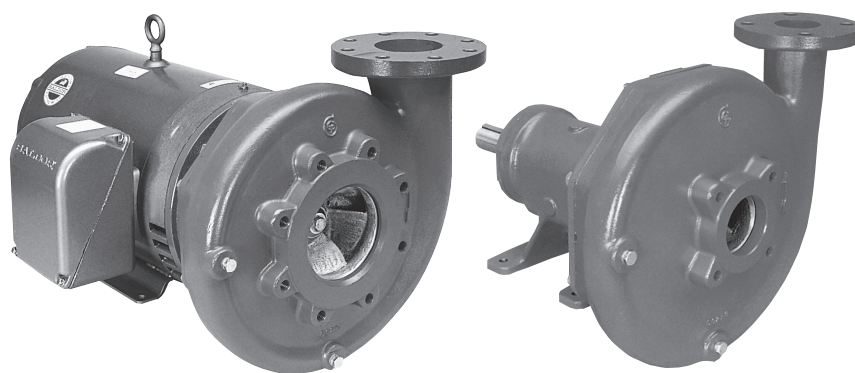




3656/3756 M- and L-Group

Cast iron, bronze fitted, end-suction flanged pumps

A full range of product features

The 3656 and 3756 M and L-Group pumps from Goulds Water Technology have been designed with technical benefits to meet the needs of users in a variety of water supply, recirculation, and cooling applications.

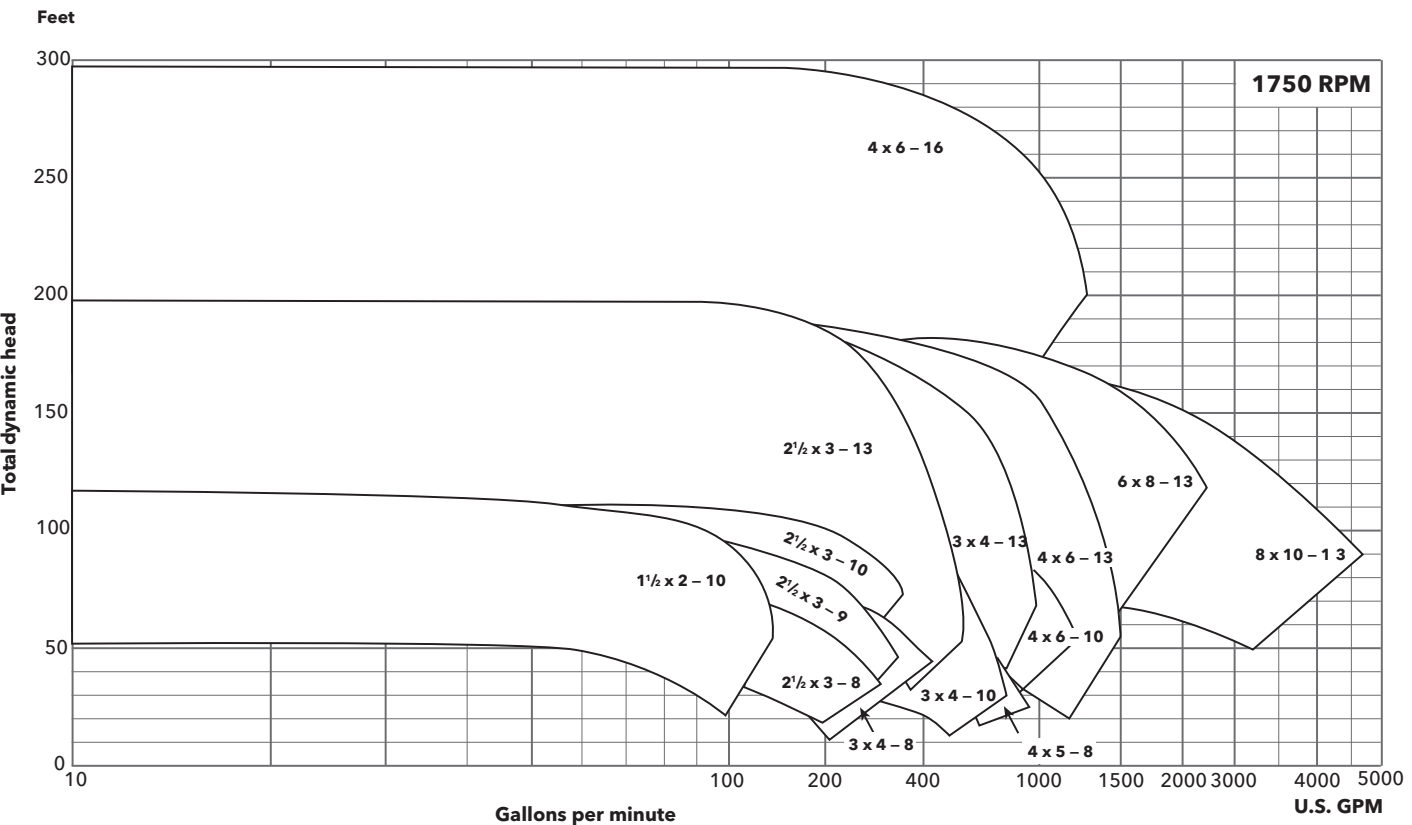
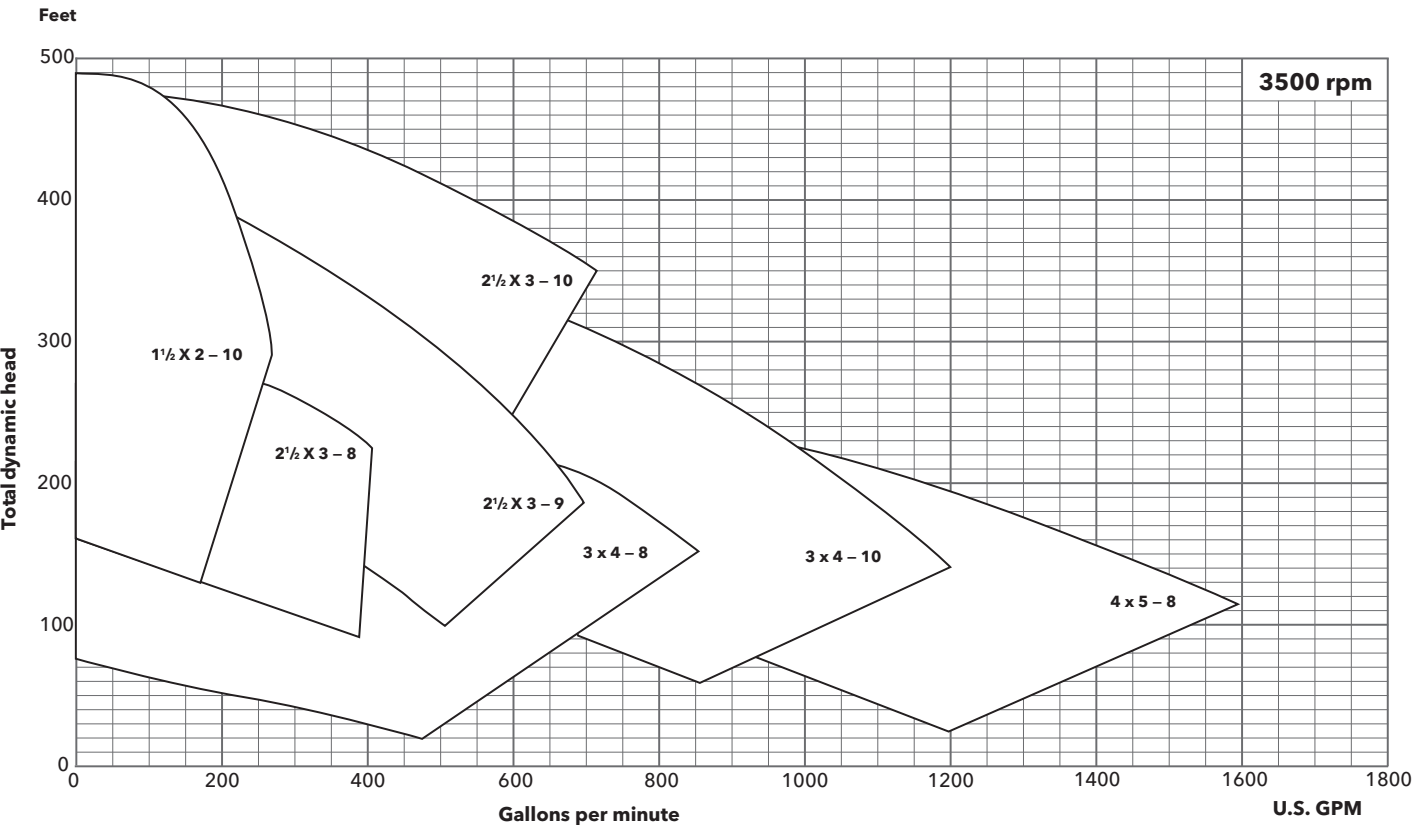
- The model 3656 offers close coupled design for space saving and simplified maintenance.
- The model 3756 offers a bearing frame mounted design for flexibility of installation and drive arrangements.
- SAE drive sizes 1 through 5 available on all M and L sizes.
- Back pull-out to reduce maintenance down time.
- Standard Type 21 mechanical seal for both reliability and availability. Carbon/ceramic/BUNA standard, with other faces and elastomers available.
- Available in all iron or bronze fitted construction for application versatility.
- Replaceable wearing components include stainless steel shaft sleeve and casing and hub wear rings to maintain peak efficiency.
- Enclosed impeller design, dynamic balancing and renewable wear rings reduce losses affecting performance and pump life.
- 125 Class ANSI flange suction/discharge connections and casing rotation for piping connection versatility.
- NPT threaded connections are supplied on 1½ x 2 – 10 and 2½ x 3 – 8 models.
- Optional rigid carbon steel bedplate, sheet metal coupling guard and T. B. Woods spacer coupling for 3756 models.
- Standard NEMA motor frame, JM shaft extension (mechanical seal) JP shaft extension (packed box), C face mounting, single-phase or three phase, 3500 or 1750 RPM for 60 Hz, 2900 or 1450 RPM for 50 Hz. Open drip-proof and totally enclosed fan cooled.*
- Optional explosion proof and high efficiency motors are available.*
- Optional casing rotation available - 3" (suction) and smaller can be rotated every 90°, 4" and larger can be rotated every 45°.



NSF 61 Certification: Pumps assembled at the factory are certified to the NSF/ANSI 61 Drinking Water System Components Standard. (Minimum usage of 2L/day for BF models. Buna seal models are not certified.)

* Premium efficiency where required by Department of Energy regulations.

Performance coverage



3656/3756 M-Group numbering system

The various versions of the 3656 and 3756 M-Group are identified by a product code number on the pump label. This number is also the catalog number for the pump. The meaning of each digit in the product code number is shown below. Not all combinations are possible. Consult your Goulds Water Technology distributor for specific requirements.

Example product code

11 BF 2 L 5 A 0

Mechanical seal/packed box and o-ring material

For optional mechanical seal modify catalog order no. with seal code listed below.

Seal code	Rotary	Stationary	Elastomers	Metal parts	Part no.	
					M-Group	
					180JM-210JM, 180JP-210TCZ*	250JM-360TCZ, 210JP-360TCZ*
0	Carbon	Ceramic	BUNA-N	316 SS	10K13	10K16
1		Sil-Carbide	EPR		10K19	10K20
3			Viton		10K27	10K45
5	Sil-Carbide				10K64	10K65

* Prime-Safe option with grease

Impeller option code

* Indicates 3500 RPM impeller for the 3 x 4 - 10, all others are 1750 RPM.

Impeller code	M-Group pump size										
	8	7	11	13	16	12	14	10	17	15	21
	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.	Dia.
A	10 1/16"	7 15/16"	10 1/16"	13 1/16"	8 1/16"	10 1/16"	13 1/16"	8 1/16"	10 1/16"	12 7/8"	10 1/16"
B	9 3/16"	7 7/16"	9 7/8"	12 3/4"	7 7/16"	9 3/4"	12 1/16"	7 3/4"	9 9/16"	12 1/2"	9 7/8"
C	8 3/8"	7 3/16"	9 5/8"	12 1/4"	7 7/16"	9"	12 5/16"	7 1/2"	9 1/8"	12 1/4"	9 1/2"
D	7 3/4"	6 13/16"	9"	11 3/4"	6 3/4"	8 5/8"	12"	7 1/4"	8 11/16"	11 7/8"	9 1/4"
E	7 1/4"	6 3/8"	8 5/8"	11 1/4"	6 3/8"	8 1/8"	11 3/4"	6 3/4"	8 1/8"	11 3/8"	8 15/16"
F	7"	6 3/16"	8 1/4"	10 3/4"	5 15/16"	7 5/8"	11 5/16"	6 1/2"	7 3/4"	11 1/16"	8 1/2"
G			8"	10 1/4"	5 1/2"	*9 1/8"	10 3/4"	6 1/16"		10 7/8"	8 3/16"
H			7 5/8"	9 1/2"	5 1/8"	*8 3/4"	10 1/8"	5 3/4"		10 1/2"	8"
J			7 1/8"		4 5/8"	*8 1/16"	9 1/8"			10 1/4"	7 11/16"
K						*8 1/8"	8 11/16"			9 7/8"	
L						*7 3/4"	8"			9 3/8"	
M						*7 5/8"	7 9/16"			13 1/16"	
N						*7 1/4"					
P						*7 1/16"					
Q											
R						*6 3/4"					

Note: Impellers will be trimmed in 1/16" increments only. If you are ordering a trim within 1/16" of the standard impeller, you will receive the standard impeller trim.

Driver

1 = 1 PH, ODP 4 = 1 PH, TEFC 7 = 3 PH, XP 0 = 1 PH, XP C = 3 PH, WD PEF = 1 PH, ODP PE
2 = 3 PH, ODP 5 = 3 PH, TEFC 8 = 3 PH, 575 V, XP A = 3 PH, 575 TE PE D = 3 PH, 575 ODP PE G = 1 PH, TE PE
3 = 3 PH, 575 V, ODP 6 = 3 PH, 575 V, TEFC 9 = 3 PH, TE PE B = 3 PH, ODP PE E = 3 PH, XP PE
PE = Premium efficiency

HP rating

G = 2 J = 5 L = 10 N = 20 Q = 30 S = 50 U = 75 W = 125
H = 3 K = 7 1/2 M = 15 P = 25 R = 40 T = 60 V = 100 X = 150

Driver: Hertz/pole/RPM

1 = 60 Hz, 2 pole, 3500 RPM 3 = 60 Hz, 6 pole, 1180 RPM 5 = 50 Hz, 4 pole, 1450 RPM
2 = 60 Hz, 4 pole, 1750 RPM 4 = 50 Hz, 2 pole, 2900 RPM

Material (Packed Box in AI or BF)

AI = All iron BF = Bronze fitted

Pump size

*7 = 2 1/2 x 3 - 8 11 = 2 1/2 x 3 - 10 14 = 3 x 4 - 13 **17 = 4 x 6 - 10 (BF only)**
8 = 1 1/2 x 2 - 10 12 = 3 x 4 - 10 15 = 4 x 6 - 13 **21 = 2 1/2 x 3 - 9 (BF only)**
*10 = 4 x 5 - 8 13 = 2 1/2 x 3 - 13 *16 = 3 x 4 - 8

* When ordered as a bare shaft pump the motor speed must be specified as 2 pole or 4 pole. The 4 pole models will utilize S-Group bearing frame.

Drive options

Substitute	Description
FRM	Bearing frame mount
*FRM2	Bearing frame mount 2-pole operation
*FRM4	Bearing frame mount 4-pole operation

3656/3756 L-Group numbering system

The various versions of the 3656 and 3756 L-Group are identified by a product code number on the pump label. This number is also the catalog number for the pump. The meaning of each digit in the product code number is shown below. Not all combinations are possible. consult your Goulds Water Technology distributor for specific requirements.

Example product code

18 BF 2 Q 2 J 0

Mechanical seal/packed box and o-ring material

For optional mechanical seal modify catalog order no. with seal code listed below.

Seal code	Rotary	Stationary	Elastomers	Metal parts	Part no.				
					L-Group				
0	Carbon, Carbone	Ceramic	BUNA-N	316 SS	10K84				
1		Sil-Carbide	EPR		NA				
3			Viton		10K112				
5	Sil-Carbide				10K144				
8A*									

* Prime-Safe option with oiler, *Opción Primero-Segura con el engrasador*

Impeller option coder

Impeller code	L-Group pump size		
	18	19	20
	Dia.	Dia.	Dia.
A	13"	13"	16"
B	12 1/2"	12 3/4"	15 5/8"
C	12 7/16"	12 3/8"	15 3/16"
D	11 7/8"	11 15/16"	14 1/2"
E	11 5/8"	11 11/16"	13 3/4"
F	11 1/8"	11 1/4"	
G	10 7/8"	10 7/8"	
H	10 1/2"	9 13/16"	
J	10"	13"	
K	9 1/2"	12 3/4"	
L	13"	12 3/8"	
M	12 1/2"	11 15/16"	
N	12 7/16"	11 11/16"	
P	11 7/8"	11 1/4"	
Q		10 7/8"	
R		9 13/16"	

■ Indicates L-Group pump (1780 RPM, 60 to 150 HP)

• For 1180 RPM Close-Coupled applications only.

Note: for trimmed impellers, use t for impeller code.

Note: impellers will be trimmed in 1/16" increments only. If you are ordering a trim within 1/16" of the standard impeller, you will receive the standard impeller trim.

Driver

1 = 1 PH, ODP 4 = 1 PH, TEFC 7 = 3 PH, XP 0 = 1 PH, XP C = 3 PH, WP PE F = 1 PH, ODP PE
 2 = 3 PH, ODP 5 = 3 PH, TEFC 8 = 3 PH, 575 V, XP A = 3 PH, 575 TE PE D = 3 PH, 575 ODP PE
 3 = 3 PH, 575 V, ODP 6 = 3 PH, 575 V, TEFC 9 = 3 PH, TE PE B = 3 PH, ODP PE E = 3 PH, XP PE
 PE = Premium efficiency

HP rating

G = 2 J = 5 L = 10 N = 20 Q = 30 S = 50 U = 75 W = 125
 H = 3 K = 7 1/2 M = 15 P = 25 R = 40 T = 60 V = 100 X = 150

Driver: Hertz/pole/RPM

1 = 60 Hz, 2 pole, 3500 RPM 3 = 60 Hz, 6 pole, 1180 RPM 5 = 50 Hz, 4 pole, 1450 RPM
 2 = 60 Hz, 4 pole, 1750 RPM 4 = 50 Hz, 2 pole, 2900 RPM

Material (Packed Box in BF)

BF = Bronze fitted

Pump size

18BF = 6 x 8 - 13

19BF = 8 x 10 - 13

20BF = 4 x 6 - 16

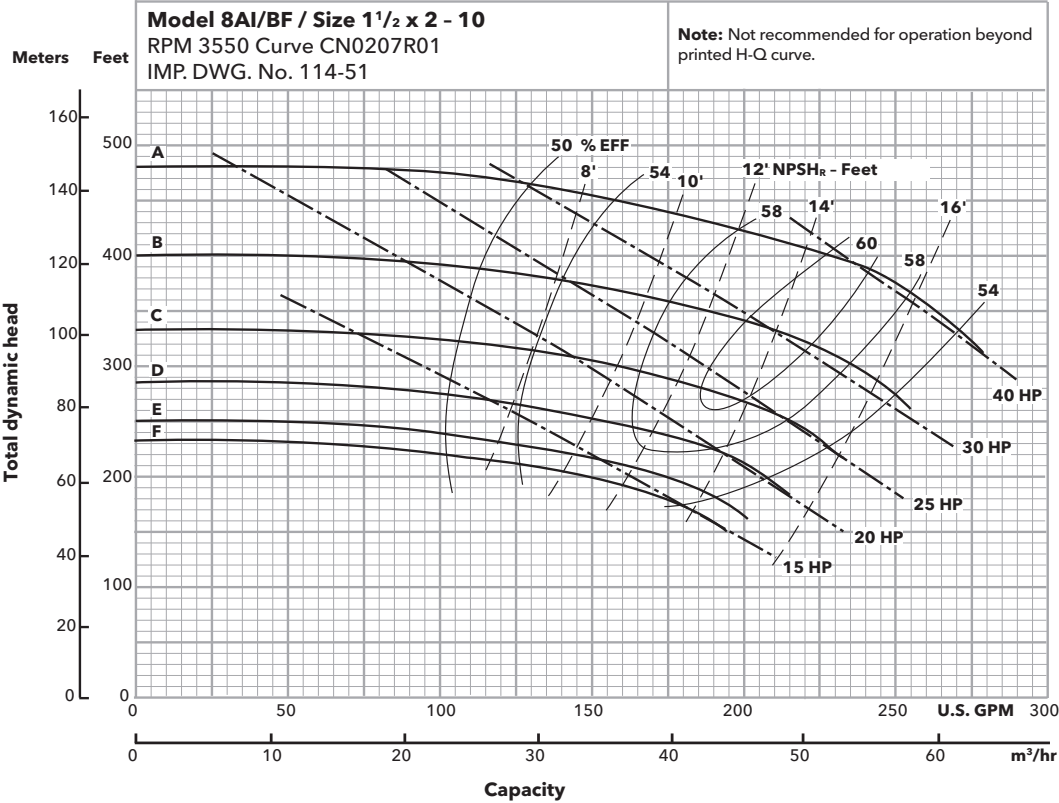
(BF only)

Drive options

Substitute	Description
FRM	Bearing frame mount

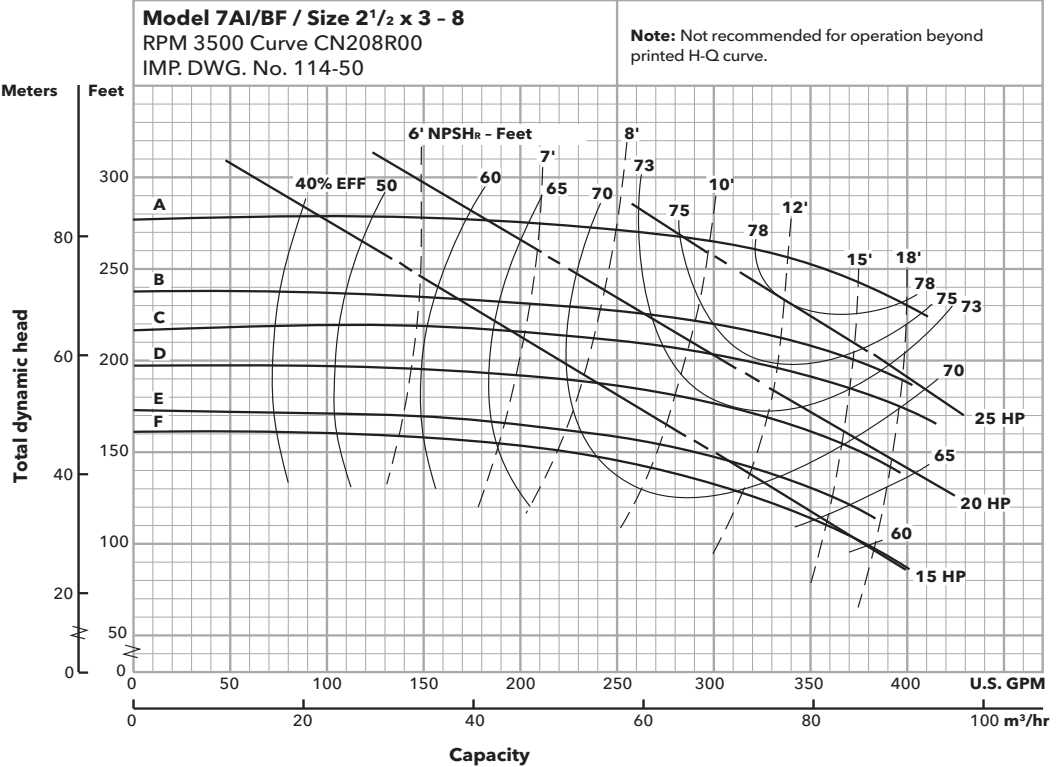
Performance curves - 60 Hz, 3500 RPM

These curves show the performance of the 3656 and 3756 at 3500 RPM and 1750 RPM, 60 Hz, and at 2900 RPM and 1450 RPM, 50 Hz. Standard impeller trims are shown. Note that not all pump sizes are available at the higher speeds.



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 3/16
C	8 3/8
D	7 3/4
E	7 1/4
F	7

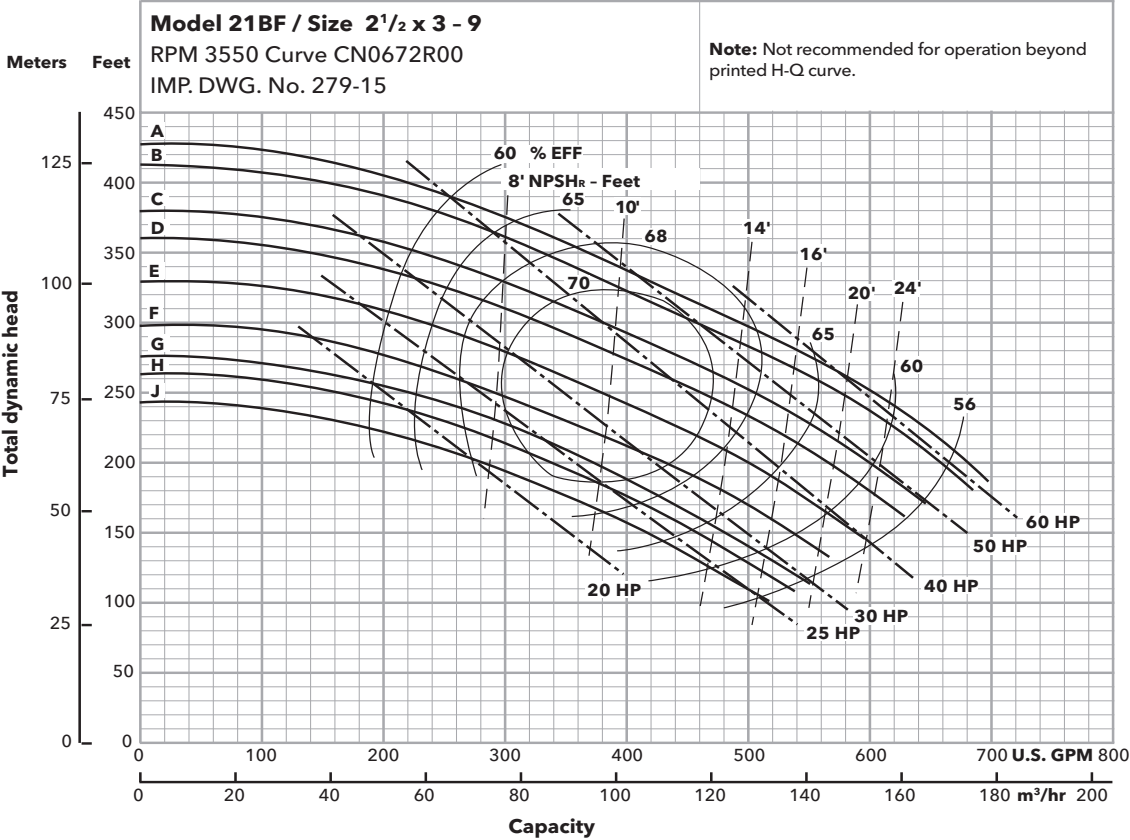
Note: Pump will pass a sphere to 5/32" diameter.



