

# **PMG Buyer's Guide**

Petroleum Handling Equipment for Industrial and Commercial Applications



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# **About Graco**



### **Lubrication Equipment Division**

From the first air-powered grease gun to our industry-leading Fire-Ball pump, Graco's Lubrication Equipment Division is what started it all. We manufacture equipment to monitor, control, manage and dispense fluids. Offering innovative equipment for all your vehicle services, industrial and automatic lubrication needs. We offer a full range of high-quality pumps, meters, valves, hose reels and accessories to increase production and reduce waste and downtime.

Graco offers a full line of quality equipment to meet the varying needs of vehicle maintenance and repair. Streamline your workflow and move more lubricants through your shop. We offer reliable, high-quality equipment you can depend on for fuel, diesel, antifreeze, oil and grease. Our versatile fluid inventory control and management systems are designed to accurately track the use of oil, grease and other automotive fluids at vehicle maintenance facilities, and our lubrication equipment ensures you deliver fluids to the right spot in your shop. From light-duty applications to high-performance concepts designed for heavy-duty jobs, our equipment is known for its rugged, durable and long-life design.





**Machining** is a core competency of Graco – it enables complete control of the component parts needed to ensure precise metering, reliable dispensing and fluid movement.

When it comes to research and development, Graco is one step ahead, ensuring we offer the best possible solutions. To guarantee superior quality and to meet the changing requirements of your markets, we prioritize investing resources in research and development. Innovative technologies and extensive field testing are a natural part of our process to develop new products. Also, every aspect of our production is subject to constant testing and

evaluation. It's the foundation to deliver products with long service life and low cost of ownership. The insurance to help you grow your business.



We understand our customers. We build a partnership, working and striving towards new solutions, together. We are at the service of our distribution partners, supporting you along the way. Look at Graco not just as a manufacturer or supplier but as an extension of your business. Our dedicated and experienced teams offer unique capabilities to help you meet your specific goals and challenges.

- Innovative, high-quality products with unique features
- A professional warranty and high service rate
- Purchasing conditions aimed at profitable growth
- A committed sales and marketing team for tailor-made support of expanding sales opportunities
- Continuous technical, commercial and hands-on training

Our world-class distribution centers and unrivaled global distributor network give Graco a unique industry advantage that allows us to rapidly deliver our products to end users worldwide.

Exceeding customer expectations is our priority. Our multilingual team of customer service specialists and technical engineers are available to you. Graco offers instructor-lead training sessions in the United States, EMEA and Asia Pacific. These courses teach theory and hands-on practical applications, covering basic operational to advanced technical knowledge. Each training session can be adapted to your specific needs.

Offering more than just products, we are focused on building relationships, identifying and developing business opportunities with you. Our sales team is available to collaborate, define strategies to assist in navigating through our product offering and provide advice on promotional activities.

Graco's marketing specialists investigate ways to expand the market and develop the right technologies for any application, in close cooperation with distributors and field users. We offer tailor-made



promotional and communication support, from defining strategic requirements to developing marketing campaigns, organizing events and creating digital or printed material.

## Graco Resources

Graco has developed tools and resources to help educate and better serve our distribution channel. Check them out today:



### Graco Sales Book

Stay up-to-date with the newest information from Graco by downloading the Graco Sales Book App.

Graco Sales Book is an innovative mobile application, designed to give Distributors access to Graco product information, including brochures, manuals, videos, and training documents - all on your mobile device.

Download today by visiting

Salesbook.graco.com



### **Graco University**

Graco University is an e-learning module that can be accessed online, anytime, and contains assets that help educate you on Graco products.

This innovative online learning program gives the tools to stay on the leading edge with a variety of resources such as virtual and instructor led courses, online books, live and on-demand video presentations, and much more.

Learn more today at

training.graco.com



### Graco Gear

Graco Gear is your one-stop shop for branded merchandise and other tools that will help you build customer relationships.

Order shirts, hats, banners, and more whenever you need! You can even add your logo for a small fee. Most orders ship next day.

Start shopping today at

gracogear.com

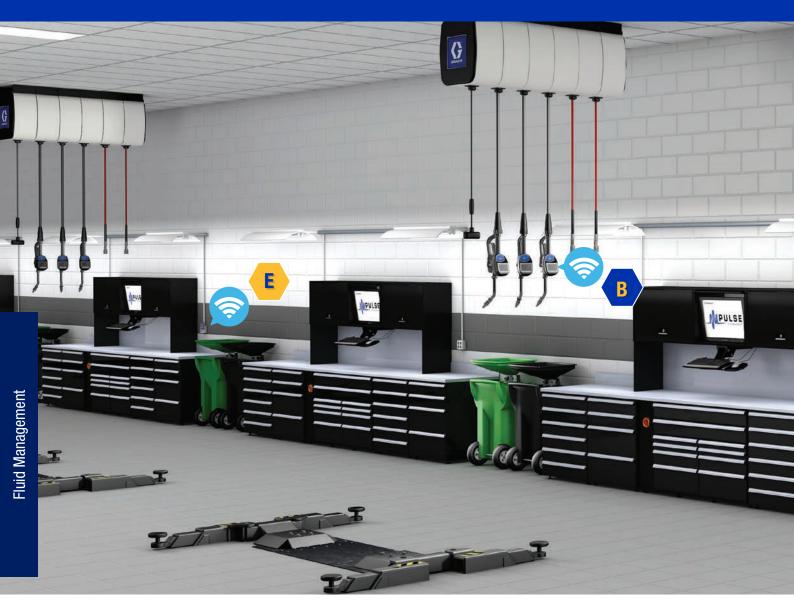
Call **800-533-9655** to speak with a Graco representative, or visit **www.graco.com** for more information.



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Pulse<sup>™</sup> Fluid Management simplifies how forward-thinking shops track and manage bulk fluids in real time - adding more transparency and accountability to drive productivity and profitability.



### **Benefits of Pulse Fluid Management**



Transparency. Monitor every drop, every time – automatically – and minimize shrinkage, rounding and discrepancies.



Scalability. Add Pulse into almost any environment quickly, and even retrofit applications or multiple buildings within the same facility.



Accountability. Track issues to the source via advanced technology, including automated alerts and customizable reports.



 $\label{lem:accurate billing.} \textbf{Accurate billing.} \ \textbf{Automatically assign}$ every ounce of fluid directly to a work order to simplify billing and maximize profit margins.



Integration. Capture data, integrate it with popular DMSs and share it with other stakeholders quickly.



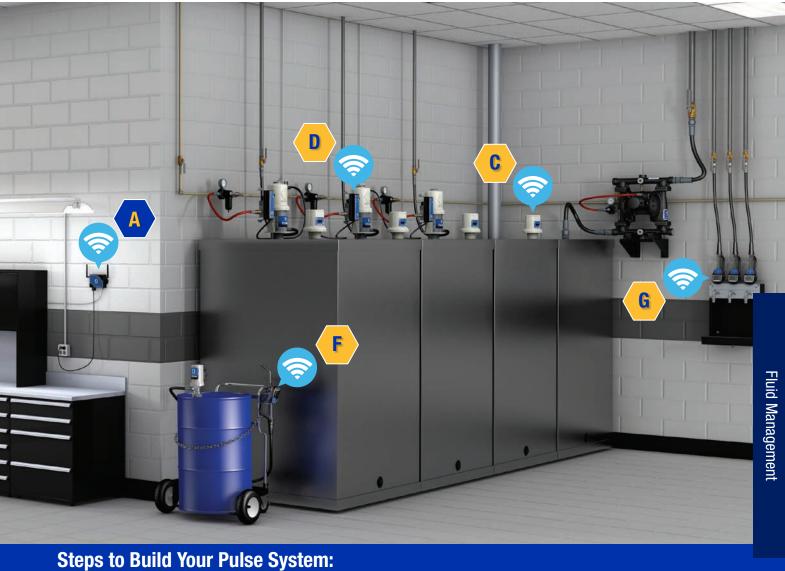
Simplicity. Avoid surprises, interruptions and delays. Fluids are tracked and recorded instantly and automatically.

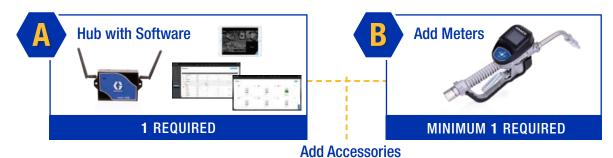


Portability. Pair with mobile dispense units and drums easily to reduce extra steps and hassles for technicians.



Inventory management. Monitor fluid inventory and schedule refills to minimize delays and excessive costs.









### Pulse Hub



There's no software to install. Simply connect the Pulse Hub to a power source and access your local network to get started. The self-contained device includes everything necessary for users to access monitoring and reporting tools instantly from any network-connected PC, tablet or smartphone.



echnical Specifications				
Weight	1.0 lb (454 gm)			
Power Supply				
Input Power	100-240 VAC line voltage (0.05 A)			
To Hub	5 VDC (0.5 amps)			
Warranty	Two years electronics			



	Part Number	Description	
24Z978 Hub for non-European installation with global power adapter		Hub for non-European installation with global power adapter	
	25D454	Hub for European (EU) installation with global power adapter	



### **Pulse Software**

Pulse Fluid Management software is focused on simple intuitive design with powerful information at your fingertips. Get a guick consolidated view of all dispenses for the entire shop via specifically designed web page and easy-to-use software. Track tank levels at a glance. Generate customizable reports and automated e-mail alerts to share critical information with other key decision-makers. For further efficiency and automation, Pulse software can be integrated with your DMS through Pulse standard integrations or our generic third-party interface.

#### Features and Benefits

- No software to install Pulse Hub generates a local web page
- Responsive web design Use any-size screen, from a PC to a phone
- Consolidated dispense queue Find everything you need in one convenient table
- Advanced reporting Create and schedule automated reports to track history and fluid usage
- Informative and preventive alerts The software offers over two dozen alert activities
- Automatic software updates Software notifies you when updates are ready to install







### **Dealer Management System (DMS) Integrations**

Gain even more efficiencies by interfacing Pulse with your existing DMS. Provides billing and workflow improvements by automatically sharing fluid dispense records.

#### Features and Benefits

- Ease of use Interface is invisible to the technician
- Security Validate work orders
- Automation Ensures that all dispenses are billed
- Custom Integrate to DMS/business system
- Detailed reporting Each job performed is recorded with information returned to DMS

#### **How It Works**

The interface to business systems or DMS provides two important basic functions:





























### **Pulse Dispense Meter**

The dispense meter is durable and easy to use, giving technicians everything they need at their fingertips. PINs and other data can be entered in moments via a larger, more intuitive display. NFC tags can be used for immediate PIN entry and faster access to work orders.

GRACO



### Large, Intuitive Display

High-contrast display for lowand bright-light conditions.

### Faster PIN Entry

Built-in NFC reader and simple, efficient controls.

#### Wireless Communication

Communicates dispense information with Hub.

### Ergonomic Design

Lower button placement.



Choose from rigid, flexible or gear lube extensions with automatic flush-mount nozzle design.

### Long Battery Life

Uses four off-the-shelf AA batteries easy to replace.

### Long-Life Valve Design

Cartridge design for long life and easier repair.

### **Protective Trigger Guard**

Prevents accidental dispenses.

Technical Specifications				
Flow Range*	0.25 to 18 gpm (0.9 to 68 lpm)			
Maximum Working Pressure	1,500 psi (103.4 bar)			
Units of Measure (factory set to quarts)	Pints, quarts, gallons, liters			
Weight	5.3 lbs (2.4 kg)			
Inlet	1/2 in NPT or 3/4 in NPT			
Outlet	3/4 in straight thread O-ring boss			
Dimensions (without extension)				
Length	13 in (33 cm)			
Width	3.75 in (9.5 cm)			
Height	5.75 in (14.6 cm)			
Maximum Recorded Dispense	999.99 units			
Operating Temperature Range	4°F to 158°F (-16°C to 70°C)			
Storage Temperature Range	-40°F to 158°F (-40°C to 70°C)			
Battery**	4 AA alkaline or lithium batteries			
RF Frequency Band	2,400 to 2,483.5 MHz			
Maximum RF Transmit Power	8 dBm			
Wetted Parts	Aluminium, stainless steel, PBT, nitrile rubber, zinc-plated carbon steel, nickel-plated carbon steel			
Fluid Compatibility	Anti-freeze, gear oil, crankcase oil, ATF, windshield wash (up to 50% alcohol-based solutions)			
Meter Accuracy <sup>†</sup> +/- 0.5 percent				
Warranty	Five year structural, 3 years electronics, 1 year wear components			

<sup>\*</sup>Tested in 10W motor oil. Flow rates vary with fluid pressure, temperature and viscosity.

\*\*Battery required to meet life expectancy: Energizer® Alkaline E91.

<sup>†</sup>At 2.5 gpm (9.5 lpm), at 70°F (21°C), with 10W oil and 1 gallon dispensed. May require calibration; out-of-box accuracy is +/- 1.25 percent.













### **Ordering Information**

8 gpm (30 lpm) Meters				Part Number			
Fluid	Extension	Nozzle	Size (in)	NPT	BSPP	BSPT	
Oil	Flexible	Automatic Quick-Close		25M319	25M334	25M349	
Oil	Rigid			25M317	25M332	25M347	
Anti-Freeze -	Flexible	Manual	Manual	1/2	25M320	25M335	25M350
Rigid	Anti-Freeze	1/2	25M318	25M333	25M348		
Gear Lube	Gear Lube	Manual		25M326	25M341	25M356	
Windshield Wash	Rigid	None		25M328	25M343	25M358	

### 18 gpm (68 lpm) Meters

	Flexible	Manual High-Flow	1/2	25M324	25M339	25M354
Oil / Anti Franza	Rigid			25M323	25M338	25M353
Oil / Anti-Freeze	Flexible	Manual High-Flow	3/4	25M330	25M345	25M360
	Rigid			25M329	25M344	25M359

### **NFC Tags**

Part Number	Description
131462	NFC tags for user identification with meter. 25-pack, blue.

### **Pulse Meter Filter Kits**

Part Number Desc		Description
	25D906	Filter kit includes filters/strainers (15M308) and 0-rings (155332)

### **Hose Identification Sets**

Vinyl hose wrap for easy identification of meter fluid.

	Part Number	Description
() GRACO	17S659	Red
Q GRACO	17S660	Blue
O GRACO	17S661	Green
O GRACO	17S662	Yellow
O GRACO	17S663	White

### **Swivel Covers / Impact Protection**

	Part Number	Description		
	15T366	Black swivel cover (standard colour with meter)		
	15T367	Red swivel cover		
	15T368	Blue swivel cover		
	15T369	Green swivel cover		
	15T370	Yellow swivel cover		
8	131226	Pulse / SD meter boot		















### **Pulse Tank Level Monitor (TLM)**

Measure your largest tanks accurately with minimal effort. The monitor's ultrasonic sensor records the tank level and can be configured to e-mail a daily report to key stakeholders detailing tank volumes, low- or high-level warnings and more.



### Simple Wireless Setup

Automatic network identification.

### Long Battery Life

Allows for remote installations. Uses four off-the-shelf AA batteries - easy to replace.

### Built-In Display

Real-time level visible from built-in display.

### Supports Multiple Tank Shapes

Ability to input strapping table for any tank shape.

### **Tough Exterior**

Sealed enclosure to accommodate outdoor usage.

### Compact Design

Easily fits into more spaces.

### **On-Demand Readings**

Ability to take reading at any time.



### **Ordering Information**

Part Number	Description
25M449	Tank Level Monitor (TLM)

chnical Specifications	
Ultrasonic Tank Depth Measurement range (Not for use in pressurized tanks)	5 in to 30 ft (12.7 cm to 9.14 m)
Fluid Level Measurement Accuracy	+/- 1.8 in (4.57 cm)
Mounting	1.5 in and 2 in threaded NPT connector (Adapter for BSPP and BSPT thread options available)
Weight (with batteries installed)	1.25 lb (567 g)
RF Frequency Band	2,400 to 2,483.5 MHz
Operating Temperature Range (Display will not function below 32°F [0°C])	-22°F to 185°F (-30°C to 85°C)
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)
Batteries	Four AA alkaline
Enclosure	IPX5
RF Communication	2,400 to 2,483.5 MHz
Vertical Tanks	
Maximum Volume	999,999 gal (999,999 l)
Maximum Height	30 ft (9.14 m)
Cylindrical Tanks	
Maximum Volume	999,999 gal (999,999 l)
Maximum Height	30 ft (9.14 m)
Maximum Length	30 ft (9.14 m)
Maximum Width	30 ft (9.14 m)
Fluid Compatibility	Automatic transmission fluid, anti-freeze, window wash, coolant, waste water
Warranty	Two years electronics















Pulse Pump Air Control (PAC)
Prevent unauthorized access to fluid inventory. Pump air supply is shut off automatically after the dispense, preventing spills and expensive cleanup if a broken line occurs. Pump operation is enabled only when a dispense has been activated from the meter.



### Easy Installation

Built-in mounting bracket.

### Simple Wireless Setup

Automatic network identification.

### High-Volume Air Valve

Supports a variety of pumps.

### Multiple Thread Options

NPT and BSPP air valve options.



### Compact Design

Allows for mounting directly on pump or in tight spaces.

### Rugged Exterior

Sealed enclosure to protect internal components.

### Multiple Wiring Options

NEMA 5-15 plug or flying leads.



### **Ordering Information**

Part Number	Description
24Z728	NPT with NEMA 5-15 plug (North America)
24Z676	NPT with flying leads
24Z677	BSPP with flying leads

#### **Technical Specifications**

Minimum Operating Pressure	36 psi (0.25 MPa, 2.5 bar)
Maximum Operating Pressure	145 psi (1.0 MPa, 10 bar)
Maximum Air Flow	93 SCFM (2.6 m³/min)
Power Supply	100–240 VAC line voltage, 24 VDC solenoid
Power Cord	
Model 24Z676, 24Z677	6 ft SJ00W, 3-wire, 18-gauge cable with flying leads
Model 24Z728	Power cord with integrated NEMA 5-15 plug
Current	25 to 60 mA
RF Frequency Band	2,400-2,483.5 MHz
Connection Ports Size (inlet, ou	tlet, exhaust)
Model 24Z676, 24Z728	3/8 in NPT
Model 24Z677	3/8 BSPP
Operating Temperature Range	14°F to 122°F (-10°C to 50°C)
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)
Weight	2.44 lbs (1.11 kg)
Dimensions	
Length	9.5 in (241.3 mm)
Width	2.25 in (57.2 mm)
Height	3.75 in (95.3 mm)
Warranty	Two years electronics





#### **Pulse Extender**

The Pulse wireless network can easily be expanded to accommodate large shops or a large number of devices. Simply plug the Extender into wall power to extend the network.

### Expands Pulse Network

Supports 20 devices and extends the network range.

#### Simple Wireless Setup

Automatic network identification.

#### Integrated Electrical Plug

Simply plugs into wall.

### Compact Design

Place conveniently in standard electrical outlet locations.



Pulse"

Remote

**Extender** 

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Fechnical Specifications			
	Operating Temperature	32°F to 158°F (0°C to 70°C)	
	Power Input	Universal AC input (85 VAC to 265 VAC)	
	Length	2.87 in (7.3 cm)	
	Width	1.97 in (5.0 cm)	
	Height	1.37 in (3.5 cm)	
	Weight	2.50 oz (70.9 g)	
	Warranty	Two years electronics	

### **Ordering Information**

Part Number	Description
17F885	Extender for US (Type A)
17F886	Extender for Europe (EU) (Type C)
17F887	Extender for United Kingdom (UK) (Type G)
17F888	Extender for Australia (Type I)

#### **Pulse Remote Extender**

The Pulse wireless network can easily be expanded to accommodate devices in secondary on-site buildings. Connect the Remote Extender to wall power and local network via Ethernet or Wi-Fi to extend the network.



### Expands Pulse Network

Supports 20 devices and extends the network range.

### Simple Wireless Setup

Automatic network identification.

### Multiple Network **Connection Options**

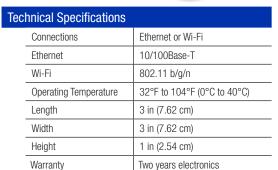
Utilizes local network Ethernet or Wi-Fi to communicate back to Hub.

#### Compact Design

Easy to place even in tight spaces.

### **Electrical Power**

Includes plug-in power adapter.



### **Ordering Information**

Part Number	Description
17F878	Remote Extender for non-European installation with global power adapter
17F879	Remote Extender for European (EU) installation with global power adapter















#### **Ordering Information**

### **Pulse Roll-Around Package**

Pulse Fluid Management wireless technology allows you to control your mobile drums and dispenses by providing security for expensive drums of synthetic and semi-synthetic fluids. Each package contains everything you need to manage your drums in existing Pulse installations. Drum not included.

Package	Extensions	Package Includes					
Number	Extensions	Meter	Pump	Downtube	Drum Cart	Air Regulator	Hose
25D948	8 GPM, Rigid	25M317					
25D952	8 GPM, Flexible	25M319	24G576	16F878	24F915	24H420	24H865
25D953	8 GPM, Gear Lube	25M326					



#### **Ordering Information**

#### Oil Bar

Part Number	Description
25D121	Oil Bar Console
25D130	Oil Bar Dispense Kit
25N415	Oil Bar Pulse Dispense Meter



#### Oil Bar

Components ordered separately. For complete unit, order console (25D121), dispense kit (25D130) (one per meter) and Pulse meters (25N415) as needed.

#### **Accessories**

Nam	Part Number	Description
	249440	Console bracket

### **Pulse Demo Kit**

Pulse demo case with everything needed to show customers how Pulse will save them time, gain them more billable hours and maximize their fixed operation's profitability.

Part Number	Description
25D625	Includes Pulse Hub (24Z978), Pulse Dispense Meter, Pulse TLM (25M449), Pulse PAC (24Z728), Pulse NFC Tag, case and protective foam



## **Wired Fluid Control**











### Ordering Information

### **Pulse Output Meters**

Part Number	Description
236763	Electronic pulse meter (quarts)
236764	Electronic pulse meter (liters)
215474	Mechanical pulse meter (quarts)
244342	Meter pulse converter, used when upgrading old-style modular fluid commander to electronic allows use of 215474/215475 with the EFC.

### **Air Solenoid Valves**

Part Number	Description
215407	Air solenoid valve, 150 psi (10 bar) (1/2 npsm (f) conduit ports for wiring; 1/4 in 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 in npsm (f) conduit ports for wiring; 1/4 in NPT(F) air ports.150 psi (10.3 bar) max. working pressure.

### **Fluid Solenoid Valves**

Part Number	Description
215487	Fluid solenoid valve, 1/2 in NPT(F) 3,000 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 in NPT(F), same as features as 215487.
110025	Bare fluid solenoid valve, 1/2 in NPT(F) 3,000 psi, same features as 215487 above, but without wiring connectors or adapters.

### **Ready-Light Kits**

Part Number	Description
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.
238996	Ready-light with junction box (no solenoid or strainer)
239019	Ready-to-dispense indicator light only
113859	Lamp for indicator only

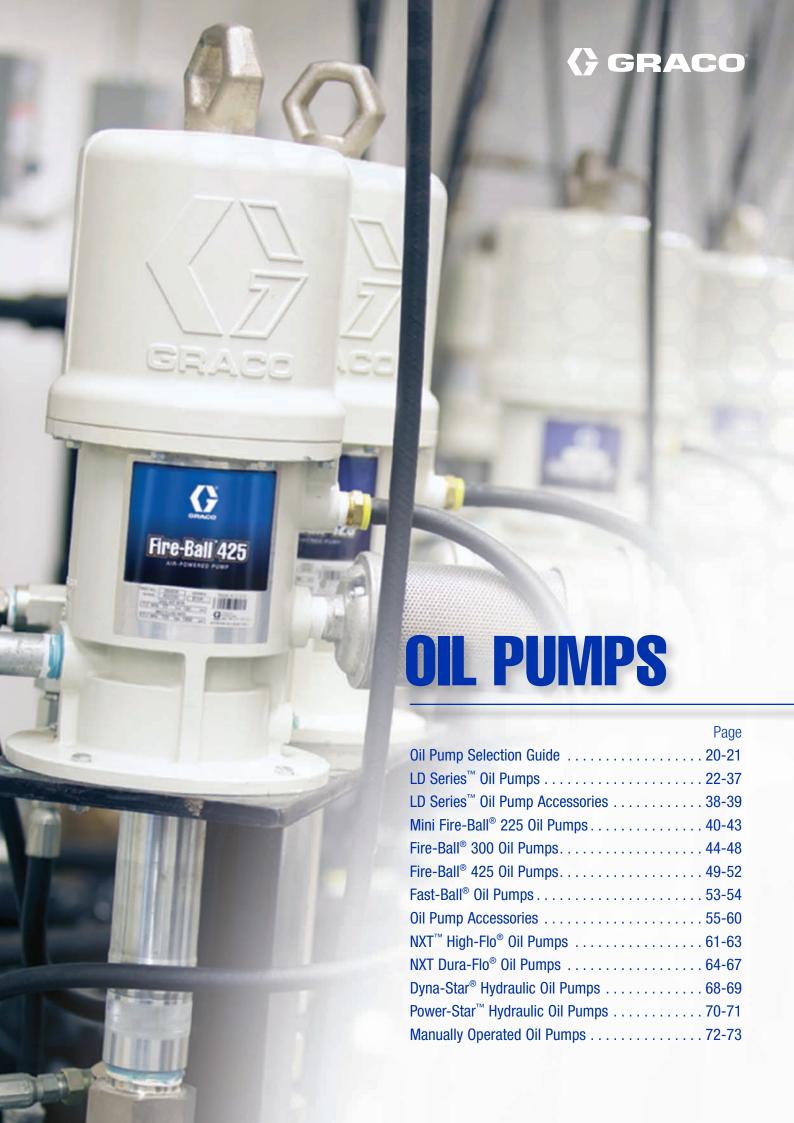
### **Installation Components**

Part Number	Description
111620	Check valve
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.

