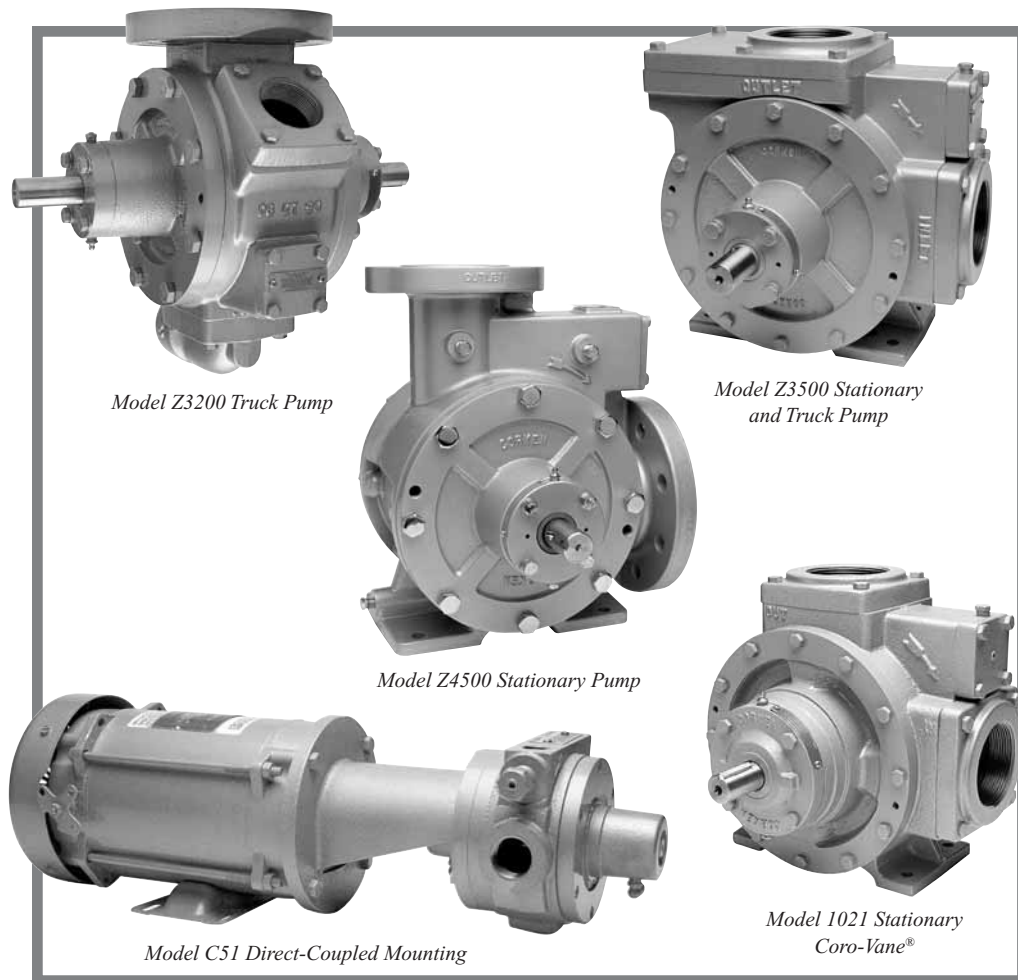


LPG Coro-Vane® Pumps

Sales Catalog for Stationary and Truck Pumps



Solutions beyond products...



CORKEN®
IDEX

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What is a Coro-Vane® Pump?

The Corken Coro-Vane® is a sliding vane pump, and is the most popular type of pump in the LP gas industry for generating high flow rates (up to 400 gpm). They combine low cost with high reliability and easy maintenance. The operating principle is simple. A slotted rotor is eccentrically supported in the cycloidal cam. The rotor is placed close to the wall of the cam so a crescent shaped cavity is formed. The rotor is sealed into the cam by two sideplates. The clearance between the rotor and sideplates is 8 to 10 thousandths of an inch depending on the model. Vanes slide in and out of the rotor slots to seal off a volume of liquid between the rotor, cam and sideplate. Liquid enters the crescent shaped pumping chamber through the holes in the cam. The vanes sweep the fluid to the opposite side of the crescent where it is squeezed through discharge holes of the cam as the vane approaches the point of the crescent (see figure 1 for illustration).

For a vane pump to function properly, the vane must always firmly contact the cam wall to form a tight seal. Centrifugal force provides some force to actuate the vane, but this force is not adequate by itself. Hydraulic forces exerted by the liquid being pumped tend to push the vanes back into the rotor. Special design features are incorporated into the Coro-Vane® pump to counteract these forces. This is partially handled by routing discharge pressure under the vanes via slots in the sideplates or holes in the vanes. Corken also uses vane drivers in our Z-Series pumps to force the vane firmly against the cam wall. The vane drivers are made of composite material and will not gouge the vanes as metal drivers can.

The horsepower and pressure characteristics of the Coro-Vane® pump are that of a positive displacement pump. As the differential pressure increases, the horsepower increases and the capacity decreases. Coro-Vane LPG/NH₃ pump housings and rotors are fabricated from ductile iron, an advanced cast iron which combines high strength with low cost. Vanes and vane drivers are composite material compatible with both LPG and NH₃. Corken Coro-Vane pumps contain no copper parts so they may be used in ammonia service. The rotor is solidly supported on both ends by roller bearings. Inboard mechanical seals are used on both sides of the rotor for positive leakage control.

Coro-Vane® Features

Sliding vane

Positive displacement

Composite vanes & drivers

Reversible sideplates

High reliability

Easy maintenance

Flow range: 1 to 400 gpm (3.8 to 1,514 L/min)

Maximum differential pressure: 150 psi (10.3 bar)

Driver range: 2 to 25 hp (1.5 to 18.6 kW)

PTO range: 400 to 800 RPM

Connections: NPT/ANSI

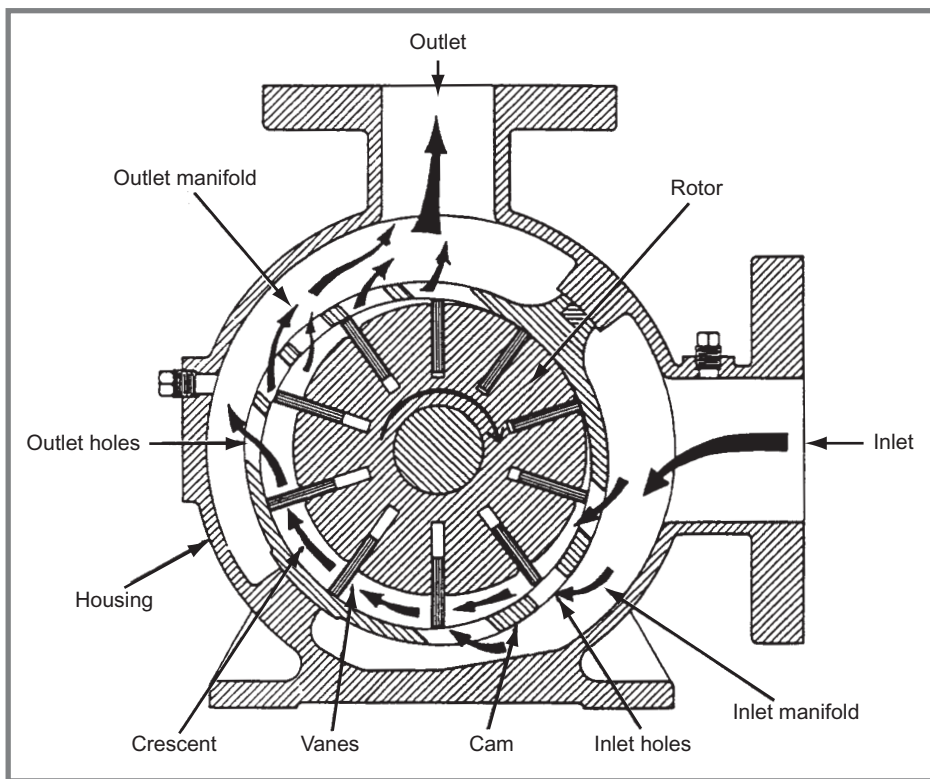


Figure 1

General Information

History of the Coro-Vane® Pumps

We began making the Coro-Vane® sliding vane pumps in the late 1950s. The line has gone through many changes, most of which affected the strength or robustness of the pump. Balanced seals were added, shaft and or case materials were changed, some 10 vane rotors were replaced with 6 vane rotors and some of the pumps were dropped from the line. The following chart will show you what LPG specific pumps we are making or have made in this product line and their status.

Model	Status	Parts	Replacement
C51	Current	Available	None
F51	Current	Available	None
321 (all configurations)	Obsolete	No longer available	F14, 521 or Z2000
721 (all configurations)	Obsolete	No longer available	521 Series or Z2000
521(all configurations prior to S.N.# CT115372)	Discontinued	Limited availability	521 with S.N.# CT115372 and later or Z2000
521(all configurations with S.N.# CT115372 and later)	Current	Available	None
522	Discontinued 12/31/05	Limited availability	Z2000
1021(all configurations prior to S.N.# CT115372)	Discontinued	Limited availability	1021 with S.N.# CT115372 and later
1021(all configurations with S.N.# CT115372 and later)	Current	Available	Replaced by Z3500
F1521 (all configurations prior to S.N.# CT115372)	Discontinued	Limited availability	F1521 with S.N.# T115372 and later
F1521 (all configurations with S.N.# CT115372 and later)	Discontinued	Limited availability	None
Z3000	Obsolete	No longer available	Z3200
Z2000	Current Model	Available	None
Z3200	Current Model	Available	None
Z3500	Current Model	Available	None
Z4200	Current Model	Available	None
Z4500	Current Model	Available	None

Markets Served by the Coro-Vane® Pump

The Coro-Vane® pump was designed for higher flow and head conditions, pumping thin liquids and liquefied gases. The most common uses for the LPG/NH₃ versions of this pump are shown below. See our Industrial Pump Sales Catalog for information on how to apply these pumps to the industrial markets.

Primary Markets

Propane bulk transfer

Propane cylinder filling

Butane transfer

Barge unloading

Tank/railcar unloading

Carousel cylinder filling

Autogas

Agricultural ammonia

Model Series Selection Guide

The Coro-Vane® pump is available in a variety of configurations. While all are Coro-Vane sliding vane pumps, each type will be used differently due to size and mounting differences. In most application types, they are interchangeable.

C51, D51, and F51 Stationary Coro-Vane® Pump

This is the smallest of the Corken Coro-Vane® sliding vane pumps. It is designed for small LPG and NH₃ applications needing very low flow. It is a very compact and economical pump and can be used industrially as well.

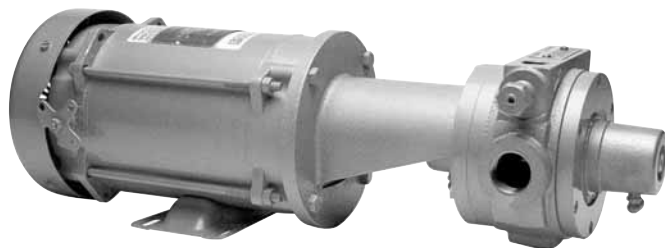
Flow range: 1–6 gpm (3.8–22.7 L/min)

Maximum differential pressure: 125 psi (8.6 bar)

Maximum driver size: 2 hp (1.5 kW)

NPT or ANSI flanges

C51 UL listed for use with LPG



Stationary Coro-Vane® Pump

This is Corken's standard bulk transfer pump. High efficiency, long wear and very easy maintenance characterize the design of our sliding vane pumps.

Flow range: 30–382 gpm (113.6–1,446 L/min)

Maximum differential pressure: 125 psi (8.6 bar)

Maximum driver size: 25 hp (18.6 kW)

ANSI or NPT flanges

Direct couple



Truck or Transport Coro-Vane® Pump (Z-Series)

Z2000, ZH2000, ZX2000, ZXH2000—foot mounted, sliding vane, 2" pump for bulk delivery trucks, flowing 41–85 gpm.

Z3200, ZH3200—3" version truck pump typically used on delivery trucks needing 63–121 gpm.

Z4200, ZH4200—4" version truck pump used on transports needing 200–400 gpm.

Flow Range : 41–400 gpm (155–1,514 L/min)

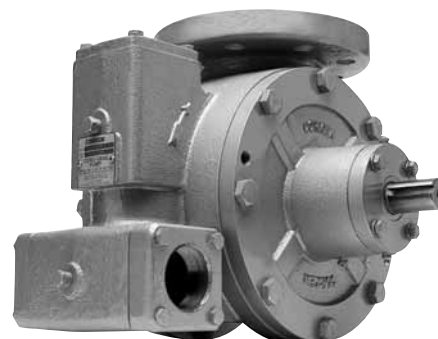
Maximum differential pressure: 150 psi (10.3 bar)

Designed for PTO or hydraulic drive

Maximum pump speed: 800 RPM

Dual 50/60 cycle capable

NPT/ANSI flange combination



C51, D51 and F51 Stationary Pumps—Features & Specifications

Equipment Type & Options

Small stationary sliding vane pump
C51, D51 and F51
Close coupled or foot mounted
NPT connections

Applications

Propane transfer
Butane transfer
Small bottle & cylinder filling

Features & Benefits

Sliding vane type:	Positive displacement pump
Heavy duty bearings:	Long bearing life
Single mechanical seal:	Very easy seal replacement and maintenance
Built in relief valve (NPT models only):	Factory pre-set—added protection
Pressure gauge connections:	Suction and discharge to reduce piping needs
Reversible sideplates:	Longer service life

Operating Specifications

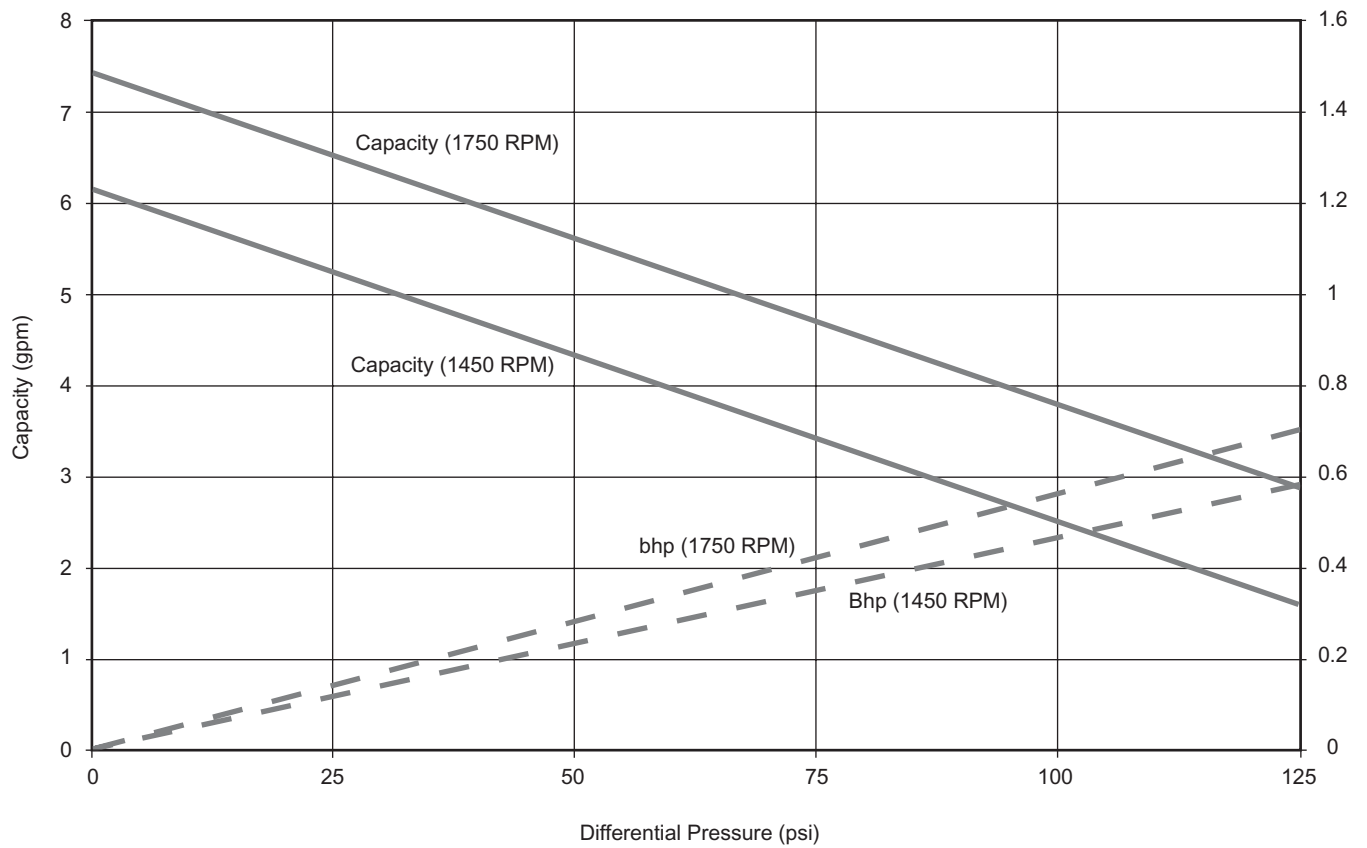
Minimum RPM:	1450	Maximum RPM:	1750
Minimum temperature:	-25°F (-32°C)	Maximum temperature:	225°F (107°C)
Maximum working pressure:	350 psig (25.2 bar g)	Maximum differential pressure:	125 psi (8.6 bar d)
Maximum driver size:	2 hp (1.5 kW)	Flow range:	1–6 gpm (4–23 L/min)

Material Specifications

Part	Model	Standard Material	Optional Material
Case, head rotor	All	Ductile iron ASTM A536	None
Sideplate	All	Gray iron ASTM A48, Class 30	None
Seal seat	All	Cast iron	Ni-Resist cast iron, displacement type ceramic, and tungsten carbide
Seal rotor	All	Carbon	None
Seal metal parts	All	Steel	None
Vanes	All	Carbon	None
Relief valve springs	All	Steel, cadmium plated	None
Relief valve	All	Steel	None
Shaft	All	8620 steel	None
Mounting bracket	C51	Gray iron ASTM A48, Class 30	None
Base	F51	Steel	None
O-rings	All	Buna-N	PTFE, Viton®, Neoprene ¹
Relief valve adjusting stem seal	All	Buna-N	None
Retainer rings	All	Steel	None
Bearings	All	Cylindrical roller	None

¹Viton® and Neoprene® are registered trademarks of the DuPont company.

