

Mobile Systems Division

PRODUCT RANGE



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Product Range

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Introduction

The Parker Promise

Our commitment to global leadership in mobile hydraulics stems from our desire to offer you, our customers, the finest quality fluid power components in the industry today. The addition of FPS products to the already extensive family of established brand names of VOAC, HPI, Nichols, Ross, Waterman and others, allows Parker Hannifin to provide one of the most extensive product lines in mobile fluid power.

In North America, we have formed a Marketing and Sales organization complete with a Systems Engineering Center strictly focused on the Mobile Market. All of our worldwide resources are available to you for this highly specialized market through this Mobile Systems Division. We are ready to advise you and can fill most of your component needs with our vast array of products ranging from pumps to valves, motors to rotary actuators, accumulators to a wide selection of other complimentary fluid power products.

Having the right solution for your mobile application is only a portion of our commitment to serving our customers. Capable people and never ending service are an integral part of our promise to you. Parker has manufacturing plants and warehouses throughout the world, as well as service, application support and knowledgeable sales personnel that are ready, willing and able to help you with your mobile hydraulic needs.

The Mobile Systems Division is structured to supply the mobile equipment industry with the types of solutions that you, our customer, want and need. Give us the opportunity to prove our commitment to you by considering Parker solutions for your next application.

After you've reviewed the following catalog, please give us a call or contact your local mobile distributor.



F1/F2



- Pressures up to 5000 psi
- High power capability
- Twin Flow version available
- Very low weight
- High self-priming speed
- Easy to install
- Easy to service

Frame size F1/F2	-20	-30	-40	-60	-80	-110	F2	
							-53/53	-70/35
Displacement [cm ³ /rev]	19.0	28.1	38.7	58.2	78.2	110.1	54/64	69/36
[in ³ /rev]	1.16	1.71	2.36	3.55	4.77	6.72	3.30/3.30	4.21/2.20
Max continuous pressure [psi]	5000	5000	5000	5000	5000	5000	5000	5000
Max self-priming speed* [rpm]	2600	2500	2400	2100	1300	1300	1400	1400

*at 15 psi abs. inlet pressure

D



- Pressure loaded design
- Efficient, simple design
- Exceptionally compact and lightweight
- Efficient at high pressure operation
- Resistant to cavitation effects
- Reliable under cold weather operation
- Multi-fluid compatibility

Frame size D	-05	-07	-09	-11	-14	-17	-22	-27
Displacement [cm ³ /rev]	1.87	2.76	3.45	4.29	5.38	6.62	8.55	10.50
[in ³ /rev]	0.114	0.168	0.210	0.262	0.329	0.404	0.522	0.641
Max continuous pressure [psi]	2500	2500	2500	2500	2500	2500	2500	2000
Max operating speed [rpm]	4000	4000	4000	4000	4000	4000	4000	4000

H



- Pressure loaded design
- Efficient, simple design
- Exceptionally compact and lightweight
- Efficient at high pressure operation
- Resistant to cavitation effects
- Reliable under cold weather operation
- Multi-fluid compatibility
- Circuits for steering applications

Frame size H	-25	-31	-39	-49	-62	-77	-90
Displacement [cm ³ /rev]	9.88	12.35	15.44	19.30	24.14	30.18	36.50
[in ³ /rev]	0.603	0.754	0.942	1.178	1.473	1.842	2.227
Max continuous pressure [psi]	2500	2500	2500	2500	2500	2000	1750
Max operating speed [rpm]	4000	4000	4000	4000	4000	4000	4000

M



- Pressure loaded design
- Efficient, simple design
- Exceptionally compact and lightweight
- Efficient at high pressure operation
- Resistant to cavitation effects
- Reliable under cold weather operation
- Multi-fluid compatibility

Frame size M	-09	-11	-14
Displacement [cm ³ /rev]	35.17	43.96	54.95
[in ³ /rev]	2.146	2.683	3.353
Max continuous pressure [psi]	2500	2250	2000
Max operating speed [rpm]	3000	3000	2500

PFVH/PFVI25



- 10 and 12 vane cartridge design
- Cartridge style design
- High operating speeds
- Efficient, simple design
- Low noise levels
- Hydraulically balanced design
- Single and tandem configurations

Frame size PFVH/PFVI25	-12	-14	-17	-19	-21
Displacement [cm ³ /rev]	40	45	55	60	68
[in ³ /rev]	2.4	2.8	3.4	3.7	4.1
Max continuous pressure [psi]	3000	3000	3000	3000	3000
Max operating speed [rpm]	2700	2700	2500	2500	2500

PFVH/PFVI35



- 10 and 12 vane cartridge design
- Cartridge style design
- High operating speeds
- Efficient, simple design
- Low noise levels
- Hydraulically balanced design
- Single and tandem configurations

Frame size PFVH/PFVI35	-21	-25	-30	-35	-38
Displacement [cm ³ /rev]	69	82	98	113	122
[in ³ /rev]	4.2	5.0	6.0	6.9	7.4
Max continuous pressure [psi]	3000	3000	3000	3000	3000
Max operating speed [rpm]	2500	2500	2500	2400	2400

PFVH/PFVI45



- 10 and 12 vane cartridge design
- Cartridge style design
- High operating speeds
- Efficient, simple design
- Low noise levels
- Hydraulically balanced design
- Single and tandem configurations

Frame size PFVH/PFVI45	-42	-47	-50	-57	-60
Displacement [cm ³ /rev]	138	154	162	183	193
[in ³ /rev]	8.5	9.4	9.9	11.2	11.8
Max continuous pressure [psi]	2500	2500	2500	2500	2500
Max operating speed [rpm]	2200	2200	2200	2200	2200

