

Ref. No. 220-8007/29-17 (P)

Sl. No.	Description / Specifications	Qty. Required
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Rotary Vane Vacuum Pump (Dual stage)

04 Nos.

Model No. : Duo 20 MC, Corrosive gas version

Order No. : PK D63 105

- Pumping Speed: 20 m³/h at 50 Hz.
- Motor: 3-Phase, 380-440 V, 50 Hz.
- Rated Power 50 Hz: 0.35 KW
- Rotational Speed at 50 Hz: 1500 min⁻¹
- Motor Protection: 3TF, Temperature sensor for optimum protection
- Protection category: IP 55
- Ambient Temperature: 12-45°C
- Cooling Method, standard: Air
- Noise level without gas ballast at 50 Hz: <= 55 dB(A)
- Magnetic coupling: Yes
- Ultimate Pressure with Gas Ballast: 4 × 10⁻³ mbar
- Ultimate Pressure without Gas Ballast: 2 × 10⁻³ mbar
- Operating fluid: P3
- Flange In: DN 25 ISO-KF
- Flange Out: DN 25 ISO-KF
- Exhaust Pressure Maximum: 1500 mbar
- Exhaust Pressure Minimum: 250 mbar
- Weight: 33 kg

Make: Pfeiffer Vacuum, Germany

Note: Provide detailed technical literature/Catalogue, Maintenance and Operational Manuals in English language.

Ref No: 220-8001/29-77(R)

Qty. Required

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Description / Specifications

Rotary Vane Vacuum Pump (Single stage)

Model No. : Uno 6 M

05 Nos.

Order No. : PK D07 712

- Pumping Speed: 4.8 m³/h at 50 Hz
- Motor: 1-Phase, 220-240 V, 50 Hz
- Rated Power 50 Hz: 0.15 KW
- Protection category: IP 40
- Rotational Speed at 50 Hz: 3000 min⁻¹
- Ambient Temperature: 12-45°C
- Cooling Method, standard: Air
- Integrated gas ballast and safety valve: yes
- **Magnetic Coupling : Yes**
- Ultimate Pressure with Gas Ballast: 0.5 mbar
- Ultimate Pressure without Gas Ballast: 3×10⁻² mbar
- Operating fluid: P3
- Flange In: DN 16 ISO-KF
- Flange Out : DN 16 ISO-KF
- Exhaust Pressure Maximum: 1500 mbar
- Exhaust Pressure minimum: 250 mbar
- Weight: 11.3 kg

Make: Pfeiffer Vacuum, Germany

Note: Provide detailed technical literature/Catalogue, Maintenance and Operational Manuals in English language.

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Sr. No.	Description / Specifications	Qty. Required
3.	<p><u>Accessories for Vacuum Pumps</u> (Model: Duo 20 MC and Model: Uno 6M)</p>	
	<p>I. Activated Carbon filter - Model No. : FAK 025</p>	06 Nos.
	<p>- Order No. : PK Z30 006 Make: Pfeiffer Vacuum, Germany</p>	
	<p>II. Oil Return Unit a) From ONF 25 L to Duo 20 M Order No. : PK 196 172-T</p>	06 Nos.
	<p>b) From ONF 16M to Uno 6 Order No. : PK 006 080-T Make: Pfeiffer Vacuum, Germany</p>	06 Nos.
	<p>III. Oil Mist filter a) Model No. : ONF 25 L Order No. : PK Z40 158</p>	06 Nos.
	<p>b) Model No. : ONF 16 M Order No. : PK Z40 003 Make: Pfeiffer Vacuum, Germany</p>	06 Nos.
	<p>IV. Zeolite Trap a) Model No. : ZFO 025 Order No. : Z70 006</p>	06 Nos.
	<p>b) Model No. : ZFO 16 Order No. : Z70 00 Make: Pfeiffer Vacuum, Germany</p>	06 Nos.
	<p>V. Condensate Separator - Model No. : KAS 16 - Order No. : PK Z10 003 Make: Pfeiffer Vacuum, Germany</p>	06 Nos.
	<p>VI. Polyester filter - Model No. : SAS 16 - Order No. : PK Z60 506 Make: Pfeiffer Vacuum, Germany</p>	06 Nos.

Sr. No.	Description / Specifications	Qty Req
4.	<p style="text-align: center;"><i>RC7 No: 220-2002/2977CR</i></p> <p>Fittings for Vacuum Pumps (Model: Duo 20 MC and Model: Uno 6M)</p> <p>I. ISO-KF Corrugated Hose (Flexible, Annealed)</p> <ul style="list-style-type: none"> - Material: Stainless Steel - Flange: SS 304/1.4301 - Bellows: SS 316 L 	<p><i>Page: 05/09</i></p>
	<ul style="list-style-type: none"> - Flexible: Yes - Stress-relieved/ Annealed: Yes - Flange Connection length: 15 mm - Temperature Range: -196 to 300°C - Pressure range: 1×10^{-3} hPa to 500 hPa Over pressure <p>a) Nominal Diameter: DN 25 ISO-KF</p> <ul style="list-style-type: none"> i. Length= 500mm Order No. : 120SWG025-0750 ii. Length= 1000mm Order No. : 120SWG025-1000 <p>b) Nominal Diameter: DN 16 ISO-KF</p> <ul style="list-style-type: none"> i. Length= 500mm Order No. : 120SWG016-0500 ii. Length= 1000mm Order No. : 120SWG016-0750 <p>Make: Pfeiffer Vacuum, Germany</p> <p>II. ISO-KF PVC Hose with Embedded Spring and Flanges</p> <ul style="list-style-type: none"> - Inner tube material: PVC, transparent - Casing: Steel coil - Hose Cover material: PVC, transparent - Smooth inner and outer walls - Flanges: DN 25 ISO-KF - Flange material: SS 304/1.4301 - Pressure range: 1×10^{-4} hPa - Temperature Range: -5 to 40°C - Nominal Diameter: DN 25 ISO-KF - Length: 500 mm - Order No: 100SPA025-0500 <p>Make: Pfeiffer Vacuum, Germany</p>	<p>12 Nos.</p> <p>06 Nos.</p> <p>12 Nos.</p> <p>06 Nos.</p> <p>12 Nos.</p>

