

# PMG Buyer's Guide

Innovative Product Solutions for the Lubrication Marketplace



PROVEN QUALITY. LEADING TECHNOLOGY.



## **Go online at [www.graco.com/lubrication](http://www.graco.com/lubrication) for:**

- Literature
- Instruction Manuals
- Buyer's Guide
- Product Knowledge Exchange
- Distributor Locator
- What's New
- GEDI®

GEDI is the "Graco Extranet Distributor Information" area on our web site where distributors have access to up-to-the-minute pricing, product order and shipping status and order entry. Information is accessed by an account number and a confidential password.

## **To Find Your Nearest Authorized Graco Lubrication Equipment Distributor**

Call: **1-800-533-9655** *(toll free North America)*

Fax: **1-800-533-9656**









Literature Index | Service Manuals | Literature

# Table of Contents

Air-Powered Oil Pumps and Packages	
Oil Pumps Quick Reference	5-6
Fast-Ball®	7
LD Series Oil Pumps and Packages	8-11
LD Series Oil Pump Accessories	12
Mini Fire-Ball® 225, Fire-Ball 300, Fire-Ball 425, and Packages	13-19
Fire-Ball® and Oil Pump Accessories	20-22
NXT™ High-Flo® and NXT Dura-Flo®	23-24
Air-Powered Grease Pumps and Packages	
Grease Pumps Quick Reference	25-26
LD Series Pumps, Packages, and Accessories	27-28
Mini Fire-Ball 225	29
Fire-Ball 300	30-31
Fire-Ball 425	32-34
Grease Pump Packages and Accessories	35-40
NXT Check-Mate®	41
Air-Powered Specialty Pumps Packages	
Lube Truck Oil and Grease Packages	42
Undercoating/Rust-Proofing Packages	43
Bulldog Hydraulic Supply Pump	44
Transfer Pumps	
Air-Operated Double-Diaphragm Pumps	45
Windshield Wash and Coolant Dispense Packages	46
Fast-Flo® (Stainless Steel)	47-48
APEX™ Electric Dispense Systems	49-50
GTP10 and GTP12 Fuel Transfer Pumps	51
Diesel Exhaust Fluid (DEF) Dispense Systems	52-55
Hydraulic-Powered Oil and Grease Pumps	
Dyna-Star®, Power-Star™, and Viscount® II Pumps	56-57
Manually-Operated Oil and Grease Pumps and Packages	
Oil and Grease Dispense	58
Windshield Wash and Coolant Transfer	59
Reels and Packages	
SD Cord and Light Reels and Accessories	60-62
LD, SD and XD Hose Reels and Accessories	63-81
Dispense Consoles	
Multi-Station Consoles and Oil Bar	82
Dispense Meters and Control Valves	
LD, SD, XDM6, XDM12™, and In-Line Electronic Meters	83-87
Mechanical Meters	88
Accessories	89
SDV15, XDV20, Pro-Shot™, and Accu-Shot™ Control and Dispense Valves	90-92
Fluid Management Systems	
Matrix™	93-96
Horizon™	97-98
Fluid Commander™	99-100
Manual Grease Guns	
Grease Guns, Accessories, and Fittings	101-103
Fluid Reclaim Packages	
Oil King™, Coolant King™, Oil Ace™, and Accessories	104-107
Hoses, Fittings, and Accessories	108-113
Ordering and Warranty Information	114-115
Index	116-122

# Oil Pumps Quick Reference

## Technical Specifications and Selection Chart

	Annual Usage	Line Length <sup>‡</sup>	Dispense Points	Fluids	Air Inlet	Fluid Inlet	Fluid Outlet
	<b>Fast-Ball, 1:1</b>						
	5,000 gal (19,000 l)	< 100 ft (30 m)	1 (no reels)	Motor Oil, ATF, Hydraulic Fluid	1/4 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)
	<b>LD Series, 3:1</b>						
	20,000 gal (75,000 l)	300 ft (91 m)	1 to 2	Motor Oil, Gear Oil, ATF, Hydraulic Fluid	1/4 in npt(f)	1 in npt(f)	1/2 in npt(f)
	<b>LD Series, 5:1</b>						
	20,000 gal (75,000 l)	300 ft (91 m)	1 to 2	Motor Oil, Gear Oil, ATF, Hydraulic Fluid	1/4 in npt(f)	1 in npt(f)	1/2 in npt(f)
	<b>Mini Fire-Ball 225, 3:1</b>						
	30,000 gal (113,500 l)	250 ft (76 m)	1 to 2	Motor Oil, Gear Oil, ATF, Hydraulic Fluid	3/8 in npt(f)	1-1/2 in npt(f)	1/2 in npt(f)
	<b>Fire-Ball 300, 5:1</b>						
	35,000 gal (132,000 l)	500 ft (152 m)	1 to 3	Motor Oil, Gear Oil, ATF, Hydraulic Fluid	3/8 in npt(f)	1-1/2 in npt(f)	1/2 in npt(f)
	<b>Fire-Ball 425, 3:1</b>						
	>35,000 gal (132,000 l)	Up to 250 ft (76 m)	3 to 4	Motor Oil, Gear Oil, ATF, Hydraulic Fluid	1/4 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)
	<b>Fire-Ball 425, 6:1</b>						
	>35,000 gal (132,000 l)	Up to 500 ft (152 m)	3 to 4	Motor Oil, Gear Oil, ATF, Hydraulic Fluid	1/4 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)
	<b>Fire-Ball 425, 10:1</b>						
	>35,000 gal (132,000 l)	Up to 750 ft (228.6 m)	3 to 4	Motor Oil, Gear Oil, ATF, Hydraulic Fluid	1/4 in npt(f)	1-1/2 in npt(f)	3/4 in npt(f)

<sup>‡</sup> Consult your local authorized Graco representative for line or pipe sizing

# Oil Pumps Quick Reference

## Technical Specifications and Selection Chart



Annual Usage	Line Length <sup>‡</sup>	Dispense Points	Pump Ratio(s)	Output Per Cycle	Fluids
<b>Dura-Flo, 6:1</b>					
>35,000 gal (132,000 l)	Up to 500 ft (152 m)	2 to 4	6:1	1000 cc	Motor Oil, Gear Oil, ATF, Hydraulic Fluid
<b>Dura-Flo, 10:1</b>					
>35,000 gal (132,000 l)	Up to 750 ft (228.6 m)	2 to 4	10:1	1000 cc	Motor Oil, Gear Oil, ATF, Hydraulic Fluid
<b>Dura-Flo, 12:1 Carbon Steel or Dura-Flo, 12:1 Stainless Steel</b>					
>35,000 gal (132,000 l)	Up to 1000 ft (305 m)	2 to 4	12:1	580 cc	Motor Oil, Gear Oil, ATF, Hydraulic Fluid
<b>Dura-Flo, 23:1</b>					
>35,000 gal (132,000 l)	Up to 1000 ft (305 m)	2 to 4	23:1	580 cc	Motor Oil, Gear Oil, ATF, Hydraulic Fluid



Annual Usage	Line Length	Dispense Points	Pump Ratio(s)	Output Per Cycle	Fluids
<b>High-Flo, 3.5:1</b>					
>35,000 gal (132,000 l)	Up to 250 ft (76 m)	4 to 5	3.5:1	2000 cc	Motor Oil, Gear Oil, ATF, Hydraulic Fluid
<b>High-Flo, 4.5:1</b>					
>35,000 gal (132,000 l)	Up to 450 ft (137.1 m)	4 to 5	4.5:1	1500 cc	Motor Oil, Gear Oil, ATF, Hydraulic Fluid
<b>High-Flo, 6:1</b>					
>35,000 gal (132,000 l)	Up to 500 ft (152.5 m)	4 to 5	6:1	2000 cc	Motor Oil, Gear Oil, ATF, Hydraulic Fluid

<sup>‡</sup> Consult your local authorized Graco representative for line or pipe sizing

# Fast-Ball® 1:1

## Air-Powered Oil Pumps and Packages

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

- Petroleum- and synthetic-based oils

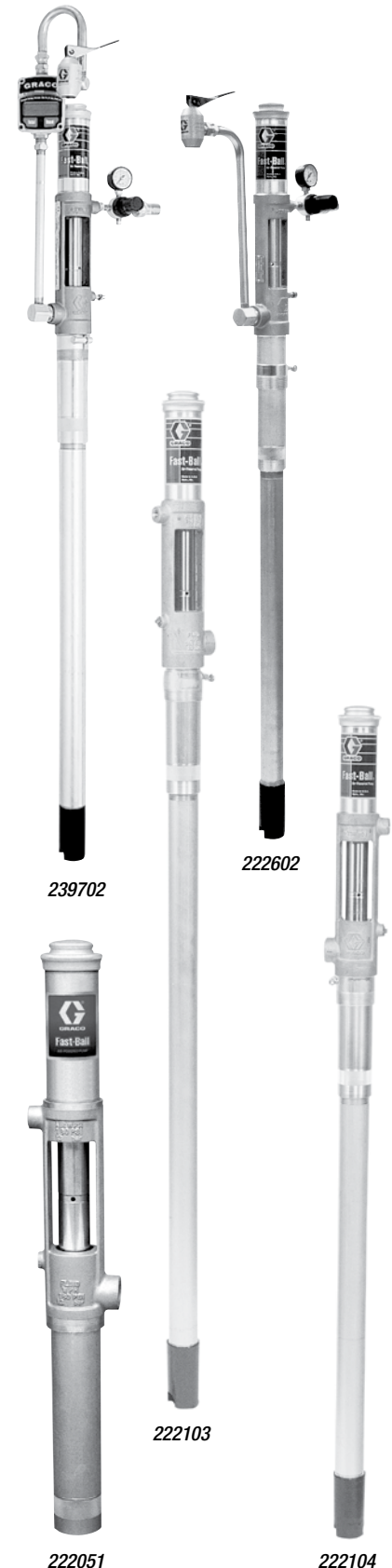
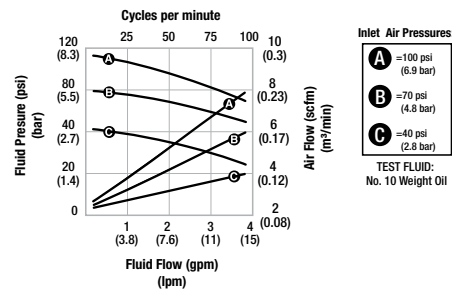
### Technical Specifications

Cycles per Gallon.....	10 (45.5 liters)
Fluid Flow gal/min @ 80 cpm .....	.5 (19 liters)
Maximum Fluid Pressure .....	180 psi (12.5 bar)
Air Motor Effective Diameter.....	1.4 in (35.6 mm)
Air Operating Range .....	40-180 psi (2.7-12.5 bar)
Approx. Air Use and Flow @ 100 psi and 80 cpm .....	.5 scfm
Wetted Materials .....	CS, Polyurethane
Air Inlet Port Size .....	1/4 in npt(f)
Fluid Inlet Port Size .....	1-1/2 in npt(f)
Fluid Outlet Port Size.....	3/4 in npt(f)
Line Length‡ .....	Up to 100 ft (30.5 m)
Dispense Points .....	1 (not recommended with hose reel)
Annual Usage .....	Up to 5,000 gal (19,000 l)
Typical Applications.....	Continuous duty, maintenance facility dispensing motor oil, automatic transmission fluid, hydraulic fluid

### Ordering Information

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

### Pump Performance



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

# LD Series 3:1 Pump

## Air-Powered Oil Pumps and Packages

### Features and Benefits

- Built-in thermal relief protects your equipment from thermal expansion
- Three inch air motor provides more power to create better flow
- Cup and plate design eliminates the need for O-rings that wear out faster

### Typical Applications

- Lubricant transfer
- Automotive dealerships
- Fast lube centers
- Service shops
- Lube trucks

### Typical Fluids Handled

- Petroleum- and synthetic-based oils

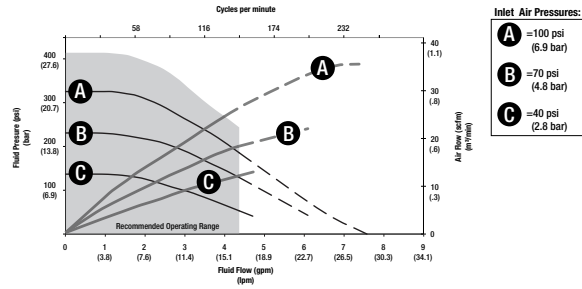
### Technical Specifications

Maximum Fluid Working Pressure .....	450 psi (31 bar, 3.10 MPa)
Fluid Pressure Ratio .....	3:1
Suction Lift (feet of oil).....	10
Air Operation Range.....	20 to 150 psi (1.37 to 10.3 bar)
Recommended Air Pressure (for optimum life).....	<125 psi (8.6 bar, 0.86 MPa)
Max Recommended Pump Speed .....	120 cycles per minute
Cycles Per Gallon/pound (l/kg) .....	29 cycles per gallon (7 cycles per liter)
Recommended Pump Speed (for maximum life).....	75 cycles per minute or lower
Wetted Parts.....	Zinc plated carbon, steel, aluminum, nitrile, polyurethane, nickel plated aluminum
Sound Pressure Level.....	72.9 dB(a)
Sound Power Level .....	82 dB(a)
Approximate Weight.....	7 pounds (3.2 kg)
Air Inlet .....	1/4 in
Fluid Inlet .....	1 in
Fluid Outlet.....	1/2 in
Free Flow .....	7.8 gpm
Annual Usage .....	Up to 20,000 gal (76,000 l)

### Ordering Information

LD Series 3:1 Pumps	
24G576	3:1 Universal Oil Pump with bung adapter (24F918)
24G579	3:1 Oil Pump with cut-to-length down tube, and bung adapter (24F918)
24G582	3:1 Oil Pump with 55 gal (200 liter) down tube and bung adapter (24F918)
24G585	3:1 Oil Pump with 275 gal (1040 liter) down tube and bung adapter (24F918)

### Pump Performance



- Inlet Air Pressures:**
- A** = 100 psi (6.9 bar)
  - B** = 70 psi (4.8 bar)
  - C** = 40 psi (2.8 bar)



LD Series 3:1 Pump



# LD Series 5:1 Pump

## Air-Powered Oil Pumps and Packages

### Features and Benefits

- Built-in thermal relief protects your equipment from thermal expansion
- Three inch air motor provides more power to create better flow
- Cup and plate design eliminates the need for O-rings that wear out faster

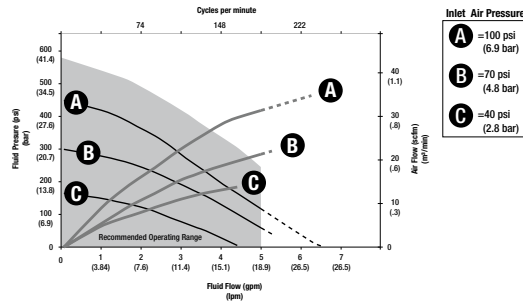
### Typical Applications

- Lubricant transfer
- Automotive dealerships
- Fast lube centers
- Service shops
- Lube trucks

### Typical Fluids Handled

- Petroleum- and synthetic-based oils

### Pump Performance



LD Series 5:1 Pump

### Technical Specifications

Maximum Fluid Working Pressure .....	750 psi (51.7 bar, 5.17 MPa)
Fluid Pressure Ratio .....	5:1
Suction Lift (feet of oil) .....	10
Air Operation Range .....	20 to 150 psi (1.37 to 10.3 bar)
Recommended Air Pressure (for optimum life) .....	<125 psi (8.6 bar, 0.86 MPa)
Max Recommended Pump Speed .....	180 cycles per minute
Cycles Per Gallon/pound (l/kg) .....	37 cycles per gallon (10 cycles per liter)
Recommended Pump Speed (for maximum life) .....	75 cycles per minute or lower
Wetted Parts .....	Zinc plated carbon, steel, aluminum, nitrile, polyurethane, nickel plated aluminum
Sound Pressure Level .....	72.9 dB(a)
Sound Power Level .....	82 dB(a)
Approximate Weight .....	7.7 pounds (3.5 kg)
Air Inlet .....	1/4 in
Fluid Inlet .....	1 in
Fluid Outlet .....	1/2 in
Free Flow .....	6.7 gpm
Annual Usage .....	Up to 20,000 gal (76,000 l)

### Ordering Information

LD Series 5:1 Pumps	
24G588	5:1 Universal Oil Pump with bung adapter (24F918)
24G591	5:1 Oil Pump with cut-to-length down tube and bung adapter (24F918)
24G594	5:1 Oil Pump with 55 gal (200 liter) down tube and bung adapter (24F918)
24G597	5:1 Oil Pump with 275 gal (1040 liter) down tube and bung adapter (24F918)

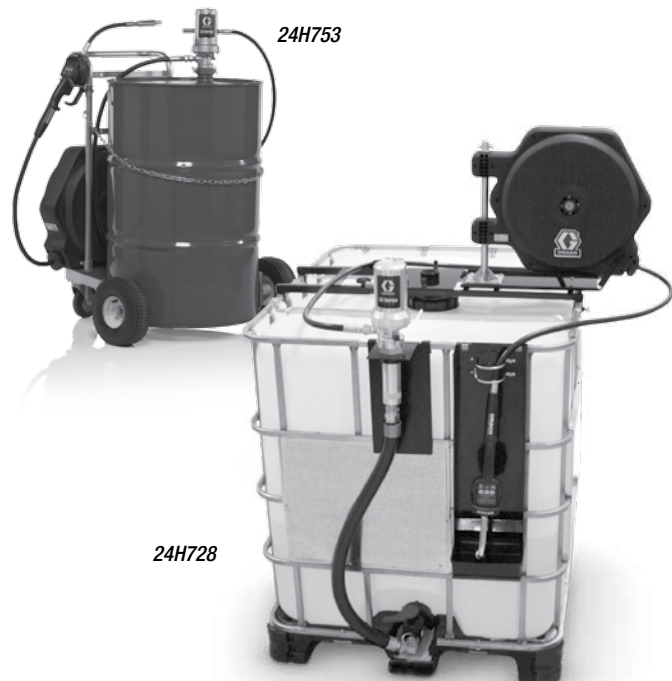
# LD Series Oil Pump Packages

## Air-Powered Oil Pumps and Packages

### Ordering Information

3:1 Tank Packages with LD Reel	
24J776	3:1 LD Tank Package. Includes: 3:1 Universal oil pump (24G576), LDM5 Manual meter (256215), 1/2" x 35' LD oil hose reel (24H662), 1/2" Oil inlet kit (24C538), LD swivel mount bracket (24C772)
3:1 Tank Packages with SD Reel	
24J733	3:1 Tank Package – Manual. Includes: 3:1 Universal Oil pump (24G576), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2" x 50' (HPM65B), SD Reel Inlet Kit (218549)
24J734	3:1 Tank Package – Preset. Includes: 3:1 Universal Oil pump (24G576), LDP5 Preset meter with rigid extension (256216), SD oil reel, 1/2" x 50' (HPM65B), SD Reel Inlet kit (218549)
24K836	3:1 Tank Package – Manual Flex: 3:1 Universal Oil pump (24G576), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 50' (HPM65B), SD Reel Inlet Kit (218549)
3:1 Deluxe Tank Packages with SD Reel	
24K777	3:1 Deluxe Tank Package – Preset Rigid: 3:1 Universal Oil Pump (24G576), LDP5 Preset meter with rigid extension (256216), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" mini air regulator with valve (24H420)
24K797	3:1 Deluxe Tank Package – Manual Rigid: 3:1 Universal Oil Pump (24G576), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
24K799	3:1 Deluxe Tank Package – Manual Flex: 3:1 Universal Oil Pump (24G576), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
24K832	3:1 Deluxe Tank Package – Manual Flex: 3:1 Universal Oil Pump (24G576), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 35' (HPM33B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
24K834	3:1 Deluxe Tank Package – Manual Rigid: 3:1 Universal Oil Pump (24G576), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2" x 35' (HPM33B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
3:1 Tote Mount Packages with SD Reel	
24K838	3:1 Oil Tote Mount with SD Reel – Preset Rigid. Includes: 3:1 Oil pump with 275 gal (1040 liter) steel down tube (24G585), LDP5 Preset meter with rigid extension (256216), SD oil reel, 1/2"x50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), Pump tote mount bracket (24F930), SD reel bracket for tote mount, Meter tray (24F914)
24K840	3:1 Oil Tote Mount with SD Reel – Manual Rigid. Includes: 3:1 Oil pump with 275 gal (1040 liter) steel down tube (24G585), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2"x50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), Pump tote mount bracket (24F930), SD reel bracket for tote mount, Meter tray (24F914)
24K842	3:1 Oil Tote Mount with SD Reel – Manual Flex. Includes: 3:1 Oil pump with 275 gal (1040 liter) steel down tube (24G585), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), Pump tote mount bracket (24F930), SD reel bracket for tote mount, Meter tray (24F914)
3:1 Tote Mount Packages with LD Reel	
24H702	3:1 Oil Tote Mount Package – Top. Includes: 3:1 275 gal (1040L) Oil pump (24G585), 6 ft Oil hose kit (24J495), Top mount tote bracket (24F930), LD Reel bracket kit (24F932), Meter tray (24F914), LDM5 Rigid Meter (256215), 1/2" x 35' LD oil hose reel (24H662)
24H704	3:1 Oil Tote Mount Package – Top. Includes: 3:1 275 gal (1040L) Oil pump (24G585), 6 ft Oil hose kit (24J495), Top mount tote bracket (24F930), LD Reel bracket kit (24F932), Meter tray (24F914), LDP5 Rigid Meter (256216), 1/2" x 35' LD oil hose reel (24H662)

24H726	3:1 Oil Tote Mount Package – Drain. Includes: 3:1 Universal oil pump (24G576), 6 ft Oil hose kit (24J495), 6 ft Suction hose kit (24H669), Tote mount pump bracket (24F920), Top mount tote bracket (24F931), LD Reel bracket kit (24F932), Meter tray (24F914), LDM5 Rigid meter (256215), LD oil hose reel, 1/2" x 35' (24H662)
24H728	3:1 Oil Tote Mount Package – Drain. Includes: 3:1 Universal oil pump (24G576), 6 ft Oil hose kit (24J495), 6 ft Suction hose kit (24H669), Tote mount pump bracket (24F920), Top mount tote bracket (24F931), LD Reel bracket kit (24F932), Meter tray (24F914), LDP5 Rigid meter (256216), LD oil hose reel, 1/2" x 35' (24H662)
3:1 Wall Mount Packages	
24H689	3:1 Oil Wall Mount Package – Drum. Includes: 3:1 Universal oil pump (24G576), 6 ft LD oil pump suction hose kit for 55 gal drum (24F935), Wall mount bracket (24F910)
24H695	3:1 Oil Wall Mount Package – Tote. Includes: 3:1 Universal oil pump (24G576), 6 ft LD Oil pump section hose kit for 275 gal tote (24H666), Oil hose kit (24H859), Wall mount bracket (24F910)
3:1 Mobile Packages	
24H751	3:1 Oil Mobile Package with LD Reel. Includes: 3:1 200L Oil pump (24G582), 6 ft Oil hose kit (24J495), LDM5 Rigid meter (256215), 55 gal Cart (24F915), LD oil hose reel, 1/2" x 35' (24H662)
24H753	3:1 Oil Mobile Package with LD Reel. Includes: 3:1 200L Oil pump (24G582), 6 ft Oil hose kit (24J495), LDP5 Rigid meter (256216), 55 gal Cart (24F915), LD oil hose reel, 1/2" x 35' (24H662)
24H775	3:1 Oil Mobile Package. Includes: 3:1 200L Oil pump (24G582), Fluid hose kit, 5 M (24H865), LDM5 Rigid meter (256215), 55 gal Cart (24F915)
24H777	3:1 Oil Mobile Package. Includes: 3:1 200L Oil pump (24G582), Fluid hose kit, 5 M (24H865), LDP5 Rigid meter (256216), 55 gal Cart (24F915)
3:1 Stationary Packages	
24H800	3:1 Oil Stationary Package. Includes: 3:1 Multi-length oil pump (24G579), 6 ft Oil hose kit (24H859), LDM5 Rigid meter (256215)
24H802	3:1 Oil Stationary Package. Includes: 3:1 Multi-length oil pump (24G579), 6 ft Oil hose kit (24H859), LDP5 Rigid meter (256216)



# 5:1 LD Series Pump Packages

## Air-Powered Oil Pumps and Packages

### Ordering Information

5:1 Tank Packages with LD Reel	
24J777	5:1 LD Tank Package. Includes: 5:1 Universal oil pump (24G588), LDM5 Manual meter (256215), 1/2" x 35' LD oil hose reel (24H662), 1/2" Oil inlet kit (24C538), LD swivel mount bracket (24C772)
5:1 Tank Packages with SD Reel	
24J735	5:1 Tank Package – Manual. Includes: 5:1 Multi-length oil pump (24G588), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2" x 50' (HPM65B), SD Reel Inlet kit (218549)
24J736	5:1 Tank Package – Preset. Includes: 5:1 Multi-length oil pump (24G588), LDP5 Preset meter with rigid extension (256216), SD reel, 1/2" x 50' (HPM65B), SD Reel Inlet Kit (218549)
24K837	5:1 Tank Package – Manual Flex: 5:1 Universal Oil pump (24G588), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 50' (HPM65B), SD Reel Inlet Kit (218549)
5:1 Deluxe Tank Packages with SD Reel	
24K796	5:1 Deluxe Tank Package – Preset Rigid: 5:1 Universal Oil Pump (24G588), LDP5 Preset meter with rigid extension (256216), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
24K798	5:1 Deluxe Tank Package – Manual Rigid: 5:1 Universal Oil Pump (24G588), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
24K800	5:1 Deluxe Tank Package – Manual Flex: 5:1 Universal Oil Pump (24G588), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
24K833	5:1 Deluxe Tank Package – Manual Flex: 5:1 Universal Oil Pump (24G588), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 35' (HPM33B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
24K835	5:1 Deluxe Tank Package – Manual Rigid: 5:1 Universal Oil Pump (24G588), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2" x 35' (HPM33B), 6 ft Air and Fluid hoses with fittings (24J495), 1/4" x 3/8" Mini air regulator with valve (24H420)
5:1 Tote Mount Packages with SD Reel	
24K839	5:1 Oil Tote Mount with SD Reel – Preset Rigid. Includes: 5:1 Oil pump with 275 gal (1040 liter) steel down tube (24G597), LDP5 Preset meter with rigid extension (256216), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), Pump tote mount bracket (24F930), SD reel bracket for tote mount, Meter tray (24F914)
24K841	5:1 Oil Tote Mount with SD Reel – Preset Rigid. Includes: 5:1 Oil pump with 275 gal (1040 liter) steel down tube (24G597), LDM5 Manual meter with rigid extension (256215), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), Pump tote mount bracket (24F930), SD reel bracket for tote mount, Meter tray (24F914)
24K843	5:1 Oil Tote Mount with SD Reel – Preset Rigid. Includes: 5:1 Oil pump with 275 gal (1040 liter) steel down tube (24G597), LDM5 Manual meter with flex extension (258693), SD oil reel, 1/2" x 50' (HPM65B), 6 ft Air and Fluid hoses with fittings (24J495), Pump tote mount bracket (24F930), SD reel bracket for tote mount, Meter tray (24F914)
5:1 Tote Mount Packages with LD Reel	
24H868	5:1 Oil Tote Mount Package – Top. Includes: 5:1 1040L Oil pump (24G597), 6 ft Oil hose kit (24J495), Tote top mount bracket (24F930), LD Reel bracket (24F932), Meter tray (24F914), LDM5 rigid meter (256215), 1/2" x 35' LD oil hose reel (24H662)
24H870	5:1 Oil Tote Mount Package – Top. Includes: 5:1 1040L Oil pump (24G597), 6 ft Oil hose kit (24J495), Tote top mount bracket (24F930), LD Reel bracket (24F932), Meter tray (24F914), LDP5 Rigid meter (256216), 1/2" x 35' LD oil hose reel (24H662)

24H892	5:1 Oil Tote Mount Package – Drain. Includes: 5:1 Oil universal pump (24G588), 6 ft Oil hose kit (24J495), Suction hose kit tote (24H669), Tote mount pump bracket (24F920), Tote top mount bracket (24F931), LD reel bracket kit (24F932), Meter tray (24F914), LDM5 Rigid meter (256215), LD oil hose reel, 1/2" x 35' (24H662)
24H894	5:1 Oil Tote Mount Package – Drain. Includes: 5:1 Oil universal pump (24G588), 6 ft Oil hose kit (24J495), Suction hose kit tote (24H669), Tote mount pump bracket (24F920), Tote top mount bracket (24F931), LD reel bracket kit (24F932), Meter tray (23F914), LDP5 Rigid meter (256216), LD oil hose reel, 1/2" x 35' (24H662)
5:1 Wall Mount Packages	
24H836	5:1 Oil Wall Mount Package – Drum. Includes: 5:1 Oil universal pump (24G588), 6 ft LD oil pump suction hose kit for 55 gal drum (24F935), Wall mount bracket (24F910)
24H842	5:1 Oil Wall Mount Package – Tote. Includes: 5:1 Oil universal pump (24G588), 6 ft Oil hose kit (24H859), 6 ft LD Oil pump section hose kit for 275 gal tote (24H666), Wall mount bracket (24F910)
5:1 Mobile Packages	
24H916	5:1 Oil Mobile Package with LD Reel. Includes: 5:1 55 gal (200 L) Oil pump (24G594), 6 ft Oil hose kit (24J495), LDM5 Rigid meter (256215), 55 gal Cart (24F915), LD oil hose reel, 1/2" x 35' (24H662)
24H918	5:1 Oil Mobile Package with LD Reel. Includes: 5:1 55 gal (200 L) Oil pump (24G594), 6 ft Oil hose kit (24J495), LDP5 Rigid meter (256216), 55 gal Cart (24F915), LD oil hose reel, 1/2" x 35' (24H662)
24H941	5:1 Oil Mobile Package. Includes: 5:1 55 gal (200 L) oil pump (24G594), Fluid hose kit, 5M (24H865), LDM5 Rigid meter (256215), 55 gal Cart (24F915)
24H943	5:1 Oil Mobile Package. Includes: 5:1 55 gal (200 L) oil pump (24G594), Fluid hose kit, 5M (24H865), LDP5 Rigid meter (256216), 55 gal Cart (24F915)
5:1 Stationary Packages	
24H965	5:1 Oil Stationary Package. Includes: 5:1 Oil multi-length pump (24G591), Fluid oil hose kit (24H859), LDM5 Rigid meter (256215)
24H967	5:1 Oil Stationary Package. Includes: 5:1 Oil multi-length pump (24G591), Fluid oil hose kit (24H859), LDP5 Rigid meter (256216)



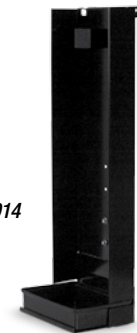
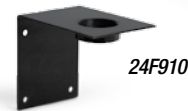
24H842

# LD Series Oil Pump Accessories

## Air-Powered Oil Pumps and Packages

### Ordering Information

Down Tubes	
16F878	Universal cut to length pvc down tube for LD 3:1 and 5:1 pumps
16F886	Drum length steel down tube for LD 3:1 and 5:1 pumps
16F885	Tote length steel down tube for LD 3:1 and 5:1 pumps
Drum Covers	
24F904	Cover for 35 lb (16 kg) pails
24F905	Cover for open-head 120 lb drums
24F906	Cover for open-head 400 lb drums
Suction Kits	
24F935	LD Oil Pump Suction hose kit for 55 gal (200 L) drum. Includes: 55 gal (200 L) drum length metal down tube, bung adapter, foot valve, and 6 ft of 1" suction hose
24H666	LD Oil Pump Suction hose kit for 275 gal (1040 L) drum. Includes: 275 gal (1040 L) tote length metal down tube, bung adapter, foot valve, and 6 ft of 1" suction hose
24H669	LD Oil Pump Suction hose kit and adapter for mounting pump to the side of IBC tote and dispensing from drain. Includes 1" x 3' Suction hose, 1" Elbow fitting, and union fitting (160022)
Hose and Fitting Kits	
24H865	15 ft LD pump fluid hose kit. Includes 1/2" x 15 ft fluid hose, 3/8" x 6 ft Air hose, Swivel (157705), and union fitting (156684)
24H859	6 ft LD pump fluid hose kit. Includes 1/2" x 6 ft fluid hose, 3/8" x 6 ft Air hose, Swivel (157705), and union fitting (156684)
Air Regulators	
24H420	Mini air pressure regulator with valve, 1/4 inch NPT x 3/8 inch NPT
Tote Mount Accessories	
24F914	Meter drip tray for mounting to the side of IBC tote
24F932	LD 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)
24F930	Top of tote mounting bracket. For mounting LD pump in top of IBC tote
24F920	Bracket for mounting LD pump on the side of IBC tote
24K285	Bracket for mounting SD hose reel to IBC tote mounting bracket 24F930 (24F930 bracket sold separately)
Mounting Hardware	
24F910	LD pump wall mounting bracket. For use with LD 3:1 and 5:1 pumps
24F918	Bung adapter for LD 3:1 and 5:1 pumps
Carts	
24F915	Drum cart with pneumatic wheels for 400 lb drums, includes chain for securing drum to cart
24H422	Drum cart with pneumatic wheels for 120 lb drums, includes chain for securing drum to cart



# Mini Fire-Ball® 225 3:1

## Air-Powered Oil Pumps and Packages

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

- Petroleum- and synthetic-based oils

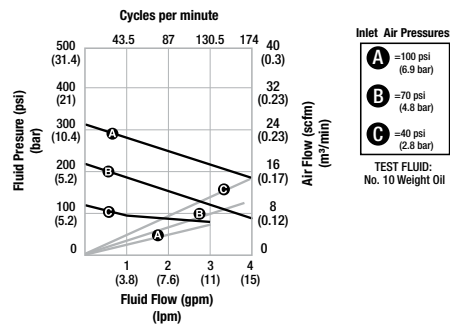
### Technical Specifications

Cycles per Gallon.....	43.5 (11.4 liters)
Fluid Flow gal/min @ 80 cpm .....	1.84 (7.0 liters)
Maximum Fluid Pressure .....	540 psi (37 bar)
Air Motor Effective Diameter.....	2.25 in (57.2 mm)
Air Operating Range .....	40-180 psi (2.8-12 bar)
Approx. Air Use and Flow @ 100 psi and 80 cpm .....	8.5 scfm @ 2.1 gpm, (0.241 m <sup>3</sup> /min @ 7.9 lpm)
Wetted Materials .....	Steel, Buna-N, Polyurethane, Aluminum, Rulon®
Air Inlet Port Size .....	3/8 in npt(f)
Fluid Inlet Port Size .....	1-1/2 in npt(f)
Fluid Outlet Port Size.....	1/2 in npt(f)
Line Length‡ .....	Up to 250 ft (76.2 m)
Dispense Points .....	1 to 2
Annual Usage .....	Up to 35,500 gal (132,000 l)
Typical Applications.....	Continuous duty, maintenance facility dispensing motor oil, gear oil, automatic transmission fluid, hydraulic fluid

### Ordering Information

Mini Fire-Ball 225 3:1 Pump	
248097	3:1 Universal Oil Pump with suction tube (15C502) and bung adapter (222308)
246775	3:1 Universal Oil Pump

### Pump Performance



246775

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

# Fire-Ball® 300 5:1

## Air-Powered Oil Pumps and Packages

### Features and Benefits

- Large air-porting design provides efficient use of compressed air supply for continuous pump operation without icing
- In-line design with fewer parts for less pump wear
- Differential air motor ensures smooth pumping
- Double-acting pump provides reliable fluid flow

### Typical Applications

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

### Typical Fluids Handled

- Petroleum- and synthetic-based oils

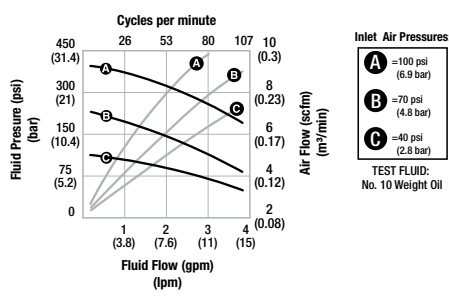
### Technical Specifications

Cycles per Gallon.....	28.4 (8.6 liters)
Fluid Flow gal/min @ 80 cpm .....	2.8 (9.3 liters)
Maximum Fluid Pressure .....	900 psi (62 bar)
Air Motor Effective Diameter.....	3 in (76.2 mm)
Air Operating Range .....	40-180 psi (2.8-12 bar)
Approx. Air Use and Flow @ 100 psi and 80 cpm .....	27 scfm @ 3 gpm (0.765 m <sup>3</sup> /min @ 11.5 lpm)
Wetted Materials .....	Steel, Polyurethane, Aluminum, Buna-N
Air Inlet Port Size .....	3/8 npt(f)
Fluid Inlet Port Size .....	1-1/2 npt(f)
Fluid Outlet Port Size.....	1/2 npt(f)
Line Length‡ .....	Up to 500 ft (152.5 m)
Dispense Points .....	1 to 3
Annual Usage .....	Up to 35,500 gal (132,000 l)
Typical Applications.....	Continuous duty, maintenance facility dispensing motor oil, gear oil, automatic transmission fluid, hydraulic fluid

### Ordering Information

Fire-Ball 300 5:1 Pump	
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 (1040 lb) tank size, bung mount

### Pump Performance



203876

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

# Fire-Ball® 425 3:1

## Air-Powered Oil Pumps and Packages

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

- Petroleum- and synthetic-based oils

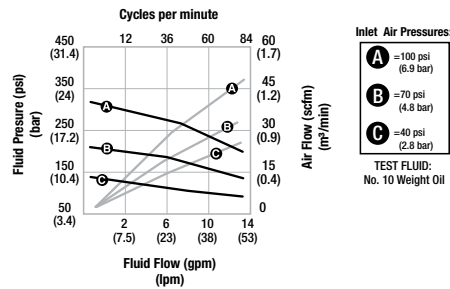
### Technical Specifications

Cycles per Gallon.....	6 (1.6 liters)
Fluid Flow gal/min @ 80 cpm .....	13.4 (50.6 liters)
Maximum Fluid Pressure .....	540 psi (37 bar)
Air Motor Effective Diameter.....	4.25 in (107.9 mm)
Air Operating Range .....	40-180 psi (2.8-12 bar)
Approx. Air Use and Flow @ 100 psi and 80 cpm .....	58 scfm @ 13.4 gpm (1.64 m <sup>3</sup> /min @ 50.6 lpm)
Wetted Materials .....	Steel, Polyurethane, Aluminum, Nitrile
Air Inlet Port Size .....	1/2 in npt(f)
Fluid Inlet Port Size .....	1-1/2 in npt(f)
Fluid Outlet Port Size.....	3/4 in npt(f)
Line Length‡ .....	Up to 250 ft (76.2 m)
Dispense Points .....	3 to 4
Annual Usage .....	Over 35,500 gal (132,000 l)
Typical Applications.....	High flow, low pressure maintenance facility dispensing motor oil, gear oil, automatic transmission fluid, hydraulic fluid

### Ordering Information

Fire-Ball 425 3:1 Pump	
237526	3:1 Universal Oil Pump

### Pump Performance



237526

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

# Fire-Ball® 425 6:1

## Air-Powered Oil Pumps and Packages

### Features and Benefits

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

### Typical Applications

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

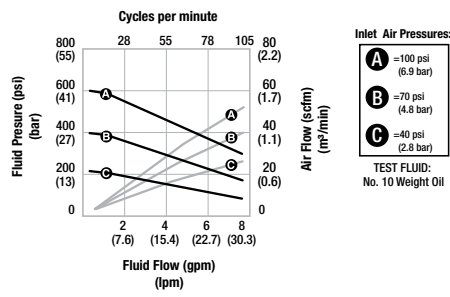
### Typical Fluids Handled

- Petroleum- and synthetic-based oils

### Technical Specifications

Cycles per Gallon.....	12 (3.2 liters)
Fluid Flow gal/min @ 80 cpm .....	6.6 (25.3 liters)
Maximum Fluid Pressure .....	1100 psi (76 bar)
Air Motor Effective Diameter.....	4.25 in (107.9 mm)
Air Operating Range .....	40-180 psi 2.8-12 bar
Approx. Air Use and Flow @ 100 psi and 80 cpm .....	49.5 scfm @ 6.8 gpm (.334 m <sup>3</sup> /min @ 25.7 lpm)
Wetted Materials .....	Steel, Polyurethane, Aluminum, Nitrile
Air Inlet Port Size .....	1/2 in npt(f)
Fluid Inlet Port Size .....	1-1/2 in npt(f)
Fluid Outlet Port Size.....	3/4 in npt(f)
Line Length‡ .....	Up to 500 ft (152.5 m)
Dispense Points .....	3 to 4
Annual Usage .....	Up to 35,500 gal (132,000 l)
Typical Applications.....	High flow, medium pressure, maintenance facility dispensing motor oil, gear oil, automatic transmission fluid, hydraulic fluid

### Pump Performance



238108

### Ordering Information

Fire-Ball 425 6:1 Pump	
238108	6:1 Universal Oil Pump

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



# Fire-Ball® 425 10:1

## Air-Powered Oil Pumps and Packages

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

- Petroleum- and synthetic-based oils

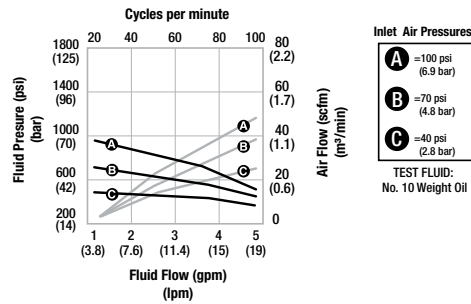
### Technical Specifications

Cycles per Gallon.....	19.6 (5.2 liters)
Fluid Flow gal/min @ 80 cpm .....	4.1 (15.4 liters)
Maximum Fluid Pressure .....	1800 psi (124 bar)
Air Motor Effective Diameter.....	4.25 in (107.9 mm)
Air Operating Range .....	40-180 psi (2.8-12 bar)
Approx. Air Use and Flow @ 100 psi and 80 cpm .....	32 scfm @ 4.1 gpm (.555 m <sup>3</sup> /min @ 15.4 lpm)
Wetted Materials .....	Steel, Polyurethane, Aluminum, Nitrile
Air Inlet Port Size .....	1/2 in npt(f)
Fluid Inlet Port Size .....	1-1/2 in npt(f)
Fluid Outlet Port Size.....	3/4 in npt(f)
Line Length‡ .....	Up to 750 ft (228.6 m)
Dispense Points .....	3 to 4
Annual Usage .....	Over 35,500 gal (132,000 l)
Typical Applications.....	Long distance, maintenance facility dispensing motor oil, gear oil, automatic transmission fluid, hydraulic fluid

### Ordering Information

Fire-Ball 425 10:1 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

### Pump Performance



205626

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

# Fire-Ball® Oil Pump Packages

## Air-Powered Oil Pumps and Packages

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

Packages	Portable	Cover-Mounted	Bung-Mounted		Universal
Container Size	16 gal (60 l)	55 gal (200 l)	275 gal (1040 l)	Universal	
<b>Mini Fire-Ball 225, 3:1 Package</b>	<b>246903</b> <sup>(4)</sup>	<b>246904</b> <sup>(4)</sup>	<b>246906</b> <sup>(4)</sup>	<b>246907</b> <sup>(3), (4)</sup>	
Mini Fire-Ball, 225 3:1 Pump	248097 <sup>(1), (3)</sup>				246775
<b>Fire-Ball 300, 5:1 package</b>	<b>225728</b> <sup>(2), (4)</sup>	<b>225094</b> <sup>(3), (4)</sup>	<b>225642</b> <sup>(3), (4)</sup>	<b>225640</b> <sup>(3), (4)</sup>	<b>225931</b> <sup>(3), (4)</sup>
Fire-Ball 300 Pump	203872	203857	204254	222087	203876
Dispense/Hose Fitting Kit	237075	222063			222062
Fluid Hose	6 ft x 1/2 in (1.8 m x 12.7 mm)				1.5 ft x 1/2 in (0.5 m x 9.5 mm)
Air Hose	—	6 ft x 3/8 in (1.8 m x 9.5 mm)			1.5 ft x 3/8 in (0.5 m x 9.5 mm)
Air Regulator	224512		—	—	—
Cover	24R350	200326	—	—	—
Caster Base	203622	—	—	—	—
Bung Adapter for 300, 5:1	—	—	222308		—
225, 3:1 Manual	309868				
300, 5:1 Manual	307884	307883			306520