Optional impeller	
Ordering code	Dia.
A	7 15/16
B	7 1/16
C	7 3/16
D	6 13/16
E	6 3/8
F	6 3/16

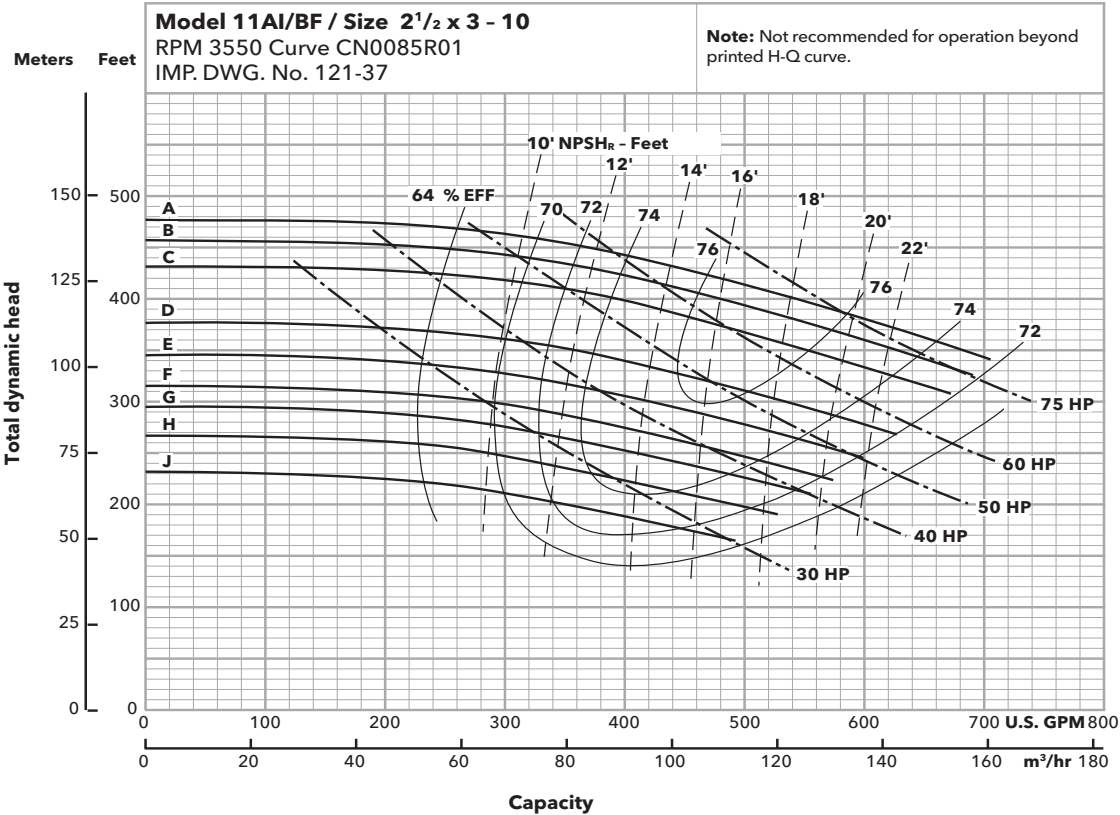
Note: Pump will pass a sphere to 5/16" diameter.

Performance curves - 60 Hz, 3500 RPM



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 7/8
C	9 1/2
D	9 1/4
E	8 15/16
F	8 1/2
G	8 3/16
H	8
J	7 11/16

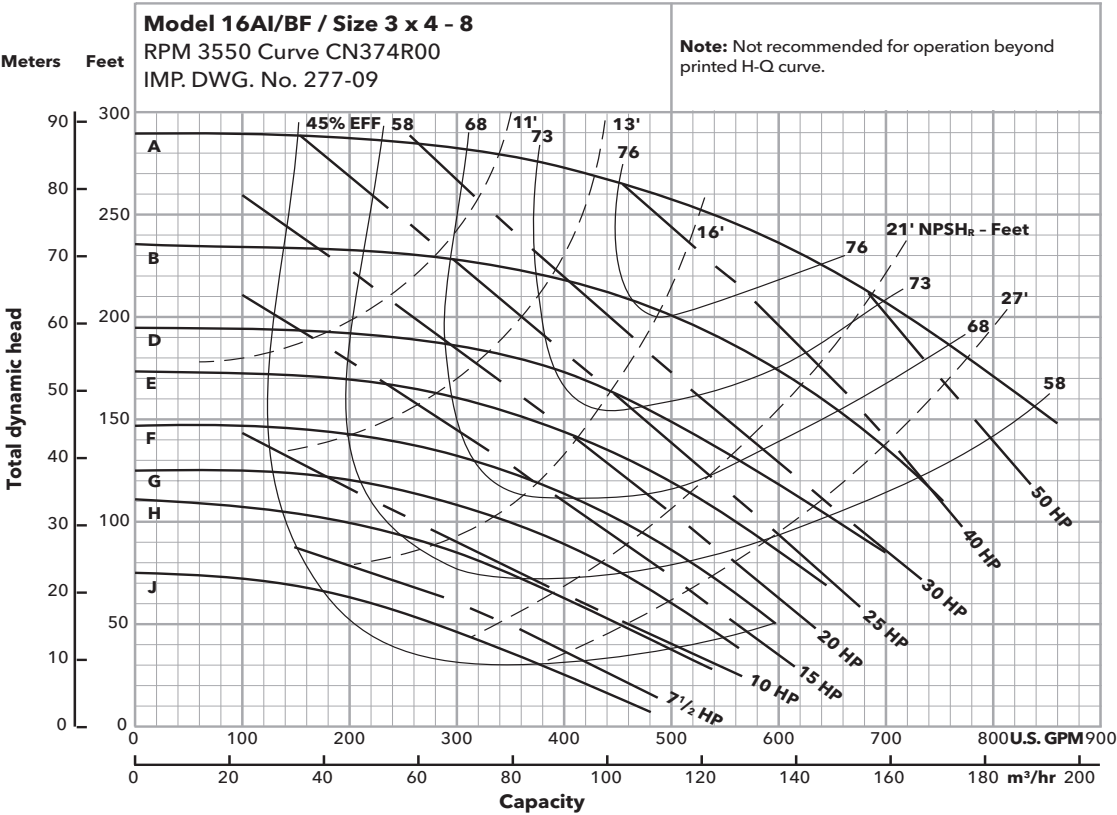
Note: Pump will pass a sphere to 5/16" diameter.



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 7/8
C	9 5/8
D	9
E	8 5/8
F	8 1/4
G	8
H	7 5/8
J	7 1/8

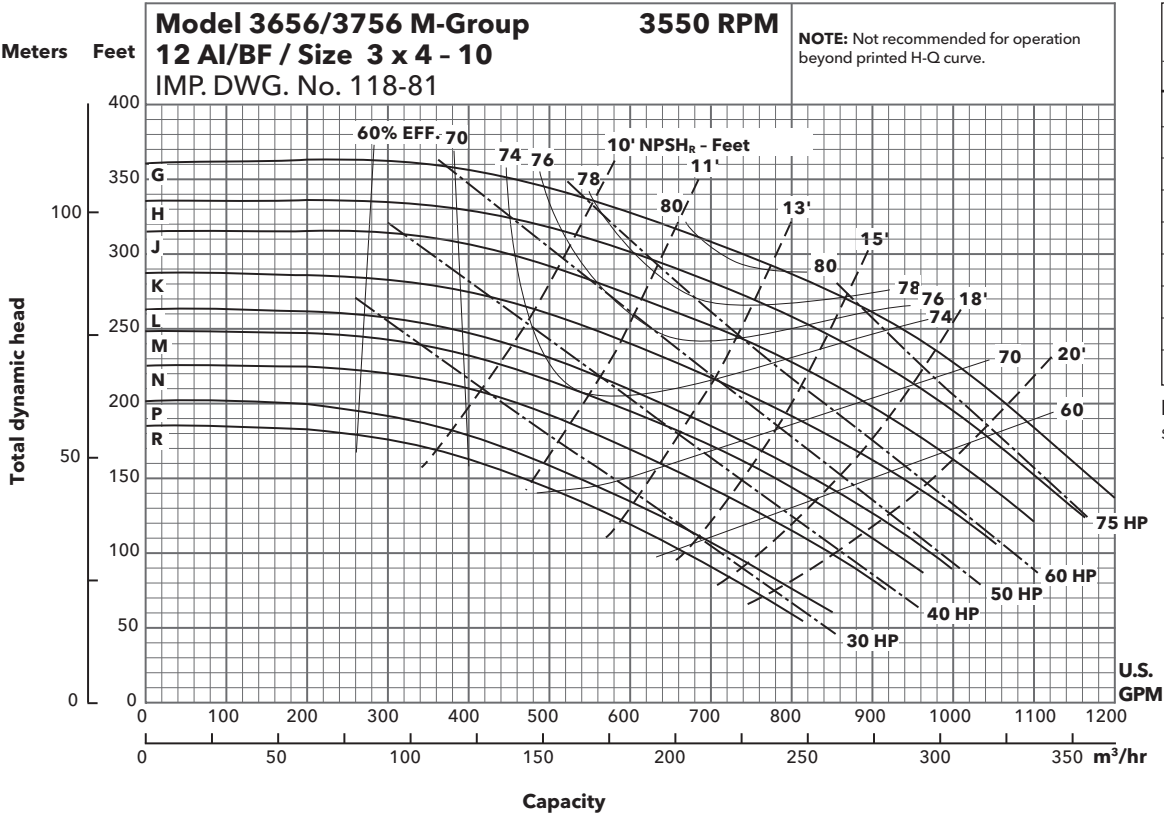
Note: Pump will pass a sphere to 5/16" diameter.

Performance curves - 60 Hz, 3500 RPM



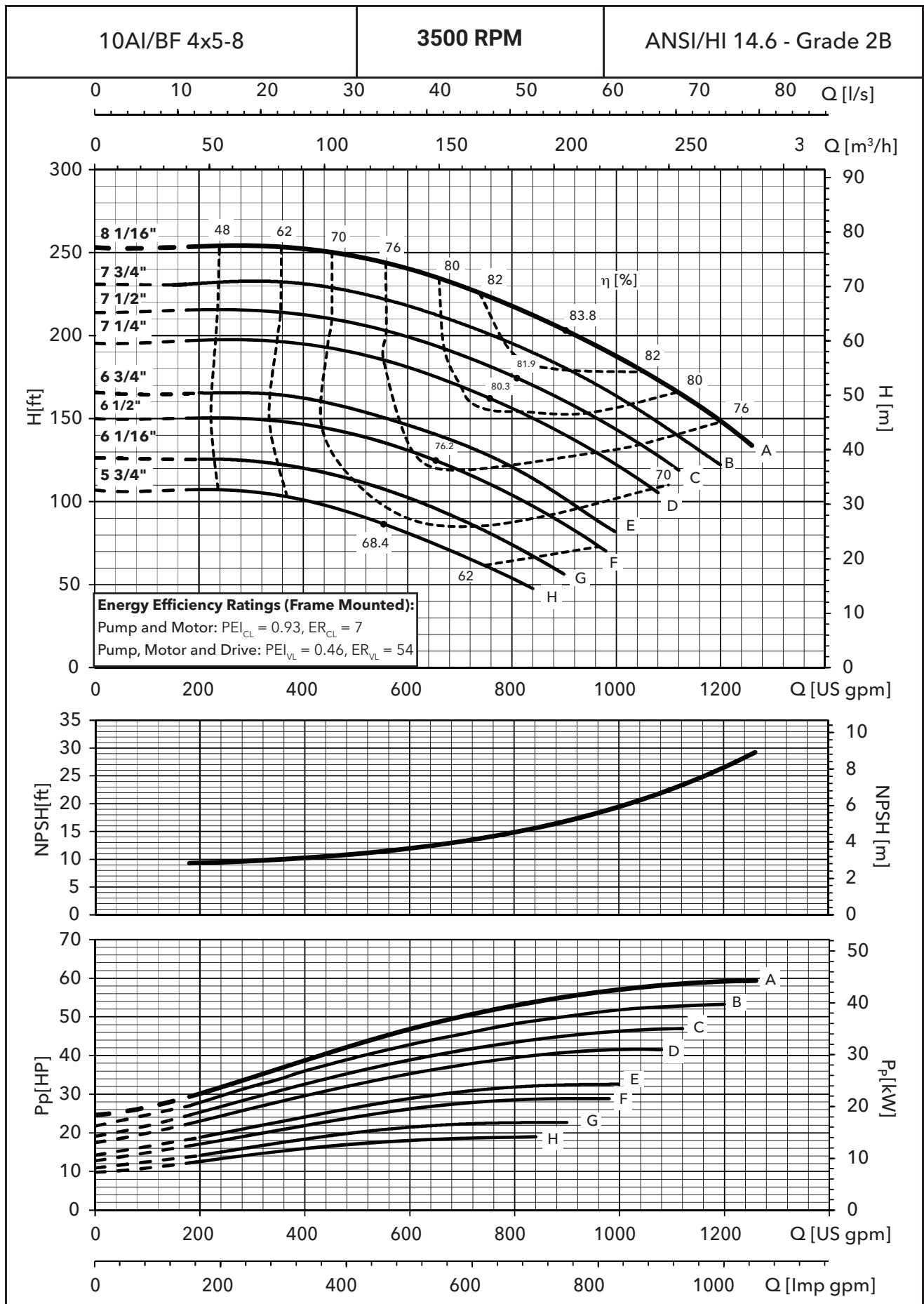
Optional impeller	
Ordering code	Dia.
A	8 1/16
B	7 7/16
D	6 3/4
E	6 3/8
F	5 15/16
G	5 1/2
H	5 1/8
J	4 5/8

Note: Pump will pass a sphere to 3/8" diameter.

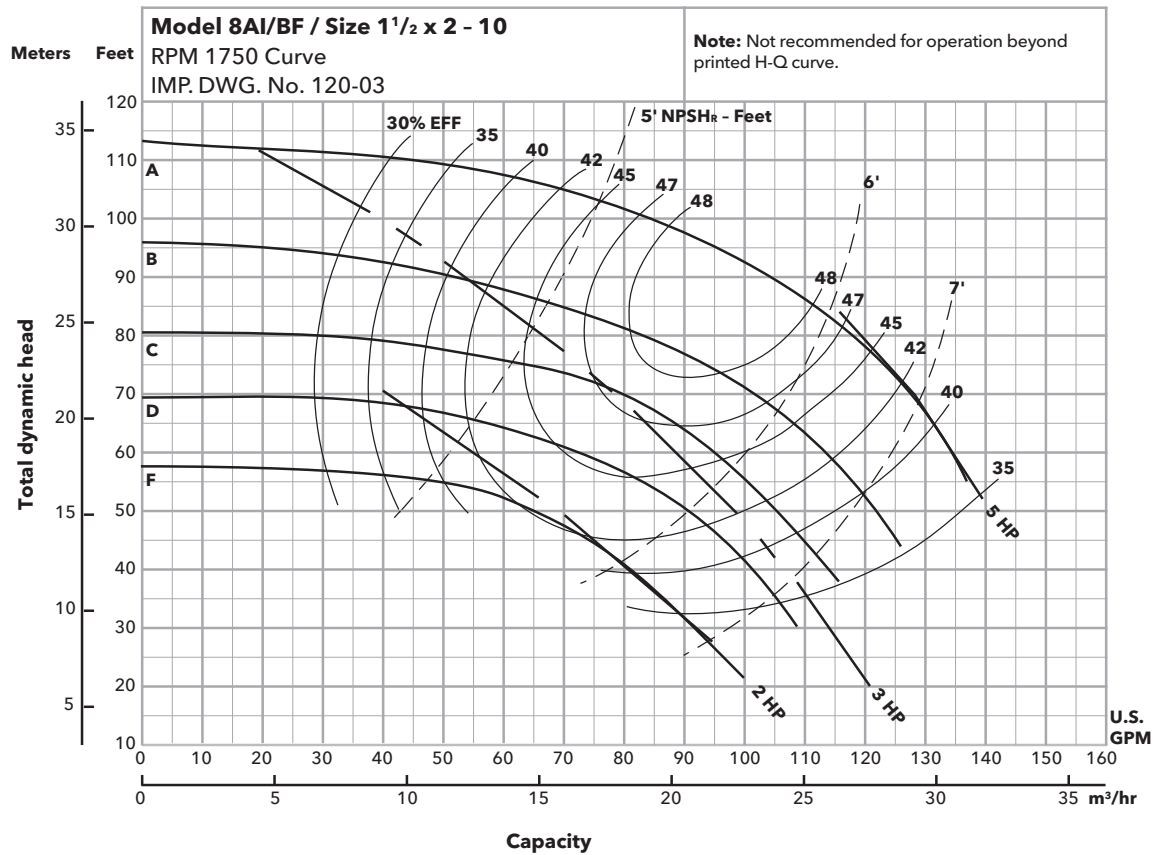


Optional impeller	
Ordering code	Dia.
G	9 1/8
H	8 3/4
J	8 7/16
K	8 1/8
L	7 3/4
M	7 5/8
N	7 1/4
P	7 1/16
R	6 3/4

Note: Pump will pass a sphere to 1/2" diameter.

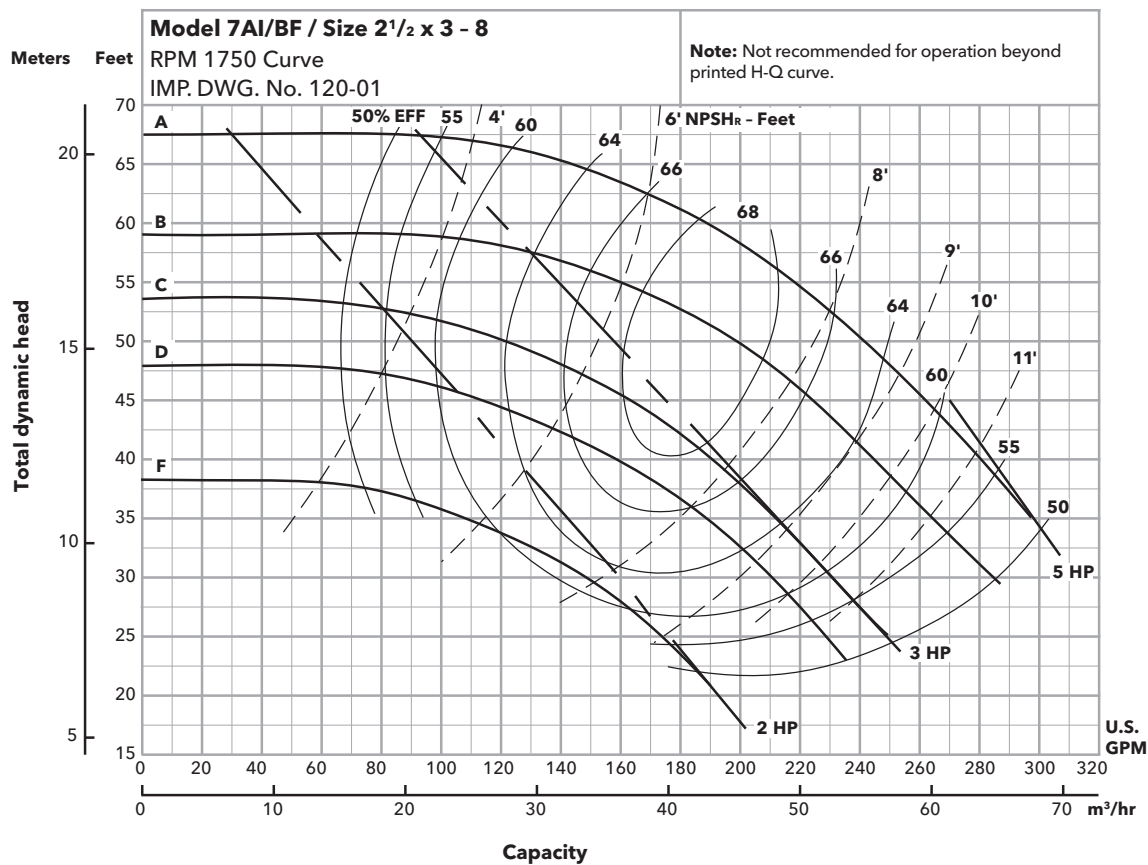


Performance curves - 60 Hz, 1750 RPM



Optional impeller	
Ordering code	Dia.
A	10 ¼ ₁₆
B	9 ¾ ₁₆
C	8 ¾ ₈
D	7 ¾ ₄
F	7

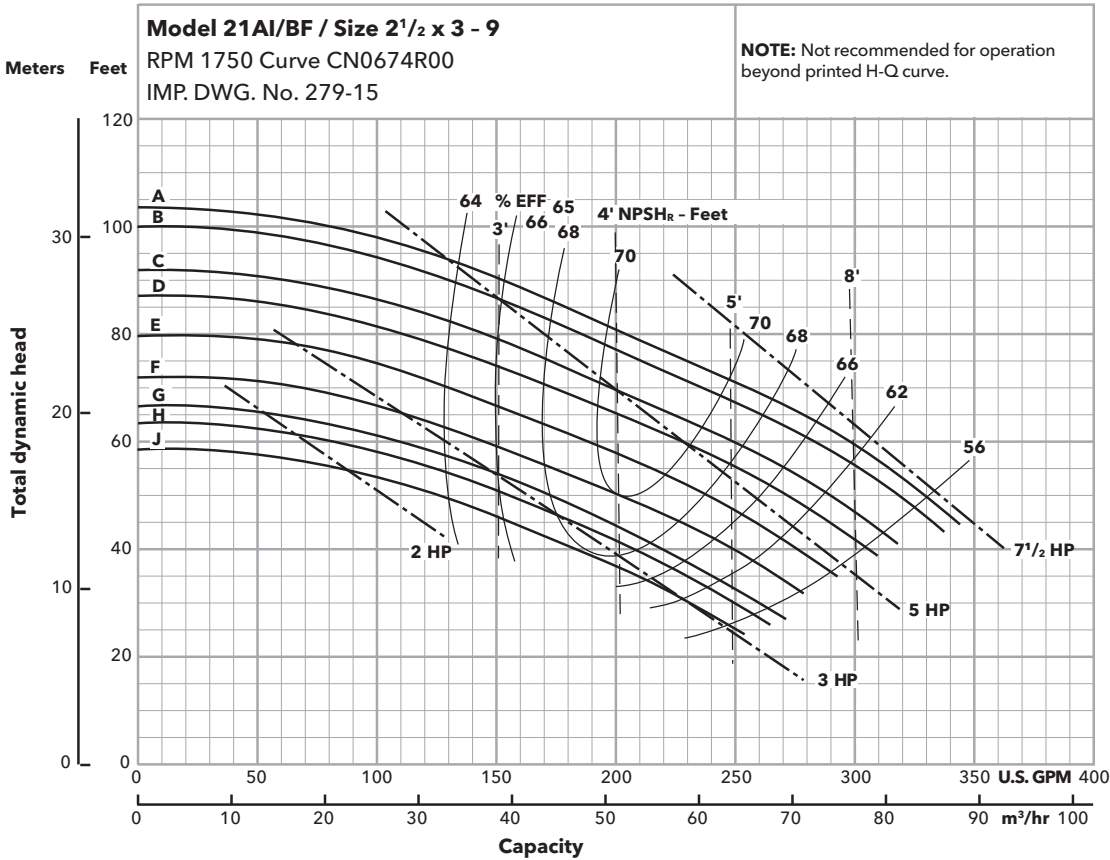
Note: Pump will pass a sphere to 5/32" diameter.



Optional impeller	
Ordering code	Dia.
A	7 15/16
B	7 7/16
C	7 3/16
D	6 13/16
F	6 3/16

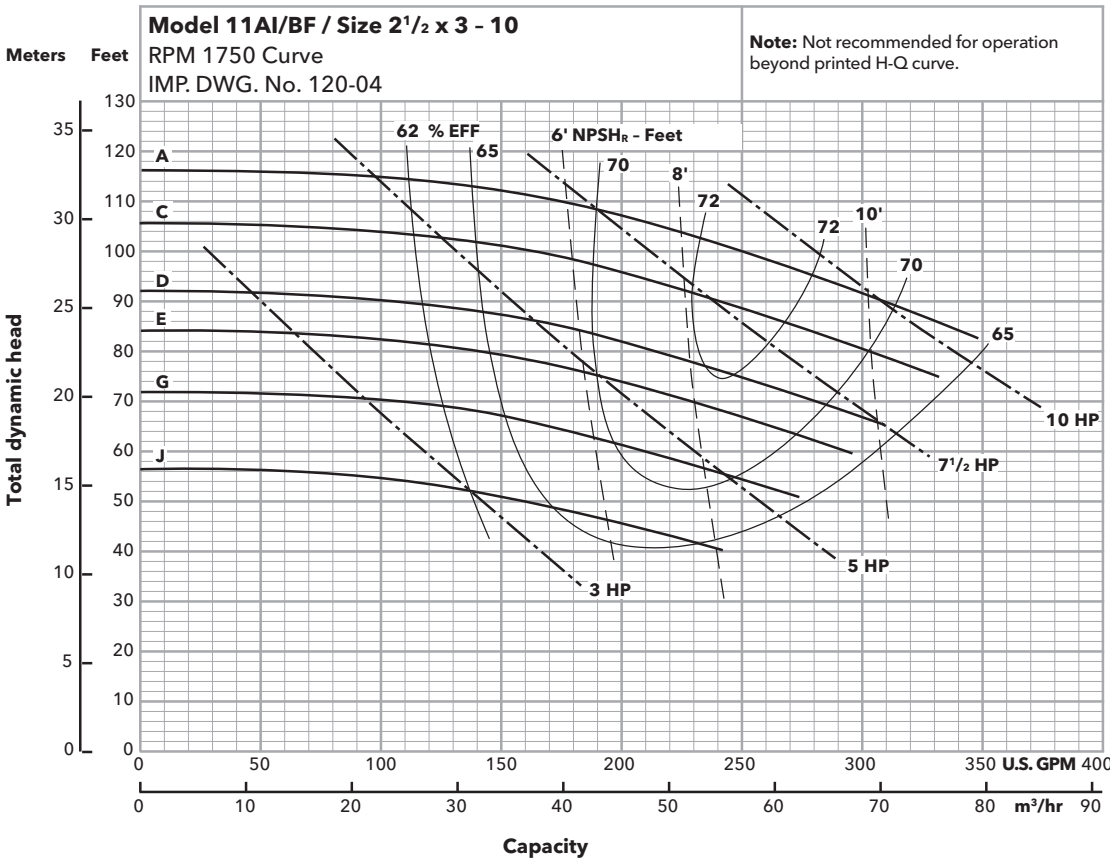
Note: Pump will pass a sphere to 5/16" diameter.

Performance curves - 60 Hz, 1750 RPM



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 7/8
C	9 1/2
D	9 1/4
E	8 15/16
F	8 1/2
G	8 3/16
H	8
J	7 1/16

Note: Pump will pass a sphere to 5/16" diameter.



