HANSA · TMP srl

HYDRAULIC COMPONENTS
HYDROSTATIC TRANSMISSIONS
GEARBOXES - ACCESSORIES

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HT 29 / B / 101 / 0710 / E

Fixed Displacement Hydraulic Vane Pumps

BV Series

CONTENTS

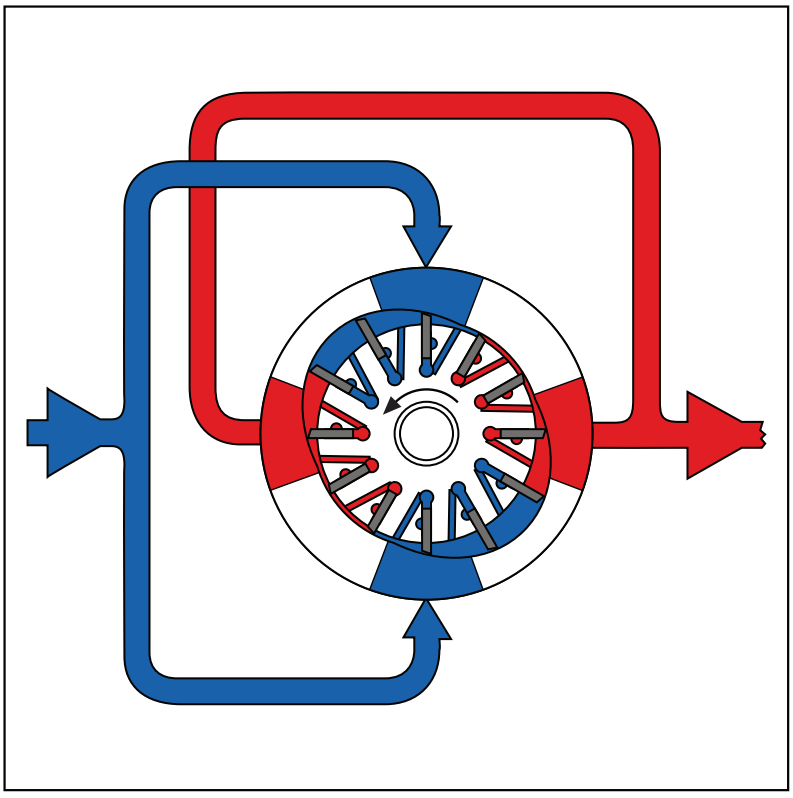
General Information

Versatility, power, compactness and low running costs are the main characteristics of vane pumps. All the components subject to wear are contained in a cartridge unit that can be easily removed for inspection and/or replacement without disconnecting the pump from the circuit, drastically reducing expensive machine down time.

The cartridge contains a rotor, vanes and inserts, a cam ring and two covers. During operation the rotor is driven by a splined shaft coupled to the drive unit. As the rotation speed increases, centrifugal forces, in combination with the pressure generated behind the vanes, push the vanes outwards, where they follow the profile of the cam of the ring with a sufficient contact pressure to ensure adequate hydraulic sealing. The two opposed pumping chambers formed by the elliptical profile of the cam cancel out radial loads on the shaft bearings, thereby giving them extremely long lifetimes.

The versatility of the BV series pumps enables them to meet the requirements of the most varied industrial applications. In fact, as well as their proven high reliability and excellent volumetric efficiency in all working conditions, they operate with particularly low noise levels. This is made possible by the special profile of the cam ring and the use of a 12 vane rotor that reduces the amplitude of the supply pressure pulses, thereby reducing induced vibrations (see drawing).

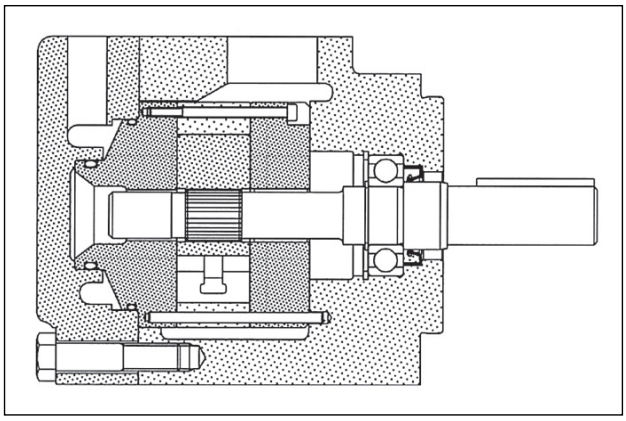
The BV series is available in four versions of single pump (from 21 to 230 L/min at 1200 rpm) and six versions of double pump (from 68 to 370 L/min at 1200 rpm), with maximum powers of over 300HP. The BV series pumps are extremely compact and are supplied with ISO norm mechanical couplings and SAE norm hydraulic fittings. This makes them very easy to install and guarantees their interchangeability with other similar pumps.

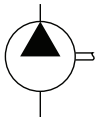


Technical Characteristics

Pump Series	Cartridge Model	Geometric Displacement		Rated Capacity at 1.200 rpm 7 bar		Rated Capacity at 1.500 rpm 7 bar		Maximum Pressure with mineral oil		Speed Range rpm	
		cm^3/g	(in^3/r)	l/min	(gpm)	l/min	(gpm)	bar	(psi)	min.	max.
BV01	02	7,2	(0.44)	8,3	(2)	10,4	(2.8)	210	(3.050)	600	1.800
	05	18,0	(1.10)	20,8	(5)	26,1	(6.9)				
	08	27,4	(1.67)	31,8	(8)	39,4	(10.4)				
	11	36,4	(2.22)	42,4	(11)	52,6	(13.9)				
	12	39,5	(2.41)	46,9	(12)	58,7	(15.5)	160	(2.300)		
	14	45,9	(2.79)	54,9	(14)	69,6	(18.4)	140	(2.030)		
BV02	12	40,1	(2.45)	46,9	(12)	58,8	(15.5)	175	(2.538)	600	1.800
	14	45,4	(2.77)	52,7	(14)	65,7	(17.4)				
	17	55,2	(3.37)	64,2	(17)	80,2	(21.2)				
	19	60,0	(3.66)	71,0	(19)	88,7	(23.4)				
	21	67,5	(4.12)	79,0	(21)	99,8	(26.4)				
BV04	21	69,0	(4.2)	79,5	(21)	101,4	(26.8)	175	(2.538)	600	1.800
	25	81,6	(5)	94,0	(25)	120,1	(31.7)				
	30	97,7	(6)	113,8	(30)	141,2	(37.3)				
	35	112,7	(6.9)	131,6	(35)	167,2	(44.1)				
	38	121,6	(7.4)	139,9	(38)	177,3	(46.8)				
BV05	42	138,6	(8.46)	164	(42)	203,4	(53.7)	175	(2.538)	600	1.800
	47	153,5	(9.4)	180	(47)	222,7	(58.8)				
	50	162,2	(9.9)	189	(50)	234	(61.8)				
	57	183,4	(11.2)	217	(57)	267	(71.2)				
	60	193,4	(11.8)	230	(60)	285	(75.3)				

Single Pump Type BV01





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the type of cartridge used and the speed of rotation. The pump is available in six versions with capacities from 21 to 55 l/min *(from 5 to 14 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
	cm^3/g	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V01-02	**7,2**	(0,44)	**8,3**	(2)	**10,4**	(2.8)	**210**	(3050)	**600**	**1800**
V01-05	**18,0**	(1.10)	**20,8**	(5)	**26,1**	(6.9)	**210**	(3050)	**600**	**1800**
V01-08	**27,4**	(1.67)	**31,8**	(8)	**39,4**	(10.4)	**210**	(3050)	**600**	**1800**
V01-11	**36,4**	(2.22)	**42,4**	(11)	**52,6**	(13.9)	**210**	(3050)	**600**	**1800**
V01-12	**39,5**	(2.41)	**46,9**	(12)	**58,7**	(15.5)	**160**	(2300)	**600**	**1800**
V01-14	**45,9**	(2.79)	**54,9**	(14)	**69,6**	(18.4)	**140**	(2030)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)***:** from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)***:** from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

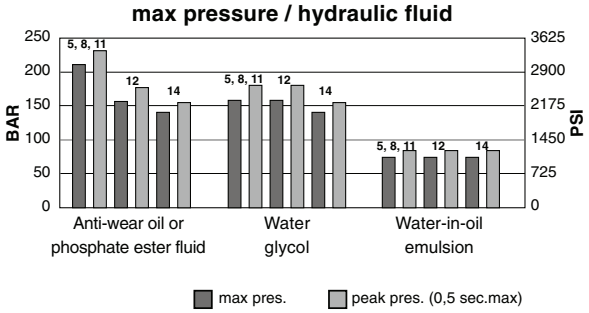
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

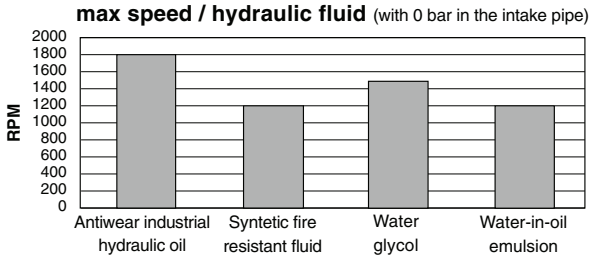
Single Pump Type BV01

Main operating data

max pressure / hydraulic fluid

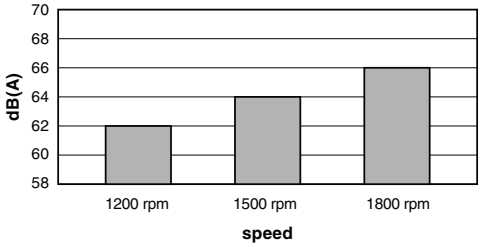


max speed / hydraulic fluid (with 0 bar in the intake pipe)

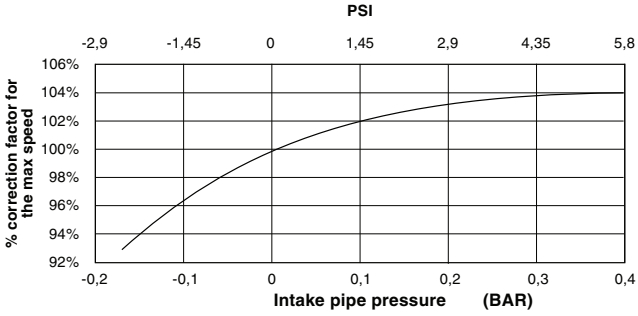


If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

Sound level at 138 bar (2000 psi)

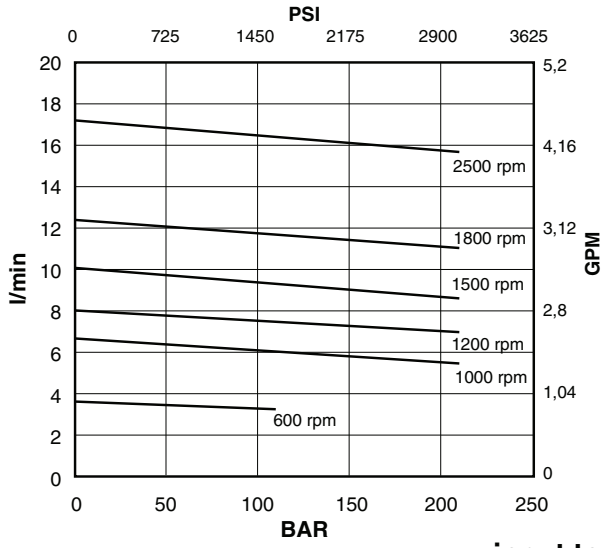


max speed / intake pipe pressure

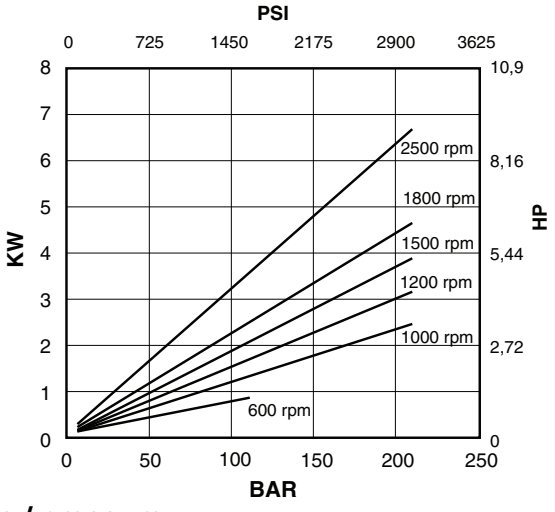


Cartridge V01-02

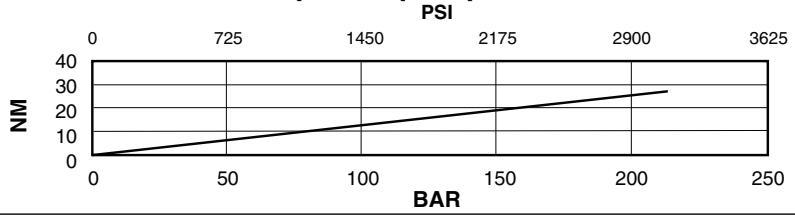
flow / pressure



power / pressure



input torque / pressure

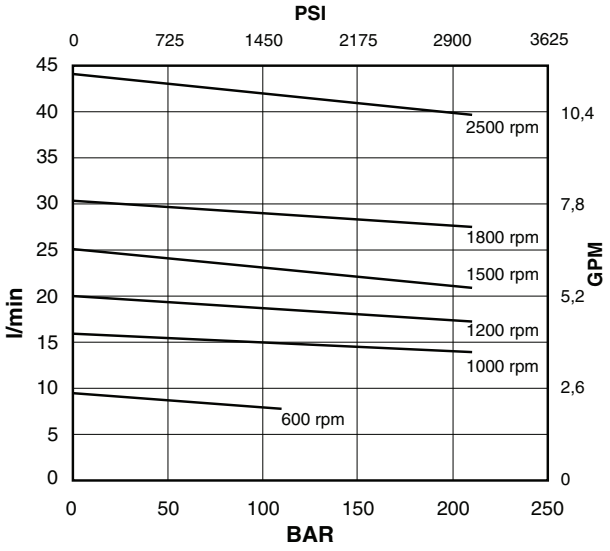


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

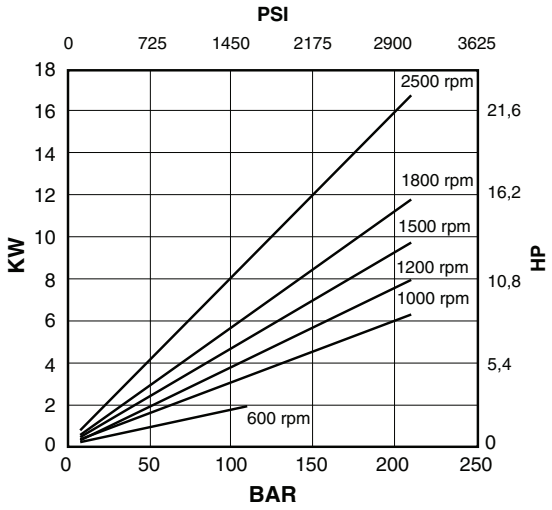
Single Pump Type BV01

Cartridge V01-05

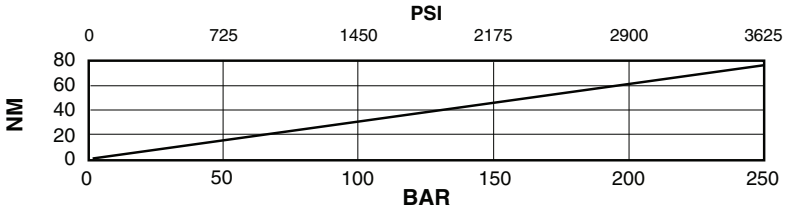
flow / pressure



power / pressure



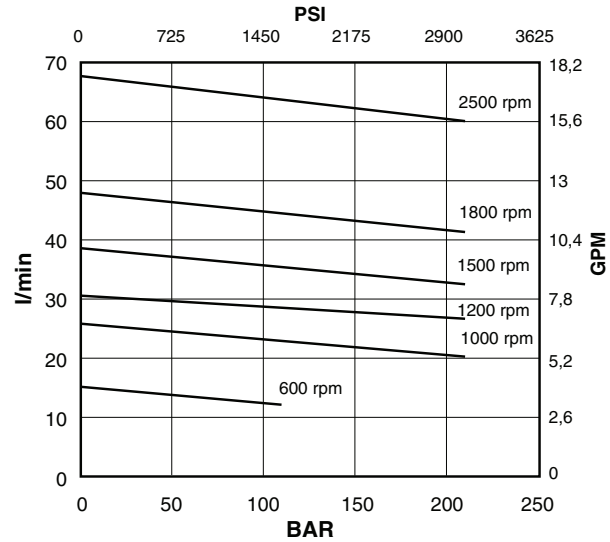
input torque / pressure



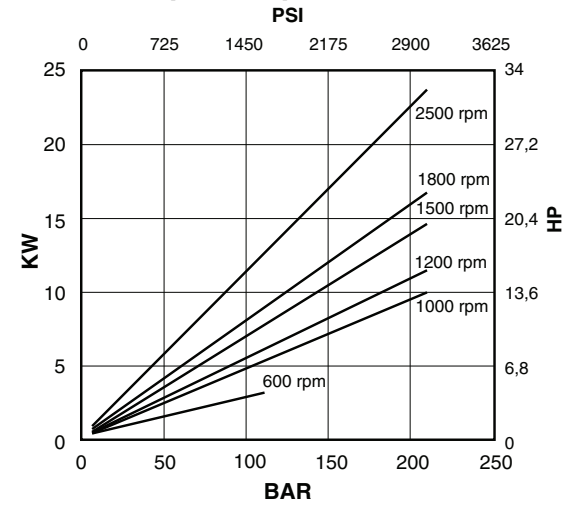
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V01-08

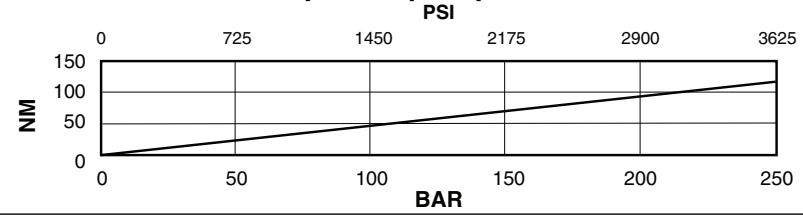
flow / pressure



power / pressure



input torque / pressure

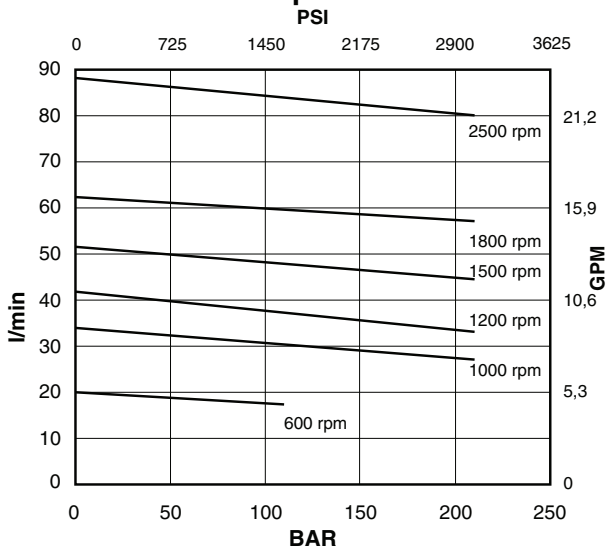


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

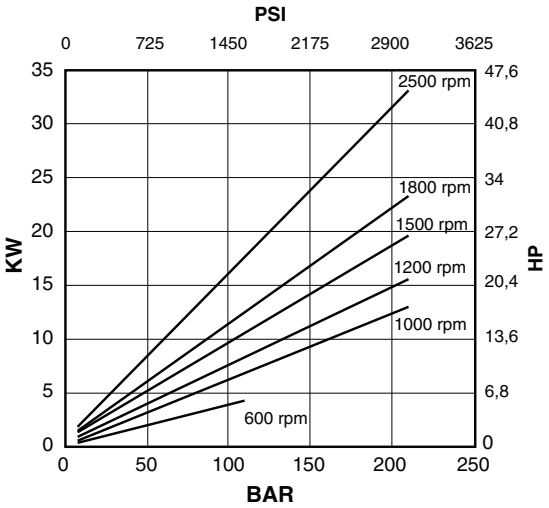
Single Pump Type BV01

Cartridge V01-11

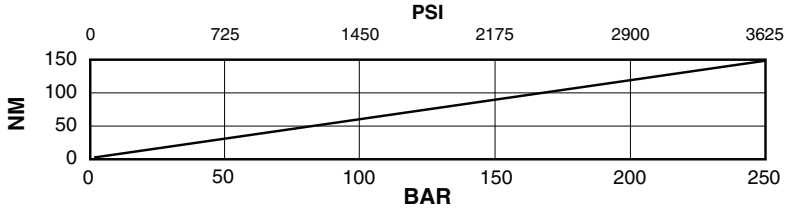
flow / pressure



power / pressure



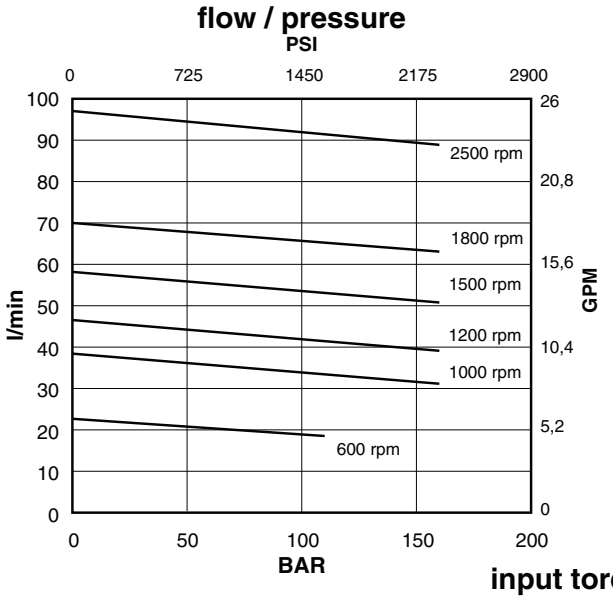
input torque / pressure



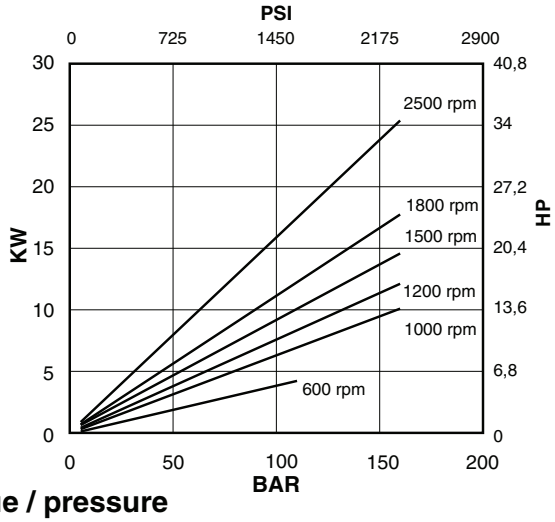
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V01-12

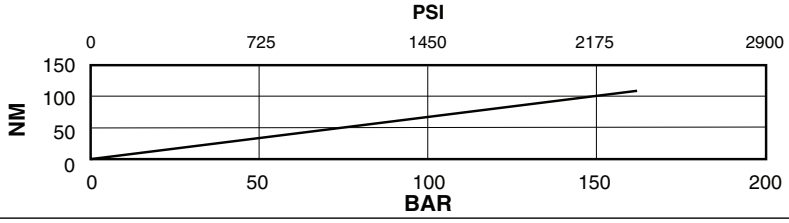
flow / pressure



power / pressure



input torque / pressure

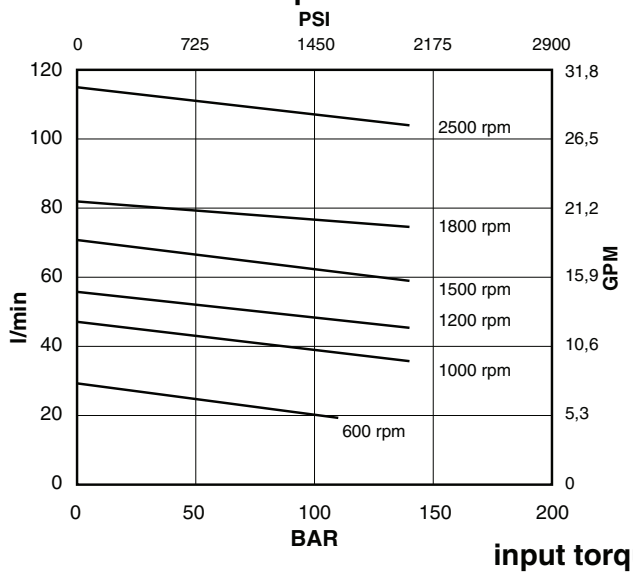


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

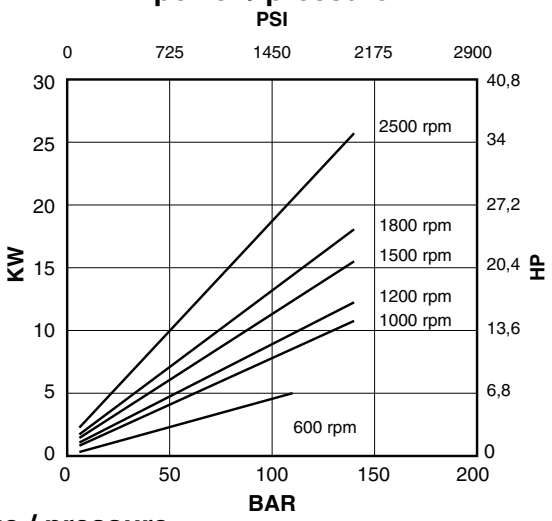
Single Pump Type BV01

Cartridge V01-14

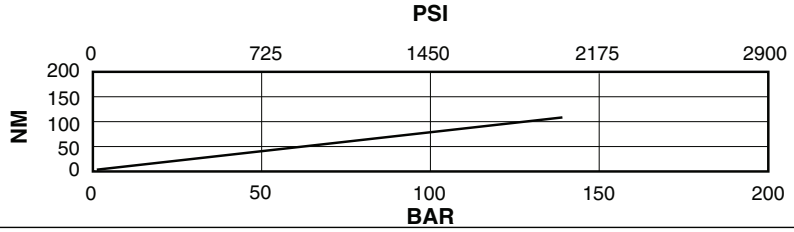
flow / pressure



power / pressure

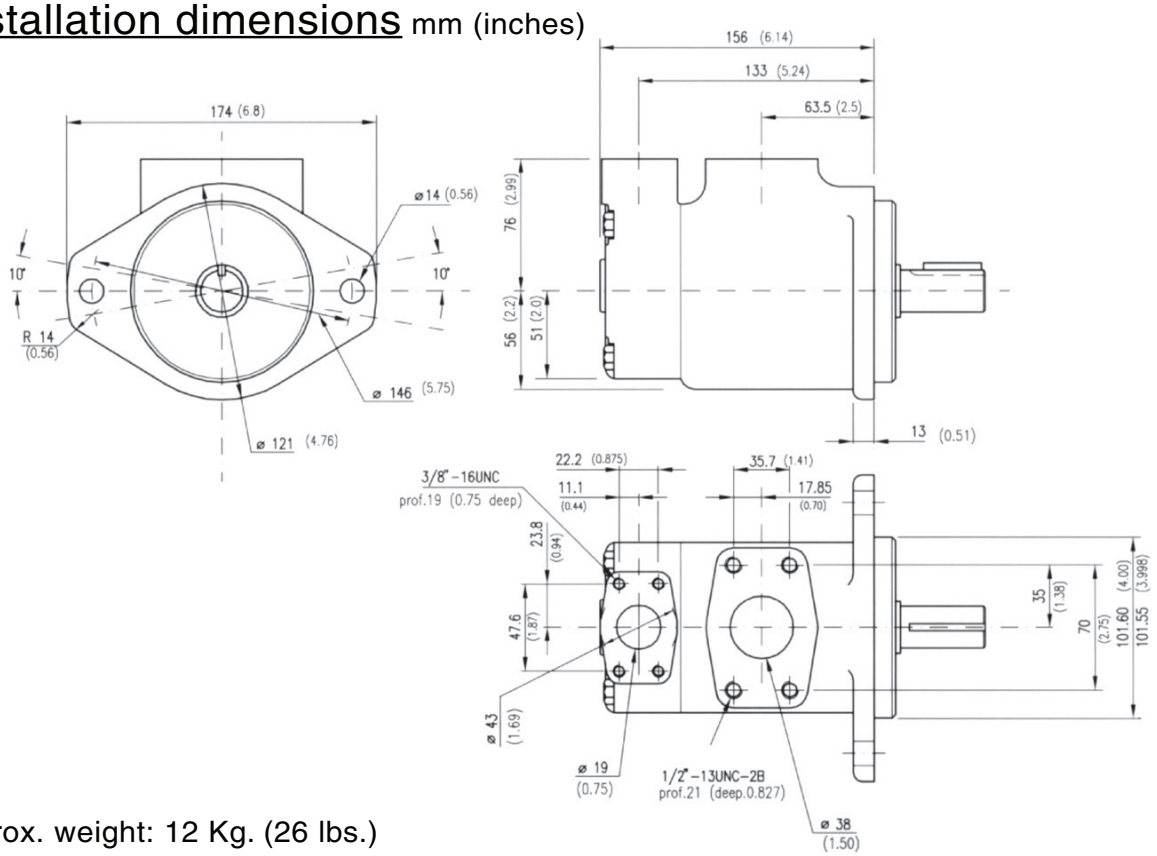


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 12 Kg. (26 lbs.)

Single Pump Type BV01

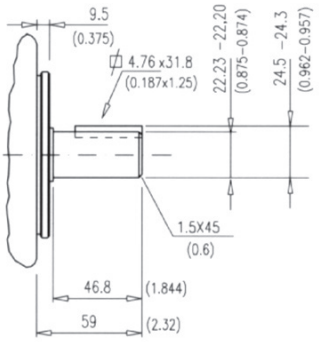
Model code breakdown

BV 01 G * * * * * (L) * (A)

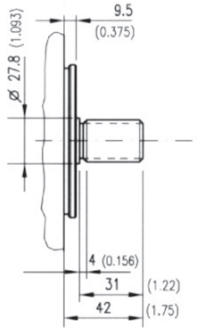
- **BV** — Pump series
- **01** — Pump type
- **G** — Design
- *** *** — Cartridge type
  02 05 08 11 12 14
- ***** — Outlet port positions
  (outlet viewed from cover end)
  A = Outlet opposite end
  B = Outlet 90° CCW from inlet
  C = Outlet in line with inlet
  D = Outlet 90° CW from inlet
- *** *** — Shaft end options
  01 = Straight with key (standard)
  11 = Splined
  90 = Splined SAE B
- **(L)** — Rotation
  (viewed from shaft end)
  L = left hand rotaton CCW (omit if CW)
- ***** — Seals
  (omit with standard seals and one shaft-seal in NBR)
  V = seals and shaft-seal in FPM (Viton®)
  D = standard seals and double shaft-seals in NBR
  F = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting
  (omit if not required)

Shaft options mm (inches)

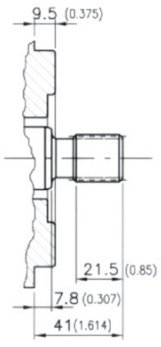
Shaft 01



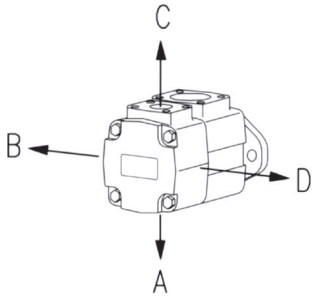
Shaft 11



Shaft 90



PORT ORIENTATIONS



Spline data
(shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	13	
Pitch	16/32	
Major dia.	22.00 - 21.90	(0.866 - 0.862)
Pitch dia.	20.638	(0.8125)
Minor dia.	18.63 - 18.35	(0.733 - 0.722)
Wildhaber	11.67 - 11.70	(0.459 - 0.461)

Single Pump Type BV01

Id. codes of pump components

Cartridge			
Series	Model	Part No.	Pump rotat.
V01	02	V0102003	right hand
	05	V0105015	right hand
	08	V0108035	right hand
	11	V0111075	right hand
	12	V0112095	right hand
	14	V0114115	right hand
V01	02	V0102007	left hand
	05	V0105025	left hand
	08	V0108045	left hand
	11	V0111085	left hand
	12	V0112105	left hand
	14	V0114125	left hand

Shaft kit	
Model	Part No.
01	M8010601
11	M8010611
90	M8010690

Shaft		Key	
Model	Part No.		Part No.
01	K0101000		M8010100
11	K0111000		-
90	K0190000		-

Body
Part No. M8010010

Shaft seal	
Part No.	Type
M8020060	primary in NBR
M8020065	primary in FPM
M8020061	secondary in NBR
M8020066	secondary in FPM

Bearing
Part No. M8010030

Seeger
Part No. M8010050

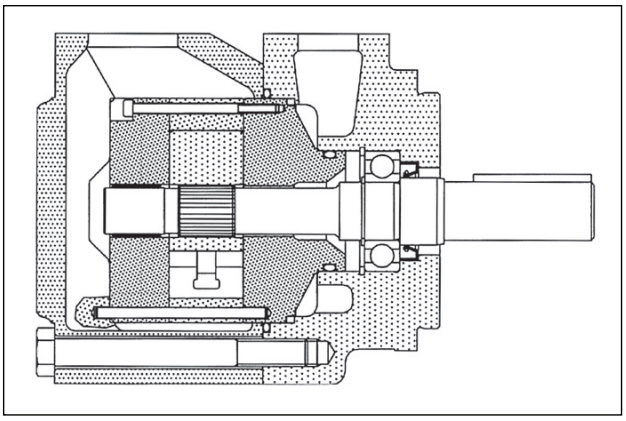
Pump seal kit		
Part No.	Parts	Type
M8010500	seals + 1 shaft seal	NBR
M8010501	seals + 2 shaft seals	NBR
M8010503	seals + 1 shaft seal	FPM (Viton®)
M8010504	seals + 2 shaft seals	FPM (Viton®)

Seeger
Part No. M8010040

Cover
Part No. M8020120

Screw
Part No. M8020420
Torque to 70 Nm (625 lb. in.)

Single Pump Type BV02



General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the type of cartridge used and the speed of rotation. The pump is available in five versions with capacities from 47 to 79 l/min *(from 12 to 21 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
	cm^3/g	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V02-12	**40,1**	(2.45)	**46,9**	(12)	**58,8**	(15.5)	**175**	(2538)	**600**	**1800**
V02-14	**45,4**	(2.77)	**52,7**	(14)	**65,7**	(17.4)	**175**	(2538)	**600**	**1800**
V02-17	**55,2**	(3.37)	**64,2**	(17)	**80,2**	(21.2)	**175**	(2538)	**600**	**1800**
V02-19	**60,0**	(3.66)	**71,0**	(19)	**88,7**	(23.4)	**175**	(2538)	**600**	**1800**
V02-21	**67,5**	(4.12)	**79,0**	(21)	**99,8**	(26.4)	**175**	(2538)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)***:** from 13 to 860 cSt. *(13 to 54 cSt. recommended).*

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better).*

Inlet pressure: *(with mineral oil)***:** from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

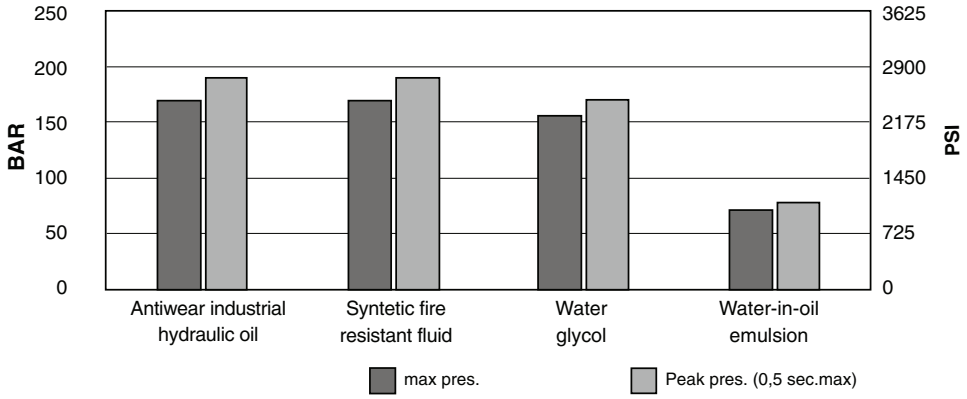
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

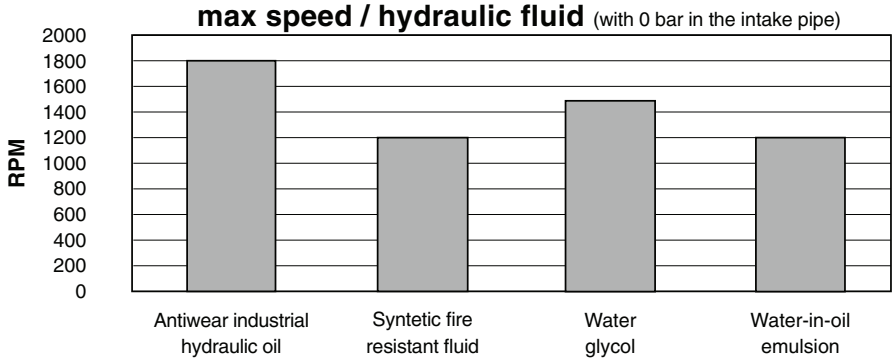
Single Pump Type BV02

Main operating data

max pressure / hydraulic fluid

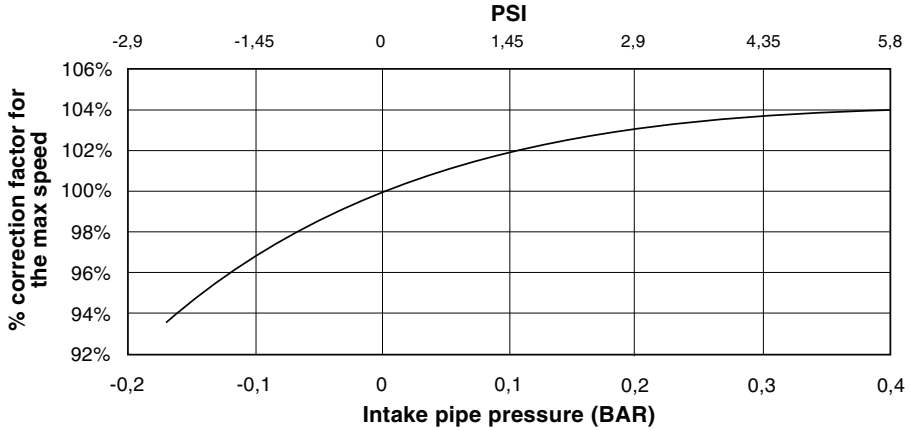


max speed / hydraulic fluid (with 0 bar in the intake pipe)

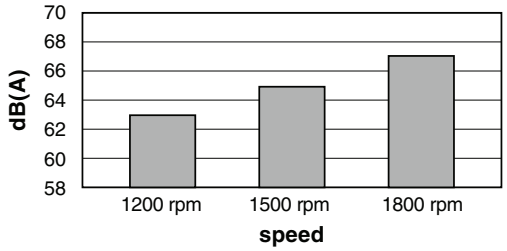


If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure



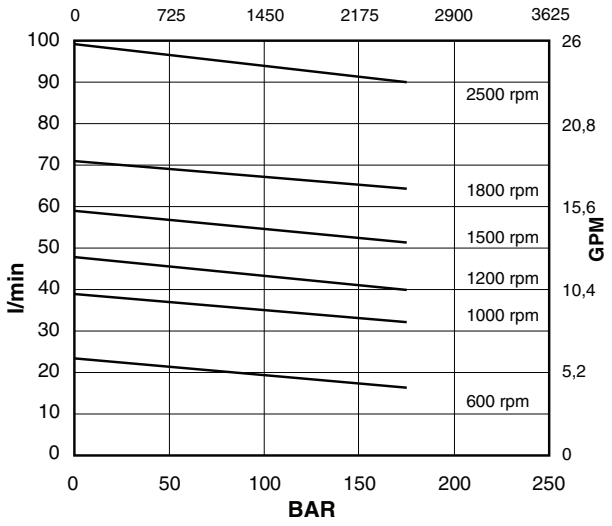
Sound level at 138 bar (2000 psi)



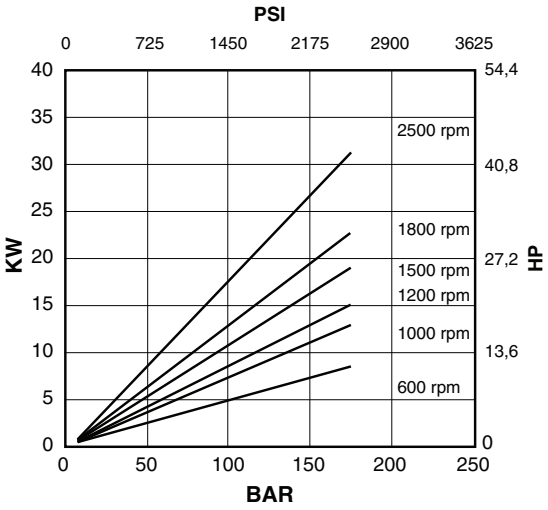
Single Pump Type BV02

Cartridge V02-12

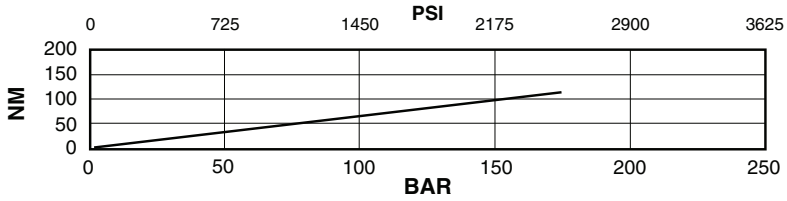
flow / pressure



power / pressure



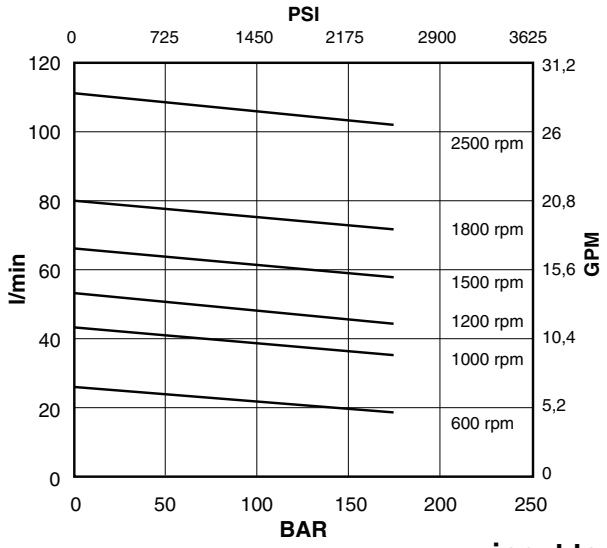
input torque / pressure



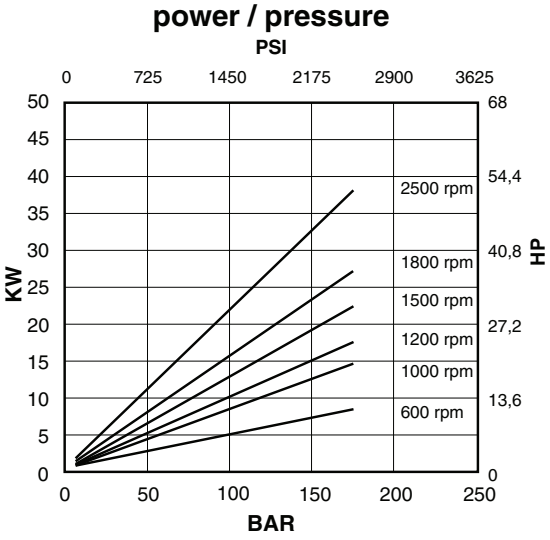
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V02-14

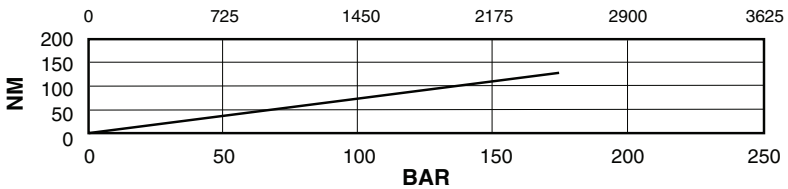
flow / pressure



power / pressure



input torque / pressure

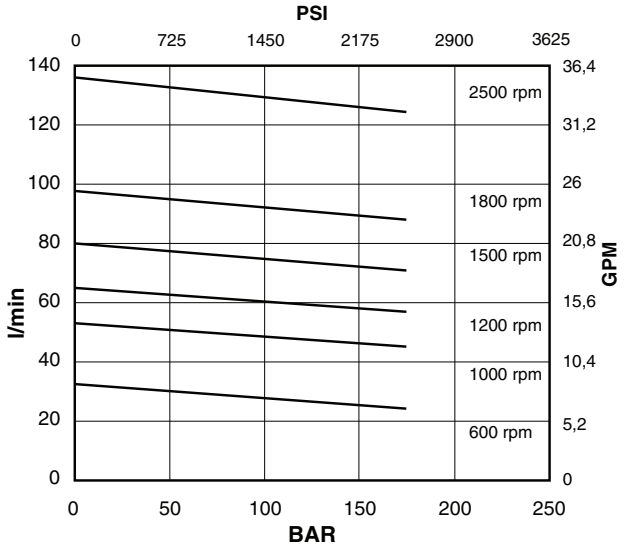


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

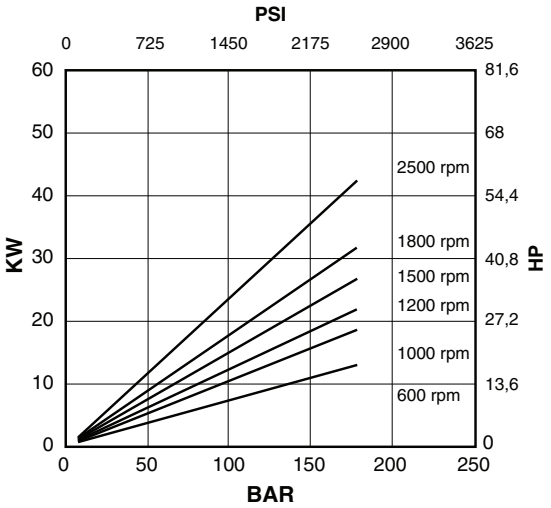
Single Pump Type BV02

Cartridge V02-17

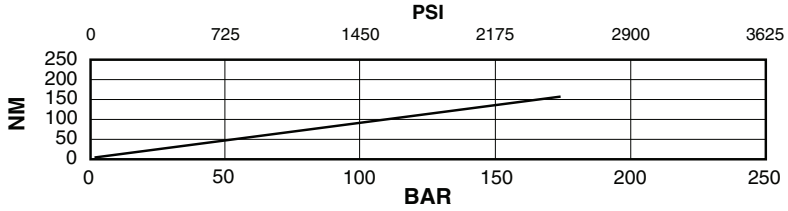
flow / pressure



power / pressure



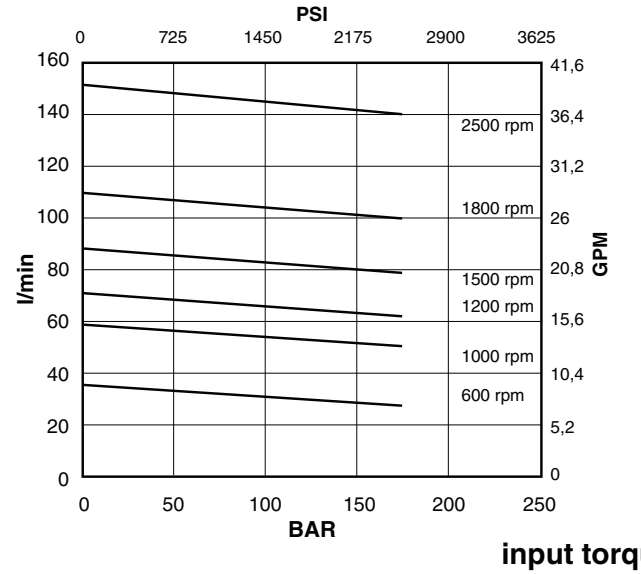
input torque / pressure



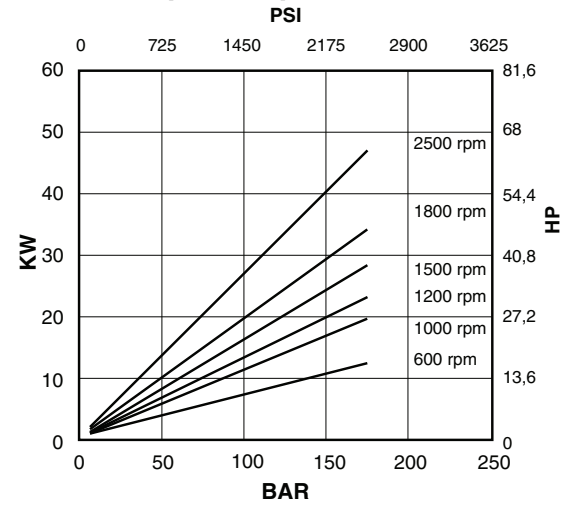
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V02-19

