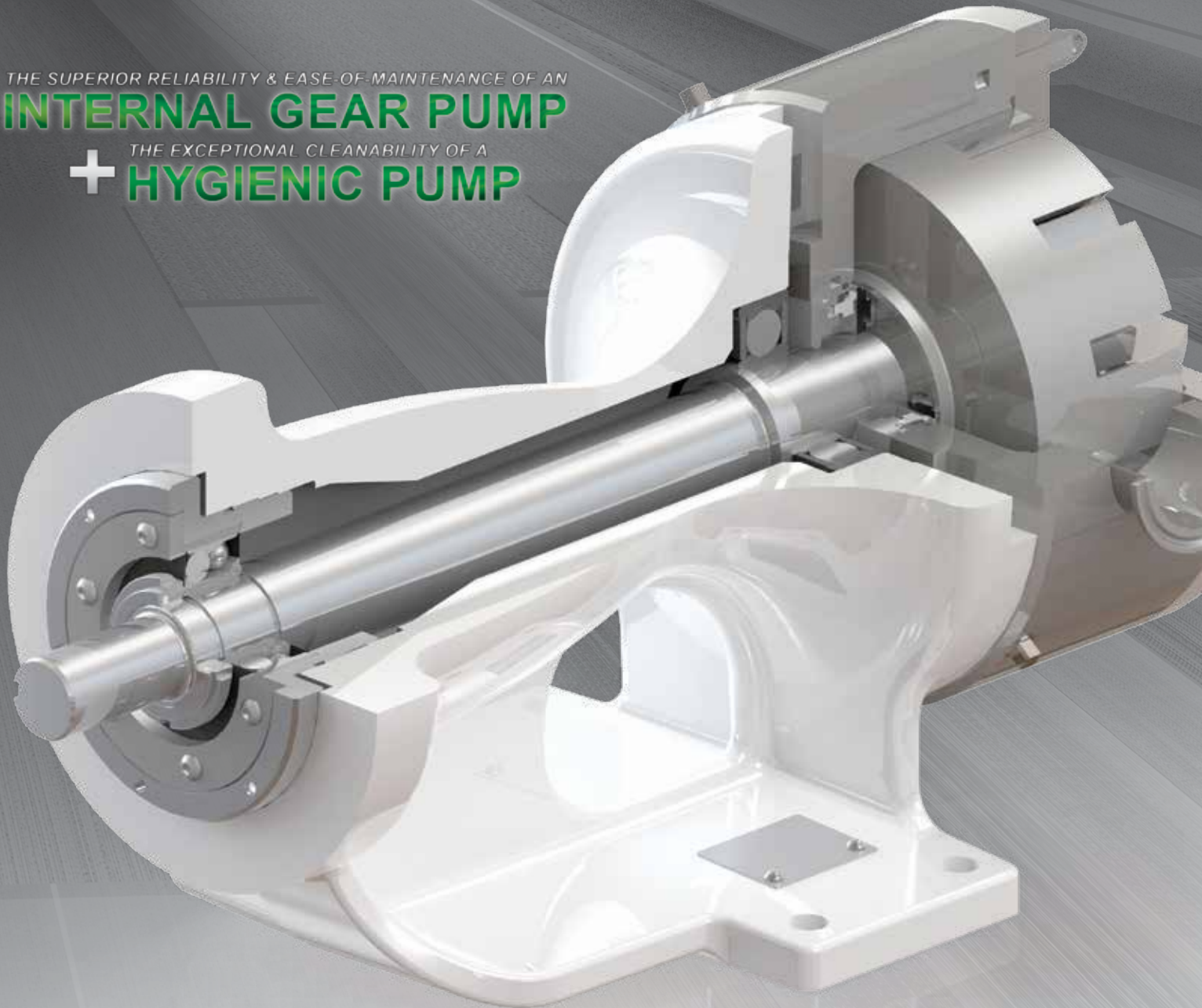




# HYGIENIC S E R I E S

THE SUPERIOR RELIABILITY & EASE-OF-MAINTENANCE OF AN  
**INTERNAL GEAR PUMP**

+ THE EXCEPTIONAL CLEANABILITY OF A  
**HYGIENIC PUMP**



FDA  
COMPLIANT

USDA  
COMPLIANT



**Capacity**  
to 320 GPM (73 M<sup>3</sup>/Hr)



**Pressure**  
to 150 PSI (10 BAR)



**Viscosity**  
28 to 1,000,000 SSU (1 to 220,000 cSt)



