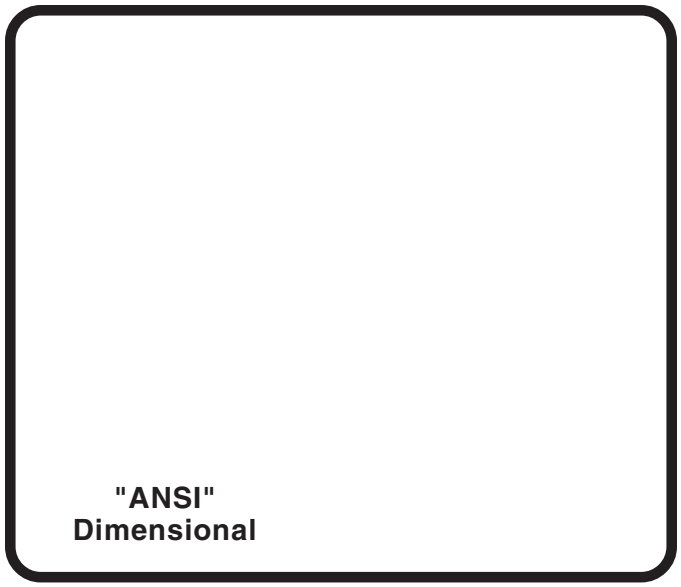
BULLETIN
P-506A
NOV. 1993

SERFILCO®

SERIES 'R' MAGNETIC-COUPLED PUMPS

THE ULTIMATE IN PUMP RELIABILITY

SCORES OF APPLICATIONS: ACIDS / ALKALIES / SOLVENTS



Made in U. S. A.

- **Non-metallic solution contact chemical process pump designed for continuous, emission-free service**
- **Magnetic-coupling for completely safe, leak-free pumping.**
  - Silicon carbide shaft and thrust ring standard
  - Fluoroplastic lined
  - Durable ductile iron exterior
  - Strong, one-piece enclosed impeller
- **ANSI-dimensional for quick replacement of existing pumps**
- **Back pull-out design**
- **Flows to 700 U.S. GPM or 180' TDH @ 60 Hz (1833 LPM or 37 M @ 50 Hz)**
- **Temperatures to 250°F (121°C)**
- **ISO 2858 design available**

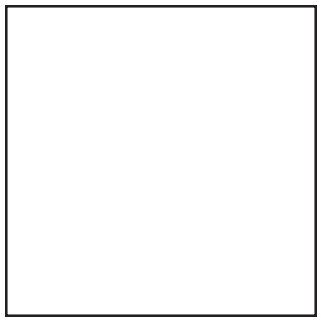
SERFILCO Series 'R' process pumps are designed to provide durability and long emission-free service. These pumps are ANSI-dimensional for quick, easy replacement of existing pumps. All wetted surfaces are non-metallic to give superior chemical resistance. Pumps include ¼" NPT liquid sensor port in secondary containment bracket.

Casing is made from ductile iron for strength and rotomolded with an ETFE liner for a smooth, continuous lining that is impossible to peel. The standard material for the shaft and thrust ring is silicon carbide for maximum chemical resistance, strength and resistance to heat shock.

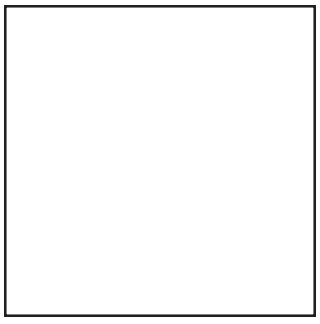
A unique feature is the non-metallic construction of the rear containment shell. This prevents any heat from being developed due to eddy currents usually formed by the rotating magnets. This allows the pumping of heat sensitive liquids as well as the ability to operate near shut-off.

Because many of the parts are common between the three sizes, inventory is drastically reduced. Multiple high power rare earth magnetic drives eliminate oversizing of motors.

