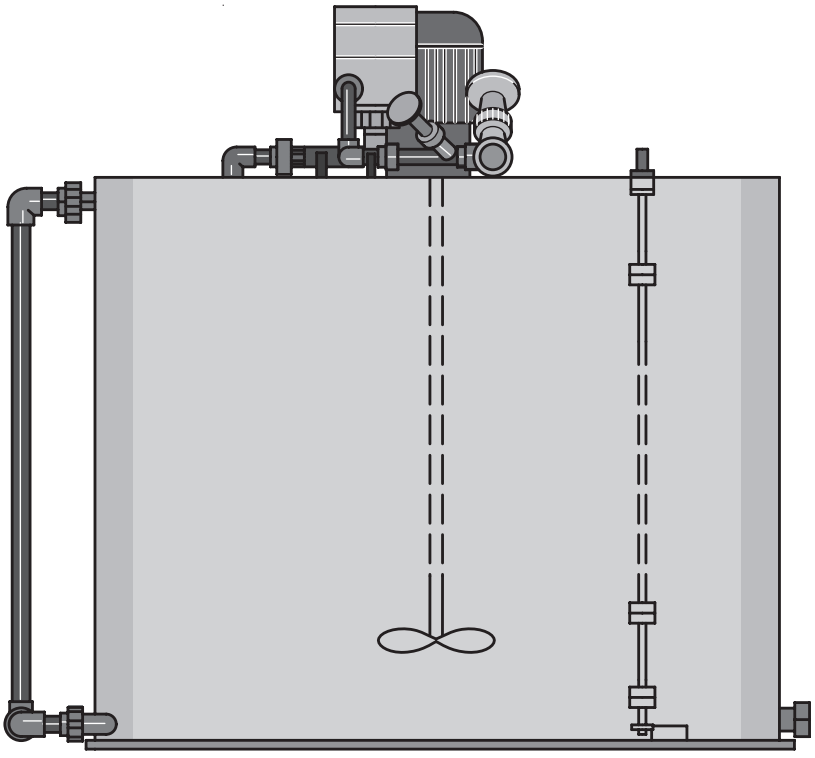
Operating Instructions Manual

Ultromat® MT

Single compartment system
for polyelectrolyte preparation



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Please read through these operating instructions carefully. Do not discard.
The guarantee is void if equipment is subject to misuse.

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Publishing details

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Operating Instructions Manual
Ultromat® MT
Single compartment system for polyelectrolyte preparation

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Subject to technical changes.

Contents

1 Transport and storage of the system

The Ultromat® MT may only be moved when empty, using suitable hoisting and lifting gear.

The tank wall must not be subject to localised loads during transportation.

Avoid extreme vibration and knocking at all costs.

If using forklift trucks, use long forks which extend to the full depth of the tank.

If using a crane to transport the equipment, attach transport slings to lifting eyes where present such that shear forces are completely avoided. Any shear forces occurring during transportation of the tank will cause damage to the tank walls and welded seams.

The admissible ambient temperature for transportation and storage of the equipment is -5 °C to +50 °C.

The equipment should be stored in a place which is protected from rain, damp (no condensation) and direct sunlight and which is dust-free as far as possible.

Direct sunlight will cause colour fading and distortion and/or cracking of the material used.

2 Use

The Ultromat® MT is a polyelectrolyte preparation system for use wherever powdered polymers are used.

