

1. Peristaltic pump CHEM-AD® VPP / VPP-E / VPP-S

1.1 CHEM-AD® VPP:

Part-No.: W3T164502

- Dosing capacity adjustment over inner potentiometer
- Control by switching the operating voltage
- Dosage capacity up to 4 l/h
- Possibility to retrofit a through flow control unit





1.2 CHEM-AD® VPP-E:

Part-No.: W3T164503

- Microprocessor controlled peristaltic pump
- Dosing capacity adjustment over inner potentiometer
- Input for carboy empty contact (fail safe)
- Potential free relais contact output (changeover)
- Contact input (potential free) or 4-20mA Input (elective by a jumper)
- Quick suction button
- ON / OFF button
- Dosage capacity up to 4 l/h
- Possibility to retrofit a flow check unit



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ISS:7 LAE4820	ISS: 8 LAE5058	ISS: 9 LAE5265	ISS: 10 LAE6910.001
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1.3 CHEM-AD® VPP-S:



Part-No.: W3T166567

- Microprocessor controlled peristaltic pump
- Stepper motor
- 2-line Display
- Operation over membrane keyboard
- Input for carboy empty contact (fail safe)
- Potential free relais contact output (changeover)
- 9 selectable operation modes
(Extern, 0-20 mA, 4-20 mA, 20-0 mA, 20-4 mA, x-y mA, Pulse, Charge, Flockulation with 2 parameter settings)
- Intuitive menu guidance
- Quick suction button
- ON / OFF button
- Wide range Input AC 100-240 V 50/60 Hz
- Dosage rate: Range Standard: up to 4 l/h
 Range High: up to 10 l/h
- Possibility to retrofit a flow check unit



Scope of delivery for CHEM-AD® VPP / VPP-E / VPP-S :

- Peristaltic pump without pump hose
- Packing with type label
- Trilingual operating manual (D/E/F)
- Mounting material (4x screw, disks, dowels and cover caps)
- Power cable with plug (length 2m)

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1.4 CHEM-AD[®] VPP-E with flow check unit:

Part-No.: W3T160724

- Functions identical with VPP-E (siehe 1.2)
- Preassembled flow check unit



Scope of delivery for CHEM-AD[®] VPP-E with flow check unit:



- Peristaltic pump VPP-E
- 2x dosing capacity kit 150 (8...150 ml/h)
- Packing with type label
- Operating manual VPP/VPP-E (D/E/F)
- Additional operating manual for buffer application (D/E/F)
- Power cable with plug (length 2m)
- Preassembled flow check unit with installation instruction
- Mounting material (4x screw, disks, dowels and cover caps)
- Applicator (W3T162574)
- Bottom priming valve (W3T160606)
- 4 m PVC-tube, clear; ID 4x1 mm (W2T505520)
- **Jumper 1+3 must be mounted (25% rotation speed)**

Rotation speed can be limited by jumper settings:

Jumper 1+4 = 50 % of maximum speed rotation

Jumper 1+3 = 25 % of maximum speed rotation

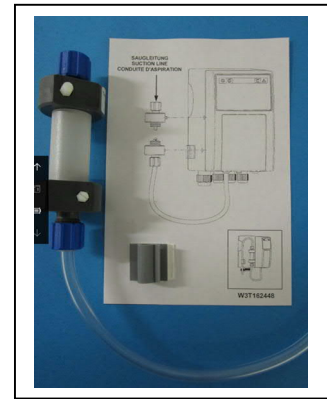
Speed rotation additionally adjustable by potentiometer.

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Flow check unit

Part-No.: W3T162443

- Preassembled flow check unit
- Installation instruction
- Hose clamb
- For retrofitting on all peristaltic pumps since 01/2004



2. Necessary accessories

Dosage capacity kit (Standard)

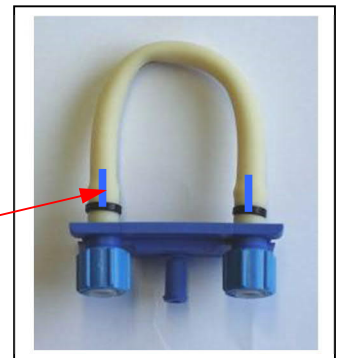
composed of: pump hose, hose clamb and hose tie,
hose material Pharmed, connection ID 4x1 mm
(dosage capacity kit 150 without hose tie)



