



air info

Information on
Pneumatic Technology
Volume XXVIII



Two new rocking piston pumps introduced by Gast

*The 74R and 75R
rocking piston pumps*

Gast has added two new models to its line of oilless rocking piston vacuum pumps and compressors: the 75R and the 74R.

The 75R is a twin-cylinder rocking piston pump, and the 74R is a single-cylinder derivative of the 75R. The 75R was specifically developed with the oxygen concentrator market in mind; however, both of the new pumps are well-suited for other applications such as nitrogen generators, tire inflators, door openers, medical analysis equipment, and cable pressurization.

Rocking piston pumps operate using a combination of the diaphragm and piston pump principles. Consequently, the rocking piston design combines many of the best features of reciprocating piston and diaphragm pumps. Rocking piston pumps are quiet, compact, and oilless like diaphragm pumps, but they can provide pressures as high as reciprocating piston pumps.

Open air flow for the 75R ranges from 4.05 cfm to 5.1 cfm, and it can deliver pressure up to 40 psi (2,8 bar) or vacuum to 27 in. Hg (99 mbar). Open air flow for the 74R is rated at 1.50 cfm, and it can deliver pressure as high as 100 psi (7,0 bar).

Four different stroke lengths, ranging from 0.35 inch to 0.47 inch, are available for the new 75R. The different stroke length options provide a range of pressures to meet the specific performance requirements of individual applications.

74R/75R pumps continued from cover

The new 74R and 75R rocking piston pumps utilize the same proven cup and cylinder technology as the 71R/72R rocking piston pumps which have been on the market for several years. Usage has demonstrated that these materials provide significantly longer cup life,

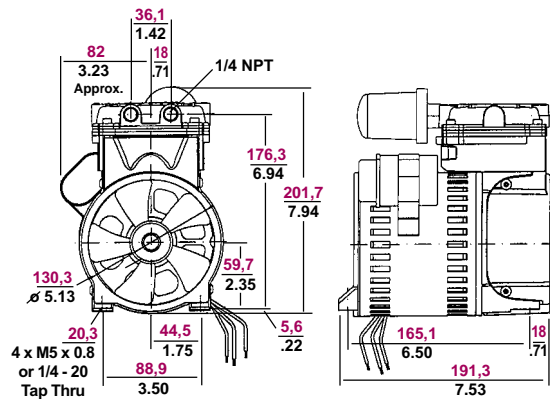
reducing pump downtime and improving reliability. And if a cup does need replacing, it can be easily changed out in minutes.

The 75R rocking piston pump has a 1/3 horsepower (0,25 kW) motor, and the 74R has a 1/4 horsepower (0,19 kW) motor.

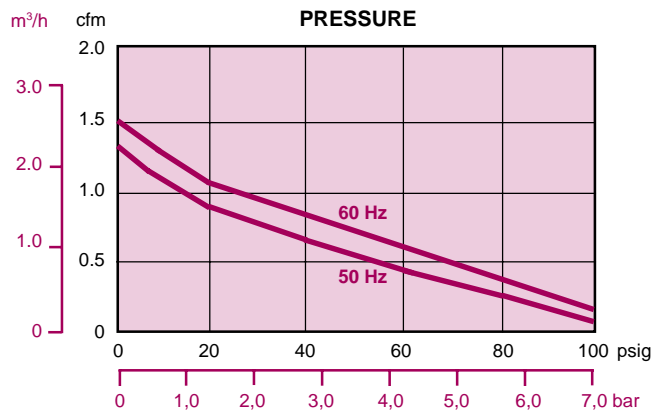
Both the 74R and the 75R are available with AC multi-voltages for worldwide applications.