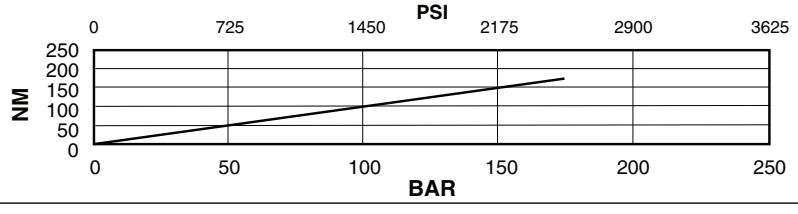
flow / pressure



power / pressure



input torque / pressure

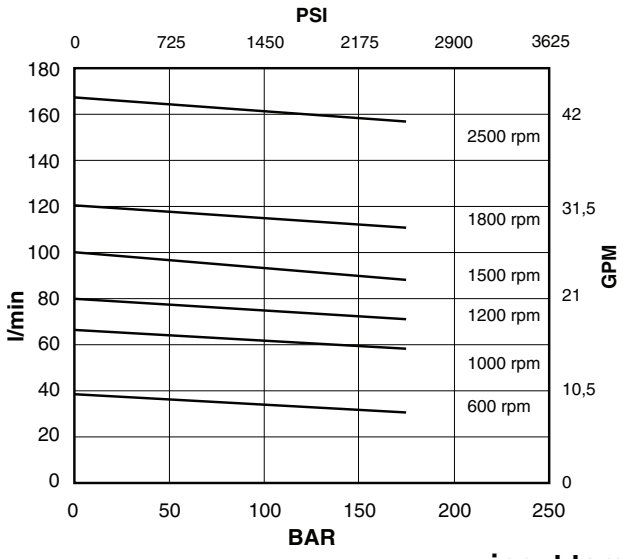


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

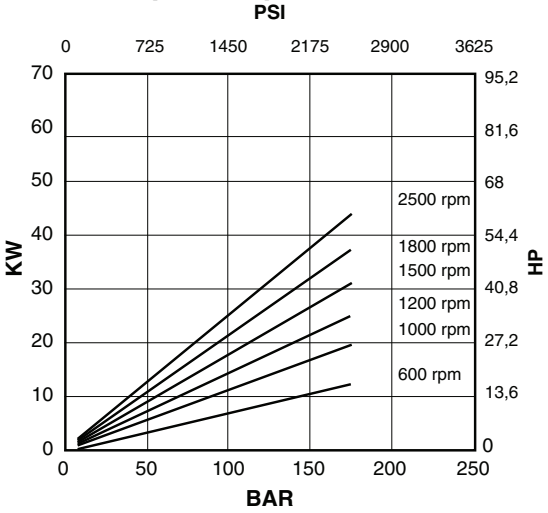
Single Pump Type BV02

Cartridge V02-21

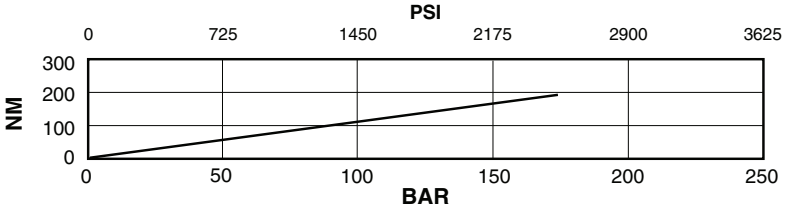
flow / pressure



power / pressure

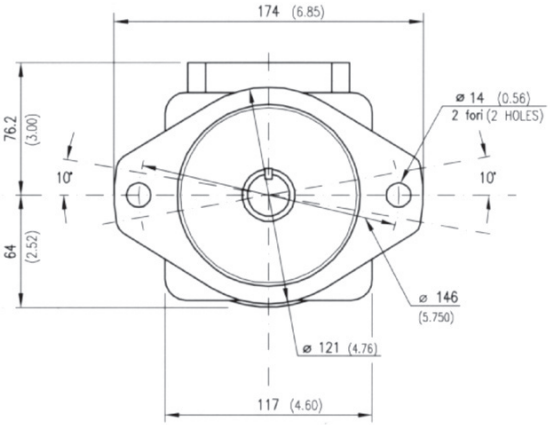


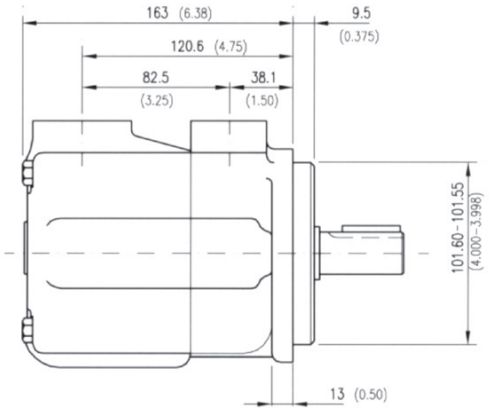
input torque / pressure

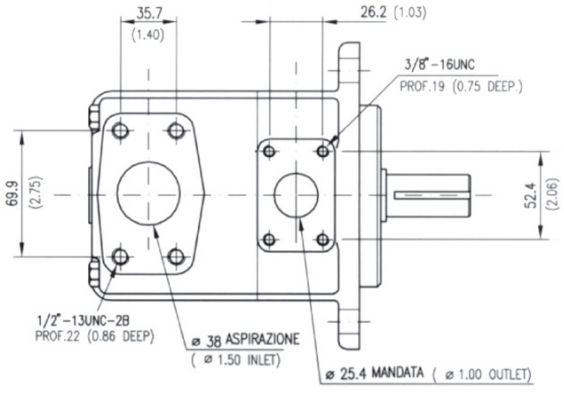


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)







Approx. weight: 15 Kg. (33 lbs.)

Single Pump Type BV02

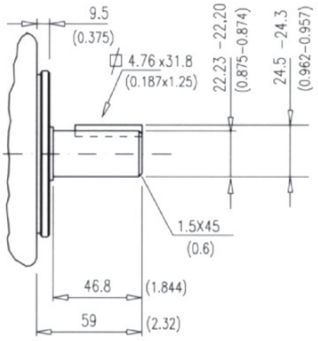
Model code breakdown

BV 02 G * * * * * (L) * (A)

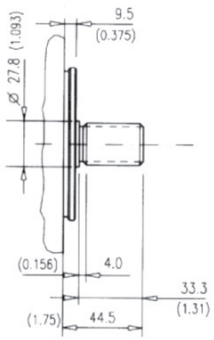
- **BV 02** — Pump series / Pump type
- **G** — Design
- *** *** — Cartridge type: **12 14 17 19 21**
- ***** — Outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CCW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- *** *** — Shaft end options
  - **01** = Straight with key (standard), **11** = Splined
  - **86** = Heavy duty straight keyed, **90** = Splined SAE B
- **(L)** — Rotation (viewed from shaft end)
  - **L** = left hand rotaton CCW (omit if CW)
- ***** — Seals (omit with standard seals and one shaft-seal in NBR)
  - **V** = seals and shaft-seal in FPM (Viton®)
  - **D** = standard seals and double shaft-seals in NBR
  - **F** = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting (omit if not required)

Shaft options mm (inches)

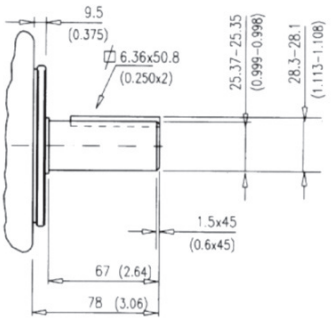
Shaft 01



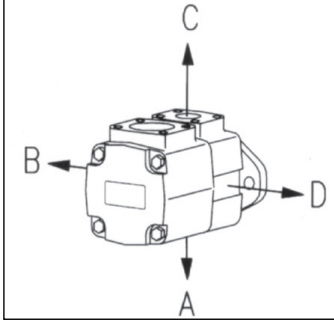
Shaft 11



Shaft 86



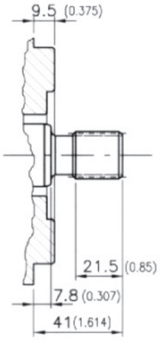
PORT ORIENTATIONS



Spline data
(shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	13	
Pitch	16/32	
Major dia.	22.00 - 21.90	(0.866 - 0.862)
Pitch dia.	20.638	(0.8125)
Minor dia.	18.63 - 18.35	(0.733 - 0.722)
Wildhaber	11.67 - 11.70	(0.459 - 0.461)

Shaft 90



Single Pump Type BV02

Id. codes of pump components

Cartridge			
Series	Model	Part No.	Pump rotat.
V02	12	V0212030	right hand
	14	V0214070	right hand
	17	V0217110	right hand
	19	V0219150	right hand
	21	V0221190	right hand
V02	12	V0212040	left hand
	14	V0214080	left hand
	17	V0217120	left hand
	19	V0219160	left hand
	21	V0221200	left hand

Shaft kit	
Model	Part No.
01	M8020601
11	M8020611
86	M8020686
90	M8020690

Shaft		Key
Model	Part No.	Codice N°
01	K0201000	M8010100
11	K0211000	-
86	K0286000	M8028600
90	K0290000	-

Body
Part No.
M8020010

Shaft seal	
Part No.	Type
M8020060	primary in NBR
M8020065	primary in FPM
M8020061	secondary in NBR
M8020066	secondary in FPM

Bearing
Part No.
M8020030

Seeger
Part No.
M8020050

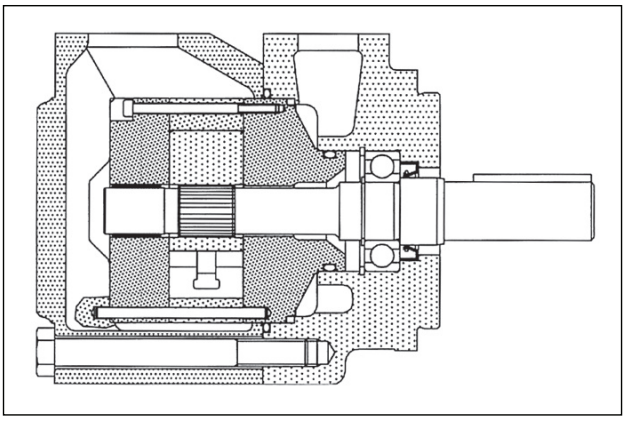
Seeger
Part No.
M8020040

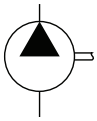
Pump seal kit		
Part No.	Parts	Type
M8020500	seals + 1 shaft seal	NBR
M8020501	seals + 2 shaft seals	NBR
M8020503	seals + 1 shaft seal	FPM (Viton®)
M8020504	seals + 2 shaft seals	FPM (Viton®)

Cover
Part No.
M8020020

Screw
Part No.
M8020070
Torque to 102 Nm (910 lb. in.)

Single Pump Type BV04





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the type of cartridge used and the speed of rotation. The pump is available in five versions with capacities from 80 to 140 l/min *(from 21 to 38 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
	cm^3/g	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V04-21	**69,0**	(4.2)	**79,5**	(21)	**101,4**	(26.8)	**175**	(2538)	**600**	**1800**
V04-25	**81,6**	(5)	**94,0**	(25)	**120,1**	(31.7)	**175**	(2538)	**600**	**1800**
V04-30	**97,7**	(6)	**113,8**	(30)	**141,2**	(37.3)	**175**	(2538)	**600**	**1800**
V04-35	**112,7**	(6.9)	**131,6**	(35)	**167,2**	(44.1)	**175**	(2538)	**600**	**1800**
V04-38	**121,6**	(7.4)	**139,9**	(38)	**177,3**	(46.8)	**175**	(2538)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)***:** from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)***:** from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

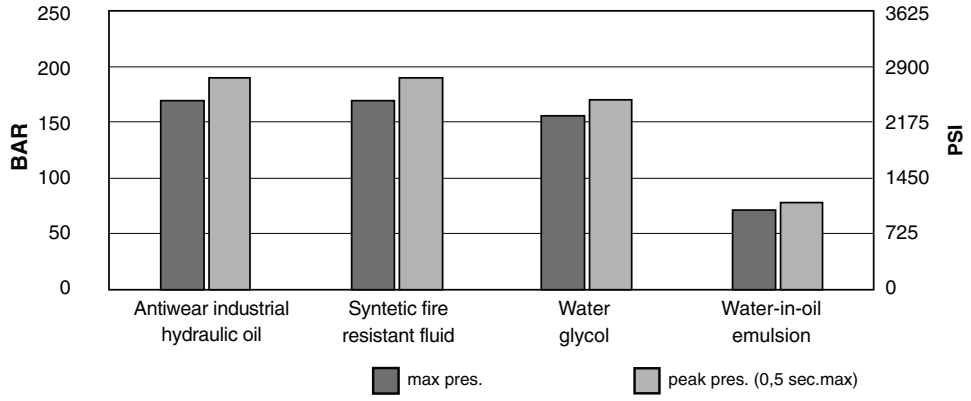
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

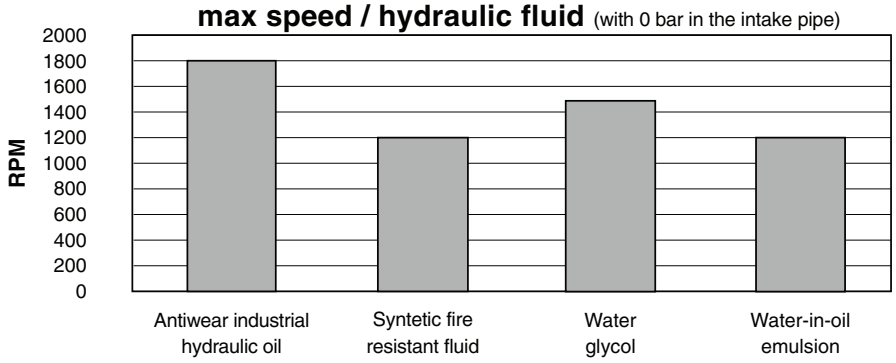
Single Pump Type BV04

Main operating data

max pressure / hydraulic fluid

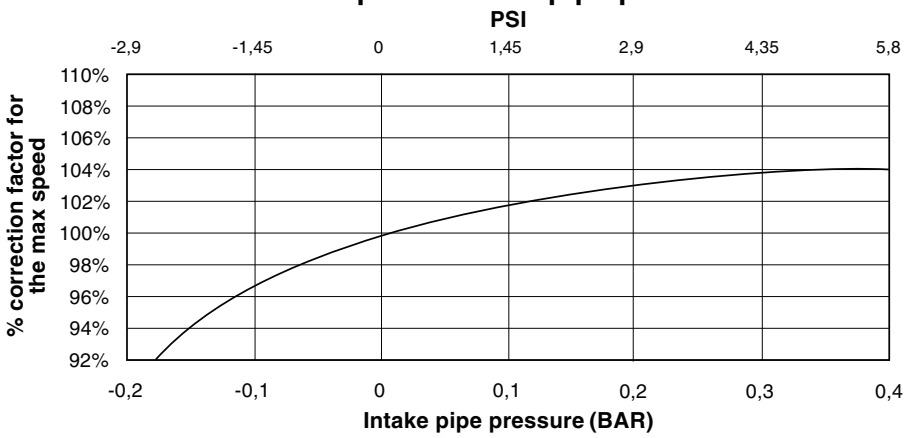


max speed / hydraulic fluid (with 0 bar in the intake pipe)

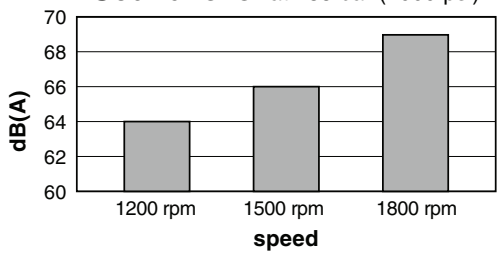


If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure



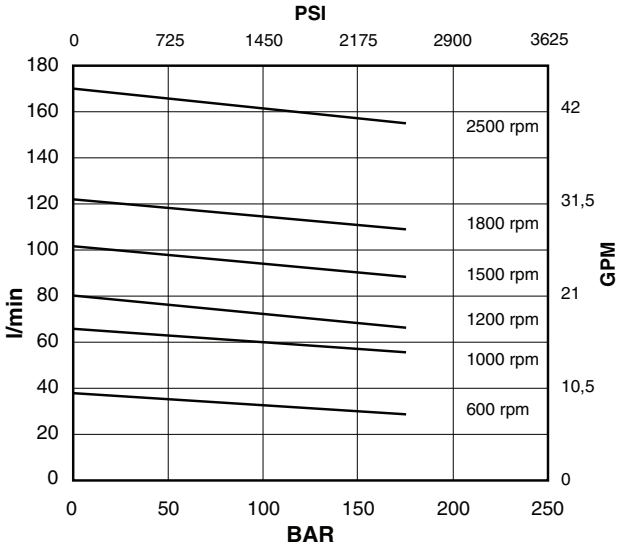
Sound level at 138 bar (2000 psi)



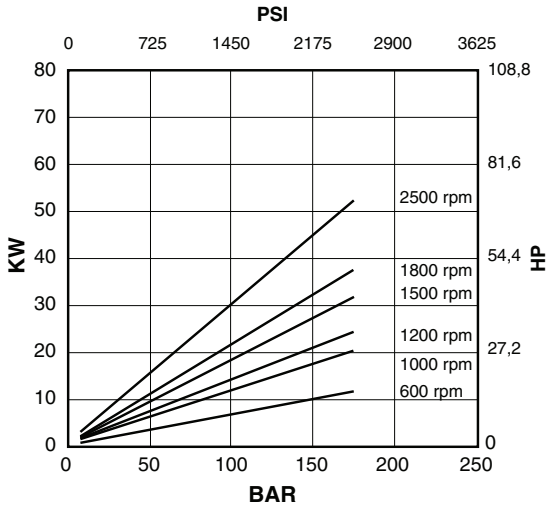
Single Pump Type BV04

Cartridge V04-21

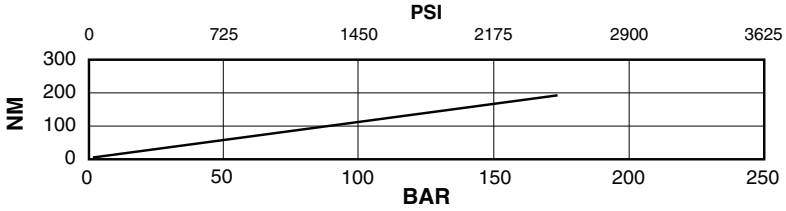
flow / pressure



power / pressure



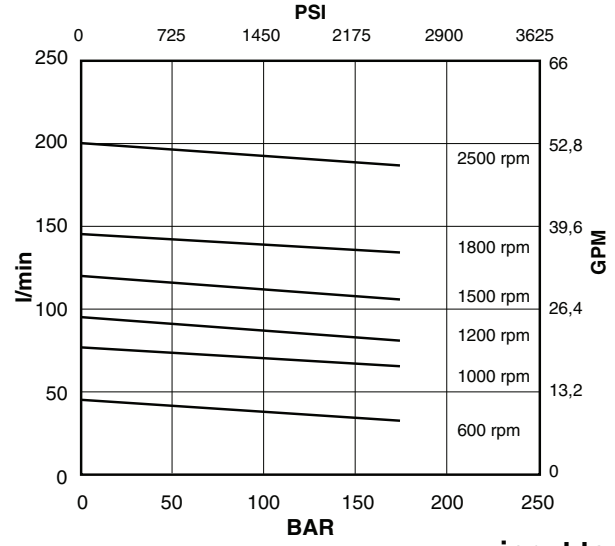
input torque / pressure



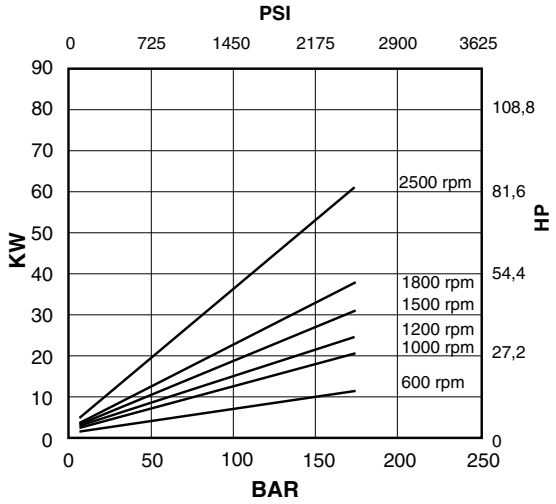
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V04-25

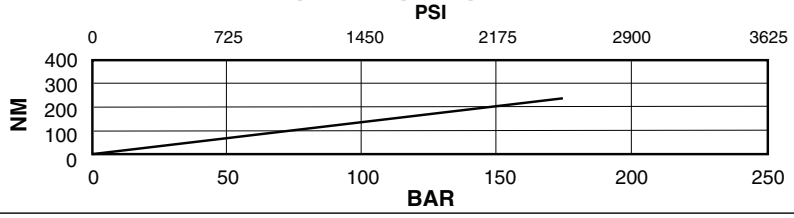
flow / pressure



power / pressure



input torque / pressure

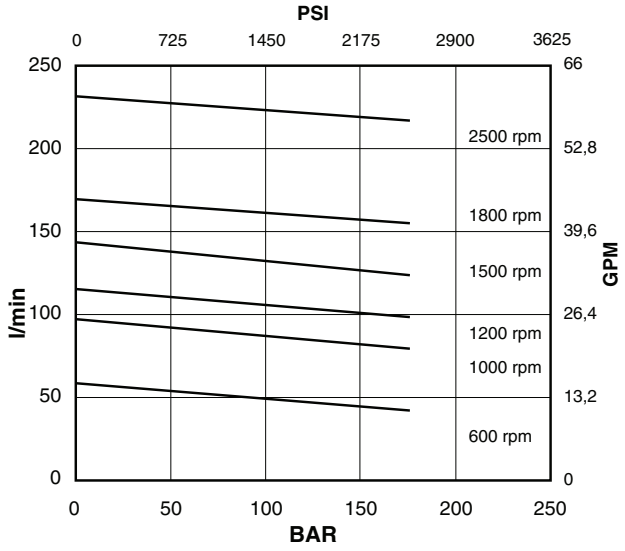


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

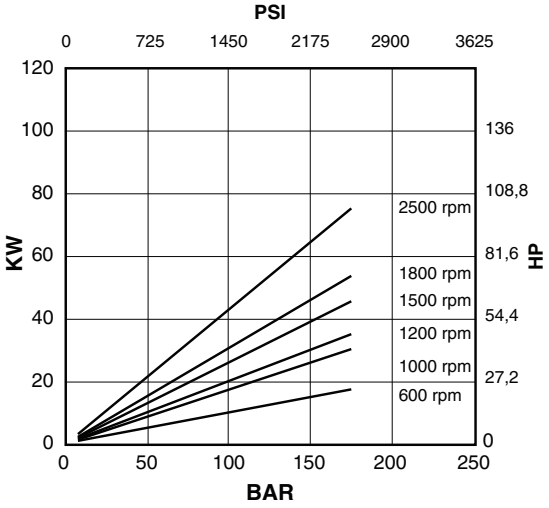
Single Pump Type BV04

Cartridge V04-30

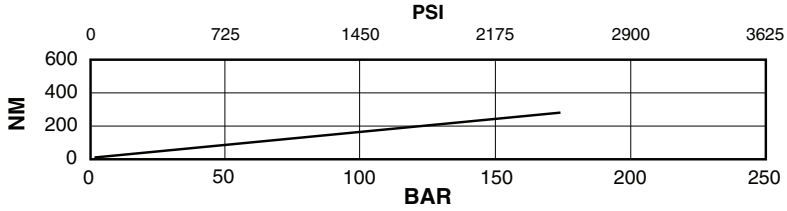
flow / pressure



power / pressure



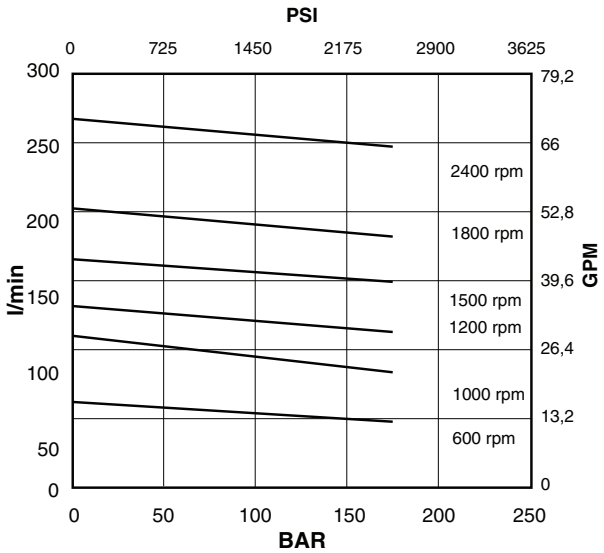
input torque / pressure



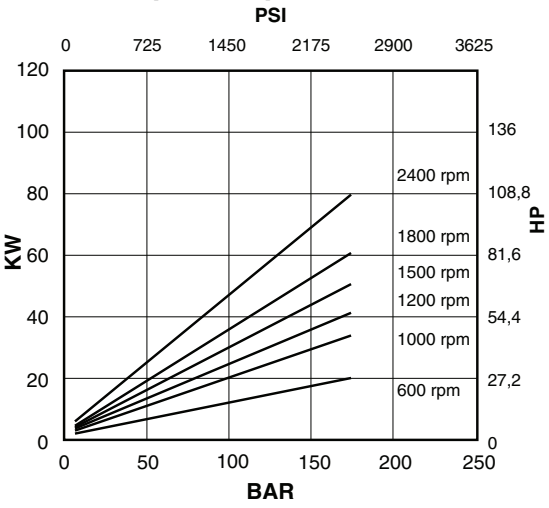
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V04-35

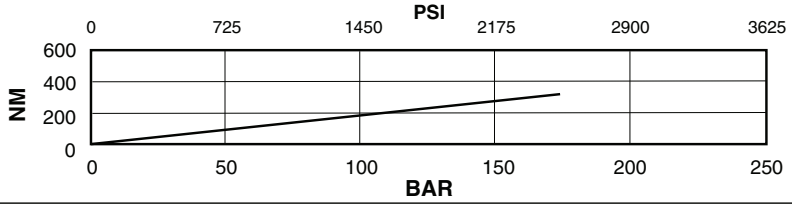
flow / pressure



power / pressure



input torque / pressure

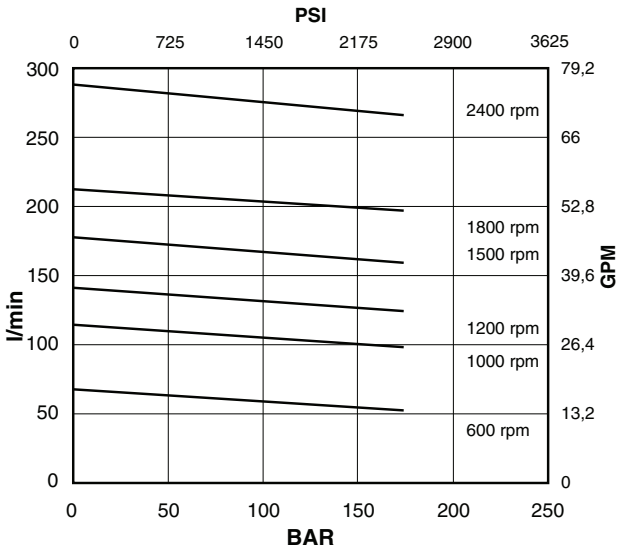


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

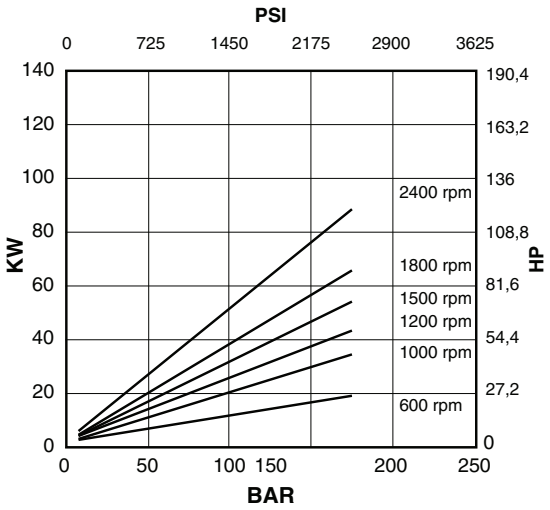
Single Pump Type BV04

Cartridge V04-38

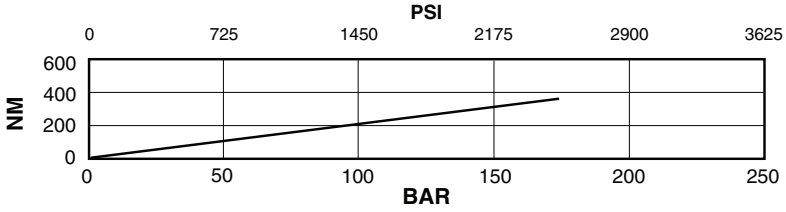
flow / pressure



power / pressure

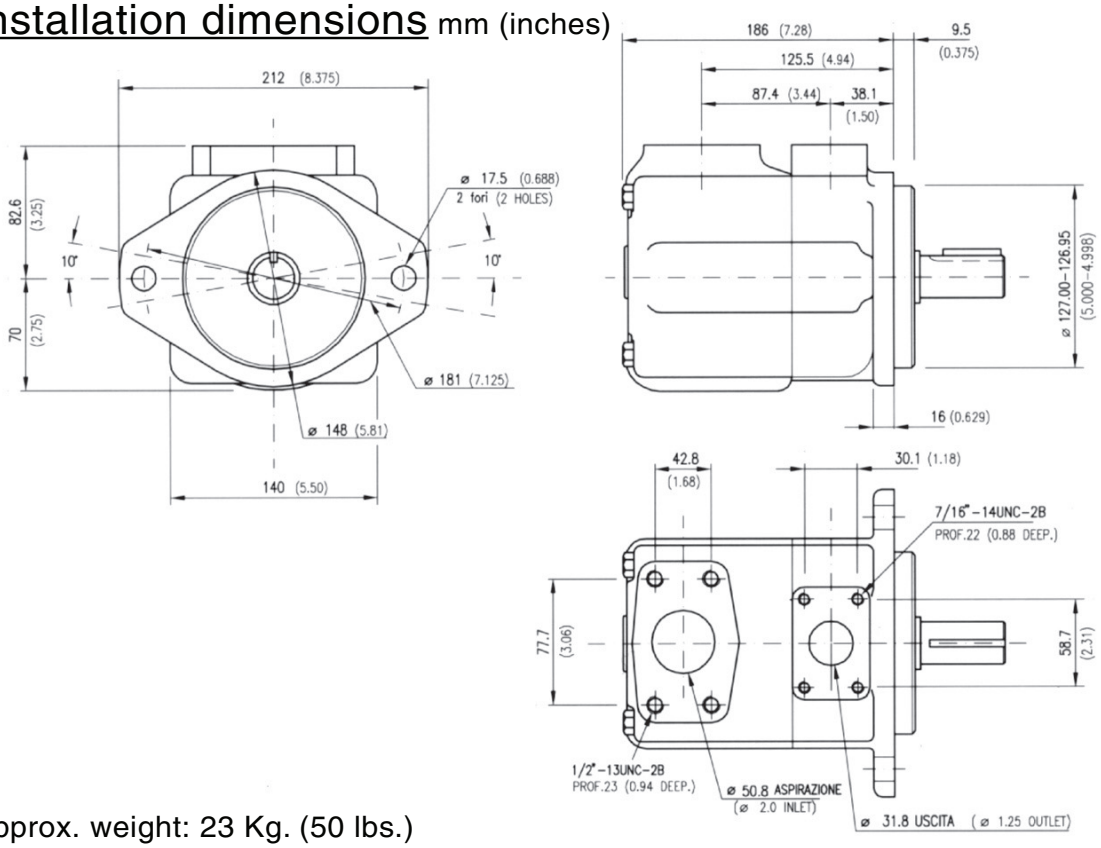


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 23 Kg. (50 lbs.)

Single Pump Type BV04

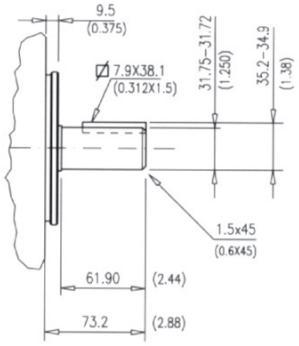
Model code breakdown

BV 04 G * * * * * (L) * (A)

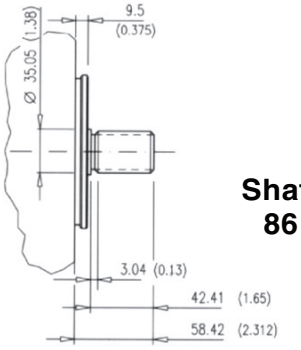
- **BV** — Pump series
- **04** — Pump type
- **G** — Design
- *** *** — Cartridge type
  21 25 30 35 38
- ***** — Outlet port positions
  (outlet viewed from cover end)
  A = Outlet opposite end
  B = Outlet 90° CCW from inlet
  C = Outlet in line with inlet
  D = Outlet 90° CW from inlet
- *** *** — Shaft end options
  01 = Straight with key (standard), **11** = Splined
  86 = Heavy duty straight keyed, **90** = Splined SAE C
- **(L)** — Rotation
  (viewed from shaft end)
  L = left hand rotaton CCW (omit if CW)
- ***** — Seals
  (omit with standard seals and one shaft-seal in NBR)
  V = seals and shaft-seal in FPM (Viton®)
  D = standard seals and double shaft-seals in NBR
  F = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting
  (omit if not required)

Shaft options mm (inches)

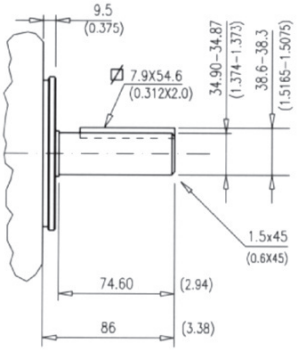
Shaft 01



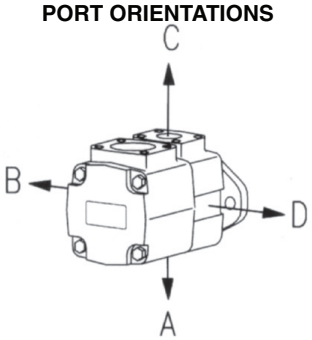
Shaft 11



Shaft 86



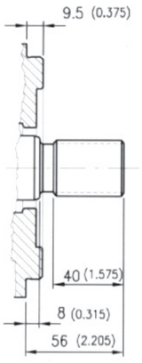
PORT ORIENTATIONS



Spline data
(shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	14	
Pitch	12/24	
Major dia.	31.60 - 31.50	(1.244 - 1.240)
Pitch dia.	29.634	(1.1667)
Minor dia.	26.99 - 26.66	(1.0627 - 1.05)
Wildhaber	15.68 - 15.73	(0.617 - 0.619)

Shaft 90



Single Pump Type BV04

Id. codes of pump components

Cartridge			
Series	Model	Part No.	Pump rotat.
V04	21	V0421030	right hand
	25	V0425070	right hand
	30	V0430110	right hand
	35	V0435150	right hand
	38	V0438190	right hand
V04	21	V0421040	left hand
	25	V0425080	left hand
	30	V0430120	left hand
	35	V0435160	left hand
	38	V0438200	left hand

Shaft kit	
Model	Part No.
01	M8040601
11	M8040611
86	M8040686
90	M8040690

Shaft		Key
Model	Part No.	Part No.
01	K0401000	M8040100
11	K0411000	-
86	K0486000	M8048600
90	K0490000	-

Body
Part No. M8040140

Shaft seal	
Part No.	Type
M8040190	primary in NBR
M8040195	primary in FPM
M8040191	secondary in NBR
M8040196	secondary in FPM

Bearing
Part No. M8040160

Seeger
Part No. M8040180

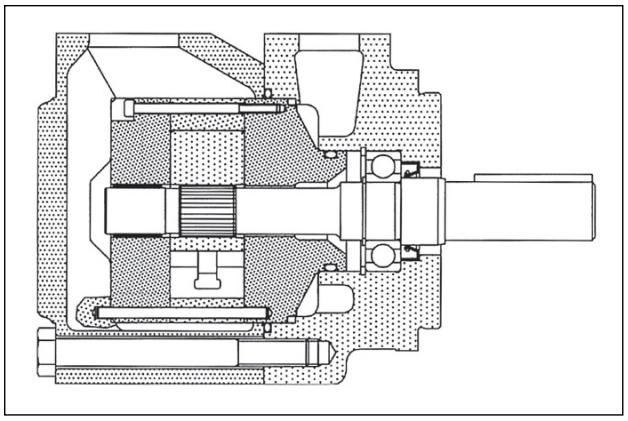
Pump seal kit		
Part No.	Parts	Type
M8040500	seals + 1 shaft seal	NBR
M8040501	seals + 2 shaft seals	NBR
M8040503	seals + 1 shaft seal	FPM (Viton®)
M8040504	seals + 2 shaft seals	FPM (Viton®)

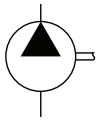
Seeger
Part No. M8040170

Cover
Part No. M8040150

Screw
Part No. M8040200
Torque to 225 Nm (2010 lb. in.)

Single Pump Type BV05





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the type of cartridge used and the speed of rotation. The pump is available in five versions with capacities from 164 to 230 l/min *(from 42 to 60 gpm*) at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
	cm^3/g	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V05-42	**138,6**	(8.46)	**164**	(42)	**203,4**	(53.7)	**175**	(2538)	**600**	**1800**
V05-47	**153,5**	(9.4)	**180**	(47)	**222,7**	(58.8)	**175**	(2538)	**600**	**1800**
V05-50	**162,2**	(9.9)	**189**	(50)	**234**	(61.8)	**175**	(2538)	**600**	**1800**
V05-57	**183,4**	(11.2)	**217**	(57)	**267**	(71.2)	**175**	(2538)	**600**	**1800**
V05-60	**193,4**	(11.8)	**230**	(60)	**285**	(75.3)	**175**	(2538)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)***:** from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)***:** from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

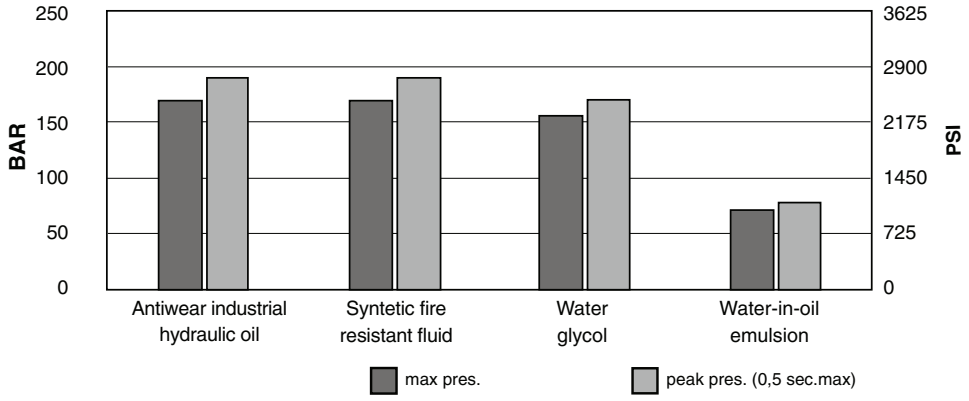
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

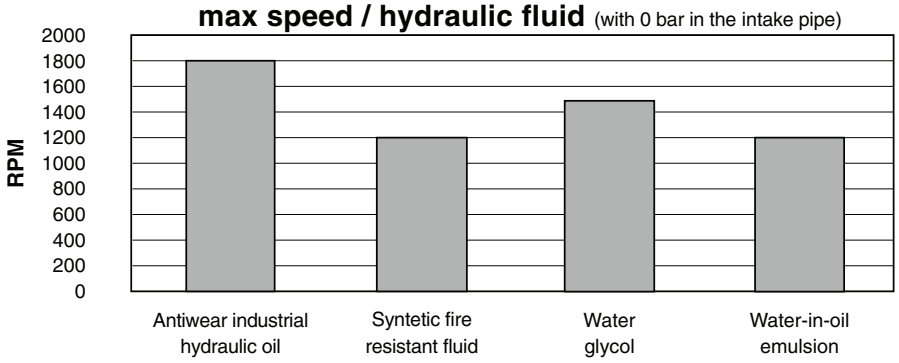
Single Pump Type BV05

Main operating data

max pressure / hydraulic fluid

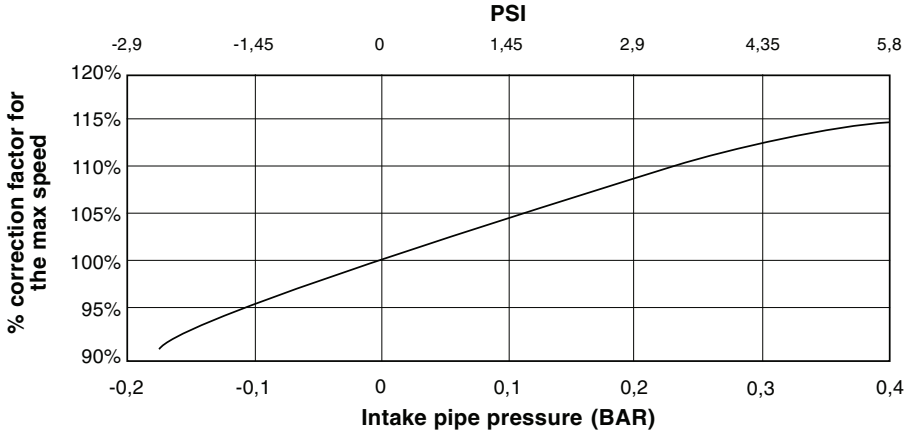


max speed / hydraulic fluid (with 0 bar in the intake pipe)

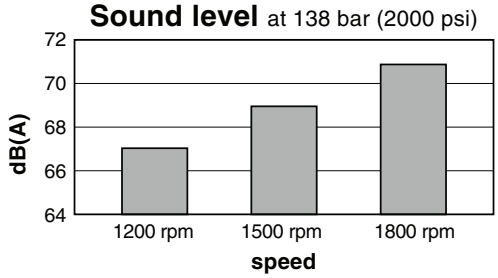


If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure



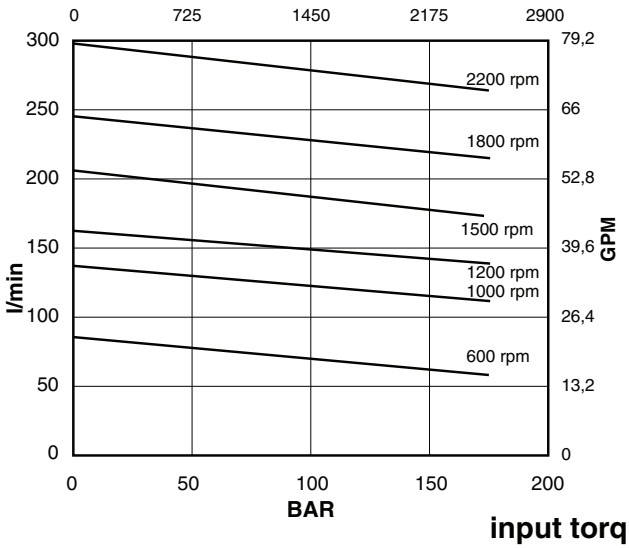
Sound level at 138 bar (2000 psi)



