



Product Catalogue



LK Armatur

Table of Contents

LK ARMATUR – A ONE-STOP SUPPLIER.....	5	DIFFERENTIAL TEMPERATURE CONTROLLERS.....	85
LOADING UNITS.....	9	LK 150 SmartSol.....	86
LK 810 ThermoMat G.....	10	LK 160 SmartBio.....	88
LK 810 ThermoMat G Eco.....	13	SOLAR PUMP UNITS.....	91
LK 810 ThermoMat W.....	16	LK 201 SmartSolar.....	92
LK 810 ThermoMat W Eco.....	19	LK 202 SmartSolar.....	94
LK 811 ThermoMat E Eco.....	22	MOUNTING KITS.....	96
LK 815 ThermoKit T Eco.....	27	VALVE ACTUATORS.....	97
LK 816 ThermoKit E Eco.....	29	LK 950 Valve Actuator.....	98
THERMIC VALVES AND CHECK VALVES.....	31	MULTIFILL®.....	101
LK 820 ThermoVar.....	32	LK 520 MultiFill® 25.....	102
LK 821 ThermoVar.....	36	LK 520 MultiFill® 32.....	104
LK 823 ThermoVar.....	40	APPLICATIONS.....	106
LK 825 ThermoVar.....	42	ZONE VALVES.....	107
LK 822 ThermoBac.....	45	LK 525 MultiZone 2W.....	108
LK 826 ThermoBac.....	47	LK 525 MultiZone 3W.....	110
LK Insulation.....	49	LK 525 MultiZone Polar.....	112
APPLICATIONS.....	50	LK 525 MultiZone Solar.....	114
MIXING VALVES.....	51	APPLICATIONS.....	116
LK 830 ThermoMix B.....	52	VALVES FOR WATER HEATING.....	117
LK 831 ThermoMix B.....	54	LK 514 MultiSafe.....	118
LK 840 ThermoMix.....	56	LK 548 AquaKit.....	119
LK 841 ThermoMix.....	59	LK 550 AquaMix.....	121
LK 845 ThermoMix.....	62	LK 551 HydroMix.....	123
LK 846 ThermoMix.....	64	OTHER VALVES.....	125
LK 850 ThermoMix H.....	66	LK 538 ThermoFill EA.....	126
LK 851 ThermoMix H.....	68	LK 539 ThermoFill EA.....	128
LK 842 ThermoMix P.....	70	LK 435 OptiFlow.....	129
LK Insulation.....	72	LK 519 ThermoSafe.....	131
TEMPERATURE CONTROLLERS.....	73	LK 700/705 AeroMat.....	132
LK 100 SmartComfort CT.....	74	Transition Fittings.....	133
LK 110 SmartComfort.....	76	Assembly Instructions for Compression Fittings.....	134
LK 120 SmartComfort.....	78	Media.....	134
LK 130 SmartComfort.....	80	THE LK GROUP.....	135
APPLICATIONS.....	84		



Garnisonsgatan 49 • SE-254 66 Helsingborg • Sweden
Phone: +46 (0)42-16 92 00 • Fax: +46 (0)42-16 92 20
info@lkarmatur.se • order@lkarmatur.se
www.lkarmatur.se

LK Armatur - A One-Stop Supplier

OUR COMPANY

LK Armatur was founded in 1985 when the LK Group widened its focus to provide heating system and calorifier manufacturers with valves and components.

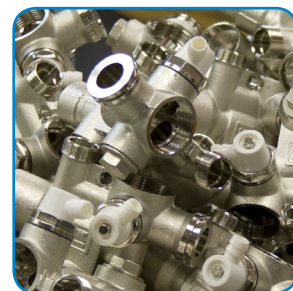
By constant development and response to market demand for new products and services, LK Armatur has grown to become an important supplier of valves, components and prefabricated units for the global OEM and distributor market. LK Armatur now produces more than one and a half million valves per year, ranging from simple standard valves to sophisticated, customized special products.

We focus on customers who see energy saving and environmental awareness as a matter of course. The risk of energy shortage, the steady increase in energy prices and the problem of global warming have created a great need for cost and energy efficient heating systems in which renewable energy sources can be utilized. The common denominator for our customers is their stringent requirements for quality, customization and delivery reliability.

Our aim is to be a complete business partner within the HVAC sector. This is why offering high quality products is not enough - the products must also be in the right place at the right time. We have made it our priority to accept general responsibility for logistics and we make sure that our deliveries arrive at our customer's workplace at the right time, clearly marked and packaged as per request. In this way we contribute to lowering our customers' production costs.

Machinery and technology have their places but what makes a company successful is people. That's why LK Armatur focuses on the employees - competence and skill are important keys to success. Education and development are natural parts of the culture at LK Armatur as we work according to the Lean production method with continuous improvement and progress.

Our management system complies with ISO 9001:2008 for the development, manufacture and distribution of valves, electronic heating controls and prefabricated systems.



OUR PRODUCTS

Our aim is to provide high quality, technically advanced products that are easy to install and uncomplicated to use. We constantly develop and design new products. Our technical staff often participate at the idea stage and are able to help our customers with not just the right product but also with complete packages that save time and money.

We offer our customers a wide range of products consisting of valves, electronic heat regulation, prefabrication of customized pipes and units as well as supplementary trade products.



VALVES

LK Armatur's core business is based on our own manufacture of valves. Thanks to our deep knowledge of the field combined with the latest technology, we can provide the market with a wide range of both standard products and sophisticated, customized special products. This product range includes ThermoMix - mixing valves, ThermoVar - thermic valves, ThermoBac - check valves, ThermoMat and ThermoKit - loading units, zone valves, filling valves, safety relief valves, temperature control valves and automatic air vents.



ELECTRONIC HEAT REGULATION

LK Armatur's own range of electronic heat and temperature controllers are gathered under the family name of Smart. Simple, user friendly products that cater to our customers' needs in a smart way. This product range includes SmartComfort - heat controllers, SmartBio - differential temperature controller, SmartSol - solar controller and SmartSolar - solar pump units.



PREFABRICATION

In the prefabrication field, we process pipes in steel, stainless steel and copper. We also assemble components into complete units. By working closely with our customers we are able to help find their ideal solutions.

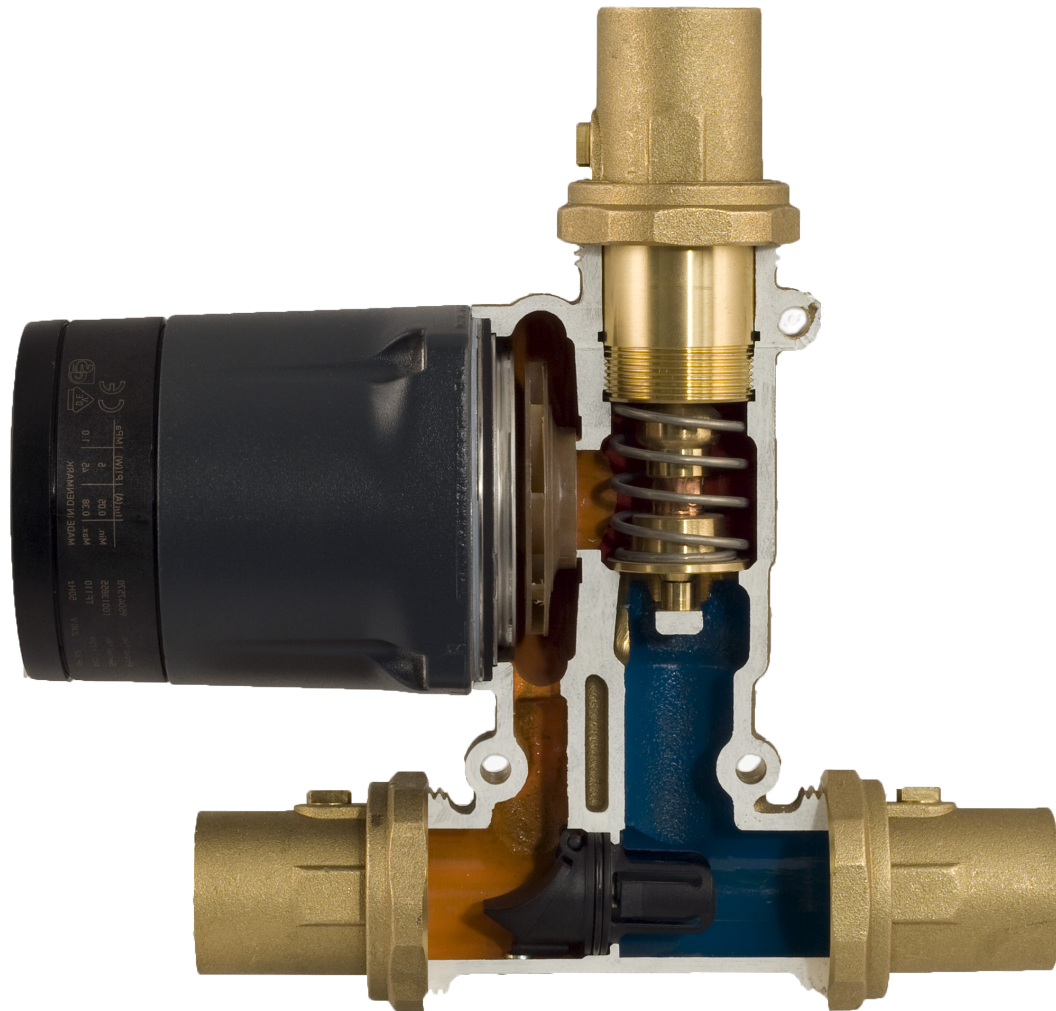


TRADE PRODUCTS

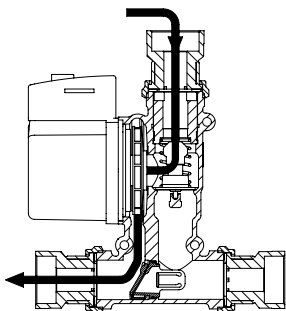
In order to be a one-stop supplier we offer, in addition to our in-house manufacture, a wide range of products from leading European manufacturers. We demand as much from our subcontractors as we do from ourselves. This means that we can be sure that all products that leave our company maintain the same high quality and are approved to national and international standards.



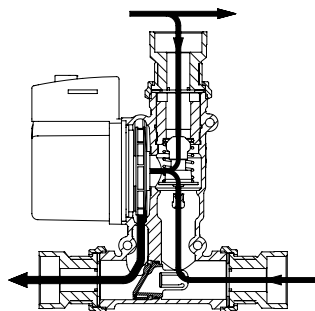
LK 810 ThermoMat



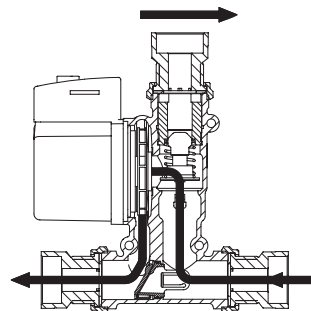
1. HEAT UP PHASE



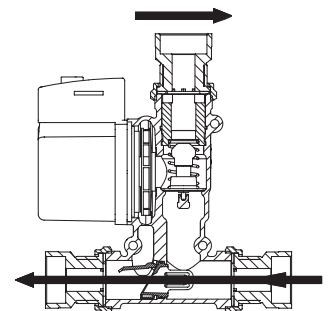
2. LOADING PHASE



3. END PHASE



4. SELF-CIRCULATION WITH CHECK VALVE



Loading Units for Solid Fuel Applications



LK 810 ThermoMat G

Compact loading unit with integrated circulating pump.



LK 810 ThermoMat G Eco

Compact loading unit with integrated low-energy circulating pump that fulfills the requirements of ErP 2015.



LK 810 ThermoMat W

Compact loading unit with integrated circulating pump.



LK 810 ThermoMat W Eco

Compact loading unit with integrated low-energy circulating pump that fulfills the requirements of ErP 2015.



LK 811 ThermoMat E Eco

Compact loading unit with low-energy circulating pump that fulfills the requirements of ErP 2015 and integrated mixing valve. LK 811 is available with or without an electronic temperature controller.



LK 815 ThermoKit T Eco

Loading group with low-energy circulating pump that fulfills the requirements of ErP 2015.



LK 816 ThermoKit E Eco

Electronic loading group with low-energy circulating pump that fulfills the requirements of ErP 2015.

LK 810 ThermoMat G



Registered
Design

TECHNICAL DATA

Voltage	230 VAC 50 Hz
Power consumption	65-95 W depending on pump speed
Max. boiler efficiency	65 kW at 20°C ΔT
Return temperature	55°C, 60°C, 65°C or 70°C
Working temperature	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. flow	2800 l/h
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Circulating pumps	Grundfos UPSO 65 Low Energy
Material, valve body	Brass EN 1982 CB753S
Material, insulation	Expanded Polypropylene EPP

LK 810 ThermoMat G is a loading unit for heating applications with solid fuel boilers and storage tanks. The loading unit is intended to ensure a high return temperature as well as an optimal temperature stratification in the storage tank, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

The LK 810 ThermoMat G is a compact design with an integrated circulating pump and a thermic loading valve that regulates on two ports. The loading unit has three ball valves to simplify installation and maintenance, three thermometers that allow for simple control of the loading process and an insulation to minimize heat loss. The loading unit is available in two versions - with or without check valve. With a check valve the functions described under phase 4 will be obtained.

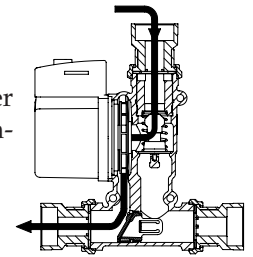
LK 810 ThermoMat G is installed in the return circuit between the solid fuel boiler and the storage tank. The unit should be mounted upright with the drive-shaft of the circulating pump in a horizontal position. The loading unit is reversible and can easily be adapted for mounting to the right or left of the boiler.

The loading unit normally requires no maintenance. The installation should be checked regularly. Thanks to the three ball valves any part can be changed without draining the system in case of servicing.

THE FUNCTION OF THE LOADING UNIT DURING THE DIFFERENT PHASES OF HEATING:

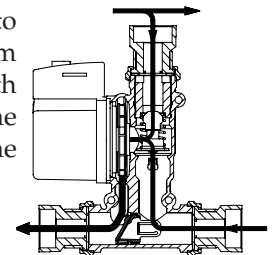
1. Heat up phase

The water circulates between boiler and loading unit while the temperature of the boiler is rising.



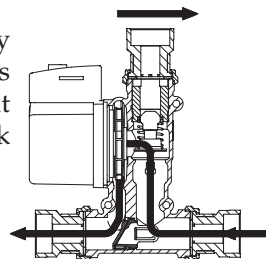
2. Loading phase

The thermostatic element starts to open and allows return water from the storage tank to be mixed with supply water before it returns to the boiler. The return temperature to the boiler is kept constant.



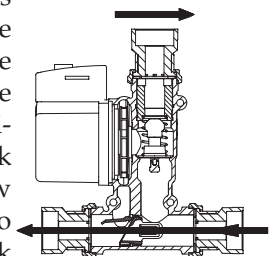
3. End phase

The thermostatic element is fully open and the bypass is closed. This results in an optimal transfer of heat from the boiler and the storage tank is filled with supply water.

