

UNIVERSAL PRODUCT LINE: STAINLESS STEEL PUMPS

SERIES 724, 4724

Section	1706
Page	1706.1
Issue	B

TABLE OF CONTENTS

Features & Benefits	2
Cutaway View & Pump Features	2
Model Number Key	3
Standard Materials of Construction	3
Specifications	4
Mounting Options.....	5
Dimensions – F, FH, G Sizes.....	6
Dimensions – H, HL, K, KK, L, LQ, LL Sizes.....	6
Dimensions – H, HL Size – A Size Reducer (<i>R Drive</i>)	7
Dimensions – K, KK, L, LQ, LL Size – B Size Reducer (<i>R Drive</i>) .	7
Dimensions – F, FH, G Size (<i>D Drive</i>)	8
Dimensions – H, HL Size (<i>D Drive</i>)	8
Dimensions – H, HL, K, KK, L, LQ, LL Size (<i>V Drive</i>)	9
NPSH Required	10

RELATED PRODUCTS

- Cast Iron, Non-Jacketed Series 4124B
Behind the Rotor Seal Pumps: Catalog Section 1401
- Cast Iron, Jacketed Series 4224B
Behind the Rotor Seal Pumps: Catalog Section 1402
- Stainless Steel, Jacketed Pumps: Catalog Section 1702

SERIES DESCRIPTION

Like the 127A and 4127A Series, these pumps feature 316SS construction for handling corrosive liquid applications. These pumps have additional unique features, however, which separate them from other Viking Pump series.

While the wetted components are stainless steel, the footed mounting bracket is cast iron, making the 724 and 4724 Series an economical alternative to a fully stainless steel pump.

Sizes H and larger feature a jacketed bracket for the circulation of steam or hot oil. Optional jacketed head plates (sizes G and larger) and optional jacketed valves (sizes L and larger) are available to add additional jacketing as required.

The small pumps (sizes F, FH & G) are especially useful in pilot plant service, small metering applications, accurate chemical additive processing, pumping of pharmaceuticals in small capacities and for feed and product pumps on evaporators and distillation systems. They are opposite ported and available with packing or mechanical seals.

The larger pumps meet the needs of moving corrosive liquids when greater capacities are required in chemical, food and other processing plants. They feature revolvable right angle casings for a variety of port orientations. They are available with packing or behind the rotor mechanical seals.



K724

OPERATING RANGE

SERIES	NOMINAL FLOW		MAXIMUM PRESSURE *		TEMPERATURE RANGE		VISCOSITY RANGE	
	GPM	m ³ h	PSI	Bar	°F	°C	SSU	cSt
724	1.5 - 110	0.3 - 25	150	10	-120 to +500	-85 to +260	28 to 2,000,000	1 to 440,000
4724	1.5 - 110	0.3 - 25	150	10	-120 to +500	-85 to +260	28 to 250,000	1 to 55,000

* Sizes F, FH & G: to 200 PSI (14 BAR) for 100 SSU (21 cSt) and above, to 100 PSI (7 BAR) for 38 to 100 SSU (4 to 21 cSt)
 Sizes H & larger: to 150 PSI (10 BAR) for 2500 SSU (550 cSt) and above, to 100 PSI (7 BAR) for 100 to 2500 SSU (21 to 550 cSt),
 to 50 PSI (3 BAR) for 38 to 100 SSU (4 to 21 cSt)

