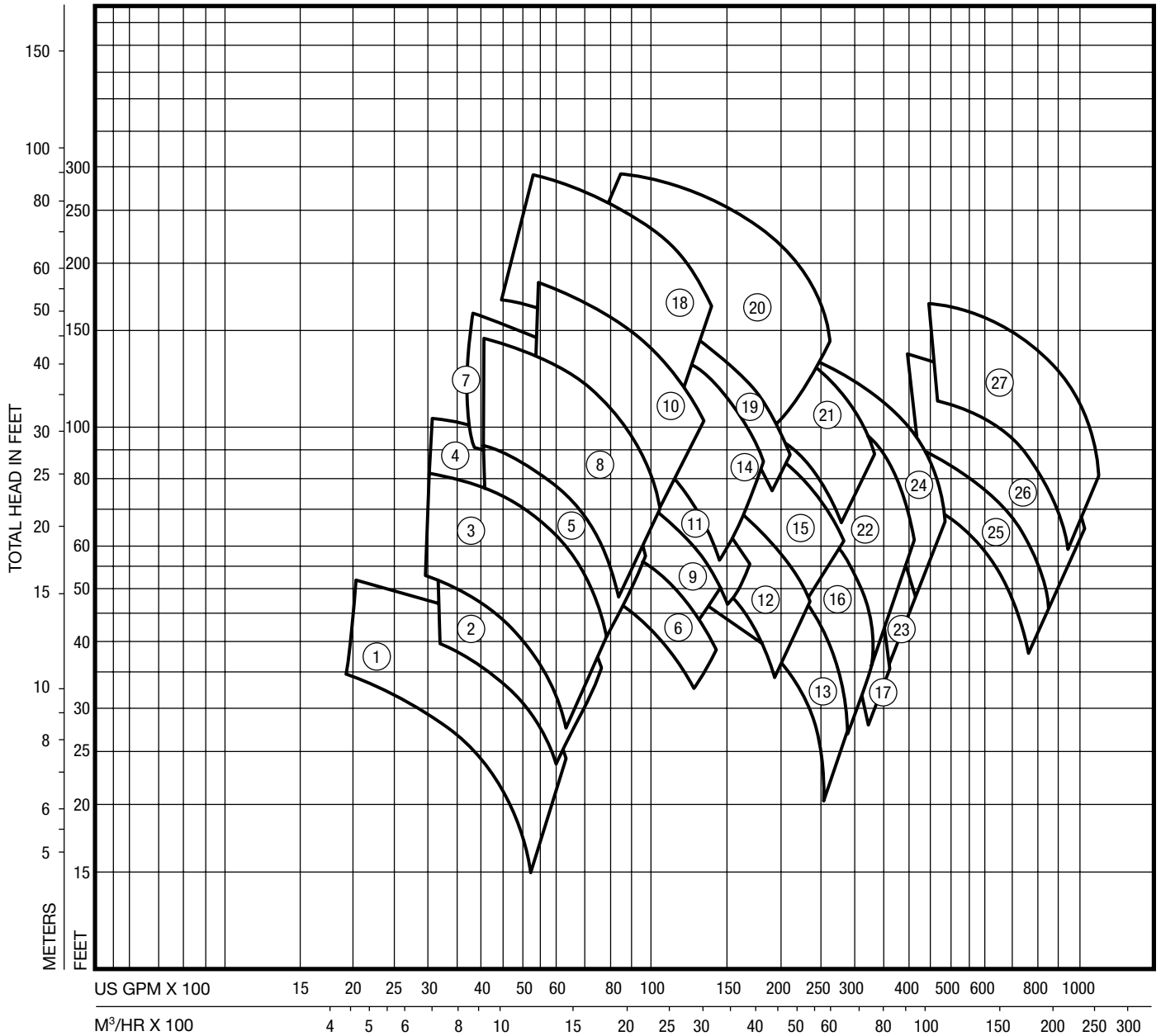


# Hydraulic Coverage Chart – 2400 Solids-Handling Pumps Performance



No.	Pump	RPM
1	12" 24x4	705
2	12" 24x5	705
3	12" 24x4	890
4	12" 24x6	705
5	12" 24x5	890
6	16" 24x5	585
7	12" 24x6	890
8	12" 24x4	1185
9	16" 24x6	585

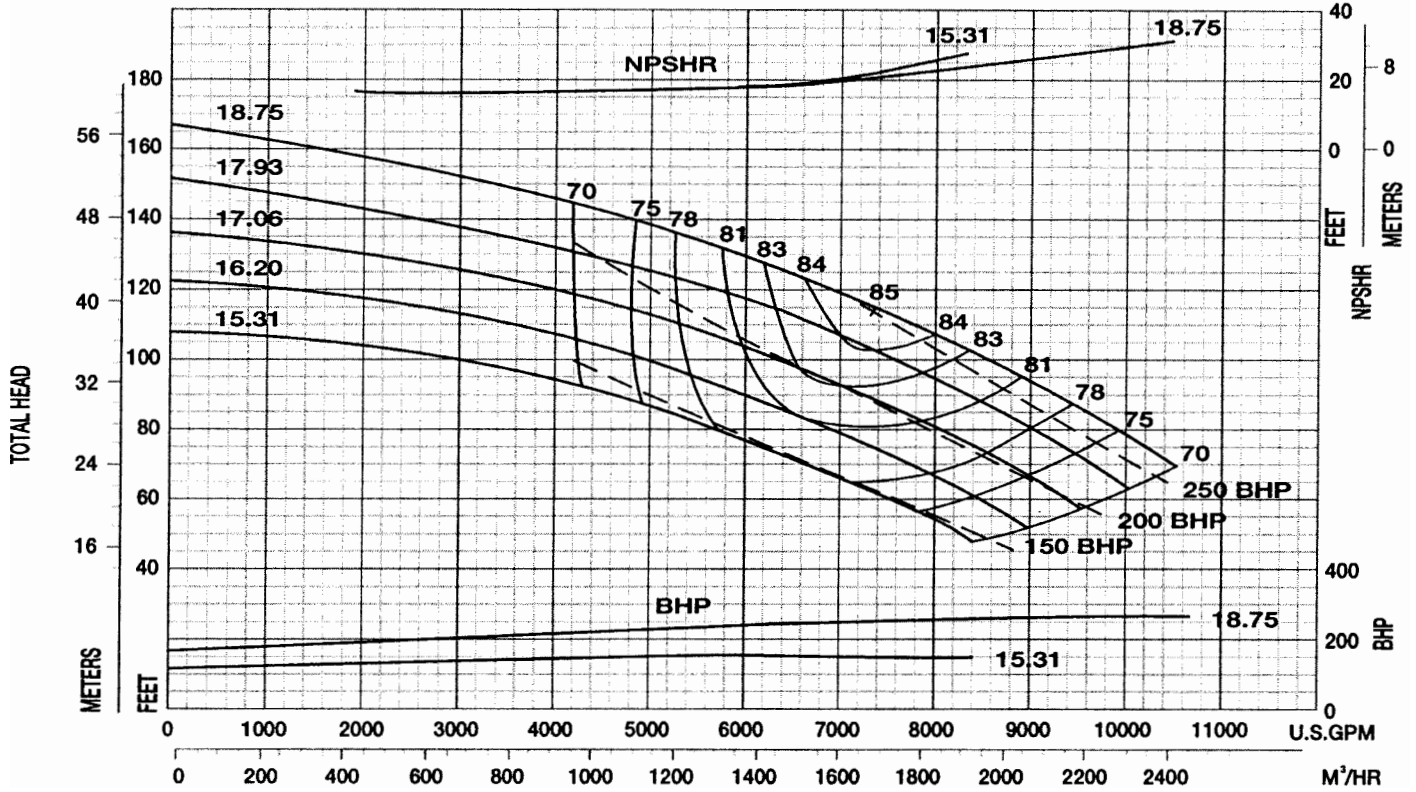
No.	Pump	RPM
10	12" 24x5	1185
11	16" 24x5	705
12	20" 24x5	505
13	24" 54x3	440
14	16" 24x4	890
15	20" 24x5	585
16	24" 24x4	505
17	30" 24x4	390
18	12" 24x6	1185

No.	Pump	RPM
19	16" 24x5	890
20	16" 24x6	890
21	20" 24x5	705
22	24" 24x4	585
23	30" 24x4	440
24	30" 24x4	505
25	42" 24x4	320
26	42" 24x4	350
27	42" 24x4	390

# Performance Curve – 12" 2414, 2424, 2444

RPM: 1185 SOLIDS: 4"

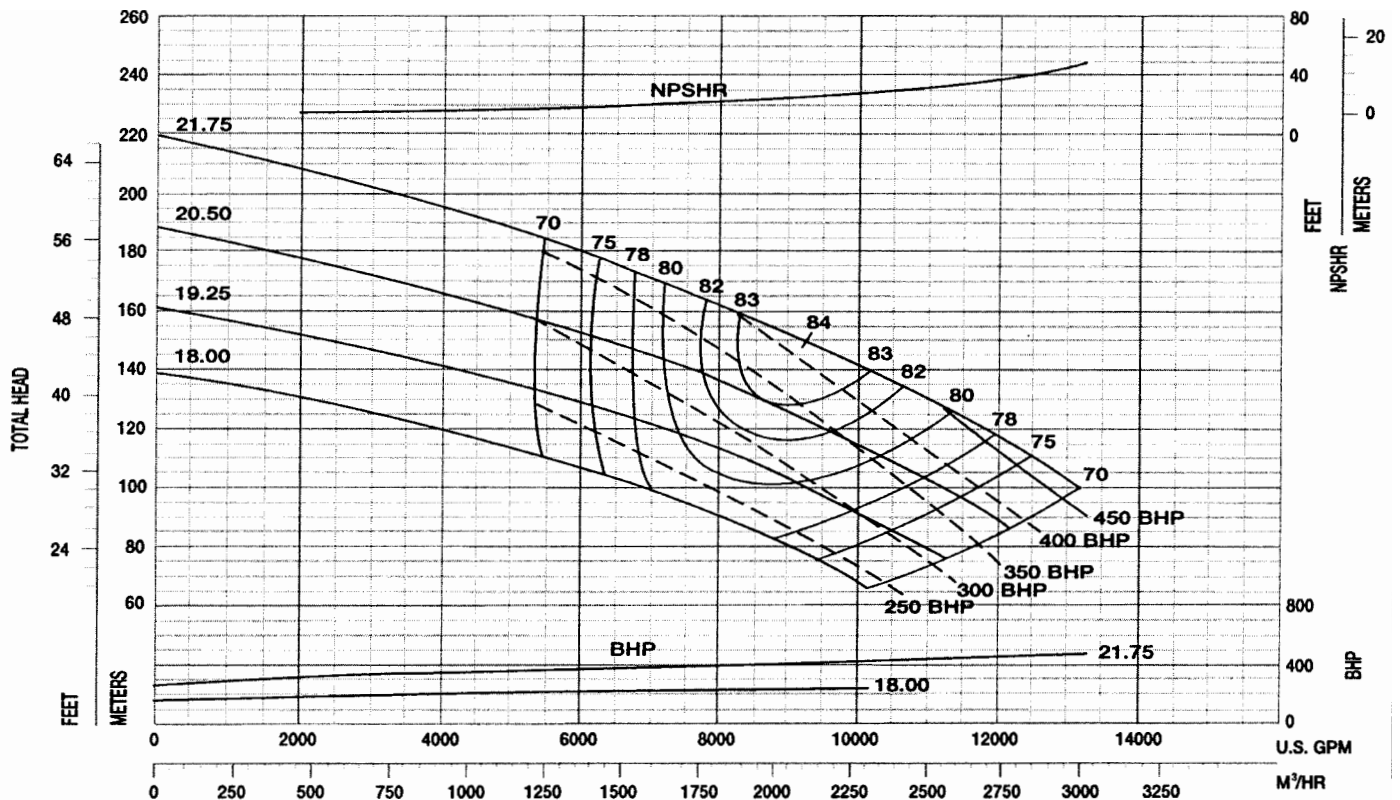
IMPELLER: L12E1A SUCTION: 14" INLET: 153.94 in<sup>2</sup>



# Performance Curve – 12" 2415, 2425, 2445

RPM: 1185 SOLIDS: 4"

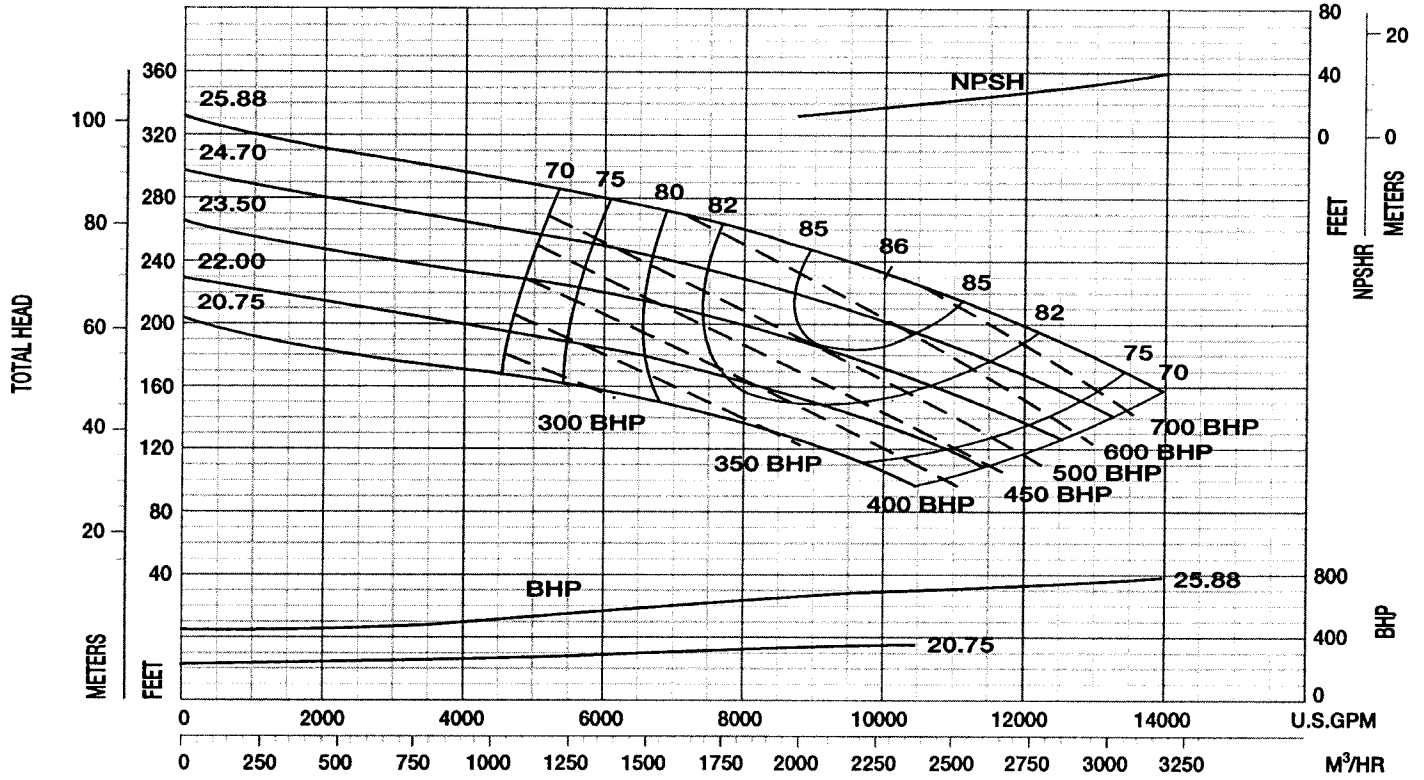
IMPELLER: L12E1C SUCTION: 14" INLET: 186 in<sup>2</sup>



# Performance Curve – 12" 2416, 2426, 2446

RPM: 1185 SOLIDS: 4.25"

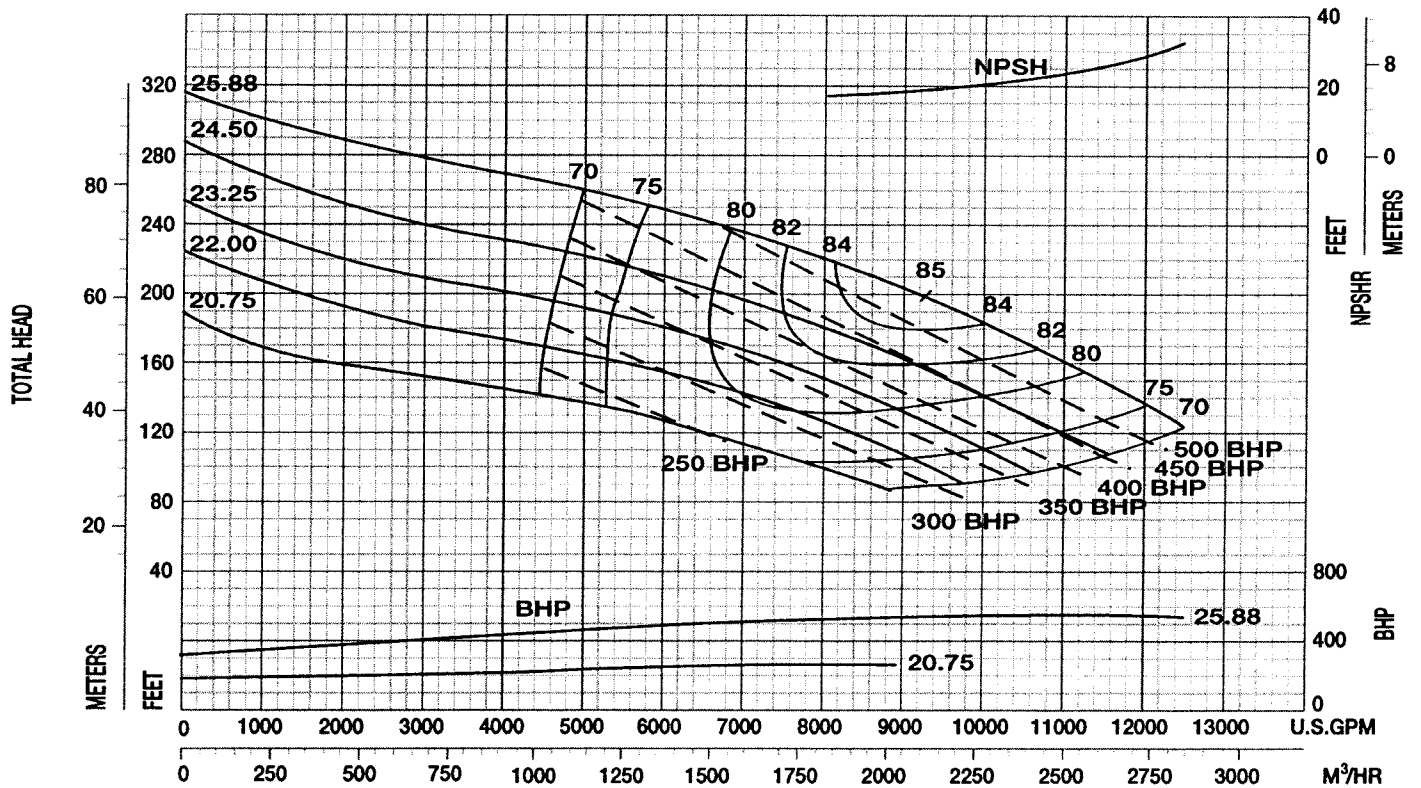
IMPELLER: L12F1C SUCTION: 14" INLET: 204 in<sup>2</sup>



# Performance Curve – 12" 2416, 2426, 2446

RPM: 1185 SOLIDS: 4.8"

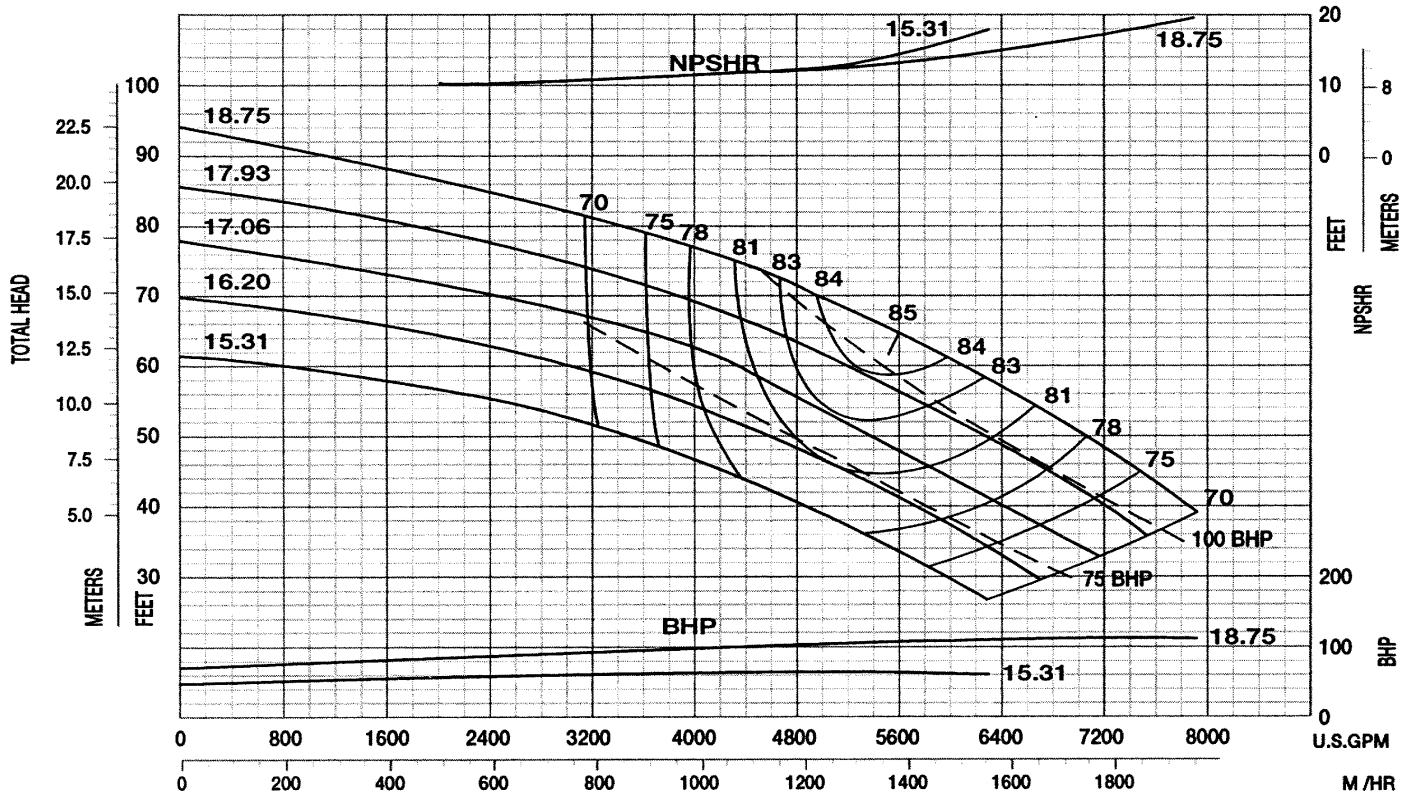
IMPELLER: L12F1G SUCTION: 14" INLET: 143 in<sup>2</sup>



# Performance Curve - 12" 2414, 2424, 2444

RPM: 890 SOLIDS: 4"

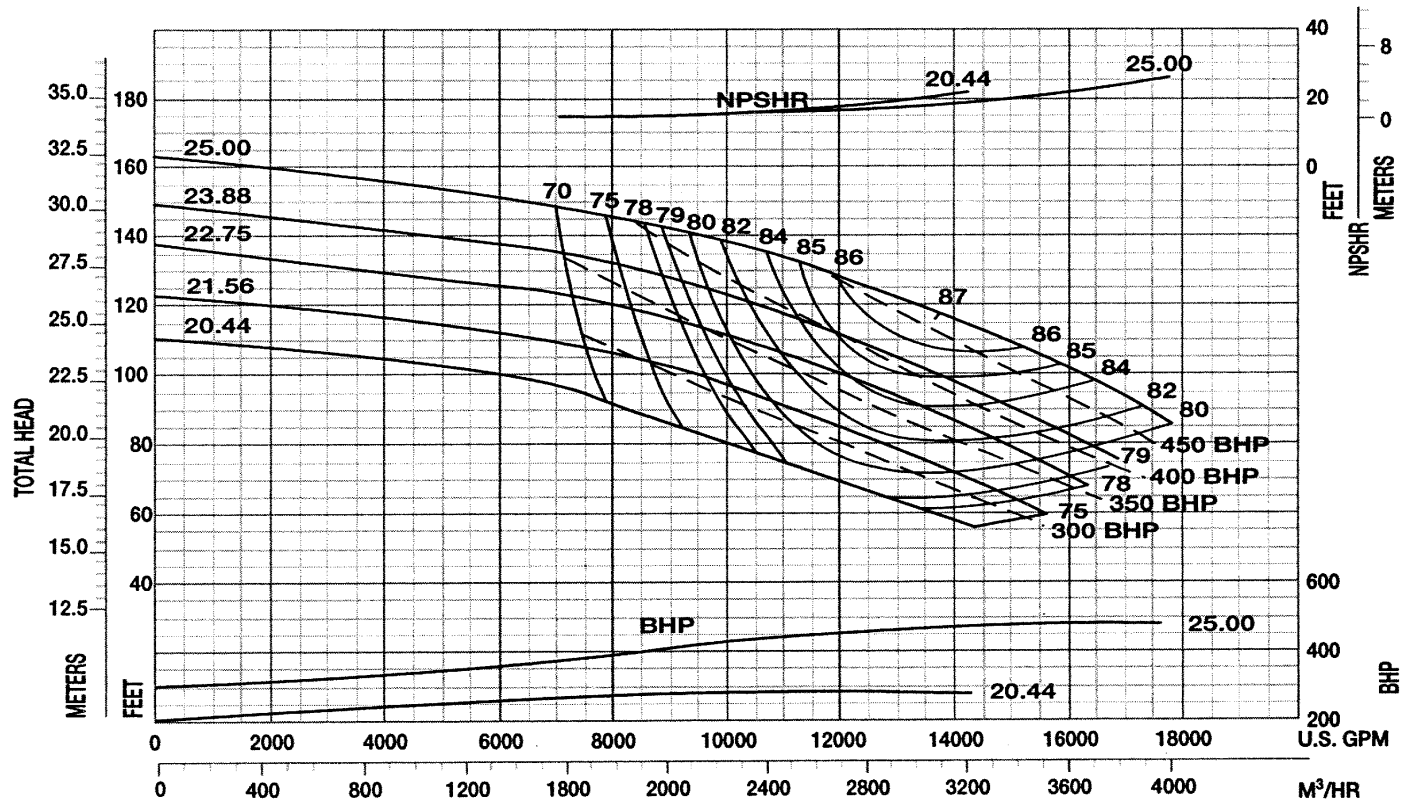
IMPELLER: L12E1A SUCTION: 14" INLET: 153.94 in<sup>2</sup>



# Performance Curve - 16" 2414, 2424, 2444

RPM: 890 SOLIDS: 5.25"

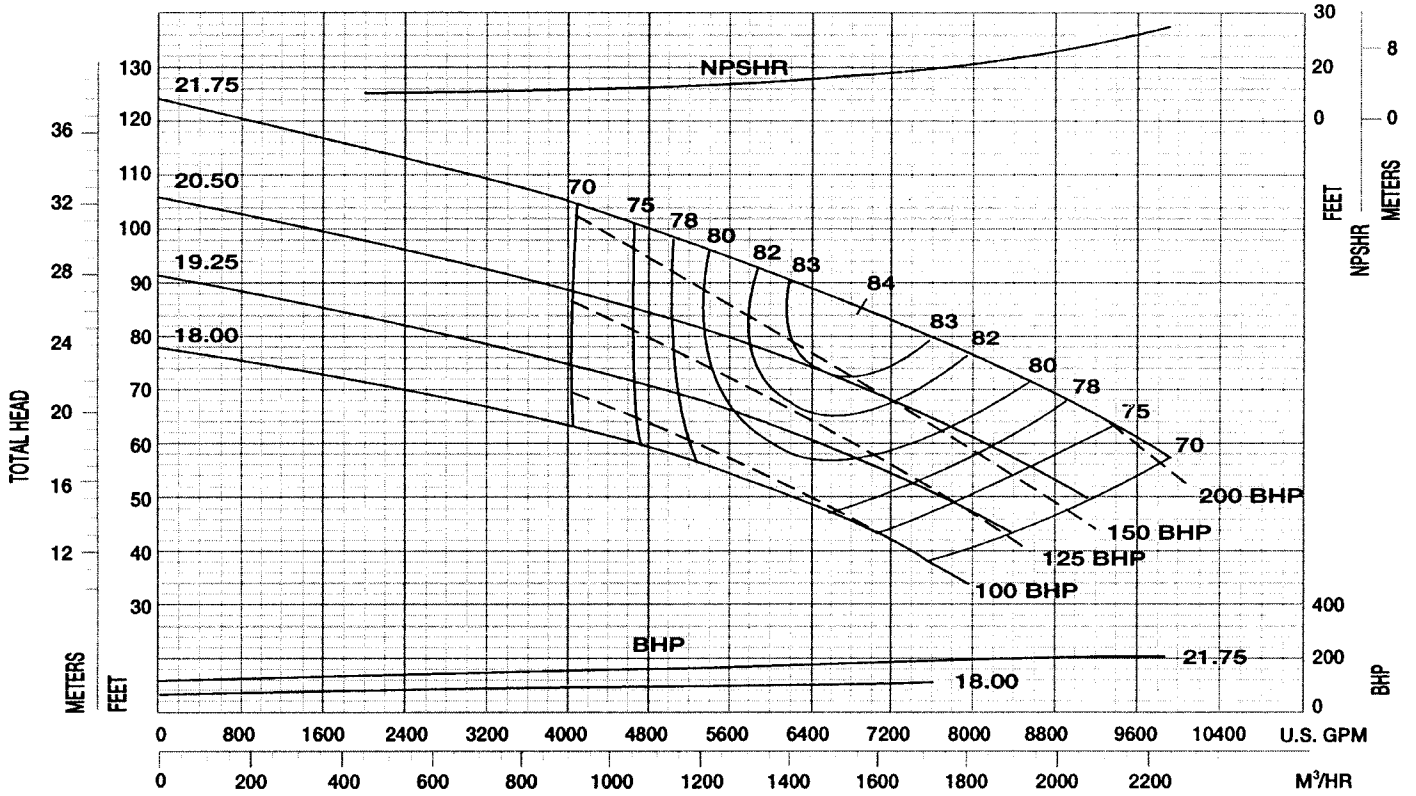
IMPELLER: L16E1A SUCTION: 18" INLET: 263.40 in<sup>2</sup>



# Performance Curve – 12" 2415, 2425, 2445

RPM: 890 SOLIDS: 4"

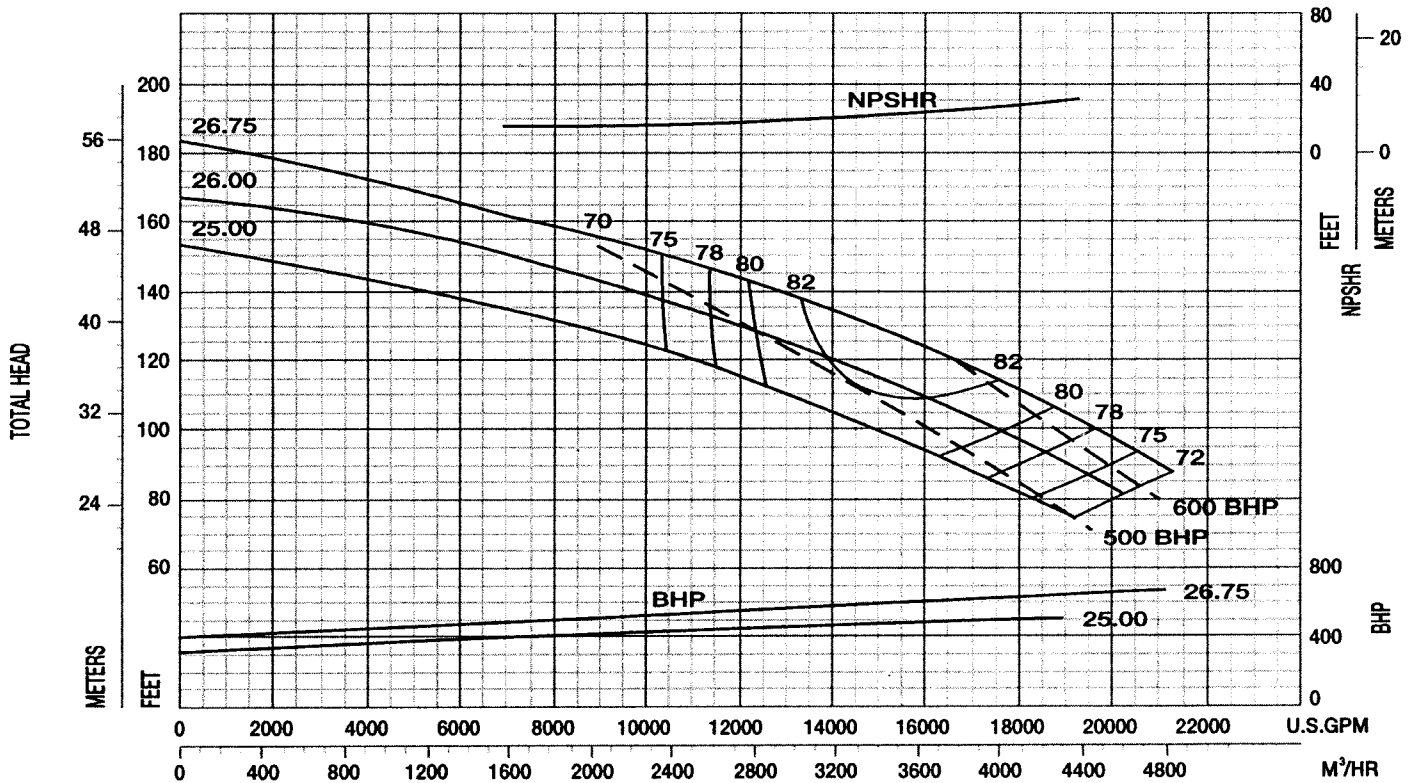
IMPELLER: L12E1C SUCTION: 14" INLET: 186 in<sup>2</sup>



# Performance Curve – 16" 2415, 2425, 2445

RPM: 890 SOLIDS: 5.25"

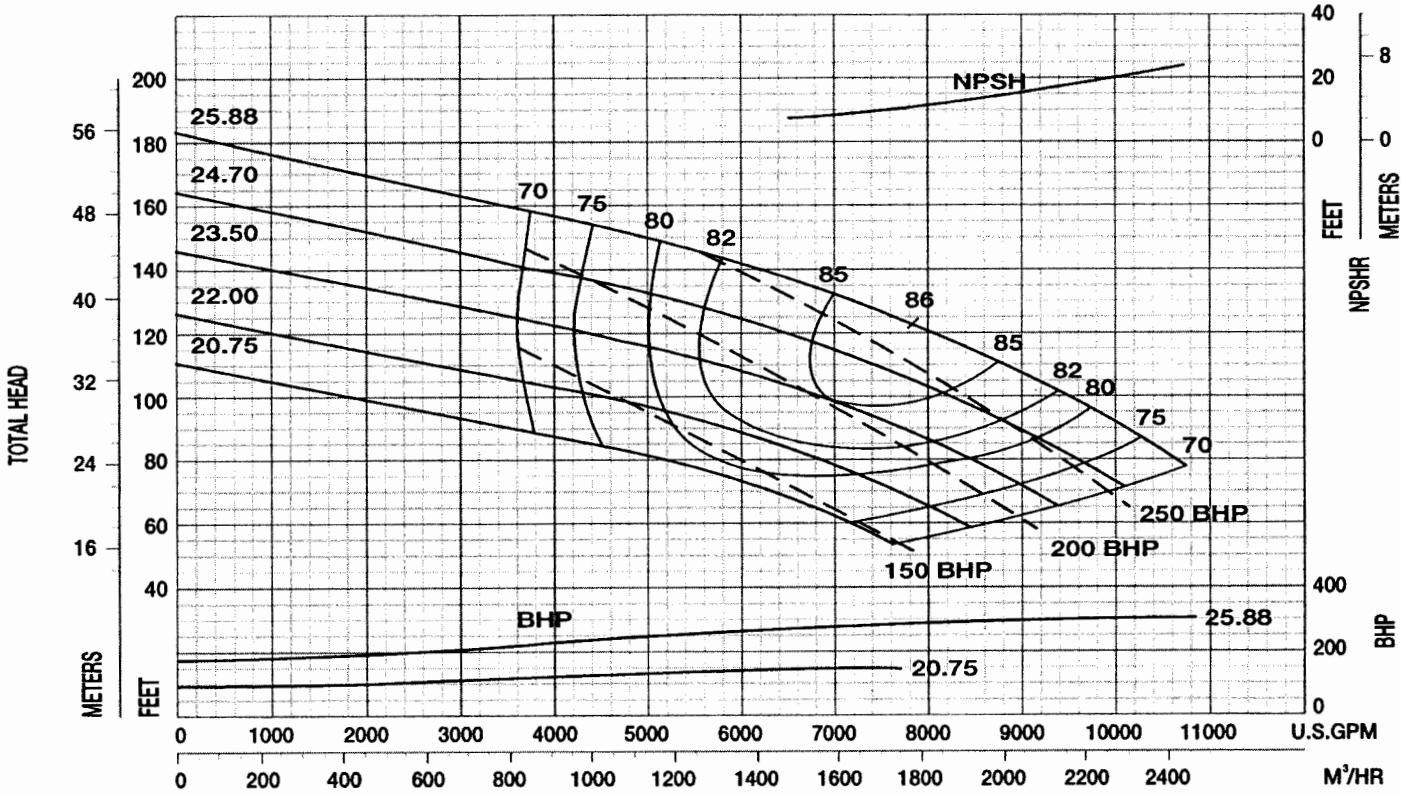
IMPELLER: L16E1C SUCTION: 18" INLET: 331 in<sup>2</sup>



# Performance Curve – 12" 2416, 2426, 2446

RPM: 890 SOLIDS: 4.25"

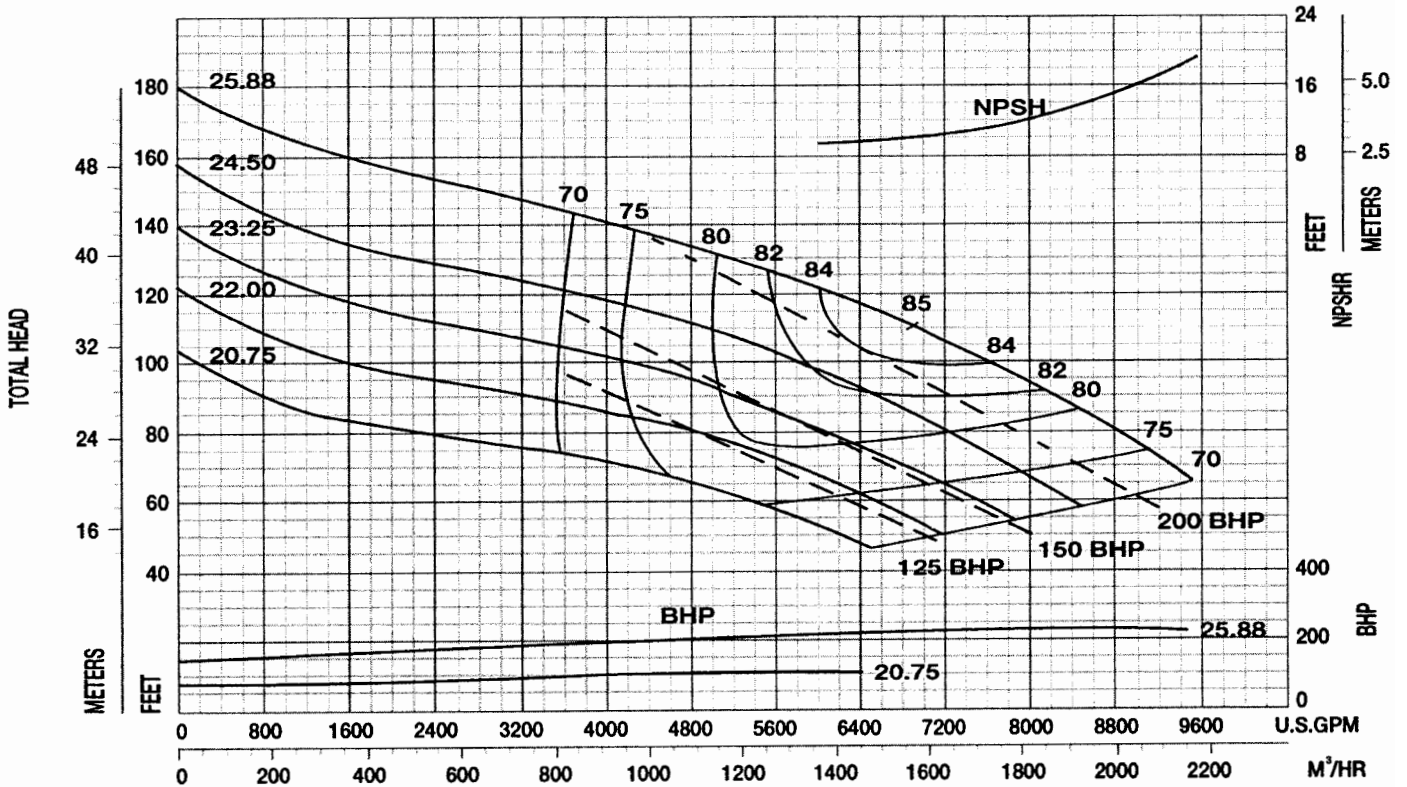
IMPELLER: L12F1C SUCTION: 14" INLET: 204 in<sup>2</sup>



# Performance Curve – 12" 2416, 2426, 2446

RPM: 890 SOLIDS: 4.8"

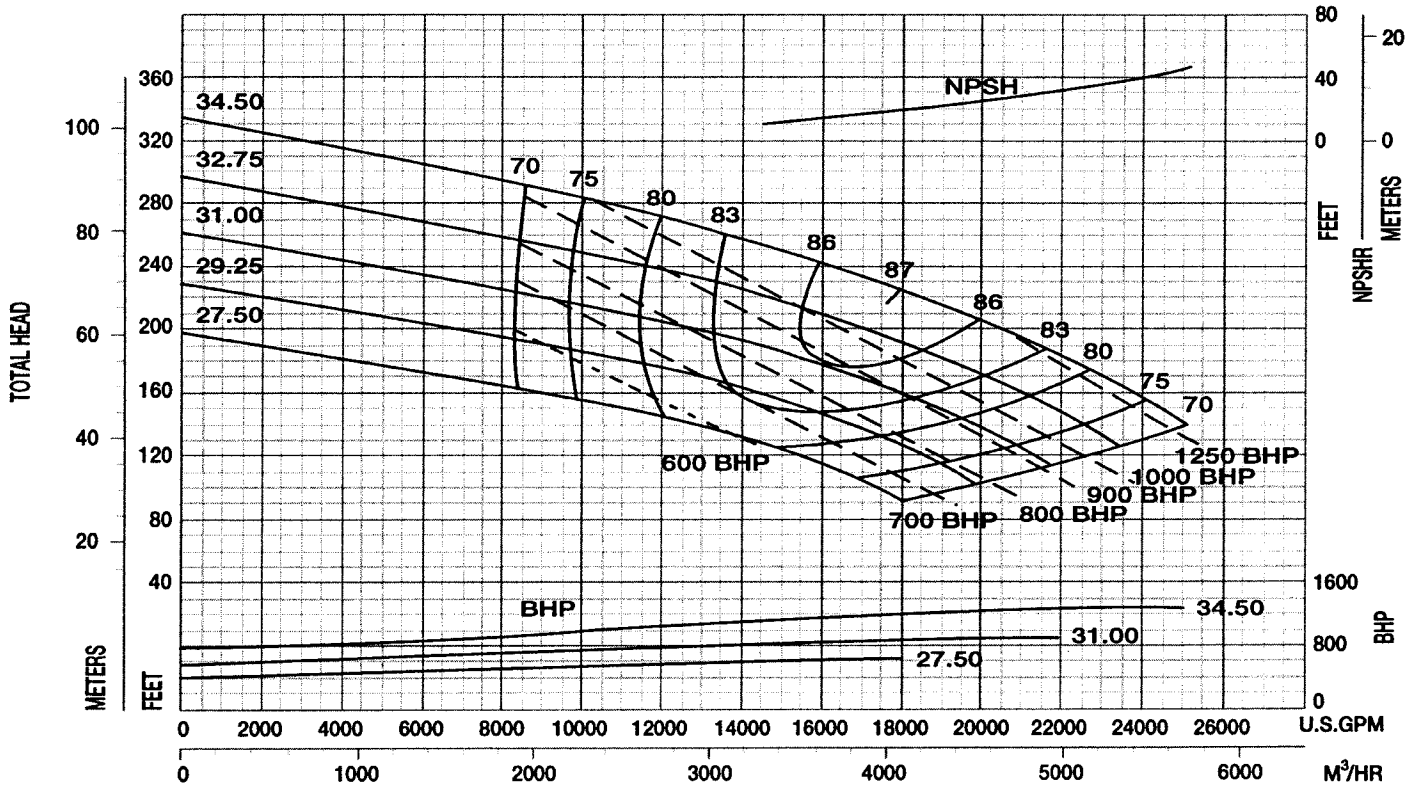
IMPELLER: L12F1G SUCTION: 14" INLET: 143 in<sup>2</sup>



# Performance Curve – 16" 2416, 2426, 2446

RPM: 890 SOLIDS: 5.7"

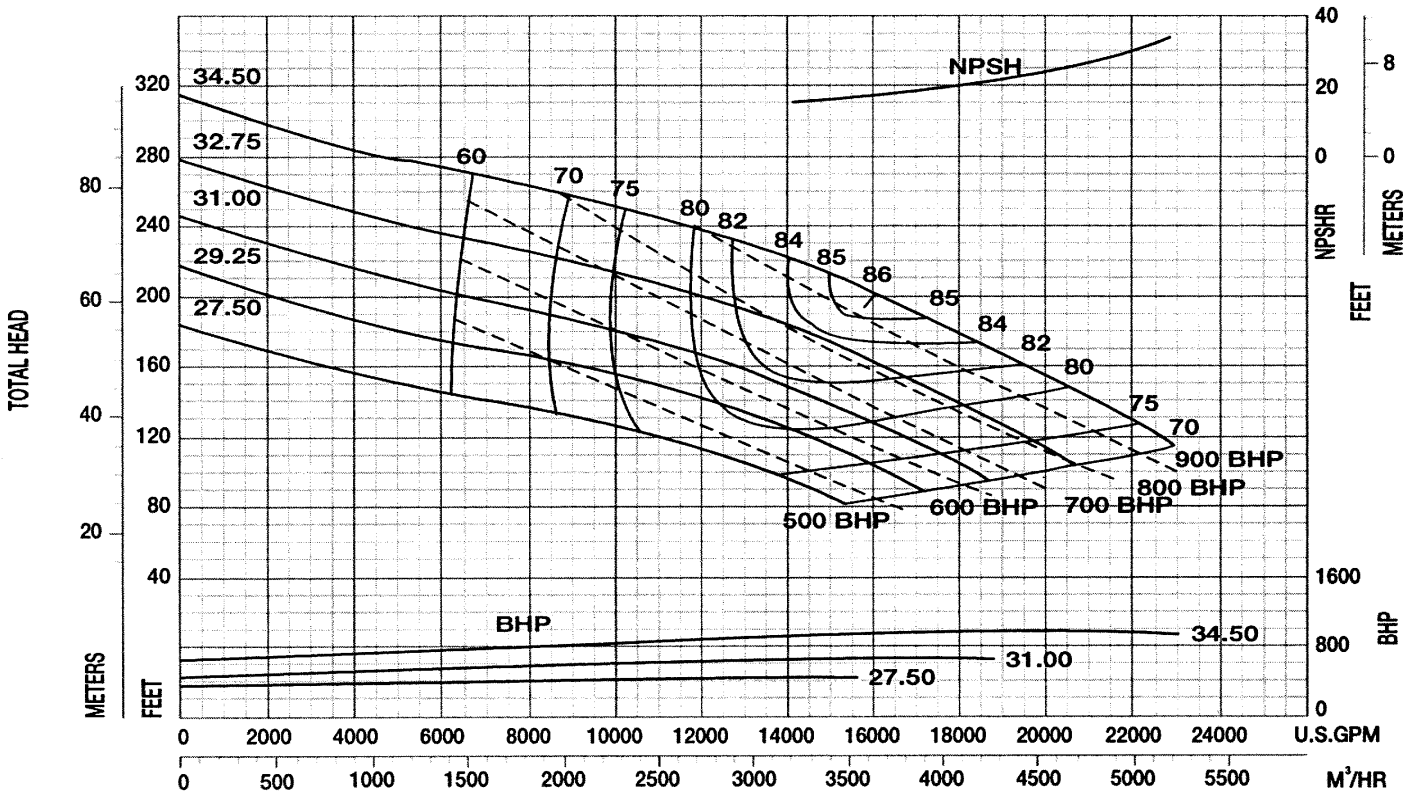
IMPELLER: L16F1C SUCTION: 18" INLET: 272 in<sup>2</sup>



