

FIXED DISPLACEMENT HYDRAULIC VANE PUMPS

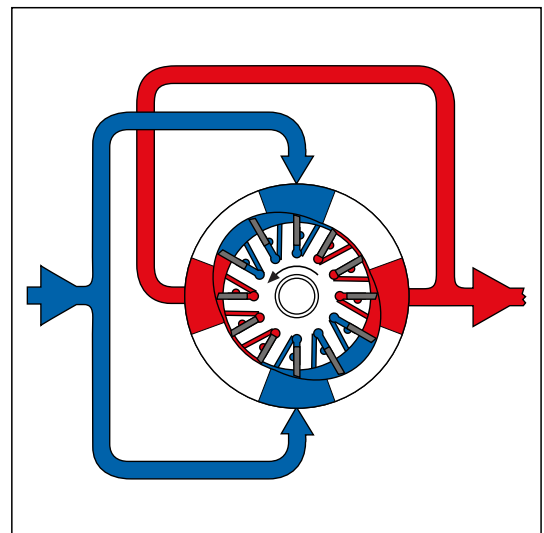
BV series



Versatility, power, compactness and low running costs are the main characteristics of B&C 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.

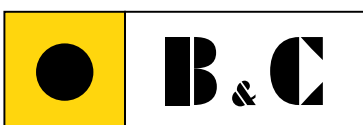
The cartridge contains a rotor, vanes and inserts, a cam ring and two covers. During operation the rotor is driven by a splined shaft coupled to the drive unit. As the rotation speed increases, centrifugal forces, in combination with the pressure generated behind the vanes, push the vanes outwards, where 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 300 HP.

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.

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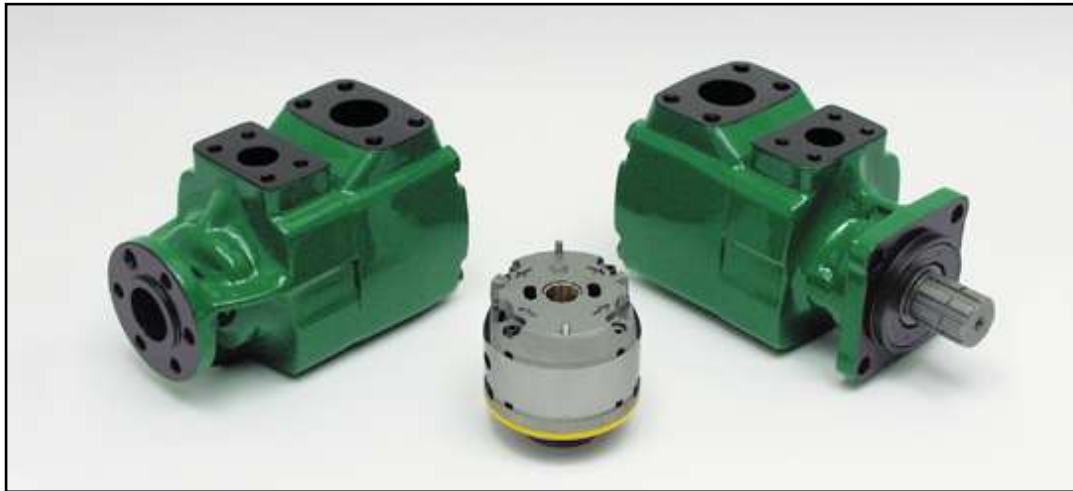
fluid power solutions