C51, D51 and F51 Stationary Pumps—Performance



Small Stationary Model Number ID & Available Options

Product Description

C51	Pump direct mounted to a 1/2 hp fan cooled, capacitor type motor. Motor includes built-in switch and automatic thermal overload for 115 volt, 50/60 Hz, single phase current.
D51	Bare pump with mounting bracket and flexible coupling to close couple the pump to any NEMA 56 or 66 C-face motor (Note motor is not included).
F51	Frame mounted pump for baseplate mounting (bare pumps only).

Base Model	C51	D51	F51
Inlet	1" NPT	1" NPT	1" NPT
Outlet	3/4"	3/4"	3/4"
Weight—bare pump lb (kg)	50 (23)	25 (11.3)	25 (11.3)

Model Number

Base X X X X

Materials Selection			
Pump	Ductile Iron	Standard	A
Vanes	Carbon	Standard	D
O-rings	Buna-N	Standard	A
	Neoprene® ¹	No charge option	B
Seal seat	Cast iron	Standard	2

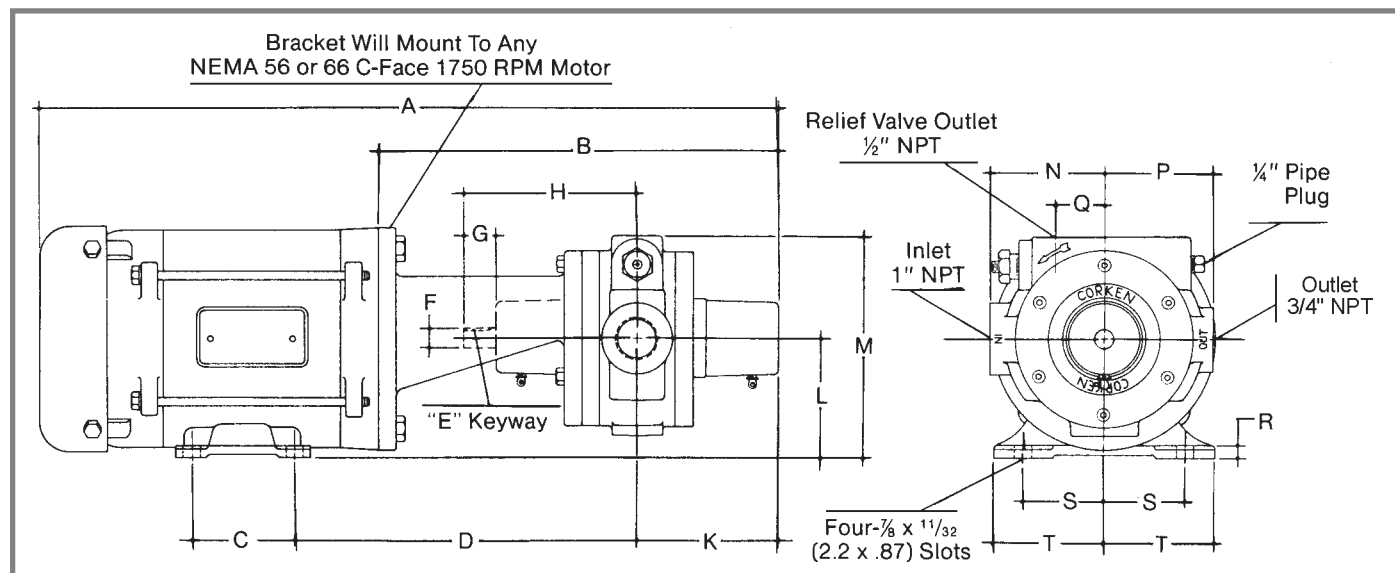
Mounting Option	Model Reference	Part Number	Maximum Motor Frame Size	Ship Wt. lb (kg) Mounting Only
Mounting for frame mounted pump (F51) mounting includes steel baseplate and direct drive through flexible coupling.	F51 only	101-12	145T	25 (11.3)

Part Number	Accessory—Options
3000-X4	Hydrostatic test
2296-1XA5	Seal assembly (Buna-N O-rings)
2296-1XB5	Seal assembly (Neoprene® ¹ O-rings)
2451-2	Vanes

¹Neoprene® is a registered trademark of the DuPont company.

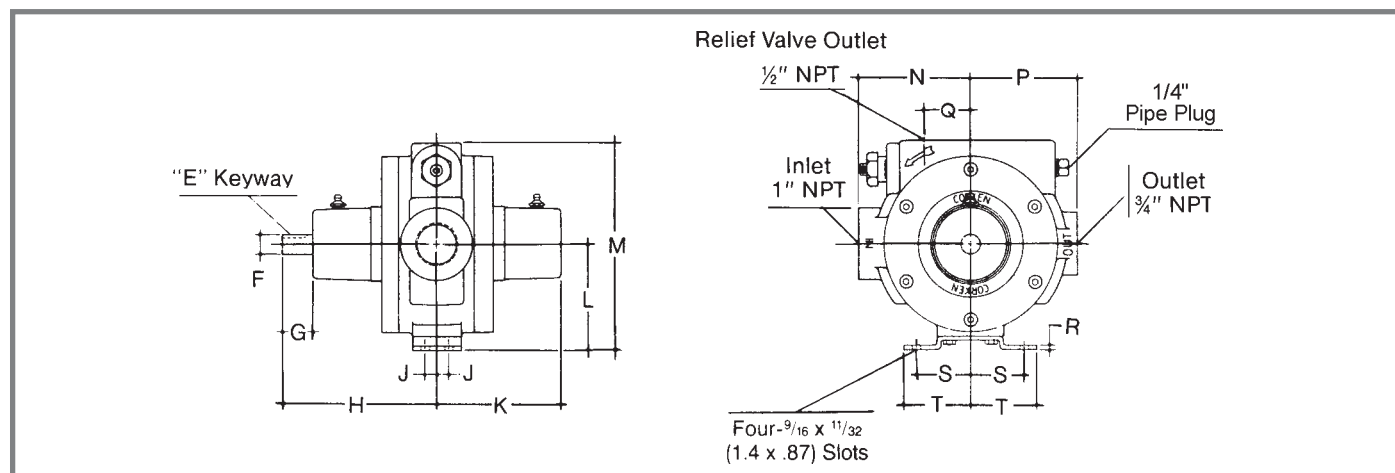
Small Stationary Pumps—Outline Dimensions

C51 and D51 Model¹



¹ Note: D51 is a C51 less motor.

F51 Model



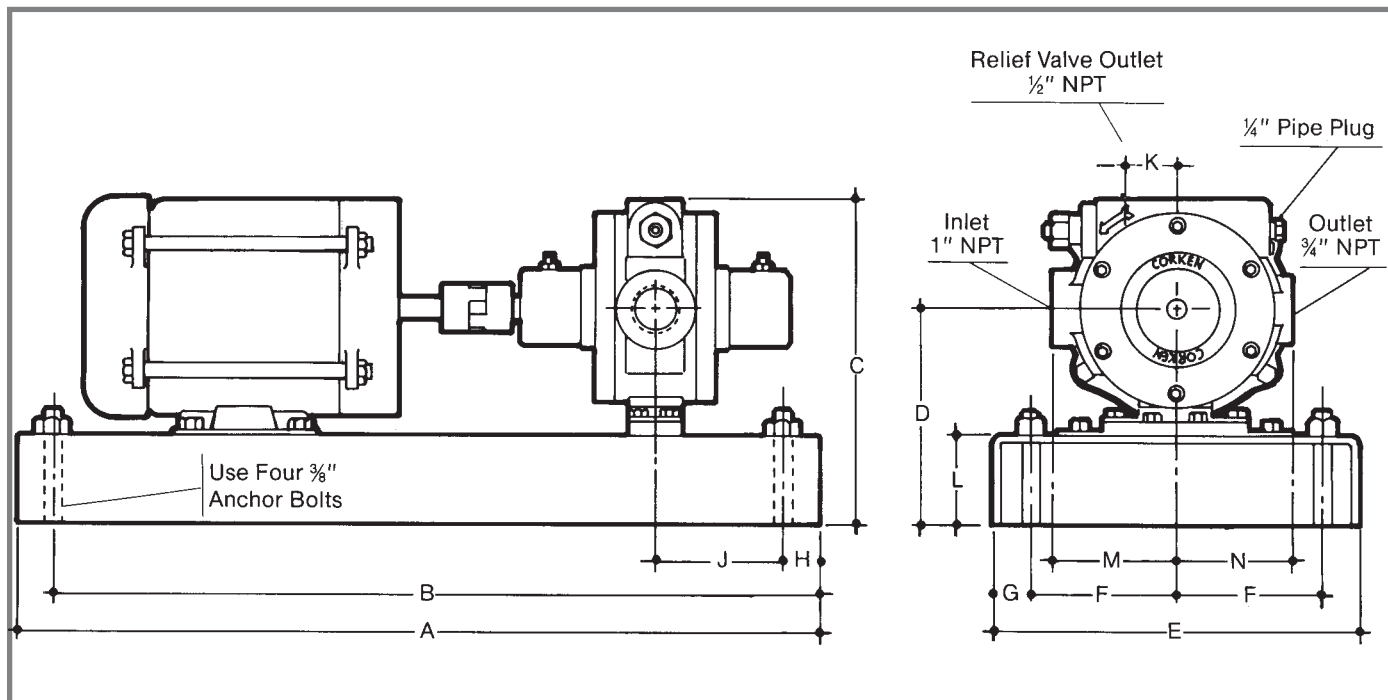
Outline Dimensions—Inches (Centimeters)

Model	A	B	C	D	E	F	G	H	J
C51	23 (58.4)	1-5/16 (28.7)	3 (7.62)	10-3/16 (25.9)	1/8 (0.32)	9/16 (1.43)	15/16 (2.38)	4-5/8 (11.7)	— —
F51	—	—	—	—	1/8 (0.32)	9/16 (1.43)	15/16 (2.38)	4-5/8 (11.7)	7/16 (1.10)

Model	K	L	M	N	P	Q	R	S	T
C51	3-11/16 (9.36)	3-1/2 (8.89)	6-1/2 (16.5)	3-3/8 (8.57)	3-3/16 (8.10)	1-7/8 (3.65)	7/32 (0.56)	2-7/16 (6.19)	3-1/4 (8.26)
F51	3-11/16 (9.36)	3-1/8 (7.93)	6-1/8 (15.6)	3-3/8 (8.57)	3-3/16 (8.10)	1-7/16 (3.65)	1/8 (0.32)	1-11/16 (4.29)	2 (5.08)

Small Stationary Pumps—Outline Dimensions

F51-101 Model



Outline Dimensions—Inches (Centimeters)

Model	A	B	C	D	E	F	G	H	J	K	L	M	N
F51-101	22 (55.9)	20 (50.8)	9 (22.9)	6 (15.2)	10 (25.4)	4 (10.2)	1 (2.54)	1 (2.54)	3-1/2 (8.89)	1-7/16 (3.65)	2-1/2 (6.35)	3-3/8 (8.57)	3-3/16 (8.10)

521, 1021, Z3500 and Z4500 Stationary Pumps—Features & Specs

Equipment Type & Options

Stationary sliding vane pump
521, 1021—NPT connections
F1021, F1521—300# ANSI flanges
-101 or -103 mounting options

Applications

Propane & butane bulk transfer
Barge, tank, railcar unloading
LPG cylinder & NH₃ nurse tank filling
Autogas pumping
Carousel cylinder filling

Features & Benefits

Sliding vane type:	Positive displacement pump
Heavy duty bearings:	Long bearing life
Single mechanical seal:	Very easy seal replacement and maintenance
Built in relief valve (NPT models only):	Factory pre-set—added protection
Pressure gauge connections:	Suction and discharge to reduce piping needs
Reversible side plates:	Longer service life

Operating Specifications

	Model				
	521	1021	F1021	Z3500	Z4500
RPM range	420–950	420–950	420–950	420–800	420–800
Temperature range	-25°F (-32°C) to 225°F (107°C)				
Maximum working pressure psig (bar g)	400 (28.6)	400 (28.6)	400 (28.6)	400 (28.6)	400 (28.6)
Maximum differential pressure psid (bar d)	125 (8.6)	125 (8.6)	125 (8.6)	125 (8.6)	125 (8.6)
Maximum driver size hp (kW)	10 (7.5)	20 (15)	20 (15)	25 (18.6)	25 (18.6)
Flow range gpm (L/min)	30–85 (113.6–321.8)	65–195 (246–738.2)	65–195 (246–738.2)	52–197 (197–746)	197–382 (746–1,446)

Flange Options

Model		Standard	No Cost Option	Extra Cost Option
521	Inlet	2-1/2" NPT	2" NPT	2", 2-1/2" weld flange
	Outlet	2" NPT	1-1/2", 2-1/2" NPT	1-1/2", 2", 2-1/2" weld flange
1021	Inlet	3" NPT	4" NPT	3", 4" weld flange
	Outlet	3" NPT	4" NPT	3", 4" weld flange
F1021	Inlet	3" 300# ANSI	—	—
	Outlet	2-1/2" 300# ANSI	—	—
Z3500	Inlet	3" NPT	4" NPT	3", 4" weld flange
	Outlet	3" NPT Elongated	—	3" weld flange elongated
Z4500	Inlet	4" 300# ANSI	—	—
	Outlet	3" 300# ANSI	—	—

Stationary Pumps—Materials & Performance

Material Specifications (521, 1021, F1021 models)

Part	Model	Standard Material	Optional Material
Case, head, flange rotor, seat adapter plate	All	Ductile iron ASTM A536	None
Cam, sideplate, bearing cap	All	Gray iron ASTM A48 Class 30	None
Welding flange	All	Steel	None
Seal seat	All	Gray iron ASTM S48, Class 30	316 SS
Seal metal parts	All	Steel	None
Shaft	521, 1021	“Stressproof” steel	None
Vanes	All	Plastic	None
Relief valve spring	521, 1021	Steel, cadmium plated	None
Relief valve	521, 1021	Steel	None
Bearing	All	Cylinder roller	None
O-rings	All	Buna-N	PTFE, Viton®, Neoprene® ¹
Retainer rings	All	Steel	None

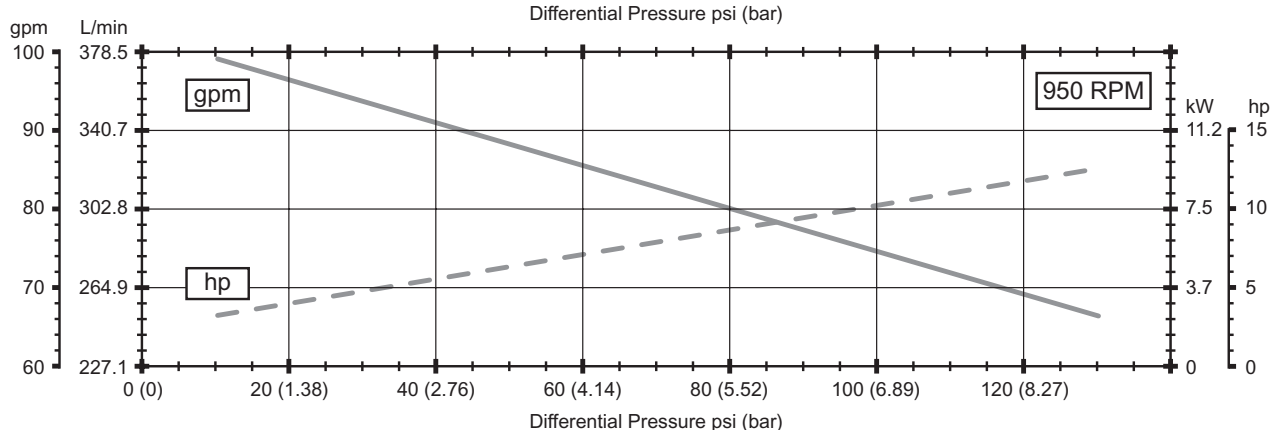
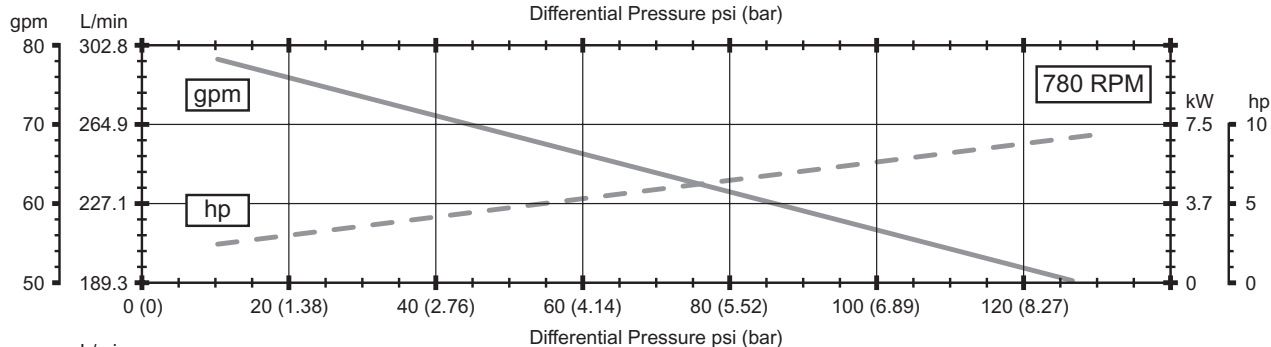
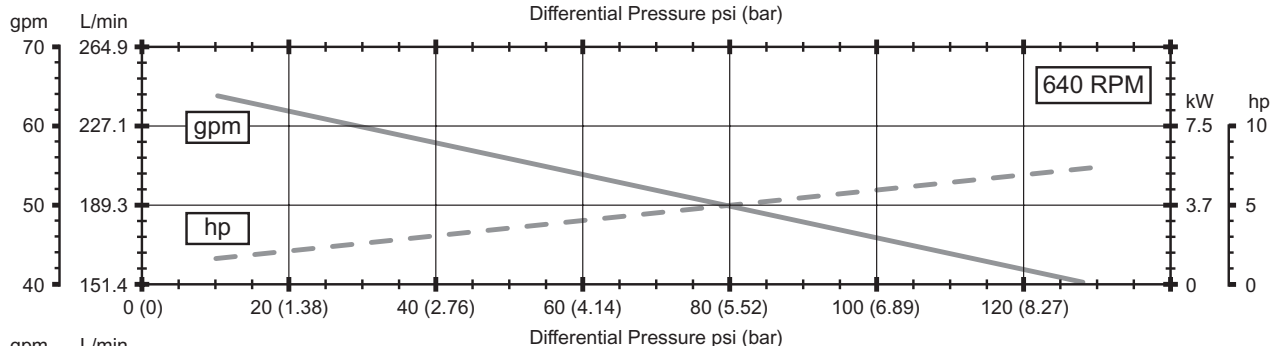
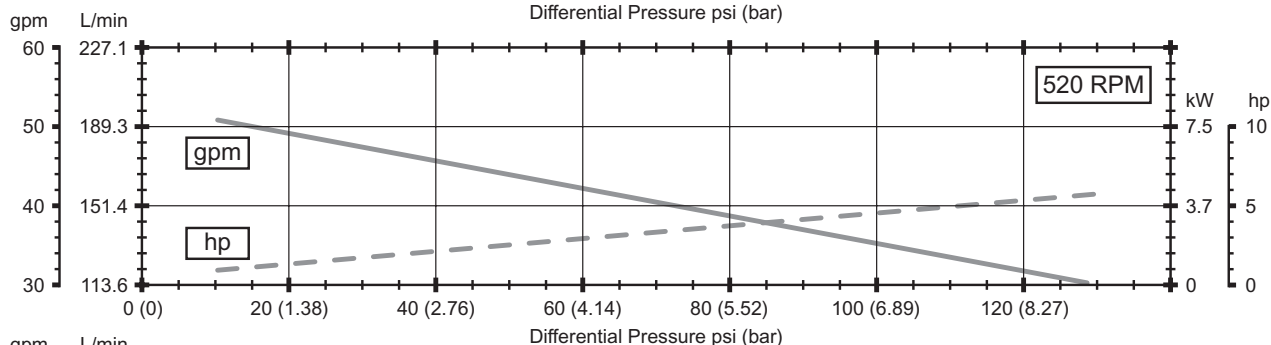
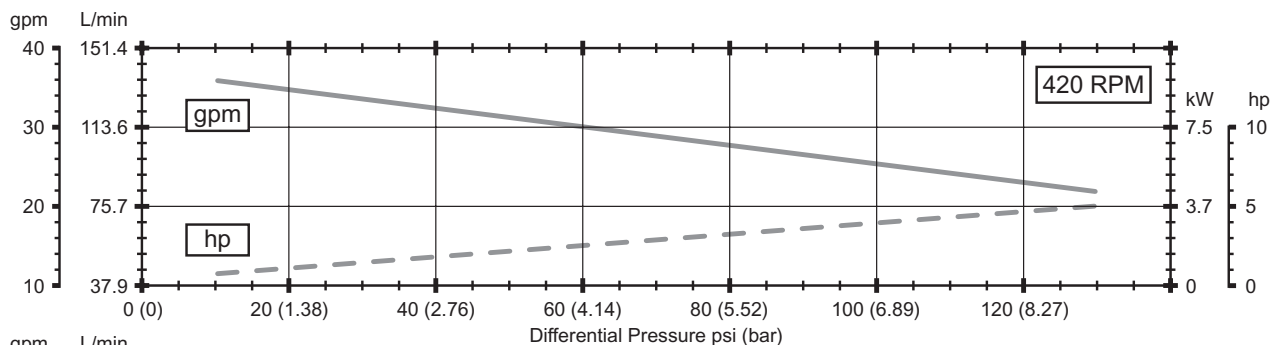
Material Specifications (Z3500 and Z4500 models)