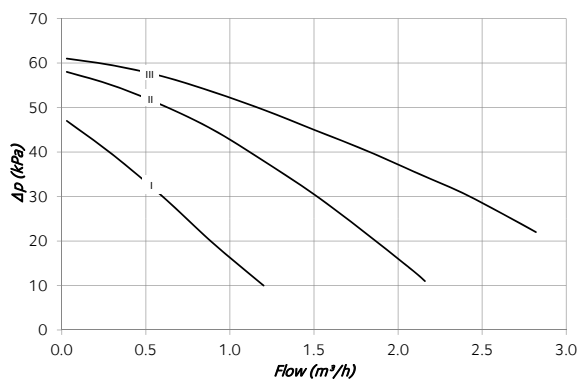


4. Self-circulation with check valve

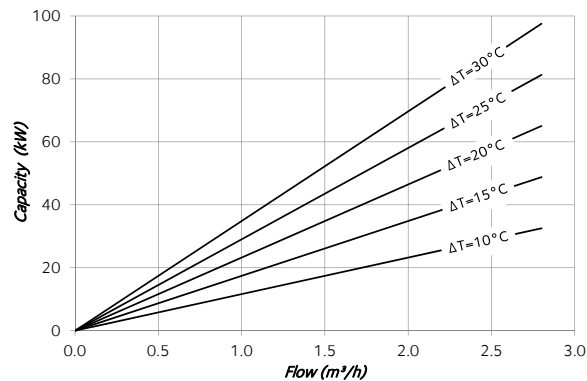
Self-circulation will be obtained as soon as the fire has gone out and the circulating pump has stopped. The remaining hot water is loaded to the storage tank. In case of power failure or pump breakdown the check valve automatically opens to allow self-circulation. The check valve also stops recirculation from storage tank to boiler.



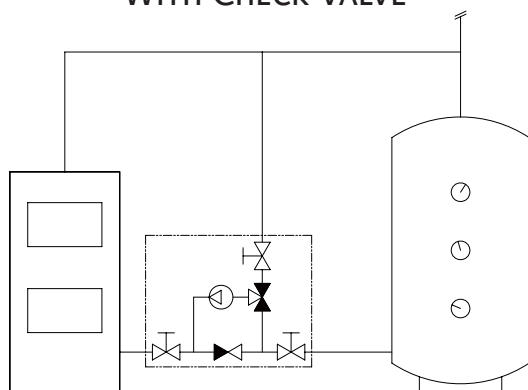
PUMP CHARACTERISTICS



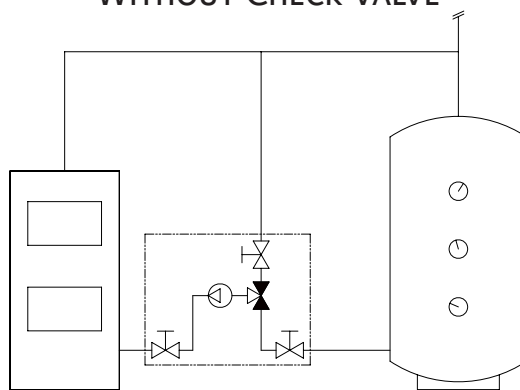
BOILER CAPACITY DIAGRAM



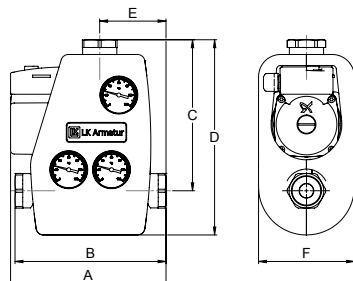
WITH CHECK VALVE



WITHOUT CHECK VALVE

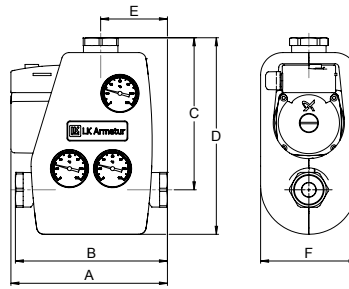


LK 810 G - FEMALE THREAD



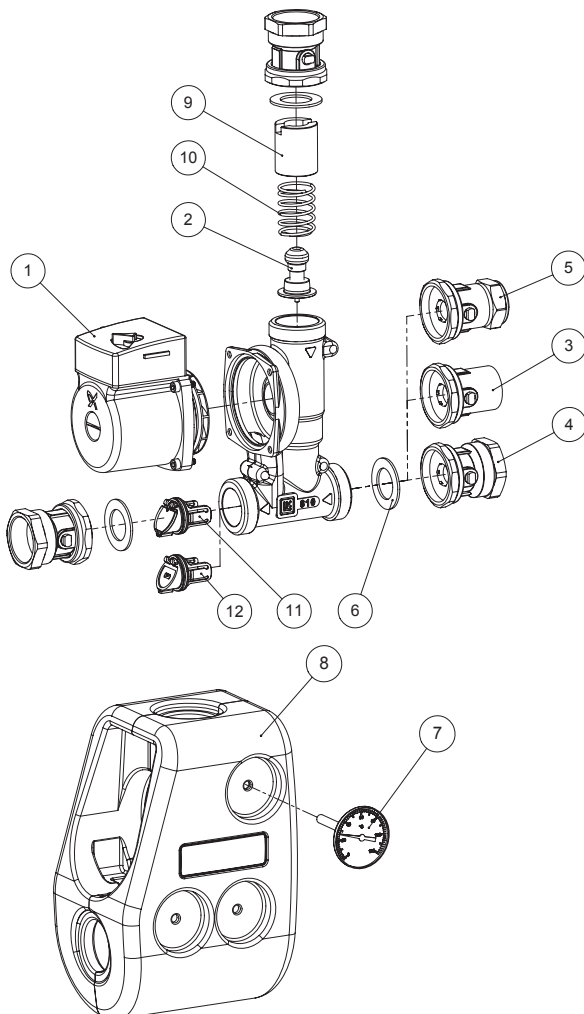
Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180005	without check valve	55 °C	F 1"	208	199	202	262	87	130	3.9
180007	without check valve	55 °C	F 1¼"	211	205	205	265	90	130	3.9
180011	without check valve	60 °C	F 1"	208	199	202	262	87	130	3.9
180013	without check valve	60 °C	F 1¼"	211	205	205	265	90	130	3.9
180017	without check valve	65 °C	F 1"	208	199	202	262	87	130	3.9
180019	without check valve	65 °C	F 1¼"	211	205	205	265	90	130	3.9
180596	without check valve	70 °C	F 1"	208	199	202	262	87	130	3.9
180598	without check valve	70 °C	F 1¼"	211	205	205	265	90	130	3.9
180006	with check valve	55 °C	F 1"	208	199	202	262	87	130	3.9
180008	with check valve	55 °C	F 1¼"	211	205	205	265	90	130	3.9
180012	with check valve	60 °C	F 1"	208	199	202	262	87	130	3.9
180014	with check valve	60 °C	F 1¼"	211	205	205	265	90	130	3.9
180018	with check valve	65 °C	F 1"	208	199	202	262	87	130	3.9
180020	with check valve	65 °C	F 1¼"	211	205	205	265	90	130	3.9
180597	with check valve	70 °C	F 1"	208	199	202	262	87	130	3.9
180599	with check valve	70 °C	F 1¼"	211	205	205	265	90	130	3.9

LK 810 G - COMPRESSION FITTING



Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180009	without check valve	55 °C	28 mm	213	209	207	267	92	130	3.9
180015	without check valve	60 °C	28 mm	213	209	207	267	92	130	3.9
180021	without check valve	65 °C	28 mm	213	209	207	267	92	130	3.9
180600	without check valve	70 °C	28 mm	213	209	207	267	92	130	3.9
180010	with check valve	55 °C	28 mm	213	209	207	267	92	130	3.9
180016	with check valve	60 °C	28 mm	213	209	207	267	92	130	3.9
180022	with check valve	65 °C	28 mm	213	209	207	267	92	130	3.9
180601	with check valve	70 °C	28 mm	213	209	207	267	92	130	3.9

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187014	Pump motor Grundfos UPSO 65	1
187015	LK 810 Thermostatic element 55°C	2
187016	LK 810 Thermostatic element 60°C	2
187023	LK 810 Thermostatic element 65°C	2
187024	LK 810 Thermostatic element 70°C	2
187017	Ball valve F 1"	3
187018	Ball valve F 1 1/4"	4
187019	Ball valve 28 mm	5
013025	Gasket EPDM 1 1/2" - Ø44 x Ø27 x 2 mm	6
180352	Thermometer 120°C - Ø51xØ7 mm, L60	7
187020	EPP insulation LK 810	8
016168	Element housing	9
014069	Spring	10
187021	Check valve LK 810 / 811	11
187022	Plug LK 810 / 811	12

LK 810 ThermoMat G Eco



Registered
Design

TECHNICAL DATA

Voltage	230 VAC 50 Hz
Power consumption	5-45 W depending on pump speed
Max. boiler efficiency	55 kW at 20°C ΔT
Return temperature	55°C, 60°C, 65°C or 70°C
Working temperature	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. flow	2300 l/h
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Circulating pumps	Grundfos Alpha 2L 60
Material, valve body	Brass EN 1982 CB753S
Material, insulation	Expanded Polypropylene EPP

LK 810 ThermoMat G Eco is a loading unit for heating applications with solid fuel boilers and storage tanks. The loading unit is intended to ensure a high return temperature as well as an optimal temperature stratification in the storage tank, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

The LK 810 ThermoMat G Eco is a compact design with an integrated low-energy circulating pump, that fulfills the requirements of ErP 2015, and a thermic loading valve that regulates on two ports. The loading unit has three ball valves to simplify installation and maintenance, three thermometers that allow for simple control of the loading process and an insulation to minimize heat loss. The loading unit is available in two versions - with or without check valve. With a check valve the functions described under phase 4 will be obtained.

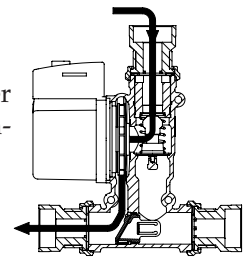
LK 810 ThermoMat G Eco is installed in the return circuit between the solid fuel boiler and the storage tank. The unit should be mounted upright with the drive-shaft of the circulating pump in a horizontal position. The loading unit is reversible and can easily be adapted for mounting to the right or left of the boiler.

The loading unit normally requires no maintenance. The installation should be checked regularly. Thanks to the three ball valves any part can be changed without draining the system in case of servicing.

THE FUNCTION OF THE LOADING UNIT DURING THE DIFFERENT PHASES OF HEATING:

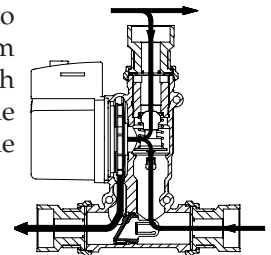
1. Heat up phase

The water circulates between boiler and loading unit while the temperature of the boiler is rising.



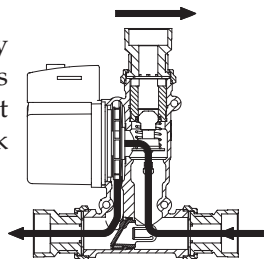
2. Loading phase

The thermostatic element starts to open and allows return water from the storage tank to be mixed with supply water before it returns to the boiler. The return temperature to the boiler is kept constant.



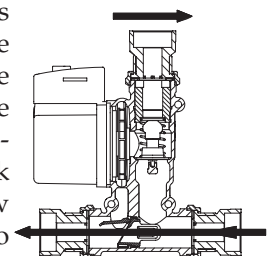
3. End phase

The thermostatic element is fully open and the bypass is closed. This results in an optimal transfer of heat from the boiler and the storage tank is filled with supply water.

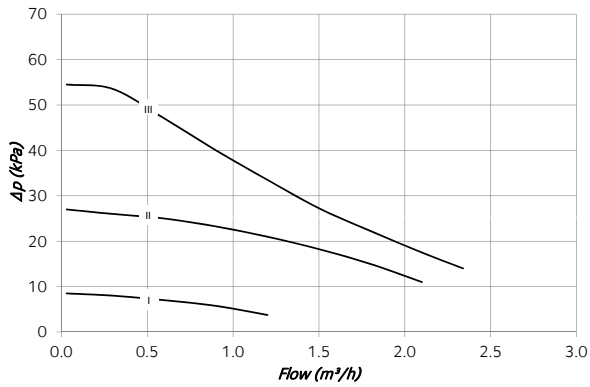


4. Self-circulation with check valve

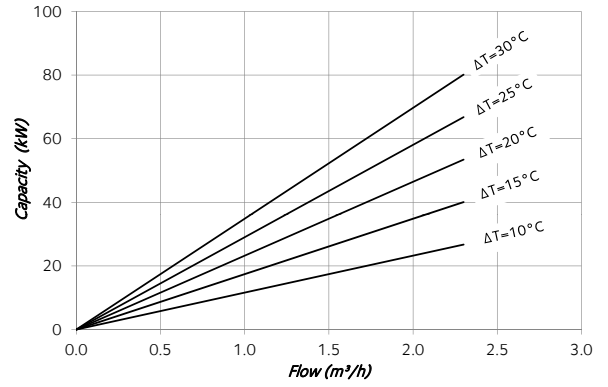
Self-circulation will be obtained as soon as the fire has gone out and the circulating pump has stopped. The remaining hot water is loaded to the storage tank. In case of power failure or pump breakdown the check valve automatically opens to allow self-circulation. The check valve also stops recirculation from storage tank to boiler.