MAIN TECHNICAL CHARACTERISTICS

Pump type	Shaft end cartridge							Cover end cartridge							
	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Maximum pressure with mineral oil		Max speed	Geometric displacement		Rated capacity at 1200 rpm 7 bar		Maximum pressure with mineral oil		Max speed	
	cm ³ /g	(in ³ /r)	l/min	(gpm)	bar	(psi)		rpm	cm ³ /g	(in ³ /r)	l/min	(gpm)	bar		(psi)
BV01	18,0	(1.10)	20,8	(5)	210	(3050)	1800								
	27,4	(1.67)	31,8	(8)	210	(3050)	1800								
	36,4	(2.22)	42,4	(11)	210	(3050)	1800								
	39,5	(2.41)	46,9	(12)	160	(2300)	1800								
	45,9	(2.79)	54,9	(14)	140	(2030)	1800								
BV02	40,1	(2.45)	46,9	(12)	175	(2538)	1800								
	45,4	(2.77)	52,7	(14)	175	(2538)	1800								
	55,2	(3.37)	64,2	(17)	175	(2538)	1800								
	60,0	(3.66)	71,0	(19)	175	(2538)	1800								
	67,5	(4.12)	79,0	(21)	175	(2538)	1800								
BV04	69,0	(4.2)	79,5	(21)	175	(2538)	1800								
	81,6	(5)	94,0	(25)	175	(2538)	1800								
	97,7	(6)	113,8	(30)	175	(2538)	1800								
	112,7	(6.9)	131,6	(35)	175	(2538)	1800								
	121,6	(7.4)	139,9	(38)	175	(2538)	1800								
BV05	138,6	(8.46)	164	(42)	175	(2538)	1800								
	153,5	(9.4)	180	(47)	175	(2538)	1800								
	162,2	(9.9)	189	(50)	175	(2538)	1800								
	183,4	(11.2)	217	(57)	175	(2538)	1800								
	193,4	(11.8)	230	(60)	175	(2538)	1800								
BV21	40,1	(2.45)	46,9	(12)	175	(2538)	1800	18,0	(1.10)	20,8	(5)	210	(3050)	1800	
	45,4	(2.77)	52,7	(14)	175	(2538)	1800	27,4	(1.67)	31,8	(8)	210	(3050)	1800	
	55,2	(3.37)	64,2	(17)	175	(2538)	1800	36,4	(2.22)	42,4	(11)	210	(3050)	1800	
	60,0	(3.66)	71,0	(19)	175	(2538)	1800	39,5	(2.41)	46,9	(12)	160	(2300)	1800	
	67,5	(4.12)	79,0	(21)	175	(2538)	1800	45,9	(2.79)	54,9	(14)	140	(2030)	1800	
BV41	69,0	(4.2)	79,5	(21)	175	(2538)	1800	18,0	(1.10)	20,8	(5)	210	(3050)	1800	
	81,6	(5)	94,0	(25)	175	(2538)	1800	27,4	(1.67)	31,8	(8)	210	(3050)	1800	
	97,7	(6)	113,8	(30)	175	(2538)	1800	36,4	(2.22)	42,4	(11)	210	(3050)	1800	
	112,7	(6.9)	131,6	(35)	175	(2538)	1800	39,5	(2.41)	46,9	(12)	160	(2300)	1800	
	121,6	(7.4)	139,9	(38)	175	(2538)	1800	45,9	(2.79)	54,9	(14)	140	(2030)	1800	
BV42	69,0	(4.2)	79,5	(21)	175	(2538)	1800	40,1	(2.45)	46,9	(12)	175	(2538)	1800	
	81,6	(5)	94,0	(25)	175	(2538)	1800	45,4	(2.77)	52,7	(14)	175	(2538)	1800	
	97,7	(6)	113,8	(30)	175	(2538)	1800	55,2	(3.37)	64,2	(17)	175	(2538)	1800	
	112,7	(6.9)	131,6	(35)	175	(2538)	1800	60,0	(3.66)	71,0	(19)	175	(2538)	1800	
	121,6	(7.4)	139,9	(38)	175	(2538)	1800	67,5	(4.12)	79,0	(21)	175	(2538)	1800	
BV51	138,6	(8.46)	164	(42)	175	(2538)	1800	18,0	(1.10)	20,8	(5)	210	(3050)	1800	
	153,5	(9.4)	180	(47)	175	(2538)	1800	27,4	(1.67)	31,8	(8)	210	(3050)	1800	
	162,2	(9.9)	189	(50)	175	(2538)	1800	36,4	(2.22)	42,4	(11)	210	(3050)	1800	
	183,4	(11.2)	217	(57)	175	(2538)	1800	39,5	(2.41)	46,9	(12)	160	(2300)	1800	
	193,4	(11.8)	230	(60)	175	(2538)	1800	45,9	(2.79)	54,9	(14)	140	(2030)	1800	
BV52	138,6	(8.46)	164	(42)	175	(2538)	1800	40,1	(2.45)	46,9	(12)	175	(2538)	1800	
	153,5	(9.4)	180	(47)	175	(2538)	1800	45,4	(2.77)	52,7	(14)	175	(2538)	1800	
	162,2	(9.9)	189	(50)	175	(2538)	1800	55,2	(3.37)	64,2	(17)	175	(2538)	1800	
	183,4	(11.2)	217	(57)	175	(2538)	1800	60,0	(3.66)	71,0	(19)	175	(2538)	1800	
	193,4	(11.8)	230	(60)	175	(2538)	1800	67,5	(4.12)	79,0	(21)	175	(2538)	1800	
BV54	138,6	(8.46)	164	(42)	175	(2538)	1800	69,0	(4.2)	79,5	(21)	175	(2538)	1800	
	153,5	(9.4)	180	(47)	175	(2538)	1800	81,6	(5)	94,0	(25)	175	(2538)	1800	
	162,2	(9.9)	189	(50)	175	(2538)	1800	97,7	(6)	113,8	(30)	175	(2538)	1800	
	183,4	(11.2)	217	(57)	175	(2538)	1800	112,7	(6.9)	131,6	(35)	175	(2538)	1800	
	193,4	(11.8)	230	(60)	175	(2538)	1800	121,6	(7.4)	139,9	(38)	175	(2538)	1800	

