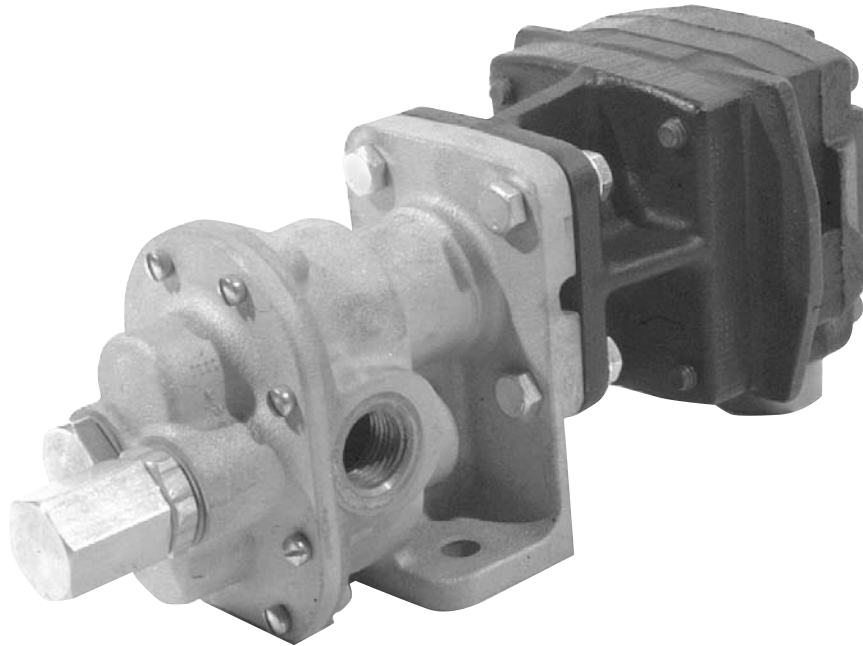

Repair and Parts Manual



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.

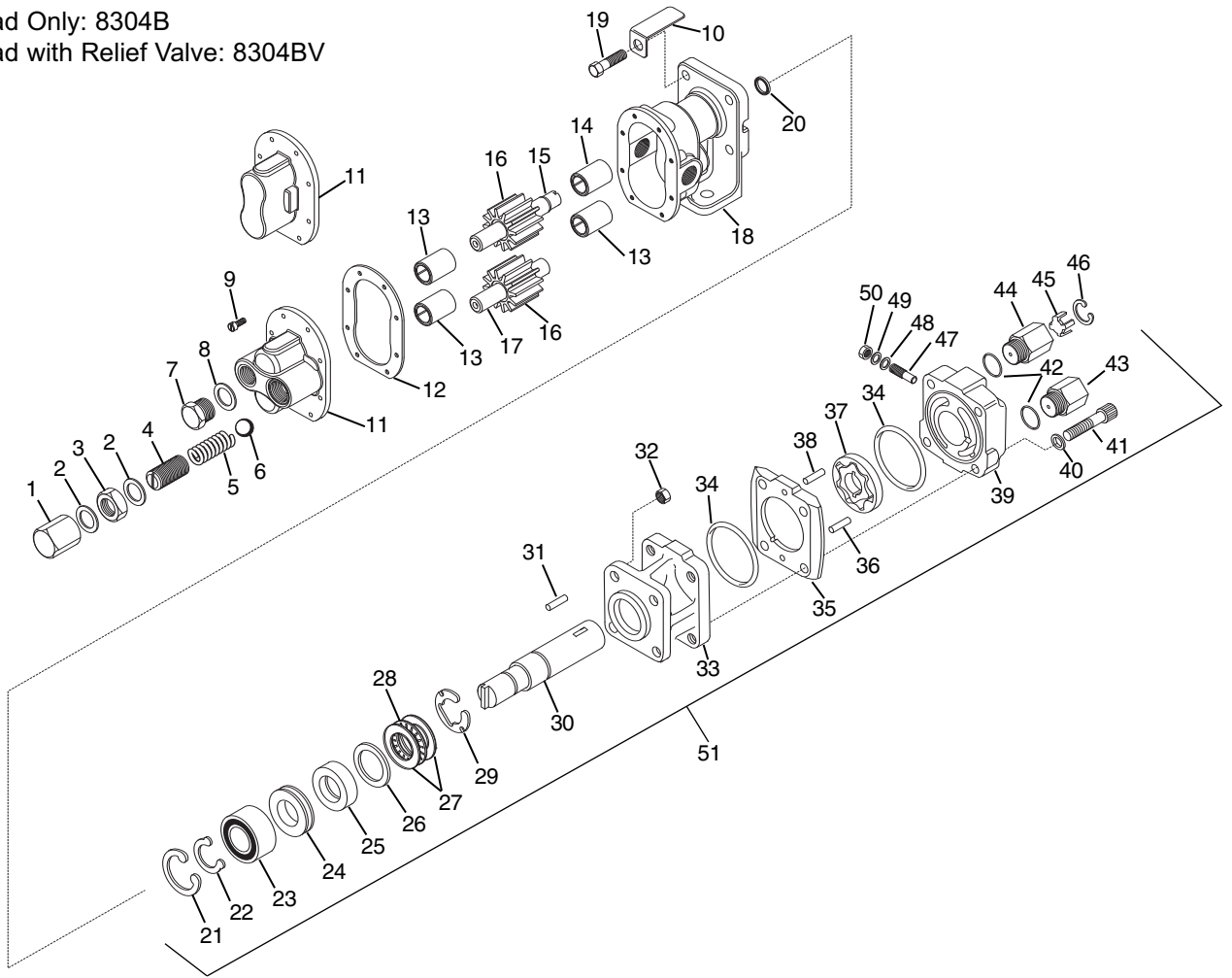
Pump Features & Benefits:

