NEW
PRODUCTS & FEATURES

WELCH
Formerly ILMVAC
by Gardner Denver

CRVpro

Your Robust Vacuum Pump

CRVpro4,6,8

CRVpro16,24,30

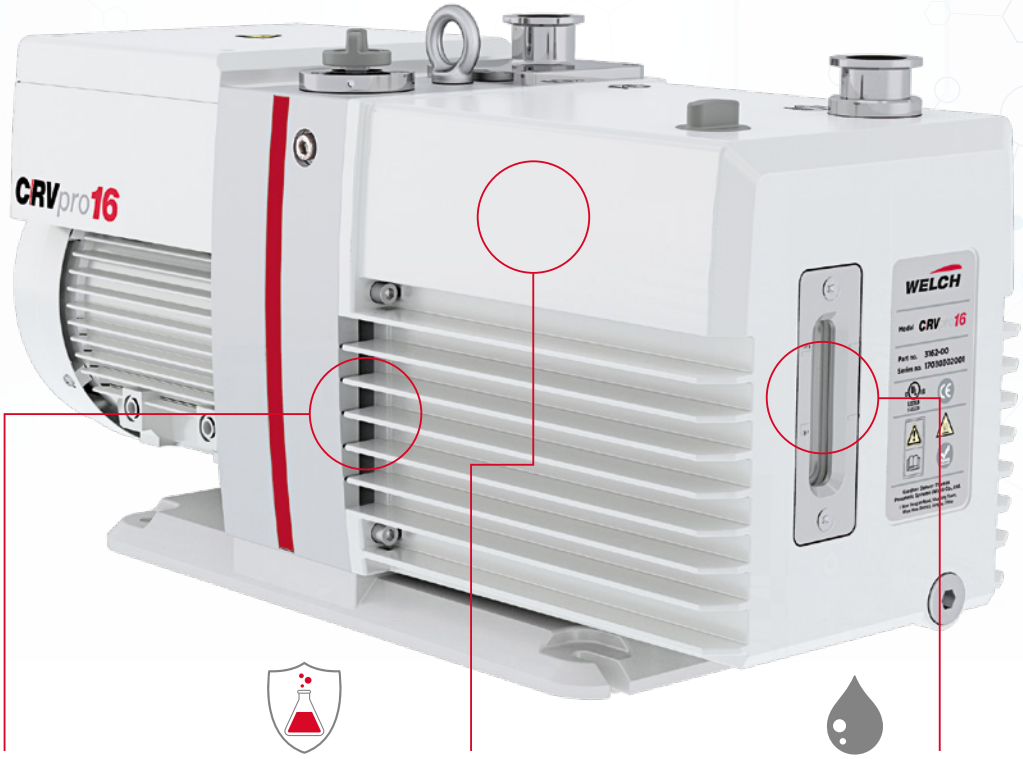
CRVpro2

www.welchvacuum.com

CRVpro

Your Robust Vacuum Pump

Discover the evolution of two-stage rotary vane vacuum pumps. Built to last. Born to perform. And designed to simplify your work. Meet the robust vacuum pump series – CRVpro.



COOL RUNNING

Enhanced air flow allows the pump to run 10°C cooler than standard rotary vane pumps. The lower temperature leads to reduced chemical activity within the pump and slows down rates of oil consumption.

INTERNAL SURFACE PROTECTION

Inside surface of the oil case has a PTFE coating and the outer surface of the pumping module has a black oxide coating. Both coatings act to slow metal corrosion and, when coupled with foreline traps, extend service interval.

LARGE OIL CAPACITY

Chemical vapors that sublime from the foreline cold trap into the pump oil are more diluted due to the larger oil capacity. This minimizes the rates of oil breakdown and reduce chemical attacks within the pump.

