



Hydraulic Eaton Vickers PVQ Pump

Vickers pump VQ10 PVQ13 PVQ20 PVQ25 PVQ32 PVQ40



Introduction

- PVQ piston pumps are in-line, variable displacement units and are available in nine sizes. Displacement is varied by means of pressure and/or flow compensator controls. An impressive assortment of control options offers maximum operating flexibility.
- PVQs operate at quietness levels that meet today's demanding industrial conditions. The sound level of each unit approaches or is below that of the electric motor driving it. Sound is reduced by a patented timing arrangement that also produces low pressure "pulses" in the outlet flow. This leads to reduced tendencies for noise in systems using PVQs.
- The PVQ series is capable of operating with many types of hydraulic fluid. Water-content and phosphate ester fluids can be accommodated, in addition to the typical petroleum based and synthetic fluids.
- Many PVQ pumps are available in a thru-drive configuration to accommodate a multitude of application and installation requirements. Thru-drive models can be coupled to various types and sizes of fixed and variable displacement pumps, resulting in a compact and versatile package. Such a package offers lower installed cost by reducing the installation size and by requiring only one mounting pad on the prime mover.
- Quiet PVQs have excellent operating characteristics, and the pumps' many control and mounting options allow choosing the optimum model for any application. Additionally, PVQs possess the same durability and long life characteristics expected of the best industrial products in today's marketplace.

Technical data:

Model	Max. displacement cm ³ /r [in ³ /rev]	Output flow LPM [gpm] @rpm	Speed rpm	Max. pressure Bar [psi]
PVQ10	10,5 [0.643]	18,9 [5.0]	1800	210 [3000]
PVQ13	13,8 [.843]	24.8 [6.0]	1800	140 [2000]
PVQ20	21,1 [1.290]	38 [10.0]	1800	210 [3000]
PVQ25	25,2 [1.540]	45.4 [12.0]	1800	210 [3000]
PVQ32	32,9 [2.010]	59.2 [15.0]	1800	140 [2000]
PVQ40	41,0 [2.500]	73.8 [19.0]	1800	210 [3000]
PVQ45	45,1 [2.750]	81.2 [21.0]	1800	186 [2700]



PVQ10 & PVQ13 Model Series

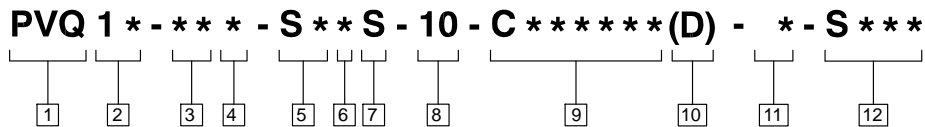
Ratings

Model Series	Maximum Geometric Displacement cm ³ /r (in ³ /r)	Rated Speed r/min	Maximum Pressure bar (psi)	Input Power at Max. Pressure & Rated Speed kW (hp)	Approx. Weight kg (lb)
PVQ10	10,5 (0.643)	1800	210 (3000)	7,4 (10)	7,2 (16)
PVQ13	13,8 (0.843)	1800	140 (2000)	6,5 (8.75)	7,2 (16)

Pressure Limits

Case pressure – 0,35 bar (5 psig) maximum
 Inlet pressure – 0,2 bar (5 in. Hg) vacuum to 2 bar (30 psig)

Model Code



1 Series PVQ

- P – Inline piston pump
- V – Variable volume
- Q – Quiet series

2 Displacement in cc/rev and pressure ratings

- 10 – 10,5 cc/rev (0.64 cir), 210 bar (3000 psi)
- 13 – 13,8 cc/rev (0.84 cir), 140 bar (2000 psi)

3 Mounting flange specifications

- A2 – Flange SAE J744 82-2 (SAE A)
- MA – Flange ISO 3019/2-80A2HW (available with “N” drive shaft only)

4 Rotation viewed from shaft end

- R – Right hand (cw), standard
- L – Left hand (ccw), optional

5 Ports, type and location

- SE – SAE O-ring rear port, 1.0625” inlet & outlet (standard)
- SS – SAE O-ring side port, 1.3125” inlet & outlet (optional)

6 Shafts, input

- 1 – Straight keyed SAE “A” modified, .75” dia. x 1.75” long
- 3 – Splined SAE “A” modified, 9T 16/32 DP major dia. fit
- N – Shaft end ISO 3019/2 E20N (available with “MA” mount only)

7 Seals

8 Pump design number

- 10 – Design number subject to change. Installation dimensions remain unchanged for designs 10–19.

