

Fixed Displacement Hydraulic Vane Pumps

BV Series



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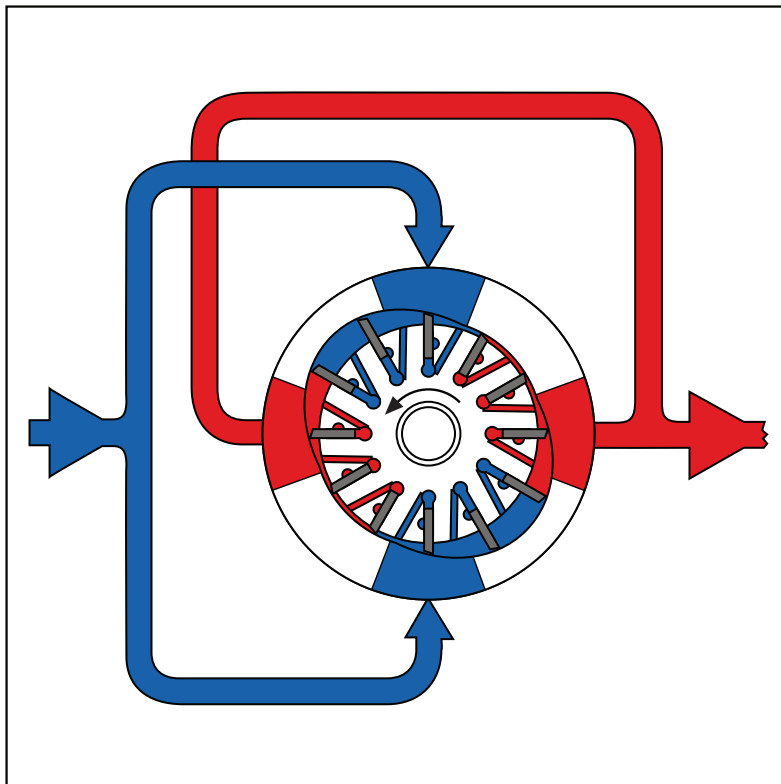
General Information

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).

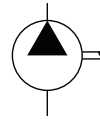
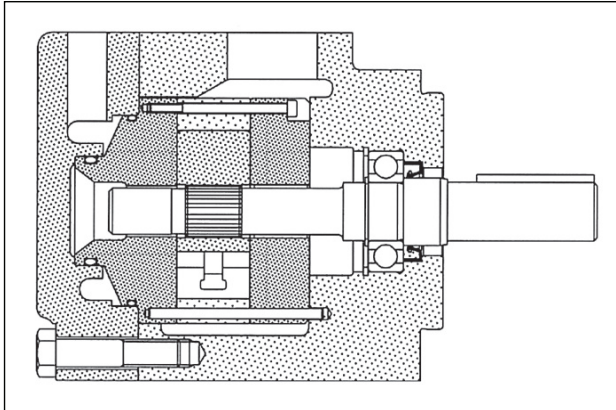
The BV series is available in four versions of single pump (from 21 to 230 L/min at 1200 rpm) and six versions of double pump (from 68 to 370 L/min at 1200 rpm), with maximum powers of over 300HP. The BV series pumps are extremely compact and are supplied with ISO norm mechanical couplings and SAE norm 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) | | | | |
| | 14 | 45,9 | (2.79) | 54,9 | (14) | 69,6 | (18.4) | | | | |
| 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) | | | | |
| | 21 | 69,0 | (4.2) | 79,5 | (21) | 101,4 | (26.8) | | | | |
| BV04 | 25 | 81,6 | (5) | 94,0 | (25) | 120,1 | (31.7) | 175 | (2.538) | 600 | 1.800 |
| | 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) | | | | |
| | 42 | 138,6 | (8.46) | 164 | (42) | 203,4 | (53.7) | | | | |
| | 47 | 153,5 | (9.4) | 180 | (47) | 222,7 | (58.8) | | | | |
| BV05 | 50 | 162,2 | (9.9) | 189 | (50) | 234 | (61.8) | 175 | (2.538) | 600 | 1.800 |
| | 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 characteristics

| 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*).

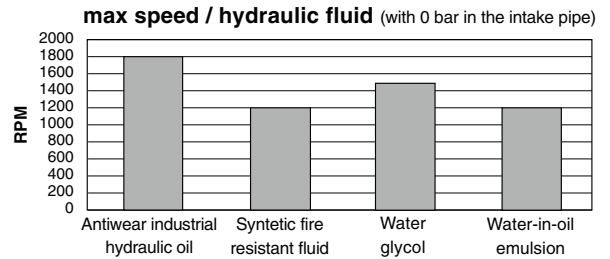
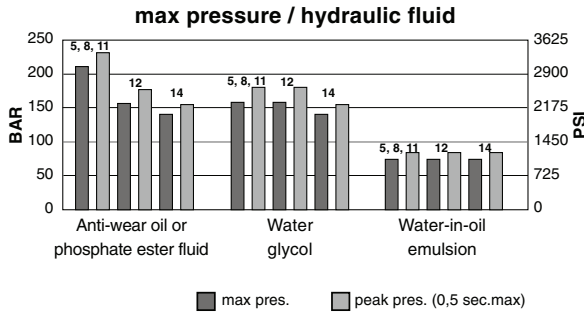
Inlet pressure: (*with mineral oil*): from -0,17 to +1,4 bar (*-2.5 to + 20 psi*)

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

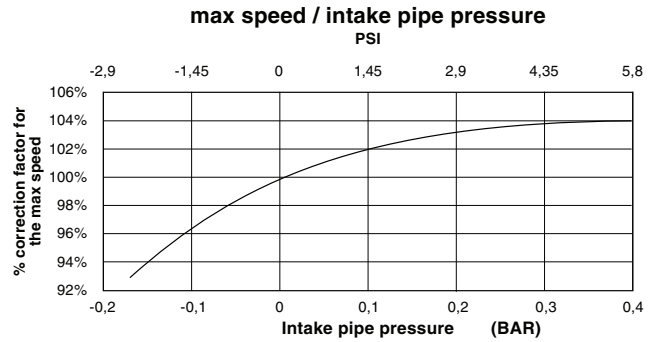
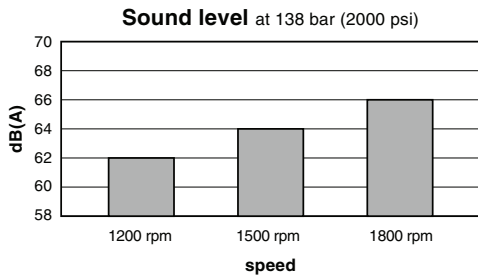
Drive: direct and coaxial by means of a flexible coupling.

Single Pump Type BV01

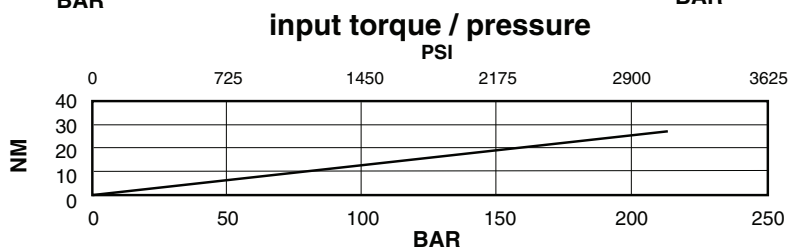
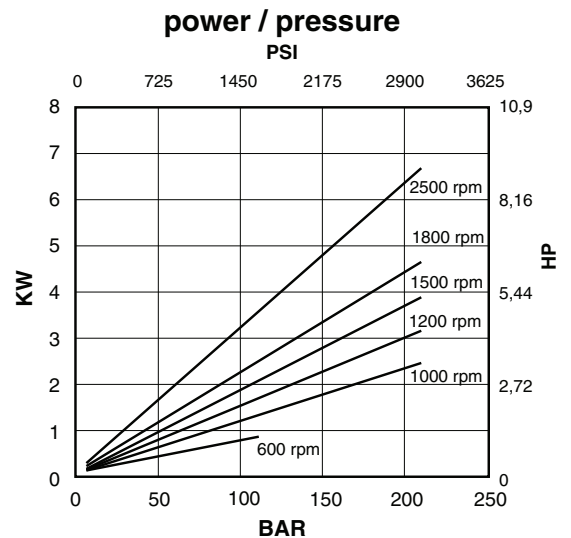
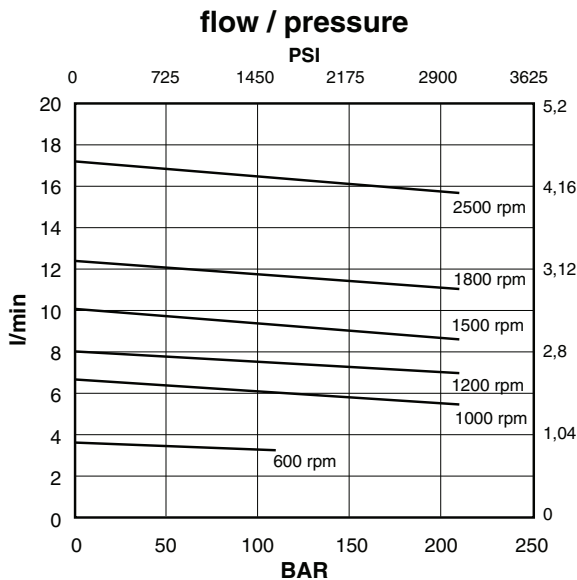
Main operating data



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

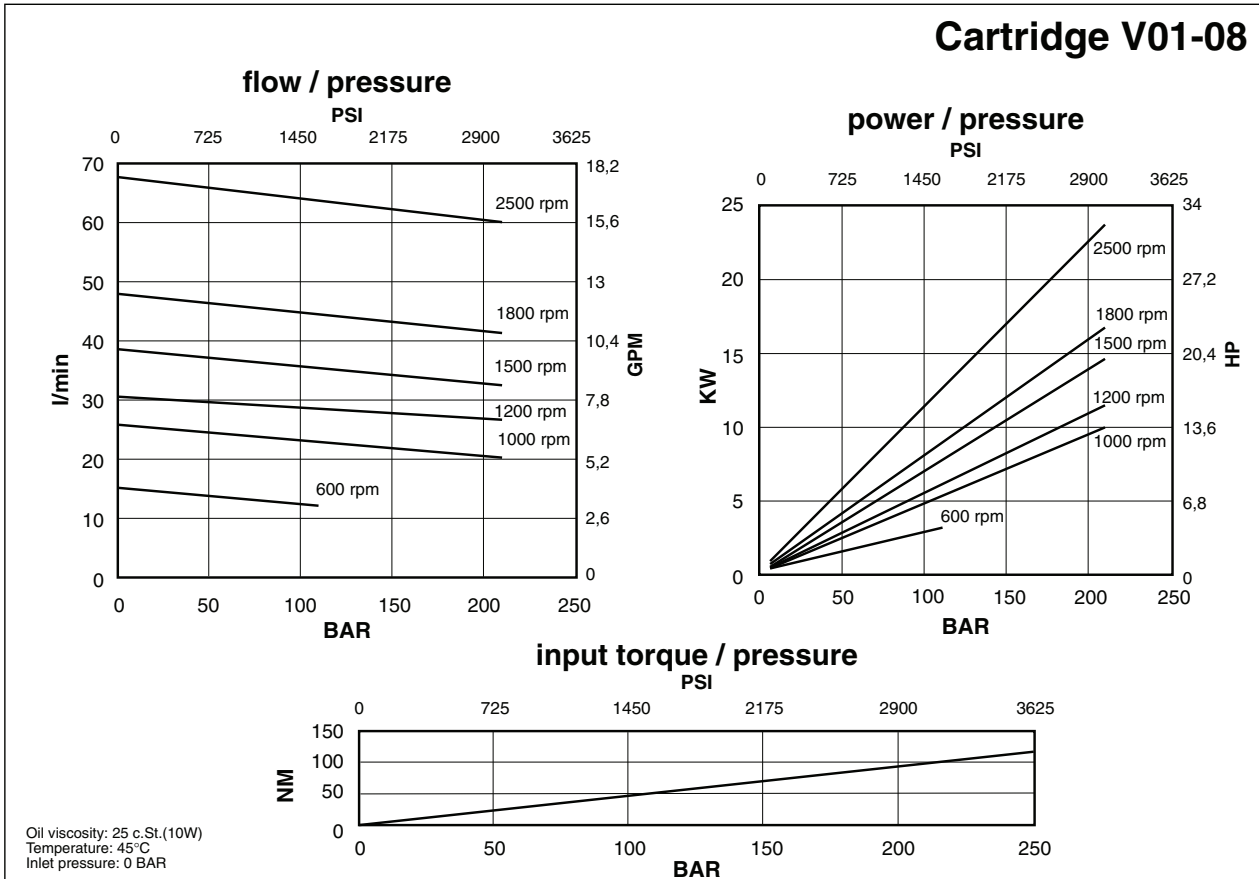
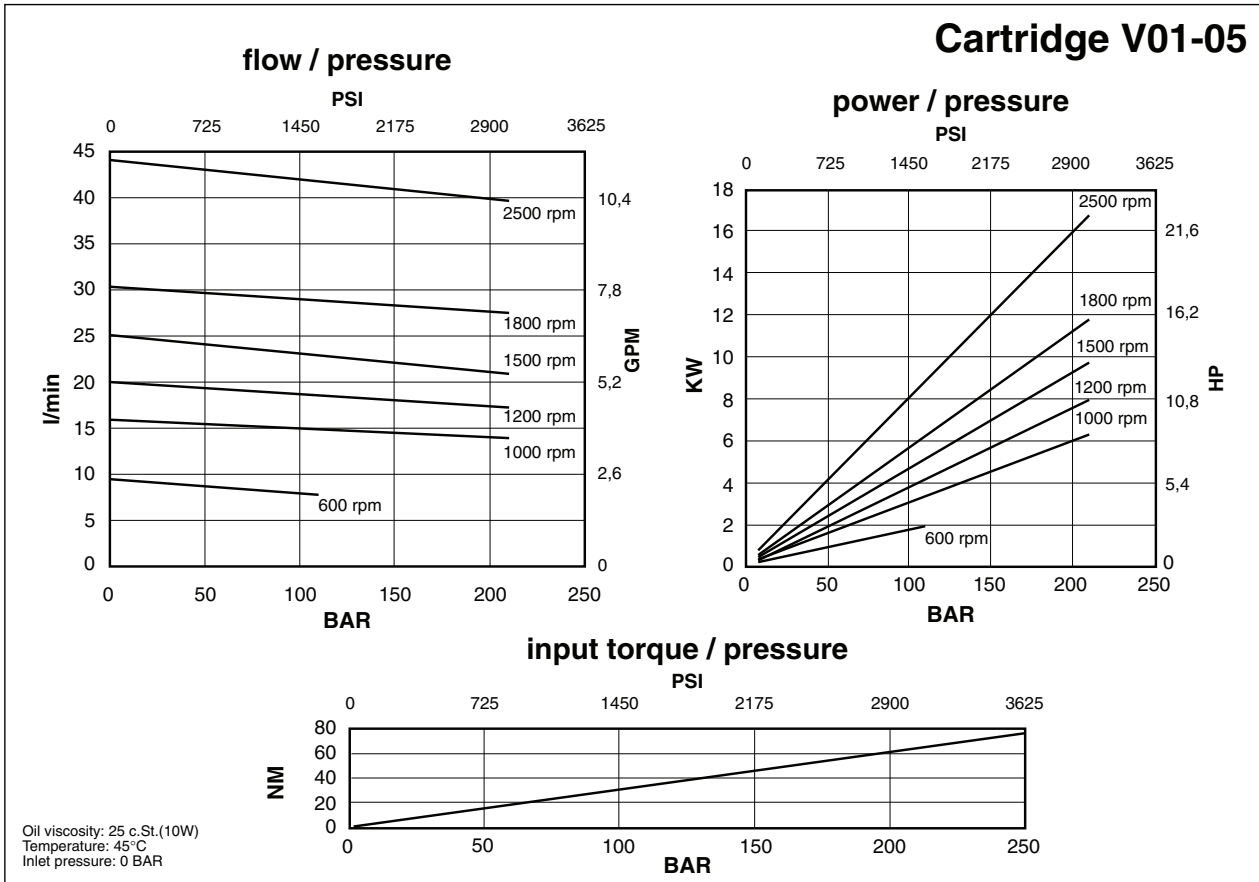


Cartridge V01-02

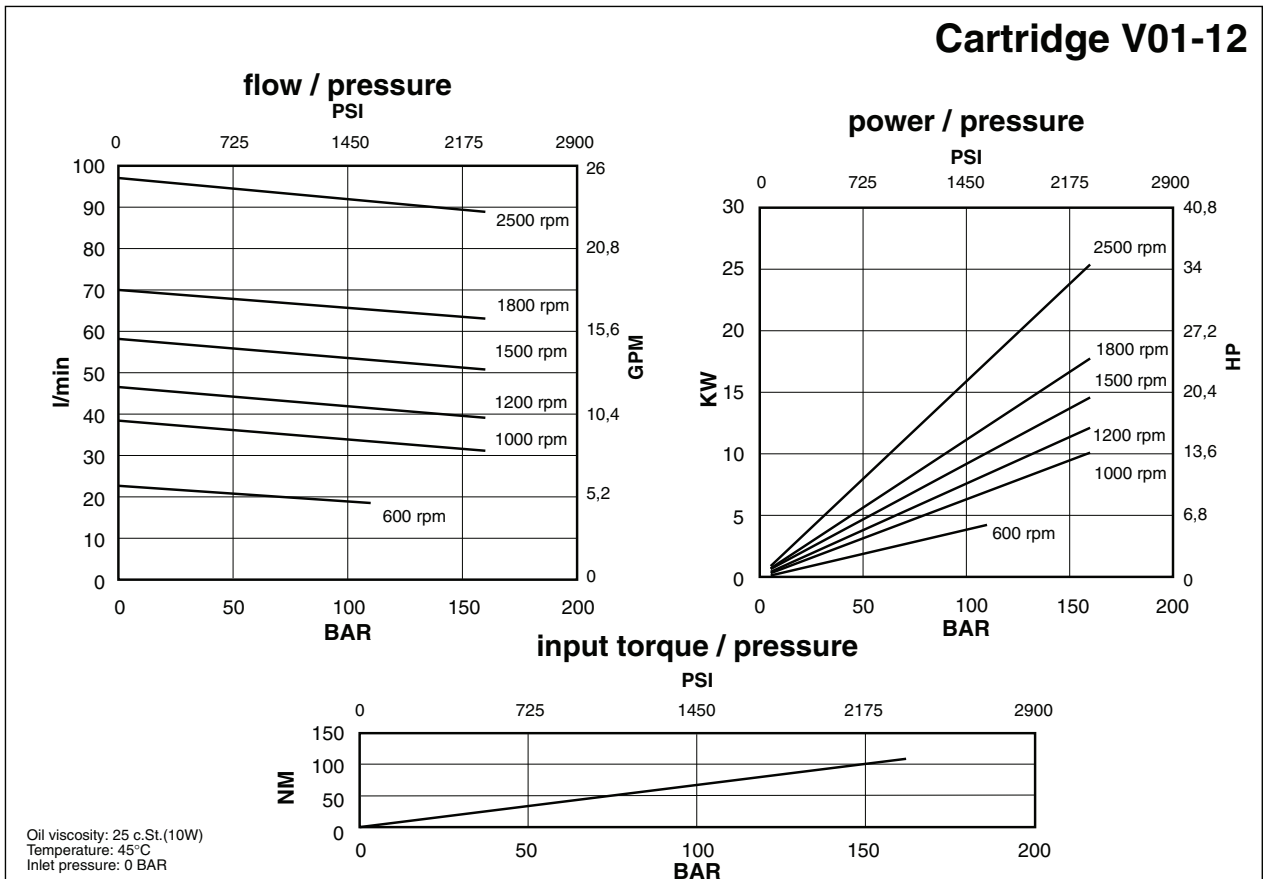
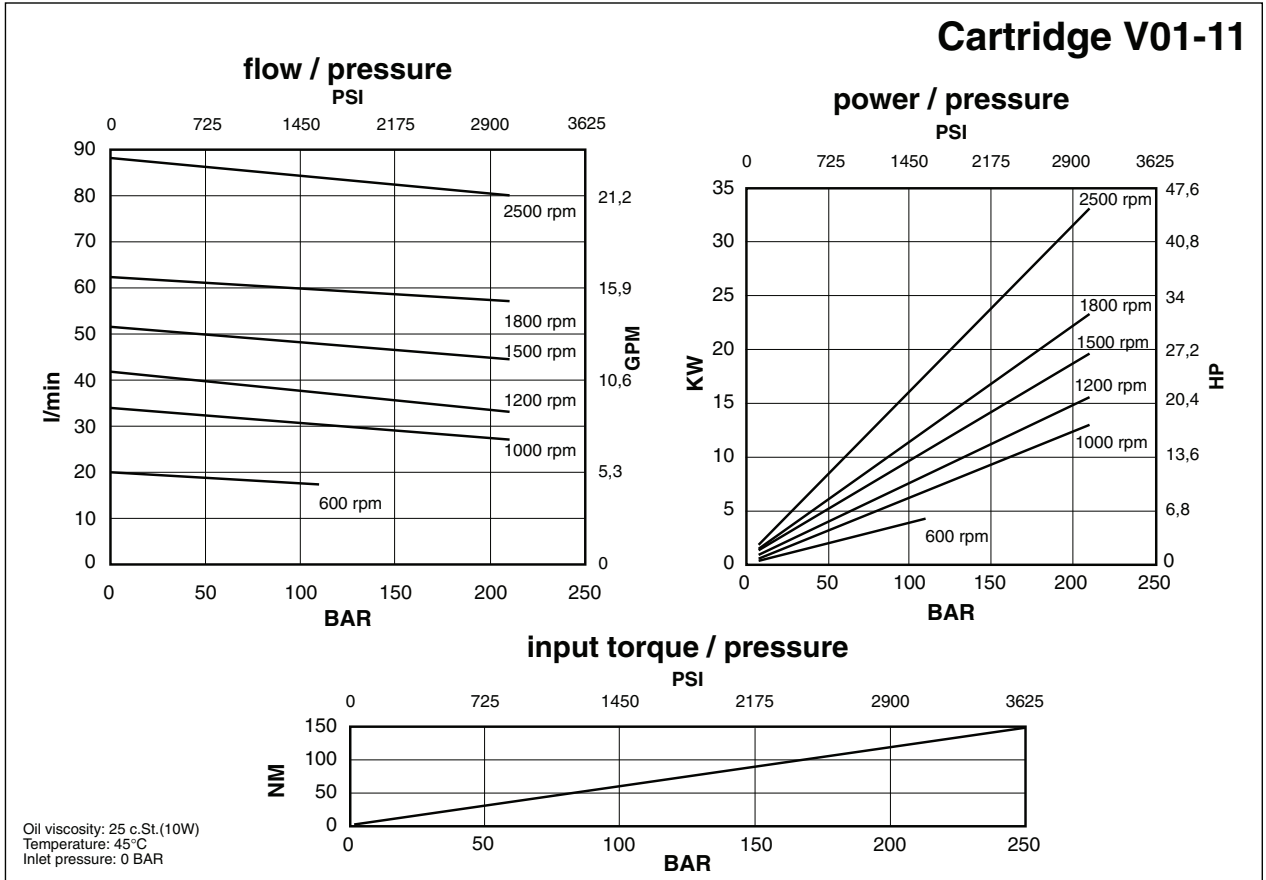


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Single Pump Type BV01

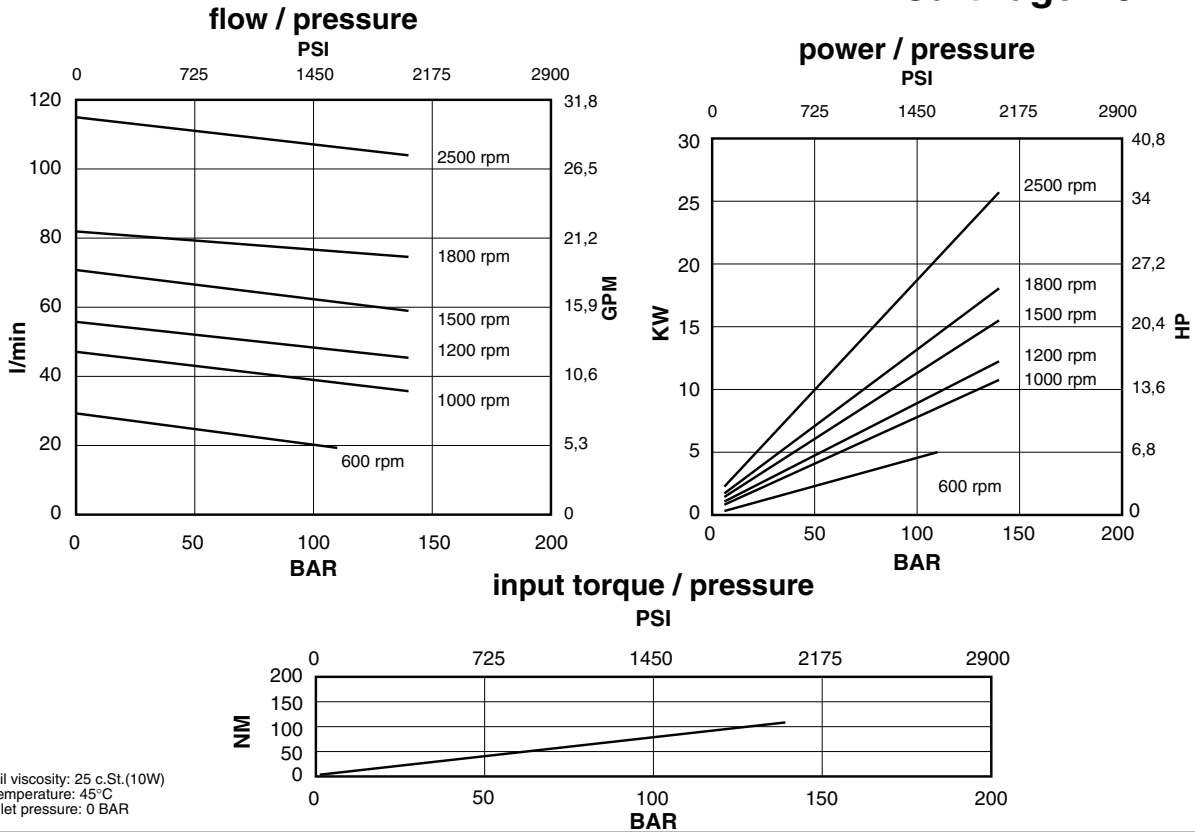


Single Pump Type BV01

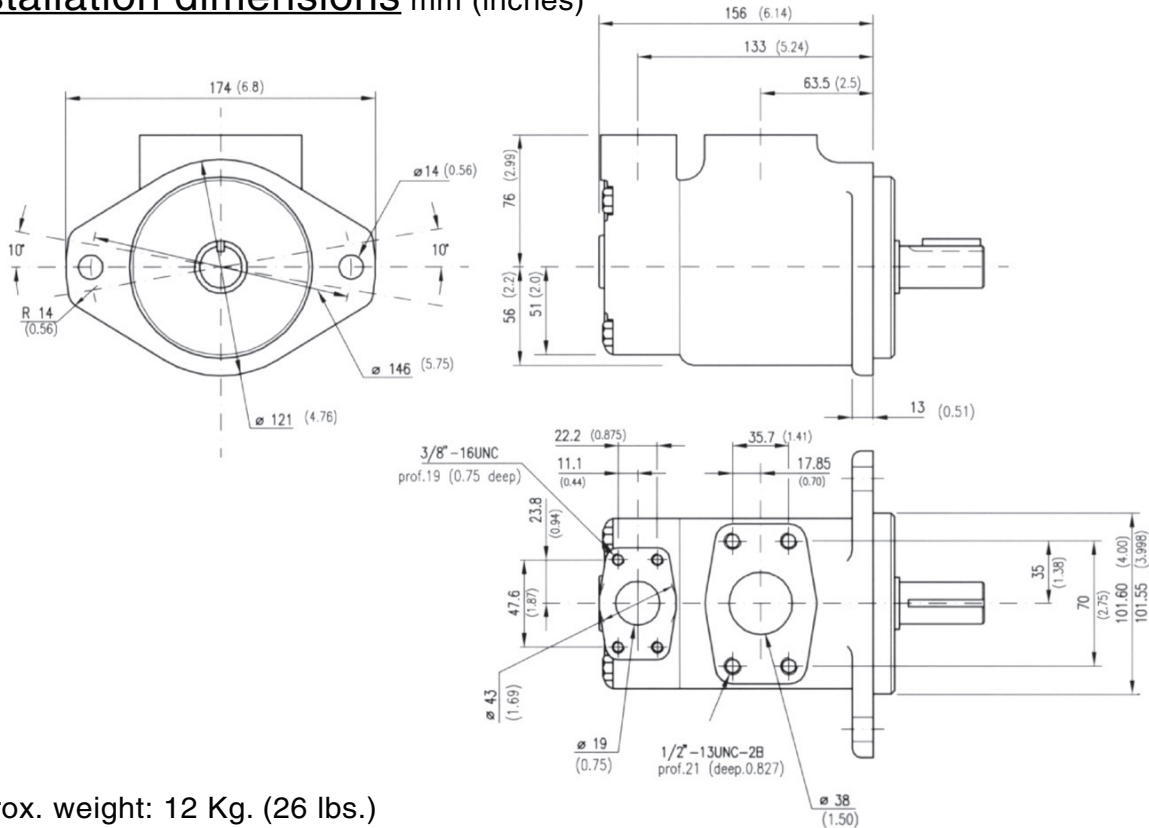


Single Pump Type BV01

Cartridge V01-14



Installation dimensions mm (inches)



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

Single Pump Type BV01

Model code breakdown

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

Pump series
BV

Pump type
01

Design
G

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

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®)

Rotation
(viewed from shaft end)

L = left hand rotation CCW (omit if CW)

Shaft end options

01 = Straight with key (standard)
11 = Splined
90 = Splined SAE B

Mounting (omit if not required)

Shaft options mm (inches)

Shaft 01

Shaft 11

Shaft 90

PORT ORIENTATIONS

Spline data
(shaft 11 and shaft 90)
Involute side fit (ASA B5.15)

| | |
|----------------|-------------------------------|
| Spline | |
| 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

The diagram shows an exploded view of the pump components. The main assembly consists of a Cartridge, a Shaft, a Body, a Seeger, a Cover, and a Shaft seal. Various sub-components like bearings, seals, and screws are also shown with their respective part numbers.

| Cartridge | | |
|-----------|-------|----------|
| Series | Model | Part No. |
| V01 | 02 | V0102003 |
| | 05 | V0105015 |
| | 08 | V0108035 |
| | 11 | V0111075 |
| | 12 | V0112095 |
| V01 | 14 | V0114115 |
| | 02 | V0102007 |
| | 05 | V0105025 |
| | 08 | V0108045 |
| | 11 | V0111085 |
| | 12 | V0112105 |
| | 14 | V0114125 |

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

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

| Key | |
|-------|----------|
| Model | Part No. |
| 01 | M8010100 |
| 11 | M8010100 |
| 90 | M8010100 |

| Body | |
|----------|------|
| Part No. | Type |
| 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. | Type |
| M8010030 | |

| Seeger | |
|----------|------|
| Part No. | Type |
| M8010050 | |

| Seeger | |
|----------|-----------------------|
| Part No. | Type |
| M8010500 | seals + 1 shaft seal |
| M8010501 | seals + 2 shaft seals |
| M8010503 | seals + 1 shaft seal |
| M8010504 | seals + 2 shaft seals |

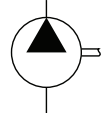
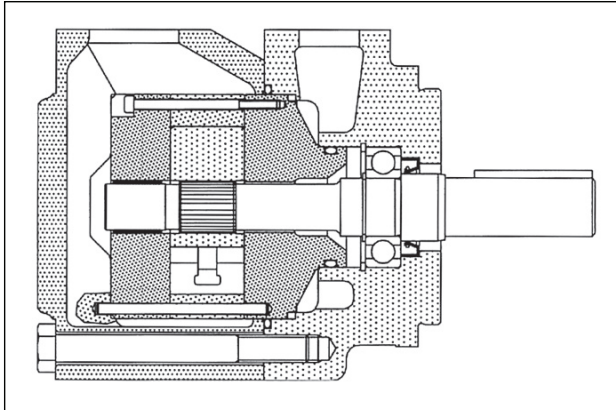
| Pump seal kit | |
|---------------|-----------------------|
| Part No. | Type |
| M8010500 | seals + 1 shaft seal |
| M8010501 | seals + 2 shaft seals |
| M8010503 | seals + 1 shaft seal |
| M8010504 | seals + 2 shaft seals |

| Cover | |
|----------|------|
| Part No. | Type |
| M8020120 | |

| Screw | |
|----------|------|
| Part No. | Type |
| 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 characteristics

| 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*).

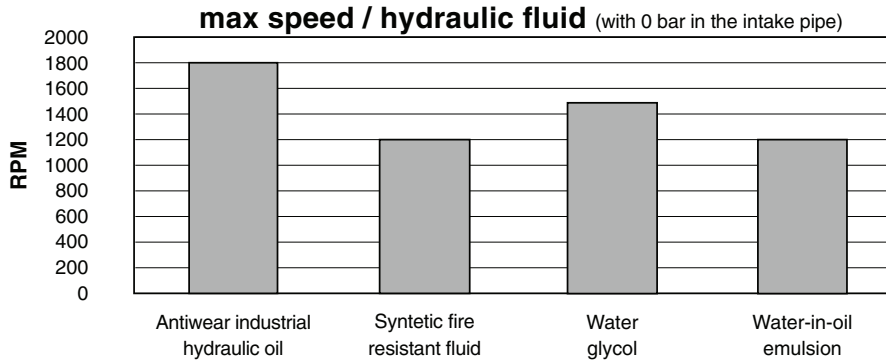
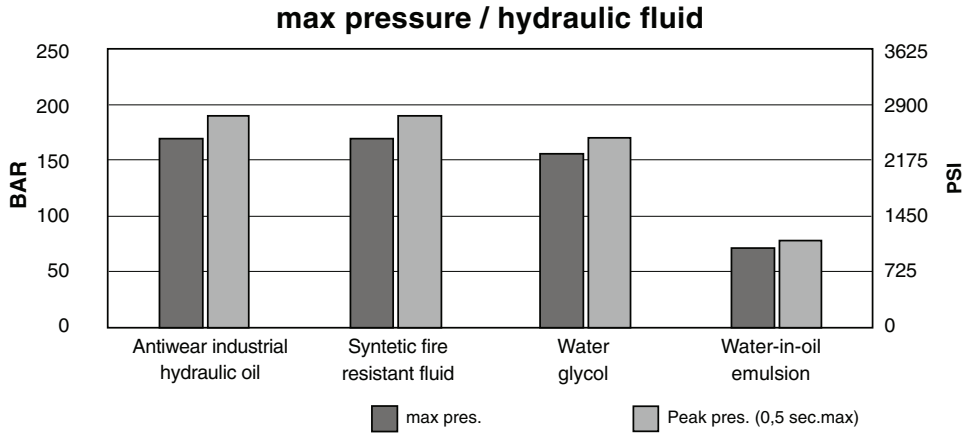
Inlet pressure: (*with mineral oil*): from -0,17 to +1,4 bar (*-2.5 to + 20 psi*)

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

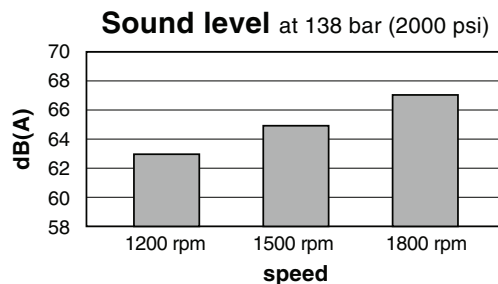
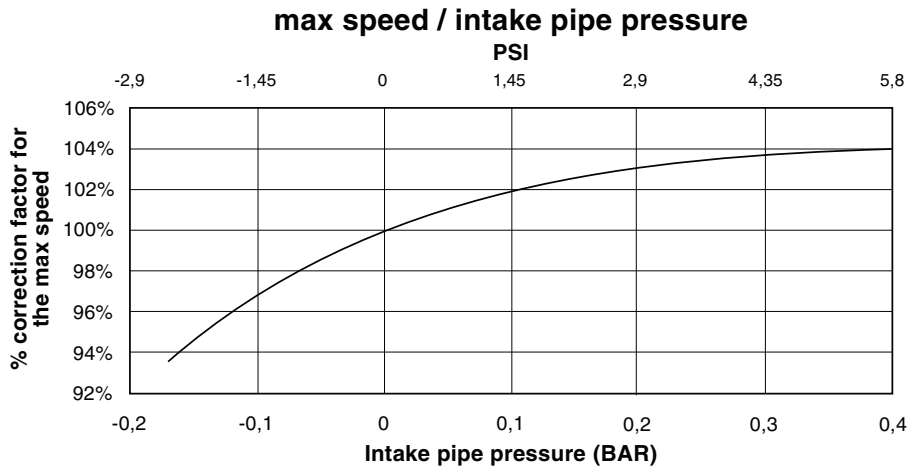
Drive: direct and coaxial by means of a flexible coupling.

Single Pump Type BV02

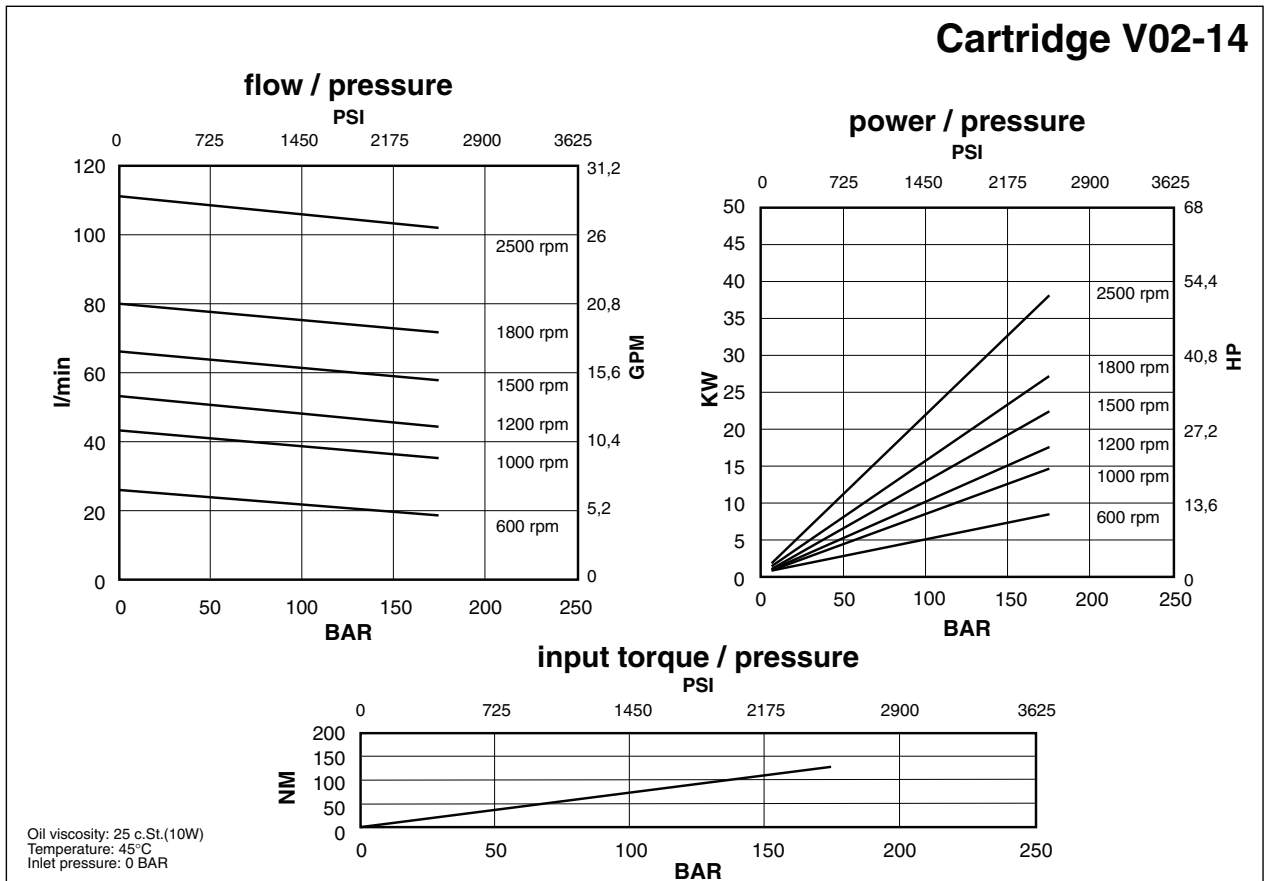
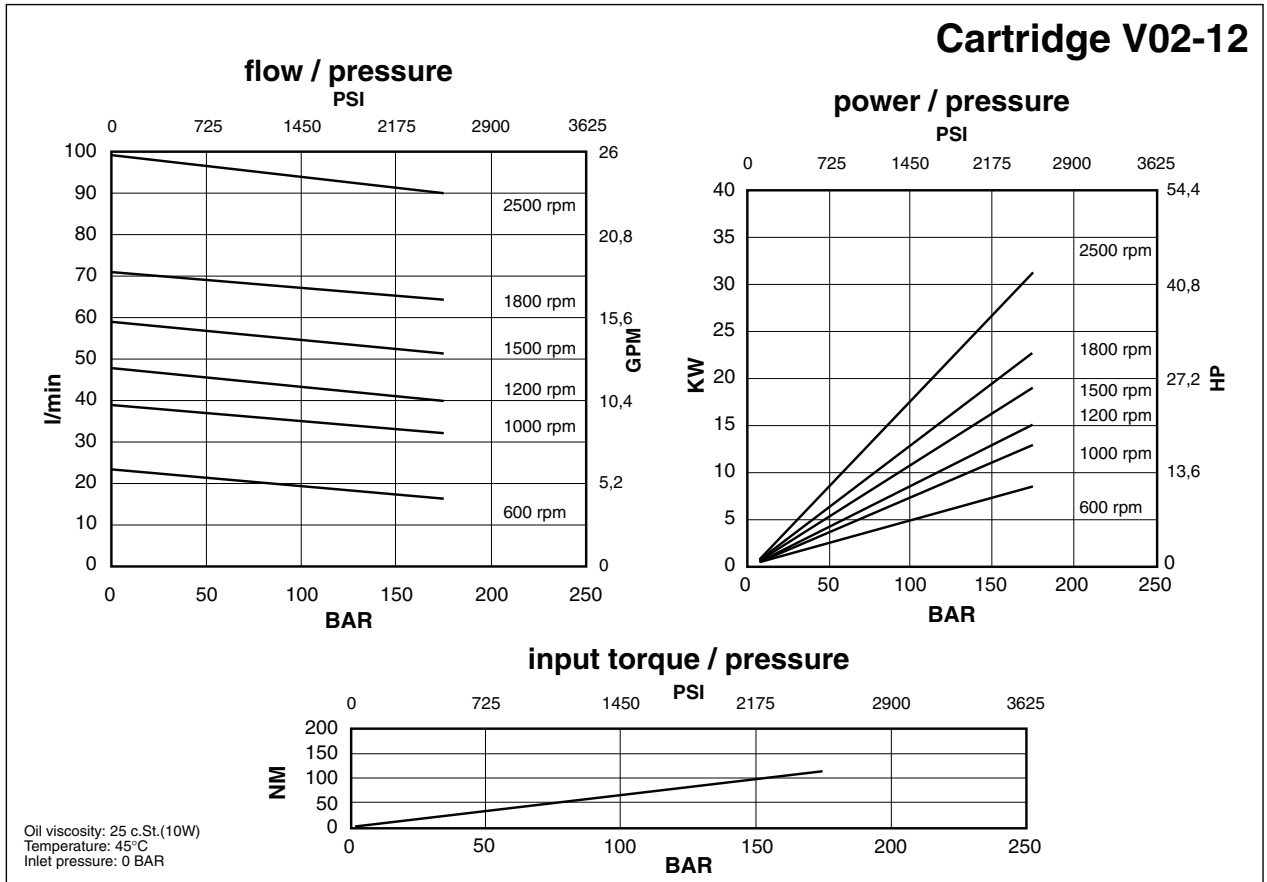
Main operating data



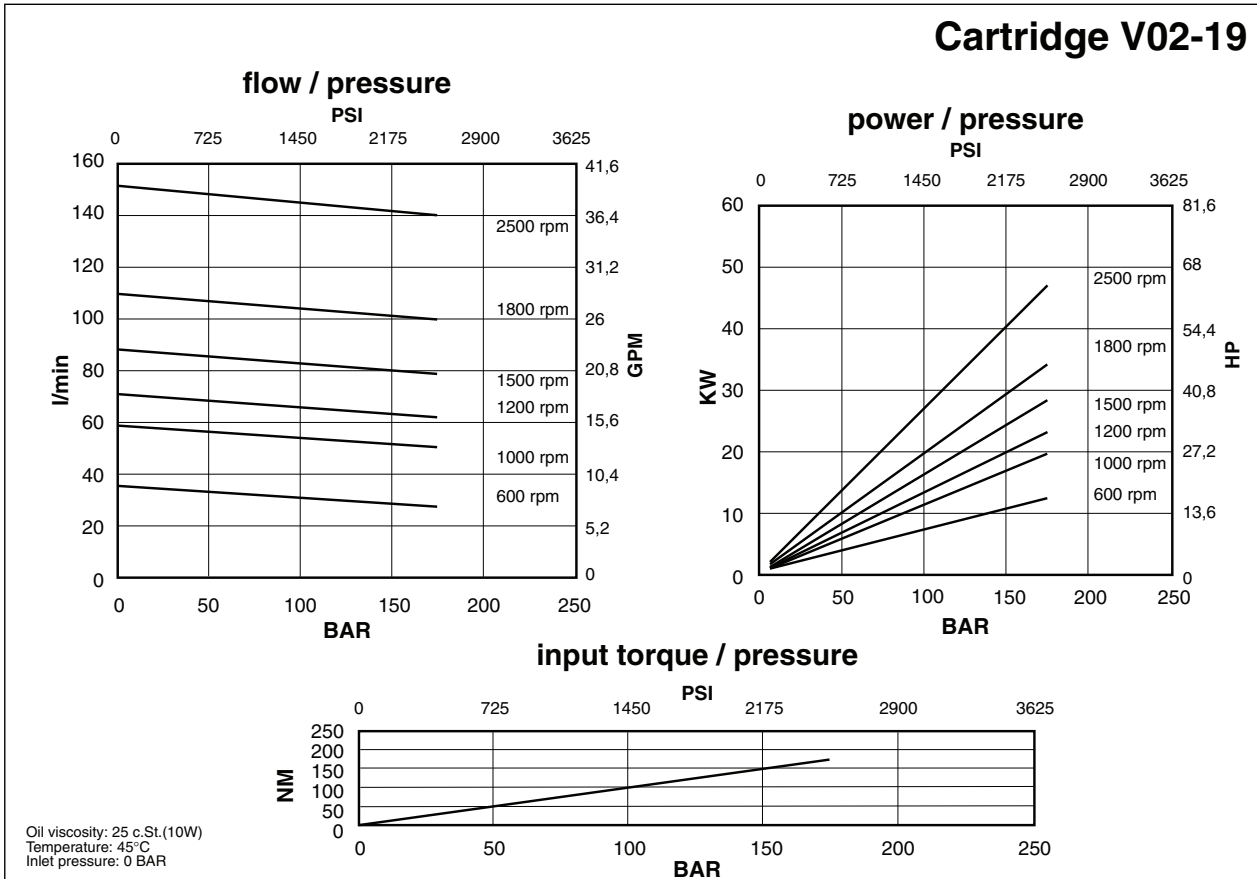
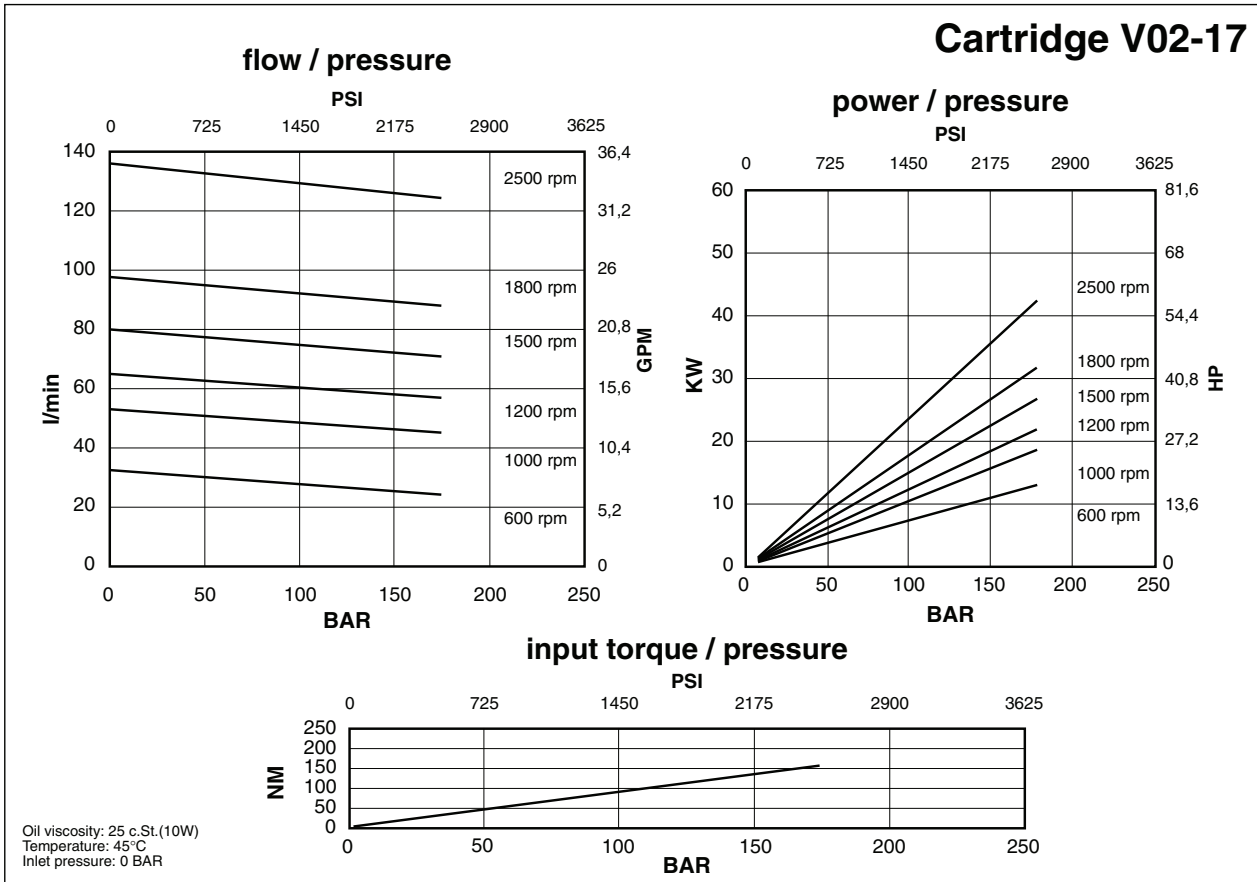
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed



