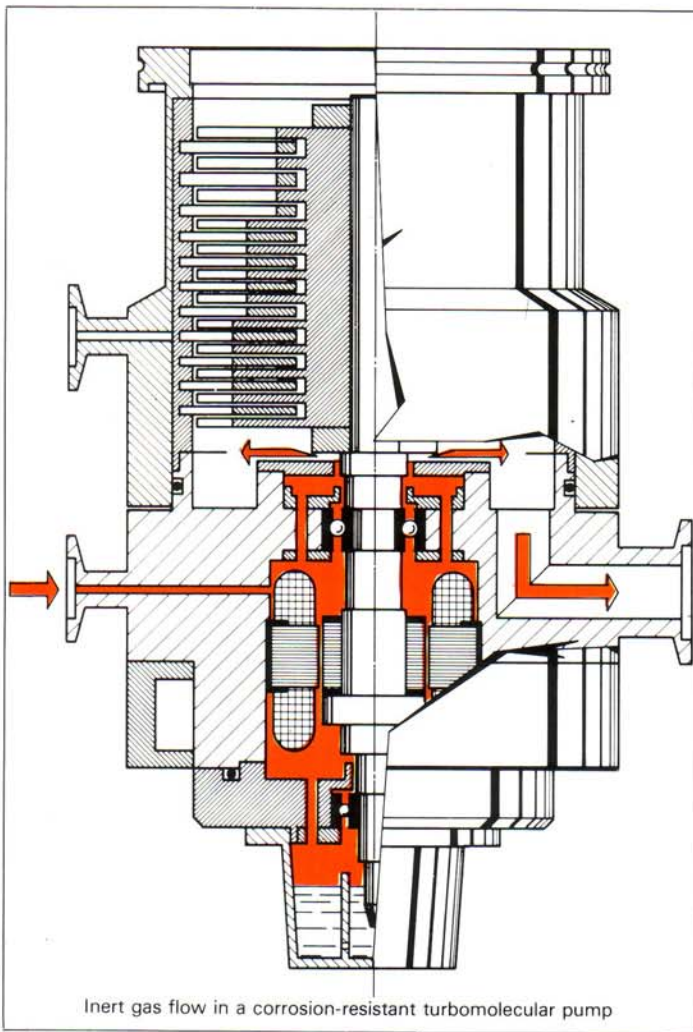
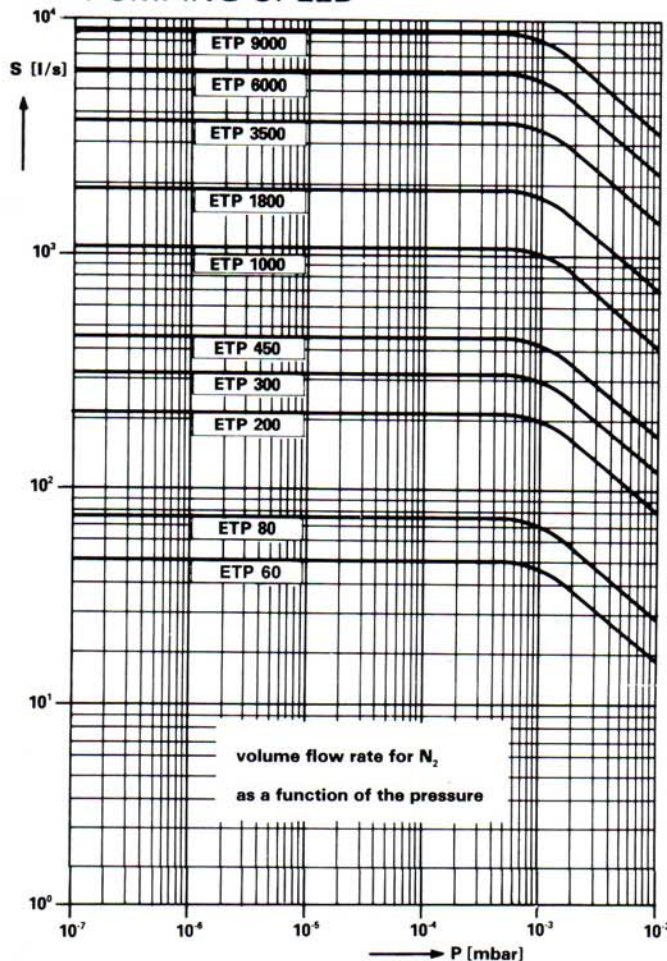


TURBOMOLECULAR PUMPS FOR VACUUM APPLICATIONS





PUMPING SPEED



Pumping Speed Range from 60 to 10000 l/s

Two families: standard and corrosion resistant pumps with purge gas inlet to protect the bearings.