oil viscosity: 25 c.St. (10W), temperature: 45°C, inlet pressure: 0 BAR





The design of the HQ series vane pumps makes them particularly suitable for application on trucks, especially garbage compactors.

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 downtime.

The special design of the inner flexible plates of the cartridge enables any thermal expansion in the rotor to be compensated for and to adequately cope with any sudden change in pressure.

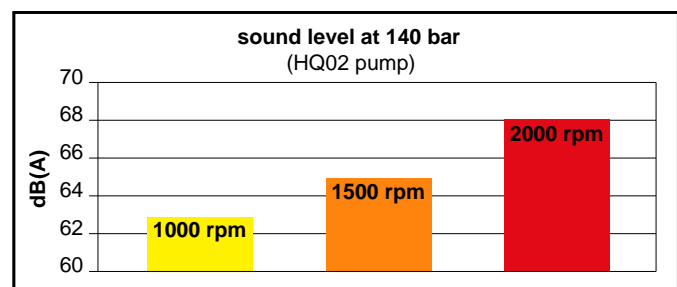
Furthermore, the two opposed pumping chambers formed by the elliptical profile of the cam cancel out radial loads, dramatically reducing vibrations and considerably increasing the pump lifetime.

In addition to reliability, HQ pump guarantees continuous high volumetric efficiency during its whole servicetime. That avoids having to compensate the typical efficiency loss of other kinds of pump, increasing the truck engine

RPM, which causes higher fuel consumption and therefore air pollution.

Such characteristics, along with an extremely low noise-level, make the HQ pump environmentally friendly, in line with the latest ecological trend.

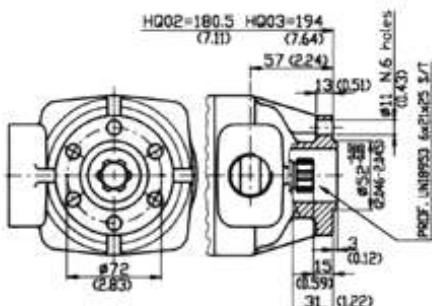
The HQ series is available in 2 versions of single pump (from 39 to 88 l/min at 1000 rpm) and two versions of double pump (from 56 to 134 l/min at 1000 rpm) with maximum powers of over 103 kW. The pumps are extremely compact and are supplied with different types of either ISO or UNI norm mounting for the direct coupling with PTO and SAE norm hydraulic fittings. That, together with the possibility to orientate the inlet and outlet ports, makes the HQ pumps very easy to install and guarantees their interchangeability with other types of pumps.



