnel to conditions, procedures and practices which, if not observed, could result in damage to or destruction of the product or other equipment.

**WARNING**
Used to define additional information, that if not closely followed may result in serious damage to equipment and represent a potential for serious personnel injury.

**DANGER**
Defines additional information, that if not closely followed may result in severe personnel injury or death. Danger is not used for property damage unless personal injury risk is present.

## PRECAUTIONS

The following are general safety precautions, which personnel must understand and follow when using or servicing this product. These precautions may or may not be included elsewhere in this manual.

**CAUTIONS**
1.  The XmR-Micro hand-pieces heater assembly housing and any installed nozzles/tips are hot when the system is "ON" and for a period of time thereafter. DO NOT touch neither the heater assembly housing, nozzles/tips or direct heated air stream. Severe burns may result!
2.  Utilize all standard electrical safety precautions when using this or any other electrical equipment.
3.  Always use this system in a well-ventilated area. A fume extraction system (such as those available from X-KAR) is highly recommended to protect personnel from solder flux fumes.
4.  Exercise proper precautions when using chemicals (e.g., solder paste). Refer to the Material Safety Data Sheet (MSDS) supplied with each chemical and adhere to all safety precautions recommended by the manufacturer.

**DANGER**
POTENTIAL SHOCK HAZARD – All repairs made on this product should be performed by qualified service personnel only. Line voltage parts will be exposed when equipment is disassembled. Service personnel must avoid contact with these parts when troubleshooting.

**NOTES**
To insure continued peak performance, use genuine X-KAR replacement parts.

## III.   PACKAGING

The box contains as follows:
1. **XmR** - Micro Rework System Base Unit
2. **XHP-10S** - Hot Air Pencil
3. **XHP-NS1** - Nozzle set (containing 3 nozzles XN-2, XN-3, XN-6)
4. **XWR-1** - Nozzle Wrench
5. **XASL-1** - Anti-seize Lubricant
6. **XSI-11** - Soldering Iron
7. **XST-77** - Tool Holder (2 pcs) for XSI-10S Soldering Iron and XHP-10S Hot Air Pencil
8. **XSI-ST** Sponge tray with sponge XSP-1
9. **-Manual**
10. **Warrantee card**

## IV.   UNPACKING

Prior to use of the system, please check if the system is complete. Should you notice that any items are missing, please notify us, giving the details of model number, voltage, date of purchase, where purchased and what is missing. Missing items must be reported within 7 days from the date of purchase.

| WARNING |
| --- |
| When unpacking, please be careful and read the manual prior to turning the system "ON". Please check that the voltage of the System corresponds with the voltage of your available supply. Connection to incorrect voltage supply may cause damage to the System! |

# V.    GENERAL INFORMATION

### FRONT PANEL

1. **Iron Electrical Connections** – Connect power and sensors in the hand piece with the base unit
2. **Power Switch** - Turns the system ON and OFF. Green light indicates that the system is ON.
3. **Digital Control Panel** – Please see below
4. **Air Flow Control** Knob–(Turning right increases airflow and turning left decreases airflow.
5. **Air Connection** – Supplies air to the hand piece.
6. **Hot Air Pencil Electrical Connections** – Connect power and sensors in the hand piece with the base unit.
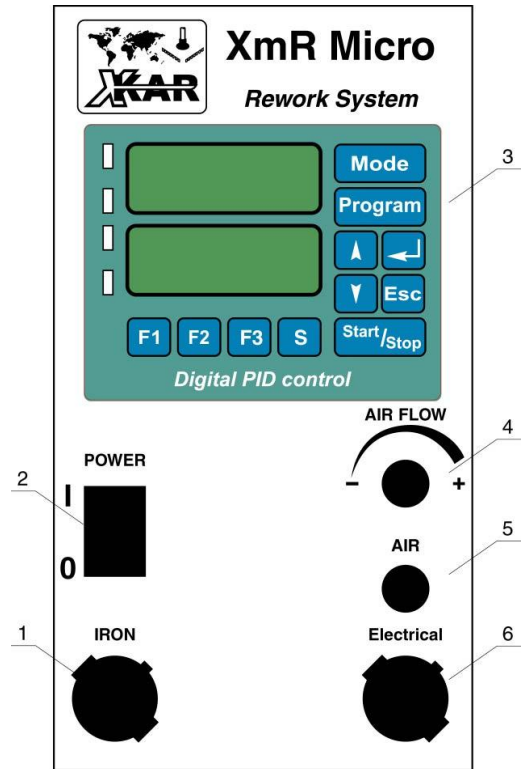
FIG. 2 VIEW OF THE CONTROL PANEL