# Performance Curve – 16" 2416, 2426, 2446

RPM: 890 SOLIDS: 6.4"

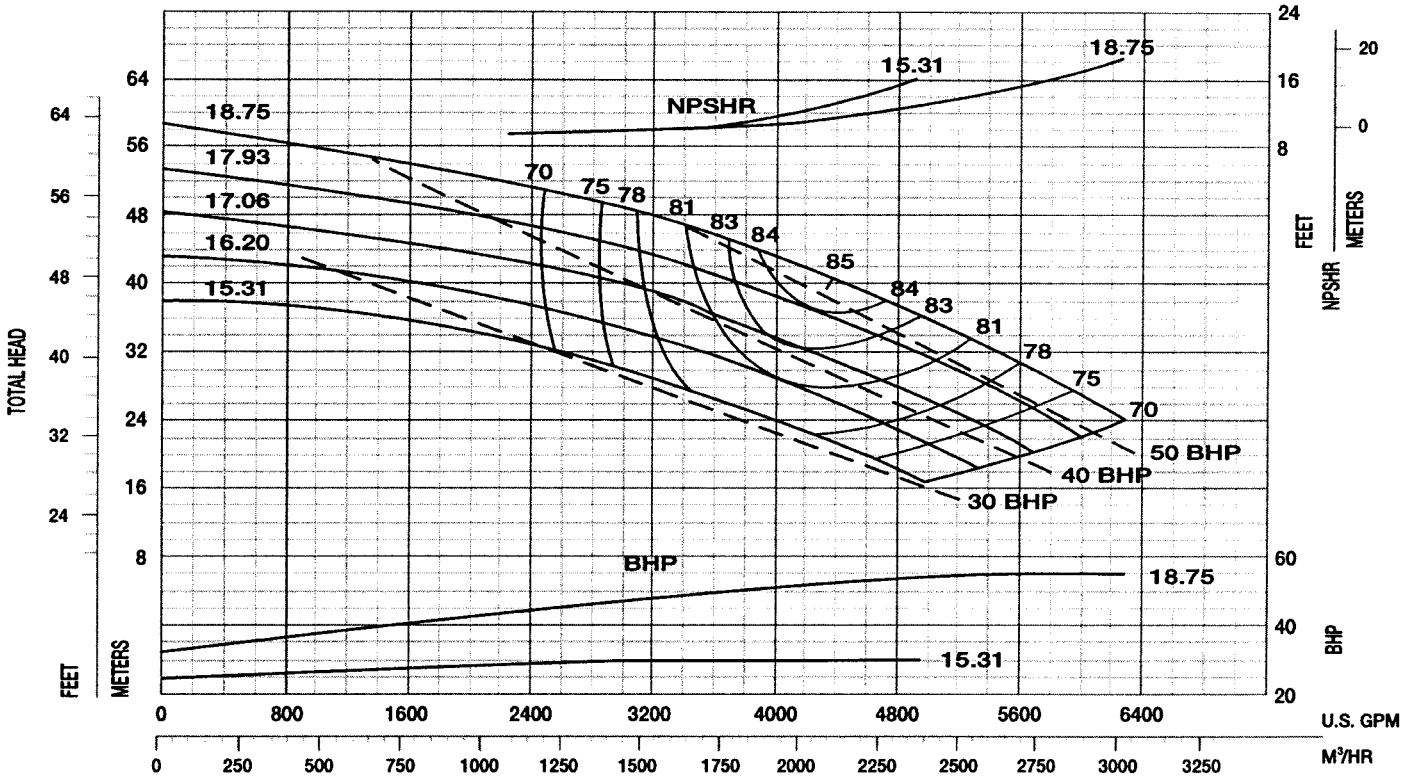
IMPELLER: L16F1G SUCTION: 18" INLET: 191 in<sup>2</sup>



# Performance Curve - 12" 2414, 2424, 2444

RPM: 705 SOLIDS: 4"

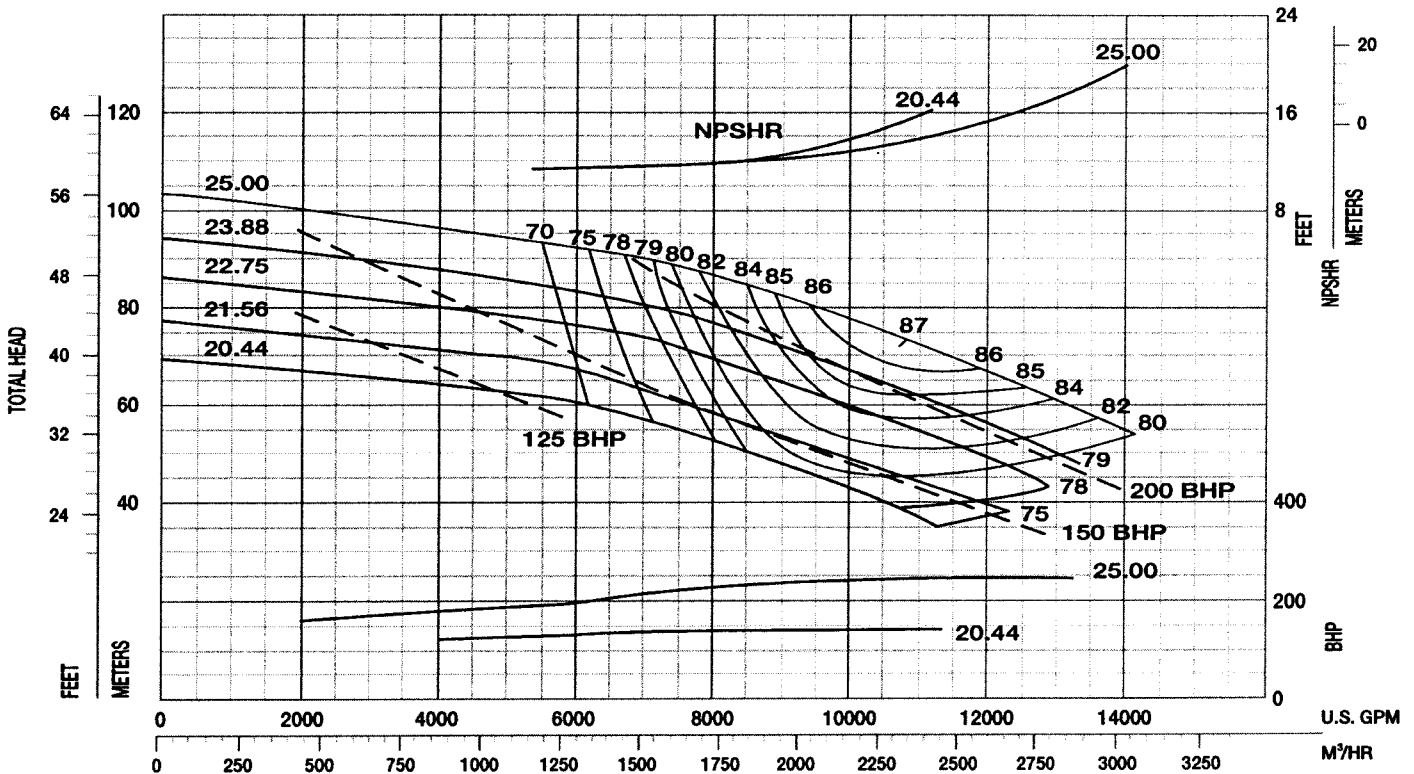
IMPELLER: L12E1A SUCTION: 14" INLET: 153.94 in<sup>2</sup>



# Performance Curve - 16" 2414, 2424, 2444

RPM: 705 SOLIDS: 5.25"

IMPELLER: L16E1A SUCTION: 18" INLET: 263.4 in<sup>2</sup>

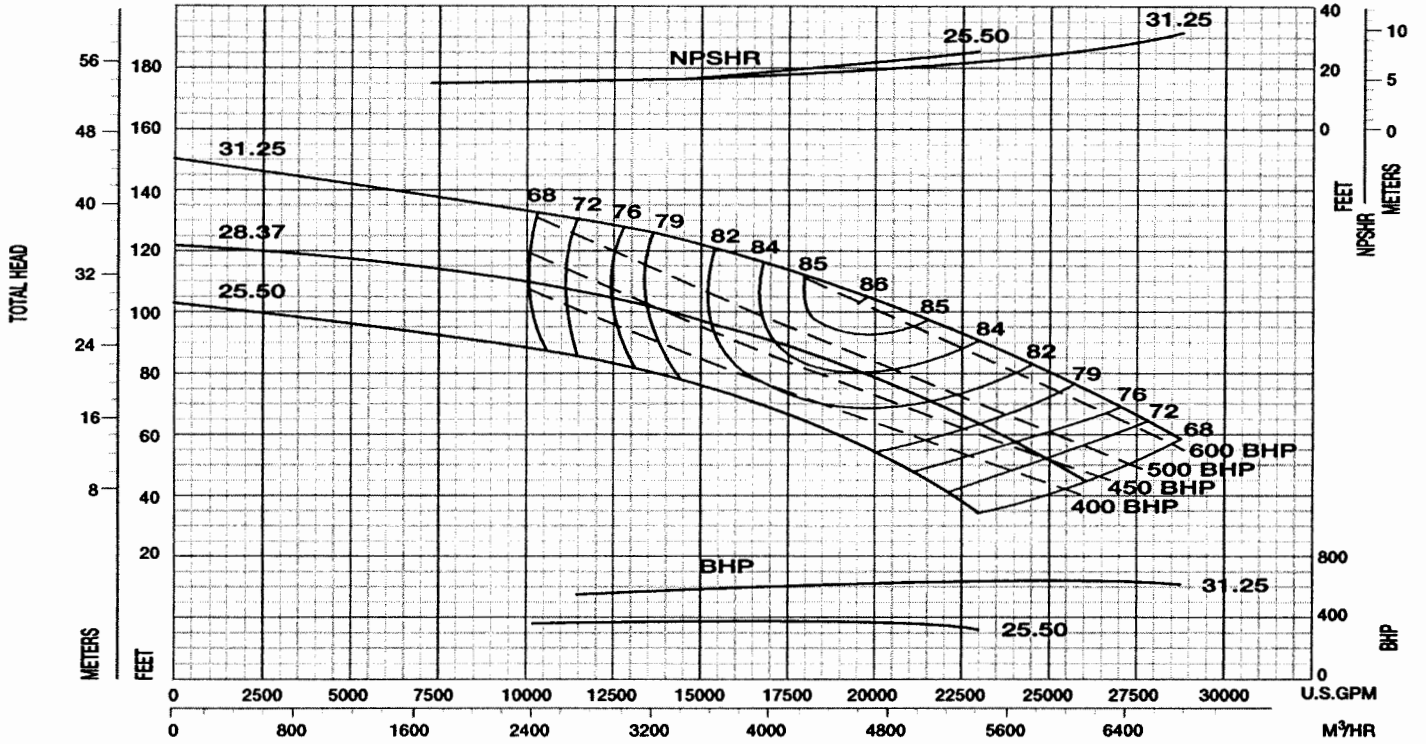




# Performance Curve – 20" 2414, 2424, 2444

RPM: 705 SOLIDS: 6.60"

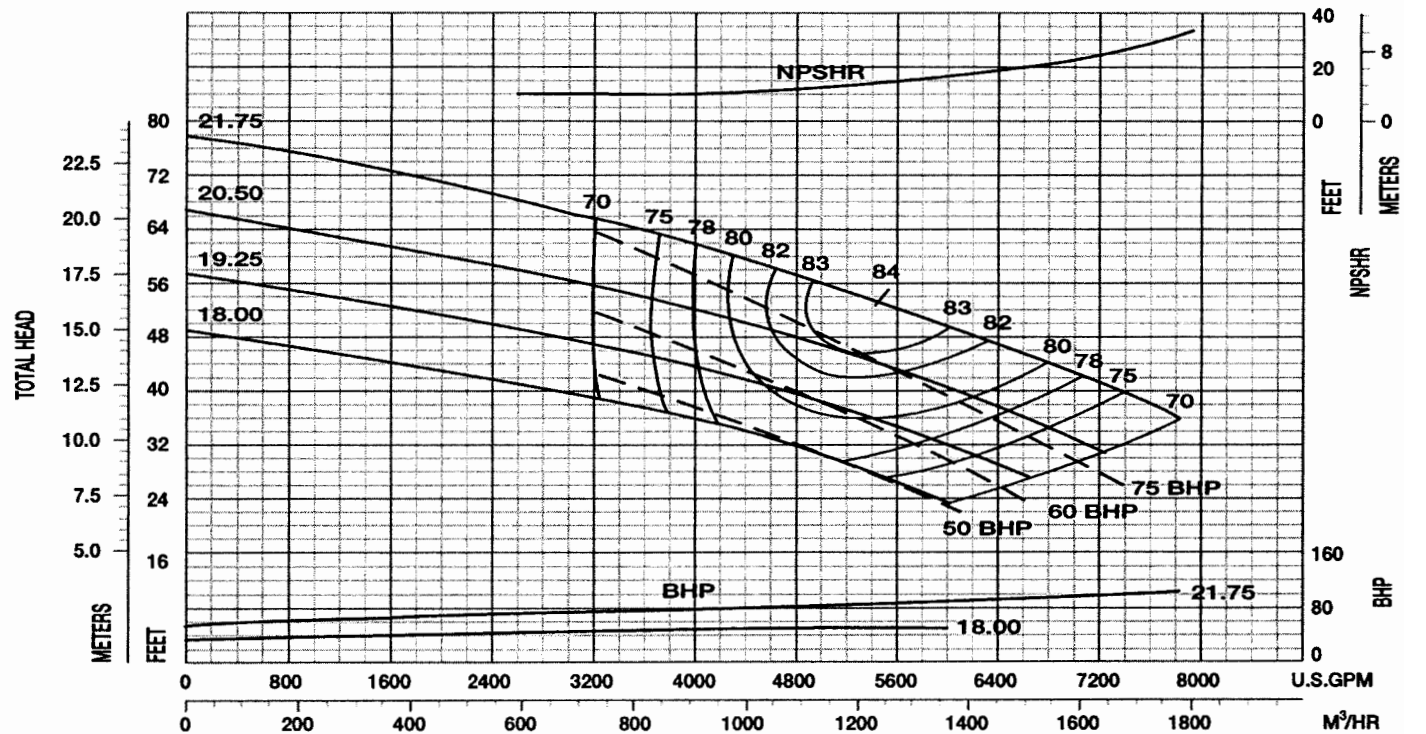
IMPELLER: L20E1A SUCTION: 24" INLET: 427.32 in<sup>2</sup>



# Performance Curve – 12" 2415, 2425, 2445

RPM: 705 SOLIDS: 4"

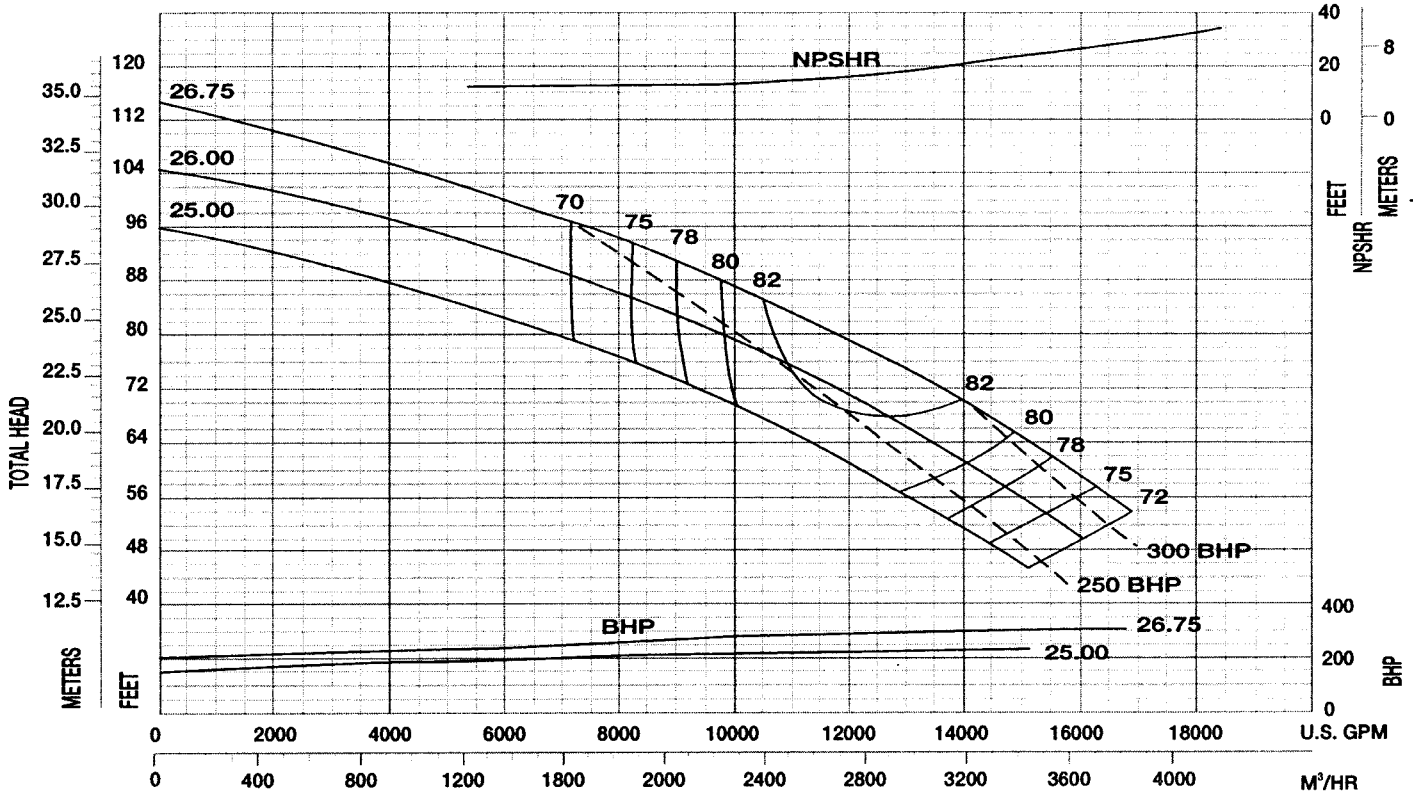
IMPELLER: L12E1C SUCTION: 14" INLET: 186 in<sup>2</sup>



# Performance Curve – 16" 2415, 2425, 2445

RPM: 705 SOLIDS: 5.25"

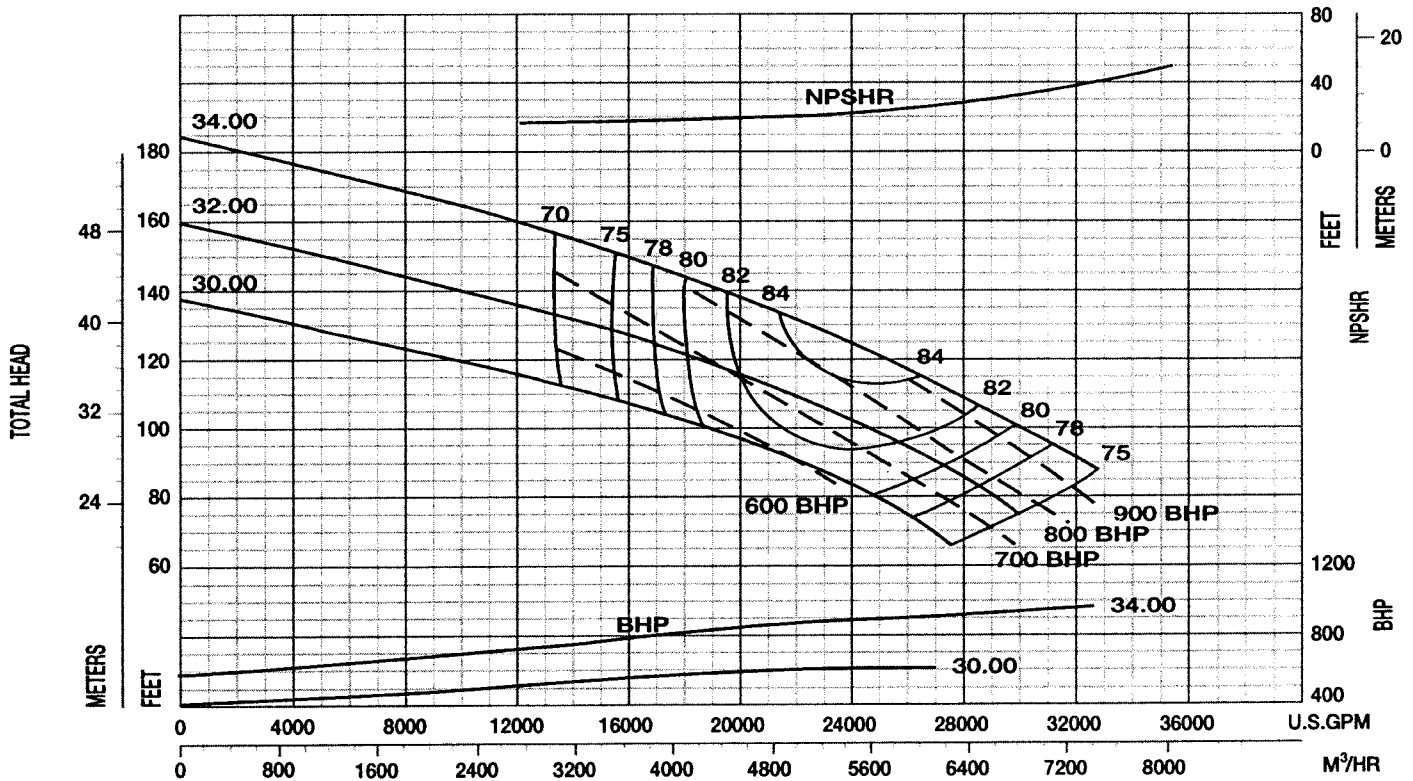
IMPELLER: L16E1C SUCTION: 18" INLET: 331 in<sup>2</sup>



# Performance Curve – 20" 2415, 2425, 2445

RPM: 705 SOLIDS: 6.6"

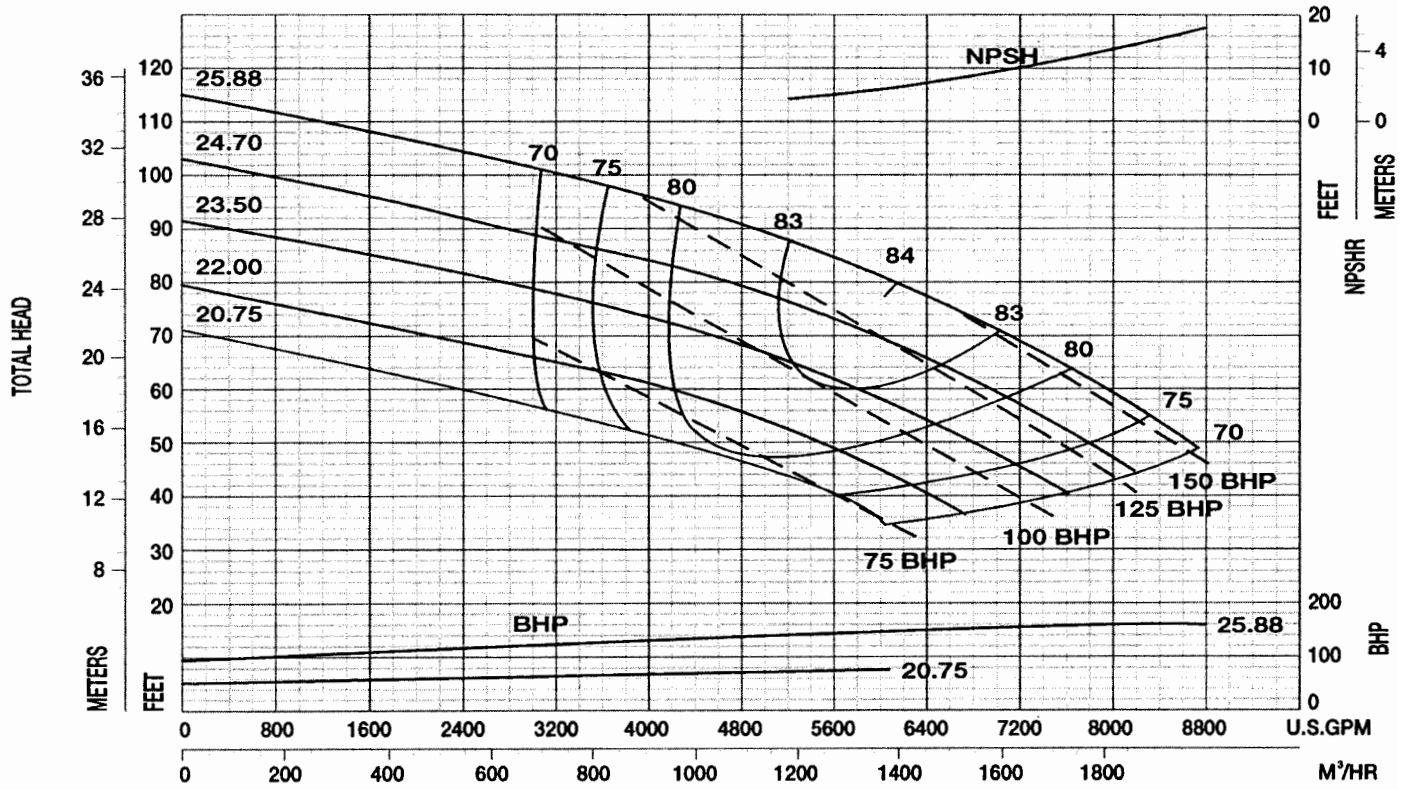
IMPELLER: L20E1C SUCTION: 24" INLET: 518 in<sup>2</sup>



# Performance Curve – 12" 2416, 2426, 2446

RPM: 705 SOLIDS: 4.25"

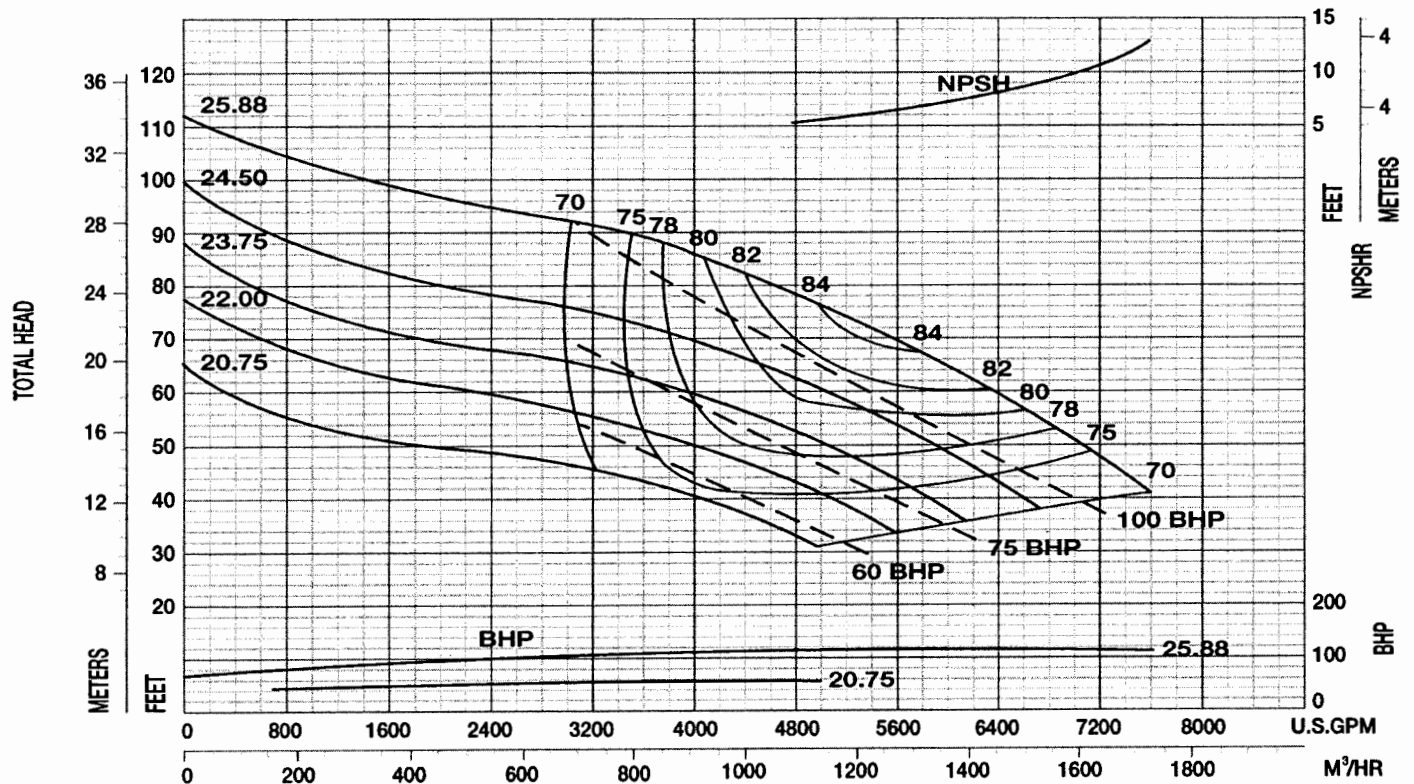
IMPELLER: L12F1C SUCTION: 14" INLET: 204 in<sup>2</sup>



# Performance Curve – 12" 2416, 2426, 2446

RPM: 705 SOLIDS: 4.8"

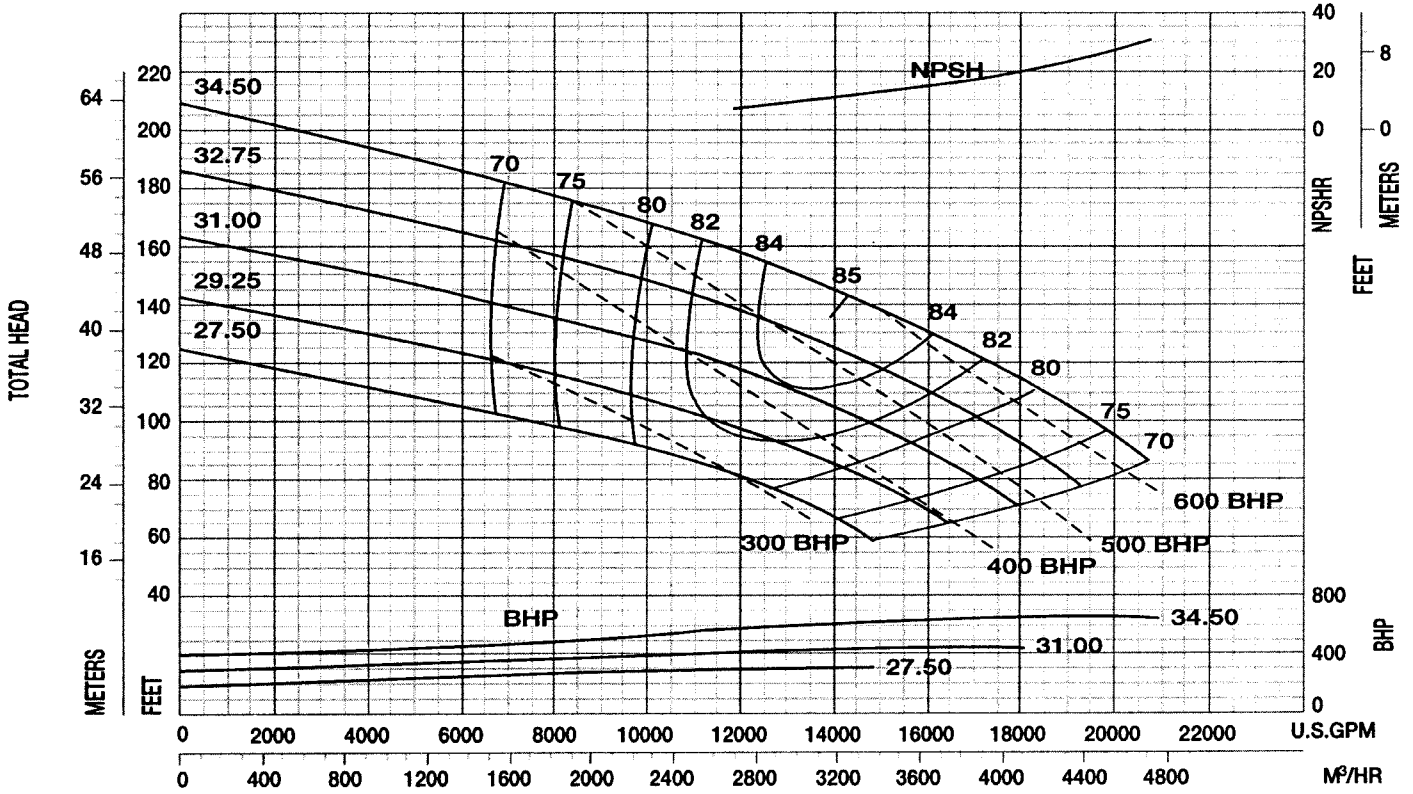
IMPELLER: L12F1G SUCTION: 14" INLET: 179 in<sup>2</sup>



# Performance Curve – 16" 2416, 2426, 2446

RPM: 705 SOLIDS: 5.7"

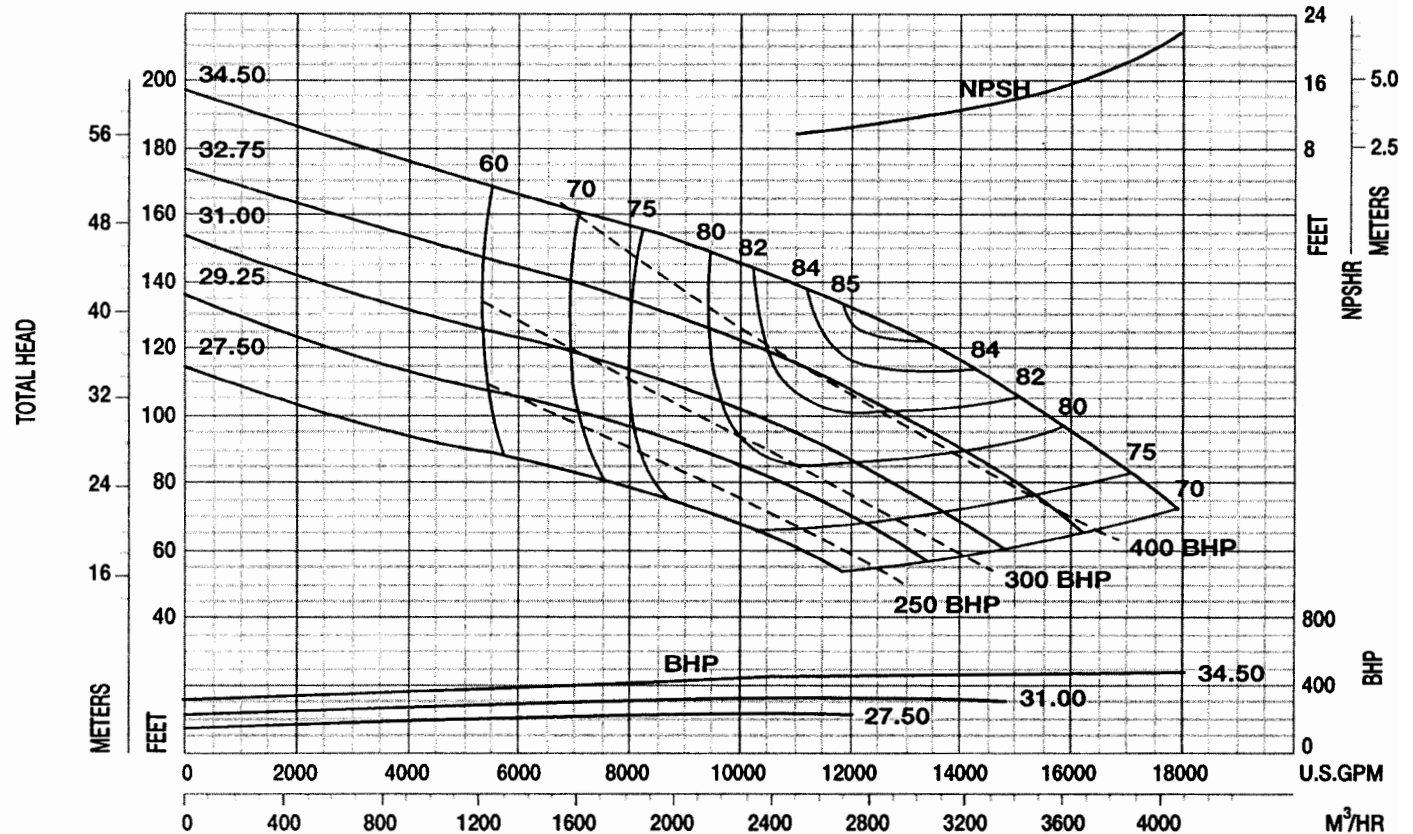
IMPELLER: L16F1C SUCTION: 18" INLET: 272 in<sup>2</sup>



# Performance Curve – 16" 2416, 2426, 2446

RPM: 705 SOLIDS: 6.4"

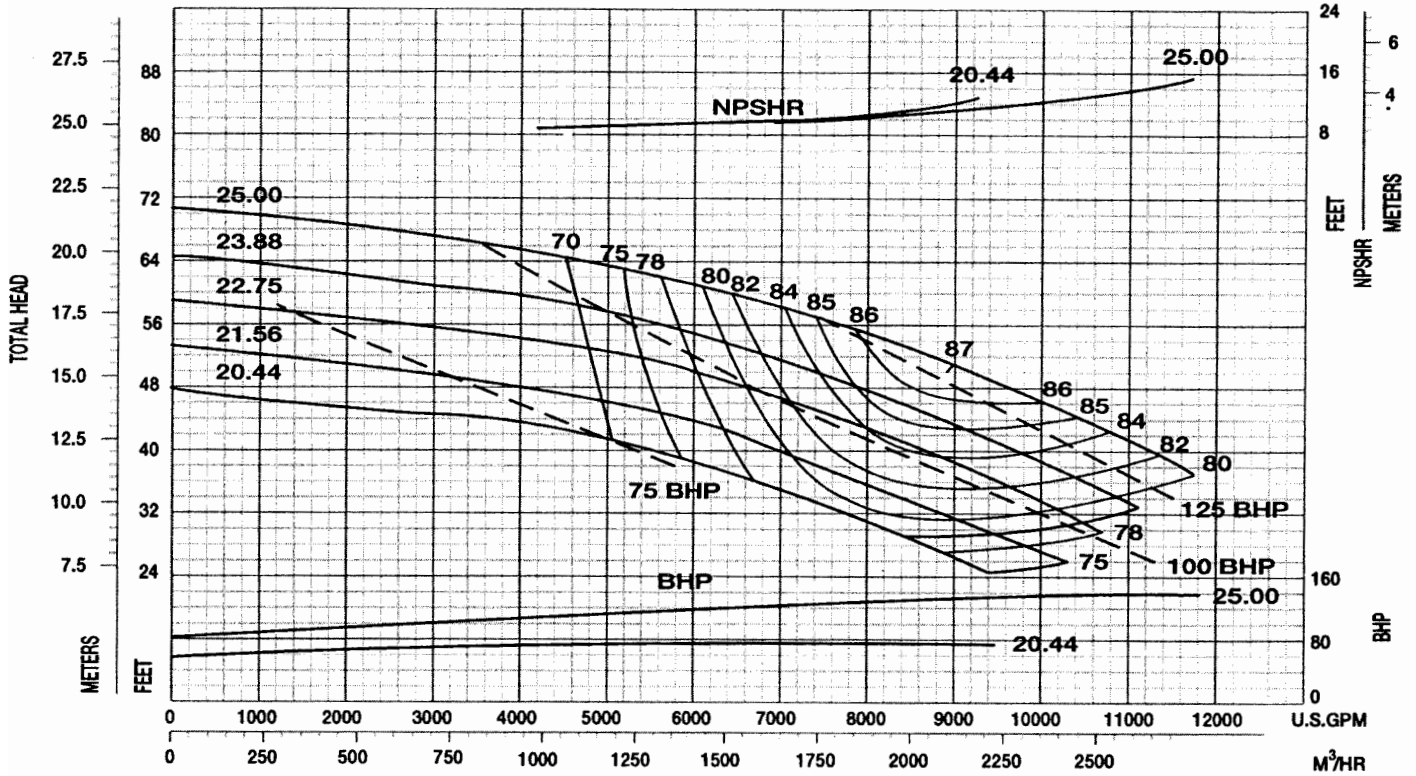
IMPELLER: L16F1G SUCTION: 18" INLET: 191 in<sup>2</sup>



# Performance Curve – 16" 2414, 2424, 2444

RPM: 585 SOLIDS: 5.25"

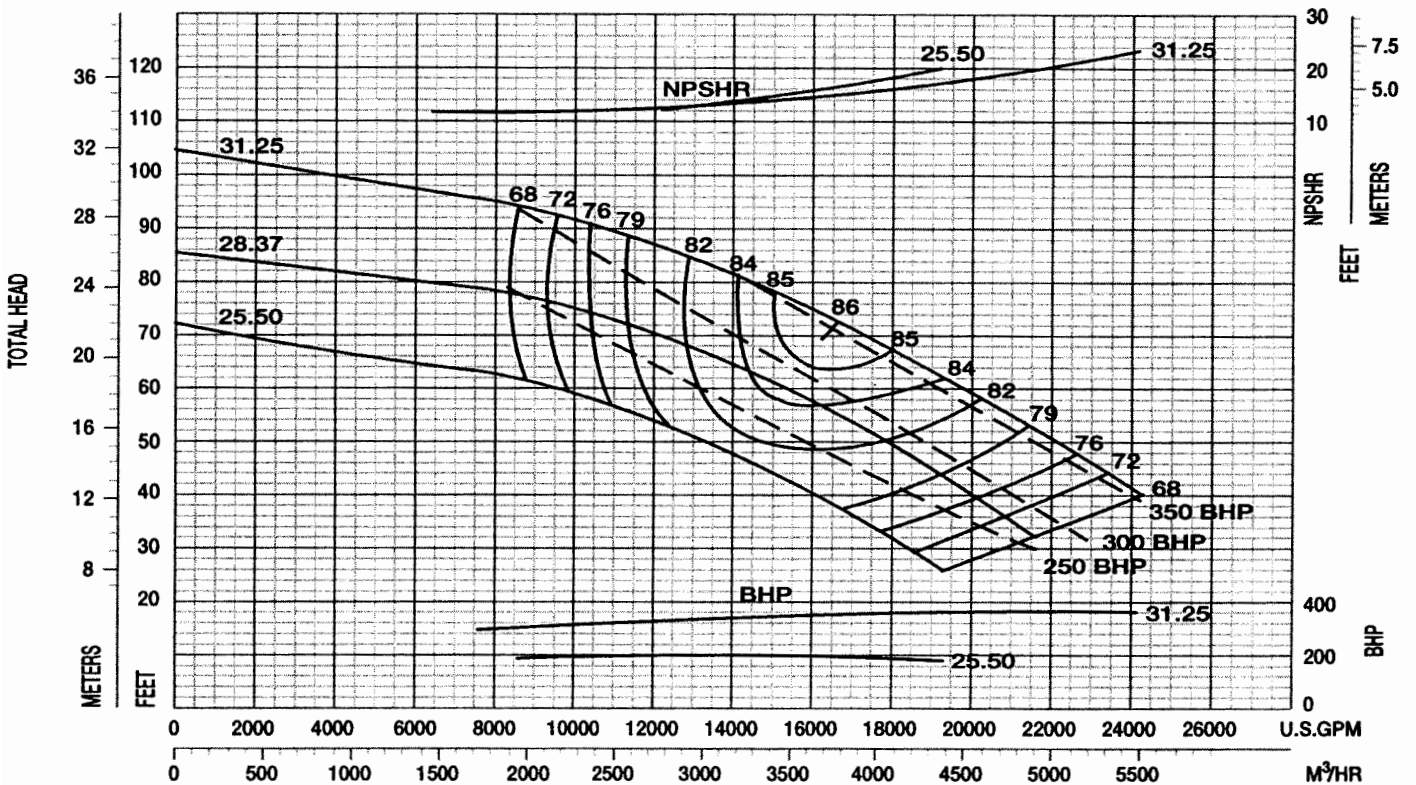
IMPELLER: L16E1A SUCTION: 18" INLET: 263.40 in<sup>2</sup>



# Performance Curve – 20" 2414, 2424, 2444

RPM: 585 SOLIDS: 6.60"

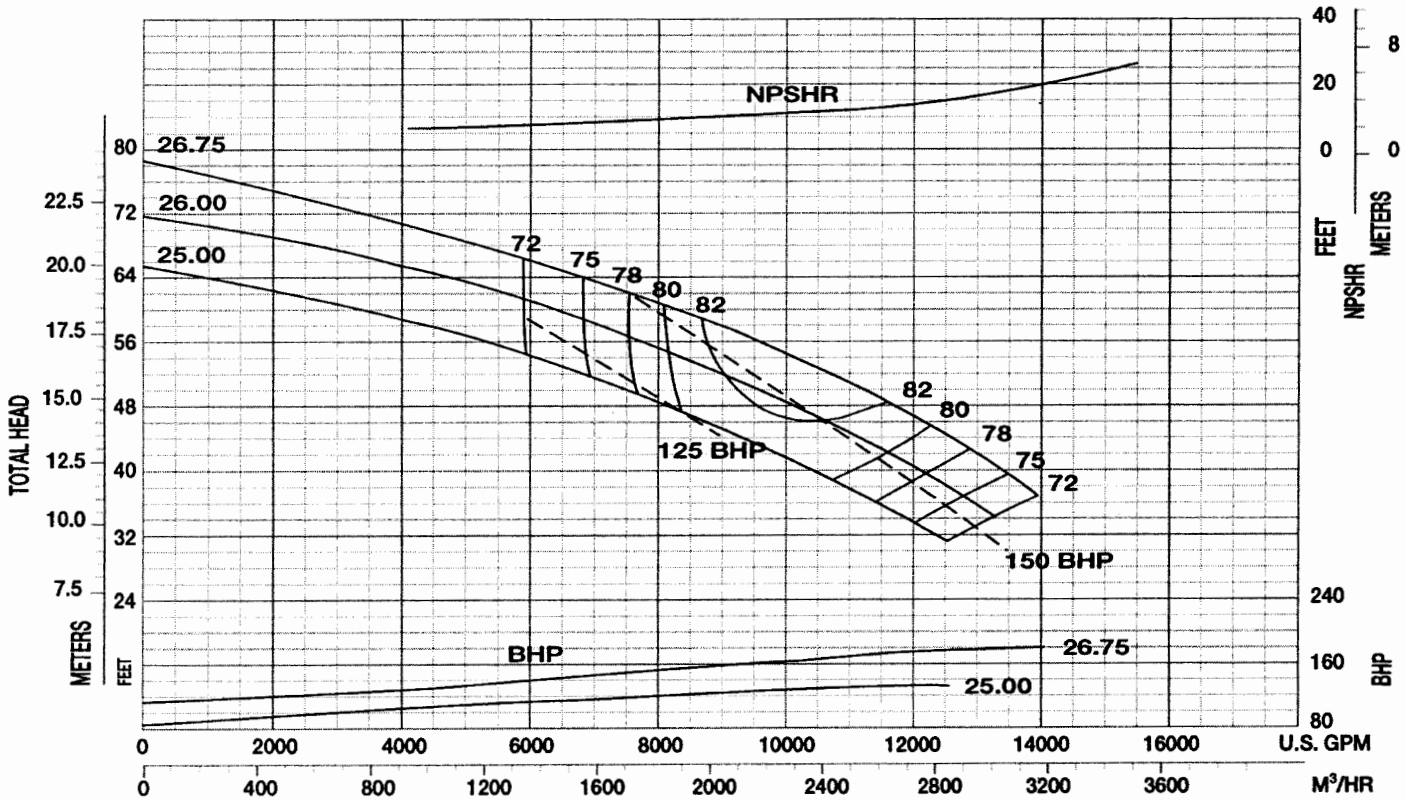
IMPELLER: L20E1A SUCTION: 24" INLET: 427.32 in<sup>2</sup>