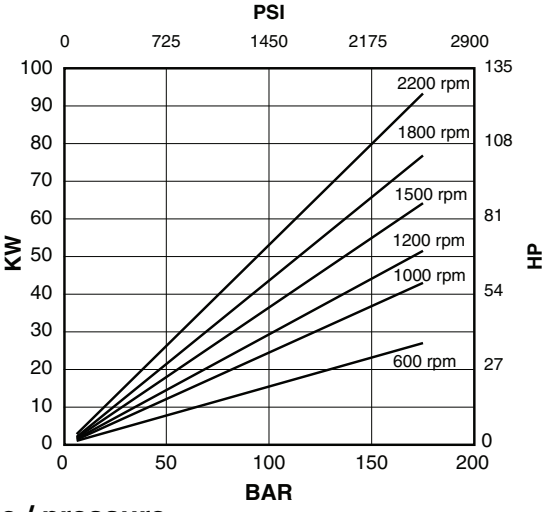
Single Pump Type BV05

Cartridge V05-42

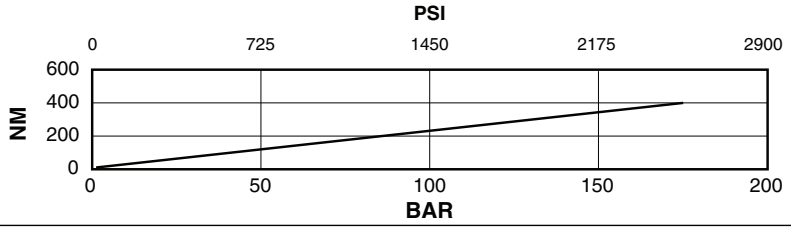
flow / pressure



power / pressure



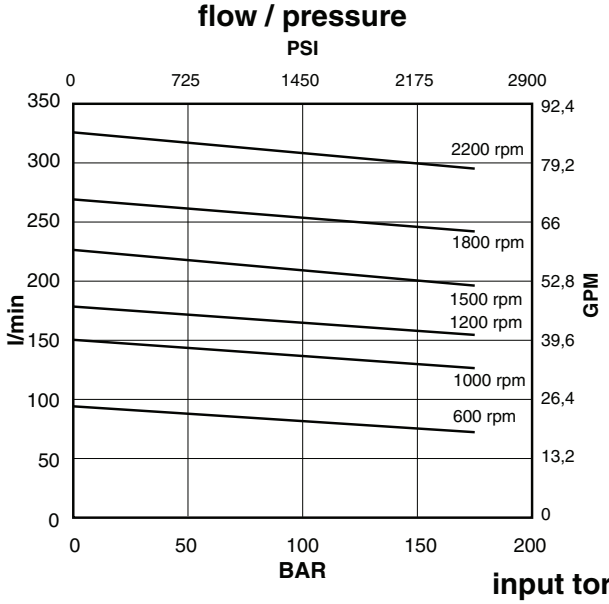
input torque / pressure



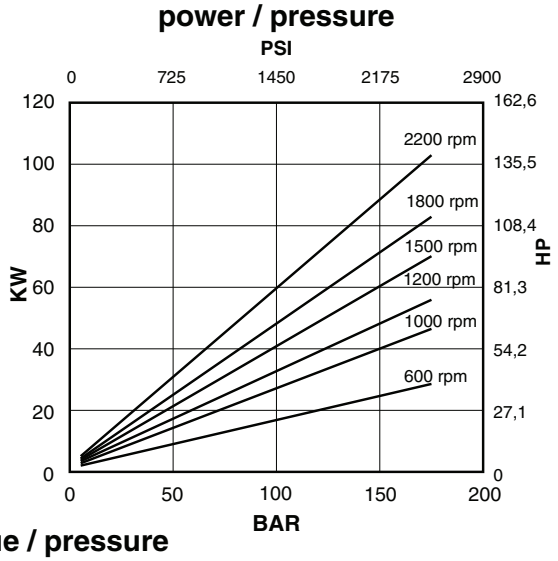
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V05-47

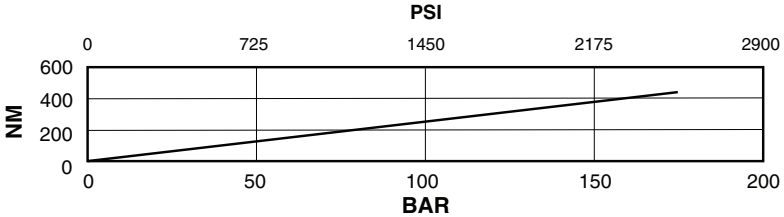
flow / pressure



power / pressure



input torque / pressure

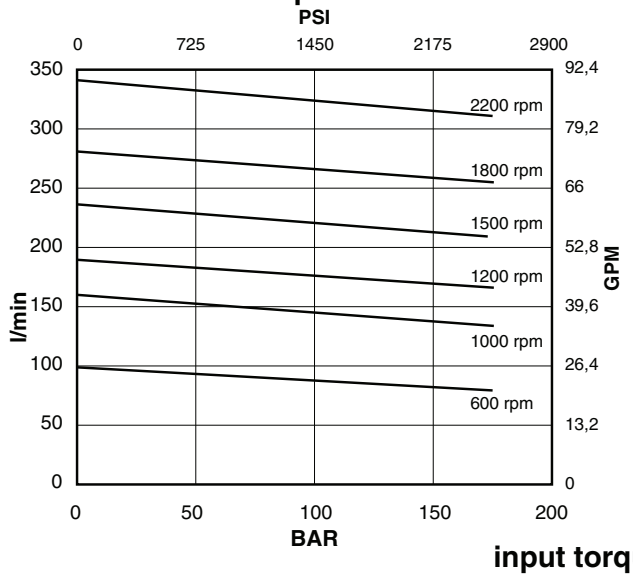


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

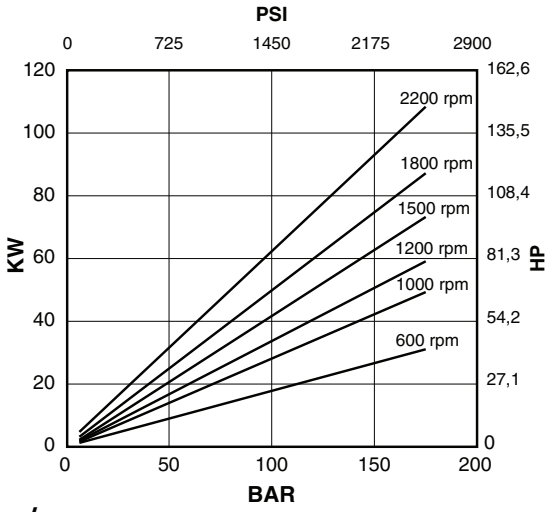
Single Pump Type BV05

Cartridge V05-50

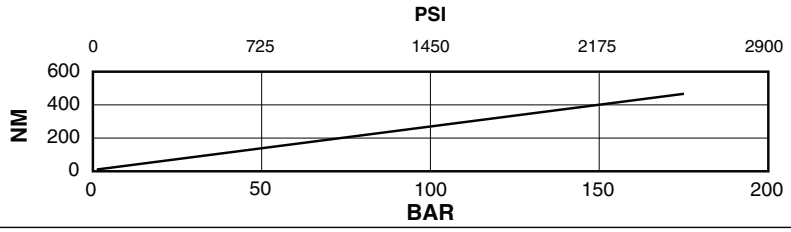
flow / pressure



power / pressure



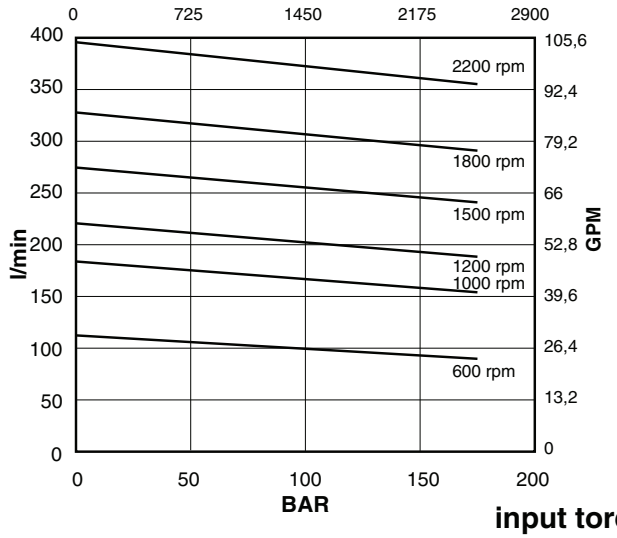
input torque / pressure



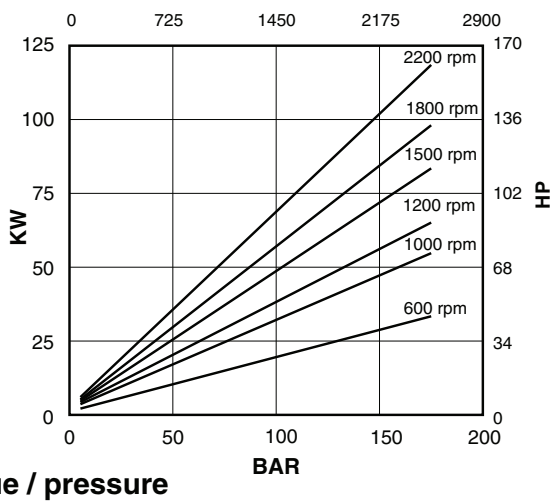
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cartridge V05-57

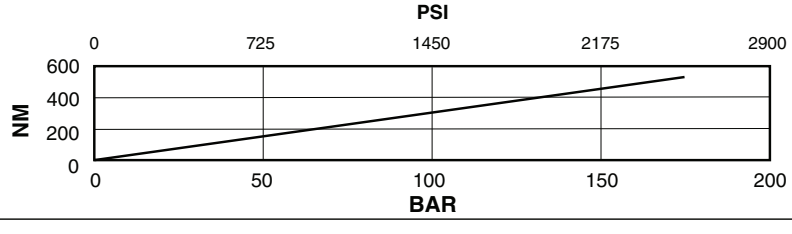
flow / pressure



power / pressure



input torque / pressure

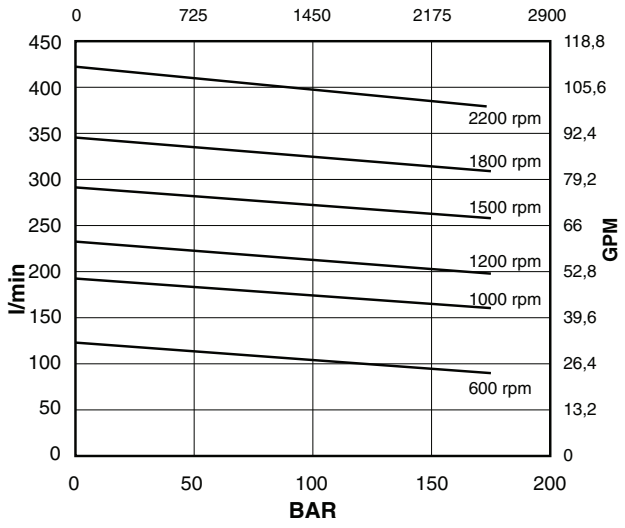


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

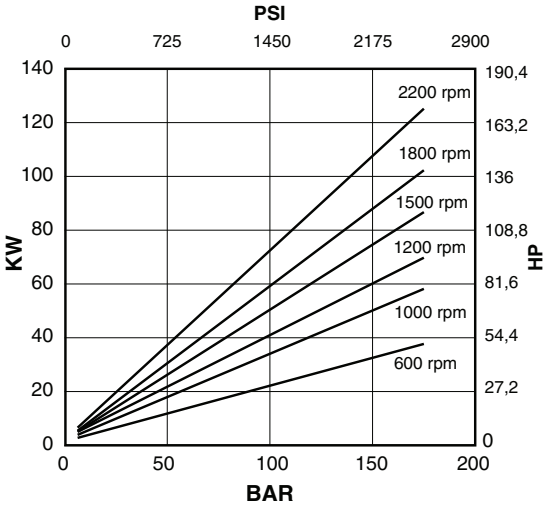
Single Pump Type BV05

Cartridge V05-60

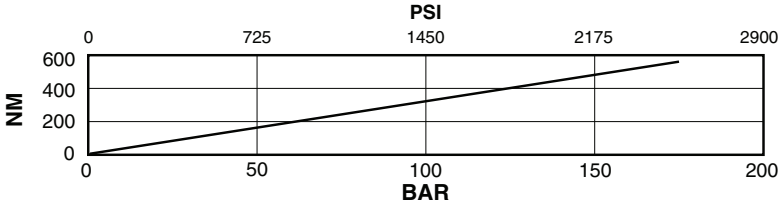
flow / pressure



power / pressure

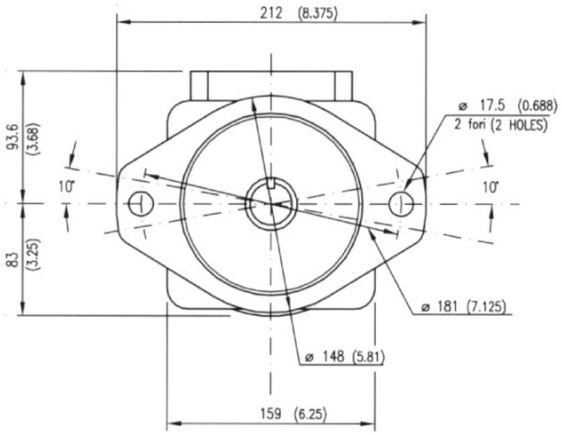


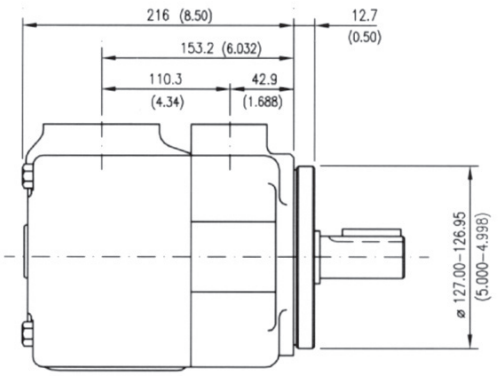
input torque / pressure

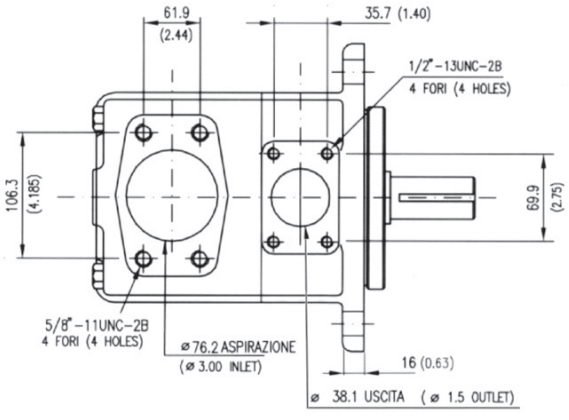


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)







Approx. weight: 34 Kg. (75 lbs.)

Single Pump Type BV05

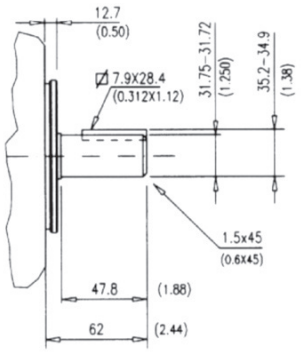
Model code breakdown

BV 05 G * * * * * (L) * (A)

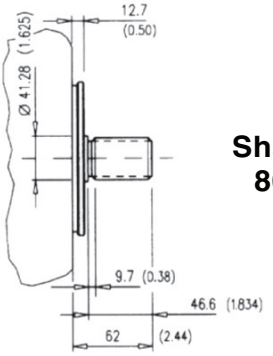
- **BV** — Pump series
- **05** — Pump type
- **G** — Design
- *** *** — Cartridge type
  42 47 50 57 60
- ***** — Outlet port positions
  (outlet viewed from cover end)
  A = Outlet opposite end
  B = Outlet 90° CCW from inlet
  C = Outlet in line with inlet
  D = Outlet 90° CW from inlet
- *** *** — Shaft end options
  01 = Straight with key (standard), **11** = Splined
  86 = Heavy duty straight keyed, **90** = Splined SAE C
- **(L)** — Rotation
  (viewed from shaft end)
  L = left hand rotaton CCW (omit if CW)
- ***** — Seals
  (omit with standard seals and one shaft-seal in NBR)
  V = seals and shaft-seal in FPM (Viton®)
  D = standard seals and double shaft-seals in NBR
  F = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting
  (omit if not required)

Shaft options mm (inches)

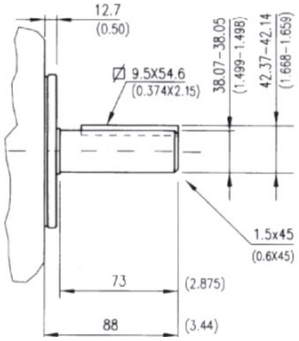
Shaft 01



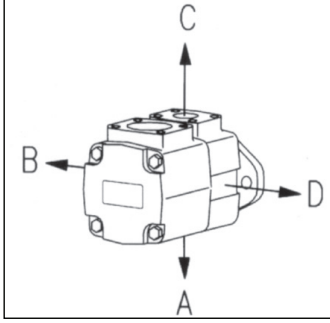
Shaft 11



Shaft 86



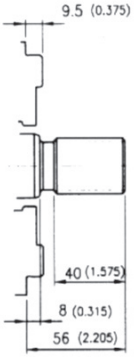
PORT ORIENTATIONS



Spline data
(shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	14	
Pitch	12/24	
Major dia.	31.60 - 31.50	(1.244 - 1.240)
Pitch dia.	29.634	(1.1667)
Minor dia.	26.99 - 26.66	(1.0627 - 1.05)
Wildhaber	15.68 - 15.73	(0.617 - 0.619)

Shaft 90



Single Pump Type BV05

Id. codes of pump components

Cartridge			
Series	Model	Part No.	Pump rotat.
V05	42	V0542010	right hand
	47	V0547030	right hand
	50	V0550050	right hand
	57	V0557070	right hand
	60	V0560090	right hand
V05	42	V0542020	left hand
	47	V0547040	left hand
	50	V0550060	left hand
	57	V0557080	left hand
	60	V0560100	left hand

Shaft kit	
Model	Part No.
01	M8050601
11	M8050611
86	M8050686
90	M8050690

Shaft		Key	
Model	Part No.		Part No.
01	K0501000		M8050100
11	K0511000		-
86	K0586000		M8058600
90	K0590000		-

Body
Part No. M8050250

Shaft seal	
Part No.	Type
M8050300	primary in NBR
M8050305	primary in FPM
M8050301	secondary in NBR
M8050306	secondary in FPM

Bearing
Part No. M8050270

Seeger
Part No. M8050290

Seeger
Part No. M8050280

Pump seal kit		
Part No.	Parts	Type
M8050500	seals + 1 shaft seal	NBR
M8050501	seals + 2 shaft seals	NBR
M8050503	seals + 1 shaft seal	FPM (Viton®)
M8050504	seals + 2 shaft seals	FPM (Viton®)

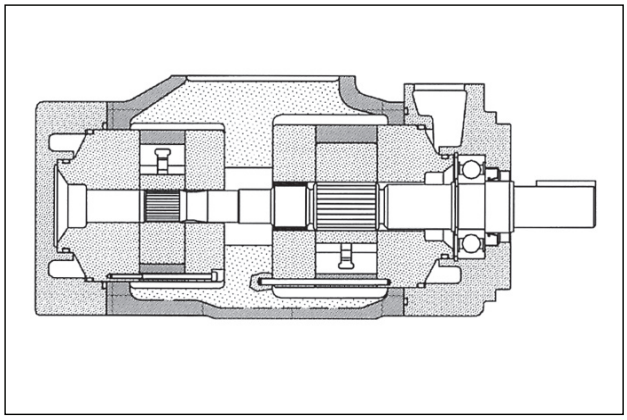
Cover
Part No. M8050260

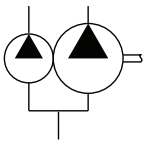
Screw
Part No. M8050310
Torque to 398 Nm (3550 lb. in.)

Technical Characteristics

Pump Series	Cartridge Model		Geometric Displacement		Rated Capacity at 1.200 rpm 7 bar		Rated Capacity at 1.500 rpm 7 bar		Maximum Pressure with mineral oil		Speed Range rpm	
			cm^3/g	(in^3/r)	l/min	(gpm)	l/min	(gpm)	bar	(psi)	min.	max.
BV21	Shaft End	12	40,1	(2.45)	46,9	(12)	58,8	(15.5)	175	(2.538)	600	1.800
		14	45,4	(2.77)	52,7	(14)	65,7	(17.4)				
		17	55,2	(3.37)	64,2	(17)	80,2	(21.2)				
		19	60,0	(3.66)	71,0	(19)	88,7	(23.4)				
		21	67,5	(4.12)	79,0	(21)	99,8	(26.4)				
BV02+BV01	Cover End	02	7,2	(0.44)	8,3	(2)	10,4	(2.8)	210	(3.050)	600	1.800
		05	18,0	(1.10)	20,8	(5)	26,1	(6.9)				
		08	27,4	(1.67)	31,8	(8)	39,4	(10.4)				
		11	36,4	(2.22)	42,4	(11)	52,6	(13.9)				
		12	39,5	(2.41)	46,9	(12)	58,7	(15.5)	160	(2.300)		
		14	45,9	(2.79)	54,9	(14)	69,6	(18.4)	140	(2.030)		
BV41	Shaft End	21	69,0	(4.2)	79,5	(21)	101,4	(26.8)	175	(2.538)	600	1.800
		25	81,6	(5)	94,0	(25)	120,1	(31.7)				
		30	97,7	(6)	113,8	(30)	141,2	(37.3)				
		35	112,7	(6.9)	131,6	(35)	167,2	(44.1)				
		38	121,6	(7.4)	139,9	(38)	177,3	(46.8)				
BV04+BV02	Cover End	02	7,2	(0.44)	8,3	(2)	10,4	(2.8)	210	(3.050)	600	1.800
		05	18,0	(1.10)	20,8	(5)	26,1	(6.9)				
		08	27,4	(1.67)	31,8	(8)	39,4	(10.4)				
		11	36,4	(2.22)	42,4	(11)	52,6	(13.9)				
		12	39,5	(2.41)	46,9	(12)	58,7	(15.5)	160	(2.300)		
		14	45,9	(2.79)	54,9	(14)	69,6	(18.4)	140	(2.030)		
BV42	Shaft End	21	69,0	(4.2)	79,5	(21)	101,4	(26.8)	175	(2.538)	600	1.800
		25	81,6	(5)	94,0	(25)	120,1	(31.7)				
		30	97,7	(6)	113,8	(30)	141,2	(37.3)				
		35	112,7	(6.9)	131,6	(35)	167,2	(44.1)				
		38	121,6	(7.4)	139,9	(38)	177,3	(46.8)				
BV04+BV01	Cover End	12	40,1	(2.45)	46,9	(12)	58,8	(15.5)	175	(2.538)	600	1.800
		14	45,4	(2.77)	52,7	(14)	65,7	(17.4)				
		17	55,2	(3.37)	64,2	(17)	80,2	(21.2)				
		19	60,0	(3.66)	71,0	(19)	88,7	(23.4)				
		21	67,5	(4.12)	79,0	(21)	99,8	(26.4)				
BV51	Shaft End	42	138,6	(8.46)	164	(42)	203,4	(53.7)	175	(2.538)	600	1.800
		47	153,5	(9.4)	180	(47)	222,7	(58.8)				
		50	162,2	(9.9)	189	(50)	234	(61.8)				
		57	183,4	(11.2)	217	(57)	267	(71.2)				
		60	193,4	(11.8)	230	(60)	285	(75.3)				
BV05+BV01	Cover End	02	7,2	(0.44)	8,3	(2)	10,4	(2.8)	210	(3.050)	600	1.800
		05	18,0	(1.10)	20,8	(5)	26,1	(6.9)				
		08	27,4	(1.67)	31,8	(8)	39,4	(10.4)				
		11	36,4	(2.22)	42,4	(11)	52,6	(13.9)				
		12	39,5	(2.41)	46,9	(12)	58,7	(15.5)	160	(2.300)		
		14	45,9	(2.79)	54,9	(14)	69,6	(18.4)	140	(2.030)		
BV52	Shaft End	42	138,6	(8.46)	164	(42)	203,4	(53.7)	175	(2.538)	600	1.800
		47	153,5	(9.4)	180	(47)	222,7	(58.8)				
		50	162,2	(9.9)	189	(50)	234	(61.8)				
		57	183,4	(11.2)	217	(57)	267	(71.2)				
		60	193,4	(11.8)	230	(60)	285	(75.3)				
BV05+BV02	Cover End	12	40,1	(2.45)	46,9	(12)	58,8	(15.5)	175	(2.538)	600	1.800
		14	45,4	(2.77)	52,7	(14)	65,7	(17.4)				
		17	55,2	(3.37)	64,2	(17)	80,2	(21.2)				
		19	60,0	(3.66)	71,0	(19)	88,7	(23.4)				
		21	67,5	(4.12)	79,0	(21)	99,8	(26.4)				
BV54	Shaft End	42	138,6	(8.46)	164	(42)	203,4	(53.7)	175	(2.538)	600	1.800
		47	153,5	(9.4)	180	(47)	222,7	(58.8)				
		50	162,2	(9.9)	189	(50)	234	(61.8)				
		57	183,4	(11.2)	217	(57)	267	(71.2)				
		60	193,4	(11.8)	230	(60)	285	(75.3)				
BV05+BV04	Cover End	21	69,0	(4.2)	79,5	(21)	101,4	(26.8)	175	(2.538)	600	1.800
		25	81,6	(5)	94,0	(25)	120,1	(31.7)				
		30	97,7	(6)	113,8	(30)	141,2	(37.3)				
		35	112,7	(6.9)	131,6	(35)	167,2	(44.1)				
		38	121,6	(7.4)	139,9	(38)	177,3	(46.8)				

Double Pump Type BV21 (BV02+BV01)





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the cartridges used and the speed of rotation. The pump is available in several versions with rated capacities from 68 to 134 l/min *(from 17 to 35 gpm)* at 1200 rpm and 7 bar .

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
shaft end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V02-12	**40,1**	(2.45)	**46,9**	(12)	**58,8**	(15.5)	**175**	(2538)	**600**	**1800**
V02-14	**45,4**	(2.77)	**52,7**	(14)	**65,7**	(17.4)	**175**	(2538)	**600**	**1800**
V02-17	**55,2**	(3.37)	**64,2**	(17)	**80,2**	(21.2)	**175**	(2538)	**600**	**1800**
V02-19	**60,0**	(3.66)	**71,0**	(19)	**88,7**	(23.4)	**175**	(2538)	**600**	**1800**
V02-21	**67,5**	(4.12)	**79,0**	(21)	**99,8**	(26.4)	**175**	(2538)	**600**	**1800**
cover end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V01-05	**18,0**	(1.10)	**20,8**	(5)	**26,1**	(6.9)	**210**	(3050)	**600**	**1800**
V01-08	**27,4**	(1.67)	**31,8**	(8)	**39,4**	(10.4)	**210**	(3050)	**600**	**1800**
V01-11	**36,4**	(2.22)	**42,4**	(11)	**52,6**	(13.9)	**210**	(3050)	**600**	**1800**
V01-12	**39,5**	(2.41)	**46,9**	(12)	**58,7**	(15.5)	**160**	(2300)	**600**	**1800**
V01-14	**45,9**	(2.79)	**54,9**	(14)	**69,6**	(18.4)	**140**	(2030)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)***:** from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)***:** from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

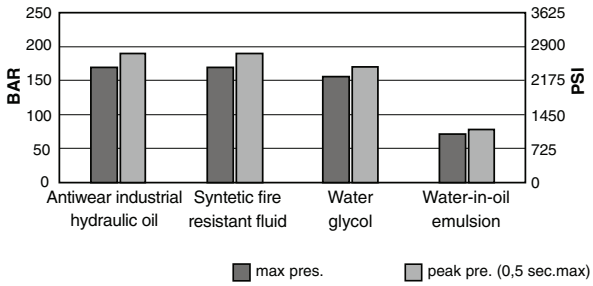
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

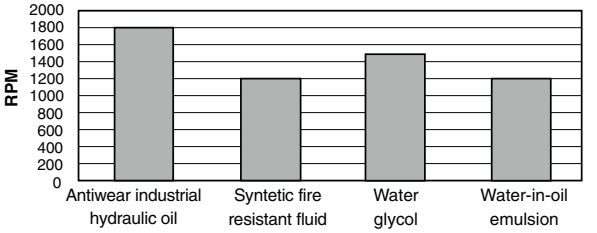
Double Pump Type BV21 (BV02+BV01)

Main operating data

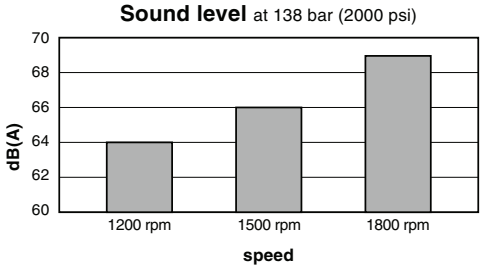
max pressure / hydraulic fluid



max speed / hydraulic fluid (with 0 bar in the intake pipe)

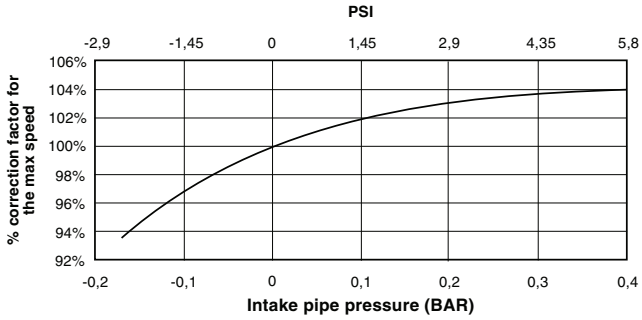


Sound level at 138 bar (2000 psi)



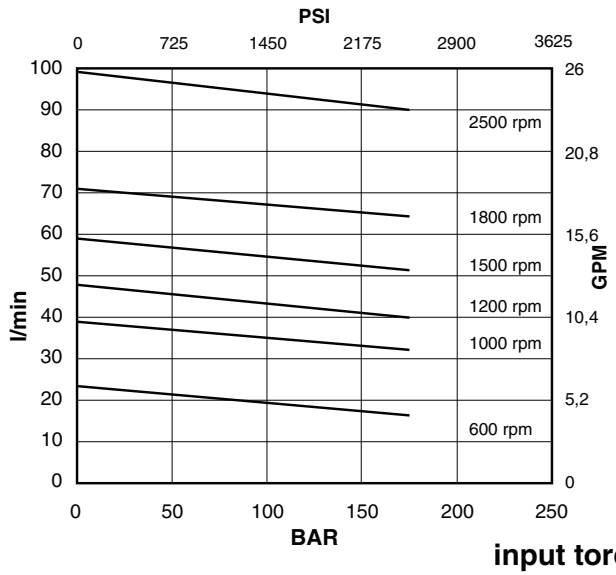
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure

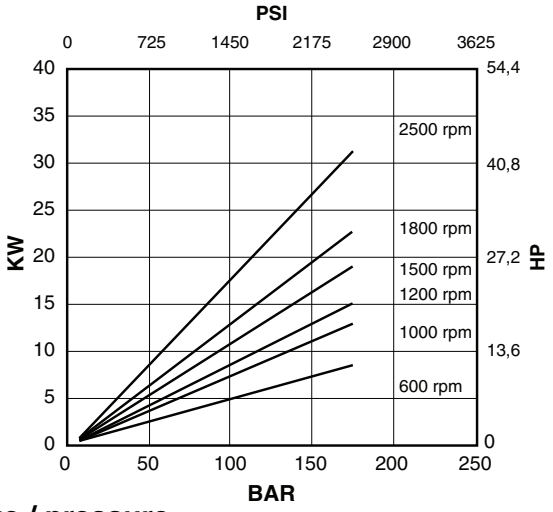


Shaft end cartridge V02-12

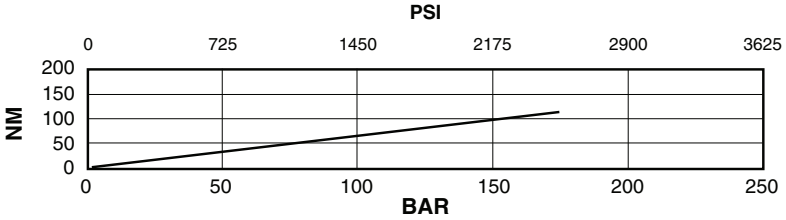
flow / pressure



power / pressure



input torque / pressure

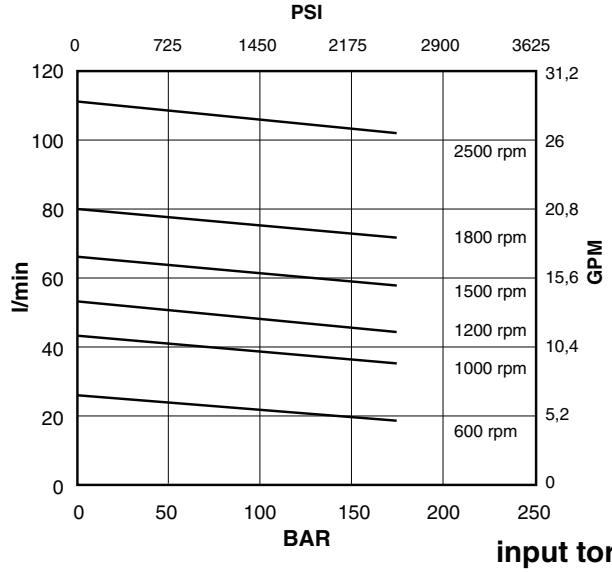


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

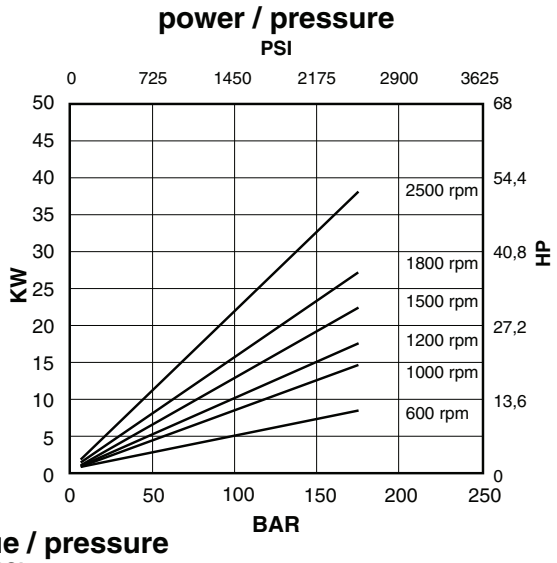
Double Pump Type BV21 (BV02+BV01)

Shaft end cartridge V02-14

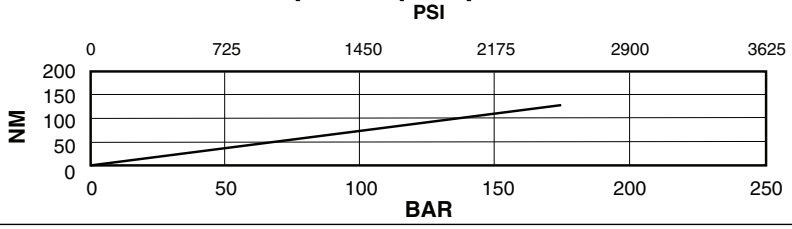
flow / pressure



power / pressure



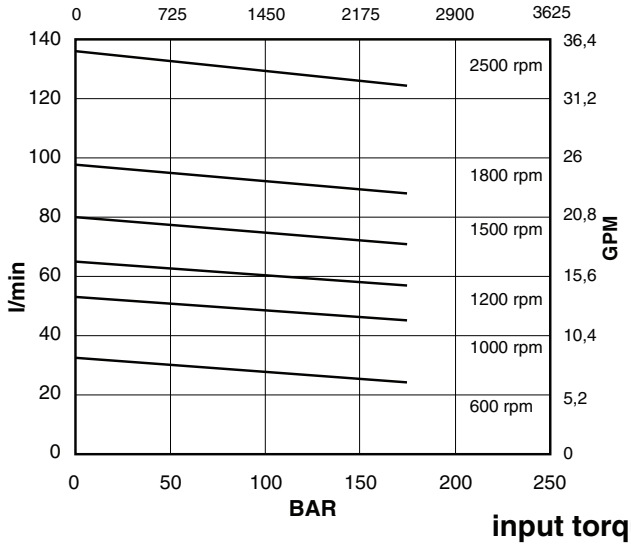
input torque / pressure



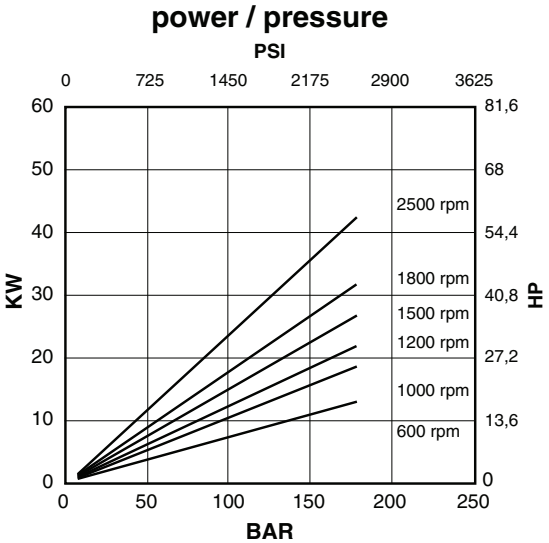
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V02-17

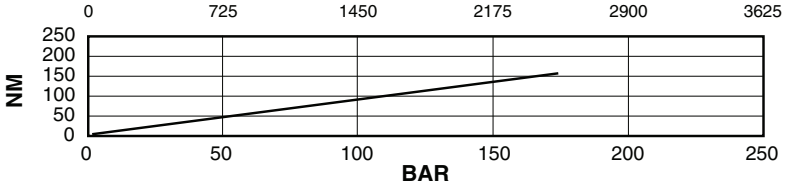
flow / pressure



power / pressure



input torque / pressure

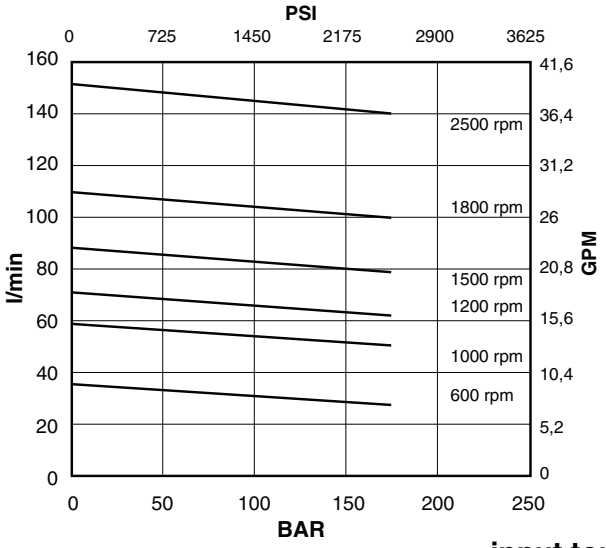


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

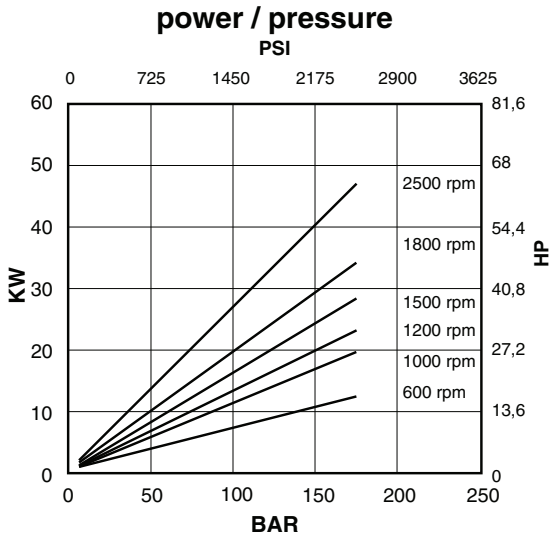
Double Pump Type BV21 (BV02+BV01)

Shaft end cartridge V02-19

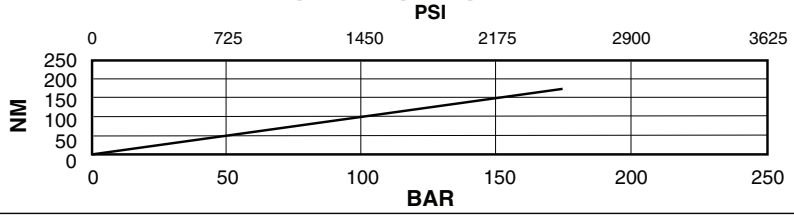
flow / pressure



power / pressure



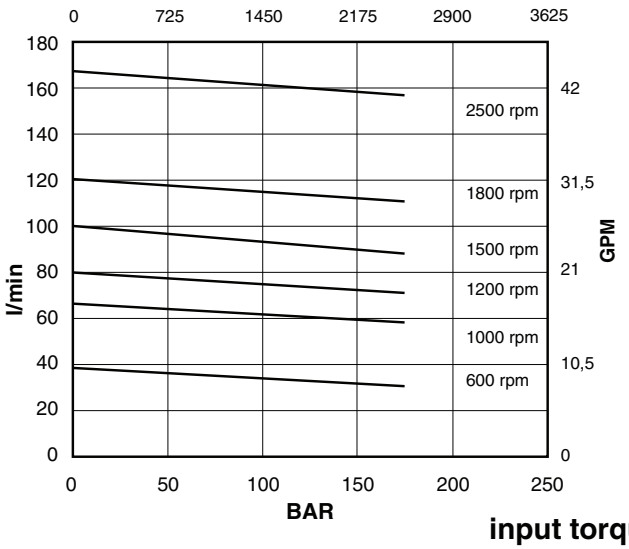
input torque / pressure



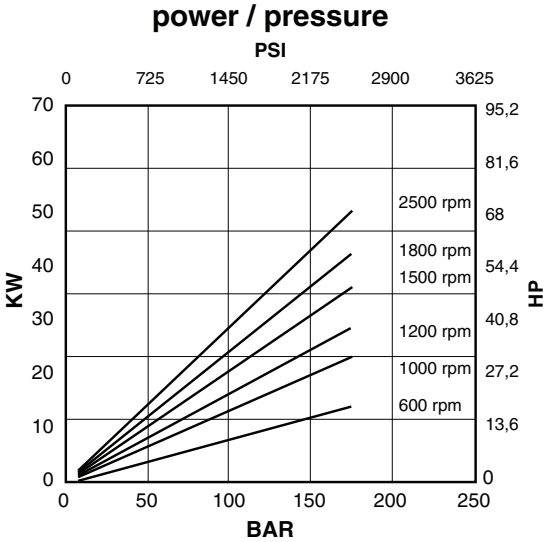
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V02-21

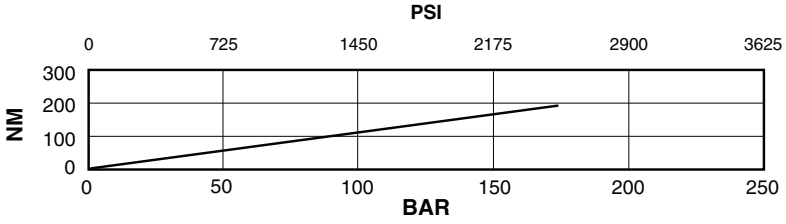
flow / pressure



power / pressure



input torque / pressure

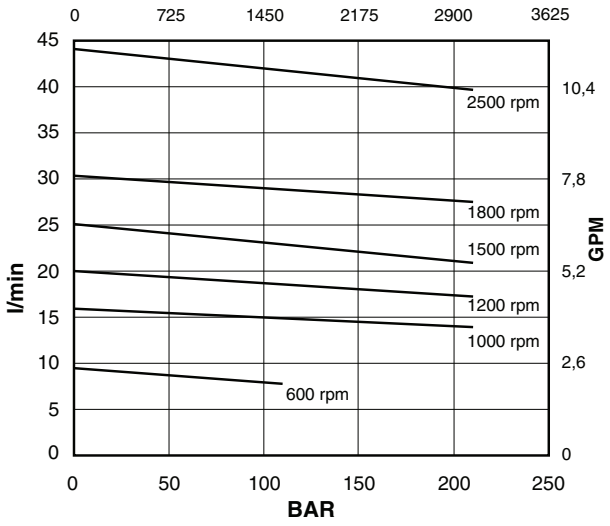


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

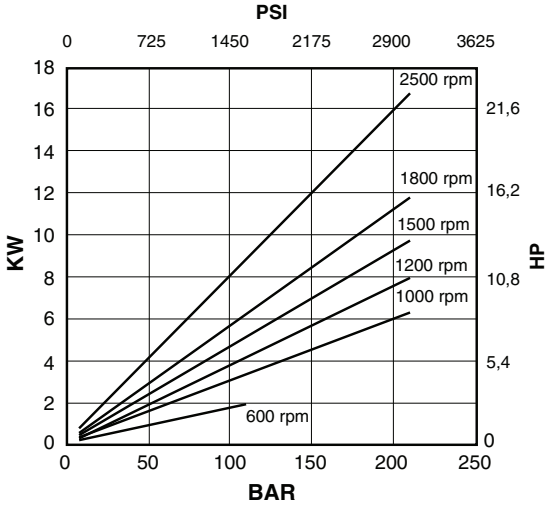
Double Pump Type BV21 (BV02+BV01)

Cover end cartridge V01-05

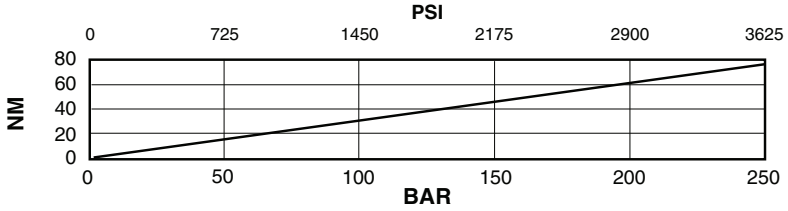
flow / pressure



power / pressure



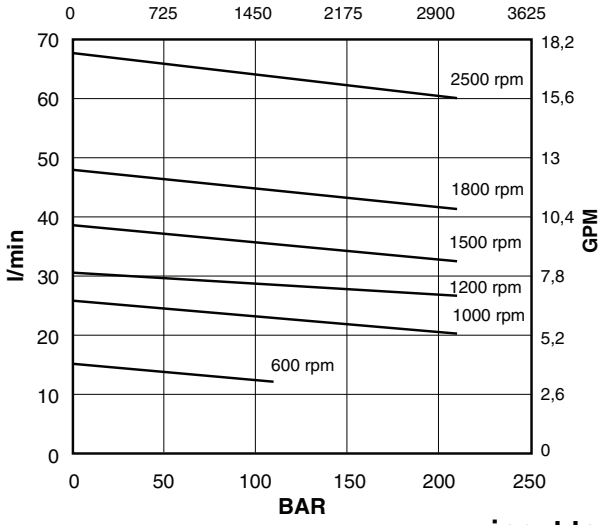
input torque / pressure



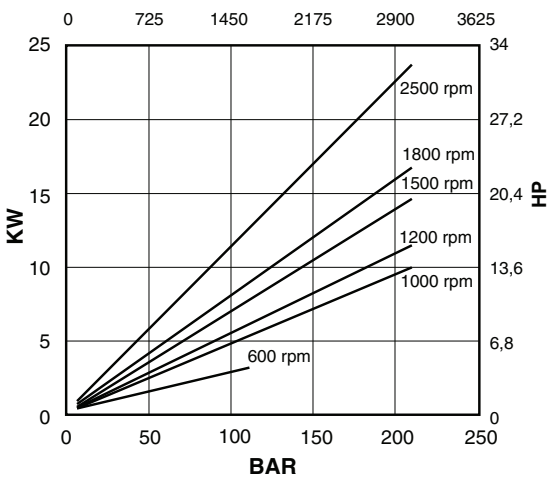
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V01-08