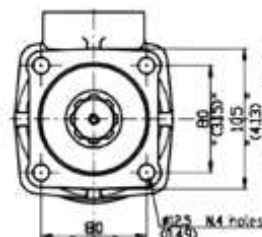
MAIN TECHNICAL CHARACTERISTICS

Pump type	Shaft end cartridge							Cover end cartridge						
	Geometric displacement		Rated capacity at 1000 rpm 7 bar		Maximum pressure with mineral oil		Max speed rpm	Geometric displacement		Rated capacity at 1000 rpm 7 bar		Maximum pressure with mineral oil		Max speed rpm
	cm ³ /g	(in ³ /r)	l/min	(gpm)	bar	(psi)		cm ³ /g	(in ³ /r)	l/min	(gpm)	bar	(psi)	
HQ02	40,1	(2.45)	39,1	(10,0)	210	(3050)	2700							
	45,4	(2.77)	43,9	(11,7)	210	(3050)	2700							
	55,2	(3.37)	53,5	(14,2)	210	(3050)	2500							
	60,0	(3.66)	59,2	(15,8)	210	(3050)	2500							
	67,5	(4.12)	65,8	(17,5)	210	(3050)	2500							
HQ03	78,3	(4.78)	75,0	(20,0)	210	(3050)	2500							
	91,2	(5.56)	88,3	(23,3)	210	(3050)	2500							
HQ21	40,1	(2.45)	39,1	(10,0)	210	(3050)	2700	18,0	(1.10)	17,3	(4,2)	210	(3050)	2700
	45,4	(2.77)	43,9	(11,7)	210	(3050)	2700	27,4	(1.67)	26,5	(6,7)	210	(3050)	2700
	55,2	(3.37)	53,5	(14,2)	210	(3050)	2500	36,4	(2.22)	35,3	(9,2)	210	(3050)	2700
	60,0	(3.66)	59,2	(15,8)	210	(3050)	2500	39,5	(2.41)	39,1	(10,0)	160	(2300)	2700
	67,5	(4.12)	65,8	(17,5)	210	(3050)	2500	45,9	(2.79)	45,8	(11,7)	140	(2030)	2700
HQ31	78,3	(4.78)	75,0	(20,0)	210	(3050)	2500	18,0	(1.10)	17,3	(4,2)	210	(3050)	2700
	91,2	(5.56)	88,3	(23,3)	210	(3050)	2500	27,4	(1.67)	26,5	(6,7)	210	(3050)	2700
								36,4	(2.22)	35,3	(9,2)	210	(3050)	2700
								39,5	(2.41)	39,1	(10,0)	160	(2300)	2700
								45,9	(2.79)	45,8	(11,7)	140	(2030)	2700

