



**CHECKBALL PISTON PUMPS
PF4300 SERIES, 21 DESIGN**

PF43*-***-21**

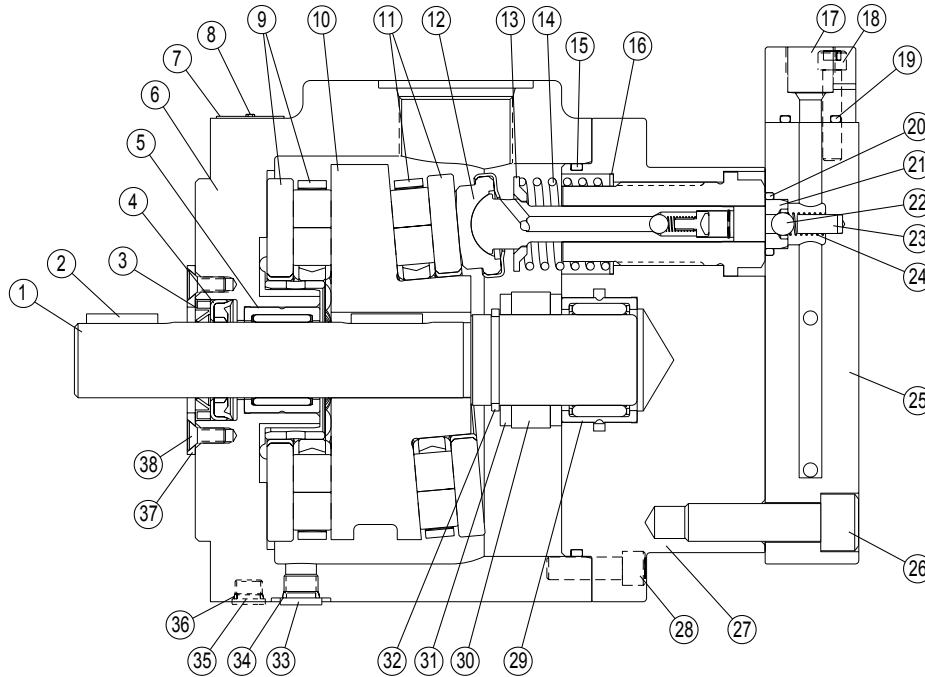


TABLE A – PARTS LIST

ID Number	Part Number	Part Description	Quantity Required
1	See Table B	Shaft	1
2	1024.325	Key (Internal and External) ^①	1 or 2
3	See Kit Table C	Wiper	1
4	See Kit Table C	Shaft Seal	1
5	431.520	Shaft Bearing (Housing)	1
6	3169.900	Housing ^②	1
7	1151.026	Nameplate	1
8	1001.003	Screw (Nameplate)	2
9	1100.155	Thrust Bearing Set ^③	1
10	See Table D	Wobble (Cam) Plate	1
11	1117.155	Thrust Bearing Set ^③	1
12	See Kit Table E	Piston Subassembly ^④	3, 5 or 6
13	See Kit Table E	Piston Retainer ^④	3, 5 or 6
14	See Kit Table E	Spring (Piston Return) ^④	3, 5 or 6
15	See Kit Table C	O-ring (Housing/Barrel)	1
16	1111.132	Washer	3, 5 or 6
17	See Kit Table F	Outlet Block	1
18	See Kit Table F	Socket-head Capscrew ^⑤	4
19	See Kit Table F	O-ring (Outlet Block)	1
20	See Kit Table C	O-ring (Outlet Seat) ^④	3, 5 or 6
21	See Kit Table E	Outlet Seat ^④	3, 5 or 6
22	See Kit Table E	Checkball (Outlet) ^④	3, 5 or 6
23	See Kit Table E	Outlet Stop Pin	3, 5 or 6
24	See Kit Table E	Spring (Outlet) ^④	3, 5 or 6
25	See Kit Table E	Cover Assembly Kit	1

