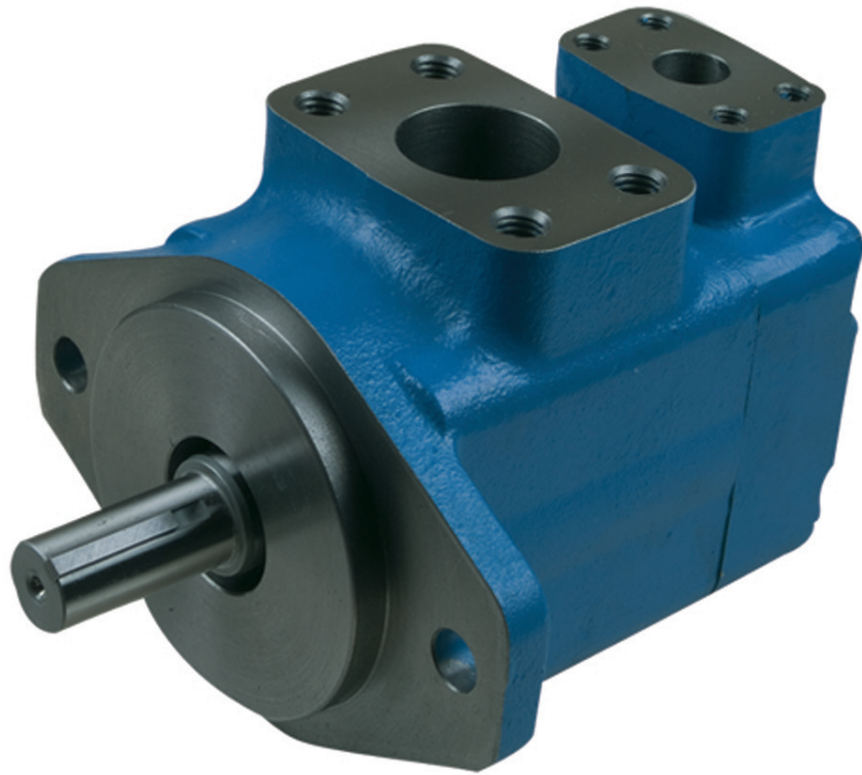


Vane Pumps



Northman



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Single Fixed Displacement		
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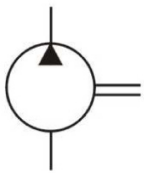
SINGLE FIXED DISPLACEMENT V10 SERIES



FEATURES

The Northman V10 Series pump is a fixed displacement, balanced vane pump. Available flow ratings are from 1 GPM to 7 GPM. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "A" two-bolt standard.

SYMBOL



MODEL CODE

V10 - 1 P - 5 P - 1 - C - ** - L

1 2 3 4 5 6 7 8 9

1 Series
V10: V10 Series Fixed Vane Pump

2 Mounting Flange
1: SAE-A, 2-Bolt

3 Inlet Port Size
P: 1" NPT
S: 1-5/16 - 12 St. Thd.

4 Flow
Flow at 1200 RPM & 100 PSI
1: 1 GPM
2: 2 GPM
3: 3 GPM
4: 4 GPM
5: 5 GPM
6: 6 GPM
7: 7 GPM

5 Outlet Port Size
P: 1/2" NPT
S: 3/4 - 16 St. Thd.

6 Shaft
1: Straight Keyed Shaft

7 Position of Outlet Port
(Viewed from Cover End)
A: Opposite Inlet
B: 90° CCW from Inlet
C: Inline with Inlet
D: 90° CW from Inlet

8 Design Number

9 Shaft Rotation
(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

SINGLE FIXED DISPLACEMENT V10 SERIES

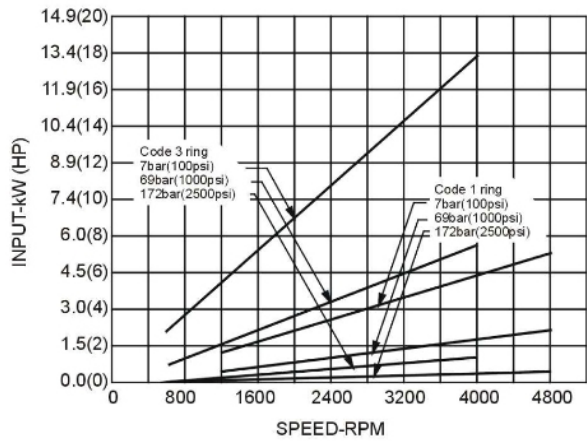
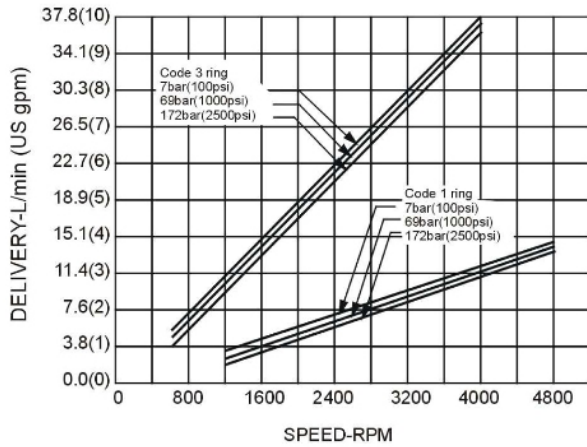
PERFORMANCE CURVES

V10 Single Pump

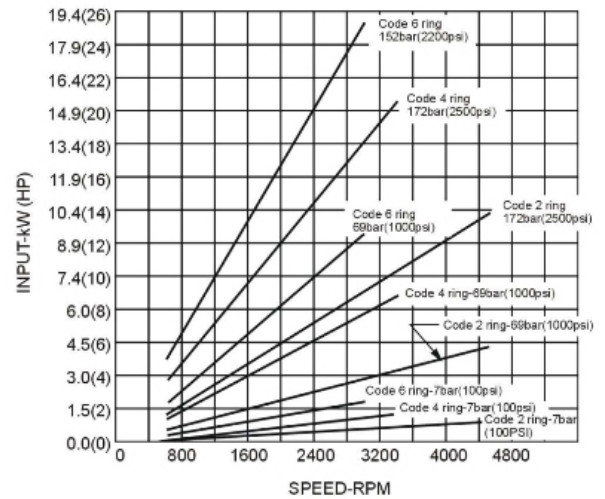
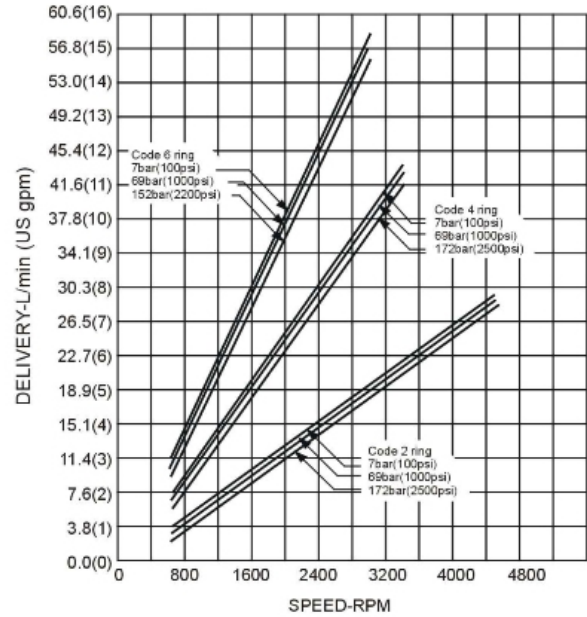
SAE 10W Fluid at 120°F

Pump Inlet at 0" Hg.

Code 1 & 3 Rings



V10 Code 2, 4 & 6 Rings



SINGLE FIXED DISPLACEMENT V10 SERIES

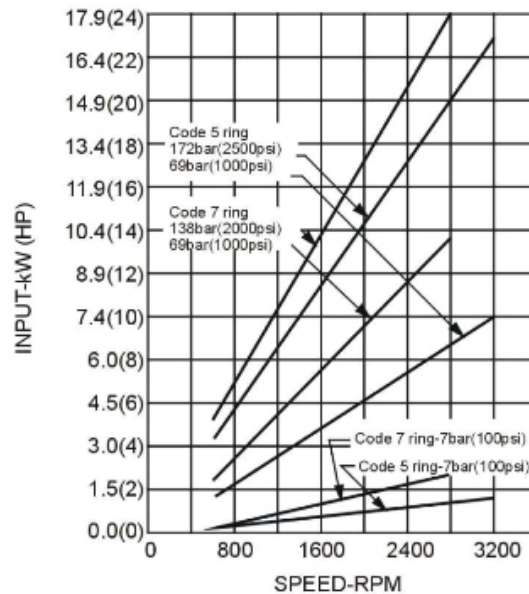
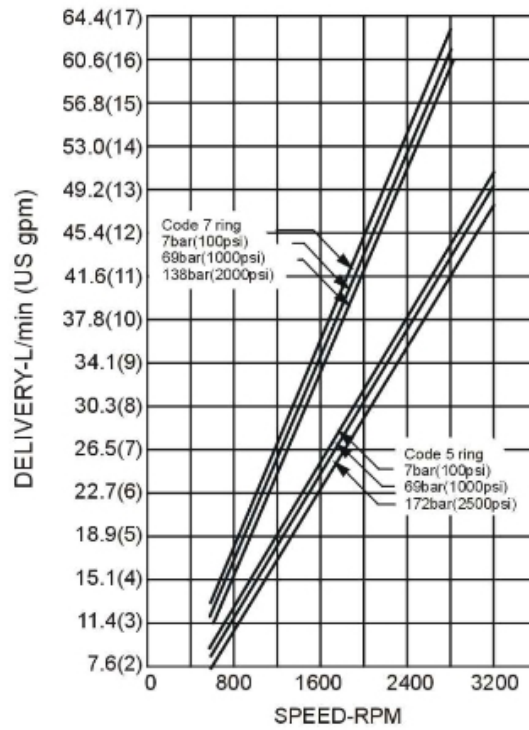
PERFORMANCE CURVES

V10 Single Pump

SAE 10W Fluid at 120°F

Pump Inlet at 0" Hg.

Code 5 & 7 Rings



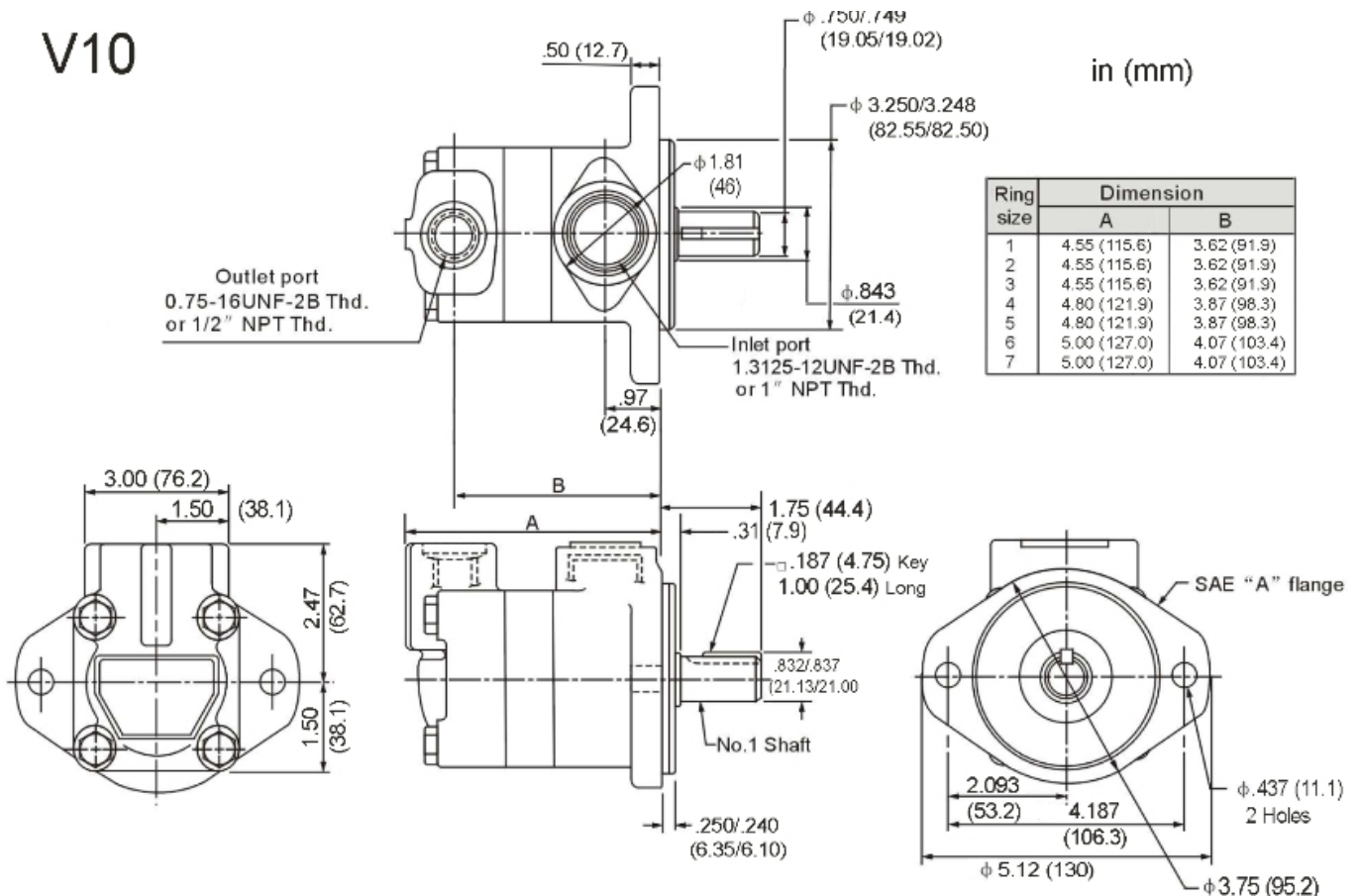
SINGLE FIXED DISPLACEMENT V10 SERIES

SPECIFICATIONS

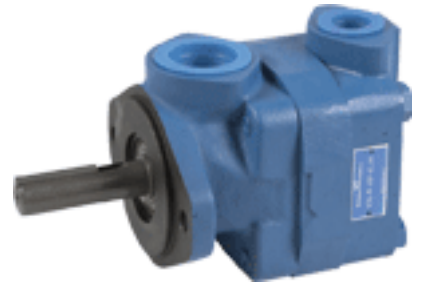
Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI				
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
V10	1	.20 (3.3)	4800	2500 (172)
	2	.40 (6.6)	4500	
	3	.60 (9.8)	4000	
	4	.80 (13.1)	3400	
	5	1.00 (16.4)	3200	2200(152)
	6	1.19 (19.5)	3000	
	7	1.39 (22.8)	2800	2000 (138)

DIMENSIONS

V10 Series Pump - Dimensions in Inches



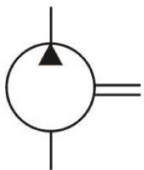
SINGLE FIXED DISPLACEMENT V20 SERIES



FEATURES

The Northman V20 Series pump is a fixed displacement, balanced vane pump. Available flow ratings are from 6 GPM to 13 GPM. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available (“L” option). The flange mounting is the SAE “A” two-bolt standard.

SYMBOL



MODEL CODE

V20 - **1P** - **9P** - **1** - **C** - ****** - **L**

1 **Series**
V20: V20 Series Fixed Vane Pump

2 **Mounting Flange**
1: SAE-A, 2-Bolt

3 **Inlet Port Size**
P: 1-1/4" NPT
S: 1-5/8 - 12 St. Thd.

4 **Flow**
Flow at 1200 RPM & 100 PSI
6: 6 GPM
7: 7 GPM
8: 8 GPM
9: 9 GPM
11: 11 GPM
12: 12 GPM
13: 13 GPM

5 **Outlet Port Size**
P: 3/4" NPT
S: 1-1/16 - 12 St. Thd.

6 **Shaft**
1: Straight Keyed Shaft

7 **Position of Outlet Port**
(Viewed from Cover End)
A: Opposite Inlet
B: 90° CCW from Inlet
C: Inline with Inlet
D: 90° CW from Inlet

8 **Design Number**

9 **Shaft Rotation**
(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

SINGLE FIXED DISPLACEMENT V20 SERIES

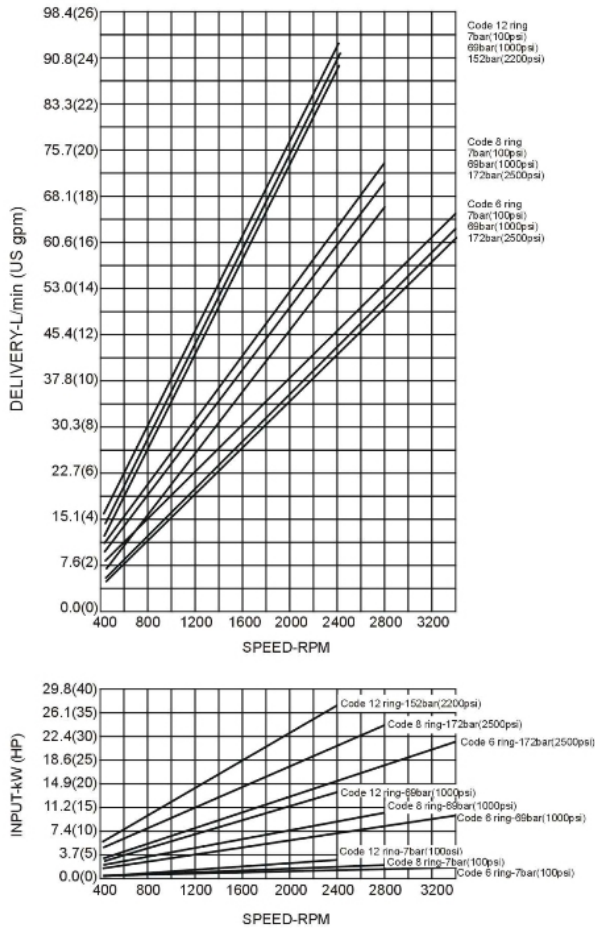
PERFORMANCE CURVES

V20 Single Pump

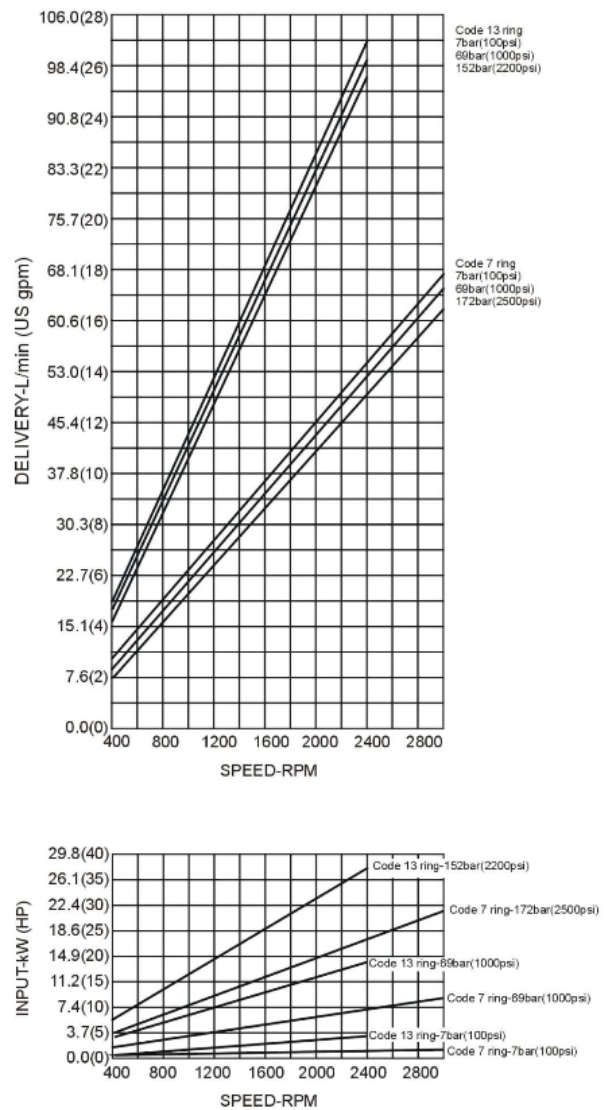
SAE 10W Fluid at 120°F

Pump Inlet at 0" Hg.

V20
Code 6, 8 & 12 Rings



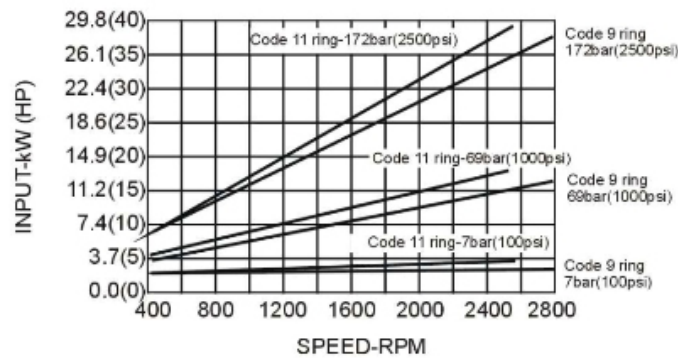
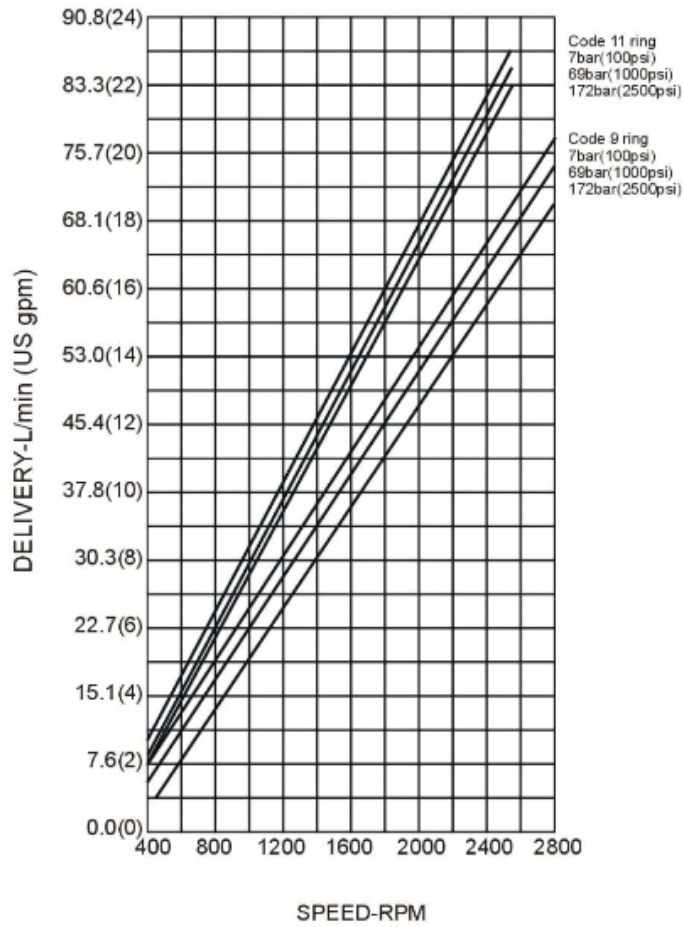
V20
Code 7 & 13 Rings



SINGLE FIXED DISPLACEMENT V20 SERIES

PERFORMANCE CURVES

Code 9 & 11 Rings



SINGLE FIXED DISPLACEMENT V20 SERIES

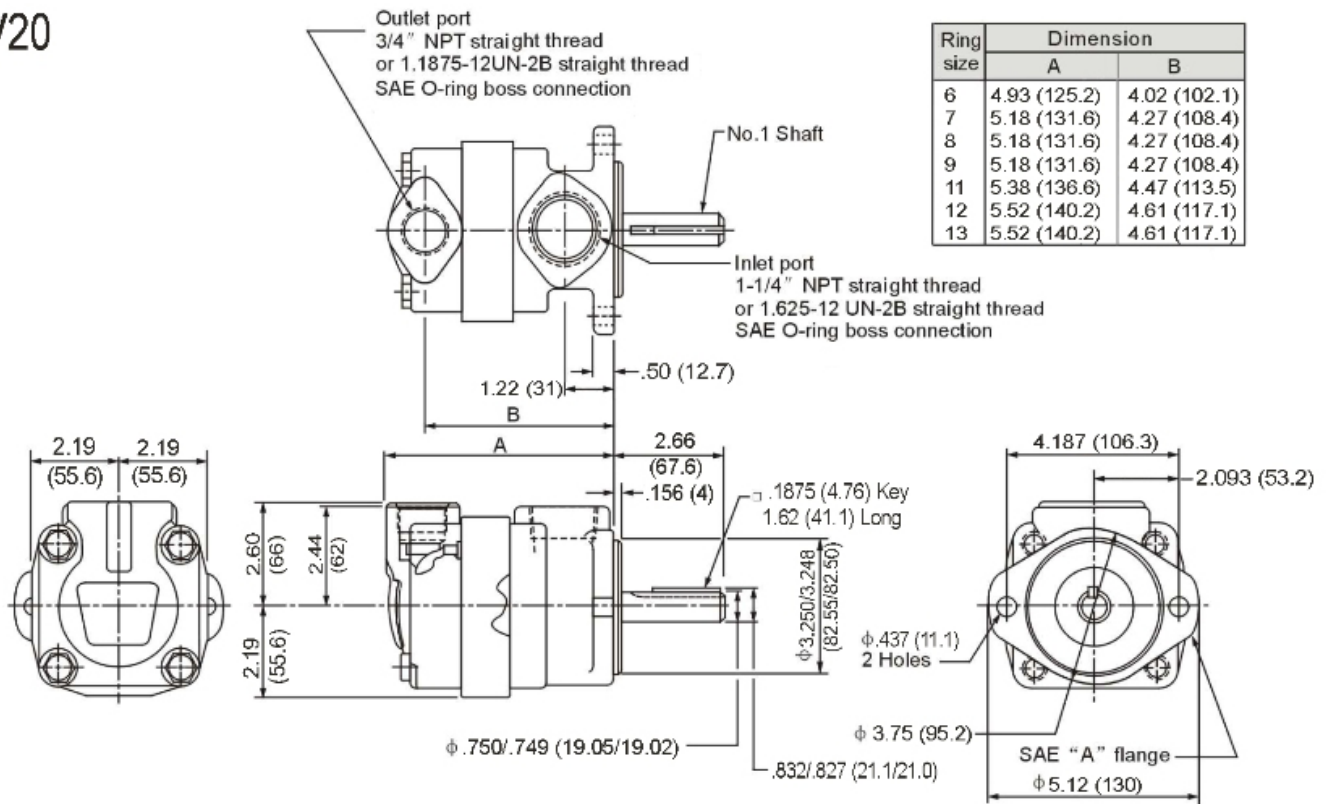
SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI				
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
V20	6	1.19 (19.5)	3400	2500 (172)
	7	1.39 (22.8)	3000	
	8	1.62 (26.5)	2800	
	9	1.81 (29.7)	2800	
	11	2.22 (36.4)	2500	2200(152)
	12	2.38 (39.0)	2400	
	13	2.59 (42.4)		

DIMENSIONS

V20 Series Pump - Dimensions in Inches

V20



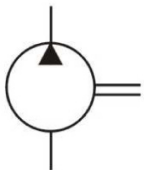
SINGLE FIXED DISPLACEMENT INDUSTRIAL DESIGN 20V SERIES



FEATURES

The Northman 20V Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 20V series are from 2 GPM to 14 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "B" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



MODEL CODE

20 **V** - **12** - **A** - **1** - **C** - ****** - **(L)**

1 **2** **3** **4** **5** **6** **7** **8**

1 **Series**
20: 20 Series Fixed Vane Pump

2 **Design Type**
V: Industrial Design

3 **GPM**
Flow at 1200 RPM, 100 PSI:
2, 5, 8, 9, 11, 12, 14

4 **Ports**
A: Inlet - 1.50" SAE, 4-Bolt Flange
Outlet - 3/4" SAE, 4-Bolt Flange

5 **Shaft**
1: 7/8" Dia., 0.187 Sq. St. Key
11: 13 Tooth Spline

6 **Position of Outlet Port**
(Viewed from Cover End)
A: Opposite Inlet
B: 90° CCW from Inlet
C: Inline with Inlet
D: 90° CW from Inlet

7 **Design Number**

8 **Shaft Rotation**
(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

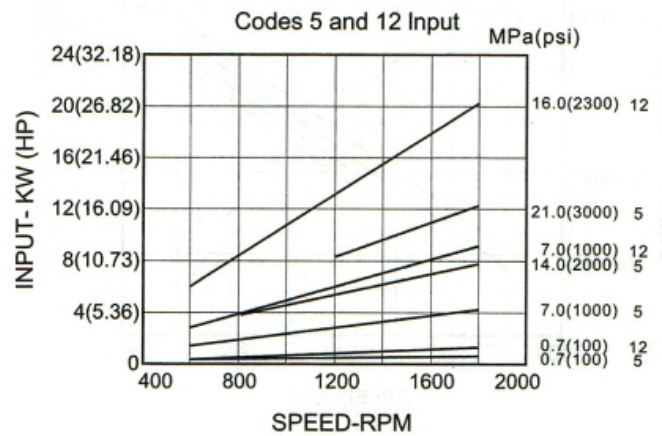
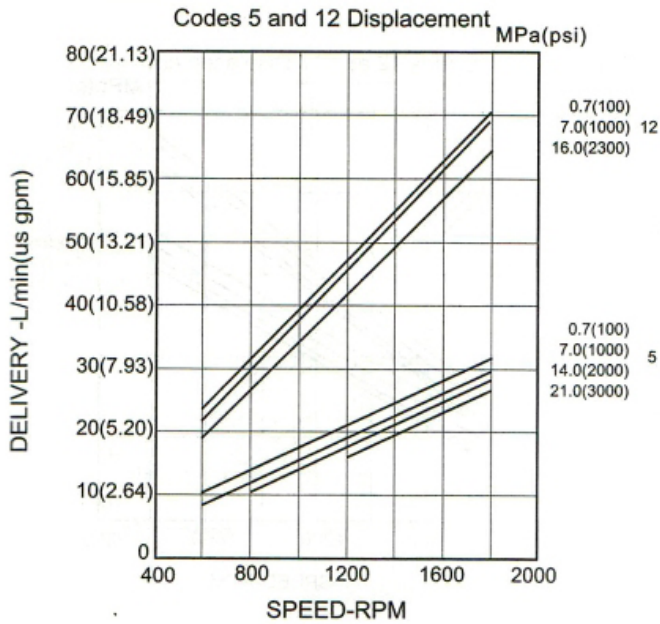
SINGLE FIXED DISPLACEMENT INDUSTRIAL DESIGN 20V SERIES

PERFORMANCE CURVES

20V Single Pump (Ring Size – 5 & 12 GPM)

SAE 10W Fluid at 120°F

Pump Inlet at 0" Hg.