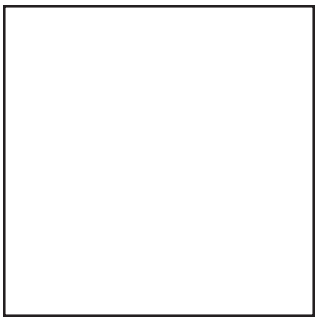
Optional **Dry Run Protector** monitors motor power to protect against dry-run or "dead heading".



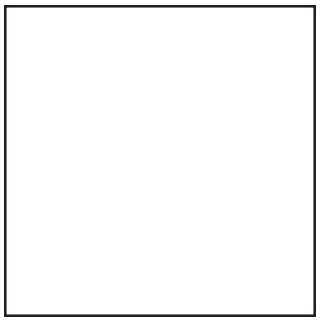
FUME SCRUBBER



TRANSFER PUMPING



WASTE TREATMENT / FILTRATION



RECIRCULATION

PHARMACEUTICAL ● PETROCHEM ● ELECTROPLATING ● FUME SCRUBBING
PAPER MAKING ● FERTILIZER PRODUCTION ● WATER TREATMENT ● PHOTOGRAPHIC

CATALOG

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P-506A

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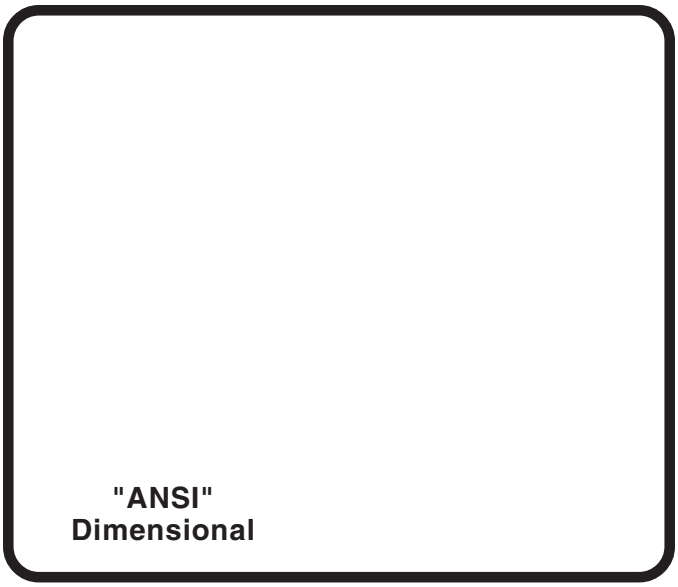

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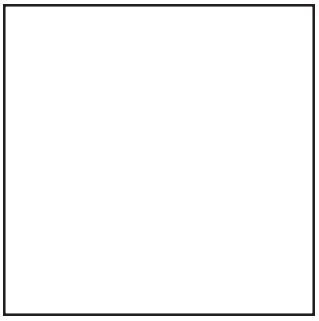
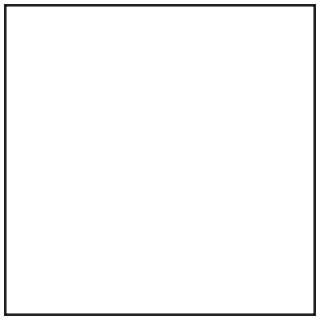
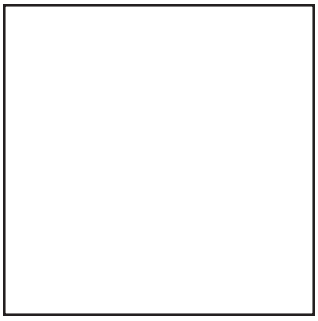


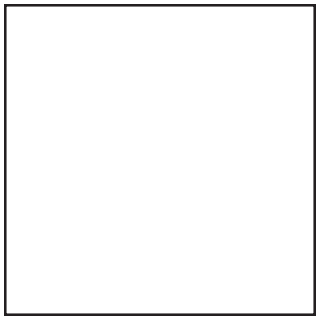
FUME SCRUBBER



TRANSFER PUMPING



WASTE TREATMENT / FILTRATION



RECIRCULATION

PHARMACEUTICAL ● PETROCHEM ● ELECTROPLATING ● FUME SCRUBBING
PAPER MAKING ● FERTILIZER PRODUCTION ● WATER TREATMENT ● PHOTOGRAPHIC

