



N999E Series Bronze Close Coupled Rotary Gear Pumps



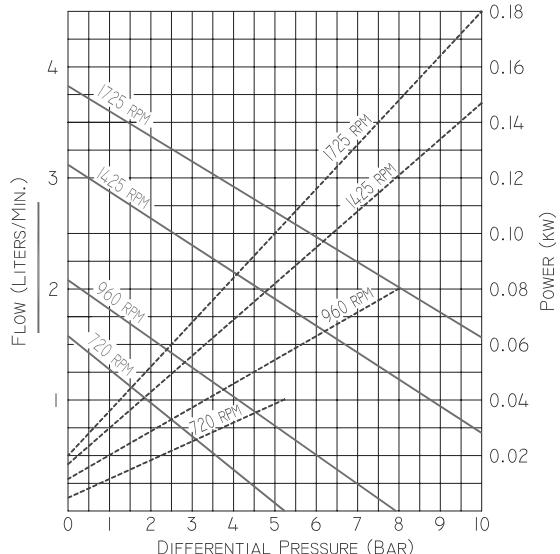
Features

- 1/4" BSPT Ports
- Temp. Range: 0°C - 60°C
- Rugged corrosion resistant bronze construction
- Compact close-coupled design
- Stainless steel shafts
- Durable bronze spur gears
- Process lubricated carbon graphite bearings
- O-ring cover seal for maximum leak protection
- Lip Seal or Mechanical Seal
- Easy field assembly to a variety of motor frames
- For compact AC motor pump units - see Bronze Adapterless Rotary Gear Pumps
- For carbonator styles see N95E series

PUMP	DESCRIPTION
OBN999E	Standard Pump with 1/4" ports
OBN999RE	Pump with 1/4" ports & relief valve
OBN999ESS	Pump with FKM lipseal
OBN999RESS	Pump with FKM lipseal & relief valve
OBN999ES16	Pump with NBR mechanical seal
OBN999RES16	Pump with NBR mechanical seal & relief valve
OBN999ES17	Pump with FKM mechanical seal
OBN999RES17	Pump with FKM mechanical seal & relief valve
OBN999ES18	Pump with PTFE mechanical seal
OBN999RES18	Pump with PTFE mech. seal & relief valve
OBN999ES8	Pump with EPDM mechanical seal
OBN999RES8	Pump with EPDM mech. seal & relief valve

Performance

VALUES @ 1cP, 20°C



General Description

Pump housings and gears are made of top quality bronze, shafts are 303 stainless steel. Bearings are designed of high performance carbongraphite material selected for wear resistance and long service life. Gear pumps are positive displacement pumps. Each shaft revolution displaces a definite amount of liquid relatively unaffected by the back pressure in the discharge line. Shaft speed and flow are directly proportional. Recommended pressure limits are 7 bar for water and non-lubricants, 10.3 bar for oil and other lubricants. The maximum shaft speed is 1750 RPM.

Shaft Seals

Close coupled gear pumps are normally supplied with a NBR lip seal. For a FKM Seal, add S5 to the pump model number. For a NBR Mechanical seal add S16 and for a FKM Mechanical Seal add S17. For a PTFE mechanical seal add S18. For a EPDM mechanical seal add S8.

Liquids and Temperature

These pumps are suitable for all liquids that are compatible with bronze. Most common liquids are water, oil, and mild chemicals in the pH range of 4 to 11. Viscous liquids require reduced shaft speeds of 1140 RPM or lower. (Consult factory.)

Liquids containing solids, abrasives, powders, or paint pigments are definitely not recommended for gear pumps. If abrasives are unavoidable, use a very low shaft speed.

See pricebook for the recommended liquid temperature range of lip and mechanical seals. Freezing of waterfilled pumps can cause damage and must be avoided. Oils at low temperatures are very viscous requiring a lower speed or extra power.