SPECIFICATIONS

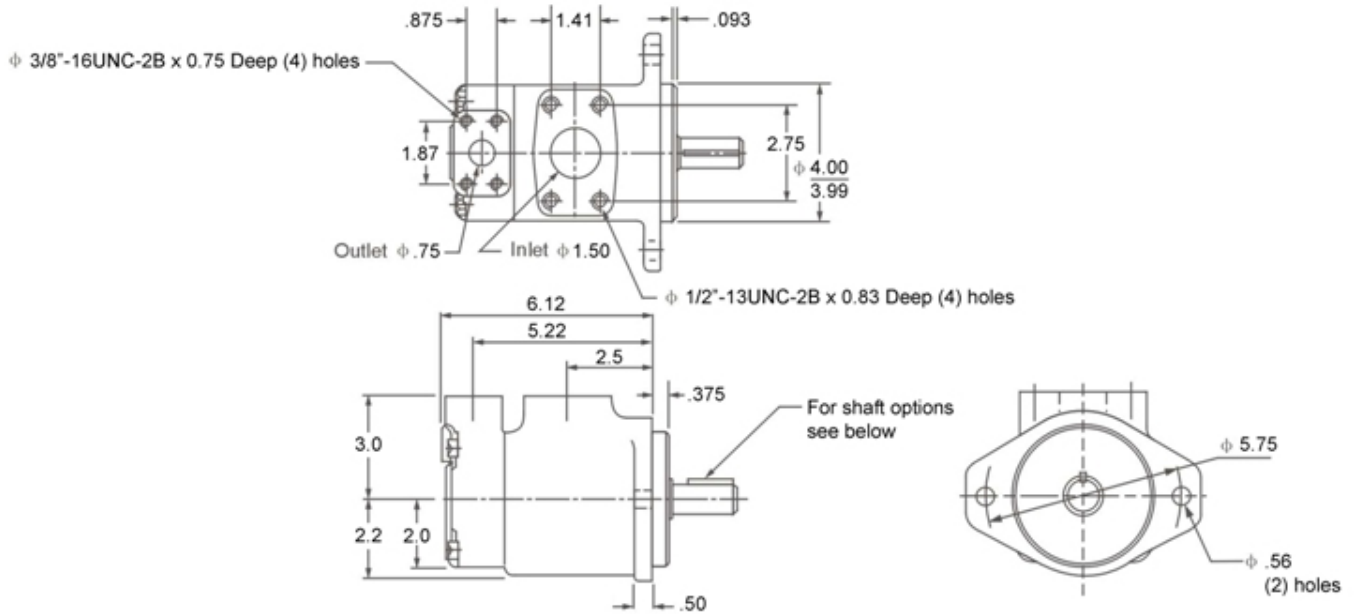
Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI

Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (kg)
20V	2	0.46 (7.5)	1800	2000 (138)	26.0 (11.8)
	5	1.04 (17)		3000(207)	
	8	1.67 (27)			
	9	1.85 (30)			
	11	2.22 (36)		2300(159)	
	12	2.47 (40)			
	14	2.78 (45)		2000 (138)	

SINGLE FIXED DISPLACEMENT 20V SERIES

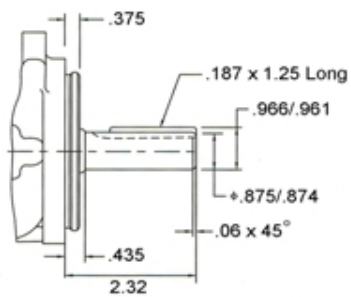
DIMENSIONS

20V Single Pump - Dimensions in Inches

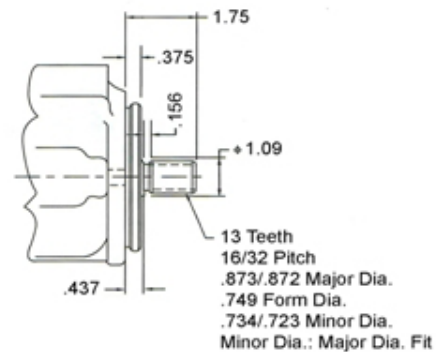


20V Shafts Dimensions in inches

#1 Straight Shaft



#11 Splined Shaft



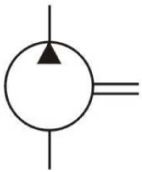
SINGLE FIXED DISPLACEMENT 20VQ SERIES



FEATURES

The Northman 20VQ Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 20VQ series are from 2 GPM to 14 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "B" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



MODEL CODE

20 **VQ** - **12** - **A** - **1** - **C** - ****** - **(L)**

1 **2** **3** **4** **5** **6** **7** **8**

1 Series

20: 20 Series Fixed Vane Pump

2 Design Type

VQ: Mobile Design

3 GPM

Flow at 1200 RPM, 100 PSI:

2, 5, 8, 9, 11, 12, 14

4 Ports

A: Inlet – 1.50" SAE, 4-Bolt Flange
Outlet – 3/4" SAE, 4-Bolt Flange

5 Shaft

1: 7/8" Dia., 0.187 Sq. St. Key

11: 13 Tooth Spline

6 Position of Outlet Port

(Viewed from Cover End)

A: Opposite Inlet

B: 90° CCW from Inlet

C: Inline with Inlet

D: 90° CW from Inlet

7 Design Number

8 Shaft Rotation

(Viewed from Shaft End)

No Code: Right Hand (CW)

L: Left Hand (CCW)

SINGLE FIXED DISPLACEMENT 20VQ SERIES

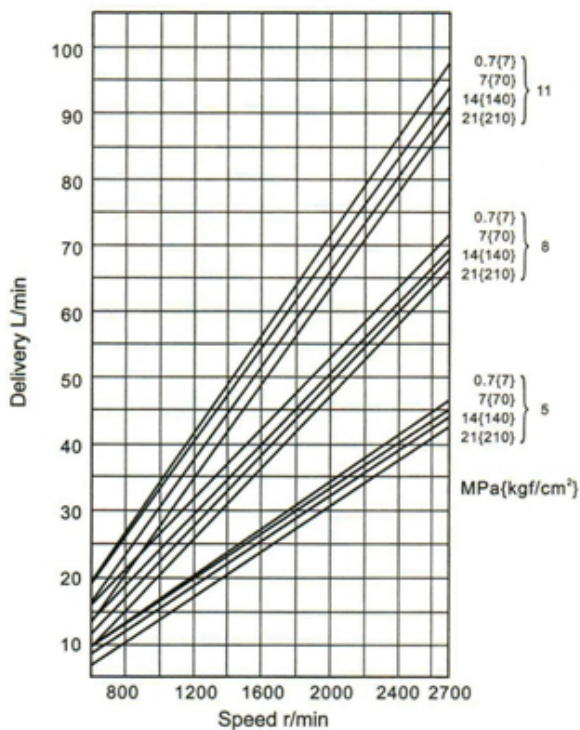
PERFORMANCE CURVES

20VQ Single Pump

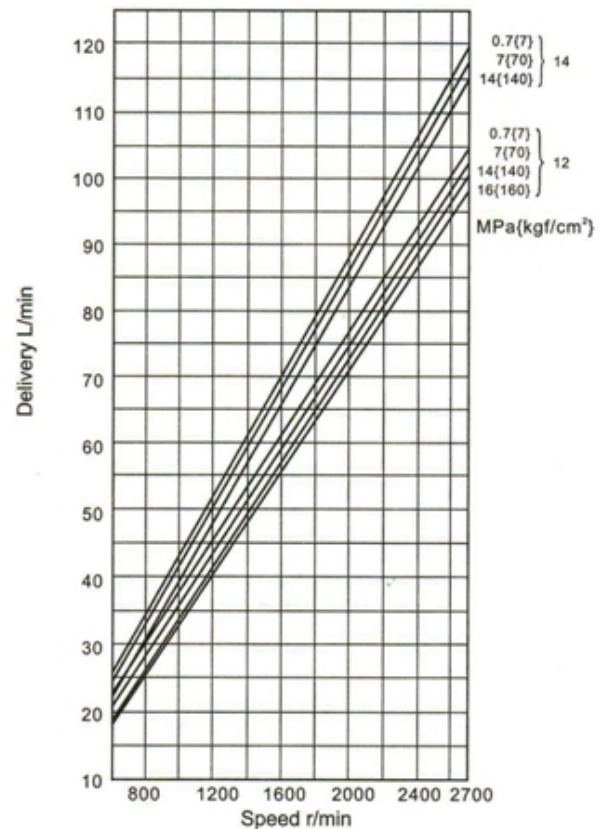
SAE 10W Fluid at 120°F

Pump Inlet at 0" Hg.

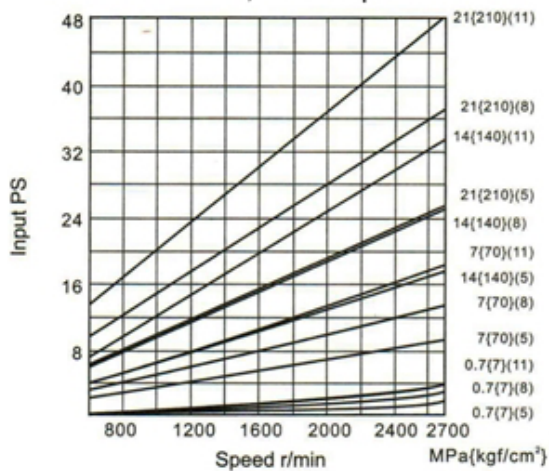
Codes 5, 8 & 11 Displacement



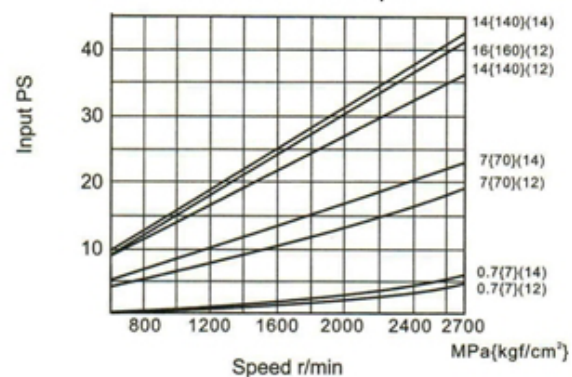
Codes 12 & 14 Displacement



Codes 5, 8 & 11 Input



Codes 12 & 14 Input



SINGLE FIXED DISPLACEMENT 20VQ SERIES

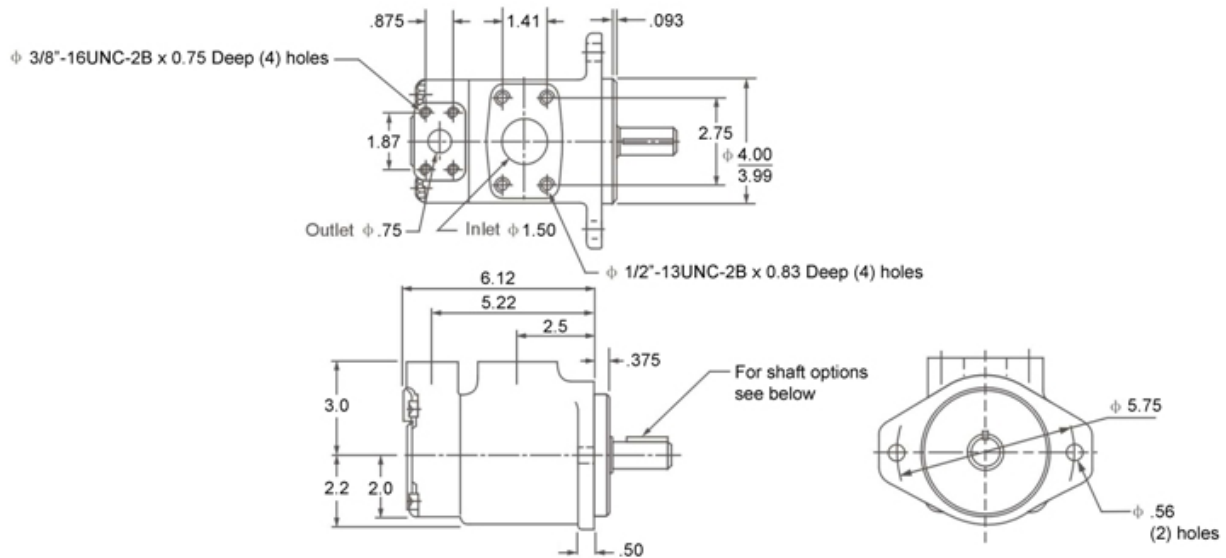
SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI

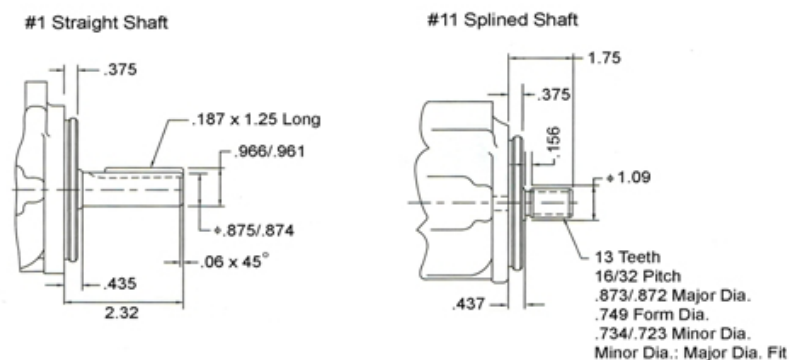
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (kg)
20VQ	2	0.43 (7)	2700	3000 (207)	26.0 (11.8)
	5	1.10 (18)			
	8	1.67 (27)			
	9	1.85 (30)			
	11	2.22 (36)		2300(159)	
	12	2.47 (40)			
	14	2.78 (45)			

DIMENSIONS

20VQ Single Pump - Dimensions in Inches



20VQ Shafts Dimensions in inches



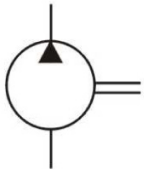
SINGLE FIXED DISPLACEMENT 25V SERIES



FEATURES

The Northman 25V Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 25V series are from 10 GPM to 21 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "B" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



MODEL CODE

25 **V** - **14** - **A** - **1** - **C** - ****** - **(L)**

1 2 3 4 5 6 7 8

1 **Series** _____ 5 **Shaft** _____ 7 **Design Number** _____

25: 25 Series Fixed Vane Pump **1:** 7/8" Dia., 0.187 Sq. St. Key

2 **Design Type** _____ 8 **Shaft Rotation** _____

V: Industrial Design **11:** 13 Tooth Spline *(Viewed from Shaft End)*

86: 1" Dia., 0.250 Sq. St. Key **No Code:** Right Hand (CW)

L: Left Hand (CCW)

3 **GPM** _____ 6 **Position of Outlet Port** _____

Flow at 1200 RPM, 100 PSI: *(Viewed from Cover End)*

10, 12, 14, 17, 21 **A:** Opposite Inlet

4 **Ports** _____ **B:** 90° CCW from Inlet

A: Inlet - 1.5" SAE, 4-Bolt Flange **C:** Inline with Inlet

Outlet - 1" SAE, 4-Bolt Flange **D:** 90° CW from Inlet

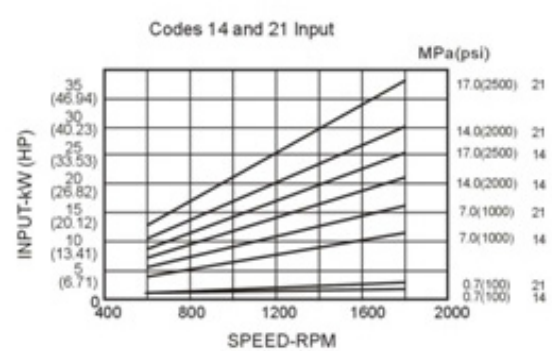
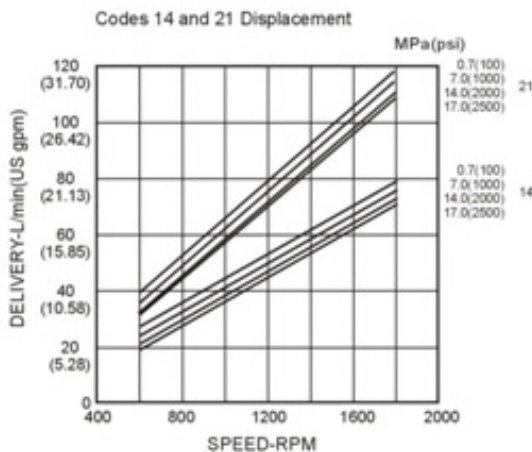
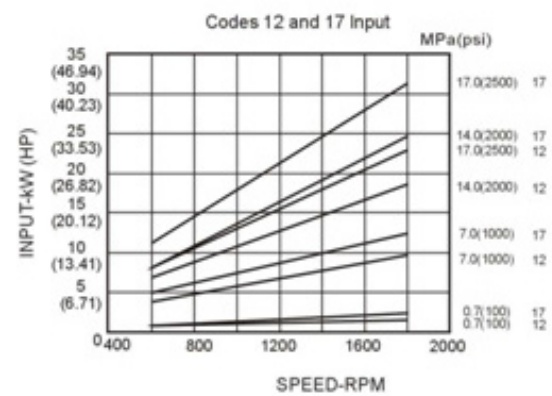
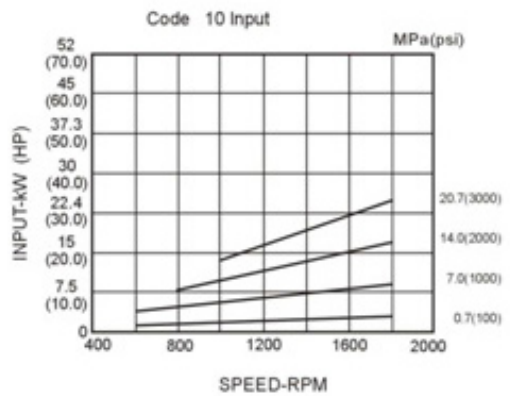
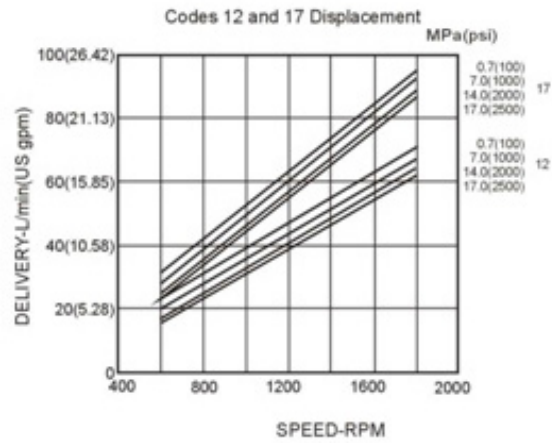
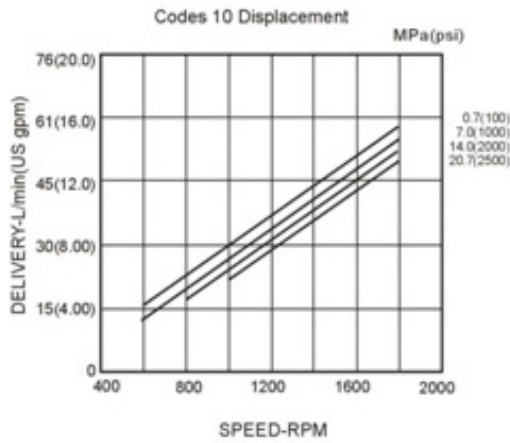
SINGLE FIXED DISPLACEMENT 25V SERIES

PERFORMANCE CURVES

25V Single Pump (Ring Size -12 & 17 GPM)

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



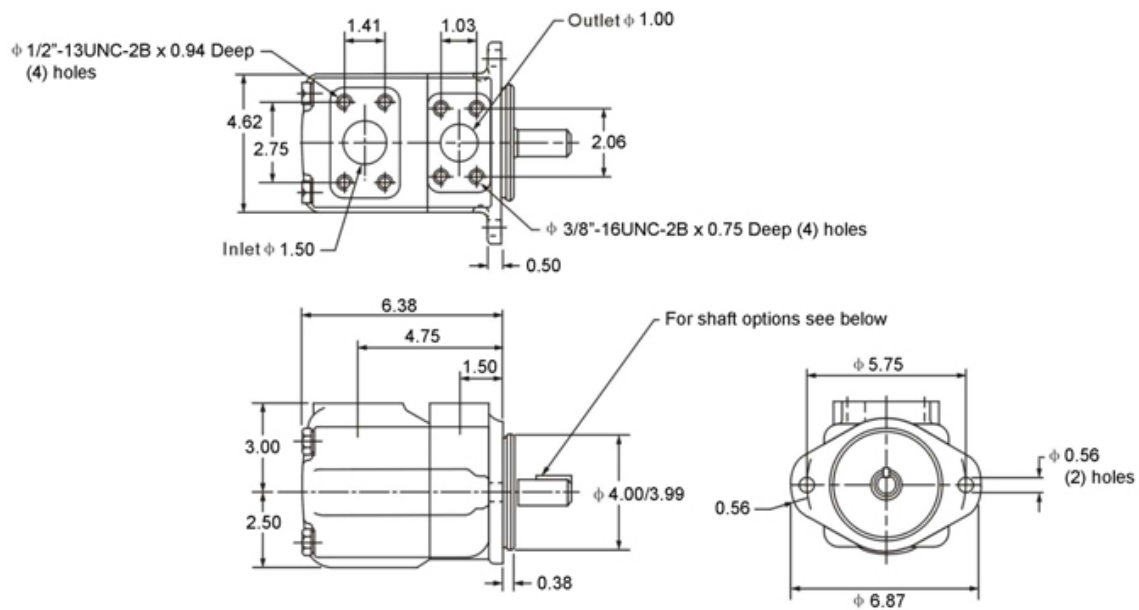
SINGLE FIXED DISPLACEMENT 25V SERIES

SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI					
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (Kg)
25V	10	1.98 (32.5)	1800	2500 (172)	32.0 (14.5)
	12	2.44 (40)			
	14	2.62 (43)			
	17	3.36 (55)			
	21	4.09 (67)			

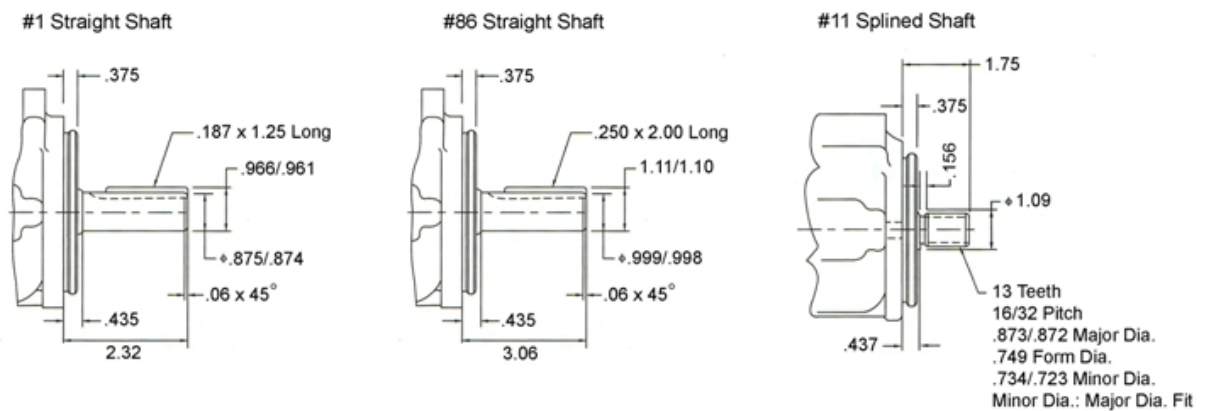
DIMENSIONS

25V Single Pump - Dimensions in Inches



25V Shafts

Dimensions in inches



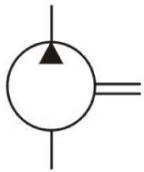
SINGLE FIXED DISPLACEMENT 25VQ SERIES



FEATURES

The Northman 25VQ Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 25VQ series are from 10 GPM to 21 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "B" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



MODEL CODE

25 **VQ** - **14** - **A** - **1** - **C** - ****** - **(L)**

1 Series	5 Shaft	7 Design Number
25: 25 Series Fixed Vane Pump	1: 7/8" Dia., 0.187 Sq. St. Key 11: 13 Tooth Spline 86: 1" Dia., 0.250 Sq. St. Key	
2 Design Type	6 Position of Outlet Port	8 Shaft Rotation
VQ: Mobile Design	<i>(Viewed from Cover End)</i> A: Opposite Inlet B: 90° CCW from Inlet C: Inline with Inlet D: 90° CW from Inlet	<i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)
3 GPM		
<i>Flow at 1200 RPM, 100 PSI:</i> 10, 12, 14, 17, 21		
4 Ports		
A: Inlet - 1.5" SAE, 4-Bolt Flange Outlet - 1" SAE, 4-Bolt Flange		

SINGLE FIXED DISPLACEMENT 25VQ SERIES

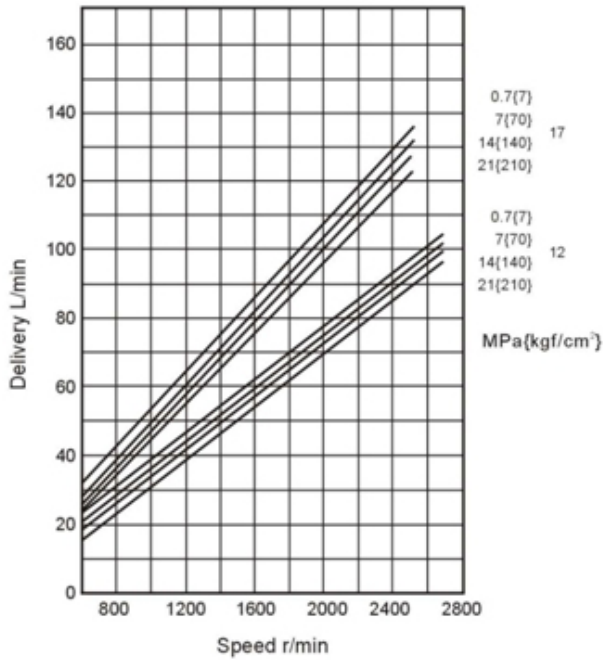
PERFORMANCE CURVES

25VQ Single Pump

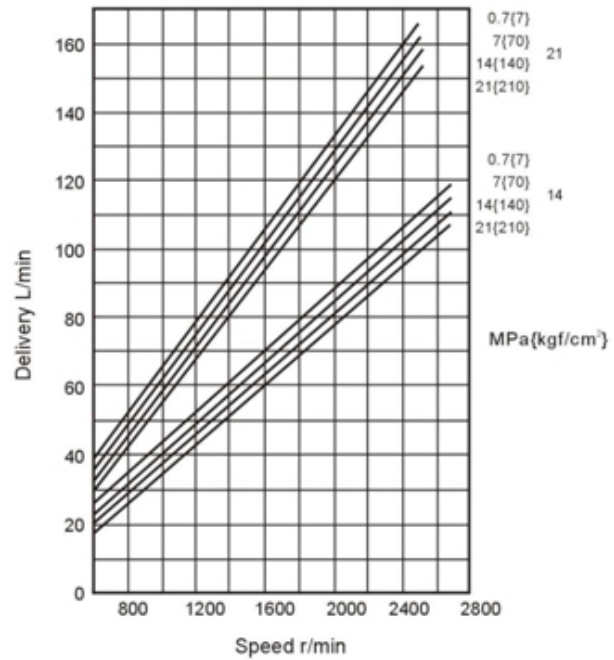
SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.

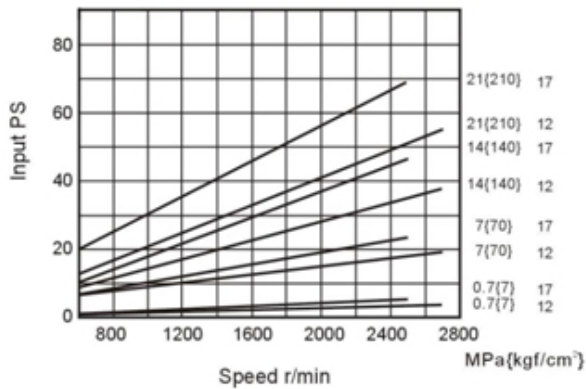
Codes 12 & 17 Displacement



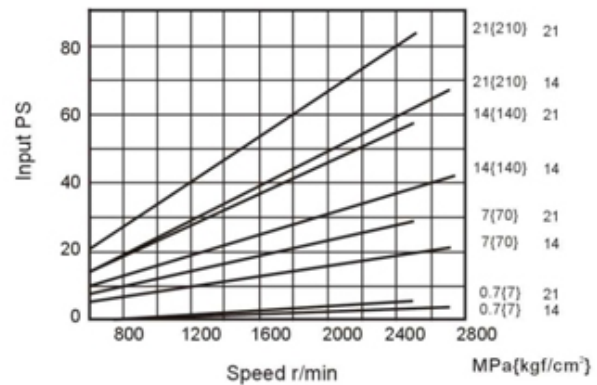
Codes 14 & 21 Displacement



Codes 12 & 17 Input



Codes 14 & 21 Input



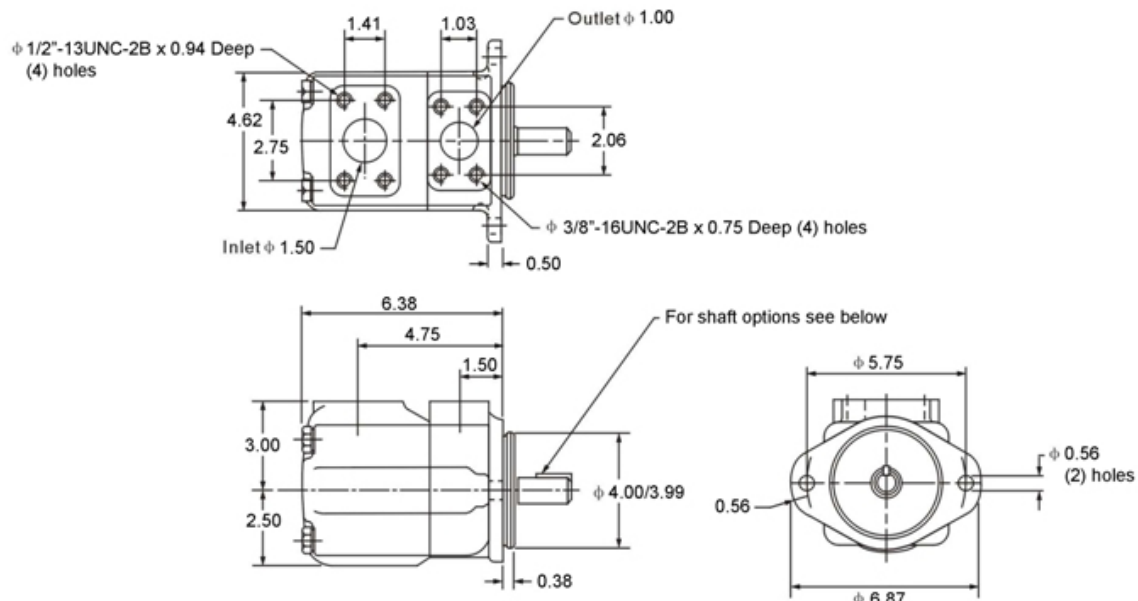
SINGLE FIXED DISPLACEMENT 25VQ SERIES

SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI					
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (Kg)
25VQ	10	1.98 (32.5)	2700	3000 (210)	32.0 (14.5)
	12	2.34 (38.3)			
	14	2.64 (43.3)			
	17	3.20 (52.5)	2500		
	21	3.97 (65.0)			

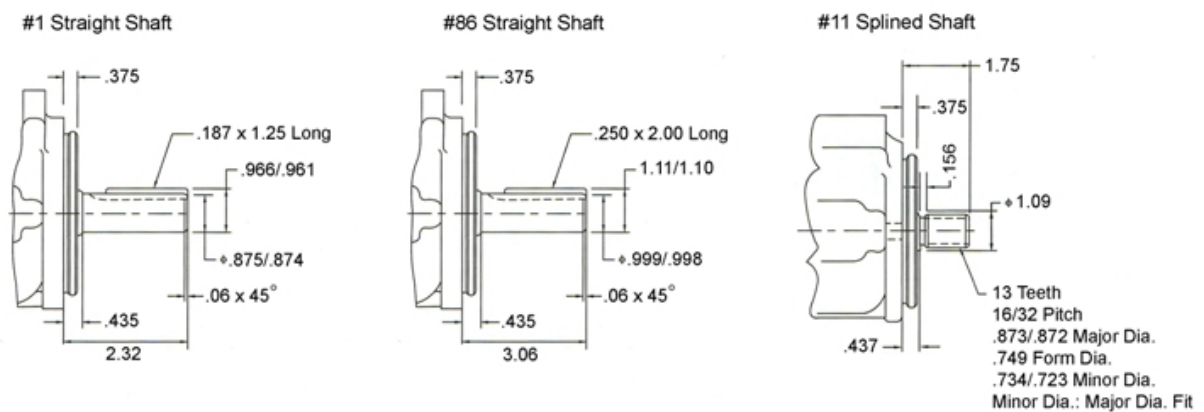
DIMENSIONS

25VQ Single Pump - Dimensions in Inches



25VQ Shafts

Dimensions in inches



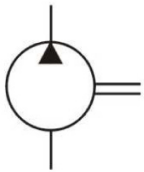
SINGLE FIXED DISPLACEMENT 35V SERIES



FEATURES

The Northman 35V Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 35V series are from 21 GPM to 38 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



MODEL CODE

35 **V** - **25** - **A** - **1** - **C** - ****** - **(L)**

1 2 3 4 5 6 7 8

<p>1 Series 35: 35 Series Fixed Vane Pump</p> <p>2 Design Type V: Industrial Design</p> <p>3 GPM Flow at 1200 RPM, 100 PSI: 21, 25, 30, 35, 38</p> <p>4 Ports A: Inlet - 2" SAE, 4-Bolt Flange Outlet - 1.25" SAE, 4-Bolt Flange</p>	<p>5 Shaft 1: 1-1/4" Dia., 0.3125 Sq. St. Key 11: 14 Tooth Spline 86: 1-3/8" Dia., 0.3125 Sq. St. Key</p> <p>6 Position of Outlet Port (Viewed from Cover End) A: Opposite Inlet B: 90° CCW from Inlet C: Inline with Inlet D: 90° CW from Inlet</p>	<p>7 Design Number</p> <p>8 Shaft Rotation (Viewed from Shaft End) No Code: Right Hand (CW) L: Left Hand (CCW)</p>
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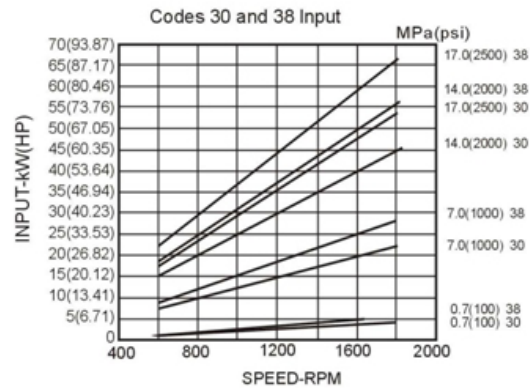
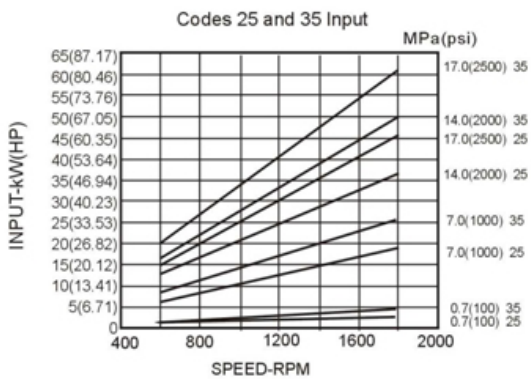
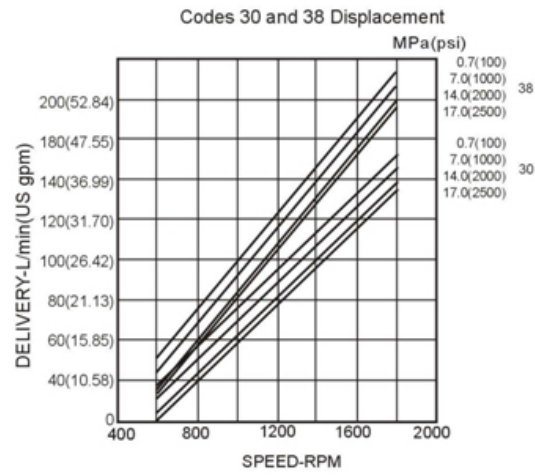
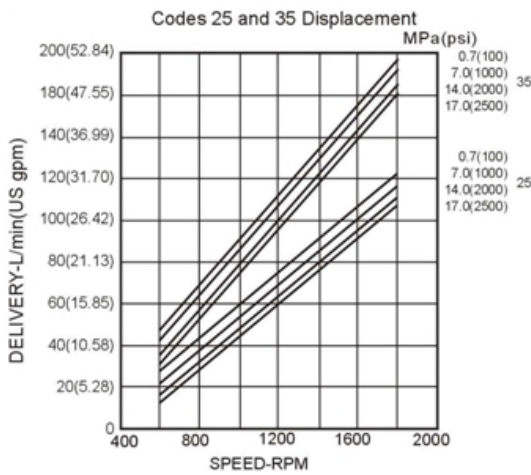
SINGLE FIXED DISPLACEMENT 35V SERIES

PERFORMANCE CURVES

35V Single Pump (Ring Size -25 & 35 GPM)

SAE 10W Fluid at 120°F.

Pump Inlet at 0° hg.



