



# Becker vacuum pump information

## MODEL U4.20

# Operating Instructions

U 4.20/0-53

## Rotary vane vacuum pumps

oil-lubricated, air-cooled



DIN EN ISO 9001  
001929 QM



### 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".

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

### Application

The pumps can be used to generate a vacuum. The specification is valid up to a height of 800 m above sea level.

The pumps cannot be used for transport of toxic or flammable materials.

Ensure that only normal atmospheric air is taken in.

### Transport and storage

Store pump in a dry area. Prevent water splashes.

Lift and transport only by using the ring screws.

### Installation

It is recommended to install the pumps 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 40°C.

### Connection and installation

Ensure correct dimensions (see Table) and clean pipelines (no weld spatter, chips or similar contamination). The diameter of the pipelines must be at least correspond to the connection threads.

With pipelines exceeding 2 m in length use the next greater diameter.

Keep connections free from oil, grease, water and other contaminants.

### Filling in oil



Use vacuum pump oil GS32.

Screw off oil intake cover OE and fill-in oil up to the maximum of the oil indicator OG.

Remove end cap at SA. Do not connect to pipeline yet.

### Motor connection

Connection to the electricity supply must be effected observing all applicable safety regulations. Comply with EN 60204 T1.

Connect motor based on connecting diagram (in terminal box) or ready-made plugs. Check for connecting voltage 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.

One phase alternating current motors with temperature controller will restart automatically after an overload and corresponding cooling down.

### Commissioning

Connect inlet line at SA. Connect cooling water inlet at point WE and outlet at point WA.

Do not throttle or block the air outlet IA or use it as pressurized air outlet.

### Maintenance

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



Before commencing maintenance, remove mains plug from socket to avoid unintentional restarting.

Dirty inlet filter or blocked air degrease elements will reduce air intake capacity.



To avoid overheating clean fan cover, fan grill, cooling fins and surfaces of the pump.

### Oil / oil separation

The oil level must be checked daily while the pump is switched off. The oil level must not be lower than the middle of the oil indicator OG.

### Oil exchange

- first oil exchange after 100 hours of operation
- then always after 500 - 1000 hours of operation
- at least once every 6 months
- or if too much water is taken in.



The old oil is drained at the draining outlet OA while the pump is switched off and still at operating temperature.



Check the air degrease element FA at the time of oil exchange and renew when blocked: Loosen cover DE and centering disc DZ.

Check coarse material separator and wash out if dirty.

### Accessories

Install intake filter in such a way that the filter cartridge is lying horizontally, thus no dirt will get into the pump during maintenance work.



Clean the filter cartridges depending on dust accumulation. Using pressurized air blow out filter from inside to outside. Wash out filter housing interior or clean using suction.

Replace blocked, oily or greasy cartridges.



## Tabelle-Table-Tableau-Tabella-Tabla

U 4.20/0-53

Anschlußleitung bis 10m ..... 3/4"  
 Pipework up to 10m  
 Tuyauterie jusqu'à 10m  
 Tubazione fino a 10m  
 Tubo de conexión hasta 10m

Schieber-Mindestbreite [mm] ..... 15  
 Width of vanes, min. [mm]  
 Largeur palettes, min. [mm]  
 Larghezza palette min. [mm]  
 Ancho mínimo de paletas [mm]

Volumenstrom bei 50/60 Hz [m³/h] ..... 18,5/22  
 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]

Länge [mm]/Breite [mm] ..... 358/235  
 Length [mm]/Width [mm]  
 Longueur [mm]/Largeur [mm]  
 Lunghezza [mm]/Larghezza [mm]  
 Longitud [mm]/Ancho [mm]

Höhe [mm] ..... 219  
 Height [mm]  
 Hauteur [mm]  
 Altezza [mm]  
 Altura [mm]

Gewicht [kg] ..... 20  
 Weight [kg]  
 Poids [kg]  
 Peso [kg]  
 Peso [kg]

Schalldruckpegel [db(A)] ..... 63  
 Acoustic pressure level [db(A)]  
 Niveau de pression acoustique [db(A)]  
 Livello di pressione acustica [db(A)]  
 Nivel de presión acústica [db(A)]

Technische Änderungen vorbehalten  
 Right of modifications reserved  
 Sous réserve des modifications  
 Sotto riserva di modificazioni  
 Salvo modificaciones técnicas



**U 4.20**

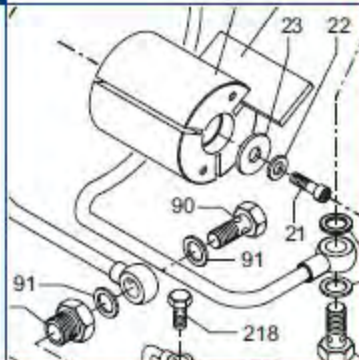
Ersatzteilliste  
 Spare parts list  
 Liste de pièces de rechange  
 Listino pezzi di ricambio  
 Lista de piezas de recambio  
 Lista de peças sobresselentes  
 Reserveonderdelenlijst  
 Reservdelistsite  
 Reservdelistsite