### BACK PANEL

1. **X-DataStore** – Factory calibration port
2. **Fuse holder** – Contains a fuse for overload protection. 20 mm type fuse (value depends an AC supply 2A for 115V and 1A for 230V supply)
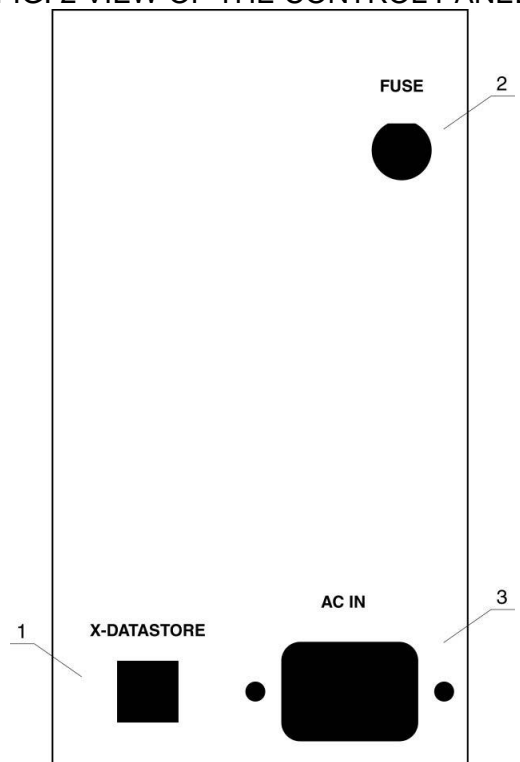3. **AC power receptacle** - Provides AC power to the system through a power cord.

FIG. 3 VIEW OF THE BACK PANEL

### DIGITAL CONTROL PANEL

1. **Heater-on indicator** - Illuminates green when the power is supplied to the heater.
2. **Program Selection indicator** - Illuminates green when the operator selects the program.
3. **View temperature indicator** - Illuminates green when the operator checks set temperature.
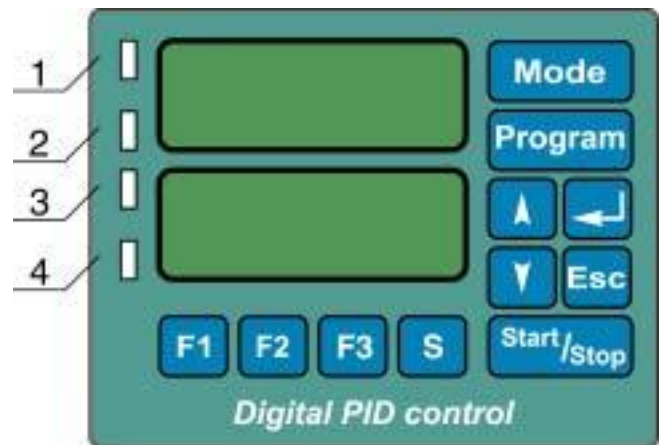4. **Set temperature indicator** - Illuminates green when the operator changes set temperature



FIG. 4 VIEW OF THE DIGITAL CONTROL PANEL

# VI.    SET-UP AND INSTALLATION

**ELECTRICAL REQUIREMENTS**
Specified on the unit label. Can be 100-120V or 220-240V

**SET-UP**
1. Remove the XmR-Micro from its shipping box. Store the shipping box in a convenient location. Reuse of these box/boxes will prevent damage if you ship or store the system.
2. The system should be located on a rigid and stable work surface.
3. Check if the power switch on the front panel is in the "OFF" position.
4. Attach sponge tray to the bottom of the unit (2 screws) on the right or on the left-hand side.
5. Set-up the XST-77 Tool Holder on the right side of the system, place the XHP-10 with desired nozzle in the holder and connect the XHP-10 to the Base (Electrical and Air connections on the right side of the Base).
6. Set-up the XST-77 Tool Holder on the left side of the system, place the XSI-11 with desired tip in the holder and connect the XSI-11 to the Base (Electrical connections on the left side of the Base).