	Dosage capacity [ml/h] **	max. back pressure [bar]	Colour identification	Part-No:
Dosage capacity kit 150	8...150 (375)	3,0	blue	W3T160729
Dosage capacity kit 600	15...600 (1500)	2,5	black	W3T164495
Dosage capacity kit 2000	45...2000 (5000)	1,5	green	W3T164496
Dosage capacity kit 4000	150...4000 (10000)	1,5	red	W3T164497
Dosage capacity kit 7000*	150...7000	1,5	yellow	W3T164724

* Dosage capacity kit 7000 only for VPP-E

** Figures in brackets only for Chem-Ad VPP-S at Range: High

Colour identification



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Applicable for following typical chemicals:

- Hydrochloric acid (up to 33%)
- pH correcting solutions
- Sodium Chlorite solutions (up to 9%)
- Flocculation agents (PAC)
- Brine solutions (up to saturated brine)
- Hypochlorite solutions (up to 15%)

Aromatic substances on request

Note: Chemical resistance against other chemicals (see chapter 7)

Dosage capacity kit for scents:

	Dosage capacity [ml/h]	max. back pressure [bar]	Part-No.:
Dosage capacity kit 2000 VT	45...2000	No back pressure permissible	W3T168658
Dosage capacity kit 2000 VT	45...2000	1,5	W3T168659



Connection to hoses ID 4x1 mm

Note: No warranty on hoses for resistance against different scents.



W3T168658 no fixture on pressure side

Note: Some scents cause a swelling of the hose

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3. Optional Accessories

Suction lance VPP 475/725 and bottom priming valve

Consisting of:

PVC suction lance with check valve; \varnothing 32 mm;
 With intake sieve; with empty tank alarm;
 5 m connection cable with multicore cable ends
 Sealing: FPM
 Ball: Ceramic
 Hose connection parts (PVDF) for ID 4x1 mm, ID 6x1 mm, ID 6x3 mm



Length [mm]	Part-No.:
475	W3T160612
725	W3T160613

Note: Connection only at Chem-Ad VPP-E and Chem-Ad VPP-S possible!

Adapter cap

Soft PVC, for suction lance (\varnothing 32 mm)

Part-No.:	W3T164389
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Note: Usage of suction lance VPP475 in combination with standard carboys (30 l) the adapter cap is necessary!



Plug

Soft PVC, for suction lance (\varnothing 32 mm)

Part-No.:	W3T164739
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Note: Usage of suction lance VPP725 in combination with standard carboys (60 l) the adapter cap is necessary!

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Bottom priming valve

Consisting of:

PVDF sink weight, intake sieve, check valve

Sealing : FPM (Viton)

Ball: Ceramic

Hose connection parts ID 4x1 mm
(PVDF cone seat)

Teile-Nr.: W3T160606



Applicator

Consisting of:

Check valve (PVC) without spring

Sealing : FPM (Viton)

Ball. Ceramic

Hose connecting parts ID 4x1 mm



Thread connection:

G 1/2"A- DIN ISO228/1 / R 1/2 DIN2999

Part-No.: W3T162406



Attention: Mounting only in vertical position to the top!

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4. Spares

Rotor

Colour: blue; Spring material: Hastelloy

Part-No.: W3T171981



Rotor cover

Colour: blue

Part-No.: W3T164505



Pump head

Colour: blue

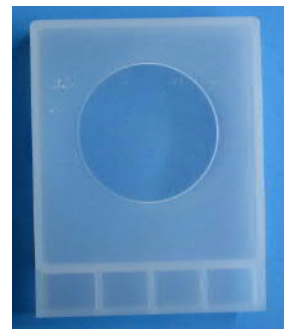
Part-No.: W3T171980





Pump head cover

Colour: white-transparent

Part-No.: W3T171982



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Front housing cover

Colour: blue

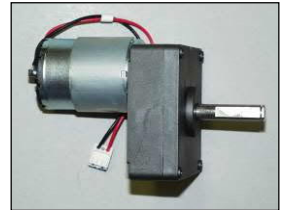
Part-No.: W3T164506



Motor gearbox unit

(only for Chem-Ad VPP / VPP-E)

Part-No.: W3T164504



Motor VPP/VPP-E

(without gearbox; incl. cabel and ker)

