



INSTRUCTION MANUAL

XDP-200D

Digital Fluid Dispensing System
for SMT Rework / Repair
and all other dispensing applications

The system's premier features include:

- The smallest footprint in the industry to save your bench space. Space saving syringe holder is attached to the unit (or there is a choice of optional freestanding holder).
- Extremely easy operation and programming with choice of 5 modes, multiple programs, program parameters viewing function and values programming function.
- Vacuum Pick-up Pencil Port (unit can be used as a vacuum pencil with optional XVP-10 vacuum pick-up hand piece).

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I. INTRODUCTION

XDP-200D microprocessor based system is the most advanced digital dispensing system available today. XDP-200D is a state of the art digital dispensing unit capable of dispensing fluids of very wide range of viscosity (from water-like to heavy solder pastes). The unit is of modern construction and utilizes latest achievements in semiconductor and microprocessor control technology.

Features

- Digital timer.
- Constant flow solenoid.
- Program controlled or Manual Dispensing.
- Digitally displayed functions and settings.
- Timing adjustment in 0,01 or 0,001 increments.



FIG. 1 VIEW OF THE SYSTEM

II. PACKAGING

The box contains as follows:

1. XDP-200D Base
2. SH-10 Side mounted syringe holder for 10 cc syringe
3. XDHA-10 Dispensing Head Assembly for 10cc syringes
4. XFS-1 Foot Switch
5. XDL-1 Compressed Air Connecting Hose
6. Manual
7. Guarantee card

III. 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.

Attention: 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!

IV. SET-UP AND INSTALLATION

1. The system should be located on stable work surface. Please note, that you will need some extra space on the side of the system for your Digital Dispenser Stand
2. Check if all switches on the front panel are in the “0” or “OFF” positions.
3. Connect power cable to the power source.

The system is now ready to use.

V. SYSTEM DESCRIPTION and APPLICATION

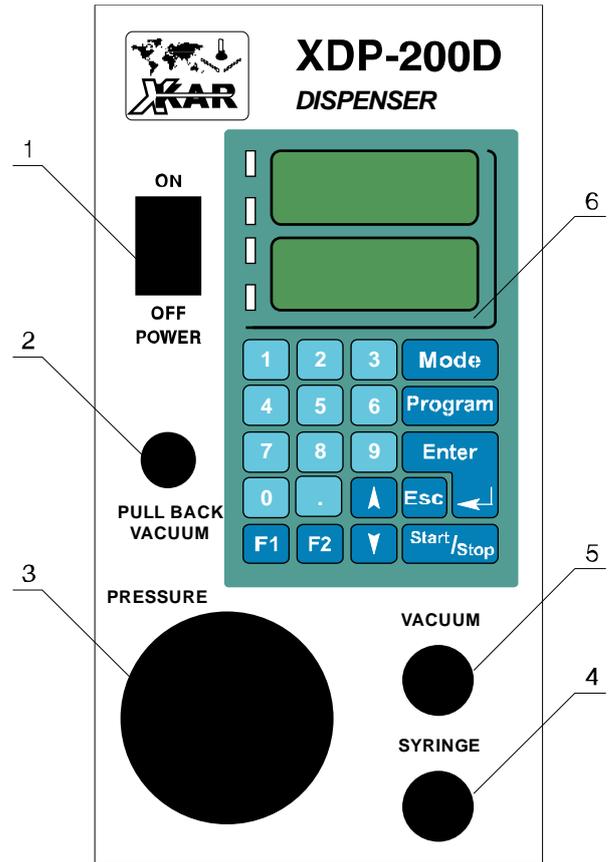
XDP-200D is a state of the art digital dispensing unit capable of dispensing fluids of very wide range of viscosity (from water-like to heavy solder pastes).

The unit is of modern construction and utilizes latest achievements in semiconductor and microprocessor control technology.

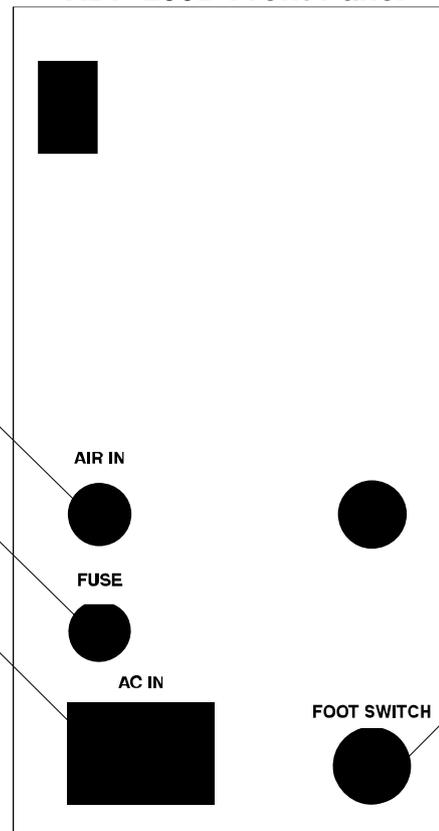
On the right side of the system is Pressure adjustment knob.

