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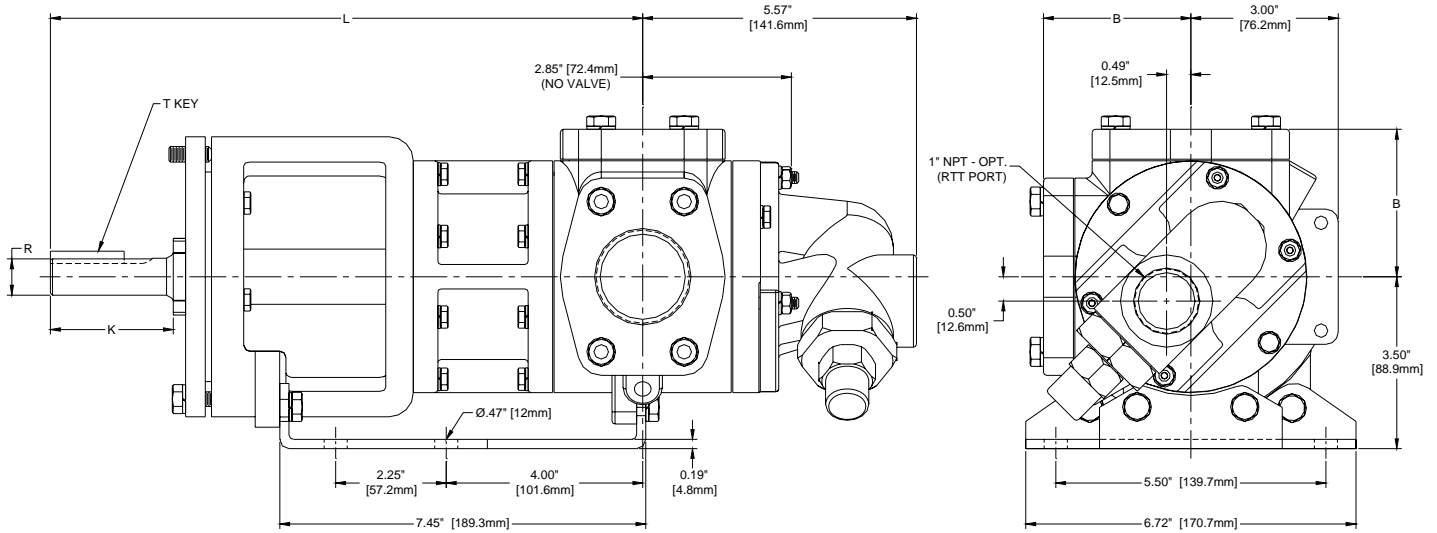
Engineering Data Pack

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GlobalGear® Pump Mounting Dimensions (GG015 – GG030 with Angle Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.10	0.75	3/16 x 3/16 x 1.5	12.07
Metric (mm)	35	16	5 x 5 x 25	264

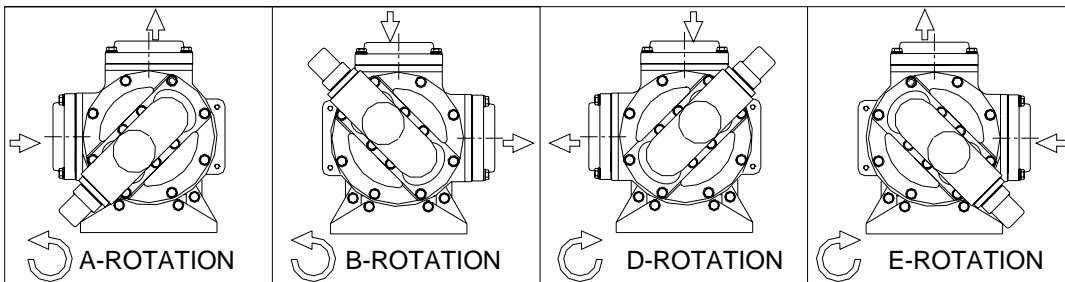
Port Dimensions

Port Type	B
1" FNPT or FBSP	3.00" [76mm]
1-1/4" FNPT or FBSP	3.00" [76mm]
1-1/2" FNPT (CI)	3.00" [76mm]
1-1/2" FNPT (SS)	3.50" [89mm]
1-1/2" FBSP	3.00" [76mm]
2" FNPT or FBSP	3.15" [80mm]
ANSI or ISO flanged	4.00" [102mm]

Face Type	Size-Rating
Raised Face	Any Offered Size-ANSI 250#
	Any Offered Size-ANSI 300#
	40mm-ISO PN16 & 40
	50mm-ISO PN16 & 40
Flat Face	Any Offered Size-ANSI 125#
	Any Offered Size-ANSI 150#
	25mm-ISO PN16 & 40

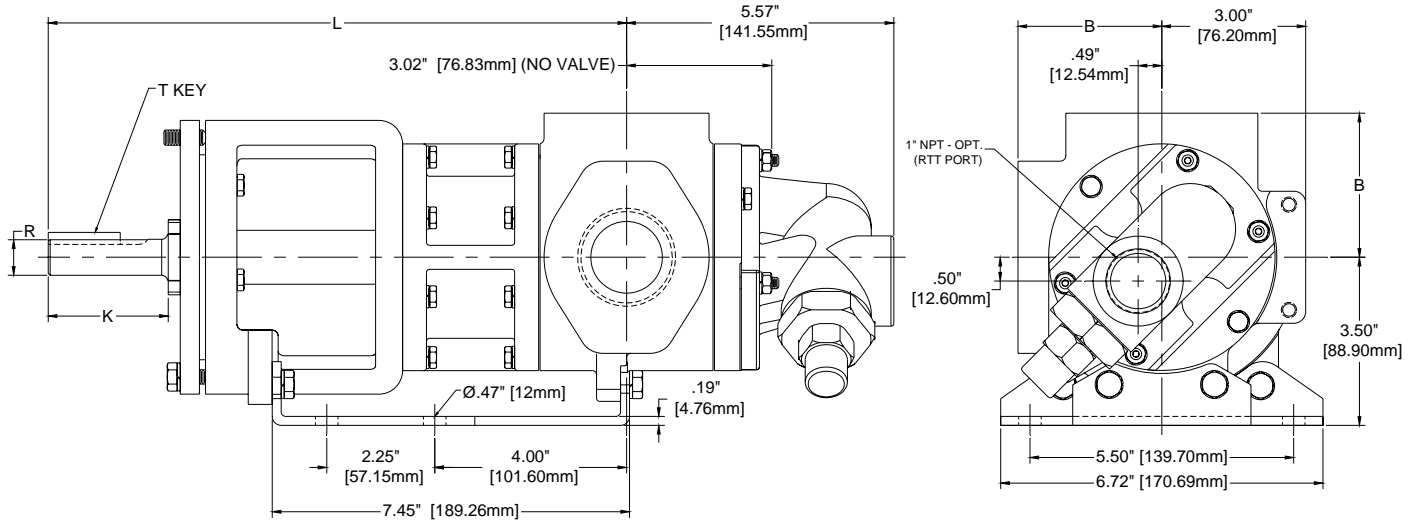
Back Pull-Out Dimensions

Size	Min Spacer
GG015	1.60" [41mm]
GG030	2.22" [56mm]





GlobalGear® Pump Mounting Dimensions (IG015I – IG030I with Integral Angle Ports)



Shaft Dimensions

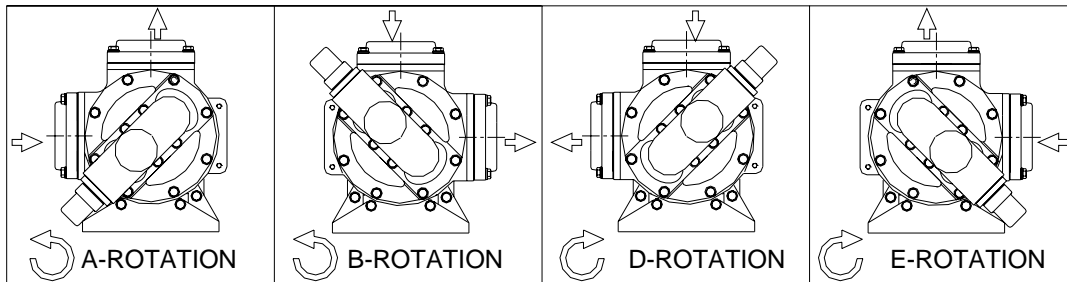
Shaft Design	K	R	T	L
Inch (")	2.10	0.75	3/16 x 3/16 x 1.5	12.07
Metric (mm)	35	16	5 x 5 x 25	264

Port Dimensions

Port Type	B
1-1/2" FNPT (CI)	3.00" [76mm]
1-1/2" FBSP (CI)	3.00" [76mm]

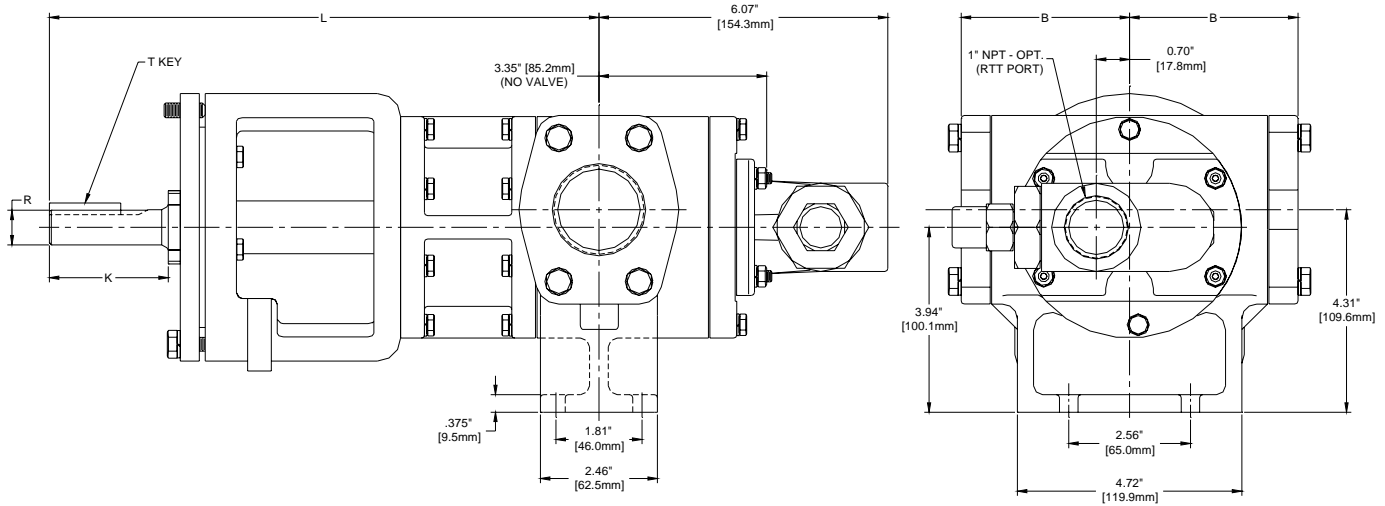
Back Pull-Out Dimensions

Size	Min Spacer
GG015	1.60" [41mm]
GG030	2.22" [56mm]





GlobalGear® Pump Mounting Dimensions (GG015 – GG030 with Side Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.36	0.75	3/16 x 3/16 x 1.5	11.56
Metric (mm)	40	16	5 x 5 x 25	251

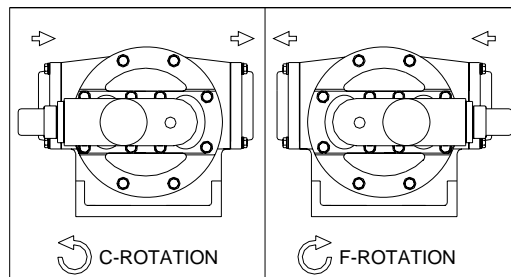
Face Type	Size-Rating
Raised Face	Any Offered Size-ANSI 250#
	Any Offered Size-ANSI 300#
	40mm-ISO PN16 & 40
	50mm-ISO PN16 & 40
Flat Face	Any Offered Size-ANSI 125#
	Any Offered Size-ANSI 150#
	25mm-ISO PN16 & 40

Port Dimensions

Port Type	B
1" FNPT or FBSP	3.54" [90mm]
1-1/4" FNPT or FBSP	3.54" [90mm]
1-1/2" FNPT (CI)	3.54" [90mm]
1-1/2" FNPT (SS)	4.04" [103mm]
1-1/2" FBSP	3.54" [90mm]
2" FNPT or FBSP	3.69" [94mm]
ANSI or ISO flanged	4.54" [115mm]

Back Pull-Out Dimensions

Size	Min Spacer
GG015	1.60" [41mm]
GG030	2.22" [56mm]

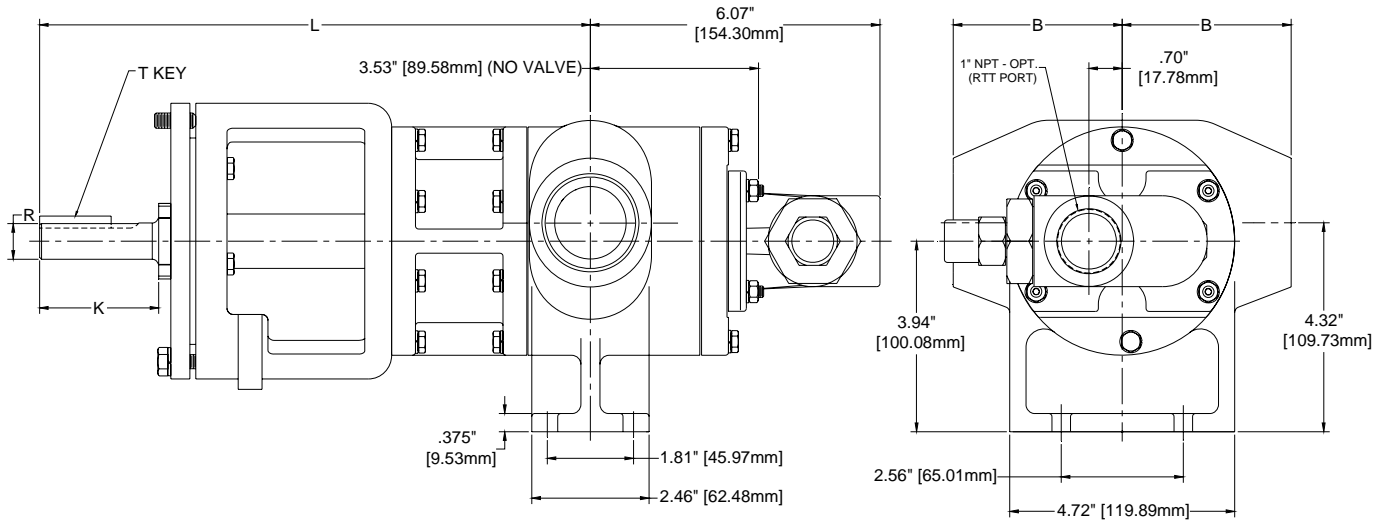




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GlobalGear® Pump Mounting Dimensions (IG015I – IG030I with Integral Side Ports)



Shaft Dimensions

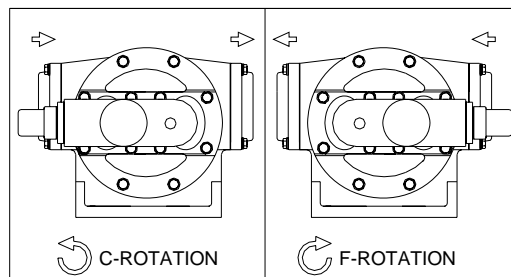
Shaft Design	K	R	T	L
Inch (")	2.36	0.75	3/16 x 3/16 x 1.5	11.56
Metric (mm)	40	16	5 x 5 x 25	251

Port Dimensions

Port Type	B
1-1/2" FNPT (CI)	3.54" [90mm]
1-1/2" FBSP (CI)	3.54" [90mm]

Back Pull-Out Dimensions

Size	Min Spacer
GG015	1.60" [41mm]
GG030	2.22" [56mm]

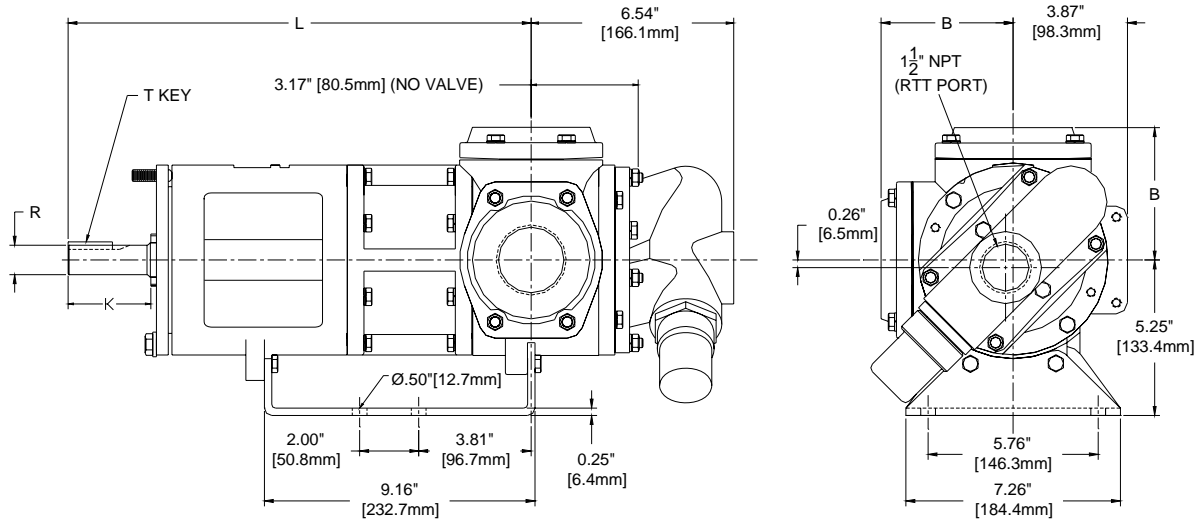




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GlobalGear® Pump Mounting Dimensions (GG050 – GG070 with Angle Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.67	1.00	1/4 x 1/4 x 1.5	15.63
Metric (mm)	64.5	27	8 x 7 x 45	343