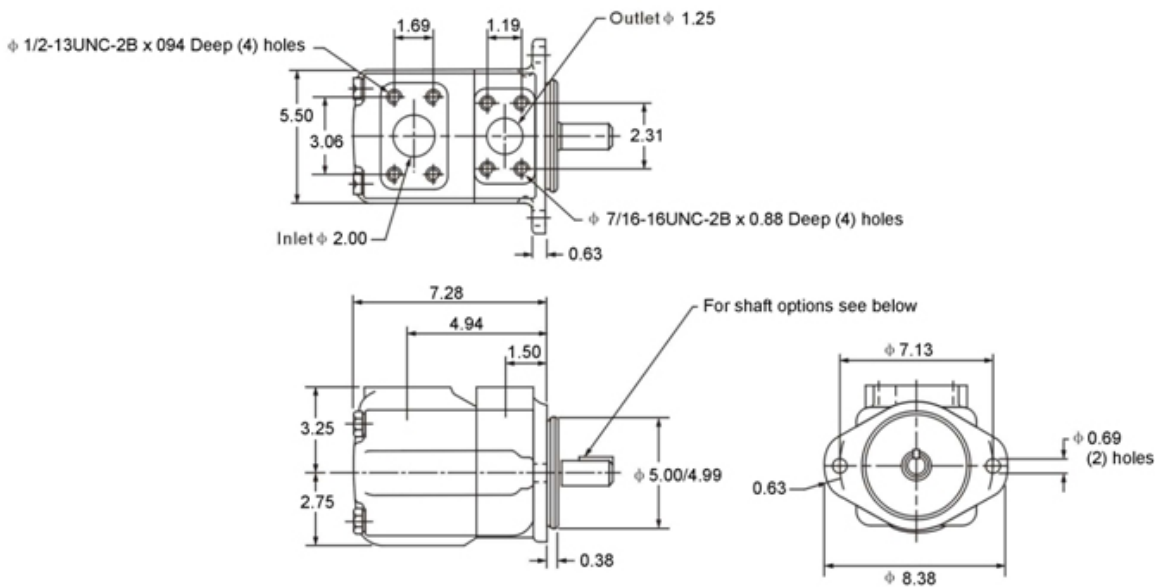
SINGLE FIXED DISPLACEMENT 35V SERIES

SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI					
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (Kg)
35V	21	4.09 (67)	1800	2500 (172)	50.0 (22.7)
	25	4.94 (81)			
	30	5.92 (97)			
	35	6.83 (112)			
	38	7.38 (121)			

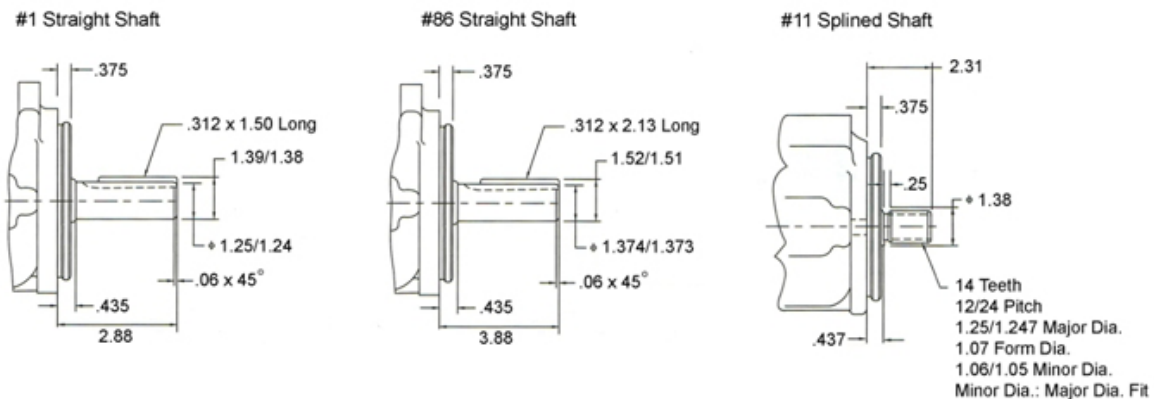
DIMENSIONS

35V Single Pump - Dimensions in Inches



35V Shafts

Dimensions in inches



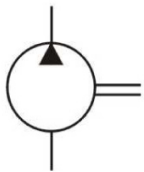
SINGLE FIXED DISPLACEMENT 35VQ SERIES



FEATURES

The Northman 35VQ Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 35VQ series are from 21 GPM to 38 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



MODEL CODE

35 **VQ** - **25** - **A** - **1** - **C** - ****** - **(L)**

1

2

3

4

5

6

7

8

1 **Series**
35: 35 Series Fixed Vane Pump

2 **Design Type**
VQ: Mobile Design

3 **GPM**
Flow at 1200 RPM, 100 PSI:
21, 25, 30, 35, 38

4 **Ports**
A: Inlet - 2" SAE, 4-Bolt Flange
Outlet - 1.25" SAE, 4-Bolt Flange

5 **Shaft**
1: 1-1/4" Dia., 0.3125 Sq. St. Key
11: 14 Tooth Spline
86: 1-3/8" Dia., 0.3125 Sq. St. Key

6 **Position of Outlet Port**
(Viewed from Cover End)
A: Opposite Inlet
B: 90° CCW from Inlet
C: Inline with Inlet
D: 90° CW from Inlet

7 **Design Number**

8 **Shaft Rotation**
(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

SINGLE FIXED DISPLACEMENT 35VQ SERIES

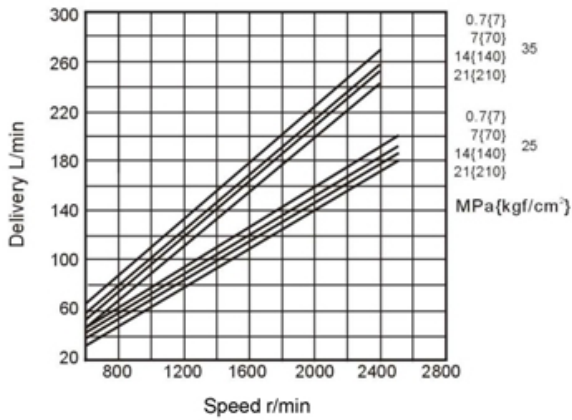
PERFORMANCE CURVES

35VQ Single Pump (Ring Size -25 & 35 GPM)

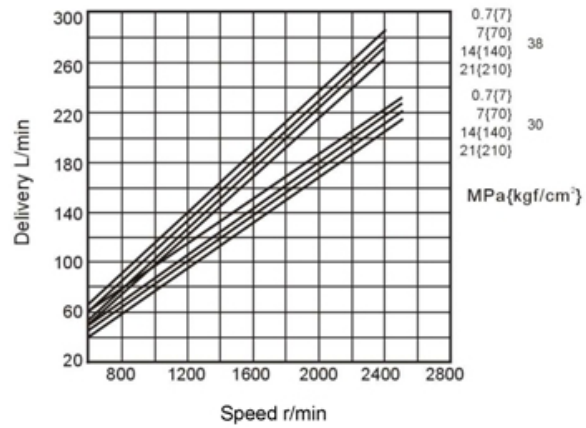
SAE 10W Fluid at 120°F.

Pump Inlet at 0° hg.

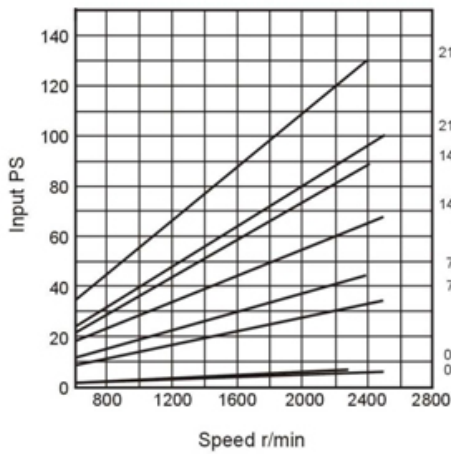
Codes 25 & 35 Displacement



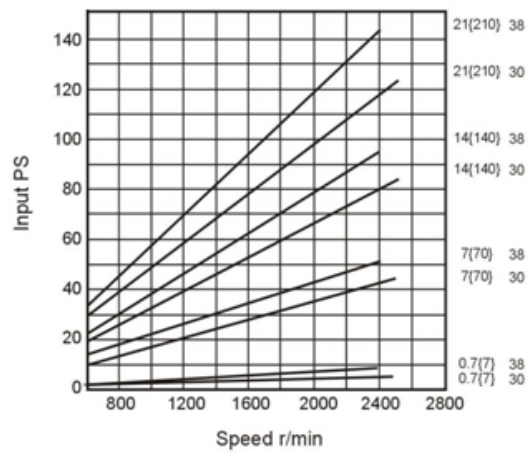
Codes 30 & 38 Displacement



Codes 25 & 35 Input



Codes 30 & 38 Input



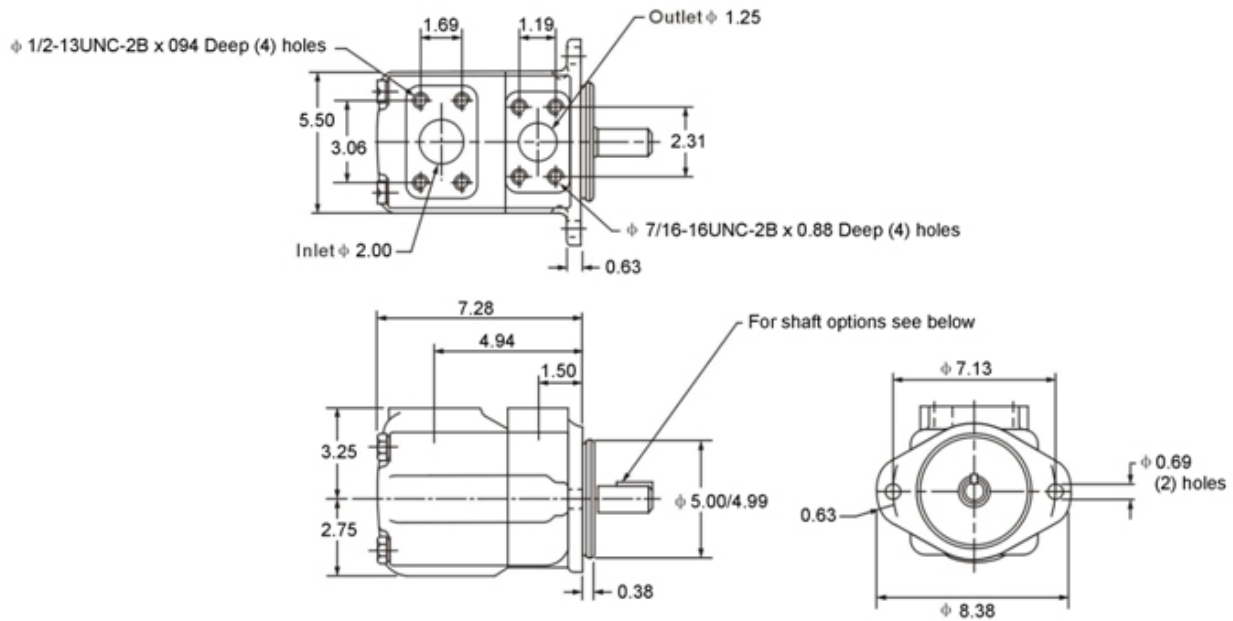
SINGLE FIXED DISPLACEMENT 35VQ SERIES

SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI					
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (Kg)
35VQ	21	3.90 (64)	2500	3000 (210)	50.0 (22.7)
	25	4.83 (79.2)			
	30	5.80 (95)			
	35	6.65 (109)	2400		
	38	7.20 (118)			

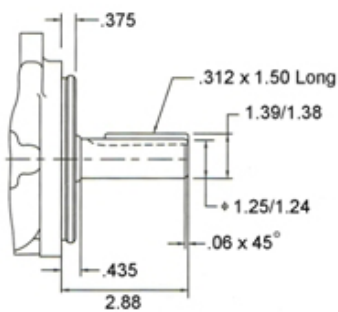
DIMENSIONS

35VQ Single Pump - Dimensions in Inches

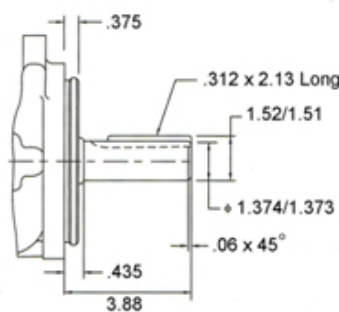


35VQ Shafts Dimensions in inches

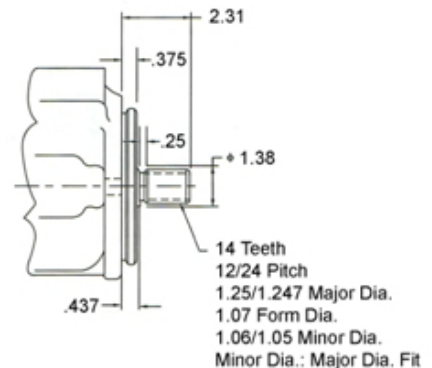
#11 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



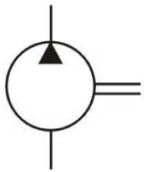
SINGLE FIXED DISPLACEMENT 45V SERIES



FEATURES

The Northman 45V Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 45V series are from 42 GPM to 60 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



MODEL CODE

45 **V** - **50** - **A** - **1** - **C** - ****** - **(L)**

1 **Series**
45: 45 Series Fixed Vane Pump

2 **Design Type**
V: Industrial Design

3 **GPM**
Flow at 1200 RPM, 100 PSI:
42, 45, 50, 60

4 **Ports**
A: Inlet - 3" SAE, 4-Bolt Flange
Outlet - 1.5" SAE, 4-Bolt Flange

5 **Shaft**
1: 1-1/4" Dia., 0.3125 Sq. St. Key
11: 14 Tooth Spline
86: 1-1/2" Dia., 0.375 Sq. St. Key

6 **Position of Outlet Port**
(Viewed from Cover End)
A: Opposite Inlet
B: 90° CCW from Inlet
C: Inline with Inlet
D: 90° CW from Inlet

7 **Design Number**

8 **Shaft Rotation**
(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

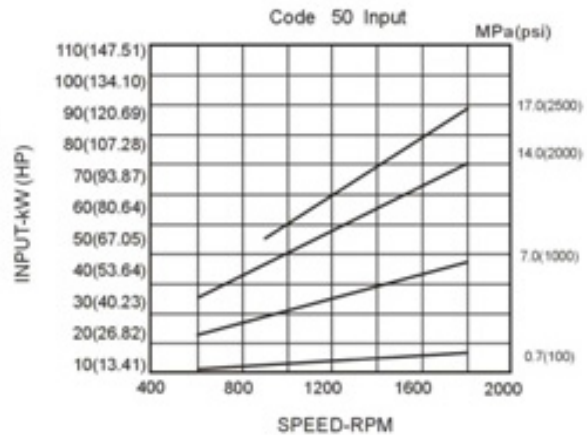
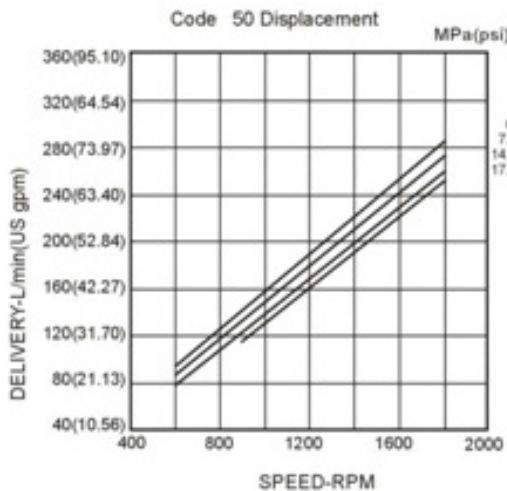
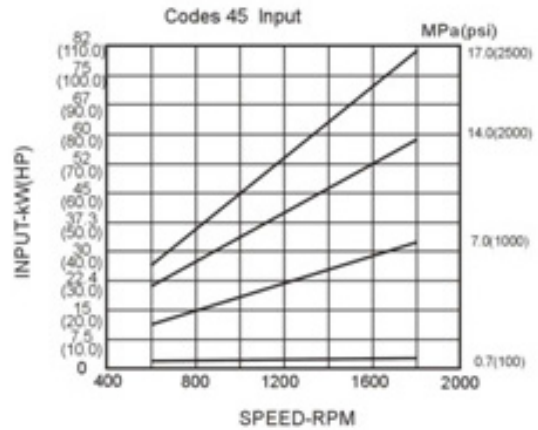
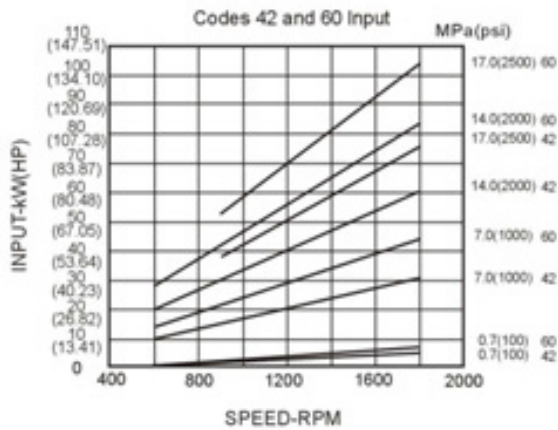
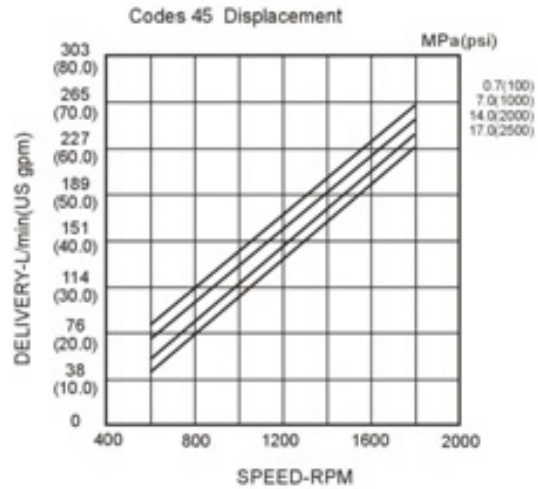
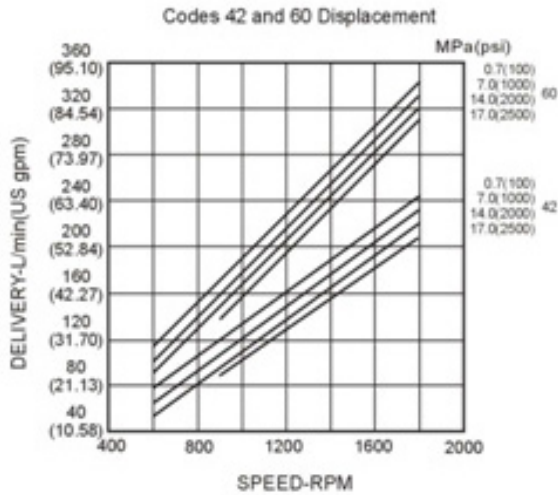
SINGLE FIXED DISPLACEMENT 45V SERIES

PERFORMANCE CURVES

45V Single Pump (Ring Size -42 & 60 GPM)

SAE 10W Fluid at 120°F.

Pump Inlet at 0° hg.



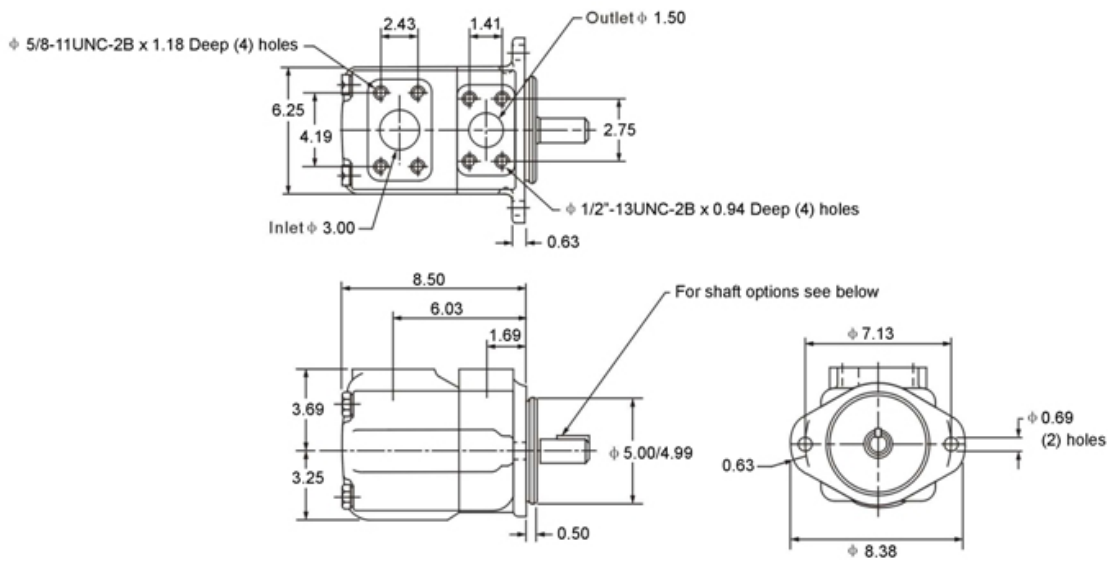
SINGLE FIXED DISPLACEMENT 45V SERIES

SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI					
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (Kg)
45V	42	8.42 (138)	1800	2500 (172)	75.2 (34.1)
	45	8.66 (142)			
	50	9.89 (162)			
	60	11.78 (193)			

DIMENSIONS

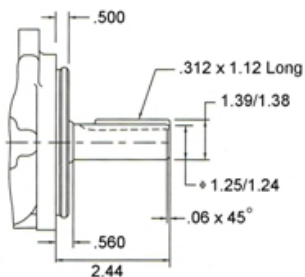
45V Single Pump - Dimensions in Inches



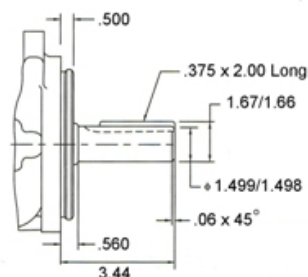
45V Shafts

Dimensions in inches

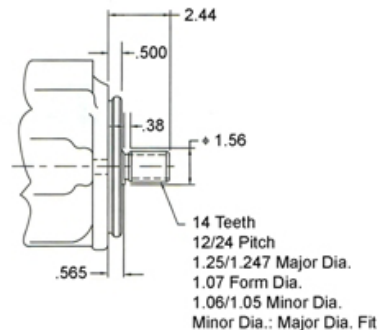
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



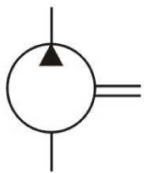
SINGLE FIXED DISPLACEMENT 45VQ SERIES



FEATURES

The Northman 45VQ Series pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 45VQ series are from 42 GPM to 60 GPM at 1200 RPM. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.

SYMBOL



Model Code

45 **VQ** - **50** - **A** - **1** - **C** - ****** - **(L)**

1

2

3

4

5

6

7

8

1 **Series**

45: 45 Series Fixed Vane Pump

2 **Design Type**

VQ: Mobile Design

3 **GPM**

Flow at 1200 RPM, 100 PSI:

42, 45, 50, 60

4 **Ports**

A: Inlet - 3" SAE, 4-Bolt Flange

Outlet - 1.5" SAE, 4-Bolt Flange

5 **Shaft**

1: 1-1/4" Dia., 0.3125 Sq. St. Key

11: 14 Tooth Spline

86: 1-1/2" Dia., 0.375 Sq. St. Key

6 **Position of Outlet Port**

(Viewed from Cover End)

A: Opposite Inlet

B: 90° CCW from Inlet

C: Inline with Inlet

D: 90° CW from Inlet

7 **Design Number**

8 **Shaft Rotation**

(Viewed from Shaft End)

No Code: Right Hand (CW)

L: Left Hand (CCW)

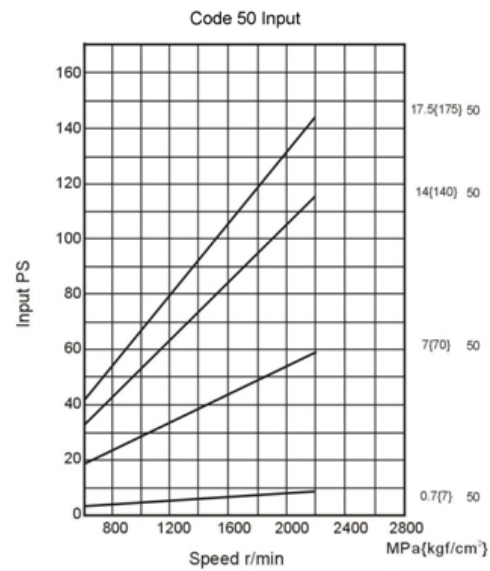
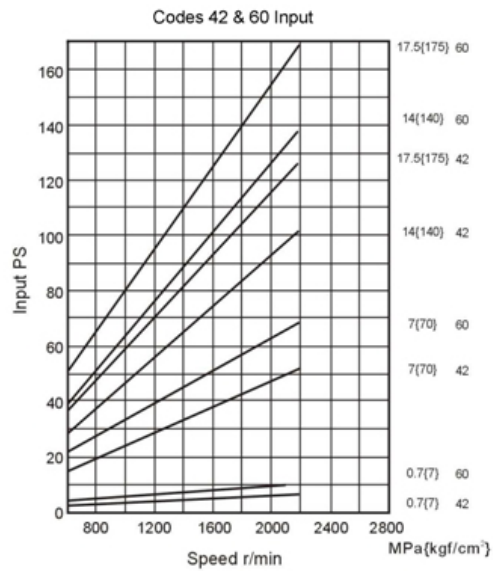
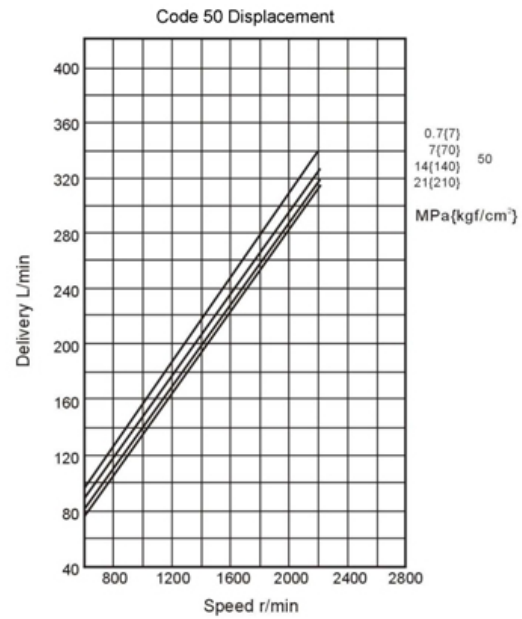
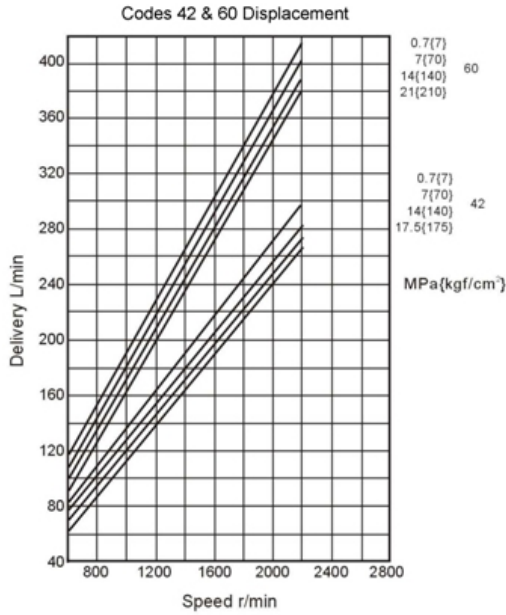
SINGLE FIXED DISPLACEMENT 45VQ SERIES

PERFORMANCE CURVES

45VQ Single Pump (Ring Size -50 GPM)

SAE 10W Fluid at 120°F.

Pump Inlet at 0° hg.



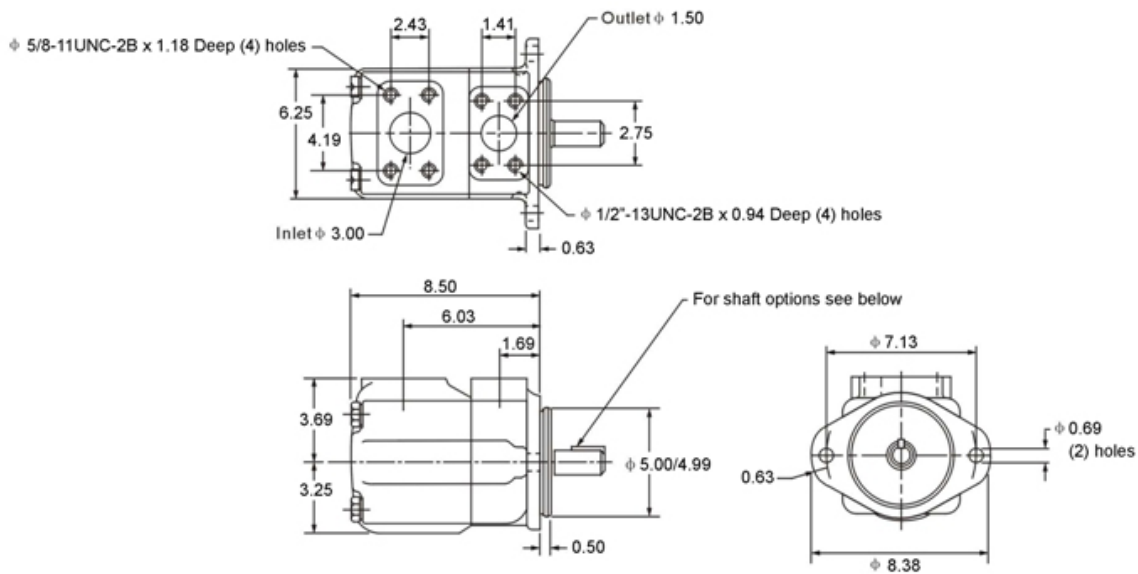
SINGLE FIXED DISPLACEMENT 45VQ SERIES

SPECIFICATIONS

Based on Petroleum Oil: 120°F (49°C), Viscosity 150 SUS at 100°F (38°C), 0 Inlet PSI					
Model	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)	Weight Lbs (Kg)
45VQ	42	8.18 (134)	2400	2500 (172)	75.2 (34.1)
	45	8.97 (147)	2200		
	50	9.52 (156)			
	60	11.53 (189)			

Dimensions

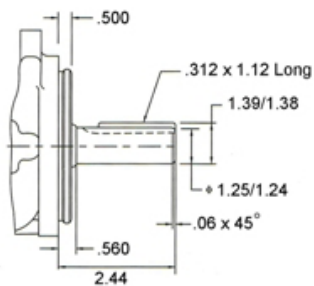
45VQ Single Pump - Dimensions in Inches



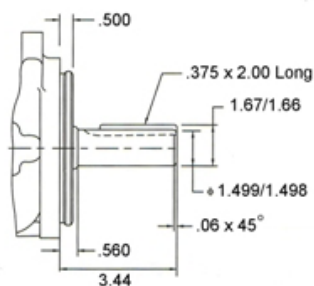
45VQ Shafts

Dimensions in inches

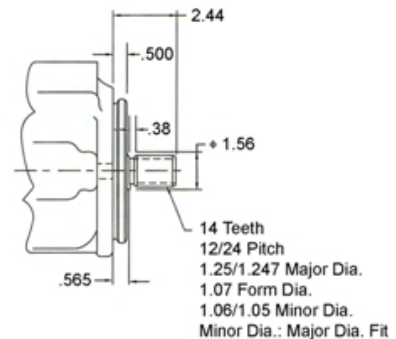
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



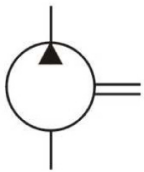
DOUBLE FIXED DISPLACEMENT 2520V SERIES

FEATURES

The Northman 2520V Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 2520V series are from 10 GPM to 21 GPM at 1200 RPM on the shaft end and from 2 to 14 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "B" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

2520 **V** - **14** - **A** - **9** - **1** - **CC** - ****** - **(L)**

1 2 3 4 5 6 7 8 9

1 Series

2520: 2520 Fixed
Double Pump

2 Design Type

V: Industrial Design

3 Shaft End Pump

Flow at 1200 RPM, 100 PSI:
10, 12, 14, 17, 21

4 Ports

A: Inlet - 2.5" SAE, 4-Bolt Flange
Shaft End Outlet -
1" SAE, 4-Bolt Flange
Cover End Outlet -
0.75" SAE, 4-Bolt Flange

5 Cover End Pump

Flow at 1200 RPM, 100 PSI:
2, 5, 8, 9, 11, 12, 14

6 Shaft

1: 7/8" Dia., 0.187 Sq. St. Key
11: 13 Tooth Spline
86: 1" Dia., 0.250 Sq. St. Key

7 Port Orientation

(Viewed from Cover End)
With No. 1 Outlet Opposite Inlet
AA - No. 2 Outlet 135°CCW from Inlet
AB - No. 2 Outlet 45°CCW from Inlet
AC - No. 2 Outlet 45°CW from Inlet
AD - No. 2 Outlet 135°CW from Inlet

With No. 1 Outlet 90° CCW from Inlet
BA - No. 2 Outlet 135°CCW from Inlet
BB - No. 2 Outlet 45°CCW from Inlet
BC - No. 2 Outlet 45°CW from Inlet
BD - No. 2 Outlet 135°CW from Inlet

7 Port Orientation (Cont.)

(Viewed from Cover End)
With No. 1 Outlet Inline with Inlet
CA - No. 2 Outlet 135°CCW from Inlet
CB - No. 2 Outlet 45°CCW from Inlet
CC - No. 2 Outlet 45°CW from Inlet
CD - No. 2 Outlet 135°CW from Inlet

With No. 1 Outlet 90° CW FROM Inlet
DA - No. 2 Outlet 135°CCW from Inlet
DB - No. 2 Outlet 45°CCW from Inlet
DC - No. 2 Outlet 45°CW from Inlet
DD - No. 2 Outlet 135°CW from Inlet

8 Design Number

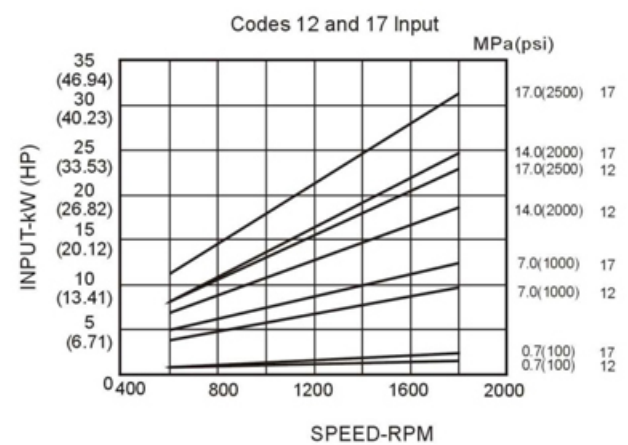
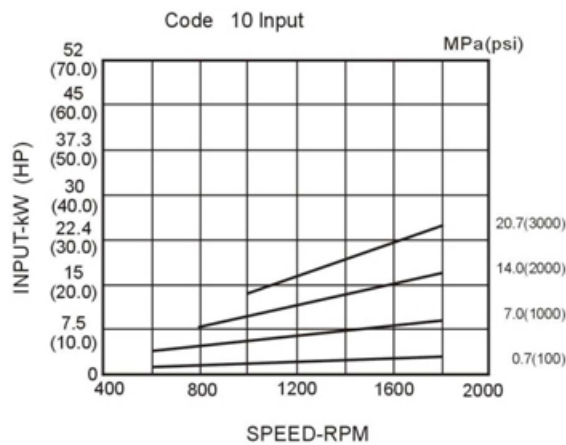
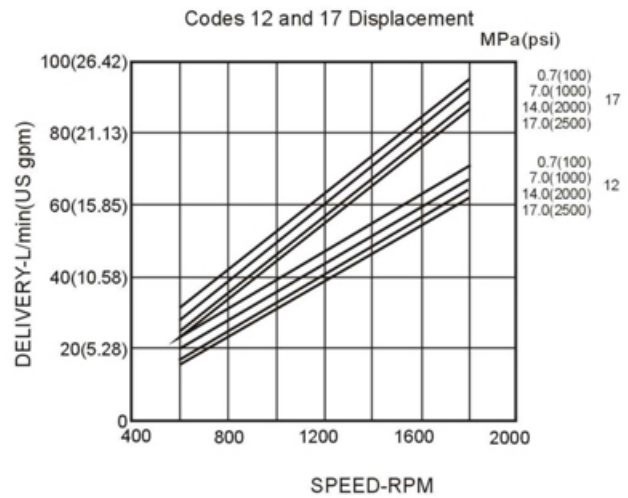
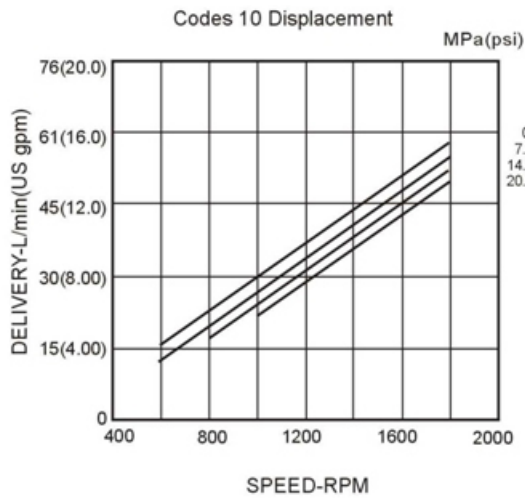
9 Shaft Rotation

(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

DOUBLE FIXED DISPLACEMENT 2520V SERIES

PERFORMANCE CURVES

2520V Double Pump
SAE 10W Fluid at 120°F.
Pump Inlet at 0" hg.



