ARO®

LUBETECH L SERIES

ENGINEERING DATA PACK

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ARO®

L SERIES MODEL NUMBER SYSTEM

	SIZE		FEATURE	MODEL			PUMP OPTIONS	ROTATION		MODIFICATION	SAE PORT OPTIONS			
POSITION	1	2	3	4	5	6	7	8	9	10	11	12	13	14

POS. 1 & 2 - SIZE

000
00
0
1
2
5

POS. 3 - REVERSING FEATURE

R = Reversing
(Not Available for 000 or 5 Size)

POS. 4, 5, & 6 - MODEL

LE

POS. 7 - PUMP OPTIONS

D = Carbon Bushings
K = Outboard Ball Bearing
U = Cover Rotated 180°
V* = Valve
*Not Available on 000LE or 5LE Size

POS. 8 & 9 - ROTATION (VALVED MODELS)

C = Clockwise Rotation
CC = Counterclockwise Rotation

POS. 8 & 9 - SUCTION PORT LOCATION (REVERSING FEATURE MODELS)

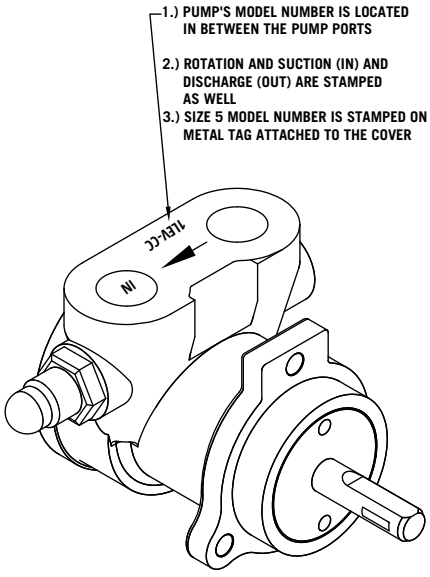
RH = Right Hand Suction
LH = Left Hand Suction

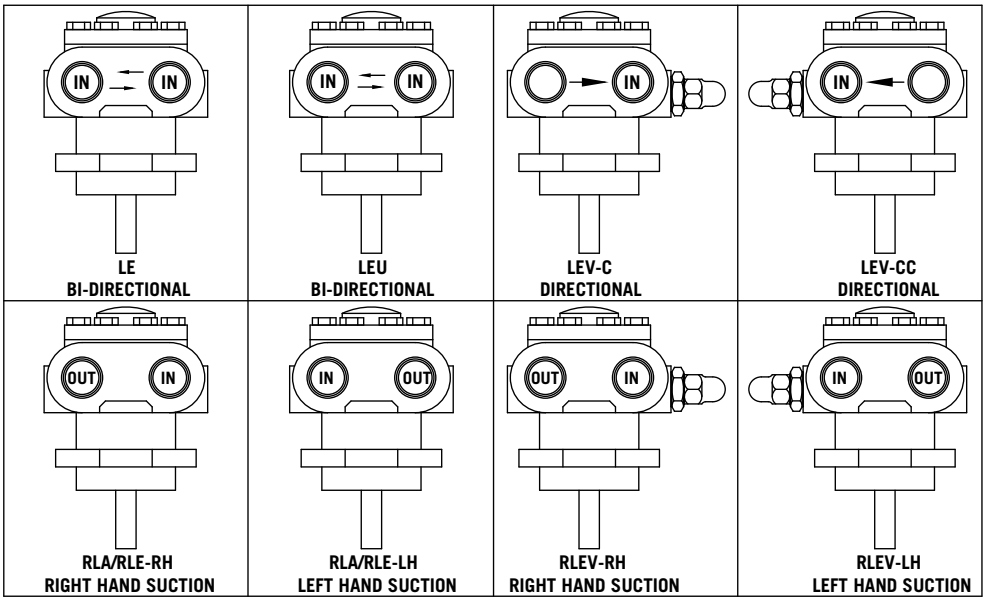
POS. 10 - MODIFICATION

5 = Neoprene Seal
7 = Viton Seal
8 = EPR Seal
A = Tang Shaft
N = No Flat/Keyway in Shaft

POS. 11, 12, 13, & 14 - SAE OPTION

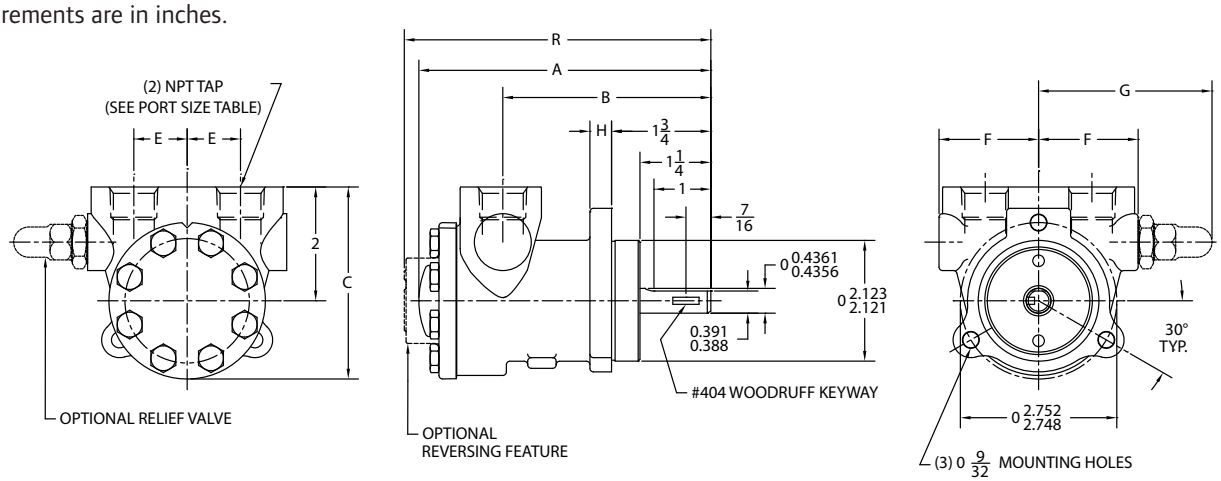
SAE8
(NPT is Standard)





000, 00, 0, 1, & 2LE PUMP MOUNTING DIMENSIONS

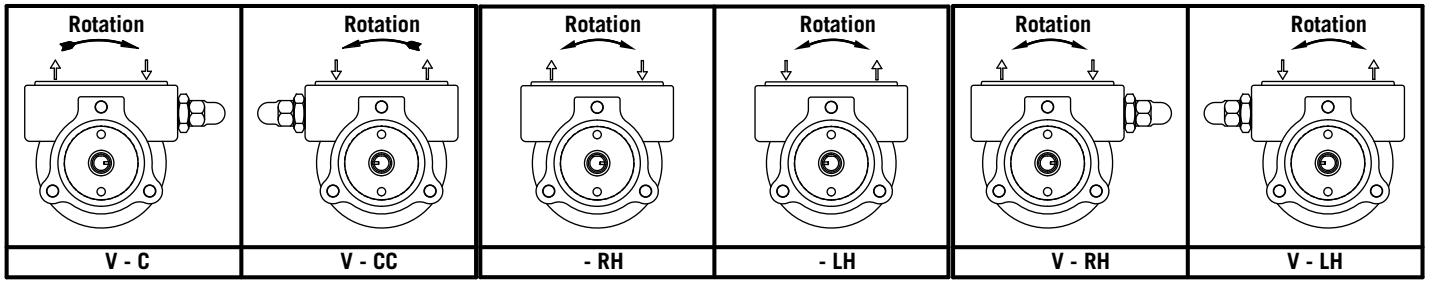
All measurements are in inches.



