

Series 760
Fixed Displacement Motor

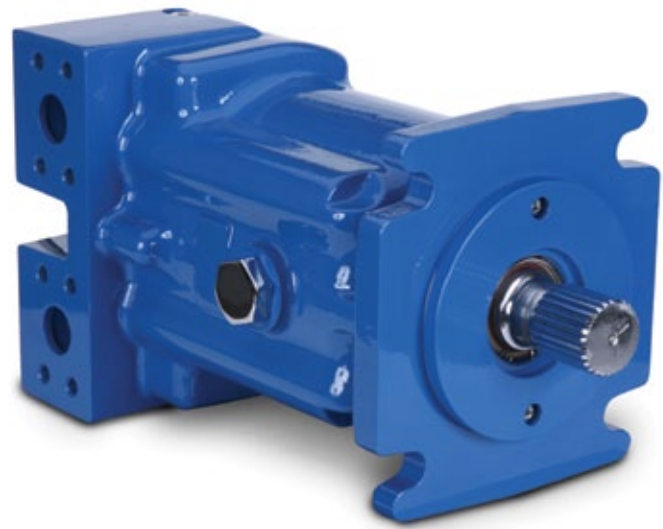


Table of Contents

Features3

Typical Applications3

Specifications and Performance Data4

Model Codes 5

Input Shaft Options6

 Positions 7 & 8

Main Ports8

 Position 9

End Cover and Loop Flushing Valve9

 Position 10

Speed Sensor13

 Position 17

Operational Diagram14

Application Information15

Hydraulic Fluid Recommendations18

Specifications and Performance

Specifications

Model		130	160
Displacement	cc/rev (in ³ /rev)	130 (7.93)	160 (9.76)
Mounting Flange	SAE D	D	
Maximum Shaft Speed	rpm @ 18°	3200	2950
Nominal Pressure*	bar (psi)	430 (6250)	430 (6250)
Peak Pressure*	bar (psi)	500 (7250)	500 (7250)
Case Pressure Continuous	bar (psi)	3 (40)	3 (40)
Case Pressure Maximum	bar (psi)	14 (200)	14 (200)
Maximum Output Torque	Nm 890 (lb-in)	1,095 (7,900)	(9700)
Temperature Rating	°C	82° C	82° C
	°F	180° F	180° F

* Nominal Pressure: Max delta system pressure at which component fatigue does not occur (pump life estimated by bearing life).

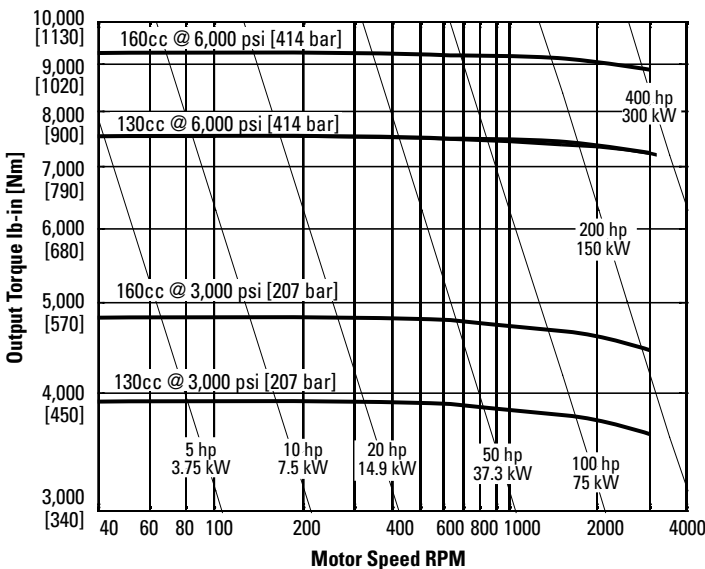
* Peak Pressure: Max operation pressure which is permissible for a short duration of time (t < 1 sec).

The following chart shows the expected bearing life with no external shaft side load and charge pressure of 304 psi.

Model Code Number		130	160
Displacement	cc/rev (in ³ /rev)	130 (7.93)	160 (9.76)
Shaft Speed	rpm	3200 1800	2950 1800
Continuous Pressure – ΔP	bar (psi)	290 (4250) 290 (4250)	240 (3500) 240 (3500)
Bearing Life – L ₁₀	hours	10,000 18,000	10,000 15,900
Bearing Life – L ₂₀	hours	33,700 46,400	31,700 48,500

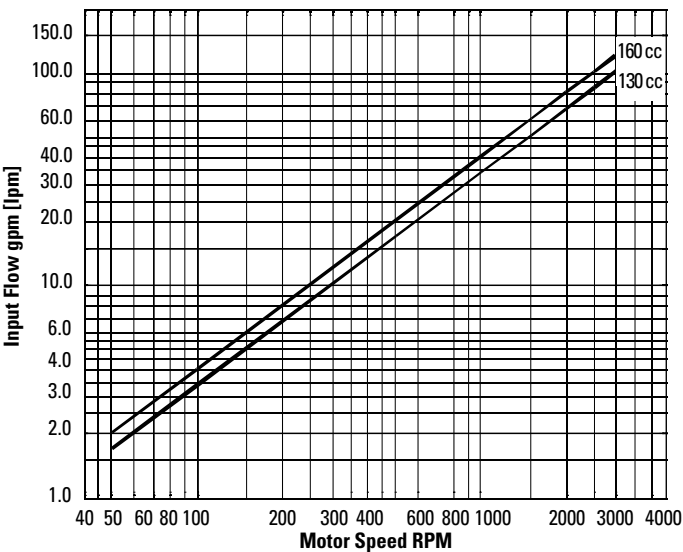
Performance

Output Torque vs Speed



Note: Operating the motor below 50 rpm is not recommended.

Input Flow vs Speed



System Pressure	3500 psi (240 bar)
Charge Pressure	400 psi
Oil Viscosity	60 SUS
Temperature	180°F (82°C)

Model Codes

The following 22 digit coding system has been developed to identify preferred feature options for the Series 760 Fixed Displacement Motor. Use this code to specify a motor with the desired features. All 22-digits of the code must be present to release a new product number for ordering.

ADZ	XXX	XX	X	X	X	X	X	X	X	X	XX	A	D	A	
1,2,3	4,5,6	7,8	9	10	11	12	13	14	15	16	17	18,19	20	21	22

1,2,3 Product

AEA – Hydrostatic Fixed Displacement Motor

4,5,6 Displacement

130 – 130,0 cm³/r
(7.93 In³/r) at 18°
Swashplate angle

160 – 160,0 cm³/r
(9.76 In³/r) at 18°
Swashplate angle

7,8 Input Shaft

01 – (1.750) Diameter
Straight With (.4375) x
(1.00) Square Key

02 – (1.750) Diameter
Tapered With (.4375) x
(1.00) Square Key

13 – 13 Tooth 8/16 Pitch
Spline

27 – 27 Tooth 16/32 Pitch
Spline

9 Main Ports

A – 31,75 (1.25) SAE 4-bolt
split flange port, high
pressure series (code
62)

B – 31,75 (1.25) SAE 4-bolt
split flange port, high
pressure series (code
62) with M12 x 1.75
threaded holes

