

Replacing Flowstar's Firmware

USER'S MANUAL

**HP-239
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HOFFER
Flow Controls

Perfecting Measurement™

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Notice

HOFFER FLOW CONTROLS, INC. MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This manual has been provided as an aid in installing, connecting, calibrating, operating, and servicing this unit. Every precaution for accuracy has been taken in the preparation of this manual; however, HOFFER FLOW CONTROLS, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that may result from the use of products in accordance with information contained in the manual.

HOFFER FLOW CONTROLS' policy is to provide a user manual for each item supplied. Therefore, all applicable user manuals should be examined before attempting to install or otherwise connect a number of related subsystems.

During installation, care must be taken to select the correct interconnecting wiring drawing. The choice of an incorrect connection drawing may result in damage to the system and/or one of the components.

Please review the complete model of each item to be connected and locate the appropriate manual(s) and/or drawing(s). Identify all model numbers exactly before making any connections. A number of options and accessories may be added to the main instrument, which are not shown on the basic user wiring. Consult the appropriate option or accessory user manual before connecting it to the system. In many cases, a system wiring drawing is available and may be requested from HOFFER FLOW CONTROLS.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the Hoffer Flow Controls Customer Service Department, telephone number (252) 331-1997 or 1-800-628-4584. BEFORE RETURNING ANY PRODUCT(S) TO HOFFER FLOW CONTROLS, PURCHASER MUST OBTAIN A RETURNED MATERIAL AUTHORIZATION (RMA) NUMBER FROM HOFFER FLOW CONTROLS' CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned RMA number should then be marked on the outside of the return package and on any correspondence.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting HOFFER FLOW CONTROLS:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS OR **CALIBRATIONS**, consult HOFFER FLOW CONTROLS for current repair/calibration charges. Have the following information available BEFORE contacting HOFFER FLOW CONTROLS:

1. P.O. number to cover the COST of the repair/calibration,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

LIMITED WARRANTY

HOFFER FLOW CONTROLS, INC. ("HFC") warrants HFC's products ("goods") described in the specifications incorporated in this manual to be free from defects in material and workmanship under normal use and service, but only if such goods have been properly selected for the service intended, properly installed and properly operated and maintained. This warranty shall extend for a period of (1) year from the date of delivery to the original purchaser (or eighteen (18) months if the delivery to the original purchaser occurred outside the continental United States). This warranty is extended only to the original purchaser ("Purchaser"). *Purchaser's sole and exclusive remedy is the repair and/or replacement of nonconforming goods as provided in the following paragraphs.*

In the event Purchaser believes the goods are defective, the goods must be returned to HFC, transportation prepaid by Purchaser, within twelve (12) months after delivery of goods (or eighteen (18) months for goods delivered outside the continental United States) for inspection by HFC. If HFC's inspection determines that the workmanship or materials are defective, the goods will be either repaired or replaced, at HFC's sole determination, free of additional charge, and the goods will be returned, transportation paid by HFC, using the lowest cost transportation available.

Prior to returning the goods to HFC, Purchaser must obtain a Returned Material Authorization (RMA) Number from HFC's Customer Service Department within 30 days after discovery of a purported breach of warranty, but no later than the warranty period; otherwise, such claims shall be deemed waived. See the Return Requests/Inquiries Section of this manual.

If HFC's inspection reveals the goods are free of defects in material and workmanship or such inspection reveals the goods were improperly used, improperly installed, and/or improperly selected for service intended, HFC will notify the purchaser in writing and will deliver the goods back to purchaser upon (i) receipt of Purchaser's written instructions and (ii) the cost of transportation. If Purchaser does not respond within 30 days after notice from HFC, the goods will be disposed of in HFC's discretion.

HFC does not warrant these goods to meet the requirements of any safety code of any state, municipality, or any other jurisdiction, and purchaser assumes all risk and liability whatsoever resulting from the use thereof, whether used singly or in combination with other machines or apparatus.