<sup>(1)</sup> 248097 includes suction tube (15C502) and bung adapter (222308)  
<sup>(2)</sup> Use 3/8 in (9.5 mm) installation kit (224512) as required  
<sup>(3)</sup> Use 3/8 in (9.5 mm) air regulator 109075 as required; must be ordered separately  
<sup>(4)</sup> Order low-level cut-off 203688 (1 1/2 inch NPT) separately for metered dispense systems

### Fire-Ball 425 Package Ordering Information

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

<sup>(1)</sup> Use 1/2 in (12.7 mm) air regulator (104266) and air pressure gauge (100960) as required; must be ordered separately—see mounting accessories section  
<sup>(2)</sup> Order low-level cut off (203688) separately for metered dispense systems—see mounting accessories section  
<sup>(3)</sup> Includes pump plus: Filter Regulator (217072), Hose and Fitting Kit (222068), Air Shutoff Valve (110225), Fluid Shutoff (108537), Wall Mount Bracket, (238245)

Cover-mounted



Bung-mounted



Universal Supply



Portable

# Fluid Dispense Packages

## Air-Powered Oil Pumps and Packages

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

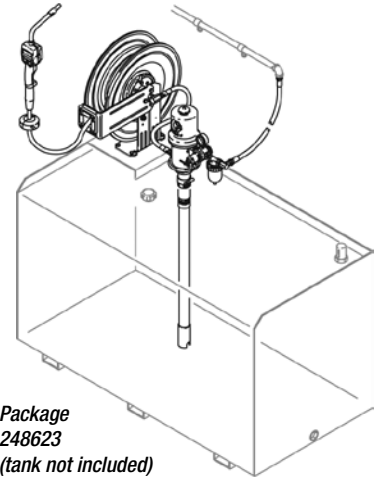
Mini Fire-Ball 225, 3:1 Pump Package	
248623*	Includes: Mini Fire-Ball 225, 3:1 Universal pump with bung adapter and down tube (248097), SD Series reel with 50 ft (15.2 m) x 1/2 in (12.7 mm) fluid hose (HPM65B), LDM5 meter (256215)
248622*	Includes: Mini Fire-Ball 225, 3:1 Universal pump with bung adapter and down tube (248097), SD Series reel with 35 ft (11 m) x 1/2 in (12.7 m) fluid hose (HPM33B), LDM5 meter (256215)

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

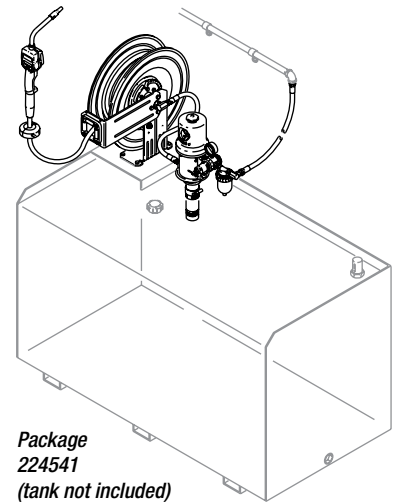
### Fire-Ball 300, 5:1 Deluxe Bulk-Oil Dispensing Packages

Fire-Ball 300, 5:1 Pump Packages	
241633*	Includes: Fire-Ball 300, 5:1 pump universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), 2 in (50.8 mm) bung adapter (222308), SD Series reel with 35 ft (11 m) x 1/2 in (12.7 mm) hose (HPM33B), SDM5 meter (255350)
224541*	Includes: Fire-Ball 300, 5:1 pump universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), 2 in (50.8 mm) bung adapter (222308), SD Series reel with 50 ft (15.3 m) x 1/2 in (12.7 mm) hose (HPM65B), 18 in (45.7 cm) hose (220598), 90° swivel (inlet on hose reel) (157416), SDM5 meter (255350)
244038*	Includes: Fire-Ball 300, 5:1 pump universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), 2 in (50.8 mm) bung adapter (222308), SD Series reel with 50 ft (15.3 m) x 1/2 in (12.7 mm) hose (HPM65B), 18 in (45.7 cm) hose (220598), 90° swivel (157416), SDP5 meter (255200)
224534*	Dispensing from Bench-Top Tanks with Fire-Ball 300, 5:1 Pump Package. Includes: Fire-Ball 300, 5:1 pump, Universal (203876), 3/8 in (9.5 mm) regulator/gauge (109075), Air filter (106148), 3/8 in (9.5 mm) x 3/8 in (9.5 mm) nipple (156849), SD Series reel with 50 ft (15.3 m) x 1/2 in (12.7 mm) hose (HPM65B), Drain valve (106151), 72 in (182.9 cm) hose kit (222063), Thermal relief valve (237893), 90° swivel (157416), SDM5 Meter (255350)

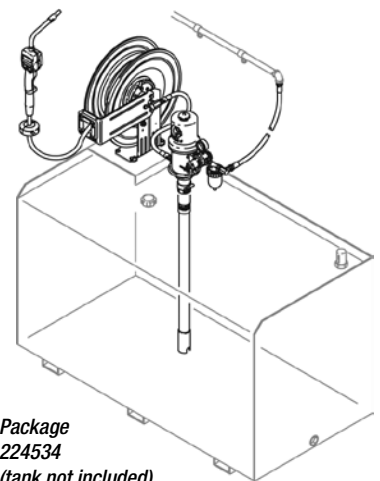
\*Order 218549 (1/2 in x 24 in) hose reel inlet kit separately NOTE: Tanks not included



Package  
248623  
(tank not included)



Package  
224541  
(tank not included)



Package  
224534  
(tank not included)

# Fire-Ball® and Oil Pump Accessories

## Air-Powered Oil Pumps and Packages

Hose and Fittings Kits for Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 Pumps	
222062	18 in (0.5 m) for connecting wall-mounted Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 pumps to piping. Includes air hose (204560) with swivel elbow (155494), fluid hose (220598) with swivel elbow (155470). Instruction manual 306520
222063	6 ft (1.8 m) for use with drum-mounted Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 pumps. Includes air hose (203320) with swivel elbow (155494), fluid hose (220591) with swivel elbow (155470). Instruction manual 307883
Dispense Kits for Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1 Pumps	
237075	6 ft (1.8 m) for use with portable lubricators powered by the Fire-Ball 300, 5:1. Includes fluid hose (220591) and SDM5 gear lube valve (255349). Instruction manual: 307884
Hose and Fittings Kits for Fire-Ball 425, 3:1, 6:1 and 10:1	
222068	18 in (0.5 m) for connecting wall-mounted Fire-Ball 425, 10:1 pumps to piping. Includes air hose (218093) with swivel elbow (155470), fluid hose (109108) with swivel elbow (160327). Instruction manual: 306520
238246	24 in (0.6 m) for use with Fire-Ball 425, 3:1 and 6:1 wall-mounted pumps to piping. Includes air hose (218093) with swivel elbow (155470), fluid hose (238247) with swivel elbow (160327)
222066	6 ft (1.8 m) for use with drum-mounted Fire-Ball 425, 10:1 pumps. Includes air hose (205418) with swivel elbow (155470), fluid hose (109105) with swivel elbow (160327). Instruction manual: 307883
Suction Kits	
236054	6 ft (1.8 m) Suction Kit for 55 gal. (200 l) drums. Includes: 55 gal. (200 l) drum tube, bung adapter and 6 ft (1.8 m) of 3/4 in fluid hose with 3/4 in ID x 1-1/2 in bushing to adapt to any universal Graco oil pump. Allows use of Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 or Fire-Ball 425, 10:1 universal pumps with barrels. Order wall brackets separately. Use with low-level cut-off (203688) when metering fluids. Instruction manual: 308335
Drum Covers	
200326	Cover for open-head 55 gal (200 l) drums. Use with Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 or Fire-Ball 425, 10:1 pump. Use adapter 160754 for cover-mounting bung-style pumps
24R350	Cover for open-head 16 gal (60 l) or 70 lb (32 kg) drums. Mounts Fast-Ball 1:1, Mini-Fire-Ball or Fire-Ball pumps
222058	Cover for 5 gal (20 l) pails. Mounts Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and 15:1 pumps. Bung adapter (222308) and bung adapter plate (160754) sold separately
160754	Bung-adapter plate for 55 gal (200 l) or 16 gal (60 l) covers. Mounts to 55 gallon (400 lb; 200 l), 16 gal (120 lb; 60 l) drum or 5 gal (20 l) pail covers and converts mounting to standard 2 npt bung opening. Allows use of bung-mounted pumps with drum covers
Wall-Mounting Brackets	
203987	For universal Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1 pumps. Clamps onto universal pump tube
238245	For use with Fire-Ball 425, 3:1, 6:1 and 10:1 pumps. Mounts directly to pump flange
236778	For use with Fire-Ball 425, 3:1, Dyna-Star 1/4:1 and Power-Star 1:1 pumps. Clamps to pump tube and provides mounting to wall surface by flange
Clamps	
203156	Open-drum pump clamp. Attaches to side of open-head drum and mounts on any size pump except Fire-Ball 425, 3:1
210880	Open-drum pump clamp for Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1 pumps. Clamps onto pump tube and attaches to open-drum lip
Tools for Working on Fire-Ball Air Motors	
207579	Padded pliers
171818	Poppet gauge
168085	Insert tool
Carts	
203650	Cart for 5, 10 and 16 gal (20, 40, and 60 l) drums. Drums fit into recess on formed base. Rim clamps secure drum to cart. Use with pail clamp (159952) when using cart with 5 gal (20 l) pails
222243	Heavy-Duty Cart with Pneumatic Wheels for 120 lb (55 kg) drums. Used for moving lubrication equipment over rough terrain. Requires: Hold down kit (222061)
111470	55 gal (200 l) Drum Truck. Heavy-duty drum truck secures 55 gal (200 l) drum on roll-around base



200326



204574



160754



203987



203156



210880



203650



111470

# Fire-Ball® and Oil Pump Accessories

## Air-Powered Oil Pumps and Packages

### Ordering Information

Portable Bases	
205054	Band Dolly for 5 gal (20 l) pails (11-1/2 in ID)
204144	Band Dolly for 10 and 16 gal (40 and 60 l) drums (14 in ID)
203622	Caster Base for 5, 10 and 16 gal (20, 40 and 60 l) drums
Drum Elevator	
241663	Air-powered elevator to speed-up 55 gal (200 l) drum changes. Maximum raised height is 39.5 in (100.3 cm). Includes cover support (207562), drum elevator (204385), and air control kit (207561)
Suction Tubes For Pumps	
238592	For 16 gal (60 l) cover-mounted Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1. Use bung adapter 222308 on all current production models. Includes (191126) 14-1/2 in (0.36 m) extension (110127) foot spacer
238593	For 55 gal (200 l) cover-mounts. Includes (191128) 21-3/4 in (0.55 m) extension (110127) foot spacer
238595	For 55 gal (200 l) bung-mounted Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1. Use bung adapter 222308 on all current production models. Includes (191130) 26 in (0.66 m) extension (110127) foot spacer
238596	For 275 gal (1100 l) bung-mounts. Includes (191131) 36 in (0.91 m) extension (110127) foot spacer
15C502	Universal Down Tube 1-1/2 in tube marked for standard container lengths from 20-41 in (0.51-1.04 m)
Bung Adapters	
222308	For Fast-Ball 1:1; Mini Fire-Ball 225, 3:1; Fire-Ball 300, 5:1; and Fire-Ball 425, 10:1 Pumps. Allows direct mounting of all universal length and extended Fast-Ball 1:1, Mini Fire-Ball 225, 3:1, Fire-Ball 300, 5:1 and Fire-Ball 425, 10:1 pumps into standard 2 npt drum bung
238125	For Mini Fire-Ball 225, 3:1; Fire-Ball 300, 5:1; and the Fire-Ball 425, 10:1. Includes double tap bushing (191075), 1 ft 3/8 in hose (238370), and 90° 3/8 in adapter (155494) for mounting universal pumps to tanks (see 308403 for details)
214583	For Fast-Flo 1:1 Pumps, allows direct mounting of full-length pump into standard 2 npt drum bung. Comes with bushing sleeve (172405)
187754	Acetal Bung Adapter includes (100220) thumbscrew (for Fire-Ball 300, 15:1 SST undercoating pump)
176684	Bung Adapter for Suction Kit (203992). Includes (100220) thumbscrew
Sealed Bung Adapters (prevents rain water and other fluids from entering drum when pump is outdoors.)	
204076	Sealed bung adapter for full-length Fire-Ball with 2-1/8 in (53.9 mm) bung and Mini Fire-Ball 225, 3:1 (2.140 inch diameter)
224579	Sealed bung adapter for universal length Fire-Ball pumps, 2.159 inch diameter (will not fit Mini Fire-Ball 225, 3:1 or old style pumps with bottom foot valve)
217359	Sealed bung adapter for Fast-Flo pumps; can be used with suction kit 236054
Low-Level Cut-Offs (Prevents air from entering pump by closing intake when fluid supply to pump is exhausted. Can be used with suction hose kit or standard suction tube without changing tube length.)	
203688	Low-level cut-offs for Fast-Ball and Fire-Ball pumps that have a universal design with suction tube extension supplying metered outlets; replaces stand-off suction tube; 1.5 npt (f) inlet. 3 in (76 mm) h
Thermal Relief Valve Kits (includes valve, hose and fittings)	
235998	Mini Fire-Ball 225, 3:1 thermal relief valve rated to 600 psi (41 bar)
237893	Fire-Ball 300, 5:1 and Fire-Ball 425, 6:1 thermal relief valve rated to 900 psi (62 bar)
248296	Fire-Ball 300, 5:1 and Fire-Ball 425, 6:1 thermal relief valve rated to 900 psi (62 bar) (same as 237893 minus bung adapter and swivel. Includes 6 foot hose)
237601	Fire-Ball 425, 3:1 thermal relief valve rated to 600 psi (41 bar)
240429	Fire-Ball 425, 10:1 thermal relief valve rated to 1600 psi (110 bar)
248324	Fire-Ball 425, 10:1 thermal relief valve rated to 1600 psi (110 bar) (same as 240429 minus bung adapter and swivel. Includes 6 foot hose)
238899	Diaphragm pump thermal relief valve rated to 150 psi (10.4 bar)
112353	Diaphragm pump thermal relief valve for fuel dispense; rated to 50 psi (3.4 bar), valve only



204144



203622



241663



203688

# Fire-Ball® and Oil Pump Accessories

## Air-Powered Oil Pumps and Packages

### Ordering Information

Bleed-Type Air Shut-Off Valves (rated to 250 psi [17.4 bar]) Female ends						
110223	1/4 in (6.4 mm)					
110224	3/8 in (9.5 mm)					
110225	1/2 in (12.7 mm)					
110226	3/4 in (19.1 mm)					
Fluid Shut-Off Valves (rated to 2,000 psi [138 bar]) For isolating oil dispense lines.						
108458	1/2 in (12.7 mm)					
108537	3/4 in (19.1 mm)					
110314	1 in (25.4 mm)					
Fluid T-Strainers 60 Mesh Strainer, 1,500 psi (103 bar) working pressure. Prevents foreign material from entering dispense lines. Not for use with grease lines.						
240417	1/2 in npt(f) swivel x 1/2 in npt(m) ports					
240418	3/8 in npt(f) x 3/8 in npt(m) ports					
Mesh Strainer Replacement for 240417						
3 replacement Elements	25 replacement Elements		Mesh			
238433	238434		40 mesh			
238431	238432		60 mesh (standard)			
238429	n/a		100 mesh			
Y-Strainers 400 psi (28 bar) max. working pressure filters material before it enters the pump. 20 mesh screen.						
Y-Strainer	Replacement Screens		Inlet/Outlet			
101078	180199		3/4 npt(f) both ends			
110877	110906		1/2 npt(f) both ends			
110878	110907		1 npt(f) both ends			
Mounting Accessories						
Pump	Fast-Ball 1:1	Mini Fire-Ball 225, 3:1	Fire-Ball 300, 5:1	Fire-Ball 425, 3:1	Fire-Ball 425, 6:1	Fire-Ball 425, 10:1
Bung Adapter	222308		N/A‡		222308	
Connection Hose Kit	222118 18 inch (45.7 cm)	222062 18 inch (45.7 cm)	238246 24 inch (60.9 cm)		222068 18 inch (45.7 cm)	
	222119 72 inch (182.8 cm)	222063 72 inch (182.8 cm)			222066 72 inch (182.8 cm)	
Wall Mounting Bracket	203987		238245		203987	
Thermal Relief Kit	—	235998	237893	237601	240429	
Air Regulator and Gauge	110147	109075		104266/100960		
Air Filter	110146	106148		106149		
Air Lubricator	110148	214847		214848		
FRL*	110149	110150		217072		
Airline Shutoff Valve	110223	110224		110225		
Fluid Shutoff Valve	108537	108458		108537		
Fluid Outlet Filter	240417		101078	—		
Low-Level Cutoff	203688					
Suction Hose Kit	236054		N/A**		N/A**	



\*Filter, Regulator, Lubricator and Gauge  
 \*\*Recommend 1-1/2 in, 6 ft hose assembly as suction kit  
 ‡Must be wall-mounted or flange-mounted

# NXT™ High-Flo®

## Air-Powered Oil Pumps and Packages



### Features and Benefits

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

### Typical Applications

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

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

\*Graco recommends 20 CPM or less for supply applications

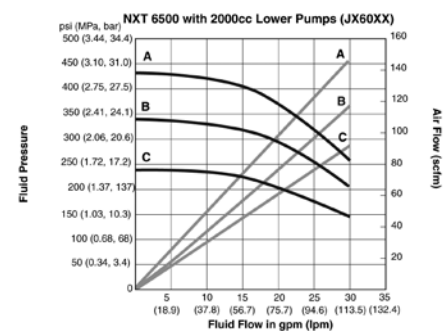
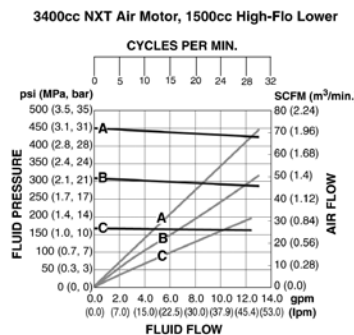
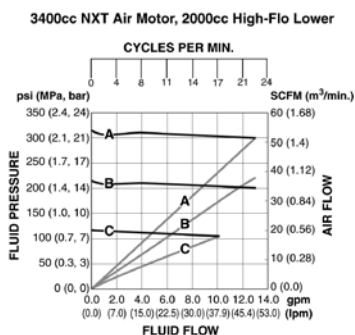
### Performance Charts

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

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

Test Fluid is No. 10 Weight Oil for all pumps

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



# NXT™ Dura-Flo®

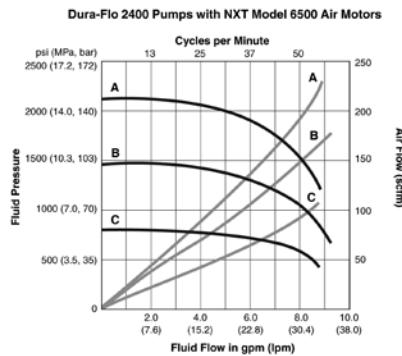
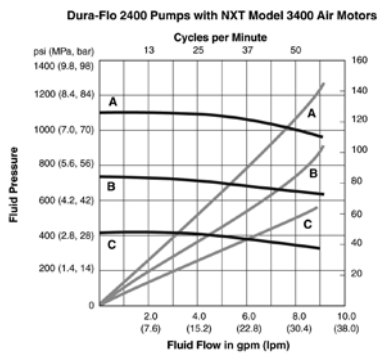
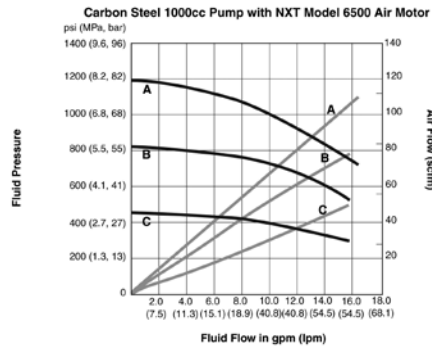
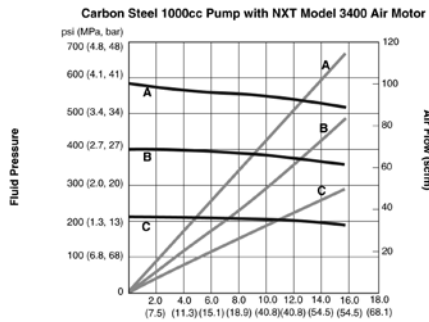
## Air-Powered Oil Pumps and Packages

Air-Powered Oil Pumps and Packages

### Performance Charts

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

Test Fluid is No. 10 Weight Oil for all pumps










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

\*Graco recommends 20 CPM or less for supply applications



# Grease Pumps Quick Reference

## Technical Specifications and Selection Chart

	Annual Usage	Line Length <sup>‡</sup>	Dispense Points	Air Inlet	Material Inlet	Material Outlet
	<b>LD Series, 50:1</b>					
	7,000 lb (3,125 kg)	300 ft (91 m)	1 to 2	1/4 in npt(f)	Priming Piston	1/4 in npt(f)
	<b>Mini Fire-Ball 225, 50:1</b>					
	10,000 lb (4,535 kg)	100 ft (30 m)	1	3/8 in npt(f)	Slotted	1/4 in npt(f)
	<b>Fire-Ball 300, 50:1</b>					
	10,000 lb (4,535 kg)	250 ft (76 m)	1 to 2	3/8 in npt(f)	Slotted	1/4 in npt(f)
	<b>Fire-Ball 425, 50:1</b>					
	20,000 lb (9,072 kg)	250-500 ft (76-152 m)	4 or more	1/2 in npt(f)	Slotted	3/8 in npt(f)
	<b>Fire-Ball 425, 75:1</b>					
	20,000 lb (9,072 kg)	250-500 ft (76-152 m)	4 or more	1/2 in npt(f)	Slotted	3/8 in npt(f)
	<b>Fire-Ball 300, 15:1</b>					
	10,000 lb (4,535 kg)	250 ft (76 m)	1 to 2	3/8 in npt(f)	Slotted	1/4 in npt(f)
	<b>Fire-Ball 425, 10:1</b>					
	20,000 lb (9,072 kg)	250-500 ft (76-152 m)	4 or more	1/2 in npt(f)	Slotted	1 in npt(f)

<sup>‡</sup> Consult your local authorized Graco representative for line or pipe sizing

# Grease Pumps Quick Reference

## Technical Specifications and Selection Chart



Annual Usage	Line Length <sup>‡</sup>	Dispense Points	Pump Ratio(s)	Output Per Cycle	Fluids
<b>Check-Mate, 14:1**</b>					
20,000 lb (9,072 kg)	Up to 100 ft (76 m)	1	14:1	500 cc	Grease
<b>Check-Mate, 26:1</b>					
20,000 lb (9,072 kg)	Up to 250 ft (76 m)	1-2	26:1	500 cc	Grease
<b>Check-Mate, 29:1</b>					
20,000 lb (9,072 kg)	Up to 250 ft (76 m)	4 or more	29:1	250 cc	Grease
<b>Check-Mate, 55:1</b>					
20,000 lb (9,072 kg)	Up to 250 ft (76 m)	1-2	55:1	250 cc	Grease
<b>Check-Mate, 63:1**</b>					
20,000 lb (9,072 kg)	Up to 250 ft (76 m)	1-2	63:1	100 cc	Grease
<b>Check-Mate, 68:1**</b>					
20,000 lb (9,072 kg)	Up to 500 ft (152 m)	1-2	68:1	200 cc	Grease

<sup>‡</sup> Consult your local authorized Graco representative for line or pipe sizing  
 \*\*NXT Check-Mate pump is available in floor stand or RAM Package.

# LD Series 50:1 Pump

## Air-Powered Grease Pumps and Packages

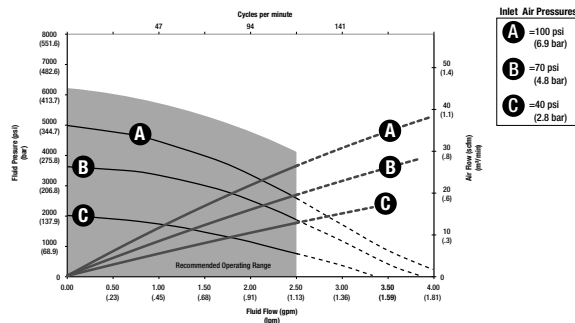
### Features and Benefits

- Three inch air motor provides more power to create better flow
- Cup and plate design eliminates the need for O-rings that wear out faster

### Typical Applications

- Medium pressure, low to medium volume grease dispense
- Automotive dealerships
- Fast lube centers
- Service shops
- Lube trucks

### Pump Performance



### Technical Specifications

Maximum Fluid Working Pressure .....	7500 psi (517 bar, 51.7 MPa)
Fluid Pressure Ratio .....	50:1
Air Operation Range .....	20 to 150 psi (1.37 to 10.3 bar)
Recommended Air Pressure (for optimum life) .....	<125 psi (8.6 bar, 0.86 MPa)
Max Recommended Pump Speed .....	120 cycles per minute
Cycles Per Gallon/pound (l/kg) .....	247 cycles per pound (103 cycles per kg)
Recommended Pump Speed (for maximum life) .....	.60 cycles per minute or lower
Wetted Parts .....	Steel, brass, nitrile rubber, polyurethane, UHMWPE, acetal
Sound Pressure Level .....	72.9 dB(a)
Sound Power Level .....	82 dB(a)
Approximate Weight .....	35 pound drum—11.2 pounds (5.1 kg), 120 pound drum—15.0 pounds (6.8 kg), 400 pound drum— 17.0 pounds (7.7 kg)
Air Inlet .....	1/4 in
Fluid Inlet .....	Priming Piston
Fluid Outlet .....	1/4 in
Free Flow* .....	5 lb/min
Annual Usage .....	Up to 7,000 lb (3175 kg)

### Ordering Information

LD Series 50:1 Pumps	
24G600	35 lb (16 kg) Grease Pump - 50:1
24G603	120 lb (55 kg) Grease Pump - 50:1
24G606	400 lb (180 kg) Grease Pump - 50:1



LD Series 50:1 Pump

Air-Powered Grease Pumps and Packages

# LD Series Pump Packages and Accessories

## Air-Powered Grease Pumps and Packages

### Ordering Information

50:1 Grease Packages (drums not included)	
24J030	35# Portable Grease package includes: 50:1 35# (16 kg) Grease pump (24G600), 6 ft Grease hose kit (24H862), 35# follower plate (24F901), 35# Drum cover (24F904), Grease valve (242056), Z-swivel (202577)
24J036	120# Stationary Grease Package includes: 50:1 120# Grease pump (24G603), 6 ft Grease hose kit (24H862), 120# follower plate (24F902), 120# Drum cover (24F905), Grease valve (242056), Z-swivel (202577)
24J048	120# Mobile Grease Package includes: 50:1 120# pump (24G603), 6 ft hose kit (24H862), 120# follower plate (24F902), 120# Drum cover (24F905), 120# Cart (24H422), Grease valve (242056), Z-swivel (202577)
24J060	120# Mobile Grease Package with LD Reel. Includes: 50:1 120# Grease pump (24G603), 6 ft Grease hose kit (24J501), 120# follower plate (24F902), 120# Drum cover (24F905), 120# Cart (24H422), LD grease hose reel, 1/4" x 35" (24H663), Grease valve (242056), Z-swivel (202577)
24J042	400# Stationary Grease Package includes: 50:1 400# Grease pump (24G606), hose kit (24H862), 400# follower plate (24F903), 400# Drum cover (24F906), Grease valve (242056), Z-swivel (202577)
24J054	400# Mobile Grease Package. Includes: 50:1 400# Grease pump (24G606), 6 ft hose kit (24H862), 400# follower plate (24F903), 400# Drum cover (24F906), 400# Cart (24F915), Grease valve (242056), Z-swivel (202577)
24J066	400# Mobile Grease Package with and LD Reel. Includes: 50:1 400# Grease pump (24G606), 6 ft Grease hose kit (24J501), 400# follower plate (24F903), 400# Drum cover (24F906), 400# Cart (24F915), LD grease hose reel, 1/4" x 35" (24H663), Grease valve (242056), Z-swivel (202577)
Drum Covers	
24F904	Cover for 35 lb (16 kg) pails
24F905	Cover for open-head 120 lb drums
24F906	Cover for open-head 400 lb drums
24P623	Adjustable bung adapter for LD grease pumps
Follower Plates	
24F901	For 35 lb (16 kg) pails with LD 50:1 pumps
24F902	For 120 lb drum with LD 50:1 pumps
24F903	For 400 lb drums with LD 50:1 pumps
Hose and Fitting Kits	
24H862	6 ft LD pump grease hose kit. Includes 1/4" x 6' grease hose, 3/8" x 6 ft air hose, and fittings
Air Regulators	
24H420	Mini air pressure regulator with valve, 1/4 inch NPT x 3/8 inch NPT
Carts	
24F915	Drum cart with pneumatic wheels for 400 lb drums, includes chain for securing drum to cart
24H422	Drum cart with pneumatic wheels for 120 lb drums, includes chain for securing drum to cart



24J030



24J048



24J060



24J054



24J066



24F915



24H422



24F904



24F901



24P623



24J042

# Mini Fire-Ball® 225, 50:1

## Air-Powered Grease Pumps and Packages

### Features and Benefits

- Priming piston pump in combination with the appropriate feeding technology provides positive pump feeding, even with viscous and/or tacky greases
- Non-corrosive air motor design for long life
- Double-acting pump ensures smooth fluid flow
- Robust grease inlet cage withstands the most abusive handling

### Typical Applications

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

### Typical Fluids Handled

- Grease up to NLGI #2

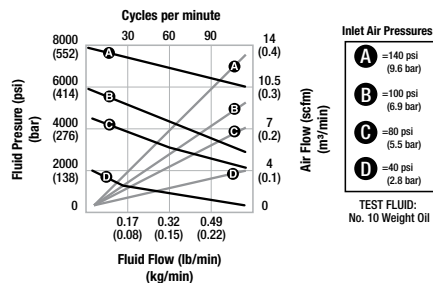
### Technical Specifications

Continuous-Duty Flow Rate.....	0.32 lb/min (0.15 kg/min)
Maximum Fluid Pressure.....	8400 psi (578 bar)
Air Motor Effective Diameter.....	2.25 in (57.2 mm)
Operating Range.....	40-140 psi (3-10 bar)
Approximate Air Use.....	7.3 scfm @ 0.41 lb/min. (.18 kg/min) @ 100 psi @ 80 cpm
Wetted Materials.....	Steel, Urethane, Aluminum, Buna-N, Brass, Ethylene, Delrin®
Air Inlet Port Size.....	3/8 in npt(f)
Material Inlet.....	Slotted
Material Outlet.....	1/4 in npt(f)
Line Length‡.....	Up to 100 ft (30.5 m)
Dispense Points.....	1
Annual Usage.....	Up to 10,000 lb (4,535 kg)

### Ordering Information

Mini Fire-Ball 225 50:1 Pumps	
246909	35 lb (16 kg) Grease Pump - 50:1
246780	120 lb (55 kg) Grease Pump - 50:1
246781	400 lb (180 kg) Grease Pump - 50:1

### Pump Performance



Air-Powered Grease Pumps and Packages

# Fire-Ball® 300, 15:1

## Air-Powered Grease Pumps and Packages

### Features and Benefits

- Priming piston pump in combination with the appropriate feeding technology provides positive pump feeding, even with viscous and/or tacky greases
- Non-corrosive air motor design for long life
- Double-acting pump ensures smooth fluid flow
- Robust grease inlet cage withstands the most abusive handling

### Typical Applications

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

### Typical Fluids Handled

- Grease up to NLGI #0

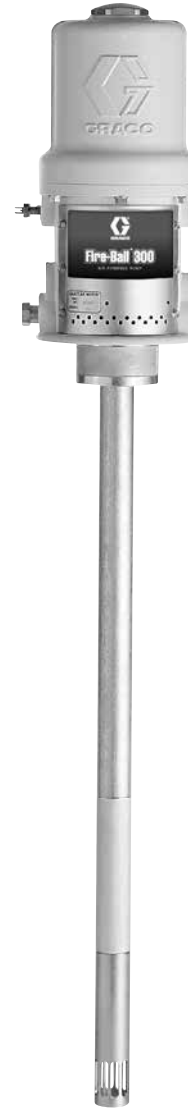
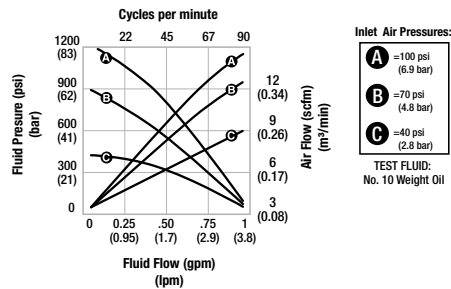
### Technical Specifications

Continuous-Duty Flow Rate.....	0.7 gpm
Maximum Fluid Pressure.....	2700 psi (186 bar)
Air Motor Effective Diameter.....	3 in (7.6 cm)
Operating Range.....	40-180 psi (2.8-12.5 bar)
Approximate Air Use.....	17 cfm@ 100 psi (7 bar)
Wetted Materials.....	CS, AL, Leather, PTFE, Rubber
Air Inlet Port Size.....	3/8 in npt(f)
Material Inlet.....	1 in npt(f) Straight Inlet
Material Outlet.....	1/4 in npt(f)
Line Length‡.....	Up to 250 ft (76.2 m)
Dispense Points.....	1 to 2
Annual Usage.....	Up to 10,000 lb (4,535 kg)

### Ordering Information

Fire-Ball 300 15:1 Pumps	
206405	35 lb (16 kg) Grease Pump - 15:1
206699	120 lb (55 kg) Grease Pump - 15:1
206700	400 lb (180 kg) Grease Pump - 15:1

### Pump Performance



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

# Fire-Ball® 300, 50:1

## Air-Powered Grease Pumps and Packages

### Features and Benefits

- Priming piston pump in combination with the appropriate feeding technology provides positive pump feeding, even with viscous and/or tacky greases
- Non-corrosive air motor design for long life
- Double-acting pump ensures smooth fluid flow
- Robust grease inlet cage withstands the most abusive handling

### Typical Applications

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

### Typical Fluids Handled

- Grease up to NLGI #2

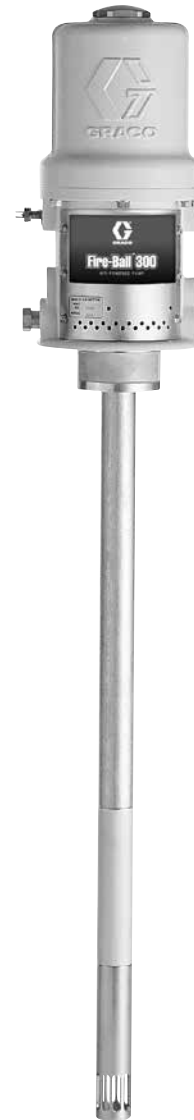
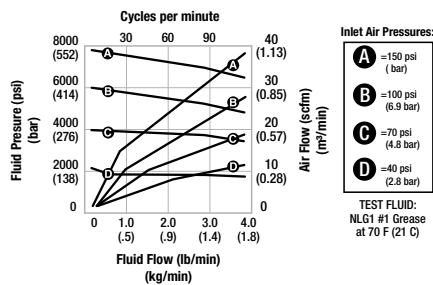
### Technical Specifications

Continuous-Duty Flow Rate .....	1.19 lb/min. (.54 kg/min.)
Maximum Fluid Pressure .....	8400 psi (580 bar)
Air Motor Effective Diameter .....	3 in (76.2 cm)
Operating Range .....	30-140 psi (3.0-9.7 bar)
Approximate Air Use .....	22.8 cfm @ 100 psi (7 bar)
Wetted Materials .....	CS, Delrin®, Buna-N, Polyurethane
Air Inlet Port Size .....	3/8 in npt(f)
Material Inlet .....	Slotted
Material Outlet .....	1/4 in npt(f)
Line Length‡ .....	Up to 250 ft (76.2 m)
Dispense Points .....	1 to 2
Annual Usage .....	Up to 10,000 lb (4,535 kg)

### Ordering Information

Fire-Ball 300 50:1 Pumps	
239877	35 lb or 70 lb (16 kg or 32 kg) Grease Pump - 50:1
239887	120 lb (55 kg) Grease Pump - 50:1
239888	400 lb (180 kg) Grease Pump - 50:1

### Pump Performance



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

# Fire-Ball® 425, 10:1

## Air-Powered Grease Pumps and Packages

### Features and Benefits

- Priming piston pump in combination with the appropriate feeding technology provides positive pump feeding, even with viscous and/or tacky greases
- Non-corrosive air motor design for long life
- Double-acting pump ensures smooth fluid flow
- Robust grease inlet cage withstands the most abusive handling

### Typical Applications

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

### Typical Fluids Handled

- Grease up to NLGI #2

### Technical Specifications

Continuous-Duty Flow Rate.....	3.5 gpm
Maximum Fluid Pressure .....	1800 psi (124 bar)
Air Motor Effective Diameter.....	4.25 in (10.8 cm)
Operating Range .....	40-180 psi (2.8-12.5 bar)
Approximate Air Use .....	13 cfm @ 100 psi (7 bar)
Wetted Materials .....	Steel, Brass, Aluminum, Leather, Buna-N
Air Inlet Port Size .....	1/2 in npt(f)
Material Inlet .....	Slotted
Material Outlet.....	1 in npt(f)
Line Length‡ .....	Up to 500 ft (152.4 m)
Dispense Points .....	4 or more
Annual Usage .....	20,000 lb or more (9,072 kg)

### Ordering Information

Fire-Ball 425 10:1 Pumps	
965129	Fire-Ball 425, 10:1 pump complete with bung adapter. For open head drum, remove bung adapter and mount to 200326, 400 lb (180 kg) drum cover. Ideal for transferring grease from 400 lb (180 kg) drum or side pocket of tote tank. Can be modified for stubby horizontal mount on tote tanks. For more information contact Lubrication Equipment Technical Assistance
965124	Stubby mount Fire-Ball 425, 10:1 pump only



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



# Fire-Ball® 425, 50:1

## Air-Powered Grease Pumps and Packages

### Features and Benefits

- Priming piston pump in combination with the appropriate feeding technology provides positive pump feeding, even with viscous and/or tacky greases
- Non-corrosive air motor design for long life
- Double-acting pump ensures smooth fluid flow
- Robust grease inlet cage withstands the most abusive handling

### Typical Applications

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

### Typical Fluids Handled

- Grease up to NLGI #2

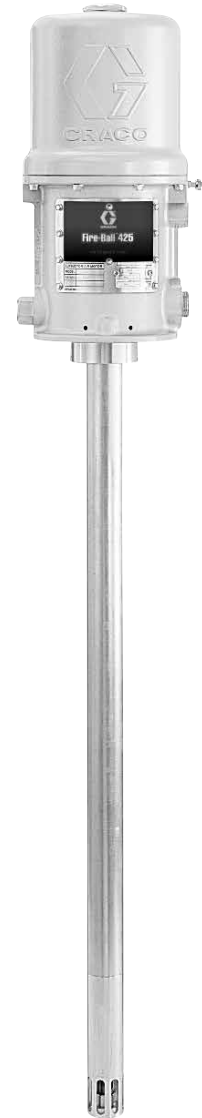
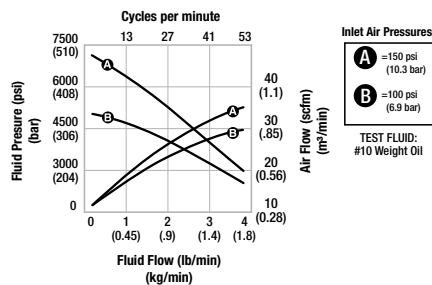
### Technical Specifications

Continuous-Duty Flow Rate.....	3.35 lb/min (1.5 kg/min.)
Maximum Fluid Pressure.....	7500 psi (517 bar)
Air Motor Effective Diameter.....	4.25 in (10.8 cm)
Operating Range.....	40-150 psi (2.8-10.4 bar)
Approximate Air Use.....	19 cfm @ 70 psi (4.8 bar)
Wetted Materials.....	CS, Leather
Air Inlet Port Size.....	1/2 in npt(f)
Material Inlet.....	Slotted
Material Outlet.....	3/8 in npt(f)
Line Length‡.....	Up to 250 ft (76.2 m)
Dispense Points.....	4 or more
Annual Usage.....	20,000 lb or more (9,072 kg)

### Ordering Information

Fire-Ball 425 50:1 Pumps	
205394	120 lb (55 kg) Grease Pump - 50:1
205395	400 lb (180 kg) Grease Pump - 50:1

### Pump Performance



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

# Fire-Ball® 425, 75:1

## Air-Powered Grease Pumps and Packages

### Features and Benefits

- Priming piston pump in combination with the appropriate feeding technology provides positive pump feeding, even with viscous and/or tacky greases
- Non-corrosive air motor design for long life
- Double-acting pump ensures smooth fluid flow
- Robust grease inlet cage withstands the most abusive handling

### Typical Applications

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

### Typical Fluids Handled

- Grease up to NLGI #2

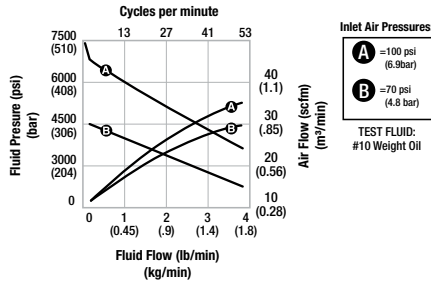
### Technical Specifications

Continuous-Duty Flow Rate.....	1.95 lb/min (0.88 kg/min)
Maximum Fluid Pressure.....	7500 psi (517 bar)
Air Motor Effective Diameter.....	4.25 in (10.8 cm)
Operating Range.....	40-100 psi (2.8-7 bar)
Approximate Air Use.....	.26 cfm @ 100 psi (7 bar)
Wetted Materials.....	CS, Leather
Air Inlet Port Size.....	1/2 in npt(f)
Material Inlet.....	Slotted
Material Outlet.....	3/8 in npt(f)
Line Length‡.....	Up to 500 ft (152.5 m)
Dispense Points.....	4 or more
Annual Usage.....	20,000 lb or more (9,072 kg)

### Ordering Information

Fire-Ball 425 75:1 Pumps	
239729	120 lb (55 kg) Grease Pump - 75:1
239730	400 lb (180 kg) Grease Pump - 75:1
239731	35/70 lb (16/32 kg) Grease Pump - 75:1

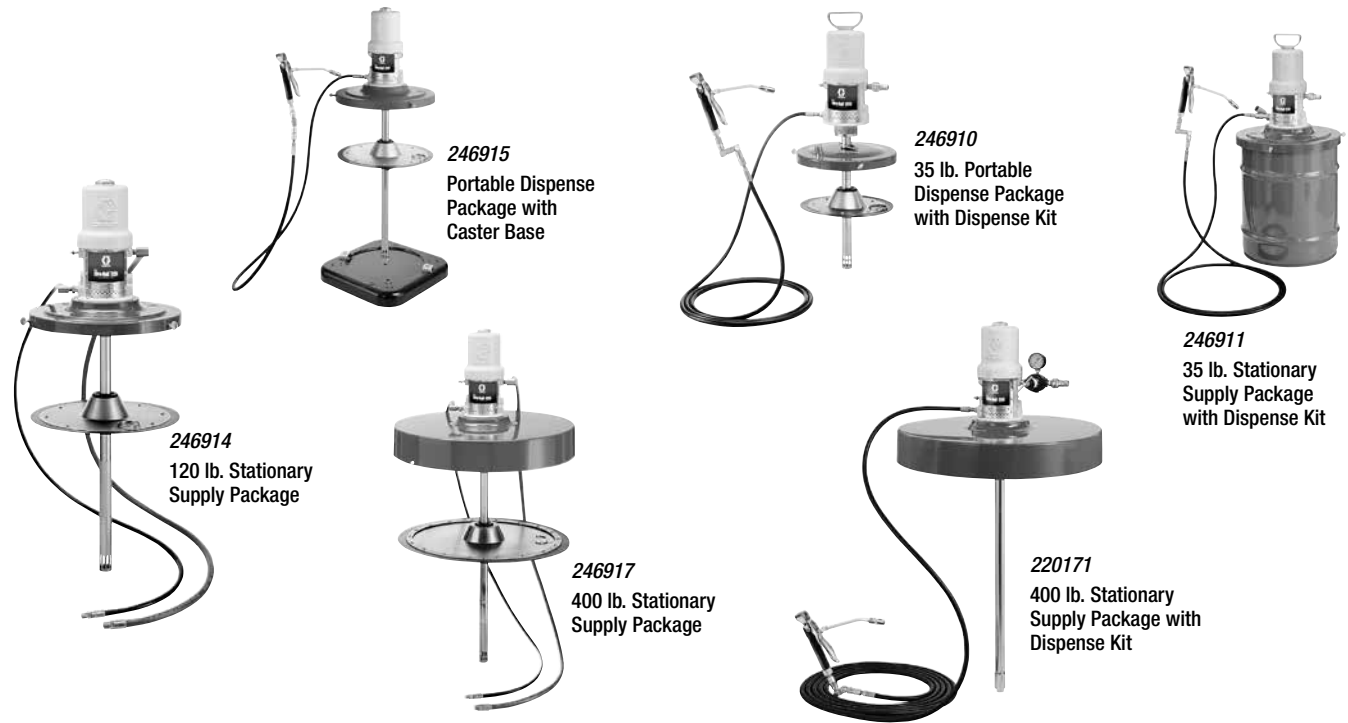
### Pump Performance



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

# Fire-Ball® Grease Pump Packages

## Air-Powered Grease Pumps and Packages



Air-Powered Grease Pumps and Packages

### Mini Fire-Ball® 225, 50:1 Grease Pumps and Packages

	Portable Pail Dispenser	Stationary Pail Dispenser	Cart-Mounted Pail Dispenser	Stationary Supply Package	Portable Package w/Caster Base	Portable Package w/2-Wheel Cart	Stationary Supply Package
Container Size	35 lb (16 kg) pail	35 lb (16 kg) pail or 70 lb (32 kg) bulk	35 lb (16 kg) pail or 70 lb (32 kg) bulk	120 lb (55 kg)	120 lb (55 kg)	120 lb (55 kg)	400 lb (180 kg)
Package No.	246910*	246911*	246913*	246914*	246915*	246916*	246917*
Pump	246909	246909	246909	246780	246780	246780	246781
Container	—	204134	204134	—	—	—	—
Follower Plate	24F901	**	**	24F902	24F902	24F902	24F903
Dispense Kit	236058***	236058***	236058***	—	236058***	236058***	—
Hose and Fitting Kit	—	—	—	222072†	—	—	222072†
Cover	222059	24R350	24R350	24R350	24R350	24R350	200326
Cart	—	—	203650	—	203622	203650	—
Manual	309967						

\*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.