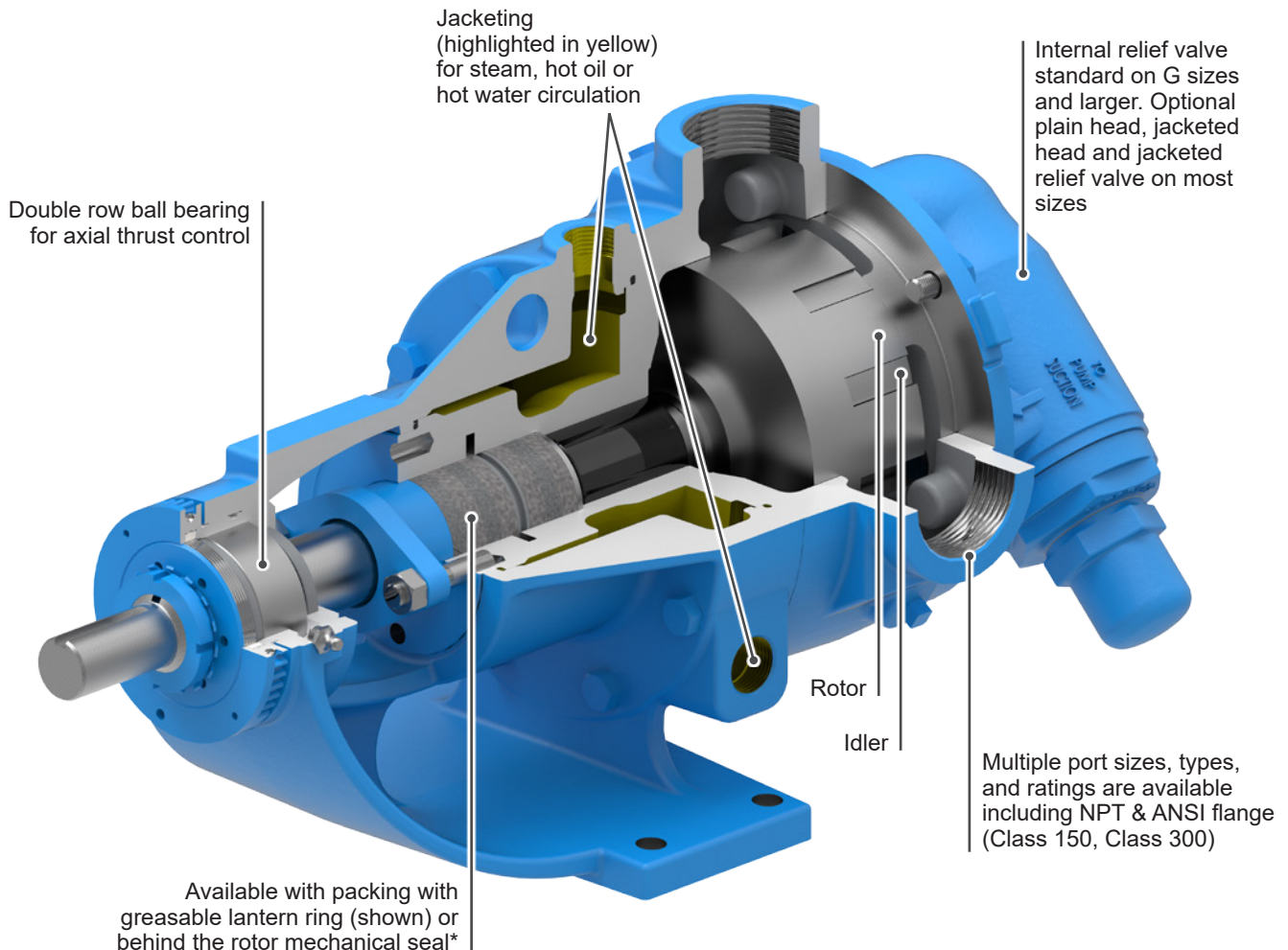
Section	1706
Page	1706.2
Issue	B

**UNIVERSAL PRODUCT LINE:
STAINLESS STEEL PUMPS
SERIES 724, 4724**

FEATURES & BENEFITS

- Integral Thrust Bearing
 - » The integral thrust bearing on the series 724 and 4724 alloy pumps makes possible outstanding performance on heavy-duty applications. The positive-lock thrust control allows for accurate axial positioning of rotor and shaft.
- No Reduction in Speed Required
 - » The three small sizes of alloy pumps can be operated at full motor speeds. This means a saving in speed reduction equipment. Larger sizes can also be operated at full catalog speed. See units on following pages (Section 210).
- Complete Jacketing on Size HL-LL Pumps
 - » Shaded area above shows complete jacketed areas for maintaining uniform temperature, hot or cold, surrounding packing or mechanical seal area as well as the back and front area of pump. Jacketed head plate available on request.
- All Parts Contacting Liquid are of Alloy Construction
 - » All parts contacting liquid being pumped are of alloy construction. Mounting bracket is cast iron.

CUTAWAY VIEW & PUMP FEATURES



* F, FH & G sizes do not have a lantern ring. Mechanical seal in stuffing box only

UNIVERSAL PRODUCT LINE: STAINLESS STEEL PUMPS

SERIES 724, 4724

Section	1706
Page	1706.3
Issue	B

MODEL NUMBER KEY

L	Q	4	7	2	4
Size:		Shaft Seal:		Series	
F	K	4 = Mechanical Seal			
FH	KK	Blank = Packing			
G	L				
H	LQ				
HL	LL				

STANDARD MATERIALS OF CONSTRUCTION

Component	Standard Material	
Casing	Stainless Steel, ASTM A743, Grade CF8M	
Head	Stainless Steel, ASTM A743, Grade CF8M	
Bracket	Cast Iron, ASTM A48, Class 35B	
Idler	Stainless Steel, ASTM A743, Grade CF8M, Case Hardened	
Rotor	Stainless Steel, ASTM A743, Grade CF8M, Case Hardened	
Rotor Shaft	Stainless Steel, ASTM A276 Type XM-19 or 316 Condition B	
③ Idler Pin	Hard Coated Stainless Steel, ASTM A276 Type 316, Colmonoy #6 Coated	
Bushings	Carbon Graphite	
② Shaft Sealing	724	PTFE Packing
	② 4724	Stainless Steel, PTFE, Carbon Graphite and Silicon Carbide
① Internal Pressure Relief Valve	Stainless Steel, ASTM A743, Grade CF8M	

- ① Relief valve not available on "F" and "FH" sizes.
- ② Standard seal can be used from 0°F. to +450°F.
With special construction, temperatures from -120°F. to +500°F. can be handled with "H" size and larger pumps.
- ③ Idler pin on "F" and "FH" size is tungsten carbide.