Motors/Pumps

F11



- Very high motor operating speeds
- Pressures up to 6000 psi
- Efficient (low losses)
- Accept high external shaft loads
- Good resistance to vibrations and temperature shocks
- Proven reliability
- Easy to service

Frame size F11	-05	-10	-19	-28**	-39**	-58**	-78**	-110**	-150	-250
Displacement [cm ³ /rev]	4.88	9.84	19.0	28.1	38.7	58.2	78.2	110.0	150.0	242.0
[in ³ /rev]	0.30	0.60	1.16	1.71	2.36	3.55	4.77	6.71	9.15	14.80
Max continuous pressure [psi]	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Max operating speed* [rpm]	12000	10000	7500	6500	5200	4500	3500	3300	3000	2700
*Functioning as motor				**Will be phased out and replaced by the equivalent F12 size.						

F12



- Very high motor operating speeds
- Pressures up to 7000 psi
- High starting torque
- Very high power capability
- High overall efficiency
- Small envelope size
- Motor and pump versions available
- Accessory valves available
- ISO, SAE and cartridge versions available
- Proven reliability
- Easy to service
- Super-shockless swing relief valve

Frame size F12	-30	-40	-60	-80	-110
Displacement [cm ³ /rev]	30.0	40.0	59.8	80.4	110.1
[in ³ /rev]	1.83	2.44	3.65	4.90	6.72
Max continuous pressure [psi]	6000	6000	6000	6000	6000
Max operating speed* [rpm]	7100	6400	5600	5200	4700

*Functioning as motor

MZG1A/PZG1A



- High operating pressures
- Rugged housing assembly
- Special seal technology
- Very high efficiencies
- Long life "DU" Teflon bushings
- Reversible motors with external case drain are standard

Frame size MZG1A/PZG1A	-013	-020	-027	-041	-051	-061
Displacement [cm ³ /rev]	1.3	2.0	2.7	4.1	5.1	6.1
[in ³ /rev]	0.08	0.12	0.17	0.25	0.31	0.37
Max continuous pressure [psi]	3600	3600	3600	3600	3600	3600
Max operating speed [rpm]	6000	6000	5000	4000	4000	3800

MZG2A/PZG2A



- High operating pressures
- Rugged housing assembly
- Special seal technology
- Very high efficiencies
- Long life "DU" Teflon bushings
- Reversible motors with external case drain are standard

Frame size MZG2A/PZG2A	-070	-095	-113	-140	-178	-208	-279
Displacement [cm ³ /rev]	7.0	9.5	11.3	14.0	17.8	20.8	27.9
[in ³ /rev]	0.4	0.6	0.7	0.9	1.1	1.3	1.7
Max continuous pressure [psi]	3600	3600	3600	3600	3400	3000	2600
Max operating speed [rpm]	4000	4000	4000	4000	3600	3450	2800

MZG3A/PZG3A



- High operating pressures
- Rugged housing assembly
- Special seal technology
- Very high efficiencies
- Long life "DU" Teflon bushings
- Reversible motors with external case drain are standard

Frame size MZG3A/PZG3A	-225	-264	-337	-394	-427	-514	-600	-696	-776	-876
Displacement [cm ³ /rev]	22.5	26.4	33.7	39.4	42.7	51.4	60	69.6	77.6	87.6
[in ³ /rev]	1.4	1.6	2.1	2.4	2.6	3.1	3.7	4.2	4.7	5.3
Max continuous pressure [psi]	3600	3600	3600	3600	3600	3300	2500	2500	2000	2000
Max operating speed [rpm]	3500	3000	3000	3000	2800	2800	2800	2500	2300	2000

TA



- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- Small envelope size

Frame size TA	-0045	-0050	-0065	-0080	-0100	-0130	-0165	-0195	-0230	-0260	-0295	-0330	-0365	-0390
Displacement [cm ³ /rev]	43	49	66	82	98	131	164	197	229	262	295	328	371	393
Displacement [in ³ /rev]	2.6	3.0	4.0	5.0	6.0	8.0	10.0	11.9	13.9	15.9	17.9	20.0	22.6	24.0
Max continuous pressure [psi]	1250	1250	1250	1250	1250	1250	1250	1250	1100	950	850	750	650	650
Max operating speed [rpm]	756	632	479	389	438	334	271	226	193	173	153	137	121	114

TB



- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque

Frame size TB	-0045	-0050	-0065	-0080	-0100	-0130	-0165	-0195	-0230	-0260	-0295	-0330	-0365	-0390
Displacement [cm ³ /rev]	45	49	65	82	99	130	163	195	228	260	293	328	371	392
Displacement [in ³ /rev]	2.7	3.0	4.0	5.0	6.0	8.0	9.9	11.9	13.9	15.9	17.9	20.0	22.6	24.0
Max continuous pressure [psi]	1800	1800	1800	1800	1800	1800	1800	1800	1500	1450	1400	1350	1250	1200
Max operating speed [rpm]	722	623	476	379	430	327	257	221	190	167	147	131	117	111

TD



- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque
- High side load capacity
- Balanced performance in both directions of rotation

Frame size TD	-0045	-0050	-0065	-0080	-0100	-0130	-0165	-0195	-0230	-0260	-0295	-0330	-0365	-0390
Displacement [cm ³ /rev]	45	50	66	82	98	130	163	196	228	261	293	326	371	392
Displacement [in ³ /rev]	2.7	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.6	24.0
Max continuous pressure [psi]	2000	2000	2000	2000	2000	2000	2000	2000	1750	1650	1550	1450	1325	1250
Max operating speed [rpm]	715	594	617	504	420	323	256	215	237	206	185	165	146	138

