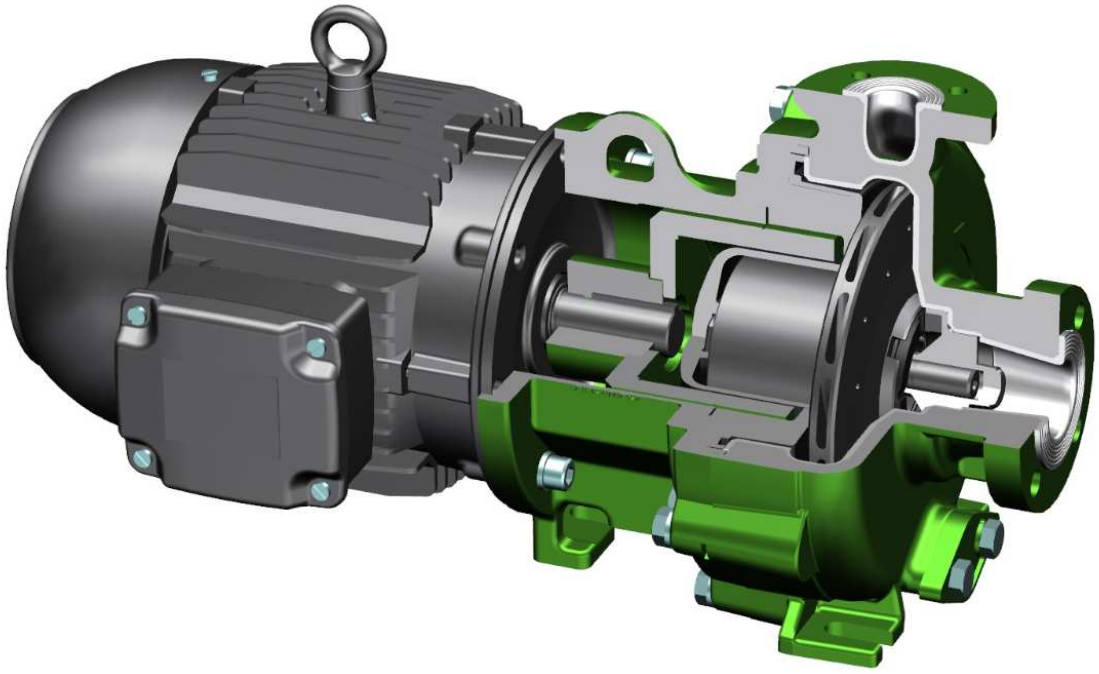
Specifications

Ansimag K+ Series Pumps for Chemical Process

Models:

- K+1516
- K+3156
- K+326s
- K+326
- K+326H
- K+436
- K+1518
- K+3158s
- K+3158
- K+328



English Original, September 2015

DESCRIPTION

Sealless Horizontal, End Suction, Centrifugal Pump for Chemical Process built to ASME/ANSI B73.3 standards, featuring:

- Magnetic drive design for efficient, zero slip operation
- Fluoropolymer lined construction for wide chemical compatibility
- Silicon Carbide sleeve & thrust bearings for reliable, maintenance free operation
- Frame mounted for seamless B73.1 replacements
- Close Coupled configuration option for easy installation
- Powder Coated, Ductile Iron exterior for high durability
- Compact, "Dual" Back Pull Out design for easy servicing
- Non-metallic containment shell with zero eddy current loss

GENERAL SPECIFICATIONS

- Maximum Particulate Concentration: 20% wt.
- Maximum Particulate Size: $^1/_4$ inch (6.4 mm) diameter

  Note: Maximum Particulate Concentration and Size given above is an approximate number and should be used a guideline. Please contact Sundyne Application Engineering if actual particulate concentration or size exceeds these figures.

