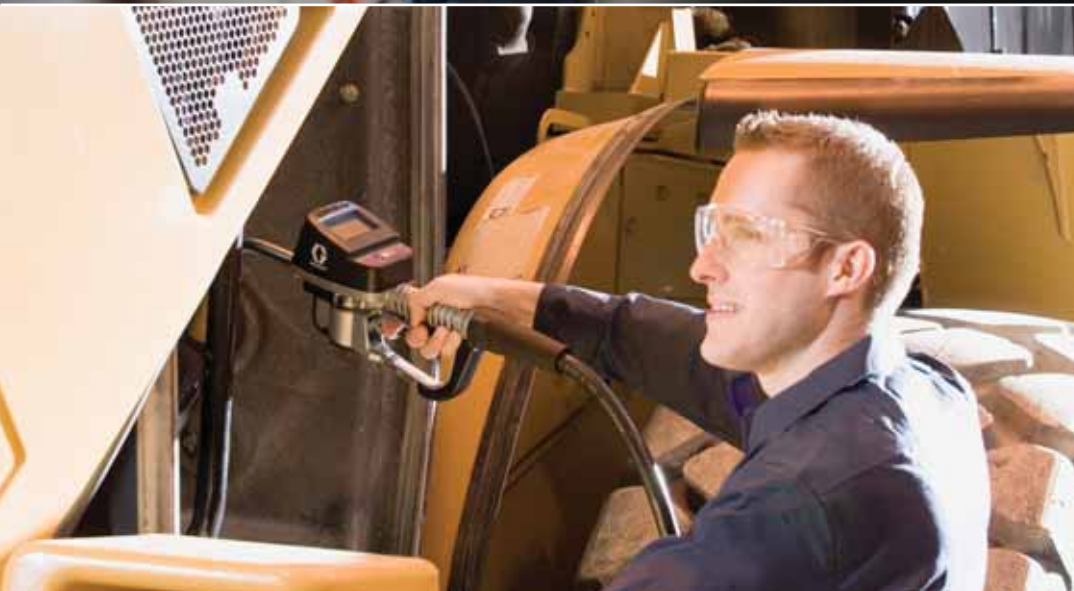


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Matrix® 3

Fluid Management Systems

Automated, Wireless Oil Dispense Tracking and Bulk Tank Monitoring

Dispense meters, software, and wireless devices capture dispense history and monitor petroleum and synthetic oil products and anti-freeze mixture inventory levels.

Features and Benefits

- Wireless transmission and reception of meter and tank level information make it simple to track your entire facility's activities
- Customize to fit your business— three product platforms (Basic, Professional, and Premier) to fit any size facility
- Multi-level security to protect your assets
- Precise measurement and control of fluids ensures profits and eliminates out of stock issues for critical inventory
- ADP and Reynolds & Reynolds interfaces provide secure, reliable, data transfer between the Matrix database and the dealership management software

Typical Applications

- Auto dealerships
- Heavy-duty fleet service
- Off-road maintenance shops
- Industrial in-plant lubrication

Typical Fluids Handled

- Petroleum and synthetic based oils
- Anti-freeze

Matrix Application Features

Feature	Basic	Professional	Premier
Maximum Number of Transceivers	1	2	8
Maximum Number of Meters	30	100	300
Maximum Number of Tank Monitors	0	12	50
Client PC Networking	0	6	300
Number of users	250	500	1000
Track Dispense by Work Order	X	X	X
Track Dispense by Technician			X
Track Dispense by Vehicle Number			X
Tank Level Email		X	X
Third Party Interface Capable		X	X
ADP® Certified Interface			X
Reynolds® Certified Interface			X

No fluid limitations with any Matrix Platform



Premier software
256634



Transceiver
255231



Matrix Meter
256282



Tank Level Monitor
256285



Pump Air Control
247436

FOR SALE TO AUTHORIZED DISTRIBUTORS ONLY

Matrix® 3

Fluid Management Systems

Software System Operating Requirements

Matrix software can be configured as a stand-alone PC or networked to multiple PC's. This software is not compatible with Apple® Computers, and is not available for the Apple® Operating system. The PC requirements for the Matrix Server and Matrix Client or shop PC's are noted below.

Server PC Hardware Requirements

- Windows® XP Professional or Vista® operating system
- Pentium® 4 or better processor
- Processor speed of 3.0 GHz or better
- RAM memory of 1 GB or better
- CD-RW or DVD/RW drive
- Serial port configuration for (1) RS422 and (1) USB connection

PC Clients

- Windows® XP Professional or Vista® operating system
- Pentium® 4 or better processor
- Processor speed of 2.0 GHz or better
- RAM memory of 1 GB or better

Software Instruction Manuals

Basic	313104
Pro.....	313106
Premier	313108
ADP.....	313112
Reynolds & Reynolds.....	313114

RF Communication (Meters, Transceivers, Tank Level Monitors, Pump Air Control)

Description	Performance
RF Communication	2.4 GHz Direct Sequence Spread Spectrum
RF Communication Range	Unobstructed: 300 to 500 ft (91 to 152 m); Obstructed: 250 to 300 ft (76 to 91 m)
RF Temperature Range	-40°F to 185°F (-40°C to 85°C)
Approvals	FCC, Industry Canada (IC), C-Tick, CE

Ordering Information

System Software

256634	Premier Software CD (includes 3rd party interface)
256635	Professional Software CD
256636	Basic Software CD
256637	Premier Software with ADP Interface
256638	Premier Software with Reynolds & Reynolds Interface

Transceiver and Connection Hardware

255231	Transceiver with Universal Power Adapter
255731	USB/RS422 Converter
15T999	15 ft USB Cable
15T998	3 ft USB Cable
119572	RS422 Bulk Wire (1000 ft roll)

Transceiver and Connection Hardware Technical Specifications

Weight	1.0 lb (454 grams)
Power Supply	100 – 240 V, 50/60 Hz to 12 VDC plug-in transformer
Instruction Manual	313008



255231

Matrix® 3

Fluid Management Systems

Matrix Meter and Accessories

Matrix Electronic Meter with Extension, 5 gpm or Less

256282	1/2 in npt(f) swivel, rigid extension and standard automatic non-drip quick-close nozzle for oil
256482	1/2 in npt(f) swivel, flexible extension and standard automatic non-drip quick-close nozzle for oil
256483	1/2 in npt(f) swivel, gear lube extension and standard quick-close nozzle
256484	1/2 in npt(f) swivel, rigid extension and standard quick-close nozzle for anti-freeze
256485	1/2 in npt(f) swivel, flexible extension and standard quick-close nozzle for anti-freeze

Matrix Electronic Meter with Extension, 14 gpm or Less

256486	1/2 in npt(f) swivel, rigid extension, high flow, quick-close nozzle for oil
256487	1/2 in npt(f) swivel, flexible extension, high flow, quick-close nozzle for oil
256488	3/4 in npt(f) swivel, rigid extension, high flow, quick-close nozzle for oil
257120	3/4 in npt(f) swivel, flexible extension, high flow, quick-close nozzle for oil

Swivel Covers

15T366	Black swivel cover (standard color with meter)
15T367	Red swivel cover
15T368	Blue swivel cover
15T369	Green swivel cover
15T370	Yellow swivel cover

Accessories

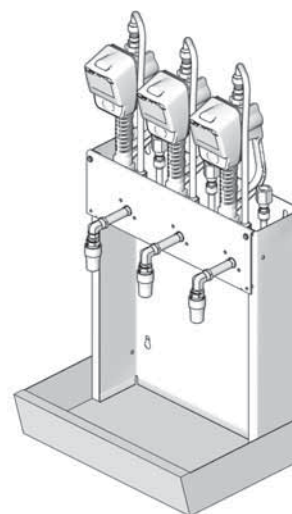
15B750	16 gallon and 55 gallon meter mounting bracket	Instruction Manual 313013
249440	Console bracket	
257539	Matrix meter for oil bar (swivel and extension removed)	
256719	Oil bar console—complete cabinet without piping and meters	
255370	Oil bar kit (fittings, nozzles, and piping)	
257556	Retro fit kit—mount Matrix meter in 222107 console	

Filter Kits for Matrix Meters

255885	Filter kit includes (10) filters/strainers (15M308), (10) spacers (15M309) and (10) O-rings (155332)
--------	--



Matrix Meter
255200



Oil Bar

Components ordered separately. For complete unit, order oil bar 256719, kit 255370 (one per meter) and Matrix meters (257539) as needed

Technical Specifications

Flow Range ⁽¹⁾	0.1 to 14 gpm (0.4 to 53 lpm)
Maximum Working Pressure	1500 psi (103.4 bar)
Operating Fluid Pressure Range*	100 – 1500 psi (7–103 bar, 0.7–10.3)
Weight (with battery and rigid nozzle extension)	6.07 lbs (2.75 kg)
Units of Measurement	Programmable in pints, quarts, gallons, or liters
Inlet	3/4 in–14 npt or 1/2 in–14 npt
Outlet	3/4 in–16 straight thread O-ring Boss
Maximum Totalizer	999,999 gallons or liters
Maximum Recorded Dispense	999.9 Units
Maximum Pre-Set Volume	999.9 Units
Battery	4 AA alkaline or 4 AA lithium
Battery Life ⁽³⁾	Preset Models—six months, manual models—one year
Wetted Parts	Aluminum, sst, pbt/pc, nitrile rubber, cs
Fluid Compatibility	Petroleum and synthetic based oils and anti-freeze mixtures (not compatible with fuel and windshield washer fluid)
Meter Pressure Loss ⁽¹⁾	± 0.5%
Accuracy ⁽²⁾	± 0.5%
Repeatability ⁽²⁾	±0.15 %
Dimension w/o Extension	13 in L x 3.75 in W x 5.75 in H, (33 cm x 9.5 cm x 14.6 cm)
Instruction Manual	313046

1. Tested in 10W oil at 70° F. Flow rates vary with fluid pressure, temperature, viscosity, inlet fitting and nozzle type.
2. At 2.5 gpm (9.5 lpm) @ 70° F (21° C) with 10 wt. oil and 1 gal (3.8 l) dispensed. May require re-calibration. Out-of-box accuracy ±1.25%.
3. Average shop use with alkaline batteries (included); 30-35% longer life with lithium AA

Matrix® 3

Fluid Management Systems

Tank Level Monitor

Choose one TLM for each bulk fluid tank. Tank readings are automatic for used or new oil and anti-freeze products.

Tank Level Monitor	
256285	Tank Level Monitor

Technical Specifications

Ultrasonic Tank Depth Measurement Range	0 – 30 ft. (0-9 m) (Not recommended for use with pressurized tanks)
Fluid Level Measurement Accuracy*	± 0.5%
Weight	2.34lb (1.06 kg)
Operating Temperature Range	-22° F - 122° F (-30° C - 50° F)
RF Operating Temperature Range	-40° F - 185° F (-40° C - 85° F)
Storage Temperature Range	-40° F - 185° F (-40° C - 85° F)
Ambient temperature range**	-22° F - 122° F (-30° C - 50° C)
Batteries	(2) 9 VDC Alkaline only
Vertical Tanks	Maximum volume: 999,999 gallons or liters, maximum height: 30 ft (360 in.)
Cylindrical Tanks	Maximum volume: 999,999 gallons or liters, maximum diameter: 30 ft (360 in.)
Approvals	FCC, Industry Canada (IC), C-Tick, CE
Instruction Manual	312964

Note: Do NOT use the Matrix Tank Level Monitor with gasoline, diesel fuel, or other flammable liquids, and materials with an auto ignition temperature below 419°F (215°C)

* The difference in air temperature between the inside and outside of the tank may affect the accuracy of fluid levels

** Display will not function below 32°F (0°C)



Tank Level Monitor
256285

Pump Air Control

One PAC required for each air pump. For safety and increased security, the PAC is a must have to maximize your fluid management system. Designed to supply air to the pump only when Matrix authorizes the dispense.

Pump Air Control (PAC)	
247435	23 scfm valve
247436	93 scfm valve

Technical Specifications

Operating Pressure Range	23-145 psi (1.7 - 10 bar)
Maximum Air Flow	247435 - 23 SCFM (0.7m³/min), 247436 - 93 SCFM (2.6m³/min)
Power Supply	120-240 VAC line voltage, 24VDC solenoid
Output Power	10mW - 100mW
AMPS	1A
Frequency	50/60 Hz
Operating Temperature Range*	32°F to 122°F (0° C to 50° C)
Enclosure Type	NEMA Type 3
Weight	247435 - 2.8 lbs (1.27 kg), 247436 - 3.4 lbs (1.5 kg)
Instruction Manual	312417

Note: Do NOT use the Matrix Tank Level Monitor with gasoline, diesel fuel, or other flammable liquids, and materials with an auto ignition temperature below 419° F (215° C).

* The difference in air temperature between the inside and outside of the tank may affect the accuracy of fluid levels. Display will not function below 32° F (0° C).



Pump Air Control
247436

Tank Accessories

CleanLine Filter Assemblies	
248421	900 psi tank mount CleanLine filter assembly (includes thermal relief)
248418	900 psi wall mount CleanLine filter assembly (includes thermal relief)
248419	1800 psi tank mount CleanLine filter assembly
248417	1800 psi wall mount CleanLine filter assembly
Replacement Filters	
15D702	900 psi CleanLine screw-on type filter
119278	1800 psi CleanLine filter element

Horizon™

Fluid Management System

Features and Benefits

- Allows multiple technicians to dispense simultaneously
- Easily configured and expandable for any facility
- Increases technicians productivity
- Password-protected to prevent unauthorized dispensing
- Tracks inventory levels and alerts operators to low-inventory conditions to minimize out-of-stock situations

Typical Applications

- Bulk-dispensing to multiple service bays
- Automotive dealerships
- Heavy-duty dealerships
- Fleet service facilities

Typical Fluids Handled

- Petroleum and synthetic based oils
- Anti-freeze



Technical Specifications

System Specifications

Control Modules on a System (1 Master only, plus 39 Slaves)	40 maximum
Keypads on a System (1 keypad per Control Module)	40 maximum
Solenoids on a System (40 Control Modules, 6 ports each)	240 maximum
Meters on a System (40 Control Modules, 6 ports each)	240 maximum
Fluids on a System	10 maximum
Dispense Areas (reel banks)	99 maximum
Operator Names / PIN Numbers	100 maximum
Dispense Records Stored	668 maximum
Simultaneous Dispenses (same and/or different fluids):	12 maximum
Jobs Waiting in Queue	12 maximum
Printer per System OR Attached Computer per System	1 maximum (either must be connected to Master Control Module)
Accuracy of System	±0.6%

Control Module Ports

Solenoid Ports (air or fluid) per Control Module	6
Pulse Meter Ports per Control Module	6
Port for Keypad per Control Module	1
Port for Printer or Computer per Master Control Module	1

Voltage Input

90-120 Volts AC, 50/60 Hz, single phase, 2 amps maximum draw	
208-240 Volts AC, 50/60 Hz, single phase, 1 amp maximum draw	
Operating Temperature Range.....	40 - 140° F (4 - 60° C) ambient
Pre-set or Free-flow Options	
Maximum Preset or Free-Flow Dispense.....	999.9 units
Minimum Preset Dispense.....	0.5 units

Units of Measure

Dispense	liters, quarts, gallons or pints (configurable for each fluid)
Inventory	liters or gallons (dependent upon dispense units chosen)

Maximum Cable Lengths

From Keypad to Control Module	50 ft (15.3 m)
From Solenoid to Control Module	50 ft (15.3 m)
From Pulse Meter to Control Module	50 ft (15.3 m)
From Printer/Computer to Master Control Module	50 ft (15.3 m)
From one end of the Control Module Network to the other end (daisy-chained)	2000 ft (610 m)

Reference Data

Instruction Manual:	308607
---------------------------	--------

Horizon™

Components and Accessories

Ordering Information

Control Module drives air and fluid solenoids, and counts pulses from meters. On-board memory contains a map of available system resources, and a power supply that supports both 120 and 240 Volt AC operation. Combine one Master Control Module with up to 39 Slave Control Modules per system.

238624	Master Control Module (one per system)
238625	Slave Control Module (up to 39 per system)

Keypads: Basic, Enhanced and Administrative

113551	Basic Keypad for navigating through the Horizon's menus
113553	Administrative Keypad is needed to set up and make changes to the system parameters
191368	Keypad Wall-Mounting Bracket

Air Solenoids open and close the air supply to the fluid pump air motor. Each solenoid can be up to 50 ft (15.3 m) from a Control Module. Up to 6 solenoids (air or fluid) can be connected to each Control Module.

215407	For Pumps Requiring Normal Air Flow (Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1)
512926	For Pumps Requiring Higher Air Flow (Fire-Ball 425, 6:1 and 3:1)

Fluid Solenoids start and stop the fluid dispense cycles. These must be placed at each dispense point for each fluid being dispensed. Each fluid solenoid can be up to 50 ft (15.3 m) from a control module. Up to 6 solenoids (either air or fluid) can be connected to each control module. The low-flow model is available in a kit with a ready light which alerts the operator when the job is ready to dispense.

215487	Low-flow: supports 3 gpm (11.4 lpm)
512927	Higher-flow: supports up to 6 gpm (22.7 lpm)
514150	Anti-Freeze Solenoid
218588	Low-flow Solenoid with Ready Light Kit
238996	Ready Light Kit (only; less the solenoid)

Pulse Meters measure fluid flow to dispense points and send a train of pulses back to the Control Modules which are counted to determine how much fluid has been dispensed. If there are multiple meters for a single fluid, check valves #111620 should be placed in series with each meter to prevent "cross talk" and oscillations. Pulse Meters can be used for either U.S. or metric units.

238618	For Oils, Gear Lube, Automatic Transmission Fluid
215474	For Anti-Freeze
111620	Check Valve, 1/2 in

Thermal Relief Kits

235998	600 psi (41 bar)
102527	Thermal Relief Valve, 900 psi (62 bar)
237893	900 psi (62 bar)
240429	1600 psi (110 bar)

System Printer prints job tickets after each dispense is complete, plus has save function for later analysis

113774	Printer
514037	Printer Paper, 1 roll

Keypad or Printer Cables

191393	25 ft (7.6 m) Cable with Connectors
191394	Cable with Connectors. 50 ft (15.3 m)

Control Module Network

113559	500 ft (152.5 m) Bulk Cable
113560	1000 ft (305 m) Bulk Cable

Pulse Meter Cable

113555	Length: 500 ft (152.5 m)
113556	Length: 1000 ft (305 m)

Solenoids Cable

113557	Length: 500 ft (152.5 m)
113558	Length: 1000 ft (305 m)

Computer Cable with Connectors

192873	Computer I/O 25 ft (7.6 m)
192874	Computer I/O 50 ft (15.3 m)

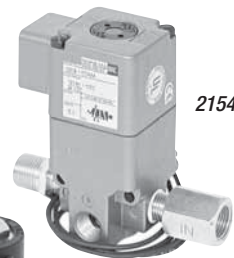


238624



113553

113551



215407



215487



113774



238618

Fluid Commander™

Fluid Management System

Features and Benefits

- Provides increased accuracy over mechanical counters
- PIN code prevents unauthorized dispensing
- Dispense totals tracked by location
- Easy to read display
- Accurate controlled dispense with parts room authorization

Typical Applications

- Parts room authorized dispensing for inventory control
- Automotive dealerships
- Heavy-duty dealerships
- Fleet service facilities

Typical Fluids Handled

- Petroleum and synthetic based oils
- Anti-freeze

Technical Specifications

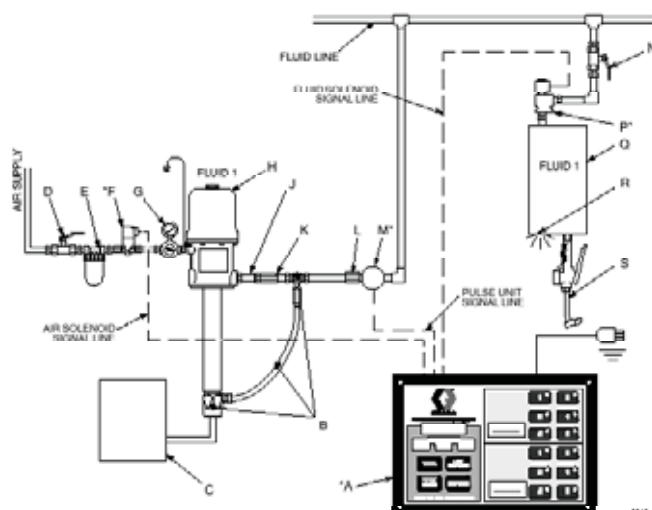
Maximum Number of Fluids	1 or 2
Dispense Stations/Bays	6 or 12
Air Solenoids Required	1 (per pump)
Fluid Solenoids Required	1 (per fluid dispense station)
Electrical Requirements	120 V, 60 Hz, .25 amps
Weight	4 lb, 5 oz. (8.0 kg)
Wiring Requirements	90V; 2-wire
Distance/Gauge	200 ft (61 m) = 18 gauge, 201 to 500 ft (61 m to 152 m) = 16 gauge, 501 ft (152 m) or more = 14 gauge
Instruction Manual	308238



Easy to Use

1. Service technician enters the service bay number, type of product, and amount to be dispensed, then activates the dispense button.
2. A "ready" light (located on the hose reel or dispense bar of the target service bay) signals when dispensing can begin.
3. As fluid is dispensed, the Fluid Commander tallies the amount dispensed and shuts-off when the pre-set amount is reached. No further dispensing takes place until new dispensing data is entered.

Typical Fluid Commander System Layout



- A. Air shut-off valve, bleed type (110224)
- B. Air filter (106148)
- C. Air solenoid valve (215407)
- D. Air regulator and gauge (109075)
- E. Pump
- F. 40-mesh fluid strainer (223179)
- G. Pulse meter (236763; 236764)
- H. Thermal relief kit*
- I. Fluid drain hose
- J. Fluid shut-off valve (108458)
- K. Fluid solenoid valve** (215487)
- L. Hose reel
- M. Ready-to-dispense indicator light** (238996)
- N. Dispense valve
- O. 1/2 npt check valve (111620)†

*Kit required to protect system from rupture due to thermal expansion of fluid lines. See instruction manual 308403.

**#218588 includes #238996 and #215487.

Note: For tank packages, pressure reliefs from instruction manual 308403 must be installed on outlet with pressure going either back to vent into the tank or to a container installed under the exit or relief valve.

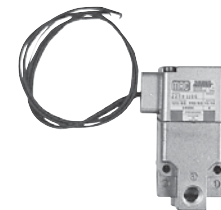
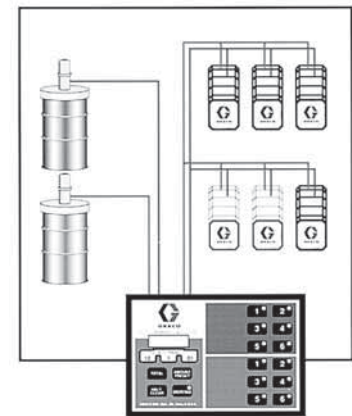
† Required to ensure meter accuracy.

Fluid Commander™

Fluid Management System

Ordering Information

Fluid Commander Systems	
232076	U.S. Measure Fluid Commander System for 2 products and 6 stations, includes: One 2-product/6-station Fluid Commander (235532), oil meter (236763), fluid solenoid valve (215487), air solenoid valve (215407), Check valve (111620)
241905	U.S. Measure Fluid Commander System for 1 product and 12 stations: Includes: One 1-product/12-station Fluid Commander (235531), Oil Meter (236763), Fluid Solenoid valve (215487), Air Solenoid valve (215407), check valve (111620)
240448	Metric Measure Fluid Commander System for 2 products and 6 stations: Includes: One 2-product/6-station Fluid Commander (232077), oil meter (236764), Fluid Solenoid valve (215487), Air Solenoid valve (215407), check valve (111620)
Accessories	
111620	Check valve
236763	Pulse Meter (quarts)
236764	Pulse Meter (liters)
215474	Pulse Meter (quarts)
215745	Pulse Meter (liters)
244342	Meter Pulse Converter, used when upgrading old-style modular fluid commander to electronic allows use of 215474/215475 with the EFC. Instruction manual 309276
Air Solenoid Valves	
215407	Air Solenoid Valve, 150 psi (10 bar) (1/2 npsm(f) conduit ports for wiring; 1/4 npt(f) air ports, adapted to 3/8(f) IN, 3/8(m) OUT) operates on 24V DC and 110 VAC. Automatically shuts-off air inlet to pump when pre-set dispensed amount is reached. Materials of construction: brass, SST, Buna.
105474	Air Solenoid Valve (bare) 150 psi (10 bar), same as #215407 but without wire connectors or adapters. 1/2 npsm(f) conduit ports for wiring; 1/4 npt(f) air ports. 150 psi (10.3 bar) max. working pressure.
Fluid Solenoid Valves	
215487	Fluid Solenoid Valve, 1/2 npt(f) 3000 psi (207 bar) operates on 24V DC. Automatically shuts-off fluid when pre-set dispensed amount is reached. Includes tube, valve, pin connector, wire plug connector and adapter.
514150	Fluid Solenoid Valve for anti-freeze, 150 psi max. (10 bar), 1/2 npt(f), same as features as #215487
110025	Bare Fluid Solenoid Valve, 1/2 npt(f) 3000 psi, same features as #215487 above, but without wiring connectors or adapters.
Ready-Light Kits	
218588	Ready-Light Kit, signals operator when dispensing can begin. Includes "ready to dispense" Indicator Light #239019, Strainer #240417, Fluid Solenoid Valve #215487 and hardware. Manual 307696.
238996	Ready-Light with Junction Box (no solenoid or strainer)
239019	Ready-to-Dispense Indicator Light only
113859	Lamp for Indicator Only
Installation Components	
223179	Fluid Filter Kit (for bare electronic meter)
186472	Wall-Mounting Bracket
108458	Fluid Shut-Off Valve
237893	Thermal Relief Kit for 900 psi (62 bar), relieves excess heat-induced pressure from dispense system. Male and female ends allow for simple installation. Instruction manual 308403.
Connecting Cables For connecting solenoids and consoles. 90-volt, 2-wire, 18-gauge.	
215481	100 ft (30.5 m) pre-connected at both ends
215480	10 ft (3.1 m) pre-connected at both ends



215407



215487



215481

Oil Pumps Quick Reference

Technical Specifications and Selection Chart

Manuals: Fast-Ball 307906 Fire-Ball 309869	Cycles per Gallon	Fluid Flow gal/min @ 80 cpm	Maximum Fluid Pressure	Air Motor Effective Diameter	Air Operating Range	Approx. Air Use and Flow @ 100 psi and 80 cpm	Wetted Materials	Air Inlet Port Size	Fluid Inlet Port Size	Fluid Outlet Port Size
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Fast-Ball 1:1*

10 (45.5 liters)	5 (19 liters)	180 psi (12.5 bar)	1.4 in (35.6 mm)	40-180 psi (2.7-12.5 bar)	5 scfm	CS, Polyurethane	1/4 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)
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Line Length[‡]: Up to 100 ft (30.5 m)
Annual Usage: Up to 5,000 gal (19,000 l)

Dispense Points: 1 (not recommended with hose reel)
Typical Applications: Continuous Duty, Maintenance Facility Dispensing Motor Oil,
Automatic Transmission Fluid, Hydraulic Fluid

Mini Fire-Ball 225, 3:1

43.5 (11.4 liters)	1.84 (7.0 liters)	540 psi (37 bar)	2.25 in (57.2 mm)	40-180 psi (2.8-12 bar)	8.5 scfm @ 2.1 gpm, (0.241 m ³ /min @ 7.9 lpm)	Steel, Buna-N, Polyurethane, Aluminum, Rulon®	3/8 in npt(f)	1-1/2 in npt(f)	1/2 in npt(f)
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Line Length[‡]: Up to 250 ft (76.2 m)
Annual Usage: Up to 6,500 gal (24,602 l)

Dispense Points: 1 to 2
Typical Applications: Continuous Duty, Maintenance Facility Dispensing Motor Oil,
Gear Oil, Automatic Transmission Fluid, Hydraulic Fluid

Fire-Ball 300, 5:1

28.4 (8.6 liters)	2.8 (9.3 liters)	900 psi (62 bar)	3 in (76.2 mm)	40-180 psi (2.8-12 bar)	27 scfm @ 3 gpm (0.765 m ³ /min @ 11.5 lpm)	Steel, Polyurethane, Aluminum, Buna-N	3/8 npt(f)	1-1/2 npt(f)	1/2 npt(f)
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Line Length[‡]: Up to 500 ft (152.5 m)
Annual Usage: Up to 30,000 gal (114,000 l)

Dispense Points: 1 to 3
Typical Applications: Continuous Duty, Maintenance Facility Dispensing Motor Oil,
Gear Oil, Automatic Transmission Fluid, Hydraulic Fluid

Fire-Ball 425, 3:1

6 (1.6 liters)	13.4 (50.6 liters)	540 psi (37 bar)	4.25 in (107.9 mm)	40-180 psi (2.8-12 bar)	58 scfm @ 13.4 gpm (1.64 m ³ /min @ 50.6 lpm)	Steel, Polyurethane, Aluminum, Nitrile	1/2 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)
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Line Length[‡]: Up to 250 ft (76.2 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 3 to 4
Typical Applications: High Flow, Low Pressure Maintenance Facility Dispensing Motor Oil,
Gear Oil, Automatic Transmission Fluid, Hydraulic Fluid

Fire-Ball 425, 6:1

12 (3.2 liters)	6.6 (25.3 liters)	1100 psi (76 bar)	4.25 in (107.9 mm)	40-180 psi (2.8-12 bar)	49.5 scfm @ 6.8 gpm (.334 m ³ /min @ 25.7 lpm)	Steel, Polyurethane, Aluminum, Nitrile	1/2 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)
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Line Length[‡]: Up to 500 ft (152.5 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 3 to 4
Typical Applications: High Flow, Medium Pressure, Maintenance Facility Dispensing Motor Oil,
Gear Oil, Automatic Transmission Fluid, Hydraulic Fluid

Fire-Ball 425, 10:1

19.6 (5.2 liters)	4.1 (15.4 liters)	1800 psi (124 bar)	4.25 in (107.9 mm)	40-180 psi (2.8-12 bar)	32 scfm @ 4.1 gpm (.555 m ³ /min @ 15.4 lpm)	Steel, Polyurethane, Aluminum, Nitrile	1/2 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)
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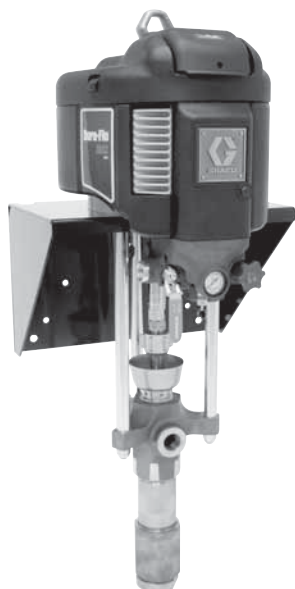
Line Length[‡]: Up to 750 ft (228.6 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 3 to 4
Typical Applications: Long Distance, Maintenance Facility Dispensing Motor Oil,
Gear Oil, Automatic Transmission Fluid, Hydraulic Fluid

[‡] Consult your local authorized Graco representative for line or pipe sizing

Oil Pumps Quick Reference

Technical Specifications and Selection Chart



See NXT Ordering Information for Instruction Manuals	Output Per Cycle	Output at 60 CPM* gpm (lpm)	Maximum Fluid Pressure psi (bar)	Motor Size	Maximum Air Input Pressure psi (bar)
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Dura-Flo, 6:1

	1000 cc	17.4 (65.9)	620 (42.7)	NXT 3400	100 (6.9)
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Line Length†: Up to 500 ft (152.5 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 3 to 4 (simultaneous)
Typical Applications: High Pressure, High Volume For Motor Oil, Gear Oil, Automatic Transmission Fluid and Hydraulic Fluid

