

# IQ Box

## Software Upgrade Instructions



# Notice

---

Veeder-Root makes no warranty of any kind with regard to this publication, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Veeder-Root shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this publication.

Veeder-Root reserves the right to change system options or features, or the information contained in this publication.

This publication contains proprietary information which is protected by copyright. All rights reserved. No part of this publication may be photocopied, reproduced, or translated to another language without the prior written consent of Veeder-Root.

Contact Red Jacket Technical Support for additional troubleshooting information at 800-323-1799.

## **DAMAGE GOODS/LOST EQUIPMENT**

---

Thoroughly examine all components and units as soon as they are received. If any cartons are damaged or missing, write a complete and detailed description of the damage or shortage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description. Refuse only the damaged product, not the entire shipment.

VR must be notified of any damages and/or shortages within 30 days of receipt of the shipment, as stated in our Terms and Conditions.

## **VEEDER-ROOT'S PREFERRED CARRIER**

---

1. Fax Bill of Lading to V/R Customer Service at 800-234-5350.
2. Call V/R Customer Service at 800-873-3313 with the specific part numbers and quantities that were received damaged or lost.
3. VR will file the claim with the carrier and replace the damaged/missing product at no charge to the customer. Customer Service will work with production facility to have the replacement product shipped as soon as possible.

## **CUSTOMER'S PREFERRED CARRIER**

---

1. Customer files claim with carrier.
2. Customer may submit a replacement purchase order. Customer Service will work with production facility to have the replacement product shipped as soon as possible.
3. If "lost" equipment is delivered at a later date and is not needed, VR will allow a Return to Stock without a restocking fee.
4. VR will NOT be responsible for any compensation when a customer chooses their own carrier.

## **RETURN SHIPPING**

---

For the parts return procedure, please follow the instructions in the "General Returned Goods Policy" pages of the "Policies and Literature" section of the Veeder-Root North American Red Jacket Mechanical Products Price Book. Veeder-Root will not accept any return product without a Return Goods Authorization (RGA) number clearly printed on the outside of the package.

**Introduction**

Safety Precautions ..... 1  
Precautions Against Static Electricity ..... 1

**Upgrading Software**

Replacing the Software PROM ..... 3

**Programming and Calibration Procedure**

Programming the Motor Type ..... 5  
Calibrating the IQ Box ..... 7

**Figures**

Figure 1. Locating software upgrade components inside IQ box ..... 3  
Figure 2. Removing U1 - Software PROM ..... 4  
Figure 3. SW1 Switch Setup chart ..... 7

**Tables**

Table 1. Motor Type Programming ..... 5  
Table 2. Reset Button and LED Actions ..... 6






## Introduction





This document contains instructions for upgrading Red Jacket IQ Box software to the latest release.

The upgrade kit contains these instructions and the upgrade software chip.

## Safety Precautions

The following safety symbols may be used throughout this manual to alert you to important safety hazards and precautions.

 <b>TURN POWER OFF</b> Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.	 <b>ELECTRICITY</b> High voltage exists in, and is supplied to, the device. A potential shock hazard exists.
 <b>WARNING</b> Heed the adjacent instructions to avoid damage to equipment, property, environment or personal injury.	 <b>STATIC SENSITIVE COMPONENTS</b> Wear grounded anti-static wrist strap before handling the printed circuit boards and mounted components.
 <b>READ ALL RELATED MANUALS</b> Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.	

 <b>WARNING</b>	
  	<p><b>This system operates on 230 Vac power. Serious injury or death from electrical shock could occur if the power ON/OFF warnings in this manual are not heeded.</b></p> <p><b>FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD CAUSE DAMAGE TO PROPERTY, ENVIRONMENT, RESULTING IN SERIOUS INJURY OR DEATH.</b></p> <ol style="list-style-type: none"><li><b>1. Read and follow all instructions in this manual, including all safety warnings.</b></li><li><b>2. Remove rings from hands, metal watch bands and bracelets, and loose hanging neck jewelry before performing these procedures.</b></li><li><b>3. Do not modify or use service parts other than those provided by Veeder-Root.</b></li></ol>

## Precautions Against Static Electricity

Before removing electronic components from their antistatic bags read the following static electricity precautions.

1. Before handling any components, discharge your body's static electric charge by touching a grounded surface.
2. Do not remove parts from their antistatic bags until you are ready to install them.