For more information about the new 75R and 74R rocking piston pumps, **circle 1 on the Gast Fax Facts card.** ■

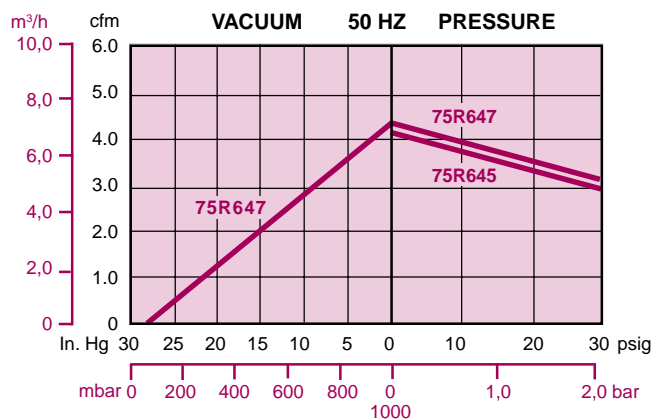
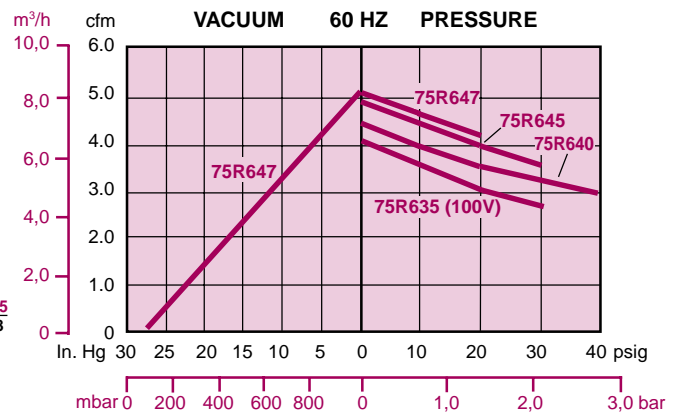
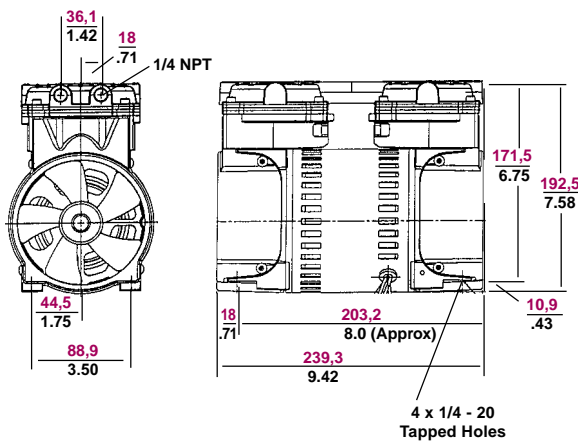
74R Product Dimensions (mm, inches)



Product Performance



75R Product Dimensions (mm, inches)



Two more regenerative blowers for high-volume vacuum and compressed air applications

Gast Manufacturing is pleased to announce two additions to the REGENAIR® line of regenerative blowers. The new R93150A is a single-stage blower designed for industrial and environmental applications. A dual-impeller, parallel version of the R9 blower, the R9P3300M, with greater air moving capabilities is also being introduced for high-volume applications.

Regenerative blowers provide high flow rates with continuous, pulse-free flow. The new R9 and R9P blowers are well-suited for a broad range of pressure and vacuum applications including parts washers and parts cleaning equipment, food preparation machinery, aquaculture/pond aeration, pneumatic conveying systems, packaging equipment, and sewage treatment.