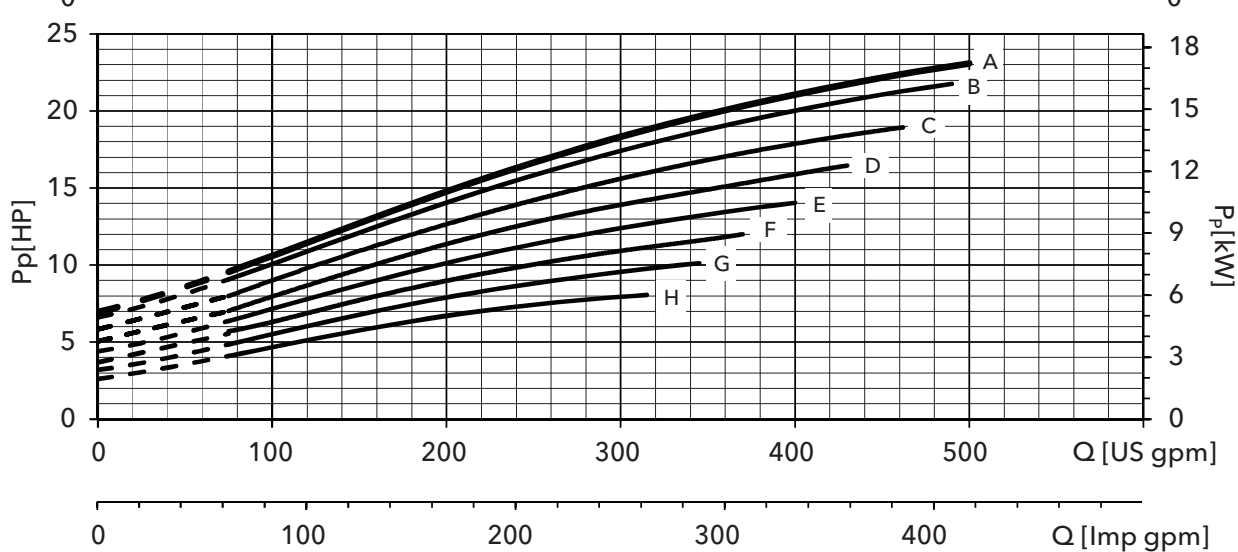
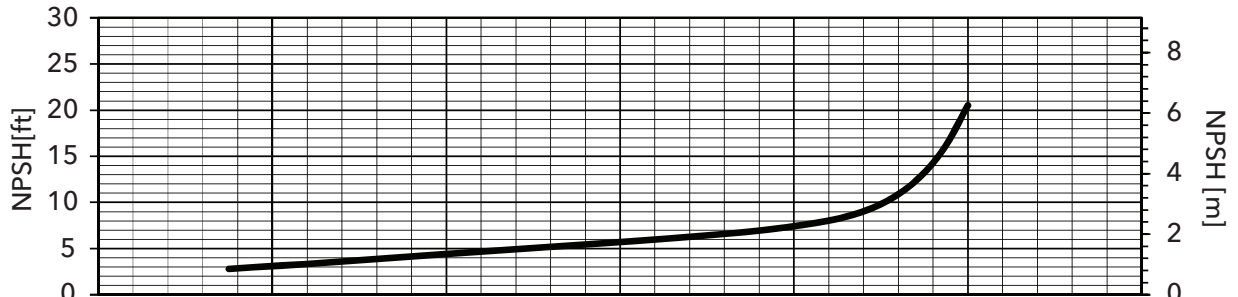
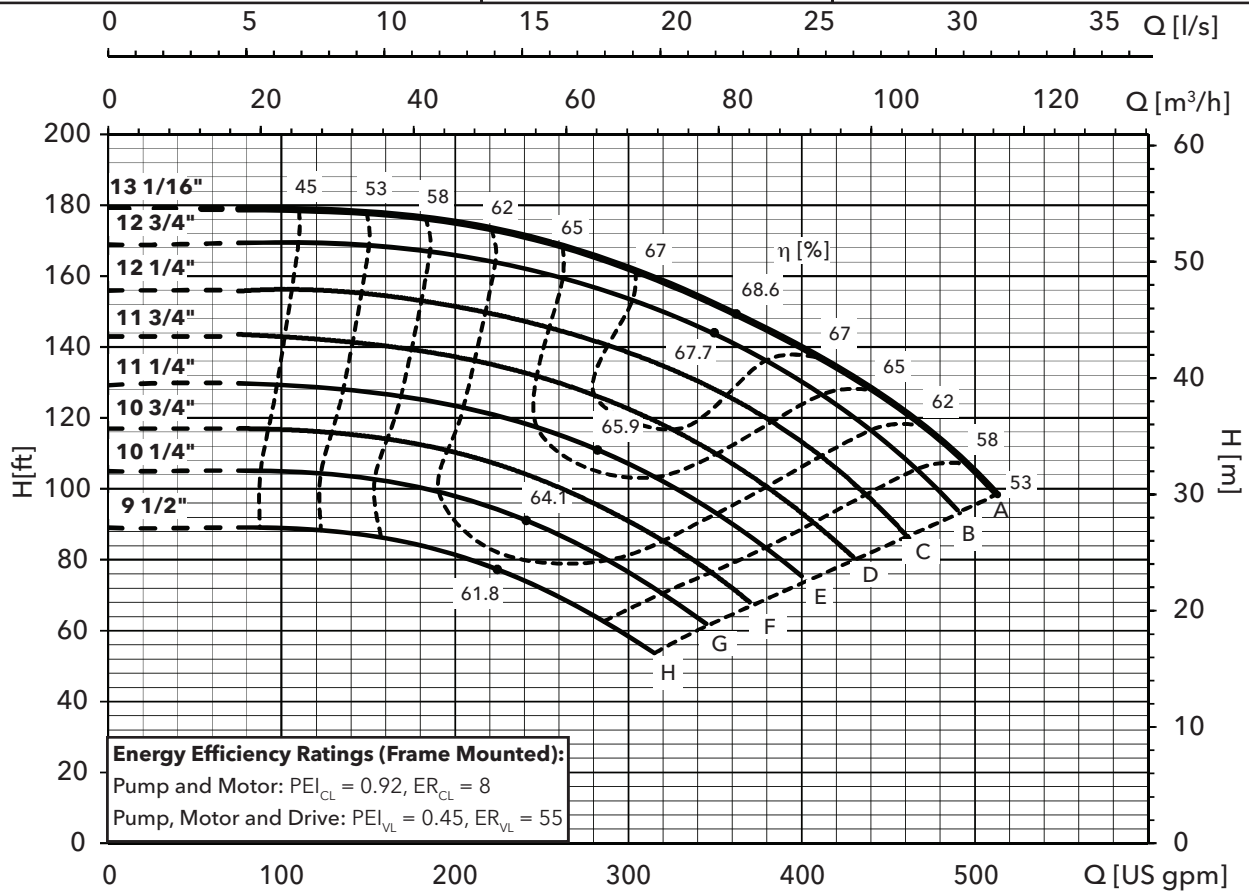
Optional impeller	
Ordering code	Dia.
A	10 1/16
C	9 5/8
D	9
E	8 5/8
G	8
J	7 1/8

Note: Pump will pass a sphere to 5/16" diameter.

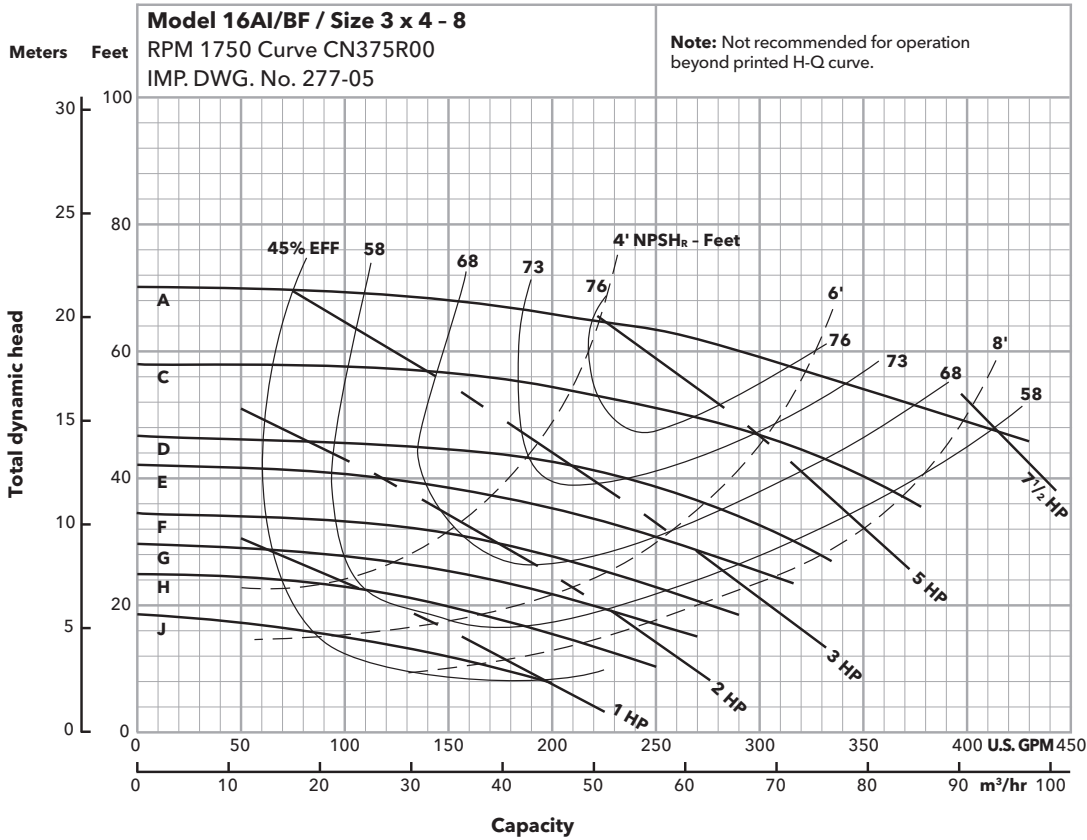
13AI/BF 2.5x3-13

1750 RPM

ANSI/HI 14.6 - Grade 2B

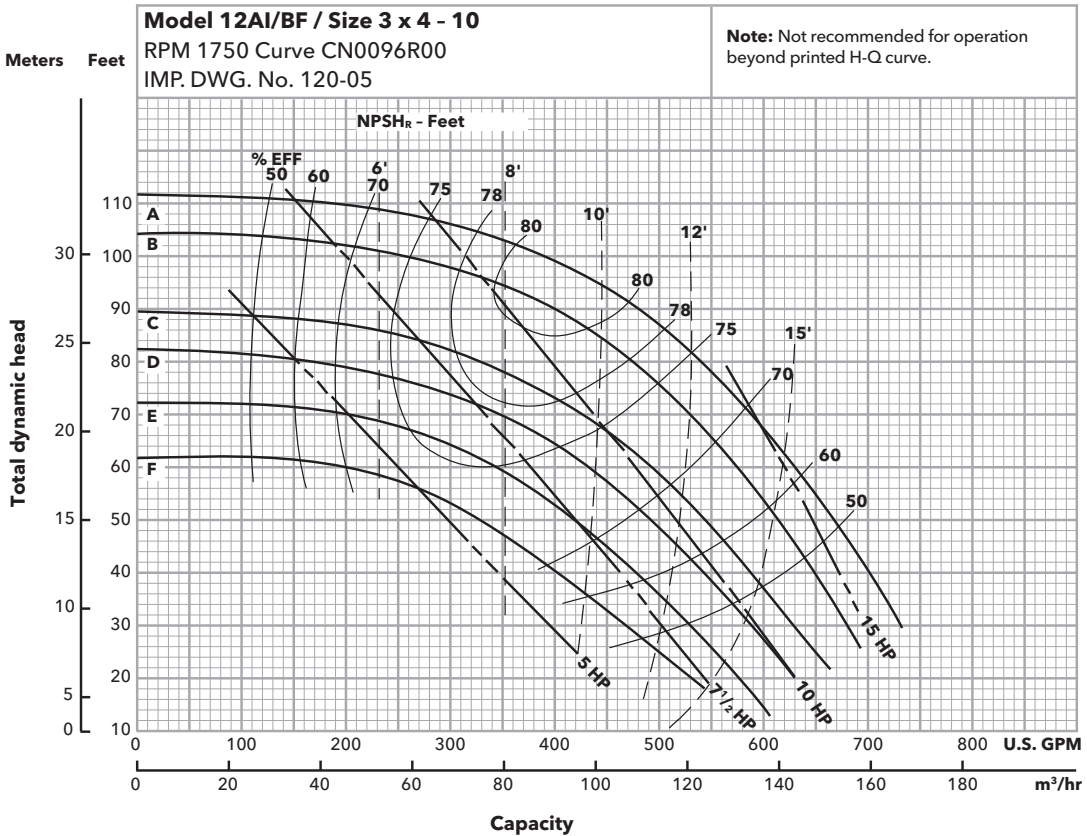


Performance curves - 60 Hz, 1750 RPM



Optional impeller	
Ordering code	Dia.
A	8 1/16
C	7 7/16
D	6 3/4
E	6 3/8
F	5 15/16
G	5 1/2
H	5 1/8
J	4 5/8

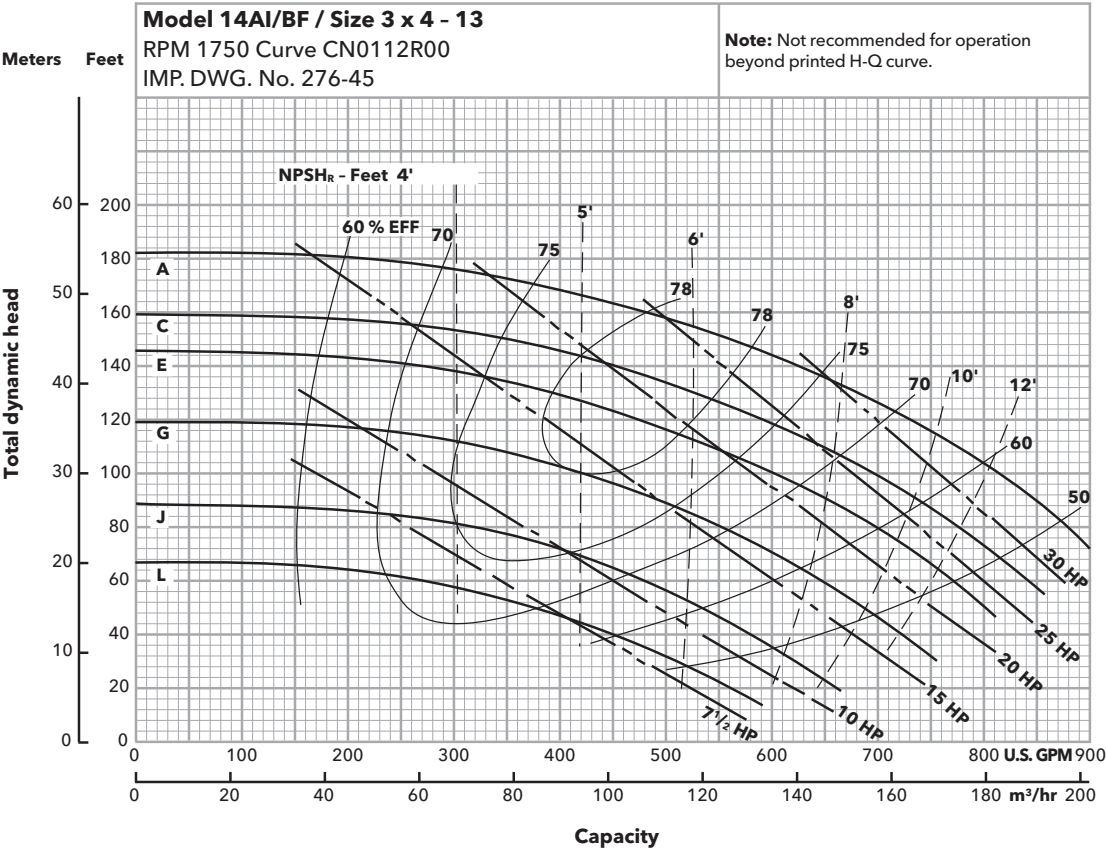
Note: Pump will pass a sphere to 3/8" diameter.



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 3/4
C	9
D	8 5/8
E	8 1/8
F	7 5/8

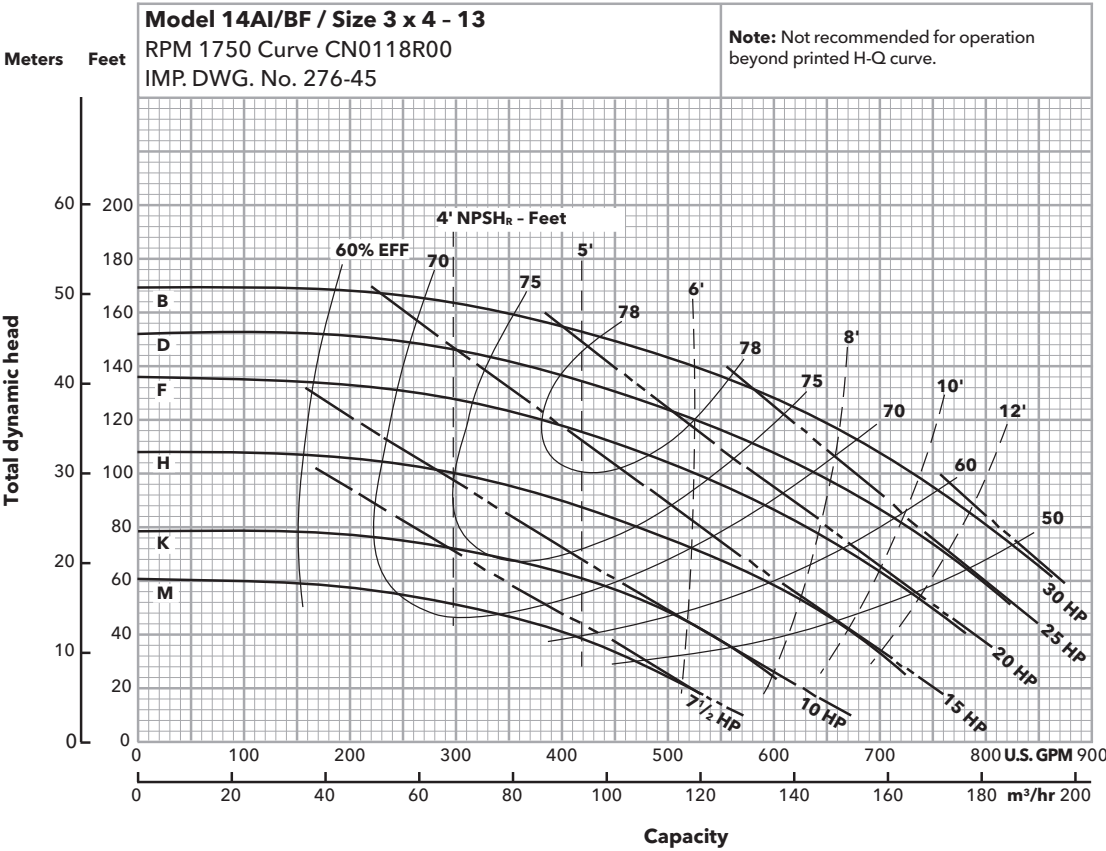
Note: Pump will pass a sphere to 3/8" diameter.

Performance curves - 60 Hz, 1750 RPM



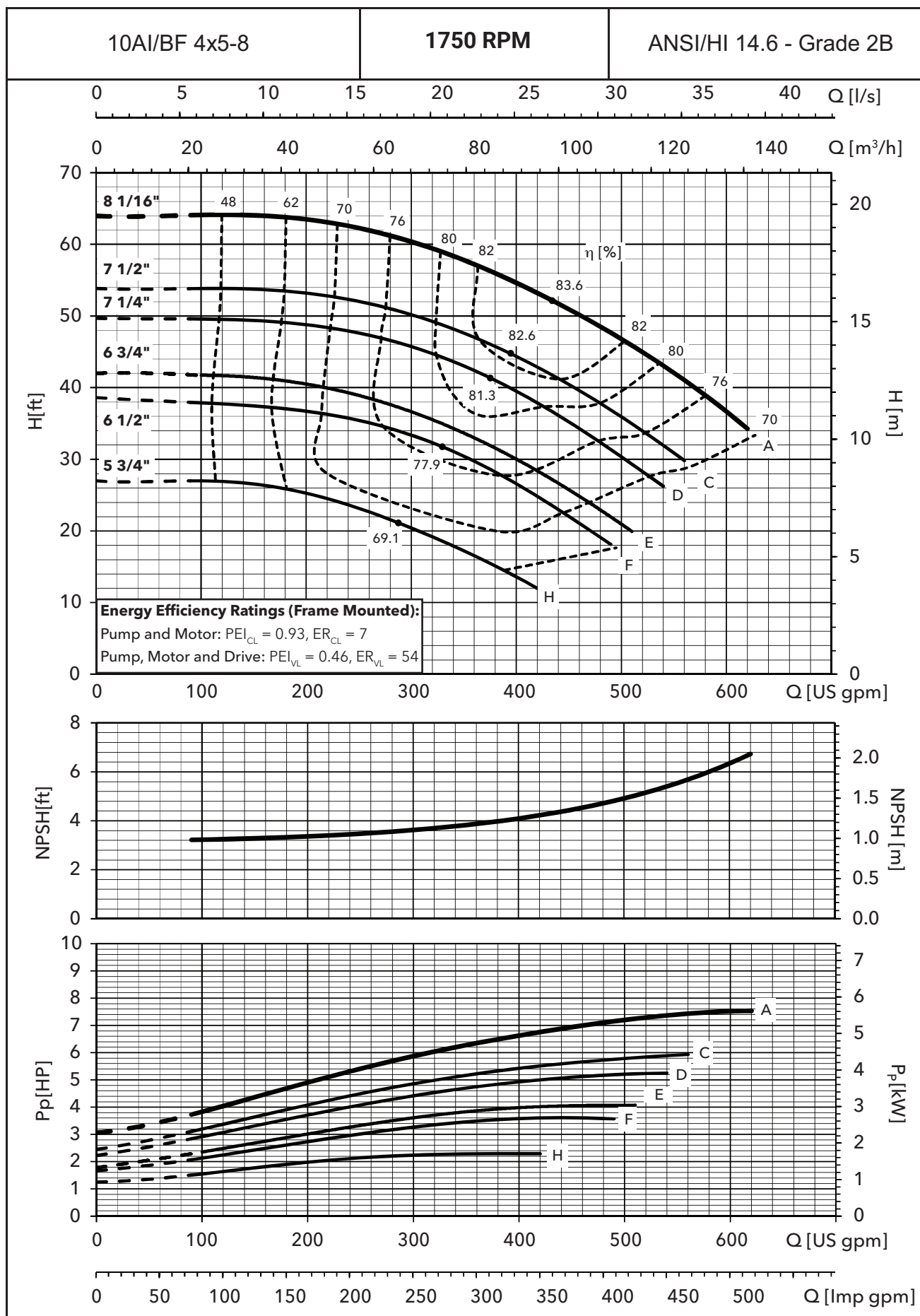
Optional impeller	
Ordering code	Dia.
A	13 1/16
C	12 5/16
E	11 3/4
G	10 3/4
J	9 1/8
L	8

Note: Pump will pass a sphere to 3/8" diameter.

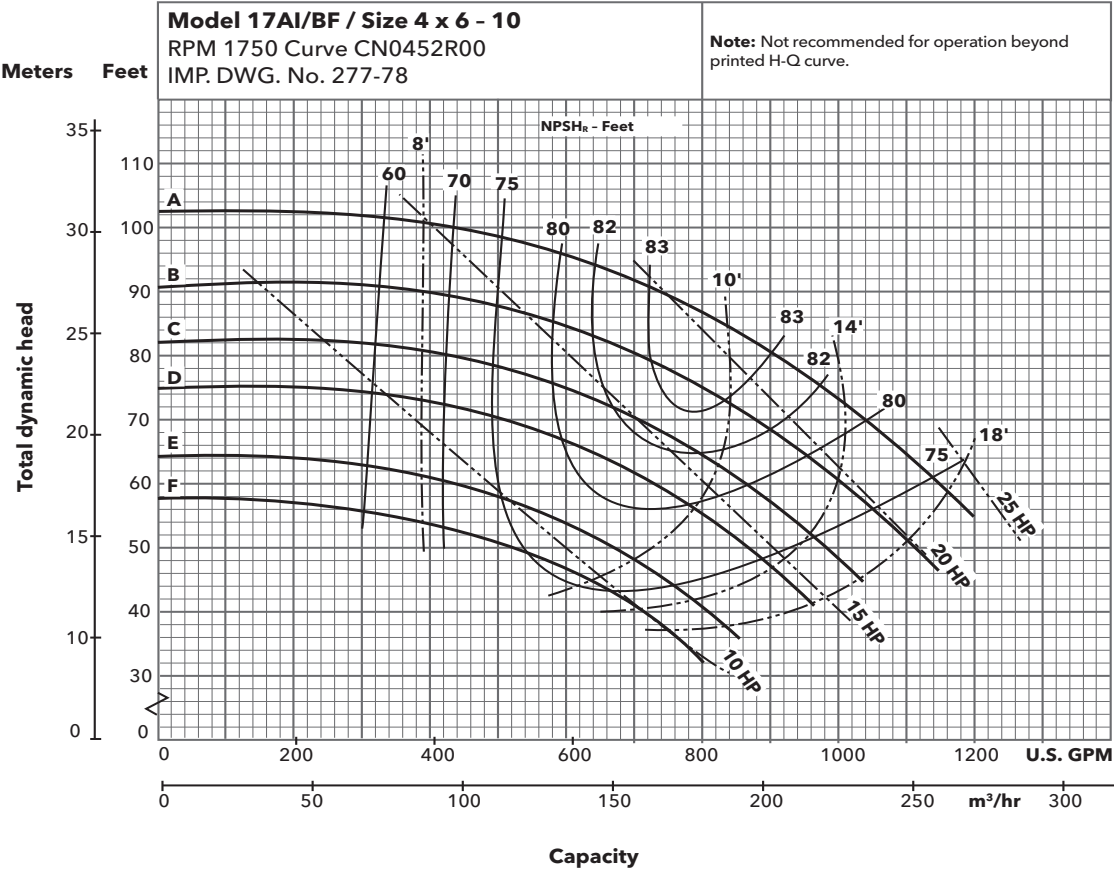


Optional impeller	
Ordering code	Dia.
B	12 3/16
D	12
F	11 5/16
H	10 1/8
K	8 11/16
M	7 7/16

Note: Pump will pass a sphere to 3/8" diameter.