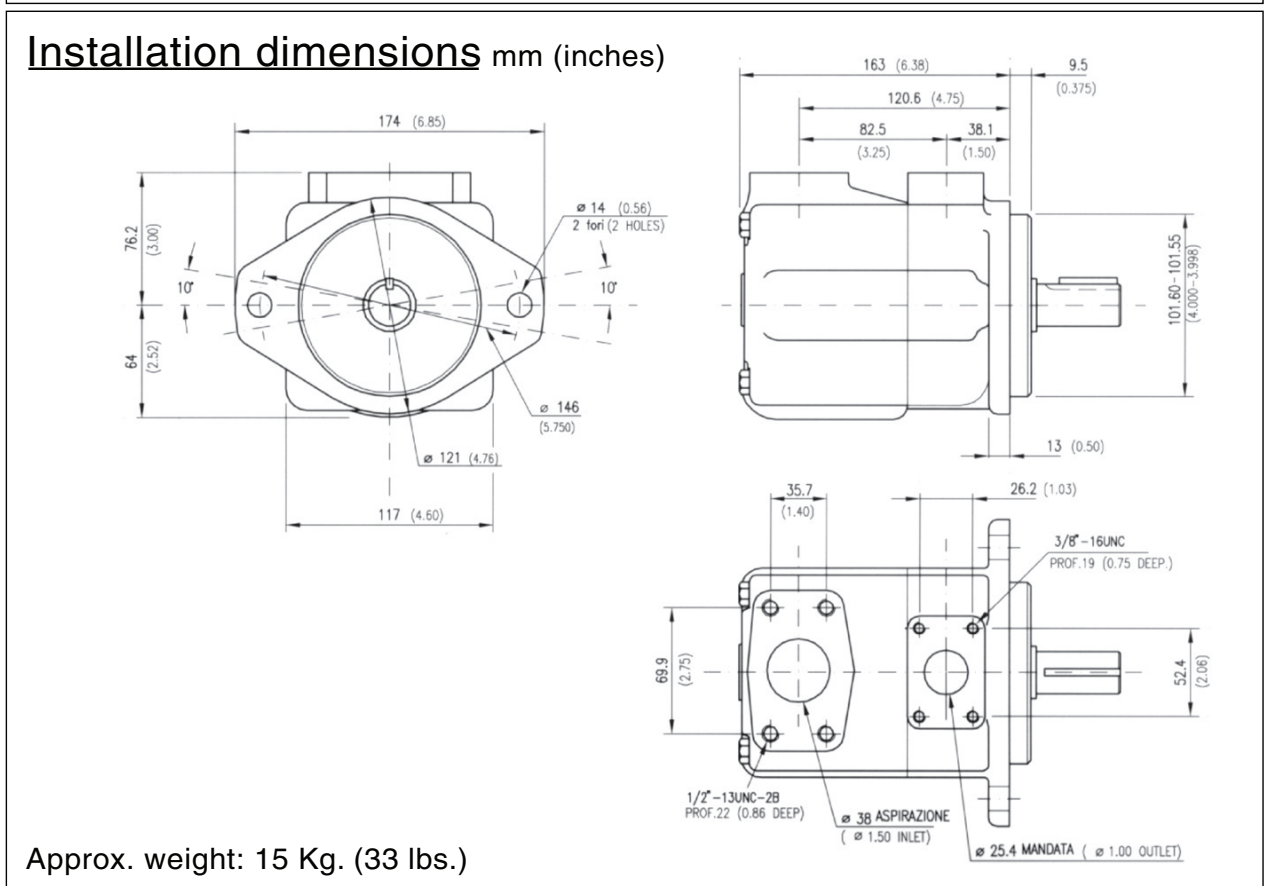
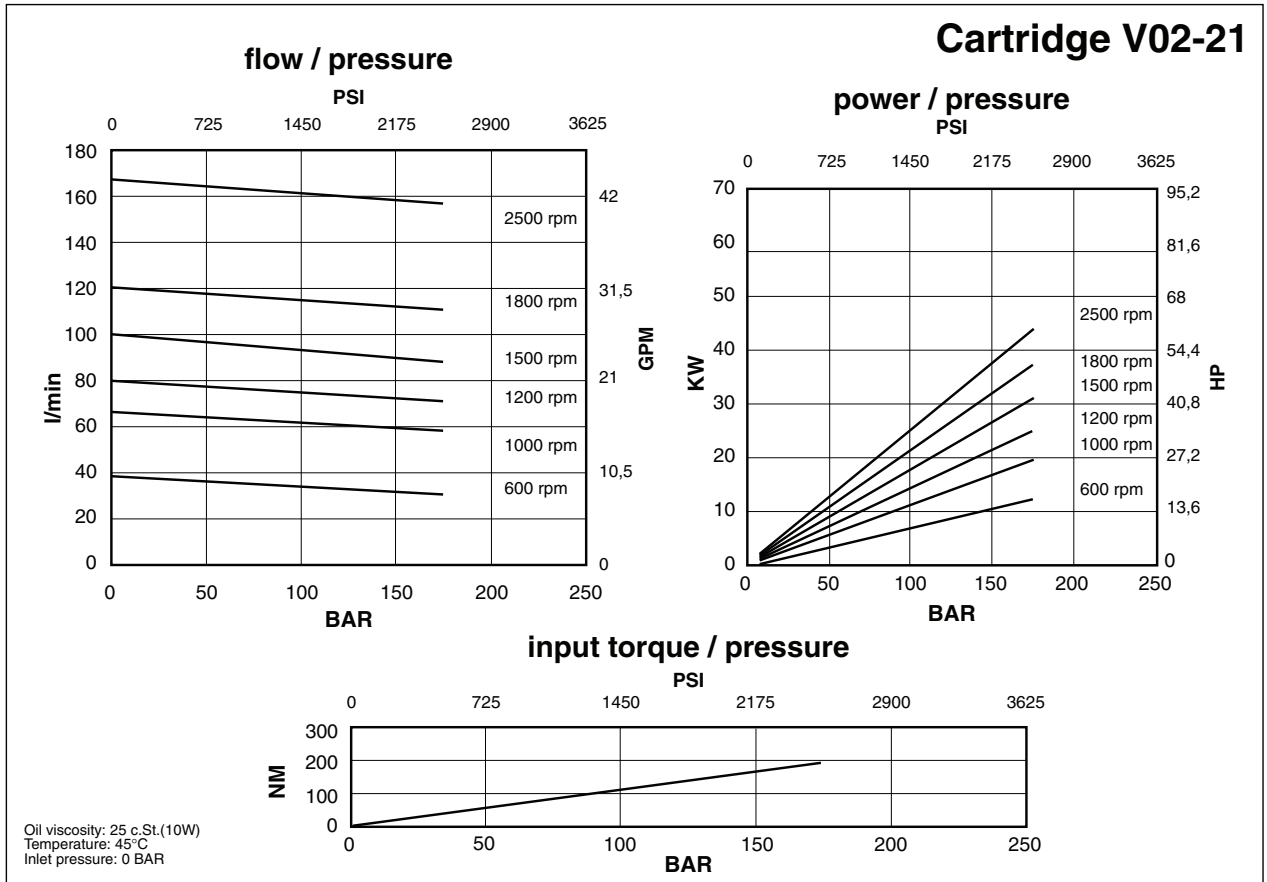
Single Pump Type BV02



Single Pump Type BV02

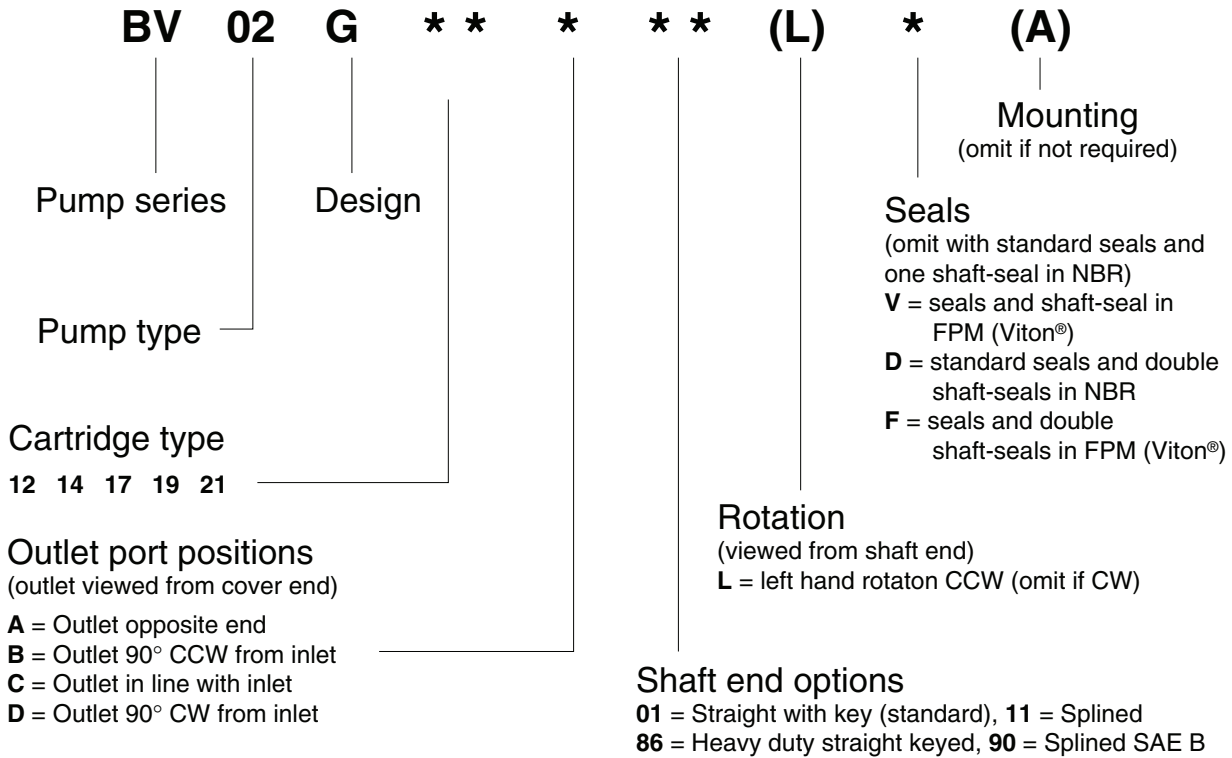


Single Pump Type BV02

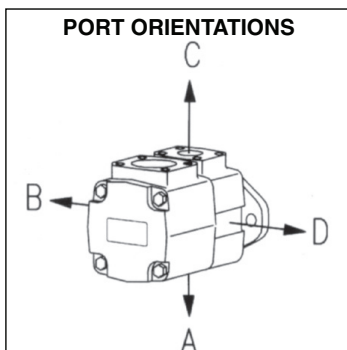
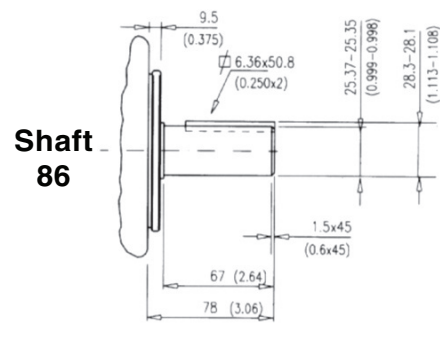
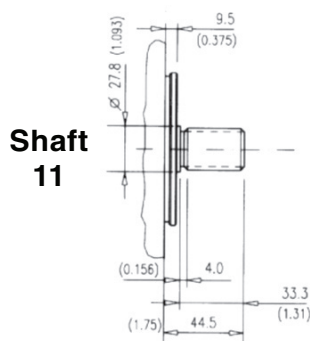
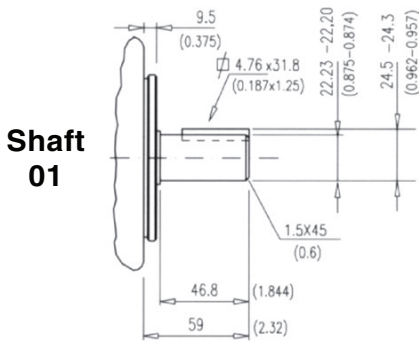


Single Pump Type BV02

Model code breakdown

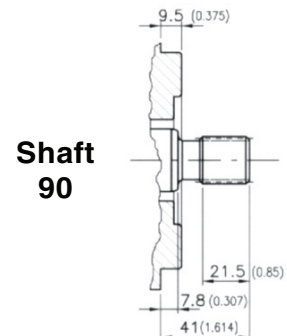


Shaft options mm (inches)



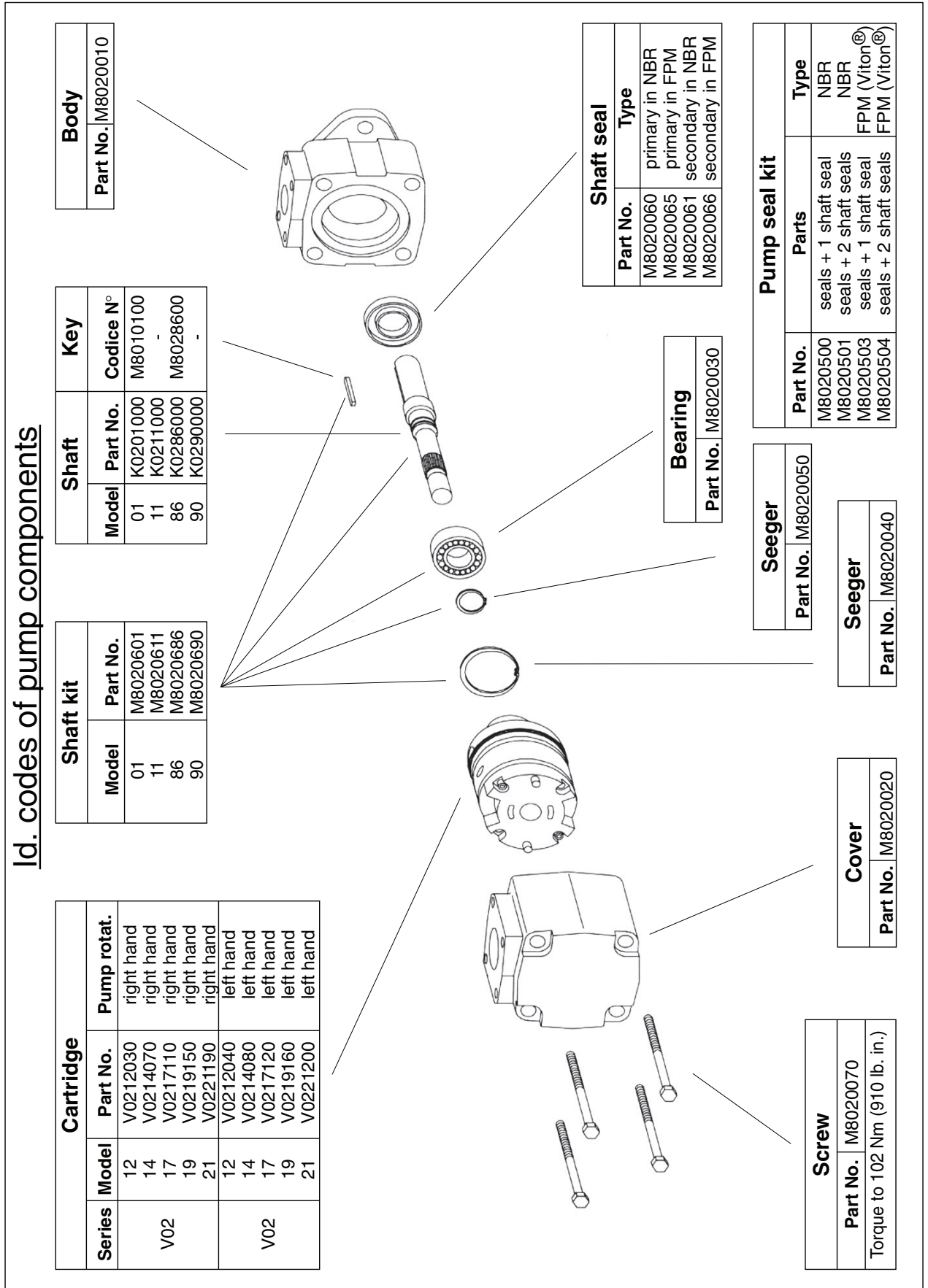
Spline data
(shaft 11 and shaft 90)
Involute side fit (ASA B5.15)

| | |
|----------------|-------------------------------|
| Spline | |
| 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 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. | Model | Codice N° |
| 01 | K0201000 | M8010100 | |
| 11 | K0211000 | | |
| 86 | K0286000 | M8028600 | |
| 90 | K0290000 | | |

| Body | |
|----------|----------|
| Part No. | M8020010 |

| Bearing | |
|----------|----------|
| Part No. | M8020030 |

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

| Seeger | |
|----------|----------|
| Part No. | M8020050 |

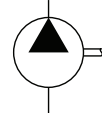
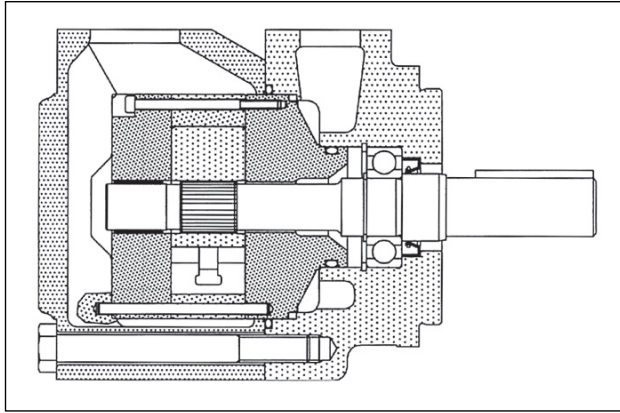
| Seeger | |
|----------|----------|
| Part No. | M8020040 |

| Cover | |
|----------|----------|
| Part No. | M8020020 |

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

| 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®) |

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 characteristics

| 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*).

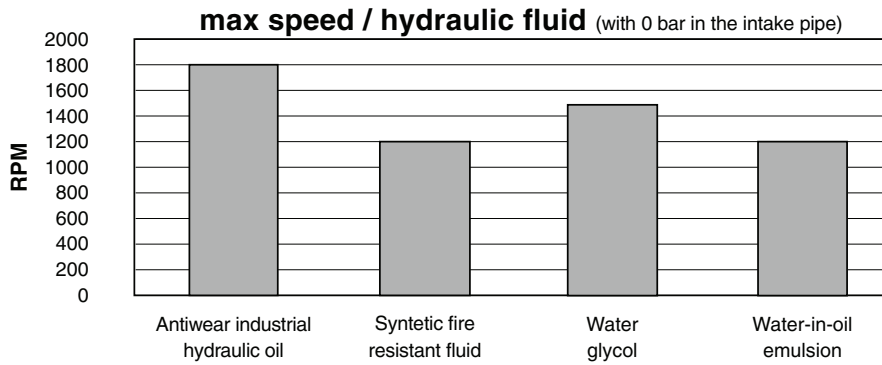
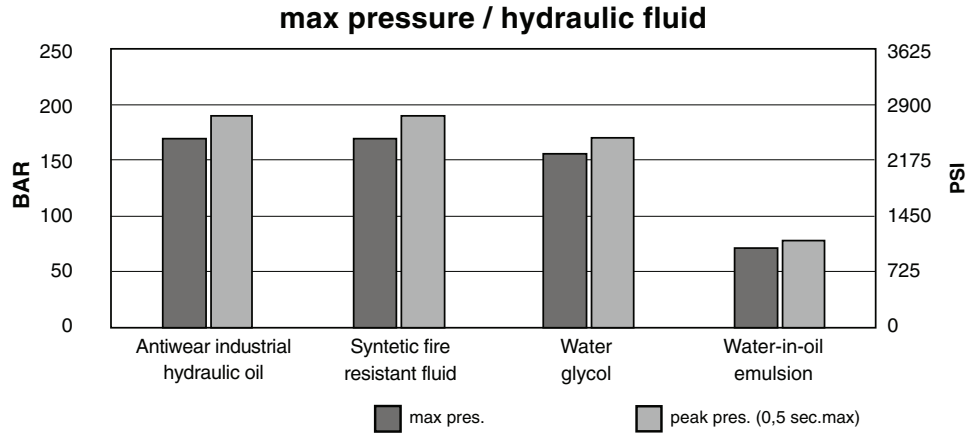
Inlet pressure: (*with mineral oil*): from -0,17 to +1,4 bar (*-2.5 to + 20 psi*)

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

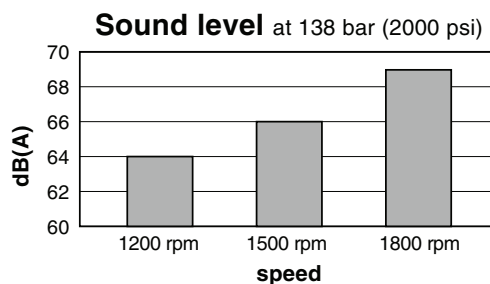
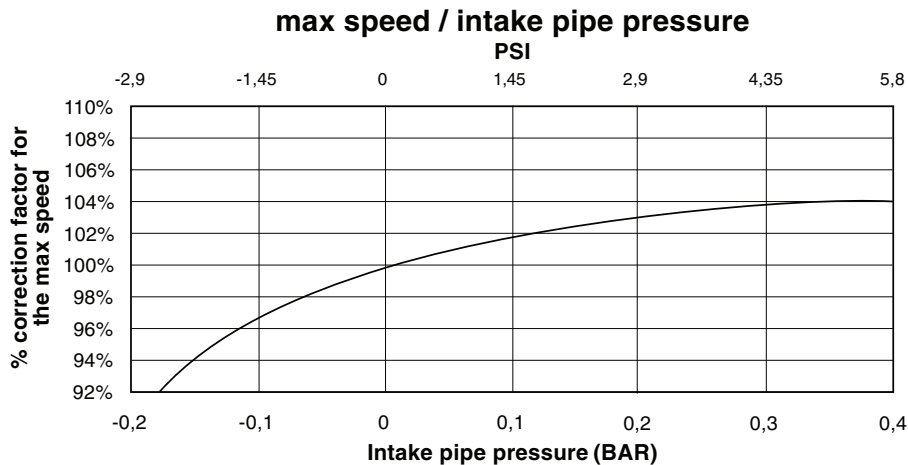
Drive: direct and coaxial by means of a flexible coupling.

Single Pump Type BV04

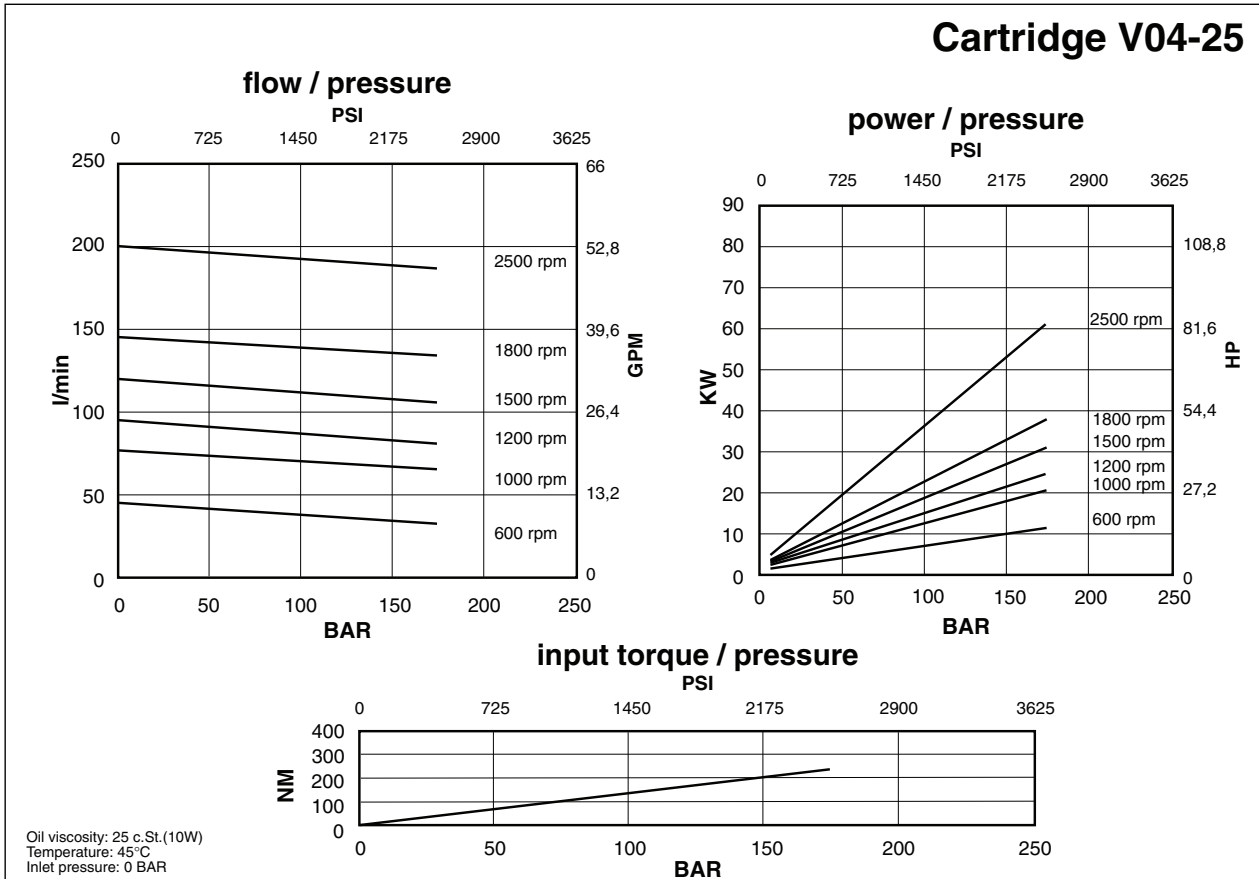
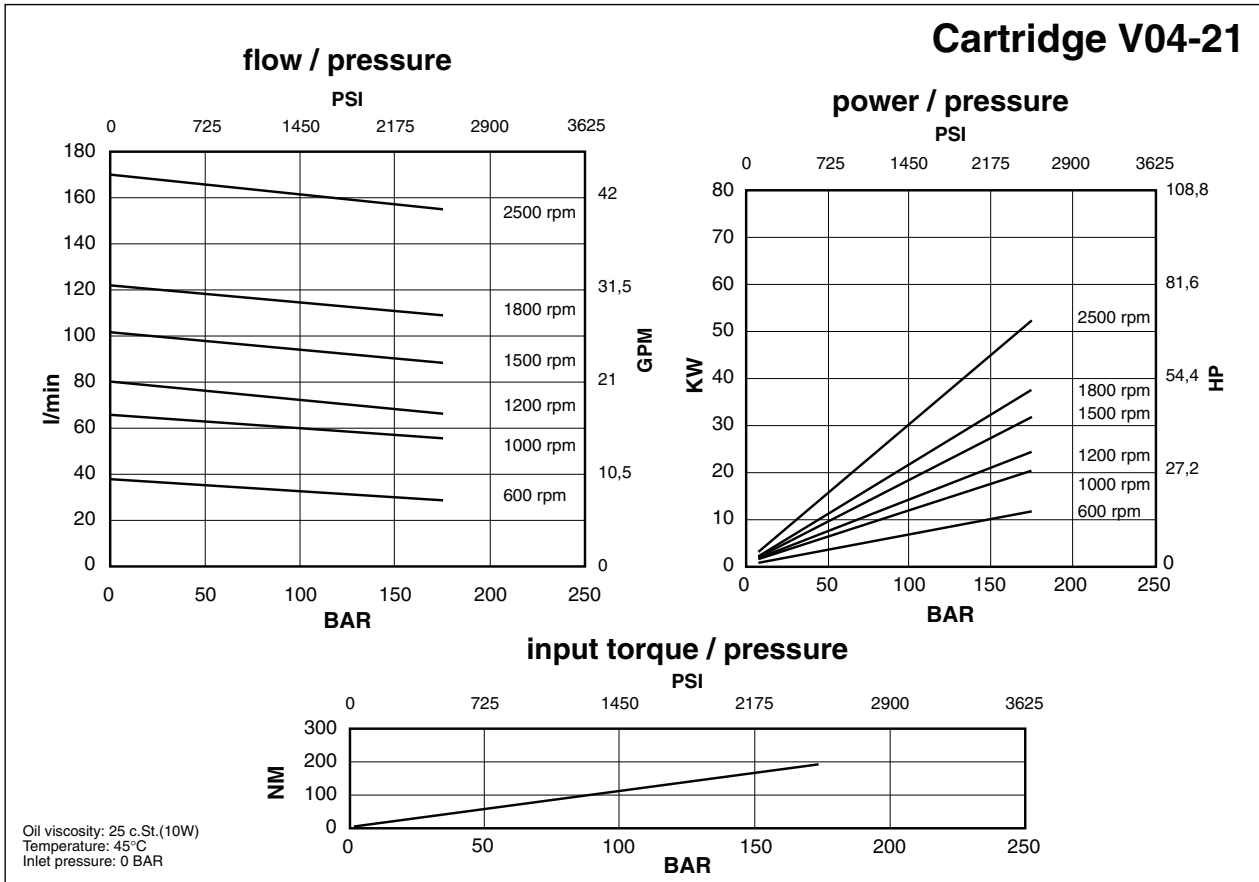
Main operating data



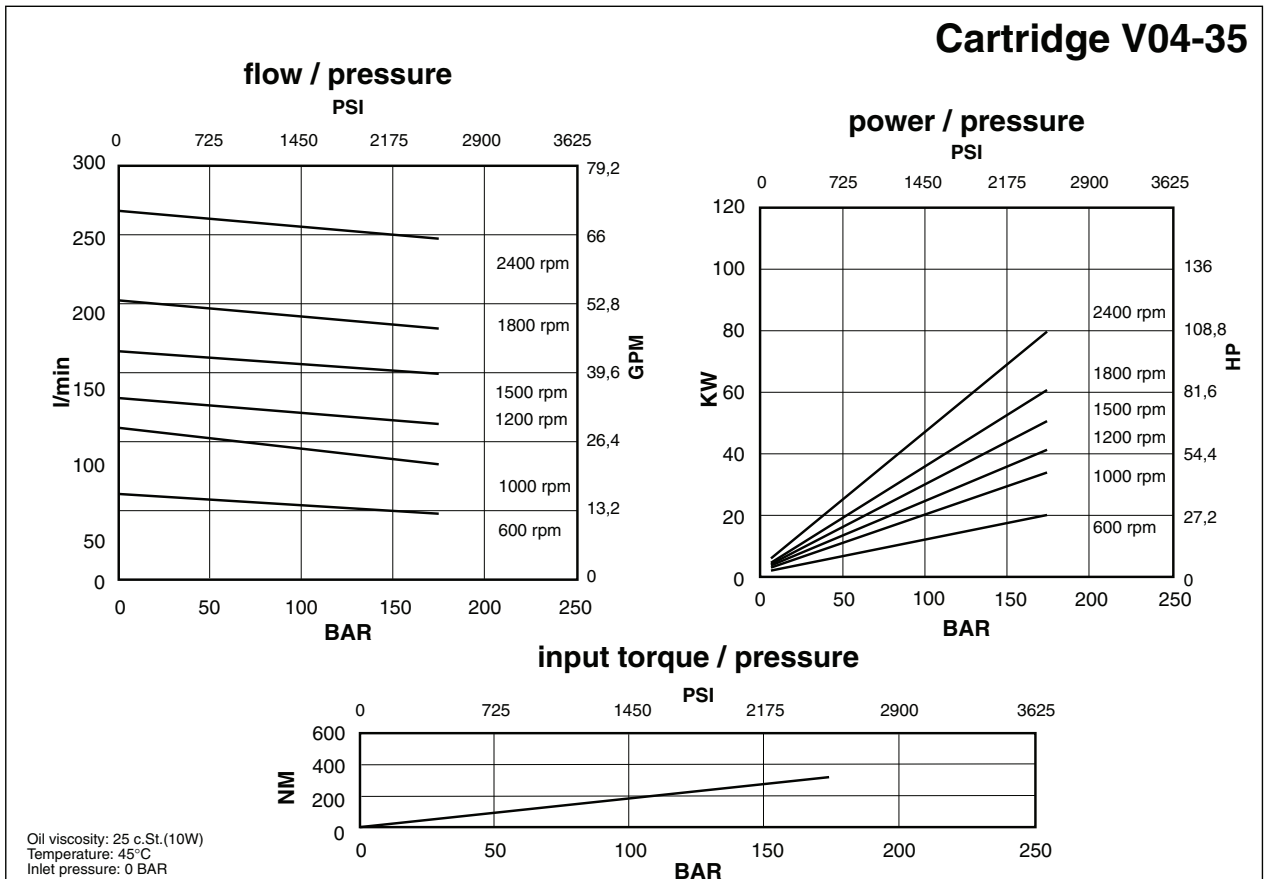
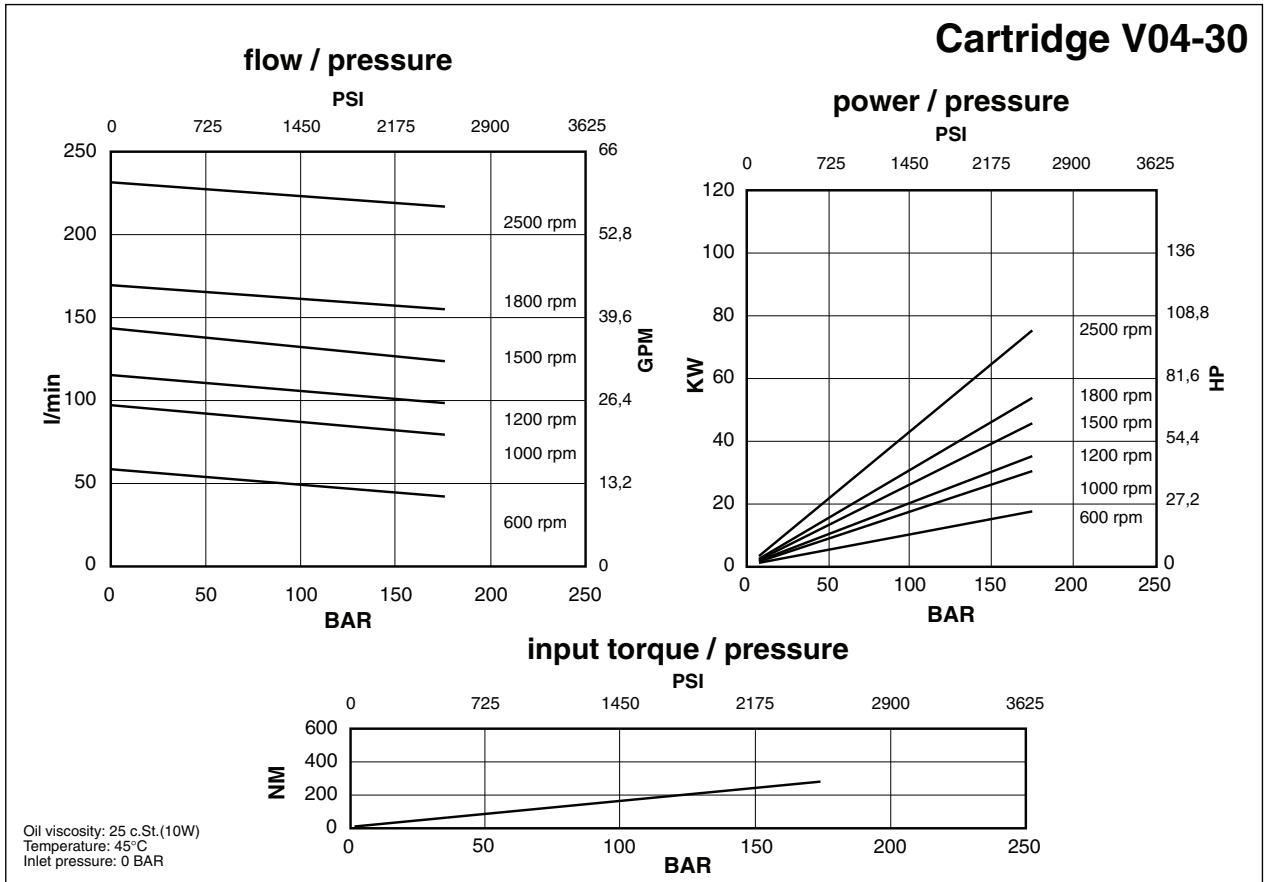
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed



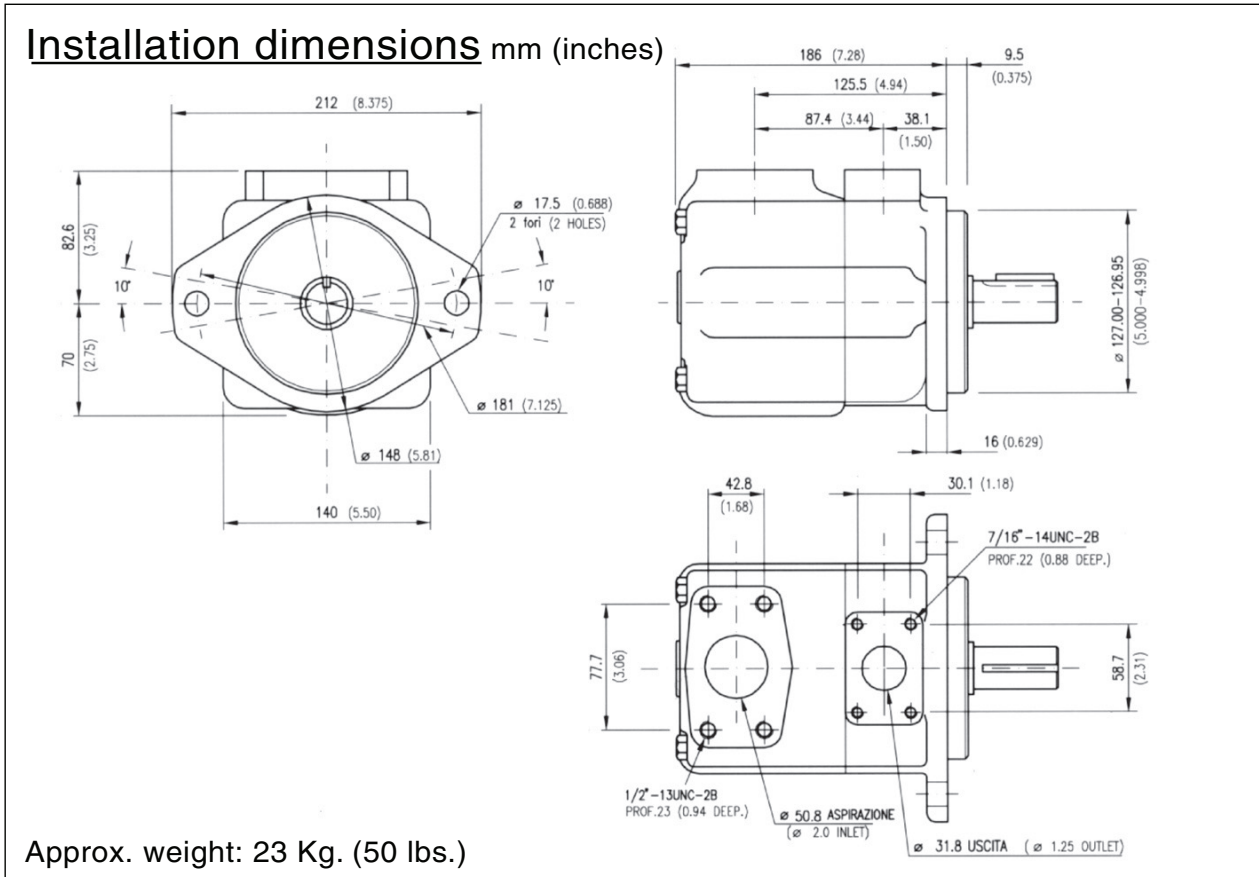
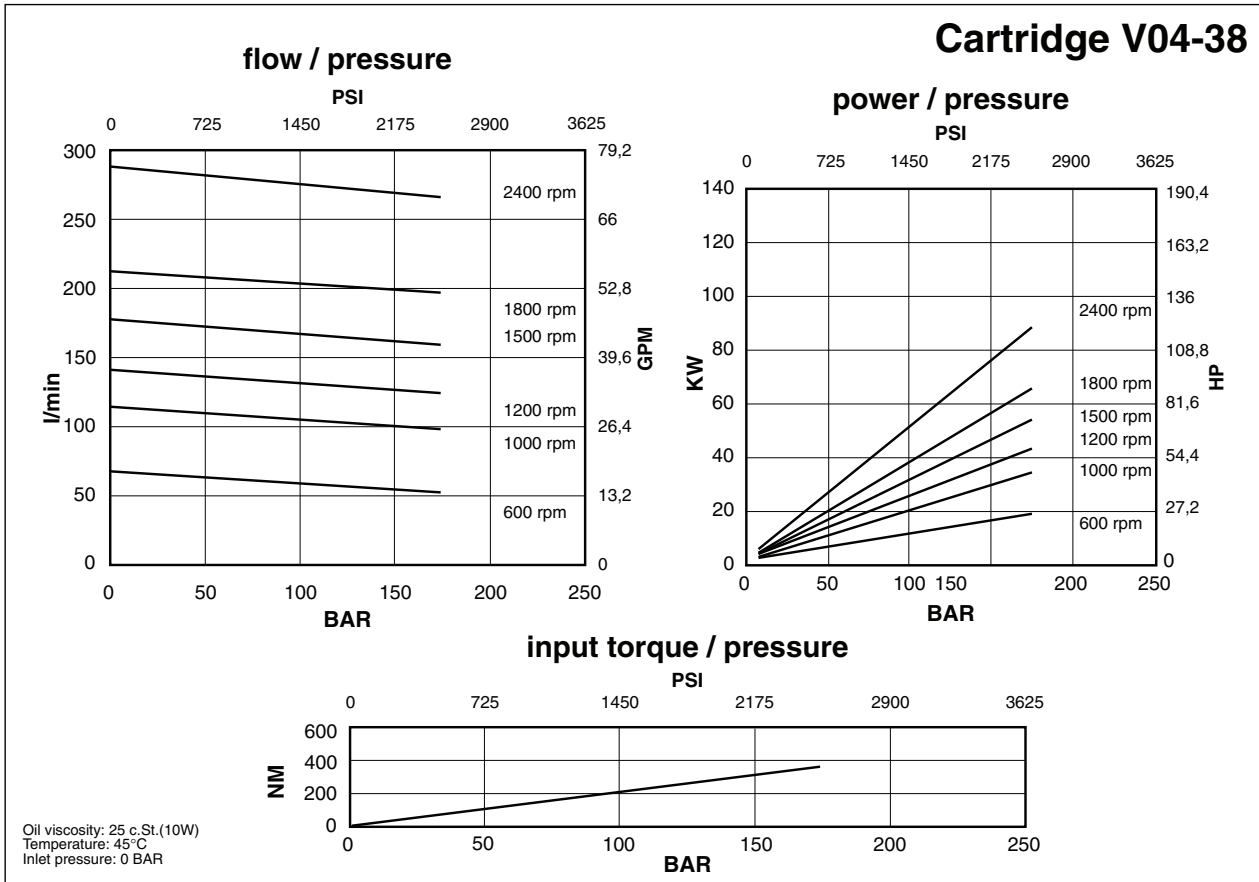
Single Pump Type BV04



Single Pump Type BV04



Single Pump Type BV04



Single Pump Type BV04

Model code breakdown

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

Pump series
BV 04

Design
G

Pump type
* * * *

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

Mounting
(omit if not required)

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®)

Rotation
(viewed from shaft end)

L = left hand rotation CCW (omit if CW)

Shaft end options
01 = Straight with key (standard), **11** = Splined
86 = Heavy duty straight keyed, **90** = Splined SAE C

Shaft options mm (inches)

Shaft 01

Shaft 11

Shaft 86

PORT ORIENTATIONS

Spline data
(shaft 11 and shaft 90)

Involute side fit (ASA B5.15)

| | |
|----------------|-------------------------------|
| Spline | |
| 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

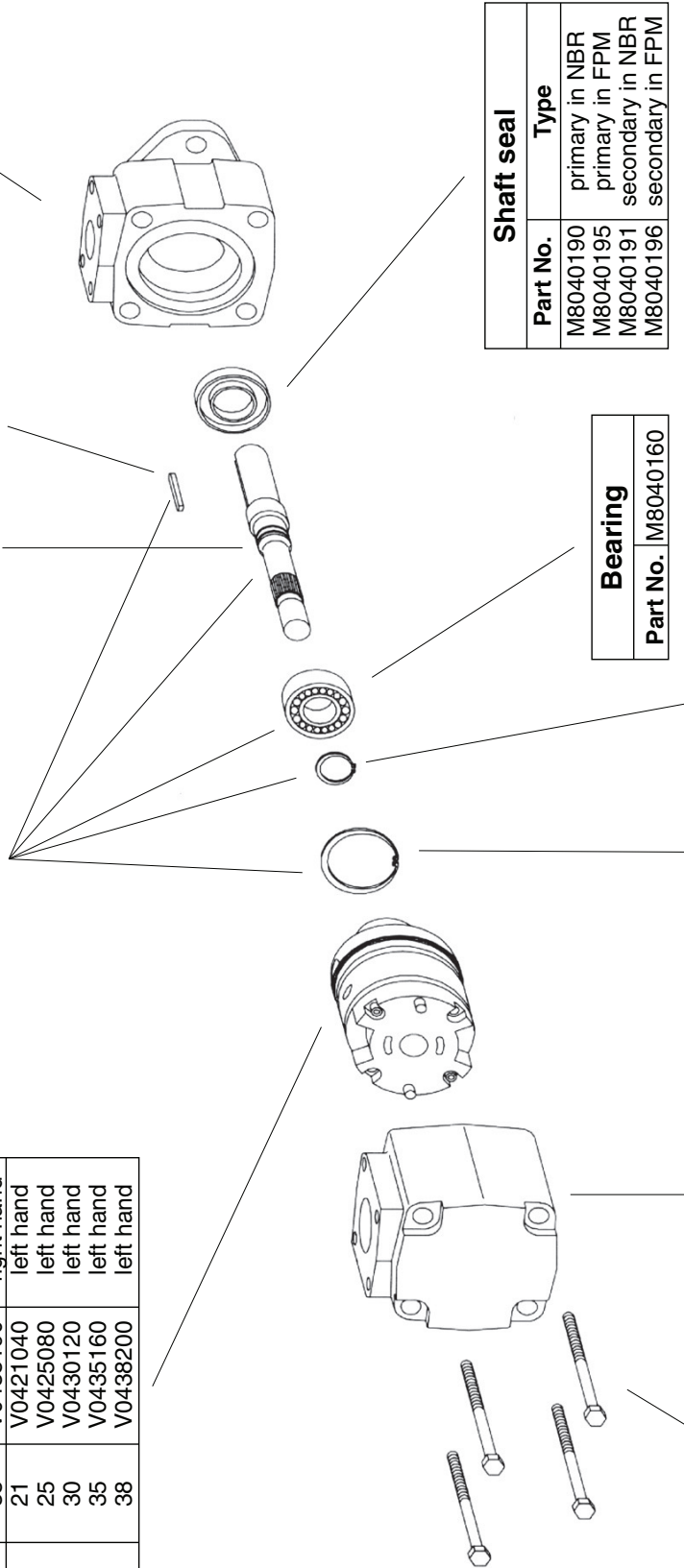
Id. codes of pump components

| Cartridge | | | |
|-----------|-------|----------|-------------|
| Series | Model | Part No. | Pump rotat. |
| V04 | 21 | V0421030 | right hand |
| | 25 | V0425070 | right hand |
| | 30 | V0430110 | right hand |
| | 35 | V0435150 | right hand |
| V04 | 38 | V0438190 | right hand |
| | 21 | V0421040 | left hand |
| | 25 | V0425080 | left hand |
| | 30 | V0430120 | left hand |
| V04 | 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. | Part No. |
| 01 | K0401000 | M8040100 | |
| 11 | K0411000 | | |
| 86 | K0486000 | M8048600 | |
| 90 | K0490000 | | |

| Body | |
|----------|----------|
| Part No. | 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. | Part No. |
| M8040160 | |

| 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®) |

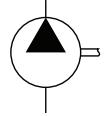
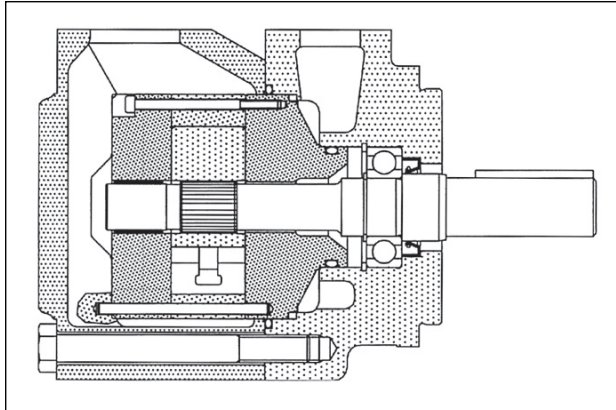
| Seeger | |
|----------|----------|
| Part No. | Part No. |
| M8040180 | |

| Seeger | |
|----------|----------|
| Part No. | Part No. |
| M8040170 | |

| Cover | |
|----------|----------|
| Part No. | Part No. |
| M8040150 | |

| Screw | |
|---------------------------------|----------|
| Part No. | 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 characteristics

| 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*).