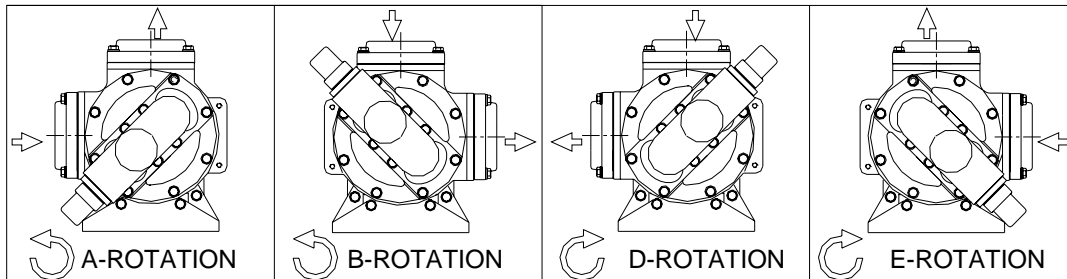
Port Dimensions

Port Type	B
1" FNPT or FBSP	4.35" [110mm]
1-1/4" FNPT or FBSP	4.35" [110mm]
1-1/2" FNPT (CI)	4.35" [110mm]
1-1/2" FNPT (SS)	4.85" [123mm]
1-1/2" FBSP	4.35" [110mm]
2" FNPT or FBSP	4.50" [114mm]
ANSI or ISO flanged	5.35" [136mm]

Face Type	Size-Rating
Raised Face	Any Offered Size-ANSI 250#
	Any Offered Size-ANSI 300#
	40mm-ISO PN16 & 40 50mm-ISO PN16 & 40
Flat Face	Any Offered Size-ANSI 125#
	Any Offered Size-ANSI 150#
	25mm-ISO PN16 & 40

Back Pull-Out Dimensions

Size	Min Spacer
GG050	2.21" [56mm]
GG070	2.61" [66mm]

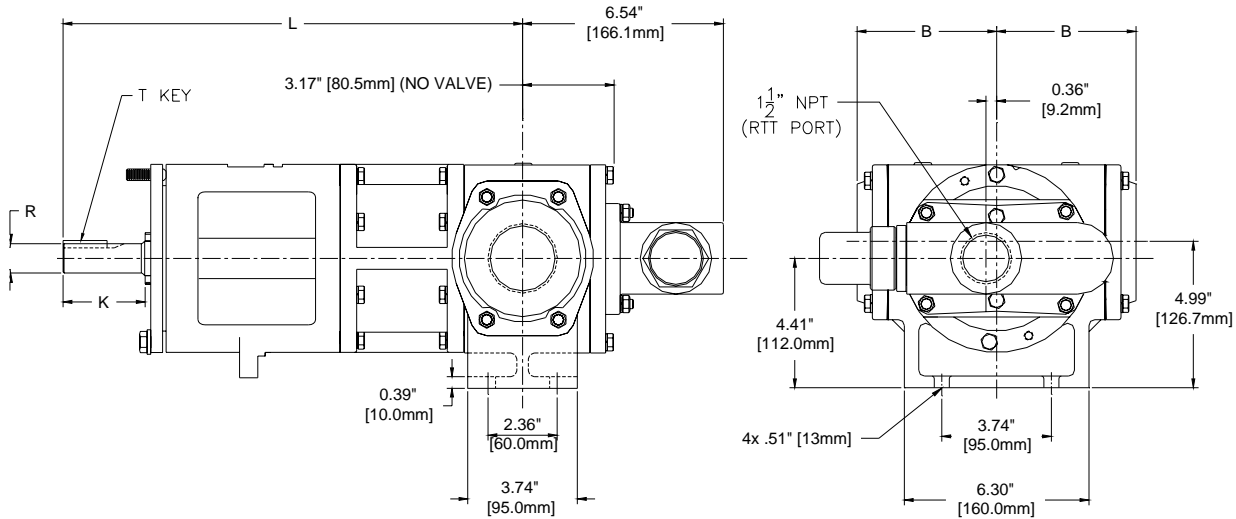




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GlobalGear® Pump Mounting Dimensions (GG050 – GG070 with Side Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.67	1	1/4 x 1/4 x 1.5	15.63
Metric (mm)	64.5	27	8 x 7 x 45	343

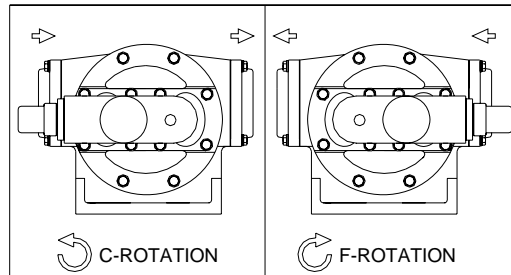
Port Dimensions

Port Type	B
1" FNPT or FBSP	3.88" [99mm]
1-1/4" FNPT or FBSP	3.88" [99mm]
1-1/2" FNPT (CI)	3.88" [99mm]
1-1/2" FNPT (SS)	4.38" [111mm]
1-1/2" FBSP	3.88" [99mm]
2" FNPT or FBSP	4.03" [102mm]
ANSI or ISO flanged	4.88" [124mm]

Face Type	Size-Rating
Raised Face	Any Offered Size-ANSI 250#
	Any Offered Size-ANSI 300#
	40mm-ISO PN16 & 40
	50mm-ISO PN16 & 40
Flat Face	Any Offered Size-ANSI 125#
	Any Offered Size-ANSI 150#
	25mm-ISO PN16 & 40

Back Pull-Out Dimensions

Size	Min Spacer
GG050	2.21" [56mm]
GG070	2.61" [66mm]

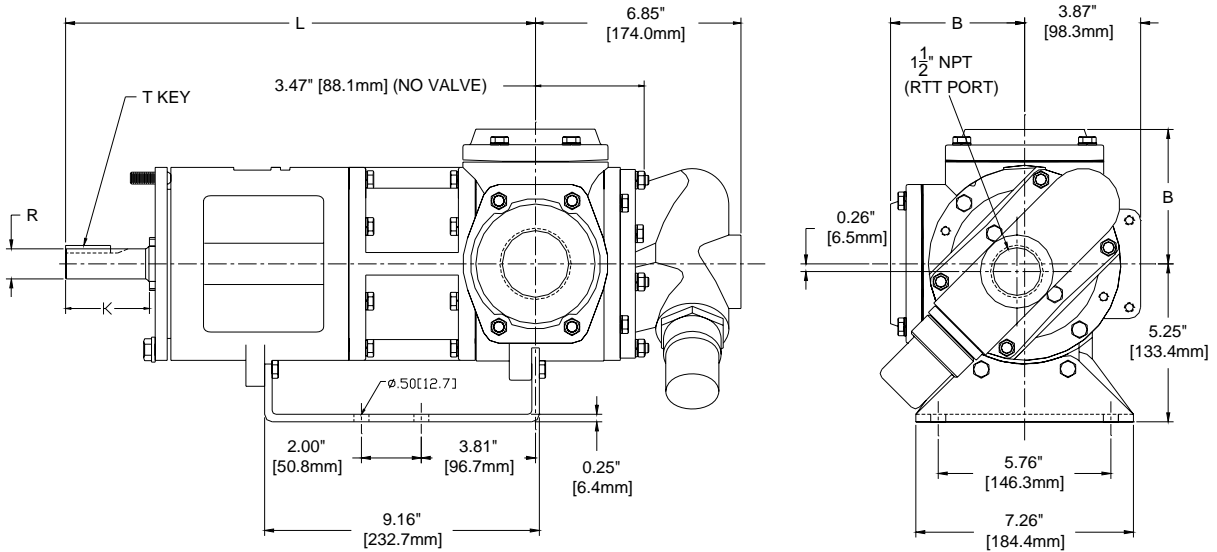




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GlobalGear® Pump Mounting Dimensions (GG080 – GG090 with Angle Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.67	1.00	1/4 x 1/4 x 1.5	15.68
Metric (mm)	69.8	27	8 x 7 x 45	350

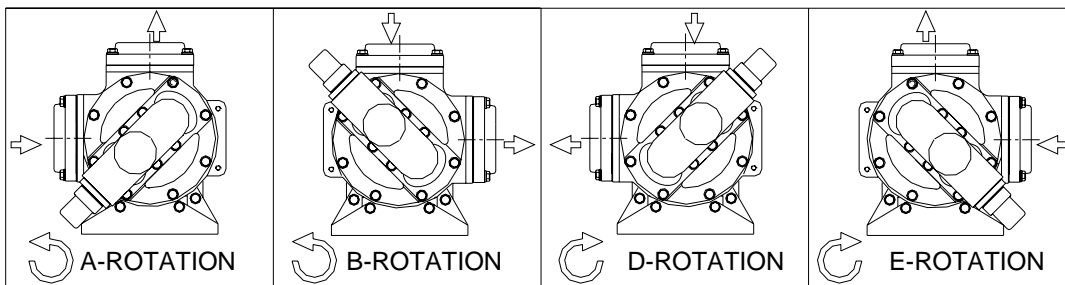
Face Type	Size-Rating
Raised Face	3"-ANSI 125# / 150#
	3" -ANSI 250# / 300#
	80mm-ISO PN16 & 40
Flat Face	2"-ANSI 125# thru 300#
	2.5"-ANSI 125# / 150#
	50mm-ISO PN40
	65mm-ISO PN16

Port Dimensions

Port Type	B
FNPT or FBSP	4.50" [114mm]
ANSI 125# /150#	4.63" [118mm]
2" ANSI 250# / 300#	5.81" [148mm]
3" ANSI 250# / 300#	5.00" [127mm]
ISO PN 16	4.63" [118mm]
50mm ISO PN 40	4.63" [118mm]
80mm ISO PN 40	5.00" [127mm]

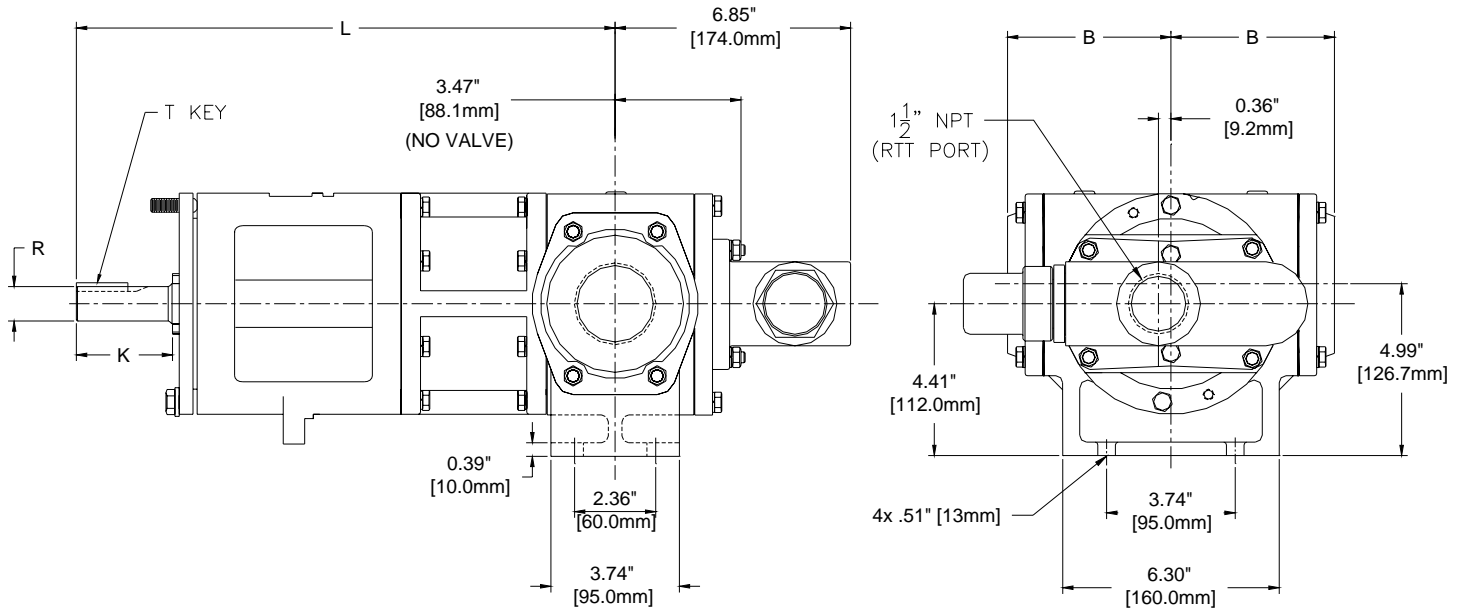
Back Pull-Out Dimensions

Size	Min Spacer
GG080	2.80" [71mm]
GG090	3.08" [78mm]





GlobalGear® Pump Mounting Dimensions (GG080 – GG090 with Side Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.67	1.00	1/4 x 1/4 x 1.5	15.68
Metric (mm)	69.8	27	8 x 7 x 45	350

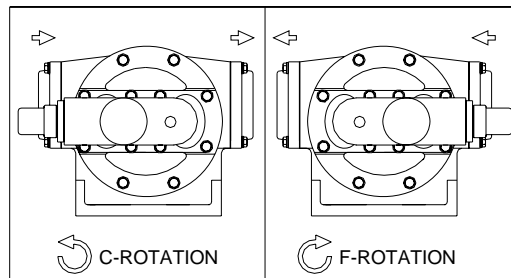
FF/RF	Size-Rating
Raised Face	3" -ANSI 125# / 150#
	3" -ANSI 250# / 300#
	80mm-ISO PN16 & 40
Flat Face	2" -ANSI 125# thru 300#
	2.5" -ANSI 1125# / 150#
	50mm-ISO PN40
	65mm-ISO PN16

Port Dimensions

Port Type	B
FNPT or FBSP	4.74" [120mm]
ANSI 125# /150#	4.87" [124mm]
2" ANSI 250# / 300#	6.05" [154mm]
3" ANSI 250# / 300#	5.24" [133mm]
ISO PN 16	4.87" [124mm]
50mm ISO PN 40	4.87" [124mm]
80mm ISO PN 40	5.24" [133mm]

Back Pull-Out Dimensions

Size	Min Spacer
GG080	2.80" [71mm]
GG090	3.08" [78mm]

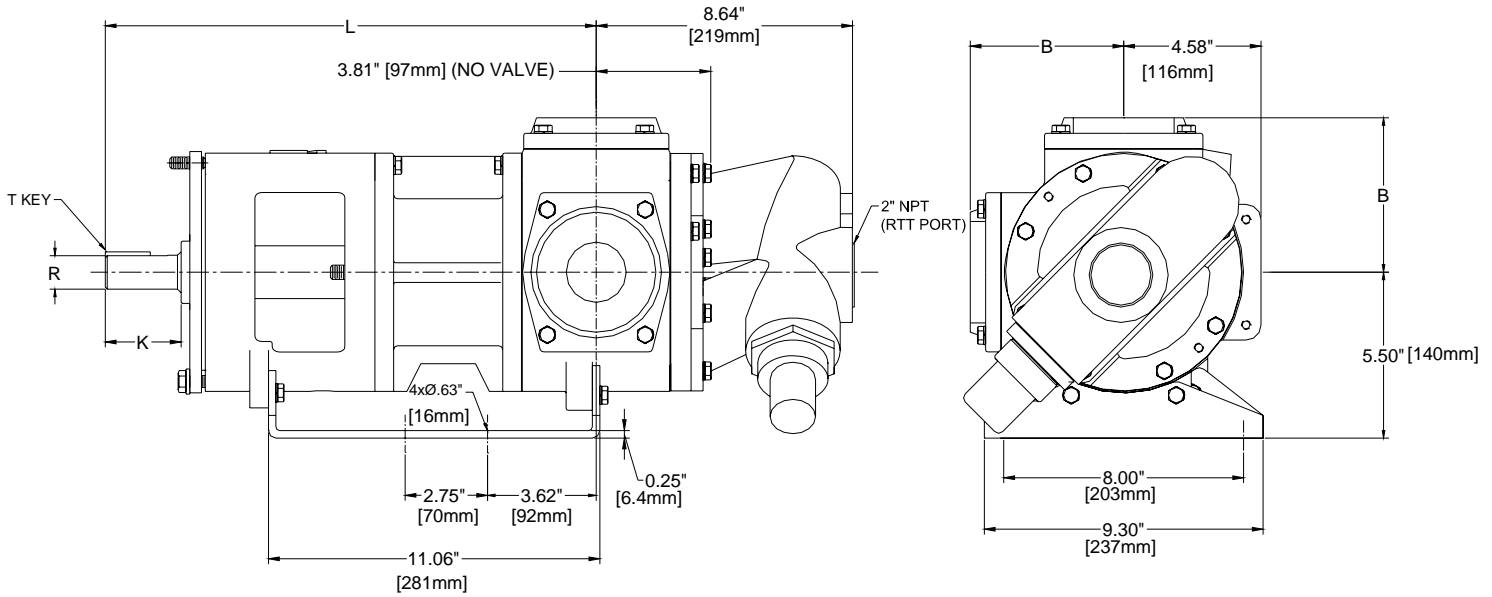




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GlobalGear® Pump Mounting Dimensions (GG120 – GG130 with Angle Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.41	1.125	1/4 x 1/4 x 2	16.38
Metric (mm)	75	32	10 x 8 x 45	430