3. Do not lay parts on the antistatic bags! Only the insides are antistatic.
4. When handling parts, hold them by their edges and their metal mounting brackets.
5. Avoid touching components or edge connectors that plug into slots.
6. Never slide parts over any surface.
7. Avoid plastic, vinyl, and styrofoam in your work area.
8. The antistatic caution icon shown to the left appears in this manual to remind you to wear the antistatic wrist strap included in your component replacement kit (Part No. 576010-908) when handling static sensitive devices.

# Upgrading Software

## Replacing the Software PROM



**WARNING!** Disconnect, lock out, and tag power to the IQ box at the panel before starting this procedure.



1. Open the IQ box cover.
2. Get the antistatic wrist strap from the component replacement kit. Slide the looped end of the antistatic wrist strap onto your wrist and then wrap the adhesive foil end around the metal ground terminal inside the IQ box (see Figure 1).
3. Locate the Software PROM U1 (see Figure 2).

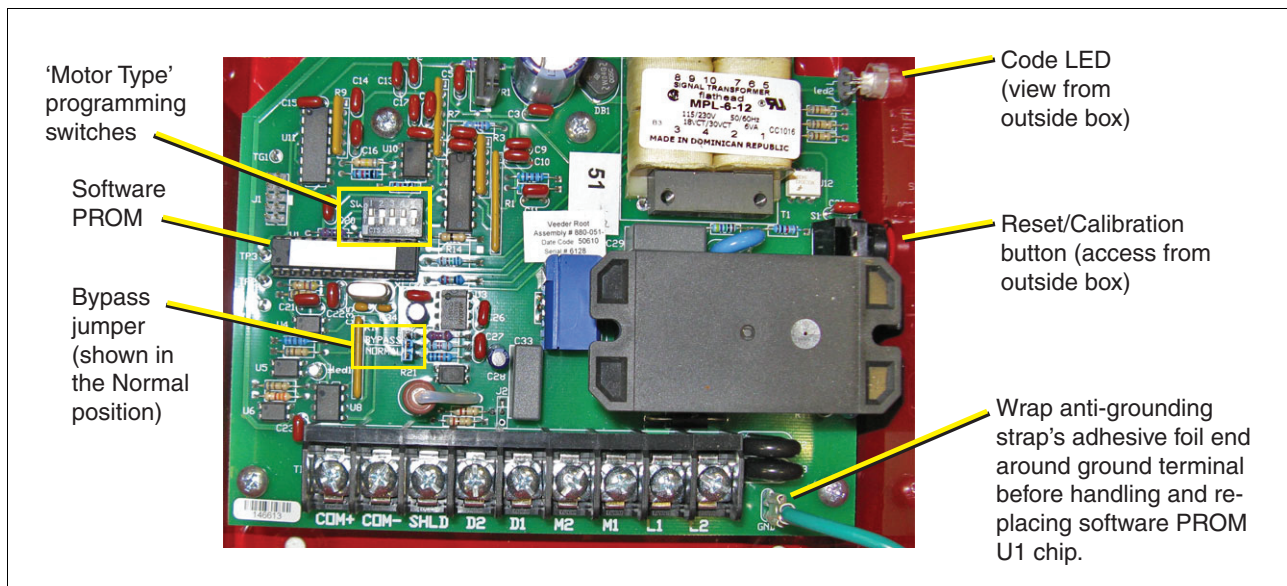


Figure 1. Locating software upgrade components inside IQ box

4. Position the small hooks in the ends of the chip removal tool under the ends of U1 as shown in Figure 2. Rock the tool side to side as you pull on the chip to lift it out of socket.
5. Orient the new upgrade chip with the end having a semicircle indent pointing toward TP3 as shown in Figure 2. Carefully align the chip pins over the holes in socket and gently push the chip into the socket. Firmly seat the chip in the socket. Remove and discard the antistatic wrist strap.