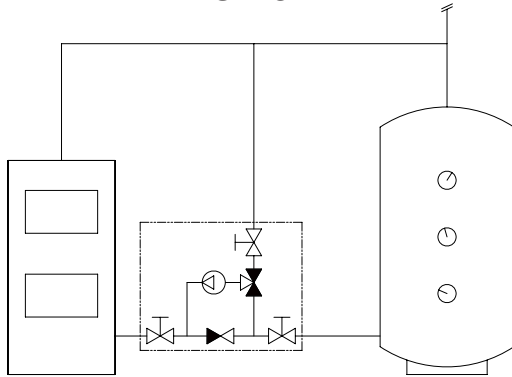
PUMP CHARACTERISTICS



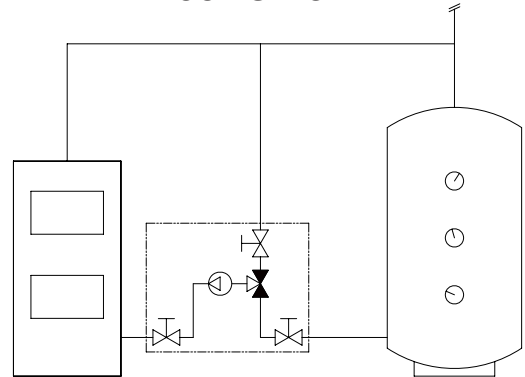
BOILER CAPACITY DIAGRAM



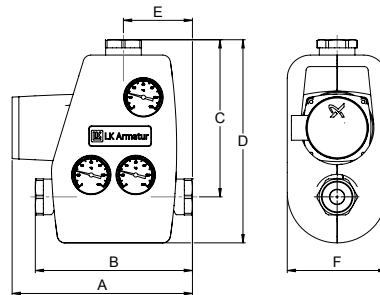
WITH CHECK VALVE



WITHOUT CHECK VALVE

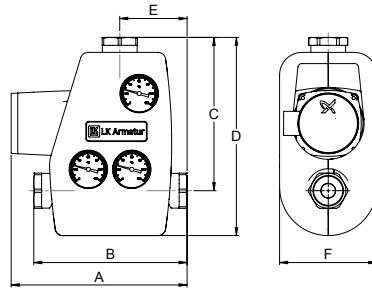


LK 810 G ECO- FEMALE THREAD



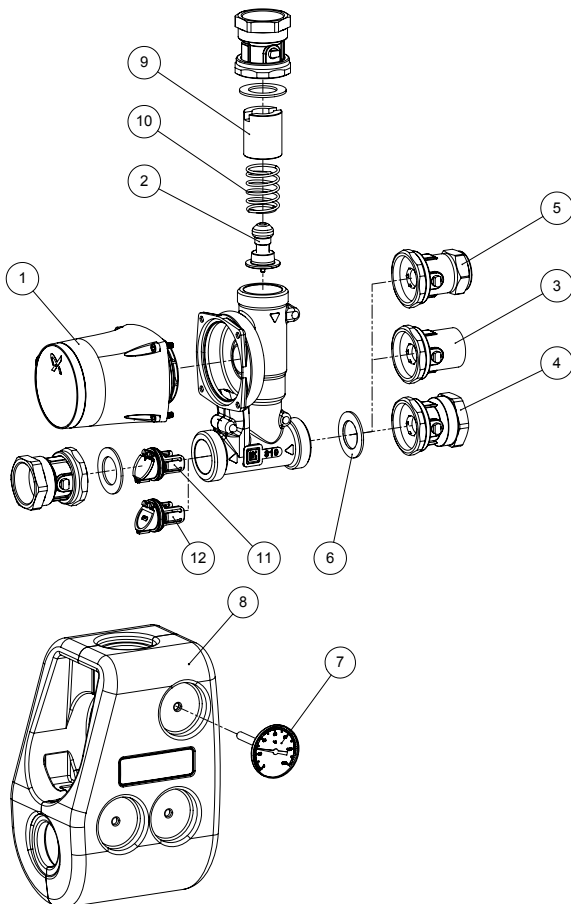
Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181048	without check valve	55 °C	F 1"	234	199	202	262	87	130	3.5
181050	without check valve	55 °C	F 1¼"	237	205	205	265	90	130	3.6
181054	without check valve	60 °C	F 1"	234	199	202	262	87	130	3.5
181056	without check valve	60 °C	F 1¼"	237	205	205	265	90	130	3.6
181060	without check valve	65 °C	F 1"	234	199	202	262	87	130	3.5
181062	without check valve	65 °C	F 1¼"	237	205	205	265	90	130	3.6
181066	without check valve	70 °C	F 1"	234	199	202	262	87	130	3.5
181068	without check valve	70 °C	F 1¼"	237	205	205	265	90	130	3.6
181049	with check valve	55 °C	F 1"	234	199	202	262	87	130	3.5
181051	with check valve	55 °C	F 1¼"	237	205	205	265	90	130	3.6
181055	with check valve	60 °C	F 1"	234	199	202	262	87	130	3.5
181057	with check valve	60 °C	F 1¼"	237	205	205	265	90	130	3.6
181061	with check valve	65 °C	F 1"	234	199	202	262	87	130	3.5
181063	with check valve	65 °C	F 1¼"	237	205	205	265	90	130	3.6
181067	with check valve	70 °C	F 1"	234	199	202	262	87	130	3.5
181069	with check valve	70 °C	F 1¼"	237	205	205	265	90	130	3.6

LK 810 G ECO - COMPRESSION FITTING



Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181052	without check valve	55 °C	28 mm	239	209	207	267	92	130	3.6
181058	without check valve	60 °C	28 mm	239	209	207	267	92	130	3.6
181064	without check valve	65 °C	28 mm	239	209	207	267	92	130	3.6
181070	without check valve	70 °C	28 mm	239	209	207	267	92	130	3.6
181053	with check valve	55 °C	28 mm	239	209	207	267	92	130	3.6
181059	with check valve	60 °C	28 mm	239	209	207	267	92	130	3.6
181065	with check valve	65 °C	28 mm	239	209	207	267	92	130	3.6
181071	with check valve	70 °C	28 mm	239	209	207	267	92	130	3.6

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187040	Pump motor Grundfos Alpha 2L60	1
187015	LK 810 Thermostatic element 55°C	2
187016	LK 810 Thermostatic element 60°C	2
187023	LK 810 Thermostatic element 65°C	2
187024	LK 810 Thermostatic element 70°C	2
187017	Ball valve F 1"	3
187018	Ball valve F 1/4"	4
187019	Ball valve 28 mm	5
013025	Gasket EPDM 1½" - Ø44 x Ø27 x 2 mm	6
180352	Thermometer 120°C - Ø51xØ7 mm, L60	7
187020	EPP insulation LK 810	8
016168	Element housing	9
014069	Spring	10
187021	Check valve LK 810 / 811	11
187022	Plug LK 810 / 811	12

LK 810 ThermoMat W

TECHNICAL DATA

Voltage	230 VAC 50 Hz
Power consumption	62-132 W depending on pump speed
Max. boiler efficiency	70 kW at 20°C ΔT
Return temperature	55°C, 60°C, 65°C or 70°C
Working temperature	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. flow	2900 l/h
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Circulating pumps	Wilo Star RS/7-3
Material, valve body	Brass EN 1982 CB753S
Material, insulation	Expanded Polypropylene EPP

LK 810 ThermoMat W is a loading unit for heating applications with solid fuel boilers and storage tanks. The loading unit is intended to ensure a high return temperature as well as an optimal temperature stratification in the storage tank, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

The LK 810 ThermoMat W is a compact design with an integrated circulating pump and a thermic loading valve that regulates on two ports. The loading unit has three ball valves to simplify installation and maintenance, three thermometers that allow for simple control of the loading process and an insulation to minimize heat loss. The loading unit is available in two versions - with or without check valve. With a check valve the functions described under phase 4 will be obtained.

LK 810 ThermoMat W is installed in the return circuit between the solid fuel boiler and the storage tank. The unit should be mounted upright with the drive-shaft of the circulating pump in a horizontal position. The loading unit is reversible and can easily be adapted for mounting to the right or left of the boiler.

The loading unit normally requires no maintenance. The installation should be checked regularly. Thanks to the three ball valves any part can be changed without draining the system in case of servicing.

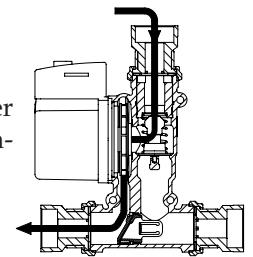


Registered Design

THE FUNCTION OF THE LOADING UNIT DURING THE DIFFERENT PHASES OF HEATING:

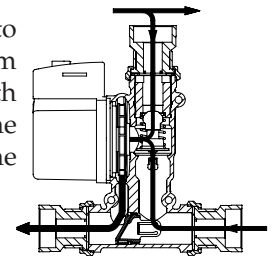
1. Heat up phase

The water circulates between boiler and loading unit while the temperature of the boiler is rising.



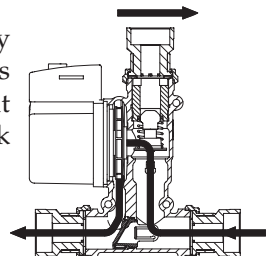
2. Loading phase

The thermostatic element starts to open and allows return water from the storage tank to be mixed with supply water before it returns to the boiler. The return temperature to the boiler is kept constant.



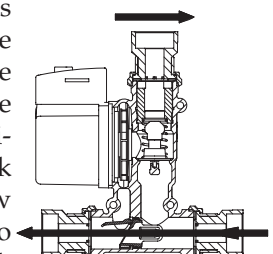
3. End phase

The thermostatic element is fully open and the bypass is closed. This results in an optimal transfer of heat from the boiler and the storage tank is filled with supply water.

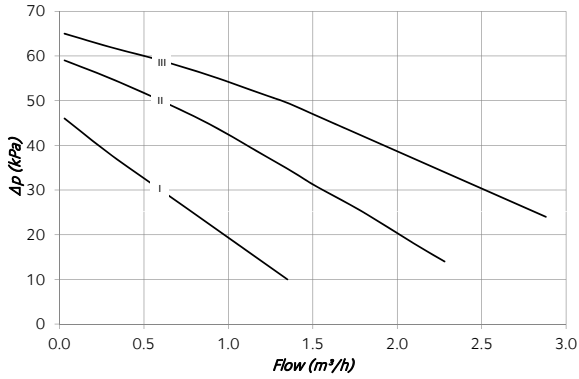


4. Self-circulation with check valve

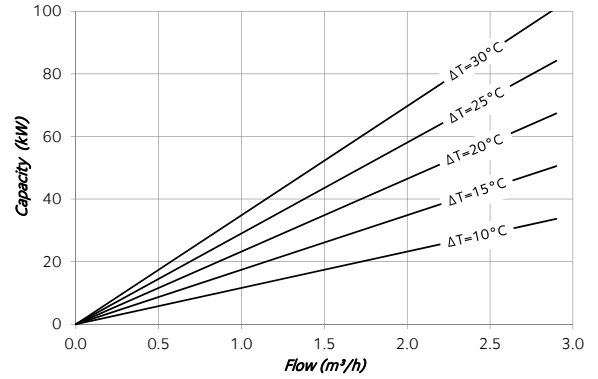
Self-circulation will be obtained as soon as the fire has gone out and the circulating pump has stopped. The remaining hot water is loaded to the storage tank. In case of power failure or pump breakdown the check valve automatically opens to allow self-circulation. The check valve also stops recirculation from storage tank to boiler.



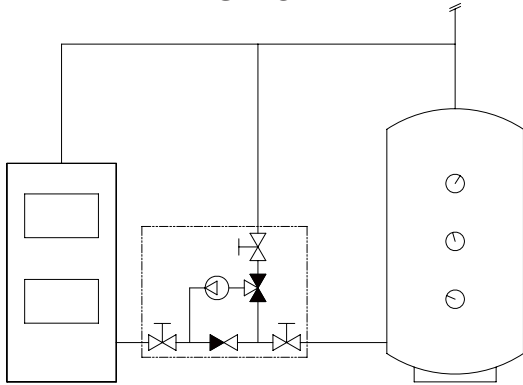
PUMP CHARACTERISTICS



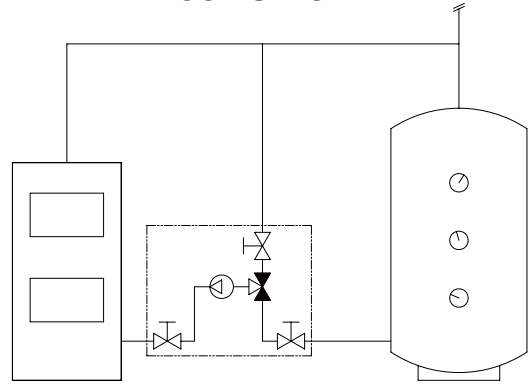
BOILER CAPACITY DIAGRAM



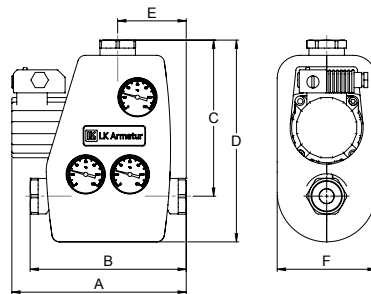
WITH CHECK VALVE



WITHOUT CHECK VALVE

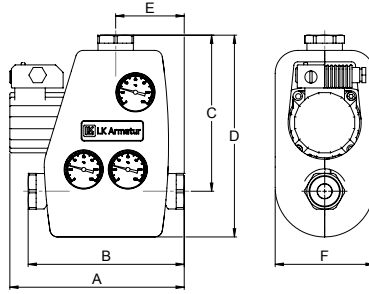


LK 810 W - FEMALE THREAD



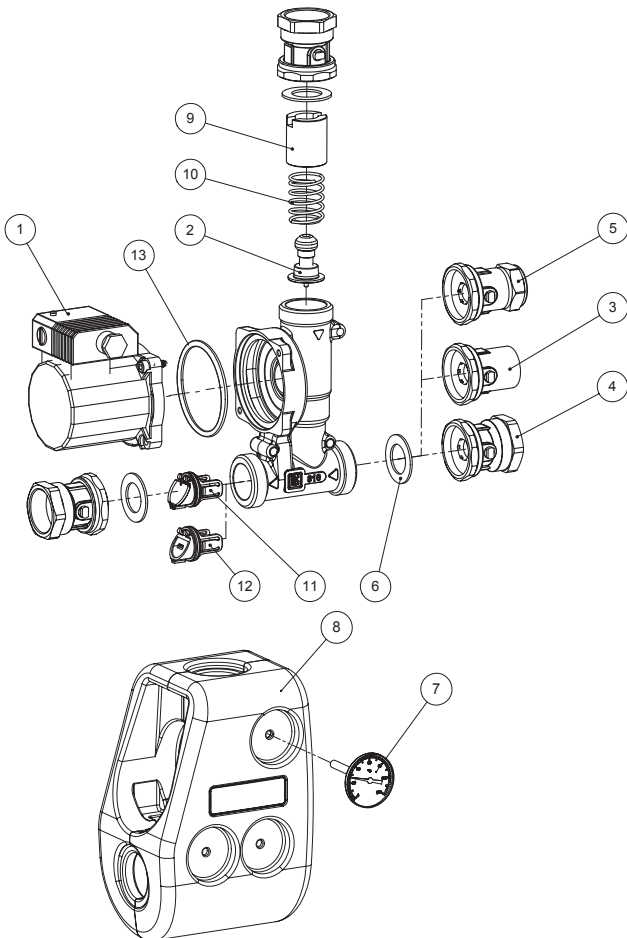
Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180023	without check valve	55 °C	F 1"	226	199	202	262	87	130	4.1
180025	without check valve	55 °C	F 1¼"	229	205	205	265	90	130	4.1
180029	without check valve	60 °C	F 1"	226	199	202	262	87	130	4.1
180031	without check valve	60 °C	F 1¼"	229	205	205	265	90	130	4.1
180035	without check valve	65 °C	F 1"	226	199	202	262	87	130	4.1
180037	without check valve	65 °C	F 1¼"	229	205	205	265	90	130	4.1
181101	without check valve	70 °C	F 1"	226	199	202	262	87	130	4.1
181103	without check valve	70 °C	F 1¼"	229	205	205	265	90	130	4.1
180024	with check valve	55 °C	F 1"	226	199	202	262	87	130	4.1
180026	with check valve	55 °C	F 1¼"	229	205	205	265	90	130	4.1
180030	with check valve	60 °C	F 1"	226	199	202	262	87	130	4.1
180032	with check valve	60 °C	F 1¼"	229	205	205	265	90	130	4.1
180036	with check valve	65 °C	F 1"	226	199	202	262	87	130	4.1
180038	with check valve	65 °C	F 1¼"	229	205	205	265	90	130	4.1
181102	with check valve	70 °C	F 1"	226	199	202	262	87	130	4.1
181104	with check valve	70 °C	F 1¼"	229	205	205	265	90	130	4.1

LK 810 W - COMPRESSION FITTING



Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180027	without check valve	55 °C	28 mm	231	209	207	267	92	130	4.1
180033	without check valve	60 °C	28 mm	231	209	207	267	92	130	4.1
180039	without check valve	65 °C	28 mm	231	209	207	267	92	130	4.1
181105	without check valve	70 °C	28 mm	231	209	207	267	92	130	4.1
180028	with check valve	55 °C	28 mm	231	209	207	267	92	130	4.1
180034	with check valve	60 °C	28 mm	231	209	207	267	92	130	4.1
180040	with check valve	65 °C	28 mm	231	209	207	267	92	130	4.1
181106	with check valve	70 °C	28 mm	231	209	207	267	92	130	4.1

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187085	Pump motor Wilo Star RS/7-3	1
187015	LK 810 Thermostatic element 55°C	2
187016	LK 810 Thermostatic element 60°C	2
187023	LK 810 Thermostatic element 65°C	2
187024	LK 810 Thermostatic element 70°C	2
187017	Ball valve F 1"	3
187018	Ball valve F 1¼"	4
187019	Ball valve 28 mm	5
013025	Gasket EPDM 1½" - Ø44 x Ø27 x 2 mm	6
180352	Thermometer 120°C - Ø51 x Ø7 mm, L60	7
187020	EPP insulation LK 810	8
016168	Element housing	9
014069	Spring	10
187021	Check valve LK 810 / 811	11
187022	Plug LK 810 / 811	12
026136	Gasket	13

LK 810 ThermoMat W Eco



TECHNICAL DATA

Voltage	230 VAC 50 Hz
Power consumption	3-45 W depending on pump speed
Max. boiler efficiency	60 kW at 20°C ΔT
Return temperature	55°C, 60°C, 65°C or 70°C
Working temperature	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	0.6 MPa (6 bar)
Max. flow	2500 l/h
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Circulating pumps	Wilo Yonos PARA */6 RKC
Material, valve body	Brass EN 1982 CB753S
Material, insulation	Expanded Polypropylene EPP

LK 810 ThermoMat W Eco is a loading unit for heating applications with solid fuel boilers and storage tanks. The loading unit is intended to ensure a high return temperature as well as an optimal temperature stratification in the storage tank, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

The LK 810 ThermoMat W Eco is a compact design with an integrated low-energy circulating pump, that fulfills the requirements of ErP 2015, and a thermic loading valve that regulates on two ports. The loading unit has three ball valves to simplify installation and maintenance, three thermometers that allow for simple control of the loading process and an insulation to minimize heat loss. The loading unit is available in two versions - with or without check valve. With a check valve the functions described under phase 4 will be obtained.