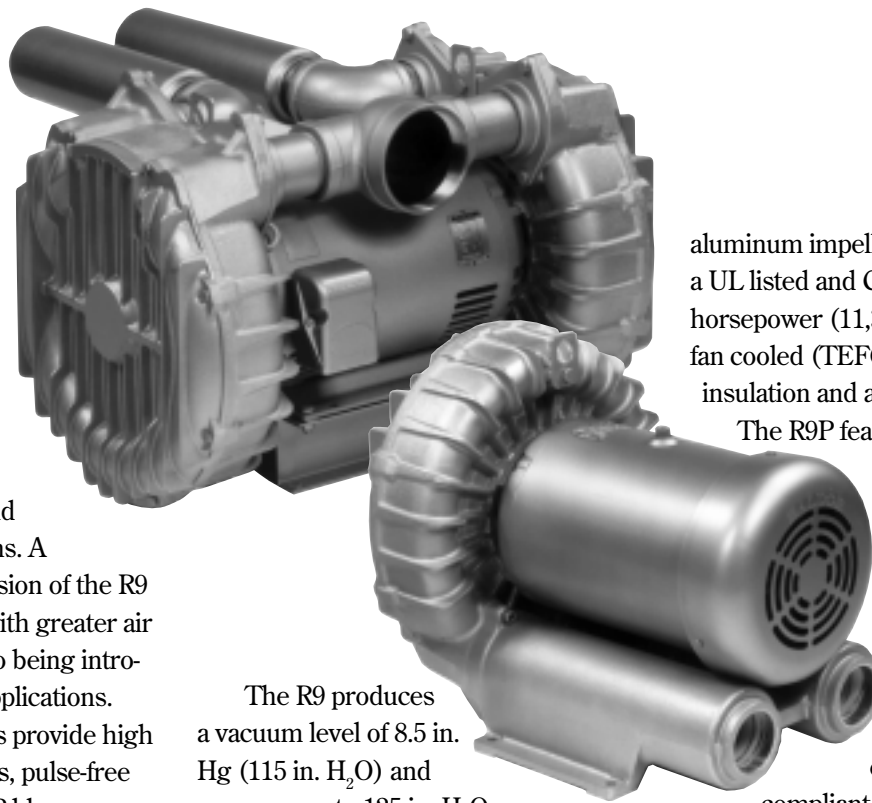
The R9 produces a vacuum level of 8.5 in. Hg (115 in. H₂O) and pressure up to 125 in. H₂O (311 mbar) with a free air flow capability of 680 cfm (1155 m³/hr). The R9P dual-impeller blower produces a vacuum level of 6.6 in. Hg (90 in. H₂O) and pressure up to 90 in. H₂O (224 mbar) with a free air flow of 1350 cfm (2294 m³/hr).

Both blowers have cast iron housings and covers along with cast

aluminum impellers. The R9 features a UL listed and CSA certified 15-horsepower (11,3 kW) totally enclosed, fan cooled (TEFC) motor with Class F insulation and an IP54 rated enclosure.

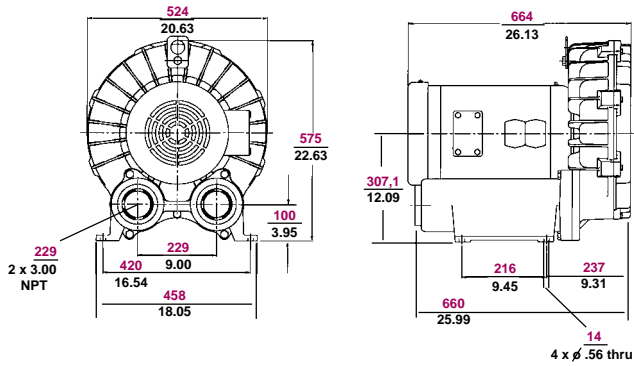
The R9P features a UL listed and CSA certified 30-horsepower (23 kW) open drip-proof (ODP) motor with Class F insulation. Permanently sealed ball bearings are utilized in the motors of both blowers, and CE compliant models are available for the European market.