HIGHEST RELIABILITY | **LONG PRODUCT LIFESPAN** | **LESS MAINTENANCE**

EXTENDS SERVICE INTERVAL

YOUR BENEFITS

Highest reliability for stable operation and long product lifespan

- Reduced risk of chemical attacks and oil breakdown by diluting chemical vapors with a larger oil chamber
- Slowing down corrosion by cool running operation
- Provides a measure of protection from sublimed chemical vapors with coating on pump module and oil case

Extended oil change intervals for less maintenance costs

- Less oil consumption by cool running operation
- Extended usability of oil due to high dilution effect by a larger oil chamber

1 LOW NOISE LEVEL
Exceptionally quiet for undisturbed work.

2 FORCED OIL LUBRICATION
Ensures moving parts are bathed in fresh oil. Equilibrates temperature, minimizes oil breakdown, and prolongs mechanical life.

3 ANTI-SUCK BACK VALVE
Prevents oil from being sucked into application in the event of a power failure.

4 GAS BALLAST WITH INERT GAS OPTION
Minimizes entrained chemicals in pump oil. Protects pump from condensable liquids from application such as water, acetyl nitrile, etc.

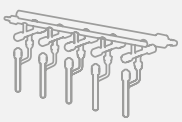
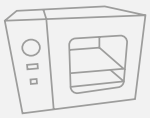
5 cUL AND CE CERTIFICATION
Compliance with local regulations and safety directives for safety operation.

6 SIZED TO FIT YOUR APPLICATION
Modern and compact design to fit different applications and performance requirements.

7 DUAL VOLTAGE MOTOR
Dual voltage motors meet IP54 standard. Motors of CRVpro 2,4,6,8 are switchable from 115V to 240V for global use excluding 100V and 200V pump versions. Each pump includes power cord suitable for country use.

8 LABYRINTH EXHAUST BAFFLING SYSTEM
To reduce oil mist emission and dampen noise level (excluding CRVpro2).

APPLICATIONS

SCHLENK LINE	FREEZE DRYER	VACUUM OVEN	GLOVE BOX	VACUUM CONCENTRATOR
				
CRVpro 2/4/6	CRVpro 2/4/6/8	CRVpro 8	CRVpro 8/16/24/30	CRVpro 6

TECHNICAL DATA

NEW

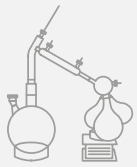
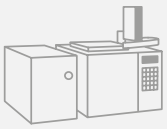
PARAMETER	UNIT	CRVpro 2	CRVpro 4	CRVpro 6	CRVpro 8	CRVpro 16	CRVpro 24	CRVpro 30
Free air displacement								
– @ 50 Hz	m^3/h (l/min)	2.5 (42)	4 (67)	6 (100)	8 (133)	18.3 (305)	26.2 (436)	33.1 (551)
– @ 60 Hz	CFM (l/min)	1.8 (50)	2.8 (78)	4.2 (118)	5.6 (158)	12.8 (363)	18.3 (519)	22.1 (627)
Pumping speed								
– @ 50 Hz	m^3/h (l/min)	2.3 (38)	3.8 (63)	5.1 (85)	7.3 (122)	16.8 (280)	24 (400)	29 (483)
– @ 60 Hz	CFM (l/min)	1.6 (47)	2.7 (77)	3.7 (105)	5.1 (143)	11.9 (336)	17 (480)	20.5 (580)
Ultimate pressure								
– Without gas ballast partial	mbar (Torr)	$3x10^{-4}$ ($2x10^{-4}$)	$5x10^{-4}$ ($4x10^{-4}$)			$3x10^{-4}$ ($2x10^{-4}$)		
– Without gas ballast total	mbar (Torr)	$3x10^{-3}$ ($2x10^{-3}$)	$2x10^{-3}$ ($1.5x10^{-3}$)			$3x10^{-3}$ ($2x10^{-3}$)		
– With gas ballast total	mbar (Torr)	$9x10^{-2}$ ($7x10^{-2}$)	$7x10^{-2}$ ($5x10^{-2}$)			$6x10^{-3}$ ($5x10^{-3}$)		
Connection flanges	DN	16 KF				25 KF		
Ambient temperature	°C	10–40						
Noise level (50 Hz)	dB (A)	≤50				≤55		
Oil capacity	ml	450	1150		1000	2400	2200	2100
Motor speed	rpm 50/60 Hz	1440/1720	1450/1740			1450/1750		
Motor power	kW 50/60 Hz	0.29/0.3	0.37/0.4			0.7/0.85		
Weight	kg	15	21	22	22.5	37	38.5	39.5
Dimensions L x W x H	mm	384/138/211*	463/157/230*			569/206/289		

* Without handle.

