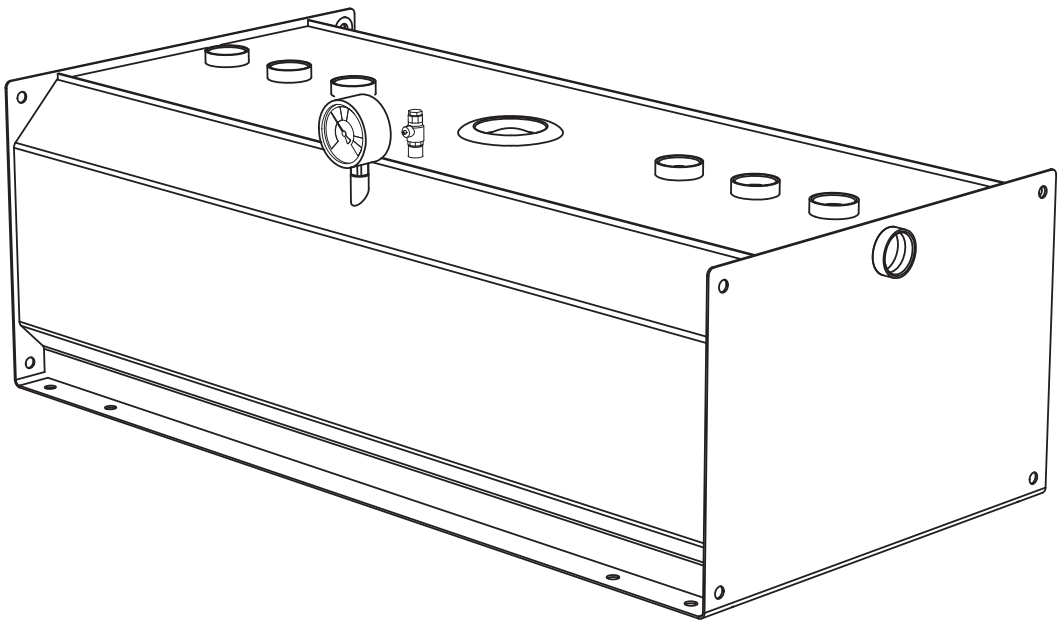
Operation and Installation Instructions TTD for Double Wall Tank System for Diesel Fuel or Mineral Oil (Fresh or Spent Oil)

Krampitz TANKSYSTEM GMBH



Type TTD: _____

Tank No.: _____

Year of construction: _____

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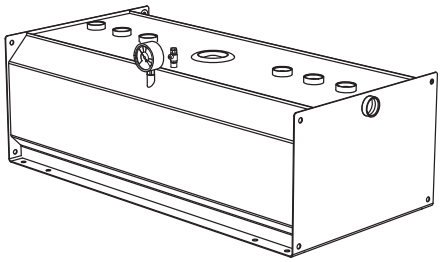
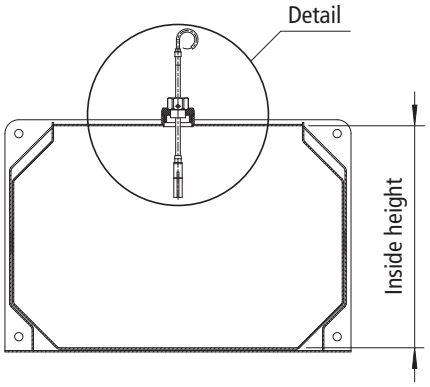
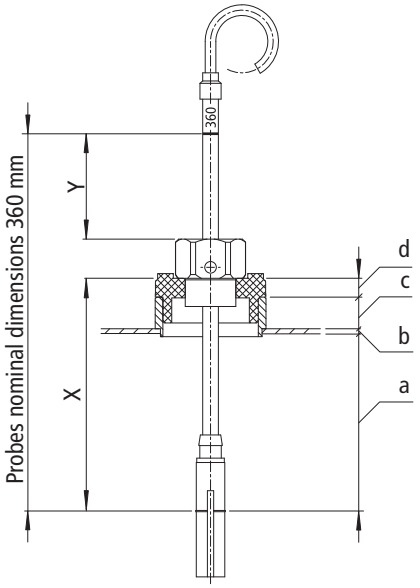
Settings of the limit sensor for day tank TTD

TTD – Day tank





Limit sensor detail



Tank type	HI	b	X-GWG	Y
	mm	mm	**mm**	mm
TTD 250	481	3	**59**	276
TTD 500	481	3	**59**	276
TTD 750	731	3	**71**	264
TTD 990	731	3	**71**	264
TTD 1500	980	4	**85**	250
TTD 1950	980	4	**85**	250

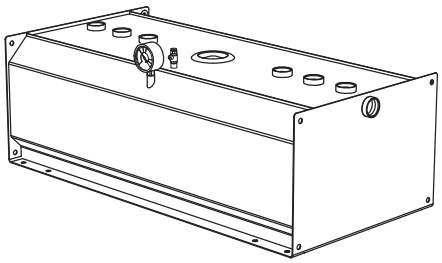
X-GWG = a + b + c + d
Y = 360 - 25 - X-GWG
a = HI - (HI*0,95)

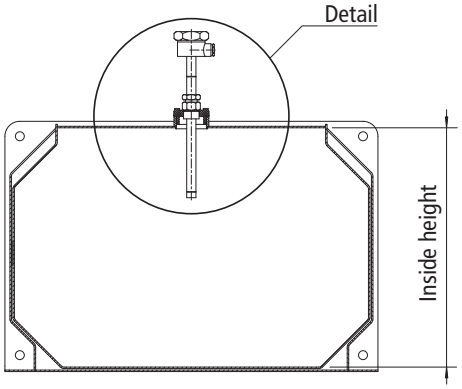
a - Height between tank roof and limit sensor setpoint
b - Roof thickness
c - Sleeve height (20 mm)
d - Reducing height (12 mm) HI - Inside height

HI - Inside height X-GWG – Settling dimension for limit sensor
Y - Control dimension

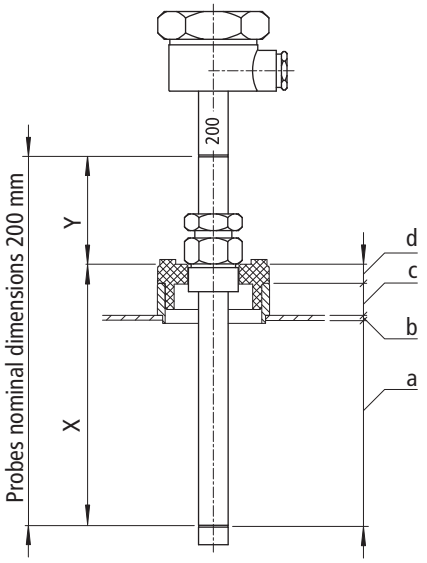
Setting the overfill guard for Day tank TTD

TTD – Day tank





Overfill guard detail



Tanktyp	HI	b	X-ÜSI	Y
	mm	mm	**mm**	mm
TTD 250	481	3	**59**	141
TTD 500	481	3	**59**	141
TTD 750	731	3	**71**	129
TTD 990	731	3	**71**	129
TTD 1500	980	4	**85**	115
TTD 1950	980	4	**85**	115

X-ÜSI = a + b + c + d
Y = 200 - X-ÜSI
a = HI - (HI*0,95)

a - Height between tank roof and overfill guard
b - Roof thickness
c - Sleeve height (20 mm)
d - Reducing height (12 mm) HI - Inside height

HI - Inside height X-ÜSI - Settling dimension for Overfill guard
Y - Control dimension

Specifications may change as design revisions take place!

PRELIMINARY NOTE

- These technical operation and installation instructions describe the „TTD double wall day tank for Diesel fuel and mineral oil". It contains descriptions and instructions required for the operator's understanding and ensuring the correct operation, proper maintenance of all materials and compliance with all safety and health instructions.
- Designation of the tank system: For brevity sake, the TTD double wall day tank for Diesel fuel and mineral oil is referred to as TTD in this manual.
- The Table of Contents provides an overview of the organization of this manual and identifies the main and sub-chapters, plus page numbers.
- Important instructions relating to technical safety and health protection are emphasized by the following symbols.


WARNING Refers to work and operation procedures which when ignored cause danger to persons.


CAUTION Refers to work and operation procedures which when ignored cause risk of damage or destruction to assets.


NOTE Technical requirements which the user should observe.

ABBREVIATIONS USED

TTD - Double wall day tank
WHG - Water management act
TRbF - Technical rules for combustible liquids
BMA - Operation and installation instructions
VDE - Verband der Elektrotechnik (Electrical engineering association)
VAwS - Verordnung über Anlagen zum Umgang mit Wasser gefährdenden Stoffen and über Fachbetriebe (Ordinance regarding plants for handing potentially water polluting substances and on specialist manufacturers)
VDS - Verband der Sachversicherer (property insurer association)

1. SAFETY INSTRUCTIONS AND REGULATIONS

1.1 Safety instructions


WARNING Maintenance and repair work to overfill guard and leakage warning equipment should only be performed by authorized specialist personnel according to Article 19 l WHG.


WARNING After connecting the electrical components to a power source, the plant is live with dangerous voltage. Electrically isolate the power supply cable before starting work on electrical components.


WARNING Enter the tank only by the openings provided for this purpose. The tank should be completely empty, cleaned and degassed before entry is permitted. Anyone entering the tank is required to wear full personal protection equipment as required by the rules of safety and health protection.


CAUTION No work such as drilling, welding, cutting or grinding should be performed on the tank body (i.e., the sheet metal containing the medium).


CAUTION Wrong operation or con-compliance with the instructions in this manual or the requirements of safety and health protection can be the cause of damage to equipment, persons and the environment and can void any warranty or guarantee.

The TTD is subject to recurrent testing and inspection after the initial start-up.

1.2 Operation procedures

1.2.1 General operation procedures

Initial start-up
Inspect the TTD and the other equipment for visible damage before initial start-up. Check the leakage indicator for pressure loss.

Readiness for operation
The plant requires constant technical monitoring to ensure that disruptions of normal operation are identified and remedial action taken as quickly as possible. Only trained and instructed personnel should monitor the equipment and perform necessary repairs.

Temporary shut-down
For temporary shut-down, switch off the TTD or disconnect it from the power supply.