### Connecting Cables for Connecting Solenoids and Consoles, 90-volt, 2-wire, 18-gauge

Part Number	Description
215481	100 ft (30.5 m) pre-connected at both ends





# **Oil Pump Selection Guide**

Pump Family and Fluid Pressure Ratio	Typical Applications	Annual Usage	Line Length	Simultaneous Dispense Points	Approx. Free Flow Rate @ 100 psi	Air Inlet	Fluid Inlet	Fluid Outlet	Air Operation Range	Reference Page
Fast Ball, 1:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	5,000 gal (19,00 l)	< 100 ft (30 m)	1 (no reels)	5 gpm (19 lpm)	1/4 NPT(F)	1-1/2 NPT(F)	3/4 NPT(F)	40-80 psi (2.7-12.5 bar)	54
LD, 3:1	Automotive dealerships     Fast lube centers     Lube trucks     Lubricant transfer     Service shops	20,000 gal (75,000 l)	300 ft (91 m)	1 to 2	7.8 gpm (30 lpm)	1/4 NPT(F)	1 NPT(F)	1/2 NPT(F)	20-150 psi (1.37-10.3 bar)	22
LD, 5:1	Automotive dealerships     Fast lube centers     Lube trucks     Lubricant transfer     Service shops	20,000 gal (75,000 l)	300 ft (91 m)	1 to 2	6.7 gpm (25 lpm)	1/4 NPT(F)	1 NPT(F)	1/2 NPT(F)	20-150 psi (1.37-10.3 bar)	22
Mini Fireball 225, 3:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	30,000 gal (113,500 l)	250 ft (76 m)	1 to 2	8.3 gpm (32 lpm)	3/8 NPT(F)	1-1/2 NPT(F)	1/2 NPT(F)	40-180 psi (2.8-12 bar)	40
Fireball 300, 5:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	35,000 gal (132,000 l)	500 ft (152 m)	1 to 3	12.1 gpm (46 lpm)	3/8 NPT(F)	1-1/2 NPT(F)	1/2 NPT(F)	40-180 psi (2.8-12 bar)	44
Fireball 425, 3:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	> 35,000 gal (132,000 l)	Up to 250 ft (76 m)	3 to 4	28.7 gpm (109 lpm)	1/2 NPT(F)	1-1/2 NPT(F)	3/4 NPT(F)	40-180 psi (2.8-12 bar)	49
Fireball 425, 6:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	> 35,000 gal (132,000 l	Up to 500 ft (152 m)	3 to 4	17.1 gpm (65 lpm)	1/2 NPT(F)	1-1/2 NPT(F)	3/4 NPT(F)	40-180 psi (2.8-12 bar)	49
Fireball 425, 10:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	> 35,000 gal (132,000 l	Up to 750 ft (228.6 m)	3 to 4	11.7 gpm (44 lpm)	1/2 NPT(F)	1-1/2 NPT(F)	3/4 NPT(F)	40-180 psi (2.8-12 bar)	49

# **Oil Pump Selection Guide**

Pump Family and Fluid Pressure Ratio	Typical Applications	Annual Usage	Line Length	Simultaneous Dispense Points	Air Inlet	Fluid Inlet	Fluid Outlet	Air Operation Range	Reference Page
NXT High Flo, 3.5:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 35,000 gal (132,000 l)	Up to 250 ft (76 m)	4 to 5	3/4 NPT(F)	1-1/2 NPT(F)	1 NPT(F)	20-100 psi (1.4-7 bar)	61
NXT High Flo, 4.5:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 35,000 gal (132,000 l)	Up to 450 ft (137 m)	4 to 5	3/4 NPT(F)	1-1/2 NPT(F)	1 NPT(F)	20-100 psi (1.4-7 bar)	61
NXT High Flo, 6:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 35,000 gal (132,000 l)	Up to 500 ft (152 m)	4 to 5	3/4 NPT(F)	2 NPT(F)	2 NPT(F)	20-75 psi (1.4-5.2 bar)	61
NXT Dura-Flo, 6:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 35,000 gal (132,000 l)	Up to 500 ft (152 m)	2 to 4	3/4 NPT(F)	2 NPT(F)	1-1/2 NPT(F)	20-100 psi (1.4-7 bar)	63
NXT Dura-Flo, 10:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 35,000 gal (132,000 l)	Up to 750 ft (228.6 m)	2 to 4	3/4 NPT(F)	2 NPT(F)	1-1/2 NPT(F)	20-100 psi (1.4-7 bar)	64
NXT Dura-Flo, 12:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 35,000 gal (132,000 l)	Up to 1000 ft (305 m)	2 to 4	3/4 NPT(F)	2 NPT(F)	1-1/2 NPT(M)	20-100 psi (1.4-7 bar)	64
NXT Dura-Flo, 23:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 35,000 gal (132,000 l)	Up to 1000 ft (305 m)	2 to 4	3/4 NPT(F)	2 NPT(F)	1-1/2 NPT(M)	20-75 psi (1.4-5.2 bar)	64

Pump Family and Fluid Pressure Ratio	Typical Applications	Maximum Output Flow Rate	Maximum Fluid Output Pressure	Hydraulic Inlet	Hydraulic Outlet	Fluid Inlet	Fluid Outlet	Maximum Hydraulic Inlet Pressure	Reference Page
Dyna-Star 1:1	Fleet service facilities Heavy-duty dealerships In-plant Lube trucks Lubricant transfer Mining Service shops	3 gpm (11 lpm)	1500 psi (102 bar)	3/8 NPT(F)	3/4 NPT(F)	1-1/2 NPT(F)	1/2 NPT(F)	1500 psi (102 bar)	68
Dyna-Star 1/4:1	Fleet service facilities Heavy-duty dealerships In-plant Lube trucks Lubricant transfer Mining Service shops	10 gpm (38 lpm)	375 psi (25.1 bar)	3/8 NPT(F)	3/4 NPT(F)	1-1/2 NPT(F)	1/2 NPT(F)	1500 psi (102 bar)	68
Power-Star 1:1	Fleet service facilities Heavy-duty dealerships In-plant Lube trucks Lubricant transfer Mining Service shops	12 gpm (45 lpm)	1500 psi (102 bar)	3/4 NPT(F)	1-1/4 NPT(F)	1-1/2 NPT(F)	1/2 NPT(F)	1500 psi (102 bar)	70



### **LD Series Oil Pumps**











### **Durable and Hardworking**

Stay ahead of the competition with LD Series pumps. These affordable and full-featured pumps are designed for lower-volume applications. LD pumps are fine-tuned for a compact, flexible and durable solution.

### Three Inch Air Motor

Provides more power to create better flow.

### **Engineered for Durability**

Patented cup and plate design eliminates the need for O-rings that wear out faster, for a more durable, longer-lasting solution.

#### Modular Air Valve

Air inlet and exhaust locations are easy to configure with just four bolts for simple, hassle-free installations.

#### **Pilot Valves**

Patented self-cleaning design increases reliability in dirty air environments and minimizes pressure drop with rapid changeovers for reduced stalling and smoother flow.

#### Built-In Thermal Relief and Inlet Strainer

Built-in thermal relief protects your equipment from thermal expansion, and an inlet strainer is built in to protect pump from contaminants.

### **Typical Applications**

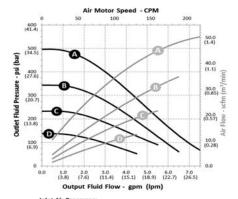
- Automotive dealerships
- · Fast lube centers
- Service shops

#### Typical Fluids Handled

• Petroleum- and synthetic-based oils (motor, gear and ATF)

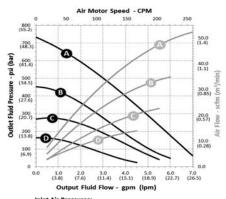
### **Pump Performance**

### **LD Series 3:1 Pumps**



(10.3 bar) (10.3 bar) (10.9 bar) (6.9 bar) (2 = 70 psi (4.8 bar) 0

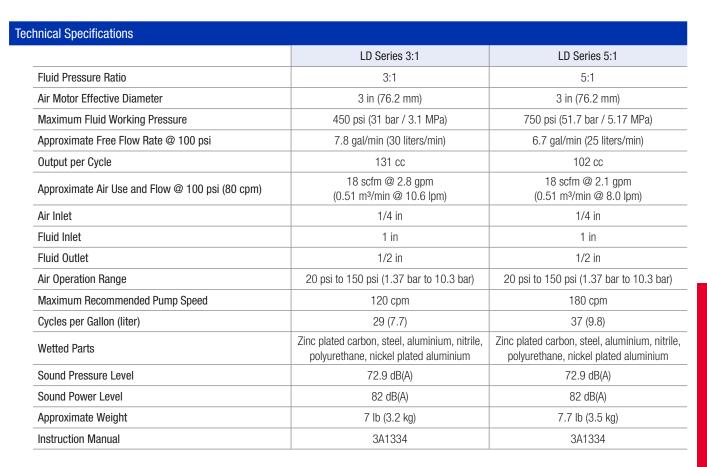
### **LD Series 5:1 Pumps**



(10.3 bar) (10.3 bar) (10.3 bar) (10.3 bar) (6.9 bar) (6.9 bar) (4.8 bar) (10.3 bar)



## **LD Series Oil Pumps**



### Ordering Information

### **LD Series 3:1 Pumps**

Part Number	Description
24G576	3:1 Universal oil pump with bung adapter (24F918)
24G579	3:1 Oil pump with cut-to-length steel downtube (16F878) and bung adapter (24F918)
24G582	3:1 Oil pump with 55 gal (200 liter) downtube (16F886) and bung adapter (24F918)
24G585	3:1 Oil pump with 275 gal (1,040 liter) steel downtube (16F885) and bung adapter (24F918)

#### **LD Series 5:1 Pumps**

Part Number	Description
24G588	5:1 Universal oil pump with bung adapter (24F918)
24G591	5:1 Oil pump with cut-to-length steel downtube (16F878) and bung adapter (24F918)
24G594	5:1 Oil pump with 55 gal (200 liter) steel downtube (16F886) and bung adapter (24F918)
24G597	5:1 Oil pump with 275 gal (1,040 liter) steel downtube (16F885) and bung adapter (24F918)





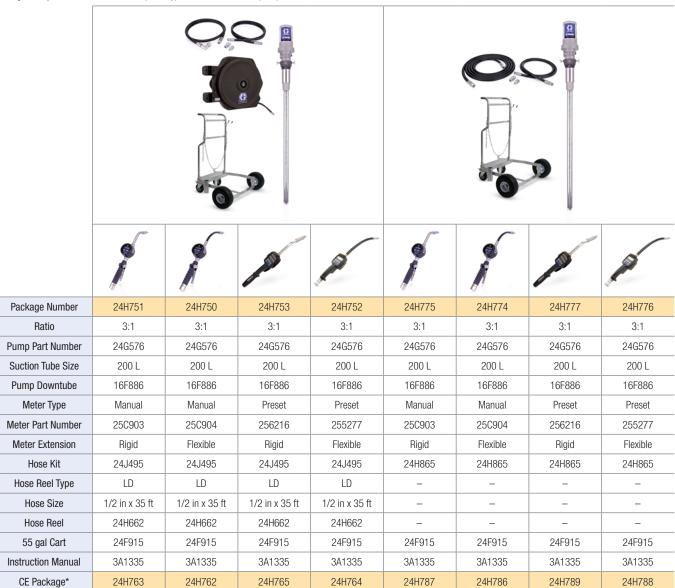




**Ordering Information** 

### **Mobile Oil Packages – Cart**

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.



\*CE packages include 2-way vented valve (BSP: 125041 / NPT: 110223) and air regulator (BSP: 24H419 / NPT: 24H420).













### **Ordering Information**

### Mobile Oil Packages - Dolly

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.











#### **Ordering Information**

### **Wall Mount Oil Packages**

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.









Package 24H695 installed on a 275 gallon tote (not included in package).

### **Stationary Oil Packages**

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.



<sup>\*</sup>CE packages include 2-way vented valve (BSP: 125041 / NPT: 110223) and air regulator (BSP: 24H419 / NPT: 24H420).







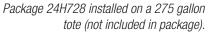
Ordering Information

### **Stationary Oil Packages - Tote**

Standard packages include LD Series hose reel. Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.

Package Number	24H702	24H704	24H726	24H728
Ratio	3:1	3:1	3:1	3:1
Pump Part Number	24G576	24G576	24G576	24G576
Suction Tube Size	275 gal (1,040 l)			
Pump Downtube	16F885	16F885	24H669	24H669
Mounting Position	Тор	Тор	Drain	Drain
Reel Type	LD	LD	LD	LD
Hose Reel Part Number	24H662	24H662	24H662	24H662
Hose Size	1/2 in x 35 ft			
LD Reel Bracket Kit	24F932	24F932	24F932	24F932
Meter Type	Manual	Preset	Manual	Preset
Meter Part Number	25C903	256216	25C903	256216
Meter Extension	Rigid	Rigid	Rigid	Rigid
Hose Kit	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose
Hose Kit Part Number	24J495	24J495	24H495	24J495
Top Mount Tote Bracket	24F930	24F930	24F931	24F931
Tote Mount Pump Bracket	-	_	24F920	24F920
Meter Tray	24F914	24F914	24F914	24F914
Instruction Manual	3A1335	3A1335	3A1335	3A1335
CE Package*	24H714	24H716	24H738	24H740

<sup>\*</sup>CE packages include 2-way vented valve (BSP: 125041 / NPT: 110223) and air regulator (BSP: 24H419 / NPT: 24H420).













Ordering Information

### **Deluxe Stationary Oil Packages - Tote**

Deluxe packages include SD Series hose reel. Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.















### **Ordering Information**

### **Tank Mount Oil Packages**

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.













### **Deluxe Tank Mount Oil Packages**

Deluxe packages include SD hose reel, air and fluid hoses with fittings, and mini air regulator.









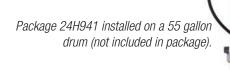
#### **Ordering Information**

### **Mobile Oil Packages - Cart**

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.



\*CE packages include 2-way vented valve (BSP: 125041 / NPT: 110223) and air regulator (BSP: 24H419 / NPT: 24H420).













### Mobile Oil Packages - Dolly

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.













### Ordering Information

### **Wall Mount Oil Packages**

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.



Package Number	24H836	24H842
Ratio	5:1	5:1
Pump Part Number	24G588	24G588
Suction Tube Size	55 gal drum	275 gal tote
Suction Hose Kit	24F935	24H666
Hose Kit	-	24H859
Wall Mount Bracket	24F910	24F910
Instruction Manual	3A1335	3A1335
CE Package*	24H839	24H845

<sup>\*</sup>CE packages include 2-way vented valve (BSP: 125041 / NPT: 110223) and air regulator (BSP: 24H419 / NPT: 24H420).

G



Package 24H842 installed on a 275 gallon tote (not included in package).

### **Stationary Oil Packages**

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.

Package Number	24H965	24H964	24H967	24H966
Ratio	5:1	5:1	5:1	5:1
Pump Part Number	24G588	24G588	24G588	24G588
Suction Tube Size	Universal	Universal	Universal	Universal
Pump Downtube	16F878	16F878	16F878	16F878
Meter Type	Manual	Manual	Preset	Preset
Meter Part Number	25C903	25C904	256216	255277
Meter Extension	Rigid	Flexible	Rigid	Flexible
Hose Kit	24H859	24H859	24H859	24H859
Instruction Manual	3A1335	3A1335	3A1335	3A1335
CE Package*	24H977	24H976	24H979	24H978

<sup>\*</sup>CE packages include 2-way vented valve (BSP: 125041 / NPT: 110223) and air regulator (BSP: 24H419 / NPT: 24H420).









### Ordering Information

### **Stationary Oil Packages - Tote**

Standard packages include LD Series hose reel. Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.

Package Number	24H868	24H870	24H892	24H894
Ratio	5:1	5:1	5:1	5:1
Pump Part Number	24G588	24G588	24G588	24G588
Suction Tube Size	275 gal (1,040 l)			
Pump Downtube	16F885	16F885	24H669	24H669
Mounting Position	Тор	Тор	Drain	Drain
Reel Type	LD	LD	LD	LD
Hose Reel Part Number	24H662	24H662	24H662	24H662
Hose Size	1/2 in x 35 ft			
LD Reel Bracket Kit	24F932	24F932	24F932	24F932
Meter Type	Manual	Preset	Manual	Preset
Meter Part Number	25C903	256216	25C903	256216
Meter Extension	Rigid	Rigid	Rigid	Rigid
Hose Kit	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose	6 ft x 3/8 in air hose / 6 ft x 1/2 in fluid hose
Hose Kit Part Number	24J495	24J495	24J495	24J495
Top Mount Tote Bracket	24F930	24F930	24F931	24F931
Tote Mount Pump Bracket	-	-	24F920	24F920
Meter Tray	24F914	24F914	24F914	24F914
Instruction Manual	3A1335	3A1335	3A1335	3A1335
CE Package*	24H880	24H882	24H904	24H906

<sup>\*</sup>CE packages include 2-way vented valve (BSP: 125041 / NPT: 110223) and air regulator (BSP: 24H419 / NPT: 24H420).

Package 24H894 installed on a 275 gallon tote (not included in package).











### Ordering Information

### **Deluxe Stationary Oil Packages – Tote**

Deluxe packages include SD Series hose reel. Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.





	•	0	
Package Number	24K839	24K843	
Ratio	5:1	5:1	
Pump Part Number	24G588	24G588	
Suction Tube Length	275 gal (1,040 l)	275 gal (1,040 l)	
Pump Downtube	16F885	16F885	
Reel Type	SD	SD	
Hose Reel Part Number	HPM65B	HPM65B	
Hose Reel Bracket	24K285	24K285	
Meter Type	Preset	Manual	
Meter Part Number	256216	25C904	
Meter Extension Rigid		Flexible	
Hoses and Fittings	ses and Fittings 24J495 2		
Top Mount Tote Bracket	24F930	24F930	
Meter Tray	24F914	24F914	
Instruction Manual	3A1335	3A1335	

Package 24K839 installed on a 275 gallon tote (not included in package).











### Oil Packages - Tank Mount

Air regulator (part 24H420 - ordered separately) must be used for LD pump thermal relief function.







# **LD Series 5:1 Oil Pump Packages**



### **Ordering Information**

## **Deluxe Oil Packages - Tank Mount**

Deluxe packages include SD hose reel, air and fluid hoses with fittings, and mini air regulator.





# **LD Series Oil Pump Accessories**









# Ordering Information

# **Air Regulators**

Part Number	Description
24H420	Mini air pressure regulator with gauge, 1/4 in NPT x 3/8 in NPT, self-relieving

#### **Carts**

7	Part Number	Description
	24F915	Drum cart with pneumatic wheels for 55 gallon drums, includes chain for securing drum to cart

## **LD Drum Dollies**

	Part Number	Description
	131183	Drum dolly for 35 lb (16 kg) drum
	131184	Drum dolly for 120 lb (54 kg) drum
	129645	Drum dolly for 400 lb (182 kg) drum

### **Downtubes**

1	Part Number	Description
	16F878	Universal cut to length PVC downtube
	16F886	Drum length steel downtube
	16F885	Tote length steel downtube

## **Drum Covers**

	Part Number	Description
	24F904	Cover for 35 lb (16 kg) pails
	24F905	Cover for open-head 120 lb drums
	24F906	Cover for open-head 400 lb drums

# **Hose and Fitting Kits**

	Part Number	Description	Kit Includes			
			Fluid Hose	Air Hose	Swivel	Union Fitting
	24H865	15 ft LD pump fluid hose kit	1/2 in x 15 ft	3/8 in x 6 ft	157705	156684
	24H859	6 ft LD pump fluid hose kit	1/2 in x 6 ft	3/8 in x 6 ft	157705	156684

### **Suction Kits**

Part Number		Description
1 )	24F935	LD oil pump suction hose kit for 55 gal (200 L) drum. Includes 55 gal (200 L) drum length metal downtube, bung adapter, foot valve and 6 ft of 1 in suction hose
	24H666	LD oil pump suction hose kit for 275 gal (1,040 L) drum. Includes 275 gal (1,040 L) tote length metal downtube, bung adapter, foot valve and 6 ft of 1 in suction hose
		LD oil pump suction hose kit and adapter for mounting pump to the side of IBC tote and dispensing from drain. Includes 1 in x 3 ft suction hose, 1 in elbow fitting and union fitting (160022)









# **LD Series Oil Pump Accessories**



# Ordering Information

# **Mounting Hardware**

Part Number	Description
24F910	LD Series pump wall mounting bracket
 24F918	Bung adapter

## **Tote Mount Accessories**

114	Part Number	Description	
	24F914	Meter drip tray for mounting to the side of IBC tote	
41	24F932	LD Series reel bracket for mounting reel to IBC top mount tote bracket (24F930 and 24F920)	
	24F931	Tote mounting bracket to mount reel on top of IBC tote (pump mounting bracket is not included)	
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	24F930	Top of tote mounting bracket. For mounting LD Series pump in top of IBC tote.	
	24F920	Bracket for mounting LD Series pump on the side of IBC tote	
	24K285	Bracket for mounting SD Series hose reel to IBC tote mounting bracket 24F930 (24F930 bracket sold separately)	



# Mini Fire-Ball® 225 Oil Pumps









# Perfect for Medium Pressure, **Low-Volume Applications**

You can't afford downtime, especially when your shop is small. The Mini Fire-Ball 225 is designed with fewer moving parts, which means less wear and tear and reduced downtime, allowing you to run a more profitable business.

# **Durable Casting**

Thick cast aluminium air motor housing offers unmatched durability.

### Fewer Repairs

Fewer moving parts in the air motor assembly means less downtime and low repair cost.

#### Extended Seal Life

In-line pump design aligns the air motor piston and fluid piston rods to maximize seal life.

### Superior Sealing

Non-metallic poppet valves offer positive sealing performance, even with contaminated "dirty" air environments for long life without repair.

#### Corrosion-Resistant

Corrosion-resistant design utilizes liquid salt nitriding, nickel plating, stainless steel, aluminium and chrome on key components for longer life.

#### **Typical Applications**

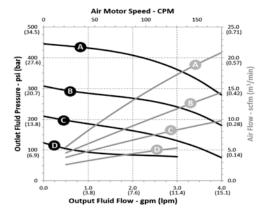
- · Automotive dealerships
- Fast lube centers
- · Service shops
- · Heavy-duty dealerships
- · Fleet services facilities
- In-plant
- · Lube trucks
- Mining

### Typical Fluids Handled

· Petroleum- and synthetic-based oils (motor, gear and ATF)

#### **Pump Performance**

#### Mini Fire-Ball 225 3:1 Pumps









# Mini Fire-Ball 225 Oil Pumps



echnical Specifications	
Fluid Pressure Ratio	3:1
Air Motor Effective Diameter	2.25 in (57.2 mm)
Maximum Fluid Working Pressure	540 psi (37 bar / 3.7 MPa)
Approximate Free Flow Rate @ 100 psi	8.3 gal/min (32 liters/min)
Output per Cycle	87 cc
Approximate Air Use and Flow @ 100 psi (80 cpm)	9 scfm @ 1.9 gpm (0.25 m³/min @ 7.2 lpm)
Air Inlet	3/8 in NPT(F)
Fluid Inlet	1-1/2 in NPT(F)
Fluid Outlet	1/2 in NPT(F)
Air Operation Range	40 psi to 180 psi (2.8 bar to 12 bar)
Maximum Recommended Pump Speed	100 cpm
Cycles per Gallon (Liter)	43.5 (11.5)
Wetted Parts	Steel, Buna-N, polyurethane, aluminium, Rulon®
Sound Pressure Level	77.8 dB(A)
Sound Power Level	85.6 dB(A)
Approximate Weight	16 lb (7.3 kg)
Instruction Manual	309868

# Ordering Information

# Mini Fire-Ball 225 3:1 Pumps

Part Number	Description	
246775	3:1 Universal oil pump	
248097	3:1 Universal oil pump with suction tube (15C502) and bung adapter (222308)	



# Mini Fire-Ball 225 3:1 Oil Pump Packages







#### **Ordering Information**

### Oil Packages





<sup>\*\*</sup>Order low-level cut-off (203688) (1-1/2 in NPT) separately for metered dispense systems.

\*\*Order low-level cut-off (203688) (1-1/2 in NPT) separately for metered dispense systems. Use 3/8 in (9.5 mm) air regulator (109075) as required; must be ordered separately.



# Mini Fire-Ball 225 3:1 Oil Pump Packages



## **Bulk Oil Dispensing Packages**



<sup>\*</sup>Order (218549) (1/2 in x 24 in) hose kit separately.



10

Fire-Ball 300

# Fire-Ball 300 5:1 Oil Pumps









# Ideal for Medium-Sized Shops with **High-Pressure Oil Transfer**

Install the Fire-Ball 300 in high-pressure, medium-volume oil dispense applications such as automotive dealerships, fast lube centers and service shops. A three inch differential air motor ensures smooth pumping, and the smooth double-acting pump design provides reliable fluid flow and accurate dispense.

# **Durable Casting**

Thick cast aluminium air motor housing offers unmatched durability.

#### Fewer Repairs

Fewer moving parts in the air motor assembly means less downtime and low repair cost.

#### Superior Sealing

Non-metallic poppet valves offer positive sealing performance, even with contaminated "dirty" air environments for long life without repair.

#### Extended Seal Life

In-line pump design aligns the air motor piston and fluid piston rods to maximize seal life.

#### Corrosion-Resistant

Corrosion-resistant design utilizes liquid nitriding, nickel plating, stainless steel, aluminium and chrome on key components for longer life.