\*\*\*Kit 236058 includes: 12 ft (3.6 m) fluid hose (109151), air coupler (208536), air nipple (169971), grease dispense valve (242056), and z-swivel (202577).

†Kit 222072 includes: 6 ft (1.8 m) air hose (203320) with swivel elbow (155494) and 6 ft (1.8 m) fluid hose (109150) with swivel elbow (155541).

### Fire-Ball® 300, 15:1 Grease Pumps and Packages

	Stationary Pail Dispenser	Stationary Drum Dispenser	Cover-Mounted Drum Dispenser
Container Size	35 lb (16 kg)	120 lb (55 kg)	400 lb (180 kg)
Package No.	222078	220170	220171
Pump	206405	206699	206700
Dispense Kit	222080†	222081§	222081§
Cover	222058	204574	200326
Manual	307882		

†Kit 222080 includes: 15 ft (4.6 m) fluid hose (109165), grease dispense valve (242056), z-swivel (202577), closed nipple (156849), quick-disconnect nipple (169971), quick-disconnect air coupler (110198), and air regulator (110234).

§Kit 222081 includes: 25 ft (7.6 m) fluid hose (109167), grease dispense valve (242056), z-swivel (202577), closed nipple (156849), quick-disconnect nipple (169971), quick-disconnect air coupler (110198), and air regulator (110234).

# Fire-Ball® Grease Pump Packages

## Air-Powered Grease Pumps and Packages

Air-Powered Grease Pumps and Packages

### Fire-Ball® 300, 50:1 35-70 lb (16-32 kg) Grease Pumps and Packages

	Portable Pail Dispenser	Stationary Pail Dispenser	Cart-Mounted Pail Dispenser	Cart-Mounted Pail Topper
Container Size	35 lb (16 kg)	35 lb or 70 lb (16 kg or 32 kg)	35 lb or 70 lb (16 kg or 32 kg)	35 lb (16 kg)
Package No.	222069*	225827*	225773*	226012*
Metered Package**	245694	—	245695	—
Pump No.	239877			
Dispense Kit	222070			
Fluid Hose	12 ft x 1/4 in (3.7 m x 6.4 mm)			
Follower Plate	24F901	†	†	—
Cover	222059	24R350		—
Holster	—	203976		
Container	—	204134	204134	—
Cart	—	—	203650	
Elevator	—	—	—	203664
Inductor Plate	—	—	—	204351
Instruction Manual	307878			

\*Use 3/8 in (9.5 mm) air regulator 109075; must be ordered separately \*\*Metered grease package includes 233807 Accu-Shot instead of 242056 Pro-Shot. †Order follower plate 220653 for 35 lb (16 kg) containers, and follower plate 220654 for 70 lb (32 kg) containers; must be ordered separately



### Fire-Ball® 300, 50:1 Packages For 120 lb (55 kg) Containers

	Portable with Caster Base	Portable with Two-Wheel Cart	Portable with Heavy-Duty Cart	Stationary Supply	Stationary Supply Topper-Inductor
Container Size lb (kg)	120 (55)	120 (55)	120 (55)	120 (55)	120 (55)
Package Number	225006 *	225026 *	222245 *	225014 *	222073 *
Metered Package	—	245696 **	—	—	—
Pump Only	239887	239887	239887	239887	239887
Dispense Kits	222070	222070	222383	222072	-
Fluid Hose	12 ft x 1/4 in (3.7 m x 6.4 mm)	—	25 ft x 1/4 in (7.6 m x 6.4 mm)	6 ft x 1/4 in (1.8 m x 6.4 mm)	6 ft x 1/4 in (1.8 m x 6.4 mm)
Air Hose	—	—	—	6 ft x 3/8 in (1.8 m x 9.5 mm)	6 ft x 3/8 in (1.8 m x 9.5 mm)
Follower Plate	24F902	24F902	24F902	24F902	—
Cover	24R350	24R350	222060	24R350	—
Holster	203976	203976	—	—	—
Caster Base	203622	—	—	—	—
Cart	—	203650	222243	—	—
Elevator	—	—	—	—	204121
Pump Support	—	—	—	—	222074†
Hold Down Kit	—	—	222061	—	—
Instruction Manual	307878	307878	307878	307880	306523

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

# Fire-Ball® Grease Pump Packages

## Air-Powered Grease Pumps and Packages

### Fire-Ball® 300, 50:1 Packages for 400 lb (180 kg) Containers

	Stationary	Topper-Inductor
Container Size lb (kg)	400 (180)	400 (180)
<b>Package Number</b>	<b>225016*</b>	<b>226013*</b>
Pump Only	239888	239888
Hose and Fitting Kit	222072	204467
Fluid Hose	6 ft (1.8 m) x 1/4 in (6.4 mm)	6 ft (1.8 m) x 1/4 in (6.4 mm)
Air Hose	6 ft (1.8 m) x 3/8 in (9.5 mm)	6 ft (1.8 m) x 3/8 in (9.5 mm)
Follower Plate	24F903	—
Cover	200326	—
Carriage	—	204461
Elevator	—	204385
Inductor Plate	—	204353
Base	—	205339
Instruction Manual	307880	306556

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



**225016**  
400 lb. Stationary  
Supply Package



**226013**  
400 lb. Stationary  
Supply with  
Topper-Inductor



**223108**  
Stationary Supply  
Package



**226018**  
400 lb. Stationary  
Supply with  
Topper-Inductor

### Fire-Ball® 425, 10:1 Packages

#### 10:1 Pump for Closed Head Drum for 400 lb (180 kg)

965129	Fire-Ball 425, 10:1 pump complete with bung adapter. For open head drum, remove bung adapter and mount to 200326, 400 lb (180 kg) drum cover. Ideal for transferring grease from 400 lb (180 kg) drum or side pocket of tote tank. Can be modified for stubby horizontal mount on tote tanks. For more information contact Lubrication Equipment Technical Assistance
--------	---

#### Fire-Ball 425, 10:1 Pump Only

965124	Fire-Ball 425, 10:1 pump only, Stubby Universal Mount
--------	---

### Fire-Ball® 425, 50:1; Bulldog® 3:1 Packages for 120-400 lb (56-180 kg) Containers

Description	Stationary Supply	Stationary Supply	Stationary Supply Topper-Inductor	Ram	Bulldog 3:1 (Sinker)
Container Size lb (kg)	120 (55)	400 (180)	400 (180)	400 (180)	400 (180)
<b>Package Number</b>	<b>223108*</b>	<b>225781*</b>	<b>226018*</b>	<b>244905</b>	<b>244848</b>
Pump Only	205394	205395	205395	205395	205148
Air Hose Kit	222076	222076	205102	222076	208610
Fluid Hose	6 ft x 3/8 in (1.8 m x 9.5 mm)				
Air Hose	6 ft x 1/2 in (1.8 m x 12.7 mm)				
Cover	204574	200326	—	—	—
Follower Plate	223344	223846	—	—	—
Carriage	—	—	204461	—	—
Elevator	—	—	204385	—	—
Inductor Plate	—	—	205699	—	222404
Base	—	—	205339	—	—
Ram	—	—	—	257435	—
Air Regulator	—	—	—	**	207651
Adapter Plate	—	—	—	162225	—
Adapter Kit	—	—	—	224266	—
Manual	307880	307880	306556	309345	309345

\* Use 1/2 in (12.7 mm) air regulator 104266 and gauge 100960; must be ordered separately For Fire-Ball 425, 50:1 Lube Truck Packages, see the Specialty Pump Section. \*\*Regulator included in Ram air control for 244905.

# Fire-Ball® Grease Pump Packages

## Air-Powered Grease Pumps and Packages

### Fire-Ball® 425, 75:1 Packages for 35-400 lb (16-180 kg) Containers

Description	Cover-Mount	Cover-Mount	Inductor	Ram	Pail Length	Bung or Cover
Container Size lb (kg)	120 (55)	400 (180)	400 (180)	400 (180)	35/70 lb (16/32 kg)	400 (180)
<b>Package Number</b>	<b>244635*</b>	<b>244636*</b>	<b>244637*</b>	<b>244906</b>	—	—
Pump Only	239729	239730	239730	239730	239731	239730
Hose and Fitting Kit	222076	222076	205102	222076		—
Drum Cover	204574	200326	—	—	204574	—
Follower Plate	223344	223846	—	—	**	—
Carriage	—	—	204461	—	—	—
Elevator	—	—	204385	—	—	—
Base	—	—	205339	—	—	—
Inductor	—	—	205699	—	—	—
Ram	—	—	—	—	—	—
Air Regulator	—	—	—	244844	—	—
Adapter Plate	—	—	—	162225	—	—
Adapter Kit	—	—	—	224266	—	—
Manual	307880	307880	306556	309345	—	—

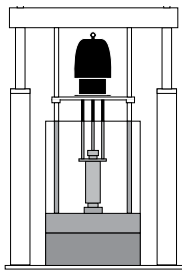
\* Use 1/2 in (12.7 mm) air regulator (104266) and gauge (100960); must be ordered separately \*\* 35 lb: 220653/ 70 lb: 223344 • For Lube Truck Packages, see the Specialty Pumps and Packages Solution Section

### RAM Assemblies

Description	Fire-Ball 300, 50:1	Fire-Ball 425, 75:1	Fire-Ball 425, 50:1	Fire-Ball 425, 10:1	Bull Dog, 3:1†
<b>System Package</b>	<b>*</b>	<b>244906</b>	<b>244905</b>	<b>*</b>	<b>244641</b>
Bare Pump	239888	239730	205395	965129	205148
Ram	257435	—	257435	—	—
Pump Mount Kit	247336	247337	247337	247337	—
Adapter Kit	224267	224266	224266	not needed	—
Air Regulator and Gauge	203716	244844	**	207468	207651
Ram Plate Seal Kit	247335	247335	247335	247335	224829
Air Hose 3/4 in x 6 ft	—	—	—	—	208610

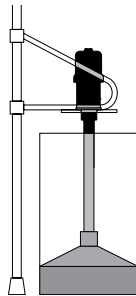
\*Order individual components. \*\*Regulator included in Ram air control for 244905. †Drum clamp when required 206537.

### Drum Systems



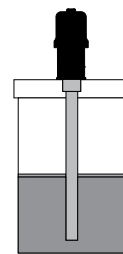
#### Ram-Mount

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



#### Inductor-Mount

- Reduce waste
- Clean and convenient method of drum change



#### Cover-Mount with Follower Plate

- Economical

# Fire-Ball® Grease Pump Accessories

## Air-Powered Grease Pumps and Packages

<b>Dispense, Hose and Fitting Kits</b>		
<b>Rated to 4,000-5,000 psi (345 bar) for Portable Fire-Ball 300, 50:1 or Mini Fire-Ball 225, 50:1 Pumps</b>		
222080	For Fire-Ball 300, 15:1. Includes: 15 ft (4.6 m) of 4,000 psi, 3/8 in (9.5 mm) fluid hose (109165), grease dispense valve (242056), z-swivel (202577), 3/8 in (9.5 mm) closed nipple (156849), quick-disconnect nipple (169971), quick-disconnect air coupler (110198) and 3/8 in (9.5 mm) air regulator (110234)	
222081	For Fire-Ball 300, 15:1. Includes: 25 ft (7.6 m) of 4,000 psi, 3/8 in (9.5 mm) fluid hose (109167), grease dispense valve (242056), z-swivel (202577), 3/8 in (9.5 mm) closed nipple (156849), quick-disconnect nipple (169971), quick-disconnect air coupler (110198) and 3/8 in (9.5 mm) air regulator (110234)	
236058	For Mini Fire-Ball 225, 50:1. Includes: 12 ft (3.6 m) fluid hose (109151), air coupler (208536), air nipple (169971), grease dispense valve (242056) and z-swivel (202577)	
222070	For Fire-Ball 300, 50:1. Includes: 12 ft (3.6 m) fluid hose (109151), air coupler (208536), air nipple (169971), grease dispense valve (242056) and z-swivel (202577). Instruction manual 307878	
222383	For Portable Units Powered by the Mini Fire-Ball 225, 50:1 or Fire-Ball 300, 50:1 pumps. Includes dispense kit: grease dispense valve (242056), 25 ft (7.6 m) fluid hose (109154), air coupler (208536), air nipple (169971) and z-swivel (202577). Instruction manual 307878	
<b>Hose and Fitting Kits</b>		
<b>Rated to 5000 psi (345 bar) for Stationary Drum-Mounted Fire-Ball 300, 50:1 Pumps</b>		
222072	Hose and Fittings Kit. Includes 6 ft (1.8 m) air hose (203320) with swivel elbow (155494) and 6 ft (1.8 m) fluid hose (109150) with swivel elbow (155541). Instruction manual 307880	
<b>Rated to 4000 psi (276 bar) for Stationary Drum-Mounted Fire-Ball 425, 50:1 Pumps</b>		
222076	Hose and Fittings Kit. Includes 6 ft (1.8 m) air hose (205418) with swivel elbow (155470) and 6 ft (1.8 m) fluid hose (109163) with swivel elbow (155494). Instruction manual 307880	
<b>Bung Adapters</b>		
239965	For Fire-Ball 425, 50:1 and 75:1 Pumps, 1.65 in ID	
239966	For Fire-Ball 300, 15:1 and 50:1 Pumps	
<b>Lincoln-to-Graco Adapter Kit</b>		
241246	For Fire-Ball 300, 50:1 when replacing a Series 20 Lincoln	
<b>Flange Mounting Accessories for Fire-Ball Pumps</b>		
948393	Flange adapter (male) Fire-Ball 300	
948392	Flange adapter (male) Fire-Ball 425	
512874	Coupler (female)	
<b>Follower Plates</b>		
24F901	LD	For 35 lb (16 kg) pails with LD 50:1; Mini Fire-Ball 225, 50:1; Fire-Ball 300, 15:1 and 50:1 pumps
24F902		For 70 and 120 lb (32/55 kg) drum with LD 50:1; Mini Fire-Ball 225, 50:1; Fire-Ball 300, 15:1 and 50:1 pumps
24F903		For 400 lb (180 kg) drum with LD 50:1; Mini Fire-Ball 225, 50:1; Fire-Ball 300, 15:1 and 50:1 pumps, 1.19 in ID
220653	SD	For 35 lb (16 kg) pails with Mini Fire-Ball 225, 50:1; Fire-Ball 300, 15:1 and 50:1 pumps
220654		For 70 and 120 lb (32/55 kg) drum, Mini Fire-Ball 225, 50:1; Fire-Ball 300, 15:1 and 50:1 pumps
223845		For 400 lb (180 kg) drum, Mini Fire-Ball 225, 50:1; Fire-Ball 300, 15:1 and 50:1 pumps, 1.19 in ID
204130		Follower plate same as 223845, but without flexible wiper
223344	D	For 120 lb (55 kg) drums with Fire-Ball 425, 50:1 and 75:1 pumps
223700		For 120 lb (55 kg) drums with Dyna-Star 5:1 pumps
223701		For 400 lb (180 kg) drums with Dyna-Star 5:1 and Fire-Ball 425, 10:1 pumps, 2.1 in ID
223846		For 400 lb (180 kg) drums with Fire-Ball 425, 50:1 and 75:1 pumps, 1-13/32 in ID
205337		Follower plate same as 223846, but without flexible wiper
<b>Drum Covers</b>		
200326	Cover for open-head 400 lb (180 kg) drums. Use with any Mini Fire-Ball 225, 50:1; Fire-Ball 300, 15:1 and 50:1; Fire-Ball 425, 10:1; or Dyna-Star 5:1 pump. Use adapter 160754 for bung mounted pumps	
204574	SD Cover for open-head 120 lb (55 kg) or 70 lb (32 kg) drums. Mounts Mini Fire-Ball 225, Fire-Ball grease pumps or Dyna-Star 5:1 pump. Use adapter 160754 for bung mounted pumps	
24R350	LD Cover for open-head 120 lb (55 kg) or 70 lb (32 kg) drums. Mounts Mini Fire-Ball 225, Fire-Ball grease pumps or Dyna-Star 5:1 pump. Use adapter 160754 for bung mounted pumps	
222059	Cover for 35 lb (16 kg) pails. Mounts Mini Fire-Ball 225, 50:1 and Fire-Ball 300, 50:1 pumps using friction-style clutch lock. Allows use of 70 lb (32 kg) length pump with 35 lb (16 kg) pail	
160754	Bung-adapter plate. Mounts to standard 400 lb (180 kg) or 120 lb (55 kg) drum cover and converts mounting to standard 2 npt bung opening. Allows use of bung-mounted pumps with drum covers	



24F901



204574



200326



222059



160754

# Fire-Ball® Grease Pump Accessories

## Air-Powered Grease Pumps and Packages

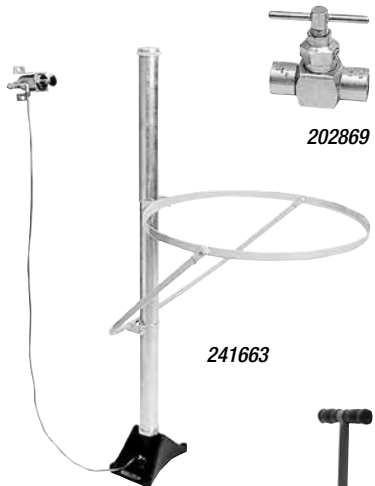
Portable Bases	
205054	Band Dolly for 35 lb (16 kg) pails
204144	Band Dolly Base for 70 lb (32 kg) or 120 lb (55 kg) drums
203622	Caster Base for 35 lb (16 kg), 70 lb (32 kg) or 120 lb (55 kg) drums
Carts	
203650	For 35 lb (16 kg), 70 lb (32 kg) and 120 lb (55 kg) drums. Drums fit onto recess on formed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



204144



203622



241663



202869



111470



203650



# NXT™ Check-Mate® Packages

## Air-Powered Grease Pumps and Packages

### Ordering Information

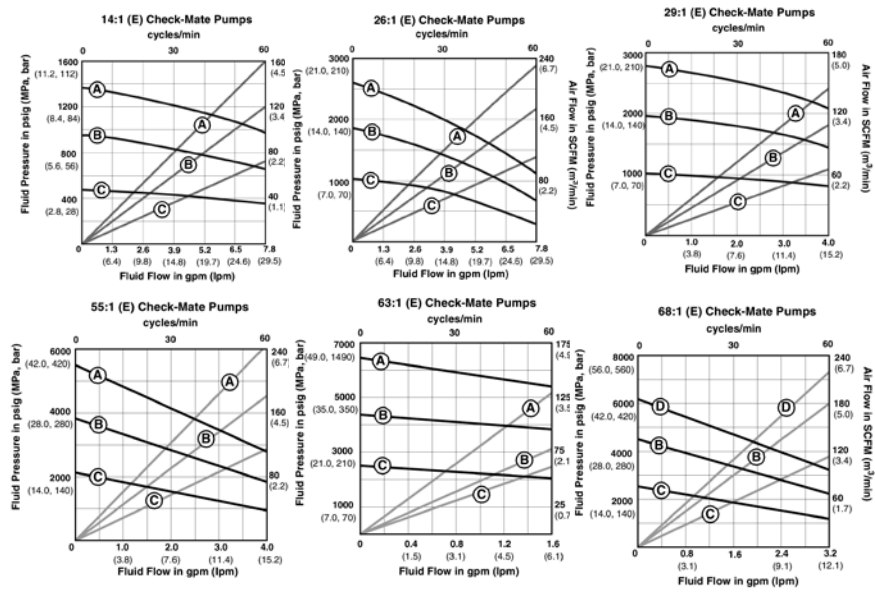
Package Number with DataTrak	247973	247976	247974	247977	247975	247978
Package Number without DataTrak	24E006	24E007	24E008	24E009	24E010	24E011
Ratio	14:1	26:1	29:1	55:1	63:1	68:1
Pump with DataTrak	P14MCS	P26MCS	P29MCS	P55MCS	P63MCS	P68MCS
Pump w/o DataTrak	P14DCS	P26DCS	P29DCS	P55DCS	P63DCS	P68DCS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

Note: Graco recommends 20 cpm or less for supply applications

### Performance Charts

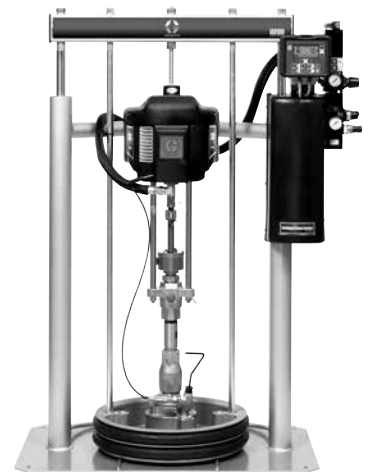
A = 100 psi (7 bar)      C = 40 psi (2.8 bar)  
 B = 70 psi (5.0 bar)      D = 90 psi (6.3 bar)

Test Fluid : #10 Weight Oil for all pumps



### Ordering Information

NXT Check-Mate RAM Packages			
Ratio	14:1	63:1	68:1
Package Number with DataTrak	247979	247980	247981
Package Number without DataTrak	24E780	24E781	24E782
Mounting	RAM System		
Operation Manual	312863		



Air-Powered Grease Pumps and Packages

# Fire-Ball® Lube Truck Oil and Grease Packages

## Air-Powered Specialty Pumps and Packages

### Oil Package Selection and Ordering Information

	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 300 Bung-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Bung-Mounted Package
Ratio	5:1			10:1	
Container Size	16 gal (60 l) Open-head	55 gal (200 l) Closed-head*		55 gal (200 l) Closed-head*	
Package Number	222086	206655	204264	206656	222067
Pump Only	203872	203857	204254	222065	222095
Hose/Fitting Kit	222063			222066	
Hose Length	6 ft (1.8 m)	6 ft (1.8 m)	6 ft (1.8 m)	6 ft (1.8 m)	6 ft (1.8 m)
Air Regulator	(1)	(1)	(1)	(2)	(2)
Hold-Down Kit	222061	207361			
Drum Cover	222060	207367	-	207367 <sup>(3)</sup>	-
Bung Adapter	-	-	204076 (2.140 in Dia.)	-	224579 (2.159 in Dia.)
Pump Clamp	-	-	204095	-	204095
Instruction Manual	307883				

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

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

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

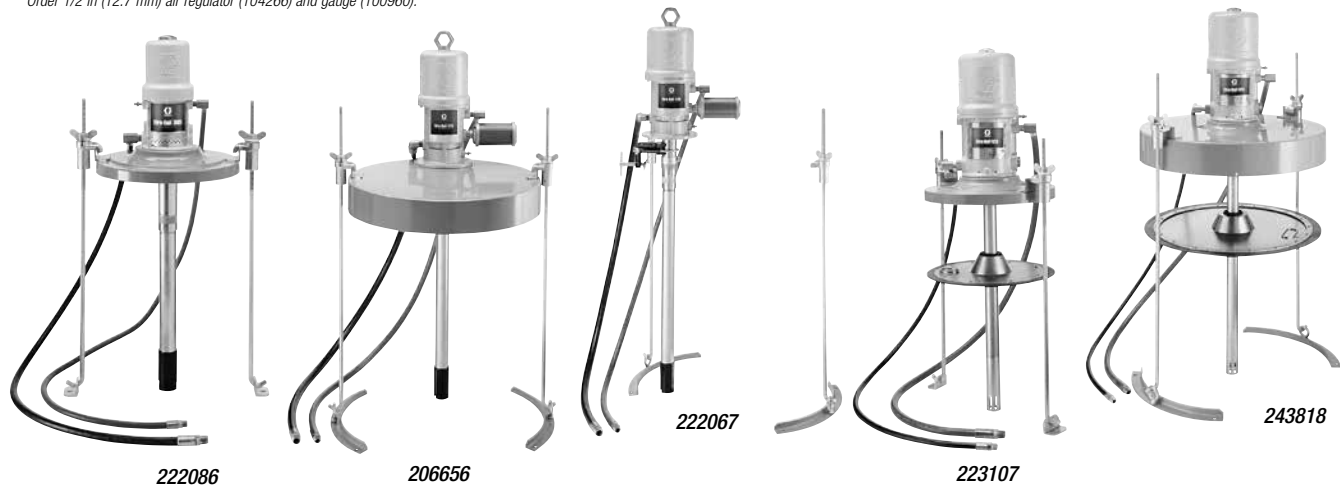
<sup>(3)</sup> Off set drum cover

### Grease Package Selection and Ordering Information

	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 300 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package	Fire-Ball 425 Cover-Mounted Package
Ratio	50:1				75:1	
Container Size	120 lb (55 kg) Open-head	400 lb (180kg) Open-head	120 lb (55 kg) Open-head	400 lb (180 kg) Open-head	120 lb (55 kg) Open-head	400 lb (180 kg) Open-head
Package Number	222085	222071	223107	222075	243817	243818
Pump Only	239887	239888	205394	205395	239729	239730
Hose/Fitting Kit	222072			222076		
Hose Length	6 ft (1.8 m)					
Air Regulator	*		**			*
Hold-Down Kit	222061	207361	222061	207361	222061	207361
Drum Cover	222060	207366	222060	207366	222060	207366
Follower Plate	220654	223845	223344	223846	223344	223846
Instruction Manual	307880					

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

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



# Fire-Ball® 300, 15:1 Undercoating/Rust-Proofing Packages

## Air-Powered Specialty Pumps and Packages

### Features and Benefits

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

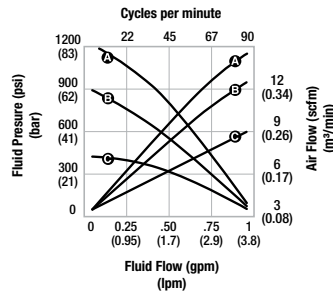
### Typical Applications

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

### Typical Fluids Handled

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

### Pump Performance



**Inlet Air Pressures:**

- A** =100 psi (6.9 bar)
- B** =70 psi (4.8 bar)
- C** =40 psi (2.8 bar)

**TEST FLUID:**  
No. 10 Weight Oil

### Technical Specifications

Maximum Fluid Pressure.....	2700 psi (186 bar)
Effective Air Motor Diameter .....	3 in (76.2 mm)
Operating Range.....	40-180 psi (2.8-12.5 bar)
Continuous-Duty Flow Rate.....	0.7 gpm (2.7 lpm)
Approx. Air Consumption @ 100 psi (7 bar).....	17 cfm
Air Inlet .....	3/8 npt(f)
Material Outlet.....	1/4 npt(f)
Material Inlet for Non-SST Pump .....	1 npt (straight inlet)
Material Inlet for 224825 (SST Pump) .....	1 npt (barbed inlet)
Wetted Parts for Non-SST Pump .....	CS, Aluminum, PTFE, Rubber
Wetted Parts for SST pump .....	SST, Aluminum, Leather, PTFE, Rubber
Instruction Manual for non-SST Pump .....	306531
Instruction Manual for SST Pump.....	308069

### Ordering Information

Style	Undercoating			Spray Masking
	Portable	Portable Dolly-Mounted	Stationary	Bung-Mounted Stationary
Container Size	35 lb (16 kg)	120 lb (54 kg)	400 lb (180 kg)	400 lb (180 kg)
<b>Package Number</b>	<b>222077</b>	<b>226342</b>	<b>226269</b>	<b>224826*</b>
Pump Only	206405	206699	206700	224825 (SST pump)
Dispense Kit	222079	222079	222082	224023
Tip	286517			286211 / 286621
Hose Length	15 ft (4.6 m)	15 ft (4.6 m)	25 ft (7.6 m)	25 ft (7.6 m)
Cover	222058	204574	200326	-
Caster Base	-	204144	-	-
Instruction Manual	307879 / 306531			308069

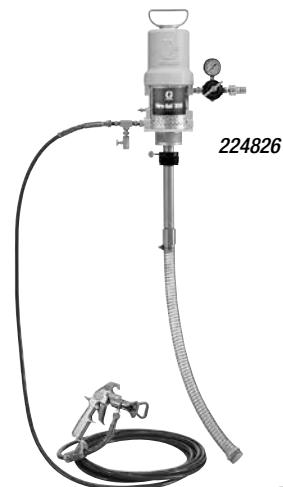
\* Package 224826 includes flexible short tube (224022) long enough for 400 lb (180 kg) container, but can be trimmed to accommodate smaller containers.

214570 | 60-mesh Aluminum filter (3/8 npt(f) inlet; 1/4 npt(f) outlet). Max. working pressure: 3000 psi (210 bar)

#### Replacement Screen Elements (SST) 3-pack/25-pack

224458/238436 30-mesh | 224459/238438 60-mesh | 224468/238440 100-mesh

202577	Z-Swivel allows non-binding movement for hard-to-reach spots. Order 155570 adapter separately to accommodate 234237 gun
206496	Nozzle Extension delivers 360° coating fan into blind areas. Length 30-3/4 in (99 cm) x 7/8-14(f) end. Tip 206502, size .043
234237	4 Finger Silver Gun with tip guard 243161 and tip 286517. 4,500 psi (310 bar) x 3/8 npt(f) inlet. Must order 155570 adapter and 239663 straight swivel to accommodate gun to 1/4" (mbe) hose
239966	Bung Adapter



# Bulldog® 43:1 Hydraulic Supply Pump

## Air-Powered Specialty Pumps and Packages

### Features and Benefits

- Compact, low-profile design makes installation easier
- Corrosion resistant – lightweight aluminum construction
- Reliable – tested to 10 million cycles without failure
- Added safety – grounded lug prevents static build-up

### Typical Applications

- Supplies hydraulic oil to accumulators in oil rig blow-out prevention systems

### Typical Fluids Handled

- Hydraulic oil

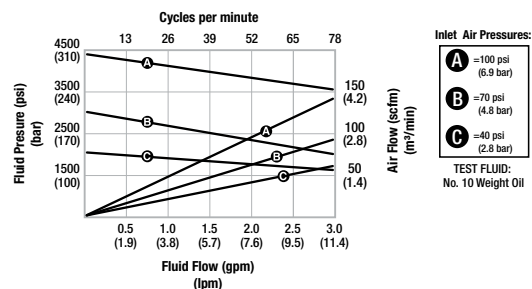
### Technical Specifications

Maximum Operating Pressure.....	4300 psi (301 bar)
Maximum Air Input Pressure.....	100 psi (7 bar)
Air Inlet .....	3/4 npsm(f)
Fluid Inlet .....	1 npt(f)
Fluid Outlet.....	3/4 npt(f)
Wetted Parts.....	CS, SST, Chrome Plating, Zinc Plating, Nickel Plating, Brass, Buna-N
Instruction Manual .....	307714



218334

### Pump Performance

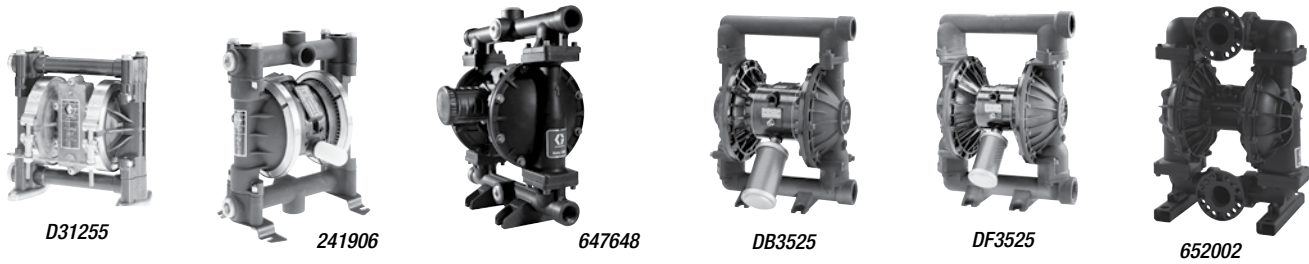


### Ordering Information

218334	43:1 Bulldog Hydraulic Supply Pump
<b>Air Pressure Regulators</b>	
206197	1/2 inch npt inlet and outlet
207755	3/4 inch npt inlet and outlet
<b>Air Line Filters</b>	
106149	1/2 inch npt inlet and outlet
106150	3/4 inch npt inlet and outlet
<b>Bleed-Type Master Air Valve</b>	
107142	1/2 inch npt inlet and outlet
<b>Grounding Clamp and Wire</b>	
103538	Grounding clamp
222011	Ground wire
<b>Air Line Lubricator</b>	
214848	1/2 inch npt inlet and outlet
214849	3/4 inch npt inlet and outlet

# Diaphragm Pumps and Accessories

## Air-Operated Double Diaphragm Transfer Pumps



### Ordering Information and Technical Specifications

Key	OT = Oil Transfer	OE = Oil Evacuation	WA = Water, Anti-Freeze	FD = Fuel Dispense (with 50 psi relief valve)	FT = Fuel Transfer	WWS = Windshield Wash Solution						
Body/Diaphragm Description	Part Number	Typical Application	Max. Air SCFM	Air Inlet NPT	Max. psi (bar)	Fluid Inlet/Outlet	Free Flow gpm (lpm)	Air Valve Replacement Kit	Kits (Seats, Balls, Diaphragms)	Diaphragm Kit	Manual	
307 3/8 in Diaphragm Pump Acetal/TPE	D31255	OT, WA, WWS	7 <sup>(1)</sup>	1/4	100 (7.0)	3/8	7 (31.8)	239952	D03255	D03005	308553	
515 1/2 in Diaphragm Pump Acetal/Buna Dual Inlet	243669	50/50 WWS, WA	28 <sup>(1)</sup>	1/4	100 (7.0)	3/4 / 1/2	15 (57)	241657	D05277	D05007	309204	
716 3/4 in Diaphragm Pump Aluminum/Buna N	241906	OT, OE, WA, WWS	28 <sup>(1)</sup>	1/4	100 (7.0)	3/4	16 (61)	241657	D05277	D05007	308573	
1 in Diaphragm Pumps 1050A Aluminum/TPE (UL)	647016	WA, FT <i>(leaded fuel only)</i>	64 <sup>(1)</sup>	1/2	100 (7.0)	1	50 (189)	24B766	Seats-24B634 and Balls-24B639	24B624	313597	
1050A Aluminum/TPE (UL)	647648	FD	25 <sup>(4)</sup>	1/2	50 (3.4)	1	38 (144)				313597	
1050A Aluminum/Buna N (UL)	647731	OT, OE, WA	64 <sup>(1)</sup>	1/2	100 (7.0)	1	50 (189)				Seats-24B632 Balls-24B639	313597
1590 1-1/2 in Diaphragm Pump Aluminum/TPE	DB3525	OT, OE, WA	125 <sup>(3)</sup>	1/2	120 (8.3)	1 1/2	100 (378.5)	236273	D0B525	D0B005	308441	
2150 2 in Diaphragm Pump Aluminum/TPE	DF3525	OT, OE, WA	175 <sup>(3)</sup>	1/2	120 (8.3)	2	150 (567)	236273	D0F525	D0F005	308368	
3300 3 in Diaphragm Pump Aluminum/TPE	652002	OT, OE, WA	335 <sup>(2)</sup>	3/4	125 (8.6)	3	300 (1,135)	24K855	Seats-24K932 Balls-24K937	24K901	3A0410	

NOTE: All pumps are 1:1 ratio <sup>(1)</sup>Max air use at 100 psi (7.0 bar) <sup>(2)</sup>Max air use at 125 psi (8.6 bar) <sup>(3)</sup>Max air use at 120 psi (7.0 bar) <sup>(4)</sup>Max air use at 50 psi (3.5 bar)

### Mounting Accessories

Pump	307	515/716	1050	1590	2150	3275
Air Line Filter	110146		106148	106149	106150	106150
Air Regulator and Gauge	110147	110147	244844	202858	206199	207651
Air Quick-Connect Coupler	208536, 1/4 npt(f)		110199, 1/2 npt(f)			N/A
Air Quick-Connect Nipple	169970, 1/4 npt(m)		110196, 1/2 npt(f)			N/A
Bleed Type Air Valve	110223		110224	110225		110226
Wall Bracket	224835		24C637	N/A	N/A	N/A
Thermal Relief Kit	238899	238428		N/A	N/A	N/A
Thermal Relief Valves 150 psi (10.3 bar)	113497 al/bn, 112119 ss/ft		113497 al/bn, 112119 ss/ft			
Grounding Wire and Clamp	222011					
Suction Hose Kit	236054			N/A	N/A	N/A
Flange Adapter Kit	N/A	N/A	N/A	N/A	N/A	N/A
Dual Inlet Manifold	N/A	243669*	24D205	N/A	N/A	N/A
Instruction Manual	308553	308573 and 308981	308326 and 308479	308441	308368	308639

\*Includes the dual inlet manifold.

# Windshield Wash and Coolant Dispense

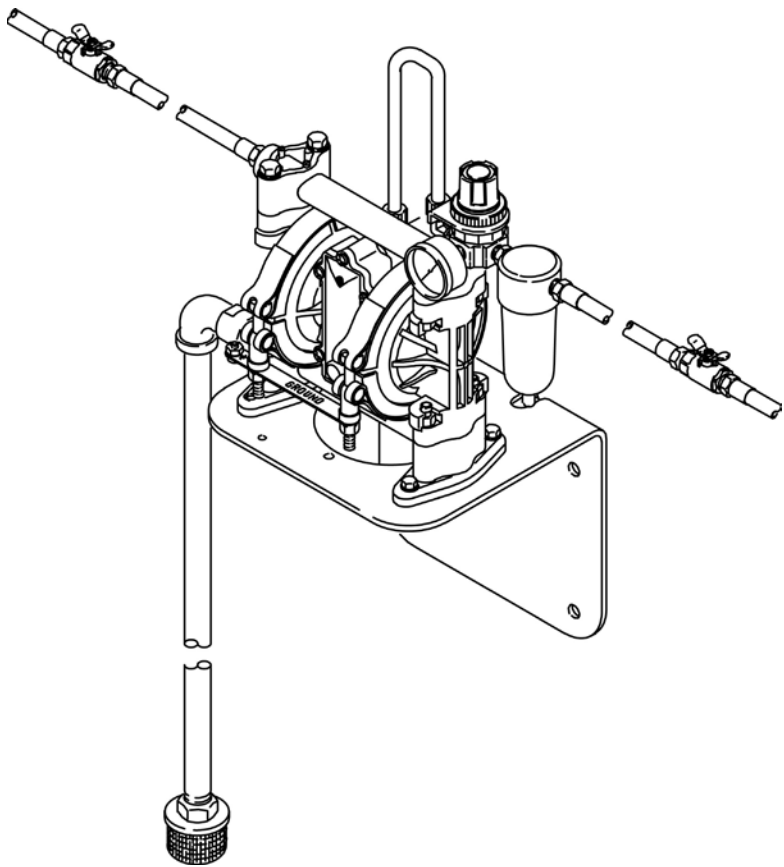
## Diaphragm Pump Specialty Packages

### Packages for Pre-Mixed Windshield Wash Solvent and Coolant Dispense

#### 307 Air-Operated Double-Diaphragm Pump

237161	Complete package includes the following: 307 Diaphragm Pump (D31255), 6 ft (1.8 m) air hose (109125), 4 ft (1.2 m) coupled nitrile fluid hose (220596), air filter (110146), air gauge (108190), air line fitting (111511), 1/4 npt air regulator (110318), elbow (100611), 15 in (381 mm) 3/8 in ID tube, (187479), mounting bracket (190125), adapter (156022), 1/4-18 npt nipple (156971), suction hose kit (223888), 6 ft (1.8 m) coupled PVC hose and 304 SST 16 mesh strainer, wall bracket (224835)
237160	Includes all items listed above except diaphragm pump and wall bracket

Diaphragm Pumps and Accessories



### Bulk Anti-Freeze and Windshield Solvent Transfer Packages

Description	1050 AODD	1050 AODD	515 AODD	716 AODD
	Dual Inlet	Single Inlet	Dual Inlet	Single Inlet
<b>Package Number</b>	<b>244679</b>	<b>244680</b>	<b>244681</b>	<b>244682</b>
Pump	647731	647731	243669	241906
Air Regulator	109075	109075	110147	110147
Fluid Connect Hose	115042	115042	109105	109105
Air Connect Hose	205418	205418	109125	109125
Air Shut-off Valve	110224	110224	110223	110223
Wall Mount Bracket	24C637	24C637	224835	224835
Dual Inlet Manifold	24D147	-	-	-
Suction Kit	2-236054	236054	2-236054	236054
Thermal Relief Kit	238428	238428	113497	113497
Instruction Manual	309353	309353	309353	309353

# Fast-Flo® 1:1

## Transfer Pumps and Accessories

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

- Water
- Anti-freeze
- Windshield wash fluid
- Used oil
- Used anti-freeze

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

### Technical Specifications

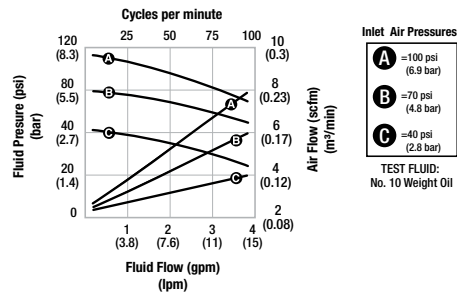
Flow Rate gpm (lpm) .....	5 (19)
Maximum Fluid Pressure psi (bar) .....	180 (12.4)
Operating Range <sup>(1)</sup> psi (bar) .....	40-180 (2.8-12)
Wetted Materials .....	See Ordering Info
Air Inlet Size .....	1/4 npt(f)
Material Inlet <sup>(2)</sup> .....	1-1/2 npt(f)
Material Outlet .....	3/4 npt(f)
Line Length ‡ .....	Up to 100 ft (30 m)
Dispense Points .....	1
Annual Usage .....	Up to 5000 gal (18921 l)

<sup>(1)</sup> Max Operating Air Pressure for 226951 is 60 psi (4.2 bar)

<sup>(2)</sup> For universal pumps

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

### Pump Performance



Transfer Pumps and Accessories

# Fast-Flo® 1:1

## Transfer Pumps and Accessories

### Ordering Information

Universal-Length Pumps (includes motor and pump-lower assembly)									
Part Number	226948	226952	237130	237131	237132	226943 *	226944**	226945**	
Material	CS	SST	CS	CS	SST	CS	CS	SST	
Std. Seal Repair Kits	218112	218112	213012	213013	213013	213012	215964	215964	
Material	Rubber	Rubber	Leather	PTFE	PTFE	Leather	Polyethylene	Polyethylene	
Typical Fluids	Motor Oil							Anti-Freeze, Windshield Wash	

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

Drum-Length Pumps (includes motor and pump-lower assembly)										
Part Number	226947	226951 †	226953	237133	237134	237129	226940	226941	226942	
Wetted Parts	CS	CS	SST	CS	CS	SST	CS	CS	SST	
Std. Seal Repair Kits	218112			213012	213013		213012	215964		
Material	Rubber			Leather	PTFE		Leather, PTFE, Leather	Polyethylene, UHMWPE		
Typical Fluids	Motor Oil								A/W	

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

\* UL-listed

\*\* UL-listed and CE-marked

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

### Accessories

Motor Service Kits for all Fast-Flo 1:1 Pumps	
220168	Motor Service Kits for all Fast-Flo 1:1 Air Valve Piston Assembly (used with repair kit 214584, which must be ordered separately)
Hose and Fittings Kits	
222118	18 in (0.5 m) for connecting wall-mounted Fast-Flo 1:1 pumps to piping. Includes: air hose (109123) with swivel elbow (155541), fluid hose (109108) with swivel elbow (160327)
222119	6 ft (1.8 m) for use with drum-mounted Fast-Flo 1:1 pumps. Includes: air hose (109125) with swivel elbow (155541), fluid hose (109105) with swivel elbow (160327)
Bung Adapters	
214583	Allows direct mounting of full-length Fast-Flo 1:1 pumps into standard 2 npt drum bung
217359	Sealed bung adapter for Fast-Flo pumps; can be used with suction kit 236054
Installation Kits	
218316	Includes shut-off valve, regulators, gauges and fittings as necessary for normal installation



# APEX™ and APEX On-Demand Transfer Pumps and Accessories

## APEX Transfer Pumps

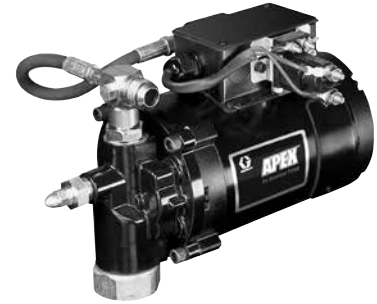
- Available with 12 VDC, 115 VAC and 230 VAC electric motors
- Self-priming, positive displacement design
- Pumps petroleum- and synthetic-based lubricants up to 8 gpm (30 lpm)
- Built-in bypass valve
- Transfer used oil with inlet suction screen (260306)
- TENV electric motor for demanding environments,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



APEX 115 VAC oil transfer system

## APEX On-Demand Dispensing Pumps

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



APEX On-Demand  
12 volt DC dispensing pump

## Typical Applications

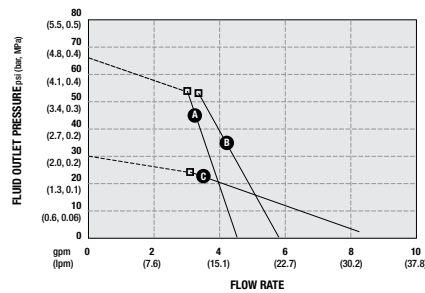
- Filling bulk tanks from drums
- Agricultural equipment
- Lubricant transfer from remote locations
- Filling in-plant machinery
- Construction equipment
- Evacuating used oil receivers
- Automotive and truck service garages
- Fleet marine and personal boat service

## Typical Fluids Handled

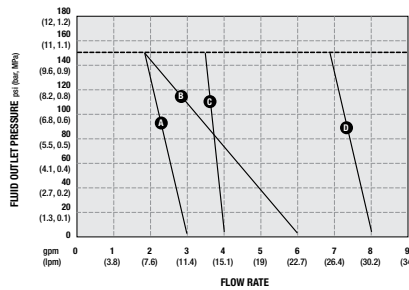
- Synthetic oil
- Petroleum oil\*
- Used oil\*
- Anti-freeze
- Hydraulic fluids
- Cutting oils
- Liquid soap
- Non-flammable oil based solvents
- Oil-based herbicide carriers

\*Not for food grade use

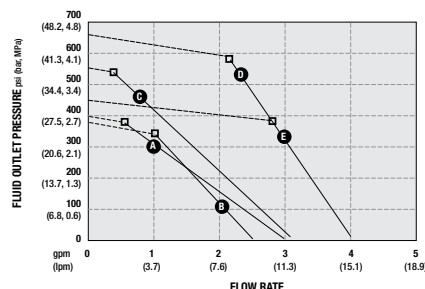
### Pump Performance



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



PART NUMBERS	LEGEND
A = 260105, 260106	Relief valve setting at 150 psi (10.3 bar, 1.0 MPa)
B = 260108	
C = 260240	
D = 260109	



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

# APEX™ and APEX On-Demand Transfer Pumps and Accessories

## APEX Transfer System

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

Note: All oil transfer systems come with 3/4 in x 8 ft hose, 1 in x 34 in suction tube and 3/4 in outlet dispense valve  
\*Designed for fluid viscosities of 1000 centistokes or less. If fluid viscosity is greater than 1000 centistokes use part 260101.