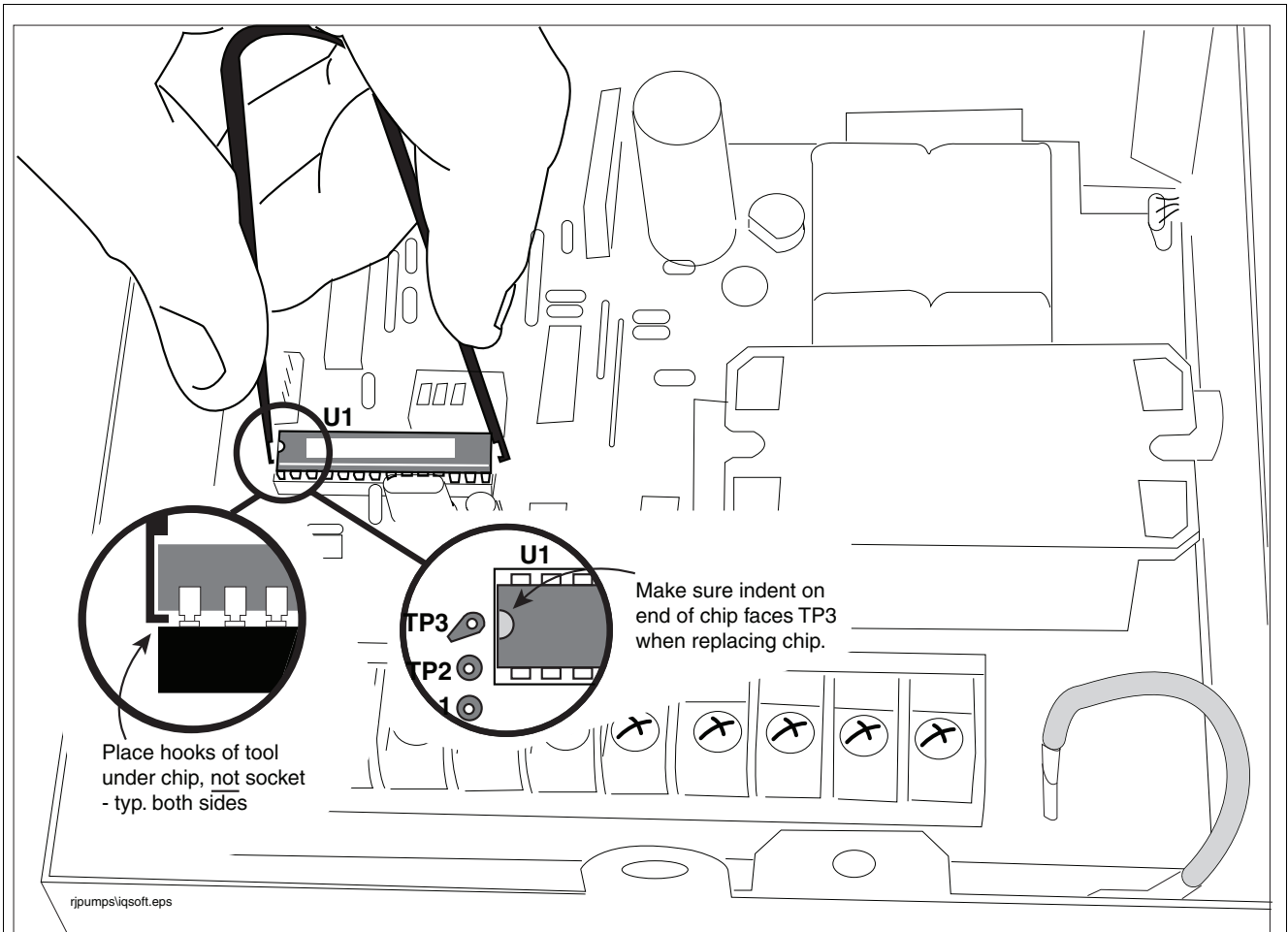


Figure 2. Removing U1 - Software PROM

# Programming and Calibration Procedure

## Programming the Motor Type

1. Place the Bypass Jumper in the Bypass Position (see Figure 1)
2. Set the five Motor Type Programming DIP switches (Figure 1) to the positions indicated in Table 1 for your Motor Type.
3. Close and secure IQ Box cover.
4. Reapply power to the IQ Box. (Hook signal must be Off).
5. Locate the Code LED and the Reset/Calibration button (see Figure 1). Depress the Reset/Cal button 20 seconds as you observe the Code LED flashing sequence shown in Table 2. Note the number of Green flashes for your Motor Type (for use in Steps 6 and 14 below).
6. Release the Reset/Cal button after confirming the Green LED has flashed the correct number of times for your Motor Type.