| **NOTE** |
| --- |
| Please ware wrist strap, which is grounded to protect your re-worked electronic boards from static charge, which may be present in or around your work place. Wrist strap is not supplied with the system |

**POWER UP**
1.  Insert the power cord into the AC Power Receptacle located on the rear panel of the unit.

| CAUTION |
| --- |
| To insure operator safety, the AC supply receptacle must be checked for proper grounding before initial system operation. |

2.  Plug the power cord into the AC supply receptacle.
3.  Turn the Power Switch to the "ON" position.
4.  When the system is turned "ON" the display shows ▮▮▮ for about 1 second. After 1 second the display will show MODE and PROGRAM, which was used last, before the system was "turned off".

The system is now ready to use.

# VII.   SYSTEM DESCRIPTION and APPLICATION

XmR Micro offers unique combination of convection and conduction tools. This newest system in the industry offers total process control and best performance. It is simple and easy to use. It has a wide range of air flow (0,5 to 4.5 l/min), indestructible heater, and operates quietly. XmR is a very accurate rework tools containing precisely controlled, and user-adjustable temperatures of both Hot Air Pencil for non-contact soldering and Iron for contact soldering.
A powerful controller offers functions not found in any other tools e.g. standby modes or individually adjustable offsets for each program, which allow the user to set exact temperatures at a working point.
The temperature sensor for the soldering iron is attached directly to the tip, which facilitates accurate feedback for temperature control. PID control optimizes power delivery to the heaters, minimizing overshot and extending heaters and tools life. Desired temperature settings can be stored in the internal memory as numbered programs for different tasks which can be recalled quickly to guarantee process control and repeatability.
The tool covers the full spectrum of temperatures, which can be precisely adjusted without the necessity to change cartridges.

## Description of Front Panel Key Pad Functions and Programming
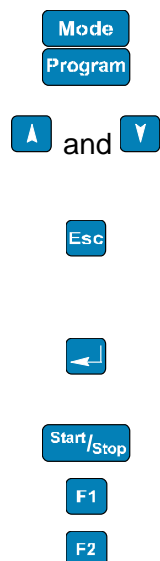
| | |
| --- | --- |
| **Mode** **Program** | **MODE** key Toggles between Iron and Hot Air Pencil Mode |
| | **PROGRAM** key selects the desired PROGRAM. |
| ▲ and ▼ | **UP** and **DOWN** keys change viewed parameter during parameters preview, increase or decrease the value of parameter during its modification. Also allow scrolling through program numbers. |
| **Esc** | ESCAPE key allows for cancellation of the action in progress (e.g. modification of a parameter). Also it allows leaving VIEWING or MODIFICATION mode. Also, instantly ends the profile cycle. |
| ↵ | **ENTER** key allows for confirmation of new parameter value, selected mode or program number. Also, when the system is pre-programmed and ready for operation (Top display shows Mode and bottom display shows Program number pressing ENTER key will access directly tip/nozzle offset entry mode. |
| **Start/Stop** | Turns the tool "ON" and "OFF" |
| **F1** | **F1** key allows viewing the values of parameters of the MODE and PROGRAM currently selected at the time of pressing F1 key. |
| **F2** | **F2** key allows entering modification mode of currently viewed parameter. |
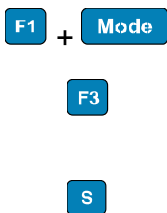
**F1** + **Mode** | Keys **F1** and **MODE**, when pressed together for more than 0,5 sec. allow to enter the user menu which allows to set system parameters.

**F3** | Key **F3**, operates only in Hot Air Pencil Mode. When pressed at any time switches the Hot Air Pencil into cooling mode.

