



Graco 4-Ball Pump Technology

High Performance Industrial Pumps



PROVEN QUALITY. LEADING TECHNOLOGY.

4-Ball Piston Pump Lowers

Graco's positive displacement piston pumps provide low cycle rates and high flow as the pump displaces fluid in both directions of the stroke. This versatile technology is used in a wide range of applications.

Graco's new 4-ball piston pumps produce low shear output for shear-sensitive materials in low pressure, high flow applications.

Applications

- Paint circulation
- Fluid transfer and supply

Typical Fluids Handled

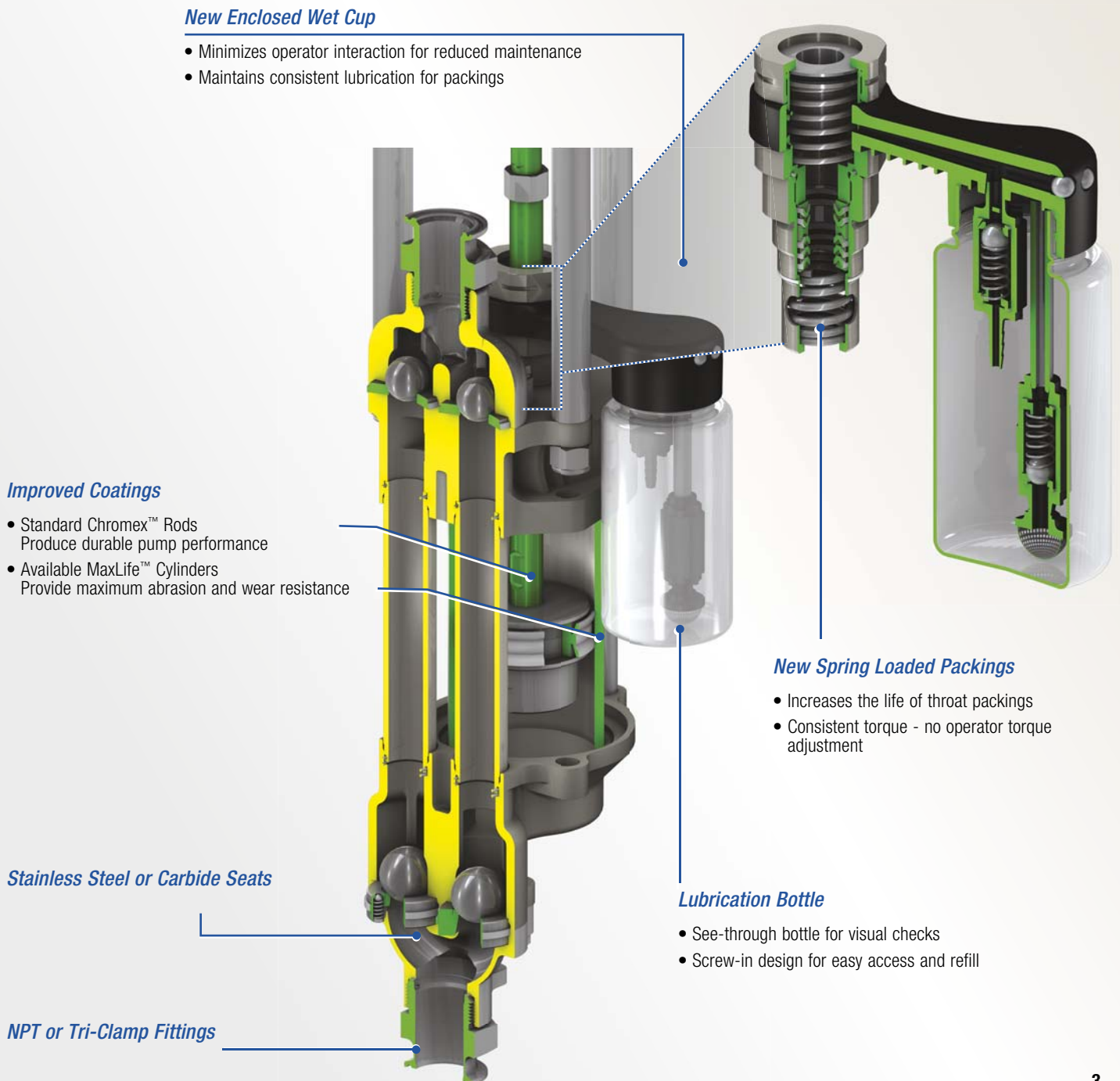
- Waterborne paints
- Solventborne paints
- Acid catalyzed varnishes, enamels and lacquers