Part	Model	Standard Material	Optional Material
Case, head, rotor, relief-valve cap, bearing cap	Z3500, Z4500	Ductile iron ASTM A536	
Cam	Z3500, Z4500	Gray iron ASTM A48, Class 50	
Sideplate	Z3500, Z4500	Gray iron ASTM A48, Class 30	
Welding flange	Z3500, Z4500	Steel	
Seal seat	Z3500, Z4500	Gray iron	Stainless steel & Ni-Resist
Seal metal parts	Z3500, Z4500	Steel	
Shaft	Z3500, Z4500	8620 steel	
Vanes and vane drivers	Z3500, Z4500	Advanced polymers	
Relief valve spring	Z3500, Z4500	Stainless steel	
Relief valve	Z3500	Steel	
	Z4500	Stainless steel	
Bearing	Z3500, Z4500	Steel	
Thrust bearing	Z3500, Z4500	Steel	
O-rings	Z3500, Z4500	Buna-N	Viton®, PTFE, Neoprene® ¹
Retainer rings	Z3500, Z4500	Steel	

¹Viton® and Neoprene® are registered trademarks of the DuPont company.

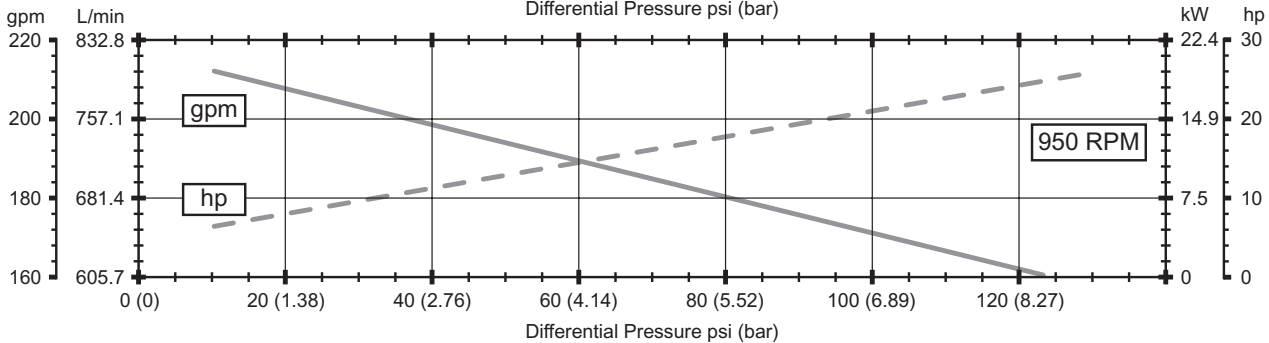
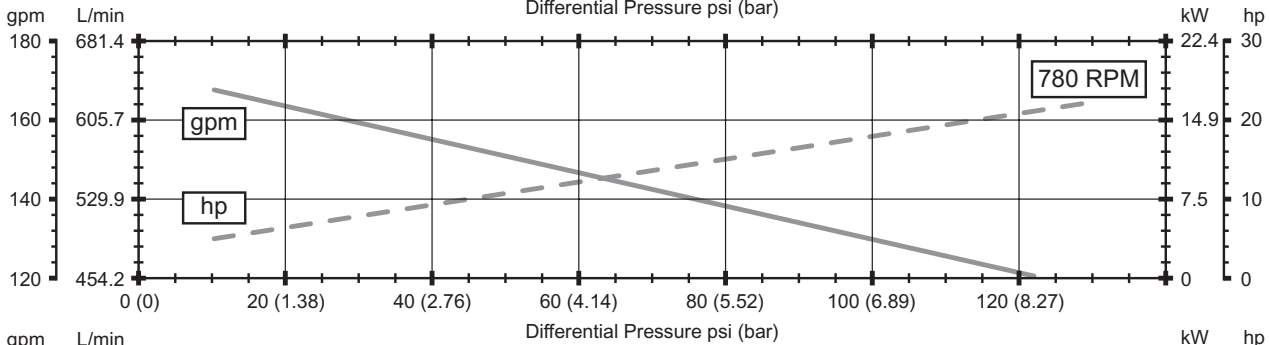
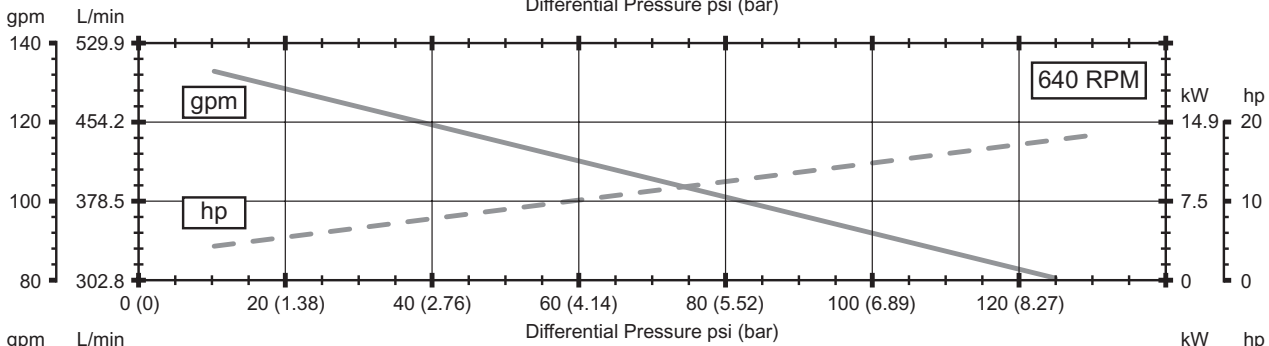
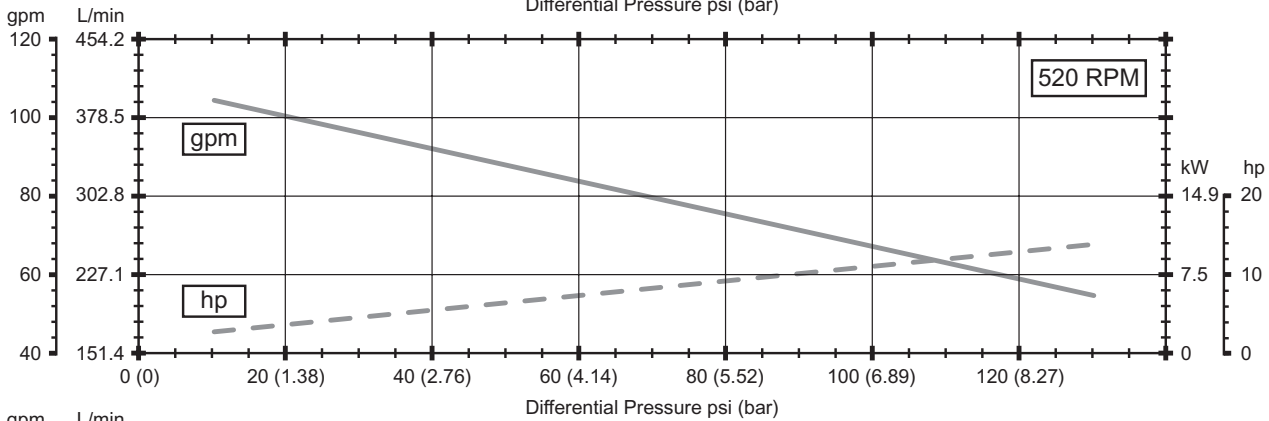
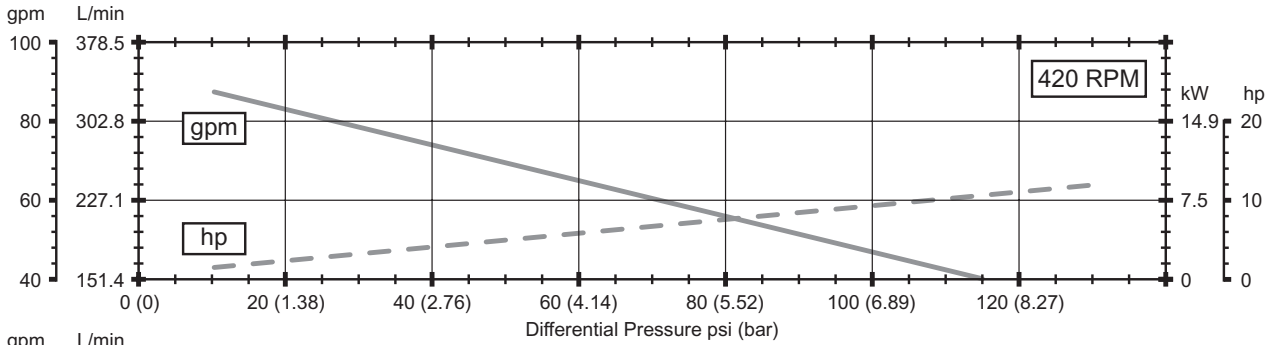
Stationary Pumps—Performance

521 Model



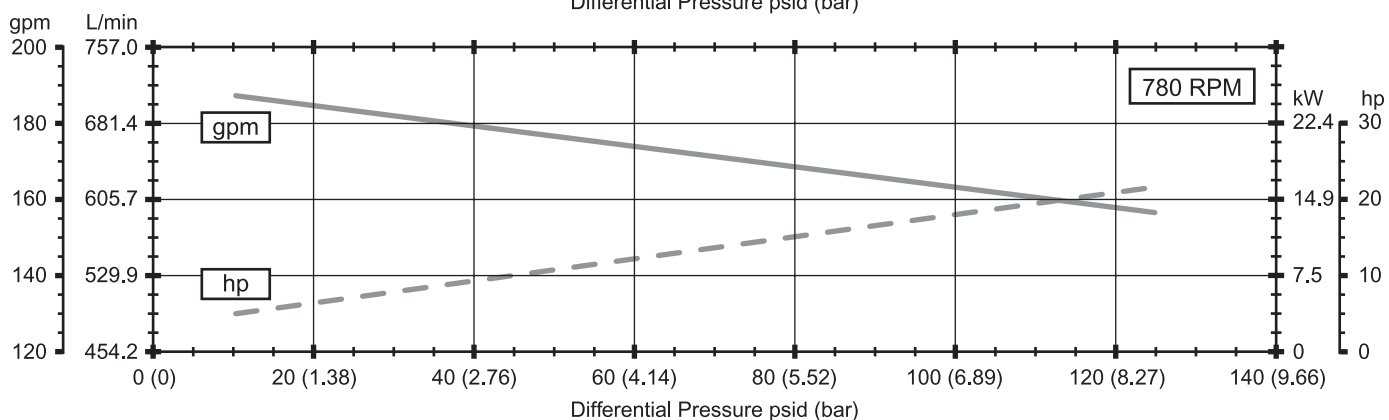
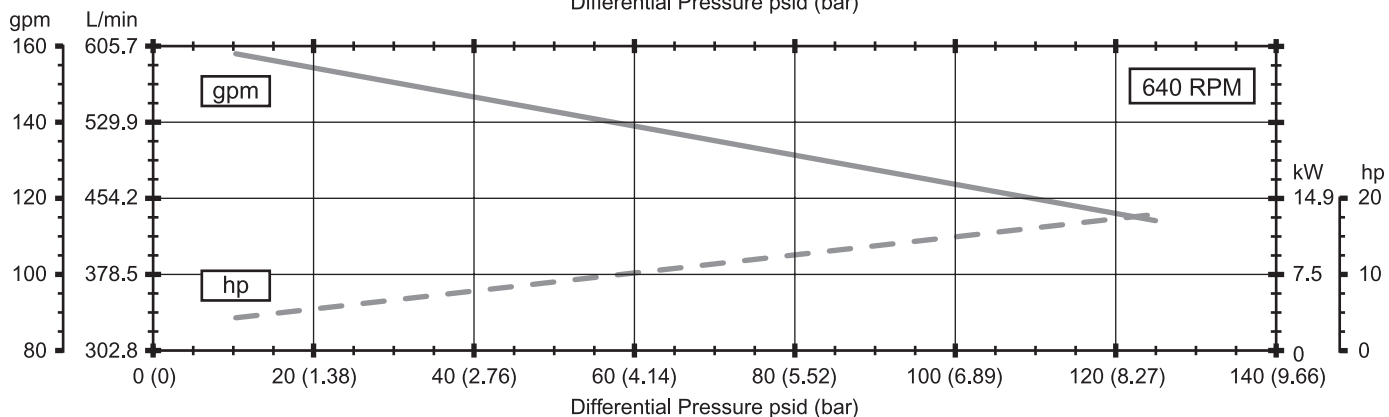
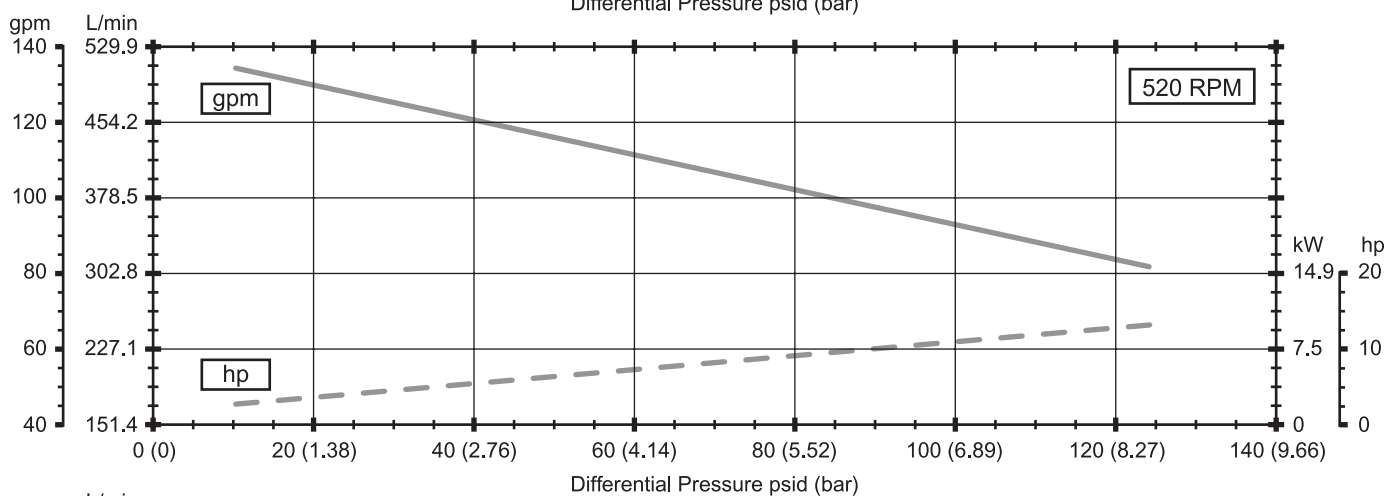
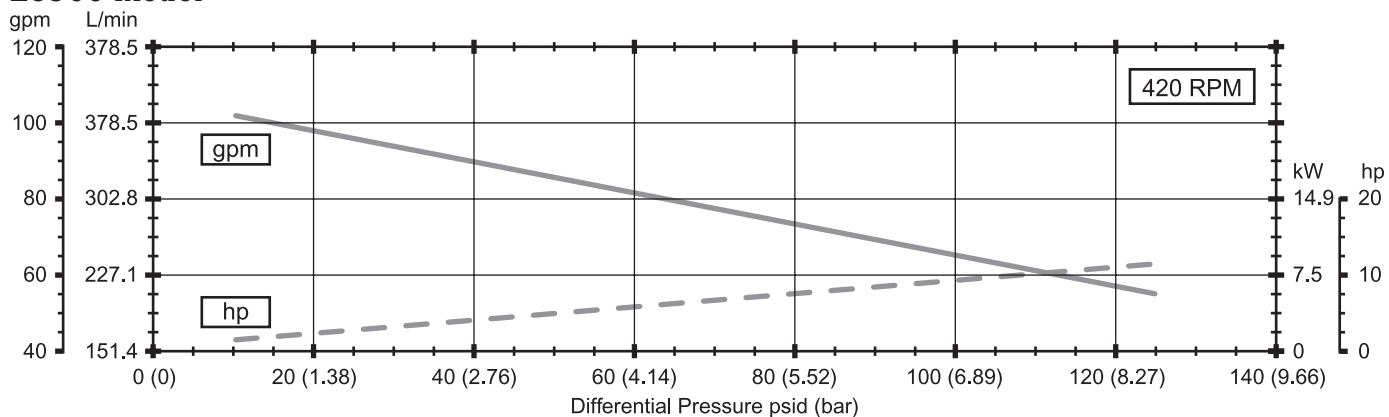
Stationary Pumps—Performance

