



SERIES 'FES' SELF-PRIMING MAGNETIC COUPLED PUMPS

97

P-519

VERSATILE-ECONOMICAL

WASTES / ACIDS
CHEMICALS / PLATING
PHOTOGRAPHIC ETCHING



- **Flows to 120 GPM or 90 ft. TDH @ 60 Hz**
(330 LPM or 23.5 m @ 50 Hz)
- **Non-metallic solution contact**
Glass reinforced polypropylene or
carbon reinforced PVDF
(See a chemical resistance chart)
- **Deep-lift capability**
up to 25 feet / 7.6 meters
- **Fast priming**
18 feet / 4.6 meters in 90 sec.
- **Capable of running dry without damage**
- **Powerful rare earth magnets**
Provide sure coupling to 1.8 S.G.
- **Accepts standard motors NEMA or IEC metric**

4

Series 'FES' self-priming magnetic coupled pumps are seal-less and "leak-proof" providing total solution containment. They are available in a choice of two different corrosion resistant materials for a wide range of chemical and temperature compatibility and are ideal for handling even the most difficult applications.

The outstanding self-priming feature of the Series 'FES' combines deep-lift capabilities (up to 25 feet / 7.6 meters) and lightning-fast priming (18 feet / 4.6 meters in 90 seconds). The priming chamber's gooseneck design eliminates the need for internal check valves while ensuring that enough liquid is retained for efficient re-priming.

These pumps utilize powerful rare earth, neodymium, magnets which allow them to operate at full flow with a full size impeller while handling liquids over 1.8 specific gravity.

Additionally the Series 'FES' is capable of running dry without damage when equipped with the standard carbon bushing and under optimum operating conditions. This helps protect the pump from operator errors and system upsets.

Their innovative and highly efficient design, and low energy consumption make these pumps one of the most versatile and economical centrifugal pumps on the market.

APPLICATIONS

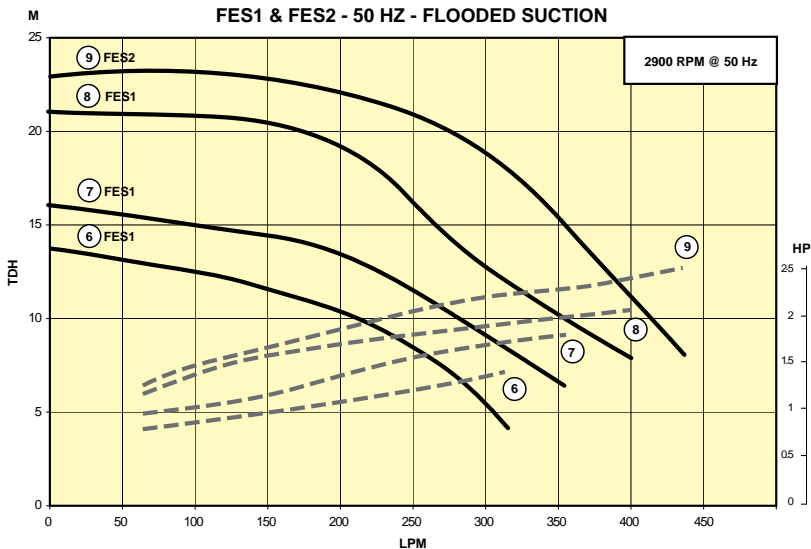
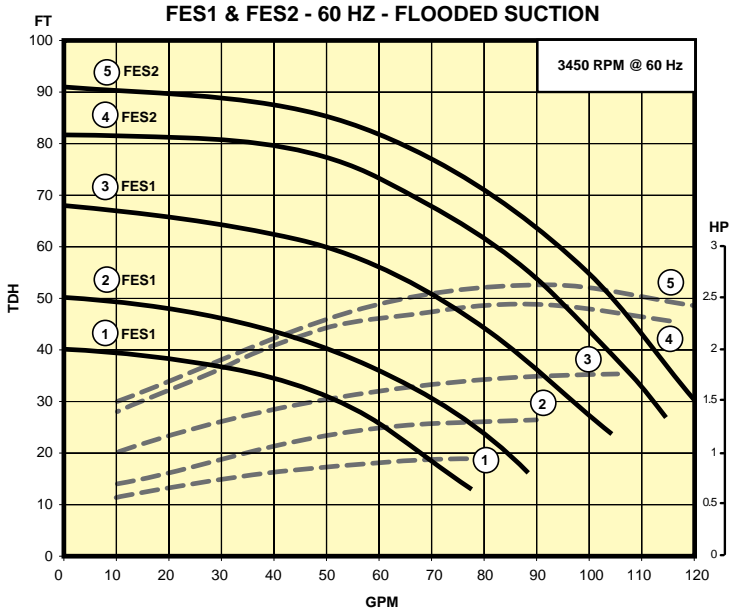
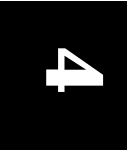
- Over-the-side pumping for filtration and agitation
- Pump from sumps or pits for waste treatment
- Transfer from rail cars, tanker trucks, or bulk storage
- Systems with entrained air or where dry run protection is required