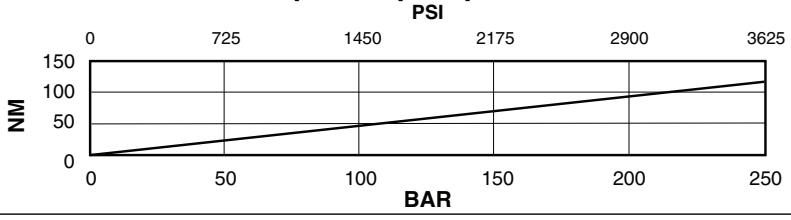
flow / pressure



power / pressure



input torque / pressure

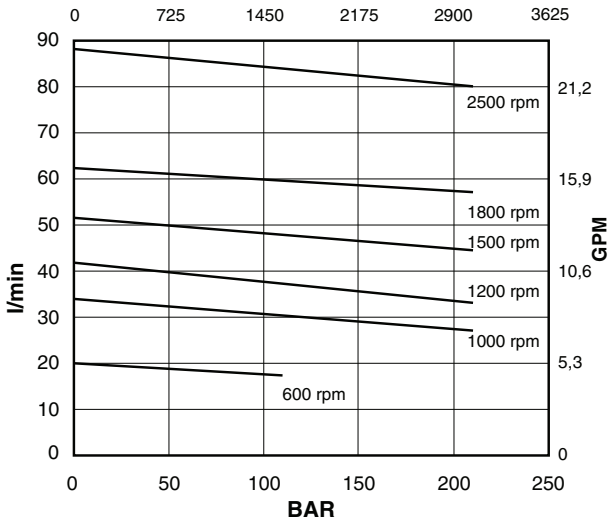


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

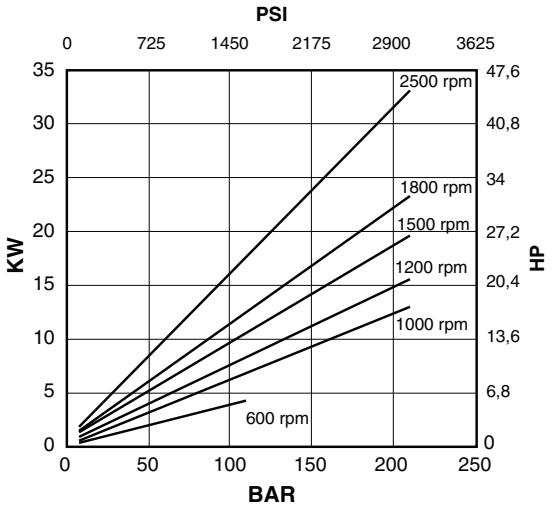
Double Pump Type BV21 (BV02+BV01)

Cover end cartridge V01-11

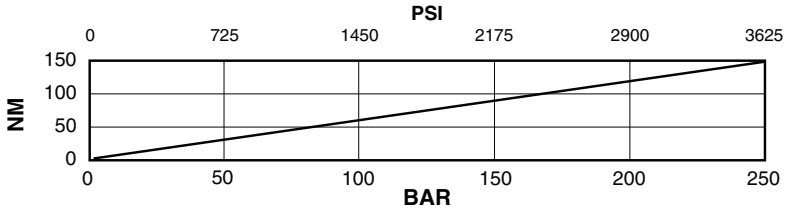
flow / pressure



power / pressure



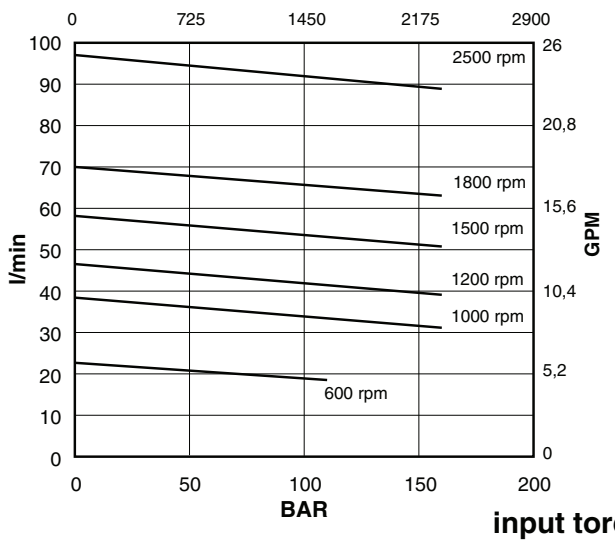
input torque / pressure



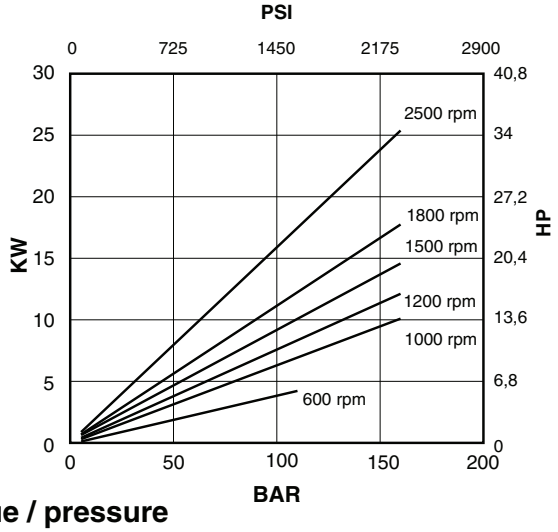
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V01-12

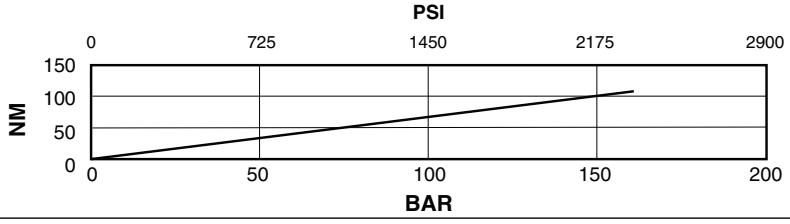
flow / pressure



power / pressure



input torque / pressure

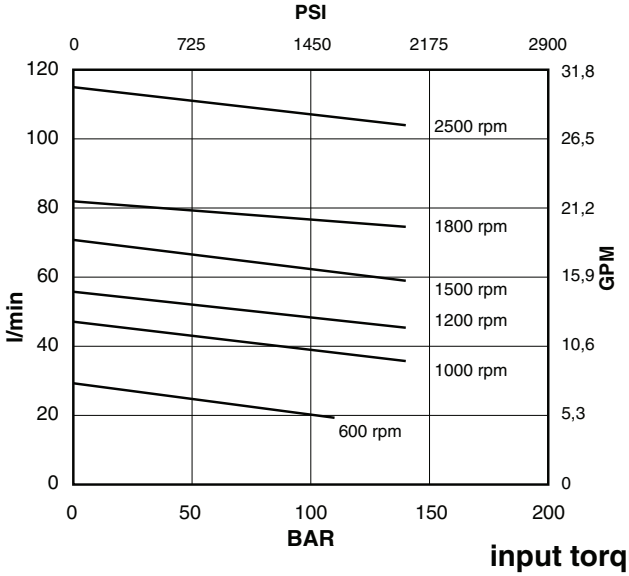


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

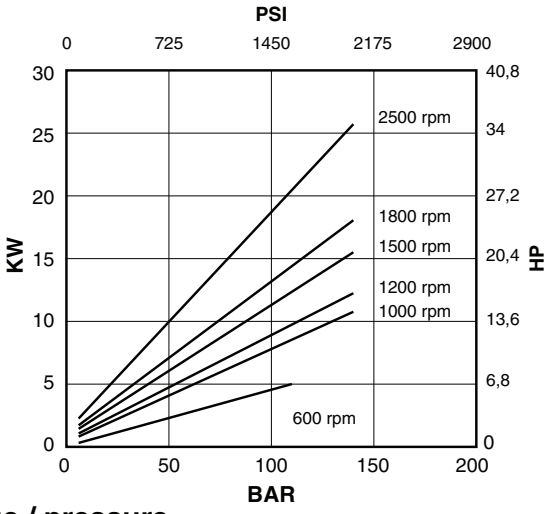
Double Pump Type BV21 (BV02+BV01)

Cover end cartridge V01-14

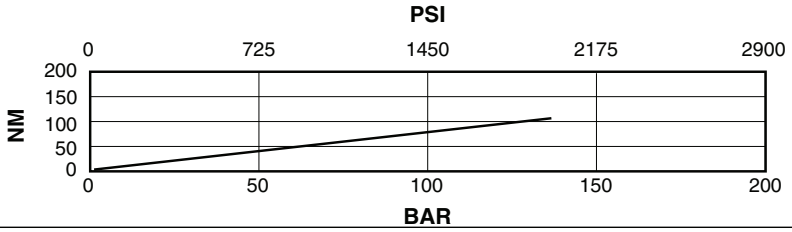
flow / pressure



power / pressure

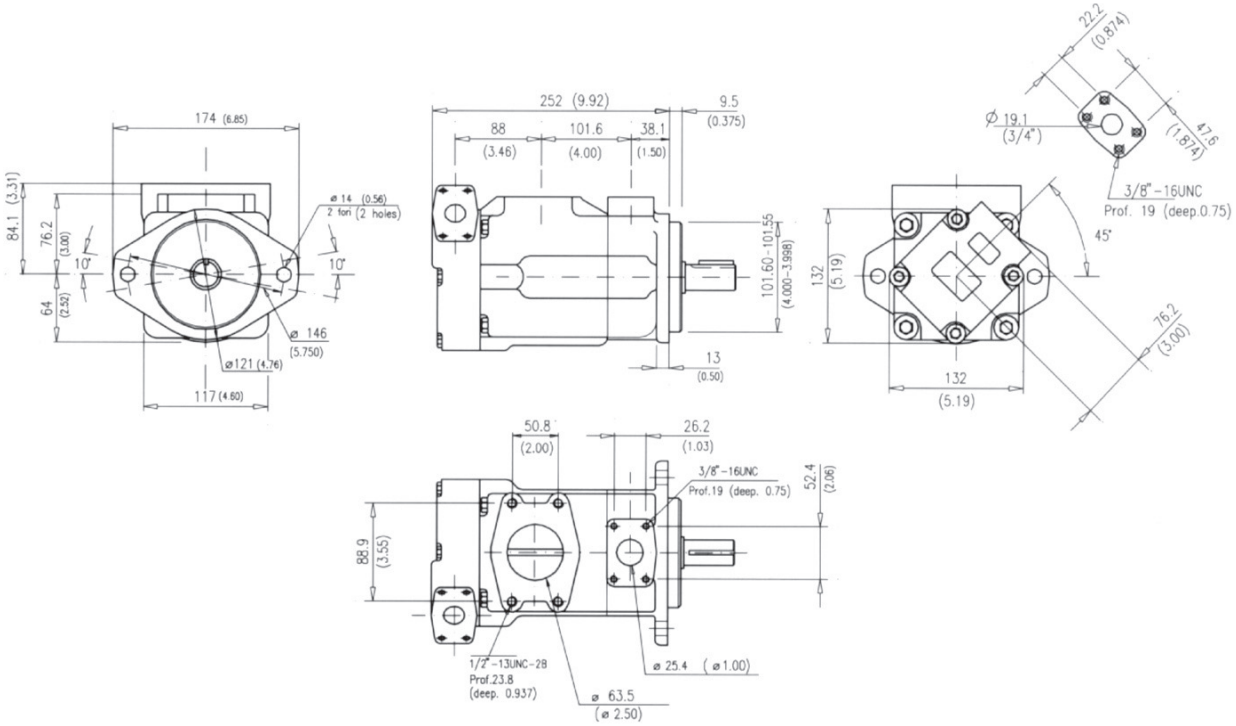


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 20,5 Kg. (45 lbs.)

Double Pump Type BV21 (BV02+BV01)

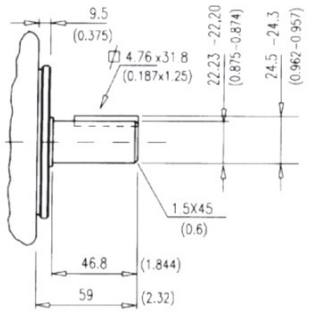
Model code breakdown

BV 21 G ** ** * * ** (L) * (A)

- **BV 21** — Pump series / Pump type
- **G** — Design
- ****** — Cartridge types
  - **-shaft end** 12 14 17 19 21
  - **-cover end** 05 08 11 12 14
- ****** — Body outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CCW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- ***** — Cover outlet port positions (outlet viewed from cover end)
  - **A** = Outlet 135° CCW from inlet
  - **B** = Outlet 45° CCW from inlet
  - **C** = Outlet 45° CW from inlet
  - **D** = Outlet 135° CW from inlet
- ***** — Shaft end options
  - **01** = Straight with key (standard), **11** = Splined
  - **86** = Heavy duty straight keyed, **90** = Splined SAE B
- **(L)** — Rotation (viewed from shaft end)
  - **L** = left hand rotaton CCW (omit if CW)
- ***** — Seals (omit with standard seals and one shaft-seal in NBR)
  - **V** = seals and shaft-seal in FPM (Viton®)
  - **D** = standard seals and double shaft-seals in NBR
  - **F** = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting (omit if not required)

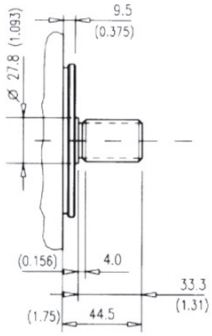
Shaft options mm (inches)

Shaft 01



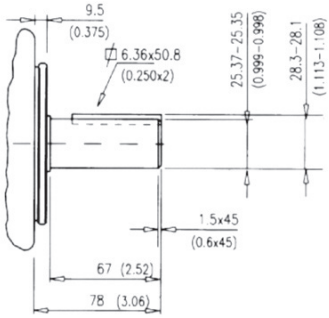
max. torque capability : 320Nm (2800 lb.in.)

Shaft 11



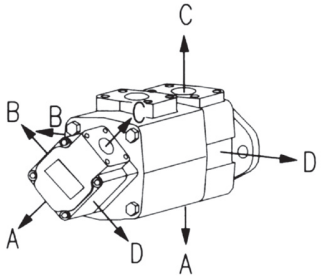
max. torque capability : 320Nm (2800 lb.in.)

Shaft 86



max torque capability: 400 Nm (3560 lb. in.)

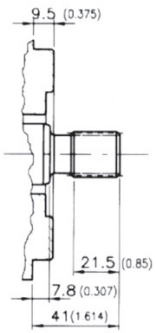
PORT ORIENTATIONS



Spline data
(shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	13	
Pitch	16/32	
Major dia.	22.00 - 21.90	(0.866 - 0.862)
Pitch dia.	20.638	(0.8125)
Minor dia.	18.63 - 18.35	(0.733 - 0.722)
Wildhaber	11.67 - 11.70	(0.459 - 0.461)

Shaft 90



max torque capability: 320 Nm (2800 lb. in.)

Double Pump Type BV21 (BV02+BV01)

Id. codes of pump components

Cartridges						Pump rotation
cover end			shaft end			
Series	Model	Part No.	Series	Model	Part No.	
V01	05	V0105010	V02	12	V0212030	right hand
	08	V0108030		14	V0214070	right hand
	11	V0111070		17	V0217110	right hand
	12	V0112090		19	V0219150	right hand
	14	V0114110		21	V0221190	right hand
V01	05	V0105020	V02	12	V0212040	left hand
	08	V0108040		14	V0214080	left hand
	11	V0111080		17	V0217120	left hand
	12	V0112100		19	V0219160	left hand
	14	V0114120		21	V0221200	left hand

Shaft kit	
Model	Part No.
01	M8210601
11	M8210611
86	M8210686
90	M8210690

Shaft		Key	
Model	Part No.		Part No.
01	K2101000		M8010100
11	K2111000		-
86	K2186000		M8028600
90	K2190000		-

Body
Part No. M8020010

Bearing
Part No. M8020030

Seeger
Part No. M8020050

Shaft seal	
Part No.	Type
M8020060	primary in NBR
M8020065	primary in FPM
M8020061	secondary in NBR
M8020066	secondary in FPM

Pump seal kit		
Part No.	Parts	Type
M8210500	seals + 1 shaft seal	NBR
M8210501	seals + 2 shaft seals	NBR
M8210503	seals + 1 shaft seal	FPM (Viton®)
M8210504	seals + 2 shaft seals	FPM (Viton®)

Inlet body
Part No. M8020110

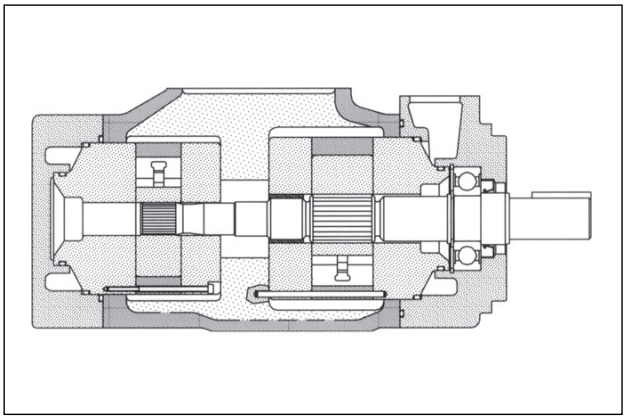
Seeger
Part No. M8020040

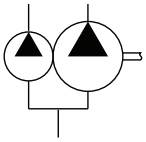
Cover
Part No. M8020120

Screw
Part No. M8020130
Torque to 102 Nm (910 lb. in.)

Screw
Part No. M8020420
Torque to 70 Nm (624 lb. in.)

Double Pump Type BV41 (BV04+BV01)





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the cartridges used and the speed of rotation. The pump is available in several versions with rated capacities from 101 to 195 l/min *(from 26 to 52 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
shaft end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V04-21	**69,0**	(4.2)	**79,5**	(21)	**101,4**	(26.8)	**175**	(2538)	**600**	**1800**
V04-25	**81,6**	(5)	**94,0**	(25)	**120,1**	(31.7)	**175**	(2538)	**600**	**1800**
V04-30	**97,7**	(6)	**113,8**	(30)	**141,2**	(37.3)	**175**	(2538)	**600**	**1800**
V04-35	**112,7**	(6.9)	**131,6**	(35)	**167,2**	(44.1)	**175**	(2538)	**600**	**1800**
V04-38	**121,6**	(7.4)	**139,9**	(38)	**177,3**	(46.8)	**175**	(2538)	**600**	**1800**
cover end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V01-05	**18,0**	(1.10)	**20,8**	(5)	**26,1**	(6.9)	**210**	(3050)	**600**	**1800**
V01-08	**27,4**	(1.67)	**31,8**	(8)	**39,4**	(10.4)	**210**	(3050)	**600**	**1800**
V01-11	**36,4**	(2.22)	**42,4**	(11)	**52,6**	(13.9)	**210**	(3050)	**600**	**1800**
V01-12	**39,5**	(2.41)	**46,9**	(12)	**58,7**	(15.5)	**160**	(2300)	**600**	**1800**
V01-14	**45,9**	(2.79)	**54,9**	(14)	**69,6**	(18.4)	**140**	(2030)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)***:** from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)***:** from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

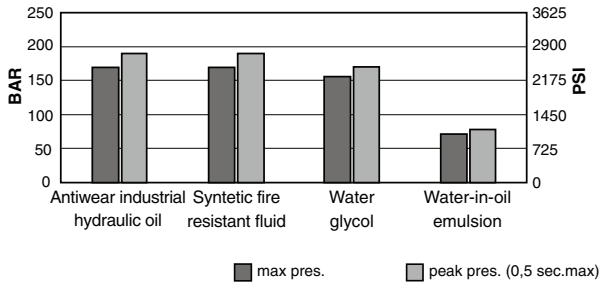
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

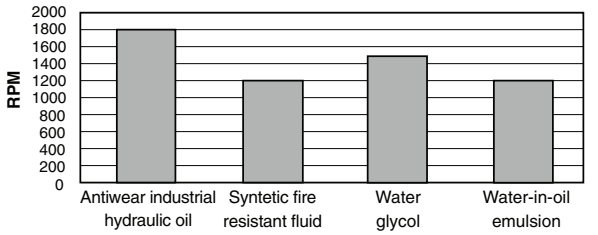
Double Pump Type BV41 (BV04+BV01)

Main operating data

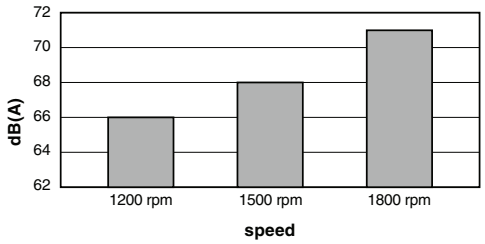
max pressure / hydraulic fluid



max speed / hydraulic fluid (with 0 bar in the intake pipe)

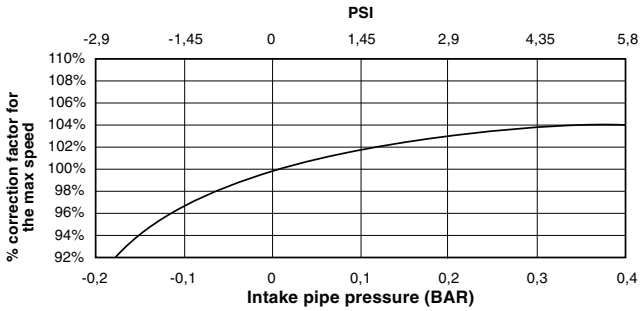


Sound level at 138 bar (2000 psi)



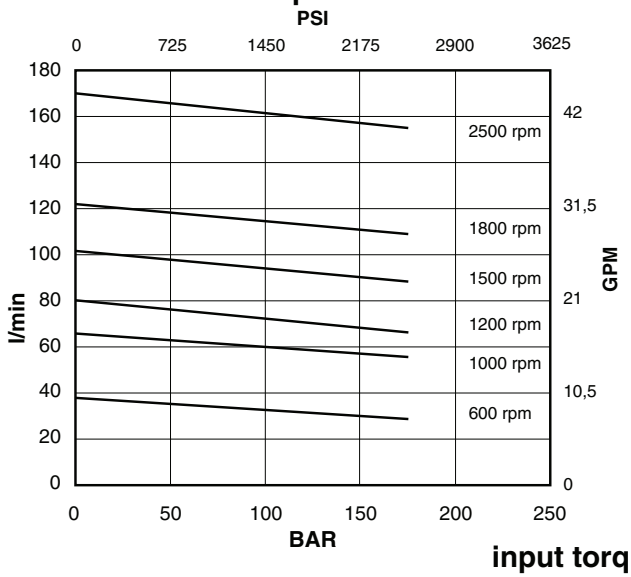
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure

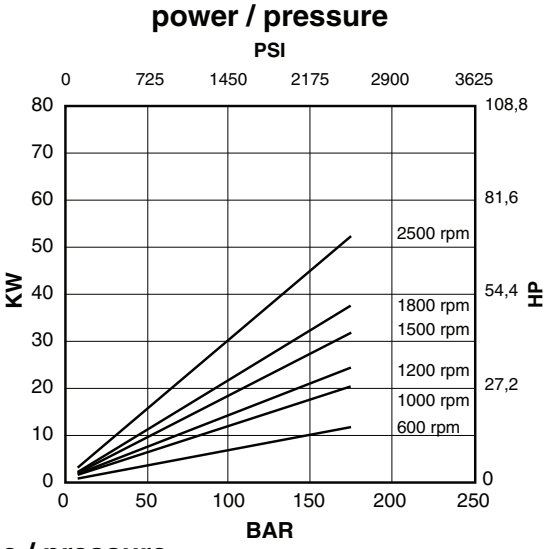


Shaft end cartridge V04-21

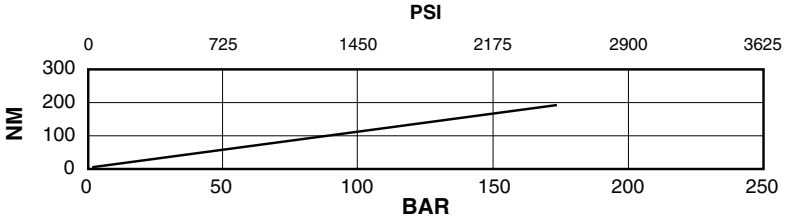
flow / pressure



power / pressure



input torque / pressure

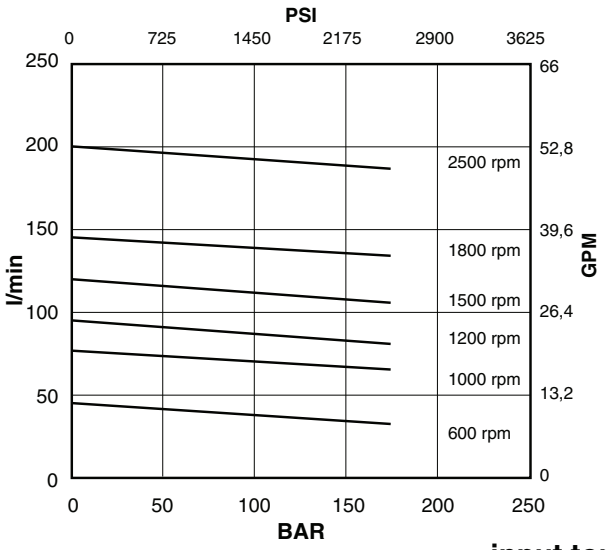


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

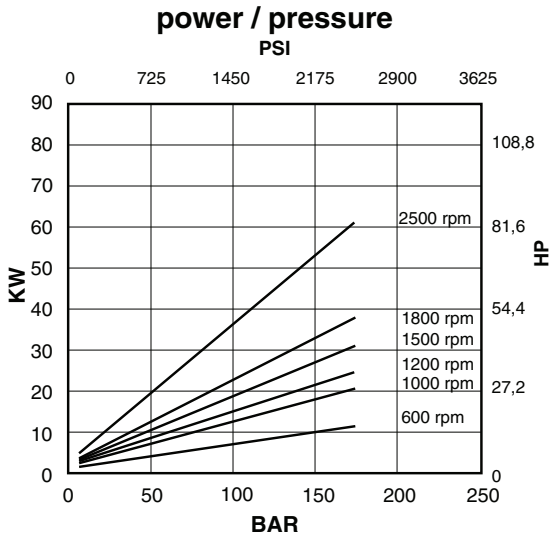
Double Pump Type BV41 (BV04+BV01)

Shaft end cartridge V04-25

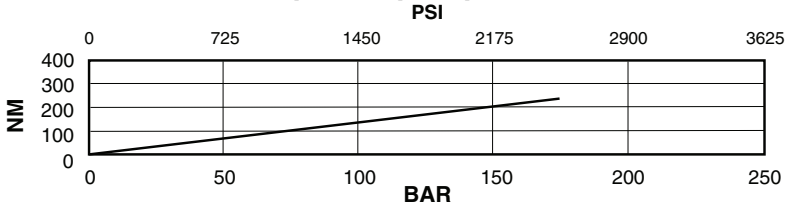
flow / pressure



power / pressure



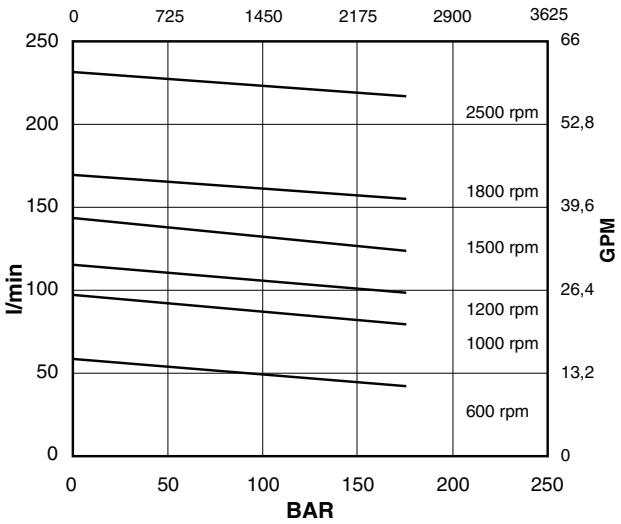
input torque / pressure



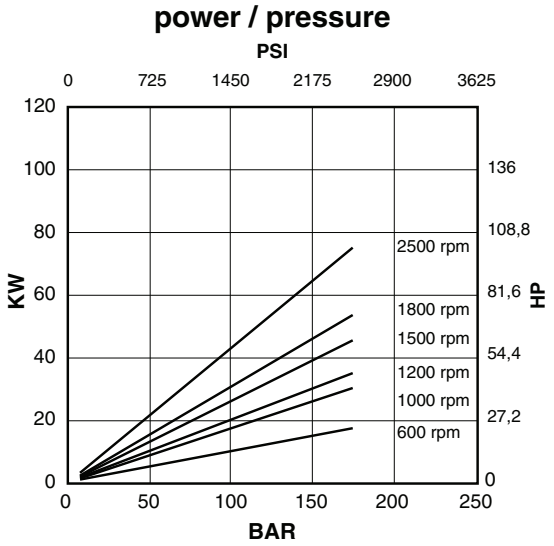
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V04-30

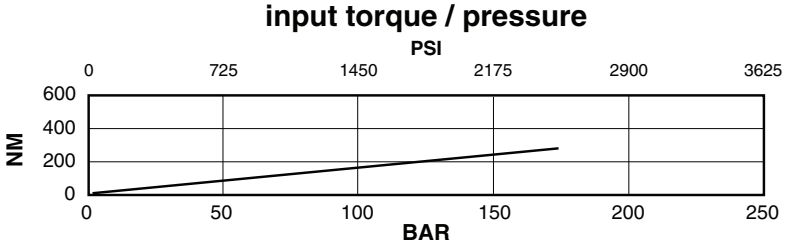
flow / pressure



power / pressure



input torque / pressure

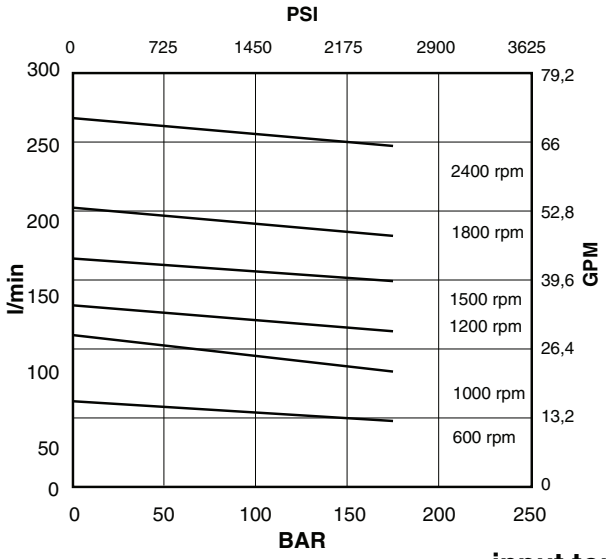


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

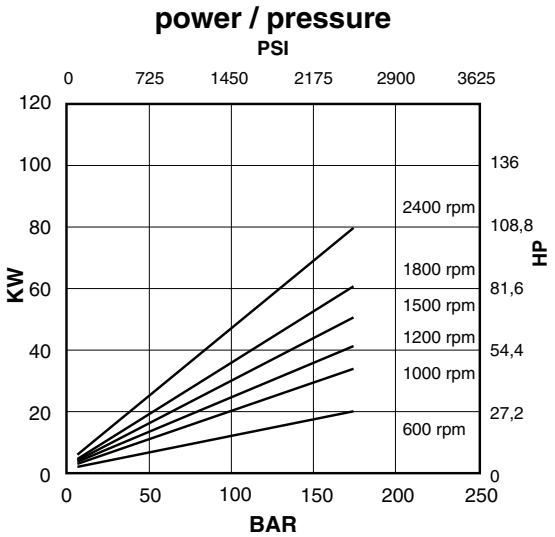
Double Pump Type BV41 (BV04+BV01)

Shaft end cartridge V04-35

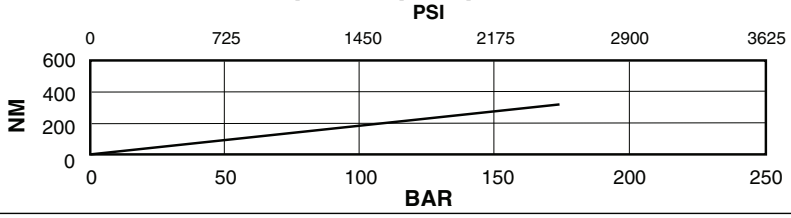
flow / pressure



power / pressure



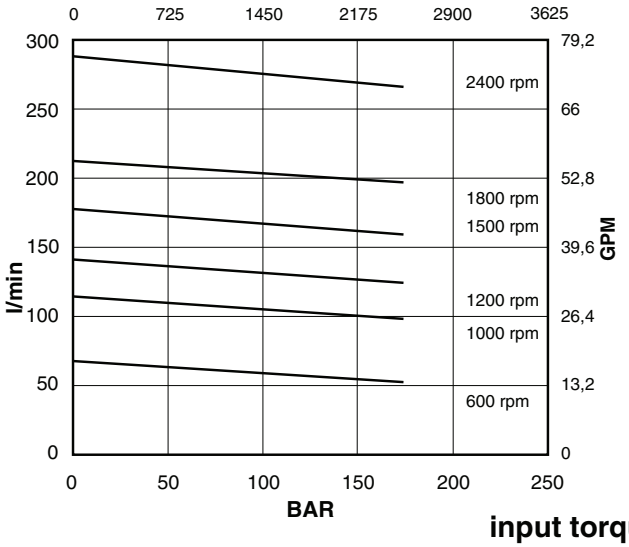
input torque / pressure



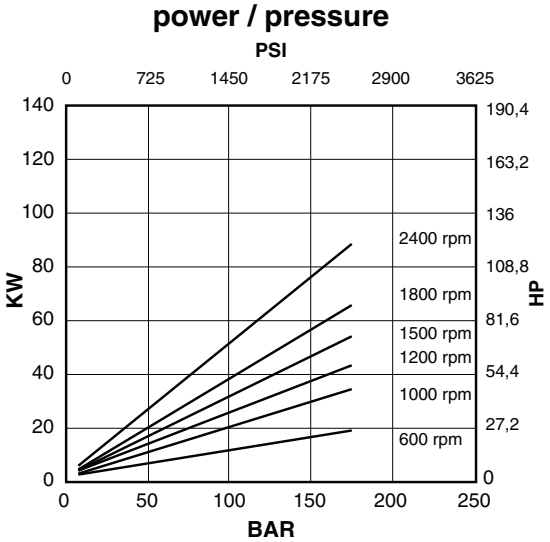
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V04-38

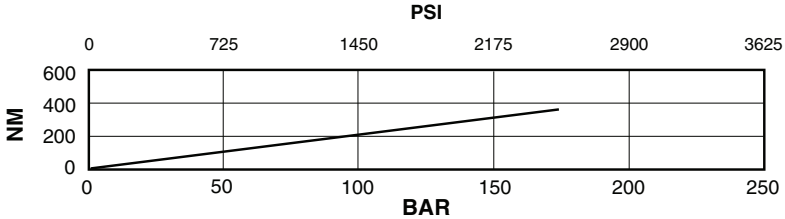
flow / pressure



power / pressure



input torque / pressure

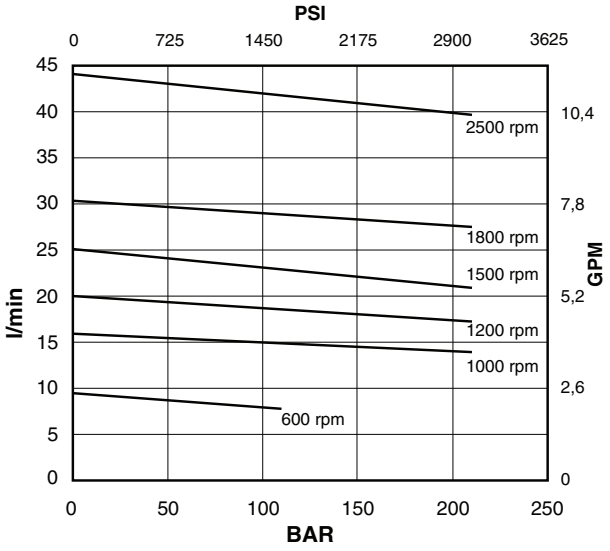


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

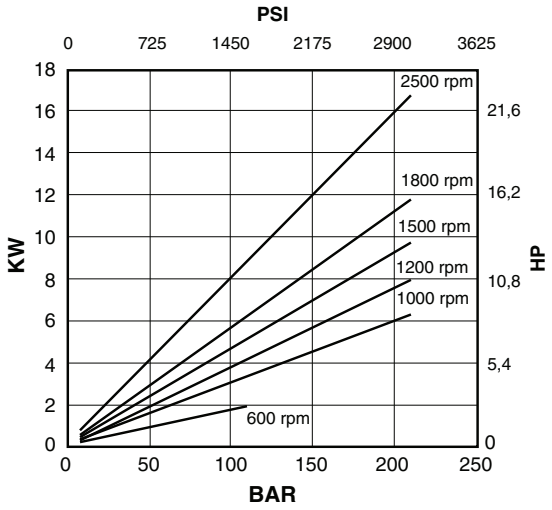
Double Pump Type BV41 (BV04+BV01)

Cover end cartridge V01-05

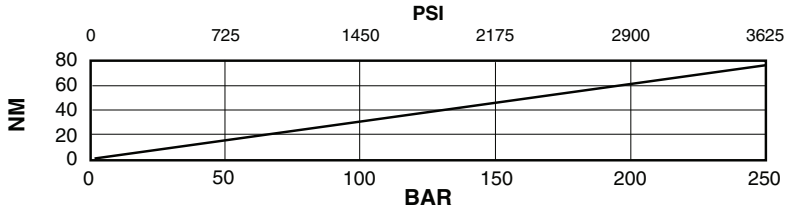
flow / pressure



power / pressure



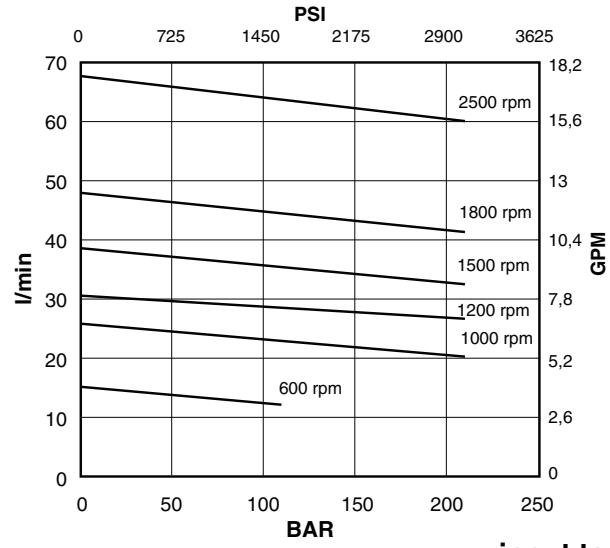
input torque / pressure



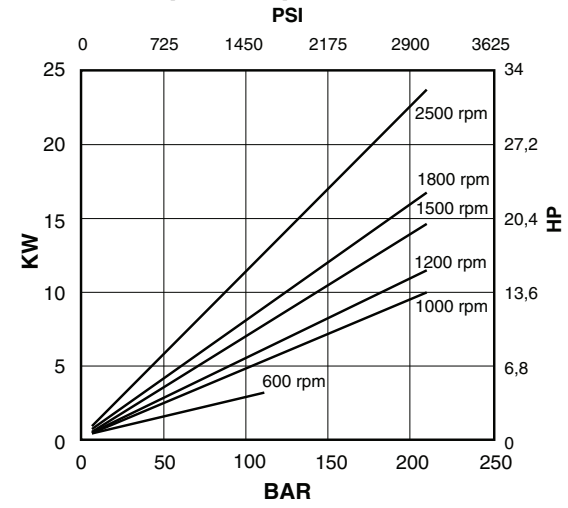
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V01-08

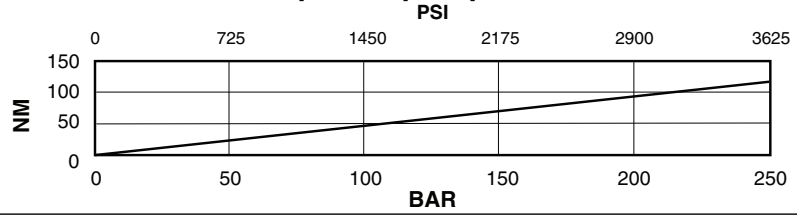
flow / pressure



power / pressure



input torque / pressure

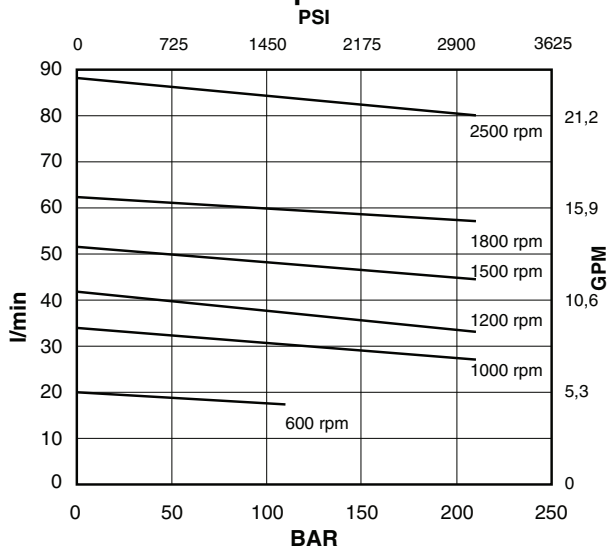


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

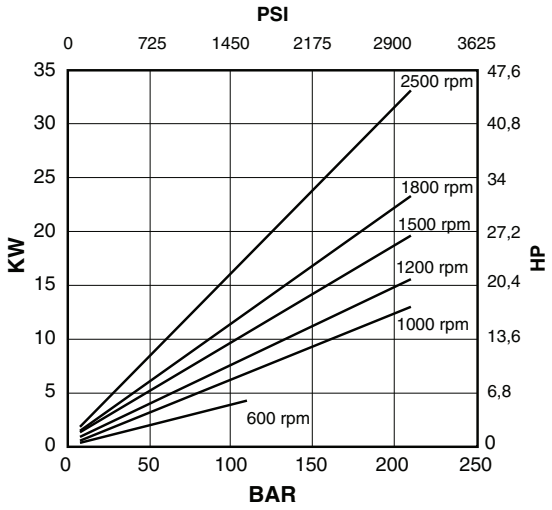
Double Pump Type BV41 (BV04+BV01)

Cover end cartridge V01-11

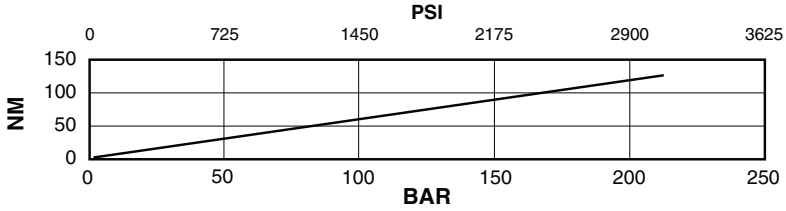
flow / pressure



power / pressure



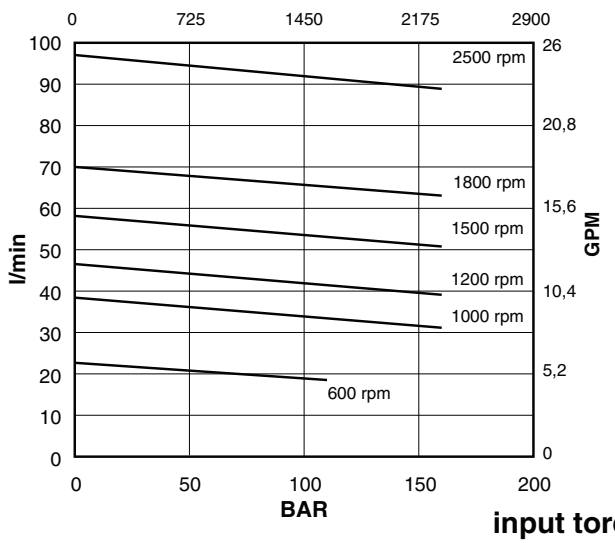
input torque / pressure



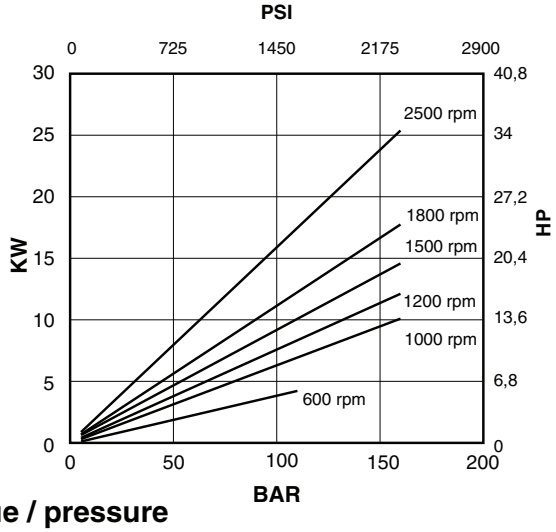
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V01-12

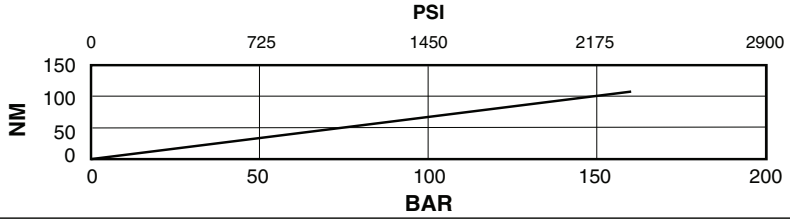
flow / pressure



power / pressure



input torque / pressure

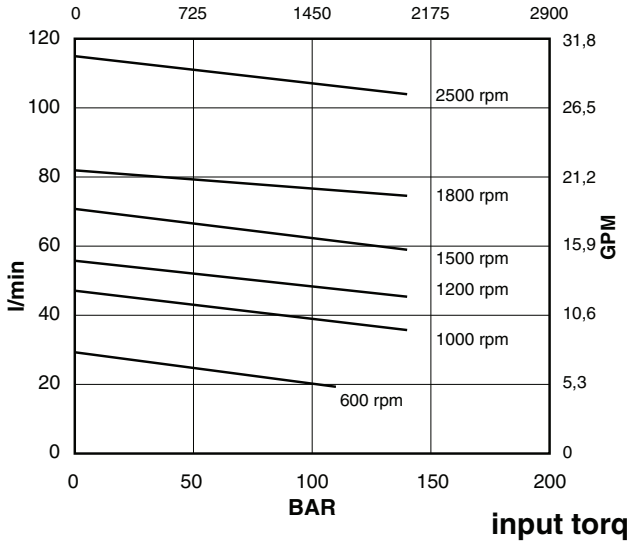


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

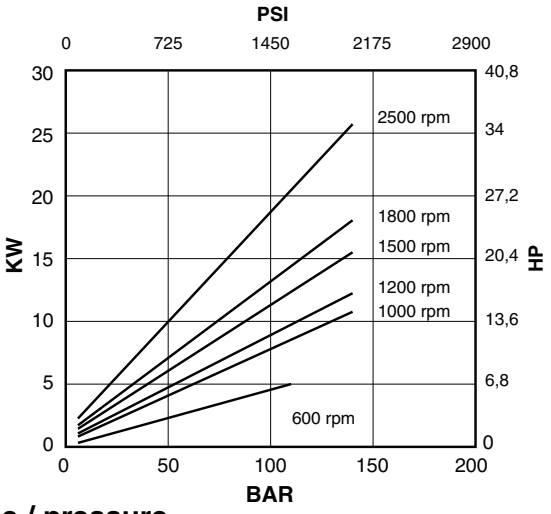
Double Pump Type BV41 (BV04+BV01)

Cover end cartridge V01-14

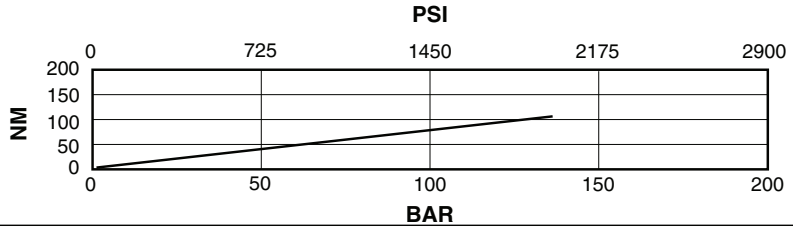
flow / pressure



power / pressure

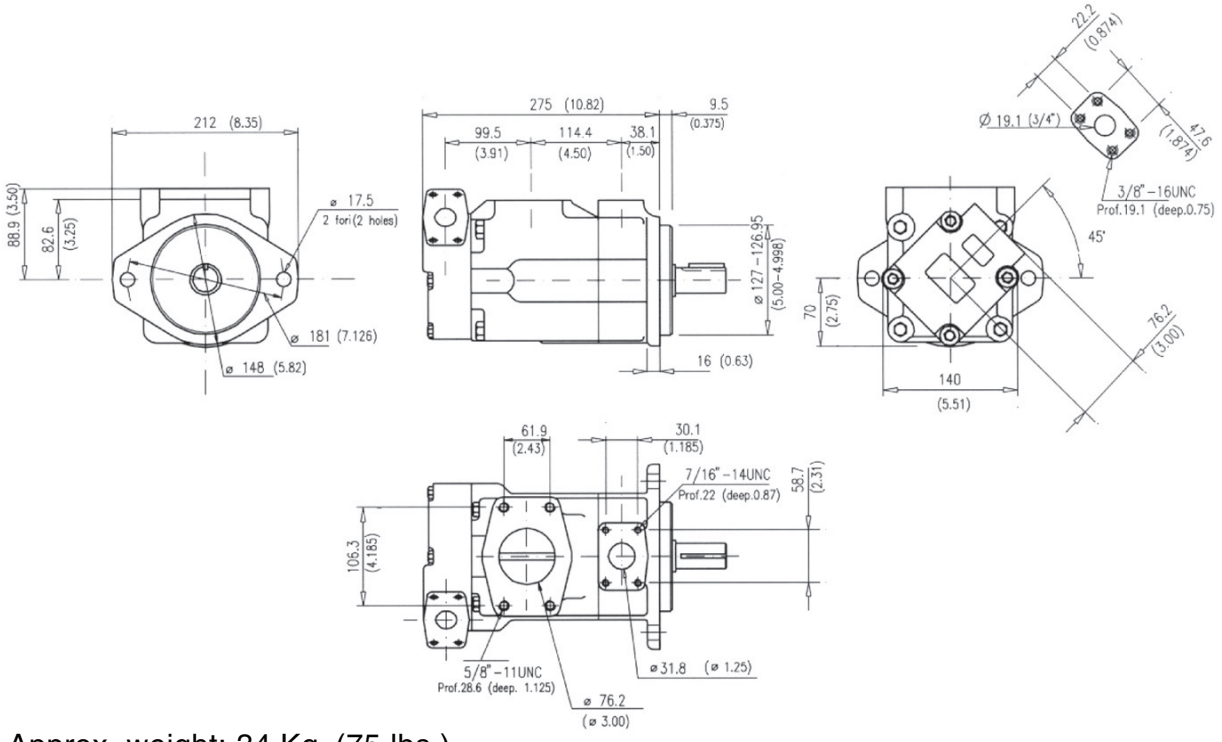


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 34 Kg. (75 lbs.)