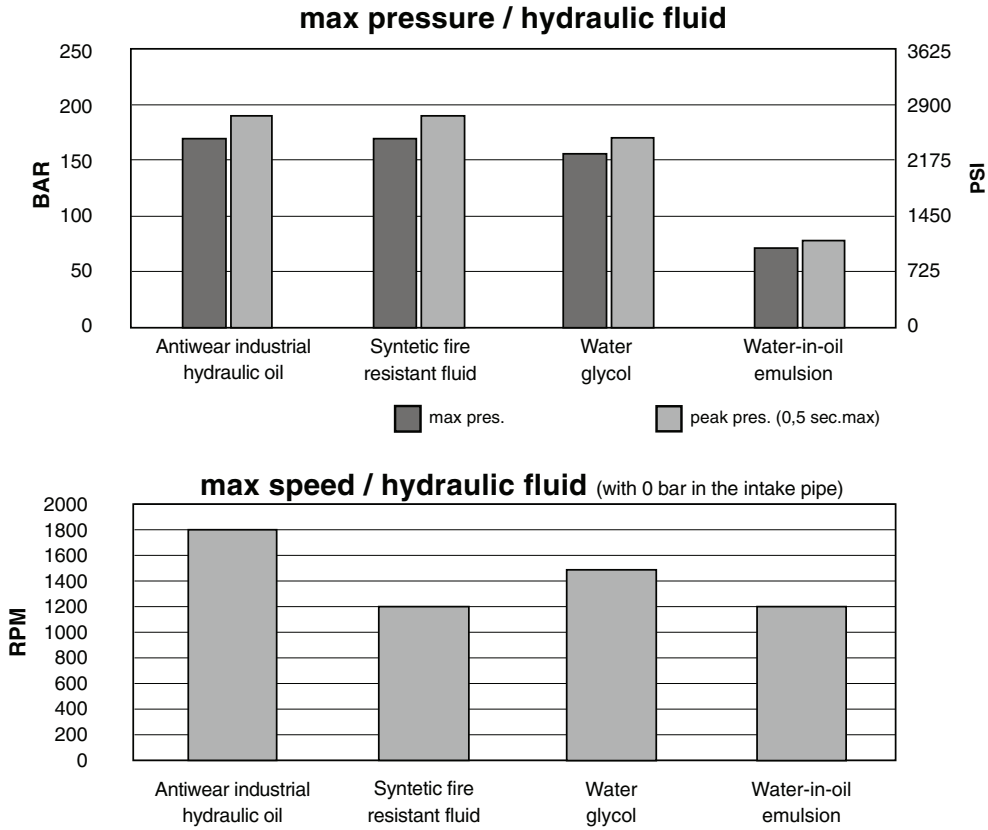
Inlet pressure: (*with mineral oil*): from -0,17 to +1,4 bar (*-2.5 to + 20 psi*)

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

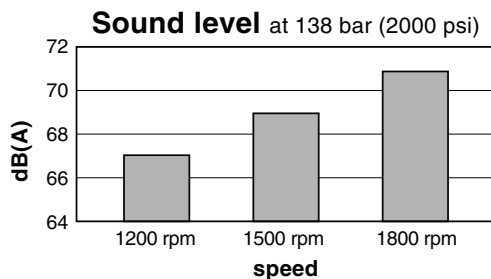
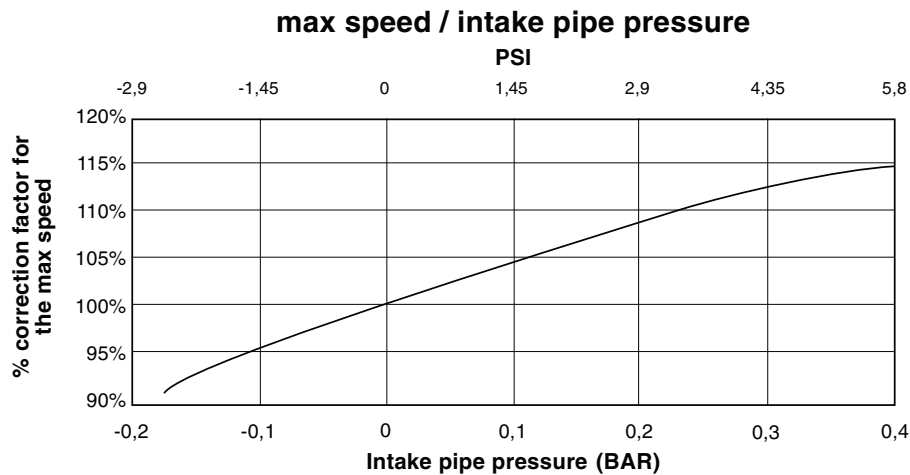
Drive: direct and coaxial by means of a flexible coupling.

Single Pump Type BV05

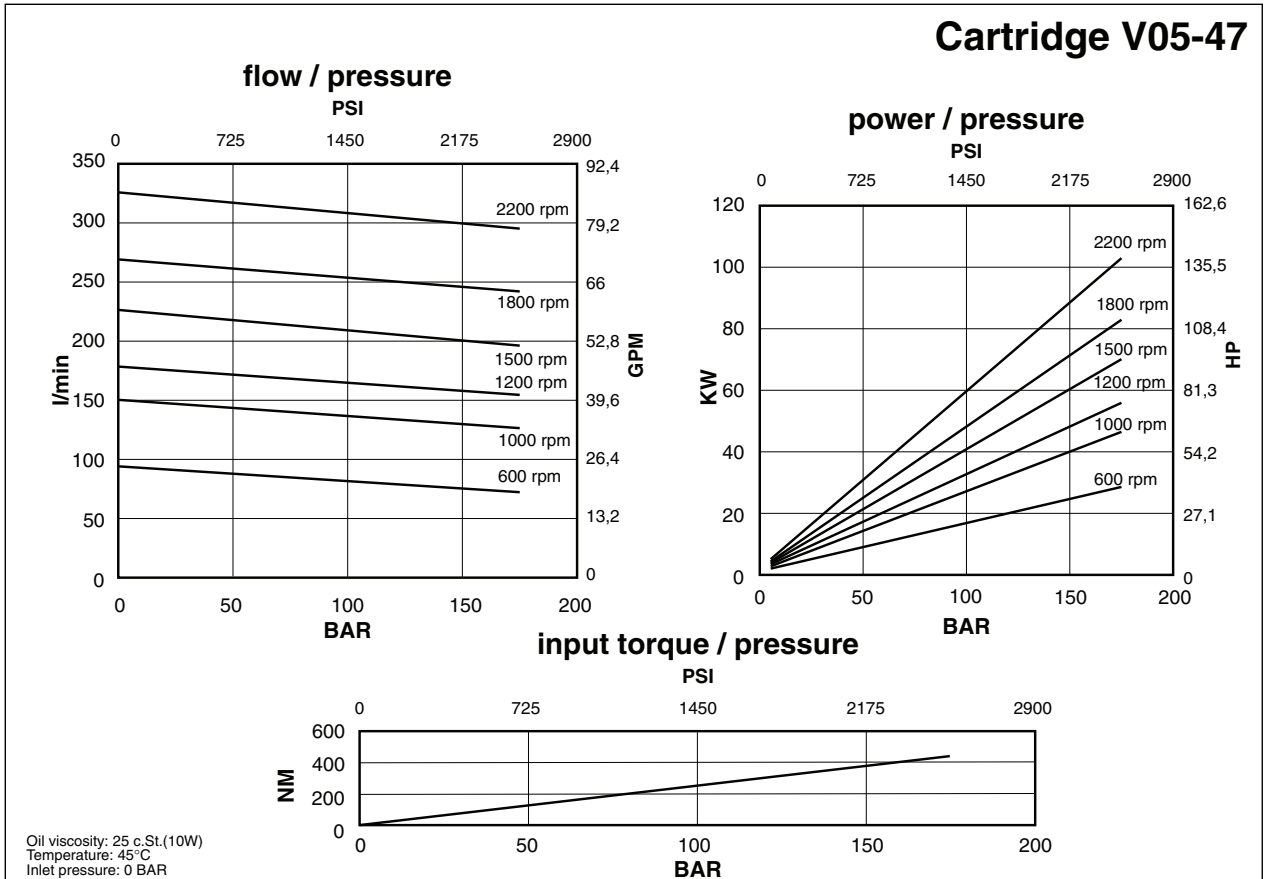
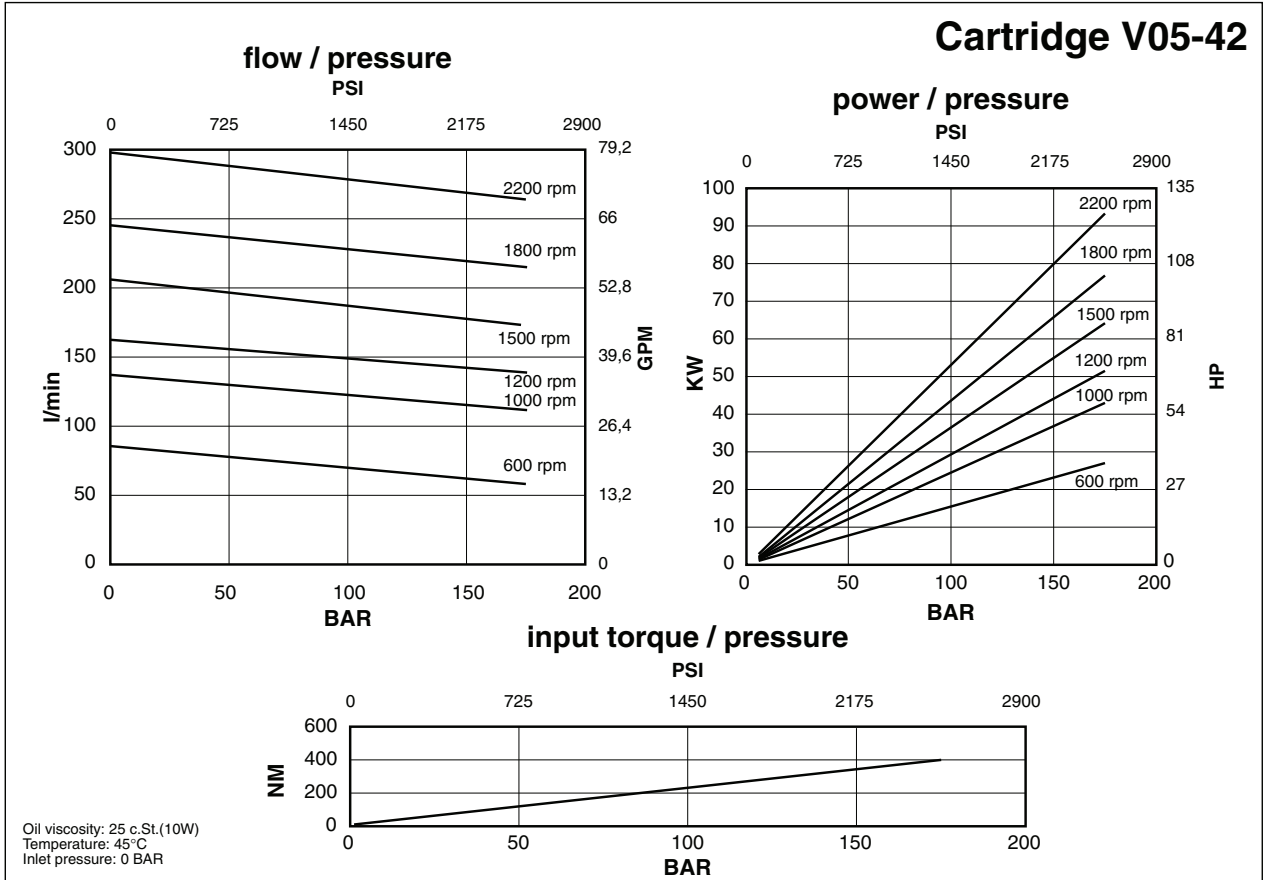
Main operating data



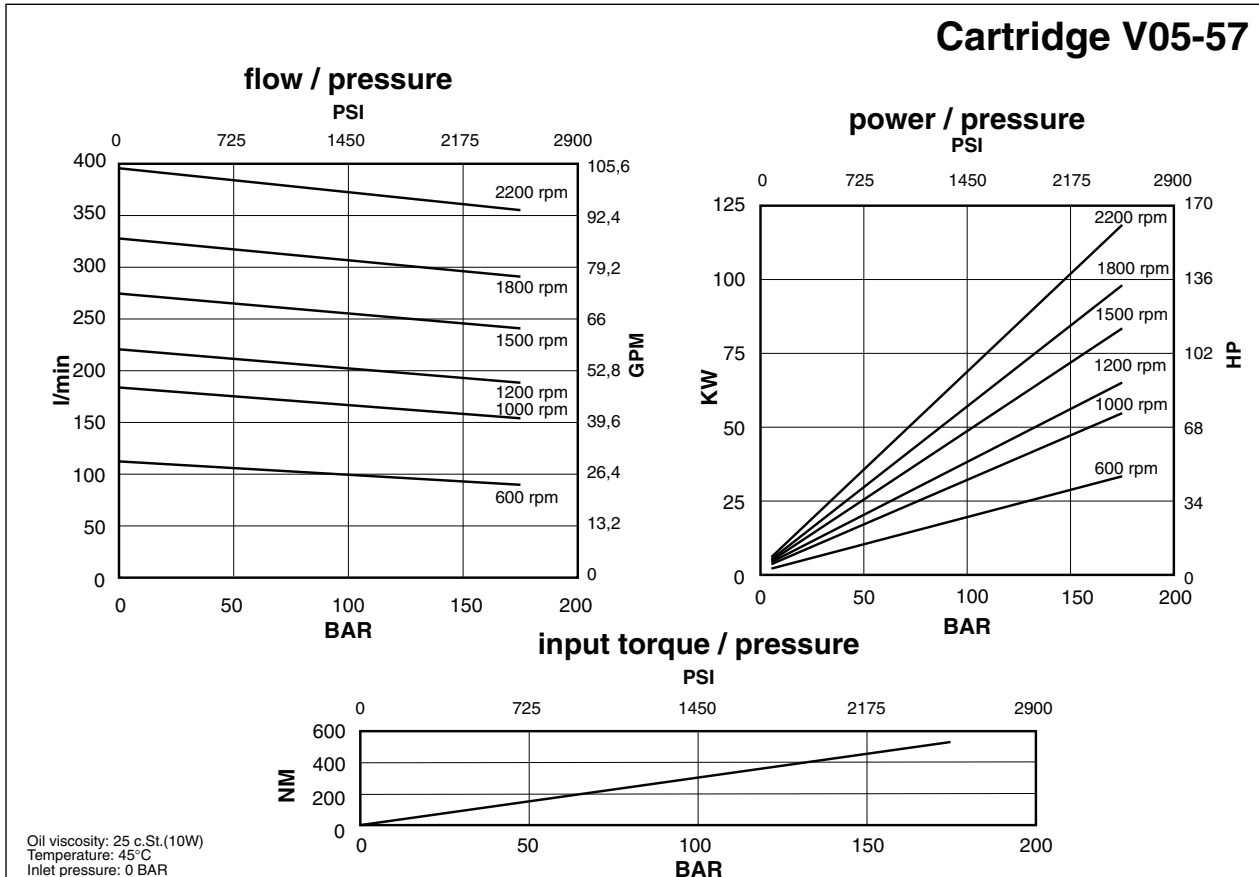
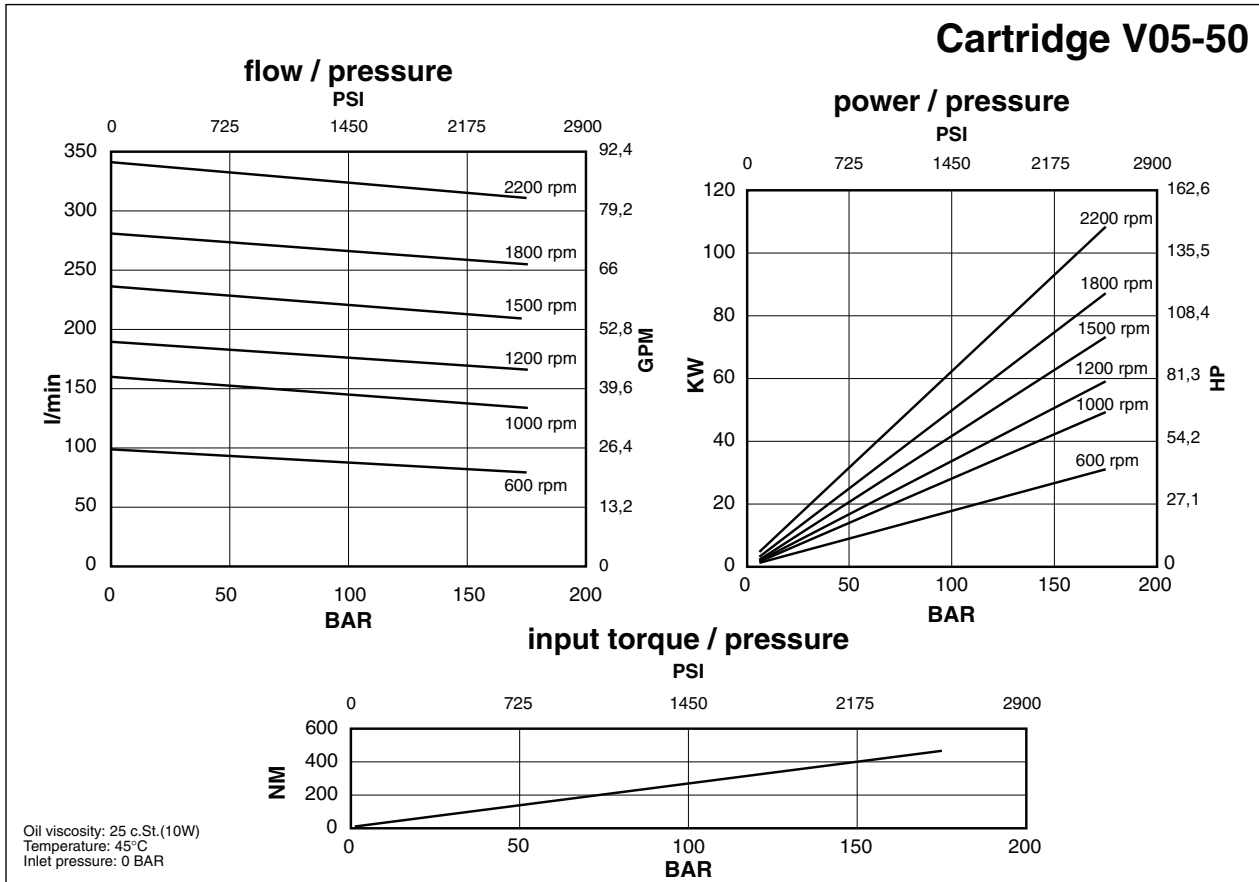
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed



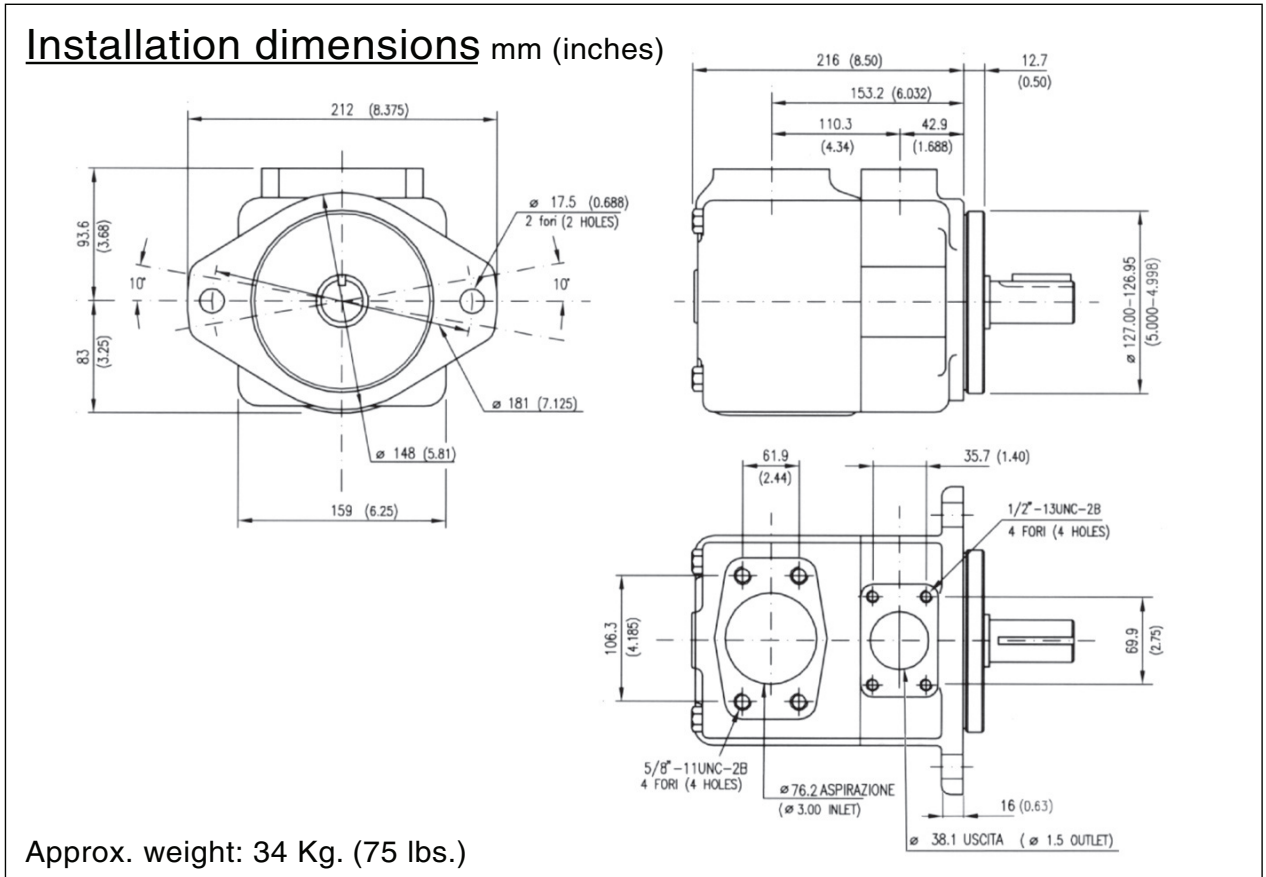
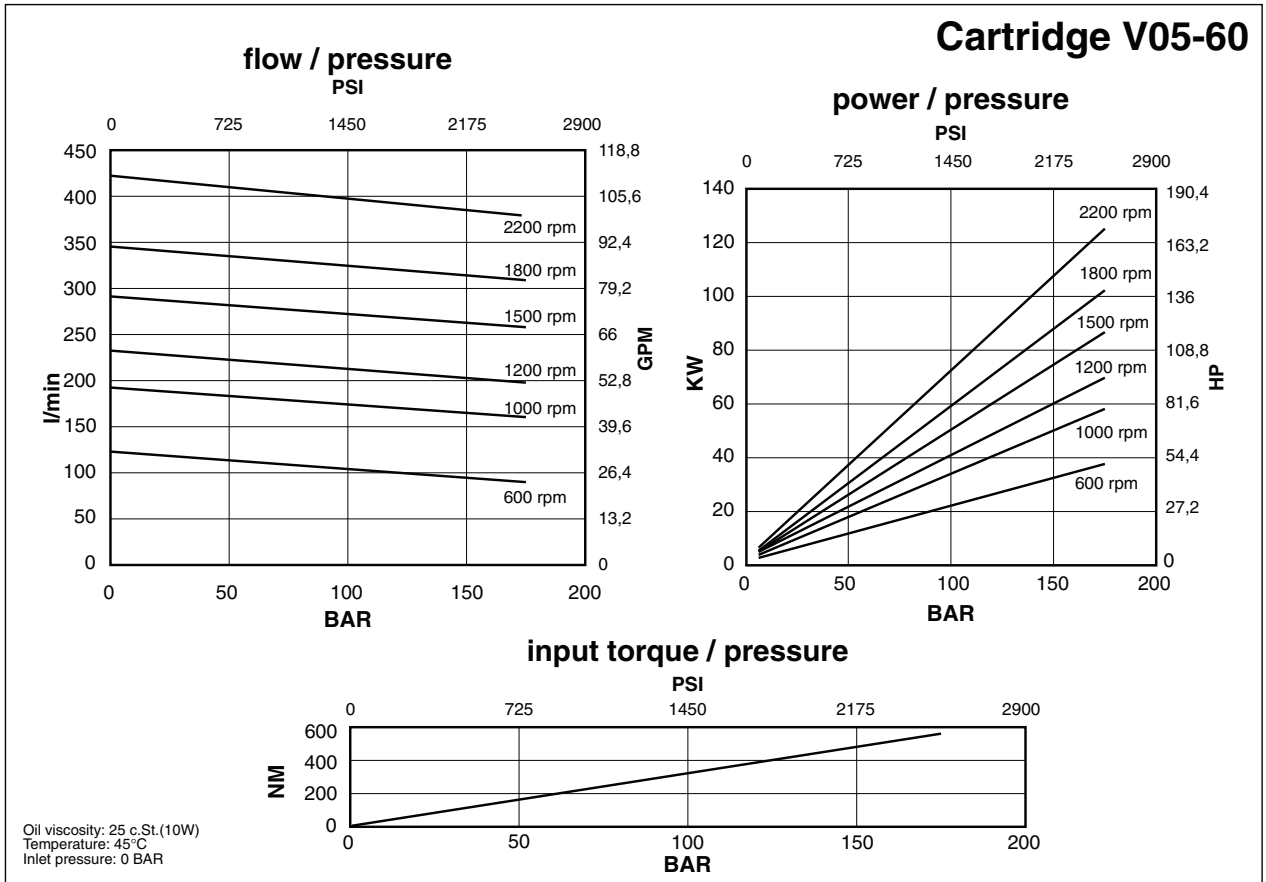
Single Pump Type BV05



Single Pump Type BV05

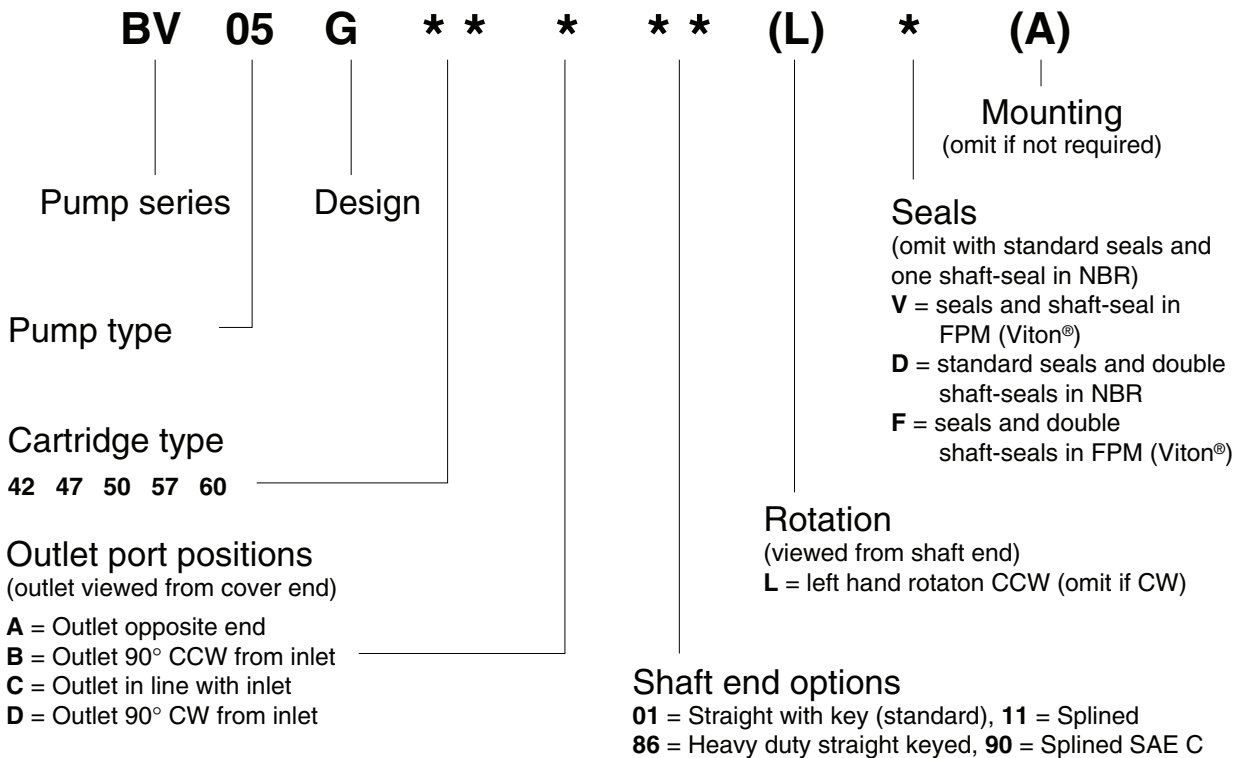


Single Pump Type BV05

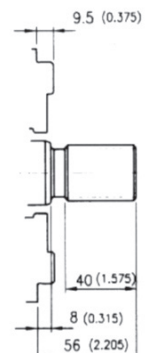
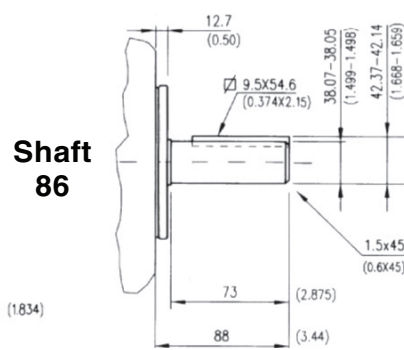
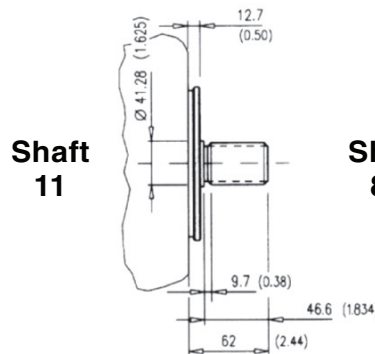
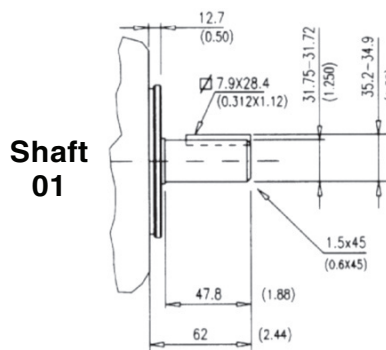


Single Pump Type BV05

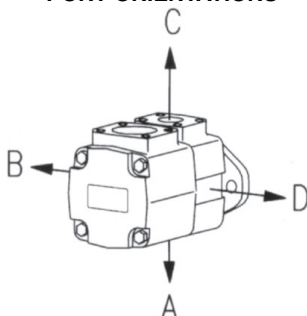
Model code breakdown



Shaft options mm (inches)



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) |

Single Pump Type BV05

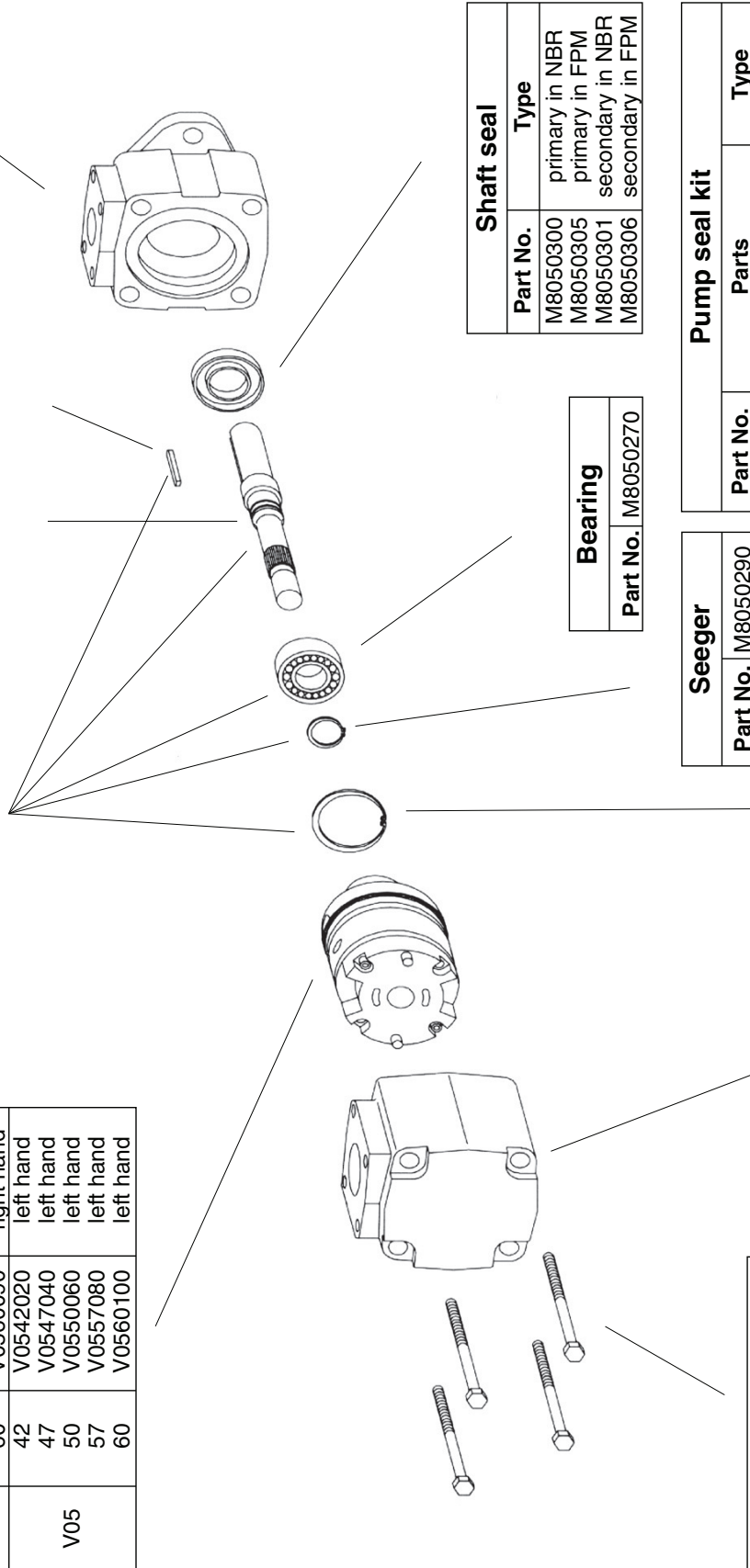
Id. codes of pump components

| Cartridge | | |
|-----------|-------|----------|
| Series | Model | Part No. |
| V05 | 42 | V0542010 |
| | 47 | V0547030 |
| | 50 | V0550050 |
| | 57 | V0557070 |
| | 60 | V0560090 |
| V05 | 42 | V0542020 |
| | 47 | V0547040 |
| | 50 | V0550060 |
| | 57 | V0557080 |
| | 60 | V0560100 |

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

| Shaft | | Key | |
|-------|----------|----------|----------|
| Model | Part No. | 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 |

| Cover | |
|----------|----------|
| Part No. | M8050260 |

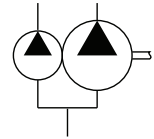
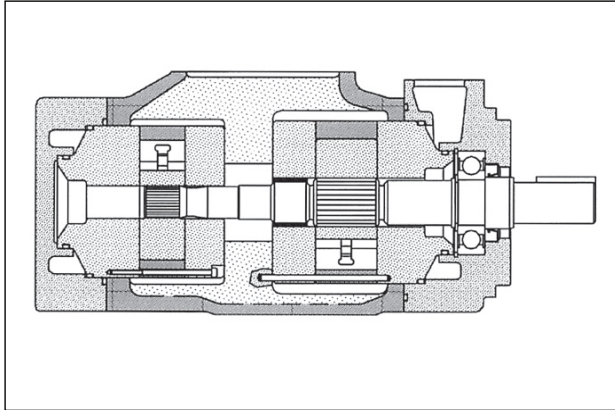
| Screw | |
|---------------------------------|----------|
| Part No. | M8050310 |
| Torque to 398 Nm (3550 lb. in.) | |

| 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®) |

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 BV02+BV01 | 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) | | | | |
| | 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) | 160 | (2.300) | | |
| | | 12 | 39,5 | (2.41) | 46,9 | (12) | 58,7 | (15.5) | 140 | (2.030) | | |
| BV41 BV04+BV02 | 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) | | | | |
| | 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) | 160 | (2.300) | | |
| | | 12 | 39,5 | (2.41) | 46,9 | (12) | 58,7 | (15.5) | 140 | (2.030) | | |
| BV42 BV04+BV01 | 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) | | | | |
| | 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 BV05+BV01 | 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) | | | | |
| | 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) | 160 | (2.300) | | |
| | | 12 | 39,5 | (2.41) | 46,9 | (12) | 58,7 | (15.5) | 140 | (2.030) | | |
| BV52 BV05+BV02 | 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) | | | | |
| | 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 BV05+BV04 | 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) | | | | |
| | 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 characteristics

| 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 |
| shaft end | | | | | | | | | | |
| 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 | | | | | | | | | | |
| 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).

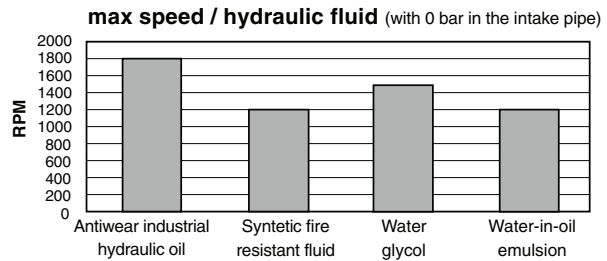
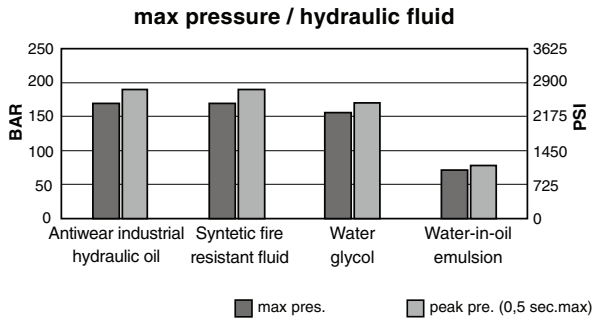
Inlet pressure: (with mineral oil): from -0,17 to +1,4 bar (-2.5 to + 20 psi)

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

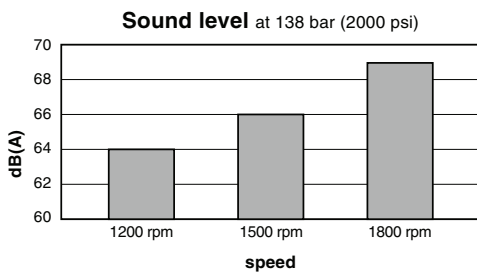
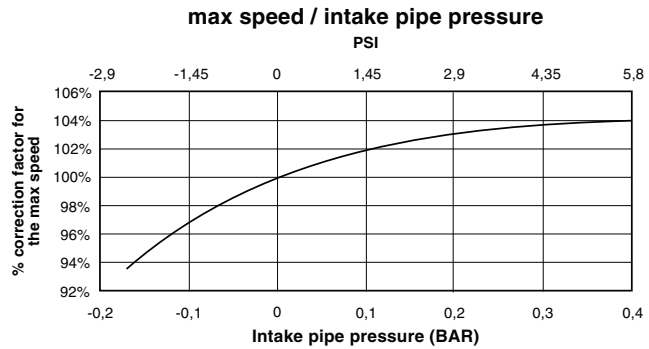
Drive: direct and coaxial by means of a flexible coupling.

Double Pump Type BV21 (BV02+BV01)

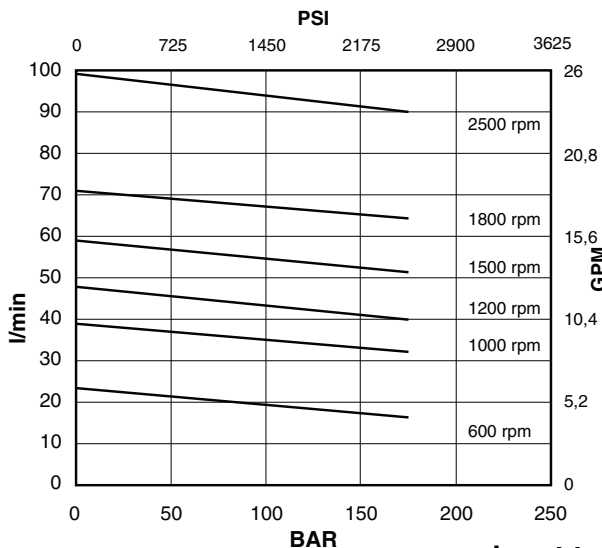
Main operating data



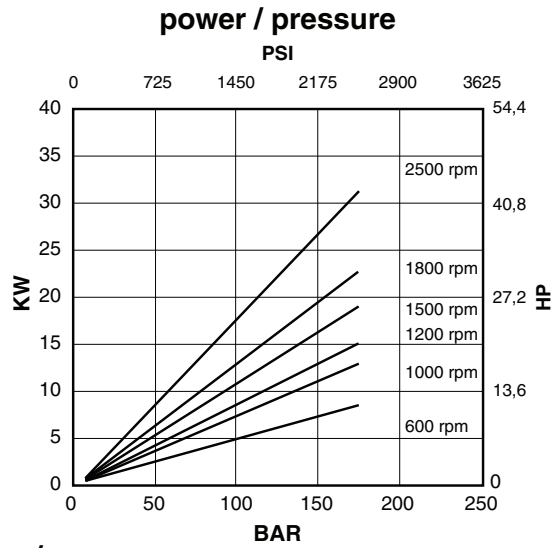
If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed



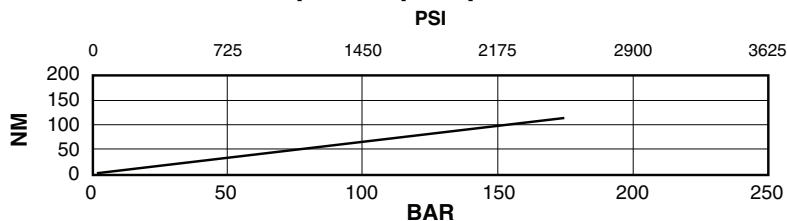
flow / pressure



Shaft end cartridge V02-12

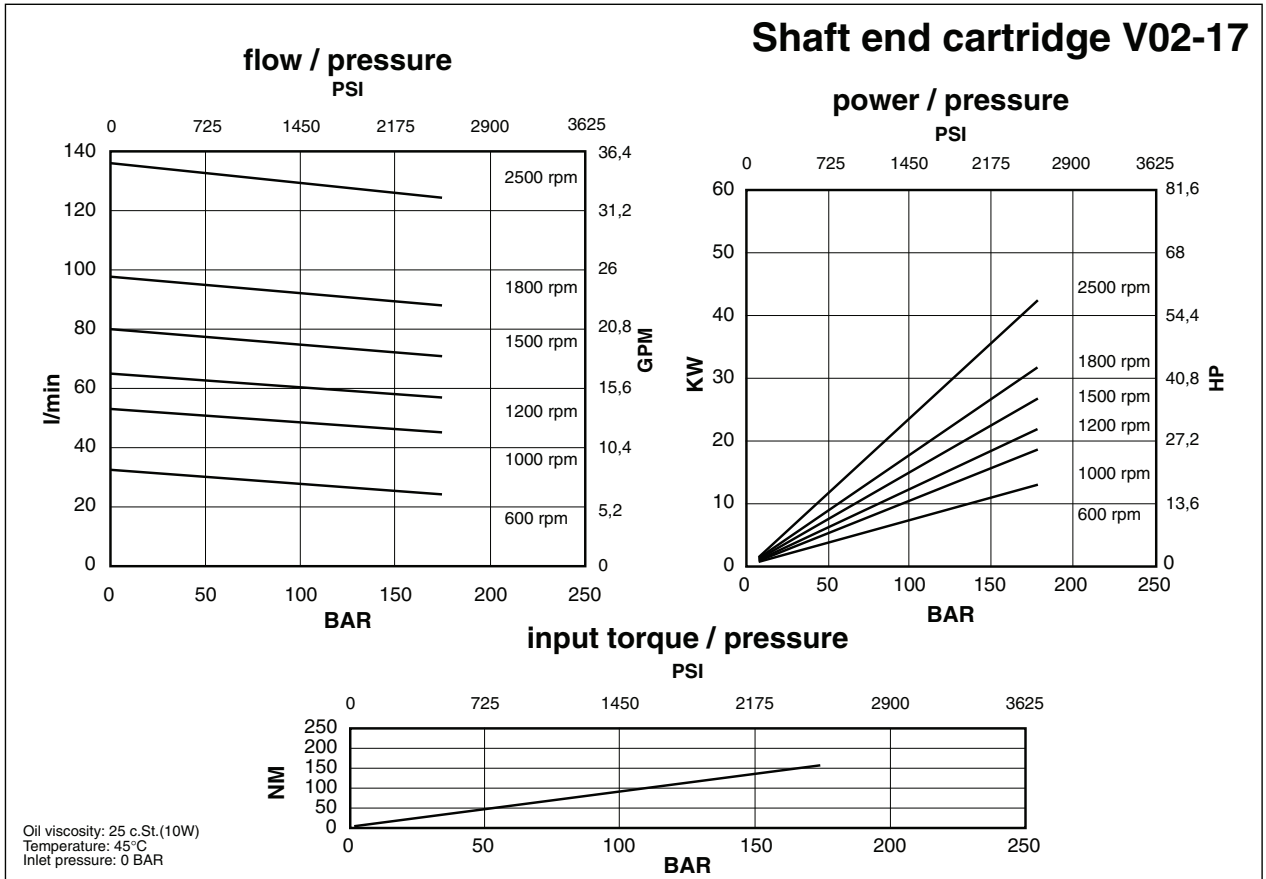
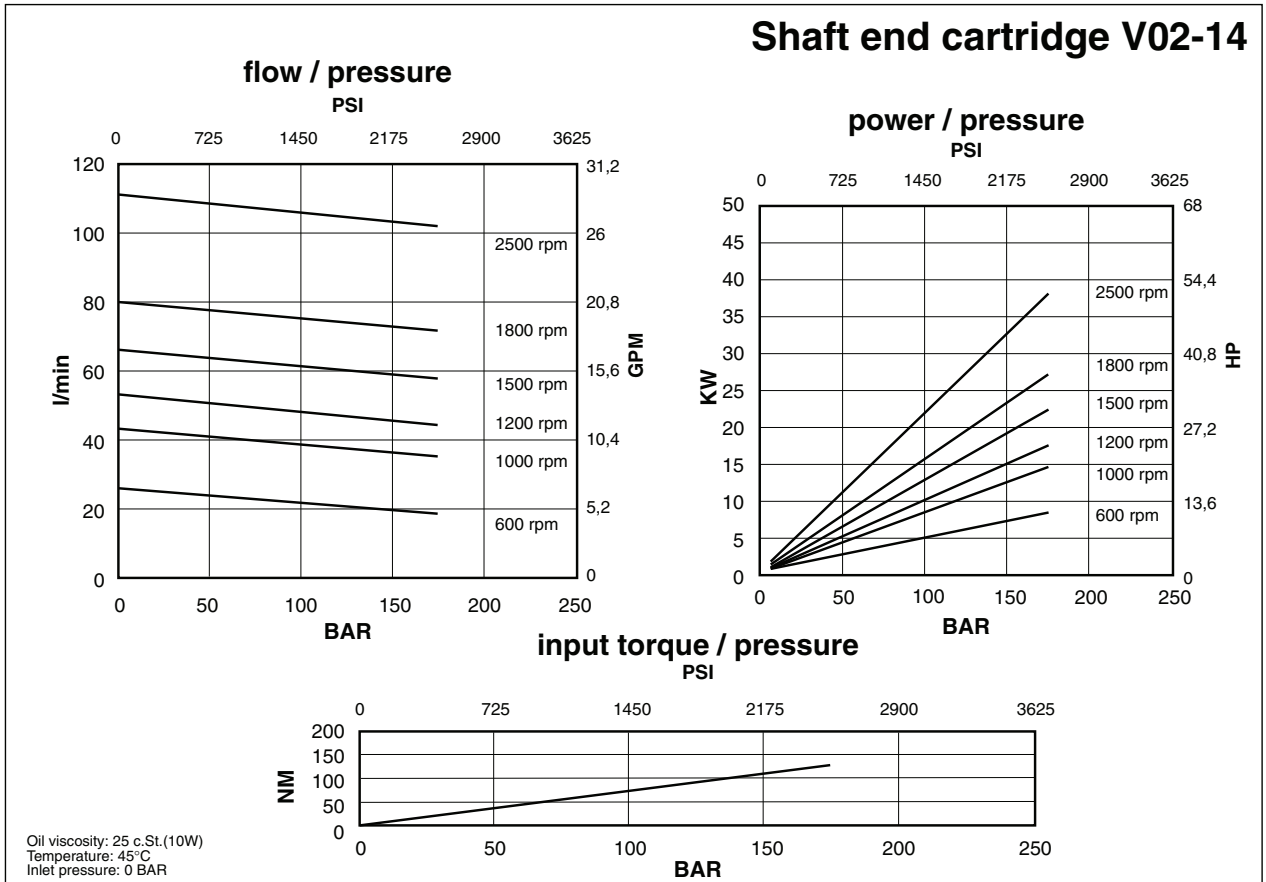


input torque / pressure



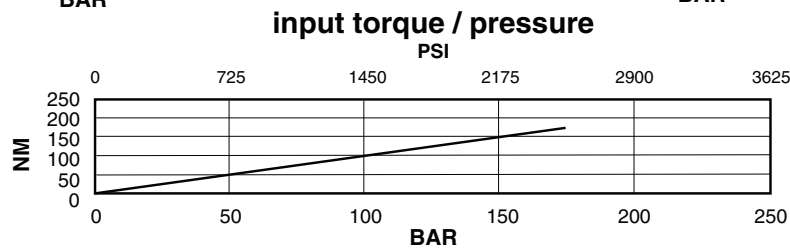
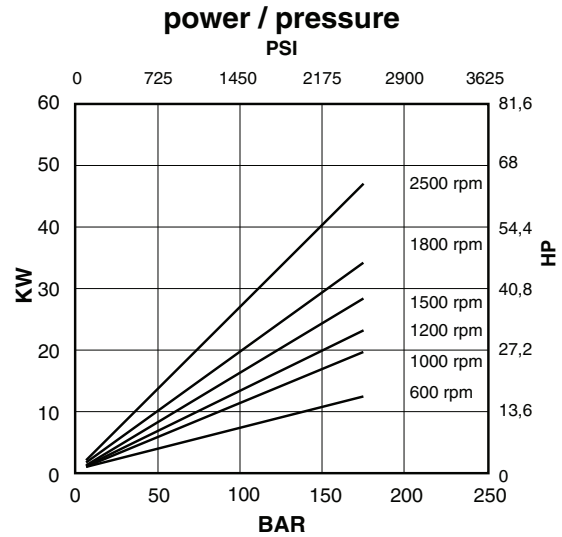
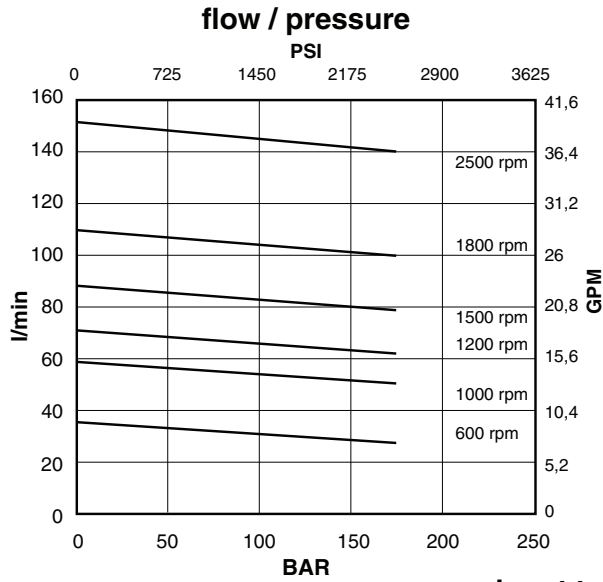
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Double Pump Type BV21 (BV02+BV01)



