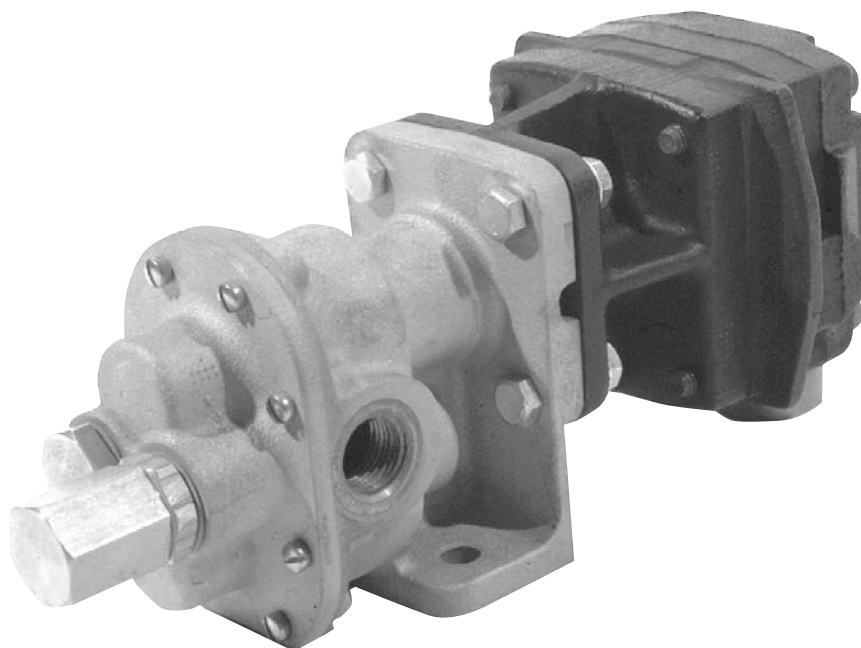


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## Repair and Parts Manual

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This positive-displacement pump is ideal for de-icing (pre-wet). Combining the pump and motor as a single unit eliminates the need for shaft alignment or Love-Joy® coupling. The unit's compact size allows it to be used in a wide variety of locations and makes it especially attractive for quick, easy retrofit installations.

### **Pump Features & Benefits:**

Optional pressure relief valve .....Safeguards against pressure buildup  
Industry-proven gear pump design .....Minimal moving parts for longevity