# Performance Curve – 16" 2415, 2425, 2445

RPM: 585 SOLIDS: 5.25"

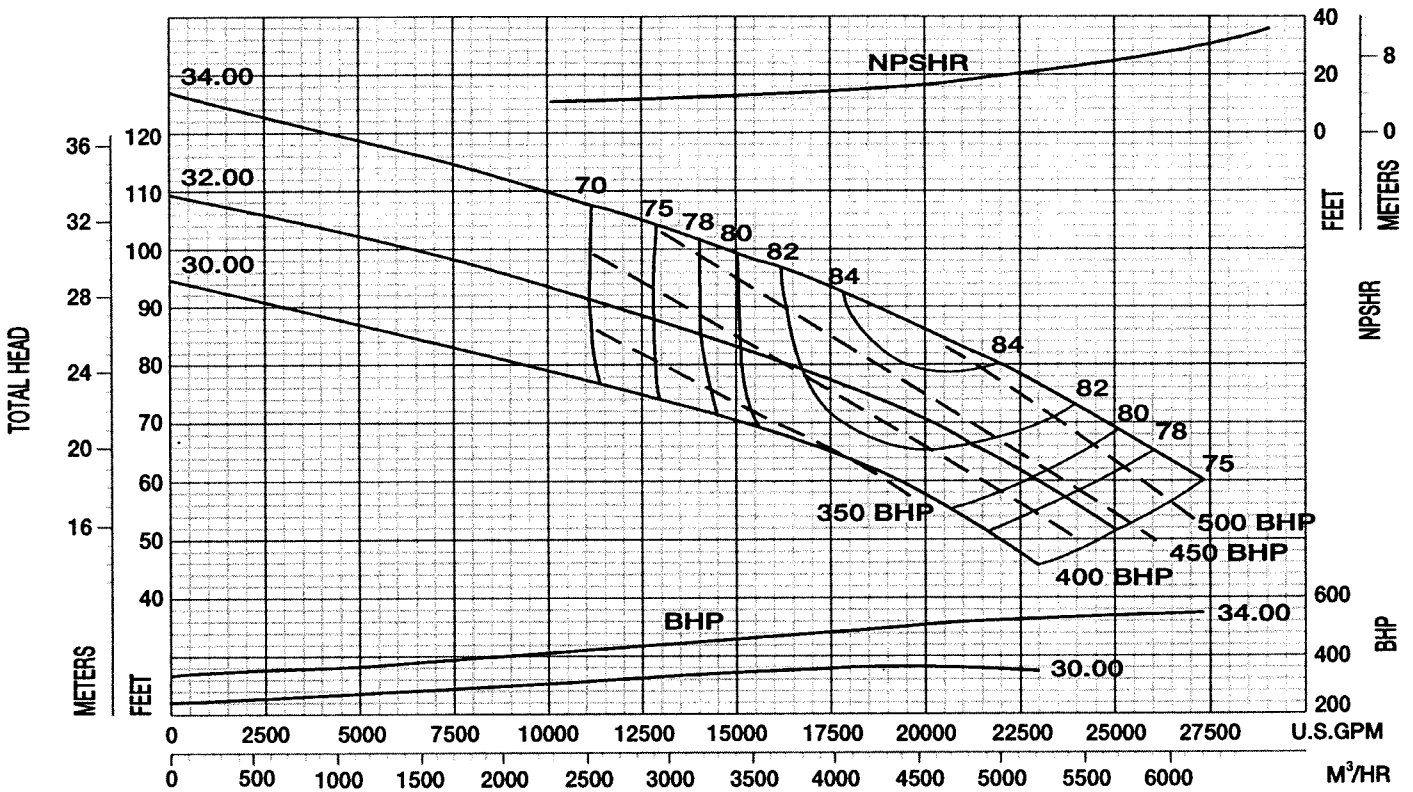
IMPELLER: L16E1C SUCTION: 18" INLET: 331 in<sup>2</sup>



# Performance Curve – 20" 2415, 2425, 2445

RPM: 585 SOLIDS: 6.6"

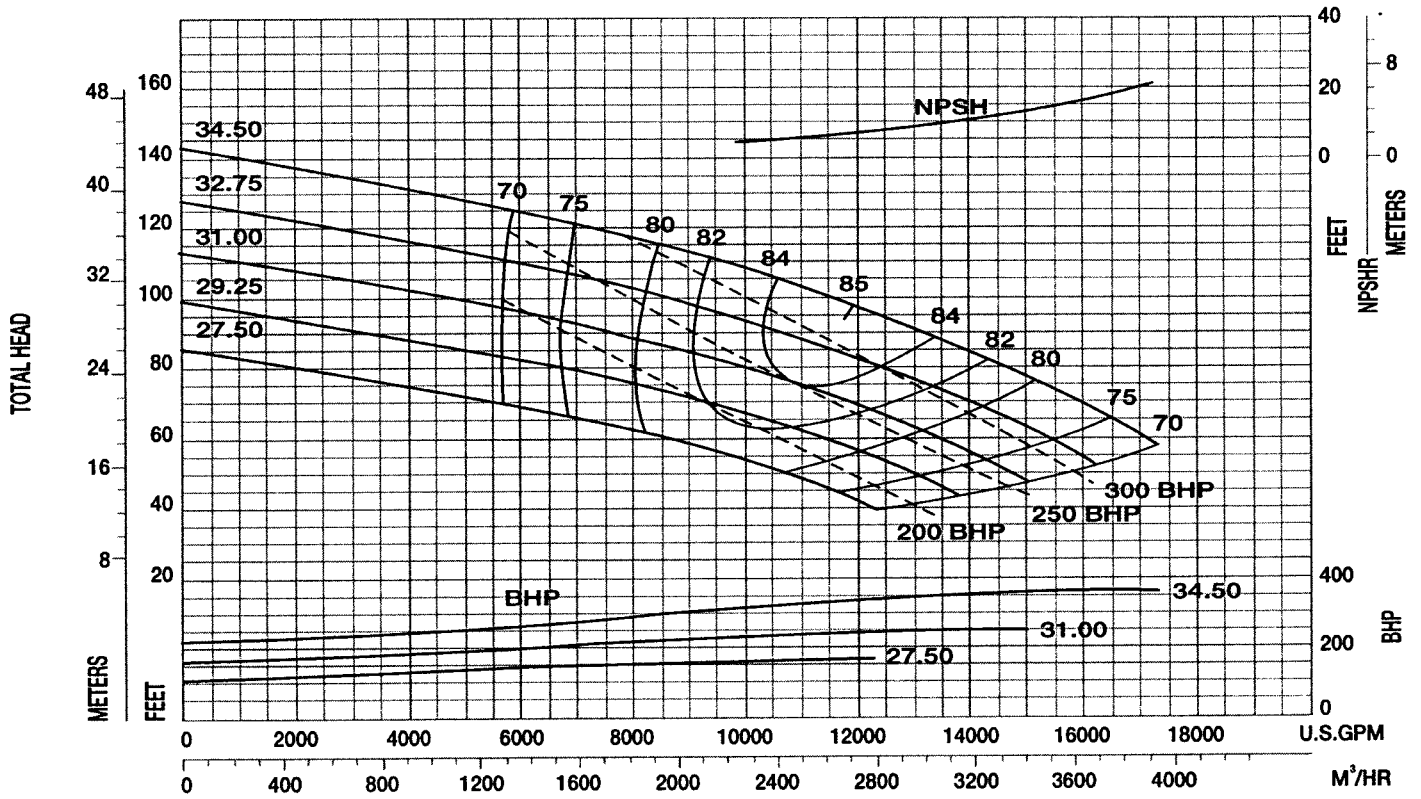
IMPELLER: L20E1C SUCTION: 24" INLET: 518 in<sup>2</sup>



# Performance Curve – 16" 2416, 2426, 2446

RPM: 585 SOLIDS: 5.7"

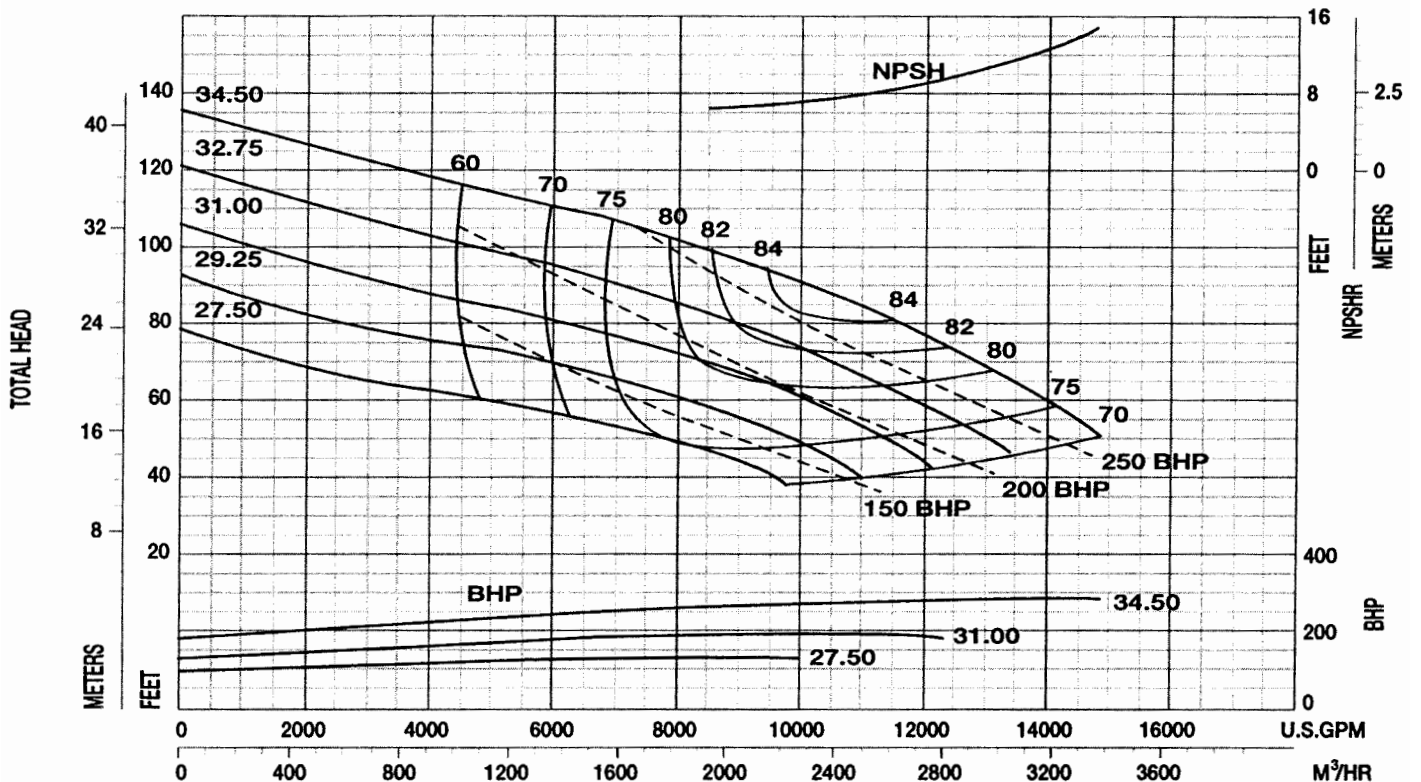
IMPELLER: L16F1C SUCTION: 18" INLET: 272 in<sup>2</sup>



# Performance Curve – 16" 2416, 2426, 2446

RPM: 585 SOLIDS: 6.4"

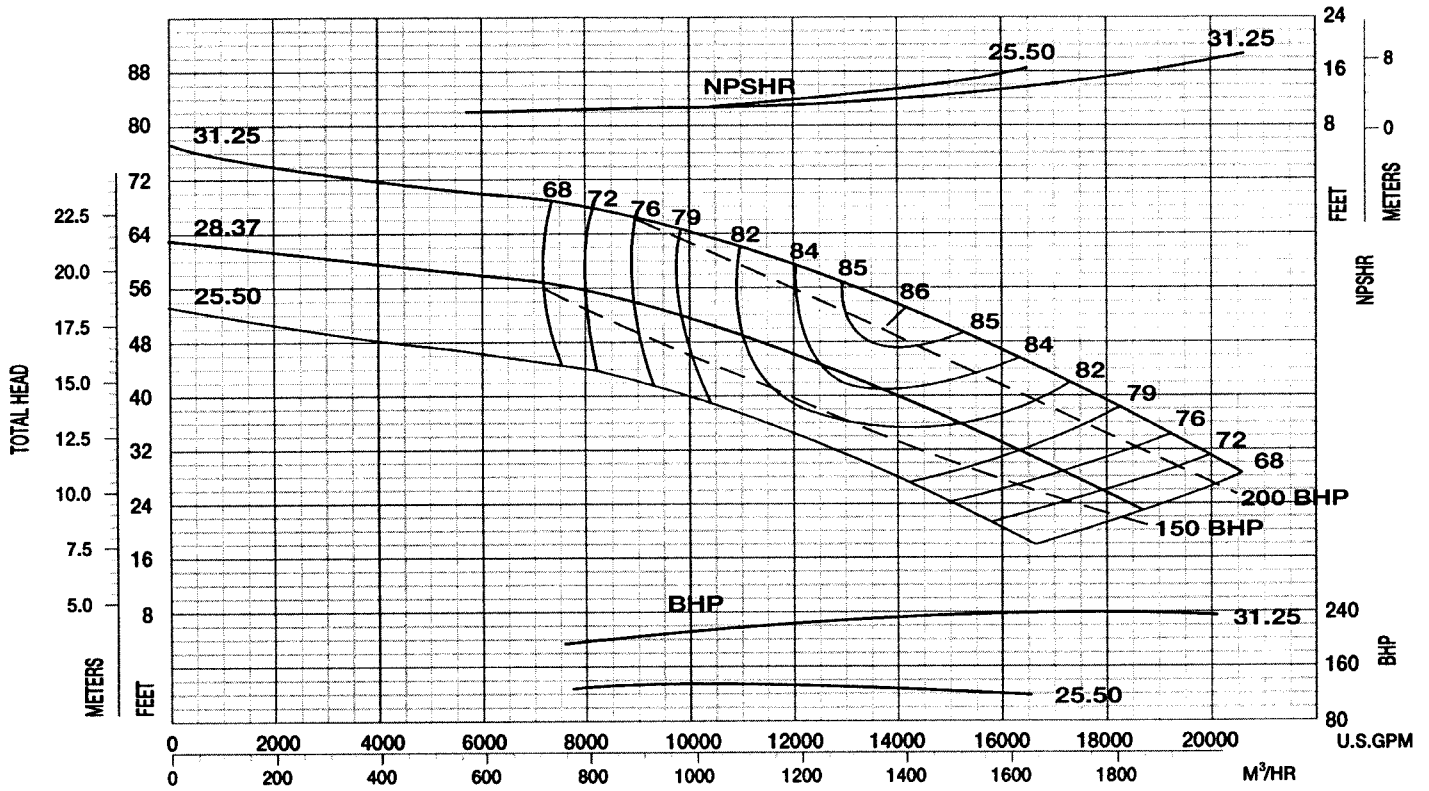
IMPELLER: L16F1G SUCTION: 18" INLET: 191 in<sup>2</sup>



# Performance Curve – 20" 2414, 2424, 2444

RPM: 505 SOLIDS: 6.60"

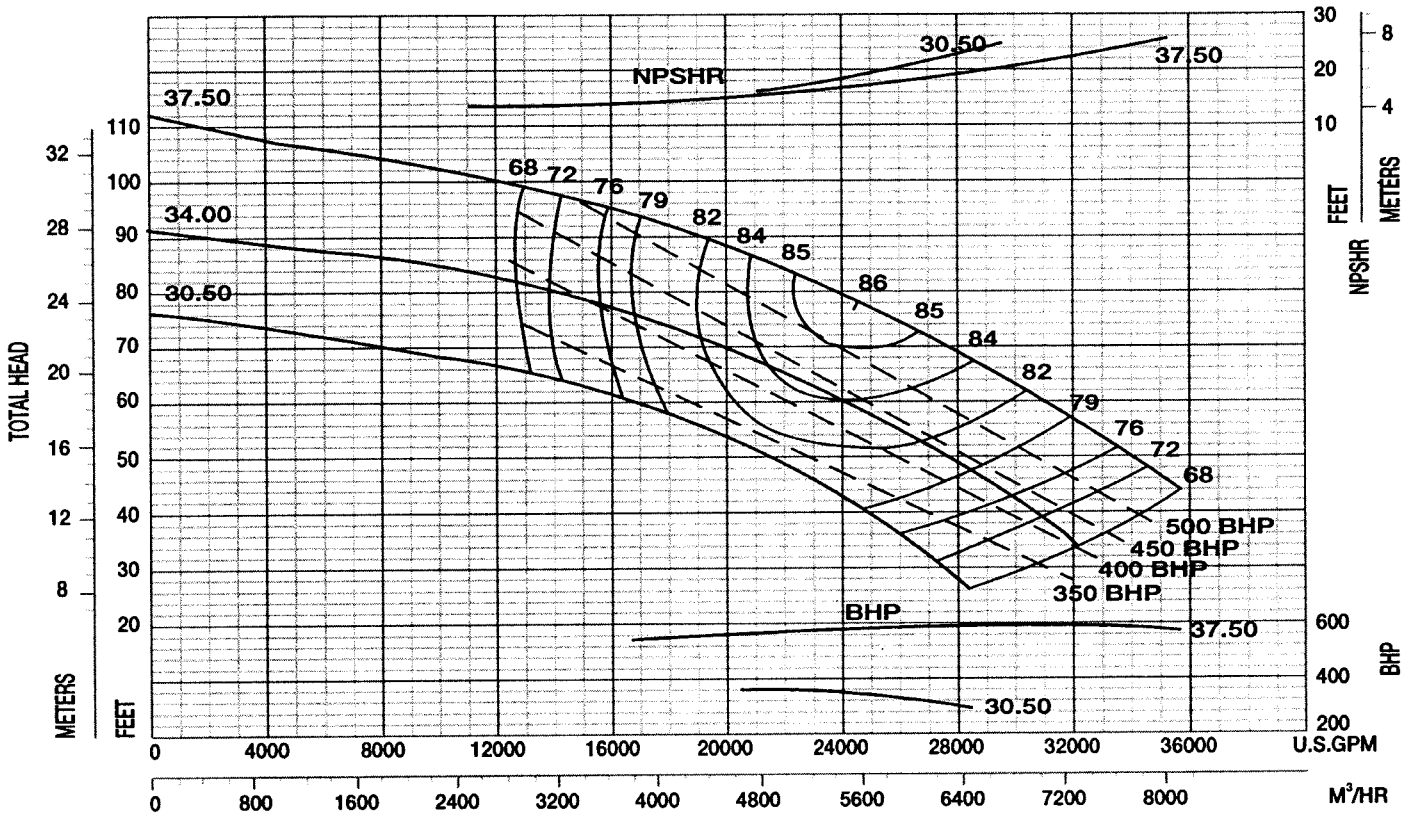
IMPELLER: L20E1A SUCTION: 24" INLET: 427.32 in<sup>2</sup>



# Performance Curve – 24" 2414, 2424, 2444

RPM: 505 SOLIDS: 8"

IMPELLER: L24E1A SUCTION: 30" INLET: 726 in<sup>2</sup>

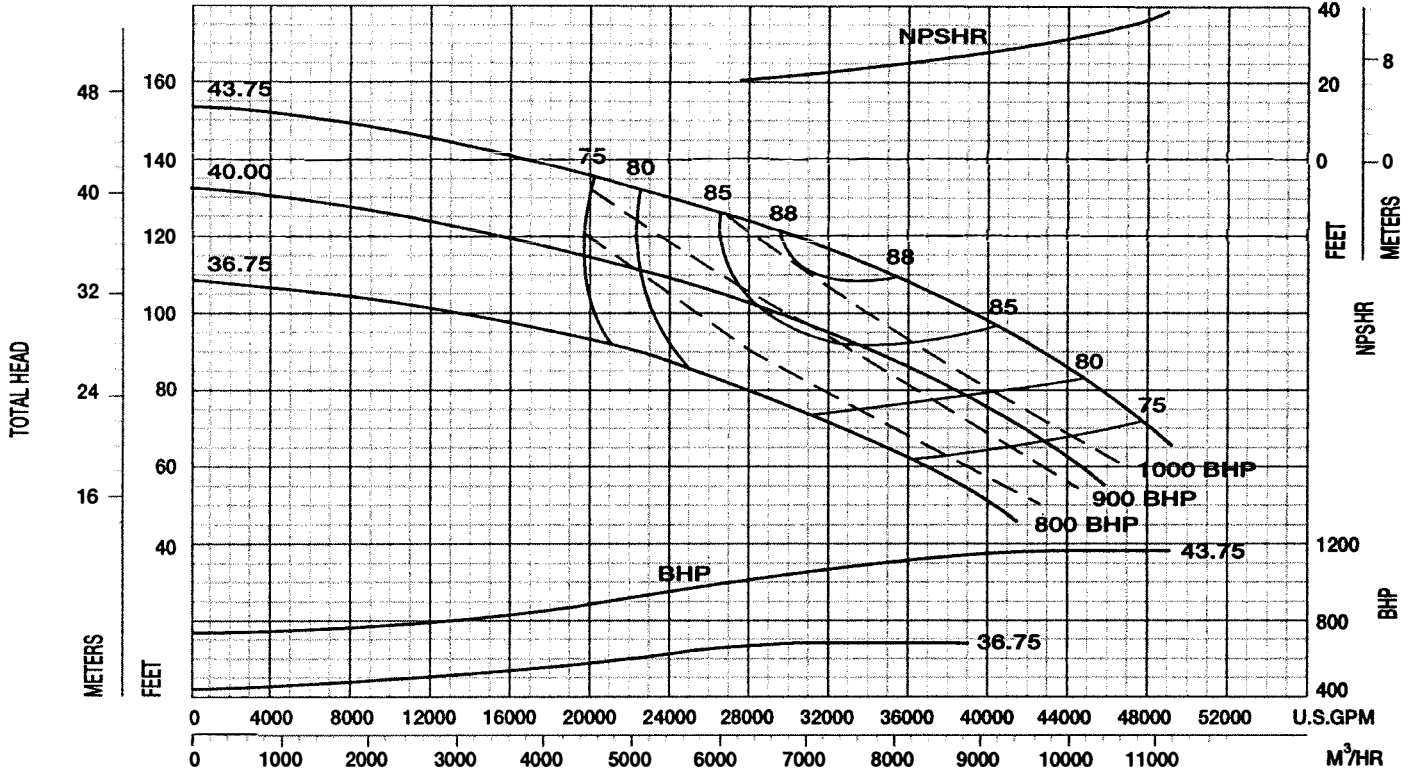




# Performance Curve – 30" 2414, 2424, 2444

RPM: 505 SOLIDS: 7.25"

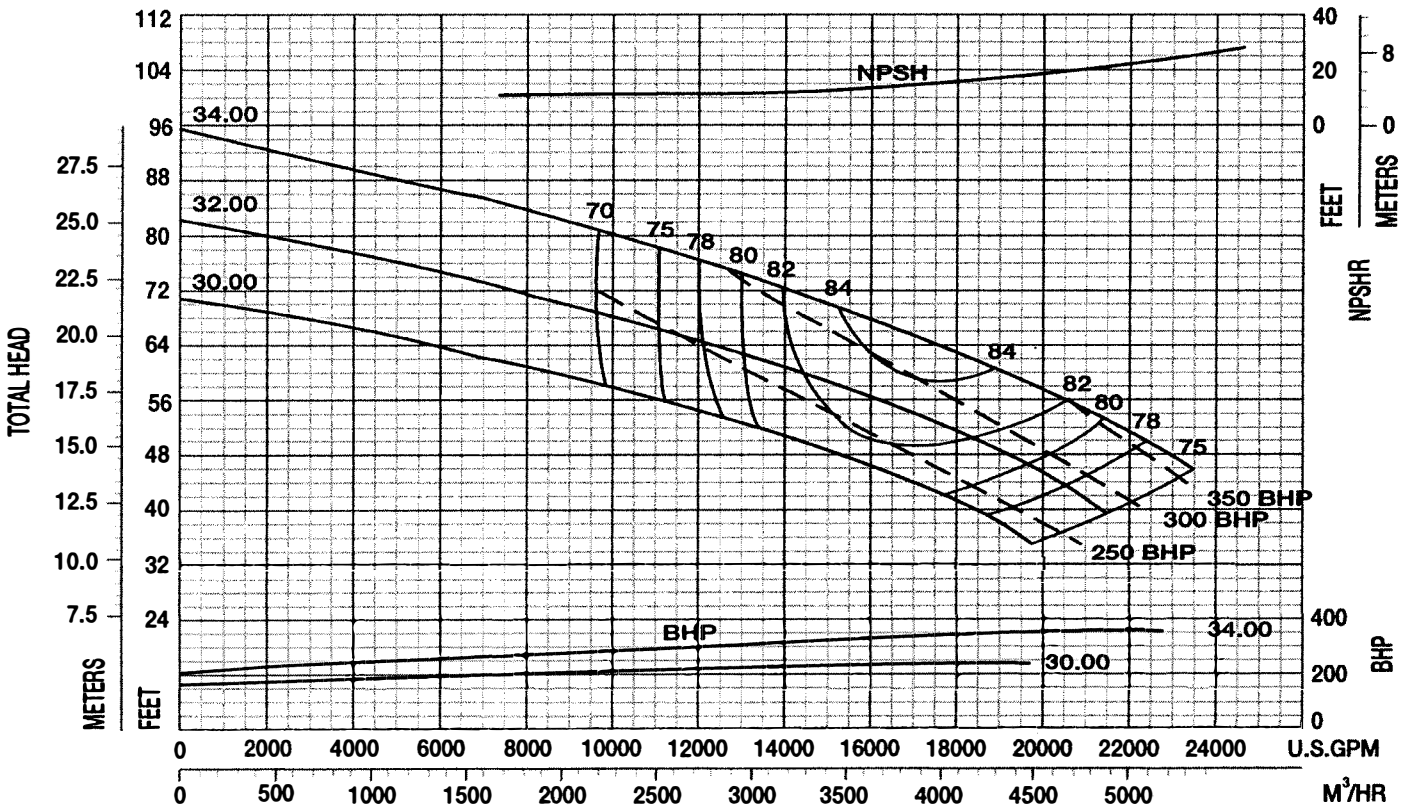
IMPELLER: L30E1A SUCTION: 36" INLET: 810 in<sup>2</sup>



# Performance Curve – 20" 2415, 2425, 2445

RPM: 505 SOLIDS: 6.6"

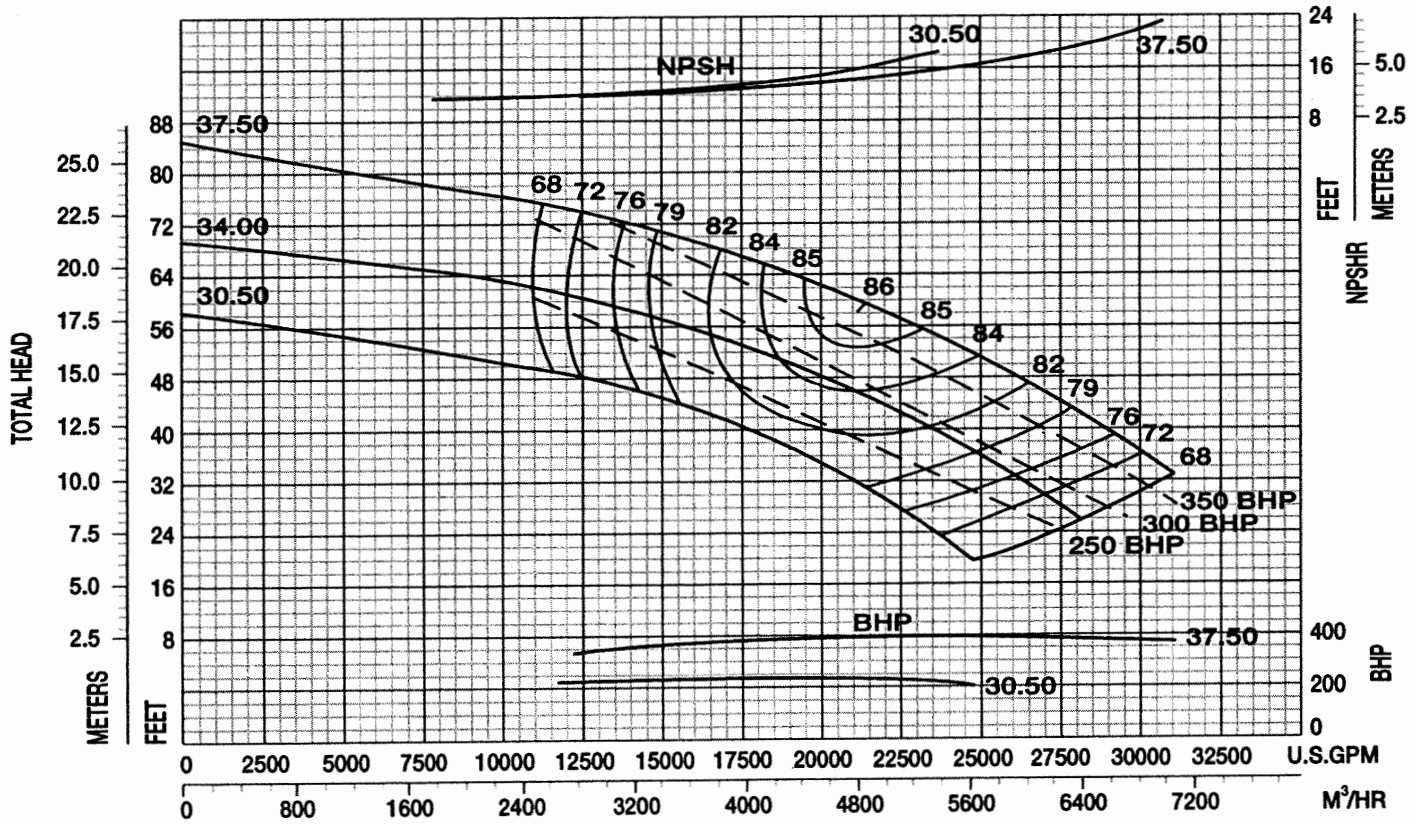
IMPELLER: L20E1C SUCTION: 24" INLET: 518 in<sup>2</sup>



# Performance Curve – 24" 2414, 2424, 2444

RPM: 440 SOLIDS: 8"

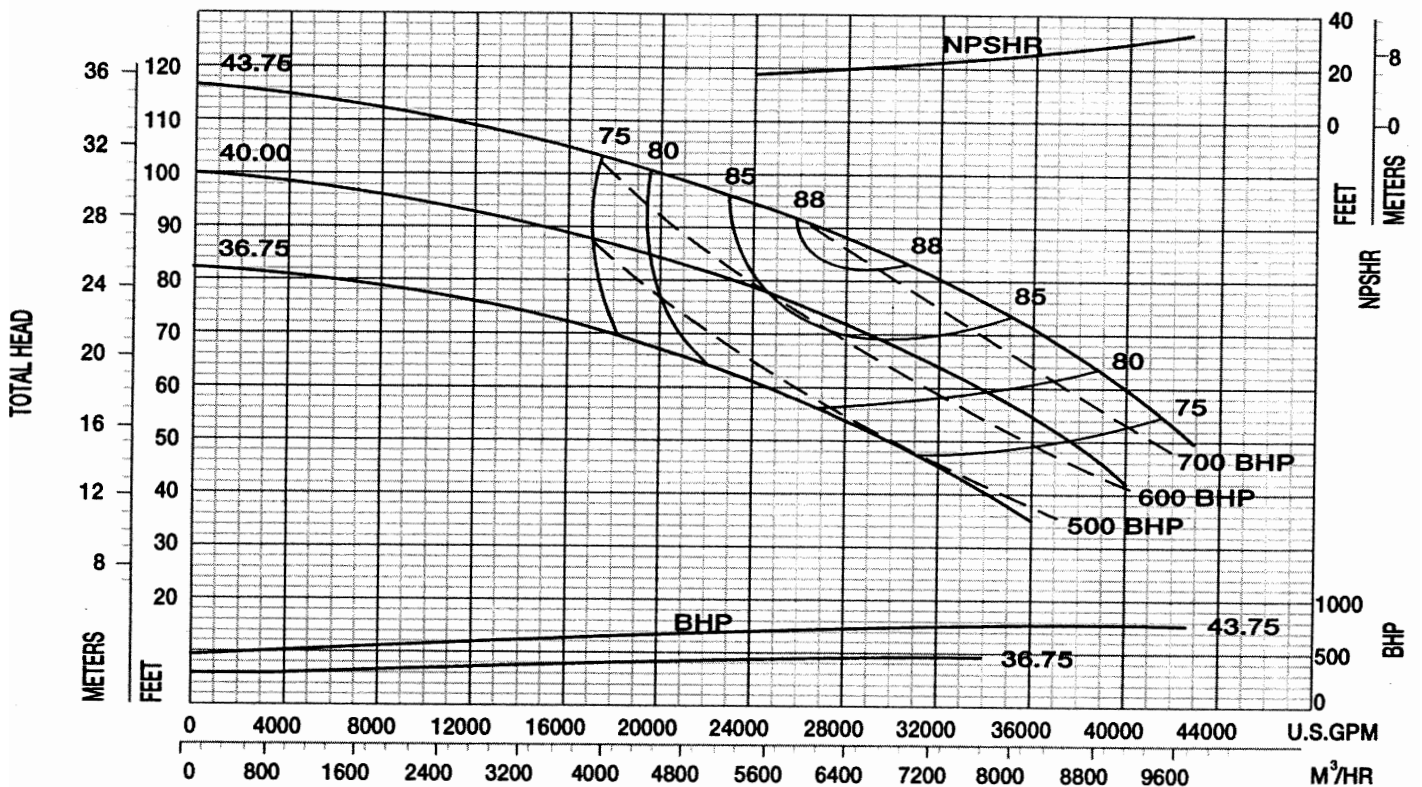
IMPELLER: L24E1A SUCTION: 30" INLET: 726 in<sup>2</sup>



# Performance Curve – 30" 2414, 2424, 2444

RPM: 440 SOLIDS: 7.25"

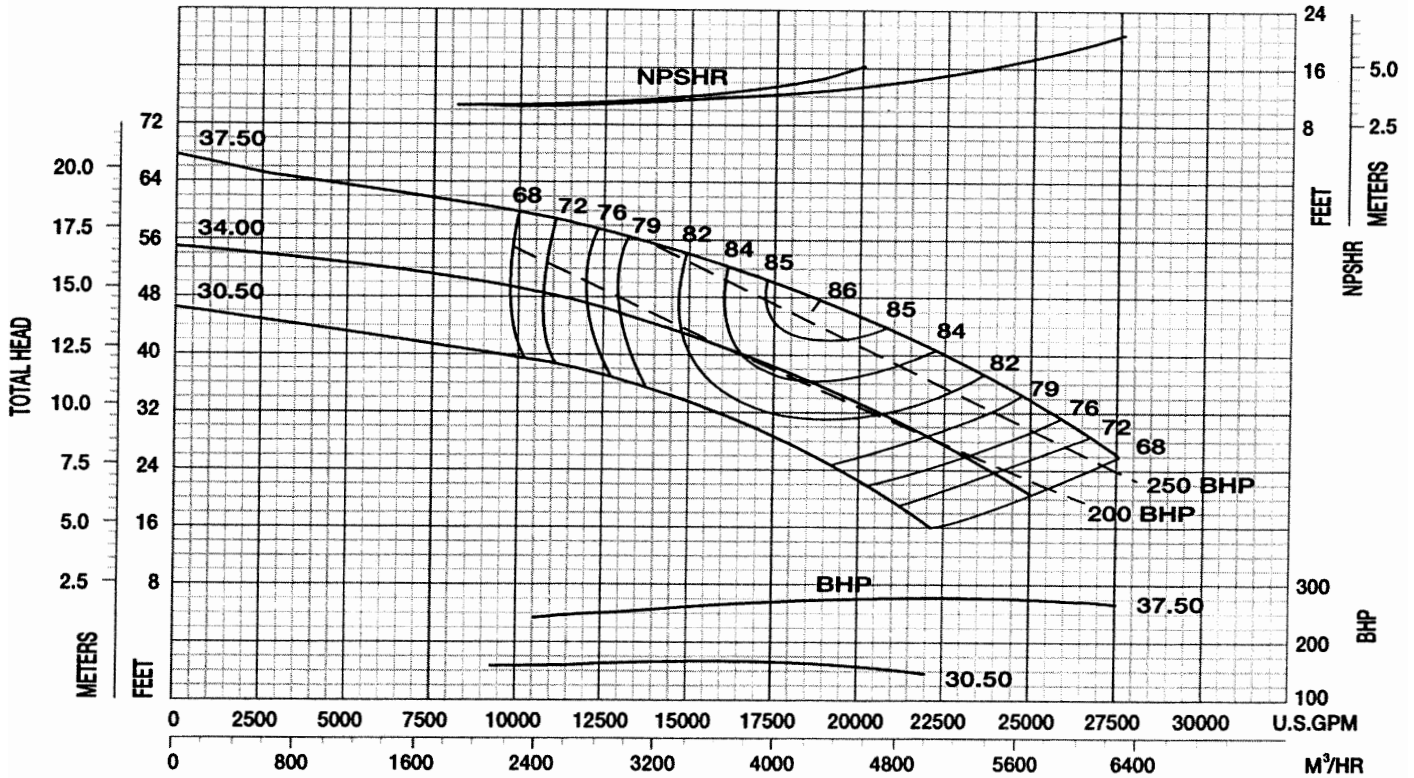
IMPELLER: L30E1A SUCTION: 36" INLET: 810 in<sup>2</sup>



# Performance Curve – 24" 2414, 2424, 2444

RPM: 390 SOLIDS: 8"

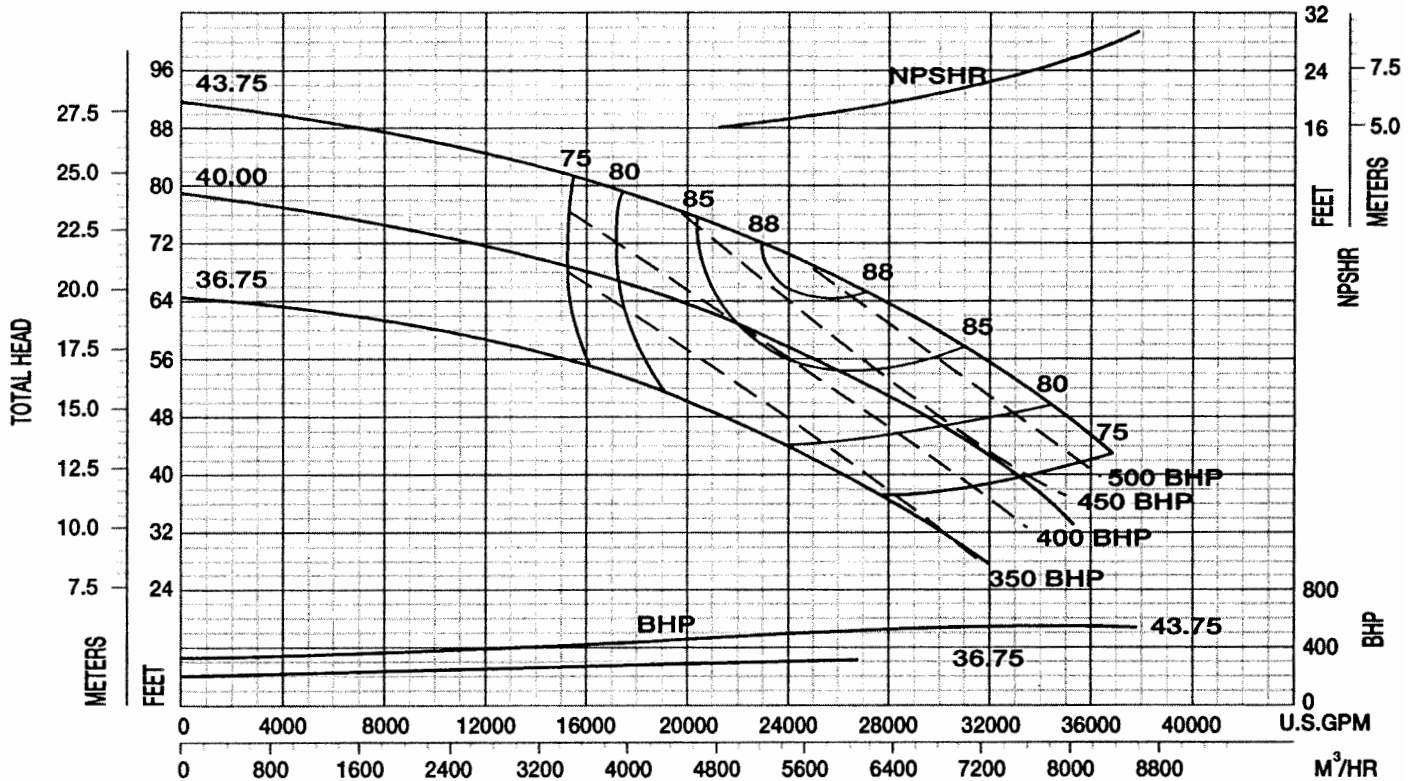
IMPELLER: L24E1A SUCTION: 30" INLET: 726 in<sup>2</sup>



# Performance Curve – 30" 2414, 2424, 2444

RPM: 390 SOLIDS: 7.25"

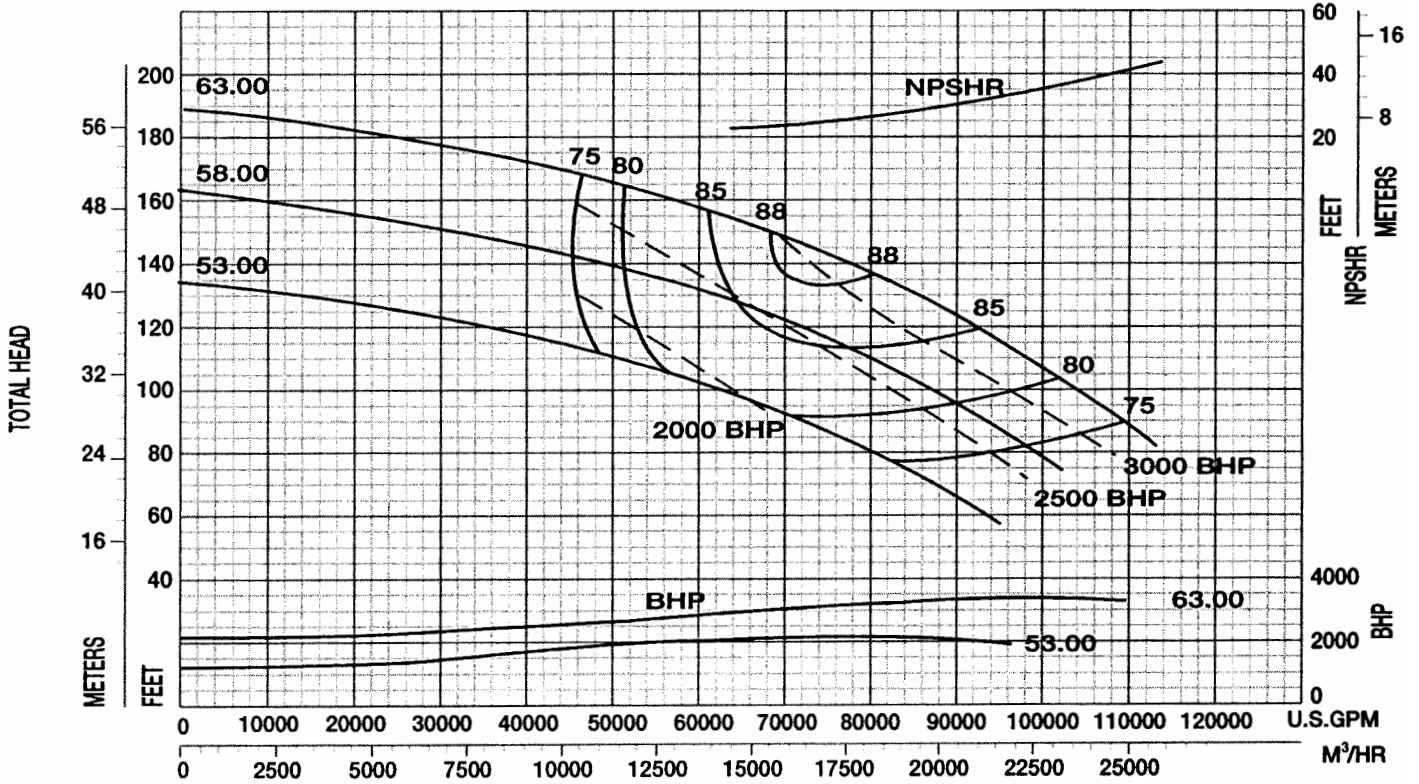
IMPELLER: L30E1A SUCTION: 36" INLET: 810 in<sup>2</sup>



# Performance Curve - 42" 2414, 2424, 2444

RPM: 390 SOLIDS: 10.5"

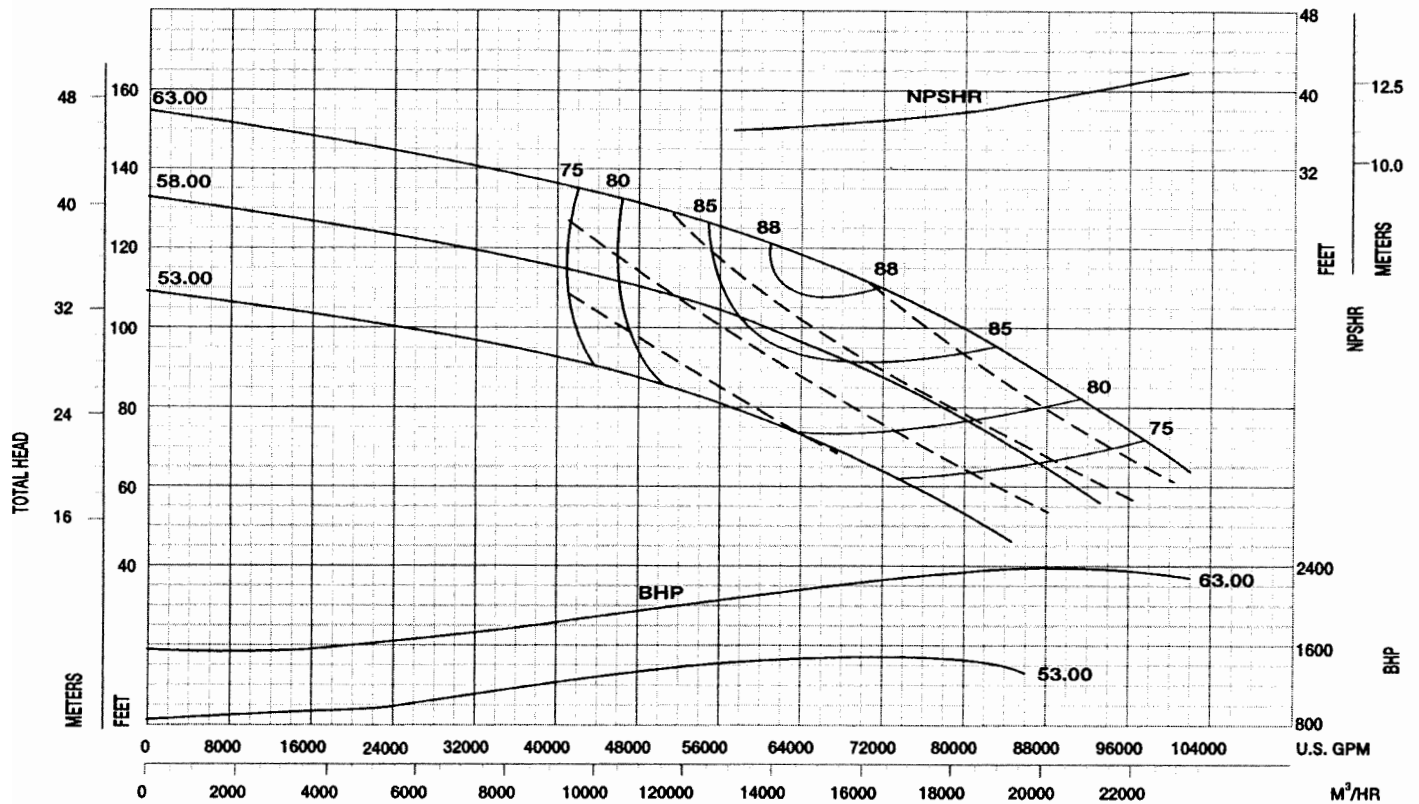
IMPELLER: L42E1A SUCTION: 48" INLET: 1833 in<sup>2</sup>



