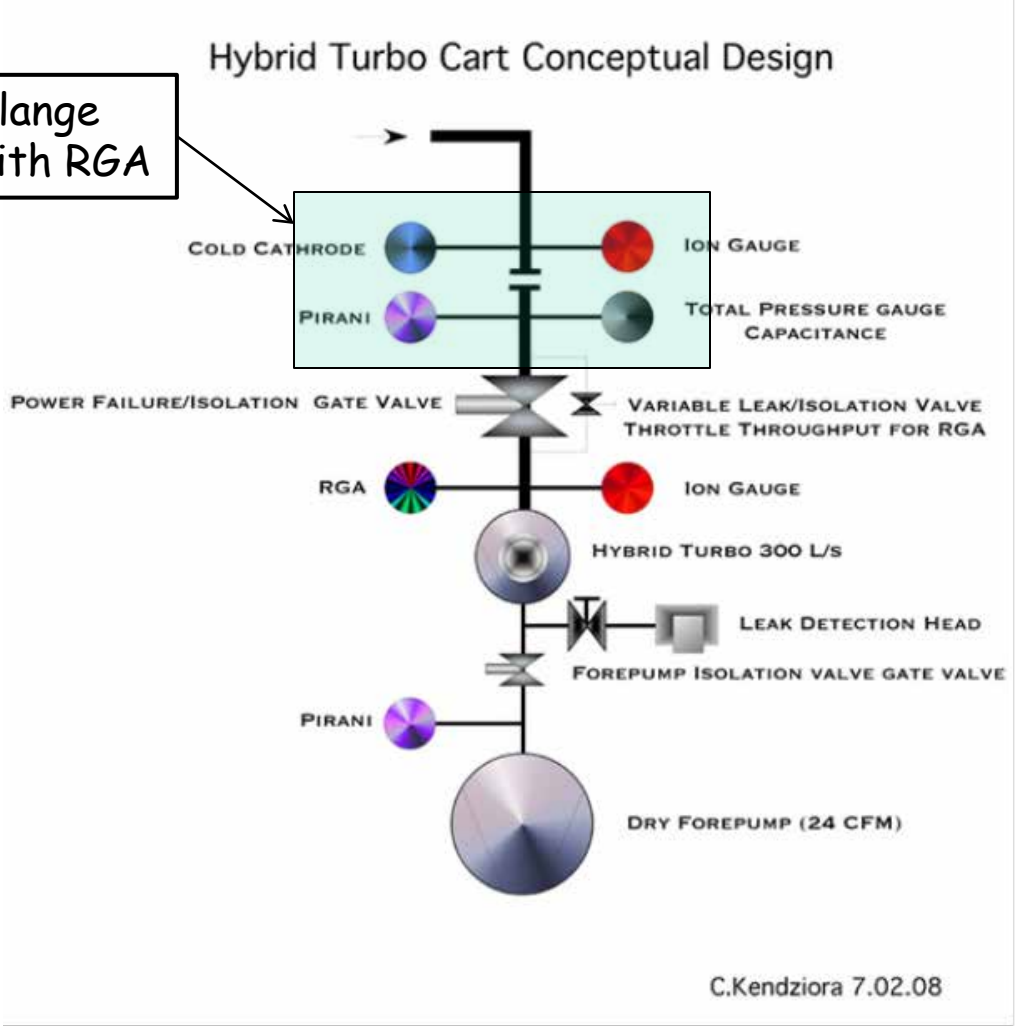
MICE SS Vacuum System

Basic Vacuum System Design

Mounted on turret flange
TP gauge replaced with RGA



Scroll Pump


Scroll Meister
Dry Scroll Vacuum Pump
ISP-90
ISP-250C
ISP-500C
ISP-1000
NEW
Dimentions
Dimentions
Trade name
Oil free scroll vacuum pump
Mode
SP 90
SP 250C
GP 500C
GP 1000
Pumping speed
Pumping speed
Air Flush
Purpose of Air Flush
How to select
SP 500C T V
500= Displacement of vacuum pump
T= Three phase
S= Single phase
V=Vertical inlet
H=Horizontal inlet
Applications
Synchrotron Facility
High Vacuum Pumping System
Sputtering equipment, Vacuum deposition equipment, Ion plating equipment
Gas recovery devices
Vacuum equipment
Leak detectors
Device handling system
Surface modification, Electron beam process
Vacuum furnace, Heat treatment furnace
Laboratory use
Vacuum packaging machine
Others