**Temperature**  
-5°F to +225°F (-20°C to +107°C)

**VIKING PUMP**

A Unit of IDEX Corporation



# VIKING PUMP

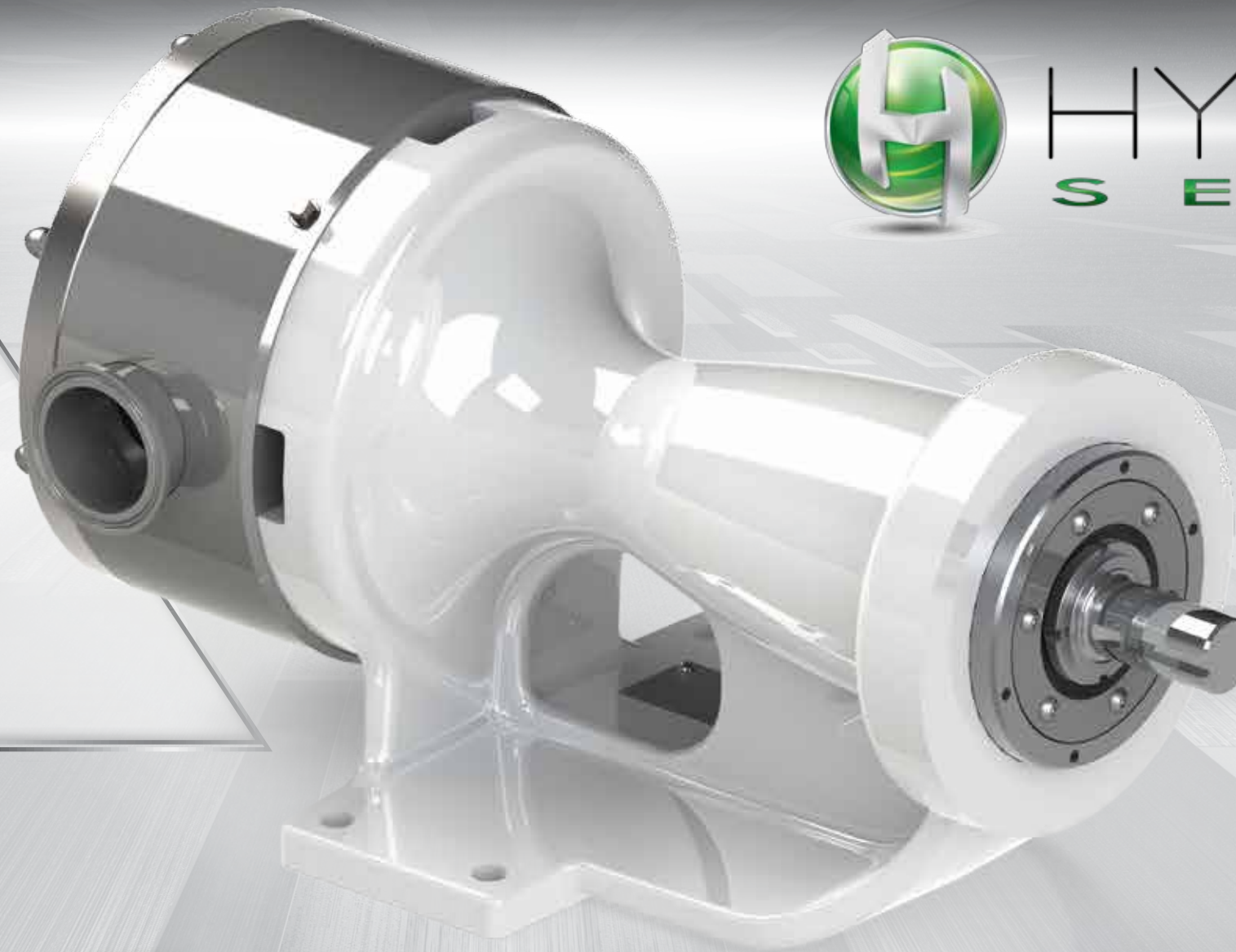
## INDUSTRY & APPLICATION EXPERTS

- Application experience spanning more than 100 years
- Extensive food and personal care product application expertise
- Viking invented the internal gear pump
- Reliability, quality and performance
- Global service & support