Double Pump Type BV41 (BV04+BV01)

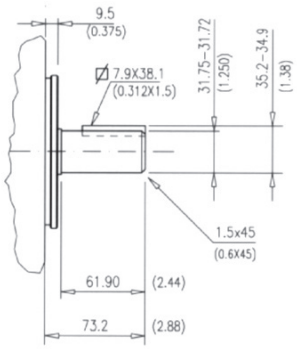
Model code breakdown

BV 41 G ** ** * * ** (L) * (A)

- **BV 41** — Pump series / Pump type
- **G** — Design
- ****** — Cartridge types
  - **-shaft end** 21 25 30 35 38
  - **-cover end** 05 08 11 12 14
- ****** — Body outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CCW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- ***** — Cover outlet port positions (outlet viewed from cover end)
  - **A** = Outlet 135° CCW from inlet
  - **B** = Outlet 45° CCW from inlet
  - **C** = Outlet 45° CW from inlet
  - **D** = Outlet 135° CW from inlet
- ***** — Shaft end options
  - **01** = Straight with key (standard), **11** = Splined
  - **86** = Heavy duty straight keyed, **90** = Splined SAE C
- **(L)** — Rotation (viewed from shaft end)
  - **L** = left hand rotaton CCW (omit if CW)
- ***** — Seals (omit with standard seals and one shaft-seal in NBR)
  - **V** = seals and shaft-seal in FPM (Viton®)
  - **D** = standard seals and double shaft-seals in NBR
  - **F** = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting (omit if not required)

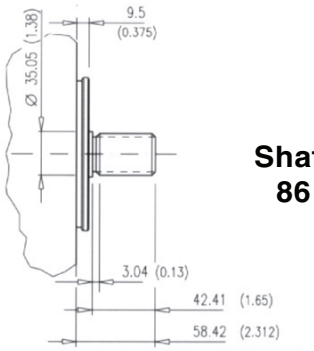
Shaft options mm (inches)

Shaft 01



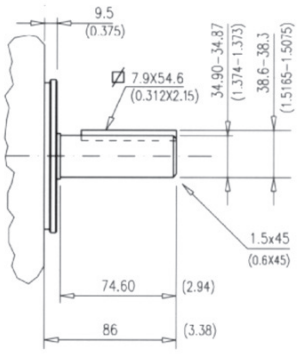
max. torque capability : 400 Nm (3560 lb.in.)

Shaft 11



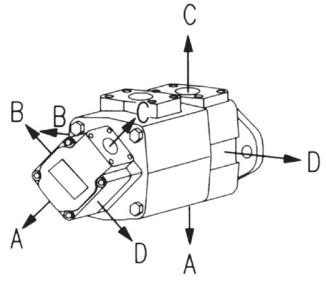
max. torque capability : 580 Nm (5100 lb.in.)

Shaft 86



max torque capability: 600 Nm (5300 lb. in.)

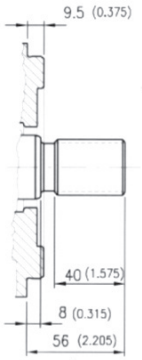
PORT ORIENTATIONS



Spline data (shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	14	
Pitch	12/24	
Major dia.	31.60 - 31.50	(1.244 - 1.240)
Pitch dia.	29.634	(1.1667)
Minor dia.	26.99 - 26.66	(1.0627 - 1.05)
Wildhaber	15.68 - 15.73	(0.617 - 0.619)

Shaft 90

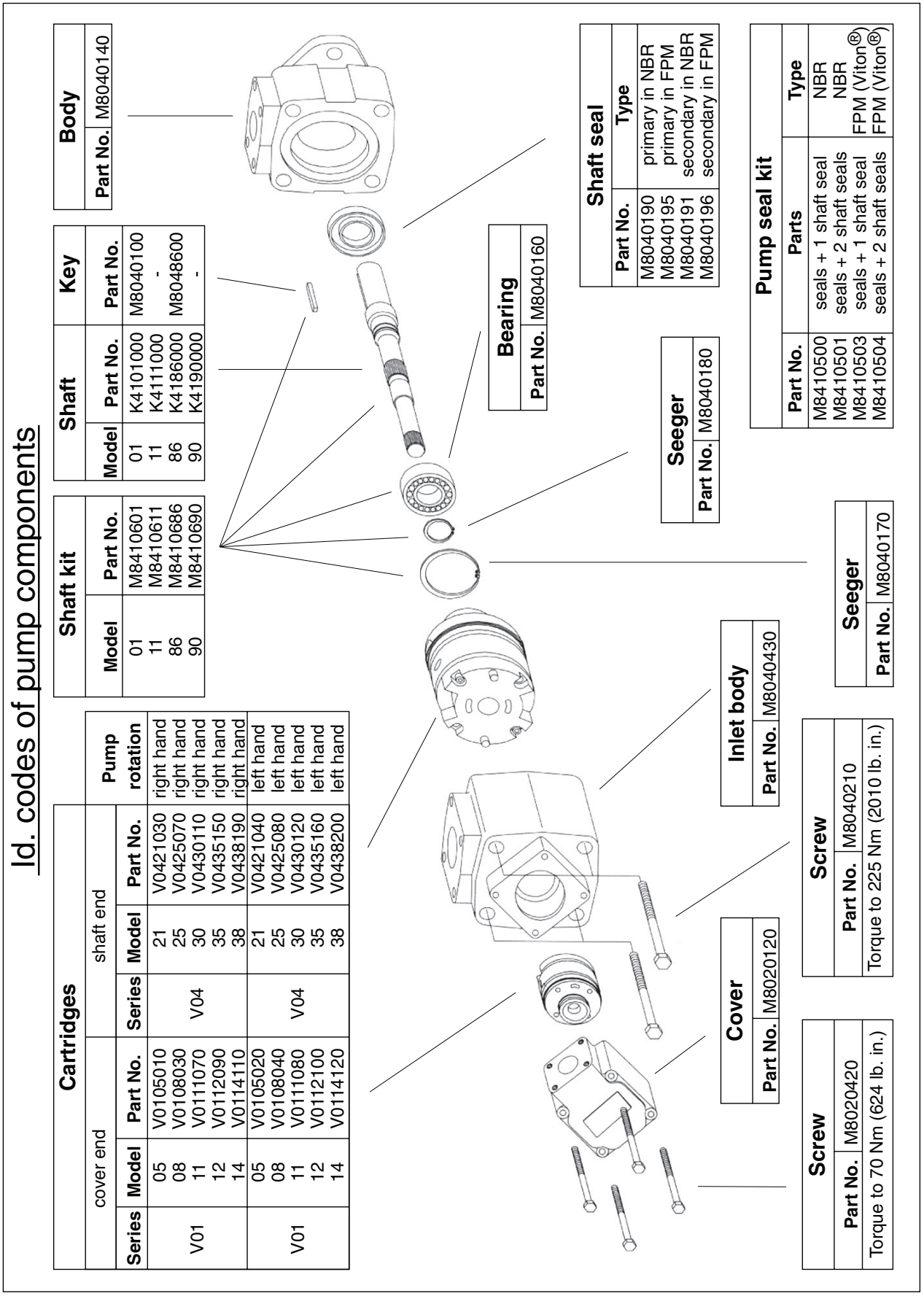


max torque capability: 580 Nm (5100 lb. in.)

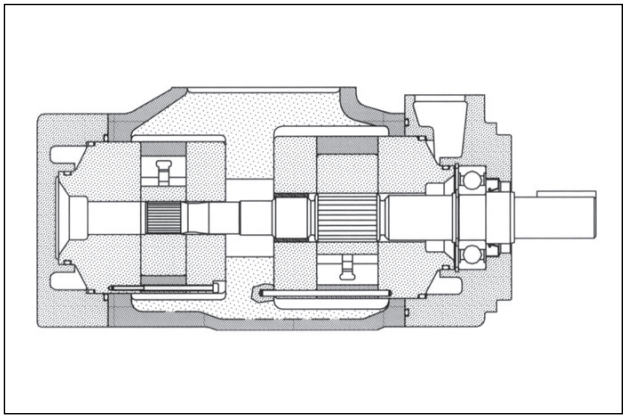
Double Pump Type BV41 (BV04+BV01)

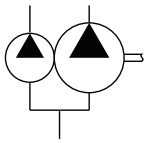
Id. codes of pump components

Cartridges						Shaft kit		Shaft		Key	Body
cover end			shaft end		Pump rotation	Model	Part No.	Model	Part No.	Part No.	Part No.
Series	Model	Part No.	Series	Model	Part No.						M8040140
V01	05	V0105010	V04	21	V0421030	01	M8410601	01	K4101000	M8040100	
	08	V0108030		25	V0425070	11	M8410611	11	K4111000	-	
	11	V0111070		30	V0430110	86	M8410686	86	K4186000	M8048600	
	12	V0112090		35	V0435150	90	M8410690	90	K4190000	-	
	14	V0114110		38	V0438190						
V01	05	V0105020	V04	21	V0421040						
	08	V0108040		25	V0425080						
	11	V0111080		30	V0430120						
	12	V0112100		35	V0435160						
	14	V0114120		38	V0438200						



Double Pump Type BV42 (BV04+BV01)





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the cartridges used and the speed of rotation. The pump is available in several versions with rated capacities from 127 to 219 l/min *(from 33 to 59 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
shaft end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V04-21	**69,0**	(4.2)	**79,5**	(21)	**101,4**	(26.8)	**175**	(2538)	**600**	**1800**
V04-25	**81,6**	(5)	**94,0**	(25)	**120,1**	(31.7)	**175**	(2538)	**600**	**1800**
V04-30	**97,7**	(6)	**113,8**	(30)	**141,2**	(37.3)	**175**	(2538)	**600**	**1800**
V04-35	**112,7**	(6.9)	**131,6**	(35)	**167,2**	(44.1)	**175**	(2538)	**600**	**1800**
V04-38	**121,6**	(7.4)	**139,9**	(38)	**177,3**	(46.8)	**175**	(2538)	**600**	**1800**
cover end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V02-12	**40,1**	(2.45)	**46,9**	(12)	**58,8**	(15.5)	**175**	(2538)	**600**	**1800**
V02-14	**45,4**	(2.77)	**52,7**	(14)	**65,7**	(17.4)	**175**	(2538)	**600**	**1800**
V02-17	**55,2**	(3.37)	**64,2**	(17)	**80,2**	(21.2)	**175**	(2538)	**600**	**1800**
V02-19	**60,0**	(3.66)	**71,0**	(19)	**88,7**	(23.4)	**175**	(2538)	**600**	**1800**
V02-21	**67,5**	(4.12)	**79,0**	(21)	**99,8**	(26.4)	**175**	(2538)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)*: from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)*: from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

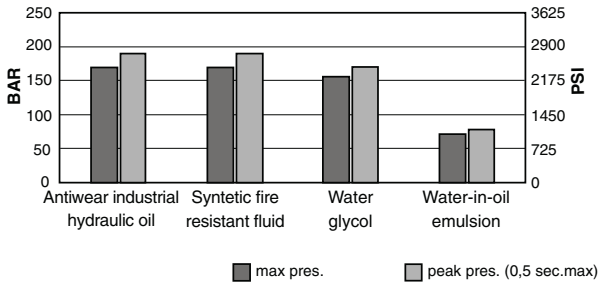
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

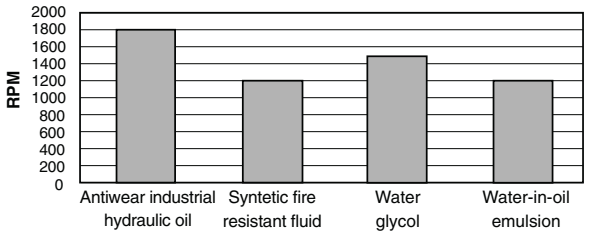
Double Pump Type BV42 (BV04+BV01)

Main operating data

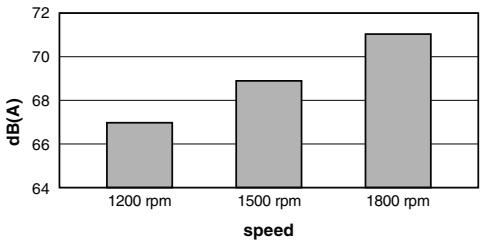
max pressure / hydraulic fluid



max speed / hydraulic fluid (with 0 bar in the intake pipe)

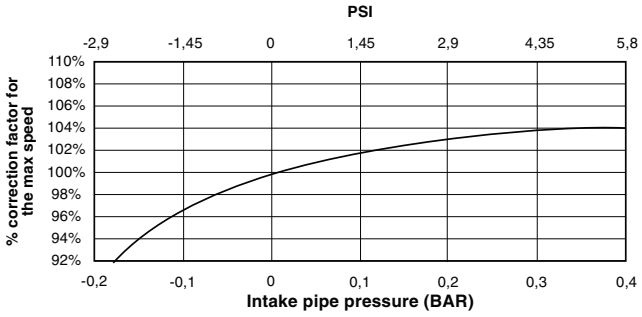


Sound level at 138 bar (2000 psi)



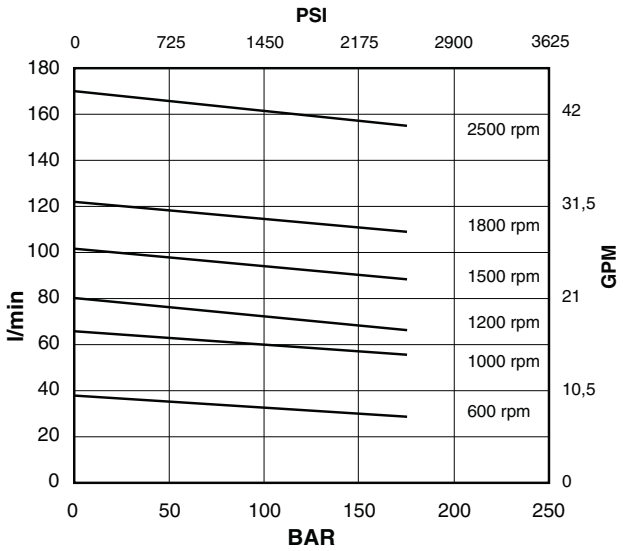
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure

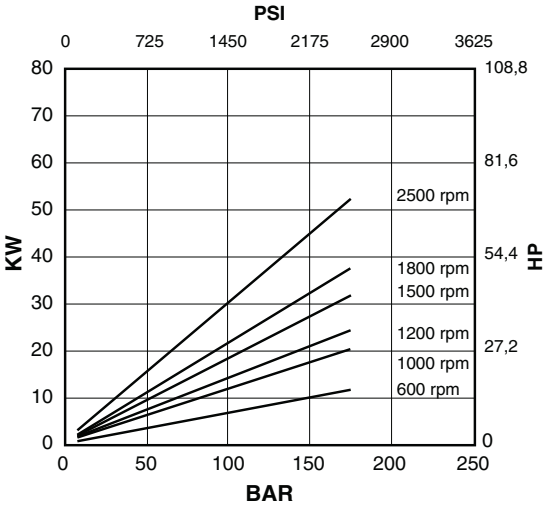


Shaft end cartridge V04-21

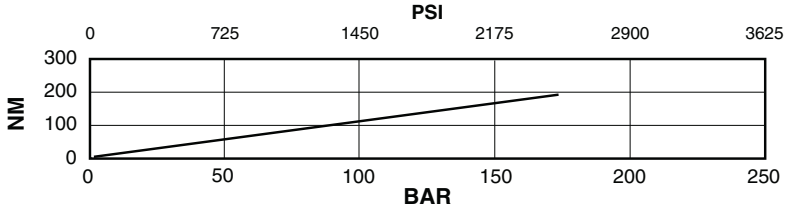
flow / pressure



power / pressure



input torque / pressure

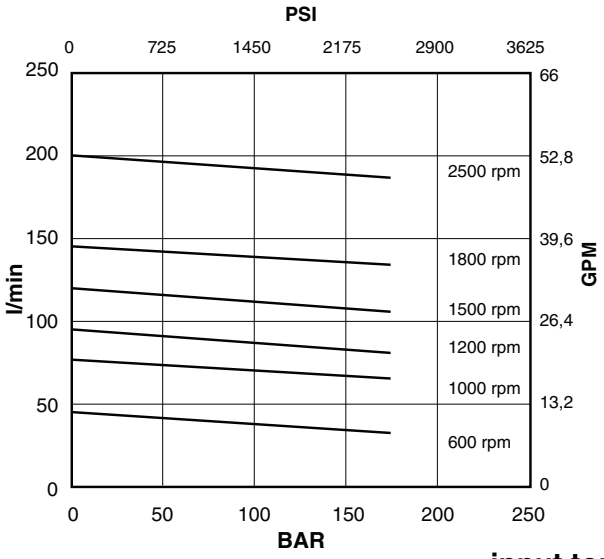


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

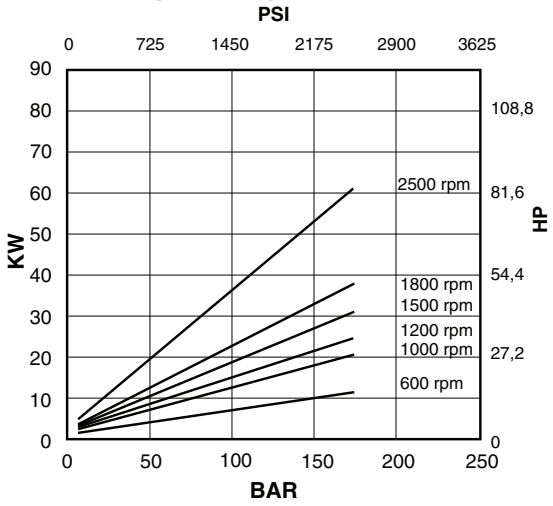
Double Pump Type BV42 (BV04+BV01)

Shaft end cartridge V04-25

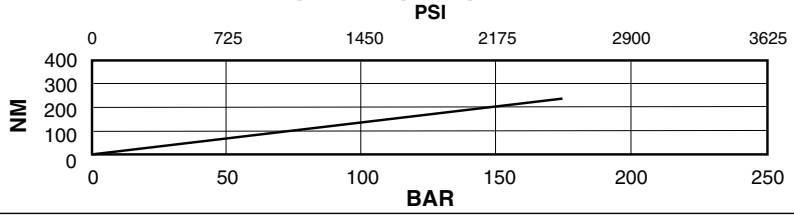
flow / pressure



power / pressure



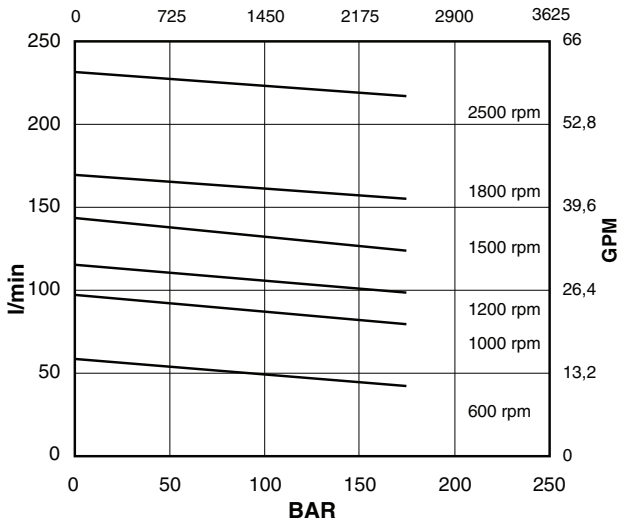
input torque / pressure



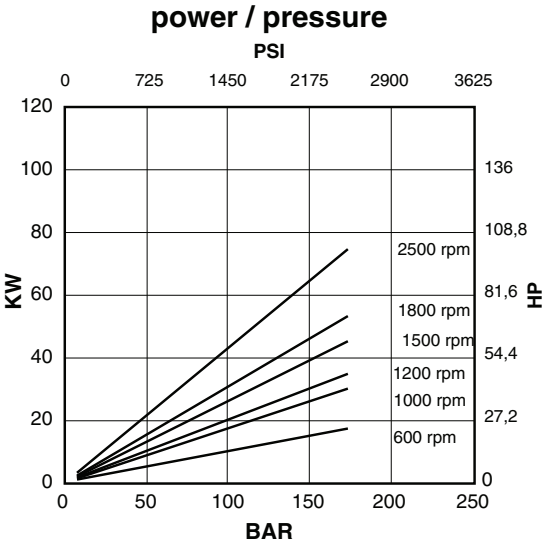
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V04-30

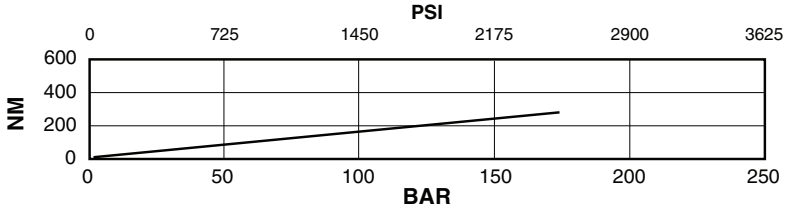
flow / pressure



power / pressure



input torque / pressure

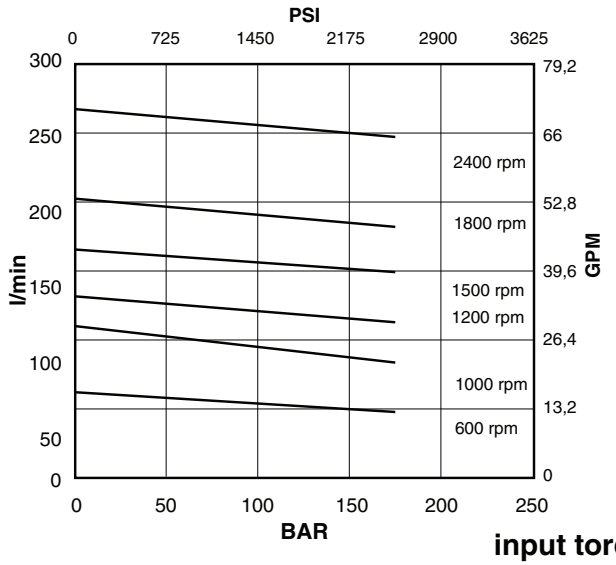


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

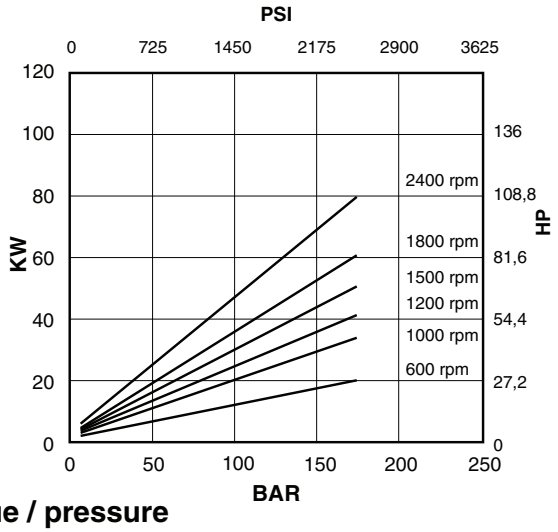
Double Pump Type BV42 (BV04+BV01)

Shaft end cartridge V04-35

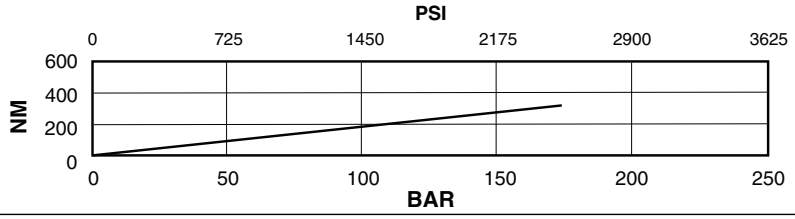
flow / pressure



power / pressure



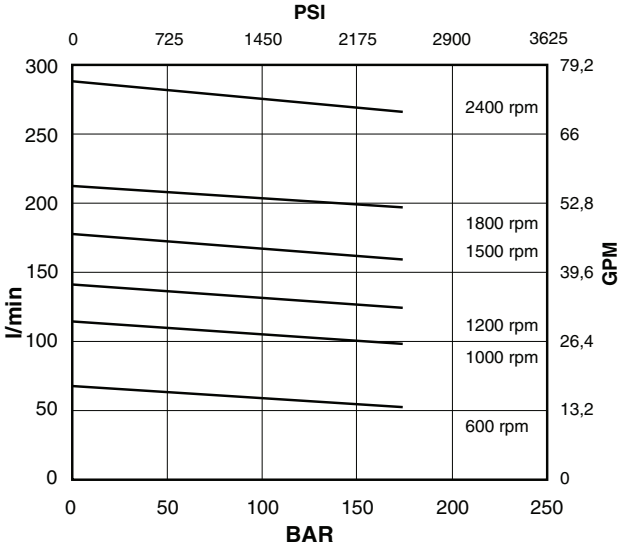
input torque / pressure



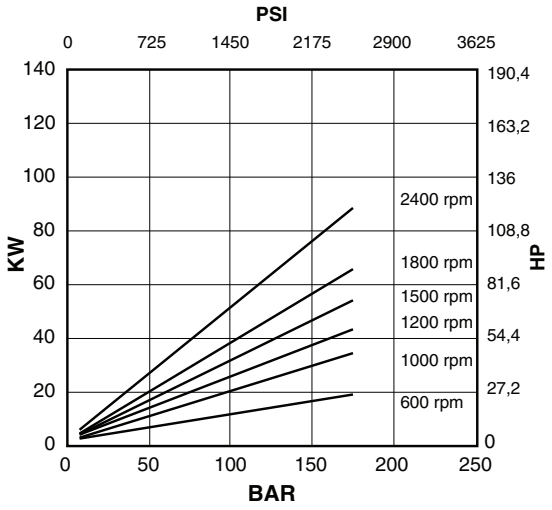
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V04-38

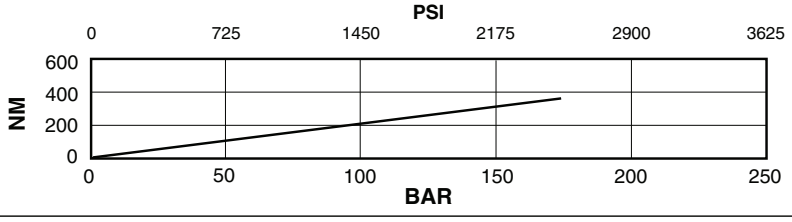
flow / pressure



power / pressure



input torque / pressure

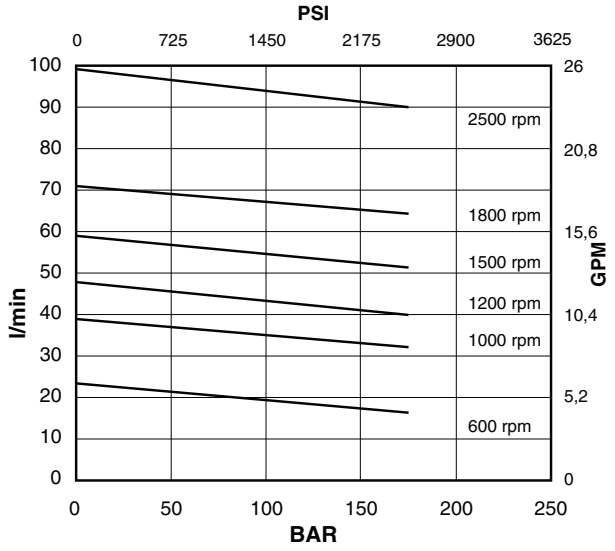


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

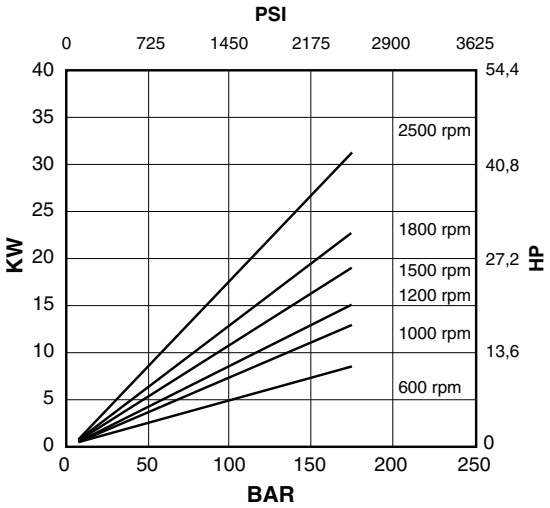
Double Pump Type BV42 (BV04+BV01)

Cover end cartridge V02-12

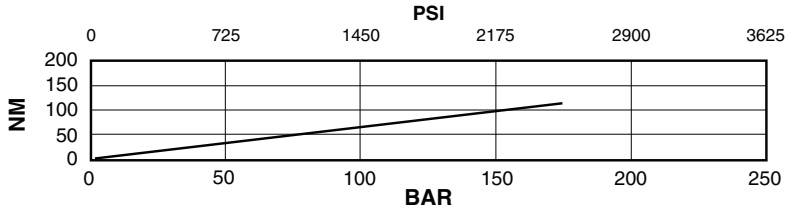
flow / pressure



power / pressure



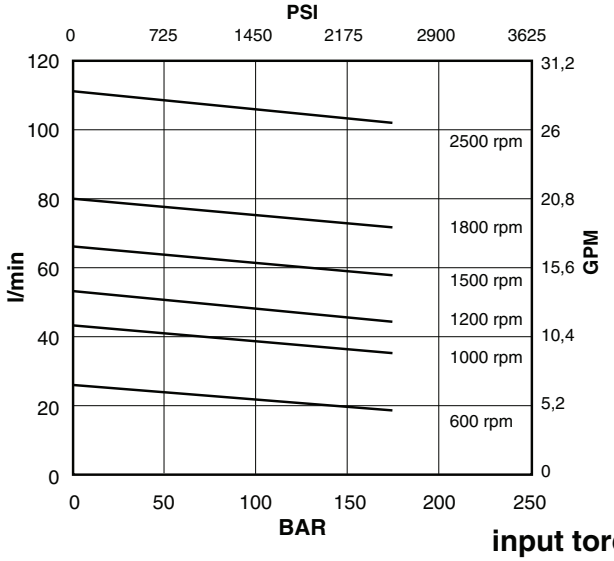
input torque / pressure



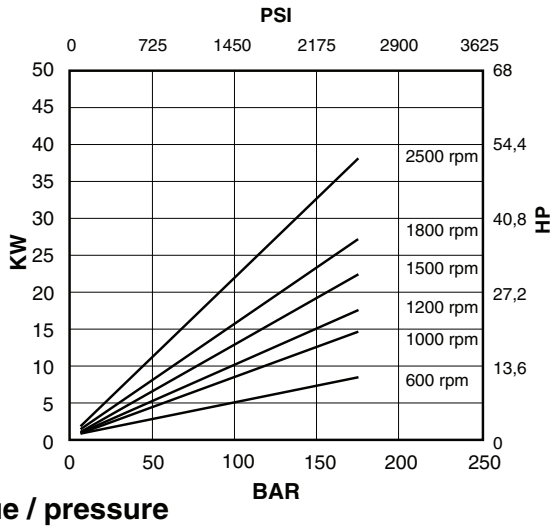
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V02-14

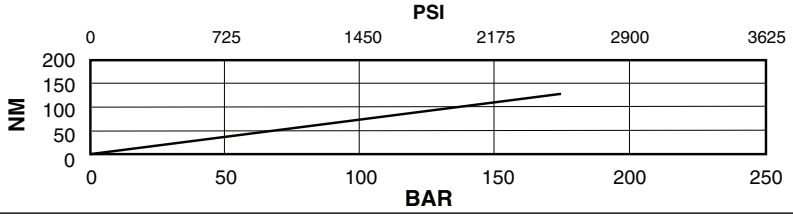
flow / pressure



power / pressure



input torque / pressure

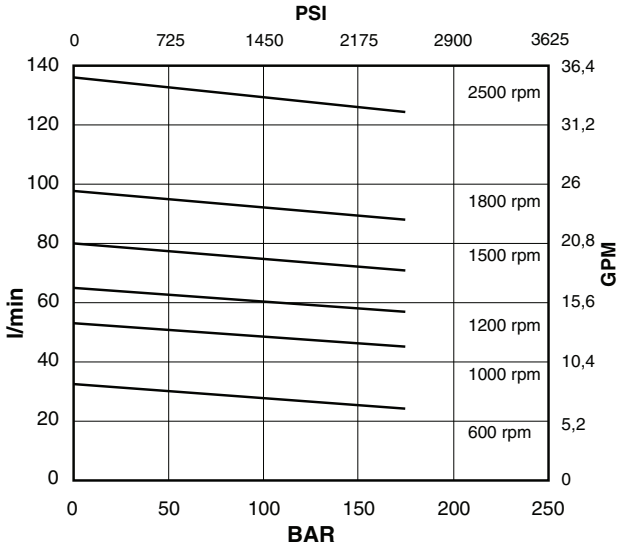


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

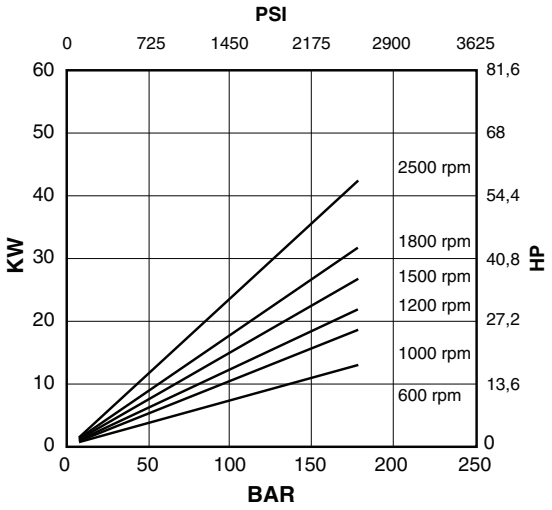
Double Pump Type BV42 (BV04+BV01)

Cover end cartridge V02-17

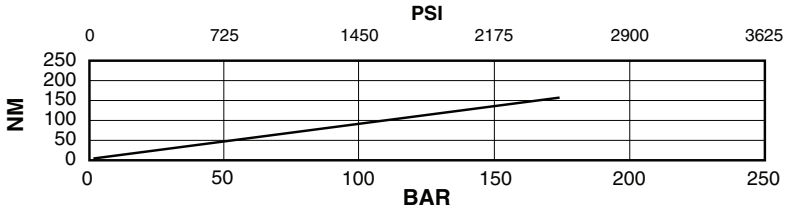
flow / pressure



power / pressure



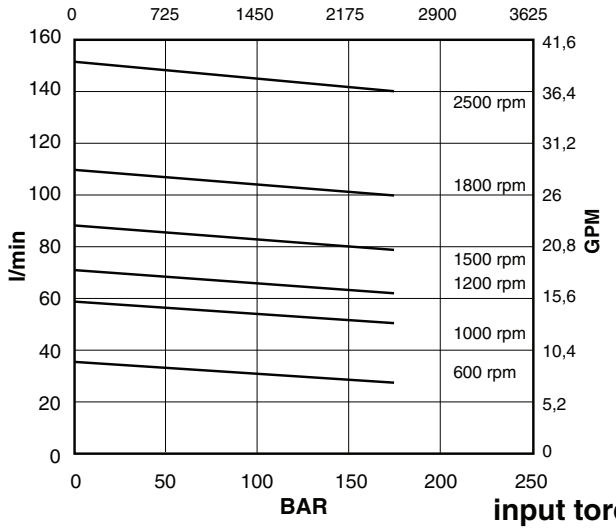
input torque / pressure



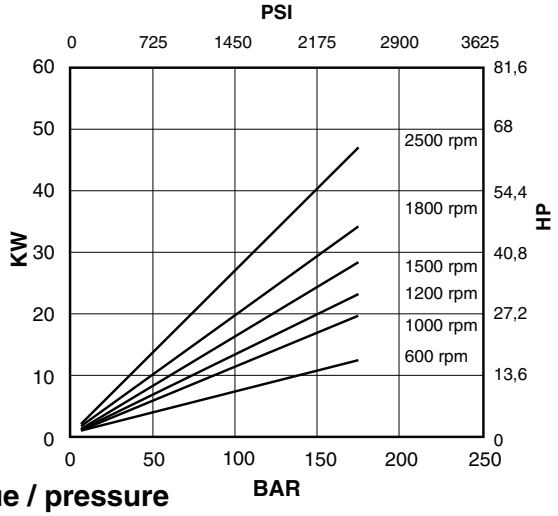
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V02-19

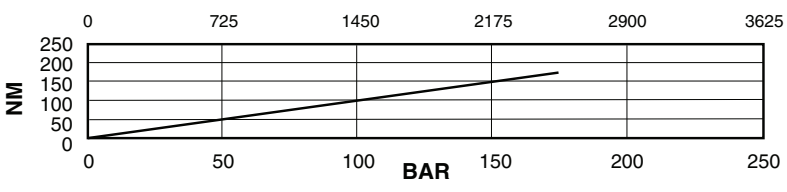
flow / pressure



power / pressure



input torque / pressure

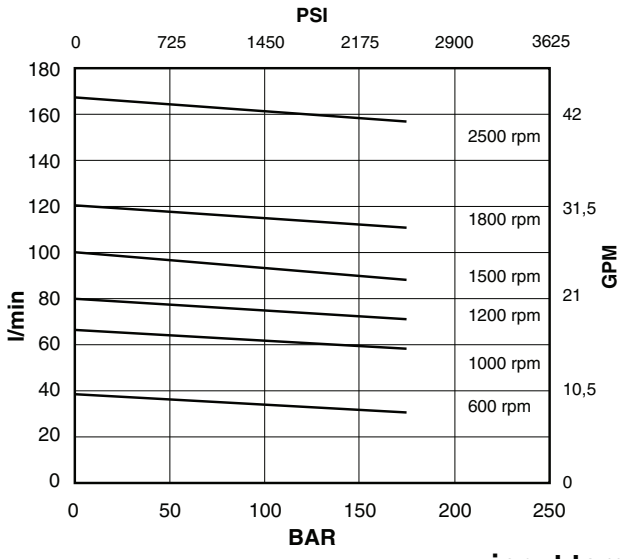


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

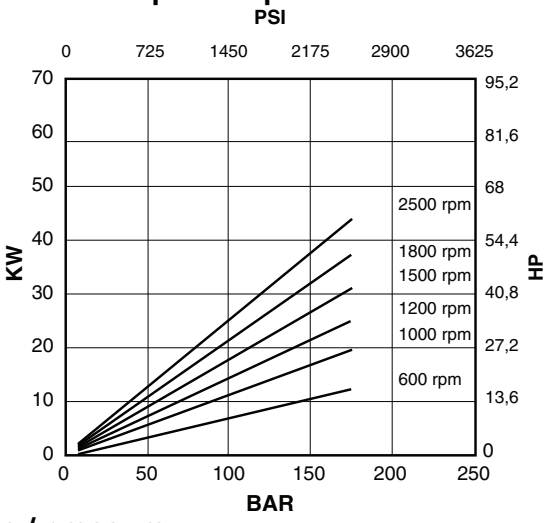
Double Pump Type BV42 (BV04+BV01)

Cover end cartridge V02-21

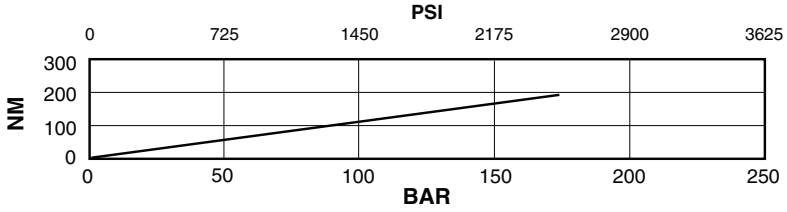
flow / pressure



power / pressure

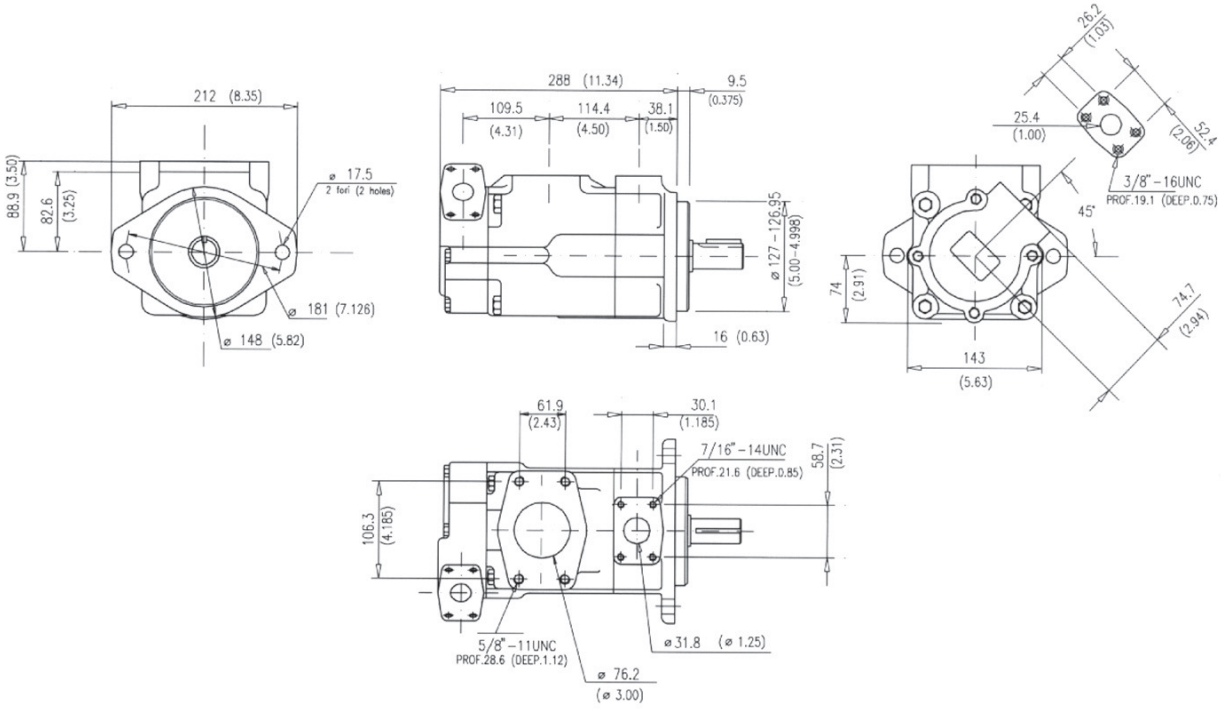


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 34,5 Kg. (76 lbs.)

Double Pump Type BV42 (BV04+BV01)

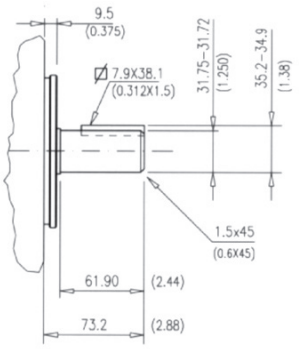
Model code breakdown

BV 42 G ** ** * * ** (L) * (A)

- **BV 42** — Pump series / Pump type
- **G** — Design
- ****** — Cartridge types
  - **-shaft end** 21 25 30 35 38
  - **-cover end** 12 14 17 19 21
- ****** — Body outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CCW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- ***** — Cover outlet port positions (outlet viewed from cover end)
  - **A** = Outlet 135° CCW from inlet
  - **B** = Outlet 45° CCW from inlet
  - **C** = Outlet 45° CW from inlet
  - **D** = Outlet 135° CW from inlet
- ***** — Shaft end options
  - **01** = Straight with key (standard), **11** = Splined
  - **86** = Heavy duty straight keyed, **90** = Splined SAE C
- **(L)** — Rotation (viewed from shaft end)
  - **L** = left hand rotaton CCW (omit if CW)
- ***** — Seals
  - (omit with standard seals and one shaft-seal in NBR)
  - **V** = seals and shaft-seal in FPM (Viton®)
  - **D** = standard seals and double shaft-seals in NBR
  - **F** = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting (omit if not required)

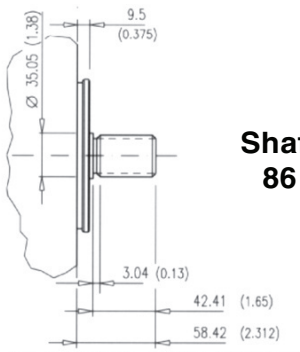
Shaft options mm (inches)

Shaft 01



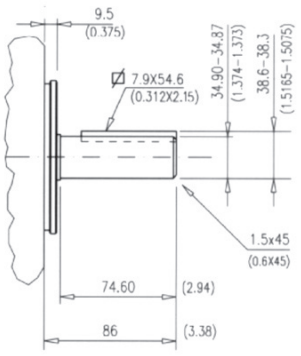
max. torque capability : 400 Nm (3560 lb.in.)