**S** | Key **S** switches the tool from "HEAT" mode to "SLEEP" mode when pressed during system operation. When pressed again during "SLEEP" mode will turn the system "ON" and cause return to the Program, which was in operation when sleep key was pressed.

## System operation

| CAUTION |
| --- |
| When display shows **not EnbL** you have pressed wrong key or the operation/function is not allowed. |

| WARNING |
| --- |
| The display always shows set temperature with a dot **888°**.<br>The display always shows current temperature without the dot **888°**. |

### CHANGING OR VIEWING SYSTEM SETTINGS

1. Power up the system.
2. Press **F1** and **Mode** keys for about 0.5 seconds. The displays will show **USEr SEt**. After few seconds, the displays show first system setting.
3. Settings can be viewed by using **A** Up and **Y** Down arrows.

**Settings, which may be changed:**

| Upper display | Lower display | Description |
| --- | --- | --- |
| **LOC** | **On** or **OFF** | Changes of pre-programmed settings are possible only when a 4-digit code is entered. LOC feature can be "ON" or "OFF". To change the locking function from ON to OFF and vice versa, the 4 digit CODE MUST be entered. LOCK is set OFF as the factory setting. Factory set code is 1234 and the user can keep it or change it to another 4 digits combination. |
| **CodE** | **CHG** | Changes lock code – described bellow. |
| **C-F** | **°C** or **°F** | Temperature scale in degrees Celsius or Fahrenheit. Can be °C or °F. Factory set: °C. |
| **Snd** | **On** or **OFF** | Enables/disables the sound. Sound can be "ON" or "OFF". Factory set: ON. |
| | **End** | Ends system settings viewing. Enter **must be** pressed to exit System Settings. |

4. To change the settings:
   a. Using arrows keys select the value to change.

b. Press `F2` key.
c. The setting can be changed by using arrows keys
d. Press `↵` to store selected value or option

**Protection against unauthorized change of pre-programmed settings**

When system is unlocked (system feature `LOC` is set to `OFF`, all settings of the system features can be altered without restrictions. When system feature `LOC` is set to `On`, the system will ask for a cod number when someone will try to change pre-programmed values. The display will show: `CodE 0000` (First digit blinking). To unlock the system, previously selected code number must be entered. If incorrect value of the code number is entered, the display will show `Err` and characteristic sound will be heard for about one second. The system will re-set to the state in which it was before an attempt to change the settings. Properly entered code will unlock the system and allow for settings to be changed until the system is locked again, or until the system is turned-off by ON/OFF switch (or by unplugging the unit from the wall outlet). It is sufficient to enter an appropriate code once during the time when the system is powered.
Changing the CODE:
`CodE CHG` has to be selected in system settings menu. Then, Enter key must be pressed. The display will than show `ocod ----` (old code). Previously used code number must be entered and Enter key pressed. The display will show `ncod ----` (new code) and a new code number has to be entered. Display will then show `REPt ----` and a new code has to be keyed in one more time and Enter key must be pressed to finish the Code Change operation. This new code will now be remembered by the system.

**Special CODE numbers used by the system:**
- **1234** - factory set code on delivery of the system to a customer.
- **XXXX** - „emergency code"; (call or e-mail Bokar International to obtain it. Proof of purchase will be required to release this code). This code will allow changing the code when entered in place of the old code.

**SETTING TOOL**
1. Power the system up.
2. Press the Mode key and toggle between the two tools. . The displays will show `HotP P88` or `Iron P88` . Choose desired tool.

**SETTING PROGRAM**
1. Power the system up
2. Set correct tool. The system will show the program, which was used before the power to the system was turned off. Press the Program key.
3. The LED #2 will illuminate to confirm that you are in the PROGRAM change mode.
4. The displays will show `HotP P88` or `Iron P88`. Pressing the PROGRAM key again can advance the program. Also both arrows can be used to either increase or decrease the program number.
5. Press `↵` key to confirm changes.
6. Press `Esc` key to cancel changes.