Dura-Flo, 10:1

	1000 cc	17.4 (65.9)	1180 (81.3)	NXT 6500	100 (6.9)
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Line Length†: Up to 750 ft (228.6 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 3 to 4 (simultaneous)
Typical Applications: High Pressure, High Volume For Motor Oil, Gear Oil, Automatic Transmission Fluid and Hydraulic Fluid

Dura-Flo, 12:1 Carbon Steel or Dura-Flo, 12:1 Stainless Steel

	580 cc	9.2 (34.8)	1190 (82.1)	NXT 3400	100 (6.9)
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Line Length†: Up to Up to 1000 ft (304.8 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 2 to 3 (simultaneous)
Typical Applications: High Pressure, High Volume For Motor Oil, Gear Oil, Automatic Transmission Fluid and Hydraulic Fluid

Dura-Flo, 23:1

	580 cc	9.2 (34.8)	1725 (118.9)	NXT 6500	75 (5.2)
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Line Length†: Up to Up to 1000 ft (304.8 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 2 to 3
Typical Applications: High Pressure, High Volume For Motor Oil, Gear Oil, Automatic Transmission Fluid and Hydraulic Fluid

High-Flo 3.5:1

	2000 cc	31.5 (119.2)	350 (24.1)	NXT 3400	100 (6.9)
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Line Length†: Up to 250 ft (76.2 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 4 to 5
Typical Applications: High Volume Transfer For Motor Oil, Gear Oil, Automatic Transmission Fluid and Hydraulic Fluid

High-Flo 4.5:1

	1500 cc	23.2 (87.8)	450 (31)	NXT 3400	100 (6.9)
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Line Length†: Up to 450 ft (137.1 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 4 to 5
Typical Applications: High Volume Transfer For Motor Oil, Gear Oil, Automatic Transmission Fluid and Hydraulic Fluid

High-Flo 6:1

	2000 cc	31.5 (119.2)	500 (34)	NXT 6500	75 (5.2)
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Line Length†: Up to 500 ft (152.5 m)
Annual Usage: Over 30,000 gal (114,000 l)

Dispense Points: 4 to 5
Typical Applications: High Volume Transfer For Motor Oil, Gear Oil, Automatic Transmission Fluid and Hydraulic Fluid

*Graco recommends 20 cpm or less for supply applications ‡ Consult your local authorized Graco representative for line or pipe sizing

Fast-Ball® 1:1

Air-Operated Piston Pumps and Packages for Oil

Features and Benefits

- In-line design with fewer parts for less pump wear
- Differential air motor ensures smooth pumping
- Double-acting pump provides reliable fluid flow

Typical Applications

- Lubricant transfer
- Automotive dealerships
- Heavy duty dealerships
- Fast lube centers
- Fleet service facilities
- Service shops
- In-plant
- Lube trucks
- Mining

Typical Fluids Handled

- Petroleum and synthetic based oils



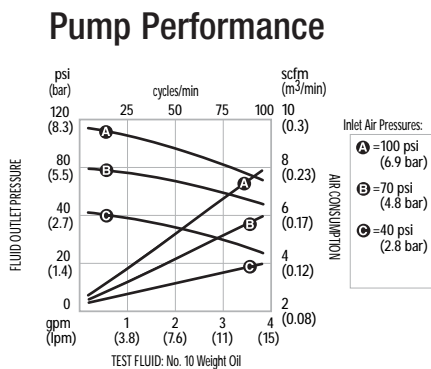
222051

222602

239702

222103

222104



Ordering Information

Package	Non-Metered Dispense	U.S./Metric Metered Dispense	Bung-Mounted	Bung-Mounted	Universal
Container Size	55 gal (200 l)			275 gal (1040 l)	Universal
Package No.	222602	239702	222103	222104	222051
Pump	222103			222104	222051
Dispense Kit	218115	239703	—	—	—
Regulator Assembly	218316		—	—	—
Hose	109125	—	—	—	—
Hose Length	6 ft (1.8 m)	—	—	—	—
Bung Adapter	222308				—
Instruction Manual	307637		307906		

Mini Fire-Ball® 225, Fire-Ball 300 and Fire-Ball 425

Air-Powered Piston Pumps and Packages for Oil

Features and Benefits

- Non-corrosive air motor design (metal parts made of SST, aluminum and chrome) for long life
- No metal-to-metal contact means longer pump life and ensures pump will withstand harsh environments
- Double-acting pump provides reliable fluid flow
- Few moving parts translates into low maintenance and low cost of ownership
- Open exhaust port provides continuous operation without icing

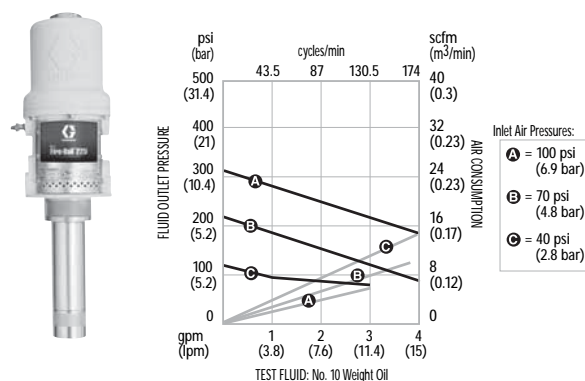
Typical Applications

- Medium to low volume and pressure lubricant transfer
- Automotive dealerships
- Heavy duty dealerships
- Fast lube centers
- Fleet service facilities
- Service shops
- In-plant
- Lube trucks
- Mining

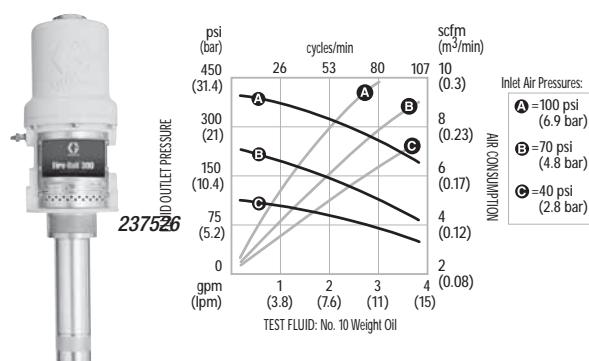
Typical Fluids Handled

- Petroleum and synthetic based oils

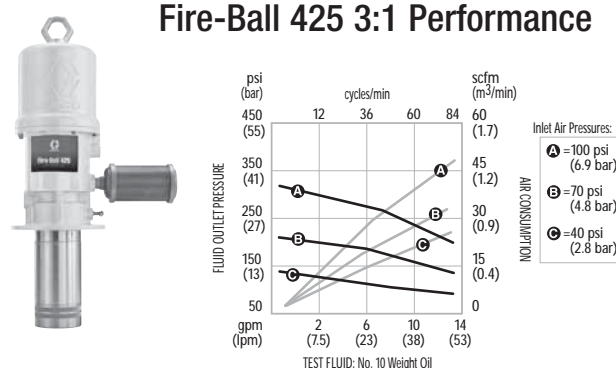
Mini Fire-Ball 225 3:1 Performance



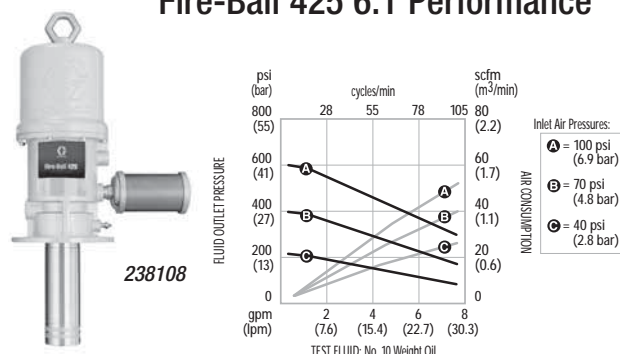
Fire-Ball 300 5:1 Performance



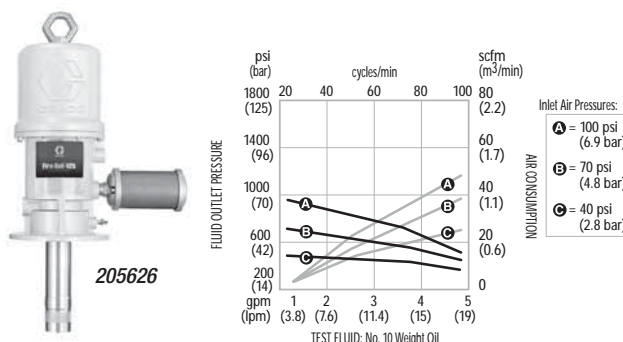
Fire-Ball 425 3:1 Performance



Fire-Ball 425 6:1 Performance



Fire-Ball 425 10:1 Performance



Mini Fire-Ball® 225, Fire-Ball 300 and Fire-Ball 425

Air-Powered Piston Pumps and Packages for Oil

Universal Supply



Bung-mounted



Cover-mounted



Portable

Fire-Ball 425 Ordering Information

Packages	Cover-Mounted	Bung-Mounted	Universal Supply	Wall-Mounted
Container Size	55 gal (200 l)		Universal	
Fire-Ball 425, 3:1 Package	—	—	—	244846 ⁽³⁾
Fire-Ball 425, 3:1 Pump	—	—	—	237526
Fire-Ball 425, 6:1 Package	—	—	—	244628 ⁽³⁾
Fire-Ball 425, 6:1 Pump	—	—	—	238108
Fire-Ball 425, 10:1 Package	225782 ^{(1) (2)}	225786 ^{(1) (2)}	225853 ^{(1) (2)}	244847
Fire-Ball 425, 10:1 Pump	222065	222095	205626	205626
Hose/Fitting Kit	222066		222068	
Fluid Hose	6 ft x 3/4 in (1.8 m x 19.05 mm)		1.5 ft x 3/4 in (0.5 m x 19.05 mm)	
Air Hose	6 ft x 1/2 in (1.8 m x 12.7 mm)		1.5 ft x 1/2 in (0.5 m x 12.7 mm)	
Cover	200326	—	—	—
Filter Regulator	—	—	—	217072
Air Shutoff Valve	—	—	—	110225
Fluid Shutoff Valve	—	—	—	108537
Wall Mount Bracket	—	—	—	238245
Instruction Manual	307883		306520	309351

⁽¹⁾ Use 1/2 in (12.7 mm) air regulator #104266 and air pressure gauge #100960 as required; must be ordered separately—see mounting accessories section

⁽²⁾ Order low-level cut off #203688 separately for metered dispense systems—see mounting accessories section

⁽³⁾ Includes pump plus: Filter Regulator (217072), Hose and Fitting Kit (222068), Air Shutoff Valve (110225), Fluid Shutoff (108537), Wall Mount Bracket, (238245)

Mini Fire-Ball 225 and Fire-Ball 300 Ordering Information

Packages	Portable	Cover-Mounted		Bung-Mounted		Universal
Container Size	16 gal (60 l)		55 gal (200 l)		275 gal (1040 l)	Universal
Mini Fire-Ball 225, 3:1 Package	246903 ‡	246904 ‡	246906 ‡	246907 *‡	246907 *‡	248230 *‡
Mini Fire-Ball, 225 3:1 Pump	248097 †					246775
Fire-Ball 300, 5:1 package	225728 *‡	225094 †‡	225642 †,‡	225640 †, ‡	225931 †, ‡	225852 †, ‡
Fire-Ball 300 Pump	203872		203857	204254	222087	203876
Dispense/Hose Fitting Kit	237075	222063				222062
Fluid Hose	6 ft x 1/2 in (1.8 m x 12.7 mm)					1.5 ft x 1/2 in (0.5 m x 9.5 mm)
Air Hose	—	6 ft x 3/8 in (1.8 m x 9.5 mm)				1.5 ft x 3/8 in (0.5 m x 9.5 mm)
Air Regulator	224512			—	—	—
Cover	204574		200326	—	—	—
Caster Base	203622	—	—	—	—	—
Bung Adapter for 300, 5:1	—	—	—	222308		—
225, 3:1 Manual	309868					
300, 5:1 Manual	307884	307883				306520

*248097 includes suction tube (15C502) and bung adapter (222308)

‡ Use 3/8 in (9.5 mm) installation kit (224512) as required

† Use 3/8 in (9.5 mm) air regulator 109075 as required; must be ordered separately

‡ Order low-level cut-off 203688 (1 1/2 inch NPT) separately for metered dispense systems

Oil Pump Accessories

Air-Operated Piston Pumps and Packages for Oil

Hose and Fittings Kits for Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 Pumps	
222062	18 in (0.5 m) for connecting wall-mounted Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 pumps to piping. Includes: air hose (204560) with swivel elbow (155494), fluid hose (220598) with swivel elbow (155470). Instruction manual 306520.
222063	6 ft (1.8 m) For use with drum-mounted Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 pumps. Includes: air hose (203320) with swivel elbow (155494), fluid hose (220591) with swivel elbow (155470). Instruction manual 307883.
Dispense Kits for Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 Pumps	
237075	6 ft (1.8 m) For use with portable lubricators powered by the Fire-Ball 300, 5:1. Includes: fluid hose (220591) and EM5 gear lube valve (238463). Instruction manual: 307884.
Hose and Fittings Kits for Fire-Ball 425, 3:1, 6:1 and 10:1	
222068	18 in (0.5 m) For connecting wall-mounted Fire-Ball 425, 10:1 pumps to piping. Includes: air hose (218093) with swivel elbow (155470), fluid hose (109108) with swivel elbow (160327). Instruction manual: 306520.
238246	24 in (0.6 m) For use with Fire-Ball 425, 3:1 and 6:1 wall-mounted pumps to piping. Includes: air hose (218093) with swivel elbow (155470), fluid hose (238247) with swivel elbow (160327).
222066	6 ft (1.8 m) For use with drum-mounted Fire-Ball 425, 10:1 pumps. Includes: air hose (205418) with swivel elbow (155470), fluid hose (109105) with swivel elbow (160327). Instruction manual: 307883.
Suction Kits	
236054	6 ft (1.8 m) Suction Kit for 55-gal. (200 l) drums. Includes: 55-gal. (200 l) drum tube, bung adapter and 6 ft (1.8 m) of 3/4 in fluid hose with 3/4 in ID x 1-1/2 in bushing to adapt to any universal Graco oil pump. Allows use of Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 or Fire-Ball 425, 10:1 universal pumps with barrels. Order wall brackets separately. Use with low-level cut-off (203688) when metering fluids. Instruction manual: 308335.
Drum Covers	
200326	Cover for open-head 55 gal (200 l) drums. Use with Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 or Fire-Ball 425, 10:1 pump. Use adapter #160754 for cover-mounting bung-style pumps.
204574	Cover for open-head 16 gal (60 l) or 70 lb (32 kg) drums. Mounts Fast-Ball 1:1, Mini-Fire-Ball or Fire-Ball pumps.
222058	Cover for 5 gal (20 l) pails. Mounts Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and 15:1 pumps. Bung adapter (222308) and bung adapter plate (160754) sold separately.
160754	Bung-adapter plate for 55 gal (200 l) or 16 gal (60 l) covers. Mounts to 55 gallon (400 lb; 200 l), 16 gal (120 lb; 60 l) drum or 5 gal (20 l) pail covers and converts mounting to standard 2 npt bung opening. Allows use of bung-mounted pumps with drum covers.
Wall-Mounting Brackets	
203987	For universal Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1 pumps. Clamps onto universal pump tube.
238245	For use with Fire-Ball 425, 3:1, 6:1 and 10:1 pumps. Mounts directly to pump flange.
236778	For use with Fire-Ball 425, 3:1, Dyna-Star 1/4:1 and Power-Star 1:1 pumps. Clamps to pump tube and provides mounting to wall surface by flange.
Clamps	
203156	Open-drum pump clamp. Attaches to side of open-head drum and mounts on any size pump except Fire-Ball 425, 3:1.
210880	Open-drum pump clamp for Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1 pumps. Clamps onto pump tube and attaches to open-drum lip.
Tools for Working on Fire-Ball Air Motors	
207579	Padded Pliers
171818	Poppet Gauge
168085	Insert Tool



200326



204574



160754



203987



203156



210880

Oil Pump Accessories

Air-Operated Piston Pumps and Packages

Carts	
203650	Cart for 5, 10 and 16 gal (20, 40, and 60 l) drums. Drums fit into recess on formed base. Rim clamps secure drum to cart. Use with pail clamp (159952) when using cart with 5 gal (20 l) pails.
222243	Heavy-Duty Cart with Pneumatic Wheels for 120 lb (55 kg) drums. Used for moving lubrication equipment over rough terrain. Requires: Hold down kit (222061).
111470	55 gal (200 l) Drum Truck. Heavy-duty drum truck secures 55 gal (200 l) drum on roll-around base.
Portable Bases	
205054	Band Dolly for 5 gal (20 l) pails (11-1/2 in ID)
204144	Band Dolly for 10 and 16 gal (40 and 60 l) drums (14 in ID)
203622	Caster Base for 5, 10 and 16 gal (20, 40 and 60 l) drums
Drum Elevator	
241663	Air-powered elevator to speed-up 55 gal (200 l) drum changes. Maximum raised height: 39.5 in (100.3 cm). Includes: cover support (207562), drum elevator (204385), and air control kit (207561).
Suction Tubes For Pumps	
238592	For 16 gal (60 l) cover-mounted Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1. Use bung adapter #222308 on all current production models. Includes (191126) 14-1/2 in (0.36 m) extension (110127) foot spacer
238593	For 55-gal (200 l) cover-mounts, includes (191128) 21-3/4 in (0.55 m) extension (110127) foot spacer
238595	For 55 gal (200 l) bung-mounted Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1. Use bung adapter #222308 on all current production models Includes (191130) 26 in (0.66 m) extension (110127) foot spacer
238596	For 275-gal (1100 l) bung-mounts, includes (191131) 36 in (0.91 m) extension (110127) foot spacer
15C502	Universal Down Tube 1-1/2 in tube marked for standard container lengths from 20-41 in (0.51-1.04 m)
Bung Adapters	
222308	For Fast-Ball 1:1; Mini Fire-Ball 225, 3:1; Fire-Ball 300, 5:1; and Fire-Ball 425, 10:1 Pumps. Allows direct mounting of all universal length and extended Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1 pumps into standard 2 npt drum bung.
238125	For Mini Fire-Ball 225, 3:1; Fire-Ball 300, 5:1; and the Fire-Ball 425, 10:1. Includes double tap bushing (191075), 1 ft 3/8 in hose (238370), and 90° 3/8 in adapter (155494) for mounting universal pumps to tanks (see 308403 for details).
214583	For Fast-Flo 1:1 Pumps, allows direct mounting of full-length pump into standard 2 npt drum bung. Comes with bushing sleeve (172405).
187754	Acetal Bung Adapter includes (100220) thumbscrew (for Fire-Ball 300, 15:1 SST undercoating pump)
176684	Bung Adapter for Suction Kit #203992 includes (100220) thumbscrew
Sealed Bung Adapters (prevents rain water and other fluids from entering drum when pump is outdoors.)	
204076	Sealed bung adapter for full-length Fire-Ball with 2-1/8 in (53.9 mm) bung and Mini Fire-Ball 225, 3:1 (2.140 inch diameter)
224579	Sealed bung adapter for universal length Fire-Ball pumps, 2.159 inch diameter (will not fit Mini Fire-Ball 225, 3:1 or old style pumps with bottom foot valve).
217359	Sealed bung adapter for Fast-Flo pumps; can be used with suction kit #236054
Low-Level Cut-Offs (Prevents air from entering pump by closing intake when fluid supply to pump is exhausted. Can be used with suction hose kit or standard suction tube without changing tube length.)	
203688	Low-level cut-offs for Fast-Ball and Fire-Ball pumps that have a universal design with suction tube extension supplying metered outlets; replaces stand-off suction tube; 1.5 npt (f) inlet. 3 in (76 mm) h.
204159	Low-level cut-off for models #203857, #203872 and #204254 built prior to 1996. 2 in (m) inlet
248296	Fire-Ball 300, 5:1 and Fire-Ball 425, 6:1 thermal relief valve rated to 900 psi (62 bar) (same as 237893 minus bung adapter and swivel. Includes 6 foot hose).
237601	Fire-Ball 425, 3:1 thermal relief valve rated to 600 psi (41 bar)
240429	Fire-Ball 425, 10:1 thermal relief valves rated to 1600 psi (110 bar)
248324	Fire-Ball 425, 10:1 thermal relief valves rated to 1600 psi (110 bar) (same as 240429 minus bung adapter and swivel. Includes 6 foot hose)
238899	Diaphragm pump thermal relief valve rated to 150 psi (10.4 bar)
112353	Diaphragm pump thermal relief valve for fuel dispense; rated to 50 psi (3.4 bar), valve only



Oil Pump Accessories

Air-Operated Piston Pumps and Packages

Thermal Relief Valve Kits (includes valve, hose and fittings)

235998	Mini Fire-Ball 225, 3:1 thermal relief valve rated to 600 psi (41 bar)
237893	Fire-Ball 300, 5:1 and Fire-Ball 425, 6:1 thermal relief valve rated to 900 psi (62 bar)
248296	Fire-Ball 300, 5:1 and Fire-Ball 425, 6:1 thermal relief valve rated to 900 psi (62 bar) (same as 237893 minus bung adapter and swivel. Includes 6 foot hose).
237601	Fire-Ball 425, 3:1 thermal relief valve rated to 600 psi (41 bar)
240429	Fire-Ball 425, 10:1 thermal relief valves rated to 1600 psi (110 bar)
248324	Fire-Ball 425, 10:1 thermal relief valves rated to 1600 psi (110 bar) (same as 240429 minus bung adapter and swivel. Includes 6 foot hose)
238899	Diaphragm pump thermal relief valve rated to 150 psi (10.4 bar)
112353	Diaphragm pump thermal relief valve for fuel dispense; rated to 50 psi (3.4 bar), valve only

Bleed-Type Air Shut-Off Valves (rated to 250 psi [17.4 bar]) Female ends

110223	1/4 in (6.4 mm)
110224	3/8 in (9.5 mm)
110225	1/2 in (12.7 mm)
110226	3/4 in (19.1 mm)

Fluid Shut-Off Valves (rated to 2000 psi [138 bar]) For isolating oil dispense lines.

108458	1/2 in (12.7 mm)
240418	3/8 in (9.5 mm)
108537	3/4 in (19.1 mm)
110314	1 in (25.4 mm)
240417	Fluid T-Strainers 60 Mesh Strainer, 750 psi (51 bar) working pressure. Prevents foreign material from entering dispense lines. Not for use with grease lines. 1/2 in npt(f) swivel x 1/2 in npt(m) ports.

Mesh Strainer Replacement for #240417

3 replacement Elements	25 replacement Elements	Mesh
238433	238434	40 mesh
238431	238432	60 mesh (standard)
238429	n/a	100 mesh

Y-Strainers 400 psi (28 bar) max. working pressure filters material before it enters the pump. 20 mesh screen.

Y-Strainer	Replacement Screens	Inlet/Outlet
101078	180199	3/4 npt(f) both ends
110877	110906	1/2 npt(f) both ends
110878	110907	1 npt(f) both ends

Mounting Accessories

Pump	Fast-Ball 1:1	Mini Fire-Ball 225 3:1	Fire-Ball 300 5:1	Fire-Ball 425 3:1	Fire-Ball 425 6:1	Fire-Ball 425 10:1
Bung Adapter		222308		N/A†	N/A†	222308
Connection Hose Kit	222118 (18 in [45.7 cm]) 222119 (72 in [182.8 cm])	222062 (18 in [45.7 cm]) 222063 (72 in [182.8 cm])		238246 (24 in [60.9 cm]) -		222068 (18 in [45.7 cm]) 222066 (72 in [182.8 cm])
Wall Mounting Bracket		203987		238245		203987
Thermal Relief Kit	-	235998	237893	237601		240429
Air Regulator and Gauge	110147	109075			104266/100960	
Air Filter	110146	106148			106149	
Air Lubricator	110148	214847			214848	
FRL*	110149	110150			217072	
Airline Shutoff Valve	110223	110224			110225	
Fluid Shutoff Valve	108537	108458			108537	
Fluid Outlet Filter		240417		101078		112087
Low-Level Cutoff			203688			
Suction Hose Kit		236054		N/A**	N/A**	

*Filter, Regulator, Lubricator and Gauge

**Recommend 1-1/2 in, 6 ft hose assembly as suction kit

†Must be wall-mounted or flange-mounted



108458



240417



101078

NXT™ High-Flo®

Air-Operated Piston Pumps for Oil

Features and Benefits

- Move large amounts of oil fast—dispenses up to 31 gallons of oil per minute
- Tested to outperform and outlast all other pumps on the market with its long-life packing design
- Models available with intuitive, easy-to-use DataTrak™ controls—gives you pump diagnostics, material usage tracking and pump runaway protection
- Reduces icing and noise—new NXT air motor is up to 50% quieter than previous models

Typical Applications

- In-plant to supply long-pipe runs or large volume header systems with multiple dispense locations
- Fill remote reservoirs or feed an automated lubrication system
- Transfer and dispense large amounts of lubricant to supply a production process
- Mines/construction for rapid refill of lube trucks and to service off-road equipment

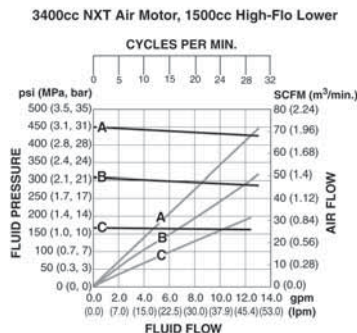
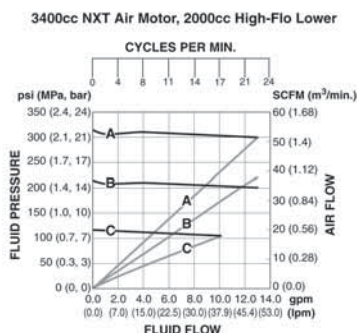


Package Number with DataTrak		247888	247889	247892	247893
Package Number without DataTrak		24D602	24D603	24D606	24D607
PUMP SPECIFICATIONS	Ratio	3.5:1	4.5:1	6:1	6:1
	Mounting	Wall (255143)	Wall (255143)	Wall (255143)	Stand (218742)
	Pump with DataTrak and thermal relief kit	24D590	24D591	24D594	24D594
	Pump w/o DataTrak and thermal relief kit	24D596	24D597	24D600	24D600
	Output per Cycle	2000cc	1500 cc	2000 cc	2000 cc
	Output at 60 CPM*	31.5 gpm (119.2 lpm)	23.2 gpm (87.8 lpm)	31.5 gpm (119.2 lpm)	31.5 gpm (119.2 lpm)
	Motor Size	NXT 3400		NXT 6500	
	Maximum Fluid Pressure	350 psi (24.1 bar)	450 psi (31.0 bar)	500 psi (35.2 bar)	
	Maximum Air Input Pressure	100 psi (6.9 bar)		75 psi (5.2 bar)	
MANUALS	System Manual	312862			
	Pump Manual	311211		311831	
	Pump Lower Manual	311690		311832	
	Motor Manual	311238			
INLET/ OUTLET	Pump Inlet Size	1 1/2 in npt (f)		2 in npt (f)	
	Pump Outlet Size	1 in npt (f)		2 in npt (f)	
HOSES	3/4 in x 4 ft Air Hose	110048			
	1 in x 6 ft Fluid Hose	115042		247969	

*Graco recommends 20 CPM or less for supply applications

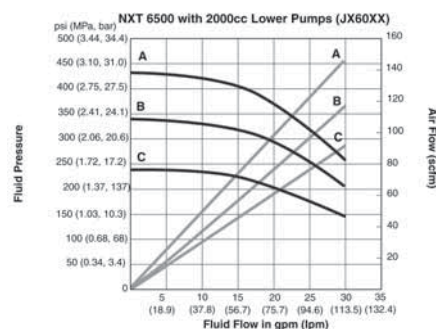
Performance Charts

A = 100 psi (7.0 bar) air pressure
B = 70 psi (4.9 bar) air pressure
C = 40 psi (2.8 bar) air pressure



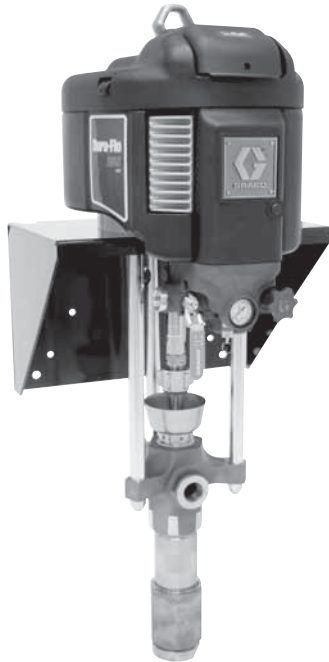
Test Fluid is No. 10 Weight Oil for all pumps

A = 70 psi (4.9 bar) air pressure
B = 55 psi (3.7 bar) air pressure
C = 40 psi (2.8 bar) air pressure



NXT™ Dura-Flo™

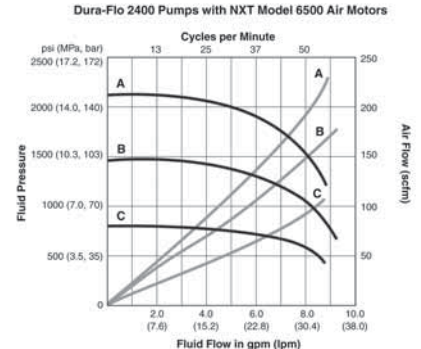
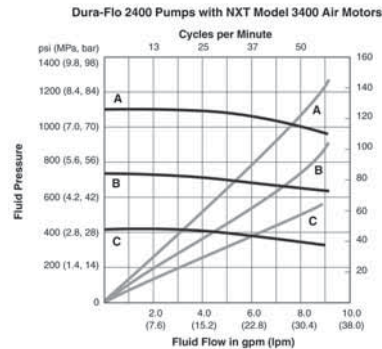
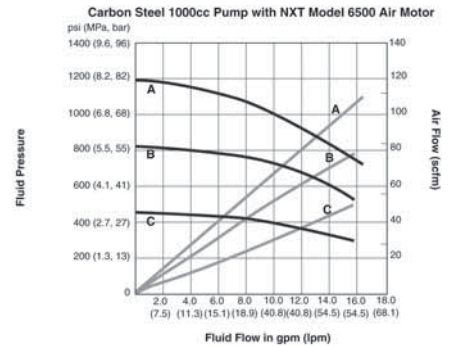
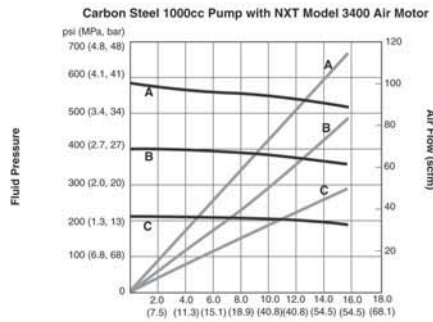
Air-Operated Piston Pumps for Oil



Performance Charts

A = 7 bar (100 psi) air pressure or 105 bar (1500 psi) hydraulic oil pressure
 B = 4.9 bar (70 psi) air pressure or 75 bar (1050 psi) hydraulic oil pressure
 C = 2.8 bar (40 psi) air pressure or 42 bar (600 psi) hydraulic oil pressure

Test Fluid is No. 10 Weight Oil for all pumps



Package Number with DataTrak		247890	247894	247891	247895
Package Number without DataTrak		24D604	24D608	24D605	–
PUMP SPECIFICATIONS	Ratio	6:1	10:1	12:1	23:1
	Mounting	Wall (255143)			
	Pump with DataTrak and thermal relief kit	24D592	24D595	24D593	–
	Pump w/o DataTrak and thermal relief kit	24D598	24D601	24D599	–
	Output per Cycle	1000cc		580cc	
	Output at 60 CPM*	17.4 gpm (65.9 lpm)		9.2 gpm (34.8 lpm)	
	Motor Size	NXT 3400	NXT 6500	NXT 3400	NXT 6500
	Max. Fluid Pressure	620 psi (42.7, 4.3 bar)	1180 psi (81.3 bar)	1190 psi (82.1 bar)	1725 psi (118.9 bar)
	Max. Air Input Pressure	100 psi (6.9 bar)			75 psi (5.2 bar)
MANUALS	System Manual	312862			
	Pump Manual	311833		311826	
	Pump Lower Manual	311717		311825	
	Motor Manual	311238			
INLET/ OUTLET	Pump Inlet Size	2 in npt(f)			
	Pump Outlet Size	1 1/2 in npt(m)			
HOSES	3/4 in x 4 ft Air Hose	110048			
	1 in x 6 ft Fluid Hose	115042			

*Graco recommends 20 CPM or less for supply applications

Grease Pumps Quick Reference

Technical Specifications and Selection Chart

Manual Number	Continuous-Duty Flow Rate	Maximum Fluid Pressure	Air Motor Effective Diameter	Operating Range	Approx. Air Use	Wetted Materials	Air Inlet Port Size	Material Inlet	Material Outlet
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309966

Mini Fire-Ball 225, 50:1

0.32 lb/min
(.15 kg/min.)

