

MAZDA

A NEW GENERATION OF TWO-STAGE LIQUID RING VACUUM PUMPS

THAT SAVES ENERGY

- **CONSISTENT HIGH PERFORMANCE**

Croll-Reynolds two-stage Vacuum Pumps with their rugged cast iron and stainless steel components, are the result of an intensive development and testing program. These innovative products incorporate modern engineering principles, based on nearly 75 years of Croll-Reynolds experience in Vacuum technology. All Vacuum Pumps are subjected to 100% performance test prior to shipment.

- **POPULAR SIZES IN STOCK**

Manufactured in India by Mazda, New Generation Liquid Ring Vacuum Pumps (Model CR-25, CR-27 & CR-210) are stocked in popular sizes for prompt delivery.

- **EXTRA DEEP STUFFING BOX**

Combined with low friction, pure graphite packing gives greater reliability.

- **EXCLUSIVE SHAFT SEALING DESIGN**

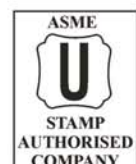
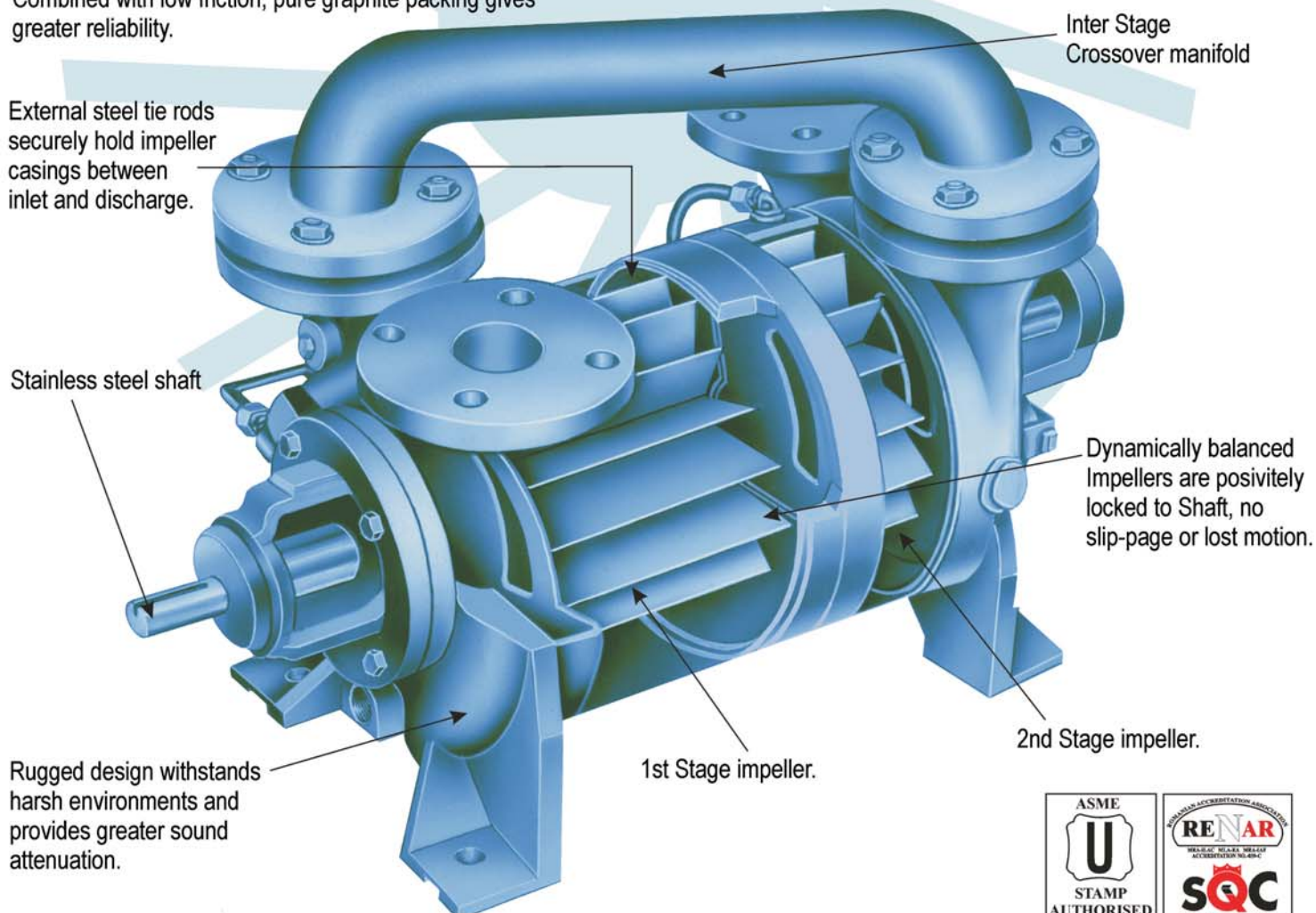
The injection of water directly into the teflon ring/nylon ring which is trapped between graphite seals. This water penetrates for lubrication, cooling and prevents gas leakage.