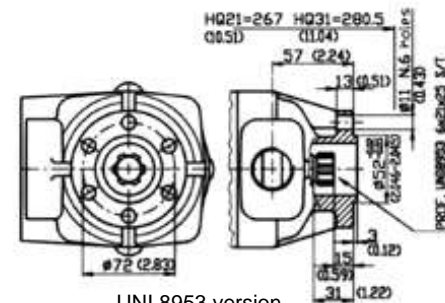
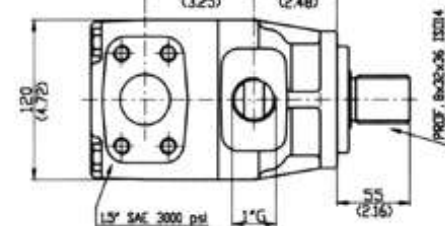
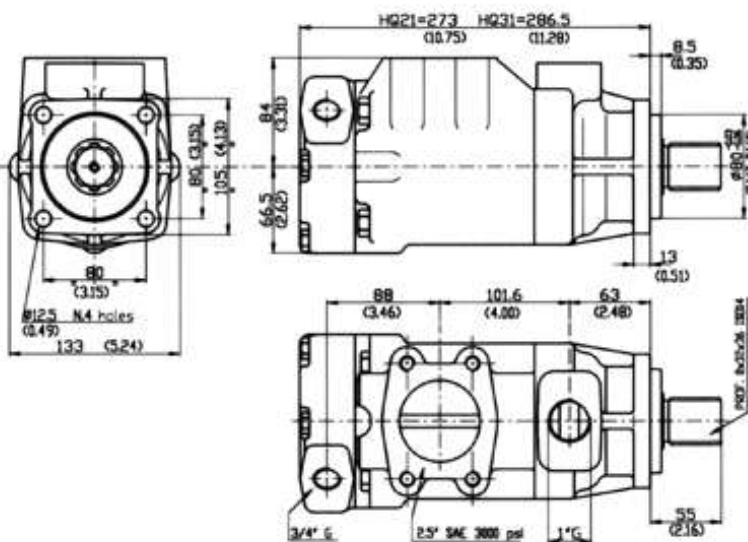
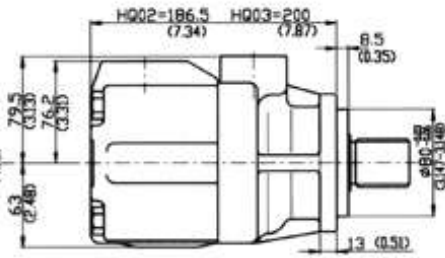
Oil viscosity: 25 c.St. (10W), temperature: 45°C, inlet pressure: 0 BAR



UNI 8953 version



Single pump
Double pump



UNI 8953 version





Thru-drive pumps save installation space and cost by eliminating double shaft extension electric motors or by reducing the number of motors and drive couplings.

Furthermore thru-drive models provide valuable circuit design flexibility, such as having the vane pump coupled with other types of pumps, both fixed and variable displacement, on a single input drive.

The B&C thru-drive pumps are available in TQ and TV versions.

The ten vane TQ type is particularly suitable for applications subject to sudden peaks of pressure, while the twelve vane TV model is specifically designed to meet very low noise requirements. The table below shows the main technical characteristics of both TQ and TV versions. More detailed technical information is available on the catalogues of the standard BQ and BV pumps.

