

4SFC 4VKC Series



A Colfax Business Unit

3 Screw Pumps

Overview

Description	The Imo® 4SF and 4VK series pumps are of rotary, positive displacement 3-screw design. Both product lines are engineered to deliver excellent performance over a wide range of fluid viscosities and system pressures. Flow rates are proportional to rotating speed when operated within each pump's recommended pressure range. The self-priming design permits both evacuation of air from suction lines and repriming if suction is lost. Axial fluid flow, high operating efficiency and effective design practices result in extremely low airborne and liquidborne noise levels.
Performance	The rotor set generates a hydrodynamic fluid film as it rotates. In turn, the fluid film lifts the rotating components. An increase in either rotating speed or fluid viscosity will result in increased hydrodynamic film strength, thus higher speed generally results in better performance and increased pump life while simultaneously reducing pump size and cost.
Design	The simple and compact 4SF and 4VK series pumps are designed with low maintenance, long operational life and ease of repair in mind. When properly installed and operated, these pumps can be expected to give many years of reliable, trouble-free service. To better accommodate piping arrangements, the inlet port of the SF series pump can be rotated in 180° increments and the inlet port of the 4VK series pump can be rotated in 90° increments.
Typical Applications	• Lubrication of diesel engines, gas turbines, steam turbines, compressors, transmission gears, large centrifugal pumps and other rotating machinery. • Circulation of lubricating oil, hydraulic oil, transformer oil and most other clean petroleum based fluids. • Fluid power service for control of machine tools, injection molding machinery, turbine governors, hydraulic cylinders, shears, punch presses, die casting machines, lifts, winches and hydrostatic bearing lift systems.

Specifications

Series	4SF	4VK
Rotor Housing	Aluminum Alloy	Aluminum Alloy
Covers	High Tensile – Close Grain Cast Iron	High Tensile – Close Grain Cast Iron
Power Rotor	Alloy Steel – Hardened & Ground	Alloy Steel – Hardened & Ground
Idler Rotors	Alloy Steel – Hardened & Ground	Alloy Steel – Hardened & Ground
Seal	Single Lip Type	Unbalanced / Single Spring / Friction Drive Mechanical Type Carbon Rotating Face Aluminum Oxide Stationary Face Buna N Bellows
Ball Bearing	Single Row, Internal - Product Lubricated	Single Row, Internal- Product Lubricated
Elastomer	Buna N	Buna N
Flow Range	1 to 17 usgpm	8 to 230 usgpm
Outlet Pressure	1450 psig maximum	1160 psig maximum
Inlet Pressure	14 psig maximum 7 psia minimum	29 psig maximum 7 psia minimum
Porting	SAE straight thread Flange pads are tapped for metric bolts	SAE Code 61 4-bolt pad Flange pads are tapped for metric bolts
Viscosity	36 to 3500 ssu	36 to 3500 ssu
Temperature	0 to 160°F	0 to 175°F
Drive	Direct Only	Direct Only
Rotation	Clockwise - Facing Pump Drive Shaft	Clockwise - Facing Pump Drive Shaft
Mounting	C-face Flange Mount, Vertical or Horizontal, Foot Mount Brackets Available	C- face Flange Mount, Vertical or Horizontal, Foot Mount Brackets Available
Maximum Speed*	3600 RPM *Assumes minimum inlet pressure requirements are met	3600 RPM *Assumes minimum inlet pressure requirements are met

Performance

Series 4SFC - Capacities Shown at 200 SSU (43 cSt)