This warranty shall not apply to any HFC goods or parts thereof, which have been repaired outside HFC's factory or altered in any way, or have been subject to misuse, negligence, or accident, or have not been operated in accordance with HFC's printed instructions or have been operated under conditions more severe than, or otherwise exceeding, those set forth in the specifications for such goods.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HFC SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE RESULTING, DIRECTLY OR INDIRECTLY, FROM THE USE OF LOSS OF USE OF THE GOODS. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THIS EXCLUSION FROM LIABILITY EMBRACES THE PURCHASER'S EXPENSES FOR DOWNTIME, DAMAGES FOR WHICH THE PURCHASER MAY BE LIABLE TO OTHER PERSONS, DAMAGES TO PROPERTY, AND INJURY TO OR DEATH OF ANY PERSON. HFC NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OR USE OF HFC'S GOODS, AND THERE ARE NO AGREEMENTS OR WARRANTIES COLLATERAL TO OR AFFECTING THE AGREEMENT. PURCHASER'S SOLE AND EXCLUSIVE REMEDY IS THE REPAIR AND/OR REPLACEMENT OF NONCONFORMING GOODS AS PROVIDED IN THE PRECEDING PARAGRAPHS. HFC SHALL NOT BE LIABLE FOR ANY OTHER DAMAGES WHATSOEVER INCLUDING INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

REPLACING FLOWSTAR'S FIRMWARE

Introduction

This instruction details the procedures used to replace the Flowstar's U13 chip located on the PCA-138 printed circuit board(pcb).

CAUTION - The Flowstar is a static -sensitive device and standard practice for static sensitive parts should be observed.

Record Setup Information

First, verify the programmed settings of the Flowstar by following the steps listed below.

1. Obtain the HFC's Test Certificate for the Flowstar unit.
2. Enter the Setup mode of the Flowstar.
3. Compare the information contain on the Test Certificate to the values programmed into Flowstar.
4. Note any differences between the HFC's Test Certificate and the programmed settings of the Flowstar.

Removal of the PCA-138 Pcb

To remove the PCA-138 pcb from the Flowstar, follow these steps.

1. Disconnect power and signal lines from the Flowstar.
2. Remove FOUR screws from the front panel of the Flowstar.
3. Detach two ribbon cables from the front panel.
4. On the back panel, remove the TOP TWO screws.
5. Detach the middle ribbon cable going from the TOP pcb to the BOTTOM pcb.
6. Slide the TOP pcb out of the Flowstar, this is the PCA-138.

Replacing the Firmware

To replace the EPROM chip on the PCA-138 pcb, follow these steps.

1. Locate the U13 chip on the PCA-138 board. This is a 24 pin IC that has a label on it. Please reference included drawing.(HFC's # 700-0086, *Component Layout PCA-138*).
2. Carefully remove the U13 chip, noting it orientation.
3. Install the new firmware into the U13 socket. Note the orientation of the IC socket. Check the EPROM for bent pins.