## Typical Applications

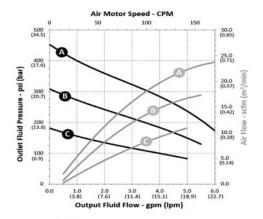
- · Automotive dealerships
- · Fast lube centers
- · Service shops
- · Heavy-duty dealerships
- · Fleet services facilities
- In-plant
- · Lube trucks
- Mining

## Typical Fluids Handled

· Petroleum- and synthetic-based oils (motor, gear and ATF)

# **Pump Performance**

#### Fire-Ball 300 5:1 Pumps









# Fire-Ball 300 Oil Pumps



chnical Specifications	
Fluid Pressure Ratio	5:1
Air Motor Effective Diameter	3 in (76.2 mm)
Maximum Fluid Working Pressure	900 psi (62 bar / 6.2 MPa)
Approximate Free Flow Rate @ 100 psi	12.1 gal/min (46 liters/min)
Output per Cycle	133 cc
Approximate Air Use and Flow @ 100 psi (80 cpm)	16 scfm @ 2.8 gpm (0.45 m³/min @ 10.6 lpm)
Air Inlet	3/8 in NPT(F)
Fluid Inlet	1-1/2 in NPT(F)
Fluid Outlet	1/2 in NPT(F)
Air Operation Range	40 psi to 180 psi (2.8 bar to 12 bar)
Maximum Recommended Pump Speed	70 cpm
Cycles per Gallon (Liter)	28.4 (7.5)
Wetted Parts	Steel, polyurethane, aluminium, Buna-N
Sound Pressure Level	77.8 dB(A)
Sound Power Level	85.6 dB(A)
Approximate Weight	17 lb (7.7 kg)
Instruction Manual	306518

# Ordering Information

# Fire-Ball 300 5:1 Pumps

Part Number	Description
203876	5:1 Universal oil pump
203872	5:1 Oil pump, 16 gal (120 lb) drum size, for cover mount
203857	5:1 Oil pump, 55 gal (400 lb) drum size, for cover mount
204254	5:1 Oil pump, 55 gal (400 lb) drum size, bung mount
222087	5:1 Oil pump, 275 gal (1,040 lb) tank size, bung mount



# Fire-Ball 300 5:1 Oil Pump Packages







#### Ordering Information

### **Oil Pump Packages**



<sup>\*</sup>Order low-level cut-off (203688) (1-1/2 in NPT) separately for metered dispense systems. Use 3/8 in (9.5 mm) installation kit (224512) as required.



<sup>\*\*</sup>Order low-level cut- off (203688) (1-1/2 in NPT) separately for metered dispense systems. Use 3/8 in (9.5 mm) air regulator (109075) as required; must be ordered separately.



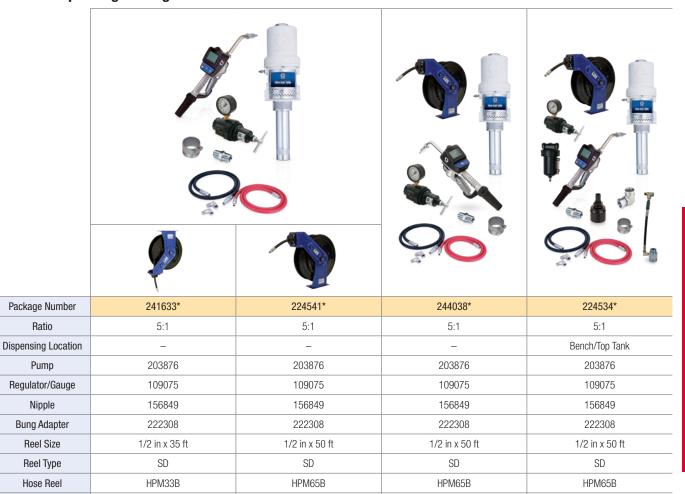


# Fire-Ball 300 5:1 Oil Pump Packages



**Ordering Information** 

# **Bulk Oil Dispensing Packages**



\*Order (218549) (1/2 in x 24 in) hose reel inlet kit separately.

Manual

255350

218549

Type of Meter

Manual/Preset

Meter

90° Swivel

Air Filter

Drain Valve

Hose

Thermal Relief Valve

Hose Reel Inlet Kit

(Not Included)

Package 224534 installed on a bulk tank (not included in package).

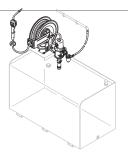
SD

Manual

255350

220598

218549



Preset

255200

220598

218549

SD

Manual

255350

157416

106148

127711

222063

237893

218549

# Fire-Ball 300 5:1 Oil Pump Packages







# Ordering Information

# **Lube Truck Packages**



Package Number	222086*	206655*	204264*	
Ratio	5:1	5:1	5:1	
Package Type	Lube truck	Lube truck	Lube truck	
Maximum Container Size	16 gal (60l) open-head	55 gal (2001) closed-head	55 gal (2001) closed-head	
Pump	203872	203857	204254	
Dispense/ Hose Fitting Kit	222063	222063	222063	
Fluid Hose Size	1/2 in x 6 ft (12.7 mm x 1.8 m)	1/2 in x 6 ft (12.7 mm x 1.8 m)	1/2 in x 6 ft (12.7 mm x 1.8 m)	
Cover	222060	207367	-	
Pump Clamp	-	-	204095	
Hold Down Kit	222061	207361	207361	
Bung Adapter	-	-	224579	
Instruction Manual	307883	307883	307883	
CE Package	241050	241051	241052	

<sup>\*</sup>Order 3/8 in (9.5 mm) air regulator and gauge (109075) separately.







# Fire-Ball 425 Oil Pumps



# Fire-Ball 425 Oil Pump Packages

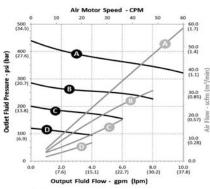




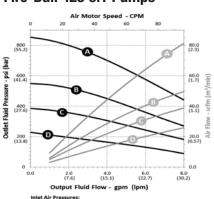


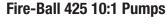
## **Pump Performance**

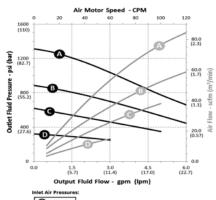
### Fire-Ball 425 3:1 Pumps



### Fire-Ball 425 6:1 Pumps











echnical Specifications						
Fluid Pressure Ratio	3:1	6:1	10:1			
Air Motor Effective Diameter	4.25 in (107.9 mm)	4.25 in (107.9 mm)	4.25 in (107.9 mm)			
Maximum Fluid Working Pressure	540 psi (37 bar / 3.7 MPa)	1,100 psi (76 bar / 7.6 MPa)	1,800 psi (124 bar / 12.4 MPa)			
Approximate Free Flow Rate @ 100 psi	12 gal/min (57 liters/min)	6 gal/min (42 liters/min)	4 gal/min (30 liters/min)			
Output per Cycle	631 cc	261 cc	189 cc			
Approximate Air Use and Flow @ 100 psi (80 cpm)	43 scfm @ 13.4 gpm (1.23 m³/min @ 50.6 lpm)	44 scfm @ 6.7 gpm (1.25 m³/min @ 25.4 lpm)	45 scfm @ 4.0 gpm (1.27 m <sup>3</sup> /min @ 15.2 lpm)			
Air Inlet	1/2 in NPT(F)	1/2 in NPT(F)	1/2 in NPT(F)			
Fluid Inlet	1-1/2 in NPT(F)	1-1/2 in NPT(F)	1-1/2 in NPT(F)			
Fluid Outlet	3/4 in NPT(F)	3/4 in NPT(F)	3/4 in NPT(F)			
Air Operation Range	40 psi to 180 psi (2.8 bar to 12 bar)	40 psi to 180 psi (2.8 bar to 12 bar)	40 psi to 180 psi (2.8 bar to 12 bar)			
Maximum Recommended Pump Speed	66 cpm	78 cpm	60 cpm			
Cycles per Gallon (Liter)	6 (1.6)	14.5 (3.8)	20 (5.3)			
Wetted Parts	Steel, polyurethane, aluminium, nitrile	Steel, polyurethane, aluminium, nitrile	Steel, polyurethane, aluminium, nitrile			
Sound Pressure Level	82 dB(A)	79.5 dB(A)	78 dB(A)			
Approximate Weight	46 lb (20.9 kg)	35 lb (15.9 kg)	29 lb (13.2 kg)			
Instruction Manual	308485	308608	308655			

# Ordering Information

## Fire-Ball 425 Pumps

Part Number	Description
237526	3:1 Universal oil pump
238108	6:1 Universal oil pump
205626	10:1 Universal oil pump
222065	10:1 Oil pump, 55 gal (400 lb) drum size, cover mount
222095	10:1 Oil pump, 55 gal (400 lb) drum size, bung mount



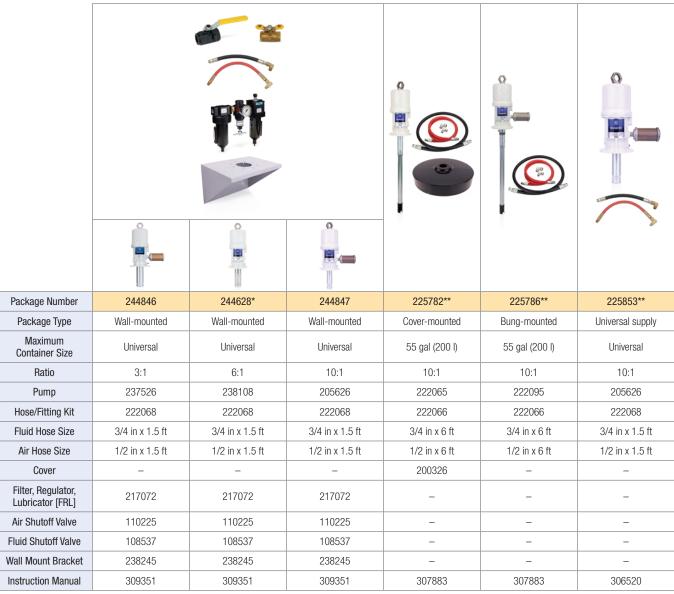




# Fire-Ball 425 Oil Pump Packages

# **Ordering Information**

### **Oil Pump Packages**



<sup>\*</sup>Order low-level cut-off (203688) (1-1/2 in NPT) separately for metered dispense systems.



<sup>\*\*</sup>Order low-level cut-off (203688) (1-1/2 in NPT) separately for metered dispense. Use 1/2 in (12.7 mm) air regulator (104266) and air pressure gauge (100960) as required; must be ordered separately.

# **Fire-Ball 425 Oil Pump Packages**









Ordering Information

# **Lube Truck Packages**



Package Number	206656*	222067*
Ratio	10:1	10:1
Package Type	Lube truck	Lube truck
Maximum Container Size	55 gal (200 l) closed-head	55 gal (200 l) closed-head
Pump	222065	222095
Dispense/ Hose Fitting Kit	222066	222066
Fluid Hose Size	1/2 in x 6 ft (12.7 mm x 1.8 m)	1/2 in x 6 ft (12.7 mm x 1.8 m)
Offset Cover	207367	-
Pump Clamp	-	204095
Hold Down Kit	207361	207361
Bung Adapter	-	224579
Instruction Manual	307883	307883
CE Package	241056	241057

<sup>\*</sup>Order 1/2 in (12.7 mm) air regulator (104266) and gauge (100960) separately.







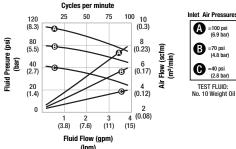
# **Fast-Ball 1:1 Oil Pumps**



- · Heavy-duty dealerships
- Fleet services facilities
- In-plant
- Lube trucks
- Mining

#### Typical Fluids Handled

 Petroleum- and synthetic-based oils (motor, gear and ATF)



# Fast-Ball 1:1 Oil Pumps







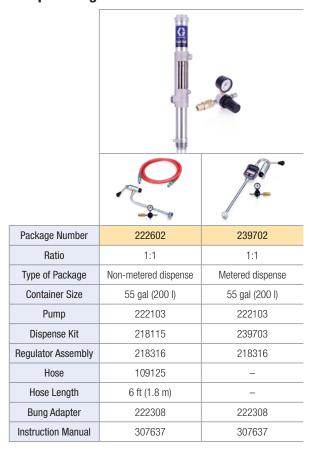
chnical Specifications					
Fluid Pressure Ratio	1:1				
Air Motor Effective Diameter	1.4 in (35.6 mm)				
Maximum Fluid Working Pressure	180 psi (12.5 bar / 1.25 MPa)				
Approximate Free Flow Rate @ 100 psi	5 gal/min (19 liters/min)				
Output per Cycle	151 cc				
Approximate Air Use and Flow @ 100 psi (80 cpm)	7 scfm @ 3.1 gpm (0.20 m³/min @ 11.7 lpm)				
Air Inlet	1/4 in NPT(F)				
Fluid Inlet	1-1/2 in NPT(F)				
Fluid Outlet	3/4 in NPT(F)				
Air Operation Range	40 psi to 80 psi (2.7 bar to 12.5 bar)				
Maximum Recommended Pump Speed	100 cpm				
Cycles per Gallon	25 cpg				
Cycles per Liter	6.6 cpl				
Wetted Parts	CS, polyurethane				
Sound Pressure Level	74.9 dB(A)				
Sound Power Level	83.5 dB(A)				
Approximate Weight	8 lb to 14 lb (3 kg to 7 kg)				
Instruction Manual	307906				

# Ordering Information

## **Pumps**



# **Pump Packages**





# **Oil Pump Accessories Guide**

Use the quick-reference guide below to determine the part and accessory options available for our most popular oil pumps.

# **Oil Pump Mounting and Accessory Guide**

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	222308	222308	_	_	222308
Connection Hose Kit	222118 (18 in / 4537 cm) 222119 (72 in / 182.8 cm)	222062 (18 in / 45.7 cm) 222063 (72 in / 182.8 cm)	222062 (18 in / 45.7 cm) 222063 (72 in / 182.8 cm)	238246 (24 in / 60.9 cm)	238246 (24 in / 60.9 cm)	222068 (18 in / 4537 cm) 222066 (72 in / 182.8 cm)
Wall Mounting Bracket	203987	203987	203987	238245	238245	203987
Thermal Relief Kit*	_	235998	237893	237601	240429	240429
Air Regulator and Gauge	110147	109075	109075	104266 / 100960	104266 / 100961	104266 / 100962
Air Filter	110146	106148	106148	106149	106149	106149
Air Lubricator	110148	214847	214847	214848	214848	214848
Filter, Regulator, Lubricator, and Gauge	110149	110150	110150	217072	217072	217072
Airline Shutoff Valve	110223	110224	110224	110225	110225	110225
Fluid Shutoff Valve	108537	108458	108458	108537	108537	108537
Fluid Outlet Filter	240417	240417	240417	101078	_	_
Low-Level Cutoff	203688	203688	203688	203688	203688	203688
Suction Hose Kit	236054	236054	236054	-	-	-

<sup>\*</sup>Required



# Ordering Information

# **Bleed-Type Air Shut-Off Valves**

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Part Number	Description
110223	1/4 in NPT
110224	3/8 in NPT
110225	1/2 in NPT
110226	3/4 in NPT

# **Bung Adapters**

			Compatible Compatible		Includes				
	Part Number	Pumps	Double Tap bushing	Bushing Sleeve	1 ft x 3/8 in Hose	90° 3/8 in Adapter	Thumb Screw		
	222308	Allows direct mounting of all universal length and extended pumps to standard 2 NPT drum bung	Fast-Ball 1:1 Mini Fire-Ball 225 3:1 Fire-Ball 300 5:1 Fire-Ball 425 10:1	_	-	_	-	-	
	187754	Acetal bung adapter	All pumps	-	-	-	-	100220	
	176684	Bung adapter for suction kit 203992	_	_	-	-	-	100220	
	238125	For mounting universal pumps to tanks	Mini Fire-Ball 225 3:1 Fire-Ball 300 5:1 Fire-Ball 425 10:1	191075	172405	238370	155494	-	

### **Carts**

	Part Number	Compatible Container Size
	203650	5 gal (20 l) 10 gal (40 l) 16 gal (60 l)
	222243	120 lb (55 kg)
	111470	55 gal (200 l)

# **Clamps**

Part Number	Description	Compatible Pumps
203156	Used to hold pump securely to the edge of an open top drum	Fast-Ball 1:1 Mini Fire-Ball 225 3:1 Fire-Ball 300 5:1 Fire-Ball 425 6:1 Fire-Ball 425 10:1
210880		Fire-Ball 300 5:1 Fire-Ball 425 10:1

# Dispense Kits for Mini Fire-Ball and Fire-Ball 300 Pumps

>	Part Number	Description Hose Length		Includes			
	Part Number	Description	Hose Length	Fluid Hose	Manual SD Gear Lube Valve	Manual	
	237075	Use with portable lubricators powered by Fire-Ball 300 Pump	6 ft	220591	255349	307884	

### Ordering Information

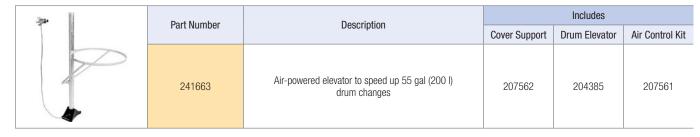
#### **Downtube - Universal**

Part Number	Description
15C502	1-1/2 in ID tube marked for standard container lengths from 20 in to 41 in (.51 m to 1.04 m)

#### **Drum Covers**

	Part Number	Container Size	Compatible Pumps
	200326	55 gal (200 l)	Mini Fire-Ball 225 3:1 Fire-Ball 300 5:1 Fire-Ball 425 10:1
	24R350	16 gal (60 l)	Fast-Ball 1:1 Mini Fire-Ball 225 3:1 Fire-Ball 300 5:1 Fire-Ball 425 3:1, 6:1, 10:1
	222058	5 gal (20 l)	Fast-Ball 1:1 Mini Fire-Ball 225 3:1 Fire-Ball 300 5:1, 15:1
	160754	55 gal (200 l) 16 gal (60 l) 5 gal (20 l)	Bung-mounted pumps

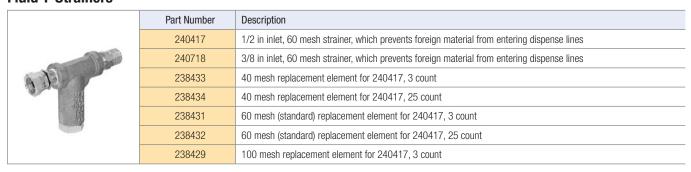
#### **Drum Elevator**



### Fluid Shut-Off Valves

Part Number	Description
108458	1/2 in NPT
108537	3/4 in NPT
110314	1 in NPT

# Fluid T-Strainers





# Ordering Information

#### Fluid Y-Strainers

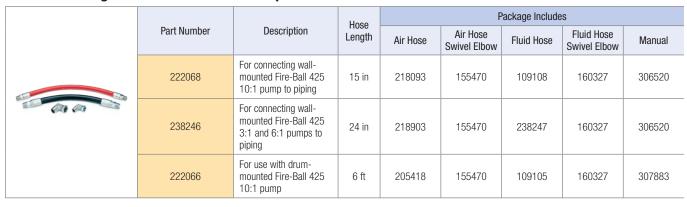


Part Number	Description
110877	1/2 in NPT inlet/outlet strainer, which filters material before entering the pump
110906	1/2 in NPT inlet/outlet strainer, replacement screen
101078	3/4 in NPT inlet/outlet strainer, which filters material before entering the pump
180199	3/4 in NPT inlet/outlet strainer, replacement screen
110878	1 in NPT inlet/outlet strainer, which filters material before entering the pump
110907	1 in NPT inlet/outlet strainer replacement screen

## Hose and Fitting Kits for Mini Fire-Ball 225 and Fire-Ball 300 5:1

		Connection -		Includes		
Part Number	Description	Air Hose			Fluid Hose	Fluid Hose Swivel Elbow
	For connecting wall-mounted pumps to piping	18 in	204560	155494	220598	155470
222063	Use with drum-mounted pumps	6 ft	203320	155494	220591	155470

## Hose and Fitting Kits for Fire-Ball 425 Pumps





## Ordering Information

# **Low-Level Cutoffs for Fast-Ball and Fire-Ball Pumps**

Part Number	Description
203688	1-1/2 in NPT cutoff, which prevents air from entering pump when fluid supply from pump is exhausted

#### **Portable Bases**

	Part Number	Description	Compatible Container Size
	205054	Band dolly	5 gal (20 l)
d d	204144	Band dolly	10 gal (40 l) 16 gal (60 l)
	203622	Caster base	5 gal (20 l) 10 gal (40 l) 16 gal (60 l)

## **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.

*	Part Number	Inlet
40.63	224040	3/4 in NPT(fbe)

# **Sealed Bung Adapters**

Part Number	Fire-Ball Length	Adapter Inside Diameter	Compatible Pumps
204076	Full length	2.140 in	Mini Fire-Ball 225 3:1
224579	Universal length	2.159 in	All except Mini Fire-Ball 225 3:1

## **Suction Kits**

	Part Number	Description	Includes			
<b>1</b>	Part Number	Description	Bung Adapter	Bushing Pipe	6 ft Hose	
	236054	Allows use of Fast-Ball, Mini-Fire-Ball and Fire-Ball universal pumps to work with barrels	188845	101496	109105	





# Ordering Information

## **Suction Tubes**



Part Number	Container Size	Type of Mount	Compatible Pumps		Includes	
	Container Size	Type of Mount	Companible Fumps	Extension Size Extension Foot S		
238592	16 gal (60 l)	Cover-mounted	Fast-Ball 1:1 Mini Fire-Ball 225 3:1 Fire-Ball 300 5:1 Fire-Ball 425 10:1	14-1/2 in	191126	110127
238593	55 gal (200 l)	Cover-mounted		21-3/4 in	191128	110127
238595	55 gal (200 l)	Bung-mounted		26 in	191130	110127
238596	275 gal (1,100 l)	Bung-mounted		36 in	191131	110127

## **Thermal Relief Valve Kits**



Part Number	Pressure Rating	Compatible Pumps		Swivel   6 ft Hose   191075   155494   238370     -     -   109163		
Fait Nullibei	Fressure nating	Compannie Fumps	Valve Bung Adapter Swivel			6 ft Hose
235998	600 psi (41 bar)	Mini Fire-Ball 225 3:1	112174	191075	155494	238370
237893	900 psi (62 bar)	Fire-Ball 300 5:1 Fire-Ball 425 6:1	112174	191075	155494	238370
248296	900 psi (62 bar)	Fire-Ball 300 5:1 Fire-Ball 425 6:1	102527	-	-	109163
237601	600 psi (41 bar)	Fire-Ball 425 3:1	113053	191075	155494	238370
240429	1,600 psi (110 bar)	Fire-Ball 425 10:1	102527	191075	155494	238370
248324	1,600 psi (110 bar)	Fire-Ball 425 10:1	113053	_	_	109163

# **Tools for Working on Fire-Ball Air Motors**



Part Number	Description
207579	Padded pliers
171818	Poppet gauge
168085	Insert tool

# **Wall-Mounting Brackets**



Part Number Description		Compatible Pumps
203987	203987 Clamps onto universal pump tube	
238245	238245 Mounts directly to pump flange	
236778	Provides mounting to wall surface by flange	Fire-Ball 425 3:1

# **∆**





# **NXT<sup>™</sup> High-Flo<sup>®</sup> Pumps**



# **Move Large Amounts of Oil Fast**

Tested to outperform and outlast all other pumps on the market — with its long-life design and intuitive, easy-to-use controls — the NXT High-Flo pump is the best value for the money. Fewer parts, faster repairs and long-lasting durability.

# Optional DataTrak™ Control

Intuitive, easy-to-use DataTrak control gives you pump diagnostics, material usage tracking and pump runaway protection.

#### **NXT Air Motor**

Modular design for easier maintenance with rugged body armor that won't rust or dent.

#### Modular Air Valves

Easy-to-repair valve eliminates stalling and contains de-icing controls.

# **Integrated Air Controls**

Easy-turn, lockable regulator is front-mounted for easy access. Compact and modular with built-in filtration.

# Piston Valve with Floating Piston Seal

For maximum pressure balance over a range of material viscosities.

### **Typical Applications**

- Fleet service facilities
- In-plant
- Mining

#### Typical Fluids Handled

• Petroleum- and synthetic-based oils (motor, gear and ATF)

# **NXT High-Flo Pumps**

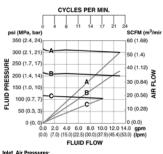






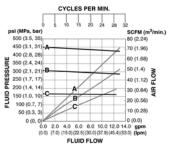
### **Pump Performance**

## **NXT 3.5:1 High-Flo Pumps**



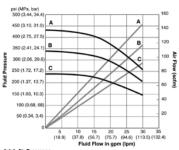


# **NXT 4.5:1 High-Flo Pumps**





# **NXT 6:1 High-Flo Pumps**



Inlet Air Pressures	:	
A =70 psi (4.8 bar)		
<b>B</b> =55 psi (3.7 bar)		
(2.8 bar)		
TEST FLUID: No. 10 Weight Oil		

chnical Specifications				
Fluid Pressure Ratio	3.5:1	4.5:1	6:1	
Air Motor Effective Diameter	7.5 in (191 mm)	7.5 in (191 mm)	10.375 in (264 mm)	
Maximum Fluid Working Pressure	350 psi (24 bar / 2.4 MPa)	450 psi (31 bar / 3.1 MPa)	500 psi (34 bar / 3.4 MPa)	
Output per Cycle	2,000 cc	1,500 cc	2,000 cc	
Air Inlet	3/4 in NPT(F)	3/4 in NPT(F)	3/4 in NPT(F)	
Fluid Inlet	1-1/2 in NPT(F)	1-1/2 in NPT(F)	2 in NPT(F)	
Fluid Outlet	1 in NPT(F)	1 in NPT(F)	2 in NPT(F)	
Air Operation Range	20 psi to 100 psi (1.4 bar to 7 bar)	20 psi to 100 psi (1.4 bar to 7 bar)	20 psi to 75 psi (1.4 bar to 5.2 bar)	
Maximum Recommended Pump Speed	60 cpm	60 cpm	60 cpm	
Cycles per Gallon (Liter)	1.9 (0.5)	2.5 (0.67)	1.9 (0.5)	
Wetted Parts	Stainless steel, PTFE, leather, UHMWPE, carbon steel	Stainless steel, PTFE, leather, UHMWPE, carbon steel	Stainless steel, PTFE, leather, UHMWPE, carbon steel	
Sound Pressure Level	77 dB(A)	77 dB(A)	80 dB(A)	
Sound Power Level	87 dB(A)	87 dB(A)	90 dB(A)	
Approximate Weight	99 lb (44.9 kg)	99 lb (44.9 kg)	178 lb (80.7 kg)	
Instruction Manuals	System – 312862 Pump – 311211 Pump Lower – 311690 Motor – 311238	System – 312862 Pump – 311211 Pump Lower – 311690 Motor – 311238	System – 312862 Pump – 311831 Pump Lower – 311832 Motor – 311238	







# Ordering Information

# Oil Pump Packages with DataTrak

Package Number with DataTrak	247888	247889	247892	247893
Ratio	3.5:1	4.5:1	6:1	6:1
Mounting	255143 (Wall)	255143 (Wall)	255143 (Wall)	218742 (Stand)
Pump with DataTrak and Thermal Relief Kit	24D590	24D591	24D594	24D594
Output per Cycle	2,000 cc	1,500 cc	2,000 cc	2,000 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 3400	NXT 6500	NXT 6500
Maximum Fluid Pressure	350 psi (24.1 bar)	450 psi (31 bar)	500 psi (35.2 bar)	500 psi (35.2 bar)
Maximum Air Input Pressure	100 psi (6.9 bar)	100 psi (6.9 bar)	75 psi (5.2 bar)	75 psi (5.2 bar)
System Manual	312862	312862	312862	312862
Pump Manual	311211	311211	311831	311831
Pump Lower Manual	311690	311690	311832	311832
Motor Manual	311238	311238	311238	311238
Pump Inlet Size	1-1/2 in NPT	1-1/2 in NPT	2 in NPT	2 in NPT
Pump Outlet Size	1 in NPT	1 in NPT	2 in NPT	2 in NPT
4 ft x 3/4 in Air Hose	110048	110048	110048	110048
6 ft x 1 in Fluid Hose	115042	115042	247969	247969
Instruction Manual	309351	309351	307883	306520

# Oil Pump Packages without DataTrak

Package Number without DataTrak	24D602	24D603	24D606	24D607
Ratio	3.5:1	4.5:1	6:1	6:1
Mounting	255143 (Wall)	255143 (Wall)	255143 (Wall)	218742 (Stand)
Pump without DataTrak and Thermal Relief Kit	24D596	24D597	24D600	24D600
Output per Cycle	2,000 cc	1,500 cc	2,000 cc	2,000 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 3400	NXT 6500	NXT 6500
Maximum Fluid Pressure	350 psi (24.1 bar)	450 psi (31 bar)	500 psi (35.2 bar)	500 psi (35.2 bar)
Maximum Air Input Pressure	100 psi (6.9 bar)	100 psi (6.9 bar)	75 psi (5.2 bar)	75 psi (5.2 bar)
System Manual	312862	312862	312862	312862
Pump Manual	311211	311211	311831	311831
Pump Lower Manual	311690	311690	311832	311832
Motor Manual	311238	311238	311238	311238
Pump Inlet Size	1-1/2 in NPT	1-1/2 in NPT	2 in NPT	2 in NPT
Pump Outlet Size	1 in NPT	1 in NPT	2 in NPT	2 in NPT
4 ft x 3/4 in Air Hose	110048	110048	110048	110048
6 ft x 1 in Fluid Hose	115042	115042	247969	247969
Instruction Manual	309351	309351	307883	306520



# **NXT<sup>™</sup> Dura-Flo® Pumps**







# **Move Large Amounts of Oil Fast**

Tested to outperform and outlast all other pumps on the market – with its long-life design and intuitive, easy-to-use controls – the NXT Dura-Flo pump is the best value for the money. Fewer parts, faster repairs and long-lasting durability.