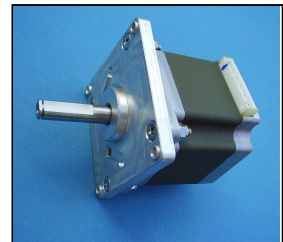
Teile-Nr.: W3T193835



Stepper motor with adapter plate

(only for Chem-Ad VPP-S)

Part-No.: W3T172505





Union nut

Material: PP

Colour: Blue

Part-No.: W3T160727



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Hose locking ring

Asymmetric shape for different hose tolerances

Material: PVDF

Colour: nature-white



Part-No.: W3T160728

Hose connector

straight, PVDF



Part-No.: W3T166721

Especially for dosage capacity kit 2000 VT without fixture on the pressure (AAE4726)

Printed circuit board

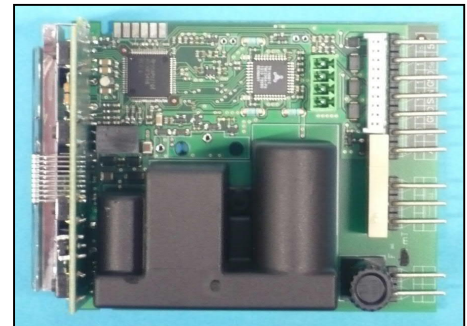
Pump type	Part-No.:
VPP	W3T164507
VPP-E	W3T164508
VPP-S	W3T172506





W3T164507



W3T164508

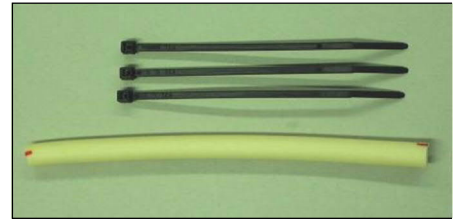


W3T172506

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Pump those (Standard)

Hose set composed of:
Hose and 3 hose ties
(pump hose 150 without hose tie)



	Dosage capacity [ml/h] **	max. back pressure [bar]	Colour identification	Part-No.:
Pump hose 150	8...150 (375)	3,0	blue	W3T160730
Pump hose 600	15...600 (1500)	2,5	black	W3T164498
Pump hose 2000	45...2000 (5000)	1,5	green	W3T164499
Pump hose 4000	150...4000 (10000)	1,5	red	W3T171983
Pump hose 7000 *)	150...7000	1,5	yellow	W3T164725



* Dosage capacity kit 7000 only for VPP-E

** Figures in brackets only for Chem-Ad VPP-S at Range: High

Pump hose for scents

	Dosage capacity [ml/h]	max. back pressure [bar]	Part-No.:
Pump hose 2000VT L = 178 mm (used in W3T168658)	45...2000	No back pressure permissible	W3T168660

Note: No warranty on hoses for resistance against different scents.



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5. Documentation

	VPP / VPP-E	VPP-S
Operating manual: trilingual (D/E/F)	W3T170817	W3T168785
Declaration of conformity: trilingual (D/E/F)	MAE1083	MAE1405
Product line sheet D	WT.490.250.500.ED.PS.1010	
Product line sheet E	WT.490.250.500.EE.PS.1010	
Technical data sheet D	WT.490.250.500.ED.DS.0910	
Technical data sheet E	WT.490.250.500.EE.DS.0910	

6. Technical data

	VPP	VPP-E	VPP-S
Electrical supply	AC 230 V (+/-10%) 50/60Hz or 24 V AC/DC	AC 230 V (+/-10%) 50/60Hz	AC 100-240 V (+/-10%) 50/60Hz
Power consumption	max. 15 W		max. 18 W
Power supply fusing	0,2 A MT		2,0 A MT
Enclosure	IP 65		
Duty cycle	100% ED		
Storage / operation temperature	5...45°C		
Suction height	max. 2 m water height (bei 20°C)		
Viscosity	< 850 mPas		
Dimensions	95x175x130 mm (BxHxT)		
Weight	ca. 1,2 kg		ca. 1,8 kg

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7. Chemical resistancy of pump hoses

All details have to be understood as guaranteed properties of material for the simplification of the hose choice but under no circumstances only as rough reference values of the hose manufacturer. All details are based on test results, which were found out under certain prerequisites, last information about the attainable life time of the hoses yields practical use only. All details are liability-free.