APEX 115 VAC oil transfer system

## APEX Transfer Pumps

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

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

## APEX On-Demand Pumps

Part Number	260110	260111	260113	260114	260112
Voltage	115 VAC				12 VDC
Hertz	60 Hz				N/A
Horsepower	0.75	1.00	1.50	2.00	0.75
Maximum Current	10 amps	13 amps	18 amps	21 amps	75 amps
Maximum Flow Rate	2.3 gpm (9 lpm)	3 gpm (11 lpm)	4.0 gpm (15 lpm)		3 gpm (11 lpm)
Maximum Pressure	370 psi (25 bar)	550 psi (38 bar)	470 psi (32 bar)	650 psi (45 bar)	400 psi (28 bar)
Inlet Port	3/4 npt				
Outlet Port	1/2 in NPT				
Weight	27 lb (12 kg)	32 lb (15 kg)	41 lb (19 kg)	52 lb (24 kg)	27 lb (12 kg)
Instruction Manual	311307				

Note: All on-demand pumps come with bung adapter

## Accessories

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



APEX On-Demand  
12 volt DC dispensing pump

# GTP10 and GTP12

## Transfer Pumps and Accessories

### Features and Benefits

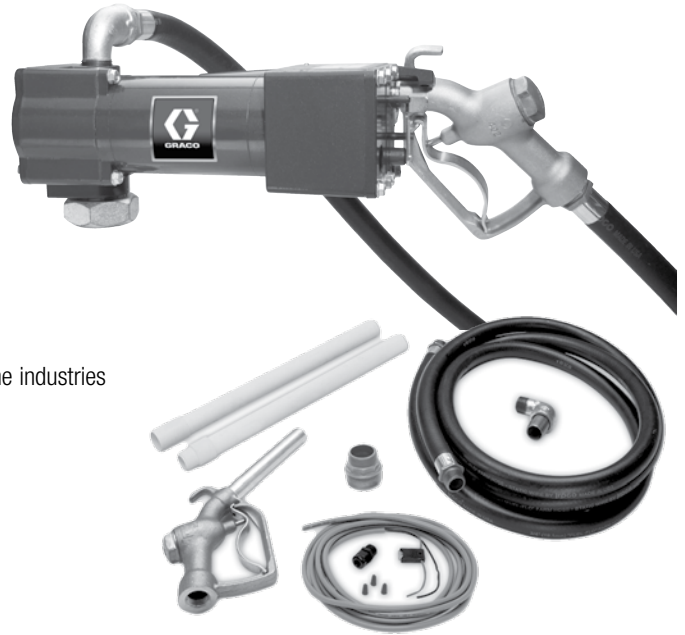
- Heavy-duty, die-cast aluminum
- CSA listed motor
- Built-in relief valve and filter strainer
- Easy-to-lock security
- High quality, UV resistant automotive finish
- Rain proof for extreme weather conditions
- Two year warranty

### Typical Applications

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

### Typical Fluids Handled

- Gasoline
- Diesel fuel
- Kerosene
- Bio-fuels



### Ordering Information

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

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

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

### Accessories

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



260083

# Diesel Exhaust Fluid (DEF) Dispense Systems

## Pumps and Packages

### Features and Benefits

Electric, pneumatic, or manual products are engineered specifically for the advanced needs of DEF fluid and are designed to minimize downtime and dispense materials quickly without compromising chemical integrity.


Choose from configured packages or build a custom DEF system specific for your application with individual pumps and components – from the economical Graco LD Blue hand pump to the high-performance Graco LD Blue electric or Graco SD Blue Air-Operated Double Diaphragm (AODD) packages.

### Typical Applications

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

### Typical Fluids Handled

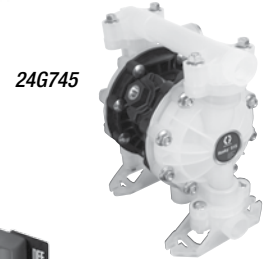
- Diesel exhaust fluid

Graco LD Blue Electric Pump Technical Specifications	120V c  us Approved	12V
Maximum Flow Rate	9 gpm	9.5 gpm
Maximum Fluid Pressure	50 psi	50 psi
RPM	1750	2600
Watts	500	260
Voltage	120V / 60hz	12V
Maximum Amperage	4.5A	22A
Duty Cycle	20 min ON/OFF	20 min ON/OFF

Graco SD Blue Pneumatic Pump Technical Specifications	Husky 515 AODD
Maximum Flow Rate	15 gpm
Maximum Fluid Pressure	50 psi
Air Operating Range	30-50 psi
Air Inlet	1/4" NPT(f)
Pump Inlet	1/2" BSPP(f) and 3/4" BSPP(f)
Hose Inlet	3/4" BSPP(f)
Pump Outlet	1/2" BSPP(f) and 3/4" BSPP(f)
Maximum Air Consumption	28 scfm



127642



24G745



24G636



24V686



24V641

# Diesel Exhaust Fluid (DEF) Dispense Systems Pumps and Packages

## LD Blue – Electric DEF Tote Packages

24V641	120V LD Blue Tote Package, LD Auto Nozzle, LD Meter
24V644	120V LD Blue Tote Package, LD Manual Nozzle
24V645	120V LD Blue Tote Package, LD Auto Nozzle
24V646	12V LD Blue Tote Package, LD Auto Nozzle, LD Meter

## LD Blue – Electric DEF Drum Packages

24V656	120V LD Blue Drum Package, LD Auto Nozzle
--------	---

## LD Blue – Electric Pumps Only

127642	120V AC Electric pump, 3/4" barbed hose tail
127643	12V DC Electric pump, 3/4" barbed hose tail
127646	Handle for 12V DC pump, Black

## SD Blue – AODD DEF Tote Packages

24V677	SD Blue Standard Tote Package, LD Auto Nozzle, LD Meter
24V678	SD Blue Standard Tote Package, LD Auto Nozzle
24F531	SD Blue Deluxe Tote Package, SD Auto Nozzle, SD Meter Kit, Coupler Kit
24F878	SD Blue Deluxe Tote Package, SD Auto Nozzle, Coupler Kit

## SD Blue – AODD DEF Drum Packages

24V679	SD Blue Standard Drum Package, LD Manual Nozzle
24V686	SD Blue Standard Drum Package, LD Auto Nozzle, LD Meter
24F947	SD Blue Deluxe Drum Package, LD Manual Nozzle, Coupler Kit
24M499	SD Blue Deluxe Drum Package, SD Auto Nozzle, SD Meter Kit, Coupler Kit

## SD Blue – AODD Pumps Only

24G745	Husky 515 Air Operated Diaphragm pump, 3/4" BSPP(f)
--------	---

## LD Hand Pumps

127647	DEF hand pump, drum length down tube
24G636	DEF hand pump with 6' dispense hose, ball valve, drum length down tube
127875	DEF hand pump with 6' dispense hose, drum length down tube, manual LD nozzle (125078)
125479	Drum length adjustable down tube for hand pump
125478	6' Dispense hose for DEF hand pump

## LD Blue Nozzles

127649	LD Automatic nozzle with stainless steel breakaway tip, 3/4" hose barb
127650	LD Automatic nozzle with built-in electronic turbine meter, with stainless steel breakaway tip, 3/4" hose barb
125078	LD Manual DEF nozzle with SST tip, 3/4" hose barb
127651	Nozzle replacement kit for LD nozzles 127649 and 127650
127652	Mis-filling nozzle kit for LD Automatic nozzles
127654	Magnetic Adaptor for Mis-fill kit



24V656



24V677



127649



127650

# Diesel Exhaust Fluid (DEF) Dispense Systems

## Pumps and Packages

Diesel Exhaust Fluid (DEF)

SD Blue Nozzles	
124398	SD Automatic shut off SST nozzle without swivel, 3/4" BSPP(f)
24F529	SD Automatic shut off SST nozzle with swivel, 3/4" BSPP(f)
127655	SD Automatic shut off SST nozzle, 3/4" hose barb
Meters	
127663	LD Blue digital in-line turbine meter. LCD display
24G738	SDI15 DEF meter, 1/2" BSPP(f/f), 1500psi, .01 to 14gpm
24H293	SDI15 meter kit with fittings for SST auto nozzle
XD 30 DEF Hose Reels	
HSDD5A	XD 30 DEF hose reel, 3/4" x 50', white
HSDD5B	XD 30 DEF hose reel, 3/4" x 50', blue
HSDD5F	XD 30 DEF hose reel, 3/4" x 50', yellow
HSDDDA	XD 30 DEF hose reel, bare, white
HSDDDB	XD 30 DEF hose reel, bare, blue
HSDDDF	XD 30 DEF hose reel, bare, yellow
Hose Reel Inlet Kits	
24W250	2' DEF inlet hose kit for XD 30 reels. 3/4" BSPP(f) x cut end. Includes 90 degree elbow
24W251	6' DEF inlet hose kit for XD 30 reels. 3/4" BSPP(f) x cut end. Includes 90 degree elbow
124875	2' DEF inlet hose, 3/4" BSPP(m) x cut end (inlet hose)
124581	6' DEF inlet hose, 3/4" BSPP(m) x cut end (inlet hose)
Dispense and Suction Hoses	
24W148	2' DEF suction hose kit with (2) hose clamps
24W149	5' DEF suction hose kit with (2) hose clamps
24W190	6' DEF dispense hose kit with (2) hose clamps
24W154	12' DEF dispense hose kit with (2) hose clamps
24W161	20' DEF dispense hose kit with (2) hose clamps
124875	2' DEF hose, 3/4" BSPP(m) x cut end (inlet hose)
124581	6' DEF hose, 3/4" BSPP(m) x cut end (inlet hose)
125079	12' DEF hose, 3/4" BSPP x cut end
124671	12' DEF hose, 3/4" BSPP x 3/4" BSPP
124603	20' DEF hose, 3/4" BSPP x 3/4" BSPP
125074	20' DEF hose, 3/4" BSPP x cut end
125242	50' DEF hose, 3/4" BSPP x 3/4" BSPP



24F529



127663



HSDD5B



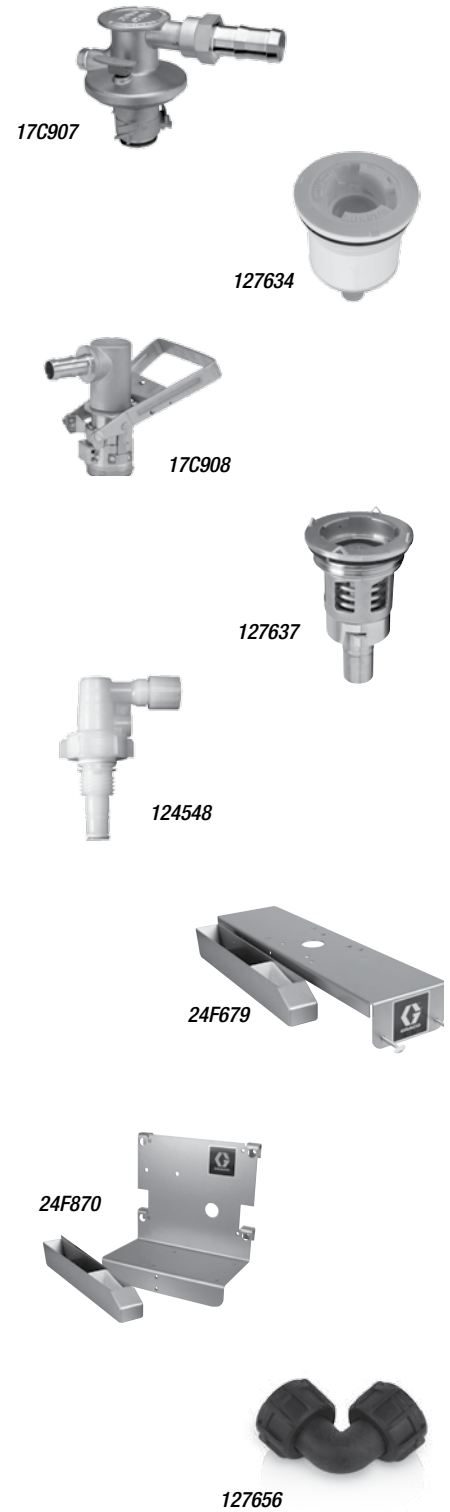
24W149



# Diesel Exhaust Fluid (DEF) Dispense Systems

## Pumps and Packages

Suction Line Components	
17C907	Micro Matic EPV dispense coupler, 3A orange, 3/4" barbed outlet, EPDM seals
127634	Micro Matic EPV container valve, 3A orange, 2.5" x 5 buttress, EPDM Seals
127793	Micro Matic EPV down tube for 55 gal drum
127794	Micro Matic EPV center down tube for 275 gal IBC tote
127635	Micro Matic EPV center down tube for 330 gal IBC tote
17C908	Micro Matic RSV dispense coupler, 3/4" barbed outlet, 4 pin, stainless steel
127637	Micro Matic RSV container valve, 2.5" x 5, 4 cam, stainless steel valve, EPDM seals
127795	Micro Matic RSV down tube for 55 gal drum
127796	Micro Matic RSV center down tube for 275 gal IBC tote
127639	Micro Matic RSV center down tube for 330 gal IBC tote
127640	Micro Matic RSV fill coupler, 1" NPT(m) inlet x 1/4" NPT(f) outlet, 4 pin, stainless steel
24W142	Micro Matic EPV package: coupler (17C907), container valve (127634), 55 gal down tube (127793)
24W141	Micro Matic EPV package: coupler (17C907), container valve (127634), 275 gal down tube (127794)
24W140	Micro Matic EPV package: coupler (17C907), container valve (127634), 330 gal down tube (127635)
24W145	Micro Matic RSV package: coupler (17C908), container valve (127637), 55 gal down tube (127795)
24W144	Micro Matic RSV package: coupler (17C908), container valve (127637), 275 gal down tube (127796)
24W143	Micro Matic RSV package: coupler (17C908), container valve (127637), 330 gal down tube (127639)
24F532	Colder Coupler kit: drum coupler (124548), drum insert (124549), and down tube (124550)
124548	Colder closed system drum coupler
124549	Colder closed system drum insert
125014	Colder closed system drum insert with buttress thread
124550	Colder closed system 47" down tube
Accessories	
24F870	AODD SD tote/wall mounting bracket with nozzle holder
24F679	AODD SD drum mounting bracket with nozzle holder
124541	Nozzle bath holder for AODD brackets
110147	Air Regulator for AODD pump (24G745), 1/4" npt(fbe) with gauge
124963	50 psi air safety valve for AODD pumps
Fittings	
127656	1" BSP(f) Elbow fitting, black
127657	1" BSP(f) x 3/4" Barb hose tail, black
127720	1" BSP(f) x 1" BSP(f) Linear socket, black
127804	3/4" x 1" BSPP(f) swivel fitting with seals, black
127805	1" BSPP(f) x 1" BSPP(f) coupler
127806	1" BSPP(m/f) swivel, white
127815	3/4" BSP x 3/4" barb SST swivel hose tail
127823	1" BSP x 3/4" barb elbow, white
24F524	3/4" BSPP(m) x 3/4" BSPP(f) SST swivel
127884	Adapter for connecting the LD manual nozzle to the LD meter
127800	Adapter for connecting the SD Automatic nozzle to the LD meter



Diesel Exhaust Fluid (DEF)

# Dyna-Star® and Power-Star™ Pumps

## Hydraulic-Powered Pumps and Packages

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear, and ATF)
- Grease up to NLGI #2

### Ordering Information for Oil Packages

Oil Applications	Power-Star, 1:1	Dyna-Star®, 1:1	Dyna-Star, 1:1	Dyna-Star, 1/4:1	Stainless Steel Dyna-Star, 1:1
Drum Size	Universal	Universal	55 gal (200 l) Bung- or Cover-Mounted	Universal	Universal
Pump Number	236754	224741	224742	236753	237653
Max. Input Pressure	1500 psi (102 bar)	1500 psi (102 bar)	1500 psi (102 bar)	1500 psi (102 bar)	1000 psi (70 bar)
Max. Fluid Input Volume	12 gpm (45.4 lpm)	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)
Max. Output Flow Rate	12 gpm (45.4 lpm)	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)	10 gpm (37.9 lpm)	3 gpm (11.4 lpm)
Maximum CPM	60	60	60	60	60
Max. Fluid Output Pressure	1500 psi (102 bar)	1500 psi (102 bar)	1500 psi (102 bar)	375 psi (25.1 bar)	1500 psi (102 bar)
Hydraulic Supply Inlet	3/4 npt	3/8 npt	3/8 npt	3/8 npt	3/8 npt(f)
Hydraulic Return Outlet	1-1/4 npt	3/4 npt	3/4 npt	3/4 npt	3/4 npt(f)
Fluid Outlet	1/2 npt	1/2 npt	1/2 npt	1/2 npt	1/2 npt(f)
Fluid Inlet	1-1/2 npt	1-1/2 npt	1-1/2 npt	1-1/2 npt	3/4 npt
Max. Incoming Fluid Temp.	130° F (54° C)	130° F (54° C)	130° F (54° C)	130° F (54° C)	130° F (54° C)
Instruction Manual	308391	308155	308155	308390	308155
Applications	Bulk oil transfer	Oil dispensing	Oil dispensing	Bulk oil transfer	Anti-freeze dispensing





# Dyna-Star® and Viscount® II Pumps

## Hydraulic-Powered Pumps and Packages

### Ordering Information for Grease Packages

Grease Applications	Dyna-Star, 5:1	Dyna-Star, 10:1	Viscount II, 2.4:1
Part No. – Drum Size	224912 – 35 lb (16 kg) 224751 – 120 lb (55 kg) 224752 – 400 lb (180 kg)	247540 – 60 lb (27 kg) 247443 – 120 lb (55 kg) 247450 – 400 lb (180 kg)	222902 – 400 lb (180 kg)
Max. Input Pressure	1500 psi (102 bar)	600 psi (41 bar)	1500 psi (102 bar)
Max. Hydraulic Fluid Input Vol.	3 gpm (11.4 lpm)	3 gpm (11.4 lpm)	12 gpm (45.4 lpm)
Max Grease Flow Output Rate	4 lb/min (1.8 kg)	1.1 lb/min (0.5 kg)	54 lb/min (20.4 kg)
Maximum CPM	60	60	60
Max. Fluid Output Pressure	7,500 psi (517 bar)	7,500 psi (517 bar)	2,300 psi (159 bar)
Hydraulic Supply Inlet	3/8 npt	3/4-16 in. JIC (37° Flare)	3/4 npt
Hydraulic Return Outlet	3/4 npt	3/4 npt	1 npt
Fluid Outlet	1/2 npt	1/2 npt	1-1/2 npt
Maximum Incoming Hydraulic Fluid Temp.	130° F (54° C)	200° F (93° C)	130° F (54° C)
Instruction Manual	308156	312350	308149

### Hydraulic Fluid Controls (Required for each pump)

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

### Accessories

#### Followers Plates

224916	Follower plate for 35 lb (16 kg)
223700	Follower plate for 120 lb (55 kg)
223701	Follower plate for 400 lb (180 kg)

#### Covers

224915	Cover for 35 lb (16 kg)
204574	Cover for 120 lb (55 kg)
200326	Cover for 400 lb (180 kg)

#### Tie-Down Covers

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)

\*Use with hold-down kit 222061 \*\*Use with hold-down kit 207361



222902



236754



224741



247540

# Oil and Grease Dispensing Packages

## Manually-Operated Pumps

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

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

Description	Portable Metered ATF Dispenser	Portable Metered Gear Lube Dispenser	Cart-Mounted Metered Gear Lube Dispenser	Stationary Non-Metered Gear Lube Dispenser	Portable Non-Metered Gear Lube Dispenser
Package Number	225880	225376	225384	225380	225378 *
Pump Only	204867				
Metered Dispense Kit	239707	239705		-	-
Dispense Kit	-	-	-	214658	214658
Hose Diameter	-	-	1/2 in (12.7 mm)		
Hose Length	-	-	6 ft (1.8 m)		
Drum Cover	204574				
Caster Base	203622		-	-	203622
Cart	-	-	203650	-	-
Instruction Manual	306436				

\* Hydraulic; can be used for gear oil dispensing.

### Pail Dispensing Package for 5 gal (20 l) Pails

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

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



225880



225380



225376



226289



225384



225378

# Lubricant and Coolant Transfer

## Manually-Operated Pumps

### Pumping Bulk Lubricants out of 16 gal (60 l) or 55 gal (200 l) Drums<sup>(1)</sup>

All pumps come with suction tube and bung adapter.

Description	Lever Pump <sup>(2)</sup>	Rotary Pump <sup>(3)</sup>	Hand-Lever Diaphragm Pump <sup>(4)</sup>
Pump Number	114829	226290	112202
Delivery rate	0.1 gal (0.4 l) per downstroke	1 gal (3.7 l) per 18 cycles	1 gal (3.7 l) per 9 cycles
Fluids Handled	Petroleum-based products, Anti-freeze	Petroleum-based products	Petroleum-based products <sup>(5)</sup>
Hose Length	-	-	8 ft (2.5 m)
Instruction manual	-	306876	-

<sup>(1)</sup> Drums not included

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

<sup>(3)</sup> Package has adjustable 2 npt bung mounting to allow use with either 16 gal (60 l) or 55 gal (200 l) drum. Package includes bung adapter and spout outlet.

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

<sup>(5)</sup> This package is recommended for gasoline, diesel, heating oil and petroleum products, but NOT recommended for water-based fluids, solvents or weak acids.



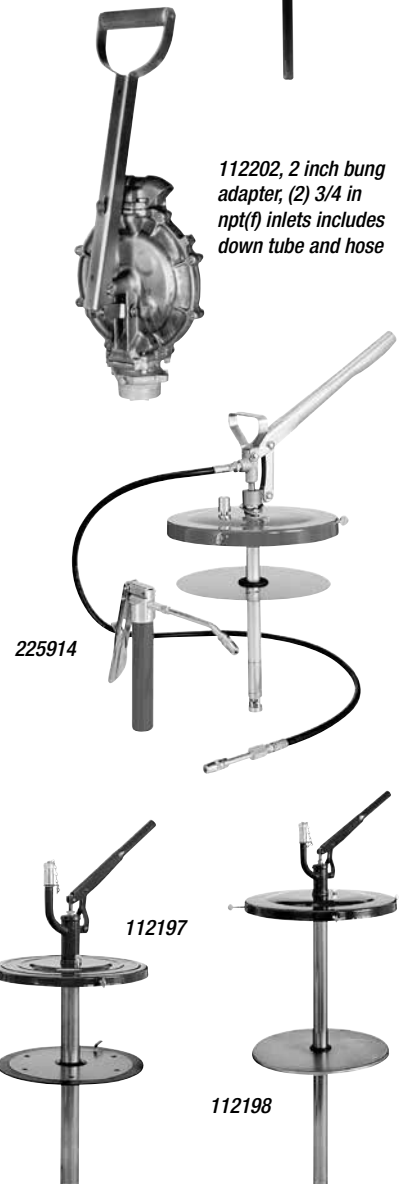
### Manual Dispense from Bulk Containers

Description	Buckshot Luber with Booster Gun	Buckshot Luber without Booster Gun	Grease Gun Fill Pump	Grease Gun Fill Pump
Container Size	35 lb (16 kg)		120 lb (55 kg)	
Package No.	225914 <sup>(1)</sup>	225844 <sup>(1)</sup>	112197 <sup>(2)</sup>	112198 <sup>(2)</sup>
Pump	203702		-	-
Dispense Kit	203703		Filler Adapter <sup>(3)</sup>	
Booster Gun	203697	-	-	-
Cover and Follower Plate	203701		-	-
Instruction Manual	306455		-	-

<sup>(1)</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>(2)</sup> Fills all three-way loading grease guns equipped with filler fittings.

<sup>(3)</sup> Dispense kit 203703 can be used for direct greasing applications (must be ordered separately).



Manually-Operated Pumps

# SD Series™ Cord and Light Reels

## Electric Cord Reels, Light Reels and Accessories

### Features and Benefits

- Durable, heavy gauge steel frame won't flex or bend for long lasting performance
- Strong spring has the capacity to take on more load than the competition and is easy to pull down and retract so you don't have to fight to get it to operate
- One source for your entire automotive or industrial reel bank so you get everything you want including expert help when you need it
- Meets UL355\*, CSA22.2 No. 21 and IP44 standards for general, commercial and industrial grade use
- Enclosed spring and components are protected from harmful elements for longer lasting, dependable operation
- Easy to install, maintain, and repair

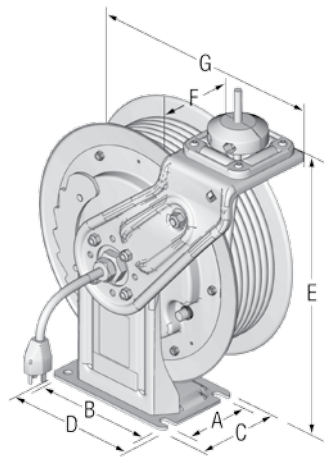
\* Rated for light outdoor use



24Y862

### Dimensions

SD SERIES SIZE 5		SD SERIES SIZE 10	
A	3.5 in (89 mm)	A	3.5 in (89 mm)
B	6.38 in (162 mm)	B	7.5 in (191 mm)
C	4.7 in (120 mm)	C	4.7 in (120 mm)
D	7.48 in (190 mm)	D	9 in (229 mm)
E†	14.8 in (376 mm)	E†	19.5 in (498 mm)
F*	6.6 in (168 mm)	F*	7 in (177 mm)
G**	13.84 in (352 mm)	G**	17.5 in (445 mm)



† Measurement taken from base to top of bolts.  
 \* Measurement taken from edge of spool to front of arm.  
 \*\* Measurement taken from end of wire-nut to top surface of cover.

### Technical Specifications

#### Operating Temperature:

Part numbers 24Y865, 24Y866, 24Y868-24Y872, 24Y877, 24Y878, 24Y884, 24Y886, 24Y887, 24Y890.....	-22° F to 122° F (-30° C to 50° C)
Part numbers 24Y859, 24Y861-24Y864, 24Y873-24Y876, 24Y880, 24Y882, 24Y883, 24Y888, 24Y889.....	-4° F to 104° F (-20° C to 40° C)

#### Weight without accessories:

Size 5: 16AWG, Cord Length - 35 Feet .....	25.4 lbs
Size 5: 16AWG, Cord Length - 50 Feet .....	27.6 lbs
Size 10: 16 AWG, Cord Length - 95 Feet .....	46.3 lbs
Size 5: 12AWG, Cord Length - 35 Feet .....	28.2 lbs
Size 5: 12AWG, Cord Length - 50 Feet .....	32.0 lbs
Size 10: 12 AWG, Cord Length - 95 Feet .....	51.8 lbs
Sound Pressure(1) .....	80 dB(A)
Sound Power(2) .....	87 dB(A)
Manual .....	3A2592

# SD Series™ Cord and Light Reels

## Electric Cord Reel and Accessories

### Ordering Information with Specifications

All Graco cord and light reels have a black finish and are 120 volt with UL/CSA approved.

Part Number	Size	Accessory	AWG	Amp	Cord Length	Insulation
24Y859	5	No Accessory – Cord Only	12	20	50 ft (15 m)	SJ00W
24Y880	10		12	18	95 ft (29 m)	SJ00W
24Y861	5	Single Industrial Receptacle	16	13	50 ft (15 m)	SJTOW
24Y862	5		12	20	35 ft (10 m)	SJ00W
24Y863	5		12	20	50 ft (15 m)	SJ00W
24Y882	10		12	18	95 ft (29 m)	SJ00W
24Y864	5	Tri-Plug GFCI Industrial Receptacle	12	15	50 ft (15 m)	SJ00W
24Y883	10		12	15	95 ft (29 m)	SJ00W
24Y865	5	Fluorescent Light	16	<1	35 ft (10 m)	SJTOW
24Y866	5		16	<1	50 ft (15 m)	SJTOW
24Y884	10		16	<1	95 ft (29 m)	SJTOW
24Y868	5	Fluorescent Light with Single Tool Tap Plug	16	10	50 ft (15 m)	SJTOW
24Y869	5	LED Light	16	<1	35 ft (10 m)	SJTOW
24Y870	5		16	<1	50 ft (15 m)	SJTOW
24Y886	10		16	<1	95 ft (29 m)	SJTOW
24Y871	5	LED Light with In-line Tool Tap	16	12	35 ft (10 m)	SJTOW
24Y872	5		16	12	50 ft (15 m)	SJTOW
24Y887	10		16	10	95 ft (29 m)	SJTOW

#### Mounting Channel For Ceiling

For use when mounting reels without an enclosure. Available to accommodate one to six reels. Refer to manual for longer channels.

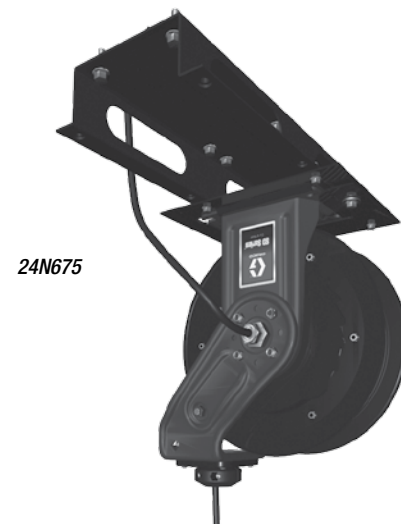
24N674	For mounting one SD Series Size 5 reel
24A934	For mounting one SD Series Size 10 reel**
24N675	For mounting two SD Series Size 5 reels
24A935	For mounting two SD Series Size 10 reels**

\*\*Design is the same as SD Series size 10 hose reels.

#### Enclosed Reel Mounting Channel For Ceiling or Wall

For use with enclosure kits only. Available to accommodate one to six reels. Refer to the manual for longer channels.

203521	For mounting one Size 5 and 10 reel
203522	For mounting two Size 5 and 10 reels



# SD Series™ Cord and Light Reels

## Electric Cord Reel and Accessories

### Ordering Information with Specifications

All Graco cord and light reels have a black finish and are 120 volt with UL/CSA approved.

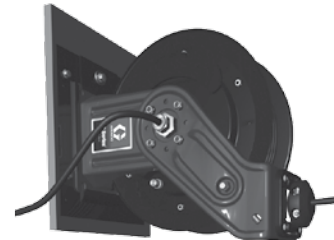
#### Cord Reel Enclosure Kits

Enclosure kit for one reel provides protection to extend the life of reel, while giving your shop a professional look.

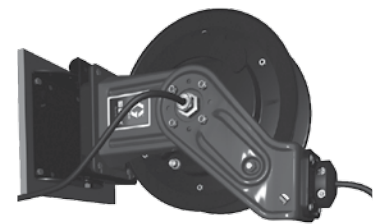
Size 5 Enclosure and spacer bracket	
24N690	White
24N682	Metallic Blue
24N683	Red
24N684	Black
24N691	Dark Blue
24N685	Yellow
Size 10 Enclosure kit for one reel	
24A217	White
24A940	Metallic Blue
24A941	Red
24A942	Black
24A943	Dark Blue
24A944	Yellow
End Panel Kits	
24A950	Black only (Same kit as Size 10 hose reels)
Retrofit Mounting Bracket	
24P164	Size 5 spacer bracket only, for mounting in existing size 10 enclosure.
24P880	Size 5 spacer bracket only, for mounting in existing size 20 enclosure.
24P881	Size 10 spacer bracket only, for mounting in existing size 20 enclosure.
16N883	Clamping plate to mount size 5 reel to existing SD Series open channel.
Swivel Mount Bracket For Wall	
Allows reel to swivel 120° with two lockable positions	
24N814	SD Series size 5
24N444	SD Series size 10
Easy Slide-in Mount For Ceiling or Wall	
Allows you to slide the reel in and out for easy installation	
24N686	SD Series size 5
24H193	SD Series size 10
I Beam Mounting Kit For Ceiling	
Secures mounting channel to I-beam without drilling	
204741	Fits SD Series size 5 and 10 reels (Two brackets are required for one to three reels)
Hands-free Magnetic Clip	
16P999	Magnetic clip with non-marring cover won't scratch vehicle finish. Snap onto light tube for hands-free operation. Spin the fixture to direct light where you need it.
Retrofit Mounting Bracket	
For Competitive reel replacement	
24N688	Fits size 5 reel
24N689	Fits size 10 reel



24N690



24N686



24N814



16P999

# LD Series Enclosed Hose Reels

## Hose Reels and Packages

### Features and Benefits

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

### Typical Applications

- Small maintenance shops
- Tire/muffler shops
- Small fast lubes
- Independent repair facilities
- Industrial manufacturing facilities

### Typical Fluids Handled

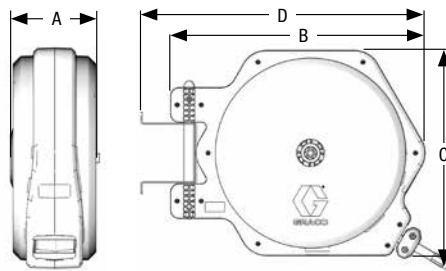
- Petroleum- and synthetic-based oils (motor, gear, and ATF)
- Grease
- Air only
- Air/water
- Anti-freeze
- Windshield washer

### Dimensions

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



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



Hose Inlet Kit for LD enclosed reels

### NPT Replacement Reels\* Ordering Information

Part Number	Application	Hose Size Id x Length		Pressure psi (bar)	Connection Size Inlet NPT(m) x Outlet NPT(m)
24H657	Air/Water/Anti-Freeze/Windshield Washer Fluid	10 mm x 11 m	3/8 in x 35 ft	250 (17.2)	1/2 in x 3/8 in
24H658	Air/Water/Anti-Freeze/Windshield Washer Fluid	10 mm x 15 m	3/8 in x 50 ft	250 (17.2)	1/2 in x 3/8 in
24H659	Air/Water/Anti-Freeze/Windshield Washer Fluid	12 mm x 11 m	1/2 in x 35 ft	250 (17.2)	1/2 in x 1/2 in
24H660	Air/Water/Anti-Freeze/Windshield Washer Fluid	12 mm x 14 m	1/2 in x 45 ft	250 (17.2)	1/2 in x 1/2 in
24H661	Oil	10 mm x 11 m	3/8 in x 35 ft	1800 (124)	1/2 in x 3/8 in
24H662	Oil	12 mm x 11 m	1/2 in x 35 ft	1800 (124)	1/2 in x 1/2 in
24H663	Grease	6 mm x 11 m	1/4 in x 35 ft	5000 (345)	3/8 in x 1/4 in

\*Reel only. Mounting Hardware is not included

### Hose Inlet Kits for LD Enclosed Hose Reel

	Part Number	Hose Inlet Description	Fits Reel	Pressure psi (bar)	Hose id in (mm)	Length in (mm)	Hose Inlet in	Hose Outlet in
For NPT connections	24C444	Air/Water/Anti-Freeze/ Windshield Washer Fluid	24H657 / 24H658 24H659 / 24H660	250 (17.2)	3/8 (10)	36 in (915)	1/2 npt(m)*	3/8 npt(m)*
	24C537	Oil	24H661	1,800 (124)	3/8 (10)			3/8 npt(m)*
	24C538		24H662		1/2 (12)			1/2 npt(m)*
	24C539	Grease	24H663	5,000 (345)	1/4 (6)			1/4 npt(m)*

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

# LD Series Enclosed Hose Reels

## Hose Reels and Packages

### Wall Mount Package\* (NPT)

Package Part Number	Application	Hose Size Id x Length	Reel (NPT)	Wall Mount Kit	Inlet Kit
24F737	Air/Water/Anti-Freeze/Windshield Washer Fluid	3/8 in x 35 ft	24H657	24G866	24C444
24F738	Air/Water/Anti-Freeze/Windshield Washer Fluid	3/8 in x 50 ft	24H658	24G866	24C444
24F739	Air/Water/Anti-Freeze/Windshield Washer Fluid	1/2 in x 35 ft	24H659	24G866	24C444
24F740	Air/Water/Anti-Freeze/Windshield Washer Fluid	1/2 in x 45 ft	24H660	24G866	24C444
24F741	Oil	3/8 in x 35 ft	24H661	24G866	24C537
24F742	Oil	1/2 in x 35 ft	24H662	24G866	24C538
24F743	Grease	1/4 in x 35 ft	24H663	24G866	24C539

\*Hose Reel, Inlet Kit, and Wall Mount Bracket Kit included.

### Fixed/Ceiling Mount Package\* (NPT)

Package Part Number	Application	Hose Size Id x Length	Reel (NPT)	Fixed Mount Kit	Inlet Kit
24F755	Air/Water/Anti-Freeze/Windshield Washer Fluid	3/8 in x 35 ft	24H657	24G865	24C444
24F756	Air/Water/Anti-Freeze/Windshield Washer Fluid	3/8 in x 50 ft	24H658	24G865	24C444
24F757	Air/Water/Anti-Freeze/Windshield Washer Fluid	1/2 in x 35 ft	24H659	24G865	24C444
24F758	Air/Water/Anti-Freeze/Windshield Washer Fluid	1/2 in x 45 ft	24H660	24G865	24C444
24F759	Oil	3/8 in x 35 ft	24H661	24G865	24C537
24F760	Oil	1/2 in x 35 ft	24H662	24G865	24C538
24F761	Grease	1/4 in x 35 ft	24H663	24G865	24C539

\*Reel, Inlet kit, and Fixed Bracket Kit included.

### Swivel/Bench Mount Package\* (NPT)

Package Part Number	Application	Hose Size Id x Length	Reel (NPT)	Swivel Mount Kit	Inlet Kit
24F773	Air/Water/Anti-Freeze/Windshield Washer Fluid	3/8 in x 35 ft	24H657	24C772	24C444
24F774	Air/Water/Anti-Freeze/Windshield Washer Fluid	3/8 in x 50 ft	24H658	24C772	24C444
24F775	Air/Water/Anti-Freeze/Windshield Washer Fluid	1/2 in x 35 ft	24H659	24C772	24C444
24F776	Air/Water/Anti-Freeze/Windshield Washer Fluid	1/2 in x 45 ft	24H660	24C772	24C444
24F777	Oil	3/8 in x 35 ft	24H661	24C772	24C537
25A113	Oil	1/2 in x 35 ft	24H662	24C772	24C538
24F779	Grease	1/4 in x 35 ft	24H663	24C772	24C539

\*Hose Reel, Inlet Kit, and Swivel Bracket Kit included.