Install the PCA-138 Pcb

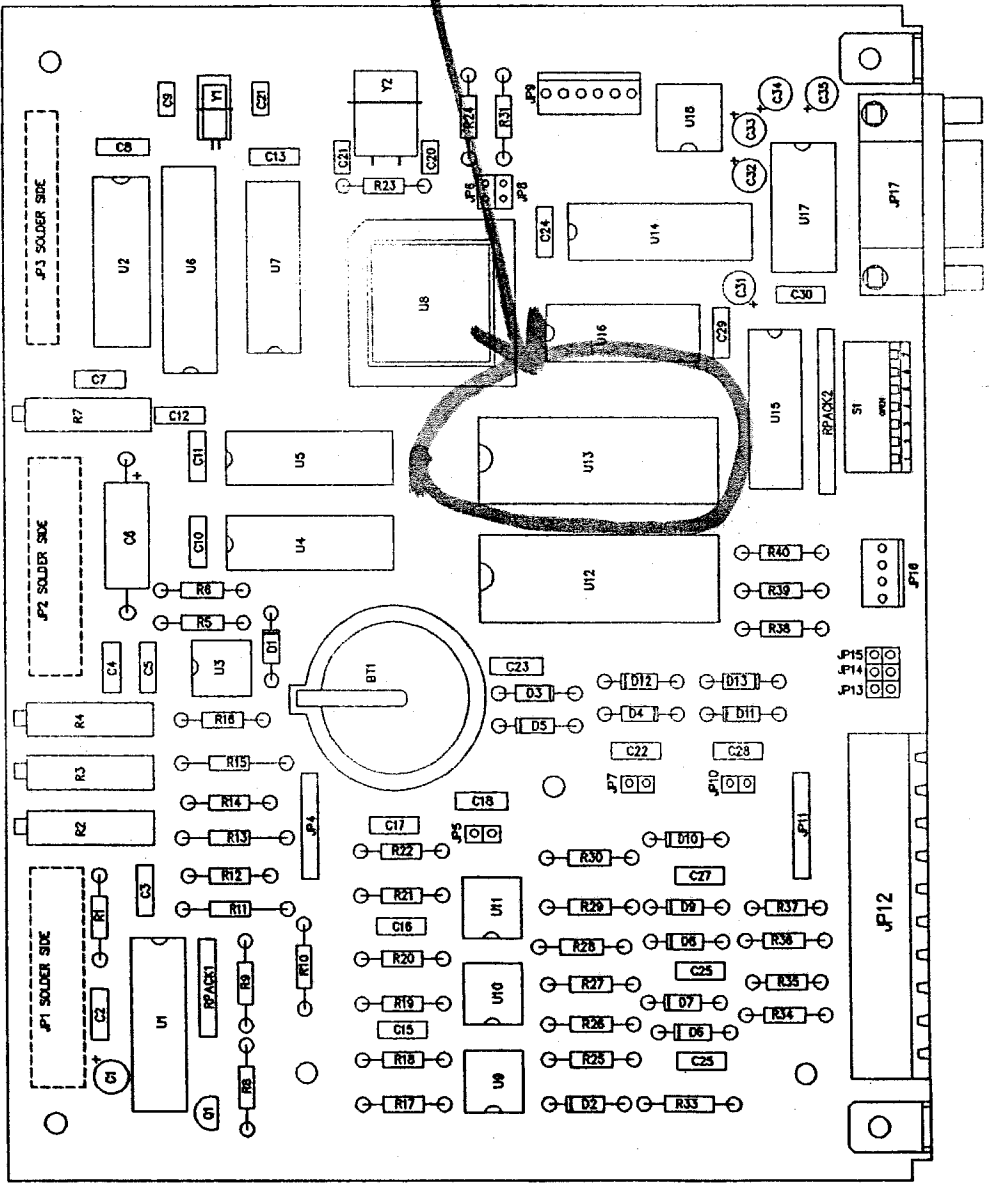
To install the PCA-138 pcb back into the Flowstar, follow the steps outline in *Removal of the PCA-138 Printed Circuit Board(PCB)* in reverse order.

Final Check

After reassembling the Flowstar, reconnect the power and signal lines. Apply power to the Flowstar. If the screen remain blank for about 1 minute, the Flowstar is performing a System Restore.

Enter the SETUP mode of the Flowstar and verify the calibration settings. If the calibration settings do not agree with HFC's Test Certificate, then enter in the correct calibration settings from the save list.

DWG NO.	700-0086	SH	1	REV	-
REVISIONS					
ZONE	REV	DESCRIPTION		DATE	APP



DRAWN		CHECK		PRODUCTION		TITLE	
Subst		J. Smith		J. Smith		PCA 138	
DATE		DATE		DATE		DATE	
10/1/68		10/1/68		10/1/68		10/1/68	
SCALE		SCALE		SCALE		SCALE	
NONE		NONE		NONE		NONE	
SIZE		SIZE		SIZE		SIZE	
C		C		C		C	
DRG NO		DRG NO		DRG NO		DRG NO	
700-0086		700-0086		700-0086		700-0086	
SHEET		SHEET		SHEET		SHEET	
1 OF 1		1 OF 1		1 OF 1		1 OF 1	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND DECIMALS SHALL BE HELD AS FOLLOWS:							
3 PLACE DECIMALS ± .01							
FRACTIONS ± 1/32							
MATERIAL							
FINISH							
APPLICATION							
NOT ASSY							
USED ON							

H OFFER FLOW CONTROLS, INC
ELIZABETH CITY, NC 27909

COMPONENT LAYOUT -
PCA 138

1
2
3
4

1
2
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4