8400 psi
(578 bar)

2.25 in
(57.2 mm)

40-140 psi
(3-10 bar)

7.3 scfm @ 0.41 lb/min.)
(.18 kg/min)
@ 100 psi @ 80 cpm

Steel, Urethane,
Aluminum, Buna-N,
Brass, Ethylene,
Delrin®

3/8 in
npt(f)

Slotted

1/4 in
npt(f)

Line Length†: Up to 100 ft (30.5 m)
Annual Usage: Up to 5,000 lb. (2,268 kg)

Dispense Points: 1
Typical Applications: Small Maintenance Facility



308883

Fire-Ball 300, 50:1

1.19 lb/min.
(.54 kg/min.)

8400 psi
(580 bar)

3 in
(76.2 mm)

30-140 psi
(3.0-9.7 bar)

22.8 cfm @100 psi
(7 bar)

CS, Delrin®, Buna-N,
Polyurethane

3/8 in
npt(f)

Slotted

1/4 in
npt(f)

Line Length†: Up to 250 ft (76.2 m)
Annual Usage: Up to 10,000 gal (4,535 kg)

Dispense Points: 1 to 2
Typical Applications: High Pressure Grease to 8400 psi, (579 bar) Outlet Pressure



306674/306982

Fire-Ball 425, 50:1

3.35 lb/min
(1.5 kg/min.)

7500 psi
(517 bar)

4.25 in
(10.8 mm)

40-150 psi
(2.8-10.4 bar)

19 cfm @70 psi
(4.8 bar)

CS, Leather

1/2 in
npt(f)

Slotted

3/8 in
npt(f)

Line Length†: Up to 250 ft (76.2 m)
Annual Usage: 20,000 lb or more (9,072 kg)

Dispense Points: 4 or more
Typical Applications: High Pressure Grease to 7500 psi, 517 bar



308777/306982

Mini Fire-Ball 425, 75:1

1.95 lb/min
(.88 kg/min.)

7500 psi
(517 bar)

4.25 in
(10.8 mm)

40-100 psi
(2.8-7 bar)

26 cfm @100 psi
(7 bar)

CS, Leather

1/2 in
npt(f)

Slotted

3/8 in
npt(f)

Line Length†: Up to 500 ft (152.5 m)
Annual Usage: 15,000 lb or more (6,804 kg)

Dispense Points: 4 or more
Typical Applications: High Pressure Grease to 7500 psi, 517 bar



306531

Fire-Ball 300, 15:1

0.7 gpm

2700 psi
(186 bar)

3 in
(7.6 cm)

40-180 psi
(2.8-12.5 bar)

17 cfm @ 100 psi
(7 bar)

CS, AL, Leather,
PTFE, Rubber

3/8 in
npt(f)

1 in npt(f)
Straight Inlet

1/4 in
npt(f)

Line Length†: Up to 250 ft (76.2 m)
Annual Usage: Up to 10,000 gal (4,535 kg)

Dispense Points: 1 to 2
Typical Applications: Medium Pressure Grease to 2700 psi, (186 bar) Outlet Pressure



309407

Fire-Ball 425, 10:1

3.5 gpm

1800 psi
(124 bar)

4.25 in
(10.8 mm)

40-180 psi
(2.8-12.5 bar)

13 cfm @100 psi
(7 bar)

Steel, Bass,
Aluminum, Leather,
Buna-N

1/2 in
npt(f)

Slotted

1 in
npt(f)

Line Length†: Up to 500 ft (152.4 m)
Annual Usage: 20,000 lb or more (9,072 kg)

Dispense Points: 4 or more
Typical Applications: High Pressure Grease to 1800 psi, (124 bar)

* Not recommended with hose reel

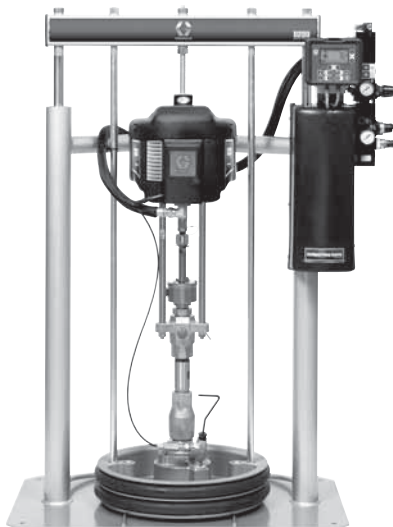
† Consult your local authorized Graco representative for line or pipe sizing

Grease Pumps Quick Reference

Technical Specifications and Selection Chart



Floor-mounted



RAM-mount

See NXT Ordering Information for Instruction Manuals	Output Per Cycle	Output at 60 CPM*	Maximum Fluid Pressure	Motor Size	Maximum Air Input Pressure psi (bar)
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Check-Mate 14:1**

500cc	57.0 lb/min (26.0 kg/min)	1400 (96.5 bar)	NXT 3400	100 (6.9)
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Line Length†: Up to 100 ft (30.5 m)
Annual Usage: Up to 20,000 lb. (9,072 kg)

Dispense Points: 1
Typical Applications: Small Maintenance Facility

Check-Mate 26:1

500cc	57.0 lb/min (26.0 kg/min)	2600 (179.3 bar)	NXT 6500	100 (6.9)
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Line Length†: Up to 250 ft (76.2 m)
Annual Usage: Up to 20,000 lb. (9,072 kg)

Dispense Points: 1 to 2 (simultaneous)
Typical Applications: Smaller Continuous Duty, Maintenance Facility

Check-Mate 29:1

250cc	28.0 lb/min (13.0 kg/min)	2900 (200.0 bar)	NXT 3400	100 (6.9)
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Line Length†: Up to 250 ft (76.2 m)
Annual Usage: Up to 20,000 lb. (9,072 kg)

Dispense Points: 4 or more
Typical Applications: Medium Continuous Duty, Maintenance Facility

Check-Mate 55:1

250cc	28.0 lb/min (13.0 kg/min)	5500 (379.2 bar)	NXT 6500	75 (5.2)
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Line Length†: Up to 250 ft (76.2 m)
Annual Usage: Up to 20,000 lb. (9,072 kg)

Dispense Points: 1 to 2 (simultaneous)
Typical Applications: Smaller Continuous Duty, Maintenance Facility

Check-Mate 63:1**

100cc	11.4 lb/min (5.2 kg/min)	4500 (310.3 bar)	NXT 3400	72 (5.0)
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Line Length†: Up to 250 ft (76.2 m)
Annual Usage: Up to 20,000 lb. (9,072 kg)

Dispense Points: 1 to 2 (simultaneous)
Typical Applications: Smaller Continuous Duty, Maintenance Facility

Check-Mate 68:1**

200cc	22.8 lb/min (10.4 kg/min)	5300 (356.5 bar)	NXT 6500	78 (5.4)
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Line Length†: Up to 500 ft (152.5 m)
Annual Usage: Up to 20,000 lb. (9,072 kg)

Dispense Points: 1 to 2 (simultaneous)
Typical Application: Smaller Continuous Duty, Maintenance Facility

* Graco recommends 20 CPM or less for supply applications.

**NXT Check-Mate pump is available in floor stand or RAM Package.
See NXT package section of this book for more information.

Mini Fire-Ball® 225, 50:1

Air-Operated Piston Pumps and Packages for Grease

Features and Benefits

- Non-corrosive air motor design for long life
- Double-acting pump ensures smooth fluid flow
- Robust grease inlet cage withstands the most abusive handling

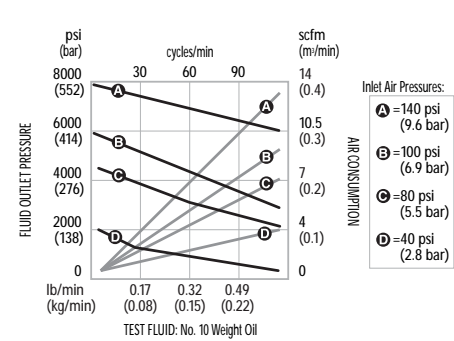
Typical Applications

- Medium to high pressure, low to medium volume grease dispense
- Automotive dealerships
- Heavy duty dealerships
- Fast lube and service centers
- Fleet service facilities
- Lube trucks
- Mining
- In-plant

Typical Fluids Handled

- Grease up to NGLI #2

Pump Performance



Mini Fire-Ball 225, 50:1 (246914)



Mini Fire-Ball 225, 50:1 (246915)



Mini Fire-Ball 225, 50:1 (246916)

Grease Pumps and Packages

	Portable Pail Dispenser	Stationary Pail Dispenser	Cart-Mounted Pail Dispenser	Stationary Supply Package	Portable Package w/ Caster Base	Portable Package w/ 2-Wheel Cart	Stationary Supply Package
Container Size	35 lb (16 kg) pail	35 lb (16 kg) pails or 70 lb (32 kg) bulk		120 lb (55 kg)			400 lb (180 kg)
Package No.	246910 +	246911 +	246913 +	246914 +	246915 +	246916 +	246917 +
Pump No.	246909			246780			246781
Container	—	204134		—	—	—	—
Follower Plate	220653	*	*	220654			223845
Dispense Kit	236058			222072	236058		222072
Fluid Hose	12 ft x 1/4 in (3.7 m x 6.4 mm)			6 ft x 1/4 in (1.8 m x 6.4 mm)	12 ft x 1/4 in (3.7 m x 6.4 mm)		6 ft x 1/4 in (1.8 m x 6.4 mm)
Air Hose	222059	204574	204574	6 ft x 3/8 in (1.8 m x 9.5 mm)	—	—	6 ft x 3/8 in (1.8 m x 9.5 mm)
Cover	222059	204574					200326
Cart	—	—	203650	—	203622	203650	—
Manual	309967						

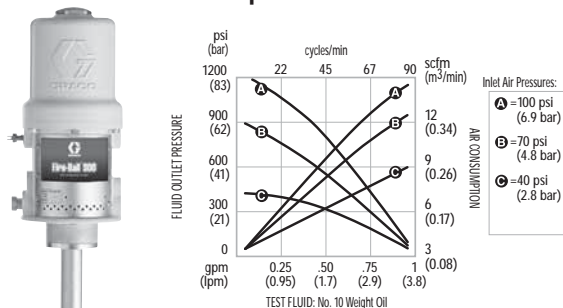
+ Order 3/8 in (9.5 mm) air regulator (109075) separately

* Order follower plate #220653 separately for 35 lb (16 kg) pails or #220654 for 70 lb (32 kg) bulk

Fire-Ball® 300, 15:1

Air-Operated Piston Pumps and Packages for Grease

Pump Performance



Packages for 35-400 lb (16-180 kg) Containers

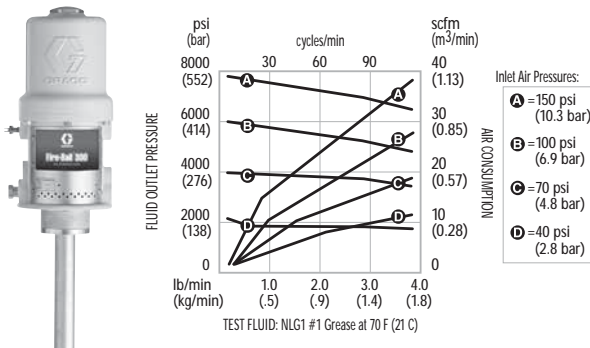
	Stationary Pail Dispenser	Stationary Drum Dispenser	Cover-Mounted Drum Dispenser
Container Size lb (kg)	35 lb (16 kg)	120 lb (55 kg)	400 lb (180 kg)
Package No.	222078	220170	220171
Pump No.	206405	206699	206700
Dispense Kit	222080	222081	222081
Fluid Hose	15 ft x 3/8 in (4.6 m x 9.5 mm)	25 ft x 3/8 in (7.6 m x 9.5 mm)	25 ft x 3/8 in (7.6 m x 9.5 mm)
Drum Cover	222058	204574	200326
Instruction Manual	307882		



Fire-Ball® 300, 50:1

Air-Operated Piston Pumps and Packages for Grease

Pump Performance



Mini Fire-Ball 225, 50:1 (246911) or
Fire-Ball 300, 50:1 (225827) Package

35-70 lb (16.32 kg) Pumps and Packages

Mini Fire-Ball 225, 50:1 (246910) or
Fire-Ball 300, 50:1 (222069) Package

	Portable Pail Dispenser	Stationary Pail Dispenser	Cart-Mounted Pail Dispenser	Cart-Mounted Pail Topper
Container Size	35 lb (16 kg)	35 lb or 70 lb (16 kg or 32 kg)	35 lb or 70 lb (16 kg or 32 kg)	35 lb (16 kg)
Package No.	222069 *	225827 *	225773 *	226012 *
Metered Package**	245694	-	245695	-
Pump No.	239877			
Dispense Kit	222070			
Fluid Hose	12 ft x 1/4 in (3.7 m x 6.4 mm)			
Air Hose	-	-	-	-
Follower Plate	220653	†	†	-
Cover	222059	204574		-
Holster	-	203976		
Container	-	204134	204134	-
Cart	-	-	203650	
Elevator	-	-	-	203664
Inductor Plate	-	-	-	204351
Instruction Manual	307878			

* Use 3/8 in (9.5 mm) air regulator #109075; must be ordered separately

** Metered grease package includes 233807 Accu-Shot instead of 242056 Pro-Shot

† Order follower plate #220653 for 35 lb (16 kg) containers, and follower plate #220654 for 70 lb (32 kg) containers; must be ordered separately



Mini Fire-Ball 225, 50:1 (246913) or
Fire-Ball 300, 50:1 (225773) Package



Mini Fire-Ball 225, 50:1 (246917)



Fire-Ball 300, 50:1 (226012)

Fire-Ball® 300, 50:1

Air-Operated Piston Pumps and Packages for Grease

Packages For 120 lb (55 kg) Containers

	Portable with Caster Base	Portable with Two-Wheel Cart	Portable with Heavy-Duty Cart	Stationary Supply	Stationary Supply Topper-Inductor
Container Size lb (kg)	120 (55)				
Package No.	225006 *	225026 *	222245 *	225014 *	222073 *
Metered Package		245696 **			
Pump No.	239887				
Dispense Kits	222070		222383	222072	-
Fluid Hose	12 ft x 1/4 in (3.7 m x 6.4 mm)		25 ft x 1/4 in (7.6 m x 6.4 mm)	6 ft x 1/4 in (1.8 m x 6.4 mm)	
Air Hose	-	-	-	6 ft x 3/8 in (1.8 m x 9.5 mm)	
Follower Plate	220654				-
Cover	204574		222060	204574	-
Holster	203976		-	-	-
Caster Base	203622	-	-	-	-
Cart	-	203650	222243	-	-
Elevator	-	-	-	-	204121
Pump Support	-	-	-	-	222074†
Hold Down Kit	-	-	222061	-	-
Instruction Manual	306523				

Packages for 400 lb (180 kg) Containers

	Stationary	Topper-Inductor
Container Size lb (kg)	400 (180)	
Package No.	225016 *	226013 *
Pump No.	239888	
Hose & Fitting Kit	222072	204467
Fluid Hose	6 ft (1.8 m) x 1/4 in (6.4 mm)	
Air Hose	6 ft (1.8 m) x 3/8 in (9.5 mm)	
Follower Plate	223845	-
Cover	200326	-
Carriage	-	204461
Elevator	-	204385
Inductor Plate	-	204353
Base	-	205339
Instruction Manual	307880	306556

* Use 3/8 in (9.5 mm) air regulator #109075; must be ordered separately
 ** Metered grease package includes 233807 Accu-Shot instead of 242056 Pro-Shot
 † Pump support assembly includes dust cover, base, inductor plate and 6 ft (1.8 m) fluid & air hoses



225006



225014



225026



225016



222073



222245

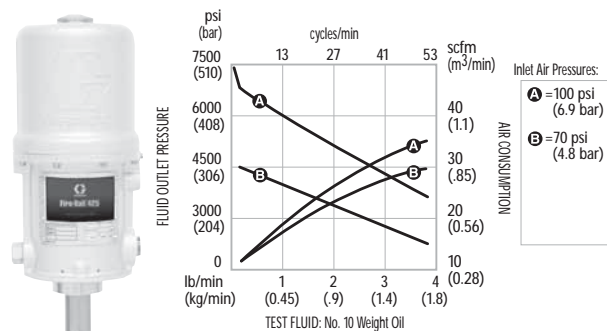


226013

Fire-Ball® 425, 10:1 and 50:1; Bulldog® 3:1

Air-Operated Piston Pumps and Packages for Grease

Fire-Ball 425, 10:1 Performance



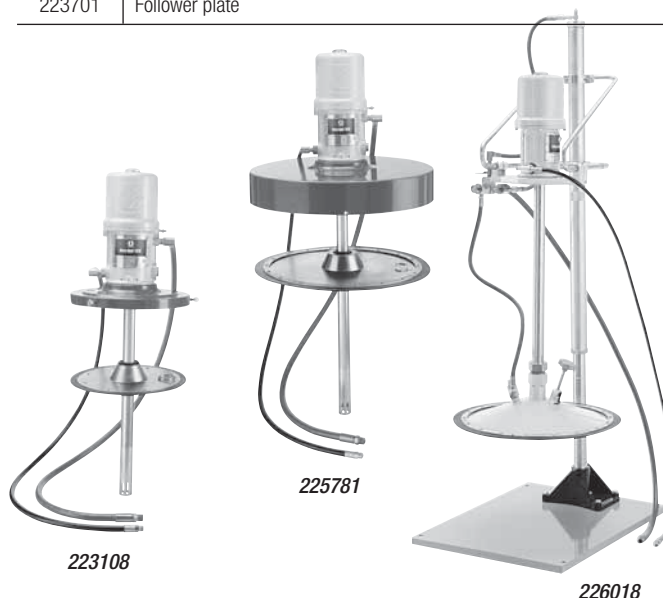
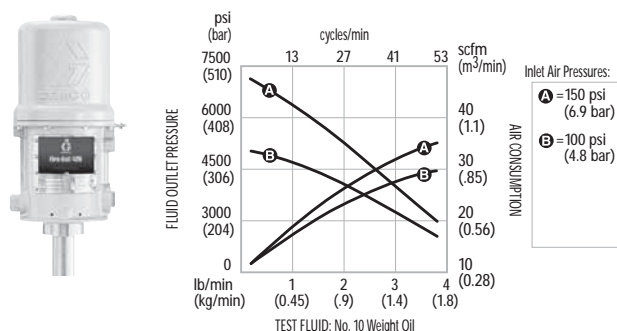
10:1 Pump Packages

965129	Fire-Ball 425, 10:1 pump for closed 400 lb (180 kg) head drums complete with bung adapter. For open head drum, remove bung adapter and mount to #200326, 400 lb (180 kg) drum cover. Ideal for transferring grease from 400 lb (180 kg) drum or side pocket of tote tank. Can be modified for stubby horizontal mount on tote tanks. Contact Graco technical assistance for information.
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10:1 Pumps and Accessories

965124	Stubby mount Fire-Ball 425, 10:1 pump only
200326	Drum cover
223701	Follower plate

Fire-Ball 425, 50:1 Performance



Packages for 120-400 lb (56-180 kg) Containers

Description	Stationary Supply	Stationary Supply	Stationary Supply Topper-Inductor	Ram	Bulldog 3:1 (Sinkers)
Container Size lb (kg)	120 (55)	400 (180)	400 (180)	400 (180)	400 (180)
Package No.	223108*	225781*	226018*	244905	244848
Pump No.	205394	205395	205395	205395	205148
Air Hose Kit	222076	222076	205102	222076	208610 / 244658
Fluid Hose	6 ft x 3/8 in (1.8 m x 9.5 mm)				
Air Hose	6 ft x 1/2 in (1.8 m x 12.7 mm)				
Cover	204574	200326	—	—	—
Follower Plate	223344	223846	—	—	—
Carriage	—	—	204461	—	—
Elevator	—	—	204385	—	—
Inductor Plate	—	—	205699	—	222404
Base	—	—	205339	—	—
Ram	—	—	—	207279	—
Air Regulator	—	—	—	244844	207651
Adapter Plate	—	—	—	162225	—
Adapter Kit	—	—	—	224266	—
Manual	307880	307880	306556	309345	309345

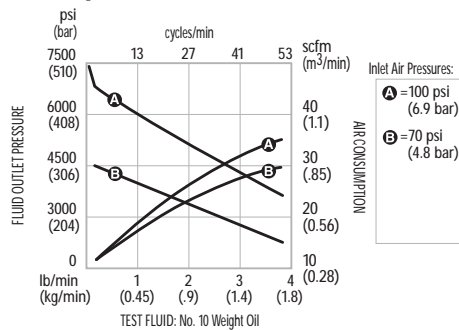
* Use 1/2 in (12.7 mm) air regulator #104266 and gauge #100960; must be ordered separately
 For Fire-Ball 425, 50:1 Lube Truck Packages, see the Specialty Pump Section
 See Tank and Tote Section for more Inductor and Ram packages

Fire-Ball® 425, 75:1

Air-Operated Piston Pumps and Packages for Grease



Pump Performance



Packages for 35-400 lb (16-180 kg) Containers

Description	Cover-Mount	Cover-Mount	Inductor	Ram	Pail Length	Bung or Cover
Container Size lb (kg)	120 (55)	400 (180)	400 (180)	400 (180)	35/70 lb (16/32 kg)	400 (180)
Package	244635 *	244636 *	244637 *	244906		
Bare pump no.	239729	239730	239730	239730	239731	239730
Hose & Fitting Kit	222076	222076	205102	222076		
Drum Cover	204574	200326	-	-	204574	
Follower Plate	223344	223846	-	-	**	
Carriage	-	-	204461	-		
Elevator	-	-	204385	-		
Base	-	-	205339	-		
Inductor	-	-	205699	-		
Ram	-	-	-	207279		
Air Regulator	-	-	-	244844		
Adapter Plate	-	-	-	162225		
Adapter Kit	-	-	-	224266		
Manual	307880	307880	306556	309345	-	-

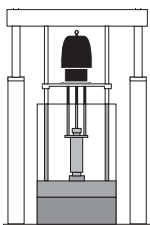
* Use 1/2 in (12.7 mm) air regulator #104266 and gauge #100960; must be ordered separately ** 35 lb: 220653/ 70 lb: 223344 • For Lube Truck Packages, see the Package Solution Section

RAM Assemblies

Description	Fire-Ball 300, 50:1	Fire-Ball 425, 75:1	Fire-Ball 425, 50:1	Fire-Ball 425, 10:1
System Package	*	244906	244905	*
Bare Pump	239888	239730	205395	965129
Ram	207279	207279	207279	207279
Pump Mount Kit	247336	247337	247337	247337
Adapter Kit	224267	224266	224266	not needed
Air Regulator and Gauge	203716	244844	244844	207468
Ram Plate Seal Kit	247335	247335	247335	247335
Air Hose 3/4 in x 6 ft	-	-	-	-
Fluid Hose 1 in x 6 ft	-	-	-	-

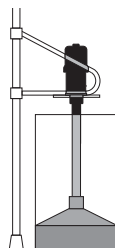
*Order individual components

Drum Systems



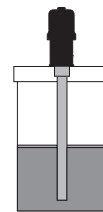
Ram Mount

- Force feed high volume pumps
- Extreme viscous grease
- Reduce waste
- Clean and convenient method of drum change



Inductor Mount

- Reduce waste
- Clean and convenient method of drum change



Cover Mount with Follower Plate

- Economical

Accessories

Air-Operated Piston Pumps and Packages for Grease

Dispense, Hose and Fitting Kits

Rated To 5000 psi (345 bar) for Portable Fire-Ball 300, 50:1 or Mini Fire-Ball 225, 50:1 Pumps

222080	For Fire-Ball 300, 15:1 Includes: 15 ft (4.6 m) of 3/8 in (9.5 mm) fluid hose #109165, grease dispense valve #242056, Z-Swivel #202577, 3/8 in (9.5 mm) closed nipple #156849, quick-disconnect nipple #169971, quick-disconnect air coupler #110198 and 3/8 in (9.5 mm) air regulator #110234.
222081	For Fire-Ball 300, 15:1 Includes: 25 ft (7.6 m) of 3/8 in (9.5 mm) fluid hose #109167, grease dispense valve #242056, Z-Swivel #202577, 3/8 in (9.5 mm) closed nipple #156849, quick-disconnect nipple #169971, quick-disconnect air coupler #110198 and 3/8 in (9.5 mm) air regulator #110234.
236058	For Mini Fire-Ball 225, 50:1 Includes: 12 ft (3.6 m) fluid hose #109151, air coupler #208536, air nipple #169971, grease dispense valve #242056, gun holder #188843 and Z-Swivel #202577.
222070	For Fire-Ball 300, 50:1 Includes: 12 ft (3.6 m) fluid hose #109151, air coupler #208536, air nipple #169971, grease dispense valve #242056 and Z-Swivel #202577. Instruction manual 307878.
222383	For Portable Units Powered by the Mini Fire-Ball 225, 50:1 or Fire-Ball 300, 50:1 Pumps Includes: dispense kit includes: grease dispense valve #242056, 25 ft (7.6 m) fluid hose #109054, air coupler #208536, air nipple #169971 and Z-Swivel #202577. Instruction manual 307878.

Hose and Fitting Kits

Rated to 5000 psi (345 bar) for Stationary Drum-Mounted Fire-Ball 300, 50:1 Pumps

222072	Hose and Fittings Kit Includes: 6 ft (1.8 m) air hose #203320 with swivel elbow #155494 and 6 ft (1.8 m) fluid hose #109150 with swivel elbow #155541. Instruction manual 307880.
--------	---

Rated to 4000 psi (276 bar) for Stationary Drum-Mounted Fire-Ball 425, 50:1 Pumps

222076	Hose and Fittings Kit Includes: 6 ft (1.8 m) air hose #205418 with swivel elbow #155470 and 6 ft (1.8 m) fluid hose #109163 with swivel elbow #155494. Instruction manual 307880.
--------	---

Bung Adapters

239965	For Fire-Ball 425, 50:1 and 75:1 Pumps, 1.65 in ID
239966	For Fire-Ball 300, 15:1 and 50:1 Pumps

Lincoln-to-Graco Adapter Kit

241246	For Fire-Ball 300, 50:1 when replacing a Series 20 Lincoln
--------	--

Flange Mounting Accessories for Fire-Ball Pumps

948393	Flange adapter (male) Fire-Ball 300
948392	Flange adapter (male) Fire-Ball 425
512874	Coupler (female)

Follower Plates

220653	For 35 lb (16 kg) pails with Mini Fire-Ball 225, 50:1, Fire-Ball 300, 15:1 and 50:1 pumps
220654	For 70 and 120 lb (32/55 kg) drum, Mini Fire-Ball 225, 50:1, Fire-Ball 300, 15:1 and 50:1 pumps
223344	For 120 lb (55 kg) drums with Fire-Ball 425, 50:1 and 75:1 pumps
223700	For 120 lb (55 kg) drums with Dyna-Star 5:1 pumps
223845	For 400 lb (180 kg) drum, Mini Fire-Ball 225, 50:1, Fire-Ball 300, 15:1 and 50:1 pumps, 1.19 in ID
204130	Follower plate same as #223845, but without flexible wiper
223846	For 400 lb (180 kg) drums with Fire-Ball 425, 50:1 and 75:1 pumps, 1-13/32 in ID
205337	Follower plate same as #223846, but without flexible wiper
223701	For 400 lb (180 kg) drums with Dyna-Star 5:1 and Fire-Ball 425, 10:1 pumps, 2.1 in ID

Drum Covers

200326	Cover for open-head 400 lb (180 kg) drum Use with any Mini Fire-Ball 225, Fire-Ball grease pump or Dyna-Star 5:1 pump. Use with adapter #160754 for cover-mounted pumps.
204574	Cover for open-head 120 lb (55 kg) or 70 lb (32 kg) drums Mounts Mini Fire-Ball 225, Fire-Ball grease pumps or Dyna-Star 5:1 pump. Use with adapter #160754 for cover-mounted pumps.
222059	Cover for 35 lb (16 kg) pails Mounts Mini Fire-Ball 225, 50:1 and Fire-Ball 300, 50:1 pumps using friction-style clutch lock. Allows use of 70 lb (32 kg) length pump with 35 lb (16 kg) pail.
160754	Bung-adapter plate Mounts to standard 400 lb (180 kg) or 120 lb (55 kg) drum cover and converts mounting to standard 2 npt bung opening. Allows use of bung-mounted pumps with drum covers.



220653



204574



200326



222059



160754

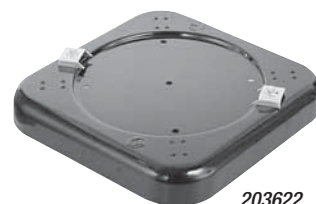
Accessories

Air-Operated Piston Pumps and Packages for Grease

Portable Bases	
205054	Band Dolly for 35 lb (16 kg) pails
204144	Band Dolly Base for 70 lb (32 kg) or 120 lb (55 kg) drums
203622	Caster Base for 35 lb (16 kg), 70 lb (32 kg) or 120 lb (55 kg) drums
Carts	
203650	For 35 lb (16 kg), 70 lb (32 kg) and 120 lb (55 kg) drums. Drums fit onto recess on formed base. Rim clamps secure drum onto cart. Use with pail clamp #159952 when using cart with 35 lb (16 kg) pails.
222243	For 120 lb (55 kg) drums with pneumatic wheels for rough terrain.
111470	Heavy-duty drum truck for 400 lb (180 kg) drums secures drum onto roll-around base.
Drum Elevators	
241663	Air-Powered Elevator to speed drum changes. Maximum raised height: 39.5 in (100.33 cm). Includes: Cover Support (207562), Drum Elevator, (204385), Air Control Kit (207561)
Air Shut-Off Valves, Bleed-type, rated to 250 psi (17.4 bar)	
110223	1/4 in (6.4 mm)
110224	3/8 in (9.5 mm)
110225	1/2 in (12.7 mm)
110226	3/4 in (19.1 mm)
High-Pressure Grease Shut-Off Valves	
202869	5000 psi (345 bar) high-pressure needle valve, 1/2 npt(f) ported valve for drop-line isolation.