### Mounting Kits Ordering Information

Part Number	Description
24G866	Wall Mount Kit
24G865	Fixed Bracket New Installation Kit
24E506	Fixed Bracket Replacement Kit
24C772	Swivel Bracket Kit



24E506



24C772



# SD 10™ and SD 20™ Hose Reels

## Hose Reels and Packages

### Features and Benefits

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

### Typical Applications

- Car dealerships
- Light/medium-duty truck dealers
- Fleet maintenance
- Mining maintenance
- Public works garages
- Construction vehicle maintenance
- Light-utility service trucks
- In-plant

### Dimensions

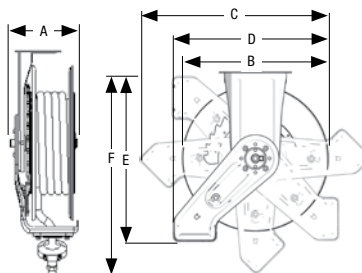
SD 10		SD 20	
A	7.0 in (177 mm)	A	7.0 in (177 mm)
B	16.2 in (412 mm)	B	18.1 in (460 mm)
C	21.0 in (533 mm)	C	23.4 in (594 mm)
D	17.1 in (435 mm)	D	19.2 in (488 mm)
E	19.5 in (495 mm)	E	21.8 in (554 mm)
F	22.5 in (571 mm)	F	25.2 in (640 mm)



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

### Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear, and ATF)
- Grease
- Air
- Water
- Anti-freeze
- Windshield washer



### Ordering Information

### Technical Specifications

Applications	Model numbers by color						Pressure psi (bar)	Hose		Connection Size		Operating Temp.	
	Metallic Blue	White	Red	Black	Dark Blue	Yellow		id (in)	Length ft (m)	Inlet npsm(m)	Outlet		
Air, Water, Anti-Freeze, Windshield Washer Fluid	SD 10	HPL23B	HPL23A	HPL23C	HPL23D	HPL23E	HPL23F	300 (20.7)	3/8	35 (11)	1/2	3/8 npt (m)	-20°–190° F (-28°–87° C)
		HPL25B	HPL25A	HPL25C	HPL25D	HPL25E	HPL25F	300 (20.7)	3/8	50 (15)	1/2	3/8 npt (m)	
		HPL2DB*	HPL2DA*	HPL2DC*	HPL2DD*	HPL2DE*	HPL2DF*	300 (20.7)	3/8	50 (15)	3/8	1/2 npt (m)	
		HPL33B	HPL33A	HPL33C	HPL33D	HPL33E	HPL33F	300 (20.7)	1/2	35 (11)	1/2	1/2 npt (m)	
	SD 20	HPL56B	HPL56A	HPL56C	HPL56D	HPL56E	HPL56F	300 (20.7)	3/8	65 (20)	1/2	3/8 npt (m)	
		HPL5JB**	HPL5JA**	HPL5JC**	HPL5JD**	HPL5JE**	HPL5JF**	300 (20.7)	3/8	65 (20)	1/2	3/8 npt (m)	
		HPL65B	HPL65A	HPL65C	HPL65D	HPL65E	HPL65F	300 (20.7)	1/2	50 (15)	1/2	1/2 npt (m)	
		HPL6DB*	HPL6DA*	HPL6DC*	HPL6DD*	HPL6DE*	HPL6DF*	300 (20.7)	1/2	50 (15)	1/2	1/2 npt (m)	
Petroleum- or Synthetic-Based Oils	SD 10	HPM33B	HPM33A	HPM33C	HPM33D	HPM33E	HPM33F	2,000 (138)	1/2	35 (11)	1/2	1/2 npt (m)	
		HPM3BB*	HPM3BA*	HPM3BC*	HPM3BD*	HPM3BE*	HPM3BF*	2,000 (138)	1/2	35 (11)	1/2	1/2 npsm (f)	
	SD 20	HPM65B	HPM65A	HPM65C	HPM65D	HPM65E	HPM65F	2,000 (138)	1/2	50 (15)	1/2	1/2 npt (m)	
		HPM6DB*	HPM6DA*	HPM6DC*	HPM6DD*	HPM6DE*	HPM6DF*	2,000 (138)	1/2	50 (15)	1/2	1/2 npsm (f)	
Grease	SD 10	HPM6HB**	HPM6HA**	HPM6HC**	HPM6HD**	HPM6HE**	HPM6HF**	2,000 (138)	1/2	50 (15)	1/2	1/2 npsm (f)	
		HPH15B	HPH15A	HPH15C	HPH15D	HPH15E	HPH15F	5,000 (345)	1/4	50 (15)	3/8	1/4 npt (m)	
		HPH23B	HPH23A	HPH23C	HPH23D	HPH23E	HPH23F	4,000 (276)	3/8	35 (11)	3/8	1/4 npt (m)	
		HPH1DB*	HPH1DA*	HPH1DC*	HPH1DD*	HPH1DE*	HPH1DF*	5,000 (345)	3/8	35 (11)	3/8	1/4 npt (f)	
	SD 20	HPH55B	HPH55A	HPH55C	HPH55D	HPH55E	HPH55F	4,000 (276)	3/8	50 (15)	3/8	1/4 npt (m)	
		HPH5DB*	HPH5DA*	HPH5DC*	HPH5DD*	HPH5DE*	HPH5DF*	4,000 (276)	3/8	50 (15)	3/8	1/4 npt (f)	
		HPH5HB**	HPH5HA**	HPH5HC**	HPH5HD**	HPH5HE**	HPH5HF**	4,800 (331)	3/8	50 (15)	3/8	1/4 npt (f)	
		HPH55B	HPH55A	HPH55C	HPH55D	HPH55E	HPH55F	4,800 (331)	3/8	50 (15)	3/8	1/4 npt (f)	

\*Bare reel-hose sold separately. \*\*Arm in tank/bench mount position.

# SD 10™ and SD 20™ Hose Reel Packages and Accessories

## Hose Reels and Packages

Reels and Packages

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

SD Reel Packages without Enclosure Kit							
	Application	SD Packages	Hose Reel	Hose Inlet Kit	Enclosure	Valve/Meter	Fitting
Steel Spool	Air	24D998	HPL23B	218549	—	218545	—
	Water	24D999	HPL23B	218549	—	180685	150287
	Oil	24E001	HPM33B	218549	—	255350	—
	Oil	24E002	HPM33B	218549	—	255348	—

SD Hose Inlet Kits		Pressure psi (bar)	Hose id in (mm)	Length in (mm)	Hose Inlet
218549	Low/medium pressure	2000 (137)	1/2 (12)	24 (610)	npt(m)
218550	High pressure	4000 (276)	3/8 (10)	24 (610)	npt(m)
224417	High pressure	5000 (345)	1/4 (6)	24 (610)	npt(m)

Reel Enclose Kits for One Reel	Provides protection to extend the life of hoses and bearings for SD single pedestal reels					
	White*	Metallic Blue	Red	Black	Dark Blue	Yellow
SD 10 Enclosure	24A217	24A940	24A941	24A942	24A943	24A944
SD 20 Enclosure	24A218	24A945	24A946	24A947	24A948	24A949
SD 10 End Caps (2)	—	—	—	24A950	—	—
SD 20 End Caps (2)	—	—	—	24A951	—	—

Enclosed Reel Mounting Channel	Enclosure mounting channel kits include all parts for mounting hose reels to walls or ceilings					
Description	1 Reel	2 Reels	3 Reels	4 Reels	5 Reels	6 Reels
SD Enclosed	203521	203522	203523	203524	203525	203526

Open Reel Mounting Channel	Accommodates one, two, three, four, five or six reels (includes all parts for wall or ceiling mounts)					
	1 Reel	2 Reels	3 Reels	4 Reels	5 Reels	6 Reels
SD 10/SD 20 Open	24A934	24A935	24A936	24A937	24A938	24A939

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

Mounting Bracket (Secures mounting channel to I-beam without drilling)	
204741	Two brackets are required for 1-3 hose reels; three brackets for 4-6 hose reels

Swivel Mounting Bracket	
24N444	Swivel mounting bracket for installing SD and XD hose reel and SD10 electric cord reel
24N814	Swivel mounting bracket for installing SD5 electric cord reel

Ball Stop Kits	
222225	For 1/4 in (6.4 mm) i.d. hose (Not for use with XD30, 700 or 750)
218340	For 1/4-3/8 in (6.4-9.5 mm) i.d. hose (Not for use with XD30, 700 or 750)
218341	.782 ID used for 3/8 in and 1/2 in (9.5 mm and 12.7 mm) hose (Not for use with XD30, 700 or 750)
237872	1.0 ID used for 5/8 in (15.9 mm) hose
237873	1.123 ID used for 3/4 in (19.1 mm) hose
237874	1.374 ID used for 1 in (25.4 mm) hose
24D132	For 3/8 in (9.5 mm) o.d. hose
24D133	For 1/2 in (12.7 mm) o.d. hose



Hose Reel Enclosure



Mounting Channel



Mounting Bracket



Swivel Mounting Bracket



Hose Inlet Kit for SD open reels

\*Bare Reel—hose sold separately. Wetted parts—bare hose reel only: zinc plated steel, steel, nitrile rubber. Dry Weight: 52 lbs (23.5 kg). Instruction Manual: 313431

# XD 10™, XD 20™ and XD 30™ Hose Reels

## Hose Reels and Packages

### Features and Benefits

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

### Typical Applications

- Heavy-duty truck dealers
- Fleet maintenance
- Mining maintenance
- Public works garages
- Construction vehicle maintenance
- Heavy-duty mobile service trucks
- Mining

### Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear, and ATF)
- Grease
- Fuel
- Pressure wash
- Air
- Water
- Anti-freeze
- Windshield washer
- Waste oil

*Note: Hose Inlet Kit for all XD Reels sold separately.*

### Dimensions

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

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

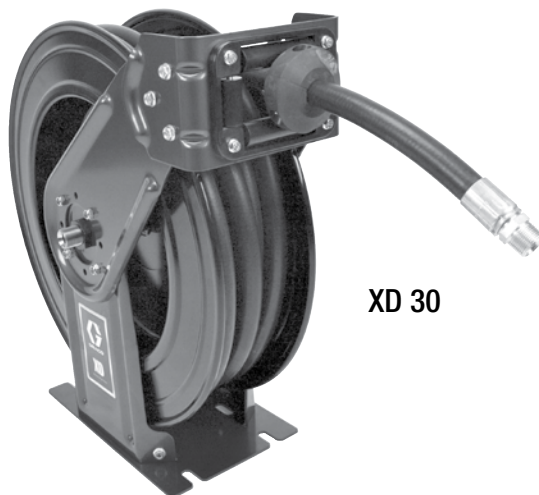
XD 30	
A	9.0 in (229 mm)
B	21.50 in (546.00 mm)
C	25.96 in (659.45 mm)
D	22.12 in (561.73 mm)
E	23.10 in (588.00 mm)
F	27.60 in (700.82 mm)



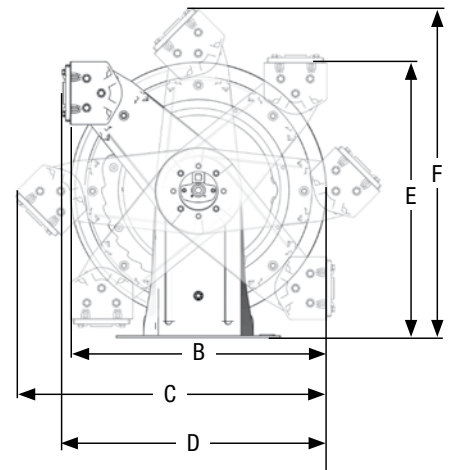
XD 10



XD 20



XD 30



# XD 10™, XD 20™ and XD 30™ Hose Reels

## Hose Reels and Packages

### Ordering Information

### Technical Specifications

Applications	Model numbers by color				Pressure psi (bar)	Hose		Connection Size		Operating Temp.	
	Metallic Blue	White	Yellow	Desert Sand		id in	Length ft (m)	Inlet in	Outlet in		
Air, Water, Anti-Freeze, Windshield Washer Fluid	XD 10	HSL25B	HSL25A	HSL25F	HSL25G	300 (20.7)	3/8	50 (15)	1/2 npsm(m)	3/8 npt(m)	-20–190° F (-28–87° C)
		HSL2DB*	HSL2DA*	HSL2DF*	HSL2DG*		3/8	50 (15)		3/8 npt(m)	
		HSL33B	HSL33A	HSL33F	HSL33G		1/2	35 (11)		1/2 npt(m)	
	XD 20	HSL56B	HSL56A	HSL56F	HSL56G		3/8	65 (20)		3/8 npt(m)	
		HSL65B	HSL65A	HSL65F	HSL65G		1/2	50 (15)		1/2 npt(m)	
		HSL6DB*	HSL6DA*	HSL6DF*	HSL6DG*		1/2	50 (15)		1/2 npt(m)	
	XD 30	HSLC8B	HSLC8A	HSLC8F	HSLC8G		1/2	75 (23)	3/4 npsm(m)	1/2 npt(m)	-40–180° F (-40–82° C)
		HSLD5B	HSLD5A	HSLD5F	HSLD5G		3/4	50 (15)		3/4 npt(m)	
Petroleum– and Synthetic– Based Oils	XD 10	HSM33B	HSM33A	HSM33F	HSM33G	2,000 (138)	1/2	1/2 npsm(m)	1/2 npt(m)	-20–190° F (-28–87° C)	
		HSM3BB*	HSM3BA*	HSM3BF*	HSM3BG*				1/2 npt(f)		
	XD 20	HSM65B	HSM65A	HSM65F	HSM65G				50 (15)		1/2 npt(m)
		HSM6DB*	HSM6DA*	HSM6DF*	HSM6DG*				50 (15)		1/2 npt(f)
	XD 30	HSMC8B	HSMC8A	HSMC8F	HSMC8G	1,500 (103)	75 (23)	1/2 npt(m)	-40–180° F (-40–82° C)		
		HSMCFB*	HSMCFA*	HSMCFF*	HSMCFG*	2,000 (138)	75 (23)	1/2 npsm(f)			
		HSMDD5B	HSMDD5A	HSMDD5F	HSMDD5G	1,250 (86)	3/4	3/4 npsm(m)		3/4 npt(m)	
		HSMDDDB*	HSMDDDA*	HSMDDDF*	HSMDDDG*	2,000 (138)	3/4	3/4 npsm(f)		3/4 npt(f)	
Grease	XD 10	HS115B	HS115A	HS115F	HS115G	8,000 (552)	1/4	50 (15)	3/8 npsm(m)	1/4 npt(m)	-40–200° F (-40°–93° C)
		HS11DB*	HS11DA*	HS11DF*	HS11DG*		3/8	35 (11)		3/8 npt(f)	
	XD 20	HS155B	HS155A	HS155F	HS155G	4,000 (276)	3/8	50 (15)	1/4 npt(m)		
		HS15DB*	HS15DA*	HS15DF*	HS15DG*	8,000 (552)			3/8 npsm(f)		
	XD 30	HS155B	HS155A	HS155F	HS155G	5,000 (345)	1/2	1/2 npsm(m)	1/2 npt(m)	-40–180° F (-40–82° C)	
		HS15DB*	HS15DA*	HS15DF*	HS15DG*				1/2 npsm(f)		
HS157B		HS157A	HS157F	HS157G	3/8				75 (23)		3/8 npt(f)
Pressure Wash	XD 30	HSPB8B	HSPB8A	HSPB8F	HSPB8G	4,000 (276)	3/8	75 (23)	3/8 npt(m)	-20–225° F (-28–107° C)	
		HSHFFB*	HSHFFA*	HSHFFF*	HSHFFG*				3/8 npsm(f)		
		HSPC5B	HSPC5A	HSPC5F	HSPC5G	4,500 (310)	1/2	50 (15)	1/2 npt(m)		
Fuel/Evacuation	XD 30	HSLE3B	HSLE3A	HSLE3F	HSLE3G	125 (8.6)	1	30 (9)	3/4 npsm(m)	1 npt(m)	-40–120° F (-40–49° C)
DEF	XD 30	HSDD5B	HSDD5A	HSDD5F	NA	50 (3.4)	3/4	50 (15)	3/4 bspp(m)	3/4 bspp ORB	12–140° F (-11–60° C)
		HSDDDB*	HSDDDA*	HSDDDF*	NA						

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

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

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

\*Bare reel–hose sold separately.

# XD Series HN Model Hose Reels

## Hose Reels and Packages

### Features and Benefits

Ideally suited for lube truck installations where space is a premium. Structurally engineered frame and spool is made from high strength steel that won't bend or flex. Long-lasting spring provides constant spring torque through the entire range of motion. Open swivel ports ensure high fluid flow with minimal pressure loss.

### Typical Applications

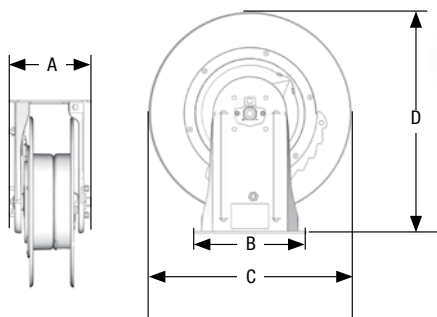
- Mining maintenance
- Public works garages
- Construction vehicle maintenance
- Light-utility service trucks

### Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear, and ATF)
- Grease
- Air
- Water
- Anti-freeze
- Fuel evacuation
- Windshield washer
- Waste oil

### Dimensions

XD 30 Hose Reels HN Model	
A	9.0" (229 mm)
B	13.77" (350.00 mm)
C	21.50" (546.00 mm)
D	23.10" (588.00 mm)



### Ordering Information

### Technical Specifications

Applications	Model numbers by color			Pressure psi (bar)	Hose		Connection Size		Operating Temp.		
	Metallic Blue	White	Yellow		id in. (mm)	Length ft (m)	Inlet npsm(m)	Outlet			
Air, Water, Anti-Freeze, Windshield Washer Fluid	XD 20 HN	HNL56B	HNL56A	HNL56F	300 (20.7)	3/8	65	1/2 npsm(m)	3/8npt(m)	-20° F to 190° F (-28° C to 87° C)	
		24C246^	24C245^	24C247^	300 (20.7)	3/8	65	1/2 npsm(m)	3/8npt(m)		
		HNL65B	HNL65A	HNL65F	300 (20.7)	1/2	50	1/2 npsm(m)	1/2 npt(m)		
	XD 30 HN	24C249^	24C248^	24C250^	300 (20.7)	1/2	50	1/2 npsm(m)	1/2 npt(m)		
		HNLC8B	HNLC8A	HNLC8F	300 (20.7)	1/2	75	1/2 npsm(m)	1/2 npt(m)		-40° F to 180° F (-40° C to 82° C)
		HNLD5B	HNLD5A	HNLD5F	300 (20.7)	3/4	50	3/4 npsm(m)	3/4 npt(m)		
Petroleum- and Synthetic-Based Oils	XD 20 HN	HNM65B	HNM65A	HNM65F	2000 (138)	1/2	50	1/2 npsm(m)	1/2 npt(m)	-20° F to 190° F (-28° C to 87° C)	
		24C252^	24C251^	24C253^	2000 (138)	1/2	50	1/2 npsm(m)	1/2 npt(m)		
	XD 30 HN	HNMC8B	HNMC8A	HNMC8F	1500 (103)	1/2	75	1/2 npsm(m)	1/2 npt(m)	-40° F to 180° F (-40° C to 82° C)	
		HNMD5B	HNMD5A	HNMD5F	1250 (86)	3/4	50	3/4 npsm(m)	3/4 npt(m)		
		HNMDDB*	HNMDDA*	HNMDDF*	2000 (138)	3/4	50	3/4 npsm(m)	3/4 npt(m)		
		HNH55B	HNH55A	HNH55F	4800 (331)	3/8	50	3/8 nptsm(m)	1/4 npt(m)		
Grease	XD 20 HN	24C255^	24C254^	24C256^	4800 (331)	3/8	50	3/8 nptsm(m)	1/4 npt(m)	-40° F to 200° F (-40° C to 93° C)	
		HNHC5B	HNHC5A	HNHC5F	5000 (345)	1/2	50	1/2 npsm(m)	1/2 npt(m)		
	XD 30 HN	HNHCDB*	HNHCDA*	HNHCDF*	5000 (345)	1/2	50	1/2 npsm(m)	1/2 npt(m)	-40° F to 180° F (-40° C to 82° C)	
		HNHB7B	HNHB7A	HNHB7F	5000 (345)	3/8	75	1/2 npsm(m)	3/8 npt(m)		
Pressure Wash	XD 30 HN	HNPB8B	HNPB8A	HNPB8F	4000 (276)	3/8	75	1/2 npsm(m)	3/8 npt(m)	-20° F to 225° F (-28° C to 107° C)	
		HNHFFB*	HNHFFA*	HNHFFF*	4000 (276)	3/8	75	1/2 npsm(m)	3/8 npsm(f)		
		HNPC5B	HNPC5A	HNPC5F	4500 (310)	1/2	50	1/2 npsm(m)	1/2 npt(m)		
Fuel/Evacuation		HNLE3B	HNLE3A	HNLE3F	125 (86)	1	30	3/4 npsm(m)	1 npt(m)	-40° F to 100° F (-40° C to 49° C)	

\*Bare reel hose sold separately ^ Reel package includes hose guide kit 15Y478

Wetted parts—bare hose reel only: zinc-plated steel, steel, nitrile rubber HN Dry Weight: 64 pounds (29.0 kg) Instruction Manual: 3A0138  
Wetted parts—HSL, HSM, HNL, and HNM Models are Nickel Plated Carbon Steel, Aluminum, Buna N Rubber, UHMWPE. HSH, HSP, HNH, and HNP Models are Nickel Plated Stainless Steel, Buna N Rubber, UHMWPE

# XD 10™, XD 20™ and XD 30™ Hose Reel Accessories

## Hose Reels and Packages

### Ordering Information

<b>XD Enclosure Kits</b>	Provides protection to extend the life of hose and bearings for XD reels					
<b>Reel Enclose kits for One Reel</b>	White	Metallic Blue	Red	Black	Dark Blue	Yellow
XD 10 Enclosure	24N331	24N332	24N333	24N334	24N335	24N336
XD 20 Enclosure	24N337	24N339	24N340	24N341	24N342	24N343
XD 10 End Caps (2)	—	—	—	24A950	—	—
XD 20 End Caps (2)	—	—	—	24A951	—	—
<b>Enclosed Reel Mounting Channel</b>	Enclosure mounting channel kits include all parts for mounting hose reels to walls or ceilings					
Description	1 Reel	2 Reels	3 Reels	4 Reels	5 Reels	6 Reels
XD Enclosed	24N323	24N324	24N325	24N326	24N327	24N328
<b>Open Reel Mounting Channel</b>	Accommodates one, two, three, four, five or six reels (includes all parts for wall or ceiling mounts)					
	1 Reel	2 Reels	3 Reels	4 Reels	5 Reels	6 Reels
XD 10/XD 20 Open	24A219	24A220	24A221	—	—	24A222
<b>Retrofit Adapter Kits</b>						
24A224	Includes all parts to mount hose reel to existing 500 series mounting pattern					
24C100	Includes all parts to convert SD10 hose reels to fit existing 250 series enclosures					
24P914	Includes all parts to convert XD20 hose reels to fit existing 500 series enclosures					
<b>Mounting Bracket</b>						
204741	Secures mounting channel to I-beam without drilling. Two brackets are required for 1-3 hose reels; three brackets for 4-6 hose reels					
<b>Ball Stop Kits</b>						
	<b>Typical Hose I.D.</b>					
222225	For 1/4 in (6.4 mm) I.D. hose <i>(Not for use with XD30, 700 or 750)</i>					
218340	For 1/4-3/8 in (6.4-9.5 mm) I.D. hose <i>(Not for use with XD30, 700 or 750)</i>					
218341	.782 I.D. used for 3/8 in and 1/2 in (9.5 mm and 12.7 mm) hose <i>(Not for use with XD 30, 700 or 750)</i>					
237872	1.0 I.D. used for 5/8 in (15.9 mm) hose					
237873	1.123 I.D. used for 3/4 in (19.1 mm) hose					
237874	1.374 I.D. used for 1 in (25.4 mm) hose					
24D132	For 3/8 in (9.5 mm) O.D. hose					
24D133	For 1/2 in (12.7 mm) O.D. hose					
<b>Hose Inlet Kits for XD 10 and XD 20</b>		<b>Pressure psi (bar)</b>	<b>Hose id in (mm)</b>	<b>Length in (mm)</b>	<b>Hose Inlet</b>	
218549	Low/medium pressure	2000 (137)	1/2 (12)	24 (610)	npt(m)	
218550	High pressure	4000 (276)	3/8 (10)	24 (610)	npt(m)	
224417	High pressure	5000 (345)	1/4 (6)	24 (610)	npt(m)	
<b>Hose Inlet Kits for XD 30</b>		<b>Pressure psi (bar)</b>	<b>Hose id in (mm)</b>	<b>Length in (mm)</b>	<b>Hose Inlet</b>	
24E283	High pressure	5000 (345)	1/2 (12)	24 (610)	npt(m)	
24E284	Low/medium pressure	1250 (86)	3/4 (19)	24 (610)	npt(m)	
218549	Low/medium pressure	2000 (137)	1/2 (12)	24 (610)	npt(m)	
24E285	Low pressure (for fuel)	125 (8.6)	1/2 (12)	24 (610)	npt(m)	
<b>DEF Hoses</b>						
124875	DEF hose, 2 ft, 3/4 in BSPP (M) x cut end (inlet hose)					
124581	DEF hose, 6 ft, 3/4 in BSPP (M) x cut end (inlet hose)					
<b>Valve Hanger Kit</b>						
224444	Mounts to side of reel to allow hanging of non-metered and high flow dispensing valves					
<b>Metal Label Kits (includes one 3/4 in x 4-1/4 in (1.9 cm x 10.8 cm) metal label and mount)</b>						
218670	Motor oil	218675	Air	218674	Hydraulic Oil	
218671	Grease	218676	Water	218673	ATF	
218672	Gear lube	218677	Anti-Freeze	218678	Evacuation	
<b>Self Adhesive Identification Label Set</b>						
180698	Set includes: 1 in x 5 in (25.4 mm x 127 mm) hose reels labels for Anti-Freeze, Water, SAE 5-40, SAE 10-40, SAE 20W, Hydraulic, Gear, SAE 10W, SAE 10-30, SAE 30W, Dexron, Air, Chassis, ATF					

Mounting Channel



Retrofit Bracket to fit 500 Series



Mounting Bracket



Ball Stop Kit



Hose Reel Enclosure

# XD 40™ and XD 50™ Hose Reels

## Hose Reels and Packages

### Features and Benefits

- More hoses to choose from. Standard models come complete with factory installed hoses on the reel.
- Rotatable inlet position makes mounting easier in more applications.
- A Graco exclusive—breakthrough swivel design allows better flow to get work done faster. Materials are corrosion resistant and strong for long lasting performance.
- Improved ratchet design has one set of teeth instead of two to avoid reel lockout.
- Heavy-duty welded spool is stronger than bolted frames that can loosen with use. Ribs add extra strength for toughness over the long haul.
- Meets worldwide standards. Built with NPT, BSPP or BSPT threads means accessories screw right on without the need for adapters. 1.5" models also include 2" Victaulic\*-style groove.

\*Victaulic is a trademark of Victaulic Company of America.



XD 40



XD 50

### Typical Applications

- Heavy-duty truck dealers
- Fleet maintenance
- Mining maintenance
- Public works garages
- Construction vehicle maintenance
- Heavy-duty mobile service trucks

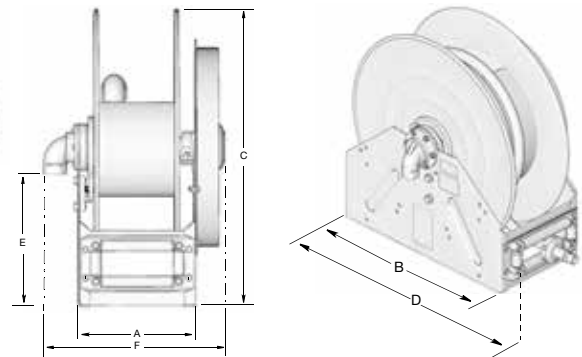
### Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear, and ATF)
- Diesel fuel
- Air
- Water
- Anti-freeze
- Waste oil

### Dimensions

XD 40 REELS	
A	11.83 in (300 mm)
B	24 in (610 mm)
C	26.13 in (664 mm)
D	26.4 in (671 mm)
E	10.91 in (277 mm)
F: Model 1	16.54 in (420 mm)
F: Model 2	17.47 in (444 mm)

XD 50 REELS	
A	11.83 in (300 mm)
B	28.5 in (724 mm)
C	30.13 in (765 mm)
D	29.4 in (747 mm)
E	10.91 in (277 mm)
F: Model 3	17.47 in (444 mm)
F: Model 4	18.24 in (463 mm)



# XD 40™ and XD 50™ Hose Reels

## Hose Reels and Packages

### Reel with Hose Ordering Information | Technical Specifications

Applications		Model numbers by color			Pressure psi (bar)	Hose		Dimension "F"	Connection Size		Operating Temperature
		Blue	Yellow	White		id in	Length ft (m)		Inlet npt (f)	Outlet npt (m)	
Air/Water	XD 40	24P327	24P328	24P329	300 (21)	1/2	100 (30)	Model 1	1	1/2	-20°-180° F (-28°-82° C)
		24P330	24P331	24P332	300 (21)	3/4	75 (23)		1	3/4	
		24P333	24P334	24P335	300 (21)	3/4	100 (30)		1	3/4	
		24P336	24P337	24P338	300 (21)	1	50 (15)		1	1	
	XD 50	24P470	24P471	24P472	300 (21)	1	75 (23)	Model 3	1	1	
		24P473	24P474	24P475	300 (21)	1	100 (30)		1	1	
Anti-Freeze	XD 40	24P984	24P985	24P986	300 (21)	3/4	100 (30)	Model 1	1	3/4	-20°-180° F (-28°-82° C)
	XD 50	24P987	24P988	24P989	300 (21)	1	100 (30)	Model 3	1	1	
Petroleum- and Synthetic-Based Oils	XD 40	24P339	24P340	24P341	2000 (138)	1/2	100 (30)	Model 2	1	1/2	-40°-180° F (-40°-82° C)
		24P342*	24P343*	24P344*	1500 (103)	3/4	75 (23)	Model 1	1	3/4	
		24R857**	24R859**	24R860**	1500 (103)	3/4	75 (23)	Model 2	1	3/4	
		24P345	24P346	24P347	1500 (103)	3/4	100 (30)		1	3/4	
		24P348*	24P349*	24P350*	1275 (88)	1	50 (15)	Model 1	1	1	
		24R861**	24R862**	24R863**	1275 (88)	1	50 (15)	Model 2	1	1	
	XD 50	24P476	24P477	24P478	1275 (88)	1	75 (23)	Model 3	1	1	
	Waste Oil Evacuation	XD 40	24P351	24P352	24P353	250 (17)	1	50 (15)	Model 1	1	
XD 50		24P479 <sup>†</sup>	24P480 <sup>†</sup>	24P481 <sup>†</sup>	200 (14)	1 1/4	35 (11)	Model 4	1 1/2 <sup>†</sup>	1 1/4	
		24P482 <sup>†</sup>	24P483 <sup>†</sup>	24P484 <sup>†</sup>	200 (14)	1 1/4	50 (15)		1 1/2 <sup>†</sup>	1 1/4	
Diesel Fuel	XD 40	24P354	24P355	24P356	250 (17)	1	50 (15)	Model 1	1	1	-40°-180° F (-40°-82° C)
	XD 50	24P485	24P486	24P487	250 (17)	1	75 (23)	Model 3	1	1	
		24P488	24P489	24P490	250 (17)	1	100 (30)		1	1	
		24P491 <sup>†</sup>	24P492 <sup>†</sup>	24P493 <sup>†</sup>	250 (17)	1 1/4	35 (11)		Model 4	1 1/2 <sup>†</sup>	
	24P494 <sup>†</sup>	24P495 <sup>†</sup>	24P496 <sup>†</sup>	250 (17)	1 1/4	50 (15)	1 1/2 <sup>†</sup>	1 1/4			
	24P497 <sup>†</sup>	24P498 <sup>†</sup>	24P499 <sup>†</sup>	150 (10)	1 1/2	50 (15)	1 1/2 <sup>†</sup>	1 1/2			

\*Truck/bench mount only. \*\*Overhead or truck mount. †Standard 2" Victaulic<sup>††</sup>-style groove on inlet. ††Victaulic is a trademark of Victaulic Company of America. See manual 3A2990 on graco.com for more dimensional information.

### Accessories

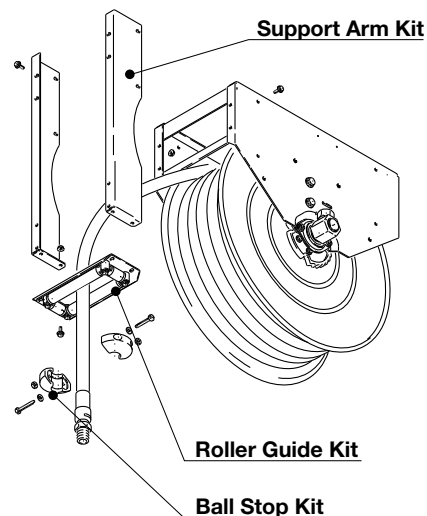
Inlet Hose Kits		Pressure psi (bar)	Hose id in (mm)	Length in (mm)	Hose Inlet
24R111	Inlet kit for Air/Water and Oil	1275 (88)	1 (25)	28 (711)	npt(m)
24R112	Inlet kit for Waste Oil Evacuation	250 (17)	1 (25)	28 (711)	npt(m)
24R115	Inlet kit for Diesel Fuel	250 (17)	1 (25)	28 (711)	npt(m)
24R117	Inlet kit for Diesel Fuel	150 (10)	1.5 (38)	28 (711)	npt(m)

#### Ball Stop Kits

237873	Ball stop kit used for 3/4 in (19.1 mm) hose
237874	Ball stop kit used for 1 in (25.4 mm) hose
24R060	Ball stop kit used for a 1.25 in (31.75 mm) hose
24R061	Ball stop kit used for a 1.5 in (38.1 mm) hose

#### Arm Kits and Roller Guides

24R076	Support Arm Kit for XD 40
24R077	Support Arm Kit for XD 50
24R072	Roller Guide Kit with Bracket for XD 40
24R074	Roller Guide Kit with Bracket for XD 50
237932	Overhead mounting kit for XD 40. Includes all parts needed for ceiling mounting 1 reel





# XD 40™ and XD 50™ Hose Reels

## Hose Reels and Packages

### Bare Reel Ordering Information

### Technical Specifications

Applications		Model numbers by color			Pressure psi (bar)	Hose Length Capacity		Dimension "F"	Connection Size		Operating Temperature	
		Blue	Yellow	White		id in	Length ft (m)		Inlet npt (f)	Outlet npt (f)		
Air/Water	XD 40	24P313	24P315	24P316	600 (41)	1/2	100 (30)	Model 1	1	1	-40°–180° F (-40°–82° C)	
						3/4	75 (23)					
		1	50 (15)									
		3/4	100 (30)									
	24P317	24P318	24P319	1		75 (23)	Model 3					
				1		100 (30)	Model 3					
XD 50	24P455	24P456	24P457	1	50 (15)	Model 1						
	24P458	24P459	24P460	1	100 (30)	Model 3						
Anti-Freeze	XD 40	26A140	26A141	26A142	600 (41)	1	50 (15)	Model 1	1	1		
	XD 50	26A143	26A144	26A145	1	100 (30)	Model 3	1	1			
Petroleum- and Synthetic-Based Oils	XD 40	24P320*	24P322*	24P323*	2000 (138)	1	50 (15)	Model 1	1	1		
						3/4	75 (23)					
		24R854**	24R855**	24R856**		1	50 (15)	Model 2				
						3/4	75 (23)					
		24P324	24P325	24P326		1/2	100 (30)					
						3/4	100 (30)					
	XD 50	24P458	24P459	24P460		1	75 (23)	Model 3			1	1
	Waste Oil Evacuation	XD 40	24P317	24P318		24P319	600 (41)	1			50 (15)	Model 1
XD 50		24P461†	24P462†	24P463†	1 1/4	35 (11)	Model 4	1 1/2†	1 1/2			
						50 (15)						
Diesel Fuel	XD 40	24P317	24P318	24P319	600 (41)	1	50 (15)	Model 1	1	1		
						XD 50	24P455	24P456	24P457	1	100 (30)	Model 3
	24P461†	24P462†	24P463†	1 1/4						35 (11)	Model 4	1 1/2†
							50 (15)					
	24P464	24P465	24P466	1			75 (23)	Model 3	1	1		
	24P467†	24P468†	24P469†	1 1/2		50 (15)	Model 4	1 1/2†	1 1/2			

\*Truck/bench mount only. \*\*Overhead or truck mount. †Standard 2" Victaulic††-style groove on inlet. ††Victaulic is a trademark of Victaulic Company of America. See manual 3A2990 on graco.com for more dimensional information.

### Accessories

Inlet Hose Kits	Pressure psi (bar)	Hose id in (mm)	Length in (mm)	Hose Inlet
24R111 Inlet kit for Air/Water and Oil	1275 (88)	1 (25)	28 (711)	npt(m)
24R112 Inlet kit for Waste Oil Evacuation	250 (17)	1 (25)	28 (711)	npt(m)
24R115 Inlet kit for Diesel Fuel	250 (17)	1 (25)	28 (711)	npt(m)
24R117 Inlet kit for Diesel Fuel	150 (10)	1.5 (38)	28 (711)	npt(m)
Ball Stop Kits				
237873	Ball stop kit used for 3/4 in (19.1 mm) hose			
237874	Ball stop kit used for 1 in (25.4 mm) hose			
24R060	Ball stop kit used for a 1.25 in (31.75 mm) hose			
24R061	Ball stop kit used for a 1.5 in (38.1 mm) hose			
Mounting Kits, Arms and Roller Guides				
24R076	Support Arm Kit for XD 40			
24R077	Support Arm Kit for XD 50			
24R072	Roller Guide Kit with Bracket for XD 40			
24R074	Roller Guide Kit with Bracket for XD 50			
237932	Overhead mounting kit for XD 40. Includes all parts needed for ceiling mounting 1 reel			

# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

### Features and Benefits

Choose from multiple frame and motor combinations—mix and match to make quick work of configuring the reel for your application. Reels can easily be configured for left or right inlet orientation by switching the outlet direction and motor rotation to suit your needs. Order reels assembled, or choose frames and motor modules to maximize uptime for on-site installations.

- Drive unit is clean and lubricated for life, so there's no need to worry about greasy, exposed drive chains that need maintenance and can be dangerous to operators
- A Graco exclusive—breakthrough swivel design allows better flow to get work done faster
- Materials are corrosion resistant and strong for long lasting performance
- Direct drive hydraulic, and enclosed gear drive pneumatic and electric with 12, 24, 115, and 230 VAC motor options
- Electric motors are UL listed for use in hazardous locations
- 600 psi (41 bar) low pressure and 3,000 psi (207 bar) medium pressure models
- Operating temperature range of -40 to 180° F (-40 to 82° C)\*
- Adjustable band clamp brake used to slow and stop reel
- Optional roller guides and arms available as accessories

*Not all options available in every configuration. Please see ordering guide for available sizes.*

*\*Grease reels are rated for 0° to 180° F (-18 to 82° C)*

### Typical Fluids

- Petroleum- and synthetic-based oils (motor, gear, ATF)
- Diesel Fuel
- Air
- Water
- Waste Oil
- Grease

### Top Quality Solutions for:

- Mining operations
- Oil and gas industry
- Heavy-duty construction
- Agriculture
- Sewer and waste water
- Transportation



**XD 60**

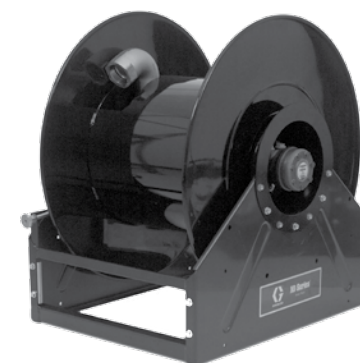
<b>Hose Capacity</b>	Up to ½ in x 100 ft, ¾ in x 100 ft, 1 in x 50 ft
<b>Swivel Size</b>	1 inch npt inlet and outlet



**XD 70**

<b>Hose Capacity</b>	Up to 1 in x 100 ft, 1.5 in x 65 ft, 2 in x 33 ft
<b>Swivel Size</b>	1, 1.5 or 2 inch npt inlet and outlet

*1.5" models include 2" Victaulic\*\* style groove on inlet*



**XD 80**

<b>Hose Capacity</b>	Up to 1 in x 150 ft, 1.5 in x 100 ft, 2 in x 50 ft
<b>Swivel Size</b>	1, 1.5 or 2 inch npt inlet and outlet

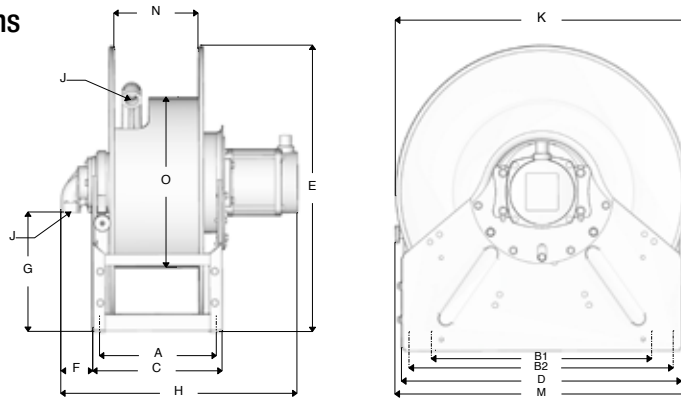
*1.5" models include 2" Victaulic\*\* style groove on inlet*

\*\* Victaulic is a trademark of Victaulic Company of America

# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

### Dimensions



Model	Power Source	A	B1	B2	C	D	E	F	G	H	J	K	M	N	O	P
		(inches)														
XD6010	Pneumatic	10.45	22.25	na	11.8	24.0	26.1	2.8	10.9	20.4	1" npt	25.0	26.0	7.8	15.5	0.437
XD6010	Hydraulic	10.45	22.25	na	11.8	24.0	26.1	2.8	10.9	15.7	1" npt	25.0	26.0	7.8	15.5	0.437
XD6010	Electric	10.45	22.25	na	11.8	24.0	26.1	2.8	10.9	21.6	1" npt	25.0	26.0	7.8	15.5	0.437
XD7010	Pneumatic	12.95	22.25	na	14.3	24.0	26.1	2.8	10.9	22.9	1" npt	25.0	26.0	10.0	10.0	0.437
XD7010	Hydraulic	12.95	22.25	na	14.3	24.0	26.1	2.8	10.9	18.2	1" npt	25.0	26.0	10.0	10.0	0.437
XD7010	Electric	12.95	22.25	na	14.3	24.0	26.1	2.8	10.9	24.1	1" npt	25.0	26.0	10.0	10.0	0.437
XD7015	Pneumatic	12.95	22.25	na	14.3	24.0	26.1	3.6	10.9	23.7	1.5" npt	25.0	26.0	10.0	10.0	0.437
XD7015	Hydraulic	12.95	22.25	na	14.3	24.0	26.1	3.6	10.9	19.0	1.5" npt	25.0	26.0	10.0	10.0	0.437
XD7015	Electric	12.95	22.25	na	14.3	24.0	26.1	3.6	10.9	24.8	1.5" npt	25.0	26.0	10.0	10.0	0.437
XD7020	Pneumatic	12.95	22.25	na	14.3	24.0	26.1	4.0	10.2	24.1	2" npt	25.0	26.0	10.0	10.0	0.437
XD7020	Hydraulic	12.95	22.25	na	14.3	24.0	26.1	4.0	10.2	19.4	2" npt	25.0	26.0	10.0	10.0	0.437
XD7020	Electric	12.95	22.25	na	14.3	24.0	26.1	4.0	10.2	25.2	2" npt	25.0	26.0	10.0	10.0	0.437
XD8010	Pneumatic	20.68	22.25	26.73	22.1	28.5	30.1	2.8	13.4	30.7	1" npt	28.0	30.4	18.0	15.5	0.437
XD8010	Hydraulic	20.68	22.25	26.73	22.1	28.5	30.1	2.8	13.4	26.0	1" npt	28.0	30.4	18.0	15.5	0.437
XD8010	Electric	20.68	22.25	26.73	22.1	28.5	30.1	2.8	13.4	31.8	1" npt	28.0	30.4	18.0	15.5	0.437
XD8015	Pneumatic	20.68	22.25	26.73	22.1	28.5	30.1	3.6	13.4	31.4	1.5" npt	28.0	30.4	18.0	15.5	0.437
XD8015	Hydraulic	20.68	22.25	26.73	22.1	28.5	30.1	3.6	13.4	26.7	1.5" npt	28.0	30.4	18.0	15.5	0.437
XD8015	Electric	20.68	22.25	26.73	22.1	28.5	30.1	3.6	13.4	32.5	1.5" npt	28.0	30.4	18.0	15.5	0.437
XD8020	Pneumatic	20.68	22.25	26.73	22.1	28.5	30.1	4.0	12.7	31.9	2" npt	28.0	30.4	18.0	15.5	0.437
XD8020	Hydraulic	20.68	22.25	26.73	22.1	28.5	30.1	4.0	12.7	27.1	2" npt	28.0	30.4	18.0	15.5	0.437
XD8020	Electric	20.68	22.25	26.73	22.1	28.5	30.1	4.0	12.7	33.0	2" npt	28.0	30.4	18.0	15.5	0.437
		(mm)														
XD6010	Pneumatic	265	565	na	300	610	663	71	277	519	1" npt	635	660	198	394	11
XD6010	Hydraulic	265	565	na	300	610	663	71	277	400	1" npt	635	660	198	394	11
XD6010	Electric	265	565	na	300	610	663	71	277	547	1" npt	635	660	198	394	11
XD7010	Pneumatic	329	565	na	363	610	663	71	277	583	1" npt	635	660	254	254	11
XD7010	Hydraulic	329	565	na	363	610	663	71	277	463	1" npt	635	660	254	254	11
XD7010	Electric	329	565	na	363	610	663	71	277	611	1" npt	635	660	254	254	11
XD7015	Pneumatic	329	565	na	363	610	663	91	277	603	1.5" npt	635	660	254	254	11
XD7015	Hydraulic	329	565	na	363	610	663	91	277	483	1.5" npt	635	660	254	254	11
XD7015	Electric	329	565	na	363	610	663	91	277	631	1.5" npt	635	660	254	254	11
XD7020	Pneumatic	329	565	na	363	610	663	102	259	613	2" npt	635	660	254	254	11
XD7020	Hydraulic	329	565	na	363	610	663	102	259	493	2" npt	635	660	254	254	11
XD7020	Electric	329	565	na	363	610	663	102	259	641	2" npt	635	660	254	254	11
XD8010	Pneumatic	525	565	679	561	724	765	71	340	779	1" npt	711	772	457	394	11
XD8010	Hydraulic	525	565	679	561	724	765	71	340	659	1" npt	711	772	457	394	11
XD8010	Electric	525	565	679	561	724	765	71	340	807	1" npt	711	772	457	394	11
XD8015	Pneumatic	525	565	679	561	724	765	91	340	799	1.5" npt	711	772	457	394	11
XD8015	Hydraulic	525	565	679	561	724	765	91	340	679	1.5" npt	711	772	457	394	11
XD8015	Electric	525	565	679	561	724	765	91	340	827	1.5" npt	711	772	457	394	11
XD8020	Pneumatic	525	565	679	561	724	765	102	323	809	2" npt	711	772	457	394	11
XD8020	Hydraulic	525	565	679	561	724	765	102	323	689	2" npt	711	772	457	394	11
XD8020	Electric	525	565	679	561	724	765	102	323	837	2" npt	711	772	457	394	11

# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

Hose Reel Ordering Information				Technical Specifications							
Applications	Model numbers by color			Description	Weight lbs (kg)	Pressure psi (bar)	Recommended Hose Capacity			Inlet/Outlet Size npt (f)	
	Blue	Yellow	White				Hose Diameter	x Length	ft (m)		
Air/Water	XD 60	24R419	24R420	24R421	XD6010, Pneumatic Motor	123 (56)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	1 in/1 in
		24R414	24R415	24R416	XD6010, Hydraulic Motor	101 (45)	600 (41)	1/2"x100'(30)	3/4"x100' (30)	1'x50" (15)	
		24R404	24R405	24R406	XD6010, 12 VDC Electric Motor, 1/2 HP	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R407	24R408	24R409	XD6010, 24 VDC Electric Motor, 1/2 HP	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R410	24R412	24R413	XD6010, 115 VAC Electric Motor	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24T207	24T208	24T209	XD6010, 230 VAC Electric Motor	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
	XD 70	24R449	24R450	24R451	XD7010, Pneumatic Motor	122 (55)	600 (41)	1"x75' (23)	1"x100' (30)		1 in/1 in
		24R446	24R447	24R448	XD7010, Hydraulic Motor	100 (45)	600 (41)	1"x75' (23)	1"x100' (30)		
		24R437	24R438	24R439	XD7010, 12 VDC Electric Motor, 1/2 HP	132 (60)	600 (41)	1"x75' (23)	1"x100' (30)		
		24R440	24R441	24R442	XD7010, 24 VDC Electric Motor, 1/2 HP	132 (60)	600 (41)	1"x75' (23)	1"x100' (30)		
		24R443	24R444	24R445	XD7010, 115 VAC Electric Motor	132 (60)	600 (41)	1"x75' (23)	1"x100' (50)		
		24T213	24T215	24T216	XD7010, 230 VAC Electric Motor	132 (60)	600 (41)	1"x75' (23)	1"x100' (30)		
	XD 80	24R531	24R532	24R533	XD8010, Pneumatic Motor	164 (74)	600 (41)	1"x150' (46)			1 in/1 in
		24R528	24R529	24R530	XD8010, Hydraulic Motor	142 (64)	600 (41)	1"x150' (46)			
		24R519	24R520	24R521	XD8010, 12 VDC Electric Motor, 1/2 HP	173 (78)	600 (41)	1"x150' (46)			
		24R522	24R523	24R524	XD8010, 24 VDC Electric Motor, 1/2 HP	173 (78)	600 (41)	1"x150' (46)			
		24R525	24R526	24R527	XD8010, 115 VAC Electric Motor	173 (78)	600 (41)	1"x150' (46)			
		24T227	24T228	24T229	XD8010, 230 VAC Electric Motor	173 (78)	600 (41)	1"x150' (46)			
Oil	XD 60	24R434	24R435	24R436	XD6010, Pneumatic Motor	125 (56)	3000 (207)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	1 in/1 in
		24R431	24R432	24R433	XD6010, Hydraulic Motor	103 (47)	3000 (207)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R422	24R423	24R424	XD6010, 12 VDC Electric Motor, 1/2 HP	134 (61)	3000 (207)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R425	24R426	24R427	XD6010, 24 VDC Electric Motor, 1/2 HP	134 (61)	3000 (207)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R428	24R429	24R430	XD6010, 115 VAC Electric Motor	134 (61)	3000 (207)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24T210	24T211	24T212	XD6010, 230 VAC Electric Motor	134 (61)	3000 (207)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	

# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

### Hose Reel Ordering Information

### Technical Specifications

Applications	Model numbers by color			Description	Weight	Pressure psi (bar)	Recommended Hose Capacity Hose Diameter x Length ft (m)			Inlet/Outlet Size npt (f)	
	Blue	Yellow	White								
Oil	XD 70	24R464	24R465	24R466	XD7010 Pneumatic Motor	100 (56)	3000 (207)	1"x75' (23)	1"x100' (30)		1 in/1 in
		24R461	24R462	24R463	XD7010 Hydraulic Motor	102 (46)	3000 (207)	1"x75' (23)	1"x100' (30)		
		24R452	24R453	24R454	XD7010 12 VDC Elec. Motor, 1/2 HP	133 (60)	3000 (207)	1"x75' (23)	1"x100' (30)		
		24R455	24R456	24R457	XD7010 24 VDC Elec. Motor, 1/2 HP	133 (60)	3000 (207)	1"x75' (23)	1"x100' (30)		
		24R458	24R459	24R460	XD7010 115 VAC Electric Motor	133 (60)	3000 (207)	1"x75' (23)	1"x100' (30)		
		24T218	24T219	24T220	XD7010 230 VAC Electric Motor	133 (60)	3000 (207)	1"x75' (23)	1"x100' (30)		
	XD 80	24R546	24R547	24R548	XD8010 Pneumatic Motor	165 (75)	3000 (207)	1"x150' (46)			1 in/1 in
		24R543	24R544	24R545	XD8010 Hydraulic Motor	143 (65)	3000 (207)	1"x150' (46)			
		24R534	24R535	24R536	XD8010 12 VDC Elec. Motor, 1/2 HP	175 (79)	3000 (207)	1"x150' (46)			
		24R537	24R538	24R539	XD8010 24 VDC Elec Motor, 1/2 HP	175 (79)	3000 (207)	1"x150' (46)			
		24R540	24R541	24R542	XD8010 115 VAC Electric Motor	175 (79)	3000 (207)	1"x150' (46)			
		24T230	24T231	24T232	XD8010 230 VAC Electric Motor	175 (79)	3000 (207)	1"x150' (46)			
Waste Oil Evac.	XD 60	24R419	24R420	24R421	XD6010 Pneumatic Motor	123 (56)	600 (41)	1'x50" (15)			1 in/1 in
		24R414	24R415	24R416	XD6010 Hydraulic Motor	101 (45)	600 (41)	1'x50" (15)			
		24R404	24R405	24R406	XD6010 12 VDC Elec. Motor, 1/2 HP	133 (60)	600 (41)	1'x50" (15)			
		24R407	24R408	24R409	XD6010 24 VDC Elec Motor, 1/2 HP	133 (60)	600 (41)	1'x50" (15)			
		24R410	24R412	24R413	XD6010 115 VAC Electric Motor	133 (60)	600 (41)	1'x50" (15)			
		24T207	24T208	24T209	XD6010 230 VAC Electric Motor	133 (60)	600 (41)	1'x50" (15)			
	XD 70	24R516*	24R517*	24R518*	XD7015, Pneumatic Motor	100 (56)	600 (41)	1.25"x35' (10.5)	1.25"x50' (15)	1.5"x50' (15)	1.5 in/1.5 in*
		24R512*	24R513*	24R515*	XD7015 Hydraulic Motor	102 (46)	600 (41)	1.25"x35' (10.5)	1.25"x50' (15)	1.5"x50' (15)	
		24R503*	24R504*	24R505*	XD7015 12 VDC Elec. Motor, 1/2 HP	133 (60)	600 (41)	1.25"x35' (10.5)	1.25"x50' (15)	1.5"x50' (15)	
		24R506*	24R507*	24R508*	XD7015 24 VDC Elec. Motor, 1/2 HP	133 (60)	600 (41)	1.25"x35' (10.5)	1.25"x50' (15)	1.5"x50' (15)	
		24R509*	24R510*	24R511*	XD7015 115 VAC Electric Motor	133 (60)	600 (41)	1.25"x35' (10.5)	1.25"x50' (15)	1.5"x50' (15)	
		24T221*	24T222*	24T223*	XD7015 230 VAC Electric Motor	133 (60)	600 (41)	1.25"x35' (10.5)	1.25"x50' (15)	1.5"x50' (15)	

\*Standard 2" Victaulic\*\* style groove on inlet. \*\*Victaulic is a trademark of Victaulic Company of America.

# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

Hose Reel Ordering Information				Technical Specifications							
Applications	Model numbers by color			Description	Weight	Pressure psi (bar)	Recommended Hose Capacity Hose Diameter x Length ft (m)			Inlet/Outlet Size npt (f)	
	Blue	Yellow	White								
Diesel Fuel	XD 60	24R419	24R420	24R421	XD6010 Pneumatic Motor	123 (56)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	1 in/1 in
		24R414	24R415	24R416	XD6010 Hydraulic Motor	101 (45)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R404	24R405	24R406	XD6010 12 VDC Electric Motor, 1/2 HP	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R407	24R408	24R409	XD6010 24 VDC Electric Motor, 1/2 HP	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24R410	24R412	24R413	XD6010 115 VAC Electric Motor	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
		24T207	24T208	24T209	XD 6010 230 VAC Electric Motor	133 (60)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1'x50" (15)	
	XD 70	24R449	24R450	24R451	XD7010 Pneumatic Motor	122 (55)	600 (41)	1"x75' (23)	1"x100' (30)		1 in/1 in
		24R446	24R447	24R448	XD7010 Hydraulic Motor	100 (45)	600 (41)	1"x75' (23)	1"x100' (30)		
		24R437	24R438	24R439	XD7010 12 VDC Electric Motor, 1/2 HP	132 (60)	600 (41)	1"x75' (23)	1"x100' (30)		
		24R440	24R441	24R442	XD7010 24 VDC Electric Motor, 1/2 HP	132 (60)	600 (41)	1"x75' (23)	1"x100' (30)		
		24R443	24R444	24R445	XD7010 115 VAC Electric Motor	132 (60)	600 (41)	1"x75' (23)	1"x100' (30)		
		24T213	24T215	24T216	XD7010 230 VAC Electric Motor	132 (60)	600 (41)	1"x75' (23)	1"x100' (30)		
	XD 70	24R516*	24R517*	24R518*	XD7015 Pneumatic Motor	100 (56)	600 (41)	1.25"x50' (15)	1.5"x50' (15)	1.5"x65' (20)	1.5 in/1.5 in*
		24R512*	24R513*	24R515*	XD7015 Hydraulic Motor	102 (46)	600 (41)	1.25"x50' (15)	1.5"x50' (15)	1.5"x65' (20)	
		24R503*	24R504*	24R505*	XD7015 12 VDC Electric Motor, 1/2 HP	133 (60)	600 (41)	1.25"x50' (15)	1.5"x50' (15)	1.5"x65' (20)	
		24R506*	24R507*	24R508*	XD7015 24 VDC Electric Motor, 1/2 HP	133 (60)	600 (41)	1.25"x50' (15)	1.5"x50' (15)	1.5"x65' (20)	
		24R509*	24R510*	24R511*	XD7015 115 VAC Electric Motor	133 (60)	600 (41)	1.25"x50' (15)	1.5"x50' (15)	1.5"x65' (20)	
		24T221*	24T222*	24T223*	XD7015 230 VAC Electric Motor	133 (60)	600 (41)	1.25"x50' (15)	1.5"x50' (15)	1.5"x65' (20)	
	XD 70	24T023	24T024	24T025	XD7020 Pneumatic Motor	128 (58)	600 (41)	2"x33' (10)			2 in/2 in
		24T020	24T021	24T022	XD7020 Hydraulic Motor	106 (48)	600 (41)	2"x33' (10)			
		24T011	24T012	24T013	XD7020 12 VDC Electric Motor, 1/2 HP	137 (62)	600 (41)	2"x33' (10)			
		24T014	24T015	24T016	XD7020 24 VDC Electric Motor, 1/2 HP	137 (62)	600 (41)	2"x33' (10)			
		24T017	24T018	24T019	XD7020 115 VAC Electric Motor	137 (62)	600 (41)	2"x33' (10)			
		24T224	24T225	24T226	XD7020 230 VAC Electric Motor	137 (62)	600 (41)	2"x33' (10)			
XD 80	24R531	24R532	24R533	XD8010 Pneumatic Motor	164 (74)	600 (41)	1"x150' (46)			1 in/1 in	
	24R528	24R529	24R530	XD8010 Hydraulic Motor	142 (64)	600 (41)	1"x150' (46)				
	24R519	24R520	24R521	XD8010 12 VDC Electric Motor, 1/2 HP	173 (78)	600 (41)	1"x150' (46)				
	24R522	24R523	24R524	XD8010 24 VDC Elec., Motor, 1/2 HP	173 (78)	600 (41)	1"x150' (46)				
	24R525	24R526	24R527	XD8010 115 VAC Electric, Motor	173 (78)	600 (41)	1"x150' (46)				
	24T227	24T228	24T229	XD8010 230 VAC Electric, Motor	173 (78)	600 (41)	1"x150' (46)				

\*Standard 2" Victaulic™--style groove on inlet. \*\*Victaulic is a trademark of Victaulic Company of America.

# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

### Hose Reel Ordering Information

### Technical Specifications

Applications	Model numbers by color			Description	Weight	Pressure psi (bar)	Recommended Hose Capacity		Inlet/Outlet Size npt (f)	
	Blue	Yellow	White				Hose Diameter x Length ft (m)			
Diesel Fuel	XD 80	24R561*	24R562*	24R563*	XD8015 Pneumatic Motor	165 (75)	600 (41)	1.5"x75' (23)	1.5"x100' (50)	1.5 in/1.5 in*
		24R558*	24R559*	24R560*	XD8015 Hydraulic Motor	143 (65)	600 (41)	1.5"x75' (23)	1.5"x100' (50)	
		24R549*	24R550*	24R551*	XD8015 12 VAC Electric Motor, 1/2 HP	175 (79)	600 (41)	1.5"x75' (23)	1.5"x100' (50)	
		24R552*	24R553*	24R554*	XD8015 24 VAC Electric Motor, 1/2 HP	175 (79)	600 (41)	1.5"x75' (23)	1.5"x100' (50)	
		24R555*	24R556*	24R557*	XD8015 115 VAC Electric Motor	175 (79)	600 (41)	1.5"x75' (23)	1.5"x100' (50)	
		24T233*	24T234*	24T235*	XD8015 230 VAC Electric Motor	175 (79)	600 (41)	1.5"x75' (23)	1.5"x100' (50)	
	XD 80	24R576	24R577	24R578	XD8020 Pneumatic Motor	169 (76)	600 (41)	2"x50' (15)		2 in/2 in
		24R573	24R574	24R575	XD8020 Hydraulic Motor	147 (67)	600 (41)	2"x50' (15)		
		24R564	24R565	24R566	XD8020 12 VDC Electric Motor, 1/2 HP	179 (81)	600 (41)	2"x50' (15)		
		24R567	24R568	24R569	XD8020 24 VDC Electric Motor, 1/2 HP	179 (81)	600 (41)	2"x50' (15)		
24R570		24R571	24R572	XD8020 115 VAC Electric Motor	179 (81)	600 (41)	2"x50' (15)			
24T236	24T237	24T238	XD8020 230 VAC Electric Motor	179 (81)	600 (41)	2"x50' (15)				
Grease-Bulk Transfer	XD 60	24R434	24R435	24R436	XD6010 Pneumatic Motor	125 (75)	3000 (207)	1"x50" (15)		1 in/1 in
		24R431	24R432	24R433	XD6010 Hydraulic Motor	103 (47)	3000 (207)	1"x50" (15)		
		24R422	24R423	24R424	XD6010 12 VDC Electric Motor, 1/2 HP	134 (61)	3000 (207)	1"x50" (15)		
		24R425	24R426	24R427	XD6010 24 VDC Electric Motor, 1/2 HP	134 (61)	3000 (207)	1"x50" (15)		
		24R428	24R429	24R430	XD6010 115 VAC Electric Motor	134 (61)	3000 (207)	1"x50" (15)		
		24T210	24T211	24T212	XD6010 230 VAC Electric Motor	134 (61)	3000 (207)	1"x50" (15)		

Operating temperature for grease reels is 0° F to 180° F (-18° to 82° C), all others are -40° F to 180° F (-40° to 82° C).

\*Standard 2" Victaulic\*\* style groove on inlet. \*\*Victaulic is a trademark of Victaulic Company of America.

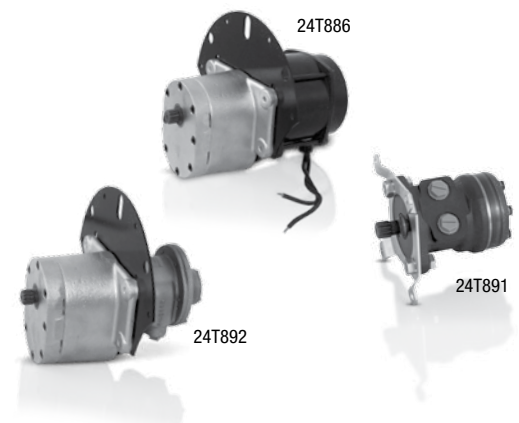
### Modular Component Ordering Information

Reel Frames Only (Pair with Motor Assemblies)											
Air/Water, Diesel Fuel	XD 60	24T104	24T105	24T106	XD6010 Bare Reel, No Motor	87 (39)	600 (41)	1/2"x100' (30)	3/4"x100' (30)	1"x50" (15)	1 in/1 in
	XD 70	24T110	24T111	24T112	XD7010 Bare Reel, No Motor	86 (39)	600 (41)	1"x75' (23)	1"x100' (30)		
	XD 80	24T122	24T123	24T124	XD8010, Bare Reel, No Motor	127 (58)	600 (41)	1"x150' (46)			
Diesel Fuel	XD 70	24T116	24T117	24T118	XD7015, Bare Reel, No Motor	87 (39)	600 (41)	1.25"x50' (15)	1.5"x50' (15)	1.5"x65' (20)	1.5 in/1.5 in†
	XD 70	24T119	24T120	24T121	XD7020, Bare Reel, No Motor	91 (41)	600 (41)	2"x33' (10)			2 in/2 in
	XD 80	24T128	24T129	24T130	XD8015 Bare Reel, No Motor	129 (58)	600 (41)	1.5"x75' (23)	1.5"x100' (30)		1.5 in/1.5 in†
	XD 80	24T131	24T132	24T133	XD8020 Bare Reel, No Motor	133 (60)	600 (41)	2"x50' (15)			2 in/2 in
Waste Oil Evac	XD 60	24T104	24T105	24T106	XD6010 Bare Reel, No Motor	87 (39)	600 (41)	1"x50" (15)			1 in/1 in
	XD 70	24T116	24T117	24T118	XD7015, Bare Reel, No Motor	87 (39)	600 (41)	1.25"x50' (15)	1.5"x50' (15)		1.5 in/1.5 in†
Oil	XD 60	24T107	24T108	24T109	XD6010, Bare Reel, No Motor	88 (40)	3000 (207)	1/2"x100' (30)	3/4"x100' (30)	1"x50" (15)	1 in/1 in
	XD 70	24T113	24T114	24T115	XD7010, Bare Reel, No Motor	87 (39)	3000 (207)	1"x75' (23)	1"x100' (30)		
	XD 80	24T125	24T126	24T127	XD8010, Bare Reel, No Motor	129 (58)	3000 (207)	1"x150' (46)			

Operating temperature for grease reels is 0° F to 180° F (-18° to 82° C), all others are -40° F to 180° F (-40° to 82° C).

†Inlet on modular reels do not come standard with Victaulic\*\* style groove. \*\*Victaulic is a trademark of Victaulic Company of America.

Motor Assemblies (Pair with Frame Only Models)	
24T889	115 VAC, 0.40 HP, motor assembly, reversible type. For installing motor to bare XD frame
24T886	12 VDC, 1/2 HP motor assembly, reversible type. For installing motor to bare XD frame
24T910	12 VDC, 2/3 HP motor assembly, reversible type. For installing motor to bare XD frame
24T888	24 VDC, 1/2 HP motor assembly, reversible type. For installing motor to bare XD frame
24T911	24 VDC, 2/3 HP motor assembly, reversible type. For installing motor to bare XD frame
24T891	Hydraulic motor assembly, reversible type. For installing motor to bare XD reel
24T892	Pneumatic motor assembly, reversible type. For installing motor to bare XD reel
24T890	230 VAC, 1/2 HP, motor assembly, reversible type. For installing motor to bare XD frame

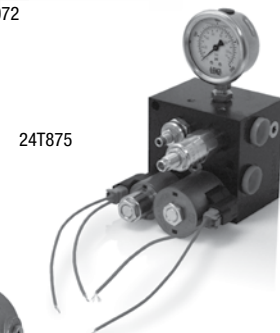
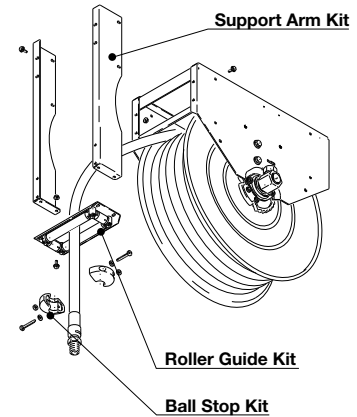


# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

### Accessories

Inlet Hose Kits		Pressure psi (bar)	Hose I.D. in (mm)	Length in (mm)	Hose Inlet
24R111	Inlet kit for air/water and oil	1275 (88)	1 (25)	28 (711)	1 in npt(m)
24R112	Inlet kit for waste oil evacuation	250 (17)	1 (25)	28 (711)	1 in npt(m)
24R115	Inlet kit for diesel fuel	250 (17)	1 (25)	28 (711)	1 in npt(m)
24R117	Inlet kit for diesel fuel	150 (10)	1.5 (38)	28 (711)	1.5 in npt(m)
24R118	Inlet kit for diesel fuel	150 (10)	2 (51)	28 (711)	2 in npt(m)
Ball Stop Kits					
237873	Ball stop kit used for 3/4 in (19.1 mm) hose				
237874	Ball stop kit used for 1 in (25.4 mm) hose				
24R060	Ball stop kit used for 1.25 in (31.75 mm) hose				
24R061	Ball stop kit used for 1.5 in (38.1 mm) hose				
Arm Kits and Hose Guides					
24T327	Stainless Steel Hose Guide for XD 60				
24T328	Stainless Steel Hose Guide for XD 70				
24T329	Stainless Steel Hose Guide for XD 80				
24R072	Roller Guide Kit with Bracket for XD 40 and XD 60				
24T330	Roller Guide Kit with Bracket for XD 70				
24T331	Roller Guide Kit with Bracket for XD 80				
24T332	Arm Kit with Stainless Steel Hose Guide for XD 60				
24T333	Arm Kit with Stainless Steel Hose Guide for XD 70				
24T334	Arm Kit with Stainless Steel Hose Guide for XD 80				
24T335	Arm Kit with Roller Guide for XD 60				
24T336	Arm Kit with Roller Guide for XD 70				
24T337	Arm Kit with Roller Guide for XD 80				
Controls					
24T875	Hydraulic control module for electric over hydraulic control of XD 60/70/80 hydraulic powered hose reels, 12 VDC. Three position, four-way valve				
24T876	Hydraulic control module for electric over hydraulic control of XD 60/70/80 hydraulic powered hose reels, 24 VDC. Three position, four-way valve				
127224	Hydraulic control module for electric over hydraulic control of XD 60/70/80 hydraulic powered hose reels, 12V, includes switch. Three position, four-way valve				
127225	Hydraulic control module for electric over hydraulic control of XD 60/70/80 hydraulic powered hose reels, 24V includes switch. Three position, four-way valve				
127271	Pneumatic valve to control XD 60/70/80 pneumatic powered hose reels. Two position, three-way valve				
127214	Momentary Push-Button On/Off switch with red rubber cap. Use for 12 or 24 VDC				
127217	Hazardous location push button On/Off switch. Use for 12 and 24 VDC				
127223	Hazardous location push button On/Off switch. Use for 115 and 220 VAC				
127218	Hazardous location junction box				
127219	12 VDC intermittent duty solenoid recommended for activating rewind on 12 VDC motor				
127220	24 VDC intermittent duty solenoid recommended for activating rewind on 24 VDC motor				
127221	Manual reset push button circuit breaker, 50 amp rating				
127222	Manual reset push button circuit breaker, 25 amp rating				





# XD 60™, XD 70™ and XD 80™ Motor Driven Hose Reels

## Hose Reels and Packages

Hoses			Pressure	Hose I.D. in (mm)
Diesel Fuel	24R102	1" x 50 ft (15 m) coupled fuel hose	250 psi (17)	1 (25)
	24R103	1" x 75 ft (23 m) coupled fuel hose	250 psi (17)	1 (25)
	24R106	1" x 100 ft (30 m) coupled fuel hose	250 psi (17)	1 (25)
	24T252	1" x 150 ft (46 m) coupled fuel hose	250 psi (17)	1 (25)
	24R108	1.25" x 35 ft (10.5 m) coupled fuel hose	250 psi (17)	1.25 (31.75)
	24R110	1.25" x 50 ft (15 m) coupled fuel hose	250 psi (17)	1.25 (31.75)
	24R114	1.5" x 50 ft (15 m) coupled fuel hose	150 psi (11)	1.5 (38)
	24T253	1.5" x 100 ft (30 m) coupled fuel hose	150 psi (11)	1.5 (38)
	127167	2" x 33 ft (10 m) coupled fuel hose	150 psi (11)	2 (50.8)
	24T254	2" x 50 ft (15 m) coupled fuel hose	150 psi (11)	2 (50.8)
Air/Water	126359	1/2" x 100 ft (30 m) coupled air/water hose	300 psi (20.6)	1/2 (12.7)
	126360	3/4" x 75 ft (23 m) coupled air/water hose	300 psi (20.6)	3/4 (19)
	126361	3/4" x 100 ft (30 m) coupled air/water hose	300 psi (20.6)	3/4 (19)
	126362	1" x 50 ft (15 m) coupled air/water hose	300 psi (20.6)	1 (25)
	126363	1" x 75 ft (23 m) coupled air/water hose	300 psi (20.6)	1 (25)
	126364	1" x 100 ft (30 m) coupled air/water hose	300 psi (20.6)	1 (25)
Oil	126375	1/2" x 100 ft (30 m) coupled oil hose	2000 psi (138)	1/2 (12.7)
	126376	3/4" x 75 ft (23 m) coupled oil hose	1500 psi (138)	3/4 (19)
	126377	3/4" x 100 ft (30 m) coupled oil hose	1500 psi (103)	3/4 (19)
	126503	1" x 50 ft (15 m) coupled oil hose	1275 psi (88)	1 (25)
	126504	1" x 75 ft (23 m) coupled oil hose	1275 psi (88)	1 (25)
	126505	1" x 100 ft (30 m) coupled oil hose	1275 psi (88)	1 (25)
Waste Oil Evac.	126379	1" x 50 ft (15 m) coupled waste oil evac hose	250 psi (17)	1 (25)
	126688	1.25" x 50 ft (15 m) coupled waste oil evac hose	200 psi (13.8)	1.25 (31.75)
	126380	1.25" x 35 ft (10.5 m) coupled waste oil evac hose	200 psi (13.8)	1.25 (31.75)
	127173	1.5" x 50 ft (15 m) coupled waste oil evac hose	200 psi (13.8)	1 (25)
<b>BSPP/BSPT Conversion Kits</b>				
24T359	BSPP Conversion Kit. To convert a 1" XD 60 or XD 80 reel from NPT to BSPP			
24T361	BSPP Conversion Kit. To convert a 1" XD 70 reel from NPT to BSPP			
24T365	BSPP Conversion Kit. To convert a 1.5" XD 70 from NPT to BSPP			
24T363	BSPP Conversion Kit. To convert a 1.5" XD 80 from NPT to BSPP			
24T360	BSPT Conversion Kit. To convert a 1" XD 60 or XD 80 reel from NPT to BSPT			
24T362	BSPT Conversion Kit. To convert a 1" XD 70 reel from NPT to BSPT			
24T366	BSPT Conversion Kit. To convert a 1.5" XD 70 from NPT to BSPT			
24T364	BSPT Conversion Kit. To convert a 1.5" XD 80 from NPT to BSPT			
24T368	BSPT Conversion Kit. To convert a 2" XD 70 from NPT to BSPT			
24T367	BSPT Conversion Kit. To convert a 2" XD 80 from NPT to BSPT			

# Dispense Consoles

## Multi-Station Consoles and Accessories

### Multi-Station Consoles\*

Six-Station Console	
222629	Includes upper and lower floor plates with roller guides and brackets (1-110236; 5-196471) to hold one water bib and five Graco LDM dispense valves. Console dimensions (without brackets): 27 in high x 54 in long x 12 in wide (68.58 cm high x 139.7 cm long x 25.4 cm wide). Console requires a floor opening of 6 in x 51 in (15.2 cm x 122.4 cm)
Four-Station Console	
223448	Includes upper and lower floor plates, roller guides and brackets (1-110236; 3-196471) to hold one water bib and three Graco LDM dispense valves. Console dimensions (without brackets): 27 in high x 36 in long x 12 in wide (68.58 cm high x 139.7 cm long x 25.4 cm wide). Console requires floor opening of 6 in x 33 in (15.2 cm x 83.8 cm)
Single Add-On Fluid Module	
222645	For adding-on to four- or six-station consoles. Includes add-on module, floor plates with roller guides to fit module and one 196471. Console requires floor opening of 6 in x 8-1/2 in (15.2 cm x 21.6 cm). Add-on fluid module dimensions 27 in high x 9 in long x 10 in wide (68.5 cm high x 22.86 cm long x 25.4 cm wide)

\*Hoses not included

Lubricant Dispense Consoles Accessories	
110236	Water bib bracket
110237	Em6 mounting bracket
110285	Pistol-grip dispense valve bracket
196471	Universal dispense valve bracket for EM5 and PM5
249440	Matrix dispense valve bracket
222641	Console roller repair kit (upper)
218591	Floor plate roller repair kit (lower)
178670	Roller only
234423	End panel replacement comes with 8 screws

### Oil Dispense Bar

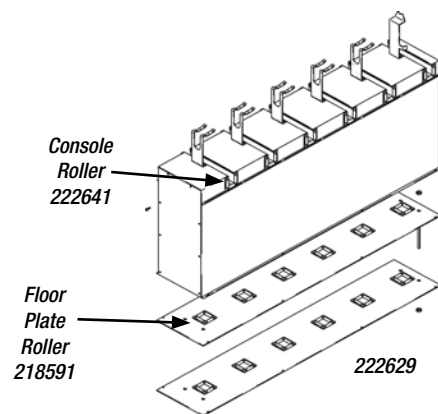
220107	Tough metal cabinet with baked-on enamel finish. Constructed with single-dispense tap and waste pan with plated, perforated metal service area and drain connection. Modular convenient design allows up to 2 oil dispense taps or 3 meters to be added at the time of installation, or later if required. Instruction manual 307742. Maximum working pressure 900 psi (62 bar). 22.6 in H x 13.25 in D x 18.3 in W (57.4 cm H x 33.7 cm D x 46.5 cm W)
Tap Kit	
220112	Add to oil dispense bar to convert into two or three taps, as needed. Kit also includes non-drip dispense valve, manifold and all necessary mounting hardware
Meter Kit	
239706	Any individual tap on the oil dispense bar can be fitted with a fluid meter. Kit includes meter 239824 and all necessary mounting hardware. Maximum working pressure 500 psi (34 bar)
220110	Spigot valve replacement



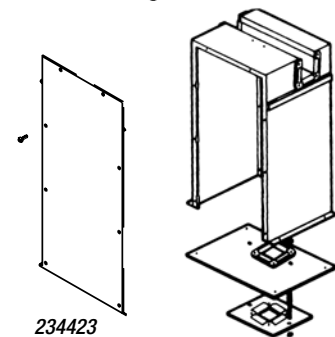
222629



220107



222629



234423

222645

# LD Series Electronic Meters

## Dispense Meters and Control Valves

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

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

### Technical Specifications

Flow Range <sup>(1)</sup> .....	0.1 - 5 gpm (0.4 - 19 lpm)
Maximum Working Pressure .....	1000 psi (69 bar)
Units of measure.....	Quarts, pints, gallons, liters (factory set to quarts)
Weight .....	3 lb (1.36 kg)
Inlet .....	1/2 in npt
Outlet .....	1/2 in npt
Operating Temperature Range.....	32 - 120° F (0 - 48.8° C)
Storage Temperature Range.....	-30 - 120° F (-34.4 - 48.8° C)
Battery .....	9 volt alkaline
Battery Life .....	one year
Wetted Parts.....	sst, nitrile rubber, zinc, cs, lcp
Meter Pressure Loss <sup>(1)</sup> .....	90 psi (6.2 bar) @ 5 gpm (19 lpm)
Accuracy <sup>(2)</sup> .....	±0.5%
Dimensions (without extension) .....	11 in L x 3.25 in W x 3.25 H (28 cm L x 8.3 cm W x 8.3 cm H)
Maximum Totalizer .....	999,999 gallons or liters
Maximum Recorded Dispense.....	999.9 Units (LDP5 only)
Warranty .....	Two Years
Instruction Manual .....	312668

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

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

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

### Ordering Information

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



Dispense Meters and Control Valves

# SD Series Electronic Meters

## Dispense Meters and Control Valves

### Features and Benefits

- Fluid inlet options (1/2 in and 3/4 in npt) meets standard and high-flow requirements
- Large LCD display and simple operator controls
- Locking trigger (LDP5/LDP15 models) and durable cast guard prevents accidental triggering
- Flush-mount nozzle valve design prevents leaks and contamination

### 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

### Technical Specifications

Flow Range <sup>(1)</sup> .....	0.1–14 gpm (0.4 - 53 lpm)
Maximum Working Pressure .....	1500 psi (103.4 bar)
Weight .....	5 lbs (2.3 kg)
Inlet .....	3/4 in–14 npt or 1/2 in–14 npt
Outlet .....	3/4 in–16 straight thread O-ring Boss
Maximum Totalizer .....	999,999 gallons or liters
Maximum Recorded Dispense .....	999.9 Units
Maximum Pre-Set Volume .....	999.9 Units
Storage Temperature Range .....	-40–158° F (-40-70° C)
Operating Temperature Range .....	4–158° F (-20-70° C)
Battery .....	4 AA alkaline or 4 AA lithium
Battery Life <sup>(3)</sup> . . . Preset Models – six months w/alkaline, manual models – one year w/alkaline 4 AA alkaline/lithium	
Wetted Parts .....	Aluminum, sst, pbt/pc, nitrile rubber, cs
Meter Pressure Loss <sup>(1)</sup> .....	180 psi (12 bar) @ 14 gpm (53 lpm)
Accuracy <sup>(2)</sup> .....	+/- 0.5%
Dimensions (without extension) .....	13 in L x 3.75 in W x 5.75 in H, (33cm x 9.5cm x 14.6cm)
Warranty .....	Five years overall, three years electronics
Instruction Manual .....	312865

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

<sup>(2)</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>(3)</sup> Average shop use with alkaline batteries (included); 30-35% longer life with lithium AA.

### Ordering Information

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



# XDM6™ Electronic Meter

## Dispense Meters and Control Valves

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled\*

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

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

### Technical Specifications

Maximum Operating Pressure.....	1500 psi (105 bar, 10.5.)
Operating Temperature Range.....	-4-130° F (-20-55° C)
Storage Temperature Range.....	-40-140° F (-40-60° C)
Inlet .....	1/2 npt
Outlet.....	1/2 npt
Wetted Parts.....	aluminum, SST, CS, acetal, nitrile rubber, Geolast™
Instruction Manual .....	308642
Accuracy/Repeatability .....	+/- 0.6%

Geolast™ is a registered trademark of Advanced Elastomer Systems.

### Ordering Information

		Rigid Extension	Flexible Extension	Gear Lube Extension
<b>XDM6 Electronic Meters</b>				
NPT	1/2" inlet	24V545	24V548	24V547
BSPP		24Y238	24Y242	24Y239
BSPT		24Y249	24Y251	24Y250

<b>XDM6 Bare Valves (no meter, trigger lock, or extension)</b>				
NPT	1/2" inlet	243992		
BSPP		24Y312		
BSPT		24Y314		

<b>Accessories</b>	
24V554	Electronic Control Replacement
203655	Twist Lock Nozzle Replacement 1/4 npt(m)
203687	Flex Extension, hose with 203655 tip
201701	Gear Lube Extension with tip
203265	Rigid Extension with tip

### Color-coded Impact Guards for Electronic Meters

Color-code various fluids dispensed to reduce errors, match store colors, or create a customized appearance. For electronic meters only

191782	Black
191783	Red



24V545



243992



24V554



191782

Dispense Meters and Control Valves

# XDM12™ Electronic Meter

## Dispense Meters and Control Valves

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled\*

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

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

### Technical Specifications

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

### Ordering Information

		Rigid Extension	Flexible Extension
<b>XDM12 Electronic Meters</b>			
NPT	3/4" inlet	24V549	24V550
	1/2" inlet	24V551	24V552
BSPP	3/4" inlet	24Y243	24Y244
	1/2" inlet	24Y246	24Y248
BSPT	3/4" inlet	24Y252	24Y253
	1/2" inlet	24Y254	24Y255

<b>XDM12 Bare Valves with Locking Trigger (no meter or extension)</b>		
NPT	3/4" inlet	238646
	1/2" inlet	238647
BSPP	3/4" inlet	24Y318
	1/2" inlet	24Y315
BSPT	3/4" inlet	24Y319
	1/2" inlet	24Y316

<b>Accessories</b>	
24V554	Electronic control replacement
223920	High flow twist lock nozzle, 1/2 npt(f) with 1 in diameter tip
238400	Automatic nozzle 1/2 npt(f) with 1 in diameter tip
185416	Filter 40 mesh stainless steel

<b>Color-coded Impact Guards for Electronic Meters</b>	
For color-coding fluids dispensed to reduce errors, match store colors, or to protect vehicle's finish. For electronic meters only.	
191782	Black
191783	Red



24V549



238647



191782



223920

# In-Line Electronic Meters

## Dispense Meters and Control Valves

### IM5 Low Pressure Meter

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

### Typical Applications

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

### Typical Fluids Handled

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

### XDI12 and SDI15 Medium/High Pressure Meters

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

### Typical Applications

- Automotive and large truck dealerships
- Fleet service facilities
- Fast lubes and service shops
- Lube trucks (XDI12 only)
- Mining
- In-plant

### Typical Fluids Handled

- Petroleum- and synthetic-based oils (motor, gear, and ATF)
- Anti-freeze (SDI15 only)

### Technical Specifications

	IM5 In-Line Meter	XDI12 In-Line Meter	SDI15 In-Line Meter
Flow Range*	0.5 to 5 gpm (1.9 to 19 lpm)	0.12 to 12.0 gpm (0.46 to 45.6 lpm)	0.5 to 15 gpm (1.9 to 57 lpm)
Max. Working Pressure	500 psi (34 bar)	1500 psi (103 bar)	1500 psi (103 bar)
Weight	1.8 lb (0.8 kg)	1.9 lb (0.95 kg)	1.8 lb (0.82 kg)
Units of Measurement	Quarts, pints, gallons, liters (factory-set to quarts)**		
Accuracy	± 0.5%	± 1.0%	± 0.5%
Inlet/Outlet	1/2 npt*	1/2 npt*	1/2 npt*
Operating Temperature Range	-4 - 122° F (-20 - 50° C)	-4° - 130° F (-20° - 55° C)	-4 - 122° F (-20 - 50° C)
Storage Temperature Range	-13 - 122° F (-25 - 50° C)	-40° - 140° F (-40° - 60° C)	-13 - 122° F (-25 - 50° C)
Outdoor	yes	yes	no
Max Totalizer	99,999	19,999	99,999
Max Recorded Dispense	999.99	199.99	999.99
Meter Pressure Loss*	25 psi (1.7 bar) @ 5 gpm (19 lpm)	150 psi (10.3 bar) @ 12 gpm (45 lpm)	22 psi (1.5 bar) @ 14 gpm (53 lpm)
Battery	9-volt, alkaline	Panasonic® CR2450 3V	2AA alkaline
Wetted Parts	nickel, zinc, zenite, nitrile rubber	aluminum, carbon steel, nitrile rubber, nickel, bronze, SST #304, cast ALNICO 8	nitrile rubber, SST, and Geolast
Instruction Manual	308687	334852	313048

\*Tested with number 10 motor oil. Flow rates vary with fluid pressure and viscosity. \*\* Display shows quantity in 0.01 increments up to 999.99 gallons, quarts, pints, or liters. Totalizes in gallons or liters up to 99,999 units (IM5 only).

### Ordering Information

IM5 In-Line Meter	
239824	IM5 In-Line Meter
XDI12 In-Line Electronic Meter	
24V553	In-Line Meter
24V554	Replacement Electronics
SDI15 In-Line Electronic Meter	
247453	In-Line Meter (U.S.)



239824



24V554



247453

# Mechanical Meters

## Dispense Meters and Control Valves

### Features and Benefits

- Balanced, lightweight, rugged construction, and comfortable grip
- Non-resettable totalizing register helps manage material usage
- Ideal for indoor and outdoor use

### Typical Applications

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

### Typical Fluids Handled

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

### Technical Specifications

Maximum Flow*	8 gpm (30.2 lpm)
Minimum Flow*	0.28 gpm (1.0 lpm)
Maximum Operating Pressure	1500 psi (103 bar)
Operating Temperature Range	-50-160° F (-45-70° C)
Accuracy*	± 1%
Weight	3.5 lb (1.6 kg)
Inlet and outlet connections	1/2 NPT, 1/2 BSPP, 1/2 BSPT

*For use with petroleum-based fluids only.*

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

### Ordering Information

Manual Meters					
		Bare	Rigid	Flexible	Gear Lube
NPT	4/16 liter	24U956	24V046	24V043	24V049
	4/16 quart	24U959	24V037	24V034	24V040
BSPT	4/16 liter	24U957	24V047	24V044	24V050
	4/16 quart	24U960	24V038	24V035	24V041
BSPP	4/16 liter	24U958	24V048	24V045	24V051
	4/16 quart	24U961	24V039	24V036	24V042

Preset Meters						
		Bare	Oil Rigid – Short	Oil Rigid – Long	Oil Flexible	Gear Lube
NPT	60 quart	24U947	24V052	24Z125	24Z126	24Z127
	60 gallon	24U950	24V055	24Z128	24Z129	24Z130
	60 liter	24U953	24V058	24Z131	24Z132	24Z133
BSPT	60 quart	24U948	24V053	–	–	–
	60 gallon	24U951	24V056	–	–	–
	60 liter	24U954	24V059	–	–	–
BSPP	60 quart	24U949	24V054	–	–	–
	60 gallon	24U952	24V057	–	–	–
	60 liter	24U955	24V060	–	–	–



24V034



24U947



24U959

Accessories	
24W641	Quick close nozzle with short rigid extension for oil
255852	Quick close nozzle with long rigid extension for oil
24W641	Quick close nozzle with short rigid extension for oil
255854	Quick close nozzle with rigid extension for gear lube
255855	Quick close nozzle with rigid extension for antifreeze
24W306	Quick close nozzle with flexible extension for antifreeze
256164	Strainer filter kit



# Accessories

## Dispense Meters and Control Valves

### LDM and LDP Accessories

Nozzle Extension Kits			
238887	Automatic nozzle with rigid extension for gear lube		
239949	Automatic thermal compensating nozzle with rigid extension for oil and anti-freeze		
239951	Automatic thermal compensating nozzle with flexible extension for oil and anti-freeze		
239950	Automatic thermal compensating nozzle with rigid extension for gear lube		
239829	Automatic thermal compensating nozzle for oil, anti-freeze, and gear lube without extension		
238371	Automatic gear lube nozzle without extension		
<i>*Economical extension used on model 255751</i>			
Additional LDM5 Accessories			
240416	Inlet Swivel		
114017	Inlet Filter, 80 mesh		
196471	Valve Bracket for Dispense Console		
240453	Valve Repair Kit		
Swivel Covers		Protective Boots with Trigger Guard	
191294*	Black	247759*	Black
191287	Red	243835	Red
191288	Blue	243836	Blue
191289	Green	243837	Green
191295	Yellow	247760	Yellow

*\*Included on meter 256215, 256216, 258693 and 258694*

### SDM and SDP Accessories

Nozzle Extension Replacement Kits For SD Series Meters	
255852	Automatic non-drip quick-close nozzle with rigid extension for oil
255853	Automatic non-drip quick-close nozzle with flexible extension for oil
255854	Non-drip quick-close nozzle with rigid extension for gear lube
255855	Non-drip quick-close nozzle with rigid extension for anti-freeze
255856	Non-drip quick-close nozzle with flexible extension for anti-freeze
255459	Automatic non-drip quick-close nozzle only for oil
255460	Quick-close nozzle only for anti-freeze
255470	Quick-close nozzle only for gear oil
255857	Non-drip quick-close high-flow nozzle with rigid extension for oil and anti-freeze
255858	Non-drip quick-close high-flow nozzle with flexible extension for oil and anti-freeze
255461	Quick-close high-flow nozzle only for oil and anti-freeze
Swivel Covers	
15T366	Black swivel cover (standard color with meter)
15T367	Red swivel cover
15T368	Blue swivel cover
15T369	Green swivel cover
15T370	Yellow swivel cover
Filter Kits for SD Series Meters	
255885	Filter kit includes (10) filters/strainers, (10) spacers and (10) O-rings (155332)



239949



239951



238887



191294

247759



255852



255853



255854



255857



15T366

# SDV15 Control Valve

## Dispense Meters and Control Valves

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

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

### Technical Specifications

Maximum Recommended Flow Rate .....	15 gpm (56.8 lpm)
Maximum Operating Pressure.....	1500 psi (103 bar)
Weight .....	0.4 lb (0.18 kg)
Operating Temperature Range.....	-40°–180° F (-40°–82° C)
Inlet .....	1/2 npt
Outlet.....	3/4 in, 16 straight thread O-ring boss
Wetted Parts.....	Aluminum, sst, cs, acetal, nitrile rubber, tpe
Warranty .....	Five years
Instruction Manual .....	312789

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

### Ordering Information

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



247712

# XDV20 Control Valve

## Dispense Meters and Control Valves

### Features and Benefits

- Moves fluid up to 20 gpm (76 lpm)
- Lock-on/lock-off trigger for hands-free operation
- Rugged cast-body design withstands harsh environments
- Built-in ball bearing swivel allows for ergonomic operation
- Inlet screen aids in keeping fluids clean
- Quick close high flow nozzle for high volume dispensing—moves fluids fast!