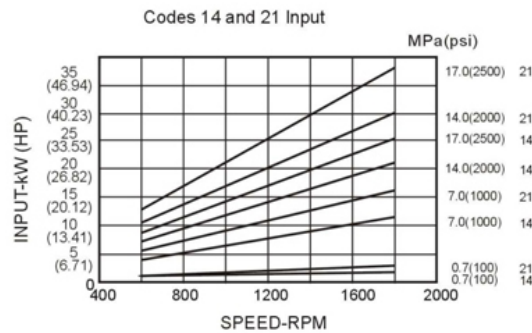
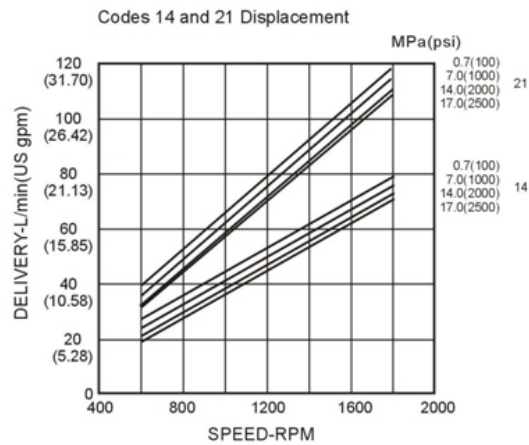
DOUBLE FIXED DISPLACEMENT 2520V SERIES

PERFORMANCE CURVES

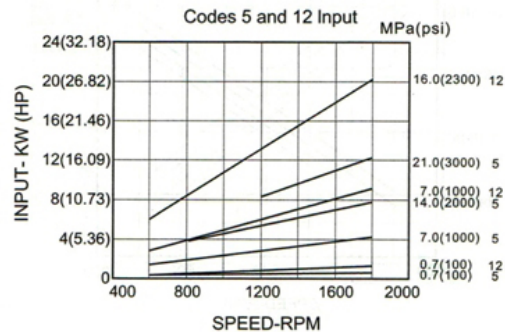
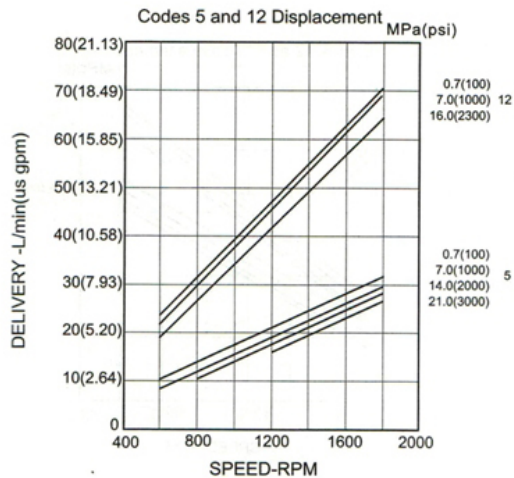
2520V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



20V Cover End Pump



DOUBLE FIXED DISPLACEMENT 2520V SERIES

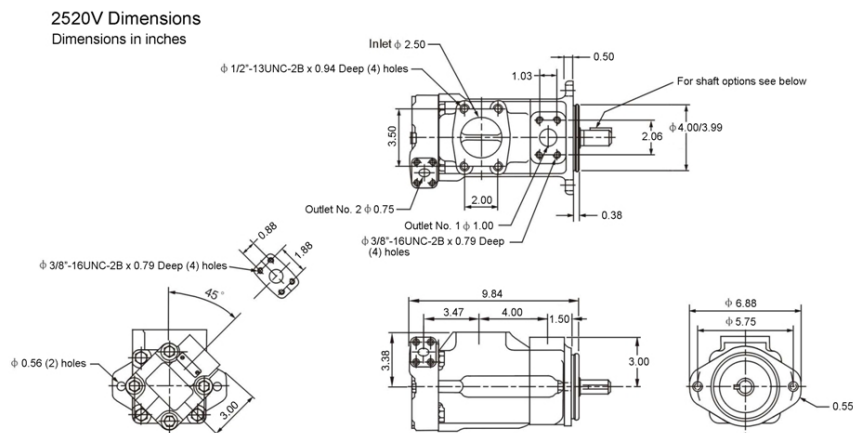
SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 2520V- <u>17</u> -A-9-1-CC-20 ("17" = Shaft End Pump)	10	1.98 (32.5)	2500 (172)
	12	2.44 (40)	
	14	2.62 (43)	
	17	3.36 (55)	
	21	4.09 (67)	

Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 2520V-17-A- <u>9</u> -1-CC-20 ("9" = Cover End Pump)	2	0.46 (7.5)	2000 (138)
	5	1.04 (17)	3000 (207)
	8	1.67 (27)	
	9	1.85 (30)	
	11	2.22 (36)	2300 (159)
	12	2.47 (40)	
	14	2.78 (45)	

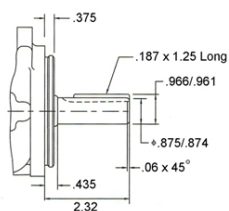
DIMENSIONS

2520V Double Pump - Dimensions in Inches

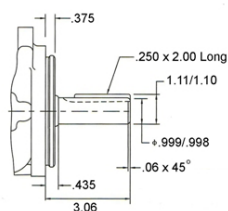


2520V Shafts Dimensions in inches

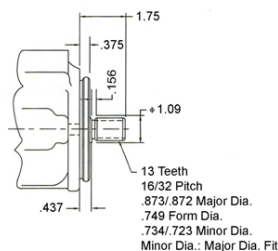
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



DOUBLE FIXED DISPLACEMENT 2520VQ SERIES

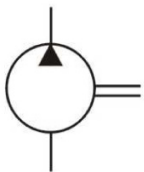
FEATURES

The Northman 2520VQ Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 2520VQ series are from 10 GPM to 21 GPM at 1200 RPM on the shaft end and from 2 to 14 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option).

The flange mounting is the SAE "B" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

2520 **VQ** - **14** - **A** - **9** - **1** - **CC** - ****** - **(L)**

1 2 3 4 5 6 7 8 9

<p>1 Series 2520: 2520 Fixed Double Pump</p>	<p>5 Cover End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 2, 5, 8, 9, 11, 12, 14</p>	<p>7 Port Orientation (Cont.) <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Inline with Inlet</u> CA - No. 2 Outlet 135°CCW from Inlet CB - No. 2 Outlet 45°CCW from Inlet CC - No. 2 Outlet 45°CW from Inlet CD - No. 2 Outlet 135°CW from Inlet</p>
<p>2 Design Type VQ: Mobile Design</p>	<p>6 Shaft 1: 7/8" Dia., 0.187 Sq. St. Key 11: 13 Tooth Spline 86: 1" Dia., 0.250 Sq. St. Key</p>	<p><u>With No. 1 Outlet 90° CW FROM Inlet</u> DA - No. 2 Outlet 135°CCW from Inlet DB - No. 2 Outlet 45°CCW from Inlet DC - No. 2 Outlet 45°CW from Inlet DD - No. 2 Outlet 135°CW from Inlet</p>
<p>3 Shaft End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 10, 12, 14, 17, 21</p>	<p>7 Port Orientation <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Opposite Inlet</u> AA - No. 2 Outlet 135°CCW from Inlet AB - No. 2 Outlet 45°CCW from Inlet AC - No. 2 Outlet 45°CW from Inlet AD - No. 2 Outlet 135°CW from Inlet</p>	<p>8 Design Number</p>
<p>4 Ports A: Inlet - 2.5" SAE, 4-Bolt Flange Shaft End Outlet - 1" SAE, 4-Bolt Flange Cover End Outlet - 0.75" SAE, 4-Bolt Flange</p>	<p><u>With No. 1 Outlet 90° CCW from Inlet</u> BA - No. 2 Outlet 135°CCW from Inlet BB - No. 2 Outlet 45°CCW from Inlet BC - No. 2 Outlet 45°CW from Inlet BD - No. 2 Outlet 135°CW from Inlet</p>	<p>9 Shaft Rotation <i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)</p>

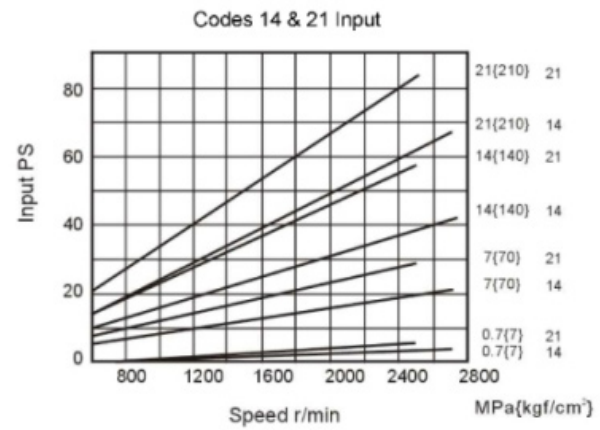
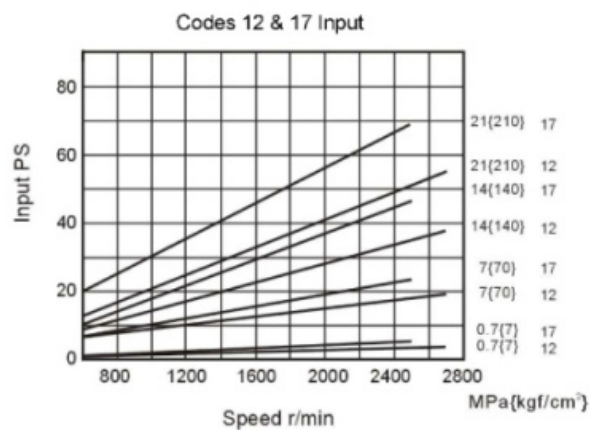
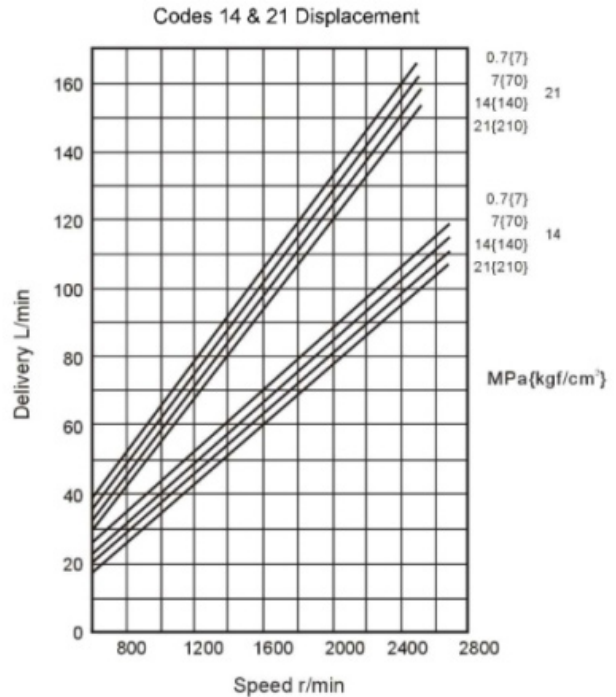
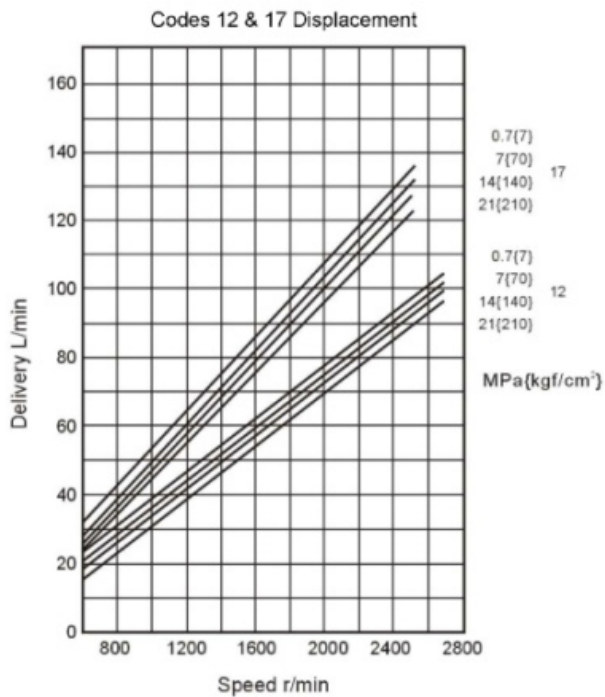
DOUBLE FIXED DISPLACEMENT 2520VQ SERIES

PERFORMANCE CURVES

2520VQ Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 2520VQ SERIES

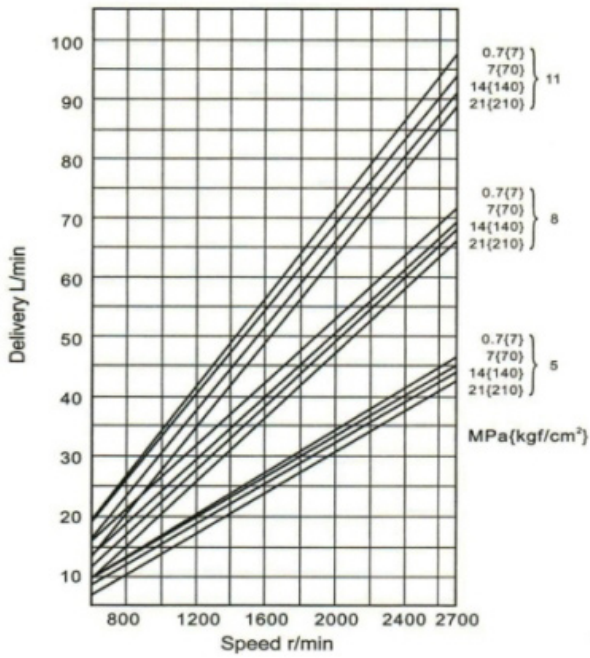
PERFORMANCE CURVES

2520VQ Double Pump

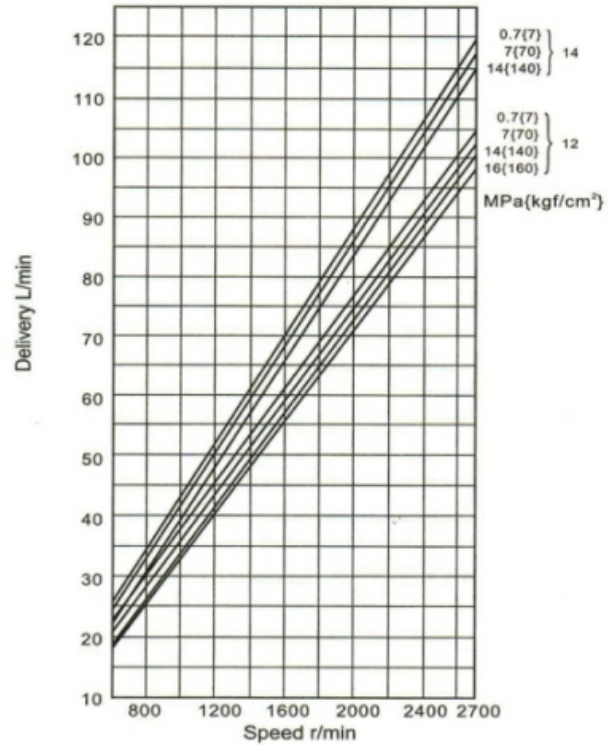
SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.

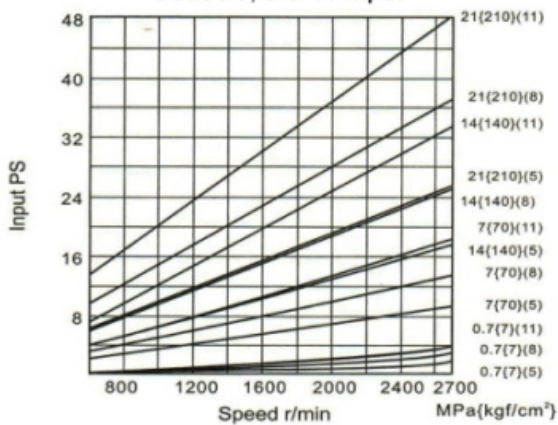
Codes 5, 8 & 11 Displacement



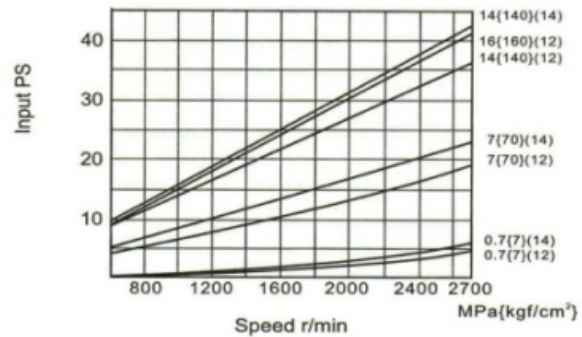
Codes 12 & 14 Displacement



Codes 5, 8 & 11 Input



Codes 12 & 14 Input



DOUBLE FIXED DISPLACEMENT 2520VQ SERIES

SPECIFICATIONS

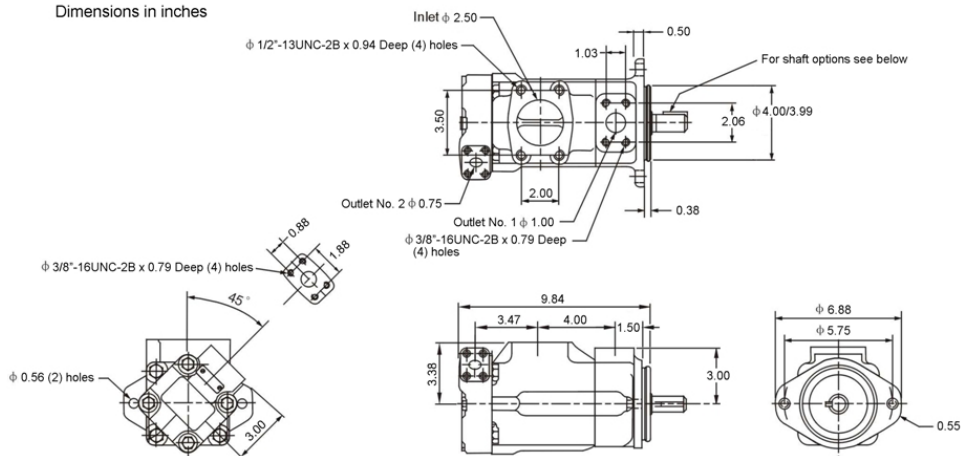
Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 2520VQ-17-A-9-1-CC-20 ("17" = Shaft End Pump)	10	1.98 (32.5)	2700	3000 (210)
	12	2.34 (38.3)		
	14	2.64 (43.3)		
	17	3.20 (52.5)	2500	
	21	3.97 (65.0)		

Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 2520VQ-17-A-9-1-CC-20 ("9" = Cover End Pump)	2	0.43 (7)	2700	3000 (207)
	5	1.10 (18)		
	8	1.67 (27)		
	9	1.85 (30)		
	11	2.22 (36)		2300 (159)
	12	2.47 (40)		
	14	2.78 (45)		

DIMENSIONS

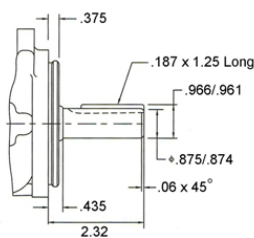
2520VQ Double Pump - Dimensions in Inches

2520VQ Dimensions
Dimensions in inches

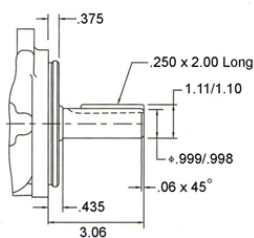


2520VQ Shafts
Dimensions in inches

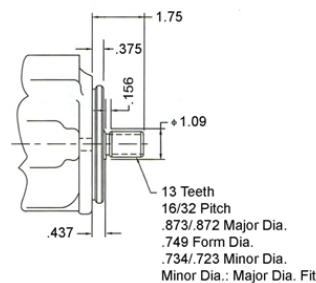
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



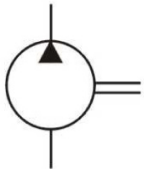
DOUBLE FIXED DISPLACEMENT 3520V SERIES

FEATURES

The Northman 3520V Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 3520V series are from 21 GPM to 38 GPM at 1200 RPM on the shaft end and from 2 to 14 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

3520 **V** - **25** - **A** - **9** - **1** - **CC** - ****** - **(L)**

1
 2
 -
 3
 -
 4
 -
 5
 -
 6
 -
 7
 -
 8
 -
 9

1 Series
3520: 3520V Fixed Double Pump

2 Design Type
V: Industrial Design

3 Shaft End Pump
Flow at 1200 RPM, 100 PSI:
21, 25, 30, 35, 38

4 Ports
A: Inlet - 3" SAE, 4-Bolt Flange
Shaft End Outlet -
1.25" SAE, 4-Bolt Flange
Cover End Outlet -
0.75" SAE, 4-Bolt Flange

5 Cover End Pump
Flow at 1200 RPM, 100 PSI:
2, 5, 8, 9, 11, 12, 14

6 Shaft
1: 1-1/4" Dia., 0.312 Sq. St. Key
11: 14 Tooth Spline
86: 1-3/8" Dia., 0.312 Sq. St. Key

7 Port Orientation
(Viewed from Cover End)
With No. 1 Outlet Opposite Inlet
AA - No. 2 Outlet 135° CCW from Inlet
AB - No. 2 Outlet 45° CCW from Inlet
AC - No. 2 Outlet 45° CW from Inlet
AD - No. 2 Outlet 135° CW from Inlet

With No. 1 Outlet 90° CCW from Inlet
BA - No. 2 Outlet 135° CCW from Inlet
BB - No. 2 Outlet 45° CCW from Inlet
BC - No. 2 Outlet 45° CW from Inlet
BD - No. 2 Outlet 135° CW from Inlet

7 Port Orientation (Cont.)
(Viewed from Cover End)
With No. 1 Outlet Inline with Inlet
CA - No. 2 Outlet 135° CCW from Inlet
CB - No. 2 Outlet 45° CCW from Inlet
CC - No. 2 Outlet 45° CW from Inlet
CD - No. 2 Outlet 135° CW from Inlet

With No. 1 Outlet 90° CW FROM Inlet
DA - No. 2 Outlet 135° CCW from Inlet
DB - No. 2 Outlet 45° CCW from Inlet
DC - No. 2 Outlet 45° CW from Inlet
DD - No. 2 Outlet 135° CW from Inlet

8 Design Number

9 Shaft Rotation
(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

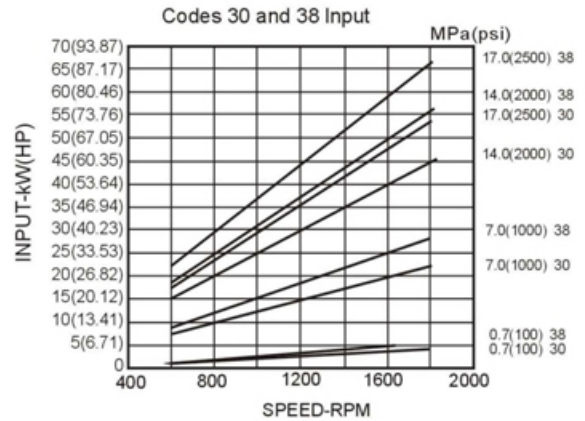
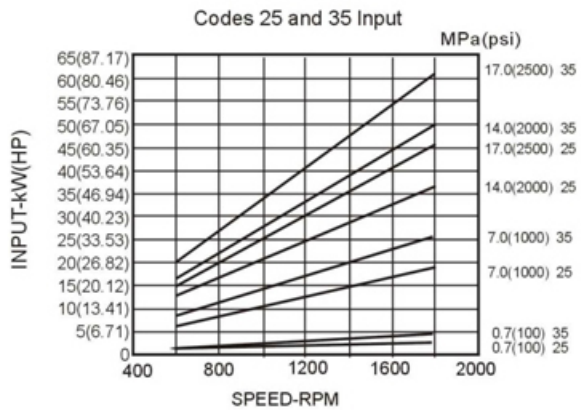
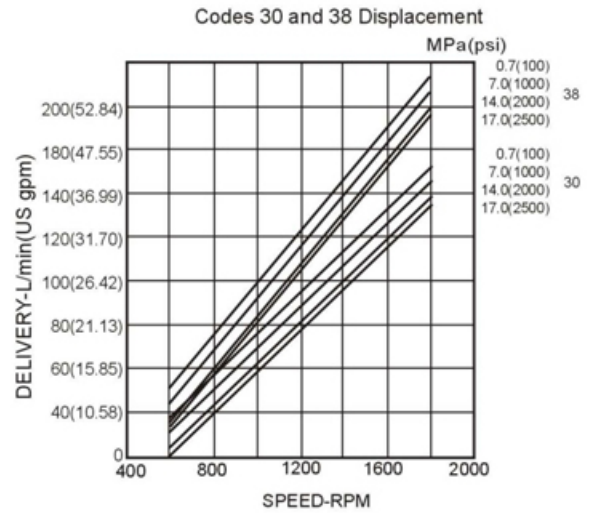
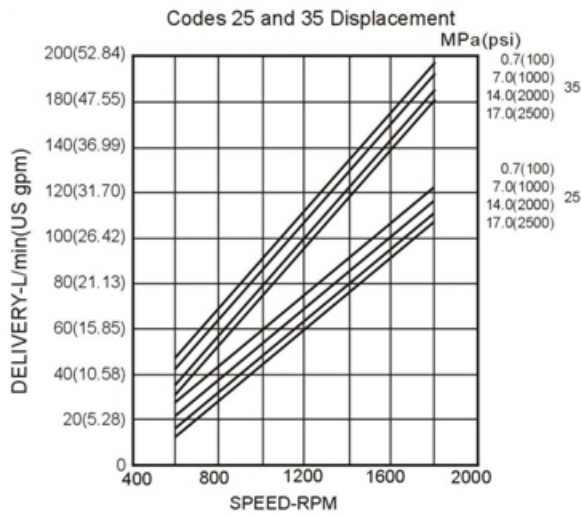
DOUBLE FIXED DISPLACEMENT 3520V SERIES

PERFORMANCE CURVES

3520V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



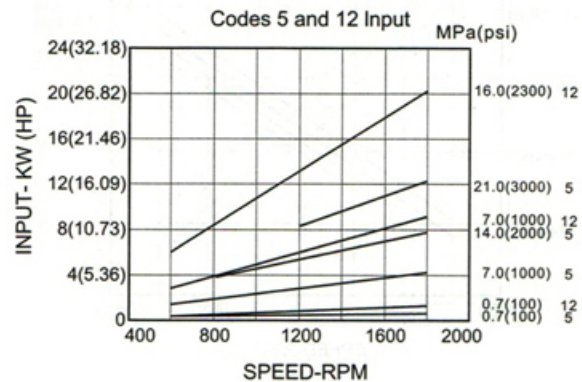
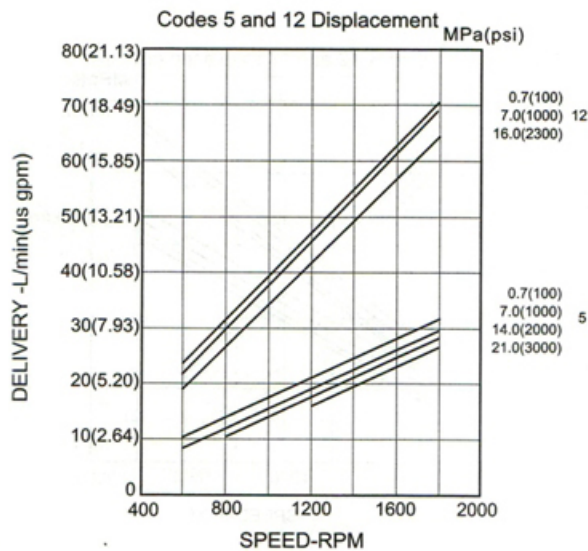
DOUBLE FIXED DISPLACEMENT 3520V SERIES

PERFORMANCE CURVES

3520V Double Pump (Ring Size -8, 11 & 14 GPM)

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



SPECIFICATIONS

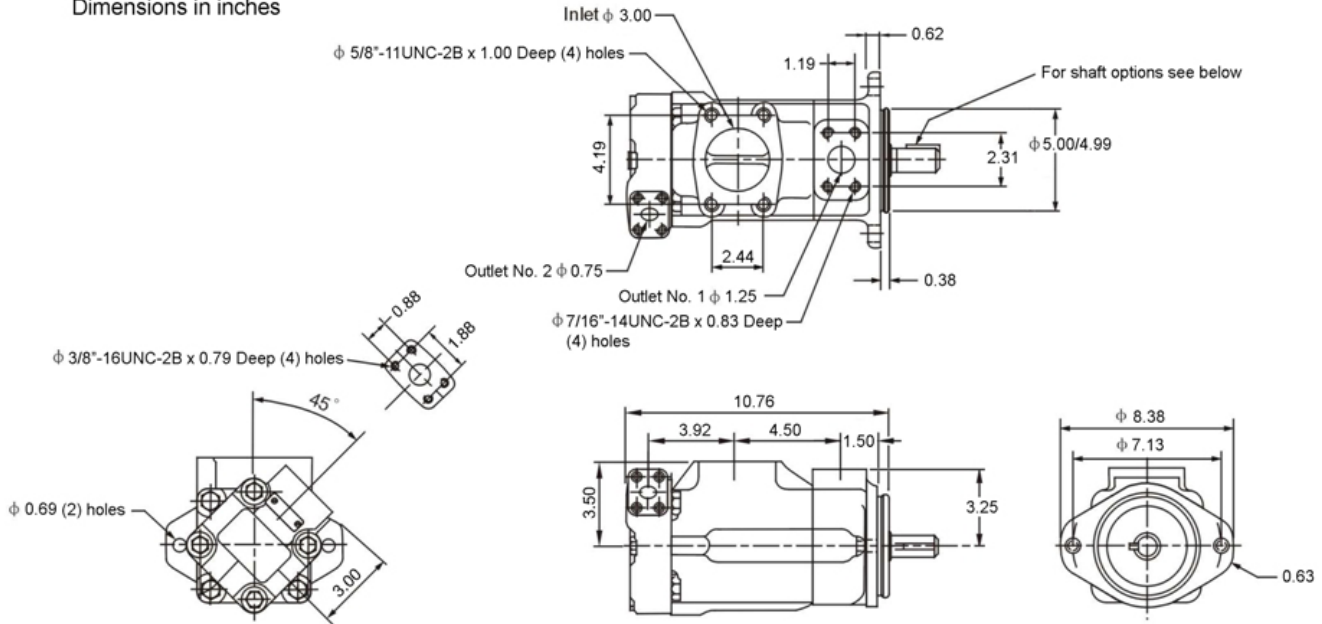
Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 3520V-30-A-12-1-CC-20 ("30" = Shaft End Pump)	21	4.09 (67)	2500 (172)
	25	4.94 (81)	
	30	5.92 (97)	
	35	6.83 (112)	
	38	7.38 (121)	
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 3520V-17-A-12-1-CC-20 ("12" = Cover End Pump)	2	0.46 (7.5)	2000 (138)
	5	1.04 (17)	3000 (207)
	8	1.67 (27)	
	9	1.85 (30)	
	11	2.22 (36)	
	12	2.47 (40)	2300 (159)
	14	2.78 (45)	2000 (138)

DOUBLE FIXED DISPLACEMENT 3520V SERIES

DIMENSIONS

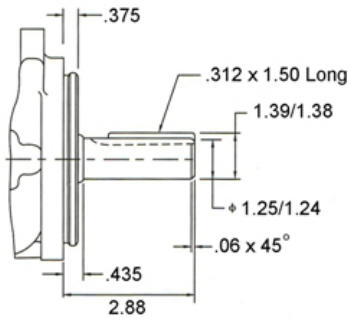
3520V Double Pump - Dimensions in Inches

