

# NRC HS2

TWO-INCH WATER-COOLED  
VACUUM DIFFUSION PUMP

HIGH SPEED...

LOW BACKSTREAMING...

COMPACT

## FEATURES

**High Speed ...** 285 liters/second at  $1 \times 10^{-4}$  Torr.

**Low Backstreaming ...** less than  $0.0009 \text{ mg/cm}^2/\text{min}$ .

**Compact Design ...** low overall height (12-11/16") and light weight (10 pounds) ensure ease of installation and maintenance.

**Wide Operating Range ...**  $2 \times 10^{-3}$  Torr down to extreme high vacuum.

**Stainless Steel Construction ...** body and jet assembly are stainless steel. This ensures quick, easy maintenance. Jet can be immersed in strong cleaning solutions.

**Full Fractionating Design ...** as in all HS series units, the NRC HS2 has a fractionating design so that contamination and decomposition products are pumped away. This design allows only the purest vapor to reach the top jet, contributing to the outstanding reliability and low maintenance requirements of the unit.

**Special Conduction-Cooled Cold Cap\* ...** the conduction cold cap further reduces backstreaming, thereby producing an extremely clean vacuum.



## GENERAL DESCRIPTION

The NRC HS2 has been designed to fill a special need in applications where high pumping speeds are required and space limitations demand a compact pump. This unit, smallest of the HS series pumps, is well suited for laboratory and research use as well as production line jobs such as television tube processing.

The NRC HS2 pump is a rugged, general-purpose unit with an operating range of  $2 \times 10^{-3}$  Torr to extreme high vacuum. The HS2 is ideal for applications requiring fast cycling because of its high pumping speed (285 l/s) combined with high fore-pressure tolerance (0.55 Torr) and throughput (0.6 Torr l/s).

\* U.S. Patent 2919061

Backstreaming rate of the unit is  $0.04 \text{ mg/cm}^2/\text{min}$ , without the use of any anti-backstreaming devices. A conduction-cooled cold cap reduces total backstreaming to a negligible level ( $0.0009 \text{ mg/cm}^2/\text{min}$ ) with only a slight reduction in pumping speed.

## OPTIONAL 325 CRYOBAFFLE

... pressures to below  $10^{-9}$  Torr

An extraordinary conductance of 460 l/s in conjunction with a relatively large reservoir (1500 cc) make this cryobaffle the perfect complement to the versatile HS2 diffusion pump. Its thin gauge creep barrier which assures maximum clean system operations, and its single charge (liquid nitrogen) holding time of 7.5 hours give this baffle the most sought-after features in cold trap design.



**varian**

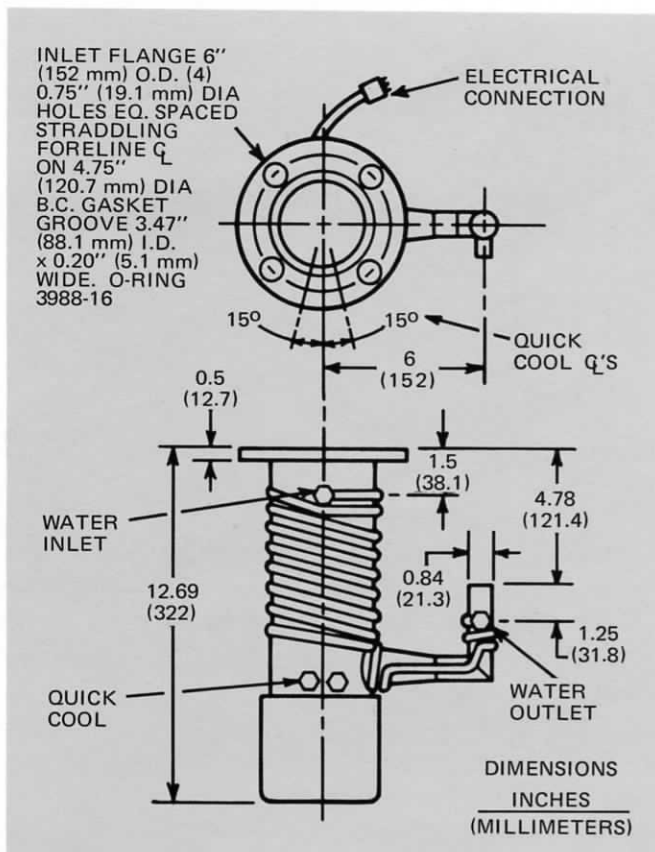
vacuum division/ **NRC** operation  
160 charlemont st.  
newton, massachusetts 02161