Unique Computer Aided Designed blades graded from "open" in the high vacuum stages to "closed" in the low vacuum stages, in order to optimize pumping speed and compression ratio.

Low vibration and noise obtained with computer balancing of rotors.

High Compression Ratio for light gases.

Totally Hydrocarbon-free vacuum.

All models, up to 1000 l/s, are available with oil or grease lubrication.

ELETTORAVA TURBOMOLECULAR PUMPS TECHNICAL DATA

MODEL		ETP 60	ETP 80	ETP 200	ETP 300	ETP 450	ETP 1000	ETP 1800	ETP 3500	ETP 6000	ETP 10000	
Pumping speed N ₂	(l/s)	60	80	190	330	460	1000	1500	3000	5500	10000	
Pumping speed H ₂	(l/s)	65	60	170	340	520	1150	1800	3400	6000	11300	
Pumping speed H ₂	(l/s)	50	40	150	300	480	1100	1700	3100	5000	10300	
Compress. ratio N ₂		> 1 × 10 ⁸	6 × 10 ⁵	1 × 10 ⁸	1 × 10 ⁸	> 1 × 10 ⁸	> 1 × 10 ¹⁰	> 1 × 10 ¹⁰	> 1 × 10 ¹⁰	> 1 × 10 ¹⁰	> 1 × 10 ¹⁰	
Compress. ratio H ₂		6 × 10 ³	350	2 × 10 ³	2 × 10 ⁴	3.5 × 10 ⁴	2 × 10 ⁵	2 × 10 ⁵	6 × 10 ⁴	2.3 × 10 ⁵	2 × 10 ⁵	
Compress. ratio H ₂		600	60	200	1 × 10 ³	1.5 × 10 ³	5 × 10 ³	5 × 10 ³	2.6 × 10 ³	8 × 10 ³	5 × 10 ³	
Ultimate pressure*	(mbar)	5 × 10 ⁻¹⁰	5 × 10 ⁻⁹	1 × 10 ⁻⁹	5 × 10 ⁻¹⁰	5 × 10 ⁻¹⁰	5 × 10 ⁻¹⁰	5 × 10 ⁻¹⁰	5 × 10 ⁻¹⁰	5 × 10 ⁻¹⁰	5 × 10 ⁻¹⁰	
Rotational speed	(rpm)	72000	60000	51000	42000	36000	36000	27000	15000	14000	12000	
Starting time	(min)	1	0.5	1	2	2.5	5	7	10	18	25	
Inlet flange		CF ISO KF	DN63CF DN63ISO DN16KF	DN63CF DN63ISO DN16KF	DN100CF DN100ISO DN25KF	DN150CF DN160ISO DN25KF	DN150CF DN160ISO DN40KF	DN200CF DN200ISO DN40KF	DN250CF DN250ISO DN63ISO	Wheeler 16'' DN400ISO DN100ISO	Wheeler 20'' DN500ISO DN100ISO	Wheeler 25'' DN630ISO DN100ISO
Outlet flange												
Min. recommended backing-pump	(m ³ /h)	2	4	8	12	15	22	35	60	80	120	
Lubrication		**	Oil/Grease	Oil/Grease	Oil/Grease	Oil/Grease	Oil/Grease	Oil	Oil	Oil	Oil	
Noise level at 1 m dist.	(dBA)	<45	<45	<45	<46	<47	<48	<49	<52	<55	<60	

* According to the DIN28428 standard, the ultimate pressure is the pressure measured in the standard test-dome after a maximum bake-out period of 48 hours at a maximum temperature of 300 °C and after a maximum cooling-down period of 48 hours.
The backing pump is a two stage rotary vane pump. The intake flange seal is of metal. Ultimate pressure and compression ratio may vary for Corrosion Resistant Turbomolecular Pumps.

