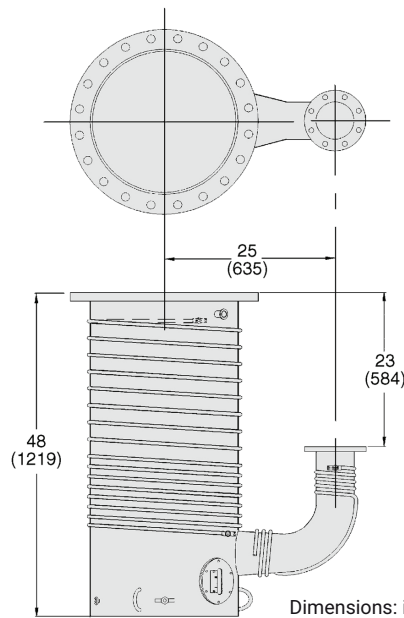


HS-20 Oil Diffusion Pump



[Download 3d drawings here.](#)

The Agilent HS-20 oil diffusion pump is a pump with a high throughput and high pumping speed of 10,000 L/s. With its fully optimized vapor jet, robust boiler design, and thermal protection switches, the pump will run without any maintenance for many years. This pump includes a standard sight glass and fill and drain assembly. It is available with a 20 in. ASA or DN 630 ISO-K inlet flange.

This diffusion pump is a perfect fit for industrial applications such as vacuum furnace, heat treatment, metallizing, and coating processes for optical lenses, electronics, and protective film layers.



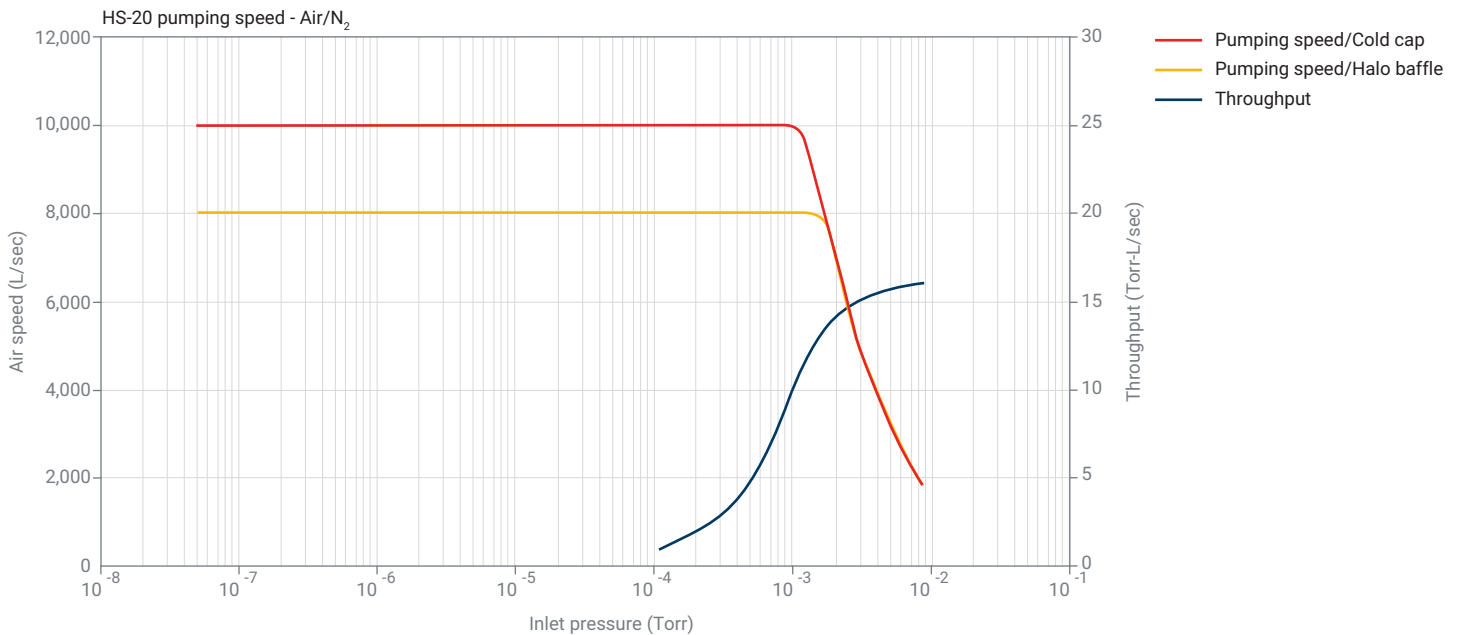
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Technical specifications