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Suction Lift

As a general rule, the suction lift should be kept at an absolute minimum by placing the pump as close to the liquid source as possible. A gear pump in new condition can lift 6 meters of water in the suction line. A foot valve (preferably with built-in strainer) is recommended at the beginning of the suction line. For a first start-up, the pump should be primed to avoid dry running. Minimum size of the suction pipe is the size of the pump inlet port. For longer suction lines (over 1.6 meters) or for viscous liquids, the pipe should be at least one size or two sizes larger than the pump inlet port.

Rotation and Relief Valve

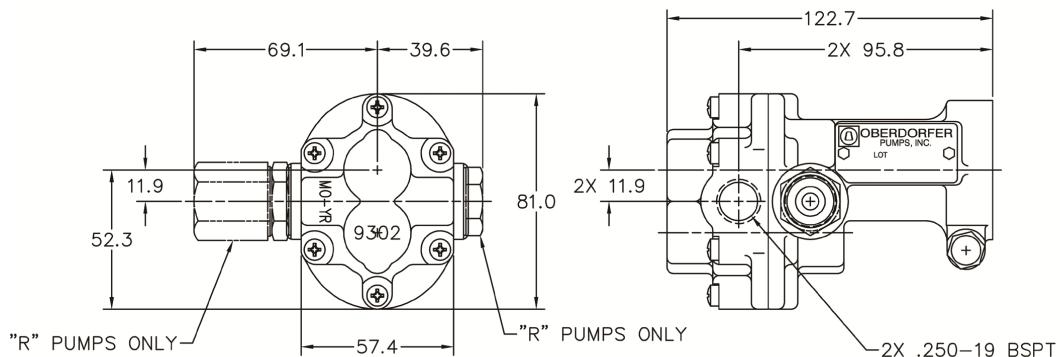
If the discharge line contains any throttling devices such as a shut-off valve, a spray nozzle or other restrictive device, it is necessary to have a relief valve in the system which returns the liquid to the suction side or to the tank. The relief valve is also available as part of the pump itself (R-model pumps).

However, built-in relief valves are only good for intermittent service. If used continuously, the pump will overheat. A built-in relief valve is strictly a safety device against overpressure. It will not work successfully as a pressure or flow control device. For this purpose a separate relief valve in the pressure line must be used.

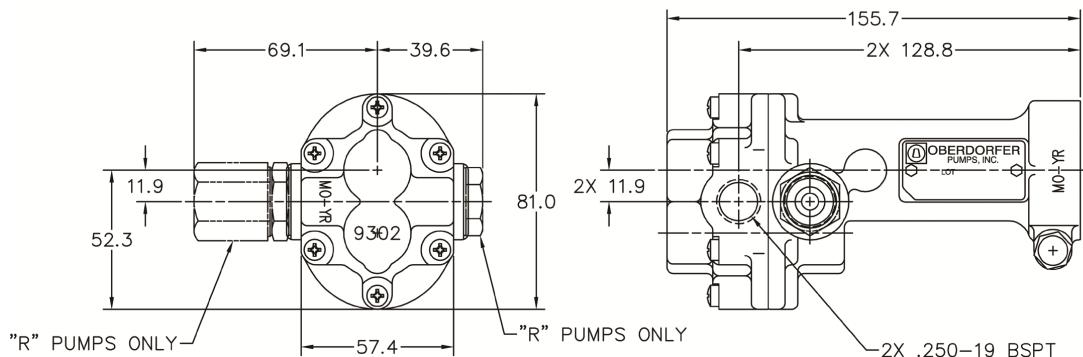
Unless otherwise specified, the pump motor unit is supplied by the factory for shaft rotation counterclockwise from shaft end. Reversing motor will reverse "in" and "out" ports and also requires changing relief valve location. The relief valve is always on the inlet side of this pump series. The factory pressure setting is 3.5 bar. To increase pressure, turn the relief valve adjusting screw in a clockwise direction