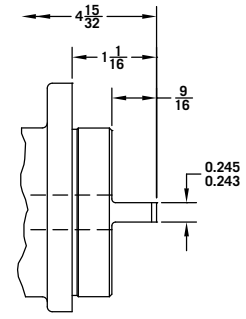
MOUNTING DIMENSIONS

PUMP MODEL		OVERALL LENGTH							
Bi-Rotational	Reversing	Bi-Rot (A)	Rev (R)	B	C	E	F	G	H
000LE		4-15/16"		3-15/32"	3-15/32"	15/16"	1-23/32"	3-3/32"	5/16"
00LE	00RLE	4-15/16"	5-3/16"	3-15/32"	3-15/32"	15/16"	1-29/32"	3-3/32"	3/8"
0LE	0RLE	4-15/16"	5-3/16"	3-15/32"	3-15/32"	15/16"	1-29/32"	3-3/32"	3/8"
1LE		5-3/32"		3-5/8"	3-5/16"	15/16"	1-3/4"	1-3/8"	3/8"
	1RLE		5-1/4"	3-17/32"	3-5/16"	15/16"	1-3/4"	1-3/8"	3/8"
2 LE	2RLE	5-15/16"	6-1/16"	4-7/16"	3-5/8"	15/16"	1-7/8"	1-3/8"	3/8"

RELIEF VALVE & REVERSING FEATURE | **REVERSING FEATURE** | **RELIEF VALVE & REVERSING FEATURE**



SHAFT END VIEW



MODIFICATION "A"

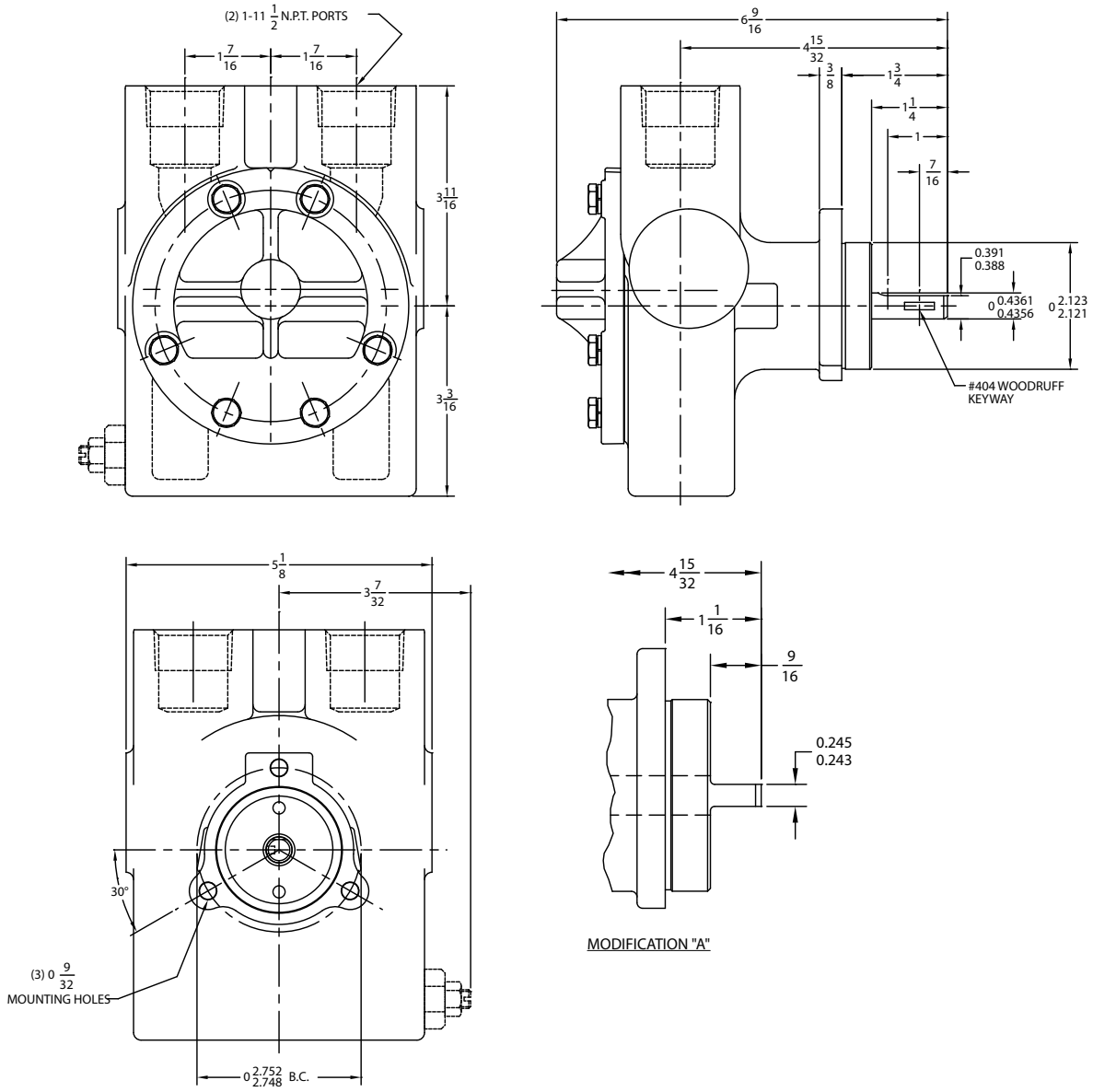
PUMP MODEL

Port Size	000LE	00LE/00RLE	0LE/0RLE	1LE/1RLE	2LE/2RLE
3/8" - 18 NPT	Standard				
1/2" - 14 NPT		Standard	Standard	Standard	Standard
3/4" - 16 UNF (SAE 8)		Optional	Optional	Optional	Optional

NOTE: In conjunction with our program of continuous testing and design upgrading, all specifications are subject to change without notice. All data is approximate. Request a quotation for your specific application.

5LE PUMP MOUNTING DIMENSIONS

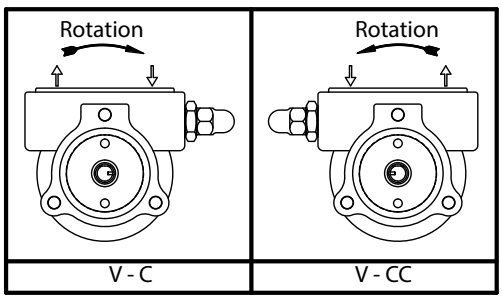
All measurements are in inches.



FLANGED PORT DIMENSIONS

PORT TYPES	
PORT TYPES	AVAILABILITY
1" - 11-1/2 NPT	Standard
1-5/16" - 12 UNF (SEA 8)	Optional

RELIEF VALVE & REVERSING FEATURE



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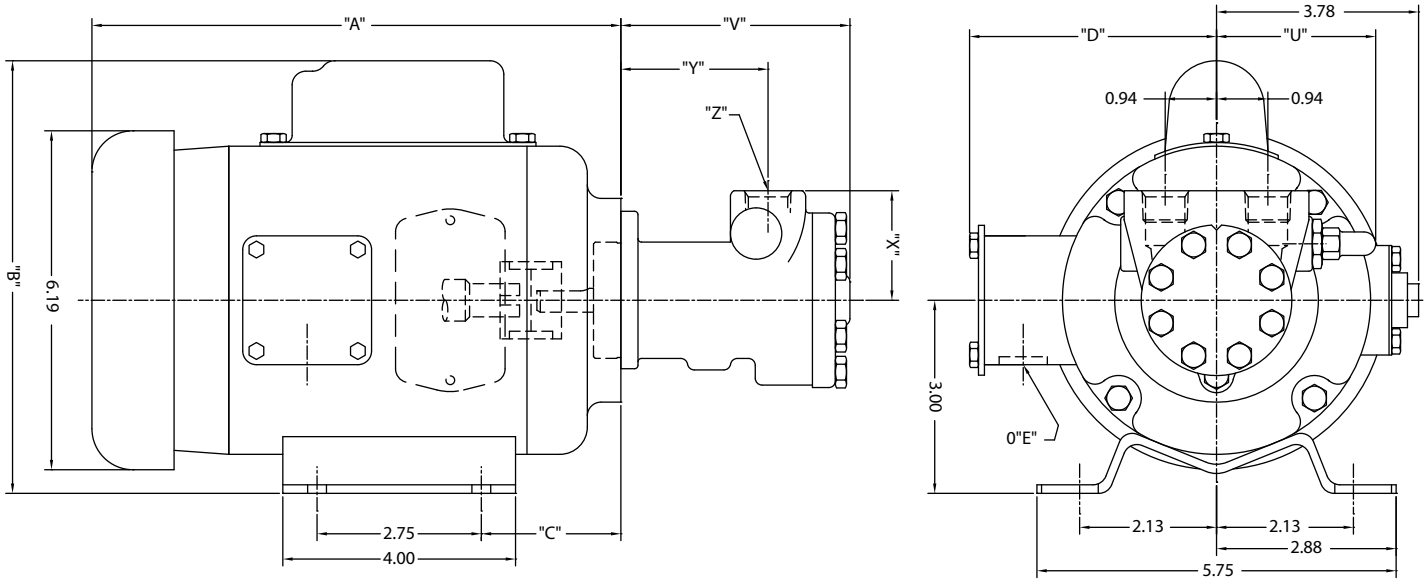
DIMENSIONS FOR 000LE-2LE CLOSE COUPLED TO A 48 FRAME 1 PHASE MOTOR

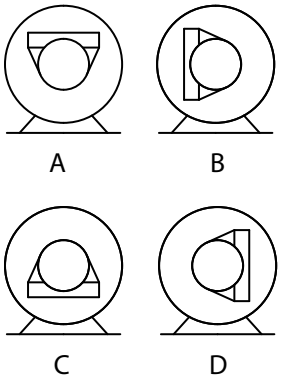
All measurements are in inches.



