



This manual contains important information.
READ AND KEEP FOR REFERENCE.

INSTRUCTIONS

First choice when
quality counts.™

Rev. D
Supersedes Rev. C

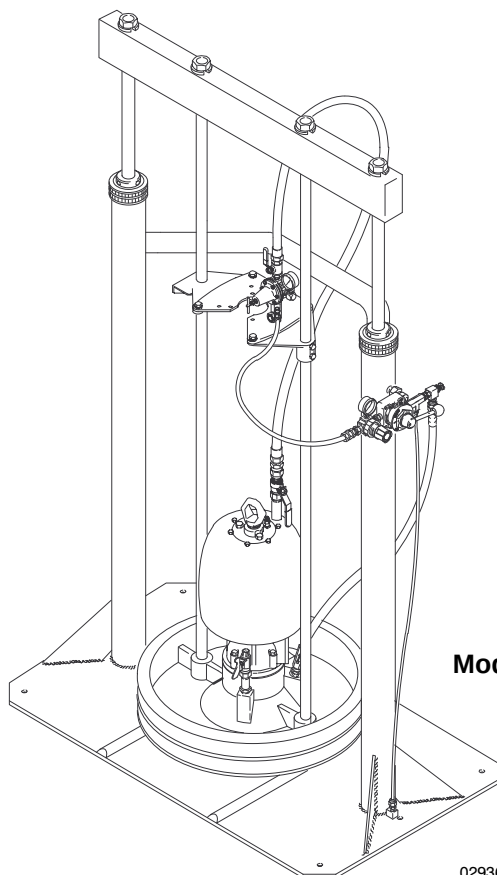
BULLDOG® AND KING™ RAM- AND FLOOR-STAND-MOUNTED

High-Volume Grease Transfer Systems

Ram-mounted systems include a pump, air-powered ram, and pump and ram air regulators

Floor-stand-mounted systems include a pump and floor stand

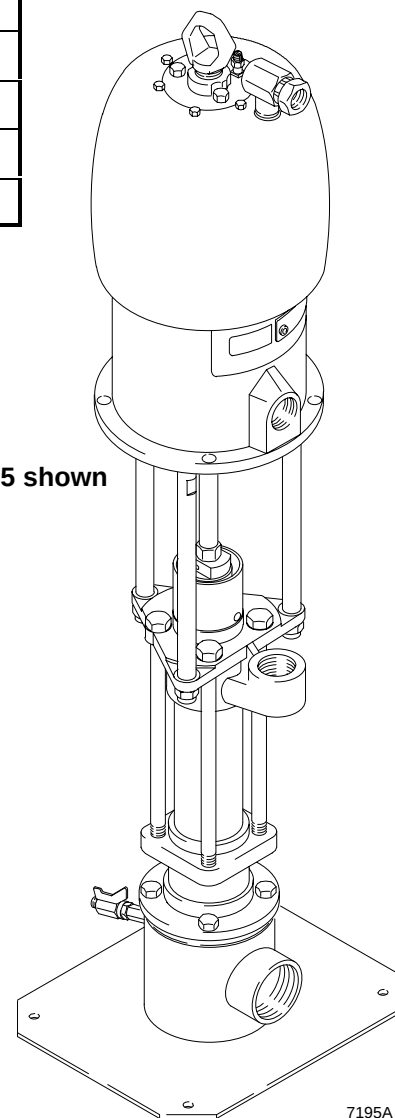
FLOOR STAND SYSTEMS	RAM SYSTEMS		
Model No.	Model No.	Description	Maximum Working Pressure
223-944	223-941	3:1 Ratio Bulldog	360 psi (2.5 MPa, 25 bar)
224-177	224-178	20:1 Ratio King	1800 psi (1.24 MPa, 124 bar)
224-179	224-182	25:1 Ratio Bulldog	2500 psi (1.7 MPa, 170 bar)
224-175		10:1 Ratio Bulldog	1000 psi (7 MPa, 69 bar)
224-185	224-186	55:1 Ratio King	5000 psi (34 MPa, 345 bar)