3 Technical data

Type	Dimension (mm)	Water intake	Shipping weight	Overflow/ drainage connection	Volume	Stirrer assembly
MT 140	D = 640 Ht = 700 H = 1020	DN 20	85 kg	DN 20	140 Litre	0.18 kW 750 rpm
MT 250	D = 640 Ht = 1100 H = 1375	DN 20	103 kg	DN 20	250 Litre	0.55 kW 750 rpm
MT 500	D = 850 Ht = 1000 H = 1300	DN 20	138 kg	DN 20	500 Litre	0.75 kW 750 rpm
MT 1000	D = 1250 Ht = 1000 H = 1340	DN 25	178 kg	DN 25	1000 Litre	1.1 kW 750 rpm
MT 2000	D = 1450 Ht = 1500 H = 1840	DN 32	209 kg	DN 32	2000 Litre	2.2 kW 750 rpm
MT 3000	D = 1750 Ht = 1600 H = 2000	DN 40	250 kg	DN 40	3000 Litre	2.2 kW 750 rpm

D = Diameter of round tank
Ht = Height of tank
H = Total height

4 Function description

4.1 Subassemblies

The Ultromat® MT consists of:

- Single compartment PP tank
- Three level float switch
- Water pipe work with wetting cone and injector
- 750 rpm stirrer

4.2 Description of components:

4.2.1 Single compartment tank

Sealed PP tank with stirrer cross members, overflow, drainage and sampling connections.

The tank's inspection opening is fitted with a permanently attached screw-on cover.

4.2.2 Float switch

A float switch with three contacts and three floats monitors the liquid level in the tank.

- Max. contact (opens when the level exceeds maximum)
- Min. contact (closes when the level falls below minimum)
- Dry run contact (closes when the level falls below minimum)

4.2.3 Water apparatus

The water required by the system enters via the water pipe work, which comprises the following parts:

- Regulating valve
- Wetting cone
- Injector

4.2.4 Stirrer

The Ultromat® MT is fitted with an electronic stirrer (230/400 V, 750 rpm) (see data sheet in appendix).

4.3 System function

The Ultromat® MT is a polyelectrolyte batching station for batching powdered polyelectrolytes. The powder is added manually. Batching concentrations can be up to 0.5 %. Maturing time depends on the actual product but is generally around 1 hour.

The system, which is designed for compactness, is supplied fully assembled. The user needs only to connect to the power and water supplies. The stirrer assembly is switched on and off by an external switch. An external motor protection switch should be fitted upstream from the equipment for added safety.

4.4 Preparing a new batch

The first step is to measure the polyelectrolyte powder for the batch.

Calculating the powder quantity:

Polymer for one batch (kg) = volume required (l) x solution concentration (%) / 100.

Example:

Volume required: 100 litre

Solution concentration: 0.5 %

Polymer for one batch (kg) = 100 (l) x 0.5 / 100 / 0.5 kg.

Function description

Turn on the water supply at an external valve. Adjust the intake quantity and the liquid level in the wetting cone via the regulating valve. The water level in the wetting cone should be approx. 3 cm. higher than the inner cone. To prevent blockages, ensure that water is flowing before pouring in the powder.

Pour the powder slowly and continuously onto the sloping wall of the water cone. An injector below the wetting cone sucks in the wetted powder particles and transports them to the Ultromat® MT tank. The injector ensures optimum wetting while preventing powder from adhering to the injector or forming lumps in the tank.

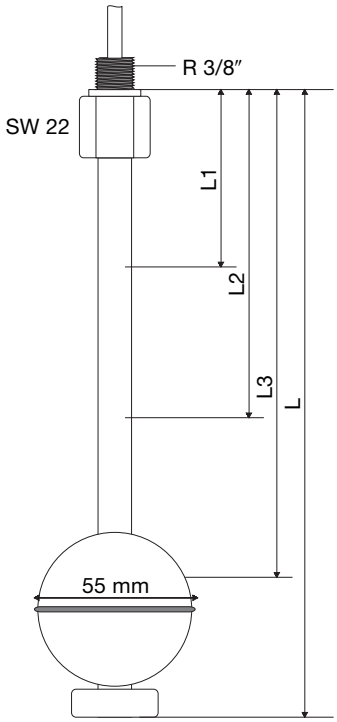
After pouring in the weighed powder quantity, add more water until the tank is full. Then turn off the valve.

After the retention period (30-90 minutes) the stirrer assembly can be switched off at the external switch. The resulting polymer solution is now ready to be pumped to its application via a metering pump.