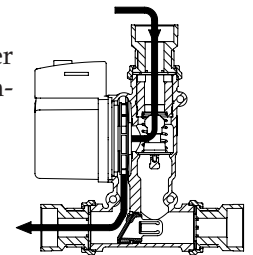
LK 810 ThermoMat W Eco is installed in the return circuit between the solid fuel boiler and the storage tank. The unit should be mounted upright with the drive-shaft of the circulating pump in a horizontal position. The loading unit is reversible and can easily be adapted for mounting to the right or left of the boiler.

The loading unit normally requires no maintenance. The installation should be checked regularly. Thanks to the three ball valves any part can be changed without draining the system in case of servicing.

THE FUNCTION OF THE LOADING UNIT DURING THE DIFFERENT PHASES OF HEATING:

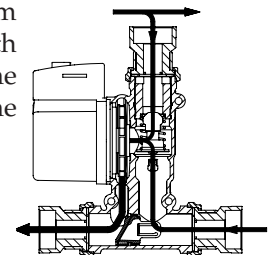
1. Heat up phase

The water circulates between boiler and loading unit while the temperature of the boiler is rising.



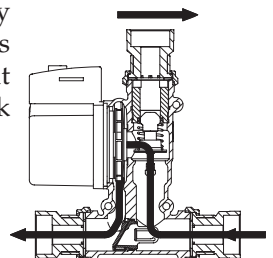
2. Loading phase

The thermostatic element starts to open and allows return water from the storage tank to be mixed with supply water before it returns to the boiler. The return temperature to the boiler is kept constant.



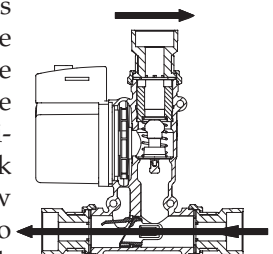
3. End phase

The thermostatic element is fully open and the bypass is closed. This results in an optimal transfer of heat from the boiler and the storage tank is filled with supply water.

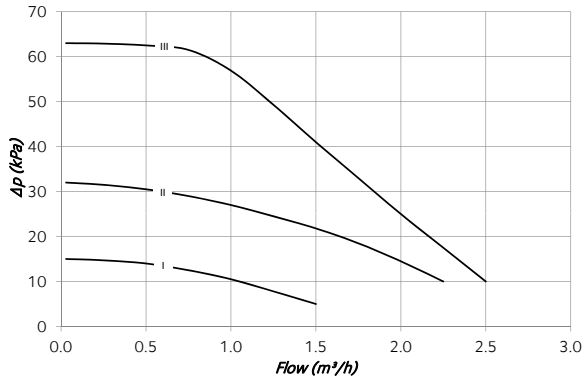


4. Self-circulation with check valve

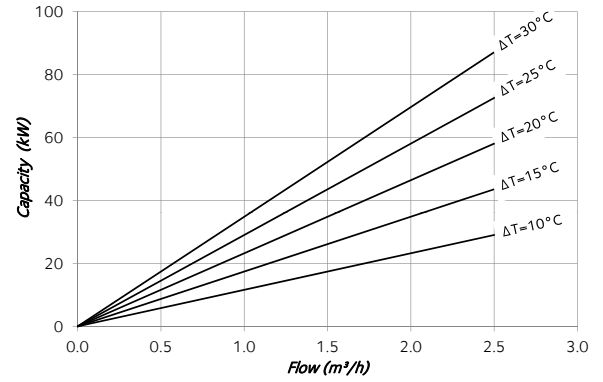
Self-circulation will be obtained as soon as the fire has gone out and the circulating pump has stopped. The remaining hot water is loaded to the storage tank. In case of power failure or pump breakdown the check valve automatically opens to allow self-circulation. The check valve also stops recirculation from storage tank to boiler.



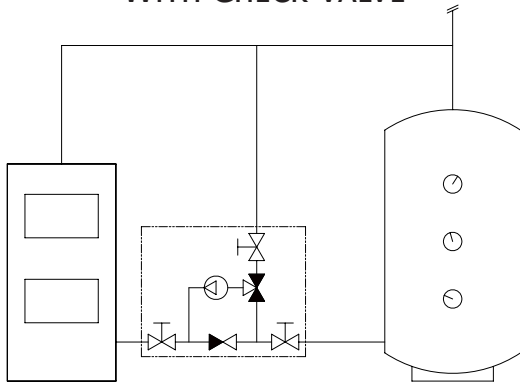
PUMP CHARACTERISTICS



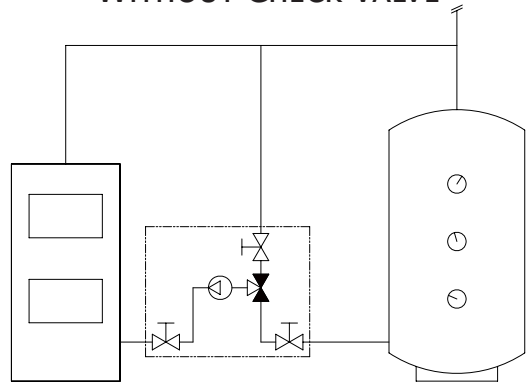
BOILER CAPACITY DIAGRAM



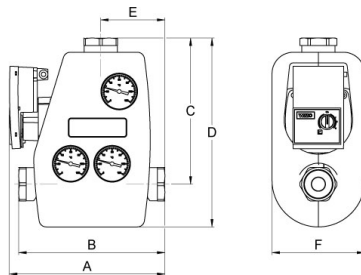
WITH CHECK VALVE



WITHOUT CHECK VALVE

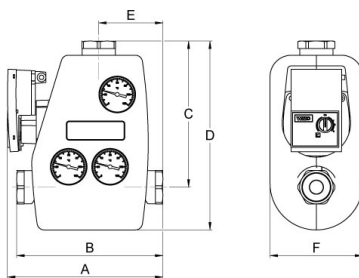


LK 810 W ECO - FEMALE THREAD



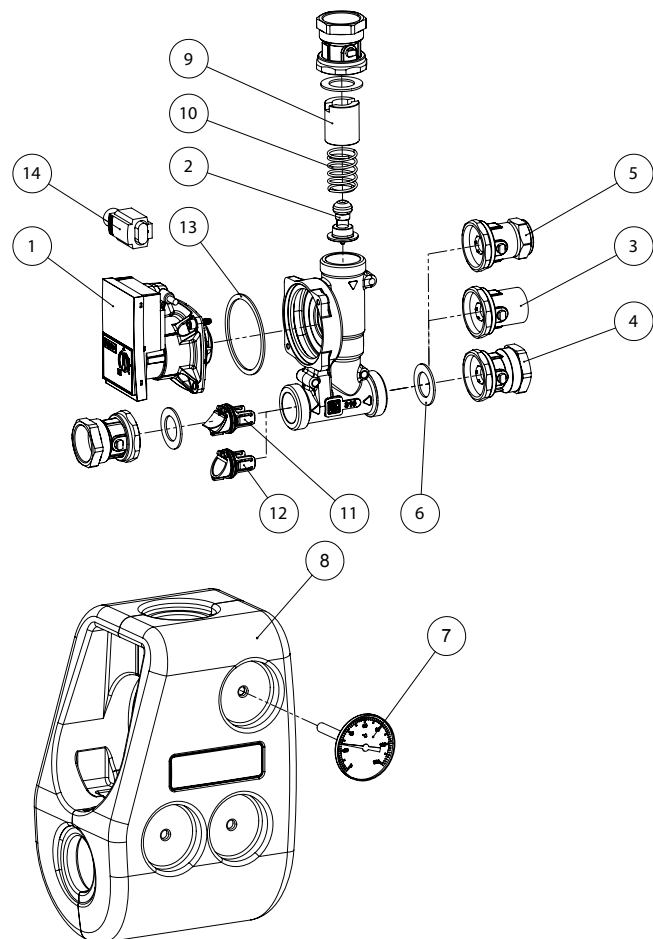
Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181373	without check valve	55 °C	F 1"	215	199	202	262	87	130	4.5
181374	without check valve	55 °C	F 1¼"	218	205	205	265	90	130	4.5
181375	without check valve	60 °C	F 1"	215	199	202	262	87	130	4.5
181376	without check valve	60 °C	F 1¼"	218	205	205	265	90	130	4.5
181377	without check valve	65 °C	F 1"	215	199	202	262	87	130	4.5
181378	without check valve	65 °C	F 1¼"	218	205	205	265	90	130	4.5
181379	without check valve	70 °C	F 1"	215	199	202	262	87	130	4.5
181380	without check valve	70 °C	F 1¼"	218	205	205	265	90	130	4.5
181381	with check valve	55 °C	F 1"	215	199	202	262	87	130	4.5
181382	with check valve	55 °C	F 1¼"	218	205	205	265	90	130	4.5
181383	with check valve	60 °C	F 1"	215	199	202	262	87	130	4.5
181384	with check valve	60 °C	F 1¼"	218	205	205	265	90	130	4.5
181385	with check valve	65 °C	F 1"	215	199	202	262	87	130	4.5
181386	with check valve	65 °C	F 1¼"	218	205	205	265	90	130	4.5
181387	with check valve	70 °C	F 1"	215	199	202	262	87	130	4.5
181388	with check valve	70 °C	F 1¼"	218	205	205	265	90	130	4.5

LK 810 W Eco - COMPRESSION FITTING



Article no.	Type	Return temperature	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181389	without check valve	55 °C	28 mm	220	209	207	267	92	130	4.5
181390	without check valve	60 °C	28 mm	220	209	207	267	92	130	4.5
181391	without check valve	65 °C	28 mm	220	209	207	267	92	130	4.5
181392	without check valve	70 °C	28 mm	220	209	207	267	92	130	4.5
181393	with check valve	55 °C	28 mm	220	209	207	267	92	130	4.5
181394	with check valve	60 °C	28 mm	220	209	207	267	92	130	4.5
181395	with check valve	65 °C	28 mm	220	209	207	267	92	130	4.5
181396	with check valve	70 °C	28 mm	220	209	207	267	92	130	4.5

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187106	Pump motor Wilo Yonos PARA */6 RKC	1
187015	LK 810 Thermostatic element 55°C	2
187016	LK 810 Thermostatic element 60°C	2
187023	LK 810 Thermostatic element 65°C	2
187024	LK 810 Thermostatic element 70°C	2
187017	Ball valve F 1"	3
187018	Ball valve F 1¼"	4
187019	Ball valve 28 mm	5
013025	Gasket EPDM 1½" - Ø44 x Ø27 x 2 mm	6
180352	Thermometer 120°C - Ø51 x Ø7 mm, L60	7
187020	EPP insulation LK 810	8
016168	Element housing	9
014069	Spring	10
187021	Check valve LK 810 / 811	11
187022	Plug LK 810 / 811	12
026136	Gasket	13
095220	Connector	14

LK 811 ThermoMat E Eco



TECHNICAL DATA

Voltage	230 VAC 50 Hz
Power consumption	3-76 W depending on pump speed
Max. boiler efficiency	Depending on circulating pump
Return temperature	5°C - 99°C with LK 100 SmartComfort CT
Working temperature	Min. +5°C/Max. +95°C
Ambient temp.	Min. +5°C/Max. +60°C
Max. working pressure	0.6 MPa (6 bar)
Max. flow	Depending on circulating pump
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Circulating pumps	Wilo Yonos PARA */6 RKC Wilo Yonos PARA */7,5 RKC
Material, valve body	Brass EN 1982 CB753S
Material, insulation	Expanded Polypropylene EPP

LK 811 ThermoMat E Eco is a loading unit for heating applications with solid fuel boilers and storage tanks. The loading unit is intended to ensure a high return temperature as well as an optimal temperature stratification in the storage tank, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

The LK 811 ThermoMat E Eco is a compact design with an integrated low-energy circulating pump, that fulfills the requirements of ErP 2015, and a mixing valve that regulates on two ports. The loading unit has three ball valves to simplify installation and maintenance and an insulation to minimize heat loss. Three thermometers that allow for simple control of the loading process can be ordered as accessories. The loading unit is available in two versions - with or without check valve. With a check valve the functions described under phase 4 will be obtained.

LK 811 ThermoMat E Eco is available with or without an electronic temperature controller. Mounting kits for controllers of other brands are available - see page 96.

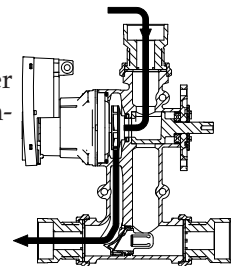
LK 811 ThermoMat E Eco is installed in the return circuit between the solid fuel boiler and the storage tank. The unit should be mounted upright with the drive-shaft of the circulating pump in a horizontal position. The loading unit is reversible and can easily be adapted for mounting to the right or left of the boiler.

The loading unit normally requires no maintenance. The installation should be checked regularly. Thanks to the three ball valves any part can be changed without draining the system in case of servicing.

THE FUNCTION OF THE LOADING UNIT DURING THE DIFFERENT PHASES OF HEATING:

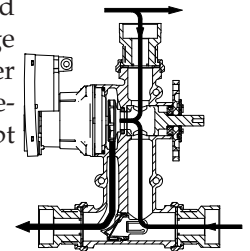
1. Heat up phase

The water circulates between boiler and loading unit while the temperature of the boiler is rising.



