

VACUUM/ATMOSPHERES COMPANY

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VAC
VACUUM/ATMOSPHERES

NI-TRAIN

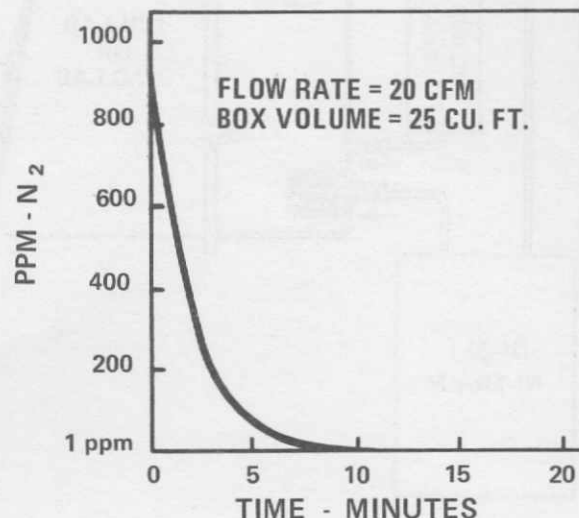
NI-20

SERIES



NI-20 & HE 493

NEW GENERATION



DESCRIPTION

The Vacuum/Atmospheres Ni-20, 20 cfm Nitrogen Gettering System is capable of reducing nitrogen to 1 ppm or less by volume when recirculating argon or helium. It is designed to be used with a VAC Dri-Train which removes water and oxygen. The Ni-20-1 has a 20 cfm blower which is mounted inside the glove box and is plumbed for independent circulation parallel to the Dri-Train. The Ni-20-2 is valved and plumbed for series bypass flow with the Dri-Train and therefore has no blower.

The titanium sponge charge removes nitrogen by chem-sorption. It cannot be regenerated. The system includes a high efficiency titanium furnace and heat exchanger, temperature controllers, safety interlocks and NEMA type standard 19" enclosure.

The Ni-20 is also capable of getting hydrogen to 1 ppm when used for hydrogen getting only. It removes hydrogen by phys-sorption and may be regenerated in this operating mode.

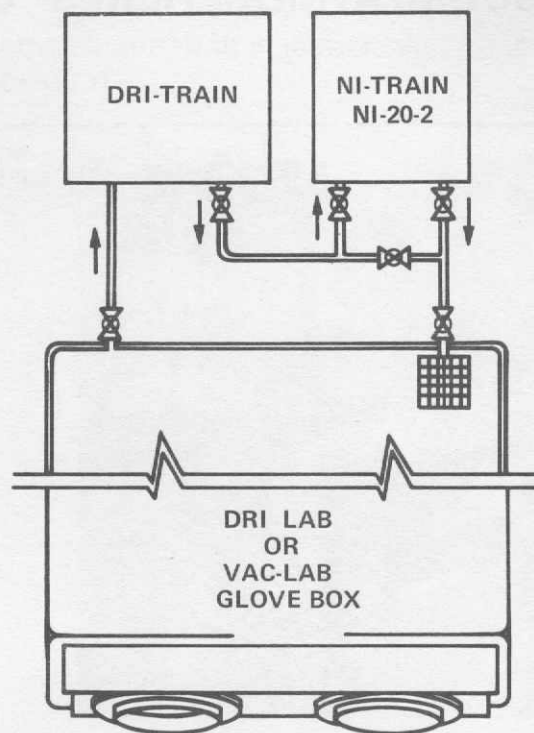
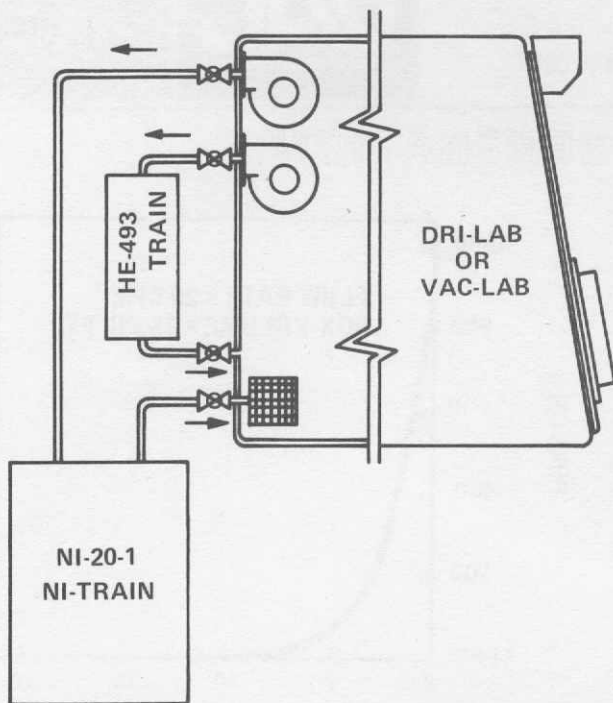
APPLICATION

The Ni-20 NI-TRAIN is used to produce an ultra pure inert atmosphere in VAC Dri-Labs or Vac-Labs for processing any materials sensitive to nitrogen or hydrogen. It is recommended that a VAC Dri-Train be used in conjunction with the Ni-Train. This will extend the life of the titanium sorbant because the Dri-Train removes oxygen and water moisture.

FEATURES

1. High capacity, high flow rate (20-25 cfm)
2. Nitrogen removal to less than 1 ppm
3. High efficiency titanium furnace and specially designed waste heat exchanger...minimum power consumption
4. Proportioning type temperature controller
5. High limit temperature and power failure safety switch with manual reset
6. Water flow safety switch
7. Gas flow safety switch
8. Flow indicator...constant flow monitoring
9. Hydrogen removal by resetting temperature controller
10. Helium leak tested to 3×10^{-10} atm cc/sec
11. Compact...minimum plumbing to insure leak free performance
12. Minimum maintenance, maximum ease of recharging

INERT ATMOSPHERE & VACUUM DEPOSITION EQUIPMENT



SPECIFICATIONS

- Minimum Flow Rates:** 20 cfm argon, 25 cfm helium
- Piping:** All stainless steel for high temperature gas flow/1" copper for ambient temperature gas flow
- Enclosure:** NEMA type standard 19" panels
- Purifier:** Nitrogen removal capacity: 150 liters. Titanium charge: 2.3 Kg (5 lbs). Waste heat exchanger inside stainless steel purifier
- Instrumentation:** Proportional type temperature controller with high limit and manual reset, gas flow indicator, no-gas-flow safety switch and no-water-flow safety switch
- Tests and Certification:** No detectable leaks under vacuum with helium mass spectrometer calibrated to 3×10^{-10} atm cc/sec. Electrical wiring conforms to City of Los Angeles Code and NEMA requirements.

DIMENSIONS AND UTILITIES

- | | |
|---------------------------------|--|
| Height: 35" | Amps: 40 |
| Width: 23" | Phase: 1 |
| Depth: 30-1/2" | Water: 4 gpm: Discharge purified gas temperature will be approximately 12°C above cooling water temperature |
| Volts: 208/240, 50-60 Hz | |

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