| | |
|---------------------------------------|--|
| Pumping Speed, Operating Range | 10,000 L/s air, 12,500 L/s He and H ₂ |
| Pumping Speed, AVS 4.1 (1963) | 17,500 L/s air |
| Maximum Throughput | 12.5 T-L/s (16.7 mbar L/s) in operating range, 18 T-L/s (23 mbar-L/s) at 0.01 Torr |
| Operating Range | 1.3×10^{-3} to 5×10^{-8} Torr (1.7×10^{-3} to 6.5×10^{-8} mbar) |
| Maximum Forepressure | No load: 0.65 Torr (0.85 mbar) Full load: 0.55 Torr (0.72 mbar) |
| Recommended Backing Pump | ≥ 100 cfm (170 m ³ /hr) |
| Backstreaming Rate, Standard Cold Cap | $< 1.5 \times 10^{-3}$ mg/cm ² /min |
| Warmup Time | 45 minutes |
| Cooldown Time | 85 minutes |
| Fluid Charge | 5 quarts (4.7 L) |
| Electrical Requirements | 3 ph, 50/60 Hz, 240/415/480 VAC |
| Pump Power | 12,000 watts |
| Cooling Water Requirements | 1.5 gpm (300 L/hr) at 60 to 80 °F (15 to 26 °C) |
| Water Connections | ¼ in. FPT Tee |
| Recommended Fluid | DC-704 or equivalent |
| Thermowell | ISO 228 G 1/2 thread (with adapter M8x1 thread) |
| Recommended Holding Pump* | DS202 Rotary Vane Pump |

* Recommended holding pump sizes are based on estimates; assuming good vacuum practice in system design and operation. Results may vary from system to system.

Performance specifications based on tests done with DC704.



Ordering information

| Description | Voltage | Weight kg (lb) | Part Number | |
|------------------------------|---------|-------------------|-------------|----------|
| | | | Flange Type | |
| HS-20 Pump | | | ASA | ISO |
| HS-20 with Standard Cold Cap | 240 V | 264.0 (580.0) | 84341308 | L5922308 |
| HS-20 with Halo Baffle | 240 V | 264.0 (580.0) | 84341318 | L5922318 |
| HS-20 with Standard Cold Cap | 415 V | 264.0 (580.0) | 84341326 | L5922326 |
| HS-20 with Halo Baffle | 415 V | 264.0 (580.0) | 84341336 | L5922336 |
| HS-20 with Standard Cold Cap | 480 V | 264.0 (580.0) | 84341309 | L5922309 |
| HS-20 with Halo Baffle | 480 V | 264.0 (580.0) | 84341319 | L5922319 |

| | Weight kg (lbs) | Part Number |
|---|--------------------|-----------------|
| Accessories | | |
| Water-Cooled Halo Baffle | 11.0 (25.0) | K1855320 |
| Centering Ring for ISO Foreline Flange, 160K | 0.5 (1.0) | IC160SV |
| Quick Cool Coil – Must Be Installed In The Factory | | Factory Special |
| Adapter Kit, 1/4 FPT to ISO G 1/2 (Qty 4) Water Fittings | | X3900-68009 |
| Replacement Parts (Six Heaters Required Per Pump) | | |
| Heater, 2000 W, 240 V/415 V with Leads | 0.5 (1.0) | 647320020 |
| Heater, 2000 W, 480 V with Leads | 0.5 (1.0) | 647320030 |
| Heater, 2000 W, 240 V/415 V no Leads – Used on Pumps Built Before May 1990 | 0.5 (1.0) | 647320060 |
| Heater, 2000 W, 480 V no Leads – Used on Pumps Built Before May 1990 | 0.5 (1.0) | 647320070 |
| Heater Crush Plate (Replace One with Each New Heater) | 0.5 (1.0) | K7108001 |
| Heater Clamping Plate (Six Required Per Pump) | 4.0 (8.0) | K7107001 |
| HS-16/20 Heater Wire, 10 AWG, 120 Inches (Two Per Heater Required) | 1.0 (0.4) | X3900-68000 |
| Heater Insulator (One Required Per Pump) | 0.5 (1.0) | L6514001 |
| Replacement O-Ring Kit for ASA Pumps (Kit Contains 1 Inlet Flange O-Ring, 1 Foreline Flange O-Ring, Sight Glass O-Ring and Gasket, 8 Fill and Drain O-Rings) | 0.5 (1.0) | K0377165 |
| Sight Glass Service Kit (Pumps Built Before Oct. 1995) | 1.5 (3.0) | F6097301 |
| Sight Glass (Pumps Built After Oct. 1995) | | L9223001 |
| Upper (Water) Thermal Switch (Set at 185 °F/85 °C) | 0.5 (1.0) | K9050001 |
| Lower (Boiler) Thermal Switch (Set at 390 °F/199 °C) | 0.5 (1.0) | K9050002 |
| Cold Cap Gasket/Grommet (Kit of Four) | 0.5 (1.0) | L8839301 |
| Cold Cap Nut and Follower (Two Each) | 0.5 (1.0) | L8840301 |

- Inlet flange 20 in. ASA, foreline flange 4 in. ASA.
- Inlet flange DN 630 ISO-K, foreline flange DN 160 ISO-K.
- Not recommended for use with Santovac 5.
- Pumps with ASA flanges include O-rings for inlet and foreline flanges.
- Pumps with ISO flanges do not include centering rings required for foreline and inlet flanges.

www.agilent.com/en/product/vacuum-technologies/diffusion-pumps/large-diffusion-pumps/hs-20-diffusion-pump

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