GLOBAL  
**LEADER**  
IN POSITIVE DISPLACEMENT  
**PUMPING**  
SOLUTIONS



# HYGIENIC SERIES



Viking's Hygienic Series positive displacement pumps are designed to conform to international standards for hygienic processing of foods, beverages, fine chemicals, pharmaceuticals and personal care products where the pump will be subject to frequent cleaning. Pumps are designed for Clean In Place (CIP) or Clean Out of Place (COP)/Strip Clean Methods.



SCAN TO GET INSTANT ACCESS TO  
VIKING PUMP'S WEBSITE

[VIKINGPUMP.COM/HYGIENIC](http://VIKINGPUMP.COM/HYGIENIC)

## MARKETS & APPLICATIONS

Chocolates

Edible Oils  
& Nut Butters

Chemicals

Dairy

Personal Care Products

Meat

Confectioneries  
& Sweeteners



# HYGIENIC SERIES ADVANTAGES



## DOUBLE SEAL FLUSH/ QUENCH PORTS STANDARD

Enables field change from single to double seals.

## INTERNAL ANGLES

Machined to a minimum radius of 1/32 in (0.08 mm) to ensure cleanability.

## INTERNAL WETTED SURFACES

Polished to a minimum Ra of 32µin (0.8µm) to ensure cleanability.

## SEALED BEARINGS WITH FOOD-GRADE GREASE

Means no oil reservoir and no oil changes.

## ROTATABLE BEARING HOUSING

Allows five minute end clearance adjustment by rotating the bearing housing, vs. 2-4 hours shimming on most lobe or circumferential piston pumps.

## REMOVABLE IDLER PIN

Allows replacement of pin only instead of head and pin assembly to reduce maintenance costs. (Patent pending)

## LOCATING PIN ON CASING

Ensures correct pump head reassembly.

## JACKSCREW TAPS

For easy head removal.

## FRONT REMOVABLE ROTOR, SHAFT SEAL AND CASING

Enables fast disassembly and reassembly for cleaning or inspection without disturbing drive end. (Patent pending)

## INSPECTION PORTS

At 3, 6, 9 and 12 o'clock positions, provide visual cue of seal leakage and keeps liquid out of bearings.

## RIGID BRACKET

Ensures shaft alignment to maximize seal and bearing life.

## ONLY ONE SHAFT SEAL

Reduces chance of unplanned downtime due to seal leakage and reduces cost of seal replacement compared to most hygienic PD pumps which require two seals.

## Cleaning Methods:



### COP (Clean Out of Place)\*

- Available conforming to 3-A Hygienic Standard #02-11, USDA FSIS sanitation guidelines, FDA GMP guidelines.
- Easily removable head, rotor, seal and casing enables complete cleaning of wetted parts.



### CIP (Clean In Place)\*

- Available with EHEDG Type EL Class 1 Certification for In-Place Cleanability
- Available conforming to 3-A Hygienic Standard #02-11, USDA FSIS sanitation guidelines, FDA GMP guidelines.
- Vertical ports for self-draining.

## Standards and Options:

### Seals:

- Single mechanical seal standard.
- Optional: double mechanical seal with flush/quench or single or double O-ring seal.

### Head Fasteners:

- Acorn nuts standard, wing nuts optional.

### Heating/Cooling:

- Jacketing option for melting chocolate or other ambient temperature solids prior to startup.



### Porting:

- Hygienic clamp ports conforming to ISO 2852 standard. Other hygienic ports and ANSI compatible flange ports optional.
- Standard and optional port sizes listed in specifications, page 6.
- Opposite ports standard, 90° ports optional.
- CIP-able port orientations:
- Additional port orientations for COP:



One port oriented downwards for drainability. (Flanged ports not available with vertical port oriented downward)

\*Not all configurations compliant with 3-A and/or EHEDG due to customer-specified option requirements like ANSI flanges or non-approved materials.