Standard models are constructed of glass-fiber reinforced polypropylene or carbon-fiber reinforced PVDF for suction casing, separator plate, inner volute, magnet liner and impeller. Impeller magnets are encapsulated in unfilled polypropylene or unfilled PVDF. The front and rear thrust rings and shaft are high purity, fluoride resistant alumina ceramic. The impeller thrust ring is molybdenum disulfide

filled PTFE. The casing 'O' ring is Viton. Maximum pump pressure; 90 PSI (6.2 bar).

Motors are continuous-duty, painted with two-part gray epoxy enamel and have a 1.5 service factor. Single phase motors are supplied with 8 ft. (2.4 m) of 3-wire cord and plug. Three phase motors are not supplied with cord.





TO ORDER, use Price Code Number

For standard 60 HZ pump-motor combination, select model from TABLE I

For custom pump-motor combination, select from components in TABLE II

TABLE I

Select pump-motor model or flow curve number providing the desired performance

MODEL FES1

FLOW CURVE	POLYPROPYLENE PUMP / MOTOR		PVDF PUMP / MOTOR		* Motor HP shown will handle full flow to a S.G. of:
	MODEL NUMBER	PRICE CODE NUMBER	MODEL NUMBER	PRICE CODE NUMBER	
1	FES1MPVGC 1A-D1.0	51-0611G	FES1MKVGC 1A-D1.0	51-0711G	1.11
2	FES1MPVGC 2A-D1.5	51-0621J	FES1MKVGC 2A-D1.5	51-0721J	1.15
3	FES1MPVGC 3B-D2.0	51-0632K	FES1MKVGC 3B-D2.0	51-0732K	1.11

MODEL FES2

4	FES2MPVGC 4C-D3.0	51-0843L	FES2MKVGC 4C-D3.0	51-0943L	1.28
5	FES2MPVGC 5C-D3.0	51-0853L	FES2MKVGC 5C-D3.0	51-0953L	1.13

* For higher specific gravity or reduced flow, refer to HP required. Then refer to Table II and construct Model and Price Code Number accordingly

TABLE II

To determine pump-motor for a specific flow, TDH, and/or specific gravity, select flow / pressure point on performance curve (solid line). Required HP is determined by moving vertically to corresponding HP

curve (dotted line) and then horizontally to HP scale. Multiply indicated HP by specific gravity of fluid to be pumped. Select pump materials and construct Model and Price Code.

EXAMPLE: PUMP + IMPELLER + MAGNET/FRAME + MOTOR = PRICE CODE NO.
 FES1MPVGC + 3 + B + D2.0 = 51-0632K

PUMP¹

MODEL NUMBER	PCN
FES1 MPVGC Polypropylene	51-06
FES1 MKVGC PVDF	51-07
FES2 MPVGC Polypropylene	51-08
FES2 MKVGC PVDF	51-09

IMPELLER

	MODEL	FLOW CURVE	ADD TO	
			MODEL	PCN
60 HZ	FES1	1	1	1
		2	2	2
		3	3	3
		4	4	4
50 HZ	FES1	5	5	5
		6	6	6
		7	7	7
		8	8	8
		9	9	9

¹ For pump only, eliminate motor suffix from price code number.

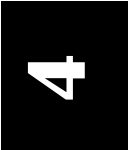
² single phase —
 115-208-230V/1/60 or
 110-220V/1/50
 Three phase —
 208-230-460V/3/60 or
 220-380V/3/50

MAGNET SET / FRAME SIZE

MOTOR²

	HP/KW	MAGNET SET	FRAME SIZE	ADD TO		SINGLE PHASE		THREE PHASE	
				MODEL	PCN	MODEL	PCN	MODEL	PCN
60 HZ	1.0	6 POLE	56C	A	1	-C1.0	C	-D1.0	G
	1.5	6 POLE	56C	A	1	-C1.5	D	-D1.5	J
	2.0	6 POLE	143/5 TC	B	2	—	—	-D2.0	K
	3.0	8 POLE	143/5 TC	C	3	—	—	-D3.0	L
	5.0	10 POLE	182/4 TC	D	4	—	—	-D5.0	P