3520V Dimensions Dimensions in inches

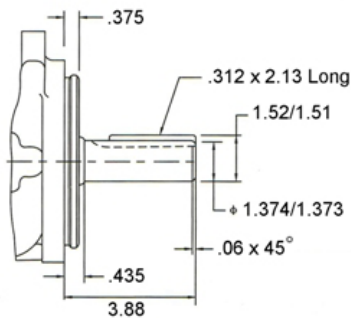


3520V Shafts Dimensions in inches

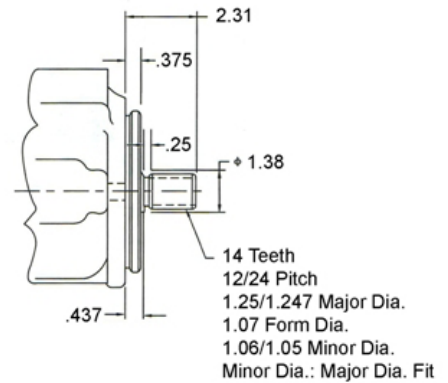
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



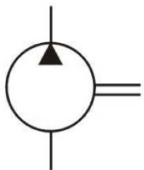
DOUBLE FIXED DISPLACEMENT 3520VQ SERIES

FEATURES

The Northman 3520VQ Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 3520VQ series are from 21 GPM to 38 GPM at 1200 RPM on the shaft end and from 2 to 14 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

3520 VQ - 25 - A - 9 - 1 - CC - ** - (L)

1
 2
 3
 4
 5
 6
 7
 8
 9

1 Series
3520: 3520VQ Fixed Double Pump

2 Design Type
VQ: Mobile Design

3 Shaft End Pump
Flow at 1200 RPM, 100 PSI:
21, 25, 30, 35, 38

4 Ports
A: Inlet – 3" SAE, 4-Bolt Flange
 Shaft End Outlet –
 1.25" SAE, 4-Bolt Flange
 Cover End Outlet –
 0.75" SAE, 4-Bolt Flange

5 Cover End Pump
Flow at 1200 RPM, 100 PSI:
2, 5, 8, 9, 11, 12, 14

6 Shaft
1: 1-1/4" Dia., 0.312 Sq. St. Key
11: 14 Tooth Spline
86: 1-3/8" Dia., 0.312 Sq. St. Key

7 Port Orientation
(Viewed from Cover End)
 With No. 1 Outlet Opposite Inlet
AA – No. 2 Outlet 135°CCW from Inlet
AB – No. 2 Outlet 45°CCW from Inlet
AC – No. 2 Outlet 45°CW from Inlet
AD – No. 2 Outlet 135°CW from Inlet

With No. 1 Outlet 90°CCW from Inlet
BA – No. 2 Outlet 135°CCW from Inlet
BB – No. 2 Outlet 45°CCW from Inlet
BC – No. 2 Outlet 45°CW from Inlet
BD – No. 2 Outlet 135°CW from Inlet

7 Port Orientation (Cont.)
(Viewed from Cover End)
 With No. 1 Outlet Inline with Inlet
CA – No. 2 Outlet 135°CCW from Inlet
CB – No. 2 Outlet 45°CCW from Inlet
CC – No. 2 Outlet 45°CW from Inlet
CD – No. 2 Outlet 135°CW from Inlet

With No. 1 Outlet 90°CW FROM Inlet
DA – No. 2 Outlet 135°CCW from Inlet
DB – No. 2 Outlet 45°CCW from Inlet
DC – No. 2 Outlet 45°CW from Inlet
DD – No. 2 Outlet 135°CW from Inlet

8 Design Number

9 Shaft Rotation
(Viewed from Shaft End)
No Code: Right Hand (CW)
L: Left Hand (CCW)

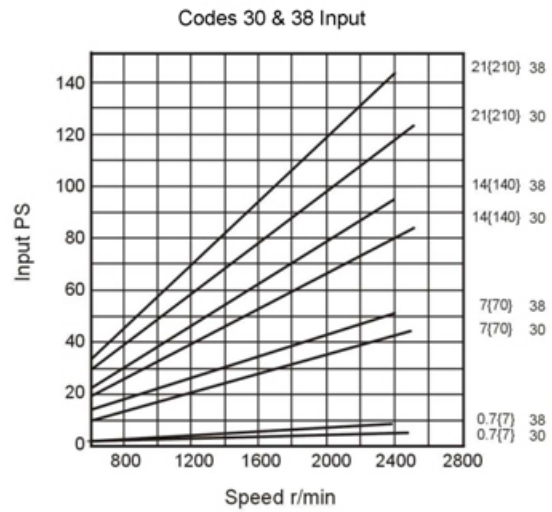
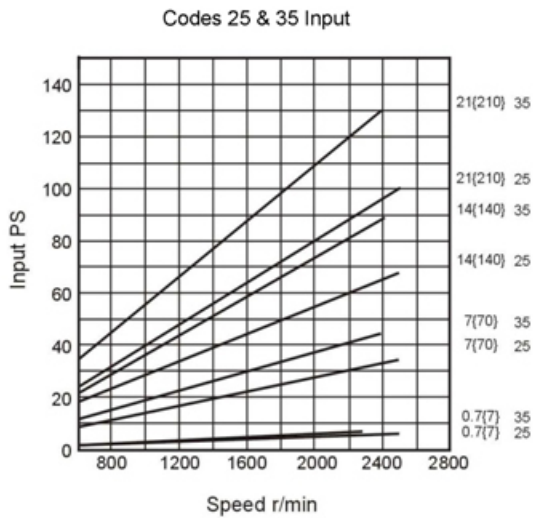
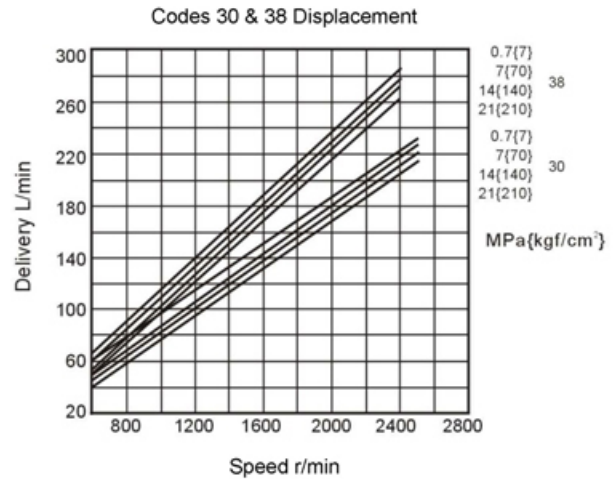
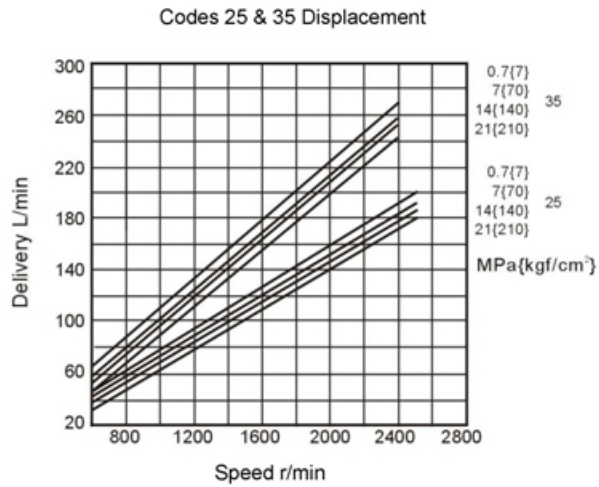
DOUBLE FIXED DISPLACEMENT 3520VQ SERIES

PERFORMANCE CURVES

3520VQ Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.

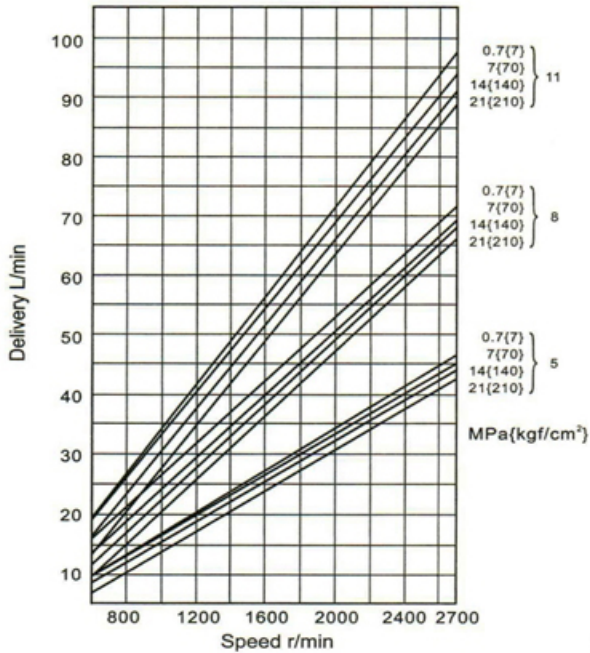


DOUBLE FIXED DISPLACEMENT 3520VQ SERIES

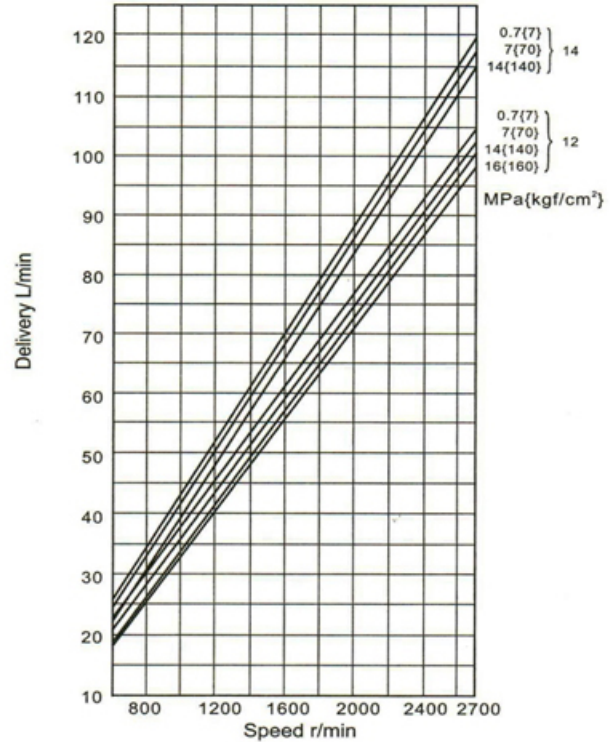
PERFORMANCE CURVES

3520VQ Double Pump
SAE 10W Fluid at 120°F.
Pump Inlet at 0" hg.

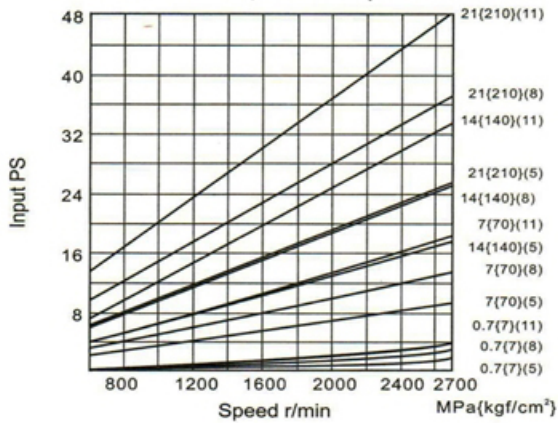
Codes 5, 8 & 11 Displacement



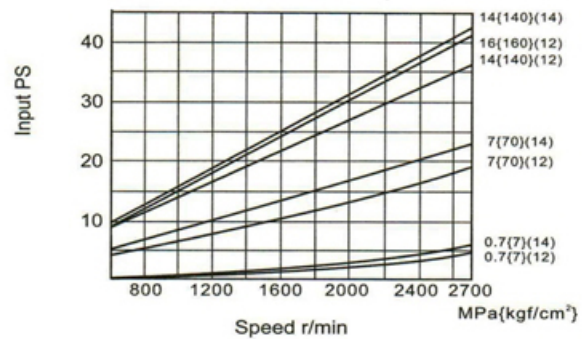
Codes 12 & 14 Displacement



Codes 5, 8 & 11 Input



Codes 12 & 14 Input



DOUBLE FIXED DISPLACEMENT 3520VQ SERIES

SPECIFICATIONS

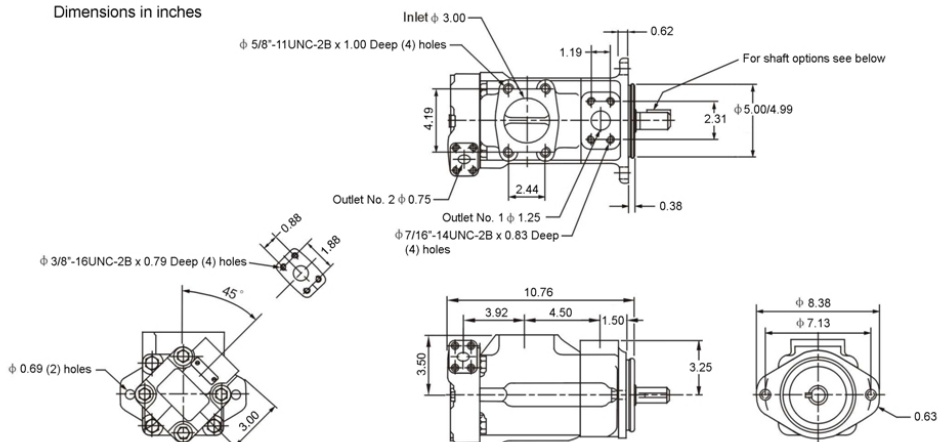
Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 3520VQ-30-A-12-1-CC-20 ("30" = Shaft End Pump)	21	3.90 (64)	2500	3000 (210)
	25	4.83 (79.2)		
	30	5.80 (95)		
	35	6.65 (109)	2400	
	38	7.20 (118)		

Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 3520VQ-30-A-12-1-CC-20 ("12" = Cover End Pump)	2	0.43 (7)	2700	3000 (207)
	5	1.10 (18)		
	8	1.67 (27)		
	9	1.85 (30)		2300 (159)
	11	2.22 (36)		
	12	2.47 (40)		
	14	2.78 (45)		

DIMENSIONS

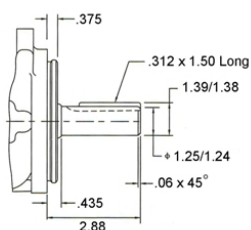
3520VQ Double Pump - Dimensions in Inches

3520VQ Dimensions
Dimensions in inches

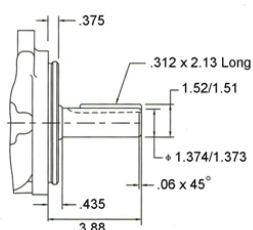


3520VQ Shafts
Dimensions in inches

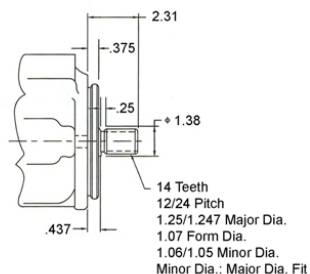
#1 Straight Shaft



#8 Straight Shaft



#11 Splined Shaft



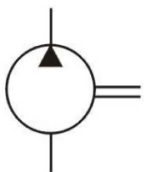
DOUBLE FIXED DISPLACEMENT 3525V SERIES

FEATURES

The Northman 3525V Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 3525V series are from 21 GPM to 38 GPM at 1200 RPM on the shaft end and from 10 to 21 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

3525 **V** - **25** - **A** - **14** - **1** - **CC** - ****** - **(L)**

1
2
3
4
5
6
7
8
9

<p>1 Series 3525: 3525V Fixed Double Pump</p>	<p>5 Cover End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 10, 12, 14, 17, 21</p>	<p>7 Port Orientation (Cont.) <i>(Viewed from Cover End)</i> With No. 1 Outlet Inline with Inlet CA - No. 2 Outlet 135° CCW from Inlet CB - No. 2 Outlet 45° CCW from Inlet CC - No. 2 Outlet 45° CW from Inlet CD - No. 2 Outlet 135° CW from Inlet</p>
<p>2 Design Type V: Industrial Design</p>	<p>6 Shaft 1: 1-1/4" Dia., 0.312 Sq. St. Key 11: 14 Tooth Spline 86: 1-3/8" Dia., 0.312 Sq. St. Key</p>	<p>With No. 1 Outlet 90° CW FROM Inlet DA - No. 2 Outlet 135° CCW from Inlet DB - No. 2 Outlet 45° CCW from Inlet DC - No. 2 Outlet 45° CW from Inlet DD - No. 2 Outlet 135° CW from Inlet</p>
<p>3 Shaft End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 21, 25, 30, 35, 38</p>	<p>7 Port Orientation <i>(Viewed from Cover End)</i> With No. 1 Outlet Opposite Inlet AA - No. 2 Outlet 135° CCW from Inlet AB - No. 2 Outlet 45° CCW from Inlet AC - No. 2 Outlet 45° CW from Inlet AD - No. 2 Outlet 135° CW from Inlet</p>	<p>8 Design Number</p>
<p>4 Ports A: Inlet - 3" SAE, 4-Bolt Flange Shaft End Outlet - 1.25" SAE, 4-Bolt Flange Cover End Outlet - 1" SAE, 4-Bolt Flange</p>	<p>With No. 1 Outlet 90° CCW from Inlet BA - No. 2 Outlet 135° CCW from Inlet BB - No. 2 Outlet 45° CCW from Inlet BC - No. 2 Outlet 45° CW from Inlet BD - No. 2 Outlet 135° CW from Inlet</p>	<p>9 Shaft Rotation <i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)</p>

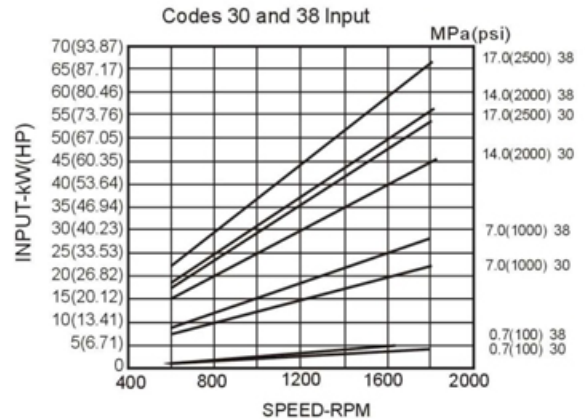
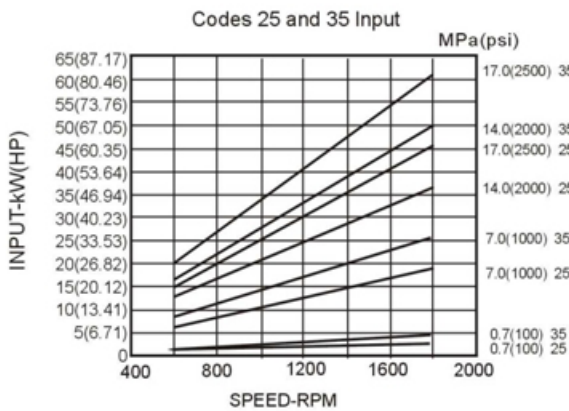
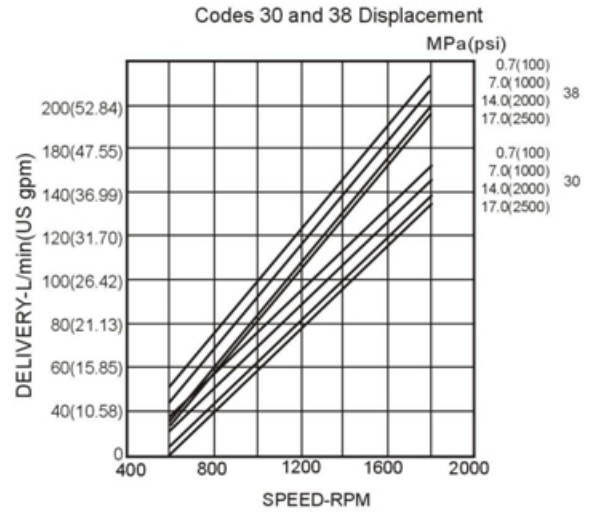
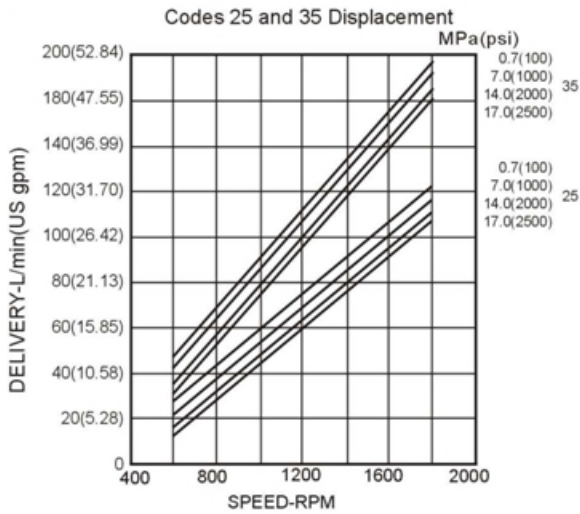
DOUBLE FIXED DISPLACEMENT 3525V SERIES

PERFORMANCE CURVES

3525V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



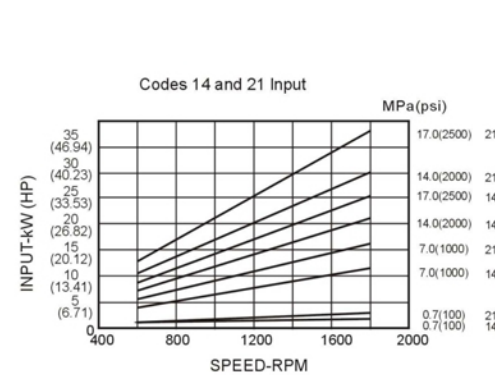
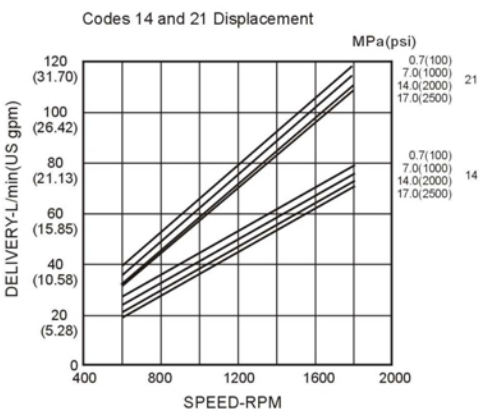
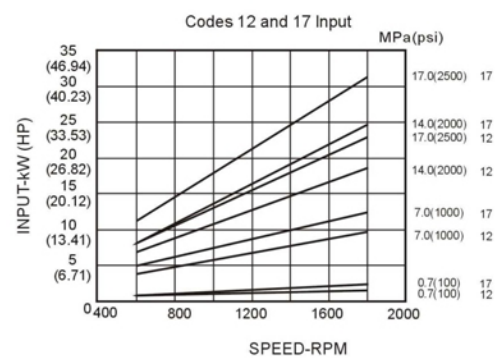
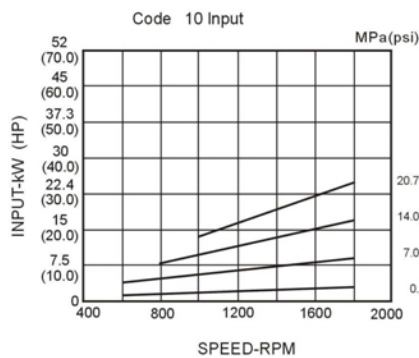
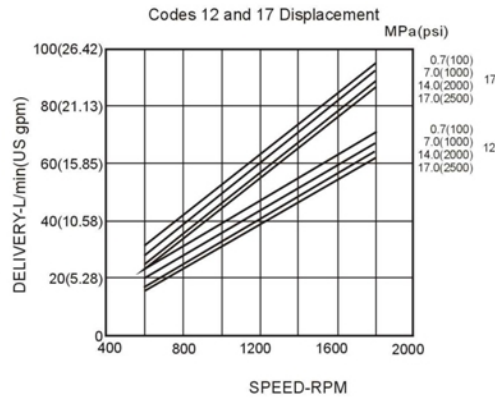
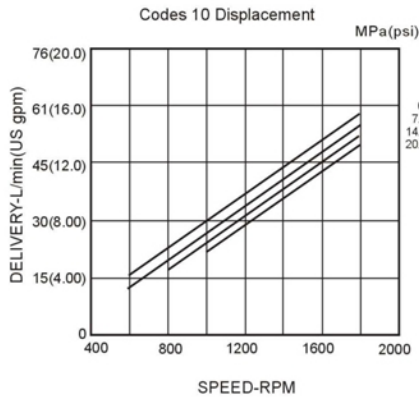
DOUBLE FIXED DISPLACEMENT 3525V SERIES

PERFORMANCE CURVES

3525V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



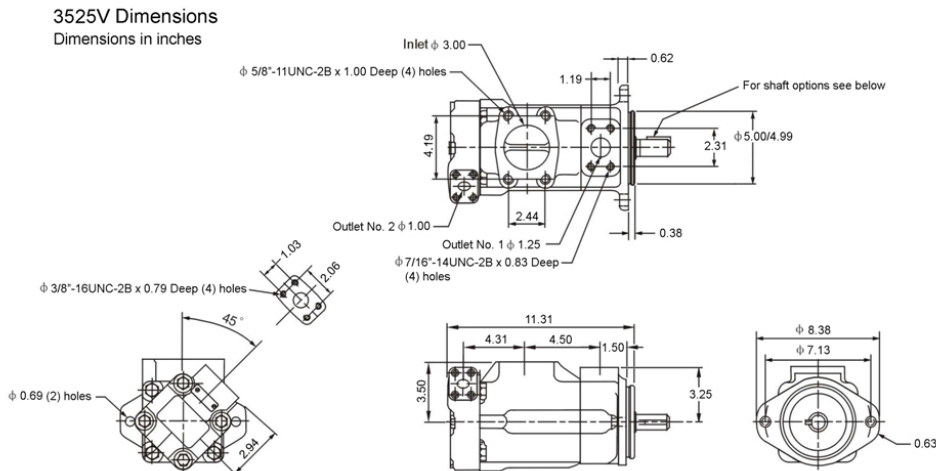
DOUBLE FIXED DISPLACEMENT 3525V SERIES

SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 3525V- <u>30</u> -A-12-1-CC-20 ("30" = Shaft End Pump)	21	4.09 (67)	2500 (172)
	25	4.94 (81)	
	30	5.92 (97)	
	35	6.83 (112)	
	38	7.38 (121)	
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 3525V-30-A- <u>12</u> -1-CC-20 ("12" = Cover End Pump)	10	1.98 (32.5)	2500 (172)
	12	2.44 (40)	
	14	2.62 (43)	
	17	3.36 (55)	
	21	4.09 (67)	

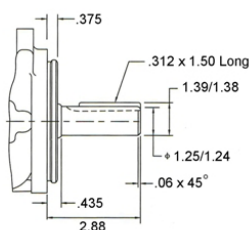
DIMENSIONS

3525V Double Pump - Dimensions in Inches

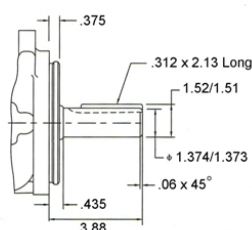


3525V Shafts Dimensions in inches

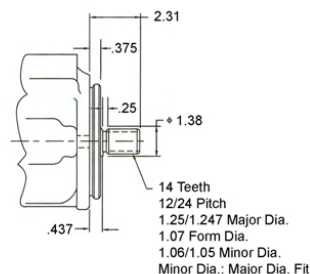
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



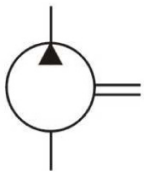
DOUBLE FIXED DISPLACEMENT 3525VQ SERIES

FEATURES

The Northman 3525VQ Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 3525VQ series are from 21 GPM to 38 GPM at 1200 RPM on the shaft end and from 10 to 21 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

3525 **VQ** - **25** - **A** - **14** - **1** - **CC** - ****** - **(L)**

1
 2
 3
 4
 5
 6
 7
 8
 9

1 Series

3525: 3525VQ Fixed Double Pump

2 Design Type

VQ: Mobile Design

3 Shaft End Pump

Flow at 1200 RPM, 100 PSI:
21, 25, 30, 35, 38

4 Ports

A: Inlet – 3" SAE, 4-Bolt Flange
Shaft End Outlet –
1.25" SAE, 4-Bolt Flange
Cover End Outlet –
1" SAE, 4-Bolt Flange

5 Cover End Pump

Flow at 1200 RPM, 100 PSI:
10, 12, 14, 17, 21

6 Shaft

1: 1-1/4" Dia., 0.312 Sq. St. Key
11: 14 Tooth Spline
86: 1-3/8" Dia., 0.312 Sq. St. Key

7 Port Orientation

(Viewed from Cover End)

With No. 1 Outlet Opposite Inlet

AA – No. 2 Outlet 135° CCW from Inlet
AB – No. 2 Outlet 45° CCW from Inlet
AC – No. 2 Outlet 45° CW from Inlet
AD – No. 2 Outlet 135° CW from Inlet

With No. 1 Outlet 90° CCW from Inlet

BA – No. 2 Outlet 135° CCW from Inlet
BB – No. 2 Outlet 45° CCW from Inlet
BC – No. 2 Outlet 45° CW from Inlet

7 Port Orientation (Cont.)

(Viewed from Cover End)

With No. 1 Outlet Inline with Inlet

CA – No. 2 Outlet 135° CCW from Inlet
CB – No. 2 Outlet 45° CCW from Inlet
CC – No. 2 Outlet 45° CW from Inlet
CD – No. 2 Outlet 135° CW from Inlet

With No. 1 Outlet 90° CW FROM Inlet

DA – No. 2 Outlet 135° CCW from Inlet
DB – No. 2 Outlet 45° CCW from Inlet
DC – No. 2 Outlet 45° CW from Inlet
DD – No. 2 Outlet 135° CW from Inlet

8 Design Number

9 Shaft Rotation

(Viewed from Shaft End)

No Code: Right Hand (CW)

L: Left Hand (CCW)

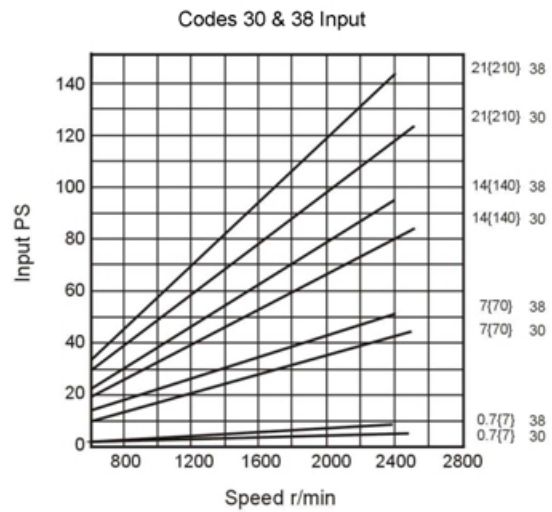
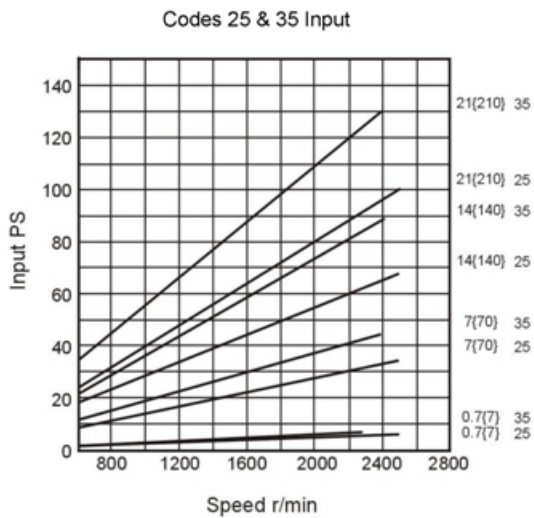
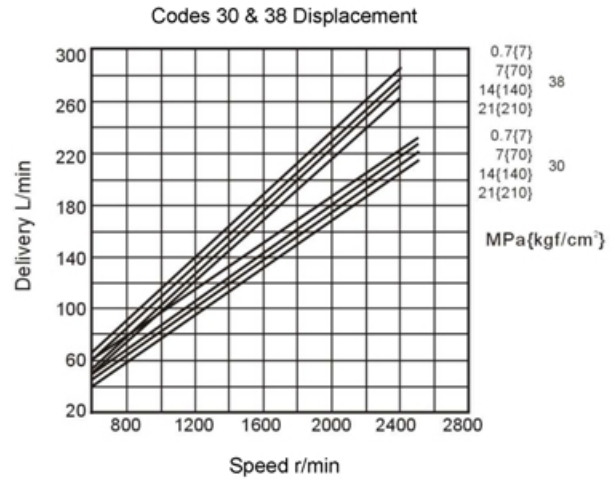
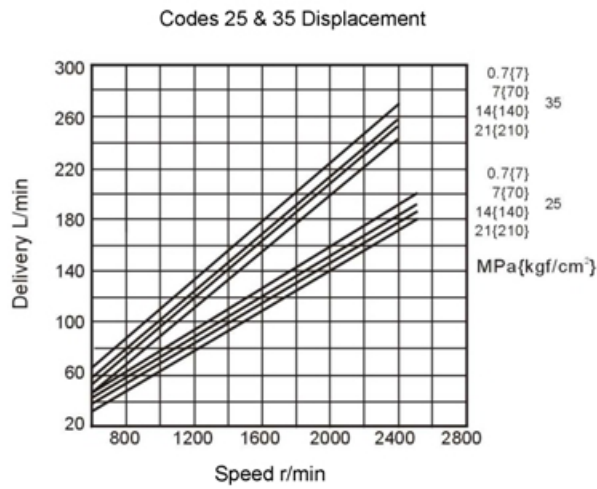
DOUBLE FIXED DISPLACEMENT 3525VQ SERIES

PERFORMANCE CURVES

3525VQ Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 3525VQ SERIES

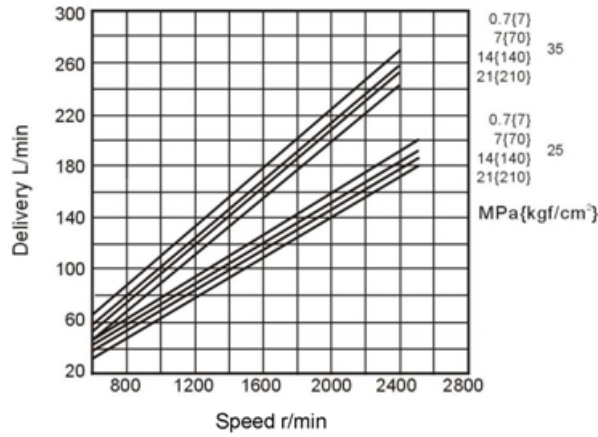
PERFORMANCE CURVES

3525VQ Double Pump

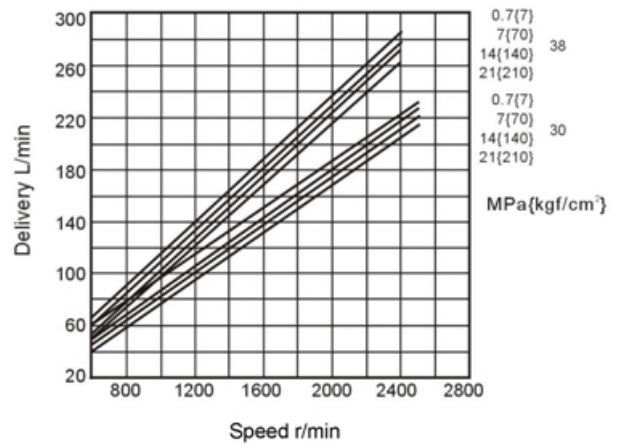
SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.