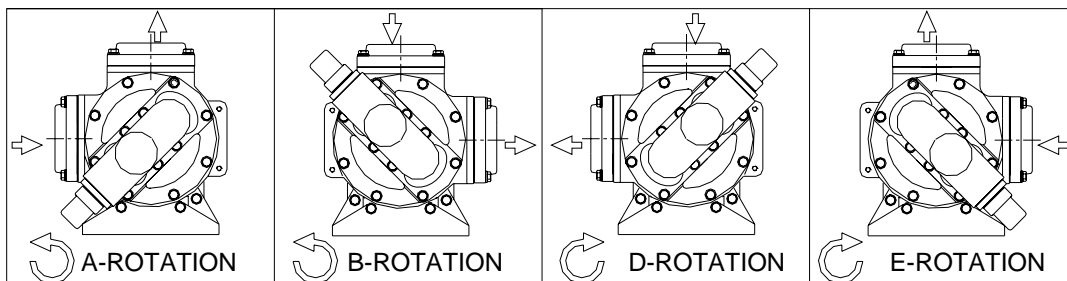
Port Dimensions

Port Type	B
FNPT or FBSP	5.12" [130mm]
2" ANSI 125# / 150#	5.25" [133mm]
2-1/2" ANSI 125# / 150#	5.25" [133mm]
3" ANSI 125# / 150#	5.25" [133mm]
4" ANSI 125# (CI)	5.25" [133mm]
4" ANSI 150# (SS)	7.19" [183mm]
2" ANSI 250# / 300#	6.43" [163mm]
3" ANSI 250# / 300#	5.62" [143mm]
4" ANSI 250# / 300#	7.19" [183mm]
65mm ISO PN 16	5.25" [133mm]
80mm ISO PN 16	5.25" [133mm]
100mm ISO PN 16 (CI)	5.25" [133mm]
100mm ISO PN 16 (SS)	7.19" [183mm]
50mm ISO PN 40	5.25" [133mm]
80mm ISO PN 40	5.62" [143mm]
100mm ISO PN 40	7.19" [183mm]

Face Type	Size-Rating
RAISED FACE	3"-ANSI 125# thru 300#
	4"-ANSI 125# thru 300#
	80mm-ISO PN16 & 40
	100mm-ISO PN16 & 40
FLAT FACE	2"-ANSI 125# thru 300#
	2.5"-ANSI 125# / 150#
	50mm-ISO PN40
	65mm-ISO PN16

Back Pull-Out Dimensions

Size	Min Spacer
GG120	3.31" [84 mm]
GG130	3.73" [95 mm]

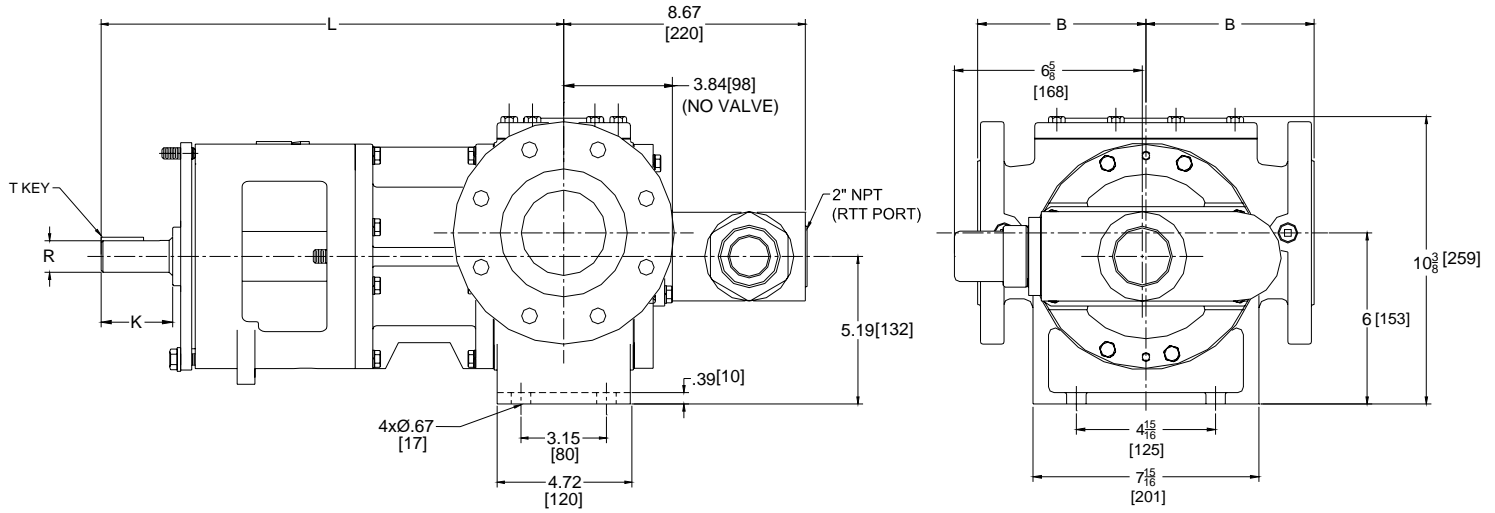




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GlobalGear® Pump Mounting Dimensions (GG120 – GG130 with Side Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	2.41	1.125	1/4 x 1/4 x 2	16.36
Metric (mm)	75	32	10 x 8 x 45	430

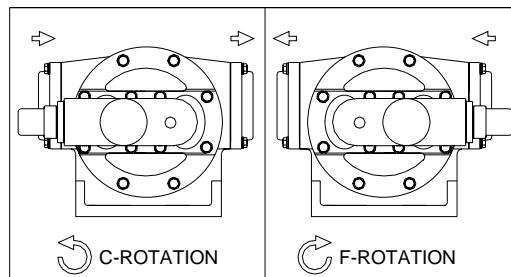
Face Type	Size-Rating
Raised Face	ALL

Port Dimensions

Port Type	B
3" ANSI 125# (CI)	5.95" [151mm]
3" ANSI 150# (SS)	5.87" [149mm]
3" ANSI 300# (SS)	6.22" [158mm]
80mm ISO PN16	5.95" [151mm]
80mm ISO PN40	6.22" [158mm]

Back Pull-Out Dimensions

Size	Min Spacer
GG120	3.31" [84 mm]
GG130	3.73" [95 mm]

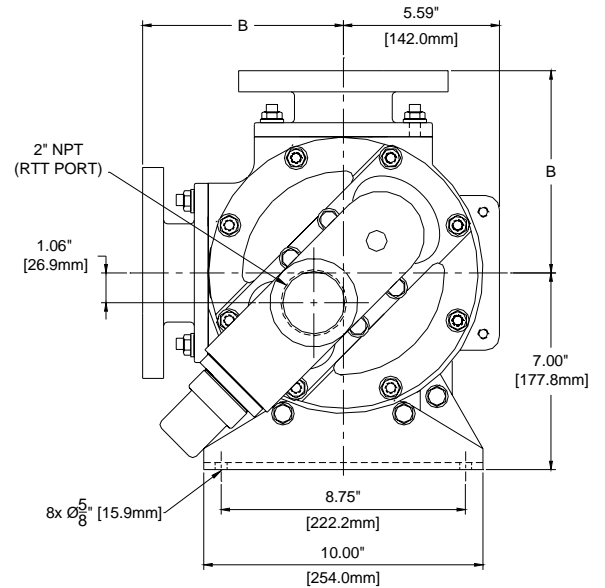
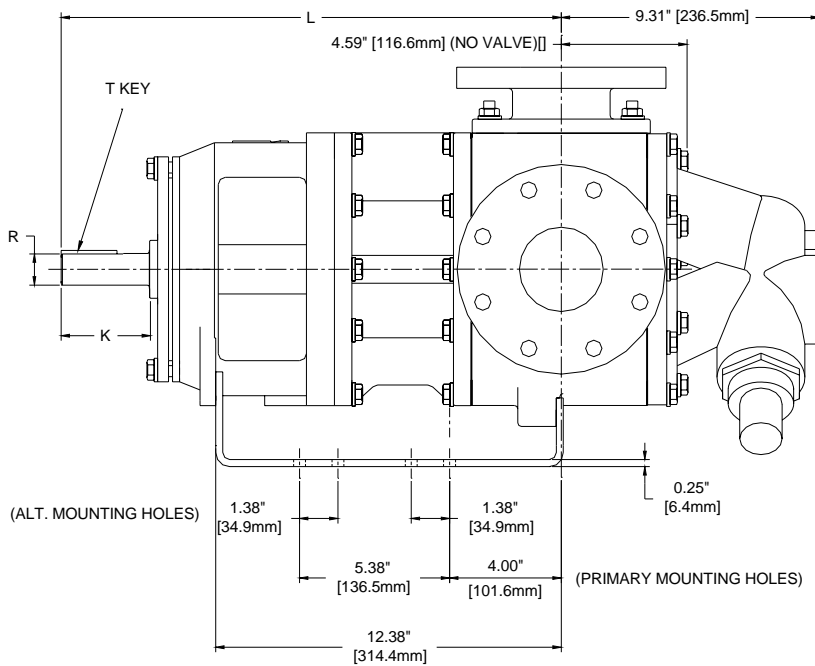




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GlobalGear® Pump Mounting Dimensions (GG200 – GG210 with Angle Ports)



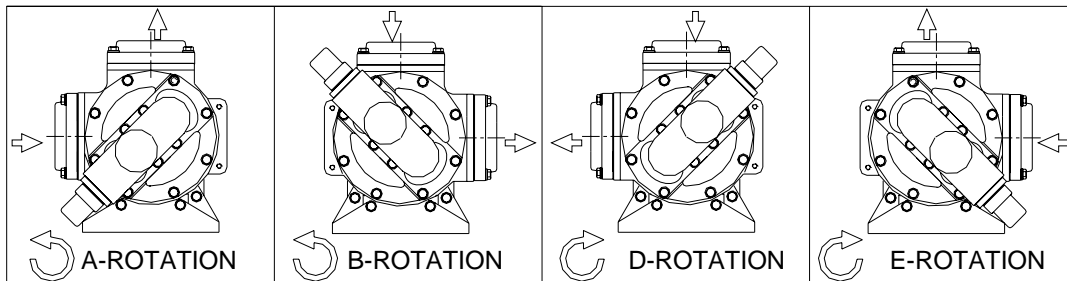
Shaft Design	K	R	T	L
Inch (")	3.04	1.125	1/4 x 1/4 x 2	17.85
Metric (mm)	67	32	10 x 8 x 45	443

Port Type	B
FNPT or FBSP tapped	6.56" [167mm]
ANSI or ISO flanged	7.19" [183mm]

Face Type	Size-Rating
Raised Face	4"-ANSI 125# thru 300#
	100mm-ISO PN16 & 40
Flat Face	2"-ANSI 125# thru 300#
	2.5"-ANSI 125# / 150#
	3"-ANSI 125# thru 300#
	50mm-ISO PN40
	65mm-ISO PN16
	80mm-ISO PN40

Back Pull-Out Dimensions

Size	Min Spacer
GG200	4.01" [102mm]
GG210	4.61" [117mm]

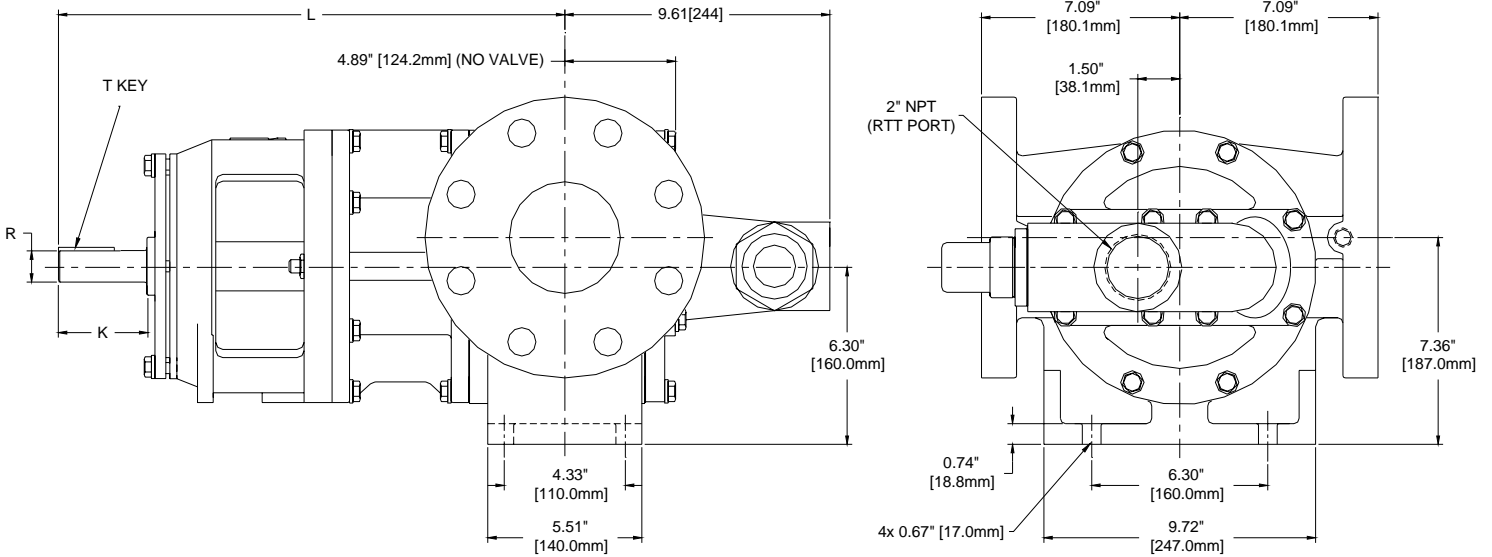




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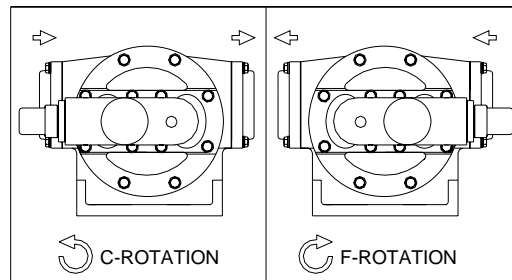
GlobalGear® Pump Mounting Dimensions (GG200 – GG210 with Side Ports)



Shaft Design	K	R	T	L
Inch (")	3.04	1.125	1/4 x 1/4 x 2	17.56
Metric (mm)	67	32	10 x 8 x 45	435

Size	Min Spacer
GG200	4.01" [102mm]
GG210	4.61" [117mm]

Face Type	Size-Rating
Flat Face	4" -ANSI 125# thru 300#
	100mm -ISO PN16 & 40

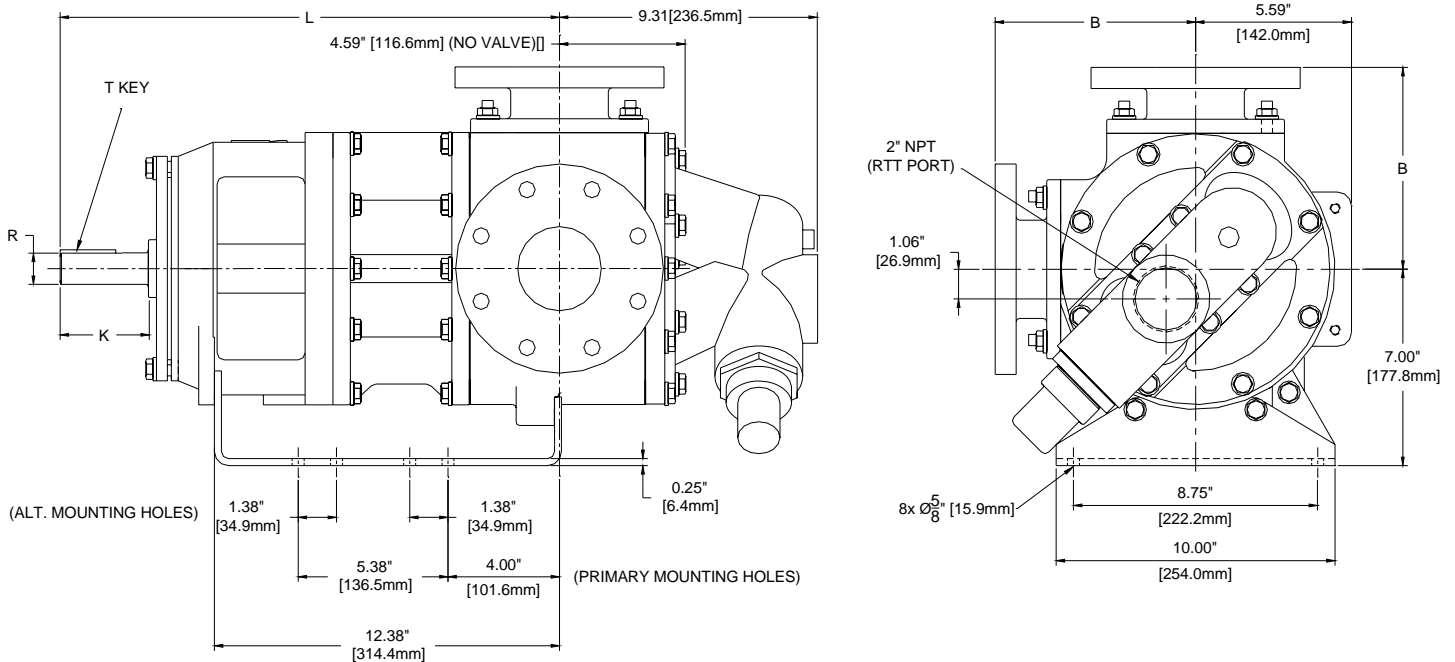




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GlobalGear® Pump Mounting Dimensions (GG250 with Angle Ports)



Shaft Dimensions

Shaft Design	K	R	T	L
Inch (")	4.30	1.438	3/8 x 3/8 x 2.5	19.25
Metric (mm)	100	35	10 x 8 x 63	489