Interchangeable with Existing Viking Heavy Duty Pumps



# HYGIENIC SERIES SPECIFICATIONS

SPECIFICATIONS														
Model Number ⑤		Standard Port Size ①	Optional Ports	Nominal Pump Flow Rate (100 SSU)			Max. Differential Pressure		Max. Hydrostatic Pressure		Max. Recommended Temp for Std. Pump ②		Approximate Shipping Weight	
Mech Seal ③	O-Ring Seal ④	in	in	GPM	M <sup>3</sup> /Hr	RPM	PSIG	BarG	PSIG	BarG	°F	°C	lbs	kg
H4157B	H157B	1	-	10	2.3	1150	150	10	400	28	225	107	40	18
HL4157B	HL157B	1-1/2	-	20	4.5	1150	150	10	400	28	225	107	42	19
KS4157B	KS157B	1-1/2	2	34	7.7	520	150	10	400	28	225	107	123	56
K4157B	K157B	2	2-1/2	50	10	520	150	10	400	28	225	107	125	57
KK4157B	KK157B	2	2-1/2, 3	65	14.7	520	150	10	400	28	225	107	130	59
LQ4157B	LQ157B	2-1/2	3	90	20	420	150	10	400	28	225	107	233	106
LL4157B	LL157B	3	-	110	25	420	150	10	400	28	225	107	240	109
LS4157B	LS157B	3	4	160	36	520	125	8.5	400	28	225	107	255	116
Q4157B	Q157B	4	6	200	45	350	125	8.5	400	28	225	107	615	279
QS4157B	QS157B	6	-	320	73	350	125	8.5	400	28	225	107	677	307

- ① Standard ports are ISO 2852 hygienic clamp. Port options include most other hygienic port types and ANSI-compatible Class 150 flanges.
- ② Higher temperatures can be handled with special construction, consult factory.
- ③ Mechanical seal viscosity range: Carbon/SiC 1 to 5,000 cSt; SiC/SiC 1 to 220,000 cSt.
- ④ O-ring seal viscosity range: 1 to 220,000 cSt.
- ⑤ Pumps with jacketing denoted as 257B or 4257B