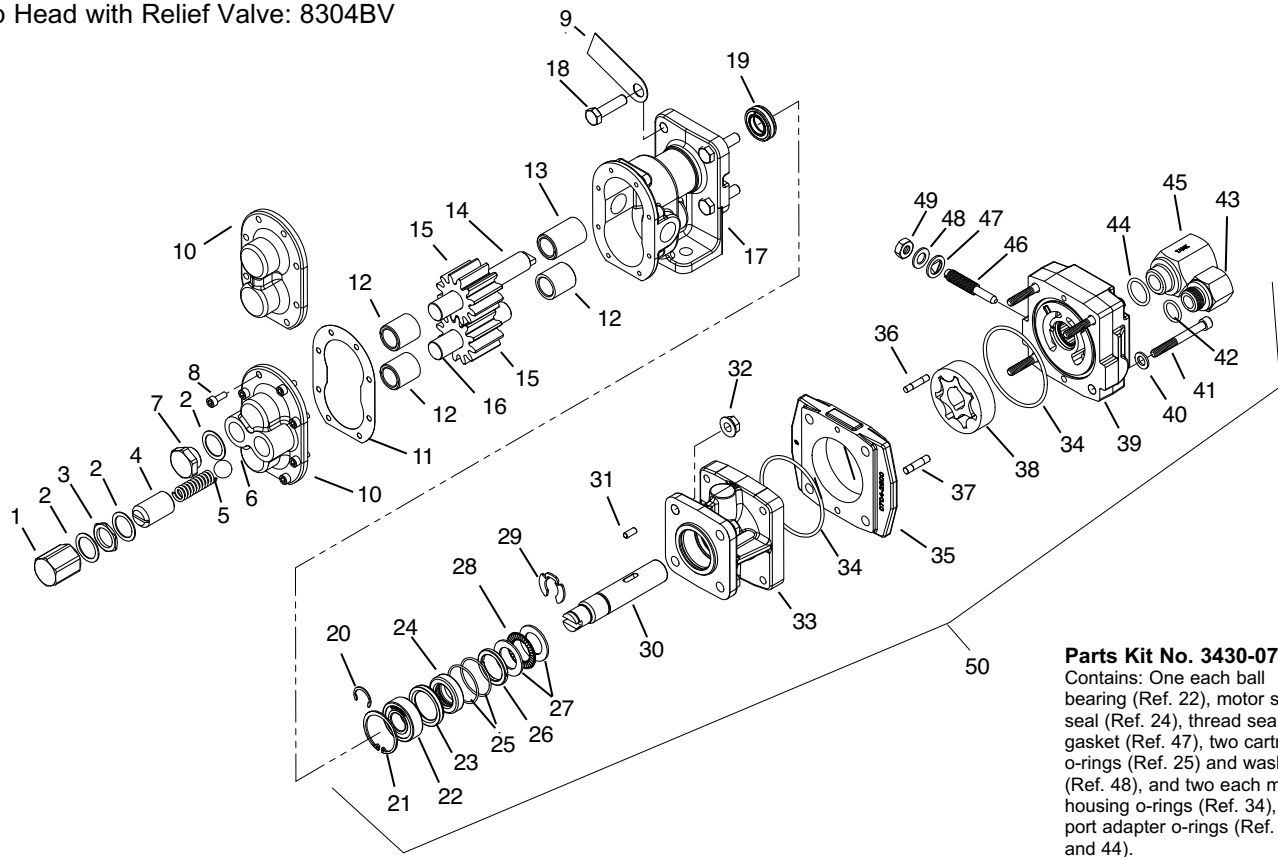
### **Motor Features & Benefits:**

State-of-the-art internal gear gerotor motor .....Maximum service for any application  
Bypass adjustment .....Allows fine tuning of flow control  
1/2-inch NPT ports with anti-reverse check .....Safeguards against change in flow direction

 **California Proposition 65 Warning** -- This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Pump Head Only: 8304B

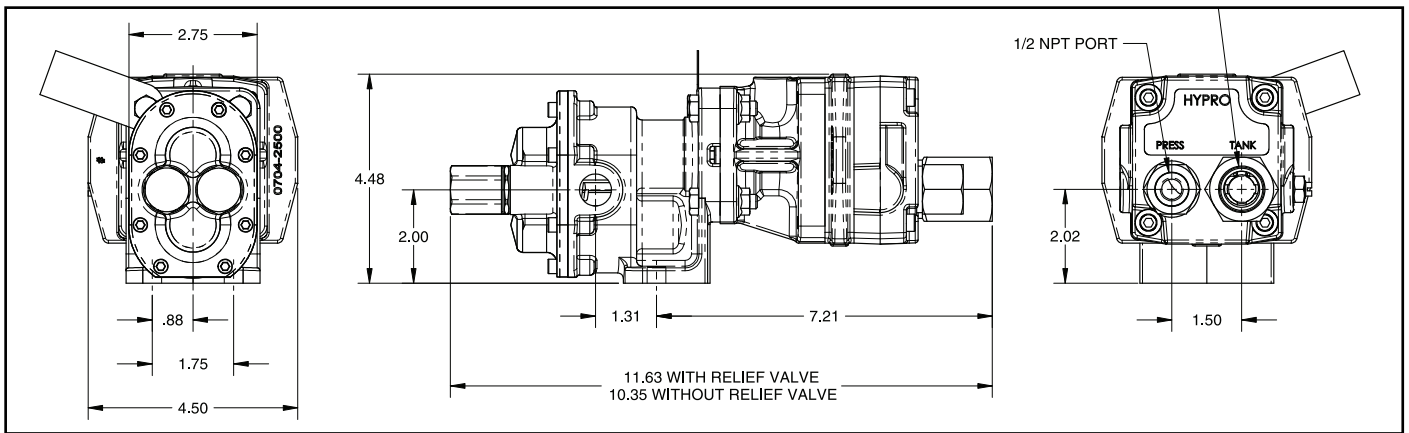
Pump Head with Relief Valve: 8304BV



**Parts Kit No. 3430-0748**  
 Contains: One each ball bearing (Ref. 22), motor shaft seal (Ref. 24), thread seal gasket (Ref. 47), two cartridge o-rings (Ref. 25) and washer (Ref. 48), and two each motor housing o-rings (Ref. 34), and port adapter o-rings (Ref. 42 and 44).

Ref. No.	Part No.	Description	Qty.
1	11572	Valve Cap	1
2	11582	Valve Gasket	3
3	11562	Lock Nut	1
4	11561	Valve Stem	1
5	24809	Spring	1
6	24808	Ball	1
7	11580	Plug	1
8	21916	Screw, Socket Head Cap	8
9	2270-0076	Tag	1
10	11489	Pressure Relief Valve Cover	1
10	11487	Non-Pressure Relief Valve Cover	1
11	00252	Gasket, Water Pump	1
12	06333	Graphite Bushing	3
13	11519	Graphite Bushing	1
14	0500-8300	Gear Pump Drive Shaft	1
15	00456	Gear	2
16	06394	Gear Pump Idler Shaft	1
17	0150-8300B	Gear Pump Body	1
18	11699	Bolt	4
19	2107-0002	Seal	1
20	1810-0038	Retaining Ring (Ext.)	1
21	1820-0013	Retaining Ring (Int.)	1
22	2000-0010	Ball Bearing	1
23	1410-0131	Front Cartridge	1
23	1410-0073	Front Spacer (2010 & newer models)	1
23	1410-0073	Front Spacer (models before 2010)	1
24	2104-0010	Shaft Seal	1
25	1720-0268	O-ring (2010 & newer models) (not used in models before 2010)	2