Intuitive, easy-to-use DataTrak control gives you pump diagnostics, material usage tracking and pump runaway protection.

#### **NXT Air Motor**

Modular design for easier maintenance with rugged body armor that won't rust or dent.

#### Modular Air Valves

Easy-to-repair valve eliminates stalling and contains de-icing controls.

# Integrated Air Controls

Easy-turn, lockable regulator is front-mounted for easy access. Compact and modular with built-in filtration.

# Piston Valve with Floating Piston Seal

For maximum pressure balance over a range of material viscosities.

## **Typical Applications**

- · Fleet service facilities
- · In-plant
- Mining

#### Typical Fluids Handled

• Petroleum- and synthetic-based oils (motor, gear and ATF)

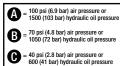






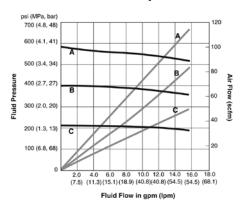


#### **Pump Performance**

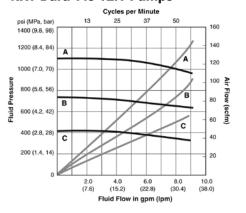


TEST FLUID: No. 10 Weight Oil

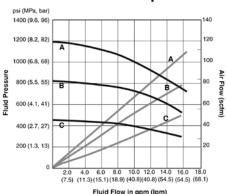
# **NXT Dura-Flo 6:1 Pumps**



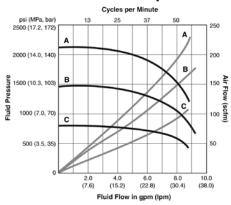
## **NXT Dura-Flo 12:1 Pumps**



### **NXT Dura-Flo 10:1 Pumps**



#### **NXT Dura-Flo 23:1 Pumps**



# **NXT Dura-Flo Pumps**







hnical Specifications				
Fluid Pressure Ratio	6:1	10:1	12:1	23:1
Air Motor Effective Diameter	7.5 in (191 mm)	10.375 in (264 mm)	7.5 in (191 mm)	10.375 in (264 mm)
Maximum Fluid Working Pressure	620 psi (43 bar / 4.3 MPa)	1,180 psi (81 bar / 8.1 MPa)	1,190 psi (82 bar / 8.2 MPa)	1,725 psi (119 bar / 11.9 MPa)
Output per Cycle	1,000 cc	1,000 cc	580 cc	580 cc
Air Inlet	3/4 in NPT(F)	3/4 in NPT(F)	3/4 in NPT(F)	3/4 in NPT(F)
Fluid Inlet	2 in NPT(F)	2 in NPT(F)	2 in NPT(F)	2 in NPT(F)
Fluid Outlet	1-1/2 in NPT(F)	1-1/2 in NPT(F)	1-1/2 in NPT(F)	1-1/2 in NPT(F)
Air Operation Range	20 psi to 100 psi (1.4 bar to 7 bar)	20 psi to 100 psi (1.4 bar to 7 bar)	20 psi to 100 psi (1.4 bar to 7 bar)	20 psi to 75 psi (1.4 bar - 5.2 bar)
Maximum Recommended Pump Speed	60 cpm	60 cpm	60 cpm	60 cpm
Cycles per Gallon (Liter)	3.8 (1.0)	3.8 (1.0)	6.5 (1.72)	6.5 (1.72)
Wetted Parts	Stainless steel, CS, chrome, zinc, nickel, Buna-N, tungsten carbide, nylon, UHMWPE, leather, PTFE, PEEK	Stainless steel, CS, chrome, zinc, nickel, Buna-N, tungsten carbide, nylon, UHMWPE, leather, PTFE, PEEK	Stainless steel, CS, chrome, zinc, nickel, tungsten carbide, ductile iron, acetal	Stainless steel, CS, chrome, zinc, nickel, tungsten carbide, ductile iron, acetal
Sound Pressure Level	77 dB(A)	80 dB(A)	77 dB(A)	80 dB(A)
Sound Power Level	87 dB(A)	90 dB(A)	87 dB(A)	90 dB(A)
Approximate Weight	113 lb (51.3 kg)	132 lb (59.9 kg)	92 lb (41.7 kg)	102 lb (46.3 kg)
Instruction Manuals	System – 312862 Pump – 311833 Pump Lower – 311717 Motor – 311238	System – 312862 Pump – 311833 Pump Lower – 311717 Motor – 311238	System – 312862 Pump – 311826 Pump Lower – 311825 Motor – 311238	System – 312862 Pump – 311826 Pump Lower – 31182 Motor – 311238









# Ordering Information

# Oil Pump Packages with DataTrak

Package Number with DataTrak	247890	247894	247891	247895
Ratio	6:1	10:1	12:1	23:1
Mounting	255143 (Wall)	255143 (Wall)	255143 (Wall)	255143 (Wall)
Pump with DataTrak and Thermal Relief Kit	24D592	24D595	24D593	-
Output per Cycle	1,000 cc	1,000 cc	580 cc	580 cc
Output at 60 CPM	17.4 gpm (65.9 lpm)	17.4 gpm (65.9 lpm)	9.2 gpm (34.8 lpm)	9.2 gpm (34.8 lpm)
Motor Size	NXT 3400	NXT 6500	NXT 3400	NXT 6500
Maximum Fluid Pressure	620 psi (42.7 bar)	1,180 psi (81.3 bar)	1,190 psi (82.1 bar)	1,725 psi (118.9 bar)
Maximum Air Input Pressure	100 psi (6.9 bar)	100 psi (6.9 bar)	100 psi (6.9 bar)	75 psi (5.2 bar)
System Manual	312862	312862	312862	312862
Pump Manual	311833	311833	311826	311826
Pump Lower Manual	311717	311717	311825	311825
Air Motor Manual	311238	311238	311238	311238
Pump Inlet Size	2 in NPT	2 in NPT	2 in NPT	2 in NPT
Pump Outlet Size	1-1/2 in NPT	1-1/2 in NPT	1-1/2 in NPT	1-1/2 in NPT
4 ft x 3/4 in Air Hose	110048	110048	110048	110048
6 ft x 1 in Fluid Hose	115042	115042	115042	115042
Instruction Manual	312862	312862	312862	312862

# Oil Pump Packages without DataTrak

Package Number without DataTrak	24D604	24D608	24D605
Ratio	6:1	10:1	12:1
Mounting	255143 (Wall)	255143 (Wall)	255143 (Wall)
Pump without DataTrak and Thermal Relief Kit	24D598	24D601	24D599
Output per Cycle	1,000 cc	1,000 cc	580 cc
Output at 60 CPM	17.4 gpm (65.9 lpm)	17.4 gpm (65.9 lpm)	9.2 gpm (34.8 lpm)
Motor Size	NXT 3400	NXT 6500	NXT 3400
Maximum Fluid Pressure	620 psi (42.7 bar)	1,180 psi (81.3 bar)	1,190 psi (82.1 bar)
Maximum Air Input Pressure	100 psi (6.9 bar)	100 psi (6.9 bar)	100 psi (6.9 bar)
System Manual	312862	312862	312862
Pump Manual	311833	311833	311826
Pump Lower Manual	311717	311717	311825
Air Motor Manual	311238	311238	311238
Pump Inlet Size	2 in NPT	2 in NPT	2 in NPT
Pump Outlet Size	1-1/2 in NPT	1-1/2 in NPT	1-1/2 in NPT
4 ft x 3/4 in Air Hose	110048	110048	110048
6 ft x 1 in Fluid Hose	115042	115042	115042
Instruction Manual	312862	312862	312862



# **Dyna-Star® Hydraulic Pumps**









### **Typical Applications**

- Service shops
- Heavy-duty dealerships
- · Fleet services facilities
- In-plant
- Lube trucks
- Mining

### Typical Fluids Handled

· Petroleum- and synthetic-based oils (motor, gear and ATF)

chnical Specifications				
Fluid Pressure Ratio	1:1	1:1	1/4:1	1:1 Stainless Steel
Pump Number	224741	224742	236753	237653
Applications	Oil dispensing	Oil dispensing	Bulk oil transfer	Anti-freeze dispensing
Drum Size	Universal	55 gal (200 l) Bung- or cover-mounted	Universal	Universal
Maximum Input Pressure	1,500 psi (102 bar)	1,500 psi (102 bar)	1,500 psi (102 bar)	1,000 psi (70 bar)
Maximum Fluid Input Volume	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)
Maximum Output Flow Rate	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)	10 gpm (37.9 lpm)	3 gpm (11.4 lpm)
Maximum Recommended CPM	60	60	60	60
Maximum Fluid Output Pressure	1,500 psi (102 bar)	1,500 psi (102 bar)	375 psi (25.1 bar)	1,500 psi (102 bar)
Hydraulic Supply Inlet	3/8 in NPT	3/8 in NPT	3/8 in NPT	3/8 in NPT
Hydraulic Return Outlet	3/4 in NPT	3/4 in NPT	3/4 in NPT	3/4 in NPT
Fluid Outlet	1/2 in NPT	1/2 in NPT	1/2 in NPT	1/2 in NPT
Fluid Inlet	1-1/2 in NPT	1-1/2 in NPT	1-1/2 in NPT	3/4 in NPT
Maximum Incoming Fluid Temp.	130°F (54°C)	130°F (54°°C)	130°F (54°C)	130°F (54°C)
Wetted Parts	Steel, copper, leather	Steel, copper, leather	Aluminium, steel, nitrile, polyurethane	Steel, copper, leather
Sound Pressure Level	77 dB(A)	77 dB(A)	77 dB(A)	77 dB(A)
Approximate Weight	24 lb (10.9 kg)	24 lb (10.9 kg)	48 lb (21.8 kg)	24 lb (10.9 kg)
Instruction Manual	308155	308155	308390	308155







# **Dyna-Star Hydraulic Pumps**



## Ordering Information

# **Dyna-Star Hydraulic Pumps**

Part Number	Description
224741	1:1 Universal oil pump
224742	1:1 Oil pump for 55 gal (400 lb) drum size, bung- or cover- mounted
236753	1/4:1 Universal oil pump
237653	1:1 Universal stainless steel oil pump

### **Accessories**

### **Drum Covers**

Part Number	Description
200326	For 55 gal (200 I) drums
204574	For 16 gal (60 l) drums
222058	For 5 gal (20 l) pails
160754	For 5 gal (20 l), 16 gal (60 l) and 55 gal (200 l) bung-mounted pumps

### **Hydraulic Fluid Controls**

Required for each pump.

7.5	Part Number	Description
	236865	Dyna-Star fluid controls [1,500 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.
	237904	1:1 Dyna-Star thermal relief valve, 1,600 psi (110 bar)

# **Wall-Mounting Brackets**



Part Number	Description	
203987	For stubby/universal 1:1 Dyna-Star pump	
236778	For stubby/universal 1/4:1 Dyna-Star pump	



# **Power-Star™ Hydraulic Pumps**

G Power-Star







# Field Proven, Energy Efficient

Hydraulic Power-Star pumps provide reliable, quiet, ice-free performance at maximum pressure and low flow rates and are up to three times more energy efficient than comparable compressed-air systems.



Self-lubricating vertical design for long life and reliable operation in high vibration environments.

## **Quiet Hydraulic Motor**

No need for add-on mufflers.

# **High-Efficiency Motor**

Uses less hydraulic oil.

# Typical Applications

- Service shops
- · Heavy-duty dealerships
- · Fleet services facilities
- In-plant
- Lube trucks
- Mining

#### Typical Fluids Handled

• Petroleum- and synthetic-based oils (motor, gear and ATF)

echnical Specifications		
Fluid Pressure Ratio	1:1	
Pump Number	236754	
Applications	Bulk oil transfer	
Drum Size	Universal	
Maximum Input Pressure	1,500 psi (102 bar)	
Maximum Fluid Input Volume	12 gpm (45.4 lpm)	
Maximum Output Flow Rate	12 gpm (45.4 lpm)	
Maximum Recommended CPM	60	
Maximum Fluid Output Pressure	1,500 psi (102 bar)	
Hydraulic Supply Inlet	3/4 in NPT	
Hydraulic Return Outlet	1-1/4 in NPT	
Fluid Outlet	1/2 in NPT	
Fluid Inlet	1-1/2 in NPT	
Maximum Incoming Fluid Temp.	130°F (54°C)	
Wetted Parts	Iron, steel, stainless steel, nitrile, polyurethane	
Sound Pressure Level	78 dB(A)	
Approximate Weight	100 lb (45.4 kg)	
Instruction Manual	308391	





# **Power-Star Hydraulic Pumps**



Ordering Information

## **Power-Star Hydraulic Pumps**

Part Number	Description	
236754	1:1 Universal oil pump	

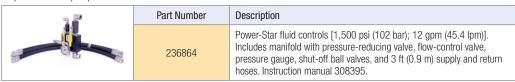
#### **Accessories**

#### **Drum Covers**



### **Hydraulic Fluid Controls**

Required for each pump.



### **Wall-Mounting Bracket**

Part Number	Description
236778	For stubby/universal 1/4:1 Power-Star pump



# **Manually Operated Pumps**









Ordering Information

### 16 Gallon (60 I) Metered and Non-Metered Dispensing Packages

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



<sup>\*</sup>Hydraulic; can be used for gear oil dispensing.







# **Manually Operated Pumps**



**Ordering Information** 

## Pail-Dispensing Package for 5 gal (20 I) Pails

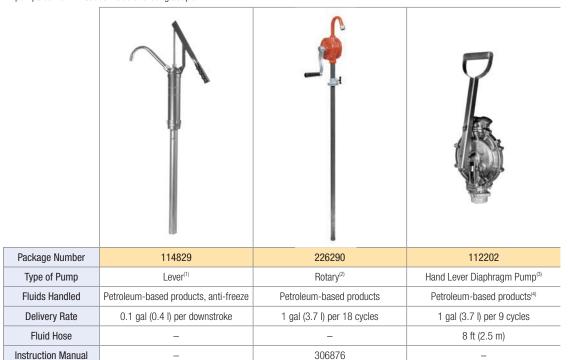
Mounts on top of standard 5 gal (20 I) pail (pail not included). Dispenses 1.6 oz to 1.9 oz. (47.3 ml to 56.2 ml) per stroke.



Package Number	226289
Fluids Handled	Gear lube
Fluid Hose	4 ft (1.2 m)
Instruction Manual	306875

## Pumping Bulk Lubricants from 16 gal (60 l) or 55 gal (200 l) Drums\*

All pumps come with suction tube and bung adapter.

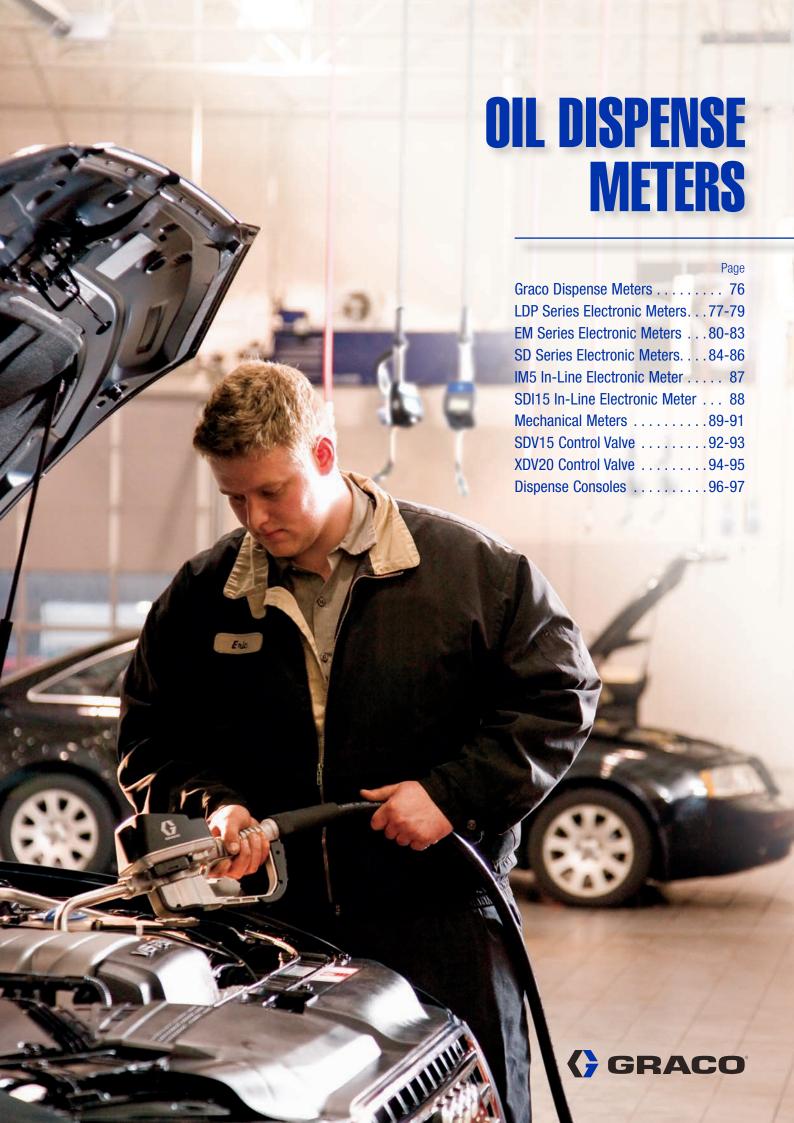


- 1 Telescopic suction tube mounts 2 in NPT bung opening of 16 gal (60 l) or 55 gal (200 l) drum. Package includes bung adapter and spout outlet
- 2 Package has adjustable 2 in NPT bung mounting to allow use with either 16 gal (60 I) or 55 gal (200 I) drum. Package includes bung adapter and spout outlet
- 3 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 aluminium telescoping suction pipe
  4 This package is recommended for gasoline, diesel, heating oil and petroleum products, but NOT recommended for water-based fluids, solvents or weak acids



Notes	





# **Graco Dispense Meters**

	Fluid	Manual/ Preset	Maximum Working Pressure	Maximum Flow Rate	Intended Use	Warranty	Reference Pages
LDP Series Electronic Meters	<ul> <li>Petroleum- and synthetic-based oils (motor, gear and ATF)</li> <li>Anti-freeze</li> </ul>	Manual/ Preset	1,000 psi (69 bar)	5 gpm (19 lpm)	Indoor	5 years overall (2 years electronics)	77-79
EM Series Electronic Meters	Petroleum- and synthetic-based oils (motor, gear and ATF)     Anti-freeze	Manual	1,500 psi (103.4 bar)	20 gpm (76 lpm)	Indoor/ Outdoor	5 years overall (3 years electronics)	80-83
SD Series Electronic Meters	<ul> <li>Petroleum- and synthetic-based oils (motor, gear and ATF)</li> <li>Anti-freeze</li> </ul>	Manual/ Preset	1,500 psi (103.4 bar)	14 gpm (53 lpm)	Indoor/ Limited Outdoor	7 years overall (3 years electronics)	84-86
IM5 In-Line Meters	<ul> <li>Petroleum- and synthetic-based oils (motor, gear and ATF)</li> <li>Anti-freeze</li> <li>Windshield wash fluid</li> </ul>	Manual	500 psi (34 bar)	5 gpm (19 lpm)	Indoor/ Outdoor	5 years overall (2 years electronics)	87
SDI15 In-Line Meters	<ul> <li>Petroleum- and synthetic-based oils (motor, gear and ATF)</li> <li>Anti-freeze</li> <li>Diesel exhaust fluid</li> </ul>	Manual	1,500 psi (103.4 bar)	15 gpm (56.8 lpm)	Indoor	7 years overall (3 years electronics)	88
Mechanical Meters	<ul> <li>Petroleum- and synthetic-based oils (motor, gear and ATF)</li> <li>Anti-freeze</li> </ul>	Manual/ Preset	1,500 psi (103.4 bar)	8 gpm (30 lpm)	Indoor/ Outdoor	5 years	89-91
SDV15 Control Valves	Petroleum- and synthetic-based oils (motor, gear and ATF)     Anti-freeze	N/A	1,500 psi (103.4 bar)	15 gpm (56.8 lpm)	Indoor/ Outdoor	7 years	92-93
XDV20 Control Valves	Petroleum- and synthetic-based oils (motor, gear and ATF)     Anti-freeze	N/A	1,500 psi (103.4 bar)	20 gpm (76 lpm)	Indoor/ Outdoor	7 years	94-95











## **LDP Series Electronic Preset Meters**

## **Perfect for Lower-Volume Service Applications**

For use in small service shops, fast lubes and low-volume in-plant applications.



Fluid Swivel

BSPT.

1/2 inch fluid inlet with

choice of NPT, BSPP or

## Easy-to-Read LCD Screen

Keeps dispenses precise.

## **Operator Controls**



Choose from rigid or flexible extensions with automatic thermal compensating nozzle.

## Rugged Meter Body

Superior impact resistance and long life.

#### Comfortable Handle

Ergonomically designed for operator comfort. Two-finger trigger with latching on preset models.

Displays in quarts, pint, gallons or liters. Durable switches for long life.

## **Typical Applications**

- Automotive dealerships
- Fast lube centers
- · Service shops
- Fleet services facilities
- In-plant

## Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear and ATF)
- · Anti-freeze

## **Technical Specifications**

Flow Range*	0.1 gpm to 5 gpm (0.4 lpm to 19 lpm)
Maximum Working Pressure	1,000 psi (69 bar)
Units of Measure	Quarts, pints, gallons, liters (factory set to quarts)
Accuracy**	+/- 0.5%
Inlet	1/2 in NPT
Outlet	1/2 in NPT
Maximum Totalizer	999,999 gallons or liters
Maximum Recorded Dispense	999.9 units
Maximum Preset Volume	999.9 units (LDP5 only)
Operating Temperature Range	32°F to 120°F (0°C to 48.8°C)
Storage Temperature Range	-30°F to 120°F (-34.4°C to 48.8°C)
Outdoor Use	No
Battery	9 volt alkaline
Battery Life	One year
Wetted Parts	SST, nitrile rubber, zinc, CS, LCP
Meter Pressure Loss*	90 psi (6.2 bar) @ 5 gpm (19 lpm)
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)
Weight	3 lb (1.36 kg)
Warranty	Five years overall, two years electronics
Instruction Manual	312668

<sup>\*</sup>Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature, viscosity, inlet and nozzle type.



<sup>\*\*</sup>At 2.5 gpm (9.5 lpm) @ 70°F (21°C) with 10 wt. oil and 1 gal (3.8 l) dispensed. May require recalibration. Out-of-box accuracy ±1.25%. Not recommended for in-line installation.