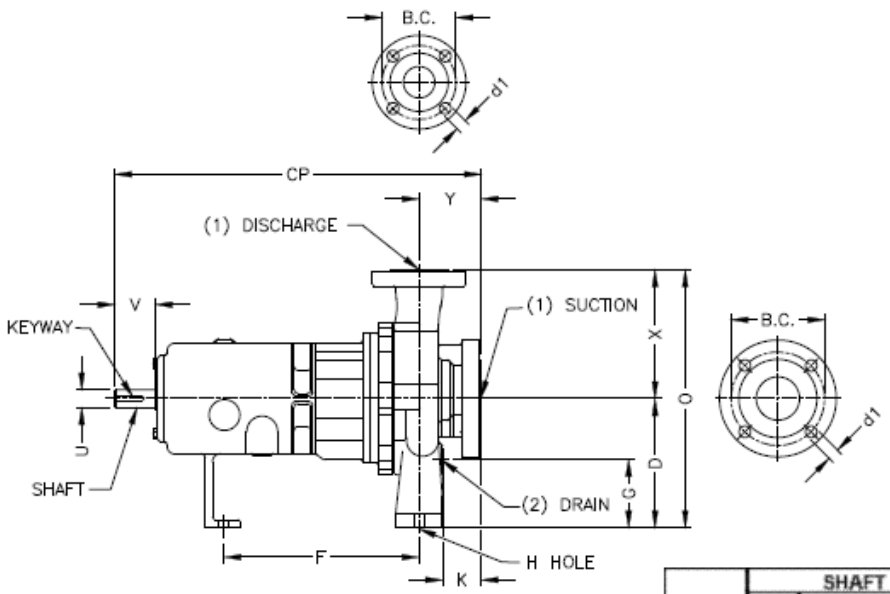
- Maximum viscosity: 900 SSU (200 centistokes)

  Note: Maximum viscosity given above is an approximate number. Pump performance (flow, head and efficiency) will be greatly affected by the viscosity of liquid pumped. Please refer to the ANSI/HI 9.6.7 "Viscosity Correction" chart to calculate actual performance. A pump should not be used, or should be used with caution, if efficiency with viscous liquid is less than 50% of efficiency with water.

MODELS & DIMENSIONS

Model	Group	Dimensional Designation
K+1516	1	AA
K+3156	1	AB
K+326s	1	AC
K+326	2	A10
K+326H	1	AC
K+436	2	—
K+1518	1	AA
K+3158s	1	AB
K+3158	2	A50
K+328	2	A60

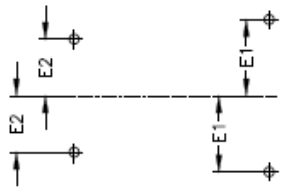
REVISIONS				
REV.	ECO #	DESCRIPTION	APPROVAL	DATE
C	EC93153	ADDED K+328 TO TABLES	JRW	09/22/15



PUMP MODEL	PUMP SIZE	ANSI DESIGNATION	(1) SUCTION FLANGE Ø	B.C.	d1	n	(1) DISCHARGE FLANGE Ø	B.C.	d1	n
K1516	1 1/2X1 X6	AA	1 1/2	3.88	0.63	4	1	3.13	0.63	4
K3156	3X 1 1/2 X6	AB	3	6	0.75	4	1 1/2	3.88	0.63	4
K326s	3 X2 X 6	-	3	6	0.75	4	2	4.75	0.75	4
K1518	1 1/2X1 X8	AA	1 1/2	3.88	0.63	4	1	3.13	0.63	4
K326	3 X2 X 6	A10	3	6	0.75	4	2	4.75	0.75	4
K436	4 X3 X 6	-	4	7.50	0.75	8	3	6	0.75	4
K3158	3X 1 1/2 X8	A50	3	6	0.75	4	1 1/2	3.88	0.63	4
K328	3x2x8	A60	3	6	0.75	4	2	4.75	0.75	4

PUMP MODEL	SHAFT U Ø	KEYWAY W X H	V	PUMP CP	D	2E1	2E2	F	G	H	K	O	X	Y	PUMP WEIGHT LBS.
K1516	7/8	3/16 X 3/32	2	17.50	5.25	6	0	7.25	1.44	5/8	2.4	11.75	6.50	4	117
K3156	7/8	3/16 X 3/32	2	17.50	5.25	6	0	7.25	1	5/8	2.2	11.75	6.50	4	141
K326s	7/8	3/16 X 3/32	2	17.50	5.25	6	0	7.25	1	5/8	2.2	11.75	6.50	4	141
K1518	7/8	3/16 X 3/32	2	17.50	5.25	6	0	7.25	1	5/8	2.4	11.75	6.50	4	134
K326	1 1/8	1/4 X 1/8	2 5/8	23.50	8.25	9.75	7.25	12.50	3.25	5/8	2.4	16.50	8.25	4	141
K436	1 1/8	1/4 X 1/8	2 5/8	23.50	8.25	9.75	7.25	12.50	2.57	5/8	1.9	16.50	8.25	4	152
K3158	1 1/8	1/4 X 1/8	2 5/8	23.50	8.25	9.75	7.25	12.50	3.25	5/8	2.2	16.75	8.50	4	154
K328	1 1/8	1/4 X 1/8	2 5/8	23.50	8.25	9.75	7.25	12.50	3.25	5/8	2.12	17.75	9.50	4	172