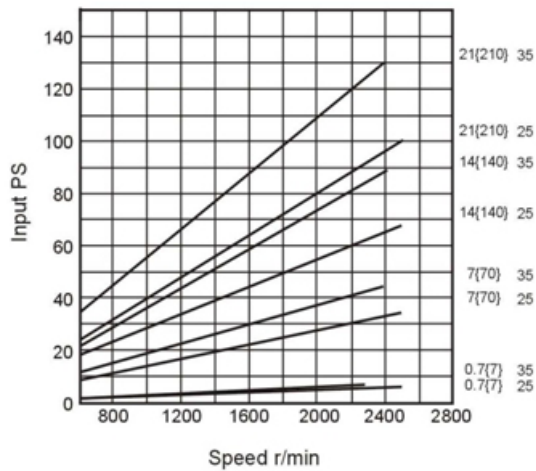
Codes 25 & 35 Displacement



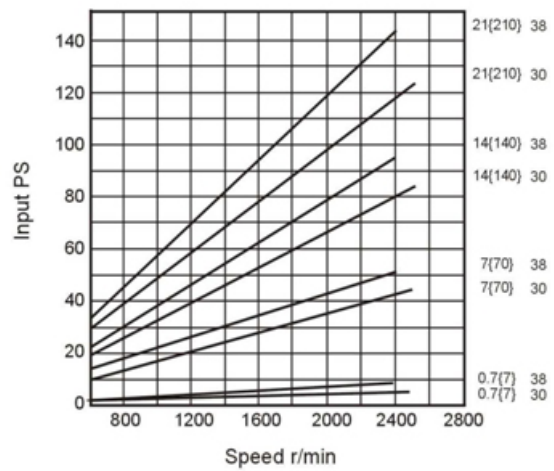
Codes 30 & 38 Displacement



Codes 25 & 35 Input



Codes 30 & 38 Input



DOUBLE FIXED DISPLACEMENT 3525VQ SERIES

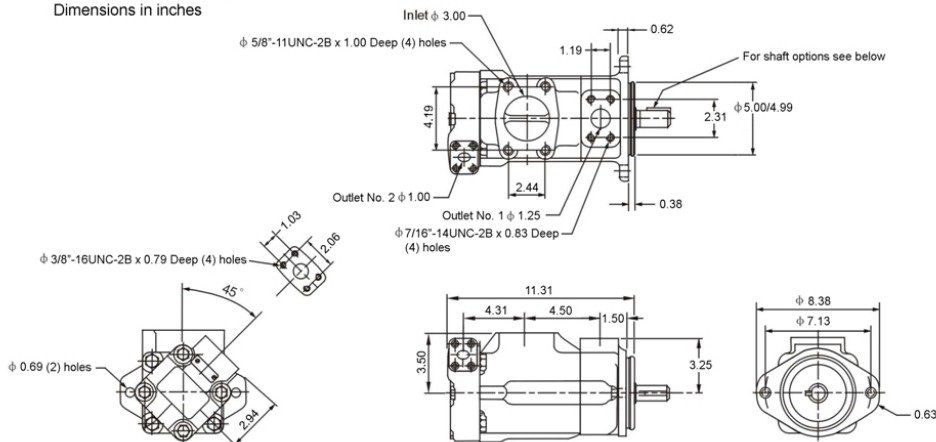
SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 3525VQ-30-A-12-1-CC-20 ("30" = Shaft End Pump)	21	3.90 (64)	2500	3000 (210)
	25	4.83 (79.2)		
	30	5.80 (95)		
	35	6.65 (109)	2400	
	38	7.20 (118)		
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 3525VQ-30-A-12-1-CC-20 ("12" = Cover End Pump)	10	1.98 (32.5)	2700	3000 (210)
	12	2.34 (38.3)		
	14	2.64 (43.3)		
	17	3.20 (52.5)	2500	
	21	3.97 (65.0)		

DIMENSIONS

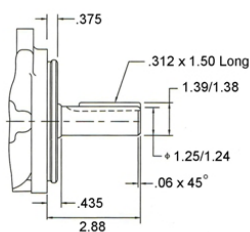
3525VQ Double Pump - Dimensions in Inches

3525VQ Dimensions
Dimensions in inches

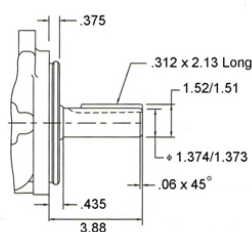


3525VQ Shafts
Dimensions in inches

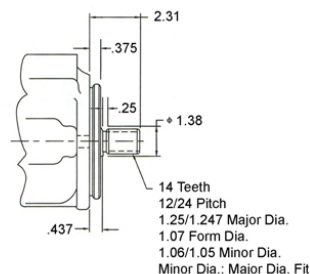
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



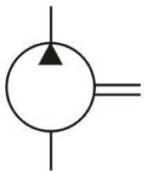
DOUBLE FIXED DISPLACEMENT 4520V SERIES

FEATURES

The Northman 4520V Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 4520V series are from 42 GPM to 60 GPM at 1200 RPM on the shaft end and from 2 to 14 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

4520 **V** - **50** - **A** - **9** - **1** - **CC** - ****** - **(L)**

1
 2
 3
 4
 5
 6
 7
 8
 9

<p>1 Series 4520: 4520V Fixed Double Pump</p>	<p>5 Cover End Pump Flow at 1200 RPM, 100 PSI: 2, 5, 8, 9, 11, 12, 14</p>	<p>7 Port Orientation (Cont.) (Viewed from Cover End) With No. 1 Outlet Inline with Inlet CA – No. 2 Outlet 135° CCW from Inlet CB – No. 2 Outlet 45° CCW from Inlet CC – No. 2 Outlet 45° CW from Inlet CD – No. 2 Outlet 135° CW from Inlet</p>
<p>2 Design Type V: Industrial Design</p>	<p>6 Shaft 1: 1-1/4" Dia., 0.312 Sq. St. Key 11: 14 Tooth Spline 86: 1-1/2" Dia., 0.375 Sq. St. Key</p>	<p>With No. 1 Outlet 90° CW FROM Inlet DA – No. 2 Outlet 135° CCW from Inlet DB – No. 2 Outlet 45° CCW from Inlet DC – No. 2 Outlet 45° CW from Inlet DD – No. 2 Outlet 135° CW from Inlet</p>
<p>3 Shaft End Pump Flow at 1200 RPM, 100 PSI: 42, 45, 50, 60</p>	<p>7 Port Orientation (Viewed from Cover End) With No. 1 Outlet Opposite Inlet AA – No. 2 Outlet 135° CCW from Inlet AB – No. 2 Outlet 45° CCW from Inlet AC – No. 2 Outlet 45° CW from Inlet AD – No. 2 Outlet 135° CW from Inlet</p>	<p>8 Design Number</p>
<p>4 Ports A: Inlet – 3.5" SAE, 4-Bolt Flange Shaft End Outlet – 1.5" SAE, 4-Bolt Flange Cover End Outlet – 0.75" SAE, 4-Bolt Flange</p>	<p>With No. 1 Outlet 90° CCW from Inlet BA – No. 2 Outlet 135° CCW from Inlet BB – No. 2 Outlet 45° CCW from Inlet BC – No. 2 Outlet 45° CW from Inlet BD – No. 2 Outlet 135° CW from Inlet</p>	<p>9 Shaft Rotation (Viewed from Shaft End) No Code: Right Hand (CW) L: Left Hand (CCW)</p>

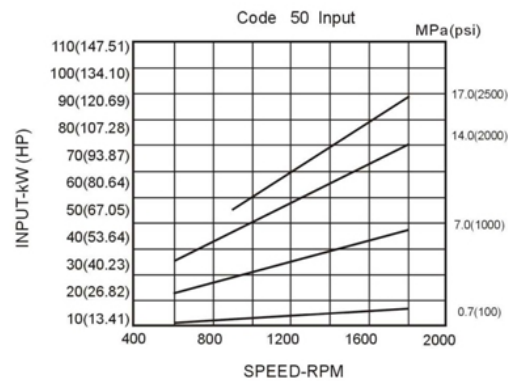
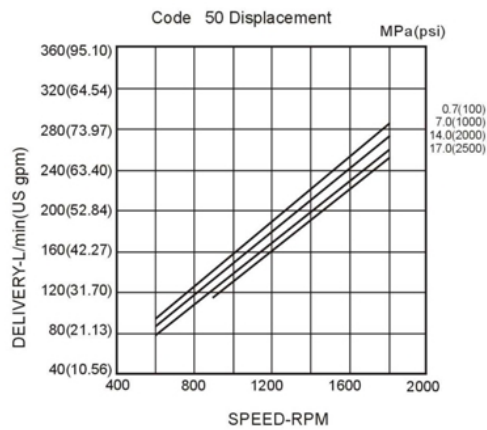
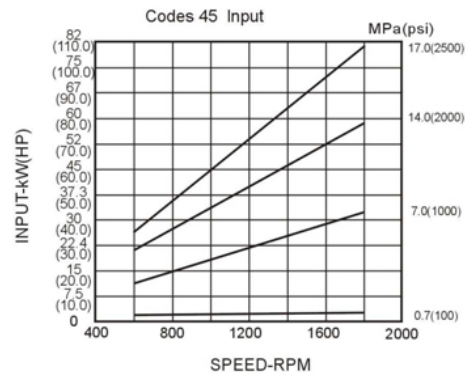
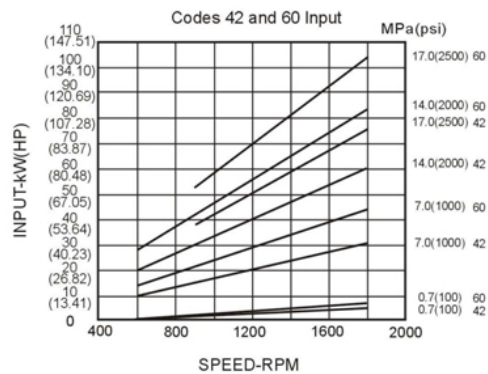
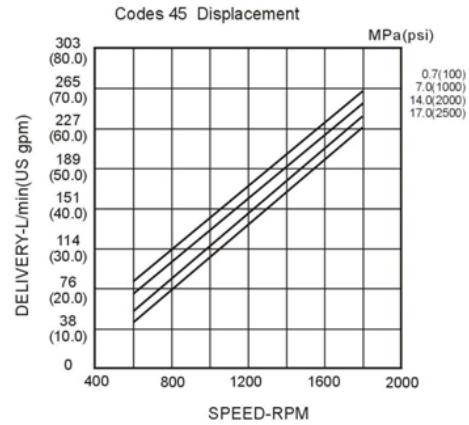
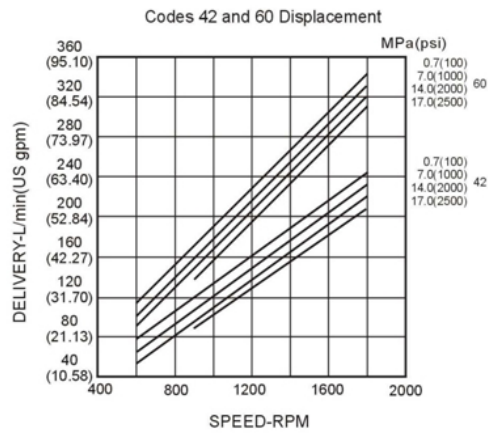
DOUBLE FIXED DISPLACEMENT 4520V SERIES

PERFORMANCE CURVES

4520V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



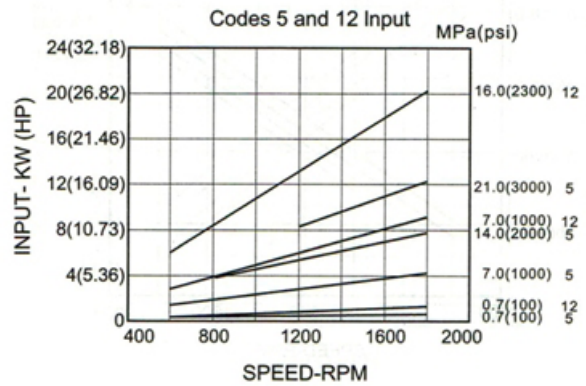
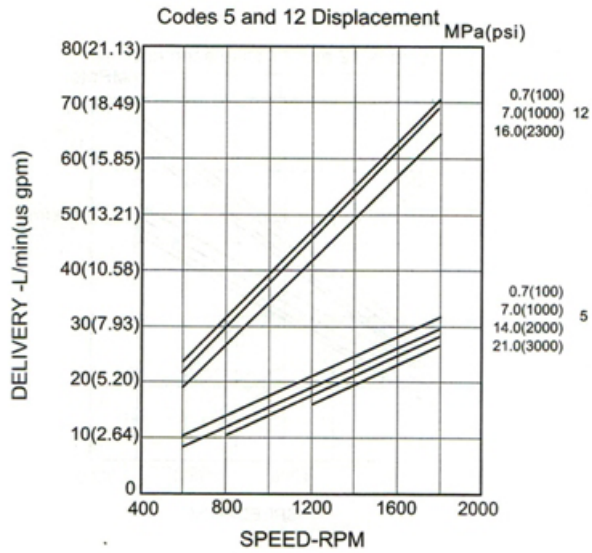
DOUBLE FIXED DISPLACEMENT 4520V SERIES

PERFORMANCE CURVES

4520V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 4520V SERIES

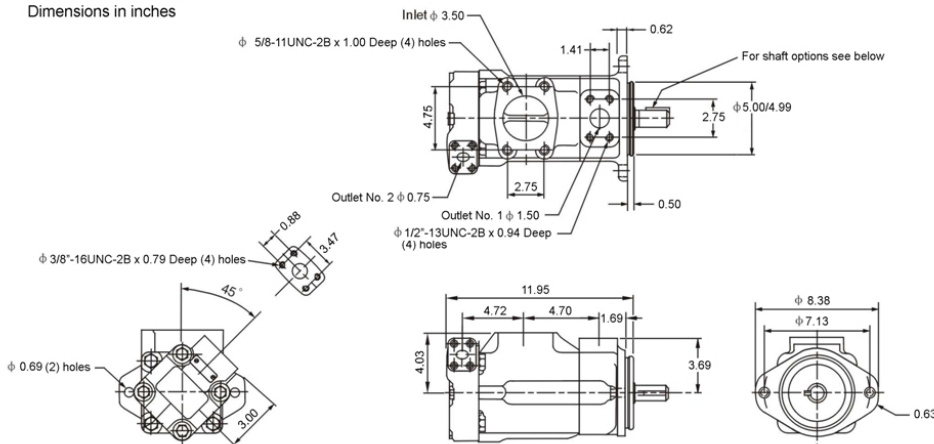
SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 4520V-50-A-9-1-CC-20 ("50" = Shaft End Pump)	42	8.42 (138)	2500 (172)
	45	8.66 (142)	
	50	9.89 (162)	
	60	11.78 (193)	
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 4520V-50-A-9-1-CC-20 ("9" = Cover End Pump)	2	0.46 (7.5)	2000 (138)
	5	1.04 (17)	3000 (207)
	8	1.67 (27)	
	9	1.85 (30)	
	11	2.22 (36)	2300 (159)
	12	2.47 (40)	
	14	2.78 (45)	2000 (138)

DIMENSIONS

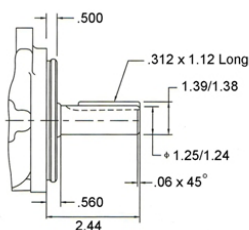
4520V Double Pump - Dimensions in Inches

4520V Dimensions
Dimensions in inches

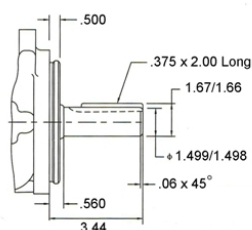


4520V Shafts
Dimensions in inches

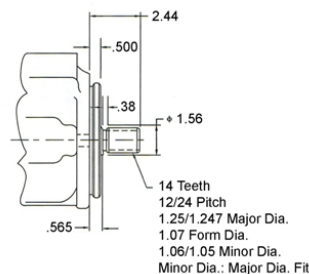
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



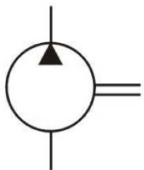
DOUBLE FIXED DISPLACEMENT 4520VQ SERIES

FEATURES

The Northman 4520VQ Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 4520VQ series are from 42 GPM to 60 GPM at 1200 RPM on the shaft end and from 2 to 14 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

4520 VQ - 50 - A - 9 - 1 - CC - ** - (L)

1
 2
 3
 4
 5
 6
 7
 8
 9

<p>1 Series 4520: 4520 Fixed Double Pump</p>	<p>5 Cover End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 2, 5, 8, 9, 11, 12, 14</p>	<p>7 Port Orientation (Cont.) <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Inline with Inlet</u> CA - No. 2 Outlet 135°CCW from Inlet CB - No. 2 Outlet 45°CCW from Inlet CC - No. 2 Outlet 45°CW from Inlet CD - No. 2 Outlet 135°CW from Inlet <u>With No. 1 Outlet 90°CW FROM Inlet</u> DA - No. 2 Outlet 135°CCW from Inlet DB - No. 2 Outlet 45°CCW from Inlet DC - No. 2 Outlet 45°CW from Inlet DD - No. 2 Outlet 135°CW from Inlet</p>
<p>2 Design Type VQ: Mobile Design</p>	<p>6 Shaft 1: 1-1/4" Dia., 0.312 Sq. St. Key 11: 14 Tooth Spline 86: 1-1/2" Dia., 0.375 Sq. St. Key</p>	<p>8 Design Number</p>
<p>3 Shaft End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 42, 45, 50, 60</p>	<p>7 Port Orientation <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Opposite Inlet</u> AA - No. 2 Outlet 135°CCW from Inlet AB - No. 2 Outlet 45°CCW from Inlet AC - No. 2 Outlet 45°CW from Inlet AD - No. 2 Outlet 135°CW from Inlet <u>With No. 1 Outlet 90°CCW from Inlet</u> BA - No. 2 Outlet 135°CCW from Inlet BB - No. 2 Outlet 45°CCW from Inlet BC - No. 2 Outlet 45°CW from Inlet BD - No. 2 Outlet 135°CW from Inlet</p>	<p>9 Shaft Rotation <i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)</p>
<p>4 Ports A: Inlet - 3.5" SAE, 4-Bolt Flange Shaft End Outlet - 1.5" SAE, 4-Bolt Flange Cover End Outlet - 0.75" SAE, 4-Bolt Flange</p>		

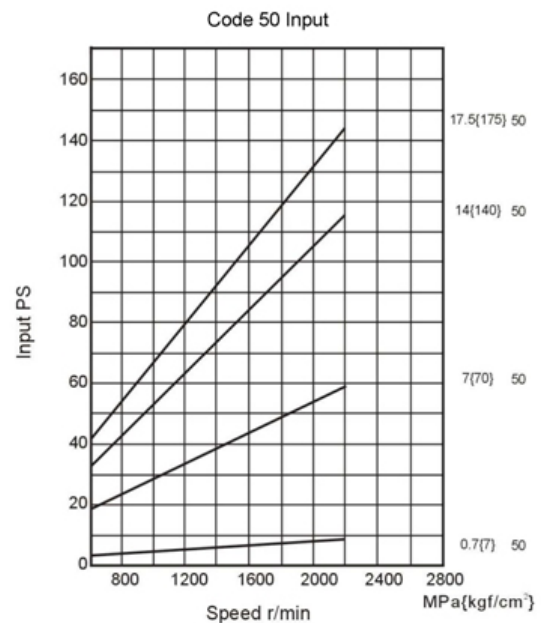
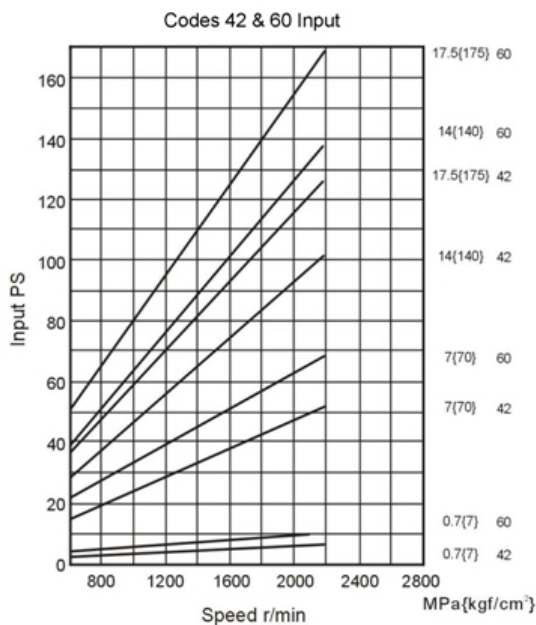
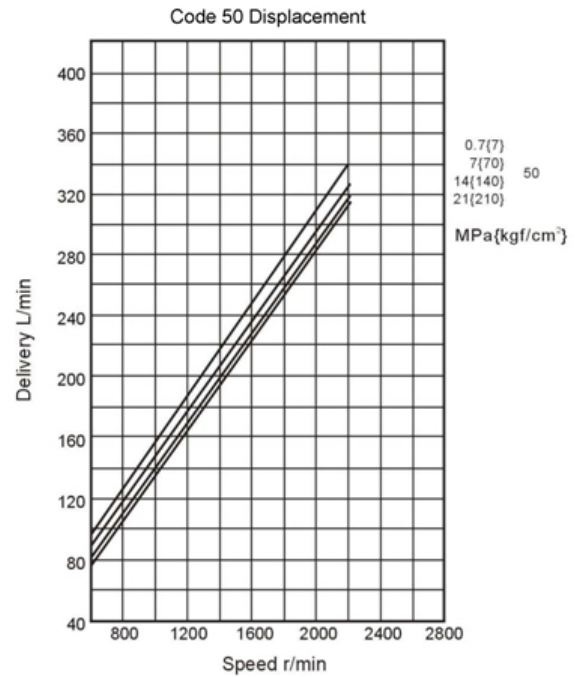
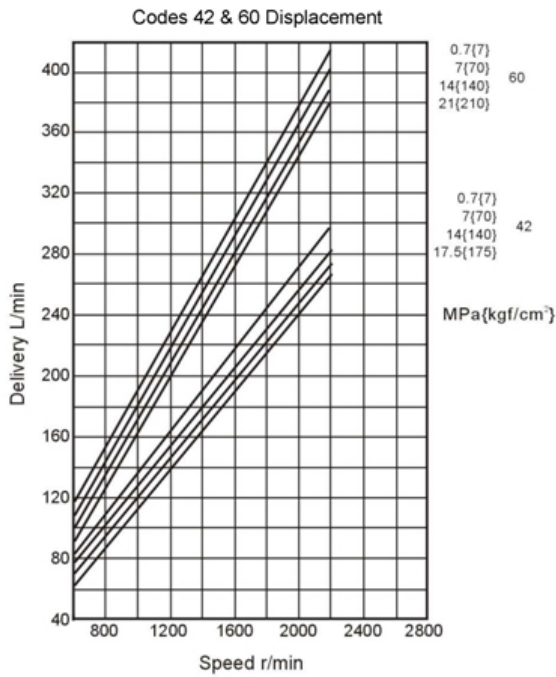
DOUBLE FIXED DISPLACEMENT 4520VQ SERIES

PERFORMANCE CURVES

4520VQ Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 4520VQ SERIES

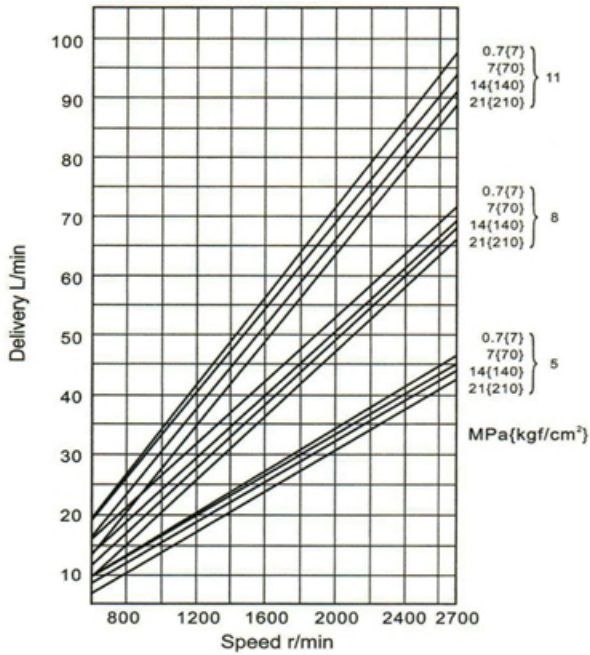
PERFORMANCE CURVES

4520VQ Double Pump

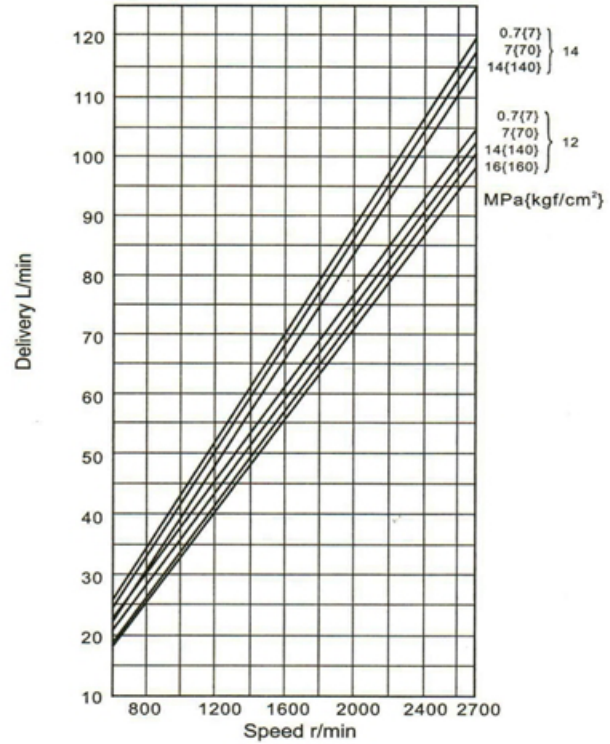
SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.

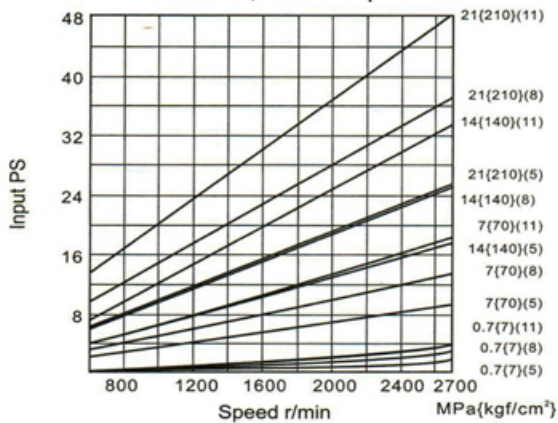
Codes 5, 8 & 11 Displacement



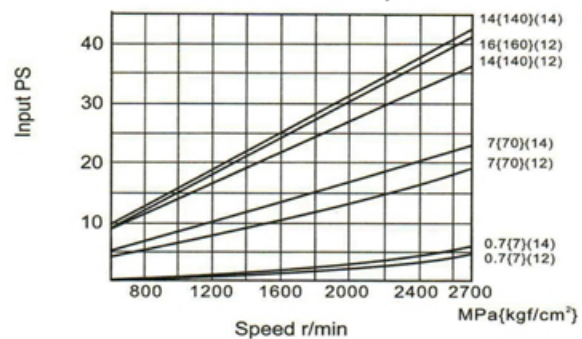
Codes 12 & 14 Displacement



Codes 5, 8 & 11 Input



Codes 12 & 14 Input



DOUBLE FIXED DISPLACEMENT 4520VQ SERIES

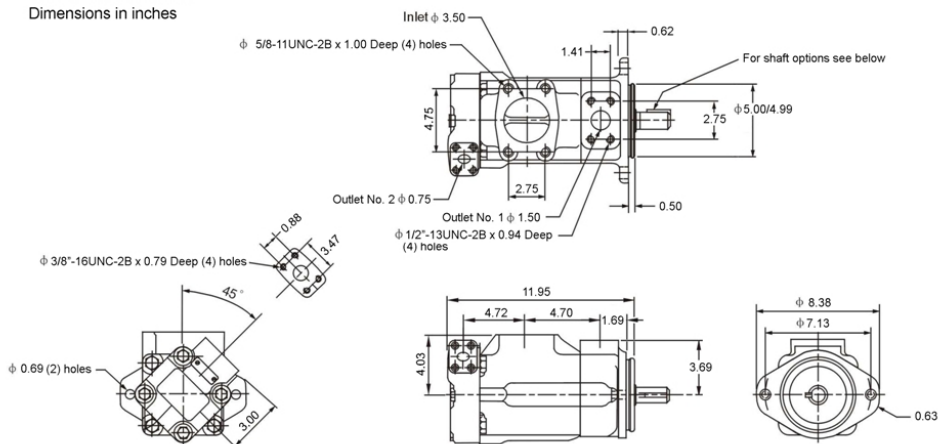
SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 4520VQ-50-A-9-1-CC-20 ("50" = Shaft End Pump)	42	8.18 (134)	2400	2500 (172)
	45	8.97 (147)	2200	
	50	9.52 (156)		
	60	11.53 (189)		
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 4520VQ-50-A-9-1-CC-20 ("9" = Cover End Pump)	2	0.43 (7)	2700	3000 (207)
	5	1.10 (18)		
	8	1.67 (27)		
	9	1.85 (30)		
	11	2.22 (36)		
	12	2.47 (40)		2300 (159)
	14	2.78 (45)		2000 (138)

DIMENSIONS

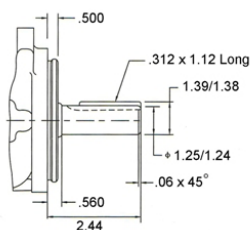
4520V Double Pump - Dimensions in Inches

4520V Dimensions
Dimensions in inches

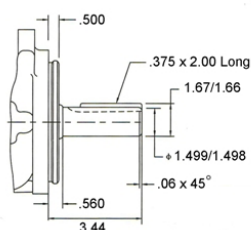


4520V Shafts
Dimensions in inches

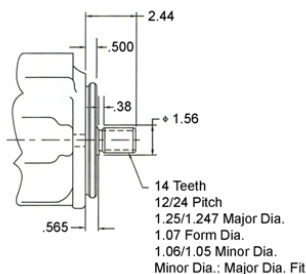
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



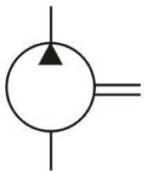
DOUBLE FIXED DISPLACEMENT 4525V SERIES

FEATURES

The Northman 4525V Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 4525V series are from 42 GPM to 60 GPM at 1200 RPM on the shaft end and from 10 to 21 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

4525 **V** - **50** - **A** - **14** - **1** - **CC** - ****** - **(L)**

1
 2
 3
 4
 5
 6
 7
 8
 9

<p>1 Series 4525: 4525 Fixed Double Pump</p>	<p>5 Cover End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 10, 12, 14, 17, 21</p>	<p>7 Port Orientation (Cont.) <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Inline with Inlet</u> CA – No. 2 Outlet 135° CCW from Inlet CB – No. 2 Outlet 45° CCW from Inlet CC – No. 2 Outlet 45° CW from Inlet CD – No. 2 Outlet 135° CW from Inlet</p> <p><u>With No. 1 Outlet 90° CW FROM Inlet</u> DA – No. 2 Outlet 135° CCW from Inlet DB – No. 2 Outlet 45° CCW from Inlet DC – No. 2 Outlet 45° CW from Inlet DD – No. 2 Outlet 135° CW from Inlet</p>
<p>2 Design Type V: Industrial Design</p>	<p>6 Shaft 1: 1-1/4" Dia., 0.312 Sq. St. Key 11: 14 Tooth Spline 86: 1-1/2" Dia., 0.375 Sq. St. Key</p>	<p>8 Design Number</p>
<p>3 Shaft End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 42, 45, 50, 60</p>	<p>7 Port Orientation <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Opposite Inlet</u> AA – No. 2 Outlet 135° CCW from Inlet AB – No. 2 Outlet 45° CCW from Inlet AC – No. 2 Outlet 45° CW from Inlet AD – No. 2 Outlet 135° CW from Inlet</p> <p><u>With No. 1 Outlet 90° CCW from Inlet</u> BA – No. 2 Outlet 135° CCW from Inlet BB – No. 2 Outlet 45° CCW from Inlet BC – No. 2 Outlet 45° CW from Inlet BD – No. 2 Outlet 135° CW from Inlet</p>	<p>9 Shaft Rotation <i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)</p>
<p>4 Ports A: Inlet – 3.5" SAE, 4-Bolt Flange Shaft End Outlet – 1.5" SAE, 4-Bolt Flange Cover End Outlet – 1" SAE, 4-Bolt Flange</p>		