9 Control type

- C** – Pressure compensator. PVQ10: Standard model is C21, indicating setting of 207 bar (3000 psi); range is 02–21 in tens of bar (350–3000 psi). PVQ13: Standard model is C14, indicating factory setting of 138 bar (2000 psi); range is 02–14 in tens of bar (350–2000 psi).
- CM** – Low pressure compensator. Standard model is CM7, indicating factory setting of 69 bar (1000 psi); range is 02–10 in tens of bar (350–1500 psi).
- S – Buna N, standard
- F – Fluorocarbon, optional

- C**VC**P – Pressure compensator with load sensing. Same as C**VC**B above, but with bleed-down orifice plugged.
- CG – Pressure compensator modified for hydraulic remote control.
- CD** – Electric dual range compensator. PVQ10: CD21 is standard 210 bar setting of high range (24–210 bar). PVQ13: CD14 is standard 140 bar setting of high range (24–140 bar). Both units require low range to be set by customer (20–100 bar).
- UV – Unloading Valve for accumulator circuits. See installation details.
- [] – bar (1000 psi); range is 02–10 in tens of bar (350–1500 psi).
- C**V**B – Pressure compensator C**, as above with load sensing. Standard load sensing setting is 11 bar (160 psi); range 10–17 bar (150–250 psi); with bleed-down orifice. Example: C21V11B indicates PVQ10 compensator with 207 bar pressure setting and 11 bar load-sense differential.
- C**V**P – Pressure compensator with load sensing as C**V**B above, but with bleed-down orifice plugged.
- C**VC**B – Pressure compensator with load sensing. Compensator same as C** above. Standard load sensing setting is 24 bar (350 psi), range 17–31 bar



PVQ20 & PVQ32 Model Series

Ratings

Model Series	Maximum Geometric Displacement cm ³ /r (in ³ /r)	Rated Speed r/min	Maximum Pressure bar (psi)	Input Power at Max. Pressure & Rated Speed kW (hp)	Approx. Weight kg (lb)
PVQ20	21,1 (1.290)	1800	210 (3000)	14,9 (20)	14 (31)
PVQ32	32,9 (2.010)	1800	140 (2000)	15,6 (21)	14 (31)

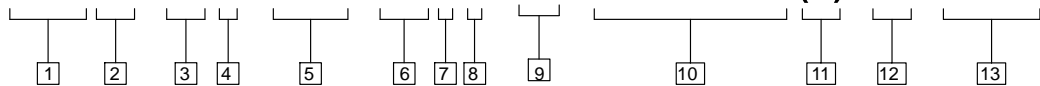
Pressure Limits

Case pressure – 0,35 bar (5 psig) maximum

Inlet pressure – 0,2 bar (5 in. Hg) vacuum to 2 bar (30 psig)