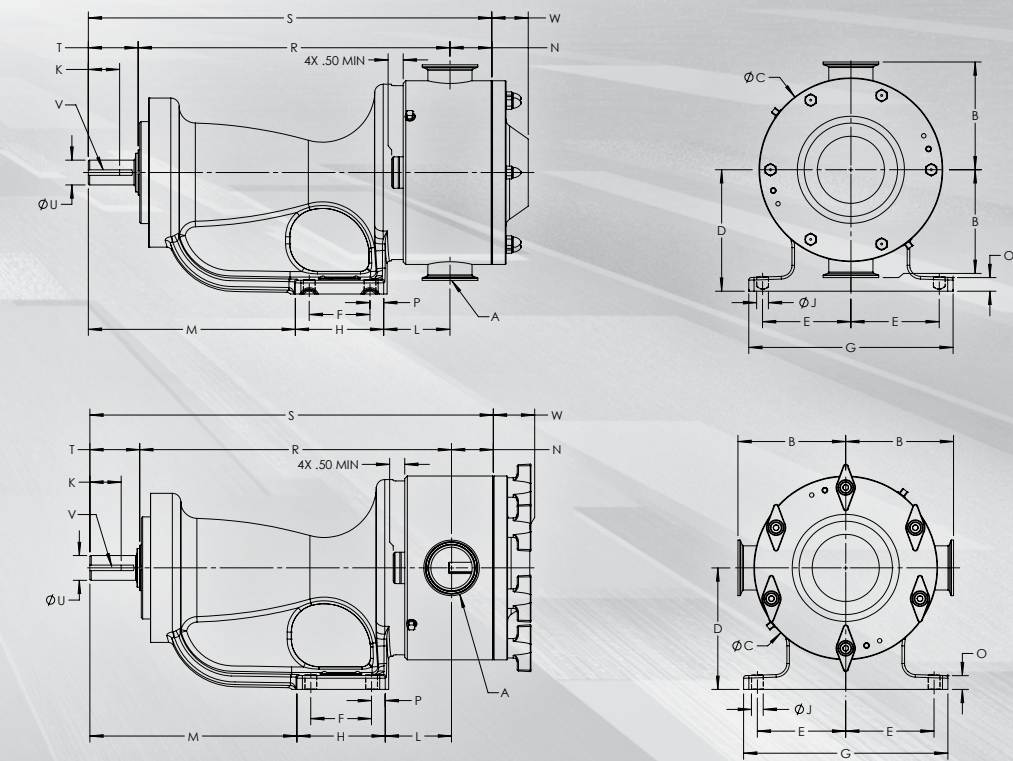
## MATERIALS OF CONSTRUCTION

Component	Product Contact?	Standard Construction	Options
Casing, Head and Rotor	Yes	316 SS	—
Rotor Retainer Screw	Yes	316 SS	—
Rotor Retainer Washer	Yes	17-4 PH SS	—
Idler	Yes	770 Non-Galling Alloy	FDA PEEK (200°F/93°C Max Temp) FDA Metal Detectable Acetal (125°F/52°C Max Temp)
Idler Bushing	Yes	FDA Carbon Graphite	Silicon Carbide, Hardened Iron ①
Idler Pin	Yes	316 Stainless Steel, Colmonoy #6 Coated	—
Single Mechanical Seal Faces	Yes	Carbon vs. Silicon Carbide	SiC vs. SiC
Double Mechanical Seal Faces	Yes	Carbon (Stationary 1) vs. Silicon Carbide (Rotary) vs. Carbon (Stationary 2)	SiC (Stationary 1) vs. SiC (Rotary) vs. Carbon (Stationary 2)
O-Rings and Mechanical Seal Elastomers	Yes	FDA Buna	FDA EPDM, FDA Viton®, Others Available
Seal Hardware, Including O-Ring Seal Sleeve (for O-Ring Shaft Seal Option)	Yes	316 SS	—
Seal Springs	No	304 SS	—
Shaft	No	17-4 PH SS	—
Sealed Ball Bearing	No	Steel, Buna, H1 Food Grade Grease	—
Sealed Angular Contact Thrust Bearings	No	Steel, Buna, H1 Food Grade Grease	—
Bracket	No	Cast Iron, Powder-Coated	—
Bearing Housing	No	316 SS	—
Tie Bolts	No	304 SS	—
Head Nuts	No	304 SS	Head Wing Nuts
Head Jacket (Option)	No	316 SS	—
Bracket Jacket (Option) ②	No	316 SS Tubing	—
Head Jacket O-Ring	No	Aflas®	—

- ① Material option not compatible with cleaning solutions, disqualifies pump from 3A and EHEDG certifications.
  - ② Bracket jacket disqualifies pump from 3A certification.
- Viton® is a registered trademark of DuPont Performance Elastomers, L.L.C.  
Aflas® is a registered trademark of the Asahi Glass Co., Ltd.