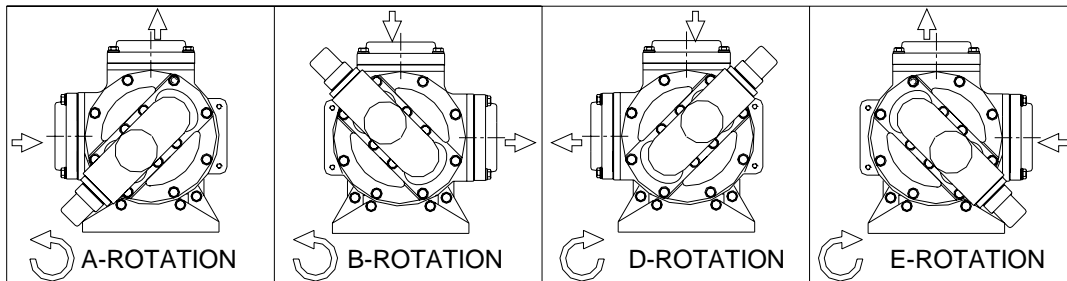
Port Dimensions

Port Type	B
FNPT or FBSP tapped	6.56" [167mm]
ANSI or ISO flanged	7.19" [183mm]

FF/RF	Size-Rating
RAISED FACE	4"-ANSI 125# thru 300#
	100mm-ISO PN16 & 40
FLAT FACE	2"-ANSI 125# thru 300#
	2.5"-ANSI 125# / #
	3"-ANSI 125# thru 300#
	50mm-ISO PN40
	65mm-ISO PN16
	80mm-ISO PN40

Back Pull-Out Dimensions

Size	Min Spacer
GG250	4.73" [120mm]

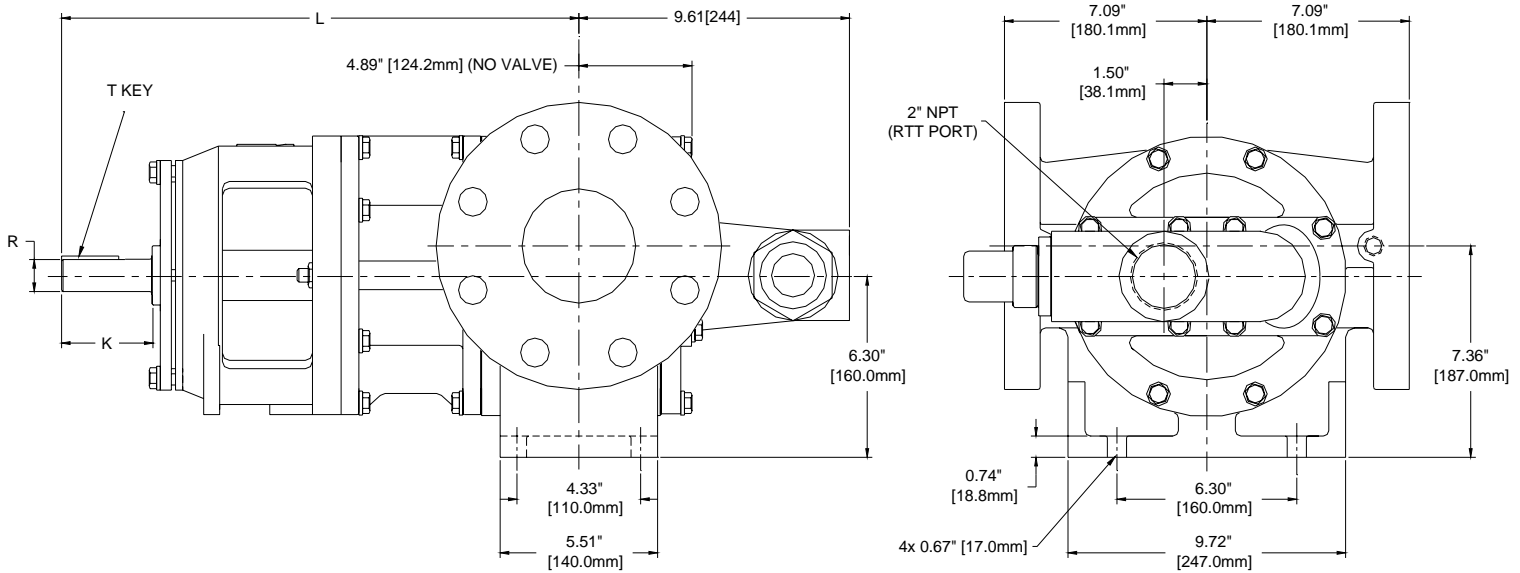




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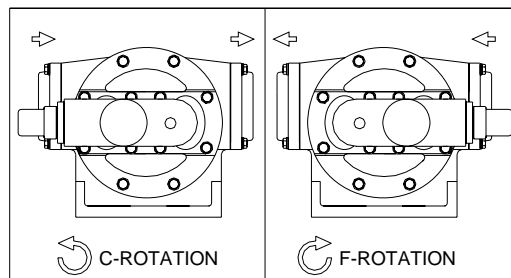
GlobalGear® Pump Mounting Dimensions (GG250 with Side Ports)



Shaft Design	K	R	T	L
Inch (")	4.30	1.438	3/8 x 3/8 x 2.5	18.96
Metric (mm)	109	35	10 x 8 x 63	482

Size	Min Spacer
GG250	4.73" [120mm]

Face Type	Size-Rating
Flat Face	4" -ANSI 125# thru 300#
	100mm-ISO PN16 & 40

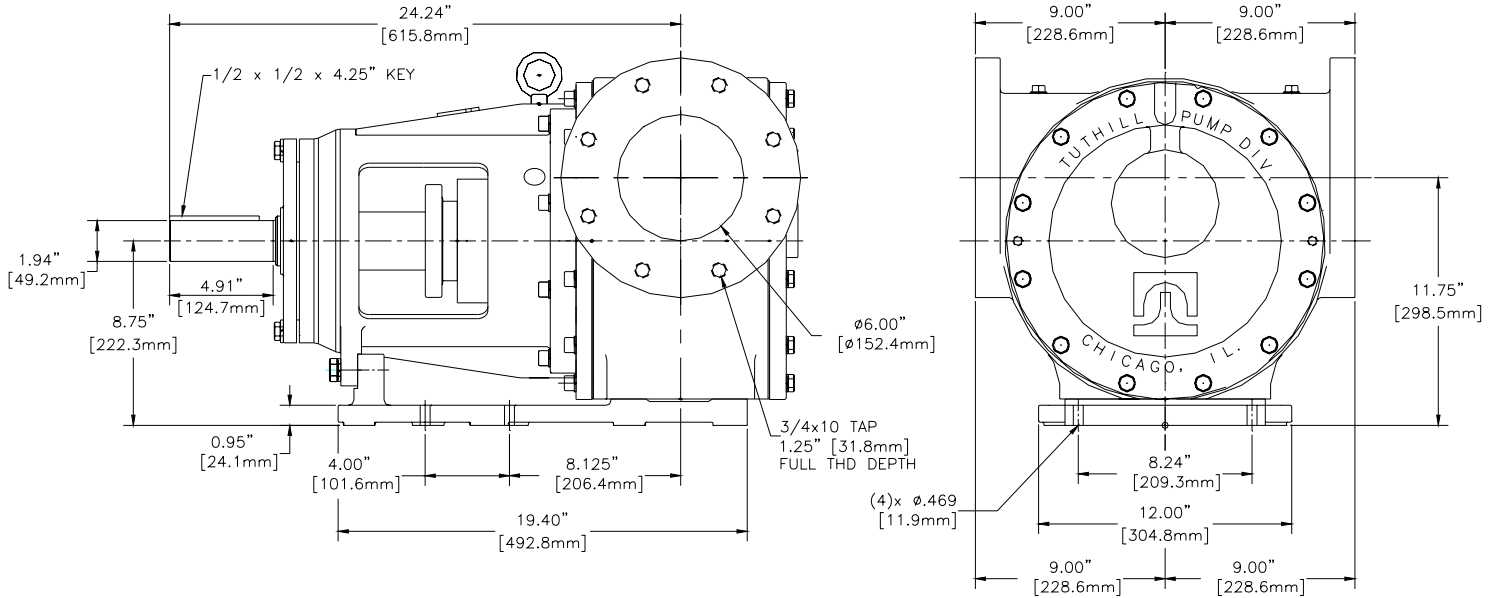




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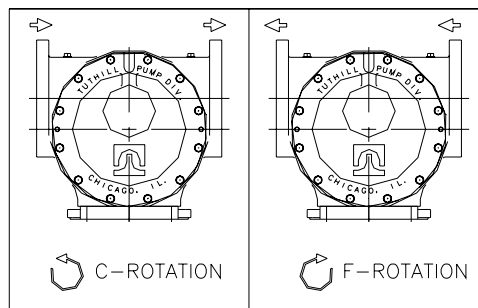
12500 South Pulaski Road
Alsip, Illinois USA 60803
Tel 708 389-2500 Fax 708 388-0869
email: tuthillpump@tuthill.com
www.tuthill.com

GlobalGear® Pump Mounting Dimensions (GG500 with Side Ports)



Back Pull-Out Dimensions

Size	Min Spacer
GG500	6.63" [168.4mm]

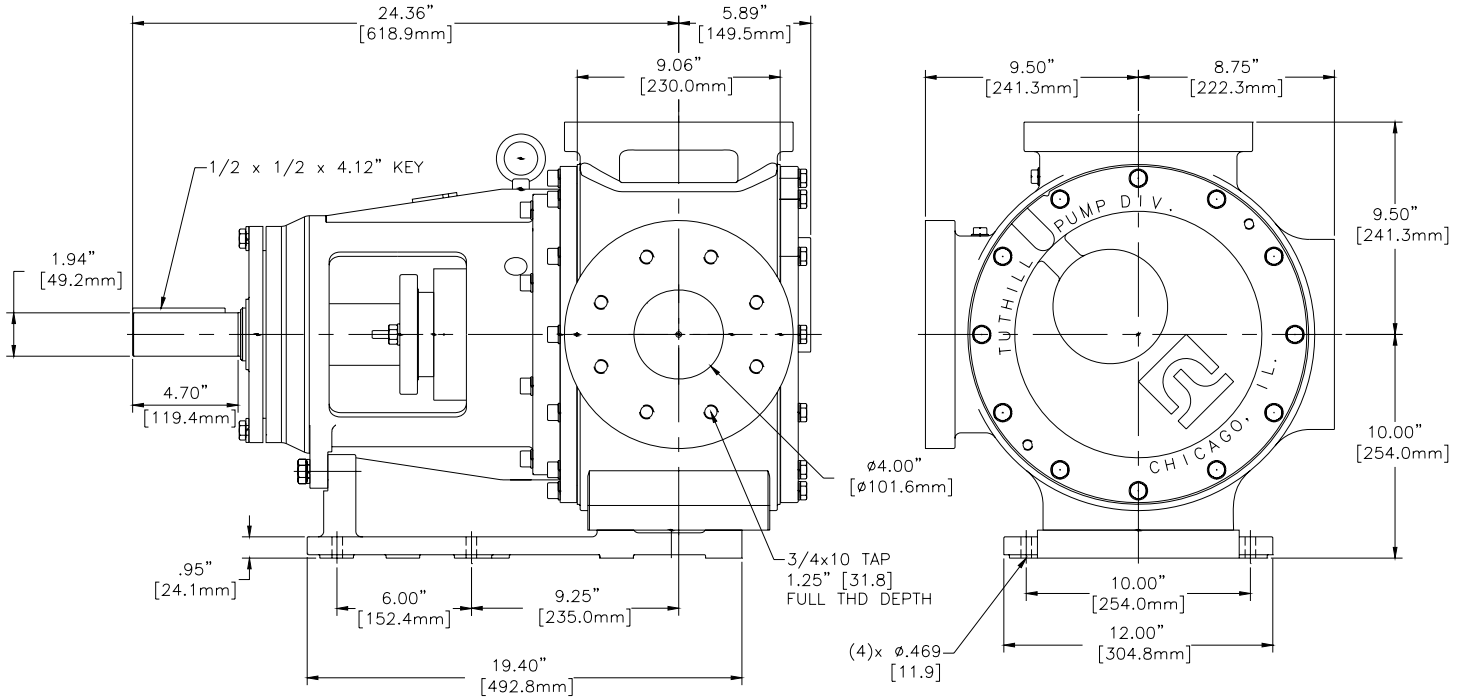




TUTHILL
Pump Group

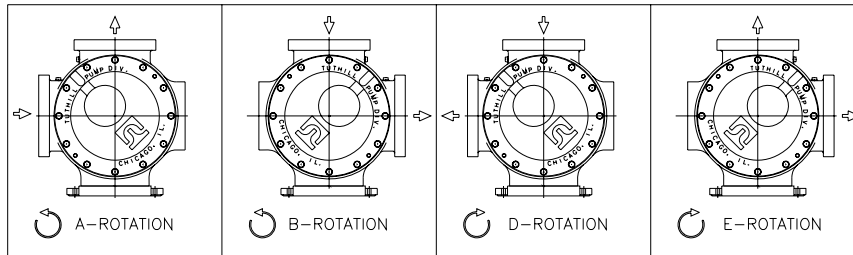
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www.tuthill.com

GlobalGear[®] Pump Mounting Dimensions (GG550 with Angle Ports)



Back Pull-Out Dimensions

Size	Min Spacer
GG550	7.18" [182.4mm]





GlobalGear® Model Number System

Pump Series	Pump Size	Material of Construction	Port Position & Rotation	Relief Valve	Sealing Method	Seal Type	Seal Flush	Port Type	Port Size	Shaft Dimensions	Bushings & Pin	Tutriding	Jackets	Clearances			
G G	2 1 0	I	A	V	M	A	1	A	K	I	A	0	0	0			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Pump Series

GG = complete pump
GD = drive module
IG = Integral ported pump (**Available only on 015 & 030 sizes with 1-1/2" NPT & BSP port**).

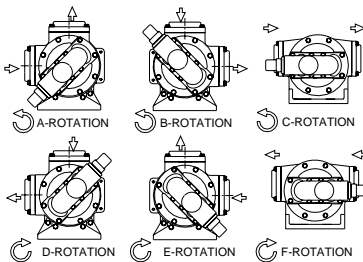
Pump Size

015 = nominal 15 GPM at 1800 RPM
030 = nominal 30 GPM at 1800 RPM
050 = nominal 50 GPM at 1500 RPM
070 = nominal 70 GPM at 1500 RPM
080 = nominal 80 GPM at 1500 RPM
090 = nominal 90 GPM at 1500 RPM
120 = nominal 120 GPM at 1200 RPM
130 = nominal 130 GPM at 1000 RPM
200 = nominal 200 GPM at 1000 RPM
210 = nominal 210 GPM at 800 RPM
250 = nominal 200 GPM at 640 RPM
500 = nominal 500 GPM at 520 RPM
550 = nominal 550 GPM at 500 RPM

Material of Construction

I = iron
S = stainless steel
C = Cast Steel

Port Position & Rotation



Relief Valve

0 = none
V = internal
R = return-to-tank

Sealing Method

P = packing
I = IB mechanical seal (behind rotor)
M = OB mechanical seal (in stuffing box)
C = cartridge mechanical seal

Seal Type

0 = no gland or packing
A = standard packing (graphite/PTFE)**
C = food-grade packing (pure PTFE)
D = Buna mechanical seal
E = Viton mechanical seal
F = PTFE mechanical seal
L = general purpose single cartridge seal (<7,500 SSU)
M = hard face cartridge seal
N = process single cartridge seal (<75,000 SSU)
T = TuffSeal cartridge lip seal (Viton o-rings)

Seal Flush

0 = none
1 = internal vent to suction (API Plan 13)

Port Type

0 = none
A = FNPT
B = FBSP
C = ANSI 125# flanged (C.I. only)
D = ANSI 150# flanged
E = ANSI 250# flanged (C.I. only)
F = ANSI 300# flanged
G = ISO PN16 flanged
H = ISO PN40 flanged

Port Size

0 = none
F = 1" or 25mm
G = 1-1/4" or 30mm
H = 1-1/2" or 40mm
I = 2" or 50mm
J = 2-1/2" or 65mm
K = 3" or 80mm
L = 4" or 100mm
M = 5" or 125mm
N = 6" or 150mm

Shaft Dimensions

I = Inch seal & coupling
M = Metric seal & coupling

Bushings & Pin

A = bronze idler & bracket
B = bronze idler with greasable pin, bronze bracket
C = carbon idler, bronze bracket
D = carbon idler & bracket
E = hi-temp carbon idler & bracket
G = T.C. idler with T.C. pin, bronze bracket
I = T.C. idler & bracket with T.C. pin & hardened shaft

Tutriding

0 = none
1 = Tuttrided rotor head, idler, cover
2 = Tuttrided rotor head, idler, cover, housing

Jackets

0 = none
1 = cover only
2 = bracket only
3 = cover and bracket

Clearances

0 = standard (<7500 SSU, 20° to 150°F)
A = 7500 to 75,000 SSU
B = 75,000 to 750,000 SSU
C = > 750,000 SSU
D = -100°F to +20°F
E = 150°F to 200°F
F = 200°F to 300°F
G* = 300°F to 400°F (see note)
H* = 400°F to 500°F (see note)
I* = 500°F to 600°F (see note)

* Note: Pumps with G, H or I in this position include hi-temp package (paint, bearing & gaskets).