10 End Cover and Loop Flushing Valve

A – Same side ports,
integral loop flushing
valve with high-rate
springs

B – Same side ports,
integral loop flushing
valve with low-rate
springs

C – Same side ports, valve
block loop flushing with
high-rate springs

D – Same side ports, valve
block loop flushing with

low-rate springs

E – Rear ports, integral
loop flushing valve with
high-rate springs

F – Rear ports, integral
loop flushing valve with
low-rate springs

G – Rear ports, valve block
loop flushing with
high-rate springs

H – Rear ports, valve block
loop flushing with
low-rate springs

11 Charge Pressure Relief Valve

0 – No relief valve

1 – Standard

2 – Orificed charge
pressure relief valve
(for composite valve
blocks only)

12 Charge Pressure Relief Valve Setting

A – None

B – 11,0 bar (160 lbf/in²)

C – 12,4 bar (180 lbf/in²)

D – 13,8 bar (200 lbf/in²)

E – 15,2 bar (220 lbf/in²)

F – 16,6 bar (240 lbf/in²)

G – 17,9 bar (260 lbf/in²)

H – 19,3 bar (280 lbf/in²)

J – 20,7 bar (300 lbf/in²)

K – 22,1 bar (320 lbf/in²)

L – 22,5 bar (326 lbf/in²)

valve block only

M – 23,4 bar (340 lbf/in²)

N – 24,1 bar (350 lbf/in²)
valve block only

P – 24,8 bar (360 lbf/in²)

R – 25,5 bar (370 lbf/in²)
valve block only

S – 26,2 bar (380 lbf/in²)

T – 26,9 bar (390 lbf/in²)
valve block only

U – 28,3 bar (410 lbf/in²)
valve block only

V – 30,0 bar (435 lbf/in²)

valve block only

13 High Pressure Relief Valve – Port A

0 – None

1 – Standard with threaded
retainer

2 – Remote pilot operated
relief valve with
threaded retainer

14 High Pressure Relief Valve Setting – Port A

A – None

B – 103 bar (1500 lbf/in²)

C – 138 bar (2000 lbf/in²)

D – 172 bar (2500 lbf/in²)

E – 207 bar (3000 lbf/in²)

F – 241 bar (3500 lbf/in²)

G – 276 bar (4000 lbf/in²)

H – 310 bar (4500 lbf/in²)

J – 345 bar (5000 lbf/in²)

K – 379 bar (5500 lbf/in²)

L – 414 bar (6000 lbf/in²)

M – 431 bar (6250 lbf/in²)

N – 448 bar (6500 lbf/in²)

P – 466 bar (6750 lbf/in²)

15 High Pressure Relief Valve – Port B

0 – None

1 – Standard with threaded
retainer

2 – Remote pilot operated
relief valve with
threaded retainer

16 High Pressure Relief Valve Setting – Port B

A – None

B – 103 bar (1500 lbf/in²)

C – 138 bar (2000 lbf/in²)

D – 172 bar (2500 lbf/in²)

E – 207 bar (3000 lbf/in²)

F – 241 bar (3500 lbf/in²)

G – 276 bar (4000 lbf/in²)

H – 310 bar (4500 lbf/in²)

J – 345 bar (5000 lbf/in²)

K – 379 bar (5500 lbf/in²)

L – 414 bar (6000 lbf/in²)

M – 431 bar (6250 lbf/in²)

N – 448 bar (6500 lbf/in²)

P – 466 bar (6750 lbf/in²)

17 Speed Sensor

0 – No sensor

1 – Digital sensor with
3 wire weather pack
connector

2 – Sensor hole (5/8-18
UNF thread) plugged
(for digital sensor)

3 – Quadrature sensor with
4 wire weather pack
connector (one 24 pulse
per rev speed signal
and one directional
signal)

4 – Quadrature sensor with
4 wire weather pack
connector (two 12 pulse
per rev speed signal in
quadrature)

5 – Sensor hole (9/16-32
UN thread) plugged (for
quadrature sensor)

18,19 Special Features

00 – No special features

01 – Metal case drain plug
in both ports

02 – Nametag opposite
dowel pin

20 Paint and Packaging

A – Painted primer blue
(standard)