**VIEW SETTING TEMPERATURE**
1. Power the system up
2. Set correct tool.
3. Set correct program.
4. Press the `F1` or `▲` Up or `▼` Down key.
5. The displays will show `HotP` `888°` or `Iron` `888°`
6. The lower display will show set temperature value for approximately 2 seconds.

**SETTING TEMPERATURE**
1. Power the system up
2. Set correct tool.
3. Set correct program.
4. Press `F2` key or press for 0.5 seconds `▲` Up or `▼` Down key.
5. The displays will show `HotP` `888°` or `Iron` `888°`
6. The lower display shows set temperature.
7. Set temperature indicator illuminates green.
8. Enter required value using `▲` Up or `▼` Down keys. Press `◄┘` key to confirm changes.
9. Press `Esc` key to cancel changes.

**SETTING OFFSET TEMPERATURE**

| NOTE |
| --- |
| Temperature Offset for Hot Air Pencil and the Iron can be changed at any time. It will depend on SET temperature and the nozzle type, which is chosen. The system will approximate the once entered offset for other set by the operator temperatures, but will not compensate for different nozzles. Each nozzle change requires offset adjustment for highest accuracy of hot air stream temperature. The system will remember once set offset for each program individually. In other words, each program has its own offset setting.<br>Offset = temperature shown on the display minus temperature of the air at the nozzle end. |

1. Power the system up
2. Set correct tool.
3. Set correct program. (Note that the offset is set for the particular program and will not be transferred to another program)
4. Press `◄┘` key.
5. Set temperature indicator illuminates green indicating that we are in changing parameter mode.
6. The displays will show alternately `HotP` `OFFS` and `HotP` `888°` or `Iron` `OFFS` and `Iron` `888°`
7. The lower display shows temperature offset which is either zero (if offset was never entered for this program) or a number recalculated by the system for given set temperature which is set-up at the time of entering or verifying the offset.
8. Enter required value using `▲` Up or `▼` Down keys.
9. Press `◄┘` key to confirm changes.
10. Press `Esc` key to cancel changes.

**USING HOT AIR PENCIL**

1. Turning the Hot Air Pencil "ON":
   a. Power the system up
   b. Set Hot Air Pencil Mode
   c. Set correct program.
   d. Set the offset for your particular nozzle and the airflow.
   e. Press `Start/Stop` key.
   f. The displays will show `HotP` `888º`.
   g. The bottom display shows measured temperature corrected by offset value.
   h. ON indicator illuminates green.
2. Turning the Hot Air Pencil "OFF":
   a. Press `Start/Stop` key.
   b. "ON" indicator will turn off and displays will show: `HotP` `P88`
   c. One can also press `F3` when Hot Air Pencil is in use and turn the Hot Air Pencil this way. Pressing `F3` again will start the cooling cycle. Air will flow through the pencil and the heater will be "OFF". Pressing `F3` again will stop cooling cycle.

**USING IRON**

1. Turning the Iron "ON":
   a. Power the system up
   b. Set Iron Mode
   c. Set correct program.
   d. Set the offset for your particular soldering tip.
   e. Press the `Start/Stop` key.
   f. The displays will show `Iron` `888º`.
   g. The lower display shows measured temperature corrected by offset value.
   h. ON indicator illuminates green.
2. Turning the Iron "OFF":
   a. Press `Start/Stop` key.
   b. "ON" indicator will turn off and displays will show: `Iron` `P88`

## VIII.  TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **Input Voltage** | 110-120, 220-240V AC |
| **Power consumption** | 160 W |
| **Temperature Control System** | µP PID Control |
| **Soldering Iron** | Ceramic heater 24V / 70W |
| **Temperature Setting Range** | 176°F - 842 °F) (80°C - 450 °C) |
| **Insulation Resistance** | Over 1000 MOhm |
| **Leakage Voltage** | Less than 0.5 mV |
| **Earth Resistance** | Less than 0.3 Ohm |
| **Ripple Temperature Without Load** | Less than ±1ºC |
| **Hot Air Pencil** | 24V AC / 70W |
| **Air Source** | High efficiency, long life diaphragm pump |
| **Air Flow** | 0.5 to 4.5 l/min |
| **Temperature Setting Range** | 176°F - 878°F (80° - 470°C) |
| **Weight** | 8.8 lbs. (4 kg) |
| **System dimensions** | 6.7" x 7.1" x 6.7" (170 x 180 x 170 mm) |
| **Packaged weight** | 13 lbs. (6 kg) |