The Latest in Low Pressure, High Flow Technology

GRACO HAS MADE IT EASIER to install and maintain your 4-ball pump. Not only can all lowers be used with pneumatic, hydraulic and electric platforms, many models have **COMMON COMPONENTS** – making cylinders and pistons easily interchangeable between pump sizes.

ADDITIONAL FEATURES also now come standard on the 4-ball lowers, such as the new enclosed wet cup, stainless steel seats and spring loaded packings.



Accurate and Dependable Motor Solutions

PNEUMATIC

Pneumatic High-Flo™ pumps with NXT™ motor technology are made for long-lasting durability. These pumps are built to handle the toughest finishing applications.

- Modular design for easier maintenance
- Rugged body armor, won't rust or dent
- High technology air motor
- De-icing controls eliminate stalling
- Integrated air control
- DataTrak™ (Optional)
 - ▣ Runaway protection
 - ▣ Pump diagnostics
 - ▣ Tracks material usage



HYDRAULIC

Field proven, energy efficient Viscount™ pumps provide reliable, quiet, ice-free performance and are up to three times more energy efficient than comparable compressed air systems. With three hydraulic motor types, Graco has the right size to meet your application needs.

- Low noise
- No icing
- Up to 3 times more efficient than pneumatics
- Lower operating costs



ELECTRIC

Get the benefits of a piston pump with the energy efficiency of an E-Flo™ electric drive unit. The dual lower minimizes pressure changes at the outlet of the pump. Online maintenance simplifies repair and reduces downtime. Accomplish remote monitoring of performance via computer or PLC for a higher degree of control.

- Low noise
- No icing
- Up to 3 times more efficient than pneumatics
- Process control and feedback
- Slow smooth changeovers



Ordering Information

HIGH-FLO

Model		1.7:1	2:1	2.3:1	3:1	3.3:1	3.5:1	4:1	4.4:1	4.5:1
PUMP SPECIFICATIONS	Pump Ratio	1.7:1	2:1	2.3:1	3:1	3.3:1	3.5:1	4:1	4.4:1	4.5:1
	Output per Cycle	4000 cc	2000 cc	3000 cc	1500 cc	4000 cc	2000 cc	1000 cc	3000 cc	1500 cc
	Motor Size	3400	2200	3400	2200	6500	3400	2200	6500	3400
	Max. Working Pressure - bar (psi)	11.7 (170)	13.8 (200)	15.8 (230)	20 (290)	22.4 (325)	23.4 (340)	27.6 (400)	30.3 (440)	31 (450)
	Max. Air Input Pressure - bar (psi)	7 (100)	7 (100)	7 (100)	7 (100)	7 (100)	7 (100)	7 (100)	7 (100)	7 (100)
	Output at 60 CPM - l/min. (gpm)	238.6 (63)	119.3 (31.9)	179 (47.3)	87.9 (23.2)	238.6 (63)	119.3 (31.5)	64 (16.9)	179 (47.3)	87.9 (23.2)
MANUALS	Pump Manual	3A0538	3A0538	3A0538	3A0538	3A0538	3A0538	3A0538	3A0538	3A0538
	Lower Manual	3A0540	3A0539	3A0540	3A0539	3A0540	3A0539	3A0539	3A0540	3A0539
	Motor Manual	311238	311238	311238	311238	311238	311238	311238	311238	311238
INLET/OUTLET SIZE	Pump Inlet Size (NPT and Tri-Clamp)	2"	1-1/2"	2"	1-1/2"	2"	1-1/2"	1-1/2"	2"	1-1/2"
	Pump Outlet Size (NPT and Tri-Clamp)	2"	1"	2"	1"	2"	1"	1"	2"	1"

