



## Upgrade Program

Existing customers can economically upgrade their molbox1 to molbox1+ hardware and specifications through an upgrade program as described below. To capture the benefits of the new molbox1+, their molblobs should be upgraded also.

molbox1's produced prior to 1996 that do not have the membrane keypad cannot be upgraded under this program. A separate trade in credit may be available – consult the factory.

**molbox1 upgrade:** The process is called Trade up:

The trade up to a new molbox1+ reuses the pressure transducers and electronic boards (including MFC control) from the existing molbox1. Fluke Calibration will build a new molbox1+ that includes the modern molbox1+ enclosure, current molbox1+ embedded software, along with new pneumatic hardware, quick connect fittings and all accessories (pressure tubes, cables, etc.)

Once Fluke Calibration receives a purchase order for the Trade up, we provide the customer with RMA instructions to ship the molbox1 to be upgraded to Fluke Calibration's Phoenix factory. First the pressure transducers from the customer's molbox1 are tested against a primary reference standard so that as received data can be recorded. Then the pressure transducers are characterized as standard class Q-RPTs which yields improved pressure uncertainty, ultimately on molbox1+ pressure measurements. Once production of the molbox1+ is complete, the Q-RPTs are calibrated and the new molbox1+ is delivered with a new product calibration report and a separate As Received calibration report with the original molbox1 as received data.

The serial number of the molbox (stored in the molbox memory) will be the same as the molbox1 serial number, but a "+" is added to the number on the label, for example SN 417+. The molbox1+ will have version 6.0 or higher firmware and comes with a new User's Manual.

The new molbox1+ will have the MFC control option IF and ONLY IF the original molbox1 had the option. Customers who want to add the MFC control option during upgrade should purchase the MFC-UPGD item below.

### molbox Upgrade Items

Item Number	Model	Description
3527476	molbox1+UPGRADE	UPGRADE OF molbox1 TO molbox1+ MASS FLOW TERMINAL
3527483	molbox1+TRADEUP	TRADE IN molbox1 FOR molbox1+ MASS FLOW TERMINAL
3531497	molbox1+TRADEUP-CE	TRADE IN molbox1 FOR molbox1+ MASS FLOW TERMINAL, CE
3461952	molbox1-MFC-UPGD	UPGRADE KIT, INSTALL MFC OPTION IN CUSTOMER-SUPPLIED molbox1

**molbloc upgrade:** In order to take advantage of molbox1+ features and to be eligible for premium calibrations, molblocs must also be upgraded. molbloc calibration data will be erased and regenerated using molbox1+'s new NIST REFPROP7 gas property data, and will be written to the molbloc EEPROM in a new format consistent with molbox1+ software v6.0 or higher. In many cases, the molbloc EEPROM, circuit board and PRTs will be replaced to accommodate the new data structure.

Most molblocs in the field are eligible for upgrade, but molblocs prior to SN 470 are generally of an incompatible design and are not eligible. If there is a question, consult the Fluke Calibration factory.

In addition, all new and upgraded molbloc-L elements up to 3E4 size will include an integrated filter assembly built into the upstream VCR endcap (fitting). molblocs will receive the new endcap during the upgrade and for all non IF (interference fit) design molblocs (size 1E3 through 3E4), the molbloc will be completely rebuilt when the endcap is replaced.

Pricing for molbloc upgrades does not depend on vintage of the current molbloc hardware or data format – there is a single price for each range as long as the molbloc is eligible.

Upgrade price does include As Received and As Left data. molbloc serial numbers remain the same after upgrade, but a “+” is added to the molbloc label for each upgraded molbloc. Upgrade price does include standard calibration in the default gas (similar to new molbloc purchase), so in addition to the upgrade price, itemized gas calibrations must be purchased. Each calibration must be redone as new, so new molbloc calibration item numbers and prices are used for upgraded molblocs.

### molbloc-L Upgrade Items

Item Number	Model	Description
3531801	1E1-L V6.0 UPGD	1E1-L V6.0 UPGD,UPGRADE 1E1 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531812	5E1-L V6.0 UPGD	5E1-L V6.0 UPGD,UPGRADE 5E1 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531820	1E2-L V6.0 UPGD	1E2-L V6.0 UPGD,UPGRADE 1E2 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531835	2E2-L V6.0 UPGD	2E2-L V6.0 UPGD,UPGRADE 2E2 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531847	5E2-L V6.0 UPGD	5E2-L V6.0 UPGD,UPGRADE 5E2 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531858	1E3-L V6.0 UPGD	1E3-L V6.0 UPGD,UPGRADE 1E3 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531864	5E3-L V6.0 UPGD	5E3-L V6.0 UPGD,UPGRADE 5E3 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531873	1E4-L V6.0 UPGD	1E4-L V6.0 UPGD,UPGRADE 1E4 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531886	3E4-L V6.0 UPGD	3E4-L V6.0 UPGD,UPGRADE 3E4 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT
3531899	1E5-L V6.0 UPGD	1E5-L V6.0 UPGD,UPGRADE 1E5 LAMINAR molbloc TO molbox1+ VER 6.0 FORMAT