PACER

SERIES 'R' MAGNETIC-COUPLED PUMPS

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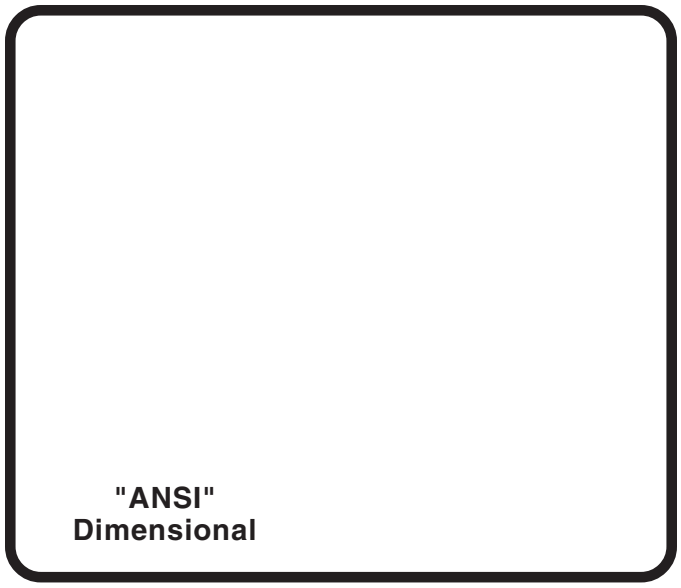
THE ULTIMATE IN PUMP RELIABILITY

SCORES OF APPLICATIONS: ACIDS / ALKALIES / SOLVENTS



**"ANSI"
Dimensional**

Made in U. S. A.

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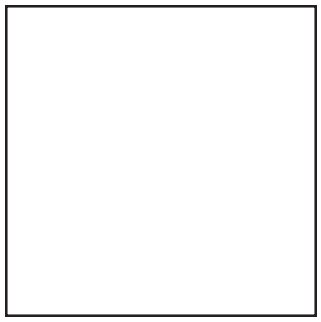
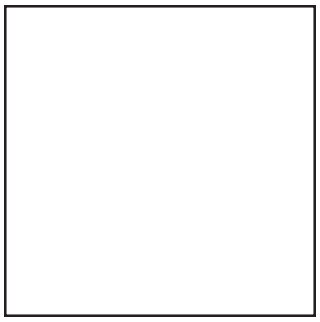
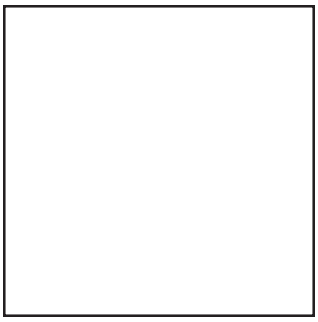


FUME SCRUBBER



TRANSFER PUMPING



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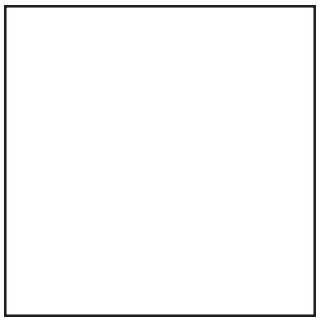

RECIRCULATION

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SERFILCO® SERIES 'R' MAGNETIC-COUPLED PUMPS

THE ULTIMATE IN PUMP RELIABILITY

SCORES OF APPLICATIONS: ACIDS / ALKALIES / SOLVENTS

U. K. VERSION

**"ISO"
Dimensional**

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  - Silicon carbide shaft and thrust ring standard
  - Fluoroplastic lined
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- **ISO-dimensional for quick replacement of existing pumps**
- **Back pull-out design**
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FUME SCRUBBER | **TRANSFER PUMPING** | **WASTE TREATMENT / FILTRATION** | **RECIRCULATION**