**Note: Standard packing is good to 600°F

Abbreviations:

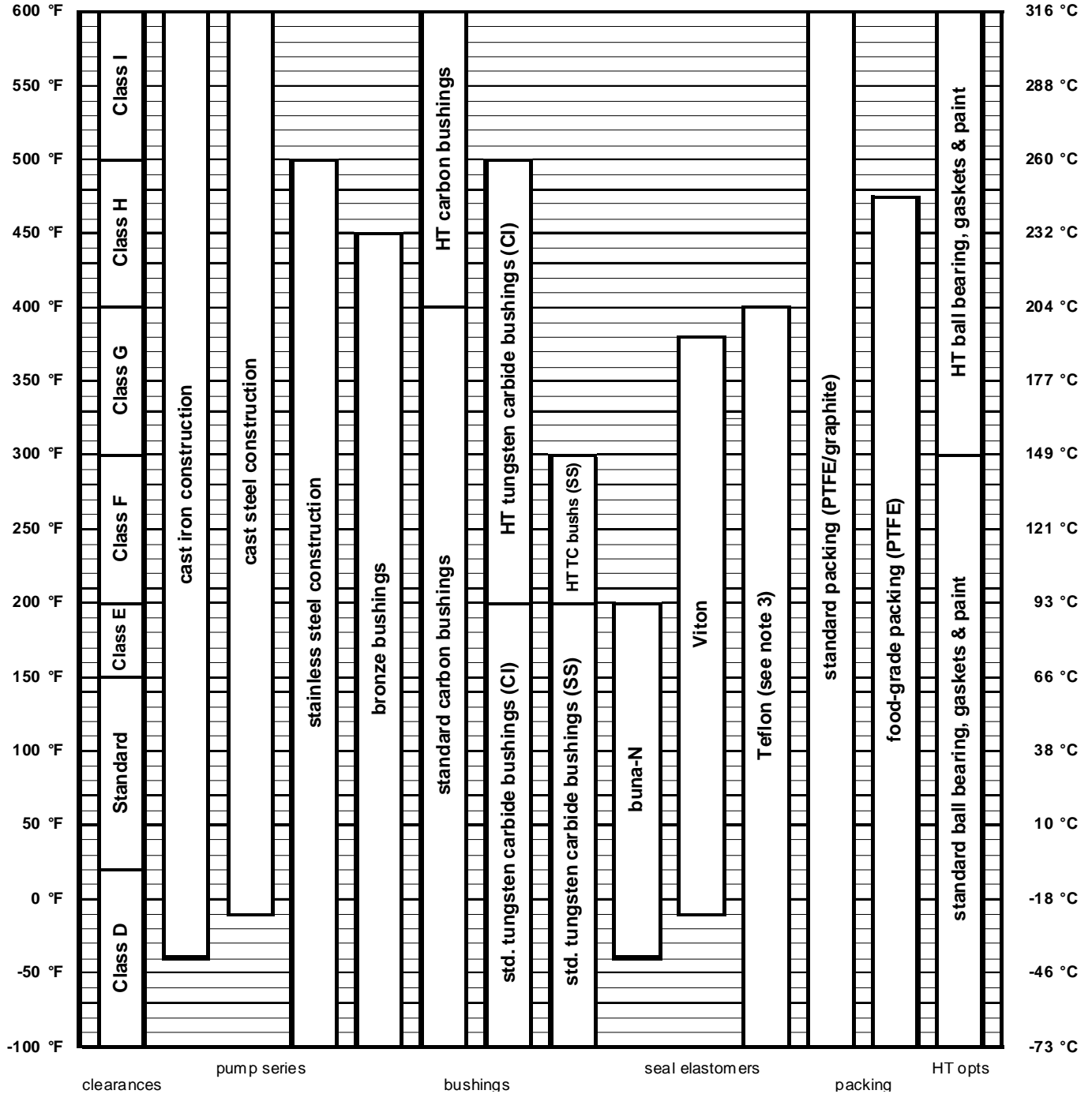
C.I. = Cast Iron
T.C. = Tungsten Carbide

For special pumps with any feature not described above

Pump Series	Pump Size	Matl	Special Indicator	Year of Design	Sequential Special Number
G G	2 1 0	I	- X	0 1	5 6



GlobalGear® Temperature Limits



Notes:

1. A pump's performance is dependent on more than just the temperature ranges of the component materials.
2. Pumps with extra clearances may have reduced flow rates when operated at lower temperatures.
3. Pumps with Teflon seals also have Teflon-encapsulated Viton O-rings which are limited to 400°F (204°C)



GlobalGear® Materials of Construction

Part Name	Material	Standard	Comments	Availability		
				GGI	GGs*	GGC*
Housing, Cover	cast iron (CI)	ASTM A48		S		
	Tutrided CI	ASTM A48	surface hardened	O		
	stainless steel (SS)	ASTM A743, grade CF8M	cast version of 316 SS		S	
	cast steel (CS)	ASTM A216, grade WCB				S
Bracket, Valve Body	cast iron (CI)	ASTM A48		S		
	stainless steel (SS)	ASTM A743, grade CF8M	cast version of 316 SS		S	
	cast steel (CS)	ASTM A216, grade WCB				S
Valve Block-Off Plate	steel	AISI 1018	no contact with pumpage	S*	S	S
Rotor Head, Idler Gear	ductile iron (DI)	ASTM A536, grade 80-55-06		S		S
	Tutrided DI	ASTM A536, grade 80-55-06	surface hardened	O		O
	stainless steel (SS)	ASTM A494, grade CY5SnBiM	"Nitronic 60"		S	
Rotor Shaft	carbon steel (CS)	AISI 4140		S		S
	hardened steel	AISI 4140	induction hardened	O		O
	stainless steel (SS)	ASTM A564, grade 630	"Armco 17-4PH"		S	
	hard-coated SS	ASTM A564, grade 630	chrome oxide coated		O	
Idler Pin	hardened steel	AISI 1117	case hardened	S		S
	stainless steel (SS)	ASTM A276, grade 316		O	S	
	tungsten carbide	grade C2		O	O	O
Bushings	bronze	SAE CA932		S		
	standard carbon	carbon graphite resin		O	S	S
	high-temp carbon	carbon graphite		O	O	O
	tungsten carbide	grade C2		O	O	O
Gaskets	standard	fiber with nitrile binder	"Garlock" Style 3000	S		
	high-temp	graphite/316 SS	"Garlock" Style 3125TC/SS	O	S	S
Bearing Carrier	cast iron (CI)	ASTM A48	no contact with pumpage	S	S	S
Cover Jacket	ductile iron (DI)	ASTM A536, grade 80-55-06	no contact with pumpage	O	O	
Jacketed Bracket	cast iron (CI)	ASTM A48		O*		
	stainless steel (SS)	ASTM A276, grade 316			O	

Availability Codes

S = Standard material for this pump series.
O = Optional material for this pump series.
* not available with GG500/GG550 pumps
Relief valves not available with GG500/GG550 pumps

Pump Models

GGI = Global Gear, Iron
GGs = Global Gear, Stainless Steel
GGC = Global Gear, Cast Steel



GlobalGear® Standard Seal Specifications (GG015 – GG030)

Seal Description	Part number	Vendor	Seal Type	Material of Construction			
				Secondary Seal	Rotary Face	Stationary Face	Wetted Hardware
Buna Mechanical Seal (Buna-N, carbon vs. ceramic)	G015 UI 9-21-D	FLOWSERVE	21	Buna	Carbon	Ceramic	304 S.S.
Viton Mechanical Seal (Viton, carbon vs. ceramic)	G015 UI 9-21-E	FLOWSERVE	21	Viton®	Carbon	Ceramic	304 S.S.
Teflon Mechanical Seal (Teflon, carbon vs. ceramic)	G015 UI 9-9T-F	FLOWSERVE	9T	Teflon®	Carbon	Ceramic	304 S.S.
Abrasion-Resistant Mech. Seal (Viton, SiC vs. SiC)	G015 UI 9-31-H	FLOWSERVE	31	Viton	Silicon Carbide	Silicon Carbide	304 S.S.
General Purpose Single Cartridge Mech. Seal	G015 UI 9-4610-L	JOHN CRANE	4610	Viton	Carbon	Silicon Carbide	316 S.S.
Process Single Cartridge Mech. Seal	G015 UI 9-5610-N	JOHN CRANE	5610	Viton	Silicon Carbide	Silicon Carbide	316 S.S.
Cartridge Lip Seal	G015 UI 9-4422-T	TPG	122	Viton	Silicon Carbide	Filled PTFE	316 S.S.

Mechanical Seals for 28mm shaft

Seal Description	Part number	Vendor	Seal Type	Material of Construction			
				Secondary Seal	Rotary Face	Stationary Face	Hardware
Buna Mechanical Seal (Buna-N, carbon vs. ceramic)	G015 UM 9-21-D	FLOWSERVE	52	Buna	Carbon	Silicon Carbide	316 S.S.
Viton Mechanical Seal (Viton, carbon vs. ceramic)	G015 UM 9-21-E	FLOWSERVE	52	Viton	Carbon	Silicon Carbide	316 S.S.
Teflon Mechanical Seal (Teflon, carbon vs. ceramic)	G015 UM 9-9T-F	FLOWSERVE	9T	Teflon	Carbon	Silicon Carbide	316 S.S.
Abrasion-Resistant Mech. Seal (Viton, SiC vs. SiC)	G015 UM 9-31-H	FLOWSERVE	52	Viton	Silicon Carbide	Silicon Carbide	316 S.S.
Viton Cartridge Single Mech. Seal (Viton, carbon vs. silicon carbide)	G015 UM 9-ISC-I	FLOWSERVE	ISC1PX	Viton	Carbon	Silicon Carbide	316 S.S.
Viton Cartridge Double Mech. Seal (Viton, carbon vs. silicon carbide)	G015 UM 9-ISC-J	FLOWSERVE	ISCX2PP	Viton	Carbon	Silicon Carbide	316 S.S.
Triple Lip Cartridge Seal	G015 UM 9-PSII-K	GARLOCK	P/S-II	Viton	Gylon (lip seals)		316 S.S.

Packings for 1 1/8" (or 28mm) shaft

Packing Description	Part number	Vendor	Packing Style	Material Description
Standard Packing (graphite/Teflon)	G015 UU 94	SEPCO	ML4002 or ML8002	Braided Teflon with graphite impregnation.
Food-Grade Packing (Teflon)	G015 UU 94-FG	SEPCO	ML2236FDA	Braided pure Teflon. FDA approved.
Hi-Temperature Packing (graphite/Teflon)	G015 UU 94-HT	JOHN CRANE	1630G & 100AL	HT-Braided Teflon with graphite impregnation.
		or SEPCO	184 & ML4500	

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 Teflon® - Registered trademark of E.I. DuPont De Nemours & Company
 Gylon® - Registered trademark of Garlock, Inc.



GlobalGear® Standard Seal Specifications (GG050 – GG090)

Mechanical Seals for 1 3/8" shaft

Seal Description	Part number	Vendor	Seal Type	Material of Construction			
				Secondary Seal	Rotary Face	Stationary Face	Wetted Hardware
Buna Mechanical Seal (Buna-N, carbon vs. ceramic)	G050 UI 9-21-D	FLOWSERVE	21	Buna	Carbon	Ceramic	304 S.S.
Viton Mechanical Seal (Viton, carbon vs. ceramic)	G050 UI 9-21-E	FLOWSERVE	21	Viton®	Carbon	Ceramic	304 S.S.
Teflon Mechanical Seal (Teflon, carbon vs. ceramic)	G050 UI 9-9T-F	FLOWSERVE	9T	Teflon®	Carbon	Ceramic	304 S.S.
Abrasion-Resistant Mech. Seal (Viton, SiC vs. SiC)	G050 UI 9-31-H	FLOWSERVE	31	Viton	Silicon Carbide	Silicon Carbide	304 S.S.
General Purpose Single Cartridge Mech. Seal	G050 UI 9-4610-L	JOHN CRANE	4610	Viton	Carbon	Silicon Carbide	316 S.S.
Process Single Cartridge Mech. Seal	G050 UI 9-5610-N	JOHN CRANE	5610	Viton	Silicon Carbide	Silicon Carbide	316 S.S.
Cartridge Lip Seal	G050 UI 9-4422-T	TPG	122	Viton	Silicon Carbide	Filled PTFE	316 S.S.

Mechanical Seals for 35mm shaft

Seal Description	Part number	Vendor	Seal Type	Material of Construction			
				Secondary Seal	Rotary Face	Stationary Face	Hardware
Buna Mechanical Seal (Buna-N, carbon vs. ceramic)	G050 UM 9-21-D	FLOWSERVE	52	Buna	Carbon	Silicon Carbide	316 S.S.
Viton Mechanical Seal (Viton, carbon vs. ceramic)	G050 UM 9-21-E	FLOWSERVE	52	Viton	Carbon	Silicon Carbide	316 S.S.
Teflon Mechanical Seal (Teflon, carbon vs. ceramic)	G050 UM 9-9T-F	FLOWSERVE	9T	Teflon	Carbon	Ceramic	316 S.S.
Abrasion-Resistant Mech. Seal (Viton, SiC vs. SiC)	G050 UM 9-31-H	FLOWSERVE	52	Viton	Silicon Carbide	Silicon Carbide	316 S.S.
Viton Cartridge Single Mech. Seal (Viton, carbon vs. silicon carbide)	G050 UM 9-ISC-I	FLOWSERVE	ISC1PX	Viton	Carbon	Silicon Carbide	316 S.S.
Viton Cartridge Double Mech. Seal (Viton, carbon vs. silicon carbide)	G050 UM 9-ISC-J	FLOWSERVE	ISCX2PP	Viton	Carbon	Silicon Carbide	316 S.S.
Triple Lip Cartridge Seal	G050 UM 9-PSII-K	GARLOCK	P/S-II	Viton	Gylon (lip seals)		316 S.S.

Packings for 1 3/8" (or 35mm) shaft

Packing Description	Part number	Vendor	Packing Style	Material Description
Standard Packing (graphite/Teflon)	G050 UU 94	SEPCO	ML4002 or ML8002	Braided Teflon with graphite impregnation.
Food-Grade Packing (Teflon)	G050 UU 94-FG	SEPCO	ML2236FDA	Braided pure Teflon. FDA approved.
Hi-Temperature Packing (graphite/Teflon)	G050 UU 94-HT	JOHN CRANE	1630G & 100AL	HT-Braided Teflon with graphite impregnation.
		or SEPCO	184 & ML4500	

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 Teflon® - Registered trademark of E.I. DuPont De Nemours & Company
 Gylon® - Registered trademark of Garlock, Inc.



GlobalGear® Standard Seal Specifications (GG120 – GG250)

Mechanical Seals for 1 3/4" shaft

Seal Description	Part number	Vendor	Seal Type	Material of Construction			
				Secondary Seal	Rotary Face	Stationary Face	Wetted Hardware
Buna Mechanical Seal (Buna-N, carbon vs. ceramic)	G120 UI 9-21-D	FLOWSERVE	21	Buna	Carbon	Ceramic	304 S.S.
Viton Mechanical Seal (Viton, carbon vs. ceramic)	G120 UI 9-21-E	FLOWSERVE	21	Viton®	Carbon	Ceramic	304 S.S.
Teflon Mechanical Seal (Teflon, carbon vs. ceramic)	G120 UI 9-9T-F	FLOWSERVE	9T	Teflon®	Carbon	Ceramic	304 S.S.
Abrasion-Resistant Mech. Seal (Viton, SiC vs. SiC)	G120 UI 9-31-H	FLOWSERVE	31	Viton	Silicon Carbide	Silicon Carbide	304 S.S.
General Purpose Single Cartridge Mech. Seal	G120 UI 9-4610-L	JOHN CRANE	4610	Viton	Carbon	Silicon Carbide	316 S.S.
Process Single Cartridge Mech. Seal	G120 UI 9-5610-N	JOHN CRANE	5610	Viton	Silicon Carbide	Silicon Carbide	316 S.S.
Cartridge Lip Seal	G120 UI 9-4422-T	TPG	122	Viton	Silicon Carbide	Filled PTFE	316 S.S.

Mechanical Seals for 45mm shaft

Seal Description	Part number	Vendor	Seal Type	Material of Construction			
				Secondary Seal	Rotary Face	Stationary Face	Hardware
Buna Mechanical Seal (Buna-N, carbon vs. ceramic)	G120 UM 9-21-D	FLOWSERVE	52	Buna	Carbon	Silicon Carbide	316 S.S.
Viton Mechanical Seal (Viton, carbon vs. ceramic)	G120 UM 9-21-E	FLOWSERVE	52	Viton	Carbon	Silicon Carbide	316 S.S.
Teflon Mechanical Seal (Teflon, carbon vs. ceramic)	G120 UM 9-9T-F	FLOWSERVE	9T	Teflon	Carbon	Ceramic	316 S.S.
Abrasion-Resistant Mech. Seal (Viton, SiC vs. SiC)	G120 UM 9-31-H	FLOWSERVE	52	Viton	Silicon Carbide	Silicon Carbide	316 S.S.
Viton Cartridge Single Mech. Seal (Viton, carbon vs. silicon carbide)	G120 UM 9-ISC-I	FLOWSERVE	ISC1PX	Viton	Carbon	Silicon Carbide	316 S.S.
Viton Cartridge Double Mech. Seal (Viton, carbon vs. silicon carbide)	G120 UM 9-ISC-J	FLOWSERVE	ISC2PP	Viton	Carbon	Silicon Carbide	316 S.S.
Triple Lip Cartridge Seal	G120 UM 9-PSII-K	GARLOCK	P/S-II	Viton	Gylon (lip seals)		316 S.S.

Packings for 1 3/4" (or 45mm) shaft

Packing Description	Part number	Vendor	Packing Style	Material Description
Standard Packing (graphite/Teflon)	G120 II(M) 94	SEPCO	ML4002 or ML8002	Braided Teflon with graphite impregnation.
Food-Grade Packing (Teflon)	G120 II(M) 94-FG	SEPCO	ML2236FDA	Braided pure Teflon. FDA approved.
Hi-Temperature Packing (graphite/Teflon)	G120 II(M) 94-HT	JOHN CRANE	1630G & 100AL	HT-Braided Teflon with graphite impregnation.
		or SEPCO	184 & ML4500	

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Teflon® - Registered trademark of E.I. DuPont De Nemours & Company
Gylon® - Registered trademark of Garlock, Inc.