21 Identification on Unit

0 – Standard

22 Design Code

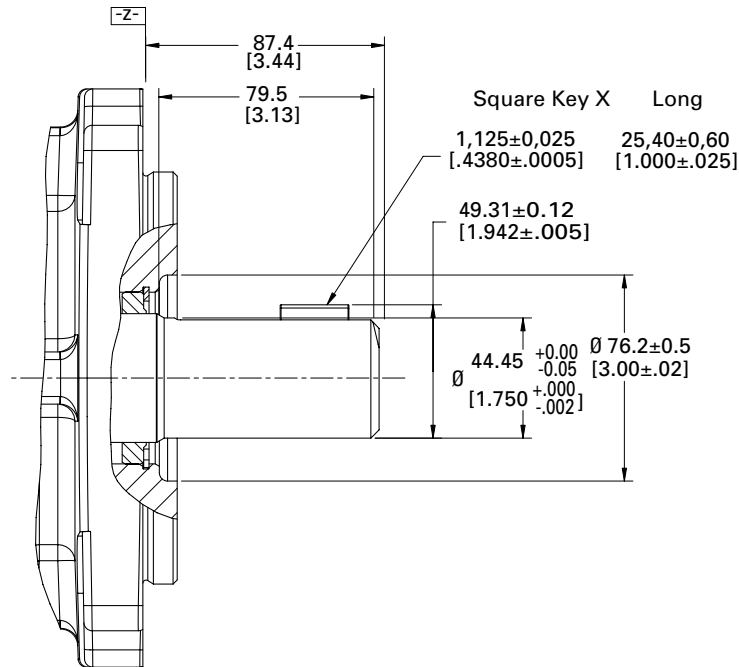
A – A

Input Shaft Options

Model Code Position 7, 8

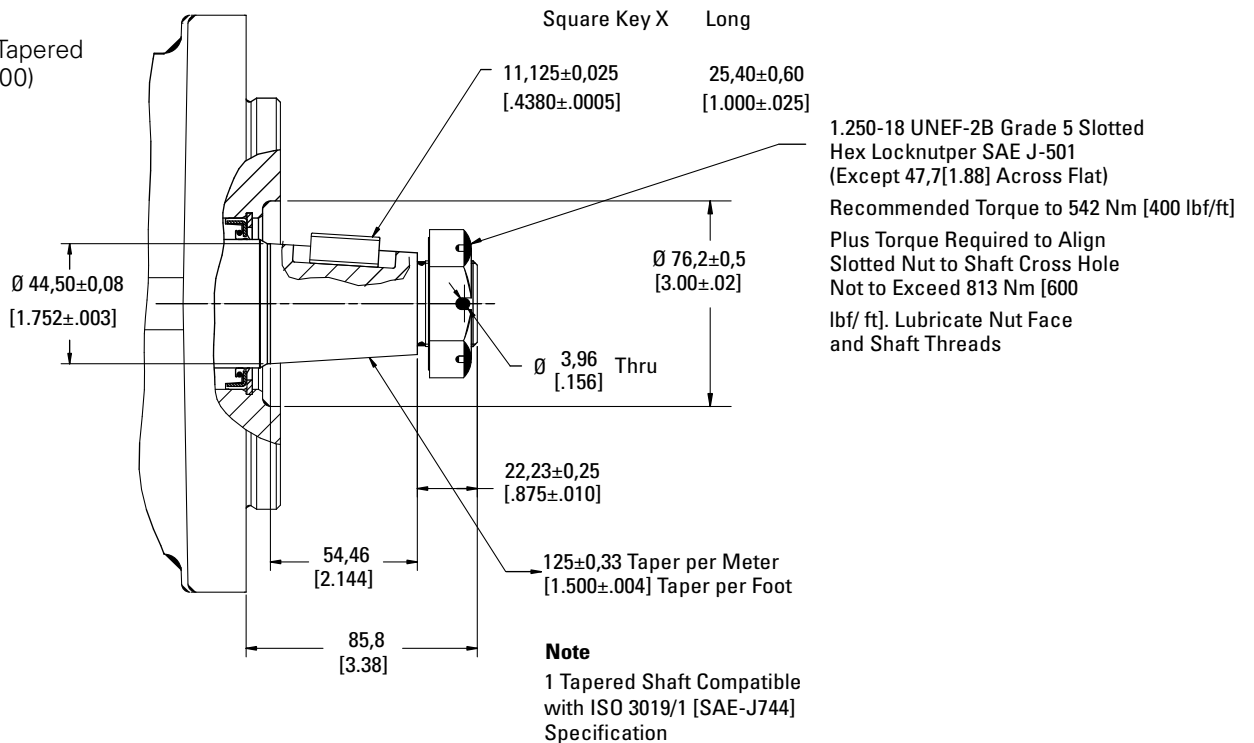
Code 01

(1.750) Diameter Straight
With (.4375) X (1.00)
Square Key



Code 02

(1.750) Diameter Tapered
With (.4375) X (1.00)
Square Key

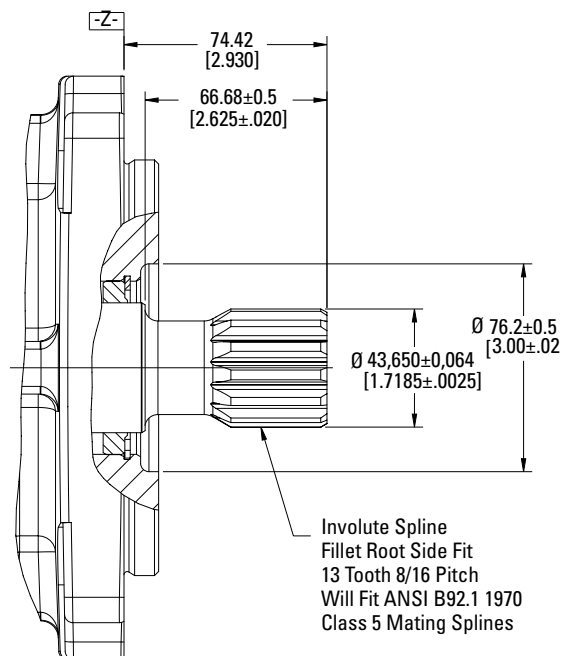


Input Shaft Options

Model Code Position 7, 8

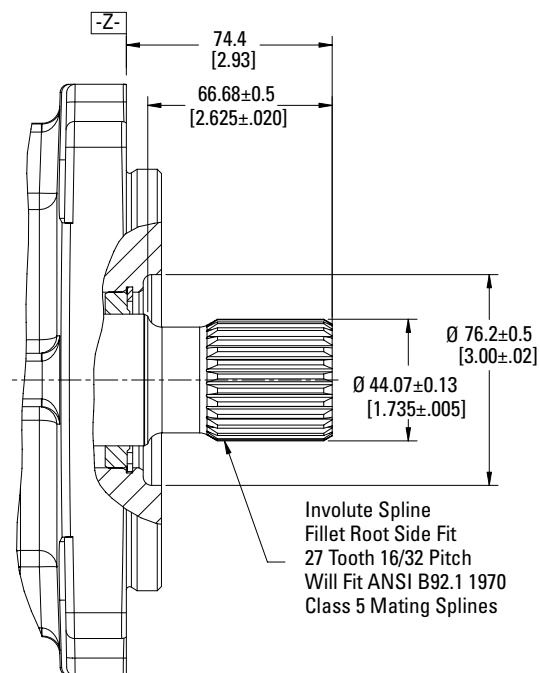
Code 13

13 Tooth 8/16 Pitch Spline
Torque 1921 Nm
17,000 lbf-in



Code 27

27 Tooth 16/32 Pitch Spline
Torque 734 Nm
6,500 lbf-in

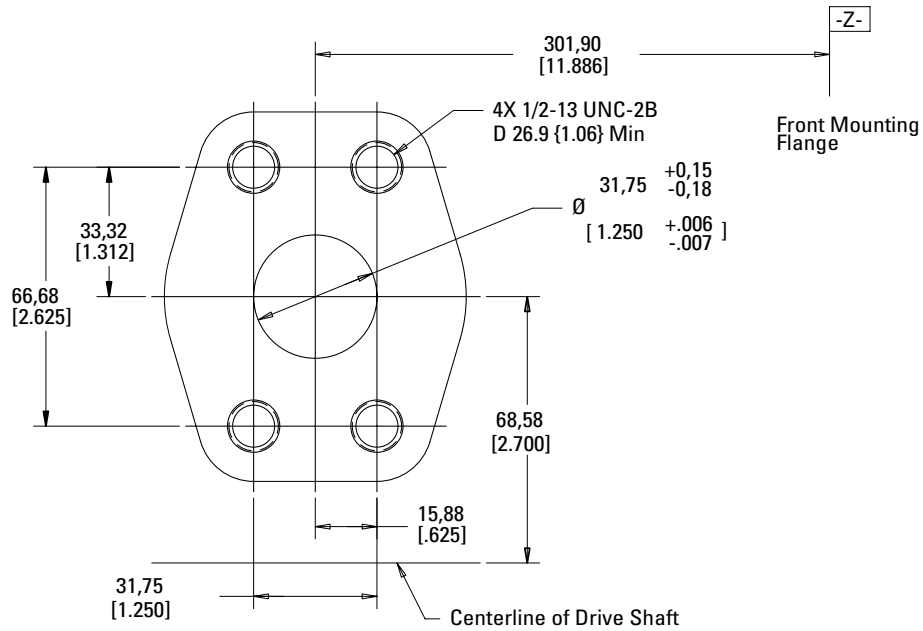