PUMP W/BEARING FRAME



NOTES:

(1) ANSI/ASME CLASS B16.5 1/8" RAISED FACE
(2) BLIND FLANGE AVAILABLE WITH 1/4" NPT
(3) REFERENCE DRAWING ONLY; (DIMENSIONS MAY VARY) DO NOT USE FOR CONSTRUCTION
(4) PLEASE REFER TO QUOTE FOR ACTUAL INSTALLED EQUIPMENT

APPROVALS:	DATE:
DRAWN BY: C. ROMANOWSKI	2-25-97
ENG. M.KLEIN	03/25/97
MFG: S.MCALLON	03/25/97
Q.A: N.RENTZELOS	03/25/97

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
DECIMALS: .XX ±0.03, .XXX ±-
FRACTIONS: ± 1/64
ANGLES: ± 2°
PROJECTION:
MATERIAL AND/OR PART #:
FINISH:

ANSIMAG
ANSIMAG, INC.
ELK GROVE, IL. 60007 USA

DESCRIPTION:
K SERIES L.C., DIM. DWG.- PUMP ONLY
PUMP:ANSI B73.3 FLANGES:ANSI

REF. SIZE	TYPE	REF. PART NO.	DWG NO.	REV
	IP	-	IP0633	C

SCALE 1=1 | DATE 2-25-97 | SHEET 1 OF 1

DESIGN and CONSTRUCTION

1. Pressure and Temperature Limits

- Pressure: Maximum Allowable Working Pressure: 285psi (19.6 Bar) @ 100°F (37.8°C)
- Vacuum: Primary containment capable of resisting a vacuum of 14.7 psi (760mmHG) at @ 100°F (37.8°C)
- Temperature:
  - Maximum: 250°F (121°C)
  - Minimum: -20°F (-29°C)

2. Flanges

Flanged suction and discharge connections conforming to ASME B16.42 Class 150

	ANSI 150#	
Model	Suction	Discharge
K+1516	1.5”	1”
K+3156	3”	1.5”
K+326s	3”	2”
K+326	3”	2”
K+326H	3”	2”
K+436	4”	3”
K+1518	1.5”	1”
K+3158s	3”	1.5”
K+3158	3”	1.5”
K+328	3”	2”

3. Casing

- End suction, Top (centerline) discharge.
- One piece solid ductile iron casing, lined with .125" ETFE fluoropolymer (standard) or PFA fluoropolymer (optional)
- Drain Connection: Blind Flange (Standard), Flanged with ¼" NPT port (Optional).
- Pure sintered silicon carbide thrust ring integral with front center support.
- Back Pullout design to permit removal of rotating elements without disturbing suction and discharge connections
- Casing Bolting: ASTM F593C

Minimum Continuous (mechanical) Flow:

Model	60 Hz		50 Hz	
	GPM @ 3600 RPM	GPM @ 1800 RPM	m3/hr @ 3000RPM	m3/hr @ 1500 RPM
K+1516	5	2.5	1	.5
K+3156	15	7.5	3	1.5
K+326s	20	10	4	2
K+326	20	10	4	2
K+326H	35	17.5	7	3.5
K+436	50	25	10	5
K+1518	5	2.5	1	.5
K+3158s	30	15	6.5	3
K+3158	30	15	6.5	3
K+328	60	30	13	7

Minimum continuous (mechanical) flow data based on water (S.G=1.0, specific heat=1.0).

Note: For continuous flow rates < 5GPM, Temperature rise should be calculated to determine Minimum continuous "thermal" flow. Use the greater of the two for Minimum Continuous Flow.

4. Impeller

- Closed type, one piece construction.