GlobalGear® Standard Seal Specifications (GG500 – GG550)

Mechanical Seals for 2 3/4" shaft

Seal Description	Part number	Vendor	Seal Type	Material of Construction			
				Secondary Seal	Rotary Face	Stationary Face	Wetted Hardware
Buna Mechanical Seal (Buna-N, carbon vs. Ni-Resist)	G500 UI 9-21-D	JOHN CRANE	2	Buna	Carbon	Ni-Resist	Plated Steel
Viton Mechanical Seal (Viton, carbon vs. Ni-Resist)	G500 UI 9-21-E	JOHN CRANE	2	Viton®	Carbon	Ni-Resist	Plated Steel
Teflon Mechanical Seal (Teflon, carbon vs. ceramic)	G500 UI 9-9T-F	JOHN CRANE	9T	Teflon®	Carbon	Ceramic	316 S.S.
Abrasion-Resistant Mech. Seal (Viton, SiC vs. SiC)	G500 UI 9-31-H	available					
General Purpose Single Cartridge Mech. Seal	G500 UI 9-4610-L	JOHN CRANE	4610	Viton	Carbon	Silicon Carbide	316 S.S.
Process Single Cartridge Mech. Seal	G500 UI 9-5610-N	JOHN CRANE	5610	Viton	Silicon Carbide	Silicon Carbide	316 S.S.
Cartridge Lip Seal	G500 UI 9-4422-T	TPG	122	Viton	Silicon Carbide	Filled PTFE	316 S.S.

Packings for 2 3/4" shaft

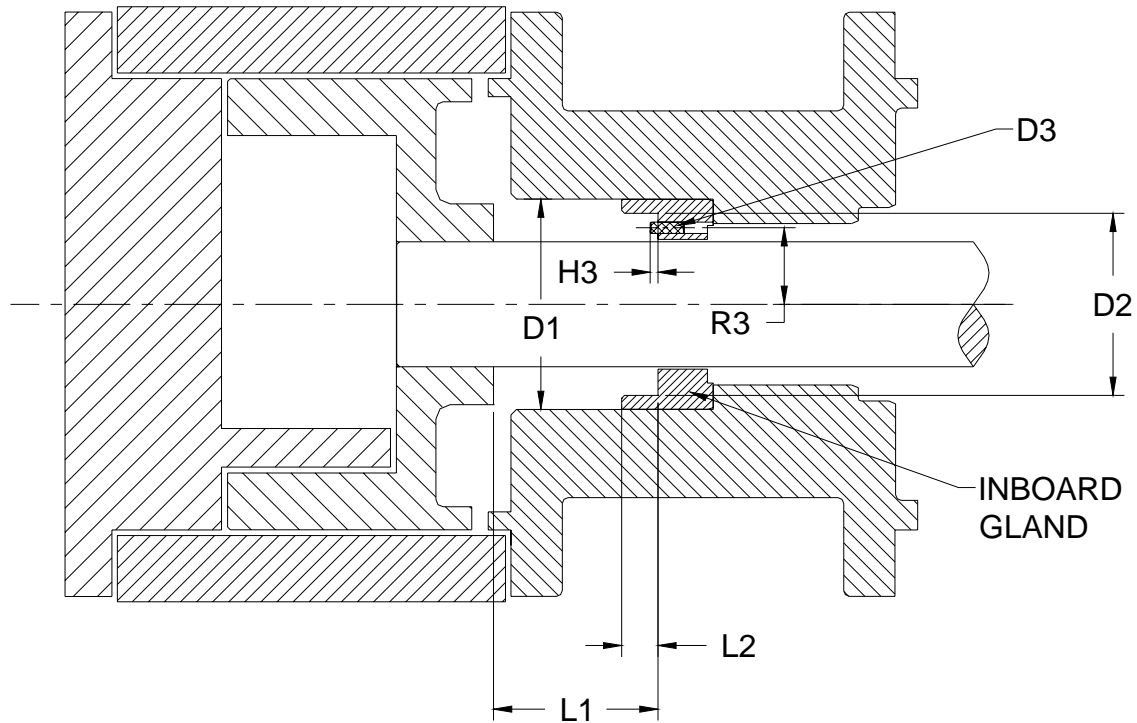
Packing Description	Part number	Vendor	Packing Style	Material Description
Standard Packing (graphite/Teflon)	G500 II 94	SEPCO	ML4002 or ML8002	Braided Teflon with graphite impregnation.
Food-Grade Packing (Teflon)	G500 II 94-FG	SEPCO	ML2236 FDA	Braided pure Teflon. FDA approved.
Hi-Temperature Packing (graphite/Teflon)	G500 II94-HT	JOHN CRANE or SEPCO	1630G & 100AL 184 & ML4500	HT-Braided Teflon with graphite impregnation.

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Gylon® - Registered trademark of Garlock, Inc.



GlobalGear® Seal Chamber Dimensions Mech Seal (Inboard Location, Inch Shaft)

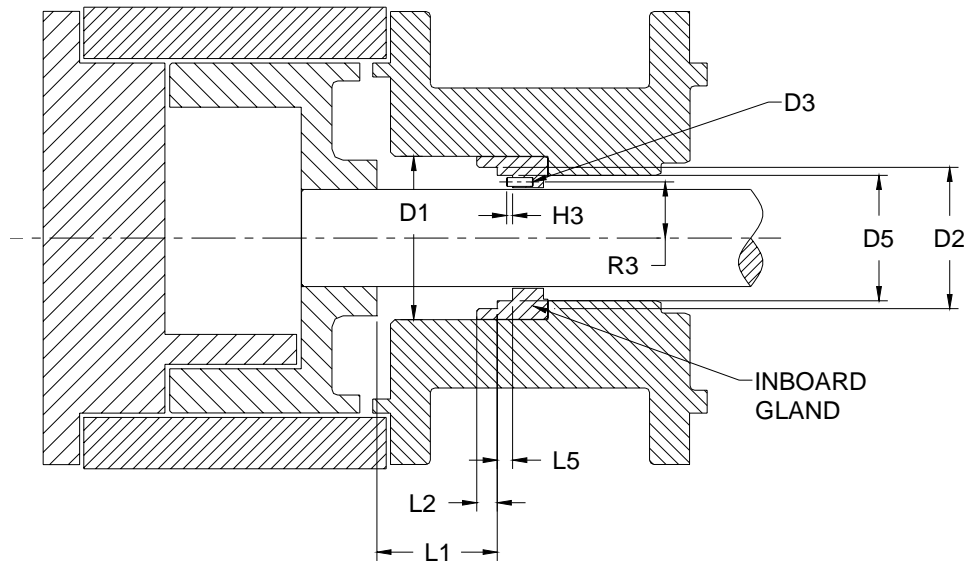
Dimension		GG015/ 030	GG050/070/ 080/090	GG120/ 130	GG200/ 210/250	GG500/ 550
Shaft Diameter	-	1.125"	1.375"	1.75"	1.75"	N/A
Chamber Diameter	D1	2.000"	2.313"	2.750"	2.750"	
Seal Working Length (std. gland)	L1	1.490"	1.562"	1.875"	1.875"	
Seal Working Length (opt. gland)	L1	1.440"	1.812"	n/a	n/a	
Seat Bore Diameter	D2	1.75"	2.000"	2.500"	2.500"	
Seat Bore Length (min)	L2	0.437"	0.398"	0.50"	0.50"	
Optional Gland Pin	D3	0.125"	0.125"	0.125"	0.125"	
	R3	0.75"	0.86"	1.17"	1.17"	
	H3	0.08"	0.08"	0.18"	0.18"	





GlobalGear® Seal Chamber Dimensions Mech Seal (Inboard Location, Metric Shaft)

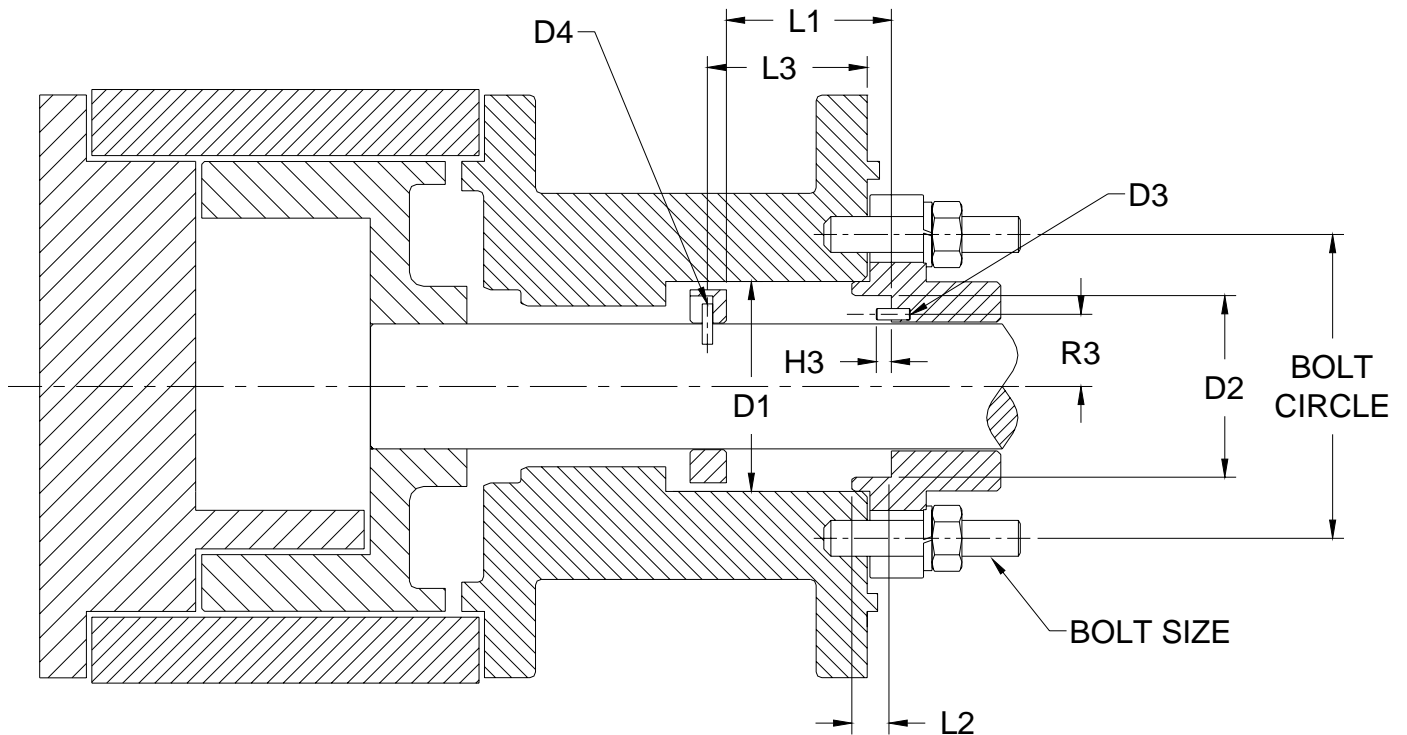
Dimension		GG015/030	GG050/070/ 080/090	GG120/130	GG200/210/ 250	GG500/ 550
Shaft Diameter	-	28.0 mm	35.0 mm	45.0 mm	45.0 mm	N/A
Chamber Diameter	D1	50.8 mm	58.8 mm	69.9 mm	69.9 mm	
Seal Working Length (std. gland)	L1	42.0 mm	42.0 mm	43.4 mm	43.4 mm	
Seal Working Length (opt. gland)	L1	35.9 mm	45.4 mm	n/a	n/a	
Seat Bore Diameter	D2	43.0 mm	50.0 mm	63.0 mm	63.0 mm	
Seat Bore Length (min.)	L2	10.0 mm	9.6 mm	10.1 mm	10.1 mm	
Seat Pilot Diameter	D5	37.0 mm	44.0 mm	56 mm	56 mm	
Seat Pilot Length	L5	6.5 mm	6.9 mm	6.8 mm	6.8 mm	
Optional Gland Pin	D3	3.18 mm	3.18 mm	3.18 mm	3.18 mm	
	R3	16.9 mm	20.0 mm	26.0 mm	26.0 mm	
	H3	4.0 mm	4.3 mm	4.8 mm	4.8 mm	





GlobalGear® Seal Chamber Dimensions Mech Seal (Outboard Location, Inch Shaft)

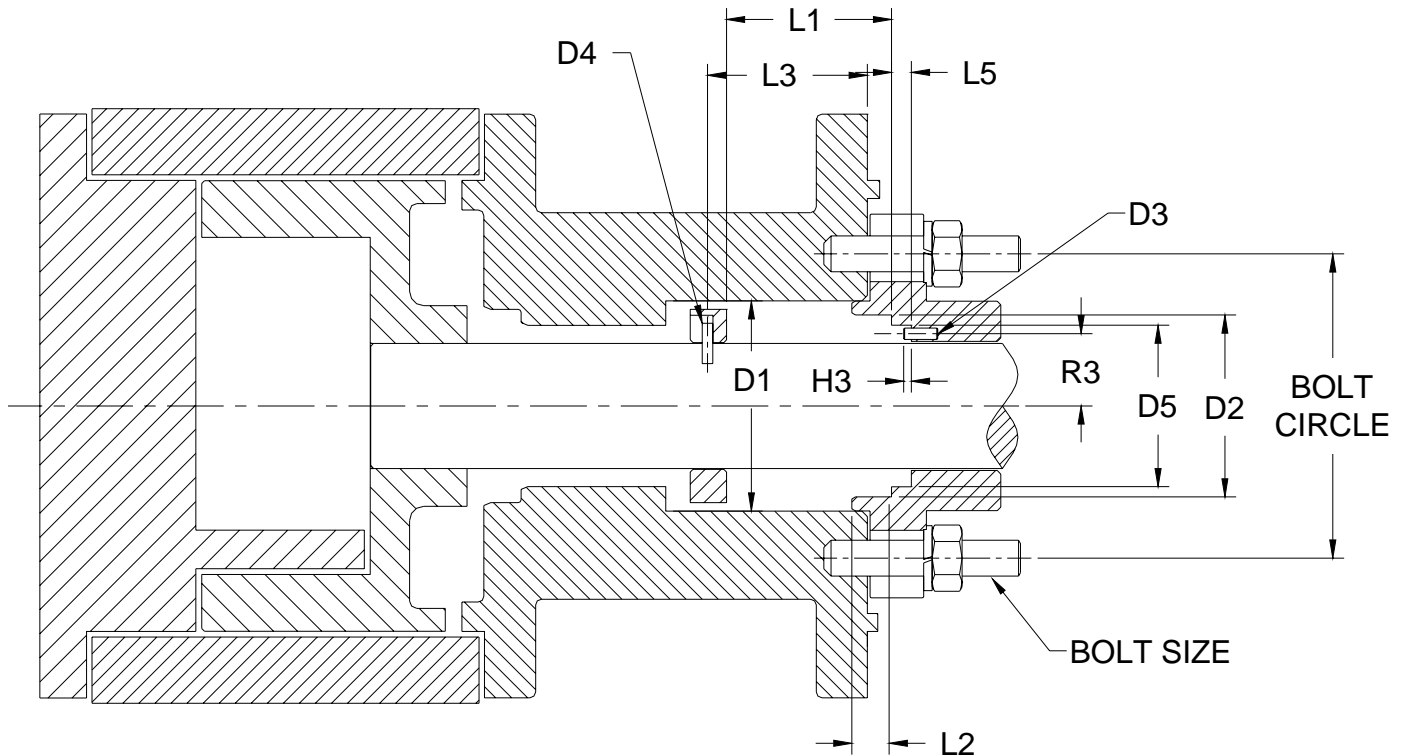
Dimension		GG15/30	GG50/70/ 80/90	GG120/130	GG200/210/ 250	GG500/ 550
Shaft Diameter	-	1.125"	1.375"	1.750"	1.750"	2.75"
Bolt Size	-	4 x M10	2 x M10	2 x M12	2 x M12	2 x M12
Bolt Circle	-	3.13"	3.35"	4.25"	4.25"	5.90"
Chamber Diameter	D1	2.000"	2.313"	2.750"	2.750"	4.50"
Seal Working Length (std. gland)	L1	1.490"	1.562"	1.860"	1.860"	2.630"
Seal Working Length (opt. gland)	L1	1.440"	1.812"	n/a	n/a	n/a
Seat Bore Diameter	D2	1.750"	2.000"	2.500"	2.500"	3.500"
Seat Bore Length (min.)	L2	0.616"	0.437"	0.50"	0.50"	0.55"
Optional Gland Pin	D3	0.125"	0.125"	0.125"	0.125"	0.125"
	R3	0.75"	0.86"	1.13"	1.13"	1.54"
	H3	0.08"	0.08"	0.12"	0.12"	0.094"
Chamber Depth to Pin Hole	L3	1.26"	1.77"	1.89"	1.89"	n/a
Pin Hole Dia.	D4	0.13"	0.13"	0.13"	0.13"	n/a





GlobalGear® Seal Chamber Dimensions Mech Seal (Outboard Location, Metric Shaft)

Dimension		GG15/30	GG50/70/ 80/90	GG120/130	GG200/210/ 250	GG500/ 550
Shaft Diameter	-	28.0 mm	35.0 mm	45.0 mm	45.0 mm	N/A
Bolt Size	-	4 x M10	2 x M10	2 x M12	2 x M12	
Bolt Circle	-	79.5 mm	85 mm	108 mm	108 mm	
Chamber Diameter	D1	50.8 mm	58.8 mm	69.9 mm	69.9 mm	
Seal Working Length (std. gland)	L1	42.0 mm	42.0 mm	44.8 mm	44.8 mm	
Seal Working Length (opt. gland)	L1	35.9 mm	45.4 mm	n/a	n/a	
Seat Bore Diameter	D2	43.0 mm	50.0 mm	63.0 mm	63.0 mm	
Seat Bore Length (min.)	L2	14.8 mm	9.5 mm	11.5 mm	11.5 mm	
Seat Pilot Diameter	D5	37.0 mm	44.0 mm	56.0 mm	56.0 mm	
Seat Pilot Length	L5	8.6 mm	6.9 mm	7.4 mm	7.4 mm	
Optional Gland Pin	D3	3.18 mm	3.18 mm	3.18 mm	3.18 mm	
	R3	n/a	20.0 mm	n/a	n/a	
	H3	4.6 mm	5.5 mm	4.1 mm	4.1 mm	
Chamber Depth to Pin Hole	L3	32 mm	44.8 mm	48.1 mm	48.1 mm	
Pin Hole Dia.	D4	3.2 mm	3.2 mm	3.2 mm	3.2 mm	

