

# W A L C H E M

An Iwaki America Company

## EKB11-C36 Series Specifications

### 1.0 Scope

- 1.1 This specification in combination with pump data sheets identifies the minimum requirements for electronic metering pumps.

### 2.0 Reference codes and standards

- 2.1 Pumps shall comply with the latest editions of the following codes and standards:

**UL Standard 778**  
**NEMA 6 (IP67)**  
**Hydraulic Institute Standards**  
**National Electric Code**

### 3.0 Definitions

- 3.1 Electronic metering pump -A positive displacement diaphragm metering pump in which the diaphragm is actuated by an electromagnetic solenoid which is in turn controlled by an electronic circuit.

### 4.0 General

- 4.1 Output volume shall be adjustable while pump is in operation.
- 4.2 Weight of pump as installed shall not exceed 14 pounds.
- 4.3 Pump shall fit within a rectangular volume 10.4" long by 4.8" wide by 10.4" high.

### 5.0 Drive

- 5.1 The pump mechanism shall be totally enclosed with no exposed moving parts.
- 5.2 Electronic control module shall be located opposite the liquid end and protected by a clear cover.
- 5.3 Average power consumption shall not exceed 22 watts under full speed and maximum pressure conditions.
- 5.4 Metering pump shall be capable of pumping a maximum of (q) GPH against a maximum pressure of (p) PSI. (q and p from Table 1)
- 5.5 Stroke length shall be adjustable from 20% to 100% by means of a readily accessible knob.
- 5.6 Control of pump speed shall be selectable between manual and external.
- 5.7 In manual mode, pump speed shall be adjustable from 1 to 360 strokes per minute by means of a readily accessible keypad with digital display.

5.8 Pump shall include an external stop input that can be set to stop the pump from a normally open or normally closed contact.

5.9 In external mode, the pump shall respond to a pulse signal from external equipment such that pulse produces one pump stroke.

## 6.0 Materials of construction

6.1 Pump housing shall be of chemically resistant PPE.

6.2 All exposed fasteners shall be stainless steel.

6.3 Liquid end materials shall be as shown in Table 2.

## 7.0 Shop tests

7.1 All pumps shall pass manufacturer's standard performance test.

**Table 1 Capacity/Pressure Rating**

| Size             | Maximum Output Capacity (q) |        | Output per Stroke (mL) |      | Maximum Pressure (p) |      | Connection Size Tubing O.D. <sup>1</sup> |
|------------------|-----------------------------|--------|------------------------|------|----------------------|------|--|
|                  | Gal/hr                      | mL/min | Min                    | Max  | PSI                  | MPa  | in                                       |
| B11              | 0.6                         | 38     | 0.021                  | 0.11 | 150                  | 1.0  | 3/8                                      |
| B16              | 1.0                         | 65     | 0.035                  | 0.18 | 105                  | 0.7  | 3/8                                      |
| B21              | 1.8                         | 115    | 0.063                  | 0.32 | 60                   | 0.4  | 3/8                                      |
| B31              | 3.3                         | 210    | 0.116                  | 0.58 | 30                   | 0.2  | 1/2                                      |
| C16              | 1.3                         | 80     | 0.046                  | 0.22 | 150                  | 1.0  | 3/8                                      |
| C21              | 2.3                         | 145    | 0.081                  | 0.40 | 105                  | 0.7  | 3/8                                      |
| C30              | 4.3                         | 270    | 0.151                  | 0.75 | 50                   | 0.35 | 1/2                                      |
| C36 <sup>2</sup> | 6.7                         | 420    | 0.235                  | 1.17 | 30                   | 0.2  | 1/2                                      |