# **LDP Series Electronic Preset Meters**











## Ordering Information

## **LDP Series LDP5 Preset Meters**

Automatic nozzle included

	Extension	Inlet in (mm)	Part Number			Package Includes	
	Extension	iniet iii (iiiiii)	NPT	BSPT	BSPP	Trigger Guard	Swivel Cover
A	Flexible		258694	24F886	24F892	Yes	Yes
	Rigid	1/2 (13)	256216	24F884	24F890	Yes	Yes
	Flexible		255277	24F883	24F889	No	No

## **Nozzle Extension Kits**

Extension	Fluid	Nozzle Description	Part Number
	Oil/Anti-freeze	Automatic, thermally compensating	239949
Rigid	Gear lube	Automatic, thermally compensating	239950
	Gear lube	Automatic	238887
Flexible	Oil/Anti-freeze	Automatic, thermally compensating	239951
North Only	Oil/Anti-freeze/Gear lube	Automatic, thermally compensating	239829
Nozzle Only	Oil/Anti-freeze/Gear lube	Automatic	238371



# Oil Dispense Meters and Control Valves







# **LDP Series Electronic Preset Meters**



## **EM5/PM5 to LD Series Upgrade Kits**

	Part Number	Description
F	257350	EM5 to LDM5
P	257351	PM5 to LDP5

## **Accessories**

Part Number	Description
240416	Inlet swivel
114017	Inlet filter, 80 mesh
 240453	Valve repair kit

## **Protective Boots with Trigger Guards**

Part Number	Description
247759	Black
243835	Red
243836	Blue
243837	Green
247760	Yellow

## **Swivel Covers**

	Part Number	Description
GRACO	191294	Black
GRACO	191287	Red
GRACO	191288	Blue
GRACO	191289	Green
CRACO	191295	Yellow

## **Hose Identification Sets**

Vinyl hose wrap for easy identification of meter fluid.

	Part Number	Description
() GRACO	17\$659	Red
Q GRACO	17S660	Blue
Q GRACO	17S661	Green
O GRACO	17S662	Yellow
O GRACO	17S663	White

# **EM Series**<sup>™</sup> **Electronic Manual Dispense Meters**











## Low-Flow and High-Flow Manual Meters

Building on the heritage of Graco's first electronic meter, the EM Series features a robust design at an affordable price. Weather-rated and shock-resistant construction protects the electronics from intense high-pressure cleaning and mechanical vibration common in industrial applications.

## Twist-Close Nozzle Prevents Leaking

Multiple extensions available including rigid, flexible and gear lube.

## **High-Flow Rates**

Capable of up to 20 gpm.

## Long Battery Life

Features upgraded electronics and easily replaceable AAA batteries.

## Prevent Accidental Dispenses

Easy-to-hold locking handle.

## **Proven in Harsh Conditions**

Sealed electronics (IP69K) are protected against direct pressure washing and dust.

## Legacy Valve

1/2 and 3/4 inch inlets, compatible with oil, ATF, anti-freeze and gear lube.

## **Typical Applications**

- Automotive dealerships
- · Service and fast lube centers
- Lube trucks
- Mining
- · Heavy-duty dealerships
- · Fleet service facilities
- In-plant

## Typical Fluids Handled

- · Petroleum- and synthetic-based oils (motor, gear and ATF)
- Anti-freeze

echnical Specifications	EM8 EM20				
Flow Range	0.25 to 8 gpm (0.95 to 30.3 lpm)	0.25 to 20 gpm (0.95 to 75.7 lpm)			
Maximum Operating Pressure	1,500 psi (102 bar)				
Unit of Measure	Quarts, gallor	s, pints, liters			
Accuracy/Repeatability	±0.	5%			
Inlet	1/2 npt 1/2 bspp 1/2 bspt	1/2 npt or 3/4 npt 1/2 bspp and 3/4 bspp 1/2 bspt and 3/4 bspt			
Outlet	3/4 straight thread O-ring boss	7/8 straight thread O-ring boss			
Maximum Totalizer	19,999 units				
Maximum Recorded Dispense	19,999 units				
Operating Temperature Range	-22°F to 180°F (-30°C to 82°C)				
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)				
Outdoor Use	Yes – IP69k as per DIN 40050-9				
Battery	2 (AAA) alkaline o	or 2 (AAA) lithium			
Wetted Parts	Aluminium, stainless steel, carbon s	teel, acetal, nitrile rubber, Geolast™			
Meter Pressure Loss*	30 psi @ 6 gpm	85 psi @ 12 gpm			
Dimensions	13 in L x 3.5 in W x 5.25 in H (33 cm L x 9 cm W x 13.3 cm H)				
Weight	3 lbs (1.36 kg)	3.1 lbs (1.39 kg)			
Warranty	Five years overall, three years electronics and 1 year wear parts				
Instruction Manual	3A5588				

<sup>\*</sup> Tested in 10W oil at 70°F (21°C). Flow rate varies with fluid pressure, temperature, viscosity, inlet fitting size and nozzle type. Geolast is a registered trademark of Advanced Elastomer Systems









# **EM Series Electronic Manual Dispense Meters**

## Ordering Information

		Extension Inlet in (mm)		Part Number		
		EXTENSION	Inlet in (mm)	NPT	BSPT	BSPP
EM8		Flexible	1/2 (13)	25C904	25C912	25C908
		Rigid		25C903	25C911	25C907
		Gear		25C905	25C913	25C909
		Flexible	1/2 (13)	25C915	25C921	25C927
EM20			3/4 (19)	25C918	25C924	25C930
			1/2 (13)	25C916	25C922	25C928
		Rigid	3/4 (19)	25C919	25C925	25C931

		Inlot in (mm)	Part Number		
		Inlet in (mm)	NPT	BSPT	BSPP
EM8		1/2 (13)	25D433	25D435	25D434
EM20		1/2 (13)	25D436	25D438	25D939
EM	E	3/4 (19)	25D437	25D440	25D441



# **EM Series**<sup>™</sup> **Electronic Manual Dispense Meters**











## **High-Flow In-Line Meter**

Graco's IM20 in-line meter is weather-rated and shock-resistant, protecting the electronics from intense, high-pressure cleaning and mechanical vibration common in industrial applications.



Simple operator control. Measures in quarts, gallons, pints and liters.

## Easy Battery Replacement

Long-lasting, replaceable AAA batteries.



## Sealed Electronics

IP69K-rated meter. Electronics are safe from pressure washing and dusty environments.

#### Tracks Totals in Two Modes

Reset total for a periodic dispense history and non-reset total for the meter's total dispense history.

## **Typical Applications**

- · Automotive dealerships
- · Service and fast lube centers
- Lube trucks
- Mining
- · Heavy-duty dealerships
- Fleet service facilities
- In-plant

## Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear and ATF)
- Anti-freeze

echnical Specifications	
Flow Range*	0.25 to 20 gpm (0.95 to 75.7 lpm)
Maximum Working Pressure	1,500 psi (102 bar)
Unit of Measure	Quarts, pints, gallons, liters (factory set to quarts)
Accuracy/Repeatability	±0.5%
Inlet/Outlet	3/4 NPT
Maximum Totalizer	19,999 units
Maximum Recorded Dispense	19,999 units
Operating Temperature Range	-22°F to 180°F (-30°C to 82°C)
Storage Temperature Range	-40°F to 185°F (-40°C to 85°C)
Outdoor Use	Yes – IP69k as per DIN 40050-9
Battery	2 (AAA) alkaline or (2) AAA lithium
Wetted Parts	Aluminium, stainless steel, carbon steel, acetal, nitrile rubber, Geolast™
Meter Pressure Loss*	35 psi @ 12 gpm
Dimensions	4.2 in L x 3.4 in W x 3.2 in H (10.7 cm L x 8. cm W x 8.1 cm H)
Weight	1 lb. 4 oz. (0.57 kg)
Warranty	Seven year overall, three years electronics
Instruction Manual	3A5588

<sup>\*</sup>Tested in 10W oil at 70°F (21°C). Flow rate varies with fluid pressure, temperature, viscosity, inlet fitting size and nozzle type. Geolast is a registered trademark of Advanced Elastomer Systems.

## Ordering Information

Part Number Description		Description
25	C841	IM20 high-flow, high-pressure in-line meter













# **EM Series Electronic Manual Dispense Meters**



## Ordering Information

## **Accessories**

Part Number	Description	
25D934	Electronic control replacement	
129876	Black impact guard for EM8 or EM20	
25D936	Battery kit: includes AAA batteries, Torx screws and bezel seal	
100896	3/4 NPT(M) x 1/2 NPT(F) adapter	

## **Hose Identification Sets**

Vinyl hose wrap for easy identification of meter fluid.

	Part Number	Description
() GRACO	17\$659	Red
Q GRACO	17\$660	Blue
G GRACO	17S661	Green
O GRACO	17S662	Yellow
O GRACO	17S663	White



## **SD Series Electronic Meters**









## For Standard and Heavier-Duty Applications

Designed to perform in larger dealerships, fleet maintenance shops, municipal garages and higher-volume in-plant applications with longer plumbing runs and larger fluid usage.



Manual or preset options. Screen contrast adjusts for reading in all lighting conditions with easy setup and navigation.

## **Durable Cast Body**

Solid construction to stand up to harsh environments and provide years of trouble-free performance.

## **Connection Swivel**

1/2 and 3/4 inch fluid inlet options meet standard and high-flow requirements, choice of NPT, BSPP and BSPT threads.

#### **Typical Applications**

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

## Typical Fluids Handled

- · Petroleum- and synthetic-based oils (motor gear, and ATF)
- · Anti-freeze



## Fluid Extension Kits

Choose from rigid or flexible extensions with automatic quick-close flush-mount nozzle design that re-seats after each dispense to prevent dirt contamination.

## Long Battery Life

Uses four off-the-shelf AA batteries.

## **Balanced Triggering**

Four-finger pressure balance triggering for superior comfort and ergonomics. Features trigger locks on SDP5 and SDP15 preset models.

166	iiiiica	ı əpe	Cilications	

Flow Range*	SDM5/SDP5 – 0.1 gpm to 5 gpm (0.4 lpm to 19 lpm) SDM15/SDP15 – 0.1 gpm to 14 gpm (0.4 lpm to 53 lpm)
Maximum Working Pressure	1,500 psi (103.4 bar)
Units of Measure	Pints, quarts, gallons, liters (factory set to quarts)
Accuracy**	+/- 0.5%
Inlet	3/4 in–14 NPT or 1/2 in–14 NPT
Outlet	3/4 in–16 straight thread 0-ring Boss
Maximum Totalizer	999,999 gallons or liters
Maximum Recorded Dispense	999.9 units
Maximum Pre-Set Volume	999.9 units
Operating Temperature Range	4°F to 158°F (-20°C to 70°C)
Storage Temperature Range	-40°F to 158°F (-40°C to 70°C)
Outdoor Use	Limited
Battery	4 AA alkaline or 4 AA lithium
Battery Life***	One year
Wetted Parts	Aluminium, sst, pbt/pc, nitrile rubber, cs
Meter Pressure Loss*	180 psi (12 bar) @ 14 gpm (53 lpm)
Dimensions (without extension)	13 in L x 3.75 in W x 5.75 in H (33 cm x 9.5 cm x 14.6 cm)
Weight	5 lb (2.3 kg)
Warranty	Seven years overall, three years electronics
Instruction Manual	312865

<sup>\*</sup>Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature, viscosity, inlet and nozzle type.



<sup>\*\*</sup>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%.

<sup>\*\*\*</sup>Average shop use with alkaline batteries (included); 30-35% longer life with lithium AA.

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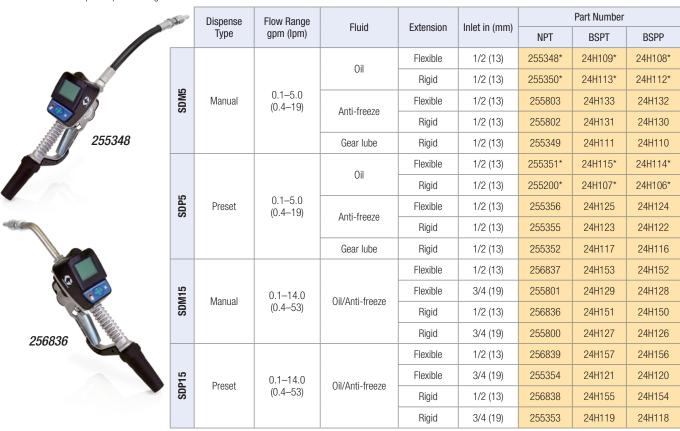




## **Ordering Information**

#### **SD Electronic Meters**

All nozzles are non-drip and quick closing.



<sup>\*</sup>Oil nozzles are automatic



# **SD Series Electronic Meters Accessories**









## Ordering Information

## **Nozzle and Extension Kits**

	Extension	Fluid	Nozzle Description	Part Number	Compatible Meters
		Oil	Non-drip, quick-close	255852	SDM5/SDP5
	Rigid	Anti-freeze	Non-drip, quick-close	255855	SDM5/SDP5
**		Oil/Anti-freeze	Non-drip, quick-close	255857	SDM15/SDP15
	Rigid	Gear lube	Non-drip, quick-close	255854	SDM5/SDP5
		Oil	Automatic, non-drip, quick-close	255853	SDM5/SDP5
To the second se	Flexible	Anti-freeze	Non-drip, quick-close	255856	SDM5/SDP5
		Oil/Anti-freeze	High-flow, non-drip, quick-close	255858	SDM15/SDP15
		Oil	Automatic, non-drip, quick-close	255459	SDM5/SDP5
	Nozzle Only	Anti-freeze	Non-drip, quick-close	255460	SDM5/SDP5
•		Oil/Anti-freeze	High-flow, non-drip, quick-close	255461	SDM15/SDP15
90	Nozzle Only	Gear lube	Non-drip, quick-close	255470	SDM5/SDP5

## **Filter Kits for SD Series Meters**

	Part Number	Description
CERO I	255885	Kit includes filters/ strainers, spacers and 0-rings

## **Swivel Covers**

Part Number	Description
15T366	Black
15T367	Red
15T368	Blue
15T369	Green
15T370	Yellow

## **Impact Protection**

	Part Number	Description
6	24W327	Matrix/SD meter boot

## **Hose Identification Sets**

Vinyl hose wrap for easy identification of meter fluid.

	Part Number	Description
() GRACO	17S659	Red
() GRACO	17S660	Blue
O GRACO	17S661	Green
O GRACO	17S662	Yellow
O GRACO	17S663	White













## **IM5 In-Line Electronic Meter**





Operates on single 9V alkaline battery.

#### Tracks Totals in Two Modes

Reset total for a periodic dispense history and non-reset total for the meter's total dispense history.

## Heavy-Duty Construction

For indoor or outdoor use.

## Easy-to-Read LCD

Simple operator controls and measures in pints, quarts, liters or gallons

## **Typical Applications**

- Automotive dealerships
- · Fast lube centers
- Service shops
- · Fleet services facilities
- In-plant

## Typical Fluids Handled

- · Petroleum- and synthetic-based oils (motor, gear and ATF)
- Anti-freeze
- · Windshield washer fluid

echnical Specifications			
Flow Range*	0.5 gpm to 5 gpm (1.9 lpm to 19 lpm)		
Maximum Working Pressure	500 psi (34 bar)		
Units of Measure	Quarts, pints, gallons, liters (factory-set to quarts)**		
Accuracy	± 0.5%		
Inlet/Outlet	1/2 NPT		
Maximum Totalizer	99,999		
Maximum Recorded Dispense	999.99		
Operating Temperature Range	-4°F to 122°F (-20°C to 50°C)		
Storage Temperature Range	-13°F to 122°F (-25°C to 50°C)		
Outdoor Use	Yes		
Battery	9-volt, alkaline		
Wetted Parts	Nickel, zinc, zenite, nitrile rubber		
Meter Pressure Loss*	25 psi (1.7 bar) @ 5 gpm (19 lpm)		
Dimensions	4.25 in L x 3.25 in W x 2.0 in H (10.8 cm L x 8.3 cm W x 5.1 cm H)		
Weight	1.8 lb (0.8 kg)		
Warranty	Five years overall, two years electronics		
Instruction Manual	308687		

<sup>\*</sup>Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature and viscosity.

## >>> Ordering Information

## Meter

Part Number	Description
239824	IM5 low pressure – low-flow in-line meter

## **Accessory**

Part Number	Description
239876	Strainer kit



<sup>\*\*</sup>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.

## **SDI15 In-Line Electronic Meter**

















Powered by two AA alkaline batteries.

## Tracks Totals in Two Modes

Reset total for a periodic dispense history and non-reset total for the meter's total dispense history.



## Rugged Stainless Steel Body

Remains corrosion free in hard environments for years of trouble-free service.

## Large, Easy-to-Read LCD

Simple operator controls and measures in pints, quarts, liters or gallons.

## **Typical Applications**

- Automotive dealerships
- · Fast lube centers
- Service shops
- · Heavy-duty dealerships
- · Fleet services facilities
- · In-plant
- Mining

## Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear and ATF)
- Anti-freeze
- Windshield washer fluid
- · Diesel exhaust fluid

hnical Specifications	
Flow Range*	0.5 gpm to 15 gpm (1.9 lpm to 57 lpm)
Maximum Working Pressure	1,500 psi (103 bar)
Units of Measure	Quarts, pints, gallons, liters (factory-set to quarts)
Accuracy	± 0.5%
Inlet/Outlet	1/2 NPT or BSPP
Maximum Totalizer	99,999
Maximum Recorded Dispense	999.99
Operating Temperature Range	-4°F to 122°F (-20°C to 50°C)
Storage Temperature Range	-13°F to 122°F (-25°C to 50°C)
Outdoor Use	No
Battery	2AA alkaline
Wetted Parts	Nitrile rubber, SST and Geolast
Meter Pressure Loss*	22 psi (1.5 bar) @ 14 gpm (53 lpm)
Dimensions	5 in L x 3 in W x 2.75 in H (12.7 cm L x 7.6 cm W x 7 cm H)
Weight	1.8 lb (0.8 kg)
Warranty	Seven years overall, three years electronics
Instruction Manual	313048

<sup>\*</sup>Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature and viscosity

## Ordering Information

#### **Meters**

Part Number	Description
247453	SDI15 medium/high pressure — medium-/high-flow in-line meter for petroleum- and synthetic-based oils, anti-freeze and windshield washer fluid
24G738	SDI15 medium/high pressure – medium-/high-flow in-line meter for diesel exhaust fluid applications (BSPP)

## **Accessories**

Part Number	Description	
108458	Shutoff ball valve 1/2 NPT(F)	
223179	Strainer kit 1/2 NPT(F) 1/2 NPT(M)	











## **Mechanical Meters**



Ideal for indoor or outdoor use in all size shops.

## Impact-Resistant Shroud

Resists scratches and protects knob and dial from damage.

## Simple, Easy Design

Dial and face design is easy to read and set.

## Fluid Swivel

½ inch fluid inlet with choice of NPT, BSPP or BSPT.

## Fluid Extension Kits

Choose from rigid or flexible with automatic thermal compensating nozzle.

## Built-In Totalizer

Helps manage material usage.

## **Durable Cast Housing**

Durable aluminium body is balanced and lightweight with comfortable grip.

## **Typical Applications**

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

## Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear and ATF)
- Anti-freeze

## **Technical Specifications**

Flow Range*	0.28 gpm (1.0 lpm) to 8 gpm (30.2 lpm)
Maximum Working Pressure	1,500 psi (103 bar)
Units of Measure	Quarts, gallons, liters
Accuracy	± 1%
Inlet	1/2 in NPT, BSPP, BSPT
Outlet	3/4-16 straight thread O-ring boss
Maximum Totalizer	99,999 units
Maximum Recorded Dispense	60 gallons
Operating Temperature Range	-50°F to 160°F (-45°C to 70°C)
Outdoor Use	Yes
Wetted Parts	Brass, aluminium, SST, TPE
Meter Pressure Loss*	30 psi (2.1 bar) @ 4 gpm (15 lpm)
Dimensions	11.5 in L x 5 in W x 6.3 in H (29.2 cm L x 12.7 cm W x 16 cm H)
Weight	3.5 lb (1.6 kg)
Warranty	Five years
Instruction Manual	333492

<sup>\*</sup>Tested with 10W motor oil. Minimum/maximum flow rates will vary with fluid viscosity.



# **Mechanical Meters**









## Ordering Information

## **Manual Meters**

	Extension	Model Description	NPT	BSPT	BSPP
	Bare	4/16 Liter	24U956	24U957	24U958
	Dale	4/16 Quart	24U959	-	-

## **Manual Meter Packages**

	Extension	Model Description	NPT	BSPT	BSPP	Replacement Nozzle/Extension Kit
	Flexible	4/16 Liter	24V043	24V044	24V045	255853
		4/16 Quart	24V034	-	_	255853
	Rigid	4/16 Liter	24V046	24V047	24V048	255852
		4/16 Quart	24V037	-	-	255852
	Gear Lube	4/16 Liter	24V049	24V050	24V051	255854
	deal Lube	4/16 Quart	24V040	-	-	255854

## **Preset Meters**

	Extension	Model Description	NPT	BSPT	BSPP
		60 Gallon	24U950	-	_
	Bare 60 Liter	60 Liter	24U953	24U954	24U955
		60 Quart	24U947	-	-













## Ordering Information

## **Preset Meter Packages**

						Deales es le ale. I
	Extension	Model	NPT	BSPT	BSPP	Package Includes
		Description				Nozzle Extension
		60 Gallon	24Z129	_	_	255853
	Flexible	60 Liter	24Z132	-	-	255853
To all		60 Quart	24Z126	-	-	255853
		60 Gallon	24Z128	-	-	255852
	Rigid	60 Liter	24Z131	-	_	255852
In 11		60 Quart	24Z125	-	_	255852
	Short Rigid	60 Gallon	24V055	-	-	24W641
		60 Liter	24V058	24V059	24V060	24W641
L'A		60 Quart	24V052	-	-	24W641
	Gear Lube	60 Gallon	24Z130	_	-	255854
		60 Liter	24Z133	-	-	255854
		60 Quart	24Z127	_	_	255854

## **Nozzle Extensions**

Fluid	Extension	Compatible Meter	Part Number
	Flexible	Manual	255853
Oil	Rigid	Manual	255852
	Short Rigid	Preset	24W641
	Flexible	Manual/Preset	24W306
Anti-freeze	Rigid	Manual/Preset	255855
Gear lube	Rigid	Manual	255854

## **Accessories**

Part Number	Description
256164	Strainer filter kit, 10-pack



## **SDV15 Control Valve**













Designed to perform in larger dealerships, fleet maintenance shops, municipal garages and higher-volume in-plant applications with longer plumbing runs and larger fluid usage.

## Fluid Extension Kits

Choose from rigid or flexible extensions with automatic flush-mount nozzle design that re-seats after each dispense to prevent dirt contamination.

## Lock-On/Lock-Off Trigger

For hands-free operation.

## Sturdy Cast Body

Designed for use in tough environments.

## 1/2 Inch Inlet with Swivel

Choice of NPT, BSPP and BSPT.

## **Typical Applications**

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

## Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear and ATF)
- Anti-freeze

15 gpm (56.8 lpm)
1,500 psi (103 bar)
1/2 in NPT, BSPP, BSPT
3/4-16 straight thread 0-ring boss
-40°F to 180°F (-40°C to 82°C)
Yes
Aluminium, SST, CS, acetal, nitrile rubber, tpe
12 in L x 8.4 in W x 2.4 in H (30.5 cm L x 21.3 cm W x 6.1 cm H)
0.4 lb (0.18 kg)
Seven years
312789

<sup>\*</sup>Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature, viscosity, inlet fitting and nozzle type.













## Ordering Information

## **SDV15 Control Valve**

	Fluid	Futoncian	Extension Inlet in (mm)		Part Number		
The state of the s	Fluid	Extension	Inlet in (mm)	NPT	BSPT	BSPP	
	- Oil	Rigid		247712	24H390	24H384	
· A		Flexible		247713	24H391	24H385	
	- Anti-freeze	Rigid	1/2 (13)	247715	24H393	24H387	
		Flexible		247716	24H394	24H388	
	Gear	Gear		247714	24H392	24H386	

## **SDV15 Bare Control Valve**

	Inlet in (mm)	Part Number		
	milet in (min)	NPT	BSPT	BSPP
	1/2 (13)	247717	24H395	24H389

## **Quick Close Nozzles with Extension**

Extension	Part Number
Rigid	255857
Flexible	255858

## **Filter Kit**

	Description	Part Number
0	Strainer filter kit	256164

## **Quick Close Nozzle**

Extension sold separately.

Fluid	Part Number
Oil	255459
Anti-freeze	255460
Gear lube	255470
Oil/Anti-freeze (high-flow)	255461

## **XDV20 Control Valve**









## For Standard and **Heavier-Duty Applications**

Designed to perform in larger dealerships, fleet maintenance shops, municipal garages and higher-volume in-plant applications with longer plumbing runs and larger fluid usage.



## Fluid Extension Kits

Choose from rigid or flexible extensions with automatic flush-mount nozzle design that re-seats after each dispense to prevent dirt contamination.

## Lock-On/Lock-Off Trigger

For hands-free operation.

## Sturdy Cast Body

Designed for use in tough environments.

## 1/2 and 3/4 Inch Inlet with Swivel Options

Meets standard and high flow requirements of NPT, BSPP and BSPT.

## **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

- Petroleum- and synthetic-based oils (motor, gear and ATF)
- · Anti-freeze

Technical Specifications	
Flow Range*	Up to 20 gpm (75.7 lpm)
Maximum Working Pressure	1,500 psi (103 bar)
Inlet	1/2 in or 3/4 in NPT, BSPP, BSPT
Outlet	7/8-14 straight thread O-ring boss
Operating Temperature Range	-40°F to 180°F (-40°C to 82°C)
Outdoor Use	Yes
Wetted Parts	Aluminium, SST, CS, acetal, nitrile rubber, Geolast
Dimensions	12 in L x 8.4 in W x 2.4 in H (30.5 cm L x 21.3 cm W x 6.1 cm H)
Weight	0.4 lb (0.18 kg)
Warranty	Seven years
Instruction Manual	308642

<sup>\*</sup>Tested in 10W oil at 70°F. Flow rates vary with fluid pressure, temperature, viscosity, inlet fitting and nozzle type.













## Ordering Information

## **XDV20 Control Valve**

Includes high flow, quick-close nozzle.

	Extension	Extension Inlet in (mm)		Part Number		
		Inlet in (mm)	NPT	BSPT	BSPP	
	Divid	1/2 (13)	247718	24H413	24H407	
Rigid	3/4 (19)	247722	24H415	24H409		
	Florible	1/2 (13)	247721	24H414	24H408	
Flexible	3/4 (19)	247723	24H416	24H410		

## **XDV20 Bare Control Valve**

	Inlot in (mm)		Part Number	
· Mi	Inlet in (mm)	NPT	BSPT	BSPP
	1/2 (13)	247724	24H417	24H411
1	3/4 (19)	247725	24H418	24H412

## **Accessories**

	Part Number	Description
	255793	Quick-close high-flow nozzle for oil, ATF and anti-freeze
	255859	Flexible extension with quick-close nozzle (255793)
4	255921	Rigid extension with quick-close nozzle (255793)

# **Meter Dispense Consoles**

Ordering Information

## **Lubricant Dispense Consoles**

Includes upper and lower plates with roller guides and brackets. Hoses not included.