		Lower Type	Cylinder	Fittings	Motor Type	DataTrak										
PUMP CONSTRUCTION	PUMP ONLY	CS	Hard Chrome	NPT	Low Noise	•	JC17L1	JC20L1	JC23L1	JC30L1	JC33L1	JC35L1	JC40L1	JC44L1	JC45L1	
							JC17M1	JC20M1	JC23M1	JC30M1	JC33M1	JC35M1	JC40M1	JC44M1	JC45M1	
					Low Noise	•	JS17L1	JS20L1	JS23L1	JS30L1	JS33L1	JS35L1	JS40L1	JS44L1	JS45L1	
				Remote	•	JS17M1	JS20M1	JS23M1	JS30M1	JS33M1	JS35M1	JS40M1	JS44M1	JS45M1		
				Remote	•	JS17R1	JS20R1	JS23R1	JS30R1	JS33R1	JS35R1	JS40R1	JS44R1	JS45R1		
				Remote	•	JS17S1	JS20S1	JS23S1	JS30S1	JS33S1	JS35S1	JS40S1	JS44S1	JS45S1		
		SST	Hard Chrome	Tri-Clamp	Low Noise	•	-	JS20L5	-	JS30L5	-	JS35L5	JS40L5	-	JS45L5	
							Remote	•	-	JS20M5	-	JS30M5	-	JS35M5	JS40M5	-
					Remote	•	-	JS20R5	-	JS30R5	-	JS35R5	JS40R5	-	JS45R5	
				Remote	•	-	JS20S5	-	JS30S5	-	JS35S5	JS40S5	-	JS45S5		
				MaxLife	NPT	Low Noise	•	JS17L2	JS20L2	JS23L2	JS30L2	JS33L2	JS35L2	JS40L2	JS44L2	JS45L2
								JS17M2	JS20M2	JS23M2	JS30M2	JS33M2	JS35M2	JS40M2	JS44M2	JS45M2
	Remote	•	JS17R2			JS20R2	JS23R2	JS30R2	JS33R2	JS35R2	JS40R2	JS44R2	JS45R2			
	Remote	•	JS17S2			JS20S2	JS23S2	JS30S2	JS33S2	JS35S2	JS40S2	JS44S2	JS45S2			
	Low Noise	•	-			JS20L6	-	JS30L6	-	JS35L6	JS40L6	-	JS45L6			
			Remote			•	-	JS20M6	-	JS30M6	-	JS35M6	JS40M6	-	JS45M6	
	Remote	•	-	JS20R6	-	JS30R6	-	JS35R6	JS40R6	-	JS45R6					
			Remote	•	-	JS20S6	-	JS30S6	-	JS35S6	JS40S6	-	JS45S6			
	PACKAGE	SST	Hard Chrome	NPT	Low Noise	•	-	-	-	703MSN*	-	704MSN*	-	-		
					Remote	•	-	-	-	703SSN*	-	704SSN*	-	-		
					Low Noise	•	-	-	-	703MST*	-	704MST*	-	-		
				Remote	•	-	-	-	703SST*	-	704SST*	-	-			
				Tri-Clamp	Low Noise	•	-	-	-	-	-	-	-	-	-	
					Remote	•	-	-	-	-	-	-	-	-	-	

(*) Package includes pump, wall bracket, air controls and DataTrak

(**) For other in-outlet connections, please refer to the ordering information "Fittings"