# HYGIENIC SERIES DIMENSIONS



## DIMENSIONS

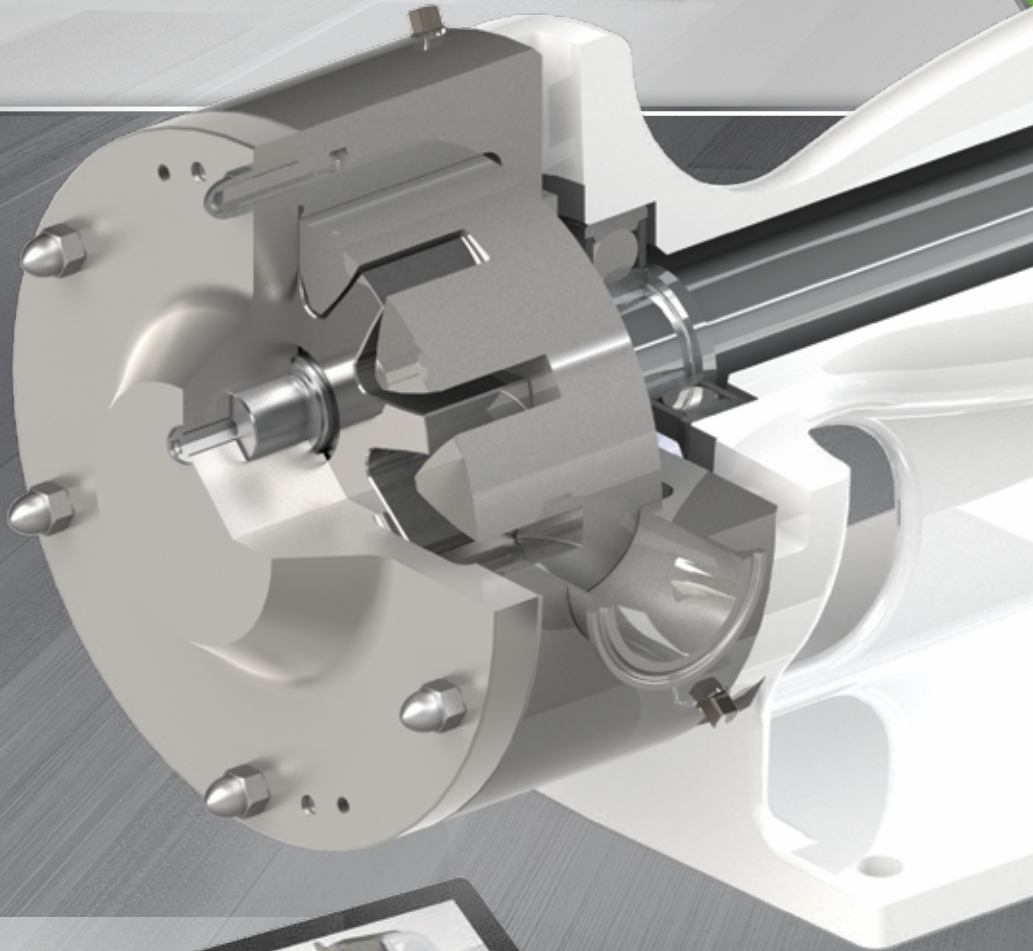
Model No.	A (in) ①	B (clamp)	B (flange)	C ②	D	E	F	G	H	J	K	L ③	M	N	O	P	R	S	T	U ③	V	W	
H4157B	H157B	1	in 3.50 mm 88.9	4.00 101.6	4.88 124.0	3.50 88.9	2.25 57.2	2.25 57.2	6.75 171.5	3.50 88.9	0.47 11.9	0.99 25.1	3.38 85.7	5.19 131.8	0.79 20.1	0.56 14.2	0.62 15.7	10.44 265.2	12.85 326.4	1.62 41.1	0.75 19.1	0.19 x 0.09 4.83 x 2.29	1.56 39.6
HL4157B	HL157B	1.5	in 3.38 mm 85.9	4.00 101.6	4.88 124.0	3.50 88.9	2.25 57.2	2.25 57.2	6.75 171.5	3.50 88.9	0.47 11.9	0.99 25.1	3.38 85.7	5.19 131.8	1.41 35.8	0.56 14.2	0.62 15.7	10.44 265.2	13.47 342.1	1.62 41.1	0.75 19.1	0.19 x .09 4.83 x 2.29	1.56 39.6
KS4157B	KS157B	1.5	in 4.88 mm 124.0	5.50 139.7	8.32 211.3	5.50 139.7	4.00 101.6	2.75 69.9	9.25 235.0	4.00 101.6	0.53 13.5	1.42 36.1	3.00 76.2	9.38 238.3	1.15 29.2	0.56 14.2	0.62 15.7	14.25 362.0	17.52 445.0	2.13 54.1	1.12 28.4	0.25 x 0.12 6.35 x 3.05	1.65 41.9
K4157B	K157B	2	in 4.88 mm 124.0	5.25 133.4	8.32 211.3	5.50 139.7	4.00 101.6	2.75 69.9	9.25 235.0	4.00 101.6	0.53 13.5	1.42 36.1	3.00 76.2	9.38 238.3	1.40 35.6	0.56 14.2	0.62 15.7	14.25 362.0	17.77 451.4	2.13 54.1	1.12 28.4	0.25 x 0.12 6.35 x 3.05	1.65 41.9
KK4157B	KK157B	2	in 4.88 mm 124.0	5.25 133.4	8.32 211.3	5.50 139.7	4.00 101.6	2.75 69.9	9.25 235.0	4.00 101.6	0.53 13.5	1.42 36.1	3.00 76.2	9.38 238.3	1.90 48.3	0.56 14.2	0.62 15.7	14.25 362.0	18.27 464.1	2.13 54.1	1.12 28.4	0.25 x 0.12 6.35 x 3.05	1.65 41.9
LQ4157B	LQ157B	2.5	in 6.32 mm 160.5	7.19 182.6	10.88 276.4	7.00 177.8	4.38 111.3	4.00 101.6	10.00 254.0	5.38 136.7	0.53 13.5	1.42 36.1	3.38 85.9	9.12 231.6	2.25 57.2	0.62 15.7	0.62 15.7	15.75 400.1	20.12 511.0	2.13 54.1	1.12 28.4	0.25 x 0.12 6.35 x 3.05	2.57 65.3
LL4157B	LL157B	3	in 6.07 mm 154.2	7.19 182.6	10.88 276.4	7.00 177.8	4.38 111.3	4.00 101.6	10.00 254.0	5.38 136.7	0.53 13.5	1.42 36.1	3.38 85.9	9.12 231.6	2.75 69.9	0.62 15.7	0.62 15.7	15.75 400.1	20.62 523.7	2.13 54.1	1.12 28.4	0.25 x 0.12 6.35 x 3.05	2.57 65.3
LS4157B	LS157B	3	in 6.07 mm 154.2	7.19 182.6	10.88 276.4	7.00 177.8	4.38 111.3	4.00 101.6	10.00 254.0	5.38 136.7	0.53 13.5	2.55 64.8	4.75 120.7	9.12 231.6	2.41 61.2	0.62 15.7	0.62 15.7	15.90 403.9	21.66 550.2	3.50 88.9	1.44 36.6	0.38 x 0.19 9.65 x 4.83	2.57 65.3
Q4157B	Q157B	4	in 8.40 mm 213.4	8.25 209.6	14.5 368.3	8.75 222.3	4.12 104.6	4.00 101.6	10.00 254.0	6.00 152.4	0.64 17.5	3.58 90.9	6.62 168.1	11.13 282.7	2.47 62.7	0.80 20.3	1.00 25.4	19.25 489.0	26.2 665.5	4.50 114.3	1.94 49.3	0.5 x 0.12 12.7 x 3.0	3.69 93.7
QS4157B	QS157B	6	in N/A mm N/A	9.00 228.6	14.50 368.3	8.75 222.3	4.12 104.6	4.00 101.6	10.00 254.0	6.00 152.4	0.69 17.5	3.58 90.9	7.12 180.8	11.13 282.7	3.47 88.1	0.80 20.3	1.00 25.4	19.75 501.6	27.72 704.1	4.50 114.3	1.94 49.3	0.5 x 0.25 12.7 x 6.3	3.95 100.3