# Performance Curve - 42" 2414, 2424, 2444

RPM: 350 SOLIDS: 10.5"

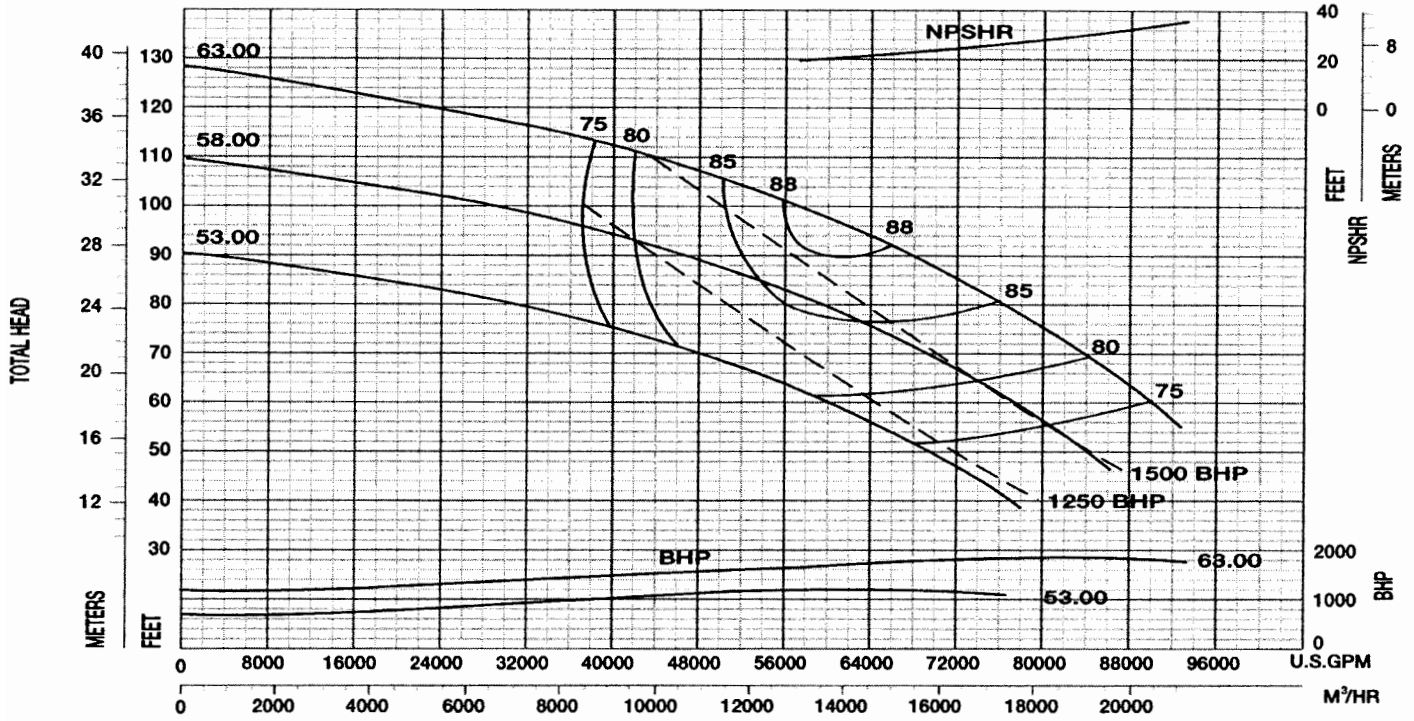
IMPELLER: L42E1A SUCTION: 48" INLET: 1833 in<sup>2</sup>



# Performance Curve - 42" 2414, 2424, 2444

RPM: 320 SOLIDS: 10.5"

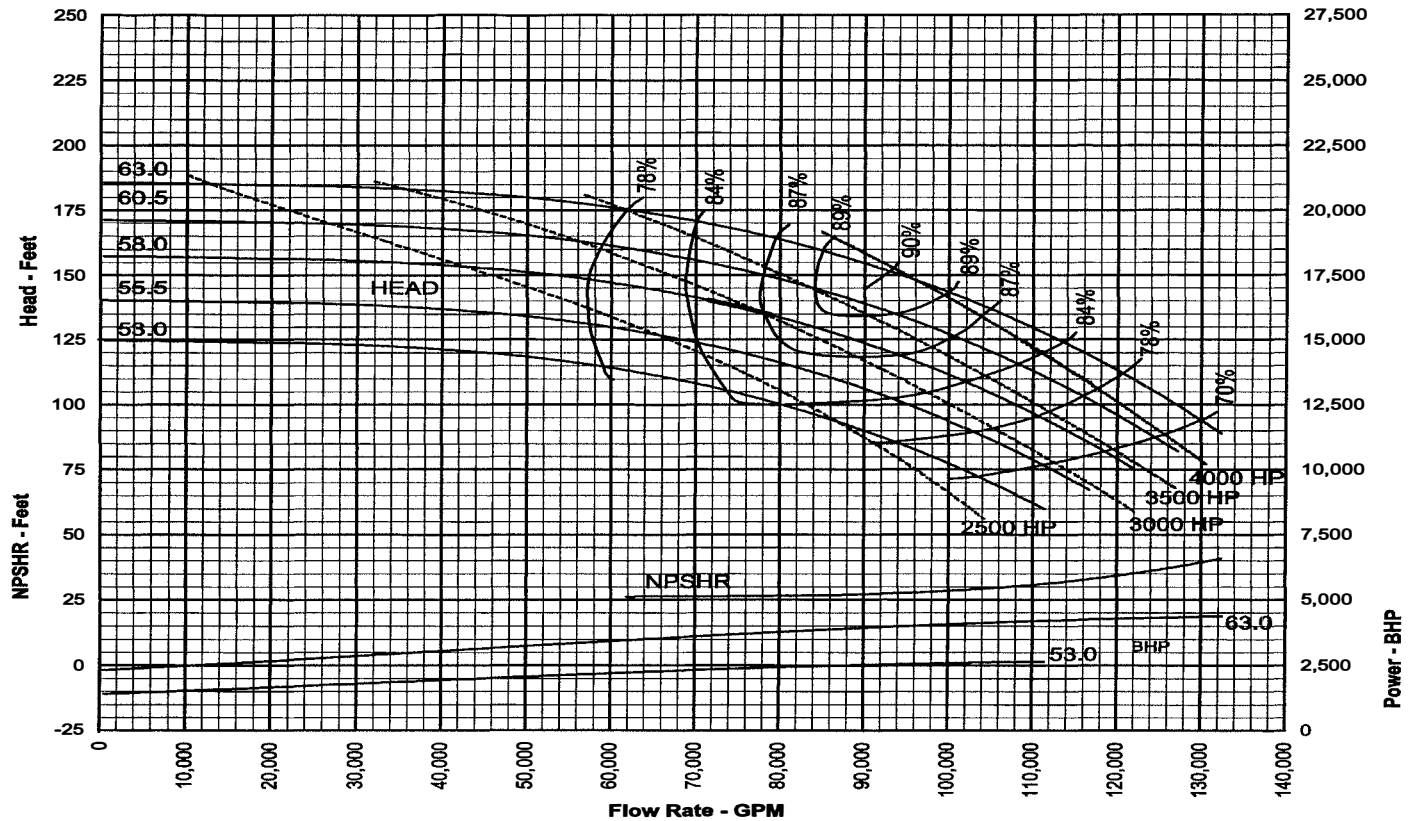
IMPELLER: L42E1A SUCTION: 48" INLET: 1833 in<sup>2</sup>



# Performance Curve - 42" 2414, 2424, 2444

RPM: 394 SOLIDS: 8"

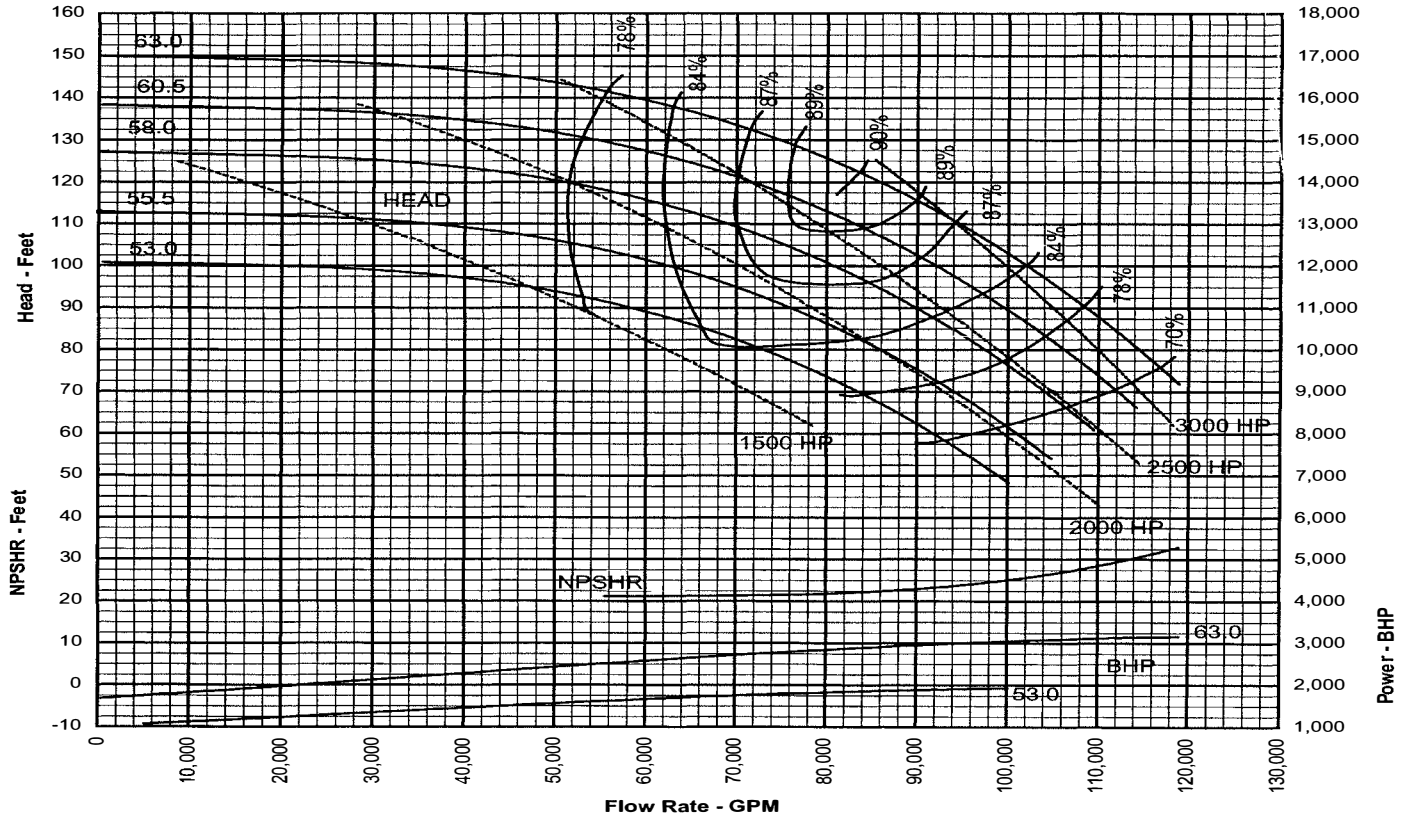
IMPELLER: L42E1B SUCTION: 48" INLET: 1257 in<sup>2</sup>



# Performance Curve - 42" 2414, 2424, 2444

RPM: **354** SOLIDS: **8"**

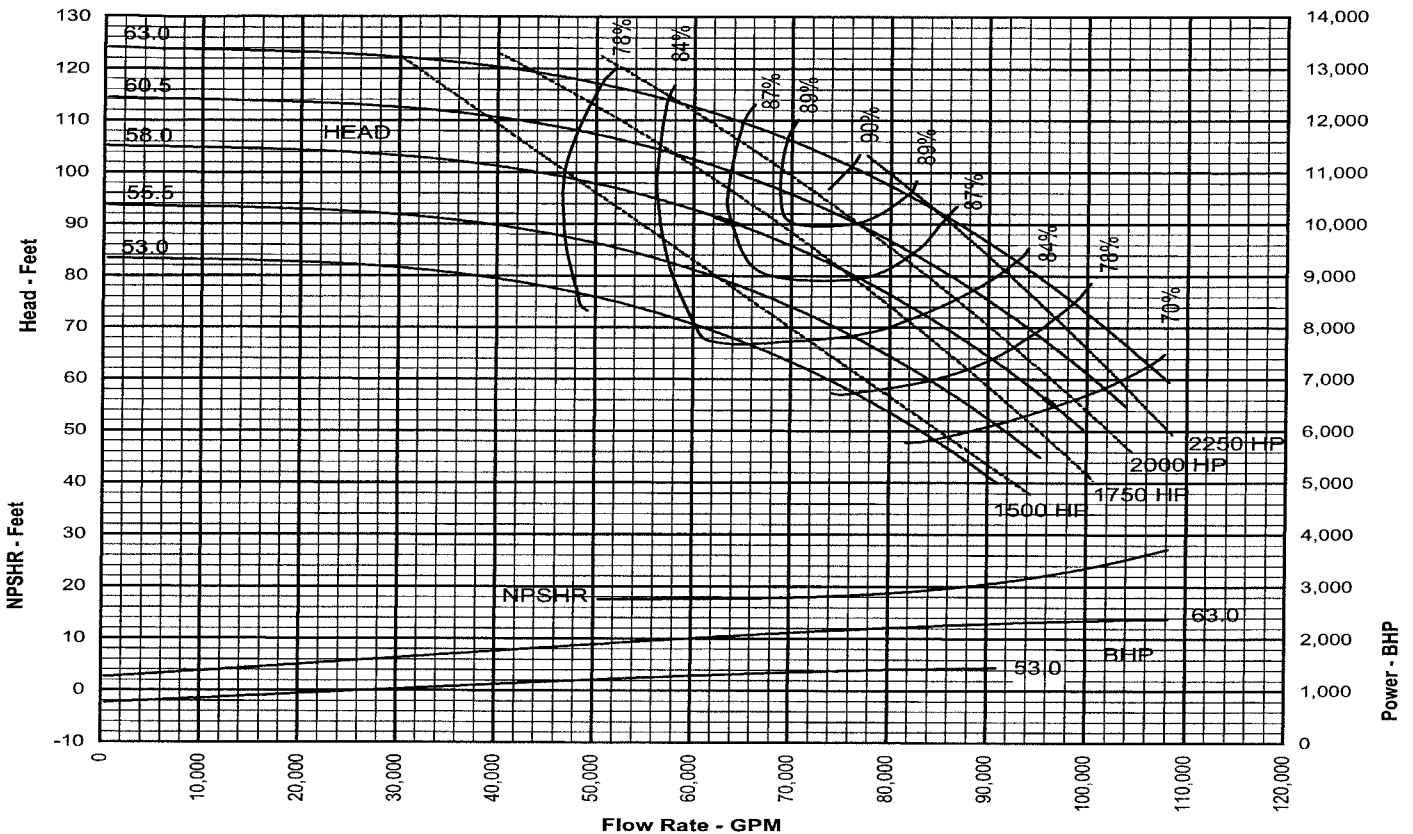
IMPELLER: **L42E1B** SUCTION: **48"** INLET: **1257 in<sup>2</sup>**



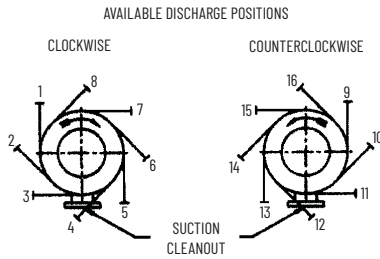
# Performance Curve - 42" 2414, 2424, 2444

RPM: **322** SOLIDS: **8"**

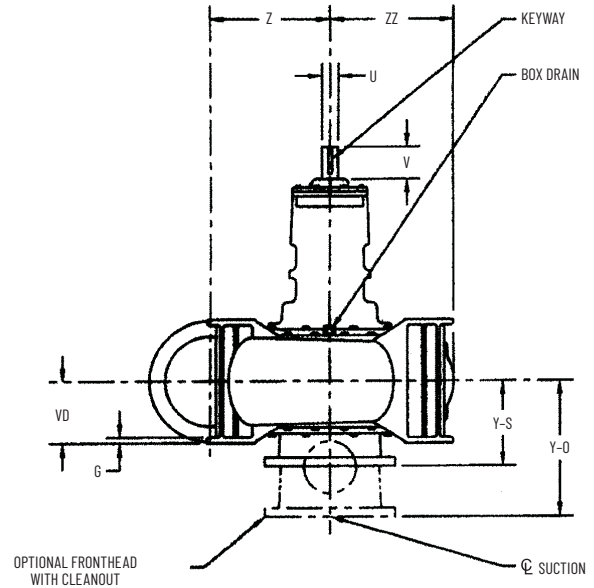
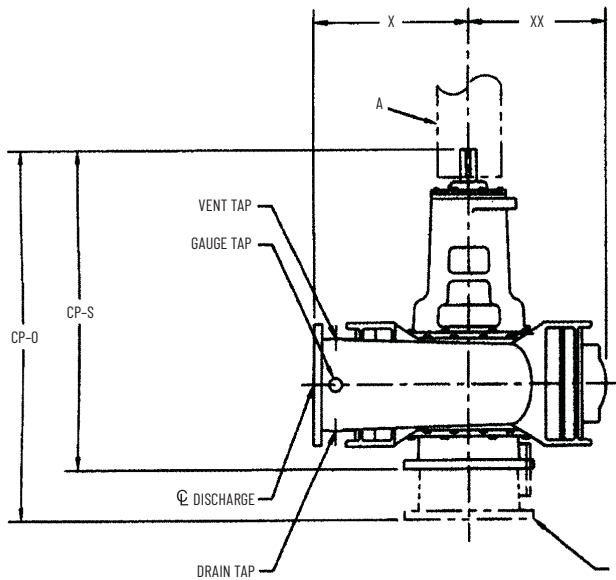
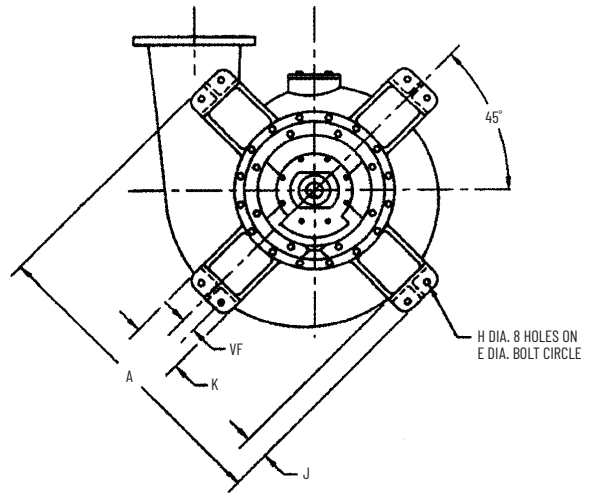
IMPELLER: **L42E1B** SUCTION: **48"** INLET: **1257 in<sup>2</sup>**



# Dimensional Data – BASIC PUMP DIMENSIONS 2414



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



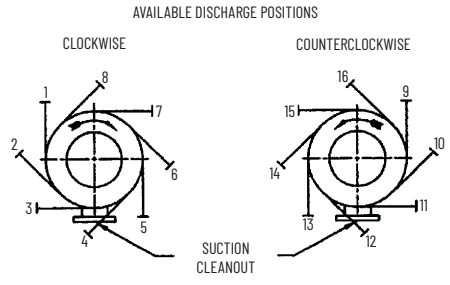
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12" 2414	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2
16" 2414	18	16	59-1/2	56-1/2	1-1/8	1-1/8	4-1/2	10	3-1/8	6	30
20" 2414	24	20	74-3/8	70-5/8	1-3/8	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	37-1/2

PUMP	Y-S	Y-0	Z	CP-S	CP-0	VD	VF	XX	ZZ	KEYWAY
12" 2414	12-3/4	23-3/4	17-3/8	51-5/16	62-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4
16" 2414	16-3/8	26-1/8	23-1/8	62	71-3/4	12	2-5/8	27	24-1/8	3/4 X 3/8 X 5-1/8
20" 2414	20-1/2	30-1/2	28-7/8	78-1/8	88-1/8	15	3-1/4	34	30	1 X 1/2 X 6-5/8

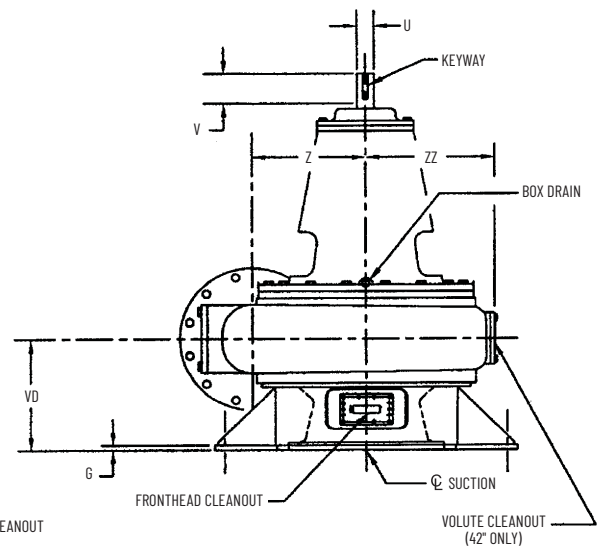
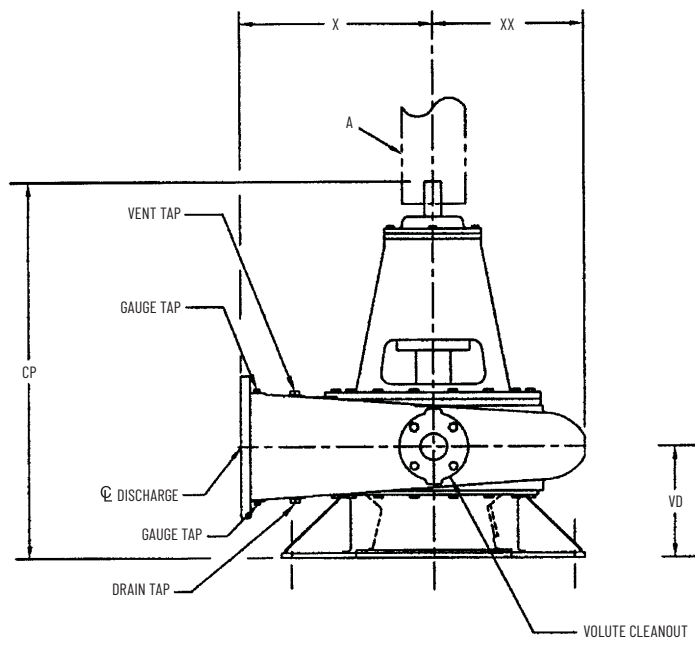
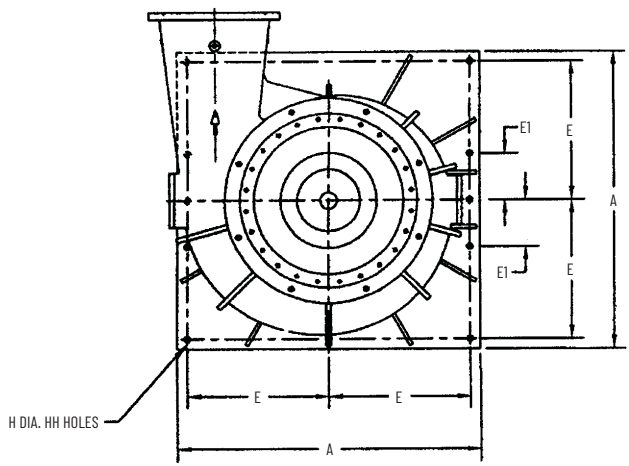
## NOTES:

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – BASIC PUMP DIMENSIONS 30" & 42" 2414



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



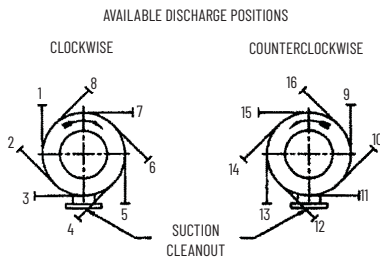
PUMP	SUCTION	DISCHARGE	A	E	E1	G	H	HH	U	V	X	Z	CP	VD	XX	ZZ	KEYWAY
30" 2414	36	30	90	42	12	1-1/2	1-3/4	8	5	8-7/8	57	33-3/4	114	33-3/4	45	40	1/2 X 5/8 X 8
42" 2414	48	42	96	45	15	2	2-3/4	8	9-1/2	13-1/2	78	48-1/2	131-7/8	42	64-3/4	58	2-1/2 X 1-1/4 X 11

**NOTES:**

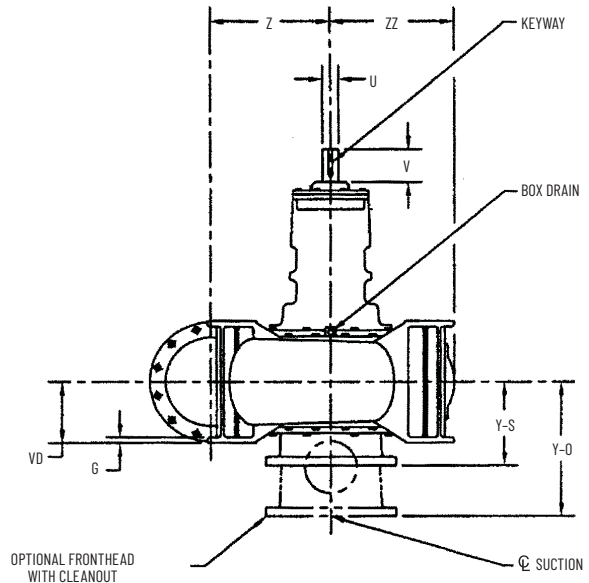
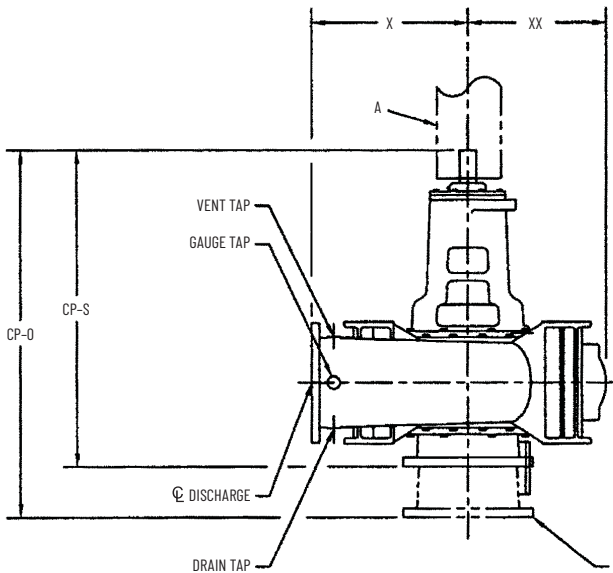
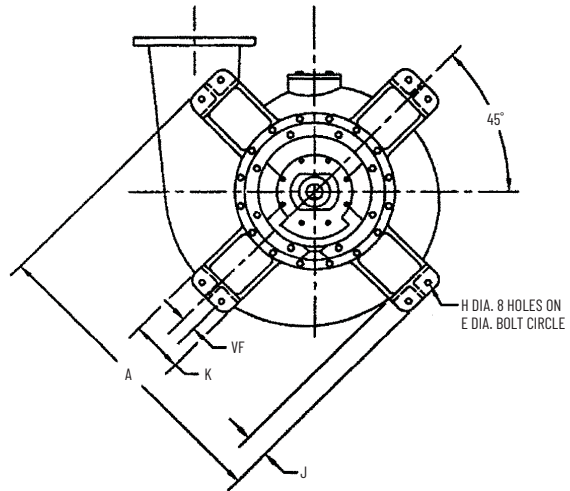
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.



# Dimensional Data – BASIC PUMP DIMENSIONS 12C2415



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12C2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2

PUMP	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12C2415	23-3/4	12-3/4	17-3/8	62-5/16	51-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4

## NOTES:

All flanges are 125# ANSI drilling unless noted.

All dimensions are in inches unless noted.

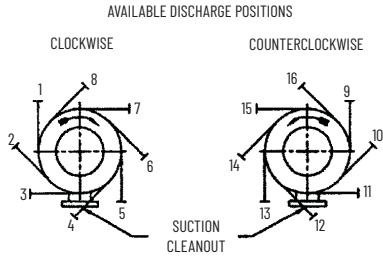
Dimensions reflect usable shaft length.

Bases are designed to have full contact with grout or a sole plate grouted in place.

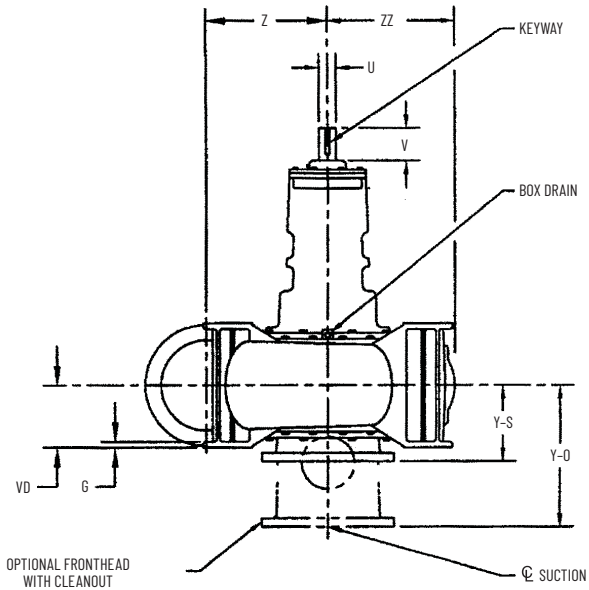
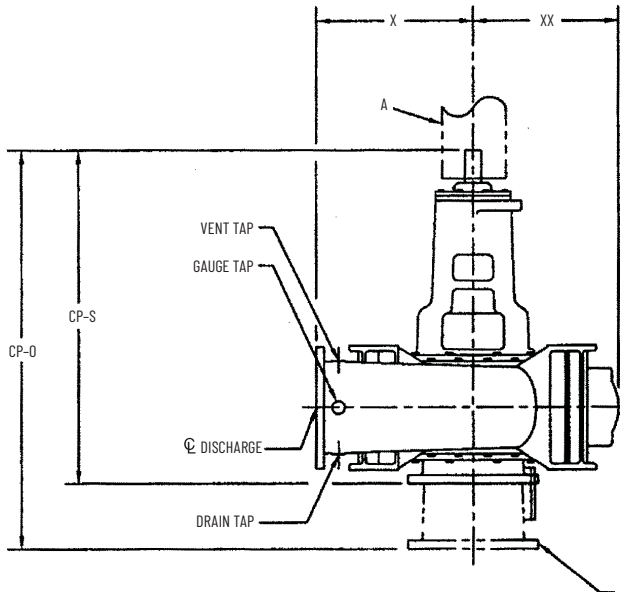
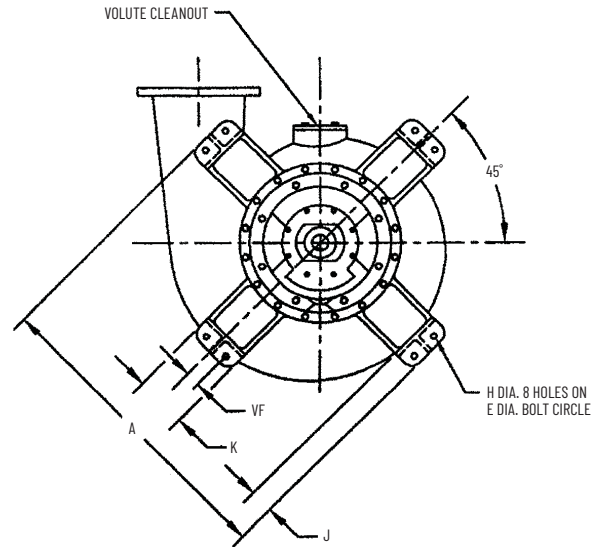
Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – BASIC PUMP DIMENSIONS 12" E2414 & 12" E2415



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12" E2414	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2
12" E2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2

PUMP	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12" E2414	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2
12" E2415	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2

## NOTES:

All flanges are 125# ANSI drilling unless noted.

All dimensions are in inches unless noted.

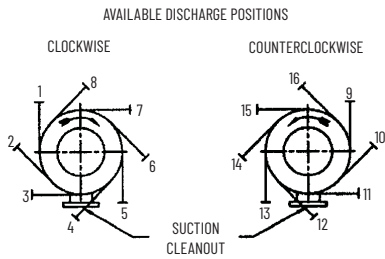
Dimensions reflect usable shaft length.

Bases are designed to have full contact with grout or a sole plate grouted in place.

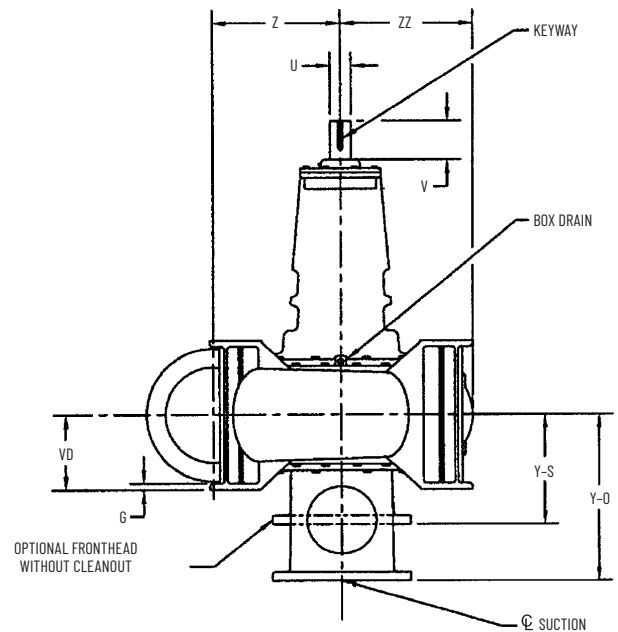
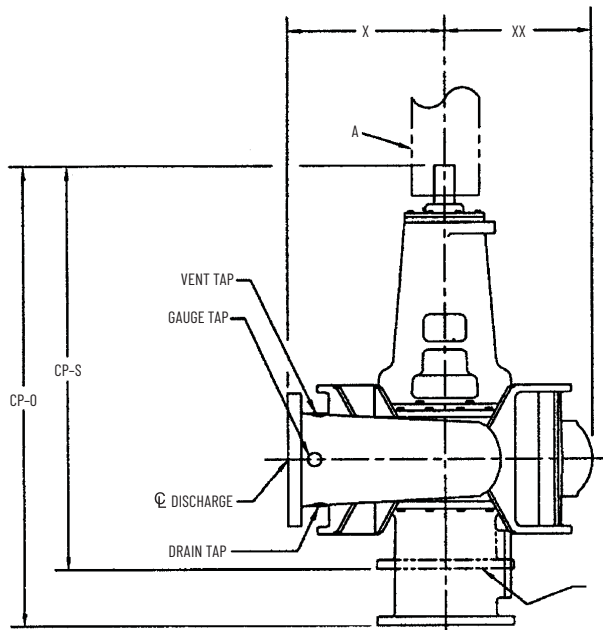
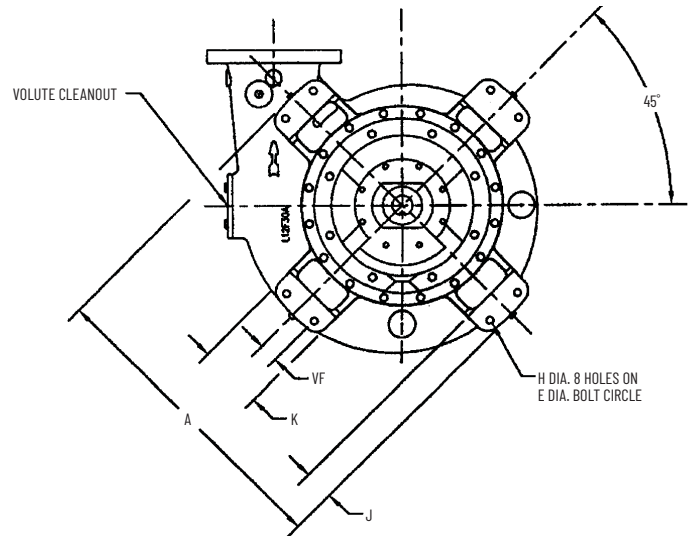
Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – BASIC PUMP DIMENSIONS 2416



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12" C2416	14	12	47-1/2	44-1/2	1-1/8	1-1/8	5-3/4	10	3-1/8	6	24
16" C2416	20	16	65-1/4	59-3/8	1-1/4	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	32
20" C2416	RTF										

PUMP	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12" C2416	25-3/4	16-7/8	19-1/2	71	62-1/8	11-1/2	3	22-3/4	20-3/4	3/4 X 3/8 X 5
16" C2416	27	RTF	26	84	RTF	13-3/8	3-1/4	30	27-1/2	1 X 1/2 X 6-1/2
20" C2416	RTF									

## NOTES:

All flanges are 125# ANSI drilling unless noted.

All dimensions are in inches unless noted.

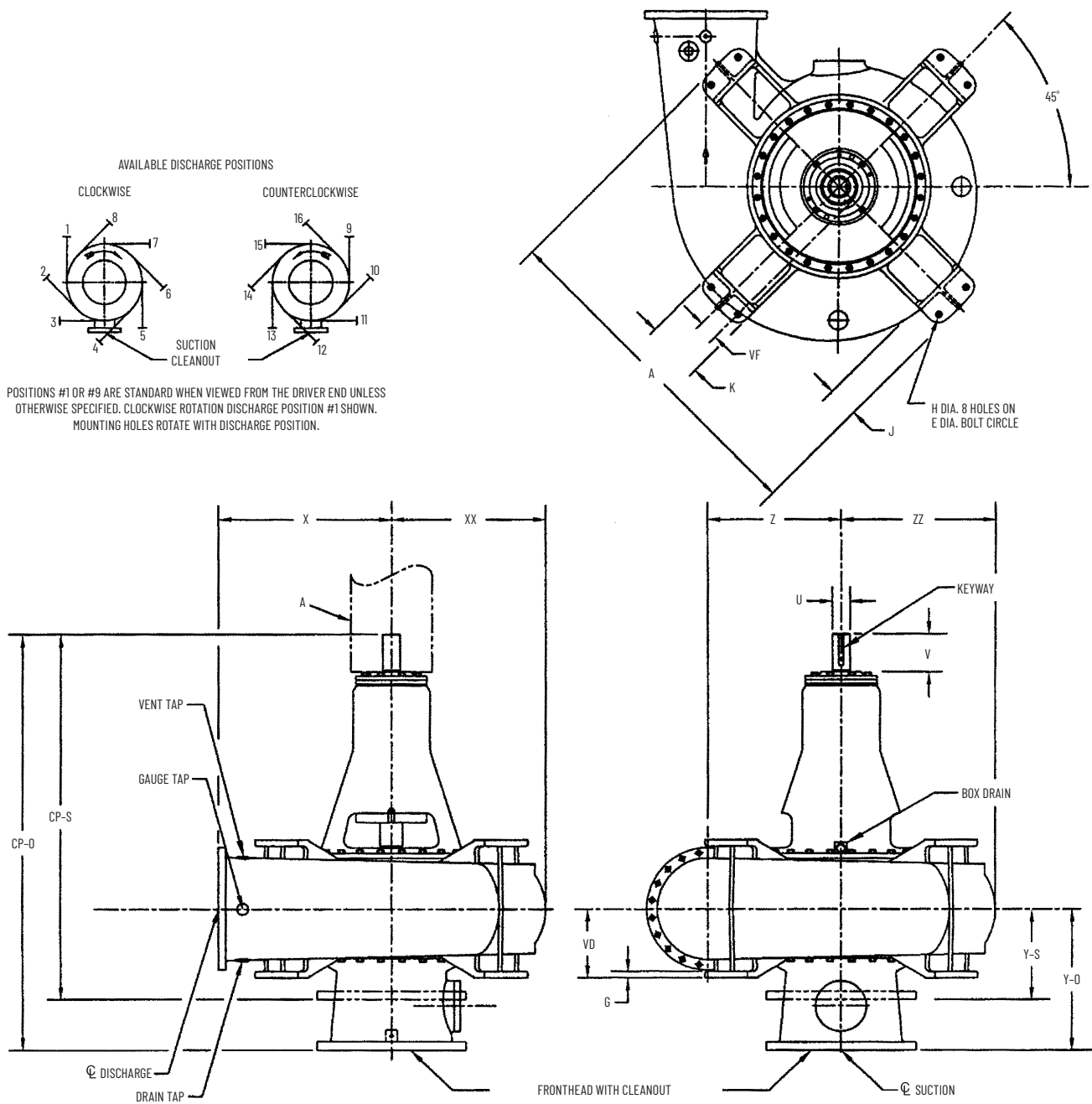
Dimensions reflect usable shaft length.

Bases are designed to have full contact with grout or a sole plate grouted in place.

Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – BASIC PUMP DIMENSIONS 24C2414



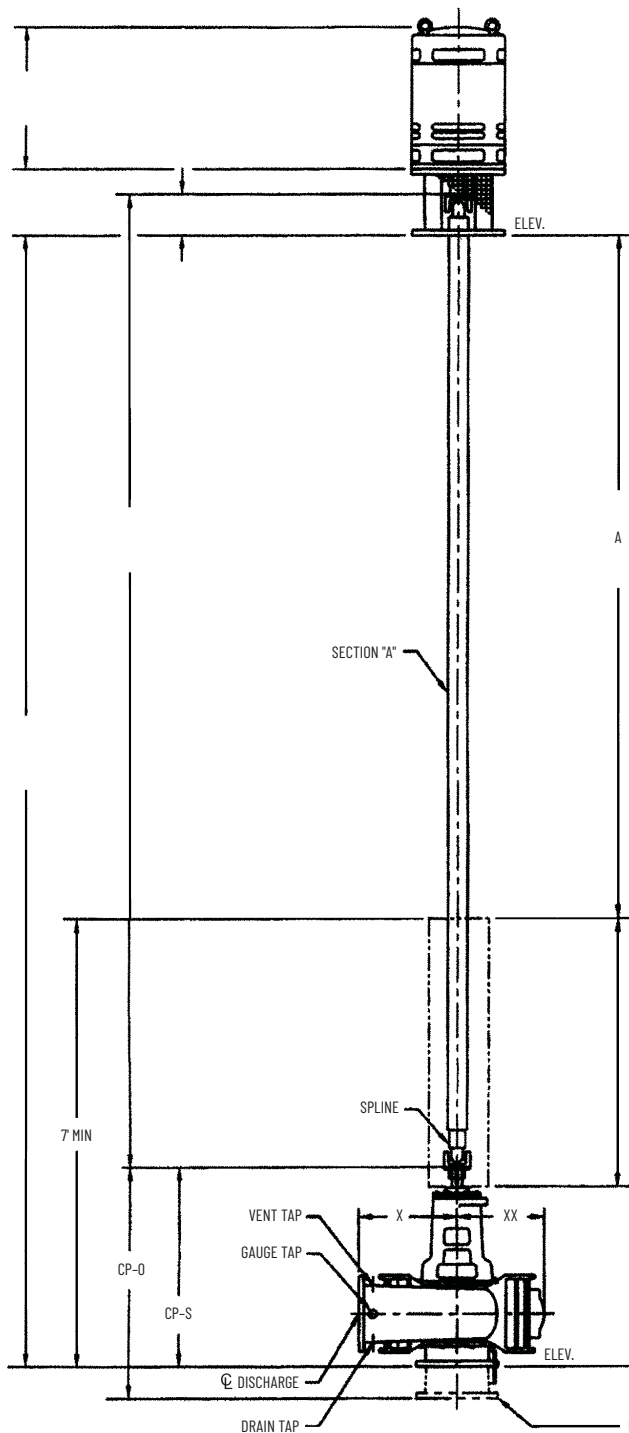
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
24C2414	30	24	89-1/4	84-3/4	1-5/8	1-5/8	6-3/4	15	4-9/16	9-1/8	45

PUMP	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
24C2414	36-13/16	RTF	34-11/16	108	RTF	18	5	41	36	1-1/4 X 5/8 X 7-3/8

**NOTES:**

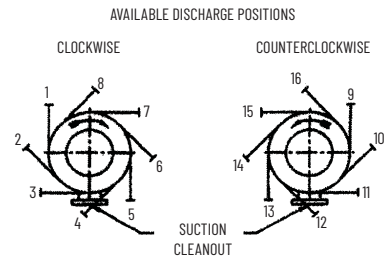
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN 2414 ONE-SECTION INTERMEDIATE SHAFT

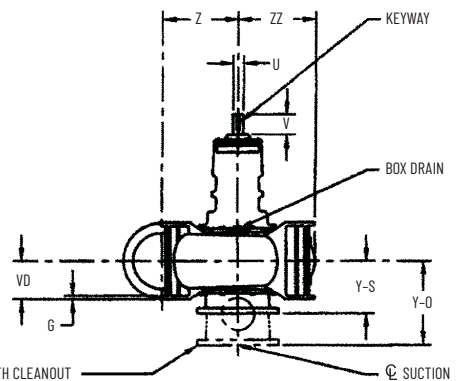
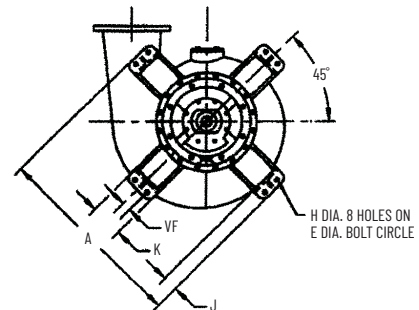


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

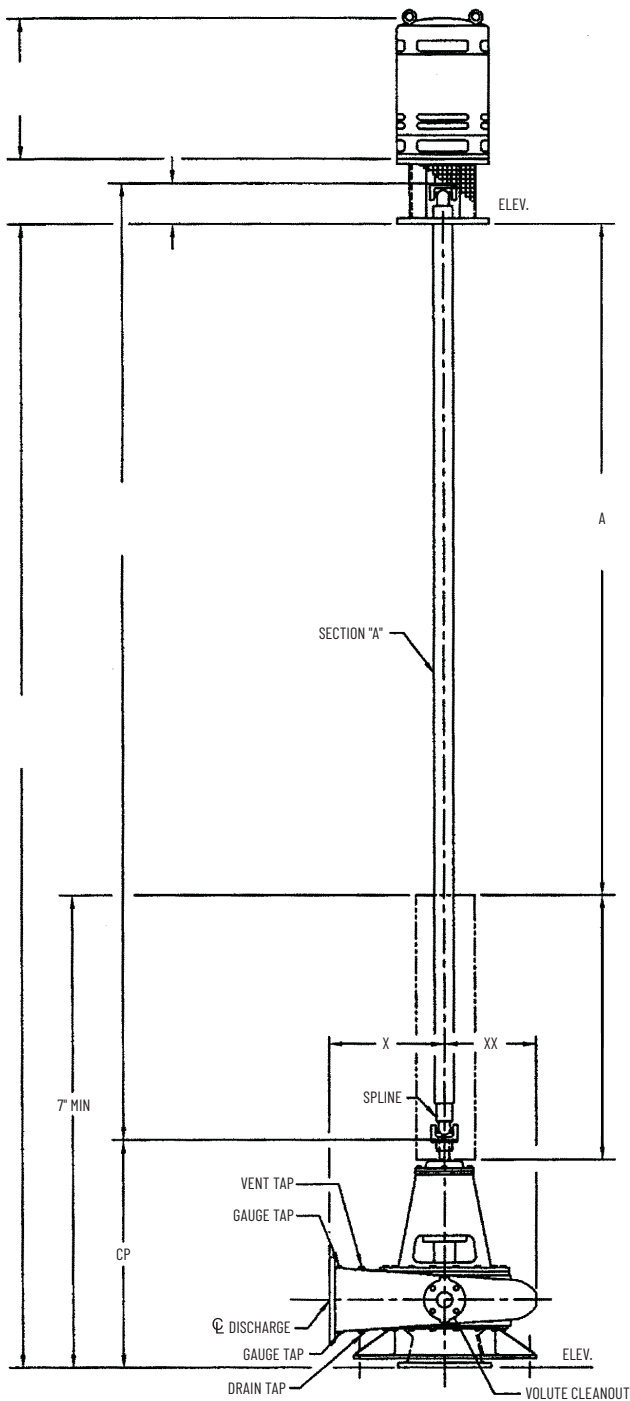


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-S	Y-O	Z	CP-S	CP-0	VD	VF	XX	ZZ	KEYWAY
12" 2416	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2	12-3/4	23-3/4	17-3/8	51-5/16	62-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4
16" 2416	18	16	59-1/2	56-1/2	1-1/8	1-1/8	4-1/2	10	3-1/8	6	30	16-3/8	26-1/8	23-1/8	62	71-3/4	12	2-5/8	27	24-1/8	3/4 X 3/8 X 5-1/8
20" 2416	24	20	74-3/8	70-5/8	1-3/8	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	37-1/2	20-1/2	30-1/2	28-7/8	78-1/8	88-1/8	15	3-1/4	34	30	1 X 1/2 X 6-5/8

# Dimensional Data – SETTING PLAN 30" & 42" – 2414 ONE-SECTION INTERMEDIATE SHAFT



## NOTES:

All flanges are 125# ANSI drilling unless noted.

