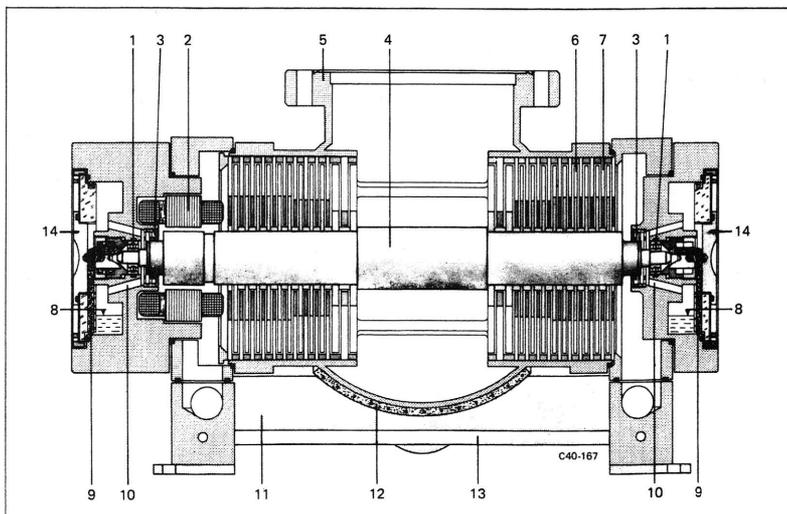
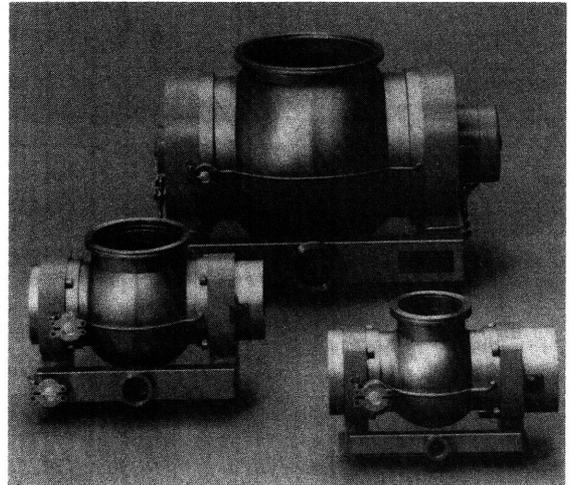


Horizontal installation with variable position of intake socket

3 sizes

Volume flow rates from 300 to 2200 l/sec

Different flange versions



Section through the TPU 330

- 1 Bearing
- 2 Motor
- 3 Labyrinth chamber
- 4 Rotor
- 5 UHV connection
- 6 Rotor disk
- 7 Stator disk
- 8 Oil reservoir
- 9 Oil supply to the bearing
- 10 Oil return
- 11 Backing pressure channel
- 12 Heater
- 13 Water cooling
- 14 Closure

Turbo molecular pump	TPH 330 TPU 330	TPH 510 TPU 510	TPH 2200 TPU 2200
Installation attitude	horizontal	horizontal	horizontal
Position of high-vacuum flange	fully optional 360°	fully optional 360°	on top/bottom/ at side
Type of bearing	wick-lubricated spindle bearings	wick-lubricated spindle bearings	circulation-lubricated spindle bearings oil flow monitoring
Bearing replacement ¹⁾	on site	on site	on site
Shipping	with oil filling	with oil filling	without oil filling

¹⁾ Not affecting the rotor/stator adjustment and balancing

Technical data

Turbo molecular pump with clamping flange CF flange

		TPH 330	TPU 330	TPH 510	TPU 510
Nominal diameter					
Inlet		DN 100 ISO-K	DN 100 CF-F	DN 160 ISO-K	DN 160 CF-F
Outlet		DN 25 ISO-KF	DN 25 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF
Volume flow rate for					
Nitrogen N ₂	l/s	300	300	500	500
Helium He	l/s	370	370	570	570
Hydrogen H ₂	l/s	330	330	500	500
Compression ratio for					
N ₂		10 ⁸	10 ⁸	10 ⁸	10 ⁸
He		3 · 10 ⁴	3 · 10 ⁴	1,5 · 10 ⁴	1,5 · 10 ⁴
H ₂		1,7 · 10 ³	1,7 · 10 ³	10 ³	10 ³
Recomm. backing pump, min.	m ³ /h	16	16	16	16
Standard electronic drive unit		TCP 121	TCP 121	TCP 310	TCP 310
Theoretical ultimate pressure ¹⁾	mbar	10 ⁻¹¹	10 ⁻¹¹	10 ⁻¹¹	10 ⁻¹¹
Ultimate pressure 1 ²⁾	mbar	<1 · 10 ⁻¹⁰			
Ultimate pressure 2 ²⁾	mbar	<1 · 10 ⁻⁹			
Ultimate pressure 3 ²⁾	mbar	<1 · 10 ⁻⁸			
Rated speed	rpm	60000	60000	60000	60000
Start-up speed	rpm	40000	40000	40000	40000
Run-up time ³⁾	min	3	3	6	6
Pump fluid					
Filling quantity	cm ³	2 x 10	2 x 10	2 x 10	2 x 10
Type		TL 011	TL 011	TL 011	TL 011
Type of cooling					
Standard ⁴⁾		Water	Water	Water	Water
Conversion kit for		Air	Air	Air	Air
Cooling water requirement	l/h	15	15	15	15
Heating jacket requirement		No	Yes	No	Yes
Power input of heater	W	180	180	250	250
Weight	kg	19	20	28	30

Ordering data

	TPH 330	TPU 330	TPH 510	TPU 510
Turbo molecular pump for electronic drive unit				
Pump with high-vacuum flange				
on top	PM P01 230	PM P01 240	PM P01 180	PM P01 190
at side	—	—	—	—
on bottom	PM P01 232	PM P01 242	PM P01 182	PM P01 192

Turbo molecular pump for mechanical frequency converter

Pump with high-vacuum flange				
on top	PM P01 235	PM P01 245	PM P01 185	PM P01 195
at side	—	—	—	—
on bottom	on request	on request	on request	on request

Accessories

Protective screen	PM 006 596 -R	PM 006 596 -R	—	—
Splinter shield	PM 441 026 -X	PM 441 026 -X	PM 414 095 -X	PM 414 095 -X
Compensator	PM 006 459 -X	PM 006 488 -X	PM 006 492 -X	PM 006 493 -X
Heating jacket				
115 V	PM 003 869 -T	—	PM 003 871 -T	—
230 V	PM 441 022 -T	—	PM 443 022 -T	—

¹⁾ Value to which the pressure in the test dome converges asymptotically. It is the lowest pressure which can be attained with the pump (according to DIN 28 428)

²⁾ Pressure which is attained in the test dome after a maximum bake-out period of 48 hours.

For a definition, see page D 2.

³⁾ Up to 90% of rated speed.

⁴⁾ Up to an ambient temperature of 30 °C

⁵⁾ When a heater is used, ducted cooling is required.

Note

For pump fluid for turbo molecular pumps, see page D 36.