## molbloc-S Upgrade Item

Item Number	Model	Description
3531917	MBLOC-S V6.0 UPGD	MBLOC-S V6.0 UPGD,UPGRADE SONIC molbloc, ANY RANGE, TO molbox1+ VER 6.0 FORMAT

## New molbloc Calibrations, Standard

Item Number	Description
3534271	MOL-L GAS CAL, FULL MOD, LO P, >5E1, STD
3534280	MOL-L GAS CAL, FULL MOD,LO P, 1E1,5E1, STD
3534298	MOL-L N2 CAL, FULL MOD, HI P, STD (1st gas)
3534306	MOL-L N2 CAL, DOWNSTREAM, 1E1, 5E1, STD (1st gas)
3534314	MOL-L N2 CAL, DOWNSTREAM, >5E1, STD (1st gas)
3534323	MOL-L GAS CAL, FULL MOD,HI P, 1E1,5E1, STD
3534338	MOL-L GAS CAL, FULL MOD, HI P, >5E1, STD
3534345	MOL-L GAS CAL, DOWNSTREAM, 1E1, 5E1, STD
3534350	MOL-L GAS CAL, DOWNSTREAM, >5E1, STD
3534377	MOL-L CAL, MICRORANGE DATA, 5E1, STD
3534389	MOL-L CAL, MICRORANGE DATA, >5E1, STD
3534392	MOL-S N2 CAL, SP, REPLACES AIR, STD
3534404	MOL-S N2 CAL, LP, REPLACES AIR, STD
3534419	MOL-S N2 CAL, HP, REPLACES AIR, STD
3534428	MOL-S AIR CAL, LP, REPLACES SP, STD (1st gas)
3534437	MOL-S AIR CAL, HP, REPLACES SP, STD (1st gas)
3534443	MOL-S GAS CAL, SP, STD
3534462	MOL-S GAS CAL, LP, STD
3534470	MOL-S GAS CAL, HP, STD
3534481	MOL-L/MOL-S CAL, ADDITIONAL POINT, STD
3534496	MOL-L CAL, EXTENDED RANGE, STD
3534501	MOL-S AIR CAL, SP, UZAM RPLS NORMAL, STD
3534512	MOL-L/MOL-S CAL, LEGACY FORMAT (PER molbloc)

## New molbloc Calibrations, Premium

Item Number	Description
3534520	MOL-L GAS CAL, FULL MOD, LO P, >5E1, PREM
3534535	MOL-L GAS CAL, FULL MOD, LO P, 1E1, 5E1, PREM
3534547	MOL-L N2 CAL, FULL MOD, LO P, PREM (1st gas)
3534558	MOL-L N2 CAL, FULL MOD, HI P, PREM (1st gas)
3534564	MOL-L N2 CAL, DOWNSTREAM, 1E1, 5E1, PREM (1st gas)
3534573	MOL-L N2 CAL, DOWNSTREAM, >5E1, PREM (1st gas)
3534586	MOL-L GAS CAL, FULL MOD, HI P, 1E1, 5E1, PREM
3534599	MOL-L GAS CAL, FULL MOD, HI P, >5E1, PREM
3534607	MOL-L GAS CAL, DOWNSTREAM, 1E1, 5E1, PREM
3534618	MOL-L GAS CAL, DOWNSTREAM, >5E1, PREM
3534641	MOL-S N2 CAL, SP, REPLACES AIR, PREM
3534652	MOL-S N2 CAL, LP, REPLACES AIR, PREM
3534665	MOL-S N2 CAL, HP, REPLACES AIR, PREM
3534676	MOL-S AIR CAL, SP, PREM (1st gas)
3534683	MOL-S AIR CAL, LP, REPLACES SP, PREM (1st gas)
3534690	MOL-S AIR CAL, HP, REPLACES SP, PREM (1st gas)
3534708	MOL-S GAS CAL, SP, PREM
3534713	MOL-S GAS CAL, LP, PREM
3534724	MOL-S GAS CAL, HP, PREM
3534736	MOL-L/MOL-S CAL, ADDITIONAL POINT, PREM

## molbloc and molbox Compatibility

All new and old molbloc and molbox models are still compatible and interchangeable, with a few software and specification dependencies to note:

- Only new or upgraded molblocs using v6.0 data format are eligible for premium gas calibrations and uncertainty specifications.
- Existing, or legacy, molblocs can be used with molbox1+ without any upgrade. molbox1+ will recognize and use the old data format. Nominal uncertainty specification will be  $\pm 0.2\%$  of reading.
- New or upgraded molblocs can be used with existing molbox1 or molbox RFM models, after the molboxes are flash-upgraded (at no cost via download from [us.flukecal.com](http://us.flukecal.com)) to molbox1 v5.4 or upcoming molbox RFM v1.2 software. These new software versions do not change the old molbox features, but allow the molbox to operate with molblocs that have the new data structure. The nominal uncertainty will be  $\pm 0.2\%$  of reading when molbox1 is used and  $\pm 0.5\%$  when molbox RFM is used.

- If a molbox customer cannot upgrade software to molbox1 v5.4 or molbox RFM v1.2 for some regulatory or other reason, newly purchased molblocs can be configured to operate with legacy molbox software. To order this option, purchase the “legacy format” molbloc calibration option with each molbloc.