XDP-200D Front Panel

1. **Power switch** - Turns the system ON and OFF.
2. **Pull back vacuum adjustment** – Turn right to increase pull back vacuum or left to reduce.
3. **Pressure gauge** – Show pressure in PSIG and kg/cm².
4. **Syringe connector with valve** – Supply of pressure to syringe.
5. **Vacuum connector with valve** – Supply of vacuum to XVP-10D Vacuum pick-up hand piece (optional equipment)
6. **Digital Control Panel** – Please see below



XDP-200D Front Panel



XDP-200D Back Panel

XDP-200D Back Panel

1. **Air source connector** – Provides compressed air to the system through the XDL-1 Compressed Air Connecting Hose.
2. **Fuse holder** – Contains a fuse for overload protection. 20 mm type fuse (value depends on AC supply 2A for 115V and 1A for 230V supply)
3. **Power cord connector** – Provides AC power to the system through a power cord.
4. **Foot switch connector** – Foot switch connected to unit turns the pressure ON and OFF and allows for cycle advance.

XDP-200D offers the user 5 different Modes of Operation:

- Hand/Foot Mode
This mode leaves the control of dispensed substance to the operator. Quantity of dispensed substance will depend on three factors: air pressure, dispensing needle size (gauge) and the time the pressure is "ON". The "ON" time is the time of pressing the foot switch.
- Four different semi-automatic modes (described below) in which time "ON" and "OFF" is programmable and precisely controlled by the microprocessor and the dispensing cycle is initiated by the operator who presses the foot switch or "Start" key on the control panel.

Description of the keys on the front panel keyboard and their functions:

- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ 0... 9 ▪ . ▪ Mode ▪ Program ▪ ↓ and ↑ ▪ Esc ▪ Enter ▪ Start ▪ F1 ▪ F2 ▪ F1+Mode | <p>Numerical keys used to modify the parameter value, change the MODE or PROGRAM. Pressing 0 key allows also for viewing the functions of the rectangular LED's located to the left of numerical displays.</p> <p>Dot key is used to modify the parameter values.</p> <p>MODE key allows to select the MODE or change the MODE.</p> <p>PROGRAM key allows to select the PROGRAM or change the program to the next one.</p> <p>UP and DOWN keys change the MODE, PROGRAM #, Viewed parameter during parameters preview, increase or decrease the value of parameter during it's modification.</p> <p>ESCAPE key allows for cancellation of the action in progress (e.g. modification of a parameter). Also it allows to leave the VIEWING mode.</p> <p>ENTER key allows for entry into parameter modification and confirmation of new parameter value, selected MODE or PROGRAM #.</p> <p>START key allows to start or stop the process.</p> <p>F1 key allows viewing of the values of parameters of the MODE and PROGRAM currently selected at the time of pressing F1 key.</p> <p>F2 key allows to enter modification mode of currently viewed parameter.</p> <p>Keys F1 and MODE, when pressed together allow to enter the menu which allows to set system parameters.</p> |
|---|--|

System Operation

When the system is turned "ON" the display shows On ---- for about 1 second. After 1 second the display will show restored MODE and PROGRAM which was used before the system was "turned off".

The Modes to choose from are as follows:

- H A n d ---- Hand Mode; each dispensing time is turned "ON" and "OFF" by the operator.
- A u t.1 P x y z Automatic 1 Mode; in which the duration of dispensing cycle is pre-programmed and the operator starts the cycle. Precisely pre-programmed cycle can be repeated every time the Foot Switch or START key is pressed by the operator.
- A u t.2 P x y z Automatic 2 Mode; in which the duration of dispensing time and the duration of the time between dispensing times is pre-programmed. Also, the number of identical cycles

(dispensing time and brake) is pre-programmed. The operator starts the sequence of cycles. Precisely pre-programmed sequence of cycles can be repeated every time the Foot Switch or START key is pressed by the operator.

Aut.3 P xyz Automatic 3 Mode; in which the duration of dispensing time and the duration of the time between dispensing times is pre-programmed. Each dispensing time and each duration between dispensing times can be pre-programmed individually. Also, the number of cycles (dispensing time and brake) is pre-programmed. The operator starts the sequence of cycles. Precisely pre-programmed sequence of cycles can be repeated every time the Foot Switch or START key is pressed by the operator.