Min	Part Number	Description	Package Includes		
Proper.	Fait Number	Description	Dispense Valve Brackets (qty)	Water Bib Brackets (qty)	
<u>G</u>	222629	Six-station console	196471 (5)	110236 (1)	
	223448	Four-station console	196471 (3)	110236 (1)	
	222645	Single add-on fluid module	196471 (1)	-	

## **Lubricant Dispense Consoles Accessories**

-	Part Number	Description
	110236	Water bib bracket
	110237	Dispense valve bracket for XD meters
-	110285	Pistol-grip dispense valve bracket
4	196471	Dispense valve bracket for LDP5, EM8 and EM20 meters
	249440	Dispense valve bracket for SD/Matrix meters

# **Dispense Consoles**

## >>> Ordering Information

## **Oil Dispense Bar**

4	Part Number	Description
	220107	Modular oil dispense bar supports up to 3 dispense taps (1 included) and optional meters. Add up to two additional dispense valves with tap kit 220112.

## **Accessories for Oil Dispense Bar**

	Part Number	Description
	220112	Dispenser valve kit for adding dispense valves to modular oil dispense bar.
TO STATE OF THE PARTY OF THE PA	239706	Meter kit for adding IM5 electronic totalizing meter to dispense valve. Reads in gallons, quarts, pints and liters.



Notes



# GREASE PUMPS

() GRACO



# **Grease Pump Selection Guide**

Pump Family and Fluid Pressure Ratio	Typical Applications	Annual Usage	Line Length	Simultaneous Dispense Points	Approx. Free Flow Rate @ 100 psi	Air Inlet	Fluid Outlet	Air Operation Range	Reference Page
LD, 50:1	Automotive dealerships     Fast lube centers     Lube trucks     Lubricant transfer     Service shops	Up to 7,000 lbs (3,175 kg)	Up to 100 (30.5 m)	1	4.5 lbs/min (2 kg/min)	1/4 in NPT(F)	1/4 in NPT(F)	20-150 psi (1.37-10.3 bar)	102-108
Mini Fireball 225, 50:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	Up to 10,000 lbs (4,535 kg)	Up to 100 (30.5 m)	1	1.5 lbs/min (0.7 kg/min)	3/8 in NPT(F)	1/4 in NPT(F)	40-140 psi (2.8-10 bar)	109-112 127-130
Fireball 300, 15:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	Up to 10,000 lbs (4,535 kg)	Up to 250 ft (76 m)	1-2	7.5 lbs/min (3.4 kg/min)	3/8 in NPT(F)	1/4 in NPT(F)	40-180 psi (2.8-12.5 bar)	113-115 127-130
Fireball 300, 50:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	Up to 10,000 lbs (4,535 kg)	Up to 250 ft (76 m)	1-2	7.5 lbs/min (3.4 kg/min)	3/8 in NPT(F)	1/4 in NPT(F)	30-140 psi (2.1-9.7 bar)	113-114 116-120 127-130
Fireball 425, 10:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	> 20,000 lbs (9,072 kg)	Up to 500 ft (152 m)	4 or more	29 lbs/min (13.1 kg/min)	1/2 in NPT(F)	1 in NPT(F)	40-180 psi (2.8-12.5 bar)	121-122 127-130
Fireball 425, 50:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	> 20,000 lbs (9,072 kg)	Up to 250 ft (76 m)	4 or more	9 lbs/min (4.1 kg/min)	1/2 in NPT(F)	3/8 in NPT(F)	40-150 psi (2.8-10.3 bar)	121-123 125-130
Fireball 425, 75:1	Automotive dealerships     Fast lube centers     Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	> 20,000 lbs (9,072 kg)	Up to 500 ft (152 m)	4 or more	6.5 lbs/min (2.9 kg/min)	1/2 in NPT(F)	3/8 in NPT(F)	40-100psi (2.8-7 bar)	121-122 124-130
GT 750, 36:1	Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Mining	> 20,000 lbs (9,072 kg)	Up to 250 ft (76 m)	4 or more	32 lbs/min (14.5 kg/min)	1/2 in NPT(F)	1 in NPT(F)	40-100psi (2.8-7 bar)	131-132

# **Grease Pump Selection Guide**

				<b>5</b>		<b>D</b> (
Pump Family and Fluid Pressure Ratio	Typical Applications	Annual Usage	Air Inlet	Fluid Outlet	Air Operation Range	Reference Page
Check-Mate 14:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 20,000 lbs (9,072 kg)	3/4 in NPT(F)	1-1/2 in NPT(M)	0-100 psi (0-7 bar)	133-134 136-137
Check-Mate 26:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 20,000 lbs (9,072 kg)	3/4 NPT(F)	1-1/2 in NPT(M)	0-100 psi (0-7 bar)	133-134 136
Check-Mate 29:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 20,000 lbs (9,072 kg)	3/4 NPT(F)	1 in NPT(F)	0-100 psi (0-7 bar)	133-134 136
Check-Mate 55:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 20,000 lbs (9,072 kg)	3/4 NPT(F)	1 in NPT(F)	0-100 psi (0-7 bar)	133 135-136
Check-Mate 63:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 20,000 lbs (9,072 kg)	3/4 NPT(F)	3/4 in NPT(M)	0-72 psi (0-4.9 bar)	133 135-137
Check-Mate 68:1	Fleet service facilities     In-plant large runs     Large volume lubricant transfer     Mining remote fill	> 20,000 lbs (9,072 kg)	3/4 NPT(F)	1 in NPT(F)	0-78 psi (0-5.4 bar)	133 135-137

Pump Family and Fluid Pressure Ratio	Typical Applications	Maximum Grease Output Flow Rate	Maximum Grease Output Pressure	Hydraulic Inlet (Supply)	Hydraulic Outlet (Return)	Grease Outlet	Maximum Hydraulic Inlet Pressure	Reference Page
Dyna-Star 5:1	Fleet service facilities Heavy-duty dealerships In-plant Lube trucks Lubricant transfer Mining Service shops	4 lb/min (1.8 kg/min)	7500 psi (517 bar)	3/8 in NPT(F)	3/4 in NPT(F)	1/2 in NPT(F)	1500 psi (102 bar)	138-139
Dyna-Star 10:1	Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	1.1 lb/min (0.5 kg/min)	7500 psi (517 bar)	3/4 in -16 JIC (37° Flare)	3/4 in NPT(F)	1/2 in NPT(F)	600 psi (41 bar)	138-139
Viscount II 2.4:1	Fleet service facilities     Heavy-duty dealerships     In-plant     Lube trucks     Lubricant transfer     Mining     Service shops	54 lb/min (20.4 kg/min)	2300 psi (159 bar)	3/4 in NPT(F)	1 in NPT(F)	1-1/2 in NPT(F)	1500 psi (102 bar)	140-141



# **LD Series 50:1 Grease Pumps**





**5 Year** Warranty!

## **Durable and hardworking**

Stay ahead of the competition with LD Series pumps. These affordable and full-featured pumps are designed for lower-volume (up to 7,000 lb/year) applications. LD pumps are fine-tuned for a compact, flexible and durable solution.

## Three-Inch Air Motor

Provides more power to create better flow.

## **Engineered for Durability**

Patented cup and plate design eliminates the need for O-rings that wear out faster, for a more durable, longer-lasting solution.

## Modular Air Valve

Air inlet and exhaust locations are easy to configure with just four bolts for simple, hassle-free installations.

## **Pilot Valves**

Patented self- cleaning design increases reliability in dirty air environments and minimizes pressure drop with rapid changeovers for reduced stalling and smoother flow.

## **Typical Applications**

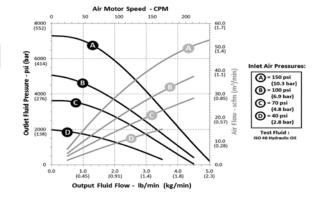
- Automotive dealerships
- · Fast lube centers
- · Service shops
- Lube trucks

## Typical Fluids Handled

Grease up to NLGI #2

## **Pump Performance**

## **LD Series 50:1 Pumps**







# **LD Series 50:1 Grease Pumps**

chnical Specifications	
Fluid Pressure Ratio	50:1
Air Motor Effective Diameter	3 in (76.2 mm)
Annual Usage	Up to 7,000 lb (3,175 kg)
Maximum Fluid Working Pressure	7,500 psi (517 bar / 51.7 MPa)
Approximate Free Flow Rate @ 100 psi	4.5 lb/min (2 kg/min)
Output per Cycle	0.34 oz (9.7 g)
Approximate Air Use and Flow @ 100 psi (80 cpm)	16 @ 1.7 lb/min (0.45 @ 0.77 kg/min)
Air Inlet	1/4 in NPT(F)
Fluid Outlet	1/4 in NPT(F)
Air Operation Range	20 psi to 150 psi (1.37 bar to 10.3 bar)
Max Recommended Pump Speed	120 cpm
Cycles per Pound (Kg)	47 cpp (103 cpk)
Wetted Parts	Steel, brass, nitrile rubber, polyurethane, UHMWPE, aceta
Sound Pressure Level	72.9 dB(A)
Sound Power Level	82 dB(A)
Approximate Weight	35 lb drum – 11.2 lb (5.1 kg) 120 lb drum – 15.0 lb (6.8 kg) 400 lb drum – 17.0 lb (7.7 kg)
Instruction Manual	3A1334

## Ordering Information

## **LD Series 50:1 Pumps**

Part Number	Description	
24G600	For 35 lb (16 kg) pail	
24G603	For 120 lb (55 kg) drum	
24G606	For 400 lb (180 kg) drum	

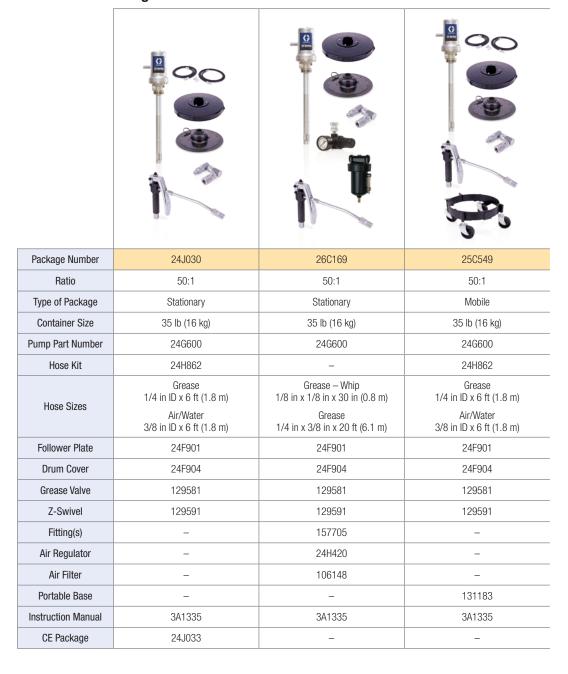


# **LD Series 50:1 Grease Pump Packages**



## Ordering Information

## 35 lb Grease Packages







# **LD Series 50:1 Grease Pump Packages**

## **Ordering Information**

## 120 lb Grease Packages





# **LD Series 50:1 Grease Pump Packages**



## Ordering Information

## 400 lb Grease Packages





# **LD Series 50:1 Grease Pump Accessories**

## **LD Pro-Shot<sup>™</sup> Non-Metered Grease Valves**



Гес	echnical Specifications					
	Pressure	7,500 psi (517 bar / 51.7 MPa)				
	Wetted Parts	Steel, nitrile rubber, PTFE				
	Inlet Size	1/4 in				

## Ordering Information

Part Number	Description	
129581	LD Pro Shot Grease Valve, 1/4 in NPT	
129582	LD Pro Shot Grease Valve, 1/4 in BSPP	
129583	LD Pro Shot Grease Valve, 1/4 in BSPT	

## **LD Z-Swivel**



- · Swivels to prevent twist damage to hoses
- Constructed of heavy-duty steel and ball bearings for smooth and unrestricted movement

#### **Technical Specifications** Pressure 6,000 psi (413 bar / 41.3 MPa) Inlet Size 1/4 in

## Ordering Information

Part Number	Description
129591	Z-swivel, 1/4 in NPT
129592	Z-swivel, 1/4 in BSPP
129593	Z-swivel, 1/4 in BSPT



# **LD Series 50:1 Grease Pump Accessories**



## Ordering Information

## **Adjustable Bung Adapter**

Part Number
24P623

24P623	Adjustable bung adapter for LD pumps

Description

## **Air Regulators**



l	Part Number	Description
	24H420	Mini self-relieving air regulator with gauge, 1/4 in NPT x 3/8 in npsm

## **Carts**



Part Number	Description
24H422	Drum cart with pneumatic wheels for 120 lb drums; includes chain for securing drum to cart
24F915	Drum cart with pneumatic wheels for 400 lb drums; includes chain for securing drum to cart

## **Drum Covers**



Part Number	Description
24F904	Cover for 35 lb (16 kg) pails
24F905	Cover for open-head 120 lb (54 kg) drums
24F906	Cover for open-head 400 lb (182 kg) drums

## **LD Drum Dollies**



Part Number	Description
131183	Drum Dolly, 35 lb (16 kg)
131184	Drum Dolly, 120 lb (54 kg)
129645	Drum Dolly, 400 lb (182 kg)

## **Follower Plates**



Part Number	Description
24F901	Follower plate for 35 lb (16 kg) pails
24F902	Follower plate for 120 lb (54 kg) drums
24F903	Follower plate for 400 lb (182 kg) drums

## **Hose and Fitting Kits**

	Part Number	Description	Includes				
Part Number	Fait Number		Grease Hose	Grease Hose Size	Air Hose	Air Hose Size	Fitting
00	24H862	6 ft LD grease pump hose kit	24H606	1/4 in NPT(M) x 1/4 in NPT(M) x 6 ft	24H858	3/8 in x 6 ft	156823
00	24J501	6 ft LD grease pump hose kit	24J487	1/4 in NPT(M) x 1/4 in NPT(M) x 6 ft	24H858	3/8 in x 6 ft	156823





# Mini Fire-Ball® 225 Grease Pumps



### Perfect for Medium Pressure, **Low Volume Applications**

You can't afford downtime, especially when your shop is small. The Mini Fire-Ball 225 is designed with fewer moving parts, which means less wear and tear and reduced downtime, allowing you to run a more profitable business.

### **Durable Casting**

Thick cast aluminium air motor housing offers unmatched durability.

### Fewer Repairs

Fewer moving parts in the air motor assembly means less downtime and low repair cost.

### Extended Seal Life

In-line pump design aligns the air motor piston and fluid piston rods to maximize seal life.

### Superior Sealing

Non-metallic poppet valves offer positive sealing performance, even with contaminated "dirty" air environments for long-life without repair.

#### Corrosion-Resistant

Corrosion-resistant design utilizes liquid salt nitriding, nickel plating, stainless steel, aluminium and chrome on key components for longer life.

### **Typical Applications**

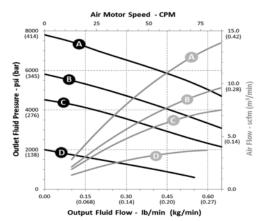
- · Automotive dealerships
- · Fast lube centers
- Service shops
- · Heavy-duty dealerships
- Fleet services facilities
- In-plant
- · Lube trucks
- Mining

### Typical Fluids Handled

· Grease up to NLGI #2

### **Pump Performance**

#### Mini Fire-Ball 225 Pumps







# Mini Fire-Ball® 225 Grease Pumps



chnical Specifications			
Fluid Pressure Ratio	50:1		
Air Motor Effective Diameter	2.25 in (57.2 mm)		
Annual Usage	Up to 10,000 lb (4,535 kg)		
Maximum Fluid Working Pressure	8,400 psi (578 bar / 57.8 MPa)		
Approximate Free Flow Rate @ 100 psi	1.5 lb/min (0.7 kg/min)		
Output per Cycle	0.12 oz (3.5 g)		
Continuous Duty Flow Rate	0.32 lb/min (0.15 kg/min)		
Approximate Air Use and Flow @ 100 psi (80 cpm)	9.3 @ 0.62 lb/min (0.26 @ 0.28 kg/min)		
Air Inlet	3/8 in NPT(F)		
Fluid Outlet	1/4 in NPT(F)		
Air Operation Range	40 psi to 140 psi (3 bar to 10 bar)		
Max Recommended Pump Speed	100 cpm		
Cycles per Pound (Kg)	130 cpp (287 cpk)		
Wetted Parts	Carbon steel, zinc plating, brass, polyurethane, ultra-high molecular weight polyethylene, Buna-N		
Sound Pressure Level	77.8 dB(A)		
Sound Power Level	85.6 dB(A)		
Approximate Weight	15 lb (6.8 kg)		
Instruction Manual	309966		

# Ordering Information

# Mini Fire-Ball 50:1 Pumps

	<del>-</del>
Part Number	Description
246909	For 35 lb (16 kg) pail
253361	For 35 lb (16 kg) pail, without handle
246780	For 120 lb (55 kg) drum
246781	For 400 lb (180 kg) drum



### Ordering Information

## 35 lb and 50 lb Grease Packages



Package Number		246910*	246911*	246913*	
Ratio		50:1	50:1	50:1	
Type of Package		Portable pail dispenser	Stationary pail dispenser	Cart-mounted pail dispenser	
Container Size		35 lb to 50 lb (16 kg to 23 kg)	35 lb to 50 lb (16 kg to 23 kg)	35 lb to 50 lb (16 kg to 23 kg)	
	Container	-	204134	204134	
Pu	ımp Part Number	246909	246909	246909	
Fluid Hose Size		1/4 in x 12 ft	1/4 in x 12 ft	1/4 in x 12 ft	
D	ispense Hose Kit	236058	236058	236058	
səp	12 ft Hose	109151	109151	109151	
Air Coupler  Air Fitting  Z-Swivel  Pro-Shot Valve		114558	114558	114558	
e Kit	Air Fitting	169971	169971	169971	
bens	Z-Swivel	202577	202577	202577	
Dis	Pro-Shot Valve	242056	242056	242056	
	Follower Plate	24F901	**	**	
	Drum Cover	222059	24R350	24R350	
	Portable Base	-	-	203650	
In	struction Manual	309967	309967	309967	
	CE Package	253384	255385	255386	



<sup>\*</sup>Use 3/8 in (9.5 mm) air regulator (109075); must be ordered separately. \*\*Order follower plate (220653) separately for 35 lb (16 kg) pails or (220654) for 70 lb (32 kg) bulk.



# Ordering Information

### 120 lb and 400 lb Grease Packages



<sup>\*</sup>Use 3/8 in (9.5 mm) air regulator (109075); must be ordered separately.





# Fire-Ball® 300 Grease Pumps



## Ideal for Shops with Grease Transfer

Install the Fire-Ball 300 in grease dispense applications. A differential air motor ensures smooth the double-acting pump design provides reliable grease flow and accurate dispense.



Thick cast aluminium air motor housing offers unmatched durability.

### Fewer Repairs

Fewer moving parts in the air motor assembly means less downtime and low repair cost.

### Extended Seal Life

In-line pump design aligns the air motor piston and fluid piston rods to maximize seal life.

### Superior Sealing

Non-metallic poppet valves offer positive sealing performance, even with contaminated "dirty" air environments for long life without repair.

#### Corrosion-Resistant

Corrosion-resistant design utilizes liquid salt nitriding, nickel plating, stainless steel, aluminium and chrome on key components for longer life.

### **Typical Applications**

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

### Typical Fluids Handled

· Grease up to NLGI #2



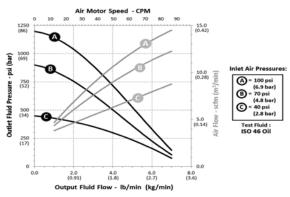
# Fire-Ball® 300 Grease Pumps



### **Pump Performance**

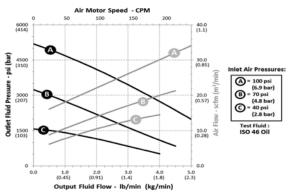
### Fire-Ball 300 15:1 Pumps

#### **Pump Performance Curve**



### Fire-Ball 300 50:1 Pumps

#### **Pump Performance Curve**



	Fire-Ball 300 15:1	Fire-Ball 300 50:1
Fluid Pressure Ratio	15:1	50:1
Air Motor Effective Diameter	3 in (76.2 mm)	3 in (76.2 mm)
Annual Usage	Up to 10,000 lb (4,535 kg)	Up to 10,000 lb (4,535 kg)
Maximum Fluid Working Pressure	2,700 psi (186 bar / 18.6 MPa)	8,400 psi (579 bar / 57.9 MPa)
Approximate Free Flow Rate @ 100 psi	7.5 lb/min (3.4 kg/min)	7.5 lb/min (3.4 kg/min)
Output per Cycle	1.29 oz (36.6 g)	0.34 oz (9.5 g)
Continuous Duty Flow Rate	0.7 lb/min (0.32 kg/min)	1.19 lb/min (0.54 kg/min)
Approximate Air Use and Flow @ 100 psi (80 cpm)	14 @ 6.5 lb/min (0.40 @ 2.9 kg/min)	21 @ 1.7 lb/min (0.59 @ 0.77 kg/mir
Air Inlet	3/8 in NPT(F)	3/8 in NPT(F)
Fluid Outlet	1/4 in NPT(F)	1/4 in NPT(F)
Air Operation Range	40 psi to 180 psi (2.8 bar to 12.5 bar)	30 psi to 140 psi (3.0 bar to 9.7 bar)
Max Recommended Pump Speed	66 cpm	76 cpm
Cycles per Pound (Kg)	12.4 cpp (27 cpk)	47.4 cpp (105 cpk)
Wetted Parts	Carbon steel, brass, copper, aluminium, PTFE, nitrile rubber, leather	Steel, brass, aluminium, acetal, nitrile rubber, polyurethane
Sound Pressure Level	77.8 dB(A)	77.8 dB(A)
Sound Power Level	85.6 dB(A)	85.6 dB(A)
Approximate Weight	22 lb (10 kg)	22 lb (10 kg)
Instruction Manual	306531	308883

# Ordering Information

### Fire-Ball 300 Grease Pumps

Part Number	Ratio	Description
206405	15:1	For 35 lb (16 kg) pail
206699	15:1	For 120 lb (55 kg) drum
206700	15:1	For 400 lb (180 kg) drum
239877	50:1	For 35 lb or 70 lb (16 kg or 32 kg) pail
239887	50:1	For 120 lb (55 kg) drum
239888	50:1	For 400 lb (180 kg) drum



# Grease

# Fire-Ball® 300 Grease Pump Packages

# Ordering Information

## **15:1 Grease Pump Packages**



Package Number		222078	220170	220171
Type of Package		Stationary Pail Dispenser	Stationary Drum Dispenser	Cover-Mounted Drum Dispenser
Ratio		15:1	15:1	15:1
Container Size		35 lb (16 kg)	120 lb (55 kg)	400 lb (180 kg)
Pu	mp Part Number	206405	206699	206700
	Dispense Kit	222080	222081	222081
	Fluid Hose	1/4 in x 15 ft	1/4 in x 25 ft	1/4 in x 25 ft
	Hose Part Number	109165	109167	109167
	Air Coupler	110198	110198	110198
SS	Air Fitting	-	169971	169971
Dispense Kit Includes	Closed Nipple	156849	156849	156849
Kit In	Z-Swivel	202577	202577	202577
ense	Fitting(s)	169971	_	_
Disp	Dispenser	Pro-Shot	Pro-Shot	Pro-Shot
	Dispenser Part Number	242056	242056	242056
	Air Regulator	110234	110234	110234
	Air Pressure Gauge	100960	100960	100960
	Drum Cover	222058	204574	200326
Ins	struction Manual	307882	307882	307882
	CE Package	241043	241044	241045





# Ordering Information

### 50:1 25 to 50 lb Grease Pump Packages



<sup>\*</sup>Use 3/8 in (9.5 mm) air regulator (109075); must be ordered separately.



# Ordering Information

## 50:1 120 lb Grease Pump Packages

							a del
Р	ackage Number	225006*	225026*	26C185*	26C186*	245696*	222245*
T	ype of Package	Portable with caster base	Portable with 2-wheel cart	Portable with caster base	Portable with 2-wheel cart	Portable with 2-wheel cart	Portable with heavy duty cart
	Ratio	50:1	50:1	50:1	50:1	50:1	50:1
	Container Size	120 lb (55 kg)	120 lb (55 kg)	120 lb (55 kg)	120 lb (55 kg)	120 lb (55 kg)	120 lb (55 kg)
Pu	mp Part Number	239887	239887	239887	239887	239887	239887
	Dispense Kits	222070	222070	26C183	26C183	245697	222383
	Fluid Hose	1/4 in x 12 ft	1/4 in x 12 ft	1/4 in x 12 ft	1/4 in x 12 ft	1/4 in x 12 ft	1/4 in x 25 ft
	Hose Part Number	109151	109151	109151	109151	109151	109154
SS	6 ft Coupled Hose	_	_	_	_	_	_
clude	Air Coupler	114558	114558	114558	114558	114558	114558
Kit n	Air Fitting	169971	169971	169971	169971	169971	169971
suse	Z-swivel	202577	202577	202577	202577	202577	202577
Dispense Kit Includes	Fitting(s)	_	_	_	_	_	_
	Dispenser	Pro-Shot	Pro-Shot	Pro-Shot	Pro-Shot	Accu-Shot	Pro-Shot
	Dispenser Part Number	242056	242056	26C184	26C184	233807	242056
ı	Fluid Hose Size	See kit above	See kit above	See kit above	See kit above	See kit above	See kit above
	Air Hose Size	_	_	_	_	_	_
	Meter	See kit above	See kit above	See kit above	See kit above	See kit above	See kit above
M	eter Part Number	See kit above	See kit above	See kit above	See kit above	See kit above	See kit above
	Follower Plate	24F902	24F902	24F902	24F902	220654	24F902
Drum Cover		24R350	24R350	24R350	24R350	204574	222060
Holster		203976	203976	203976	203976	203976	_
	Portable Base	203622	203650	203622	203650	203650	222243
	Elevator	-	-	_	-	_	_
	Pump Support	-	-	_	-	_	_
	Hold Down Kit	-	-	_	-	_	222061
In	struction Manual	307878	307878	307878	307878	307878	307878
	CE Package	240880	240881	_	_	_	240882
*Use	3/8 in (9.5 mm) air re	gulator (109075); must be or	dered separately.				