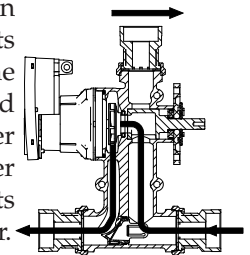
2. Loading phase

The mixing valve starts to open and allows return water from the storage tank to be mixed with supply water before it returns to the boiler. The return temperature to the boiler is kept constant.



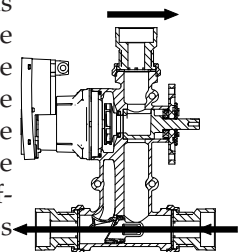
3. End phase

The mixing valve is fully open towards the storage tank. This results in an optimal transfer of heat from the boiler and the storage tank is filled with supply water. When the boiler has cooled the electronic controller LK 100 SmartComfort CT prevents re-circulation from storage tank to boiler.

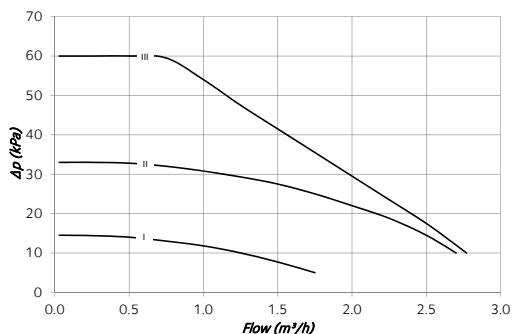


4. Self-circulation with check valve

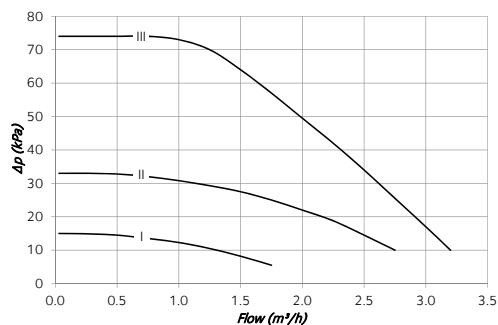
Self-circulation will be obtained as soon as the fire has gone out and the circulating pump has stopped. The remaining hot water is loaded to the storage tank. In case of power failure or pump breakdown the check valve automatically opens to allow self-circulation. The check valve also stops recirculation from storage tank to boiler.



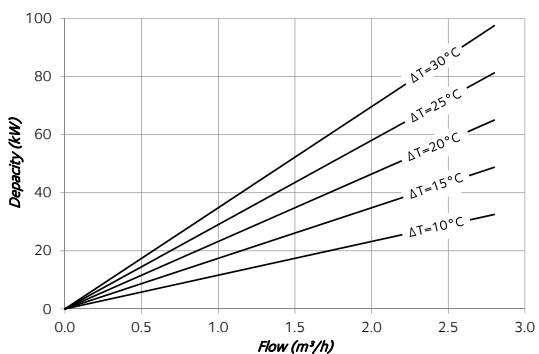
PUMP CHARACTERISTICS, YONOS PARA */6 RKC



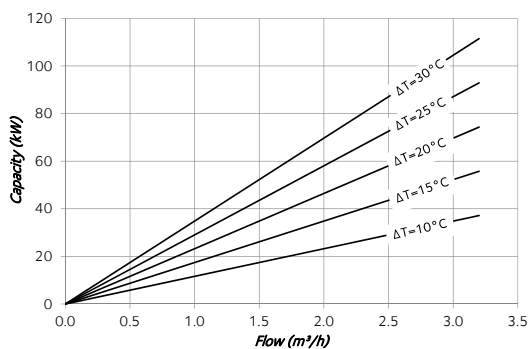
PUMP CHARACTERISTICS, YONOS PARA */7.5 RKC



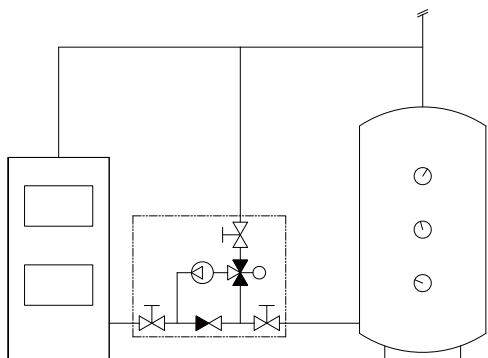
BOILER CAPACITY DIAGRAM, YONOS PARA*/6 RKC



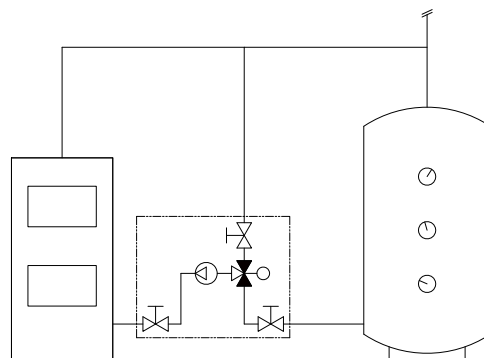
BOILER CAPACITY DIAGRAM, YONOS PARA*/7.5 RKC



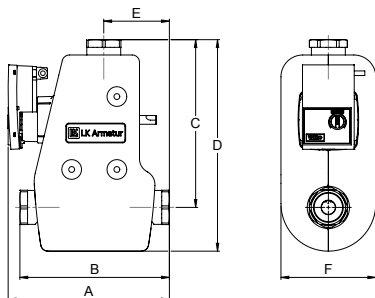
WITH CHECK VALVE



WITHOUT CHECK VALVE

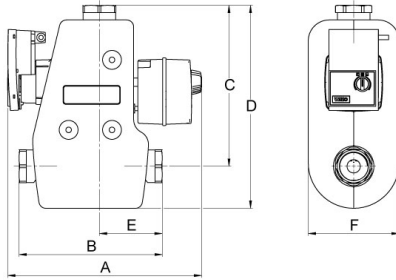


LK 811 - WILO YONOS PARA */6 RKC - FEMALE THREAD



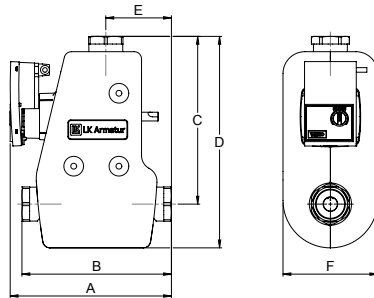
Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181436	with check valve	F 1"	218	199	227	287	87	130	3.9
181437	without check valve	F 1"	218	199	227	287	87	130	3.9
181438	with check valve	F 1¼"	221	205	230	290	90	130	3.9
181439	without check valve	F 1¼"	221	205	230	290	90	130	3.9

LK 811 WITH LK 100 SMARTCOMFORT CT - WILO YONOS PARA */6 RKC - FEMALE THREAD



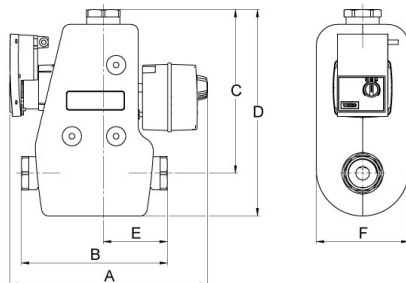
Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Note	Weight kg
181526	without check valve	F 1"	280	199	227	287	87	130	adapter - EU	4.3
181527	without check valve	F 1¼"	280	205	230	290	90	130	adapter - EU	4.3
181551	with check valve	F 1"	280	199	227	287	87	130	adapter - EU	4.3
181552	with check valve	F 1¼"	280	205	230	290	90	130	adapter - EU	4.3
181530	with check valve	F 1"	280	199	227	287	87	130	adapter - UK	4.3
181531	without check valve	F 1"	280	199	227	287	87	130	adapter - UK	4.3
181532	with check valve	F 1¼"	280	205	230	290	90	130	adapter - UK	4.3
181533	without check valve	F 1¼"	280	205	230	290	90	130	adapter - UK	4.3

LK 811 - WILO YONOS PARA */6 RKC - COMPRESSION FITTING



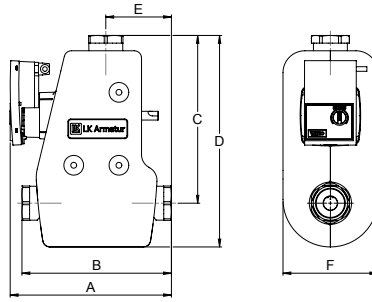
Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181440	with check valve	28 mm	223	209	232	292	92	130	3.9
181441	without check valve	28 mm	223	209	232	292	92	130	3.9

LK 811 WITH LK 100 SMARTCOMFORT - CT WILO YONOS PARA */6 RKC - COMPRESSION FITTING



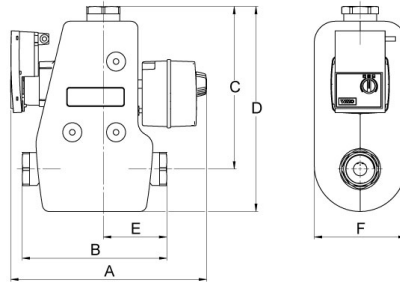
Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Note	Weight kg
181528	with checkvalve	28 mm	280	209	232	292	92	130	adapter - EU	4.3
181529	without check valve	28 mm	280	209	232	292	92	130	adapter - EU	4.3
181534	with check valve	28 mm	280	209	232	292	92	130	adapter - UK	4.3
181535	without check valve	28 mm	280	209	232	292	92	130	adapter - UK	4.3

LK 811 - WILO YONOS PARA */7.5 RKC - FEMALE THREAD



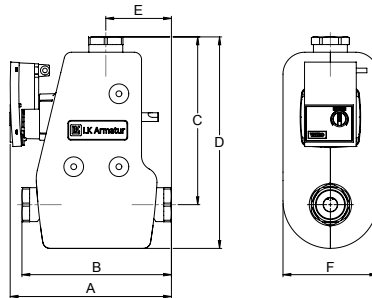
Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181542	with check valve	F 1"	226	199	227	287	87	130	4
181543	without check valve	F 1"	226	199	227	287	87	130	4
181544	with check valve	F 1 1/4"	229	205	230	290	90	130	4
181545	without check valve	F 1 1/4"	229	205	230	290	90	130	4

LK 811 WITH 100 SMARTCOMFORT CT - WILO YONOS PARA */7.5 RKC - FEMALE THREAD



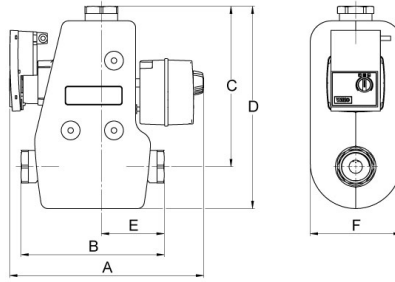
Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Note	Weight kg
181558	without check valve	F 1"	288	199	227	287	87	130	adapter - EU	4.4
181559	without check valve	F 1 1/4"	288	205	230	290	90	130	adapter - EU	4.4
181560	with check valve	F 1"	288	199	227	287	87	130	adapter - EU	4.4
181561	with check valve	F 1 1/4"	288	205	230	290	90	130	adapter - EU	4.4
181564	with check valve	F 1"	288	199	227	287	87	130	adapter - UK	4.4
181565	without check valve	F 1"	288	199	227	287	87	130	adapter - UK	4.4
181566	with check valve	F 1 1/4"	288	205	230	290	90	130	adapter - UK	4.4
181567	without check valve	F 1 1/4"	288	205	230	290	90	130	adapter - UK	4.4

LK 811 - WILO YONOS PARA */7.5 RKC - COMPRESSION FITTING



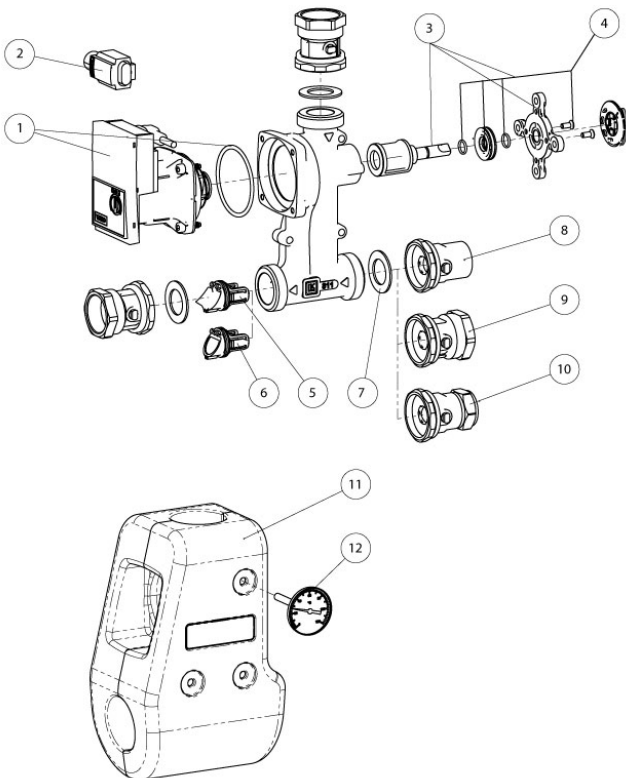
Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181546	with check valve	28 mm	231	209	232	292	92	130	4
181547	without check valve	28 mm	231	209	232	292	92	130	4

LK 811 WITH LK 100 SMARTCOMFORT CT - WILO YONOS PARA */7.5 RKC - COMPRESSION FITTING



Article no.	Type	Dimension	A mm	B mm	C mm	D mm	E mm	F mm	Note	Weight kg
181562	with check valve	28 mm	288	209	232	292	92	130	adapter - EU	4.4
181563	without check valve	28 mm	288	209	232	292	92	130	adapter - EU	4.4
181568	with check valve	28 mm	288	209	232	292	92	130	adapter - UK	4.4
181569	without check valve	28 mm	288	209	232	292	92	130	adapter - UK	4.4

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187111	Pump motor Wilo Yonos PARA */6 RKC	1
187140	Pump motor Wilo Yonos PARA */7.5 RKC	1
095220	Connector	2
187110	Repair kit 811	3
187066	Sealing kit 811/840/841, DN 15-20	4
187021	Check valve 810 / 811	5
187022	Plug 810 / 811	6
013025	Gasket EPDM 1½" - Ø44 x Ø27 x 2 mm	7
187017	Ball valve F 1"	8
187018	Ball valve F 1¼"	9
187019	Ball valve 28 mm	10
187112	EPP insulation 811	11
058126	Thermometer 120°C - Ø51 x Ø7 mm, L75 mm	12

LK 815 ThermoKit T Eco



TECHNICAL DATA

Voltage	230 VAC 50/60 Hz
Power consumption	12-140 W depending on pump speed
Max. boiler efficiency	140 kW at 20°C ΔT
Return temperature	45°C, 50°C, 55°C, 60°C, 65°C or 70°C
Working temperature	Min. +5°C/Max. +95°C
Ambient temp.	Min. +5°C/Max. +40°C
Max. working pressure	1.0 MPa (10 bar)
Max. flow	5900 l/h
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Circulating pump	Grundfos UPML 25-95 180
Material, valve body	Brass EN 1982 CB753S
Material, insulation	Expanded Polypropylene EPP

THE FUNCTION OF THE LOADING UNIT DURING THE DIFFERENT PHASES OF HEATING:

1. Heat up phase

The water circulates between boiler and loading group while the temperature of the boiler is rising.