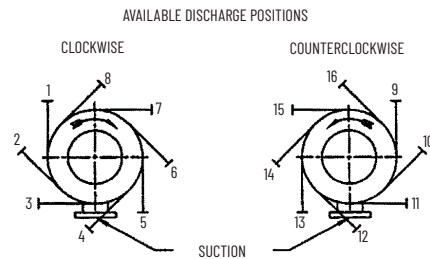
All dimensions are in inches unless noted.

Dimensions reflect usable shaft length.

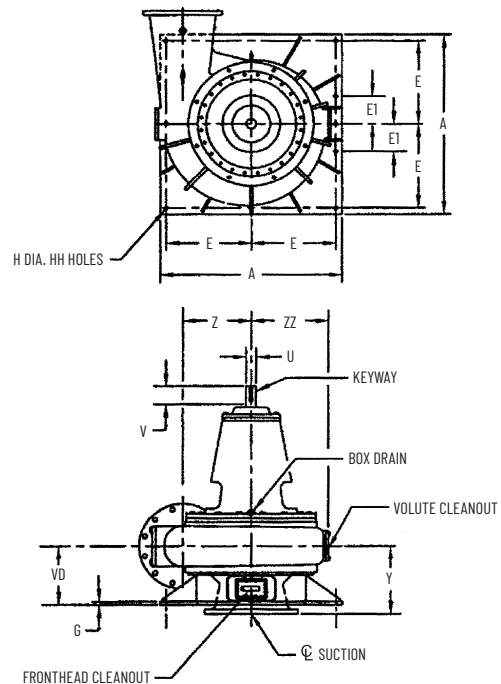
Bases are designed to have full contact with grout or a sole plate grouted in place.

Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.

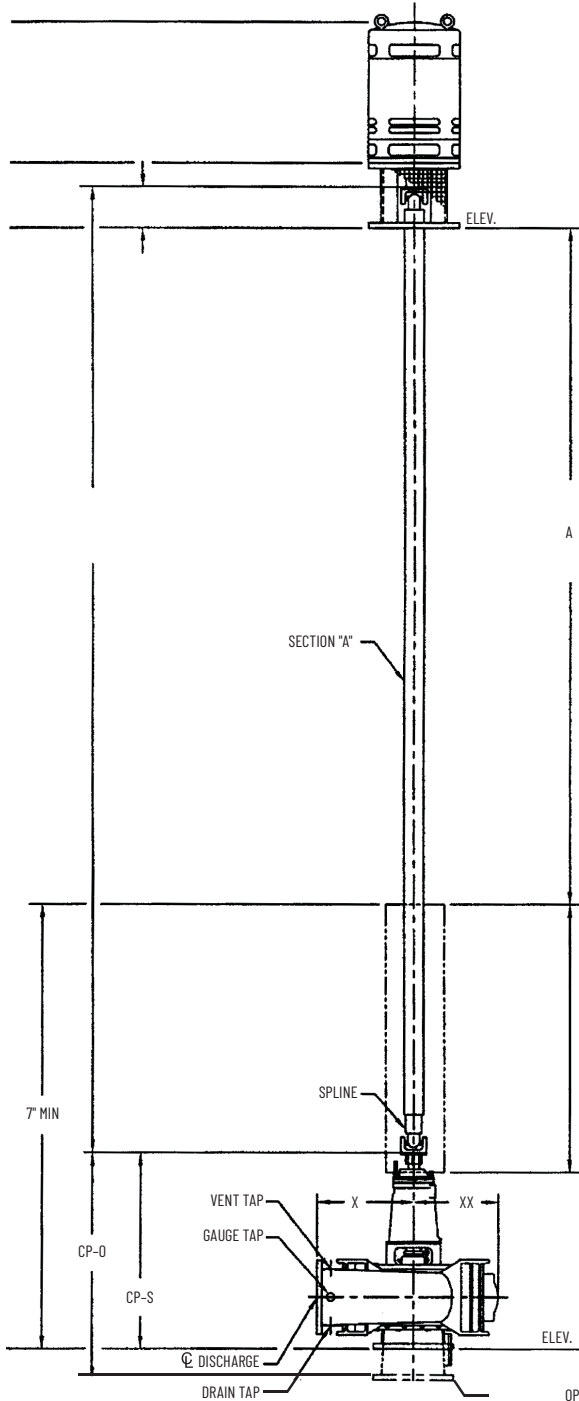


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



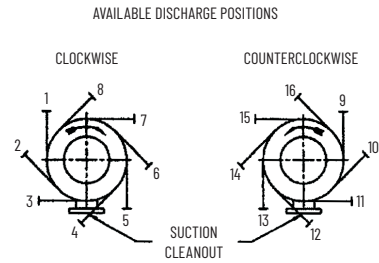
PUMP	SUCTION	DISCHARGE	A	E	E1	G	H	HH	U	V	X	Y	Z	CP	VD	XX	ZZ	KEYWAY
30" 2414	36	30	90	42	N/A	1-1/2	1-3/4	6	5	8-7/8	57	33-3/4	33-3/4	114	29-1/4	45	40	1-1/4 X 5/8 X 8
42" 2414	48	42	96	45	15	2	2-3/4	8	9-1/2	6-5/8	78	42	48-1/2	124-3/4	33	64-3/4	58	N/A

# Dimensional Data – SETTING PLAN 2" E2414 & 12" E2415 ONE-SECTION INTERMEDIATE SHAFT

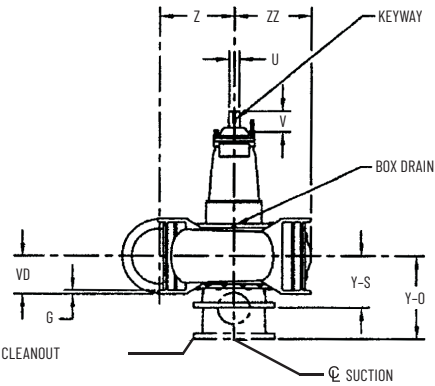
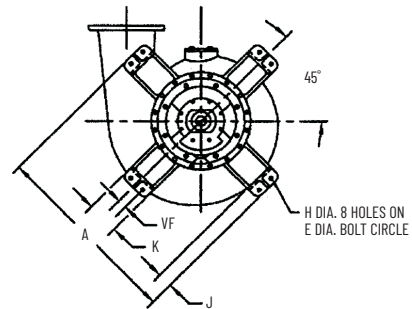


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

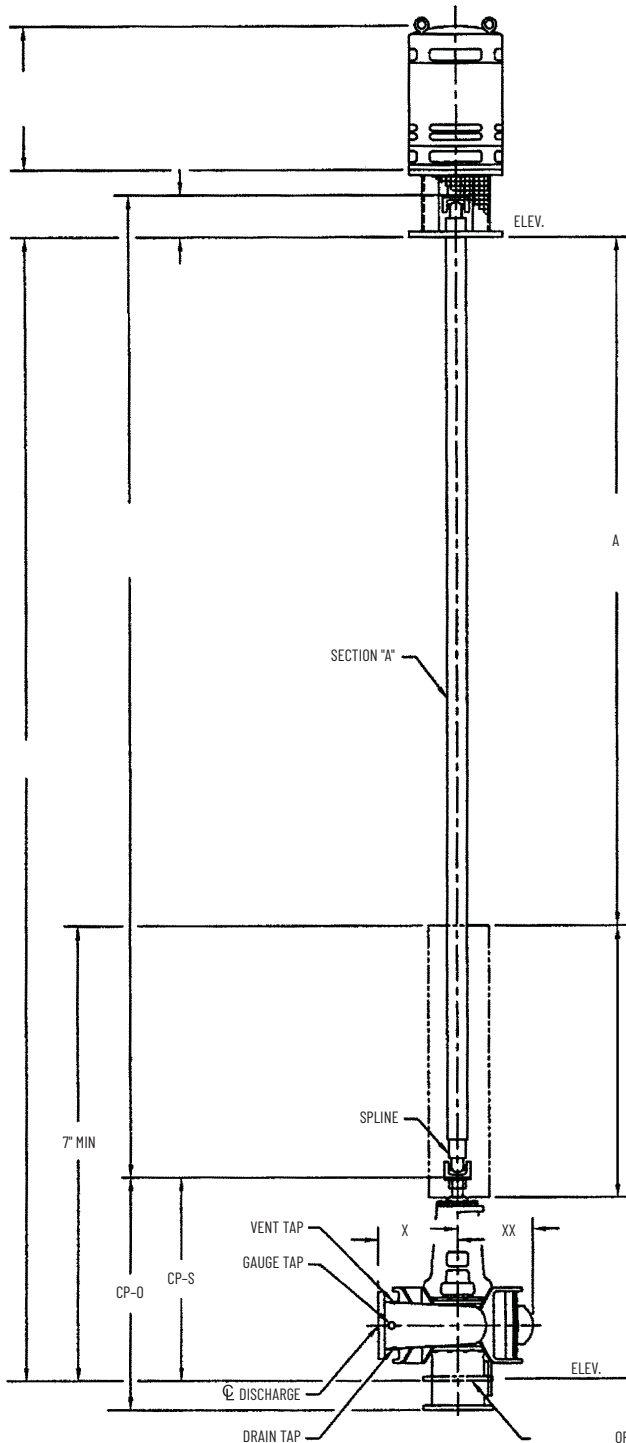


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. COUNTERCLOCKWISE ROTATION DISCHARGE POSITION #9 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



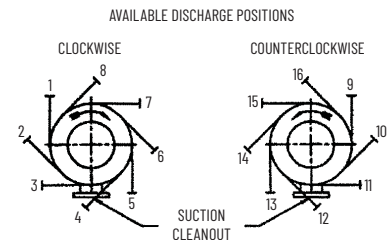
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12" E2414	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2
12" E2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2

# Dimensional Data – SETTING PLAN 2416 ONE-SECTION INTERMEDIATE SHAFT

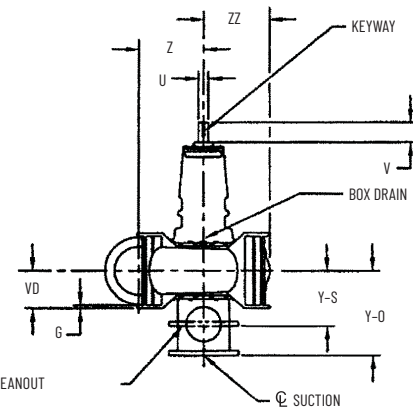
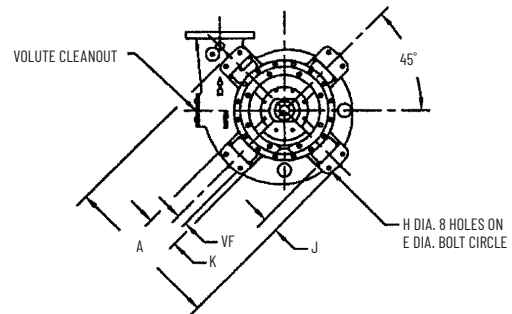


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.



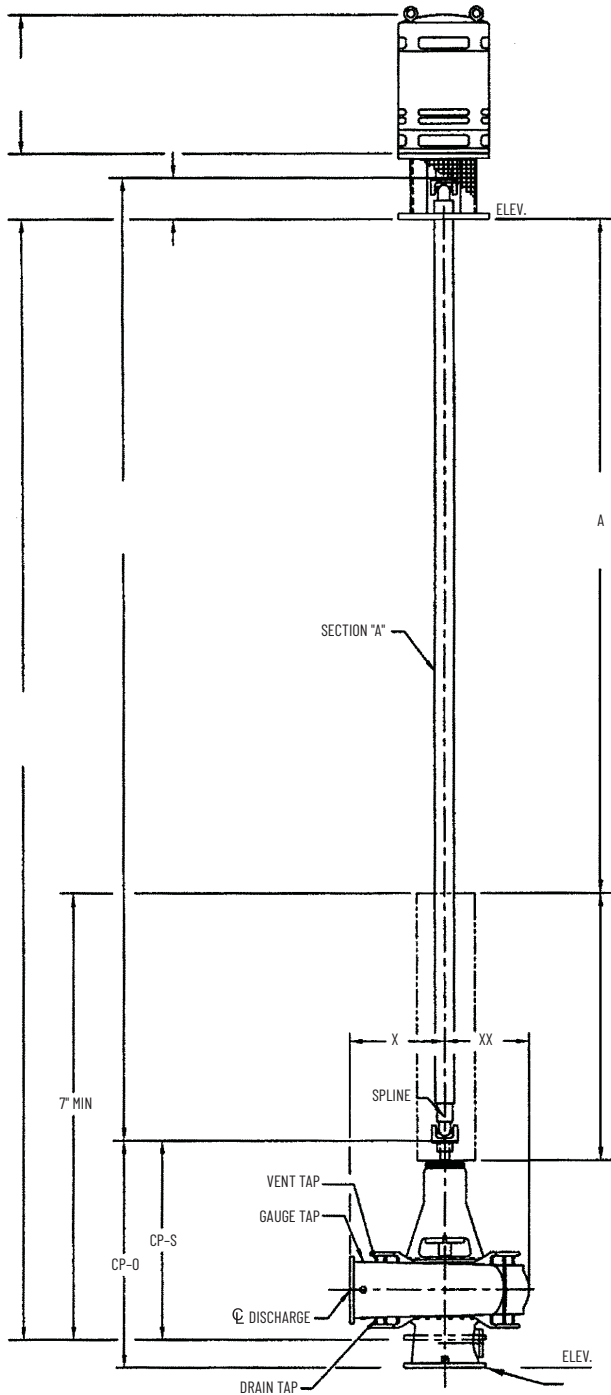
POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12" C2416	14	12	47-1/2	44-1/2	1-1/8	1-1/8	5-3/4	10	3-1/8	6	24	25-3/4	16-7/8	19-1/2	71	62-1/8	11-1/2	3	22-3/4	20-3/4	3/4 X 3/8 X 5
16" C2416	20	16	65-1/4	59-3/8	1-1/4	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	32	27	RTF	26	84	RTF	13-3/8	3-1/4	30	27-1/2	1 X 1/2 X 6-1/2
20" C2416	RTF																				



# Dimensional Data – SETTING PLAN 24" C2414 ONE-SECTION INTERMEDIATE SHAFT



## NOTES:

All flanges are 125# ANSI drilling unless noted.

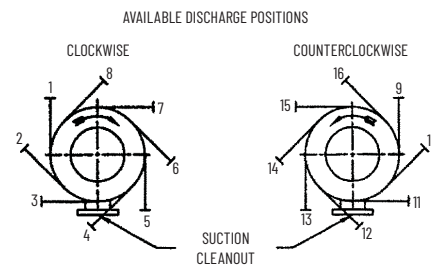
All dimensions are in inches unless noted.

Dimensions reflect usable shaft length.

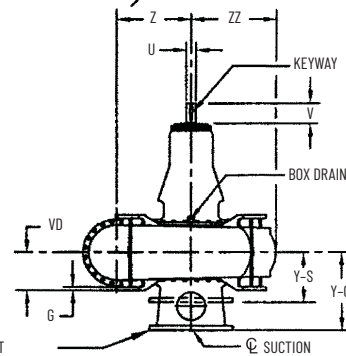
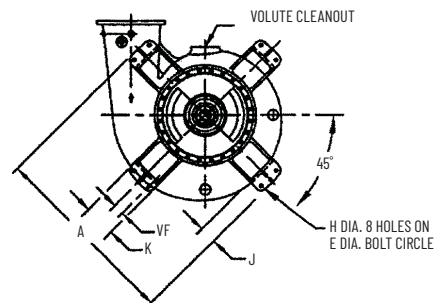
Bases are designed to have full contact with grout or a sole plate grouted in place.

Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.



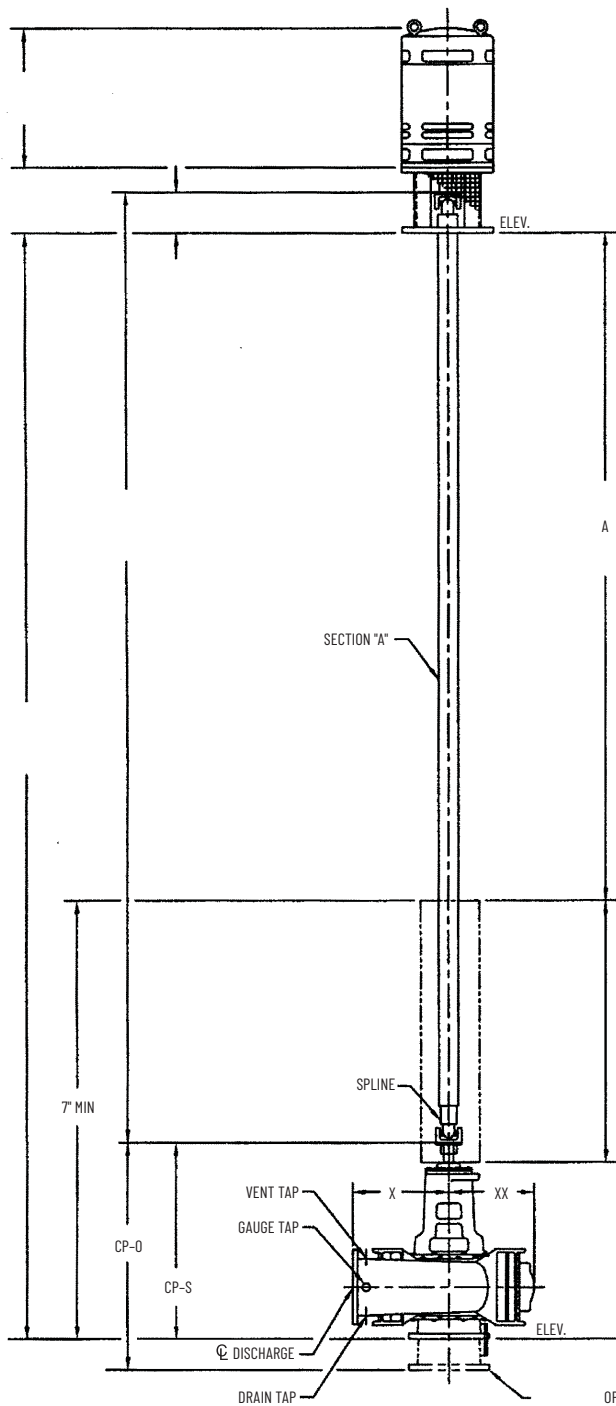
POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
24C2414	30	24	89-1/4	84-3/4	1-5/8	1-5/8	6-3/4	15	4-9/16	9-1/8	45

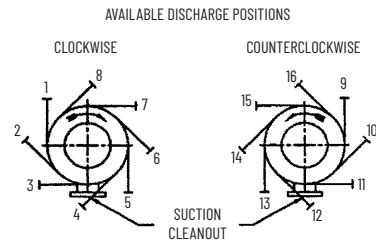
PUMP	Y-O	Y-S	Z	CP-O	CP-S	VD	VF	XX	ZZ	KEYWAY
24C2414	36-13/16	RTF	34-11/16	108	RTF	18	5	41	36	1-1/4 X 5/8 X 7-3/8

# Dimensional Data – SETTING PLAN 12C2415 ONE-SECTION INTERMEDIATE SHAFT

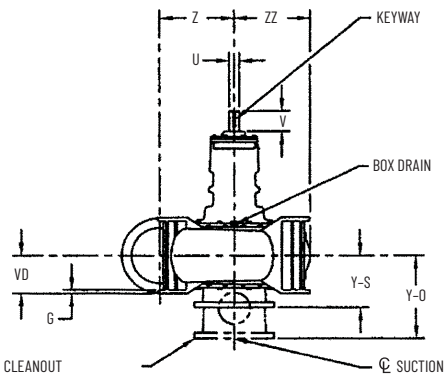
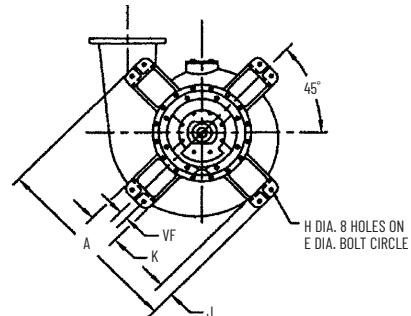


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.



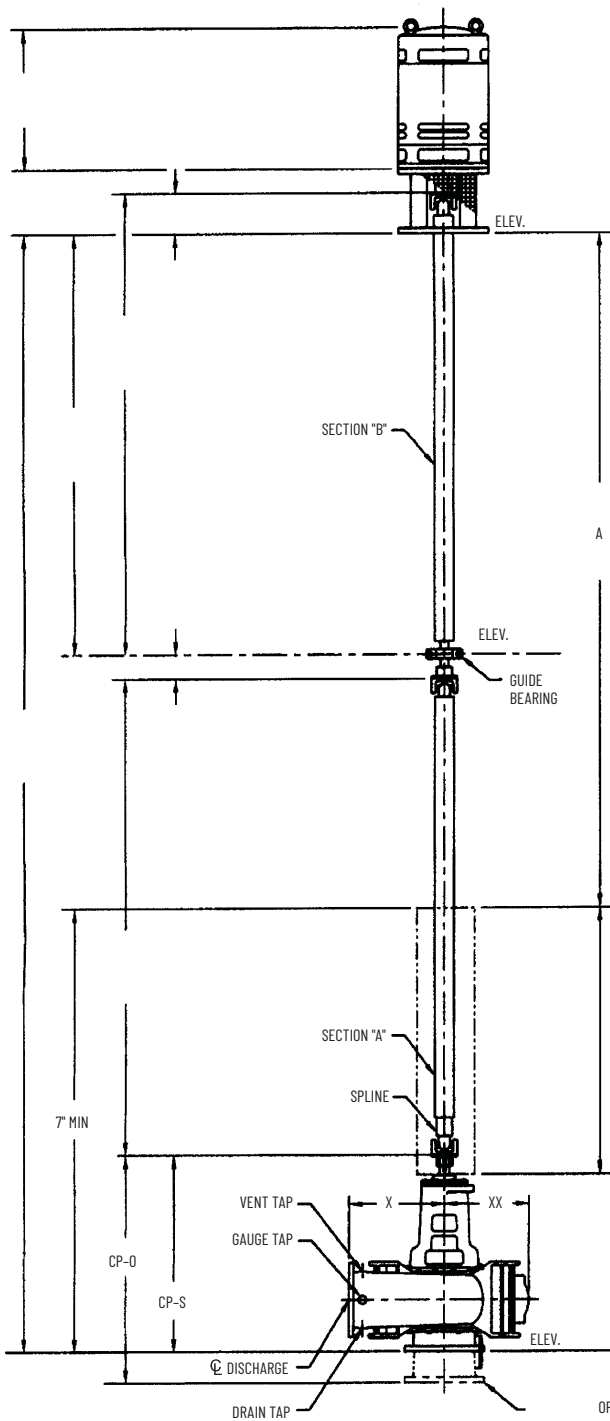
POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



OPTIONAL FRONTHEAD WITH CLEANOUT

PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12C2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	61-5/16	51-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4

# Dimensional Data – SETTING PLAN 2414 TWO-SECTION INTERMEDIATE SHAFT



### NOTES:

All flanges are 125# ANSI drilling unless noted.

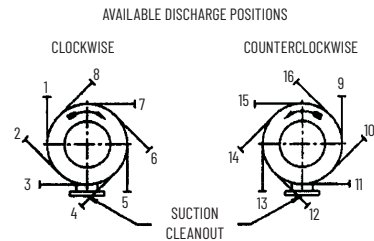
All dimensions are in inches unless noted.

Dimensions reflect usable shaft length.

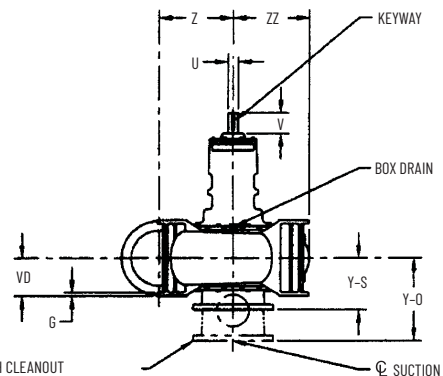
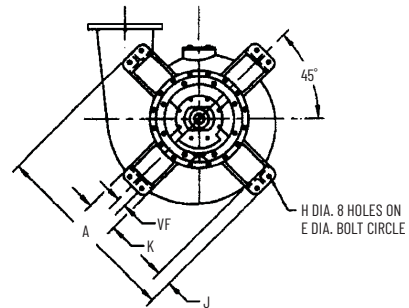
Bases are designed to have full contact with grout or a sole plate grouted in place.

Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.

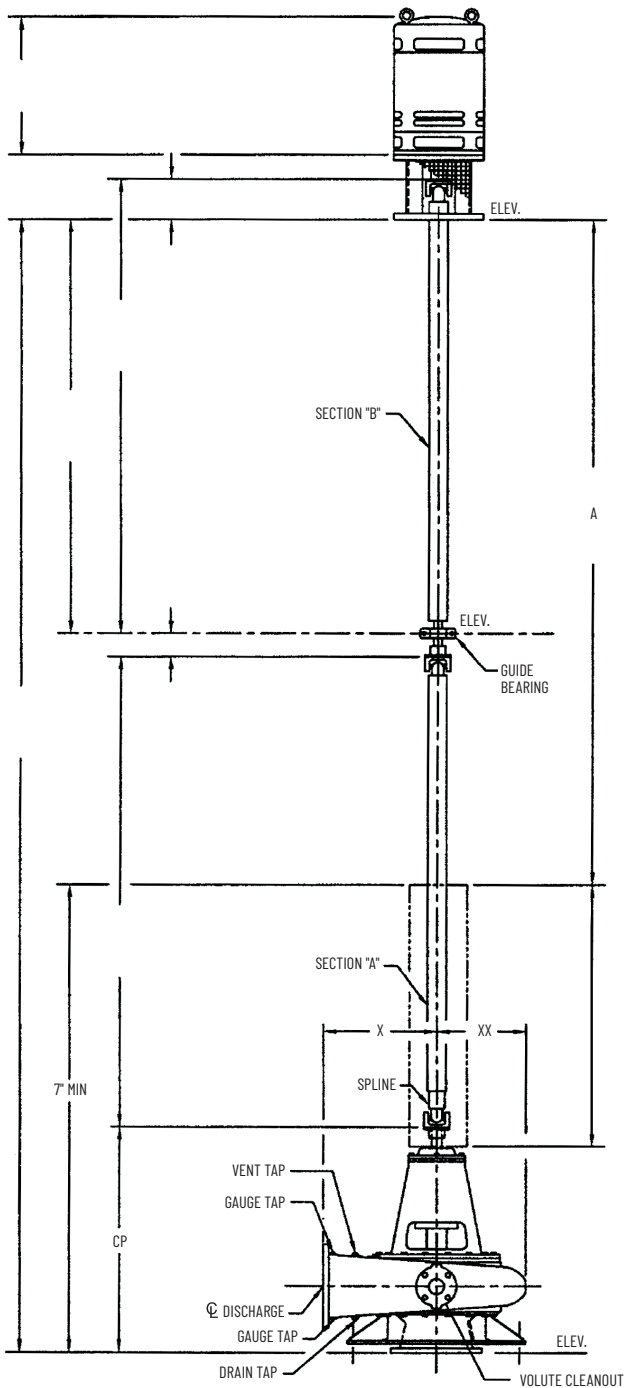


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-S	Y-O	Z	CP-S	CP-O	VD	VF	XX	ZZ	KEYWAY
12" 2414	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2	12-3/4	23-3/4	17-3/8	51-5/16	62-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4
16" 2414	18	16	59-1/2	56-1/2	1-1/8	1-1/8	4-1/2	10	3-1/8	6	30	16-3/8	26-1/8	23-1/8	62	71-3/4	12	2-5/8	27	24-1/8	3/4 X 3/8 X 5-1/8
20" 2414	24	20	74-3/8	70-5/8	1-3/8	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	37-1/2	20-1/2	30-1/2	28-7/8	78-1/8	88-1/8	15	3-1/4	34	30	1 X 1/2 X 6-5/8

# Dimensional Data – SETTING PLAN 30" & 42" – 2414 TWO-SECTION INTERMEDIATE SHAFT



## NOTES:

All flanges are 125# ANSI drilling unless noted.

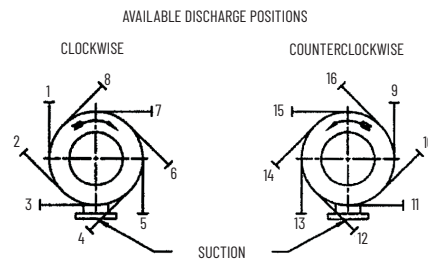
All dimensions are in inches unless noted.

Dimensions reflect usable shaft length.

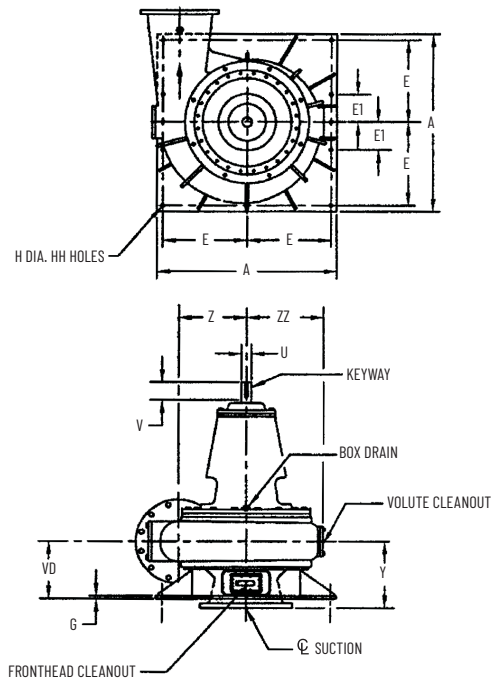
Bases are designed to have full contact with grout or a sole plate grouted in place.

Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.

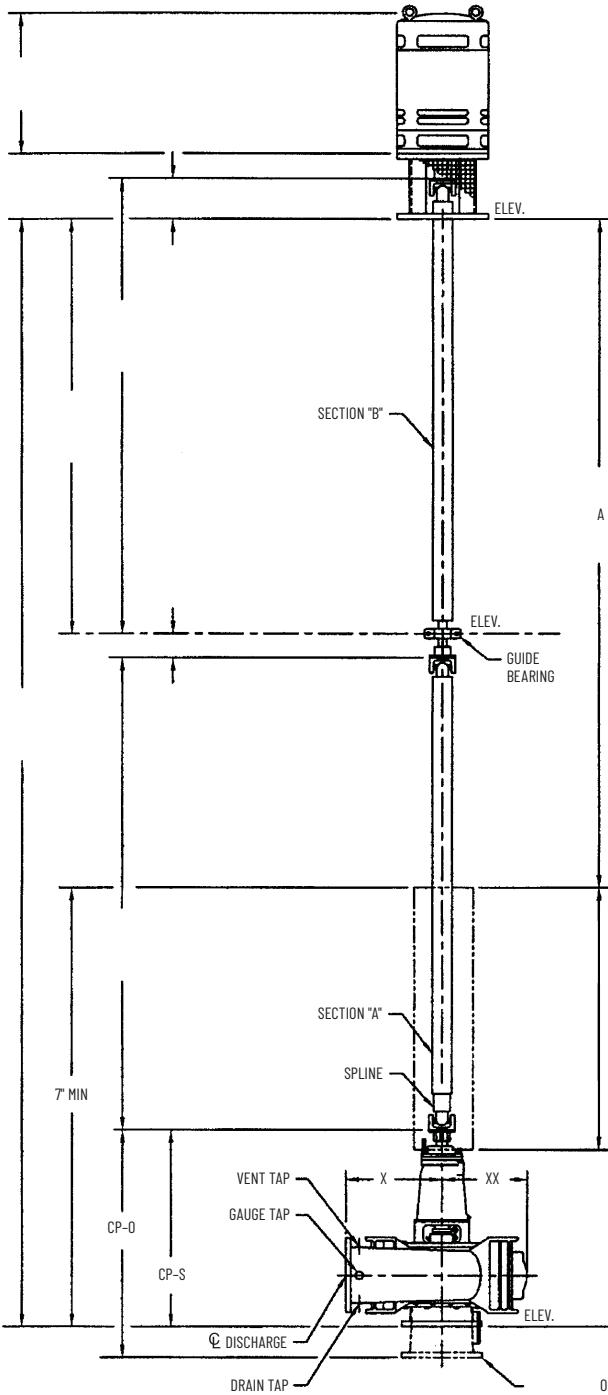


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



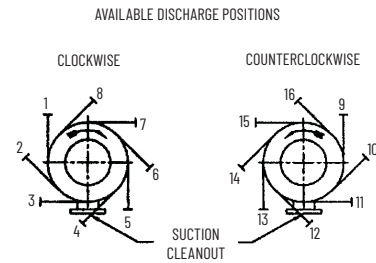
PUMP	SUCTION	DISCHARGE	A	E	E1	G	H	HH	U	V	X	Y	Z	CP	VD	XX	ZZ	KEYWAY
30" 2414	36	30	90	42	N/A	1-1/2	1-3/4	6	5	8-7/8	57	33-3/4	33-3/4	114	29-1/4	45	40	1-1/4 X 5/8 X 8
42" 2414	48	42	96	45	15	2	2-3/4	8	9-1/2	6-5/8	78	42	48-1/2	124-3/4	33	64-3/4	58	N/A

# Dimensional Data – SETTING PLAN 12" E2414 & 12" E2415 TWO-SECTION INTERMEDIATE SHAFT

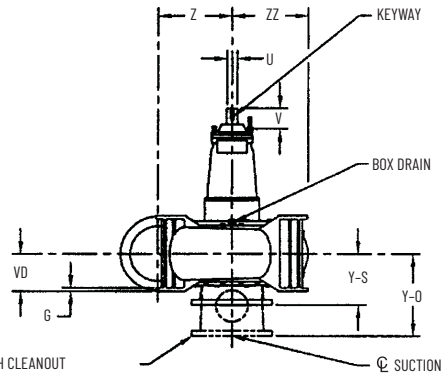
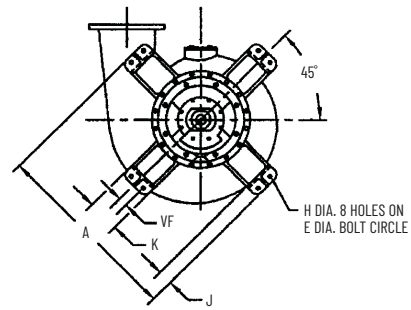


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

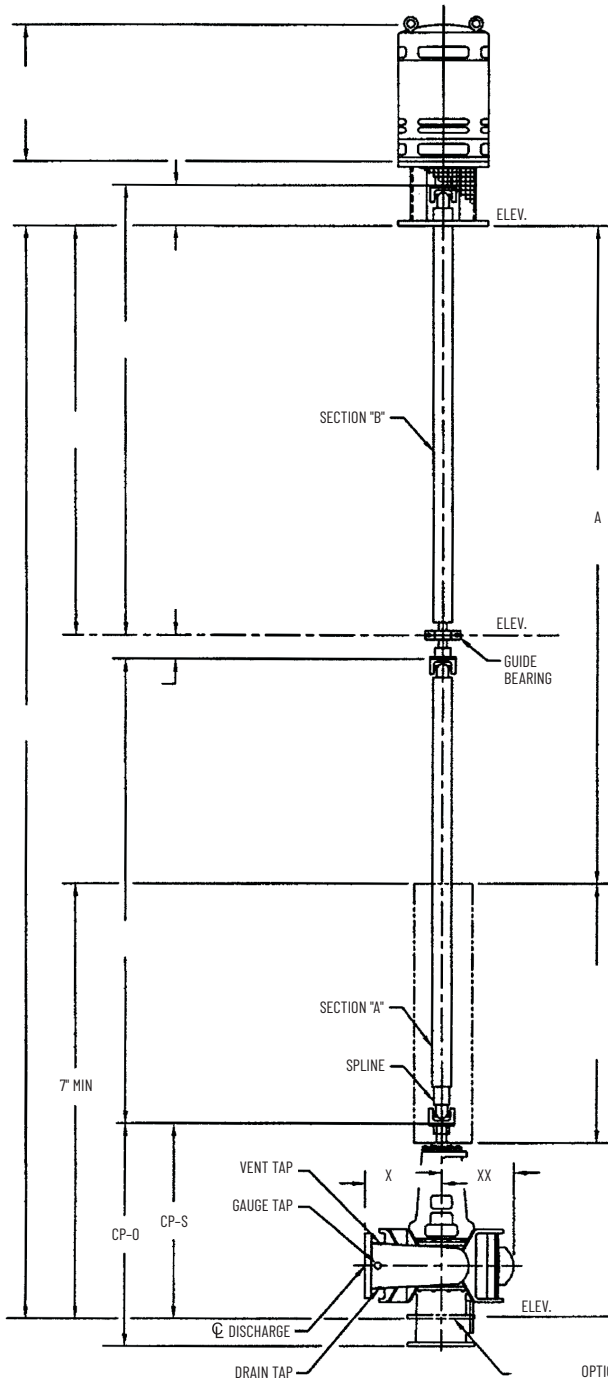


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



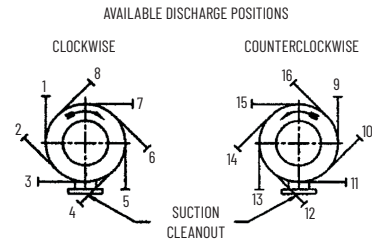
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-O	Y-S	Z	CP-O	CP-S	VD	VF	XX	ZZ	KEYWAY
12" E2414	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2
12" E2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2

# Dimensional Data – SETTING PLAN 2416 TWO-SECTION INTERMEDIATE SHAFT

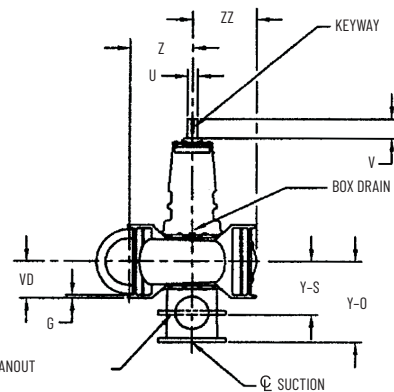
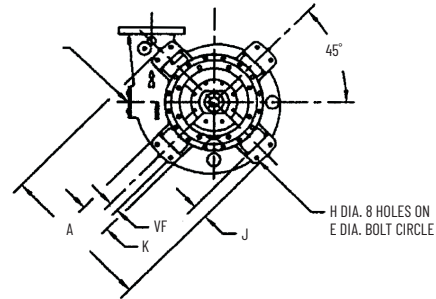


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.



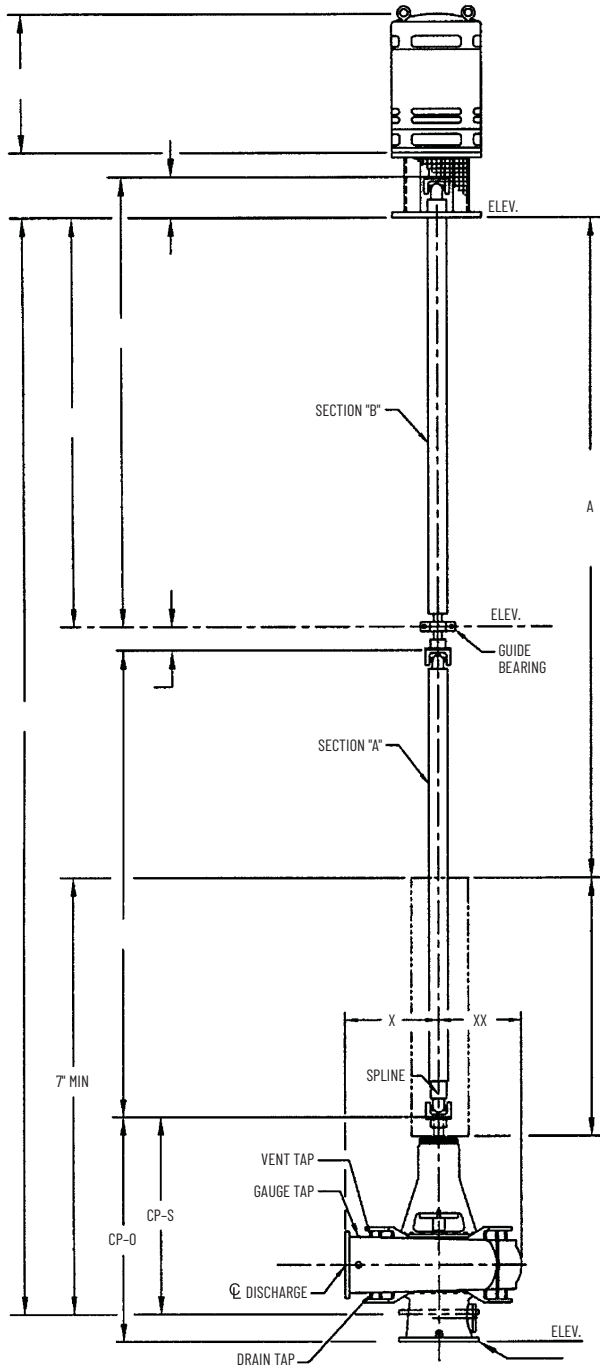
POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



OPTIONAL FRONTHEAD WITHOUT CLEANOUT

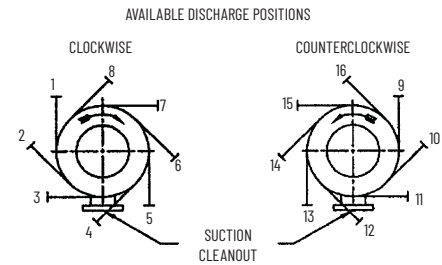
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-O	Y-S	Z	CP-O	CP-S	VD	VF	XX	ZZ	KEYWAY
12" C2416	14	12	47-1/2	44-1/2	1-1/8	1-1/8	5-3/4	10	3-1/8	6	24	25-3/4	16-7/8	19-1/2	71	62-1/8	11-1/2	3	22-3/4	20-3/4	3/4 X 3/8 X 5
16" C2416	20	16	65-1/4	59-3/8	1-1/4	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	32	27	RTF	26	84	RTF	13-3/8	3-1/4	30	27-1/2	1 X 1/2 X 6-1/2
20" C2416	RTF																				

# Dimensional Data – SETTING PLAN 24C2414 TWO-SECTION INTERMEDIATE SHAFT

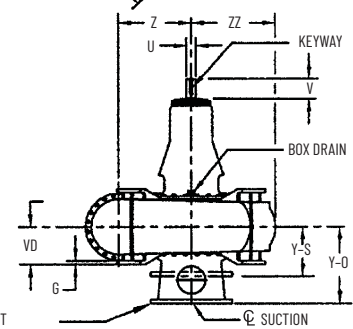
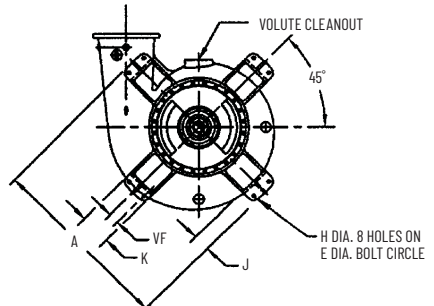


**NOTES:**

All flanges are 125# ANSI drilling unless noted.  
 All dimensions are in inches unless noted.  
 Dimensions reflect usable shaft length.  
 Bases are designed to have full contact with grout or a sole plate grouted in place.  
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 Dimensions shown may vary due to normal manufacturing tolerances.



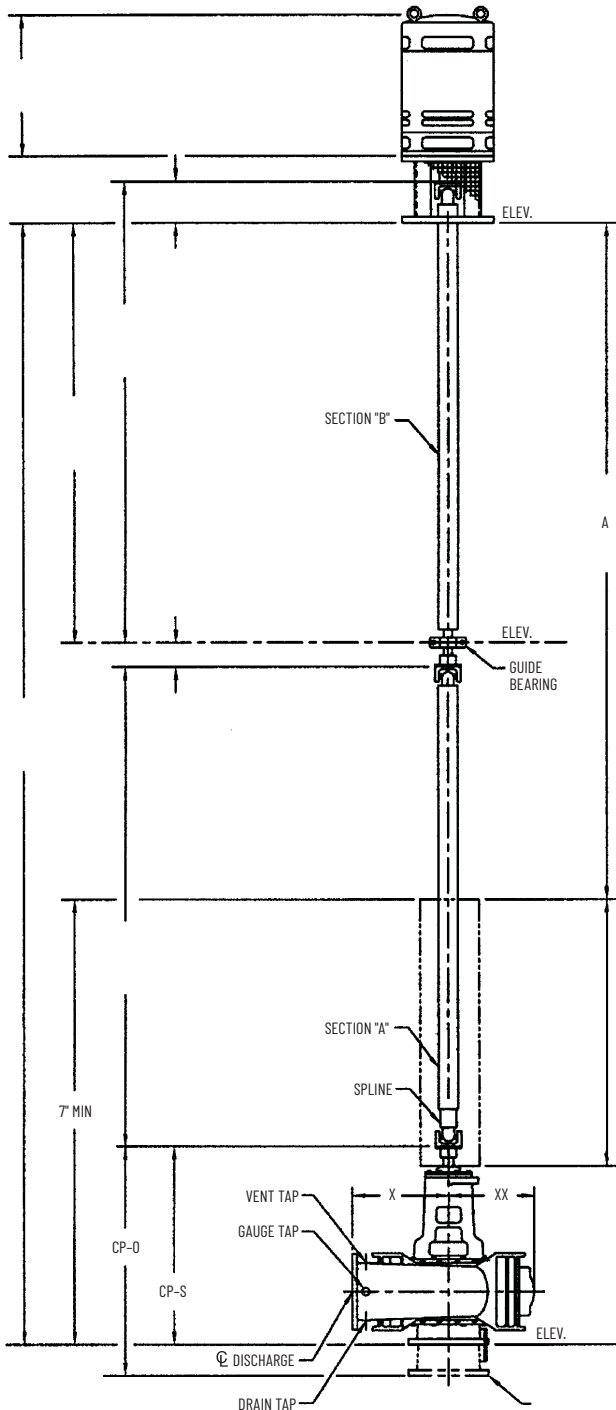
POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
24C2414	30	24	89-1/4	84-3/4	1-5/8	1-5/8	6-3/4	15	4-9/16	9-1/8	45

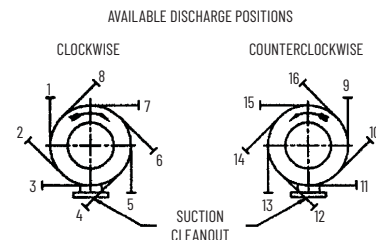
PUMP	Y-O	Y-S	Z	CP-O	CP-S	VD	VF	XX	ZZ	KEYWAY
24C2414	36-13/16	RTF	34-11/16	108	RTF	18	5	41	36	1-1/4 X 5/8 X 7-3/8

# Dimensional Data – SETTING PLAN 12C2415 TWO-SECTION INTERMEDIATE SHAFT

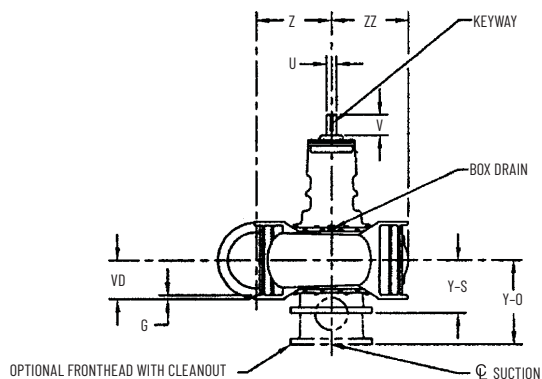
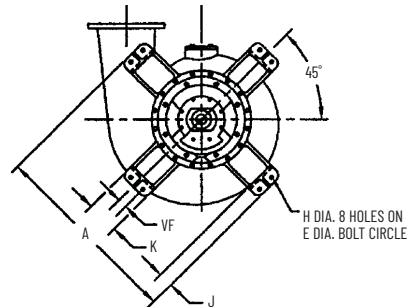


## NOTES:

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
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- Dimensions shown may vary due to normal manufacturing tolerances.