Restart
Inspect the TTD to ensure that it is in proper and good technical condition before it is restarted. Inspect the following equipment:

- Leakage indicator,
- Electrical connections and components (outside),
- Vessels and connecting piping for leaks.

1.2.2 Action to take

1. The owner is obliged to maintain the TTD in a state suitable for storing fuels or mineral oil, perform necessary repairs without delay and take all safety precautions required by circumstances.
2. If the owner cannot judge the state of the equipment or repair defects, he should obtain help from an expert or conclude a maintenance contract with an accredited specialist firm.
3. The plant must not be operated when a defect exists that can be the cause of danger.
4. Action to avert or contain the dangerous state should be taken without delay.
5. Prescribed safety devices must be used.
6. All safety devices should be operated and maintained so that they are effective at any time.
7. In particular, safety devices must not be bypassed or rendered ineffective in part or whole.
8. Liquids potentially contaminating water should only be filled in tanks which are intended for such liquids.
9. Fill the TTD, but avoid overfilling. Find out the filling level in the tank before starting the filling procedure. You should know how much more liquid the TTD can hold.
10. The truck or barrel filling procedure requires constant monitoring by the operator.

1.2.3 Instruction of operators

All operators should be familiar with the start-up and handling of the TTD and the content of these operation instructions. All operators should also know the dangers that can arise in connection with storage and filling of potentially water contaminating liquids and action to avoid such dangers and should be instructed accordingly before the first operation and then in regular intervals, but at least once a year, and the instruction should be put on record.

1.2.4 Repairs and maintenance

No liquid should be filled in or withdrawn from the tank when maintenance work is under way. Electrically isolate the complete plant before starting repair.

1.2.5 Safety tests and inspections

Test item Designation	Person(s) carrying out the test/inspection	Time interval	Proof of test/inspection
Visual inspection of the tank	Owner	weekly	-
Visual inspection for leaks of connections to the tank	Owner	weekly	-
Function control of the leakage indicator	Specialist firm acc. to WHG*	yearly	Certification
Function control of the limit sensor**	Specialist firm acc. to WHG*	yearly	Certification
Function control of the overfill guard**	Specialist firm acc. to WHG*	yearly	Certification
Function control of the level sensor**	Specialist electric firm or instructed personnel	yearly	Certification

* after instruction by manufacturer

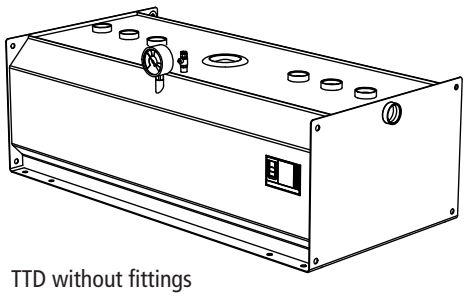
* * if installed - probes

1.2.6 Handling of fuel oil, Diesel fuel and mineral oil:

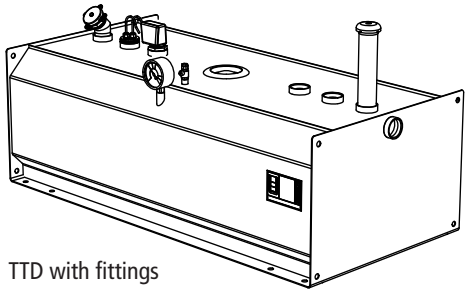
Observe all applicable general safety instructions.

2. DESCRIPTION

2.1 Illustration of the TTD

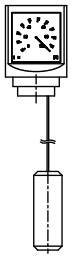


TTD without fittings



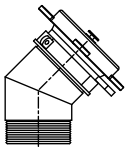
TTD with fittings

Fittings

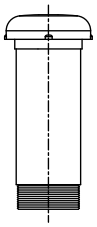


Mechanical level indicator

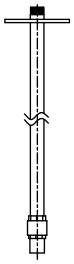
Leakage indicator KÜR 5



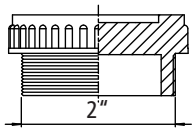
Filling socket



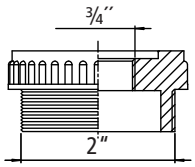
Bleeding hood with pipe socket



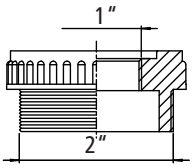
Suction pipe with foot valve, flanged



Dummy plug AG 2″



Adapter AG 2″ x IG ¾″



Adapter AG 2″ x IG 1″

2.2 Intended use of the TTD

The TTD is used as day tank to supply plants and equipment with fuel or lubricating oil. The TTD is also referred to as supply tank. It can be installed at indoor sites or in an equipment container. The area on which the tank is installed should be level and have sufficient load bearing capacity. The tank should only be installed in areas which are not exposed to additional hazards or requirements. If the tank is used under special conditions, all applicable requirements should be observed.
The cube shape of the TTD ensures maximum utilization of available space. The tank is set up close by the equipment which it supplies so that the small external pump or the pump integrated in the tank unit can pump the liquid. To facilitate this, the connected piping should not include any considerable height differences or bends. The TTD is manufactured according to the general inspectorate approval No. Z-38.12-23.

CAUTION Move the TTD only when it is empty and clean.

CAUTION When installing the TTD under special conditions, e.g. in a potentially explosive zone, all applicable requirements should be observed.

2.3 Specifications of the TTD

2.3.1 Weights and dimensions of the TTD

The TTD is available in six different standard sizes. Tanks of non-standard length, width or height can be made without problem. The only point is that the tank must be of a size than can be transported.

The volume capacities of the different tank types are listed in the table below. The digit in the designation is an indicator and designated the tank type.

Tank type	Volume 100%	Volume 95%	Length	Total length	Width	Height	Total height	Weight
Art.-Nr.	Liter	Liter	mm	mm	mm	mm	mm	kg
TTD 250	245	230	1.260	1.280	500	505	630	133
TTD 500	470	440	1.510	1.530	750	505	630	186
TTD 750	730	700	1.510	1.530	750	755	880	248
TTD 990	975	940	2.010	2.030	750	755	880	316
TTD 1500	1.800	1.730	2.010	2.030	1.000	1.005	1.130	524
TTD 1950	2.300	2.190	2.010	2.030	1.250	1.005	1.130	658

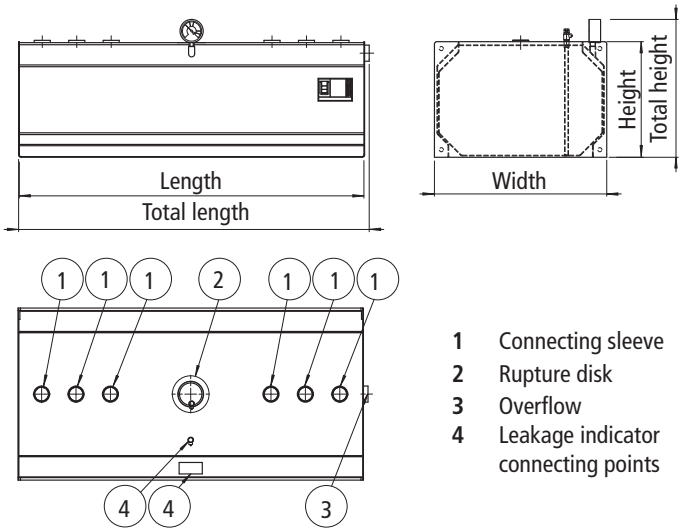
2.3.2 Connections of the TTD

The following connections are provided on the TTD:

1. Roof side: Six connecting sleeves 2˝ for optional installation of level sensor, overfill guard, machine return pipe, filling by pump, filling from tank truck, and bleeding. Located at the center is an NBR rupture disk which protects the tank from overpressure. If the rupture disk is removed, the opening can be used as hand hole or for inspection.

2. Front side: A 2" overflow sleeve for connection of an overflow pipe back to the storage tank is located on the right, centrally relative to the top edge 2". If no overflow pipe is installed, the connecting sleeve should be closed by a dummy plug. The overfill tube is a reasonably priced alternative to the overfill guard, for which the storage tank should not be more than five meters away from the day tank and not placed lower than the outline of the day tank.

If the day tank is used without a storage tank, an approved safety device protecting against overfilling is prescribed for capacities of 1,000 liters or more. The same requirement also applies to smaller tanks which are not filled from tank truck via dispensing nozzle.



1 Connecting sleeve
2 Rupture disk
3 Overflow
4 Leakage indicator connecting points

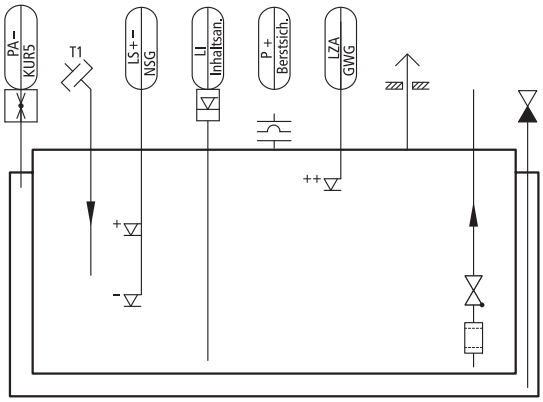
NOTE The general inspectorate approval No. Z-38.12-23 limits the maximum filling volume to 95 percent of the tank height.

2.3.3 Filling and discharge rates of the TTD from tank trucks

TTD type	Filling rate (max)	Withdrawal rate
Up to TTD 990	150 liters/min - only with dispensing nozzle	600 liters/min
From TTD 990	600 liters/min - with tank truck hose set	600 liters/min

Storage tanks are filled at the tank truck connection. Tanks up to 1,000 liters volume can also be filled by dispensing nozzle which stops the liquid flow according to the dead man's principle

2.3.4 Plant layout scheme



Standard tank with tank fittings containers with standard equipment and optional accessories in working order

TTD - Day tank, Double wall

Legend - Designations acc. to DIN 19227

PA – KUR5	Vacuum leak alarm with design approval (static, type KÜR 5)
P + Berstsich.	Rupture disk overpressure guard
LI Inhaltsan.	Local level indicator Mechanical level indicator
LS + – NSG	Float switch
LZA GWG	Overfill guard Limit monitor with design approval

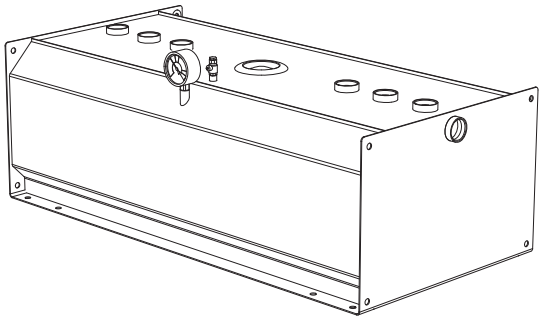
Legend - Symbols according to DIN 2481

T1	Connection for filling from tank truck
	Rupture disk (overpressure)
	Foot valve
	Filter / mud trap
	Level meter
	Bleeding to atmosphere
	Indicates direction of liquid flow
	Leakage indicator
	Suction socket leakage indicator
++ + – –	Level meter, Switching contacts for top and bottom limits
	Double wall vessel

2.4. Units of the TTD - standard equipment

2.4.1 The tank vessel

The typical feature of the tank vessel is the double wall cube design. This design ensures maximum utilization of the available space. The standard tank vessel of the TTD is made of steel (S235 JRG2).
To protect it from corrosion, the tank vessel is provided with a 2-component coat of paint on the outside (RAL 7032). The inside wall is blank and oiled.