Sf. No.	Description / Specifications	Qty. Required
	<p style="text-align: center;"><i>REF: 220-800/297908</i></p> <p>III. ISO-KF Centering Ring</p> <ul style="list-style-type: none"> - Material: SS 304/1.4301 - O-Ring material: FKM a) Nominal Diameter: DN 25 ISO-KF Order No. : 122ZRC025 b) Nominal Diameter: DN 16 ISO-KF Order No. : 122ZRC016 <p>Make: Pfeiffer Vacuum, Germany</p>	<p style="text-align: right;"><i>Page: 06/9</i></p> <p>24 Nos.</p> <p>24 Nos.</p>
	<p>IV. ISO-KF O-Rings</p> <ul style="list-style-type: none"> - Material: FKM - Cord dia: 5 mm - Temperature Range: -15 to 150 °C - Packing: 10 pieces (O-rings) a) Nominal Diameter: DN 25 ISO-KF Order No. : 102DOR025-S10 b) Nominal Diameter: DN 16 ISO-KF Order No. : 102DOR016-S10 <p>Make: Pfeiffer Vacuum, Germany</p>	<p>08 Nos.</p> <p>04 Nos.</p>
	<p>V. ISO-KF Wingnut Clamp</p> <ul style="list-style-type: none"> - Material: SS 304/1.4301 - Temperature range: -196 to 200°C - Torque: Maximum 2 Nm on wingnut - Over Pressure maximum: 1500 hPa a) Nominal Diameter: DN 20/25 ISO-KF Order No. : 120BSR025 b) Nominal Diameter: DN 10/16 ISO-KF Order No. : 120BSR016 <p>Make: Pfeiffer Vacuum, Germany</p>	<p>36 Nos.</p> <p>24 Nos.</p>

Sr. No.	Description / Specifications	Qty. Required
	<p style="text-align: right;">REF No. 220-8008/29-1700</p> <p>VI. ISO-KF Hingeless Clamp</p> <ul style="list-style-type: none"> - Material: SS 304/1.4301 - Temperature range: -10 to 125°C - Torque: Maximum 2 Nm on wingnut - Over Pressure maximum: 500 hPa <p>a) Nominal Diameter: DN 32/40 ISO-KF Order No: 120BSG040</p> <p>b) Nominal Diameter: DN 50 ISO-KF Order No: 120BSG050</p> <p>Make: Pfeiffer Vacuum, Germany</p>	<p>Pf. 07/10</p> <p>06 Nos.</p> <p>06 Nos.</p>
	<p>VII. ISO-KF Half Nipple</p> <ul style="list-style-type: none"> - Material: SS 304/1.4301 - Nominal Diameter: DN 25 ISO-KF - Temperature range: -196 to 300°C - Pressure range: 1×10^{-8} hPa to 1500 hPa <p>a) Tube Dimension: 25.4 x 1.65 mm, Length: 40 mm Order No: 120FRA025-25-40</p> <p>b) Tube Dimension: 28 x 2 mm, Length: 55 mm Order No: 120FRA025-28-55</p> <p>Make: Pfeiffer Vacuum, Germany</p>	<p>12 Nos.</p> <p>12 Nos.</p>
	<p>VIII. ISO-KF Hose Connector</p> <ul style="list-style-type: none"> - Material: SS 304/1.4301 - Temperature Range: -196 to 300°C <p>a) Nominal Diameter: DN 16 ISO-KF Order No: 120ASC016-12</p> <p>b) Nominal Diameter: DN 25 ISO-KF Order No: 120ASC025-12</p> <p>Make: Pfeiffer Vacuum, Germany</p>	<p>12 Nos.</p> <p>12 Nos.</p>

Sr. No.	Description / Specifications	Qty. Required
	<p>(X) Block Valve</p> <ul style="list-style-type: none"> - Order No: PF D48 533 - Type: Inline valve - Operating Pressure max: 2000 hPa. - Operating pressure min: 1×10^{-8} mbar - Closing time: ≤ 160 ms - Control Valve: Included - Feed-through: bellows, stainless steel - Flange (in and out): DN 25 ISO-KF - Housing: stainless steel - Opening time: ≤ 120 ms - Seal: FKM - Service life: 10 million cycles - Normally closed: yes - Supply: 200-230 V AC, 50 Hz <p>Make: Pfeiffer Vacuum, Germany</p> <p>Note: Provide detailed technical literature/Catalogue, Maintenance and Operational Manuals in English language.</p>	05 Nos.
5.	<p>Vacuum Oil</p> <ul style="list-style-type: none"> - Trademark Name : P3 - Flash Point: $\geq 250^{\circ}\text{C}$ - Viscosity at 40°C: 94-100 cSt - Water Content: Nil - Mechanical impurities: Nil - Packing: 5 liters - Order No. : PK 001 107-T <p>Make: Pfeiffer Vacuum, Germany</p>	20 Nos.