Optional pressure relief valveSafeguards against pressure buildup
Industry-proven gear pump designMinimal moving parts for longevity

Motor Features & Benefits:

State-of-the-art internal gear gerotor motorMaximum service for any application
Bypass adjustmentAllows fine tuning of flow control
1/2-inch NPT ports with anti-reverse checkSafeguards against change in flow direction

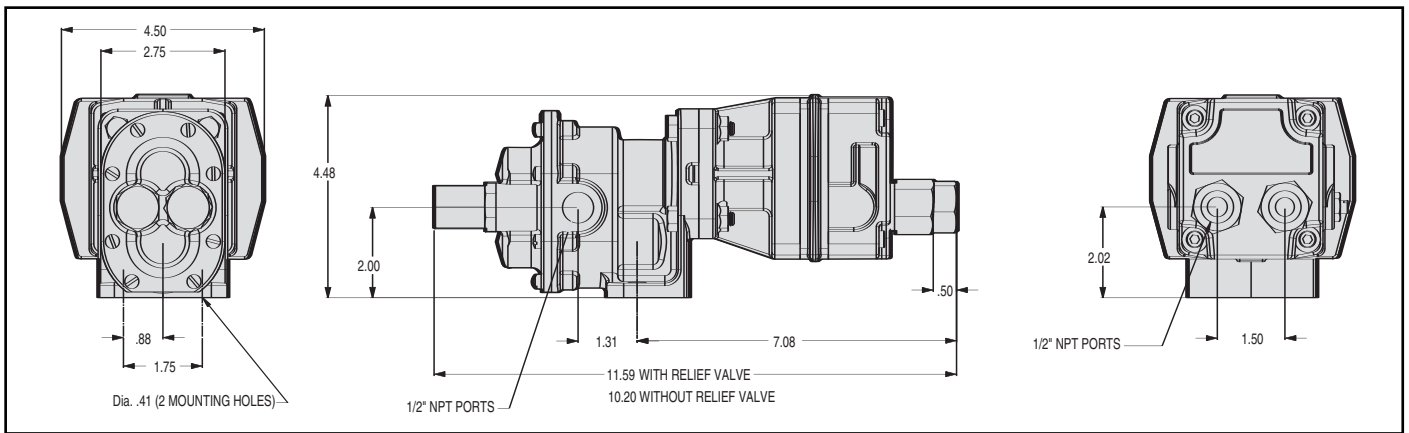
Pump Head Only: 8304B
 Pump Head with Relief Valve: 8304BV



Ref. No.	Part No.	Description	Qty.
1	11572	Valve Cap	1
2	11582	Valve Gasket	2
3	11562	Lock Nut	1
4	11561	Valve Stem	1
5	24809	Spring	1
6	24808	Ball	1
7	11580	Plug	1
8	11582	Valve Gasket	1
9	21916	Screw	8
10	2270-0076	I.D. Tag	1
11	11489	Pressure Relief Valve Cover	1
11	11487	Non-Pressure Relief Valve Cover	1
12	00252	Gasket	1
13	06333	Graphite Bushing	3
14	11519	Graphite Bushing	1
15	0500-8300	Gear Pump Drive Shaft	1
16	00456	Gear	2
17	06394	Gear Pump Idler Shaft	1
18	0150-8300B	Gear Pump Body	1
19	11699	Bolt	4
20	2107-0002	Seal	1
21	1820-0013	Retaining Ring (Int.)	1
22	1810-0038	Retaining Ring (Ext.)	1
23	2000-0010	Bearing	1
24	1410-0073	Spacer	1
25	2104-0005	Shaft Seal	1

Ref. No.	Part No.	Description	Qty.
26	1410-0074	Seal Spacer	1
27	2029-0010	Thrust Bearing Race	2
28	2029-0009	Thrust Bearing	1
29	1810-0026	Snap Ring	1
30	0517-2501	Hyd. Motor-Drive Shaft	1
31	1610-0031	Key	1
32	2250-0060	Lock Nut	4
33	0151-2500C1	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	3900-0048	Gerotor	1
38	1600-0044	Dowel Pin	1
39	0251-2500C2	Motor Endplate (Includes Main Bearing)	1
40	2270-0039	Washer	4
41	2220-0032	Cap Screw	4
42	1720-0108	O-ring	2
43	3360-0021	Pressure Port Adapter	1
44	3320-0049	Tank Port Adapter	1
45	3260-0039	Poppet	1
46	1820-0023	Retaining Ring	1
47	3220-0029	Bypass Adjusting Screw	1
48	1700-0047	Gasket	1
49	2270-0027	Washer	1
50	2250-0038	Lock Nut	1
51	2500-0023C	Hyd. Motor Complete	1