**WARNING! Disconnect, lock out, and tag power to the IQ box at the panel before starting these steps.**

7. Disconnect power from the IQ Box.
8. Place the Bypass Jumper in the Normal Position..

**Table 1. Motor Type Programming**






Number of Code LED Flashes	Switch Position					Manufacturer	Motor
	1	2	3	4	5		
1	OFF	OFF	OFF	OFF	OFF	FARADYNE	1/3 60 Hz
2	OFF	OFF	OFF	OFF	ON		3/4 60 Hz
3	OFF	OFF	OFF	ON	OFF		1.5 60 Hz
4	OFF	OFF	OFF	ON	ON		2.0 60 Hz
5	OFF	OFF	ON	OFF	OFF		X3
6	OFF	OFF	ON	OFF	ON		3/4 50 Hz
7	OFF	OFF	ON	ON	OFF		1.5 50 Hz
8	OFF	OFF	ON	ON	ON		2.0 50 Hz
9	OFF	ON	OFF	OFF	OFF		X4



Table 1. Motor Type Programming

Number of Code LED Flashes	Switch Position					Manufacturer	Motor
	1	2	3	4	5		
10	ON	OFF	OFF	OFF	OFF	FRANKLIN	1/3 60 Hz
11	ON	OFF	OFF	OFF	ON		3/4 60 Hz
12	ON	OFF	OFF	ON	OFF		1.5 60 Hz
13	ON	OFF	OFF	ON	ON		2.0 60 Hz
14	ON	OFF	ON	OFF	OFF		X3
15	ON	OFF	ON	OFF	ON		3/4 50 Hz
16	ON	OFF	ON	ON	OFF		1.5 50 Hz
17	ON	OFF	ON	ON	ON		2.0 50 Hz
18	ON	ON	OFF	OFF	OFF		X4
SOLID	ANY OTHER SETTING					UNKNOWN	UNKNOWN

Table 2. Reset Button and LED Actions

LED	Reset Button - Time Depressed	Action
Off 	Start	Press And Hold The Reset Button
Green 	5 seconds	Clears Alarms
Red 	10 seconds	Queues Calibration
Off 	20 seconds	Cancel calibration. If in Bypass mode, reads and stores Motor Type.
Green 	20 seconds	Flashes saved Motor Type code (see Table 1)

## Calibrating the IQ Box

1. The unit must be calibrated every time the Motor Type programming is performed even if the Motor Type does not change. Set the five DIP switches to the desired pump type and mode / role select configuration (see Figure 3). NOTE: The unit will not calibrate if a Motor Type has not been programmed.
2. Close and secure the IQ Box cover.
3. Reapply power to the IQ Box. (Hook signal must be Off).
4. Perform a calibration by depressing the Reset/Calibration button for 10 seconds (LED turns red).
5. The saved Motor Type can be verified with the Bypass jumper in the Normal position.
6. Depress the Reset/Calibration button for 20-seconds – continue holding the button in until the Green LED has flashed the Motor Type code.
7. If the number of green flashes matches your Motor Type code noted in Step 5. on page 5 above, The IQ Box is now ready for operation.

Each IQ Box must have its duty established through the dip switch bank labeled SW1 on the circuit board.

Follow the chart below to properly set each of the five switches.

Pump Type	Switch	Mode Select	Switch		Role Select	Switch	
	1		2	3		4	5
Standard	on	Stand Alone	on	on	Unit 1	on	on
X Series	off	Manifolded PLLD	on	off	Unit 2	on	off
		Manifolded Alternating	off	on	Unit 3	off	on
		Manifolded Direct	off	off	Unit 4	off	off

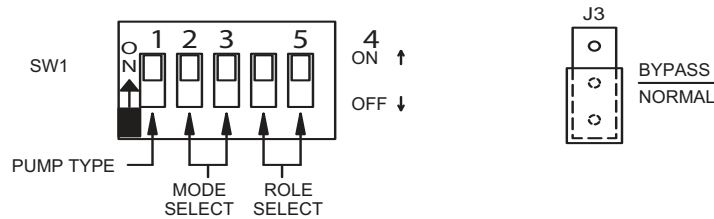


Figure 3. SW1 Switch Setup chart