VISCOUNT

		2000 cc	1500 cc	4000 cc	1000 cc	3000 cc	750 cc	2000 cc
PUMP SPECIFICATIONS	Output per Cycle	2000 cc	1500 cc	4000 cc	1000 cc	3000 cc	750 cc	2000 cc
	Motor Size	Viscount I	Viscount I	Viscount II	Viscount I	Viscount II	Viscount I	Viscount II
	Max. Working Pressure - bar (psi)	12 (167)	16 (225)	21 (300)	21 (300)	28 (400)	31 (450)	32 (460)
	Max. Hydraulic Input Pressure - bar (psi)	103 (1500)	103 (1500)	83 (1200)	103 (1500)	83 (1200)	103 (1500)	83 (1200)
	Oil Flow at 60 CPM - l/min. (gpm)	13.2 (3.5)	13.2 (3.5)	45 (12)	13.2 (3.5)	45 (12)	11.3 (3)	45 (12)
	Output at 60 CPM - l/min. (gpm)	119.3 (31.5)	87.9 (23.2)	238.6 (63)	64 (16.9)	179 (47.3)	43.9 (11.6)	119.3 (31.5)
MANUALS	Pump Manual	3A0537	3A0537	3A0537	3A0537	3A0537	3A0537	3A0537
	Lower Manual	3A0539	3A0539	3A0540	3A0539	3A0540	3A0539	3A0539
	Motor Manual	308330	308330	308048	308330	308048	308330	308048
INLET/OUTLET SIZE	Hydraulic Fluid Inlet	3/4" (37° flare)	3/4" (37° flare)	3/4 npt(f)	3/4" (37° flare)	3/4 npt(f)	3/4" (37° flare)	3/4 npt(f)
	Hydraulic Fluid Outlet	7/8" (37° flare)	7/8" (37° flare)	1 npt(f)	7/8" (37° flare)	1 npt(f)	7/8" (37° flare)	1 npt(f)
	Pump Inlet Size (NPT and Tri-Clamp)	1-1/2"	1-1/2"	2"	1-1/2"	2"	1-1/2"	2"
	Pump Outlet Size (NPT and Tri-Clamp)	1"	1"	2"	1"	2"	1"	2"

		Lower Type	Cylinder	Fittings						
PUMP CONSTRUCTION	CS	Hard Chrome	NPT	24E331	24E328	24E340	24E325	24E337	-	24E334
				-	-	-	-	-	24E322	-
	SST	Hard Chrome	NPT	24E491	24E489	24E341	24E487	24E338	24E485	24E493
				24E492	24E490	24E342	24E488	24E339	24E486	24E494
		MaxLife	Tri-Clamp	24E332	24E329	-	24E326	-	24E323	24E335
				24E333	24E330	-	24E327	-	24E324	24E336

(**) For other in-outlet connections, please refer to the ordering information "Fittings"

NOTE: Graco recommends 20 cpm or less for intermittent pumping applications and 12 cpm or less for continuous pumping applications.

Ordering Information

E-FLO

Model		1500	2000	3000	4000
PUMP SPECIFICATIONS	Output per Cycle	1500 cc	2000 cc	3000 cc	4000 cc
	Electric AC Motor Size	3 HP	5 HP	5 HP	5 HP
	Max Working Pressure - bar (psi)	29 (425)*	32 (460)	23 (330)	17 (250)
	Output at 20 CPM - l/min. (gpm)	31 (8.1)	45 (12)	61 (16.2)	85.5 (22.6)
MANUALS	Pump Manual	311593 / 311594	311593 / 311594	311593 / 311594	311593 / 311594
	Lower Manual	3A0539	3A0539	3A0540	3A0540
	Motor Manual	311593	311593	311593	311593
INLET/ OUTLET SIZE	Pump Inlet Size	2 in Tri-Clamp	2 in Tri-Clamp	2 in Tri-Clamp	2 in Tri-Clamp
	Pump Outlet Size	2 in Tri-Clamp	2 in Tri-Clamp	2 in Tri-Clamp	2 in Tri-Clamp