Model #	HP	Description	"A"	"B"	"C"	"D"	"E"	WT (LBS)
88514	1/4	1/60/115/230 VOLT, 1725 RPM, TEFC, 48YZ FRAME	9.60"	7.41"	2.50"	4.51"	0.88"	23
88600	1/4	1/60/115/230 VOLT, 1725 RPM, XPFC, 48YZ FRAME	12.95"	5.84"	4.11"	6.50"	0.50"	38
88513	1/3	1/60/115/230 VOLT, 1725 RPM, TEFC, 48YZ FRAME	9.60"	7.41"	2.50"	4.51"	0.88"	26
88516	1/2	1/60/115/230 VOLT, 1725 RPM, TEFC, 48YZ FRAME	9.60"	7.41"	2.50"	4.51"	0.88"	29

Model #	"U"	"V"	"X"	"Y"	"Z" - NPT
000LE	3-3/32"	3-13/32"	1-11/16"	2-3/32"	3/8" - 18
00LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
0LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
1LE	3-1/8"	3-11/32"	2"	1-7/8"	1/2" - 14
2LE	3-1/8"	4-3/16"	2"	2-11/16"	1/2" - 14

ASSEMBLY STYLES



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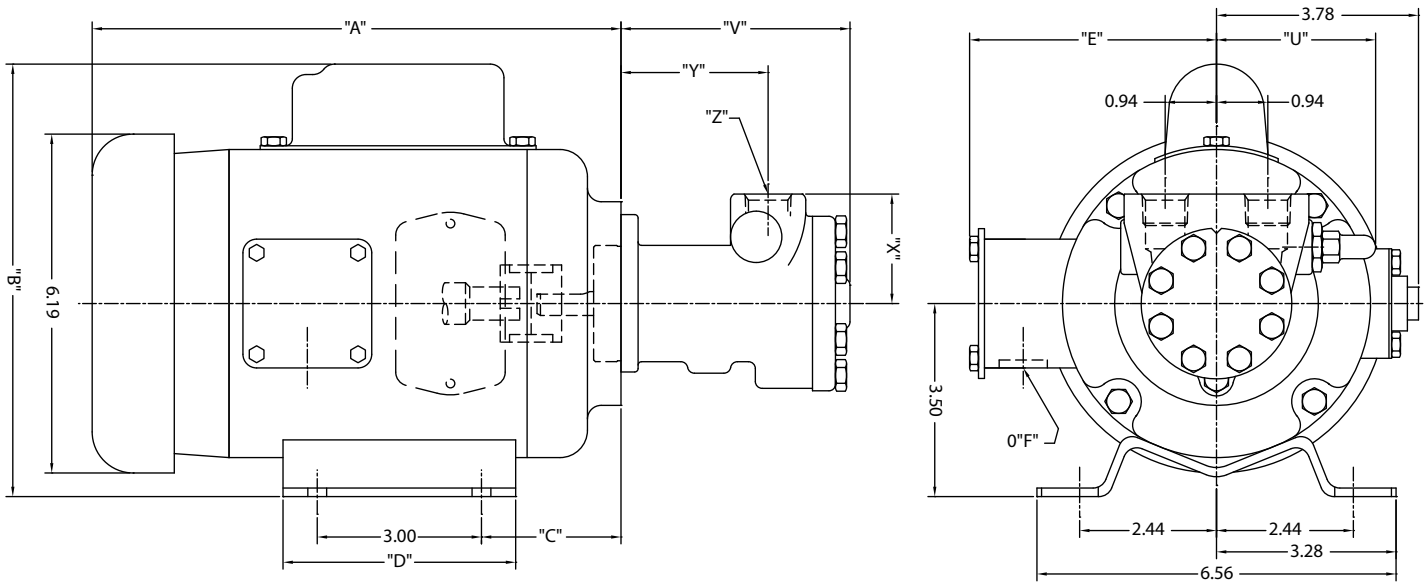
DIMENSIONS FOR 000LE-2LE CLOSE COUPLED TO A 56 FRAME 1 PHASE MOTOR

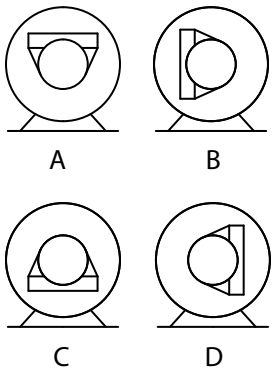
All measurements are in inches.



Model #	HP	Description	"A"	"B"	"C"	"D"	"E"	"F"	WT (LBS)
88494	1/2	1/60/115/230 VOLT, 1725 RPM, TEFC, 56YZ FRAME	9.65"	7.90"	2.75"	4.00"	4.90"	0.88"	33
88601	1/2	1/60/115/230 VOLT, 1725 RPM, XPFC, 56YZ FRAME	13.96"	6.60"	4.36"	4.25"	6.50"	0.50"	44
88602	3/4	1/60/115/230 VOLT, 1725 RPM, TEFC, 56YZ FRAME	11.78"	8.68"	2.75"	4.25"	4.51"	0.88"	36

Model #	"U"	"V"	"X"	"Y"	"Z" - NPT
000LE	2-15/16"	3-13/32"	1-11/16"	2-3/32"	3/8" - 18
00LE	2-7/8"	3-3/16"	2"	1-23/32"	1/2" - 14
0LE	2-7/8"	3-3/16"	2"	1-23/32"	1/2" - 14
1LE	2-7/8"	3-11/32"	2"	1-7/8"	1/2" - 14
2LE	3-1/32"	4-3/16"	2"	2-11/16"	1/2" - 14

ASSEMBLY STYLES



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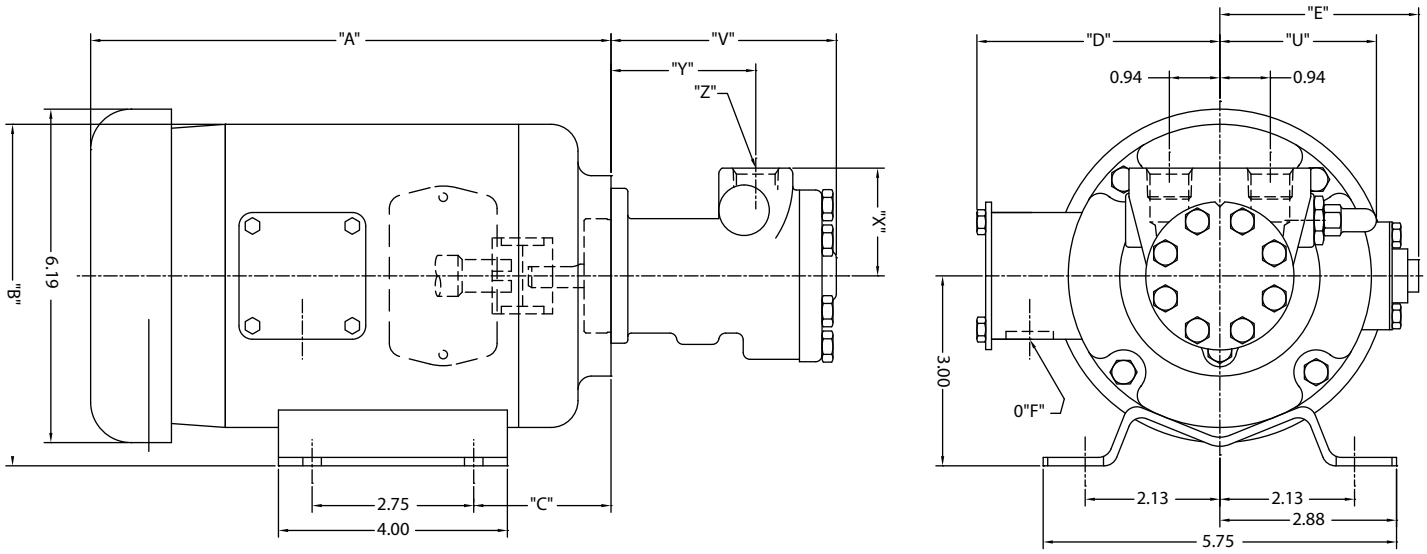
DIMENSIONS FOR 000LE-2LE CLOSE COUPLED TO A 48 FRAME 3 PHASE MOTOR

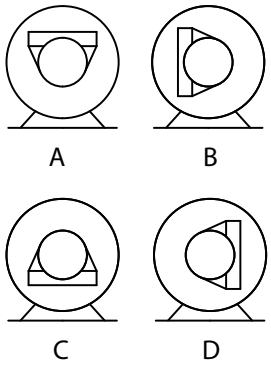
All measurements are in inches.