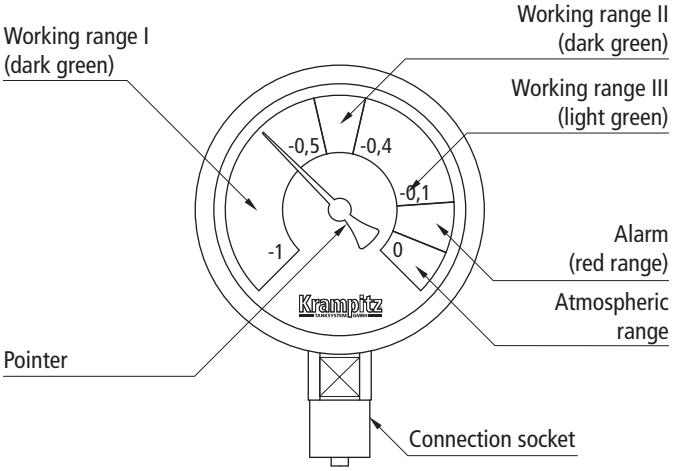


2.4.2 The static vacuum leakage indicator (installed)

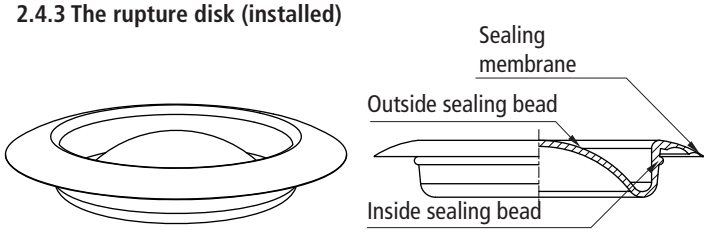
The static vacuum leakage indicator is suitable for tank systems without permanent power supply. It consists of an impact resistant stainless steel housing with capsule pressure gauge and a filling of glycerol. The alarm is indicated visibly by pointer. The vacuum is produced by an external pump in the space monitored for leakage and enclosed. If the vacuum drops, the alarm is indicated by the pointer entering the red range.
The vacuum leakage indicator should be inspected visual

- regularly during operation and, in particular, after
- every transport
- every change of another location
- every initial start-up
- every restart
- every temporary shut-down
- in accordance with control procedures during operation.

Stop operation of the equipment if the pointer enters the red range of the scale. The static vacuum leakage indicator is marketed general inspectorate certificate No. Z-65.22-158.

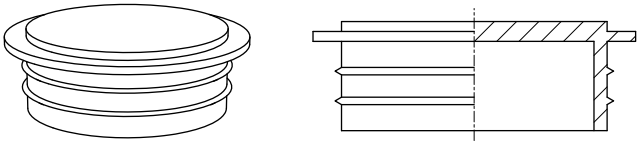


2.4.3 The rupture disk (installed)



The rupture disk is installed in the center of the tank roof. If a sudden overpressure occurs, it protects the tank by being ejected before it bursts. The opening of the rupture disk can also be used as hand hole and inspection opening.

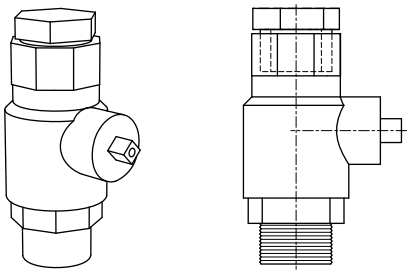
2.4.4 The transport plug (installed)



The plastic transport plugs are inserted in all sleeves of the tank vessel. They provide protection from corrosion during transport. All transport plugs should be removed before the fittings are installed or the TTD or fittings of the TTD are put into operation. Sleeves not used should be closed by dummy plug (see item 2.5.2).

2.4.5 The ball valve (installed)

The ball valve 3/8´´ is installed in the tank roof. The manufacturer provides the ball valve for generating the required vacuum. Once the vacuum is established, the toggle of the ball valve is removed and the socket closed by dummy plug and O-ring.



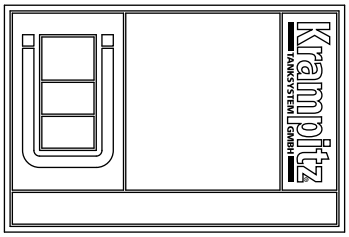
NOTE Work on or tampering with the ball valve is forbidden and will void all warranty claims.
Inform the manufacturer if the vacuum drops.

2.4.6 Corrosion protection for indoor installation

Every TTD storage tank is provided with standard corrosion protection of 2-component textured paint. The standard finish of Krampitz Tanksystem GmbH for this series is RAL 7032 (pebble grey). Other RAL finishes are possible on request and against extra price.
The inside of the tank is not treated and provided with a thin coat of oil as corrosion protection.

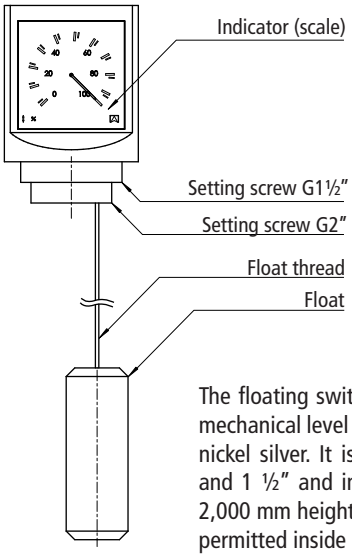
2.4.7 The nameplate

Every TTD storage tank is provided with a nameplate according to general inspectorate certificate No. Z-38.12-23. Placed on the right side of the nameplate is the logo of the manufacturer Krampitz Tanksystem GmbH.
All relevant data of the tank (manufacturer's number, year of production, test pressure, tank capacity, material, etc.) is placed in the center of the nameplate.
The label confirming compliance with the EC directives for vessels is attached on the left of the nameplate. The name of the manufacturer, the number of the general inspectorate approval and the organization by which the manufacturer is inspected are also put there. The nameplate is attached on the long side of the tank. The tester's code according to DIN 6600 is added to the nameplate after the successful test of the tank.



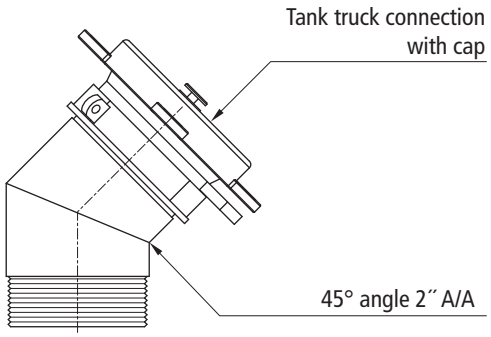
2.5 Connection kit

2.5.1 The level indicator



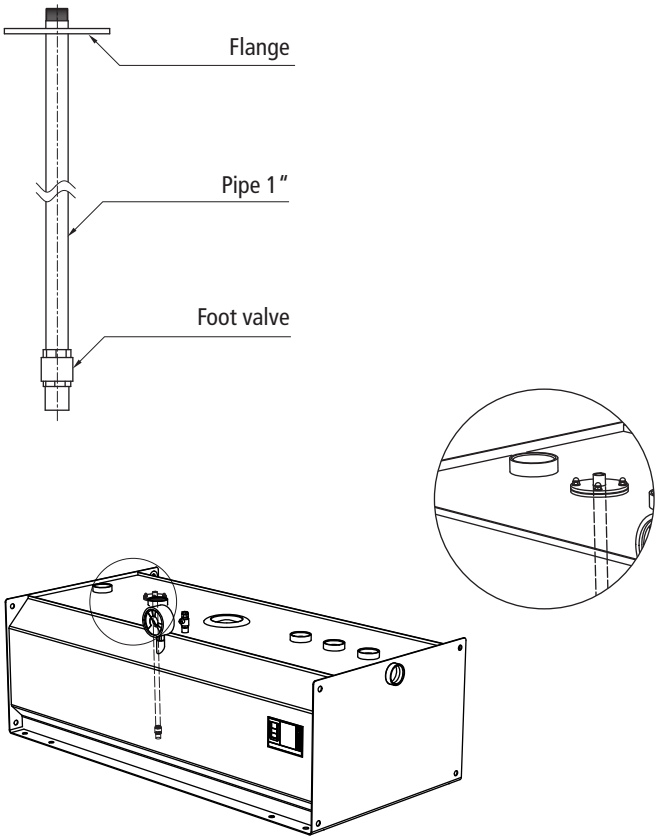
The floating switch volume indicator is a universal mechanical level gauge with gear drive of brass and nickel silver. It is held by double screw thread 2" and 1 ½" and installed in tanks from 750 mm to 2,000 mm height. Shifting to other locations is only permitted inside a building.

2.5.2 The filling socket



Every TTD should have sockets for a filling pipe and a filling socket, resp. (also see TRbF 20).
The tank truck connection socket 2´´ x 2 ½´´ is installed in the tank roof by a 45° angle A/A in a 2´´ sleeve. If the owner installs this connection outside the equipment room, the socket can also be mounted on a wall.

2.5.3 The suction pipe - machine flow pipe

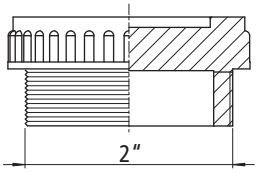


The suction pipe is flange mounted to the roof. The machine flow pipe is connected to it after installation of the suction pipe with foot valve.