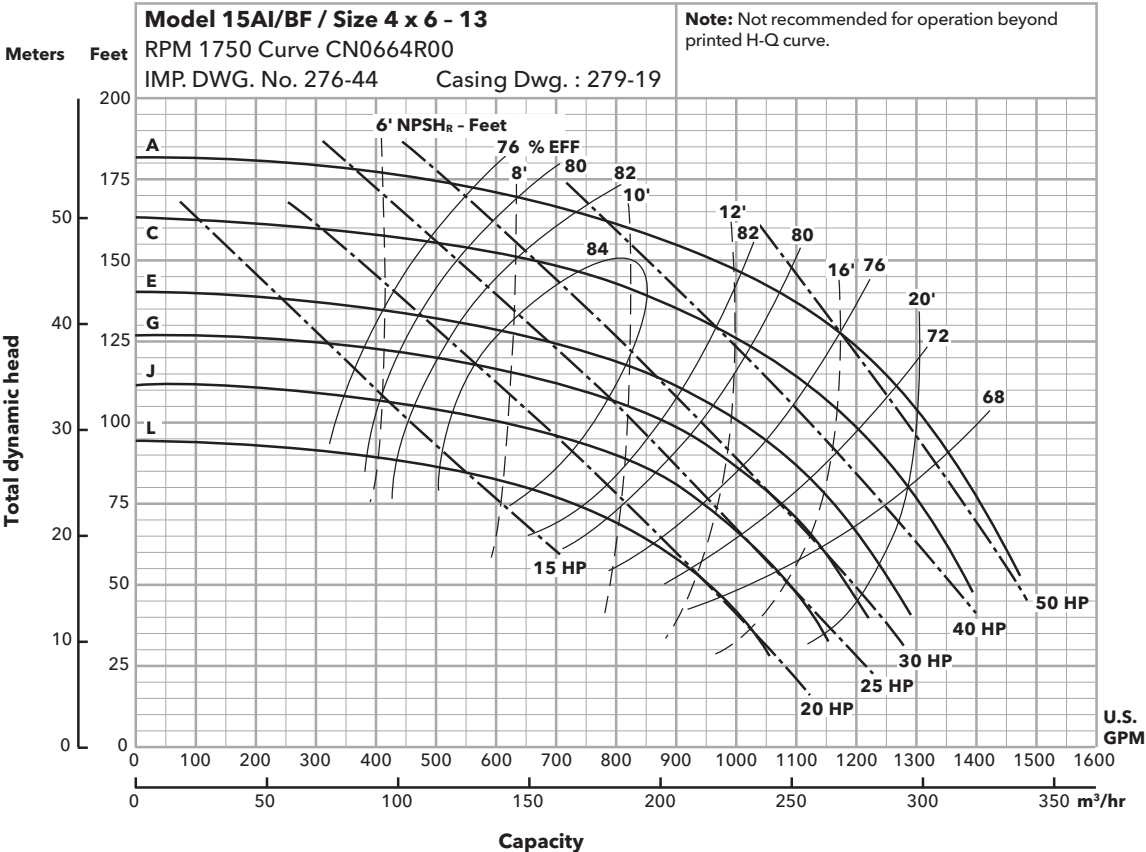


Performance curves - 60 Hz, 1750 RPM



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 9/16
C	9 1/8
D	8 1/16
E	8 1/8
F	7 3/4

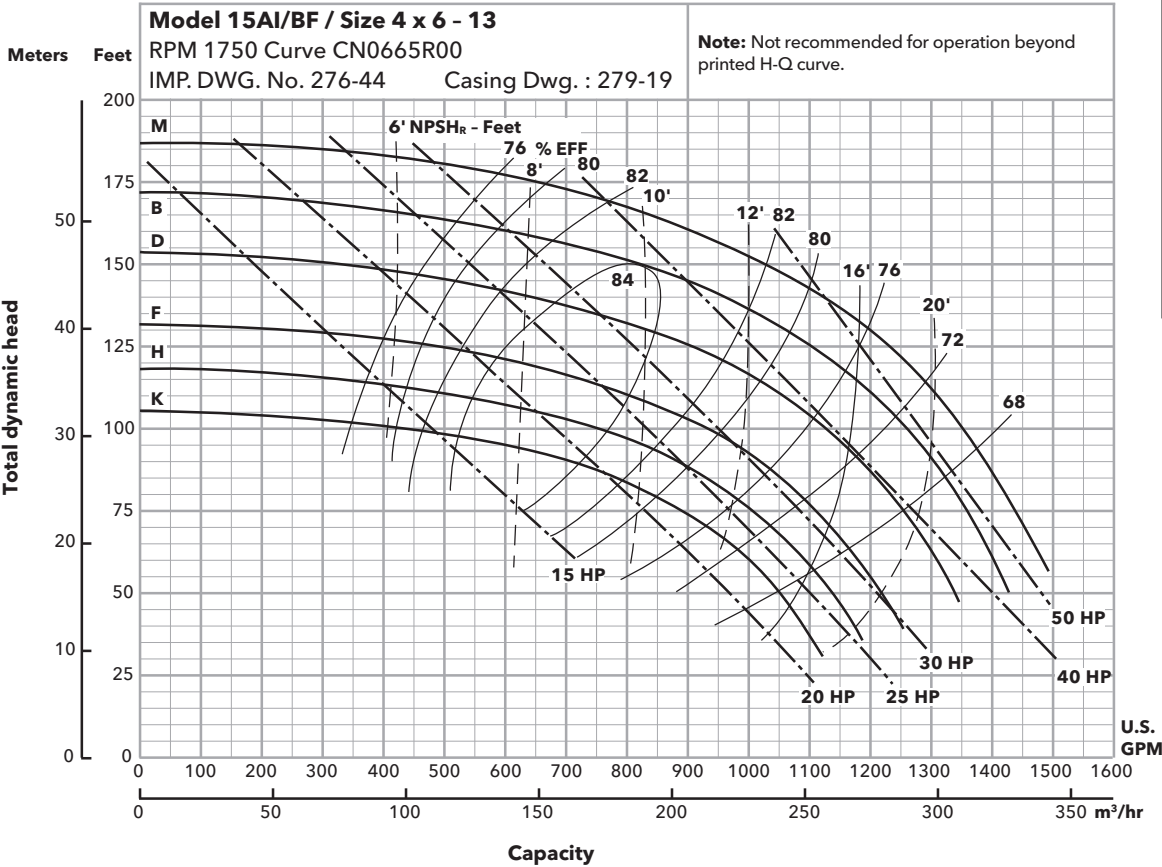
Note: Pump will pass a sphere to 7/16" diameter.



Optional impeller	
Ordering code	Dia.
A	12 7/8
C	12 1/4
E	11 3/8
G	10 7/8
J	10 1/4
L	9 3/8

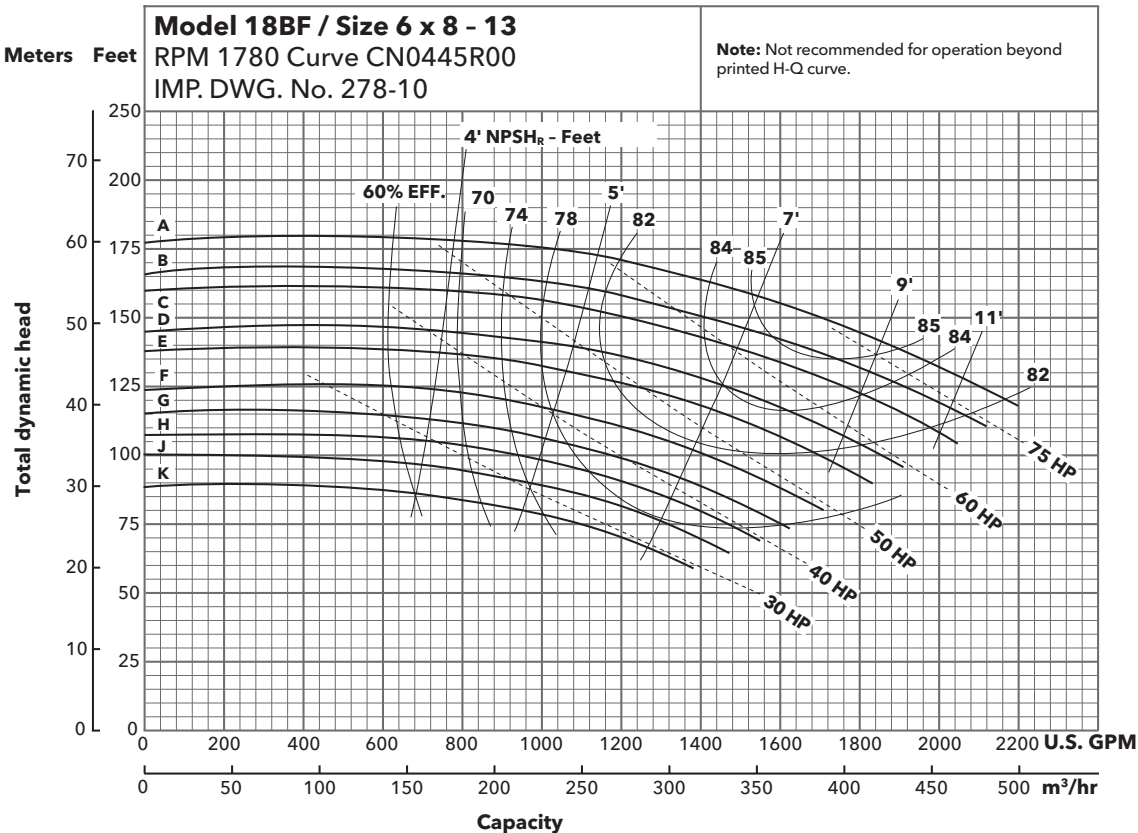
Note: Pump will pass a sphere to 7/16" diameter.

Performance curves - 60 Hz, 1750 RPM



Optional impeller	
Ordering code	Dia.
M	13 1/16
B	12 1/2
D	11 7/8
F	11 1/16
H	10 1/2
K	9 7/8

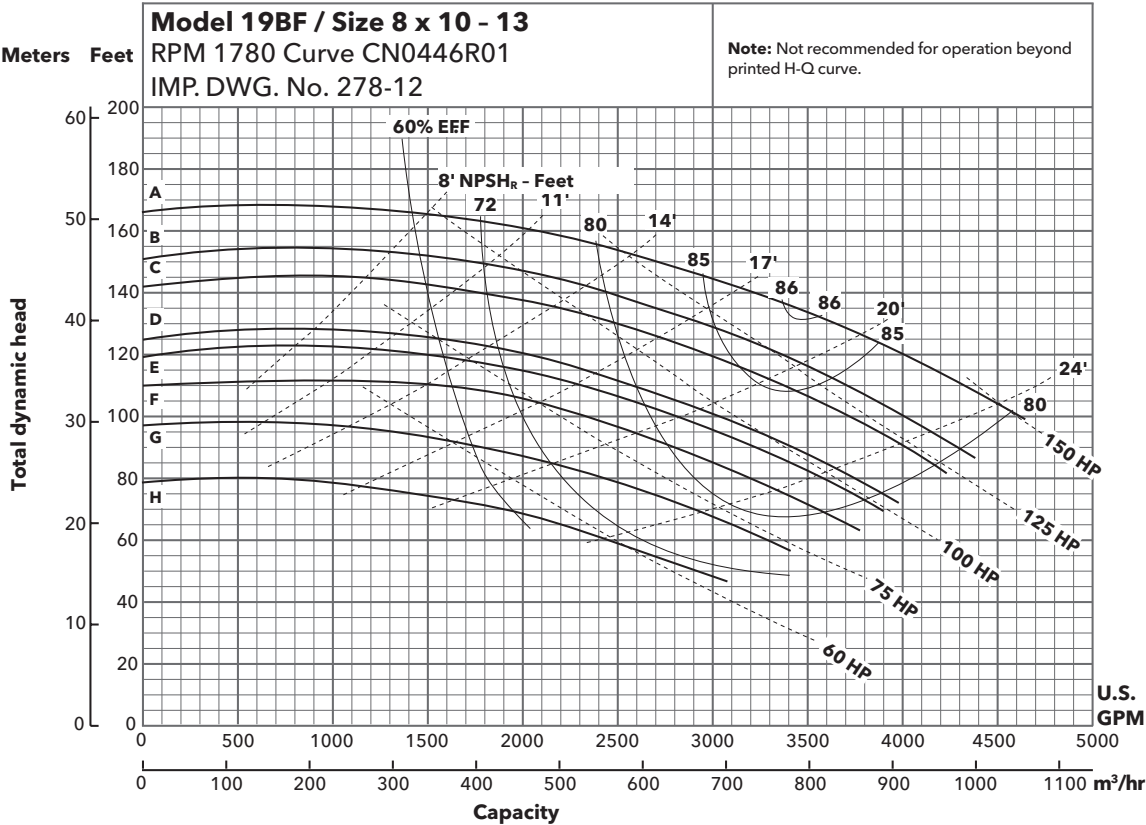
Note: Pump will pass a sphere to 7/16" diameter.



Optional impeller	
Ordering code	Dia.
A	13
B	12 1/2
C	12 5/16
D	11 7/8
E	11 5/8
F	11 1/8
G	10 7/8
H	10 1/2
J	10
K	9 1/2

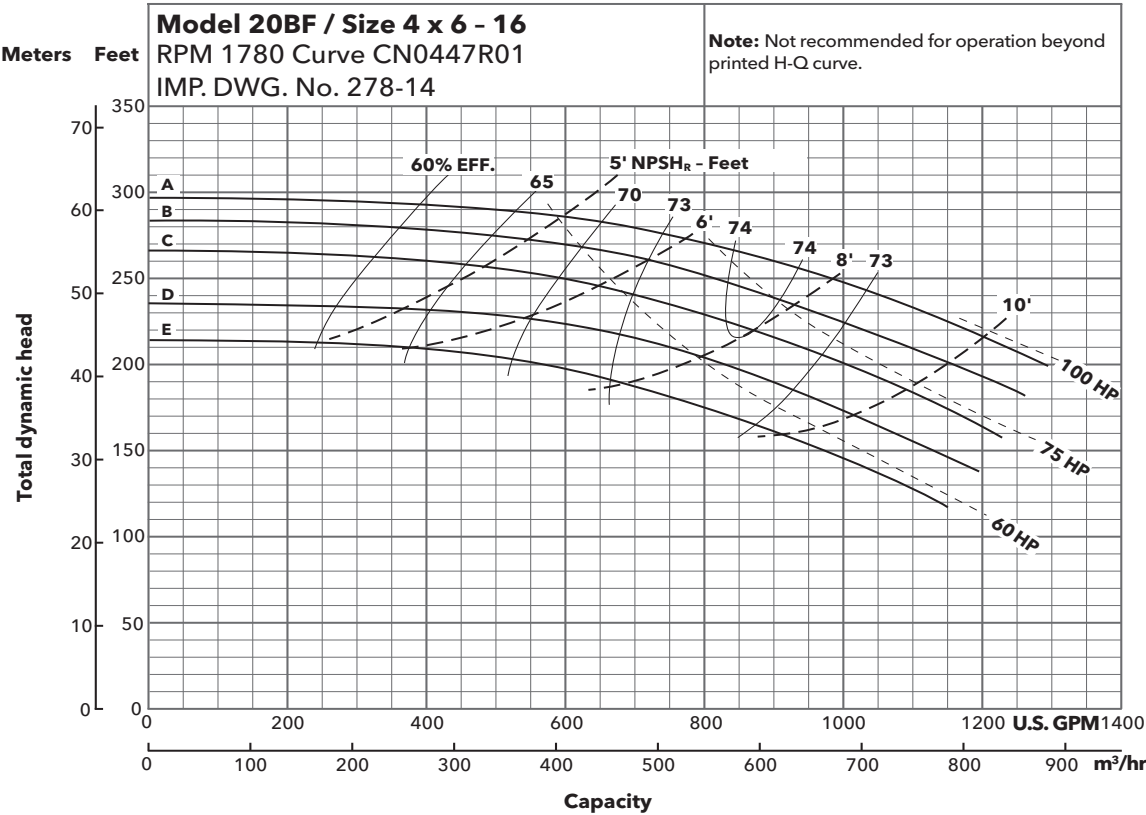
Note: Pump will pass a sphere to 7/8" diameter.

Performance curves - 60 Hz, 1780 RPM



Optional impeller	
Ordering code	Dia.
A	13
B	12 3/4
C	12 3/8
D	11 15/16
E	11 11/16
F	11 1/4
G	10 7/8
H	9 13/16

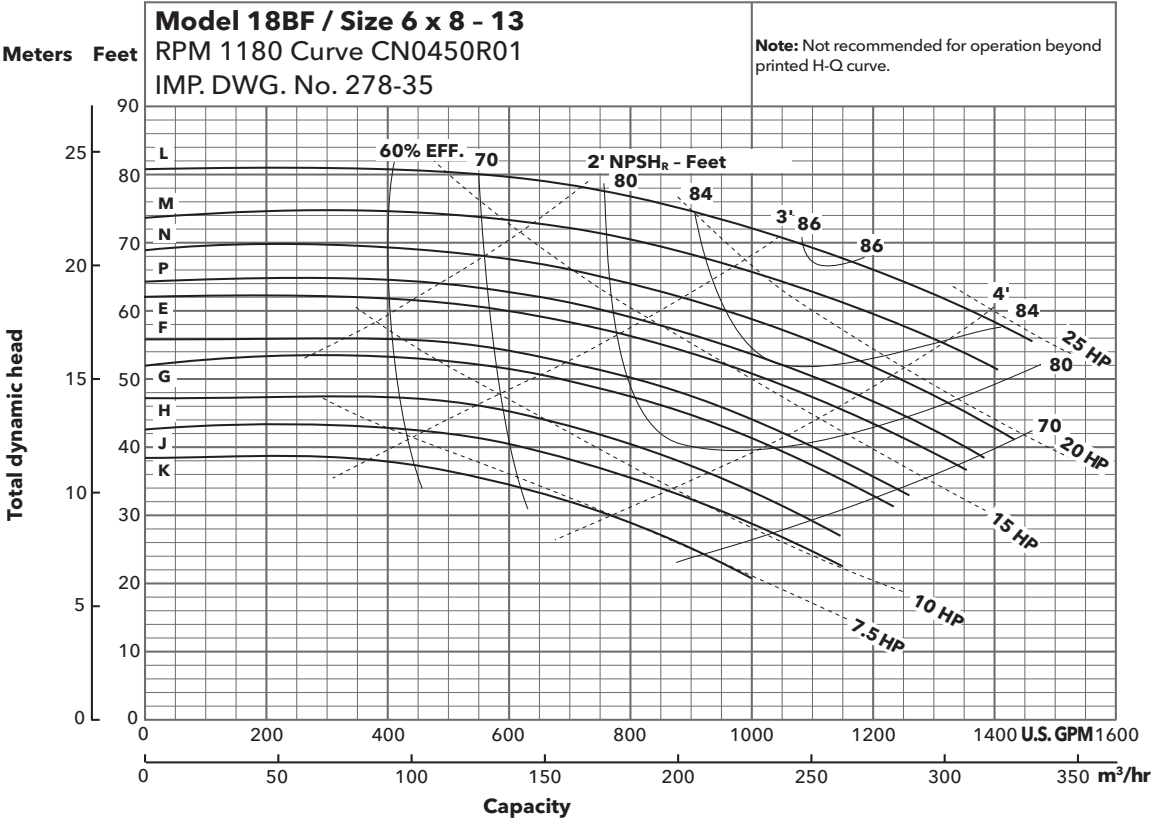
Note: Pump will pass a sphere to 7/8 diameter.



Optional impeller	
Ordering code	Dia.
A	16
B	15 5/8
C	15 3/16
D	14 1/2
E	13 3/4

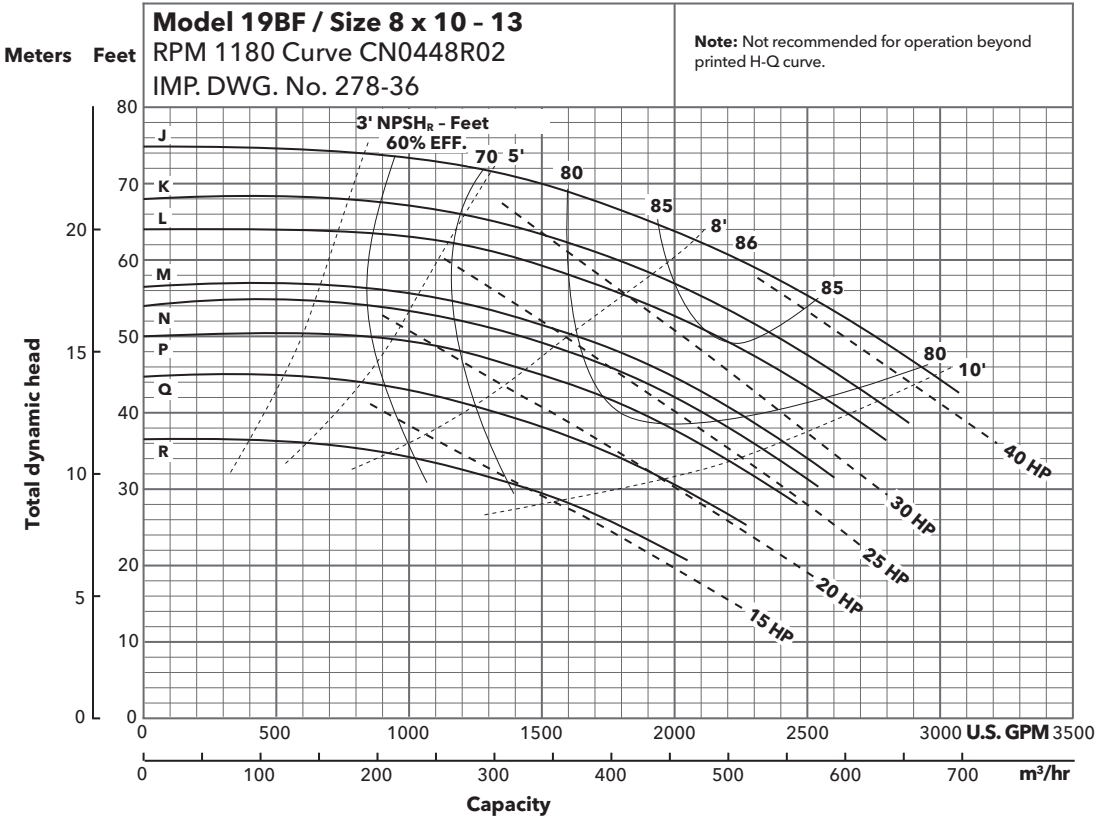
Note: Pump will pass a sphere to 5/8" diameter.
NOTA: La bomba dejará pasar una esfera de hasta 5/8 de pulgada de diámetro.

Performance curves - 60 Hz, 1780 RPM



Optional impeller	
Ordering code	Dia.
L	13
M	12½
N	12⅝
P	11⅞
E	11⅝
F	11⅞
G	10⅞
H	10½
J	10
K	9½

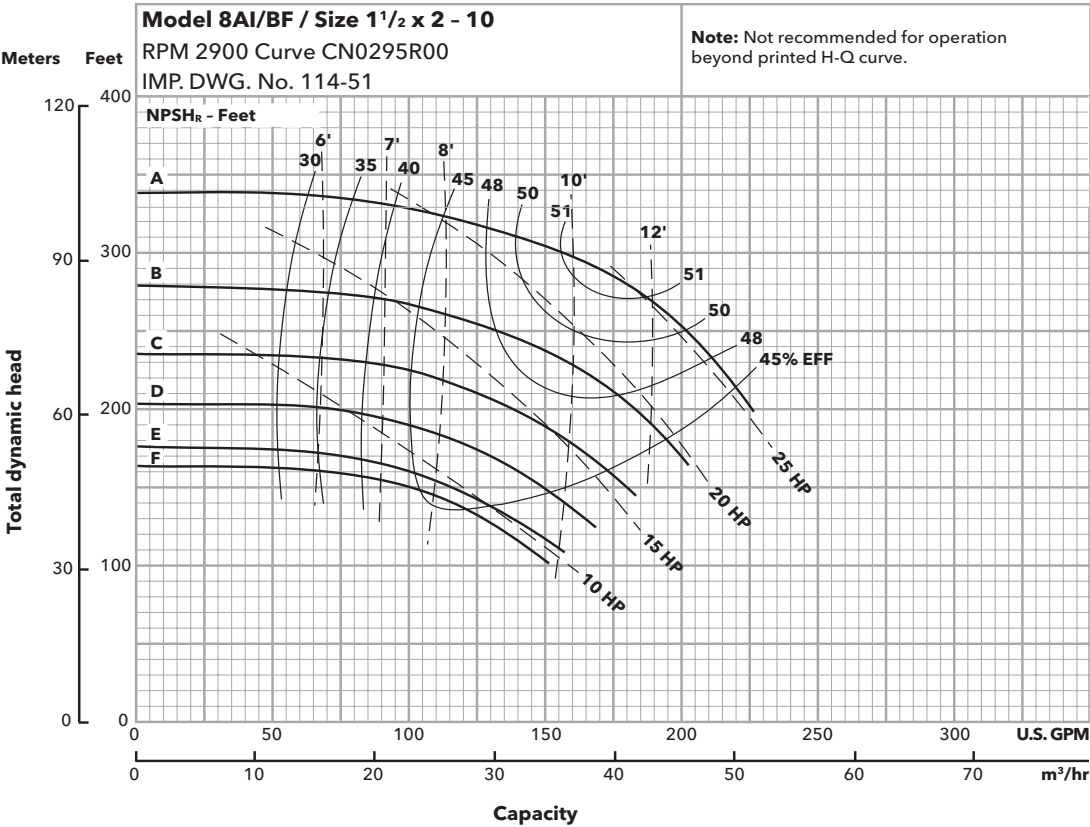
Note: Pump will pass a sphere to ⅞" diameter.



Optional impeller	
Ordering code	Dia.
J	13
K	12¾
L	12⅜
M	11⅝
N	11⅞
P	11¼
Q	10⅞
R	9⅝

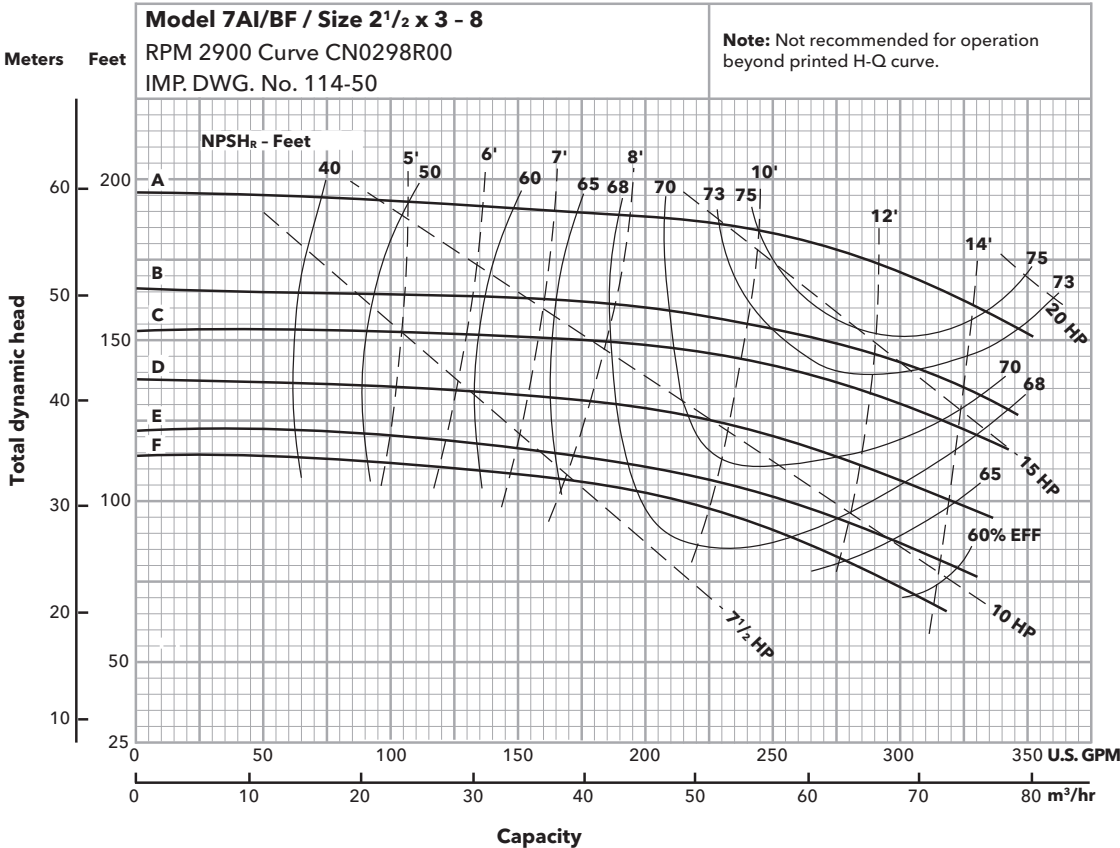
Note: Pump will pass a sphere to ⅞" diameter.