PHARMACEUTICAL ● PETROCHEM ● ELECTROPLATING ● FUME SCRUBBING
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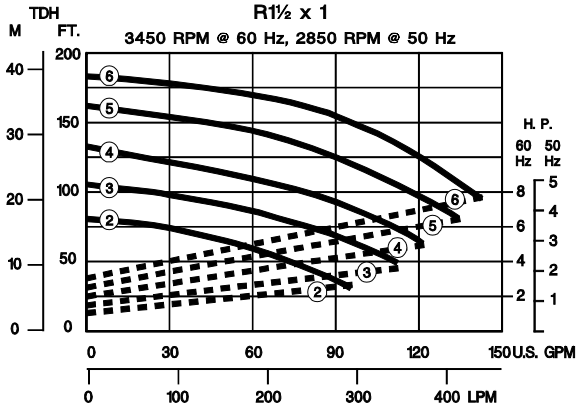
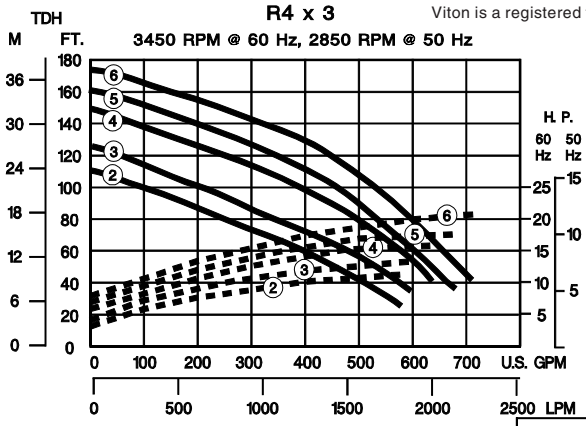
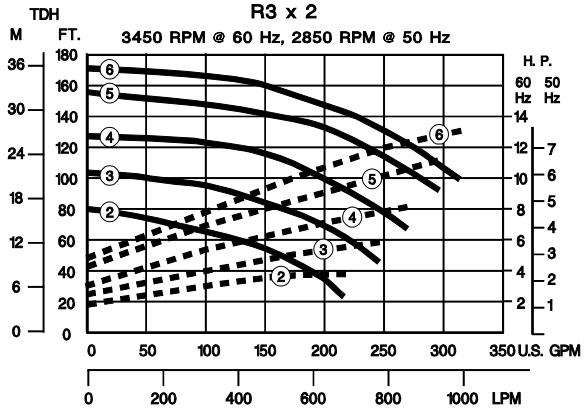
Series 'R' magnetic drive pumps are rotomolded with an ECTFE lining with an external cast iron support. The impeller magnet assembly is ETFE. The rear liner is injection molded ETFE with a FRP composite outer cover. The standard shaft and thrust ring are premium grade silicon carbide (SiC) and the mouth ring is CFR TFE, while the bushing is carbon. Standard "O"-rings are Viton® .

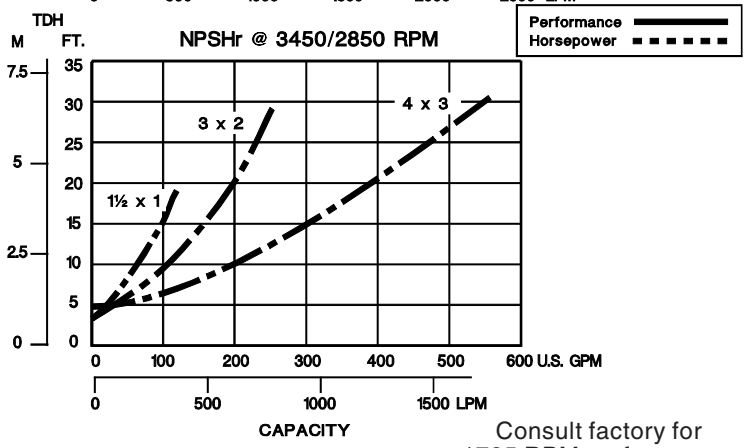
Impeller is fully enclosed for high efficiency and available in smaller diameters for high specific gravity solutions. Pump connections have 150 Lb. flanges and faces. Each pump assembly includes a built-in ¼" FNPT sensor connection for a liquid sensor in the bracket. Standard NEMA frame motors are TEFC, 3450 or 2850 RPM.