1021/F1021 Model



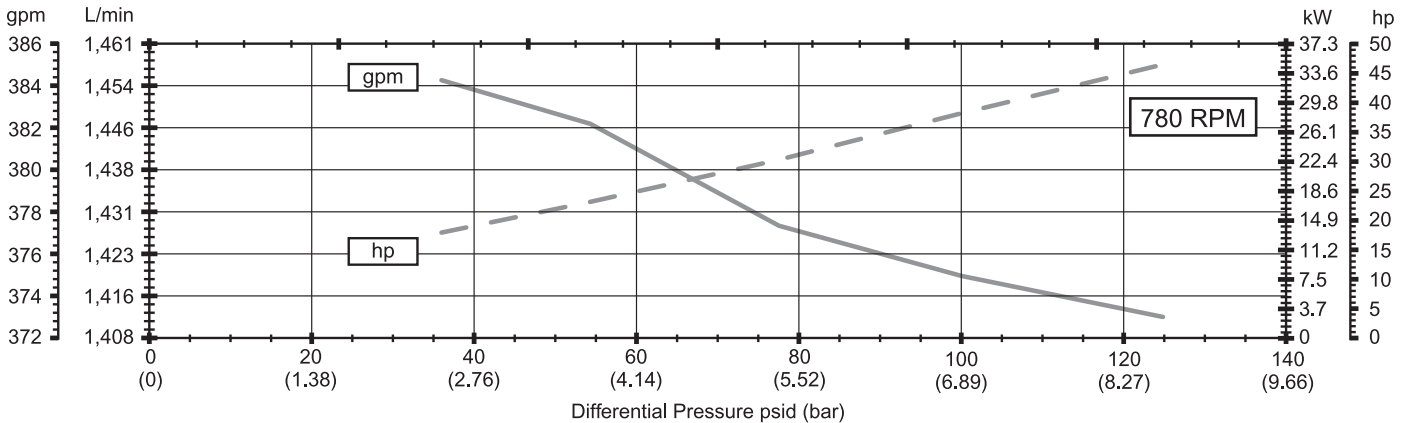
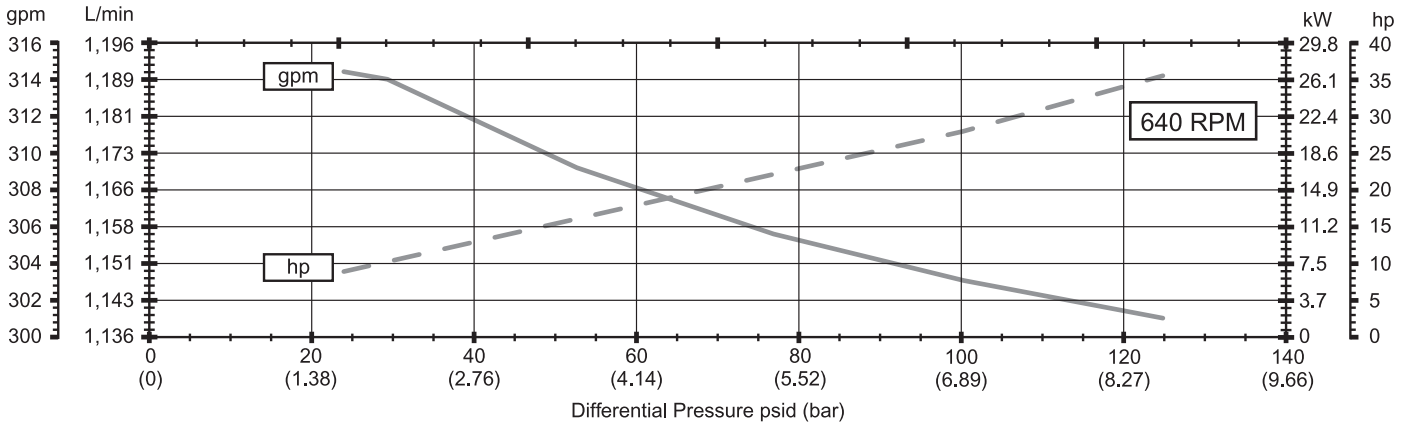
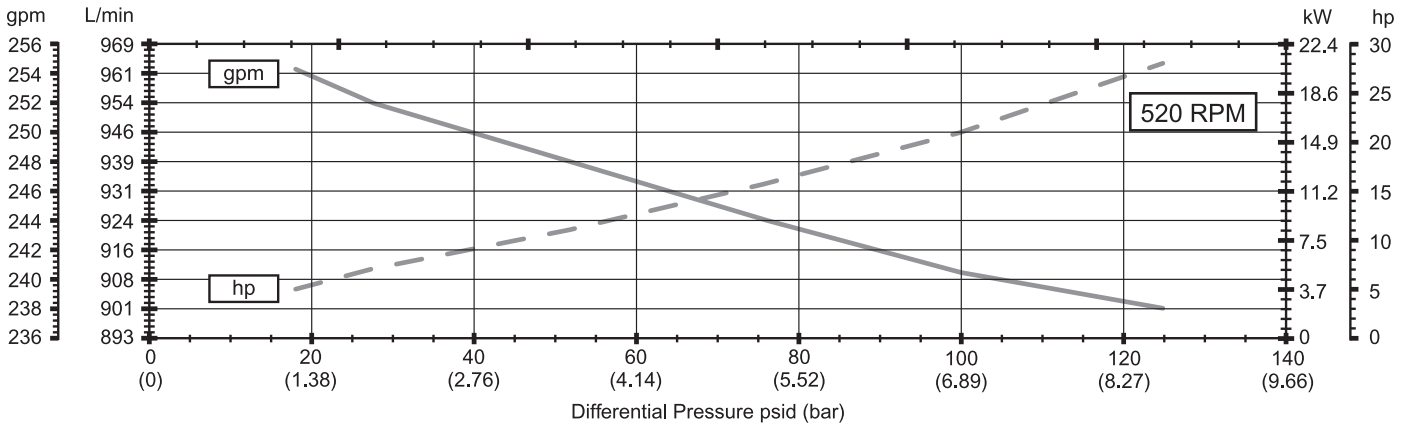
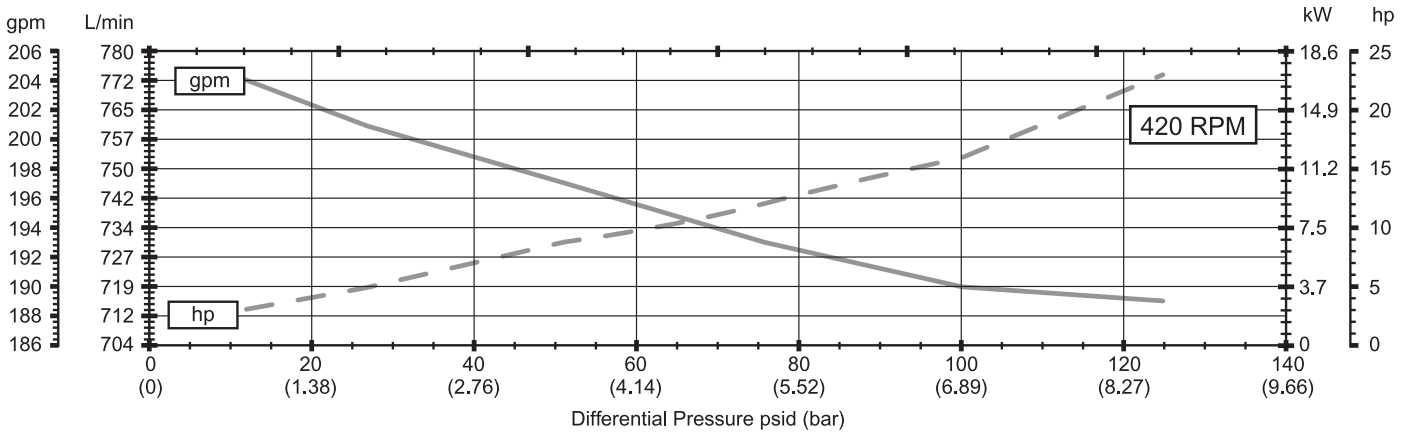
Stationary Pumps—Performance

Z3500 Model



Stationary Pumps—Performance

Z4500 Model



Stationary Pumps Model Number ID & Available Options

Base Model	521	1021	F1021	Z3500	Z4500
Inlet	2-1/2" NPT	3" NPT	3" 300# ANSI	3" NPT	4" 300# ANSI
Outlet	2" NPT	3" NPT	2-1/2" 300# ANSI	3" NPT Elongated	3" 300# ANSI
Weight—bare pump lb (kg)	132 (60)	200 (91)	200 (91)	265 (120)	265 (120)

Model Number
Base X X X X X

Vane Type	10 Vanes	Standard	Standard	Standard			E
	6 Vanes with Vane Drivers				Standard	Standard	H

Vaness	GCB-50	Standard				G
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O-ring Material	Buna-N	Standard				A
	Neoprene ¹	No charge option				B

Flange Options WF=Slip-on weld flange ell = Elbow All ANSI flanges are 300# • Indicates available flange connections

Inlet Flange

Standard	2-1/2" NPT	•					J
	3" NPT		•		•		M
	3" ANSI			•			P
	4" ANSI					•	S
No Cost Options	2" NPT	•					E
	4" NPT		•		•		Q
Extra Cost Options	2" WF	•					F
	2-1/2" WF	•					K
	3" WF		•		•		N
	4" WF		•		•		R

Outlet Flange

Standard	2" NPT	•				E
	3" NPT		•			M
	3" NPT Elongated				•	S
	2-1/2" ANSI			•		L
No Cost Options	3" ANSI				•	P
	1-1/2" NPT	•				C
	2-1/2" NPT	•				J
Extra Cost Options	4" NPT		•			Q
	1-1/2" WF	•				D
	2" WF	•				F
	2-1/2" WF	•				K
	3" WF		•			N
	3" WF Elongated				•	T
	4" WF		•			R

Mounting Options

Description	Model	Part Number	Maximum Driver (hp)	Ship Weight (mounting only) lb
Mounting set up for V-belt drive. Includes steel baseplate, adjustable motor slid base, V-belt drive and enclosed beltguard	521	103-9-	245T	422
	1021/F1021	103-10-	284T	560
	Z3500	103-10-	284T	560
	Z4500	103-15-	284T	630
	All	102-		Consult Factory
Mounting set up for use with engine driver through V-belt includes steel baseplate, flexible coupling and guard	All	101GRB-	254T	Consult Factory
Mounting set up for direct drive. Includes size B gear reducer, steel baseplate, reducer bracket, couplings and coupling guard	All	101GRC-	324T	Consult Factory

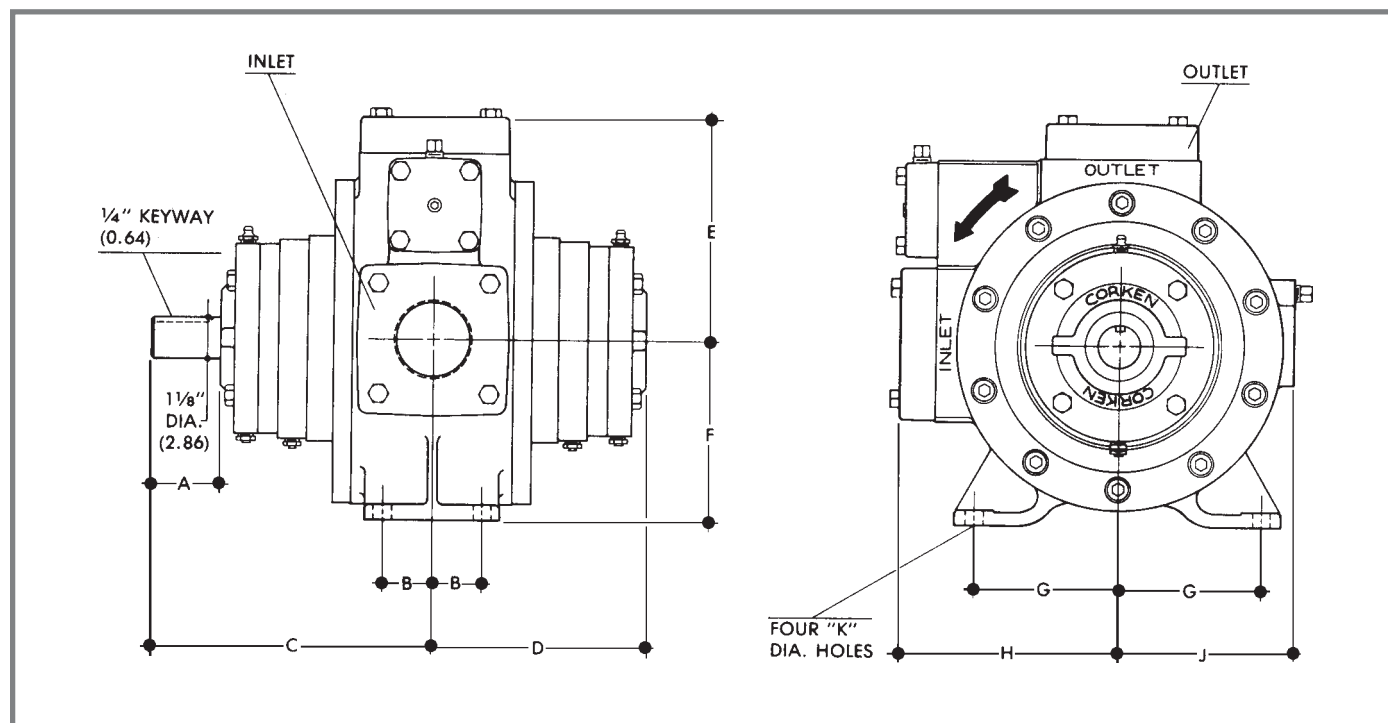
Part Number	Accessory—Options
3000-X1	Hydrostatic test
2904-X2	Repair kit—521

Part Number	Accessory—Options
2906-X2	Repair kit—1021/F1021
3195-X2	Repair kit—Z3500
3197-X1	Repair kit—Z4500

¹Neoprene® is a registered trademark of the DuPont company.

Stationary Pumps—Outline Dimensions

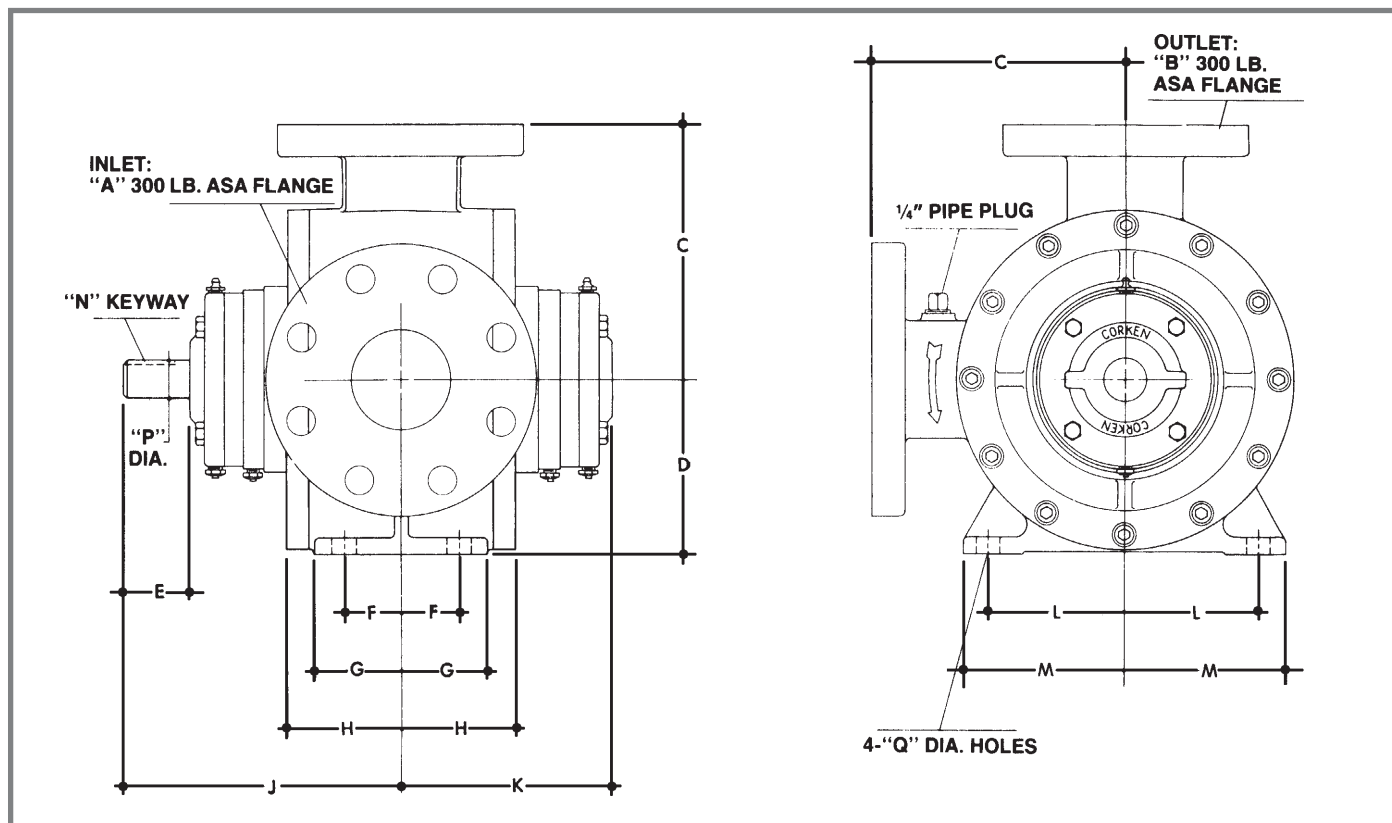
521 and 1021 Models



Outline Dimensions—Inches (Centimeters)						
Model	Inlet	Outlet	A	B	C	D
521	2-1/2" NPT (std.) Opt: 2" NPT 2", 2-1/2" Weld	2" NPT (std.) Opt: 1-1/2", 2-1/2" NPT 1-1/2", 2", 2-1/2" Weld	1-31/32 (5)	1-3/8 (3.49)	7-7/8 (20)	5-29/32 (15)
1021	3" NPT (std.) Opt: 3", 4" Weld 4" NPT	3" NPT (std.) Opt: 3", 4" Weld 4" NPT	2 (5.08)	1-3/4 (4.45)	8-1/2 (21.59)	6-7/16 (16.35)