ID Number	Part Number	Part Description	Quantity Required
26	1667.028	Socket-head Capscrew ^{⑥,⑦}	5 or 6
27	See Table D	Barrel	1
28	1666.028	Socket-head Capscrew ^⑧	10
29	1041.155	Shaft Bearing (Barrel)	1
30	1098.132	Thrust Sleeve	1
31	1105.155	Thrust Washer	2
32	1081.049	Retaining Ring	1
33	1564.006	Plug (Drain Port) ^⑨	3
34	See Kit Table C	O-ring (Drain Port Plug)	3
35	1565.006	Plug (Vertical Mounting)	1
36	See Kit Table C	O-ring (Vertical Mounting)	1
37	1067.048	Screw (Retainer Plate) ^⑩	4
38	1486.101	Retainer Plate (Shaft Seal)	1

- ① Spline shaft models ("S" Code) have one key (internal only).
- ② If either the Housing (Item #6) or Barrel (Item #26) are replaced, Shaft (Item #1) must be replaced due to revisions in construction.
- ③ One set consists of one thrust bearing and one thrust plate.
- ④ Quantity determined by number of pistons in model. Refer to Table E.
- ⑤ Apply anti-seize compound to threads and shoulder. Torque to 30 lb-ft (47 N·m).
- ⑥ Five-piston models require 5 capscrews. Three-piston and six-piston models require 6 capscrews. Refer to Table E.
- ⑦ Apply anti-seize compound to threads and shoulder. Torque to 180 lb-ft (244 N·m).
- ⑧ Apply anti-seize compound to threads and shoulder. Torque to 40 lb-ft (54 N·m).
- ⑨ Torque to 18 lb-ft (25 N·m).
- ⑩ Apply Loctite #242 or equivalent. Torque to 100 lb-in (11,3 N·m).

TABLE B – SHAFT OPTIONS

Shaft Code	Part Description	Part Number
No Code	1.250 Inch Diameter, Keyed	1194.288
S	1.250 Inch Diameter, Spline	1195.288

TABLE C – SEAL KITS

Seal Code	Description	Kit Number
D	Standard: Buna-N (Nitrile) with Polyurethane (Disogrin®) o-rings in the cover	KP43009018
XD	Fluorocarbon (Viton® or Fluorel®) with Polyurethane (Disogrin®) o-rings in the cover	KP43009019
XE	All EPR with High Pressure Shaft Seal ^①	KP43009012
XV	Fluorocarbon with High Pressure Shaft Seal	KP43009011

① Shaft seal wiper not required nor included for models with EPR seals. Contact the sales department for recommended operating conditions with EPR seals.

TABLE D – WOBBLE (CAM) PLATE/BARREL OPTIONS

Output Flow Code	Part Number	
	Wobble (Cam) Plate	Barrel
03	1170.101	3166.900
04	428.392	3166.900
05	1170.101	3167.900
06	1170.101	3168.900
08	428.392	3167.900
09	1237.101	3167.900
10	1139.101	3167.900
12	1139.101	3168.900

SERVICE NOTES

The barrel for Design 20-21 models includes integral piston-bore inserts, as shown at right. This barrel is factory-assembled and finished. It must be ordered as a complete assembly.

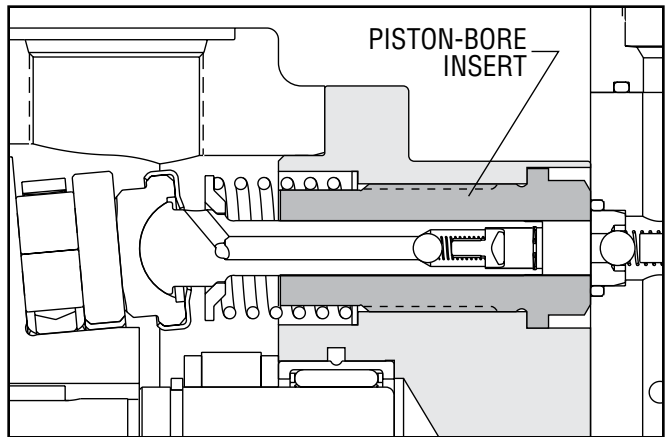
TABLE E – PISTON, COVER AND OUTLET CHECK KITS

Output Flow Code	Number of Pistons	No. Kits Req.	Kit Number		
			Piston Kit	Cover Kit	Outlet Check Kit
03	3	1	KP43039040	KP43209350	KP43039020
04	3	1	KP43039040	KP43209350	KP43039020
05	5	1	KP43059040	KP43209550	KP43059020
06	6	2	KP43039040	KP43209650 ^①	KP43039020
08	5	1	KP43059040	KP43209550	KP43059020
09	5	1	KP43059040	KP43209550	KP43059020
10	5	1	KP43059040	KP43209550	KP43059020
12	6	2	KP43039040	KP43209650 ^①	KP43039020

① Only ONE Cover Kit is required for Output Flow Code 06&12.