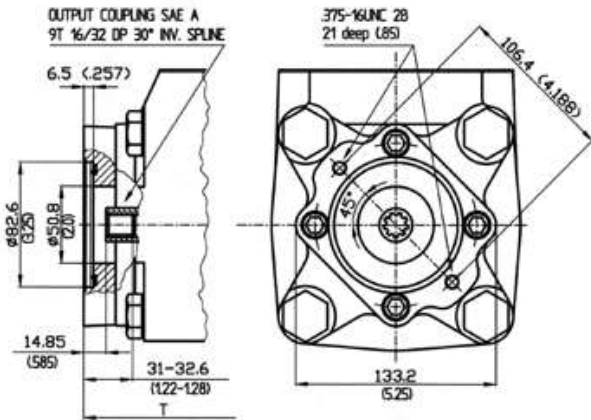
MAIN TECHNICAL CHARACTERISTICS

Pump type	Geometric displacement		Rated capacity at 1200 rpm 7 bar		TQ series			TV series		
					Maximum pressure with mineral oil		Max speed	Maximum pressure with mineral oil		Max speed
	cm ³ /g	(in ³ /r)	l/min	(gpm)	bar	(psi)	rpm	bar	(psi)	rpm
02	40,1	(2.45)	46,9	(12)	210	(3050)	2700	175	(2538)	1800
	45,4	(2.77)	52,7	(14)	210	(3050)	2700	175	(2538)	1800
	55,2	(3.37)	64,2	(17)	210	(3050)	2500	175	(2538)	1800
	60,0	(3.66)	71,0	(19)	210	(3050)	2500	175	(2538)	1800
	67,5	(4.12)	79,0	(21)	210	(3050)	2500	175	(2538)	1800
04	69,0	(4.2)	79,5	(21)	210	(3050)	2500	175	(2538)	1800
	81,6	(5)	94,0	(25)	210	(3050)	2500	175	(2538)	1800
	97,7	(6)	113,8	(30)	210	(3050)	2500	175	(2538)	1800
	112,7	(6.9)	131,6	(35)	210	(3050)	2400	175	(2538)	1800
	121,6	(7.4)	139,9	(38)	210	(3050)	2400	175	(2538)	1800
05	138,6	(8.46)	164	(42)	175	(2538)	2200	175	(2538)	1800
	153,5	(9.4)	180	(47)	175	(2538)	2200	175	(2538)	1800
	162,2	(9.9)	189	(50)	175	(2538)	2200	175	(2538)	1800
	183,4	(11.2)	217	(57)	175	(2538)	2200	175	(2538)	1800
	193,4	(11.8)	230	(60)	175	(2538)	2200	175	(2538)	1800

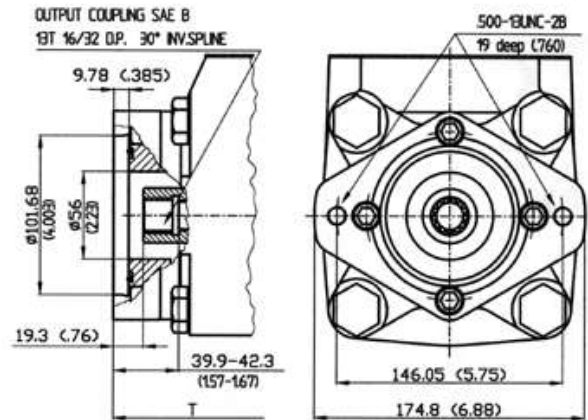
Oil viscosity: 25 c.St. (10W), temperature: 45°C, inlet pressure: 0 BAR

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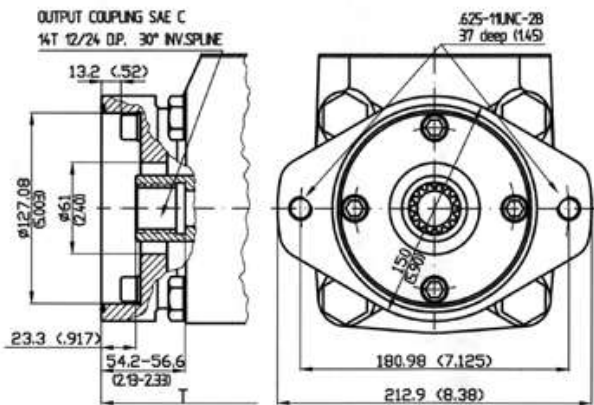
REAR MOUNTINGS



SAE A type



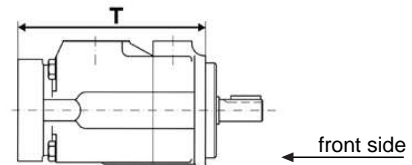
SAE B type



SAE C type

T length mm (inches)

True-drive connection	Pump TQ/TV 02	Pump TQ/TV 04	Pump TQ/TV 05
SAE A	236.5 (9.3)	259.1 (10.2)	291.6 (11.5)
SAE B	245.8 (9.67)	268.2 (10.56)	300.7 (11.84)
SAE C	-	275.8 (10.86)	308.4 (13.33)



ISO mountings, available on request

SHAFT TORQUE RATINGS

Nm (lb-in)

Pump model	TQ/TV 02		TQ/TV 04		TQ/TV 05		
	Straight key 203	Splined 297	Straight key 203	Splined 297	Straight key 203	Splined 297	
Max input torque (front side)	400 (3560)	316 (2800)	600 (5300)	790 (7000)	810 (7200)	1020 (9000)	
Max output torque (rear side)	SAE A	131 (1160)					
	SAE B	316 (2800)			384 (3400)		
	SAEC		437 (3870)		702 (6210)		