varian spa  
via varian, 10040 leini  
torino, italy

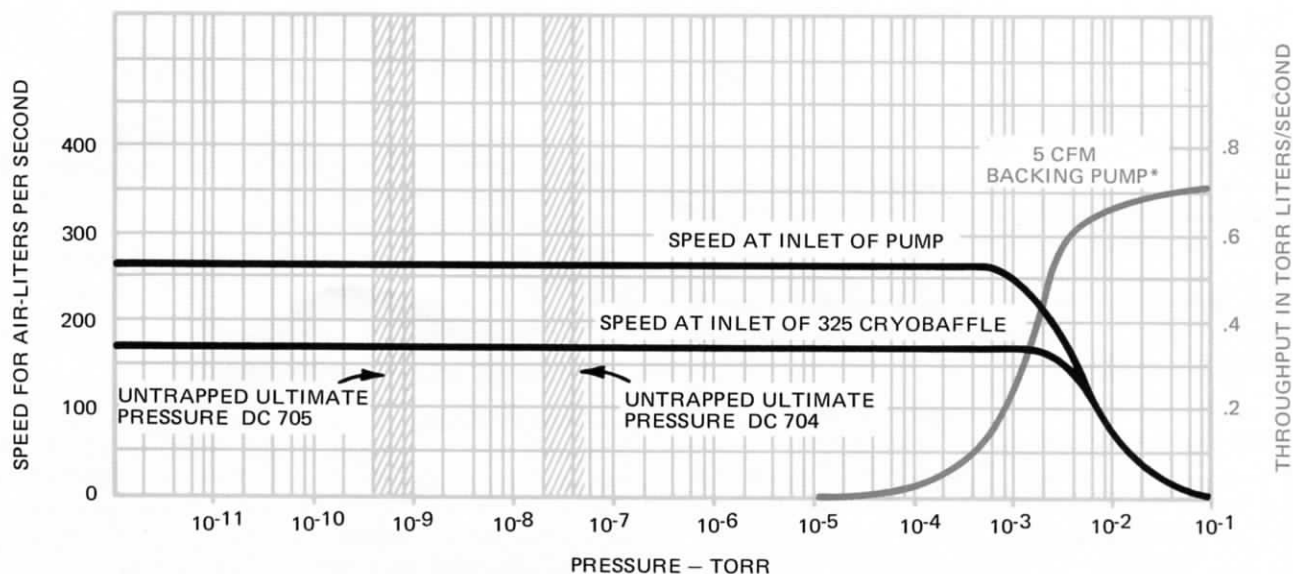
# NRC HS2

## SPECIFICATIONS

<b>Maximum Speed</b> .....	285 liters/second for air
<b>Normal Operating Range</b> .....	$2 \times 10^{-3}$ Torr down to extreme high vacuum ranges
<b>Maximum Forepressure</b> .....	No load — .55 Torr Full load — .40 Torr
<b>Backing Pump</b> .....	5 CFM
<b>Backstreaming Rate</b> .....	Less than $0.0009 \text{ mg/cm}^2/\text{min}$ (with cold cap)
<b>Warm-Up Time</b> .....	15 minutes
<b>Cooling-Time</b> .....	10 minutes
<b>Fluid Charge</b> .....	100 cc
<b>Power</b> .....	450 watts — 120 volts, 50/60 Hz 1 phase (opt. 240 volts)
<b>Height</b> .....	12-11/16" — allow additional 3-1/2" for heater removal
<b>Body</b> .....	Stainless Steel
<b>Flange</b> .....	Mild Steel
<b>Jet Assembly (3 stage)</b> .....	Stainless Steel
<b>Cold Cap</b> .....	Copper — fits over top jet
<b>Heater</b> .....	Replaceable cartridge in removal platen
<b>Weight</b> .....	10 pounds (net)
<b>Cooling Water</b> .....	0.1 GPM at 60° to 80° inlet temperature



## SPEED CURVE



Speed curves based on standard AVS test procedures.

\* Nominal backing pump speed in a typical AVS test installation.

## HOW TO ORDER

Orders and requests for additional information should be addressed to the nearest Varian District Office or to Varian Associates, NRC Operation, 160 Charlemont St., Newton, Massachusetts 02161. Address European inquiries to nearest Varian District Office or to Varian SpA, Via Varian, 10040 Leini, Torino, Italy.