Outline Dimensions—Inches (Centimeters)						
Model	E	F	G	H	J	K
521	6-1/8 (15.56)	5 (12.70)	4 (10.16)	6-1/8 (15.56)	4-11/16 (11.91)	1/2 (1.27)
1021	7-1/16 (17.94)	5-1/2 (13.97)	4 1/8 (10.48)	7-1/16 (17.94)	5-3/8 (13.65)	1/2 (1.27)

F1021 Model



Outline Dimensions—Inches (Centimeters)

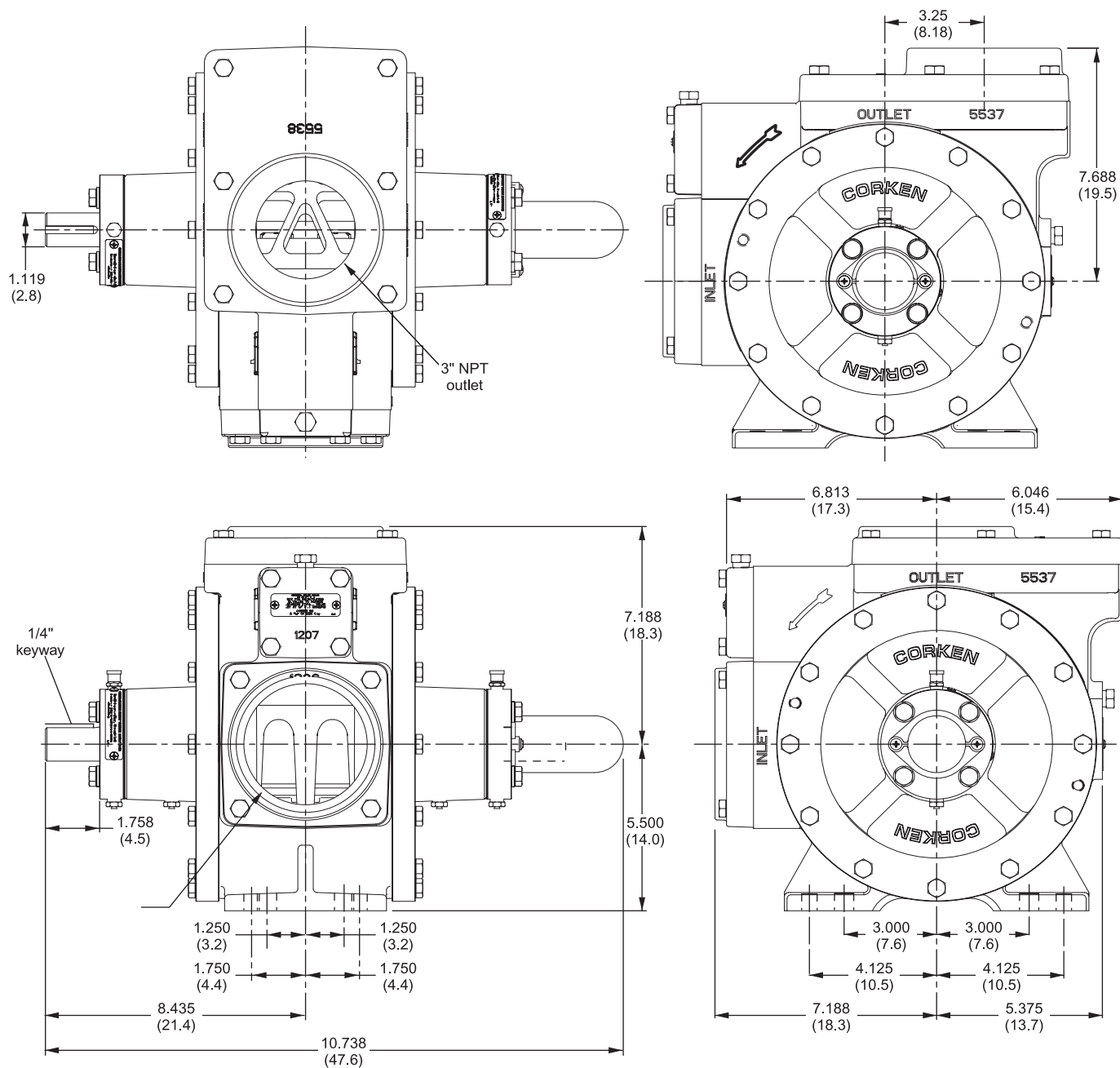
Model	A	B	C	D	E	F	G	H
F1021	3	2-1/2	7-3/4 (19.7)	5-1/2 (14.0)	2 (5.1)	1-3/4 (4.4)	2-5/8 (6.7)	3-1/2 (8.9)

Outline Dimensions—Inches (Centimeters)

Model	J	K	L	M	N	P	Q
F1021	8-1/2 (21.6)	6-1/2 (16.5)	4-1/8 (10.5)	4-15/16 (12.5)	1/4 (0.64)	1-1/8 (2.9)	1/2 (1.27)

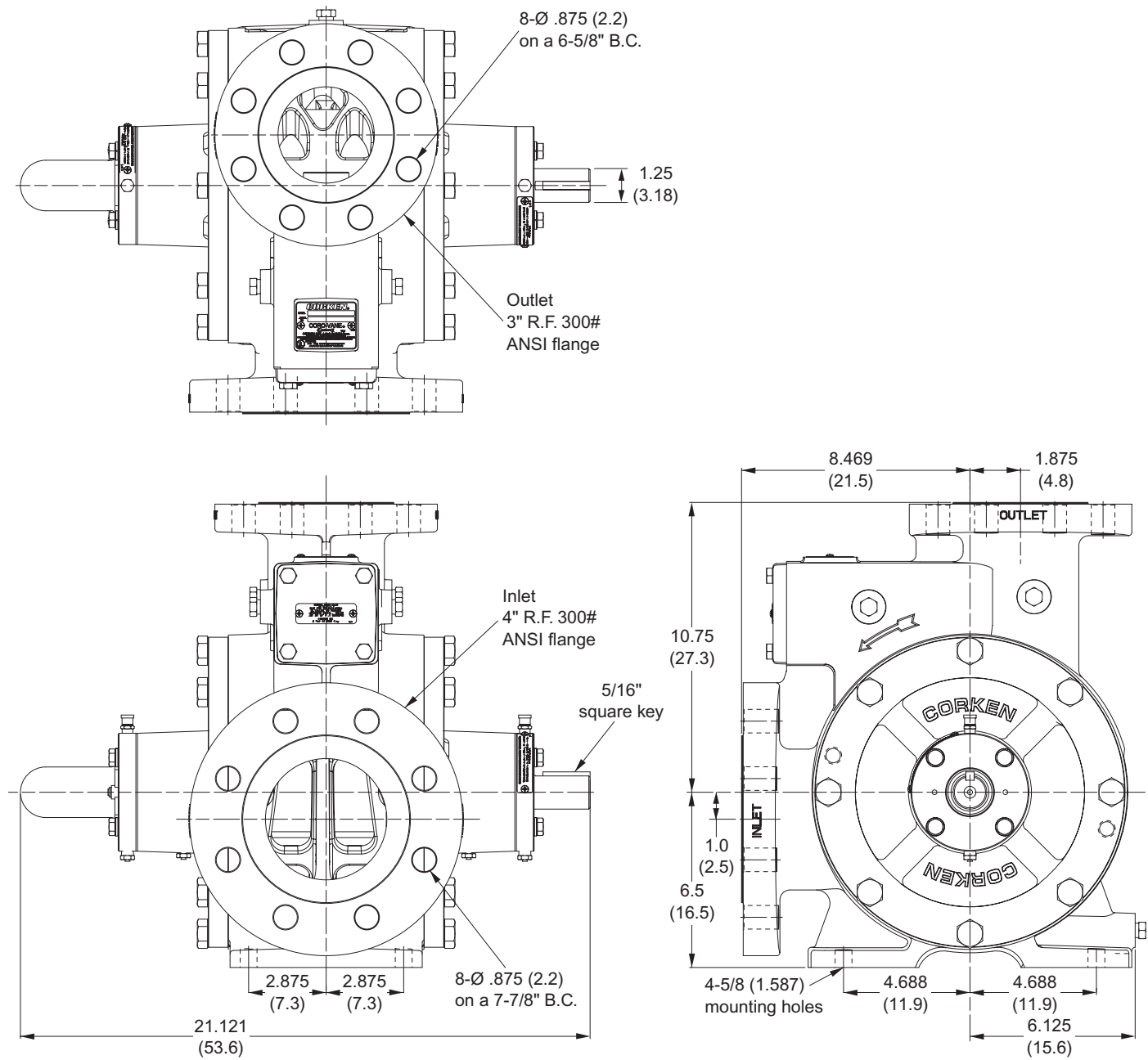
Z-Series Stationary Pump—Outline Dimensions

Z3500 Model



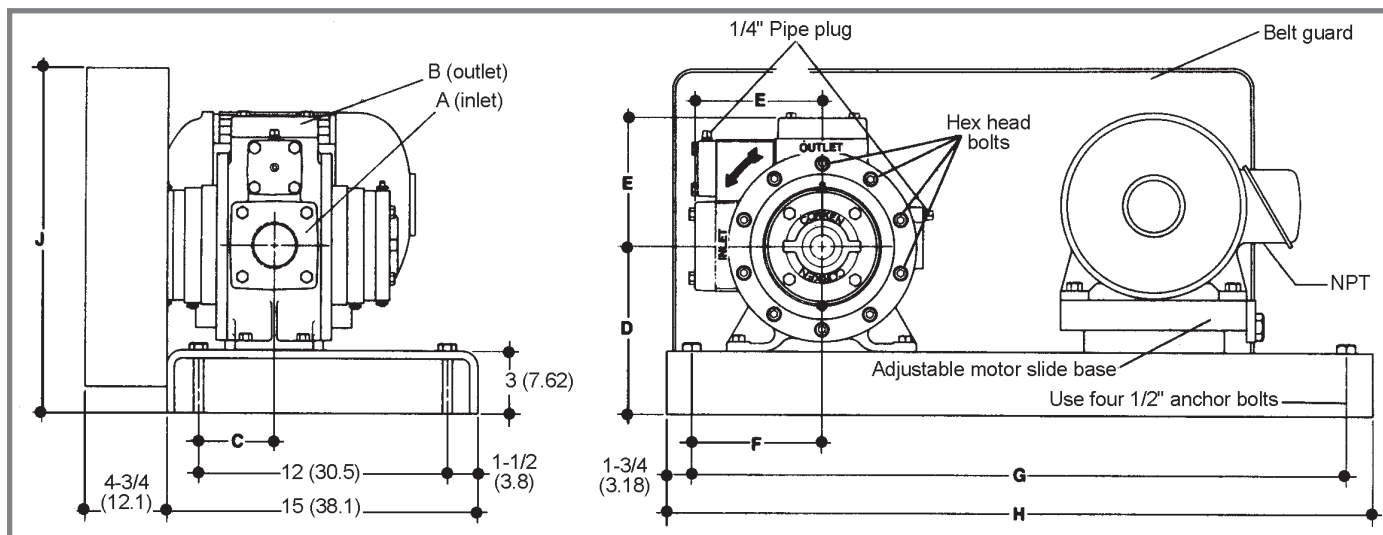
Z-Series Stationary Pump—Outline Dimensions

Z4500 Model



Stationary Pumps—Outline Dimensions

521-103 and 1021-103 Models



Flange Dimensions

Model	A (inlet)	B (outlet)
521	2-1/2" NPT (2" NPT opt.)	2" NPT (1-1/2", 2-1/2" NPT opt.)
1021	3" NPT (4" NPT opt.)	3" NPT (4" NPT opt.)

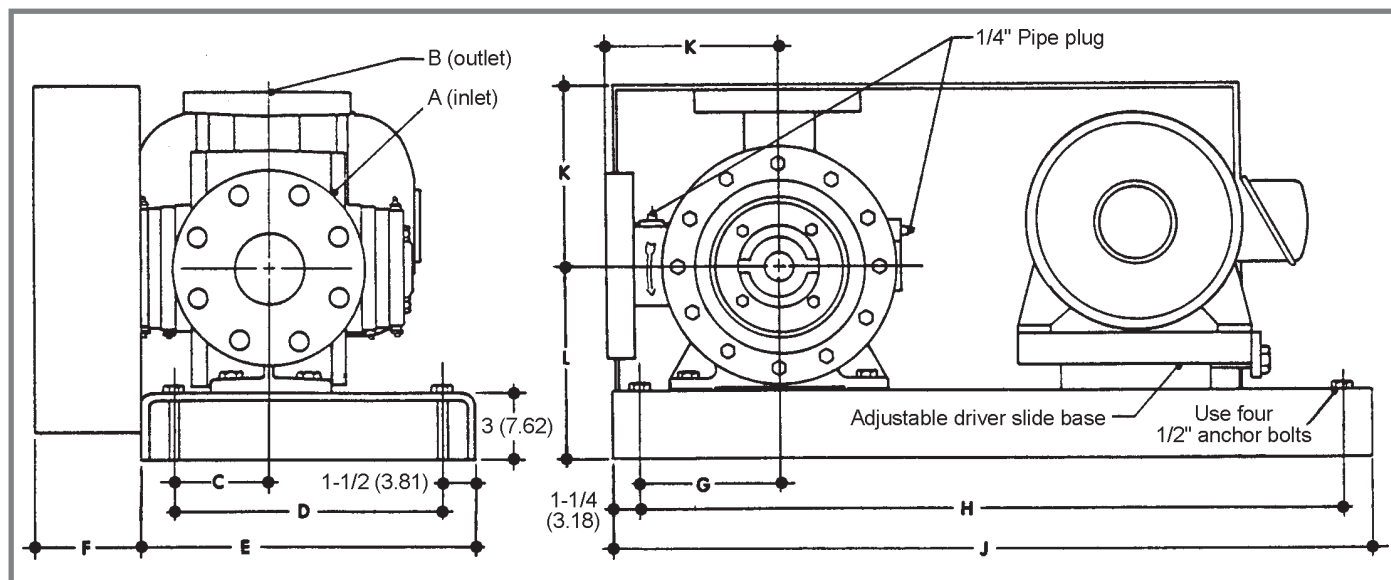
Motor		Pump	521-103 Dimensions—Inches (Centimeters)						
Hp	Frame ¹	Speed	C	D	E	F	G	H	J
2	145T	All	3-5/8 (9.21)	8 (20.3)	6-1/8 (15.6)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
2	182T	All	3-5/8 (9.21)	8 (20.3)	6-1/8 (15.6)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
3	182T	All	3-5/8 (9.21)	8 (20.3)	6-1/8 (15.6)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
3	184T	All	3-5/8 (9.21)	8 (20.3)	6-1/8 (15.6)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
5	184T	All	3-5/8 (9.21)	8 (20.3)	6-1/8 (15.6)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
7-1/2	213T	All	3-5/8 (9.21)	8 (20.3)	6-1/8 (15.6)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
10	215T	420-470	3-5/8 (9.21)	10-3/4 (27.3)	6-1/8 (15.6)	9-1/4 (23.5)	39-1/2 (100.3)	42 (106.7)	19-3/4 (50.2)
10	215T	520-950	3-5/8 (9.21)	8 (20.3)	6-1/8 (15.6)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)

Motor		Pump	1021-103 Dimensions—Inches (Centimeters)						
Hp	Frame ¹	Speed	C	D	E	F	G	H	J
3	182T	All	4-1/2 (10.8)	8-1/2 (21.6)	7-3/16 (18.3)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
3	182T	All	4-1/2 (10.8)	8-1/2 (21.6)	7-3/16 (18.3)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
5	184T	All	4-1/2 (10.8)	8-1/2 (21.6)	7-3/16 (18.3)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
7-1/2	213T	All	4-1/2 (10.8)	8-1/2 (21.6)	7-3/16 (18.3)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
10	215T	420-470	4-1/2 (10.8)	10-1/2 (26.7)	7-3/16 (18.3)	9-1/4 (23.5)	39-1/2 (100.3)	42 (106.7)	19-3/4 (50.2)
10	215T	520-950	4-1/2 (10.8)	8-1/2 (21.6)	7-3/16 (18.3)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
15	254T	420-520	4-1/2 (10.8)	10-1/2 (26.7)	7-3/16 (18.3)	9-1/4 (23.5)	39-1/2 (100.3)	42 (106.7)	19-3/4 (50.2)
15	254T	580-950	4-1/2 (10.8)	8-1/2 (21.6)	7-3/16 (18.3)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)
20	256T	520	4-1/2 (10.8)	10-1/2 (26.7)	7-3/16 (18.3)	9-1/4 (23.5)	39-1/2 (100.3)	42 (106.7)	19-3/4 (50.2)
20	256T	640-950	4-1/2 (10.8)	8-1/2 (21.6)	7-3/16 (18.3)	6-1/4 (15.9)	31-1/2 (80.0)	34 (86.4)	16-1/2 (41.9)

¹All dimensions based on a motor speed of 1,750 RPM.