Model #	HP	Description	"A"	"B"	"C"	"D"	"E"	"F"	WT (LBS)
88515	1/4	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 48YZ FRAME	9.10"	5.84"	2.50"	4.90"	3.78"	0.88"	33
88603	1/4	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, XPFC, 48YZ FRAME	12.95"	6.10"	4.11"	6.50"	-	0.50"	33
88495	1/3	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 48YZ FRAME	9.10"	5.84"	2.50"	4.90"	3.78"	0.88"	33
88519	1/2	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 48YZ FRAME	9.10"	5.84"	2.50"	4.90"	3.78"	0.88"	33

Model #	"U"	"V"	"X"	"Y"	"Z" - NPT
000LE	3-3/32"	3-13/32"	1-11/16"	2-3/32"	3/8" - 18
00LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
0LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
1LE	3-1/8"	3-11/32"	2"	1-7/8"	1/2" - 14
2LE	3-1/8"	4-3/16"	2"	2-11/16"	1/2" - 14

ASSEMBLY STYLES



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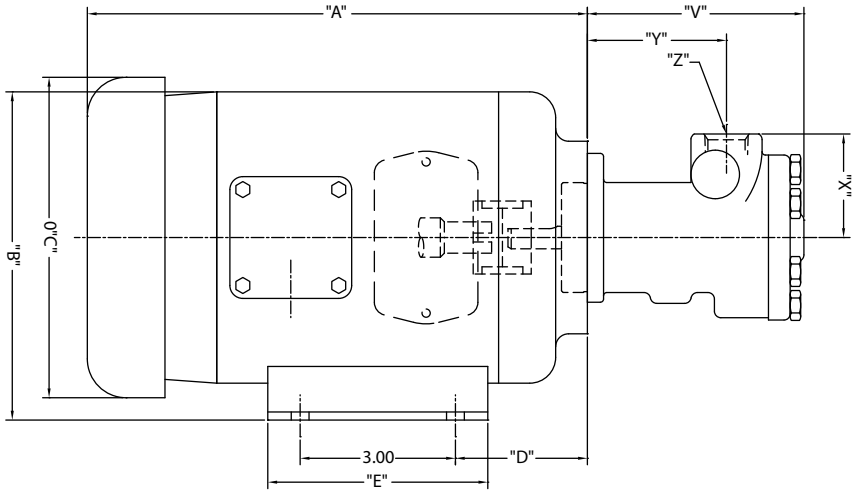
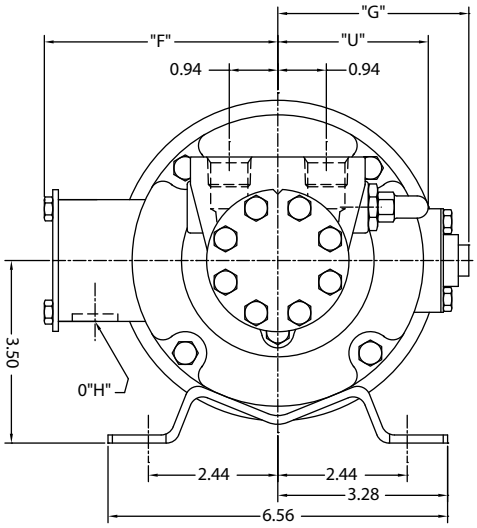
DIMENSIONS FOR 2LE CLOSE COUPLED TO A 56 FRAME 3 PHASE MOTOR

All measurements are in inches.

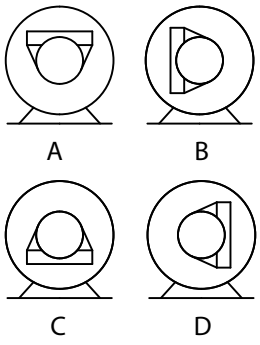




Model #	HP	Description	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	WT (LBS)
88520	1/2	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	9.78"	6.34"	6.19"	2.75"	4.25"	4.51"	3.69"	0.88"	30
88604	1/2	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, XPFC, 56YZ FRAME	13.96"	6.60"	6.20"	4.36"	4.25"	6.50"	-	0.50"	42
88521	3/4	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	10.36"	6.83"	7.19"	2.84"	4.50"	5.20"	4.19"	0.88"	36
88605	1	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	10.36"	6.83"	7.19"	2.84"	4.50"	5.20"	4.19"	0.88"	36
88606	1-1/2	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	11.36"	6.83"	7.19"	2.84"	4.50"	5.20"	4.19"	0.88"	40

Model #	"U"	"V"	"X"	"Y"	"Z" - NPT
000LE	3-3/32"	3-13/32"	1-11/16"	2-3/32"	3/8" - 18
00LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
0LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
1LE	3-1/8"	3-11/32"	2"	1-7/8"	1/2" - 14
2LE	3-1/8"	4-3/16"	2"	2-11/16"	1/2" - 14

ASSEMBLY STYLES



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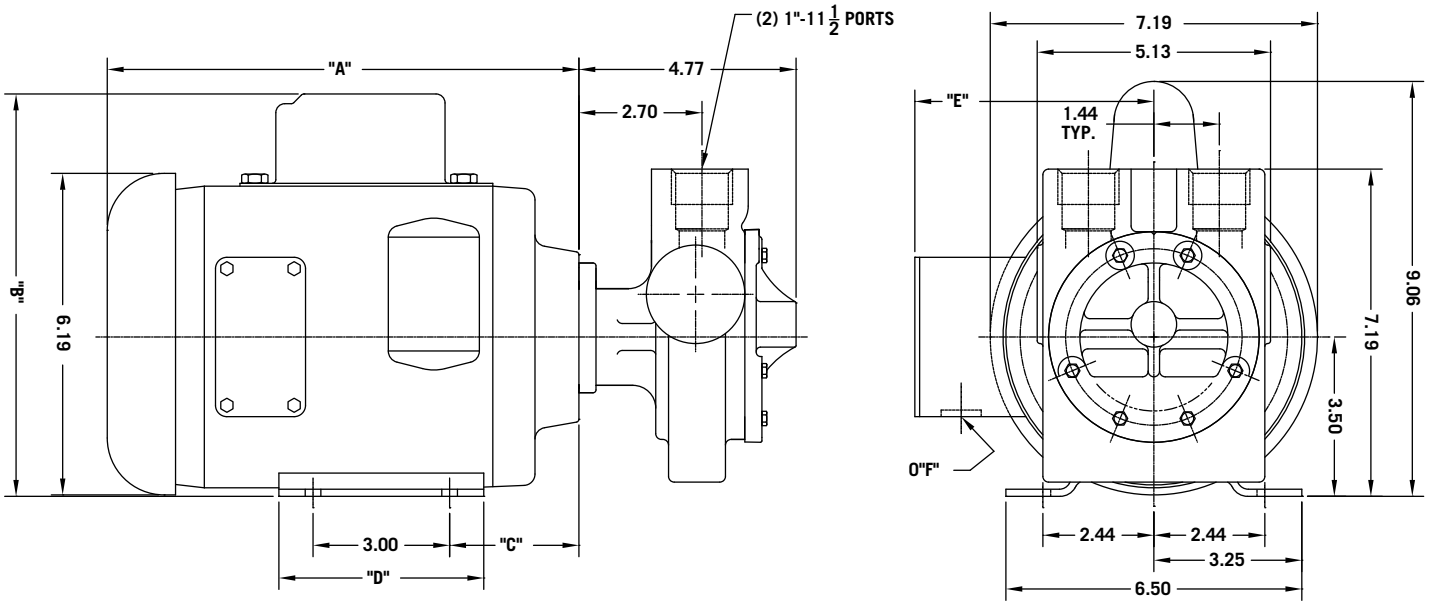
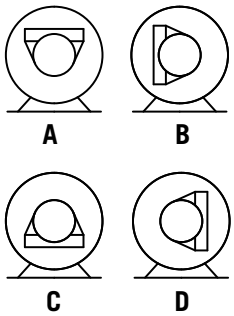
DIMENSIONS FOR 5LE CLOSE COUPLED TO A 56 FRAME 1 PHASE MOTOR

All measurements are in inches.