It is recommended to insert several possible hose samples for at least 48 hours at the desired working conditions, particularly temperature and concentration to the promoting medium with the table one or if necessary after a rough preselection. At noticeable weight, lengths, diameter or elasticity changes the hose material is unsuitable for the promoting medium.

Note: Parameters like temperature, pressure, concentration and additives can influence the material resistance fundamentally. In addition, mixtures of the listed chemicals also influence the resistance of the hose material.

Note: The tables treat only the chemical resistance of the pump hoses. It has to be checked at support of food whether the corresponding pump hose has a food admittance.



Service interval for pump hoses:

The pump hose has to be changed:

2. after **1000 hours** running period

or

2. after a period of 1 year (independent whether the pump was running or not)

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8. Resistancy of the hose material (Standard)

Chemikalie / Materialkennung	PH (13)
Acetamid, 67% in W.	2
Acetat-Lösungsmittel	2
Adipinsäure, 100% in Alk.	2
Alaun: 5% in W.	1
Alkohole im allgemeinen	1
Aluminiumchlorid. 53% in W.	1
Aluminiumhydroxid, 2% in W.	1
Aluminiumsalze	1
Aluminiumsulfat. 50% in W.	1
Ameisensäure, 25% in W.	1
Ameisensäure, 40-50% in W.	2
Ameisensäure, 98% in W.	2
Ammoniak wasserfreie Flüssigkeit	1
Ammoniumacetat. 45% in W.	1
Ammoniumhydroxid, 5-10% in W.	1
Ammoniumhydroxid. 30% in W.	1
Ammoniumkarbonat. 20% in W.	1
Ammoniumpersulfat, 30% in W.	1
Ammoniumsälze	1
Ammoniumsulfat. 30% in W.	1
Amylacetat	2
Antimonate	1
Arsenhaltige Salze	1
Bariumhydroxid 5% in W.	1
Bariumkarbonat, 1% in W.	1
Benzoessäure	2
Benzylalkohol	1
Bier	1
Blausäure, Cyanwasserstoff	1
Bleiacetat, 35% in W.	1
Bleichflüssigkeit, 22% in W.	1
Bleisälze	1

Chemikalie / Materialkennung	PH (13)
Borax, 6% in W.	1
Borsäure. 4% in W.	1
Butadien	1
Buttersäure	2
Butylacetat	2
Calciumcarbonat, 25% in verdünnten Säuren	1
Calciumchlorid, 30% in W.	1
Calciumhydroxid, 10% in Glycetol	1
Calciumhypochlorit, 20% in W.	1
Calciumnitrat, 55% in W.	1
Calciumsalze	1
Calciumsulfat, 0,2% in W.	1
Chloressigsäure, 20% in W.	2
Chromsäure, 10-20% in W.	1
Cresylsäure	2
Dibutylphtalat	1
Diethylamin	1
Diethylenglycol	1
Dimethylformamid	2
Diocetylphthalat	1
Eisen(II)-chlorid 40% in W.	1
Eisen(II)-sulfat. 5% in W.	1
Eisen(III)-chlorid. 43% in W.	1
Eisen(III)-nitrat, 60% in W.	1
Eisen(III)-sulfat, 5 % in W.	1
Essig	1
Essigsäure (Eisessig, 100%)	2
Essigsäure 10% in W.	1
Essigsäure 50-60% in W.	2
Essigsäureanhydrid	1
Ethylacetat	2
Ethylakohol	1

Chemical resistance:

- 1 = very well
- 2 = well
- 3 = moderate
- 4 = unapplicable



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Chemikalie / Materialkennung	PH (13)
Ethylenchlorhydrin	1
Ethylenglycol	1
Ethylenoxid	1
Fruchtsaft	1
Gallussäure, 17% in Aceton	2
Galvanisierlösungen	1
Gelatine	1
Gerbsäure, 75% in W.	2
Glucose, 50% in W.	1
Glycerin	1
Glykolsäure, 70% in W.	2
Harnsäure	1
Harnstoff, 20% in W.	1
Hydrochinon, 7% in W.	2
Hydroxybernsteinsäure, 36% in W.	1
Hypochlorige Säure, 25% in W.	1
Iod, 50 ppm in W.	1
Isopropylacetat	2
Kaliumcyanid, 33% in W.	1
Kaliumdichromat, 5% in W.	1
Kaliumhydroxid, <10% in W.	1
Kaliumiodid, 56% in W.	1
Kaliumkarbonat, 55% in W.	1
Kaliumkarbonat, 55% in W.	1
Kaliumpermanganat, 6% in W.	1
Kalziumsalze	1