Model	**Minimum Trim**	**Maximum Trim**	**Eye Area (sq. in.)**
K+1516	4.5" (114 mm)	6.45" (165 mm)	3.98
K+3156	4.5" (114 mm)	6.45" (165 mm)	5.94
K+326s	4.5" (114 mm)	6.45" (165 mm)	5.94
K+326	4.5" (114 mm)	6.45" (165 mm)	5.94
K+326H	4.5" (114 mm)	6.45" (165 mm)	8.95
K+436	4.5" (114 mm)	6.45" (165 mm)	8.95
K+1518	6.00" (150mm)	8.25" (210mm)	3.98
K+3158s	6.00" (150mm)	8.25" (210mm)	6.03
K+3158	6.00" (150mm)	8.25" (210mm)	6.03

- Manufactured with carbon fiber filled ETFE fluoropolymer (standard) or GFR-PFA fluoropolymer (optional).
- Replaceable, mouth ring, either carbon fiber filled PTFE or sintered silicon carbide.

5. Magnetic Drive

- Constructed with Neodymium Iron Boron magnets for maximum strength in three sizes
- Zero slip coupling design.
- Soft start devices not required.
- Fully “sheathed” Outer Drive

Maximum Driver Power:

Drive Size	60 Hz		50 Hz	
	HP @ 3600 RPM	**HP @ 1800 RPM**	**kW @ 3000 RPM**	**kW @ 1500 RPM**
A	10	5	5.5	3
B	15	7.5	7.5	4
C	30	15	18	9

6. Assembly Bearings

- Replaceable, press fit: Sintered silicon Carbide (Standard), carbon/graphite (Optional)
- Manufactured from pure sintered silicon carbide (SiC).

Shaft

- Non-rotating, replaceable shaft design.
- Axial groove for improved lubrication and particulate bypass. (U.S. Patent 5,641,275)
- Fully supported at both ends (front shaft support and rear casing).

7. Containment

- Aramid reinforced vinyl ester lined with CFR-ETFE (Standard) or Glass Fiber Reinforce PFA (Optional).
- Integral carbon fiber filled PTFE back thrust ring.
- No energy losses due to eddy currents from magnetic coupling.
- 1200 psi (83 Bar) burst pressure.