Stationary Pumps—Outline Dimensions

F1021-103 Model

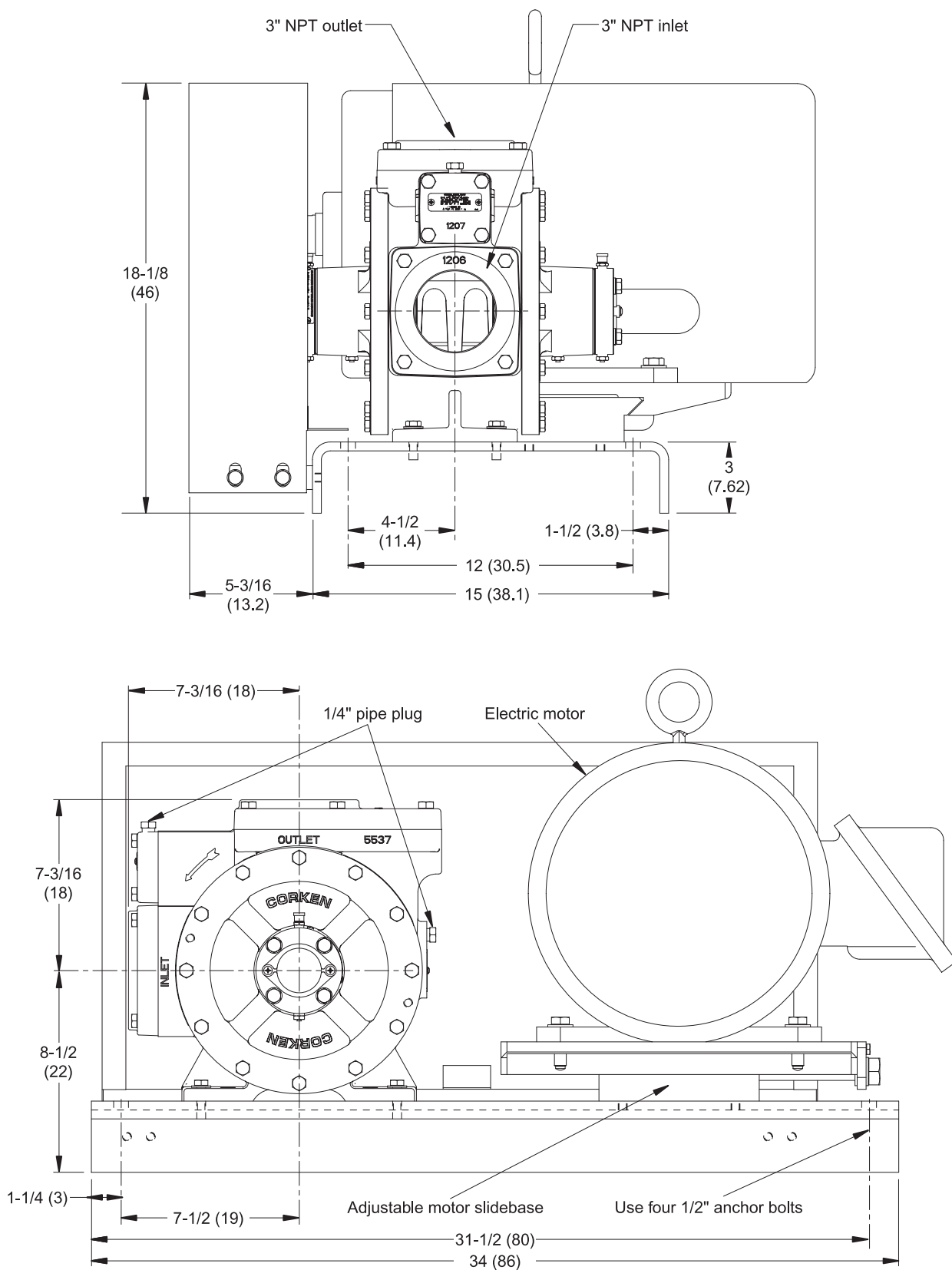


Flange Dimensions		
Model	A (inlet)	B (Outlet)
F1021	3" 300# ANSI	2-1/2" 300# ANSI

Motor		Pump	F1021-103 Outline Dimensions—Inches (Centimeters)								
Hp	Frame ¹	Speed	C	D	E	F	G	H	J	K	L
3	182T	All	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	6-1/4 (15.9)	31-1/2 (80)	34 (86.4)	7-3/4 (19.7)	8-1/2 (21.6)
3	182T	All	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	6-1/4 (15.9)	31-1/2 (80)	34 (86.4)	7-3/4 (19.7)	8-1/2 (21.6)
5	184T	All	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	6-1/4 (15.9)	31-1/2 (80)	34 (86.4)	7-3/4 (19.7)	8-1/2 (21.6)
7-1/2	213T	All	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	6-1/4 (15.9)	31-1/2 (80)	34 (86.4)	7-3/4 (19.7)	8-1/2 (21.6)
10	215T	420-470	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	9-1/4 (23.5)	39-1/2 (100.3)	42 (106.7)	7-3/4 (19.7)	10-1/2 (26.7)
10	215T	520-950	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	6-1/4 (15.9)	31-1/2 (80)	34 (86.4)	7-3/4 (19.7)	8-1/2 (21.6)
15	254T	420-520	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	9-1/4 (23.5)	39-1/2 (100.3)	42 (106.7)	7-3/4 (19.7)	10-1/2 (26.7)
15	254T	580-950	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	6-1/4 (15.9)	31-1/2 (80)	34 (86.4)	7-3/4 (19.7)	8-1/2 (21.6)
20	256T	520	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	9-1/4 (23.5)	39-1/2 (100.3)	42 (106.7)	7-3/4 (19.7)	10-1/2 (26.7)
20	256T	640-950	4-1/4 (10.8)	12 (30.5)	15 (38.1)	5 (12.7)	6-1/4 (15.9)	31-1/2 (80)	34 (86.4)	7-3/4 (19.7)	8-1/2 (21.6)

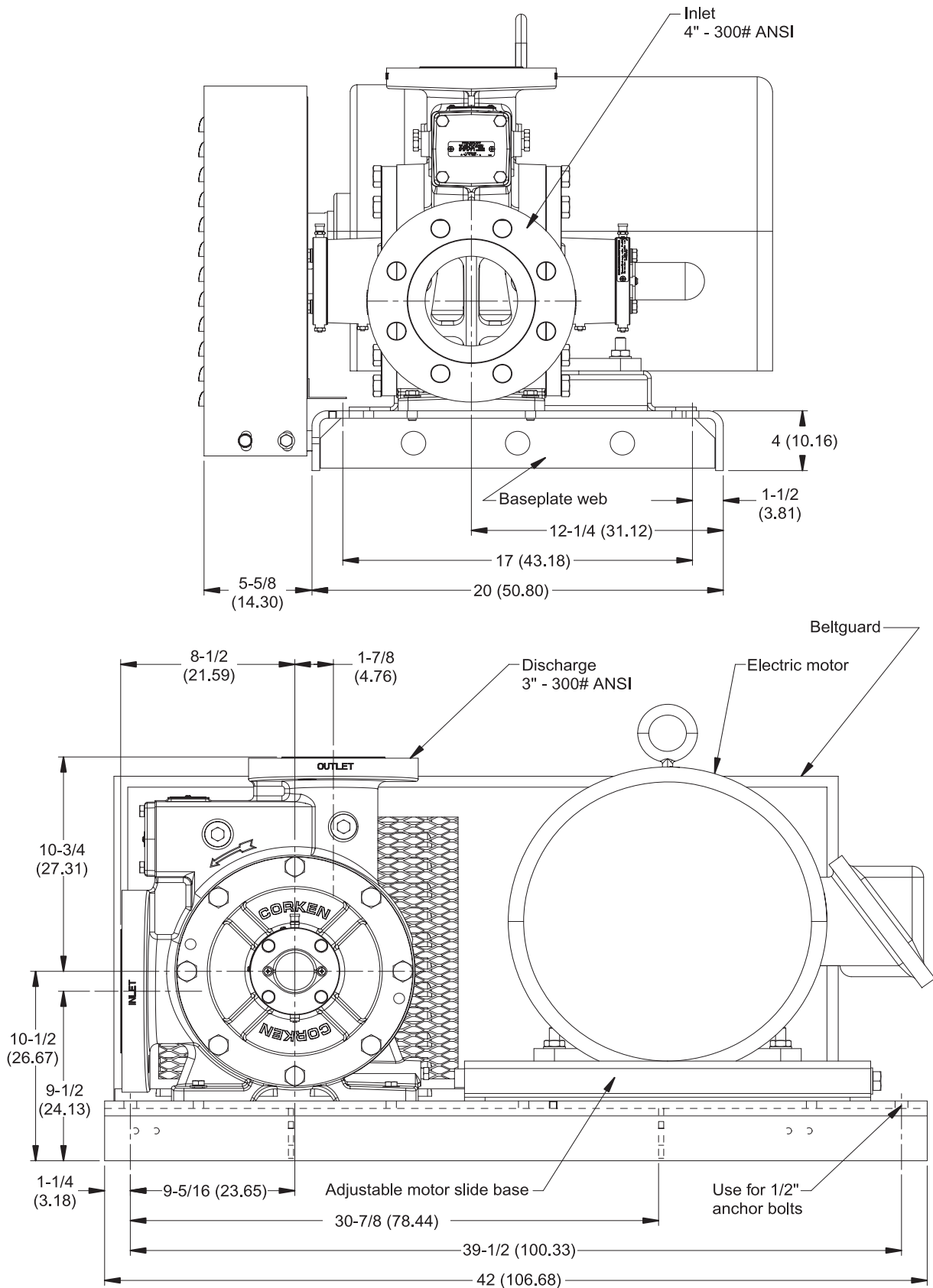
¹All dimensions based on a motor speed of 1,750 RPM.

Z3500-103 Model



Z-Series Stationary Pump—Outline Dimensions

Z4500-103 Model



Z-Series Truck Pumps—Features & Specifications

Equipment Type & Options

Truck sliding vane pump
Multiple connection options
Optional auxiliary inlet

Applications

Propane bulk transfer Auto-fuel pumping
NH₃ nurse tanks Carousel cylinder filling
LPG cylinders

Features & Benefits

Sliding vane type:	Positive displacement pump
Heavy duty bearings:	Long bearing life
Single mechanical seal:	Very easy seal replacement and maintenance
Built in relief valve (NPT models only):	Factory pre-set—added protection
Pressure gauge connections:	Suction and discharge to reduce piping needs
Reversible side plates:	Longer service life

Operating Specifications

RPM range:	500–800 RPM	Internal relief valve:	Yes
Max. working pressure:	400 psig (28.6 bar)	Max. differential pressure:	125 psid (8.6 bar d) for Z/ZH2000, Z/ZH3200, and Z/ZH4200 150 psid (10.3 bar d) for ZX/ZXH2000
Temperature range:	-25°F–225°F (-32°C–107°C)	Flow range:	41–400 gpm (155–1,514 L/min)

Material Specifications

Part	Model	Standard Material	Optional Material
Case, head, rotor, relief-valve cap, bearing cap	All	Ductile iron ASTM A536	
Cam	All	Gray iron ASTM A48, Class 50	
Sideplate	All	Gray iron ASTM A48, Class 30	
Welding flange	All	Steel	
Seal seat	All	Gray iron	Stainless steel & Ni-Resist
Seal metal parts	Z/ZH/ZX/ZXH2000, Z/ZH3200, Z3500, Z/ZH4200	Steel	
Shaft	All	8620 steel	
Vanes and vane drivers	All	Advanced polymers	
Relief valve spring	Z/ZH3200	Steel, cadmium plated	
	Z/ZH/ZX/ZXH2000, Z/ZH4200	Stainless steel	
Relief valve	Z/ZH3200	Steel	
	Z/ZH/ZX/ZXH2000, Z/ZH4200	Stainless steel	
Bearing	All	Steel	
Thrust bearing	All	Steel	
O-rings	All	Buna-N	PTFE, Viton®, Neoprene® ¹
Retainer rings	All	Steel	

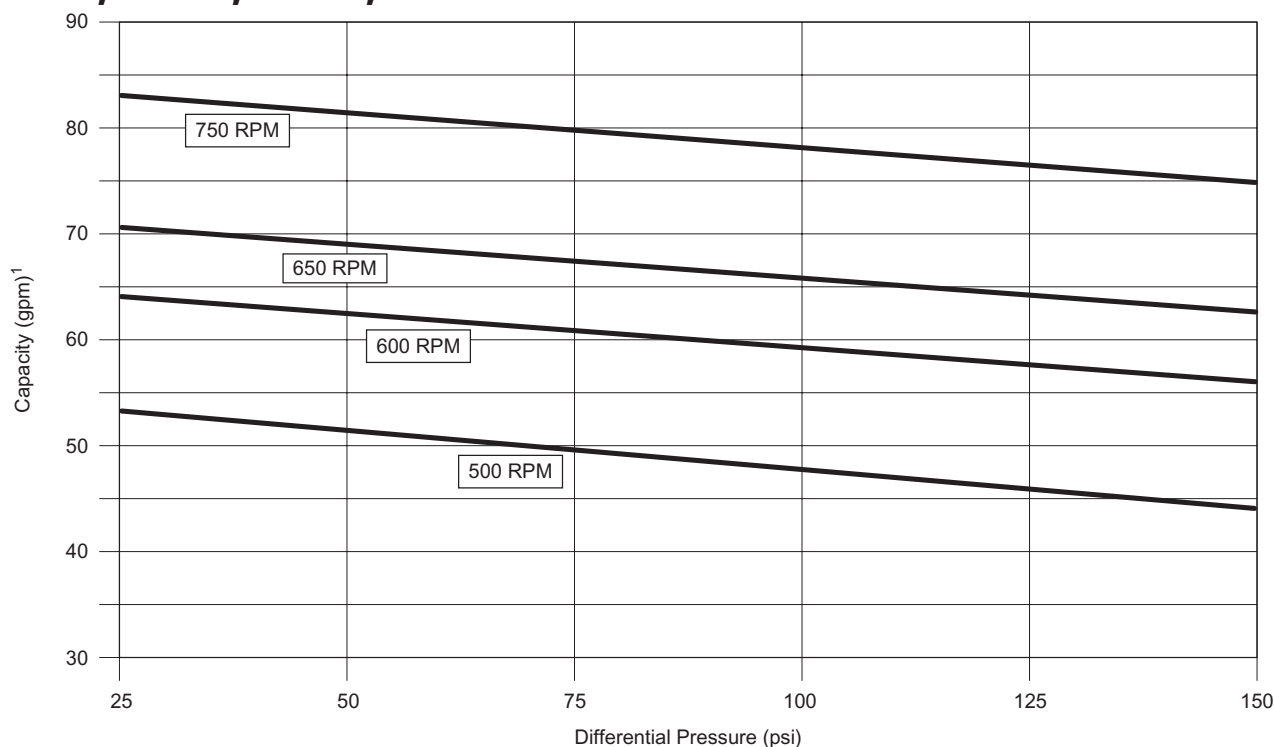
¹Viton® and Neoprene® are registered trademarks of the DuPont company.

Flange Specifications

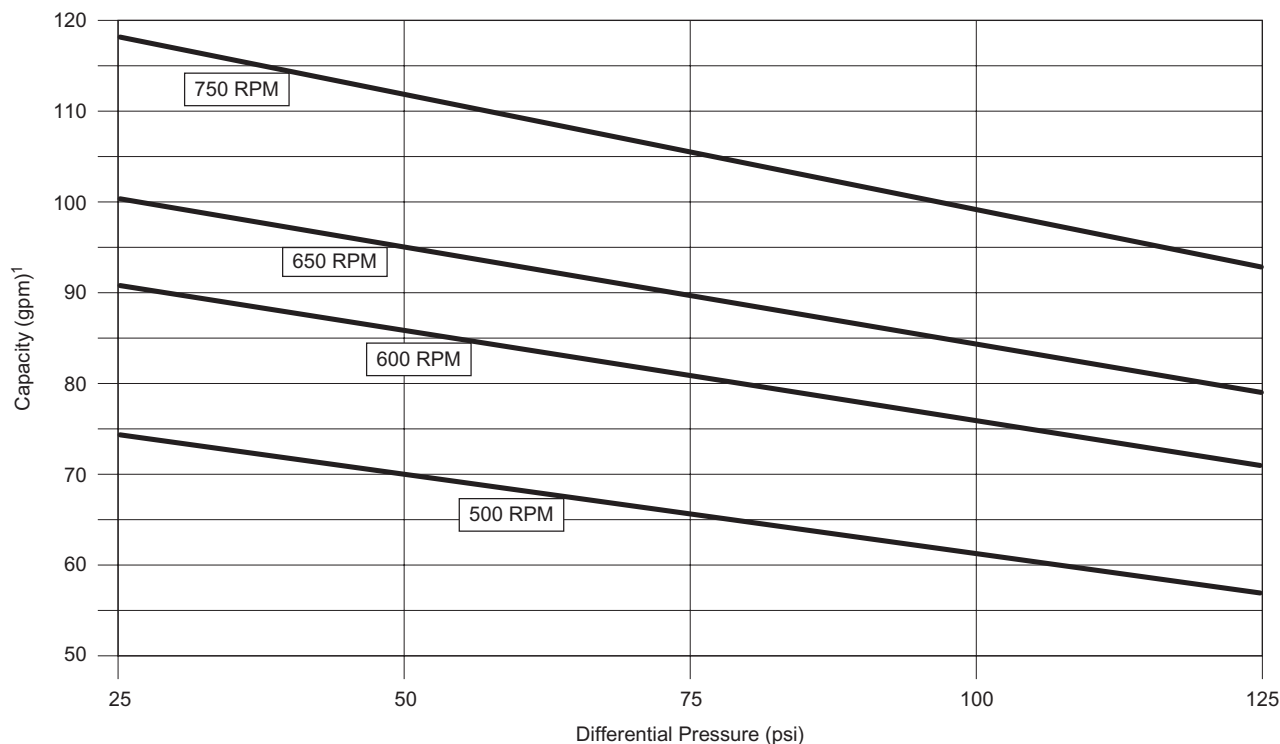
Ports	Z/ZH/ZX/ZXH2000		Z/ZH3200		Z/ZH4200	
	Standard	Optional	Standard	Optional	Standard	Optional
Inlet	2" NPT ²	None	3" 300# ANSI	None	4" 300# ANSI	None
Outlet	2" NPT ²	None	2" NPT ell ²	2" or 1-1/2" NPT ¹	2" Dual NPT ²	None
Auxiliary Inlet	None	None	2" NPT ²	1-1/2" NPT, 2" NPT ell or blind ²	2" NPT ²	2" NPT ell, 3" NPT, or blind ²

²Steel slip-on welding flanges are available at extra cost.