Viton is a registered trademark of **DuPont**.



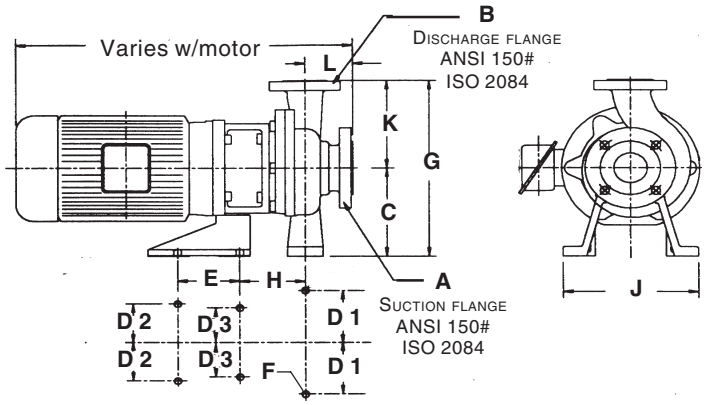






Consult factory for 1725 RPM performance.

DIMENSIONS



DESIGN	MODEL	A INLET	B OUTLET	C	D1	D2	D3	E	F	G	H	J	K	L	WEIGHT *
ANSI (inches)	**R1½ x 1**	1½	1	5.25	3.00	4.25	N/A	11.84		11.75	N/A	7.50	6.50		83 lbs.
	R3 x 2	3	2	8.25	4.875	3.625	3.25	5.25	.625	16.50	5.56	11.25	8.25	4.00	98 lbs.
	R4 x 3	4	3	8.25	4.875	3.625	3.25	5.25		16.50	5.56	11.25	8.25		126 lbs.
ISO (mm)	**R50 x 32**	50	32	132	95	—		—		292		240	160	80	38 kg.
	R65 x 50	65	50	132	95	—	55	—	M12	292	285	240	160	80	44 kg.
	R80 x 65	80	65	160	106	—		—		340		265	180	100	57 kg.

Consult factory for baseplate to meet ANSI dimensions.

* Pump only

BULLETIN

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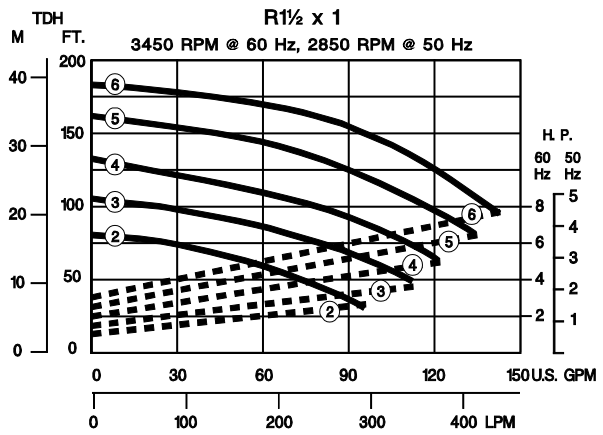