TABLE F – OUTLET BLOCKS

Port Code	Port Type	Seal Type	Kit Number
No Code	S.A.E.	XV	KP94081081
		XE	KP94081082
		D	KP94081083
		XD	KP94081084
A	Coned and Threaded	XV	KP94082091
		XE	KP94082092
		D	KP94082093
		XD	KP94082094
B	BSPP	XV	KP94083091
		XE	KP94083092
		D	KP94083093
		XD	KP94083094



The Design 20-21 barrel with piston-bore inserts is not field-serviceable and must be ordered as a complete assembly.

TYPICAL MODEL CODE

PF43

03

H - S

XV

A

-

21

Pump Type	
PF43	Fixed Displacement Checkball Pump

Output Flow (At 1800 rpm, at maximum pressure) ^{①②}	
03	Standard: 2.2 gpm (8,3 L/min) "H" Option: 2.0 gpm (7,5 L/min)
04	Standard: 3.2 gpm (12,1 L/min) "H" Option: 3.1 gpm (11,7 L/min)
05	Standard: 3.7 gpm (14,0 L/min) "H" Option: 3.6 gpm (13,6 L/min)
06	Standard: 4.4 gpm (16,6 L/min) "H" Option: 4.4 gpm (16,6 L/min)
08	Standard: 5.4 gpm (20,4 L/min) "H" Option: 5.3 gpm (19,9 L/min)
09	Standard: 6.0 gpm (22,7 L/min) "H" Option: 5.9 gpm (22,3 L/min)
10	Standard: 6.8 gpm (25,7 L/min) "H" Option: 6.7 gpm (25,3 L/min)
12	Standard: 8.2 gpm (31,0 L/min) "H" Option: 8.1 gpm (30,7 L/min)

① Output flows based on typical performance at maximum pressure. Refer to performance curves for flows at lower pressures.

② Models PF4303 and PF4304 have three pistons; Models PF4305, PF4308, PF4309 and PF4310 have five pistons; Models PF4306 and PF4312 have six pistons.

Ports	
No Code	Inlet No. 24 S.A.E.; Outlet No. 8 S.A.E. ^①
A	Inlet No. 24 S.A.E.; Outlet 9/16 Medium Pressure Coned and Threaded, .8125-16 U.N.-2B Threaded ^②
B	Inlet No. 24 S.A.E.; Outlet G 1/2 (B.S.P.) ^③

① Not recommended for operation above 8000 psi (560 bar). Contact the fitting manufacturer for the pressure rating of the fitting.

② High pressure port uses Autoclave Medium Pressure, Butech M/P or equivalent fitting.

③ Outlet port uses British Standard Pipe fitting. Not recommended for operation above 10 000 psi (700 bar).

Design Number

Seals	
D	Standard: Buna-N (Nitrile) with Polyurethane (Disogrin [®]) o-rings in the cover
XD	Fluorocarbon (Viton [®] or Fluorel [®]) with Polyurethane (Disogrin [®]) o-rings in the cover and High Pressure Shaft Seal
XE	All EPR with High Pressure Shaft Seal ^①
XV	All Fluorocarbon (Viton [®] or Fluorel [®]) with High Pressure Shaft Seal

① Contact the sales department for recommended operating conditions with EPR seals.

Drive Shaft	
No Code	Keyed, 1.250 inch (31,75 mm) diameter
S	S.A.E. Spline, 1.250 inch (31,75 mm)

Operating Pressure	
No Code	Standard Pressure
H	High Pressure ^①

① Requires "A" or "B" port option.

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