### 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

Maximum Recommended Flow Rate .....	20 gpm (76 lpm)
Maximum Operating Pressure.....	1500 psi (105 bar)
Assembly Weight (no meter) .....	0.4 lb (0.18 kg)
Operating Temperature Range.....	-40°–180° F (-40–82° C)
Inlet .....	1/2 npt and 3/4 npt
Outlet.....	7/8-14 straight thread o-ring boss
Wetted Parts.....	aluminum, SST, CS, acetal, nitrile rubber, Geolast
Instruction Manual .....	308642



247722



247724

### Ordering Information

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

# Grease Dispense Valves

## Dispense Meters and Control Valves

### Pro Shot™ Non-Metered Grease Valves

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

### Typical Applications

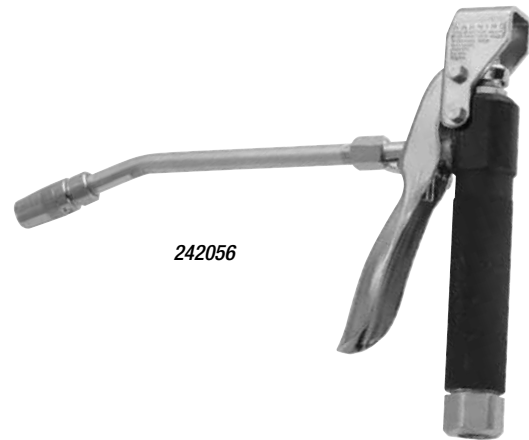
- Service shops
- Heavy-duty dealerships
- Fast lube centers
- Automotive dealerships
- In-plant
- Lube trucks
- Mining

### Typical Fluids Handled

- Grease up to NLGI #2

### Ordering Information

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



### Accu-Shot™ Metered Grease Valves

- Accurate grease metering within  $\pm 3\%$
- Easy-to-read LCD display
- Handles pressure up to 5000 psi (345 bar) and flow up to 36 oz/min (1 kg/min)

### Typical Applications

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

### Typical Fluids Handled

- Grease up to NLGI #2

### Ordering Information

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



# Matrix™

## Fluid Management Systems

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

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

### Matrix Application Features

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

No fluid limitations with any Matrix Platform



Premier software  
256634



Transceiver  
257464



Matrix Meter  
256282



Tank Level Monitor  
256285



Pump Air Control  
247436



### Matrix Demo Kit

Professional Matrix demo case with everything you need to show your customers how Matrix will save them time, gain them more billable hours, and maximize their fixed-operation's profitability.

### Ordering Information

Matrix Demo Kit	
24X077	Includes Matrix Demo Meter (24F318), Matrix Premier Software (256634), Matrix Transceiver (257464), Matrix Tank Level Monitor (256285), Matrix Pump Air Control (247436), USB Cable (15T998), Custom Protective Case

# Matrix™

## Fluid Management Systems

### Software System Operating Requirements

Matrix software can be configured as a stand-alone Windows® PC or networked to multiple PC's.

### PC Hardware Requirements

- Windows® Vista®, Windows® 7, Windows® 8.0, Windows® 8.1, and Windows® 10 operating system
- Windows® 2008 (R2) server platforms
- Processor speed of 3.0 GHz or better
- RAM memory of 2 GB or better
- (1) USB connection



Premier software  
256634

### Software Instruction Manuals

Basic	Professional	Premier	ADP	Procede	Reynolds & Reynolds
313104	313106	313108	313112	334786	313114

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

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

### Ordering Information

System Software	
256634	Premier Software (includes 3rd party interface)
256635	Professional Software
256636	Basic Software
256637	Premier Software with CDK/ADP Interface
128160	Premier Software with Procede Excede Interface
129258	Premier Software with Procede Excede Interface (additional site)
256638	Premier Software with Reynolds & Reynolds Interface

### Matrix Transceiver and Connection Hardware

Transceiver and Connection Hardware	
257464	Transceiver with Universal Power Adapter
255731	USB/RS422 Converter
15T999	15 ft USB Cable
15T998	3 ft USB Cable
119572	RS422 Bulk Wire (1000 ft roll)



257464

### Transceiver and Connection Hardware Technical Specifications

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

# Matrix™

## Fluid Management Systems

### Matrix Meter Technical Specifications

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

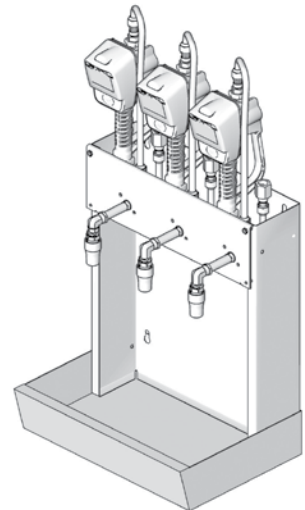
1. Tested in 10W oil at 70° F. Flow rates vary with fluid pressure, temperature, viscosity, inlet fitting and nozzle type.
2. At 2.5 gpm (9.5 lpm) @ 70° F (21° C) with 10 wt. oil and 1 gal (3.8 l) dispensed. May require re-calibration. Out-of-box accuracy ±1.25%.
3. Average shop use with alkaline batteries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



**Matrix Meter**  
256282

### Matrix Meter and Accessories

Matrix Electronic Meter with Extension, 5 gpm or Less		
256282	1/2 in npt(f) swivel, rigid extension and standard automatic non-drip quick-close nozzle for oil	
256482	1/2 in npt(f) swivel, flexible extension and standard automatic non-drip quick-close nozzle for oil	
256483	1/2 in npt(f) swivel, gear lube extension and standard quick-close nozzle	
256484	1/2 in npt(f) swivel, rigid extension and standard quick-close nozzle for anti-freeze	
256485	1/2 in npt(f) swivel, flexible extension and standard quick-close nozzle for anti-freeze	
Matrix Electronic Meter with Extension, 14 gpm or Less		
256486	1/2 in npt(f) swivel, rigid extension, high flow, quick-close nozzle for oil	
256487	1/2 in npt(f) swivel, flexible extension, high flow, quick-close nozzle for oil	
256488	3/4 in npt(f) swivel, rigid extension, high flow, quick-close nozzle for oil	
257120	3/4 in npt(f) swivel, flexible extension, high flow, quick-close nozzle for oil	
Swivel Covers		
15T366	Black swivel cover (standard color with meter)	
15T367	Red swivel cover	
15T368	Blue swivel cover	
15T369	Green swivel cover	
15T370	Yellow swivel cover	
Accessories		
249440	Console bracket	
257539	Matrix meter for oil bar (swivel and extension removed)	Instruction Manual 313013
256719	Oil bar console—complete cabinet without piping and meters	
255370	Oil bar kit (fittings, nozzles, and piping)	
257556	Retro fit kit—mount Matrix meter in 222107 console	
Filter Kits for Matrix Meters		
255885	Filter kit includes (10) filters/strainers (15M308), (10) spacers (15M309) and (10) O-rings (155332)	



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

### Matrix Roll-Around Packages

Matrix wireless technology allows you to control your mobile drums and dispenses by providing security for expensive drums of synthetic and semisynthetic fluids. Each package contains everything you need to manage your drums in existing Matrix installations.

### Ordering Information

Matrix Roll-Around Packages	
Packages contain Matrix Meter (specified below); LD 3:1 Universal Oil Pump (24G576); Universal Cut-to-Length Down Tube (16F878); Drum Cart for 55 Gallon Container (24F915); and Air Regulator with Valve, 1/4" NPT x 3/8" NPT (24N420). Drum not included.	
24Z257	Rigid Extension for Oil (256282)
24Z256	Flexible Extension for Oil (256482)
24Z258	Gear Lube Extension (256483)



**24Z257**  
Drum not included

# Matrix™ Fluid Management Systems

## Tank Level Monitor

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

Tank Level Monitor	
256285	Tank Level Monitor

## Technical Specifications

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

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

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

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



**Tank Level Monitor  
256285**

## Pump Air Control

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

Pump Air Control (PAC)	
247436	93 scfm valve

## Technical Specifications

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

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

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



**Pump Air Control  
247436**

## Tank Accessories

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



# Horizon™ Fluid Management Systems

## Features and Benefits

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

## Typical Applications

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

## Typical Fluids Handled

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

## Technical Specifications

### System Specifications

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

Accuracy of System .....

±0.6%

### Control Module Ports

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

### Voltage Input

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

Maximum Preset or Free-Flow Dispense .....

999.9 units

Minimum Preset Dispense .....

0.5 units

### Units of Measure

Dispense .....

liters, quarts, gallons or pints (configurable for each fluid)

Inventory .....

liters or gallons (dependent upon dispense units chosen)

### Maximum Cable Lengths

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

### Reference Data

Instruction Manual .....	308607
--------------------------	--------



# Horizon™

## Fluid Management Systems

### Ordering Information

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

238624 Master Control Module (one per system)

238625 Slave Control Module (up to 39 per system)

#### Keypads: Basic, Enhanced and Administrative

113551 Basic Keypad for navigating through the Horizon's menus

113553 Administrative Keypad is needed to set up and make changes to the system parameters

191368 Keypad Wall-Mounting Bracket

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

215407 For pumps requiring normal air flow (Mini Fire-Ball 225, 3:1 and Fire-Ball 300, 5:1)

512926 For pumps requiring higher air flow (Fire-Ball 425, 6:1 and 3:1)

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

215487 Low-flow: supports 3 gpm (11.4 lpm)

512927 Higher-flow: supports up to 6 gpm (22.7 lpm)

514150 Anti-Freeze Solenoid

218588 Low-flow Solenoid with Ready Light Kit

238996 Ready Light Kit (only; less the solenoid)

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

238618 For oils, gear lube, automatic transmission fluid

215474 For anti-freeze

111620 Check Valve, 1/2 in

#### Thermal Relief Kits

235998 600 psi (41 bar)

102527 Thermal Relief Valve, 900 psi (62 bar)

237893 900 psi (62 bar)

240429 1600 psi (110 bar)

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

113774 Printer

514037 Printer paper, 1 roll

#### Keypad or Printer Cables

191393 25 ft (7.6 m) cable with connectors

191394 Cable with connectors. 50 ft (15.3 m)

#### Control Module Network

113559 500 ft (152.5 m) bulk cable

113560 1000 ft (305 m) bulk cable

#### Pulse Meter Cable

113555 Length: 500 ft (152.5 m)

113556 Length: 1000 ft (305 m)

#### Solenoids Cable

113557 Length: 500 ft (152.5 m)

113558 Length: 1000 ft (305 m)

#### Computer Cable with Connectors

192873 Computer I/O 25 ft (7.6 m)

192874 Computer I/O 50 ft (15.3 m)

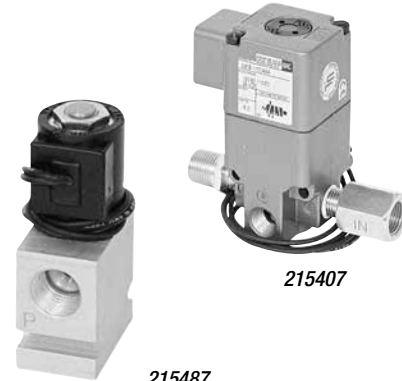


238624



113553

113551



215487

215407



113774



238618

# Fluid Commander™

## Fluid Management Systems

### Features and Benefits

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

### Typical Applications

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

### Typical Fluids Handled

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

### Easy to Use

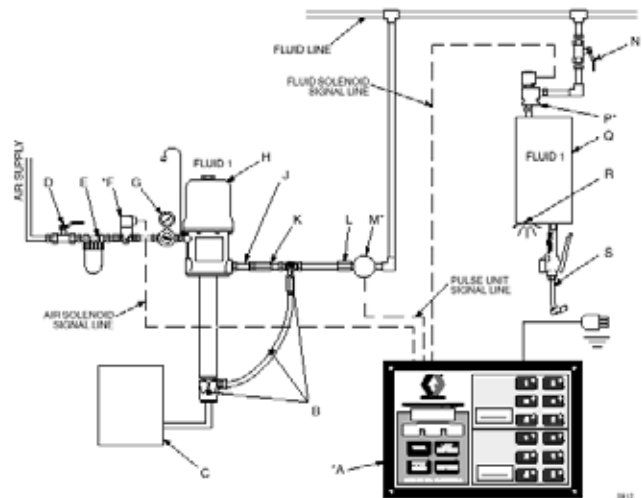
1. Service technician enters the service bay number, type of product, and amount to be dispensed, then activates the dispense button.
2. A “ready” light (located on the hose reel or dispense bar of the target service bay) signals when dispensing can begin.
3. As fluid is dispensed, the Fluid Commander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

### Technical Specifications

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



### Typical Fluid Commander System Layout



#### KEY

- A. Control\*
- B. Pressure Relief Kit, 237893, 1–1/2 npt (m x f)
- C. Supply Tank
- D. Air Shutoff Valve, bleed-type
- E. Air Filter
- F. Air Solenoid Valve\*, 215407
- G. Air Regulator, 202156
- H. Pump
- J. Flexible Hose, 3–6 ft (0.9–1.8 m) long
- K. Check Valve\*, 111620 (required)
- L. Fluid Filter, 223179
- M. Pulse Meter\*, 236763 or 236764
- N. Fluid Shutoff Valve, 108458, 1/2"
- P. Fluid Solenoid Valve\*, 215487
- Q. Hose Reel
- R. Ready Light, 238996
- S. Dispense Valve

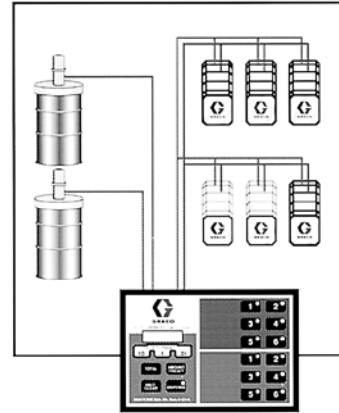
\* These parts are included with Model 232076, 240448, or 241905.

# Fluid Management Systems

## Fluid Commander™

### Ordering Information

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



215407



215487



215481

# Manually-Operated Grease Guns

## Grease Guns, Accessories and Fittings

### Ordering Information

Grease Guns	
202600	1/8 npt(f) Power-Shot Booster Gun boosts incoming pressure up to 18,000 psi (1,242 bar). Use with any high-pressure lubricator. Maximum inlet pressure: 5000 psi (345 bar). Includes nozzle (200389). (Hose swivel 202579 must be ordered separately). Instruction Manual: 306271
110218	Standard Lever-Action Grease Gun: Develops up to 6000 psi (400 bar) working pressure and pumps 1.8 oz (51 g) per 40 strokes. Can be loaded via cartridge or bulk fill. Optional loader fitting available. Equipped with rigid extension and hydraulic coupler
110216	Heavy-Duty Lever-Action Grease Gun with high-pressure variable low-volume. Three-way loading: bulk fill, loader fitting or 14 oz cartridge. Pumps 1.24 oz per 40 strokes. Includes air bleeder valve. Equipped with rigid extension and hydraulic coupler (M IL-G-3859). Can develop up to 10,000 psi (690 bar). Comes with 236171, easy fill valve
110203	Pistol-Matic Grease Gun with three-way loading: bulk fill, loader fitting or cartridge. Pumps .72 oz (28.4 g) per 40 strokes. Includes air bleeder valve. Equipped with rigid extension and hydraulic coupler. Can develop up to 3500 psi (241 bar)
203697	1/8 npt(f) Hot-Shot Portable Booster Gun for portable operation without continuous connection to grease supply. Has 4 oz (113 g) grease reservoir in handle capable of servicing up to 100 fittings before needing a refill. Has grease fitting for recharging from either manual or air-powered luber. Single-hand operation squeeze handle develops up to 10,000 psi (690 bar). Includes grease extension and nozzle 200389. Instruction Manual: 306460
110202	Pistol-Matic Grease Gun is the same as 110203 but with 12 in (30.4 cm) flexible rubber hose and hydraulic coupler
112196	1/4 npt Pistol-Style Air-Operated Grease Gun is a spring-primed, single-shot gun. Three-way loading: bulk fill, loader fitting or 14 oz (400 g) cartridge. Air input range of 75 to 100 psi (5 to 7 bar); working pressure of 6000 psi (414 bar). Pumps 1.2 oz (34 g) per 40 pulls at 100 psi (7 bar). Includes standard gun coupler and bleeder valve, 1/8 in-27 NPT rigid extension. (1/4 npt air input connection)
110201	Suction Gun for evacuating and filling fluids into gear housings, differentials, transmissions and related applications. Holds 1 pint (16 oz/473 cc), comes with red clear plastic 12 in (30.4 cm) hose
Z-Swivels	
202579	1/8 npt(m) x 1/4 npt(f) free-ball bearing
202577	1/4 npt(m) x 1/4 npt(f) free-ball bearing use with dispense valve 242055 and 242056
224569	3/8 npt(m) x 3/8 npt(f) free-ball bearing use with dispense valve 242057 and 242058
207948	1/2 npt(m) x 1/2 npt(f) free-ball bearing
Straight Swivels	
204082	1/8 npt(m) x 1/8 npt(f) 8000 psi (550 bar) free-ball bearing
204083	1/4 npt(m) x 1/8 npt(f) 8000 psi (550 bar) free-ball bearing
204084	1/4 npt(m) x 1/4 npt(f) 8000 psi (550 bar) free-ball bearing
214925	3/8 npt(f) x 1/4 npsm(f-union) 5000 psi (345 bar)
214926	3/8 npt(f) x 1/2 npsm(f-union) 5000 psi (345 bar)
207946	3/8 npt(f) x 1/2 npsm(f-union) 5000 psi (345 bar)
207947	1/2 npt(m) x 1/2 npt(f) 6000 psi (414 bar)
360° Swivels	
Swivels and locks into full 360° angle. Use for maximum coupler adaptability and reach	
203597	360° Grease Swivel with tapered-nose coupler (200325)
203198	360° Grease Swivel, 8,000 psi (552 bar) maximum working pressure (without coupler)



# Manually-Operated Grease Guns

## Grease Guns, Accessories and Fittings

### Grease Nozzles

200389	Standard nozzle. Includes straight 6 in (15.2 cm), 1/8 npt(m) extension tube (197471) and tapered nose 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
204897	Swivel nozzle. Includes straight 12 in (30.4 cm), 1/8 npt(m) extension tube (155836) and tapered nose coupler (200325). Coupler has 360° swivel adapter (203198) for added convenience
204204*	Flexible 12 in (30.4 cm) hose nozzle. 1/8 npt(m) includes tapered-nose coupler (200325)
203504*	Flexible 12 in (30.4 cm) hose nozzle. 1/8 npt(m) includes tapered-nose coupler (200325) and lock sleeve connector (203497) for quick connection to any grease nozzle having tapered-nose coupler
109145	12 In (30.4 cm) hose nozzle without coupler
112255	18 In (45.8 cm) hose nozzle without coupler
109148*	30 In (76.2 cm) hose nozzle without coupler, has 1/8 npt(m) both ends. Use as alternate for rigid nozzle with tapered-nose coupler 200325

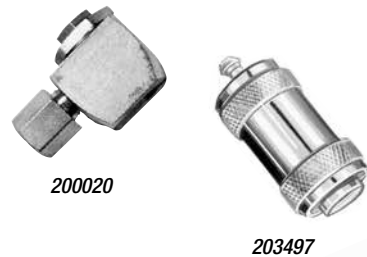
\*Warning: potential injection hazard. Not for use above 5000 psi (345 bar).

### Grease Couplers

200325	1/8 npt(f) inlet standard tapered-nose coupler. Hardened jaws grip grease fittings through wide-sealing angle, but release easily. Maximum working pressure 8000 psi (551 bar)
202650	1/8 npt(f) inlet standard straight nose grease coupler for manual operated grease guns only. Maximum working pressure 3000 psi (206 bar)
200020	1/8 npt(f) inlet standard button-head coupler. Gives fast, positive seal on button-head fittings
200021	1/8 npt(f) inlet giant button-head coupler. Gives fast, positive seal on larger button-head fittings

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

201881	Hydraulic-to-push adapter. Used for U-joints and low-pressure service
205532	Hydraulic-to-steel needle adapter. Used for flush fittings. 250 psi (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 standard grease fitting with sleeve to lock connector in place
236171	Easy-fill valve. For faster loading of graco hand grease guns with gun loaders. Replaces hydraulic fittings on all grease guns with 1/8 npt(f)
204929	Grease loader valve. For use with lever-operated, high-volume grease pumps. Permits quick bulk-filling of hand-operated grease lever guns equipped with easy-fill valve 236171
205592	Hydraulic adapter assortment package. Contains needle adapter (205568), plug adapter (205554), push adapter (201881), nylon needle adapter (205582), hydraulic-to-steel needle adapter (205532) and whip hose nozzle connector (203504)



### Grease Gun Fittings

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

Part No.	Shank	Description	Pressure Rating
100054	9/32	1/8 npt straight	10,000 psi (690 bar)
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	

# Manually-Operated Grease Guns

## Grease Guns, Accessories and Fittings

1/4" Tapered Thread Grease Fittings (steel; ball-check)			
100848	3/8	1/4 npt 67° angle	10,000 psi (690 bar)
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	
1/4" Tapered Thread-Forming Grease Fittings (steel; ball-check)			
110703	13/64	1/4-28 straight	10,000 psi (690 bar)
110705	13/64	1/4-28 90° angle	
Drive-Type Grease Fittings (steel)			
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)			
100837	7/16	1/4 npt straight	
101297	33/64	3/8 npt straight	
110711	35/64	1/2 npt straight	
Giant Button-Head Grease Fitting (steel)			
110712	9/16	3/8 npt straight	
100854	1/2	1/4 npt straight	
Grease Accessory Packages			
202654	Convenient Storage Box Contains the following threaded fittings in the quantity listed:		
Shank	Description	Grease Fitting No.	Quantity
9/32	1/8 npt straight	100054	30
9/32	1/8 npt 30° angle	100970	10
9/32	1/8 npt 90° angle	100833	10
3/16	1/4-28 straight	100846	20
13/64	1/4-28 45° angle	100847	10
Easy-Outs			
101604	1/8 npt		
101605	1/4-28 unf		



101287



100834



101297



110712



202654



101605



101604

# Oil King,<sup>™</sup> Coolant King<sup>™</sup> and Oil Ace<sup>™</sup>

## Fluid Reclaim Packages and Accessories

### Oil King and Coolant King

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

### Typical Applications

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

### Typical Fluids Handled

- Used oil—Oil King
- Used antifreeze—Coolant King

### Ordering Information

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

\* Must use 224873 for topside evacuation. Must ship via truck.



238866



248632

### Oil Ace

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

### Typical Applications

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

### Typical Fluids Handled

- Used oil

### Ordering Information

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



119577



# Oil Receivers and Drains

## Fluid Reclaim Packages and Accessories

### Ordering Information

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



239301



244055



208009



218969

# Oil Evacuation

## Fluid Reclaim Packages and Accessories

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

Wall-Mounted Packages	
24E166	Includes: 1050A (1 in) diaphragm pump (647731), wall bracket (24C637), air installation kits (240684), fluid installation kits (240685), drum style adapter kits (240832) <i>NOTE: Used-oil receivers are not included and must be ordered separately. See instruction manual 313597 for more information.</i>
224873	Includes: 716 (3/4 in) diaphragm pump (241906), wall bracket (224835), air installation kits, fluid installation kits (240685), drum style adapter kits (240832) <i>NOTE: Used-oil receivers are not included and must be ordered separately.</i>

**Stationary Gear-Oil Evacuation Systems with 716 or 1050 Diaphragm Pump**

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

224955	Includes: 716 diaphragm pump (241906), air control kit (110149), mounting kit (224759), swivel union (157785), hose coupler (111474), suction hose/wand** (221146) and control valve** (220969) <i>**Order additional suction hose/wand (221146) and additional control valve (220969) for each additional suction point. Note: Order grounding clamp (222011) or use locally-supplied grounding wires and clamps in accordance with applicable codes.</i>
24E167	Includes: UL-listed 1050A diaphragm pump (647731), air control kit, hose and fitting kit (222149), evacuation, suction hose/wand** (221146) and wall bracket (24C637) <i>**Order additional suction hose/wand 221146 and additional control valve 220969 for each additional suction point. Note: Order grounding clamp 222011 or use locally-supplied grounding wires and clamps in accordance with applicable codes. See instruction manual 313597 for more information.</i>

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

Suction Wand Kits	
223696	15 in (38.1 cm)
224762	48 in (121.9 cm)

### Used-Oil Handling Accessories

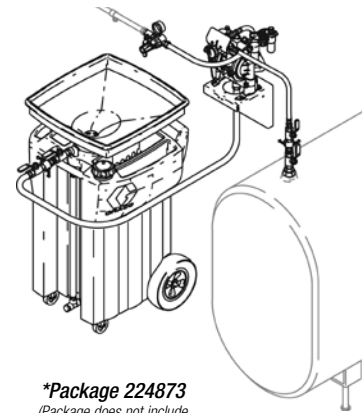
4-Way Evacuation Valve	
120581	1" npt (f) 4-way evacuation valve
120601	1.5" npt (f) 4-way evacuation valve

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

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

Oil Tank Monitor	
116229	Shuts off air to the pump when tank is full.

Accessories for Port-Evac Pump (223695)	
223888	6 ft (1.8 m) suction hose for ATF and anti-freeze. Includes filter screen



**\*Package 224873**  
(Package does not include 238866 receiver or tank)



223695



120581



218970



116229



223888

# Oil Evacuation

## Fluid Reclaim Packages and Accessories

### Fluid Reclaim Accessories

243167	U-tube for used-oil drain cart evacuation system. 1/2 npt (mbe)
222011	Grounding clamp for all used-oil handling systems includes 25 ft (7.6 m) grounding wire
<b>Fas-Vac Evacuation Systems</b>	
224667*	Fas-vac evacuation system (without drum) basic system includes 716 diaphragm pump and mounting hardware. Instruction manual 308154
224700*	16 gallon (60 l) system includes pump (224667), dolly (224665), wand storage kit (224666), evacuation hose (224669) and 16 gallon (60 l) drum (111468). Instruction manual 308154
224701*	55 gallon (200 l) system (without drum) includes pump (224667), 55 gallon (200 l) drum truck (111470), wand storage kit (224666) and evacuation hose (224702). Instruction manual 308154
187359	4-way valve 1/2 npt(f) ports

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



224701

### Hoses, Fittings, and Accessories

#### Air Filters

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

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

#### Automatic Filter Drain

106151	Float-type drain for automatic emptying of accumulated fluid in a filter assembly. 1/4 npt(m). Fits air filters 106150, 112859, and 217074.
127711	Float-type drain for automatic emptying of accumulated fluid in a filter assembly. Fits air filter 106148 and 106149.

#### Air Regulators

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

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

#### Installation Kits

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

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

#### Air Lubricators

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

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



106148



106151



109075



224512



214847

# Accessories

## Hoses and Fittings

### FRL Combination Units

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

110149	1/4 npt (fbe)
110150	3/8 npt (fbe)
217072	1/2 npt (fbe)
217073	3/4 npt (fbe)



110150

### Bleed-type Air Shut-off Valves

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

110223	1/4 npt(fbe)
110224	3/8 npt(fbe)
110225	1/2 npt(fbe)
110226	3/4 npt(fbe)
107142	1/2 npt(mxf)
107141	3/4 npt(mxf)



106151



110223



107142

### Air Line Shut-off Valves Ball valve-type air line shut-off valve; non-pressure relieving

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



208536

### Quick-Connect Coupler

Permits quick, convenient attachment of air supply hoses

208536	1/4 npt(fbe)
110198	3/8 npt(f)
110199	1/2 npt(f)
110200	3/4 npt(f)



169970

### Quick-Connect Nipple

Allows quick attachment of air supply hoses to pump motor

169970	1/4 npt(m)
169967	1/4 npt(f)
169971	3/8 npt(m)
110196	1/2 npt(m)
110197	3/4 npt(m)

### Air Needle Valve

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

205090	1/4 npt(f) outlet port; 1/4 npt(m) inlet port
206264	1/8 npt(f) outlet port; 1/4 npt(m) inlet port



205090

### Air Pressure Relief Valve

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

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

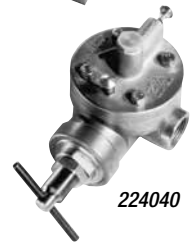


110065

# Accessories

## Hoses and Fittings

<b>Air Pressure Gauge</b>	
Allows visual check of air pressure being supplied to the pump. Rated to 200 psi (14 bar)	
110319	1/8 npt(m) bottom inlet; black
100960	1/4 npt(m) bottom inlet; black
101180	1/4 npt(m) bottom inlet; chrome
<b>Air manifold</b>	
Supply several pumps from one supply line. Larger port delivery ensures adequate air flow to all pumps	
158990	Four outlet ports; 3/8 npt(f)
601950	Three outlet ports; 1/2 npt(f)
<b>Runaway Valve</b>	
Prevents pump damage by automatically closing the air line to stop the pump when a runaway pump condition occurs due to an empty barrel or hose leak	
224040	3/4 npt(fbe)
<b>Blow Guns</b>	
236211	Safety Blow Gun tip swivels freely and cannot be removed. Tip pressure will not exceed 30 psi (2 bar), adequate for cleaning. Maximum working pressure 150 psi (10 bar). Use with coupler 208536
<b>Tire Inflators</b>	
236205	Heavy-duty Tire Inflator includes 12 in (30 cm) hose with swivel dual-foot chuck and pop-out gauge. Tapered chuck nut fits wheel-cover holes on cars and light trucks. Gauge ranges from 0-120 psi in 2 psi increments. Maximum working pressure 250 psi (18 bar), 1/4 npt(f) inlet
236206	Passenger Car Tire Inflator includes 12 in (30 cm) hose with straight-on chuck and pop-out gauge. Tapered chuck nut fits wheel cover holes on cars and light trucks. Ideal for use on reels. Gauge ranges from 0-90 psi in 2 psi increments. Maximum working pressure 250 psi (18 bar), 1/4 npt(f) inlet
218545	1/4 npt(f) Tire Chuck, durable, full-volume tool for adding/relieving air pressure
<b>Water Valve</b>	
180685	Water/Anti-Freeze Bib is a durable, full-volume dispense nozzle for water, anti-freeze and windshield washer fluid. Nitrile rubber seals with 1/4 npt (f) inlet. Maximum pressure is 100 psi (7 bar)



## Heavy-Duty Reinforced Hoses

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

<b>1/4 in ID hoses with maximum pressure rating of 5000 psi (345 bar)</b>		
Part No.	Length	Fittings
109145	12 in (0.3 m)	1/8 in x 1/8 in (4.8 mm x 4.8 mm) with bend restrictor
109146	15 in (0.4 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109147	24 in (0.6 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109148	30 in (0.8 m)	1/8 in x 1/8 in (4.8 mm x 4.8 mm) with bend restrictor
109149	48 in (1.2 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109150	72 in (1.8 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109151	12 ft (3.6 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109152	15 ft (4.6 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109153	20 ft (6.1 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109154	25 ft (7.6 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109156	35 ft (10.6 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109157	40 ft (12.2 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109158	50 ft (15.3 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)



# Lubrication Hoses

## Hoses and Fittings

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

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

### Lubrication Hoses (Oil)

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

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

#### 3/4 in ID hoses with maximum pressure rating of 2,250 psi (155 bar)

Part No.	Length	Fittings
109108	18 in (0.4 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
109105	72 in (1.8 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
111010	10 ft (3.0 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
237865	75 ft (22.9 m)	1/2 in x 1 in (12.7 mm x 25.4 mm)
237866	50 ft (15.2 m)	1/2 in x 1 in (12.7 mm x 25.4 mm)

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

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

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

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

### Air/Water Hoses

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

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

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

# Air/Water Hoses

## Hoses and Fittings

### Fabric-Reinforced 1/4 in ID hoses with maximum pressure rating of 180 psi (12.4 bar)

Part No.	Length	Fittings
109123	18 in (0.5 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109124	4 ft (1.2 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109125	6 ft (1.8 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109126	10 ft (3.1 m)	1/4 in x 1/4 in (6.4 mm x 6.4 mm)
109127	25 ft (7.6 m)	1/4 in x 1/2 in (6.4 mm x 12.7 mm)
109128	40 ft (12.2 m)	1/4 in x 1/2 in (6.4 mm x 12.7 mm)
218491	40 ft (12.2 m)	3/8 in x 1/4 in (9.5 mm x 6.4 mm)

### 3/8 in ID hoses with maximum pressure rating of 180 psi (12.4 bar)

Part No.	Length	Fittings
204560	18 in (0.5 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109130	4 ft (1.2 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
203320	6 ft (1.8 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
109131	10 ft (3.1 m)	3/8 in x 3/8 in (9.5 mm x 9.5 mm)
110326	16 ft (4.9 m)	1/4 in x 3/8 in (6.4 mm x 9.5 mm)
109132	25 ft (7.6 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
109133	30 ft (9.2 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
109134	40 ft (12.2 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)
109135	60 ft (18.3 m)	3/8 in x 1/2 in (9.5 mm x 12.7 mm)

### 1/2 in ID hose with maximum pressure rating of 180 psi (12.4 bar)

Part No.	Length	Fittings
218093	22 in (0.56 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
110046	4 ft (1.2 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
205418	6 ft (1.8 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
214656	10 ft (3.1 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)

### 1/2 in ID hose with maximum pressure rating of 300 psi (20.7 bar)

Part No.	Length	Fittings
248312	25 ft (7.6 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)
248313	50 ft (15.2 m)	1/2 in x 1/2 in (12.7 mm x 12.7 mm)

### 3/4 in ID hoses with maximum pressure rating of 180 psi (12.4 bar)

Part No.	Length	Fittings
110047	18 in (0.5 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
110048	4 ft (1.2 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
208610	6 ft (1.8 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
214955	10 ft (3.1 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)
208611	25 ft (7.6 m)	3/4 in x 3/4 in (19.1 mm x 19.1 mm)

# Pipe Fittings and Swivels

## Hoses and Fittings

### Bushing – reducing, standard and expanding

Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)
100030	1/4 in x 1/8 in	159841	3/8 in x 1/4 in	100206	1/2 in x 1/4 in
100081	1/2 in x 3/4 in	100615	3/4 in x 1/4 in	100505	3/4 in x 3/8 in
100896	3/4 in x 1/2 in	100380	1 in x 1/2 in	158586	1 in x 3/4 in

### Pipe Adapters

Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)
150171	1/8 in x 1/8 in	159840	1/8 in x 1/4 in	156580	1/8 in x 3/8 in
150287	1/4 in x 3/8 in	159842	1/4 in x 1/2 in	150286	3/8 in x 3/8 in
156022	3/8 in x 1/2 in	168595	1/2 in x 3/4 in		

### Street Elbows

Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)	Part No.	Thread Size (m x f)
100840	1/4 in x 1/4 in	155699	3/8 in x 3/8 in	158683	1/2 in x 1/2 in
176393	3/4 in x 3/4 in				

### Coupling (standard)

Part No.	Thread Size	Part No.	Thread Size	Part No.	Thread Size
100451	1/8 in	113093	1/4 in	162024	3/8 in
158581	1/2 in	100385	3/4 in	100474	1 in

### Hex Nipple (standard and reducing)

Part No.	Thread Size	Part No.	Thread Size	Part No.	Thread Size
151519	1/4 in x 1/8 in	156971	1/4 in x 1/4 in	156296	3/8 in x 1/8 in
165198	3/8 in x 1/4 in	156849	3/8 in x 3/8 in	162449	1/2 in x 1/4 in
159239	1/2 in x 3/8 in	158491	1/2 in x 1/2 in	194048	3/4 in x 3/8 in
157191	3/4 in x 1/2 in	175013	3/4 in x 3/4 in	158555	1 in x 3/4 in

### Square-Head Plug

Part No.	Thread Size	Part No.	Thread Size	Part No.	Thread Size
111697	1/4 in	100040	3/8 in	100737	1/2 in
104663	3/4 in				

### Straight Swivel Adapter\*

Part No.	Rigid (m) x Swivel (f)	Part No.	Rigid (m) x Swivel (f)	Part No.	Rigid (m) x Swivel (f)
208434	1/8 in x 1/4 in	156823	1/4 in x 1/4 in	157705	1/4 in x 3/8 in
155665	3/8 in x 3/8 in	162505	3/8 in x 1/2 in	156684	1/2 in x 1/2 in
158256	1/2 in x 3/8 in	157785	3/4 in x 3/4 in	202965	1 in x 3/4 in
160022	1 in x 1 in				

### 90° Swivel Adapter\*

Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)
157676	1/4 in x 1/4 in	155677	3/8 in x 3/8 in	159801	3/8 in x 1/2 in
157416	1/2 in x 1/2 in	156589	3/4 in x 3/4 in		

### Straight Swivel Adapter\*

Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)	Part No.	Rigid (f) x Swivel (f)
155570	1/4 in x 1/4 in	159153	3/8 in x 1/4 in	156173	3/8 in x 3/8 in
155653	1/2 in x 1/4 in	161077	1/2 in x 3/8 in	155865	1/2 in x 1/2 in
156172	3/5 in x 3/4 in	158383	1 in x 1 in		

### 90° Swivel\*

Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)
155541	1/4 in x 1/4 in	155495	3/8 in x 1/4 in	155494	3/8 in x 3/8 in
217430	3/8 in x 1/2 in	161037	1/2 in x 3/8 in	155470	1/2 in x 1/2 in
160327	3/4 in x 3/4 in				

### 45° Swivel Adapter\*

Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)	Part No.	Rigid (M) x Swivel (F)
161889	3/8 in x 3/8 in	105281	3/4 in x 3/4 in		

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





# Tube and Fittings

## Hoses and Fittings

### Tube Fittings

Maximum pressure rating of 3000 psi (207 bar) with appropriate tubing wall thickness

#### Tube Union Flow 90° Elbow

Part No.	Tube OD	
101012	5/8 in	-
101376	7/8 in	-

#### Tube Union – Straight

Part No.	Tube OD	
101009	5/8 in	-
101340	7/8 in	-

#### Male Connector

Part No.	Tube OD	Thread
101339	7/8 in	3/4 npt

#### Female Connector – Straight

Part No.	Tube OD	Thread
101008	5/8 in	1/2 npt

#### Tube Tee with Female Branch

Part No.	Tube OD	Thread
101013	5/8 in	5/8 npt

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



### Technical Information

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

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

### Air Lines

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

### Fluid Lines

This information applies to typical automotive flow rate service requirements

#### Chassis Grease Lubricant Supply Lines (based upon 5000 psi [345 bar] maximum working pressure)

Supply Line Length	Supply Pump	Hydraulic Supply Line Tubing	ASTM A53 or A106 Grade "B" – Seamless Pipe (6000 psi [414 bar] forged steel fittings)
Up to 50 feet	50:1 Fire-Ball 300, 425	5/8" OD x .109" Wall Tube	1/2" Schedule 80
50 to 100 feet	50:1 Fire-Ball 300, 425	5/8" OD x .109" Wall Tube	1" Schedule 160
100 to 200 feet	50:1 Fire-Ball 300	N/A	1-1/4" Schedule 160
100 to 200 feet	50:1 Fire-Ball 425	N/A	1-1/2" Schedule 160
200 feet and up	50:1 Fire-Ball 300, 425	N/A	1-1/2" Schedule 160

#### Motor Oil, Gear Lube, or ATF Lubricant Supply Lines (based upon 1000 psi [69 bar] maximum working pressure)

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

# Petroleum Management Group

## Ordering and Warranty Information

---

This Price List supersedes all previous price lists dated prior to January 2, 2011.

Prices, discount codes, and family codes subject to change without notice.

\$50.00 U.S. net minimum billing, exclusive of application taxes and transportation.

The goods are sold to Distributor EX Works (Incoterms 2000) Graco's premises or the premises of Graco's Supplier. All freight charges, handling, insurance, duty, taxes and other charges are at Distributor's expense, with the following exception: for single orders and/or shipments to USD \$2,500 net value or more, Graco will prepay surface freight charges to the U.S. port of exit or the U.S. freight forwarder of Distributor's choice.

All prices are F.O.B. shipping point.

Returns will not be accepted on configured or low demand products built to special customer order. These orders are subject to a cancellation fee.

Graco strives to ship all orders within 48 hours. If you have need for an emergency shipment and your order is received before 2:30 p.m. Central Time, you may request same day shipment.

Graco Inc. reserves the right to correct any typographical errors in this price list.

Possession of this list does not permit any party to purchase any or all of the items listed herein.

Prices, as shown herein, do not include any sales tax, excise tax, or other similar tax which must be added when, as, and if applicable.

This price list does not list parts that are obsolete or discontinued. Always refer to the most recent lists and instruction forms.

### GEDI® Website

GEDI stands for Graco Extranet for Distributor Information and is for use exclusively by authorized Graco distributors. This online tool features up-to-the-minute list price, net price, order/product information, product availability and shipping information. Access to this portion of the [www.graco.com](http://www.graco.com) website requires your Graco account number and the assignment of a GEDI password.

If you would like to access GEDI, visit [www.graco.com](http://www.graco.com) for easy online instructions.

### Product Orders and Inquiries

- Order entry
- Product availability
- List and net prices
- Literature orders
- Order status
- Shipping charges
- Tracking information
- Same day shipping\*

*\*All orders entered and credit approved by noon qualify for same day shipping*

### Fax Order Line *(orders only please)*

**Toll Free: 800-533-9656**

*(In Minnesota Twin Cities Metro Area, dial 612-378-3590)*

Free-up phone lines. Fax your orders day or night. You will receive a fax conformation of your order, which includes:

- Shipping location
- Graco sales release number
- Total net order entry value
- Line item pricing
- Quantity available by line item
- Part description

### Customer Service and Technical Assistance

**Toll Free: 800-533-9655**

*(In Minnesota Twin Cities Metro Area, dial 612-623-6928)*

- Product information
- Product application questions
- Delivery date changes
- Product availability dates
- Maintenance and repair advice
- Correct order and invoice errors
- Product pre-return authorization (RGA)
- Resolves shipping and traffic questions

### For additional information visit [www.graco.com](http://www.graco.com)

- Product search
- Product photos
- Product listing
- Literature information  
(service manuals, catalogs, etc.)
- Sales rep location
- GEDI access

### EZ Fax\* Document Ordering System

Get the documents you need 24-hours-a-day

- Service Manual
- Data Sheets
- Literature Index

# Petroleum Management Group

## Ordering and Warranty Information

### Standard Graco Warranty

#### 1 Year Warranty Policy

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective.