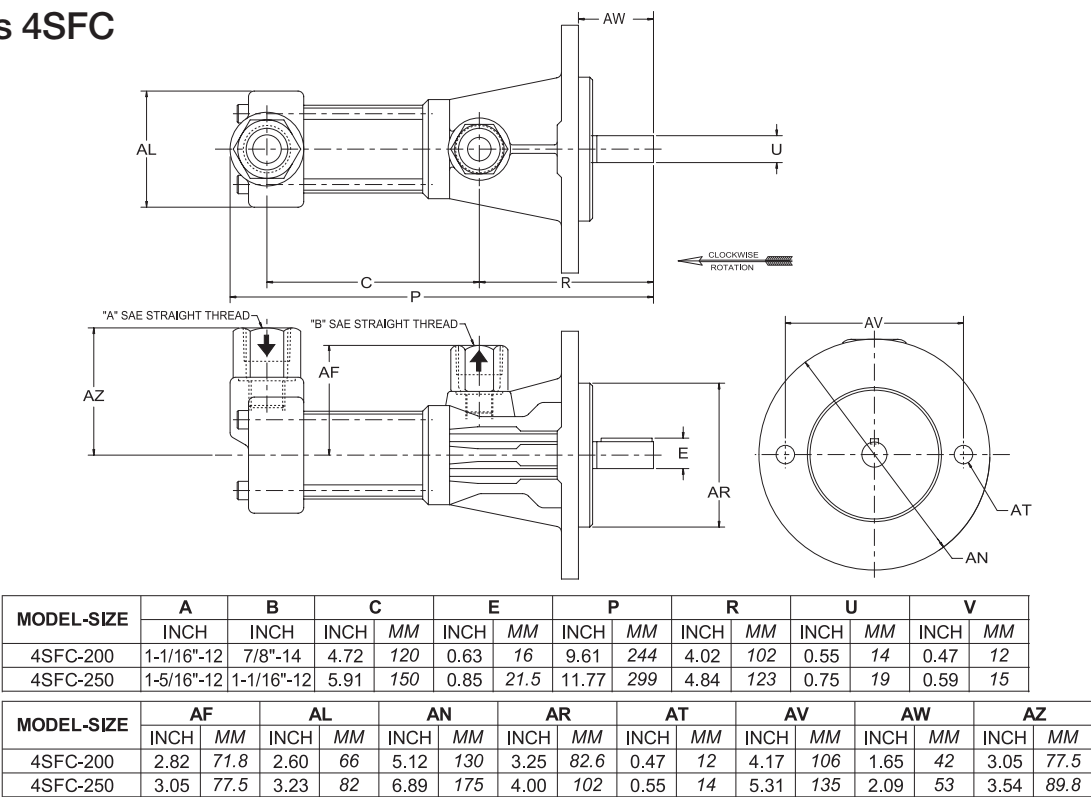
Series 4SFC Pump – Typical Output Flow Rates & Power Requirements																						
Model	PSI	1750 RPM / 200 SSU										3500 RPM / 200 SSU										
		100	250	400	550	700	850	1000	1150	1300	1450	100	250	400	550	700	850	1000	1150	1300	1450	
200R200	GPM	1.4	1.2	1.1	1.0	0.9	0.8	0.8				3.0	2.9	2.7	2.7	2.6	2.5	2.4	2.4	2.3	2.3	
	BHP	0.2	0.4	0.5	0.6	0.8	0.9	1.1				0.5	0.8	1.1	1.4	1.7	2.0	2.3	2.5	2.8	3.1	
200R300	GPM	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2			4.6	4.4	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.5	
	BHP	0.3	0.5	0.7	1.0	1.1	1.3	1.6	1.8			0.6	1.0	1.5	1.9	2.3	2.8	3.2	3.7	4.1	4.5	
200R400	GPM	2.8	2.6	2.4	2.2	2.1	1.9	1.8	1.7	1.7		6.1	5.9	5.7	5.5	5.4	5.3	5.2	5.1	5.0	4.9	
	BHP	0.3	0.6	0.9	1.2	1.5	1.8	2.0	2.3	2.6		0.7	1.3	1.9	2.4	3.0	3.6	4.2	4.8	5.3	5.9	
250R380	GPM	4.3	4.0	3.7	3.5	3.3	3.2	3.0	2.9	2.8	2.6	9.2	8.9	8.6	8.4	8.3	8.1	8.0	7.8	7.7	7.6	
	BHP	0.4	0.9	1.3	1.7	2.2	2.6	3.1	3.5	3.9	4.3	1.0	1.9	2.7	3.6	4.4	5.3	6.2	7.0	7.9	8.8	
250R500	GPM	5.7	5.3	5.0	4.7	4.5	4.3	4.1	3.9	3.8	3.6	12.2	11.8	11.5	11.2	11.0	10.8	10.6	10.4	10.3	10.1	
	BHP	0.5	1.1	1.7	2.2	2.8	3.4	3.9	4.5	5.0	5.6	1.2	2.3	3.4	4.6	5.7	6.4	8.0	9.1	10.2	11.4	
250R700	GPM	8.0	7.5	7.1	6.7	6.4	6.2	5.9	5.7	5.5	5.3	17.1	16.6	16.1	15.8	15.5	15.3	15.0	14.8	14.6	14.4	
	BHP	0.7	1.5	2.3	3.1	3.9	4.6	5.5	6.2	7.0	7.8	1.5	3.1	4.7	6.2	7.8	9.4	11.0	12.6	14.2	15.8	
NOTE - Do not operate pump at pressures where GPM and BHP values are not provided.																						