Model #	HP	Description	"A"	"B"	"C"	"D"	"E"	"H"	WT (LBS)
88494	1/2	1/60/115/230 VOLT, 1725 RPM, TEFC, 56YZ FRAME	9.65"	7.90"	2.75"	4.00"	4.90"	0.88"	33
88601	1/2	1/60/115/230 VOLT, 1725 RPM, XPFC, 56YZ FRAME	13.96"	6.60"	4.36"	4.25"	6.50"	0.50"	44
88602	3/4	1/60/115/230 VOLT, 1725 RPM, TEFC, 56YZ FRAME	11.78"	8.68"	2.75"	4.25"	4.51"	0.88"	36

ASSEMBLY STYLES



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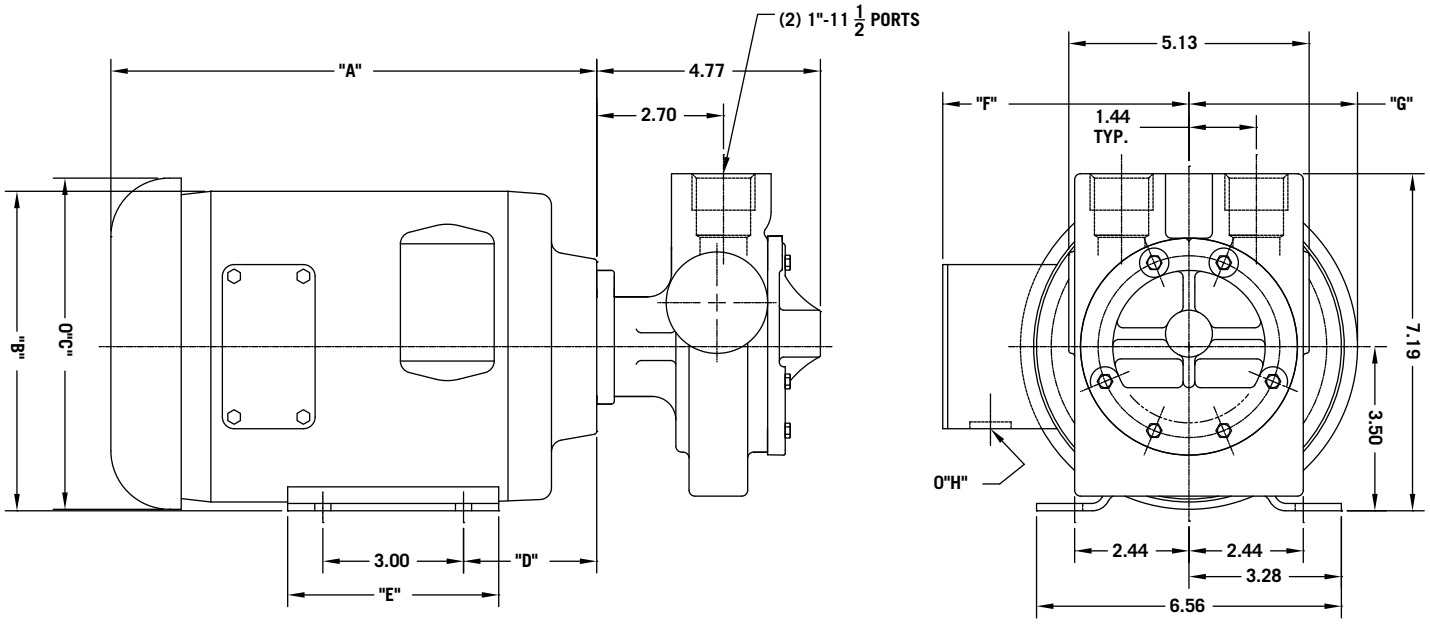
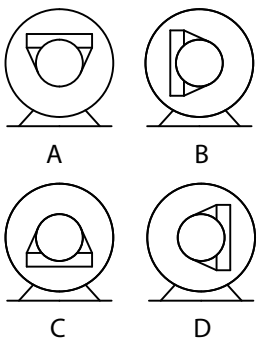
DIMENSIONS FOR 5LE CLOSE COUPLED TO A 56 FRAME 3 PHASE MOTOR

All measurements are in inches.



Model #	HP	Description	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	WT (LBS)
88520	1/2	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	9.78"	6.34"	6.19"	2.75"	4.25"	4.51"	3.69"	0.88"	30
88604	1/2	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, XPFC, 56YZ FRAME	13.96"	6.60"	6.20"	4.36"	4.25"	6.50"	-	0.50"	42
88521	3/4	3PH/50//60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	10.36"	6.83"	7.19"	2.84"	4.50"	5.20"	4.19"	0.88"	36
88605	1	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	10.36"	6.83"	7.19"	2.84"	4.50"	5.20"	4.19"	0.88"	36
88606	1-1/2	3PH/50/60/190-220/380-440 VOLT, 208-230/460 VOLT, 1425/1725 RPM, TEFC, 56YZ FRAME	11.36"	6.83"	7.19"	2.84"	4.50"	5.20"	4.19"	0.88"	40

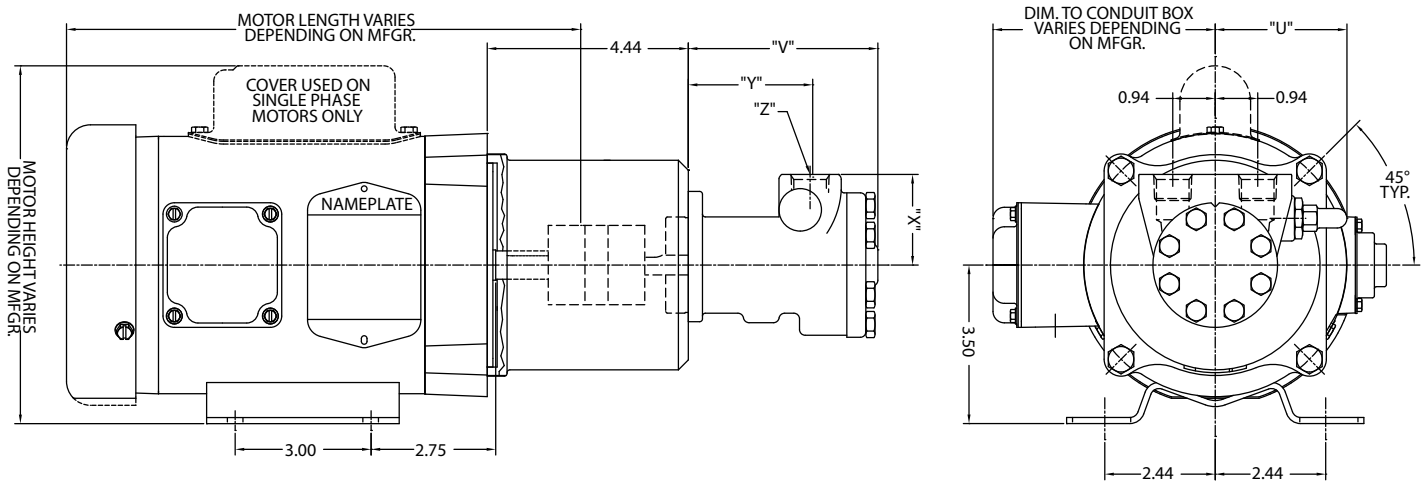
ASSEMBLY STYLES



NOTE: In conjunction with our program of continuous testing and design upgrading, all specifications are subject to change without notice. All data is approximate. Request a quotation for your specific application.

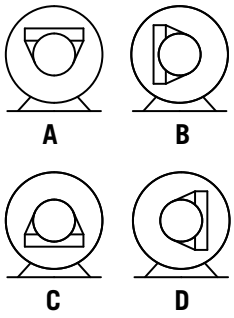
DIMENSIONS FOR 000LE-2LE ADAPTER MOUNTED TO A 56 FRAME 1 & 3 PHASE MOTOR

All measurements are in inches.



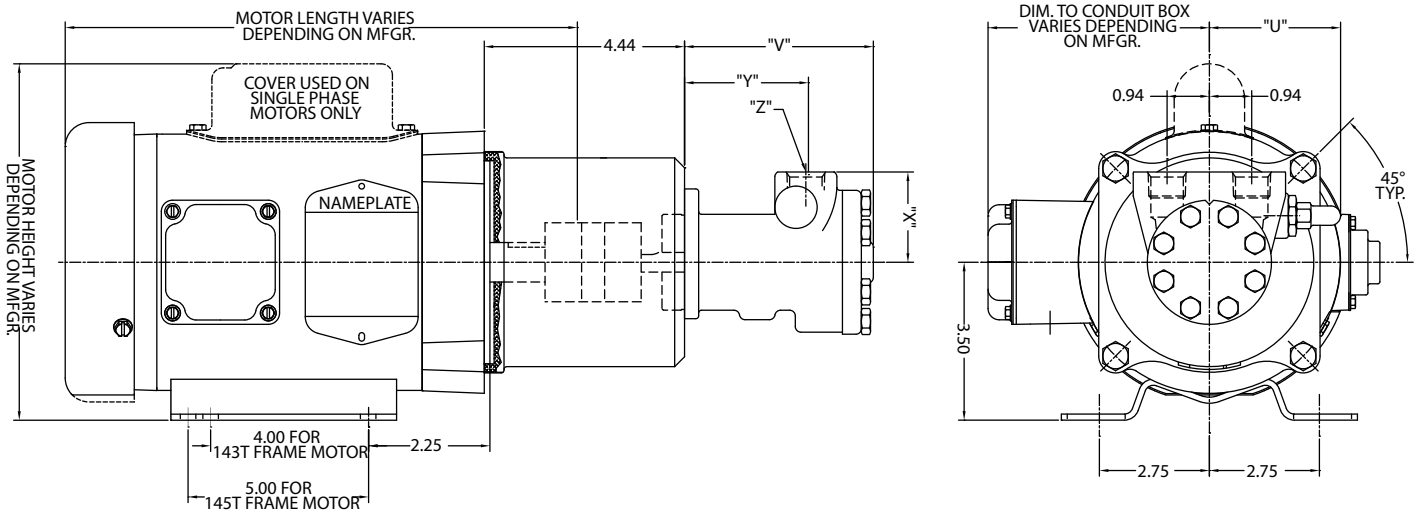
Model #	"U"	"V"	"X"	"Y"	"Z" - NPT
000LE	3-3/32"	3-13/32"	1-11/16"	2-3/32"	3/8" - 18
00LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
0LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
1LE	3-1/8"	3-11/32"	2"	1-7/8"	1/2" - 14
2LE	3-1/8"	4-3/16"	2"	2-11/16"	1/2" - 14

ASSEMBLY STYLES



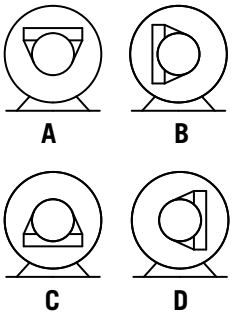
DIMENSIONS FOR 000LE-2LE ADAPTER MOUNTED TO A 143/145TC FRAME 1 & 3 PHASE MOTOR

All measurements are in inches.