Main Ports

Model Code Position 9

Code A

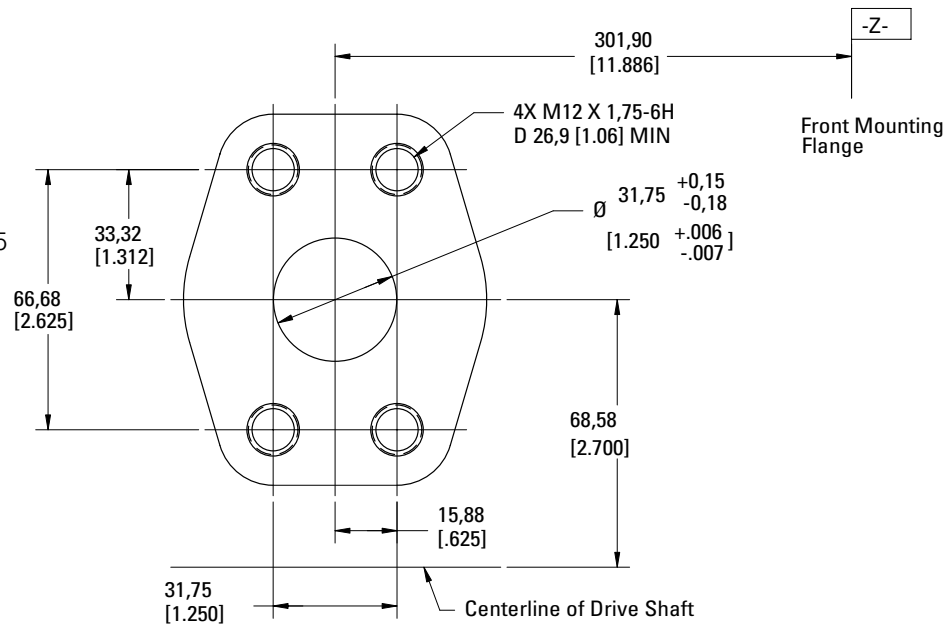
31,75 (1.25) SAE 4-Bolt Split Flange Port, High Pressure Series (Code 62)



1.25 SAE 4-Bolt Split Flange Port High Pressure Series (Code 62)

Code B

31,75 (1.25) SAE 4-Bolt Split Flange Port, High Pressure Series (Code 62) with M12 X 1.75 Threaded Holes



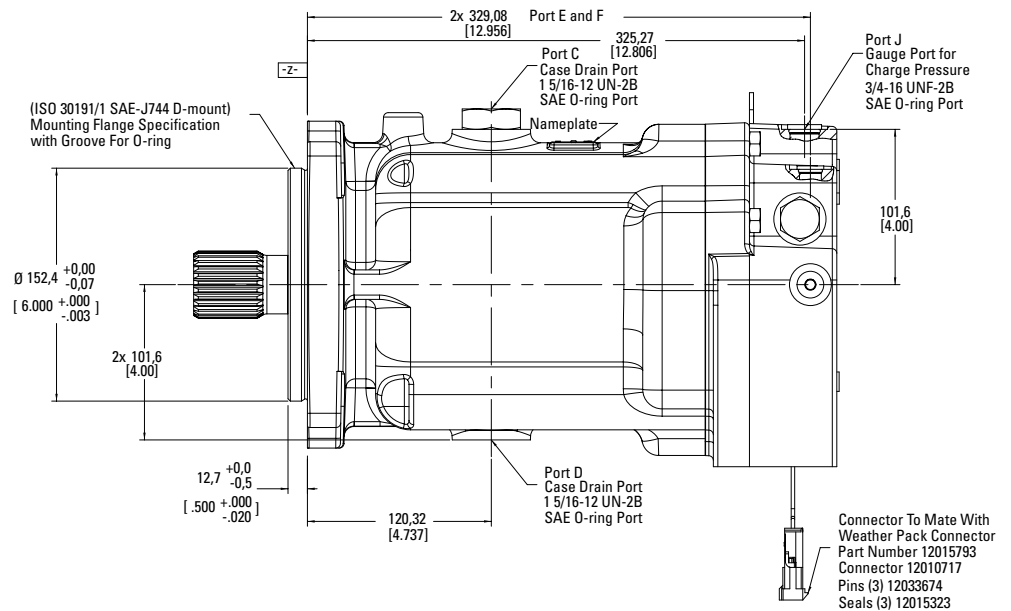
1.25 SAE 4-Bolt Split Flange Port High Pressure Series (Code 62)

End Cover and Loop Flushing Valve

Model Code Position 10

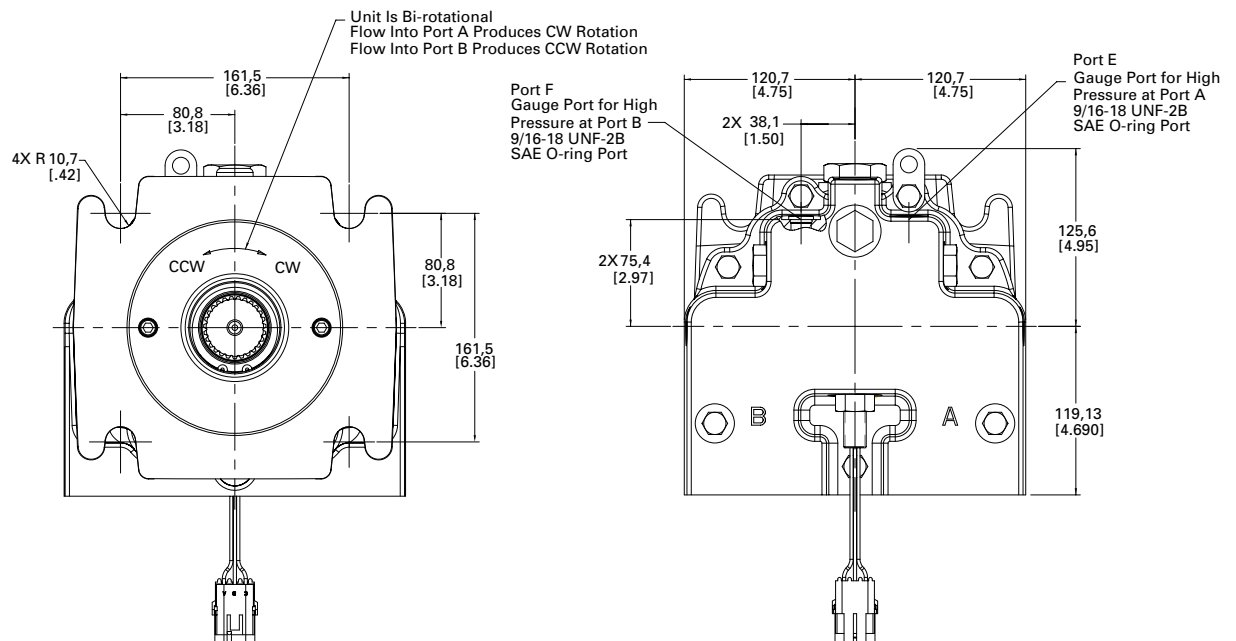
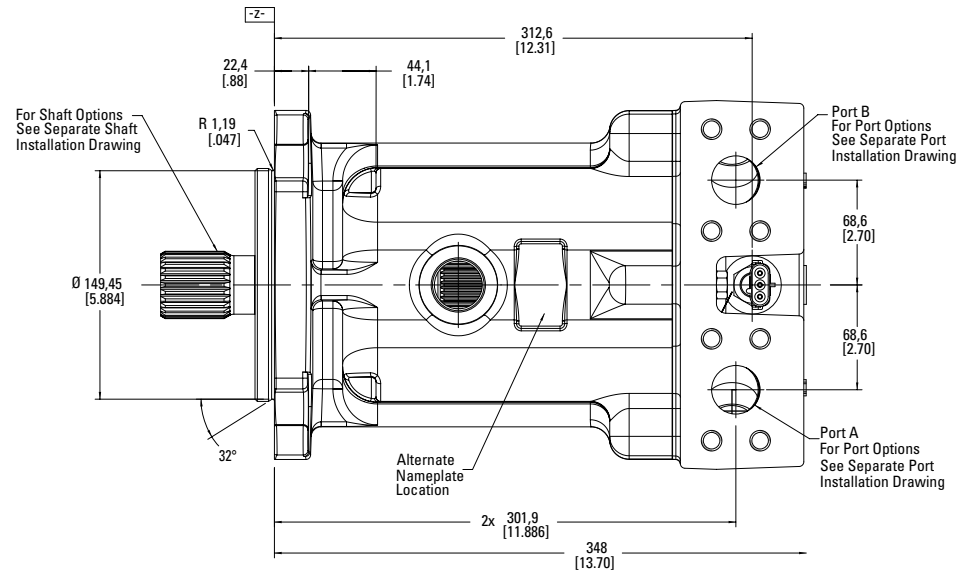
Code A