Performance curves - 50 Hz, 2900 RPM



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 3/16
C	8 3/8
D	7 3/4
E	7 1/4
F	7

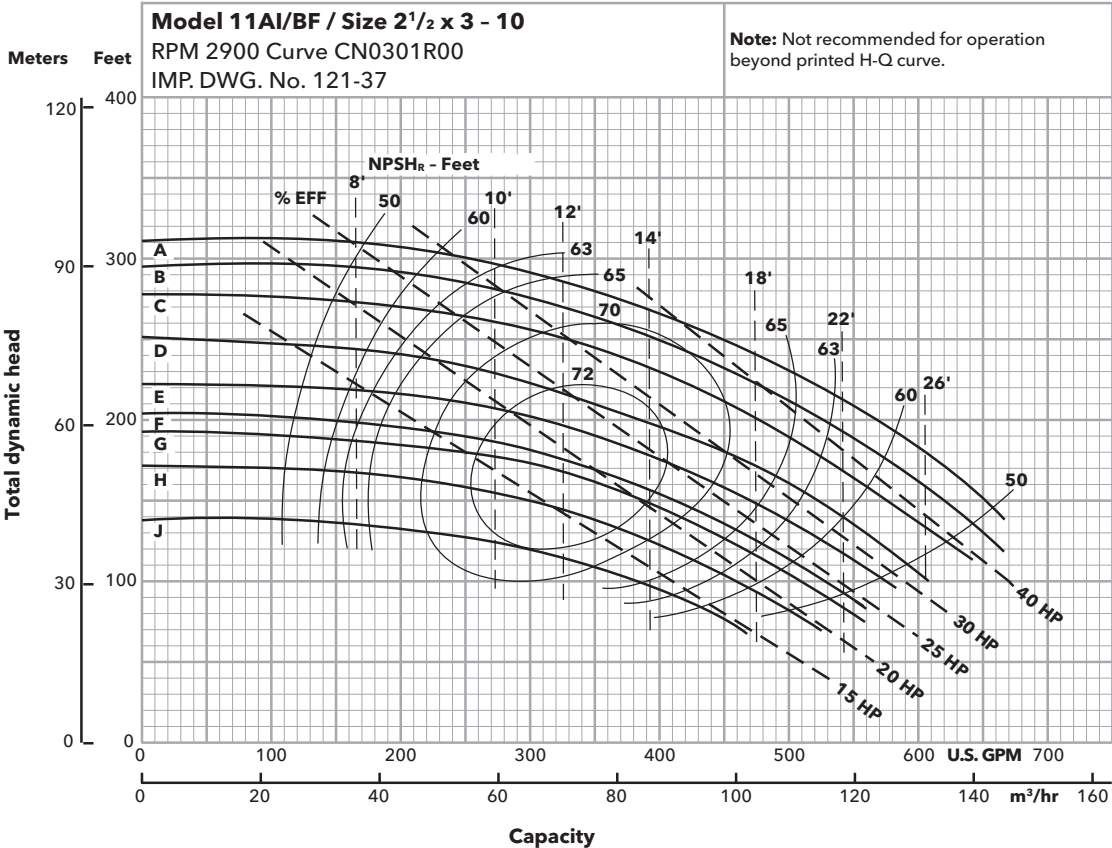
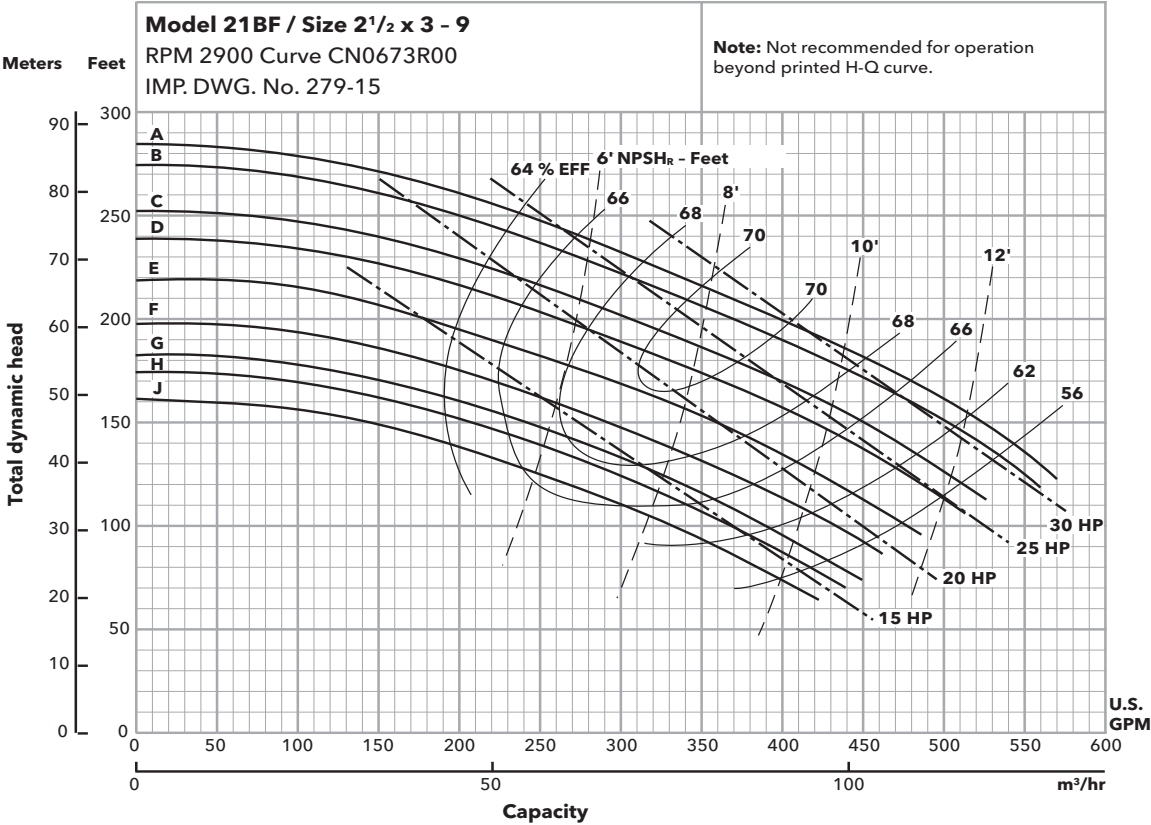
Note: Pump will pass a sphere to 5/32" diameter.

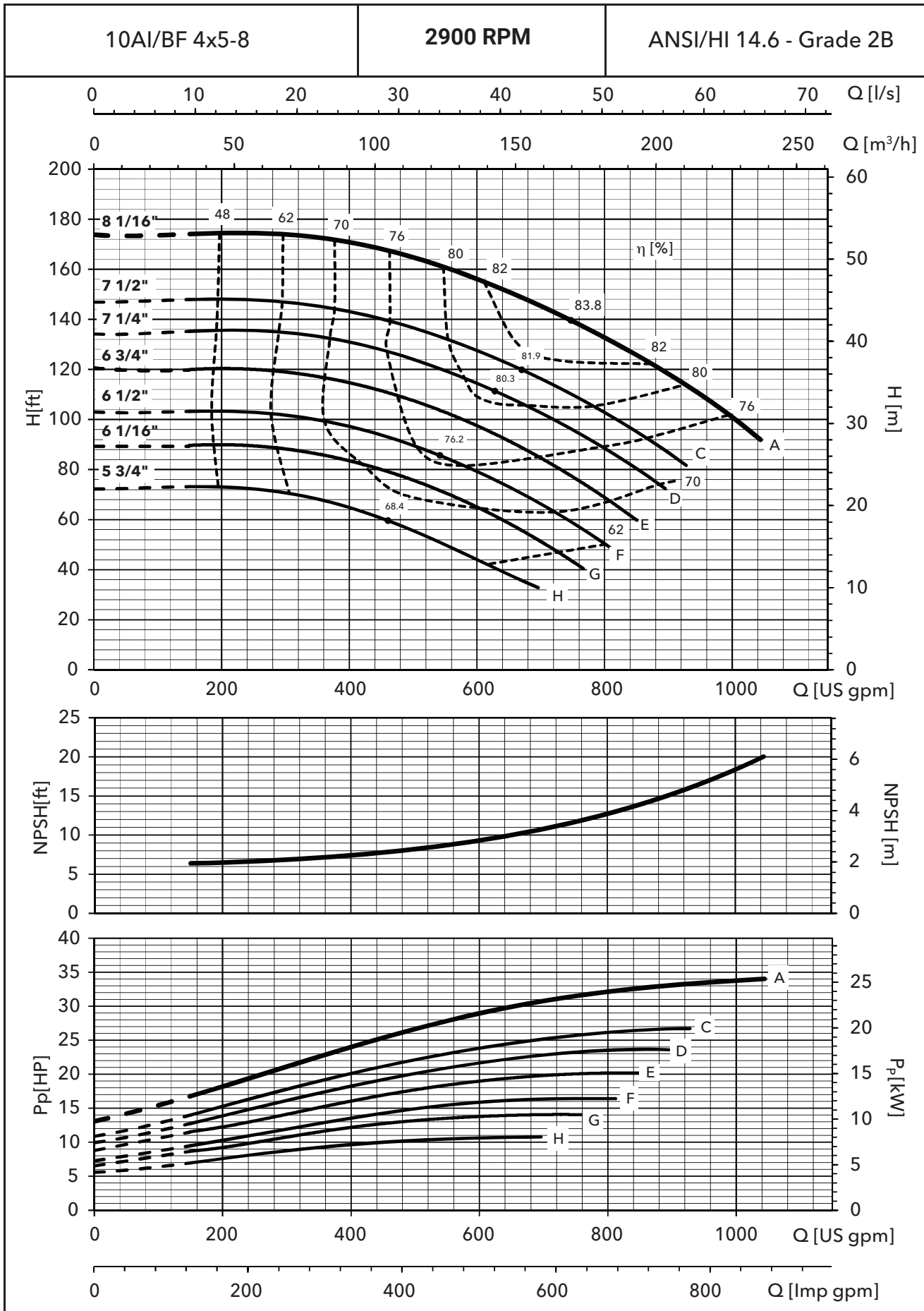


Optional impeller	
Ordering code	Dia.
A	7 15/16
B	7 7/16
C	7 3/16
D	6 13/16
E	6 3/8
F	6 3/16

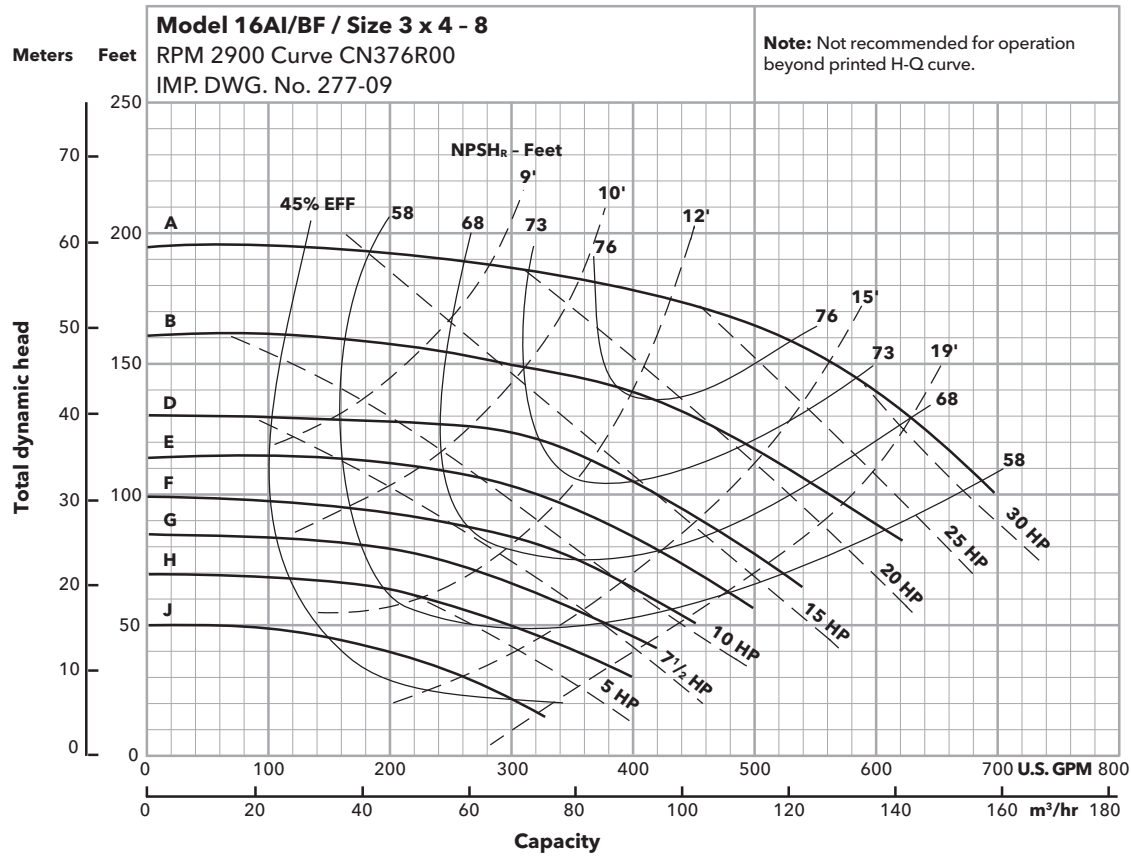
Note: Pump will pass a sphere to 5/16" diameter.

Performance curves - 50 Hz, 2900 RPM





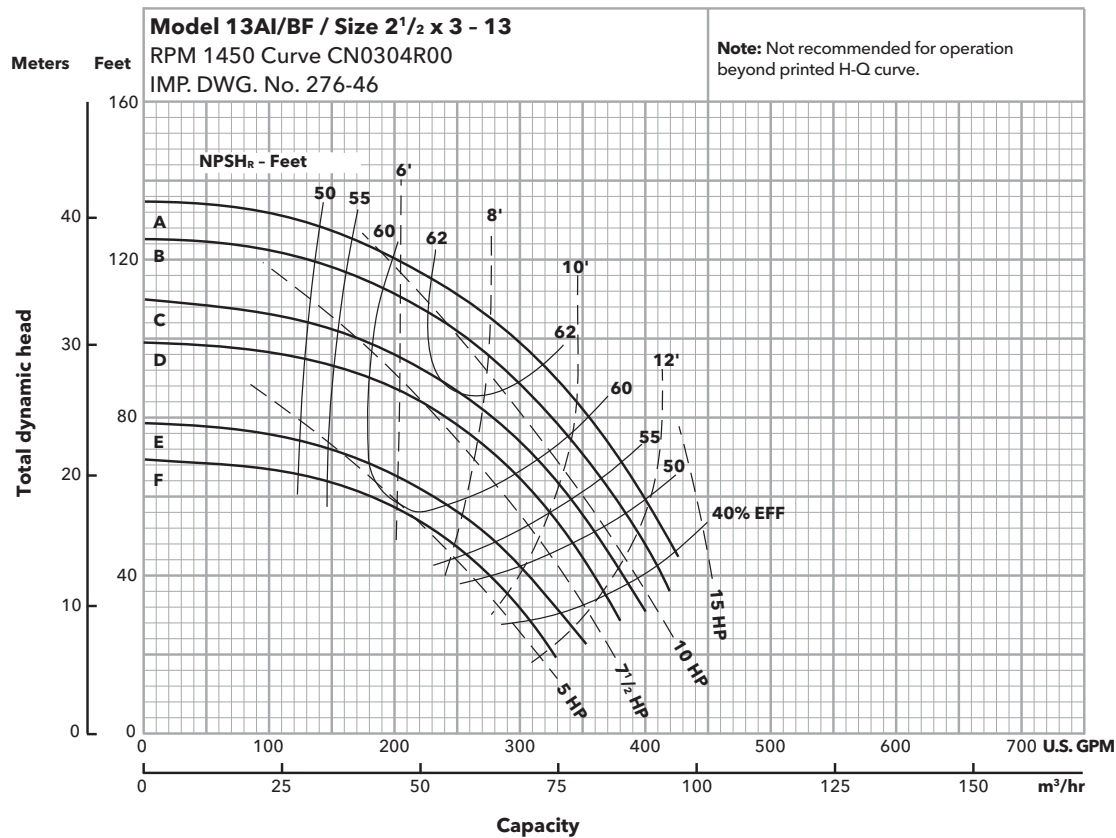
Performance curves - 50 Hz, 2900 RPM



Optional impeller	
Ordering code	Dia.
A	8 1/16
B	7 7/16
D	6 3/4
E	6 3/8
F	5 15/16
G	5 1/2
H	5 1/8
J	4 5/8

Note: Pump will pass a sphere to 5/16" diameter.

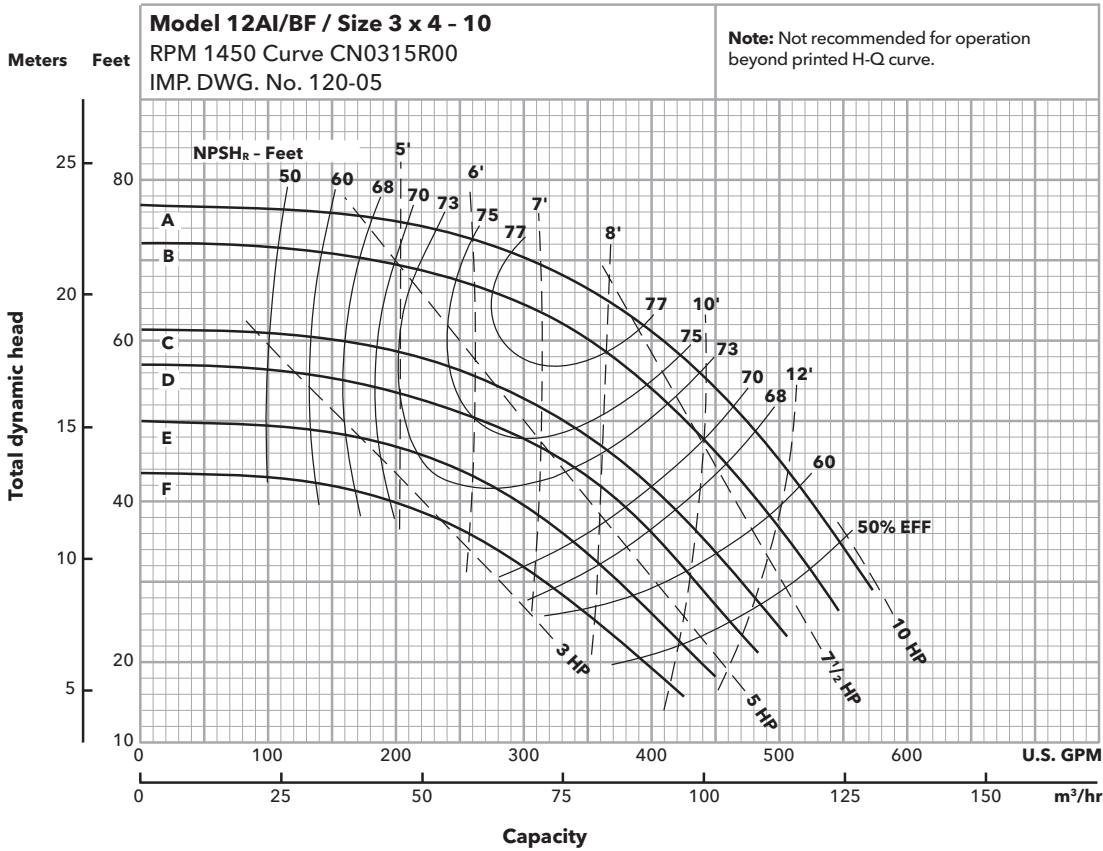
Performance curves - 50 Hz, 1450 RPM



Optional impeller	
Ordering code	Dia.
A	13 1/16
B	12 3/4
C	11 7/8
D	11 3/8
E	9 7/8
F	9 3/8

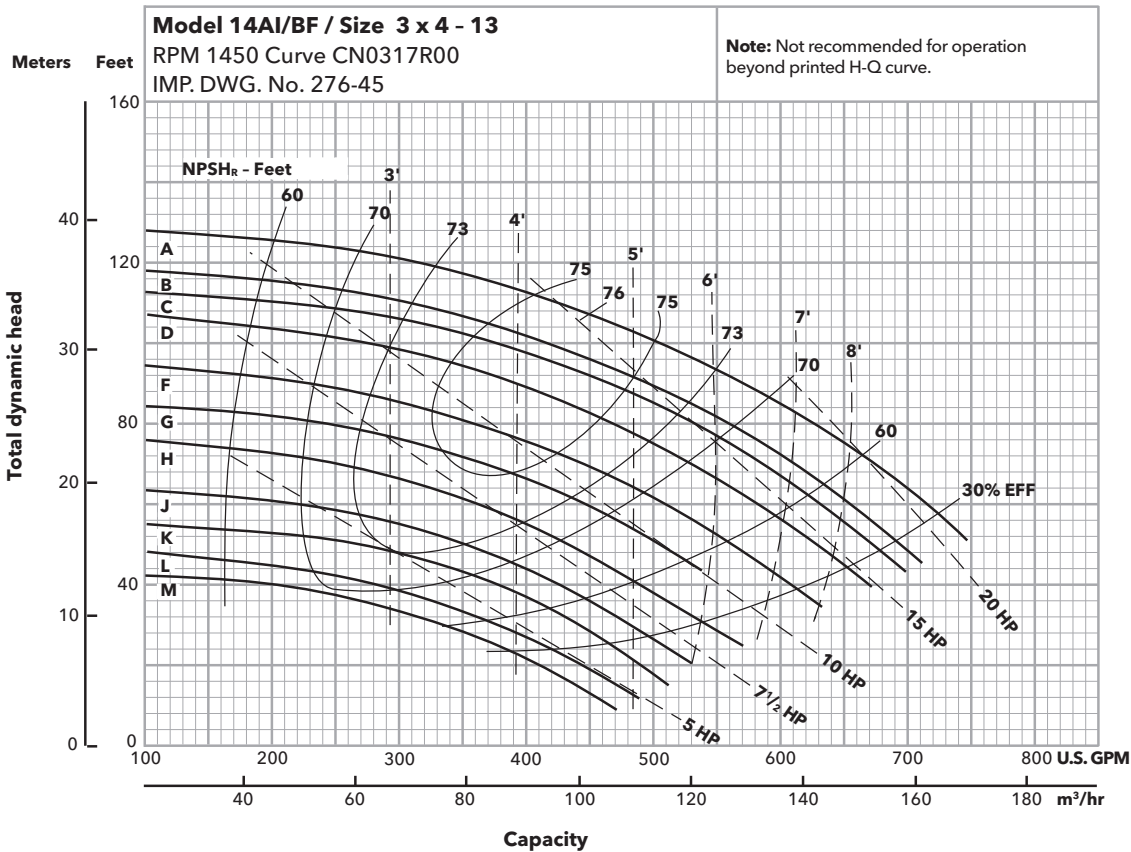
Note: Pump will pass a sphere to 5/16" diameter.

Performance curves - 50 Hz, 1450 RPM



Optional impeller	
Ordering code	Dia.
A	10 1/16
B	9 3/4
C	9
D	8 5/8
E	8 1/8
F	7 5/8

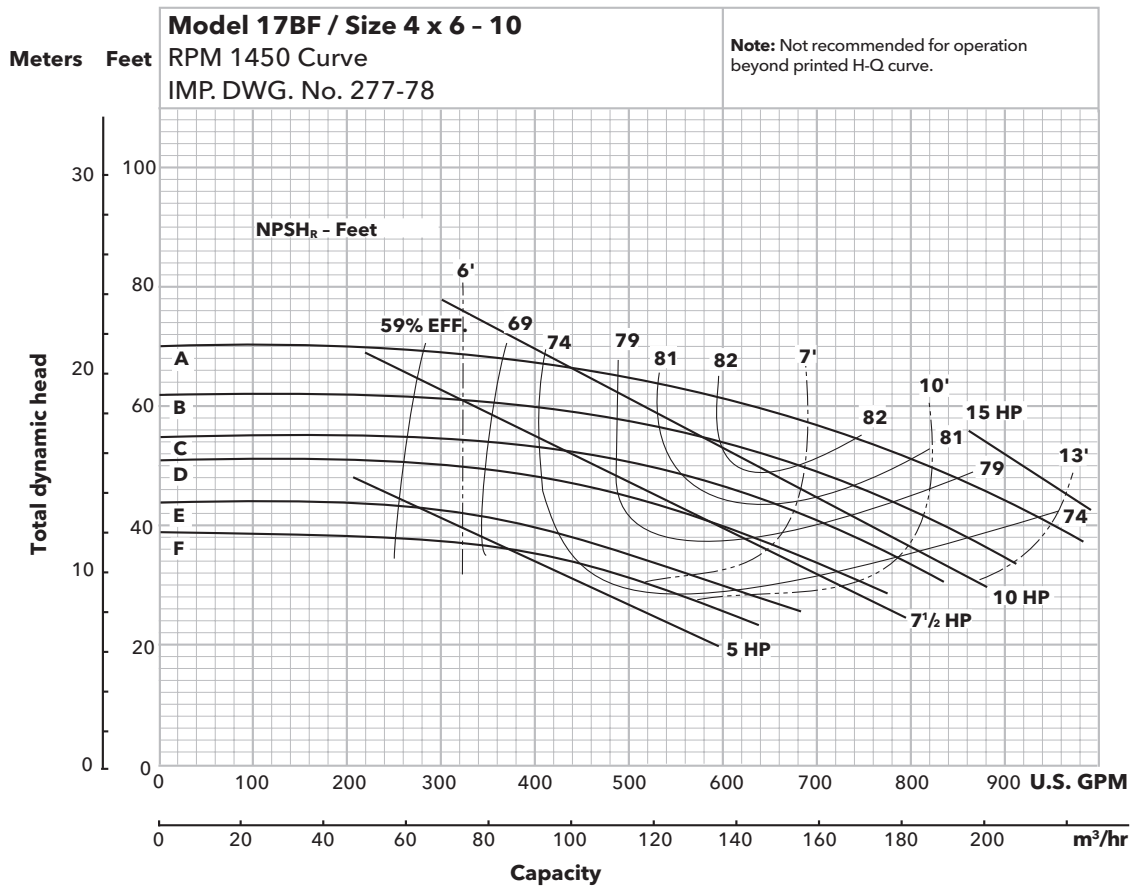
Note: Pump will pass a sphere to 3/8" diameter.



Optional impeller	
Ordering code	Dia.
A	13 1/16
B	12 7/16
C	12 5/16
D	12
F	11 5/16
G	10 3/4
H	10 1/8
J	9 1/8
K	8 1/16
L	8
M	7 7/16

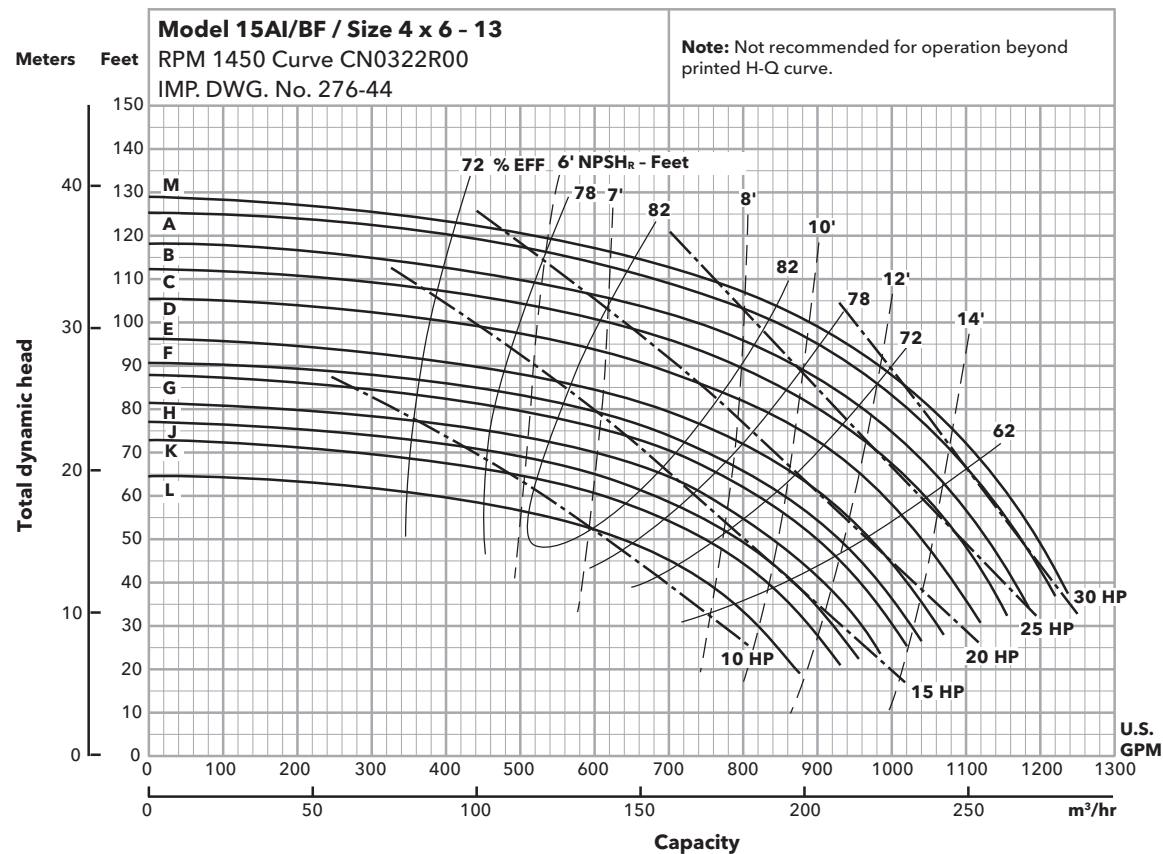
Note: Pump will pass a sphere to 3/8" diameter.