- **EXPERIENCE**

Since 1917 Croll-Reynolds has been supplying quality Vacuum equipments for your application. Let CR Engineering team help you, select the right Vacuum Pumps for your process needs.

- **VERY HIGH RELIABILITY**

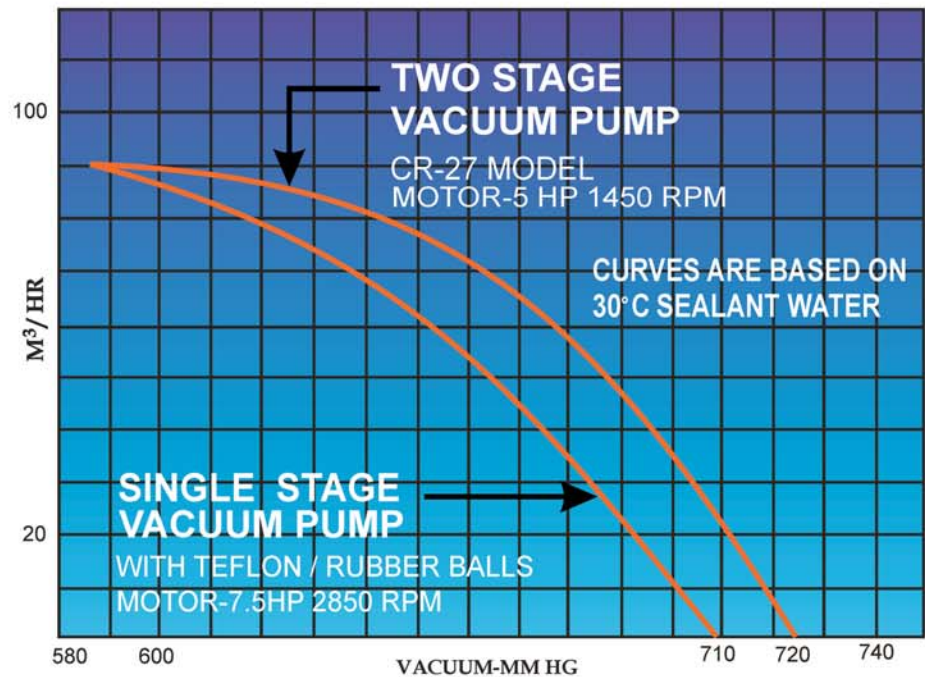
There are no teflon or rubber balls inside the pumps to deteriorate Vacuum performance, CR pumps require very little maintenance.



TECHNICALLY THE MOST ADVANCED OF ITS TYPE ON THE MARKET

Compare our designs with the competition. You will not find a competitive offering that can match the overall quality, construction features and performance capabilities of Mazda Two Stage Vacuum Pumps.

The Curves below show the results of capacity tests conducted on competitive Vacuum Pumps and the new Mazda Two-Stage Pumps.