Model Code

PVQ ** - ** * - A ** - S ** * - 10 - C ** * * * * * (D) - ** - S ** *



<p>1 Series PVQ</p> <p>P – Inline piston pump V – Variable volume Q – Quiet series</p>	<p>8 Seals</p> <p>S – Buna N, standard F – Fluorocarbon, optional</p>	<p>(350 psi), range 17–31 bar (250–450 psi). With bleed-down orifice.</p>
<p>2 Displacement in cc/rev and pressure ratings</p> <p>20 – 21,1 cc/rev (1.29 cir), 210 bar (3000 psi) 32 – 32,9 cc/rev (2.01 cir), 140 bar (2000 psi)</p>	<p>9 Pump design number</p> <p>10 – Design number subject to change. Installation dimensions remain unchanged for designs 10–19.</p>	<p>C**VC**P – Pressure compensator with load sensing. Same as C**VC**B above, but with bleed-down orifice plugged.</p>
<p>3 Mounting flange specifications</p> <p>B2 – Flange SAE J744 101-2 (SAE B) MB – Flange ISO 3019/2-100A2HW (available with “N” drive shaft only)</p>	<p>10 Control type</p> <p>C** – Pressure compensator. PVQ20: Standard model is C21, indicating setting of 207 bar (3000 psi); range is 02–21 in tens of bar (350–3000 psi). PVQ32: Standard model is C14, indicating factory setting of 138 bar (2000 psi); range is 02–14 in tens of bar (350–2000 psi).</p>	<p>CG – Pressure compensator modified for hydraulic remote control.</p>
<p>4 Rotation viewed from shaft end</p> <p>R – Right hand (cw), standard L – Left hand (ccw), optional</p>	<p>CM** – Low pressure compensator. Standard model is CM7, indicating factory setting of 70 bar (1000 psi); range is 02–10 in tens of bar (350–2000 psi).</p>	<p>CD** – Electric dual range compensator. PVQ20: CD21 is standard 207 bar setting of high range (24–210 bar). PVQ32: CD14 is standard 140 bar setting of high range (24–140 bar). Both units require low range to be set by customer (20–100 bar).</p>
<p>5 Thru-drive without coupling (available with side ports only)</p> <p>Blank – No thru-drive A9 – SAE J744 82-2 (SAE A) w/9T spline A11 – SAE J744 82-2 (SAE A) w/11T spline</p>	<p>C**V**B – Pressure compensator C**, as above with load sensing. Standard load sensing setting is 11 bar (160 psi); range 10–17 bar (150–250 psi); with bleed-down orifice. Example: C21V11B indicates PVQ20 compensator with 210 bar pressure setting and 11 bar load-sense differential.</p>	<p>UV – Unloading Valve for accumulator circuits. See installation details.</p>
<p>6 Ports, type and location</p> <p>SE – SAE O-ring rear port, 1.625” inlet & outlet (standard) SS – SAE O-ring side port, 1.625” inlet & outlet (optional)</p>	<p>C**V**P – Pressure compensator with load sensing as C**V**B above, but with bleed-down orifice plugged.</p>	<p>11 Control option</p> <p>Blank – Without adjustable maximum displacement stop (standard) D – Adjustable maximum displacement stop (optional)</p>
<p>7 Shafts, input</p> <p>1 – Straight keyed SAE “B” modified, 2.31” long 3 – Splined SAE “B” modified, 13T 16/32 DP major dia. fit N – Shaft end ISO 3019/2 E25N (available with “MB” mount only) 28 – 26-tooth splined shaft (Vickers). Used in PVQ20/32 single to mount on PVQ40/45 “B26” thru-drive.</p>	<p>C**VC**B – Pressure compensator with load sensing. Compensator same as C** above. Standard load sensing setting is 24 bar</p>	<p>12 Control design</p> <p>11 – C** and CM** 11 – C**D and CM**D 12 – C**V(C)**B and C**V(C)**P 20 – UV, CD** and CG</p>
	<p>13 Special suffixes</p> <p>S2 – Shaft up mounting S3 – British Standard Parallel Threads Counterbore Ports (ISO R288 threads). Contact Vickers for available configurations. S9 – Special CG compensator for use with electronically modulated relief valves</p>	

PVQ40 & PVQ45 Model Series

Ratings

Model Series	Maximum Geometric Displacement cm ³ /r (in ³ /r)	Rated Speed r/min	Maximum Pressure bar (psi)	Input Power at Max. Pressure & Rated Speed kW (hp)	Approx. Weight kg (lb)
PVQ40	41,5 (2.500)	1800	210 (3000)	27,6 (37)	20,6 (45.4)
PVQ45	45,1 (2.750)	1800	186 (2700)	28,3 (38)	20,6 (45.4)

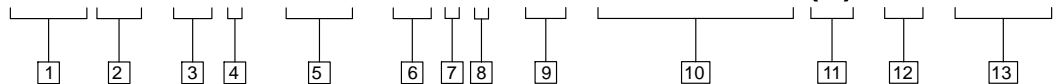
Pressure Limits

Inlet pressure – 0,2 bar (5 in. Hg) vacuum to 2 bar (30 psig)
Case pressure – 0,35 bar (5 psig) maximum

Note: Integral relief valve limits case pressure peaks to 0,7 bar (10 psi) higher than inlet pressure to protect pump. Flow from valve is returned directly to pump inlet. Use of case drain line required to limit steady-state case pressure.