**SERVICE**

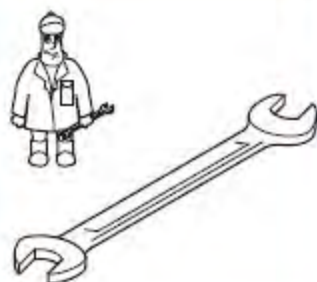
**BECKER**  
 D-6279 Huppert  
 www.becker-international.com

No.  ← **Index**  
 year   
 type:  ← **Variante**  
 CE  
 frequency \_\_\_\_\_ Hz  
 speed \_\_\_\_\_ min.<sup>-1</sup>  
 power required \_\_\_\_\_ kW  
 inlet capacity \_\_\_\_\_ m<sup>3</sup>/h  
 pressure + \_\_\_\_\_ mbar  
 vacuum - \_\_\_\_\_ mbar

Made in



Reservdelistsite  
 Varaosaluettelo  
 Wykaz części zamiennych  
 Seznam náhradních dílů  
 Tartalékalkatrész lista  
 Κατάλογος ανταλλακτικών  
 Yedek parça listesi  
 Перечень запасных частей  
 备用零件目录  
 スペアパーツリスト



Pos.	Menge <sup>2)</sup> Quantity Quantité Quantità Cantidad	Bestell-Nr. Ident No. No. Identification No. Identificazione No. de pedido	Bezeichnung Description Designation Designazione Descripción
■	1	549000 40300	Dichtungssatz, Complete set of seals, Jeu de joints, Kit di guarnizioni, Junta Completa
8	SATZ/KIT	900583 00003	Schieber, Rotor Vane, Palette, Empujador
34	1	965413 00000	Luftentölelement, Oil separating element, Element separation huile, Cartuccia sepa-ratore olio, Elemento de desaceitar de aire

<sup>2)</sup> erforderliche Bestellmenge / necessary order quantity / quantité nécessaire / quantità di ordinazione necessari / cantidad necesario

Wartung  
 Maintenance  
 Entretien  
 Manutenzione  
 Mantenimiento



# SERVICE

[www.becker-international.com](http://www.becker-international.com)

Sales and service network

**U 4.20**
**Standard**

**Variante**

**U 4.20/XX**

①

**/09**

- mit Gasballastventil
- with gas ballast valve
- avec l'este d'air
- con valvola di zavoratrice
- con valvula de lastre de gas