Performance curves - 50 Hz, 1450 RPM



Optional impeller	
Ordering code	Dia.
A	10 $\frac{1}{16}$
B	9 $\frac{7}{16}$
C	9 $\frac{1}{8}$
D	8 $\frac{1}{16}$
E	8 $\frac{1}{8}$
F	7 $\frac{3}{4}$

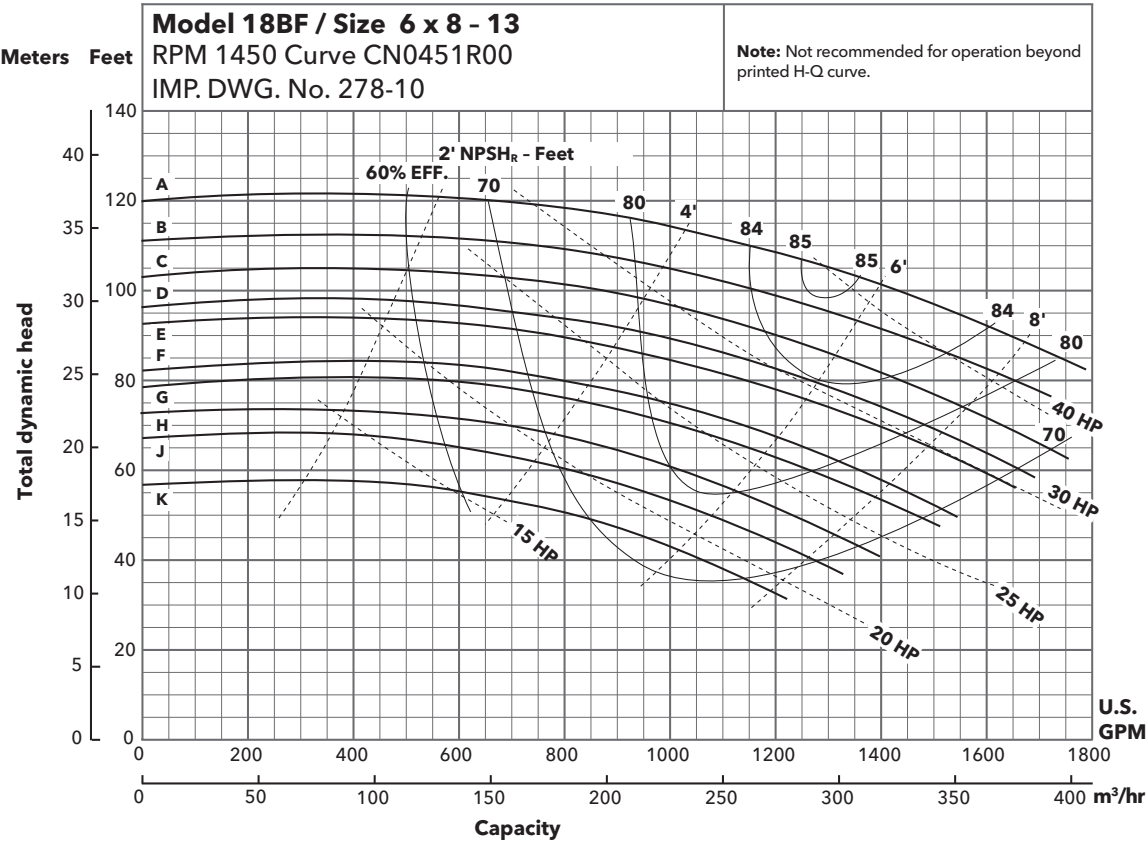
Note: Pump will pass a sphere to $\frac{7}{16}$ " diameter.



Optional impeller	
Ordering code	Dia.
M	13 $\frac{1}{16}$
A	12 $\frac{7}{8}$
B	12 $\frac{1}{2}$
C	12 $\frac{1}{4}$
D	11 $\frac{7}{8}$
E	11 $\frac{3}{8}$
F	11 $\frac{1}{16}$
G	10 $\frac{7}{8}$
H	10 $\frac{1}{2}$
J	10 $\frac{1}{4}$
K	9 $\frac{7}{8}$
L	9 $\frac{3}{8}$

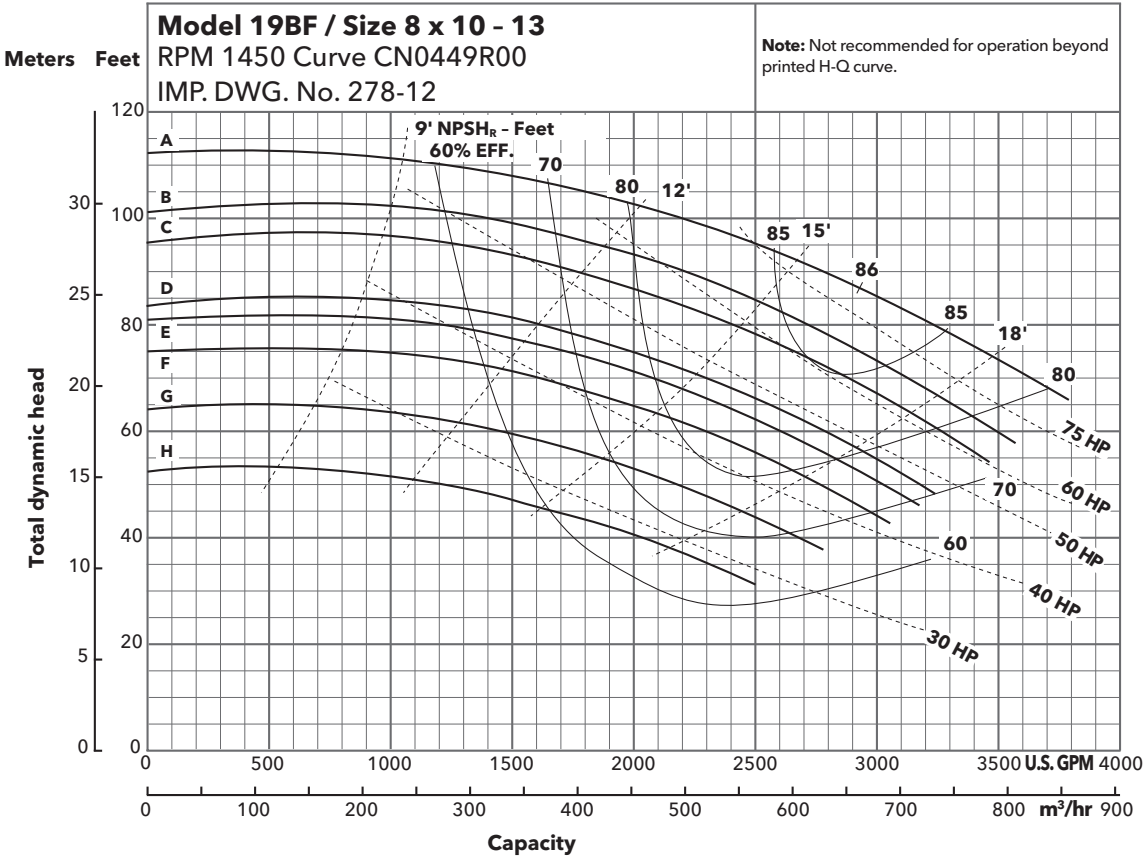
Note: Pump will pass a sphere to $\frac{7}{16}$ " diameter.

Performance curves - 50 Hz, 1450 RPM



Optional impeller	
Ordering code	Dia.
A	13
B	12 1/2
C	12 5/16
D	11 7/8
E	11 5/8
F	11 1/8
G	10 7/8
H	10 1/2
J	10
K	9 1/2

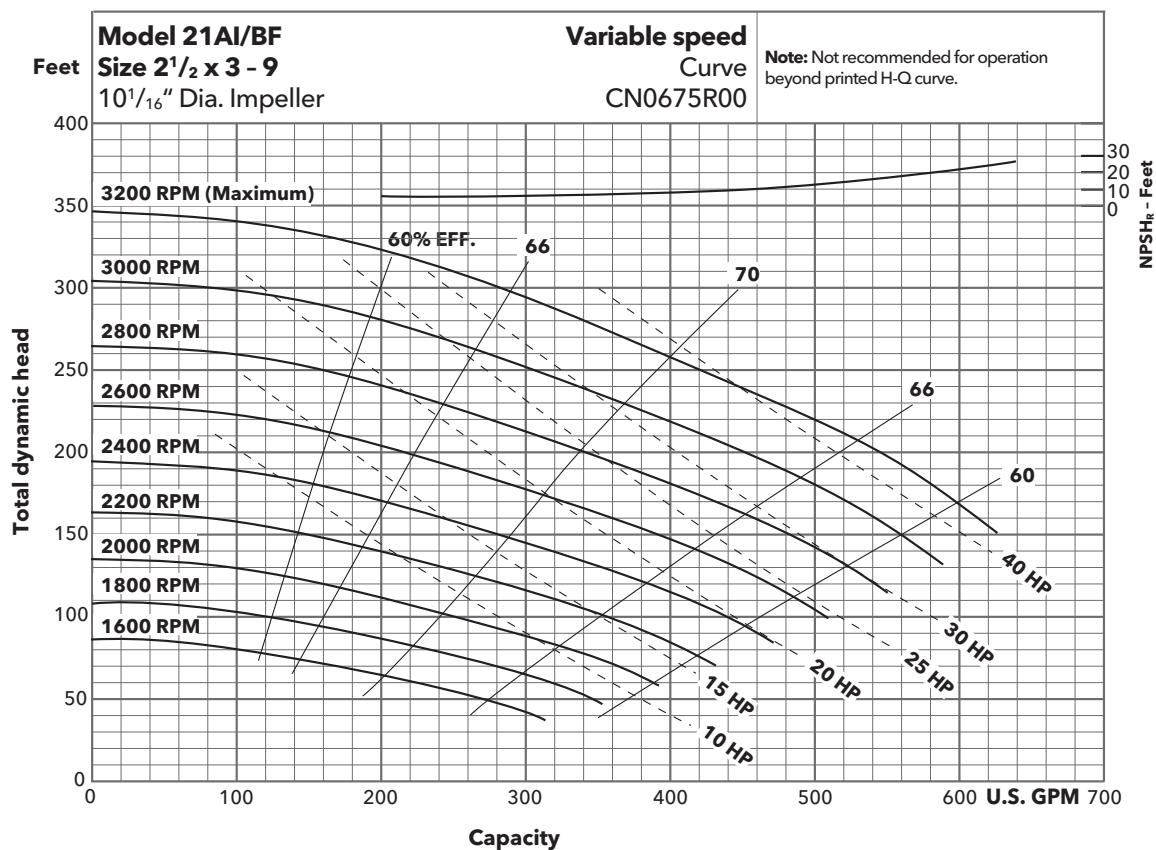
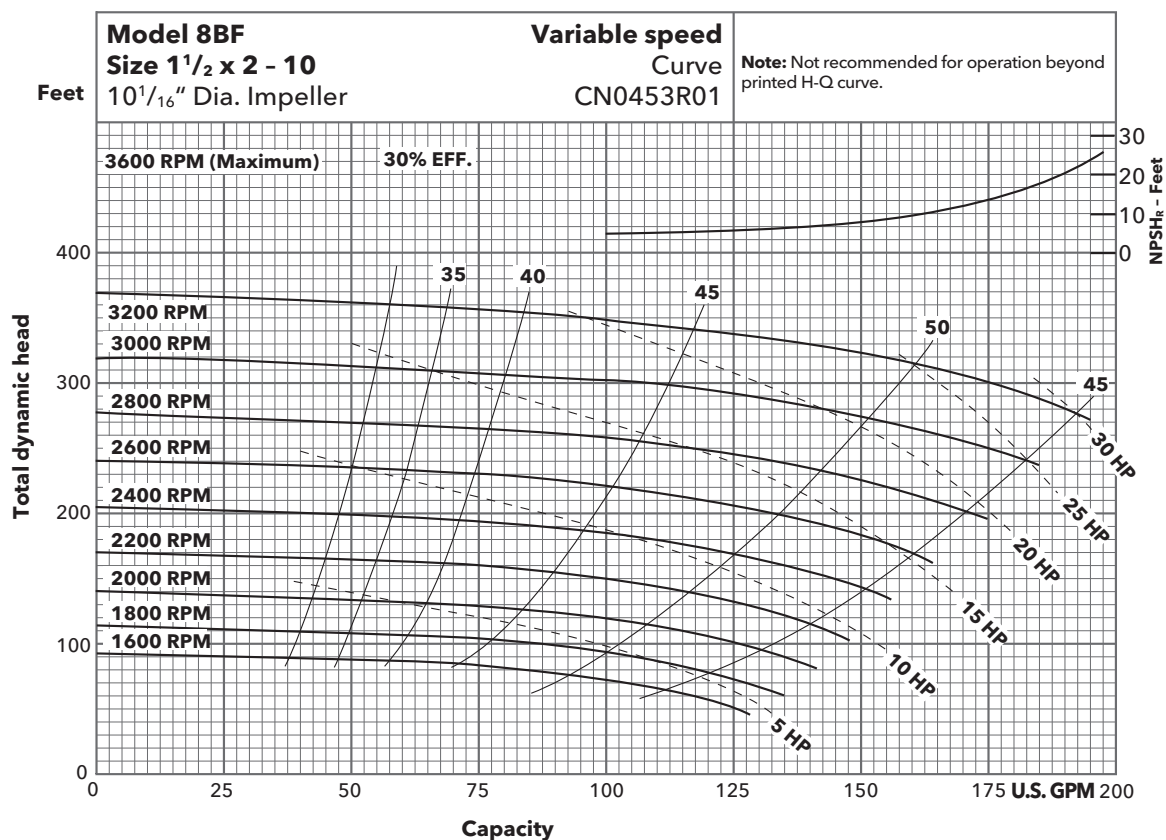
Note: Pump will pass a sphere to 7/8" diameter.



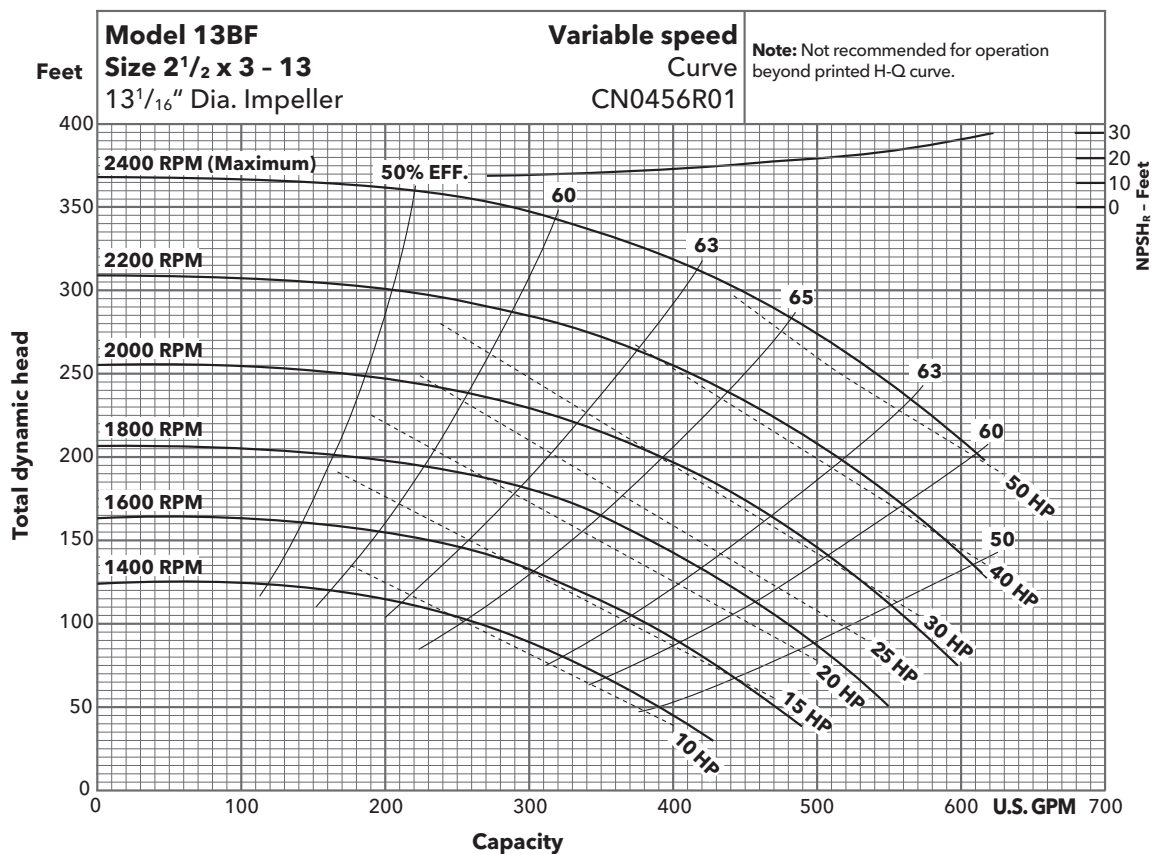
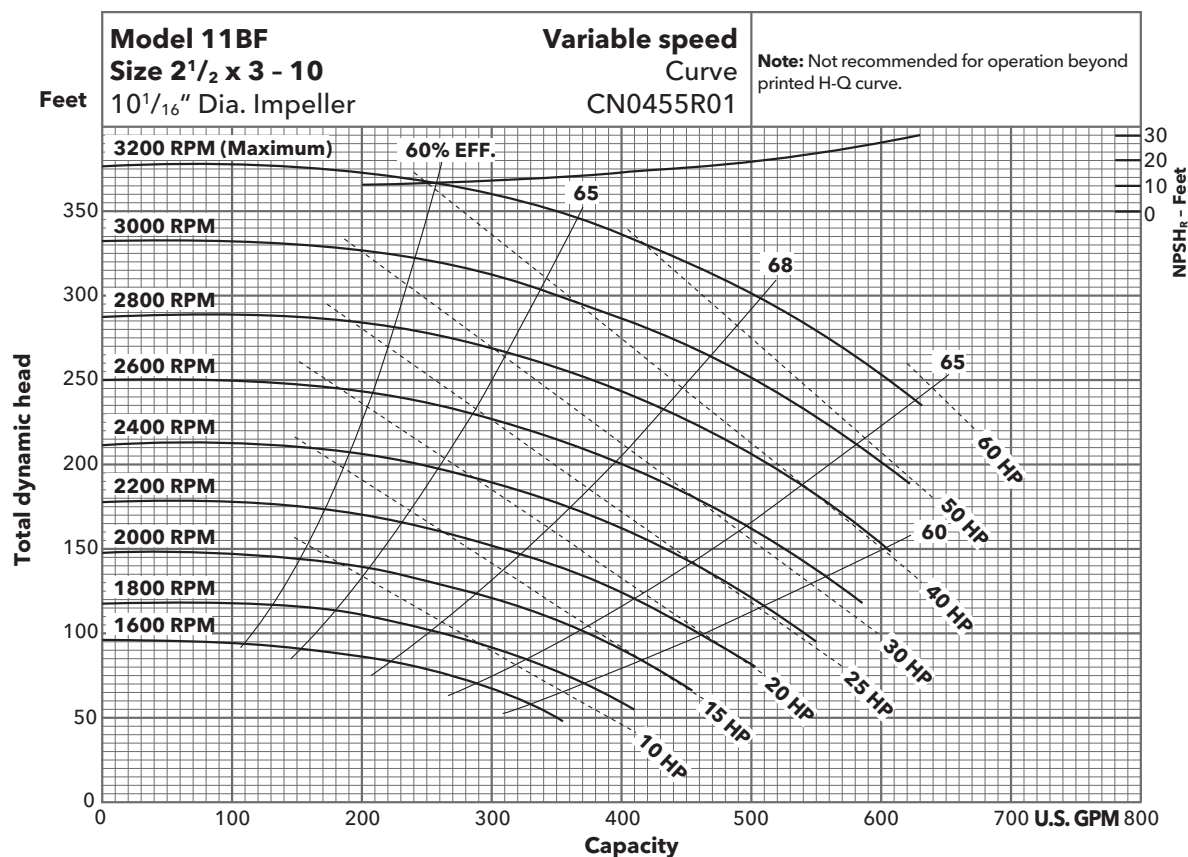
Optional impeller	
Ordering code	Dia.
A	13
B	12 3/4
C	12 3/8
D	11 15/16
E	11 11/16
F	11 1/4
G	10 7/8
H	9 13/16

Note: Pump will pass a sphere to 7/16" diameter.

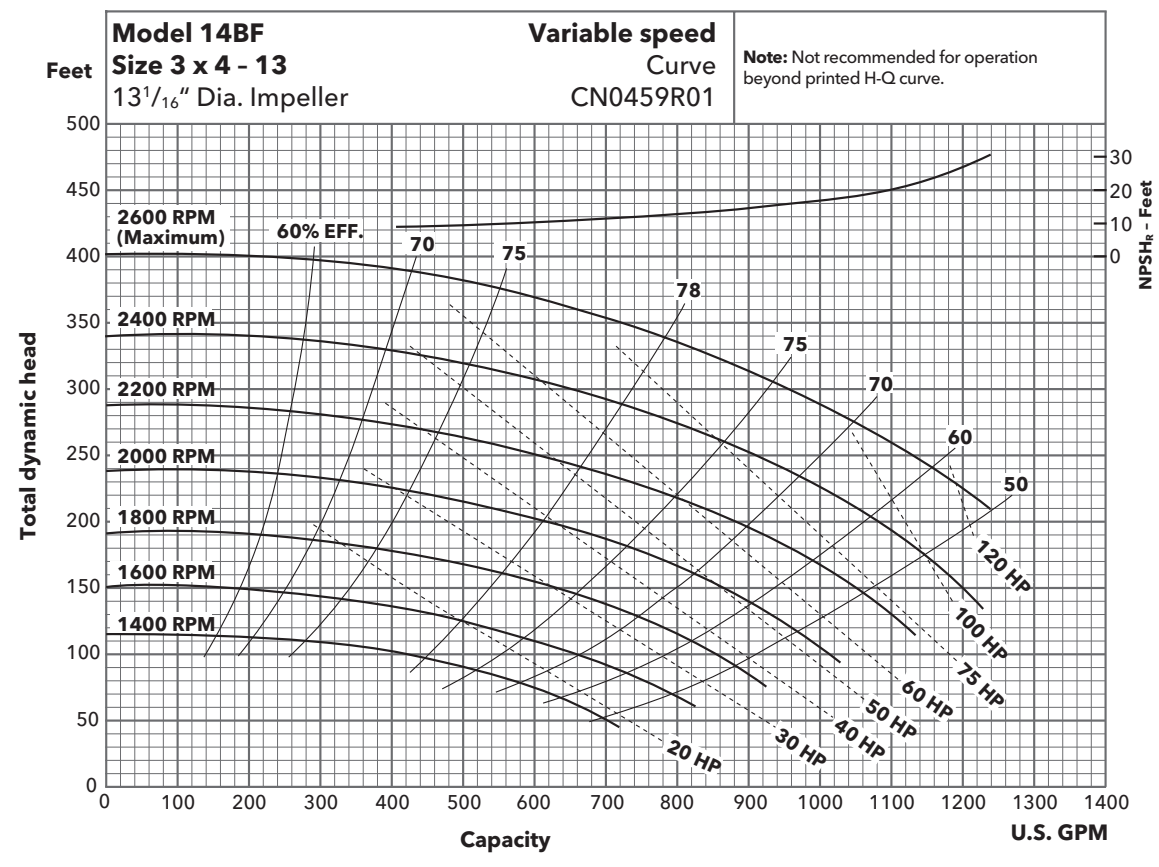
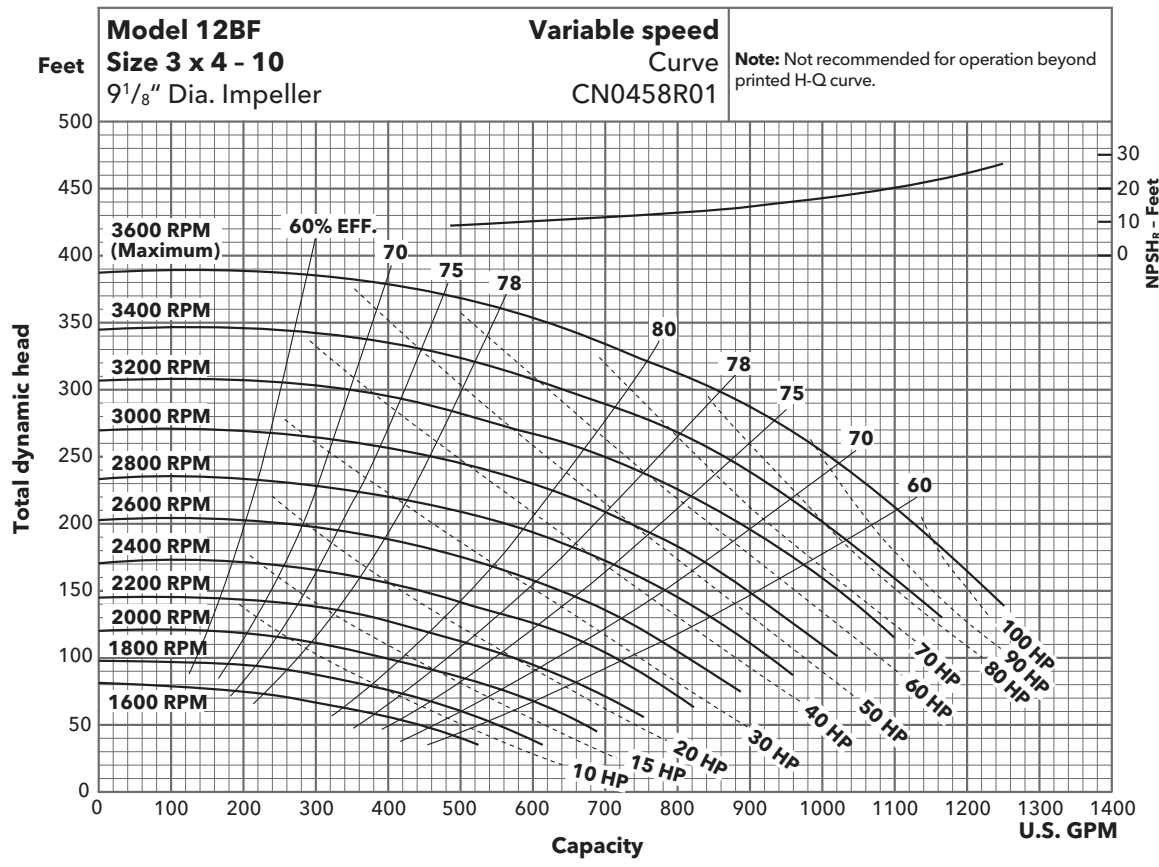
Performance curves - variable speed