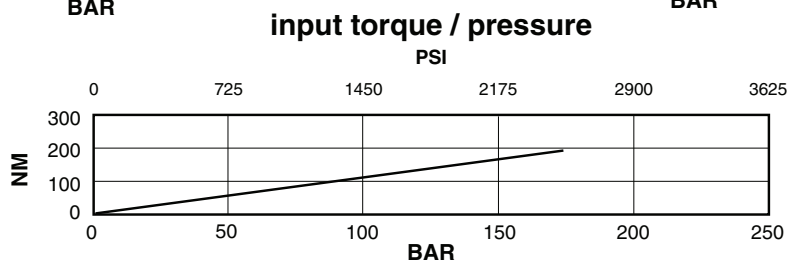
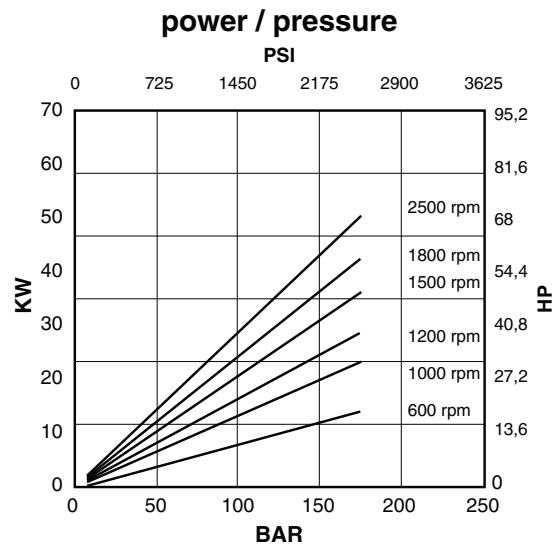
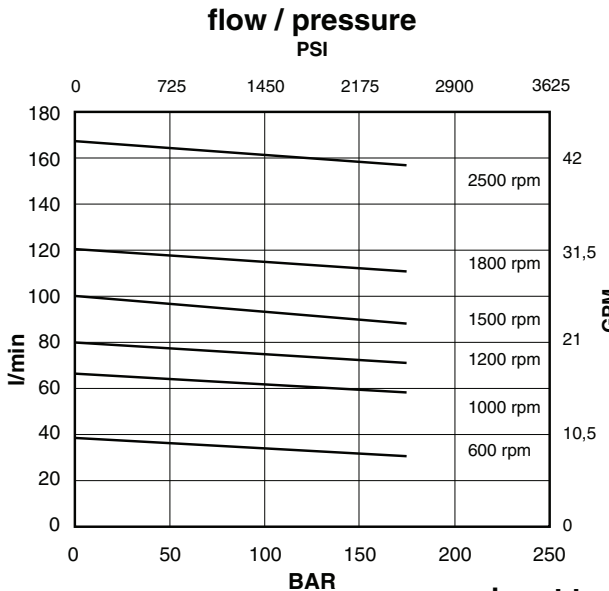
Double Pump Type BV21 (BV02+BV01)

Shaft end cartridge V02-19



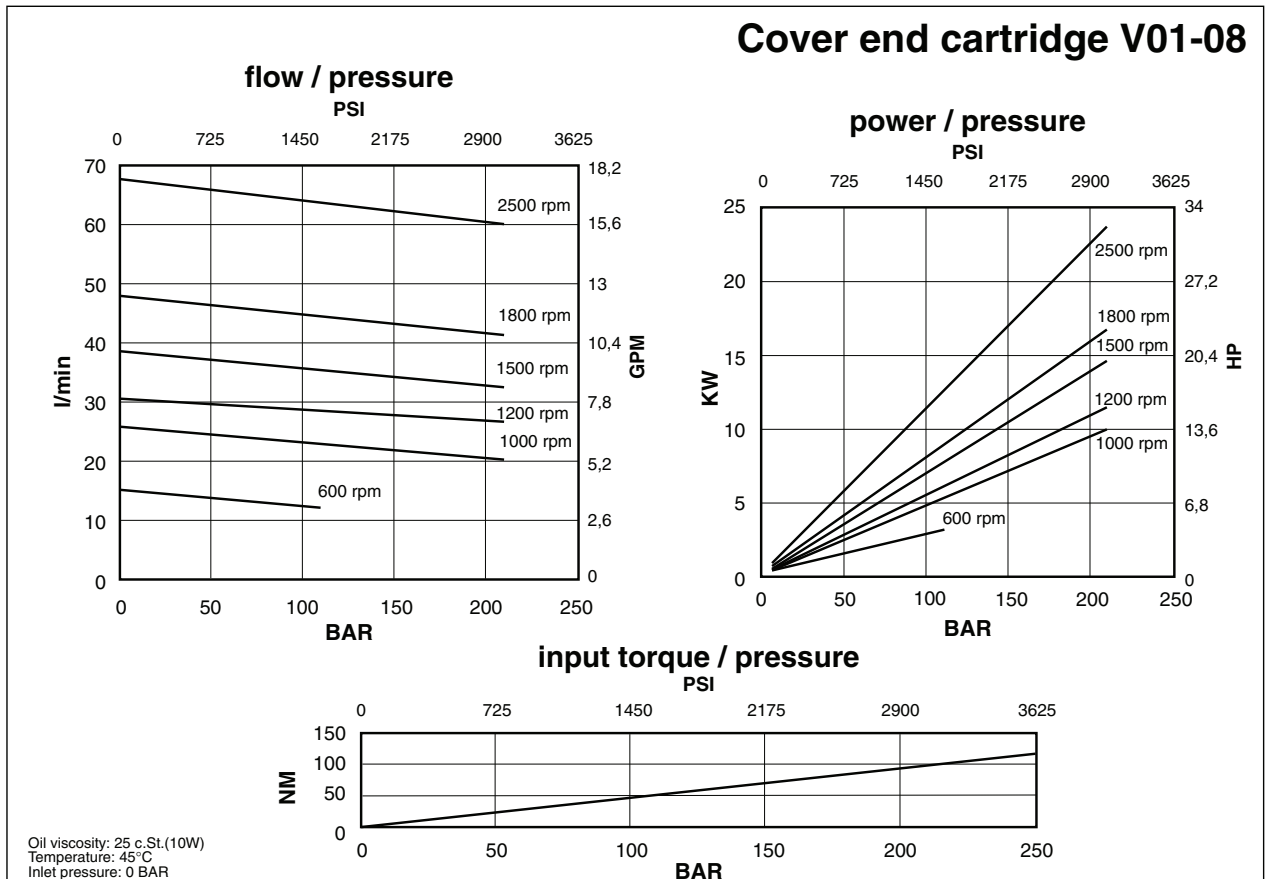
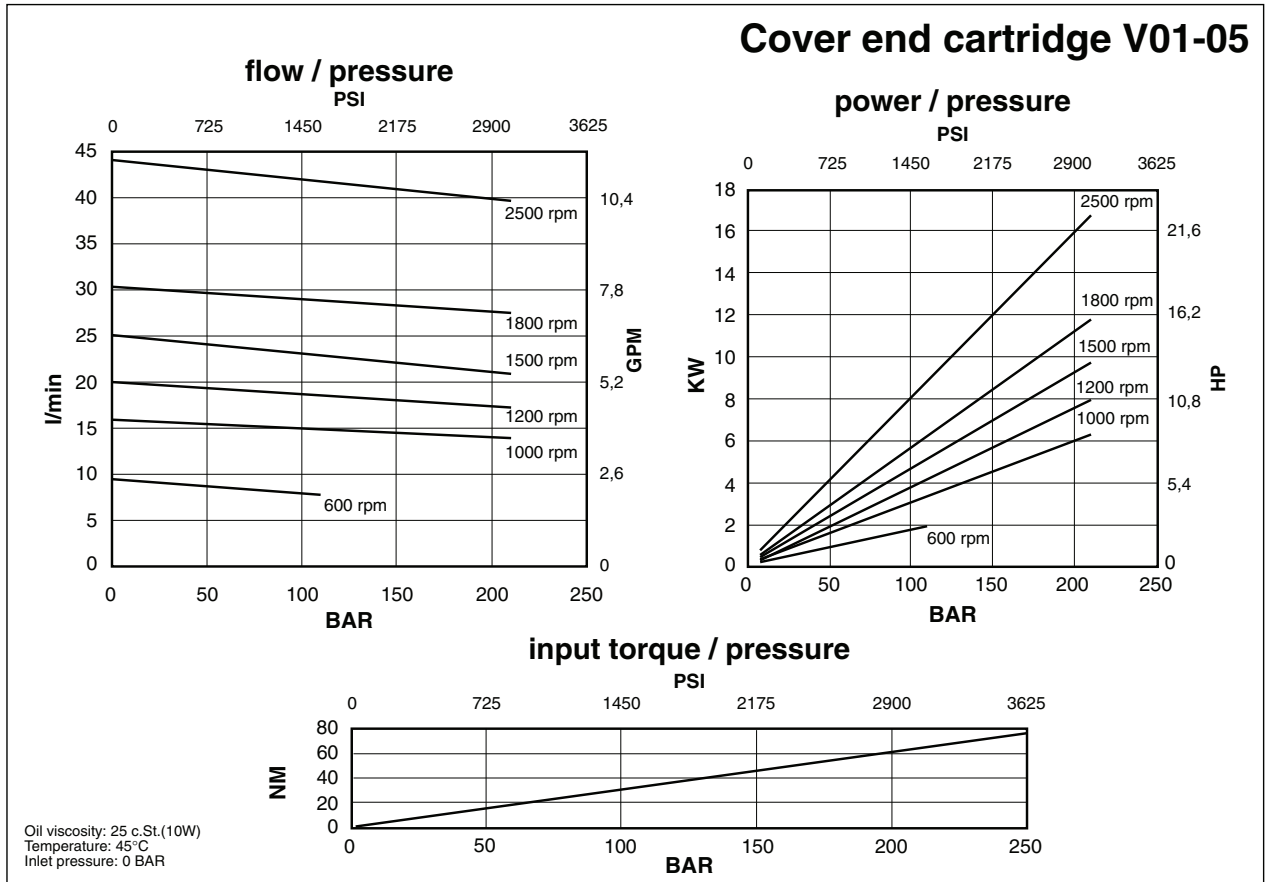
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V02-21



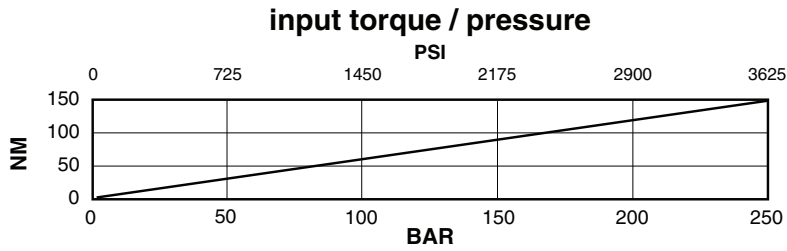
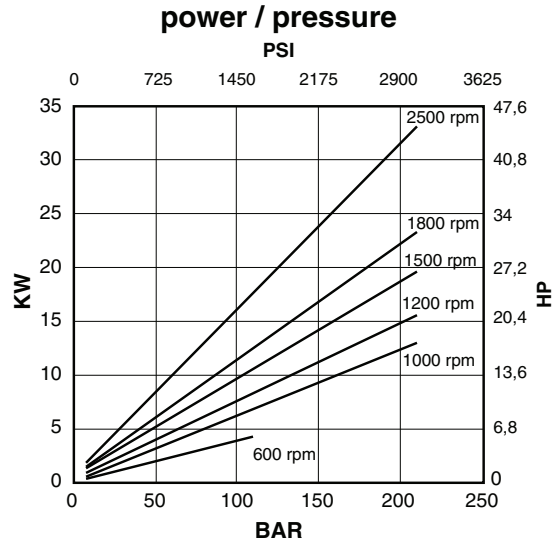
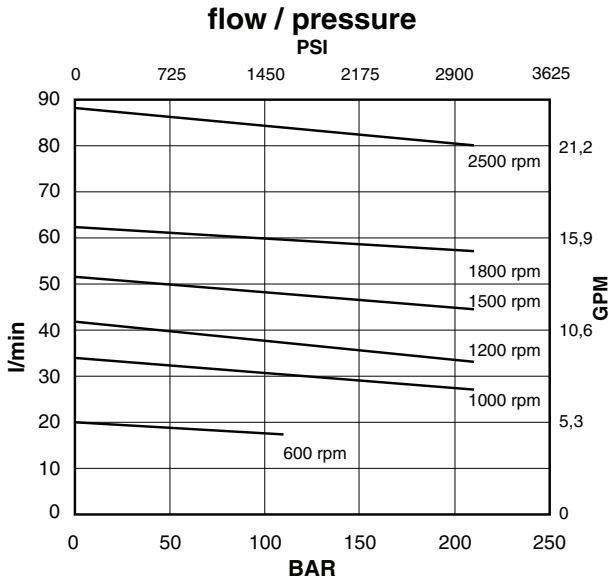
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Double Pump Type BV21 (BV02+BV01)



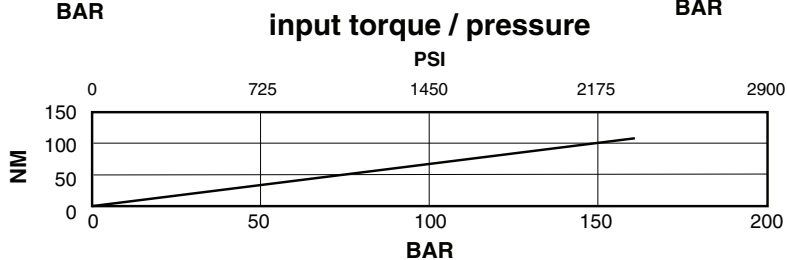
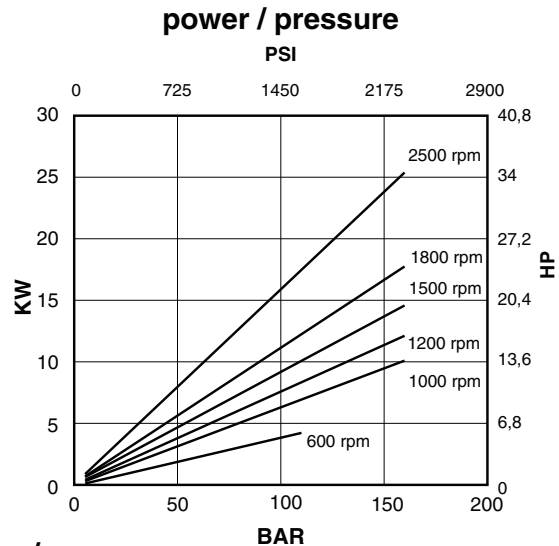
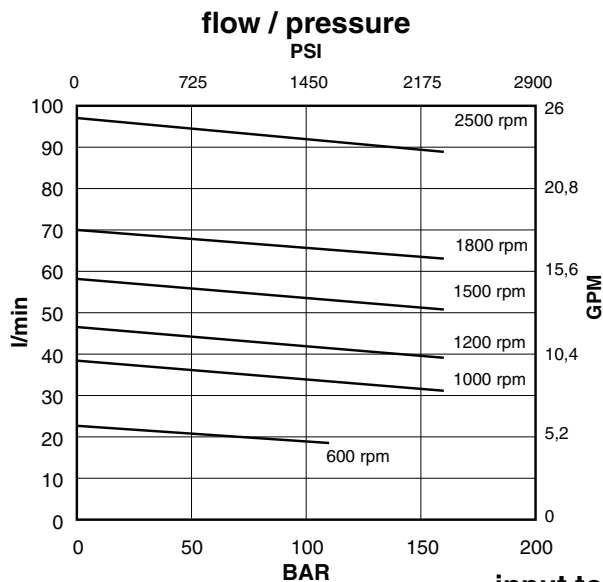
Double Pump Type BV21 (BV02+BV01)

Cover end cartridge V01-11



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

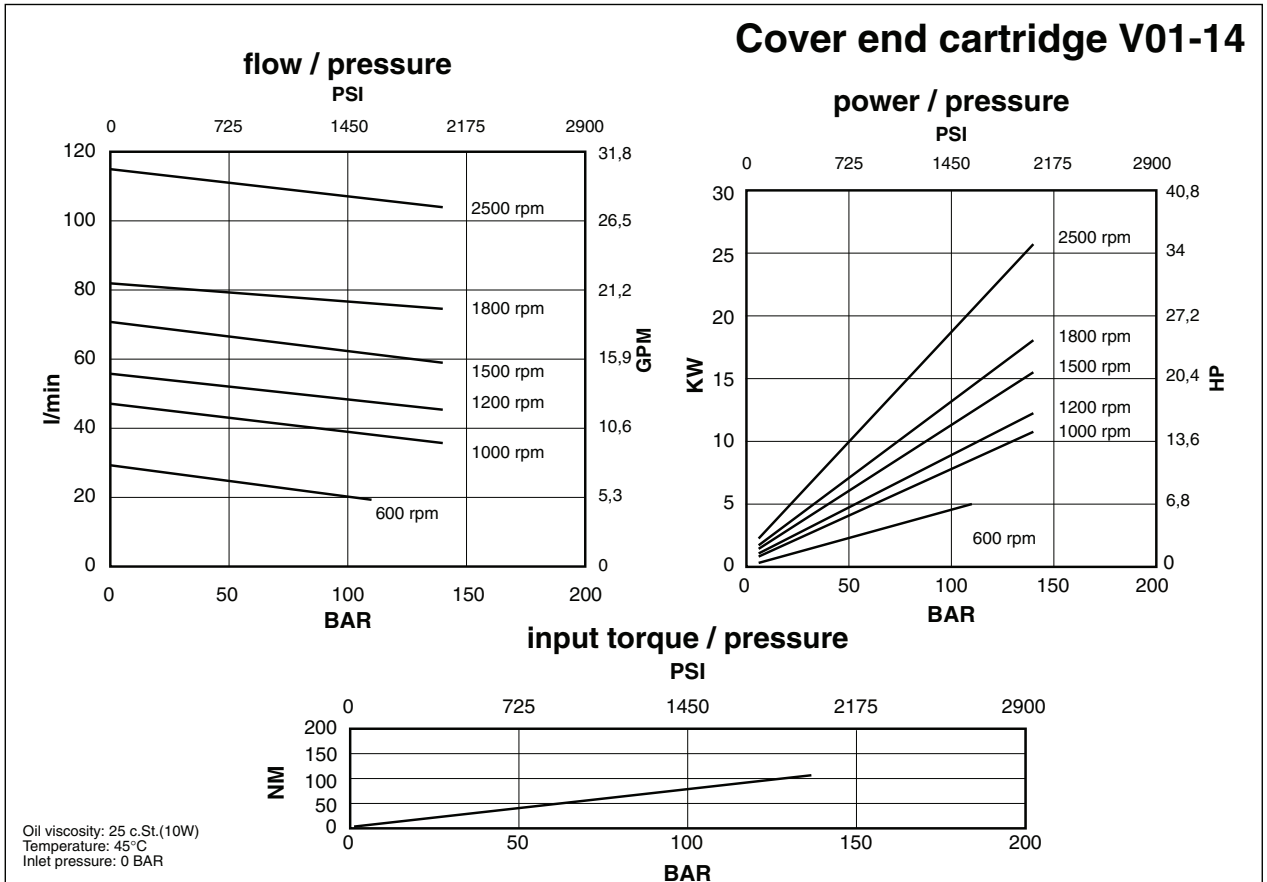
Cover end cartridge V01-12



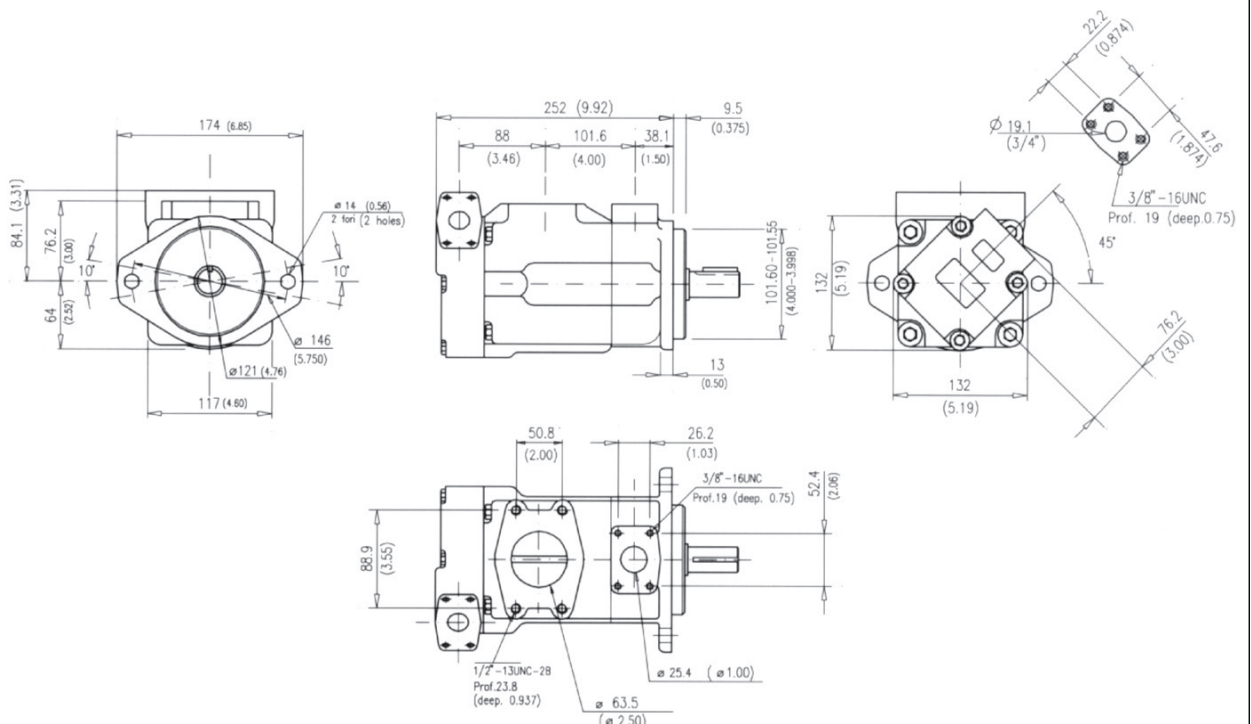
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Double Pump Type BV21 (BV02+BV01)

Cover end cartridge V01-14



Installation dimensions mm (inches)



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

Double Pump Type BV21 (BV02+BV01)

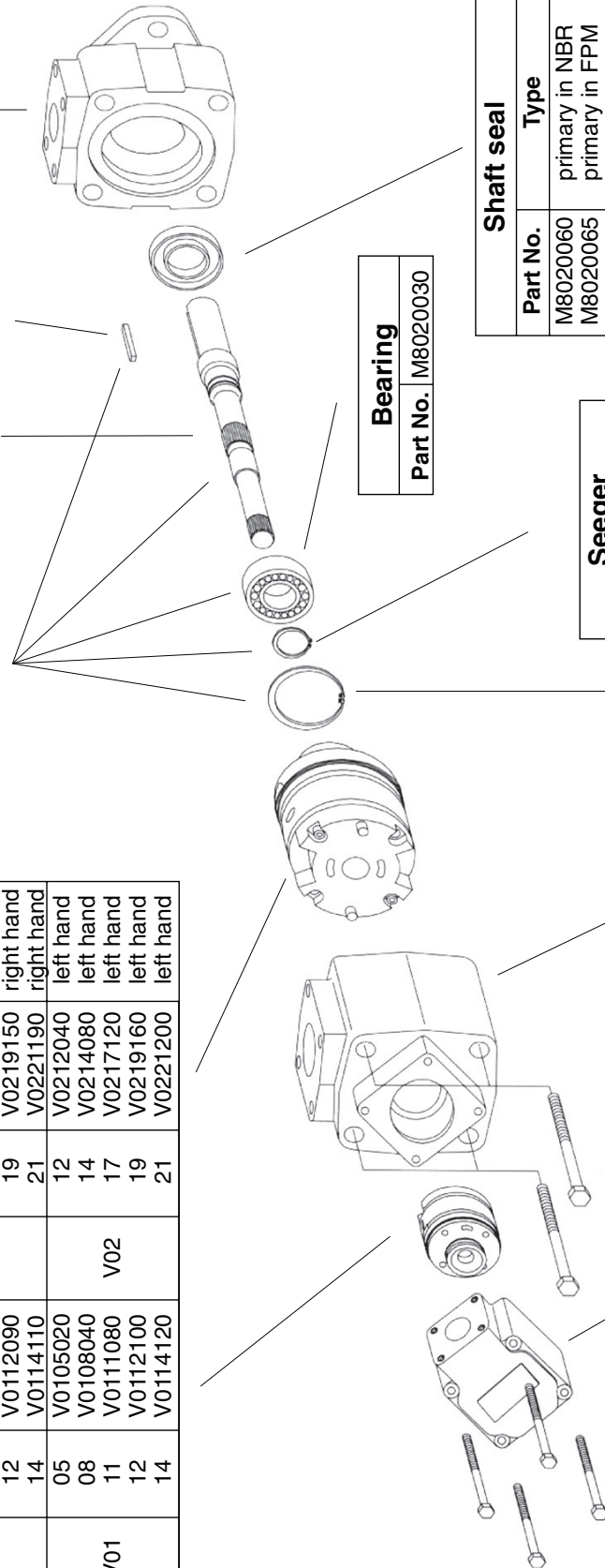
Id. codes of pump components

| cover end | | shaft end | | Pump rotation | |
|-----------|----------|-----------|----------|---------------|------------|
| Series | Model | Part No. | Model | | |
| V01 | 05 | V0105010 | 12 | V0212030 | right hand |
| | 08 | V0108030 | 14 | V0214070 | right hand |
| | 11 | V0111070 | 17 | V0217110 | right hand |
| | 12 | V0112090 | 19 | V0219150 | right hand |
| V01 | 14 | V0114110 | 21 | V0221190 | right hand |
| | 05 | V0105020 | 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. | Part No. |
| 01 | K2101000 | M8010100 | |
| 11 | K2111000 | - | |
| 86 | K2186000 | M8028600 | |
| 90 | K2190000 | - | |

| Body | |
|----------|----------|
| Part No. | 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. | Part No. |
| M8020030 | |

| Seeger | |
|----------|----------|
| Part No. | Part No. |
| M8020050 | |

| Inlet body | |
|------------|----------|
| Part No. | Part No. |
| M8020110 | |

| Cover | |
|----------|----------|
| Part No. | Part No. |
| M8020120 | |

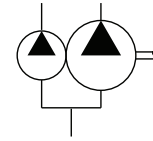
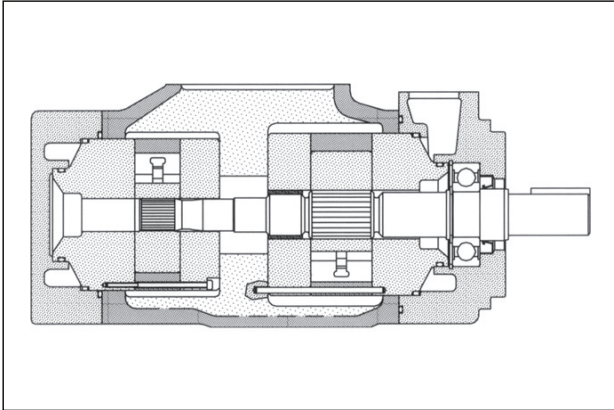
| Screw | |
|-------------------------------|----------|
| Part No. | Part No. |
| M8020420 | |
| Torque to 70 Nm (624 lb. in.) | |

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

| Seeger | |
|----------|----------|
| Part No. | Part No. |
| M8020040 | |

| 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®) |

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 characteristics

| 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 |
| shaft end | | | | | | | | | | |
| 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 | | | | | | | | | | |
| 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).

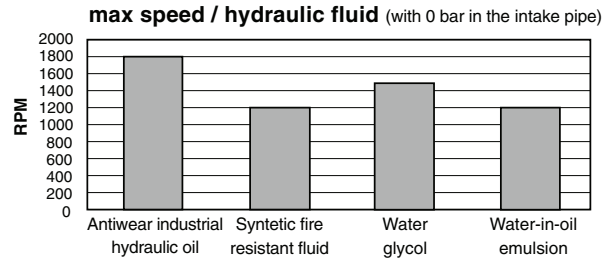
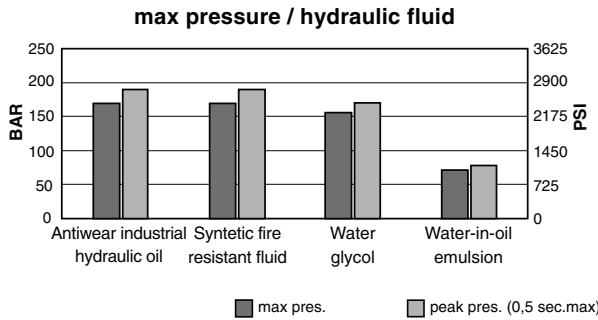
Inlet pressure: (with mineral oil): from -0,17 to +1,4 bar (-2.5 to + 20 psi)

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

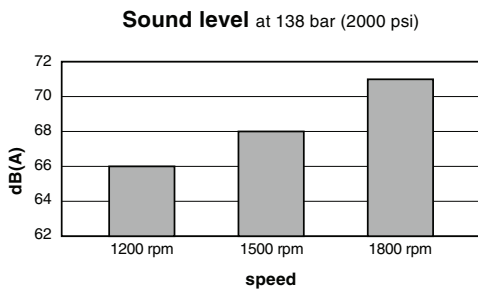
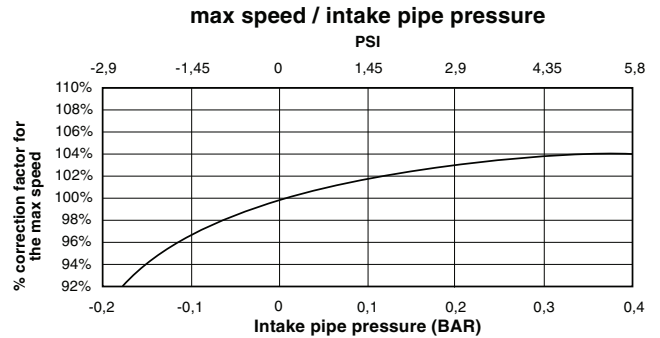
Drive: direct and coaxial by means of a flexible coupling.

Double Pump Type BV41 (BV04+BV01)

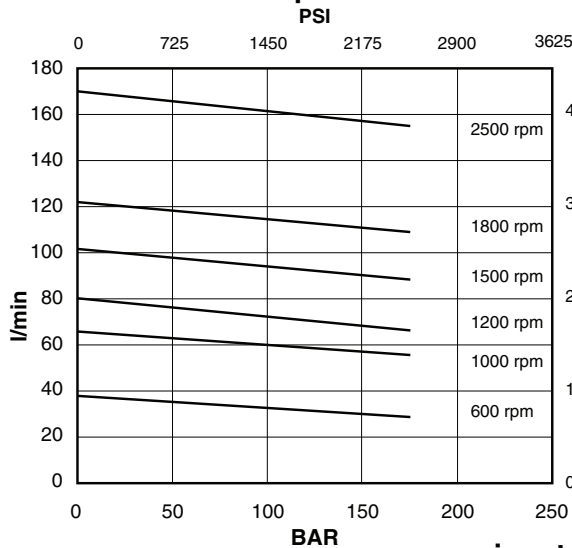
Main operating data



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

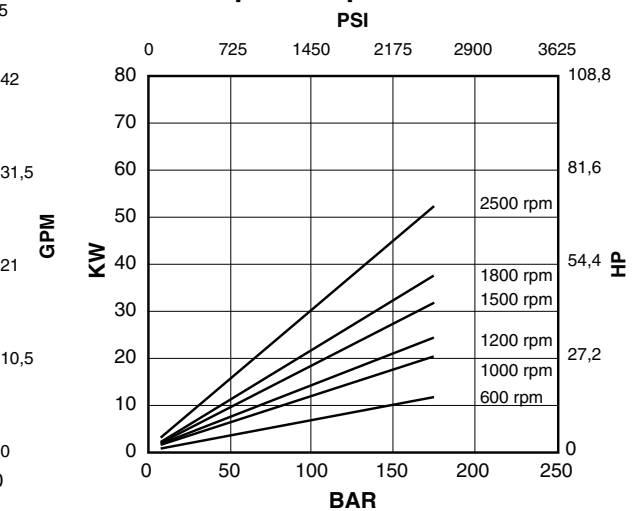


flow / pressure

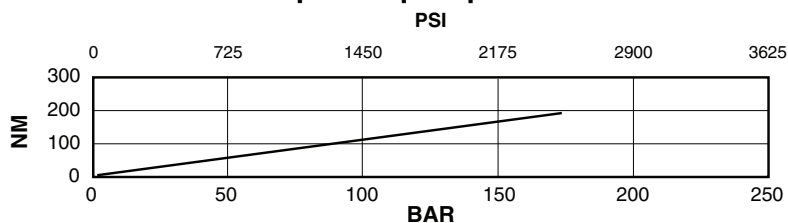


Shaft end cartridge V04-21

power / pressure



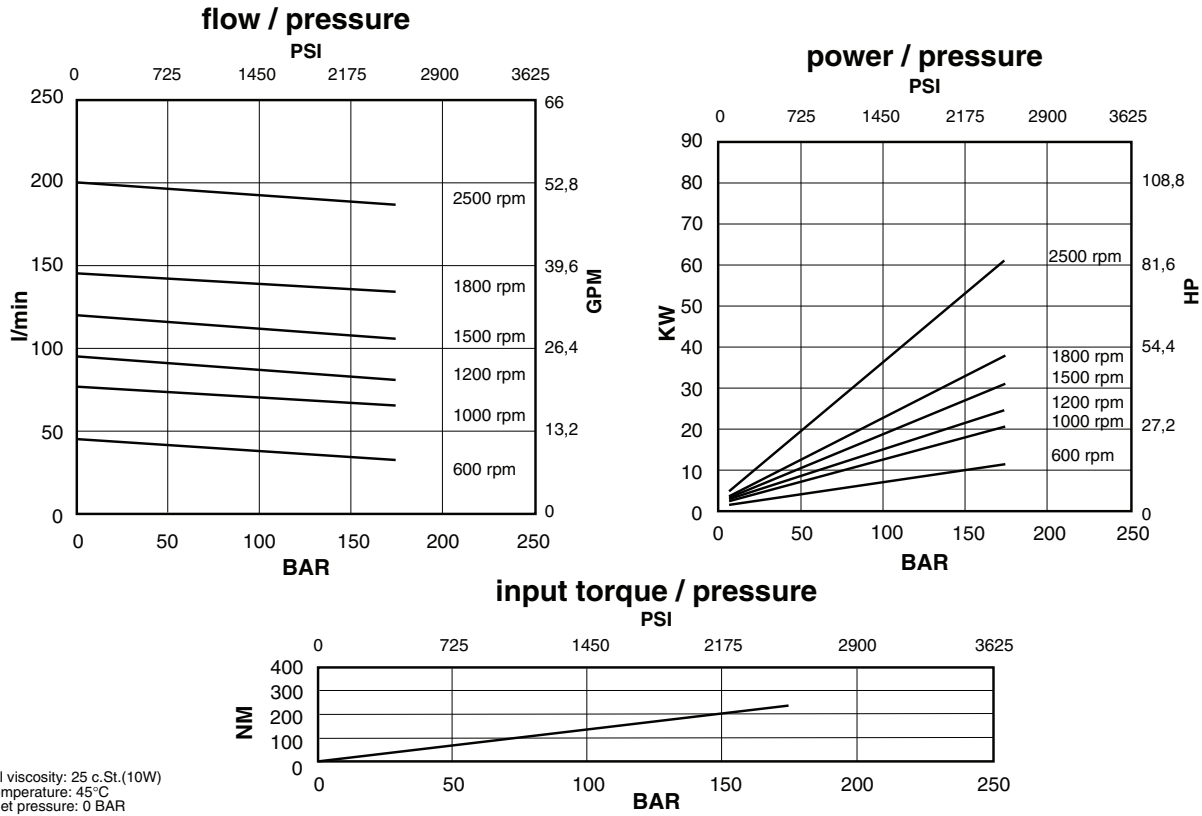
input torque / pressure



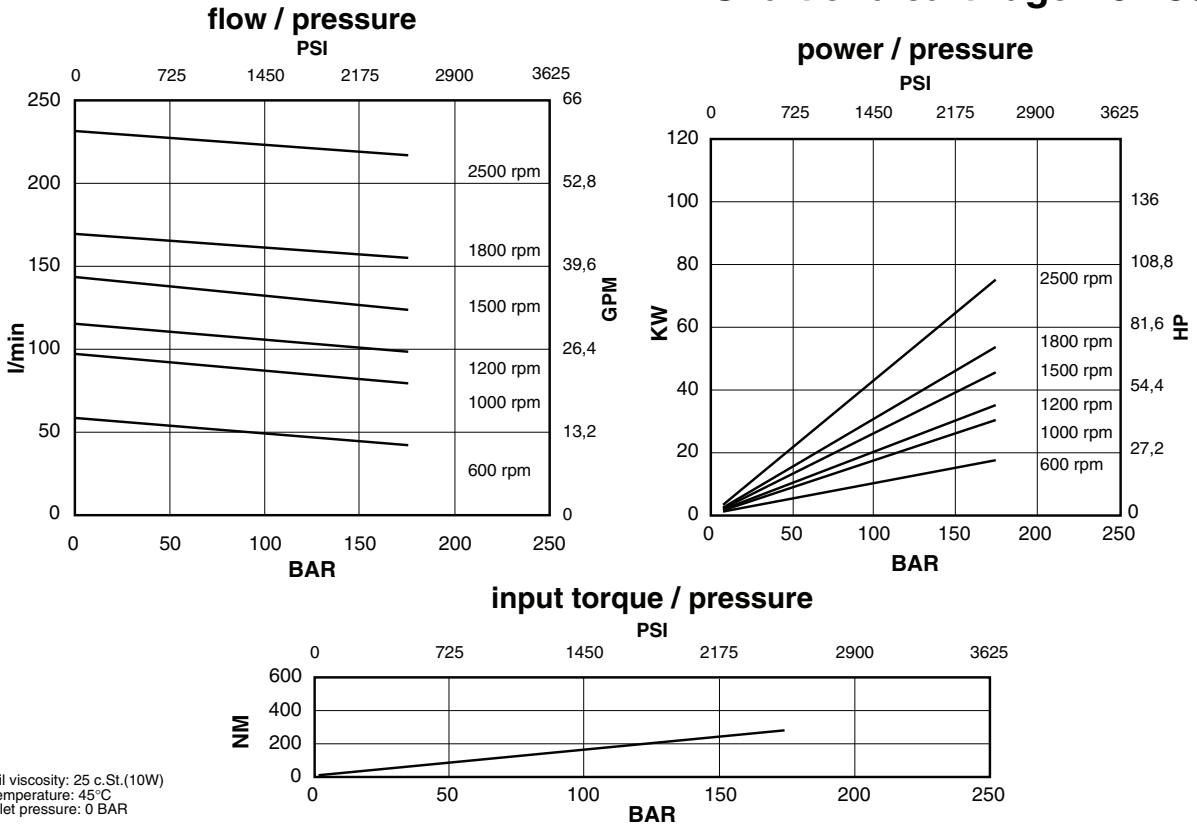
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Double Pump Type BV41 (BV04+BV01)

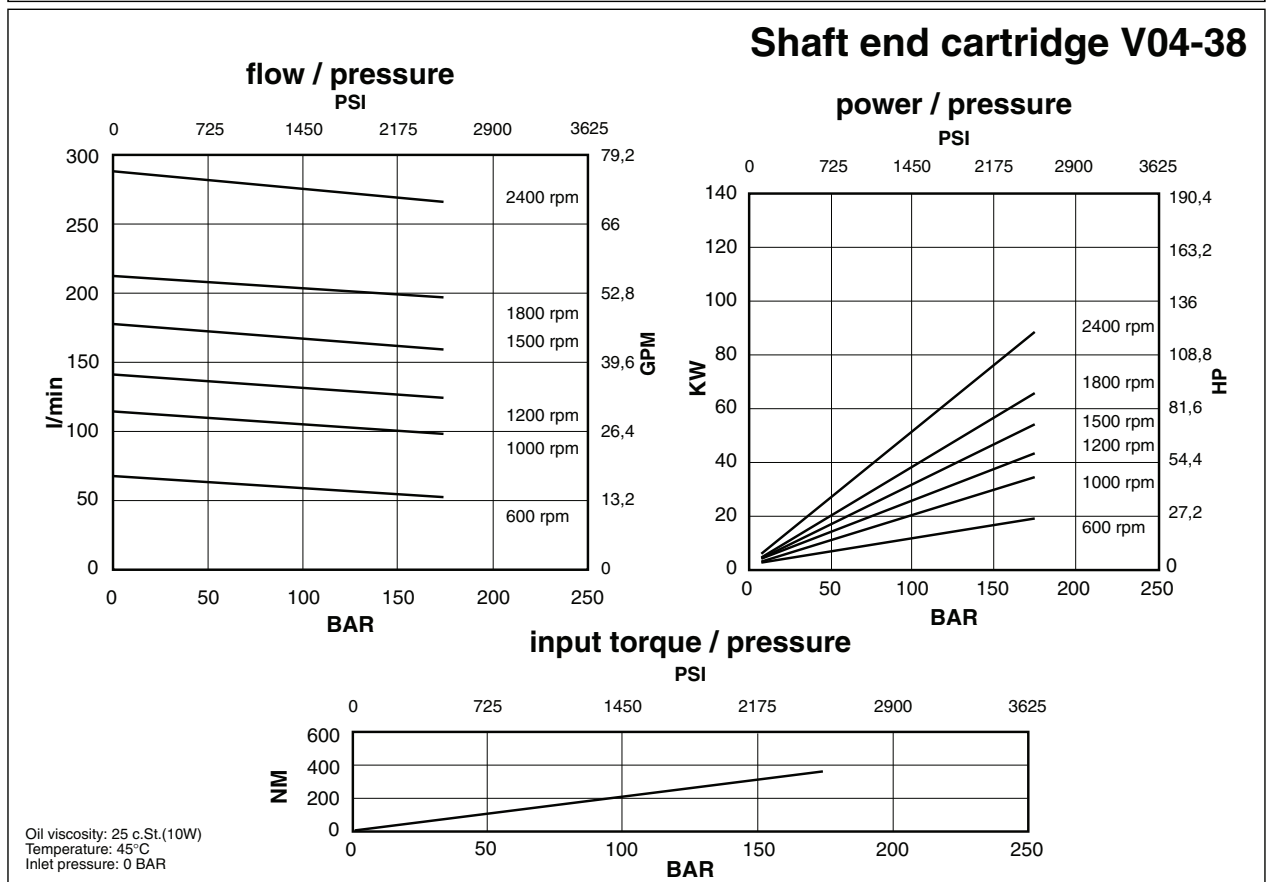
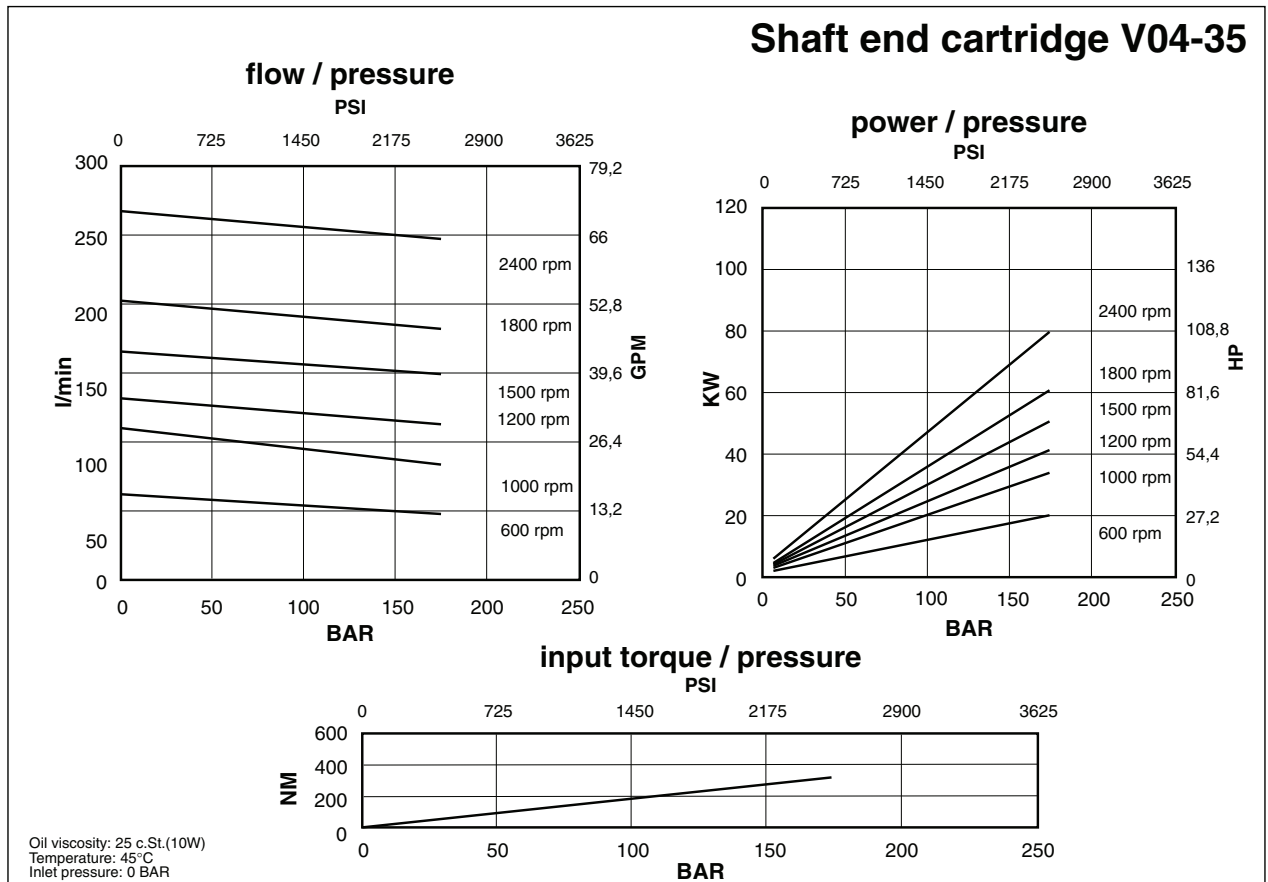
Shaft end cartridge V04-25



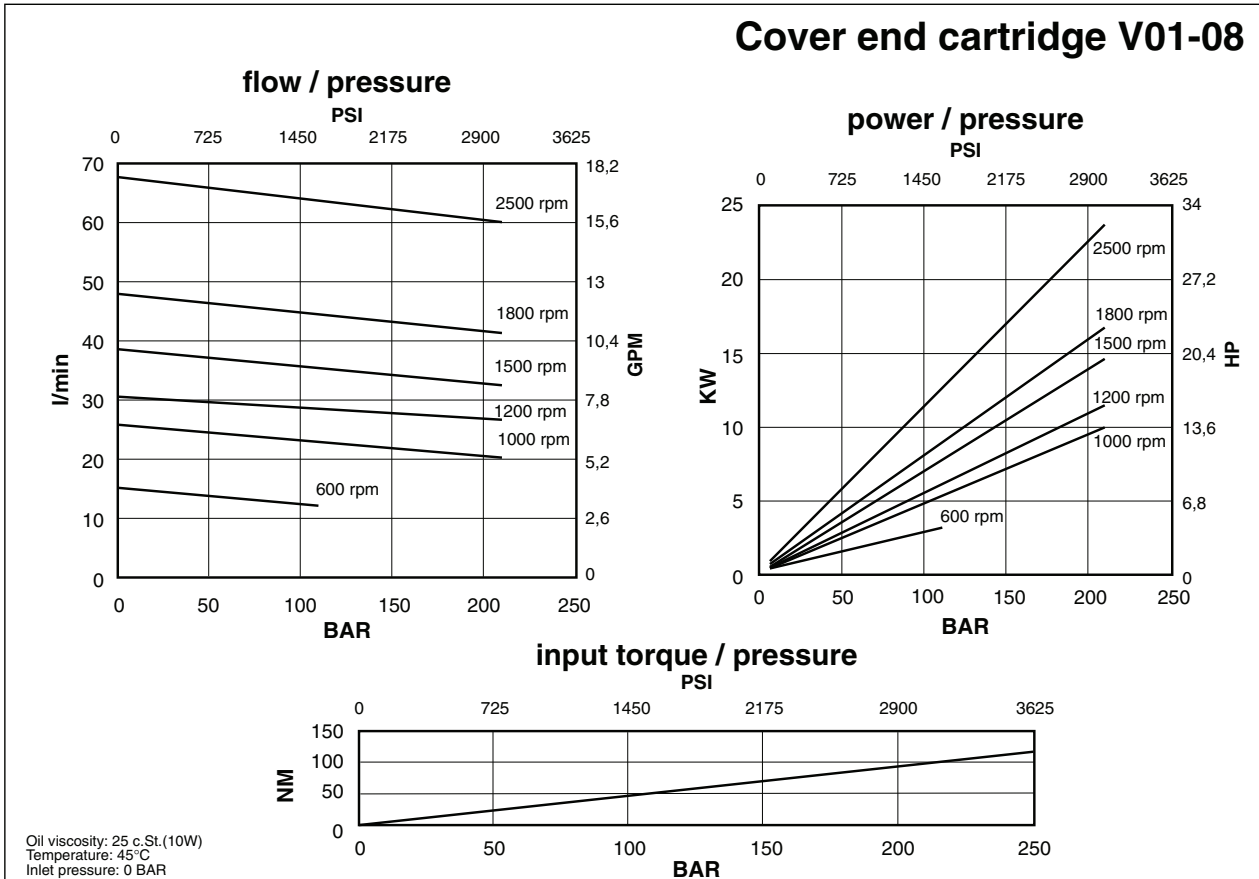
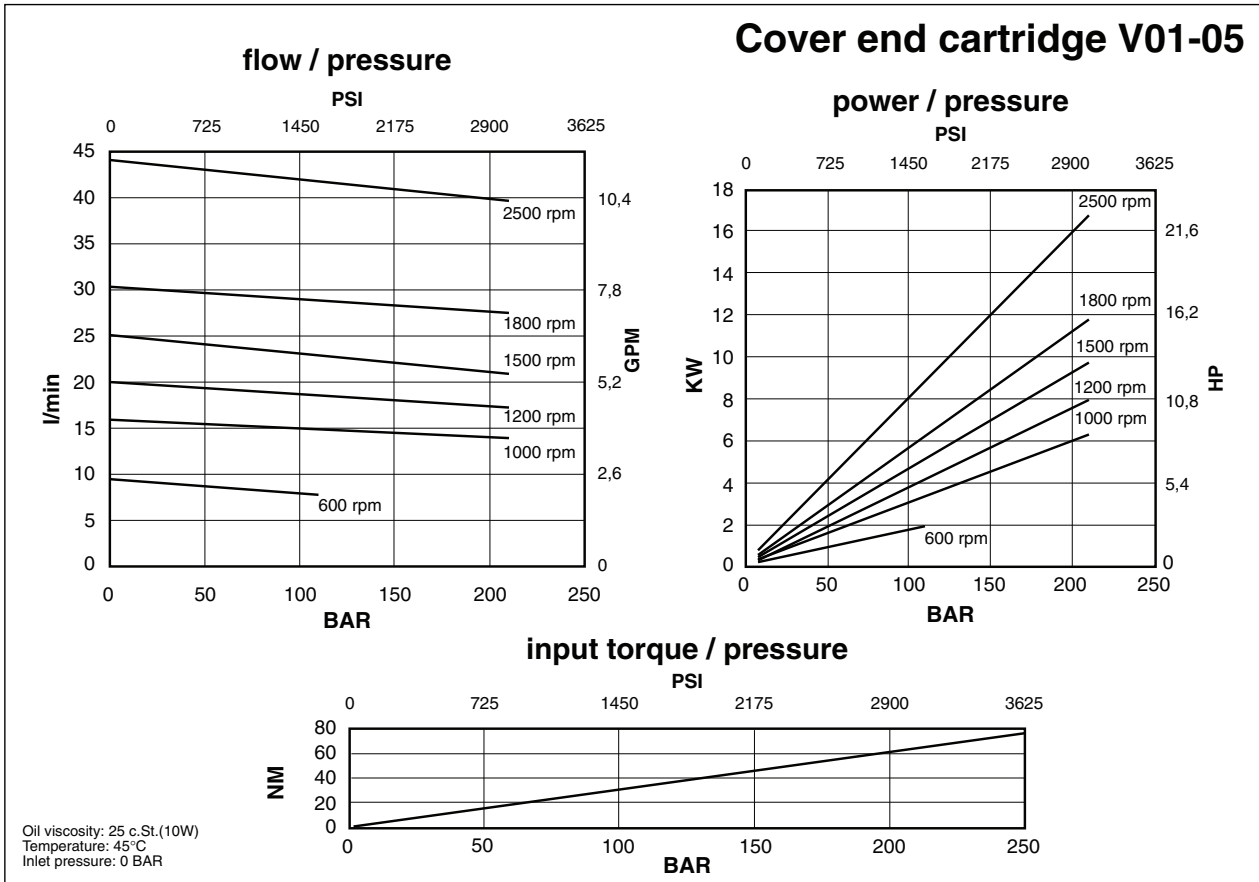
Shaft end cartridge V04-30