Z2000, ZH2000, ZX2000, and ZXH2000 Models



Z3000, Z3200, and ZH3200 Models

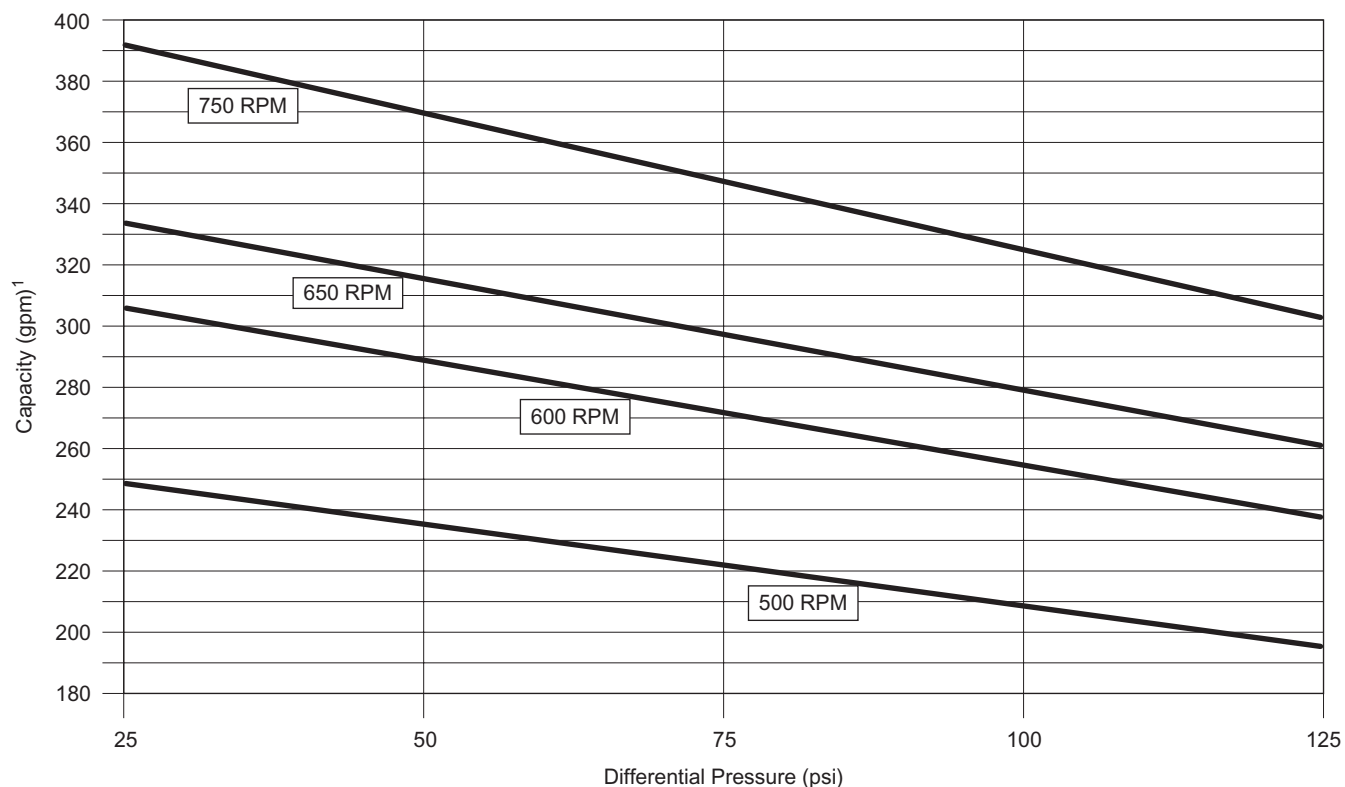


¹The chart shows approximate delivery rates as seen in vapor equalized propane systems at 70°F (21°C) with no pressure loss in pump suction piping. The following will cause increased vaporization of the liquid in the pump suction, adversely affecting the delivery:

1. Restrictions in the suction piping such as internal valves, excess flow valves, elbows, etc.
2. Restriction or lack of a vapor return line
3. Temperatures below 70°F (21°C)

This loss of delivery is not caused by the pump but is a result of the natural thermodynamic properties of liquefied petroleum gases. See the GUIDE TO CORKEN LIQUIFIED GAS TRANSFER EQUIPMENT CP226 for additional information.

Z4200 and ZH4200 Models



¹The chart shows approximate delivery rates as seen in vapor equalized propane systems at 70°F (21°C) with no pressure loss in pump suction piping. The following will cause increased vaporization of the liquid in the pump suction, adversely affecting the delivery:

1. Restrictions in the suction piping such as internal valves, excess flow valves, elbows, etc.
2. Restriction or lack of a vapor return line
3. Temperatures below 70°F (21°C)

This loss of delivery is not caused by the pump but is a result of the natural thermodynamic properties of liquefied petroleum gases. See the GUIDE TO CORKEN LIQUIFIED GAS TRANSFER EQUIPMENT CP226 for additional information.

Z-Series Truck Pumps—Performance

Z2000, ZH2000, ZX2000, and ZXH2000 Truck Pumps

Pump Speed	Differential Pressure	Approximate Delivery of Propane ¹	Brake hp Required	Pump Torque Required
RPM	psi (kPa)	gpm (L/min)	bhp (kW)	ft•lb (N•M)
750	50 (345)	82 (309)	2.9 (2.2)	20.4 (27.7)
750	100 (689)	77 (291)	5.8 (4.3)	40.8 (55.3)
750	150 ² (1,034)	75 (284)	8.9 (6.63)	62.2 (84.3)
650	50 (345)	69 (261)	2.5 (1.9)	20.4 (27.7)
650	100 (689)	64 (242)	5.1 (3.8)	40.8 (55.3)
650	150 ² (1,034)	63 (238)	7.7 (5.7)	62.2 (84.3)
600	50 (345)	63 (238)	2.3 (1.7)	20.4 (27.7)
600	100 (689)	58 (219)	4.6 (3.5)	40.8 (55.3)
600	150 ² (1,034)	56 (212)	7.1 (5.3)	62.2 (84.3)
500	50 (345)	52 (197)	1.9 (1.4)	20.4 (27.7)
500	100 (689)	46 (174)	3.9 (2.9)	40.8 (55.3)
500	150 ² (1,034)	44 (166)	5.9 (4.4)	62.2 (84.3)

Z3200 and ZH3200 Truck Pumps

Pump Speed	Differential Pressure	Approximate Delivery of Propane ¹	Brake hp Required	Pump Torque Required
RPM	psi (kPa)	gpm (L/min)	bhp (kW)	ft•lb (N•M)
750	50 (345)	112 (424)	6.2 (4.6)	43.4 (58.9)
750	100 (689)	99 (375)	9.9 (7.4)	69.3 (94.0)
650	50 (345)	95 (360)	5.2 (3.9)	42.0 (57.0)
650	100 (689)	84 (318)	8.2 (6.1)	66.3 (89.9)
600	50 (345)	86 (326)	5.0 (3.7)	41.3 (56.0)
600	100 (689)	76 (288)	7.8 (5.9)	64.8 (87.9)
500	50 (345)	70 (265)	3.8 (2.8)	39.9 (54.1)
500	100 (689)	62 (235)	5.8 (4.3)	60.9 (82.6)

Z4200 and ZH4200 Truck Pumps

Pump Speed	Differential Pressure	Approximate Delivery of Propane ¹	Brake hp Required	Pump Torque Required
RPM	psi (kPa)	gpm (L/min)	bhp (kW)	ft•lb (N•M)
750	50 (345)	369 (1,397)	12.5 (9.3)	87 (118.0)
750	100 (689)	325 (1,230)	25.1 (18.6)	175 (237.3)
650	50 (345)	316 (1,196)	10.8 (8.0)	87 (118.0)
650	100 (689)	278 (1,052)	21.7 (16.1)	175 (237.3)
600	50 (345)	289 (1,094)	9.9 (7.3)	87 (118.0)
600	100 (689)	254 (961)	20.0 (14.8)	175 (237.3)
500	50 (345)	236 (893)	8.3 (6.2)	87 (118.0)
500	100 (689)	208 (787)	16.7 (12.4)	175 (237.3)

¹Delivery times are approximate—see note on page 23 for further explanation.

²Applies to ZX2000 and ZXH2000 models only.

Z-Series Truck Pumps Model Number ID and Available Options

Base Model	Z/ZH2000	ZX/ZXH2000	Z/ZH3200	Z/ZH4200
Inlet	3" NPT	2" NPT	3" ANSI	4" ANSI
Outlet	3" NPT	2" NPT	2" ell	Dual 2" NPT
Auxillary Inlet	None	None	2" NPT	2" NPT
Internal Relief	150 psi	175 psi	150 psi	150 psi
Weight Bare Pump lb (kg)	185 (84)	100 (45)	140 (64)	275 (125)

Model Number
Base X X X X X X

Vane Type	6 Vanes with Vane Drivers	Standard	H
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Vaness	GCB-50	Standard	G
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O-ring Material	Buna-N	Standard	A
	Neoprene ^{®1}	No charge option	B

¹Neoprene[®] is a registered trademark of the DuPont company.

Flange Options WF=Slip-on weld flange ell = Elbow All ANSI flanges are 300# • Indicates available flange connections

Standard	2" NPT	•	•			E
	3" ANSI			•		P
	4" ANSI				•	S
Extra Cost Options	2" WF	•	•			F

Outlet Flange

Standard	2" NPT	•	•		•	E
	2" NPT ell			•		G
No Cost Options	1-1/2" NPT			•		C
	2" NPT			•		E
Extra Cost Options	1-1/2" WF			•		D
	2" WF	•	•	•	•	F
	2" NPT ell	•	•			G

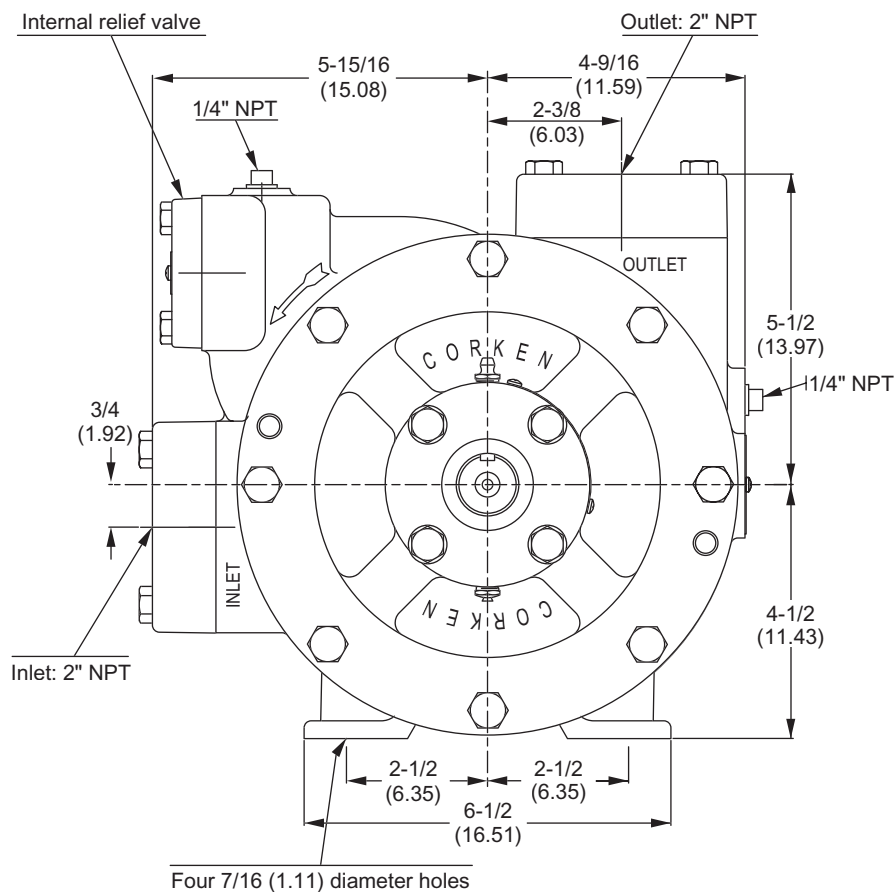
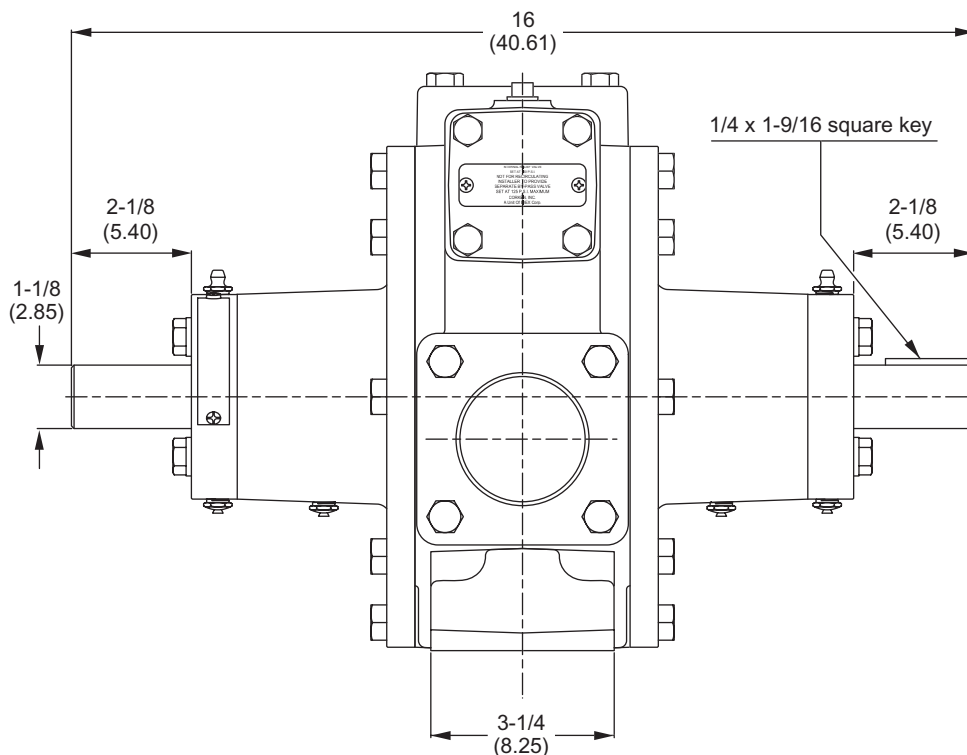
Auxillary Flange

Standard	2" NPT			•	•	E
	None	•	•			U
	1-1/2" NPT			•		C
No Cost Options	Blind Flange			•	•	T
	1-1/2" WF			•		D
Extra Cost	2" WF			•	•	F
	2" NPT ell			•		G