Model Code

PVQ 4 * - * * * - * * * - * * * * - 10 - C * * * * * * * (D) - * * - S * * *



1 Series PVQ

P – Inline piston pump
V – Variable volume
Q – Quiet series

2 Displacement in cc/rev and pressure ratings

40 – 41, cc/rev (2.50 cir), 210 bar (3000 psi)
45 – 45,1 cc/rev (2.75 cir), 186 bar (2700 psi)

3 Mounting flange specifications

B2 – Flange SAE J744 101-2 (SAE B)
MB – Flange ISO 3019/2-100A2HW (available with “N” drive shaft only)

4 Rotation viewed from shaft end

R – Right hand (cw), standard
L – Left hand (ccw), optional

5 Thru-drive without coupling

(available with side ports only)

Blank – No thru-drive

A9 – SAE J744 82-2 (SAE A) w/9T spline
A11 – SAE J744 82-2 (SAE A) w/11T spline
B26 – SAE J744 101-2 (SAE B) w/26T spline

6 Ports, type and location

SE – SAE O-ring rear port, (standard)
SS – SAE O-ring side port, (optional)
FS – SAE 4-bolt, side ports (Preferred for SAE A thru-drive. Not available on SAE B thru-drive.)

7 Shafts, input

1 – Straight keyed SAE “B” modified, 1.75” long (not available on thru-drive)
2 – Straight keyed, SAE “B-B” modified
3 – Splined SAE “B” modified, 13T 16/32 DP flat root side fit
4 – Splined SAE “B-B” modified 15T 16/32 DP flat root side fit

N – Shaft end ISO 3019/2 E25N (available with “MB” mount only)
28 – 26 tooth splined shaft (Vickers). Used in PVQ40/45 single to mount on PVQ40/45 “B26” thru-drive.

8 Seals

S – Buna N, standard
F – Fluorocarbon, optional

9 Pump design number

10 – Design number subject to change. Installation dimensions remain unchanged for designs 10–19.

10 Control type

C** – Pressure compensator. PVQ40: Standard model is C21, indicating setting of 210 bar (3000 psi); range is 02–21 in tens of bar (350–3000 psi). PVQ45: Standard model is C19, indicating factory setting of 186 bar (2700 psi); range is 02–19 in tens of bar (350–2700 psi).
CM** – Low pressure compensator. Standard model is CM7, indicating factory setting of 70 bar (1000 psi); range is 02–10 in tens of bar (350–1500 psi).

C**V**B – Pressure compensator C**, as above with load sensing. Standard load sensing setting is 11 bar (160 psi); range 10–17 bar (150–250 psi); with bleed-down orifice. Example: C21V11B indicates PVQ40 compensator with 210 bar pressure setting and 11 bar load-sense differential.

C**V**P – Pressure compensator with load sensing as C**V**B above, but with bleed-down orifice plugged.

C**VC**B – Pressure compensator with load sensing. Compensator same as C** above. Standard load sensing setting is 24 bar (350 psi), range 17–31 bar (250–450 psi). With bleed-down orifice.

C**VC**P – Pressure compensator with load sensing. Same as C**VC**B above, but with bleed-down orifice plugged.

CG – Pressure compensator modified for hydraulic remote control.

CD** – Electric dual range compensator. PVQ40: CD21 is standard 210 bar setting of high range (24–207 bar). PVQ45: CD19 is standard 190 bar setting of high range (24–190 bar). Both units require low range to be set by customer (20–100 bar).

UV – Unloading Valve for accumulator circuits. See installation details.