Shaft 11



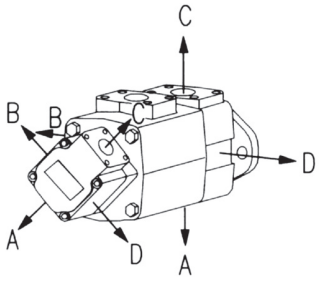
max. torque capability : 580 Nm (5100 lb.in.)

Shaft 86



max torque capability: 600 Nm (5300 lb. in.)

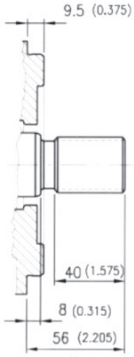
PORT ORIENTATIONS



Spline data
(shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	14	
Pitch	12/24	
Major dia.	31.60 - 31.50	(1.244 - 1.240)
Pitch dia.	29.634	(1.1667)
Minor dia.	26.99 - 26.66	(1.0627 - 1.05)
Wildhaber	15.68 - 15.73	(0.617 - 0.619)

Shaft 90



max torque capability: 580 Nm (5100 lb. in.)

Double Pump Type BV42 (BV04+BV01)

Id. codes of pump components

Cartridges

cover end		shaft end			Pump rotation
Series	Model	Part No.	Series	Model	Part No.	
V02	12	V0212010	V04	21	V0421030	right hand
	14	V0214050		25	V0425070	right hand
	17	V0217090		30	V0430110	right hand
	19	V0219130		35	V0435150	right hand
	21	V0221170		38	V0438190	right hand
V02	12	V0212020	V04	21	V0421040	left hand
	14	V0214060		25	V0425080	left hand
	17	V0217100		30	V0430120	left hand
	19	V0219140		35	V0435160	left hand
	21	V0221180		38	V0438200	left hand

Shaft kit

Model	Part No.
01	M8420601
11	M8420611
86	M8420686
90	M8420690

Shaft

Model	Part No.
01	K4201000
11	K4211000
86	K4286000
90	K4290000

Key

Part No.
M8040100
-
M8048600
-

Body

Part No.
M8040140

Bearing

Part No.
M8040160

Shaft seal

Part No.	Type
M8040190	primary in NBR
M8040195	primary in FPM
M8040191	secondary in NBR
M8040196	secondary in FPM

Seeger

Part No.
M8040180

Pump seal kit

Part No.	Parts	Type
M8420500	seals + 1 shaft seal	NBR
M8420501	seals + 2 shaft seals	NBR
M8420503	seals + 1 shaft seal	FPM (Viton®)
M8420504	seals + 2 shaft seals	FPM (Viton®)

Intel body

Part No.
M8040240

Seeger

Part No.
M8040170

Cover

Part No.
M8050350

Screw

Part No.
M8040220

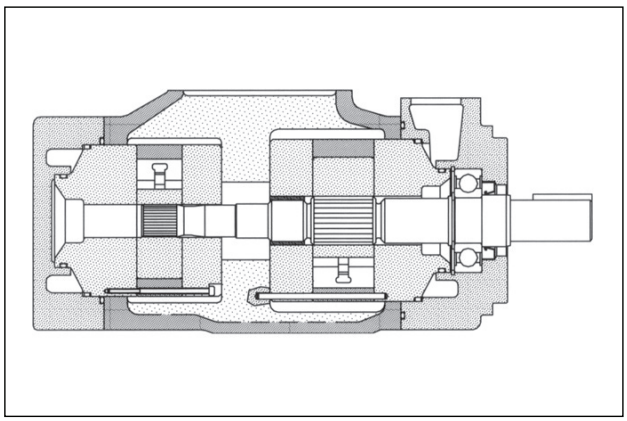
Torque to 225 Nm (2010 lb. in.)

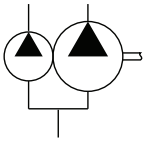
Screw

Part No.
M8040230

Torque to 102 Nm (910 lb. in.)

Double Pump Type BV51 (BV05+BV01)





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the cartridges used and the speed of rotation. The pump is available in several versions with rated capacities from 185 to 285 l/min *(from 47 to 74 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure awith mineral oil		Speed range rpm	
shaft end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V05-42	**138,6**	(8.46)	**164**	(42)	**203,4**	(53.7)	**175**	(2538)	**600**	**1800**
V05-47	**153,5**	(9.4)	**180**	(47)	**222,7**	(58.8)	**175**	(2538)	**600**	**1800**
V05-50	**162,2**	(9.9)	**189**	(50)	**234**	(61.8)	**175**	(2538)	**600**	**1800**
V05-57	**183,4**	(11.2)	**217**	(57)	**267**	(71.2)	**175**	(2538)	**600**	**1800**
V05-60	**193,4**	(11.8)	**230**	(60)	**285**	(75.3)	**175**	(2538)	**600**	**1800**

cover end	cm^3/g	(in^3/r)	l/min	(gpm)	l/min	(gpm)	bar	(psi)	min	max
V01-05	**18,0**	(1.10)	**20,8**	(5)	**26,1**	(6.9)	**210**	(3050)	**600**	**1800**
V01-08	**27,4**	(1.67)	**31,8**	(8)	**39,4**	(10.4)	**210**	(3050)	**600**	**1800**
V01-11	**36,4**	(2.22)	**42,4**	(11)	**52,6**	(13.9)	**210**	(3050)	**600**	**1800**
V01-12	**39,5**	(2.41)	**46,9**	(12)	**58,7**	(15.5)	**160**	(2300)	**600**	**1800**
V01-14	**45,9**	(2.79)	**54,9**	(14)	**69,6**	(18.4)	**140**	(2030)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)*: from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)*: from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

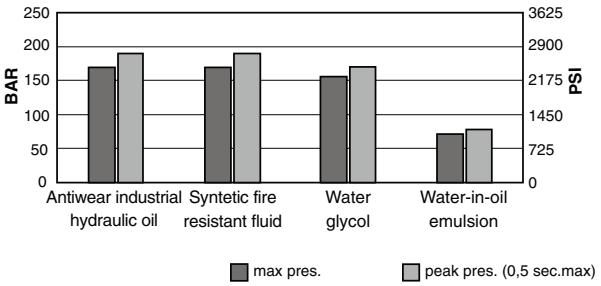
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

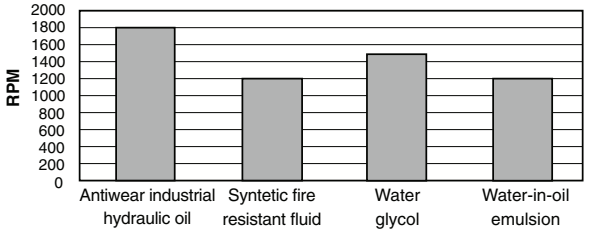
Double Pump Type BV51 (BV05+BV01)

Main operating data

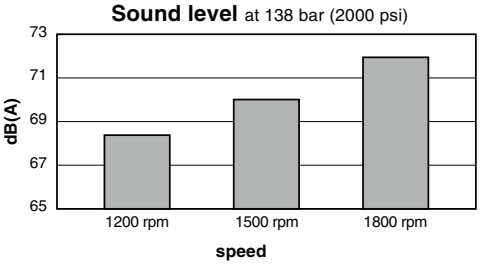
max pressure / hydraulic fluid



max speed / hydraulic fluid (with 0 bar in the intake pipe)

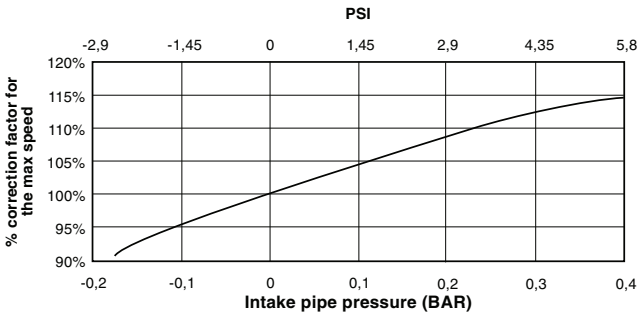


Sound level at 138 bar (2000 psi)



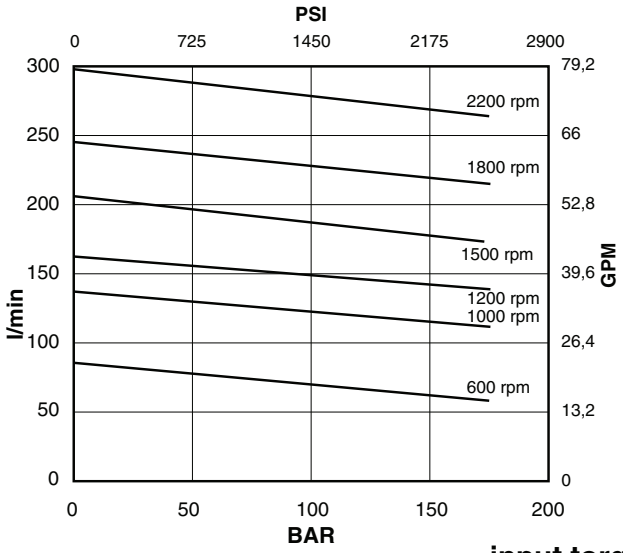
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure

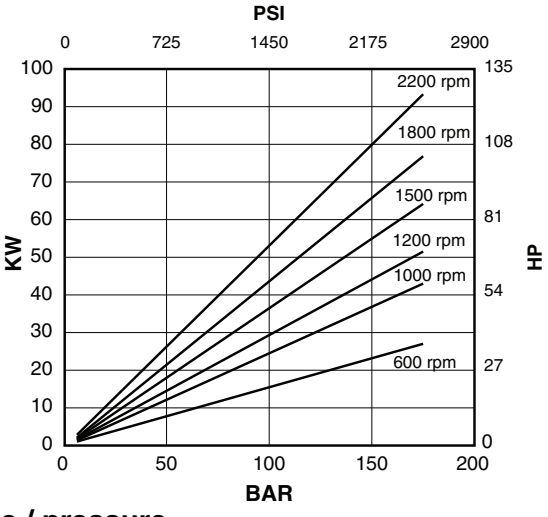


Shaft end cartridge V05-42

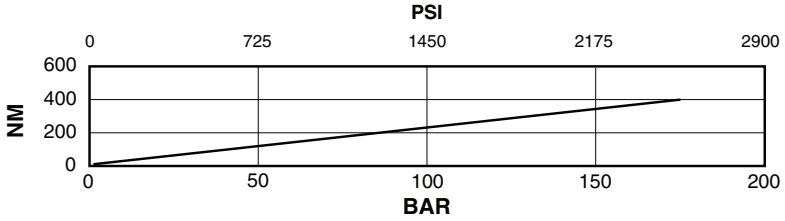
flow / pressure



power / pressure



input torque / pressure

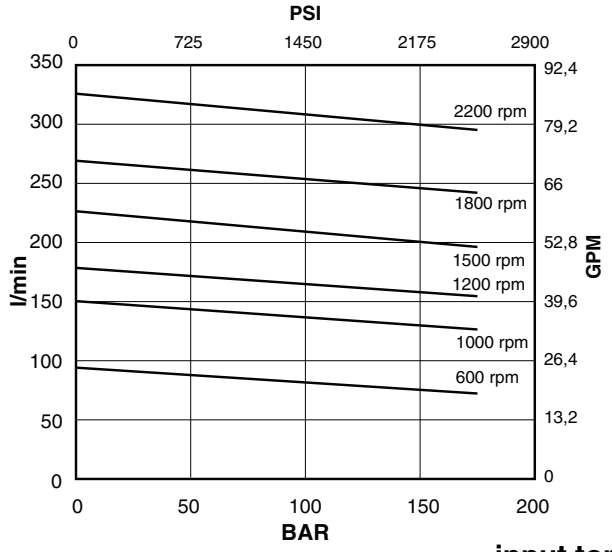


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

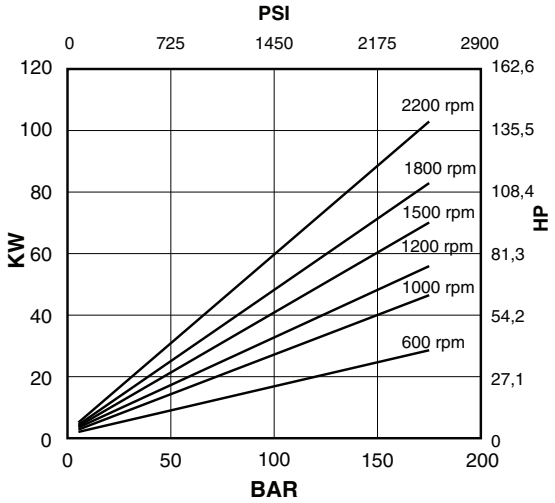
Double Pump Type BV51 (BV05+BV01)

Shaft end cartridge V05-47

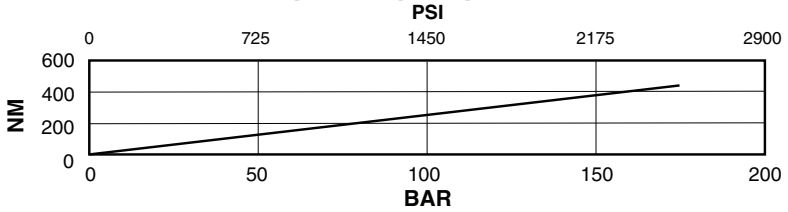
flow / pressure



power / pressure



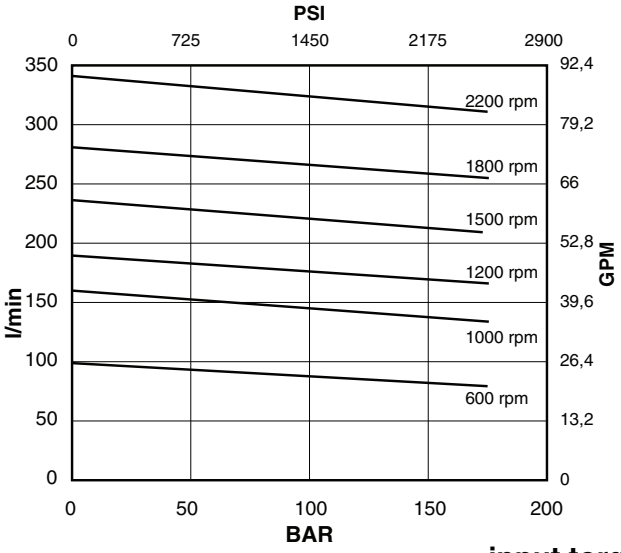
input torque / pressure



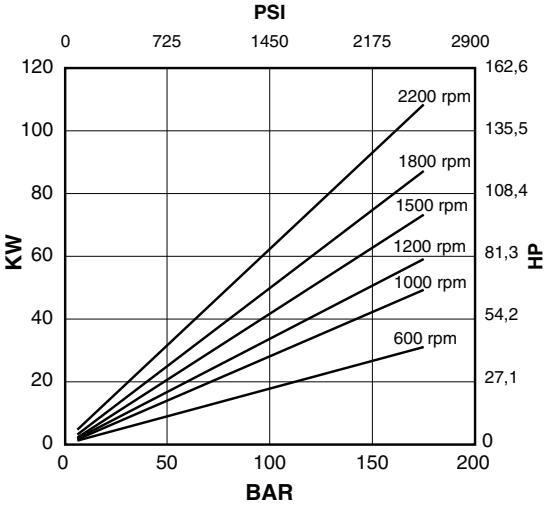
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-50

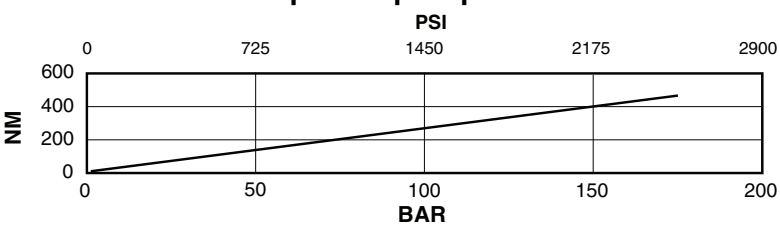
flow / pressure



power / pressure



input torque / pressure

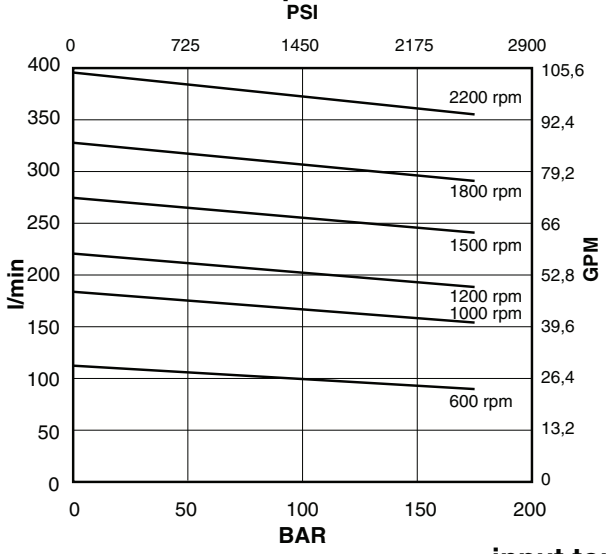


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

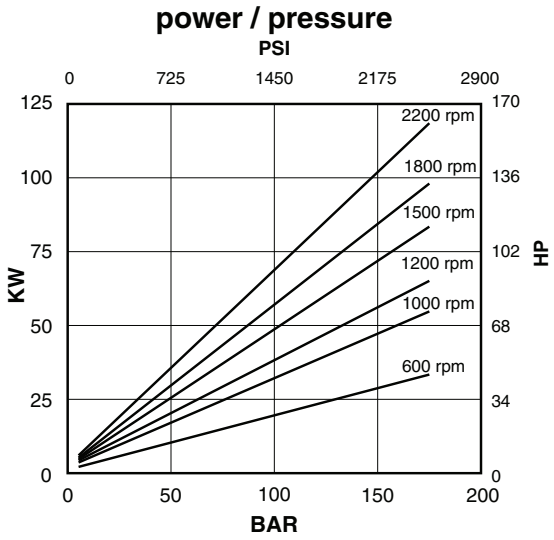
Double Pump Type BV51 (BV05+BV01)

Shaft end cartridge V05-57

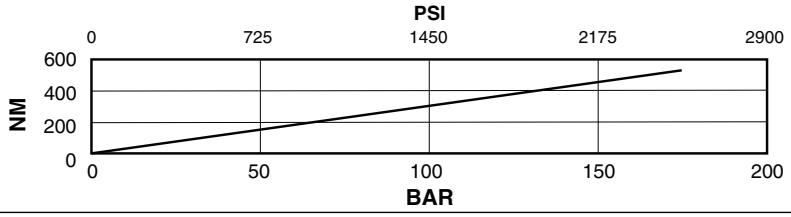
flow / pressure



power / pressure



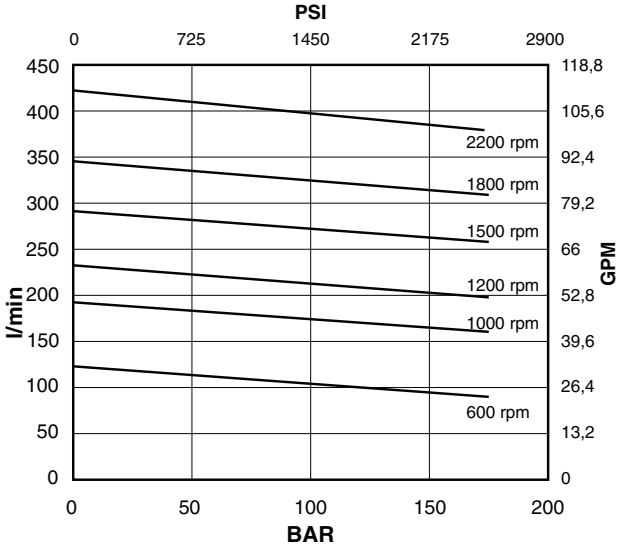
input torque / pressure



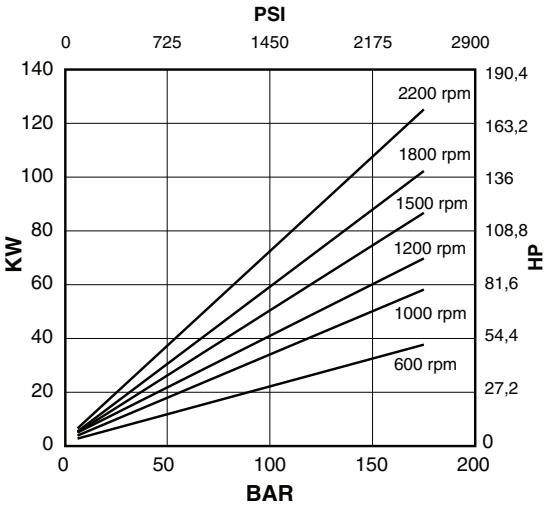
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-60

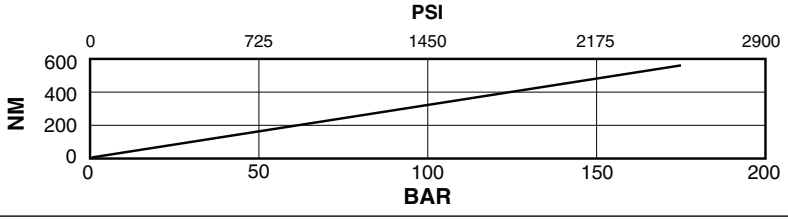
flow / pressure



power / pressure



input torque / pressure

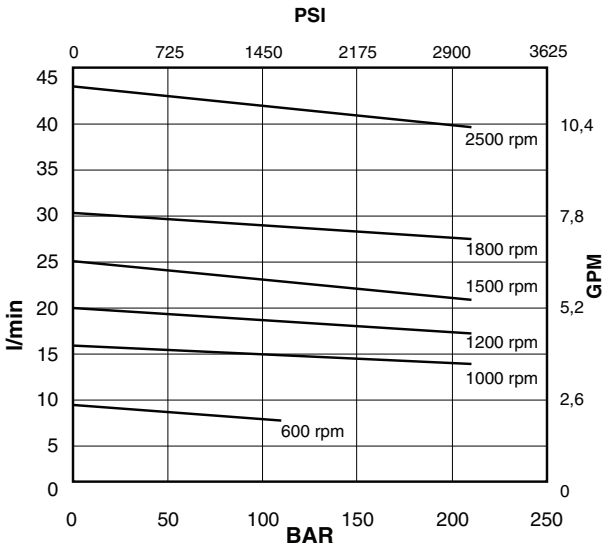


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

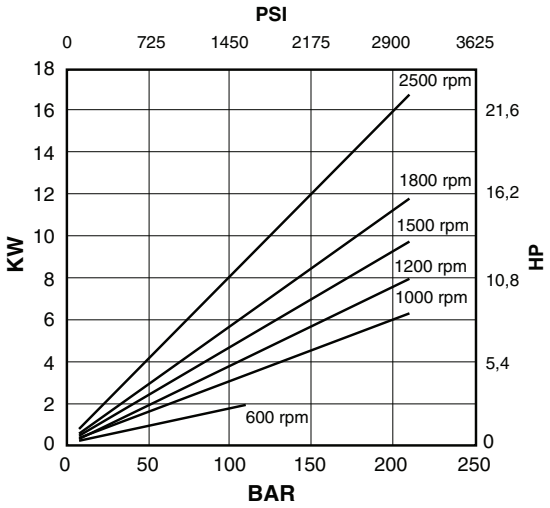
Double Pump Type BV51 (BV05+BV01)

Cover end cartridge V01-05

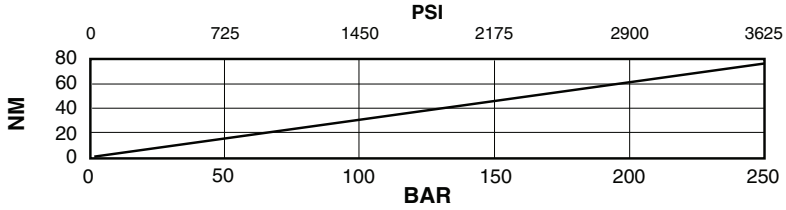
flow / pressure



power / pressure



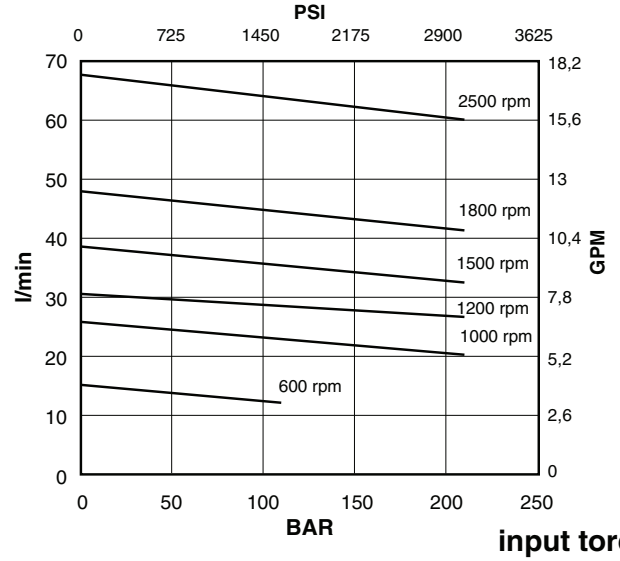
input torque / pressure



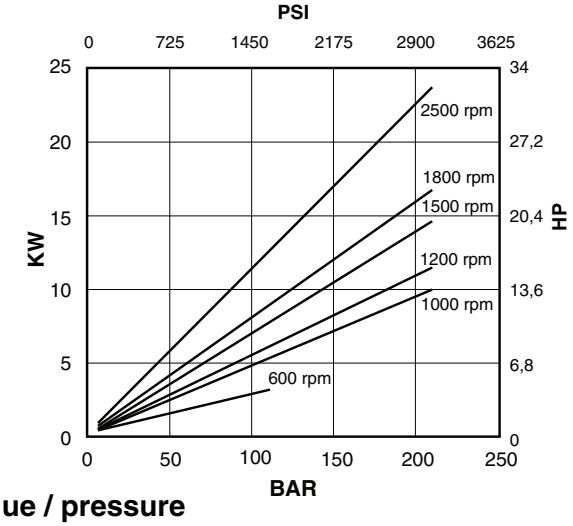
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V01-08

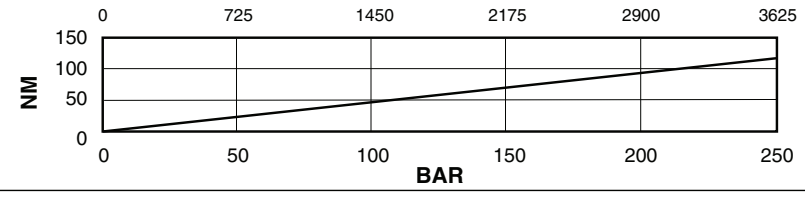
flow / pressure



power / pressure



input torque / pressure

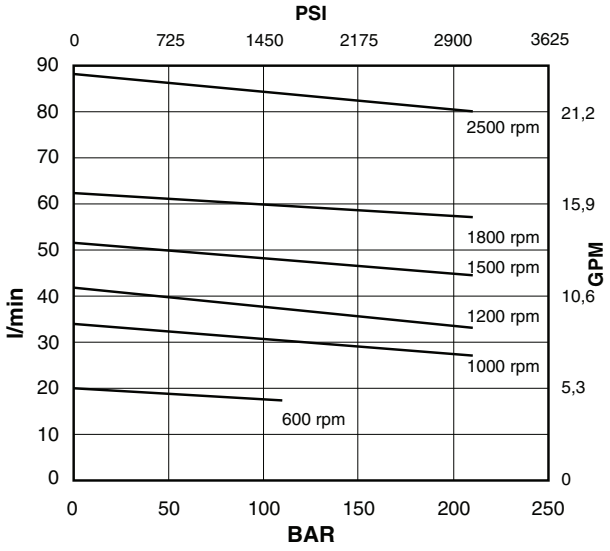


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

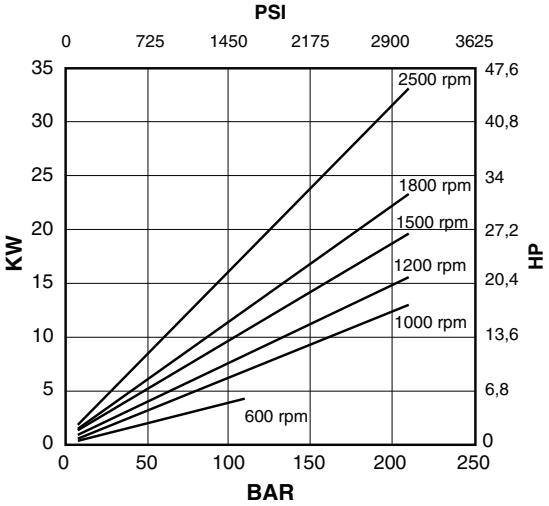
Double Pump Type BV51 (BV05+BV01)

Cover end cartridge V01-11

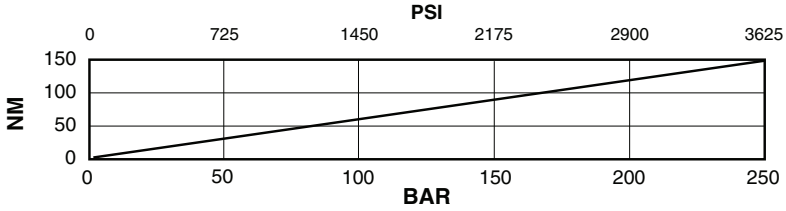
flow / pressure



power / pressure



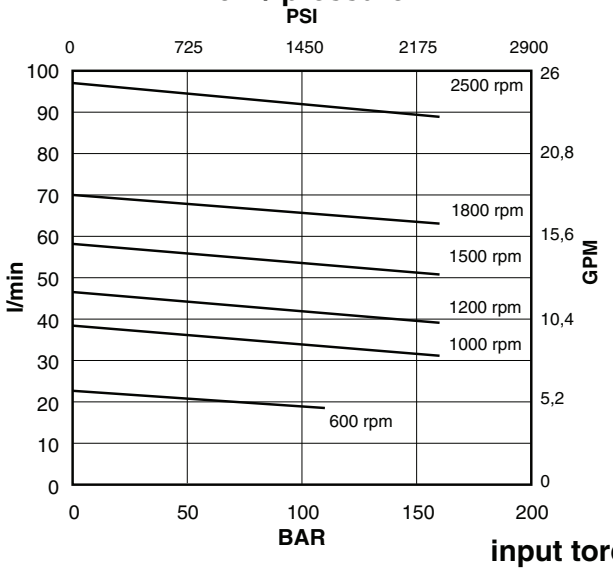
input torque / pressure



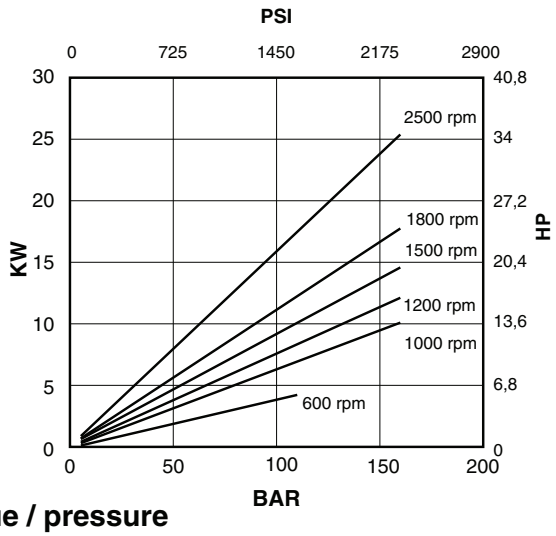
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V01-12

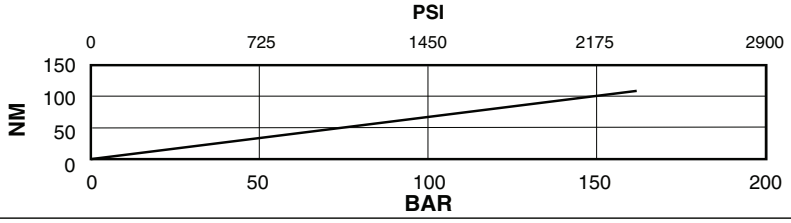
flow / pressure



power / pressure



input torque / pressure

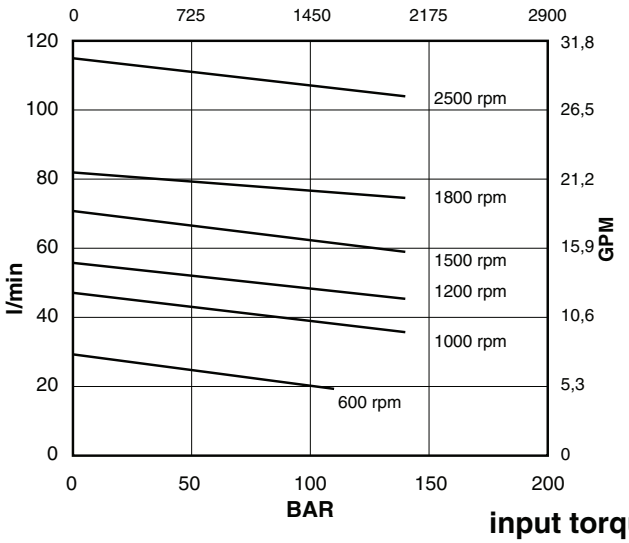


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

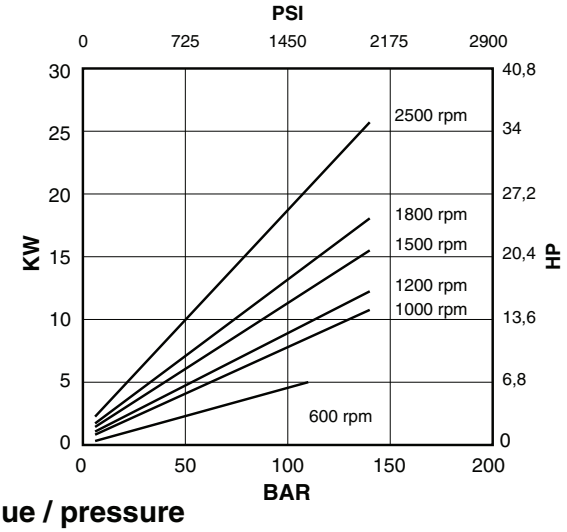
Double Pump Type BV51 (BV05+BV01)

Cover end cartridge V01-14

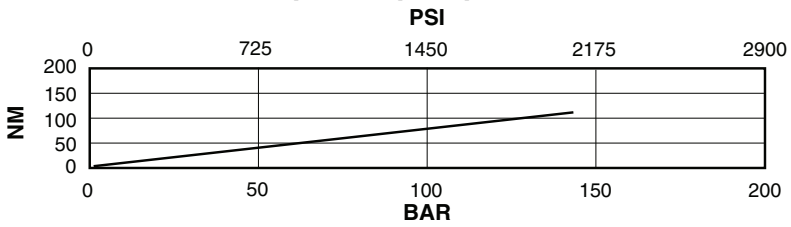
flow / pressure



power / pressure

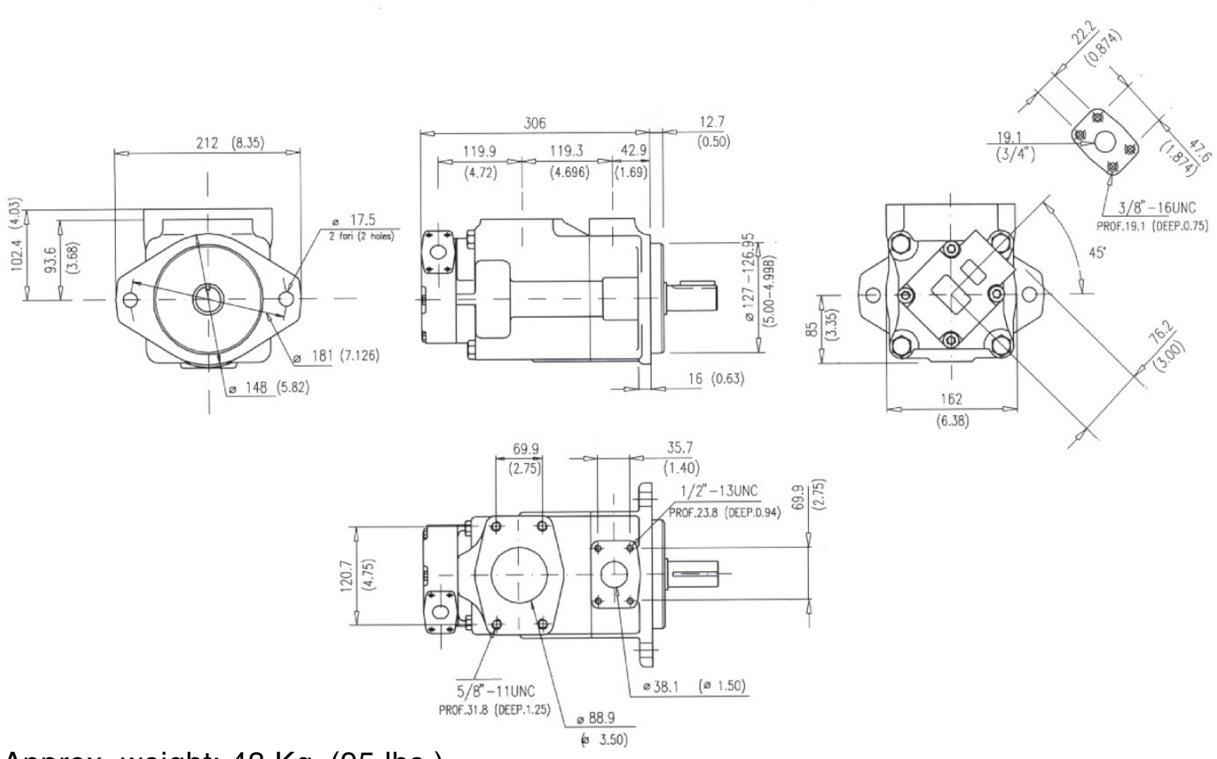


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 43 Kg. (95 lbs.)

Double Pump Type BV51 (BV05+BV01)

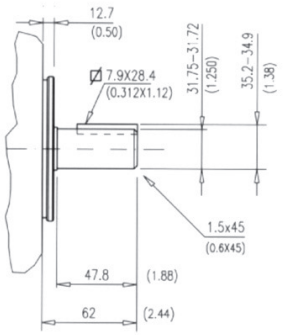
Model code breakdown

BV 51 G ** ** * * ** (L) * (A)

- **BV 51** — Pump series / Pump type
- **G** — Design
- ****** — Cartridge types
  - **-shaft end** 42 47 50 57 60
  - **-cover end** 05 08 11 12 14
- ****** — Body outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CCW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- ***** — Cover outlet port positions (outlet viewed from cover end)
  - **A** = Outlet 135° CCW from inlet
  - **B** = Outlet 45° CCW from inlet
  - **C** = Outlet 45° CW from inlet
  - **D** = Outlet 135° CW from inlet
- ***** — Shaft end options
  - **01** = Straight with key (standard), **11** = Splined
  - **86** = Heavy duty straight keyed, **90** = Splined SAE C
- **(L)** — Rotation (viewed from shaft end)
  - **L** = left hand rotaton CCW (omit if CW)
- ***** — Seals (omit with standard seals and one shaft-seal in NBR)
  - **V** = seals and shaft-seal in FPM (Viton®)
  - **D** = standard seals and double shaft-seals in NBR
  - **F** = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting (omit if not required)

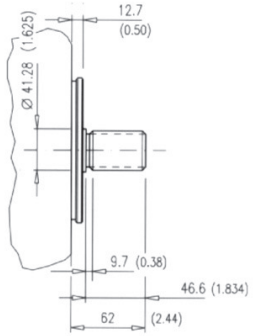
Shaft options mm (inches)

Shaft 01



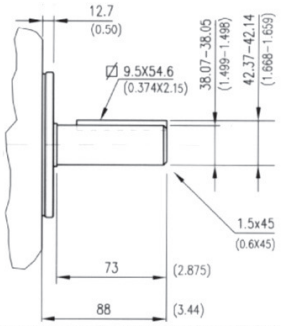
max. torque capability : 600 Nm (5300 lb.in.)

Shaft 11



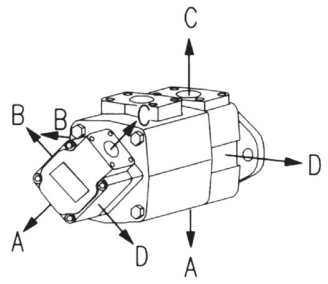
max. torque capability : 820 Nm (7200 lb.in.)

Shaft 86



max. torque capability : 820 Nm (7200 lb.in.)

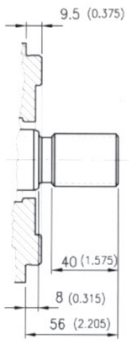
PORT ORIENTATIONS



Spline data (shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	14	
Pitch	12/24	
Major dia.	31.60 - 31.50	(1.244 - 1.240)
Pitch dia.	29.634	(1.1667)
Minor dia.	26.99 - 26.66	(1.0627 - 1.05)
Wildhaber	15.68 - 15.73	(0.617 - 0.619)

Shaft 90



max. torque capability : 820 Nm (7200 lb.in.)

Double Pump Type BV51 (BV05+BV01)

Id. codes of pump components

Cartridges						Pump rotation
	cover end		shaft end			
Series	Model	Part No.	Series	Model	Part No.	
V01	05	V0105010	V05	42	V0542010	right hand
	08	V0108030		47	V0547030	right hand
	11	V0111070		50	V0550050	right hand
	12	V0112090		57	V0557070	right hand
	14	V0114110		60	V0560090	right hand
V01	05	V0105020	V05	42	V0542020	left hand
	08	V0108040		47	V0547040	left hand
	11	V0111080		50	V0550060	left hand
	12	V0112100		57	V0557080	left hand
	14	V0114120		60	V0560100	left hand

Shaft kit	
Model	Part No.
01	M8510601
11	M8510611
86	M8510686
90	M8510690

Shaft		Key
Model	Part No.	Part No.
01	K5101000	M8050100
11	K5111000	-
86	K5186000	M8058600
90	K5190000	-

Body
Part No. M8050250

Bearing
Part No. M8050270

Seeger
Part No. M8050290

Shaft seal	
Part No.	Type
M8050300	primary in NBR
M8050305	primary in FPM
M8050301	secondary in NBR
M8050306	secondary in FPM

Pump seal kit		
Part No.	Parts	Type
M8510500	seals + 1 shaft seal	NBR
M8510501	seals + 2 shaft seals	NBR
M8510503	seals + 1 shaft seal	FPM (Viton®)
M8510504	seals + 2 shaft seals	FPM (Viton®)

Inlet body
Part No. M8050390

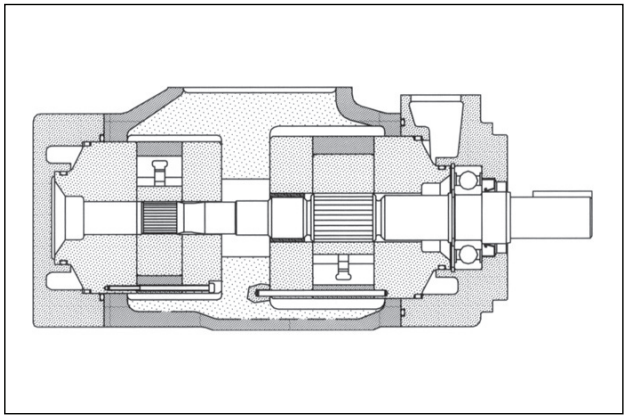
Seeger
Part No. M8050280

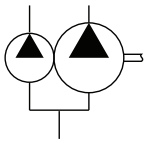
Cover
Part No. M8020120

Screw
Part No. M8050320
Torque to 398 Nm (3550 lb. in.)

Screw
Part No. M8020420
Torque to 70 Nm (624 lb. in.)