Same Side Ports, Integral Loop Flushing Valve with High-Rate Springs



Code B

Same Side Ports, Integral Loop Flushing Valve with Low-Rate Springs

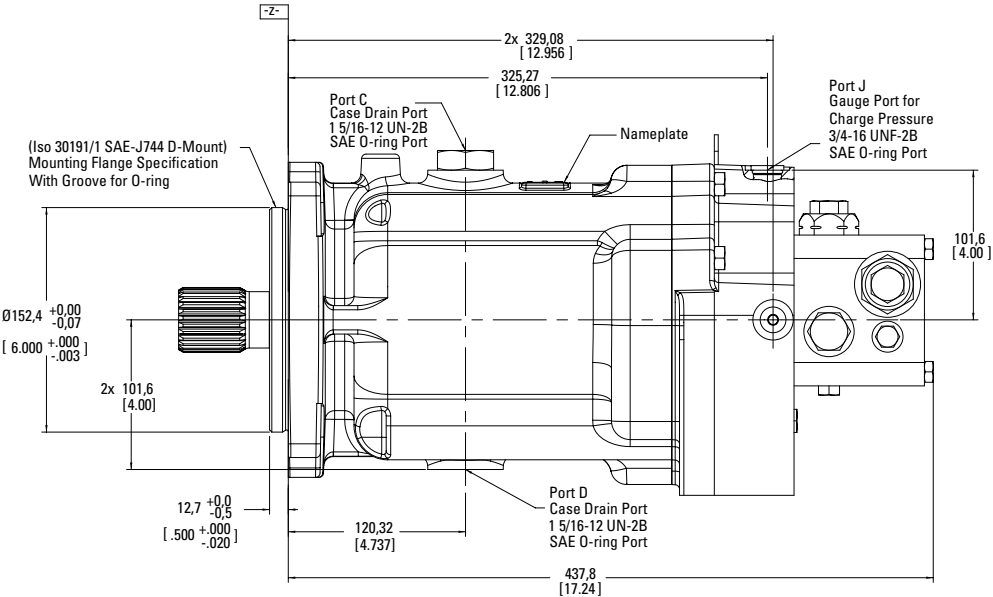


End Cover and Loop Flushing Valve

Model Code Position 10

Code C

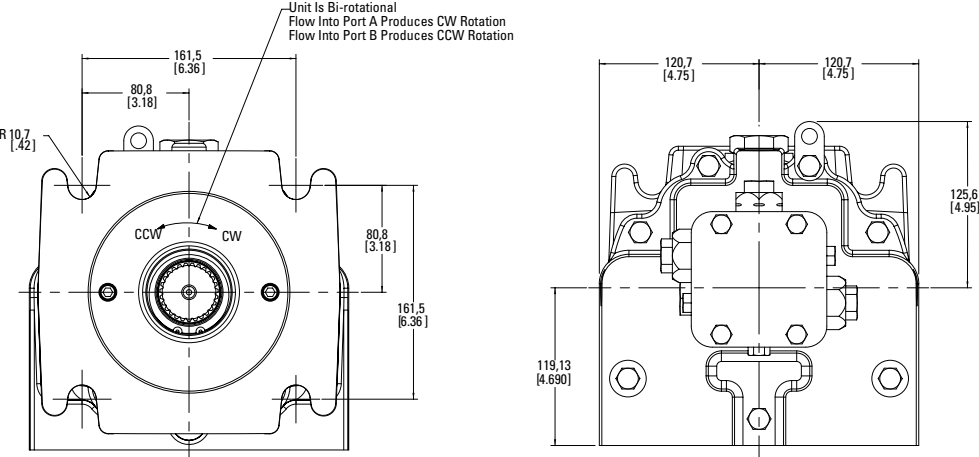
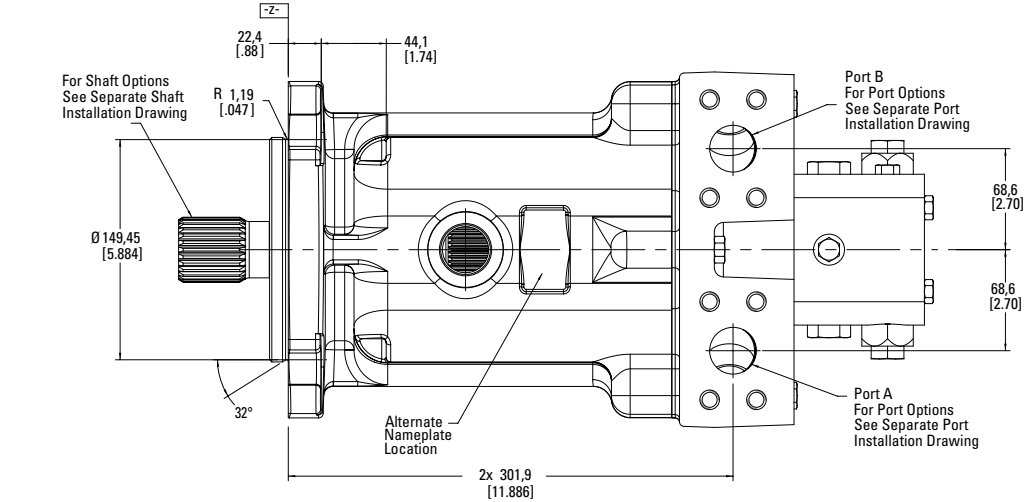
Same Side Ports, Valve Block Loop Flushing with High-Rate Springs