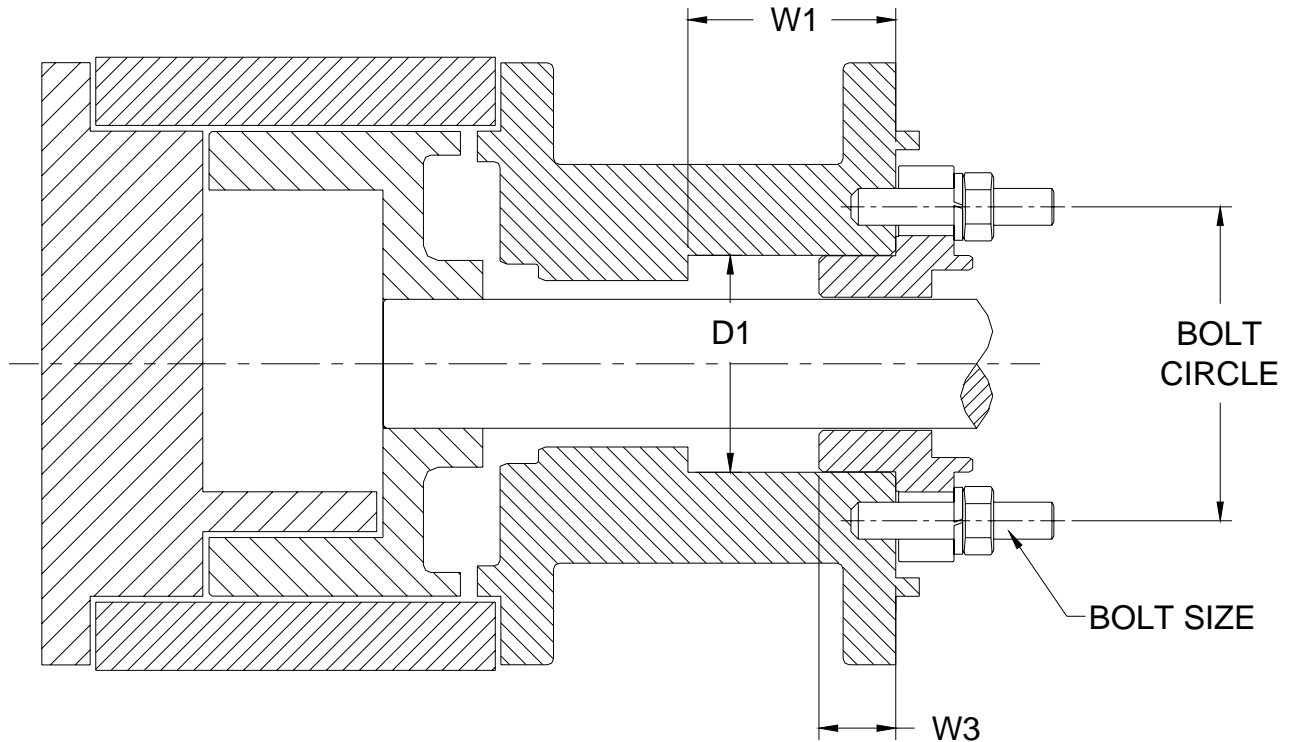




GlobalGear® Seal Chamber Dimensions Packing

Dimension (Inch Shaft)		GG15/30	GG50/70/ 80/90	GG120/130	GG200/210/ 250	GG500/ 550
Shaft Diameter	-	1.125"	1.375"	1.750"	1.750"	2.75"
Bolt Size	-	4 x M10	2 x M10	2 x M12	2 x M12	2 x M12
Bolt Circle	-	3.13"	3.35"	4.25"	4.25"	5.90"
Chamber Diameter	D1	2.000"	2.313"	2.750"	2.750"	4.50"
Chamber Length	W1	1.69"	2.22"	2.43"	2.43"	2.95"
Gland Length	W3	0.64"	0.82"	0.68"	0.68"	1.14"

Dimension (Metric Shaft)		GG15/30	GG50/70/ 80/90	GG120/130	GG200/210/ 250	GG500/ 550
Shaft Diameter	-	28.0 mm	35.0 mm	45.0 mm	45.0 mm	N/A
Bolt Size	-	4 x M10	2 x M10	2 x M12	2 x M12	
Bolt Circle	-	79.5 mm	85 mm	108 mm	108 mm	
Chamber Diameter	D1	50.80 mm	58.75 mm	69.85 mm	69.85 mm	
Chamber Length	W1	42.9 mm	56.4 mm	61.7 mm	61.7 mm	
Gland Length	W3	16.3 mm	20.8 mm	17.3 mm	17.3 mm	



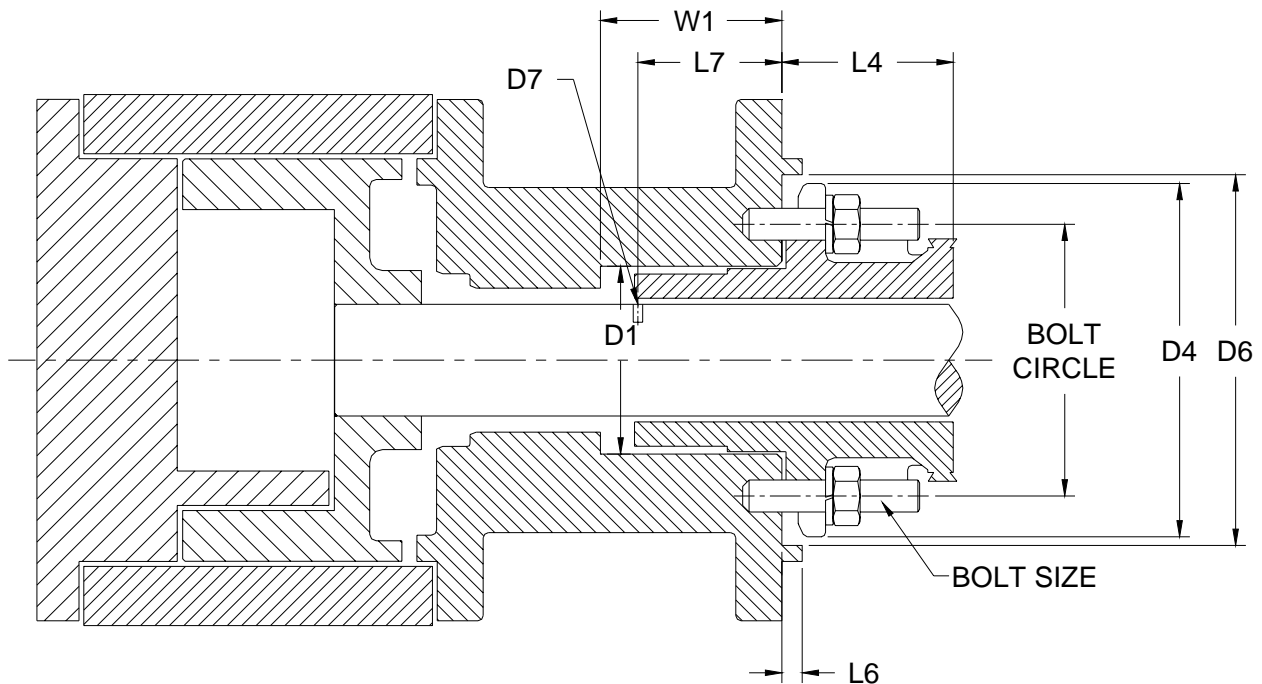


GlobalGear® Seal Chamber Dimensions Cartridge Seal

Dimension (Inch Shaft)		GG15/30	GG50/70/ 80/90	GG120/130	GG200/210/ 250	*GG500 /550
Shaft Diameter	-	1.125"	1.375"	1.750"	1.750"	2.750"
Bolt Size	-	4 x M10	2 x M10	2 x M12	2 x M12	2 x M14
Bolt Circle	-	3.13"	3.35"	4.25"	4.25"	5.906"
Chamber Diameter	D1	2.000"	2.313"	2.750"	2.750"	3.78"
Chamber Length	W1	1.69"	2.22"	2.43"	2.43"	2.95"
Max Seal Diameter	D4	3.75"	4.88"	5.60"	5.75"	-----
Max Seal Length	L4	2.06"	2.62"	4.40"	4.40"	4.66
Gland Obstruction Dia.	D6	2.87"	4.56"	5.65"	5.75"	-----
Gland Obstruction Length	L6	0.25"	0.25"	0.44"	0.44"	-----
Chamber Depth to Pin Hole	L7	1.26"	1.77"	1.89"	1.89"	-----
Pin Hole Dia.	D7	0.13"	0.13"	.13"	.13"	-----

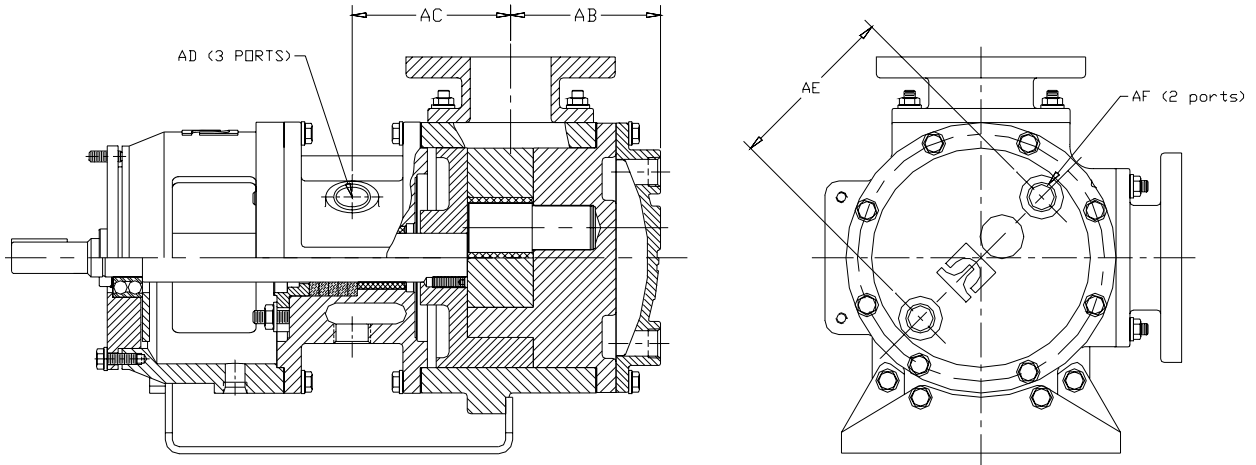
*GG500/550 HAVE DIFFERENT BRACKET AND SEAL CHAMBER CONFIGURATION

Dimension (Metric Shaft)		GG15/30	GG50/70/ 80/90	GG120/130	GG200/210/ 250
Shaft Diameter	-	28.0 mm	35.0 mm	45.0 mm	45.0 mm
Bolt Size	-	4 x M10	2 x M10	2 x M12	2 x M12
Bolt Circle	-	79.5 mm	85 mm	108 mm	108 mm
Chamber Diameter	D1	50.80 mm	58.75 mm	69.85 mm	69.85 mm
Chamber Length	W1	42.9 mm	56.4 mm	61.7 mm	61.7 mm
Max Seal Diameter	D4	95 mm	125 mm	142 mm	142 mm
Max Seal Length	L4	52 mm	66 mm	112 mm	112 mm
Gland Obstruction Dia.	D6	72.8 mm	115.8 mm	143.5 mm	146.0 mm
Gland Obstruction Length	L6	6.4 mm	6.4 mm	11.2 mm	11.2 mm
Chamber Depth to Pin Hole	L7	32 mm	44.8 mm	48.1 mm	48.1 mm
Pin Hole Dia.	D7	3.2 mm	3.2 mm	3.2 mm	3.2 mm





GlobalGear® Jackets Data & Dimensions



Dimensions - 90° Ports

pump size	Jacketed Cover					Jacketed Bracket		
	AB		AE		AF	AC		AD
	inch	mm	inch	mm		inch	mm	
GG15/30 IB seal	3.67	93	2.04	52	1/2" NPT	3.58	91	3/8" NPT
GG15/30 OB seal	3.67	93	2.04	52	1/2" NPT	2.93	74	3/8" NPT
GG50/70 Iron IB seal	3.65	93	3.23	82	1/2" NPT	4.77	121	1/2" NPT
GG50/70 Iron OB seal	3.65	93	3.23	82	1/2" NPT	3.36	85	1/2" NPT
GG50/70 Stainless	3.65	93	3.23	82	1/2" NPT	4.82	122	3/4" NPT
GG80/90 Iron IB seal	4.01	102	3.23	82	1/2" NPT	3.22	82	1/2" NPT
GG80/90 Iron OB seal	4.01	102	3.23	82	1/2" NPT	4.12	105	1/2" NPT
GG80/90 Stainless	4.01	102	3.23	82	1/2" NPT	3.22	82	3/4" NPT
GG120/130	4.37	111	4.72	120	3/4" NPT	4.93	125	1" NPT
GG200/210	5.31	135	6.14	156	3/4" NPT	5.62	143	1" NPT
GG250	5.31	135	6.14	156	3/4" NPT	5.62	143	1" NPT
GG550	8.49	216	9.45	240	3/4" NPT	N/A	N/A	N/A

Ratings

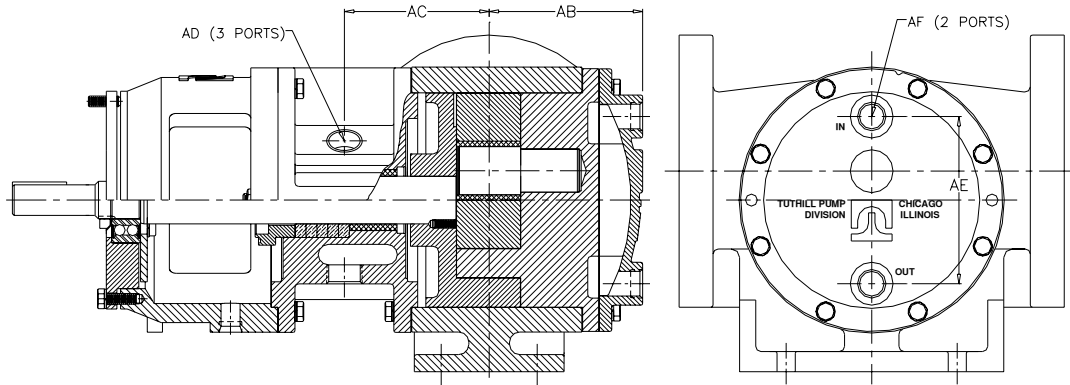
Jacket Ratings		steam	heat transfer fluid
max temperature	deg F	365	600
	deg C	185	316
max pressure	psig	150	150
	bar g	10.3	10.3

Notes:

- Jacketed covers are not available with pumps with relief valves.
- Brackets also contain additional ports that access the seal chamber. Do not connect them to steam or H.T.F.



GlobalGear® Jackets Data & Dimensions



Dimensions - 180° Ports

pump size	Jacketed Cover				AF	Jacketed Bracket		
	AB		AE			AC	AD	
	inch	mm	inch	mm				inch
GG15/30 IB seal	3.17	81	2.04	52	1/2" NPT	4.08	104	3/8" NPT
GG15/30 OB seal	3.17	81	2.04	52	1/2" NPT	4.08	104	3/8" NPT
GG50/70 Iron IB seal	3.65	93	3.23	82	1/2" NPT	4.77	121	1/2" NPT
GG50/70 Iron OB seal	3.65	93	3.23	82	1/2" NPT	3.36	85	1/2" NPT
GG50/70 Stainless	3.65	93	3.23	82	1/2" NPT	4.82	122	3/4" NPT
GG80/90 Iron IB seal	4.01	102	3.23	82	1/2" NPT	3.22	82	1/2" NPT
GG80/90 Iron OB seal	4.01	102	3.23	82	1/2" NPT	4.12	105	1/2" NPT
GG80/90 Stainless	4.01	102	3.23	82	1/2" NPT	3.22	82	3/4" NPT
GG120/130	4.37	111	4.72	120	3/4" NPT	4.37	111	1" NPT
GG200/210	5.65	144	6.14	156	3/4" NPT	5.33	135	1" NPT
GG250	5.65	144	6.14	156	3/4" NPT	5.33	135	1" NPT
GG500	8.49	216	9.45	240	3/4" NPT	N/A	N/A	N/A

Ratings

Jacket Ratings		steam	heat transfer fluid
max temperature	deg F	365	600
	deg C	185	316
max pressure	psig	150	150
	bar g	10.3	10.3

Notes:

1. Jacketed covers are not available with pumps with relief valves.
2. Brackets also contain additional ports that access the seal chamber. Do not connect them to steam or H.T.F.