# Ordering Information

## 50:1 120 lb Grease Pump Packages



Daakana Numak - ::		005044#	000070+
Package Number		225014*	222073*
Type of Package		Stationary supply	Stationary supply topper-inductor
	Ratio	50:1	50:1
	Container Size	120 lb (55 kg)	120 lb (55 kg)
Pι	ımp Part Number	239887	239887
	Dispense Kits	222072	-
	Fluid Hose	1/4 in x 6 ft	-
	Hose Part Number	109150	-
SS	6 ft Coupled Hose	203320	-
Dispense Kit Includes	Air Coupler	-	-
Kitin	Air Fitting	-	-
suse	Z-swivel	_	-
Dispe	Fitting(s)	155494/155541	-
	Dispenser	-	-
	Dispenser Part Number	-	-
Fluid Hose Size		See kit above	1/4 in x 6 ft
Air Hose Size		See kit above	3/8 in x 6 ft
	Meter	Pro-Shot	Pro-Shot
M	eter Part Number	242056	242056
	Follower Plate	24F902	-
	Drum Cover	24R350	-
Holster		-	-
Portable Base		-	-
Elevator		-	204121
Pump Support		-	222074
	Hold Down Kit	-	-
In	struction Manual	307880	306523
	CE Package	241034	-

<sup>\*</sup>Use 3/8 in (9.5 mm) air regulator (109075); must be ordered separately.

## 50:1 400 lb Grease Pump Packages



Package Number		225016*	226013*
Type of Package		Stationary supply	Stationary supply topper-inductor
	Ratio	50:1	50:1
	Container Size	400 lb (180 kg)	400 lb (180 kg)
Pι	ımp Part Number	239888	239888
Но	se and Fitting Kits	222072	204467
səpn	Fluid Hose	1/4 in x 6 ft	1/4 in x 6 ft
it Incl	Hose Part Number	109150	109150
Dispense Kit Includes	6 ft Coupled Hose	203320	-
Fitting(s)		155494/155541	100206/156971/205528
	Air Hose Size	3/8 in x 6 ft	3/8 in x 6 ft
	Follower Plate	24F903	-
	Drum Cover	200326	_
	Elevator	-	204385
	Pump Support	-	204461
	Inductor Plate	_	204353
	Base	-	205339
In	struction Manual	307880	306556
	CE Package	241035	-

<sup>\*</sup>Use 3/8 in (9.5 mm) air regulator (109075); must be ordered separately.



# >>> Ordering Information

## **50:1 Grease Pump Lube Truck Packages**



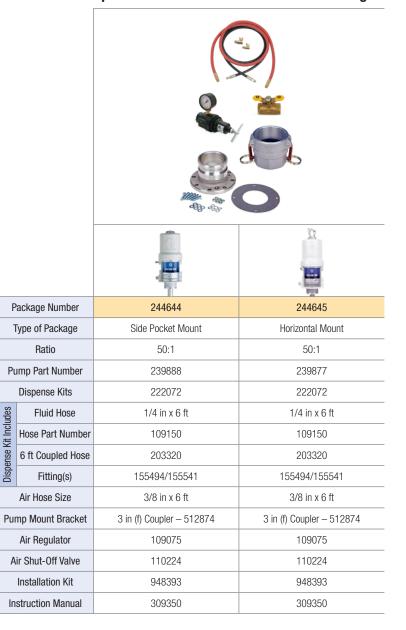
Package Number		222085*	222071*
Type of Package		Lube truck	Lube truck
	Ratio	50:1	50:1
	Container Size	120 lb (55 kg)	400 lb (180 kg)
Pι	ımp Part Number	239887	239888
	Dispense Kits	222072	222072
sapn	Fluid Hose	1/4 in x 6 ft	1/4 in x 6 ft
Dispense Kit Includes	Hose Part Number	109150	109150
ense k	6 ft Coupled Hose	203320	203320
Disp	Fitting(s)	155494/155541	155494/155541
	Air Hose Size	3/8 in x 6 ft	3/8 in x 6 ft
	Follower Plate	220654	223845
	Drum Cover	222060	207366
	Hold Down Kit	222061	207361
In	struction Manual	307880	307880
	CE Package	241036	241037

<sup>\*</sup>Use 3/8 in (9.5 mm) air regulator (109075); must be ordered separately.



# Ordering Information

### 50:1 Grease Pump Side Pocket and Horizontal Mount Packages







# Fire-Ball® 425 Grease Pumps



## The Pump of Choice for Your Most **Demanding Applications!**

The Fire-Ball 425 features a large air motor to supply the power you need for long pipe runs and higher-volume dispensing. An ideal choice for applications where multiple dispenses happen at the same time.



Thick cast aluminium air motor housing offers unmatched durability.

### Fewer Repairs

Fewer moving parts in the air motor assembly means less downtime and low repair cost.

#### Extended Seal Life

In-line pump design aligns the air motor piston and fluid piston rods to maximize seal life.

### Superior Sealing

Non-metallic poppet valves offer positive sealing performance, even with contaminated "dirty" air environments for long life without repair.

### Corrosion-Resistant

Corrosion-resistant design utilizes liquid salt nitriding, nickel plating, stainless steel, aluminium and chrome on key components for longer life.

### **Typical Applications**

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

### Typical Fluids Handled

· Grease up to NLGI #2

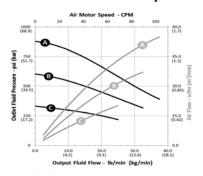


# Fire-Ball® 425 Grease Pumps



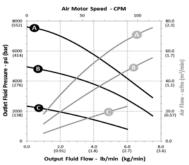
### **Pump Performance**

### Fire-Ball 425 10:1 Pumps



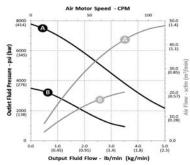


### Fire-Ball 425 50:1 Pumps





### Fire-Ball 425 75:1 Pumps





nnical Specifications			
	Fire-Ball 425 10:1	Fire-Ball 425 50:1	Fire-Ball 425 75:1
Fluid Pressure Ratio	10:1	50:1	75:1
Air Motor Effective Diameter	4.25 in (108 mm)	4.25 in (108 mm)	4.25 in (108 mm)
Annual Usage	20,000+ lb (9,072+ kg)	20,000+ lb (9,072+ kg)	20,000+ lb (9,072+ kg)
Maximum Fluid Working Pressure	1,800 psi (124 bar / 12.4 MPa)	7,500 psi (517 bar / 51.7 MPa)	7,500 psi (517 bar / 51.7 MPa)
Approximate Free Flow Rate @ 100 psi	29 lb/min (13.1 kg/min)	9 lb/min (4.1 kg/min)	6.5 lb/min (2.9 kg/min)
Output per Cycle	5.82 oz (164.7 g)	1.06 oz (30 g)	0.71 oz (20 g)
Continuous Duty Flow Rate	3.5 lb/min (1.59 kg/min)	3.35 lb/min (1.52 kg/min)	1.95 lb/min (0.88 kg/min)
Approximate Air Use and Flow @ 100 psi (80 cpm)	45 @ 29 lb/min (1.3 @ 13 kg/min)	43 @ 5.3 lb/min (1.2 @ 2.4 kg/min)	43 @ 3.5 lb/min (1.2 @ 1.6 kg/min
Air Inlet	1/2 in NPT(F)	1/2 in NPT(F)	1/2 in NPT(F)
Fluid Outlet	1 in NPT(F)	3/8 in NPT(F)	3/8 in NPT(F)
Air Operation Range	40 psi to 180 psi (2.8 bar to 12.5 bar)	40 psi to 150 psi (2.8 bar to 10.4 bar)	40 psi to 100 psi (2.8 bar to 7 bar)
Max Recommended Pump Speed	60 cpm	60 cpm	60 cpm
Cycles per Pound	2.75 cpp	15.1 cpp	22.7 cpp
Cycles per Kg	6 cpk	33 cpk	50 cpk
Wetted Parts	Steel, brass, aluminium, leather, Buna-N	CS, brass, aluminium, leather	CS, brass, aluminium, leather
Sound Pressure Level	80.9 dB(A)	80.9 dB(A)	80.9 dB(A)
Sound Power Level	94.6 dB(A)	94.6 dB(A)	94.6 dB(A)
Approximate Weight	38 lb (17.2 kg)	34 lb to 37 lb (15 kg to 17 kg)	30 lb to 37 lb (14 kg to 17 kg)
Instruction Manual	309407	306674	308777

### Ordering Information

### Fire-Ball 425 Grease Pumps

Part Number	Ratio	Description
965124	10:1	Stubby pump
965129*	10:1	For 400 lb (180 kg) drum
205394	50:1	For 120 lb (55 kg) drum
205395	50:1	For 400 lb (180 kg) drum

Part Number	Ratio	Description
239731	75:1	For 35 or 70 lb (16 or 32 kg) pail
239729	75:1	For 120 lb (55 kg) drum
239730	75:1	For 400 lb (180 kg) drum

<sup>\*</sup>Includes 2 in NPT Bung Adapter (part number 222308).





# Ordering Information

## 50:1 120 lb and 400 lb Grease Pump Packages



D-4 057405	/D	A = = = == l= l; .)		-1
Part 257435	ınaııı	ASSEITIDIVI	ΠUL	SHUVVI

					Tare 201 400 (Harri Addornally) Not Shown
F	Package Number	223108*	225781*	226018*	244905
	Type of Package	Stationary Supply	Stationary Supply	Stationary Supply Topper-Inductor	Stationary Ram
	Ratio	50:1	50:1	50:1	50:1
	Container Size	120 lb (55 kg)	400 lb (180 kg)	400 lb (180 kg)	400 lb (180 kg)
P	ump Part Number	205394	205395	205395	205395
	Dispense Kits	222076	222076	205102	222076
sapn	Fluid Hose	3/8 in x 6 ft	3/8 in x 6 ft	3/8 in x 6 ft	3/8 in x 6 ft
Dispense Kit Includes	Hose Part Number	109163	109163	109163	109163
ense k	6 ft Coupled Hose	205418	205418	_	205418
Disp	Fitting(s)	155470/155494	155470/155494	156859/196220/205528	155470/155494
	Air Hose Size	1/2 in x 6 ft	1/2 in x 6 ft	1/2 in x 6 ft	1/2 in x 6 ft
	Drum Cover	204574	200326	_	-
	Follower Plate	223344	223846	_	-
	Pump Support	-	-	204461	-
	Elevator	-	-	204385	-
	Inductor Plate	-	-	205699	-
	Base	-	-	205339	-
	Ram	-	-	_	257435
	Adapter Plate	-	-	_	162225
	Adapter Kit	-	-	_	224266
R	am Plate Seal Kit	-	-	_	247335
lr	struction Manual	307880	307880	306556	309345
	CE Package	241039	241040	-	257589

 $<sup>^{\</sup>star}\text{Use}$  1/2 in (12.7 mm) air regulator (104266) and gauge (100960); must be ordered separately.



## Ordering Information

## 75:1 120 lb and 400 lb Grease Pump Packages



					Ture Zor Too (Harry Goorney) Hot Grown
Package Number		244635*	244636*	244637*	244906
Type of Package		Stationary Cover-Mount	Stationary Cover-Mount	Stationary Inductor	Stationary Ram
	Ratio	75:1	75:1	75:1	75:1
	Container Size	120 lb (55 kg)	400 lb (180 kg)	400 lb (180 kg)	400 lb (180 kg)
Pι	ımp Part Number	239729	239730	239730	239730
	Dispense Kits	222076	222076	205102	222076
ndes	Fluid Hose	3/8 in x 6 ft	3/8 in x 6 ft	3/8 in x 6 ft	3/8 in x 6 ft
it Indi	Hose Part Number	109163	109163	109163	109163
Dispense Kit Includes	6 ft Coupled Hose	205418	205418	-	205418
Fitting(s)		155470/155494	155470/155494	156859/196220/205528	155470/155494
	Air Hose Size	1/2 in x 6 ft	1/2 in x 6 ft	1/2 in x 6 ft	1/2 in x 6 ft
Drum Cover		204574	200326	-	-
Follower Plate		223344	223846	-	-
Pump Support		-	-	204461	-
	Elevator	-	-	204385	-
	Inductor Plate		-	205699	
	Base	-	-	205339	-
	Ram	-	-	-	257435
Adapter Kit		-	-	-	224266
R	am Plate Seal Kit	-	-	-	247355
	Pump Mount Kit	-	-	-	247337
In	struction Manual	307880	307880	306556	309345
CE Package		24M271	24M272	-	-

 $<sup>^{\</sup>star}$ Use 1/2 in (12.7 mm) air regulator (104266) and gauge (100960); must be ordered separately.

# Ordering Information

## 50:1 and 75:1 Grease Pump Lube Truck Packages

P	ackage Number	223107*	222075*	243817*	243818**			
Т	ype of Package	Lube Truck	Lube Truck	Lube Truck	Lube Truck			
	Ratio	50:1	50:1	75:1	75:1			
	Container Size	120 lb (55 kg)	400 lb (180 kg)	120 lb (55 kg)	400 lb (180 kg)			
Pu	mp Part Number	205394	205395	239729	239730			
	Dispense Kits	222076	222076	222076	222076			
səpr	Fluid Hose	3/8 in x 6 ft	3/8 in x 6 ft	3/8 in x 6 ft	3/8 in x 6 ft			
it Incli	Hose Part Number	109163	109163	109163	109163			
Dispense Kit Includes	6 ft Coupled Hose	205418	205418	205418	205418			
Dispe	Fitting(s)	155470/155494	155470/155494	155470/155494	155470/155494			
	Air Hose Size	1/2 in x 6 ft	1/2 in x 6 ft	1/2 in x 6 ft	1/2 in x 6 ft			
	Drum Cover	222060	207366	222060	207366			
	Follower Plate	223344	223846	223344	223846			
	Hold Down Kit	222061	207361	222061	207361			
Ins	struction Manual	307880	307880	307880	307880			
	CE Package	241041	241042	24M273	24M274			

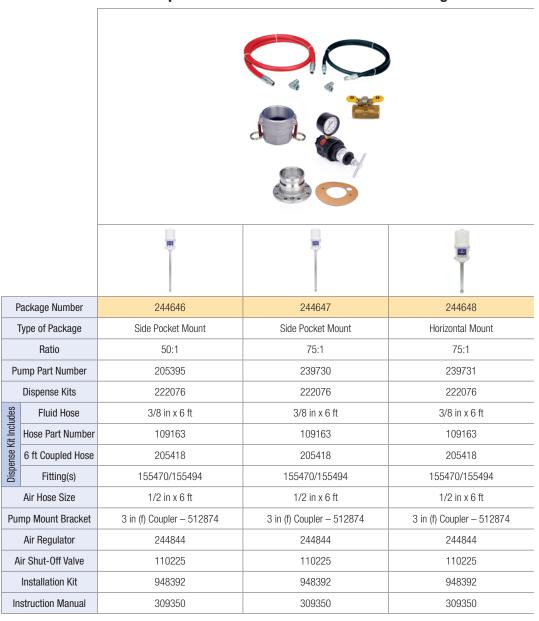
<sup>\*</sup>Use 1/2 in (12.7 mm) air regulator (104266) and gauge (100960); must be ordered separately.

<sup>\*\*</sup>Use 3/8 in (9.5 mm) air regulator (109075); must be ordered separately.



# Ordering Information

### 50:1 and 75:1 Grease Pump Side Pocket and Horizontal Mount Packages







### Ordering Information

## **Air Regulators**

Say.
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Part Number	Description		
109075	3/8 in NPT (fbe) with gauge		
244844	1/2 in NPT (fbe) with gauge		

# **Bleed-Type Air Shut-Off Valves**



Part Number	Description
110223	1/4 in NPT
110224	3/8 in NPT
110225	1/2 in NPT
110226	3/4 in NPT

## **Bung Adapters**



Part Number	Dimensions	Compatible Pumps
239965	1.65 in ID	Fire-Ball 425, 50:1 Fire-Ball 425, 75:1
239966	1.29 in ID	Fire-Ball 300, 15:1 Fire-Ball 300, 50:1

## **Dispense Hose and Fitting Kits**



			Includes							
	Part Number	Compatible Pump(s)	Fluid Hose Size	Fluid Hose	Grease Dispense Valve	Z-Swivel	3/8 in Closed Nipple	Quick- Disconnect Nipple	Quick- Disconnect Coupler	3/8 in Air Regulator
	222080	Fire-Ball 300, 15:1	1/4 in x 15 ft	109165	242056	202577	156849	169971	110198	110234
	222081	Fire-Ball 300, 15:1	1/4 in x 25 ft	109167	242056	202577	156849	169971	110198	110234
	236058	Mini Fire-Ball 225, 50:1	1/4 in x 12 ft	109151	242056	202577	_	169971	114558	-
	222070	Fire-Ball 300, 50:1	1/4 in x 12 ft	109151	242056	202577	-	169971	114558	_
	26C183	Fire-Ball 300, 50:1	1/4 in x 12 ft	109151	26C184	202577	-	169971	114558	_
	222383	Mini Fire-Ball 225, 50:1 Fire-Ball 300, 50:1	1/4 in x 25 ft	109154	242056	202577	-	169971	114558	_

## **Hose and Fitting Kits**



			Includes				
Part Number	Pressure Rating	Compatible Pumps	6 ft Air Hose	Air Hose Swivel Elbow	6 ft Fluid Hose	Fluid Hose Swivel Elbow	
222072	5,000 psi (345 bar)	Fire-Ball 300, 50:1	203320	155494	109150	155541	
222076	4,000 psi (276 bar)	Fire-Ball 425, 50:1	205418	155470	109163	155494	





## Ordering Information

### **Drum Covers**

	Part Number	Description	Compatible Pumps
	222059	Cover for 35 lb (16 kg) pails	Mini Fire-Ball 225, 50:1 Fire-Ball 300, 50:1
	24R350	LD Cover for open-head 35 lb (16 kg), 70 lb (32 kg) or 120 lb (55 kg) drums	Mini Fire-Ball 225, 50:1 Fire-Ball Pumps
	204574	SD Cover for open-head 70 lb (32 kg) or 120 lb (55 kg)	Mini Fire-Ball 225, 50:1 Fire-Ball Pumps
	200326	Cover for open-head 400 lb (180 kg) drums	Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1 Fire-Ball 425, 10:1 and 50:1
	160754	Bung-adapter plate for mounting pump to 120 lb (55 kg) or 400 lb (180 kg) drum covers	Fire-Ball Pumps

### **Drum Elevator**

3p. ∥	Part Number	Description	Includes		
	Fait Number	Description	Cover Support	Drum Elevator	Air Control Kit
	241663	Air-powered elevator to speed up 400 lb (180 kg) drum changes	207562	204385	207561

# Flange Mounting Accessories for Fire-Ball Pumps

	Part Number	Description
	948393	Flange Adapter (male) for Fire-Ball 300 Pumps
<b>3</b> •	948392	Flange Adapter (male) for Fire-Ball 425 Pumps
8	512874	Coupler (female), 3 in thread





### Ordering Information

### **Follower Plates**

	Part Number	Container Size	Flexible Wiper	Compatible Pumps
	24F901	35 lb (16 kg)	16F769	LD 50:1 Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1
	24F902	70 lb (32 kg) 120 lb (55 kg)	16F781	LD 50:1 Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1
	24F903	400 lb (180 kg)	16F784	LD 50:1 Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1
	220653	35 lb (16 kg)	183241	Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1
	220654	70 lb (32 kg) 120 lb (55 kg)	183243	Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1
	223845	400 lb (180 kg)	186463	Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1
	204130	400 lb (180 kg)	_	Mini Fire-Ball 225, 50:1 Fire-Ball 300, 15:1 Fire-Ball 300, 50:1
	223344	120 lb (55 kg)	183243	Fire-Ball 425, 50:1 Fire-Ball 425, 75:1
	223700	120 lb (55 kg)	183243	Dyna-Star 5:1
	223701	400 lb (180 kg)	186463	Dyna-Star 5:1 Fire-Ball 425 10:1
	223846	400 lb (180 kg)	186463	Fire-Ball 425, 50:1 Fire-Ball 425, 75:1
	205337	400 lb (180 kg)	-	Fire-Ball 425, 50:1 Fire-Ball 425, 75:1

# **High-Pressure Grease Shut-Off Valve**

Part Number	Description	Pressure Rating	Inlet
202869	High-pressure needle valve	5,000 psi (345 bar)	1/2 in

## **Lincoln-to-Graco Adapter Kit**

Part Number	Description	Compatible Pump
241246	For Replacing a Series 20 Lincoln	Fire-Ball 300, 50:1





### Ordering Information

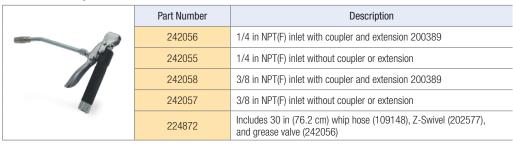
#### **Portable Bases**

	Part Number	Description
	131183	Drum dolly, 35 lb (16 kg)
S.	131184	Drum dolly, 120 lb (54 kg)
	129645	Drum dolly, 400 lb (182 kg)
	203622	Caster base for 120 lb (54 kg) drums

### **Carts**

	Part Number	Description	Compatible Container Size
	203650	Drums fit onto recess on formed base. Rim clamps secure drum onto cart.	35 lb (16 kg) 70 lb (32 kg) 120 lb (55 kg)
4	222243	Heavy-duty drum cart with pneumatic wheels	120 lb (55 kg)
	111470	Heavy-duty drum truck on roll-around base	400 lb (180 kg)

### **Pro-Shot Dispense Valves**



### **Swivel**

	Part Number	Description
THE STATE OF THE S	202577	Z-Swivel allows non-binding movement for hard-to-reach locations, 1/4-18 NPT





# GT 750 36:1 Grease Pumps

# **Fewer Strokes and Longer Pump Life**

The GT 750\* pump was engineered to perform in challenging applications and changing environments. The large 7.5-inch air motor and pump lower combination allows the GT 750 pump to move the same amount of grease with up to four times fewer pump strokes.



### Efficient Air Motor

Use less air to move more grease.

### **High Flow Rates**

Up to 30 lb/min of grease.

### High Volume Per Stroke

Pump more grease without having to drive pump too quickly to damage seals.

## Proven Pump Technology

Based on Graco  $\mathsf{NXT}^{^\mathsf{TM}}$  pump technology.

### Multiple Tank Options

Available in 35, 120 and 400 lb down tube lengths.

### **Typical Applications**

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

### Typical Fluids Handled

• Grease up to NLGI #2

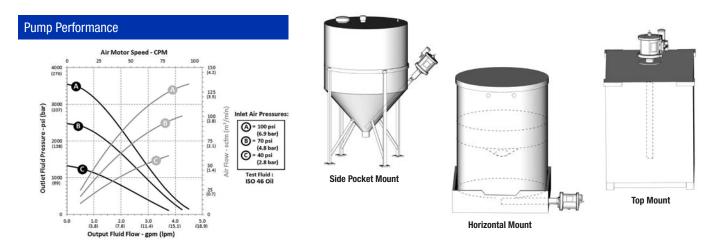
chnical Specifications	
Fluid Pressure Ratio	36:1
Air Pressure Operating Range	40-100 psi (3-7 bar)
Maximum Working Pressure	3600 psi (248 bar)
Maximum Recommended Pump Speed	60 cycles per minute
Air Motor Effective Diameter	7.5 in (190 mm)
Stroke	4.75 in (121 mm)
Air Inlet	1/2 in NPT
Fluid Outlet	1 in NPT
Maximum Delivery	30 lb/min (13.6 kg/min)
Pump Weight	59 lb (26.8 kg)
Wetted Parts	Steel, brass, Buna-N, urethane, ductile iron, aluminium
Sound Power (measured at 70 psi [4.8 bar], 20 CPM per ISO-9414-2)	77.2 dBa
Sound Pressure (tested at 3.28 ft [1 m] from equipment)	70.5 dBa
Pump Cycles Per Pound	3 cycles
Pump Cycles Per KG	6 cycles
Warranty	Five years overall and 1 year wear parts
Instruction Manual	3A5363

<sup>\*</sup> Not CE-marked



# GT 750 36:1 Grease Pumps





# Ordering Information

### GT 750 36:1 Grease Pumps (not CE-marked)

Part Number	Description
24W498	GT 750, 36:1 Grease Pump, stubby length
25D116	GT 750, 36:1 Grease Pump, 120 lb length
24W337	GT 750, 36:1 Grease Pump, 400 lb length

### **Accessories**

Part Number	Description
131380	3 in Male Camlock Adapter
131394	3 in Female Camlock Adapter







## **Move Large Amounts of Grease Fast**

Tested to outperform and outlast all other pumps on the market – with its long-life packing design and intuitive, easy-to-use controls — the NXT<sup>™</sup> High-Flo pump is the best value for the money. Fewer parts, faster repairs, and long-lasting durability.

### Optional DataTrak Control

Intuitive, easy-to-use DataTrak<sup>™</sup> control gives you pump diagnostics, material usage tracking and pump runaway protection.

#### **NXT Air Motor**

Modular design for easier maintenance with rugged body armor that won't rust or dent.

### Modular Air Valves

Easy-to-repair valve eliminates stalling and contains deicing controls.

### Integrated Air Controls

Easy-turn, lockable regulator is front-mounted for easy access. Compact and modular with built-in filtration.

### Piston Valve with Floating Piston Seal

For maximum pressure balance over a range of material viscosities.

