
W A L C H E M

An Iwaki America Company

LK Series Specifications

1.0 Scope

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

2.0 Definitions

- 2.1 Mechanically Actuated Diaphragm Pump - a positive displacement diaphragm-metering pump in which there is a direct coupling mechanism between the diaphragm and the motor.

3.0 General

- 3.1 Output volume shall be adjustable while pump is in operation.
- 3.2 Weight of pump as installed shall not exceed 63 pounds.
- 3.3 Pump shall fit within a rectangular volume 17" long by 9" wide by 21" high.

4.0 Drive

- 4.1 The mechanically actuated diaphragm metering pump mechanism shall be totally enclosed with no exposed moving parts.
- 4.2 The pump drive shall utilize a lost motion design. The rotation of the motor shall be reduced by means of a worm and wheel. The rotation shall be converted to a reciprocating motion by means of a dual cam, and a spring back mechanism including the worm wheel, shaft, slider, and spring.
- 4.3 The pump drive shall be oil-bath lubricated
- 4.4 The diaphragm shall be mechanically connected to the pump drive. There shall be no hydraulic oil backing of the diaphragm to ensure there is no contamination of the process fluid in the event of a diaphragm failure.
- 4.5 Pump drive shall be by 1/3 HP, NEMA 42C electric motor.
- 4.6 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)
- 4.7 Stroke length shall be adjustable from 10% to 100% by means of a micrometer dial.
- 4.8 An optional DC drive shall provide for external control by a 4-20mA input signal. The control shall be NEMA 4X and shall include a manual/external switch.

5.0 Materials of construction

- 5.1 Pump housing shall be epoxy painted aluminum.
- 5.2 All exposed fasteners shall be stainless steel.
- 5.3 Liquid end materials shall be as shown in Table 2.

6.0 Shop tests

- 6.1 All pumps shall pass manufacturer's standard performance test.

Table 1 Capacity/Pressure Rating

Model	Capacity		Maximum Pressure PSI (MPa)		Stroke speed (spm)		Connection NPT		Max Viscosity cps
	50Hz (l/h)	60Hz (GPH)	PVC/PVDF	SS	50Hz	60Hz	PVC/PVDF	SS	
LKN32	30	9.5	150 (1)	225 (1.5)	96	116	1/2"	1/2"	VC: 300 TC: 300 VH: 500 VS: 1000 S6: 1000
LKN45	50	15.9	150 (1)	225 (1.5)	48	58	1/2"	1/2"	
LKN47	100	31.8	120 (0.8)	120 (0.8)	96	116	1/2" *	1/2"	
LKN55	168	53.4	75 (0.5)	75 (0.5)	48	58	1"	1"	
LKN57	360	114.3	45 (0.3)	45 (0.3)	96	116	1"	1"	

* LKN47-VS has 1" NPT connections

Table 2 Materials of Construction

Material symbol		VC	VH	VS	TC	S6	
Part	Pump head	PVC	PVC	PVC	PVDF	SS316	
	Valve ball	CE	HC	HC/SS304	CE	HC	
	Valve seat	Type 32	FKM	EPDM	SS304	FKM	SS316
		Type 45 to 57	PVC	PVC	SS304	PVDF	SS316
	O ring	FKM	EPDM	EPDM	FKM	-	
	Valve gasket	PTFE					
	Diaphragm	PTFE + EPDM					