Section D-D

Code D

Same Side Ports, Valve Block Loop Flushing with Low-Rate Springs

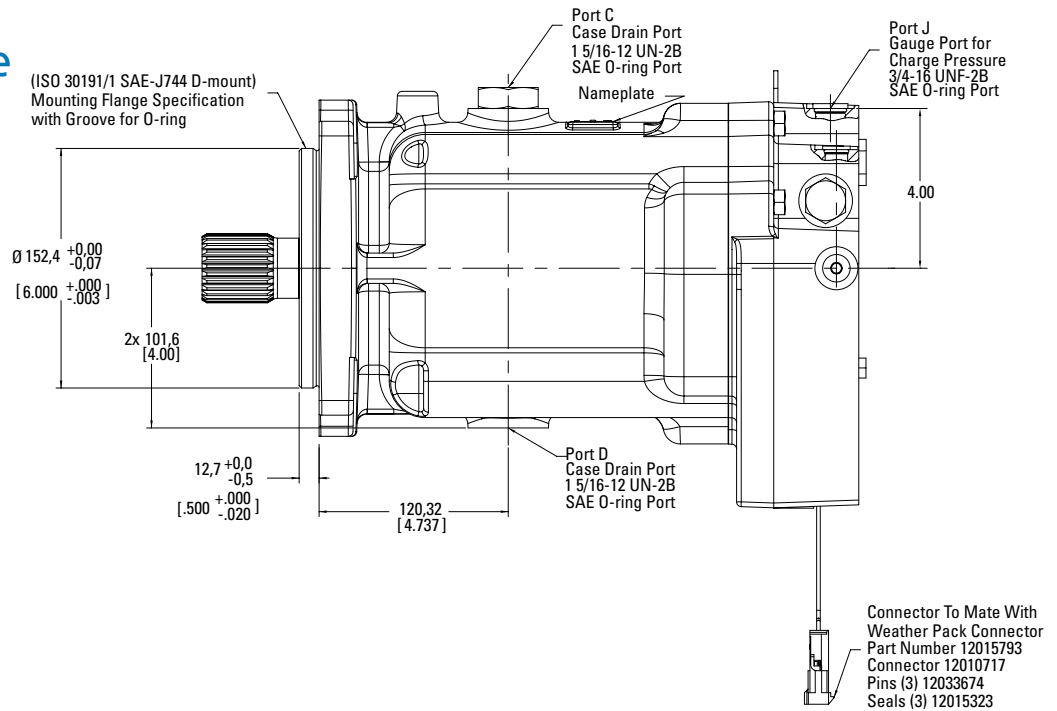


End Cover and Loop Flushing Valve

Model Code Position 10

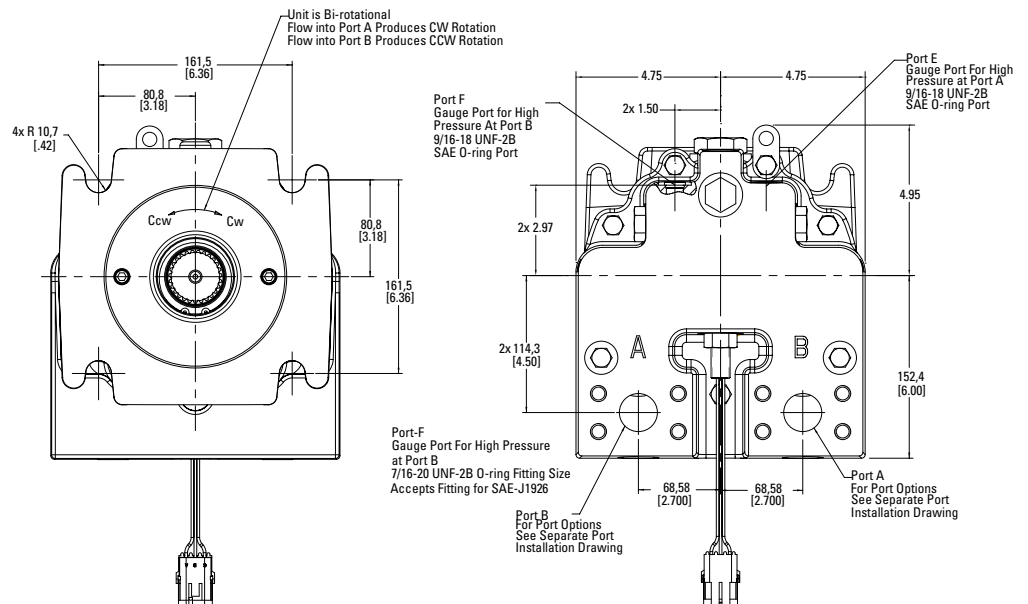
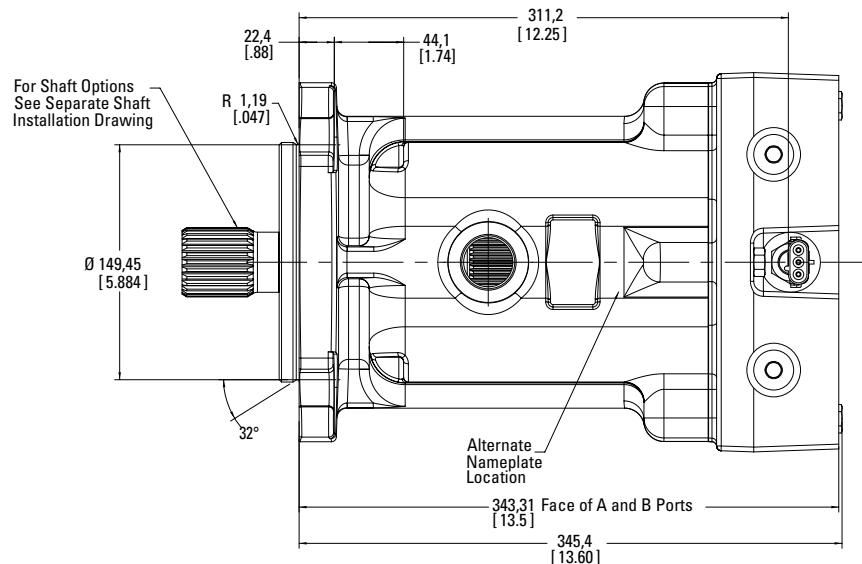
Code E