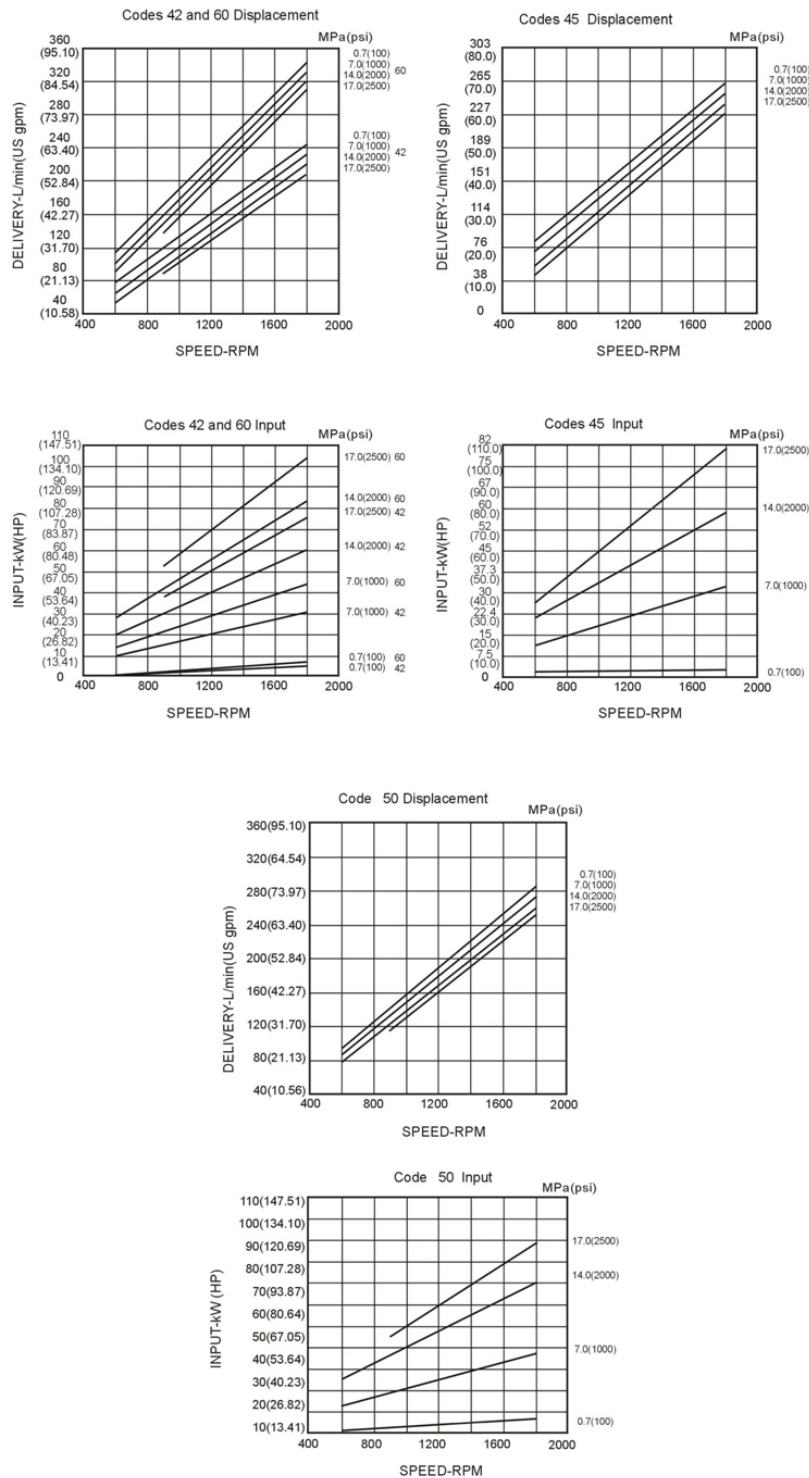
DOUBLE FIXED DISPLACEMENT 4525V SERIES

PERFORMANCE CURVES

4525V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



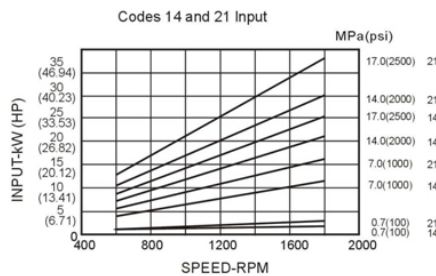
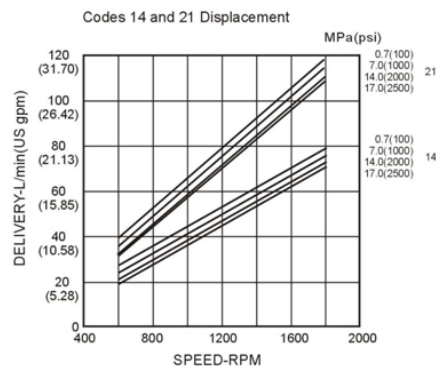
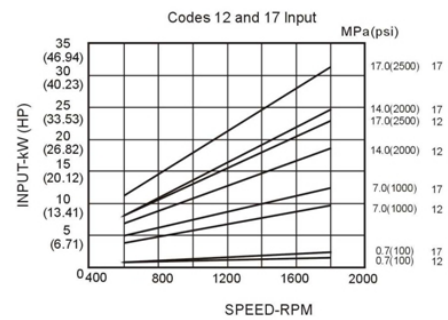
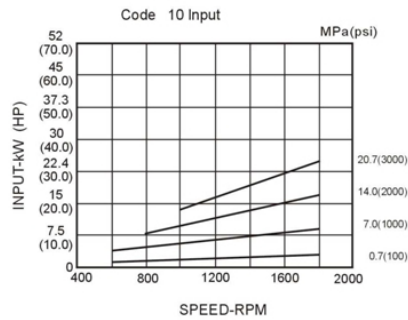
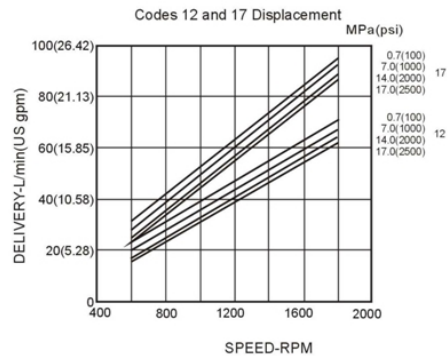
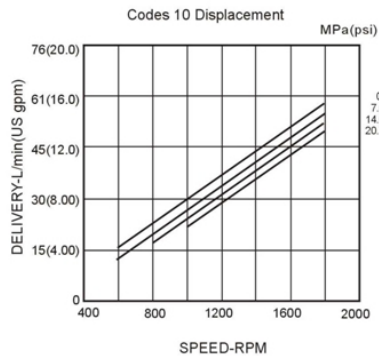
DOUBLE FIXED DISPLACEMENT 4525V SERIES

PERFORMANCE CURVES

4525V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 4525V SERIES

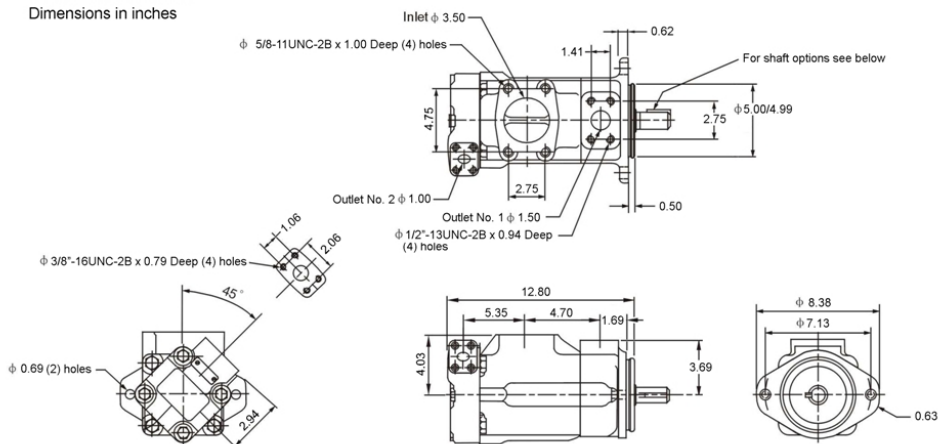
SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 4525V-50-A-14-1-CC-20 ("50" = Shaft End Pump)	42	8.42 (138)	2500 (172)
	45	8.66 (142)	
	50	9.89 (162)	
	60	11.78 (193)	
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 4525V-50-A-14-1-CC-20 ("14" = Cover End Pump)	10	1.98 (32.5)	2500 (172)
	12	2.44 (40)	
	14	2.62 (43)	
	17	3.36 (55)	
	21	4.09 (67)	

DIMENSIONS

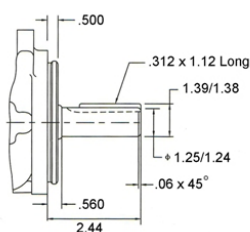
4525V Double Pump - Dimensions in Inches

4525V Dimensions
Dimensions in inches

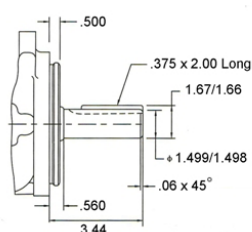


4525V Shafts
Dimensions in inches

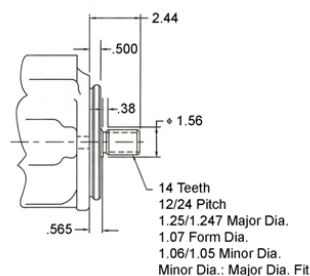
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



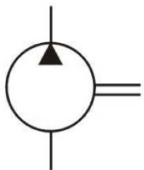
DOUBLE FIXED DISPLACEMENT 4525VQ SERIES

FEATURES

The Northman 4525VQ Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 4525VQ series are from 42 GPM to 60 GPM at 1200 RPM on the shaft end and from 10 to 21 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

4525 VQ - 50 - A - 14 - 1 - CC - ** - (L)

1
 2
 3
 4
 5
 6
 7
 8
 9

<p>1 Series 4525: 4525 Fixed Double Pump</p>	<p>5 Cover End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 10, 12, 14, 17, 21</p>	<p>7 Port Orientation (Cont.) <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Inline with Inlet</u> CA – No. 2 Outlet 135°CCW from Inlet CB – No. 2 Outlet 45°CCW from Inlet CC – No. 2 Outlet 45°CW from Inlet CD – No. 2 Outlet 135°CW from Inlet</p>
<p>2 Design Type VQ: Mobile Design</p>	<p>6 Shaft 1: 1-1/4" Dia., 0.312 Sq. St. Key 11: 14 Tooth Spline 86: 1-1/2" Dia., 0.375 Sq. St. Key</p>	<p><u>With No. 1 Outlet 90°CW FROM Inlet</u> DA – No. 2 Outlet 135°CCW from Inlet DB – No. 2 Outlet 45°CCW from Inlet DC – No. 2 Outlet 45°CW from Inlet DD – No. 2 Outlet 135°CW from Inlet</p>
<p>3 Shaft End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 42, 45, 50, 60</p>	<p>7 Port Orientation <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Opposite Inlet</u> AA – No. 2 Outlet 135°CCW from Inlet AB – No. 2 Outlet 45°CCW from Inlet AC – No. 2 Outlet 45°CW from Inlet AD – No. 2 Outlet 135°CW from Inlet</p>	<p>8 Design Number</p>
<p>4 Ports A: Inlet – 3.5" SAE, 4-Bolt Flange Shaft End Outlet – 1.5" SAE, 4-Bolt Flange Cover End Outlet – 1" SAE, 4-Bolt Flange</p>	<p><u>With No. 1 Outlet 90°CCW from Inlet</u> BA – No. 2 Outlet 135°CCW from Inlet BB – No. 2 Outlet 45°CCW from Inlet BC – No. 2 Outlet 45°CW from Inlet BD – No. 2 Outlet 135°CW from Inlet</p>	<p>9 Shaft Rotation <i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)</p>

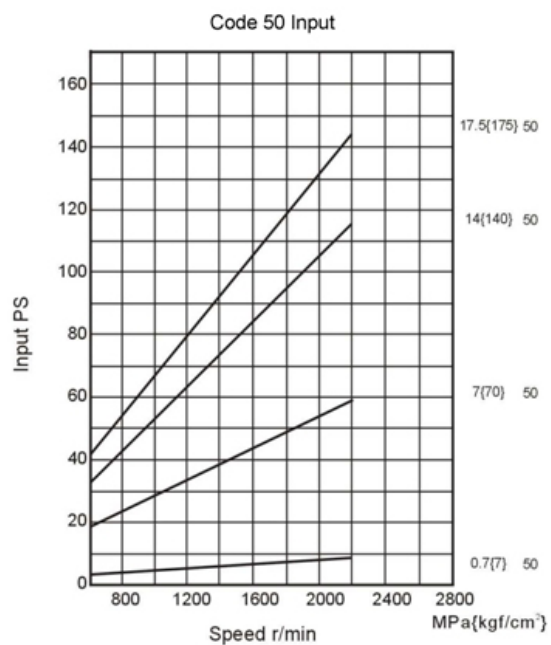
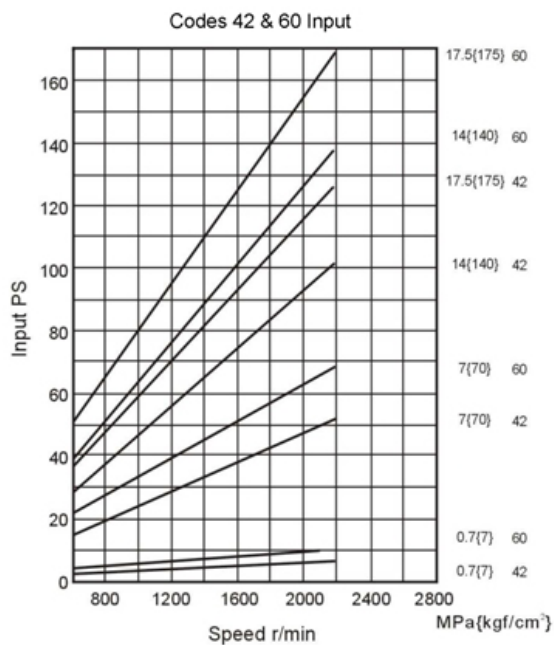
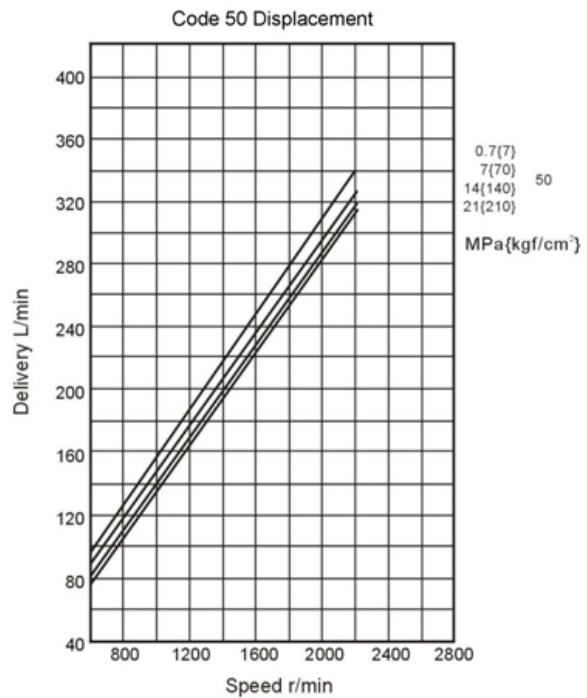
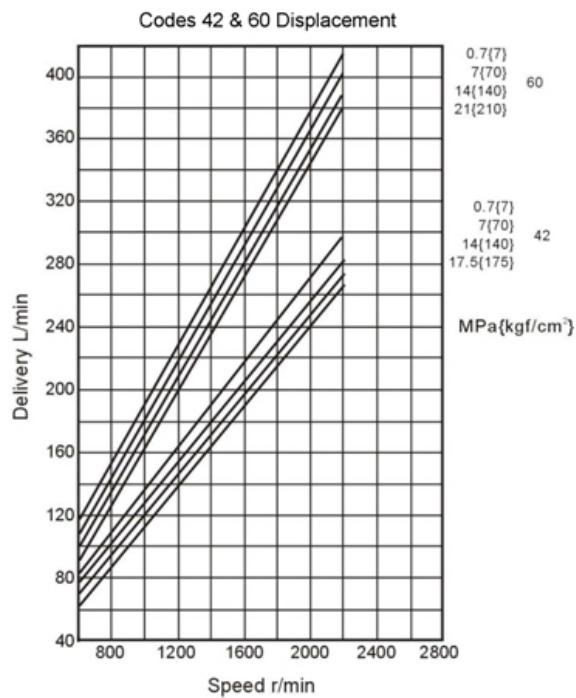
DOUBLE FIXED DISPLACEMENT 4525VQ SERIES

PERFORMANCE CURVES

4525VQ Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



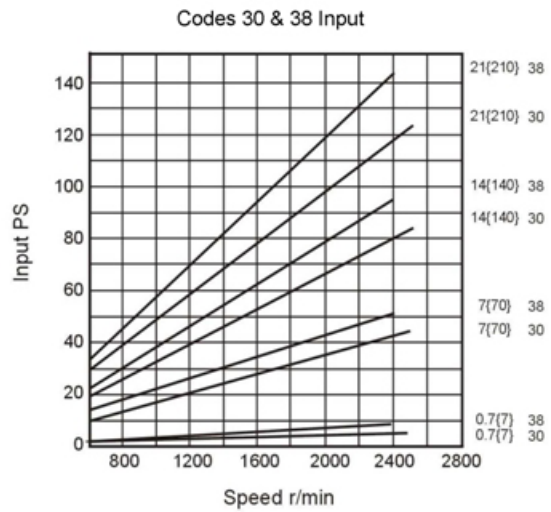
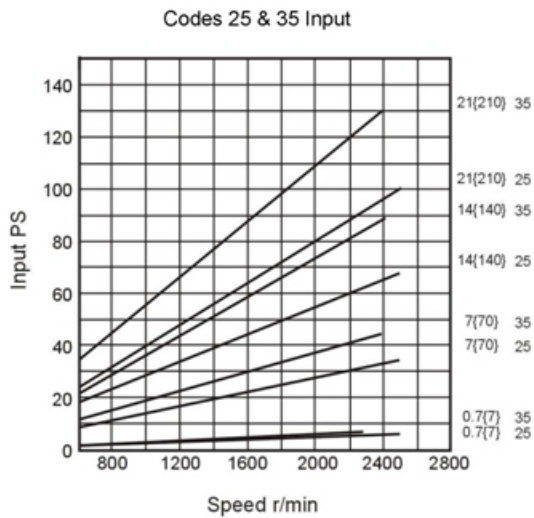
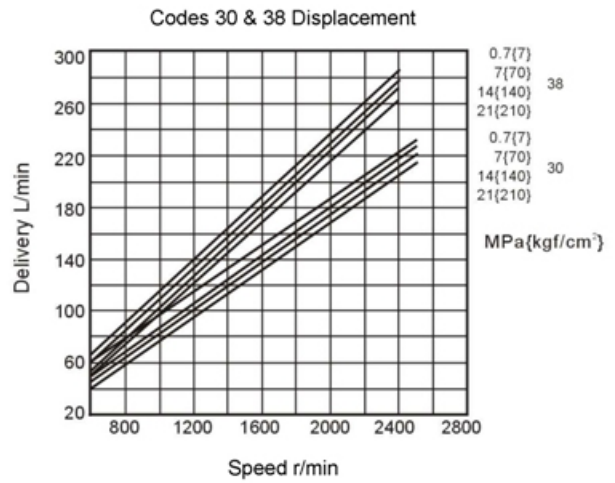
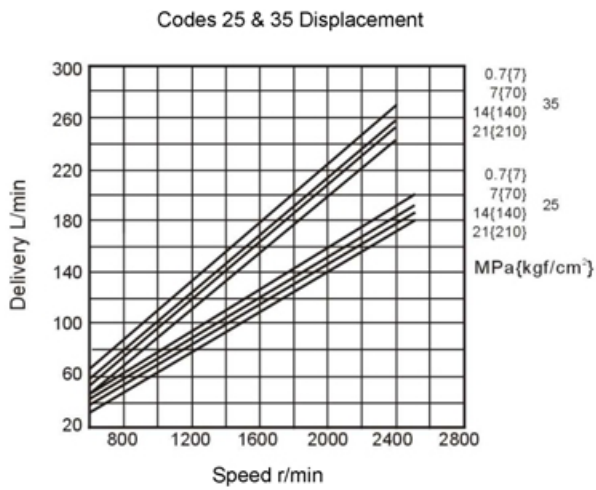
DOUBLE FIXED DISPLACEMENT 4525VQ SERIES

PERFORMANCE CURVES

4525VQ Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 4525VQ SERIES

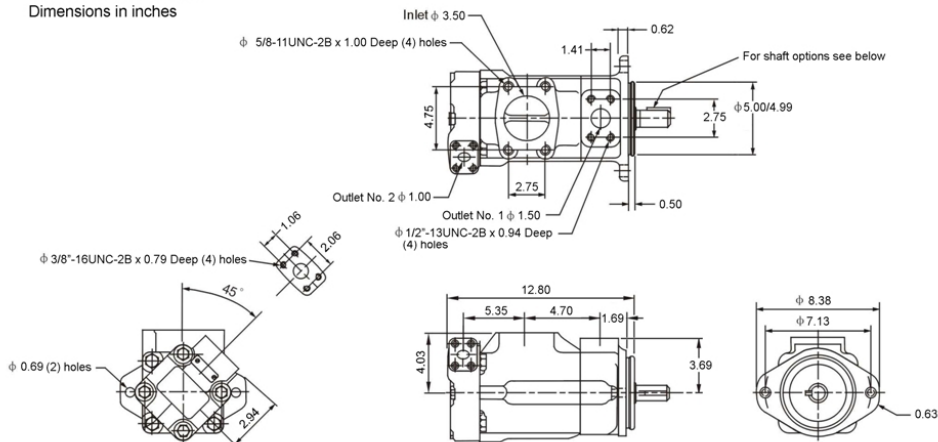
SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 4525VQ-50-A-14-1-CC-20 ("50" = Shaft End Pump)	42	8.18 (134)	2400	2500 (172)
	45	8.97 (147)	2200	
	50	9.52 (156)		
	60	11.53 (189)		
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 4525VQ-50-A-14-1-CC-20 ("14" = Cover End Pump)	10	1.98 (32.5)	2700	3000 (210)
	12	2.34 (38.3)		
	14	2.64 (43.3)		
	17	3.20 (52.5)	2500	
	21	3.97 (65.0)		

DIMENSIONS

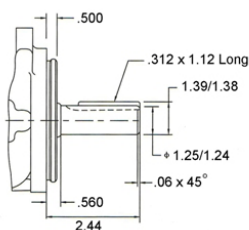
4525VQ Double Pump - Dimensions in Inches

4525VQ Dimensions
Dimensions in inches

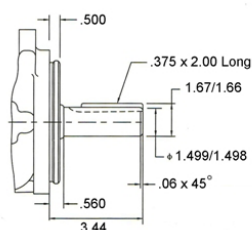


4525VQ Shafts
Dimensions in inches

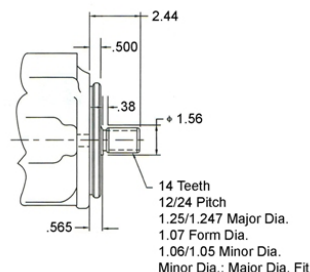
#1 Straight Shaft



#86 Straight Shaft



#11 Splined Shaft



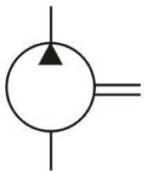
DOUBLE FIXED DISPLACEMENT 4535V SERIES

FEATURES

The Northman 4535V Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump for industrial applications features high pressure capability with 12 vanes for low noise. The available flow ratings for the 4535V series are from 42 GPM to 60 GPM at 1200 RPM on the shaft end and from 21 to 38 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

4535 **V** - **50** - **A** - **25** - **1** - **CC** - ****** - **(L)**

1
 2
 3
 4
 5
 6
 7
 8
 9

<p>1 Series 4535: 4535 Fixed Double Pump</p>	<p>5 Cover End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 21, 25, 30, 35, 38</p>	<p>7 Port Orientation (Cont.) <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Inline with Inlet</u> CA - No. 2 Outlet Opposite Inlet CB - No. 2 Outlet 90° CCW from Inlet CC - No. 2 Outlet Inline with Inlet CD - No. 2 Outlet 90° CW from Inlet</p>
<p>2 Design Type V: Industrial Design</p>	<p>6 Shaft 1: 1-1/4" Dia., 0.312 Sq. St. Key 11: 14 Tooth Spline 86: 1-1/2" Dia., 0.375 Sq. St. Key</p>	<p><u>With No. 1 Outlet 90° CW FROM Inlet</u> DA - No. 2 Outlet Opposite Inlet DB - No. 2 Outlet 90° CCW from Inlet DC - No. 2 Outlet Inline with Inlet DD - No. 2 Outlet 90° CW from Inlet</p>
<p>3 Shaft End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 42, 45, 50, 60</p>	<p>7 Port Orientation <i>(Viewed from Cover End)</i> <u>With No. 1 Outlet Opposite Inlet</u> AA - No. 2 Outlet Opposite Inlet AB - No. 2 Outlet 90° CCW from Inlet AC - No. 2 Outlet Inline with Inlet AD - No. 2 Outlet 90° CW from Inlet</p>	<p>8 Design Number</p>
<p>4 Ports A: Inlet - 4" SAE, 4-Bolt Flange Shaft End Outlet - 1.5" SAE, 4-Bolt Flange Cover End Outlet - 1.25" SAE, 4-Bolt Flange</p>	<p><u>With No. 1 Outlet 90° CCW from Inlet</u> BA - No. 2 Outlet Opposite Inlet BB - No. 2 Outlet 90° CCW from Inlet BC - No. 2 Outlet Inline with Inlet BD - No. 2 Outlet 90° CW from Inlet</p>	<p>9 Shaft Rotation <i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)</p>

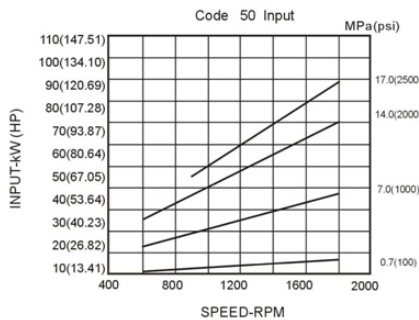
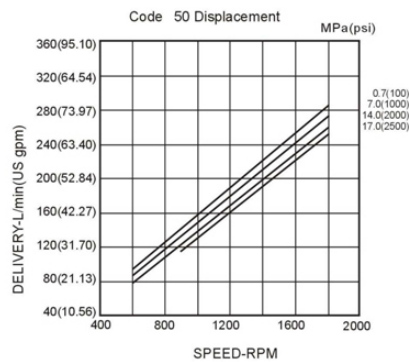
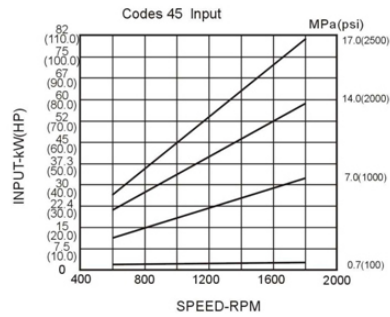
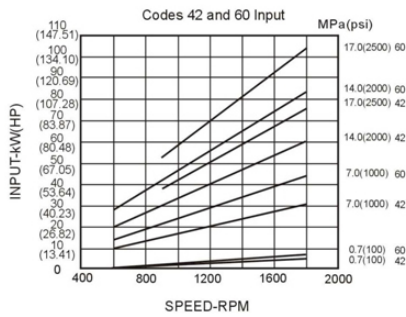
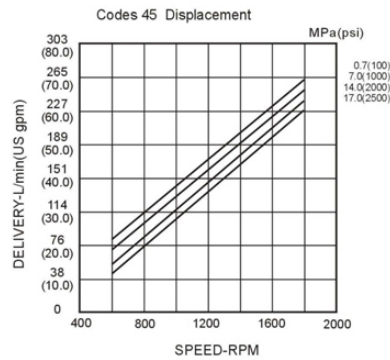
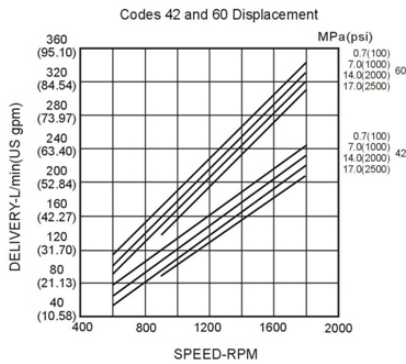
DOUBLE FIXED DISPLACEMENT 4535V SERIES

PERFORMANCE CURVES

4535V Double Pump

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



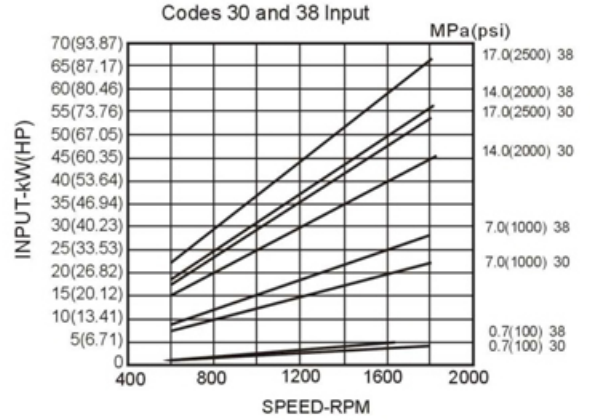
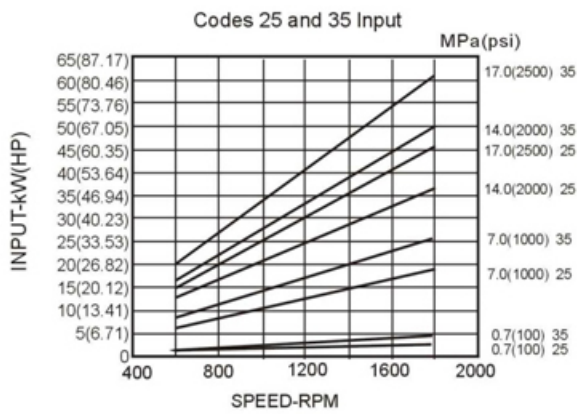
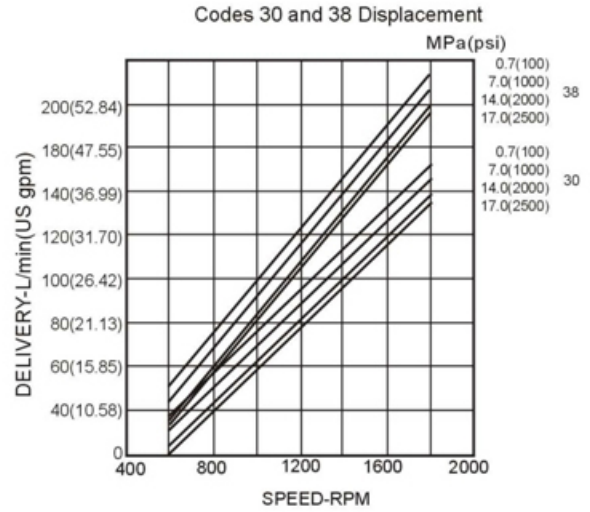
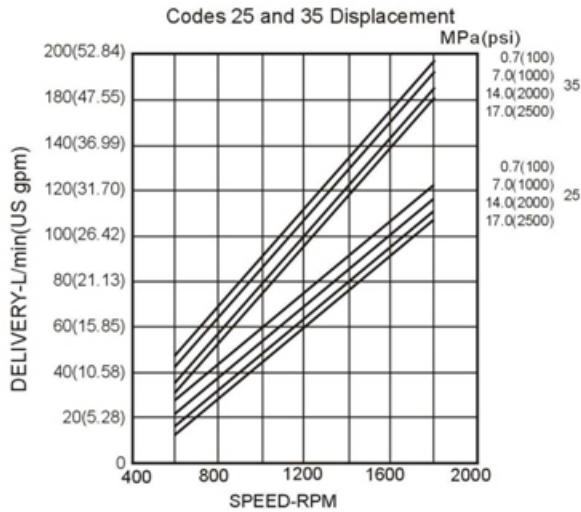
DOUBLE FIXED DISPLACEMENT 4535V SERIES

PERFORMANCE CURVES

4535V Double Pump (Ring Size -30 & 38 GPM)

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 4535V SERIES

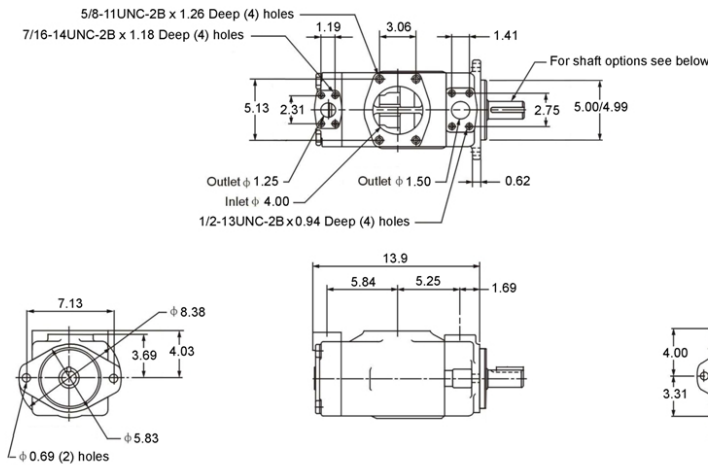
SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 4535V-50-A-30-1-CC-20 ("50" = Shaft End Pump)	42	8.42 (138)	2500 (172)
	45	8.66 (142)	
	50	9.89 (162)	
	60	11.78 (193)	

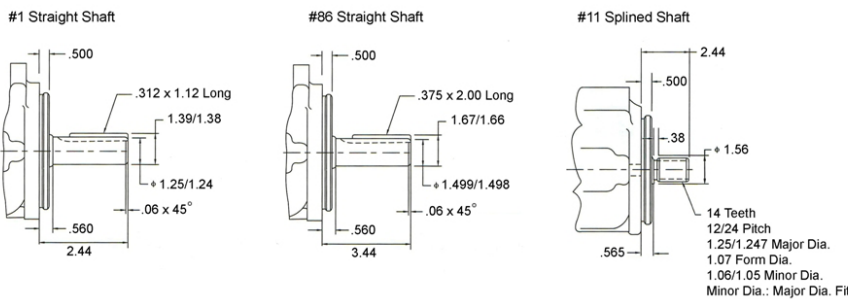
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Pressure PSI (BAR)
P/N Example 4535V-50-A-30-1-CC-20 ("30" = Cover End Pump)	21	4.09 (67)	2500 (172)
	25	4.94 (81)	
	30	5.92 (97)	
	35	6.83 (112)	
	38	7.38 (121)	

DIMENSIONS

4535V Double Pump - Dimensions in Inches



4535V Shafts Dimensions in inches



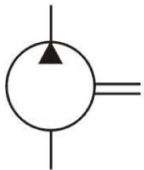
DOUBLE FIXED DISPLACEMENT 4535VQ SERIES

FEATURES

The Northman 4535VQ Series double pump is a fixed displacement, hydraulic balanced vane pump. This high performance intravane pump features the 10 vane design for the high pressure and speed requirements of mobile applications. The available flow ratings for the 4535VQ series are from 42 GPM to 60 GPM at 1200 RPM on the shaft end and from 21 to 38 GPM at 1200 RPM on the cover end. Viton seals are standard. Standard rotation is right-hand (clockwise), with left-hand rotation (counterclockwise) available ("L" option). The flange mounting is the SAE "C" two-bolt standard. The outlet port may be oriented in any one of four positions.