Model 223-941 shown

02936B

Model 224-175 shown



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GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

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Parts – Ram-Mounted Systems

Model 223–941 3:1 Ratio Bulldog

Ref No.	Part No.	Description	Qty
1	205–148	PUMP, 3:1 Bulldog <i>See manual 306–642 for parts</i>	1
2	207–279	RAM <i>See manual 308–168 for parts</i>	1
3	205–712	PUMP AIR REGULATOR KIT <i>See manual 308–168 for parts</i>	1

Model 224–178 20:1 Ratio King

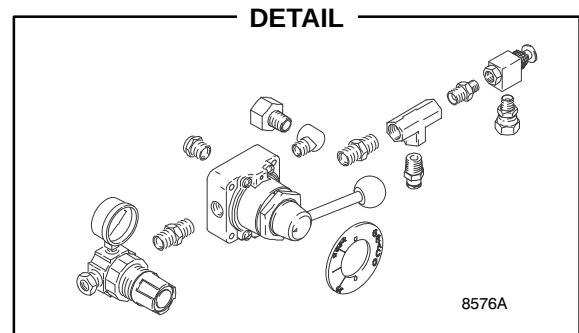
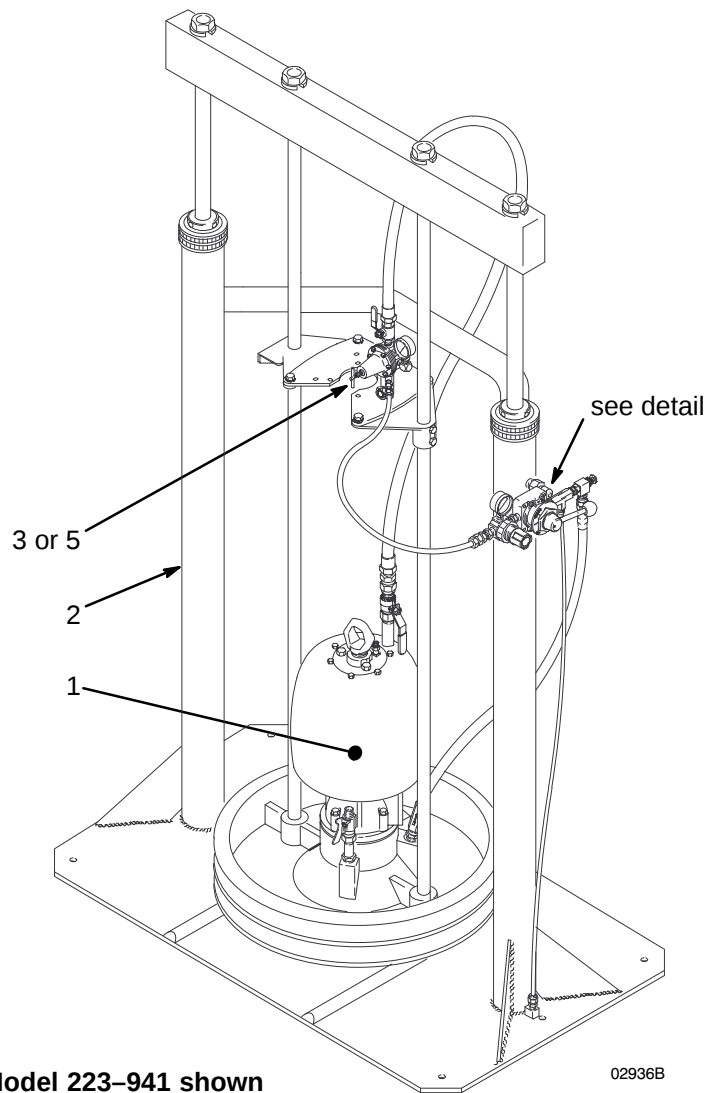
Ref No.	Part No.	Description	Qty
1	224–103	PUMP, 20:1 King <i>See manual 308–111 for parts</i>	1
2	207–279	RAM <i>See manual 306–934 for parts</i>	1
5	207–651	PUMP AIR REGULATOR <i>See manual 308–168 for parts</i>	1