5 Data sheet, float switch

5.1 Data sheet, float switch in VA for Ultromat® MT

- Solenoid float switch with stainless steel ball float
- Switch function: pulse contact
- External thread: 3/8"
- Enclosure rating: IP 65
- Cable: NYLHY 0.75 mm^2
- Minimal density: >0.8 kg/dm^3
- Maximum temperature: 90 °C
- Installed length: vertical ± 30 °
- Material: stainless steel 1.4571
- The contacts are designed as pulse contacts,
  i.e. the circuit is made when the float is directly above the contacts.



Float switch

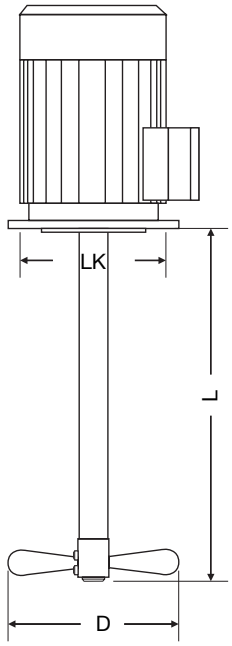
Technical data

Article number:	1017419	1003694	1017420	1017420	700377
for Ultromat:	MT 140	MT 250	MT 500	MT 1000	MT 2000
Tank height:	700 mm	1100 mm	1000 mm	1000 mm	1500 mm
Type:	ERV 3/8 VSSS-	ERV 3/8 VSSS-	ERV 3/8 VSSS-	ERV 3/8 VSSS-	ERV 3/8 V
	L650 VA	L1050 VA	L950 VA	L950 VA	L1445 VA
L1 (max):	150	100	150	150	150
L2 (min):	480	900	700	700	1000
L3 (dry):	600	1000	900	900	1390
L (total):	650	1050	950	950	1455
Material:	1.4571	1.4571	1.4571	1.4571	1.4571
Switch load:	100 VA/250 V= 2A	100 VA/250 V= 2A	100 VA/250V= 2A	100 VA/250 V= 2A	100 VA/250 V= 2A
Switch function:	N/O	N/O	N/O	N/O	N/O
Cable length:	3 m	3 m	3 m	3 m	3 m
Float shape:	Ball	Ball	Ball	Ball	Ball
Enclosure rating:	IP 65	IP 65	IP 65	IP 65	IP 65

6 Data sheet, stirrer assembly

6.1 Stirrer assemblies for Ultromat® MT

- 750 rpm at 50 Hz
- 900 rpm at 60 Hz
- Enclosure rating: IP 65
- Insulation class F, drip proof insulation
- Material, shaft: 1.4404
- Material, stirrer vanes: 1.4571
- Material, collet and spigot: 1.4305
- Radial shaft seal
- Dual wound electric motors
- Motor built according to DIN EN 60034-1/11.95



Stirrer assembly

Technical data

Electrical data

Part number:	1005114	1005115	1005116	1005117	1005118
Wattage:	0.18 kW	0.55 kW	0.75 kW	1.1 kW	2.2 kW
Motor type:	K21R80K8	K21R90LL8	K21R100L8	K21R100LX8	K21R112MX8
Motor part-no:	740878	740879	740880	740881	740882
Voltage 50 Hz:	220 - 245 V	220 - 245 V	220 - 245 V	220 - 245 V	220 - 245 V
	380 - 420 V	380 - 420 V	380 - 420 V	380 - 420 V	380 - 420 V
Voltage 60 Hz:	220 - 265 V	220 - 265 V	220 - 265 V	220 - 265 V	220 - 265 V
	380 - 460 V	380 - 460 V	380 - 460 V	380 - 460 V	380 - 460 V
Connection type:	3 ph. / delta Y	3 ph. / delta Y	3 ph. / delta Y	3 ph. / delta Y	3 ph. / delta Y
Speed 50/60 Hz:	750/900 rpm	750/900 rpm	750/900 rpm	750/900 rpm	750/900 rpm