TF



- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque
- High side load capacity

Frame size TF	-0090	-0100	-0130	-0140	-0170	-0195	-0290	-0280	-0360	-0365	-0405	-0475
Displacement [cm ³ /rev]	81	100	128	141	169	197	238	280	364	365	405	477
[in ³ /rev]	4.9	6.1	7.8	8.6	10.3	12.0	14.5	17.1	22.2	22.2	24.7	29.1
Max continuous pressure [psi]	3000	2250	2000	2000	2000	2000	2000	2000	1350	1400	1850	1645
Max operating speed [rpm]	488	517	404	368	309	267	297	252	193	202	172	149

TG



- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque
- High side load capacity

Frame size TG	-0140	-0170	-0195	-0290	-0295	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement [cm ³ /rev]	140	169	195	237	280	337	405	476	529	624	786	958
[in ³ /rev]	8.6	10.3	11.9	14.5	17.1	20.6	24.7	29.1	32.3	38.0	48.0	58.5
Max continuous pressure [psi]	3000	3000	3000	3000	3000	3000	2500	2000	2000	1750	1500	1000
Max operating speed [rpm]	459	399	331	268	227	182	162	149	129	109	85	76

TH



- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque
- High side load capacity

Frame size TH	-0140	-0170	-0195	-0290	-0295	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement [cm ³ /rev]	140	169	195	237	280	337	405	476	529	624	786	958
[in ³ /rev]	8.6	10.3	11.9	14.5	17.1	20.6	24.7	29.1	32.3	38.0	48.0	58.5
Max continuous pressure [psi]	3000	3000	3000	3000	3000	3000	2500	2000	2000	1750	1500	1000
Max operating speed [rpm]	660	554	477	393	334	277	232	237	213	182	143	118

NE



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Low internal pressure drop
- High starting torque

Frame size NE	-060	-090	-115	-145	-175	-210	-270	-310	-395
Displacement [cm ³ /rev]	60	90	115	145	175	210	270	310	395
[in ³ /rev]	3.6	5.4	7.1	8.8	10.6	12.9	16.4	18.9	24.1
Max continuous pressure [psi]	3000	3000	3000	3000	2750	2750	2500	2250	2250
Max operating speed [rpm]	770	684	651	525	436	358	282	241	184

110A



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Low internal pressure drop
- High starting torque

Frame size 110A	-036	-054	-071	-088	-106	-129	-164	-189	-241
Displacement [cm ³ /rev]	59	89	116	144	174	211	269	310	395
[in ³ /rev]	3.6	5.4	7.1	8.8	10.6	12.9	16.4	18.9	24.1
Max continuous pressure [psi]	3000	3000	3000	3000	2750	2750	2500	2250	2250
Max operating speed [rpm]	898	684	651	525	436	358	282	263	184

130S



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Low internal pressure drop
- High starting torque

Frame size 130S	-036	-054	-071	-088	-106	-129	-164	-189	-241
Displacement [cm ³ /rev]	59	89	116	144	174	211	269	310	395
[in ³ /rev]	3.6	5.4	7.1	8.8	10.6	12.9	16.4	18.9	24.1
Max continuous pressure [psi]	3000	3000	3000	3000	2750	2750	2500	2250	2250
Max operating speed [rpm]	898	684	651	525	436	358	282	241	184

110A w/m



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Low internal pressure drop
- High starting torque
- Heavy duty bearings

Frame size 110A w/m	-088	-106	-129	-164	-189	-241
Displacement [cm ³ /rev]	144	174	211	269	310	305
[in ³ /rev]	8.8	10.6	12.9	16.4	18.9	24.1
Max continuous pressure [psi]	3000	2750	2750	2500	2250	2250
Max operating speed [rpm]	525	436	358	282	263	184

120S



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Low internal pressure drop
- High starting torque
- High side load capacity
- High torque transmission

Frame size 120S	-088	-106	-129	-164	-189	-241
Displacement [cm ³ /rev]	144	174	211	269	310	395
[in ³ /rev]	8.8	10.6	12.9	16.4	18.9	24.1
Max continuous pressure [psi]	2750	2750	2500	2500	2250	2250
Max operating speed [rpm]	472	392	322	254	220	173

700/716



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Low internal pressure drop
- High starting torque
- High flow capability
- Series/Parallel operation
- Solenoid, pilot, or manual shaft actuation

Frame size 700/716	-072	-108	-142	-176	-212	-258
Displacement [cm ³ /rev]	60	88	116	144	174	212
[in ³ /rev]	119	176	232	289	348	423
	3.6	5.4	7.1	8.8	10.6	12.9
	7.2	10.8	14.2	17.6	21.2	25.8
Max continuous pressure [psi]	3500	3500	3500	3500	3250	2750
	3000	3000	3000	2500	2000	2000
Max operating speed [rpm]	1027	684	651	524	435	321
	962	641	488	393	327	268
						Series
						Parallel
						Series
						Parallel
						Series
						Parallel

310



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Compact design
- High side load capacity
- Rugged 4.1 to 1 planetary gear reducer

Frame size 310	-1	-2	-3	-4	-5	-6	-7
Displacement [cm ³ /rev]	242	363	478	592	713	868	1103
[in ³ /rev]	14.8	22.2	29.1	36.1	43.5	53.0	67.3
Max continuous pressure [psi]	2250	2250	2250	1800	1500	1250	1000
Max operating speed [rpm]	228	156	118	94	79	66	51

400S



- High volumetric efficiency
- Wear compensated power element
- One-piece, fixed axis shaft
- Most compact motor on the market
- Long life
- Low internal pressure drop
- High starting torque
- High side load capacity
- Heavy duty setting brake