204144



203622



202869



203650



111470



241663

NXT™ Check-Mate® Packages

Air Operated Piston Pumps and Packages for Grease

Ordering Information

Package Number with DataTrak	247973	247976	247974	247977	247975	247978
Package Number without DataTrak	24E006	24E007	24E008	24E009	24E010	24E011
Ratio	14:1	26:1	29:1	55:1	63:1	68:1
Pump with DataTrak	P14MCS	P26MCS	P29MCS	P55MCS	P63MCS	P68MCS
Pump w/o DataTrak	P14DCS	P26DCS	P29DCS	P55DCS	P63DCS	P68DCS
Mounting	Floor Stand (223952)					
3/4 in x 6 ft Air Hose	208610					
1 in x 6 ft Fluid Hose	115042	244657				
System Manual	312863					
Pump Manual	312376					
Pump Lower Manual	312375					
Motor Manual	311238					

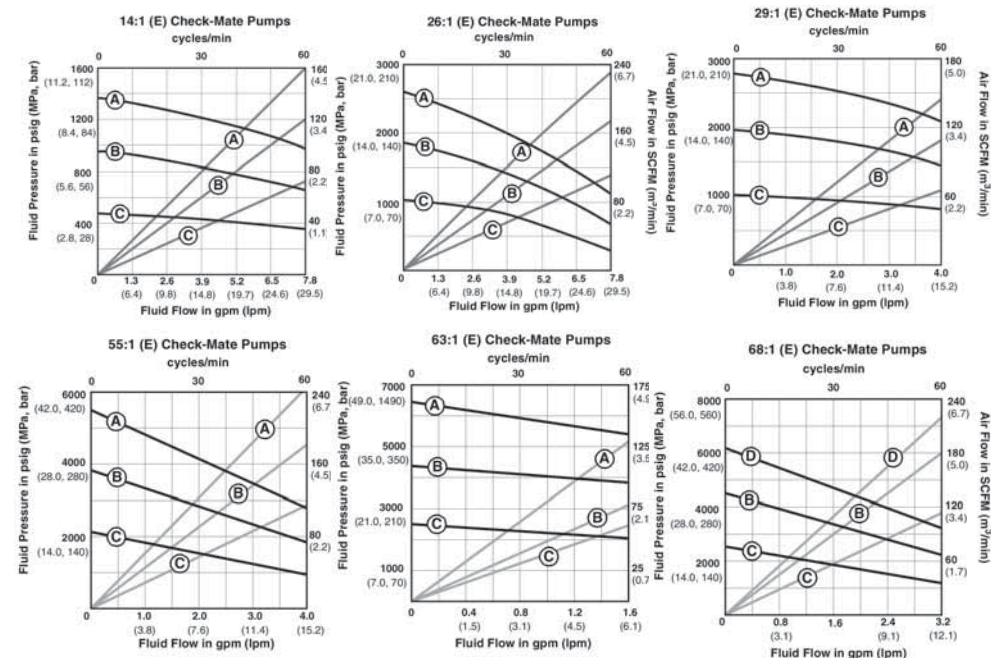
*Graco recommends 20 cpm or less for supply applications

Performance Charts

A = 100 psi (7 bar)
B = 70 psi (5.0 bar)

C = 40 psi (2.8 bar)
D = 90 psi (6.3 bar)

Test Fluid : #10 Weight Oil for all pumps



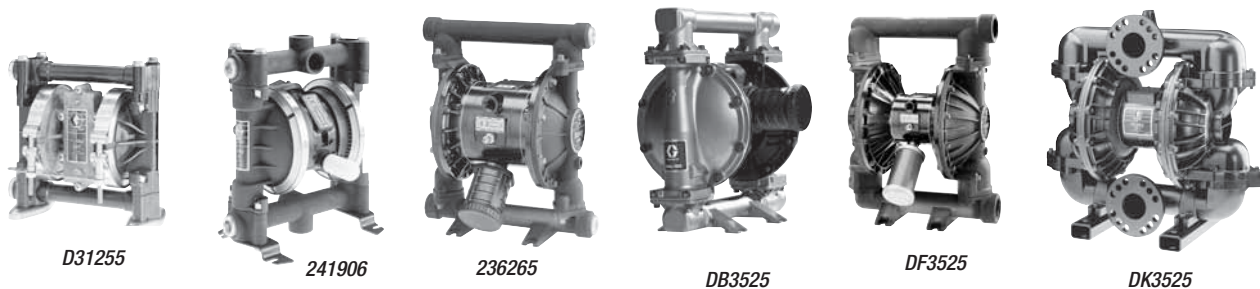
Ordering Information

NXT Check-Mate RAM Packages			
Ratio	14:1	63:1	68:1
Package Number	247979	247980	247981
Mounting	RAM System		
Operation Manual	312371		
Repair and Parts Manual	312373		



Diaphragm Pumps

Air-Operated Double Diaphragm Transfer Pumps



Ordering Information and Technical Specifications

Key	OT = Oil Transfer	OE = Oil Evacuation	WA = Water, Anti-Freeze		FD = Fuel Dispense (with 50 psi relief valve)			FT = Fuel Transfer	WWS = Windshield Wash Solution			
Body/Diaphragm Description		Part Number	Typical Application	Max. Air SCFM	Air Inlet NPT	Max. psi (bar)	Fluid Inlet/ Outlet	Free Flow gpm (lpm)	Air Valve Replacement Kit	Kits (Seats, Balls, Diaphragms)	Diaphragm Kit	Manual
307 3/8 in Diaphragm Pump Acetal/TPE		D31255	OT, WA, WWS	7 ⁽¹⁾	1/4	100(7)	3/8	7 (31.8)	239952	D03255	D03005	308553
515 3/4 in Diaphragm Pump Aluminum/Buna N		241906	OT, OE, WA, WWS	28 ⁽¹⁾	1/4	100(7)	3/4	16 (60.6)	241657	D05277	D05007	308573
716 3/4 in Diaphragm Pump Acetal/Buna Dual Inlet		243669	50/50 WWS, WA	28 ⁽¹⁾	1/4	100(7)	3/4	16 (61)	241657	D05277	D05007	308573
1 in Diaphragm Pumps 1050A Aluminum/TPE (UL)		647016	OT, WA, OE, FT, WA, FD	67	1/2	125 (8.6)	1	50 (189)	24B766	24B634 and 24B639	24B624	313597
1050A Aluminum/TPE (UL)		647648		20 ⁽²⁾	1/2	50 (3.4)	1	32 (121)				313597
1050A Aluminum/TPE		647666		67 ⁽²⁾	1/2	125 (8.6)	1	50 (189)				312877
1590 1-1/2 in Diaphragm Pump Aluminum/TPE		DB5525	OT, OE, WA	90 ⁽³⁾	1/2	120 (8.3)	1 1/2	90 (341)	236273	D0B525	D0B005	308441
2150 2 in Diaphragm Pump Aluminum/TPE		DF3525	OT, OE, WA	175 ⁽³⁾	1/2	120 (8.3)	2	150(567)	236273	D0F525	D0F005	308368
3275 3 in Diaphragm Pump Aluminum/TPE		DK3525	OT, OE, WA	325 ⁽³⁾	3/4	120 (8.3)	3	275 (1,041)	238765	D0K525	D0K005	308639

NOTE: All pumps are 1:1 ratio ⁽¹⁾ Max air use at 100 psi (7.0 bar) ⁽²⁾ Max air use at 125 psi (8.6 bar) ⁽³⁾ Max air use at 120 psi (7.0 bar)

Mounting Accessories

Pump	307	515/716	1040	1590	2150	3275
Air Line Filter	110146		106148	106149	106150	106150
Air Regulator & Gauge	110147	110147	244844	202858	206199	207651
Air Quick-Connect Coupler	208536, 1/4 npt(f)		110199, 1/2 npt(f)			N/A
Air Quick-Connect Nipple	169970, 1/4 npt(m)		110196, 1/2 npt(f)			N/A
Bleed Type Air Valve	110223		110224	110225		110226
Wall Bracket	224835		189233	N/A	N/A	N/A
Thermal Relief Kit	238899	238428		N/A	N/A	N/A
Thermal Relief Valves 150 psi (10.3 bar)	113497 al/bn, 112119 ss/tf		113497 al/bn , 112119 ss/tf			
Grounding Wire and Clamp	222011					
Suction Hose Kit	236054			N/A	N/A	N/A
Flange Adapter Kit	N/A	N/A	N/A	N/A	N/A	N/A
Dual Inlet Manifold	N/A	*	685984 **	N/A	N/A	N/A
Instruction Manual	308553	308573 & 308981	308326 & 308479	308441	308368	308639

*243669 comes with dual inlet **Dual inlet must be ordered separately for 685984

Fast-Flo® 1:1

Transfer Pumps

Features and Benefits

- Stainless steel models available for corrosion resistance
- Differential air motor for smooth operation and reliability

Typical Applications

- Low pressure, high volume transfer of low viscosity fluids
- Automotive dealerships
- Heavy duty dealerships
- Fast lube centers
- Fleet service facilities
- Service shops
- In-plant
- Lube trucks
- Mining

Typical Fluids Handled

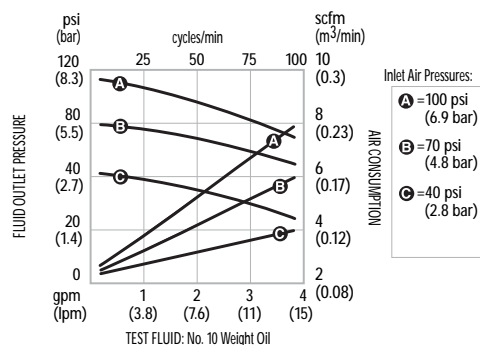
- Water
- Anti-freeze
- Windshield wash fluid
- Used Oil
- Used Anti-freeze

NOTE: Use Fast-Ball 1:1 for petroleum-based products.

226948

226947

Performance Chart



Manual 307427	Flow Rate gpm (lpm)	Maximum Fluid Pressure psi (bar)	Operating Range ⁽¹⁾ psi (bar)	Wetted Materials	Air Inlet Size	Material Inlet ⁽²⁾	Material Outlet
Fast-Flo 1:1							
	5 (19)	180 (12.4)	40-180 (2.8-12)	See Ordering Info	1/4 npt(f)	1-1/2 npt(f)	3/4 npt(f)
Line Length: Up to 100 ft (30 m) Annual Usage: Up to 5000 g (18921 l)				Dispense Points: 1 Typical Applications: In-Plant, Small Maintenance Facility			

(1) Max Operating Air Pressure for #226951 is 60 psi (4.2 bar)

(2) For universal pumps

Fast-Flo® 1:1

Transfer Pumps

Ordering Information

Universal-Length Pumps (includes motor and pump-lower assembly)

Part Number	226948	226952	237130	237131	237132	226943 *	226944 **	226945 **
Material	CS	SST	CS	CS	SST	CS	CS	SST
Std. Seal Repair Kits	218112	218112	213012	213013	213013	213012	215964	215964
Material	Rubber	Rubber	Leather	PTFE	PTFE	Leather	Polyethylene	Polyethylene
Typical Fluids	Motor Oil						Anti-Freeze, Windshield Wash	

(Note: All seal repair kits are interchangeable with other Fast-Flo pumps.)

Drum-Length Pumps (includes motor and pump-lower assembly)

Part Number	226947	226951 †	226953	237133	237134	237129	226940	226941	226942
Accessories									
Wetted Parts	CS	CS	SST	CS	CS	SST	CS	CS	SST
Std. Seal Repair Kits	218112			213012	213013		213012	215964	
Material	Rubber			Leather	PTFE		Leather, PTFE, Leather	Polyethylene, UHMWPE	
Typical Fluids	Motor Oil								A/W

Note: All seal repair kits are interchangeable with other Fast-Flo pumps.

* UL-listed

** UL-listed and CE-marked

† Adjustable down tube length between 18 in (457 mm) to 46.4 in (1180 mm)

Accessories

Motor Service Kits for all Fast-Flo 1:1 Pumps

220168	Motor Service Kits for all Fast-Flo 1:1 Air Valve Piston Assembly (used with repair kit #214584, which must be ordered separately)
--------	--

Hose and Fittings Kits

222118	18 in (0.5 m) for connecting wall-mounted Fast-Flo 1:1 pumps to piping. Includes: air hose (109123) with swivel elbow (155541), fluid hose (109108) with swivel elbow (160327).
222119	6 ft (1.8 m) for use with drum-mounted Fast-Flo 1:1 pumps. Includes: air hose (109125) with swivel elbow (155541), fluid hose (109105) with swivel elbow (160327).

Bung Adapters

214583	Allows direct mounting of full-length Fast-Flo 1:1 pumps into standard 2 npt drum bung.
217359	Sealed bung adapter for Fast-Flo pumps; can be used with suction kit #236054

Installation Kits

218316	Includes shut-off valve, regulators, gauges and fittings as necessary for normal installation.
--------	--

Hurricane™

Dispense System

Features and Benefits

- Electric pump with 6 ft (1.8 m) grounded power cord
- Digital metering standard on all units
- Quick-change bung adapter
- Pumps synthetic or petroleum based oils, ATF and antifreeze (up to 50/50 mix)
- Simple two button operation
- Fits any container up to 44 in (1.1 m) tall with a 2 in =NPT opening
- Measures in quarts, gallons, pints or liters
- Available with 8 ft or 25 ft (2.4 m or 7.6 m) meter and hose or built-in taper
- Variety of portable package options

Typical Fluids Handled

- Synthetic Oil
- Petroleum Based Oils
- ATF
- Antifreeze (50/50 mix)



234902 and 249294 Hurricane with meter & hose

Technical Specifications

Voltage	110 Volts / 60 Hz
Maximum current	6 Amps
Flow rate	1.50 gpm (6.0 lpm)
Maximum container height	44 in (1.1 m)
Weight (varies by model)	Up to 20 lbs (9 kg)
Meter accuracy	± 1.5%
Instruction manual	311216

ETL listed in US and Canada



249771 and 249821 Portable package with 25 gallon dispense cart



253486 and 253494 Portable package 16 gallon barrel not included

Ordering Information

Hurricane Dispense Systems	
248918	Hurricane metered taper unit
234902	Hurricane 8 ft (2.4 m) hose and meter
249294	Hurricane 25 ft (7.6 m) hose and meter
Portable Packages with 25 Gallon Dispense Cart	
249783	Hurricane metered taper unit
249771	Hurricane 8 ft (2.4 m) hose and meter
249821	Hurricane 25 ft (7.6 m) hose and meter
Portable Packages for 16 Gallon (60 l) Barrels	
253487	Hurricane caster base with metered taper
253486	Hurricane caster base with 8 ft (2.4 m) hose and meter
253494	Hurricane caster base with 25 ft (7.6 m) hose and meter
Accessories	
253683	Hurricane caster base



234902 and 249294 Hurricane with meter & hose



248918 Hurricane taper unit

APEX™ and APEX On-Demand Electric Transfer Pumps

APEX Transfer Pumps

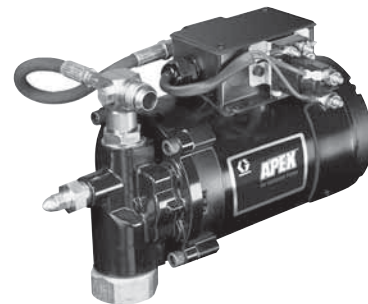
- Available with 12 VDC, 115 VAC and 230 VAC electric motors
- Self-priming, positive displacement design
- Pumps petroleum- and synthetic-based lubricants up to 8 gpm (30 lpm)
- Built-in bypass valve
- Transfer used oil with inlet suction screen (260306)
- TENV electric motor for demanding environments, models 260105, 260106, 260108 and 260109
- System includes suction tube, fluid hose, dispense valve and bung adapter for models 260100, 260101, 260102 and 260104



APEX 115 VAC oil transfer system

APEX On-Demand Dispensing Pumps

- On-demand sensing system automatically starts and stops the pump
- Low operating and installation costs
- Available in 12 VDC and 115 VAC
- TENV electric motor for demanding environments
- Extremely quiet pump operation
- Output flow is continuous and non-pulsating
- Inlet and outlet check valves with thermal relief valves included



APEX On-Demand
12 volt DC dispensing pump

Typical Applications

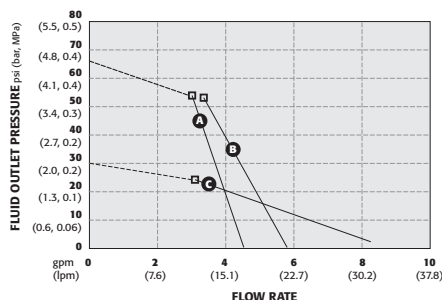
- Filling bulk tanks from drums
- Agricultural equipment
- Lubricant transfer from remote locations
- Filling in-plant machinery
- Construction equipment
- Evacuating used oil receivers
- Automotive and truck service garages
- Fleet marine and personal boat service

Typical Fluids Handled

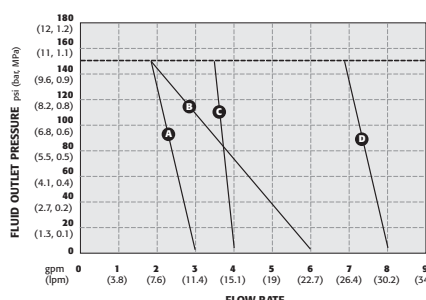
- Synthetic oil
- Petroleum oil*
- Used oil*
- Anti-freeze
- Hydraulic fluids
- Cutting oils
- Liquid soap
- Non-flammable oil based solvents
- Oil based herbicide carriers

*Not for food grade use

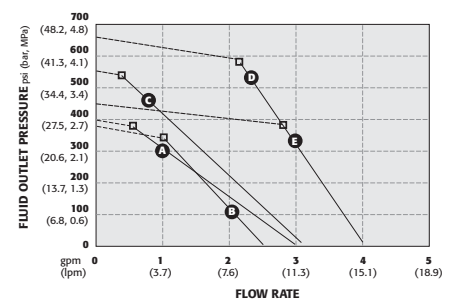
Performance Charts by Part Number



PART NUMBERS	LEGEND
A=260101, 260104	Relief valve opens
B=260100	Relief valve opens
C=260102	Relief valve opens



PART NUMBERS	LEGEND
A=260105, 260106	Relief valve opens
B=260108	Relief valve opens
C=260240	Relief valve opens
D=260109	Relief valve opens



PART NUMBERS	LEGEND
A=260112	Pressure switch opens
B=260110	Pressure switch opens
C=260111	Pressure switch opens
D=260114	Pressure switch opens
E=260113	Pressure switch opens

APEX™ and APEX On-Demand Electric Transfer Pumps

APEX Transfer System

Part Number	260100	260101	260102*	260104
Motor	12 VDC	115 VAC	115 VAC	230 VAC
Hertz	NA	60 Hz		50/60 Hz
Horsepower	0.75	0.50	0.75	0.50
Maximum Current	35 amps	9.2 amps	9.0 amps	3.9 amps
Maximum Flow Rate	5.8 gpm (22 lpm)	4.25 gpm (16 lpm)	8.0 gpm (30 lpm)	4.25 gpm (16 lpm)
Maximum Pressure	65 psi (4.5 bar)		30 psi (2.1 bar)	65 psi (4.5 bar)
Inlet port	1 npt(f)			
Outlet port	3/4 npt(f)			
Weight	34 lbs (15 kg)	25 lbs (11 kg)		
Instruction manual	311305			

Note: All oil transfer systems come with 3/4 in x 8 ft hose, 1 in x 3/4 in suction tube & 3/4 in outlet dispense valve
 *Designed for fluid viscosities of 1000 centistokes or less. If fluid viscosity is greater than 1000 centistokes use part # 260101.

APEX Transfer Pumps

Part Number	260105*	260106	260108	260109
Motor	115 VAC			
Hertz	60 Hz			
Horsepower	1.00			
Maximum Current	7.5 amps		9.0 amps	11.0 amps
Maximum Flow Rate	3.0 gpm (11 lpm)		4.0 gpm (15 lpm)	8.0 gpm (30 lpm)
Maximum Pressure	150 psi (10 bar)			
Inlet port	1 npt			
Outlet port	3/4 npt			
Weight	25 lb (11 kg)			30 lb (14 kg)
Instruction manual	311306			

Note: All oil transfer pumps come with bung adapter.
 *Part no. 260105 is a wall mount unit

APEX On-Demand Pumps

Part Number	260110	260111	260113	260114	260112
Voltage	115 VAC				12 VDC
Hertz	60 Hz				N/A
Horsepower	0.75	1.00	1.50	2.00	0.75
Maximum Current	10 amps	13 amps	18 amps	21 amps	75 amps
Maximum Flow Rate	2.3 gpm (9 lpm)	3 gpm (11 lpm)	4.0 gpm (15 lpm)		3 gpm (11 lpm)
Maximum Pressure	370 psi (25 bar)	550 psi (38 bar)	470 psi (32 bar)	650 psi (45 bar)	400 psi (28 bar)
Inlet port	3/4 npt				
Outlet port	-12 JIC (m)				
Weight	27 lb (12 kg)	32 lb (15 kg)	41 lb (19 kg)	52 lb (24 kg)	27 lb (12 kg)
Instruction manual	311307				

Note: All on-demand pumps come with bung adapter

Accessories	
260415	Oil Meter with 3/4" npt inlet and outlet ports. Displays in quarts.
260145	Wall Mounting Bracket, fits all models
260238	"Y" Strainer with 3/4" npt female in-line strainer for used oil transfer
260306	Inlet Suction Screen Assembly, required for used oil applications, 20 mesh screen
260124	55 in (1.3 m) PVC Suction Tube With inlet check valve



260415 Oil meter

GTP10 and GTP12

Fuel Transfer Pumps

Features and Benefits

- Heavy duty, die-cast aluminum
- CSA listed motor
- Built-in relief valve and filter strainer
- Easy-to-lock security
- High quality, UV resistant automotive finish
- Rain proof for extreme weather conditions
- Two year warranty

Typical Applications

- Fuel transfer for the construction, agriculture, manufacturing and marine industries

Typical Fluids Handled

- Gasoline
- Diesel fuel
- Kerosene
- Bio-fuels



Fuel Transfer Kit: Includes pump, fuel nozzle, bung adapter, 34 in (0.9 m) suction tube, 12 ft (3.7 m) grounded hose, elbow fitting, 18 ft (5.5 m) power cable, wire nuts and strain relief

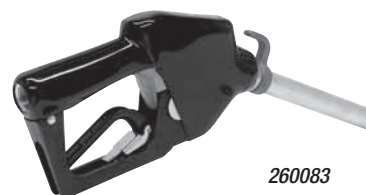
NOTE: AC units do not include power cable, wire nuts or strain relief

Ordering Information

Kit Number	260000	260020	260025	260022
Voltage	12 VDC	24 VDC	115 VAC	230 VAC
Inlet Port	1 npt			
Outlet Port	3/4 npt			
Current	12 amps	6 amps	1.7 amps	1 amps
Power Cord	18 ft (5.5 m)		N/A	
Hose	3/4 in x 12 ft (19 mm x 3.7 m)			
Suction Tube	1 in x 34 in (25 mm x 0.9 m)			
Weight	20 lbs (9 kg)			
Max Fluid Flow	10 gpm (38 lpm)		12 gpm (45 lpm)	
Instruction Manual	311304			

Accessories

260078	Unleaded nozzle
260083	Unleaded nozzle with auto shut-off
260082	Regular/diesel nozzle with auto shut-off
260079	Regular/diesel nozzle
260523	8 ft x 3/4 in (2.4 m) npt UL Listed hose
260521	12 ft x 3/4 in (3.7 m) npt UL Listed hose



260083

Lube Truck Package Solutions

Fire-Ball® Oil and Grease Packages

Oil Package Selection and Ordering Information

	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 300 Bung-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Bung-Mounted Package
Ratio	5:1			10:1	
Container Size	16 gal (60 l) Open-head	55 gal (200 l) Closed-head†			55 gal (200 l) Closed-head†
Package No.	222086	206655	204264	206656	222067
Bare Pump No.	203872	203857	204254	222065	222095
Hose/Fitting Kit	222063			222066	
Hose Length	6 ft (1.8 m)	6 ft (1.8 m)	6 ft (1.8 m)	6 ft (1.8 m)	6 ft (1.8 m)
Air Regulator	(1)	(1)	(1)	(2)	(2)
Hold-Down Kit	222061	207361			
Drum Cover	222060	207367	-	207367 ⁽³⁾	-
Bung Adapter	-	-	204076 (2.140 in Dia.)	-	224579 (2.159 in Dia.)
Pump Clamp	-	-	204095	-	204095
Instruction Manual	307883				

† For closed-head drums, pump mounts off-center on drum cover. Pump draws through standard 2 npt bung opening and is equipped with grommet for rain-tight seal to the drum cover.

(1) Order 3/8 in (9.5 mm) air regulator and gauge separately, #109075.

(2) Order 1/2 in (12.7 mm) air regulator #104266 and gauge #100960 separately.

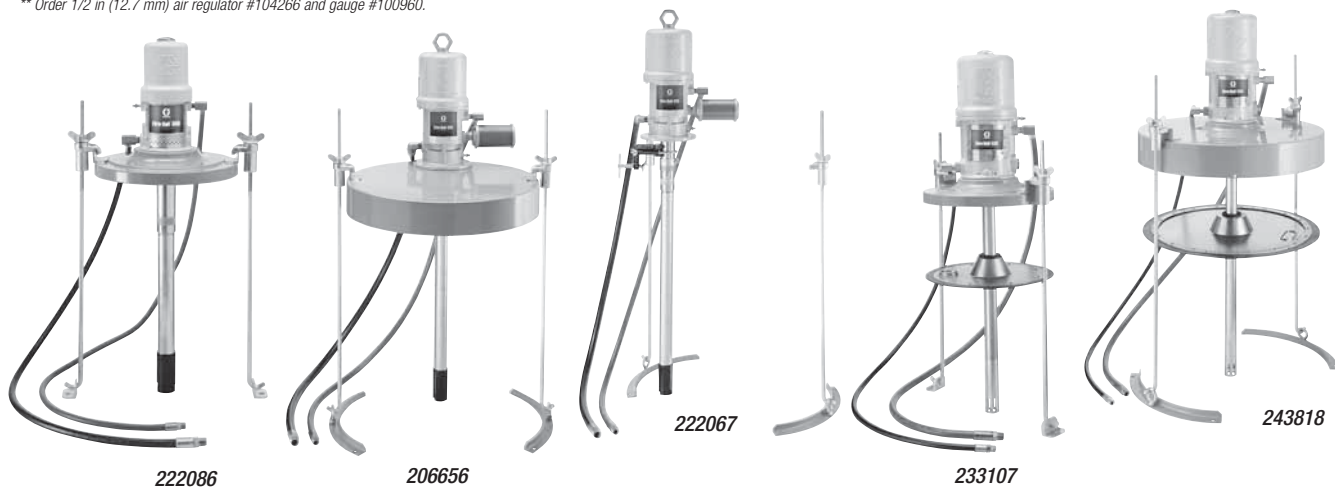
(3) Off set drum cover

Grease Package Selection and Ordering Information

	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package
Ratio	50:1				75:1	
Container Size	120 lb (55 kg) Open-head	400 lb (180kg) Open-head	120 lb (55 kg) Open-head	400 lb (180 kg) Open-head	120 lb (55 kg) Open-head	400 lb (180 kg) Open-head
Package No.	222085	222071	223107	222075	243817	243818
Bare Pump No.	239887	239888	205394	205395	239729	239730
Hose/Fitting Kit	222072		222076			
Hose Length	6 ft (1.8 m)					
Air Regulator	*		**			*
Hold-Down Kit	222061	207361	222061	207361	222061	207361
Drum Cover	222060	207366	222060	207366	222060	207366
Follower Plate	220654	223845	223344	223846	223344	223846
Instruction Manual	307880					

* Order 3/8 in (9.5 mm) air regulator and gauge separately, #109075.

** Order 1/2 in (12.7 mm) air regulator #104266 and gauge #100960.



Undercoating/Rust-Proofing Packages

Fire-Ball® 300, 15:1 Packages

Features and Benefits

- Available in carbon steel for petroleum-based or SST for water-based materials
- Durable air motor provides trouble-free operation

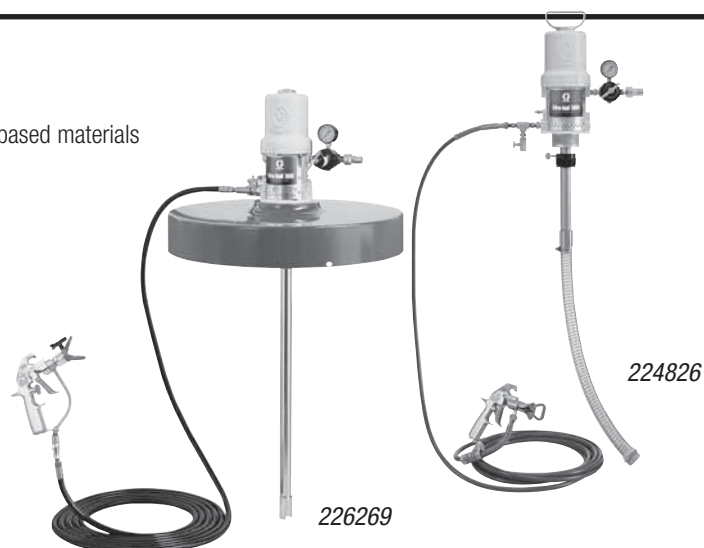
Typical Applications

- Undercoating, rust-proofing and sound-deadening materials
- Automotive and heavy-duty vehicle dealerships
- Fast lube centers and service shops
- Fleet service facilities

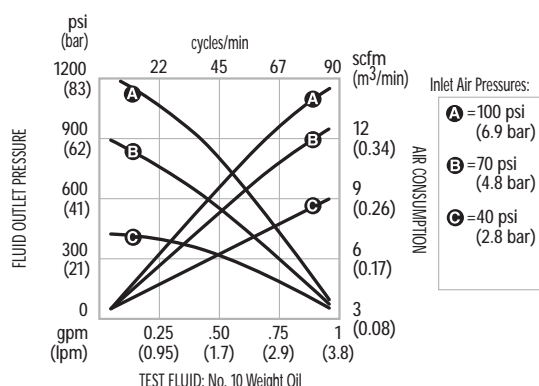
Typical Fluids Handled

- Undercoating and rust-proofing

(verify chemical compatibility for pump's wetted components with undercoating material supplier or contact Graco directly at 1-800-533-9655)



Pump Performance



Technical Specifications

Maximum Fluid Pressure	2700 psi (186 bar)
Effective Air Motor Diameter	3 in (76.2 mm)
Operating Range	40 to 180 psi (2.8 to 12.5 bar)
Continuous-Duty Flow Rate	.07 gpm (2.7 lpm)
Approx. Air Consumption @ 100 psi (7 bar)	17 cfm
Air Inlet	3/8 npt(f)
Material Outlet	1/4 npt(f)
Material Inlet for Non-SST Pump	1 npt (straight inlet)
Material Inlet for 224825 (SST Pump)	1 npt (barbed inlet)
Wetted Parts for Non-SST Pump	CS, Aluminum, PTFE, Rubber
Wetted Parts for SST pump	SST, Aluminum, Leather, PTFE, Rubber
Instruction Manual for non-SST Pump	306531
Instruction Manual for SST Pump	308069

Ordering Information

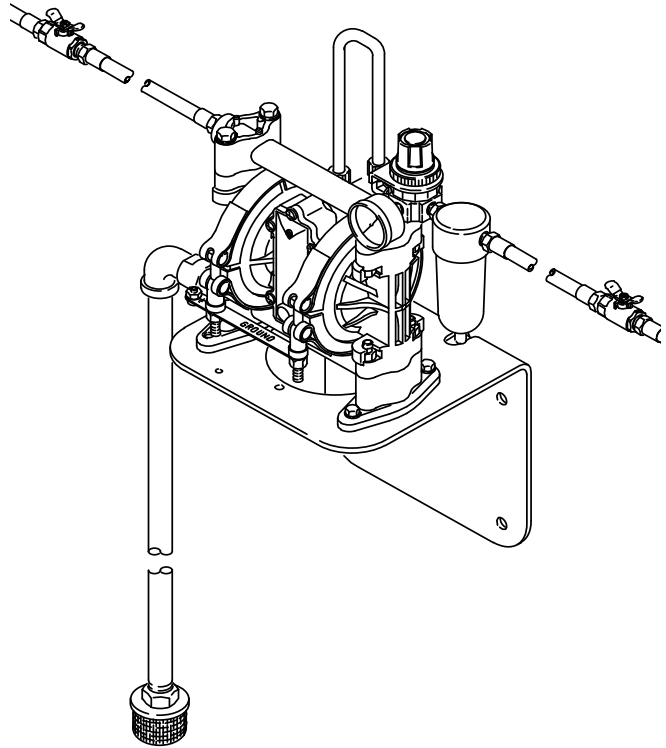
	Undercoating			Spray Masking
Style	Portable	Portable Dolly Mounted	Stationary	Bung Mounted Stationary
Container Size	35 lb (16 kg)	120 lb (54 kg)	400 lb (180 kg)	400 lb (180 kg)
Package No.	222077	226342	226269	224826*
Pump	206405	206699	206700	224825 (SST pump)
Dispense Kit	222079	222079	222082	224023
Tip		286517		286211 / 286621
Hose Length	15 ft (4.6 m)	15 ft (4.6 m)	25 ft (7.6 m)	25 ft (7.6 m)
Cover	222058	204574	200326	-
Caster Base	-	204144	-	-
Instruction Manual	307879/306531			308069

* Package #224826 includes flexible short tube #224022 long enough for 400 lb (180 kg) container, but can be trimmed to accommodate smaller containers.