Turbo

Technical specifications

Specifications		ATH 31 +	ATH 200 (I)	ATH 300 (CI)
Inlet flange (ISO-K or CF-F)		DN63	DN100	DN100 (DN160)
Pumping speed	N_2 l/s	30	200	250 (300)
	He l/s	20	130	215 (240)
Compression ratio	N_2	10^{11}	> 10^9	> 10^9
	He	2.10^7	10^5	10^5
Ultimate pressure	mbar	< 5.10^{-10}	< 5.10^{-10}	< 5.10^{-10}
Maximum inlet pressure	mbar	0.5	4.10^{-3}	0.1
Maximum exhaust pressure	mbar	45	4	10
Intermediate port	Bride	DN16	DN25	DN16
Pumping speed	N_2 l/s	1	10	5
	He l/s	1	8	5
Recommended primary pump		PPM, ACP, AMD	PPM, ACP, AMD	PPM, ACP, AMD
Exhaust flange		DN16	DN16	DN25
Orientation		Any	Any	Any
Rotational speed	RPM	42000	36000	42000
Noise level	dB(A)	< 45	< 53	< 53
Vibration level	mm/s	< 0.1	< 0.3	< 0.3
Maximum power	VA	100	100	300
Start-up time	min.	2	< 6	< 3.5
Weight ISO-K/CF-F	kg	1.2 / 2.2	5.5 / 9.7	6.5 / 10.5
Cooling		natural, air, water	natural, air, water	natural, air, water
Dimension h, d (ISO-K)	mm	101, 94	187, 156	200, 160

(*) : measured following Pneurop standard (CF-F flanges, after 48 hours of baking with Pascal primary pump).