Frame size 400S	-088	-106	-129	-164	-189	-241
Displacement [cm ³ /rev]	144	174	211	269	310	395
[in ³ /rev]	8.8	10.6	12.9	16.4	18.9	24.1
Max continuous pressure [psi]	3000	3000	2750	2750	2500	2250
Max operating speed [rpm]	472	392	322	254	244	173

V12



- Very high operating speeds
- Displacement ratio 5:1
- Pressures up to 7000 psi
- Very high power capability
- High starting torque
- Low weight
- High overall efficiency
- Axial or side ports
- Controls available for most needs
- ISO, SAE and cartridge versions available

Frame size V12	-60	-80	-110	-160
Displacement				
max at 35° [cm ³ /rev]	60	80	110	160
[in ³ /rev]	3.66	4.88	6.71	9.76
min at 6.5° [cm ³ /rev]	12	16	22	32
[in ³ /rev]	0.73	0.98	1.34	1.95
Max continuous pressure [psi]	6000	6000	6000	6000
Max operating speed* [rpm]	7000	6250	5600	5000

* At reduced displacement

T12



- Designed specifically for track drives
- Very high operating speeds
- Pressures up to 7000 psi
- Very high power capability
- High starting torque
- Low weight
- High overall efficiency
- Axial or side ports
- Two-position control
- Cartridge version available

Frame size T12	-60	-80
Displacement		
max at 35° [cm ³ /rev]	60	80
[in ³ /rev]	3.66	4.88
min at 10° [cm ³ /rev]	18	24
[in ³ /rev]	0.73	0.98
Max continuous pressure [psi]	6000	6000
Max operating speed* [rpm]	7000	6250

* At min displacement

PAVC



- High strength cast iron housing
- Built in supercharger
- High sideload capacity
- Sealed shaft bearing
- Two piece housing
- Cartridge controls
- Airbleed valve
- Thru-shaft option (PAVC100)
- Optional port location
- Full pressure rating on water glycol fluids
- Control Drain may be filtered and/or cooled

Frame size PAVC	-33	-38	-65	-100
Displacement [cm ³ /rev]	33	38	65	100
[in ³ /rev]	2.0	2.3	4.0	6.1
Max continuous pressure [psi]	3000	3000	3000	3000
Max self priming speed at 0 psi gauge [rpm]	3000	3000	3000	2600

PVP



- High strength cast iron housing
- Modular controls
- Fast response times
- Thru-shaft options
- Optional port location
- 9 & 11 piston design
- English and metric mounting features
- Low control pressures

Frame size PVP	-16	-23	-33	-41	-48	-60	-76	-100	-140
Displacement [cm ³ /rev]	16.4	23	33	41	48	60	76	100	140
[in ³ /rev]	1.0	1.4	2.0	2.5	2.9	3.7	4.6	6.1	8.5
Max continuous pressure [psi]	3600	3600	3600	3600	3600	3600	3600	3600	3600
Max self priming speed at 0 psi gauge [rpm]	3000	3000	3000	2800	2600	2200	2200	1800	1800

PHP



- High strength cast iron housing
- Modular controls
- Fast response times
- Thru-shaft options
- Optional port location
- 9 & 11 piston design
- English and metric mounting features
- Low control pressures

Frame size PHP	-10	-60
Displacement [cm ³ /rev]	10	60
[in ³ /rev]	0.6	3.7
Max continuous pressure [psi]	5000	5000
Max self priming speed at 0 psi gauge [rpm]	3000	2200

PV



- High strength cast iron housing
- Modular controls
- Large control piston
- Thru-shaft option
- 9 piston design
- Multiple pressure control
- English and metric mounting features
- Fast response option

Frame size PV	-23	-46	-92	-130	-180	-250
Displacement [cm ³ /rev]	23	46	92	130	180	250
[in ³ /rev]	1.4	2.8	5.6	7.9	11.0	15.3
Max continuous pressure [psi]	5000	5000	5000	5000	5000	5000
Max operating speed [rpm]	2750	2400	1900	1800	1800	1800

VP1



- Pressures up to 5000 psi
- Suitable for all load-sensing systems
- Splined shaft DIN 5462
- Mounting flange ISO 7653-1985
- Light and compact
- Strong and reliable
- Less energy – less fuel – less heat
- Self-priming

Frame size VP1	-45	-75
Displacement [cm ³ /rev]	45	75
[in ³ /rev]	2.75	4.58
Max continuous pressure [psi]	4350	4350
Self-priming speed* [rpm]	2400	2400

* 2 1/2" suction line

V30



- Low noise levels
- Long life
- Many modular control options
- Thru-shaft options
- Swash plate position indicator
- Pressures up to 6000 psi
- Hydrostatically balanced nitrided steel slipper shoes
- Short response time
- Easy to service

Designation	V30D-045	V30D-075	V30D-095	V30D-115	V30D-140	V30D-250
Displacement [cu.in./rev]	2.75	4.58	5.86	7.02	8.66	15.31
[cm ³ /rev]	46	75	96	115	142	251
Max continuous pressure [psi]	5000	5000	5000	3800 ¹⁾	5000	5000
Self-priming speed at max swash angle and 15 psi (1 bar) absolute inlet pressure [rpm]	2600	2400	2200	2000	2100	1600

¹⁾ Higher pressure possible with swash angle = 17°

MMC1000



MMC1000

The MMC1000 is a digital controller with auxiliary interface modules designed for the control of hydraulic systems on mobile equipment. The MMC1000 makes use of CAN based serial bus system for communication between the remote I/O modules, proportional valves, and the MMC1000 central control unit.