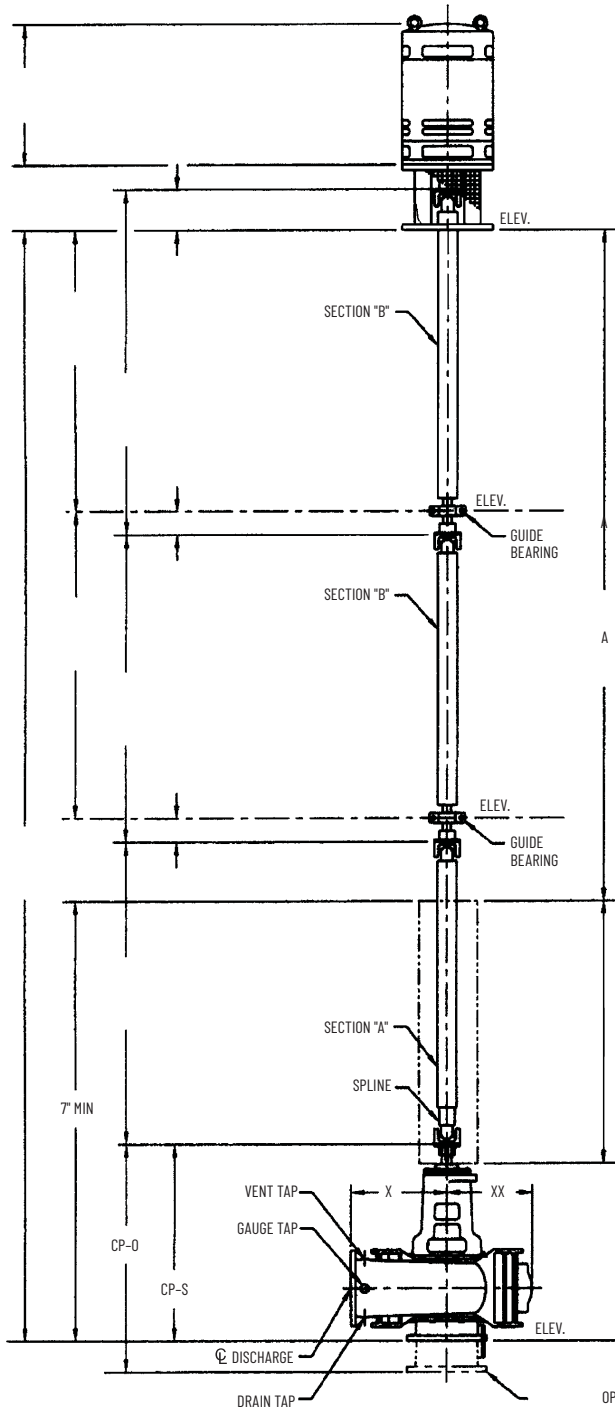
POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12C2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	61-5/16	51-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4



# Dimensional Data – SETTING PLAN 2414 THREE-SECTION INTERMEDIATE SHAFT



## NOTES:

All flanges are 125# ANSI drilling unless noted.

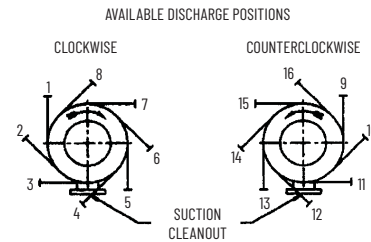
All dimensions are in inches unless noted.

Dimensions reflect usable shaft length.

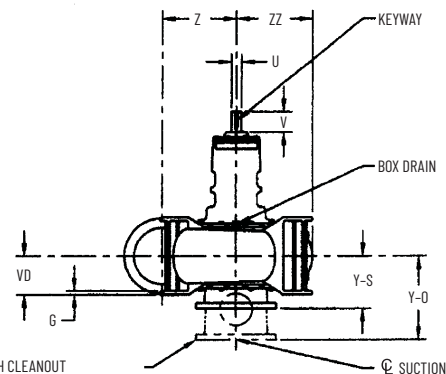
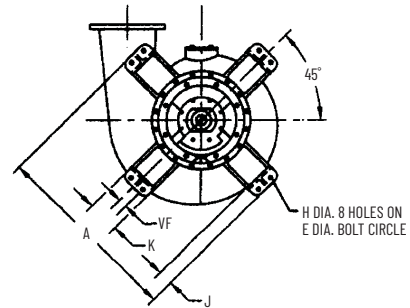
Bases are designed to have full contact with grout or a sole plate grouted in place.

Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.

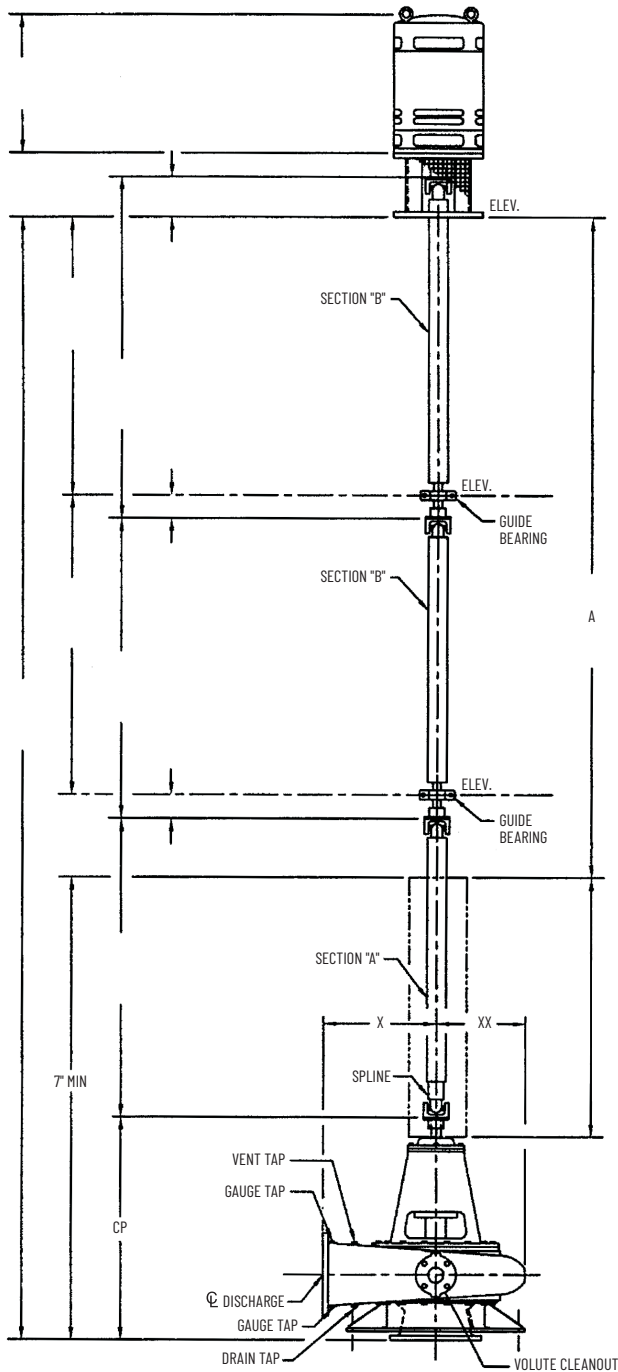


OPTIONAL FRONTHEAD WITH CLEANOUT

PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-S	Y-0	Z	CP-S	CP-0	VD	VF	XX	ZZ	KEYWAY
12" 2414	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2	12-3/4	23-3/4	17-3/8	51-5/16	62-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4
16" 2414	18	16	59-1/2	56-1/2	1-1/8	1-1/8	4-1/2	10	3-1/8	6	30	16-3/8	26-1/8	23-1/8	62	71-3/4	12	2-5/8	27	24-1/8	3/4 X 3/8 X 5-1/8
20" 2414	24	20	74-3/8	70-5/8	1-3/8	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	37-1/2	20-1/2	30-1/2	28-7/8	78-1/8	88-1/8	15	3-1/4	34	30	1 X 1/2 X 6-5/8

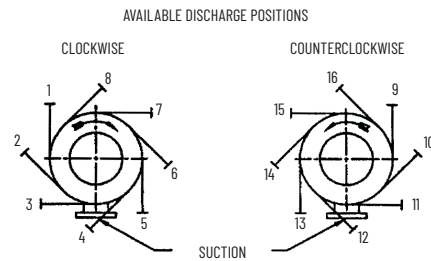
# Dimensional Data – SETTING PLAN 30" & 42" – 2414

## THREE-SECTION INTERMEDIATE SHAFT

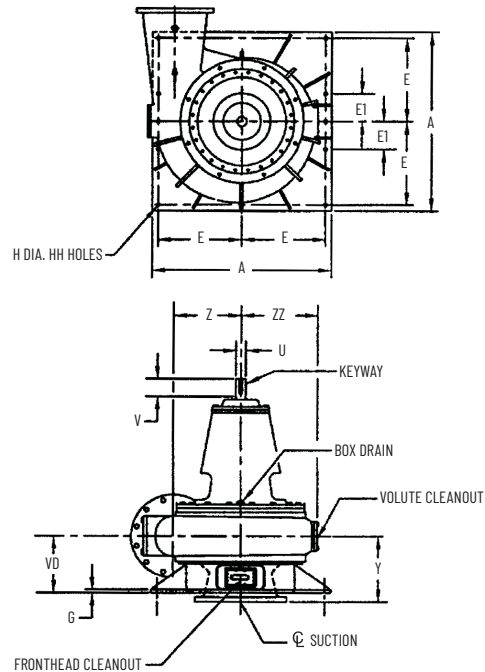


### NOTES:

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
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- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

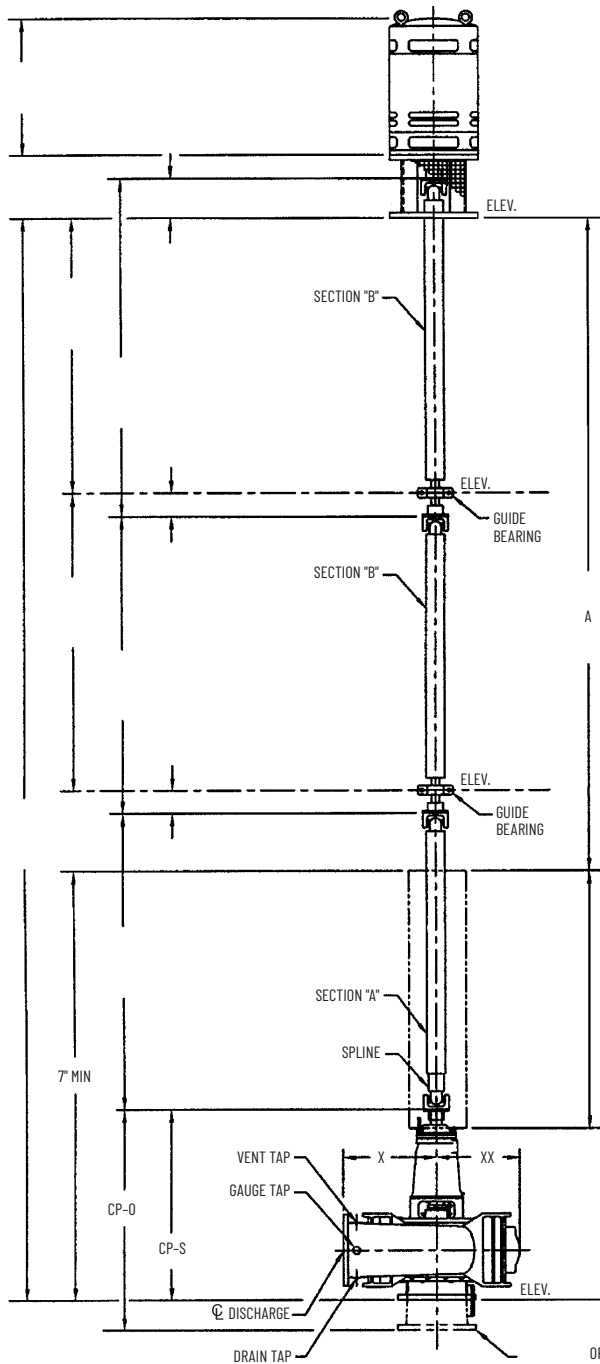


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



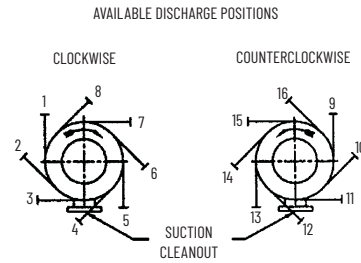
PUMP	SUCTION	DISCHARGE	A	E	E1	G	H	HH	U	V	X	Y	Z	CP	VD	XX	ZZ	KEYWAY
30" 2414	36	30	90	42	N/A	1-1/2	1-3/4	6	5	8-7/8	57	33-3/4	33-3/4	114	29-1/4	45	40	1-1/4 X 5/8 X 8
42" 2414	48	42	96	45	15	2	2-3/4	8	9-1/2	6-5/8	78	42	48-1/2	124-3/4	33	64-3/4	58	N/A

# Dimensional Data – SETTING PLAN 12" E2414 & 12" E2415 THREE-SECTION INTERMEDIATE SHAFT

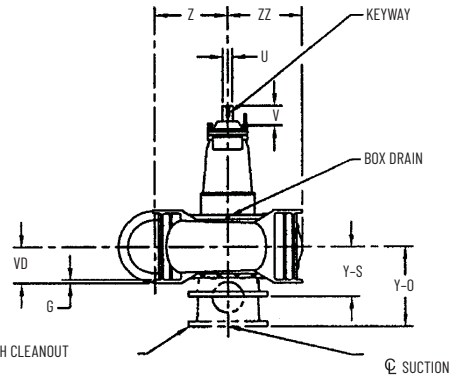
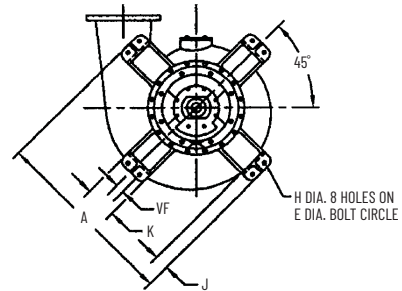


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
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- Dimensions shown may vary due to normal manufacturing tolerances.

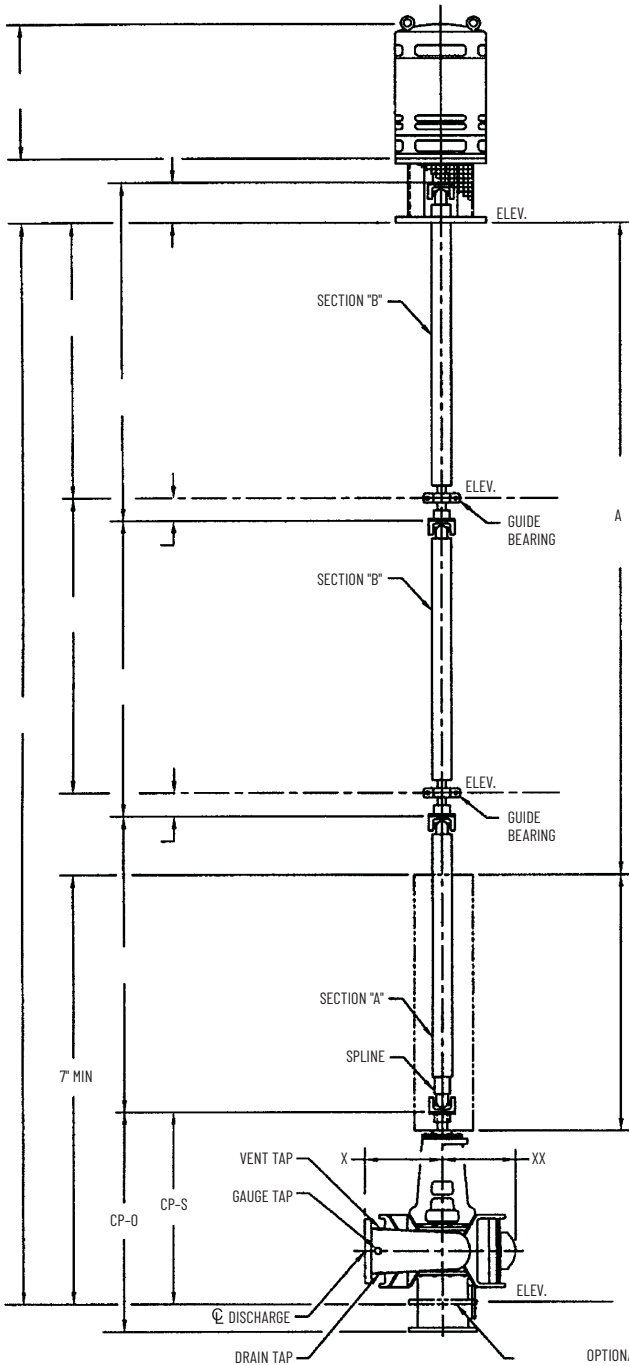


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



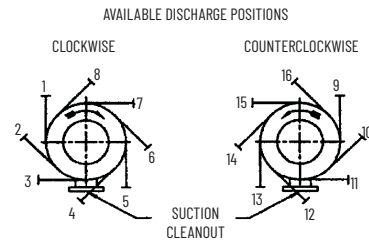
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12" E2414	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2
12" E2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2

# Dimensional Data – SETTING PLAN 2416 THREE-SECTION INTERMEDIATE SHAFT

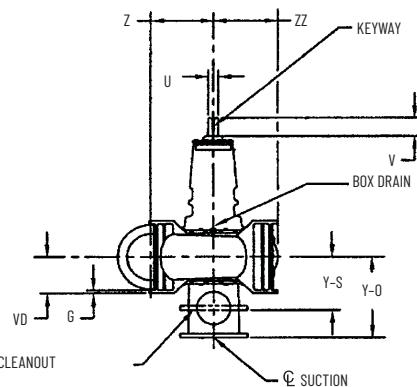
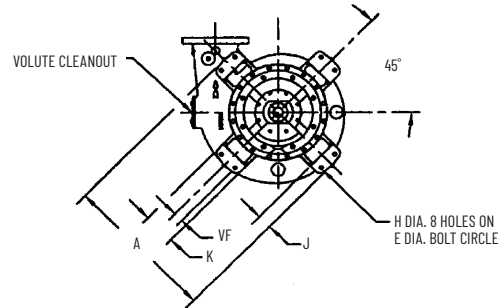


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

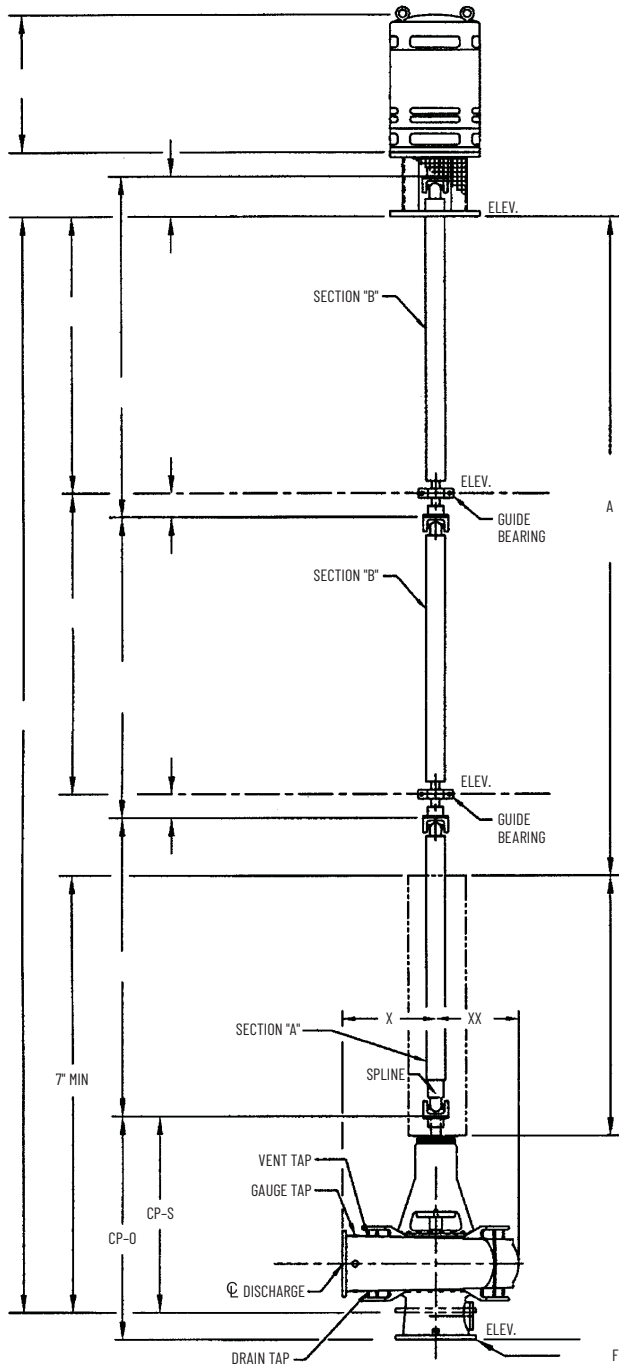


POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



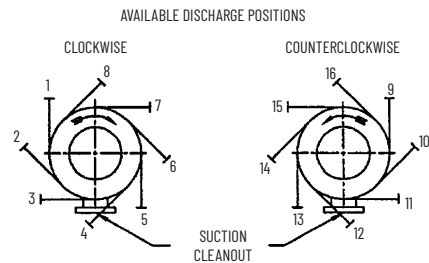
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12" C2416	14	12	47-1/2	44-1/2	1-1/8	1-1/8	5-3/4	10	3-1/8	6	24	25-3/4	16-7/8	19-1/2	71	62-1/8	11-1/2	3	22-3/4	20-3/4	3/4 X 3/8 X 5
16" C2416	20	16	65-1/4	59-3/8	1-1/4	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	32	27	RTF	26	84	RTF	13-3/8	3-1/4	30	27-1/2	1 X 1/2 X 6-1/2
20" C2416														RTF							

# Dimensional Data – SETTING PLAN 24C2414 THREE-SECTION INTERMEDIATE SHAFT

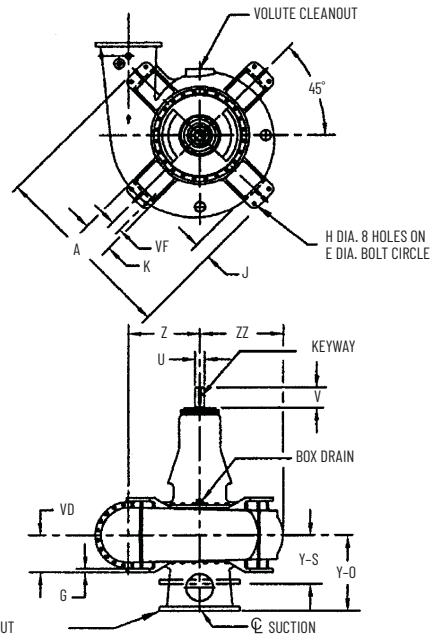


**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
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- Dimensions shown may vary due to normal manufacturing tolerances.



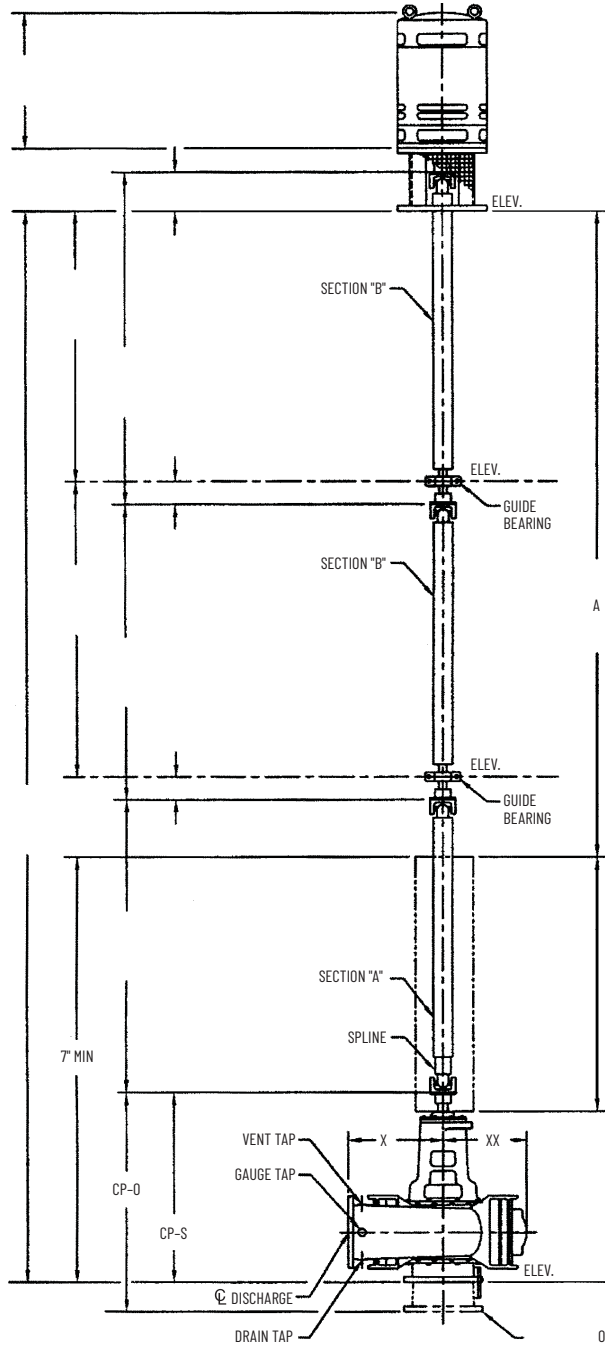
POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
24C2414	30	24	89-1/4	84-3/4	1-5/8	1-5/8	6-3/4	15	4-9/16	9-1/8	45

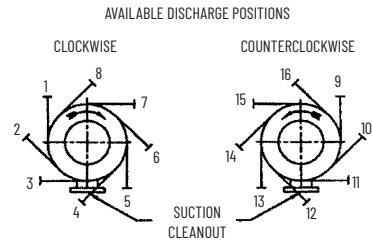
PUMP	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
24C2414	36-13/16	RTF	34-11/16	108	RTF	18	5	41	36	1-1/4 X 5/8 X 7-3/8

# Dimensional Data – SETTING PLAN 12C2415 THREE-SECTION INTERMEDIATE SHAFT

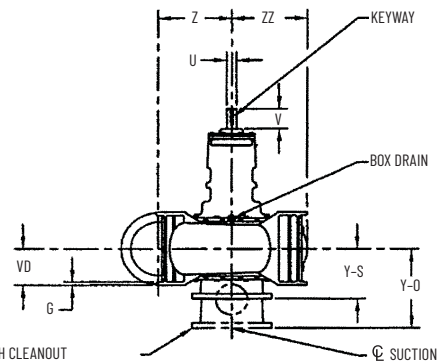
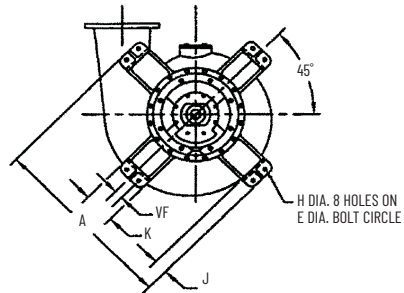


**NOTES:**

All flanges are 125# ANSI drilling unless noted.  
 All dimensions are in inches unless noted.  
 Dimensions reflect usable shaft length.  
 Bases are designed to have full contact with grout or a sole plate grouted in place.  
 Not for construction, installation, or application purposes unless certified.  
 Dimensions shown may vary due to normal manufacturing tolerances.



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



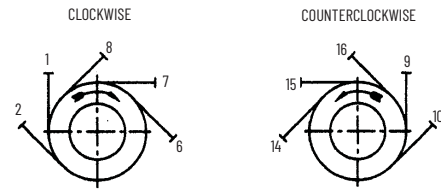
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X	Y-O	Y-S	Z	CP-O	CP-S	VD	VF	XX	ZZ	KEYWAY
12C2415	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	62-5/16	51-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4

# Typical Specifications – 2420 HORIZONTAL DRY-PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

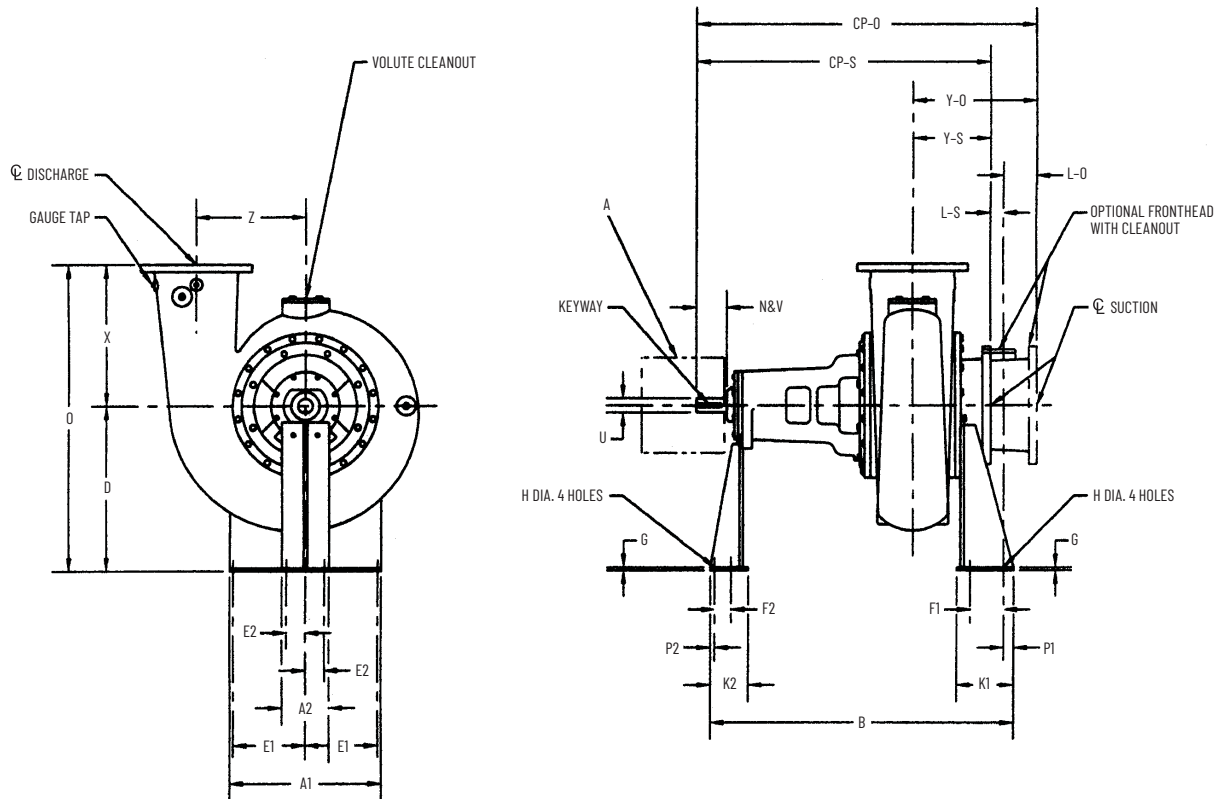
<b>Pump Model</b>	<b>2424 (1)</b>		
Pump Size (Discharge Size)	12	16	20
Suction Size	14	18	24
<b>Nominal Wear Ring Clearance:</b>			
Radial Rings (standard)	.040	.058	.064
"L" shape rings (optional)	.025	.030	.030
<b>Impeller Fastener:</b>			
Size	1/2–13	3/4–16	1–14
Tightening Torque (lb-ft)	35	60	130
<b>Impeller:</b>			
Weight (lbs.)	165	350	745
Inlet Area (sq. inches)	153.94	263.40	427.32
WR <sup>2</sup> (lb-ft <sup>2</sup> )	42.2	154.0	486.0
Sphere Size, Maximum	4	5.25	6.60
<b>Shaft Diameter:</b>			
at Impeller	3	4.50	5.50
at Sleeve	4.50	5.50	6.50
at Thrust Bearing	4.33	4.00	5.75
at Radial Bearing	4.72	5.51	6.49
between Bearings	5.375	6	7.50
at Coupling	2.375	3.125	3.675
Torsional Shaft Stiffness (in.-lbs./radian)	6.3x10 <sup>6</sup>	7.00x10 <sup>6</sup>	1.57x10 <sup>7</sup>
Center to Center of Bearings	14-1/4	16-19/32	22-1/16
Thrust Bearing No.	7322	217TS	322TS
Radial Bearing No.	23024	23128	22234
<b>Sealing Box:</b>			
Packing:			
Size	3/4	3/4	3/4
No. Rings per Box	5	5	5
Seal Cage Width	1-1/2	1-1/2	1-1/2
Mechanical Seal:			
Type (Standard)	Double	Double	Double
Recommended Flush Water:			
Pressure	(2)	(2)	(2)
Flow (GPM)	1/2–1	1/2–1	1/2–1
Sleeve OD	4-7/8	6	7
Box ID	6-7/16	7-9/16	8-9/16
Box Depth	5-1/2	5-1/2	5-1/2
Box Inlet Tap Size (NPT)	1/4	1/4	1/4
Box Outlet Tap Size (NPT) (mechanical seal only)	1/4	1/4	1/4
Backhead Drain Tap Size (NPT)	3/4–14	3/4–14	3/4–14
Volute Cleanout Diameter	4-1/2	6	8
Fronthead Cleanout Diameter (optional)	6	6	8
Vent/Priming Tap Size (NPT)	1	1	1
Volute Drain Tap Size (NPT)	1	1	1
<b>Gauge Tap Size:</b>			
Suction & Discharge (NPT)	1/2	1/2	1/2
Hydrostatic Test, PSI (3)	130	130	130
Casing Working, PSI (3)	85	85	85
Nominal Casing Thickness	11/16	7/8	1-1/8
Operating Temperature °F (3)	150	150	150
Anchor Bolt Size, recommended	5/8	7/8	1-1/8
Shipping Weight, Basic Pump Only (lbs.)	2870	4550	9320

# Dimensional Data – BASIC PUMP DIMENSIONS 2424

## AVAILABLE DISCHARGE POSITIONS



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



PUMP	SUCTION	DISCHARGE	A1	A2	B	D	E1	E2	F1	F2	G	H	K1	K2	L-S
12" 2424	14	12	28	9-1/2	54-3/8	27-3/8	13-1/4	3-3/4	6	3-1/2	5/8	7/8	10	7-1/2	2-1/2
16" 2424	18	16	32	10	62-13/16	35	15-1/4	4	7	3-1/2	3/4	7/8	12	8	1-1/2
20" 2424	24	20	40-3/4	14	85-5/8	43-1/4	15-7/8	5-1/2	10	9	1	1-1/8	16	15	3-7/8

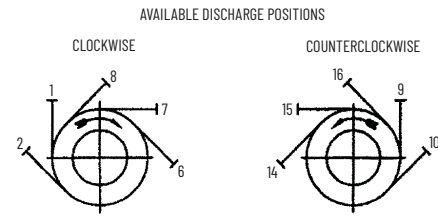
PUMP	L-O	N&V	O	P1	P2	U	X	Y-S	Y-O	Z	CP-S	CP-O	KEYWAY
12" 2424	8-1/2	4-3/4	49-7/8	1	1	2-3/8	22-1/2	12-3/4	23-3/4	17-3/8	51-5/16	62-5/16	5/8 X 5/16 X 4
16" 2424	8-1/4	6	65	2	1	3-1/8	30	16-3/8	26-1/8	23-1/8	62-1/8	71-3/4	3/4 X 3/8 X 5-1/8
20" 2424	6-1/8	7-1/2	80-3/4	2	2	3-7/8	37-1/2	20-1/2	30-1/2	28-7/8	78-1/8	88-1/8	1 X 1/2 X 6-5/8

### NOTES:

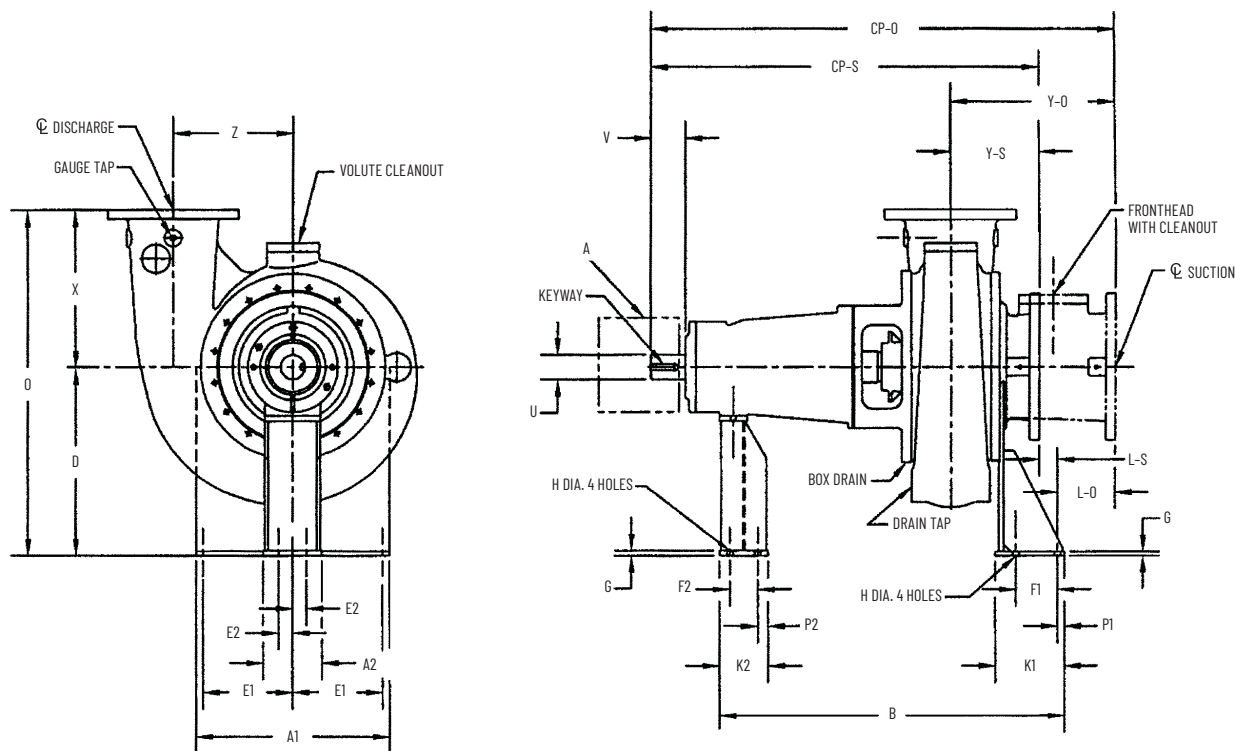
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Suction gauge connections are not available and should be located on adjacent suction piping.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.



# Dimensional Data – BASIC PUMP DIMENSIONS 12" E2424 & 12" E2425



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



PUMP	SUCTION	DISCHARGE	A1	A2	B	D	E1	E2	F1	F2	G	H	K1	K2	L-0
12" E2424	14	12	28	8-1/2	49-15/16	27-3/8	13-1/4	2	6	4	3/4	7/8	10	7	2-5/8
12" E2425	14	12	28	8-1/2	49-15/16	27-3/8	13-1/4	2	6	4	3/4	7/8	10	7	2-5/8

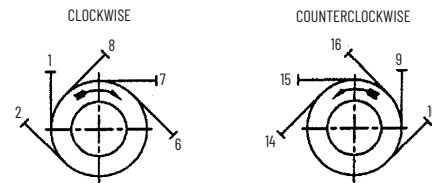
PUMP	L-S	O	P1	P2	U	V	X	Y-0	Y-S	Z	CP-0	CP-S	KEYWAY
12" E2424	8-3/8	49-7/8	1	1-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	7/8 X 7/16 X 3-1/2
12" E2425	8-3/8	49-7/8	1	1-1/2	3-1/2	4-3/4	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	7/8 X 7/16 X 3-1/2

## NOTES:

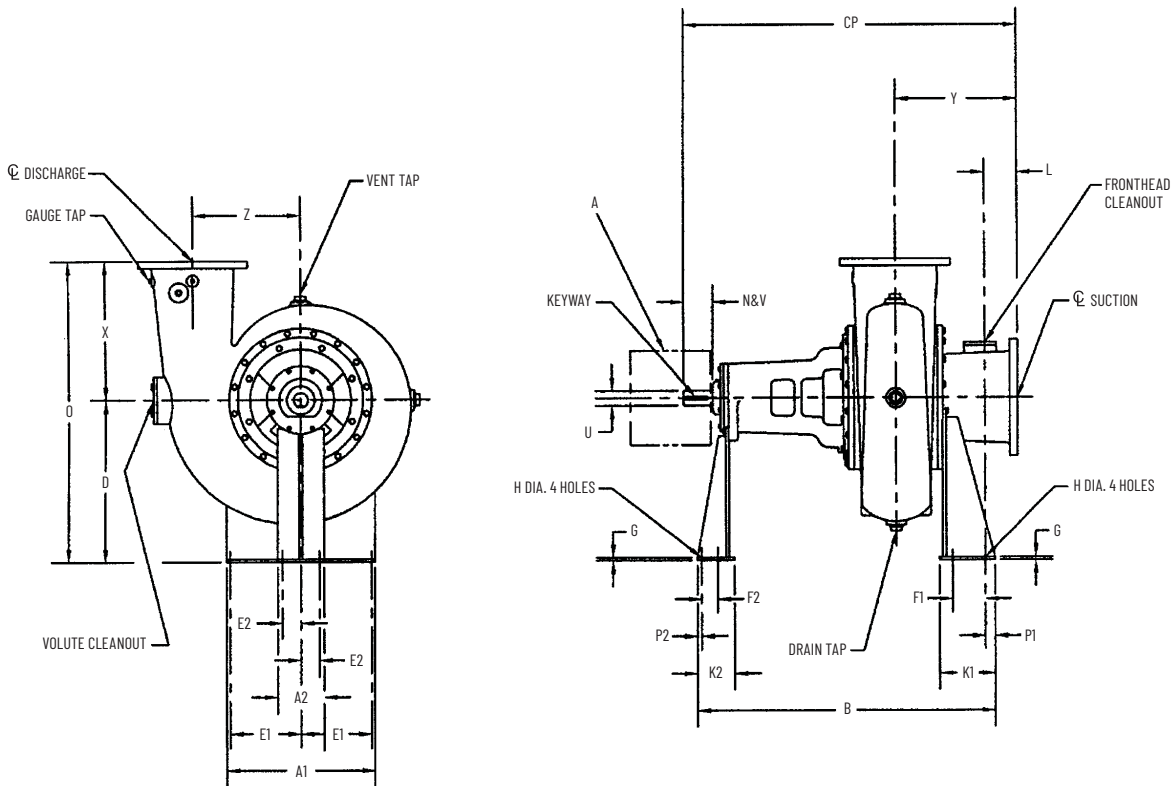
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – BASIC PUMP DIMENSIONS 2426

AVAILABLE DISCHARGE POSITIONS



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



PUMP	SUCTION	DISCHARGE	A1	A2	B	D	E1	E2	F1	F2	G	H	K1	K2
12C2426	14	12	36	10	60-3/4	27	17	4	7	3-1/2	5/8	7/8	12	8
16C2426														
20C2426														

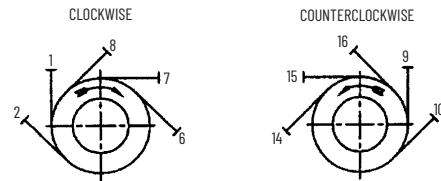
PUMP	L	N&V	O	P1	P2	U	X	Y	Z	CP	KEYWAY
12C2426	8-7/8	6-1/8	51	1-7/8	1	3-1/8	24	25-3/4	19-1/2	71	3/4 X 3/8 X 5
16C2426											
20C2426											

**NOTES:**

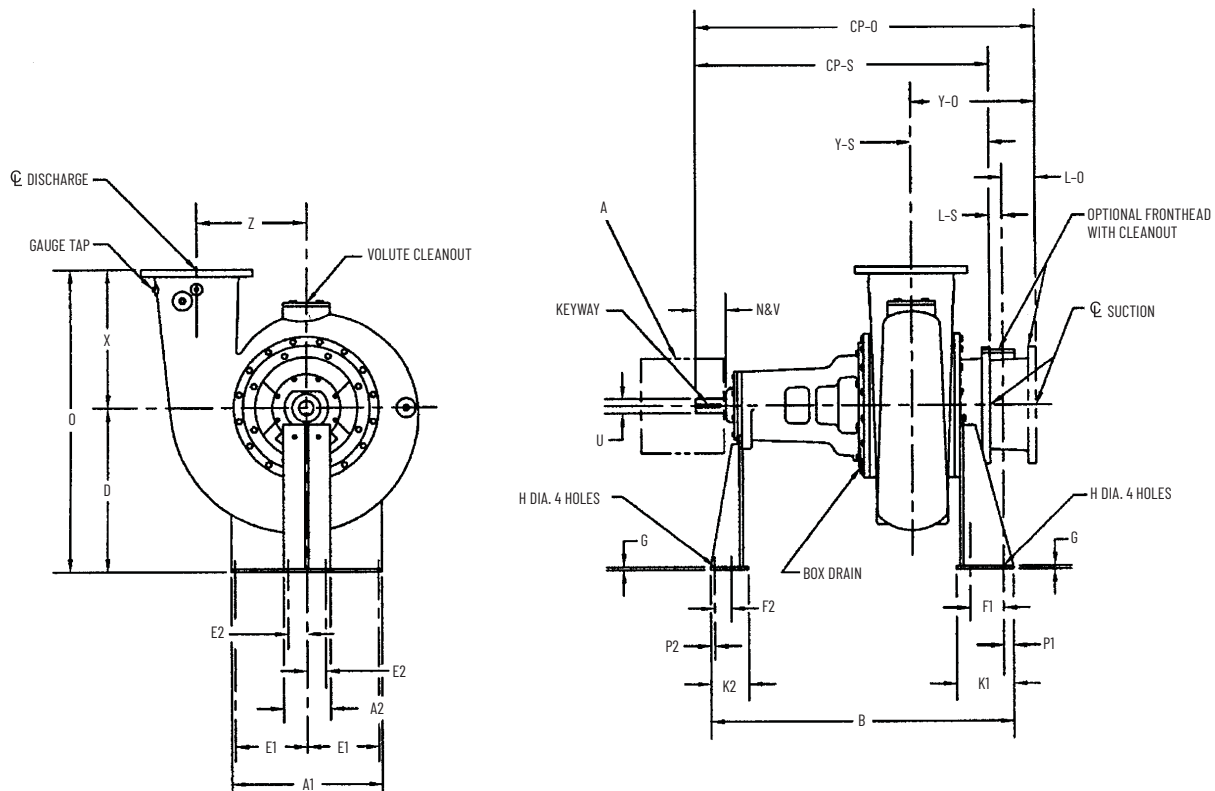
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Suction gauge connections are not available and should be located on adjacent suction piping.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – BASIC PUMP DIMENSIONS 12C2425

## AVAILABLE DISCHARGE POSITIONS



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



PUMP	SUCTION	DISCHARGE	A1	A2	B	D	E1	E2	F1	F2	G	H	K1	K2	L-0
12C2425	14	12	28	9-1/2	54-3/8	27-3/8	13-1/4	3-3/4	6	3-1/2	5/8	7/8	10	7-1/2	8-1/2

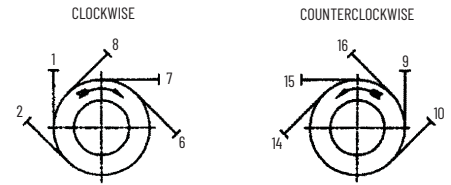
PUMP	L-S	N&V	O	P1	P2	U	X	Y-0	Y-S	Z	CP-0	CP-S	KEYWAY
12C2425	2-1/2	4-3/4	49-7/8	1	1	2-3/8	22-1/2	23-3/4	12-3/4	17-3/8	62-5/16	51-5/16	5/8 X 5/16 X 4

### NOTES:

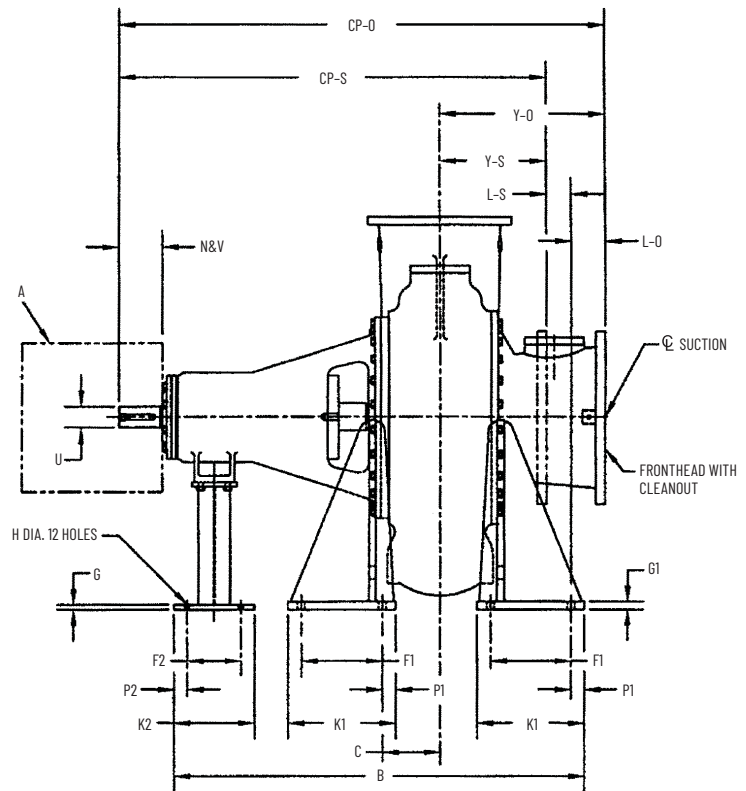
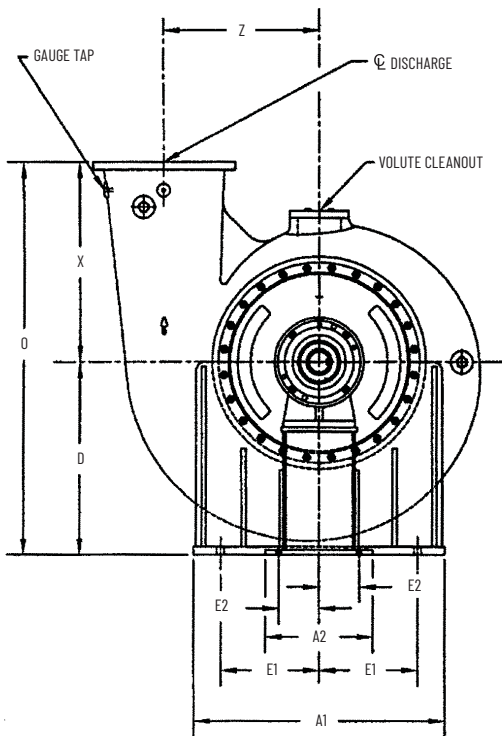
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – BASIC PUMP DIMENSIONS 24C2424

AVAILABLE DISCHARGE POSITIONS



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



PUMP	SUCTION	DISCHARGE	A1	A2	B	C	D	E1	E2	F1	F2	G	G1	H	K1	K2
24C2424	30	24	56	24	90-1/4	12-3/8	43-1/4	22	9	19	12	1-1/4	1-1/2	1-1/8	24	18

PUMP	L-S	L-O	N&V	O	P1	P2	U	X	Y-0	Y-S	Z	CP-0	CP-S	KEYWAY
24C2424	RTF	7-5/16	9-1/4	88-1/4	2-1/2	3	4-9/16	45	36-13/16	RTF	34-11/16	106	RTF	1-1/4 X 5/8 X 7-3/8

**NOTES:**

All flanges are 125# ANSI drilling unless noted.