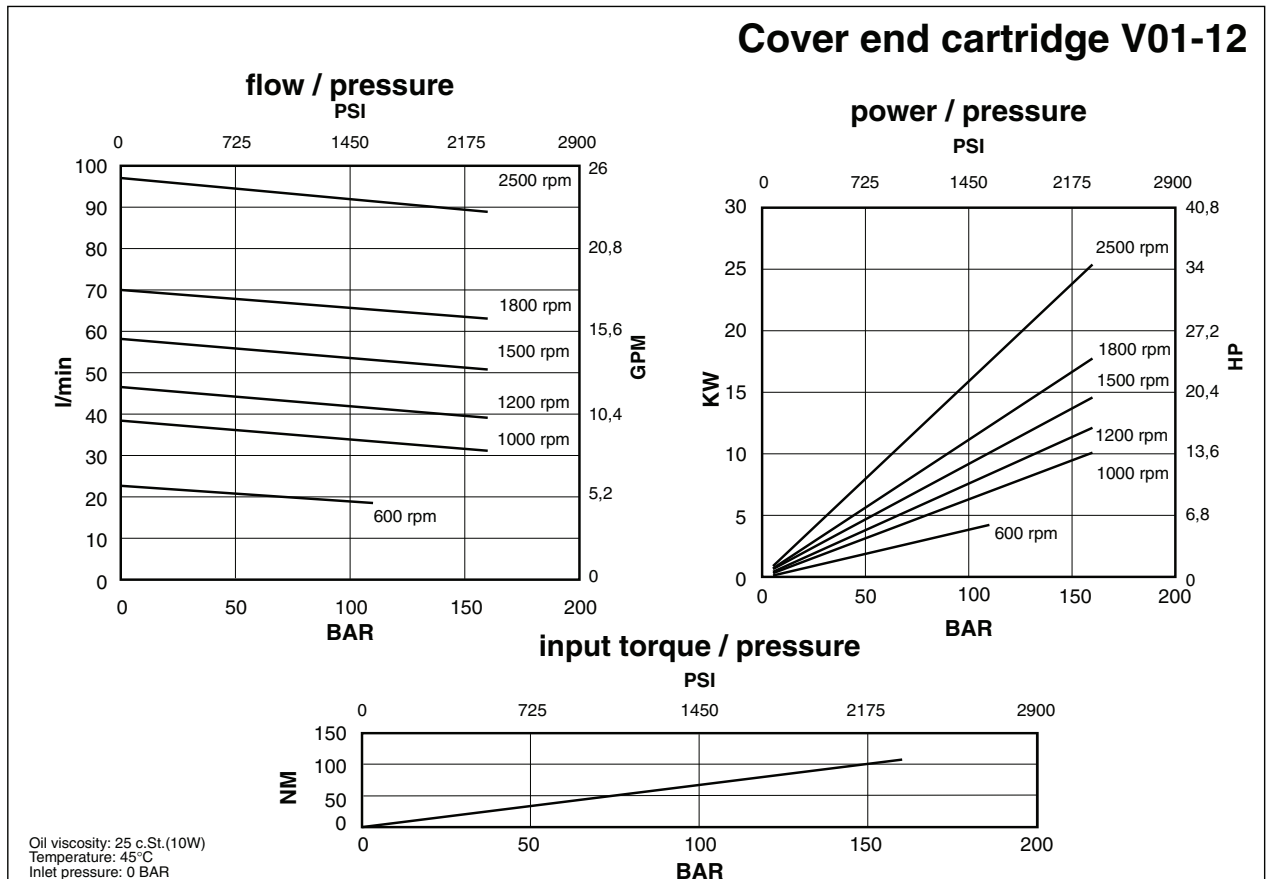
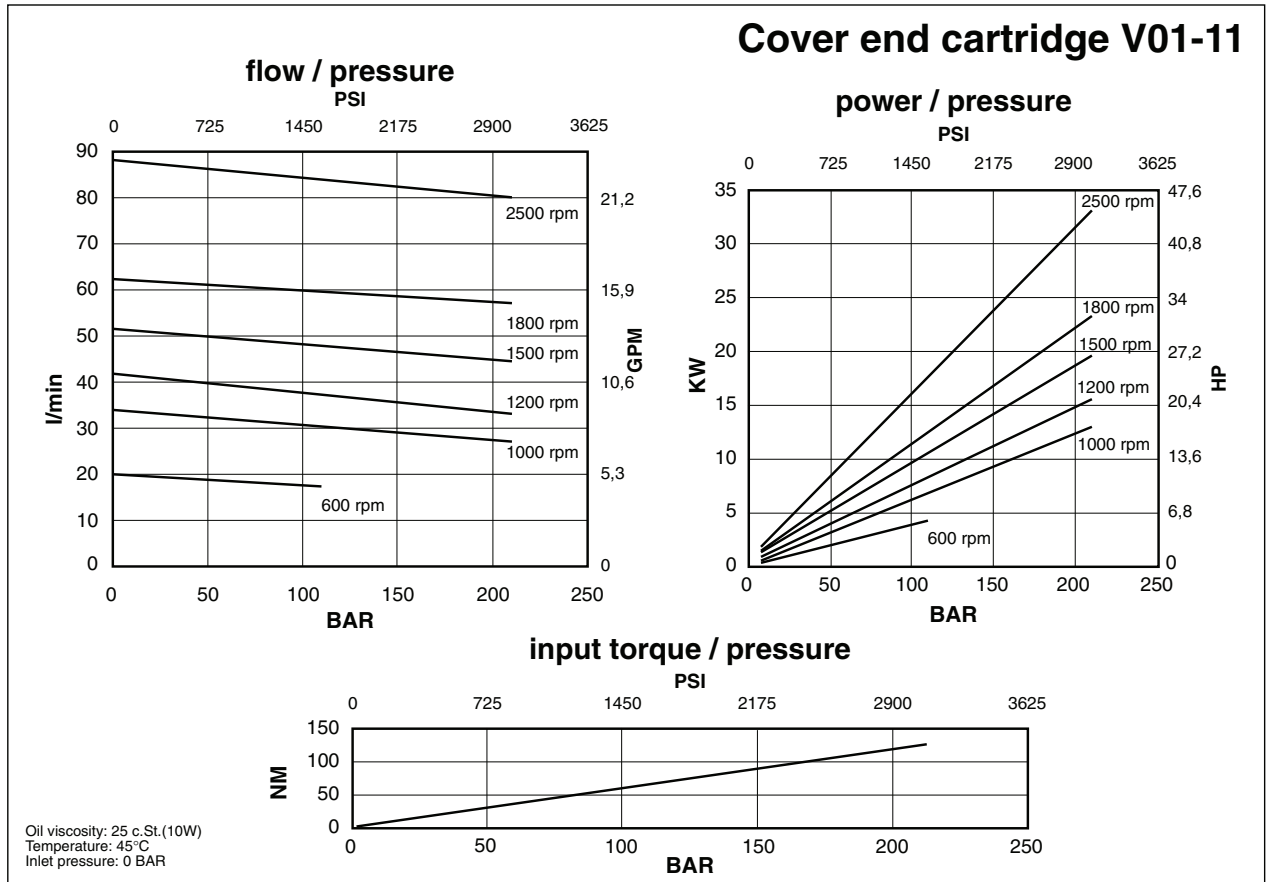
Double Pump Type BV41 (BV04+BV01)



Double Pump Type BV41 (BV04+BV01)

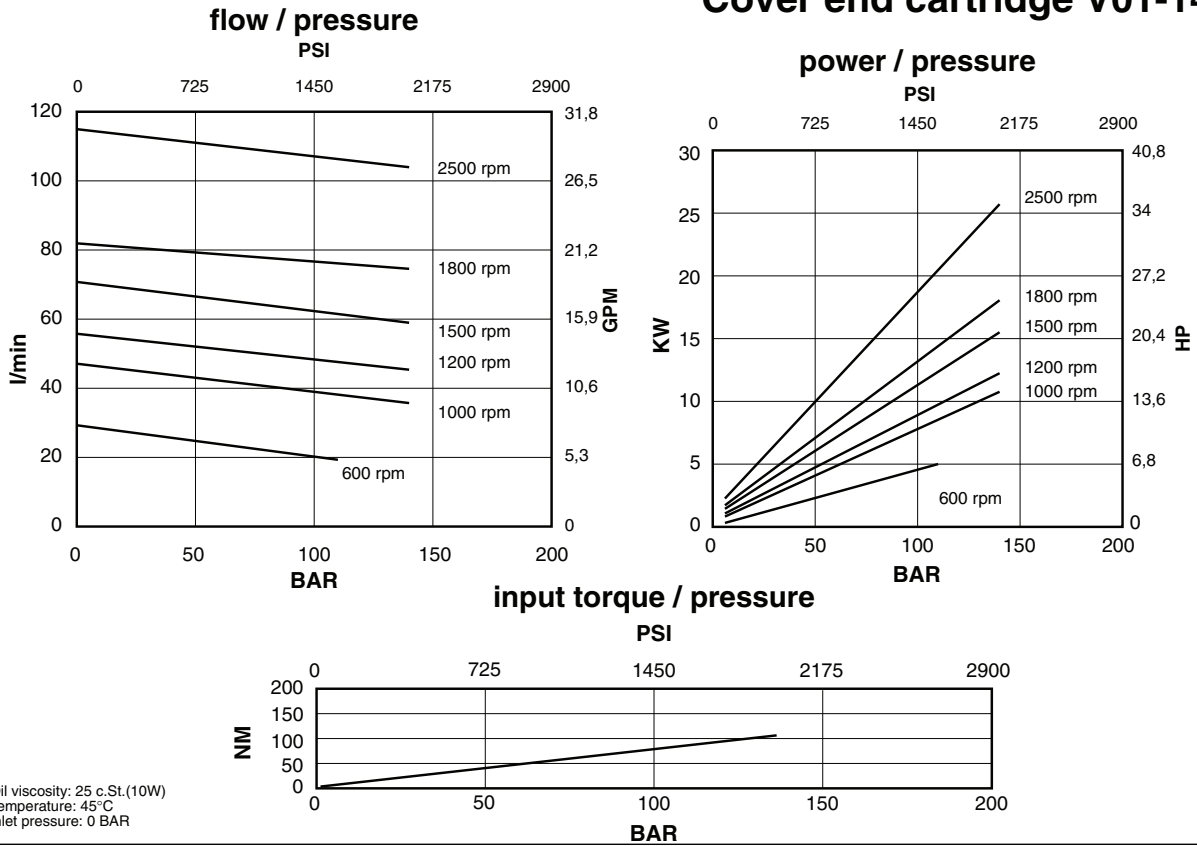


Double Pump Type BV41 (BV04+BV01)

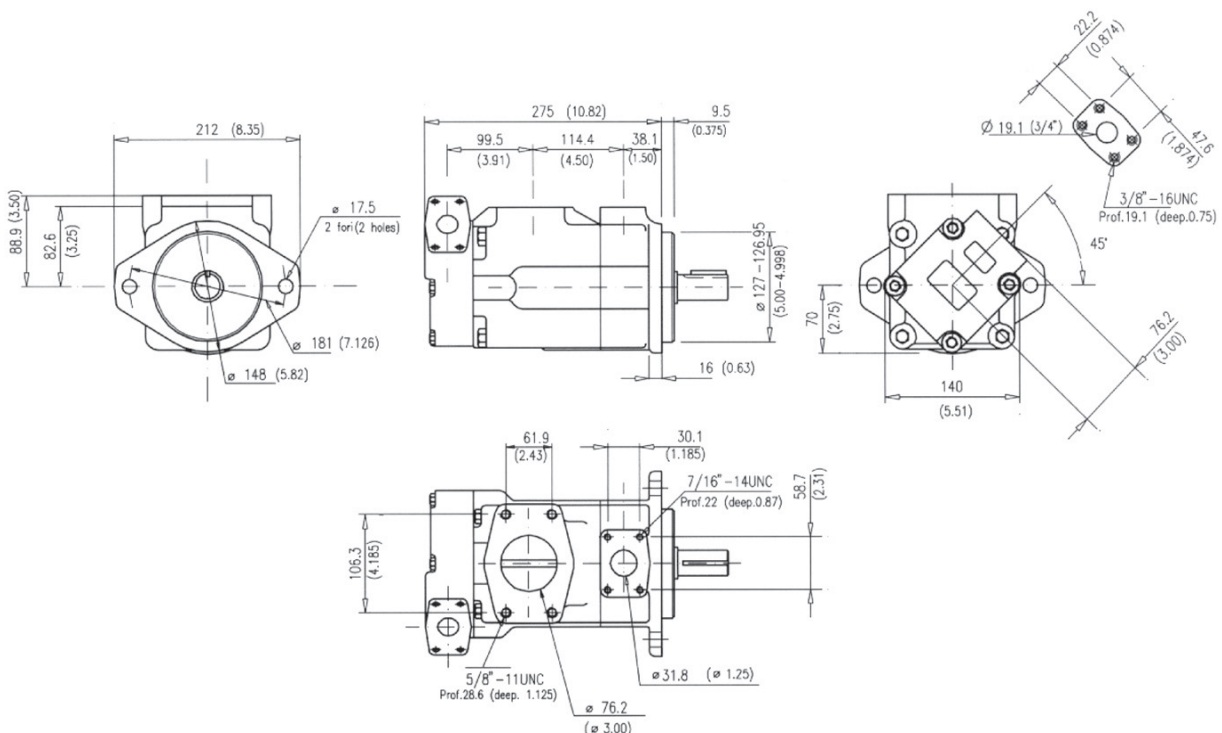


Double Pump Type BV41 (BV04+BV01)

Cover end cartridge V01-14



Installation dimensions mm (inches)



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

Double Pump Type BV41 (BV04+BV01)

Model code breakdown

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

Pump series (BV 41)

Design (G)

Pump type (** **)

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

Mounting
(omit if not required)

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®)

Rotation
(viewed from shaft end)

L = left hand rotation CCW (omit if CW)

Shaft end options

01 = Straight with key (standard), 11 = Splined

86 = Heavy duty straight keyed, 90 = Splined SAE C

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.)

Shaft 90

max torque capability: 580 Nm (5100 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) |

Double Pump Type BV41 (BV04+BV01)

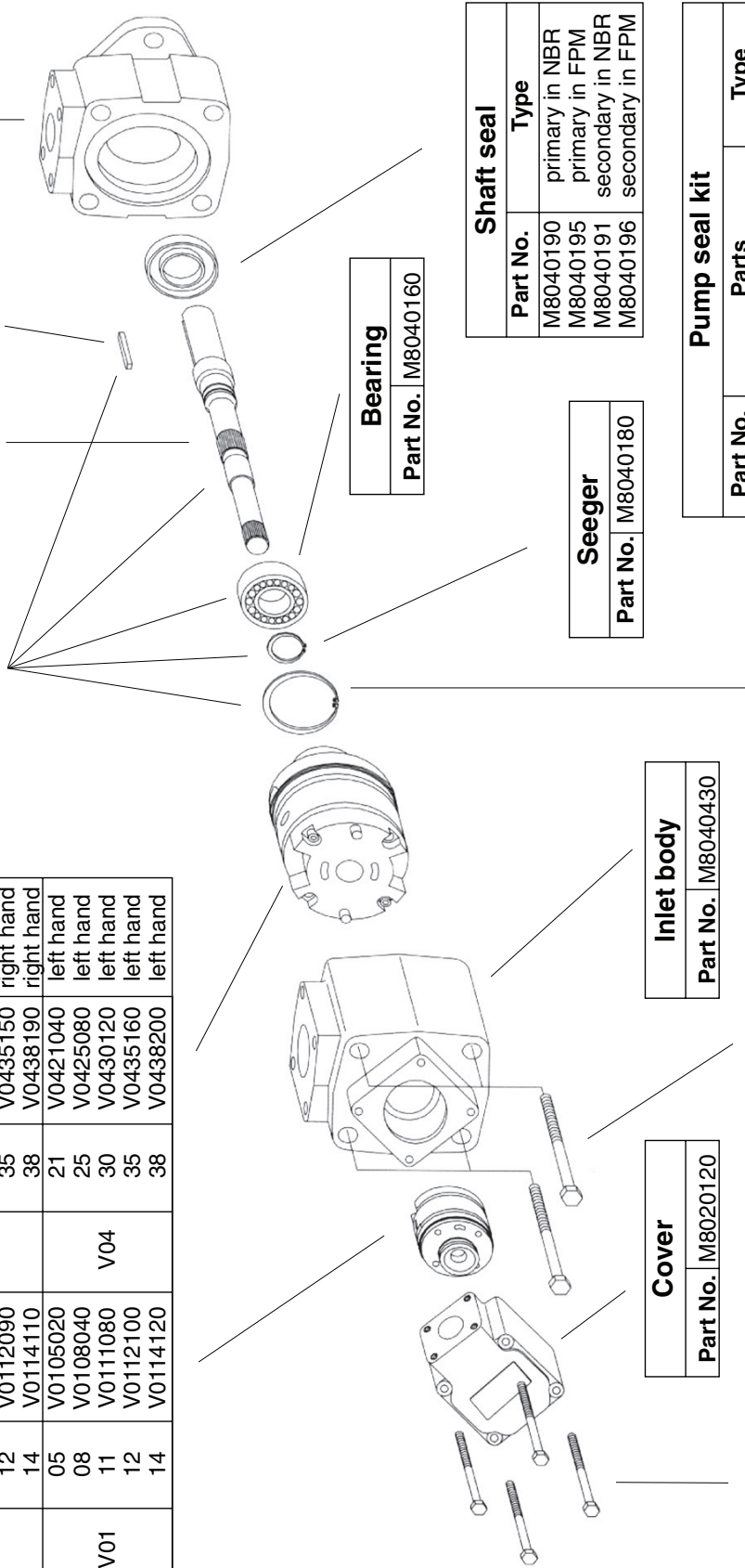
Id. codes of pump components

| cover end | | shaft end | | | Pump rotation | |
|-----------|-------|-----------|--------|-------|---------------|------------|
| Series | Model | Part No. | Series | Model | | Part No. |
| V01 | 05 | V0105010 | V04 | 21 | V0421030 | right hand |
| | 08 | V0108030 | | 25 | V0425070 | right hand |
| | 11 | V0111070 | | 30 | V0430110 | right hand |
| | 12 | V0112090 | | 35 | V0435150 | right hand |
| | 14 | V0114110 | | 38 | V0438190 | right hand |
| V01 | 05 | V0105020 | V04 | 21 | V0421040 | left hand |
| | 08 | V0108040 | | 25 | V0425080 | left hand |
| | 11 | V0111080 | | 30 | V0430120 | left hand |
| | 12 | V0112100 | | 35 | V0435160 | left hand |
| | 14 | V0114120 | | 38 | V0438200 | left hand |

| Shaft kit | |
|-----------|----------|
| Model | Part No. |
| 01 | M8410601 |
| 11 | M8410611 |
| 86 | M8410686 |
| 90 | M8410690 |

| Shaft | | Key | |
|-------|----------|----------|----------|
| Model | Part No. | Part No. | Part No. |
| 01 | K4101000 | M8040100 | |
| 11 | K4111000 | - | |
| 86 | K4186000 | M8048600 | |
| 90 | K4190000 | - | |

| 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 |

| Seeger | |
|----------|----------|
| Part No. | M8040180 |

| Pump seal kit | | |
|---------------|-----------------------|--------------|
| Part No. | Parts | Type |
| M8410500 | seals + 1 shaft seal | NBR |
| M8410501 | seals + 2 shaft seals | NBR |
| M8410503 | seals + 1 shaft seal | FPM (Viton®) |
| M8410504 | seals + 2 shaft seals | FPM (Viton®) |

| Inlet body | |
|------------|----------|
| Part No. | M8040430 |

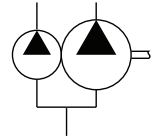
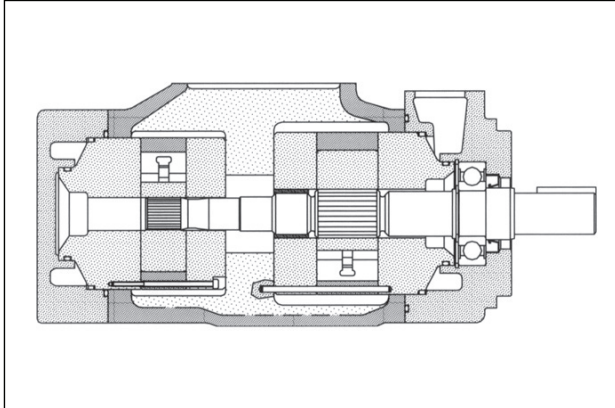
| Seeger | |
|----------|----------|
| Part No. | M8040170 |

| Cover | |
|----------|----------|
| Part No. | M8020120 |

| Screw | |
|---------------------------------|----------|
| Part No. | M8040210 |
| Torque to 225 Nm (2010 lb. in.) | |

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

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 characteristics

| 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 |
| shaft end | | | | | | | | | | |
| 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 | | | | | | | | | | |
| 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)

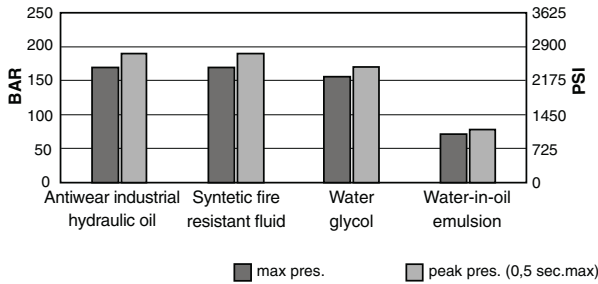
Operating temperature: with mineral oil -10°C +70°C (+30°C to +60°C recommended), with water based fluids +15°C to +50°C.

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

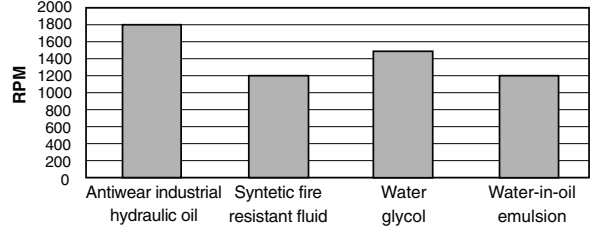
Double Pump Type BV42 (BV04+BV01)

Main operating data

max pressure / hydraulic fluid

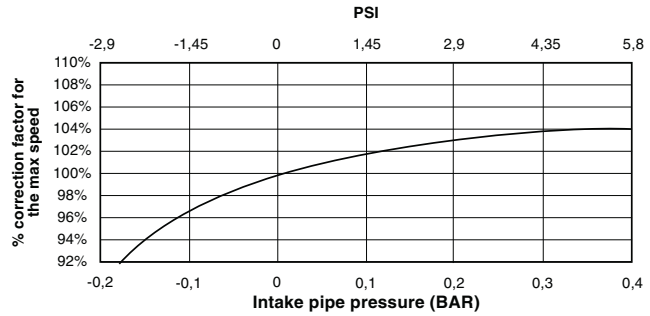


max speed / hydraulic fluid (with 0 bar in the intake pipe)

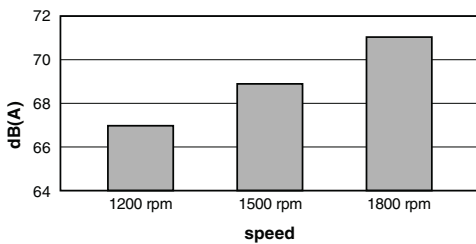


If the intake pressure is not zero bar, use the graph below to find the percentage correction factor to apply to the maximum speed

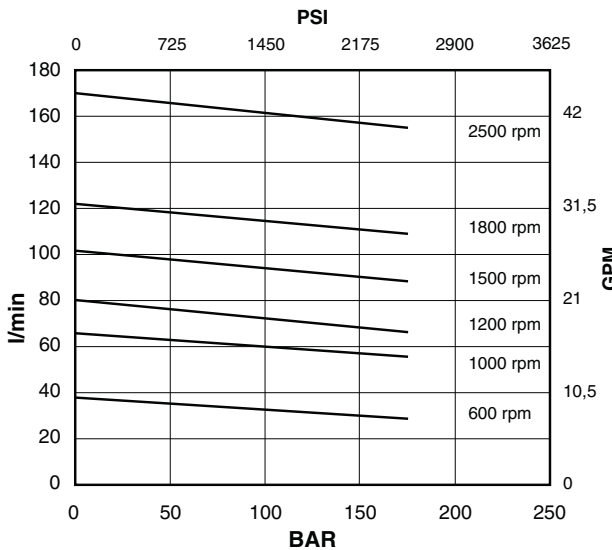
max speed / intake pipe pressure



Sound level at 138 bar (2000 psi)

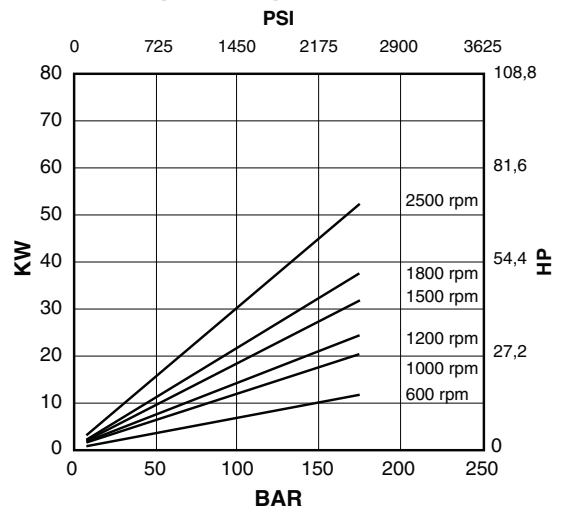


flow / pressure

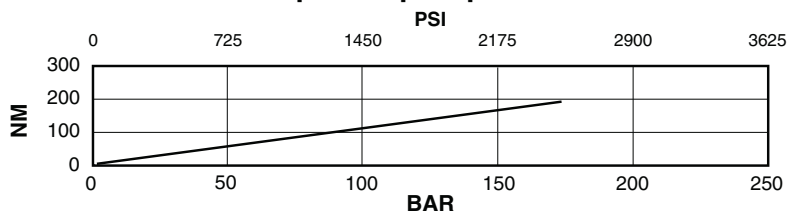


Shaft end cartridge V04-21

power / pressure

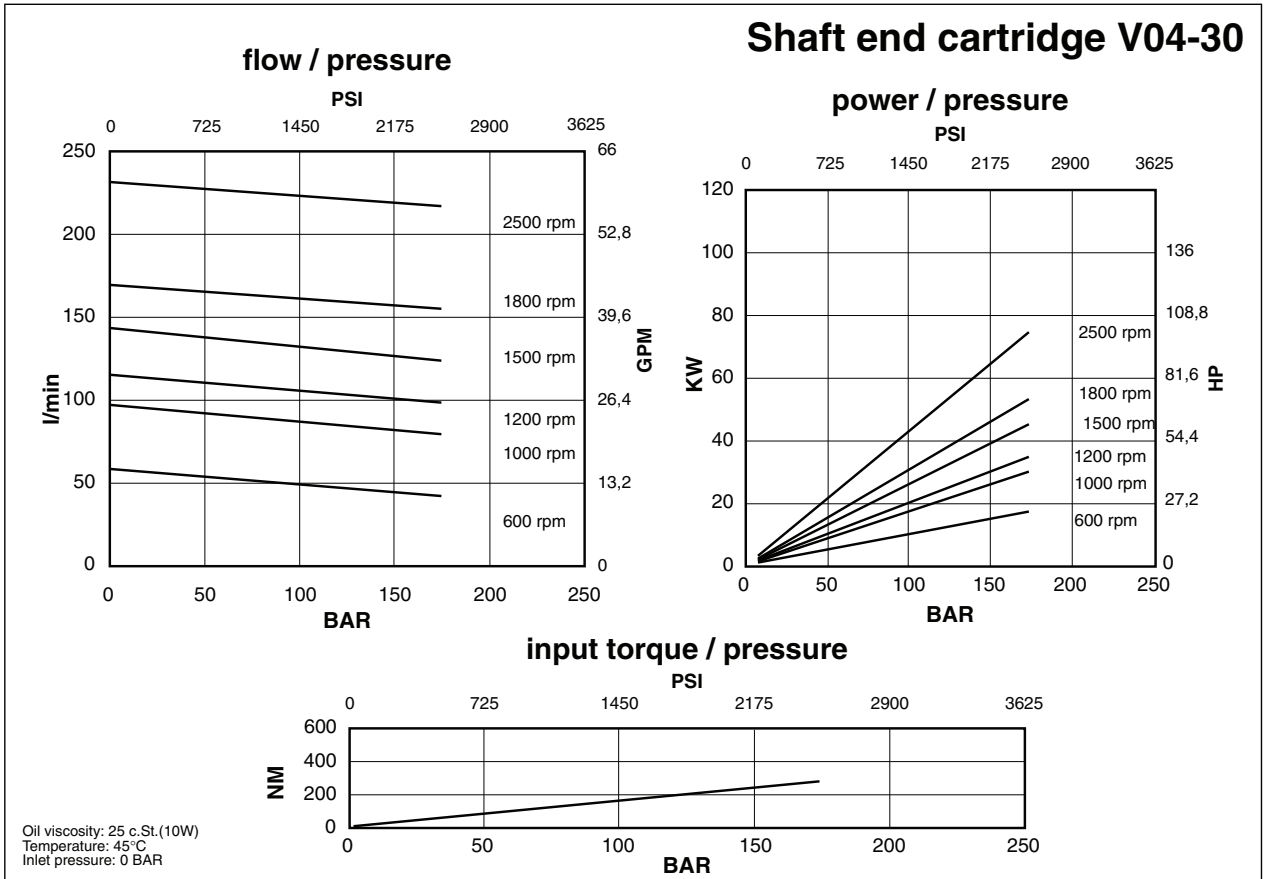
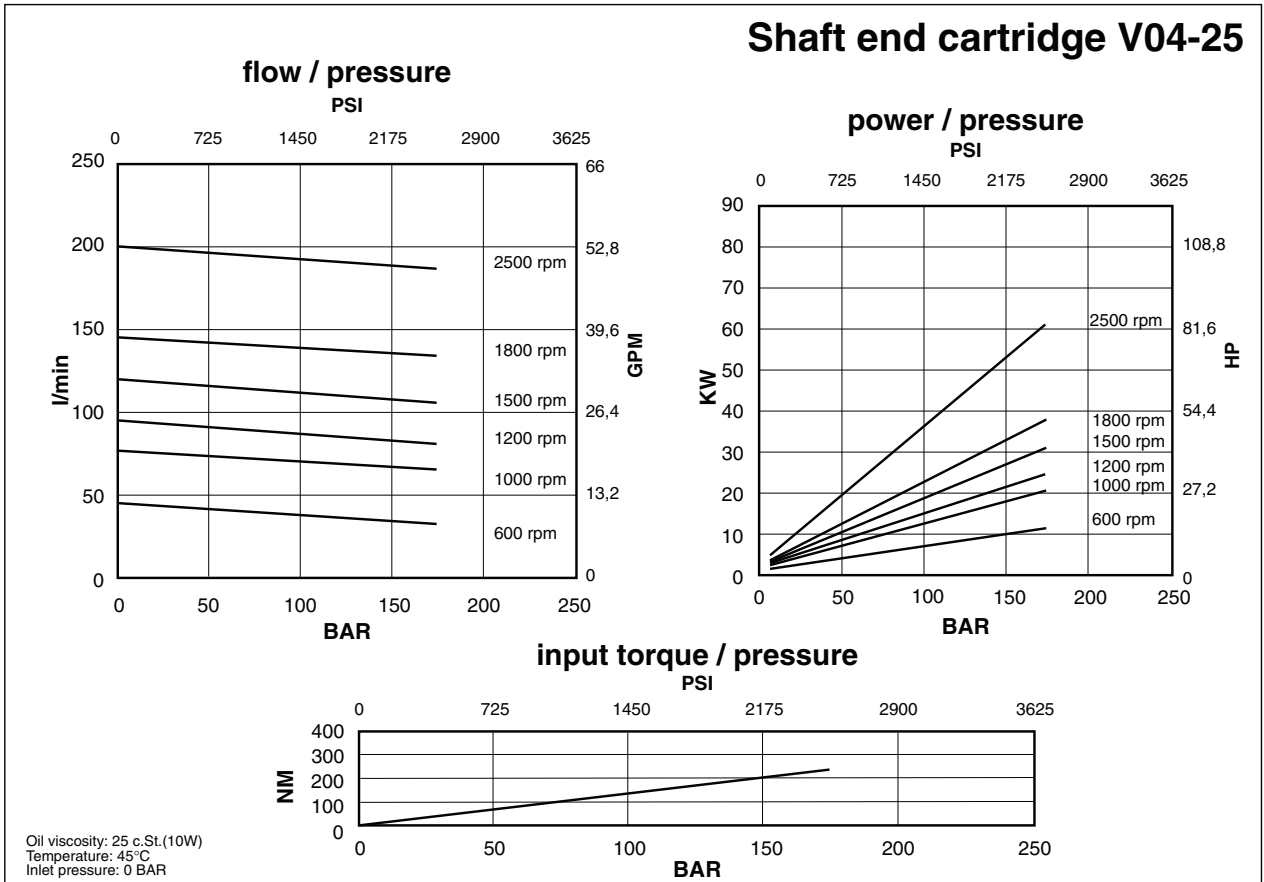


input torque / pressure



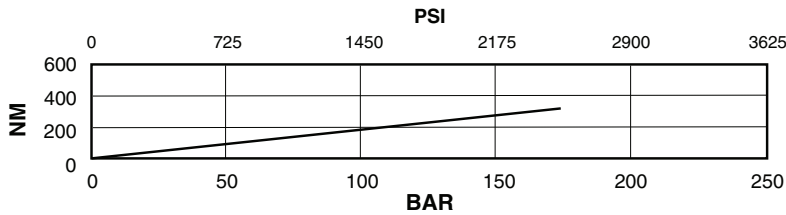
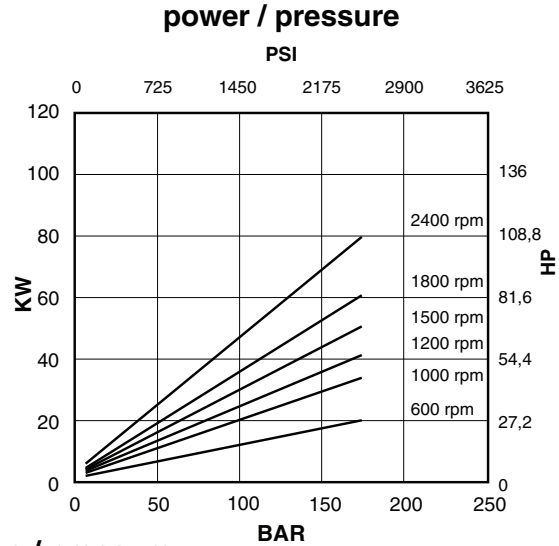
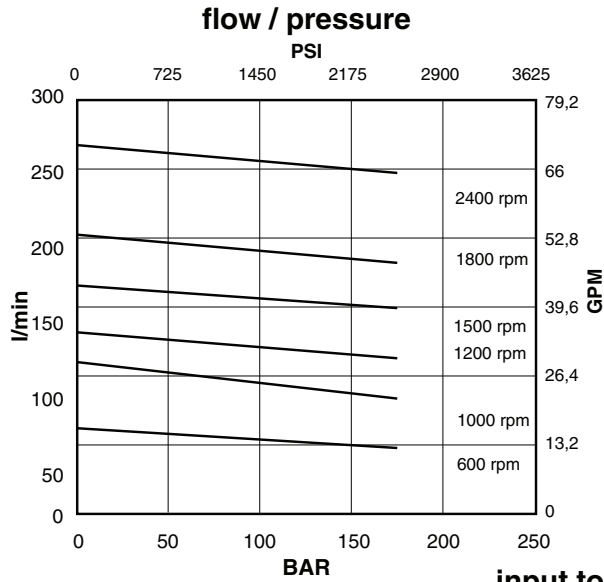
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Double Pump Type BV42 (BV04+BV01)



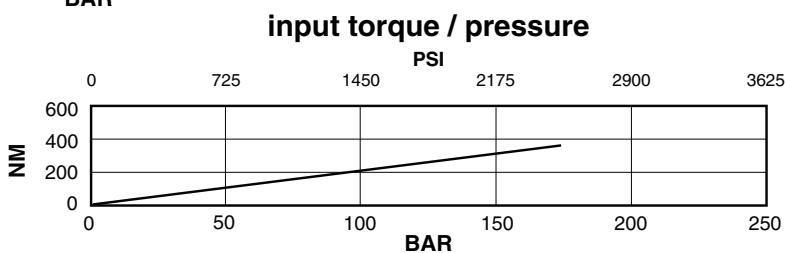
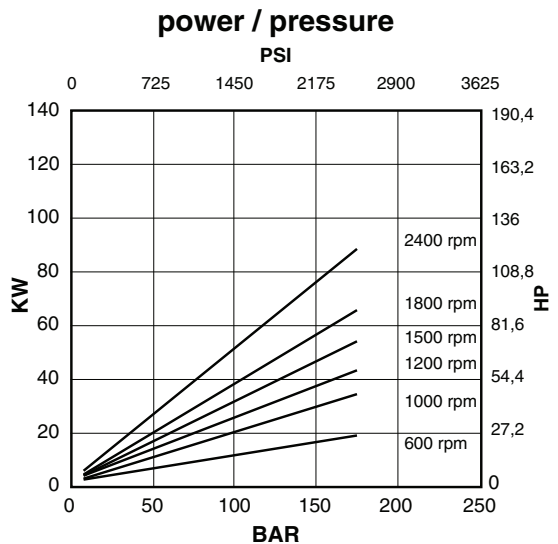
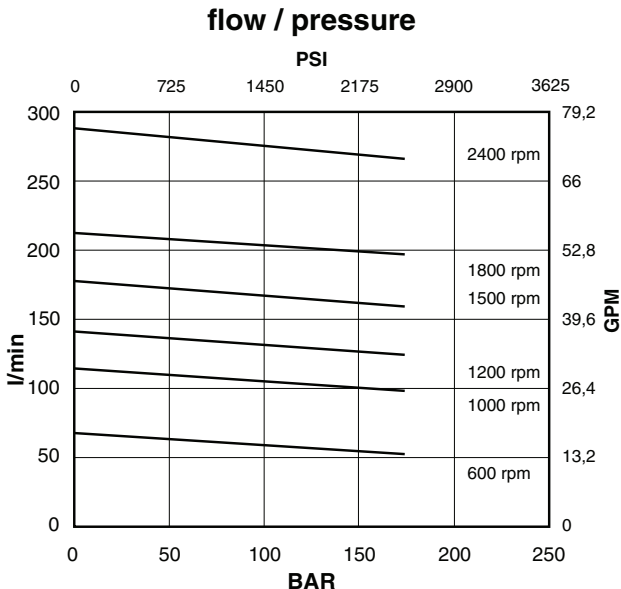
Double Pump Type BV42 (BV04+BV01)

Shaft end cartridge V04-35



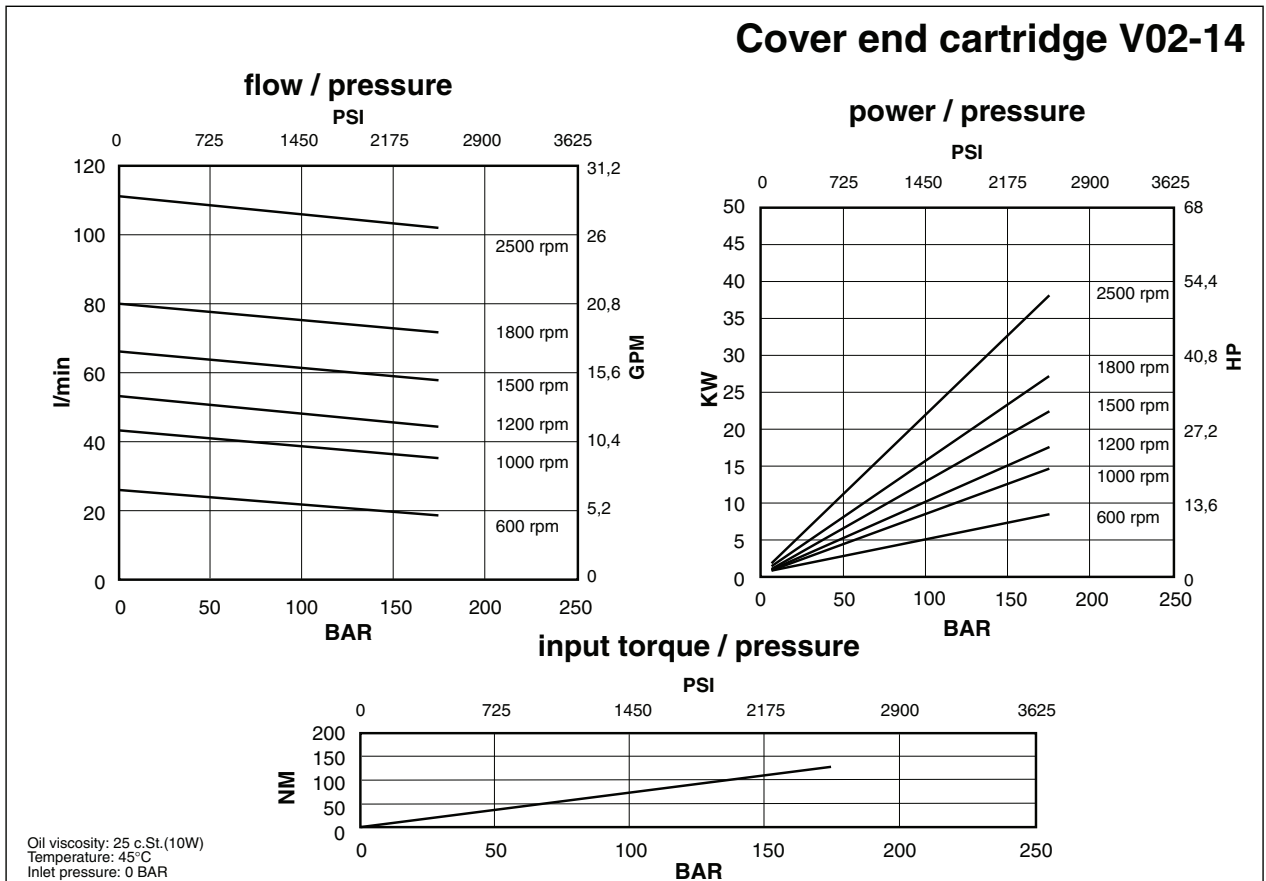
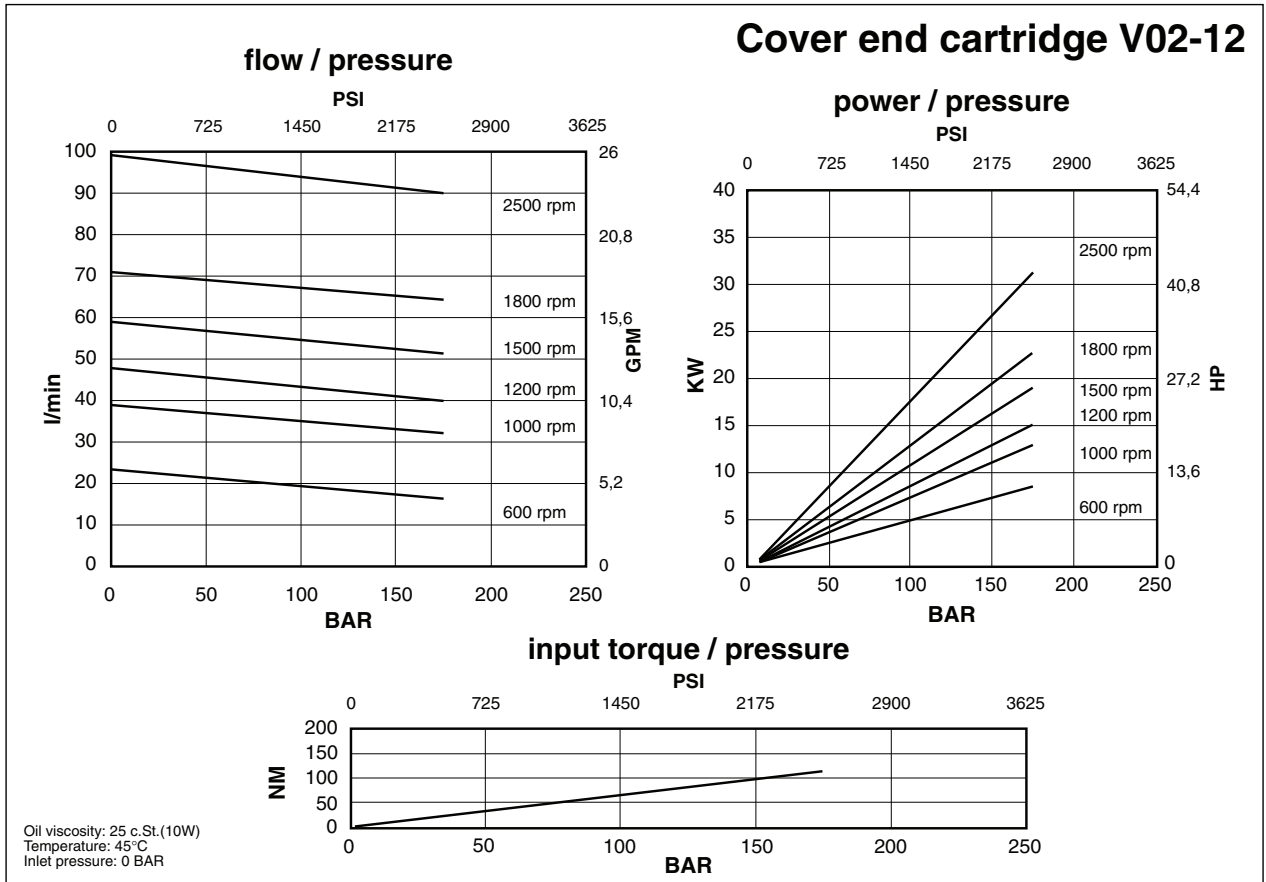
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V04-38