The CAN bus feature makes possible a simplified wiring installation and 2-way communications between the individual valves and I/O modules and the main controller for simplified diagnostics and setup. The CAN technology also allows the distribution of control to the individual components. Additionally, the controller is capable of reading sensor inputs for advanced control of the equipment.

System type	EHC35	IQAN	MMC1000	MOTION-PAC
Individually adjustable control characteristics, start and final values	X	X	X	X
Linear or broken characteristics		X		X
Selectable current steps (forced opening)	X	X	X	X
Adjustable ramp function for control of speed changes	X	X	X	X
Two-speed function for switching between two speed ranges		X	X	X
Double function for control of two alternative valves, or two different control characteristics for the same valve		X	X	X
Common reduction function for stepless down-regulation of all control-curve slopes by means of an external analog signal		X	X	X
Individual reduction function for individual stepless down-regulation of control-curve slope by means of external analog signals		X	X	X
Activating functions for automatic engagement of different functions upon selected lever actuation or by means of switching buttons		X	X	X
Holding function – can retain desired control signal for any function		X	X	X
Dead-man function for any lever unit		X	X	X
Friction brake for retention in any position		X		X
Handle with center-position detent		X		X

IQAN



EHC35

The EHC35 is an electro-hydraulic, *analog* control system for the proportional remote control of directional valves, pumps, motors, etc.

IQAN

IQAN, an electro-hydraulic control system, enables both the implement and transmission hydraulics in a machine to be controlled by one system. This, together with modular construction, digital serial signal transmission (using CAN bus technology) and a host of integrated-function options, makes the IQAN system comprehensive, rational, easy to install and enormously flexible for original machine design and subsequent modification to suit different applications.

Utilizing advanced but easily understood monitoring and fault-finding facilities, the IQAN system gives continuous information on the status of important machine parameters by means of a graphic display in the cab. This display enables the machine operator to make better informed decisions on the optimization of control values to suit changes in load and working conditions. With a laptop computer connected to the system, the integrated fault-finding routines in IQAN can be supplemented with a diagnostics facility for service personnel to easily identify any faults that might occur in the hydraulics system.

MOTION-PAC



The Motion-pac control system offers a variety of prepackaged systems to suit application and market needs. Some of the products include:

- Digital and analog controllers for valve drivers to microprocessors with application specific software
- On board calibration with digital displays
- Data logging
- Remote control systems designed to provide true remote control between the electro-hydraulic technology and the operator
- Joysticks which make use of conductive plastic tracks and solid state technology to provide analog and directional signals with the electronic controller supplies Pulse Width Modulation drive output
- Switch consoles which provide fingertip on/off control of auxiliary operations

12 or 24 V DC

All of the above control systems are available for 12 or 24 V DC. The output control-signal ranges are 0 to 0.8 A and 0 to 0.6 A respectively. The output control pressure from the PVE/PVC102 and PVC25/QDC25 converter valves used with the systems is 0 to 435 psi for both voltage levels. All units carry the CE mark and comply with the EMC Directive (89/336/EEC).

PCL4



The PCL4 is a hydraulic pilot system for the proportional remote control of directional valves, pumps, motors, etc. It is available with coordinate lever-units, as well as linear units for hand or foot control.

The PCL4 is intended primarily for the remote control of hydraulically operated spool actuators and pump regulators in all kinds of mobile and industrial applications.

All connection ports can be obtained with G1/4, M14x1.5 or 9/16 UNF connection threads. The coordinate valve is available in a version with all connections in the base plate. Up to 6 linear units can be built together in a block.

System Type	Hydraulic pilot pressure
Control-pressure range	14 -1000 psi
Control flow	max 4 GPM
Individual control characteristics for each direction	X
Selectable start and final pressures	X
Selectable lever forces	X
Curves with straight characteristics	X
Curves with 2-step characteristics	X
Curves with forced opening (final step)	X
Friction brake for retention in any position	X
Mechanical or electro-magnetic end-position detent	X

PCL4-N



Pneumatic

VP04



The VP04 is a pneumatic pilot valve for the proportional remote control of directional valves, positioning cylinders etc. Either linear or coordinate-lever versions of the VP04 are available.

Principal applications include the proportional remote control of pneumatic spool-actuators and positioning cylinders in mobile or industrial hydraulic systems.

All connections are furnished with couplings of the plug-in type. The signal ports can be obtained for 6 mm or 1/4" I.D. hoses. The primary port and tank port are available in 6 mm, 8 mm, 1/4" or 5/16" I.D.

System Type	Pneumatic pilot pressure
Control-pressure range	0 - 115 psi
Control flow	max 7 NI/s
Control curves with straight characteristics	X
Friction brake for retention in any position	X
Mechanical end-position detent	X

Hydraguide™ Hydrostatic Steering Units

HGF



- Compact package size
- Patented pressure dams
- Removable upper column
- Full pressure shaft seal
- Fittingless port cover
- Internal relief valve
- Low noise option
- Manual emergency steering

Frame size HGF	-08	-10	-12	-16	-20
Displacement [cm ³ /rev]	54.1	67.7	81.1	108.2	135.2
[in ³ /rev]	3.30	4.13	4.95	6.60	8.25
Max operating pressure [psi]	1800	1800	1800	1800	1800
Flow [GPM]	8	8	8	8	8

HGA



- Full pressure shaft seal
- Linear valve spool
- Patented pressure dams
- Vaned rotor
- Pressure balanced metering group
- Load sense option
- Manual emergency steering
- Multiple column options