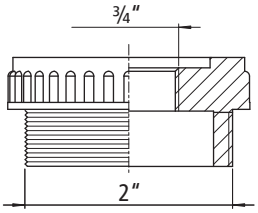
2.5.4 The adapter set

The adapter set ensures that fittings can be mounted. In addition to this, the 2" sleeves in the tank roof facilitate the connection of the flow and return pipes to the machine.
The adapter set consists of:

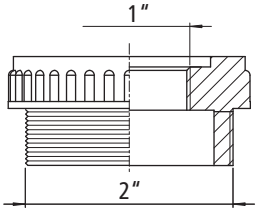
4 dummy plugs AG 2"



2 reducers AG 2" x IG ¾"



2 reducers AG 2" x IG 1"



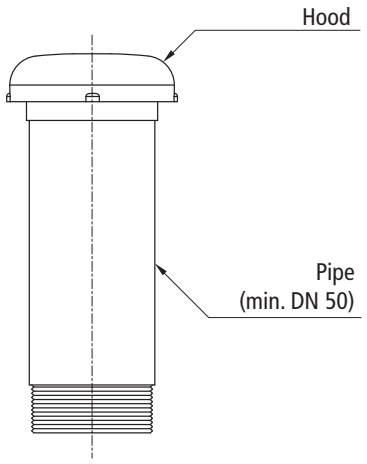
The 2" dummy plug and the reducers are made of PE-HD. The plug is sealed by O-ring in a sealing groove in the plug. The plug is installed tight simply by screwing it hand-tight into the respective 2´´sleeve on the tank roof. For ease of handling, the plug is knurled on the outer surface.

2.5.5 The machine return pipe

The machine return pipe can be connected to one of the 2" sleeves in the tank roof installed without problem with a 2´´ x ¾´´ reducing adapter.

2.5.6 The bleeding adapter with hood

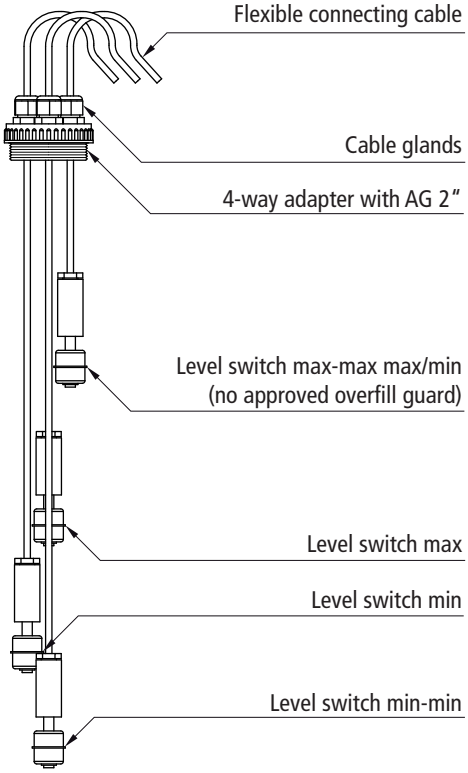
The 2´´bleeding tube is installed in a 2´´connecting sleeve in the tank roof.
If the tank is filled from a tank truck by the tank truck connection, the bleeding line should at least be at the same height above the tank roof as the socket for filling from tank truck.
Tanks installed below ground level (for example in the basement of a building) should have the bleeding adapter installed at least up to 500 mm above the connection for filling from tank trucks and 500 mm above ground level. The bleeding pipe should not end inside an enclosed room.
Exception: Above-ground individual tank for Diesel fuel or fuel oil smaller than 1000 liters.



2.6 Units of the TTD - special design

2.6.1 The level sensor

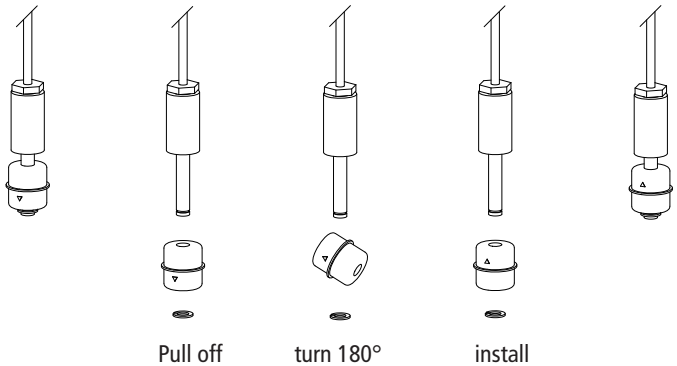
2.6.1.1 The level switch (miniature alarm)



Level sensors sense the level of a liquid inside a tank. There are different types of level sensors:
a) a switching system with level switches, and
b) an electronic measuring system with encoders.
The signals of level switches can be used directly for automatic control, regulation or signaling.
In electronic measuring systems, the signal from the encoder is converted in appropriate switching signals by the associated evaluation logic.

The level switch does not need approval because it is only used as normally-open contact in tank systems, for example, for „pump on" control (low level contact) or „pump off" (high level contact). Only approved overfill guards are permitted for „overfilling alarm switching point (max-max).
The level switch can also be used for simple detection of leaks.
The level switch is made of stainless steel and is equipped with a flexible, oil-resistant cable. The permitted temperature range of the cable is between -5°C and +50°C. The 5-meter connecting cable is installed directly at the control of the system.

The level switch can be set to the required level by means of the cable glands in the multiple-way adapter and fastened appropriately. The level switch can be converted from a normally open to a normally closed contact simply by turning the float by 180° on the switch shaft.



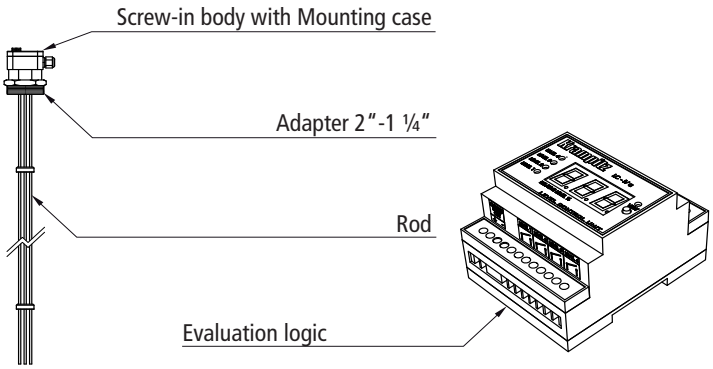
Specifications

Switching voltage	max. 200 V DC / max. 120 V AC	
Switching capacity	max. 10 W	
Contact resistance	max. 0.5 mOhm	
Switching current	max. 0.5 A	
Cable size	2 x 0.5 mm2 x 4,000 mm	
Material	Float, weight, shaft	Stainless steel, non-corrosive
	Cable	PVC

CAUTION Observe the specifications of the switch.

The electric level switch (miniature alarm) control and signals exactly defined levels in the tank. When a 4-way cable gland is used, up to four level switches can be installed in a tank.

2.6.1.2 The electronic volume indicator

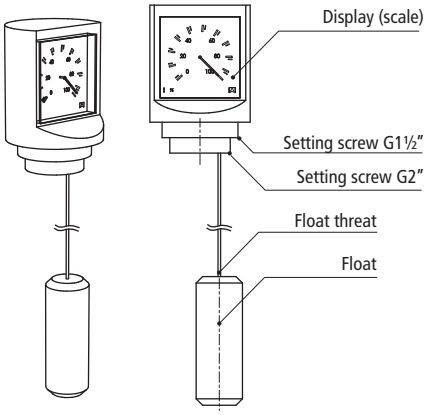


The TTD can be equipped with an electronic volume indicator for comfortable recording filling data.
The Level Control V electronic volume indicator is a complete measuring system for the continuous measurement of levels in tanks.
With this system, the tank height can be adapted and up to four limit values defined. These relay contacts are galvanically separated from the system. The system displays the level on the evaluation logic as a percentage value.
The electronic volume indicator is tested and precalibrated for the target tank before it is shipped.

2.6.1.3 Floating switch volume indicator (AM-001) and dipstick with dipstick pipe plug (AM-006)

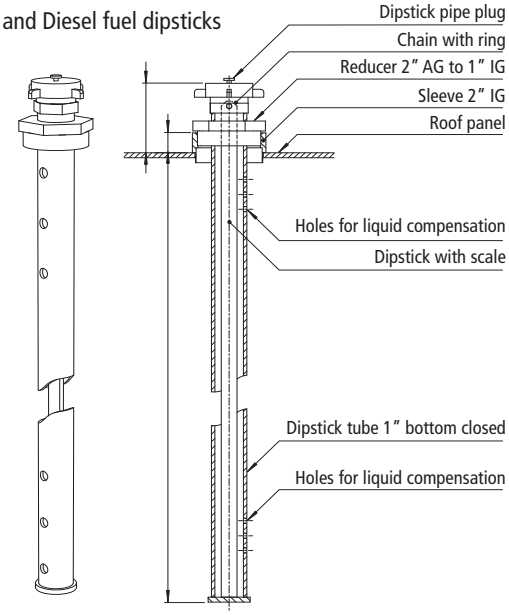
Floating switch volume indicator
Universal mechanical level gauge with gear drive of brass and nickel silver.

Description:
- Constant display
- Reading: in percent of the total height
- Set pointer as consumption indicator
- Mounting: Double screw thread 2" and 1 1/2"
- Vessel: Krampitz tanks height: 750 to 2,000 mm
- For tank systems inside buildings
- Housing of ABS and float of PE-HD



Dipstick with dipstick pipe plug
Only for outdoor plants because the dipstick cannot be pulled out unless there is enough space.