Series 4VKC - Capacities Shown at 200 SSU (43 cSt)

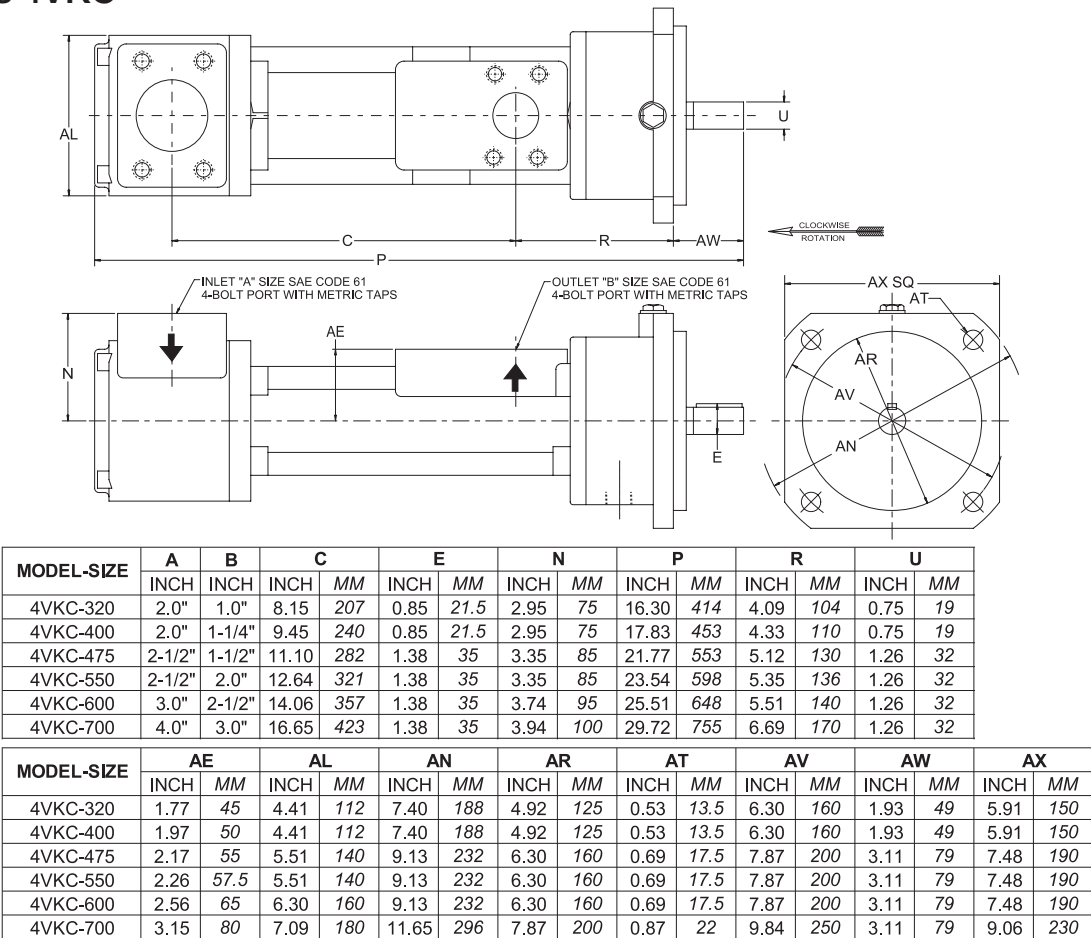
Series 4VKC Pump – Typical Output Flow Rates & Power Requirements																		
MODEL	PSIG	1750 RPM / 200 SSU									3500 RPM / 200 SSU							
		100	250	400	550	700	850	1000	1150		100	250	400	550	700	850	1000	1150
0320R690	GPM	12.5	11.3	10.4	9.6	9.0	8.4	7.9	7.4		27.1	25.9	25.0	24.3	23.6	23.1	22.5	22.0
	BHP	1.8	2.5	3.7	5.0	6.3	7.6	8.9	10.1		3.0	5.5	8.1	10.6	13.2	15.8	18.3	20.9
0400R0560	GPM	16.7	15.5	14.7	14.1	13.5	13.0	12.5	12.1		35.2	34.1	33.3	32.6	32.1	31.5	31.1	30.6
	BHP	1.5	3.1	4.8	6.4	8.0	9.6	11.3	12.9		3.9	7.1	10.4	13.6	16.9	20.1	23.4	26.6
0400R0680	GPM	20.0	18.6	17.5	16.6	15.9	15.2	14.6	14.0		42.6	41.1	40.1	39.2	38.5	37.8	37.2	36.6
	BHP	1.7	3.7	5.7	7.7	9.6	11.6	13.6	15.6		4.4	8.3	12.2	16.2	20.1	24.1	28.0	32.0
0400R0800	GPM	24.0	22.5	21.5	20.6	19.9	19.2	18.6	18.0		50.5	49.1	48.1	47.2	46.4	45.7	45.1	44.5
	BHP	2.0	4.3	6.6	8.9	11.3	13.6	15.9	18.2		4.8	9.5	14.1	18.7	23.4	28.0	32.7	37.3
0475R0730	GPM	31.1	29.4	28.2	27.2	26.4	25.6	24.9	24.2		65.1	63.4	62.2	61.2	60.4	59.6	58.9	58.2
	BHP	2.8	5.7	8.7	11.7	14.7	17.6	20.6	23.6		7.1	13.1	19.0	24.8	30.9	36.9	42.8	48.8
0475R0950	GPM	40.5	38.3	36.7	35.4	34.2	33.2	32.2	31.4		84.9	82.7	81.1	79.8	78.6	77.6	76.6	75.8