		Motor Type	Sensor Type	Lower Type	Stand				
PUMP CONSTRUCTION	No Motor	No Sensor	SST	•	EP0070	EP0010	EP0020	EP0030	
					EP0071	EP0011	EP0021	EP0031	
			MAXLIFE	•	EP0080	EP0040	EP0050	EP0060	
					EP0081	EP0041	EP0051	EP0061	
		ATEX/FM	SST	•	EP0170	EP0110	EP0120	EP0130	
					EP0171	EP0111	EP0121	EP0131	
			MAXLIFE	•	EP0180	EP0140	EP0150	EP0160	
					EP0181	EP0141	EP0151	EP0161	
	ATEX	No Sensor	SST	•	EP3070	EP1010	EP1020	EP1030	
					EP3071	EP1011	EP1021	EP1031	
			MAXLIFE	•	EP3080	EP1040	EP1050	EP1060	
					EP3081	EP1041	EP1051	EP1061	
		ATEX/FM	SST	•	EP3170	EP1110	EP1120	EP1130	
					EP3171	EP1111	EP1121	EP1131	
			MAXLIFE	•	EP3180	EP1140	EP1150	EP1160	
					EP3181	EP1141	EP1151	EP1161	
	FM	No Sensor	SST	•	EP4070	EP2010	EP2020	EP2030	
					EP4071	EP2011	EP2021	EP2031	
			MAXLIFE	•	EP4080	EP2040	EP2050	EP2060	
					EP4081	EP2041	EP2051	EP2061	
		ATEX/FM	SST	•	EP4170	EP2110	EP2120	EP2130	
					EP4171	EP2111	EP2121	EP2131	
			MAXLIFE	•	EP4180	EP2140	EP2150	EP2160	
					EP4181	EP2141	EP2151	EP2161	

*5 HP motor on no-motor configuration allows for 31 bar (460 psi) maximum working pressure

NOTE: Graco recommends 20 cpm or less for intermittent pumping applications and 12 cpm or less for continuous pumping applications.

Agitators

- 231414 Heavy-duty agitator with elevator, drum cover and siphon kit
- 231413 Same as 231414 without siphon capability
- 238157 Heavy-duty back-gearred agitator
- 240209 Same as 238157 with siphon kit

Air Supply Controls

- 217074 Air Filter (40 micron)
- High Volume Air Regulator
 - 181521 5.6 m³/min (200 cfm) - 5.17 bar (75 psi) max
 - 206197 5.6 m³/min (200 cfm) - 8.61 bar (128 psi) max
 - 207755 10.7 m³/min (380 cfm) - 8.61 bar (128 psi) max
- 214849 Air Lubricator (3/4 npt(f), 473 cc (16 oz) bowl capacity)
- 217072 Air Filter-Regulator-Lubricator (FRL) kit (2200/3400)
- 217073 Air Filter-Regulator-Lubricator (FRL) kit (6500)
- 222345 Air Filter-Regulator-Lubricator (FRL) kit (2200/3400/Glutton with hose, bracket, gauge and swivel adapters)
- NXT011 Integrated air control for NXT Air Motors

Back Pressure Regulators (BPR)

- 208997 Mechanical 56.7 l/min (15 gpm) - 12.4 bar (180 psi) max fluid pressure, 1-1/4" npt
- 236770 Mechanical 16.3 l/min (4.3 gpm) - 12.4 bar (180 psi) max fluid pressure, 3/8" npt
- 916154 Carbide Mechanical 56.7 l/min (15 gpm) - 12.4 bar (180 psi) max fluid pressure, 1-1/4" npt
- 288117 Pneumatic 75.7 l/min (20 gpm) - 20.7 bar (300 psi) max fluid pressure, 1-1/4" npt
- 288311 Pneumatic 75.7 l/min (20 gpm) - 20.7 bar (300 psi) max fluid pressure, 1-1/2" npt
- 288262 Pneumatic 75.7 l/min (20 gpm) - 20.7 bar (300 psi) max fluid pressure, 2" Tri-Clamp
- 224486 Low Shear Mechanical 75.7 l/min (20 gpm) - 20.7 bar (300 psi) max fluid pressure, 1-1/2" npt
- 223824 Low Shear Mechanical 75.7 l/min (20 gpm) - 20.7 bar (300 psi) max fluid pressure, 2" Sanitary
- 15J498 Pneumatic BPR Conversion Kit
- 24E709 BPR Kit for 750 cc Lowers

Ordering Information

Fittings

16F044	Inlet/Outlet Fitting for 1" npt to 1" bspp
16F045	Inlet/Outlet Fitting for 1-1/2" npt to 1-1/2" bspp
16F046	Inlet/Outlet Fitting for 2" npt to 2" bspp
16G834	Inlet/Outlet Fitting for 1" npt to 1 1/4" bspp
15J423	Inlet/Outlet Fitting for 2" Tri-Clamp to 2" npt
15J639	Inlet/Outlet Fitting for 1-1/2" Tri-Clamp to 2" Tri-Clamp