2. Loading phase

The thermic valve starts to open and allows return water from the storage tank to be mixed with supply water before it returns to the boiler. The return temperature to the boiler is kept constant.

3. End phase

The thermostatic element is fully open. This results in an optimal transfer of heat from the boiler and the storage tank is filled with supply water.

4. Self-circulation

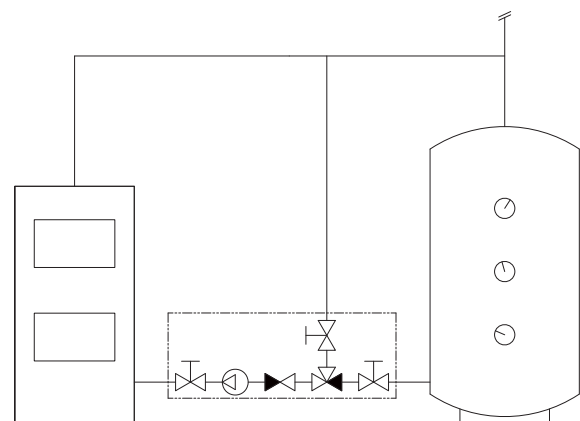
As soon as the fire has gone out and the circulating pump has stopped the remaining hot water in the boiler is loaded to the storage tank as long as the thermic valve remains open. When the boiler has cooled the thermic valve closes. The check valve prevents recirculation from storage tank to boiler.

LK 815 ThermoKit T Eco is a loading group for heating applications with solid fuel boilers and storage tanks. The loading group is intended to ensure a high return temperature as well as an optimal temperature stratification in the storage tank, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

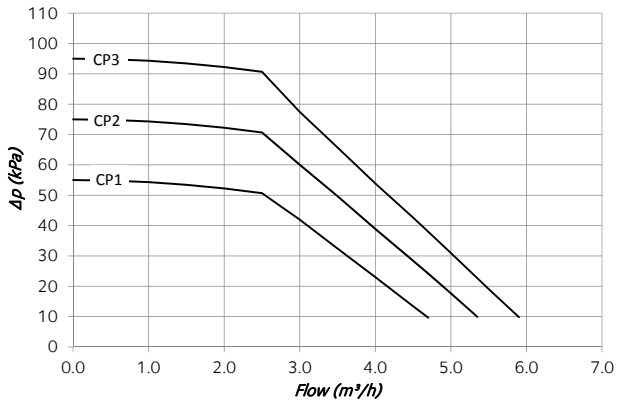
LK 815 ThermoKit T Eco consists of a low-energy circulating pump, that fulfills the requirements of ErP 2015, an LK 823 ThermoVar thermic loading valve with insulation, a check valve, a thermometer for reading return temperatures and three ball valves to simplify installation and maintenance.

LK 815 ThermoKit T Eco is installed in the return circuit between the solid fuel boiler and the storage tank. The group should be mounted with the drive-shaft of the circulating pump in a horizontal position. The loading group is reversible and can easily be adapted for mounting to the right or left of the boiler.

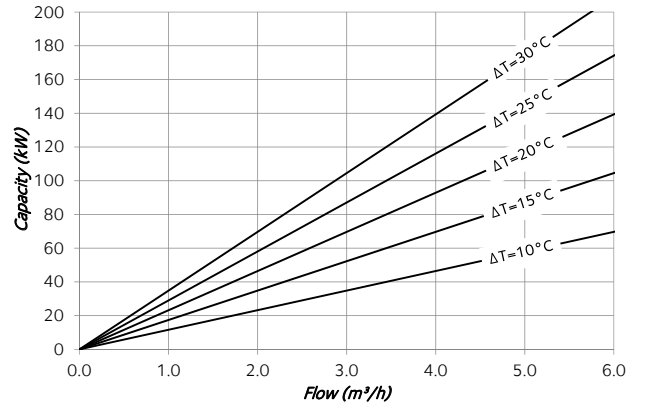
The loading group normally requires no maintenance. The installation should be checked regularly. Thanks to the three ball valves any part can be changed without draining the system, should the need for servicing arise.



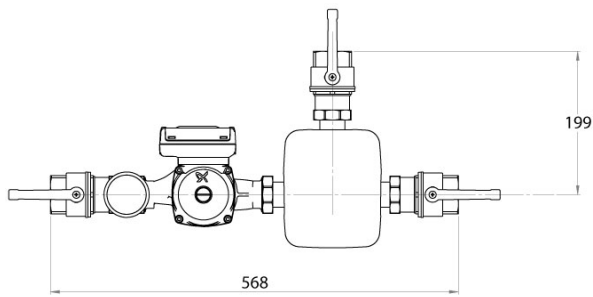
PUMP CHARACTERISTICS



BOILER CAPACITY DIAGRAM



LK 815 - GRUNDFOS UPML 25-95 - FEMALE THREAD



Article no.	Return temperature	Dimension	Weight kg
181572	45 °C	F 1½"	7.1
181573	50 °C	F 1½"	7.1
181574	55 °C	F 1½"	7.1
181575	60 °C	F 1½"	7.1
181576	65 °C	F 1½"	7.1
181577	70 °C	F 1½"	7.1

LK 816 ThermoKit E Eco



TECHNICAL DATA

Voltage	230 VAC 50/60 Hz
Primary voltage, adapter	100-240 VAC 50/60 Hz
Secondary voltage, adapter	24 VDC 250 mA
Power consumption	10-180 W depending on pump speed, LK SmartComfort CT, 3 VA
Max. boiler efficiency	Dependent on circulating pump
Return temperature	5°C-99°C, adjustable
Working temperature	Min. +5°C/Max. +95°C
Ambient temp.	Min. +5°C/Max. +40°C
Max. working pressure	1.0 MPa (10 bar)
Angle of rotation	90°
Torque	5 Nm
Max. flow	Dependent on circulating pump
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Circulating pumps	Grundfos UPML 25-95 180, Grundfos UPMXL 32-105 180 Grundfos Magna 32-80 180
Operation time	140 sec.
Protection class	IP 40
Material, valve body	Brass EN 12165 CW617N
Material, insulation	Expanded Polypropylene EPP

LK 816 ThermoKit E Eco is a loading group for heating applications with solid fuel boilers and storage tanks. The loading group is intended to ensure a high return temperature as well as an optimal temperature stratification in the storage tank, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

LK 816 ThermoKit E Eco is a unit consisting of a low-energy circulating pump, that fulfills the requirements of ErP 2015, an LK 840 ThermoMix mixing valve, an LK 100 SmartComfort CT controller with adjustment of the lowest return temperature 5°C-99°C and three ball valves to simplify installation and maintenance. Articles number 181578 and 181579 are delivered with an insulation for the mixing valve.

LK 816 ThermoKit E Eco is installed in the return circuit between the solid fuel boiler and the storage tank. The group should be mounted with the drive-shaft of the circulating pump in a horizontal position. The loading group is reversible and can easily be adapted for mounting to the right or left of the boiler.

The loading group normally requires no maintenance. The installation should be checked regularly. Thanks to the three ball valves any part can be changed without draining the system, should the need for servicing arise.

THE FUNCTION OF THE LOADING UNIT DURING THE DIFFERENT PHASES OF HEATING:

1. Heat up phase

The water circulates between boiler and loading group while the temperature of the boiler is rising.

2. Loading phase

The mixing valve starts to open and allows return water from the storage tank to be mixed with supply water before it returns to the boiler. The return temperature to the boiler is kept constant.

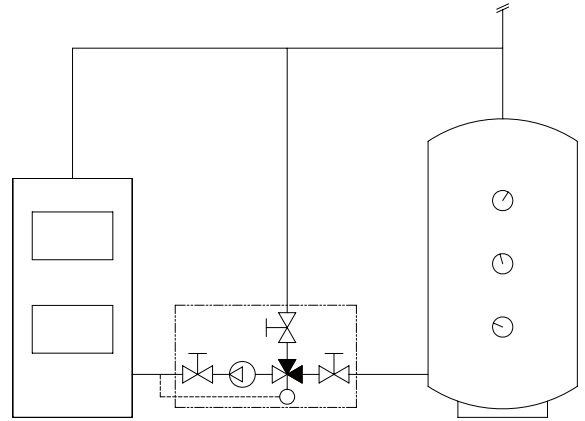
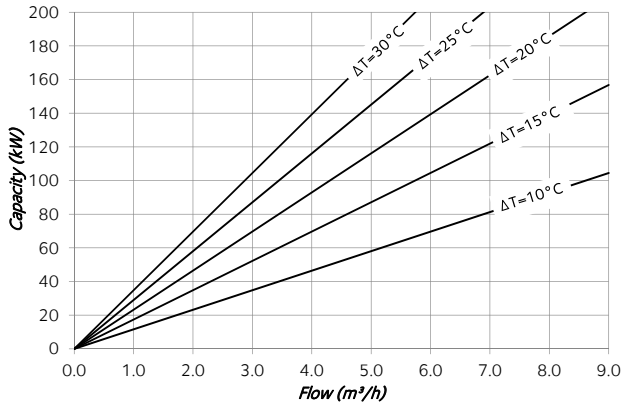
3. End phase

The mixing valve is fully open towards the storage tank. This results in an optimal transfer of heat from the boiler and the storage tank is filled with supply water. When the boiler has cooled the electronic controller prevents re-circulation from storage tank to boiler.

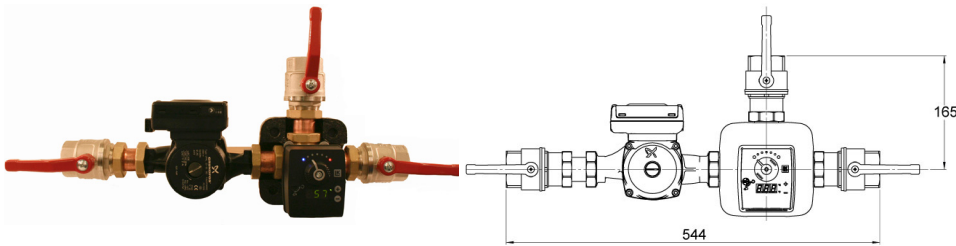
4. Self-circulation

In case of power failure or pump breakdown the electronic controller can be manually operated and the storage tank is loaded through self-circulation.

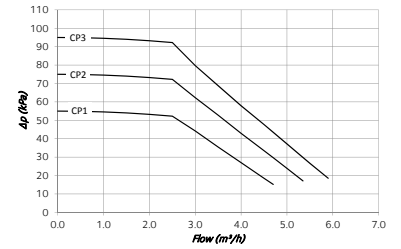
BOILER CAPACITY DIAGRAM



LK 816 - GRUNDFOS UPML 25-95 - FEMALE THREAD

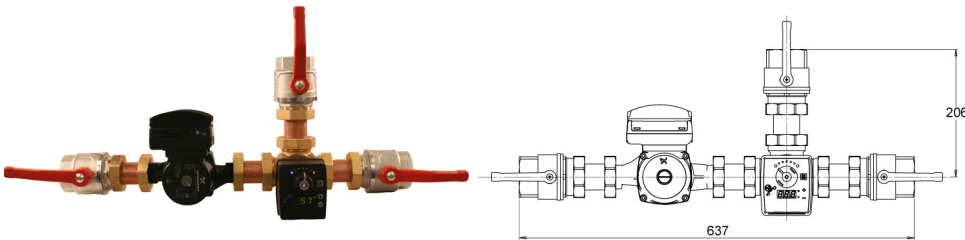


PUMP CHARACTERISTICS

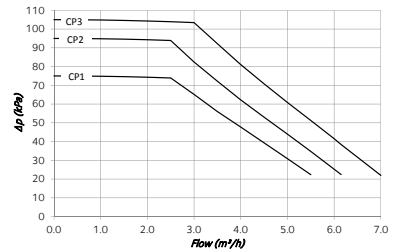


Article no.	Dimension	Note	Weight kg
181578	F 1½"	adapter - EU	7.1
181579	F 1½"	adapter - UK	7.1

LK 816 - GRUNDFOS UPMXL 32-105 - FEMALE THREAD

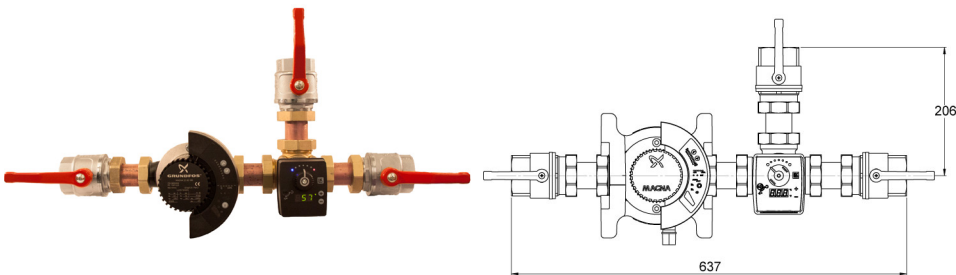


PUMP CHARACTERISTICS

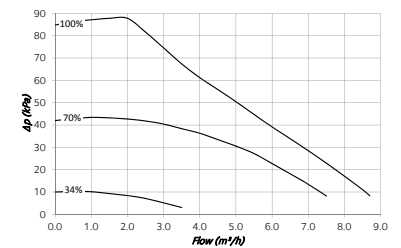


Article no.	Dimension	Note	Weight kg
181580	F 2"	adapter - EU	11.1
181581	F 2"	adapter - UK	11.1

LK 816 - GRUNDFOS MAGNA 32-80 - FEMALE THREAD



PUMP CHARACTERISTICS



Article no.	Dimension	Note	Weight kg
181410	F 2"	adapter - EU	12.4
181582	F 2"	adapter - UK	12.4
187120		Insulation for Grundfos Magna	

Thermic Valves and Check Valves



LK 820 ThermoVar

3-way thermic loading valve made of brass.



LK 821 ThermoVar

3-way thermic zone valve made of brass.



LK 823 ThermoVar

3-way thermic loading valve made of brass.



LK 825 ThermoVar

3-way thermic loading valve made of cast iron.



LK 822 ThermoBac

3-way check valve made of brass.



LK 826 ThermoBac

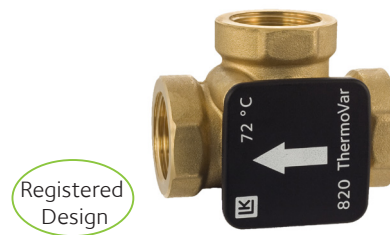
3-way check valve made of cast iron.



LK Insulation

Insulation for ThermoVar, ThermoBac and ThermoMix.

LK 820 ThermoVar



TECHNICAL DATA

Opening temperature	45°C, 55°C, 61°C, 66°C, 72°C or 80°C
Working temperature	
45°C-55°C	Min. +5°C Max. +95°C
61°C-80°C	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12165 CW617N
Material, sealing	EPDM

LK 820 ThermoVar is a 3-way thermic loading valve for solid fuel/storage tank installations. The valve is intended to ensure both an optimal temperature stratification in the storage tank and a high return temperature to the boiler, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

LK 820 can be equipped with an insulation - see under Accessories. For more information, please see the product sheet for insulations - page 49.

The valve can be mounted at any angle. LK 820 ThermoVar can easily be adapted for right- or left-hand mounting. The valve can be installed in three different positions. In the standard version the valve is intended for installation in position II. It can easily be adapted for installation in position I. For delivery of valves intended for installation in position III, please contact our Sales Department.