## IX.  SPARE PARTS

| P/N | DESCRIPTION |
|---|---|
| **XHP-10S** | Hot Air Pencil |
| **XSP-1** | Sponge |
| **XSI-ST** | Sponge tray with sponge XSP-1 |
| **XST-77** | Tool Holder |
| **XST-77 –INS-5** | Holder Insert (5 pcs) |
| **XHP-10 BS** | XHP Barrel/Heat exchanger Set |

# X. OPTIONAL EQUIPMENT

**XRX Series** - Tips for XSI-11 Soldering Iron



XRX-93RT-B (Standard)

XRX-93RT-LB

XRX-93RT-SB

XRX-93RT-0.8D

XRX-93RT-1.6D

XRX-93RT-2D

XRX-93RT-2.4D

XRX-93RT-3.2D

XRX-93RT-BC

XRX-93RT-1C

XRX-93RT-2C

XRX-93RT-3C

XRX-93RT-4C

XRX-93RT-5K
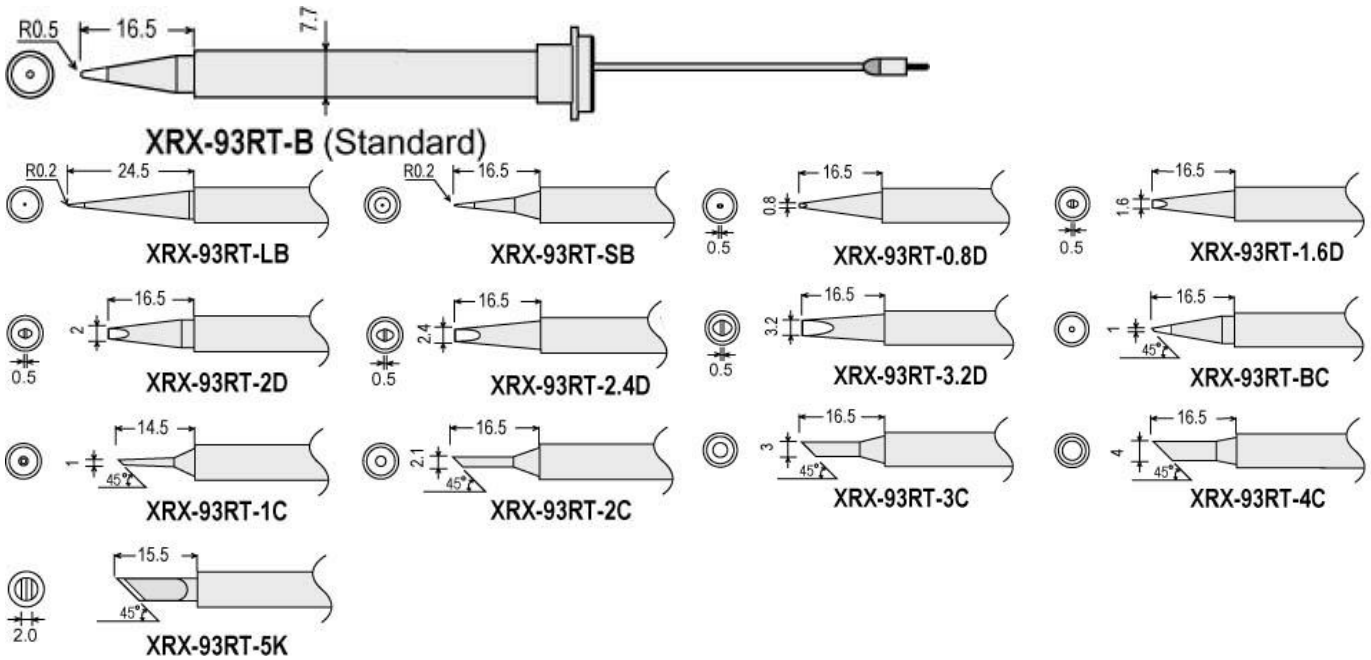
**XN Nozzles** - Nozzles for XHP-10