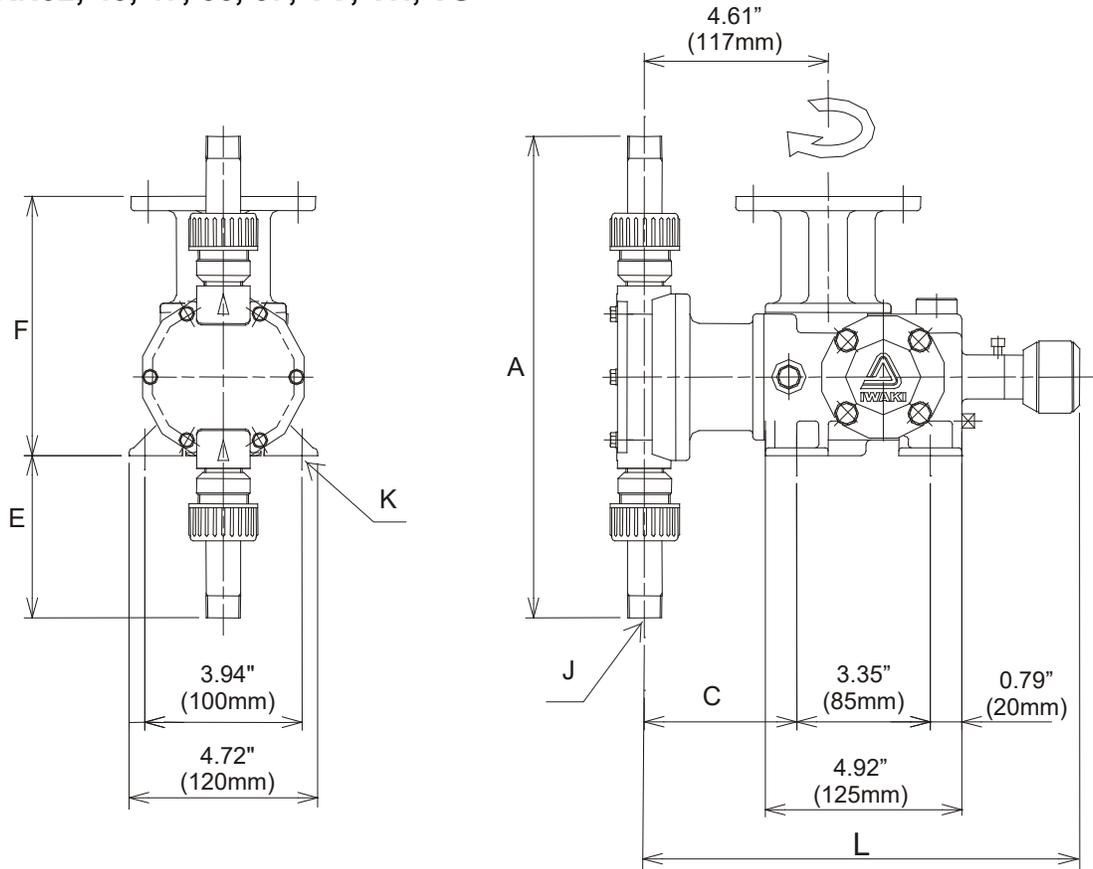
CE Alumina ceramic
 FKM Fluoroelastomer
 PCTFE Polychlorotrifluoroethylene
 PVDF Polyvinylidene fluoride

EPDM Ethylene propylene diene monomer
 HC Hastelloy C276
 PVC Polyvinylchloride
 SS316 316 stainless steel