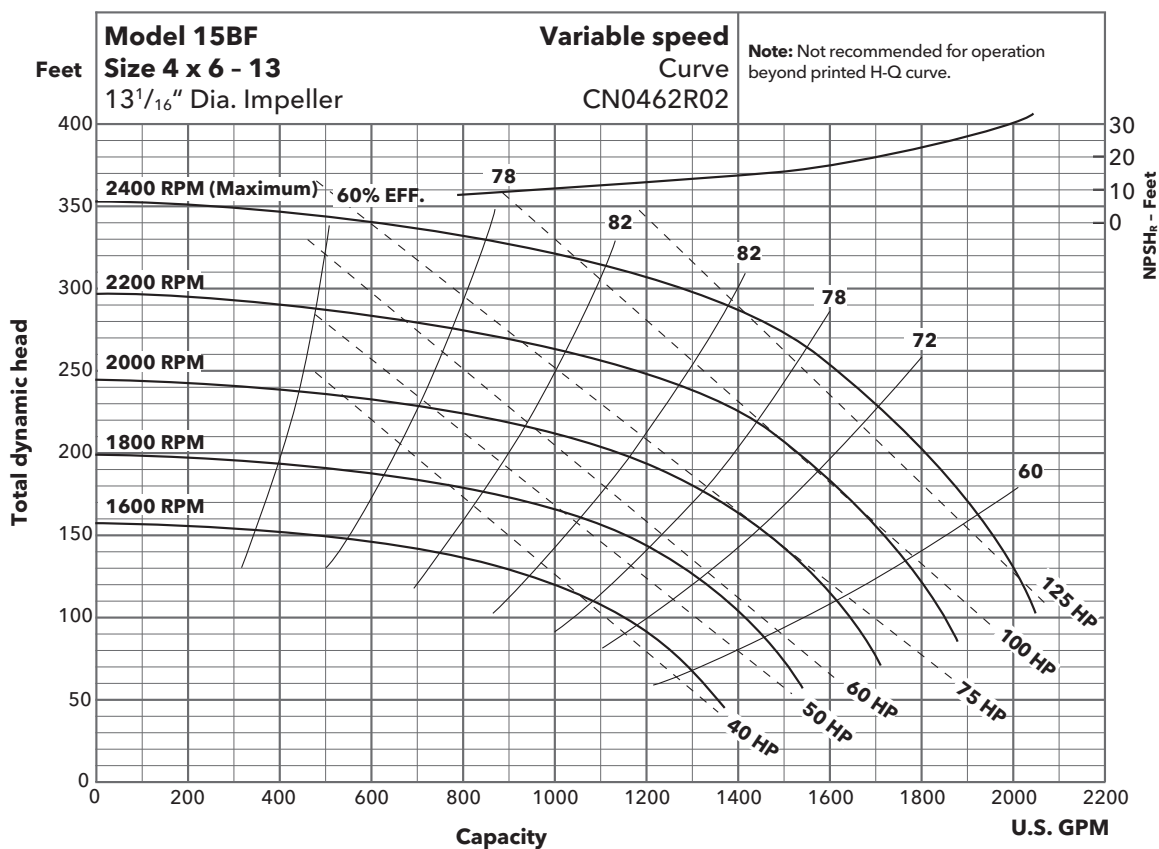
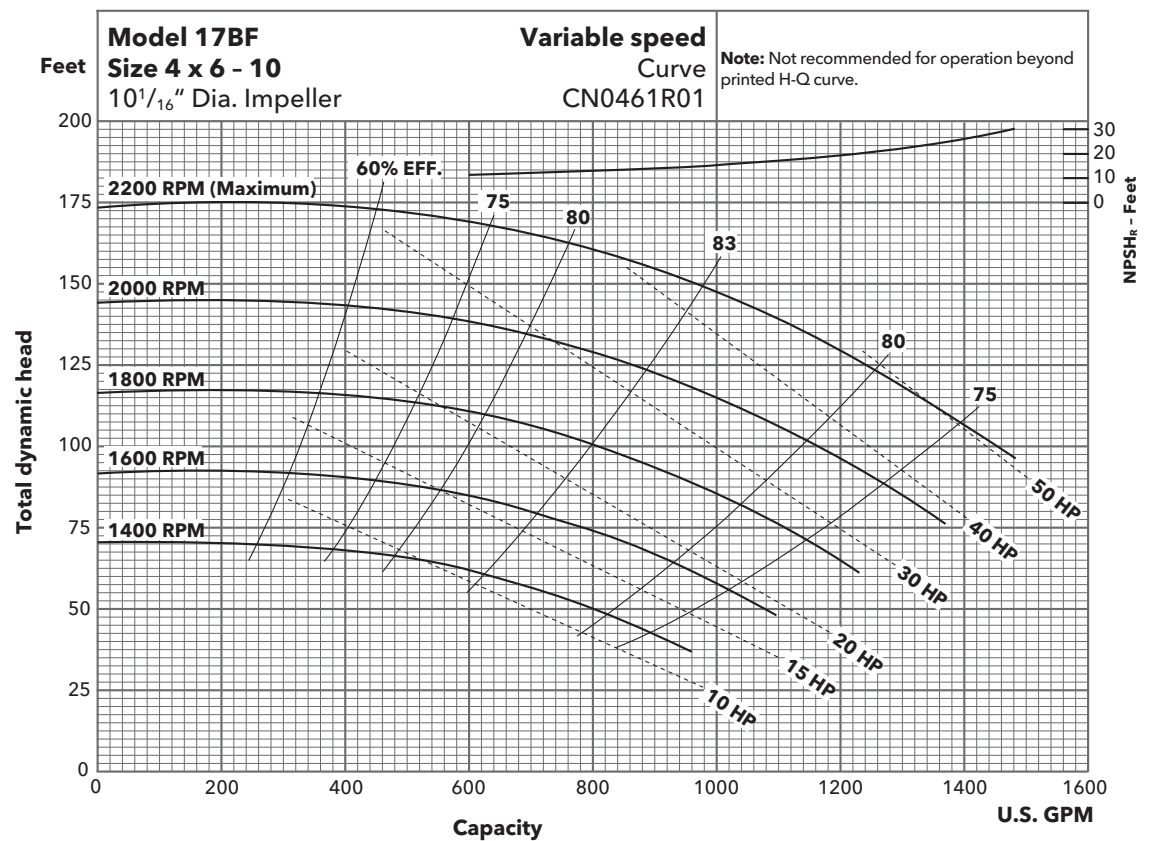
Performance curves - variable speed



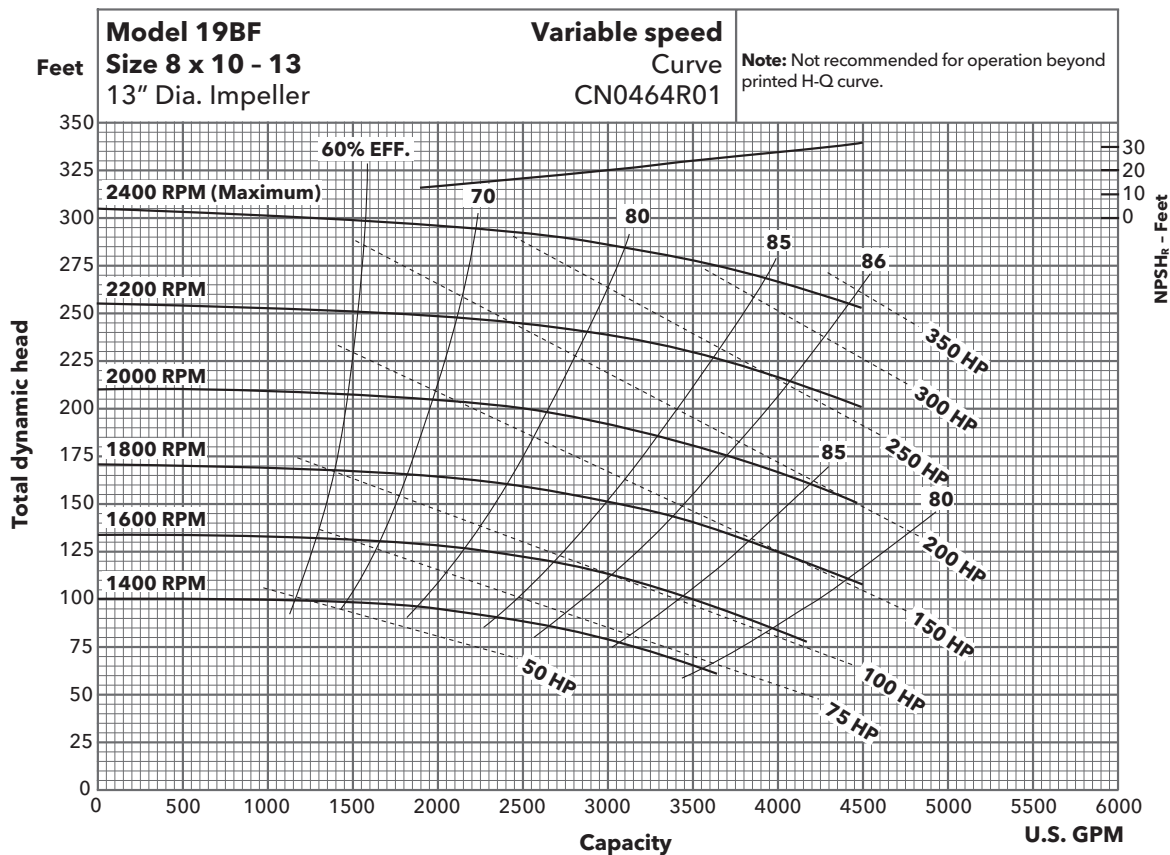
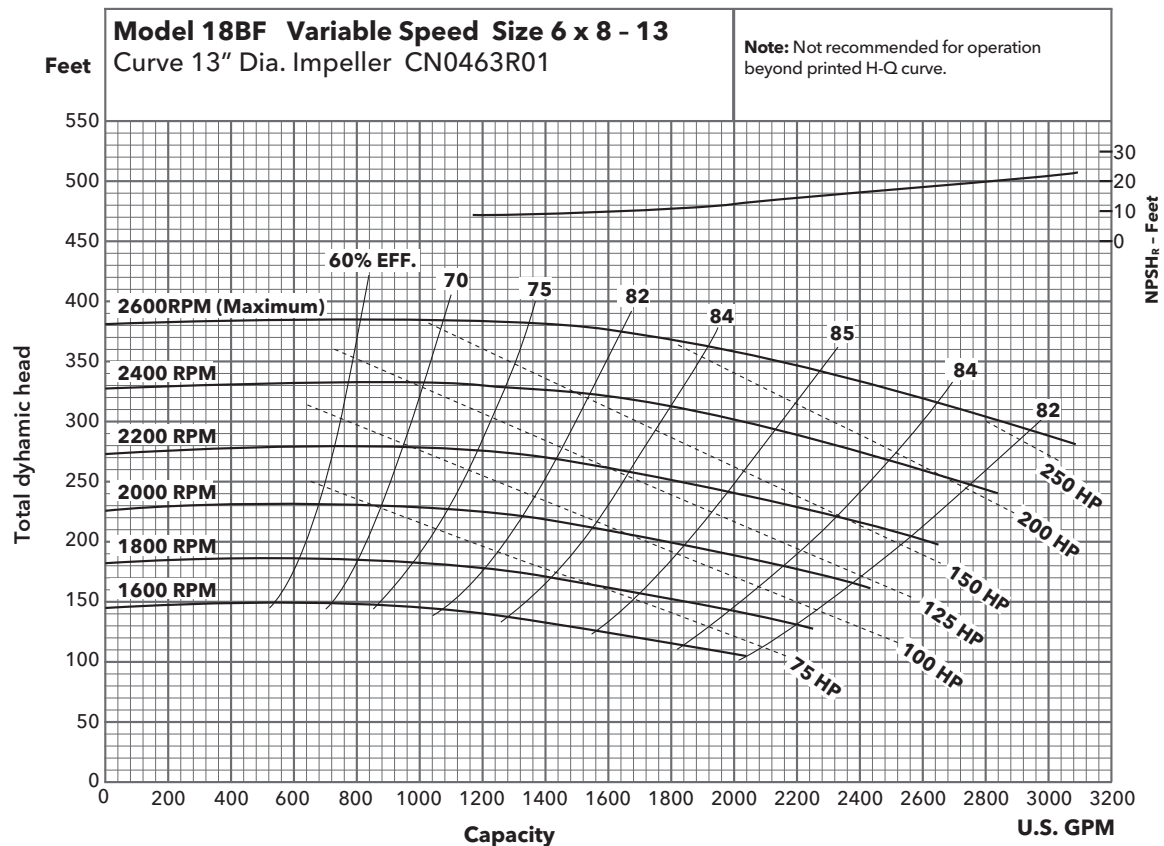
Performance curves - variable speed



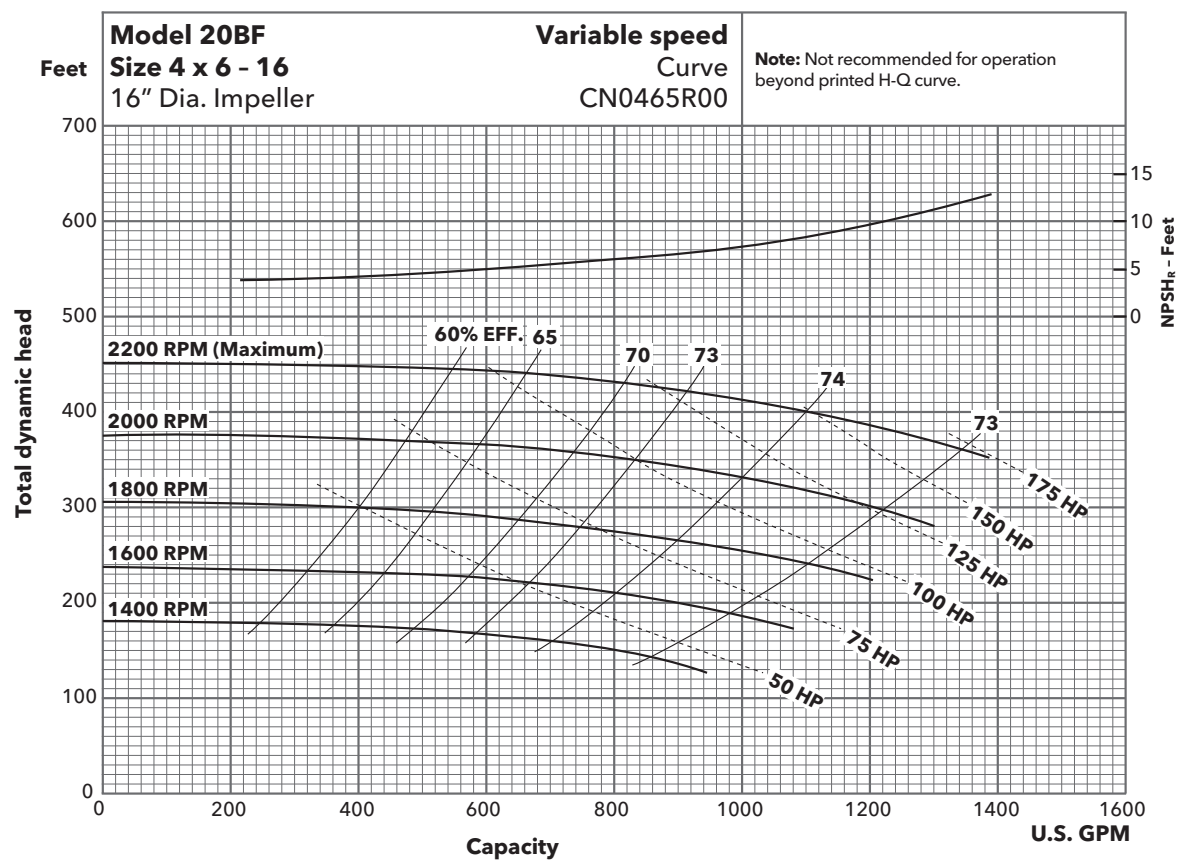
Performance curves - variable speed



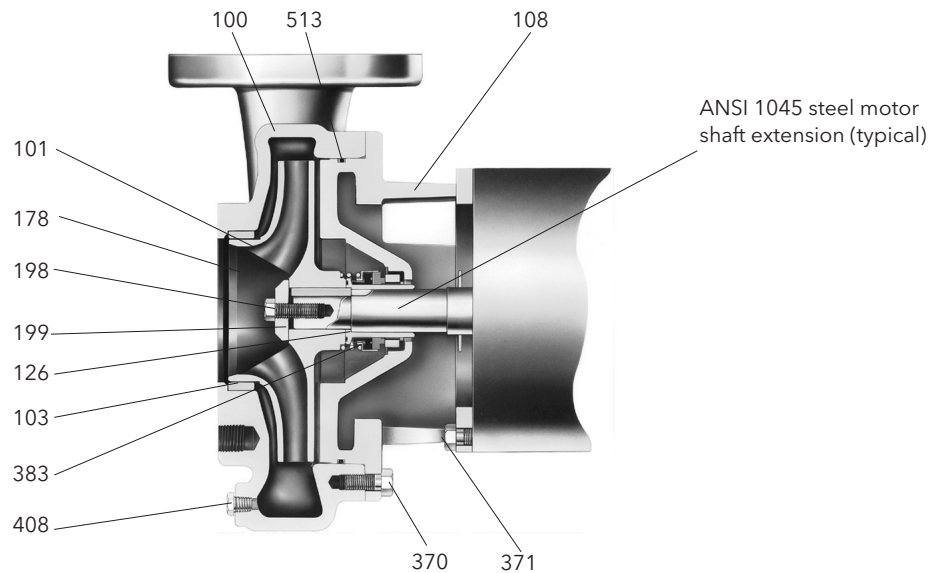
Performance curves - variable speed



Performance curves - variable speed



3656 M- and L-Group materials of construction



Item no.	Description	Materials	
		All iron	Bronze fitted
100	Casing	1001	1003
101	Impeller		1101
103	Casing wear ring		1618
108	Adapter/seal housing		1001
126	Shaft sleeve	AISI Type 300 Series SS	
178	Impeller key		
198	Impeller bolt		
199	Impeller washer		
370	Hex head cap screw (adapter to case)	Steel zinc plated grade 5	
371	Hex head cap screw (adapter to motor)		
383	Mechanical seal	See seal chart	
408	Pipe plug 1/4" or 3/8"	Zinc plated steel	
513	O-ring	BUNA-N - standard EPR - optional Viton - optional	

Material code	Engineering standard
1003	Cast iron ASTM A48-CL30
10618	Bismuth bronze - lead free
1001	Cast iron ASTM A48 CL20
1101	ASTM B584, Modified C87500 - lead free

Packed box arrangement		
Item no.	Description	Materials
105	Lantern ring	Teflon*
106	Packing, 5 rings	Teflon impregnated
107	Gland	AISI 316SS
126	Shaft sleeve	AISI type 300 Series stainless steel
353	Gland stud	
355	Gland nut	

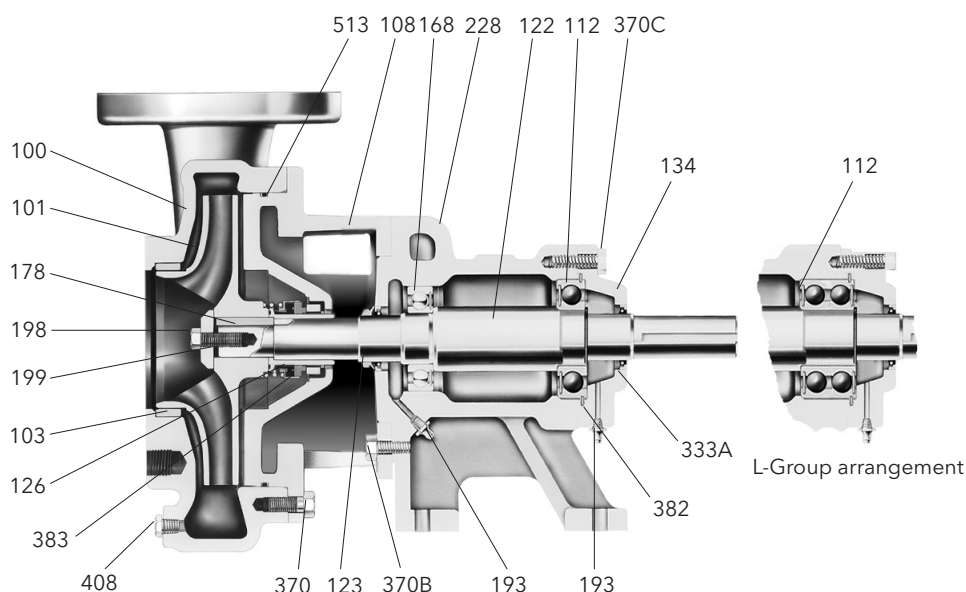
Note:

Seal housing wear ring (item number 203) not shown. See repair parts page for detail. (Required for all models except 3 x 4 – 10.)

Mechanical seal chart, type 21

Item no.	Part no.			Rotary	Stationary	Elastomers	Metal parts	Intended duty
	M-Group		L-Group					
	180JM-210JM 180JP-210CZ*	250JM-360TCZ 210JP-360TCZ* M bearing frame	All motors, L bearing frame					
383	10K13	10K16	10K84	Carbon	Ceramic	BUNA-N	316 SS	Standard
	10K19	10K20	Consult factory		Sil-carbide	EPR		High temp, caustic
	10K27	10K45	10K112			Viton		Abrasive
	10K64	10K65	10K144	Sil-carbide				
	15K17	15K3	15K4	Packed box design with BUNA o-ring * All packed box units use JP style motors.				

3756 M- and L-Group materials of construction



Item no.	Description	Materials	
		All iron	Bronze fitted
100	Casing	1001	1003
101	Impeller		1101
103	Casing wear ring		1618
108	Adapter/seal housing		1001
126	Shaft sleeve	AISI Type 300 Series SS	
178	Impeller key		
198	Impeller bolt		
199	Impeller washer		
370	Hex head cap screw (adapter to case)	Steel zinc plated grade 5	
370B	Hex head cap screw (adapter to bearing frame)		
383	Mechanical seal	See seal chart	
408	Pipe plug 1/4" or 3/8"	Zinc plated steel	
513	O-ring	BUNA-N - standard EPR - optional Viton - optional	

Power end components

228	Bearing frame	Cast iron ASTM A48 CL20
134	Bearing cover	

Item no.	Description	Materials	
		All iron	Bronze fitted
122	Pump shaft		Steel
168	Ball bearing (inboard)		Steel
112	Ball bearing (outboard)		Steel
382	Retaining ring, bearing	Steel zinc plated grade 5	
370C	Hex head cap screw (bearing frame to cover)		
333A	Lip seal	BUNA-N	
193	Grease fitting	Steel	
123	V-ring deflector	BUNA-N	

Packed box arrangement

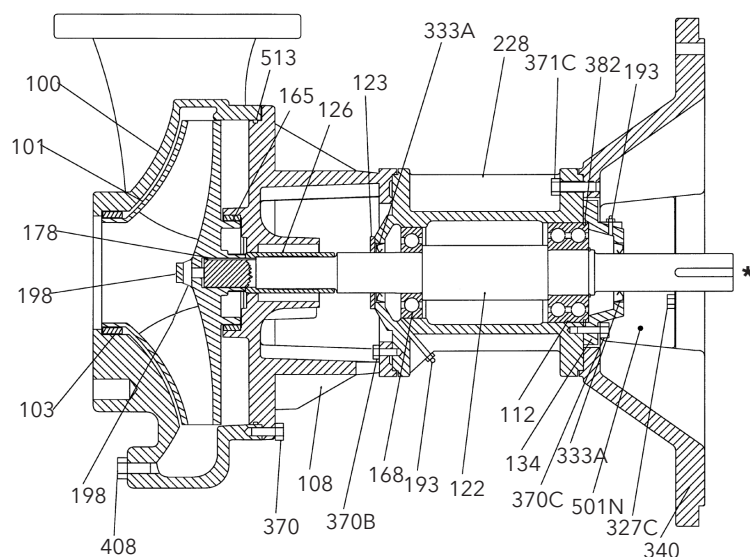
Item no.	Description	Materials
105	Lantern ring	Teflon*
106	Packing, 5 rings	Teflon impregnated
107	Gland	AISI 316SS
126	Shaft sleeve	AISI type 300 Series stainless steel
353	Gland stud	
355	Gland nut	

Material code

Engineering standard

1001	Cast iron ASTM A48-CL30
1102	Sil-brass ASTM B584, modified C87500 - lead free
1003	Cast iron ASTM A48 CL30
1617	Bismuth bronze - lead free

3756 M- and L-Group SAE drive materials of construction



Item no.	Description	Materials	
		All iron	Bronze fitted
100	Casing	1001	1003
101	Impeller		1101
103	Casing wear ring		1618
108	Adapter/seal housing	AISI Type 300 Series SS	1001
126	Shaft sleeve		
178	Impeller key		
198	Impeller bolt	Steel zinc plated grade 5	
370	Hex head cap screw (adapter to case)		
370B	Hex head cap screw (adapter to bearing frame)		
383	Mechanical seal	See seal chart	
408	Pipe plug 1/4" or 3/8"	Zinc plated steel	
513	O-ring	BUNA-N - standard EPR - optional Viton - optional	

Power end components

228	Bearing frame	1003
134	Bearing cover	1001
340	Adapter/engine	1003
371C	Hex head cap screw (adapter to bearing frame)	Steel SAE 1200 grade 5
501N	Cover/adapter	Galvanized steel
327C	Cap screw (cover to adapter)	Steel SAE 1200 grade 5

Item no.	Description	Materials	
		All iron	Bronze fitted
122	Pump shaft		AISI 4140
168	Ball bearing (inboard)		Steel
112	Ball bearing (outboard)		Steel
382	Retaining ring, bearing	Steel SAE 1200 Grade 5	
370C	Hex head cap screw (bearing frame to cover)		
333A	Lip seal	BUNA-N	
193	Grease fitting	Steel	
123	V-ring deflector	BUNA-N	

Packed box arrangement

Item no.	Description	Materials
105	Lantern ring	Teflon*
106	Packing, 5 rings	Teflon impregnated
107	Gland	AISI 316SS
126	Shaft sleeve	AISI type 300 Series stainless steel
353	Gland stud	
355	Gland nut	

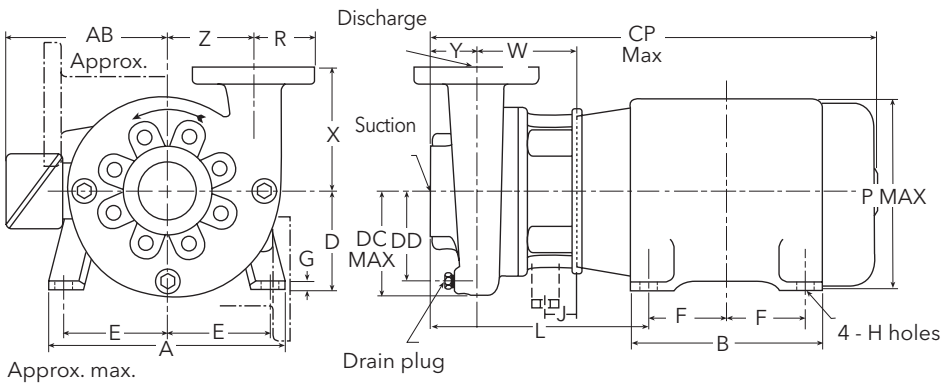
Material code

Engineering standard

1001	Cast iron ASTM A48-CL20
1003	Cast iron ASTM A48 CL30
1101	Sil-brass ASTM B584, modified C87500 - lead free
1618	Bismuth bronze - lead free

3656 M- and L-Group dimensions and weights

Mechanical seal



Note:

1. All pumps shipped in vertical discharge position. For other orientations, remove casing bolts, rotate to desired position, and tighten $\frac{3}{8}$ -16 casing bolts to 37 ft./lbs. torque., $\frac{1}{2}$ -13 casing bolts to 90 ft./lbs. torque.
2. Dimensions in inches, weight in pounds.
3. Not to be used for construction purposes.