Section	1706
Page	1706.4
Issue	B

**UNIVERSAL PRODUCT LINE:
STAINLESS STEEL PUMPS
SERIES 724, 4724**

SPECIFICATIONS

② Model Number	Standard Port Size Inches	Nominal Pump Rating GPM m ³ /h RPM			④ Maximum Hydrostatic Pressure PSIG BAR		② Maximum Recommended Temperature for Standard Pump °F °C		Maximum Recommended Discharge Pressure (PSIG) ⑤ 38 to 100 SSU 100 to 2500 SSU 2500 SSU & Up			⑥ Maximum Temperature Pressure of Fluids in Jackets								Approx. Shipping Weight with Valve Lbs. Kg.	
												Steam (Sat)				Heat Transfer Oil					
												Temp.		Press.		Temp.		Press.			
												°F	°C	PSI	BAR	°F	°C	PSI	BAR		
F724 F4724	½	1.5	0.3	1750	400	28	300	149	100	200	200	—	—	—	—	—	—	—	—	① 11	5
FH724 FH4724	¾	3	0.7	1750	400	28	300	149	100	200	200	—	—	—	—	—	—	—	—	① 12	5.5
G724 G4724	1	5	1	1150	400	28	300	149	100	200	200	—	—	—	—	—	—	—	—	14	6
H724 H4724	1½	10	2	1150	400	28	375	190	50	100	150	365	185	150	10	450	230	150	10	48	22
HL724 HL4724	1½	20	5	1150	400	28	375	190	50	100	150	365	185	150	10	450	230	150	10	50	23
K724 K4724	2	45	10	520	400	28	350	175	50	100	150	365	185	150	10	450	230	150	10	125	57
KK724 KK4724	2	65	15	520	400	28	350	175	50	100	150	365	185	150	10	450	230	150	10	130	59
L724 L4724	2	90	20	420	400	28	350	175	50	100	150	365	185	150	10	450	230	150	10	170	77
LQ724 LQ4724	③ 2½	90	20	420	400	28	350	175	50	100	150	365	185	150	10	450	230	150	10	205	93
LL724 LL4724	③ 3	110	25	420	400	28	350	175	50	100	150	365	185	150	10	450	230	150	10	240	109

① Relief valve not available on "F" and "FH" sizes.

② For mechanical seal (4724) pumps on applications with viscosities above 25,000 SSU (5,500 cSt), provide details for recommendation.

③ Ports are suitable for use with Class 150 ANSI companion flanges or flanged fittings. All others tapped for standard pipe.

④ Standard seal can be used from 0°F. to +450°F.

With special construction, temperatures from -120°F. to +500°F. can be handled with "H" size and larger pumps.

⑤ For handling liquids less than 38 SSU (4 cSt), special construction features may be required. Provide details for recommendations.

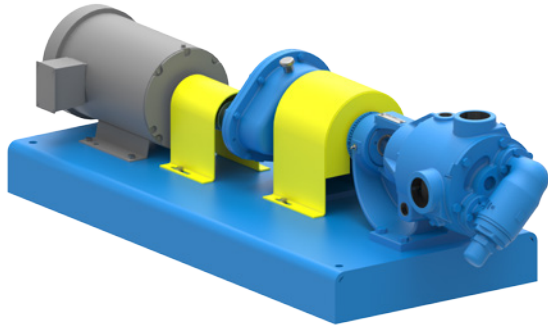
⑥ Cast iron jacketed head plate available for "G" size and larger. Relief valve cannot be used on head of pump with jacketed head plate.

UNIVERSAL PRODUCT LINE: STAINLESS STEEL PUMPS

SERIES 724, 4724

Section	1706
Page	1706.5
Issue	B

MOUNTING OPTIONS

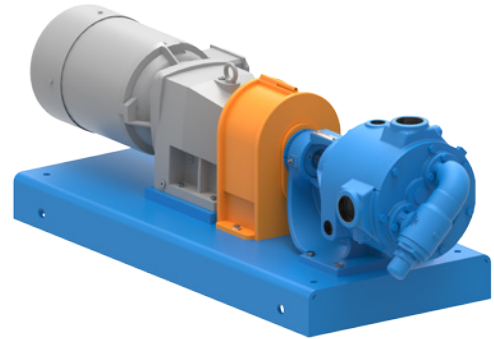


Viking Offset Reducer Drive (R Drive)

Pump unit (pump, gear reducer, motor, base, couplings and guards) using a Viking offset gear reducer.