Part Number	Accessory—Options
3000-X1	Hydrostatic test

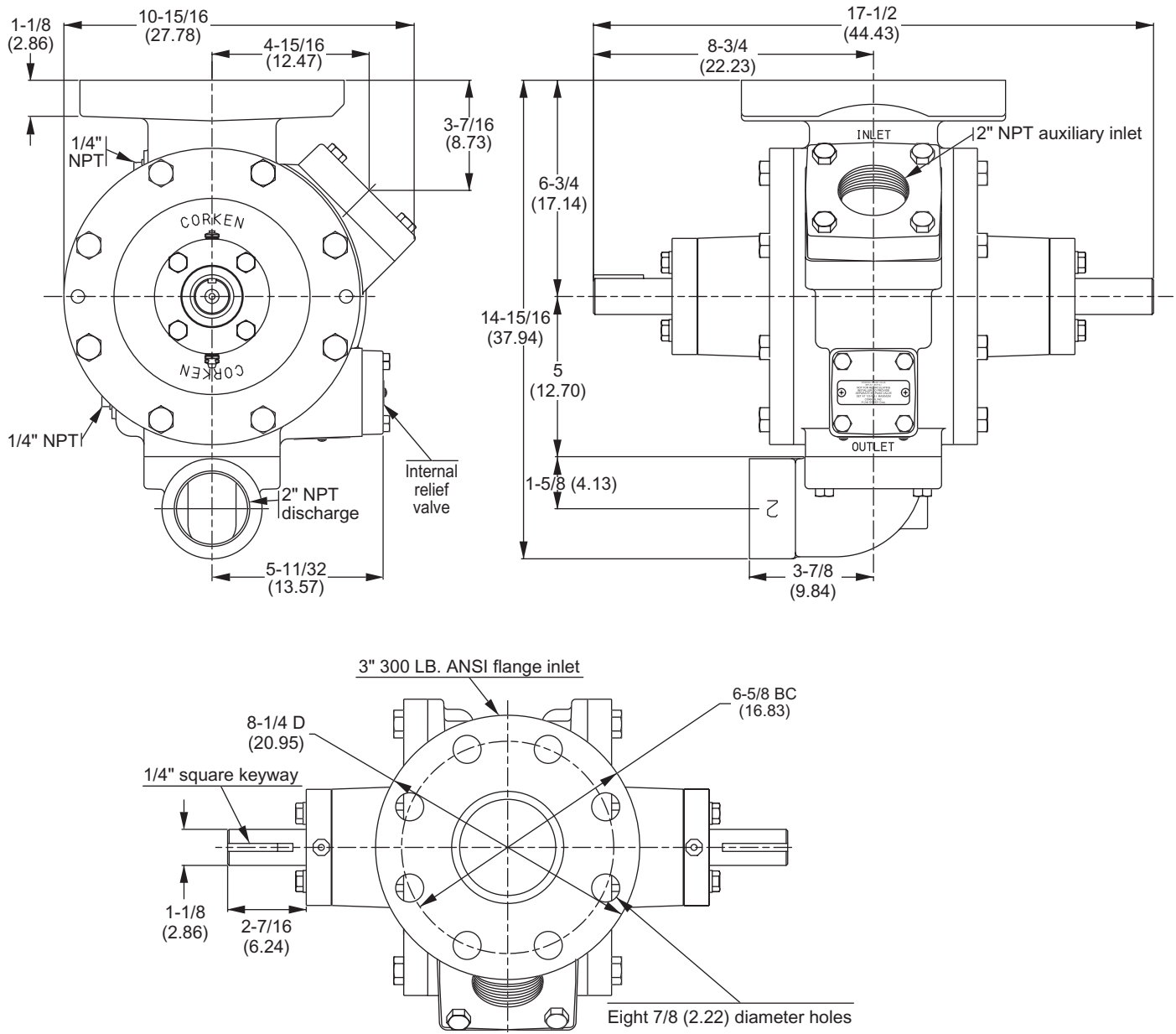
Z-Series Truck Pumps—Outline Dimensions

Z2000 and ZX2000 Models



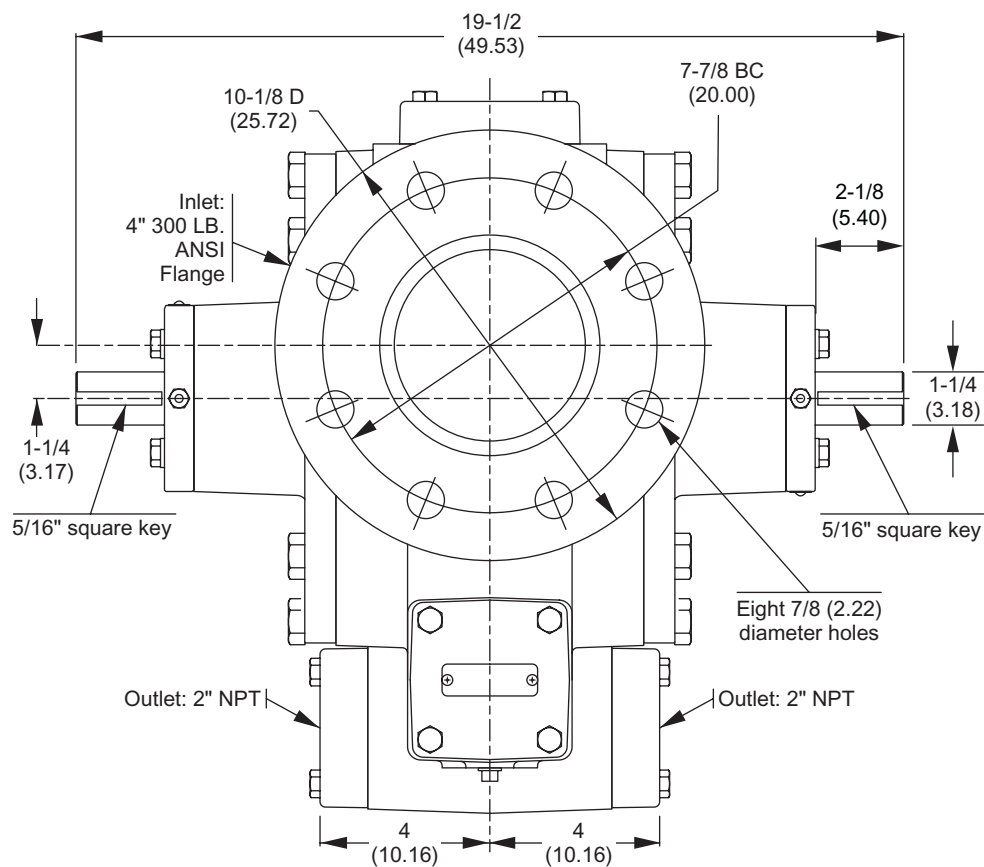
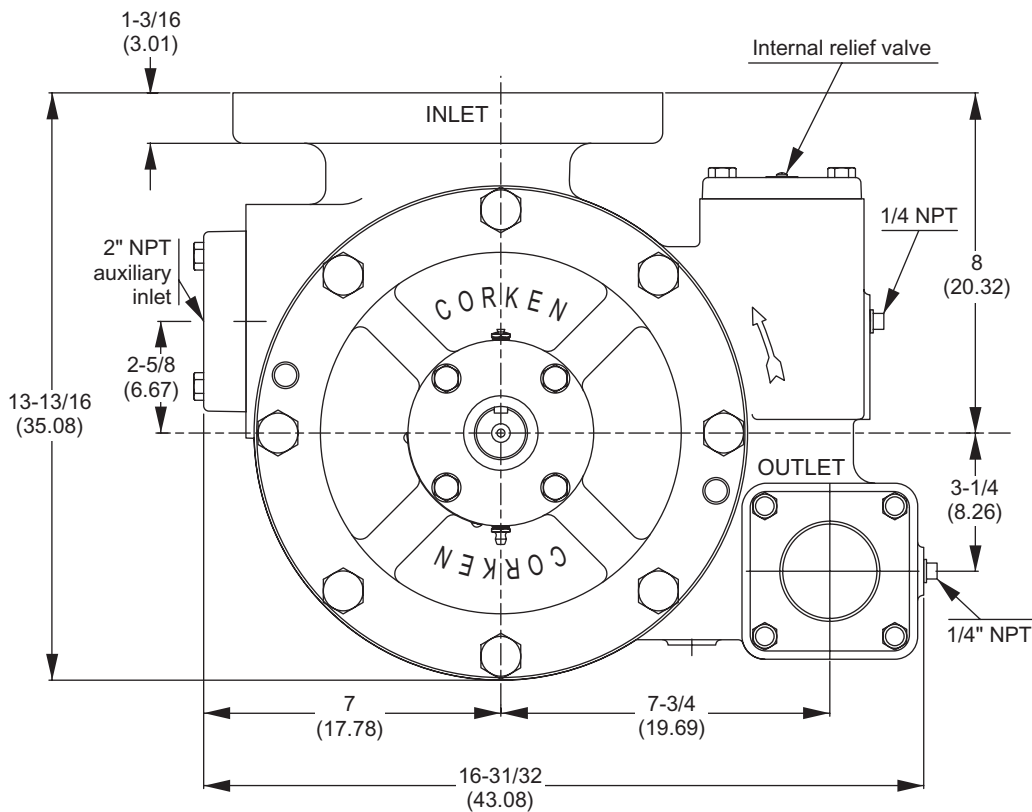
Z-Series Truck Pump—Outline Dimensions

Z3200 Model



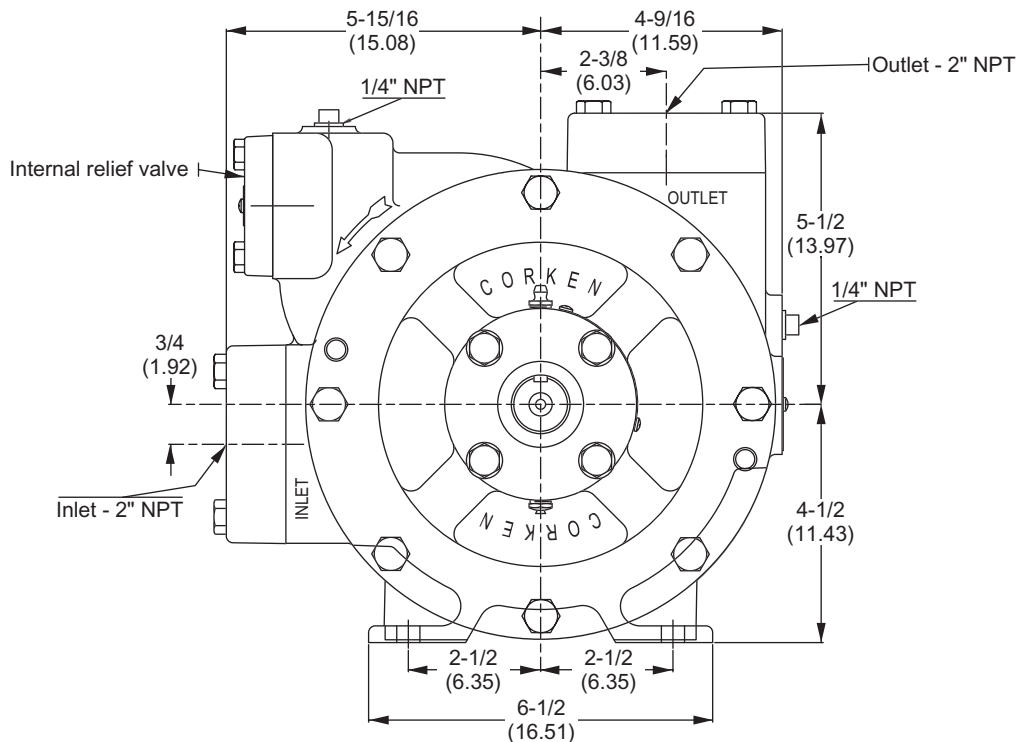
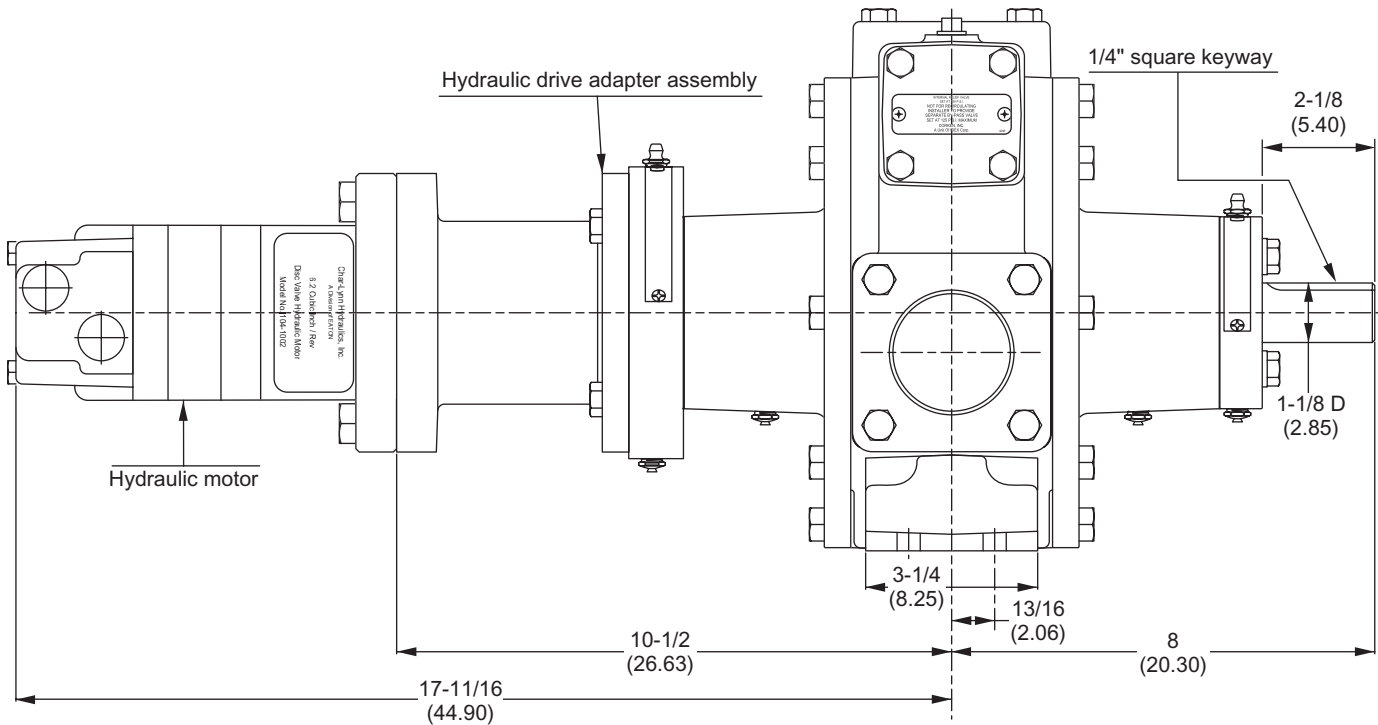
Z-Series Truck Pump—Outline Dimensions

Z4200 Model



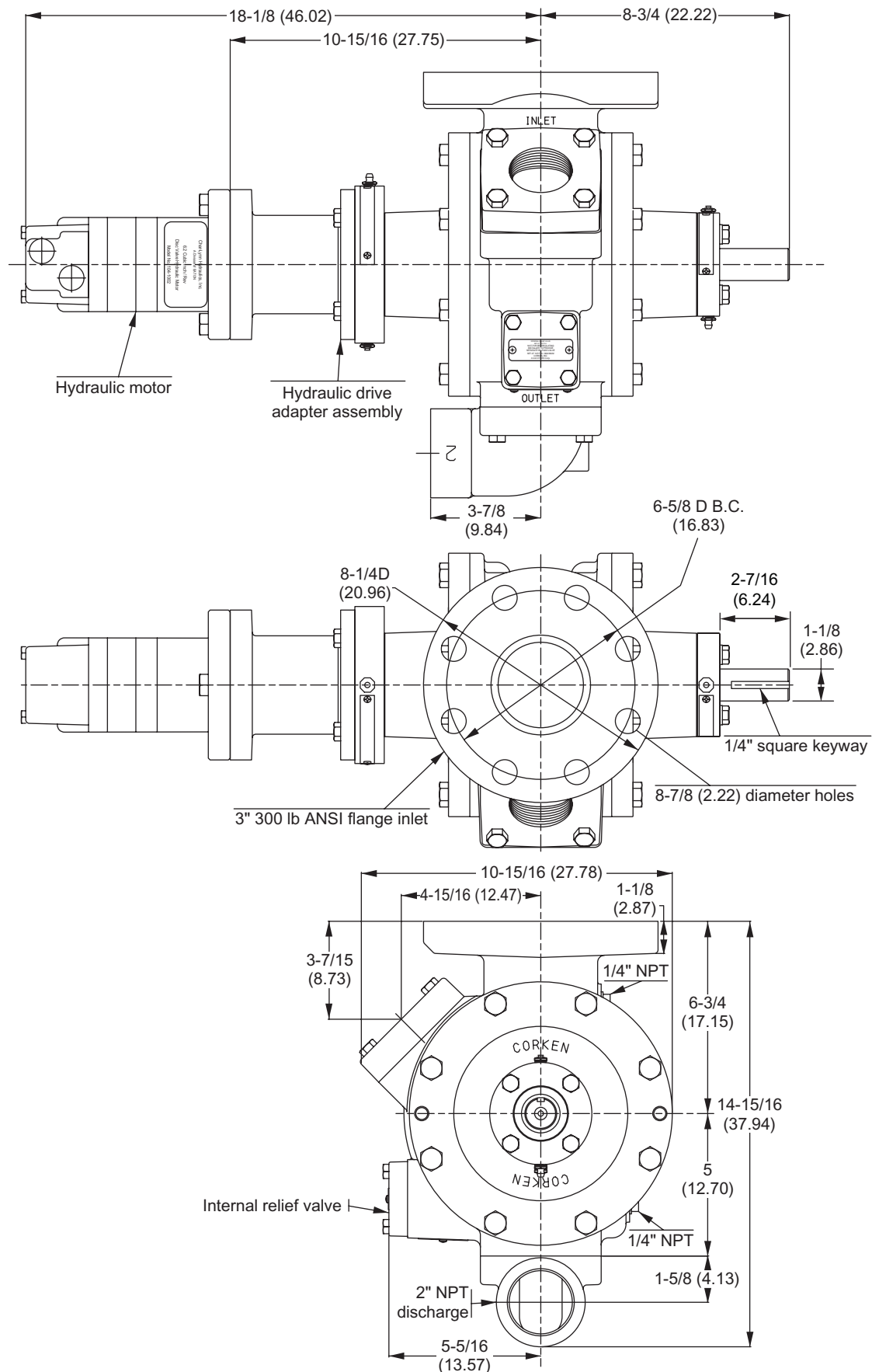
ZH-Series Truck Pumps—Outline Dimensions

ZH2000 and ZXH2000 Models



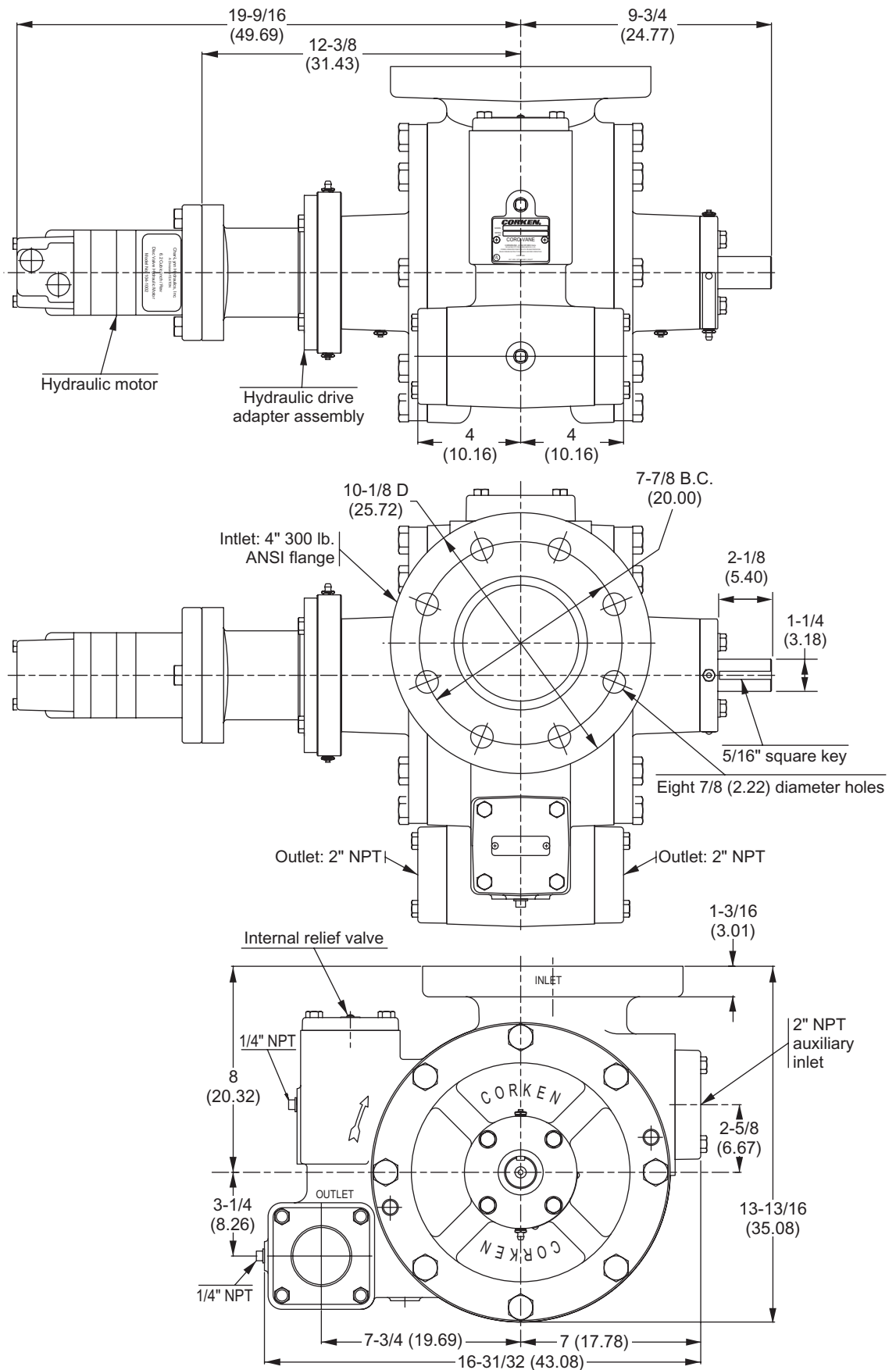
ZH-Series Truck Pump—Outline Dimensions

ZH3200 Model



ZH-Series Truck Pump—Outline Dimensions

ZH4200 Model





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