Aut.4 P xyz Automatic 4 Mode; in which the duration of dispensing times is pre-programmed individually for each duration and each cycle is started by the operator (Foot switch or START key) and ends when dispensing time elapses. To start next pre-programmed dispensing cycle an operator presses the Foot Switch or START key on the front panel.

Dispensing cycle can be started or stopped by pressing Foot Switch or **Start** key.

To end the cycle one has to stop it first and then press **Esc**.

MODE or PROGRAM can not be changed when the dispensing cycle is in progress.

It is possible to change the parameters of the PROGRAM which is actually used, but this is possible only when the cycle is stopped.

PROGRAMMING OF THE UNIT

Parameters which may be pre-programmed:

Note: parameter accuracy depends on the parameter value: for values less than 10.00 parameter can be programmed in increments of 0.001 (maximum 9.999); for values more than 10.00 parameter can be programmed in increments of 0.01 (maximum 99.99). This must be remembered when pre-programming the values of parameters.

PLS, dispensing time (pulse) in Aut.1 MODE; value in the range of 0.001 to 99.99 sec.

P.xyz, dispensing time (pulse) in Aut.2..Aut.4 MODES; value in the range of 0.001 to 99.99 sec.

S.xyz, break between dispensing times (pulses) in Aut.2..Aut.4 MODES; value in the range of 0.001 to 99.99 sec.

CntS, number of dispensing periods (pulses) in Aut.2 MODE; even number in the range of 1-999.

LOC, (system feature); changes of parameters possible only when a 4 digit code is entered. LOC feature can be **On** or **OFF**.

Code CHG, (system feature); code change

o.c o d, (system feature); first step to change the code, old code number, even number, range from 1 to 9999.

n.c o d, (system feature); second step to change the code, new code number, even number, range from 1 to 9999.

REPt, (system feature); third step to change the code, repeated new code number, even number, range from 1 to 9999.

Snd, (system feature); enable/disable of sound, Sound can be **On** or **OFF**.

GLAr 8888, (system feature); adjustment of brightness of LED Display, implemented by

use of UP/DOWN arrows on the control panel, full adjustment performed in 8 steps.

Protection against unauthorized change of pre-programmed parameters

When system is unlocked (system feature **LOC** is set to **OFF**), all parameters and system features can be altered without restrictions. When system feature **LOC** is set to **On**, the system will ask for a cod number every time someone will try to change pre-programmed values. The Display will show: **CodE - - - -**. To unlock the system, previously selected code number must be entered. During entering the code digits in place of the entered digit the '8' will appear on the display (security reason). 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 it was in before an attempt to change the parameter. Properly entered code will unlock the system and allow for parameters change 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.

It is not necessary to enter the code each time there is a need to modify the parameters.

Changing the CODE:

CodE **CHG** has to be selected in system parameters menu. Than, key **Enter** or **F2** must be pressed. The display will than show **o.c o d - - - -** (old code). Previously used code number must be entered and key **Enter** pressed. The display will show **n.c o d - - - -** (new code) and a new code number has to be entered . Display will than show **REPt - - - -** and a new code has to be keyed in one more time. 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 to change the code when entered in place of the old code.

YYYY- „master code”; this is manufacturers code which can be used in parallel or instead off the to the user code. Use of the “master code” does not interfere with currently used code number.

Mode change; (Led.1 is „ON”)

Mode, **↑**- (Mode + 1); pressing “Mode” and “arrow up” will advance the mode sequentially in a close loop

↓- (Mode – 1); pressing “Mode” and “arrow down” will cause the system to go back to a previous mode sequentially in a close loop

1...5– pressing the digits will set selected mode number

Enter–pressing “ENTER” key ends MODE change

Esc– pressing “Esc” key also ends MODE change

F1– pressing “F1” ends MODE change and enables viewing of pre-set parameters

F2– pressing “F2” ends MODE change and enables change of the first parameter in a given MODE and a given PROGRAM.

Start– pressing “START” key ends MODE change and starts the process.

NOTE: Foot Switch is acting in parallel to a START/STOP key with the exception of the HAND (Operator controlled) mode. In this mode the dispensing cycle is "ON" for as long as the Foot Switch is pressed (push button action). When the process is controlled from the front panel pressing the START/STOP key starts dispensing and pressing it again stops dispensing.

Program change; (Led.2 is „ON”)

Note: Program change is possible in Automatic Modes. MODES Aut.1 and Aut.2 have 99 PROGRAMS.

MODES Aut.3 and Aut.4 have 9 PROGRAMS.

Program, **↑**- (program + 1); pressing “Program” and “arrow up” will advance the PROGRAM sequentially in a close loop

↓- (program – 1); (pressing “Program” and “arrow down” will cause the system to go back to a previous PROGRAM sequentially in a close loop)

0...**9**- pressing the digits will set selected PROGRAM number (1 to 99)

Enter- pressing “ENTER” key ends PROGRAM change

Esc- pressing “Esc” key once returns to the PROGRAM number before initiated change. Pressing “Esc” key the second time also ends the PROGRAM change.