Frame size HGA	-08	-10	-12	-14	-16	-20	-24	-28	-32
Displacement [cm ³ /rev]	97.4	121.6	146.0	170.5	194.7	243.4	292.1	338.4	389.1
[in ³ /rev]	5.94	7.42	8.91	10.40	11.88	14.85	17.82	20.65	23.74
Max operating pressure [psi]	2500	2500	2500	2500	2500	2500	2500	2500	2500
Flow [GPM]	5	5	5	10	10	10	10	10	10

HGB



- Full pressure shaft seal
- Linear valve spool
- Patented pressure dams
- Pressure balanced metering group
- Load sense option
- Manual emergency steering
- Multiple column options

Frame size HGB	-16	-24	-32	-40	-48	-64
Displacement [cm ³ /rev]	491.7	737.6	983.4	1229.3	1475.1	1966.8
[in ³ /rev]	30	45	60	75	90	120
Max operating pressure [psi]	2500/3000*	2500/3000*	2500/3000*	2500/3000*	2500/3000*	2500/3000*
Flow [GPM]	35	35	35	35	35	35

*Special housing for 3000 psi operation available.

VDP12



Two types of directional valves can be used: open-center valves (CFO) and closed-center valves (CFC). The two types of valves give completely different control characteristics.

CFO valves are intended for applications in which simple, uncomplicated components are required and where the demands for simultaneous operation characteristics are moderate. CFC valves are intended for applications in which the demands on control characteristics are great, while at the same time, a system with a fixed pump is required.

Parker valves can be obtained with a large number of optional components and mountings such as:

- A main pressure relief
- Individually adjusted port-relief and anti-cavitation valves
- Separate replenishing valves with counterpressure valves
- Application adapted spools
- A large selection of spool actuators
- Single or multi-pump operation by stacked valves
- Subplate, stackable, or manifold styles
- Load hold checks
- Crossover reliefs
- Flow controls
- Power beyond feature
- Proportional inlets for fine metering
- E-stop, pump channel blocked in emergency

[Options vary for different valves]

F130CF



MV3



System type	Valve	Pump flow [GPM]	Pressure [PSI]	Operation			
				Manual	Pneumatic	Hydraulic	Electro-hydraulic
CFO	VY13	4	2000	X			
CFO	MV5	6	3000				X
CFO	MV3	12	3000	X			
CFO	HV07	13	3600	X	X	X	X
CFO	VDP11	20	2000	X			
CFO	MV4	23	2500				X
CFO	F130CF	34	4600	X	X	X	X
CFO	VDP12	25	3500	X			
CFO	H170CF	45	4600	X	X	X	X
CFC	MV5	6	3000				X
CFC	MMV 6	8	4000				X
CFC	BV06	10	3000				X
CFC	MV3	12	3000	X			
CFC	MMV 10	21	5000	X		X	X
CFC	MV4	23	2500				X
CFC	BV18	24	5000	X	X	X	X
CFC	L90LS	34	4600	X	X	X	X
CFC	MMV 12	34	5000	X		X	X
CFC	MMV 16	52	5000	X		X	X
CFC	HV08	80	4600	X	X	X	X

D1VW



The D1VW Series directional control valves are high-performance, 4-chamber, direct operated, wet armature solenoid controlled, 3 or 4-way valves. They are available in 2 or 3-position and conform to NFPA's D03 mounting patterns.

- Mechanically tunable soft shift
- Proportional spools, 21 spool styles available

- DC surge suppression
- Four electrical connection options
- AC & DC lights available (CSA approval for solenoids and lights)
- Waterproof (NEMA 4 rated)
- Explosion proof
- CSA and UL approved
- Flow ranges from 5-22 gpm

MV5



CP and CPU valves are used when there is a high demand for good control precision with little interference between functions during simultaneous operation. The system is of simple construction, but requires a certain adaptation to the application in order to give the best combination of function, control characteristics and operating economy.

BV18



Parker valves can be obtained with a large number of optional components and mountings such as:

- A main pressure relief
- Individually adjusted port-relief and anti-cavitation valves
- Separate replenishing valves with counterpressure valves
- Application adapted spools
- A large selection of spool actuators
- Single or multi-pump operation by stacked valves
- Subplate, stackable, or manifold styles
- Load hold checks
- Crossover reliefs
- Flow controls
- Variable or fixed pumps

VPL



[Options vary for different valves]

System type	Valve	Pump flow [GPM]	Pressure [PSI]	Operation			
				Manual	Pneumatic	Hydraulic	Electro-hydraulic
CP/CPU	MMV 6	8	4000				X
CP/CPU	BV06	10	3000				X
CP/CPU	MMV 10	21	5000	X		X	X
CP/CPU	BV18	24	5000	X	X	X	X
CP/CPU	HV07	24	3600	X	X	X	X
CP/CPU	MMV 12	34	5000	X		X	X
CP/CPU	F150CP	40	4600	X	X	X	X
CP/CPU	VQL	50	5000	X			X
CP/CPU	VML	50	5000	X			
CP/CPU	VPL	50	5000	X		X	X
CP/CPU	MMV 16	52	5000	X		X	X
CP/CPU	VP/VPO	100	4000	X		X	X

MMV6



The directional control valve in the load sense system regulates the displacement of a variable displacement pump via a load signal line. The pump maintains a pressure difference between its outlet port and the highest load signal to supply pressure and flow to match the demand. These systems are the most advanced offering optimum control characteristics with good efficiency/fuel economy.