Viking 724 and 4724 Series pumps are available with rugged, compact and exceptionally quiet type "A", "B" and "C" helical gear reducers, all mounted on formed steel bases with motors. Using "A" reducers with two size pumps.

Sizes: F - LL

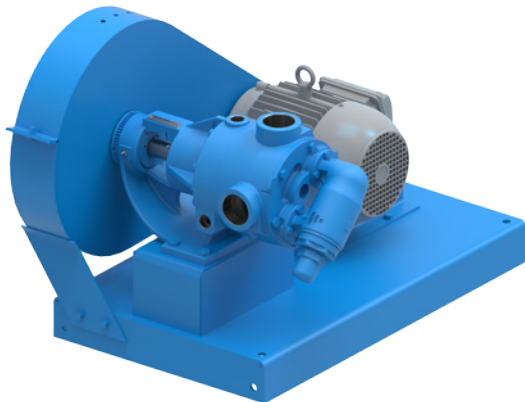


Viking Purchased Reducer Drive (P Drive)

Pump unit (pump, gear reducer, motor, base, couplings and guards) using a non-standard "purchased" gear reducer.

With separate heavy-duty gear reducers. Pumps, reducers and motors are connected through flexible couplings with guards.

Sizes: F - LL

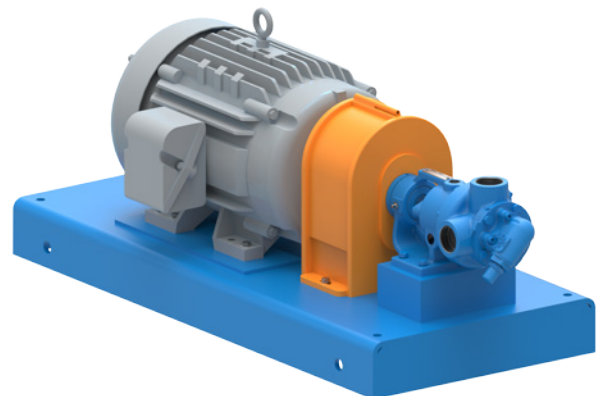


V-Belt Drive (V Drive)

Pump unit (pump, motor, base, sheaves, belts and guard) using v-belts for speed reduction.

The "V" Drive Heavy-Duty Units include 724 or 4724 Series pumps mounted on steel bases complete with totally guarded V-belt drive. Drive mounts on end of pump shaft. Slide rails are required on motors. Furnished as extra item. For small units, motors usually furnished with slotted feet. Maximum standard reduction 4½ to 1 on "H" thru "HL" size units, 6 to 1 maximum on "K" and larger sizes.

Sizes: H - LL



Base Mounted Direct Drive (D Drive)

Pump is direct connected to a motor on a base with coupling and coupling guard.

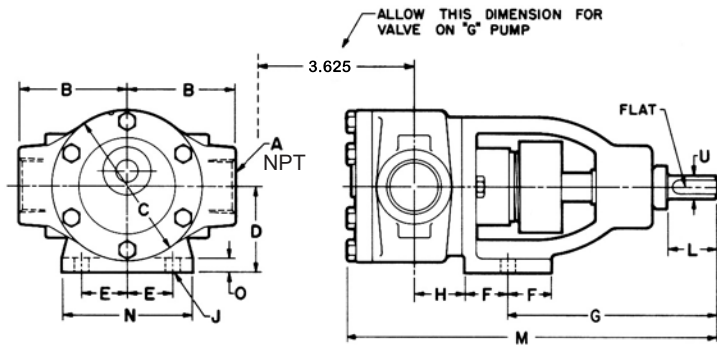
The "D" drive mounting of 724 and 4724 Series pumps is specially designed for compactness. In all sizes the pumps and power are mounted on formed steel bases and connected through a flexible coupling with guards. "F" and "FH" sizes direct connect to 1800 RPM motors. The "G", "H" and "HL" pumps are direct connected to 1200 RPM motors.