Dimensions

N999(R)E & N999(R)ES5



N999(R)ES16, N999(R)ES17, N999(R)ES18 & N999(R)ES8



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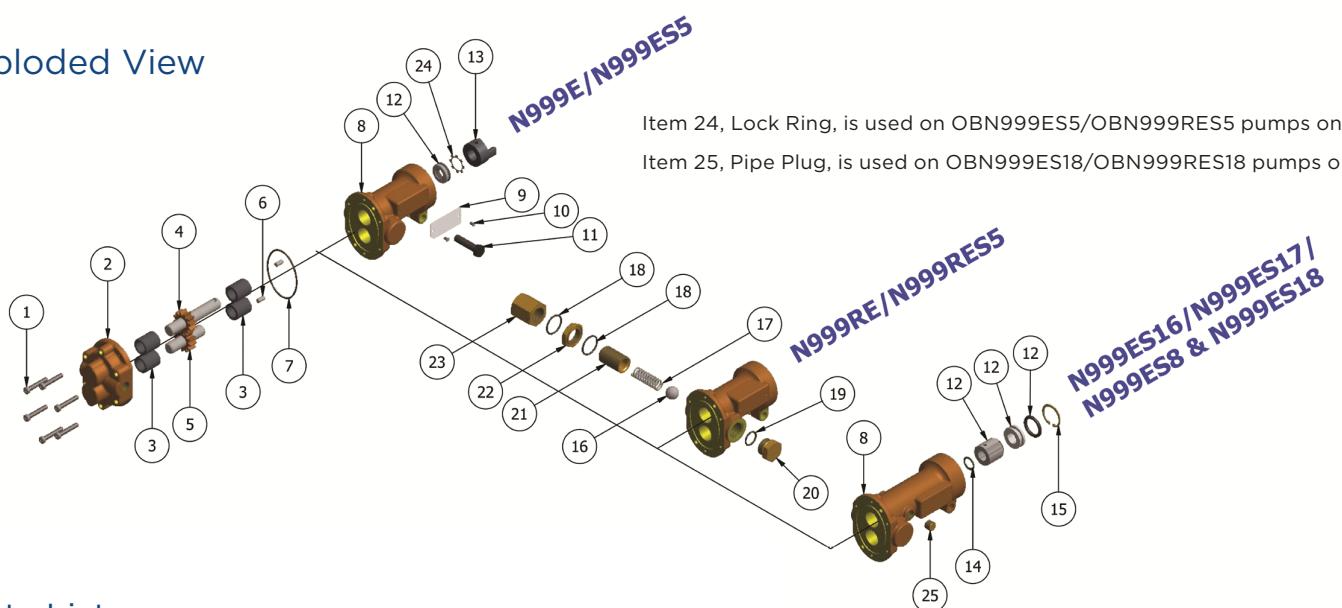
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Exploded View



