



# SERIES 'ECI' METAL VERTICAL PUMPS & 'ESS' METAL VERTICAL PUMPS



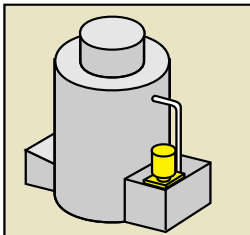
## HIGH EFFICIENCY AND LOW ENERGY USAGE FOR:

**ACIDS  
WET PROCESSING SOLUTIONS  
FUME SCRUBBERS  
CLEANING SOLUTIONS**

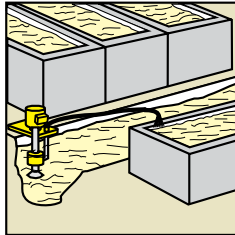
- **Flows to 180 U. S. GPM or 90 ft. TDH @ 60 Hz**  
(565 LPM or 19.5m @ 50 Hz)
- **Standard column length is 13"**  
Available in 20", 32" and 44" lengths
- **Available in cast iron or all 316 stainless steel solution contact**
- **Available in two sizes -**  
1 1/4" x 1" and 2" x 1 1/2" NPT
- **Motors are standard NEMA 'C' face**  
(.75 - 5.0 HP)
- **Centrifugal — quiet, vibration-free**
- **Shaft vapor seal protects motor bearings and atmosphere**

The Series 'ECI' and 'ESS' vertical pumps feature a high efficiency semi-open impeller, cast construction for superior strength and corrosion resistance, and a cantilevered 316 stainless steel shaft guided by a graphite or Rulon® bushing. This same bushing design and unique column assembly allows for reliable operation with columns up to 44".

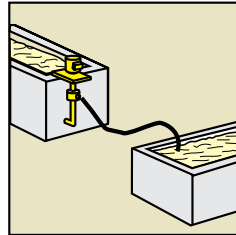
The bushing is lubricated by the product being pumped, thus no external flushing liquid is required. However, since the bushing is being product flushed, these pumps must be used inside the tank. The optional heavy duty mounting plate uses a clamp arrangement which allows it to be positioned anywhere along the length of the pump column. The optional discharge pipe then fits through the mounting plate for easy drop-in installation.



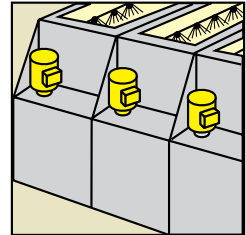
FUME SCRUBBING



SUMP DRAINING



CHEMICAL TRANSFERRING



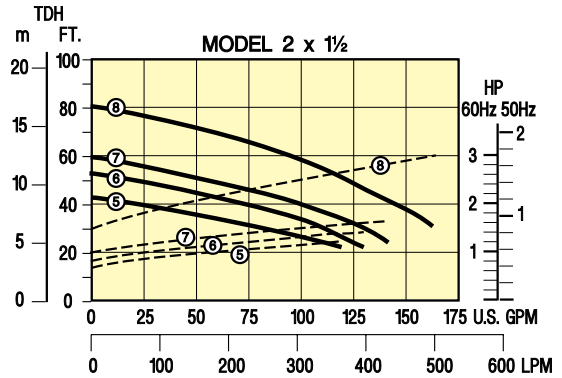
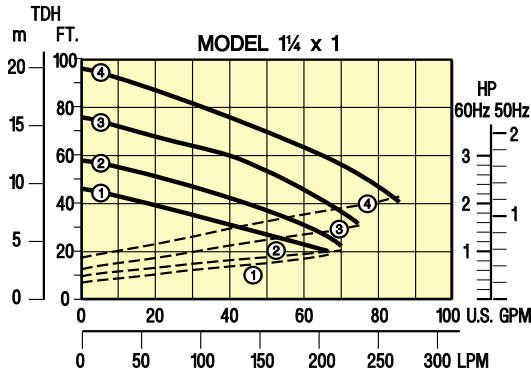
PCB WET PROCESSING or CLEANING SOLUTIONS



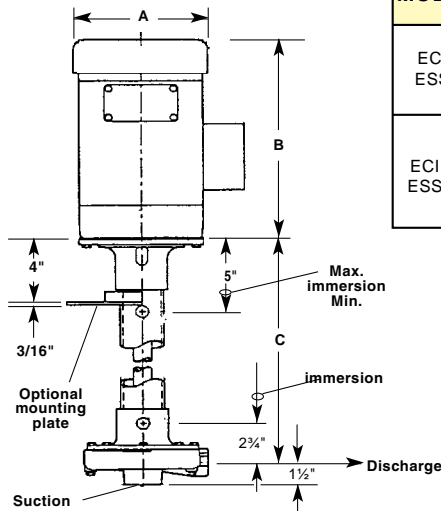
# SERIES 'ECI' Performance and Dimensions and SERIES 'ESS' Performance and Dimensions

Pumps are constructed of 316 stainless steel throughout for maximum corrosion resistance. Gasket is a synthetic fiber with cast iron, Teflon® with 316 SS, shaft vapor seal is Vitor®. Shaft is available in four lengths to 44". Graphite or Rulon® shaft bushing provides vibration-free service and is located directly above the semi-enclosed high efficiency impeller, therefore, it is product flushed.