XN-1

XN-2

XN-3

XN-4

XN-5

XN-6

XN-7      XN-8      XN-9
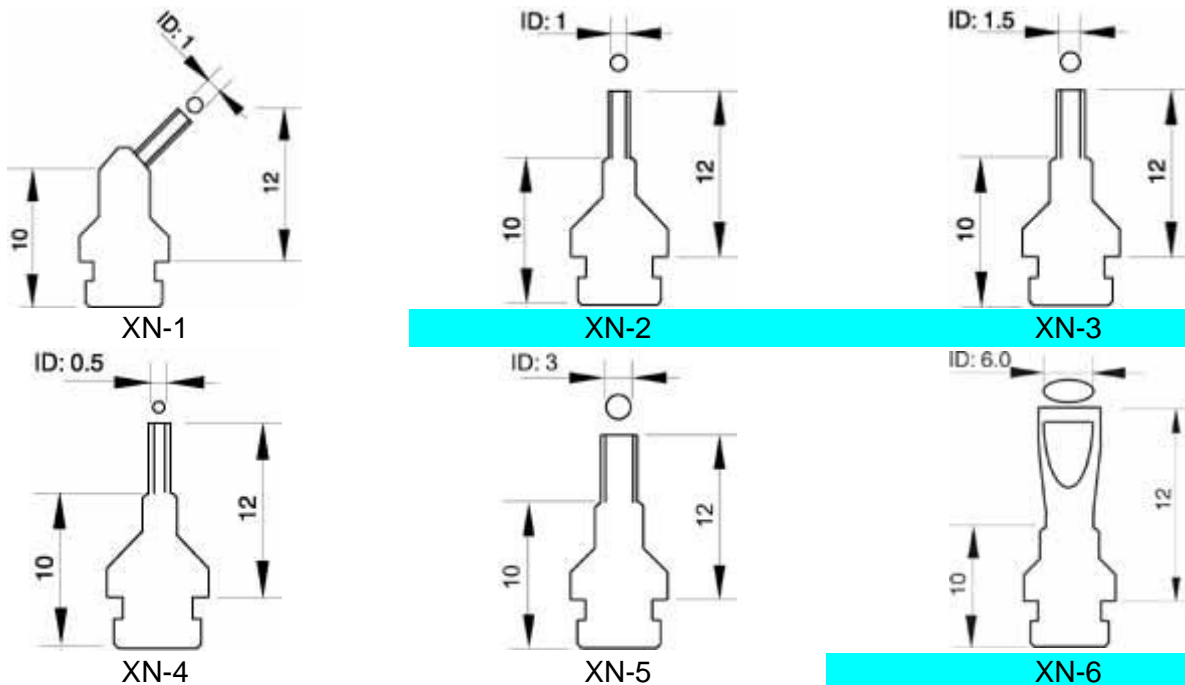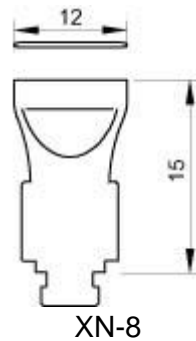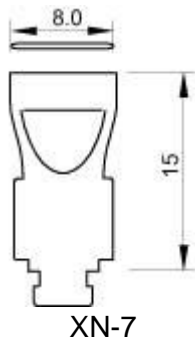
Nozzles contain in XHP-NS1 Nozzle Set

**SMT:** www.bokar.com, www.SMT-tool.com, www. X-Reflow306.com, www.X-1003.com, www.SMTrepair.com, ww.FineRework.com, www.SMTdispenser.com, www.SMTFocus.com

**ESD:** www.ESDapparel.com, www.ESDmeters.com, www.ESDpacakging.net, www.ZeroCharge.net, www.No-Stat.com, www.ESDchair.com, www.ESDlabcoats.com , www.ESDcarts.com,

**Other:** www.SuperiorScrewdrivers.com, www.Super-Iron.com,

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