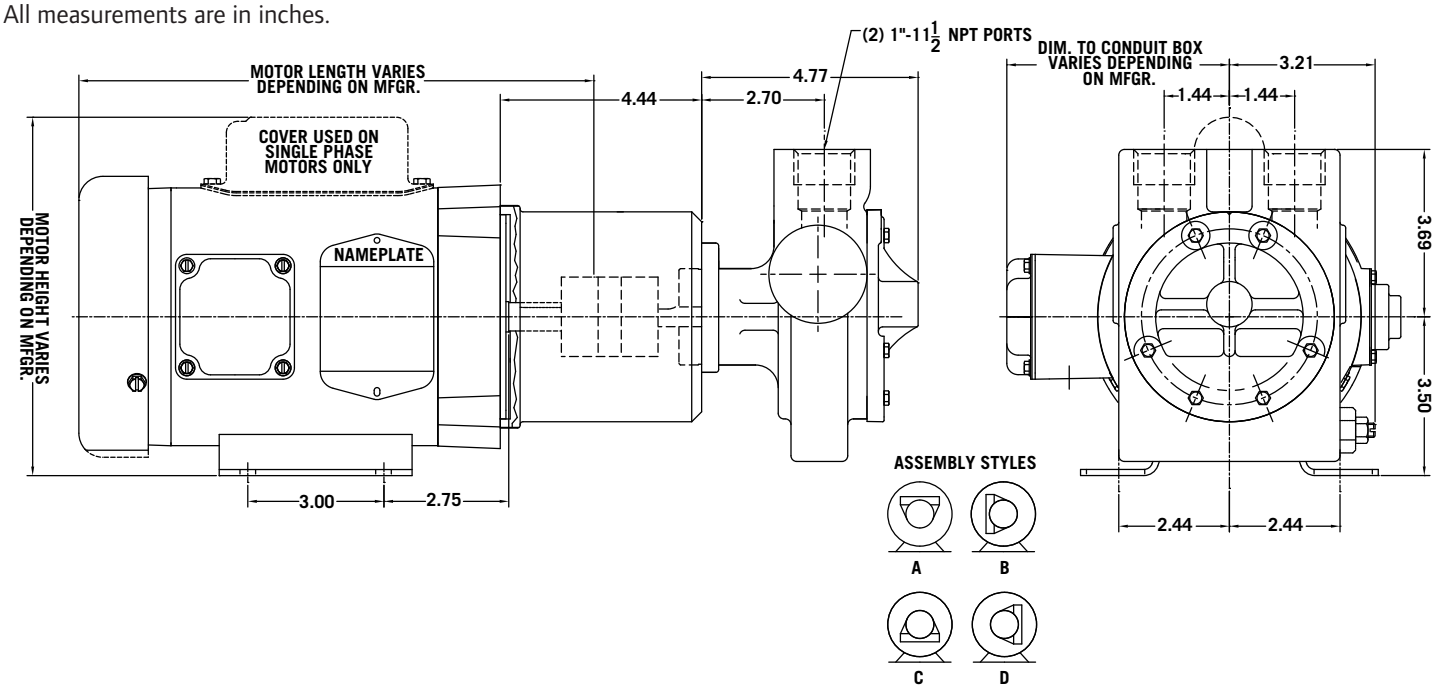
Model #	"U"	"V"	"X"	"Y"	"Z" - NPT
000LE	3-3/32"	3-13/32"	1-11/16"	2-3/32"	3/8" - 18
00LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
0LE	3-3/32"	3-3/16"	2"	1-23/32"	1/2" - 14
1LE	3-1/8"	3-11/32"	2"	1-7/8"	1/2" - 14
2LE	3-1/8"	4-3/16"	2"	2-11/16"	1/2" - 14

ASSEMBLY STYLES



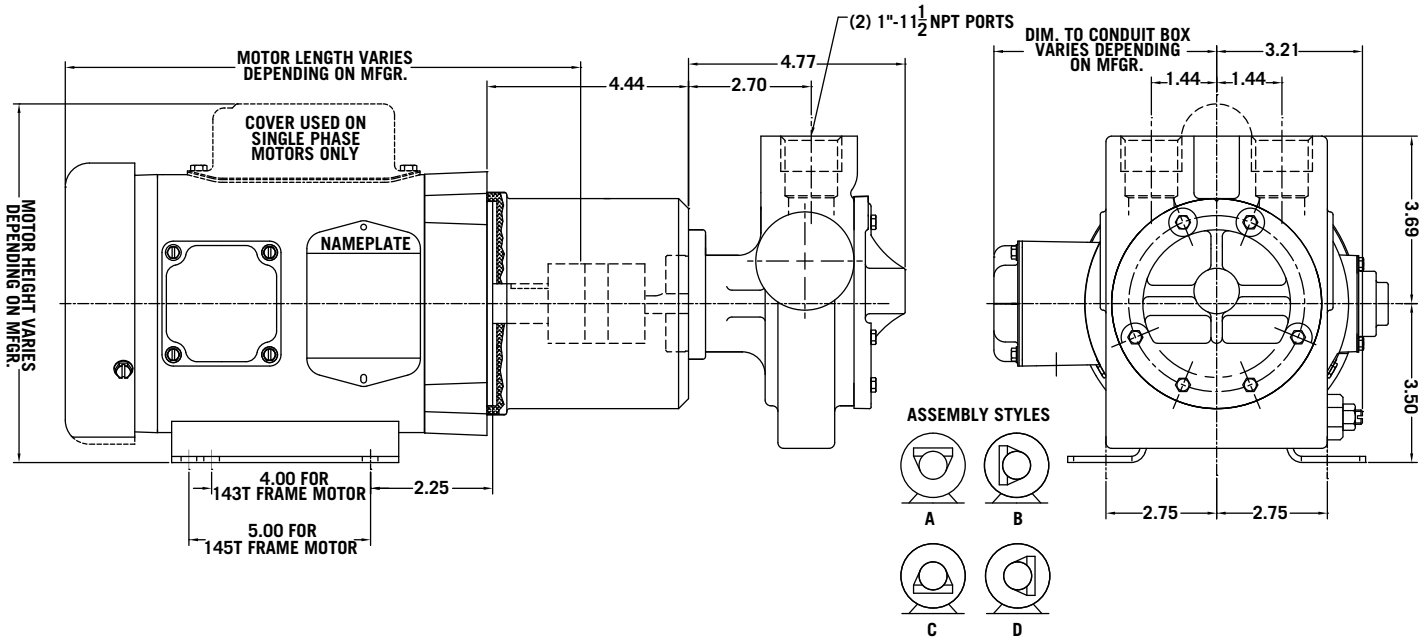
DIMENSIONS FOR 5LE ADAPTER MOUNTED TO A 56 FRAME 1 & 3 PHASE MOTOR

All measurements are in inches.