For more information about the new R9 and R9P blowers, **circle 2 on the Gast Fax Facts card.** ■

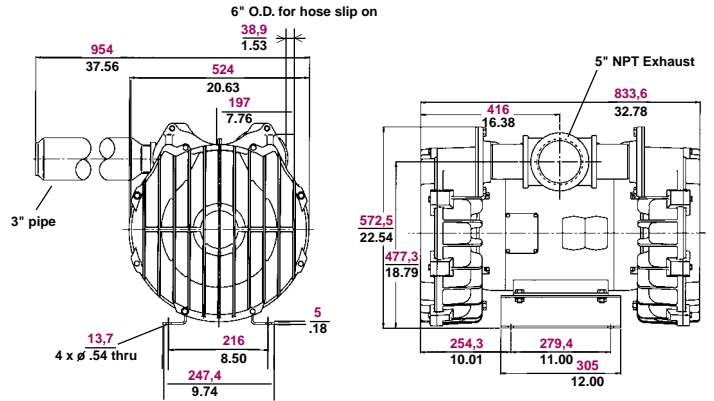


regenerative blowers continued

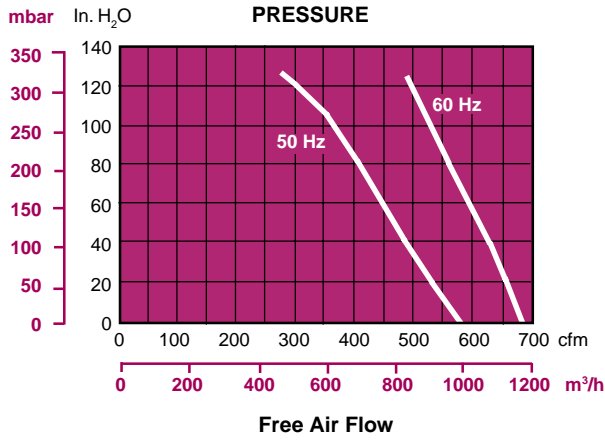
R9 Product Dimensions (mm) (inches)



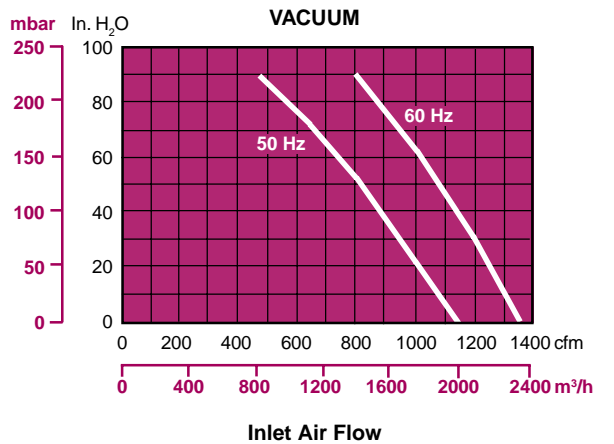
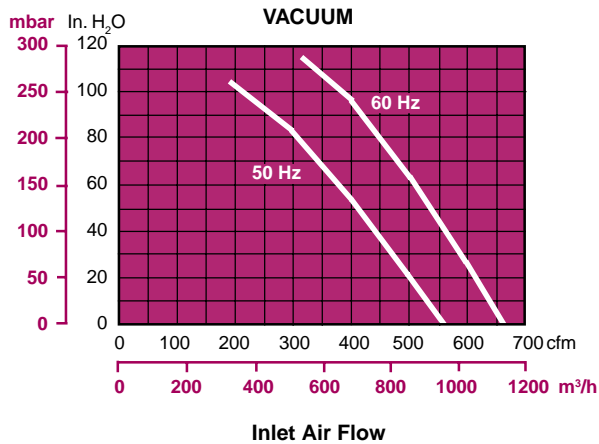
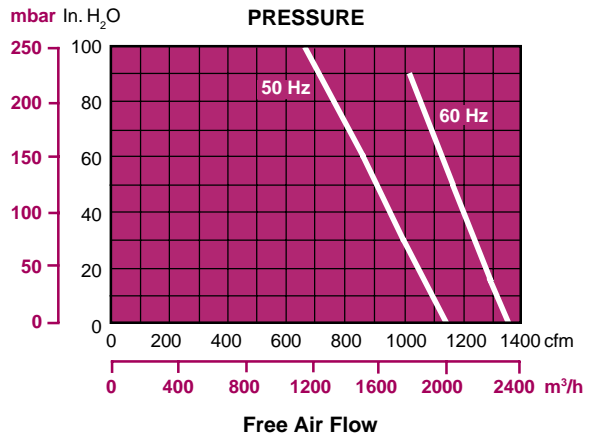
R9P Product Dimensions (mm) (inches)