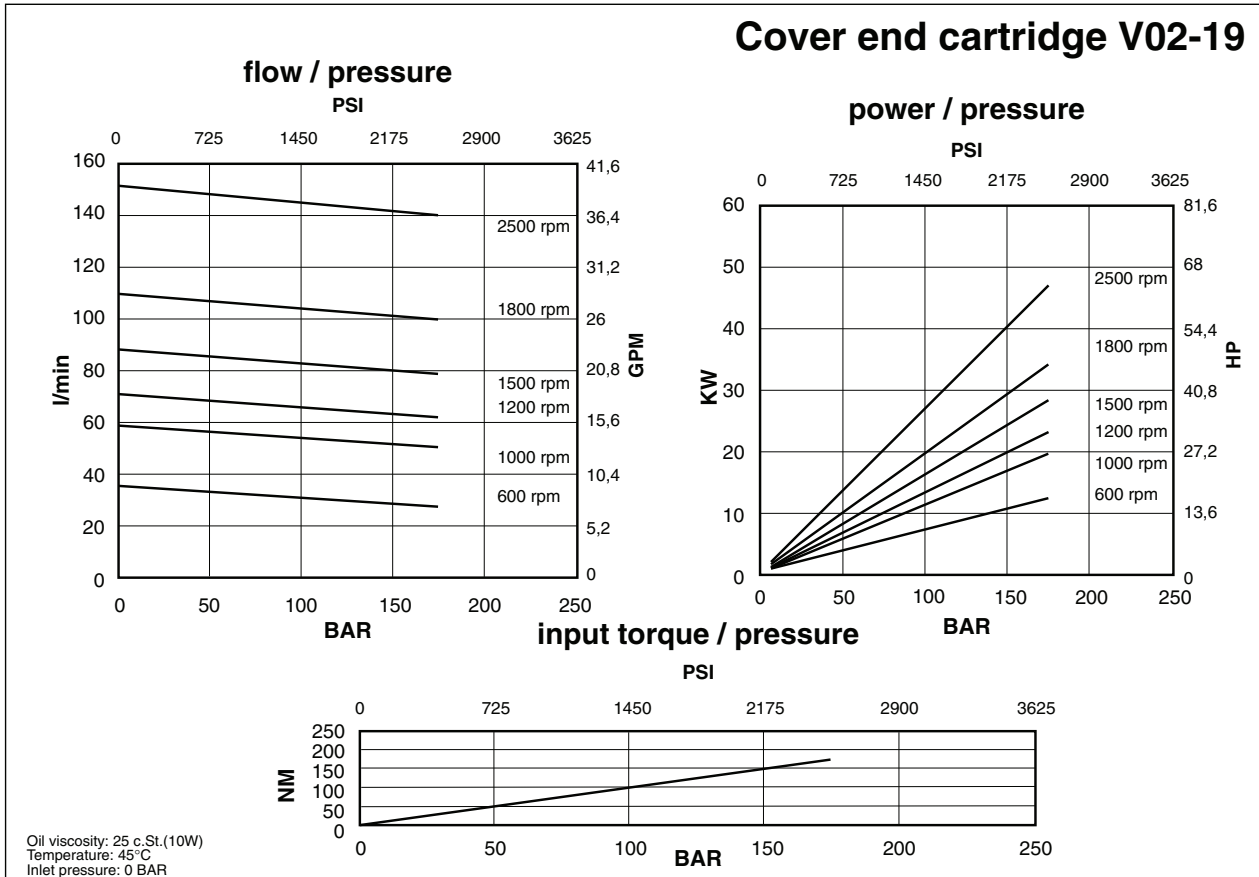
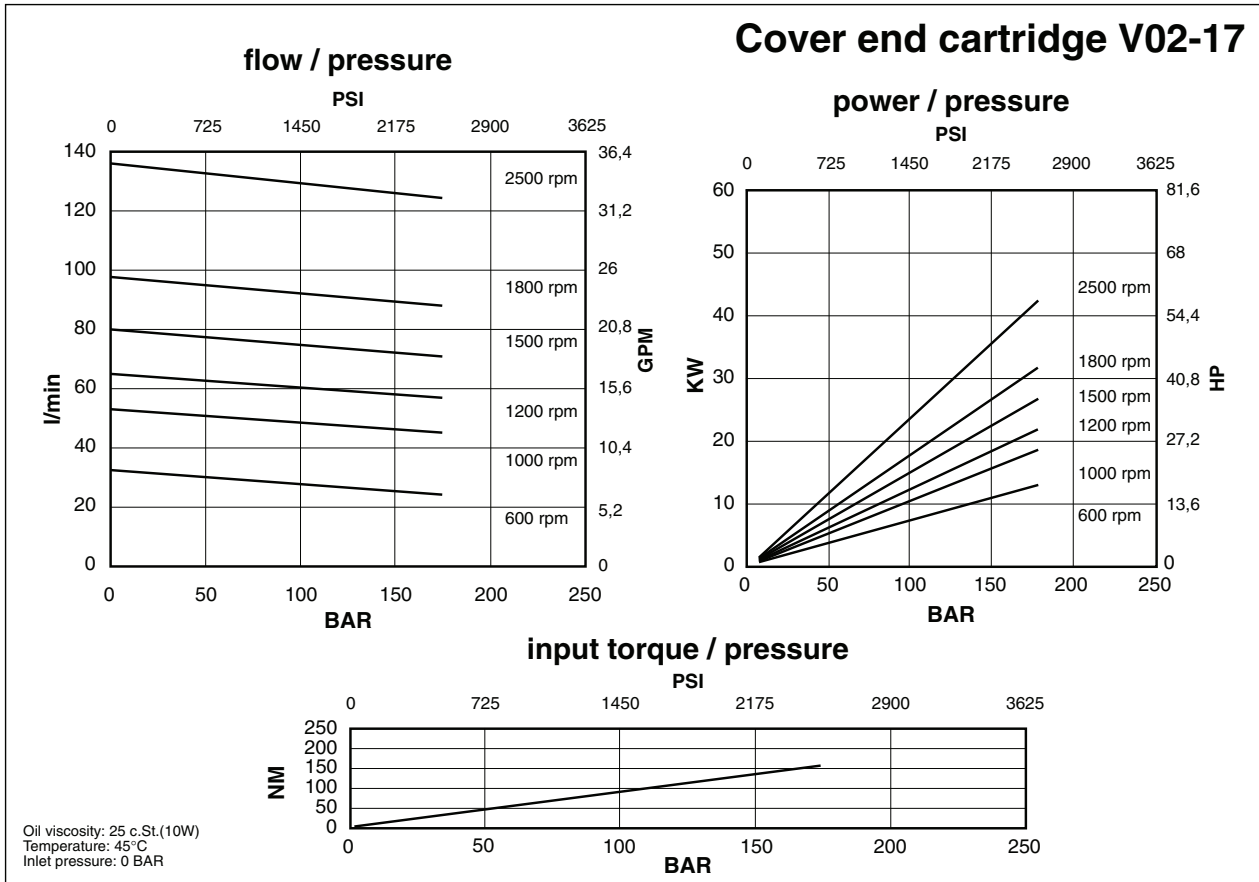


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

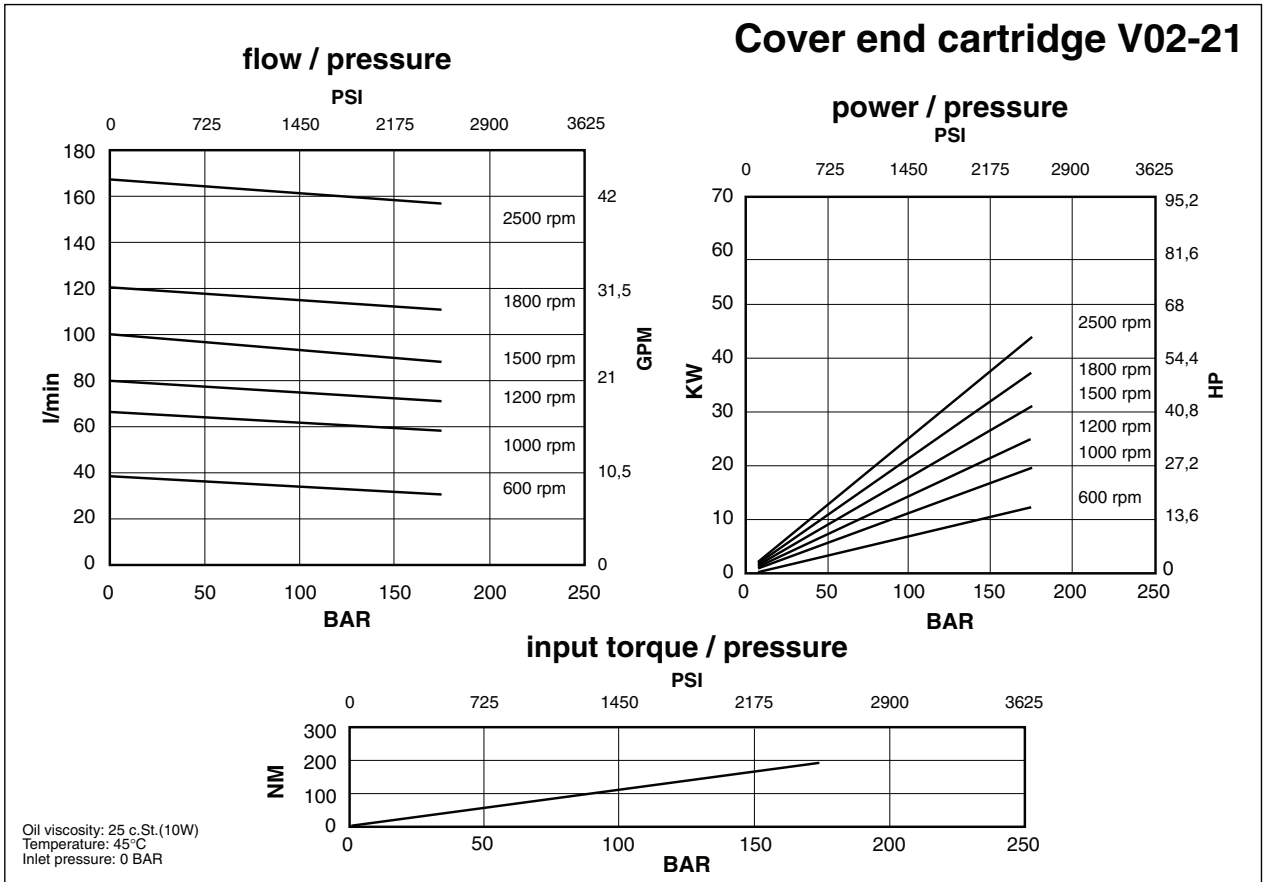
Double Pump Type BV42 (BV04+BV01)



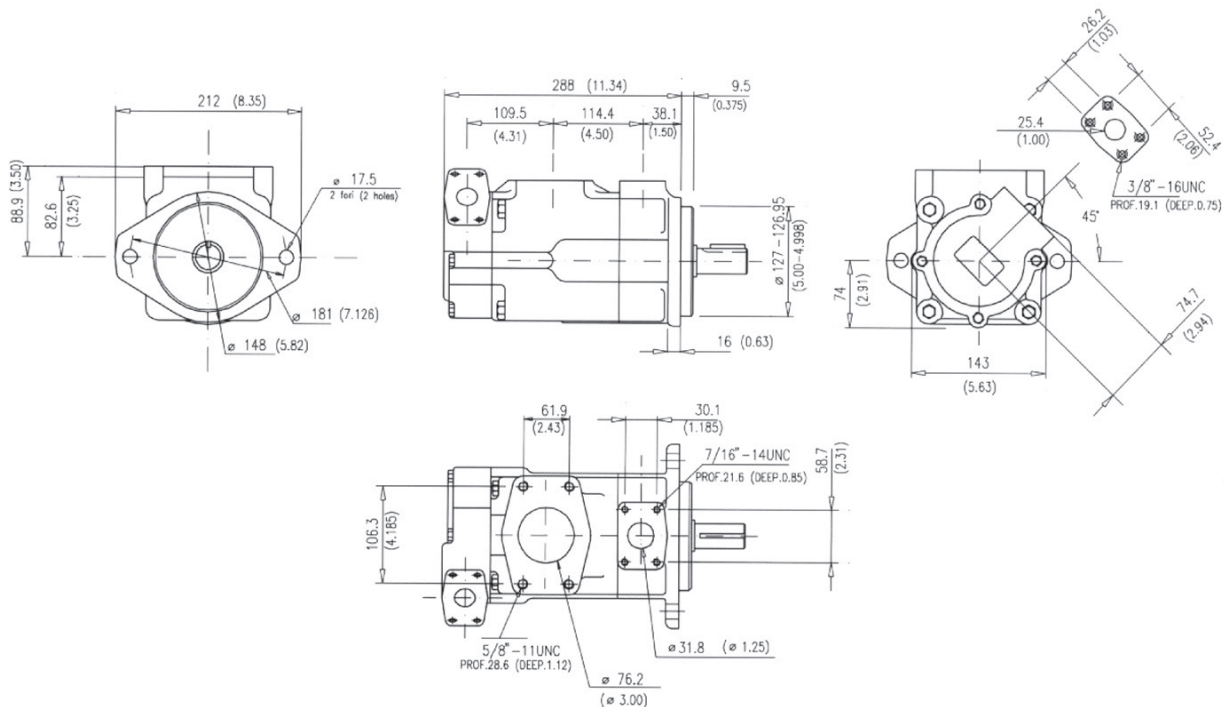
Double Pump Type BV42 (BV04+BV01)



Double Pump Type BV42 (BV04+BV01)



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)

Pump series (BV)

Pump type (42)

Design (G)

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

Mounting
(omit if not required)

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®)

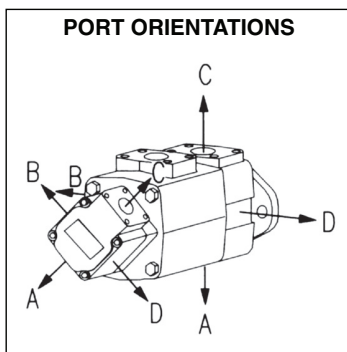
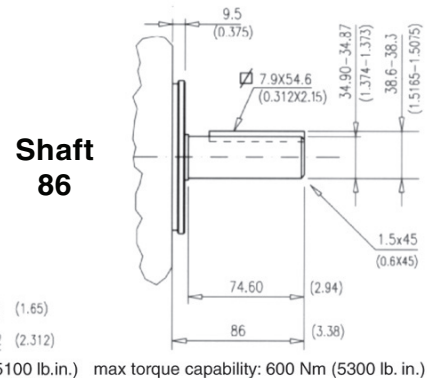
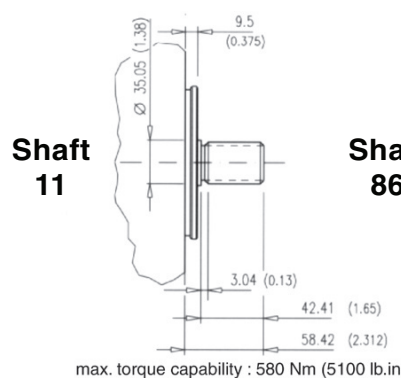
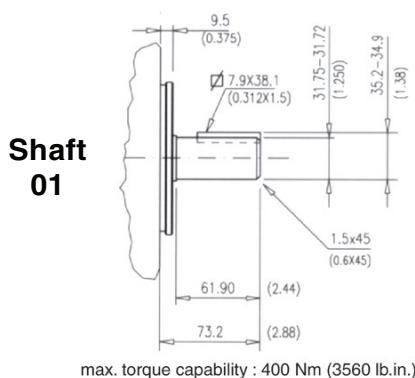
Rotation
(viewed from shaft end)

- L** = left hand rotaton CCW (omit if CW)

Shaft end options

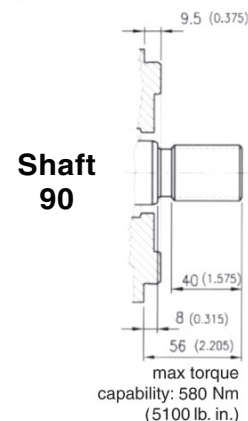
- 01** = Straight with key (standard), **11** = Splined
- 86** = Heavy duty straight keyed, **90** = Splined SAE C

Shaft options mm (inches)



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) |



Double Pump Type BV42 (BV04+BV01)

Id. codes of pump components

| Cartridges | | | | Pump rotation | | |
|------------|-----------|----------|--------|---------------|----------|------------|
| cover end | shaft end | | | | | |
| 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 | | Shaft | | Key | | Body | |
|-----------|----------|-------|----------|----------|----------|----------|----------|
| Model | Part No. | Model | Part No. | Part No. | Part No. | Part No. | Part No. |
| 01 | M8420601 | 01 | K4201000 | M8040100 | M8040140 | | |
| 11 | M8420611 | 11 | K4211000 | - | | | |
| 86 | M8420686 | 86 | K4286000 | M8048600 | | | |
| 90 | M8420690 | 90 | K4290000 | - | | | |

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

| Seeger | |
|----------|--------|
| Part No. | Seeger |
| M8040180 | |

| Bearing | |
|----------|---------|
| Part No. | Bearing |
| M8040160 | |

| 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®) |

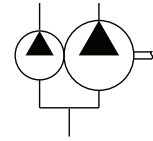
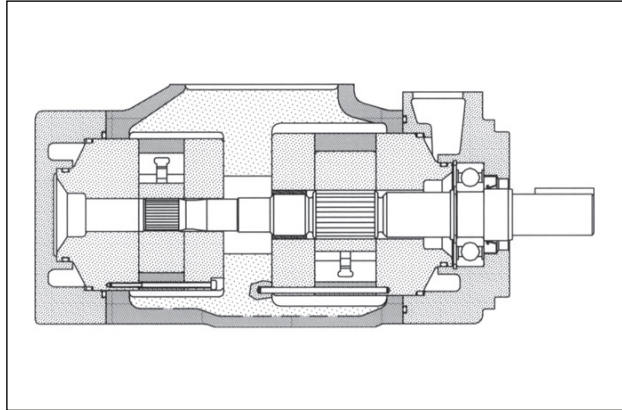
| Intel body | |
|------------|------------|
| Part No. | Intel body |
| M8040240 | |

| Screw | |
|----------|---------------------------------|
| Part No. | Screw |
| M8040220 | Torque to 225 Nm (2010 lb. in.) |

| Cover | |
|----------|-------|
| Part No. | Cover |
| M8050350 | |

| Screw | |
|----------|--------------------------------|
| Part No. | Screw |
| 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 characteristics

| 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 | |
|------------------|------------------------|----------------------|-------------------------------------|-------|-------------------------------------|--------|---------------------------------------|--------|--------------------|------|
| | cm ³ /g | (in ³ /r) | l/min | (gpm) | l/min | (gpm) | bar | (psi) | min | max |
| shaft end | | | | | | | | | | |
| 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 | | | | | | | | | | |
| 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).

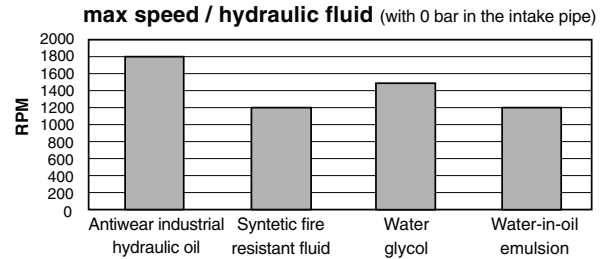
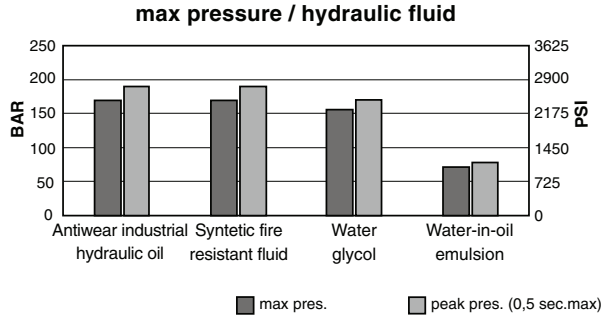
Inlet pressure: (with mineral oil): from -0,17 to +1,4 bar (-2.5 to + 20 psi)

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

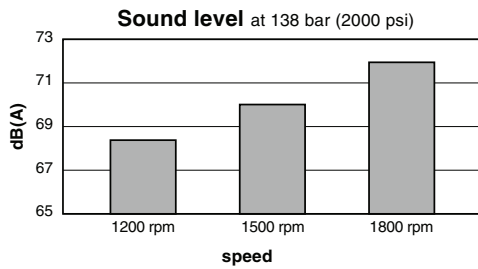
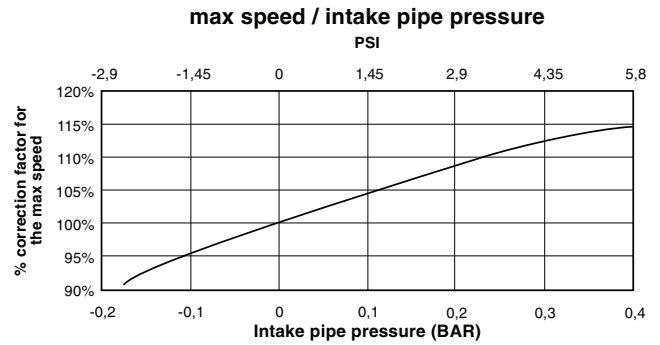
Drive: direct and coaxial by means of a flexible coupling.

Double Pump Type BV51 (BV05+BV01)

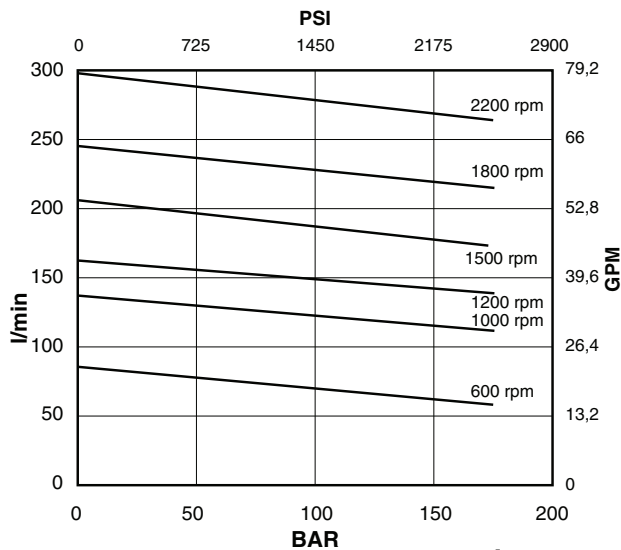
Main operating data



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

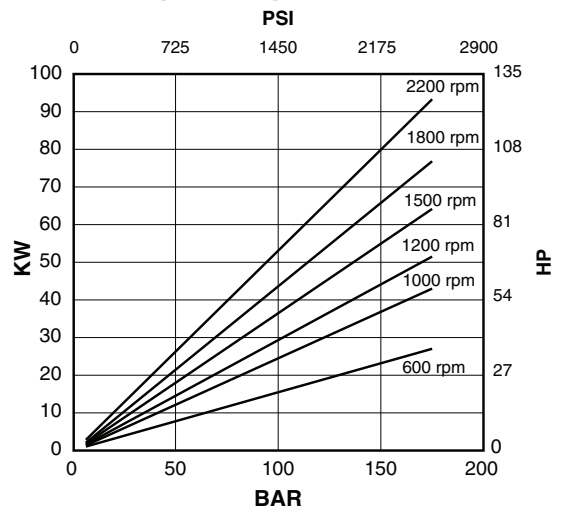


flow / pressure

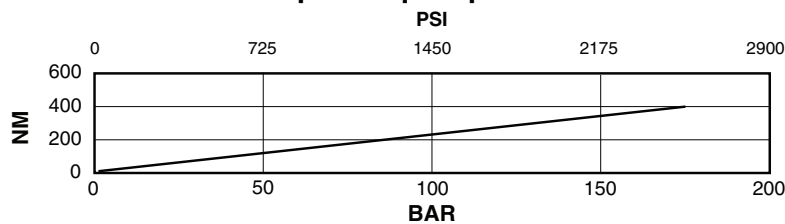


Shaft end cartridge V05-42

power / pressure



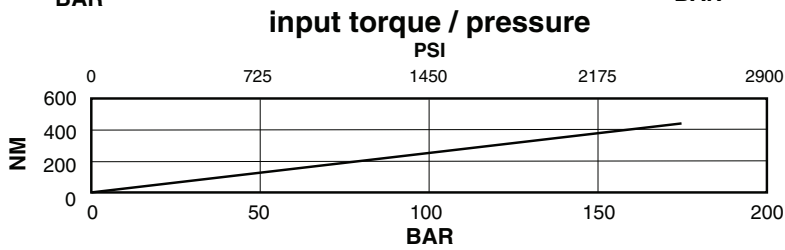
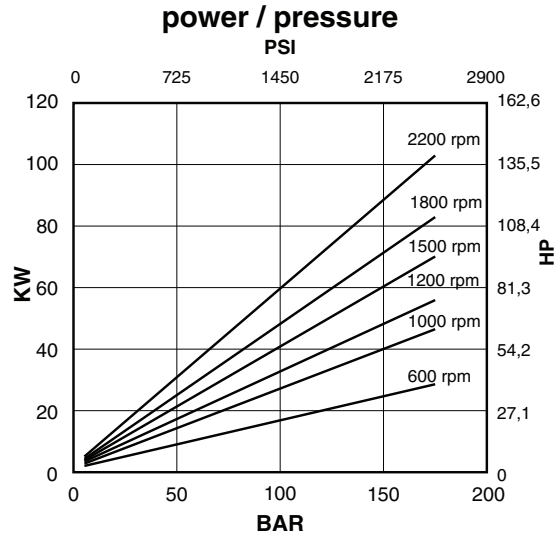
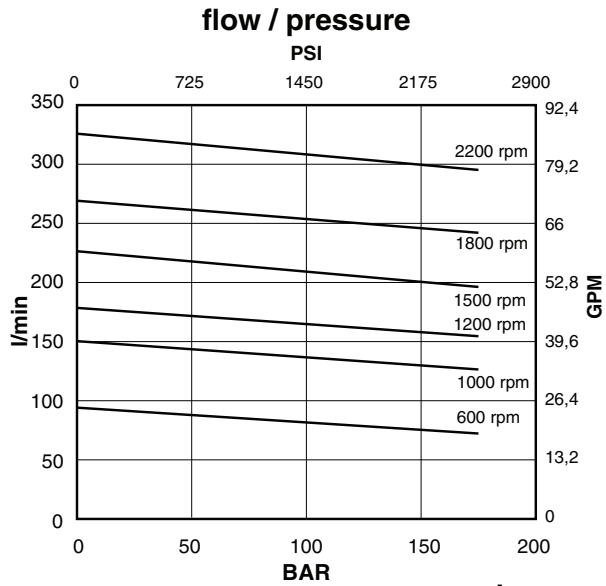
input torque / pressure



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

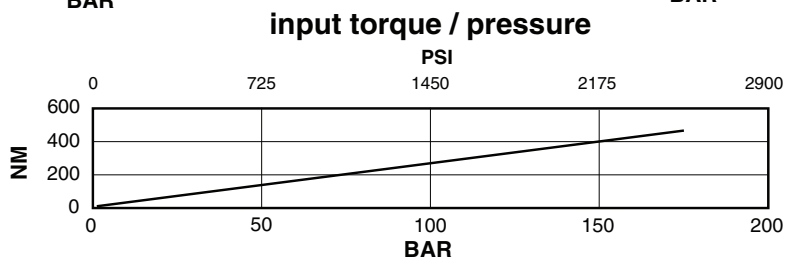
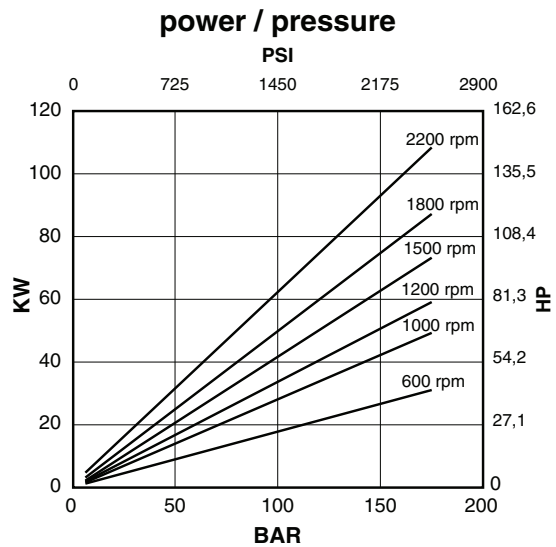
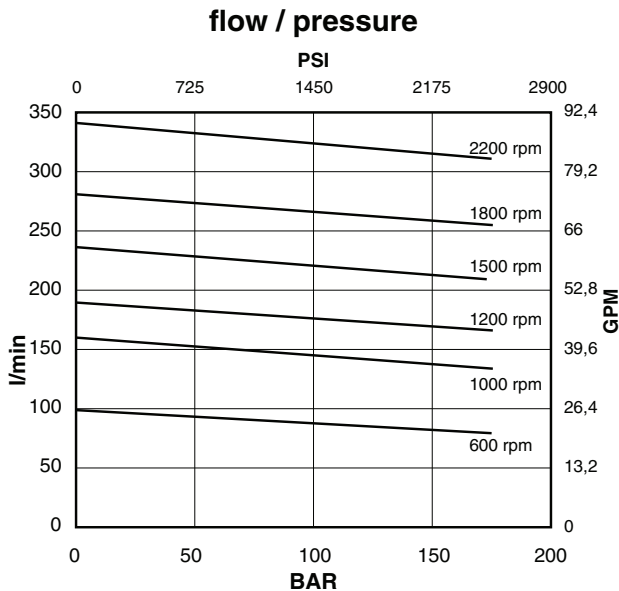
Double Pump Type BV51 (BV05+BV01)

Shaft end cartridge V05-47



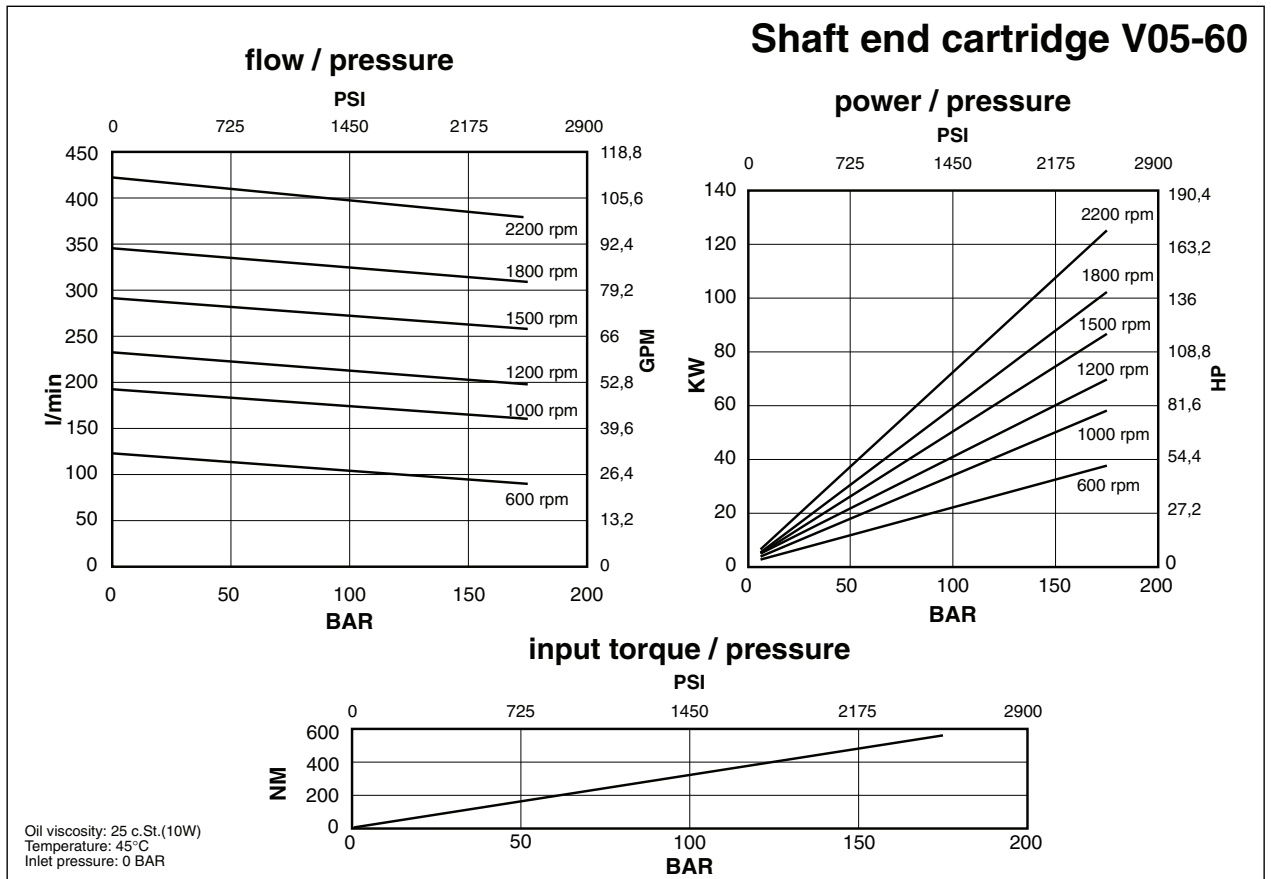
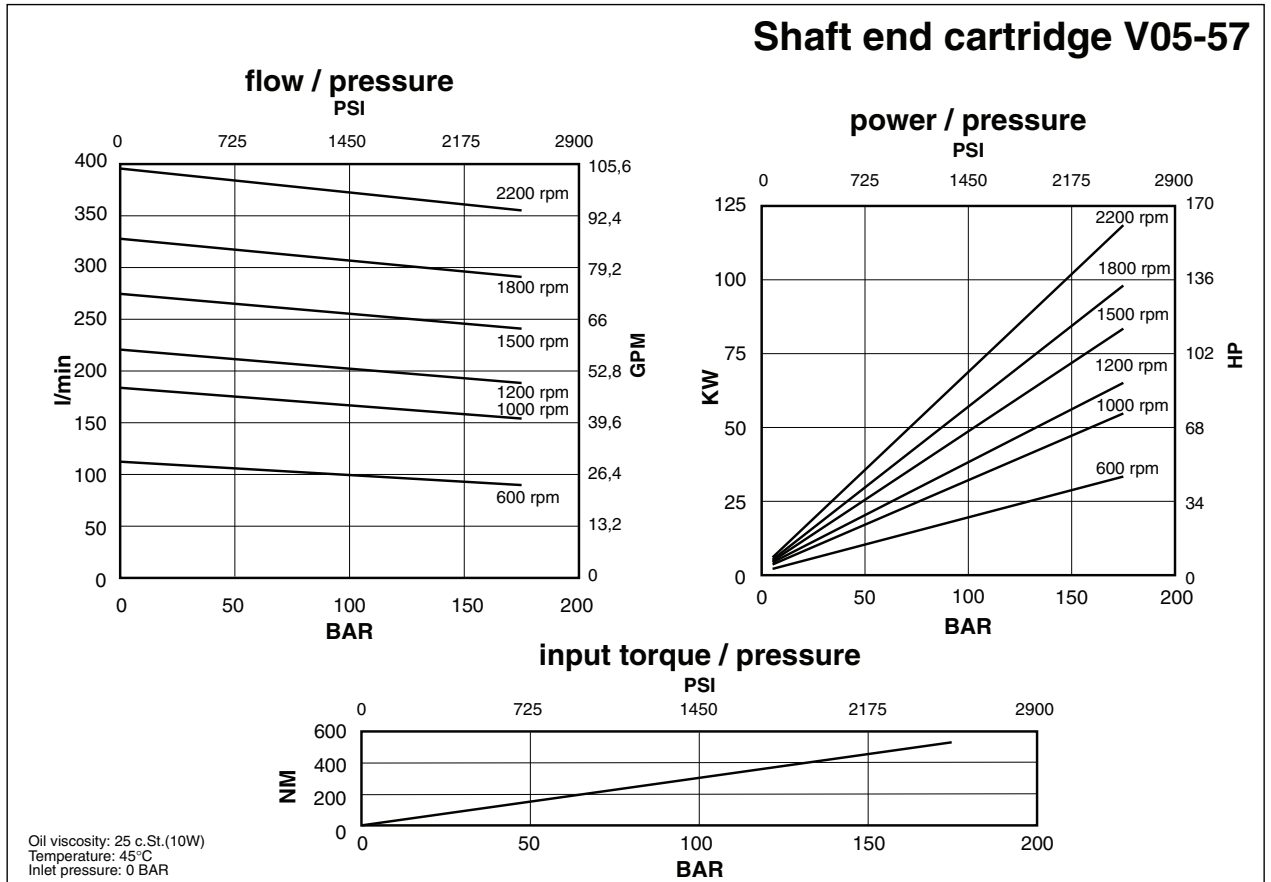
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-50

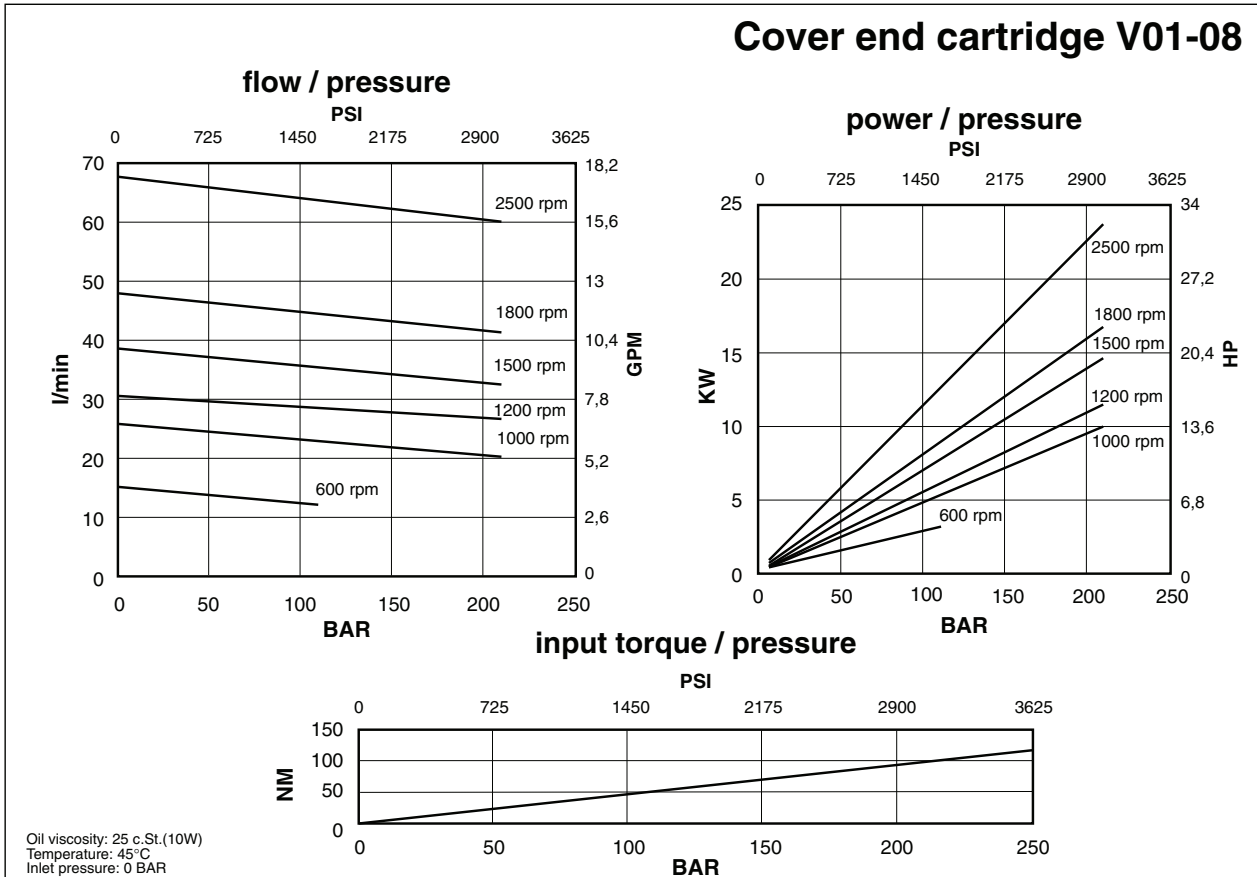
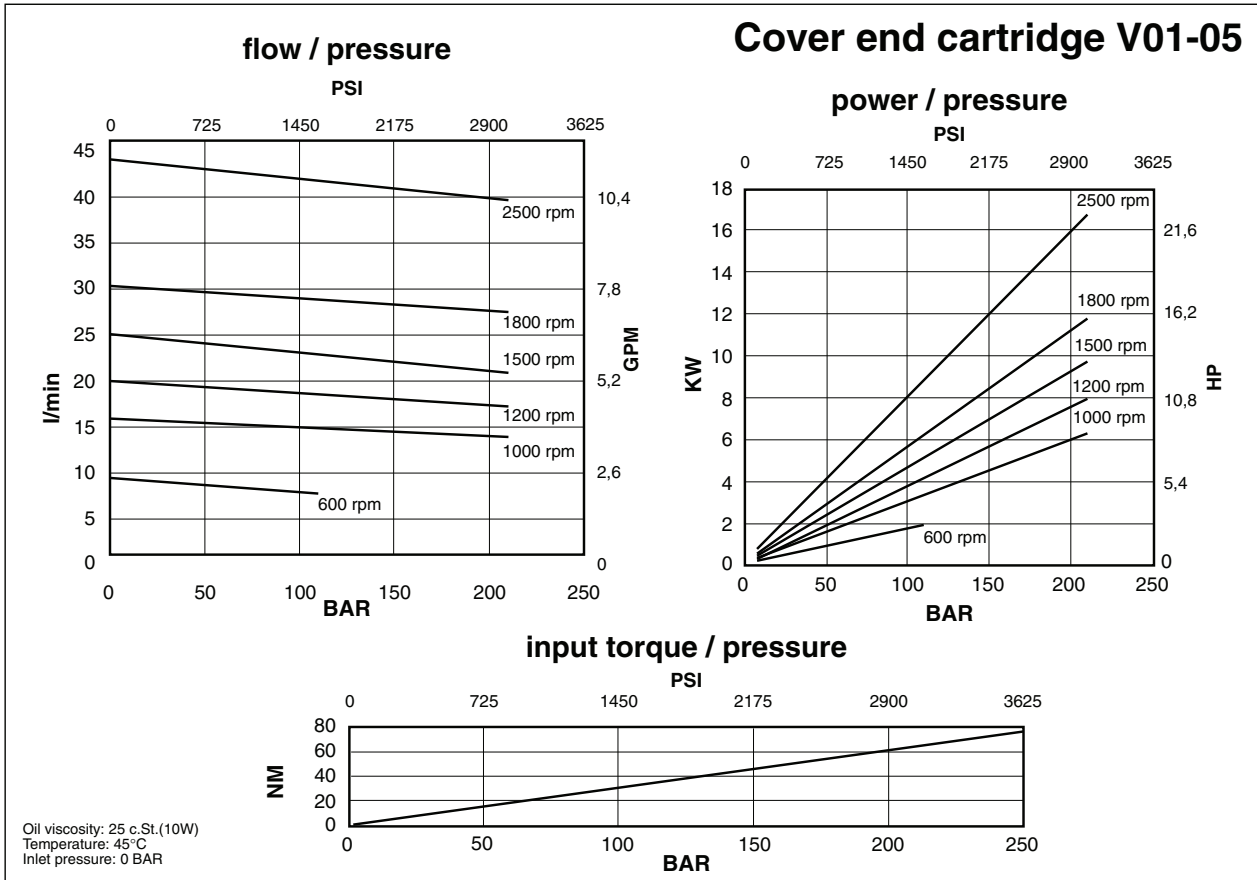


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

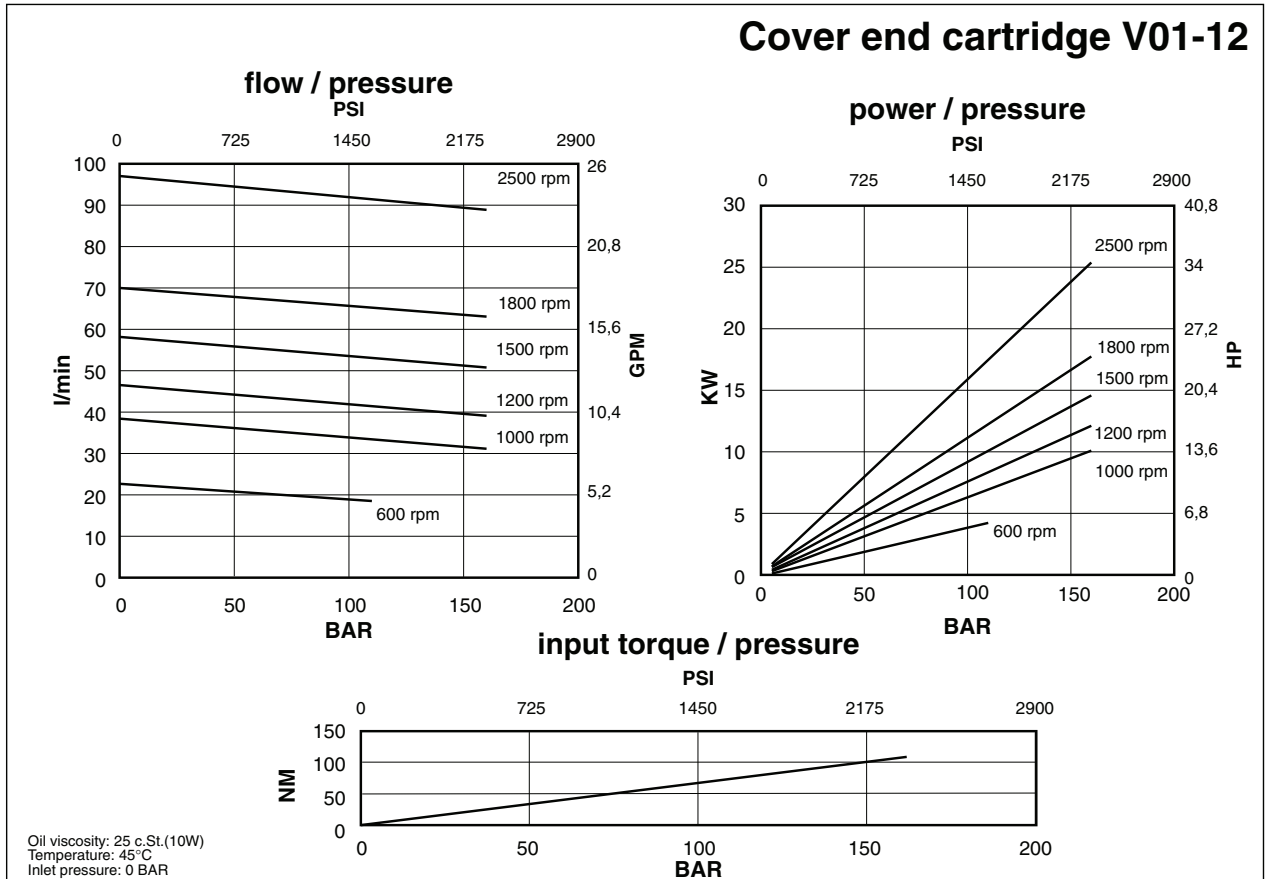
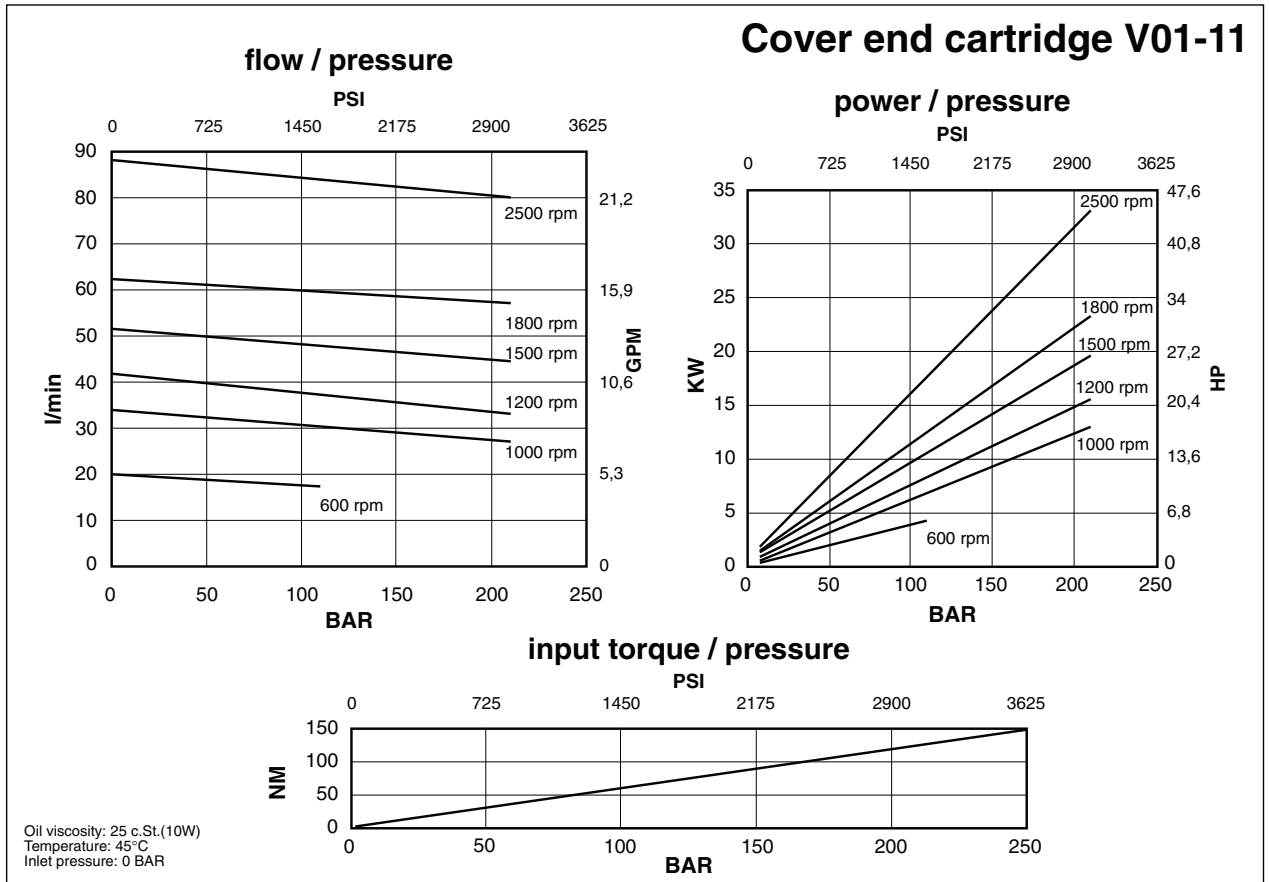
Double Pump Type BV51 (BV05+BV01)



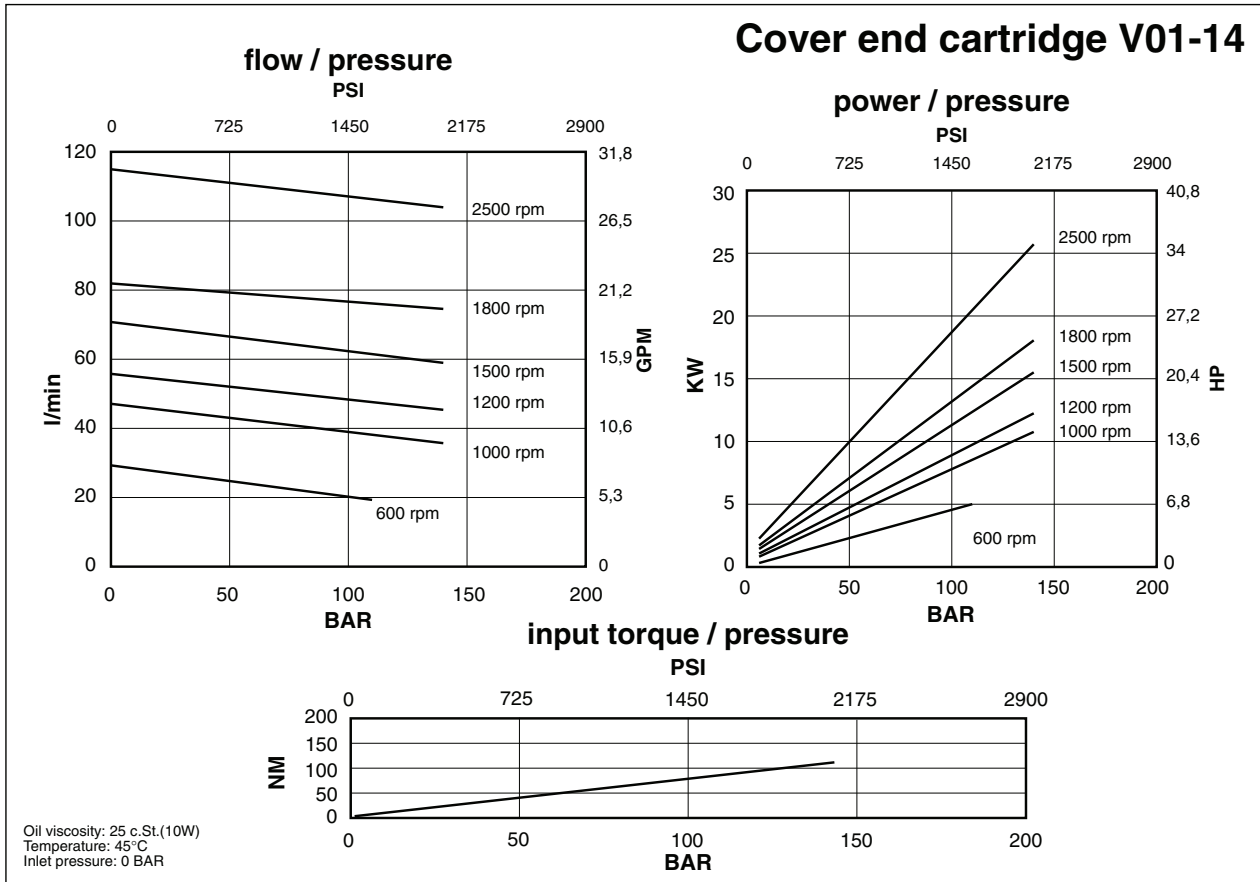
Double Pump Type BV51 (BV05+BV01)



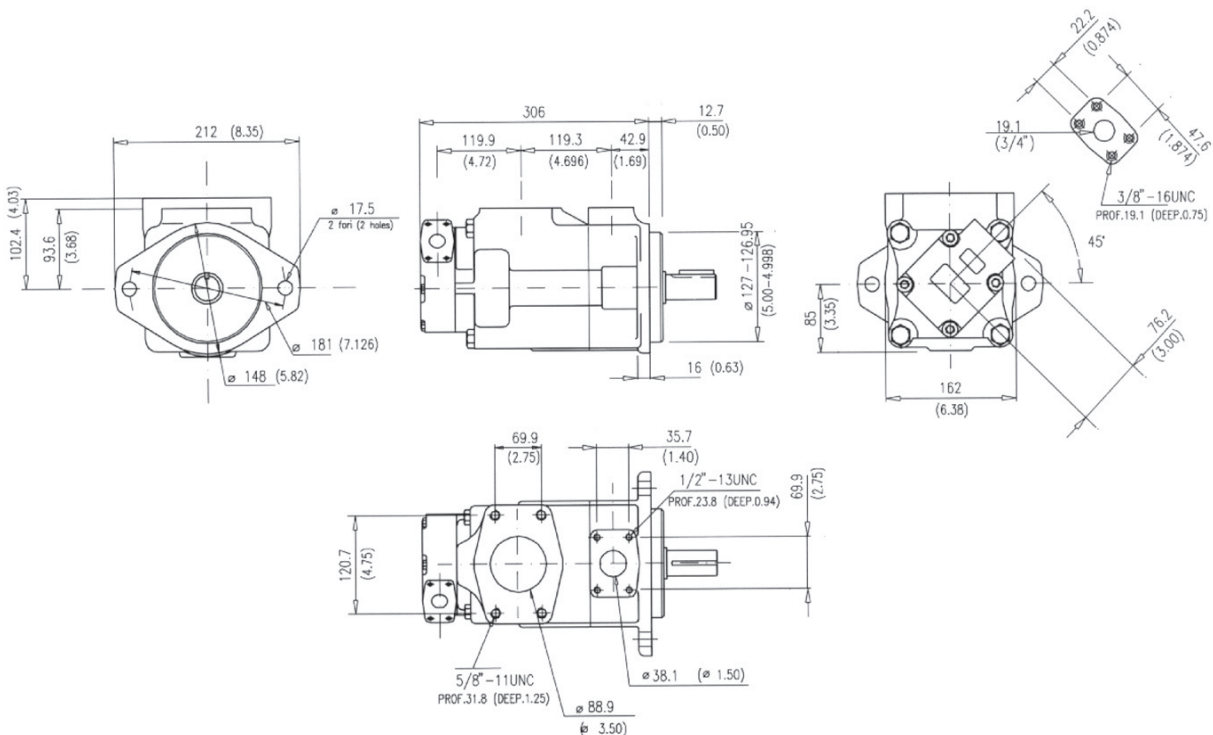
Double Pump Type BV51 (BV05+BV01)



Double Pump Type BV51 (BV05+BV01)



Installation dimensions mm (inches)



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

Double Pump Type BV51 (BV05+BV01)

Model code breakdown

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

Pump series | **Design**

Pump type

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

Mounting
(omit if not required)

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®)

Rotation
(viewed from shaft end)

L = left hand rotation CCW (omit if CW)

Shaft end options

01 = Straight with key (standard), **11** = Splined

86 = Heavy duty straight keyed, **90** = Splined SAE C

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.)