F1- pressing “F1” ends PROGRAM change and enables viewing of pre-set parameters

F2- pressing “F2” ends PROGRAM change and enables change of the first parameter in a given PROGRAM.

Start- pressing “START” key ends PROGRAM change and starts the process.

Viewing pre-programmed values and functions **F1**. (Led.3 is “ON”)

Note: There is no viewing of set values in the HAND MODE.

Pressing the **F1** key always starts viewing of pre-set parameters. The system will scroll viewing the pre-set values pausing 1.5 sec on each parameter.

F1, **↑**- (parameter + 1); pressing “F1” and “arrow up” keys will advance viewed parameter sequentially in a close loop

F1, **↓**- (parameter – 1); (pressing “F1” and “arrow down” keys will cause the system to go back to a previously viewed parameter sequentially in a close loop)

F2 or **Enter**- pressing “F2” or “Enter” stops viewing and enables a change of the viewed parameter.

Esc- pressing “Esc” key ends parameters viewing mode

Mode, **Program**- pressing “MODE” and “PROGRAM” enables viewing of current MODE or PROGRAM

Start- pressing “START” key ends parameters viewing mode and starts the process.

Parameter value change **F2** (Led.4 is „ON”)

NOTE: Use of numeric keys clears the value of the parameter first and than new value is entered.

0...**9**- pressing the digits will set the parameter value

.- pressing „ . .” begins entering fractional time values (dispensing time or break)

↑- pressing „arrow up” key will advance value sequentially in a close loop (value + 1, time +0.01 or +0.001)

 - pressing „arrow down” key will cause the system to go back to a previous value sequentially in a close loop (value - 1, time - 0.01 or - 0.001)

 - pressing “ENTER” key confirms new parameter value and will cause the system to go back to a parameters viewing mode (automatic scrolling mode is off).

 - pressing „Esc” key once returns to the parameter value before change. Pressing „Esc” key second time cause the system to go back to a parameters viewing mode

,  - pressing “MODE” or “PROGRAM” enables viewing of current MODE or PROGRAM

 - pressing “START” key ends parameters value change and starts the process.

1.1. Viewing System Parameters +

NOTE: To access System Set-up Menu two keys must be pressed at the same time: „ F1” and „ MODE”.

-  - pressing „arrow up” key scrolls up through system parameters sequentially in a close loop
-  - pressing „arrow down” key scrolls down through system parameters sequentially in a close loop
- ,  - pressing “Enter” and “F2” allows entry into a viewed system parameter change
-  - pressing “Esc” key ends system parameters viewing mode
- ,  - pressing “MODE” and “PROGRAM” enables viewing of current MODE or PROGRAM
-  - pressing “START” key ends system parameters viewing and starts the process

1.2. System parameters modification (Led.4 is „ON”)

-  - pressing „arrow up” key will advance system parameters sequentially in a close loop
-  - pressing „arrow down” key will cause the system to go back to a previous system parameter sequentially in a close loop
-  - pressing “ENTER” key confirms new system parameter and will cause the system to go back to a system parameters viewing mode
-  - pressing “Esc” key ends system parameters viewing mode
- ,  - pressing “MODE” and “PROGRAM” enables viewing of current MODE or PROGRAM
-  - pressing “START” key cancels current parameter modification and starts the process

2. System information

LED Indicator

- Led.1 – MODE change
- Led.2 – PROGRAM change

XDP-200D Digital Fluid Dispensing System

- Led.3 – Parameters viewing mode
- Led.4 – Values or System parameter change

Note: Press **0**. to see *Led functions*

- In case of controller failure LED display will show: **Conn. - out.**

VI. TECHNICAL SPECIFICATIONS

Input Voltage	100V AC / 115V AC / 230V AC
Power Consumption	Max. 20 VA
Internal Voltage	24 V DC
Operating Pressure	2 to 100 psi (0,2 to 7 bar)
Air Source	Shop Air or Compressor
Time Range	Full shot range of 0,01 to 99.9 sec.
Repeat Accuracy	± 0,05% (Microprocessor controlled)
Reset Time	Less than 9 milliseconds
Weight	3.0 kg (6.6 lbs.)
System dimensions	225 x 166 x 88 mm 8.9" x 6.5" x 3.5"
Packaged weight	3.6 kg (8 lbs.)

VII. OPTIONAL EQUIPMENT

XVP-10D Vacuum pick-up hand piece

XDS-1 Universal Syringe Stand

XHS-1 Finger Activated Switch



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