Pump dimensions and weights (Dimension "L" determined by pump and motor)

Pump	Suction	Discharge	CP (max.)	DC (max.)	DD	R	NPT Drain	W	X	Y	Z	Weight (lbs)	L									
													Motor frame									
													140	180	210	250/280	320	360				
1 ½ x 2 -10	2*	1 ½*	30 ¼	6 ¾	5 ⅞	1 ¼	1 ¼	5	6	3	5 ½	93	10 ⅞	11 ½	12 ½	12 ¾	-	-				
2 ½ x 3 -8	3*	2 ½*	30 ¾	6 ¼	5 ¼	1 ⅜		5 ⅞		3 ⅜	5	78	11 ⅞	12	13	13 ¼	-	-				
2 ½ x 3 -9	3	2 ½	33 ½	7 ⅞	6	3 ½	⅜	5	7 ½	2 ¾	5 ½	85	10 ⅝	11 ¼	12¼	12 ½	13	13 ⅝				
2 ½ x 3 -10			30 ¼	8 ⅞	7 ⅝								9	3	7 ½	139	-	-	12½	12 ¾	-	-
2 ½ x 3 -13			30 ⅙	6 ¼	5 ⅜								¼	5 ⅙	7	5 ⅝	82	11 ⅜	11 ⅜	12 ⅜	13 ⅙	13 ⅝
3 x 4 -8	4	3	30 ⅜	7 ⅜	6 ½	3 ¾	⅜	5 ⅙	7 ½	3	5 ½	99	11	11 ⅝	12 ⅝	12 ⅞	-	-				
3 x 4 -10			33 ¼	9 ½	8 ⅞			5	9		7 ½	155	-	-	12 ½	12 ¾	-	-				
3 x 4 -13			34 ¼	6 ⅞	5 ¾			5 ½	8		5	99	11 ⅜	12	13	13 ¼	13 ¾	14 ⅜				
4 x 5 -8	5	4	30 ⅞	8 ⅝	7 ½	4 ½	⅜	5 ½	8½	3 ⅞	7	135	-	-	13 ⅞	13 ⅜	-	-				
4 x 6 -10	6		32	9 ¾	8⅞			5 ¼	9	3	7 ½	171	-	-	12 ½	12 ¾	13	-				
4 x 6 -13																						
6 x 8 -13	See Packed Box Dimension Page. (pumps utilize JP motors)																					
8 x 10 -13																						
4 x 6 -16																						

*Denotes NPT connection. All other connections are for use with ANSI class 150 mating flanges. Dimensions in inches, weights in lbs. Do not use for construction purposes.

Motor frames and horsepower

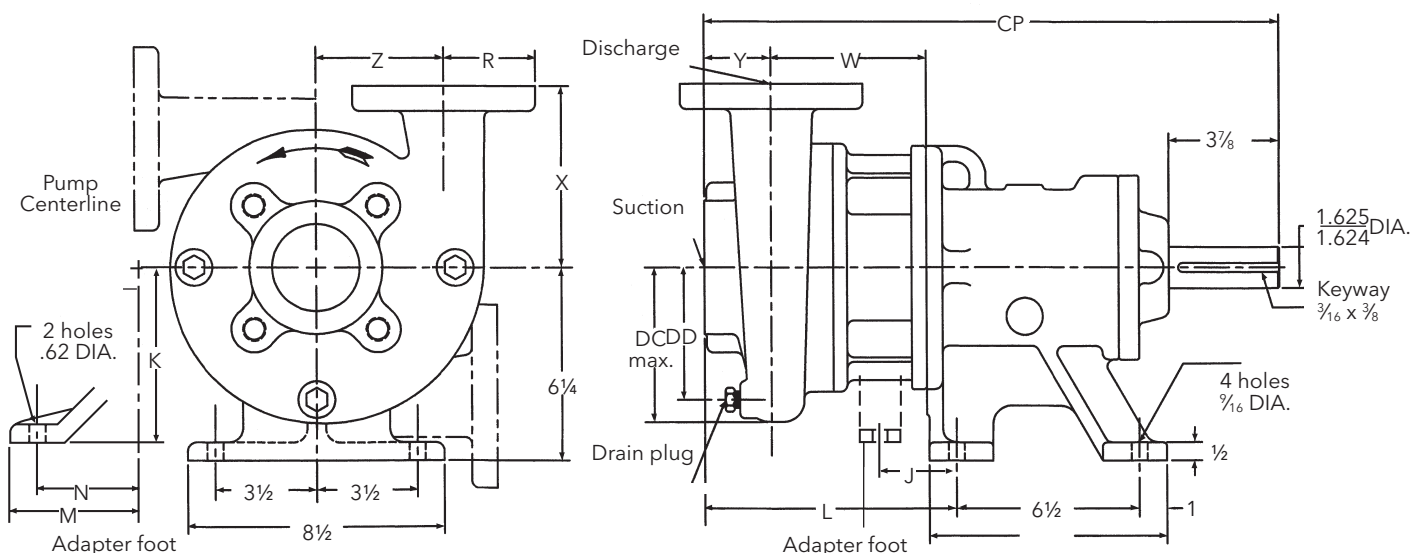
Motor dimensions and weights (may vary with manufacturer)*

Motor frame	A	AB (max.)	B	D	E	F	G	H	P* (max.)	Weight (lbs.)
143JM	6 1/2	5 1/4	6	3 1/2	2 3/4	2	1/8	5/16	6 5/8	41
145JM										57
182JM	8 1/2	5 7/8	6 1/2	4 1/2	3 3/4	2 1/4	3/16	3/8	7 7/8	77
184JM						2 3/4				97
213JM	9 1/2	7 3/8	8	5 1/4	4 1/4	2 3/4	1/4	1/2	9 5/8	122
215JM						3 1/2				155
213TCZ						2 3/4				122
215TCZ						3 1/2				155
254JM	11 1/4	9	9 1/2	6 1/4	5	4 1/8	1/4	1/2	11 1/2	265
256JM						5				320
284JM	12 1/4	12 1/4	10 3/4	7	5 1/2	4 3/4	1/4	1/2	13 1/4	419
286JM						5 1/2				422
324JM	13 1/4	13 1/4	12	8	6 1/4	5 1/4	5/16	5/8	15 1/8	562
326JM						6				588
364TCZ	17 1/2	15 1/8	14 1/2	9	7	5 5/8	1	5/8	18 3/8	775
365TCZ						6 1/8				1005

Frame size JM	ODP	TEFC	RPM
143 JM	1	1	1750
145 JM	1 1/2, 2	1 1/2, 2	
182 JM	3	3	
184 JM	5	5	
213 JM	7 1/2	7 1/2	
215 JM, 215 TCZ	10	10	
254 JM	15	15	
256 JM	20	20	
284 JM	25	25	
286 JM	30	30	
324 JM	40	40	3500
326 JM	50	50	
143 JM	1 1/2	1 1/2	
145 JM	2, 3	2	
182 JM	5	3	
184 JM	7 1/2	5	
213 JM	10	7 1/2	
215 JM	15	10	
215 TCZ	15	-	
254 JM	20	15	
256 JM	25	20	
284 JM	30	25	
286 JM	40	30	
324 JM	50	40	
326 JM	60	50	
364 TCZ	75	60	
365 TCZ	-	75	

3756 M- and L-Group dimensions and weights

Mechanical seal



Motor dimensions and weights (may vary with manufacturer)*

Pump	Suction	Discharge	CP	DC (max.)	DD	L	J	K	M	N	R	NPT drain	W	X	Y	Z	Weight (lbs.)	
1½ x 2 -10	2*	1½*	21 ⅞	6 ¾	5 ⅞	9 ⅜	—	—	—	—	1 ¼	¼	5	6	3	5 ½	155	
2½ x 3 - 8	3*	2½*	22 ⅜	6 ¼	5 ¼	9 ⅞	—	—	—	—	1 13⁄16		5 ⅞		3 ⅜	5	140	
2½ x 3 - 9	3	2½	21 ⅝	7 ⅞	6	9 ⅞	—	—	—	—	3 ½	⅜	5	7 ½	2 ¾	5 ½	147	
2½ x 3 - 10			21 ⅞	8 ⅞	7 ⅝	9 ⅜	—	—	—	—				9	3	7 ½		201
2½ x 3 - 13			22 ⅜	8 ⅞	7 ⅝	9 11⁄16	—	—	—	—				3 ¾	5 ⅞	7 ½		
3 x 4 - 8	4	3	22 ⅜	6 ¼	5 ⅜	9 11⁄16	—	—	—	—	3 ¾	¼	5 ⅞	7	3	5 ⅞	144	
3 x 4 - 10			22	7 ⅜	6 ½	9 ½	—	—	—	—			5 ⅞	7 ½		5 ½	161	
3 x 4 - 13			21 ⅞	9 ½	8 ⅞	9 ⅜	—	—	—	—			5	9		7 ½	217	
4 x 5 - 8	5	4	22 ⅜	6 ⅞	5 ¾	9 ⅞	—	—	—	—	4 ½	⅜	5 ½	8	3	5	161	
4 x 6 - 10	22 ½		8 ⅝	7 ½	10	—	—	—	—	5 ½			8 ½	3 ⅞		7	200	
4 x 6 - 13	22 ⅞		9 ¾	8 ⅞	9 ⅝	—	—	—	—	5 ¼			9	3		7 ½	233	
■ 4 x 6 - 16	8	6	26 ½	12 ¾	11	12 13⁄16	2 ⅞	9 ¾	8	7	5 ½	⅜	8 ⅞	12	4	10 ½	430	
■ 6 x 8 - 13			25 ¼	12 ¾	10 ½	13 ⅝	3 ¾	7 ½	6 ½	5 ½			8 ⅞	11	3 ⅞	8 ¾	330	
■ 8 x 10 - 13			26 ½	14 ¾	13	14	3 ¾	7 ½	6 ½	5 ½			6 ¾	8 ⅞	12 ¾	4	10	515

*Denotes NPT connection. All other connections are for use with ANSI class 150 mating flanges. Dimensions in inches, weights in lbs. Do not use for construction purposes.

■ Indicate "L" group pump.

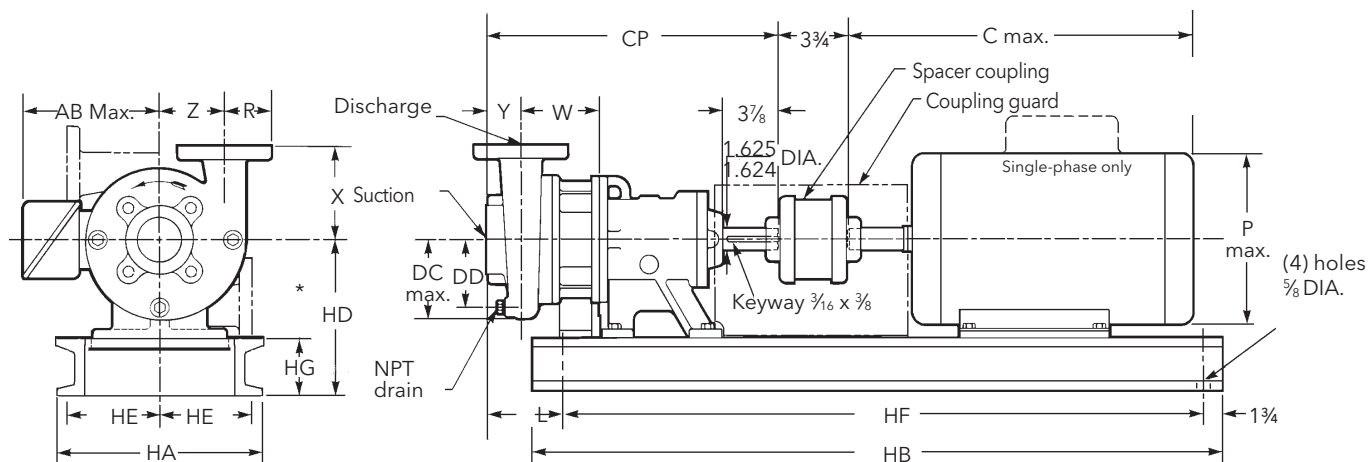
Note:

1. All pumps shipped in vertical discharge position. For other orientations, remove casing bolts, rotate to desired position, and tighten 3/8 - 16 casing bolts to 37 ft./lbs. torque., 1/2 - 13 casing bolts to 90 ft./lbs. torque.
2. Dimensions in inches, weight in pounds.
3. Not to be used for construction purposes.

Engineering data - M- Group

Mechanical seal

Channel steel bedplate. Clockwise rotation viewed from drive end.



* Dimension will include any special shims required to match pump centerline to motor.

Note:

1. All pumps shipped in vertical discharge position. For other orientations, remove casing bolts, rotate to desired position, and tighten $\frac{3}{8}$ - 16 casing bolts to 37 ft./lbs. torque., $\frac{1}{2}$ - 13 casing bolts to 90 ft./lbs. torque.
2. Dimensions in inches, weight in pounds.
3. Not to be used for construction purposes.

Pump dimensions and weights

Pump	Suction	Discharge	CP (max.)	DC (max.)	DD	L	R	NPT Drain	W	X	Y	Z	Weight (lbs)	
1 ½ x 2 - 10	2*	1 ½*	21 ⅞	6 ¾	5 ⅞	9 ⅜	1 ¼	1 ¼	5	6	3	5 ½	155	
2 ½ x 3 - 8	3*	2 ½*	22 ⅞	6 ¼	5 ¼	9 ⅞	1 13/16		5 ⅞		3 ⅜	5	140	
2 ½ x 3 - 9	3	2 ½	21 ⅞	7 ⅞	6	9 ⅞	3 ½	⅜	5	7 ½	2 ¾	5 ½	147	
2 ½ x 3 - 10			21 ⅞	8 ⅞	7 ⅞	9 ⅜					9	3	7 ½	201
2 ½ x 3 - 13			21 ⅞	8 ⅞	7 ⅞	9 ⅜					9	3	7 ½	201
3 x 4 - 8	4	3	22 ⅞	6 ¼	5 ⅞	9 ⅞	3 ¾	¼	5 ⅞	7	3	5 ⅞	144	
3 x 4 - 10			22	7 ⅞	6 ½	9 ½			5 ⅞	7 ½		5 ½	161	
3 x 4 - 13			21 ⅞	9 ½	8 ⅞	9 ⅞			5	9		7 ½	217	
4 x 5 - 8			22 ⅞	6 ⅞	5 ¾	9 ⅞			5 ½	8		5	161	
4 x 6 - 10	6	4	22 ⅞	8 ⅞	7 ½	10	4 ½	⅜	5 ½	8 ½	3 ⅞	7	200	
4 x 6 - 13			22 ⅞	9 ¾	8 ⅞	9 ⅞			5 ¼	9	3	7 ½	233	

*Denotes NPT connection. All other connections are for use with ANSI class 150 mating flanges.

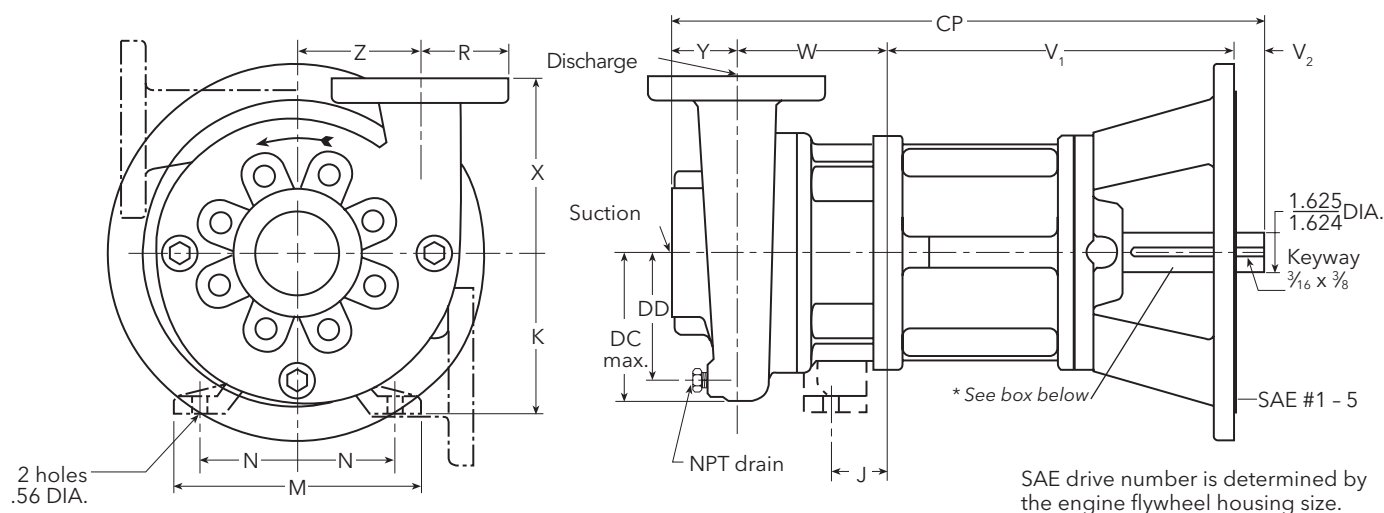
Motor and bedplate dimensions and weights (may vary with manufacturer.)

Motor frame	HP @ 3500 RPM		HP @ 1750 RPM - T-frame only		AB (max.)	C (max.)	P (max.)	Wt. (lbs.)	Bedplate data															
	Three-phase								HA	HB	HD	HE	HF	HG	Weight (lbs)	Motor shim	Bearing frame shim							
	ODP*	TEFC*	ODP*	TEFC*																				
184T	-	-	5	5	5 7⁄8	18	8	95	13	42	10¼	5¼	38½	4	111	1¾	-							
213T	-	-	7 ½	7 ½	7 ¾	18	9 ⅝	116								1	-							
215T	15	-	10	10		19 ⅞		136								-	-							
254T	20	15	15	15	10 ⅞	21 ⅝	13	266								-	-							
256T	25	20	20	20	23 ⅜	264		15	44	10½	5¾	40½	3½	124	-	¾								
284TS/T	30	25	25	25	12 ⅝	24 7⁄8	15								392	18	48	12	7¼	44½	4	183	-	1 ¾
286TS/T	40	30	30	30	26 ⅝	422									31 ⅝								834	-
324TS/T	50	40	40	40	14 ⅞	30 ¼	17 ¾								634								13	7¼
326TS/T	60	50	50	50	31 ⅝	834		32 ⅝	1000	-	2 ¾													
364TS/T	75	60	60	60	15 ⅞	32 ⅝	18 7⁄8	1000																
356TS/T	100	75	75	75																				

* Premium efficiency where required by Department of Energy regulations.

3756 M- and L-Group SAE drive dimensions and weights

Packed box



Dimensions and weights

Pump	Suction	Discharge	CP	DC (max.)	DD	J	K	M	N	R	NPT drain	W	X	Y	Z	Weight (lbs.)
1 1/2 x 2 - 10	2*	1 1/2*	25 7/16	6 3/4	5 7/8	—	—	—	—	1 1/4	1/4	7 7/8	6	3 3/8	5 1/2	235
2 1/2 x 3 - 8	3*	2 1/2*	25 15/16	6 1/4	5 1/4	—	—	—	—	1 13/16		8			5	220
2 1/2 x 3 - 9	3	2 1/2	25 3/16	7 1/8	6	—	—	—	—	3 1/2	3/8	7 7/8	7 1/2	2 3/4	5 1/2	230
2 1/2 x 3 - 10			25 5/16	8 7/8	7 5/8	—	—	—	—	3 1/2		7 7/8	9	3	7 1/2	285
2 1/2 x 3 - 13	4	3	22 3/4	6 1/4	5 5/8	—	—	—	—	3 3/4	1/4	8 3/16	7	3	5 5/8	225
3 x 4 - 8			25 9/16	7 3/8	6 1/2	—	—	—	—	3 3/4		8	7 1/2		5 1/2	240
3 x 4 - 10			25 7/16	9 1/2	8 1/8	—	—	—	—	3 3/4		7 7/8	9		7 1/2	300
3 x 4 - 13	5	4	25 13/16	6 7/8	5 3/4	—	—	—	—	4 1/2	3/8	8 3/8	8	3 1/8	5	240
4 x 5 - 8			27 1/16	8 5/8	7 1/2	—	—	—	—	4 1/2		8 3/8	8 1/2		7	280
4 x 6 - 10			25 11/16	9 3/4	8 1/8	—	—	—	—	4 1/2		8 1/8	9		7 1/2	315
4 x 6 - 13	6	4	27 3/16	12 3/4	11	1 15/16	9 3/4	16	7	5 1/2	3/8	8 3/8	12	4	10 1/2	500
4 x 6 - 16			25 15/16	12 3/4	10 1/2	2 3/8	7 1/2	13	5 1/2	5 1/2		8 3/8	11	3 7/8	8 3/4	400
6 x 8 - 13			27 3/16	14 3/4	13	2 3/8	7 1/2	13	5 1/2	6 3/4		8 5/8	12 3/4	4	10	585
8 x 10 - 13	10	8	27 3/16	14 3/4	13	2 3/8	7 1/2	13	5 1/2	6 3/4		8 5/8	12 3/4	4	10	585

*Denotes NPT connection. All other connections are for use with ANSI class 150 mating flanges. Dimensions in inches, weights in lbs. Do not use for construction purposes.

■ Indicate "L" group pump.

Note:

- All pumps shipped in horizontal discharge position. For other orientations, remove casing bolts, rotate to desired position, and tighten 3/8 - 16 casing bolts to 37 ft./lbs. torque., 1/2 - 13 casing bolts to 90 ft./lbs. torque.
- Dimensions in inches, weight in pounds.
- Not to be used for construction purposes.

★

SAE #	V ₁	V ₂
1, 3, 5	13 1/4	1 1/2
2, 4	13	1 3/4

SAE drives have a splined shaft option - see price book for ordering information. Spline size is 10T, 1 1/2" diameter.

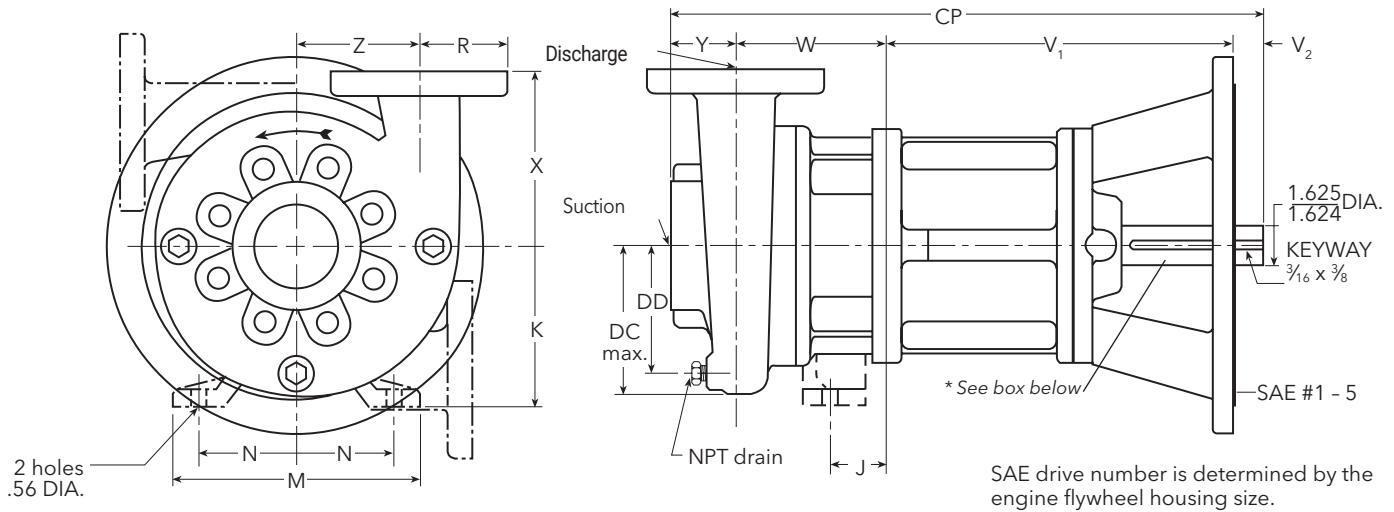
Spline shaft option

Spline diameter

10T
(Spline count)

3756 M- and L-Group SAE drive dimensions and weights

Mechanical seal



Dimensions and weights

Pump	Suction	Discharge	CP	DC (max.)	DD	J	K	M	N	R	NPT drain	W	X	Y	Z	Weight (lbs.)
1 1/2 x 2 - 10	2*	1 1/2*	22 7/16	6 3/4	5 7/8	-	-	-	-	1 1/4	1/4	5	6	3 3/8	5 1/2	235
2 1/2 x 3 - 8	3*	2 1/2*	23 1/16	6 1/4	5 1/4	-	-	-	-	1 13/16		5 1/8				220
2 1/2 x 3 - 9	3	2 1/2	22 5/16	7 1/8	6	-	-	-	-	3 1/2	3/8	5	7 1/2	2 3/4	5 1/2	230
2 1/2 x 3 - 10			22 7/16	8 7/8	7 7/8	-	-	-	-				9	3	7 1/2	285
2 1/2 x 3 - 13			19 7/8	6 1/4	5 3/8	-	-	-	-		1/4	5 5/16	7	3	5 5/8	225
3 x 4 - 8	4	3	22 11/16	7 3/8	6 1/2	-	-	-	-	3 3/4		5 1/8	7 1/2		5 1/2	240
3 x 4 - 10			22 9/16	9 1/2	8 1/8	-	-	-	-		3/8	5	9	3	7 1/2	300
3 x 4 - 13	5	4	22 15/16	6 7/8	5 3/4	-	-	-	-			5 1/2	8		5	240
4 x 5 - 8			24 5/16	8 5/8	7 1/2	-	-	-	-			5 1/2	8 1/2	3 1/8	7	280
4 x 6 - 10			22 13/16	9 3/4	8 1/8	-	-	-	-			5 1/4	9	3	7 1/2	315
4 x 6 - 13			27 3/16	12 3/4	11	1 7/8	9 3/4	16	7			8 3/8	12	4	10 1/2	500
4 x 6 - 16	8	6	25 15/16	12 3/4	10 1/2	2 3/8	7 1/2	13	5 1/2	5 1/2		8 3/8	11	3 7/8	8 3/4	400
6 x 8 - 13			27 3/16	14 3/4	13	2 3/8	7 1/2	13	5 1/2	6 3/4		8 5/8	12 3/4	4	10	585
8 x 10 - 13																

*Denotes NPT connection. All other connections are for use with ANSI class 150 mating flanges. Dimensions in inches, weights in lbs. Do not use for construction purposes.

■ Indicate "L" group pump.

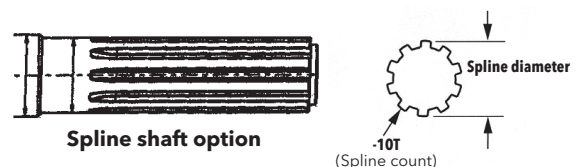
Note:

- All pumps shipped in horizontal discharge position. For other orientations, remove casing bolts, rotate to desired position, and tighten 3/8 - 16 casing bolts to 37 ft./lbs. torque, 1/2 - 13 casing bolts to 90 ft./lbs. torque.
- Dimensions in inches, weight in pounds.
- Not to be used for construction purposes.



SAE #	V1	V2
1, 3, 5	13 1/4	1 1/2
2, 4	13	1 3/4

SAE drives have a splined shaft option - see price book for ordering information. Spline size is 10T, 1 1/2" diameter.



Specifications

Capacities to: 1600 GPM (363 m³/hr) at 3500 RPM 4500 GPM (1020 m³/hr) at 1750 RPM

Heads to: 490 feet TDH (150 m) at 3500 RPM 300 feet TDH (90 m) at 1750 RPM

Working pressure to: 200 PSIG (14 bars)

Suction pressure to: 100 PSIG (7 bars)

Maximum temperature to: 212°F (100°C) with standard seal or 250°F (121°C) with optional seal

Motor: NEMA standard JM frame for 3656 or T-frame for 3756 mechanical seal, JP or T-frame for packed box. Open drip proof*, totally enclosed fan cooled* and explosion proof* enclosures available. Single-phase (115/230 V), 2-5 HP and three phase (230/460 V) 2 - 150 HP are available at 1750 or 3500 RPM.

Direction of rotation: Clockwise viewed from motor end

* Premium efficiency where required by Department of Energy regulations.

Typical applications

- Booster service
- Spraying systems
- Irrigation
- Water circulation
- Liquid transfer
- General purpose pumping

13AI/BF motor sizing

Impeller	3500 RPM	Motor selection 1.0
	Max. HP	
A	23.0	25
B	21.8	20
C	18.9	20
D	16.5	15
E	14.0	15
F	12.0	15
G	10.1	15
H	8.1	10



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