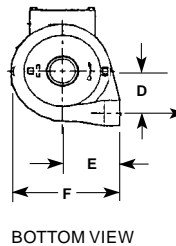
Optional mounting plate can be clamped and tightened at any given point on the pump column, which allows the pump to be set at the desired depth. Motors are 3450 RPM @ 60 Hz or 2850 @ 50 Hz, TEFC or EXP, painted with two-part epoxy paint. Single phase TEFC motors include 8 ft. (2.4m) line cord.



## DIMENSIONS



MODEL	HP	SUC. DISCH.		DIMENSIONS Inches						WEIGHT Lbs.(kg.)	
		NPT (In.)		A	B	C	D	E	F		
ECI1 ESS1	3/4	1-1/4	1	6-1/8	9-1/4	13	2-3/4	3-1/2	6-5/8	59 (27)	
	1			6-1/8	9-3/4	20					63 (28)
	2			7-1/4	10-1/2	32					69 (31)
ECI1 1/2 ESS1 1/2	1	2	1-1/2	6-1/8	9-3/4	13	3-1/8	3-3/4	7-7/8	63 (28)	
	1-1/2			7-1/4	10-1/2	20					80 (36)
	2			7-1/4	11-1/8	32					85 (38)
	3			7-1/4	12-3/8	44					88 (40)
	5			8-1/2	13-5/8	-					-





**TO ORDER**

**TABLE I**

Select 13" long pump-motor model from flow curve number providing the desired performance. Motor HP is non-overloading at full flow, for 1.0 specific gravity and 60 Hz operation. Graphite bushing.

ESS1 PUMP - MOTOR (230/460/3/50-60) 13" 'C' length		
FLOW CURVE NO.	MODEL NUMBER	PRICE CODE NO.
1	ESS1-1-13"C-G-D1.0	61-1011E
2	ESS1-2-13"C-G-D1.5	61-2011F
3	ESS1-3-13"C-G-D2.0	61-3011G
4	ESS1-4-13"C-G-D3.0	61-4011H
ESS1½ PUMP - MOTOR (230/460/3/50-60) 13" 'C' length		
5	ESS1½-5-13"C-G-D1.5	62-5011F
6	ESS1½-6-13"C-G-D2.0	62-6011G
7	ESS1½-7-13"C-G-D3.0	62-7011H
8	ESS1½-8-13"C-G-D5.0	62-8011J

**TABLE II**

Determine pump-motor model for a specified GPM, TDH, length, bushing and specific gravity. Select performance point on curve and size HP from corresponding number dotted line vertically above or below performance point. Read required HP at right ordinate and multiply by specific gravity. Select pump model components and Price Code Numbers from Table II.

PUMP		IMPELLER			LENGTH		
MODEL	PRICE CODE NO.	FLOW CURVE NO.	ADD TO ...		C DIM.	ADD TO ...	
			MODEL	PRICE CODE NO.		MODEL	PRICE CODE NO.
ECI1	61-	1	1	1	13"	13°C	01
ESS1		2	2	2	20"	20°C	02
ECI1½		3	3	3	32"	32°C	03
ESS1½		4	4	4	44"	44°C	04
	62-	5	5	5			
		6	6	6			
		7	7	7			
		8	8	8			

**MATERIAL**

PUMP	BUSHING	ADD TO ...	
		MODEL	PRICE CODE NO.
ESS 316SS	Graphite	G	1
	Rulon	R	2
ECI CI	Graphite	G	3
	Rulon	R	4
	None <sup>1</sup>	—	5

**TEFC MOTOR<sup>2</sup> (3450 or 2850)**

HP	SINGLE PHASE <sup>3</sup>		THREE PHASE <sup>3</sup>	
	ADD TO ...		ADD TO ...	
	MODEL	PRICE CODE NO.	MODEL	PRICE CODE NO.
.75	C.75	A	D.75	D
1	C1.0	B	D1.0	E
1.5	C1.5	C	D1.5	F
2.0	—	—	D2.0	G
3.0	—	—	D3.0	H
5.0	—	—	D5.0	J

<sup>1</sup> Standard 13" CI pump does not have a bushing

<sup>2</sup> For explosion-proof motors (UL and CSA approved for Class I, Group D or Class II, Groups F & G.), add X to Model No. and Price Code No. EXP motors are 60 Hz only.

<sup>3</sup> Single phase - 115-208-230V/1/60 or 220-440V/1/50  
Three phase - 208-230-460V/3/60 or 380-415V/3/50

**OPTIONAL EQUIPMENT**

DESCRIPTION	ADD SUFFIX to MODEL NO.	USE SEPARATE PRICE CODE NO.
Mtg. plate (12"x12" w/hole for disch. pipe assy.) Steel 304 stn. steel	-MP	61-1000 61-2000
Discharge pipe assy.	1" NPT for ESS1	-DPA1
	1½" NPT for ESS1½	-DPA1½
	1" NPT for ECI1	-DPA1
	1½" NPT for ECI1½	-DPA1½
		61-1001 61-1002 61-1003 61-1004