Fluid Filter

244053	Low Pressure, SST (Mesh 60) standard
247479	3/4" npt(f) SST fluid filter kit
247480	1" npt(f) SST fluid filter kit
247474	Carbone steel fluid filter kit
Low Pressure Bag Filter	
915515	56.7 l/min (15 gpm) - 20.7 bar (300 psi), CS
915516	56.7 l/min (15 gpm) - 20.7 bar (300 psi), SST
915517	113.4 l/min (30 gpm) - 20.7 bar (300 psi), CS
915518	113.4 l/min (30 gpm) - 20.7 bar (300 psi), SST
Red Alert Low Pressure Filter	
213057	22.7 l/min (6 gpm) - 30 Mesh, 3/4" npt
213058	22.7 l/min (6 gpm) - 60 Mesh, 3/4" npt
213059	22.7 l/min (6 gpm) - 100 Mesh, 3/4" npt
213060	22.7 l/min (6 gpm) - 150 Mesh, 3/4" npt
213061	22.7 l/min (6 gpm) - 200 Mesh, 3/4" npt
213062	75.7 l/min (20 gpm) - 30 Mesh, 3/4" npt
213063	75.7 l/min (20 gpm) - 60 Mesh, 3/4" npt
213064	75.7 l/min (20 gpm) - 100 Mesh, 3/4" npt
213065	75.7 l/min (20 gpm) - 150 Mesh, 3/4" npt
213066	75.7 l/min (20 gpm) - 200 Mesh, 3/4" npt

Gauge

187875	Gauge 2.1 bar (30 psi) max, SST
187874	Gauge 6.9 bar (100 psi) max, SST
187873	Gauge 13.8 bar (200 psi) max, SST
187876	Gauge 20.7 bar (300 psi) max, SST

Mounting Hardware

255143	Wall Bracket – For all NXT and Viscount Motors
253692	Stand – For NXT and Viscount Motors (750-2000 cc)
218742	Stand – For NXT and Viscount Motors (3000-4000 cc)
247312	Wall mount and floor stand adapter for NXT 2200 motor
16E086	Wall mount and floor stand adapter for Viscount I, I+ motor
287884*	Heavy duty cart
287919*	Light duty cart
222011	Grounding Clamps
15H884	Stand – E-Flo

Electric Motor Accessories

120373	Local I/O Box
15J755	Sensor Circuit Kit
288414	Gear Box Lubricant, 12 pack carton

Hydraulic Motor Accessories

189305	Assembly tool for servicing yoke and trip rod (Viscount I)
253483	Intake Valve Seat with Relief Valve, Carbide Seat (Viscount I)
239865	Intake Valve Seat without Relief Valve, Carbide Seat (Viscount I)
237744	Intake Valve Seat, with Internal Pressure Relief Valve (Viscount II)
180529	Intake Valve Seat, without Relief Valve (Viscount II)
515258	Hydraulic Pressure Control Valve 3/4" npt inlet, 3/4" npt outlet, 1/4" npt drain, 1/4" npt gauge
512150	Hydraulic shutoff valve 138 bar (2000 psi) max, 1/2" npt (fbe)
102644	Hydraulic shutoff valve 207 bar (3000 psi) max, 3/4" npt (fbe)
102646	Hydraulic shutoff valve 207 bar (3000 psi) max, 1" npt (fbe)
169236	Hydraulic Oil 18 l (5 gal) size

Pneumatic Motor Accessories

NXT206	DataTrak upgrade kit for the NXT 2200
NXT306	DataTrak upgrade kit for the NXT 3400
NXT606	DataTrak upgrade kit for the NXT 6500

Suction Kits

247475	For 1-1/2" npt(f) 19 l (5 gallon) SST suction kit
247476	For 1-1/2" npt(f) 208 l (55 gallon) SST suction kit
247477	For 2" npt(f) 19 l (5 gallon) SST suction kit
247478	For 2" npt(f) 208 l (55 gallon) SST suction kit
24E709	Circulation kit 16.3 l/min (4.3 gpm) - 12.4 bar (180 psi) max