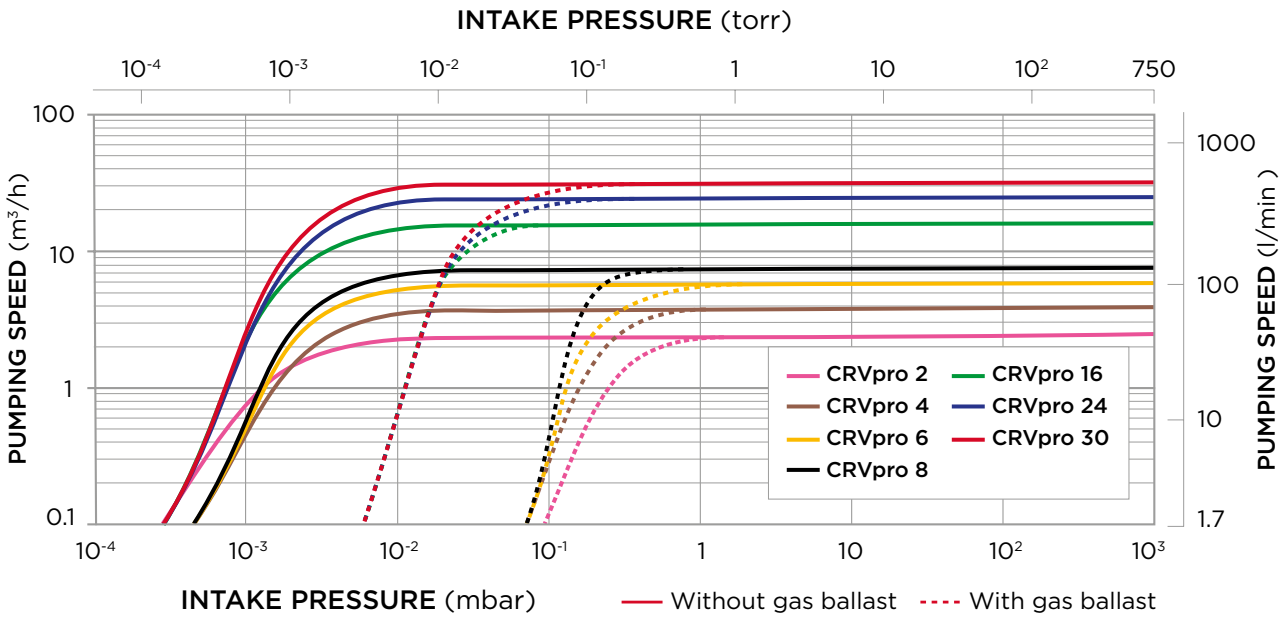
ORDERING INFORMATION

DESCRIPTION
220-240 V / 50 Hz; 230 V / 60 Hz, 115 V / 60 Hz, 1 phase motor with line cord EU-plug (CEE 7/4), line cord UK-plug (BS1363), line cord US-plug (NEMA 6-15)**
220-240 V / 50 Hz; 230 V / 60 Hz, 1 phase motor with line cord EU-plug (CEE 7/4), line cord UK-plug (BS1363)
220-240 V / 50 Hz; 230 V / 60 Hz, 1 phase motor with line cord EU-plug (CEE 7/4), line cord UK-plug (BS1363) with PFPE oil filling
115 V / 60 Hz, 1 phase motor with line cord US-plug (NEMA 5-15)
190/380 V / 50 Hz; 280-230/460 V / 60 Hz, 3 phase motor, requires hard wiring with appropriate cable and suitable motor protection
Service kit for overhaul servicing – contains wearing parts; vanes and springs, plus O-rings, gaskets and shaft seals

Every pump is supplied complete with Directorr™ Premium vacuum pump oil, centering rings, clamping rings and motor overload protection. Ready for use after oil filling.