*Assembly No. 19369 consists of (1) Ref. No. 1 Valve Cap, (2) Ref. No. 2 Valve Gasket, (1) Ref. No. 3 Lock Nut, (1) Ref. No. 4 Valve Stem.

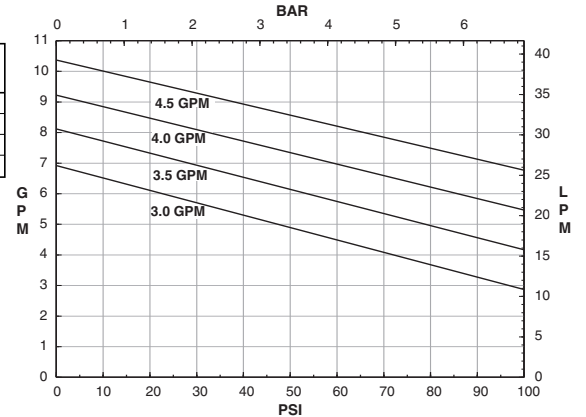


8304B-HM5C

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.

8304B-HM5C



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 Pumps and Other Hypro Products

Hypro warrants to the original purchaser of its products (the "Purchaser") that such products will be free from defects in material and workmanship under normal use for the period of one (1) year for all products except: oil crankcase plunger pumps will be free from defects in material and workmanship under normal use for the period of five (5) years, and accessories will be free from defects in material and workmanship under normal use for the period of ninety (90) days. In addition, Hypro warrants to the purchaser all forged brass pump manifolds will be free from defects in material and workmanship under normal use and from damage resulting from environmental conditions for the life of the pump.

"Normal use" does not include use in excess of recommended maximum speeds, pressures, vacuums and temperatures, or use requiring handling of fluids not compatible with component materials, as noted in Hypro product catalogs, technical literature, and instructions. This warranty does not cover freight damage, freezing damage, normal wear and tear, or damage caused by misapplication, fault, negligence, alterations, or repair that affects the performance or reliability of the product.

THIS WARRANTY IS EXCLUSIVE. HYPRO MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Hypro's obligation under this warranty is, at Hypro's option, to either repair or replace the product upon return of the entire product to the Hypro factory in accordance with the return procedures set forth below. **THIS IS THE EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.**

IN NO EVENT SHALL HYPRO BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHETHER FOR BREACH OF ANY WARRANTY, FOR NEGLIGENCE, ON THE BASIS OF STRICT LIABILITY, OR OTHERWISE.

Return Procedures

All pumps or products *must* be flushed of any chemical (ref. OSHA Section 0910.1200 (d)(e)(f)(g)(h)) and hazardous chemicals *must* be labeled before being shipped* to Hypro for service or warranty consideration. Hypro reserves the right to request a Material Safety Data sheet from the Purchaser for any pump or product Hypro deems necessary. Hypro reserves the right to "disposition as scrap" pumps or products returned which contain unknown substances, or to charge for any and all costs incurred for chemical testing and proper disposal of components containing unknown substances. Hypro requests this in order to protect the environment and personnel from the hazards of handling unknown substances.

For technical or application assistance, call the **Hypro Technical/Application number: 1-800-445-8360.**

To obtain service or warranty assistance, call the Hypro Service and Warranty number: 1-800-468-3428; or call the Hypro Service and Warranty FAX: (651) 766-6618.

Be prepared to give Hypro full details of the problem, including the following information:

1. Model number and the date and from whom you purchased your pump.
2. A brief description of the pump problem, including the following:
 - Liquid pumped. State the pH and any non-soluble materials, and give the generic or trade name.
 - Temperature of the liquid and ambient environment.
 - Suction lift or vacuum (measured at the pump).
 - Discharge pressure.
 - Size, type, and mesh of the inlet strainer.
 - Drive type (gas engine/electric motor; direct/belt drive; tractor PTO) and rpm of pump.
 - Viscosity (of oil, or other than water weight liquid).
 - Elevation from the pump to the discharge point.
 - Size and material of inlet and outlet line.
 - Type of spray gun, orifice size, unloader/relief valve.

Hypro may request additional information and may require a sketch to illustrate the problem. Contact the factory to receive a return material authorization before sending the product. All pumps returned for warranty work should be sent shipping charges prepaid to:

HYPRO-Pentair Water
Attention: Service Department
375 Fifth Avenue NW
New Brighton, Minnesota 55112

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



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Pentair Water
SPRAY GROUP

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