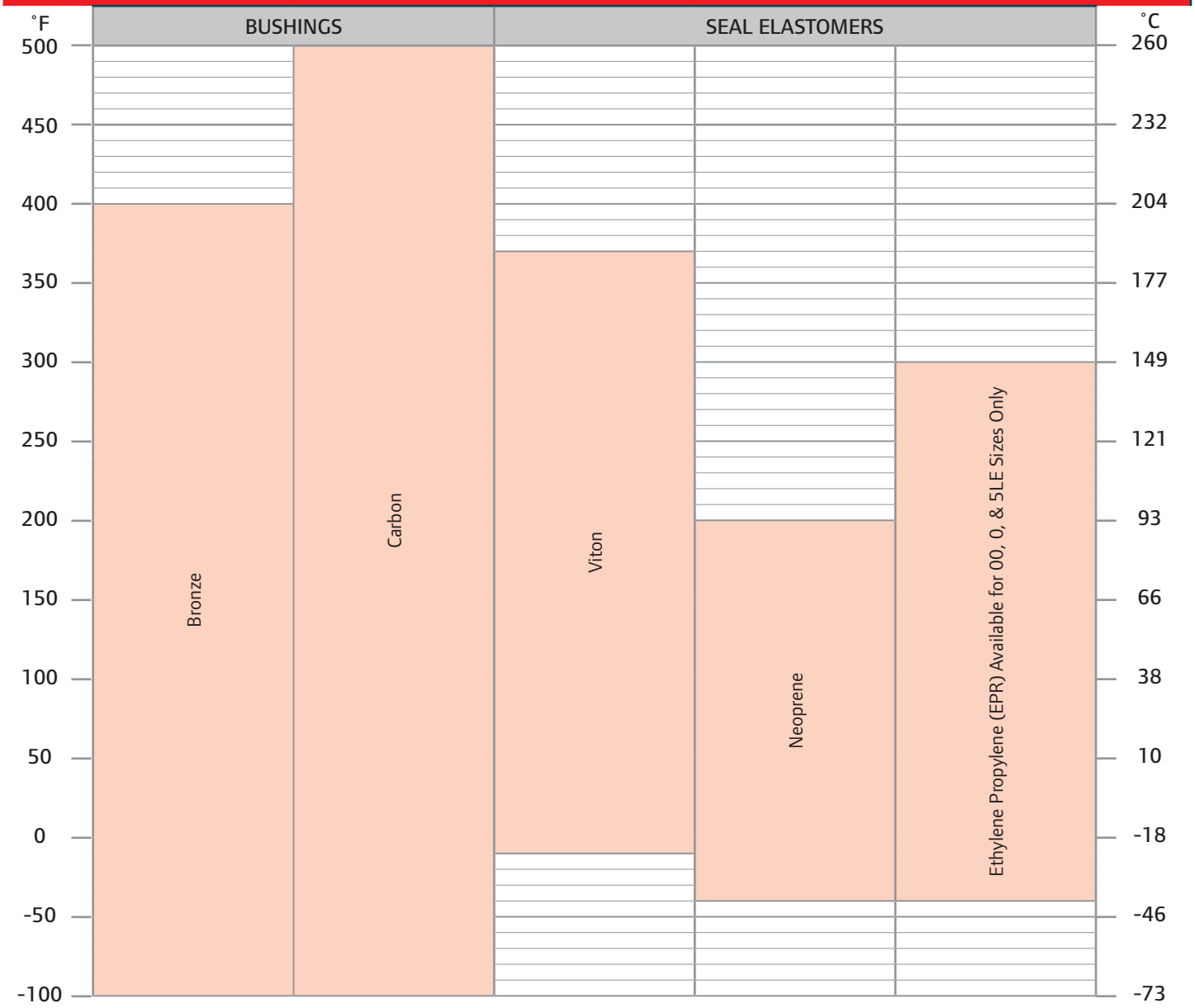


DIMENSIONS FOR 5LE ADAPTER MOUNTED TO A 143/145TC FRAME 1 & 3 PHASE MOTOR

All measurements are in inches.



L SERIES TEMPERATURE LIMITS



L SERIES MATERIALS OF CONSTRUCTION

PART NAME	MATERIAL	STANDARD	COMMENTS	AVAILABILITY
HOUSING	Cast Iron	ASTM A48 - 96a	Classes 30, 35, or 40	Standard
HOUSING BUSHING	Steel	AISI 12L14		Standard
	Carbon	Carbon Graphite Resin	Standard on 5LE Pumps Only	Optional
	Bronze	SAE 660	Available on 2L Size Only	Standard
COVER	Cast Iron	ASTM A48 - 96a	Classes 30, 35, or 40	Standard
ROTOR	Steel	ASTM A311	Stressproof	Standard
IDLER	P/M Steel	MPIF-0508-P		Standard
IDLER PIN	Steel	C1117	Heat Treated	Standard
IDLER BUSHING	Bronze	SAE 660		Standard
	Carbon	Carbon Graphite Resin		Optional
HOUSING PLUG	Steel	AISI 12L14	DU Bushing Assembled in Housing Plug	Standard
GASKETS	Standard	Oriented Polyester		Standard
	Standard	Buna Coated Aluminum	Available on 2L Size Only	Standard
0-RINGS & SEALS	Viton			Standard
	Neoprene			Optional
	EPR		Sizes - 00, 0, & 5LE	Optional

L CARTRIDGE PUMP MATERIALS OF CONSTRUCTION

PART NAME	MATERIAL	STANDARD	COMMENTS	AVAILABILITY
HOUSING	Cast Iron	ASTM A48 - 96a	Classes 30, 35, or 40	Standard
HOUSING BUSHING	Steel	AISI 12L14		Standard
COVER	Cast Iron	ASTM A48 - 96a	Classes 25, 30, 35, or 40	Standard
ROTOR	Steel	ASTM A311	Stressproof	Standard
IDLER	P/M Steel	MPIF-0508-P		Standard
IDLER PIN	Steel	C1117	Heat Treated	Standard
IDLER BUSHING	Bronze	SAE 660		Optional
	Carbon	Carbon Graphite Resin		Optional
O-RING	Viton			Standard
SEAL	Viton			Standard

CARTRIDGE PUMP MODEL NUMBER SYSTEM

	SIZE		MODEL			PUMP OPTIONS	ROTATION		MODIFICATION
POSITION #	1	2	3	4	5	6	7	8	9

POS. 1 & 2 - SIZE

00
0
1
2

POS. 3, 4, & 5 - MODEL

LFD
RFD

POS. 6 - PUMP OPTIONS

B-7 = Shaft Lip Seal (Viton)
U = Cover Rotated 180°
K = Outboard Ball Bearing
(Available on 00 -1 Size LFD & RFD Models)

POS. 7 - ROTATION (VALVED MODELS)

C = Clockwise Rotation
CC = Counterclockwise Rotation

POS. 9 - MODIFICATION

1 = External Ports
2 = Internal/External Ports
7 = Viton Seal
A = Tang Shaft

CARTRIDGE PUMP NPSHr DATA FOR 0-1000 SSU

Pump Series	300 RPM	600 RPM	900 RPM	1200 RPM	1500 RPM	1800 RPM
000L		1.0'	1.7'	1.9'	2.1'	2.3'
00L		1.0'	1.7'	2.0'	2.3'	2.6'
0L		1.0'	1.8'	2.2'	2.5'	2.9'
1L		1.1'	1.8'	2.3'	2.9"	3.5'
2L	1.1'	2.3'	3.0'	3.8'	5.8'	7.0'
5L	1.7'	2.8'	4.6'	6.6'	9.2'	12.3'

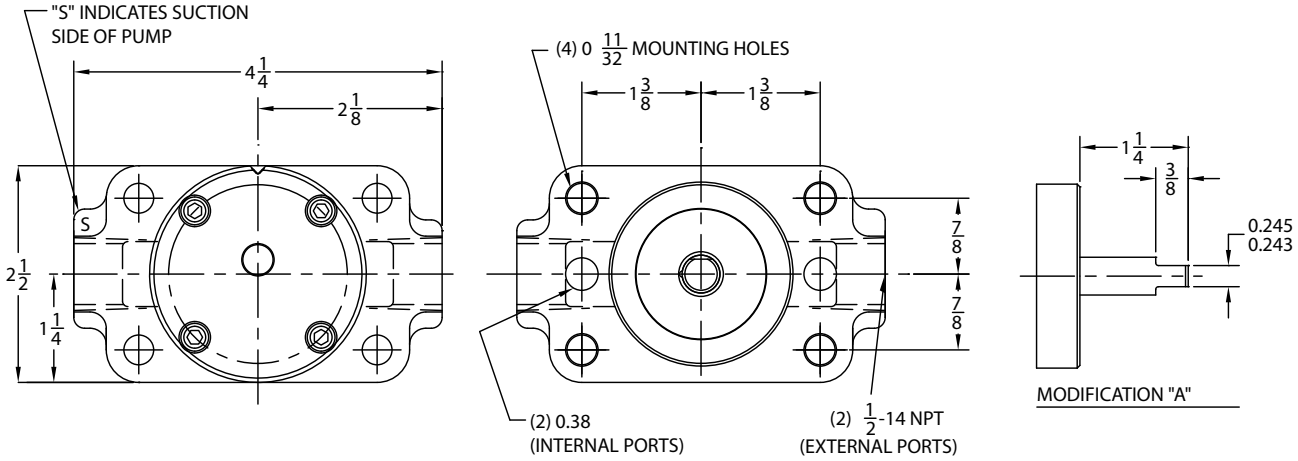
NOTE: For liquid viscosity up to 1000 SSU, NPSHa (Net Positive Suction Head available) must be greater than the NPSHr (Net Positive Suction Head required) value provided in the table. Values above are for feet of liquid with a Specific Gravity of 1.0.