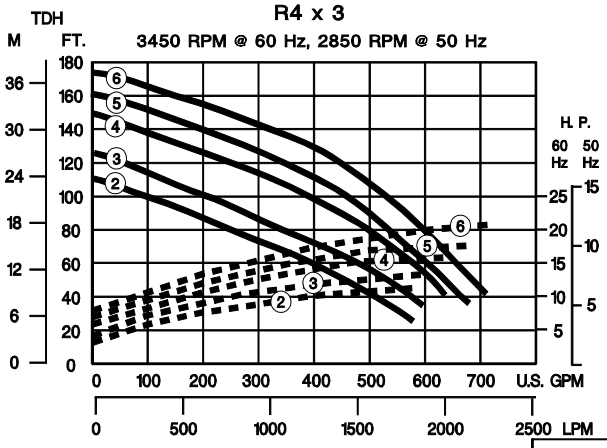

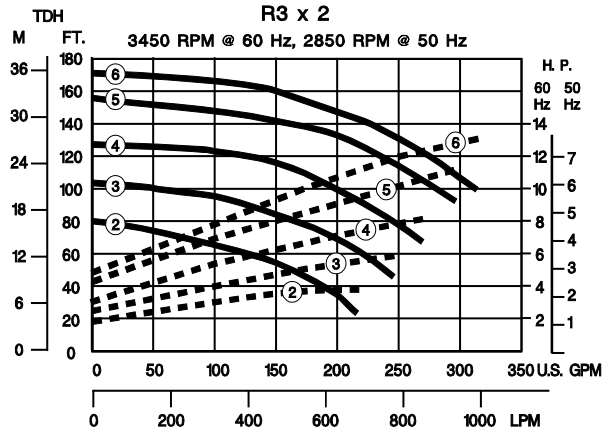

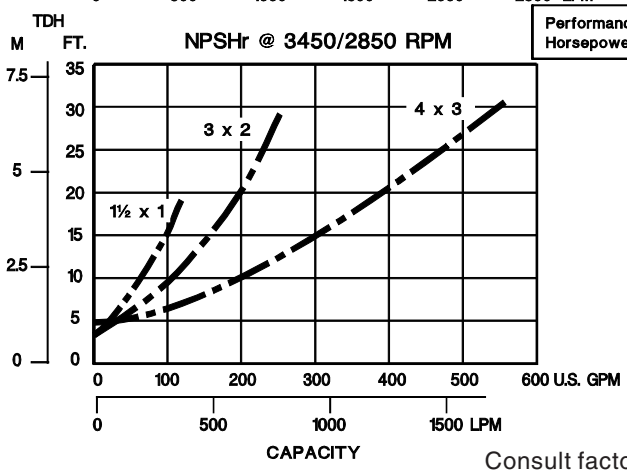

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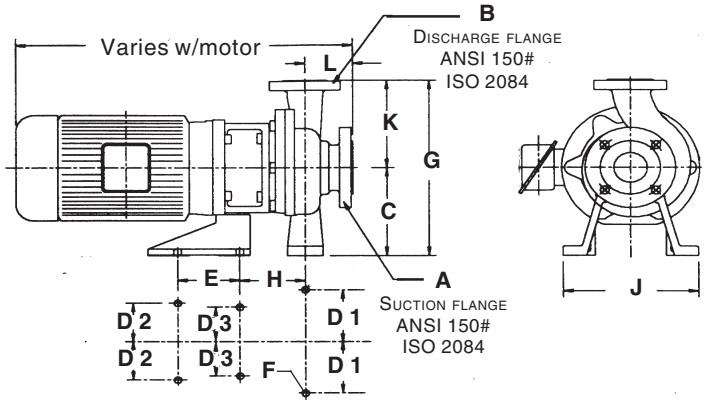
DIMENSIONS



DESIGN	MODEL	A INLET	B OUTLET	C	D1	D2	D3	E	F	G	H	J	K	L	WEIGHT *
ANSI (inches)	R1½ x 1	1½	1	5.25	3.00	4.25	N/A	11.84		11.75	N/A	7.50	6.50		83 lbs.
	R3 x 2	3	2	8.25	4.875	3.625	3.25	5.25	.625	16.50	5.56	11.25	8.25	4.00	98 lbs.
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* Pump only

heading for left hand catalog page. Print out at 98%

To order standard pump-motor combination, select model from TABLE I.
To customize your pump-motor or order ISO design, select from components in TABLE II.

TABLE I

Select pump-motor model corresponding to flow curve number providing the desired performance.

1½ x 1 PUMP / NEMA MOTOR ASSEMBLY				3 x 2 PUMP / NEMA MOTOR ASSEMBLY			
FLOW CURVE	MODEL NO.	[1] MAXIMUM S. G. AT FULL FLOW (3450 RPM)	PRICE CODE NO.	FLOW CURVE	MODEL NO.	[1] MAXIMUM S. G. AT FULL FLOW (3450 RPM)	PRICE CODE NO.
2	R1½ x 1AHCS-2A-D3.0	1.2	53-1212B	2	R3 x 2 AHCS-2A-D7.5	1.2	53-2212D
3	R1½ x 1AHCS-3A-D5.0	1.4	53-1312C	3	R3 x 2 AHCS-3A-D7.5	1.4	53-2312D
4	R1½ x 1AHCS-4A-D5.0	1.0	53-1412C	4	R3 x 2 AHCS-4B-D10.0	1.2	53-2423E
5	R1½ x 1AHCS-5A-D7.5	1.2	53-1512D	5	R3 x 2 AHCS-5C-D20.0	1.8	53-2534G
6	R1½ x 1AHCS-6A-D7.5	1.0	53-1612D	6	R3 x 2 AHCS-6C-D20.0	1.5	53-2634G