Sizes: F - HL

Section	1706
Page	1706.6
Issue	B

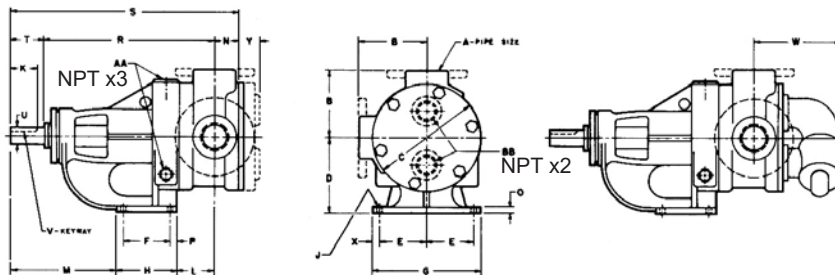
**UNIVERSAL PRODUCT LINE:
STAINLESS STEEL PUMPS
SERIES 724, 4724**

DIMENSIONS – F, FH, G SIZES



Model Number		① A (in)		B	C	D	E	F	G	H	J	U (in)	L	M	N	O
Packed	Mech Seal															
F724	F4724	1/2	in	2.00	2.50	2.00	1.06	1.00	4.88	1.19	0.34	0.50	1.13	8.44	3.00	0.31
			mm	51	64	51	27	25	124	30	9		29	214	76	8
FH724	FH4724	3/4	in	2.00	2.50	2.00	1.06	1.00	4.88	1.19	0.34	0.50	1.13	8.44	3.00	0.31
			mm	51	64	51	27	25	124	30	9		29	214	76	8
G724	G4724	1	in	2.50	3.50	2.00	1.06	1.00	4.88	1.19	0.34	0.50	1.13	8.56	3.00	0.31
			mm	64	89	51	27	25	124	30	9		29	217	76	8

DIMENSIONS – H, HL, K, KK, L, LQ, LL SIZES



Model Number				B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U (in)	V	W	X	Y	AA (in)	BB (in)
Packed	Mech Seal																										
H724	H4724	in mm	1/2 NPT	3.50	4.75	3.50	2.75	2.25	6.75	3.50	0.47	1.50	3.25	5.19	1.31	0.56	0.63	10.31	13.25	1.63	0.75	.19 x .09	4.19	0.63	1.34	0.50	0.50
				89	121	89	70	57	171	89	12	38	83	132	33	14	16	262	337	41			106	16	34		
HL724	HL4724	in mm	1/2 NPT	3.50	4.75	3.50	2.75	2.25	6.75	3.50	0.47	1.50	3.25	5.19	1.31	0.56	0.63	10.31	13.25	1.63	0.75	.19 x .09	4.19	0.63	1.34	0.50	0.50
				89	121	89	70	57	171	89	12	38	83	132	33	14	16	262	337	41			106	16	34		
K724	K4724	in mm	2 NPT	5.13	8.00	5.50	4.00	2.75	9.25	4.00	0.53	2.00	3.00	9.38	1.75	0.63	0.63	14.13	18.13	2.25	1.13	.25 x .13	6.88	0.63	1.50	0.75	1.25
				130	203	140	102	70	235	102	13	51	76	238	44	16	16	359	460	57			175	16	38		
KK724	KK4724	in mm	2 NPT	5.13	8.00	5.50	4.00	2.75	9.25	4.00	0.53	2.00	3.00	9.38	1.75	0.63	0.63	14.13	18.13	2.25	1.13	.25 x .13	6.88	0.63	1.50	0.75	1.25
				130	203	140	102	70	235	102	13	51	76	238	44	16	16	359	460	57			175	16	38		
L724	L4724	in mm	2 NPT	6.50	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.00	3.38	9.13	1.75	0.63	0.63	15.63	19.63	2.25	1.13	.25 x .13	7.13	0.63	1.81	1.00	1.00
				165	260	178	111	102	254	137	13	51	86	232	44	16	16	397	498	57			181	16	46		
LQ724	LQ4724	in mm	① 2 1/2	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.00	3.38	9.13	1.75	0.63	0.63	15.63	19.63	2.25	1.13	.25 x .13	7.13	0.63	1.81	1.00	1.00
				183	260	178	111	102	254	137	13	51	86	232	44	16	16	397	498	57			181	16	46		
LL724	LL4724	in mm	① 3	7.19	10.25	7.00	4.38	4.00	10.00	5.38	0.53	2.00	3.38	9.13	2.25	0.63	0.63	15.63	20.13	2.25	1.13	.25 x .13	7.63	0.63	1.81	1.00	1.00
				183	260	178	111	102	254	137	13	51	86	232	57	16	16	397	511	57			194	16	46		

① Ports are suitable for use with 150# ANSI (ASA) companion flanges or flanged fittings.