Double Pump Type BV52 (BV05+BV02)





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the cartridges used and the speed of rotation. The pump is available in several versions with rated capacities from 211 to 309 l/min *(from 54 to 81 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
shaft end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V05-42	**138,6**	(8.46)	**164**	(42)	**203,4**	(53.7)	**175**	(2538)	**600**	**1800**
V05-47	**153,5**	(9.4)	**180**	(47)	**222,7**	(58.8)	**175**	(2538)	**600**	**1800**
V05-50	**162,2**	(9.9)	**189**	(50)	**234**	(61.8)	**175**	(2538)	**600**	**1800**
V05-57	**183,4**	(11.2)	**217**	(57)	**267**	(71.2)	**175**	(2538)	**600**	**1800**
V05-60	**193,4**	(11.8)	**230**	(60)	**285**	(75.3)	**175**	(2538)	**600**	**1800**
cover end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V02-12	**40,1**	(2.45)	**46,9**	(12)	**58,8**	(15.5)	**175**	(2538)	**600**	**1800**
V02-14	**45,4**	(2.77)	**52,7**	(14)	**65,7**	(17.4)	**175**	(2538)	**600**	**1800**
V02-17	**55,2**	(3.37)	**64,2**	(17)	**80,2**	(21.2)	**175**	(2538)	**600**	**1800**
V02-19	**60,0**	(3.66)	**71,0**	(19)	**88,7**	(23.4)	**175**	(2538)	**600**	**1800**
V02-21	**67,5**	(4.12)	**79,0**	(21)	**99,8**	(26.4)	**175**	(2538)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)*: from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)*: from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

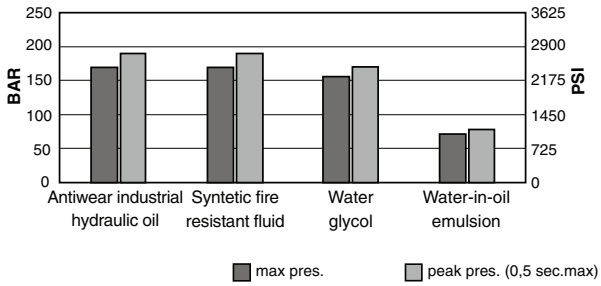
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

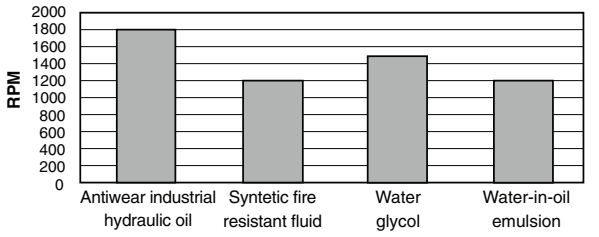
Double Pump Type BV52 (BV05+BV02)

Main operating data

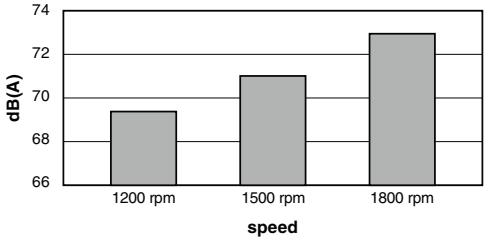
max pressure / hydraulic fluid



max speed / hydraulic fluid (with 0 bar in the intake pipe)

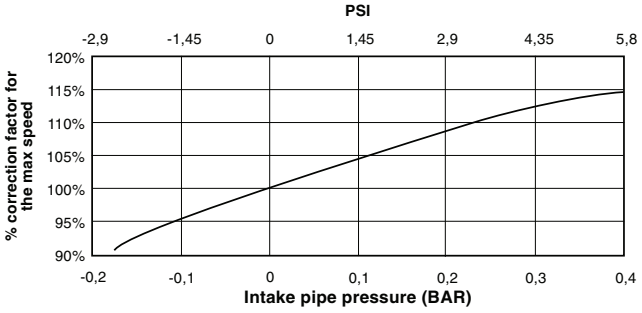


Sound level at 138 bar (2000 psi)



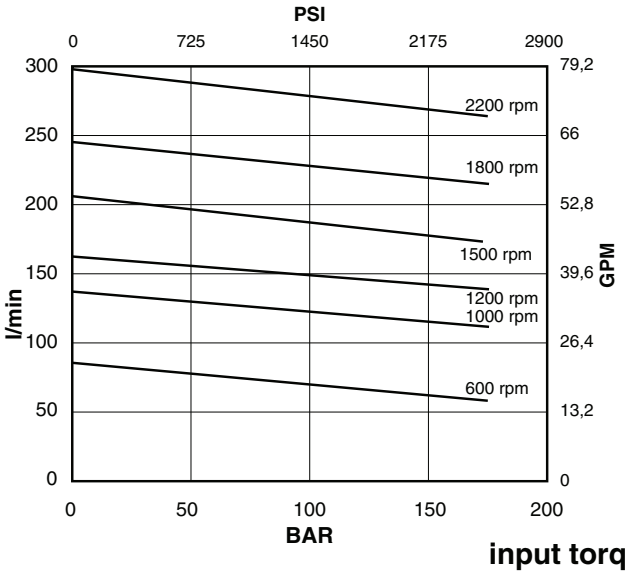
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure

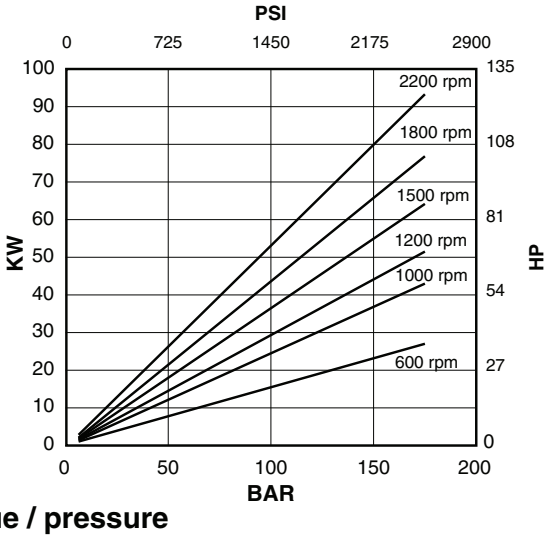


Shaft end cartridge V05-42

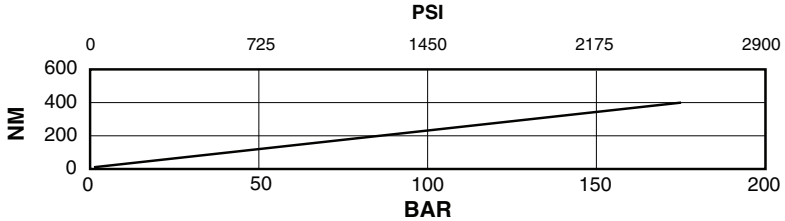
flow / pressure



power / pressure



input torque / pressure

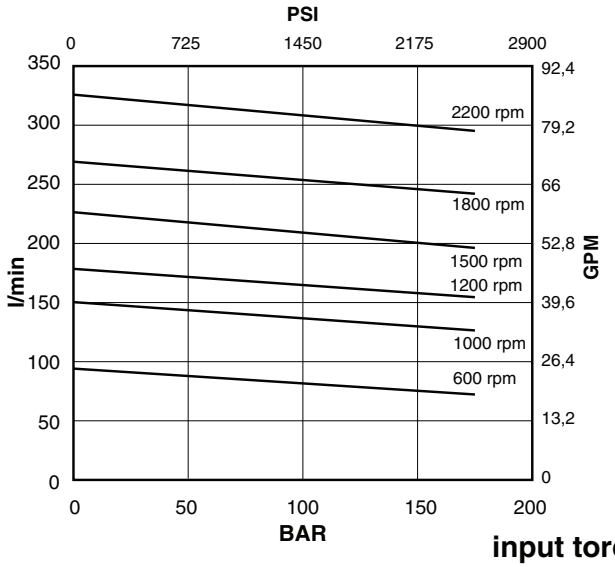


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

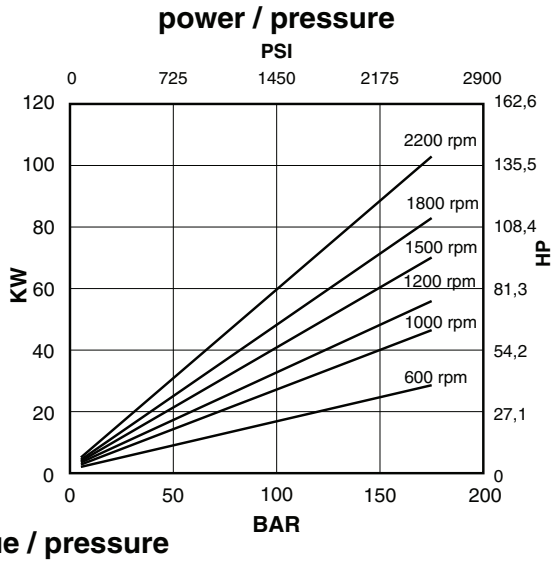
Double Pump Type BV52 (BV05+BV02)

Shaft end cartridge V05-47

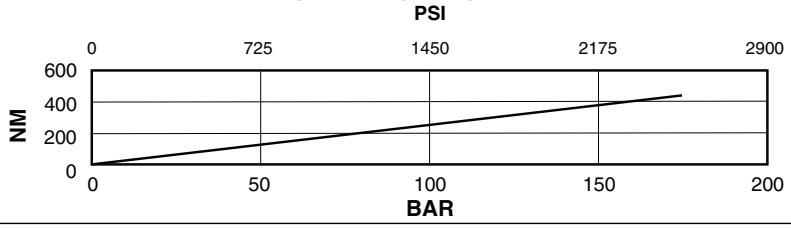
flow / pressure



power / pressure



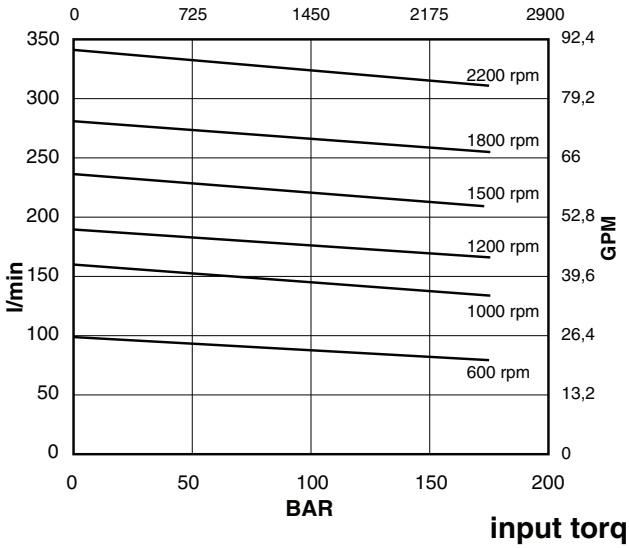
input torque / pressure



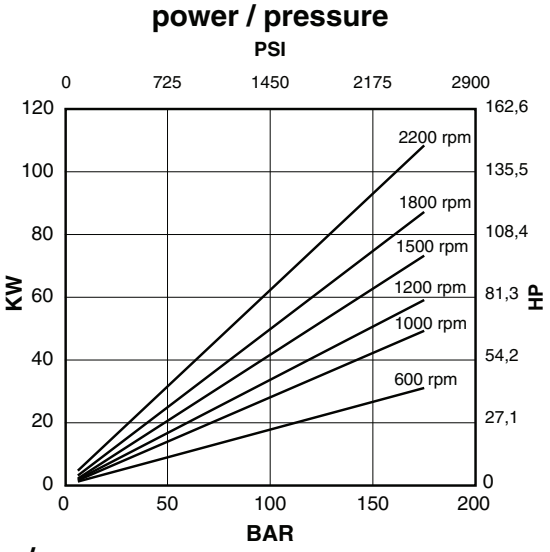
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-50

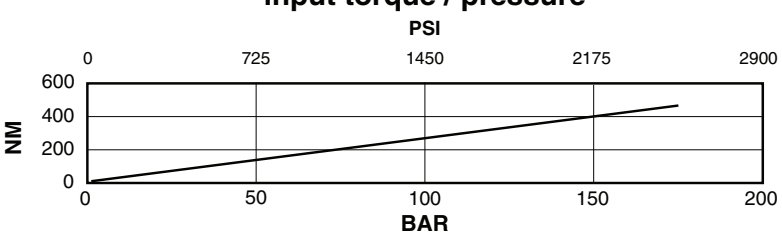
flow / pressure



power / pressure



input torque / pressure

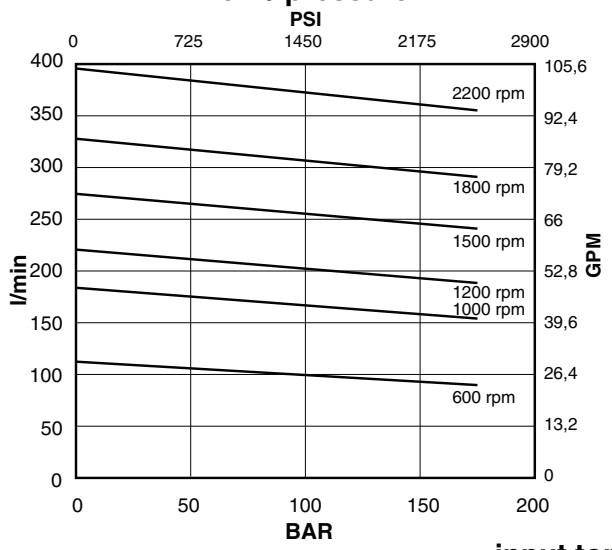


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

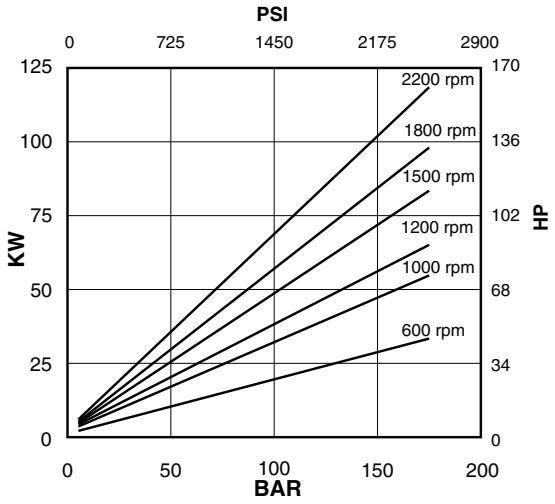
Double Pump Type BV52 (BV05+BV02)

Shaft end cartridge V05-57

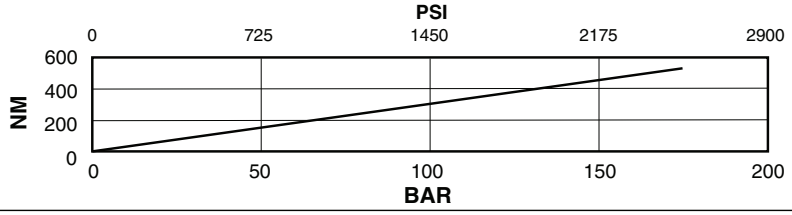
flow / pressure



power / pressure



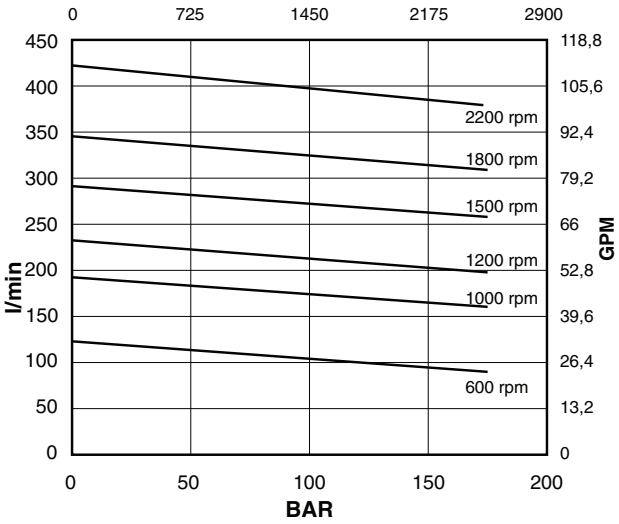
input torque / pressure



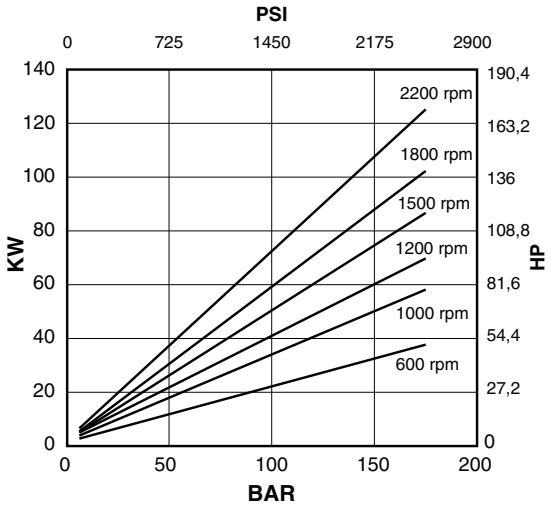
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-60

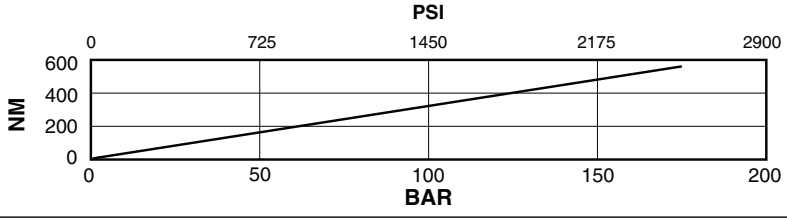
flow / pressure



power / pressure



input torque / pressure

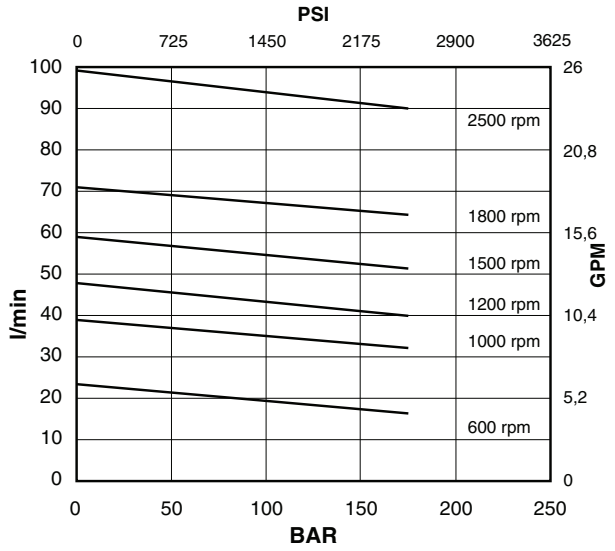


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

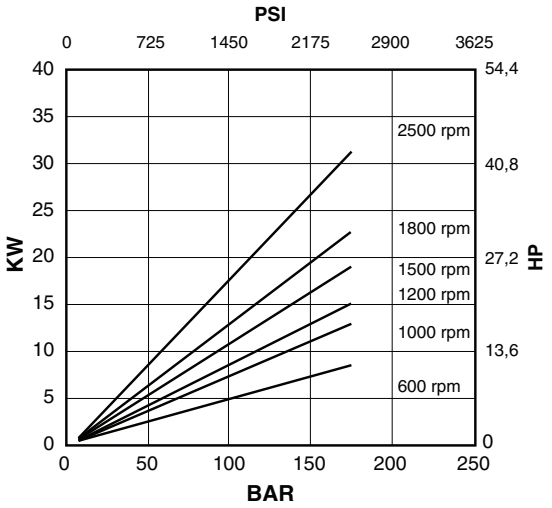
Double Pump Type BV52 (BV05+BV02)

Cover end cartridge V02-12

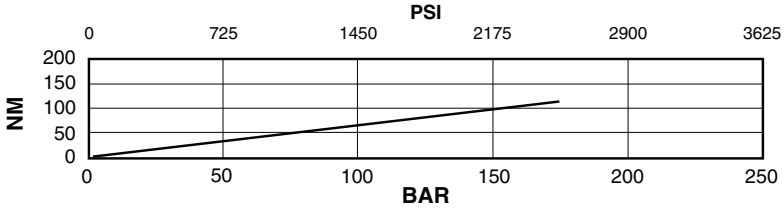
flow / pressure



power / pressure



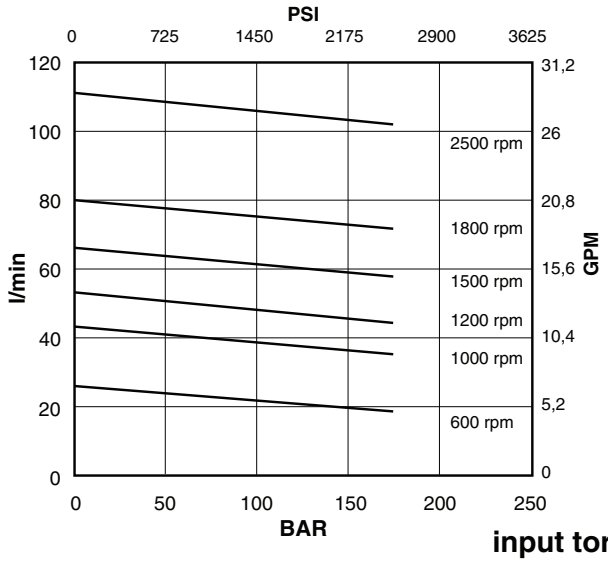
input torque / pressure



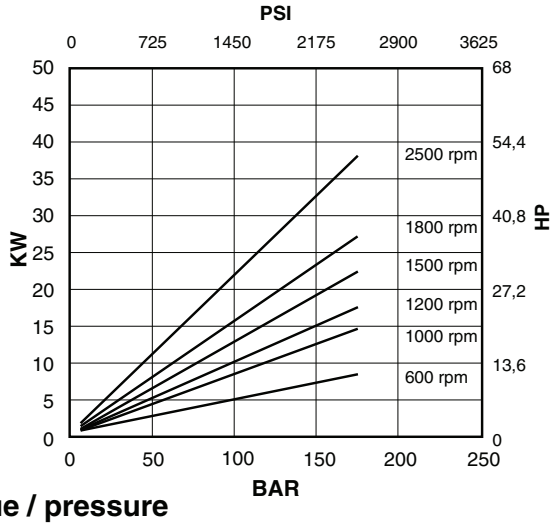
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V02-14

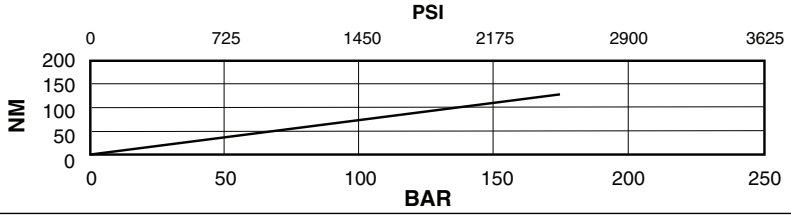
flow / pressure



power / pressure



input torque / pressure

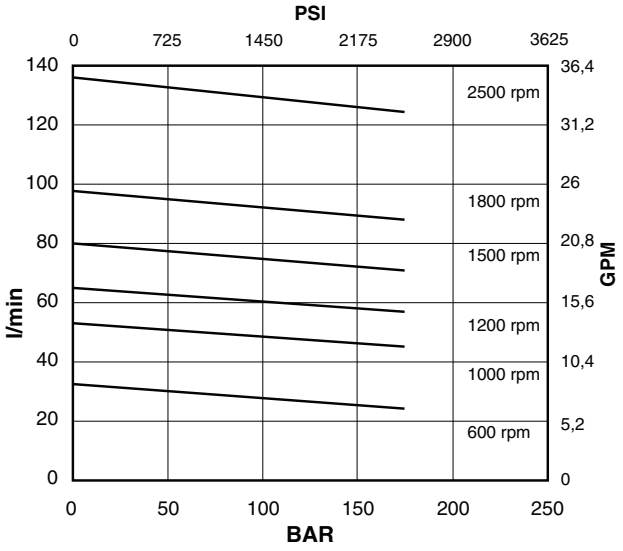


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

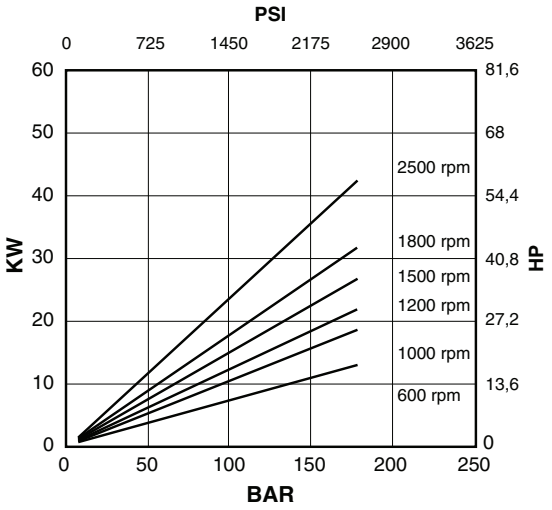
Double Pump Type BV52 (BV05+BV02)

Cover end cartridge V02-17

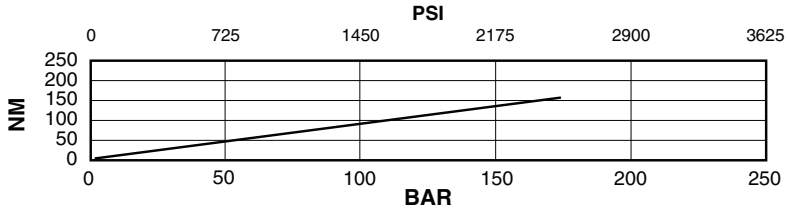
flow / pressure



power / pressure



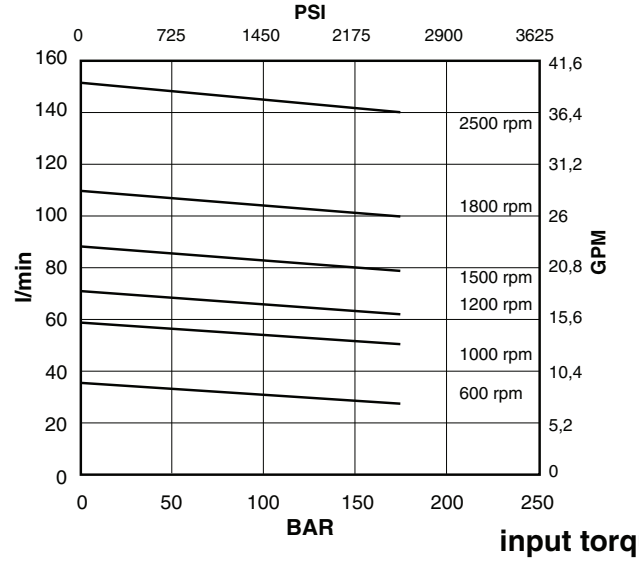
input torque / pressure



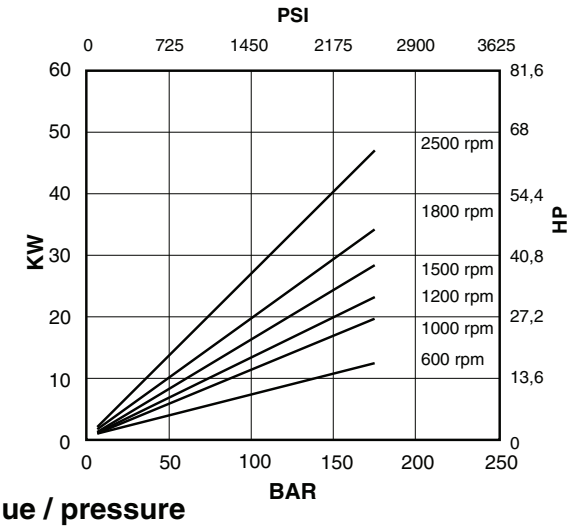
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V02-19

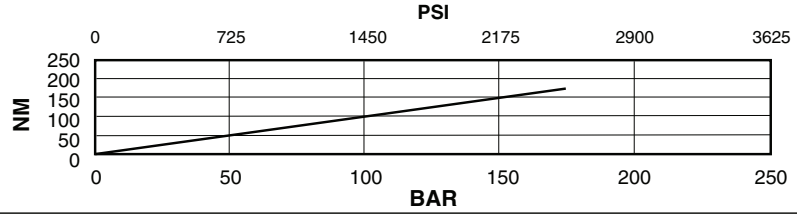
flow / pressure



power / pressure



input torque / pressure

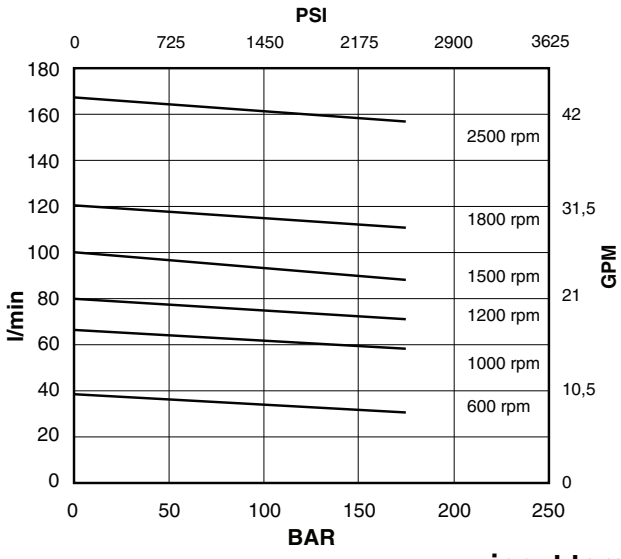


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

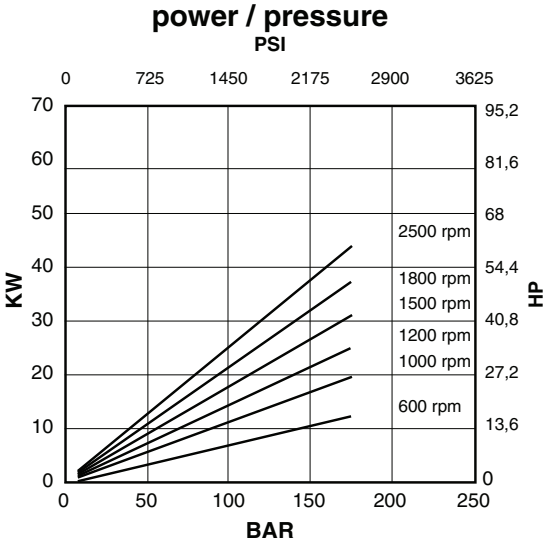
Double Pump Type BV52 (BV05+BV02)

Cover end cartridge V02-21

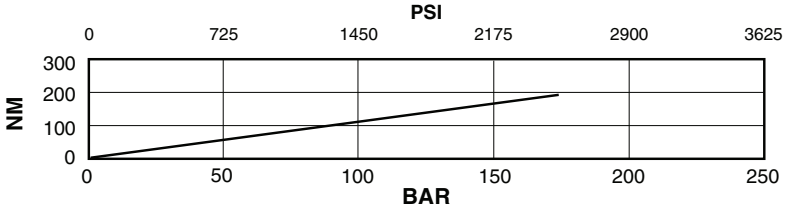
flow / pressure



power / pressure

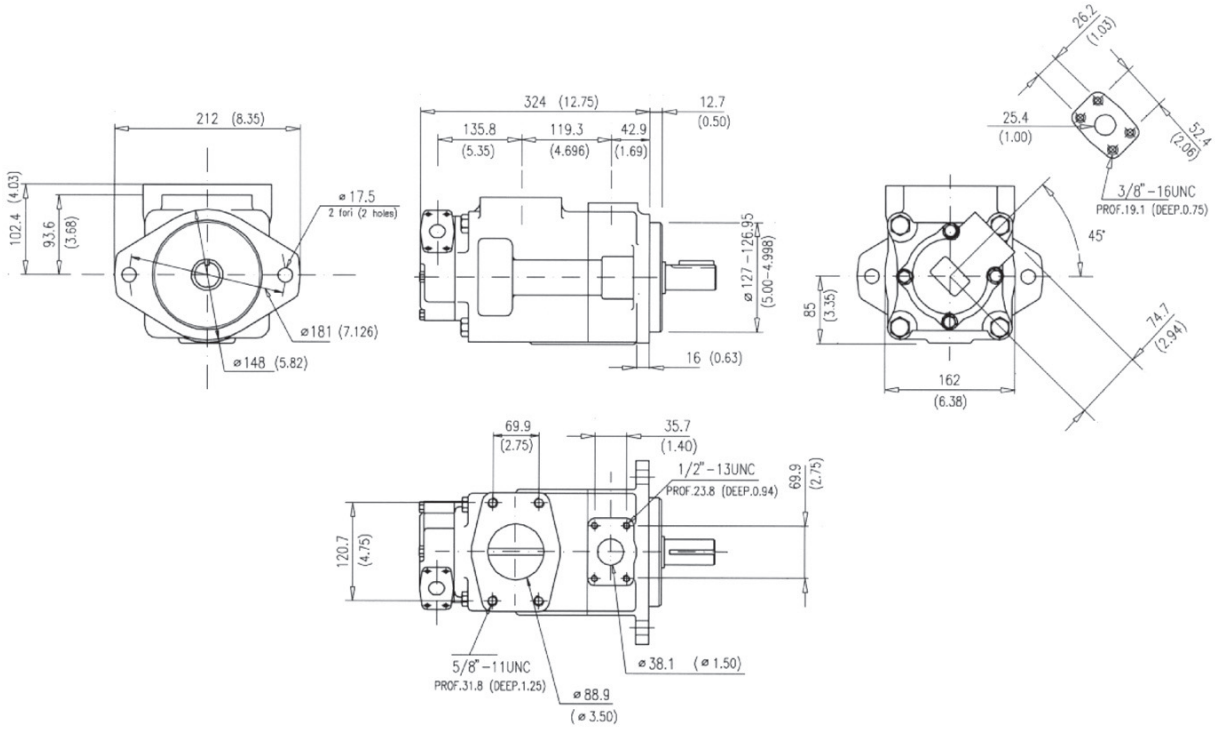


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 46 Kg. (101 lbs.)

Double Pump Type BV52 (BV05+BV02)

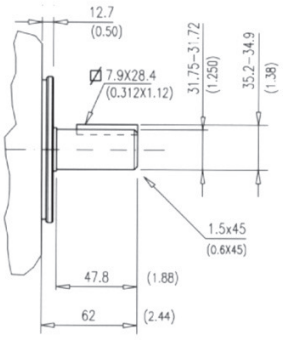
Model code breakdown

BV 52 G ** ** * * ** (L) * (A)

- **BV** — Pump series
- **52** — Pump type
- **G** — Design
- ****** — Cartridge types
  - **-shaft end** 42 47 50 57 60
  - **-cover end** 12 14 17 19 21
- ****** — Body outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CCW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- ***** — Cover outlet port positions (outlet viewed from cover end)
  - **A** = Outlet 135° CCW from inlet
  - **B** = Outlet 45° CCW from inlet
  - **C** = Outlet 45° CW from inlet
  - **D** = Outlet 135° CW from inlet
- ***** — Shaft end options
  - **01** = Straight with key (standard), **11** = Splined
  - **86** = Heavy duty straight keyed, **90** = Splined SAE C
- **(L)** — Rotation (viewed from shaft end)
  - **L** = left hand rotaton CCW (omit if CW)
- ***** — Seals
  - (omit with standard seals and one shaft-seal in NBR)
  - **V** = seals and shaft-seal in FPM (Viton®)
  - **D** = standard seals and double shaft-seals in NBR
  - **F** = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting (omit if not required)

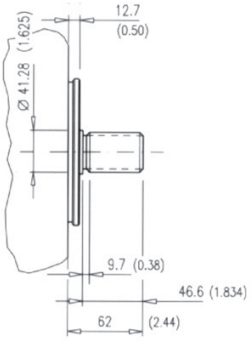
Shaft options mm (inches)

Shaft 01



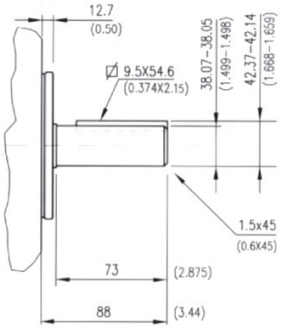
max. torque capability : 600 Nm (5300 lb.in.)

Shaft 11



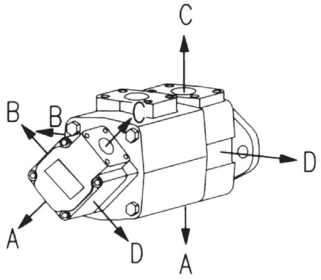
max. torque capability : 820 Nm (7200 lb.in.)

Shaft 86



max. torque capability : 820 Nm (7200 lb.in.)

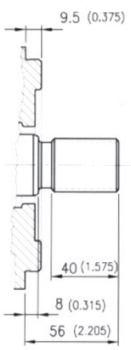
PORT ORIENTATIONS



Spline data
(shaft 11 and shaft 90)

Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	14	
Pitch	12/24	
Major dia.	31.60 - 31.50	(1.244 - 1.240)
Pitch dia.	29.634	(1.1667)
Minor dia.	26.99 - 26.66	(1.0627 - 1.05)
Wildhaber	15.68 - 15.73	(0.617 - 0.619)

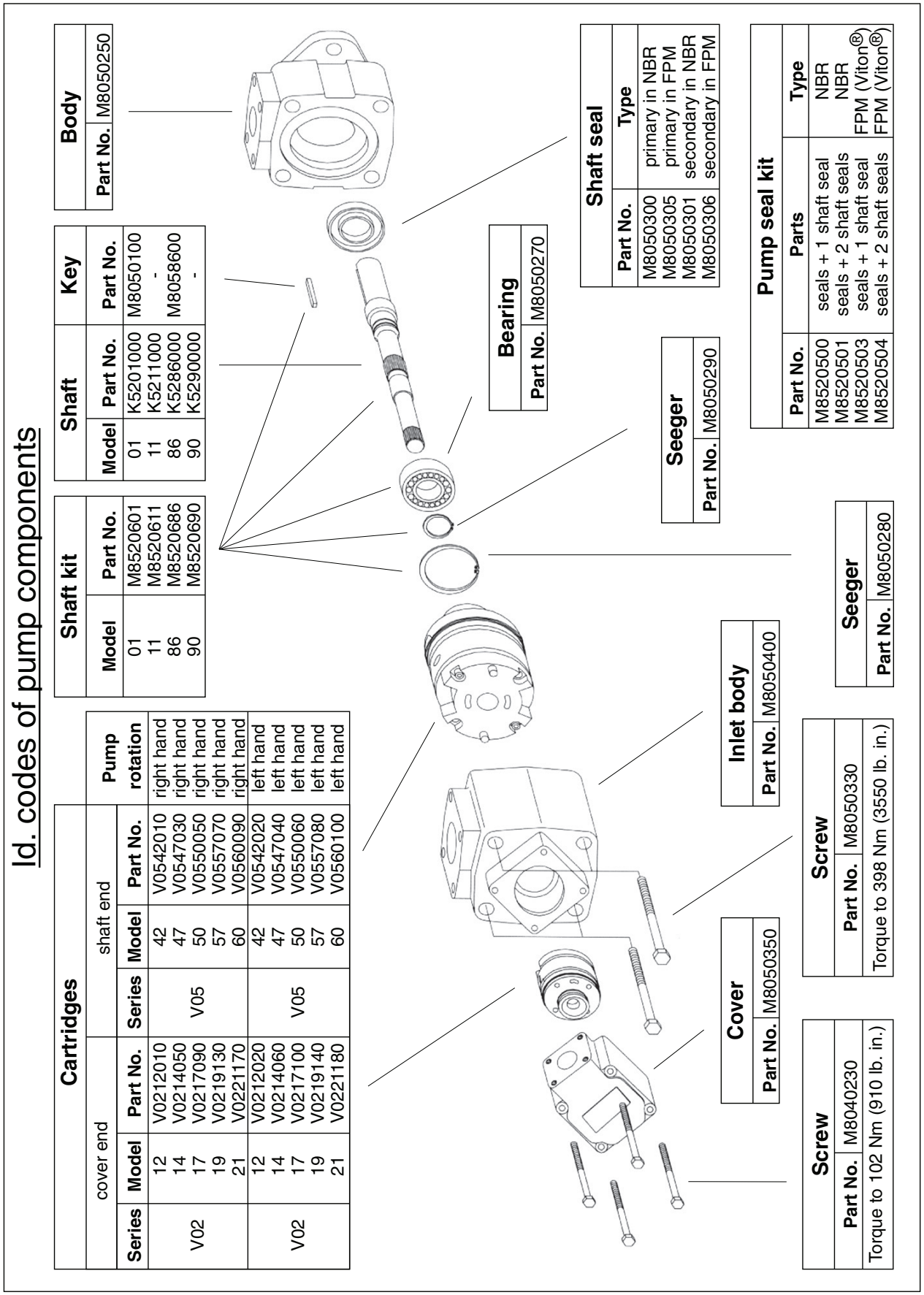
Shaft 90



max. torque capability : 820 Nm (7200 lb.in.)

Double Pump Type BV52 (BV05+BV02)

Id. codes of pump components



Cartridges

cover end			shaft end			Pump rotation
Series	Model	Part No.	Series	Model	Part No.	
V02	12	V0212010	V05	42	V0542010	right hand
	14	V0214050		47	V0547030	right hand
	17	V0217090		50	V0550050	right hand
	19	V0219130		57	V0557070	right hand
	21	V0221170		60	V0560090	right hand
V02	12	V0212020	V05	42	V0542020	left hand
	14	V0214060		47	V0547040	left hand
	17	V0217100		50	V0550060	left hand
	19	V0219140		57	V0557080	left hand
	21	V0221180		60	V0560100	left hand

Shaft kit

Model	Part No.
01	M8520601
11	M8520611
86	M8520686
90	M8520690

Shaft

Model	Part No.
01	K5201000
11	K5211000
86	K5286000
90	K5290000

Key

Part No.
M8050100
-
M8058600
-

Body

Part No.
M8050250

Bearing

Part No.
M8050270

Seeger

Part No.
M8050290

Shaft seal

Part No.	Type
M8050300	primary in NBR
M8050305	primary in FPM
M8050301	secondary in NBR
M8050306	secondary in FPM

Pump seal kit

Part No.	Parts	Type
M8520500	seals + 1 shaft seal	NBR
M8520501	seals + 2 shaft seals	NBR
M8520503	seals + 1 shaft seal	FPM (Viton®)
M8520504	seals + 2 shaft seals	FPM (Viton®)

Inlet body

Part No.
M8050400

Seeger

Part No.
M8050280

Cover

Part No.
M8050350

Screw

Part No.
M8050330

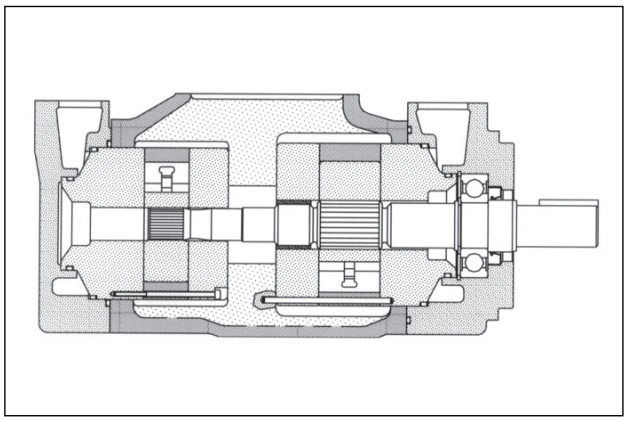
Torque to 398 Nm (3550 lb. in.)

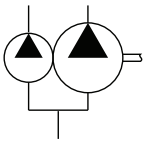
Screw

Part No.
M8040230

Torque to 102 Nm (910 lb. in.)

Double Pump Type BV54 (BV05+BV04)





General description

Fixed displacement vane pump, hydraulically balanced, with capacity determined by the cartridges used and the speed of rotation. The pump is available in several versions with rated capacities from 244 to 370 l/min *(from 63 to 98 gpm)* at 1200 rpm and 7 bar.

Technical characteristcs

Cartridge model	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Rated capacity at 1500 rpm 7 bar		Maximum pressure with mineral oil		Speed range rpm	
shaft end	**cm^3/g**	(in^3/r)	**l/min**	(gpm)	**l/min**	(gpm)	**bar**	(psi)	**min**	**max**
V05-42	**138,6**	(8.46)	**164**	(42)	**203,4**	(53.7)	**175**	(2538)	**600**	**1800**
V05-47	**153,5**	(9.4)	**180**	(47)	**222,7**	(58.8)	**175**	(2538)	**600**	**1800**
V05-50	**162,2**	(9.9)	**189**	(50)	**234**	(61.8)	**175**	(2538)	**600**	**1800**
V05-57	**183,4**	(11.2)	**217**	(57)	**267**	(71.2)	**175**	(2538)	**600**	**1800**
V05-60	**193,4**	(11.8)	**230**	(60)	**285**	(75.3)	**175**	(2538)	**600**	**1800**

cover end	cm^3/g	(in^3/r)	l/min	(gpm)	l/min	(gpm)	bar	(psi)	min	max
V04-21	**69,0**	(4.2)	**79,5**	(21)	**101,4**	(26.8)	**175**	(2538)	**600**	**1800**
V04-25	**81,6**	(5)	**94,0**	(25)	**120,1**	(31.7)	**175**	(2538)	**600**	**1800**
V04-30	**97,7**	(6)	**113,8**	(30)	**141,2**	(37.3)	**175**	(2538)	**600**	**1800**
V04-35	**112,7**	(6.9)	**131,6**	(35)	**167,2**	(44.1)	**175**	(2538)	**600**	**1800**
V04-38	**121,6**	(7.4)	**139,9**	(38)	**177,3**	(46.8)	**175**	(2538)	**600**	**1800**

Hydraulic fluids: mineral oils, phosphate ester based fluids, water emulsions in oil, water-glycol fluids.

Viscosity range *(with mineral oil)*: from 13 to 860 cSt. *(13 to 54 cSt. recommended)*.

Filtration: for the inlet - 149 micron abs., for the return line - 25 micron abs. or better *(with synthetic fluids: for the return line - 10 micron abs. or better)*.

Inlet pressure: *(with mineral oil)*: from -0,17 to +1,4 bar *(-2.5 to + 20 psi)*

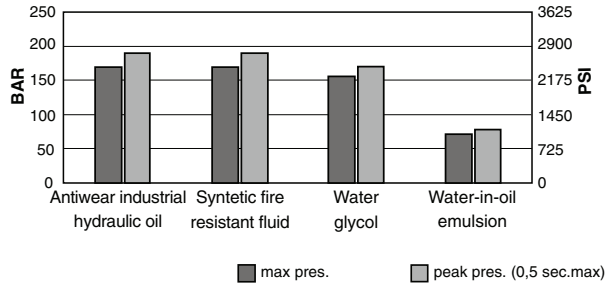
Operating temperature: with mineral oil -10°C +70°C *(+30°C to +60°C recommended),* with water based fluids +15°C to +50°C.

Drive: direct and coaxial by means of a flexible coupling.