This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations. This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment

does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

### Graco Petroleum Management Group Equipment Extended Warranty

Graco warrants all equipment referenced in this document that is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. Graco will, for a period as defined in the table below from the date of sale, repair or replace equipment covered by this warranty and determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

	5 Year Warranty	7 Year Warranty	10 Year Warranty
Oil/Grease Pumps and Packages	LD Pumps	Mini-Fireball 225	Fireball 425
	Fastball / Fast-Flo	Fireball 300	NXT Pumps
	AODD		
Electronic Meters and Valves LD Meter Electronics (2 years) All other meter series electronics (3 years)	LD Meters	Matrix Meters	
		SD Electronic Meters	
		EM6/EM12 Electronic Meters	
		IM5/IM6 Electronic Meters	
		SDI15 Electronic Meters	
		SDV15 Valve XDV20 Valve	
Hose Reels and Packages All reel series wear parts, including but not limited to: hose, swivel seats, roller guides (12 months); springs (36 months). All bare hose reels, all components (12 months).	LD Series Reels and Packages	SD Series Reels and Packages	
		XD Series Reels and Packages	
Accessories	Oil King		
	Coolant King		
	Oil Ace		

Equipment or components not identified are not covered by this warranty. Complete part number list available by request.

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
15C502	13, 18, 21	24D598	24	24F947	53	24K800	11
15D702	96	24D599	24	24G576	8, 10	24K832	10
15M308	95	24D600	23	24G579	8, 10	24K833	11
15M309	95	24D601	24	24G582	8, 10	24K834	10
15T366	89, 95	24D602	23	24G585	8, 10	24K835	11
15T367	89, 95	24D603	23	24G588	9, 11	24K836	10
15T368	89, 95	24D604	24	24G591	9, 11	24K837	11
15T369	89, 95	24D605	24	24G594	9, 11	24K838	10
15T370	89, 95	24D606	23	24G597	9, 11	24K839	11
15T998	93, 94	24D607	23	24G600	27, 28	24K840	10
15T999	94	24D608	24	24G603	27, 28	24K841	11
15Y478	69	24D989	66	24G606	27, 28	24K842	10
16F886	12	24D990	66	24G636	52, 53	24K843	11
16N883	62	24D991	66	24G738	54	24K855	45
16P999	62	24D992	66	24G745	52, 53	24K901	45
17C907	55	24D993	66	24G865	64	24K932	45
17C908	55	24D994	66	24G866	64	24K937	45
23F914	11	24D995	66	24H193	62	24M499	53
24A217	62, 66	24D996	66	24H293	54	24N323	70
24A218	66	24D997	66	24H420	10, 11, 12, 28	24N325	70
24A219	70	24D998	66	24H422	12, 28	24N327	70
24A220	66, 70	24D999	66	24H657	63, 64	24N328	66, 70
24A221	70	24E001	66	24H658	63, 64	24N331	70
24A224	66, 70	24E002	66	24H659	63, 64	24N332	70
24A934	61, 66	24E006	41	24H660	63, 64	24N333	70
24A935	61, 66	24E007	41	24H661	63, 64	24N334	70
24A936	66	24E008	41	24H662	10, 11, 63, 64	24N335	70
24A937	66	24E009	41	24H663	28, 63, 64	24N336	66, 70
24A938	66	24E010	41	24H666	10, 11, 12	24N337	70
24A939	66	24E011	41	24H669	10, 11, 12	24N339	70
24A940	62, 66	24E166	106	24H689	10	24N340	70
24A941	62, 66	24E167	106	24H695	10	24N341	70
24A942	62, 66	24E781	41	24H702	10	24N342	70
24A943	62, 66	24E782	41	24H704	10	24N343	70
24A944	62, 66	24F318	93	24H726	10	24N444	62, 66
24A945	66	24F524	55	24H728	10	24N674	61
24A946	66	24F529	54	24H751	10	24N675	61
24A947	66	24F531	53	24H753	10, 11	24N682	62
24A948	66	24F532	55	24H775	10	24N683	62
24A949	66	24F679	55	24H777	10	24N684	62
24A950	62, 66, 70	24F737	64	24H800	10	24N685	62
24A951	66, 70	24F738	64	24H802	10	24N686	62
24B624	45	24F739	64	24H836	11	24N688	62
24B632	45	24F740	64	24H842	11	24N689	62
24B634	45	24F741	64	24H859	10, 11, 12	24N690	62
24B639	45	24F742	64	24H862	28	24N691	62
24B766	45	24F743	64	24H865	10, 11, 12	24N814	62, 66
24C100	66, 70	24F755	64	24H868	11	24P164	62
24C245	69	24F756	64	24H870	11	24P313	73
24C246	69	24F757	64	24H892	11	24P315	73
24C247	69	24F758	64	24H894	11	24P316	73
24C248	69	24F759	64	24H916	11	24P317	73
24C249	69	24F760	64	24H918	11	24P318	73
24C250	69	24F761	64	24H941	11	24P319	73
24C251	69	24F773	64	24H943	11	24P320	73
24C252	69	24F774	64	24H965	11	24P322	73
24C253	69	24F775	64	24H967	11	24P323	73
24C254	69	24F776	64	24J030	28	24P324	73
24C255	69	24F777	64	24J036	28	24P325	73
24C256	69	24F778	64	24J042	28	24P326	73
24C444	63, 64	24F779	64	24J048	28	24P327	72
24C537	63, 64	24F870	55	24J054	28	24P328	72
24C538	10, 11, 63, 64	24F878	53	24J060	28	24P329	72
24C539	63, 64	24F901	12, 28, 36, 39	24J066	28	24P330	72
24C637	45, 46, 106	24F902	28, 35, 36	24J495	10, 11	24P331	72
24C772	10, 11, 64	24F903	28, 35	24J501	28	24P332	72
24C793	64	24F904	12, 28	24J733	10	24P333	72
24D132	66, 70	24F905	12, 28	24J734	10	24P334	72
24D133	66, 70	24F906	12, 28	24J735	11	24P335	72
24D205	45, 46	24F910	10, 11, 12	24J736	11	24P336	72
24D590	23	24F914	10, 11, 12	24J776	10	24P337	72
24D591	23	24F915	10, 11, 12, 28	24J777	11	24P338	72
24D592	24	24F918	8, 9, 12	24K285	12	24P339	72
24D593	24	24F920	10, 11, 12	24K777	10	24P340	72
24D594	23	24F930	10, 11, 12	24K796	11	24P341	72
24D595	24	24F931	10, 11, 12	24K797	10	24P342	72
24D596	23	24F932	10, 11, 12	24K798	11	24P343	72
24D597	23	24F935	10, 11, 12	24K799	10	24P344	72

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
24P345	72	24R115	72	24R518	77, 78	24T018	78
24P346	72	24R117	72, 73, 80	24R519	76, 78	24T019	78
24P347	72	24R118	80	24R520	76, 78	24T020	78
24P348	72	24R350	20, 35, 36	24R521	76, 78	24T021	78
24P349	72	24R404	76, 77, 78	24R522	76, 78	24T022	78
24P350	72	24R405	76, 77, 78	24R523	76, 78	24T023	78
24P351	72	24R406	76, 77, 78	24R524	76, 78	24T024	78
24P352	72	24R407	76, 77, 78	24R525	76, 78	24T025	78
24P353	72	24R408	76, 77, 78	24R526	76, 78	24T104	79
24P354	72	24R409	76, 77, 78	24R527	76, 78	24T105	79
24P355	72	24R410	76, 77, 78	24R528	76, 78	24T106	79
24P356	72	24R412	76, 77, 78	24R529	76, 78	24T107	79
24P455	73	24R413	76, 77, 78	24R530	76, 78	24T108	79
24P456	73	24R414	76, 77, 78	24R531	76, 78	24T109	79
24P457	73	24R415	76, 77, 78	24R532	76, 78	24T110	79
24P458	73	24R416	76, 77, 78	24R533	76, 78	24T111	79
24P459	73	24R419	76, 77, 78	24R534	77	24T112	79
24P460	73	24R420	76, 77, 78	24R535	77	24T113	79
24P461	73	24R421	76, 77, 78	24R536	77	24T114	79
24P462	73	24R422	76, 79	24R537	77	24T115	79
24P463	73	24R423	76, 79	24R538	77	24T116	79
24P464	73	24R424	76, 79	24R539	77	24T117	79
24P465	73	24R425	76, 79	24R540	77	24T118	79
24P466	73	24R426	76, 79	24R541	77	24T119	79
24P467	73	24R427	76, 79	24R542	77	24T120	79
24P468	73	24R428	76, 79	24R543	77	24T121	79
24P469	73	24R429	76, 79	24R544	77	24T122	79
24P470	72	24R430	76, 79	24R545	77	24T123	79
24P471	72	24R431	76, 79	24R546	77	24T124	79
24P472	72	24R432	76, 79	24R547	77	24T125	79
24P473	72	24R433	76, 79	24R548	77	24T126	79
24P474	72	24R434	76, 79	24R549	79	24T127	79
24P475	72	24R435	76, 79	24R550	79	24T128	79
24P476	72	24R436	76, 79	24R551	79	24T129	79
24P477	72	24R437	76, 78	24R552	79	24T130	79
24P478	72	24R438	76, 78	24R553	79	24T131	79
24P479	72	24R439	76, 78	24R554	79	24T132	79
24P480	72	24R440	76, 78	24R555	79	24T133	79
24P481	72	24R441	76, 78	24R556	79	24T207	76, 77, 78
24P482	72	24R442	76, 78	24R557	79	24T208	76, 77, 78
24P483	72	24R443	76, 78	24R558	79	24T209	76, 77, 78
24P484	72	24R444	76, 78	24R559	79	24T210	76, 79
24P485	72	24R445	76, 78	24R560	79	24T211	76, 79
24P486	72	24R446	76, 78	24R561	79	24T212	76, 79
24P487	72	24R447	76, 78	24R562	79	24T213	76, 78
24P488	72	24R448	76, 78	24R563	79	24T215	76, 78
24P489	72	24R449	76, 78	24R564	79	24T216	76, 78
24P490	72	24R450	76, 78	24R565	79	24T218	77
24P491	72	24R451	76, 78	24R566	79	24T219	77
24P492	72	24R452	77	24R567	79	24T220	77
24P493	72	24R453	77	24R568	79	24T221	77, 78
24P494	72	24R454	77	24R569	79	24T222	77, 78
24P495	72	24R455	77	24R570	79	24T223	77, 78
24P496	72	24R456	77	24R571	79	24T224	78
24P497	72	24R457	77	24R572	79	24T225	78
24P498	72	24R458	77	24R573	79	24T226	78
24P499	72	24R459	77	24R574	79	24T227	76, 78
24P880	62	24R460	77	24R575	79	24T228	76, 78
24P881	62	24R461	77	24R576	79	24T229	76, 78
24P984	72	24R462	77	24R577	79	24T230	77
24P985	72	24R463	77	24R578	79	24T231	77
24P986	72	24R464	77	24R854	73	24T232	77
24P987	72	24R465	77	24R855	73	24T233	79
24P988	72	24R466	77	24R856	73	24T234	79
24P989	72	24R503	77, 78	24R857	72	24T235	79
24R060	72, 73, 80	24R504	77, 78	24R859	72	24T236	79
24R061	72, 73, 80	24R505	77, 78	24R860	72	24T237	79
24R072	72, 73, 80	24R506	77, 78	24R861	72	24T238	79
24R074	72, 73	24R507	77, 78	24R862	72	24T252	81
24R076	72, 73	24R508	77, 78	24R863	72	24T253	81
24R077	72, 73	24R509	77, 78	24R902	36	24T254	81
24R102	81	24R510	77, 78	24T011	78	24T327	80
24R103	81	24R511	77, 78	24T012	78	24T328	80
24R106	81	24R512	77, 78	24T013	78	24T329	80
24R108	81	24R513	77, 78	24T014	78	24T330	80
24R110	81	24R515	77, 78	24T015	78	24T331	80
24R111	72, 73, 80	24R516	77, 78	24T016	78	24T332	80
24R114	81	24R517	77, 78	24T017	78	24T333	80

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
24T334.....	80	24V646.....	53	26A143.....	73	109128.....	111
24T335.....	80	24V656.....	53	26A144.....	73	109130.....	111
24T336.....	80	24V677.....	53	26A145.....	73	109131.....	111
24T337.....	80	24V678.....	53	100030.....	112	109132.....	111
24T359.....	81	24V679.....	53	100040.....	112	109133.....	111
24T360.....	81	24V686.....	53	100054.....	102, 103	109134.....	111
24T361.....	81	24W140.....	55	100081.....	112	109135.....	111
24T362.....	81	24W141.....	55	100206.....	112	109145.....	102, 109
24T363.....	81	24W142.....	55	100220.....	21	109146.....	109
24T364.....	81	24W143.....	55	100380.....	112	109147.....	109
24T365.....	81	24W144.....	55	100385.....	112	109148.....	92, 102, 109
24T366.....	81	24W145.....	55	100451.....	112	109149.....	109
24T367.....	81	24W148.....	54	100474.....	112	109150.....	35, 39, 109
24T368.....	81	24W149.....	54	100505.....	112	109151.....	35, 39, 109
24T875.....	80	24W154.....	54	100611.....	46	109152.....	109
24T876.....	80	24W161.....	54	100615.....	112	109153.....	109
24T886.....	79	24W190.....	54	100737.....	112	109154.....	109
24T888.....	79	24W250.....	54	100833.....	102, 103	109156.....	109
24T889.....	79	24W251.....	54	100834.....	102, 103	109157.....	109
24T890.....	79	24W306.....	88	100835.....	103	109158.....	109
24T891.....	79	24W641.....	88	100837.....	103	109160.....	110
24T892.....	79	24Y238.....	85	100840.....	112	109161.....	110
24T910.....	79	24Y239.....	85	100846.....	103	109162.....	110
24T911.....	79	24Y242.....	85	100847.....	103	109163.....	39, 110
24U703.....	87	24Y243.....	86	100848.....	103	109165.....	35, 39, 110
24U947.....	88	24Y244.....	86	100854.....	103	109167.....	35, 39
24U948.....	88	24Y246.....	86	100896.....	112	109169.....	110
24U949.....	88	24Y248.....	86	100960.....	18, 22, 37, 38, 42, 109	109170.....	110
24U950.....	88	24Y249.....	85	100970.....	102, 103	110025.....	100
24U951.....	88	24Y250.....	85	100971.....	102	110046.....	111
24U952.....	88	24Y251.....	85	101008.....	113	110047.....	111
24U953.....	88	24Y252.....	86	101009.....	113	110048.....	23, 24, 111
24U954.....	88	24Y253.....	86	101012.....	113	110065.....	108
24U955.....	88	24Y254.....	86	101013.....	113	110069.....	110
24U956.....	88	24Y255.....	86	101078.....	22	110127.....	21
24U957.....	88	24Y312.....	85	101180.....	109	110146.....	22, 45, 46, 107
24U958.....	88	24Y314.....	85	101277.....	102	110147.....	22, 45, 46, 55, 107
24U959.....	88	24Y315.....	86	101281.....	103	110148.....	22, 107
24U960.....	88	24Y316.....	86	101283.....	103	110149.....	22, 106, 107, 108
24U961.....	88	24Y318.....	86	101287.....	103	110150.....	22, 108
24V034.....	88	24Y319.....	86	101297.....	103	110196.....	45, 108
24V035.....	88	24Y859.....	60, 61	101312.....	103	110197.....	108
24V036.....	88	24Y861.....	60, 61	101339.....	113	110198.....	35, 39, 108
24V037.....	88	24Y862.....	60, 61	101340.....	113	110199.....	45, 108
24V038.....	88	24Y863.....	61	101376.....	113	110200.....	108
24V039.....	88	24Y864.....	60, 61	101604.....	103	110201.....	101
24V040.....	88	24Y865.....	60, 61	101605.....	103	110202.....	101
24V041.....	88	24Y866.....	60, 61	102527.....	98	110203.....	101
24V042.....	88	24Y868.....	60, 61	103347.....	108	110216.....	101
24V043.....	88	24Y869.....	61	103538.....	44	110218.....	101
24V044.....	88	24Y870.....	61	104266.....	18, 22, 37, 38, 42, 107	110223.....	22, 40, 45, 46, 108
24V045.....	88	24Y871.....	61	104663.....	112	110224.....	22, 40, 45, 46, 108
24V046.....	88	24Y872.....	60, 61	105281.....	112	110225.....	18, 22, 40, 45, 108
24V047.....	88	24Y873.....	60	105474.....	100	110226.....	22, 40, 45, 108
24V048.....	88	24Y876.....	60	106148.....	19, 22, 45, 107	110234.....	35, 39, 107
24V049.....	88	24Y877.....	60	106149.....	22, 44, 45, 107	110236.....	82
24V050.....	88	24Y878.....	60	106150.....	44, 45, 107	110237.....	82
24V051.....	88	24Y880.....	60, 61	106151.....	19, 107, 108	110285.....	82
24V052.....	88	24Y882.....	60, 61	107141.....	108	110314.....	22
24V053.....	88	24Y883.....	60, 61	107142.....	44, 108	110318.....	46, 107
24V054.....	88	24Y884.....	60, 61	108190.....	46	110319.....	109
24V055.....	88	24Y886.....	60, 61	108202.....	105, 106	110326.....	111
24V056.....	88	24Y887.....	60, 61	108203.....	106	110702.....	103
24V057.....	88	24Y888.....	60	108204.....	105	110703.....	103
24V058.....	88	24Y889.....	60	108458.....	22, 99, 100	110705.....	103
24V059.....	88	24Y890.....	60	108491.....	106	110706.....	103
24V060.....	88	24Z125.....	88	108537.....	18, 22	110709.....	103
24V545.....	85	24Z126.....	88	108867.....	106	110710.....	103
24V547.....	85	24Z127.....	88	109054.....	39	110711.....	103
24V548.....	85	24Z128.....	88	109075.....	18, 19, 22, 35, 36, 37, 42, 46, 107	110712.....	103
24V549.....	86	24Z129.....	88	109077.....	108	110713.....	103
24V550.....	86	24Z130.....	88	109105.....	20, 46, 48, 110	110877.....	22
24V551.....	86	24Z131.....	88	109108.....	20, 48, 110	110878.....	22
24V552.....	86	24Z132.....	88	109123.....	48, 111	110906.....	22
24V553.....	85, 86, 87	24Z133.....	88	109124.....	111	110907.....	22
24V641.....	53	26A140.....	73	109125.....	7, 46, 48, 111	111010.....	110
24V644.....	53	26A141.....	73	109126.....	111	111468.....	107
24V645.....	53	26A142.....	73	109127.....	111	111470.....	20, 40, 107

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
111474.....	106	127271.....	80	159239.....	112	203504.....	102
111511.....	46	127634.....	55	159801.....	112	203521.....	61, 66
111620.....	98, 99, 100	127635.....	55	159840.....	112	203522.....	61, 66
111697.....	112	127637.....	55	159841.....	112	203523.....	66
112119.....	45	127639.....	55	159842.....	66, 112	203524.....	66, 70
112196.....	101	127640.....	55	159952.....	20, 40	203525.....	66
112197.....	59	127642.....	52, 53	160022.....	12, 112	203597.....	101
112198.....	59	127643.....	53	160327.....	20, 48, 112	203622.....	18, 21, 35, 36, 40, 58
112202.....	59	127646.....	53	160754.....	20, 39	203650.....	20, 35, 36, 40, 58
112255.....	102	127647.....	53	161037.....	112	203655.....	85
112353.....	21	127649.....	53	161077.....	112	203664.....	36
112859.....	107	127650.....	53	161889.....	112	203687.....	85
113093.....	112	127651.....	53	162024.....	112	203688.....	18, 20, 21, 22
113497.....	45, 46	127652.....	53	162225.....	37, 38	203697.....	59, 101
113551.....	98	127654.....	53	162449.....	112	203701.....	59
113553.....	98	127655.....	54	162505.....	112	203702.....	59
113555.....	98	127656.....	55	165198.....	112	203703.....	59
113556.....	98	127657.....	55	168085.....	20	203716.....	38
113557.....	98	127663.....	54	168595.....	112	203857.....	14, 18, 42
113558.....	98	127711.....	107	169967.....	108	203872.....	14, 18, 42
113559.....	98	127720.....	55	169970.....	45, 108	203876.....	14, 18, 19
113560.....	98	127793.....	55	169971.....	35, 39, 108	203976.....	36
113774.....	98	127794.....	55	171818.....	20	203987.....	20, 22
113859.....	100	127795.....	55	172405.....	21	203992.....	21
114017.....	89	127796.....	55	175013.....	112	204072.....	102
114829.....	59	127800.....	55	176393.....	112	204076.....	21, 42
115042.....	23, 24, 41, 46	127804.....	55	176684.....	21	204082.....	101
116229.....	106	127805.....	55	178670.....	82	204083.....	101
118464.....	108	127806.....	55	180199.....	22	204084.....	101
119278.....	96	127815.....	55	180685.....	66, 109	204095.....	42
119572.....	94	127823.....	55	180698.....	70	204121.....	36
119577.....	104	127875.....	53	185416.....	86, 90	204130.....	39
120581.....	106	127884.....	55	186472.....	100	204134.....	35, 36
124398.....	54	128160.....	94	187359.....	107	204144.....	21, 40, 43
124541.....	55	150171.....	112	187479.....	46	204204.....	102
124548.....	55	150286.....	112	187754.....	21	204254.....	14, 18, 42
124549.....	55	150287.....	66, 112	190125.....	46	204264.....	42
124550.....	55	150622.....	102	191075.....	21	204351.....	36
124581.....	54, 70	151519.....	112	191126.....	21	204353.....	37
124603.....	54	154616.....	105	191128.....	21	204385.....	21, 37, 38, 40
124671.....	54	155332.....	89, 95	191130.....	21	204461.....	37, 38
124875.....	54, 70	155470.....	20, 39, 112	191131.....	21	204467.....	37
124963.....	55	155494.....	20, 21, 35, 39, 112	191287.....	89	204560.....	20, 111
125014.....	55	155495.....	112	191288.....	89	204574.....	18, 20, 35, 36, 37, 38, 39, 43, 57, 58
125074.....	54	155541.....	35, 39, 48, 112	191289.....	89	204741.....	62, 66, 70
125078.....	53	155570.....	43, 112	191294.....	89	204867.....	58
125079.....	54	155653.....	112	191295.....	89	204897.....	102
125242.....	54	155665.....	112	191368.....	98	204929.....	102
125478.....	53	155677.....	112	191393.....	98	205054.....	21, 40
125479.....	53	155699.....	112	191394.....	98	205090.....	108
126359.....	81	155836.....	102	191782.....	85, 86	205102.....	37, 38
126360.....	81	155865.....	112	191783.....	85, 86	205148.....	37, 38
126361.....	81	156022.....	46, 112	192873.....	98	205337.....	39
126362.....	81	156172.....	112	192874.....	98	205339.....	37, 38
126363.....	81	156173.....	112	194048.....	112	205394.....	33, 37, 42
126364.....	81	156296.....	112	196471.....	82, 89	205395.....	33, 37, 38, 42
126375.....	81	156580.....	112	200020.....	102	205418.....	20, 39, 46, 111
126376.....	81	156589.....	112	200021.....	102	205532.....	102
126377.....	81	156684.....	12, 112	200325.....	101, 102	205554.....	102
126379.....	81	156789.....	105	200326.....	18, 20, 32, 35, 37, 38, 39, 43, 57	205568.....	102
126380.....	81	156823.....	112	200389.....	92, 101, 102	205582.....	102
126503.....	81	156849.....	19, 35, 39, 112	201701.....	85	205592.....	102
126504.....	81	156971.....	46, 112	201881.....	102	205600.....	110
126505.....	81	157191.....	112	202156.....	99	205626.....	17, 18
126688.....	81	157416.....	19, 112	202577.....	28, 35, 39, 43, 92, 101	205699.....	37, 38
127167.....	81	157676.....	112	202579.....	101	206197.....	44
127173.....	81	157705.....	12, 112	202600.....	101	206199.....	45
127214.....	80	157785.....	106, 112	202650.....	102	206264.....	108
127217.....	80	158256.....	112	202654.....	103	206405.....	30, 35, 43
127218.....	80	158383.....	112	202858.....	45, 107	206496.....	43
127219.....	80	158491.....	112	202869.....	40	206502.....	43
127220.....	80	158555.....	112	202965.....	112	206537.....	38
127221.....	80	158581.....	112	203156.....	20	206655.....	42
127222.....	80	158586.....	112	203198.....	101, 102	206656.....	42
127223.....	80	158683.....	112	203265.....	85	206699.....	30, 35, 43
127224.....	80	158990.....	109	203320.....	20, 35, 39, 111	206700.....	30, 35, 43
127225.....	80	159153.....	112	203497.....	102	207279.....	38

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
207361.....	42, 57	220593.....	110	224040.....	109	233933.....	92
207366.....	42, 57	220596.....	46	224266.....	37, 38	234237.....	43
207367.....	42	220598.....	19, 20, 110	224267.....	38	234423.....	82
207468.....	38	220600.....	110	224444.....	70	235346.....	105
207561.....	21, 40	220608.....	110	224458.....	43	235531.....	100
207562.....	21, 40	220653.....	35, 36, 38, 39	224512.....	18, 107	235532.....	100
207579.....	20	220654.....	35, 36, 39, 42	224534.....	19	235878.....	85
207651.....	37, 38, 45	220969.....	106	224541.....	19	235998.....	21, 22, 57, 98
207755.....	44, 107	221007.....	106	224569.....	101	236054.....	20, 21, 22, 45, 46, 48
207946.....	101	221092.....	110	224579.....	21, 42	236058.....	35, 39
207947.....	101	221093.....	110	224665.....	107	236171.....	101, 102
207948.....	101	221146.....	106	224666.....	107	236205.....	109
208009.....	105	222011.....	44, 45, 106, 107	224667.....	107	236206.....	109
208390.....	108	222051.....	7	224669.....	107	236211.....	109
208393.....	108	222058.....	20, 35, 43	224700.....	107	236267.....	45
208434.....	112	222059.....	35, 36, 39	224701.....	107	236273.....	45
208536.....	35, 39, 45, 108, 109	222060.....	36, 42, 57	224702.....	107	236753.....	56
208610.....	37, 38, 41, 111	222061.....	20, 36, 42, 57	224741.....	56, 57	236754.....	56, 57
208611.....	111	222062.....	18, 20, 22	224742.....	56	236763.....	99, 100
208630.....	108	222063.....	18, 19, 20, 22, 42	224751.....	57	236764.....	99, 100
210880.....	20	222065.....	17, 18, 42	224752.....	57	236778.....	20
213012.....	48	222066.....	18, 20, 22, 42	224759.....	106, 107	236864.....	57
213013.....	48	222067.....	42	224762.....	106	236865.....	57
214570.....	43	222068.....	18, 20, 22	224825.....	43	237075.....	18, 20
214583.....	21, 48	222069.....	36	224826.....	43	237129.....	48
214584.....	48	222070.....	36, 39	224829.....	38	237130.....	48
214656.....	111	222071.....	42	224835.....	45, 46, 106	237131.....	48
214658.....	58	222072.....	35, 36, 37, 39, 42	224872.....	92, 93	237132.....	48
214847.....	22, 107	222073.....	36	224873.....	105, 106	237133.....	48
214848.....	22, 44, 107	222074.....	36	224912.....	57	237134.....	48
214849.....	44, 107	222075.....	42	224915.....	57	237160.....	46
214925.....	101	222076.....	37, 38, 39, 42	224916.....	57	237161.....	46
214926.....	101	222077.....	43	224955.....	106	237526.....	15, 18
214955.....	111	222078.....	35	225006.....	36	237601.....	21, 22
215407.....	98, 99, 100	222079.....	43	225014.....	36	237653.....	56
215474.....	98, 100	222080.....	35, 39	225016.....	37	237861.....	110
215475.....	100	222081.....	35, 39	225026.....	36	237865.....	110
215481.....	100	222082.....	43	225094.....	18	237866.....	110
215487.....	98, 99, 100	222085.....	42	225272.....	105	237872.....	66, 70
215964.....	48	222086.....	42	225376.....	58	237873.....	66, 70, 72, 73, 80
217072.....	18, 22, 108	222087.....	14, 18	225378.....	58	237874.....	66, 70, 72, 73, 80
217073.....	108	222090.....	104	225380.....	58	237893.....	19, 21, 22, 98, 99, 100
217074.....	107	222095.....	17, 18, 42	225384.....	58	237904.....	57
217359.....	21, 48	222103.....	7	225640.....	18	237932.....	72, 73
217430.....	112	222104.....	7	225642.....	18	238108.....	16, 18
218093.....	20, 111	222118.....	22, 48	225728.....	18	238125.....	21
218112.....	48	222119.....	22, 48	225773.....	36	238245.....	18, 20, 22
218115.....	7	222149.....	106	225781.....	37	238246.....	20, 22
218316.....	7, 48, 107	222225.....	66, 70	225782.....	18	238247.....	20
218334.....	44	222243.....	20, 36, 40	225786.....	18	238370.....	21
218340.....	66, 70	222245.....	36	225827.....	36	238371.....	89
218341.....	66, 70	222308.....	7, 13, 18, 19, 20, 21, 22	225844.....	59	238400.....	86
218491.....	111	222383.....	36, 39	225852.....	18	238428.....	45, 46
218545.....	66, 109	222404.....	37	225853.....	18	238429.....	22
218549.....	10, 11, 19, 66, 70	222417.....	66, 70, 72, 73, 80	225880.....	58	238431.....	22
218550.....	66, 70, 72, 73, 80	222602.....	7	225914.....	59	238432.....	22
218588.....	98, 100	222629.....	82	225931.....	18	238433.....	22
218591.....	82	222641.....	82	226012.....	36	238434.....	22
218670.....	70	222645.....	82	226013.....	37	238436.....	43
218671.....	70	222902.....	57	226018.....	37	238437.....	43
218672.....	70	223107.....	42	226269.....	43	238438.....	43
218673.....	70	223108.....	37	226289.....	58	238440.....	43
218674.....	70	223179.....	99, 100	226290.....	59	238592.....	21
218675.....	70	223187.....	102	226342.....	43	238593.....	21
218676.....	70	223344.....	37, 38, 39, 42	226940.....	48	238595.....	21
218677.....	70	223448.....	82	226941.....	48	238596.....	21
218678.....	70	223695.....	106	226942.....	48	238618.....	98
218969.....	105, 106	223696.....	106	226943.....	48	238624.....	98
218970.....	106	223697.....	106	226944.....	48	238625.....	98
220107.....	82	223700.....	39, 57	226945.....	48	238646.....	86
220110.....	82	223701.....	39, 57	226947.....	47, 48	238647.....	86
220112.....	82	223845.....	37, 39, 42	226948.....	47, 48	238866.....	104, 105, 106
220168.....	48	223846.....	37, 38, 39, 42	226951.....	47, 48	238887.....	89
220170.....	35	223888.....	46, 106	226952.....	48	238899.....	21, 45
220171.....	35	223920.....	86	226953.....	48	238996.....	98, 99, 100
220590.....	110	223952.....	41	232076.....	99, 100	239019.....	100
220591.....	20, 110	223965.....	106	232077.....	100	239301.....	105
220592.....	110	224023.....	43	233807.....	36, 92	239302.....	105



# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
239663	43	246903	18	255353	84	260238	50
239702	7	246904	18	255354	84	260306	49, 50
239703	7	246906	18	255355	84	260521	51
239705	58	246907	18	255356	84	260523	51
239706	82	246909	29, 35	255370	95	263265	45
239707	58	246910	35	255459	89, 90	286211	43
239729	34, 38, 42	246911	35	255460	89, 90	286517	43
239730	34, 38, 42	246913	35	255461	89, 90	286621	43
239731	34, 38	246914	35	255470	89, 90	308403	21
239824	82, 87	246915	35	255731	94	312417	96
239829	89	246916	35	255751	83, 89	313013	95
239877	31, 36	246917	35	255793	91	313046	95
239887	31, 36, 42	247335	38	255800	84	313104	94
239888	31, 37, 38, 42	247336	38	255801	84	313106	94
239949	89	247337	38	255802	84	313108	94
239950	89	247435	96	255803	84	313112	94
239951	89	247436	93, 96	255852	88, 89	313114	94
239952	45	247443	57	255853	89	512874	39
239965	39	247450	57	255854	88, 89	512926	98
239966	39, 43	247453	87	255855	88, 89	512927	98
240416	89	247540	57	255856	89	514037	98
240417	22, 100	247712	90	255857	89, 90	514150	98, 100
240418	22	247713	90	255858	89, 90	601950	109
240429	21, 22, 98	247714	90	255859	91	647016	45
240448	99, 100	247715	90	255885	89, 95	647648	45
240453	89	247716	90	255921	91	647731	45, 46, 106
240684	106	247717	90	256164	88, 90	652002	45
240685	106	247718	91	256215	10, 11, 19, 83, 89	948392	39
240832	105, 106	247721	91	256216	10, 11, 83, 89	948393	39
241246	39	247722	91	256282	95	965124	32, 37
241633	19	247723	91	256285	93, 96	965129	32, 37, 38
241657	45	247724	91	256482	95	DOB005	45
241663	21, 40	247725	91	256483	95	DOB525	45
241905	99, 100	247759	89	256484	95	DOF005	45
241906	45, 46, 106	247760	89	256485	95	DOF525	45
241908	110	247888	23	256486	95	D03005	45
242055	92, 101	247889	23	256487	95	D03255	45
242056	28, 35, 36, 39, 92, 101	247890	24	256488	95	D05007	45
242057	92, 101	247891	24	256634	93, 94	D05277	45
242058	92, 101	247892	23	256635	94	D31255	45, 46
243161	43	247893	23	256636	94	DB3525	45
243167	107	247894	24	256637	94	DF3525	45
243392	85	247895	24	256638	94	HMH55A	69
243599	85	247969	23	256719	95	HMH55B	69
243650	105	247973	41	256836	84	HMH55F	69
243669	45, 46	247974	41	256837	84	HNHB7A	69
243817	42	247975	41	256838	84	HNHB7B	69
243818	42	247976	41	256839	84	HNHB7F	69
243835	89	247977	41	257120	95	HNHC5A	69
243836	89	247978	41	257435	37, 38	HNHC5B	69
243837	89	247979	41	257464	93	HNHC5F	69
243992	85	247980	41	257539	95	HNHCDA	69
244038	19	247981	41	257556	95	HNHCDB	69
244055	105	248097	13, 18, 19	258693	10, 11, 83, 89	HNHCDF	69
244342	100	248230	18	258694	83, 89	HNHFFA	69
244628	18	248296	21	260000	51	HNHFFB	69
244635	38	248312	111	260020	51	HNHFFF	69
244636	38	248313	111	260025	51	HNL56A	69
244637	38	248324	21	260078	51	HNL56B	69
244641	38	248417	96	260079	51	HNL56F	69
244657	41	248418	96	260082	51	HNL65A	69
244679	46	248419	96	260083	51	HNL65B	69
244680	46	248421	96	260100	49, 50	HNL65F	69
244681	46	248622	19	260101	49, 50	HNLC8A	69
244682	46	248623	19	260102	49, 50	HNLC8B	69
244844	38, 45, 107	248632	104, 105	260104	49, 50	HNLC8F	69
244845	107	249058	110	260105	49, 50	HNLD5A	69
244846	18	249440	82, 95	260106	49, 50	HNLD5B	69
244847	18	255143	24	260108	49, 50	HNLD5F	69
244905	37, 38	255200	19, 84, 93, 95	260109	49, 50	HNLE3A	69
244906	38	255231	93, 94	260110	50	HNLE3B	69
245694	36	255277	83	260111	50	HNLE3F	69
245695	36	255348	66, 84	260112	50	HNM65A	69
245696	36	255349	84	260113	50	HNM65B	69
246775	13, 14, 18	255350	19, 66, 84	260114	50	HNM65F	69
246780	29, 35	255351	84	260124	50	HNMC8A	69
246781	29, 35	255352	84	260145	50	HNMC8B	69

# Index

Part No.	Page No.	Part No.	Page No.	Part No.	Page No.	Part No.	Page No.
HNMC8F	69	HPL65E	65	HSL65A	68		
HNMD5A	69	HPL65F	65	HSL65B	68		
HNMD5B	69	HPM3BA	65	HSL65F	68		
HNMD5F	69	HPM3BB	65	HSL65G	68		
HNMDDA	69	HPM3BC	65	HSLC8A	68		
HNMDDB	69	HPM3BD	65	HSLC8B	68		
HNMDDF	69	HPM3BE	65	HSLC8F	68		
HNPB8A	69	HPM3BF	65	HSLC8G	68		
HNPB8B	69	HPM6DA	65	HSLD5A	68		
HNPB8F	69	HPM6DB	65	HSLD5B	68		
HNPC5A	69	HPM6DC	65	HSLD5F	68		
HNPC5B	69	HPM6DD	65	HSLD5G	68		
HNPC5F	69	HPM6DE	65	HSLE3A	68		
HPH1DA	65	HPM6DF	65	HSLE3B	68		
HPH1DB	65	HPM33A	65	HSLE3F	68		
HPH1DC	65	HPM33B	10, 11, 19, 65, 66	HSLE3G	68		
HPH1DD	65	HPM33C	65	HSM3BA	68		
HPH1DE	65	HPM33F	65	HSM3BB	68		
HPH1DF	65	HPM65A	65	HSM3BF	68		
HPH5DA	65	HPM65B	10, 11, 19, 65	HSM3BG	68		
HPH5DB	65	HPM65C	65	HSM6DA	68		
HPH5DC	65	HPM65D	65	HSM6DB	68		
HPH5DD	65	HPM65E	65	HSM6DF	68		
HPH5DE	65	HPM65F	65	HSM6DG	68		
HPH5DF	65	HRL56B	66	HSM33A	68		
HPH15A	65	HRM33D	65	HSM33B	68		
HPH15B	65	HRM33E	65	HSM33F	68		
HPH15C	65	HSDD5A	54, 68	HSM33G	68		
HPH15D	65	HSDD5B	54, 68	HSM65A	68		
HPH15E	65	HSDD5F	54, 68	HSM65B	68		
HPH15F	65	HSDDDA	54, 68	HSM65F	68		
HPH23A	65	HSDDDB	54, 68	HSM65G	68		
HPH23B	65	HSDDDF	54, 68	HSMC8A	68		
HPH23C	65	HS1DA	68	HSMC8B	68		
HPH23D	65	HS1DB	68	HSMC8F	68		
HPH23E	65	HS1DF	68	HSMC8G	68		
HPH23F	65	HS1DG	68	HSMCFA	68		
HPH55A	65	HS15DA	68	HSMCFB	68		
HPH55B	65	HS15DB	68	HSMCFE	68		
HPH55C	65	HS15DF	68	HSMCFG	68		
HPH55D	65	HS15DG	68	HSM5A	68		
HPH55E	65	HS115A	68	HSM5B	68		
HPH55F	65	HS115B	68	HSM5F	68		
HPL5JA	65	HS115F	68	HSM5G	68		
HPL5JB	65	HS115G	68	HSMDDA	68		
HPL5JC	65	HS155A	68	HSMDDB	68		
HPL5JD	65	HS155B	68	HSMDDF	68		
HPL5JE	65	HS155F	68	HSMDDG	68		
HPL5JF	65	HS155G	68	HSPB8A	68		
HPL23A	65	HS1B7A	68	HSPB8B	68		
HPL23B	65	HS1B7B	68	HSPB8F	68		
HPL23C	65	HS1B7F	68	HSPB8G	68		
HPL23D	65	HS1B7G	68	HSPC5A	68		
HPL23E	65	HS1C5A	68	HSPC5B	68		
HPL23F	65	HS1C5B	68	HSPC5F	68		
HPL25A	65	HS1C5F	68	HSPC5G	68		
HPL25B	65	HS1C5G	68	P14DCS	41		
HPL25C	65	HS1CDA	68	P14MCS	41		
HPL25D	65	HS1CDB	68	P26DCS	41		
HPL25E	65	HS1CDF	68	P26MCS	41		
HPL25F	65	HS1CDG	68	P29DCS	41		
HPL33A	65	HS1FFA	68	P29MCS	41		
HPL33B	65	HS1FFB	68	P55DCS	41		
HPL33C	65	HS1FFF	68	P55MCS	41		
HPL33D	65	HS1FFG	68	P63DCS	41		
HPL33E	65	HSL25A	68	P63MCS	41		
HPL33F	65	HSL25B	68	P68DCS	41		
HPL56A	65	HSL25F	68	P68MCS	41		
HPL56B	65	HSL25G	68				
HPL56C	65	HSL33A	68				
HPL56D	65	HSL33B	68				
HPL56E	65	HSL33F	68				
HPL56F	65	HSL33G	68				
HPL65A	65	HSL56A	68				
HPL65B	65	HSL56B	68				
HPL65C	65	HSL56F	68				
HPL65D	65	HSL56G	68				



## AMERICAS

### MINNESOTA

Worldwide Headquarters  
Graco Inc.  
88-11th Avenue N.E.  
Minneapolis, MN 55413

### MAILING ADDRESS

P.O. Box 1441  
Minneapolis, MN 55440-1441  
Tel: 612-623-6000 Fax: 612-623-6777

## EUROPE

### BELGIUM

Graco BVBA  
Industrieterrein-Oude Bunders  
Slakweidestraat 31  
B-3630 Maasmechelen,  
Belgium  
Tel: 32 89 770 700 Fax: 32 89 770 777

## ASIA PACIFIC

### AUSTRALIA

Graco Australia Pty Ltd.  
Suite 17, 2 Enterprise Drive  
Bundoora, Victoria 3083  
Australia  
Tel: 61 3 9468 8500 Fax: 61 3 9468 8599

### CHINA

Graco Hong Kong Ltd.  
Shanghai Representative Office  
Building 7  
1029 Zhongshan Road South,  
Huangpu District  
Shanghai, 200011  
The People's Republic of China  
Tel: 86 21 649 50088 Fax: 86 21 649 50077

### INDIA

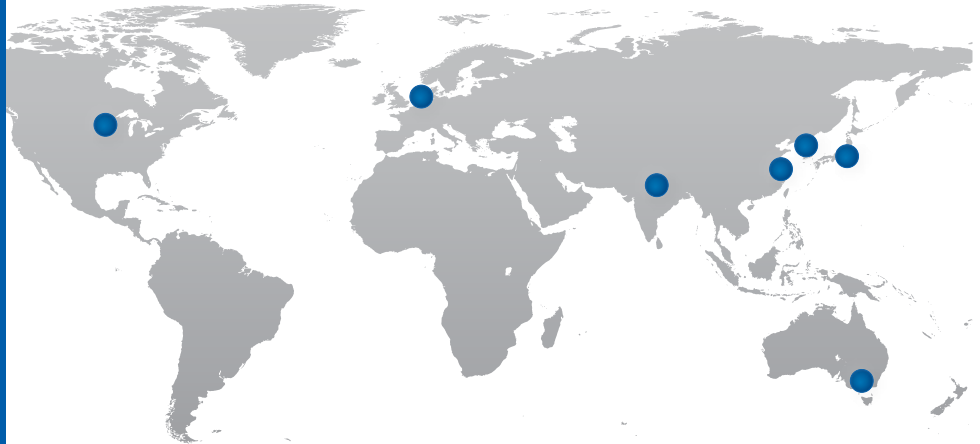
Graco Hong Kong Ltd.  
India Liaison Office  
Room 443, Level 4  
Augusta Point, Golf Course Road  
Gurgaon, Haryana, India 122001  
Tel: 91 124 435 4208 Fax: 91 124 435 4001

### JAPAN

Graco K.K.  
1-27-12 Hayabuchi  
Tsuzuki-ku  
Yokohama City, Japan 2240025  
Tel: 81 45 593 7300 Fax: 81 45 593 7301

### KOREA

Graco Korea Inc.  
Shinhan Bank Building  
4th Floor #1599  
Gwangyang-Dong, Dongan-Ku,  
Anyang-si, Korea 431-060  
Tel: 82 31 476 9400 Fax: 82 31 476 9801



# Graco's got you covered

Facilities Worldwide for Global Support



## Quality First

At Graco we pride ourselves on providing best-in-class products. Engineered solutions are manufactured in our own facilities, with the highest standards in the industry. We provide you with world-class customer support and expertise to help solve your lubrication challenges.



## Global Reach

Graco has facilities across the globe to provide you with the products and service *you* need, where *you* live. Plus, Graco has dedicated field experts in all areas of the world to support the products we sell.



## Product Capabilities

Graco has a broad range of products to provide solutions that meet your needs. Our products are engineered and tested to perform in the harshest environments so you can be certain your equipment is protected and working at peak performance.

Contact us today!

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