1. ½" NPT female for 316SS

2. Output of the EKC36-TC/FC/SH is 6.3 Gal/hr (400 mL/min)

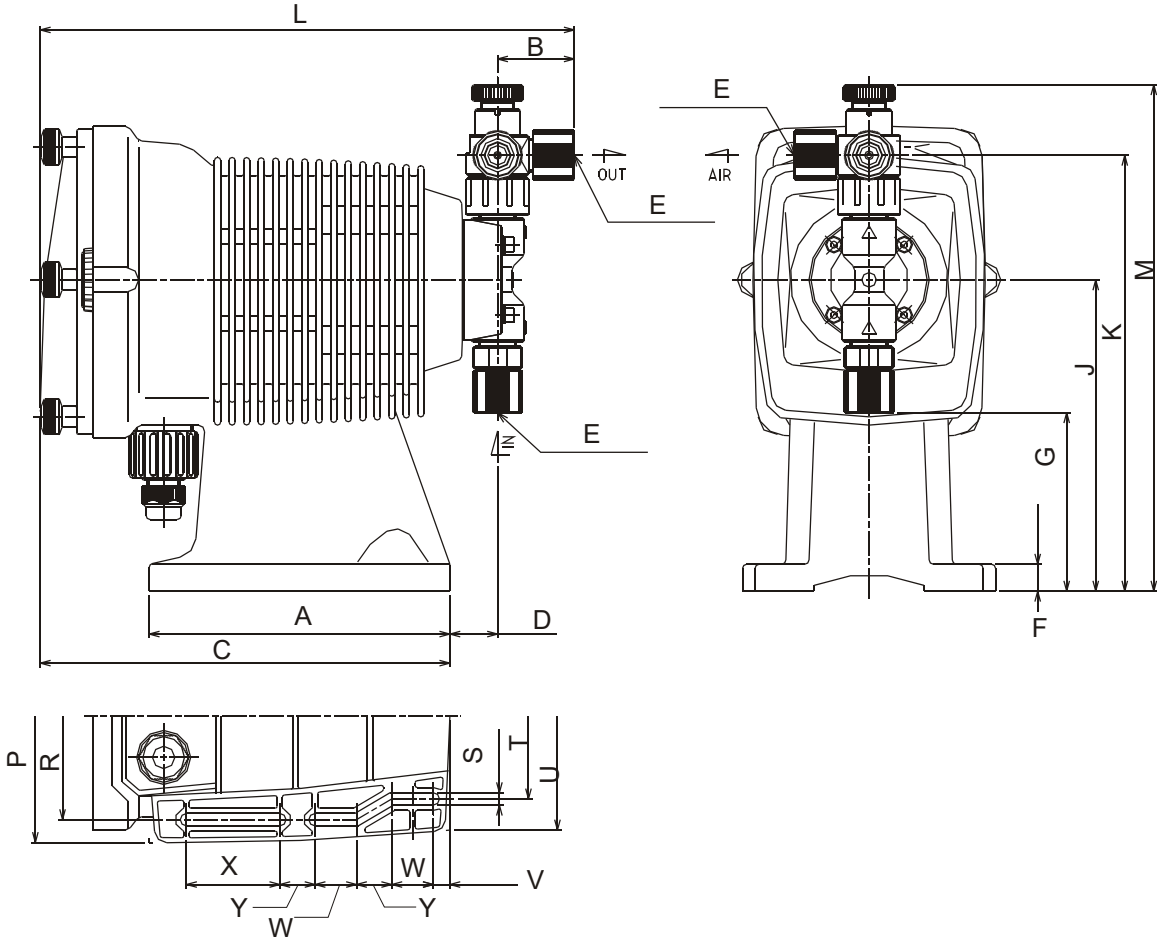
**Table 2 Materials of Construction**

| Liquid End | Pump Head & Fittings | Diaphragm           | Valve Balls | Valve Seat | Valve Seals | Gasket | Tubing |
|------------|----------------------|---------------------|-------------|------------|-------------|--------|--------|
| FC         | PVDF                 | PTFE bonded to EPDM | CE          | PCTFE      | PTFE        | PTFE   | PE     |
| PC         | GFRPP                |                     | CE          | FKM        | FKM         |        |        |
| PE         | GFRPP                |                     | CE          | EPDM       | EPDM        |        |        |
| VC (A)     | PVC                  |                     | CE          | FKM        | FKM         |        |        |
| VE         | PVC                  |                     | CE          | EPDM       | EPDM        |        |        |
| VF         | PVC                  |                     | PTFE        | EPDM       | EPDM        |        |        |
| SH         | SS                   |                     | HC          | HC         | PTFE        |        |        |
| TC         | PVDF                 |                     | CE          | FKM        | FKM         |        | PE     |

CE Alumina ceramic  
 FKM Fluoroelastomer  
 HC Hastelloy C276  
 PE Polyethylene  
 PVC Polyvinylchloride (translucent)  
 SS 316 stainless steel

EPDM Ethylene propylene diene monomer  
 GFRPP Glass fiber reinforced polypropylene  
 PCTFE Polychlorotrifluoroethylene  
 PTFE Polytetrafluoroethylene  
 PVDF Polyvinylidene fluoride

## Dimensions



### Dimensions (inches)

| EK MODEL | A    | B                 | C    | D    | E Ø       | F    | G    | J    | K                 | L                  | M                 |
|----------|------|-------------------|------|------|-----------|------|------|------|-------------------|--------------------|-------------------|
| 11,16,21 | 5.71 | 1.46 <sup>1</sup> | 7.78 | 0.91 | 1/4 x 3/8 | 0.51 | 3.39 | 5.91 | 8.72 <sup>2</sup> | 10.14 <sup>1</sup> | 9.61 <sup>3</sup> |
| 31, 36   | 5.71 | 1.50              | 7.78 | 1.06 | 3/8 x 1/2 | 0.51 | 2.68 | 5.91 | 9.14              | 10.33              | 10.40             |

Notes for EK11,16, 21:

Addition of a Multifunction Valve increases overall length by 0.37". Addition of an Auto Air Vent Valve increases overall length by 1.59".

Addition of a Multifunction Valve increases discharge height by 0.22". No change for the Auto Air Vent Valve. Addition of a Multifunction Valve increases overall liquid end height by 1.16". No change for the Auto Air Vent Valve.

### Mounting Dimensions (inches)

| EK Model | P    | R    | S    | T    | U    | V    | W    | X    | Y    |
|----------|------|------|------|------|------|------|------|------|------|
| 11,16,21 | 4.80 | 3.94 | 0.24 | 3.15 | 4.33 | 0.31 | 0.79 | 1.77 | 0.67 |
| 31, 36   | 4.80 | 3.94 | 0.24 | 3.15 | 4.33 | 0.31 | 0.79 | 1.77 | 0.67 |

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