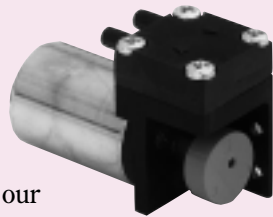
R9 Product Performance



R9P Product Performance



miniature diaphragm pump line expands again



Gast is pleased to announce yet another addition to our line of miniature diaphragm pumps—the 3D. The new pump is being introduced in response to growing market requirements for more flow in smaller packages, and it gives OEMs and other customers another option when trying to satisfy their application needs. No other pump on the market in this size can come close to the performance of the 3D.

The new 3D miniature diaphragm pump is smaller than the 5D and larger than the 2D. Not surprisingly, the 3D's performance fills a niche between the 2D and the 5D as well. The new pump is capable of delivering up to 11.3 in. Hg (628 mbar) of vacuum or pressure as high as 7.1 psi

(0,49 bar). Free air flow is rated at 1.18 liters per minute. The 3D measures less than 1-1/2 inches long, just over 5/8 inch wide, and slightly more than 1 inch high. It weighs a little more than half an ounce (16 grams).

The 3D is specifically targeted to serve a wide variety of medical applications, including breath analyzers and infant blood pressure cuffs. It is also designed to meet the expanding requirements of the air sampling and gas detection markets, and the new pump can be used in other applications such as automatic pipettes and vacuum pick-and-place units for the electronics industry.

The 3D has a standard 0.060-inch stroke. Two other stroke options are available (0.050 inch and 0.070 inch); however, they are not offered as stock models.

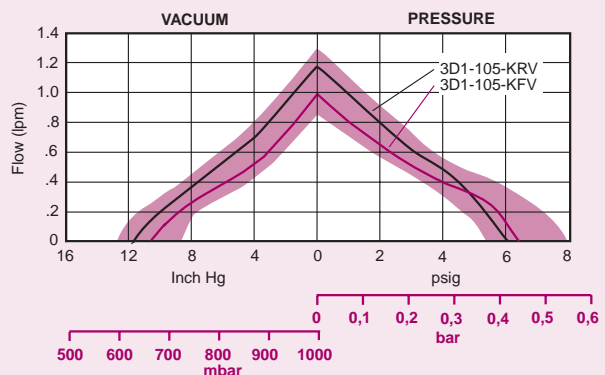
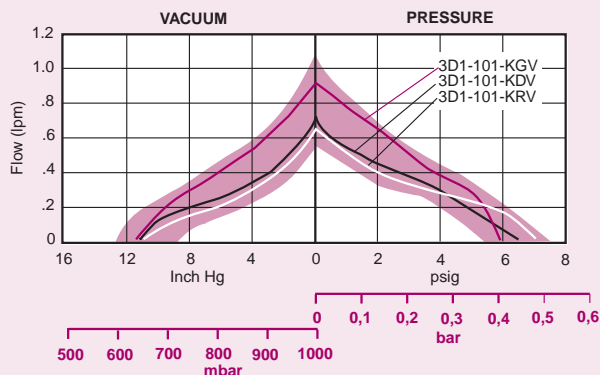
The pump head and valve plate are molded of polyphenylene sulfide (PPS), which provides good radiation resistance and is inert to most chemicals and solvents. The valve and diaphragm are fabricated from an ethylene propylene diene monomer (EPDM) elastomer that resists attack by most chemicals.

The 3D is available with either an ironless core or an iron core motor. Three standard voltage options (4.5, 9, and 12 volt) are available for the ironless core motor, and two voltage options (6 and 12 volt) are available for the iron core motor. The new pump mounts in any plane, and the head can be rotated to any of four 90-degree positions on the pump body.

For more information about the new 3D miniature diaphragm pump, **circle 3 on the Gast Fax Facts card.**

Product Performance (Metric, U.S.)