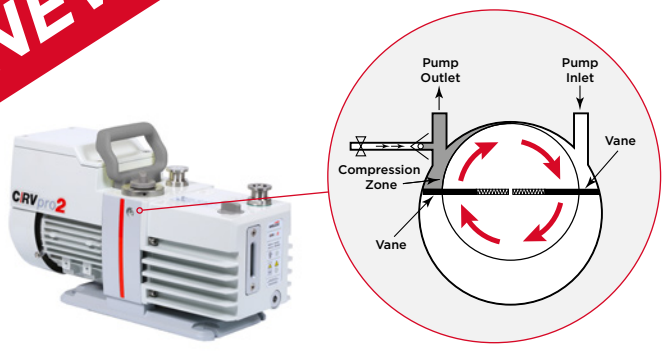
SHORT PATH	HVAC	MASS SPECTROMETER	INDUSTRIAL APPLICATIONS
			
CRVpro 8/30	CRVpro 8	CRVpro 16/24/30	CRVpro 4/6/8/16/24/30

PERFORMANCE



NEW

NEW CRVpro GAS BALLAST SYSTEM



Port enables use of dry inert gas for gas ballast

It's important to use the gas ballast function when pumping condensable vapours to ensure that they don't condense inside of the pump and cause oil degradation.

As well as having a standard gas ballast valve for operation with atmospheric air, all CRVpro now come with the option to use dry inert gas for more efficient gas ballast performance. Use adapter kit to facilitate inert gas connection.

DESCRIPTION	ORDER NO.
Inert gas ballast adapter kit	S3256-99

	CRVpro 2	CRVpro 4	CRVpro 6	CRVpro 8	CRVpro 16	CRVpro 24	CRVpro 30
	3022-00	3042-00	3062-00	3082-00	–	–	–
	–	–	–	–	3162-00	3242-00	3302-00
	–	–	3062-03	–	3162-03	–	3302-03
	–	–	–	–	3161-00	3241-00	3301-00
				3087T-01	3167T-01		3307T-01
	S3344-99	S3077-99	S3078-99	S3079-99	S3193-99	S3194-99	S3195-99

** CRVpro 2,4,6,8 are switch selectable between 220-240 V / 50 Hz; 230 V / 60 Hz and 115 V / 60 Hz operation. CRVpro 16, 24, 30 models are not switch selectable.

COMPLETE PUMP PACKAGES

330070

330074

330080

PACKAGE	DESCRIPTION	CRVpro 2	CRVpro 4	CRVpro 6	CRVpro 8
CRVpro starter package	CRVpro with oil mist separator AKD 16, 2-way ball valve, hose connector DN 16KF-10/8 mm, vacuum hose (1,5 m), oil change set	330070	330071	330072	330073
CRVpro premium package	CRVpro with digital vacuum gauge PIZA 111 cr-gold, oil mist separator AKD 16, 2-way ball valve, T-piece, hose connector DN16KF-10/8 mm, vacuum hose (2,5 m), oil change set	330077	330074	330075	–
CRVpro Schlenk line package	CRVpro with oil mist separator AKD 16, oil change set, 2-way ball valve, KFG16 glass cold trap, adapters and connecting parts	–	330080	–	–

NEW

700621

NEW WELCH FOM PROFESSIONAL OIL MIST FILTER WITH OIL DRAINBACK

- **Coalesced oil drains back into pump oil case to reduce oil consumption and enables a clean work space**
- **Exhaust can be directed into existing fume hood**
- **Reduces pump noise**
- **Filters to 0.3 micron particle size**

PREMIUM VACUUM PUMP OIL

800995-01

800995-05

A triple-distilled hydrocarbon oil using severely hydrotreated base stock is designed to resist breakdown at higher RPMs and operating temperatures of direct-drive vacuum pumps. Premium oil enables direct-drive vacuum pumps to maintain the highest vacuum performance over time.