214570	60-mesh Aluminum filter (3/8 npt(f) inlet; 1/4 npt(f) outlet) Max. working pressure: 3000 psi (210 bar)
Replacement Screen Elements (SST) 3-pack/25-pack 238435/238436 30-mesh 238437/238438 60-mesh 238439/238440 100-mesh	
202577	Z-Swivel allows non-binding movement for hard-to-reach spots. Order 155570 adapter separately to accommodate 234237 gun
206496	Nozzle Extension delivers 360° coating fan into blind areas. Length 30-3/4 in (99 cm) x 7/8-14(f) end. Tip 206502, size .043
234237	4 Finger Silver Gun with tip guard 243161 and tip 286517. 4500 psi (310 bar) x 3/8 npt(f) inlet. Must order 155570 adapter and 239663 straight swivel to accommodate gun to 1/4" (mbe) hose
239966	Bung Adapter

Windshield Wash and Coolant Dispense

Pump Package Solutions



Packages for Pre-Mixed Windshield Wash Solvent and Coolant Dispense

Powered by the 307 air-operated double-diaphragm pump, this package is designed for transferring and dispensing pre-mixed windshield wash and coolant.

237161 Complete Package Includes the Following:*

307 Diaphragm Pump (D31255), 6 ft (1.8 m) air hose (109125), 4 ft (1.2 m) coupled nitrile fluid hose (220596), 3/8-18 npt x 1/2-14 npt (mbe) air filter (110146), air gauge (108190), air line fitting (111511), 1/4 npt air regulator (110318), elbow (100611), 15 in (381 mm) 3/8 in ID tube, (187479), mounting bracket (190125), adapter (156022), 1/4-18 npt nipple (156971), suction hose kit (223888), 6 ft (1.8 m) coupled PVC hose and 304 SST 16 mesh strainer, wall bracket (224835).

237160 Includes all items listed above except diaphragm pump and wall bracket.

Bulk Anti-Freeze and Windshield Solvent Transfer Packages

Description	1040 AODD	1040 AODD	716 AODD	716 AODD
	Dual Inlet	Single Inlet	Dual Inlet	Single Inlet
Package Number	244679	244680	244681	244682
Pump	236265		243669	241906
Air Regulator	109075		110147	
Fluid Connect Hose	115042		109105	
Air Connect Hose	205418		109125	
Air Shut-off Valve	110224		110223	
Wall Mount Bracket	189233		224835	
Dual Inlet Manifold	685984	—	—	—
Suction Kit	2-236054	236054	2-236054	236054
Thermal Relief Kit	238428		113497	
Instruction Manual	309353			

Dyna-Star® and Power-Star™ Pumps For Oil and Grease Applications

Features and Benefits

- Ties into existing hydraulic systems on mobile equipment
- Operates quieter than air driven pumps and doesn't require mufflers
- Eliminates the need for air compressors
- Provides self-lubrication for long life and reliability
- Hydraulic changeover is faster with less pulsation allowing smoother output pressure, even with long plumbing runs

Typical Applications

- Low pressure, high volume oil transfer
- High pressure, high volume grease dispense
- Heavy-duty dealerships
- Fleet service facilities
- Service shops
- In-plant
- Lube trucks
- Mining

Typical Fluids Handled

- Petroleum and synthetic based oils
- Grease up to NGLI #2



Ordering Information for Oil Packages

Oil Applications	Power-Star 1:1	Dyna-Star® 1:1	Dyna-Star 1:1	Dyna-Star 1/4:1	Stainless Steel Dyna-Star 1:1
Drum Size	Universal		55 gal (200 l) Bung- or Cover-Mounted	Universal	
Pump No.	236754	224741	224742	236753	237653
Max. Input Pressure	1500 psi (102 bar)				
Max. Fluid Input Volume	12 gpm (45.4 lpm)	3 gpm (11.4 lpm)			
Max. Output Flow Rate	12 gpm (45.4 lpm)	3 gpm (11.4 lpm)		10 gpm (37.9 lpm)	3 gpm (11.4 lpm)
Maximum CPM	60				
Max. Fluid Output Pressure	1500 psi (102 bar)			375 psi (25.1 bar)	1500 psi (102 bar)
Hydraulic Supply Inlet	3/4 npt	3/8 npt	3/8 npt	3/8 npt	3/8 npt(f)
Hydraulic Return Outlet	1-1/4 npt	3/4 npt	3/4 npt	3/4 npt	3/4 npt(f)
Fluid Outlet	1/2 npt	1/2 npt	1/2 npt	1/2 npt	1/2 npt(f)
Fluid Inlet	1-1/2 npt				
Max. Incoming Fluid Temp.	130° F (54° C)				
Instruction Manual	308391	308155		308390	308155
Applications	Bulk oil transfer	Oil dispensing		Bulk oil transfer	Anti-freeze dispensing

Dyna-Star® and Viscount® II Pumps For Oil and Grease Applications

Ordering Information for Grease Packages

Grease Applications	Dyna-Star 5:1	Dyna-Star 10:1	Viscount II 2.4:1
Part No. – Drum Size	224912 – 35 lb (16 kg) 224751 – 120 lb (55 kg) 224752 – 400 lb (180 kg)	247540 – 60 lb (27 kg) 247443 – 120 lb (55 kg) 247450 – 400 lb (180 kg)	222902 – 400 lb (180 kg)
Max. Input Pressure	1500 psi (102 bar)	600 psi (41 bar)	1500 psi (102 bar)
Max. Fluid Input Vol.	3 gpm (11.4 lpm)		7.5 gpm (28.5 lpm)
Max Flow Output Rate	4 lb/min (1.8 kg)	1.1 lb/min (0.5 kg)	9 lb/min (4.1 kg)
Maximum CPM	60		
Max. Fluid Output Pressure	7500 psi (517 bar)		2300 psi (159 bar)
Hydraulic Supply Inlet	3/8 npt	3/4-16 in. JIC (37° Flare)	3/4 npt
Hydraulic Return Outlet	3/4 npt		1 npt
Fluid Outlet	1/2 npt		1-1/2 npt
Maximum Incoming Hydraulic Fluid Temp.	130° F (54° C)	200°F (93°C)	130°F (54°C)
Instruction Manual	308149	247540, 247443, 247450	308149

Hydraulic Fluid Controls (Required for each pump)

236864	Dyna-Star Fluid Controls [1500 psi (102 bar); 3 gpm (11.4 lpm)]. Includes manifold with pressure-reducing valve, flow control valve, pressure gauge, shut-off ball valves and 3 ft (0.9 m) supply and return hoses. Instruction manual 308395.
236865	Power-Star Fluid Controls [1500 psi (102 bar); 12 gpm (45.4 lpm)] Includes manifold with pressure-reducing valve, flow control valve, pressure gauge, shut-off ball valves and 3 ft (0.9 m) supply and return hoses. Instruction manual 308395.
237904	1:1 Dyna-Star Thermal Relief Valve, 1600 psi (110 bar)
235998	Mini Fire-Ball 225, 3:1 thermal relief valve rated to 600 psi (41 bar)

Accessories

Follower Plates		Covers		Tie-Down Covers	
224916	Follower plate for 35 lb (16 kg)	224915	Cover for 35 lb (16 kg)	222060*	Tie-Down Cover for 120 lb (55 kg)
223700	Follower plate for 120 lb (55 kg)	204574	Cover for 120 lb (55 kg)	207366**	Tie-Down Cover for 400 lb (180 kg)
223701	Follower plate for 400 lb (180 kg)	200326	Cover for 400 lb (180 kg)	*Use with hold-down kit #222061 **Use with hold-down kit #207361	



222902



236754



224741



247540

Manual Pumps

For Oil and Grease

16 Gallon (60 l) Metered and Non-Metered Dispensing Packages

Designed for manual dispensing of fluid oil from bulk containers to point of application.

Description	Portable Metered ATF Dispenser	Portable Metered Gear Lube Dispenser	Cart-Mounted Metered Gear Lube Dispenser	Stationary Non-Metered Gear Lube Dispenser	Portable Non-Metered Gear Lube Dispenser
Package No.	225880	225376	225384	225380	225378 *
Pump No.	204867				
Metered Dispense Kit	239707	239705		-	-
Dispense Kit	-	-	-	214658	214658
Hose Diameter	-	-	1/2 in (12.7 mm)		
Hose Length	-	-	6 ft (1.8 m)		
Drum Cover	204574				
Caster Base	203622		-	-	203622
Cart	-	-	203650	-	-
Instruction Manual	306436				

* Hydraulic; can be used for gear oil dispensing.

Pail Dispensing Package for 5 gal (20 l) Pails

Mounts on top of a standard 5 gal (20 l) pail (pail not included). Delivery hose has curved nozzle that stores in cover port.

Description	Economy Gear-Lube Dispenser (Dispenses 1.6 to 1.9 oz. [47.3 to 56.2 ml] per stroke)
Package No.	226289
Hose length	4 ft (1.2 m)
Instruction manual	306875



Manual Pumps

For Fluid Transfer

Pumping Bulk Lubricants out of 16 gal (60 l) or 55 gal (200 l) Drums*

All pumps come with suction tube and bung adapter.

Description	Lever Pump**	Rotary Pump†	Hand-Lever Diaphragm Pump‡
Pump No.	114829	226290	112202
Delivery rate	0.1 gal (0.4 l) per downstroke	1 gal (3.7 l) per 18 cycles	1 gal (3.7 l) per 9 cycles
Fluids Handled	Petroleum-based products, Anti-freeze	Petroleum-based products	Petroleum-based products+
Hose Length	-	-	8 ft (2.5 m)
Instruction manual	308896	306876	-

*Drums not included

** Telescopic suction tube mounts 2 npt bung opening of 16 gal (60 l) or 55 gal (200 l) drum. Package includes bung adapter and spout outlet.

† Package has adjustable 2 npt bung mounting to allow use with either 16 gal (60 l) or 55 gal (200 l) drum. Package includes bung adapter and spout outlet.

‡ A double-action high volume pump for gasoline and similar petroleum products. Fits 30 gal (113 l) to 55 gal (200 l) drum. Complete with an 8 ft (2.4 m) hose with 3/4 in fittings and aluminum telescoping suction pipe. Delivers approximately one gallon per nine strokes.

+ This package is recommended for gasoline, diesel, heating oil and petroleum products, but NOT recommended for water-based fluids, solvents or weak acids.

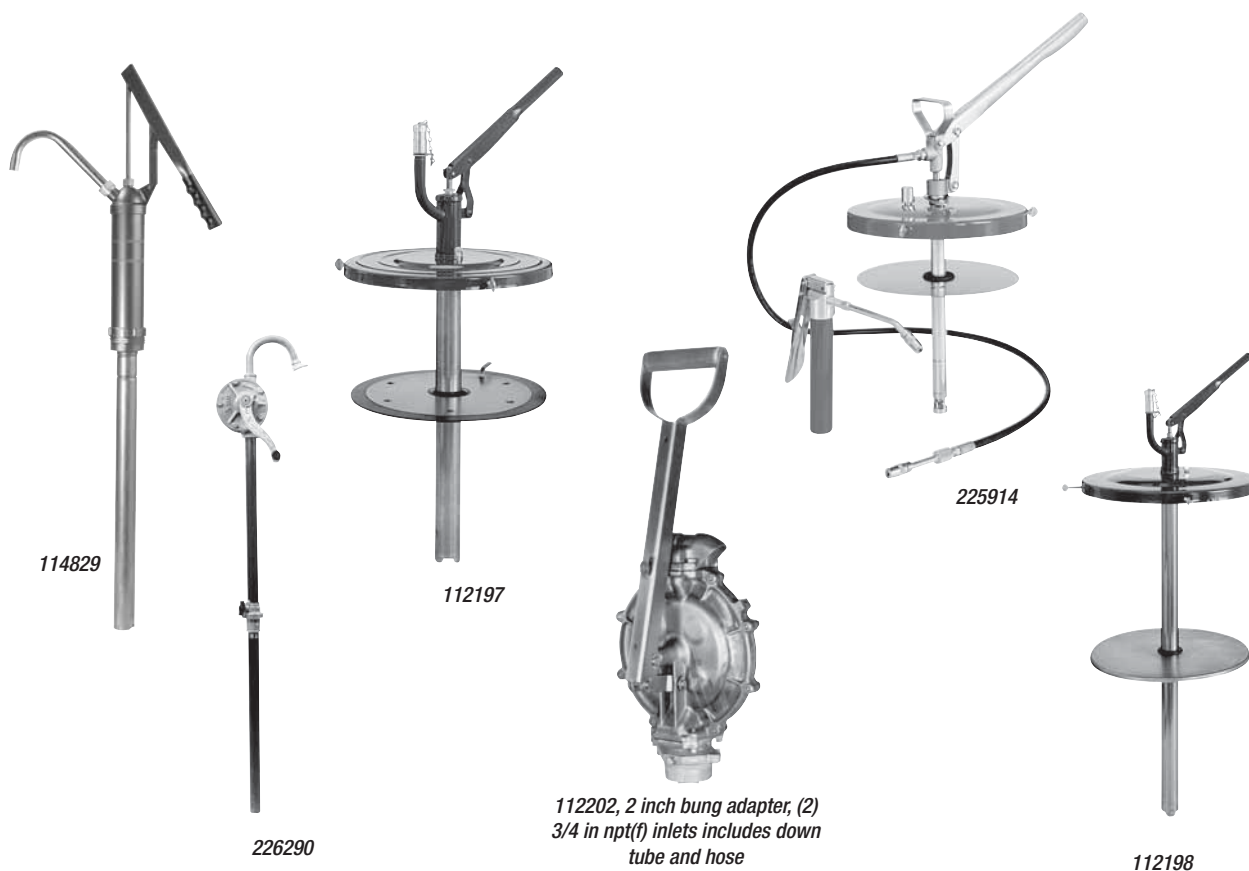
Manual Dispense from Bulk Containers

Description	Buckshot Luber with Booster Gun	Buckshot Luber without Booster Gun	Grease Gun Fill Pump	Grease Gun Fill Pump
Container Size	35 lb (16 kg)			120 lb (55 kg)
Package No.	225914 *	225844 *	112197 **	112198 **
Pump	203702		-	-
Dispense Kit	203703		Filler Adapter+	
Booster Gun	203697	-	-	-
Cover and Follower Plate	203701		-	-
Instruction Manual	306455		-	-

* Delivers 1/4 oz (0.7 grams) of grease per stroke at pressures to 3000 psi (207 bar). Can service fittings directly or be used to charge a booster gun for more efficiency at higher pressures.

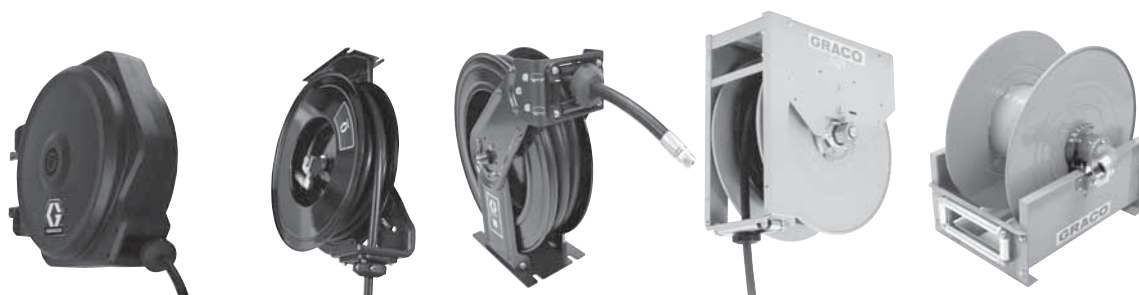
** Fills all three-way loading grease guns equipped with filler fittings. See instruction manual 308306 for filling adapters.

+ Dispense kit #203703 can be used for direct greasing applications (must be ordered separately).



Hose Reels

Selection Guide



Hose Reel	LD Series	SD Series	XD Series	700 Series	750 Series
Hose Length	Up to 65 ft (19.8 m)		Up to 75 ft (22.9 m)	75 ft (22.9 m)	50 ft (15.2 m)
Typical Application	<ul style="list-style-type: none"> • Small Maintenance Shops • Tire/Muffler Shops • Small Fast Lubes • Independent Repair Facilities • Industrial Manufacturing Facilities 	<ul style="list-style-type: none"> • Car Dealerships • Light/Medium-Duty Truck Dealers • Fleet Maintenance • Mining Maintenance • Public Works Garages • Construction Vehicle Maintenance • Light-Utility Service Trucks 	<ul style="list-style-type: none"> • Heavy-Duty Truck Dealers • Fleet Maintenance • Mining Maintenance • Public Works Garages • Construction Vehicle Maintenance • Heavy-Duty Mobile Service Trucks • Mining 	<ul style="list-style-type: none"> • Extreme-Duty Auto Dealers • Heavy-Duty Dealers • Fleet Service • Service Shops • In-Plant • Lube Trucks • Mining 	<ul style="list-style-type: none"> • Extreme-Duty Heavy-Duty Dealers • Fleet Service • Service Shops • In-Plant • Lube Trucks • Mining
Typical Fluids	<ul style="list-style-type: none"> • Petroleum– and Synthetic–Based Oils • Grease • Air only • Air/Water 	<ul style="list-style-type: none"> • Petroleum– and Synthetic–Based Oils • Grease • Air • Water • Anti-Freeze • Windshield Washer 	<ul style="list-style-type: none"> • Petroleum– and Synthetic–Based Oils • Grease • Fuel Evac • Pressure Wash • Air • Water • Anti-Freeze • Windshield Washer 	<ul style="list-style-type: none"> • Petroleum– and Synthetic–Based Oils • Air • Water • Anti-Freeze • Windshield Wash • Used Oil and Anti-Freeze • Fuel 	<ul style="list-style-type: none"> • Petroleum– and Synthetic–Based Oils • Water • Anti-Freeze • Unleaded and Diesel Fuels
Enclosed		Enclosure Available		Enclosure Available	

LD Series

Enclosed Hose Reels



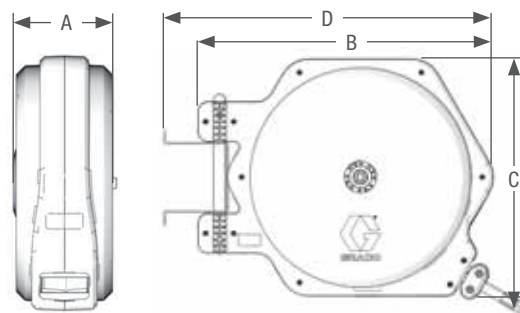
Enclosed hose reel comes with ceiling/wall mounting swivel bracket. Required inlet hose kit sold separately.

Features

- Designed for light-duty applications
- Enclosed for safety and protection, extends hose life
- Flexible mounting options—hang on wall or ceiling; bench, table or tank top-mount options are available
- Full-flow swivel maximizes fluid flow with minimal pressure drop
- Easy spring tension adjustment—increase or decrease pressure spring tension while reel is pressurized

Dimensions

LD SERIES	
A	7.1 in (180 mm)
B	23.0 in (585 mm)
C	18.5 in (470 mm)
D	25.6 in (650 mm)



Ordering Information

Technical Specifications

Applications	Model Numbers	Pressure psi (bar)	Hose id x Length		Connection Size Inlet bspt(m) x Outlet bspt(m)	Operating Temp.	WETTED PARTS	WEIGHT
Air Only	HEL13D	250 (17.2)	6 mm x 11 m	1/4 in x 35 ft	1/2 in x 1/4 in	14–140° F (-10–60° C)	Aluminum, Buna-N, Rubber, PVC	9 kg (19.8 lb)
	HEL15D	250 (17.2)	6 mm x 15 m	1/4 in x 50 ft				9.5 kg (21 lb)
Air/Water	HEL23D	250 (17.2)	10 mm x 11 m	3/8 in x 35 ft	1/2 in x 3/8 in	0–140° F (-17–60° C)	Aluminum, Buna-N, Rubber	10.4 kg (23 lb)
	HEL25D	250 (17.2)	10 mm x 15 m	3/8 in x 50 ft	1/2 in x 3/8 in			11 kg (24.25 lb)
	HEL33D	250 (17.2)	12 mm x 11 m	1/2 in x 35 ft	1/2 in x 1/2 in			10.5 kg (23.1 lb)
	HEL34D	250 (17.2)	12 mm x 14 m	1/2 in x 45 ft	1/2 in x 1/2 in			11 kg (24.3 lb)
Petroleum– and Synthetic–based Oils	HEM23D	1800 (124)	10 mm x 11 m	3/8 in x 35 ft	1/2 in x 3/8 in		Carbon Steel, Buna-N, Rubber, UHMWPE	11.4 kg (25.1 lb)
	HEM33D	1800 (124)	12 mm x 11 m	1/2 in x 35 ft	1/2 in x 1/2 in			14 kg (38.8 lb)
Grease	HEH13D	5000 (345)	6 mm x 11 m	1/4 in x 35 ft	3/8 in x 1/4 in			13.2 kg (29.1 lb)

SD Series

Composite Spool Hose Reels



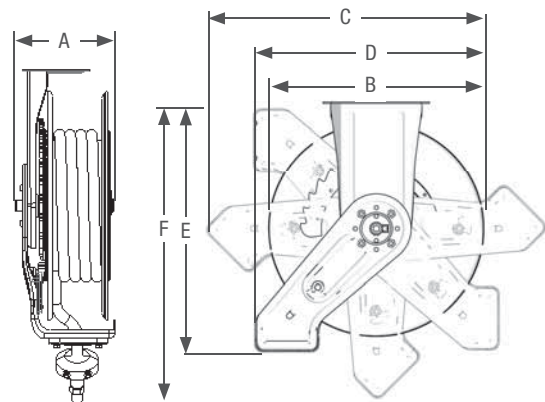
Single pedestal with composite spool. Inlet Hose Kit sold separately.

Features

- Designed for standard-duty applications such as small service garages and repair shops
- Structurally reinforced frame doesn't flex when handling hose
- Guide arm position easily changes for mounting on bench, ceiling or wall
- Enamel finish protects the reel from the environment
- Lightweight composite spool made from high strength resins resists dents and corrosion
- Compact design easily fits inside tool bench or cabinet
- Enclosure kits available—ideal when appearance and protection is important
- Available in six colors. Metallic blue is standard.

Dimensions

LD SERIES	
A	7.0 in (177 mm)
B	18.1 in (460 mm)
C	23.4 in (594 mm)
D	19.2 in (488 mm)
E	21.8 in (554 mm)
F	25.2 in (640 mm)



Ordering Information

Technical Specifications

Applications		Model Numbers by Color					Pressure psi (bar)	Hose ID	Length ft (m)	Connection Size		Operating Temp.
		Metallic Blue	White	Red	Black	Dark Blue				Inlet npsm(m)	Outlet	
Air, Water, Anti-freeze, Windshield Washer Fluid	SIZE 20	HRL56B	HRL56A	HRL56C	HRL56D	HRL56E	300 (20.7)	3/8 in	65 (20)	1/2	3/8 npt(m)	-20° – 190° F (-28° – 87° C)
		HRL65B	HRL65A	HRL65C	HRL65D	HRL65E	300 (20.7)	1/2 in	50 (15)	1/2	1/2 npt(m)	
Petroleum- and Synthetic-based Oils		HRM65B	HRM65A	HRM65C	HRM65D	HRM65E	2,000 (138)	1/2 in	50 (15)	1/2	1/2 npt(m)	
Grease		HRH55B	HRH55A	HRH55C	HRH55D	HRH55E	4,000 (276)	3/8 in	50 (15)	3/8	1/4 npt(m)	-40° – 200° F (-40° – 93° C)

Wetted parts—bare hose reel only: zinc plated steel, anodized aluminum, nitrile rubber
 Dry Weight: 44 lbs (20 kg)
 Instruction Manual: 313431

SD Series

Steel Spool Hose Reels



Single pedestal with metal spool. Inlet Hose Kit sold separately.

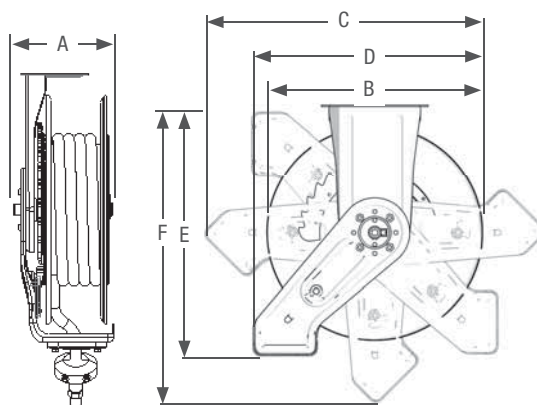
Features

- Designed for daily use by professional mechanics
- Structurally engineered frame made from high strength steel won't bend or flex
- Long-lasting spring provides constant spring torque through the entire range of motion
- Flexible positioning of guide arm for mounting on bench or ceiling, wall or utility truck
- Steel spool for demanding applications
- Open swivel ports ensure high fluid flow with minimal pressure loss
- Enclosure kits available – ideal when appearance and protection is important
- Available in six colors. Metallic blue is standard.

Dimensions

SD SERIES SIZE 10	
A	7.0 in (177 mm)
B	16.2 in (412 mm)
C	21.0 in (533 mm)
D	17.1 in (435 mm)
E	19.5 in (495 mm)
F	22.5 in (571 mm)

SD SERIES SIZE 20	
A	7.0 in (177 mm)
B	18.1 in (460 mm)
C	23.4 in (594 mm)
D	19.2 in (488 mm)
E	21.8 in (554 mm)
F	25.2 in (640 mm)



Ordering Information

Technical Specifications

Applications		Model numbers by color					Pressure	Hose		Connection Size		Operating Temp.	
		Metallic Blue	White	Red	Black	Dark Blue	Yellow	psi (bar)	id (in)	Length ft (mt)	Inlet npsm(m)		Outlet
Air, Water, Anti-freeze, Windshield Washer Fluid	SIZE 10	HPL23B	HPL23A	HPL23C	HPL23D	HPL23E	HPL23F	300 (20.7)	3/8	35 (11)	1/2	3/8 npt (m)	-20°–190° F (-28°–87° C)
		HPL25B	HPL25A	HPL25C	HPL25D	HPL25E	HPL25F	300 (20.7)	3/8	50 (15)	1/2	3/8 npt (m)	
		HPL33B	HPL33A	HPL33C	HPL33D	HPL33E	HPL33F	300 (20.7)	1/2	35 (11)	1/2	1/2 npt (m)	
	SIZE 20	HPL56B	HPL56A	HPL56C	HPL56D	HPL56E	HPL56F	300 (20.7)	3/8	65 (20)	1/2	3/8 npt (m)	
		HPL65B	HPL65A	HPL65C	HPL65D	HPL65E	HPL65F	300 (20.7)	1/2	50 (15)	1/2	1/2 npt (m)	
Petroleum– or Synthetic– based Oils	SIZE 10	HPM33B	HPM33A	HPM33C	HRM33D	HRM33E	HPM33F	2,000 (138)	1/2	35 (11)	1/2	1/2 npt (m)	
		HPM3BB*	HPM3BA*	HPM3BC*	HPM3BD*	HPM3BE*	HPM3BF*	2,000 (138)	1/2	35 (11)	1/2	1/2 npsm (f)	
	SIZE 20	HPM65B	HPM65A	HPM65C	HPM65D	HPM65E	HPM65F	2,000 (138)	1/2	50 (15)	1/2	1/2 npt (m)	
		HPM6DB*	HPM6DA*	HPM6DC*	HPM6DD*	HPM6DE*	HPM6DF*	2,000 (138)	1/2	50 (15)	1/2	1/2 npsm (f)	
Grease	SIZE 10	HPH15B	HPH15A	HPH15C	HPH15D	HPH15E	HPH15F	5,000 (345)	1/4	50 (15)	3/8	1/4 npt (m)	-40°–200° F (-40°–93° C)
		HPH23B	HPH23A	HPH23C	HPH23D	HPH23E	HPH23F	4,000 (276)	3/8	35 (11)	3/8	1/4 npt (m)	
		HPH1DB*	HPH1DA*	HPH1DC*	HPH1DD*	HPH1DE*	HPH1DF*	5,000 (345)	3/8	35 (11)	3/8	1/4 npt (f)	
	SIZE 20	HPH55B	HPH55A	HPH55C	HPH55D	HPH55E	HPH55F	4,000 (276)	3/8	50 (15)	3/8	1/4 npt (m)	
		HPH5DB*	HPH5DA*	HPH5DC*	HPH5DD*	HPH5DE*	HPH5DF*	4,000 (276)	3/8	50 (15)	3/8	1/4 npt (f)	

* Bare Reel–hose sold separately
Wetted parts–bare hose reel only: zinc plated steel, steel, nitrile rubber

Dry Weight: 52 lbs (23.5 kg) Instruction Manual: 313431

XD Series

Hose Reels

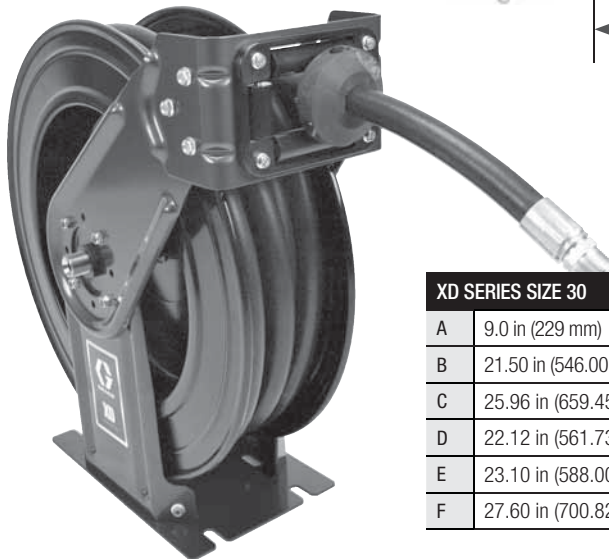
Size 10



Size 20



Size 30



Features

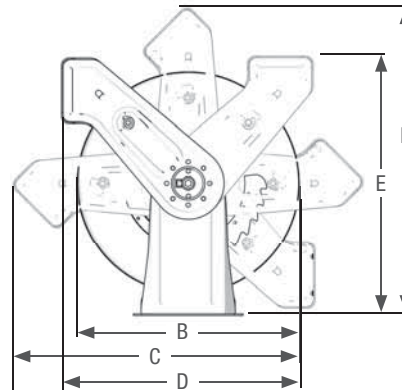
- Designed for robust/heavy-duty applications such as mobile lube trucks or large equipment service, yet with a narrow footprint to fit more reels into small spaces
- Dual pedestal frame provides increased strength for extreme-duty applications
- Long lasting spring is sealed for protection against the weather
- Durable steel spool rides on sealed roller bearings to ensure trouble-free performance
- Available in four colors. Metallic blue is standard.
- Available with arms removed for bulkhead mounting*

* Contact your local distributor for more information

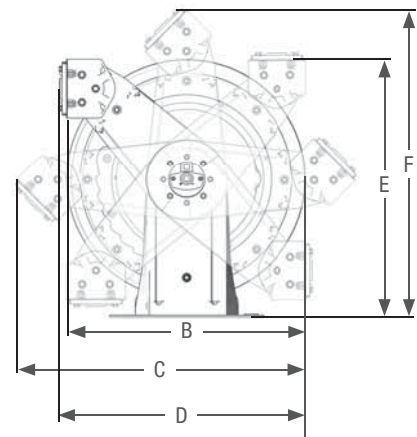
Dimensions

XD SERIES SIZE 10	
A	7.5 in (196 mm)
B	16.2 in (412 mm)
C	21.0 in (533 mm)
D	18.0 in (457 mm)
E	18.5 in (470 mm)
F	22.5 (571 mm)

XD SERIES SIZE 20	
A	7.5 in (196 mm)
B	18.1 in (460 mm)
C	23.4 in (594 mm)
D	20.0 in (508 mm)
E	21.0 in (533 mm)
F	25.2 in (640 mm)



XD SERIES SIZE 30	
A	9.0 in (229 mm)
B	21.50 in (546.00 mm)
C	25.96 in (659.45 mm)
D	22.12 in (561.73 mm)
E	23.10 in (588.00 mm)
F	27.60 in (700.82 mm)



NOTE: Hose Inlet Kit for all XD Reels sold separately.