Mechanical data

Size:	80 K	90 L	100 L	100 L	112 M
Shape:	IM V1/3011	IM V1/3011	IM V1/3011	IM V1/3011	IM V1/3011
Flange size:	A 160	A 200	A 200	A 250	A 250
Pitch circle for holes:	130 mm	165 mm	165 mm	215 mm	215 mm
L:	580 mm	930 mm	790 mm	790 mm	1240 mm
D:	120 mm	170 mm	200 mm	220 mm	260 mm
Shaft diameter:	22.0 mm	33.7 mm	33.7 mm	42.4 mm	42.4 mm
Mixer shaft part-no.:	1008679	1007809	740893	1007810	1008680
Propeller part-no.:	740883	740884	740885	740886	740887
Weight:	15 kg	23 kg	28 kg	33 kg	51 kg

Specification

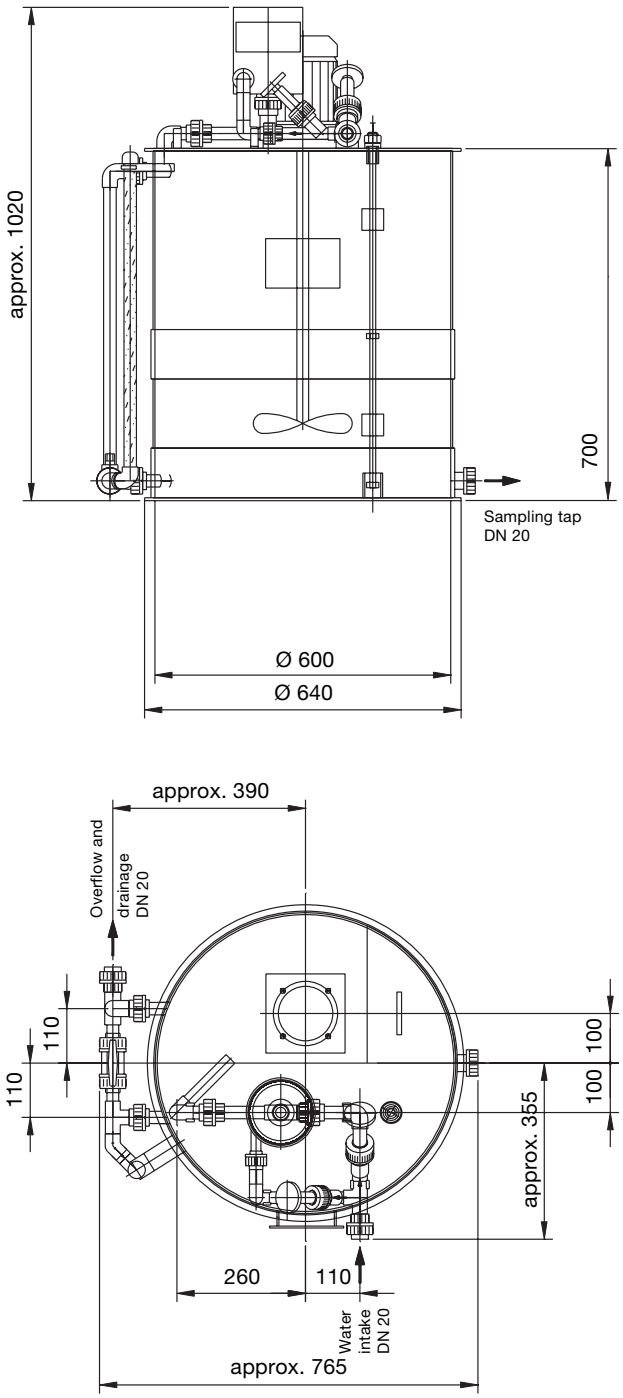
Enclosure rating:	IP 55	IP 55	IP 55	IP 55	IP 55
Insulation class:	F	F	F	F	F
Colour/motor casing:	RAL 5003	RAL 5003	RAL 5003	RAL 5003	RAL 5003