Note: The 3D performance is based on test results of nominal units. Solid lines show standard performance of stock models. Shaded area represents capabilities when models are customized for specific requirements. Please consult factory for customized models.



product information

Miniature diaphragm pump

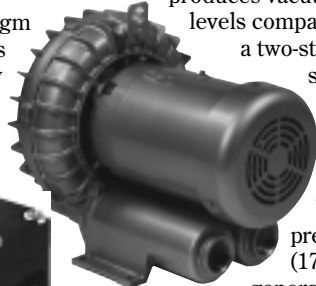
In response to the need for smaller and smaller diaphragm pumps, Gast has introduced the new 2D miniature diaphragm pump. This pump is just over 1-1/4 inches long, less than 3/4 inch wide, and slightly more than an inch tall. Yet it can deliver pressure up to 5.5 psi (0,38 bar) or vacuum to 11 in. Hg (641 mbar) with a free air flow of 0.65 liter per minute. Brush-type iron core and brush-type ironless core motors are both available. Operational voltage can range from 3 to 12 volts.



For more information on the new 2D miniature diaphragm pump, **circle number 4** on the Gast Fax Facts card.

Single-stage regenerative blower

The R4M single-stage regenerative blower produces vacuum and pressure levels comparable with those of a two-stage blower, yet it still provides the greater free air flow capacity of a single-stage blower. The blower produces pressure up to 6.14 psi (170 in. H₂O) and generates a vacuum level of 10 in. Hg (136 in. H₂O) with a free air flow capacity of 252 cfm.



For more information on the new R4M regenerative blower, **circle 5** on the Gast Fax Facts card.

5D miniature diaphragm pump

Slightly larger than the 2D miniature diaphragm pump, the 5D is a small, quiet source of moderate vacuum or pressure. The 5D can deliver up to 13.0 in. Hg (573 mbar) of vacuum or 11 psi (0,76 bar) of pressure. Open air flow for the 5D is rated at 1.5 liters per minute. The pump is less than 1-1/2 inches tall, under 1 inch wide, and less than 1-3/4 inches long. Brush-type iron core and brush-type ironless core motors are both available. Operational voltage can range from 2 to 14 volts.



To receive information on the 5D series oilless miniature diaphragm pump, **circle number 6** on the Gast Fax Facts card.

literature

Revised linear pump catalog

A catalog providing detailed information on Gast's complete line of linear pumps and compressors is now available. The catalog has been recently revised and expanded to include information on 20 new models that have been added to the line. Linear pumps use electromagnetic oscillation of two diaphragms to generate pressure or vacuum, making them highly efficient and extremely quiet. The pumps are capable of generating pressure up to 10.5 psi (0,72 bar) or vacuum to 12.1 in. Hg (603 mbar). Free air flow can vary from 0.39 cfm to 8.9 cfm (11 to 252 liters/min).



To receive a copy of the new linear pump catalog, **circle 7** on the Gast Fax Facts card.

Full-line overview catalog

You may be familiar with just one or a handful of Gast products, but did you know that we manufacture more than 100 basic pneumatic product lines? They include vacuum pumps, compressors, air motors, gearmotors, vacuum generators, and regenerative blowers. This informative catalog shows the full extent of Gast's product offerings and includes data and charts which allow you to compare the operating characteristics and applications for each type. Complete global listings of Gast representatives, distributors, and sales offices are also included.

Just circle number **8** on the Gast Fax Facts card.



Updated miniature pump catalog

Also available is a recently updated catalog specifically devoted to our line of miniature compressors and vacuum pumps. The 2D, 5D, 10D, 15D, and 22D miniature diaphragm pumps are all described in the catalog, as well as the 8R series miniature rocking piston pump. The catalog includes performance information and describes the available motor options for each product. Additional information includes product features, dimensions, and materials of construction.

For a free copy of the updated miniature pump catalog, **circle 9** on the Gast Fax Facts card.

GAST

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