Parts List

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Model	Qty. 6	Qty. 1	Qty. 4	Qty. 1	Qty. 1	Qty. 2	Qty. 1	Qty. 1	Qty. 1	Qty. 2	Qty. 1	Qty. 1	Qty. 1	Qty. 1
OBN999E	OB5013	OB9302NB5N	OB5024	OB32198	OB32199	OB8885	OB9797-033	OB9303NN2N	OB9344	OB9345	OB5595	OB5007	N/A	OB5604
OBN999RE	OB5013	OB9302NB5N	OB5024	OB32198	OB32199	OB8885	OB9797-033	OB9303NN2B	OB9344	OB9345	OB5595	OB5007	N/A	OB5604
OBN999ES5	OB5013	OB9302NB5N	OB5024	OB32198	OB32199	OB8885	OB9797-033	OB9303NN2N	OB9344	OB9345	OB5595	OB7580	N/A	OB5604
OBN999RES5	OB5013	OB9302NB5N	OB5024	OB32198	OB32199	OB8885	OB9797-033	OB9303NN2B	OB9344	OB9345	OB5595	OB7580	N/A	OB5604
OBN999ES16	OB5013	OB9302NB5N	OB5024	OB33291	OB32199	OB8885	OB9797-033	OB9304PN4N	OB9344	OB9345	OB5595	N/A	OB32584	OB5604
OBN999RES16	OB5013	OB9302NB5N	OB5024	OB33291	OB32199	OB8885	OB9797-033	OB9304PN4B	OB9344	OB9345	OB5595	N/A	OB32584	OB5604
OBN999ES17	OB5013	OB9300NB5N	OB5024	OB33291	OB32199	OB8885	OB9797-033	OB9304PN4N	OB9344	OB9345	OB5595	N/A	OB32585	OB5604
OBN999RES17	OB5013	OB9302NB5N	OB5024	OB33291	OB32199	OB8885	OB9797-033	OB9304PN4B	OB9344	OB9345	OB5595	N/A	OB32585	OB5604
OBN999ES18	OB5013	OB9302NB5N	OB5024	OB33291	OB32199	OB8885	OB9355-033	OB9304PN6N	OB9344	OB9345	OB5595	N/A	OB32335	OB5604
OBN999RES18	OB5013	OB9302NB5N	OB5024	OB33291	OB32199	OB8885	OB9355-033	OB9304PN6B	OB9344	OB9345	OB5595	N/A	OB32335	OB5604
OBN999ES8	OB5013	OB9302NB5N	OB5024	OB33291	OB32199	OB8885	OB9999-033	OB9304PN4N	OB9344	OB9345	OB5595	N/A	OB32754	OB5604
OBN999RES8	OB5013	OB9302NB5N	OB5024	OB33291	OB32199	OB8885	OB9999-033	OB9304PN4B	OB9344	OB9345	OB5595	N/A	OB32754	OB5604

	15	16	17	18	19	20	21	22	23	24	25	Repair Kits
Model	Qty. 1	Qty. 1	Qty. 1	Qty. 2	Qty. 1	Qty. 1	Qty. 1	Qty. 1	Qty. 1	Qty. 1	Qty. 1	
OBN999E	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	OB10873
OBN999RE	N/A	OB5803	OB1840	OB9797-019	OB9797-015	OB1838	OB5237	OB5240D	OB5239	N/A	N/A	OB10873
OBN999ES5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7626	N/A	OB12109
OBN999RES5	N/A	OB5803	OB1840	OB9797-019	OB9797-015	OB1838	OB5237	OB5240D	OB5239	7626	N/A	OB12109
OBN999ES16	OB7639	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	OB12392
OBN999RES16	OB7639	OB5803	OB1840	OB9797-019	OB9797-015	OB1838	OB5237	OB5240D	OB5239	N/A	N/A	OB12392
OBN999ES17	OB7639	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	OB12393
OBN999RES17	OB7639	OB5803	OB1840	OB9797-019	OB9797-015	OB1838	OB5237	OB5240D	OB5239	N/A	N/A	OB12393
OBN999ES18	OB7639	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TBD
OBN999RES18	OB7639	OB5803	OB1840	OB9797-019	OB9797-015	OB1838	OB5237	OB5240D	OB5239	N/A	N/A	TBD
OBN999ES8	OB7639	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TBD
OBN999RES8	OB7639	OB5803	OB1840	OB9999-019	OB9999-015	OB1838	OB5237	OB5240D	OB5239	N/A	N/A	TBD

Repair Kits contain items 3, 4, 5, 7, 12, 14, 15 & 24.

Adapter Kits

Adapter Kits		
Adapter Kit	Part Number	Description
M	OB10562	48 Frame
N	OB10816	56 Frame
P	OB11722	S56 Frame
Q	OB11331	56C Frame (to 3/4 HP)
F	OB11332	IEC71
N/A	N/A	Adapterless - Modified 48

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