Chemikalie / Materialkennung	PH (13)
Kupfer(II)chlorid, 40% in W.	1
Kupfer(II)nitrat, 70% in W.	1
Kupfer(II)sulfat, 13% in W.	1
Lacklösungsmittel	2
Lösungsmittel für Fotografie	2
Magnesiumchlorid, 35% in W.	1
Magnesiumhydroxid, 10% in verd. Säure	1
Magnesiumkarbonat, 1% in W.	1
Magnesiumnitrat, 50% in W.	1
Magnesiumsulfat, 25% in W.	1
Maissirup	1
Mangansalze	1
Melasse	1
Methanol	1
Methylacetat	2
Milch	1
Milchsäure, 3-10% in W.	1
Milchsäure, 85% in W.	2
Natriumacetat, 55% in W.	1
Natriumbenzoat, 22% in W.	1
Natriumbikarbonat, 7% in W.	1
Natriumchlorat, 45% in W.	1
Natriumchlorid, 20% in W.	1
Natriumcyanid, 30% in W.	1
Natriumfluorid, 3% in W.	1
Natriumhydroxid, 10-15% in W.	1
Natriumhydroxid, 30-40% in W.	1
Natriumhypochlorit, 12,2% in W.	1
Natriumhypochlorit, 5,5% in W.	1
Natriumkarbonat, 7% in W.	1
Natriumnitrat, 3,5% in W.	1
Natriumsalze	1
Natriumsulfate, 3,6% in W.	1
Natriumsulfid, 13% in W.	1
Nickelchlorid, 40% in W.	1

Chemical resistance:

- 1 = very well
- 2 = well
- 3 = moderate
- 4 = unapplicable

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 evoqua WATER TECHNOLOGIES		Evoqua Water Technologies GmbH	
FIRST ANGLE PROJECTION 		DIMENSIONS IN mm	
DESIGN CENTRE: GER		SHEET 31 OF 32	
REF: MAE1084	ISS: 11	TOLERANCES TO ISO 2768 - m	A4 © 2014
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Chemikalie / Materialkennung	PH (1,3)
Nickelnitrat, 75% in W.	1
Nickelsalze	1
Nickelsulfat, 25% in W.	1
Oleum, 25% in W.	1
Ölsäure	3
Oxalsäure, 12% in W.	2
Perchlorsäure, 67% in W.	1
Phenol, 5-10% in W.	1
Phenol, 91% in W.	1
Phosphor(III)chlirdsäure	2
Phosphorsäure, <10% in W.	1
Phosphorsäure, 25% in W.	1
Phosphorsäure, 85% in W.	1
Phthalsäure, 9% in Alk.	1
Phthalsäurehydrid, 9% in Alk.	1
Propylenglycol	1
Quecksilber	1
Quecksilber(II)-chlorid, 6% in W.	1
Quecksilber(II)-cyanid, 8% in W.	1
Quecksilbersalze	1
Reinigungslösungen	2
Salicylsäure, 1% in W.	1
Salpetersäure, 10% in W.	1
Salpetersäure, 35% in W.	1
salpetrige Säure, 10% in W.	1
Salzsäure	1
Salzsäure, 37% in W.	2
Schwefeldioxid, nasses Gas	1
Schwefeldioxid, trockenes Gas	1
Schwefelsäure, 10% in W.	1
Schwefelsäure, 30% in W.	1
Schweflige Säure	1

Chemikalie / Materialkennung	PH (1,3)
Seifenlösungen	2
Silbernitrat, 55% in W.	1
Thionylchlorid	1
Titansalze	1
Trichloressigsäure, 90% in W.	2
Tricresylphoshat	1
Trinatriumphosphat	1
Vinylacetat	2
Wasser, destilliert	1
Wasser, entionisiert	1
Wasserstoffperoxid, 3% in W.	1
Wasserstoffperoxid, 10% in W.	1
Wasserstoffperoxid, 30% in W.	1
Wasserstoffperoxid, 90% in W.	2
Weinsäure, 56% in W.	1
Zinkchlorid	1
Zinksalze	1
Zinnchlorid, 45% in W.	1
Zinnsalze	1
Zinntetrachlorid, 50% in W.	1
Zitronensäure, 10-20% in W.	1

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