11 Control option

Blank – Without adjustable maximum displacement stop (standard)

D – Adjustable maximum displacement stop (optional)

12 Control design

10 – C** and CM**
11 – C**D and CM**D
12 – C**V(C)**B and C**V(C)**P
20 – CD**, CG, and UV

13 Special suffixes

S2 – Shaft up mounting
S3 – British Standard Parallel Threads Counterbore Ports (ISO R288 threads). Contact Vickers for available configurations.
S9 – Special CG compensator for use with electronically modulated relief valves

Part number of Eaton Vickers PVQ pump

02-136856	PVQ20B2RSE1S10C2111	02-341624	PVQ13A2RSS1S20C14D12	02-328896	PVQ20B2RSE1F20CM711
02-136902	PVQ32B2RSE1S10C14D11	02-341630	PVQ13A2RSS1S20C1411	02-328964	PVQ32B2RSE1S20CG20S2
02-136904	PVQ32B2RSS1S10C1411	02-341634	PVQ13A2RSS1S20CM712	02-333550	PVQ32MBRSSNS20CM711GEVS
02-142063	PVQ10A2RSE1S10C2111	02-341635	PVQ13A2LSS1S20CM712	02-333619	PVQ32B2RSE1S20CM711GEVS
02-142065	PVQ10A2LSS1S10C2111	02-341637	PVQ13A2RSS1S20CM7D12	02-334023	PVQ32B2RSE1S20C14V11P12
02-142066	PVQ10A2RSS1S10C2111	02-341638	PVQ13A2RSS3S20C1412	02-334093	PVQ32B2RA9SS1S20C14V11P12
02-142067	PVQ13A2RSS1S10C1411	02-341643	PVQ13A2RSE1F20CM712	02-334114	PVQ10A2RSE1S10C21V11P12S
02-142069	PVQ13A2RSE1S10C1411	02-341644	PVQ13A2RSE1S20C1412	02-334132	PVQ20B2RSE1S20CGD20
02-142070	PVQ10A2LSE1S10C2111	02-341645	PVQ13A2RSE1S20C1412S2	02-334218	PVQ32B2RSS3S20C1411
02-142534	PVQ13A2RSE1S10C14D11	02-341646	PVQ13A2RSE1S20C14D12	02-334242	PVQ20B2RSE1S20C21V11P12
02-142609	PVQ10A2RSE1S10CM1011	02-341649	PVQ13A2RSE1S20CG30	02-334281	PVQ32B2RSE1S20CM7D11
02-142758	PVQ32B2RA9SS1S10C1411	02-341650	PVQ13A2RSE1S20CG30S2	02-334293	PVQ20MBRMSNS20CM7D11
02-142907	PVQ13A2RSE1S10CM7D11	02-341651	PVQ13A2RSE1S20CGD30	02-334296	PVQ10MARMNSNS10CM7D11
02-142921	PVQ32B2RSE1S10C1411	02-341653	PVQ13A2RSE1S20CM712	02-334307	PVQ20B2RSS1S20CG20
02-143002	PVQ20B2RSE3S10C2111	02-341656	PVQ13A2RSE3S20C1412	02-334322	PVQ20B2RSS3S20CM711
02-143026	PVQ20B2RA9SS1S10CM711	02-341660	PVQ13-A2L-SE1S-20-CM7D-12	02-334393	PVQ32B2RSS1S20C14D11
02-143068	PVQ13A2RSS1S10CM7D11	02-341661	PVQ13A2LSE1S20CM712	02-334395	PVQ32B2RSS1S20CM7D11
02-143094	PVQ10A2RSE1S10CG20	02-341665	PVQ32B2RA9SS3S21C1412	02-334416	PVQ32B2RSE1S20CM711S4
02-143123	PVQ10A2RSE1S10CG20S2	02-341668	PVQ32B2RA9SS1S21C1412	02-334417	PVQ32B2RSE1S20CM7D11S2
02-143152	PVQ10A2RSE1S10C21D11	02-341670	PVQ32MBRENS21C14D12	02-334457	PVQ10A2RSS1S10CG20S2
02-143204	PVQ10A2RSE1S10CGD20	02-341671	PVQ32MBRSSNS21CM712	02-334459	PVQ20B2RSE1S20CGD20S2