All dimensions are in inches unless noted.

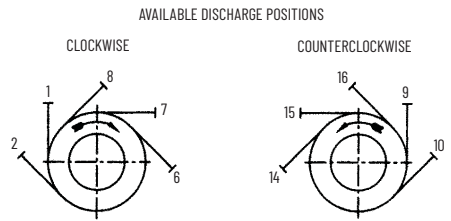
Dimensions reflect usable shaft length.

Not for construction, installation, or application purposes unless certified.

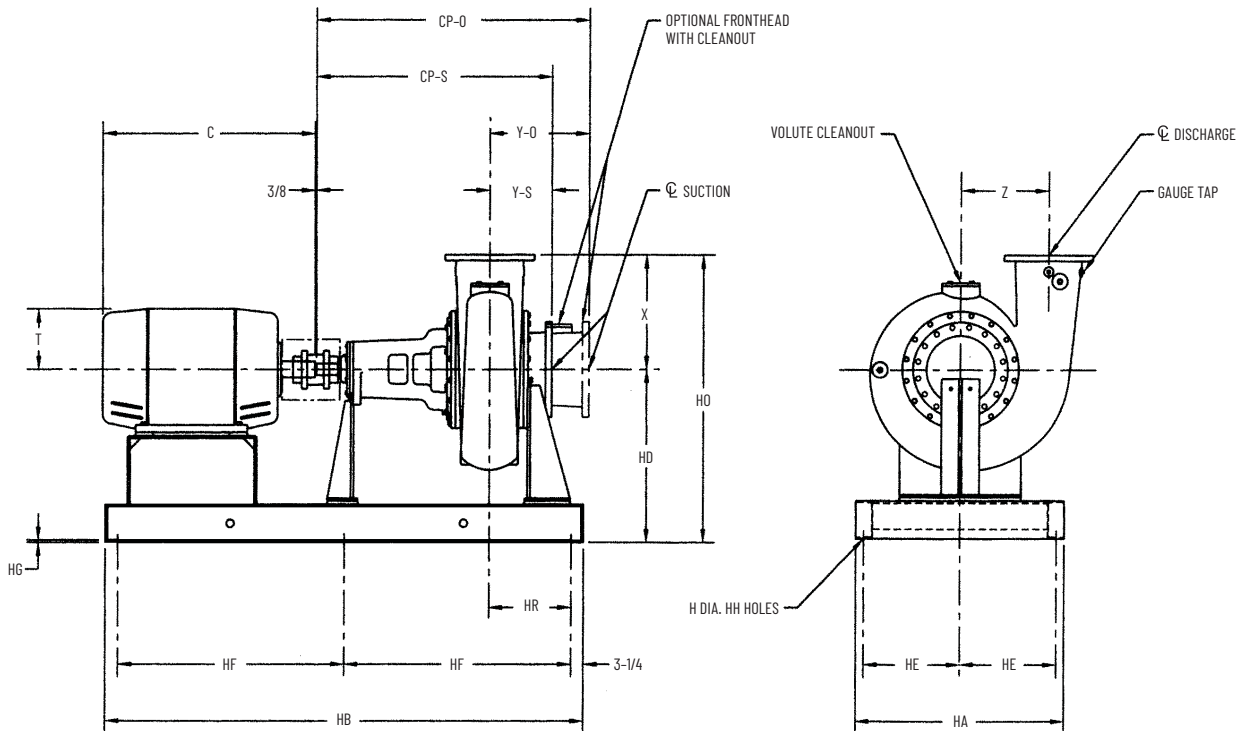
Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN 2424

MOTOR DIMENSIONS	
C	T



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



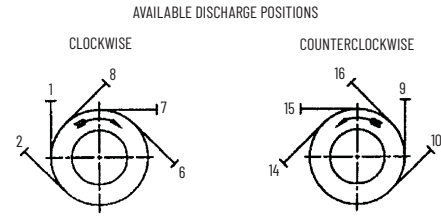
PUMP	SUCTION	DISCHARGE	X	Y-S	Y-0	Z	CP-S	CP-0	HD	HO	HR	H	HA	HB	HE	HF	HG	HH
12" 2424	14	12	22-1/2	12-3/4	23-3/4	17-3/8	51-5/16	62-5/16	36-3/8	58-7/8	16	CONSULT FACTORY						
16" 2424	18	16	30	16-3/8	26-1/8	23-1/8	62	71-3/4	46	76	18							
20" 2424	24	20	37-1/2	20-1/2	30-1/2	28-7/8	78-1/8	88-1/8	54-1/2	92	26							

**NOTES:**

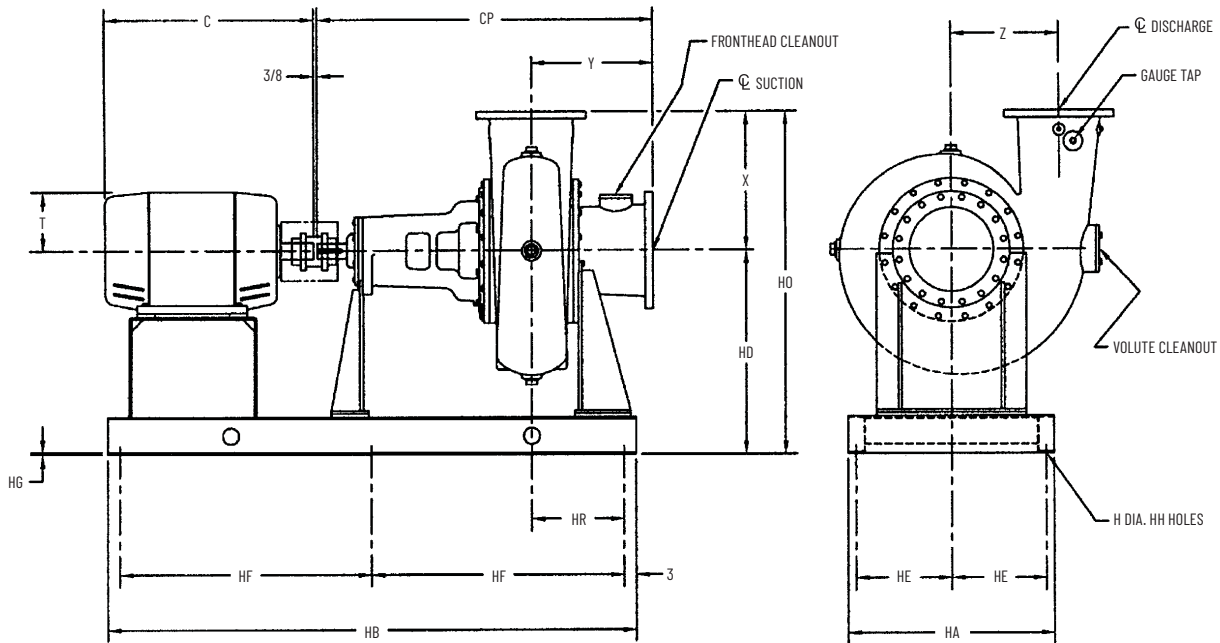
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Bases are designed to be completely filled with grout.
- Suction gauge connections are not available and should be located on adjacent suction piping.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN 2426

MOTOR DIMENSIONS	
C	T



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



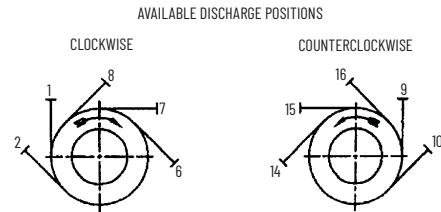
PUMP	SUCTION	DISCHARGE	X	Y	Z	CP	HD	HO	HR	H	HA	HB	HE	HF	HG	HH
12C2426	14	12	24	25-3/4	19-1/2	71	36	60	17	11/16	RTF					
16C2426	RTF															
20C2426	RTF															

**NOTES:**

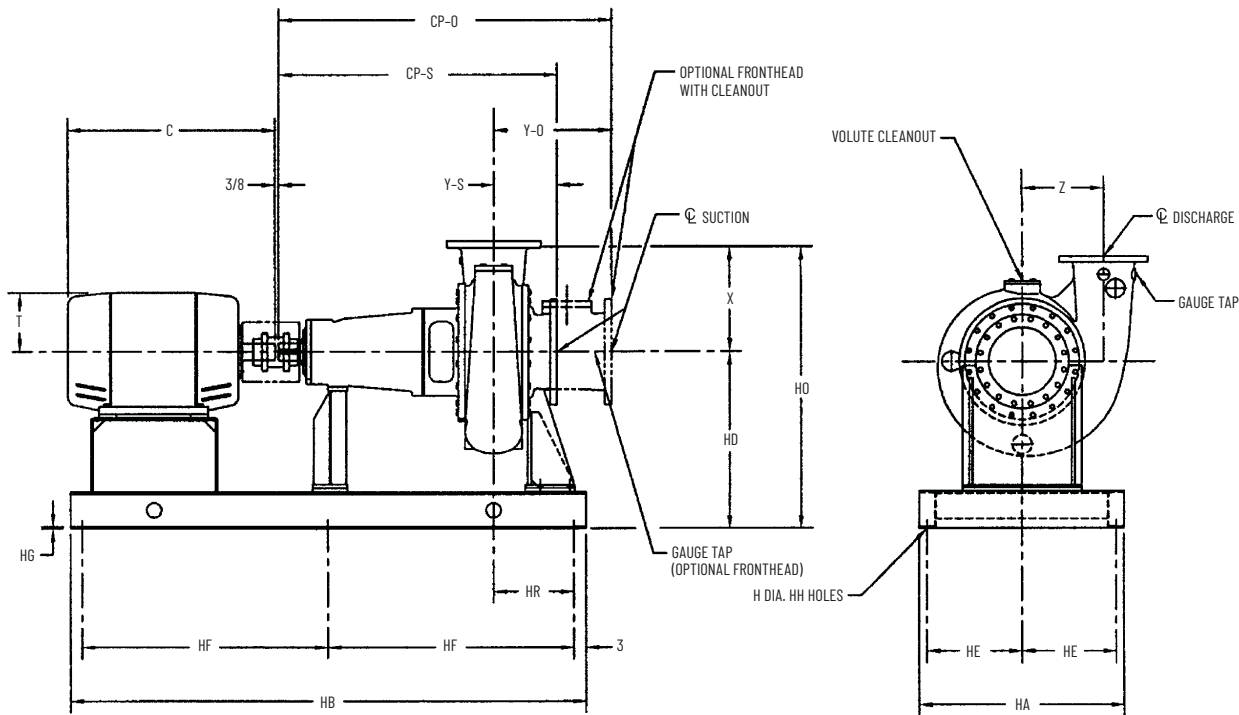
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Bases are designed to be completely filled with grout.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN 12" E2424 & 12" E2425

MOTOR DIMENSIONS	
C	T



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



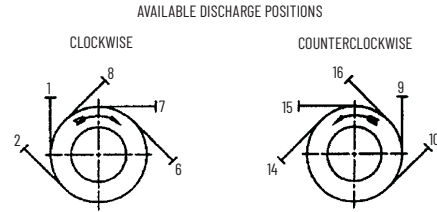
PUMP	SUCTION	DISCHARGE	X	Y-0	Y-S	Z	CP-0	CP-S	HD	HO	HR	H	HA	HB	HE	HF	HG	HH
12" E2424	14	12	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	36-3/8	58-7/8	16	CONSULT FACTORY						
12" E2425	14	12	22-1/2	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	36-3/8	58-7/8	16							

**NOTES:**

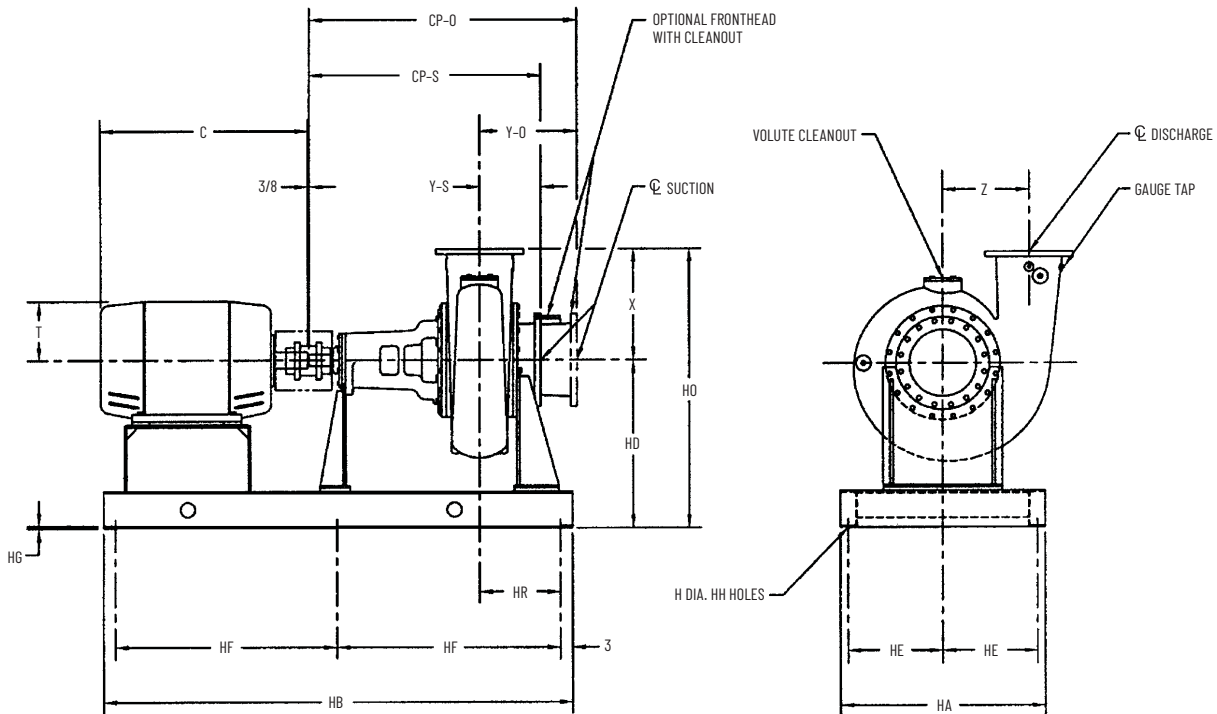
- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Bases are designed to be completely filled with grout.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN 12C2425

MOTOR DIMENSIONS	
C	T



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



PUMP	SUCTION	DISCHARGE	X	Y-0	Y-S	Z	CP-0	CP-S	HD	HO	HR	H	HA	HB	HE	HF	HG	HH
12C2425	14	12	22-1/2	23-3/4	12-3/4	17-3/8	62-5/16	51-5/16	36-3/8	58-7/8	16	CONSULT FACTORY						

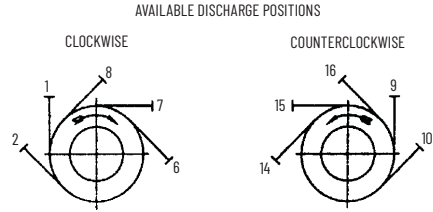
**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Bases are designed to be completely filled with grout.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

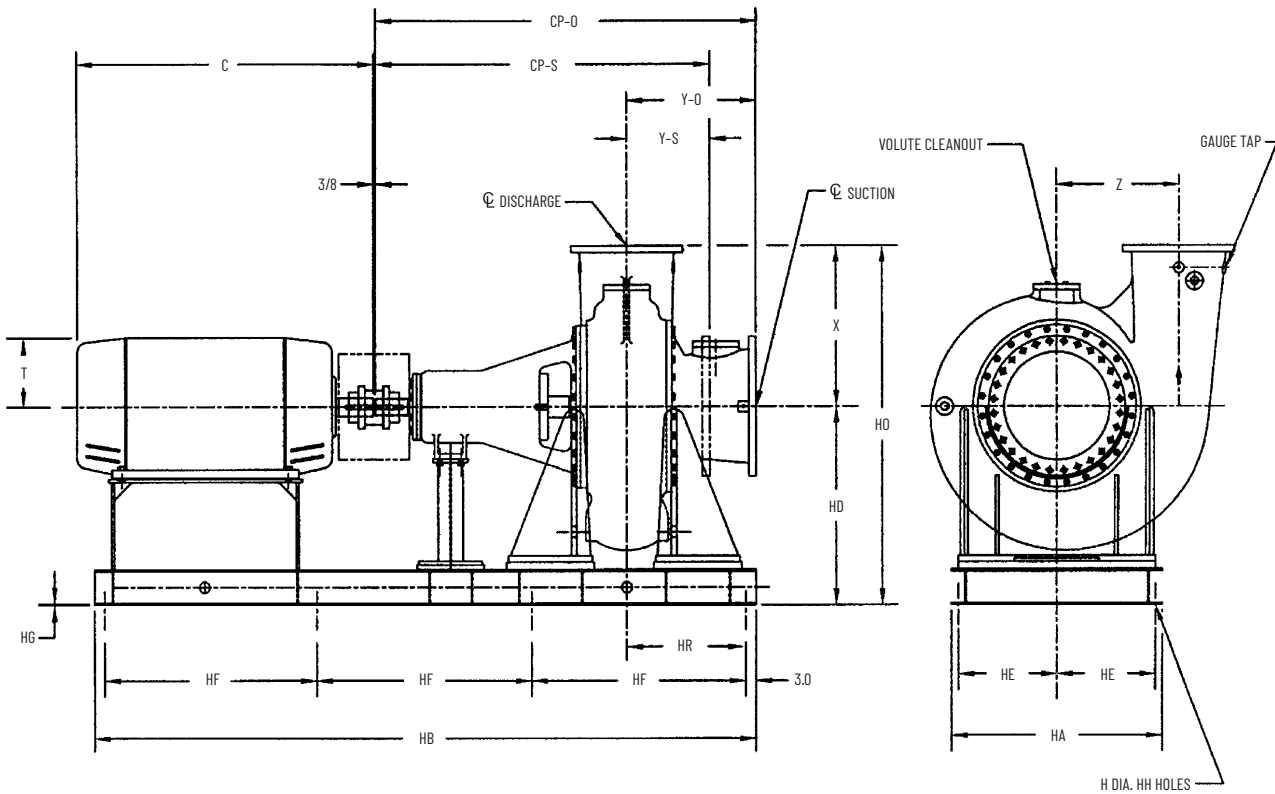


# Dimensional Data – SETTING PLAN 24C2424

MOTOR DIMENSIONS	
C	T



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.



PUMP	SUCTION	DISCHARGE	X	Y-0	Y-S	Z	CP-0	CP-S	HD	HO	HR	H	HA	HB	HE	HF	HG	HH
24C2424	30	24	45	36-13/16	RTF	34-11/16	108	RTF	55-1/4	100-1/4	33-1/4				RTF			

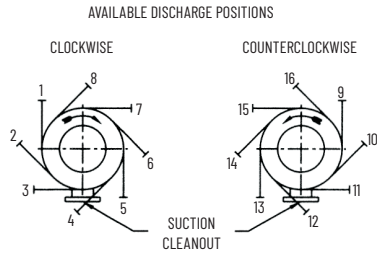
**NOTES:**

All flanges are 125# ANSI drilling unless noted.  
 All dimensions are in inches unless noted.  
 Not for construction, installation, or application purposes unless certified.  
 Dimensions shown may vary due to normal manufacturing tolerances.

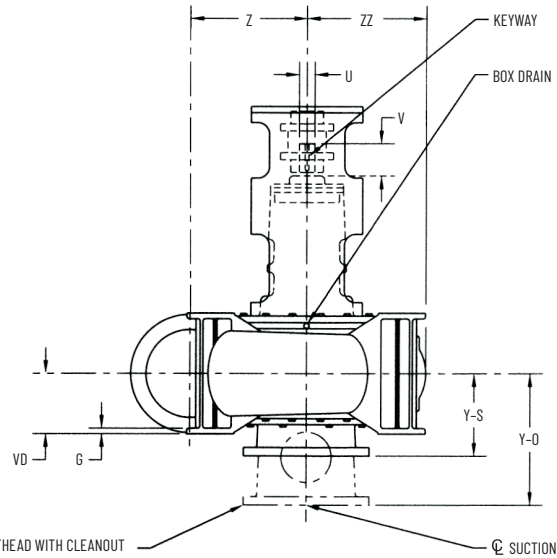
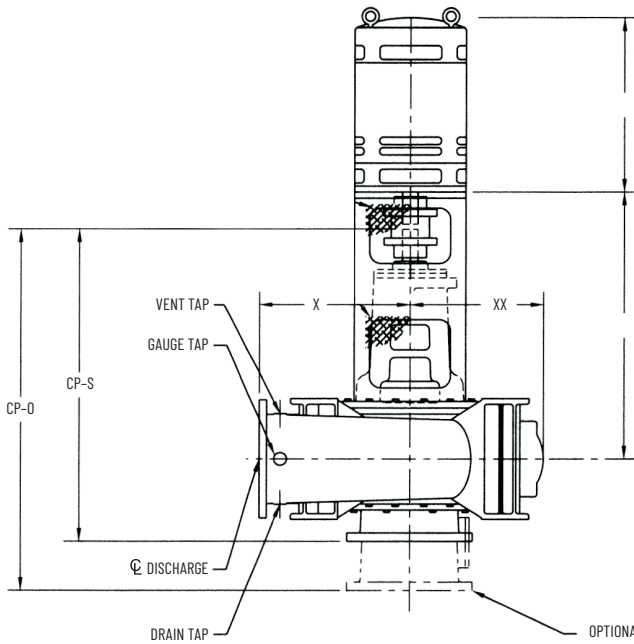
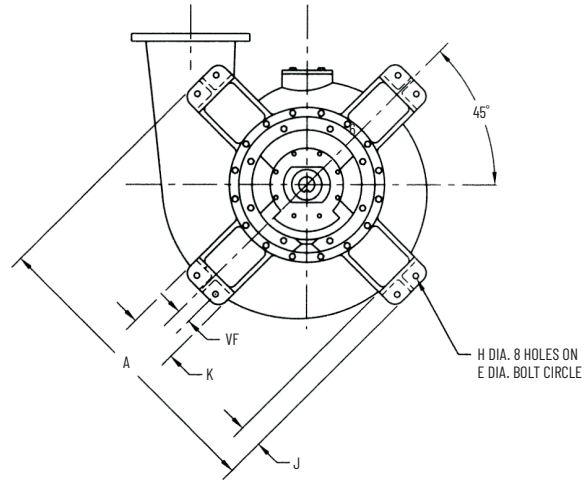
# Typical Specifications – 2440 HORIZONTAL DRY-PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

	<b>2444 (1)</b>		
Pump Size (Discharge Size)	12	16	20
Suction Size	14	18	24
<b>Nominal Wear Ring Clearance:</b>			
Radial Rings (standard)	.040	.058	.064
"L" shape rings (optional)	.025	.030	.030
<b>Impeller Fastener:</b>			
Size	1/2–13	3/4–16	1–14
Tightening Torque (lb-ft)	35	60	130
<b>Impeller:</b>			
Weight (lbs.)	165	350	745
Inlet Area (sq. inches)	153.94	263.40	427.32
WR <sup>2</sup> (lb-ft <sup>2</sup> )	42.2	154.0	486.0
Sphere Size, Maximum	4	5.25	6.60
<b>Shaft Diameter:</b>			
at Impeller	3	4.50	5.50
at Sleeve	4.50	5.50	6.50
at Thrust Bearing	4.33	4.00	5.75
at Radial Bearing	4.72	5.51	6.49
between Bearings	5.375	6	7.50
at Coupling	2.375	3.125	3.675
Torsional Shaft Stiffness (in.-lbs./radian)	6.3x10 <sup>6</sup>	7.00x10 <sup>6</sup>	1.57x10 <sup>7</sup>
Center to Center of Bearings	14-1/4	16-19/32	22-1/16
Thrust Bearing No.	7322	217TS	322TS
Radial Bearing No.	23024	23128	22234
<b>Sealing Box:</b>			
Packing:			
Size	3/4	3/4	3/4
No. Rings per Box	5	5	5
Seal Cage Width	1-1/2	1-1/2	1-1/2
Mechanical Seal:			
Type (Standard)	Double	Double	Double
Recommended Flush Water:			
Pressure	(2)	(2)	(2)
Flow (GPM)	1/2–1	1/2–1	1/2–1
Sleeve OD	4-7/8	6	7
Box ID	6-7/16	7-9/16	8-9/16
Box Depth	5-1/2	5-1/2	5-1/2
Box Inlet Tap Size (NPT)	1/4	1/4	1/4
Box Outlet Tap Size (NPT) (mechanical seal only)	1/4	1/4	1/4
Backhead Drain Tap size (NPT)	3/4–14	3/4–14	3/4–14
Volute Cleanout Diameter	4-1/2	6	8
Fronthead Cleanout Diameter (optional)	6	6	8
Vent/Priming Tap Size (NPT)	1	1	1
Volute Drain Tap Size (NPT)	1	1	1
<b>Gauge Tap Size:</b>			
Suction & Discharge (NPT)	1/2	1/2	1/2
Hydrostatic Test, PSI (3)	130	130	130
Casing Working, PSI (3)	85	85	85
Nominal Casing Thickness	11/16	7/8	1-1/8
Operating Temperature °F (3)	150	150	150
Anchor Bolt Size, recommended	5/8	7/8	1-1/8
Minimum Diameter Round Opening to Install Pump	60	80	100
Shipping Weight, Basic Pump Only (lbs.)	3020	4700	9380

# Dimensional Data – SETTING PLAN DIMENSIONS 2444



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



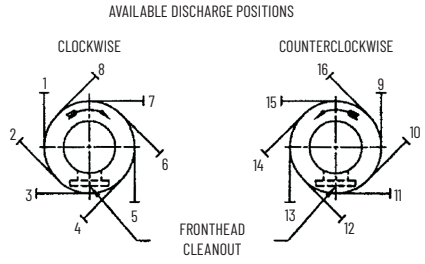
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12" 2444	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2
16" 2444	18	16	59-1/2	56-1/2	1-1/8	1-1/8	4-1/2	10	3-1/8	6	30
20" 2444	24	20	74-3/8	70-5/8	1-3/8	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	37-1/2

PUMP	Y-S	Y-0	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12" 2444	12-3/4	23-3/4	17-3/8	51-5/16	62-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4
16" 2444	16-3/8	26-1/8	23-1/8	62	71-3/4	12	2-5/8	27	24-1/8	3/4 X 3/8 X 5-1/8
20" 2444	20-1/2	30-1/2	28-7/8	78-1/8	88-1/8	15	3-1/4	34	30	1 X 1/2 X 6-5/8

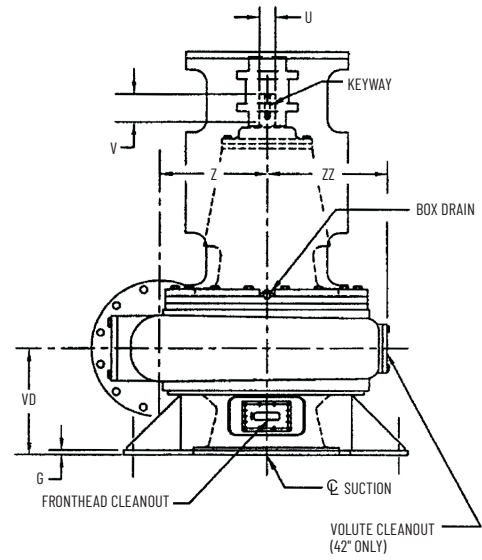
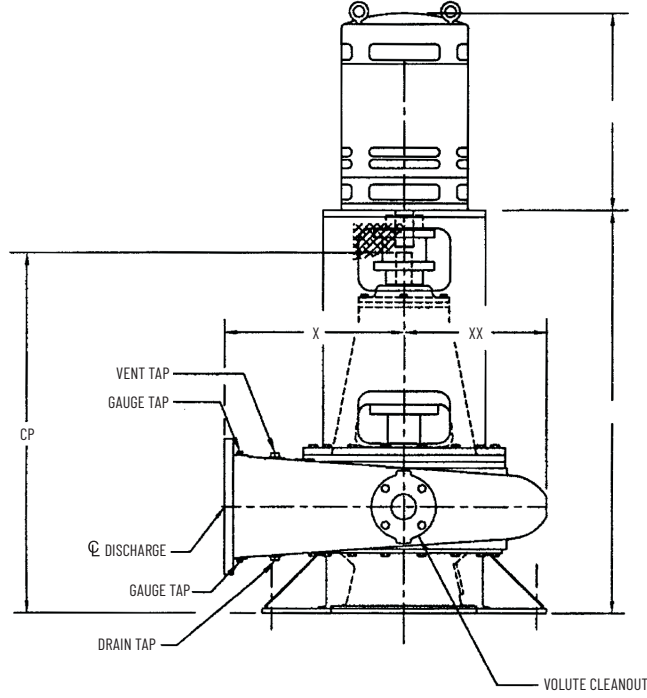
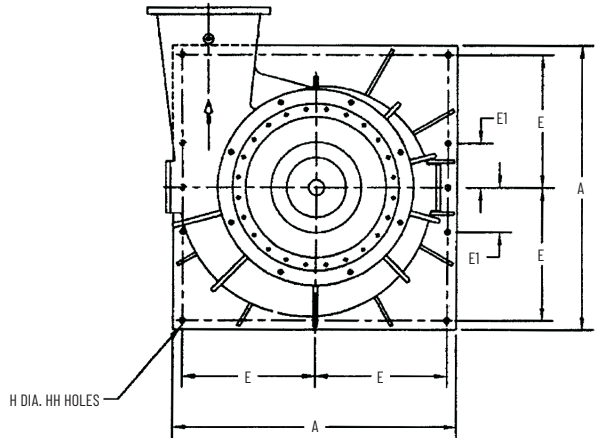
## NOTES:

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN DIMENSIONS 30" & 42" 2444



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. COUNTERCLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN.

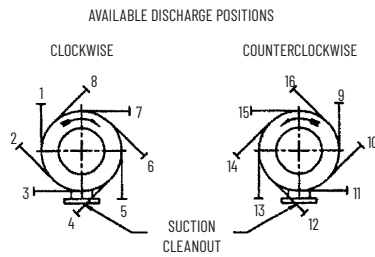


PUMP	SUCTION	DISCHARGE	A	E	E1	G	H	HH	U	V	X	Z	CP	VD	XX	ZZ	KEYWAY
30" 2444	36	30	90	42	12	1-1/2	1-3/4	8	5	8-7/8	57	33-3/4	114	33-3/4	45	40	1-1/4 X 5/8 X 8
42" 2444	48	42	96	45	15	2	2-3/4	8	9-1/2	13-1/2	78	48-1/2	131-7/8	42	64-3/4	58	2-1/2 X 1-1/4 X 11

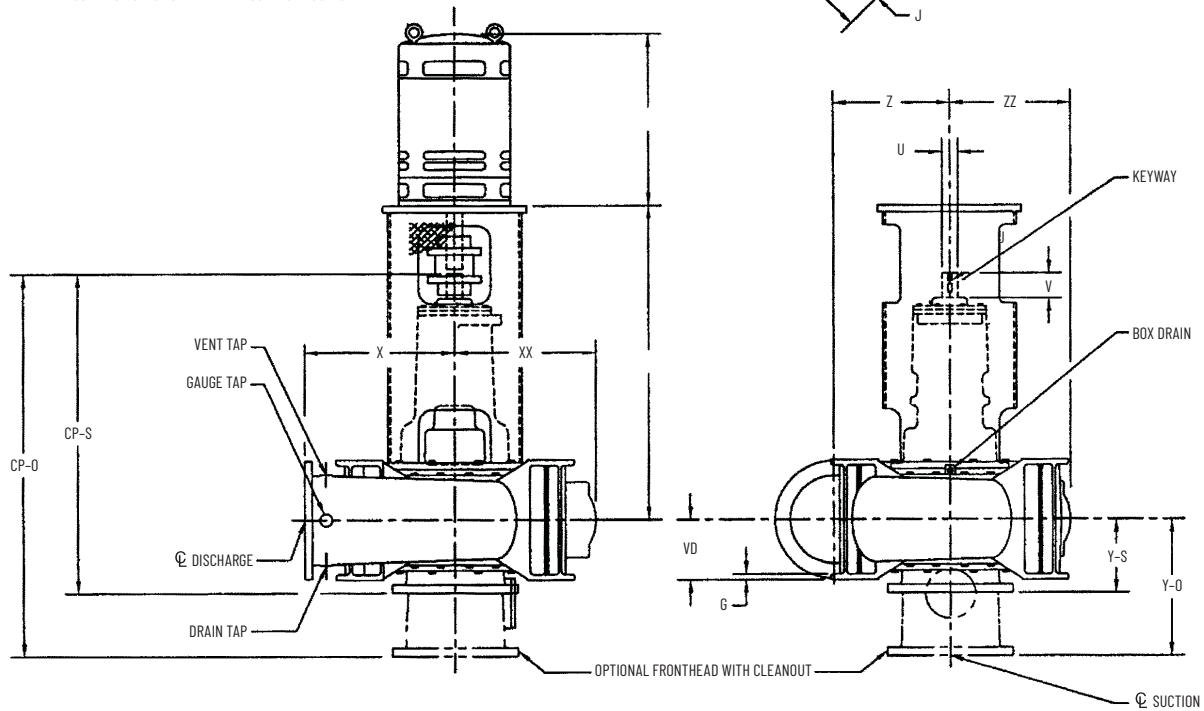
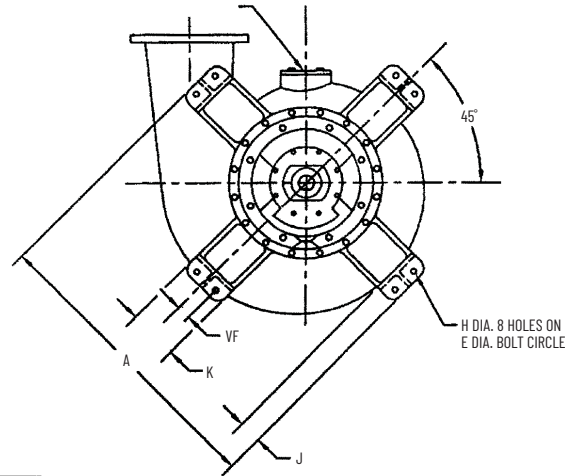
**NOTES:**

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN DIMENSIONS 12" E2444 & 12" E2445



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



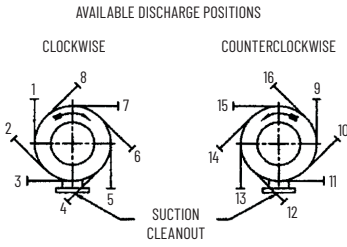
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12" E2444	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2
12" E2445	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	3-1/2	4-3/4	22-1/2

PUMP	Y-O	Y-S	Z	CP-O	CP-S	VD	VF	XX	ZZ	KEYWAY
12" E2444	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2
12" E2445	23-3/4	12-3/4	17-3/8	67-1/8	56-1/8	9-1/2	2	20	18	7/8 X 7/16 X 3-1/2

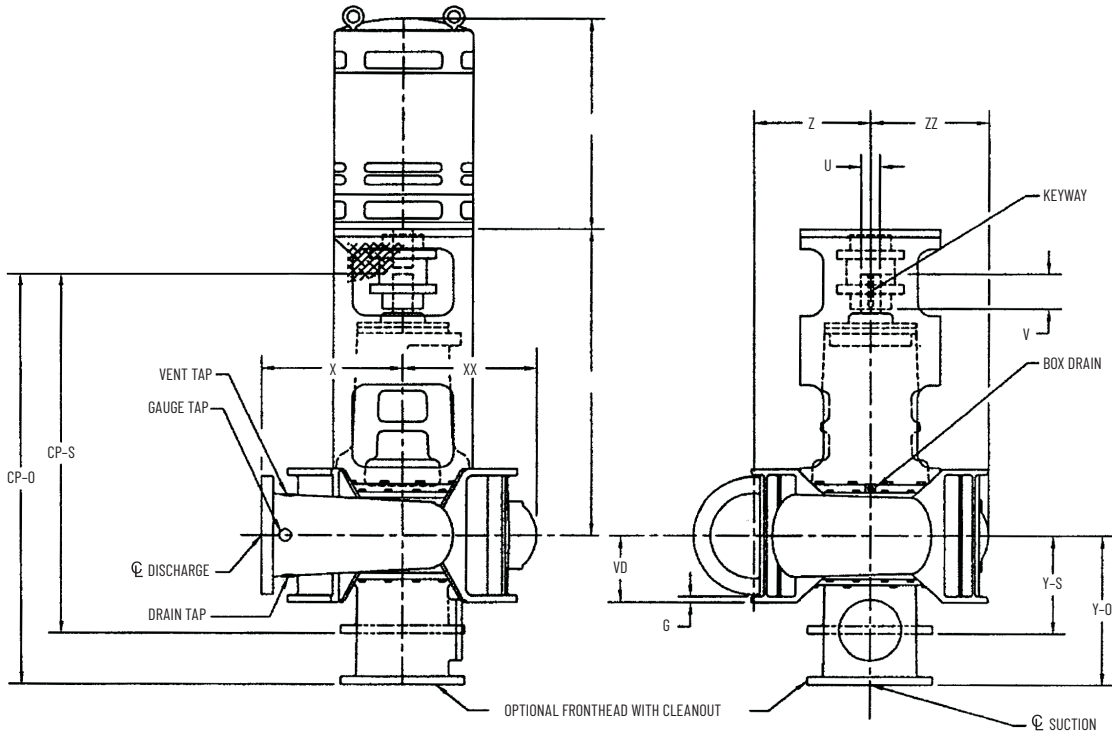
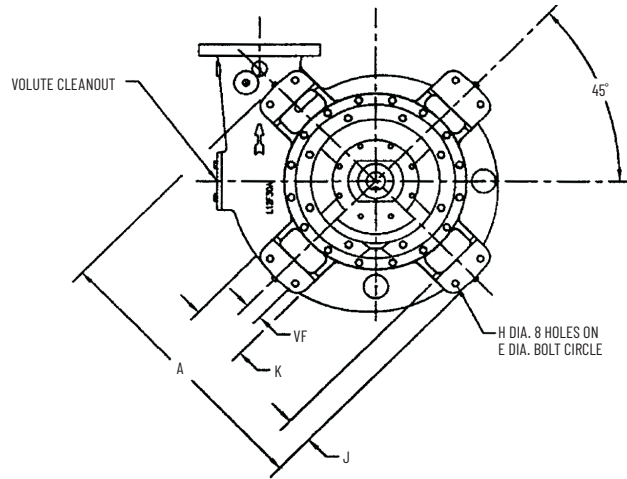
## NOTES:

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN DIMENSIONS 2446



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



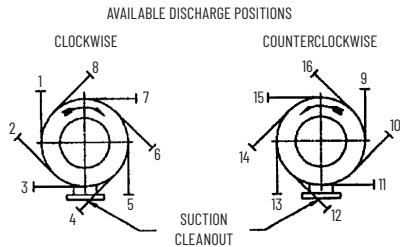
PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12" C2446	14	12	47-1/2	44-1/2	1-1/8	1-1/8	5-3/4	10	3-1/8	6	24
16" C2446	20	16	65-1/4	59-3/8	1-1/4	1-3/8	5-5/8	12-1/2	3-7/8	7-1/2	32
20" C2446	RTF										

PUMP	Y-O	Y-S	Z	CP-O	CP-S	VD	VF	XX	ZZ	KEYWAY
12" C2446	25-3/4	16-7/8	19-1/2	71	62-1/8	11-1/2	3	22-3/4	20-3/4	3/4 X 3/8 X 5
16" C2446	27	RTF	26	84	RTF	13-3/8	3-1/4	30	37-1/2	1 X 1/2 X 6-1/2
20" C2446	RTF									

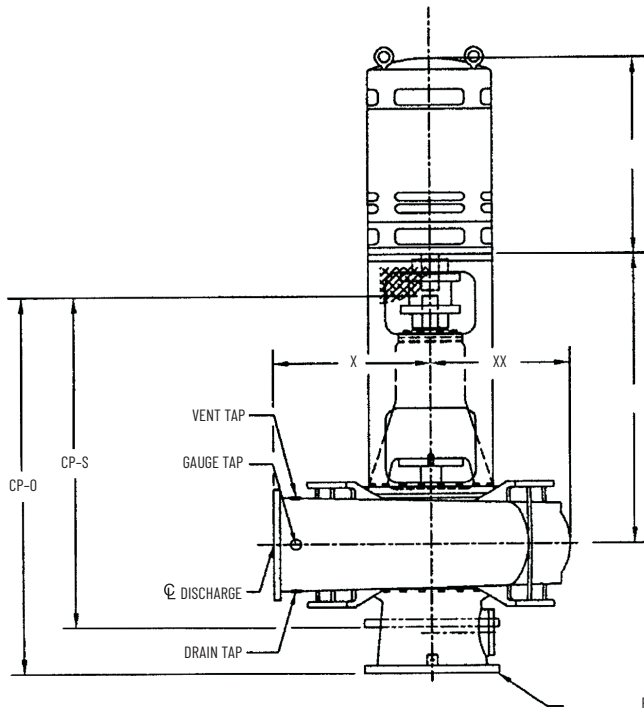
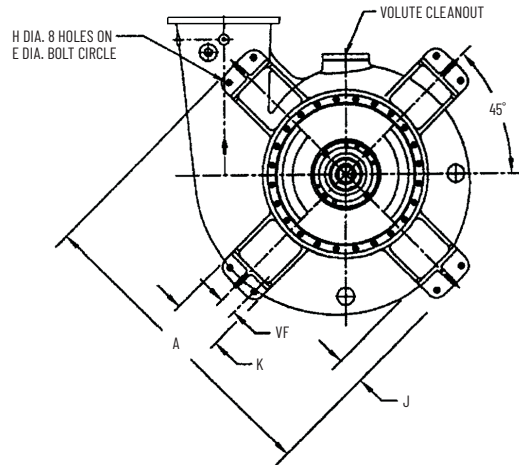
## NOTES:

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.

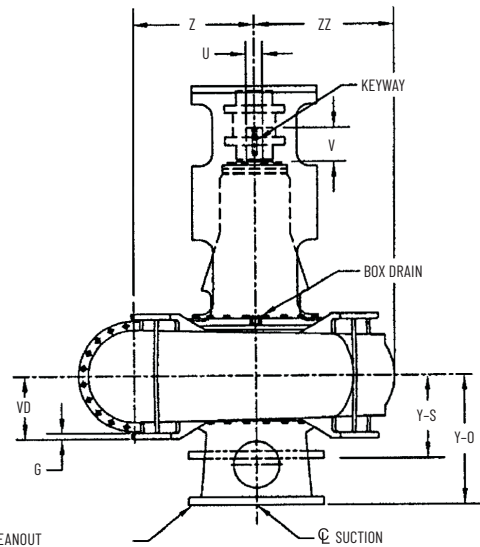
# Dimensional Data – SETTING PLAN DIMENSIONS 24C2444



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



FRONTHEAD WITH CLEANOUT



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
24C2444	30	24	89-1/4	84-3/4	1-5/8	1-5/8	6-3/4	15	4-9/16	9-1/8	45

PUMP	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
24C2444	36-13/16	RTF	34-11/16	108	RTF	18	5	41	36	1-1/4 X 5/8 X 7-3/8

## NOTES:

All flanges are 125# ANSI drilling unless noted.