② ③ ④

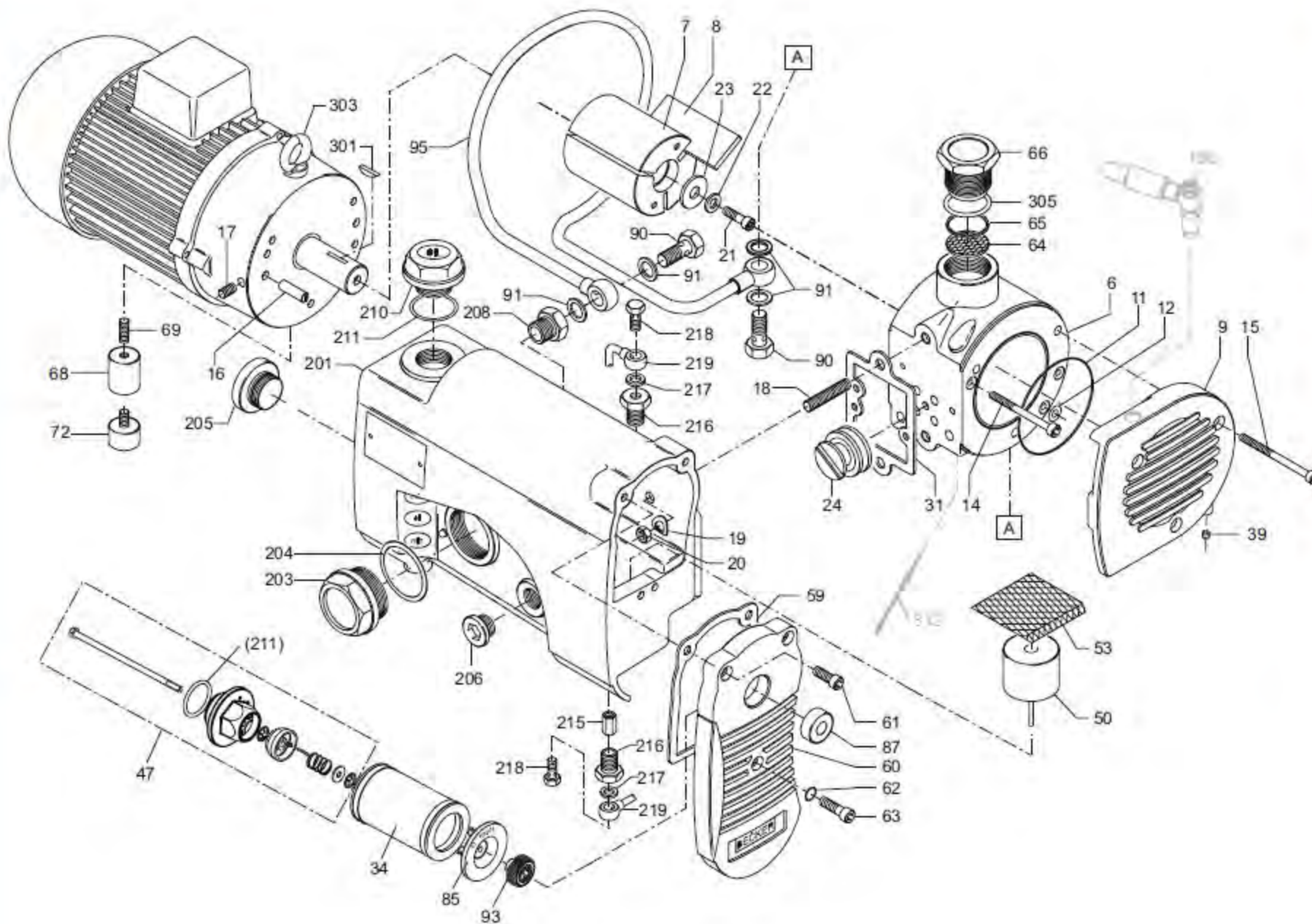
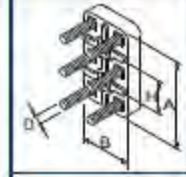
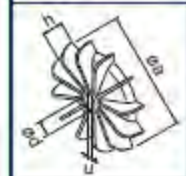
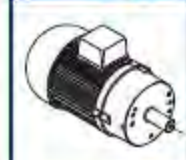
**/53 + /53.1 + /59**


- mit Wasserkühler
- with water radiator
- avec radiateur d'eau
- con radiatore d'acqua
- con radiador de agua



⑤

**/55**

- mit Doppelrückschlagventil
- with double-check valve
- avec double valve de retenue
- con doppia valvola di ritenuta
- con doble válvula de retención


**SERVICE**


C INDEX	Pos.	Ident No.	Description	
U 4.20	□	549000 40300	SET OF SEALS <sup>1)</sup>	
	6	000101 40300	PUMP BODY	
	7	020001 40300	ROTOR	
	8	900583 00003	VANES (KIT) <sup>2)</sup>	
	9	000701 40300	LID	
	11	913117 90000	O-RING	
	12	913161 00000	O-RING	
	14	945371 01000	SOCKET HEAD SCREW	
	15	945376 01000	SOCKET HEAD SCREW	
	16	947628 00000	STRAIGHT PIN	
	17	945805 00000	THREADED PIN	
	18	946917 00000	STUD	
	19	917107 00000	SPRING COLLAR	
	20	947105 00000	HEX.NUT	
	21	901807 00000	SCREW	
	22	949203 00000	TOOTHED SPRING WASHER	
	23	016800 05000	CLAMPING DISC	
	24	537500 26200	VALVE	
	31	003100 40300	GASKET	
	34	965413 00000	OIL SEPARATING ELEMENT (1x) <sup>2)</sup>	
	39	945618 00000	THREADED PIN	
	47	727504 99628	BLOW-OFF VALVE	
	50	867800 99559	FLOAT	
	53	005001 40300	SIEVE	
	59	003000 40300	GASKET	
	60	503701 40300	COVER	
	61	945319 00000	SOCKET HEAD SCREW	
	62	948021 00000	SEALING RING	
	63	945320 00000	SOCKET HEAD SCREW	
	64	005000 40300	SIEVE	
	65	948227 00000	SEEGER-LOCKRING	
	66	537501 99633	NON RETURN VALVE	
68	068100 40300	SUPPORT PILLAR		
69	945623 00000	THREADED PIN		
72	941305 00000	RUBBER BUFFER		
85	016802 40300	CLAMPING DISC		
87	953125 00000	NOZZLE		
90	948402 00000	HOLLOW SCREW		
91	947902 00000	SEALING RING		
93	921500 50000	HANDLE		
95	960206 40300	COOLER		
201	002402 40300	HOUSING FOR OIL SEPARATION		
203	907302 00000	OIL SIGHT GLASS		
204	91310030100	GASKET		
205	951221 00100	LOCKING SCREW + GASKET		
206	951202 00100	LOCKING SCREW + GASKET		
208	912306 00000	CONNECTING SCREW		
210	916800 10000	COVER		
211	913116 50100	O-RING		
215	003300 10700	NOZZLE		
216	912300 00000	CONNECTING SCREW		
217	948002 00000	SEALING RING		
218	009400 19000	HOLLOW HOLDING SCREW		
219	012200 40300	PIPE		
301	947700 10000	WOODRUFF KEY		
303	948801 00000	EYE BOLT		
305	913106 00100	O-RING		
312	943402 60000	TEMPERATURE SENSOR - OPTIONAL		