DIMENSIONS

Outer dimensions

■ LKN32, 45, 47, 55, 57, VC, VH, VS

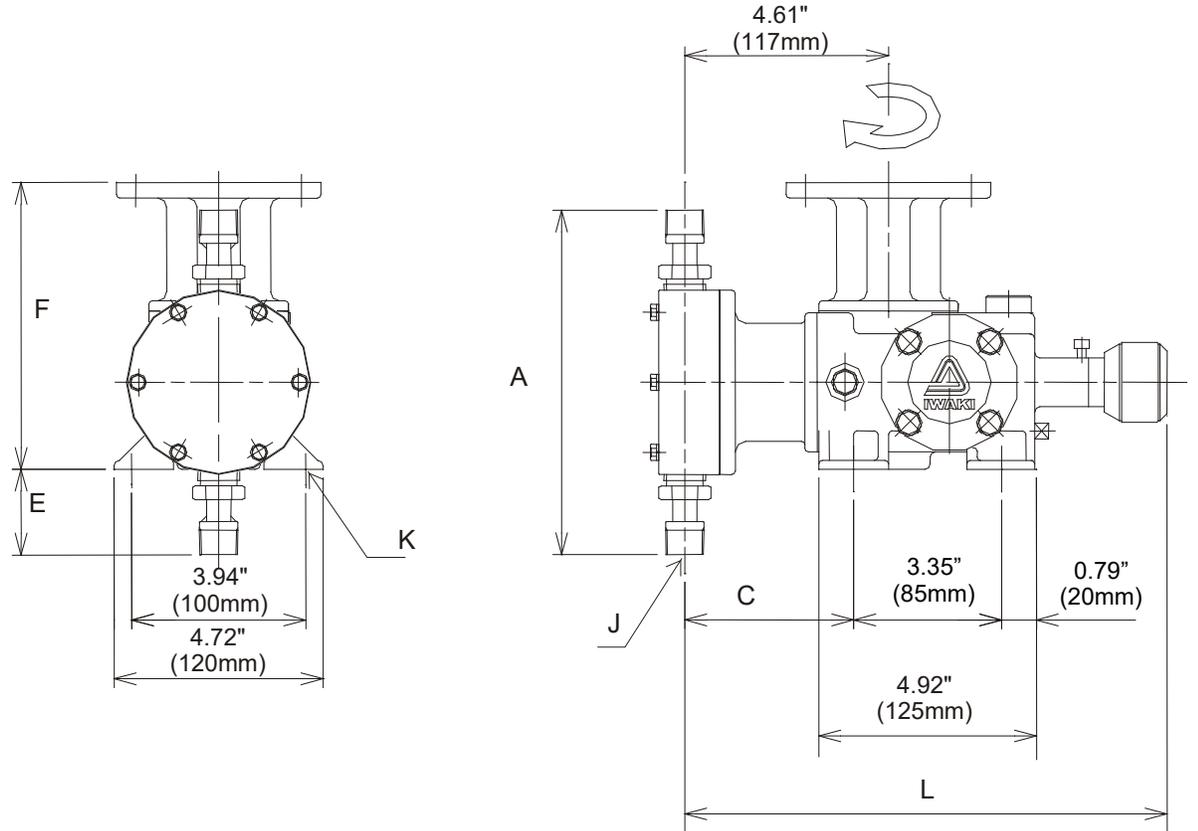


Dimensions in inches (mm)

Model	L	A	C	E	F	J	K
LKN32, VC, VH, VS	14.41 (366)	13.78 (350)	7.32 (186)	4.92 (125)	4.84 (123)	½" NPT	4 x ø0.35" (ø9)
LKN45, 47, VC, VH, VS	14.57 (370)	14.57 (370)	7.40 (188)	5.31 (135)			
LKN47VS	14.88 (378)	8.19 (208)	7.72 (196)	4.09 (104)		1" NPT	
LKN55, 57, VC, VH, VS	15.55 (395)	14.57 (370)	8.31 (211)	4.92 (125)			