**HIGHER VACUUM & CAPACITY
AT REDUCED POWER CONSUMPTION & RPM**

EFFICIENCIES THAT PAY OFF IN SAVINGS OF THOUSANDS OF RUPEES PER PUMP PER YEAR

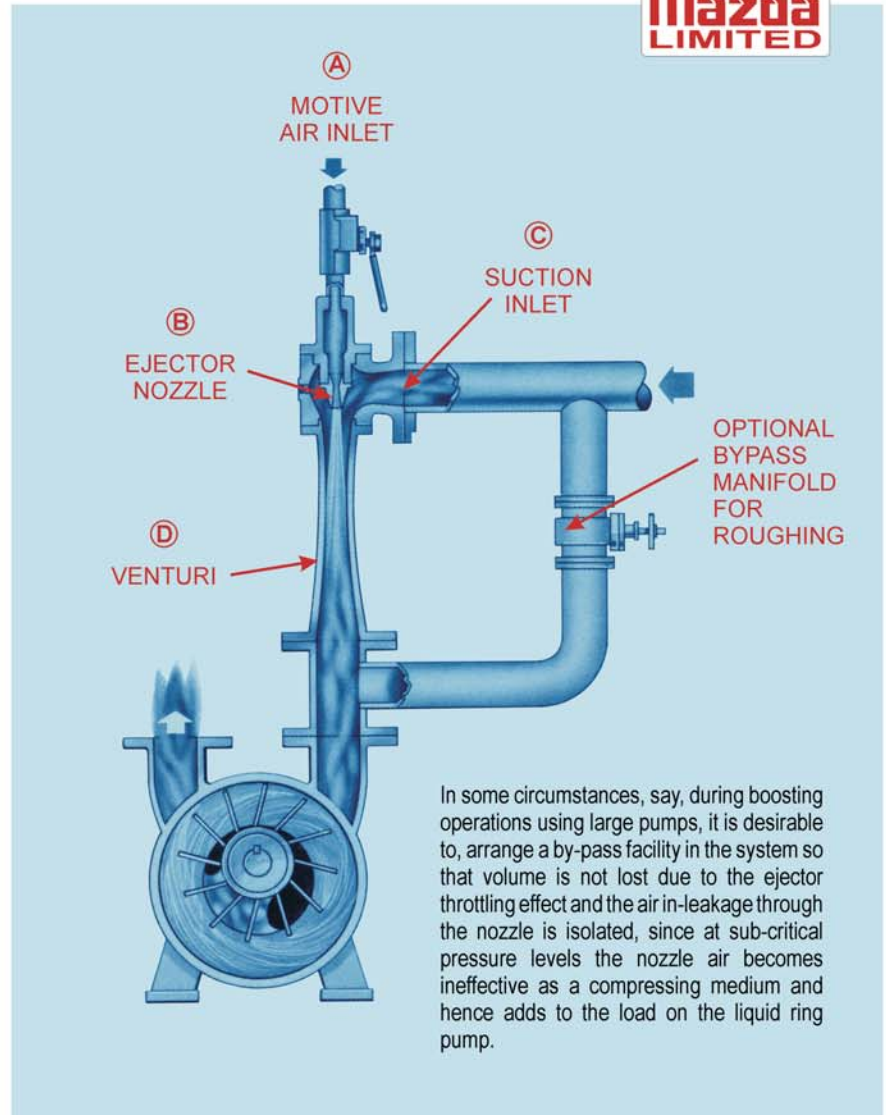
CR Pumps offer the first real improvements in Vacuum Pump technology in nearly 75 years. They have dramatically improved operating efficiencies and offer long-term savings of tens of thousands of Rupees in power costs. You not only save electricity to run the Pump, you can often downsize the motor to gain additional savings.

COMBINATION AIR EJECTOR/ LIQUID RING VACUUM PUMP SYSTEMS

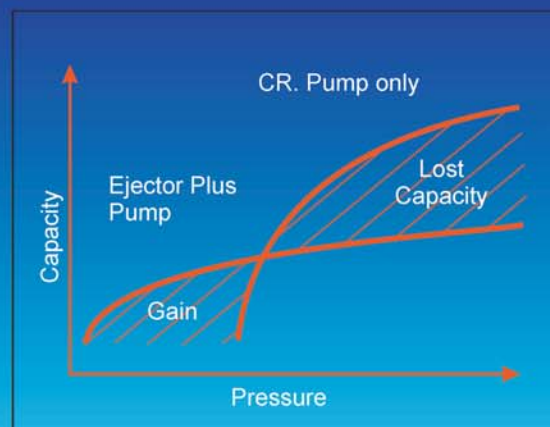
A Croll-Reynolds air operated ejector can be mounted in the suction line or directly on the suction inlet of a two stage liquid ring vacuum pump to achieve suction pressures lower than those which could be reached by the pump alone. A combination air-ejector/liquid ring pump system will achieve operating pressures as low as 4 torr and close off pressures of 3 torr. This additional pressure reduction is achieved with no increase in horsepower or other utilities because the ejector uses air, at atmospheric pressure as the motive fluid and the amount of air which is passed through the nozzle of the ejector, effectively protects the pump from cavitation, even on a closed suction duty. In addition the motive air is atmospheric air, is free, and makes the pumps less critical to temperature changes of the seal water.