[1] For higher specific gravity or less than full flow, select appropriate model from TABLE II.

For 4 x 3 models, refer to TABLE II.

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 components and compile Model and Price Code Numbers. Calculate Net Positive Suction Head Available(NPSHa) for the installation and refer to NPSHr curves on preceding page. NPSHa should be no less than NPSHr to avoid cavitation or related suction problems.

PUMP [2]		
	MODEL NO.	PRICE CODE NO.
ANSI	R 1½ x 1 AHCS	53-1
	R 3 x 2 AHCS	53-2
	R 4 x 3 AHCS	53-3
ISO	R50 x 32 IHCS	53-4
	R65 x 50 IHCS	53-5
	R80 x 65 IHCS	53-6

IMPELLER		
FLOW CURVE	ADD TO . . . MODEL NUMBER	ADD TO . . . PRICE CODE NO.
2	- 2	2
3	- 3	3
4	- 4	4
5	- 5	5
6	- 6	6

MAGNET COUPLING			
MAXIMUM H. P.		ADD TO . . .	
60 Hz	50 Hz	MODEL NUMBER	PRICE CODE NO.
7.5	6	A	1
10	8	B	2
20	16	C	3

MOTOR [3]					
TEFC NEMA FRAME SIZE	ADD TO . . . MODEL NUMBER H.P. (KW)	PRICE CODE NO.	IP54 METRIC FRAME SIZE	ADD TO . . . MODEL NUMBER H.P. (KW)	PRICE CODE NO.
143 / 5 TC	- D2.0	1A	90S	- DM2.0 (1.5)	5A
182 / 4 TC	- D3.0	2B	90L	- DM3.0 (2.2)	5B
	- D5.0	2C	100L	- DM4.0 (3.0)	6C
	- D7.5	2D	112M	- DM5.3 (4.0)	6D
213 / 15 TC	- D7.5	3D	132SA	- DM7.3 (5.5)	7E
	- D10.0	3E	132SB	- DM10.0 (7.5)	7F
	- D15.0	3F	160MA	- DM14.5 (11.0)	8G
254 / 56 TC	- D20.0	4G			
	- D25.0	4H			

[2] For pump only— delete motor suffix from Model Number and use Price Code Number without letter suffix. i. e. 53-1212

[3] Three phase— 3450 RPM - 208/230/460/3/60 or 2850 RPM - 190/380/416/3/50.

EXAMPLE: MODEL **PRICE CODE NO.**

R1½ x 1AHCS - 2 A - D3.0 = 53-1212B

OPTIONAL DRY RUN PROTECTOR	PRICE CODE NO.
This unit provides sensitive, general purpose pump protection by monitoring the power going to a pump. It is capable of shutting down the pump via motor control circuit when the load is below the *low trip* level (dry-running) or when the load exceeds the *high trip* setting (jammed impeller, bearing failure). For convenience, the device is preset at the factory according to the customer's specifications. However, the unit can be easily reset to new specifications by consulting the instruction manual. Specify motor voltage.	53-0000

Order Motor Starter separately.

To order standard pump-motor combination, select model from TABLE I.
To customize your pump-motor or order ISO design, select from components in TABLE II.

TABLE I

Select pump-motor model corresponding to flow curve number providing the desired performance.