Outer Dimensions

■ LKN32, 45, 47, 55, 57, S6

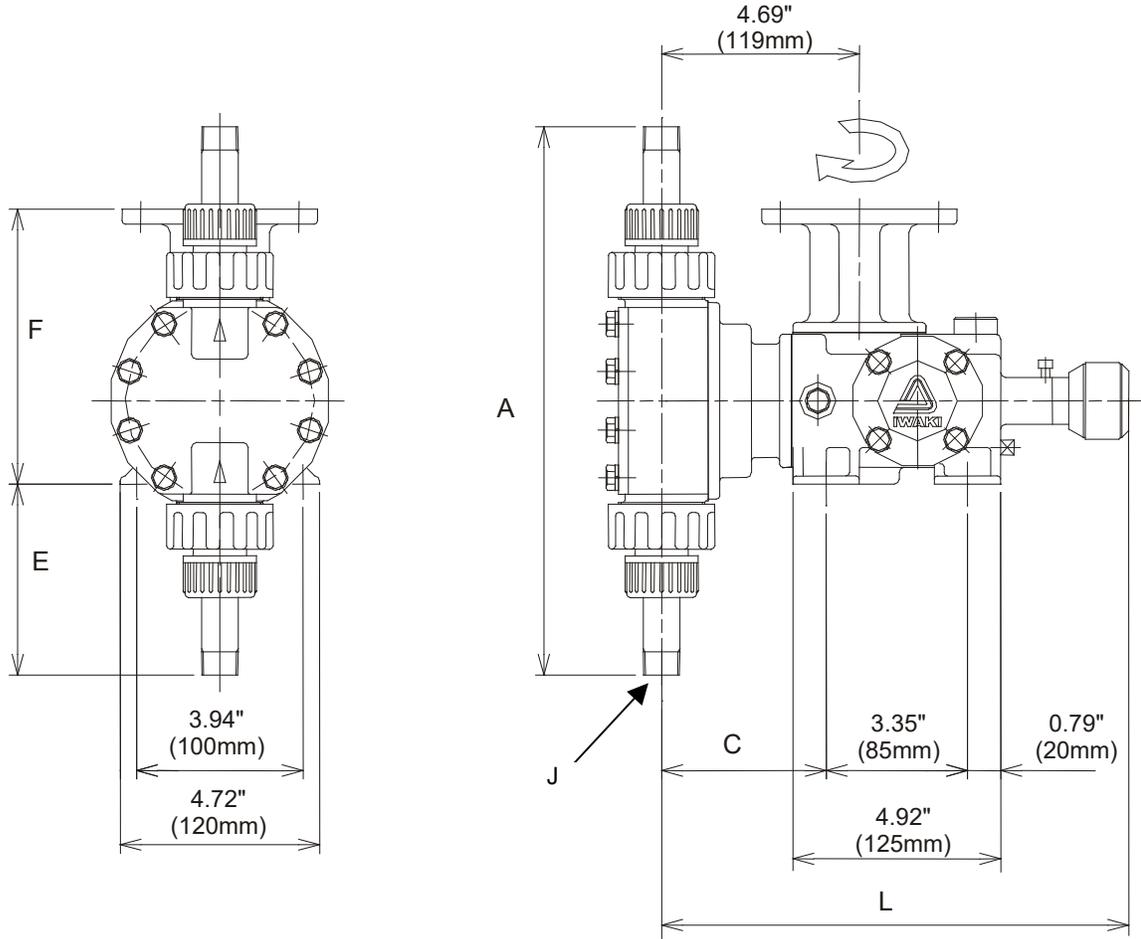


Dimensions in inches (mm)

Model	L	A	C	D	E	F	J	K
LKN32, S6	13.27 (337)	4.29 (109)	3.62 (92)	2.36 (60)	1.65 (42)	4.84 (123mm)	½" NPT	4 x ø0.35" (ø9)
LKN45, 47, S6	13.50 (343)	5.51 (140)	5.12 (130)	2.36 (60)	3.15 (80)			
LKN55, 57, S6	15.71 (399)	8.19 (208)	6.30 (160)	4.09 (104)	4.33 (110)		1" NPT	

Outer Dimensions

■ LKN32, 45, 47, 55, 57, TC



Model	L	A	C	D	E	F	J	K
LKN32, TC	13.27 (337)	4.29 (109)	3.62 (92)	2.36 (60)	1.65 (42)	4.84 (123mm)	½" NPT	4 x ø0.35" (ø9)
LKN45, 47, TC	13.50 (343)	5.51 (140)	5.12 (130)	2.36 (60)	3.15 (80)			
LKN55, 57, TC	15.71 (399)	8.19 (208)	6.30 (160)	4.09 (104)	4.33 (110)		1" NPT	