Rear Ports, Integral Loop Flushing Valve with High-Rate Springs



Code F

Rear Ports, Integral Loop Flushing Valve with Low-Rate Springs

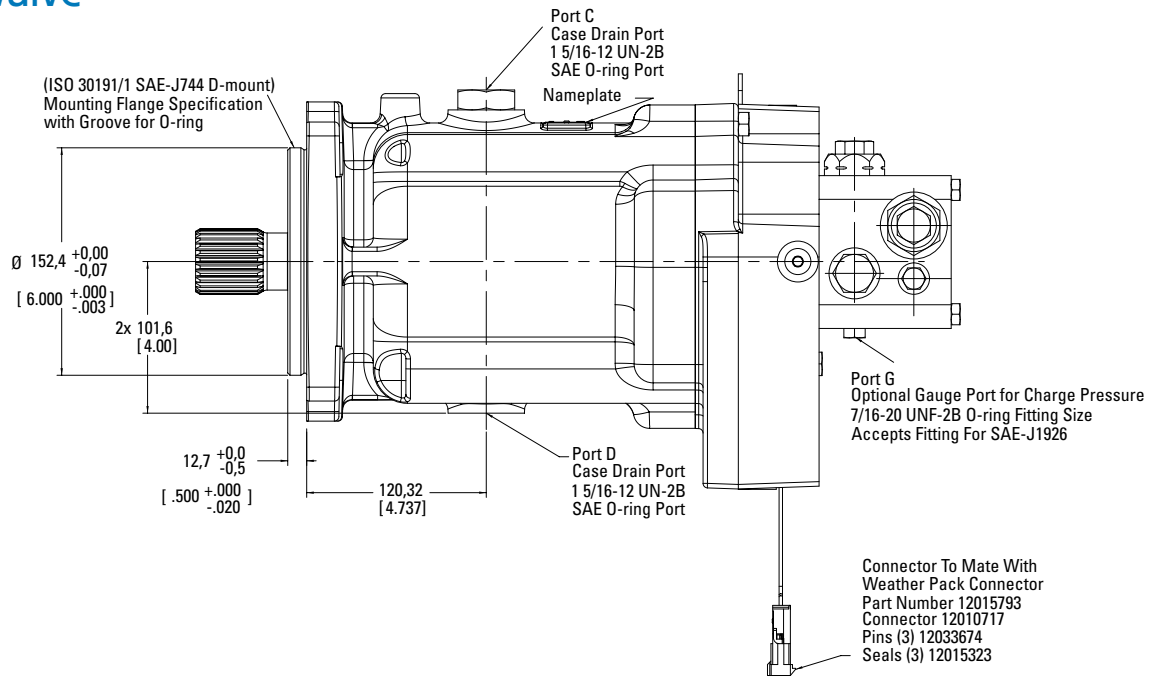


End Cover and Loop Flushing Valve

Model Code Position 10

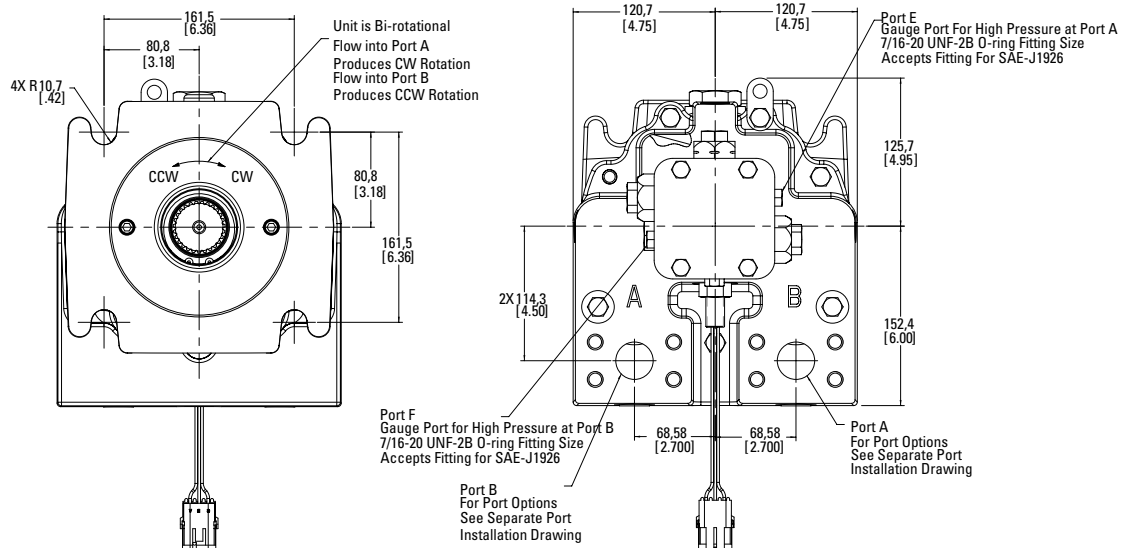
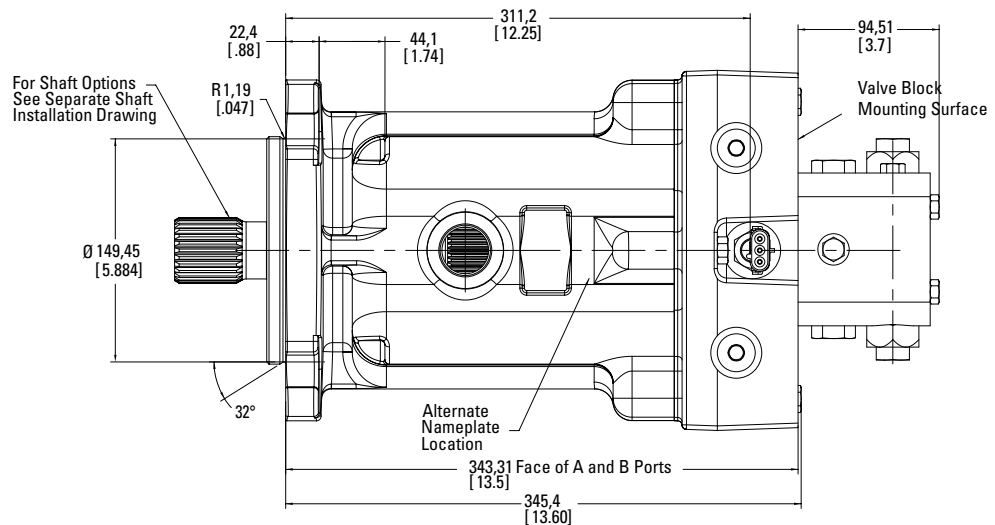
Code G

Rear Ports, Valve Block
Loop Flushing with
High-Rate Springs



Code H

Rear Ports, Valve Block
Loop Flushing with
Low-Rate Springs



Speed Sensor

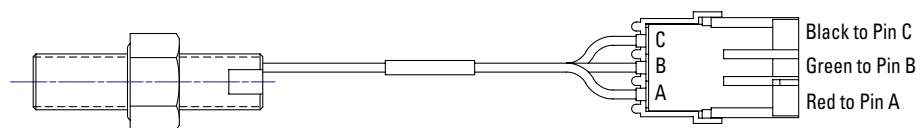
Model Code Position 17

Code 0

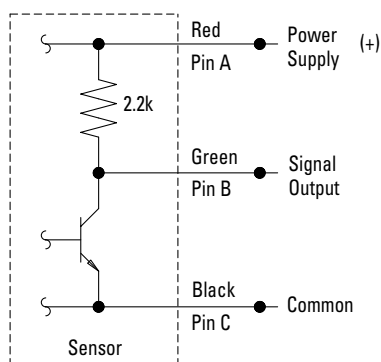
No Sensor

Code 1

Digital Sensor with 3 wire weatherpack connector



Packard Electric Weather Pack Series
12010717 Connector (Black With Index Code 101)
(Mates With 12015793, Connector And
12089188, Sleeve Terminal Female)
12015323 Seal (3 Seals)
12089040 Pin (3 Pins)



Output Circuit
Wiring Instructions

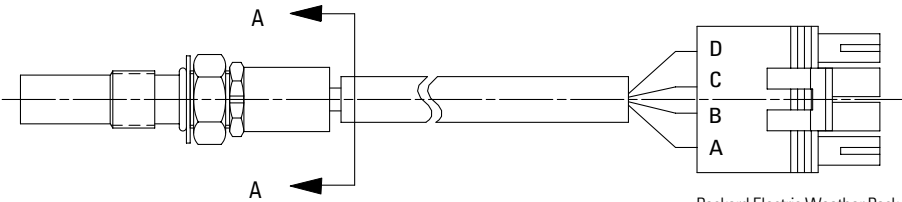
Supply Voltage 4.5Vdc to 16Vdc
Supply Current 20mA Max
Logic Zero State 400mV at 20mA
Sink Current
Operating Temperature: 40°F to
+257°F (-40°C To +125°C)
Operating Frequency 0Hz to 5KHz
Duty Cycle 20% to 80%
Sink Current: 25mA Max