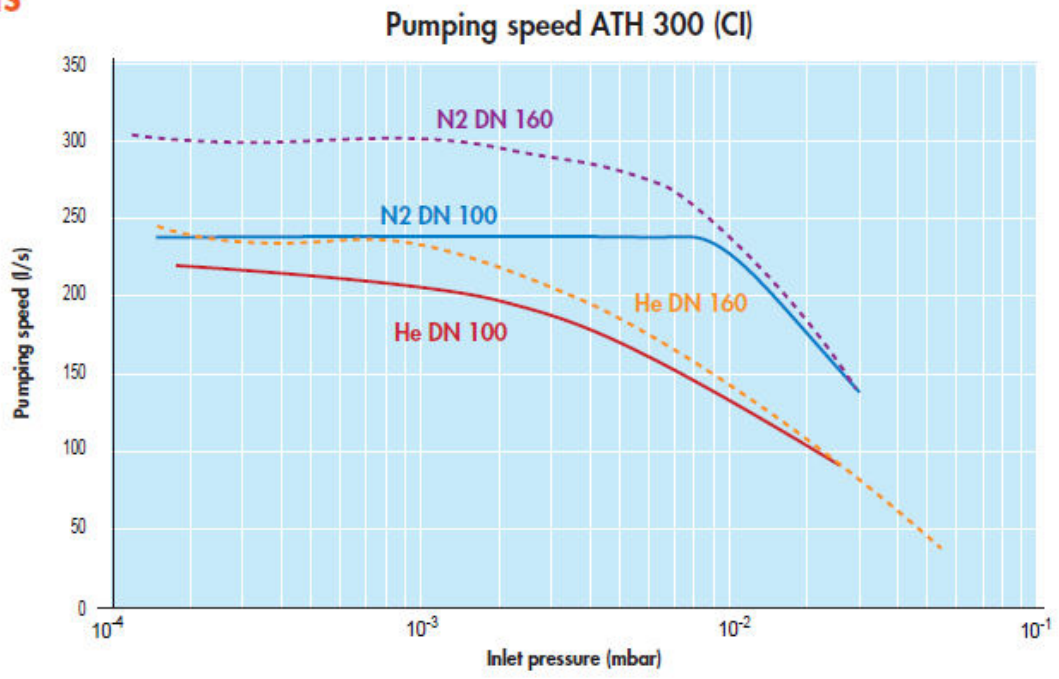
Monitoring

Turbo Performance

ATH 300 - Optimized for heavy duty applications

Wide operating pressure range from 10^{-10} mbar (torr) up to 0.1 mbar (torr) with a wet or dry fore pump

A chemical version equipped with a gas purge is available for pumping corrosive gases - ATH 300 CI.



To increase

Gate Valve

Pneumatic actuator

double acting
with position indicator
with solenoid

DN		Ordering numbers (specify control voltage)				
mm	inch	ISO-F	CF-F metric threads	CF-F UNF threads	ASA-LP (T) ASA (A)	JIS
63	2½	14036-PE44	14036-CE44	14036-UE44	14036-TE44	14036-JE44
80	3	14038-PE44	14038-CE44	14038-UE44	on request	on request
100	4	14040-PE44	14040-CE44	14040-UE44	14040-TE44	14040-JE44
160	6	14044-PE44	14044-CE44	14044-UE44	14044-TE44	14044-JE44
200	8	14046-PE44	14046-CE44	14046-UE44	14046-TE44	14046-JE44
250	10	14048-PE44	14048-CE44	14048-UE44	14048-TE44	14048-JE44
320	12	14050-PE44	on request	on request	14050-TE44	14050-JE44
350	14	on request	on request	on request	on request	on request
400	16	14052-PE44	on request	on request	14052-AE44	14052-JE44

without position indicator, without solenoid: 140 . . - . E14
with position indicator, without solenoid: 140 . . - . E24
without position indicator, with solenoid: 140 . . - . E34 (specify control voltage)

3-position

RGA – Stanford Research System

Pirani Gauge - MKS

1 X 10^{-4} torr

Televac Convection Gauge

Specifications

Vacuum Measurement Range	1 mTorr to 1,000 Torr (Air/N_2)
Accuracy	+/- 1 mTorr at 1-10 mTorr +/- 10% of reading at 10 to 1000 mTorr +/- 20% of reading at 50 Torr – 120 Torr +/- 10% of reading at 120 Torr – 1000 Torr
Response Time	<500 milliseconds from 10^{-5} Torr to Atmosphere
Operating Temperature	+15 degrees C to 50 degrees C
Bakeout Temperature	250 degrees C (w/ 2 ¾ Conflat Flange)
Mounting Position	Must be mounted vertically
Mechanical Connection	1/8 NPT, NW16, NW25, 2 ¾ CF and others
Electrical Connection	Octal connector
Sensor Material	Nickel-plated Brass & Stainless Steel
Overpressure Tolerance	150 PSIG
Dimensions	Max. Height 3.5" (for 1/8" NPT) Max. Width 1.25" (for 1/8" NPT)

Ordering Information

Instrument Selection

Many Televac instruments are compatible with the 4A Convection Gauge Tube. Consider the MC300 panel-mount instrument with two 4A stations or the MP4AR self-contained remote for remote mounted applications. Televac also features other panel mount instruments, which combine the 4A convection for rough vacuum measurement and Televac's cold or hot ionization gauge tubes for high and ultra high vacuum measurement.

MC300 Panel Mount Instrument

MP4AR Self-Contained Remote

Summary

- All controllers are mounted in a ½ high rack
- Gate valve needs gas pressure
  - Run off N2 bottle
  - Loss of AC caused pressure to close valve
- Separate instrumentation on SS vacuum space & pumping system
  - Multiple low and high-vacuum gauges
  - Have both cold and hot cathode gauges
- Only the Pirani will work with field on, however
  - Well, maybe the Televac too.