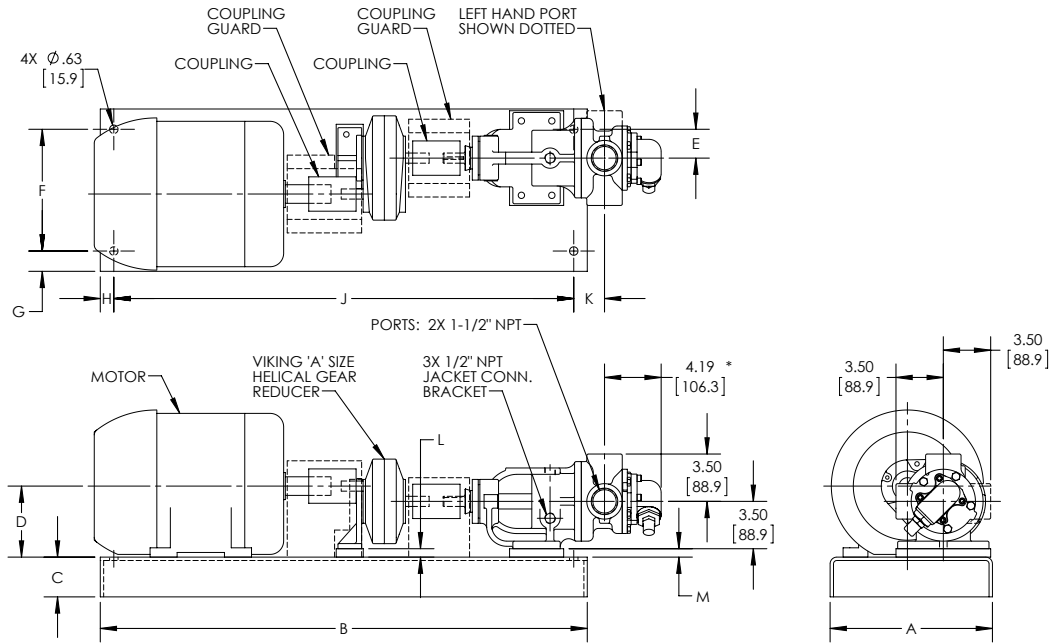
These dimensions are average and not for construction purposes. Certified prints on request.

UNIVERSAL PRODUCT LINE: STAINLESS STEEL PUMPS

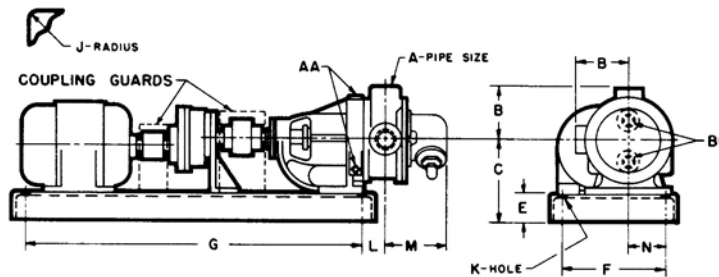
SERIES 724, 4724

Section	1706
Page	1706.7
Issue	B

DIMENSIONS – H, HL SIZE – A SIZE REDUCER (R DRIVE)



DIMENSIONS – K, KK, L, LQ, LL SIZE – B SIZE REDUCER (R DRIVE)



Model Number		A (in)	B	C	E	F	G	J	K	L	M	N	PIPE SIZE		
Packed	Mechanical Seal												AA (in)	BB (in)	
① K724	① K4724	2	in	5.13	9.50	4.00	14.25	48.00	1.38	0.63	2.00	6.88	4.25	0.75	1.25
			mm	130	241	102	362	1219	35	16	51	175	108		
① KK724	① KK4724	2	in	5.13	9.50	4.00	14.25	48.00	1.38	0.63	2.00	6.88	4.25	0.75	1.25
			mm	130	241	102	362	1219	35	16	51	175	108		
L724	L4724	2	in	6.50	11.00	4.00	14.25	48.00	1.38	0.63	2.38	7.13	4.63	1.00	1.00
			mm	165	279	102	362	1219	35	16	60	181	117		
LQ724	LQ4724	② 2½	in	7.19	11.00	4.00	14.25	48.00	1.38	0.63	2.38	7.13	4.63	1.00	1.00
			mm	183	279	102	362	1219	35	16	60	181	117		
LL724	LL4724	② 3	in	7.19	11.00	4.00	14.25	48.00	1.38	0.63	2.38	7.63	4.63	1.00	1.00
			mm	183	279	102	362	1219	35	16	60	194	117		

- ① With motor frames 184T and smaller, these units are assembled on a shorter base with the following dimension changes:
(F= 16, G = 39, L = 3, N = 5.625).
Motor rails 1 7/8" high are required with 56, 143-T and 145-T frame motors.

Motor frame larger than 256T requires larger base. Consult factory.
Units available to accept 10 H.P., 1200 R.P.M. maximum motor.

NOTE: Motor rails 2" high are required on L, LQ & LL size units with 184T or 4 1/2" center height motors.