	BHP	3.4	7.3	11.1	15.0	18.9	22.8	26.7	30.6		8.3	16.1	23.9	31.7	39.4	47.2	55.0	62.7
0550R0950	GPM	54.0	50.8	48.5	46.6	44.9	43.5	42.1	40.8		113.5	110.3	108.0	106.1	104.5	103.0	101.6	100.3
	BHP	4.6	9.8	15.0	20.2	25.4	30.7	35.9	41.1		11.5	21.9	32.3	42.7	53.1	63.6	74.0	84.4
0550R1080	GPM	62.1	58.9	56.6	54.7	53.1	51.6	50.2	49.0		129.8	126.6	124.3	122.4	120.7	119.3	117.9	116.6
	BHP	5.1	11.0	16.9	22.8	28.8	34.7	40.6	46.5		12.4	24.3	36.1	48.0	59.8	71.6	83.5	95.3
0600R1060	GPM	72.1	68.1	65.2	62.8	60.7	58.8	57.1	55.5		151.1	147.1	144.2	141.8	139.7	137.8	136.1	134.5
	BHP	6.3	13.2	20.2	27.1	34.0	40.9	47.8	54.7		16.1	29.9	43.8	57.6	71.4	85.3	99.1	112.9
0600R1390	GPM	93.3	87.3	83.0	79.4	76.3	73.5	71.0	68.6		197.0	191.0	186.6	183.1	180.0	177.2	174.6	172.3
	BHP	7.8	16.8	25.9	35.0	44.0	53.1	62.2	71.3		19.0	37.1	55.2	73.4	91.5	109.7	127.8	145.9
0700R1100	GPM	103.7	99.2	95.9	93.1	90.8	88.6	86.7	84.9		215.4	210.8	207.5	204.8	202.4	200.3	198.3	196.5
	BHP	9.1	18.8	28.6	38.4	48.1	57.9	67.7	77.4		23.2	42.7	62.2	81.8	101.3	120.9	140.4	159.9
0700R1400	GPM	131.8	125.8	121.5	118.0	114.9	112.1	109.6	107.2		273.9	267.9	263.6	260.1	257.0	254.2	251.7	249.3
	BHP	10.8	23.3	35.7	48.1	60.6	73.0	85.4	97.9		26.7	51.6	76.5	101.3	126.2	151.1	175.9	200.8