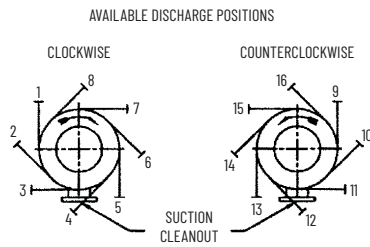
All dimensions are in inches unless noted.

Dimensions reflect usable shaft length.

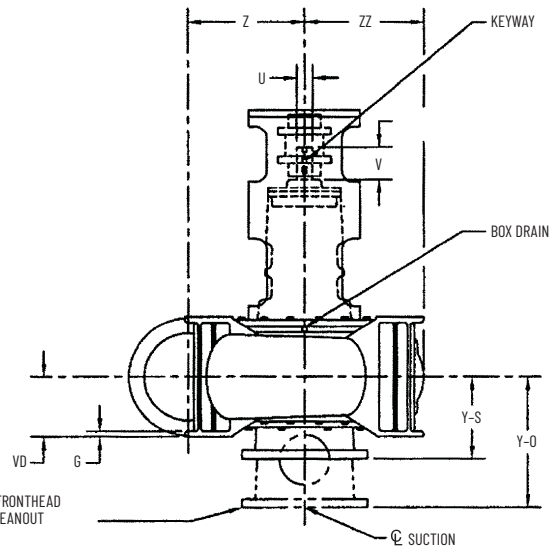
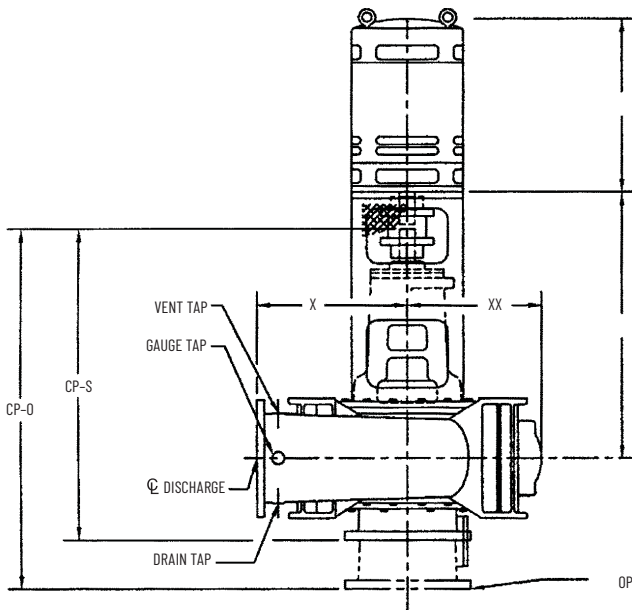
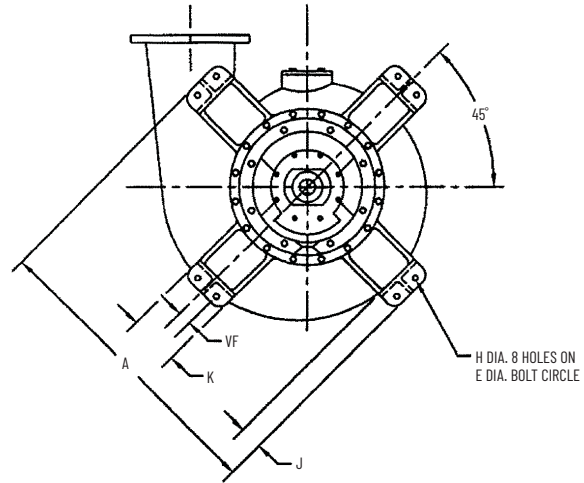
Not for construction, installation, or application purposes unless certified.

Dimensions shown may vary due to normal manufacturing tolerances.

# Dimensional Data – SETTING PLAN DIMENSIONS 12C2445



POSITIONS #1 OR #9 ARE STANDARD WHEN VIEWED FROM THE DRIVER END UNLESS OTHERWISE SPECIFIED. CLOCKWISE ROTATION DISCHARGE POSITION #1 SHOWN. MOUNTING HOLES ROTATE WITH DISCHARGE POSITION.



PUMP	SUCTION	DISCHARGE	A	E	G	H	J	K	U	V	X
12C2445	14	12	44-5/8	42-3/8	7/8	7/8	3-5/16	7-1/2	2-3/8	4-3/4	22-1/2

PUMP	Y-0	Y-S	Z	CP-0	CP-S	VD	VF	XX	ZZ	KEYWAY
12C2445	23-3/4	12-3/4	17-3/8	62-5/16	51-5/16	9-1/2	2	21	18-1/8	5/8 X 5/16 X 4

## NOTES:

- All flanges are 125# ANSI drilling unless noted.
- All dimensions are in inches unless noted.
- Dimensions reflect usable shaft length.
- Bases are designed to have full contact with grout or a sole plate grouted in place.
- Not for construction, installation, or application purposes unless certified.
- Dimensions shown may vary due to normal manufacturing tolerances.



# Typical Specifications – SOLIDS–HANDLING PUMPS TECHNICAL DATA

Pump Model	2414 (1)						2415			2416	
Pump Size (Discharge Size)	12	16	20	24	30	42	12	16	20	12	16
Suction Size	14	18	24	30	36	48	14	18	24	14	20
Nominal Wear Ring Clearance (axial)	.030	.030	.030	.030	.030	.050	.030	.030	.030	.030	.030
<b>Impeller Fastener:</b>											
Grade 8 Hardware/Size	1/2–13	3/4–16	1–14	1-1/4–12	1–8	1-1/4–7	1/2–13	3/4–16	1–14	3/4–16	1–14
Tightening Torque (lb.-ft)	60	225	500	1000	450	900	60	225	500	225	500
<b>Impeller:</b>											
Weight (lbs.)	165	350	745	1585	2900	4000	210	280	850	330 (4)	440 (5)
Inlet Area (sq. inches)	153.94	263.40	427.32	726	810	1833	186	331	518	204 (4)	272 (5)
WR <sup>2</sup> (lb-ft <sup>2</sup> )	42.2	154.0	486.0	1758	4950	13330	95.5	249	940	190 (4)	493 (5)
Sphere Size, Maximum	4	5.25	6.60	8	7.25	10.5	4	5.25	6.60	4.25 (4)	5.7 (5)
<b>Shaft Diameter:</b>											
at Impeller	3	4.50	5.50	5.50	6.50	10.48	4.12	4.50	5.50	4.25	5.50
at Sleeve	4.50	5.50	6.50	5.50	6.50	N/A	4.12	5.50	6.50	5.50	6.50
at Thrust Bearing	4.33	4.00	5.75	5.75	7.50	10.24	4.00	4.00	5.75	4.00	5.75
at Radial Bearing	4.72	5.51	6.69	5.91	8.66	12.60	4.73	5.51	6.69	5.50	6.69
between Bearings	5.375	6	7.50	7.12	10.25	13.50	5.19	6	7.50	6	7.50
at Coupling	2.375	3.125	3.875	4.562	5.000	9.45	3.50	3.125	3.875	3.125	3.875
Torsional Shaft Stiffness (in.-lbs./rad.)	6.3x10 <sup>6</sup>	7.00x10 <sup>6</sup>	1.57x10 <sup>7</sup>	6.13x10 <sup>6</sup>	2.04x10 <sup>7</sup>	3.33x10 <sup>8</sup>	9.2x10 <sup>6</sup>	7.00x10 <sup>6</sup>	1.57x10 <sup>7</sup>	7.00x10 <sup>6</sup>	1.57x10 <sup>7</sup>
Center to Center of Bearings	14-1/4	16-19/32	22-1/16	32	35-9/16	36	18-7/8	18-19/32	22-1/16	17.60	27.10
Thrust Bearing No.	7322	217TS	322TS	TSS-TS	TS-TSS	29360	98400	217TS	322TS	217TS	322TS
Radial Bearing No.	23024	23128	22234	22230	23044	23064	23024	23128	22234	23128	22234
<b>Sealing Box:</b>											
Packing:											
Size	3/4	3/4	3/4	1	1	1	5/8	3/4	3/4	3/4	3/4
No. Rings per Box	5	5	5	6	5	5	5	5	5	5	5
Seal Cage Width	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
Mechanical Seal:											
Type (Standard)	Double	Double	Double	Double	Double	Double	Double	Double	Double	Double	Double
Recommended Flush Water:											
Pressure	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Flow (GPM)	1/2–1	1/2–1	1/2–1	1/2–1	1/2–1	1/2–1	1/2–1	1/2–1	1/2–1	1/2–1	1/2–1
Sleeve OD	4-7/8	6	7	6-1/2	7-1/2	15-1/4	4-1/2	6	7	6	7
Box ID	6-7/16	7-9/16	8-9/16	8-1/2	9-1/2	17-1/4	5-3/4	7-9/16	8-9/16	7-9/16	8-9/16
Box Depth	5-1/2	5-1/2	5-1/2	8-3/4	8	8-1/2	5	5-1/2	5-1/2	5-1/2	5-1/2
Box Inlet Tap Size (NPT)	1/4	1/4	1/4	3/8	1/4	1/2	1/4	1/4	1/4	1/4	1/4
Box Outlet Tap Size (NPT) (mechanical seal only)	1/4	1/4	1/4	3/8	1/4	1/2	1/4	1/4	1/4	1/4	1/4
Backhead Drain Tap Size (NPT)	3/4–14	3/4–14	3/4–14	3/8	3/4	1	3/4	3/4–14	3/4–14	3/4–14	3/4–14
Volute Cleanout Diameter	4-1/2	6	8	9-1/2	8	14&16	4-1/2	6	8	6	8
Fronthead Cleanout Diameter (optional)	6	6	8	9-1/2	8	6x14	6	6	8	6	8
Vent/Priming Tap Size (NPT)	1	1	1	2	1	2	1	1	1	1	1
Volute Drain Tap Size (NPT)	1	1	1	2	1	2	1	1	1	1	1
<b>Gauge Tap Size</b>											
Suction & Discharge (NPT)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Hydrostatic Test, PSI (3)	130	130	130	130	130	130	160	130	130	200	200
Casing Working, PSI (3)	85	85	85	85	85	85	110	85	85	126	126
Nominal Casing Thickness	11/16	7/8	1-1/8	1-1/2	1-3/8	1-7/8	11/16	7/8	1-1/8	1-1/4	1-5/8
Operating Temperature °F (3)	150	150	150	150	150	120	150	150	150	150	150
Anchor Bolt Size, recommended	5/8	7/8	1-1/8	1-3/8	1-1/2	RTF	5/8	7/8	1-1/8	7/8	1-1/8
Minimum Diameter Round Opening to Install Pump	60	80	100	120	RTF	RTF	60	80	100	65	90
2410 Shipping Weight, Basic Pump Only (lbs.)	2720	4380	8790	12000	19000	54000	2720	4380	8790	6500	8650
2420 Shipping Weight, Basic Pump Only (lbs.)	2870	4550	9320	12720	20140	58300	2870	4550	9320	6950	9250
2440 Shipping Weight, Basic Pump Only (lbs.)	3020	4700	9380	13200	21100	59940	3020	4700	9380	7200	9600

# Technical Data

<b>Model 2414</b>	
Type	Vertical, single-stage, non-clog radial flow impeller, dry pit
Rotation	CW or CCW as viewed looking down on pump, specify on order
Volute	Single, one-piece volute with hand hole; integral pads for direct mounting*
Impeller	3-vane single suction, Francis-vane, enclosed, solids handling; with wearing ring
Fronthead	Separate one piece casting, flanged; with wearing ring
	External flushing wear ring (optional)
	Hand hole cleanout (optional)
Backhead	Separate one-piece casting with integrally cast stuffing box
Pump Shaft	Accurately machined over entire length, for straight impeller bore; with key and contoured impeller capscrew
Shaft Sleeve	Straight type, positive adhesive sealed to prevent leakage between sleeve and shaft
Stuffing Box	Packing, injection tap
	Water seal ring (optional)
	Mechanical seal, double type, one-piece gland (optional)
Gland	2-bolt, 2-piece interlocking
Bearing frame	Separate thrust, Brg. Hsg. w/cover; integrally cast radial Brg. Hsg. w/cover
Bearing, Thrust 12"	Angular contact duplex mounted ball; grease lubricated
Bearings, Thrust 16", 20"	Tapered roller and deep groove ball; grease lubricated
Bearing, Radial	Spherical roller, self-aligning, grease lubricated
Auxiliary Connections	Stuffing box drain connection
	Volute priming/vent and drain connections
	Wearing ring flush connection (optional)
	Suction and discharge gauge connections
Coupling	Flexible coupling universal joint or solid drive type shafting (optional)
Base Mounted	Elevated to accommodate front head only (suction piping below foundation) (optional)
	Elevated to accommodate front head and suction elbow (suction piping above foundation) (optional)
Wearing Rings	Radial type
	Radial type for external flushing (optional)
	L shape (optional)
	L shape for external flushing (optional)

\*Pump Mounting Adapter may be required for some suction positions.

# Technical Data – SOLIDS–HANDLING PUMPS TECHNICAL DATA

<b>12" – 2414 Standard Fitted Pump</b>		
Description	Material	Specification (1)
Impeller	Cast iron	A48, CL30
Shaft, pump	Steel	A322-GR 4140 MOD
Ring half, seal water	Bronze	B584 AL 836
Sleeve, shaft	Stainless steel	A743-CA-15 (3)
Wearing ring, fronthead	Stainless steel	A743-CA-15 (3)
Wearing ring, impeller	Stainless steel	A743-CA-15 (2)
Gland half, interlocking	Cast iron	A48, CL30
Volute	Cast iron	A48, CL30
Fronthead	Cast iron	A48, CL30
Backhead	Cast iron	A48, CL30
Frame, bearing	Cast iron	A48, CL30
Key, impeller	Steel	A108 GR 1018
Deflector	Rubber	Buna-N
Lip seal	Steel & rubber	Commercial
Cover, radial bearing housing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
O-ring, volute	Rubber	Buna-N
Housing, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Cover, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Locknut, bearing	Steel	Commercial
Lockwasher, bearing	Steel	Commercial
Bearing, radial	Steel	Commercial
Bearing, thrust	Steel	Commercial
Cover, volute hand hole	Cast iron	A48, CL30
Gasket, volute hand hole cover	Rubber	–
Packing	Synthetic, graphite impregnated	Commercial
Key, coupling	Steel	A108 GR 1018
Cap, impeller	Cast Iron	A48, CL30
Capscrew, impeller	Steel	SAE J429 GR-8
<b>Options to Basic Pumps</b>		
Impeller	Bronze	B584 AL 836
Impeller	Cast iron/3% Ni	A48, CL30 MOD
Sleeve, shaft	Stainless steel	A743 GR CA-40 MOD (4)
Base (not shown)	Steel	A283 GR-D
Wearing ring, front head	Stainless steel	A743 GR CA-40 MOD (4)

# Technical Data – SOLIDS–HANDLING PUMPS TECHNICAL DATA

<b>12" – 2414 Standard Fitted Pump Options to Basic Pumps</b>		
Description	Material	Specification (1)
Wearing ring, Impeller	Stainless steel	A743-CA-15 (3)
Gland half, interlocking	Bronze	B584 AL 836
Gland, solid (mechanical seal)	Steel	A283 GR-D
Shim, impeller adjusting	Steel	AISI 1010
Cover front head hand hole	Cast iron	A48, CL30
Gasket, front head hand hole cover	Rubber	–
Seal, mechanical	–	(5)

**NOTES:**

1. All Material Specifications are ASTM, unless otherwise noted, and are for description
2. 190 to 241 Brinell Hardness
3. 300 to 350 Brinell Hardness
4. 450 to 484 Brinell Hardness
5. Manufacturer's option

# Technical Data – SOLIDS–HANDLING PUMPS TECHNICAL DATA

16" and 20" – 2414 Standard Fitted Pumps		
Description	Material	Specification (1)
Impeller	Cast iron	A48, CL30
Shaft, pump	Steel	A322-GR 4140 MOD
Ring half, seal water	Bronze	B584 AL 836
Sleeve, shaft	Stainless steel	A743-CA-15 (3)
Wearing ring, fronthead	Stainless steel	A743-CA-15 (3)
Wearing ring, impeller	Stainless steel	A743-CA-15 (2)
Gland half, interlocking	Cast iron	A48, CL30
Volute	Cast iron	A48, CL30
Fronthead	Cast iron	A48, CL30
Backhead	Cast iron	A48, CL30
Frame, bearing	Cast iron	A48, CL30
Key, Impeller	Steel	A108 GR 1018
Deflector	Rubber	Buna-N
Lip seal	Steel & rubber	Commercial
Cover, radial bearing housing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
O-ring, volute	Rubber	Buna-N
Housing, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Cover, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Locknut, bearing	Steel	Commercial
Lockwasher, bearing	Steel	Commercial
Washer, keyed	Steel	Commercial
Bearing, radial	Steel	Commercial
Bearing, thrust (inner)	Steel	Commercial
Bearing, thrust (outer)	Steel	Commercial
Shim, bearing adjusting	Steel	AISI 1010
Cover, volute hand hole	Cast iron	A48, CL30
Gasket, volute hand hole cover	Rubber	–
Packing	Synthetic, graphite impregnated	Commercial
Key, coupling	Steel	A108 GR 1018
Cap, impeller	Cast iron	A48, CL30
Capscrew, impeller	Steel	SAE J429 GR-8

# Technical Data – SOLIDS–HANDLING PUMPS TECHNICAL DATA

<b>16" and 20" – 2414 Standard Fitted Pump Options to Basic Pumps</b>		
Description	Material	Specification (1)
Impeller	Bronze	B584 AL 836
Impeller	Cast iron/3% Ni	A48, CL30 MOD
Sleeve, shaft	Stainless steel	A743-CA-40 MOD (4)
Base (not shown)	Steel	A283 GR-D
Wearing ring, front head	Stainless steel	A743-CA-40 MOD (4)
Wearing ring, impeller	Stainless steel	A743-CA-15 (3)
Gland half, interlocking	Bronze	B584 AL 836
Gland, solid (mechanical seal)	Steel	A283 GR-D
Shim, impeller adjusting	Steel	AISI 1010
Cover front head hand hole	Cast iron	A48, CL30
Gasket, front head hand hole cover	Rubber	–
Seal, mechanical	–	(5)

#### NOTES:

1. All Material Specifications are ASTM, unless otherwise noted, and are for description
2. 190 to 241 Brinell Hardness
3. 300 to 350 Brinell Hardness
4. 450 to 484 Brinell Hardness
5. Manufacturer's option

# Technical Data

<b>Model 2424</b>	
Type	Horizontal, single-stage, non-clog radial flow impeller, dry-pit
Rotation	CW or CCW as viewed looking down on pump, specify on order
Volute	Single, one-piece volute with hand hole; fabricated pedestals for mounting to base
Nozzles	Flanged, end suction, side (tangential) discharge
Impeller	3-vane single suction, Francis-vane, enclosed, solids handling; with wearing ring
Fronthead	Separate one piece casting, flanged; with wearing ring
	External flushing wear ring (optional)
	Hand hole cleanout (optional)
Backhead	Separate one-piece casting with integrally cast stuffing box
Pump Shaft	Accurately machined over entire length, for straight impeller bore; with key and contoured impeller capscrew
Shaft Sleeve	Straight type, positive adhesive sealed to prevent leakage between sleeve and shaft
Stuffing Box	Packing, injection tap
	Water seal ring (optional)
	Mechanical seal, double type, one-piece gland (optional)
Gland	2-bolt, 2-piece interlocking
Bearing Frame	Separate thrust, Brg. Hsg. w/cover; integrally cast radial Brg. Hsg. w/cover
Bearing, Thrust 12"	Angular contact duplex mounted ball; grease lubricated
Bearings, Thrust 16", 20"	Tapered roller and deep groove ball; grease lubricated
Bearing, Radial	Spherical roller, self-aligning, grease lubricated
Auxiliary Connections	Stuffing box drain connection
	Volute priming/vent and drain connections
	Wearing ring flush connection (optional)
	Discharge gauge connections
Coupling	Flexible insert type
	Steelflex or gear type (optional)
Baseplate	Welded structural steel
Coupling Guard	One-piece, enclosed, base mounted
Wearing Rings	Radial type
	Radial type for external flushing (optional)
	L shape (optional)
	L shape for external flushing (optional)

# Technical Data – 2420 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

<b>12" – 2424 Standard Fitted Pump</b>		
Description	Material	Specification (1)
Impeller	Cast iron	A48, CL30
Shaft, pump	Steel	A322-GR 4140 MOD
Ring half, seal water	Bronze	B584 AL836
Sleeve, shaft	Stainless steel	A743-CA-15 (3)
Wearing ring, fronthead	Stainless steel	A743-CA-15 (3)
Wearing ring, impeller	Stainless steel	A743-CA-15 (2)
Gland half, interlocking	Cast iron	A48, CL30
Pedestal, frame	Steel	A283 GR-D
Pedestal, pump	Steel	A283 GR-D
Volute	Cast iron	A48, CL30
Fronthead	Cast iron	A48, CL30
Backhead	Cast iron	A48, CL30
Frame, bearing	Cast iron	A48, CL30
Key, impeller	Steel	A108 GR 1018
Deflector	Rubber	Buna-N
Lip seal	Steel & rubber	Commercial
Cover, radial bearing housing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
O-ring, volute	Rubber	Buna-N
Housing, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Cover, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Locknut, bearing	Steel	Commercial
Lockwasher, bearing	Steel	Commercial
Bearing, radial	Steel	Commercial
Bearing, thrust	Steel	Commercial
Cover, volute hand hole	Cast iron	A48, CL30
Gasket, volute hand hole cover	Rubber	–
Packing	Synthetic, graphite impregnated	Commercial
Key, coupling	Steel	A108 GR 1018
Cap, impeller	Cast iron	A48, CL30
Capscrew, impeller	Steel	SAE J429 GR-8
<b>Options to Basic Pumps</b>		
Impeller	Bronze	B584 AL836
Impeller	Cast iron/3% Ni	A48, CL30 MOD
Sleeve, shaft	Stainless steel	A743-CA-40 MOD (4)
Base (not shown)	Steel	A283 GR-D
Wearing ring, front head	Stainless steel	A743 GR CA-40 MOD (4)



# Technical Data – 2420 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

<b>12" – 2424 Standard Fitted Pump Options to Basic Pumps</b>		
Description	Material	Specification (1)
Wearing ring, impeller	Stainless Steel	A743-CA-15 (3)
Gland half, interlocking	Bronze	B584 AL836
Gland, solid (mechanical seal)	Steel	A283 GR-D
Shim, impeller adjusting	Steel	AISI 1010
Cover front head hand hole	Cast iron	A48, CL30
Gasket, front head hand hole cover	Rubber	–
Seal, mechanical	–	(5)

**NOTES:**

1. All Material Specifications are ASTM, unless otherwise noted, and are for description
2. 190 to 241 Brinell Hardness
3. 300 to 350 Brinell Hardness
4. 450 to 484 Brinell Hardness
5. Manufacturer's option

# Technical Data – 2420 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

16" and 20" – 2424 Standard Fitted Pumps		
Description	Material	Specification (1)
Impeller	Cast iron	A48, CL30
Shaft, pump	Steel	A322-GR 4140 MOD
Ring half, seal water	Bronze	B584 AL836
Sleeve, shaft	Stainless steel	A743-CA-15 (3)
Wearing ring, fronthead	Stainless steel	A743-CA-15 (3)
Wearing ring, impeller	Stainless steel	A743-CA-15 (2)
Gland half, interlocking	Cast iron	A48, CL30
Pedestal, frame	Steel	A283 GR-D
Pedestal	Pump	Steel
Volute	Cast iron	A48, CL30
Fronthead	Cast iron	A48, CL30
Backhead	Cast iron	A48, CL30
Frame, bearing	Cast iron	A48, CL30
Key, Impeller	Steel	A108 GR 1018
Deflector	Rubber	Buna-N
Lip seal	Steel & rubber	Commercial
Cover, radial bearing housing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
O-ring, volute	Rubber	Buna-N
Housing, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Cover, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Locknut, bearing	Steel	Commercial
Lockwasher, bearing	Steel	Commercial
Washer, keyed	Steel	Commercial
Bearing, radial	Steel	Commercial
Bearing, thrust (inner)	Steel	Commercial
Bearing, thrust (outer)	Steel	Commercial
Shim, bearing adjusting	Steel	AISI 1010
Cover, volute hand hole	Cast iron	A48, CL30
Gasket, volute hand hole cover	Rubber	–
Packing	Synthetic, graphite impregnated	Commercial
Key, coupling	Steel	A108 GR 1018
Cap, impeller	Cast Iron	A48, CL30
Capscrew, impeller	Steel	SAE J429 GR-8

# Technical Data – 2420 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

<b>16" and 20" – 2424 Standard Fitted Pump Options to Basic Pumps</b>		
Description	Material	Specification (1)
Impeller	Bronze	B584 AL836
Impeller	Cast iron/3% Ni	A48, CL30 MOD
Sleeve, shaft	Stainless Steel	A743-CA-40 MOD (4)
Base (not shown)	Steel	A283 GR-D
Wearing ring, fronthead	Stainless steel	A743-CA-40 MOD (4)
Wearing ring, impeller	Stainless steel	A743-CA-15 (3)
Gland half, interlocking	Bronze	B584 AL836
Gland, solid (mechanical seal)	Steel	A283 GR-D
Shim, impeller adjusting	Steel	AISI 1010
Cover front head hand hole	Cast iron	A48, CL30
Gasket, front head hand hole cover	Rubber	–
Seal, mechanical	–	(5)

**NOTES:**

1. All Material Specifications are ASTM, unless otherwise noted, and are for description
2. 190 to 241 Brinell Hardness
3. 300 to 350 Brinell Hardness
4. 450 to 484 Brinell Hardness
5. Manufacturer's option

# Technical Data

<b>Model 2444</b>	
Type	Vertical close-coupled, single-stage, non-clog radial flow impeller, dry-pit
Rotation	CW or CCW as viewed looking down on pump, specify on order
Volutes	Single, one-piece volute with hand hole; integral pads for direct mounting*
Nozzels	Flanged, End (Bottom) Suction, Side (Tangential) Discharge
Impeller	3-vane single suction, Francis-vane, enclosed, solids handling; with wearing ring
Fronthead	Separate one-piece casting, flanged; with wearing ring
	External flushing wear ring (optional)
	Hand hole cleanout (optional)
Backhead	Separate one-piece casting with integrally cast stuffing box
Pump Shaft	Accurately machined over entire length, for straight impeller bore; with key and contoured impeller capscrew
Shaft Sleeve	Straight type, positive adhesive sealed to prevent leakage between sleeve and shaft
Stuffing Box	Packing, injection tap
	Water seal ring (optional)
	Mechanical seal, double type, one-piece gland (optional)
Gland	2-bolt, 2-piece interlocking
Bearing Frame	Separate thrust, Brg. Hsg. w/cover; integrally cast radial Brg. Hsg. w/cover
Bearing, Thrust 12"	Angular contact duplex mounted ball; grease lubricated
Bearings, Thrust 16", 20"	Tapered roller and deep groove ball; grease lubricated
Bearing, Radial	Spherical roller, self-aligning, grease lubricated
Auxiliary Connections	Stuffing box drain connection
	Volute priming/vent and drain connections
	Wearing ring flush connection (optional)
	Suction and discharge gauge connections
Coupling	Flexible insert type
	Steelflex or gear type (optional)
Base Mounted	Elevated to accommodate front head only (suction piping below foundation) (optional)
	Elevated to accommodate front head and suction elbow (suction piping above foundation) (optional)
Motor Adapter	Barrel type, mounted on volute mounting pads; large access openings with see through coupling guards (optional)
Wearing Rings	Radial type
	Radial type for external flushing (optional)
	L shape (optional)
	L shape for external flushing (optional)

\*Pump Mounting Adapter may be required for some suction positions.

# Technical Data – 2440 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

<b>12" – 2444 Standard Fitted Pump</b>		
Description	Material	Specification (1)
Impeller	Cast iron	A48, CL30
Shaft, pump	Steel	A322-GR 4140 MOD
Ring half, seal water	Bronze	B584 AL836
Sleeve, shaft	Stainless steel	A743-CA-15 (3)
Wearing ring, fronthead	Stainless steel	A743-CA-15 (3)
Wearing ring, impeller	Stainless steel	A743-CA-15 (2)
Gland half, interlocking	Cast iron	A48, CL30
Volute	Cast iron	A48, CL30
Fronthead	Cast iron	A48, CL30
Backhead	Cast iron	A48, CL30
Frame, bearing	Cast iron	A48, CL30
Key, impeller	Steel	A108 GR 1018
Deflector	Rubber	Buna-N
Lip seal	Steel & rubber	Commercial
Cover, radial bearing housing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
O-ring, volute	Rubber	Buna-N
Housing, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Cover, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Locknut, bearing	Steel	Commercial
Lockwasher, bearing	Steel	Commercial
Bearing, radial	Steel	Commercial
Bearing, thrust	Steel	Commercial
Cover, volute hand hole	Cast iron	A48, CL30
Gasket, volute hand hole cover	Rubber	–
Packing	Synthetic, graphite impregnated	Commercial
Key, coupling	Steel	A108 GR 1018
Adapter, motor	Steel	A283 GR-D
Cap, impeller	Cast iron	A48, CL30
Capscrew, impeller	Steel	SAE J429 GR-8
<b>Options to Basic Pumps</b>		
Impeller	Bronze	B584 AL 836
Impeller	Cast iron/3% Ni	A48, CL30 MOD
Sleeve, shaft	Stainless steel	A743 GR CA-40 MOD (4)
Base (not shown)	Steel	A283 GR-D
Wearing ring, fronthead	Stainless steel	A743 GR CA-40 MOD (4)

# Technical Data – 2440 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

<b>12" – 2444 Standard Fitted Pump Options to Basic Pumps</b>		
Description	Material	Specification (1)
Wearing ring, impeller	Stainless steel	A743-CA-15 (3)
Gland half, interlocking	Bronze	B584 AL 836
Gland, solid (mechanical seal)	Steel	A283 GR-D
Shim, impeller adjusting	Steel	AISI 1010
Cover fronthead hand hole	Cast iron	A48, CL30
Gasket, fronthead hand hole cover	Rubber	–
Seal, mechanical	–	(5)

**NOTES:**

1. All Material Specifications are ASTM, unless otherwise noted, and are for description
2. 190 to 241 Brinell Hardness
3. 300 to 350 Brinell Hardness
4. 450 to 484 Brinell Hardness
5. Manufacturer's option

# Technical Data – 2440 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

<b>16" and 20" – 2444 Standard Fitted Pumps</b>		
<b>Description</b>	<b>Material</b>	<b>Specification (1)</b>
Impeller	Cast iron	A48, CL30
Shaft, pump	Steel	A322-GR 4140 MOD
Ring half, seal water	Bronze	B584 AL 836
Sleeve, shaft	Stainless steel	A743-CA-15 (3)
Wearing ring, fronthead	Stainless steel	A743-CA-15 (3)
Wearing ring, impeller	Stainless steel	A743-CA-15 (2)
Gland half, interlocking	Cast iron	A48, CL30
Volute	Cast iron	A48, CL30
Fronthead	Cast iron	A48, CL30
Backhead	Cast iron	A48, CL30
Frame, bearing	Cast iron	A48, CL30
Key, impeller	Steel	A108 GR 1018
Deflector	Rubber	Buna-N
Lip seal	Steel & rubber	Commercial
Cover, radial bearing housing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
O-ring, volute	Rubber	Buna-N
Housing, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Cover, thrust bearing	Cast iron	A48, CL30
Lip seal	Steel & rubber	Commercial
Locknut, bearing	Steel	Commercial
Lockwasher, bearing	Steel	Commercial
Washer, keyed	Steel	Commercial
Bearing, radial	Steel	Commercial
Bearing, thrust (inner)	Steel	Commercial
Bearing, thrust (outer)	Steel	Commercial
Shim, bearing adjusting	Steel	AISI 1010
Cover, volute hand hole	Cast iron	A48, CL30
Gasket, volute hand hole cover	Rubber	–
Packing	Synthetic, graphite impregnated	Commercial
Key, coupling	Steel	A108 GR 1018
Adapter, motor	Steel	A283 GR-D
Cap, impeller	Cast iron	A48, CL30
Capscrew, impeller	Steel	SAE J429 GR-8

# Technical Data – 2440 HORIZONTAL DRY PIT SOLIDS-HANDLING PUMPS TECHNICAL DATA

<b>16" and 20" – 2444 Standard Fitted Pump Options to Basic Pumps</b>		
Description	Material	Specification (1)
Impeller	Bronze	B584 AL 836
Impeller	Cast iron/3% Ni	A48, CL30 MOD
Sleeve, shaft	Stainless Steel	A743-CA-40 MOD (4)
Base (not shown)	Steel	A283 GR-D
Wearing ring, fronthead	Stainless steel	A743-CA-40 MOD (4)
Wearing ring, impeller	Stainless steel	A743-CA-15 (3)
Gland half, interlocking	Bronze	B584 AL 836
Gland, solid (mechanical seal)	Steel	A283 GR-D
Shim, impeller adjusting	Steel	AISI 1010
Cover fronthead hand hole	Cast iron	A48, CL30
Gasket, fronthead hand hole cover	Rubber	–
Seal, mechanical	–	(5)

#### NOTES:

1. All Material Specifications are ASTM, unless otherwise noted, and are for description
2. 190 to 241 Brinell Hardness
3. 300 to 350 Brinell Hardness
4. 450 to 484 Brinell Hardness
5. Manufacturer's option



# Specifications – 2400 SERIES

## Solids-Handling Pumps

### General

The contractor will furnish and install a quantity of \_\_\_\_\_ Fairbanks Nijhuis® \_\_\_\_\_" (Discharge) x \_\_\_\_\_" (Suction) Model \_\_\_\_\_ Vertical dry pit solids-handling pumping units. Pumps are to be connected to drivers by suitably sized (flexible) (solid) intermediate shafting with guide bearings and shaft guards as required. Drivers shall be mounted on heavy duty ring bases which provide access to the motor shaft coupling.

### Conditions of Operation

Each pump shall be capable of providing the following hydraulic conditions:

<u>Design Condition</u>	<u>Primary Condition</u>	<u>Secondary Condition</u>
Capacity	_____ GPM	_____ GPM
Total Dynamic Head	_____ TDH	_____ TDH
% Efficiency	_____ EFF	_____ EFF
NPSHR	_____ Feet	_____ Feet
Maximum Speed	_____ RPM	_____ RPM
Minimum Shutoff Head	_____ Feet	_____ Feet
Maximum Shutoff Head	_____ Feet	
Maximum Solid Size	_____ Inches	

Net positive suction head available (NPSHA) at the centerline of the pump impeller is \_\_\_\_\_' at \_\_\_\_\_GPM.  
Liquid is \_\_\_\_\_with a maximum temperature of \_\_\_\_\_°F.

### Rotation

The pump will be [clockwise] [counterclockwise] rotation when viewed from the driver end looking at the pump.

### Impeller

The impeller shall be 3 vane, enclosed radial-vane design single suction, non-clogging type designed to pass a minimum sphere size of \_\_\_\_\_" diameter. Wiper vanes on the impeller back shroud are not allowed. The impeller is to be dynamically balanced and secured to a straight fit on the shaft by means of a key, and capscrews, and matched to the volute/casing.

### Volute/Casing

The volute is to be one-piece cast with side flanged tangential discharge. The discharge flange shall be 125 PSI ANSI drilling. Volute design to permit front or back impeller removal and be capable of rotation in increments to accommodate piping orientation. Diffusion vanes are not permitted. A volute handhole for inspection and cleanout at the cutwater with cover contoured to the inner surface of the casing is to be furnished. Casing shall be hydrostatically tested at 1.5 times the maximum operating pressure. Four mounting pads shall be cast integrally and on the periphery of the volute.

### Fronthead

The fronthead suction flange shall be 125 PSI ANSI drilling. (Option: Fronthead with cleanout.)

### Backhead

The backhead shall be provided with an integrally cast sealing box. The sealing box is to accommodate a minimum of 7 rings of packing. A split gland shall be furnished. Provisions are to be made for complete draining of sealing box leakage. Sealing box to be drilled and tapped for external flushing with seal cage. (Option: Mechanical seal.)

**Fits**

Volute, fronthead, backhead, and frame shall be manufactured with concentric shoulder fits to assure accurate alignment.

**Shaft Assembly**

The shaft shall be made from Type 4140 alloy steel, of sufficient diameter to carry the maximum load imposed and prevent vibration and fatigue. Shaft is to be accurately machined along its entire length. A renewable straight shaft sleeve, positive adhesive sealed, shall protect the shaft through the sealing box area. Shaft deflection not to exceed .002" at the packing gland over the normal operating range.

**Wearing Rings**

Radial type removable wearing rings are to be provided on both the impeller and suction head for reduction of recirculation. The impeller wear ring shall be approximately 50 Brinell softer than the fronthead ring. Option 1: Radial type wear rings for external flushing. Option 2: L-Shape wear rings. Option 3: L-Shape wear rings for external flushing.

**Frame**

The bearing frame shall be of a rugged design. Bearing supports are to be of heavy duty construction providing for self-centering fit with the casing for proper alignment. Bearing housings shall be dust proof incorporating lip seals in contact with the pump shaft.

**Bearings****12" 2414**

Radial (inboard) bearing shall be grease lubricated spherical roller type, self-aligning. Thrust (outboard) bearing shall be grease lubricated, angular contact, duplex mounted. Bearings to be designed for a minimum L10 life of 100,000 hours in accordance with AFBMA at BEP. Grease reliefs with plugs will be provided.

**16" & 20" 2414**

Radial (inboard) bearing shall be grease lubricated spherical roller type, self-aligning. Thrust (outboard) bearing shall be grease lubricated, tapered roller. Bearings to be designed for a minimum L10 life of 100,000 hours in accordance with AFBMA at BEP. Grease reliefs with pipe plugs will be provided.

**Pump Materials of Construction**

Pump components shall be made from the materials as shown on the material specification page.

**Quality Assurance**

Pumps are to be engineered and manufactured under a written Quality Assurance program. The Quality Assurance program is to be in effect for at least five years, to include a written record of periodic internal and external audits to confirm compliance with such program.

# Specifications – 2420 SERIES

## Horizontal Dry Pit Solids-Handling Pumps

### General

The contractor will furnish and install a quantity of \_\_\_\_\_ Fairbanks Nijhuis® \_\_\_\_\_" (Discharge) x \_\_\_\_\_" (Suction) Model \_\_\_\_\_ Horizontal dry pit solids-handling pumping units. Pumping units will include pump with fabricated steel base, coupling, coupling guard, and motor.

### Conditions of Operation

Each pump shall be capable of providing the following hydraulic conditions:

<u>Design Condition</u>	<u>Primary Condition</u>	<u>Secondary Condition</u>
Capacity	_____ GPM	_____ GPM
Total Dynamic Head	_____ TDH	_____ TDH
% Efficiency	_____ EFF	_____ EFF
NPSHR	_____ Feet	_____ Feet
Maximum Speed	_____ RPM	_____ RPM
Minimum Shutoff Head	_____ Feet	_____ Feet
Maximum Shutoff Head	_____ Feet	
Maximum Solid Size	_____ Inches	

Net positive suction head available (NPSHA) at the centerline of the pump impeller is \_\_\_\_\_' at \_\_\_\_\_ GPM.  
Liquid is \_\_\_\_\_ with a maximum temperature of \_\_\_\_\_°F.

### Rotation

The pump will be [clockwise] [counterclockwise] rotation when viewed from the driver end looking at the pump.

### Impeller

The impeller shall be 3 vane, enclosed radial-vane design single suction, non-clogging type designed to pass a minimum sphere size of \_\_\_\_\_" diameter. Wiper vanes on the impeller back shroud are not allowed. The impeller is to be dynamically balanced and secured to a straight fit on the shaft by means of a key, and capscrews, and matched to the volute/casing.

### Volute/Casing

The volute is to be one-piece cast with side flanged tangential discharge. The discharge flange shall be 125 PSI ANSI drilling. Volute design to permit front or back impeller removal and be capable of rotation in increments to accommodate piping orientation. Diffusion vanes are not permitted. A volute handhole for inspection and cleanout at the cutwater with cover contoured to the inner surface of the casing is to be furnished. Nominal casing thickness is to be \_\_\_\_\_". Casing shall be hydrostatically tested at 1.5 times the maximum operating pressure.

### Fronthead

The fronthead suction flange shall be 125 PSI ANSI drilling. (Option: Fronthead with cleanout.)

### Backhead

The backhead shall be provided with an integrally cast sealing box. The sealing box is to accommodate a minimum of 7 rings of packing. A split gland shall be furnished. Provisions are to be made for complete draining of sealing box leakage. Sealing box to be drilled and tapped for external flushing with seal cage. (Option: Mechanical seal.)

**Fits**

Volute, fronthead, backhead, and frame shall be manufactured with concentric shoulder fits to assure accurate alignment.

**Shaft**

The shaft shall be made from Type 4140 alloy steel, of sufficient diameter to carry the maximum load imposed and prevent vibration and fatigue. Shaft is to be accurately machined along its entire length. A renewable straight shaft sleeve, positive adhesive sealed, shall protect the shaft through the sealing box area. Shaft deflection not to exceed .002" at the packing gland over the normal operating range.

**Wearing Rings**

Radial type removable wearing rings are to be provided on both the impeller and suction head for reduction of recirculation. The impeller wear ring shall be approximately 50 Brinell softer than the fronthead ring. Option 1: Radial type wear rings for external flushing. Option 2: L-Shape wear rings. Option 3: L-Shape wear rings for external flushing.

**Frame**

The bearing frame shall be of a rugged design. Bearing supports are to be of heavy duty construction providing for self-centering fit with the casing for proper alignment. Bearing housings shall be dust proof incorporating lip seals in contact with the pump shaft.

**Supports**

The fabricated frame and volute supports shall be bolted directly to the frame lip and the volute fronthead bolt circle.

**Bearings**

12" 2424

Radial (inboard) bearing shall be grease lubricated spherical roller type, self-aligning. Thrust (outboard) bearing shall be grease lubricated, angular contact, duplex mounted. Bearings to be designed for a minimum L10 life of 100,000 hours in accordance with AFBMA at BEP. Grease reliefs with plugs will be provided.

16" & 20" 2424

Radial (inboard) bearing shall be grease lubricated spherical roller type, self-aligning. Thrust (outboard) bearing shall be grease lubricated, tapered roller. Bearings to be designed for a minimum L10 life of 100,000 hours in accordance with AFBMA at BEP. Grease reliefs with pipe plugs will be provided.

**Pump Materials of Construction**

Pump components shall be made from the materials as shown on the material specification page.

**Quality Assurance**

Pumps are to be engineered and manufactured under a written Quality Assurance program. The Quality Assurance program is to be in effect for at least five years, to include a written record of periodic internal and external audits to confirm compliance with such program.

# Specifications – 2440 SERIES

## Horizontal Dry Pit Solids-Handling Pumps

### General

The contractor will furnish and install a quantity of \_\_\_\_\_ Fairbanks Nijhuis® \_\_\_\_\_" (Discharge) x \_\_\_\_\_" (Suction) Model \_\_\_\_\_ Vertical close coupled solids-handling pumping units. Pumps are to be connected to drivers by flexible coupling. Drivers shall be mounted on heavy duty ring bases which provide access to the motor shaft coupling.

### Conditions of Operation

Each pump shall be capable of providing the following hydraulic conditions:

<u>Design Condition</u>	<u>Primary Condition</u>	<u>Secondary Condition</u>
Capacity	_____ GPM	_____ GPM
Total Dynamic Head	_____ TDH	_____ TDH
% Efficiency	_____ EFF	_____ EFF
NPSHR	_____ Feet	_____ Feet
Maximum Speed	_____ RPM	_____ RPM
Minimum Shutoff Head	_____ Feet	_____ Feet
Maximum Shutoff Head	_____ Feet	
Maximum Solid Size	_____ Inches	

Net positive suction head available (NPSHA) at the centerline of the pump impeller is \_\_\_\_\_' at \_\_\_\_\_ GPM.  
Liquid is \_\_\_\_\_ with a maximum temperature of \_\_\_\_\_°F.

### Rotation

The pump will be [clockwise] [counterclockwise] rotation when viewed from the driver end looking at the pump.

### Impeller

The impeller shall be 3 vane, enclosed radial-vane design single suction, non-clogging type designed to pass a minimum sphere size of \_\_\_\_\_" diameter. Wiper vanes on the impeller back shroud are not allowed. The impeller is to be dynamically balanced and secured to a straight fit on the shaft by means of a key, and capscrew, and matched to the volute/casing.

### Volute/Casing

The volute is to be one-piece cast with side flanged tangential discharge. The discharge flange shall be 125 PSI ANSI drilling. Volute design to permit front or back impeller removal and be capable of rotation in increments to accommodate piping orientation. Diffusion vanes are not permitted. A volute handhole for inspection and cleanout at the cutwater with cover contoured to the inner surface of the casing is to be furnished. Nominal casing thickness is to be \_\_\_\_\_". Casing shall be hydrostatically tested at 1.5 times the maximum operating pressure. Four mounting pads shall be cast integrally and on the periphery of the volute.

### Fronthead

The fronthead suction flange shall be 125 PSI ANSI drilling. (Option: Fronthead with cleanout.)

### Backhead

The backhead shall be provided with an integrally cast sealing box. The sealing box is to accommodate a minimum of 7 rings of packing. A split gland shall be furnished. Provisions are to be made for complete draining of sealing box leakage. Sealing box to be drilled and tapped for external flushing with seal cage required. (Option: Mechanical seal.)

**Fits**

Volute, fronthead, backhead, and frame shall be manufactured with concentric shoulder fits to assure accurate alignment.

**Shaft**

The shaft shall be made from Type 4140 alloy steel, of sufficient diameter to carry the maximum load imposed and prevent vibration and fatigue. Shaft is to be accurately machined along its entire length. A renewable straight shaft sleeve, positive adhesive sealed, shall protect the shaft through the sealing box area. Shaft deflection not to exceed .002" at the packing gland over the normal operating range.

**Wearing Rings**

Radial type removable wearing rings are to be provided on both the impeller and suction head for reduction of recirculation. The impeller wear ring shall be approximately 50 Brinell softer than the fronthead ring. Option 1: Radial type wear rings for external flushing. Option 2: L-Shape wear rings. Option 3: L-Shape wear rings for external flushing.

**Frame**

The bearing frame shall be of a rugged design. Bearing supports are to be of heavy duty construction providing for self-centering fit with the casing for proper alignment. Bearing housings shall be dust proof incorporating lip seals in contact with the pump shaft.

**Bearings****12" 2444**

Radial (inboard) bearing shall be grease lubricated spherical roller type, self-aligning. Thrust (outboard) bearing shall be grease lubricated, angular contact, duplex mounted. Bearings to be designed for a minimum L10 life of 100,000 hours in accordance with AFBMA at BEP. Grease reliefs with plugs will be provided.

**16" & 20" 2444**

Radial (inboard) bearing shall be grease lubricated spherical roller type, self-aligning. Thrust (outboard) bearing shall be grease lubricated, tapered roller. Bearings to be designed for a minimum L10 life of 100,000 hours in accordance with AFBMA at BEP. Grease reliefs with pipe plugs will be provided.

**High Ring Base**

The motor high ring base shall be made of structural steel plate designed to support the weight of the drive unit and to assure accurate alignment of the pump and driver shafts. Ample openings are to be provided at the sides to allow access to the coupling, bearing lubrication fittings and sealing box.

**Coupling Guard**

All pumps are to have a coupling guard that allows visual inspection of the coupling without removal of the guard. Guard is to be retained in place with easily removable fasteners.

**Pump Materials of Construction**

Pump components shall be made from the materials as shown on the material specification page.

**Quality Assurance**

Pumps are to be engineered and manufactured under a written Quality Assurance program. The Quality Assurance program is to be in effect for at least five years, to include a written record of periodic internal and external audits to confirm compliance with such program.