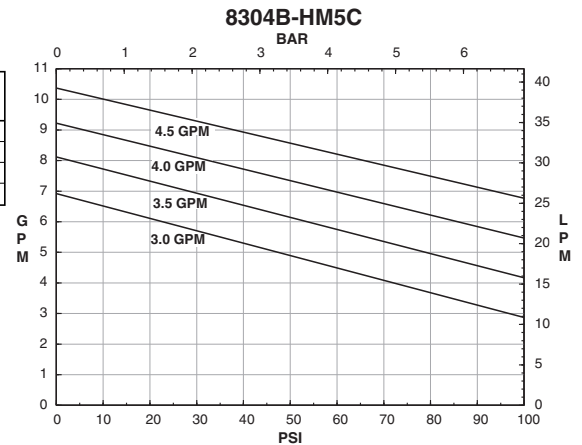
Ref. No.	Part No.	Description	Qty.
26	1410-0130	Spacer (2010 & newer models)	1
26	1410-0074	Seal Spacer (models before 2010)	1
27	2029-0010	Thrust Bearing Race	2
28	2029-0009	Thrust Bearing	1
29	1810-0026	Snap Ring	1
30	0539-2500	Hyd. Motor Drive Shaft	1
31	1610-0031	Key	1
32	2250-0060	Lock Nut	4
33	0150-2500C	Motor Body (includes main bearing)	1
34	1720-0110	O-ring	2
35	0704-2500C1	Gerotor Housing	1
36	1600-0037	Dowel Pin	1
37	1600-0044	Dowel Pin	1
38	3900-0048	Gerotor Assembly	1
39	0254-2500C2	Motor Endplate (includes main bearing)	1
40	2270-0039	Washer	4
41	2220-0032	Cap Screw	4
42	1720-0108	O-ring	1
43	3360-0021A	Pressure Port Adapter	1
44	1720-0262	O-ring	1
45	3320-0051A	Tank Port Adapter	1
46	3220-0029	Bypass Adjusting Screw	1
47	1700-0047	Gasket	1
48	2270-0027	Washer	1
49	2250-0038	Jam Nut	1
50	2500-0023C	Complete Motor Assembly	1



### 8304B-HM5C

Hydraulic Flow (GPM)	GPM at 0 PSI	GPM at 10 PSI	GPM at 20 PSI	GPM at 30 PSI	GPM at 40 PSI	GPM at 50 PSI	GPM at 60 PSI	GPM at 70 PSI	GPM at 80 PSI	GPM at 90 PSI	GPM at 100 PSI
3.0	6.9	6.5	6.1	5.7	5.3	4.9	4.5	4.1	3.7	3.3	2.9
3.5	8.1	7.7	7.3	6.9	6.6	6.2	5.8	5.4	5.0	4.6	4.2
4.0	9.2	8.9	8.5	8.1	7.8	7.4	7.0	6.7	6.2	5.9	5.5
4.5	10.4	10.1	9.7	9.3	9.0	8.6	8.2	7.9	7.5	7.1	6.8

This data was generated using water as the pumping media. Performance will vary with different viscosity fluids. Hydraulic pressures vary from 200 to 850 PSI for the performance chart above.



### HYDRAULIC MOTOR AND GEAR PUMP INFORMATION

Hypro hydraulic motors are designed to operate in open center; closed center; and closed center, load-sensing systems. Setup for each type of system varies to some degree. However, there are some rules that need to be followed for any type of setup.

1. **Do not let hydraulic oil flow rate to the motor exceed 4.5 GPM.** Additional hydraulic flow may cause over speeding that may damage or destroy the gear pump.
2. **Do not run the motor backwards.** Reverse operation will damage or destroy the seals in the pump and motor. Hypro hydraulic motors are equipped with a tank port adapter that includes a built-in check valve. This check valve will guard against reverse operation and should not be removed.
3. (Closed Center and Load-Sense Systems Only) **Do not place the spool valve selector in the neutral position when shutting down the motor.** This will trap pressure in the hydraulic lines and will damage the motor seal. Always use the float position to shut down the motor.
4. (Open Center Systems Only) It is not recommended that the 8304B-HM5C be installed on open center systems with flow rates higher than 12 GPM. The low flow requirements of the pump may cause excessive heating of the hydraulic oil in larger systems because of the large amount of bypassed oil.
5. **The maximum operating pressure for the pump is 100 PSI.** Do not exceed that pressure or the pump may be damaged.
6. Do not operate the pump without a relief valve. The 8304B is a positive displacement gear pump and must have a relief valve installed on the discharge side of the pump to protect against over pressurization in the event of having the flow shut off.
7. There is an operating instruction card (PN 6031-0343) attached to the hydraulic motor at the factory. Please use this card for setting up the motor in your hydraulic system.