Secondary Containment or Control

- Available upon request

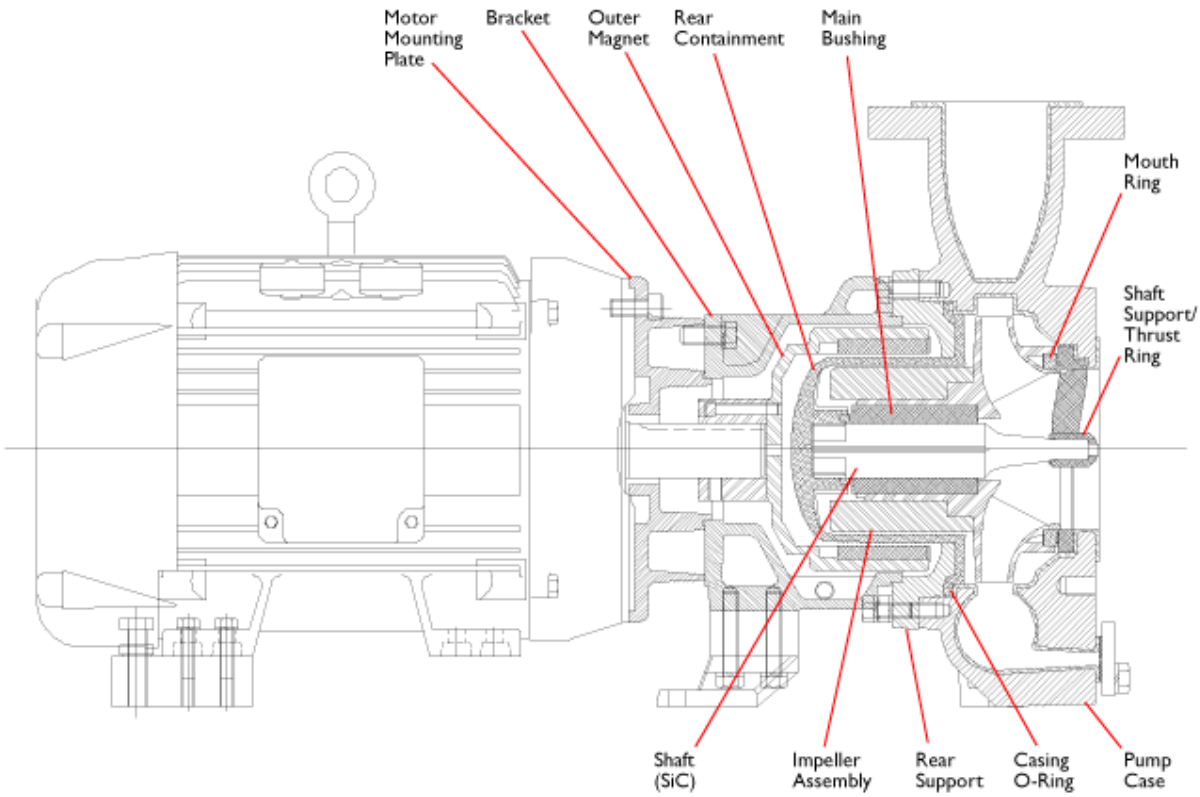
8. Bearing Frame

- Complies with ASME/ANSI B73.3 dimensional standards
- L_{10} life of 30,000 hours
- Inpro Type VBX inboard and outboard seals
- Large oil reservoir for cool operation and long oil life.
- Large Oil Sight Glass for direct oil level indication.
- 3/8” NPT port for leak monitoring.

Coupling Housing (Optional)

- Ductile Iron construction to provide rigid “monobloc” fit between motor and casing, eliminating the need for a bearing frame and flexible coupling.
- Designed to fit standard, off-the-shelf, NEMA C-Face & IEC B5 flange motors
- 3/8” NPT port for leak monitoring.

9. Materials of Construction



	ETFE Construction	PFA Construction	Optional Materials
Casing	ETFE lined Ductile Iron	PFA lined Ductile Iron	
Impeller	Carbon Fiber Reinforced ETFE	Glass Fiber Reinforced PFA	
Inner Drive	Carbon Fiber Reinforced ETFE / Neodymium Iron Boron	Glass Fiber Reinforced PFA / Neodymium Iron Boron	
Shaft	Silicon Carbide	Silicon Carbide	
Bushing	Carbon Fiber Reinforced ETFE / Silicon Carbide	Glass Fiber Reinforced PFA / Silicon Carbide	Carbon
Shaft Support	Carbon Fiber Reinforced ETFE / Silicon Carbide	Glass Fiber Reinforced PFA / Silicon Carbide	
Mouth Ring	Carbon Fiber Reinforced PTFE	Silicon Carbide	
O-Ring	FKM	FKM	EPDM, PTFE wrapped FEP/PFA encapsulated FKM
Containment Shell	Carbon Fiber Reinforced ETFE lined Kevlar Reinforced Vinyl Ester	Glass Fiber Reinforced PFA lined Kevlar Reinforced Vinyl Ester	
Outer Drive	Carbon Steel / Neodymium Iron Boron	Carbon Steel / Neodymium Iron Boron	
Rear Casing Support	Ductile Iron	Ductile Iron	
Housing / Bearing Frame	Ductile Iron	Ductile Iron	

10.General

- Allowable Forces & Moments: in accordance with ANSI/HI 9.6.2-2015
- Vibration level < 2x the limits specified in ANSI/HI 9.6.4-2009 Figure 9.6.4.4
- Paint System: Powder Coat

Weights (Pump only, with Bearing Frame)

Model	Weight
K+1516	117 lbs. (53 kg.)
K+3156	141 lbs. (64 kg.)
K+326s	141 lbs. (64 kg.)
K+326	141 lbs. (64 kg.)
K+326H	141 lbs. (64 kg.)
K+436	152 lbs. (69 kg.)
K+1518	134 lbs. (61 kg.)
K+3158s	148 lbs. (67 kg.)
K+3158	154 lbs. (70 kg.)
K+328	172 lbs. (78 kg.)

Specific Speeds

Model	Ns	Nss
K+1516	913	5186
K+3156	1204	5894
K+326s	1227	5954
K+326	1214	5816
K+326H	1600	7733
K+436	1840	5899
K+1518	617	3884
K+3158s	840	5321
K+3158	728	5629
K+328	1022	4803

11. Tests

- Hydrostatic Test to ANSI/HI 14.6-2011, Appendix B
- Performance Test to ANSI/HI 14.6-2011, Acceptance Grade 2B
- NPSH Test to ANSI/HI 14.6-2011, 14.6.5.8
- Spark Test to Sundyne PN41.26-01

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