C INDEX	Pos.	Ident No.	Description	
		960009 00000 960016 00100 960023 00100	BECKER LUBE M 100 (MINERAL OIL) - 1L BECKER LUBE S 100 (SYNTHETIC OIL) - 1L BECKER LUBE SL 100 (FOOD SECTOR) - 1L	
<sup>1)</sup> Set of seals - 549000 40300 - Pos.: 11, 12, 31, 59, 62, 91, 204, 211, 217, 305				
<sup>2)</sup> necessary order quantity / maintenance				

U 4.20	Variante 	Pos. <sup>2)</sup>	Bestell Nr. / Ident No. / No. Identification / No. Identificazione / No. De pedido		Beschreibung / Description / Designation / Designazione / Descripcion
① /09 - mit Gasballastventil - with gas ballast valve - avec l'este d'air - con valvola di zavoratrice - con valvula de lastre de gas		9	000702 40300	<del>000701 40300</del>	SEITENDECKEL / LID / COUVERCLE / COPERCHIO / TAPA LATERAL
		190	768717 99626		GASBALLASTVENTIL, KOMPLETT / GAS BALLAST VALVE / L'ESTE D'AIR / VALVOLA DI ZAVORATRICE / VÁLVULA DE LASTRE DE GAS
② /53 - mit Wasserkühler - with water radiator - avec radiateur d'eau - con radiatore d'acqua - con radiador de agua		95	960205 40300	<del>960206 40300</del>	KÜHLER / COOLER / REFRROIDISSEUR / RAFFREDDATORE / REFRIGERADOR
		143	012201 40300		LEITUNG / PIPE / TUYAU / CONDOTTO / CONDUCTO
		144	012202 40300		LEITUNG / PIPE / TUYAU / CONDOTTO / CONDUCTO
		146	948402 00000		HOHLSCHRAUBE / HOLLOW SCREW / VIS CREUSE / VITE ESAGONALE / TORNILLO HUECO
		147	948030 00000		DICHTRING / GASKET / JOINT / GUARNIZIONE / JUNTA
③ /53.1		66	537513 99633	<del>537504 99633</del>	RÜCKSCHLAGVENTIL / NON-RETURN-VALVE / SOUPAPE ANTI-RETOUR / VALVOLA NON RITORNO / VÁLVULA ANTIRRETORNO
		95	960205 40300	<del>960206 40300</del>	KÜHLER / COOLER / REFRROIDISSEUR / RAFFREDDATORE / REFRIGERADOR
		143	012201 40300		LEITUNG / PIPE / TUYAU / CONDOTTO / CONDUCTO
		144	012202 40300		LEITUNG / PIPE / TUYAU / CONDOTTO / CONDUCTO
		146	948402 00000		HOHLSCHRAUBE / HOLLOW SCREW / VIS CREUSE / VITE ESAGONALE / TORNILLO HUECO
④ /59		66	537511 99633	<del>537504 99633</del>	RÜCKSCHLAGVENTIL / NON-RETURN-VALVE / SOUPAPE ANTI-RETOUR / VALVOLA NON RITORNO / VÁLVULA ANTIRRETORNO
		95	960205 40300	<del>960204 40300</del>	KÜHLER / COOLER / REFRROIDISSEUR / RAFFREDDATORE / REFRIGERADOR
		126	969439 00000		ANSCHLUSS / CONNECTION / CONNEXION / CONNESSIONE / CONEXIÓN
		143	012201 40300		LEITUNG / PIPE / TUYAU / CONDOTTO / CONDUCTO
		144	012202 40300		LEITUNG / PIPE / TUYAU / CONDOTTO / CONDUCTO
⑤ /55 - mit Doppelrückschlagventil - with double-check valve - avec double valve de retenue - con doppia valvola di ritenuta - con doble válvula de retención		66	537512 99633	<del>537504 99633</del>	RÜCKSCHLAGVENTIL / NON-RETURN-VALVE / SOUPAPE ANTI-RETOUR / VALVOLA NON RITORNO / VÁLVULA ANTIRRETORNO

<sup>2)</sup> variantenabhängige Bauteile / variant-dependent components / composants variante-dependantes / componenti variante-dipendenti / componentes variante-dependientes