OPERATION

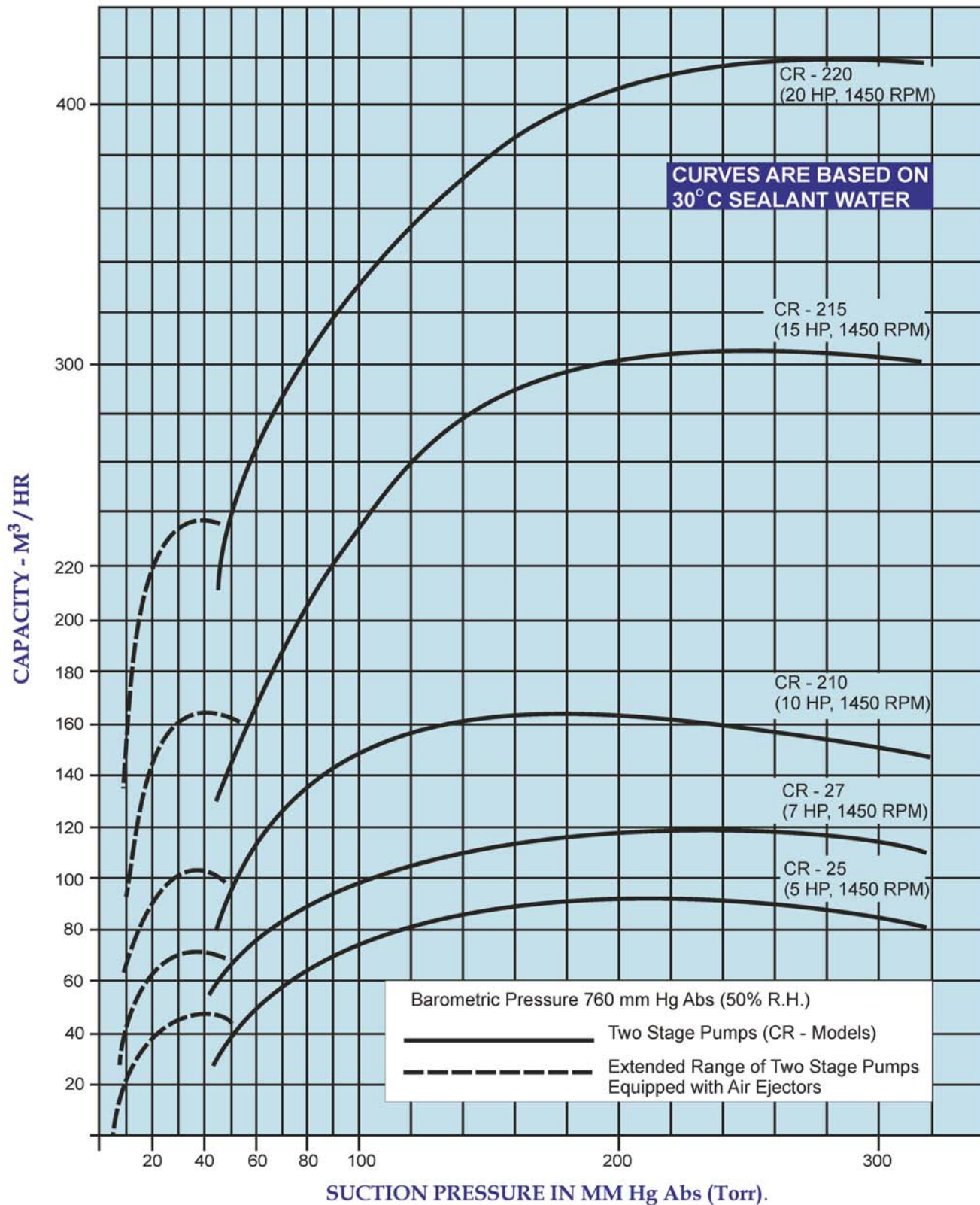
Ambient air at atmospheric pressure is drawn in through motive air inlet (A) and passed through a converging diverging nozzle (B). The high velocity air leaving the nozzle entrains the gases or vapors to be handled at the suction inlet (C) and compresses this load through the Venturi (D) to the inlet pressure of the liquid ring vacuum pump. The Pump then compresses the motive air and process gas to atmospheric pressure.



The disadvantage of the air ejector is illustrated by the diagram below, it can be seen that a reduced capacity is available in the lower vacuum ranges.



SIZING CURVES



LARGER CAPACITY PUMPS AVAILABLE UPON REQUEST.



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