L90LS



Parker valves can be obtained with a large number of optional components and mountings such as:

- A main pressure relief
- Individually adjusted port-relief and anti-cavitation valves
- Separate replenishing valves with counterpressure valves
- Application adapted spools
- A large selection of spool actuators
- Single or multi-pump operation by stacked valves
- Subplate, stackable, or manifold styles
- Load hold checks
- Crossover reliefs
- Flow controls
- Various electrical certification can be met

K220LS



[Options vary for different valves]

System type	Valve	Pump flow [GPM]	Pressure [PSI]	Operation			
				Manual	Pneumatic	Hydraulic	Electro-hydraulic
LS	MV5	6	5000				X
LS	MMV 6	8	4000				X
LS	MMV 10	21	5000	X			X
LS	L90LS	34	4600	X	X	X	X
LS	MMV 12	34	5000	X		X	X
LS	K170LS	45	4600	X	X	X	X
LS	VQL	50	5000	X			X
LS	VML	50	5000	X			X
LS	VPL	50	5000	X		X	X
LS	MMV 16	52	5000	X		X	X
LS	K220LS	65	5000			X	X
LS	HV08	80	4600	X		X	X
LS	VPVPO	100	4000	X		X	X

Threaded Cartridge Valves



Pressure Control Valves

Valve type	Max working pressure [PSI]	Max setting pressure [PSI]	Flow capacity [GPM]
Direct acting relief valves	5000	5000	0-40
Counterbalance valves	3500	3500	0-200
Cross-over relief valves	3500	3500	0-20
Dual relief with anti-cavitation checks	5000	5000	0-16
Piloted operated relief valves	5000	5000	0-80
Pressure sensing valves	5000		0-50
Reducing/relieving valves	5000	5000	0-40
Direct acting pressure reducing valves	5000	5000	0-15
Pressure reducing valves	5000	5000	0-15
Pressure reducing spools	5000		0-50
Sequence valves	5000	5000	0-40
Unloading relief valves	3500	3000	0-1.5
Logic elements	3600	3600	0-50

Volume Control Valves

Valve type	Max working pressure [PSI]	Max flow setting [GPM]	Flow capacity [GPM]
Needle valves	3500		0-50
Rotary adjust needle valves	3500		0-15
Flow divider/combiner valves	3000		0-12
Pilot control flow control valves	3000		0-15
Flow control valves	3500		0-12
Restrictive-type, pressure compensated valves	3500		0-40
Priority-type, pressure compensated valves	3500	0-10	0-15
Restrictive-type, pressure compensated flow regulator valves	3500		0-15
Priority-type, pressure compensated flow regulator valves	3500	0-9	0-15
Priority-type, pressure compensated flow regulator with relief	3500	0-9	0-15
Velocity fuses	3000		0-8

Threaded Cartridge Valves

Load Holding Valves

Valve type	Max working pressure [PSI]	Flow capacity [GPM]
Check valves	5000	0-60
Soft seat check valves	3000	0-15
Vent-to-open check valves	3500	0-60
Pilot-to-close check valves	3500	0-40
Single pilot operated check valves	3000	0-50
Double pilot operated check valves	3000	0-50
Shuttle valves	3500	0-6

Directional Control Valves

Valve type	Max working pressure [PSI]	Flow capacity [GPM]
Manual valves	3500	13
Manual three-way valves	3500	6
Manual four-way valves	3500	2
Pilot operated directional control valves	3500	10
Solenoid, poppet-type, two-way valves	5000	70
Solenoid, poppet-type, bi-directional valves	5000	5
Solenoid, spool-type, two-way valves	5000	20
Solenoid, spool-type, three-way valves	5000	17
Solenoid, spool-type, four-way valves	5000	8
Double Solenoid, spool-type, four-way valves	5000	6

Proportional Control Valves

Valve type	Max working pressure [PSI]	Flow capacity [GPM]
Solenoid operated, two-way, N.C. or N.O. proportional flow control valves	5000	14
Solenoid operated, two-way N.O. proportional pressure control valves	5000	8
Solenoid operated, two-way N.C. throttle valve	3000	5
Solenoid operated, proportional pressure reducing valves	5000	40
Solenoid operated, proportional flow control, pressure compensated	3000	10
Solenoid operated, three-way, proportional pressure control	3000	10

Auxiliary Valves



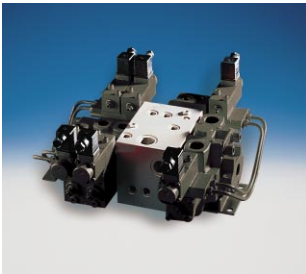
Valve type	Max working pressure [PSI]	Max setting pressure [PSI]	Flow capacity [GPM]
Subplate/relief valves	3500		60
Hi-lo unloading valves	3500	3000	15
Hand pumps	700		.083 in ³ /stroke(displ.)
Accumulator bleed-down valves	3500		20(inlet); 60(accum-tank)
Bankable, 2-position, 4-way, solenoid operated, circuit selector control valves	3000		10
Bankable inlet relief valves	3000		10
Bankable inlet relief valves with unloader	3000		9
Bankable unloader valves	3000		9
Reducer valves	3600		7
Sequencing valves	3600		7
Hose-rupture valves	5000		66

Relief Valves

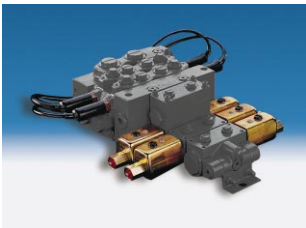


Directly controlled pressure-relief valves with anti-cavitation function. The valves have good pressure characteristics together with very short reaction times. They are compact, reliable, very well sealed and are not sensitive to contamination.