Code 2

Sensor Hole (5/8-18
UNF Thread) Plugged
(For Digital Sensor)

Speed Sensor

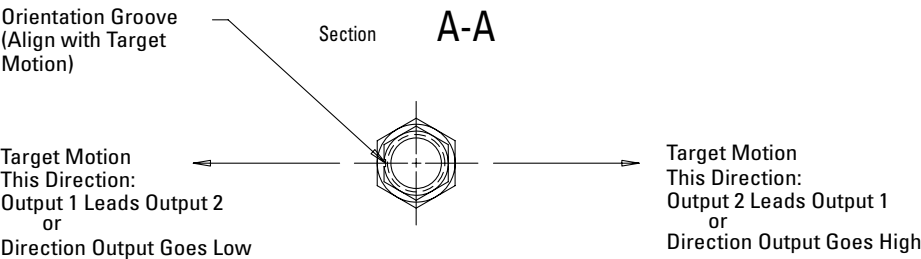
Model Code Position 17



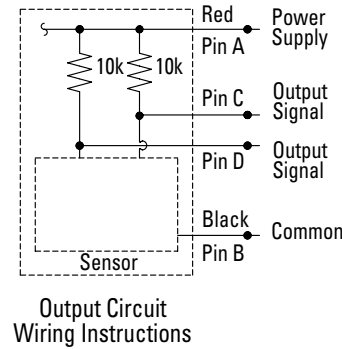
Packard Electric Weather Pack Series
1201 5797 Tower Connector (Black with Index Code 101)
1201 5323 Seal (4x)
1208 9188 Sleeve (Female) Terminals (4x)
(Mates with 1201 0974, Connector
and 1208 9040, Male Terminal)

Code 3

Quadrature Sensor with
4 Wire Weather Pack
Connector (One 24 Pulse
Per Rev Speed Signal and
One Directional Signal)



Output 1 and 2 are quadrature outputs with a phase angle difference of $90^{\circ} \pm 45^{\circ}$. The speed output signal is the exclusive or of output 1 and output 2. The direction output signal is derived from the last and current states of output 1 and 2.



Code 4

Quadrature Sensor with
4 Wire Weather Pack
Connector (Two 12 Pulse
Per Rev Speed Signal in
Quadrature)

Supply Voltage: (Vs) 8 to 28
Vdc (Functional Range)

Supply Current: (Is) 40mA
(Including Internal Pull-up
Resistor)

Switching Frequency:
7 to 3k Hz

Output: Open Collector with
10k OHm Pull-up Resistor

Output Voltage Low: (Vol)
0.5 Vdc Max at 10 Ma

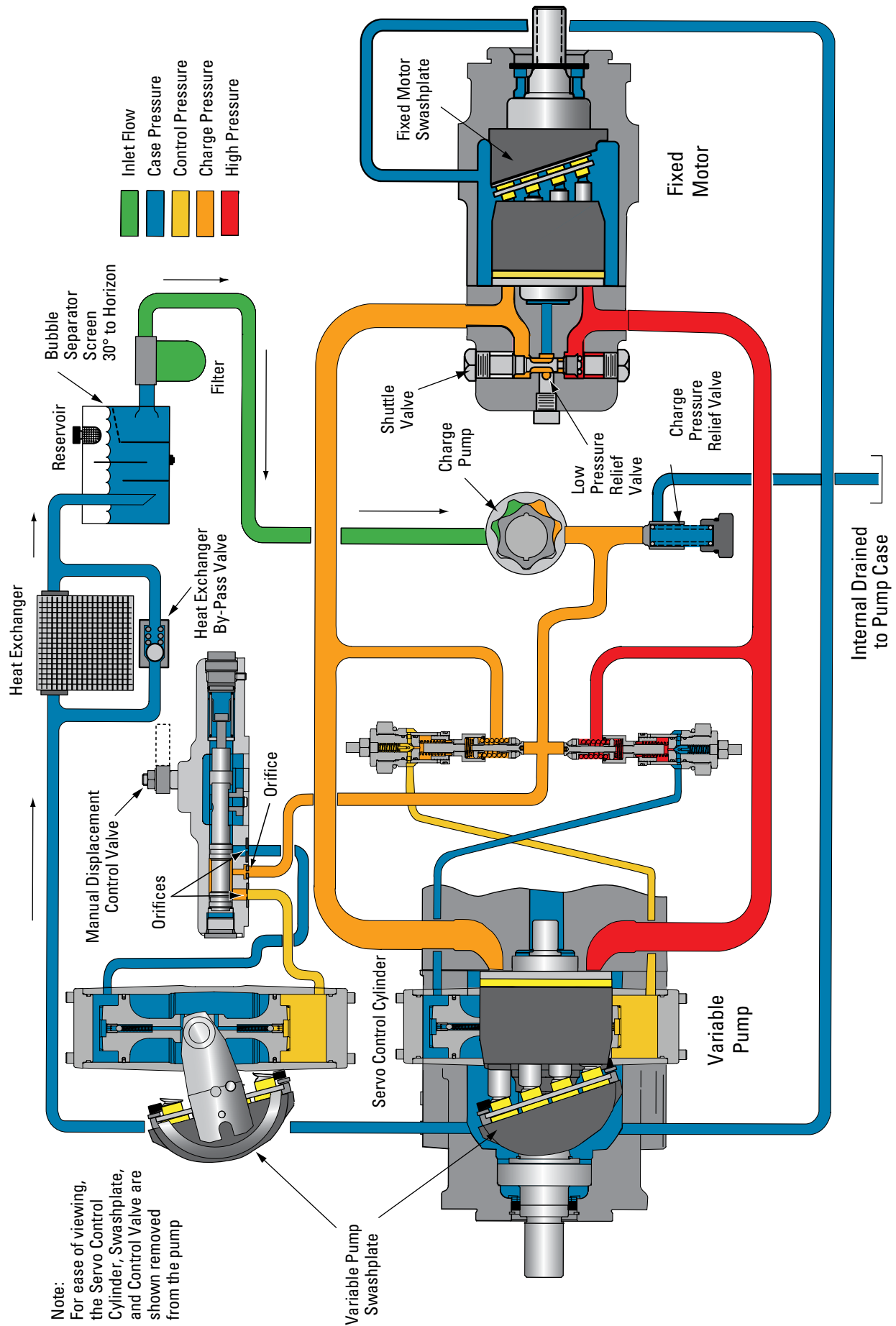
Pulse Width: 20 to 80% of
Duty Cycle (with Specified
Target)

		Connector Pin Color-signal			
Output Types		A	B	C	D
Code 3	One Speed Signal Providing 2 Pulse Per Target Tooth and One Directional Signal	Red-Power	Black-common	Blue-speed	White-direction
Code 4	Two Speed Signals in Quadrature Each Providing 1 Pulse Per Target Tooth	Red-Power	Black-common	Orange-output 1	Yellow-output 2

Code 5

Sensor Hole (9/16-32
UN Thread) Plugged
(For Quadrature Sensor)

Operational Diagram



Typical Series 760 Variable Displacement Pump/Fixed Displacement Motor Schematic