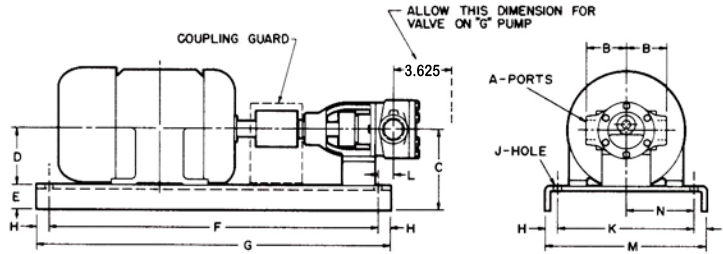
- ② Ports are suitable for use with 150# ANSI (ASA) companion flanges or flanged fittings.

These dimensions are average and not for construction purposes. Certified prints on request.

Section	1706
Page	1706.8
Issue	B

**UNIVERSAL PRODUCT LINE:
STAINLESS STEEL PUMPS
SERIES 724, 4724**

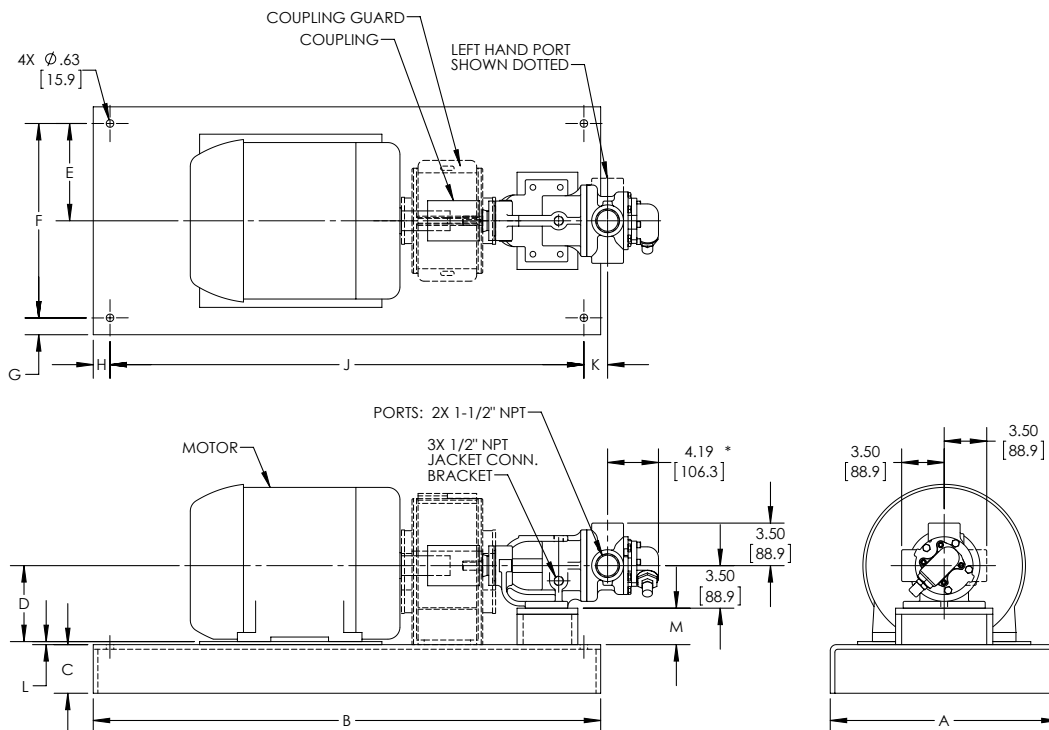
DIMENSIONS – F, FH, G SIZE (D DRIVE)



Model Number		A (in)		B	C	① D	E	F	G	H	J	K	L	M	N
Packed	Mech Seal														
F724	F4724	1/2	in	2.00	5.00	3.50	1.50	20.50	22.00	0.75	0.50	8.50	0.94	10.00	4.25
			mm	51	127	89	38	521	559	19	13	216	24	254	108
FH724	FH4724	3/4	in	2.00	5.00	3.50	1.50	20.50	22.00	0.75	0.50	8.50	0.94	10.00	4.25
			mm	51	127	89	38	521	559	19	13	216	24	254	108
G724	G4724	1	in	2.50	5.00	3.50	1.50	20.50	22.00	0.75	0.50	8.50	0.94	10.00	4.25
			mm	64	127	89	38	521	559	19	13	216	24	254	108

① For motor frames 56, 143T and 145T.