Valve type	Max working pressure [PSI]	Pressure setting range [PSI]	Flow capacity [GPM]
Relief valves	6000	360 - 6000	0 - 70



Integrated Hydraulic Circuits (Hydraulic Manifold Blocks) are designed to meet the many demands on mobile hydraulic equipment. Manifold blocks offer you the following benefits: a minimum number of tubes, hoses and couplings; fewer components; fewer leakage points; less space required; simplified assembly and service instructions; and a complete system solution with optimized functions. Manifold blocks can be flanged to one or more directional valves as well as to pumps, cylinders, motors and filters.





Piston Accumulators

- Over 50 standard capacities from 5 cu. in. (.075 liters) to 50 gallons (189 liters)
- 2", 3", 4", 6", 7", 9" and 12" nominal bore sizes
- Maximum operating pressures up to 5000 psi (350 Bar)
- Patented five-bladed V-O-ring piston seals in five standard seal compounds
- Accumulator and gas bottle configurations
- ASME, TUV, and DNV Certifications



Diaphragm Accumulators

- Standard capacities from 5 cu. in. (.075 liters) to 170 cu. in. (2.8 liters)
- Maximum operating pressures up to 3600 PSI (250 Bar)
- Compact and lightweight
- Low-cost, non-repairable design
- Quick responding diaphragms of nitrile or hydrin



Bladder Accumulators

- Standard capacities from 10 cu. in. (.16 liters) to 40 gallons (151 liters)
- Maximum operating pressures up to 6000 psi (414 Bar)
- Superior in-house manufactured bladders
- Six bladder compounds to suit a variety of fluids and temperatures
- Bottom and top repairable, high-flow, transfer barriers, and gas bottles
- Water/chemical service available

Accumulator
Charging Kit





Low Pressure Filters

- Variety of mounting configurations
- High capacity/high efficiency Microglass II media
- Visual and electrical indicators with several connector styles
- Flange options for low profile easy mounting
- Integral breather (FT series)

Model	Max flow (gpm)	Max pressure (psi)	Mounting style
12AT	17	150	Spin-on
50AT	36	150	Spin-on
RF4	120	150	Tank top
FTA	15	150	Tank top
FTB	35	150	Tank top
FTC	75	150	Tank top
IL2, RF2	120	200	In-line, L-style
RF7	300	150	Tank top



Medium Pressure Filters

- NPT, SAE or flange ports
- High capacity/high efficiency Microglass II media
- Visual and electrical indicators with several connector styles
- Cartridge style bypass valve

Model	Max flow (gpm)	Max pressure (psi)	Mounting style
15CN	25	1000	In-line
40CN	80	1000	In-line
80CN	120	1000	In-line



High Pressure Filters

- SAE, flange or ISO ports
- High capacity/high efficiency Microglass II media
- Visual and electrical indicators with several connector styles
- Manifold mount option (50P & 15/30P series)
- Reverse flow option (50PR series) for HST circuits



Model	Max flow (gpm)	Max pressure (psi)	Mounting style
15P	20	3000	In-line, manifold
30P	45	3000	In-line, manifold
30PD	25	3000	In-line, duplex
50P	100	5000	In-line, bowl up
50PR	70	5000	In-line, reverse flow
18P	25	6000	In-line
28P	55	6000	In-line
38P	110	6000	In-line



PLC-3000

The PLC-3000 is the next generation portable particle counter designed to verify fluid cleanliness levels. The fully portable PLC-3000 can perform both on-line and bottle sampling, with the same unit, while reporting counts at 2, 5, 15, 25, 50 and 100 microns. The new PLC-3000 includes many unique features, including:

- Viscosity measurement from 200-2000 SUS for trend analysis
- Particle counting in ISO or NAS format in less than one minute
- On-line sampling up to 6000 psi
- Temperature measurement
- Petroleum based and phosphate ester (Skydrol[®]) fluid compatible with the same unit

Par-Test

A complete laboratory analysis performed on a small volume of fluid. Results are provided in a neatly organized three page format. Two types of services are available through Par-Test, a water based fluid kit and a petroleum based fluid kit. The kit includes a pre-cleaned sample bottle, data sheet and mailing container. The standard tests included with the service are; particle count, photomicrograph, free water analysis, viscosity analysis, water analysis and neutralization analysis.



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Parker Hannifin Corporation

About Parker Hannifin Corporation

Parker Hannifin is a leading global motion-control company dedicated to delivering premier customer service. A Fortune 500 corporation listed on the New York Stock Exchange (PH), our components and systems comprise over 1,400 product lines that control motion in some 1,000 industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electromechanical motion-control solutions. Our Company has the largest distribution network in its field, with over 7,500 distributors serving more than 350,000 customers worldwide.

Parker's Charter

To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information

North American customers seeking product information, the location of a nearby distributor, or repair services will receive prompt attention by calling the Parker Product Information Center at our toll-free number: 1-800-C-PARKER (1-800-272-7537). In the UK, a similar service is available by calling 0500-103-203.

The Aerospace Group is a leader in the development, design, manufacture and servicing of control systems and components for aerospace and related high-technology markets, while achieving growth through premier customer service.



The Climate & Industrial Controls Group designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air-conditioning and industrial customers worldwide.



The Fluid Connectors Group designs, manufactures and markets rigid and flexible connectors, and associated products used in pneumatic and fluid systems.



The Seal Group designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.



The Hydraulics Group designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.



The Filtration Group designs, manufactures and markets quality filtration and clarification products, providing customers with the best value, quality, technical support, and global availability.



The Automation Group is a leading supplier of pneumatic and electromechanical components and systems to automation customers worldwide.



The Instrumentation Group is a global leader in the design, manufacture and distribution of high-quality critical flow components for worldwide process instrumentation, ultra-high-purity, medical and analytical applications.