### **Typical Applications**

- · Fleet services facilities
- In-plant
- Mining

### Typical Fluids Handled

· Grease up to NLGI #2

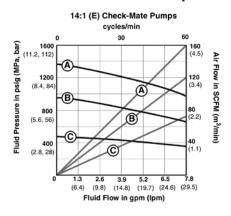


### Pump Performance

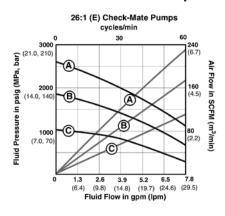


TEST FLUID: No. 10 Weight Oil

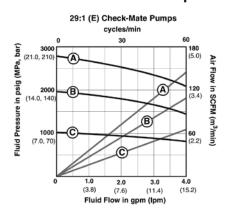
### **NXT 14:1 Check-Mate Pumps**



### **NXT 26:1 Check-Mate Pumps**



### **NXT 29:1 Check-Mate Pumps**



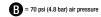
hnical Specifications			
	NXT Check-Mate 14:1	NXT Check-Mate 26:1	NXT Check-Mate 29:1
Fluid Pressure Ratio	14:1	26:1	29:1
Air Motor	NXT 3400	NXT 6500	NXT 3400
Air Motor Effective Diameter	7.5 in (191 mm)	10.4 in (264 mm)	7.5 in (191 mm)
Pump Lower	L500CS	L500CS	L250CS
Maximum Fluid Working Pressure	1,400 psi (97 bar / 9.7 MPa)	2,600 psi (179 bar / 17.9 MPa)	2,900 psi (200 bar / 20 MPa)
Output per Cycle	15.4 oz (435 g)	15.4 oz (435 g)	7.7 oz (218 g)
Air Inlet	3/4 in NPT(F)	3/4 in NPT(F)	3/4 in NPT(F)
Fluid Outlet	1-1/2 in NPT(M)	1-1/2 in NPT(M)	1 in NPT(F)
Air Operation Range	0 psi to 100 psi (0 bar 7 bar)	0 psi to 100 psi (0 bar to 7 bar)	0 psi to 100 psi (0 bar to 7 bar)
Max Recommended Pump Speed	20 cpm	20 cpm	20 cpm
Cycles per Pound	1.0 cpp	1.0 cpp	2.1 cpp
Cycles per Kg	2 cpk	2 cpk	5 cpk
Wetted Parts	303, 304, 316 and 17-4PH grades of stainless steel; ductile iron and carbon steel, electroless nickel plated; carbon steel, zinc and electroless nickel plated; E52100 and ETD 150 alloy steel; PTFE; UHMWPE; carbon-filled PTFE; acetal	303, 304, 316 and 17-4PH grades of stainless steel; ductile iron and carbon steel, electroless nickel plated; carbon steel, zinc and electroless nickel plated; E52100 and ETD 150 alloy steel; PTFE; UHMWPE; carbon-filled PTFE; acetal	ETD 150, 41L40, and 4140 alloy steel; 304, 316, 17-4PH and 440C grades of stainless steel; acetal; carbon-filled PTFE; carbon steel; ductile iron; electroless nickel, zinc and chrome plating; PTFE; UHMWPE
Sound Pressure Level	77 dB(A)	80 dB(A)	77 dB(A)
Sound Power Level	87 dB(A)	90 dB(A)	87 dB(A)
Approximate Weight	152 lb (69 kg)	169 lb (77 kg)	128 lb (58 kg)
Instruction Manual	System – 312863 Pump – 312376 Pump Lower – 312375 Air Motor – 311238	System – 312863 Pump – 312376 Pump Lower – 312375 Air Motor – 311238	System – 312863 Pump – 312376 Pump Lower – 312375 Air Motor – 311238



### Pump Performance

#### Inlet Pressures:





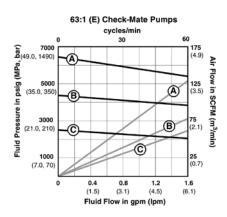


TEST FLUID: No. 10 Weight Oil

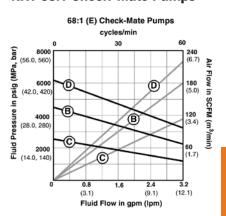
### **NXT 55:1 Check-Mate Pumps**

### 55:1 (E) Check-Mate Pumps cycles/min 30 Fluid Pressure in psig (MPa, bar) 6000 (42.0, 420) Αir A Flow in SCFM (m3/min) 1.0 2.0 3.0 (3.8) (7.6) (11.4) Fluid Flow in gpm (lpm) 4.0 (15.2)

### **NXT 63:1 Check-Mate Pumps**



### **NXT 68:1 Check-Mate Pumps**



hnical Specifications			
	NXT Check-Mate 55:1	NXT Check-Mate 63:1	NXT Check-Mate 68:1
Fluid Pressure Ratio	55:1	63:1	68:1
Air Motor Effective Diameter	10.4 in (264 mm)	7.5 in (191 mm)	10.4 in (264 mm)
Maximum Fluid Working Pressure	5,500 psi (379 bar / 37.9 MPa)	4,500 psi (310 bar / 31 MPa)	5,300 psi (366 bar / 36.6 MPa)
Output per Cycle	7.7 oz (218 g)	3.1 oz (87 g)	6.1 oz (174 g)
Air Inlet	3/4 in NPT(F)	3/4 in NPT(F)	3/4 in NPT(F)
Fluid Outlet	1 in NPT(F)	3/4 in NPT(M)	1 in NPT(F)
Air Operation Range	0 psi to 100 psi (0 bar to 7 bar)	0 psi to 72 psi (0 bar to 4.9 bar)	0 psi to 78 psi (0 bar to 5.4 bar)
Max Recommended Pump Speed	20 cpm	20 cpm	20 cpm
Cycles per Pound	ycles per Pound 2.1 cpp		2.6 срр
Cycles per Kg	5 cpk	11 cpk	6 cpk
Wetted Parts	ETD 150, 41L40 and 4140 alloy steel; 304 and 17-4PH grades of stainless steel; acetal; carbon- filled PTFE; CS; ductile iron; eNi, Zn and chrome plating; UHMWPE	ETD 150, 41L40 and 4140 alloy steel; 304 and 17-4PH grades of stainless steel; acetal; carbon- filled PTFE; CS; ductile iron; eNi, Zn and chrome plating; UHMWPE	ETD 150, 41L40 and 4140 alloy steel; 304, 316 and 17-4PH grades of stainless steel; acetal; carbon-filled PTFE; CS; ductile iron; eNi, Zn and chrome plating; PTFE; UHMWPE
Sound Pressure Level	80 dB(A)	87 dB(A)	80 dB(A)
Sound Power Level	90 dB(A)	87 dB(A)	90 dB(A)
Approximate Weight	145 lb (66 kg)	101 lb (46 kg)	145 lb (66 kg)
Instruction Manual	System – 312863 Pump – 312376 Pump Lower – 312375 Air Motor – 311238	System — 312863 Pump — 312376 Pump Lower — 312375 Air Motor — 311238	System – 312863 Pump – 312376 Pump Lower – 312375 Air Motor – 311238





## Ordering Information

## **Pump Packages with DataTrak**

Package Number	247973	247976	247974	247977	247975	247978
Ratio	14:1	26:1	29:1	55:1	63:1	68:1
Pump with DataTrak	P14MCS	P26MCS	P29MCS	P55MCS	P63MCS	P68MCS
Mounting Type	Floor Standing					
Mounting Number	222276	222276	222276	222276	222276	222276
3/4 in x 6 ft Air Hose	208610	208610	208610	208610	208610	208610
1 in x 6 ft Fluid Hose	115042	244657	244657	244657	244657	244657

## **Pump Packages without DataTrak**

Package Number	24E006	24E007	24E008	24E009	24E010	24E011
Ratio	14:1	26:1	29:1	55:1	63:1	68:1
Pump without DataTrak	P14DCS	P26DCS	P29DCS	P55DCS	P63DCS	P68DCS
Mounting Type	Floor Standing					
Mounting Number	222276	222276	222276	222276	222276	222276
3/4 in x 6 ft Air Hose	208610	208610	208610	208610	208610	208610
1 in x 6 ft Fluid Hose	115042	244657	244657	244657	244657	244657





### Ordering Information

## **RAM Pump Packages with DataTrak**

Package Number	247979	247980	247981
Ratio	14:1	63:1	68:1
RAM System	CM53BA	CM17BA	CM2RBA
3/4 in x 6 ft Air Hose	208610	208610	208610
1 in x 6 ft Fluid Hose	115042	244657	244657

## **RAM Pump Packages without DataTrak**

Package Number	24E780	24E781	24E782
Ratio	14:1	63:1	68:1
RAM System	CM515A	CM155A	CM2L5A
3/4 in x 6 ft Air Hose	208610	208610	208610
1 in x 6 ft Fluid Hose	115042	244657	244657





### Accessory Ordering Information

### **Drum Covers**

	Part Number	Description
	200326	Cover for open-head 400 lb (180 kg) drums
	204574	SD Cover for open-head 70 lb (32 kg) or 120 lb (55 kg)
	24R350	LD Cover for open-head 35 lb (16 kg), 70 lb (32 kg) or 120 lb (55 kg) drums



# **Dyna-Star® Hydraulic Pumps**





# Field-Proven, Energy-Efficient

Hydraulic Dyna-Star pumps provide reliable, quiet, ice-free performance at maximum pressure and low-flow rates and are up to three times more energy efficient than comparable compressed-air systems.

### **Built-In Reliability**

Self-lubricating vertical design for long life and reliable operation in high-vibration environments.

### **Quiet Hydraulic Motor**

No need for add-on mufflers.

### High-Efficiency Motor

Uses less hydraulic oil.

### **Typical Applications**

- Service shops
- · Heavy-duty dealerships
- · Fleet services facilities
- In-plant
- Lube trucks
- Mining

### Typical Fluids Handled

• Grease up to NLGI #2

hnical Specifications		
Fluid Pressure Ratio	5:1	10:1
Pump Number	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)
Applications	Grease Dispensing	Grease Dispensing
Maximum Input Pressure	1,500 psi (102 bar)	600 psi (41 bar)
Maximum Fluid Input Volume	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)
Maximum Output Flow Rate	4 lb/min (1.8 kg)	1.1 lb/min (0.5 kg)
Maximum Recommended CPM	60	60
Maximum Fluid Output Pressure	7,500 psi (517 bar)	7,500 psi (517 bar)
Hydraulic Supply Inlet	3/8 in NPT	3/4 to 16 in JIC (37° Flare)
Hydraulic Return Outlet	3/4 in NPT	3/4 in NPT
Fluid Outlet	1/2 in NPT	1/2 in NPT
Maximum Incoming Fluid Temp.	130°F (54°C)	200°F (93°C)
Wetted Parts	Steel, copper, polyurethane, Buna-N, polyester elastomer	Steel, copper, polyurethane, Buna-N, polyester elastomer
Sound Pressure Level	77 dB(A)	77 dB(A)
Approximate Weight	224912 - 32.5 lb (14.7 kg) 224751 - 37.5 lb (17 kg) 224752 - 42 lb (19.1 kg)	247540 – 41 lb (18.6 kg) 247443 – 43.5 lb (19.7 kg) 247450 – 48 lb (21.8 kg)
Instruction Manual	308156	312350





# **Dyna-Star Hydraulic Pumps**

### Ordering Information

## **Dyna-Star Hydraulic Pumps**

Part Number	Description
224912	5:1 Grease pump for 35 lb (16 kg) pails
224751	5:1 Grease pump for 120 lb (55 kg) drum
224752	5:1 Grease pump for 400 lb (180 kg) drum
247450	10:1 Grease pump for 35 lb (16 kg) pails
247443	10:1 Grease pump for 120 lb (55 kg) drum
247450	10:1 Grease pump for 400 lb (180 kg) drum

### **Accessories**

### **Drum Covers**

	Part Number	Description
	224915	Cover for 35 lb (16 kg) pail
	204574	Cover for 120 lb (55 kg) drum
	200326	Cover for 400 lb (180 kg) drum

### **Follower Plates**

	Part Number	Description
a to	224916	Follower plate for 35 lb (16 kg)
	223700	Follower plate for 120 lb (55 kg)
	223701	Follower plate for 400 lb (180 kg)

### **Hydraulic Fluid Controls**

Required for each pump

1.5	Part Number	Description
	236864	Dyna-Star Fluid Controls [1,500 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.

### **Tie-Down Covers**

	Part Number	Description
	222060*	Dyna-Star, 5:1 tie-down cover for 120 lb (55 kg)
	207366**	Dyna-Star, 5:1 tie-down cover for 400 lb (180 kg)

<sup>\*</sup>Use with hold-down kit 222061. \*\*Use with hold-down kit 207361.



# **Viscount® II Pumps**





# Field-Proven, Energy-Efficient

When paired with any of Graco's priming piston pumps, the Viscount II hydraulic air motor offers exceptional cost savings by operating on 20% of the energy used by a pneumatic motor.

### **Built-In Reliability**

Self-lubricating vertical design for long life and reliable operation in high-vibration environments.

### **Quiet Hydraulic Motor**

No need for add-on mufflers.

### High-Efficiency Motor

Uses less hydraulic oil.

### **Typical Applications**

- Service shops
- · Heavy-duty dealerships
- · Fleet services facilities
- In-plant
- Lube trucks
- Mining

### Typical Fluids Handled

• Grease up to NLGI #2

echnical Specifications				
Fluid Pressure Ratio	2.4:1			
Pump Number	222902 - 400 lb (180 kg)			
Applications	Grease Dispensing			
Maximum Input Pressure	1,500 psi (103.5 bar)			
Maximum Fluid Input Volume	12 gpm (45.4 lpm)			
Maximum Output Flow Rate	7.5 gpm (28.5 lpm)			
Maximum Recommended CPM	60			
Maximum Fluid Output Pressure	2,300 psi (159 bar)			
Hydraulic Supply Inlet	3/4 in NPT			
Hydraulic Return Outlet	1 in NPT			
Fluid Outlet	1-1/2 in NPT			
Maximum Incoming Fluid Temp.	130°F (54°C)			
Wetted Parts	Carbon steel; chrome, zinc and electroless nickel plating; 304 and 17-4 PH grades of stainless steel; E52100 alloy steel; ductile iron; acetal; PTFE; ultra-high-molecular weight polyethylene			
Sound Pressure Level	< 70 dB(A)			
Approximate Weight	196 lb (89 kg)			
Instruction Manual	308149			



### Ordering Information

## **Viscount II Pumps**

Part Number	Description
222902	2.4:1 Grease Pump for 400 lb (180 kg) drum

### **Accessories**

## **Hydraulic Fluid Controls**

Required for each pump



Part Number	Description
236865	Viscount II Fluid Controls [1,500 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.



# **Manually Operated Grease Pumps**



# Ordering Information

### **Manual Dispense from Bulk Containers**



<sup>\*</sup> Delivers 1/4 oz (0.7 grams) of grease per stroke at pressures to 3,000 psi (207 bar). Can service fittings directly or be used to charge a booster gun for more efficiency at higher pressures.

<sup>\*\*</sup> Fills all three-way loading grease guns equipped with filler fittings.

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



# **Graco Dispense Valves and Guns Selection Guide**

#### **Grease Valves**

Grease valves							
	Fluid	Type	Maximum Working Pressure	Maximum Flow Rate	Intended Use	Warranty	Reference Pages
Accu-Shot <sup>™</sup>	NLGI #2	Metered	8,000 psi (552 bar)	2 lb/min 1 kg/min	Indoor/ Outdoor	1 year	140
			(002 541)	i Ng/iiiii	Outdoor		
Pro Shot <sup>™</sup>	Grease up to NLGI #2	Non- Metered	8,000 psi (552 bar)	2 lb/min 1 kg/min	Indoor/ Outdoor	1 year	141
			(4. 1.,				
Power Shot <sup>™</sup>	Grease up to	Booster		N/A	Indoor/	1 year	142
	NLGI #2		5,000 psi (345 bar) Output 18,000 psi (1,242 bar)		Outdoor		

### **Grease Guns**

diease dulis	Fluid	Style	Maximum Working Pressure	Loading	Intended Use	Warranty	Reference Pages
Manual	Grease up to NLGI #2	Grease up to Lever NLGI #2	6,000 psi to 10,000 psi (414 bar to 690 bar)	Cartridge/ bulk fill/ loader fill/ suction	Indoor/ Outdoor	1 year	143
			·				
Pneumatic	Grease up to NLGI #2	Pistol	6,000 psi (414 bar)	Bulk fill/ loader fill	Indoor/ Outdoor	1 year	143
The state of the s	NLGI #2						
Booster	Grease up to NLGI #2	Pistol	10,000 psi	Loader fill	Indoor/ Outdoor	1 year	143
	INLUI #Z		(690 bar)		Outubul		

# **Accu-Shot™ Metered Grease Valve**





### **Typical Applications**

- Fleet services facilities
- · Heavy-duty dealerships
- In-plant
- Lube trucks
- Mining

### Typical Fluids Handled

• Grease up to NLGI #2

Technical Specifications	
Maximum Working Pressure	5,000 psi (345 bar)
Metering System	Oval gears
Accuracy	$\pm$ 3% with grease consistency (grade NLGI) 2/3
Repeatability (typical)	$\pm$ 1% with grease consistency (grade NLGI) 2/3
Storage Temperature Range	-4°F to 158°F (-20°C to 170°C)
Operating Temperature Maximum	95 (%RU)
Battery	Standard alkaline batteries 2 x 1.5 Volt Size AA
Battery Life	18 to 24 months (depends on usage)
Dimensions (without extension)	8.8 in L x 1.8 in W x 4.4 H (22.4 cm L x 4.6 cm W x 11.2 cm H)
Weight	2.2 lb (1.0 kg)
Warranty	One year
Instruction Manual	309454

### Ordering Information

Part Number	Description	Includes
233807	U.S. measurement, includes extension and hydraulic coupler	Standard nozzle extension (200389) and 1/4 in NPT inlet
233933	Metric measurement, includes extension and hydraulic coupler	Standard nozzie extension (200369) and 174 in NFT iniet





# **Pro Shot™ Non-Metered Grease Valve**



### **Typical Applications**

- · Fleet services facilities
- · Heavy-duty dealerships
- In-plant
- Lube trucks
- Mining

### Typical Fluids Handled

• Grease up to NLGI #2

Tec	hnical Specifications	
	Maximum Working Pressure	8,000 psi (552 bar)
	Inlet Size	1/4 in or 3/8 in
	Wetted Parts	Chrome vanadium, polyurethane, brass, carbon steel, alloy steel
	Warranty	One year
	Instruction Manual	309032

# Ordering Information

	Description		NPT		BSPT		BSPP	
	Description	1/4 in	3/8 in	1/4 in	3/8 in	1/4 in	3/8 in	
1	Non-metered grease valve with standard nozzle extension (200389)	242056	242058	24H400	24H402	24H404	24H406	
1	Bare non-metered grease valve only	242055	242057	24H399	24H401	24H403	24H405	
	Non-metered grease valve package. Includes Grease Valve (242056), Z-Swivel (202577) and Whip Hose (109148).	224872	-	-	-	-	_	
N. Marie Mar	Non-metered grease valve package. Includes Grease Valve (242055), coupler (200325) and Whip Hose (109145).	26C184	-	-	-	-	-	

# **Power-Shot**™ Booster Valve





### Typical Applications

- Fleet services facilities
- · Heavy-duty dealerships
- In-plant
- Lube trucks
- Mining

### Typical Fluids Handled

• Grease up to NLGI #2

Technical Specifications	
Maximum Input Pressure	5,000 psi (34 MPa, 345 bar)
Maximum Delivery Pressure	Up to 18,000 psi (124 MPa, 1241 bar)
Inlet Size	1/8 NPT female
Wetted Parts	Alloy steel, carbon steel, chrome alloy, copper, leather
Weight	3 lb (1.4 kg)
Height	7 in (178 mm)
Length	11.675 in (296 mm)
Warranty	One year
Instruction Manual	306271

## Ordering Information

Part Number	Description
202600	1/8 NPT(F) Power Shot booster Valve. Includes nozzle (200389)

#### Accessories

Part Number	Description
202579	Hose swivel (must be ordered separately)





# **Heavy-Duty Grease Guns**



# Lever-Action and Pistol-Style Grease Dispensing Guns

Durable design for years of trouble-free use in demanding environments. Reduces downtime and is easy to load – two- or three-way loading capability makes it easy to keep on greasing.



# Ordering Information

	Part Number	Style	Gun Type	Pressure psi (bar)	Loading	Includes	
	112196	Pneumatic	Pistol	6,000 (414)	Bulk fill/ loader fill	Rigid extension and hydraulic coupler	
	203697	Booster	Pistol	10,000 (690)	Loader fill	Rigid extension	
	110218	Manual	Lever –	6,000 (414)	Cartridge/bulk fill	Rigid extension and hydraulic coupler	
,	110216					Rigid extension, hydraulic coupler and air bleeder valve	
×.	110203		Pistol	Diatal	10,000 (690)	Cartridge/ bulk fill/ loader fill	Rigid extension, hydraulic coupler and air bleeder valve
2	110202					12 in (30.4 cm) flexible extension, hydraulic coupler and air bleeder valve	
4	110201		Suction	_	Suction	12 in (30.4 cm) clear plastic hose	

#### **Accessories**

	Part Number	Description
109145	109145	12 in (30.4 cm) clear plastic hose without coupler
	112255	18 in (45.8 cm) clear plastic hose without coupler



# **Accessories**



## >>> Ordering Information

### **Z-Swivels**



Maximum Working Pressure psi (bar)	Inlet	Outlet	Thread	Part Number
6,500 (450)	1/8 in	1/4 in	NPT	202579
6,500 (450)	1/4 in	1/4 in	NPT	202577
6,500 (450)	3/8 in	3/8 in	NPT	224569
6,000 (414)	1/2 in	1/2 in	NPT	207948
6,500 (450)	1/4 in	1/4 in	BSPT	24H614
6,500 (450)	1/4 in	1/4 in	BSPP	24H615

# **Straight Swivels**



Maximum Working	Ni	Part Number	
Pressure psi (bar)	Inlet	Outlet	Part Number
8,000 (500)	1/8 in	1/8 in	204082
8,000 (500)	1/4 in	1/8 in	204083
8,000 (500)	1/4 in	1/4 in	204084
6,000 (414)	1/2 in	1/2 in	207947
5,000 (345)	3/8 in	1/2 in	214926
5,000 (345)	3/8 in	1/2 in	214946
5,000 (345)	1/2 in	1/2 in	207946

### 360° Swivels



Part Number	Includes		
rait Nullibei	Fitting	Coupler	
203597	203198	200325	
203198	203198	_	

### **Nozzles**

Part Number	Description		
200389 Standard nozzle. Includes straight 6 in (15.2 cm), 1/8 NPT(M) extension tube (197471) and tape coupler (200325).			
204072	Swivel nozzle. Includes straight 6 in (15.2 cm), 1/8 NPT(M) extension tube (197471) and tapered nose coupler (200325). Coupler has 360° swivel adapter (203198) for added convenience.		
Swivel nozzle. Includes straight 12 in (30.4 cm), 1/8 NPT(M) extension tube (155836) and tapered nose of (200325). Coupler has 360° swivel adapter (203198) for added convenience.			
204204*	Flexible 12 in (30.4 cm) hose nozzle. 1/8 NPT(M) includes tapered-nose coupler (200325).		
Flexible 12 in (30.4 cm) hose nozzle. 1/8 NPT(M) includes tapered-nose coupler (200325) and lock-sle 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 tapered-nose coupler 200325.			

<sup>\*</sup>Warning: Potential injection hazard. Not for use above 5,000 psi (345 bar).









### Ordering Information

### **Couplers**

	Part Number	Part Number Description	
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 8,000 psi (551 bar).			
202650 1/8 NPT(F) inlet standard straight-nose grease coupler for manual operated grease guns only.  Maximum working pressure 3,000 psi (206 bar).			
200020 1/8 NPT(F) inlet standard button-head coupler. Gives fast, positive seal on button-head fittings.		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.		1/8 NPT(F) inlet giant button-head coupler. Gives fast, positive seal on larger button-head fittings.	





### **Adapters**

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

Part Number	Description	
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 (17 bar) max. Not for air grease applications or guns.	
205582	Hydraulic-to-nylon needle adapter. Used for removable plugs. 250 psi (17 bar) 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 standar grease fitting with sleeve to lock connector in place.	
Easy-fill valve. For faster loading of Graco hand grease guns with gun loaders. Replaces hydraulic fittings of grease guns with 1/8 NPT(F).		
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.		
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 ho nozzle connector (203504).		







205582





### Tapered Thread Grease Fittings, 10,000 psi (690 bar) (steel; ball check)

Part Number	Shank	Description
100054	9/32	1/8 NPT straight
101277	1-9/32	1/8 NPT straight
100970	9/32	1/8 NPT 30° angle
100834	9/32	1/8 NPT 45° angle
100971	9/32	1/8 NPT 65° angle
100833	9/32	1/8 NPT 90° angle
100848	3/8	1/4 NPT 67° angle
100846	3/16	1/4-28 tapered SAE-LT straight
100847	13/64	1/4-28 tapered SAE-LT 45° angle
101283	3/16	1/4-28 tapered SAE-LT 90° angle
101281	11/32	1/4-28 tapered SAE-LT straight
110702	19/64	1/4-28 tapered SAE-LT 65° angle
100835	12/32	1/4 NPT straight













# **Accessories**



### Ordering Information

### 1/4 in Tapered Thread-Forming Grease Fittings, 10,000 psi (690 bar) (steel; ball check)

Part Number	Shank	Description
110703	13/64	1/4-28 straight
110705	13/64	1/4-28 90° angle

### **Drive-Type Grease Fittings (steel)**

Part Number	Shank	Description
110706	3/32	3/16 drill straight
110709	7/32	3/16 drill 65° angle
110713	1/4	3/16 drill straight without ball check
101312	7/32	3/16 drill straight with ball check
110710	1/4	5/16 drill straight with ball check
101287	17/64	1/4 drill straight without ball check



### **Standard Button-Head Grease Fitting (steel)**

1/4 in Tapered Thread Grease Fittings (steel; ball check)

Part Number	Shank	Description
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)**

Part Number	Shank	Description
110712	9/16	3/8 NPT straight
100854	1/2	1/4 NPT straight



### **Easy-Outs**

Part Number	Description
101604	3/8 NPT straight
101605	1/4 NPT straight



### **Grease Accessory Packages**

Convenient storage box contains the following threaded fittings in the quantities listed:

Part Number	Package Includes				
	Quantity	Grease Fitting No.	Shank	Description	
202654	30	100054	9/32	1/8 NPT straight	
	10	100970	9/32	1/8 NPT 30° angle	
	10	100833	9/32	1/8 NPT 90° angle	
	20	100846	3/16	1/4-28 straight	
	10	100847	13/64	1/4-28 45° angle	