Description:
- Dipsticks with centimeter graduation, easy to read
- Long brass chain
- Medium fuel oil and Diesel fuel dipsticks made of plastic
- Carburetor fuel as medium - Dipsticks of aluminium



2.6.2 Bearing charts

2.6.2.1 Bearing charts for TTD 250, TTD 500

Bearing charts - TTD 250

Level mm	Content Liter	Level %	Level mm	Content Liter	Level %	Level mm	Content Liter	Level %
10	3,35	2,1%	170	83,94	35,3%	330	173,93	68,6%
20	6,95	4,2%	180	89,56	37,4%	340	179,55	70,7%
30	10,79	6,2%	190	95,19	39,5%	350	185,18	72,8%
40	14,88	8,3%	200	100,81	41,6%	360	190,80	74,8%
50	19,22	10,4%	210	106,44	43,7%	370	196,34	76,9%
60	23,80	12,5%	220	112,06	45,7%	380	201,63	79,0%
70	28,62	14,6%	230	117,68	47,8%	390	206,67	81,1%
80	33,70	16,6%	240	123,31	49,9%	400	211,48	83,2%
90	39,01	18,7%	250	128,93	52,0%	410	216,03	85,2%
100	44,57	20,8%	260	134,56	54,1%	420	220,34	87,3%
110	50,19	22,9%	270	140,18	56,1%	430	224,41	89,4%
120	55,82	24,9%	280	145,81	58,2%	440	228,23	91,5%
130	61,44	27,0%	290	151,43	60,3%	450	231,80	93,6%
140	67,07	29,1%	300	157,05	62,4%	460	235,29	95,6%
150	72,69	31,2%	310	162,68	64,4%	470	238,78	97,7%
160	78,31	33,3%	320	168,30	66,5%	480	242,26	99,8%

Bearing charts - TTD 500

Level mm	Content Liter	Level %	Level mm	Content Liter	Level %	Level mm	Content Liter	Level %
10	7,73	3,2%	170	163,84	35,7%	330	331,27	69,3%
20	15,76	4,2%	180	174,31	37,8%	340	341,73	71,4%
30	24,08	6,3%	190	184,77	39,9%	350	352,20	73,5%
40	32,69	8,4%	200	195,23	42,0%	360	362,66	75,6%
50	41,61	10,5%	210	205,70	45,2%	370	373,02	77,7%
60	50,81	12,6%	220	216,16	46,2%	380	383,09	79,8%
70	60,32	14,7%	230	226,63	58,8%	390	392,86	81,9%
80	70,12	16,8%	240	237,09	50,4%	400	402,33	84,0%
90	80,21	18,9%	250	247,56	52,5%	410	411,51	87,2%
100	90,59	21,0%	260	258,02	54,6%	420	420,39	88,2%
110	101,06	24,2%	270	268,48	56,7%	430	428,98	90,3%
120	111,52	25,2%	280	278,95	58,8%	440	437,27	92,4%
130	121,99	27,3%	290	289,41	60,9%	450	445,27	94,5%
140	132,45	29,4%	300	299,88	63,0%	460	453,16	96,6%
150	142,91	31,5%	310	310,34	66,2%	470	461,05	98,7%
160	153,38	33,6%	320	320,81	67,2%	480	242,26	99,8%

2.6.2.2 Bearing charts for TTD 750, TTD 990, TTD 1500, TTD 1950

Bearing charts - TTD 750

Level mm	Content Liter	Level %	Level mm	Content Liter	Level %	Level mm	Content Liter	Level %
10	7,73	1,4%	250	247,56	34,4%	490	498,70	67,5%
20	15,76	2,8%	260	258,02	35,8%	500	509,16	68,9%
30	24,08	4,1%	270	268,48	37,2%	510	519,63	70,2%
40	32,69	5,5%	280	278,95	38,6%	520	530,09	71,6%
50	41,61	6,9%	290	289,41	39,9%	530	540,55	73,0%
60	50,81	8,3%	300	299,88	41,3%	540	551,02	74,4%
70	60,32	9,6%	310	310,34	42,7%	550	561,48	75,8%
80	70,12	11,0%	320	320,81	44,1%	560	571,95	77,1%
90	80,21	12,4%	330	331,27	45,5%	570	582,41	78,5%
100	90,59	13,8%	340	341,73	46,8%	580	592,88	79,9%
110	101,06	15,2%	350	352,20	48,2%	590	603,34	81,3%
120	111,52	16,5%	360	362,66	49,6%	600	613,80	82,6%
130	121,99	17,9%	370	373,13	51,0%	610	624,27	84,0%
140	132,45	19,3%	380	383,59	52,3%	620	634,63	85,4%
150	142,91	20,7%	390	394,06	53,7%	630	644,69	86,8%
160	153,38	22,0%	400	404,52	55,1%	640	654,46	88,2%
170	163,84	23,4%	410	414,98	56,5%	650	663,94	89,5%
180	174,31	24,8%	420	425,45	57,9%	660	673,11	90,9%
190	184,77	26,2%	430	435,91	59,2%	670	682,00	92,3%
200	195,23	27,5%	440	446,38	60,6%	680	690,58	93,7%
210	205,70	28,9%	450	456,84	62,0%	690	698,88	95,0%
220	216,16	30,3%	460	467,31	63,4%	700	706,87	96,4%
230	226,63	31,7%	470	477,77	64,7%	710	714,77	97,8%
240	237,09	33,1%	480	488,23	66,1%	720	722,66	99,2%

Bearing charts - TTD 990

Level mm	Content Liter	Level %	Level mm	Content Liter	Level %	Level mm	Content Liter	Level %
10	10,34	1,4%	250	331,30	34,4%	490	667,40	67,5%
20	21,09	2,8%	260	345,31	35,8%	500	681,41	68,9%
30	32,22	4,1%	270	359,31	37,2%	510	695,41	70,2%
40	43,75	5,5%	280	373,32	38,6%	520	709,42	71,6%
50	55,68	6,9%	290	387,32	39,9%	530	723,42	73,0%
60	68,00	8,3%	300	401,32	41,3%	540	737,43	74,4%
70	80,72	9,6%	310	415,33	42,7%	550	751,43	75,8%
80	93,84	11,0%	320	429,33	44,1%	560	765,43	77,1%
90	107,35	12,4%	330	443,34	45,5%	570	779,44	78,5%
100	121,24	13,8%	340	457,34	46,8%	580	793,44	79,9%
110	135,24	15,2%	350	471,35	48,2%	590	807,45	81,3%
120	149,25	16,5%	360	485,35	49,6%	600	821,45	82,6%
130	163,25	17,9%	370	499,35	51,0%	610	835,46	84,0%
140	177,26	19,3%	380	513,36	52,3%	620	849,32	85,4%
150	191,26	20,7%	390	527,36	53,7%	630	862,79	86,8%
160	205,26	22,0%	400	541,37	55,1%	640	875,86	88,2%
170	219,27	23,4%	410	555,37	56,5%	650	888,54	89,5%
180	233,27	24,8%	420	569,38	57,9%	660	900,82	90,9%
190	247,28	26,2%	430	583,38	59,2%	670	912,71	92,3%
200	261,28	27,5%	440	597,38	60,6%	680	924,20	93,7%
210	275,29	28,9%	450	611,39	62,0%	690	935,30	95,0%
220	289,29	30,3%	460	625,39	63,4%	700	946,01	96,4%
230	303,29	31,7%	470	639,40	64,7%	710	956,57	97,8%
240	317,30	33,1%	480	653,40	66,1%	720	967,13	99,2%

Bearing charts - TTD 1500

Level mm	Content Liter	Level %	Level mm	Content Liter	Level %	Level mm	Content Liter	Level %
10	15,29	1,0%	340	625,47	34,8%	670	1.250,80	68,6%
20	30,98	2,0%	350	644,42	35,9%	680	1.269,75	69,7%
30	47,06	3,1%	360	663,37	36,9%	690	1.288,69	70,7%
40	63,53	4,1%	370	682,32	37,9%	700	1.307,64	71,7%
50	80,41	5,1%	380	701,27	38,9%	710	1.326,59	72,7%
60	97,67	6,1%	390	720,22	40,0%	720	1.345,54	73,8%
70	115,34	7,2%	400	739,17	41,0%	730	1.364,49	74,8%
80	133,40	8,2%	410	758,12	42,0%	740	1.383,44	75,8%
90	151,85	9,2%	420	777,07	43,0%	750	1.402,39	76,8%
100	170,69	10,2%	430	796,01	44,1%	760	1.421,34	77,9%
110	189,64	11,3%	440	814,96	45,1%	770	1.440,29	78,9%
120	208,59	12,3%	450	833,91	46,1%	780	1.459,24	79,9%
130	227,54	13,3%	460	852,86	47,1%	790	1.478,19	80,9%
140	246,49	14,3%	470	871,81	48,2%	800	1.497,14	82,0%
150	265,44	15,4%	480	890,76	49,2%	810	1.516,09	83,0%
160	284,38	16,4%	490	909,71	50,2%	820	1.535,03	84,0%
170	303,33	17,4%	500	928,66	51,2%	830	1.553,98	85,0%
180	322,28	18,4%	510	947,61	52,3%	840	1.572,93	86,1%
190	341,23	19,5%	520	966,56	53,3%	850	1.591,88	87,1%
200	360,18	20,5%	530	985,51	54,3%	860	1.610,83	88,1%
210	379,13	21,5%	540	1.004,46	55,3%	870	1.629,64	89,1%
220	398,08	22,5%	550	1.023,41	56,4%	880	1.648,05	90,2%
230	417,03	23,6%	560	1.042,35	57,4%	890	1.666,07	91,2%
240	435,98	24,6%	570	1.061,30	58,4%	900	1.683,70	92,2%
250	454,93	25,6%	580	1.080,25	59,4%	910	1.700,93	93,2%
260	473,88	26,6%	590	1.099,20	60,5%	920	1.717,76	94,3%
270	492,83	27,7%	600	1.118,15	61,5%	930	1.734,20	95,3%
280	511,78	28,7%	610	1.137,10	62,5%	940	1.750,24	96,3%
290	530,73	29,7%	620	1.156,05	63,5%	950	1.765,89	97,3%
300	549,67	30,7%	630	1.175,00	64,5%	960	1.781,39	98,4%
310	568,62	31,8%	640	1.193,95	65,6%	970	1.796,90	99,4%
320	587,57	32,8%	650	1.212,90	66,6%			
330	606,52	33,8%	660	1.231,85	67,6%			