(f) = female

Surge Tanks

220157	Medium Volume, electropolished stainless steel, 1.25 npt(f) inlet, 1.25 npt(f) outlet - 42 bar (4.2 MPa - 600 psi)
238987	High Volume 75.7 l/min (20 gpm), 20.7 bar (300 psi), SST, 2" npt
238988	High Volume 75.7 l/min (20 gpm), 20.7 bar (300 psi), SST, 1-1/2" npt - sanitary
218509	High Volume 75.7 l/min (20 gpm), 20.7 bar (300 psi), SST, 2" npt, carbide

Heater

239850	Vis-con HP (120 VAC)
239851	Vis-con HP (240 VAC) with bracket-for the heater
239852	Vis-con HP (220/240 VAC) without bracket-for the heater

Retrofit Connection Kits

24F308	High-Flo to Bulldog/Senator
24F065	High-Flo to Viscount/President/President Stubby

Upgrade Kits

24E664	Upgrade Kit for Enclosed Wet Cup, SST, for Lowers 1000cc
24F062	Upgrade Kit for Enclosed Wet Cup, CS, for Lowers 1000cc
24F063	Upgrade Kit Open Wet Cup, SST, for Lowers 1000-1500-2000cc
24F064	Upgrade Kit Open Wet Cup, CS, for Lowers 1000-1500-2000cc
24F293	Upgrade Kit, E-Flo Ball cages
24F285	Upgrade Kit for Enclosed Wet Cup, SST, for Lowers 3000cc
24F286	Upgrade Kit for Enclosed Wet Cup, CS, for Lowers 3000cc
24F287	Upgrade Kit Open Wet Cup, SST, for Lowers 3000cc
24F288	Upgrade Kit Open Wet Cup, CS, for Lowers 3000cc
24H346	Upgrade Kit for Enclosed Wet Cup, SST, for Lowers 1500cc
24H347	Upgrade Kit for Enclosed Wet Cup, CST, for Lowers 1500cc
24H348	Upgrade Kit for Enclosed Wet Cup, SST, for Lowers 2000cc
24H349	Upgrade Kit for Enclosed Wet Cup, CST, for Lowers 2000cc
24H350	Upgrade Kit for Enclosed Wet Cup, SST, for Lowers 2000cc
24H351	Upgrade Kit for Enclosed Wet Cup, CST, for Lowers 2000cc
24H354	Upgrade Kit for Enclosed Wet Cup, SST, for Lowers 4000cc
24H355	Upgrade Kit for Enclosed Wet Cup, CST, for Lowers 4000cc

* Please contact customer service for questions or assistance choosing the correct cart adapter kit for your pump.

General Comment

Please select the special connection kit when a new 4-Ball lower has to be mounted on older pumps with President®, Senator®, Bulldog®, NXT® 2200, NXT® 3400 Air Motors, and Viscount® II Hydraulic Motors. Please refer to instruction Manual # 311876 for more information.





ABOUT GRACO

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

GRACO LOCATIONS

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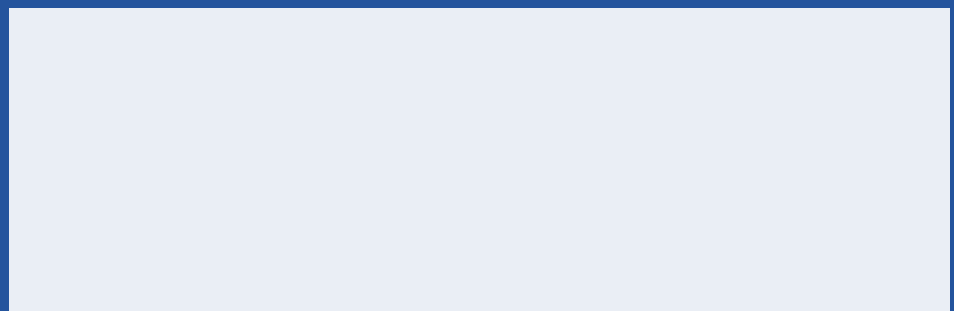
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All written and visual data contained in this document are based on the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Graco is certified ISO 9001.



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