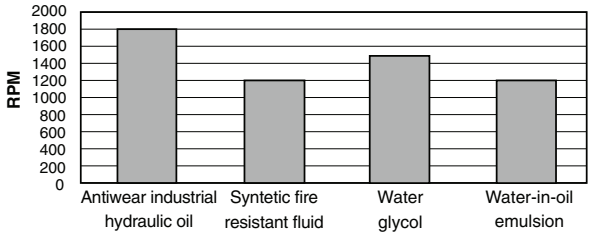
Double Pump Type BV54 (BV05+BV04)

Main operating data

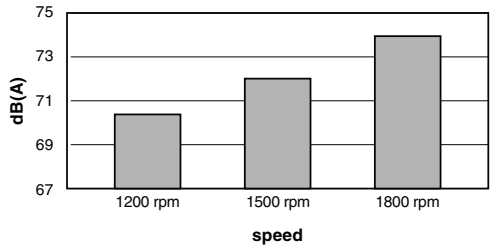
max pressure / hydraulic fluid



max speed / hydraulic fluid (with 0 bar in the intake pipe)

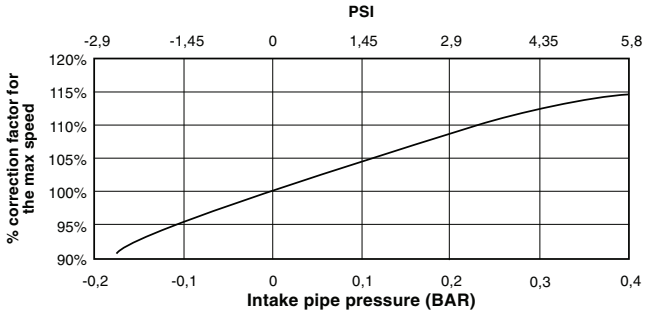


Sound level at 138 bar (2000 psi)



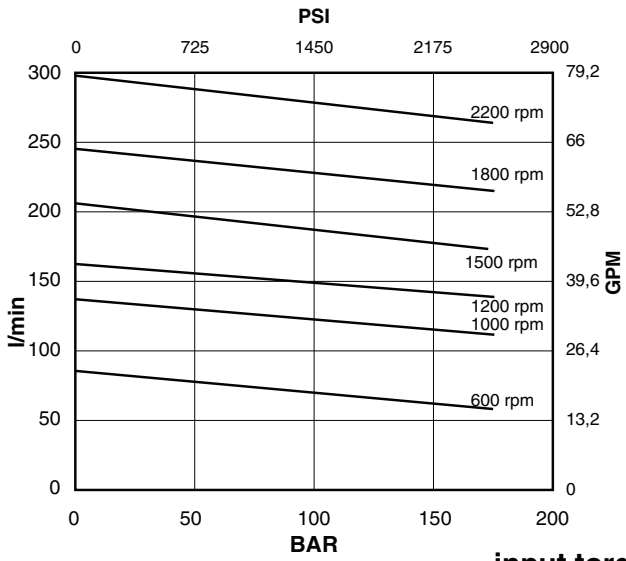
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

max speed / intake pipe pressure

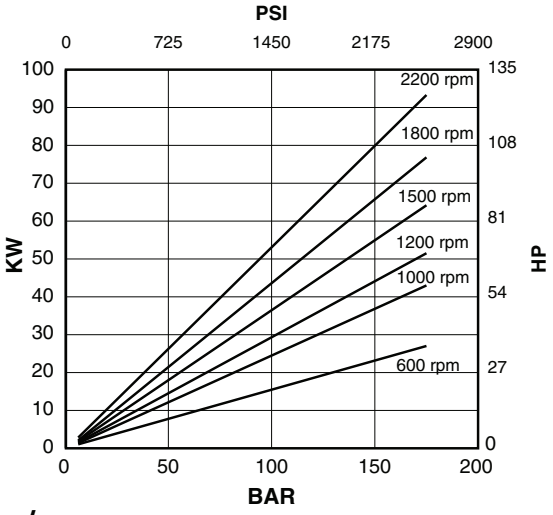


Shaft end cartridge V05-42

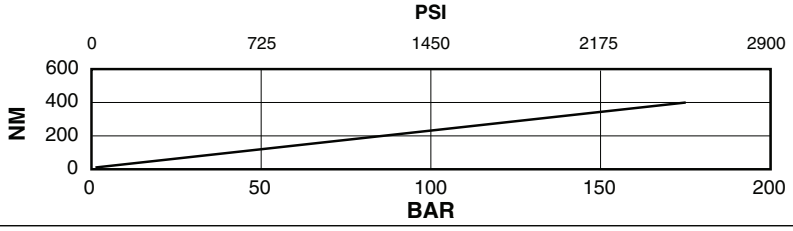
flow / pressure



power / pressure



input torque / pressure

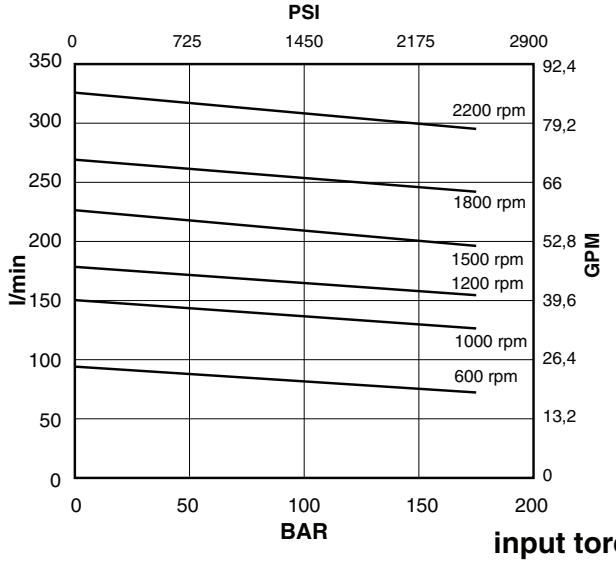


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

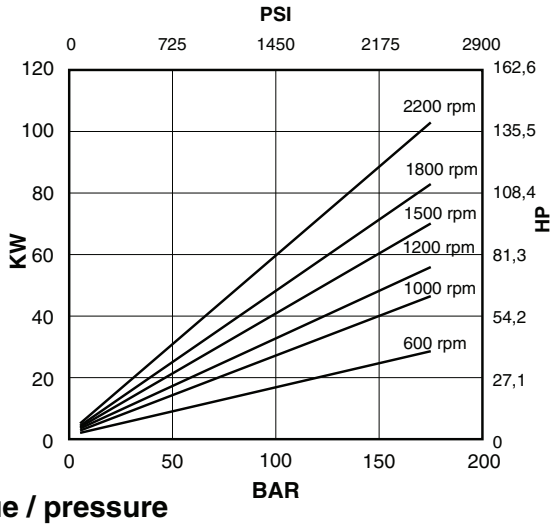
Double Pump Type BV54 (BV05+BV04)

Shaft end cartridge V05-47

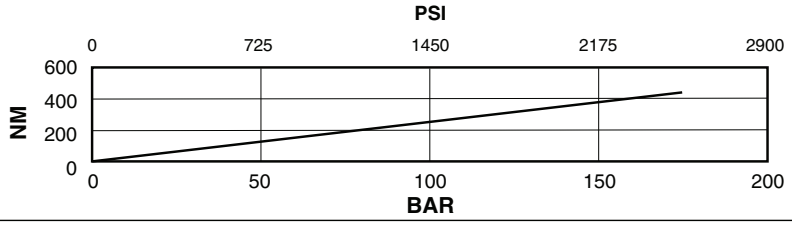
flow / pressure



power / pressure



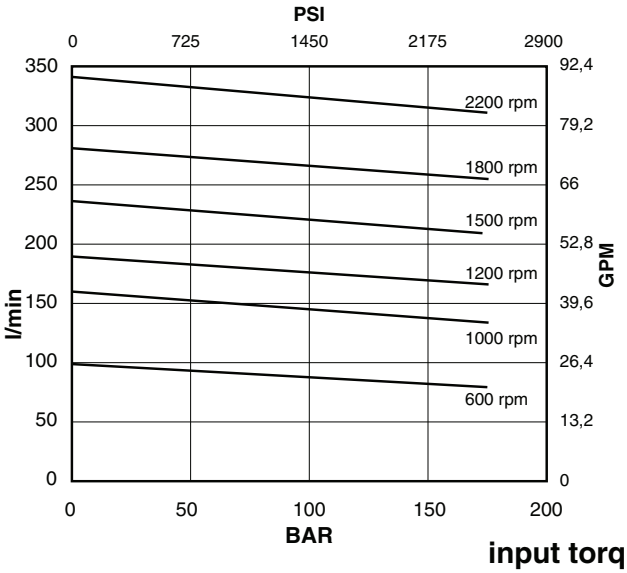
input torque / pressure



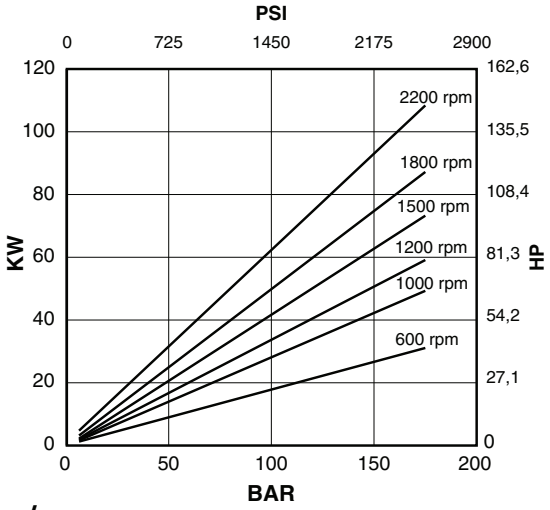
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-50

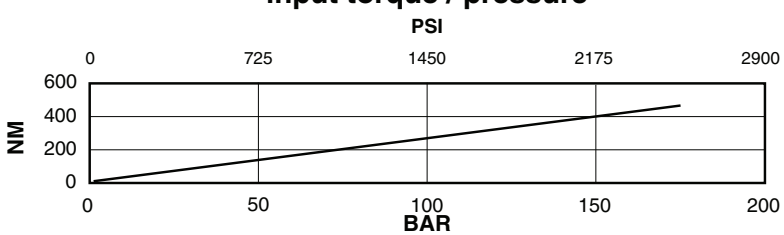
flow / pressure



power / pressure



input torque / pressure

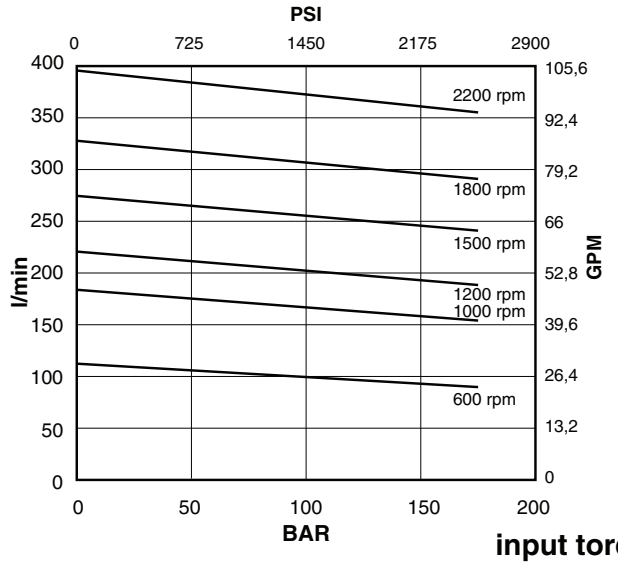


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

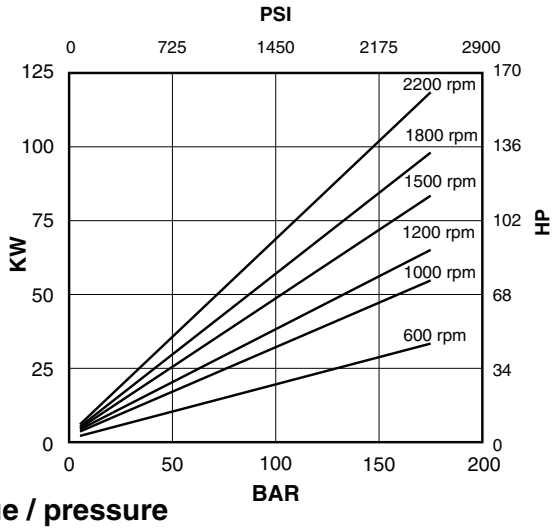
Double Pump Type BV54 (BV05+BV04)

Shaft end cartridge V05-57

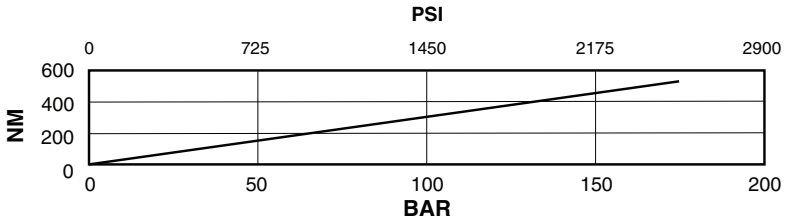
flow / pressure



power / pressure



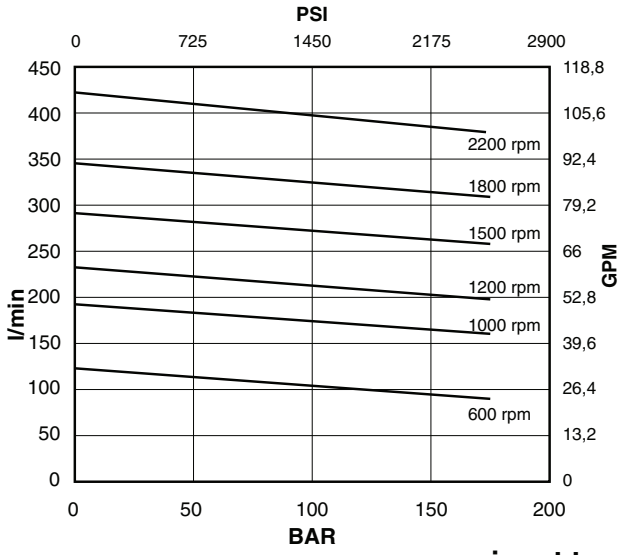
input torque / pressure



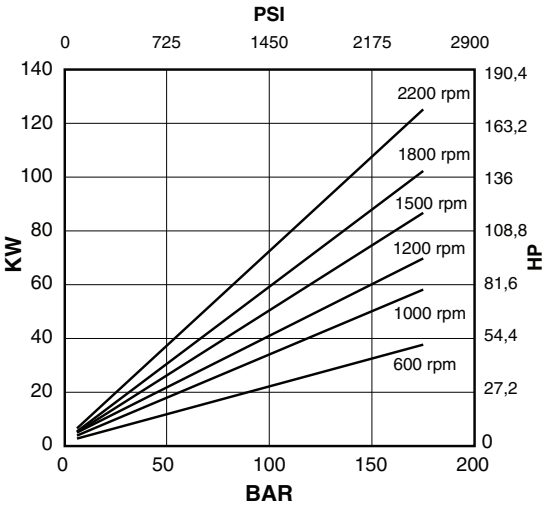
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-60

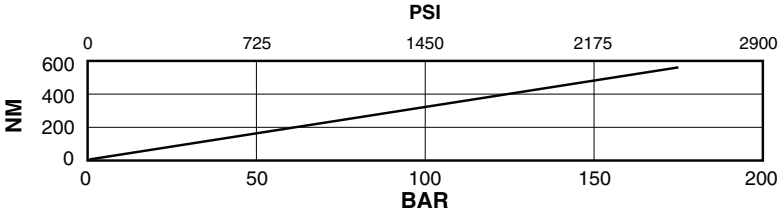
flow / pressure



power / pressure



input torque / pressure

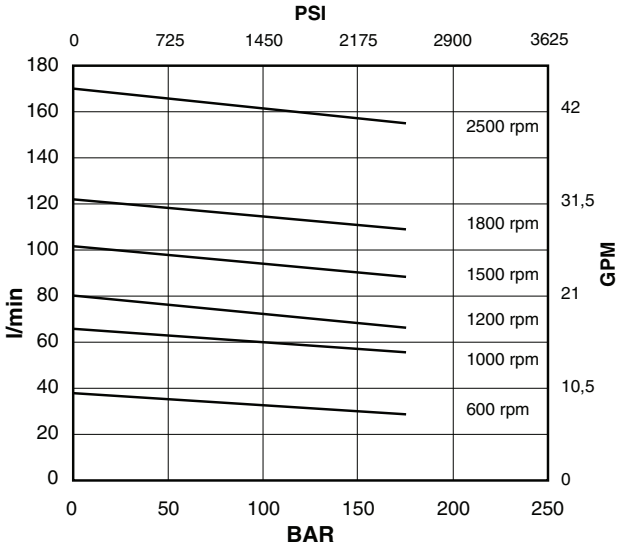


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

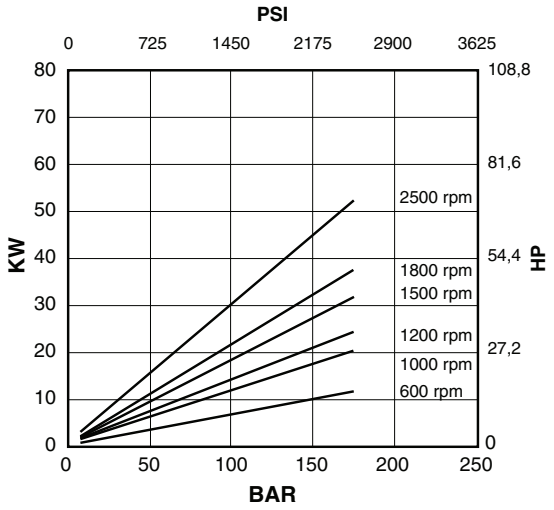
Double Pump Type BV54 (BV05+BV04)

Cover end cartridge V04-21

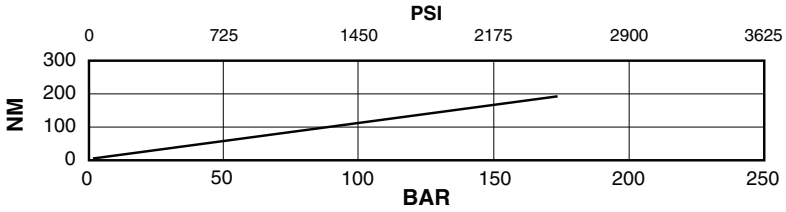
flow / pressure



power / pressure



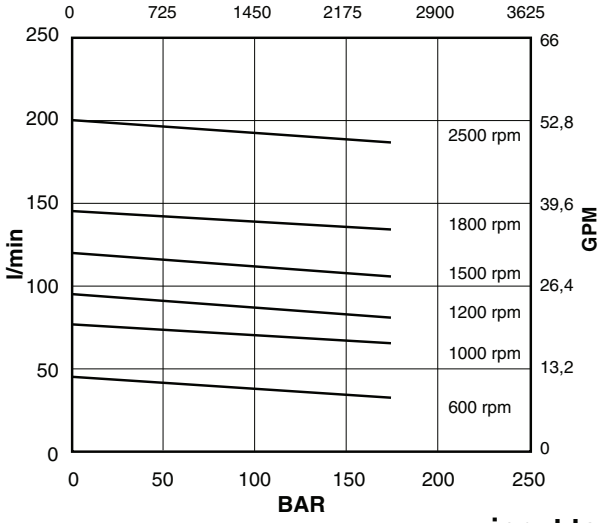
input torque / pressure



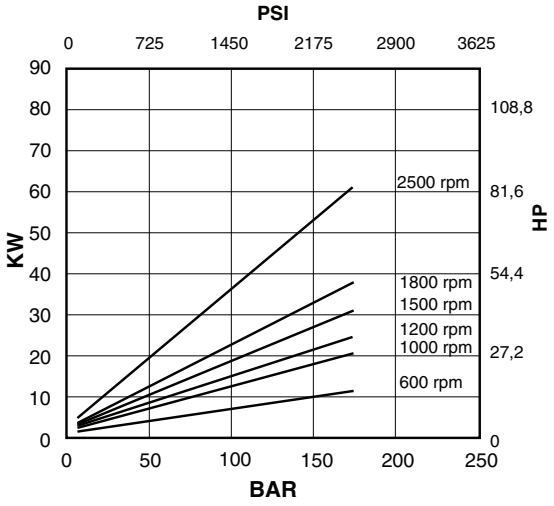
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V04-25

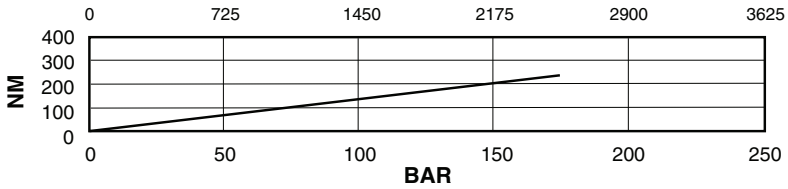
flow / pressure



power / pressure



input torque / pressure

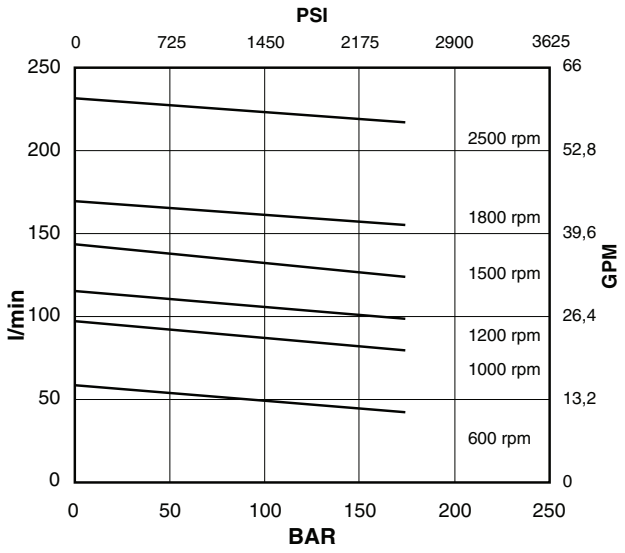


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

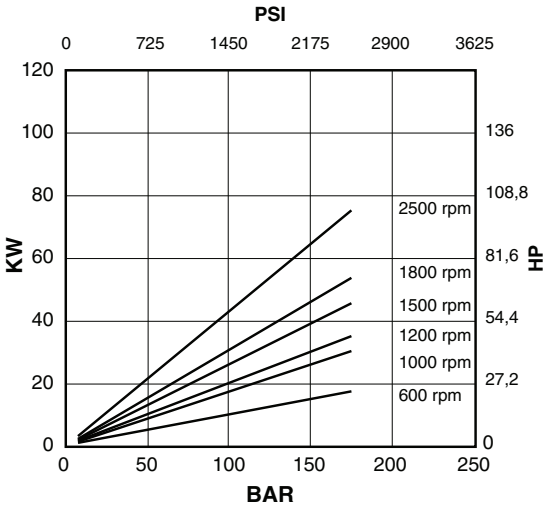
Double Pump Type BV54 (BV05+BV04)

Cover end cartridge V04-30

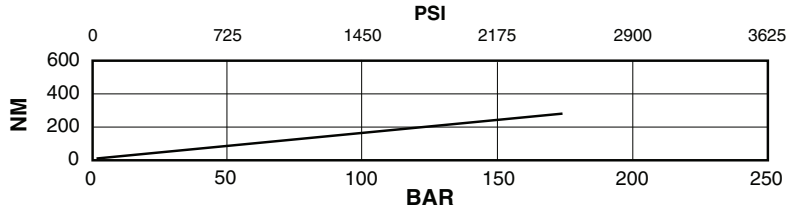
flow / pressure



power / pressure



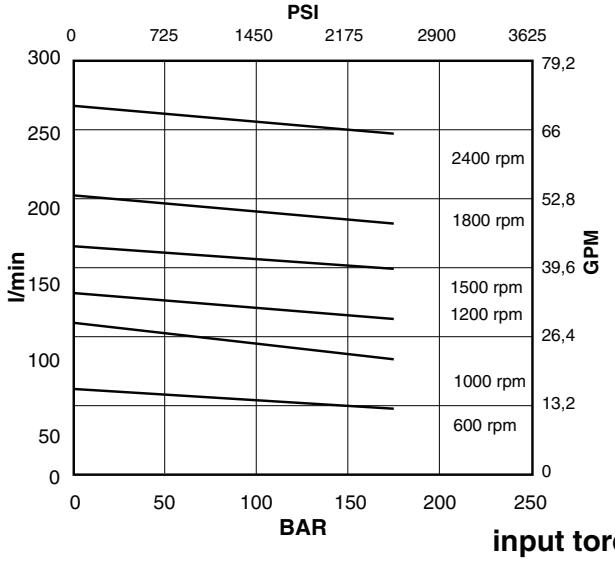
input torque / pressure



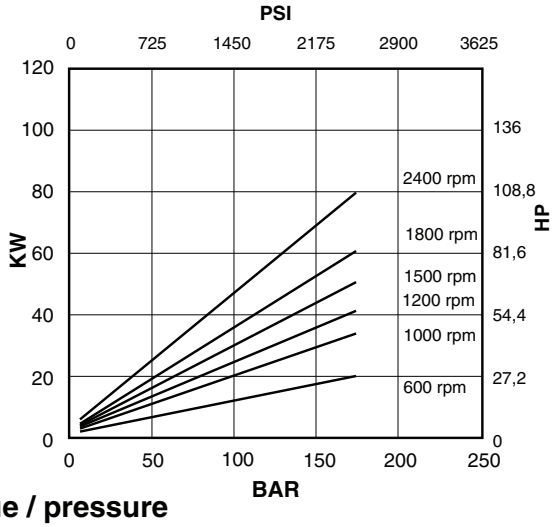
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Cover end cartridge V04-35

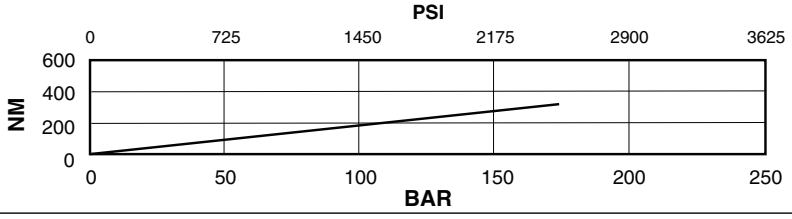
flow / pressure



power / pressure



input torque / pressure

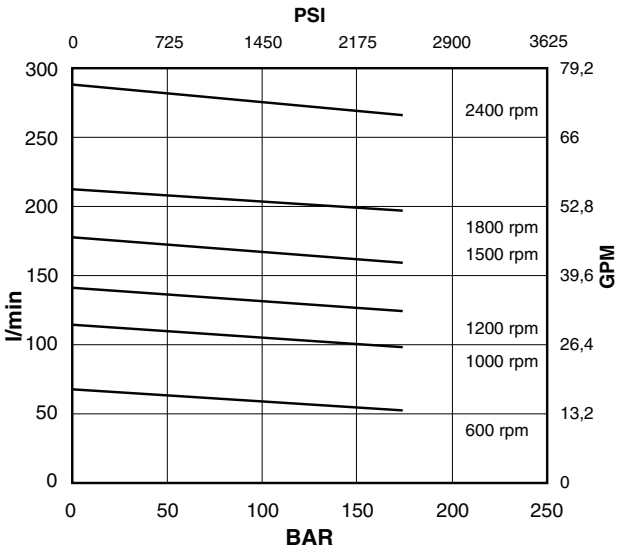


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

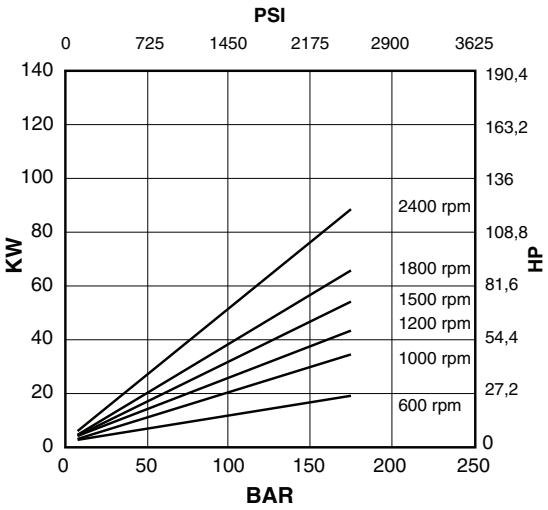
Double Pump Type BV54 (BV05+BV04)

Cover end cartridge V04-38

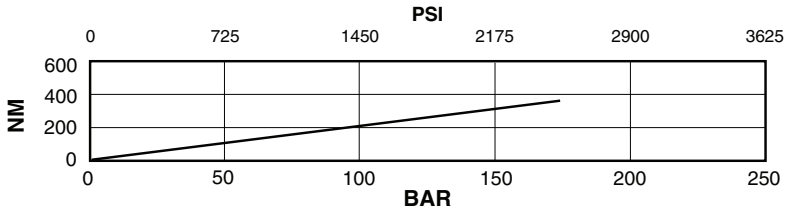
flow / pressure



power / pressure

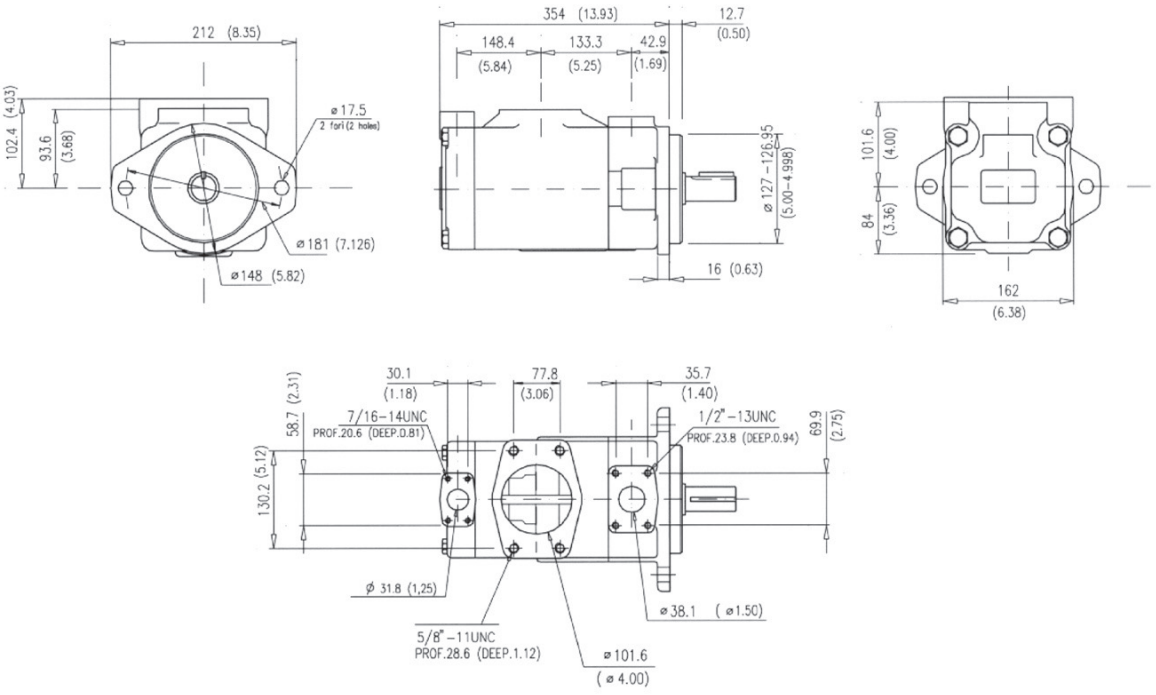


input torque / pressure



Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Installation dimensions mm (inches)



Approx. weight: 54 Kg. (118 lbs.)

Double Pump Type BV54 (BV05+BV04)

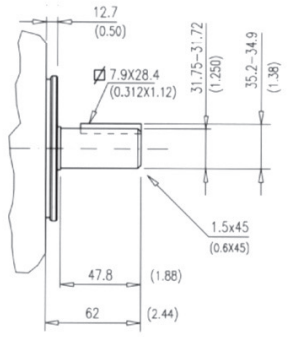
Model code breakdown

BV 54 G ** ** * * ** (L) * (A)

- **BV 54** — Pump series / Pump type
- **G** — Design
- ****** — Cartridge types
  - **-shaft end** 42 47 50 57 60
  - **-cover end** 21 25 30 35 38
- ****** — Body outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CCW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- ***** — Cover outlet port positions (outlet viewed from cover end)
  - **A** = Outlet opposite end
  - **B** = Outlet 90° CW from inlet
  - **C** = Outlet in line with inlet
  - **D** = Outlet 90° CW from inlet
- ***** — Shaft end options
  - **01** = Straight with key (standard), **11** = Splined
  - **86** = Heavy duty straight keyed, **90** = Splined SAE C
- **(L)** — Rotation (viewed from shaft end)
  - **L** = left hand rotaton CCW (omit if CW)
- ***** — Seals (omit with standard seals and one shaft-seal in NBR)
  - **V** = seals and shaft-seal in FPM (Viton®)
  - **D** = standard seals and double shaft-seals in NBR
  - **F** = seals and double shaft-seals in FPM (Viton®)
- **(A)** — Mounting (omit if not required)

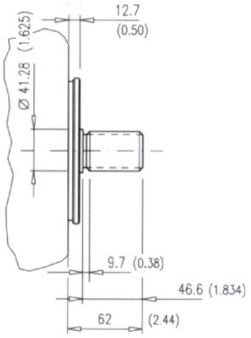
Shaft options mm (inches)

Shaft 01



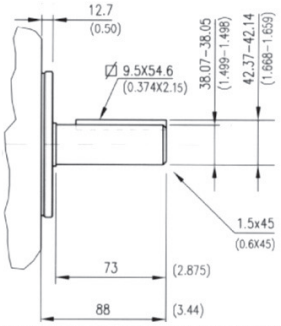
max. torque capability : 600 Nm (5300 lb.in.)

Shaft 11



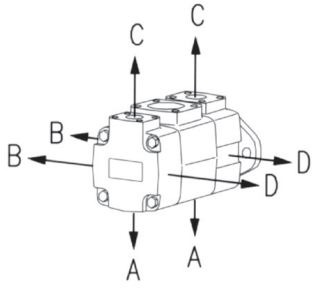
max. torque capability : 820 Nm (7200 lb.in.)

Shaft 86



max. torque capability : 820 Nm (7200 lb.in.)

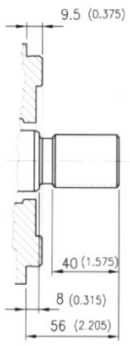
PORT ORIENTATIONS



Spline data (shaft 11 and shaft 90)

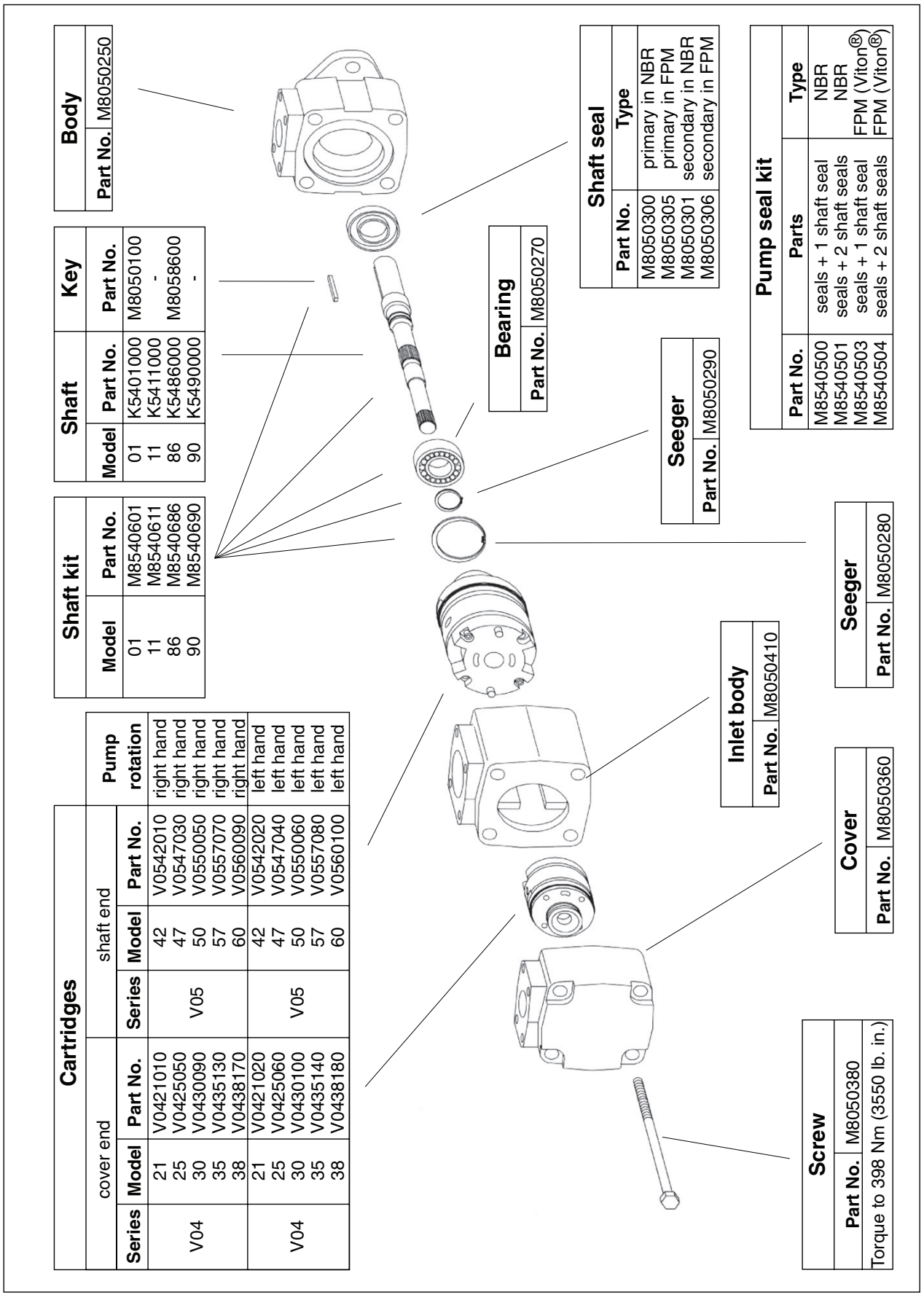
Spline	Involute side fit (ASA B5.15)	
Pressure angle	30°	
No. of teeth	14	
Pitch	12/24	
Major dia.	31.60 - 31.50	(1.244 - 1.240)
Pitch dia.	29.634	(1.1667)
Minor dia.	26.99 - 26.66	(1.0627 - 1.05)
Wildhaber	15.68 - 15.73	(0.617 - 0.619)

Shaft 90



max. torque capability : 820 Nm (7200 lb.in.)

Double Pump Type BV54 (BV05+BV04)



Cartridges						Pump rotation
	cover end			shaft end		
Series	Model	Part No.	Series	Model	Part No.	
V04	21	V0421010	V05	42	V0542010	right hand
	25	V0425050		47	V0547030	right hand
	30	V0430090		50	V0550050	right hand
	35	V0435130		57	V0557070	right hand
	38	V0438170		60	V0560090	right hand
V04	21	V0421020	V05	42	V0542020	left hand
	25	V0425060		47	V0547040	left hand
	30	V0430100		50	V0550060	left hand
	35	V0435140		57	V0557080	left hand
	38	V0438180		60	V0560100	left hand

Shaft kit	
Model	Part No.
01	M8540601
11	M8540611
86	M8540686
90	M8540690

Shaft		Key	
Model	Part No.		Part No.
01	K5401000		M8050100
11	K5411000		-
86	K5486000		M8058600
90	K5490000		-

Body
Part No. M8050250

Bearing
Part No. M8050270

Seeger
Part No. M8050290

Shaft seal	
Part No.	Type
M8050300	primary in NBR
M8050305	primary in FPM
M8050301	secondary in NBR
M8050306	secondary in FPM

Pump seal kit		
Part No.	Parts	Type
M8540500	seals + 1 shaft seal	NBR
M8540501	seals + 2 shaft seals	NBR
M8540503	seals + 1 shaft seal	FPM (Viton®)
M8540504	seals + 2 shaft seals	FPM (Viton®)

Inlet body
Part No. M8050410

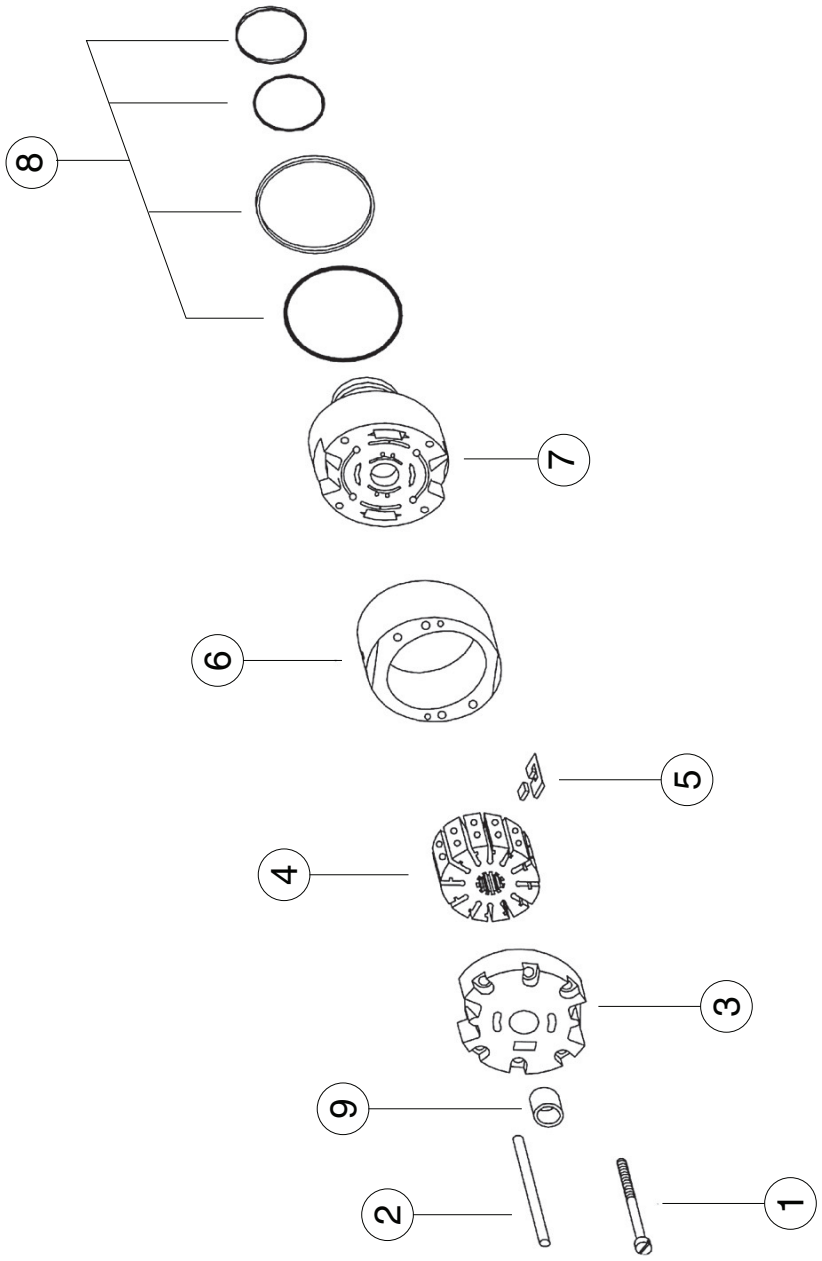
Seeger
Part No. M8050280

Cover
Part No. M8050360

Screw
Part No. M8050380
Torque to 398 Nm (3550 lb. in.)

BV Pumps - Cartridge Kit Components

Id. codes of cartridge kit components



BV Pumps - Cartridge Kit Components

Cartridge Series	Model	1 Screw	2 Pin	3 Inlet support plate	4 Rotor	5 Vane and insert kit (12+12 pcs.)	6 Ring	7 Outlet support plate	8 Seal kit (4 pcs.)	9 Bushing (*)
V01	02			L6209200	L6209300	L6209100	L7209002			
	05			L6209200	L6209300	L6209100	L7209005			
	08			L6209200	L6209300	L6209100	L7209008			
	11	L6200900	L6200800	L6200200	L6200300	L6201200	L7201011	L6200100	L6201100	L6200600
	12	3,6 Nm (32 lb. in.)		L6200200	L6200300	L6201200	L7201012		L6202100 (FPM)	
	14			L6200200	L6200300	L6201200	L7201014			
V02	12			L6250200	L6250300	L6251200	L6251012	L6250100	L6251100	L7250600
	14						L6251014			
	17	L6250900	L6250800				L6251017			
	19	5,5 Nm (49 lb. in.)					L6251019		L6252100 (FPM)	
	21						L6251021			
V04	21			L6350200	L6350300	L6351200	L6351021	L6350100	L6351100	L7350600
	25						L6351025			
	30	L6350900	L6350800				L6351030			
	35	12,6 Nm (112 lb.in)					L6351035		L6352100 (FPM)	
	38						L6351038			
V05	42			L6450200	L6450300	L6451200	L6451042	L6450100	L6451100	L7450600
	47						L6451047			
	50	L6450900	L6450800				L6451050			
	57	12,6 Nm (112 lb.in)					L6451057		L6452100 (FPM)	
	60						L6451060			

(*) Note: The cover end cartridge of the double pump is without bushing.

BV Pumps

Operating Instructions

Maximum speed: the maximum speeds given in this catalogue are valid for an atmospheric pressure of 1 bar (14.7 psi) and with ambient temperature in the range of +30°C to +50°C. Higher speeds than those given cause a reduction in the volumetric efficiency, due to cavitation phenomena in the inlet area inside the pump. Sustained excess speed causes a rapid deterioration of the internal components reducing the lifetime of the cartridge.

Minimum speed: In general, the min. speed for all pumps is 600 rpm. However, it is possible to operate at lower speeds with certain pump configurations and with appropriate operating temperatures.

Inlet pressure: the inlet pressure, measured at the inlet port, should remain within the prescribed limits. Note that pressures lower than minimum limit cause cavitation and pressures above th e maximum limit cause abnormal loads on the shaft and the bearings. In both cases this causes a significant reduct ion in the lifetime of the cartridge.

Maximum outlet pressure: the maximum outlet pressure is different for each type of fluid used as can be seen from the corresponding diagrams. With optimal temperature and filtration conditions a pressure peak of +10% is permissible for a maximum time of 0.5 sec.

Mounting and drive connections: consider the following indications when preparing the installation drawings for the system:
- the pump is designed to operate with keyed shaft coupled axial ly and by means of a flexible coupling to the drive;
- the clearance between the keyed shaft and the corresponding sleeve coupling has to be between 0.004 and 0.030 mm;
- avoid axial and radial loads on the shaft;
- the mounting flange has to be perpendicular to the drive shaft , with a maximum error of 0.18 mm every 100 mm;
- when mounting onto a gearbox, or other component without a flexible coupling, it is advisable to order pumps with splined shaft. In this case the clearance between splines has to be between 0.013 and 0.051 mm on the pitch diameter .

Hydraulic circuit: always install a pressure relief valve on the supply line to prevent the pressure from exceeding the allowed maximum. Normally, it is set in accordance with the weakest component in the system. (In the case where it is the pump, set the valve to a pressure 15% higher than the maximum pressure rating of the pump.)
Inlet line tubing should have a section equal to or greater than that of the inlet port of the pump. It is advisable to keep the tube connecting the pump to the reservoir as short possible. Particular care has to be taken with the inlet line which has to be hermetically sealed to avoid entraining air into the c ircuit; this varies the characteristics of the hydraulic fluid causing the operating parts to become damaged.

Filtration: the inlet line filter must have a flow rate capacity that is higher than that of the pump at its maximum operating speed. The filtration requirements for individual models are given in this catalogue.The use of a filter by-pass is recommended for cold starts and should the filter become clogged. Proper maintenance of the filter element is essential for the correct operation of the entire system. In normal conditions replace the filter element after the first 50 hours of operation. Subsequently, replace it at least every 500 hours. Regarding the filter on the return line, the same general conditions apply as for the inlet line and it should be positioned in an accessible location for ease of maintenance.

Tank: if possible, the reservoir should be positioned above the pump. Otherwise, ensure that the minimum level of the fluid contained in it is higher than the pump inlet line opening. It is important to avoid draining the inlet line with the pump at standstill. The opening of the return line into the reservoir must remain below the minimum level of the fluid in the reservoir. It must not be positioned too close to the opening of the inlet line to avoid the possibility of any air bubbles passing into the inlet line. Baffles inside the reservoir may be useful in avoiding the problem. Rapid temperature changes can cause condensation on the underside of the lid of the reservoir with the formation of droplets of water that can fall into the oil. To avoid this problem it is recommended that the lid should have small vents so that the air space in the reservoir is ventilated. The vents have to be screened, though, to prevent the entry of dust or the sudden expulsion of fluid.

Start-up: use the following procedure when the pump is started-up for the first time:
completely fill the pump and the inlet line with fluid;
start the engine for approximately one second a number of times at regular intervals of approximately 2 or 3 seconds until the noise level reduces, thereby confirming that it has been primed;
with a manometer check to ensure that the outlet pressure increases slightly;
once the pump has been primed, maintain low pressure levels acti vating all parts of the circuit a number of times until air bubbles disappear completely from the return line to the reservoir.
This procedure should be carefully as any residual air inside the pump can quickly cause the rotor to seize.

Cold starting: when starting the pump, especially with low ambient temperatures, operate with moderate speed and pressure until the average temperature in the entire circuit is within the given limits.

As HANSA-TMP has a very extensive range of products and some products have a variety of applications, the information supplied may often only apply to specific situations.
If the catalogue does not supply all the information required, please contact HANSA-TMP.
In order to provide a comprehensive reply to queries we may require specific data regarding the proposed application.

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HANSA-TMP reserves the right to amend specifications at their discretion.

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