02-143282	PVQ13A2RSE1S10CM711	02-341676	PVQ32B2RSE3S21C14V11P13	02-334575	PVQ32B2LSS1S20C1411
02-143295	PVQ10A2RSE1S10CM711	02-341677	PVQ32B2RSE3S21C14D12	02-334671	PVQ32B2RA9SS3S20C1411
02-143378	PVQ20B2RSE1S10CM711	02-341680	PVQ32-B2R-SE1S-21-CG-30	02-334679	PVQ20MBRENSNS20CM711
02-143552	PVQ32B2RSE1S10CM711	02-341682	PVQ32B2RSE1S21C14V11B13	02-334688	PVQ20B2RSS1S20C21D11
02-143569	PVQ20B2RSE1S10C21D11	02-341685	PVQ32-B2R-SE1S-21-C14-12	02-334689	PVQ20B2RSS1S20C21V11P12
02-143577	PVQ10A2RSE3S10C2111	02-341686	PVQ32-B2R-SE1S-21-C14D-12	02-334711	PVQ20B2LSE1S20C21D11
02-143634	PVQ10A2RSS3S10C2111	02-341687	PVQ32-B2R-SE1S-21-CM7-12	02-334712	PVQ20MBRMSNS20C21D11
02-143635	PVQ13A2RSS1S10CM711	02-341690	PVQ32B2RSE1S21CM7D12	02-334731	PVQ20B2RSE1S20C21V11P12S
02-151613	PVQ20B2RSE1S10C21V11B12	02-341694	PVQ32B2LSE3S21CM712	02-334752	PVQ32B2RSS1S20CGD20
02-151619	PVQ20B2RSE1S10CG20	02-341697	PVQ32-B2L-SE1S-21-C14-12	02-334760	PVQ20B2RSE1S20C21D11S2
02-151701	PVQ20B2RSS1S10C21D11	02-341875	PVQ13A2RSE1S10CM411S26	02-334778	PVQ32B2RSS3S20C14V11B12
02-151712	PVQ32B2RSS28S10C1411	02-341876	PVQ13A2RSE1S10CM611S26	02-334868	PVQ10MARSENS10CM711
02-151924	PVQ10A2RSE1S10C21V11B12	02-345091	PVQ10MARSENS10C2111	02-334992	PVQ32MBRENS20C14D11
02-151937	PVQ13A2RSE1S10CGD20	02-345202	PVQ32B2RSS1F20CM7D11	02-335016	PVQ32B2RSE1S20CGD20
02-151938	PVQ13A2RSE1S10CG20	02-345361	PVQ10MARSENS20C21D12	02-335081	PVQ32MBRENS20CM711
02-151964	PVQ10A2RSS1S10CM711	02-345386	PVQ10A2RSS3S10CM7D11	02-335096	PVQ32B2RSS1S20C14V11PD12
02-152042	PVQ13A2RSS3S10C1411	02-345456	PVQ13MARSENS10C1411	02-335183	PVQ20MBRENS20C2111
02-152043	PVQ13A2RSE3S10CM711	02-345491	PVQ20B2RSE3S20C21V11B12	02-335291	PVQ20B2RSS1S20CM7D11
02-152084	PVQ32B2RSE1S10CG20	02-345526	PVQ13A2RSE3S10C14D11	02-335311	PVQ32B2RSE1S20CGD20S2
02-152126	PVQ13A2RSE1S10CG20S2	02-345747	PVQ10A2RSE1S10C2111S4	02-335354	PVQ32MBRMSNS20CM711
02-152156	PVQ10A2RSS3S10CM711	02-345915	PVQ20B2RA9SS3S20CG20	02-335394	PVQ20B2RSS1S20CG20S2
02-152340	PVQ13A2LSE1S10CM711	02-346014	PVQ20B2RSS28S20C2111	02-335415	PVQ20B2RA9SS1S20CG20
02-152360	PVQ10A2RSE3S10CG20	02-346024	PVQ20B2LSE1S20CM7D11	02-335417	PVQ32MBRSSNS20C1411
02-159601	PVQ20B2RSE28S10CM711	02-346047	PVQ32B2RSE1S20C14V11BD12	02-335507	PVQ32B2RSS3S20CM7D11
02-159756	PVQ10A2LSE1S10CM711	02-346096	PVQ50B2MRMSNS3S40C21V11P	02-335540	PVQ32B2RSE1S20C1411S2
02-159757	PVQ20B2LSE1S10CM711	02-346205	PVQ10A2RSE1S10C21V11P12	02-335829	PVQ20B2RSE1S20C21V11BD12
02-159905	PVQ13A2RSE3S10C1411	02-346707	PVQ32B2LSS1S20CG20	02-335939	PVQ20B2RSS1S20C21V11PD12