### GENERAL SAFETY INFORMATION

#### DANGER

Do not pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in explosive atmospheres. The pump should be used only with liquids compatible with the pump component materials. Failure to follow this notice can result in severe personal injury and/or property damage and will void the product warranty.

#### CAUTION

1. Maximum liquid temperature for the pump is 140 degrees F. Maximum liquid temperature for the motor is 200 degrees F.
2. Release all pressure within the system before servicing.
3. Secure the outlet lines before operating the pump. An unsecured line may whip, causing personal injury and/or property damage.
4. Check hose for worn or weak conditions before each use. Make certain that all connections are tightly secured.
5. Use only pipe, hose and fittings rated for the maximum psi rating of the pump.
6. Do not use these pumps for pumping water or other liquids for human or animal consumption.

## Limited Warranty on Hypro/SHURflo Agricultural Pumps & Accessories

Hypro/SHURflo (hereafter, "Hypro") agricultural products are warranted to be free of defects in material and workmanship under normal use for the time periods listed below, with proof of purchase.

- Pumps: one (1) year from the date of manufacture, or one (1) year of use. This limited warranty will not exceed two (2) years, in any event.
- Accessories: ninety (90) days of use.

This limited warranty will not apply to products that were improperly installed, misapplied, damaged, altered, or incompatible with fluids or components not manufactured by Hypro. All warranty considerations are governed by Hypro's written return policy.

Hypro's obligation under this limited warranty policy is limited to the repair or replacement of the product. All returns will be tested per Hypro's factory criteria. Products found not defective (under the terms of this limited warranty) are subject to charges paid by the returnee for the testing and packaging of "tested good" non-warranty returns.

No credit or labor allowances will be given for products returned as defective. Warranty replacement will be shipped on a freight allowed basis. Hypro reserves the right to choose the method of transportation.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on Hypro's behalf. Hypro shall not be liable for any labor, damage or other expense, nor shall Hypro be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product. This limited warranty covers agricultural products distributed within the United States of America. Other world market areas should consult with the actual distributor for any deviation from this document.

### Return Procedures

All products must be flushed of any chemical (ref. OSHA section 1910.1200 (d) (e) (f) (g) (h)) and hazardous chemicals must be labeled/tagged before being shipped\* to Hypro for service or warranty consideration. Hypro reserves the right to request a Material Safety Data Sheet from the returnee for any pump/product it deems necessary. Hypro reserves the right to "disposition as scrap" products returned which contain unknown fluids. Hypro reserves the right to charge the returnee for any and all costs incurred for chemical testing, and proper disposal of components containing unknown fluids. Hypro requests this in order to protect the environment and personnel from the hazards of handling unknown fluids.

Be prepared to give Hypro full details of the problem, including the model number, date of purchase, and from whom you purchased your product. Hypro may request additional information, and may require a sketch to illustrate the problem.

**Contact Hypro Service Department at 800-468-3428 to receive a Return Merchandise Authorization number (RMA#).** Returns are to be shipped with the RMA number clearly marked on the outside of the package. Hypro shall not be liable for freight damage incurred during shipping. Please package all returns carefully. All products returned for warranty work should be sent **shipping charges prepaid** to:

HYPRO / PENTAIR  
Attention: Service Department  
375 Fifth Avenue NW  
New Brighton, MN 55112

For technical or application assistance, call the **Hypro Technical/Application number: 800-445-8360**, or send an email to: **technical@hypropumps.com**. To obtain service or warranty assistance, call the **Hypro Service and Warranty number: 800-468-3428**; or send a fax to the **Hypro Service and Warranty FAX: 651-766-6618**.

\*Carriers, including U.S.P.S., airlines, UPS, ground freight, etc., require specific identification of any hazardous material being shipped. Failure to do so may result in a substantial fine and/or prison term. Check with your shipping company for specific instructions.

Visit [www.hypropumps.com/register](http://www.hypropumps.com/register) today to register your product and stay up-to-date on new products and promotional offers.

The following information is required:

Model # \_\_\_\_\_ Serial # \_\_\_\_\_



375 Fifth Avenue NW • New Brighton, MN 55112 USA  
Phone: (651) 766-6300 • 800-424-9776 • Fax: 800-323-6496  
[www.hypropumps.com](http://www.hypropumps.com)

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