50 HZ	1.0	6 POLE	56C	A	1	C1.0-50	A	-D1.0-50	D
	1.5	6 POLE	56C	A	1	C1.5-50	C	—	—
	1.5	6 POLE	143/5 TC	B	2	—	—	-D1.5-50	E
	2.0	6 POLE	143/5 TC	B	2	—	—	-D2.0-50	G
	3.0	8 POLE	182/4 TC	E	5	—	—	-D3.0-50	J
	5.0	10 POLE	182/4 TC	H	7	—	—	-D5.0-50	K
	1.0/.75	6 POLE	80 FR	C	3	—	—	-DM.75	L
	1.5/1.1	6 POLE	80 FR	C	3	—	—	-DM1.1	P
	2.0/1.5	6 POLE	90 FR	D	4	—	—	-DM1.5	Q
	3.0/2.2	8 POLE	90 FR	F	6	—	—	-DM2.2	U
	4.0/3.0	10 POLE	100 FR	J	8	—	—	-DM3.2	V
	5.5/4.0	10 POLE	112 FR	M	9	—	—	-DM4.2	W





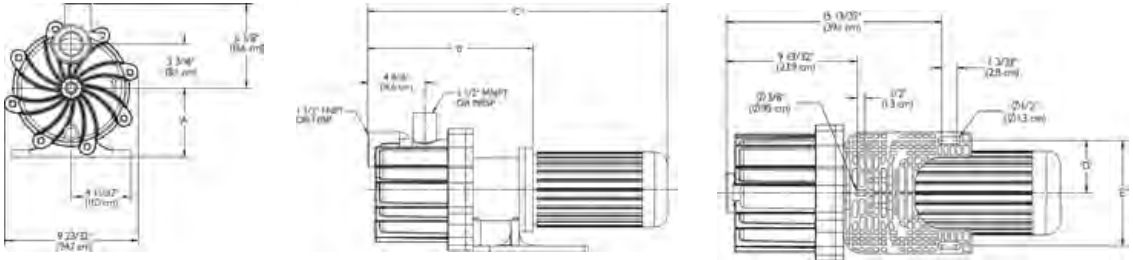
OPTIONAL, use Price Code Number

DESCRIPTION	ADD OR CHANGE MODEL	ADD TO PCN
O-RING: (Change V in Model) EPDM	-L	1
Bushing: (Change C in Model) Teflon Alumina Ceramic	-T -R	T R
CONNECTIONS: BSP Threads Union Flange	-B -U -F	B U F

DESCRIPTION	ADD OR CHANGE MODEL	ADD TO PCN
SPECIALS: SiC (bushing, thrust ring, shaft) Hastelloy shaft Titanium hardware Non-Sparking ring	-S -H -M -N	S H M N

4

DIMENSIONS — IN (MM)



Also available 1-1/2" x 1-1/2" 150 lb. ANSI-ISO PN20/PN40 flange or 50 mm x 50 mm union connection

MOTOR FRAME	A	B	C†	D	E	Weight - lbs (kg)	
						PP	PVDF
NEMA 56C	5" (12.7 cm)	12-9/16" (31.9 cm)	24-9/16" (62.4 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25 (11.3)	30 (13.6)
NEMA 145	5" (12.7 cm)	12-9/16" (31.9 cm)	23-5/16" (59.2 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25 (11.3)	30 (13.6)
NEMA 184	5" (12.7 cm)	13-7/16" (31.4 cm)	25-11/16" (66.6 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	26 (11.8)	31 (14.1)
IEC 80 w/B14 or B5*	5" (12.7 cm)	13-3/16" (33.5 cm)	23-23/32" (60.2 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.5 (11.6)	30.5 (13.8)
IEC 90 w/B14 or B5*	5" (12.7 cm)	13-3/16" (33.5 cm)	23-7/8" (60.6 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.5 (11.6)	30.5 (13.8)
IEC 100 w/B14	5" (12.7 cm)	13-1/4" (33.7 cm)	25-13/32" (64.5 cm)	3-5/32" (8.0 cm)	6-10/32" (16.0 cm)	25.5 (11.6)	30.5 (13.8)
IEC 112 w/B14	5" (12.7 cm)	13-1/4" (33.7 cm)	25-29/32" (65.8 cm)	3-3/4" (9.5 cm)	7-1/2" (19.1 cm)	25.5 (11.6)	30.5 (13.8)

NOTE Contact factory for dimensions on flanged or union models. †Varies with motor manufacturer.

* Doesn't include motor weight. ** For B5 weight, add 3 lbs. to 80/90 B14 frame weight and 6 lbs. to 100/112 B14 weight.