02-159995	PVQ10A2RSE1S10CM7D11	02-346758	PVQ20B2RSE1S20C21D11S4	02-335940	PVQ32B2RSS1S20C14V11PD12
02-160170	PVQ32MBRSSNS10CM711	02-346801	PVQ10A2RSE3S20CG30S2	02-335944	PVQ10A2RSS1S10C21V11PD12
02-160247	PVQ10A2RSE3S10CM711	02-346874	PVQ32B2RSE1S21CM7D12S2	02-335945	PVQ13A2RSS1S10C14V11PD12
02-160404	PVQ10A2RSE3S10CGD20	02-346914	PVQ20B2RSE1F21C21D12S2	02-340578	PVQ20B2RSS1S20CGD20
02-160579	PVQ20B2RSE1S10C21V11P12	02-346921	PVQ10A2RSE3S20C21V11B13	02-341137	PVQ13A2RSE1S10CM711S2
02-305669	PVQ32B2RSS1S10CM7D11	02-346957	PVQ20MBRSSNS21C2112	02-341215	PVQ20B2RSE1S20C2111S2
02-305784	PVQ20B2RSS1S10CGD20	02-347053	PVQ10MARSENS20CG30	02-341240	PVQ32B2RSE1S20UV1421
02-305949	PVQ10A2RSE1S10C21D11S2	02-347064	PVQ20B2RSE1S21CG30S9	02-341359	PVQ32B2RSE1F20CM711
02-306210	PVQ10A2LSE1F10CM711	02-347067	PVQ32B2RSS28S21C1412	02-341380	PVQ32B2RSS1S20C14V11B12
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02-306244	PVQ20B2RSE1S10CM7D11	02-347115	PVQ13A2RSE1S20C14V11B13	02-341539	PVQ20B2RA9SS1S21C21V11B1
02-306309	PVQ10A2RSS1S10C21D11	02-347172	PVQ20B2RA9SS1S21CG30S2	02-341540	PVQ20B2RA9SS1S21C2112
02-306333	PVQ10A2RSS3S10CG20S2	02-347179	PVQ20B2RA9SS1S20CG20S2	02-341550	PVQ20-B2L-SE1S-21-C21-12
02-306334	PVQ20B2RA9SS1S10CG20S2	02-347190	PVQ32B2RSE1S21C14V11B13S	02-341551	PVQ20B2RSS1S21CM712
02-314712	PVQ10A2LSE1S10C21D11	02-347212	PVQ32B2RSE1S21C14V11P13	02-341552	PVQ20B2RSE1S21C2112
02-314740	PVQ32B2RA9SS1S10CG20	02-347213	PVQ20B2RSE1F20C21D11S2	02-341553	PVQ20B2RSE1S21C21D12
02-314805	PVQ10A2RSE1S10CG20S9	02-347340	PVQ10A2RSE3S20CM7D12	02-341555	PVQ20-B2R-SE1S-21-C21V11B-13
02-314858	PVQ13A2RSS1S10C14D11	02-347423	PVQ32B2RSS1S21C1412S2	02-341556	PVQ20-B2R-SE1S-21-CM7-12
02-314863	PVQ32B2RSS1S10CGD20	02-347430	PVQ13A2RSE1S20C14V11P13	02-341558	PVQ20B2RSE3S21C2112

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02-314941	PVQ10A2RSS3S10C21D11	02-347942	PVQ10A2LSE1S20C14D12	02-341560	PVQ20-B2R-SE1S-21-CM7D-12
02-318759	PVQ10A2RSS3S10CG20	02-347973	PVQ10A2RSE1S20C2112S2	02-341561	PVQ20-B2R-SS1S-21-C21-12
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02-328150	PVQ20B2RSE1S20C2111	02-348272	PVQ20B2RSE1S21CD1121S2	02-341578	PVQ10A2RSE1S20C21D12S2
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02-328152	PVQ20B2RSS1S20CM711	02-348360	PVQ32B2RSE3S21CG30	02-341584	PVQ10A2RSE1S20CG30
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02-328323	PVQ20B2RSE1S10C21V11PD12	02-348839	PVQ20B2RSS1S21C21D12	02-341614	PVQ10A2LSE1S20C2112
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