SYMBOL



MODEL CODE

4535 VQ - 50 - A - 25 - 1 - CC - ** - (L)

1
 2
 3
 4
 5
 6
 7
 8
 9

<p>1 Series 4535: 4535 Fixed Double Pump</p>	<p>5 Cover End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 21, 25, 30, 35, 38</p>	<p>7 Port Orientation (Cont.) <i>(Viewed from Cover End)</i> With No. 1 Outlet Inline with Inlet CA - No. 2 Outlet Opposite Inlet CB - No. 2 Outlet 90° CCW from Inlet CC - No. 2 Outlet Inline with Inlet CD - No. 2 Outlet 90° CW from Inlet</p>
<p>2 Design Type VQ: Mobile Design</p>	<p>6 Shaft 1: 1-1/4" Dia., 0.312 Sq. St. Key 11: 14 Tooth Spline 86: 1-1/2" Dia., 0.375 Sq. St. Key</p>	<p>With No. 1 Outlet 90° CW FROM Inlet DA - No. 2 Outlet Opposite Inlet DB - No. 2 Outlet 90° CCW from Inlet DC - No. 2 Outlet Inline with Inlet DD - No. 2 Outlet 90° CW from Inlet</p>
<p>3 Shaft End Pump <i>Flow at 1200 RPM, 100 PSI:</i> 42, 45, 50, 60</p>	<p>7 Port Orientation <i>(Viewed from Cover End)</i> With No. 1 Outlet Opposite Inlet AA - No. 2 Outlet Opposite Inlet AB - No. 2 Outlet 90° CCW from Inlet AC - No. 2 Outlet Inline with Inlet AD - No. 2 Outlet 90° CW from Inlet</p>	<p>8 Design Number</p>
<p>4 Ports A: Inlet - 4" SAE, 4-Bolt Flange Shaft End Outlet - 1.5" SAE, 4-Bolt Flange Cover End Outlet - 1.25" SAE, 4-Bolt Flange</p>	<p>With No. 1 Outlet 90° CCW from Inlet BA - No. 2 Outlet Opposite Inlet BB - No. 2 Outlet 90° CCW from Inlet BC - No. 2 Outlet Inline with Inlet BD - No. 2 Outlet 90° CW from Inlet</p>	<p>9 Shaft Rotation <i>(Viewed from Shaft End)</i> No Code: Right Hand (CW) L: Left Hand (CCW)</p>

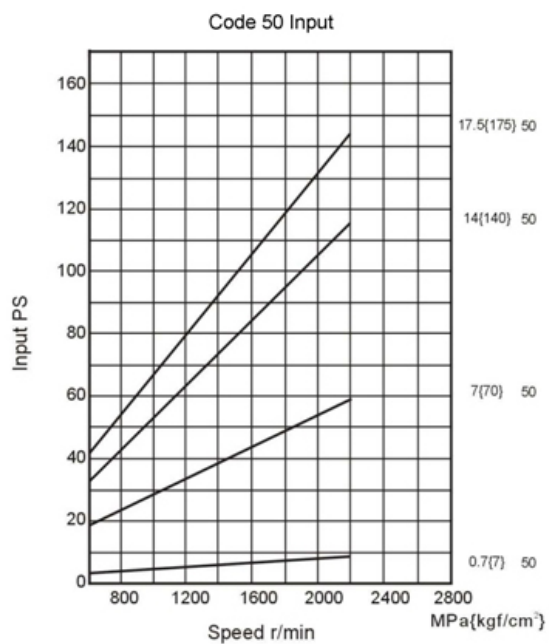
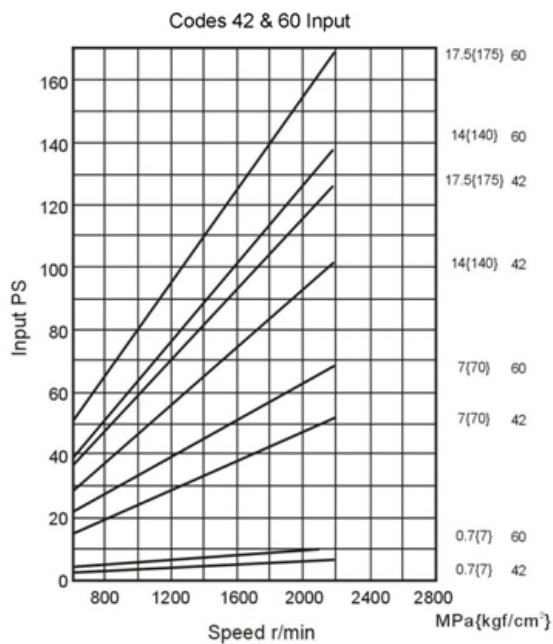
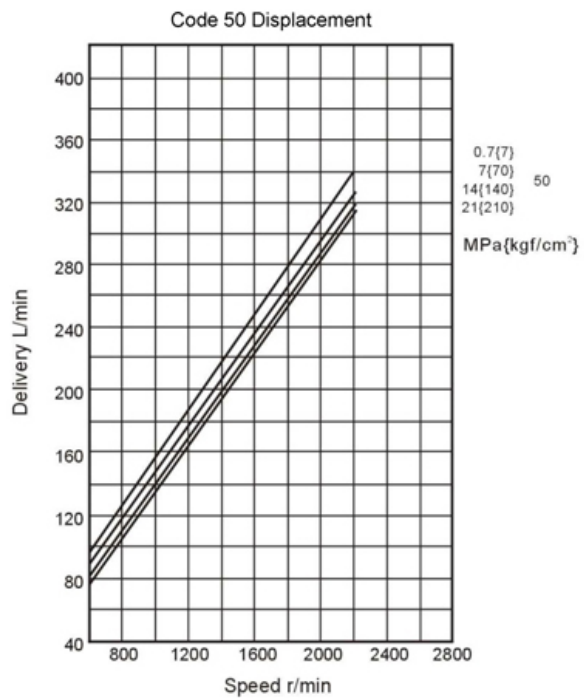
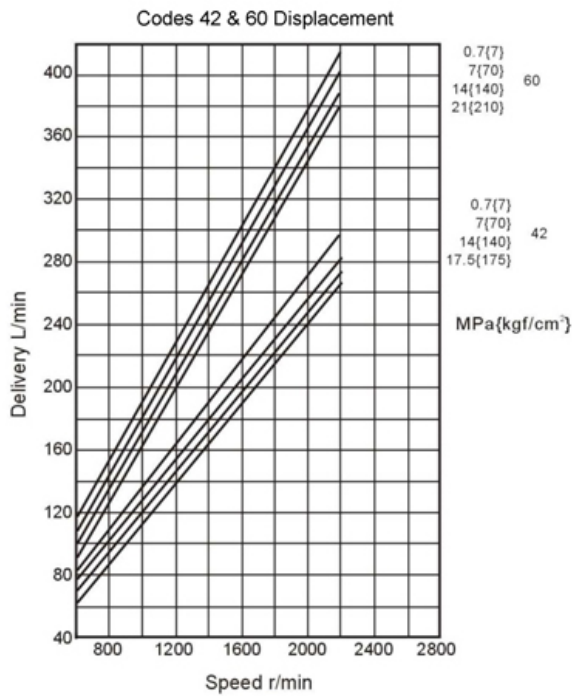
DOUBLE FIXED DISPLACEMENT 4535VQ SERIES

PERFORMANCE CURVES

4535VQ Double Pump (Ring Size -42 & 60 GPM)

SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.



DOUBLE FIXED DISPLACEMENT 4535VQ SERIES

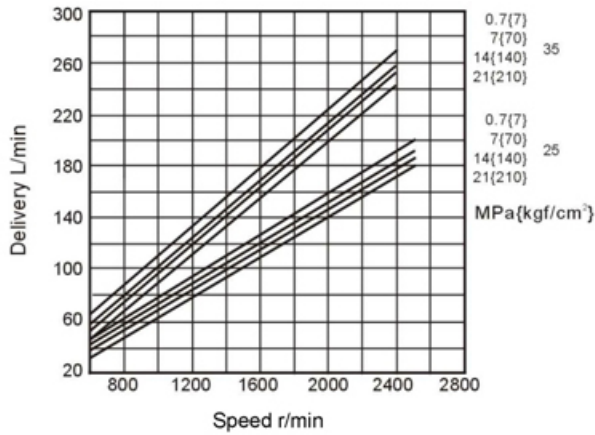
PERFORMANCE CURVES

4535VQ Double Pump

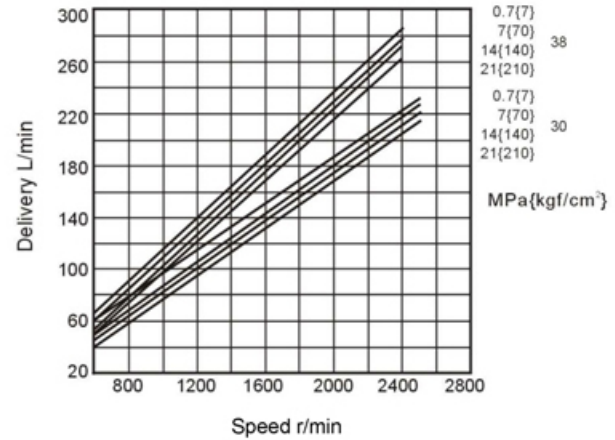
SAE 10W Fluid at 120°F.

Pump Inlet at 0" hg.

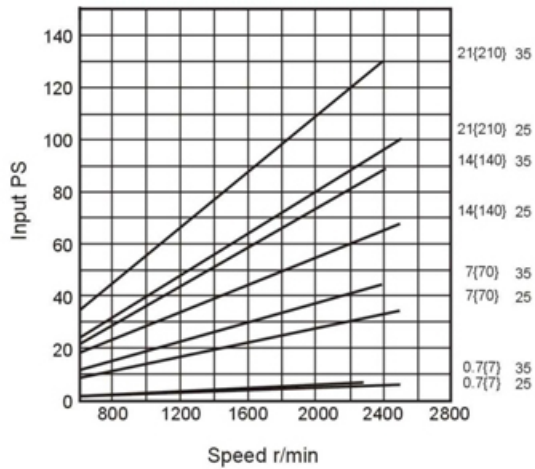
Codes 25 & 35 Displacement



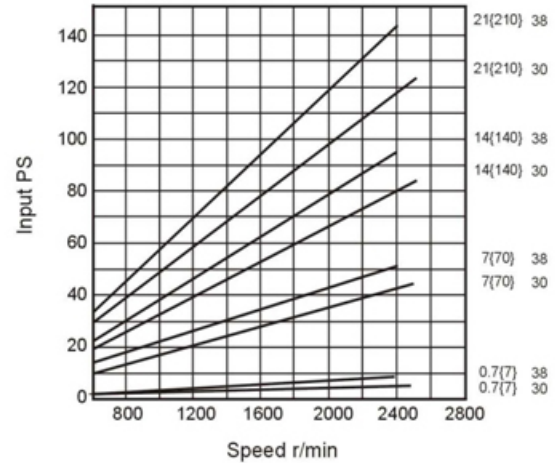
Codes 30 & 38 Displacement



Codes 25 & 35 Input



Codes 30 & 38 Input



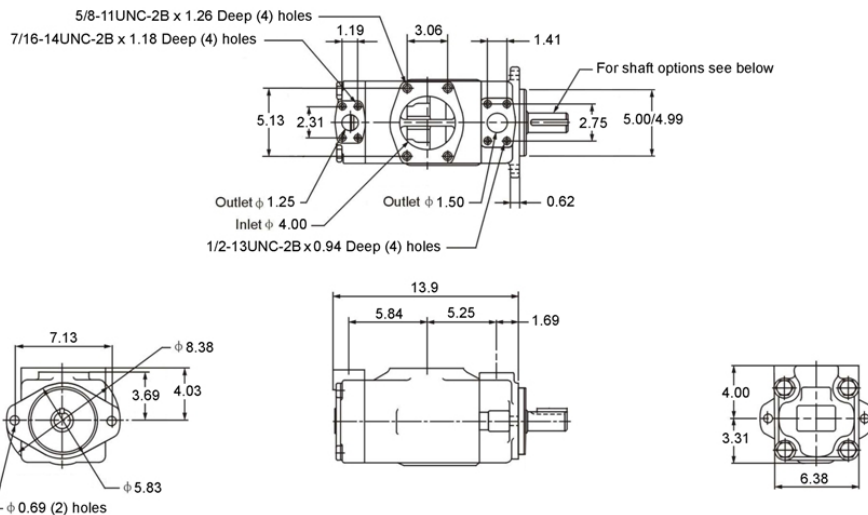
DOUBLE FIXED DISPLACEMENT 4535VQ SERIES

SPECIFICATIONS

Shaft End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 4535VQ-50-A-30-1-CC-20 ("50" = Shaft End Pump)	42	8.18 (134)	2400	2500 (172)
	45	8.97 (147)	2200	
	50	9.52 (156)		
	60	11.53 (189)		
Cover End Pump	Flow Code GPM @ 1200 RPM & 100 PSI	Displacement in ³ /r (cm ³ /r)	Max. Speed RPM	Max. Pressure PSI (BAR)
P/N Example 4535VQ-50-A-30-1-CC-20 ("30" = Cover End Pump)	21	3.90 (64)	2500	3000 (210)
	25	4.83 (79.2)		
	30	5.80 (95)		
	35	6.65 (109)	2400	
	38	7.20 (118)		

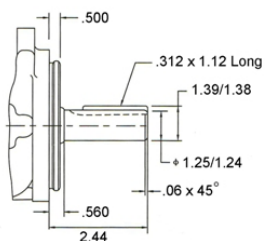
DIMENSIONS

4535VQ Double Pump - Dimensions in Inches

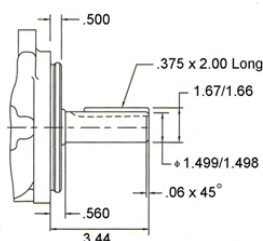


4535VQ Shafts Dimensions in inches

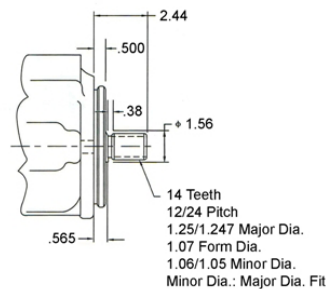
#1 Straight Shaft



#86 Straight Shaft

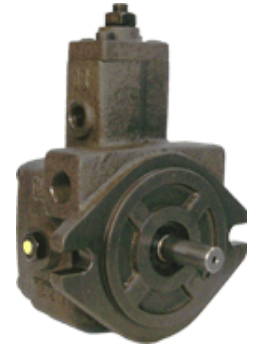


#11 Splined Shaft



VARIABLE VOLUME, PRESSURE COMPENSATED VANE PUMPS

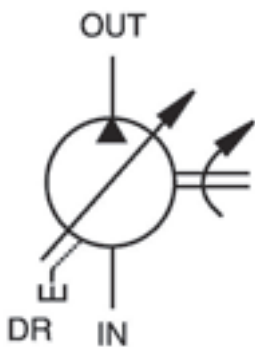
VPVC F12/F20 SERIES



FEATURES

- VPVC series offers design engineers an opportunity to design circuits with high efficiency.
- Built-in compensator control automatically adjusts pump delivery to system volume requirements at selected pressures. System relief valve may not be needed.
- Wasted horsepower is reduced and heat generated is much less than fixed displacement pumps.
- No manual maximum flow adjustment.

SYMBOL



MODEL CODE

VPVC - F 12 - A1 - ** - N

1 **2** **3** **4** **5** **6**

1 Series

VPVC: Variable Volume,
Pressure Compensated Pump

2 Mounting Flange

F: SAE A, 2-Bolt

3 Displacement

Nominal No-Load
Delivery at 1800 RPM
12: 12 LPM (3.2 GPM)
20: 20 LPM (5.3 GPM)

4 Pressure Range

A1: 8-20 BAR (110-290 PSI)
A2: 15-35 BAR (200-500 PSI)
A3: 30-70 BAR (430-1000 PSI)

5 Design Number

6 Ports

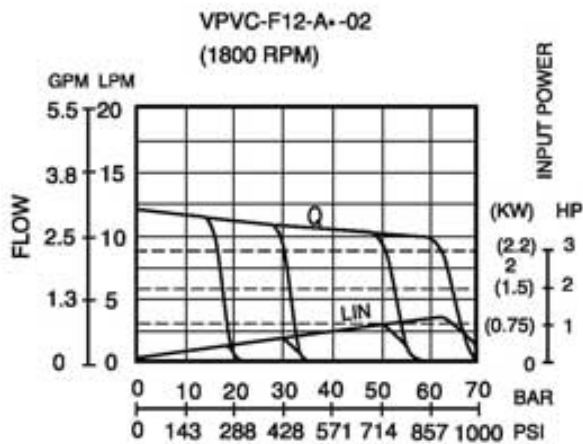
N: NPT Ports

VARIABLE VOLUME, PRESSURE COMPENSATED VANE PUMPS

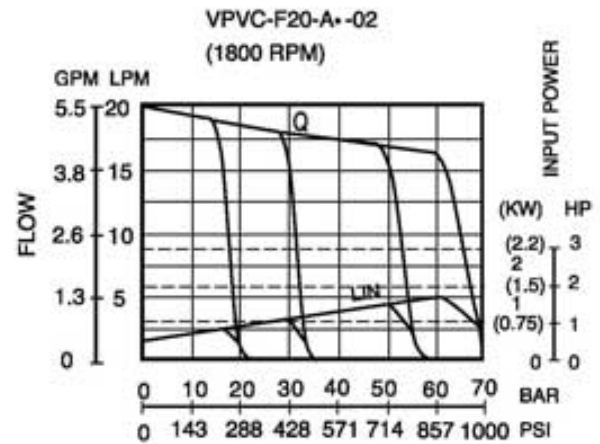
VPVC F12/F20 SERIES

SPECIFICATIONS

MODEL	DELIVERY AT UNLOADING LPM(GPM)			PRESSURE ADJ RANGE BAR (PSI)	SPEED OF ROTATION		MAX. SET PRESSURE BAR (PSI)	WEIGHT KGS (LBS)
	1800 RPM	1500 RPM	1200 RPM		MAX.	MIN.		
VPVC-F12-A1-**-N				8-20 (110-290)			20 (284)	
VPVC-F12-A2-**-N	12 (3.17)	10 (2.64)	8 (2.12)	15-35 (200-500)	1800	800	35 (500)	5 (11)
VPVC-F12-A3-**-N				30-70 (430-1000)			70 (1000)	
VPVC-F20-A1-**-N				8-20 (110-290)				
VPVC-F20-A2-**-N	20 (5.28)	17 (4.49)	13.3 (3.53)	15-35 (200-500)	1800	800	35 (500)	5 (11)
VPVC-F20-A3-**-N				30-70 (430-1000)			70 (1000)	



PRESSURE
Q : DELIVERY
LIN : INPUT POWER



PRESSURE
Q : DELIVERY
LIN : INPUT POWER

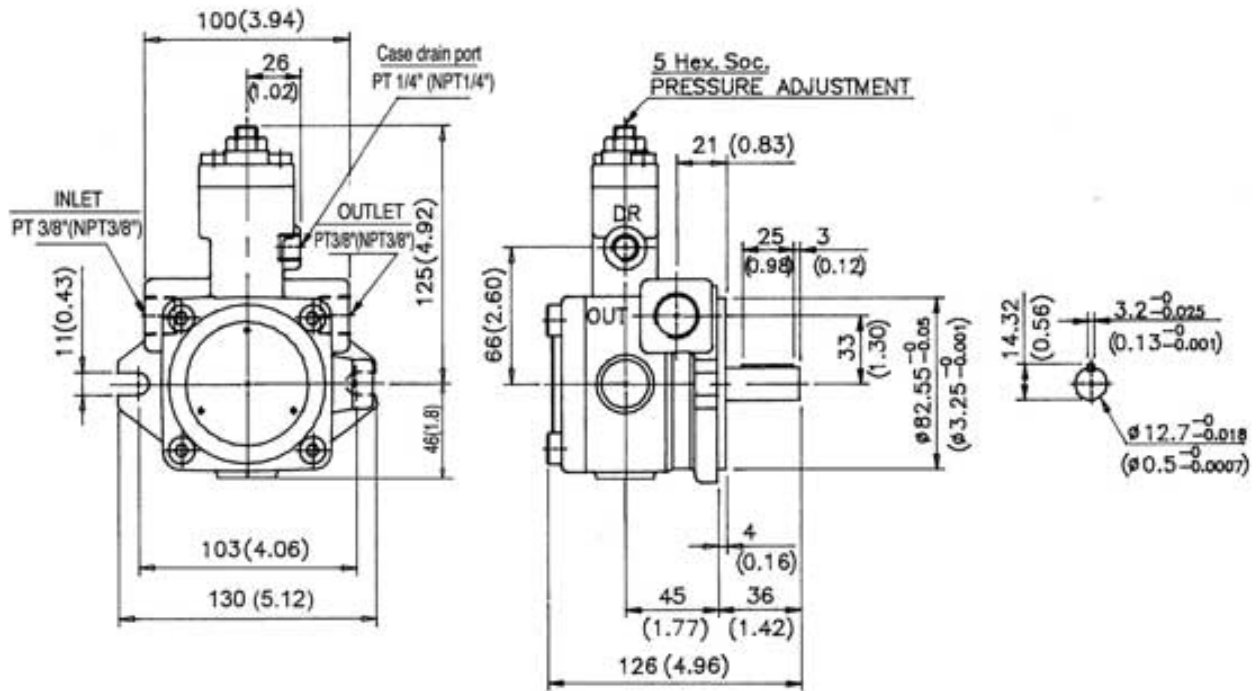
VARIABLE VOLUME, PRESSURE COMPENSATED VANE PUMPS

VPVC F12/F20 SERIES

DIMENSIONS

VPVC-F12/F20-A-**-N FLANGE SAE A

UNIT: mm(inch) WEIGHT: 5 kgs (11 lbs)



VARIABLE VOLUME, PRESSURE COMPENSATED VANE PUMPS

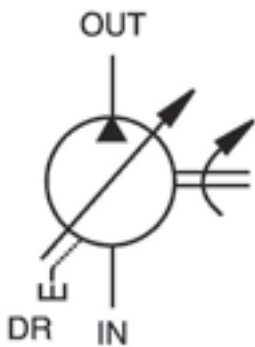
VPVC F30/F40 SERIES



FEATURES

- VPVC series offers design engineers an opportunity to design circuits with high efficiency.
- Built-in compensator control automatically adjusts pump delivery to system volume requirements at selected pressures. System relief valve may not be needed.
- Wasted horsepower is reduced and heat generated is much less than fixed displacement pumps.
- Manual maximum flow adjustment.

Symbol



MODEL CODE

VPVC – F 30 – A1 – ** – N

1

2

3

4

5

6

1 **Series** _____

VPVC: Variable Volume,
Pressure Compensated Pump

2 **Mounting Flange** _____

F: 4-Bolt

3 **Displacement** _____

Nominal No-Load
Delivery at 1800 RPM
30: 30 LPM (8 GPM)
40: 40 LPM (10.5 GPM)

4 **Pressure Range** _____

A1: 8-20 BAR (110-290 PSI)
A2: 15-35 BAR (200-500 PSI)
A3: 30-70 BAR (430-1000 PSI)

5 **Design Number** _____

6 **Ports** _____

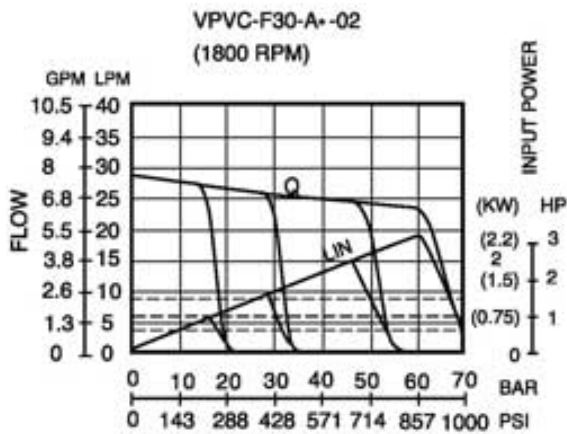
N: NPT Ports

VARIABLE VOLUME, PRESSURE COMPENSATED VANE PUMPS

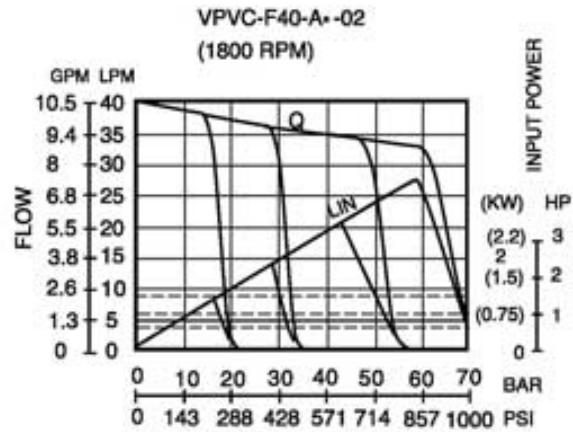
VPVC F30/F40 SERIES

SPECIFICATIONS

MODEL	DELIVERY AT UNLOADING LPM(GPM)			PRESSURE ADJ . RANGE BAR (PSI)	SPEED OF ROTATION		MAX. SET PRESSURE BAR (PSI)	WEIGHT KGS (LBS)
	1800 RPM	1500 RPM	1200 RPM		MAX.	MIN.		
VPVC-F30-A1-**-N				8-20 (110-290)			20 (284)	
VPVC-F30-A2-**-N	30 (7.93)	25 (6.6)	20 (5.3)	15-35 (200-500)	1800	800	35 (500)	9 (20)
VPVC-F30-A3-**-N				30-70 (430-1000)			70 (1000)	
VPVC-F40-A1-**-N				8-20 (110-290)			20 (284)	
VPVC-F40-A2-**-N	40 (10.57)	35 (9.25)	28 (7.4)	15-35 (200-500)	1800	800	35 (500)	9 (20)
VPVC-F40-A3-**-N				30-70 (430-1000)			70 (1000)	



PRESSURE
Q : DELIVERY
LIN : INPUT POWER



PRESSURE
Q : DELIVERY
LIN : INPUT POWER

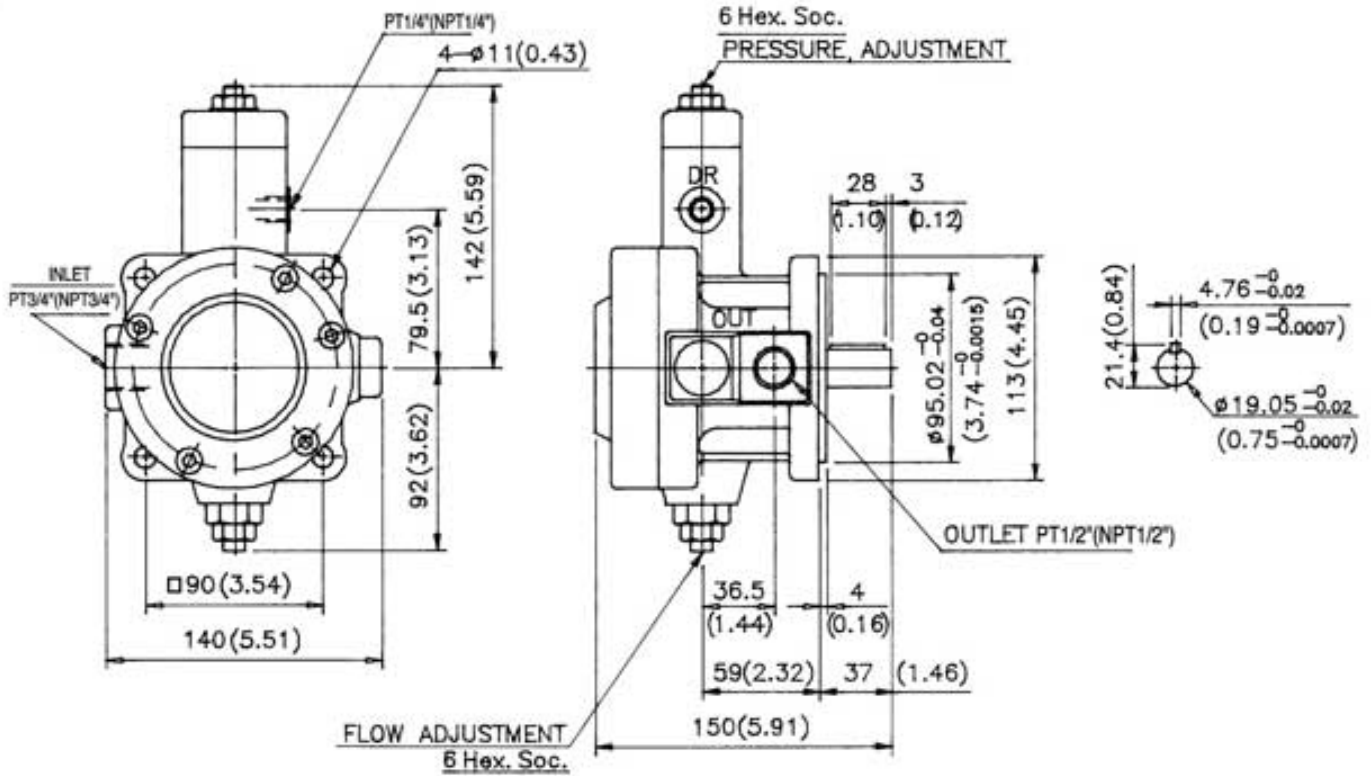
VARIABLE VOLUME, PRESSURE COMPENSATED VANE PUMPS

VPVC F30/F40 SERIES

DIMENSIONS

VPVC-F30/F40-A-**-N FLANGE SAE A

UNIT: mm(inch) WEIGHT: 9 kgs (19.8 lbs)



VANE PUMP CARTRIDGE KITS



SPECIFICATIONS

Series	Size GPM @ 1200 RPM, 100 PSI	SHAFT END (Or Single Pump)		COVER END (If Double Pump)	
		Buna	Viton	Buna	Viton
20V	2	(Contact NFP with complete pump P/N and rotation)		CV2002	CV2002V
	5			CV2005	CV2005V
	8			CV2008	CV2008V
	9			CV2009	CV2009V
	11			CV2011	CV2011V
	12			CV2012	CV2012V
	14			CV2014	CV2014V
25V	10	CV2510	CV2510V	CV2510C	CV2510VC
	12	CV2512	CV2512V	CV2512C	CV2512VC
	14	CV2514	CV2514V	CV2514C	CV2514VC
	17	CV2517	CV2517V	CV2517C	CV2517VC
	21	CV2521	CV2521V	CV2521C	CV2521VC
35V	21		CV3521V	CV3521C	CV3521VC
	25	CV3525	CV3525V	CV3525C	CV3525VC
	30	CV3530	CV3530V	CV3530C	CV3530VC
	35	CV3535	CV3535V	CV3535C	CV3535VC
45V	38	CV3538	CV3538V	CV3538C	CV3538VC
	42	CV4542	CV4542V	-	-
	45	CV4545	CV4545V	-	-
	50	CV4550	CV4550V	-	-
	60	CV4560	CV4560V	-	-

Note: Buna P/N's for reference only. NFP currently stocks Viton as standard, shown in bold.

VANE PUMP CARTRIDGE KITS

SPECIFICATIONS

VQ SERIES (20VQ, 25VQ, 35VQ, 45VQ)

Series	Size GPM @ 1200 RPM, 100 PSI	SHAFT END (Or Single Pump)		COVER END (If Double Pump)	
		Buna	Viton	Buna	Viton
20VQ	2	(Contact NFP with complete pump P/N and rotation)		CVQ2002	CVQ2002V
	5			CVQ2005	CVQ2005V
	8			CVQ2008	CVQ2008V
	9			CVQ2009	CVQ2009V
	11			CVQ2011	CVQ2011V
	12			CVQ2012	CVQ2012V
	14			CVQ2014	CVQ2014V
25VQ	10	CVQ2510	CVQ2510V	CVQ2510C	CVQ2510VC
	12		CVQ2512V	CVQ2512C	CVQ2512VC
	14	CVQ2514	CVQ2514V	CVQ2514C	CVQ2514VC
	17	CVQ2517	CVQ2517V	CVQ2517C	CVQ2517VC
	21	CVQ2521	CVQ2521V	CVQ2521C	CVQ2521VC
35VQ	21	CVQ3521	CVQ3521V	CVQ3521C	CVQ3521VC
	25	CVQ3525	CVQ3525V	CVQ3525C	CVQ3525VC
	30	CVQ3530	CVQ3530V	-	CVQ3530VC
	35	CVQ3535	CVQ3535V	-	CVQ3535VC
	38	CVQ3538	CVQ3538V	CVQ3538C	CVQ3538VC
45VQ	42	CVQ4542	CVQ4542V	-	-
	45	CVQ4545	CVQ4545V	-	-
	50	CVQ4550	CVQ4550V	-	-
	60	CVQ4560	CVQ4560V	-	-

Note: Buna P/N's for reference only. NFP currently stocks Viton as standard, shown in bold.

P/N's in this chart are for right-hand rotation pumps only.

If pump assembly is left-hand rotation, add "L" to NFP P/N; e.g., CV2514VL, CVQ3525VLC

Available Series:	Single	Double
20VQ		-
25VQ		2520VQ
35VQ		3520VQ, 3525VQ
45VQ		4520VQ, 4525VQ, 4535VQ

Northman

Solenoid Directional Valve

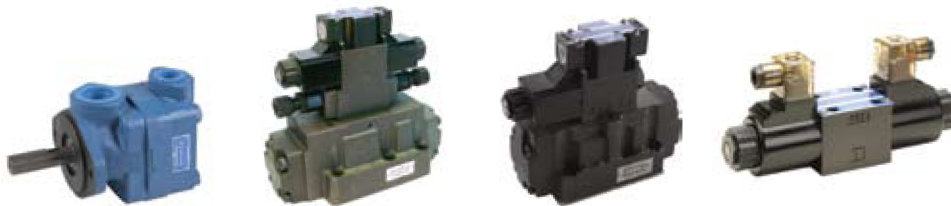
Modular Valve

Pressure Control Valve

Flow Control Valve

Variable Vane Pump

High Pressure Vane Pump



Our Commitment

We are committed to excellent customer care, quality products and a very timely delivery.

Northman's reputation for reliability is built on high quality products, engineering and manufacturing systems.

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