GlobalGear® NPSH Data

NPSHr for up to 750 ssu (feet of water)

pump size	pump speed (rpm)									
	150	250	350	450	550	750	950	1150	1450	1750
GG015	1.4	1.6	1.8	2.1	2.4	3.0	4.5	6.2	8.6	11.3
GG030	1.4	1.6	1.8	2.1	2.4	3.0	4.5	6.2	8.6	11.3
GG050	1.5	1.8	2.2	2.7	3.4	5.2	7.7	11.2	15.0	
GG070	1.5	1.8	2.2	2.7	3.4	5.2	7.7	11.2	15.0	
GG080	1.5	1.8	2.2	2.7	3.4	5.2	7.7	11.2	15.0	
GG090	1.5	1.8	2.2	2.7	3.4	5.2	7.7	11.2	15.0	
GG120	1.6	1.9	2.7	3.5	4.7	7.7	11.7	16.4		
GG130	1.6	1.9	2.7	3.5	4.7	7.7	11.7			
GG200	1.8	2.4	3.6	4.8	6.9	11.9	17.4			
GG210	1.8	2.4	3.6	4.8	6.9	11.9				
GG250	1.8	2.4	3.6	4.8	6.9	11.9				
GG500	3.4	6.2	10.5	15.8	24.0					
GG550	3.4	6.2	10.5	15.8	24.0					

NPSHr for up to 165 cst. (meters of water)

pump size	pump speed (rpm)									
	150	250	350	450	550	750	950	1150	1450	1750
GG015	0.4	0.5	0.5	0.6	0.7	0.9	1.4	1.9	2.6	3.4
GG030	0.4	0.5	0.5	0.6	0.7	0.9	1.4	1.9	2.6	3.4
GG050	0.5	0.5	0.7	0.8	1.0	1.6	2.3	3.4	4.6	
GG070	0.5	0.5	0.7	0.8	1.0	1.6	2.3	3.4	4.6	
GG080	0.5	0.5	0.7	0.8	1.0	1.6	2.3	3.4	4.6	
GG090	0.5	0.5	0.7	0.8	1.0	1.6	2.3	3.4	4.6	
GG120	0.5	0.6	0.8	1.1	1.4	2.3	3.6	5.0		
GG130	0.5	0.6	0.8	1.1	1.4	2.3	3.6			
GG200	0.5	0.7	1.1	1.5	2.1	3.6	5.3			
GG210	0.5	0.7	1.1	1.5	2.1	3.6				
GG250	0.5	0.7	1.1	1.5	2.1	3.6				
GG500	1.0	1.9	3.2	4.8	7.3					
GG550	1.0	1.9	3.2	4.8	7.3					

High Viscosity Correction Factors

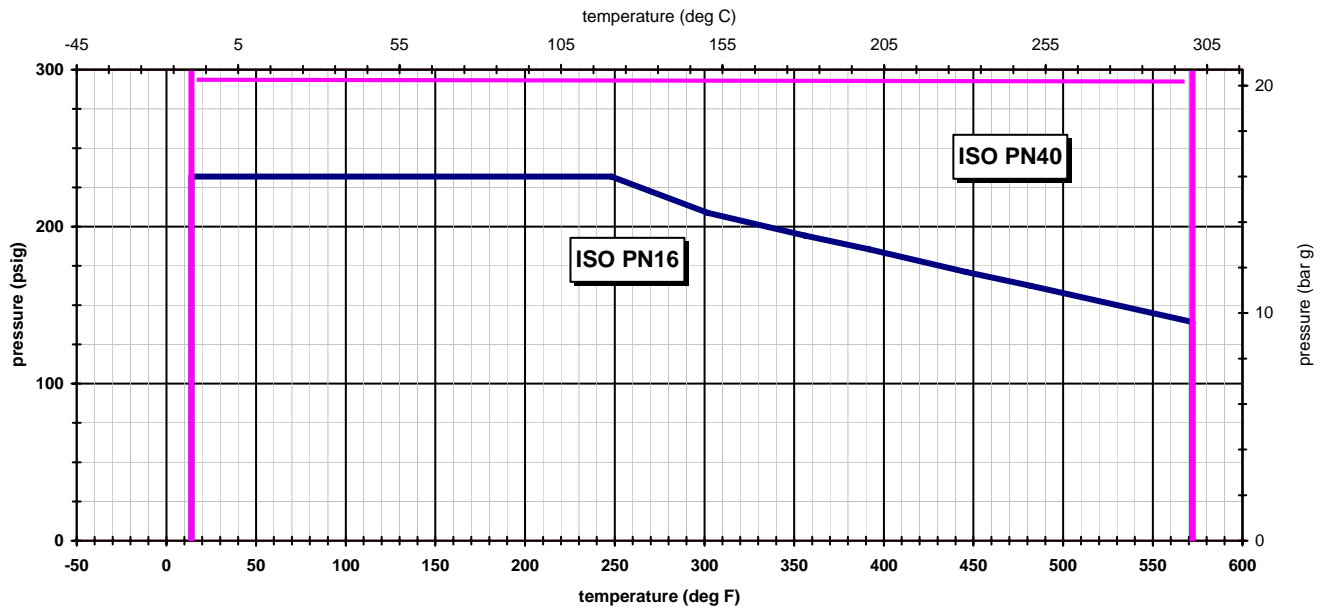
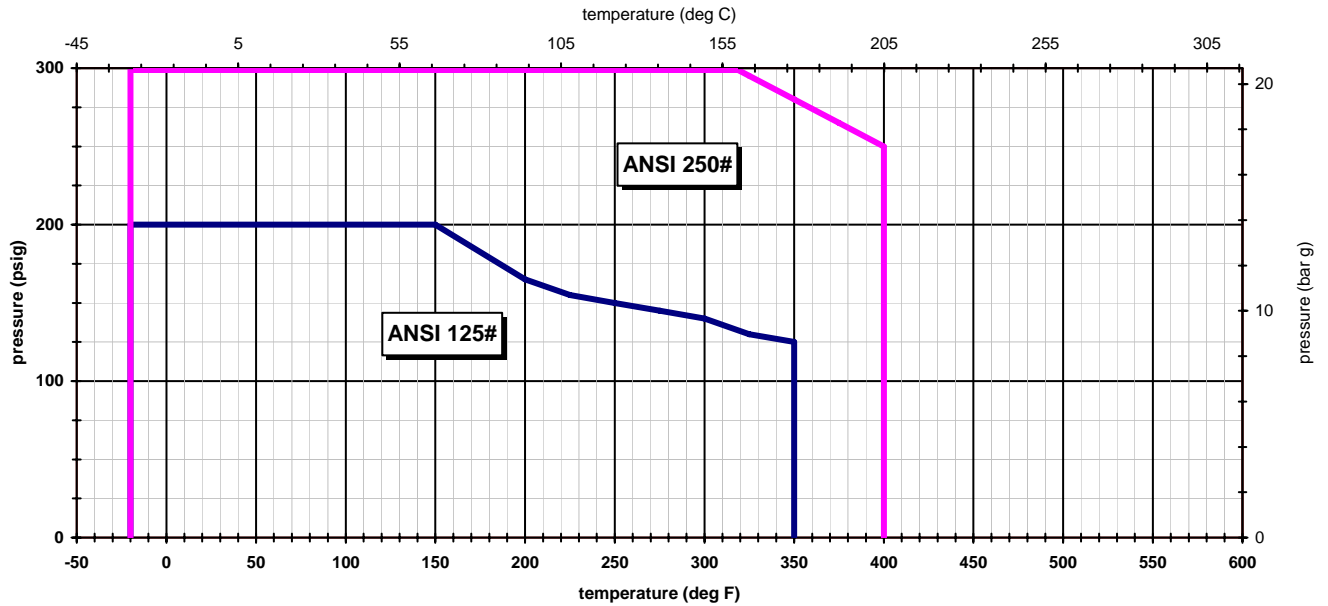
viscosity	CF	viscosity	CF	viscosity	CF
2500 ssu	1.3	25,000 ssu	2.7	250,000 ssu	5.3
550 cst		5500 cst		55,000 cst	
5000 ssu	1.7	50,000 ssu	3.1	500,000 ssu	6.7
1100 cst		11,000 cst		110,000 cst	
10,000 ssu	2.0	100,000 ssu	4.0	1,000,000 ssu	10.7
2200 cst		22,000 cst		220,000 cst	

Notes:

1. For viscosity above 750 ssu (165 cst), multiply the charted NPSHr value by the appropriate correction factor.
2. NPSHa (available) must be greater than NPSHr (required) for proper pump operation.
3. Data shown here is for pumps with standard ports. Optional ports of different sizes may affect NPSHr.



GlobalGear® Flange Ratings (Cast Iron)

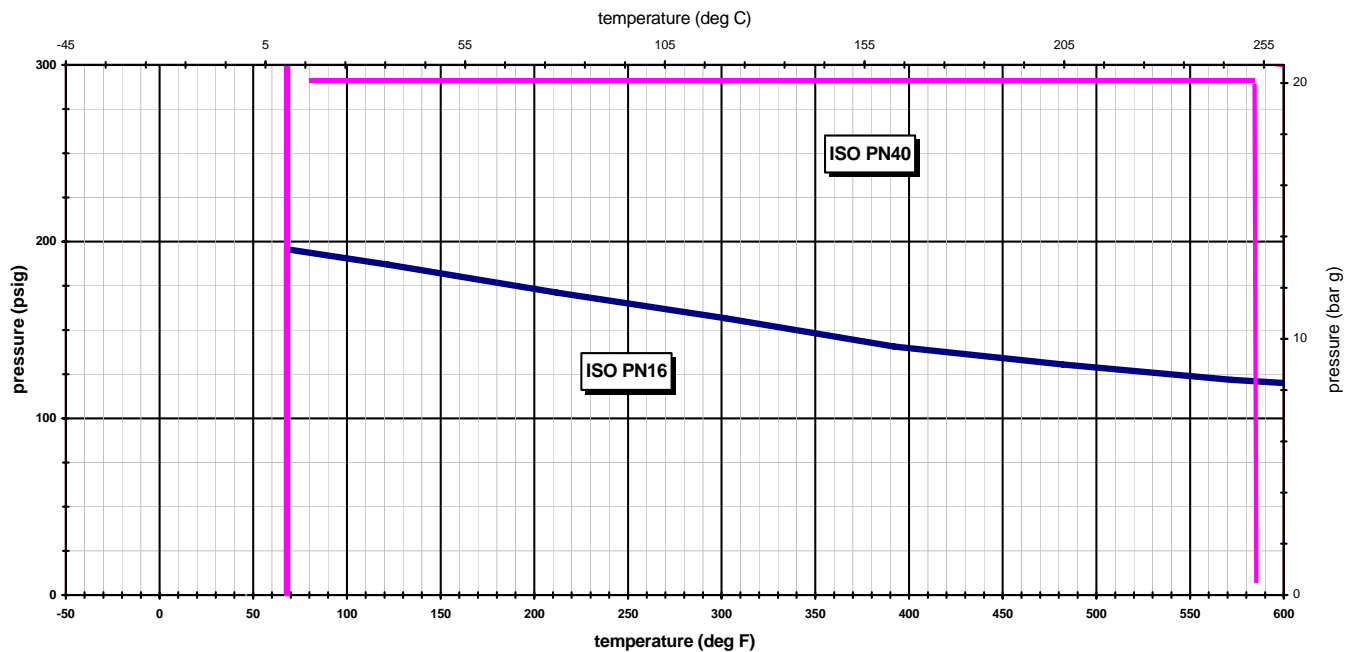
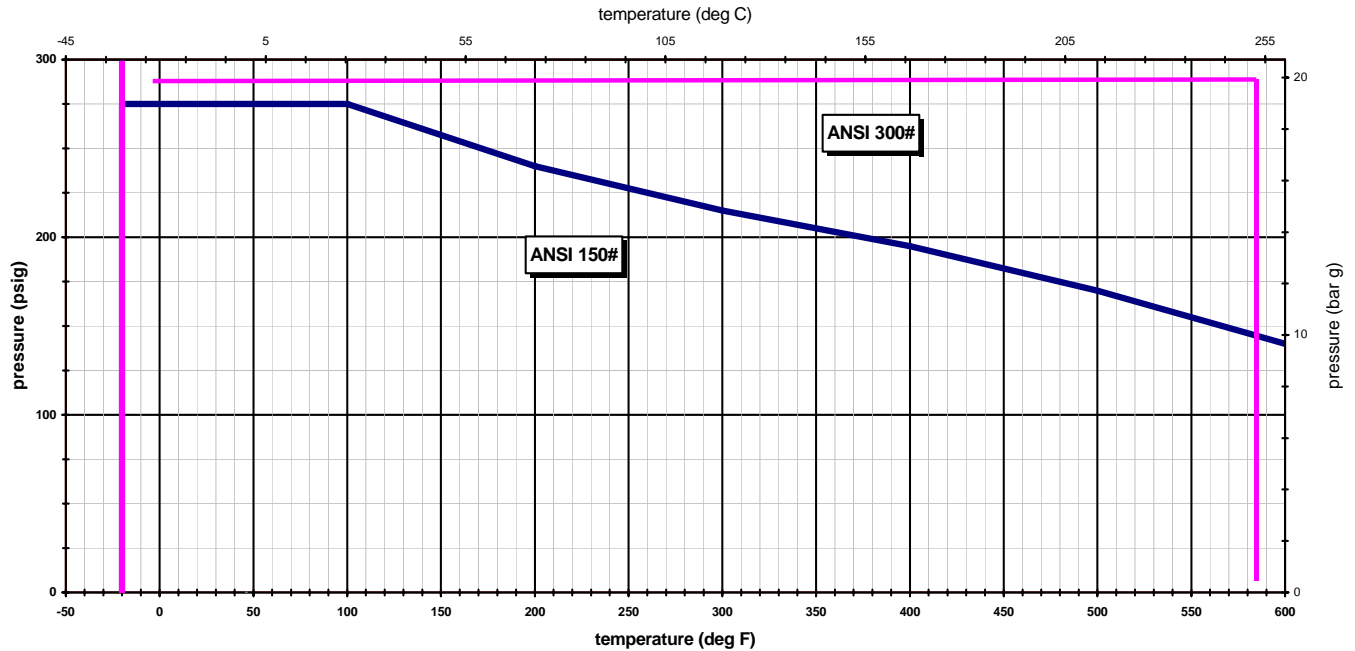


NOTES:

- 1) These charts show the ratings for flanges only - the maximum pump operating conditions must also be checked.
- 2) Consult the appropriate Tuthill catalog for maximum allowable operating pressures and temperatures, based on pump application conditions and pump features.
- 3) These ratings are based on non-shock pressures.
- 4) ANSI data is from ASME/ANSI B16.1 - 1989 (class A). Consult this spec for more information.



GlobalGear® Flange Ratings (Stainless Steel)

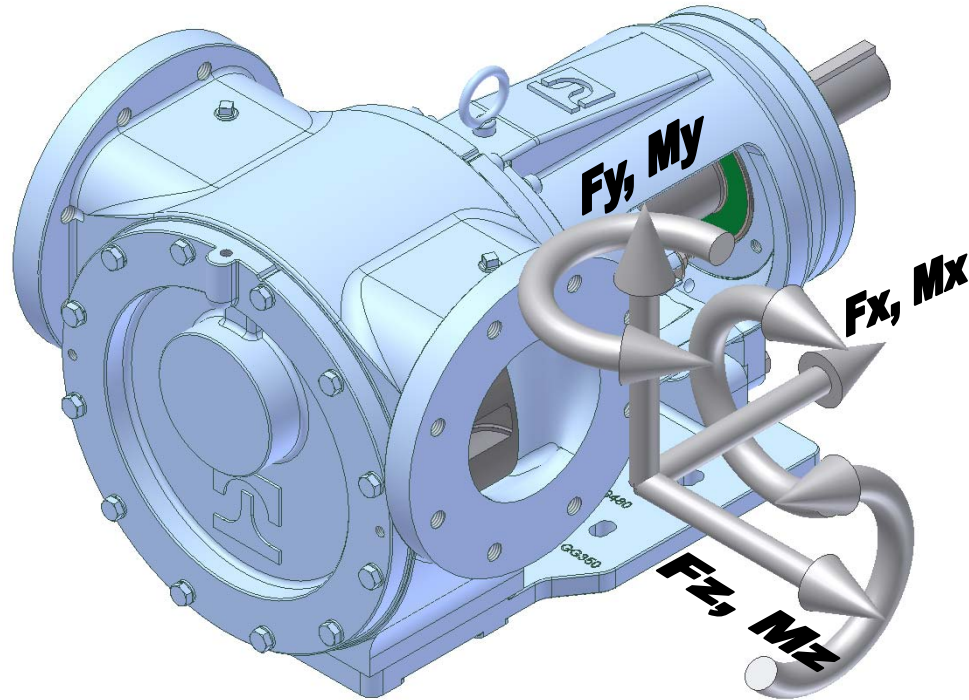


NOTES:

- 1) These charts show the ratings for flanges only - the maximum pump operating conditions must also be checked.
- 2) Consult the appropriate Tuthill catalog for maximum allowable operating pressures and temperatures, based on pump application conditions and pump features.
- 3) These ratings are based on non-shock pressures.
- 4) ANSI data is from ASME/ANSI B16.5 - 1988 (matl group 2.2). Consult this spec for more information.
- 5) ISO data is from ISO 7005-1 : 1992 (matl group 13E0). Consult this spec for more information.



GG Series Pumps Nozzle Loading Data



Pump Size	Nominal Port Size		Max. Fx, Fy & Fz		Max. Mx, My, & Mz	
	Inch	mm	Lbs.	N	Lb-ft.	N-m
GG015-030	1.5	40	113	500	188	138
	2	50	150	500	250	184
GG050-070	2	50	150	500	250	184
GG080-090	2	50	150	500	250	184
	3	80	225	1001	375	277
GG120-130	2	50	150	500	250	184
	2.5	50	150	500	250	184
	3	80	225	1001	375	277
	4	100	300	1334	500	369
GG200-210-250	2	50	150	500	250	184
	2.5	50	150	500	250	184
	3	80	225	1001	375	277
	4	100	300	1334	500	369
GG500	6	150	450	2002	750	553
GG550	6	150	450	2002	750	553

Notes:

1. We always recommend proper pipe support. Hydraulic Institute standards state, "... both suction and discharge piping should be independently supported near the pump so that when the flange bolts are tightened, no strain will be transmitted to the pump casing."
2. For GG Iron Series, multiply the above values by 0.35.
3. These maximum values are not valid for combined forces and moments.