XD Series

Hose Reels

Ordering Information

Technical Specifications

Applications		Model numbers by color				Pressure	Hose		Connection Size		Operating Temp.
		Metallic Blue	White	Yellow	Desert Sand	psi (bar)	id in	Length ft (m)	Inlet in	Outlet in	
Air, Water, Anti-freeze, Windshield Washer Fluid	SIZE 10	HSL25B	HSL25A	HSL25F	HSL25G	300 (20.7)	3/8	50 (15)	1/2 npsm(m)	3/8 npt(m)	-20–190 °F (-28–87 °C)
		HSL33B	HSL33A	HSL33F	HSL33G		1/2	35 (11)		1/2 npt(m)	
	SIZE 20	HSL56B	HSL56A	HSL56F	HSL56G		3/8	65 (20)		3/8 npt(m)	
		HSL65B	HSL65A	HSL65F	HSL65G		1/2	50 (15)		1/2 npt(m)	
	SIZE 30	HSLC8B	HSLC8A	HSLC8F	HSLC8G			75 (23)	-40–180 °F (-40–82 °C)		
		HSLD5B	HSLD5A	HSLD5F	HSLD5G		3/4	50 (15)		3/4 npsm(m)	3/4 npt(m)
Petroleum– and Synthetic– based Oils	SIZE 10	HSM33B	HSM33A	HSM33F	HSM33G	2,000 (138)	1/2	35 (11)	1/2 npsm(m)	1/2 npt(m)	-20–190 °F (-28–87 °C)
		HSM3BB *	HSM3BA *	HSM3BF	HSM3BG	2,000 (138)		35 (11)		1/2 npt(f)	
	SIZE 20	HSM65B	HSM65A	HSM65F	HSM65G	2,000 (138)		50 (15)		1/2 npt(m)	
		HSM6DB *	HSM6DA *	HSM6DF *	HSM6DG	2,000 (138)		50 (15)		1/2 npt(f)	
	SIZE 30**	HSMC8B	HSMC8A	HSMC8F	HSMC8G	1,500 (103)		75 (23)	1/2 npt(m)	-40–180 °F (-40–82 °C)	
		HSMCFB *	HSMCFA *	HSMCFF *	HSMCFG *	2,000 (138)		75 (23)	1/2 npsm(f)		
		HSMD5B	HSMD5A	HSMD5F	HSMD5G	1,250 (86)	3/4	50 (15)	3/4 npt(m)		
		HSMDDB *	HSMDDA *	HSMDDF *	HSMDDG *	2,000 (138)		3/4	3/4 npsm(f)		
Grease	SIZE 10	HS115B	HS115A	HS115F	HS115G	5,000 (345)	1/4	50 (15)	3/8 npsm(m)	1/4 npt(m)	-40–200 °F (-40°–93 °C)
		HS11DB *	HS11DA *	HS11DF *	HS11DG *		3/8	35 (11)		3/8 npt(f)	
	SIZE 20	HS155B	HS155A	HS155F	HS155G	4,000 (276)		50 (15)		1/4 npt(m)	
		HS15DB*	HS15DA*	HS15DF*	HS15DG*	5,000 (345)				1/2	
	SIZE 30**	HS1C5B	HS1C5A	HS1C5F	HS1C5G		5,000 (345)	1/2 npsm(m)	1/2 npt(m)		-40–180 °F (-40–82 °C)
		HS1CDB *	HS1CDA *	HS1CDF *	HS1CDG *	1/2 npsm(f)					
Pressure Wash	SIZE 30	HSPB8B	HSPB8A	HSPB8F	HSPB8G	4,000 (276)	3/8	75 (23)	1/2 npsm(m)	3/8 npt(m)	-20–225 °F (-28–107 °C)
		HS1FFB *	HS1FFA *	HS1FFF *	HS1FFG *					3/8 npsm(f)	
Fuel/Evacuation	SIZE 30	HSLE3B	HSLE3A	HSLE3F	HSLE3G	125 (8.6)	1	30 (9)	3/4 npsm(m)	1 npt(m)	-40–120 °F (-40–49 °C)

Maximum dry weight with hose: XD10 = 54 lbs (24.5 kg), XD20 = 59 lbs (27 kg), XD30 = 98 lbs (44.5 kg)

Wetted parts–Bare hose reel only: zinc plated steel, anodized aluminum, nitrile rubber

Instruction Manuals: XD10 and XD20: 313431, XD30: 3A0138

* Bare reel–hose sold separately

** Not recommended for overhead installation. Maximum installed height is 7 feet (2.13 meters).

700 Series

Hose Reels



*237875 with 237932
Overhead mounting kit. Includes all
parts needed for ceiling-mounting.*

Features

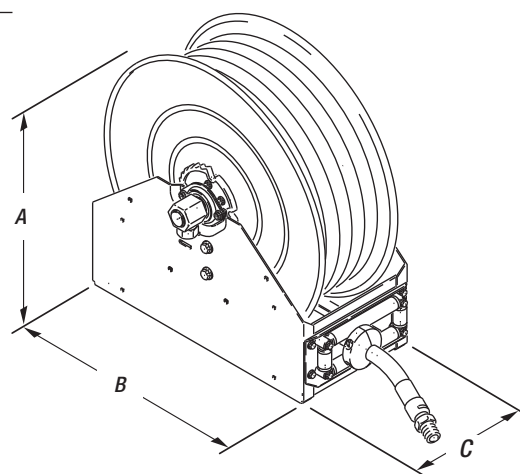
- Fully ported swivel and shaft for unrestricted flow
- Handles hose lengths up to 75 ft (23 m)
- Heavy-duty ball bearings outlast sleeved-type bearings
- Easy rewind with minimal hose guidance

Typical Fluids Handled

- Petroleum and synthetic based oils
- Air
- Water
- Anti-freeze
- Windshield wash fluid
- Used Oil
- Used Anti-freeze

Dimensions

700 SERIES	
A	26.25 in (628 mm)
B	24.0 in (609 mm)
C	11.83 in (300 mm)



Ordering Information

Medium-Pressure Oil Dispense Reels (rated to 1500 psi/103 bar)	
237728	Bare Hose Reel
237879 *	Hose Reel with 3/4 in x 75 ft (19.1 mm x 23 m) hose
Medium-Pressure Oil Evacuation and Dispense Reels (rated to 212 psi/14.6 bar)	
241910 *	Hose Reel with 1 in x 50 ft (25.4 mm x 15 m) hose; 24 in (0.3 m) Hg vacuum
Medium-Pressure Fuel Dispense Reel (rated to 125 psi/8.6 bar)	
237884 *	Hose Reel with 1 in x 50 ft (25.4 mm x 15 m) hose

* Not recommended for overhead installation

Technical Specifications

Inlet npsm (m)	Outlet npt (m)	Max. Pressure Psi (bar)	Maximum Vacuum	Operating Temp.	Wetted Parts	Weight (bare reel)	Instruction Manual
1 npt(f)	1 npt(f)	1500 psi (bare reel))	24 in Hg	-40°F to 180°F (-40°C to 82°C)	Carbon Steel, Buna	103 lb (46.7 kg)	308546

750 Series

Hose Reels



Features

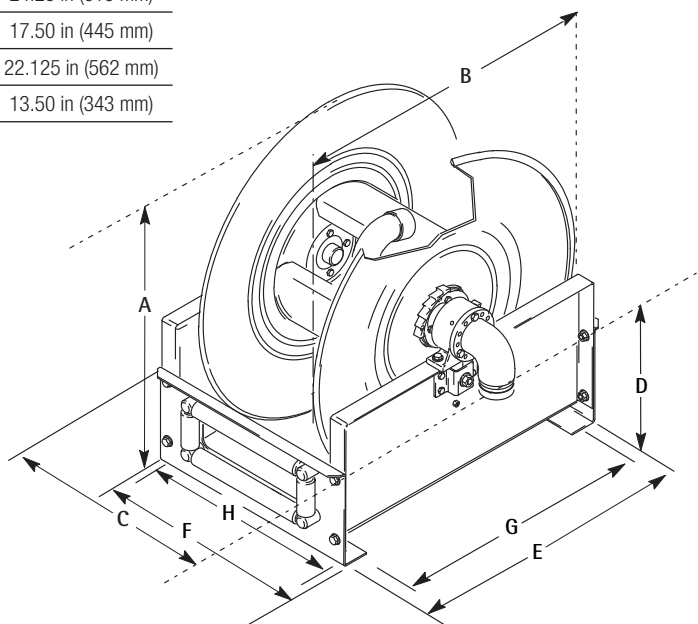
- Heavy-duty, high volume reel
- Industrial-grade paint for high abrasion and corrosion resistance
- Full-flow shaft
- Heavy-duty brackets and springs
- Rugged base and hose rollers
- Heavy-duty latch mechanism

Typical Fluids Handled

- Unleaded, leaded and diesel fuels
- Petroleum and synthetic based oils
- Water
- Anti-freeze

Dimensions

750 Series	
A	26.25 in (667 mm)
B	26.25 in (667 mm)
C	21.88 in (556 mm)
D	13.75 in (349 mm)
E	24.25 in (616 mm)
F	17.50 in (445 mm)
G	22.125 in (562 mm)
H	13.50 in (343 mm)



Ordering Information

Bulk Dispense Reels (rated to 125psi/8.6 bar)

245410	Bare Hose Reel
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Technical Specifications

Inlet npsm (m)	Outlet npt (m)	Max. Pressure Psi (bar)	Hose Capacity	Operating Temp.	Wetted Parts	Weight (bare reel)	Instruction Manual
1-1/2 npt(f)	1-1/2 npt(f)	375 psi (26 bar)	50 ft (15.2m) x 1.50 in ID Hose	150° F (65° C)	Carbon Steel, Buna	139 lbs (63 kg)	309442

Packages

Hose Reels

LD Enclosed Hose Reel Packages

Package	Reel	Hose Inlet Kit	Dispense Valve/Meter
24D197	HEM33D	24C538	LDM5 Rigid with trigger guard (256215)
24D198	HEM33D	24C538	LDM5 Flex without trigger guard (255751)
24D199	HEM33D	24C538	LDP5 Rigid with trigger guard (256216)
24D200	HEM33D	24C538	LDP5 Flex without trigger guard (255277)

SD Reel Packages with Enclosure Kit

	SD Packages	Hose Reel	Hose Inlet Kit	White Enclosure	Dispense Valve
Composite Spool	24B812	HRL56B	218549	24A218	—
	24B813	HRL56B	218549	24A218	218545
	24B814	HRL56B	218549	24A218	180685/150287
	24B815	HRM65B	218549	24A218	—
	24B816	HRH55B	218550	24A218	—

SD Reel Packages with Enclosure Kit

	SD Packages	Hose Reel	Hose Inlet Kit	White Enclosure	Dispense Valve/Meter	Fitting
Steel Spool	24D989	HPL23B	218549	24A217	—	—
	24D990	HPL25B	218549	24A217	—	—
	24D991	HPL33B	218549	24A217	—	—
	24D992	HPL23B	218549	24A217	218545	—
	24D993	HPL23B	218549	24A217	180685	150287
	24D994	HPL33B	218549	24A217	180685	159842
	24D995	HPM33B	218549	24A217	—	—
	24D996	HPM33B	218549	24A217	255350	—
	24D997	HPM33B	218549	24A217	255348	—

SD Steel Spool Reel Packages

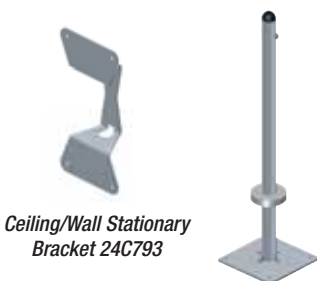
	SD Packages	Hose Reel	Hose Inlet Kit	Enclosure	Dispense Valve/Meter	Fitting
Steel Spool	24D998	HPL23B	218549	—	218545	—
	24D999	HPL23B	218549	—	180685	150287
	24D001	HPM33B	218549	—	255350	—
	24D002	HPM33B	218549	—	255348	—

Accessories

For LD, SD and XD Reels

Ordering Information

LD Enclosed Mounting Brackets	
24C793	Ceiling/Wall Stationary Bracket
24C772	Tote, Bench or Wall Mount Post



Hose Inlet Kits for LD Enclosed Hose Reel

FOR BSP CONNECTIONS	Part Number	Hose Inlet Description	Fits Reel	Pressure psi (bar)	Hose id in (mm)	Length in (mm)	Hose Inlet in	Hose Outlet in		
	24C437	Air	HEL13D	250 (17.2)	1/4 (6)	36 in (915)	1/4 bspt(m)	1/4 bspt(m)		
			HEL15D		1/2 (12)		1/2 bspt(m)	3/8 bspt(m)		
	24C438	Air/ water	HEL23D						1/2 bspt(m)	1/2 bspt(m)
			HEL25D							
	24C440	Oil	HEM23D	1,800 (124)				1/2 bspt(m)	1/2 bspt(m)	
HEM33D										
24C442	Grease	HEH13D	5,000 (345)	1/4 (6)	1/4 bspt(m)	1/4 bspt(m)				
FOR NPT CONNECTIONS	24C443	Air	HEL13D	250 (17.2)	1/4 (6)	36 in (915)	1/4 npt(m)*	1/4 npt(m)*		
			HEL15D		3/8 (10)		1/2 npt(m)*	3/8 npt(m)*		
	24C444	Air/water	HEL23D						1/2 npt(m)*	1/2 npt(m)*
			HEL25D							
	24C537	Oil	HEM23D	1,800 (124)				3/8 (10)	1/2 npt(m)*	
	24C538		HEM33D					1/2 (12)	1/2 npt(m)*	
	24C539		Grease	HEH13D	5,000 (345)		1/4 (6)	1/4 npt(m)*	1/4 npt(m)*	

* NPT hose connection when using BSP to NPT adapter (included)

Reel Enclosures

- Designed for enclosing SD single pedestal reels
- Enclosures provide protection to extend the life of hoses and bearings

Enclose Kits for One Reel	Part Numbers by Color					
	White*	Metallic Blue	Red	Black	Dark Blue	Yellow
Size 10 Enclosure	24A217	24A940	24A941	24A942	24A943	24A944
Size 20 Enclosure	24A218	24A945	24A946	24A947	24A948	24A949
Size 10 End Caps (2)	—	—	—	24A950	—	—
Size 20 End Caps (2)	—	—	—	24A951	—	—

* White enclosures available for immediate shipment. Consult factory for lead-time for other colors.

Mounting Channels

Enclosure mounting channels accommodate one, two, three, four, five or six reels (includes all parts needed to mount hose reels to walls or ceilings)

Description	Mounting Channel					
	1 Reel	2 Reels	3 Reels	4 Reels	5 Reels	6 Reels
SD10 and SD20*	24A934	24A935	24A936	24A937	24A938	24A939
XD10 and XD20	24A219	24A220	24A221	—	—	24A222
Enclosure Kit	203521	203522	203523	203524	203525	203526

* For use without enclosure kit



Accessories

For SD, XD, 700 and 750 Series Reels



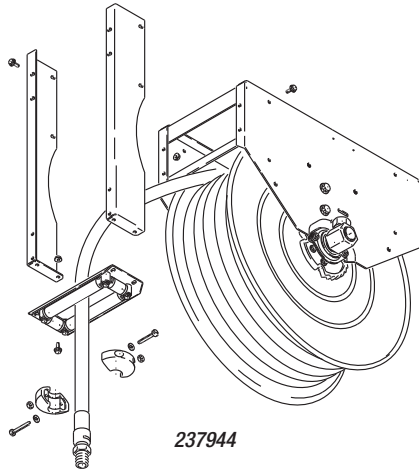
Retrofit Bracket to 500 Series



Ball Stop Kit



Hose Inlet Kit for SD and XD open reels



237944

Ordering Information

Retrofit Adapter Kits

24A224	Includes all parts to mount hose reel to existing 500 series mounting pattern
24C100	Includes all parts to convert SD10 hose reels to fit existing 250 series enclosures

Mounting Bracket

204741	Secures mounting channel to I-beam without drilling. Two brackets are required for 1-3 hose reels; three brackets for 4-6 hose reels.
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Ball Stop Kits

Typical Hose id

222225*	For 1/4 in (6.4 mm) i.d. hose
218340*	For 1/4-3/8 in (6.4-9.5 mm) i.d. hose
218341*	.782 ID used for 3/8 in and 1/2 in 9.5 mm and 12.7 mm) hose
237872	1.0 ID used for 5/8 in (15.9 mm) hose
237873	1.123 ID used for 3/4 in (19.1 mm) hose
237874	1.374 ID used for 1 in (25.4 mm) hose
24D132	For 3/8 in (9.5 mm) o.d. hose
24D133	For 1/2 in (12.7 mm) o.d. hose

*Not for use with XD30, 700 or 750 reels

Hose Inlet Kits for SD and XD Reels	Description	Pressure psi (bar)	Hose id in (mm)	Length in (mm)	Hose Inlet
218549	Low /medium pressure	2000 (137)	1/2 (12)	24 (610)	npt(m)
218550	High pressure	4000 (276)	3/8 (10)	24 (610)	npt(m)
222417	High pressure	5000 (345)	1/4 (6)	24 (610)	npt(m)

Medium-Pressure Oil Dispense Reels (rated to 1500 psi/103 bar)

218591	Hose Roller Repair Kit
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Valve Hanger Kit

224444	Mounts to side of reel to allow hanging of non-metered and high flow dispensing valves
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Metal Label Kits (includes one 3/4 in x 4-1/4 in (1.9 cm x 10.8 cm) metal label and mount)

218670	Motor Oil	218675	Air
218671	Grease	218676	Water
218672	Gear Lube	218677	Anti-Freeze
218673	ATF	218678	Evacuation
218674	Hydraulic Oil		

Self Adhesive Identification Label Set

180698	Set includes: 1 in x 5 in (25.4 mm x 127 mm) hose reels labels for Anti-Freeze, Water, SAE 5-40, SAE 10-40, SAE 20W, Hydraulic, Gear, SAE 10W, SAE 10-30, SAE 30W, Dexron, Air, Chassis, ATF
237932*	Overhead mounting kit includes all parts needed for ceiling-mounting reel. (one required per reel.)
237944*	Roller support kit includes roller support accessories for ceiling mounted reels (reel not included).
109064	Hose inlet kit 1 (mbe) x 28 in (71 cm)

*Required for overhead mounting

Dispense Consoles

Multi-Station Consoles*

Six-Station Console

222629	Includes upper and lower floor plates with roller guides and brackets (1-110236; 5-196471) to hold one water bib and five Graco LDM dispense valves. Console Dimensions (without brackets): 27 in high x 54 in long x 12 in wide (68.58 cm high x 139.7 cm long x 25.4 cm wide) Console requires a floor opening of 6 in x 51 in (15.2 cm x 122.4 cm)
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Four-Station Console

223448	Includes upper and lower floor plates, roller guides and brackets (1-110236; 3-196471) to hold one water bib and three Graco LDM dispense valves. Console Dimensions (without brackets): 27 in high x 36 in long x 12 in wide (68.58 cm high x 139.7 cm long x 25.4 cm wide) Console requires floor opening of 6 in x 33 in (15.2 cm x 83.8 cm).
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Single Add-On Fluid Module

222645	For adding-on to four- or six-station consoles. Includes add-on module, floor plates with roller guides to fit module and one 196471. Console requires floor opening of 6 in x 8-1/2 in (15.2 cm x 21.6 cm). Add-on fluid module dimensions 27 in high x 9 in long x 10 in wide (68.5 cm high x 22.86 cm long x 25.4 cm wide).
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*Hoses not included. See ordering information on page 140

Lubricant Dispense Consoles Accessories

110236	Water Bib Bracket
110237	EM6 Mounting Bracket
110285	Pistol-Grip Dispense Valve Bracket
196471	Universal Dispense Valve Bracket for EM5 and PM5
249440	Matrix Dispense Valve Bracket
222641	Console Roller Repair Kit (upper)
218591	Floor Plate Roller Repair Kit (lower)
178670	Roller only
234423	End Panel Replacement comes with 8 screws

Oil Dispense Bar

220107	Tough metal cabinet with baked-on enamel finish. Constructed with single-dispense tap and waste pan with plated, perforated metal service area and drain connection. Modular convenient design allows up to 2 oil dispense taps or 3 meters to be added at the time of installation, or later if required. Instruction manual 307742. Maximum working pressure 900 psi (62 bar). 22.6 in H x 13.25 in D x 18.3 in W (57.4 cm H x 33.7 cm D x 46.5 cm W)
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Tap Kit

220112	Add to oil dispense bar to convert into two or three taps, as needed. Kit also includes non-drip dispense valve, manifold and all necessary mounting hardware.
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Meter Kit

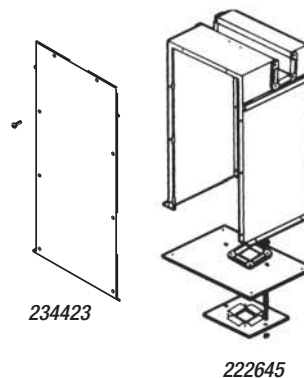
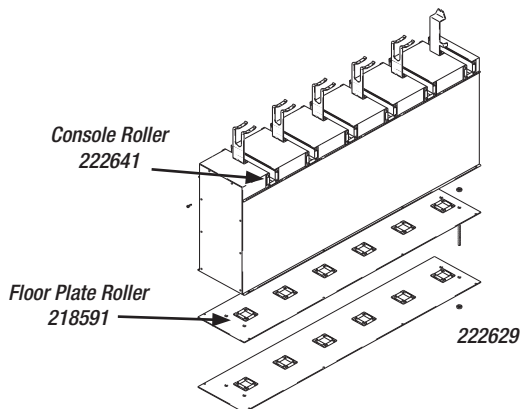
239706	Any individual tap on the oil dispense bar can be fitted with a fluid meter. Kit includes meter #239824 and all necessary mounting hardware. Maximum working pressure 500 psi (34 bar).
220110	Spigot Valve Replacement



222629



220107



LD Series Electronic Meters

Dispense Meters and Control Valves

Features and Benefits

- Manual and Preset Dispense
- Dispenses in gallons, quarts, pints and liters
- Easy to read LCD display with durable switches for long life
- Rugged engineered material for superior impact resistance and long life
- Ergonomically-designed handle for optimum comfort
- Standard rigid extension kit and automatic thermal compensating nozzle
- Optional extensions available

Typical Applications

- Metered oil dispense
- Heavy-duty dealerships
- Fleet service facilities
- For indoor use only
- Automotive dealerships
- Fast lube centers
- Service shops
- In-plant

Typical Fluids Handled

- Petroleum and synthetic based oils
- Anti-freeze

Technical Specifications

Flow Range ⁽¹⁾	0.1 to 5 gpm (0.4 to 19 lpm)
Maximum Working Pressure	1000 psi (69 bar)
Units of measure	Quarts, pints, gallons, liters (factory set to quarts)
Weight	3 lb (1.36 kg)
Inlet	1/2 in npt
Outlet	1/2 in npt
Operating Temperature Range	32 to 120°F (0 to 48.8°C)
Storage Temperature Range	-30 to 120°F (-34.4 to 48.8°C)
Battery	9 volt alkaline
Battery Life	one year
Wetted Parts	sst, nitrile rubber, zinc, cs, lcp
Meter Pressure Loss ⁽¹⁾	90 psi @ 5 gpm
Accuracy ⁽²⁾	±0.5%
Dimensions (without extension)	11 in L x 3.25 in W x 3.25 H (28 cm L x 8.3 cm W x 8.3 cm H)
Maximum Totalizer	999,999 gallons or liters
Maximum Recorded Dispense	999.9 Units (LDP5 only)
Warranty	Two Years
Instruction Manual	312668

(1) Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature, viscosity, inlet fitting and nozzle type.

(2) @ 2.5 gpm (9.5 lpm) @ 70°F (21°C) with 10 wt. oil and 1 gal (3.8 l) dispensed.

May require re-calibration. Out-of-box accuracy ±1.25%.
Not recommended for in-line installation.

Ordering Information

LDM5 Manual Dispense Meters		LDP5 Preset Dispense Meters	
255751	1/2 in npt(f) swivel, flexible extension and automatic nozzle for oil and anti-freeze	255277	1/2 in npt(f) swivel, flexible extension and automatic nozzle for oil and anti-freeze
256215	1/2 in npt(f) swivel, rigid extension, trigger guard/boot and automatic nozzle for oil and anti-freeze	256216	1/2 in npt(f) swivel, rigid extension, trigger guard/boot and automatic nozzle for oil and anti-freeze
258693	1/2 in npt(f) swivel, flexible extension, trigger guard/boot and automatic nozzle for oil and anti-freeze	258694	1/2 in npt(f) swivel, flexible extension, trigger guard/boot and automatic nozzle for oil and anti-freeze

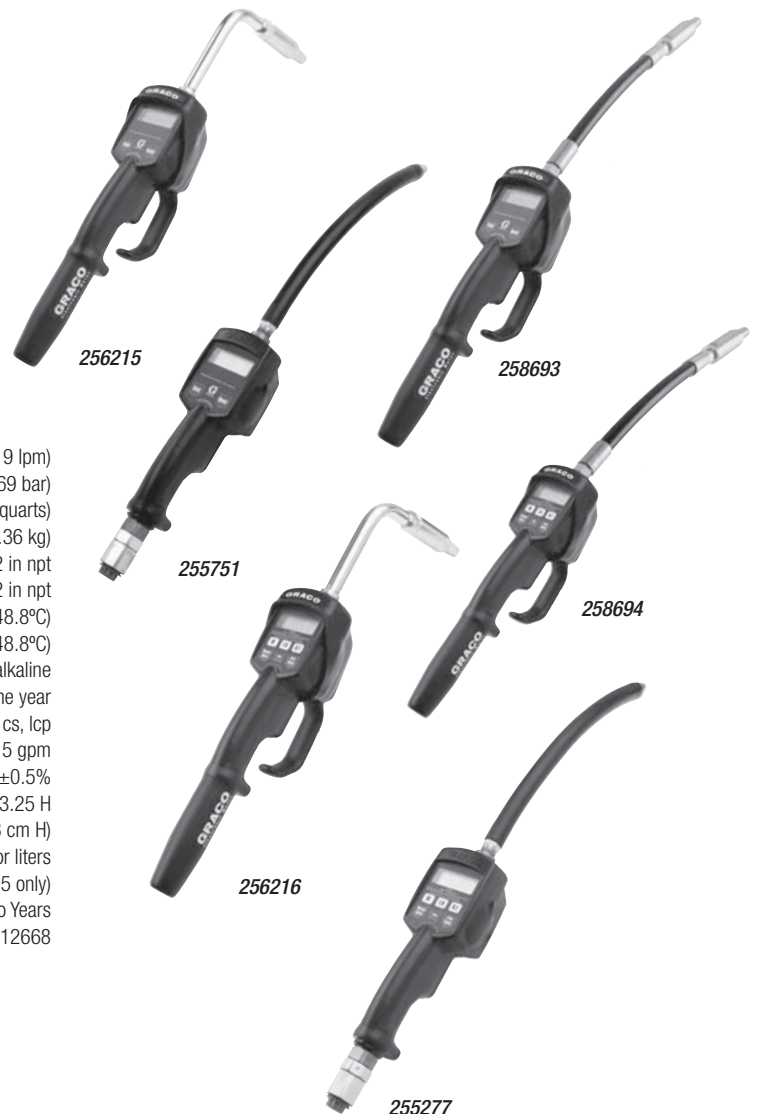
LDM5 Manual Dispense Meter

Two Models to Choose From

- LDM5 with inlet boot, trigger guard and rigid extension with thermal compensating nozzle
- LDM5 with flexible extension and automatic nozzle

LDP5 Preset Dispense Meters

- LDP5 preset dispense model with inlet boot, trigger guard and rigid extension with thermal compensating nozzle
- LDP5 preset dispense model with flexible extension and automatic nozzle



SD Series Electronic Meters

Dispense Meters and Control Valves

Features and Benefits

- Fluid inlet options (1/2 in and 3/4 in npt) meets standard and high-flow requirements
- Large LCD display and simple operator controls
 - Adjusts for easy reading in all lighting conditions
 - Calibration easily adjusts from keypad
- Solid construction to stand up to harsh environments and provide years of trouble-free performance
 - Locking trigger (LDP5 models)
 - Durable cast trigger guard prevents accidental triggering
- Flush-mount nozzle valve design prevents leaks and contamination
- Designed for no leak performance

Typical Applications

- Metered oil dispense in demanding environments
- Automotive dealerships
- Heavy-duty dealerships
- Fast lube centers
- Fleet service facilities
- Service shops
- In-plant
- Lube Trucks
- Mining

Typical Fluids Handled

- Petroleum and synthetic based oils
- Anti-freeze

Technical Specifications

Flow Range ⁽¹⁾	0.1 to 14 gpm (0.4 to 53 lpm)
Maximum Working Pressure	1500 psi (103.4 bar)
Weight	5 lbs (2.3 kg)
Inlet	3/4 in – 14 npt or 1/2 in – 14 npt
Outlet	3/4 in – 16 straight thread O-ring Boss
Maximum Totalizer	999,999 gallons or liters
Maximum Recorded Dispense	999.9 Units
Maximum Pre-Set Volume	999.9 Units
Storage Temperature Range	-40° to 158°F (-40° to 70°C)
Operating Temperature Range	4° to 158°F (-20° to 70°C)
Battery	4 AA alkaline or 4 AA lithium
Battery Life ⁽³⁾	Preset Models – six months with alkaline, manual models – one year with alkaline 4 AA alkaline or lithium
Wetted Parts	Aluminum, sst, pbt/pc, nitrile rubber, cs
Meter Pressure Loss ⁽¹⁾	+/- 0.5%
Accuracy ⁽²⁾	+/- 0.5%
Dimension w/o Extension	13 in L x 3.75 in W x 5.75 in H, (33cm x 9.5cm x 14.6cm)
Warranty	Five years overall, three years electronics
Instruction Manual	312865

1. Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature, viscosity, inlet and nozzle type.
 2. At 2.5 gpm (9.5 lpm) @ 70°F (21°C) with 10 wt. oil and 1 gal (3.8 l) dispensed. May require re-calibration.
 Out-of-box accuracy ±1.25%.
 3. Average shop use with alkaline batteries (included); 30-35% longer life with lithium AA.