Model 224–182 25:1 Ratio Bulldog

Ref No.	Part No.	Description	Qty
1	223–896	PUMP, 25:1 Bulldog <i>See manual 308–111 for parts</i>	1
2	207–279	RAM <i>See manual 306–934 for parts</i>	1
3	205–712	PUMP AIR REGULATOR KIT <i>See manual 308–168 for parts</i>	1

Model 224–186 55:1 Ratio King

Ref No.	Part No.	Description	Qty
1	223–898	PUMP, 55:1 King <i>See manual 308–111 for parts</i>	1
2	207–279	RAM <i>See manual 306–934 for parts</i>	1
5	207–651	PUMP AIR REGULATOR <i>See manual 308–168 for parts</i>	1



Model 223–941 shown

02936B

Parts – Floor-Mounted Systems

Model 224–179 25:1 Ratio Bulldog			
Ref No.	Part No.	Description	Qty
1	223–897	PUMP, 25:1 Bulldog <i>See manual 308–111 for parts</i>	1
2	223–952	FLOOR STAND	1
3	223–090	ADAPTER KIT <i>Includes items 4 and 5</i>	1
4	223–546	.MOUNTING KIT <i>See separate parts list</i>	1
5	208–390	.BALL VALVE	1

Model 224–185 55:1 Ratio King			
Ref No.	Part No.	Description	Qty
1	224–101	PUMP, 55:1 King <i>See manual 308–111 for parts</i>	1
2	223–952	FLOOR STAND	1
3	223–090	ADAPTER KIT <i>Includes items 4 and 5</i>	1
4	223–546	.MOUNTING KIT <i>See separate parts list</i>	1
5	208–390	.BALL VALVE	1

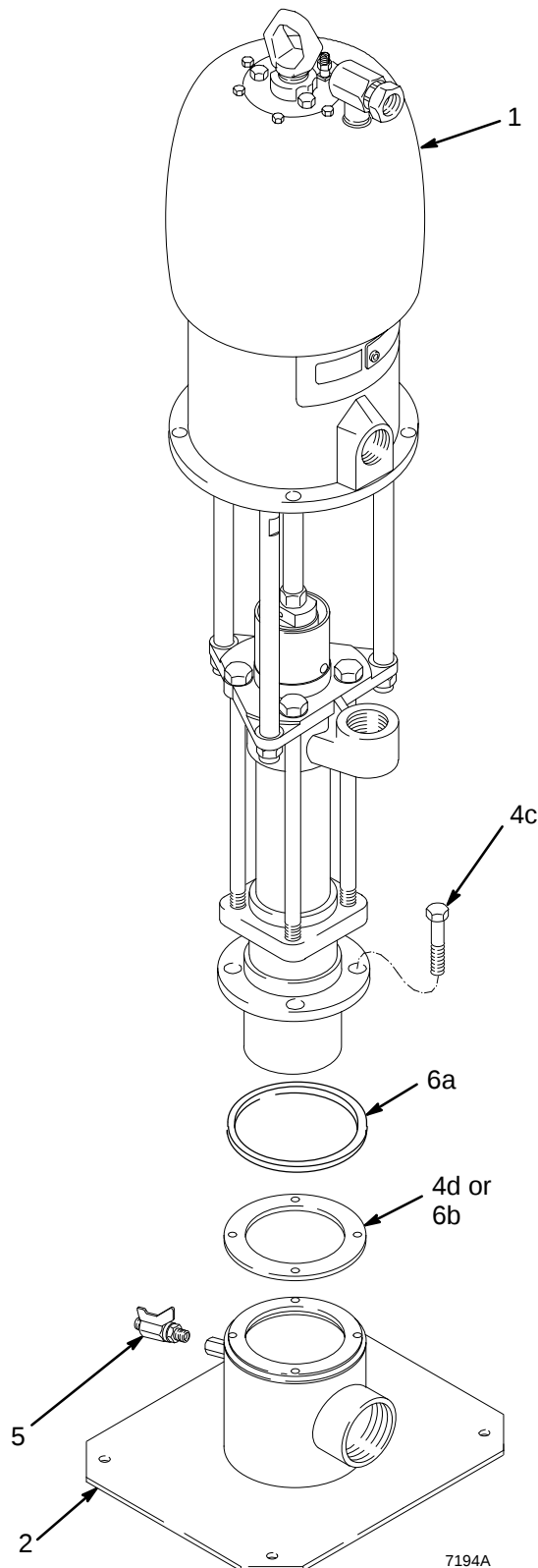
Model 224–177 20:1 Ratio King			
Ref No.	Part No.	Description	Qty
1	224–103	PUMP, 20:1 King <i>See manual 308–111 for parts</i>	1
2	223–952	FLOOR STAND	1
4c	102–637	CAPSCREW	4
4d	110–301	GASKET	1
6	222–776	ADAPTER KIT <i>Includes items 4 and 5</i>	1
6a	111–151	.O-RING	1
6b	162–788	.GASKET	1

