

## Safety Regulations



Please comply with Accident Prevention Regulations VBG 16, Compressors, in particular Section IIIc "Installation" and IV "Operation" plus VBG 4 "Electrical equipment and tools".

Vacuum pumps may only be converted or modified after approval by the manufacturer.

Air compression will generate high pump temperatures, especially at the oil container:

- Install pumps/compressors in a position where hot surfaces cannot be touched
- Or protect the area around them
- Or install warning signs.

To prevent the pump heating up to values exceeding specifications it is absolutely necessary to execute each individual step of the maintenance procedures.

## Application

The pumps can be used to generate underpressure (vacuum).

The specification is valid up to a height of 800 m above sea level.

Do not convey toxic or inflammable media.

Inlet air must be standard dry atmospheric air.

## Transport and storage

Store pump in a dry area. Prevent condensation caused by vapour.

Lift and transport only by using the ring screws.

## Installation

It is recommended to install the pumps/compressor with easy access for maintenance.

Clearance between compressors and adjacent walls should be no less than 10 cm of free space in order to ensure sufficient air flow for cooling. Ambient temperatures must not exceed 45°C.

## U 4.70-4.100

### Rotary vane vacuum pumps

oil-lubricated, air-cooled

## Connection and installation

Ensure correct dimensions and clean pipelines (no weld spatter, chips or similar contamination). The diameter of the pipelines should at least equal that of the threads. For pipeline lengths of more than 2 m use the next larger line diameter. Keep connections free from oil, grease and water or other contaminations.

## Filling-in of oil



Use vacuum pump oil SHELL V 9930. Screw-off oil inlet cover and fill-in oil up to the maximum of the inspection glass MA. Remove protective caps at LA and SA. Don't connect to the pipelines yet.

## Motor connection

Connect the pump/compressor to the electricity supply observing all applicable safety regulations. Comply with EN 60204 T1.

Connect motor based on connecting diagram (in terminal box). This work should be carried out by an experienced electrician only. Check for connecting voltage, nominal current and frequency.



Install motor circuit-breaker and set to nominal motor current. (For data see motor rating plate).

Briefly start motor and check rotation (arrow on casing). Exchange phases if rotation is incorrect.

Avoid switching of more than 10 times per hour.

## Commissioning

Connect intake line at SA. Don't throttle or block air discharge LA nor use as compressed air outlet.

## Operating Instructions

## Maintenance

Maintain pump regularly to achieve the best operating results. Maintenance intervals will depend on the pump's use and ambient conditions.



Before commencing maintenance switch off electricity to reliably avoid unintentional restarting. Suction will be reduced by contaminated intake filters or blocked air degrease elements.



Fan cover, fan grill, cooling ribs and surfaces of the compressor have to be cleaned to avoid overheating.

## Oil / Oil separation

Check oil level daily while the pump is switched off. The oil level must not sink below inspection glass middle MI.

## Oil exchange

- First exchange of oil after 100 hours of operation
- Then every time after 500 - 2000 hours of operation
- At least twice a year
- Or after high intake of water



The old oil is to be drained at drainage screw OA while pump is switched off but still at operating temperature.



Check air degrease element FA when exchanging oil and replace if blocked. Insert with seam pointing downwards.

The filter cartridges are inserted behind the enclosure cover GD and are to be cleaned depending on the dust level. Loosen cover DE. Check coarse material separator and wash out if contaminated: Loosen oil container cover OD and oil pipeline OL.



## Accessories

Mount **intake filter AS** with the filter cartridge in horizontal position. This is to ensure that no dirt will get into the compressor during maintenance work.




Clean filter cartridges according to the amount of dust in the environment. Use compressed air to blow through the filter from inside out. Wash-out filter on the inside or use vacuum. Make certain that blocked, oily or greasy cartridges are exchanged against new ones.

Set **vacuum control valve** to operational value.

**Oil level switch:** Check function during oil exchange;

**Gas ballast valve:** Exchange contaminated valve.



Vakuumumpen - Verdichter  
Vacuum pumps - Compressors

Gebr. Becker GmbH & Co. • Postfach 250220 • D-42238 Wuppertal

**Konformitätserklärung**

im Sinne der EG-Maschinenrichtlinie 89/392/EWG, Anhang II A

Der Hersteller **Gebr. Becker GmbH & Co.  
Höcker Feld 29-31  
42279 Wuppertal**

erklärt hiermit, daß die Pumpe

**U 4.70-100**

in der von uns gelieferten Ausführung folgenden einschlägigen Bestimmungen entspricht:

- EG-Richtlinie Maschinen 89/392/EWG
- EG-Richtlinie elektrische Betriebsmittel 73/23/EWG
- EG-Richtlinie elektromagnetische Verträglichkeit 89/336/EWG



\* jeweils in der aktuellen Fassung

Angewendete harmonisierte Normen, insbesondere:

**EN 1012 T1, EN 1012 T2, EMV EN 50081-82**

Angewendete nationale technische Normen, insbesondere: **VBG 16**

Gebr. Becker GmbH & Co.  
Wuppertal, den 17.05.1996


  
 Dr. Henning                      K. Trinler  
 Geschäftsführung

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USt-IdNr. DE 12 102 1048

## Tabelle-Table-Tableau-Tabella-Tabla

	U 4.70	U 4.100
Anschlußleitung bis 2m / 2m bis 10m Pipework up to 2m / 2m up to 10m Tuyauterie jusqu'à 2m / de 2m jusqu'à 10m Tubazione fino a 2m / da 2m fino a 10m Tubo de conexión hasta 2m / de 2 a 10m	1 1/4" / 1 3/4"	1 1/4" / 1 3/4"
Schieber-Mindestbreite [mm] Width of vanes, min. [mm] Largeur palettes, min. [mm] Larghezza palette min. [mm] Ancho mínimo de paletas [mm]	34	34
Volumenstrom bei 50/60 Hz [m3/h] Air flow at 50/60 Hz [m3/h] Débit d'air à 50/60 Hz [m3/h] Capacità aria a 50/60 Hz [m3/h] Caudal volumétrico de aire con 50/60 Hz [m3/h]	70/84	100/120
Länge [mm]/Breite [mm] Length [mm]/Width [mm] Longeur [mm]/Largeur [mm] Lunghezza [mm]/Larghezza [mm] Longitud [mm]/Ancho [mm]	688/374	799/374
Höhe [mm] Height [mm] Hauteur [mm] Altezza [mm] Altura [mm]	300	300
Gewicht [kg] Weight [kg] Poids [kg] Peso [kg] Peso [kg]	54	77
Schalldruckpegel [db(A)] Acoustic pressure level [db(A)] Niveau de pression acoustique [db(A)] Livello di pressione acustica [db(A)] Nivel de presión acústica [db(A)]	67	68

Technische Änderungen vorbehalten  
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