Bearing charts - TTD 1950

Level mm	Content Liter	Level %	Level mm	Content Liter	Level %	Level mm	Content Liter	Level %
10	20,23	1,0%	340	793,60	34,8%	670	1.582,11	68,6%
20	40,87	2,0%	350	817,50	35,9%	680	1.606,01	69,7%
30	61,89	3,1%	360	841,39	36,9%	690	1.629,90	70,7%
40	83,31	4,1%	370	865,28	37,9%	700	1.653,79	71,7%
50	105,13	5,1%	380	889,18	38,9%	710	1.677,69	72,7%
60	127,34	6,1%	390	913,07	40,0%	720	1.701,58	73,8%
70	149,95	7,2%	400	936,97	41,0%	730	1.725,48	74,8%
80	172,96	8,2%	410	960,86	42,0%	740	1.749,37	75,8%
90	196,36	9,2%	420	984,76	43,0%	750	1.773,27	76,8%
100	220,14	10,2%	430	1.008,65	44,1%	760	1.797,16	77,9%
110	244,03	11,3%	440	1.032,54	45,1%	770	1.821,05	78,9%
120	267,93	12,3%	450	1.056,44	46,1%	780	1.844,95	79,9%
130	291,82	13,3%	460	1.080,33	47,1%	790	1.868,84	80,9%
140	315,72	14,3%	470	1.104,23	48,2%	800	1.892,74	82,0%
150	339,61	15,4%	480	1.128,12	49,2%	810	1.916,63	83,0%
160	363,50	16,4%	490	1.152,01	50,2%	820	1.940,52	84,0%
170	387,40	17,4%	500	1.175,91	51,2%	830	1.964,42	85,0%
180	411,29	18,4%	510	1.199,80	52,3%	840	1.988,31	86,1%
190	435,19	19,5%	520	1.223,70	53,3%	850	2.012,21	87,1%
200	459,08	20,5%	530	1.247,59	54,3%	860	2.036,10	88,1%
210	482,98	21,5%	540	1.271,49	55,3%	870	2.059,85	89,1%
220	506,87	22,5%	550	1.295,38	56,4%	880	2.083,21	90,2%
230	530,76	23,6%	560	1.319,27	57,4%	890	2.106,18	91,2%
240	554,66	24,6%	570	1.343,17	58,4%	900	2.128,75	92,2%
250	578,55	25,6%	580	1.367,06	59,4%	910	2.150,92	93,2%
260	602,45	26,6%	590	1.390,96	60,5%	920	2.172,70	94,3%
270	626,34	27,7%	600	1.414,85	61,5%	930	2.194,08	95,3%
280	650,24	28,7%	610	1.438,75	62,5%	940	2.215,07	96,3%
290	674,13	29,7%	620	1.462,64	63,5%	950	2.235,66	97,3%
300	698,02	30,7%	630	1.486,53	64,5%	960	2.256,11	98,4%
310	721,92	31,8%	640	1.510,43	65,6%	970	2.276,57	99,4%
320	745,81	32,8%	650	1.534,32	66,6%			
330	769,71	33,8%	660	1.558,22	67,6%			

2.6.3 The electronic leakage indicator (installed)

In an impact resistant housing, the leakage indicator contains the indicating and control elements, a vacuum pump, a pressure switch, a printed circuit board with the required electromagnetic components for processing the output signal, a filter and three hose connections for the pneumatic connection to the monitored space of the tank.

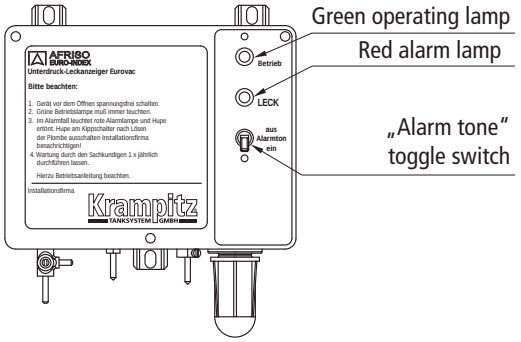
If operating voltage (230 V, 50 Hz) is supplied and vacuum has built up, the green lamp lights. The leakage indicator generates constant vacuum (approximately -400 mbar) in the monitored space of the tank and sounds an alarm if the vacuum drops (= pressure rises) (below about -340mbar).

The alarm is provided visually (red alarm lamp) and audibly and can be sampled at a floating relay contact (1 switchover). The audible alarm can be muted after breaking the seal under the „alarm sound" toggle switch. When the supply voltage fails, no alarm is triggered. The device is ready for operation immediately after the power supply is restored.
A leak that may have developed in the meantime will be signaled.

A visual check of the leakage indicator is made

- every time the device is transported
- every time the device is moved to another site
- every initial start-up
- every restart
- every temporary shut-down.

CAUTION The leakage indicator operates on 230 V, 50Hz mains voltage. This voltage can cause extremely severe burn injuries. Contact with this voltage can be fatal. Disconnect the supply voltage before you open the leakage indicator or starting maintenance or repair work (switch off the fuse!).

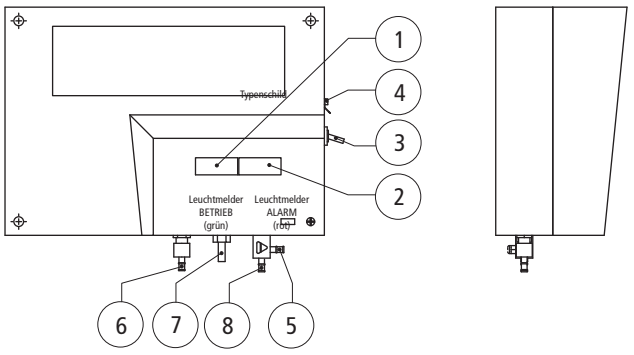


Specifications	
Dimensions (L x W x H) in mm	215 x 165 x 100
Footprint (L x W x H) in mm	250 x 170 x 999
Weight in kg	1,7
Supply voltage	230 V AC +/-10% 50/60 Hz
Rated output	95 VA
Line fuse	T 0,8 A
Output relay	1 changeover switch
Output relay switching capacity	max. 250 V, 2 A, ohmic load
Relay contact fuse	T 2 A
Switching point "Alarm on" in mbar	-325 to -355
Switching point "Alarm off" in mbar	-380 (value for information, exact level depends on switching hysteresis)
Switching point „Pump on" in mbar	-380 (value for information, exact level depends on switching hysteresis)
Switching point „Pump off" in mbar	-410 to -450
Hose connection, diameter in mm	5
Connecting hose	PVC hose 4 x 2 mm, 6 x 2 mm
Permitted ambient temperature in °C	-5 to +50
Protection class	11 EN 60730
Type of protection	IP 30 EN 60529
Radio interference suppression	according to EN 50081-1
Noise immunity	according to EN 50082-2

2.6.4 The electronic vacuum leakage indicator

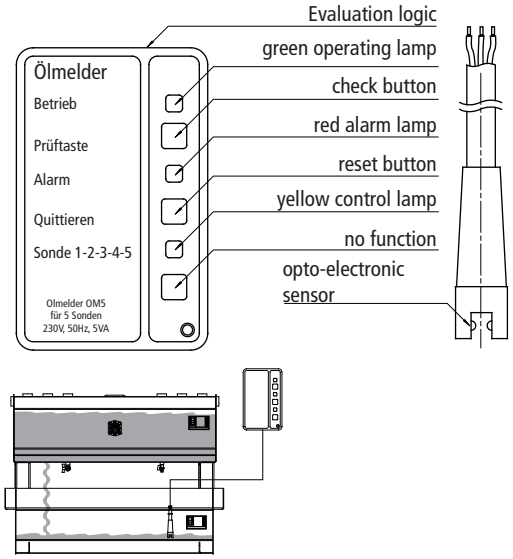
Vacuum leakage indicator for monitoring double wall tanks. The leakage indicator establishes and maintains vacuum in the monitored space of the double wall tank. If a gas leak occurs, air or fumes is taken in the monitored space and causes a vacuum drop.
Minor leaks are compensated by starting the pump. Major leaks cannot be compensated by the pump because the pump capacity is insufficient for this. In this case, vacuum will be reduced further. When the vacuum alarm threshold is obtained, visual and audible alarms are triggered.
If a liquid leakage occurs, stored medium or ground water will be taken in the monitored space. Vacuum drops and the pump starts working to restore the operating vacuum level.
After some time, stored medium or ground water will be taken in the monitored space. The liquid barrier closes and separates the pump from the monitored space.

The pump cannot produce more vacuum. Vacuum remaining in the monitored space and the measuring line is consumed by the entry of more liquid.
When the alarm threshold is obtained, visual and audible alarms are triggered. Vacuum remaining when alarm is triggered is sufficient to prevent the entry of stored medium in the environment.



1 Green operating lamp
2 Red alarm lamp
3 Toggle switch
4 Seal mount
5 Check valve
6 Suction line connection
7 Exhaust line connection
8 Measuring line connection

2.6.5 The oil warning sensor with alarm and evaluation unit



2.6.5.1 Function of the oil alarm

The oil alarm sensor detects the different optical behavior of air and liquids.
It is placed at the lowest point of the monitored space. The integrated signal module provides constant monitoring of the electric output signal of the sensor. When the system is ready, the green lamp lights. If the sensor is exposed to air, the signal module sends a go ahead signal: The green operating lamp lights, the red alarm lamp is off, the relay drops out. When the sensor is immersed in oil, the signal module signals a leak (alarm): The red alarm lamp and the audible alarm are triggered, the relay picks up. The audible alarm can be muted by pressing the "Rest" button. Pressing the button activates the audible alarm again.
If several sensors are connected to one evaluation logic, the sensors can be closed by the number of blinking pulses of the yellow indicator lamp. The frequency of the blinking pulses is about three seconds. No alarm is triggered if mains power fails. The device is ready when mains power is restored. Any leak occurring during power outage will be indicated. The green operating lamp shines as soon as the oil alarm is supplied with mains voltage. The function of the alarm function can be simulated with the check button.
The oil alarm is an approved leakage warning device. It is installed in the sump space of the day tank. Up to 5 sensors can be connected to one evaluation logic. The oil alarm quickly detects leaks of substances dangerous to water according to VAwS. If a sensor is immersed in liquid, the signal module identifies the change of the sensor signal and triggers a visible and an audible alarm and also operates the relay for the output unit.

2.6.5.2 Configuration of the oil alarm

The oil alarm consists of a signal module and up to five sensors. The signal module and the sensors are connected with each other by a 3-wire signal cable of up to 10 meters length. The oil alarm sensor consists of an infrared transmitter and an infrared receiver attached at a certain distance to each other. Both parts together form an optical barrier. If air is between the transmitter and the receiver, most of the infrared radiation emitted by the transmitter is received. The system operates on the optical coupler principle. The signal module contains an impact resistant plastic housing indicators and controls as well as the required electronic components for evaluating and converting the sensor signal into a digital output signal. The output signal is available as floating relay contact (changeover contact).