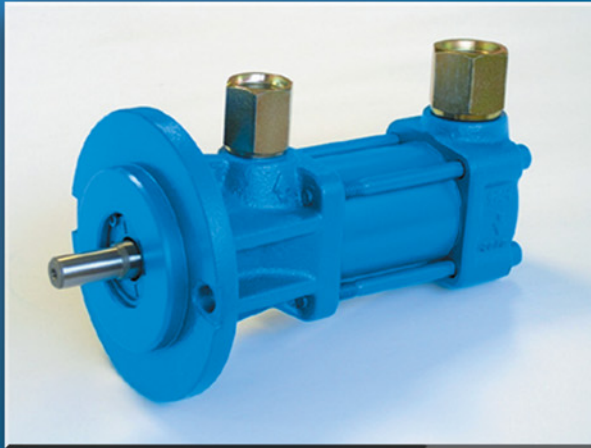
Outline Drawings and Dimensions

Series 4SFC

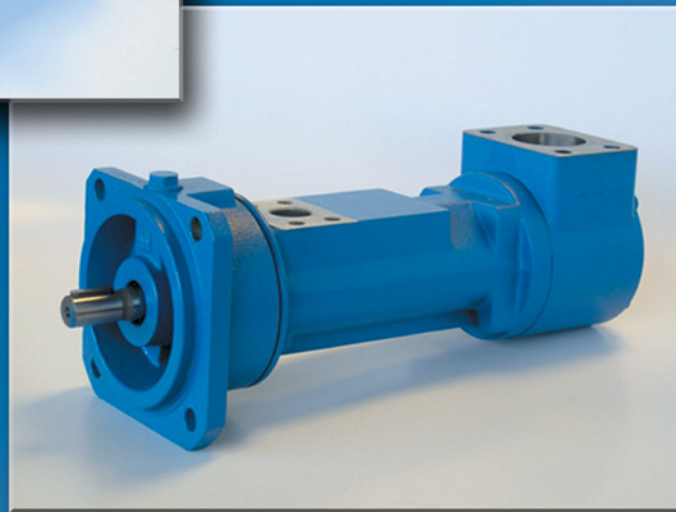


Series 4VKC





Series 4SFC



Series 4VKC

Series 4SFC and 4VKC Model Nomenclature

4SF C - 0320 R 0690

4VK C - 0320 R 0690

Pump Series

Mounting Configuration

**Power Rotor Diameter —
(in tenths of a millimeter)**

- Power RotorLead
(in tenths of a millimeter)

Direction of Rotation Facing Shaft



FOR MORE INFORMATION CONTACT:



PUMPS AND TANKS

9332 N 95th Way
Scottsdale, AZ 85258
480-998-4097
sales@apewater.com



Manufacturing under ISO 9001:2000 Quality Management Systems