- ① Standard ports are hygienic clamp. Hygienic clamp port dimension is O.D. of pipe, not O.D. of ferrule, which is about 1/2" greater diameter. Flange ports suitable for use with Class 150 steel or stainless steel companion flanges or flanged fittings.
  - ② "D" dimension on H-Q sizes represents both shaft height and horizontal port centerline height. "D" dimension on QS size represents shaft height only. Horizontal port centerline height on QS size is 11.75" (298.5 mm).
  - ③ "U" dimension on L, LL & LS equivalent to Viking Universal Seal 127A series of same size, not 127AE or B, which have 1.44" (36.6 mm) diameter.
- NOTE:** Jacketed pumps (models 257B & 4257B) not shown. For jacketed pump dimensions, contact factory or your local distributor.





# HYGIENIC S E R I E S



Drop-in Replacement for Existing Viking Pumps



One Shaft Seal (Mechanical or O-Ring)



Fast Clean In Place (CIP), Fast Clean Out of Place (COP)



No Shimming, No Rotor Timing, No Oil/Grease Changing



Flow to 320 GPM (73 M<sup>3</sup>/Hr), Pressure to 150 PSI (10 BAR)

## WATCH THE VIDEOS



Learn more about how the Hygienic Series is redefining the hygienic processing industry.

Scan this QR code or visit [VIKINGPUMP.COM/HYGIENIC](http://VIKINGPUMP.COM/HYGIENIC)



# VIKING PUMP

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