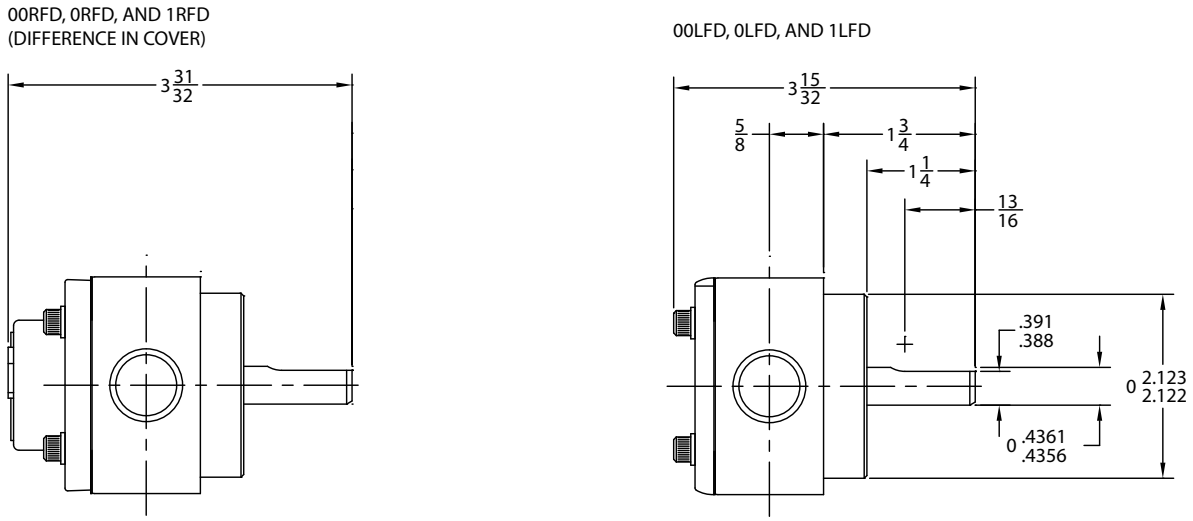
VISCOSITY CORRECTION FACTOR

Viscosity	2500 SSU	5000 SSU	10000 SSU
Correction Factor	1.3	1.7	2.0

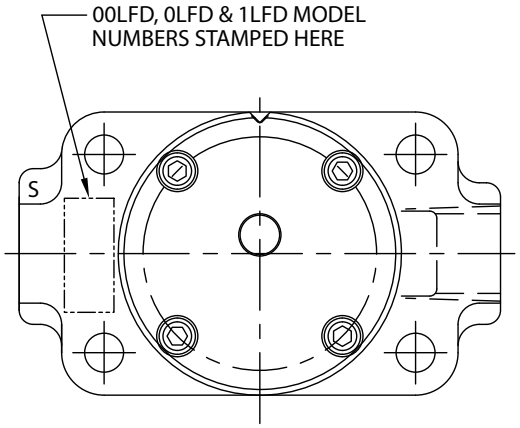
00LFD, 0LFD, 1LFD, 00RFD, 0RFD, & 1RFD PUMP MOUNTING DIMENSIONS

All measurements are in inches.



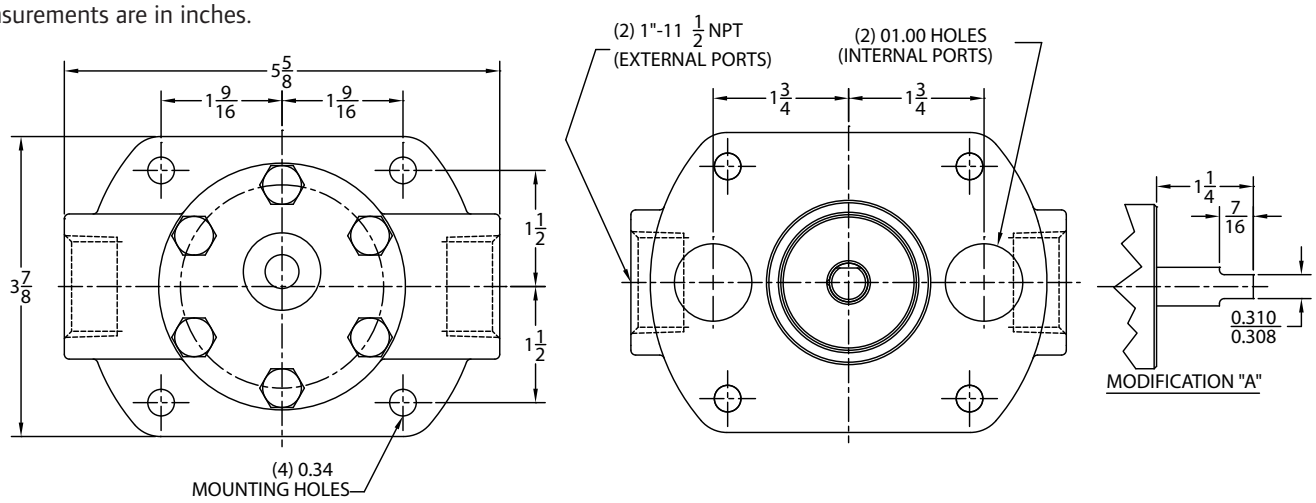


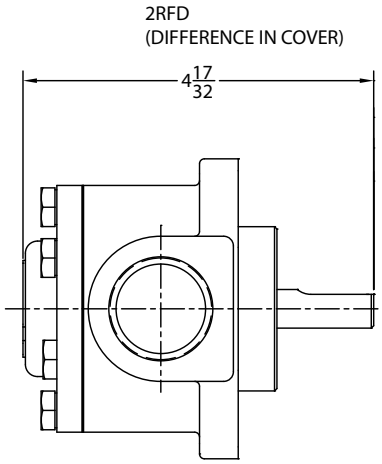
MODEL NUMBER LOCATION

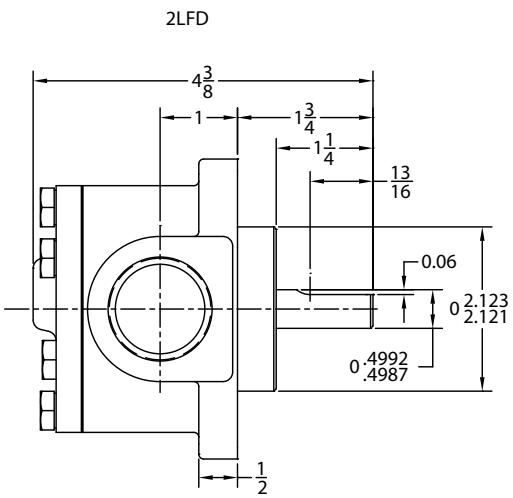


2LFD & 2RFD PUMP MOUNTING DIMENSIONS

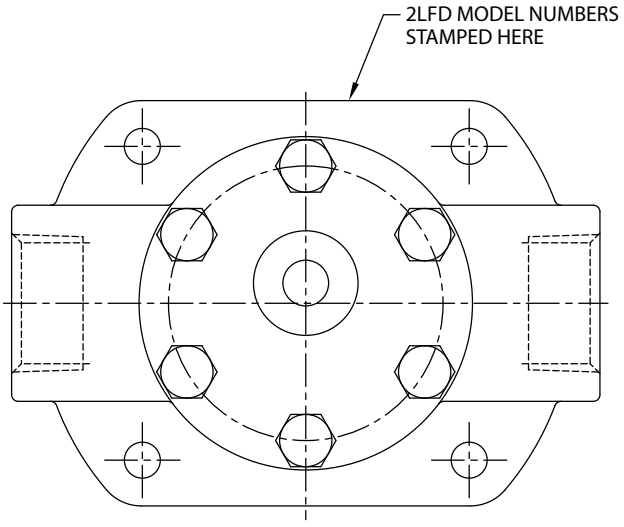
All measurements are in inches.







MODEL NUMBER LOCATION



REGULATORY COMPLIANCE INFORMATION

ATEX

The Lube Tech Series pumps' technical file is lodged in accordance with Article 13(1)(b)(ii)of ATEX Directive 2014/34/EU of 26 February 2014

THE FOLLOWING STANDARDS WERE USED TO VERIFY CONFORMANCE:

2006/42/EC – The Machinery Directive

EN 1127-1:2011 – Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology

EN ISO 80079-36:2016 – Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements

EN ISO 80079-37:2016 – Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Nonelectrical type of protection constructional safety ''c'', control of ignition sources ''b'', liquid immersion ''k''

ARO's L series and 4100 series pumps are UL listed for Power-operated pumps for fuel oil service.

The Lube Tech Series pumps comply with the European Directive 2006/42/EC

THE FOLLOWING STANDARDS WERE USED TO VERIFY CONFORMANCE:

EN ISO 12100:2010 – Safety of machinery - General principles
for design

EN 809:1998+A1:2009 – Pumps and pump units for liquids - Common safety requirements

2011/65/EU – The Restriction of Hazardous Substances Directive

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