- **Low vapor pressure**
- **Designed for high RPM direct drive vacuum pumps**
- **No additives or inhibitors to react with user chemistry**
- **Recommended for Welch direct-drive vacuum pumps**

PUMP OIL CONDITION COLOUR Good Oil Bad Oil (Possible Pump Damage)

ORDERING INFORMATION			
Size	1 litre	5 litres	20 litres
Order No.	800995-01	800995-05	800995-20

For other vacuum pump oils, e.g PFPE oil, please see our website www.welchvacuum.com

ACCESSORIES

INLET AND EXHAUST

705183 (INLET)

700145 (INLET)

700435 (INLET)

700621 (EXHAUST)

320015 (EXHAUST)

700010 (EXHAUST)

DESCRIPTION	ORDER NO.	
INLET	**CRVpro 2, 4, 6, 8**	**CRVpro 16, 24, 30**
ADT fine vacuum adsorption trap. With a very high affinity to Hydrocarbons to eliminate oil back-streaming	(ADT16) 705183	(ADT25) 705184
PT separator to prevent the suction of condensates. Large collection capacity with sight glass for level monitoring	(PT16) 700144	(PT25) 700145
ASF particle filter – for non-chemical applications only	(ASF10) 700435-01	(ASF20) 700435
EXHAUST	**CRVpro 2, 4, 6, 8**	**CRVpro 16, 24 ,30**
FOM professional oil mist filter with oil drainback, for excellent elimination of oil mist	(FOM16) 700621	(FOM25) 700622
AKD oil mist separator with horizontal arrangement and glass jar for easy capture of oil mist	(AKD16) 320015	–
OME economical oil mist filter with clear housing for easy oil level monitoring	(OME10/16) 700010	–

APPLICATION KITS

330031

330044

330051

330053

330055

DESCRIPTION	ORDER NO.	
	CRVpro 2, 4, 6, 8	**CRVpro 16, 24, 30**
Freeze Dryer Adapter kit, with oil mist separator AKD, 2-way ball valve, 1.5m PVC vacuum hose, hose nozzle connectors, adapters, clamps and centring rings	(DN16) 330031	–
Vacuum Concentrator Adapter kit, with 1.5m PVC vacuum hose, hose nozzle connectors, adapters, clamps and centring rings	(DN16) 330044	–
Vacuum Measurement kit, with digital vacuum gauge PIZA 111 cr-gold, stand for gauge, T-piece, clamps and centring rings	(DN16) 330051	(DN25) 330052
Vacuum Control kit, with digital vacuum gauge MRV 100 & PIZA 111 cr-gold sensor, T-piece, solenoid control valve, clamps and centring rings	(DN16) 330053	(DN25) 330054
Vacuum Pump Protection kit, KFG16 glass cold trap with dewar vessel for liquid nitrogen, 500mm flexible Stainless Steel hose, clamps and centring rings. Pre-pump protection for comprehensive trapping of vapours and aggressive media. For use with Dry Ice, additional screen accessory 828944 is required	(DN16) 330055	–

HOSE AND CONNECTIONS

701011

701151

710755

701401

710213

DESCRIPTION	ORDER NO.	
	CRVpro 2, 4, 6, 8	**CRVpro 16, 24, 30**
KF Clamping ring, Aluminium	(DN16) 701011	(DN25) 701013
KF External centring ring, Aluminium with FKM O-ring	(DN16) 701151	(DN25) 701153
KF Stainless steel flexible hose, 1500mm	(DN16) 710755	(DN25) 710756
KF Reducing adapter DN25/16, for inlet/exhaust	701401	–
Ground Cone adapter flange for Schlenk line NS14/23 – DN16KF	710213	–

Visit www.welchvacuum.com for our complete range of vacuum hardware

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