Use of stirrer assemblies in the Ultromats

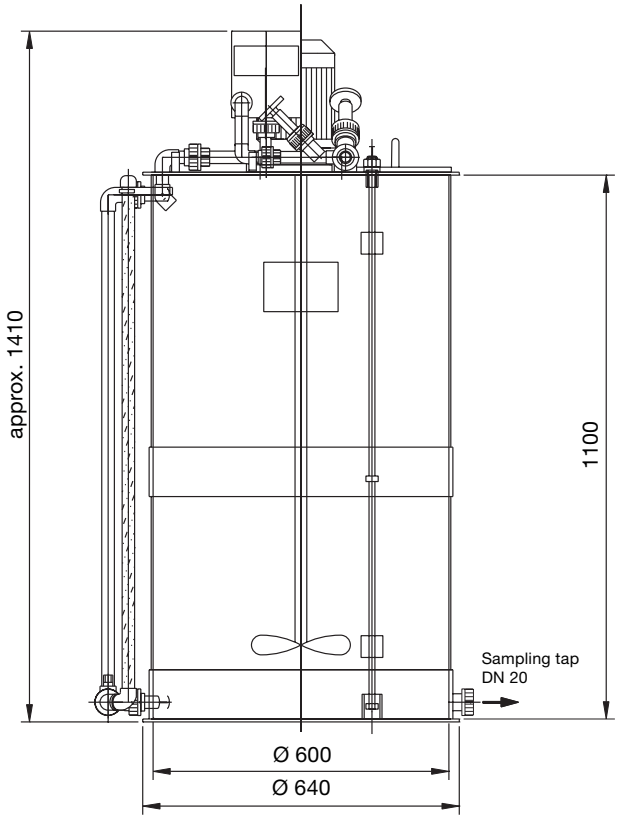
Ultromat type:	MT 140	MT 250	MT 500	MT 1000	MT 2000