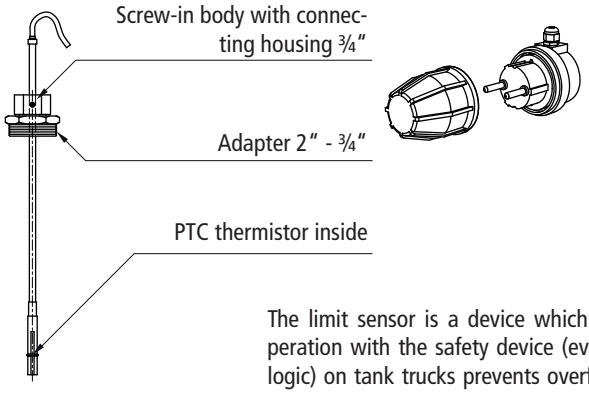
2.6.6 The overfill guards

Any tank that is intended for storing Diesel fuel or fuel oil and which has with the tank truck connection, except above-ground tanks containing not more than 1,000 liters, which are filled by manual nozzle without permanently installed piping, must have an overfill guard which stops the filling procedure in time when the permitted level is obtained or triggers an audible alarm. Tanks containing more than 1,000 liters and intended for storing Diesel fuel or fuel oil, which are filled from road tank trucks or top-mounted tanks, must be equipped with a limit sensor which functions as safety device on tank trucks or top-mounted tanks (also refer to TRbF 20 Article 9.3). Tanks for storage of other potentially water-contaminating liquids and flammable substances, e.g., mineral oil, which are filled automatically, must be equipped with an approved overfill guard. The overfill guard should not be used as switching point for actuating the replenishing device in normal operation.

NOTE The overfill guard must be approved for the storage medium.

NOTE Tanks must not be filled higher than the permitted maximum filling level. The permitted filling level depends on the medium (coefficient of cubic expansion; also refer to TRbF 20) and is limited to 95 % of the tank height of the TTD.

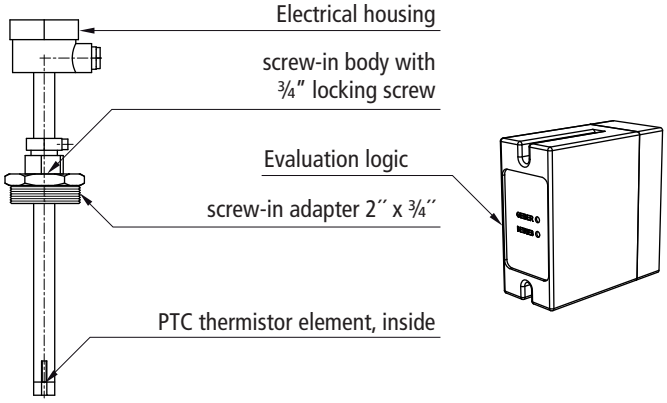
2.6.6.1 The limit sensor (GWG) with PTC thermistor - only for Diesel fuel and fuel oil



The limit sensor is a device which in cooperation with the safety device (evaluation logic) on tank trucks prevents overfilling of permanently installed tanks. Permanently installed tanks for storage of Diesel fuel or fuel oil which are filled from tank trucks must have a limit sensor. Exception: Tanks smaller than 1,000 liters filled by manual nozzle without permanently installed pipe. The limit sensor should be adapted to the highest permitted filling level of the tank. (Also refer to limit sensor installation instructions).

2.6.6.2 The overfill guard with evaluation logic

The PTC termistor based level sensor of the approved overfill guard is installed in a 2" sleeve in the tank roof by means of a 2´´ x ¾´´ adapter (refer to adapter). An approved overfill guard is required in any case if the tank is filled by electric pump and permanently installed pipeline. The overfill guard should be adapted to the highest permitted filling level of the tank. (Refer to overfill guard installation instructions).

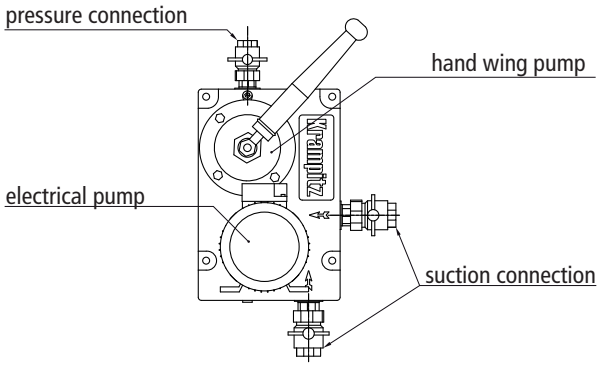


2.6.6.3. Overview: Possible switching points and control instructions

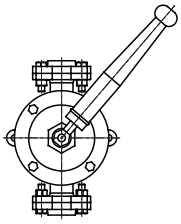
Symbol	Designation	Filling level in percent	Level sensor type	Control command
▽ ++	max-max	95	limiting-value transmitter/ overfill protectio-nin case of export application: mini detector	over-fill alarm pump off
▽ +	max	70	mini detector	operating contact: pump off
▽ –	min	40	mini detector	operating contact: pump on and signal indicating the repeat order of fuel
▽ – –	min-min	10	mini detector	Mangel-Alarm: Maschine aus

2.6.7 The Pump Combination

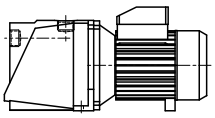
The pump combination uses the KTD storage tank to supply remote daily tanks. The pump combination contains an electrical pump and a hand wing pump in one case. In the event of a failure or defect of the electrical pump, the hand pump ensures that the system can be operated without interruption. It also serves the ventilation of the suction pipe (for further details see the operating instructions for the pump combination).



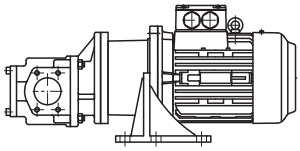
2.6.7.1 Further pumps from the product range of Krampitz Tanksystem GmbH



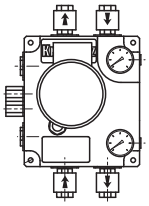
hand wing pump
from 20 litres/min
to 100 litres/min
Example: 20 litres/min



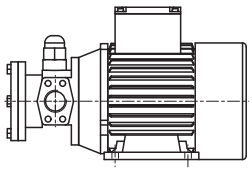
electrical centrifugal pump
from 45 litres/min
to 1,000 litres/min
Example: 80 litres/min



gear pump
from 6 litres/min
to 200 litres/min
Example: 200 litres/min

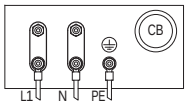


block pump unit
from 6 litres/min
to 26 litres/min
Example: 26 litres/min

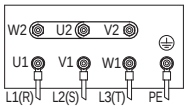


Gerotor pump
from 6 litres/min
to 26 litres/min
Example: 26 litres/min

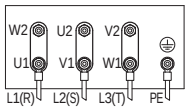
Connection schemes for electropumps



Connection scheme 230 V/AC
Alternating current (single-phase)
CB operating capacitor
(internally connected to motor,
no internal bridge required!)



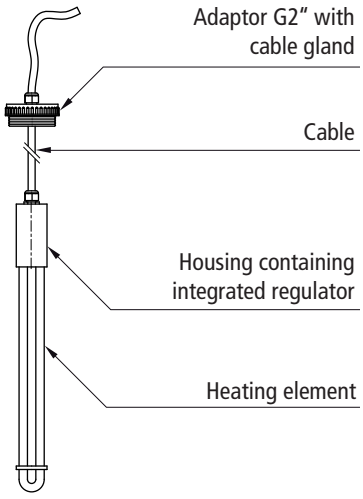
Connection scheme 400 V
Rotary current
(three-phase)
Star connection



Connection scheme 400 V
Rotary current
(three-phase)
Delta connection

2.6.8 Tank heater

Tank heater up to 1,500 W / up to 8,000 litres



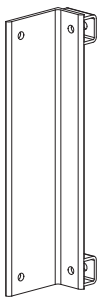
The use of a tank heater with integrated thermostat between 8°C bis 12°C
and thermal limiter reliably prevents the separation of paraffin fractions of
light heating oil and diesel at low temperatures. In this manner, the pump
and nozzle viscosity of the oil and diesel in the suction area is maintained.

NOTE Not permitted/approved for liquids with a flash point < 55°

Power	Tank volume	Voltage
220 W	up to 2,000 litres	230 V, 50 Hz

2.6.9 The wall brackets

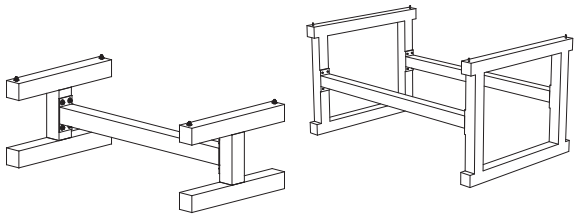
The wall brackets will be installed at the two boreholes in the front wall area. The tank with the wall brackets will then be positioned on the wall to which it is to be fixed and installed with the relevant dowels.



NOTE Due to the static requirements concerning the wall of the building, the use of wall brackets will only make sense for tanks up to the TTE 990 series.

tank type	TTD 250	TTD 500	TTD 750	TTD 990
Wall brackets type	WK 2		WK 3	
weight/pair	12 kg		18 kg	

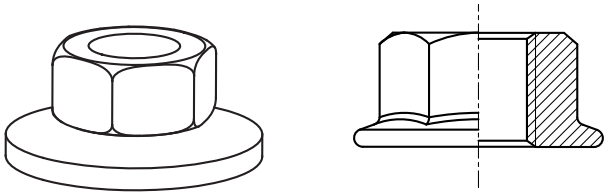
2.6.10 The supporting column



The vertical column is made up of two columns in double T-shape that are manufactured from square tube dimensioned 100 x 100 x 3 mm. These columns will be bolted with four nuts each to a cross-member at two head plates. The collecting pan or the daily storage tank will then be lifted onto this vertical column, placed on the relevant welding bolts and fi xed with four M10 nuts and non-detachable washers. The openings of the square tubes will then be sealed with the lids that are included in the delivery.