1½ x 1 PUMP / NEMA MOTOR ASSEMBLY				3 x 2 PUMP / NEMA MOTOR ASSEMBLY			
FLOW CURVE	MODEL NO.	[1] MAXIMUM S. G. AT FULL FLOW (3450 RPM)	PRICE CODE NO.	FLOW CURVE	MODEL NO.	[1] MAXIMUM S. G. AT FULL FLOW (3450 RPM)	PRICE CODE NO.
2	R1½ x 1AHCS-2A-D3.0	1.2	53-1212B	2	R3 x 2 AHCS-2A-D7.5	1.2	53-2212D
3	R1½ x 1AHCS-3A-D5.0	1.4	53-1312C	3	R3 x 2 AHCS-3A-D7.5	1.4	53-2312D
4	R1½ x 1AHCS-4A-D5.0	1.0	53-1412C	4	R3 x 2 AHCS-4B-D10.0	1.2	53-2423E
5	R1½ x 1AHCS-5A-D7.5	1.2	53-1512D	5	R3 x 2 AHCS-5C-D20.0	1.8	53-2534G
6	R1½ x 1AHCS-6A-D7.5	1.0	53-1612D	6	R3 x 2 AHCS-6C-D20.0	1.5	53-2634G

[1] For higher specific gravity or less than full flow, select appropriate model from TABLE II.

For 4 x 3 models, refer to TABLE II.

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 components and compile Model and Price Code Numbers. Calculate Net Positive Suction Head Available(NPSHa) for the installation and refer to NPSHr curves on preceding page. NPSHa should be no less than NPSHr to avoid cavitation or related suction problems.

PUMP [2]		
	MODEL NO.	PRICE CODE NO.
ANSI	R 1½ x 1 AHCS	53-1
	R 3 x 2 AHCS	53-2
	R 4 x 3 AHCS	53-3
ISO	R50 x 32 IHCS	53-4
	R65 x 50 IHCS	53-5
	R80 x 65 IHCS	53-6

IMPELLER		
FLOW CURVE	ADD TO . . .	
	MODEL NUMBER	PRICE CODE NO.
2	- 2	2
3	- 3	3
4	- 4	4
5	- 5	5
6	- 6	6

MAGNET COUPLING			
MAXIMUM H. P.		ADD TO . . .	
60 Hz	50 Hz	MODEL NUMBER	PRICE CODE NO.
7.5	6	A	1
10	8	B	2
20	16	C	3

MOTOR [3]					
TEFC NEMA FRAME SIZE	ADD TO . . .		IP54 METRIC FRAME SIZE	ADD TO . . .	
	MODEL NUMBER H.P. (KW)	PRICE CODE NO.		MODEL NUMBER H.P. (KW)	PRICE CODE NO.
143 / 5 TC	- D2.0	1A	90S	- DM2.0 (1.5)	5A
182 / 4 TC	- D3.0	2B	90L	- DM3.0 (2.2)	5B
	- D5.0	2C	100L	- DM4.0 (3.0)	6C
	- D7.5	2D	112M	- DM5.3 (4.0)	6D
213 / 15 TC	- D7.5	3D	132SA	- DM7.3 (5.5)	7E
	- D10.0	3E	132SB	- DM10.0 (7.5)	7F
	- D15.0	3F	160MA	- DM14.5 (11.0)	8G
254 / 56 TC	- D20.0	4G			
	- D25.0	4H			

[2] For pump only— delete motor suffix from Model Number and use Price Code Number without letter suffix. i. e. 53-1212

[3] Three phase— 3450 RPM - 208/230/460/3/60 or 2850 RPM - 190/380/416/3/50.

EXAMPLE: **MODEL** **PRICE CODE NO.**

R1½ x 1AHCS - 2 A - D3.0 = 53-1212B

OPTIONAL DRY RUN PROTECTOR	PRICE CODE NO.
This unit provides sensitive, general purpose pump protection by monitoring the power going to a pump. It is capable of shutting down the pump via motor control circuit when the load is below the *low trip* level (dry-running) or when the load exceeds the *high trip* setting (jammed impeller, bearing failure). For convenience, the device is preset at the factory according to the customer's specifications. However, the unit can be easily reset to new specifications by consulting the instruction manual. Specify motor voltage.	53-0000

F.O.B. Northbrook, Illinois

F.O.B. Leola, Pennsylvania

Order Motor Starter separately.

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