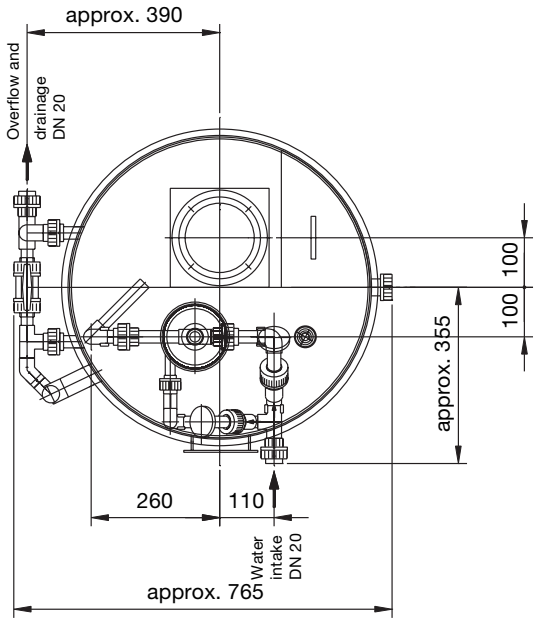
7 Dimension drawing

7.1 Ultromat® MT 140

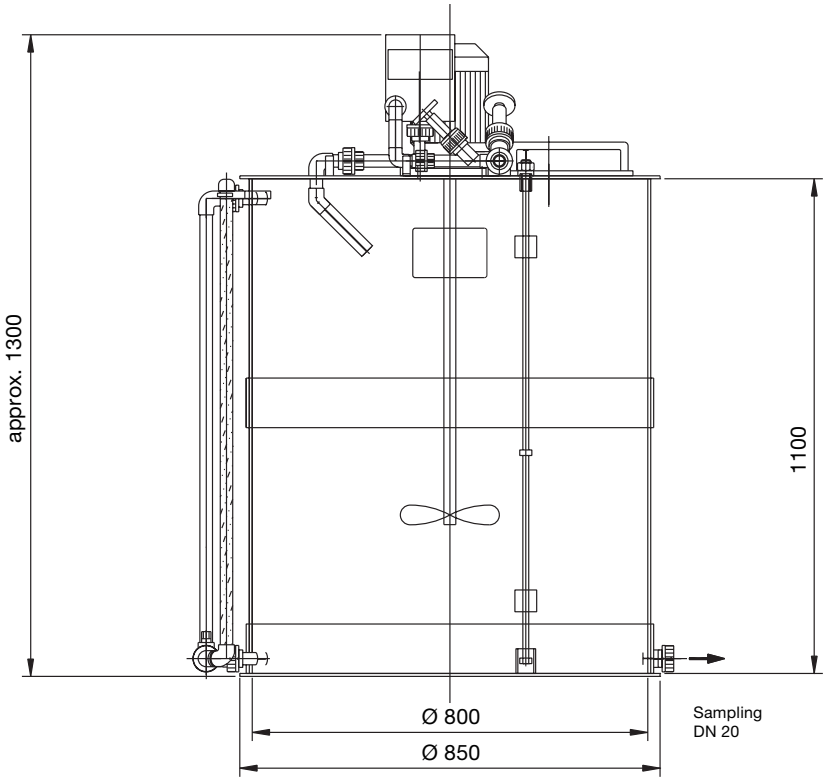


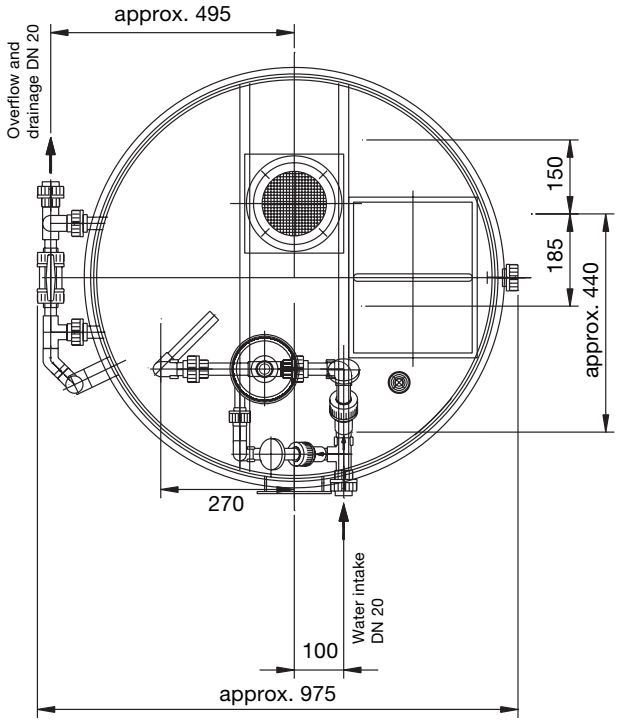
7.2 Ultromat® MT 250



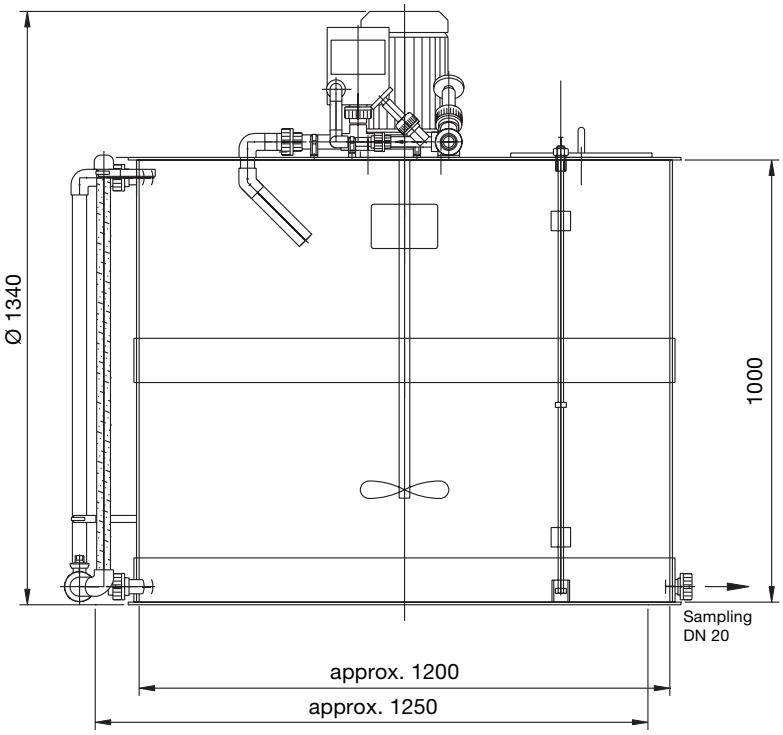


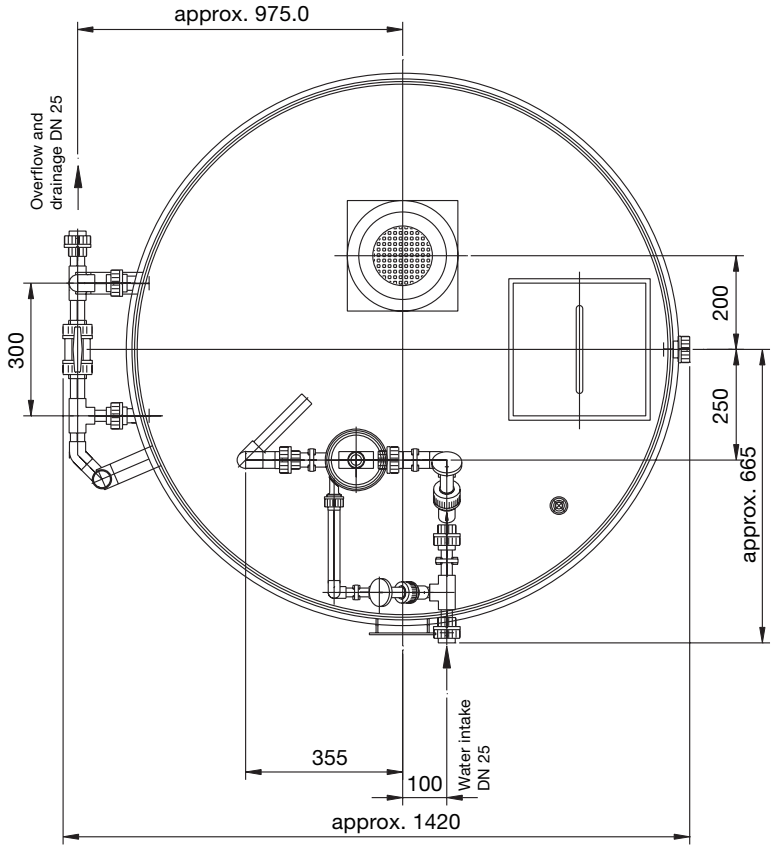
7.3 Ultromat® MT 500



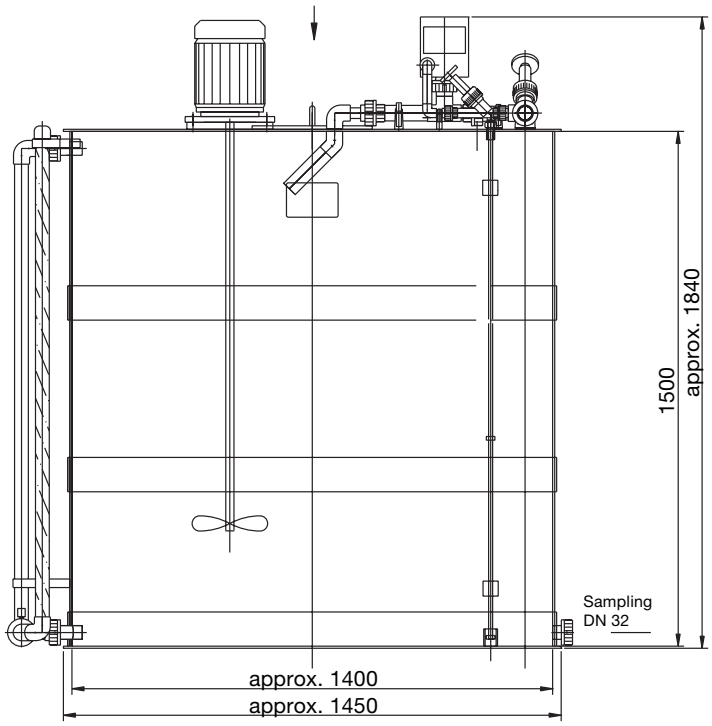


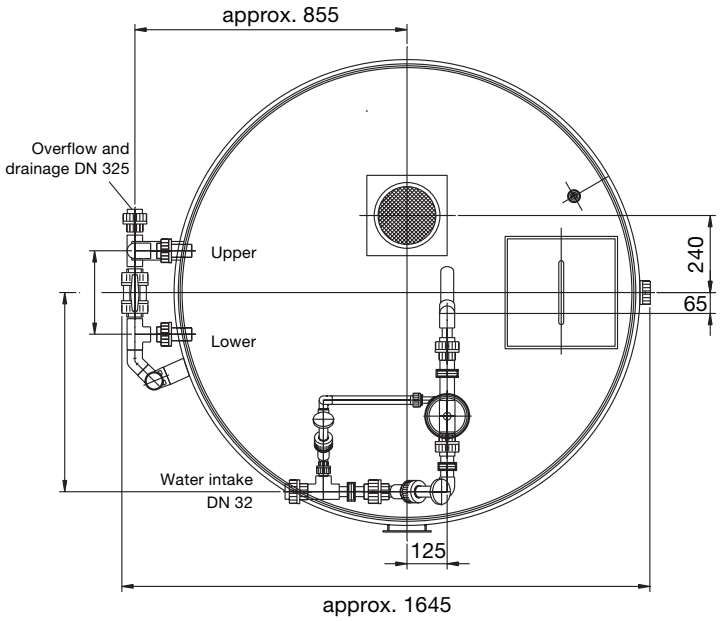
7.4 Ultromat® MT 1000





7.5 Ultromat® MT 2000





EC Declaration of Conformity

We,

ProMinent Dosiertechnik GmbH
Im Schuhmachergewann 5 - 11
D - 69123 Heidelberg

hereby declare that, on the basis of its functional concept and design and in the version brought into circulation by us, the product specified in the following complies with the relevant, fundamental safety and health stipulations laid down by EC regulations.
Any modification to the product not approved by us will invalidate this declaration.

Product description :	***Polyelectrolyte preparation system, Ultromat***
Product type :	***AT / ATF / AF / ATP / ATFP / ATD / ATFD / MT***
Serial number :	***see type identification plate on device***
Relevant EC regulations :	***EC - machine regulation (89/392/EEC) subsequently 93/44/EEC*** ***EC - low voltage regulation (73/23/EEC)*** ***EC - EMC - regulation 89/336/EEC subsequently 92/31/EEC***
Harmonised standards used, in particular :	***EN 292-1, EN 292-2, EN 563*** ***EN 60204-1*** ***EN 50081-1/2, EN 50082-1/2***
National standards and other technical specifications used, in particular :	
Date/manufacturer's signature :	*12.03.02*
The undersigned :	*Dr. Rainer V. Dulger, Executive Vice President R&D and Production*

Addresses and delivery informations from the manufacturer:

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