Shaft 90

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

PORT ORIENTATIONS

Spline data
(shaft 11 and shaft 90)

Involute side fit (ASA B5.15)

| | | |
|----------------|---------------|-----------------|
| Spline | | |
| 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) |

Double Pump Type BV51 (BV05+BV01)

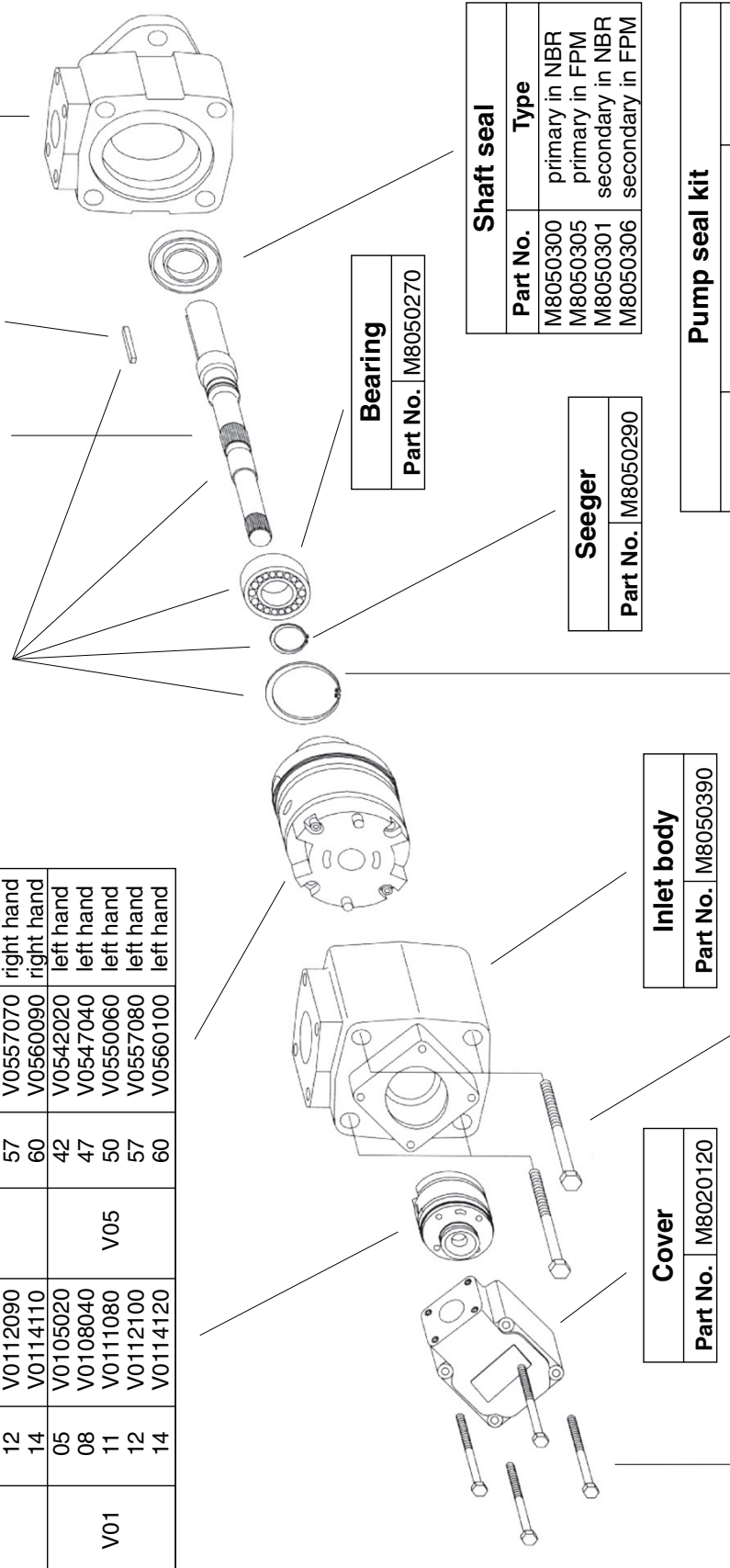
Id. codes of pump components

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

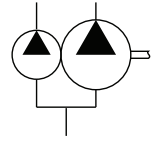
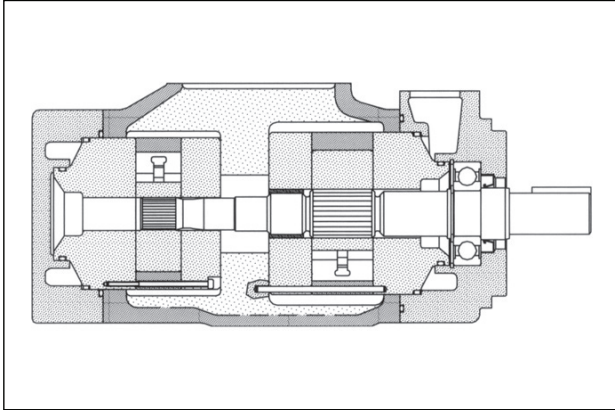
| Shaft kit | |
|-----------|----------|
| Model | Part No. |
| 01 | M8510601 |
| 11 | M8510611 |
| 86 | M8510686 |
| 90 | M8510690 |

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

| Body | |
|----------|----------|
| Part No. | Part No. |
| M8050250 | |



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 characteristics

| 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 |
| cover end | cm³/g | (in³/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).

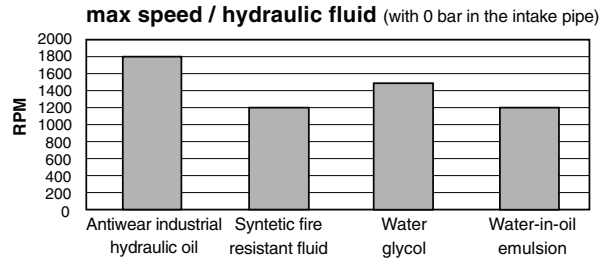
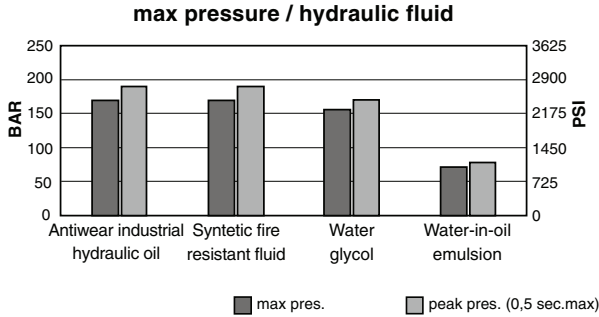
Inlet pressure: (with mineral oil): from -0,17 to +1,4 bar (-2.5 to + 20 psi)

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

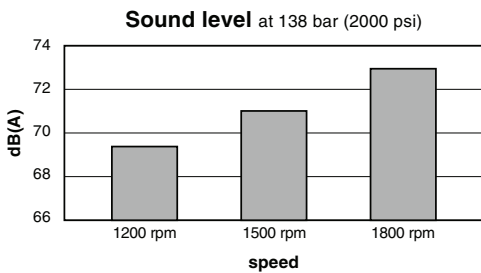
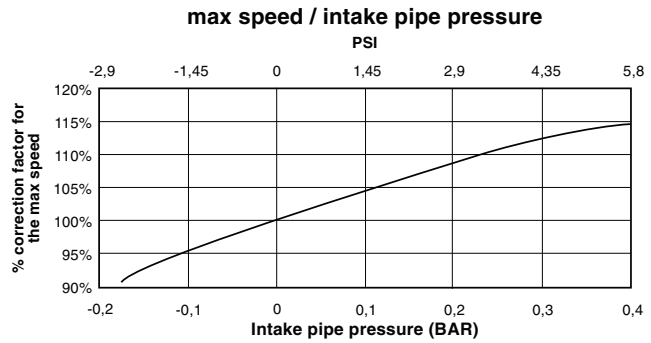
Drive: direct and coaxial by means of a flexible coupling.

Double Pump Type BV52 (BV05+BV02)

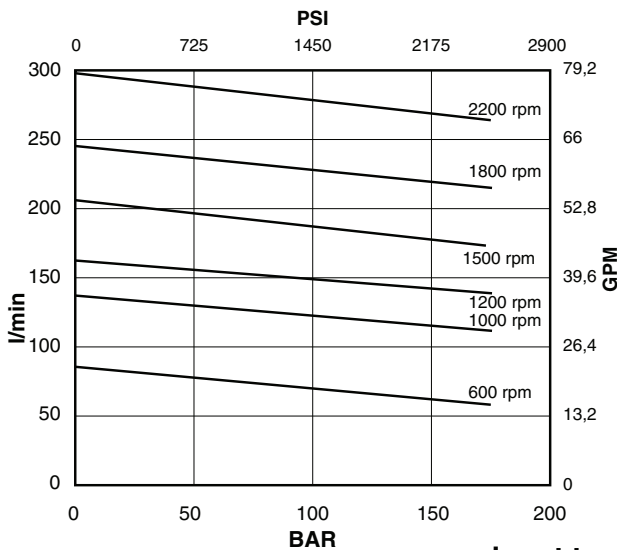
Main operating data



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

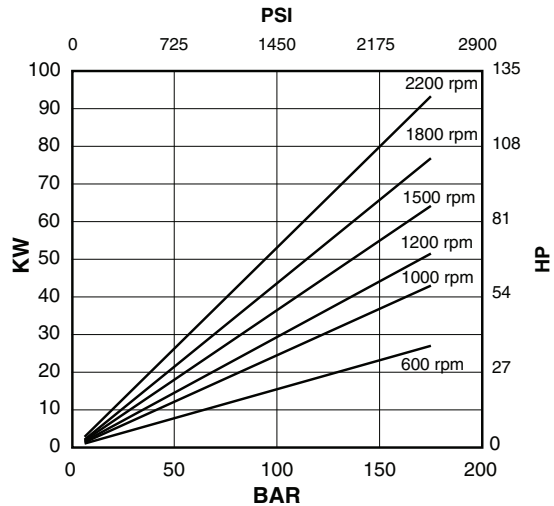


flow / pressure

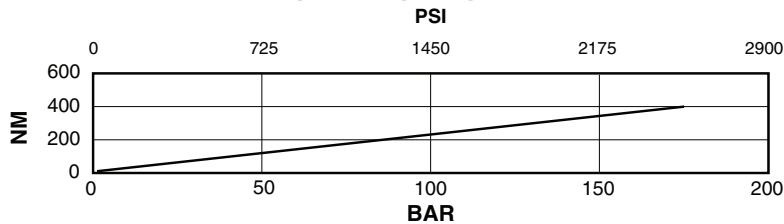


Shaft end cartridge V05-42

power / pressure



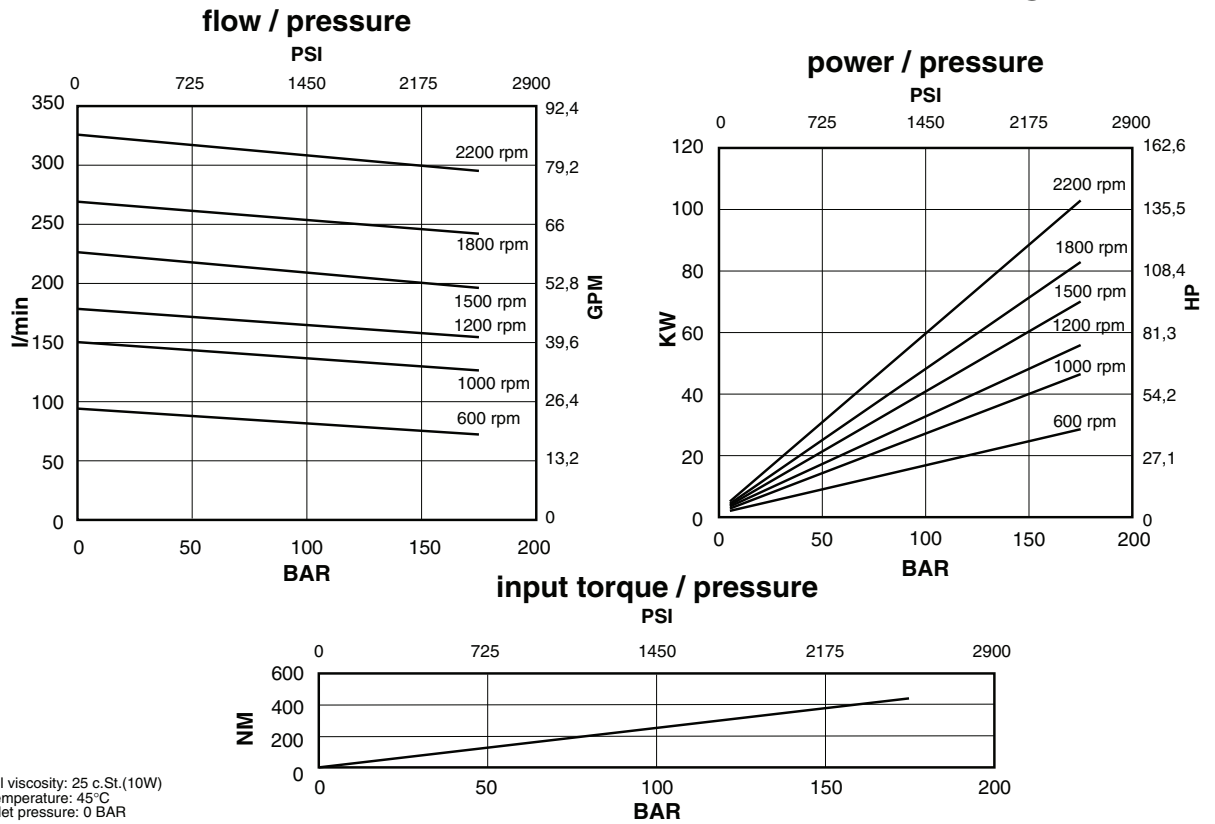
input torque / pressure



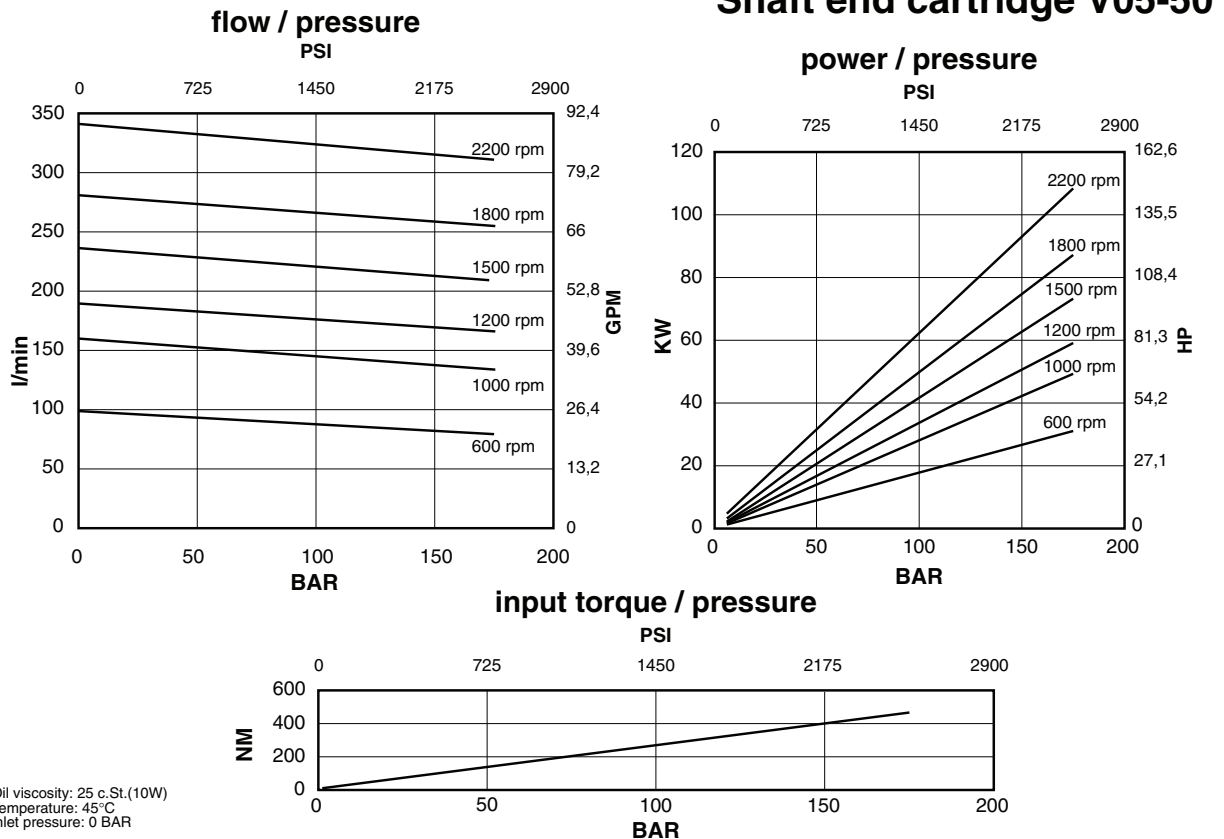
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Double Pump Type BV52 (BV05+BV02)

Shaft end cartridge V05-47

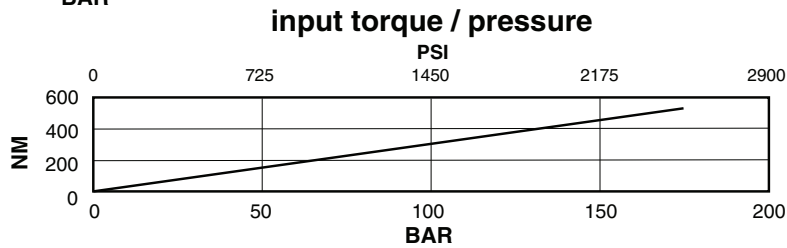
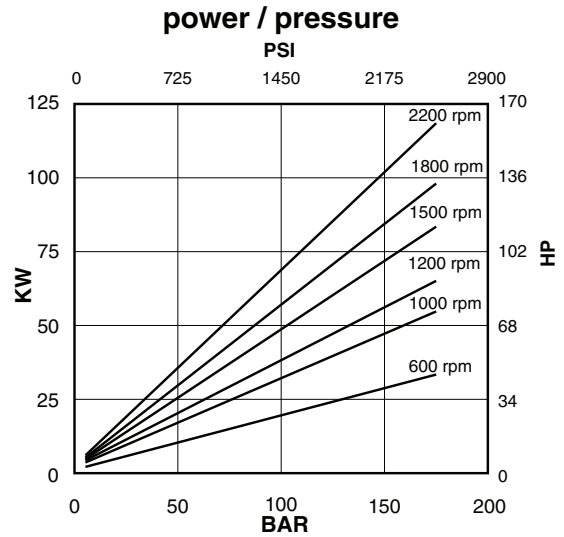
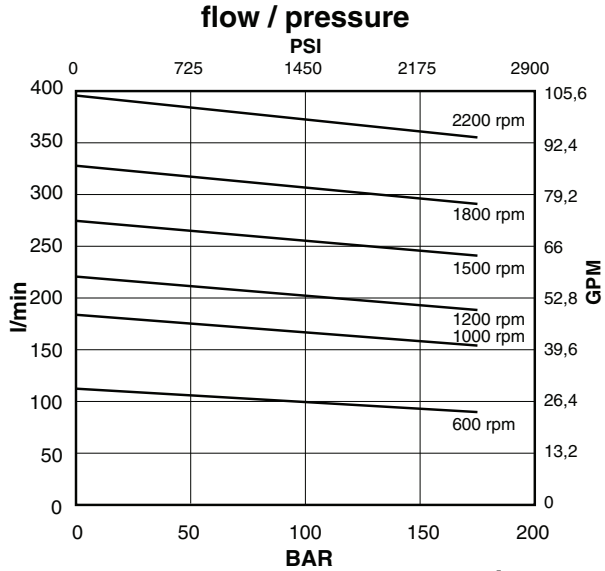


Shaft end cartridge V05-50



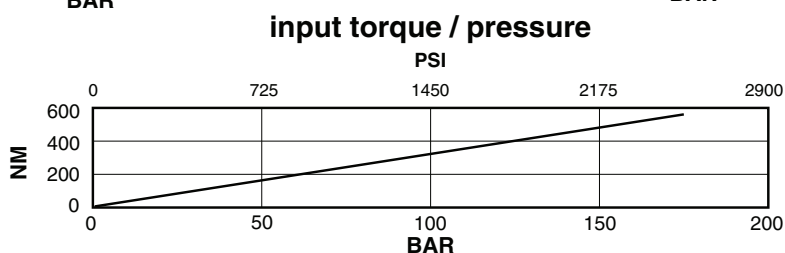
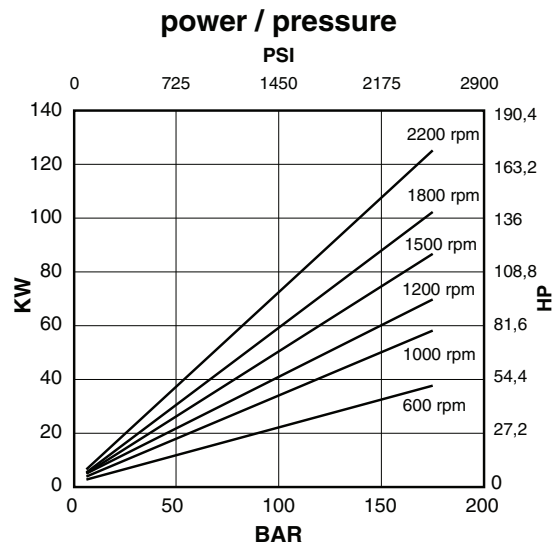
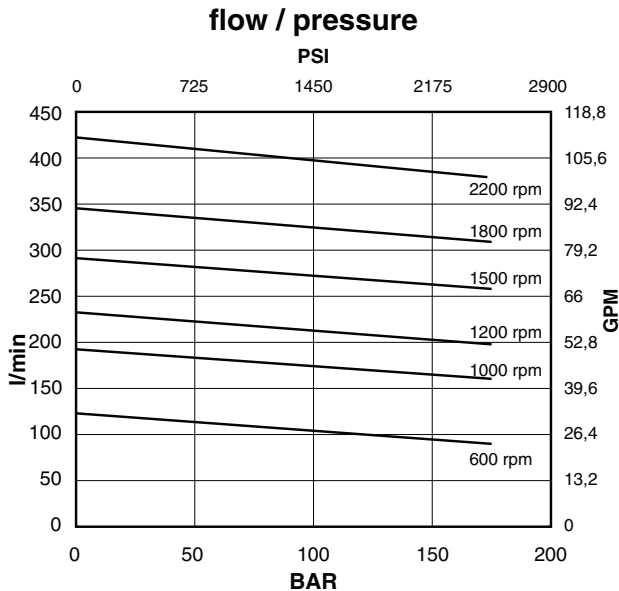
Double Pump Type BV52 (BV05+BV02)

Shaft end cartridge V05-57



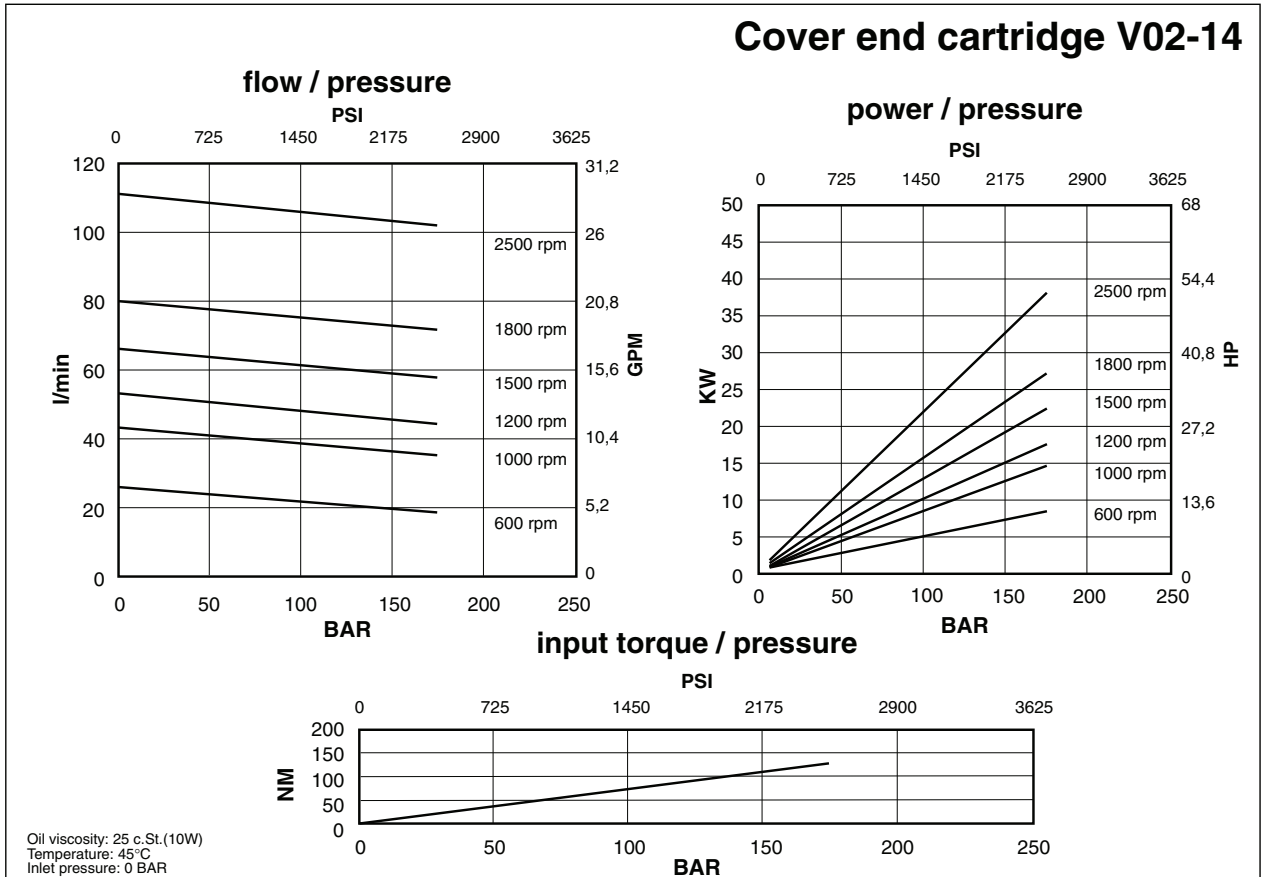
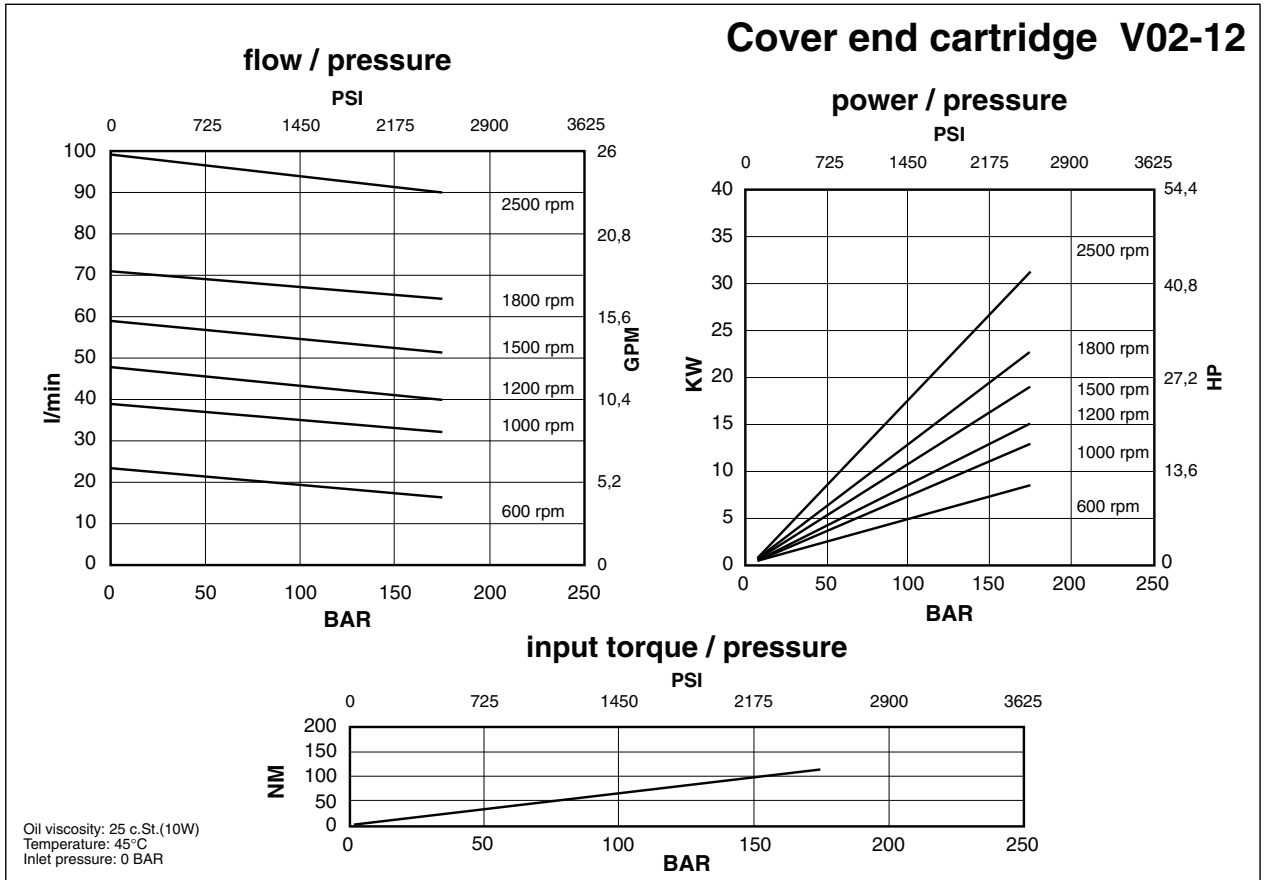
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Shaft end cartridge V05-60

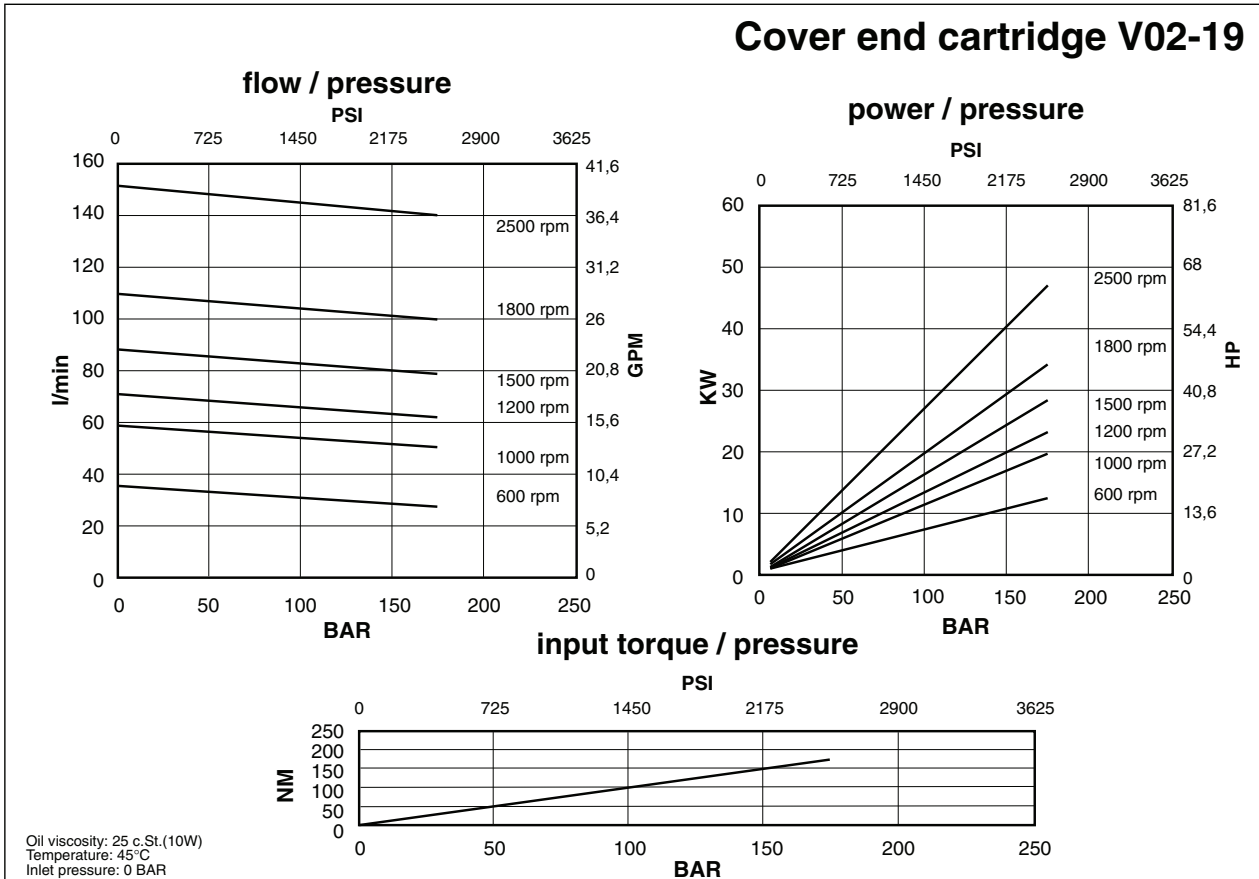
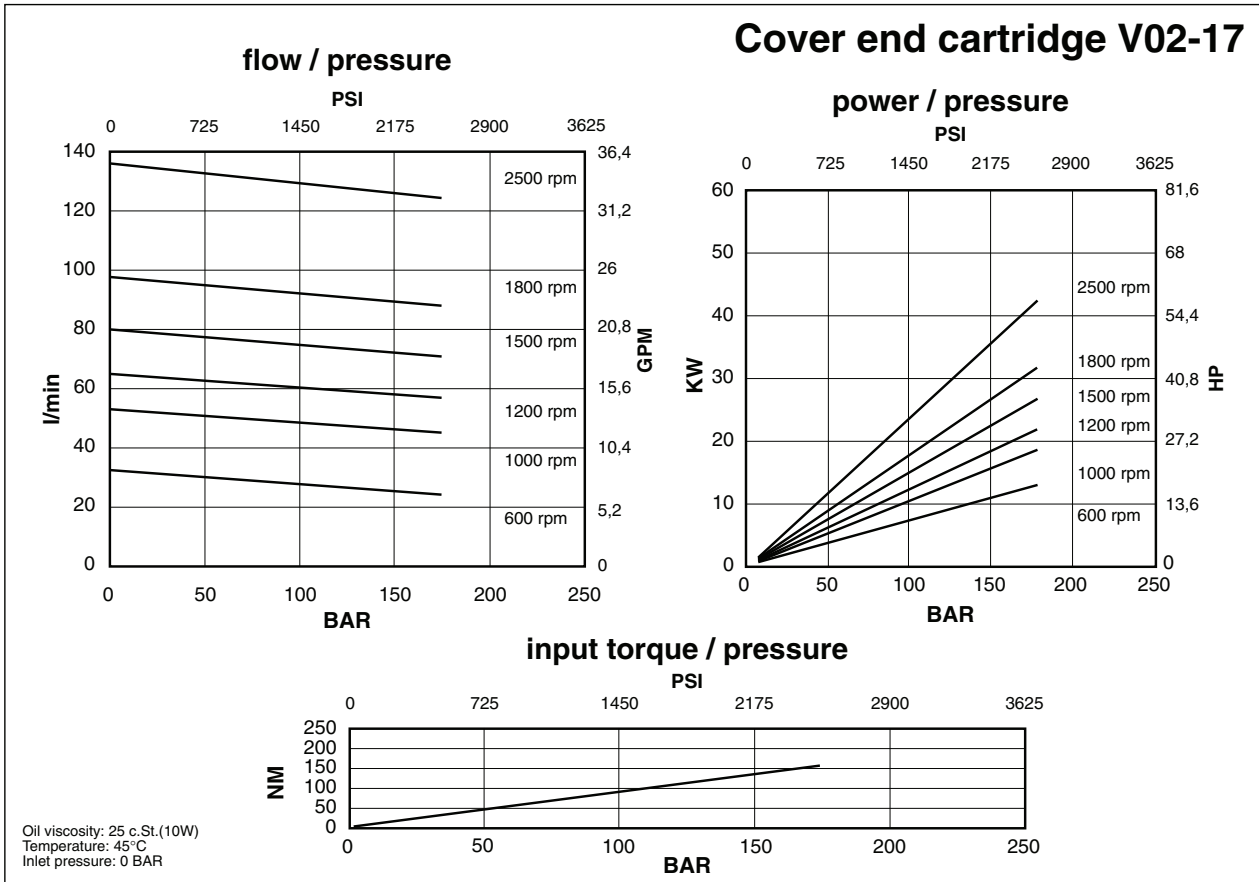


Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

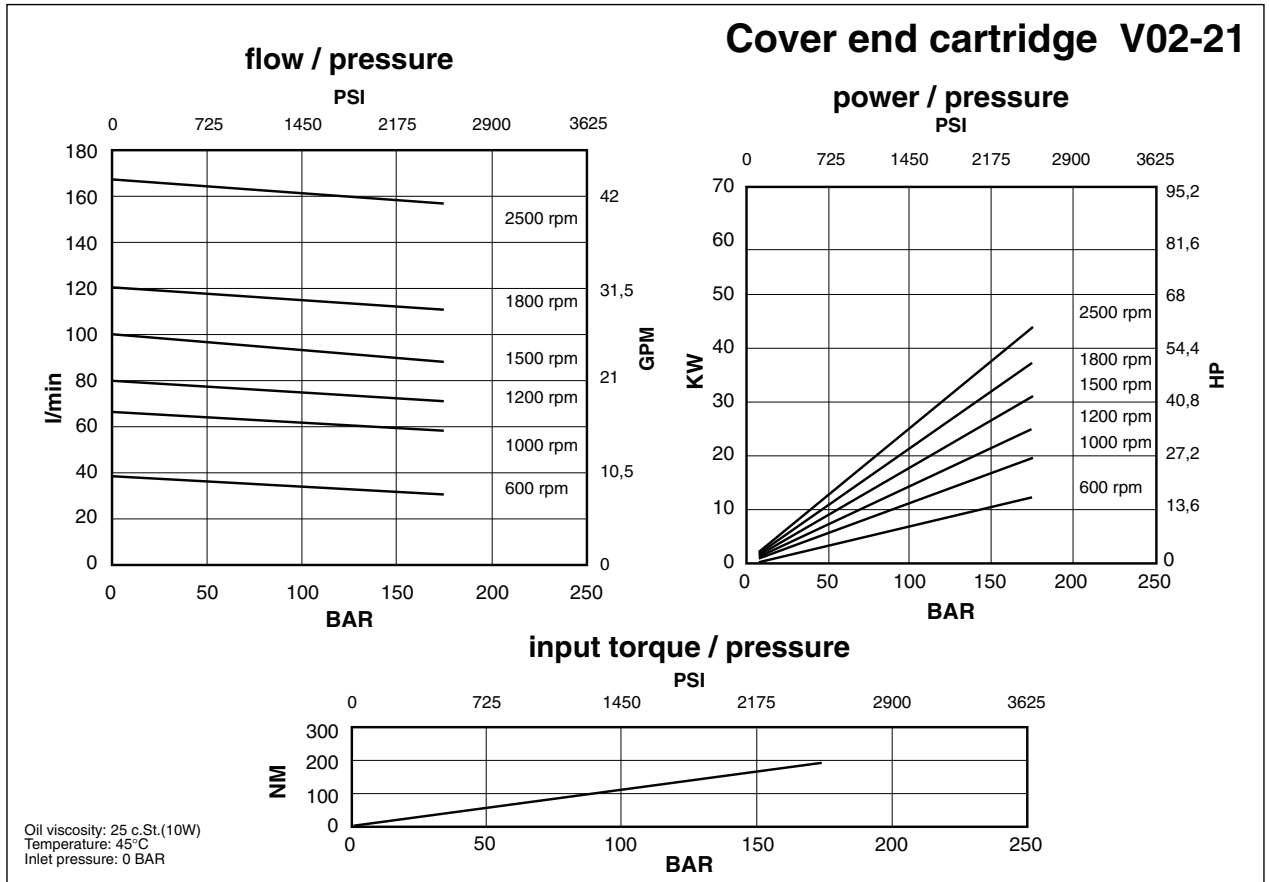
Double Pump Type BV52 (BV05+BV02)



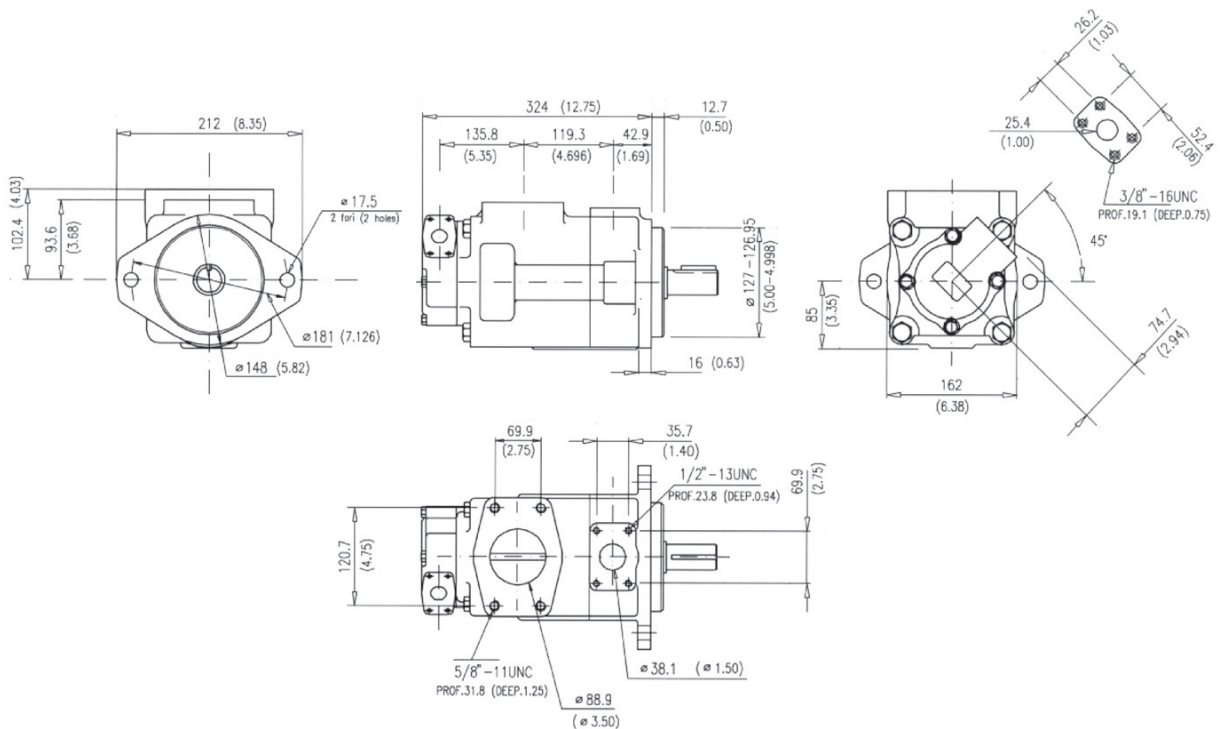
Double Pump Type BV52 (BV05+BV02)



Double Pump Type BV52 (BV05+BV02)



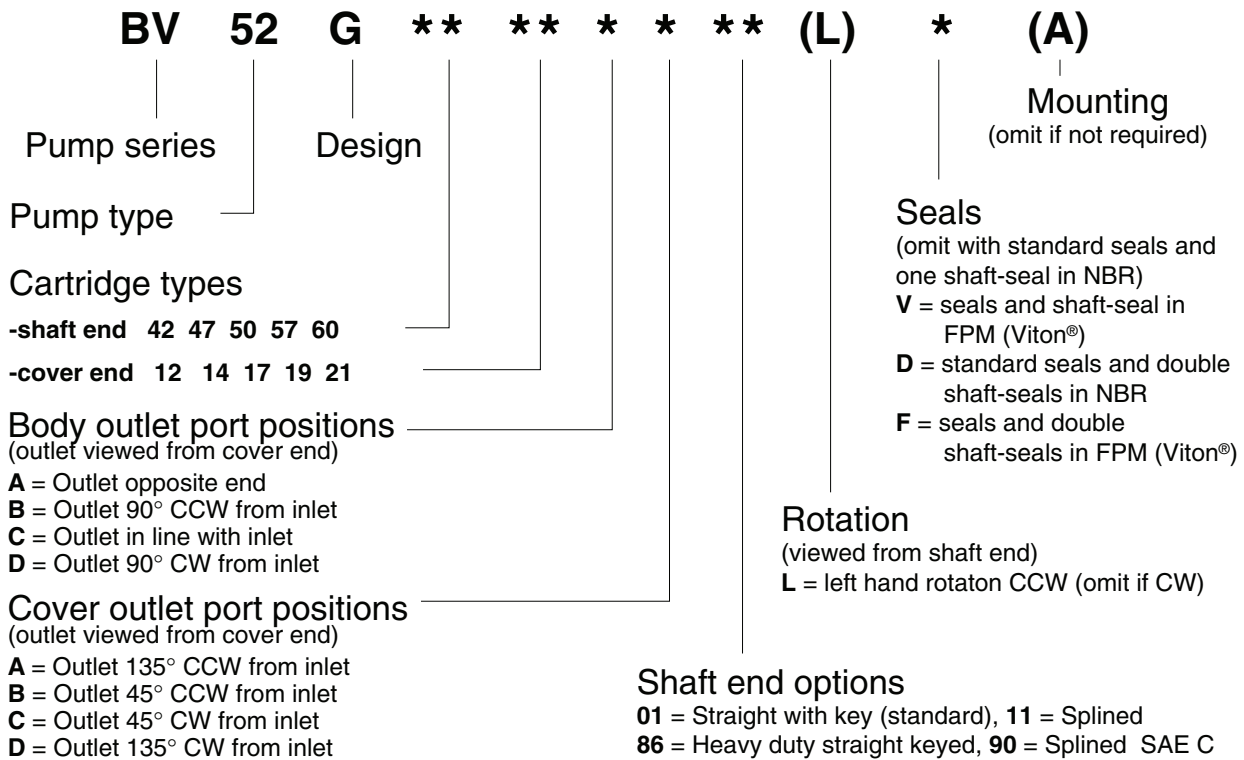
Installation dimensions mm (inches)



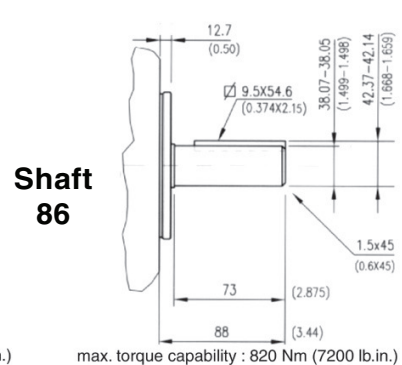
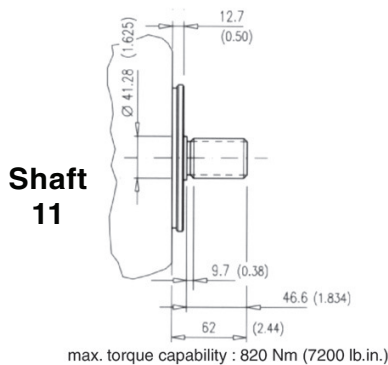
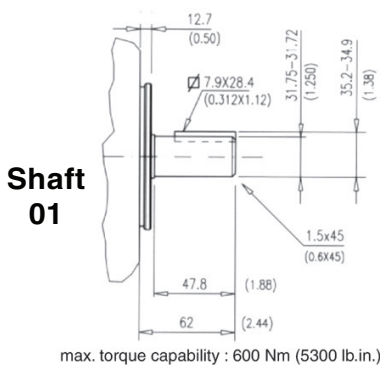
Approx. weight: 46 Kg. (101 lbs.)

