

Vacuum Generation - Turbomolecular Pump Systems

Turbomolecular Pump Systems CDK - in a Housing, Compact

The functional units for generating high and ultra-high vacuums are completely mounted in a housing and ready for operation. The individual components are perfectly matched to each other. The SST turbomolecular pump is equipped with dry-running, solid-lubricated hybrid ceramic bearings which prevent the vacuum being contaminated by greases, oils or their decomposition products. This means that the design excludes residual hydrocarbon gas spectra.

CDK turbomolecular pump systems are compact and dry running. The automatic shut-off system stops the backing pump when the required final vacuum is reached.

CDK turbomolecular pump systems comprise:

- an SST turbomolecular pump with integrated drag stages stage
- a three-stage diaphragm pump - types CDK 180/280 or
- a piston-diaphragm pump set - types CDK 181/281
- a solenoid valve in the fore vacuum piping to the turbomolecular pump
- a power supply unit for supplying all the modules
- a fan for the cooling required in the device casing

Automatic switch off:

All CDK turbomolecular pump systems have an automatic switch off device for the fore vacuum system. The backing pump system is switched off as soon as the ultimate pressure has been reached in the receptacle. The solenoid valve in the backing line to the turbomolecular pump is closed simultaneously. This prevents reverse venting of the turbomolecular pump and receptacle.

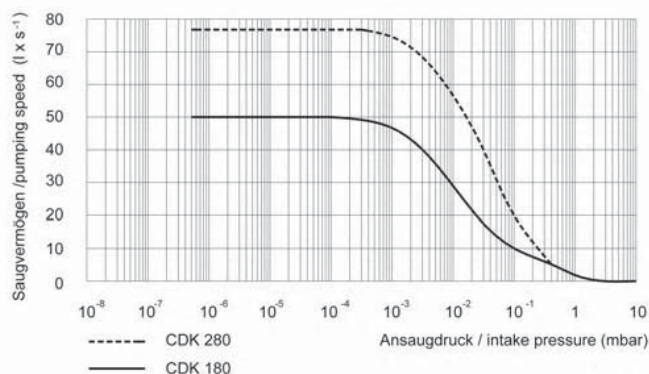
The major advantages of this automatic switch off are:

- the service life of the diaphragm pump is substantially increased to up to 10,000 operating hours
- the noise level is noticeably reduced by at least 3 dB(A)
- the operating costs for energy consumption are reduced, this becomes especially noticeable when several CDK turbomolecular pump systems are used.

The SST turbomolecular pump consists of:

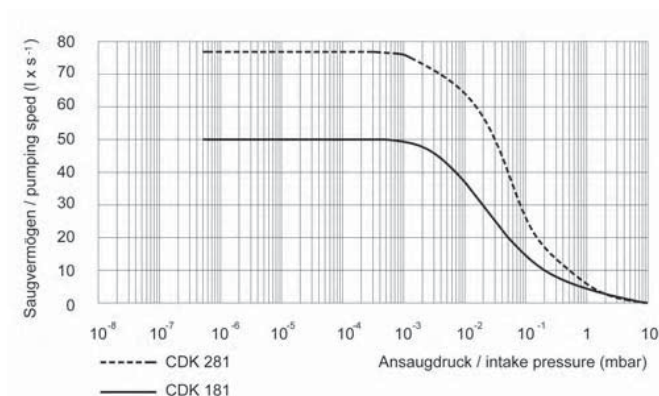
- monobloc rotors with extremely low residual vibrations
- special blade design for high pumping speeds and high compression ratios, particularly for light gases
- the gap-free rotor structure gives fast degassing on the high vacuum side

Ultimate pressure statements: see note in chapter SST turbomolecular pumps



Special characteristics:

- very long life span- up to 10,000 operating hours
- very low noise level: CDK 180/280 below 51 dB (A), CDK 181/281 below 53 dB (A)
- optimized, hydrocarbon free backing pump system
- rapid evacuation to high vacuum
- compact and low weight
- very long service intervals



Technical Features

Type	Ult. pressure mbar	Pumping speed eff N ₂ /He/H ₂ l/s	Dim. (W/D/H) mm	Weight (230 / 115 V) kg
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Pumping speed fore vacuum 0.7 m³

CDK 180	5x10 ⁻⁷	50/56/46	193/344/400	13.7 / 14.4
CDK 180 UHV	5x10 ⁻⁸	50/56/46	193/344/400	14.7 / 15.4
CDK 280	5x10 ⁻⁷	77/65/50	193/344/381	13.7 / 14.4
CDK 280 UHV	5x10 ⁻⁸	77/65/50	193/344/381	14.7 / 15.4


Pumping speed fore vacuum 1.5 m³

CDK 181	5x10 ⁻⁷	50/56/46	193/414/400	15 / 15
CDK 181 UHV	5x10 ⁻⁸	50/56/46	193/414/400	16 / 16
CDK 281	5x10 ⁻⁷	77/65/50	193/414/400	15 / 15
CDK 281 UHV	5x10 ⁻⁸	77/65/50	193/414/400	16 / 16


Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
CDK 180	230 / 50/60	yes	1	101224
CDK 180	115 / 50/60	yes	1	101224-01
CDK 180 UHV	230 / 50/60	yes	1	101225
CDK 180 UHV	115 / 50/60	yes	1	101225-01
CDK 280	230 / 50/60	yes	1	101226
CDK 280	115 / 50/60	yes	1	101226-01
CDK 280 UHV	230 / 50/60	yes	1	101227
CDK 280 UHV	115 / 50/60	yes	1	101227-01
CDK 181	230 / 50/60	yes	1	101228
CDK 181	115 / 50/60	yes	1	101228-01
CDK 181 UHV	230 / 50/60	yes	1	101229
CDK 181 UHV	115 / 50/60	yes	1	101229-01
CDK 281	230 / 50/60	yes	1	101230
CDK 281	115 / 50/60	yes	1	101230-01
CDK 281 UHV	230 / 50/60	yes	1	101231
CDK 281 UHV	115 / 50/60	yes	1	101231-01

Note:
Country specific
mains connection
cable separately
to the device, see
page 146.

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