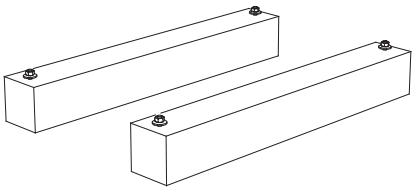
tank type	TTD 250	TTD 500	TTD 750	TTD 990	TTD 1500	TTD 1950
height vertical column	**vertical column type and weight**					
500 mm	ST 2/5	ST 3/5	ST 3/5	ST 4/5	ST 5/5	ST 6/5
1000 mm	ST 2/10	ST 3/10	ST 3/10	ST 4/10	ST 5/10	ST 6/10
1500 mm	ST 2/15	ST 3/15	ST 3/15	ST 4/15	ST 5/15	ST 6/15

2.6.11 The Krampitz special nut with captive washer



For quick and safe installation, the Krampitz Tanksystems come with special bolts. Unlike conventional fasteners is in the Krampitz special bolt washer connected with the captive nut. So quickly and a permanent connection can be established.

2.6.12 The feet



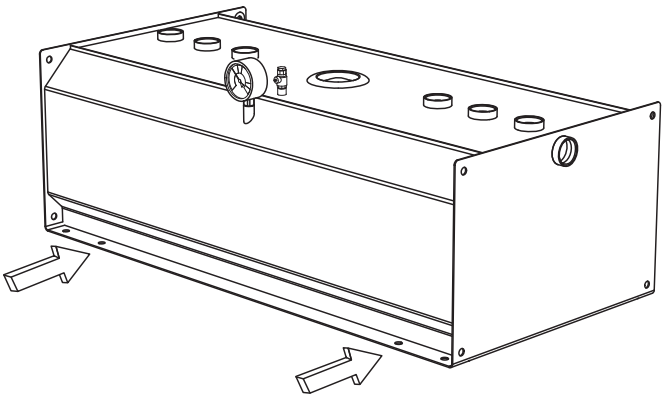
The feet consist of a pair of square steel tubes dimensioned 100 x 100 x 3 mm. They are equipped with M10 welding bolts and M10 nuts with non-detachable washers. The daily storage tank or the collecting pan can be put up on the ground in the most optimal way with their help.

tank type	TTE 250	TTE 500	TTE 750	TTE 990	TTE 1500	TTE 1950
foot type	FS 1	FS 2			FS 3	FS 4
weight/pair	9 kg	14 kg			16 kg	18 kg

3. START-UP

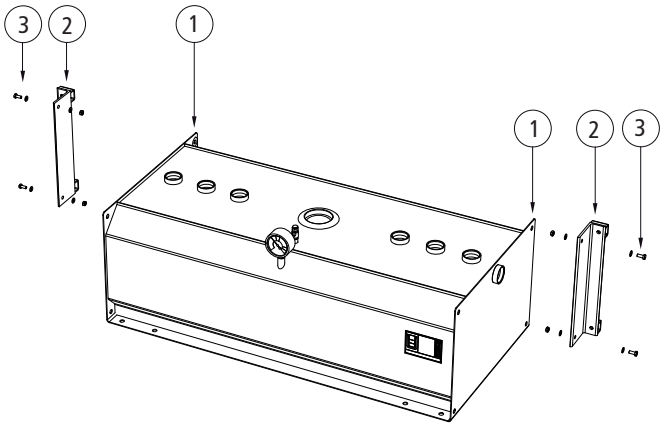
3.1 Transport of the TTD

The KTD can be easily transported by fork lift or hand lift.



CAUTION During transport, the relevant, currently valid safety regulations must be observed and damages must be avoided. In the event that the colour coat is damaged, corrosion protection must be properly restored.

3.2 Wall mounting of the TTD

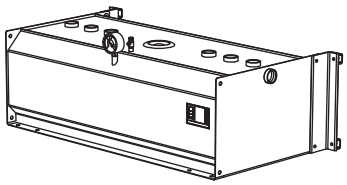


The permit system for mounting the tank wall at a building site must be obtained. The static strength of the wall (at least B15) must be proven before installation. The day tank can be mounted by using two anchor wall brackets with four corresponding types of fasteners. The wall bracket (pos. 2) will be at the rear holes of the front walls (pos. 1) mounted with the tank bolts M 10 (pos. 3).

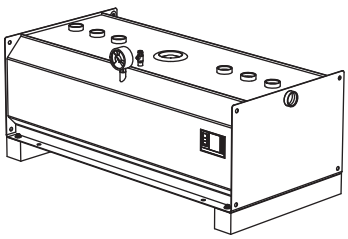
After the day tank means including wall bracket with hoist on the wall is positioned. Now it's possible to drill holes in the wall, then can be the wall anchor (corresponding to manual) fixed. Now, the day tank with the wall brackets on the wall or be attached to the wall anchor.

3.3 Setting up the TTD on feet / supporting

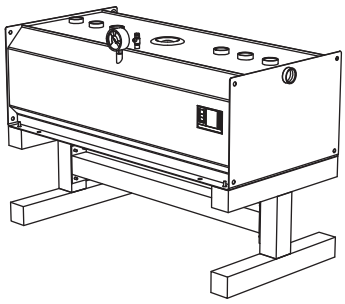
The KTD must only be placed on even and load-bearing floor space (minimum quality B 15 or equal). A stress analysis must be performed and presented. Generally, storage tanks up to a maximum storage volume of 5,000 litres can be operated in a machine room.
The day tank can be positioned exactly over the injection pump of a motor with the stand column. For this will be the foots of the stand column connected wit the head plate of the sub-carrier (bolts M 10).



TTD-500 double wall daily storage tank with wall brackets



TTD-500 double wall daily storage tank with feet



TTD-500 double wall daily storage tank with vertical column

CAUTION Rollover risk in cases of excessive movement by moving the construction.

CAUTION The lifting of the tanks is to follow safety rules for appropriate and valid. There is danger of injury and damage to components.

3.4 First start-up

Before filling the TTD for the first time, check that::

1. the tank is properly fastened and placed
2. the pipe connections are leak-tight and properly connected
3. the sensors are properly connected, such as the
   a. level sensor
   b. over-fill protection
   c. oil warning probe (oil detector)
   d. limiting-value transmitter
4. the blind plugs are tightly connected

3.5 Operation sequence

- Check the position of the ball valves. The ball valves at the system flow connection must be closed.
- Apply voltage. The voltage puts the sensors into operation.
- Bei Betankung mit anlageneigener Pumpe Stellung der Pumpenkugelhähne überprüfen.

CAUTION The over-fill protection triggers an alarm during the first seconds because the PTC thermistor of the level sensor must heat up first.

- Fillings by tank lorry:

1. When the filling level rises, the switching of the level switch points can be checked (if applicable, these are: MIN-MIN, MIN, MAX, MAX-MAX).
2. As soon as the limiting-value transmitter is wet, the filling is automatically interrupted. The filling via filling connection with a tank lorry is mandatory for storage tanks with a capacity of more than 1,000 litres. Smaller daily tanks can be filled with the petrol pump nozzle with a dead man's switch which automatically shuts off fuel delivery

- Fillings by system pump:

1. When the filling level rises, the switching of the level switch points can be checked (if applicable, these are: MIN-MIN, MIN, MAX, MAX-MAX).
2. As soon as the installed over-fill protection is wet, the pump must be automatically switched off

- check pipe connections for leak-tightness
- filling level per level indicator to check again
- if necessary, open the ball valves at the system flow connection
- The TTD is now ready to use

4. DOCUMENTS

The TTD double wall daily storage tank are delivered with the documents below:

- inspection sheet in German language (two copies)
- drawing (one copies)
- building authority permit Z-38.12-23 (one copies)
- operating instructions for the individual module components, such as level sensor, over-fill protection, pump combination
- The permit book contains with National Technical Approval Z-65.22-158 leak indicator with the indication "KÜR 5" without vacuum generator for the control room of double-wall tanks for the storage of liquids hazardous to water (two copies)

These documents are sent to the customer by mail. Only the delivery note is delivered together with the tank to avoid that important documents get lost at the construction site
The permit book contains an inspection table for the respective tank. This inspection table holds the tank dimensions, the tank type, the date of the first inspection as well as further inspection dates. The person conducting the further inspections can sign in the book to acknowledge the inspections.

5. WARRANTY

§1 Scope of warranty

(1) The warranty covers system defects throughout the warranty period which occur during proper operation and use of the system and circuitry and which don't result from external causes of any kind, mechanical damages or non-compliance of regulations regarding the use of the system or circuitry.
(2) In addition, the warranty doesn't cover damages resulting from improper maintenance and repair work.

§2 Warranty Period

The warranty period begins when the system is taken into operation on-site. Any warranty claims made within the warranty period are reviewed. This only applies to the tank system. The warranty period is 24 months.
For fittings and devices (mechanical, electromechanical, electrical and electronic), supplied by external manufacturers, the warranty period is 6 months.

§3 Handling

(1) In the event that defects occur during the warranty period, warranty claims must be made immediately, at the latest within two weeks, in writing.
(2) Only Krampitz Tanksystem GmbH is authorised to accept warranty claims.

§ 4 Warranty Exclusion

Warranty claims cannot be considered:

a. if the damage to – or destruction of – the installation, circuitry, or parts of such, has been caused by an act of nature or by the consequences of operation of the installation in a manner not intended, in particular by external mechanical or chemical factors;
b. if damage has occurred as a result of improper handling, particularly non-compliance with the operating instructions provided.
c. if the circuitry, or parts of such, have not been repaired or serviced by legitimate representatives, employees or agents of Krampitz Tanksystem GmbH.
d. if the circuitry, or parts of such, exhibit mechanical damage of any kind.

§5 Supplementary regulations

(1) In the event of a warranty claim, the foregoing provisions regulate the legal relationship with respect to us in a fi nal and conclusive manner. Any further claims, in particular those concerning damage or loss, of whatever nature, arising from the installation, circuitry, parts of the circuitry or by operation of such, are excluded.
(2) The burden of proof for the proper installation and operation of the facility, circuitry or parts of such, in accordance with the operating instructions provided, rests with the purchaser.
(3) Place of performance, applicable law, venue of jurisdiction

Place of performance for the delivery is the destination, for payment the place of the customer. Supplementary to the purchasing conditions, German law is applicable. The applicability of the UN law on sale of goods, however, is excluded.

The sole venue of jurisdiction for all disputes arising directly or indirectly from the contractual relationship – provided that the contractor is a registered trader – is Lüneburg.

If the contractor is not a registered trader, then Lüneburg is the venue of jurisdiction for claims for summary proceedings for collection procedure (Mahnverfahren). Should any of the individual provisions of the contract be – or become – void, the validity of the remaining parts of these conditions shall not be affected.

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