POSITION I

As soon as the boiler temperature has reached the selected opening temperature, the thermic valve allows hot water to load to the storage tank. Return water from the storage tank is mixed with supply water before it circulates back into the boiler. The loading temperature is at least the selected opening temperature.

A balancing valve should be installed in the circuit between boiler and loading valve.

The installation should be equipped with an LK 822 Thermo-Bac check valve to prevent self-circulation from storage tank to boiler after the fire has gone out. In case of power failure or pump breakdown the check valve automatically opens for self-circulation.

The circulating pump should be controlled by a thermostat that measures the boiler's water or flue gas temperature.

POSITION II

As soon as the boiler temperature has reached the selected opening temperature, the thermic valve allows return water from the storage tank to mix with supply water before it circulates back into the boiler. The return temperature is at least the selected opening temperature.

A balancing valve should be installed in the circuit between boiler and loading valve.

The circulating pump should be controlled by a thermostat that measures the boiler's water or flue gas temperature.

POSITION III

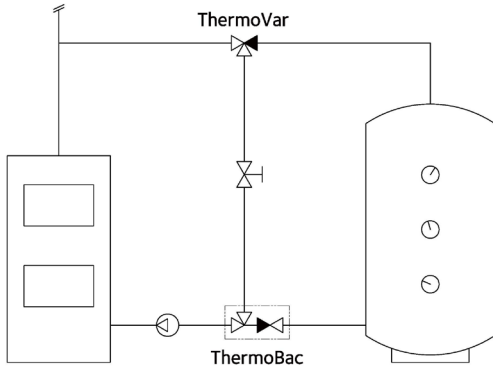
As soon as the boiler temperature has reached the selected opening temperature, the thermic valve allows return water from the storage tank to mix with supply water before it circulates back into the boiler. The return temperature is at least the selected opening temperature.

A balancing valve should be installed in the circuit between boiler and loading valve.

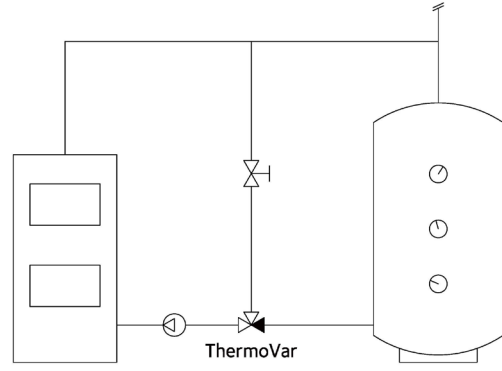
The installation should be equipped with an LK 822 Thermo-Bac check valve to prevent self-circulation from storage tank to boiler after the fire has gone out. In case of power failure or pump breakdown the check valve opens automatically for self-circulation.

The circulating pump should be controlled by a thermostat that measures the boiler's water or flue gas temperature.

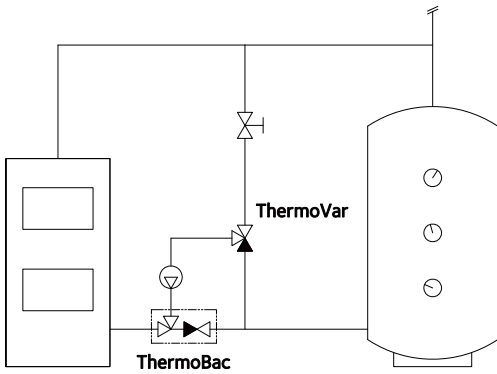
POSITION I



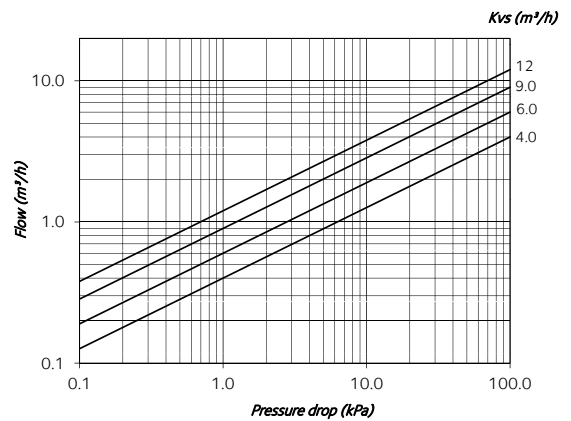
POSITION II



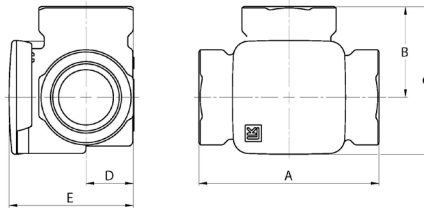
POSITION III



CAPACITY DIAGRAM



LK 820 - FEMALE THREAD

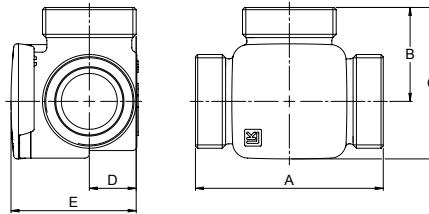


Article no.	Opening temperature	Dimension	Kvs m³/h	A mm	B mm	C mm	D mm	E mm	Weight kg
180491	45 °C	F ½"	4.0	80	40	66	21	35	0.7
180492	45 °C	F ¾"	6.0	80	40	66	21	35	0.7
180493	45 °C	F 1"	9.0	82	41	67	21	35	0.7
180494	45 °C	F 1¼"	12	84	42	68	24	39	0.8
180499	55 °C	F ½"	4.0	80	40	66	21	35	0.7
180500	55 °C	F ¾"	6.0	80	40	66	21	35	0.7
180501	55 °C	F 1"	9.0	82	41	67	21	35	0.7
180502	55 °C	F 1¼"	12	84	42	68	24	39	0.8
180507	61 °C	F ½"	4.0	80	40	66	21	35	0.7
180508	61 °C	F ¾"	6.0	80	40	66	21	35	0.7
180509	61 °C	F 1"	9.0	82	41	67	21	35	0.7
180510	61 °C	F 1¼"	12	84	42	68	24	39	0.8

LK 820 - FEMALE THREAD

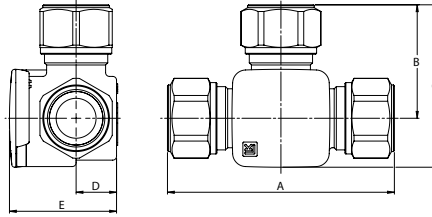
Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
180515	66 °C	F ½"	4.0	80	40	66	21	35	0.7
180516	66 °C	F ¾"	6.0	80	40	66	21	35	0.7
180517	66 °C	F 1"	9.0	82	41	67	21	35	0.7
180518	66 °C	F 1¼"	12	84	42	68	24	39	0.8
180523	72 °C	F ½"	4.0	80	40	66	21	35	0.7
180524	72 °C	F ¾"	6.0	80	40	66	21	35	0.7
180525	72 °C	F 1"	9.0	82	41	67	21	35	0.7
180526	72 °C	F 1¼"	12	84	42	68	24	39	0.8
180531	80 °C	F ½"	4.0	80	40	66	21	35	0.7
180532	80 °C	F ¾"	6.0	80	40	66	21	35	0.7
180533	80 °C	F 1"	9.0	82	41	67	21	35	0.7
180534	80 °C	F 1¼"	12	84	42	68	24	39	0.8

LK 820 - MALE THREAD



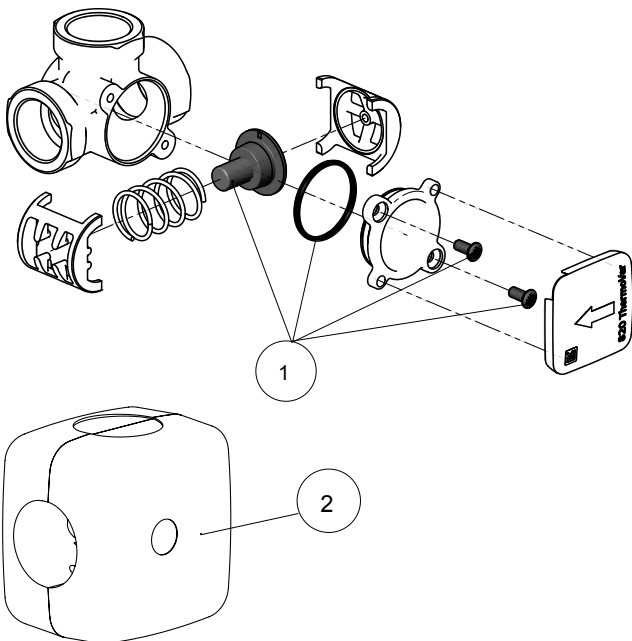
Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
180495	45 °C	M ¾"	4.0	80	40	66	21	35	0.7
180496	45 °C	M 1"	6.0	80	40	66	21	35	0.7
180497	45 °C	M 1¼"	9.0	84	42	68	21	35	0.7
180498	45 °C	M 1½"	12	84	42	68	24	39	0.8
180503	55 °C	M ¾"	4.0	80	40	66	21	35	0.7
180504	55 °C	M 1"	6.0	80	40	66	21	35	0.7
180505	55 °C	M 1¼"	9.0	84	42	68	21	35	0.7
180506	55 °C	M 1½"	12	84	42	68	24	39	0.8
180511	61 °C	M ¾"	4.0	80	40	66	21	35	0.7
180512	61 °C	M 1"	6.0	80	40	66	21	35	0.7
180513	61 °C	M 1¼"	9.0	84	42	68	21	35	0.7
180514	61 °C	M 1½"	12	84	42	68	24	39	0.8
180519	66 °C	M ¾"	4.0	80	40	66	21	35	0.7
180520	66 °C	M 1"	6.0	80	40	66	21	35	0.7
180521	66 °C	M 1¼"	9.0	84	42	68	21	35	0.7
180522	66 °C	M 1½"	12	84	42	68	24	39	0.8
180527	72 °C	M ¾"	4.0	80	40	66	21	35	0.7
180528	72 °C	M 1"	6.0	80	40	66	21	35	0.7
180529	72 °C	M 1¼"	9.0	84	42	68	21	35	0.7
180530	72 °C	M 1½"	12	84	42	68	24	39	0.8
180535	80 °C	M ¾"	4.0	80	40	66	21	35	0.7
180536	80 °C	M 1"	6.0	80	40	66	21	35	0.7
180537	80 °C	M 1¼"	9.0	84	42	68	21	35	0.7
180538	80 °C	M 1½"	12	84	42	68	24	39	0.8

LK 820 - COMPRESSION FITTING



Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
181118	45 °C	15 mm	4.0	114	57	83	21	35	0.8
181119	45 °C	22 mm	6.0	114	57	83	21	35	0.8
181120	45 °C	28 mm	9.0	120	60	86	21	35	1.0
181121	55 °C	15 mm	4.0	114	57	83	21	35	0.8
181122	55 °C	22 mm	6.0	114	57	83	21	35	0.8
181123	55 °C	28 mm	9.0	120	60	86	21	35	1.0
181124	61 °C	15 mm	4.0	114	57	83	21	35	0.8
181125	61 °C	22 mm	6.0	114	57	83	21	35	0.8
181126	61 °C	28 mm	9.0	120	60	86	21	35	1.0
181133	66 °C	15 mm	4.0	114	57	83	21	35	0.8
181134	66 °C	22 mm	6.0	114	57	83	21	35	0.8
181135	66 °C	28 mm	9.0	120	60	86	21	35	1.0
181127	72 °C	15 mm	4.0	114	57	83	21	35	0.8
181128	72 °C	22 mm	6.0	114	57	83	21	35	0.8
181129	72 °C	28 mm	9.0	120	60	86	21	35	1.0
181130	80 °C	15 mm	4.0	114	57	83	21	35	0.8
181131	80 °C	22 mm	6.0	114	57	83	21	35	0.8
181132	80 °C	28 mm	9.0	120	60	86	21	35	1.0

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187025	Thermostatic element 820, 45°C	1
187026	Thermostatic element 820, 55°C	1
187027	Thermostatic element 820, 61°C	1
187028	Thermostatic element 820, 66°C	1
187029	Thermostatic element 820, 72°C	1
187030	Thermostatic element 820, 80°C	1
187107	Insulation, DN 15-20	2
187108	Insulation, DN 25-32	2

LK 821 ThermoVar



TECHNICAL DATA

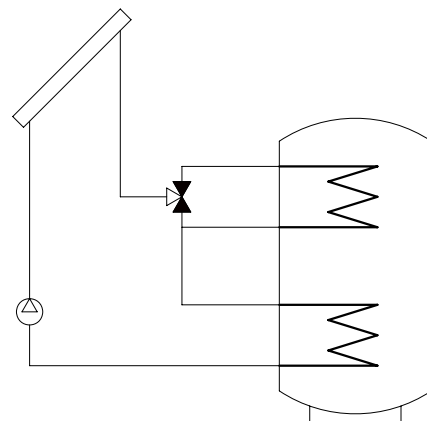
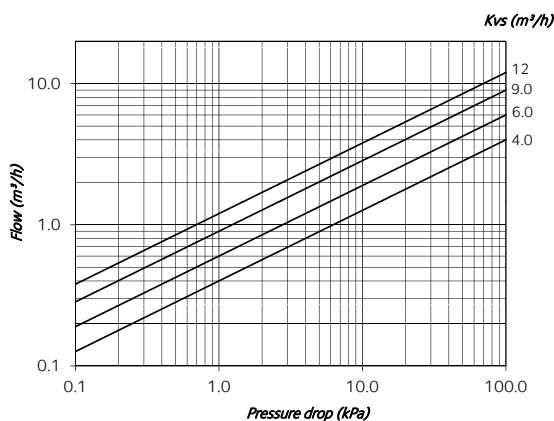
Opening temperature	45°C, 55°C, 61°C, 66°C, 72°C or 80°C
Working temperature	45°C - 55°C
	Min. +5°C/Max. +95°C
	61°C - 80°C
	Min. +5°C/Max. +110°C
Ambient temp.	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12165 CW617N
Material, sealing	EPDM

LK 821 ThermoVar 3-way thermic zone valve is designed to change the direction of flow of the media in heating systems. The valve is controlled by the temperature of the media. With an LK 821 ThermoVar installed in, for example, a solar heating system an optimal stratification in the storage tank is obtained.

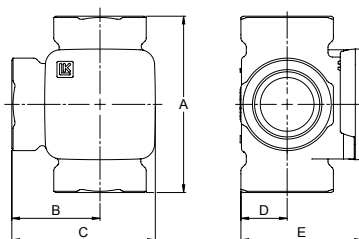
LK 821 can be equipped with an insulation - see under Accessories. For more information, please see the product sheet for insulations - page 49.

The valve can be mounted at any angle. LK 821 ThermoVar can easily be adapted for right- or left-hand mounting.