** The ETP 60 pump has one grease lubricated bearing with ceramic balls, and one passive radial magnetic bearing.

TECHNICAL DATA FOR OIL-LUBRICATED TURBOMOLECULAR PUMPS

Model:		ETP 80 N	ETP 200 N	ETP 300 N	ETP 450 N	ETP 1000 N	ETP 1800 N	ETP 3500 N	ETP 6000 N	ETP 10000 N
Oil quantity	(cm ³)	35	35	80	80	80	200	300	1000	2000
Starting power	(W)	200	360	400	500	500	900	1500	1900	5000
Operating power	(W)	90	130	150	170	180	250	400	600	900
Cooling W = Water A = Air		W/A	W/A	W/A	W/A	W/A	W	W	W	W
Minimum water flow	(l/h)	15	20	25	30	40	70	80	100	140
Operating position		vertical	vertical	vertical	vertical	vertical	vertical	vertical	vertical	vertical
Overall diameter	CF (mm) ISO (mm)	113.5 99.	152 136	202.8 160	202.8 202.8	256 256	330 330	— 485	— 620	— 795
Overall height	CF (mm) ISO (mm)	234 227	272 272	290 290	257 247	370 360	600 587	— 636	— 802	— 1000
Weight	(kg)	3.2	8	18	23	33	45	130	250	950

TECHNICAL DATA FOR GREASE-LUBRICATED TURBOMOLECULAR PUMPS

Model:		ETP 60 GM	ETP 80 G	ETP 200 G	ETP 300 G	ETP 450 G	ETP 1000 G
Starting power	(W)	80	200	360	400	500	500
Operating power	(W)	10	50	50	70	70	80
Cooling W = water A = air		W/A	W/A	W/A	W/A	W/A	W/A
Minimum water flow	(l/h)	10	15	20	25	30	40
Operating Position		Any	Any	Any	Any	Any	Any
Overall Diameter	CF (mm) ISO (mm)	113.5 99	113.5 99	152 136	202.8 180	202.8 202.8	256 256
Overall Height	CF (mm) ISO (mm)	198 192	192 185.5	225 225	246 246	317 317	318 308
Weight	(kg)	4	5.1	10.7	20	25	35



ELETTORAVA TURBO-CONTROLLERS TECHNICAL DATA

Model:		ETC 60	ETC 80 S	ETC 200	ETC 300	ETC 450	ETC 1000	ETC 1800	ETC 3500	ETC 6000	ETC 10000
Input voltage	(V)	100/120	100/120	100/120	100/120	100/120	100/120	100/120	100/120	100/120	220/380/440
	(V) 1 Phase	220/240 1 Phase	220/240 1 Phase	220/240 1 Phase	220/240 1 Phase	220/240 1 Phase	220/240 1 Phase	220/240 1 Phase	220/240 1 Phase	220/240 1 Phase	3 Phase
Input frequency	(Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Output voltage (3 phases)	(V)	54	54	54	54	54	54	90	90	90	150
Output frequency	(Hz)	1200	1000	850	700	600	600	450	250	233	200
Input power max.	(VA)	350	500	800	1200	1300	1400	1600	3000	5000	10000
Output power max.	(VA)	160	400	600	600	600	600	900	1500	3000	6000
Normal output power	*(W)	—	90	130	150	170	180	250	400	600	900
	** (W)	10	50	50	70	70	80	—	—	—	—
Dimensions:											
Width	(mm)	107	107	213	213	213	213	483	483	483	483
Height	(mm)	128	128	133	133	133	133	133	133	133	267
Depth	(mm)	285	285	260	300	300	300	350	350	350	460
Weight	(kg)	4	4	7	10	10	10	25	30	30	60

* With oil lub. pump

** With grease lub. pump



ETC 200 up to ETC 1000



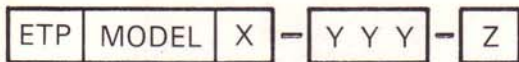
ETC 80 S



ETC 1800 / ETC 3500 / ETC 6000



ORDERING INFORMATION



- Z = W Water cooling
- Z = A Air cooling
- Y Y Y = CFF Conflat Inlet Flange
- Y Y Y = ISO Iso Inlet Flange
- Y Y Y = WHE Wheeler Inlet Flange
- X = N Oil lubrication
- X = G Grease lubrication
- X = F Fomblin Oil lub

MODEL = 50, 80, 200, 300, 450, 1000, 1800, 3500, 6000, 10000

ETP = Elettrovava Turbomolecular Pump
 (can be changed into CRTP = Corrosion Resistant Turbomolecular Pump)

EXAMPLE: ETP 300 N - CFF - W

Elettrovava ETP 300 turbomolecular pump
 with oil lubrication (N), Conflat flange (CFF), Water cooling (W)



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