Model 224–175 10:1 Ratio Bulldog			
Ref No.	Part No.	Description	Qty
1	224–102	PUMP, 10:1 Bulldog <i>See manual 308–111 for parts</i>	1
2	223–952	FLOOR STAND	1
4c	102–637	CAPSCREW	4
4d	110–301	GASKET	1
6	222–776	ADAPTER KIT <i>Includes items 4 and 5</i>	1
6a	111–151	.O-RING	1
6b	162–788	.GASKET	1

Model 223–944 3:1 Ratio Bulldog			
Ref No.	Part No.	Description	Qty
1	205–148	PUMP, 3:1 Bulldog <i>See manual 306–642 for parts</i>	1
2	223–952	FLOOR STAND	1
6	222–776	ADAPTER KIT <i>Includes items 4 and 5</i>	1
6a	111–151	.O-RING	1
6b	162–788	.GASKET	1

Purchase Item 5, 208–390, Ball Valve, separately for 3:1 Bulldog, Model 223–944.

Ref No. 4 223–546 Mounting Kit			
Ref No.	Part No.	Description	Qty
4a	185–443	RING	1
4b	185–445	MOUNTING PLATE	1
4c	102–637	CAPSCREW	4
4d	110–301	GASKET	1



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Setup

- Unpack the components. Be sure you have all the required instruction manuals, which are listed below. Other manuals may be supplied, depending on accessories you add to the system. Contact your Graco distributor if any manuals are missing.
- Refer to the pump instruction manual for general installation information, and to the component-specific manuals for detailed installation.
- All accessories added to the system must be able to withstand the air and fluid operating pressures of the pump.
- Use compressed air to blow debris out of the air supply lines before connecting them to the system.
- Properly ground your system. Follow the grounding information in your pump instruction manual.
- The pump was factory-tested in light oil. Flush the system with a compatible solvent before regular use if the material you are pumping could be contaminated by the oil.
- Refer to the instruction manuals, particularly the Pump manual and the Ram or Floor Stand manual, for operating instructions.
- **Always** follow the **Pressure Relief Procedure** in your pump instruction manual before you install, check, or repair any part of the system, and whenever you shut down the system.

System Model No.	Instructions Manuals				
	Ram	Floor Stand	Motor	Pump	Air Regulator
223-941	306-934	—	307-049	306-642	308-168
223-944	—	307-971			—
224-178	306-934	—	306-968		308-168
224-177	—	307-971			—
224-182	306-934	—			308-168
224-179	—	307-971			—
224-175	—	307-971			—
224-186	306-934	—	306-968		308-168
224-185	—	307-971			—

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Manual Change Summary

This manual went from Rev. C to Rev. D to show pictorial changes in Ram Model No. 207–279, which is shown on the cover and on page 2.

Graco Standard Warranty

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.

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1-800-367-4023 Toll Free

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