Double Pump Type BV52 (BV05+BV02)

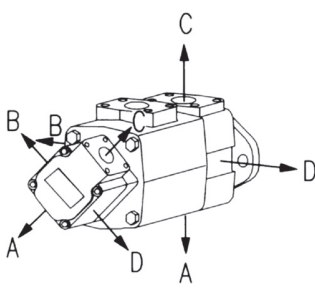
Model code breakdown



Shaft options mm (inches)



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



Double Pump Type BV52 (BV05+BV02)

Id. codes of pump components

The diagram shows an exploded view of the pump assembly. Components are labeled with callouts pointing to their respective parts in the assembly. The parts are organized into several tables and boxes:

| Cartridges | | | |
|------------|-------|-----------|--------|
| cover end | | shaft end | |
| Series | Model | Part No. | Series |
| V02 | 12 | V0212010 | 42 |
| | 14 | V0214050 | 47 |
| | 17 | V0217090 | 50 |
| | 19 | V0219130 | 57 |
| | 21 | V0221170 | 60 |
| V02 | 12 | V0212020 | 42 |
| | 14 | V0214060 | 47 |
| | 17 | V0217100 | 50 |
| | 19 | V0219140 | 57 |
| | 21 | V0221180 | 60 |

| Model | Part No. | Pump rotation |
|-------|----------|---------------|
| 01 | M8520601 | right hand |
| 11 | M8520611 | right hand |
| 86 | M8520686 | right hand |
| 90 | M8520690 | right hand |

| Model | Part No. | Shaft kit |
|-------|----------|-----------|
| 01 | M8520601 | |
| 11 | M8520611 | |
| 86 | M8520686 | |
| 90 | M8520690 | |

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

| Part No. | Key |
|----------|-----|
| M8050100 | |
| M8058600 | |

| Part No. | Body |
|----------|------|
| M8050250 | |

| Part No. | Bearing |
|----------|---------|
| M8050270 | |

| Part No. | Seeger |
|----------|--------|
| M8050290 | |

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

| Part No. | Inlet body |
|----------|------------|
| M8050400 | |

| Part No. | Cover |
|----------|-------|
| M8050350 | |

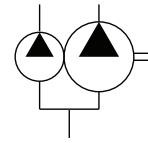
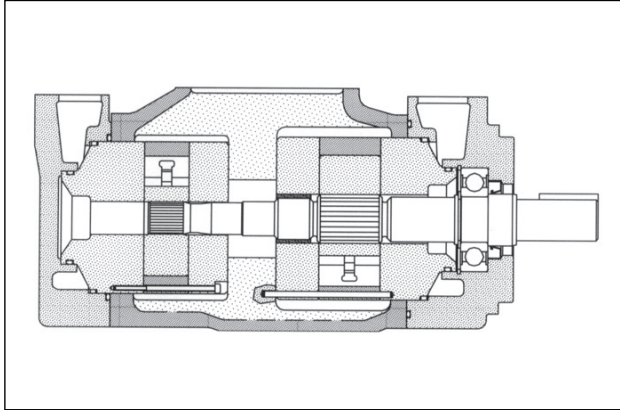
| Part No. | Screw |
|----------|---------------------------------|
| M8040230 | Torque to 102 Nm (910 lb. in.) |
| M8050330 | Torque to 398 Nm (3550 lb. in.) |

| Part No. | Seeger |
|----------|--------|
| M8050280 | |

| Part No. | Pump seal kit |
|----------|-----------------------|
| M8520500 | seals + 1 shaft seal |
| M8520501 | seals + 2 shaft seals |
| M8520503 | seals + 1 shaft seal |
| M8520504 | seals + 2 shaft seals |

| Part No. | Type |
|----------|--------------|
| M8520500 | NBR |
| M8520501 | NBR |
| M8520503 | FPM (Viton®) |
| M8520504 | FPM (Viton®) |

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 characteristics

| 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 |
| shaft end | | | | | | | | | | |
| 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 | | | | | | | | | | |
| 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).

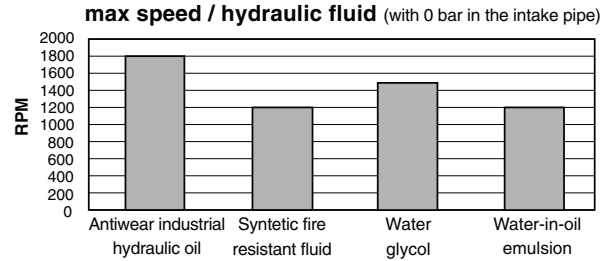
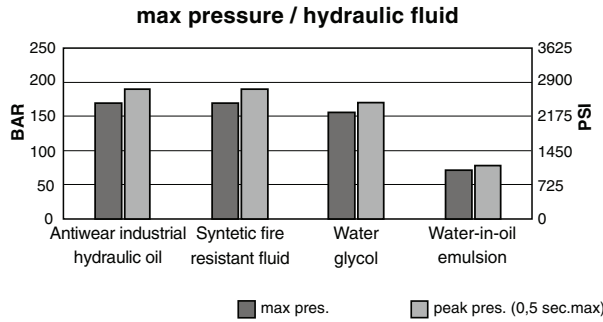
Inlet pressure: (with mineral oil): from -0,17 to +1,4 bar (-2.5 to + 20 psi)

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

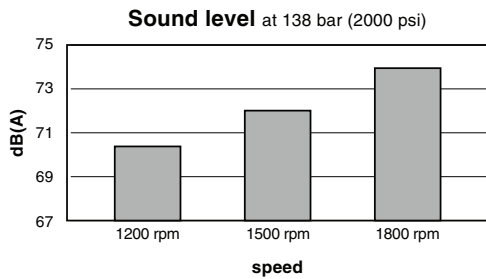
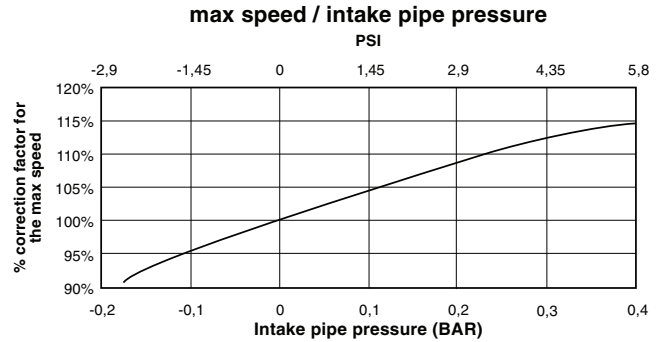
Drive: direct and coaxial by means of a flexible coupling.

Double Pump Type BV54 (BV05+BV04)

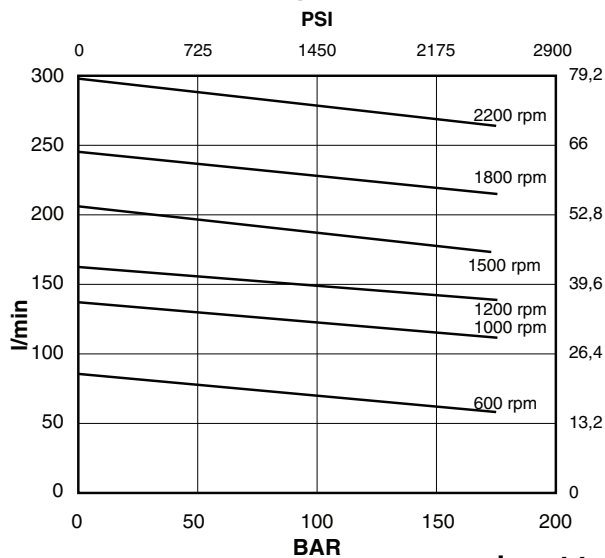
Main operating data



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

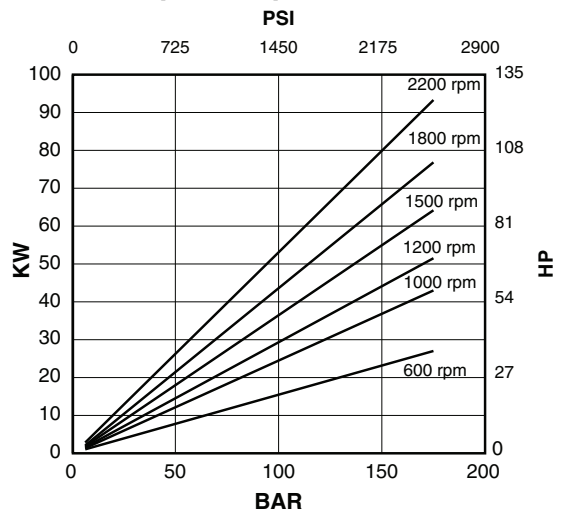


flow / pressure

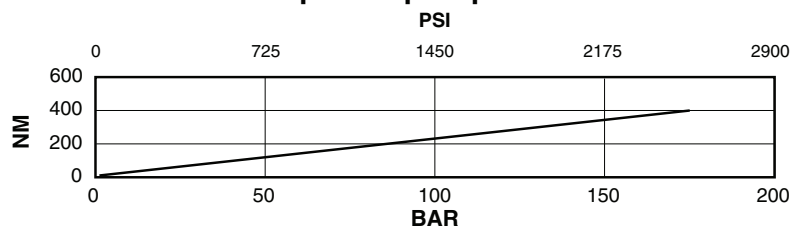


Shaft end cartridge V05-42

power / pressure



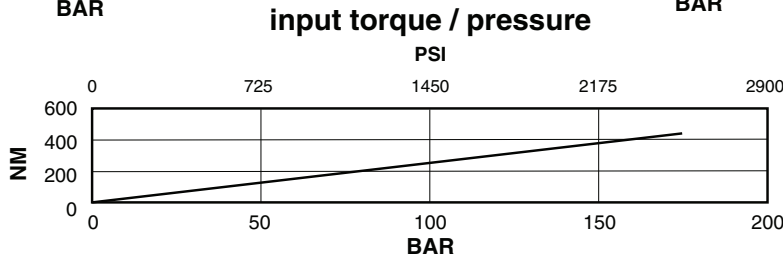
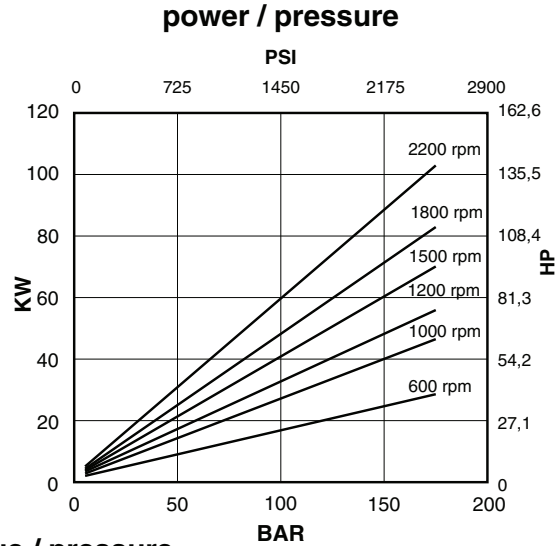
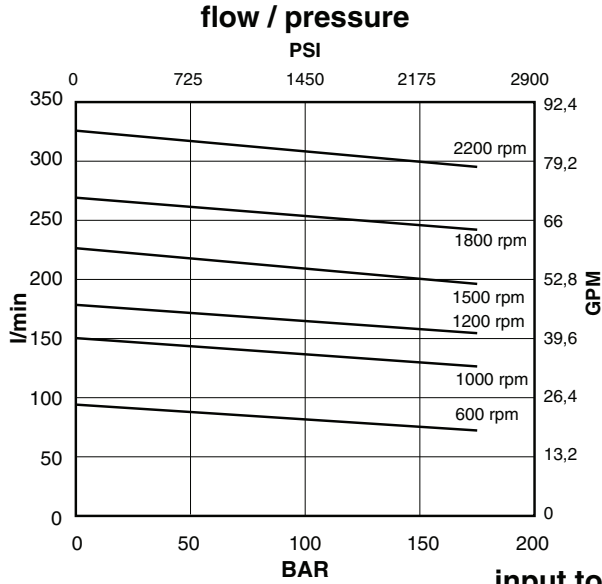
input torque / pressure



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

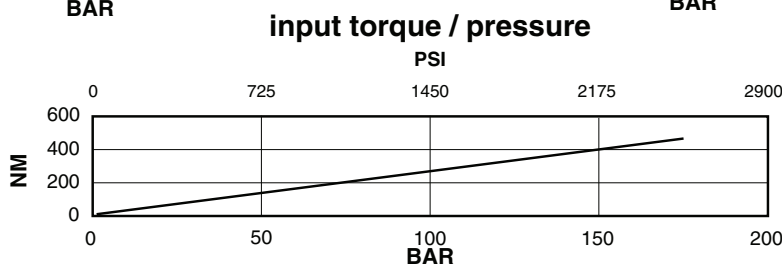
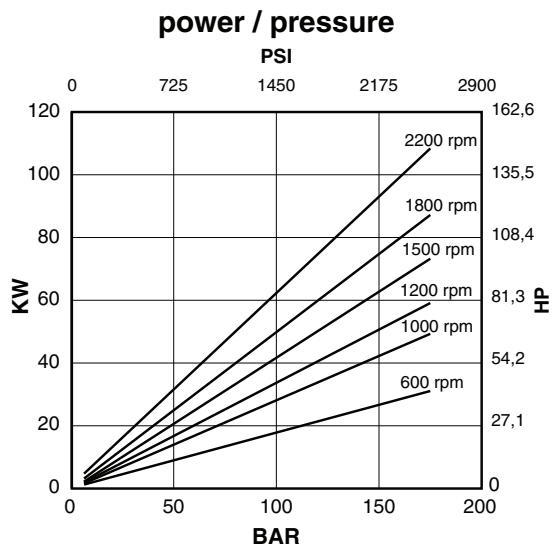
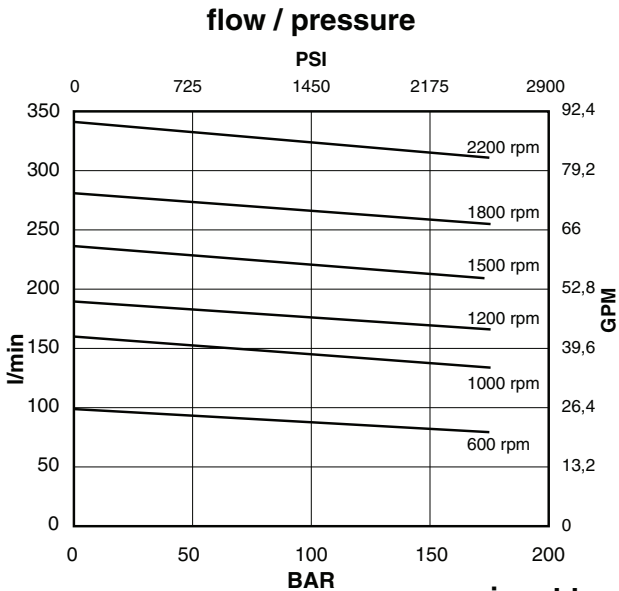
Double Pump Type BV54 (BV05+BV04)

Shaft end cartridge V05-47



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

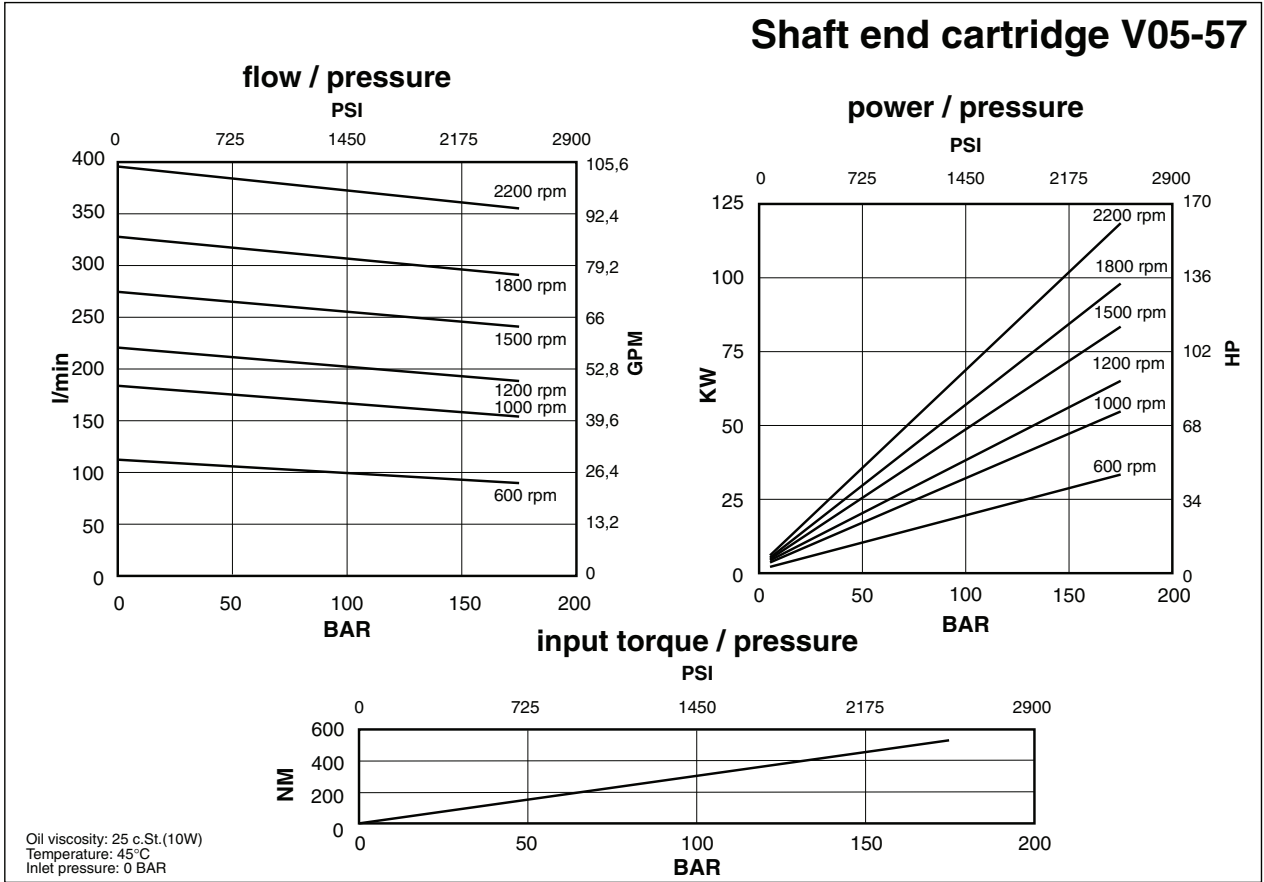
Shaft end cartridge V05-50



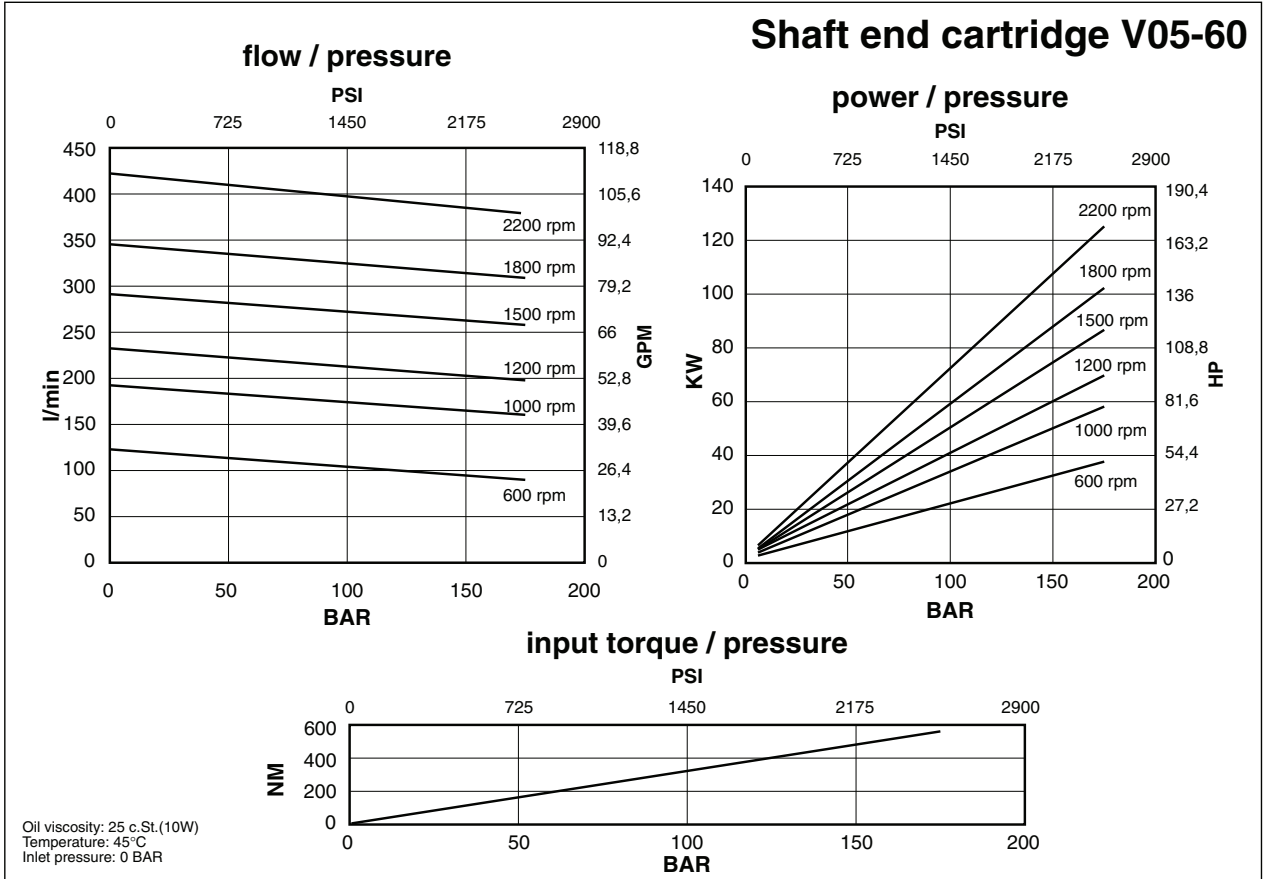
Oil viscosity: 25 c.St.(10W)
Temperature: 45°C
Inlet pressure: 0 BAR

Double Pump Type BV54 (BV05+BV04)

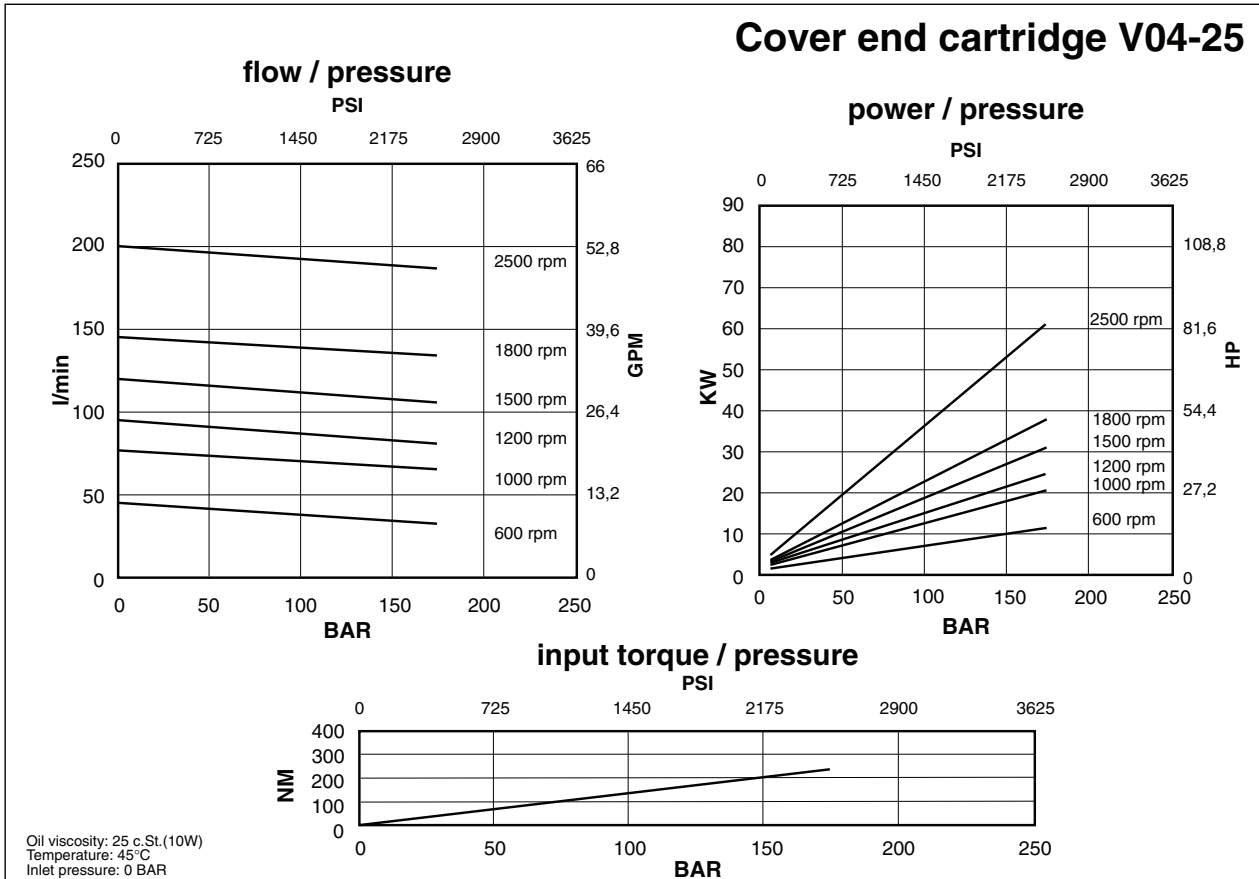
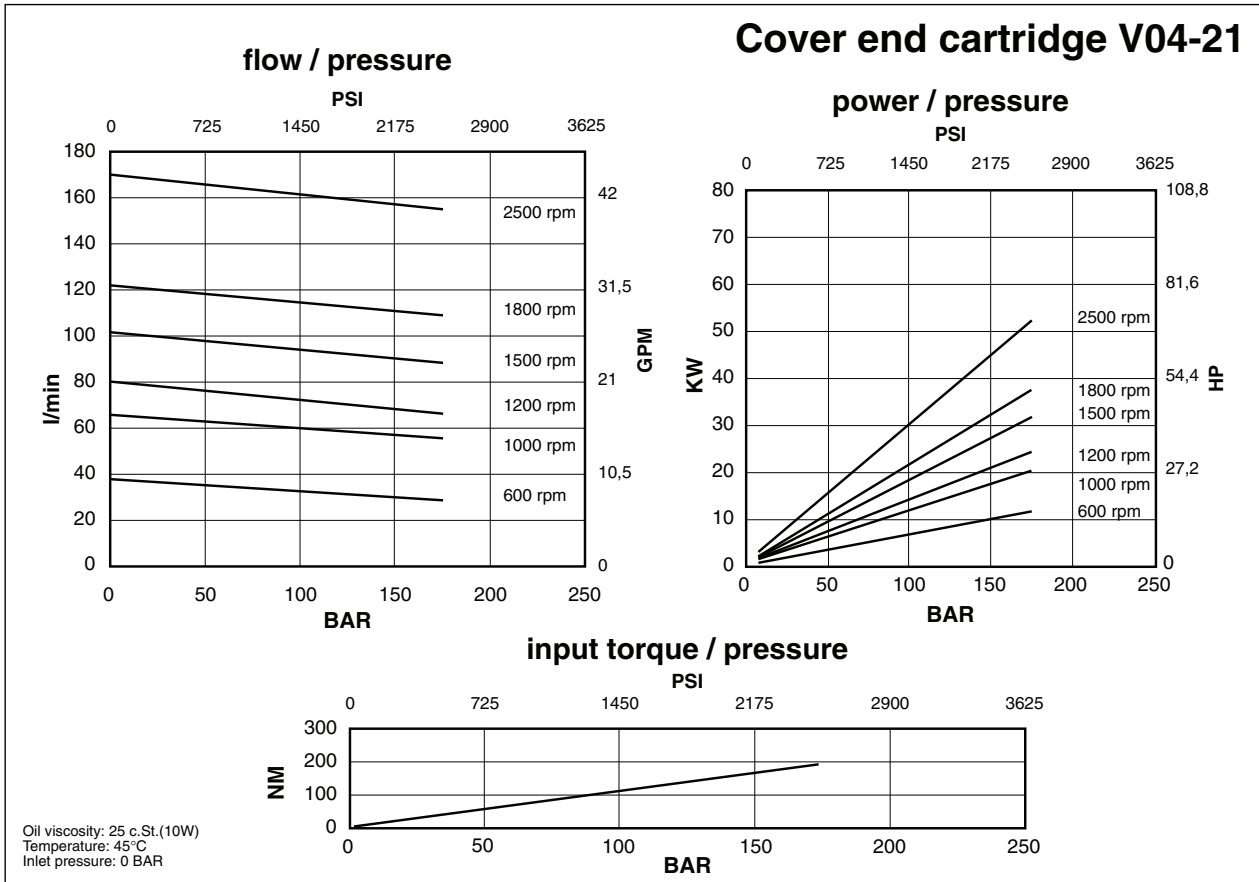
Shaft end cartridge V05-57



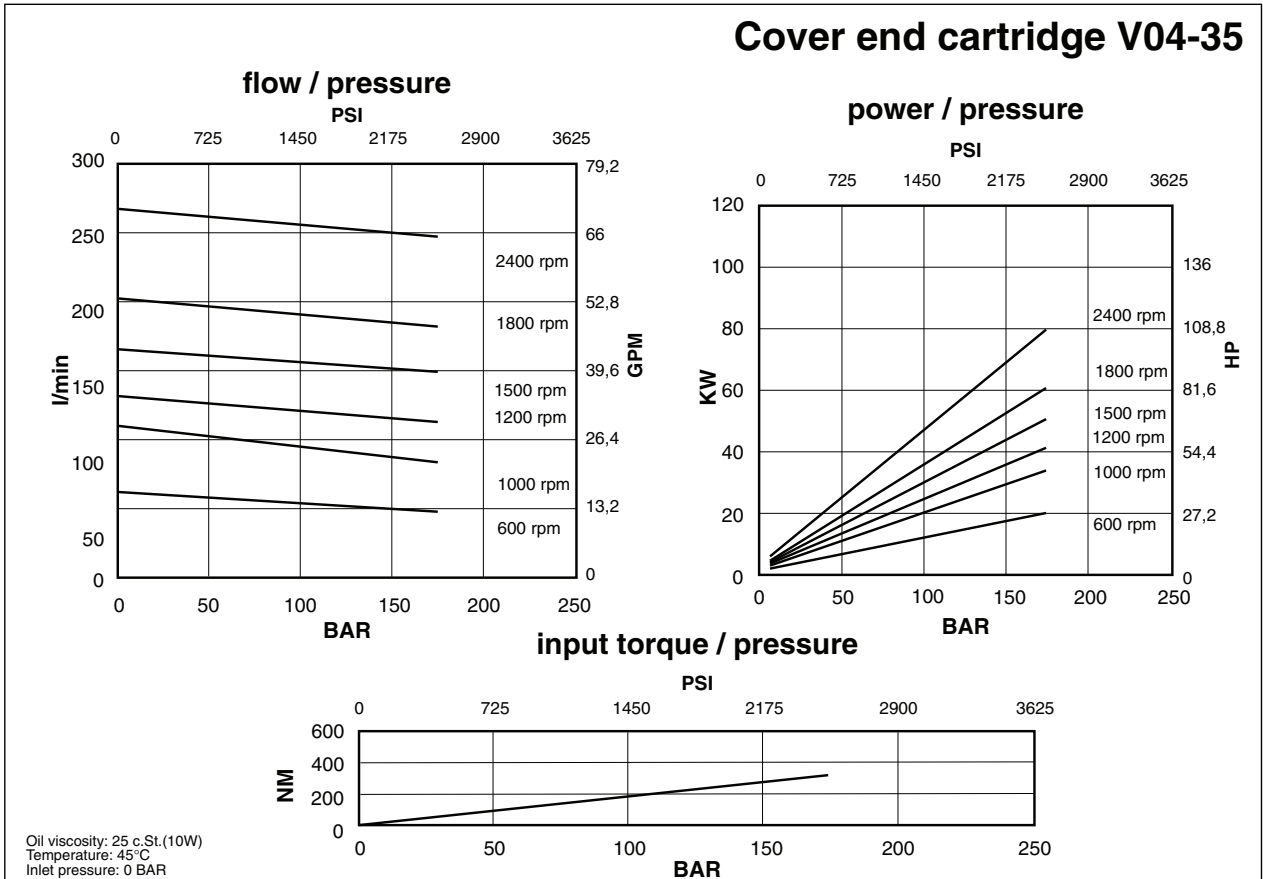
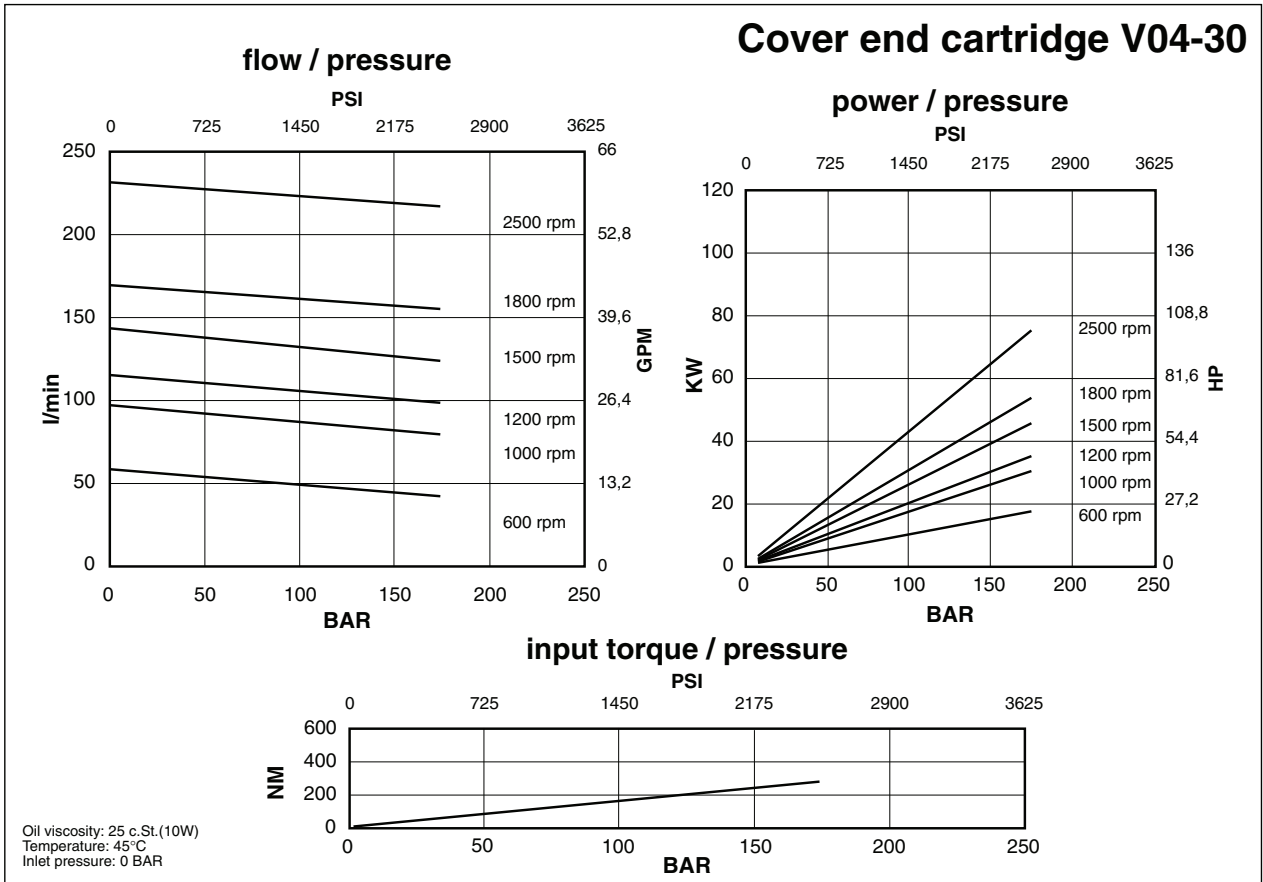
Shaft end cartridge V05-60



Double Pump Type BV54 (BV05+BV04)



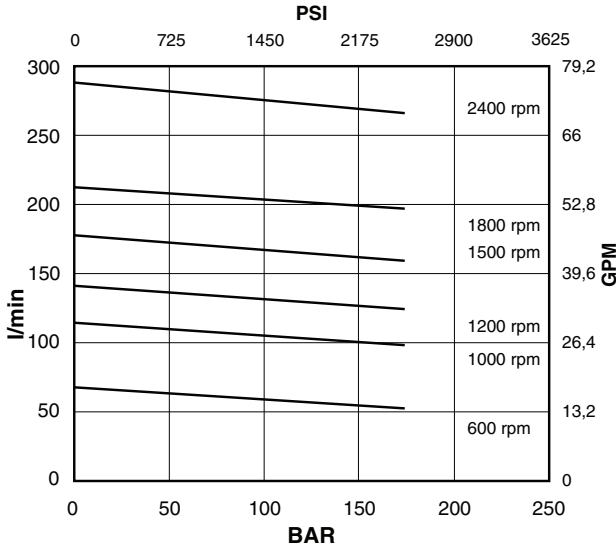
Double Pump Type BV54 (BV05+BV04)



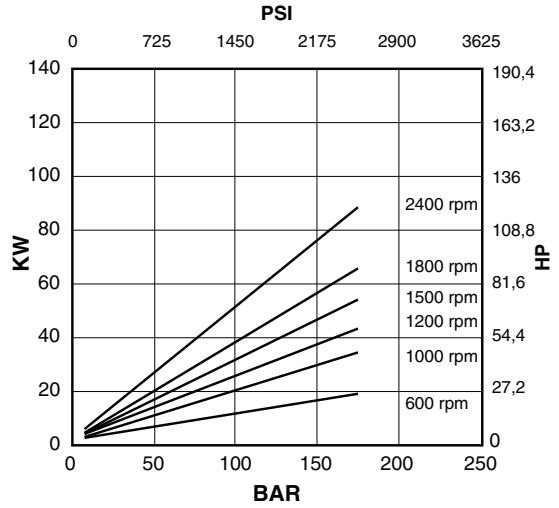
Double Pump Type BV54 (BV05+BV04)

Cover end cartridge V04-38

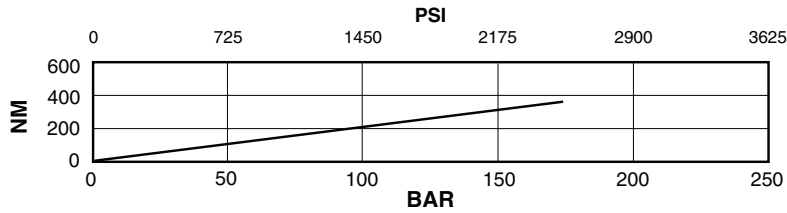
flow / pressure



power / pressure

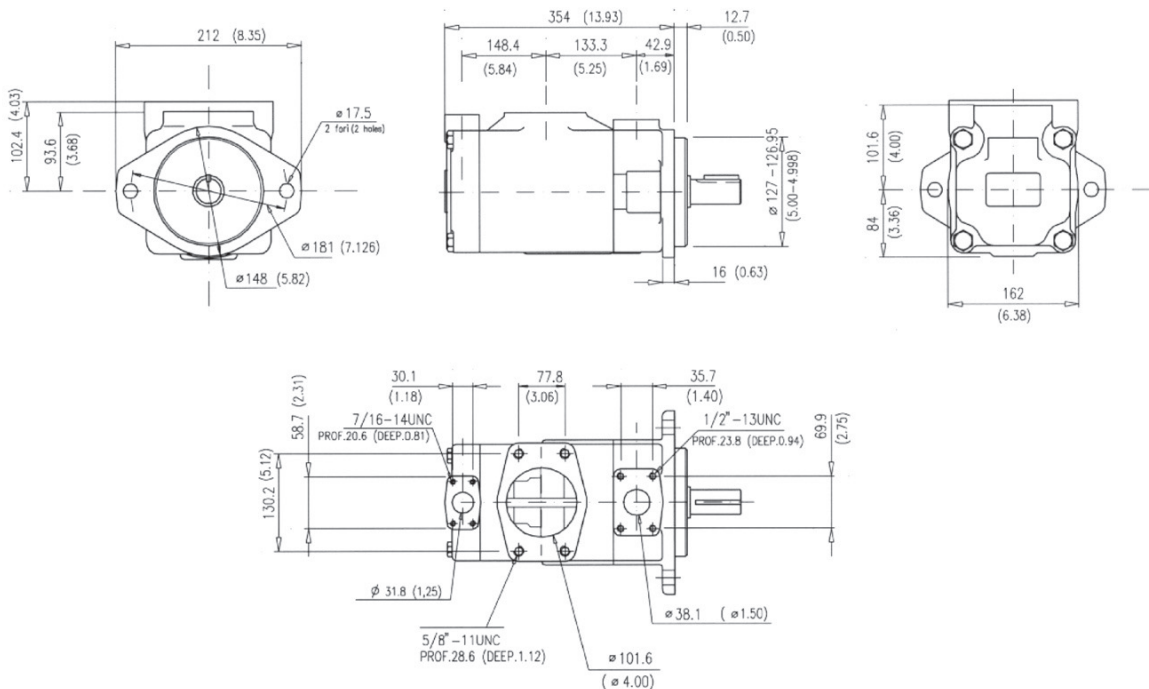


input torque / pressure



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)

Pump series (BV 54)

Design (G)

Pump type (** **)

Cartridge types (* *)

Body outlet port positions (**)

Cover outlet port positions (**)

Rotation ((L))

Shaft end options (*)

Mounting
(omit if not required)

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®)

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° CCW from inlet
C = Outlet in line with inlet
D = Outlet 90° CW from inlet

Rotation
(viewed from shaft end)

L = left hand rotation CCW (omit if CW)

Shaft end options

01 = Straight with key (standard), **11** = Splined
86 = Heavy duty straight keyed, **90** = Splined SAE C

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.)

Shaft 90

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

PORT ORIENTATIONS

Spline data
(shaft 11 and shaft 90)

Involute side fit (ASA B5.15)

| | |
|----------------|-------------------------------|
| Spline | |
| 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) |

Double Pump Type BV54 (BV05+BV04)

Cartridges

| cover end | | shaft end | | Pump rotation | | |
|-----------|-------|-----------|--------|---------------|----------|------------|
| 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 |
| V04 | 38 | V0438170 | V05 | 60 | V0560090 | right hand |
| | 21 | V0421020 | | 42 | V0542020 | left hand |
| | 25 | V0425060 | | 47 | V0547040 | left hand |
| | 30 | V0430100 | | 50 | V0550060 | left hand |
| V04 | 35 | V0435140 | V05 | 57 | V0557080 | left hand |
| | 38 | V0438180 | | 60 | V0560100 | left hand |

Shaft kit

| Model | Part No. |
|-------|----------|
| 01 | M8540601 |
| 11 | M8540611 |
| 86 | M8540686 |
| 90 | M8540690 |

Shaft

| Model | Part No. |
|-------|----------|
| 01 | K5401000 |
| 11 | K5411000 |
| 86 | K5486000 |
| 90 | K5490000 |

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 |

Inlet body

| Part No. |
|----------|
| M8050410 |

Seeger

| Part No. |
|----------|
| M8050280 |

Cover

| Part No. |
|----------|
| M8050360 |

Seeger

| Part No. |
|----------|
| M8050280 |

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®) |

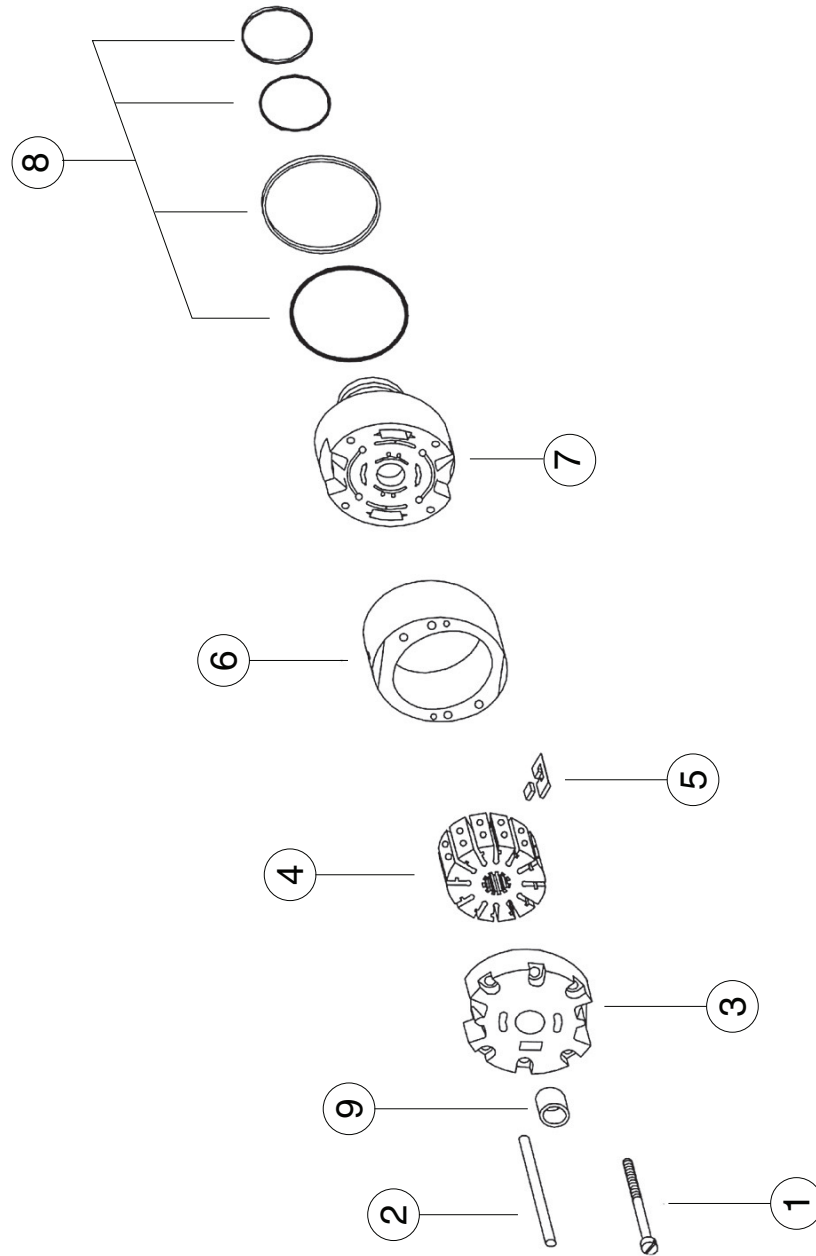
Screw

| 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 | | | |
| V02 | 11 | L6200800 | L6200200 | L6200300 | L6201200 | L7201011 | L6200100 | L6201100 | L6200600 |
| | 12 | 3,6 Nm (82 lb. in.) | L6200200 | L6200300 | L6201200 | L7201012 | | L6202100 (FPM) | |
| | 14 | | L6200200 | L6200300 | L6201200 | L7201014 | | | |
| V04 | 12 | | | | | L6251012 | | | |
| | 14 | | | | | L6251014 | | | |
| | 17 | L6250800 | L6250200 | L6250300 | L6251200 | L6251017 | L6250100 | L6251100 | L7250600 |
| V05 | 19 | 5,5 Nm (49 lb. in.) | | | | L6251019 | | L6252100 (FPM) | |
| | 21 | | | | | L6251021 | | | |
| | 21 | | | | | L6351021 | | | |
| V04 | 25 | | | | | L6351025 | | | |
| | 30 | L6350800 | L6350200 | L6350300 | L6351200 | L6351030 | L6350100 | L6351100 | L7350600 |
| | 35 | 12,6 Nm (112 lb.in) | | | | L6351035 | | L6352100 (FPM) | |
| V05 | 38 | | | | | L6351038 | | | |
| | 42 | | | | | L6451042 | | | |
| | 47 | | | | | L6451047 | | | |
| V05 | 50 | L6450800 | L6450200 | L6450300 | L6451200 | L6451050 | L6450100 | L6451100 | L7450600 |
| | 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 the maximum limit cause abnormal loads on the shaft and the bearings. In both cases this causes a significant reduction 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 axially 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 circuit; 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 activating 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.

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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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HYDRAULIC COMPONENTS
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