DIMENSIONS – H, HL SIZE (D DRIVE)



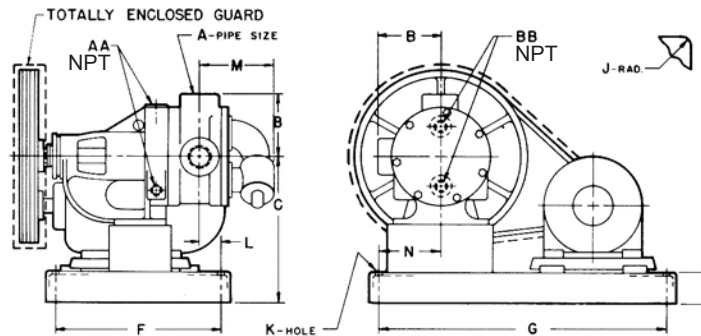
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UNIVERSAL PRODUCT LINE: STAINLESS STEEL PUMPS

SERIES 724, 4724

Section	1706
Page	1706.9
Issue	B

DIMENSIONS – H, HL, K, KK, L, LQ, LL SIZE (V DRIVE)



Model Number		A (in)		B	C	E	F	G	J	K	L	M	N	PIPE SIZE	
Packed	Mech Seal													AA (in)	BB (in)
② H724	H4724	1½	in	3.50	9.25	1.75	14.75	23.75	0.75	0.50	5.00	4.19	4.25	0.50	0.75
			mm	89	235	44	375	603	19	13	127	106	108		
② HL724	HL4724	1½	in	3.50	9.25	1.75	14.75	23.75	0.75	0.50	5.00	4.19	4.25	0.50	0.75
			mm	89	235	44	375	603	19	13	127	106	108		
③ K724	K4724	2	in	5.13	13.81	3.25	17.00	28.75	1.00	0.50	2.50	6.88	5.25	0.75	1.25
			mm	130	351	83	432	730	25	13	64	175	133		
③ KK724	KK4724	2	in	5.13	13.81	3.25	17.00	28.75	1.00	0.50	2.50	6.88	5.25	0.75	1.25
			mm	130	351	83	432	730	25	13	64	175	133		
③ L724	L4724	2	in	6.50	15.31	3.25	17.00	28.75	1.00	0.50	2.25	7.13	5.25	1.00	1.00
			mm	165	389	83	432	730	25	13	57	181	133		
③ LQ724	LQ4724	① 2½	in	7.19	15.31	3.25	17.00	28.75	1.00	0.50	2.25	7.13	5.25	1.00	1.00
			mm	183	389	83	432	730	25	13	57	181	133		
③ LL724	LL4724	① 3	in	7.19	15.31	3.25	17.00	28.75	1.00	0.50	2.25	7.63	5.25	1.00	1.00
			mm	183	389	83	432	730	25	13	57	194	133		

① Ports are suitable for use with Class 150 ANSI (ASA) companion flanges or flanged fittings.

② Base dimensions correct for all motors.

③ Base dimensions correct thru frame 215T motors. Larger motors require larger base.

Section	1706
Page	1706.10
Issue	B

**UNIVERSAL PRODUCT LINE:
STAINLESS STEEL PUMPS
SERIES 724, 4724**

NPSH REQUIRED

Printed performance curves are not available.

Performance curves can be electronically generated with the Viking Pump Curve Generator on vikingpump.com.

NPSHR data is not available on the curve generator.

NPSH (Net Positive Suction Head): The NPSH_R (Net Positive Suction Head Required by the pump) is given in the table below and applies for viscosities through 750 SSU. NPSH_A (Net Positive Suction Head – Available in the system) must be greater than the NPSH_R. For a complete explanation of NPSH, see Application Data Sheet AD-19.

FOR VISCOSITIES UP TO 750 SSU – See NPSH_R table below.

NPSH_R for high viscosities can be estimated using the following method:

1. Calculate line loss for a 1 foot long pipe of a diameter matching the pump inlet port size. Use your flow rate and max viscosity.
2. Convert this value into Feet of Liquid (S.G. 1.0)
3. Add this value to the NPSH_R value in the chart below.

NPSH_R – FEET OF LIQUID (Specific Gravity 1.0), Viscosities up to 750 SSU

PUMP SIZE	PUMPS SPEED, RPM														
	100	125	155	190	230	280	350	420	520	640	780	950	1150	1450	1750
C	—	—	—	—	—	—	—	—	—	—	—	1.7	1.9	2.2	2.4
F, FH	—	—	—	—	—	—	—	—	—	1.8	1.9	2.1	2.3	2.8	3.4
H, HL	—	—	—	—	1.7	1.8	1.9	2.1	2.4	2.8	3.4	4.5	6.2	9.5	13.5
K, KK	—	1.7	1.8	1.9	2.1	2.3	2.8	3.3	4.4	6.3	9.1	—	—	—	—
LQ	1.6	1.8	2.0	2.2	2.5	3.0	3.8	5.0	7.3	10.8	—	—	—	—	—
LL	1.6	1.8	2.0	2.2	2.5	3.0	3.8	5.0	7.3	—	—	—	—	—	—