Ordering Information

SDM5 MANUAL DISPENSE ELECTRONIC METER, 5 GPM OR LESS	
255350	1/2 in npt(f) swivel, rigid oil extension with standard automatic non-drip quick-close nozzle
255348	1/2 in npt(f) swivel, flexible oil extension with standard automatic non-drip quick-close nozzle
255349	1/2 in npt(f) swivel, gear lube extension with standard quick-close nozzle
255802	1/2 in npt(f) swivel, rigid anti-freeze extension with standard quick-close nozzle
255803	1/2 in npt(f) swivel, flexible anti-freeze extension with standard quick-close nozzle
SDM15 MANUAL DISPENSE ELECTRONIC METER, 14 GPM OR LESS	
256836	1/2 in npt(f) swivel, rigid oil extension with high flow, quick-close nozzle
256837	1/2 in npt(f) swivel, flexible oil extension with high flow, quick-close nozzle
255800	3/4 in npt(f) swivel, rigid oil extension with high flow, quick-close nozzle
255801	3/4 in npt(f) swivel, flexible oil extension with high flow, quick-close nozzle
SDP5 PRESET DISPENSE ELECTRONIC METER, 5 GPM OR LESS	
255200	1/2 in npt(f) swivel, rigid oil extension with standard automatic non-drip quick-close nozzle
255351	1/2 in npt(f) swivel, flexible oil extension with standard automatic non-drip quick-close nozzle
255352	1/2 in npt(f) swivel, gear lube extension with standard quick-close nozzle
255355	1/2 in npt(f) swivel, rigid anti-freeze extension with standard quick-close nozzle for anti-freeze
255356	1/2 in npt(f) swivel, flexible anti-freeze extension with standard quick-close nozzle for anti-freeze
SDP15 PRESET DISPENSE ELECTRONIC METER, 14 GPM OR LESS	
256838	1/2 in npt(f) swivel, rigid oil extension with high flow, quick-close nozzle
256839	1/2 in npt(f) swivel, flexible oil extension with high flow, quick-close nozzle for oil
255353	3/4 in npt(f) swivel, rigid oil extension with high flow, quick-close nozzle for oil
255354	3/4 in npt(f) swivel, flexible oil extension with high flow, quick-close nozzle for oil

EM6™ Electronic Meter

Dispense Meters and Control Valves

Features and Benefits

- Screw-tight nozzle for positive shut off
- Ball bearing swivel for ease of use
- Durable design ideal for use in harsh environments
- Reset capable for periodic dispense history information

Typical Applications

- Metered oil dispense in demanding environments
- Automotive dealerships
- Heavy-duty dealerships
- Service and fast lube centers
- Fleet service facilities
- In-plant
- Lube Trucks
- Mining

Typical Fluids Handled*

- Petroleum and synthetic based oils

* Not recommended for use with anti-freeze or windshield washer fluid



243599

Ordering Information

EM6 Electronic Meters	
243599	U.S. measure (rigid extension)
243600	U.S. measure (gear lube extension)
243601	U.S. measure (flexible extension)
243602	Metric measure (rigid extension)
243603	Metric measure (gear lube extension)
243604	Metric measure (flexible extension)
243992	1/2 in (12.7 mm) bare valve (without locking trigger)
Accessories	
235878	U.S. Electronic Control Replacement
235901	Metric Electronic Control Replacement
203655	Twist Lock Nozzle Replacement 1/4 npt(m)
203687	Flex Extension, hose with 203655 tip
201701	Gear Lube Extension with tip
203265	Rigid Extension with tip
Color-coded Impact Guards for Electronic Meters	
Color-code various fluids dispensed to reduce errors, match store colors, or create a customized appearance. For electronic meters only.	
191782	Black
191783	Red
191784	Blue
191785	Green

Technical Specifications

Maximum Recommended Flow Rate	6 gpm (23.01 lpm)
Maximum Operating Pressure.....	1500 psi (105 bar, 10.5,)
Operating Temperature Range.....	-40° to 180°F (-40° to 82°C)
Storage Temperature Range.....	-40° to 140°F (-40° to 60°C)
Inlet	1/2 npt
Outlet.....	1/2 npt
Wetted Parts.....	aluminum, SST, CS, acetal, nitrile rubber, Geolast™
Instruction Manual	308642
Accuracy/Repeatability	+/- 0.6%

Geolast™ is a registered trademark of Advanced Elastomer Systems.



235878

191782

243392

EM12™ Electronic Meter

Dispense Meters and Control Valves

Features and Benefits

- Locking trigger for hands-free operation
- High-flow capability provides up to 12 gpm (45 lpm)
- Rugged design withstands demanding environments
- Reset capable for periodic dispense history information

Typical Applications

- Automotive and Heavy-Duty dealerships
- Service and fast lube centers
- Fleet service facilities
- In-plant
- Lube Trucks
- Mining

Typical Fluids Handled*

- Petroleum and synthetic based oils

* Not recommended for use with anti-freeze or windshield washer fluid



238641

Ordering Information

EM12 Electronic Meters with 3/4 in npt(f) swivel inlet

238636	U.S. measure 1/2 in (12.7 mm) rigid extension
238637	U.S. measure 1/2 in (12.7 mm) flexible extension
238638	Metric measure 1/2 in (12.7 mm) rigid extension
238639	Metric measure 1/2 in (12.7 mm) flexible extension

EM12 Electronic Meters with 1/2 in npt(f) swivel inlet

238640	U.S. measure 1/2 in (12.7 mm) rigid extension
238641	U.S. measure 1/2 in (12.7 mm) flexible extension
238642	Metric measure 1/2 in (12.7 mm) rigid extension
238643	Metric measure 1/2 in (12.7 mm) flexible extension

Bare Valves with locking trigger (No meter or extension)

238647	Inline flow through with 1/2 npt(f) swivel inlet and outlet
238646	Inline flow through 3/4 npt(f) swivel inlet; 1/2 npt(f) outlet

Accessories

235878	U.S. Electronic Control Replacement
235901	Metric Electronic Control Replacement
223920	High Flow Twist Lock Nozzle, 1/2 npt(f) with 1 in diameter tip.
238400	Automatic Nozzle 1/2 npt(f) with 1 in diameter tip
185416	Filter 40 mesh stainless steel

Color-coded Impact Guards for Electronic Meters

For color-coding fluids dispensed to reduce errors, match store colors, or to protect vehicles finish. For electronic meters only.

191782	Black
	Red
191784	Blue
190386	Green

Technical Specifications

Maximum Recommended Flow Rate	12 gpm (45.4 lpm)
Maximum Operating Pressure.....	1500 psi (105 bar)
Operating Temperature Range.....	-4° to 130°F (-20° to 55°C)
Storage Temperature Range.....	-40° to 140°F (-40° to 60°C)
Inlet	1/2 npt and 3/4 npt
Outlet.....	1/2 npt
Wetted Parts.....	aluminum, SST, CS, acetal, nitrile rubber, Geolast
Instruction Manual	308642



238647



191782



223920

In-Line Electronic Meters

Dispense Meters and Control Valves

IM5 Low Pressure Meter

- Heavy-duty construction for outdoor use
- Easy-to-use meter dispenses pints, quarts, liters or gallons
- Easy-to-replace 9-volt alkaline battery
- Compatible with windshield wash solvent or anti-freeze

Typical Applications

- Automotive dealerships
- Fast lube centers
- Service shops
- In-plant

Typical Fluids Handled

- Petroleum and synthetic based oils
- Anti-freeze
- Windshield wash fluid

Ordering Information

IM5 In-Line Meter	
239824	IM5 In-Line Meter
IM6 In-Line Electronic Meter	
244075	In-Line Meter (U.S.)
244076	In-Line Meter (Metric)
235878	Replacement Electronics (U.S.)
235901	Replacement Electronics (Metric)
SDI15 In-Line Electronic Meter	
247453	In-Line Meter (U.S.)



239824



244075



247453

IM6 and SDI15

Medium/High Pressure Meters

- Reset capable for periodic dispense history information
- Durable design ideal for rugged environments
- Easy-to-use meter dispenses pints, quarts, liters or gallons
- Shock-resistant durability

Typical Applications

- Automotive and large truck dealerships
- Fast lubes and service shops
- Fleet service facilities
- In-plant
- Lube trucks (IM6 only)
- Mining

Typical Fluids Handled*

- Petroleum and synthetic based oils

* Not recommended with anti-freeze or windshield wash

Technical Specifications

	IM5 In-Line Meter	IM6 In-Line Meter	SDI15 In-Line Meter
Flow Range*	0.5 to 5 gpm (1.9 to 19 lpm)	0.12 to 12.0 gpm (0.46 to 45.6 lpm)	0.1 to 14 gpm (0.4 to 53 lpm)
Max. Working Pressure	500 psi (34 bar)	1500 psi (103 bar)	
Weight	1.8 lb (0.8 kg)	1.9 lb (0.95 kg)	1.8 lb (0.82 kg)
Units of Measurement	Quarts, pints, gallons, liters (factory-set to quarts)**		
Accuracy	± 0.5%	± 1.0%	± 0.5%
Inlet/Outlet	1/2 npt*		
Operating Temperature Range	-4 to 122°F (-20 to 50°C)	-4° to 130°F (-20° to 55°C)	-4 to 122°F (-20 to 50°C)
Storage Temperature Range	-13 to 122°F (-25 to 50°C)	-40° to 140°F (-40° to 60°C)	-13 to 122°F (-25 to 50°C)
Battery	9-volt, alkaline		2AA alkaline
Wetted Parts	nickel, zinc, zenite, nitrile rubber	aluminum, carbon steel, nitrile rubber, nickel, bronze, SST #304, cast ALNICO 8	aluminum, carbon steel, nitrile rubber, nickel, bronze, SST, Geolast
Instruction Manual	306687	307965	313048

*Tested with number 10 motor oil. Flow rates vary with fluid pressure and viscosity.

**Display shows quantity in 0.01 increments up to 999.99 gallons, quarts, pints, or liters. Totalizes in gallons or liters up to 99,999 units.

Mechanical Meters

Dispense Meters and Control Valves

Features and Benefits

- Balanced, lightweight, rugged construction, and comfortable grip
- Non-resettable totalizing register helps manage material usage
- Handles a variety of petroleum and synthetic based oils and anti-freeze
- Ideal for indoor and outdoor use

Typical Applications

- Automotive dealerships
- Heavy-duty dealerships
- Fast lube centers
- Fleet service facilities
- In-plant
- Lube trucks
- Mining

Typical Fluids Handled

- Petroleum and synthetic based oils and anti-freeze

Technical Specifications

Maximum Flow*	4 gpm (15.1 lpm)
Minimum Flow*	0.4 gpm (1.5 lpm)
Maximum Operating Pressure	1000 psi (68.9 bar)
Operating Temperature Range	-40°F to 140°F (-40°C to 60°C)
Accuracy	± 0.65%
Weight	6.0 lb (2.7 kg)
Inlet and outlet connections	1/2 npt(f)

For use with petroleum-based fluids only.

**Tested with Mobil® DTE-25 motor oil. Minimum/maximum flow rates will vary with fluid viscosity.*

Ordering Information

Manual Meters	
256556	16 Quart Meter with flexible extension and twist lock nozzle
253601	10 Liter Meter with flexible extension and twist lock nozzle
256786	16 Quart Meter with rigid extension and twist lock nozzle
256788	10 Liter Meter with rigid extension and twist lock nozzle
256787	16 Quart Meter with gear lube extension and automatic nozzle
256789	10 Liter Meter with gear lube extension and automatic nozzle
Preset Meters	
207738	60 Quart Meter valve with rigid extension and automatic nozzle
207739	60 Gallon Meter valve with rigid extension and automatic nozzle
207742	60 Liter Meter valve with rigid extension and automatic nozzle
Nozzles	
255459	Quick-close nozzle only for oil
255460	Quick-close nozzle only for anti-freeze
255470	Quick-close nozzle only for gear lube



207738



256786



256788



256789

Accessories

Dispense Meters and Control Valves

LDM and LDP Accessories

Nozzle Extension Kits	
255861	Automatic nozzle with flexible extension for oil and anti-freeze*
239949	Automatic thermal compensating nozzle with rigid extension for oil and anti-freeze
239951	Automatic thermal compensating nozzle with flexible extension for oil and anti-freeze
239950	Automatic thermal compensating nozzle with rigid extension for gear lube
239829	Automatic thermal compensating nozzle for oil and anti-freeze without extension
238371	Automatic thermal compensating gear lube nozzle without extension

*Economical extension used on model 255751

Additional LDM5 Accessories	
240416	Inlet Swivel
114017	Inlet Filter, 80 mesh
196471	Valve Bracket for Dispense Console
240453	Valve Repair Kit
238555	Electronic Cover Control Assembly Kit

Swivel Covers		Protective Boots with Trigger Guard	
191294*	Black	247759*	Black
191287	Red	243835	Red
191288	Blue	243836	Blue
191289	Green	243837	Green
191295	Yellow	247760	Yellow

*Included on meter 256215

SDM and SDP Accessories

Nozzle Extension Replacement Kits For SD Series Meters	
255852	Automatic non-drip quick-close nozzle with rigid extension for oil
255853	Automatic non-drip quick-close nozzle with flexible extension for oil
255854	Non-drip quick-close nozzle with rigid extension for gear lube
255855	Non-drip quick-close nozzle with rigid extension for anti-freeze
255856	Non-drip quick-close nozzle with flexible extension for anti-freeze
255459	Automatic non-drip quick-close nozzle only for oil
255460	Quick-close nozzle only for anti-freeze
255470	Quick-close nozzle only for gear oil
255857	Non-drip quick-close high-flow nozzle with rigid extension for oil and anti-freeze
255858	Non-drip quick-close high-flow nozzle with flexible extension for oil and anti-freeze
255461	Quick-close high-flow nozzle only for oil and anti-freeze

Swivel Covers	
15T366	Black swivel cover (standard color with meter)
15T367	Red swivel cover
15T368	Blue swivel cover
15T369	Green swivel cover
15T370	Yellow swivel cover

Filter Kits for SD Series Meters	
255885	Filter kit includes (10) filters/strainers (15M308), (10) spacers (15M309) and (10) O-rings (155332)



255861



239949



239951



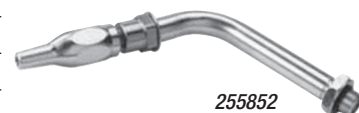
239950



191294



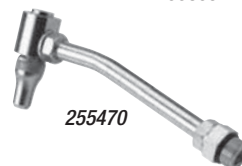
247759



255852



255853



255470



255461



15T366

SDV15 Control Valve

Dispense Meters and Control Valves

Features and Benefits

- Moves fluid up to 15 gpm (56.8 lpm) (15 gpm obtained with high-flow nozzle—purchased separately)
- Sturdy cast body designed for use in tough environments
- Lock-on trigger
- 1/2 in npt(f) inlet with built-in ball bearing swivel allows for ergonomic operation
- Inlet screen aids in keeping fluids clean

Typical Applications

- Automotive dealerships
- Heavy-duty dealerships
- Fast lube centers
- Fleet service facilities
- Service shops
- In-plant
- Lube trucks
- Mining

Typical Fluids Handled

- Dispenses motor oils
- Transmission fluid,
- Anti-freeze



247712

Technical Specifications

Maximum Recommended Flow Rate	15 gpm (18.9 lpm)
Maximum Operating Pressure.....	1500 psi (103 bar)
Weight	0.4 lb (0.18 kg)
Operating Temperature Range.....	-40° to 180° F (-40° to 82° C)
Inlet	1/2 npt
Outlet.....	3/4 in, 16 straight thread O-ring boss
Wetted Parts.....	Aluminum, sst, cs, acetal, nitrile rubber, tpe
Warranty	Five years
Instruction Manual	312789

1. Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature, viscosity, inlet fitting and nozzle type.

Ordering Information

SDV15 Control Valves	
247712	1/2 in npt(f) swivel, locking open trigger, rigid extension and standard automatic non-drip quick-close nozzle for oil products
247713	1/2 in npt(f) swivel, locking open trigger, flexible extension and standard automatic non-drip quick-close nozzle for oil products
247714	1/2 in npt(f) swivel locking open trigger, gear lube extension and standard quick-close nozzle
247715	1/2 in npt(f) swivel locking open trigger, rigid extension and standard quick-close nozzle for anti-freeze
247716	1/2 in npt(f) swivel locking open trigger, flexible extension and standard quick-close nozzle for anti-freeze
Bare Valve (no extension)	
247717	1/2 in npt(f) swivel locking open trigger, 3/4 in - 16(f) straight thread O-ring boss outlet, and trigger lock, no extension
Accessories	
256164	Filter kit includes (10) filters/strainers (185416)
255459	Quick-close nozzle only for oil
255460	Quick-close nozzle only for anti-freeze
255470	Quick-close nozzle only for gear lube
255857	Non-drip quick-close high-flow nozzle with rigid extension for oil and anti-freeze
255858	Non-drip quick-close high-flow nozzle with flexible extension for oil and anti-freeze
255461	Quick-close high-flow nozzle only for oil and anti-freeze

XDV20 Control Valve

Dispense Meters and Control Valves

Features and Benefits

- Moves fluid up to 20 gpm (76 lpm)
- Lock-on lock-off trigger for hands-free operation
- Rugged cast-body design withstands harsh environments
- Built-in ball bearing swivel allows for ergonomic operation
- Inlet screen aids in keeping fluids clean

Typical Applications

- High-flow, non-metered oil dispense
- Automotive dealerships
- Heavy-duty dealerships
- Fast lube centers
- Fleet service facilities
- In-plant
- Lube trucks
- Mining

Typical Fluids Handled

- Dispenses motor oils
- Transmission fluid
- Anti-freeze



247722



247724

Technical Specifications

Maximum Recommended Flow Rate	20 gpm (45.4 lpm)
Maximum Operating Pressure.....	1500 psi (105 bar)
Assembly Weight (no meter)	0.4 lb (0.18 kg)
Operating Temperature Range.....	-40° to 180° F (-40° to 82° C)
Inlet	1/2 npt and 3/4 npt
Outlet.....	7/8-14 straight thread o-ring boss
Wetted Parts.....	aluminum, SST, CS, acetal, nitrile rubber, Geolast
Instruction Manual	308642

Ordering Information

XDV20 Control Valves	
247718	1/2 npt(f) swivel inlet, 1/2 in (12.7 mm); rigid extension
247721	1/2 npt(f) swivel inlet, 1/2 in (12.7 mm); flexible extension
247722	3/4 npt(f) swivel inlet, 1/2 in (12.7 mm); rigid extension
247723	3/4 npt(f) swivel inlet, 1/2 in (12.7 mm); flexible extension
Bare Valves (no extension)	
247724	Has locking trigger and in-line flow through 1/2 npt(f) swivel inlet; 1/2 npt(f) outlet
247725	Has locking trigger and in-line flow through 3/4 npt(f) swivel inlet; 1/2 npt(f) outlet
Accessories	
255793	Quick-close high flow nozzle for oil, ATF and anti-freeze; 7/8-14 ORB (XDV20 only)
255859	Flex extension with quick-close nozzle (255793) for XDV20
255921	Rigid extension with quick-close nozzle (255793) for XDV20

Grease Dispense Valves

Dispense Meters and Control Valves

Pro Shot™ Non-Metered Grease Valves

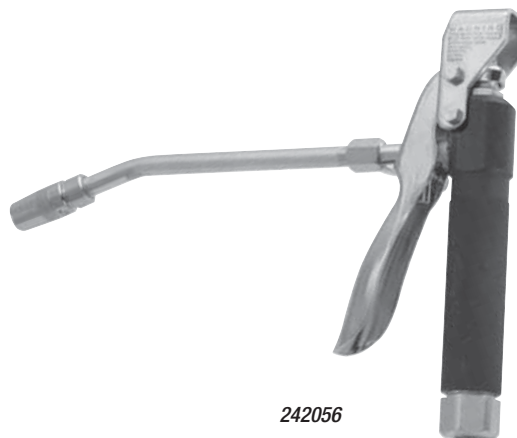
- Rugged design for harsh environments
- Pressure-assisted trigger for ease of operation
- Easy top adjustment with locking nut
- Pro-Shot adjustment nut protected by rigid guard

Typical Applications

- Service shops
- Heavy-duty dealerships
- Fast lube centers
- Automotive dealerships
- In-plant
- Lube trucks
- Mining

Typical Fluids Handled

- Grease up to NLGI #2



242056

Ordering Information

Pro-Shot Grease Dispense Valve	
242056	1/4 npt(f) inlet with coupler and extension #200389
242055	1/4 npt(f) inlet without coupler or extension
242058	3/8 npt(f) inlet with coupler and extension #200389
242057	3/8 npt(f) inlet without coupler or extension
224872	Includes 30 in (76.2 cm) whip hose #109148, Z-Swivel #202577 and grease valve #242056.

Accu-Shot™ Metered Grease Valves

- Accurate grease metering within $\pm 3\%$
- Easy to read LCD display
- Handles pressure up to 5000 psi and flow up to 36 oz/min

Typical Applications

- Lube trucks
- Heavy-duty dealerships
- In-plant
- Fleet service facilities
- Mining

Typical Fluids Handled

- Grease up to NLGI #2



233807

Ordering Information

Accu-Shot Electronic Metered Grease Valve	
233807	U.S. Measurement Includes extension and hydraulic coupler
233933	Metric Measurement Includes extension and hydraulic coupler

Manual Grease Guns and Fittings

Grease Guns, Accessories and Fittings

Ordering Information

Grease Guns	
202600	1/8 npt(f) Power-Shot Booster Gun boosts incoming pressure up to 18,000 psi (1,242 bar). Use with any high-pressure lubricator. Maximum inlet pressure: 5000 psi (345 bar). Includes nozzle (200389). (Hose swivel #202579 must be ordered separately). Instruction Manual: 306271.
110218	Standard Lever-Action Grease Gun: Develops up to 6000 psi (400 bar) working pressure and pumps 1.8 oz. (51 g) per 40 strokes. Can be loaded via cartridge or bulk fill. Optional loader fitting available. Equipped with rigid extension and hydraulic coupler.
110216	Heavy-Duty Lever-Action Grease Gun with high-pressure variable low-volume. Three-way loading: bulk fill, loader fitting or 14 oz. cartridge. Pumps 1.24 oz. per 40 strokes. Includes air bleeder valve. Equipped with rigid extension and hydraulic coupler (M IL-G-3859). Can develop up to 10,000 psi. Comes with 236171, easy fill valve.
110203	Pistol-Matic Grease Gun with three-way loading: bulk fill, loader fitting or cartridge. Pumps .72 oz. (28.4 g) per 40 strokes. Includes air bleeder valve. Equipped with rigid extension and hydraulic coupler. Can develop up to 3500 psi
203697	1/8 npt(f) Hot-Shot Portable Booster Gun for portable operation without continuous connection to grease supply. Has 4 oz. (113 g) grease reservoir in handle capable of servicing up to 100 fittings before needing a refill. Has grease fitting for recharging from either manual or air-powered luber. Single-hand operation squeeze handle develops up to 10,000 psi (690 bar). Includes grease extension and nozzle #200389. Instruction Manual: 306460.
110202	Pistol-Matic Grease Gun is the same as #110203 but with 12 in (30.4 cm) flexible rubber hose and hydraulic coupler.
112196	1/4 npt Pistol-Style Air-Operated Grease Gun is a spring-primed, single-shot gun. Three-way loading: bulk fill, loader fitting or 14 oz. (400 g) cartridge. Air input range of 75 to 100 psi (5 to 7 bar); working pressure of 6000 psi (414 bar). Pumps 1.2 oz. (34 g) per 40 pulls at 100 psi (7 bar). Includes standard gun coupler and bleeder valve, 1/8 in-27 NPT rigid extension. (1/4 npt air input connection).
110201	Suction Gun for evacuating and filling fluids into gear housings, differentials, transmissions and related applications. Holds 1 pint (16 oz, 473 cc), comes with red clear plastic 12 in (30.4 cm) hose.
Z-Swivels	
202579	1/8 npt(m) x 1/4 npt(f) free-ball bearing
202577	1/4 npt(m) x 1/4 npt(f) free-ball bearing use with dispense valve #242055 and #242056
224569	3/8 npt(m) x 3/8 npt(f) free-ball bearing use with dispense valve #242057 and 242058
207948	1/2 npt(m) x 1/2 npt(f) free-ball bearing
Straight Swivels	
204082	1/8 npt(m) x 1/8 npt(f) free-ball bearing (8000 psi; 550 bar)
204083	1/4 npt(m) x 1/8 npt(f) free-ball bearing (8000 psi; 550 bar)
204084	1/4 npt(m) x 1/4 npt(f) free-ball bearing (8000 psi; 550 bar)
214925	3/8 npt(f) x 1/4 npsm(f-union) (5000 psi; 345 bar)
214926	3/8 npt(f) x 1/2 npsm(f-union) (5000 psi; 345 bar)
207946	3/8 npt(f) x 1/2 npsm(f-union) (6000 psi; 414 bar)
207947	1/2 npt(m) x 1/2 npt(f) (6000 psi; 414 bar)
360° Swivels	
Swivels and locks into full 360° angle. Use for maximum coupler adaptability and reach.	
203597	360° Grease Swivel with tapered-nose coupler #200325
203198	360° Grease Swivel, 8,000 psi maximum working pressure (without coupler)



Grease Guns

Accessories and Fittings

Grease Nozzles

200389	Standard Nozzle. Includes straight 6 in (15.2 cm), 1/8 npt(m) extension tube #150622 and tapered nose coupler #200325.
204072	Swivel Nozzle. Includes straight 6 in (15.2 cm), 1/8 npt(m) extension tube #150622 and tapered nose coupler #200325. Coupler has 360° swivel adapter #203198 for added convenience.
204897	Swivel Nozzle. Includes straight 12 in (30.4 cm), 1/8 npt(m) extension tube #155836 and tapered nose coupler #200325. Coupler has 360° swivel adapter #203198 for added convenience.
204204*	Inlet Flexible 12 in (30.4 cm) Hose Nozzle. 1/8 npt(m) Includes tapered-nose coupler #200325.
203504*	Inlet Flexible 12 in (30.4 cm) Hose Nozzle. 1/8 npt(m) Includes tapered-nose coupler #200325 and lock sleeve connector #203497 for quick connection to any grease nozzle having tapered-nose coupler.
109145	12 in (30.4 cm) Hose Nozzle without Coupler
112255	18 in (45.8 cm) Hose Nozzle without Coupler
109148*	30 in (76.2 cm) Hose Nozzle without Coupler, has 1/8 npt(m) both ends. Use as alternate for rigid nozzle with tapered-nose coupler #200325.

*Warning: potential injection hazard. Not for use above 5000 psi (345 bar).

Grease Couplers

200325	1/8 npt(f) inlet Standard Tapered-Nose Coupler. Hardened jaws grip grease fittings through wide-sealing angle, but release easily. Maximum working pressure 8000 psi (551 bar).
202650	1/8 npt(f) inlet Standard Straight Nose Grease Coupler for manual operated grease guns only. Maximum working pressure 3000 psi (206 bar).
200020	1/8 npt(f) inlet Standard Button-Head Coupler. Gives fast, positive seal on button-head fittings.
200021	1/8 npt(f) inlet Giant Button-Head Coupler. Gives fast, positive seal on larger button-head fittings.

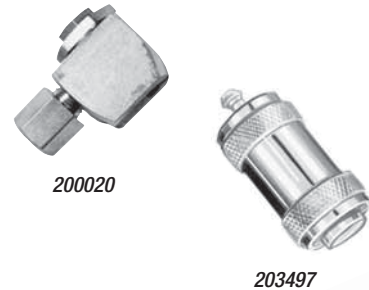
Adapters have lock-sleeve quick-connector, works with any grease nozzle with a tapered-nose coupler.

201881	Hydraulic-to-Push Adapter. Used for U-joints and low-pressure service.
205532	Hydraulic-to-Steel Needle Adapter. Used for flush fittings. 250 psi max, not for air grease applications or guns.
205582	Hydraulic-to-Nylon Needle Adapter. Used for removable plugs. 250 psi max, not for air grease applications or guns.
223187	90° Hydraulic-to-Push Adapter (K-Car) Refer to Instruction Manual 306708.
203497	Lock Sleeve Connector. 1/8 npt(f) outlet. Allows for quick connection to tapered-nose coupler. Inlet is standard grease fitting with sleeve to lock connector in place.
236171	Easy-Fill Valve. For faster loading of Graco hand grease guns with gun loaders. Replaces hydraulic fittings on all grease guns with 1/8 npt(f). Refer to Instruction Manual 308306.
204929	Grease Loader Valve. For use with lever-operated, high-volume grease pumps. Permits quick bulk-filling of hand-operated grease lever guns equipped with Easy-Fill Valve #236171. Refer to Instruction Manual 308306.
205592	Hydraulic Adapter Assortment Package. Contains needle adapter #205568, plug adapter #205554, push adapter #201881, nylon needle adapter #205582, hydraulic-to-steel needle adapter #205532 and whip hose nozzle connector #203504.

Grease Gun Fittings

1/8 npt Threaded Grease Fittings (steel; ball-check)

Part No.	Shank	Description	Pressure Rating
100054	9/32	1/8 npt straight	10,000 psi (689 bar)
101277	1-9/32	1/8 npt straight	10,000 psi (689 bar)
100970	9/32	1/8 npt 30° angle	10,000 psi (689 bar)
100834	9/32	1/8 npt 45° angle	10,000 psi (689 bar)
100971	9/32	1/8 npt 65° angle	10,000 psi (689 bar)
100833	9/32	1/8 npt 90° angle	10,000 psi (689 bar)



Grease Guns

Accessories and Fittings

1/4 npt Threaded Grease Fittings (steel; ball-check)			
100848	3/8	1/4 npt 67° angle	10,000 psi (689 bar)
100846	3/16	1/4-28 straight	10,000 psi (689 bar)
100847	13/64	1/4-28 45° angle	10,000 psi (689 bar)
101283	3/16	1/4-28 90° angle	10,000 psi (689 bar)
101281	11/32	1/4-28 straight	10,000 psi (689 bar)
110702	19/64	1/4-28 65° angle	10,000 psi (689 bar)
100835	12/32	1/4-28 straight	10,000 psi (689 bar)
1/4 npt Thread-Forming Grease Fittings (steel; ball-check)			
110703	13/64	1/4-28 straight	10,000 psi (689 bar)
110704	13/64	1/4-28 45° angle	10,000 psi (689 bar)
110705	13/64	1/4-28 90° angle	10,000 psi (689 bar)
3/16 npt Thread-Forming Grease Fittings (steel; ball-check)			
110706	3/32	3/16 npt straight	10,000 psi (689 bar)
110709	7/32	3/16 npt 65° angle	10,000 psi (689 bar)
Drive-Type Grease Fittings (steel; no check)			
110713	1/4	3/16 npt straight	
101312	1/4	3/16 npt straight	
110710	1/4	5/16 npt straight	
101287	17/64	1/4 npt straight	
Standard Button-Head Grease Fitting (steel)			
100837	7/16	1/4 npt straight	
101297	33/64	3/8 npt straight	
110711	35/64	1/2 npt straight	
Giant Button-Head Grease Fitting (steel)			
110712	9/16	3/8 npt straight	
100854	1/2	1/4 npt straight	
Grease Accessory Packages			
202654	Convenient Storage Box Contains the following threaded fittings in the quantity listed:		
Shank	Description	Grease Fitting No.	Quantity
9/32	1/8 npt straight	100054	30
9/32	1/8 npt 30° angle	100970	10
9/32	1/8 npt 90° angle	100833	10
3/16	1/4-28 straight	100846	20
13/64	1/4-28 45° angle	100847	10
Easy-Outs For installation and removal of grease fittings.			
101604	1/8 npt		
101605	1/4-28 unf		



101287



100834



101297



110704



110712



202654



101605



101604

Oil King™, Coolant King™ and Oil Ace™

Fluid Reclaim Packages

Oil King and Coolant King

- Large 25 gallon capacity with sight gauge
- Convenient tool trays and filter areas
- Large offset collection pan with screen
- Oversized tires to get over hose and rough floors
- Color specific receiver for easy identification

Typical Applications

- Used fluid receiver
- Automotive dealerships
- Heavy-duty dealerships
- Fast lube centers
- Fleet service facilities
- Service shops

Typical Fluids Handled

- Used oil – Oil King
- Used antifreeze – Coolant King



Ordering Information

Oil King Oil Receiver	
238866	25 gal (95 l) Polyethylene tank with used-filter tray, tool holders and sight gauge. Includes all hardware for topside evacuation or bottom drain*. Instruction manual 308667.
Coolant King Anti-Freeze Receiver	
248632	25 gal (95 l) Polyethylene tank with used-filter tray, tool holders and sight gauge. Includes all hardware for topside evacuation or bottom drain. *

* Must use 222090 or 224873 for topside evacuation. Must ship via truck.

Oil Ace

- Easy to drain using shop air pressure
- Large 24 gallon capacity
- Large offset collection pan with screen

Typical Applications

- Pressurized used oil receiver
- Automotive dealerships
- Heavy-duty dealerships
- Service shops
- Fast lube centers
- Fleet service facilities

Typical Fluids Handled

- Used Oil

Ordering Information

Oil Ace	
119577	24 gal (90 l) Steel-tank Pressurized Oil Drain



Fluid Reclaim Packages and Accessories

Ordering Information

16 gal (60 l) Used-Oil Receiver with drum.	
239301	Use with evacuation kit #240832. Instruction manual 306449.
16 gal (60 l) Used-Oil Receiver without drum.	
239302	Instruction manual 306449.
Funnel Kit	
243650	Use with 238866, 239301, 239302 and 248632. Includes tray and pipe.
Wall-Mounted Funnel Drain	
154616	Use with Pedestal Receiver #225272 to open automatic check-valve and drain used oil through wall to waste tank. Drain has 1-1/4 npt(f) outlet.
Drum-Mounted Funnel Drain	
156789	Use with Pedestal Receiver (#225272) to open automatic check-valve and drain used oil into standard drum. Funnel drain has 2 npt bung fitting for use with 55 gal (210 l) or 16 gal (60 l) drums, or 275 gallon (1,100 l) tanks.
ATF Drain Funnel	
208009	Use with Pedestal Receiver #225272 to extend funnel reach. Use for draining transmissions. (Not equipped with drain plug.) 16 in x 24 1/2 in
Rolling Used-Oil Receiver	
218969	Specially designed for car and truck fast-lube facilities where speed and mobility are important. Adjustable steel rollers fit track widths of 39 in (99 cm) to 46 inches (117 cm), with a minimum running width of 2-1/2 in (63.5 mm). Front and rear drain fittings allow use of two drains on a single track, permitting two receivers to be drained simultaneously. Instruction manual 307727. Unit includes: 30 gal (114 l) steel tank, 1-1/2 npt drain valve #108204, 1-1/2 npt quick coupler #108202 and 1-1/2 npt coupler cap. Dimensions: 24 in (61 cm) wide; 33 in (84 cm) long; 11 in (28 cm) deep; 3 in (7.6 cm) diameter wheels. 1-1/2 in drain hose—see manual provided.
Narrow Rolling Used-Oil Receiver	
235346	Same as #218969 above, except track width range is from 34.2 in (87 cm) to 42.2 in (108 cm). 27 gal (102 l) capacity. Instruction manual 307727. See accessories on page 101.
Big Hauler™ Truck Drain	
244055	Specially-designed for truck maintenance facilities, the Big Hauler Truck Drain boasts a large capacity and easy maneuverability. Dimensions: 42 in (106.7 cm) long; 30 in (76.2 cm) wide; 9 in (22.9 cm) deep. Capacity: 26 gallons (98 l). Instruction manual 309194. Gravity drain valve at bottom of unit allows for easy drain access. 3/4 in npt outlet can also be used with 224873 or 222090 for diaphragm evacuation. 240832 can be ordered separately for existing diaphragm pump evacuation systems. Instruction manual 308719.



239301



208009



244055



218969

Fluid Reclaim Packages and Accessories

Packages for Used-Oil Evacuation with Air-Operated Diaphragm Pumps

Wall-Mounted Packages	
222090	Includes: 1040 (1 in) diaphragm pump (236265), Wall bracket (189233), Air installation kits (240684), Fluid installation kits (240685), Drum style adapter kits (240832). <i>NOTE: Used-oil receivers are not included and must be ordered separately. See instruction manual 308719 for more information.</i>
24E166	Includes: 1050A (1 in) diaphragm pump (647016), Wall bracket (224835), Air installation kits, Fluid installation kits (240685), Drum style adapter kits (240832). <i>NOTE: Used-oil receivers are not included and must be ordered separately. See instruction manual 313597 for more information.</i>
224873	Includes: 716 (3/4 in) diaphragm pump (241906), Wall bracket (224835), Air installation kits (240684), Fluid installation kits (240685), Drum style adapter kits (240832). <i>NOTE: Used-oil receivers are not included and must be ordered separately.</i>

Stationary Gear-Oil Evacuation Systems with 716 or 1040 Diaphragm Pump

System evacuates lube from differential case using suction generated by a diaphragm pump. Nylon tubes ranging in size from 3/16 in OD to 1/2 in OD are included to fit through sight plug to completely drain the case. Evacuated gear lube is then pumped to waste tank. Piping and waste tank not included. Systems are fully-groundable and bondable for safe transfer of used oil.

224955	Includes: 716 diaphragm pump #241906, air control kit #110149, mounting kit #224759, swivel union #157785, hose coupler #111474, suction hose/wand** #221146 and control valve** #220969. **Order additional suction hose/wand #221146 and additional control valve #220969 for each additional suction point. <i>Note: Order grounding clamp #222011 or use locally-supplied grounding wires and clamps in accordance with applicable codes.</i>
222148	Includes: UL-listed 1040 diaphragm pump #236265, air control kit (221147), hose and fitting kit (222149), evacuation, suction hose/wand** #221146 and wall bracket (189233). **Order additional suction hose/wand #221146 and additional control valve #220969 for each additional suction point. <i>Note: Order grounding clamp #222011 or use locally-supplied grounding wires and clamps in accordance with applicable codes.</i>
24E167	Includes: UL-listed 1050A diaphragm pump (647016), air control kit (221147), hose and fitting kit (222149), evacuation, suction hose/wand** (221146) and wall bracket (189233). **Order additional suction hose/wand #221146 and additional control valve #220969 for each additional suction point. <i>Note: Order grounding clamp #222011 or use locally-supplied grounding wires and clamps in accordance with applicable codes. See instruction manual 313597 for more information.</i>

Port-Evacuation Pump

223695	Port-Evacuation allows fast, clean withdrawal of gear lube, ATF, anti-freeze, and related fluids. Includes: 716 diaphragm pump (241906), mounting kit with 10 ft (3 m) suction hose (223697) which attaches to wands of four different diameters (suction wand kit, 223696): 1/2 in (12.7 mm); 3/8 in (9.5 mm); 1/4 in (6.4 mm), and 3/16 in (4.7 mm). Instruction manual 308035.
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Suction Wand Kits

223696	15 in (38.1 cm)
224762	48 in (121.9 cm)

Used-Oil Handling Accessories

Tandem Drain Kit

218970	Tandem drain kit connects two rolling receivers for flow-through draining operation. Kit includes connector hose, shut-off valve, pipe nipple, and quick-connect nipple. Instruction manual 307727.
108491	Drain hose kit allows rolling used-oil receiver to be drained directly into the used-oil line. Kit is 24 in (0.6 m) in length with camlock coupler on one end.

Swing-Arm Drain Kit

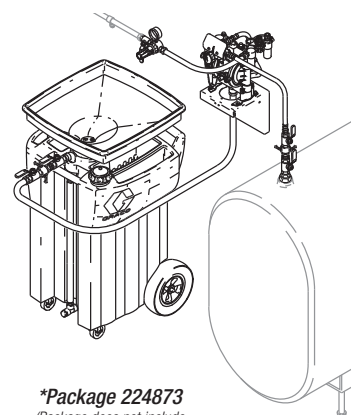
221007	Used for servicing single rolling used-oil receiver (218969). When used with tandem drain kit (218970) it can service two receivers on a single track. Kit includes swivel elbow (108867), connector hose (111931), dust cap (108203) and male adapter (108202).
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Oil Tank Monitor

116229	Shuts off air to the pump when tank is full. Mounted at either end of fast lube service pit, swing-arm drain stores against pit wall and is rotated into position for use.
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Accessories for Port-Evac Pump (223695)

223888	6 ft (1.8 m) suction hose for ATF and anti-freeze. Includes filter screen.
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***Package 224873**
(Package does not include 238866 receiver or tank)

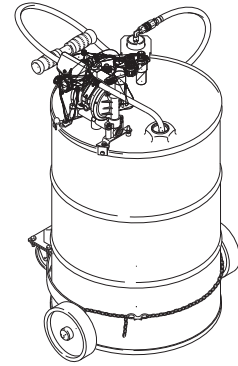


Fluid Reclaim Packages and Accessories

Fluid Reclaim Accessories

222178	U-Tube for Used-Oil Drain Cart Evacuation System (222148) Size: 1/2 npt(mbe).
222011	Grounding Clamp for all Used-Oil Handling Systems Includes 25 ft (7.6 m) grounding wire.
Fas-Vac Evacuation Systems	
224667*	Fas-Vac Evacuation System (without drum) Basic System includes 716 diaphragm pump and mounting hardware. Instruction manual 308154.
224700*	16-gal (60 l) System with 16-gal. (72.7 l) drum Includes pump #224667, dolly #224665, wand storage kit #224666, evacuation hose #224669 and 16 gal drum #111468. Instruction manual 308154.
224763*	16-gal (60 l) System (without drum) Includes same items as #224700 above, but no drum. Instruction manual 308154.
224701*	55-gal (200 l) System (without drum) Includes pump #224667, 55 gal (200 l) drum truck #111470, wand storage kit #224666 and evacuation hose #224702. Instruction manual 308154.
187359	4-Way Valve 1/2 npt(f) ports

*224759 FLR mounting kit and 110149 FRL must be ordered separately. See instruction manual 308163.



224701

Hoses, Fittings and Accessories

Air Filters

Centrifugal action 1/4, 3/8 and 1/2 npt. (with 20 micron filters); 3/4 npt having 40 micron filters to remove water and foreign particles from air supply.

110146	1/4 npt(fbe)	106148	3/8 npt(fbe)
106149	1/2 npt(fbe)	106150	3/4 npt(fbe)



106148

Automatic Filter Drain

106151 Float-type drain for automatic emptying of accumulated fluid in a filter assembly. 1/4 npt(m) (does not fit air filter #110146)

Air Regulators

Provides precision control of outlet air pressure. Feedback principle provides constant pressure to pump regardless of air demand rate and fluctuations in supply pressure. (Additional fittings required except air regulators with installation kits.)

110318	1/4 npt(fbe)
110147	1/4 npt(fbe) with gauge
110234	3/8 npt(fbe)
109075	3/8 npt(fbe) with gauge
202858	3/8 npt(m) x 1/2 npsm(f) with gauge
104266	1/2 npt(fbe)
244844	1/2 npt(fbe) with gauge
207755	3/4 npt(fbe)
244845	3/4 npt(fbe) with gauge



109075

Installation Kits

Installation kits include: shut-off valve, regulators, gauges and fittings as necessary for normal installation.

218316	Installation kits for Fast-Flo, Fire-Ball, or Husky 307 and 716 diaphragm pumps
224512	Installation kits for Mini Fire-Ball 225 and Fire-Ball



224512

Air Lubricators

Extends pump life and smooths pump movement by applying measured lubricant to all moving parts within the pump air motor. Control knob and sight window allow adjustment of dispensed lubricant.

214848	1/2 npt(fbe)
110148	1/4 npt(fbe)
214847	3/8 npt(fbe)
214849	3/4 npt(fbe)



214847

Hoses and Fittings

Accessories

FRL Combination Units

Each includes filter, regulator, pressure gauge, lubricator and connection fittings.

110149	1/4 npt (fbe)
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110150	3/8 npt (fbe)
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217072	1/2 npt (fbe)
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217073	3/4 npt (fbe)
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Bleed-type Air Shut-off Valves

Closes air inlet to pump and relieves trapped air pressure down line from valve. Recommended for each pump drop line. (Note: Be certain to install correctly: if installed backwards air will constantly escape from the valve.)

110223	1/4 npt(fbe)
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110224	3/8 npt(fbe)
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110225	1/2 npt(fbe)
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110226	3/4 npt(fbe)
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107142	1/2 npt(mxf)
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107141	3/4 npt(mxf)
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Air Line Shut-off Valves Ball valve-type air line shut-off valve; non-pressure relieving.

208390	1/4 npt(mbe)
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208393	3/8 npt(mbe)
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208630	1/2 npt(m) x 3/8 npt(f)
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109077	3/4 npt(fbe)
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118464	1 npt(fbe)
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Quick-Connect Coupler

Permits quick, convenient attachment of air supply hoses.

208536	1/4 npt(fbe)
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110198	3/8 npt(f)
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110199	1/2 npt(f)
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110200	3/4 npt(f)
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Quick-Connect Nipple

Allows quick attachment of air supply hoses to pump motor.

169970	1/4 npt(m)
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169967	1/4 npt(f)
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169971	3/8 npt(m)
--------	------------

110196	1/2 npt(m)
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110197	3/4 npt(m)
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Air Needle Valve

Controls pump speed by restricting air flow to pump or other air-operated equipment.

205090	1/4 npt(f) outlet port; 1/4 npt(m) inlet port
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206264	1/8 npt(f) outlet port; 1/4 npt(m) inlet port
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Air Pressure Relief Valve

Prevents pump from operating beyond recommended working pressure by opening at a pre-set maximum air pressure.

103347	90 psi (6 bar)
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110065	60 psi (4 bar)
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110150



106151



110223



107142



208536



169970



205090



110065

Hoses and Fittings

Accessories

Air Pressure Gauge

Allows visual check of air pressure being supplied to the pump. Rated to 200 psi (14 bar).

110319	1/8 npt(m) bottom inlet; black
100960	1/4 npt(m) bottom inlet; black
101180	1/4 npt(m) bottom inlet; chrome

Air manifold

Supply several pumps from a common air supply line. Air inlet port is larger than delivery ports to ensure adequate air flow to all pumps.

158990	Four outlet ports; 3/8 npt(f)
601950	Three outlet ports; 1/2 npt(f)

Runaway Valve

Prevents pump damage by automatically closing the air line to stop the pump when a runaway pump condition occurs due to an empty barrel or hose leak.

224040	3/4 npt(fbe)
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Blow Guns

208627	Air Blow Gun, 1/4 npt(f), use with coupler 208536.
236211	Safety Blow Gun tip swivels freely and cannot be removed. Tip pressure will not exceed 30 psi (2 bar), adequate for cleaning. Maximum Working Pressure 150 psi (10 bar). Use with coupler 208536.

Tire Inflators

236205	Heavy-Duty Tire Inflator includes 12 in (30 cm) hose with swivel dual-foot chuck and pop-out gauge. Tapered chuck nut fits wheel-cover holes on cars and light trucks. Gauge ranges from 0-120 psi in 2 psi increments. Maximum Working Pressure 250 psi (18 bar), 1/4 npt(f) inlet.
236206	Passenger Car Tire Inflator includes 12 in (30 cm) hose with straight-on chuck and pop-out gauge. Tapered chuck nut fits wheel cover holes on cars and light trucks. Ideal for use on reels. Gauge ranges from 0-90 psi in 2 psi increments. Maximum Working Pressure 250 psi (18 bar), 1/4 npt(f) inlet.
218545	1/4 npt(f) Tire Chuck, durable, full-volume tool for adding/relieving air pressure.

Water Valve

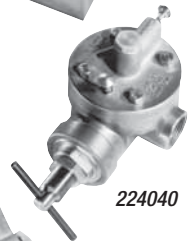
180685	Water/Anti-Freeze Bib is a durable, full-volume dispense nozzle for water, anti-freeze and windshield washer fluid. Nitrile rubber seals with 1/4 npt(f) inlet. Maximum pressure is 100 psi.
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Heavy-Duty Reinforced Hoses

Heavy-duty reinforced hose for use with grease, oil and undercoating material. Hoses are black, male at both ends. Lubrication hoses listed herein are grounded for static electrical discharge.

1/4 in ID hoses with maximum pressure rating of 5000 psi (345 bar)

Part No.	Length	Fittings
109145	12 in (0.3 m)	1/8 in x 1/8 in with bend restrictor
109146	15 in (0.4 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109147	24 in (0.6 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109148	30 in (0.8 m)	1/8 in x 1/8 in with bend restrictor
109149	48 in (1.2 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109150	72 in (1.8 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109151	12 ft (3.6 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109152	15 ft (4.6 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109153	20 ft (6.1 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109154	25 ft (7.6 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109156	35 ft (10.6 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109157	40 ft (12.2 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109158	50 ft (15.3 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)



Hoses and Fittings

Lubrication Hoses

3/8 in ID hoses with maximum pressure rating of 4000 psi (276 bar)

Part No.	Length	Fittings
109160	12 in (0.3 m)	1/4 in x 1/2 in (6.4 mm x 12.7 mm)
109161	24 in (.62 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109162	48 in (1.2 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109163	72 in (1.8 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109165	15 ft (4.6 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109170	50 ft (15.3 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109169	40 ft (12.2 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109170	50 ft (15.3 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)

Lubrication Hoses (Oil)

1/2 in ID hoses with maximum pressure rating of 3000 psi (207 bar)

Part No.	Length	Fittings
220604	12 in (0.3 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
110069	15 in (0.4 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
220598	18 in (0.5 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
220600	54 in (1.4 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
220591	72 in (1.8 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
220590	10 ft (3.1 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
220592	16 ft (4.9 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
220593	20 ft (6.1 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
220608	25 ft (7.6 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
221092	40 ft (12.2 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
221093	50 ft (15.3 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
237861	75 ft (22.9 m)	1/2 in x 3/4 in (12.7 mm x 19.1 mm)
109108	18 in (0.4 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
109105	72 in (1.8 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
111010	10 ft (3.0 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
237865	75 ft (22.9 m)	1/2 in x 1 in (12.7 mm x 25.4 mm)
237866	50 ft (15.2 m)	1/2 in x 1 in (12.7 mm x 25.4 mm)

1 in ID hose rated to maximum pressure of 125 psi (8.7 bar)

Part No.	Length	Fittings
249058	50 ft (15.2)	1 in x 1 in (25.4 mm x 25.4 mm)

1 in ID hose rated to maximum pressure of 212 psi (14.6 bar)

Part No.	Length	Fittings
241908	50 ft (15.2)	1 in x 1 in (25.4 mm x 25.4 mm)
241907	30 ft (9.1 m)	1 in x 1 in (25.4 mm x 25.4 mm)

Air/Water Hoses

Hoses for air, water, anti-freeze and windshield washer fluid. Hoses are red with male fittings at both ends.

Coiled 1/4 in ID hose with maximum pressure rating of 180 psi (12 bar)

Part No.	Length	Fittings
205600	50 ft (15.3 m)	1/4 in x 50 ft (6.4 mm x 15.3 m)

Hoses and Fittings

Lubrication Hoses

Fabric-Reinforced 1/4 in ID hoses with maximum pressure rating of 180 psi (12 bar)		
Part No.	Length	Fittings
109123	18 in (0.5 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109124	4 ft (1.2 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109125	6 ft (1.8 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109126	10 ft (3.1 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109127	25 ft (7.6 m)	1/4 in x 1/2 in (6.4 mm x 12.7 mm)
109128	40 ft (12.2 m)	1/4 in x 1/2 in (6.4 mm x 12.7 mm)
218491	40 ft (12.2 m)	3/8 in x 1/4 in (9.5 mm x 6.4 mm)
3/8 in ID hoses with maximum pressure rating of 180 psi (12 bar)		
Part No.	Length	Fittings
109129	15 in (0.4 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
204560	18 in (0.5 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109130	4 ft (1.2 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
203320	6 ft (1.8 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109131	10 ft (3.1 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
110326	16 ft (4.9 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109132	25 ft (7.6 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
109133	30 ft (9.2 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
249181	40 ft (12.2 m)	1/2 in x 3/8 in (12.7 mm x 9.5 mm)
109134	40 ft (12.2 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
109135	60 ft (18.3 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
1/2 in ID hose with maximum pressure rating of 180 psi (12 bar)		
Part No.	Length	Fittings
218093	22 in (0.56 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
110046	4 ft (1.2 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
205418	6 ft (1.8 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
214656	10 ft (3.1 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
248312	25 ft (7.6 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
248313	50 ft (15.2 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
3/4 in ID hoses with maximum pressure rating of 180 psi (12 bar)		
Part No.	Length	Fittings
110047	18 in (0.5 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
110048	4 ft (1.2 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
208610	6 ft (1.8 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
214955	10 ft (3.1 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
208611	25 ft (7.6 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)

Hoses and Fittings

Pipe Fittings and Swivels

Busing – reducing, standard and expanding					
Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)
100030	1/4 in x 1/8 in	159841	3/8 in x 1/4 in	100206	1/2 in x 1/4 in
100081	1/2 in x 3/4 in	100615	3/4 in x 1/4 in	100505	3/4 in x 3/8 in
100896	3/4 in x 1/2 in	100380	1 in x 1/2 in	158586	1 in x 3/4 in
Pipe Adapters					
Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)
150171	1/8 in x 1/8 in	159840	1/8 in x 1/4 in	156580	1/8 in x 3/8 in
150287	1/4 in x 3/8 in	159842	1/4 in x 1/2 in	150286	3/8 in x 3/8 in
156022	3/8 in x 1/2 in	168595	1/2 in x 3/4 in		
Street Elbows					
Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)
100840	1/4 in x 1/4 in	155699	3/8 in x 3/8 in	158683	1/2 in x 1/2 in
176393	3/4 in x 3/4 in				
Coupling (standard)					
Part No.	Thread Size	Part No.	Thread Size	Part No.	Thread Size
100451	1/8 in	113093	1/4 in	162024	3/8 in
158581	1/2 in	100385	3/4 in	100474	1 in
Hex Nipple (standard and reducing)					
Part No.	Thread Size	Part No.	Thread Size	Part No.	Thread Size
151519	1/4 in x 1/8 in	156971	1/4 in x 1/4 in	156296	3/8 in x 1/8 in
165198	3/8 in x 1/4 in	156849	3/8 in x 3/8 in	162449	1/2 in x 1/4 in
159239	1/2 in x 3/8 in	158491	1/2 in x 1/2 in	194048	3/4 in x 3/8 in
157191	3/4 in x 1/2 in	175013	3/4 in x 3/4 in	158555	1 in x 3/4 in
Square-Head Plug					
Part No.	Thread Size	Part No.	Thread Size	Part No.	Thread Size
111697	1/4 in	100040	3/8 in	100737	1/2 in
104663	3/4 in				
Straight Swivel Adapter*					
Part No.	Rigid (m) x Swivel (f)	Part No.	Rigid (m) x Swivel (f)	Part No.	Rigid (m) x Swivel (f)
208434	1/8 in x 1/4 in	156823	1/4 in x 1/4 in	157705	1/4 in x 3/8 in
155665	3/8 in x 3/8 in	162505	3/8 in x 1/2 in	156684	1/2 in x 1/2 in
158256	1/2 in x 3/8 in	157785	3/4 in x 3/4 in	202965	1 in x 3/4 in
160022	1 in x 1 in				
90° Swivel Adapter*					
Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)
157676	1/4 in x 1/4 in	155677	3/8 in x 3/8 in	159801	3/8 in x 1/2 in
157416	1/2 in x 1/2 in	156589	3/4 in x 3/4 in		
Straight Swivel Adapter*					
Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)
155570	1/4 in x 1/4 in	159153	3/8 in x 1/4 in	156173	3/8 in x 3/8 in
155653	1/2 in x 1/4 in	161077	1/2 in x 3/8 in	155865	1/2 in x 1/2 in
156172	3/5 in x 3/4 in	158383	1 in x 1 in		
90° Swivel*					
Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)
155541	1/4 in x 1/4 in	155495	3/8 in x 1/4 in	155494	3/8 in x 3/8 in
217430	3/8 in x 1/2 in	161037	1/2 in x 3/8 in	155470	1/2 in x 1/2 in
160327	3/4 in x 3/4 in				
45° Swivel Adapter*					
Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)
161889	3/8 in x 3/8 in	105281	3/4 in x 3/4 in		

*Not a "live" swivel, position is stationary after tightened



Hoses and Fittings

Tube and Fittings

Tube Fittings		
Maximum pressure rating of 3000 psi (207 bar) with appropriate tubing wall thickness.		
Tube Union Flow 90° Elbow		
Part No.	Tube OD	
101012	5/8 in	
101376	7/8 in	
Tube Union – Straight		
Part No.	Tube OD	
101009	5/8 in	
101340	7/8 in	
Male Connector		
Part No.	Tube OD	Thread
101339	7/8 in	3/4 npt
Female Connector – Straight		
Part No.	Tube OD	Thread
101008	5/8 in	1/2 npt
101520	7/8 in	3/4 npt
Tube Tee with Female Branch		
Part No.	Tube OD	Thread
101013	5/8 in	5/8 npt
101378	7/8 in	3/4 npt

NOTE: Consult you local distributor for additional tube-fitting requirements (ie: high-pressure, low-pressure, etc.) and fitting recommendations: Parker; AeroQuip; Weatherhead; Lenz; Crawford; or Imperial Eastmand.



Technical Information

Always use a qualified installer and ensure the installer follows the detailed instructions included with every Graco product.

1. Always use new pipe. Make certain that pipes are clean and free of rust and scale.
2. When cutting pipe remove burrs and chips that may damage dispense valves and meters.
3. Always flush the system with oil before attaching dispense valves and meters.

Air Lines

Main Line	Branch Line	Pump Model	
3/4 in or 1 in ID pipe	3/8 in or 1/2 in ID pipe	Fast-Ball; Mini Fire-Ball 225	
3/4 in or 1 in ID pipe	1/2 in ID pipe	Fire-Ball	

Fluid Lines

This information applies to typical automotive flow rate service requirements.

Chassis Grease Lubricant Supply Lines (based upon 5000 psi maximum working pressure)

Supply Line Length	Supply Pump	Hydraulic Supply Line Tubing	ASTM A53 or A106 Grade "B" Seamless Pipe (6000 psi forged steel fittings)
Up to 50 feet	50:1 Fire-Ball 300, 425	5/8" OD x .109" Wall Tube	1/2" Schedule 80
50 to 100 feet	50:1 Fire-Ball 300, 425	5/8" OD x .109" Wall Tube	1" Schedule 160
100 to 200 feet	50:1 Fire-Ball 300	N/A	1-1/4" Schedule 160
100 to 200 feet	50:1 Fire-Ball 425	N/A	1-1/2" Schedule 160
200 feet and up	50:1 Fire-Ball 300, 425	N/A	1-1/2" Schedule 160

Motor Oil, Gear Lube, or ATF Lubricant Supply Lines (based upon 1000 psi maximum working pressure)

Supply Line Length	Supply Pump	Hydraulic Supply Line Tubing	ASTM A53 Butt welded Pipe (Class 300 malleable fittings)
Up to 50 feet	5:1 Fire-Ball 300	5/8" OD x .049" Wall Tube	1/2" Schedule 40
Up to 50 feet	10:1 Fire-Ball 425	3/4" OD x .049" Wall Tube	3/4" Schedule 40
50 to 100 feet	5:1 Fire-Ball 300	3/4" OD x .049" Wall Tube	3/4" Schedule 40
50 to 100 feet	10:1 Fire-Ball 425	1" OD x .049" Wall Tube	1" Schedule 40
100 to 200 feet	5:1 Fire-Ball 300	1" OD x .049" Wall Tube	1" Schedule 40
100 to 200 feet	10:1 Fire-Ball 425	1-1/2" OD x .095" Wall Tube	1-1/4" Schedule 40
200 feet and up	5:1 Fire-Ball 300	1-1/2" OD x .095" Wall Tube	1-1/4" Schedule 40
200 feet and up	10:1 Fire-Ball 425	1-1/2" OD x .095" Wall Tube	1-1/4" Schedule 40

Tank Packages

Fluid Dispense Packages

Mini Fire-Ball® 225, 3:1 Bulk-Oil Dispensing Packages

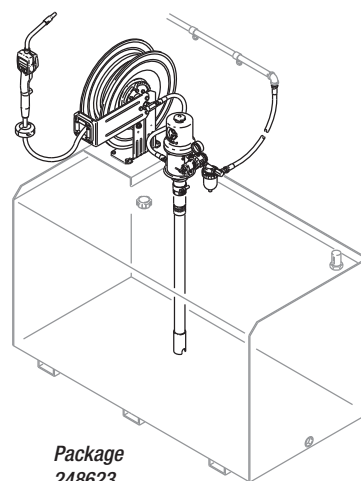
Mini Fire-Ball 225, 3:1 Pump Package	
248623*	Includes: Mini Fire-Ball 225, 3:1 Universal pump with bung adapter and down tube (248097), SD Series reel with 50 ft (15.2 m) x 1/2 in (12.7 mm) fluid hose (HPM65B), LDM5 meter (256215)
248622*	Includes: Mini Fire-Ball 225, 3:1 Universal pump with bung adapter and down tube (248097), SD Series reel with 25 ft (7.6 m) x 1/2 in (12.7 mm) fluid hose (HPM33B), EM5 meter (256215)

*Order 218549 (1/2 in x 24 in) hose reel inlet kit separately NOTE: Tanks not included

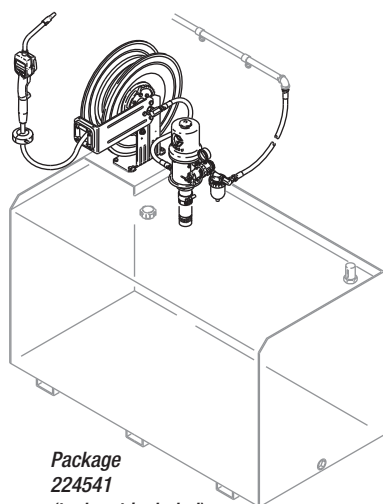
Fire-Ball 300, 5:1 Deluxe Bulk-Oil Dispensing Packages

Fire-Ball 300, 5:1 Pump Packages	
241633*	Includes: Fire-Ball 300, 5:1 pump universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), 2 in (50.8 mm) bung adapter (222308), SD Series reel with 25 ft (7.6 m) x 1/2 in (12.7 mm) hose (HPM33B), EM5 meter (255350)
224541*	Includes: Fire-Ball 300, 5:1 pump universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), 2 in (50.8 mm) bung adapter (222308), SD Series reel with 50 ft (15.3 m) x 1/2 in (12.7 mm) hose (HPM65B), 18 in (45.7 cm) hose (220598), 90° swivel (inlet on hose reel) (157416), SDM5 meter (255350)
244038*	Includes: Fire-Ball 300, 5:1 pump universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), 2 in (50.8 mm) bung adapter (222308), SD Series reel with 50 ft (15.3 m) x 1/2 in (12.7 mm) hose (HPM65B), 18 in (45.7 cm) hose (220598), 90° swivel (157416), SDP5 meter (255200)
224534*	Dispensing from Bench-Top Tanks with Fire-Ball 300, 5:1 Pump Package. Includes: Fire-Ball 300, 5:1 pump, Universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), Air filter (106148), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), SD Series reel with 50 ft (15.3 m) x 1/2 in (12.7 mm) hose (HPM65B), Drain valve (106151), 72 in (182.9 cm) hose kit (222063), Thermal relief valve (237893), 90° swivel (157416), SDM5 Meter (255350)

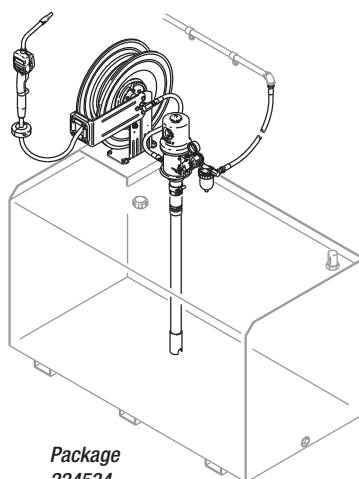
*Order 218549 (1/2 in x 24 in) hose reel inlet kit separately NOTE: Tanks not included



Package
248623
(tank not included)



Package
224541
(tank not included)



Package
224534
(tank not included)

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