CAPACITY DIAGRAM

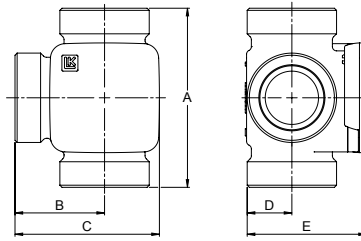


LK 821 - FEMALE THREAD



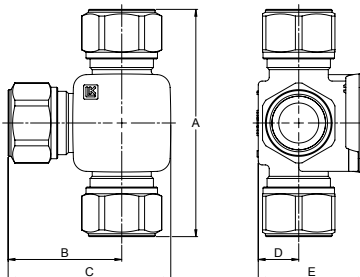
Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
180539	45 °C	F 1/2"	4.0	80	40	66	21	35	0.7
180540	45 °C	F 3/4"	6.0	80	40	66	21	35	0.8
180541	45 °C	F 1"	9.0	82	41	67	21	35	0.9
180542	45 °C	F 1 1/4"	12	84	42	68	24	39	1.0
180547	55 °C	F 1/2"	4.0	80	40	66	21	35	0.7
180548	55 °C	F 3/4"	6.0	80	40	66	21	35	0.8
180549	55 °C	F 1"	9.0	82	41	67	21	35	0.9
180550	55 °C	F 1 1/4"	12	84	42	68	24	39	1.0
180555	61 °C	F 1/2"	4.0	80	40	66	21	35	0.7
180556	61 °C	F 3/4"	6.0	80	40	66	21	35	0.8
180557	61 °C	F 1"	9.0	82	41	67	21	35	0.9
180558	61 °C	F 1 1/4"	12	84	42	68	24	39	1.0
180563	66 °C	F 1/2"	4.0	80	40	66	21	35	0.7
180564	66 °C	F 3/4"	6.0	80	40	66	21	35	0.8
180565	66 °C	F 1"	9.0	82	41	67	21	35	0.9
180566	66 °C	F 1 1/4"	12	84	42	68	24	39	1.0
180571	72 °C	F 1/2"	4.0	80	40	66	21	35	0.7
180572	72 °C	F 3/4"	6.0	80	40	66	21	35	0.8
180573	72 °C	F 1"	9.0	82	41	67	21	35	0.9
180574	72 °C	F 1 1/4"	12	84	42	68	24	39	1.0
180579	80 °C	F 1/2"	4.0	80	40	66	21	35	0.7
180580	80 °C	F 3/4"	6.0	80	40	66	21	35	0.8
180581	80 °C	F 1"	9.0	82	41	67	21	35	0.9
180582	80 °C	F 1 1/4"	12	84	42	68	24	39	1.0

LK 821 - MALE THREAD



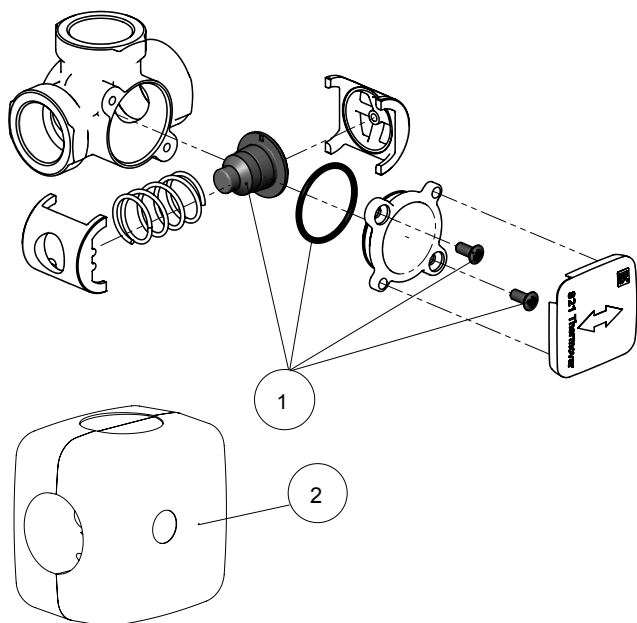
Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
180543	45 °C	M 3/4"	4.0	80	40	66	21	35	0.7
180544	45 °C	M 1"	6.0	80	40	66	21	35	0.8
180545	45 °C	M 1 1/4"	9.0	84	42	68	21	35	0.9
180546	45 °C	M 1 1/2"	12	84	42	68	24	39	1.0
180551	55 °C	M 3/4"	4.0	80	40	66	21	35	0.7
180552	55 °C	M 1"	6.0	80	40	66	21	35	0.8
180553	55 °C	M 1 1/4"	9.0	84	42	68	21	35	0.9
180554	55 °C	M 1 1/2"	12	84	42	68	24	39	1.0
180559	61 °C	M 3/4"	4.0	80	40	66	21	35	0.7
180560	61 °C	M 1"	6.0	80	40	66	21	35	0.8
180561	61 °C	M 1 1/4"	9.0	84	42	68	21	35	0.9
180562	61 °C	M 1 1/2"	12	84	42	68	24	39	1.0
180567	66 °C	M 3/4"	4.0	80	40	66	21	35	0.7
180568	66 °C	M 1"	6.0	80	40	66	21	35	0.8
180569	66 °C	M 1 1/4"	9.0	84	42	68	21	35	0.9
180570	66 °C	M 1 1/2"	12	84	42	68	24	39	1.0
180575	72 °C	M 3/4"	4.0	80	40	66	21	35	0.7
180576	72 °C	M 1"	6.0	80	40	66	21	35	0.8
180577	72 °C	M 1 1/4"	9.0	84	42	68	21	35	0.9
180578	72 °C	M 1 1/2"	12	84	42	68	24	39	1.0
180583	80 °C	M 3/4"	4.0	80	40	66	21	35	0.7
180584	80 °C	M 1"	6.0	80	40	66	21	35	0.8
180585	80 °C	M 1 1/4"	9.0	84	42	68	21	35	0.9
180586	80 °C	M 1 1/2"	12	84	42	68	24	39	1.0

LK 821 - COMPRESSION FITTING



Article no.	Opening temperature	Dimension	Kvs m³/h	A mm	B mm	C mm	D mm	E mm	Weight kg
180901	45 °C	15 mm	4.0	114	57	83	21	35	0.8
180903	45 °C	22 mm	6.0	114	57	83	21	35	0.8
180904	45 °C	28 mm	9.0	120	60	86	21	35	1.0
180905	55 °C	15 mm	4.0	114	57	83	21	35	0.8
180907	55 °C	22 mm	6.0	114	57	83	21	35	0.8
180908	55 °C	28 mm	9.0	120	60	86	21	35	1.0
180909	61 °C	15 mm	4.0	114	57	83	21	35	0.8
180911	61 °C	22 mm	6.0	114	57	83	21	35	0.8
180912	61 °C	28 mm	9.0	120	60	86	21	35	1.0
180913	66 °C	15 mm	4.0	114	57	83	21	35	0.8
180915	66 °C	22 mm	6.0	114	57	83	21	35	0.8
180916	66 °C	28 mm	9.0	120	60	86	21	35	1.0
180917	72 °C	15 mm	4.0	114	57	83	21	35	0.8
180919	72 °C	22 mm	6.0	114	57	83	21	35	0.8
180920	72 °C	28 mm	9.0	120	60	86	21	35	1.0
180921	80 °C	15 mm	4.0	114	57	83	21	35	0.8
180923	80 °C	22 mm	6.0	114	57	83	21	35	0.8
180924	80 °C	28 mm	9.0	120	60	86	21	35	1.0

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187031	Thermostatic element 821, 45°C	1
187032	Thermostatic element 821, 55°C	1
187033	Thermostatic element 821, 61°C	1
187034	Thermostatic element 821, 66°C	1
187035	Thermostatic element 821, 72°C	1
187036	Thermostatic element 821, 80°C	1
187107	Insulation, DN 15-20	2
187108	Insulation, DN 25-32	2

LK 823 ThermoVar



TECHNICAL DATA

Opening temperature	45°C, 50°C, 55°C, 60°C, 65°C or 70°C
Working temperature	45°C - 55°C
	Min. +5°C/Max. +95°C
	60°C - 70°C
	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa
Leakage	< 0.5% of Kvs at 100 kPa
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	Brass EN 1982 CB753S
Material, cover	Brass EN 12165 CW617N
Material, sealing	EPDM

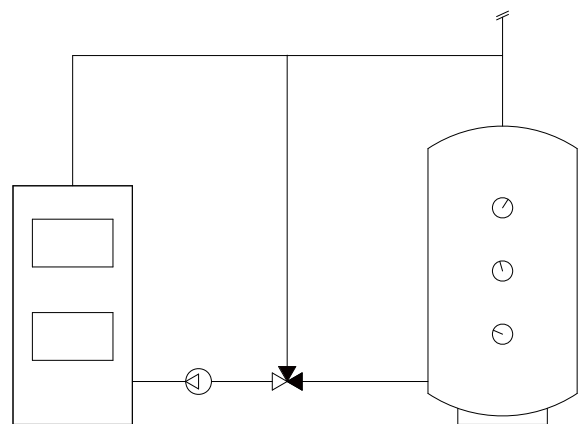
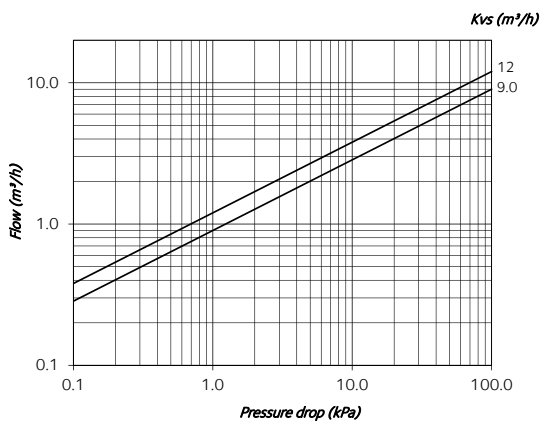
LK 823 ThermoVar is a 3-way thermic loading valve for solid fuel/storage tank installations. The valve is intended to ensure both an optimal temperature stratification in the storage tank and a high return temperature to the boiler, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

The valve regulates on two ports, which means that there is no need for a balancing valve in the circuit between boiler and loading valve. The thermostatic element starts to open port A at an outgoing mixed water temperature in port AB of 45°C, 50°C, 55°C, 60°C, 65°C or 70°C. Port B is closed when the temperature in port A exceeds the nominal opening temperature by 10°C.

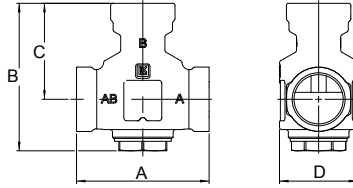
LK 823 can be equipped with an insulation - see under Accessories. For more information, please see the product sheet for insulations - page 49.

The valve can be mounted at any angle. LK 823 ThermoVar is for right- or left-hand mounting.

CAPACITY DIAGRAM

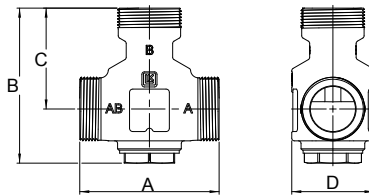


LK 823 - FEMALE THREAD



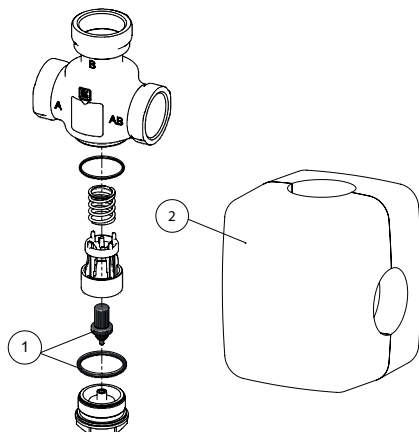
Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	Weight kg
181284	45 °C	F 1"	9.0	92	114	72.5	Ø55	1.0
181288	45 °C	F 1¼"	12	105	117	76	Ø62	1.2
181285	50 °C	F 1"	9.0	92	114	72.5	Ø55	1.0
181289	50 °C	F 1¼"	12	105	117	76	Ø62	1.2
181286	55 °C	F 1"	9.0	92	114	72.5	Ø55	1.0
181290	55 °C	F 1¼"	12	105	117	76	Ø62	1.2
181287	60 °C	F 1"	9.0	92	114	72.5	Ø55	1.0
181291	60 °C	F 1¼"	12	105	117	76	Ø62	1.2
181536	65 °C	F 1"	9.0	92	114	72.5	Ø55	1.0
181537	65 °C	F 1¼"	12	105	117	76	Ø62	1.2
181539	70 °C	F 1"	9.0	92	114	72.5	Ø55	1.0
181540	70 °C	F 1¼"	12	105	117	76	Ø62	1.2

LK 821 - MALE THREAD



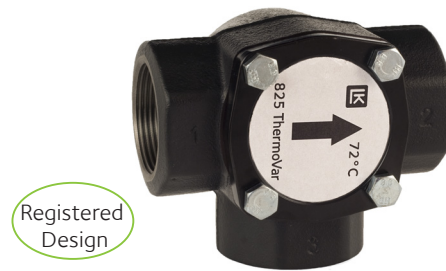
Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	Weight kg
181300	45 °C	M 1½"	12	105	117	76	Ø62	1.2
181301	50 °C	M 1½"	12	105	117	76	Ø62	1.2
181302	55 °C	M 1½"	12	105	117	76	Ø62	1.2
181303	60 °C	M 1½"	12	105	117	76	Ø62	1.2
181538	65 °C	M 1½"	12	105	117	76	Ø62	1.2
181541	70 °C	M 1½"	12	105	117	76	Ø62	1.2

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187102	Thermostatic element 823, 45°C	1
187103	Thermostatic element 823, 50°C	1
187104	Thermostatic element 823, 55°C	1
187105	Thermostatic element 823, 60°C	1
187138	Thermostatic element 823, 65°C	1
187139	Thermostatic element 823, 70°C	1
187109	Insulation, DN 25-32	2

LK 825 ThermoVar



TECHNICAL DATA

Opening temperature	45°C, 55°C, 61°C, 72°C or 80°C
Working temperature	45°C - 55°C
	Min. +5°C/Max. +95°C
	61°C - 80°C
	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Material, valve body	Cast Iron EN 1561 EN-GJL-200
Material, external cover	Coated Aluminium
Material, cover sealing	Fibre
Material, sealing	EPDM

LK 825 ThermoVar is a 3-way thermic loading valve for solid fuel/storage tank installations. The valve is intended to ensure both an optimal temperature stratification in the storage tank and a high return temperature to the boiler, thus increasing the efficiency of the system. Tarring and condensation are prevented which prolongs boiler life.

The valve can be mounted at any angle. LK 825 ThermoVar can easily be adapted for right- or left-hand mounting. The valve can be installed in three different positions. In the standard version the valve is intended for installation in position I. It can easily be adapted for installation in position II. For delivery of valves intended for installation in position III, please contact our Sales Department.

POSITION I

As soon as the boiler temperature has reached the selected opening temperature, the thermic valve allows hot water to load to the storage tank. Return water from the storage tank is mixed with supply water before it circulates back into the boiler. The loading temperature is at least the selected opening temperature.

A balancing valve should be installed in the circuit between boiler and loading valve.

The installation should be equipped with an LK 822 Thermo-Bac check valve to prevent self-circulation from storage tank to boiler after the fire has gone out. In case of power failure or pump breakdown the check valve automatically opens for self-circulation.

The circulating pump should be controlled by a thermostat that measures the boiler's water or flue gas temperature.

POSITION II

As soon as the boiler temperature has reached the selected opening temperature, the thermic valve allows return water from the storage tank to mix with supply water before it circulates back into the boiler. The return temperature is at least the selected opening temperature.

A balancing valve should be installed in the circuit between boiler and loading valve.

The circulating pump should be controlled by a thermostat that measures the boiler's water or flue gas temperature.

POSITION III

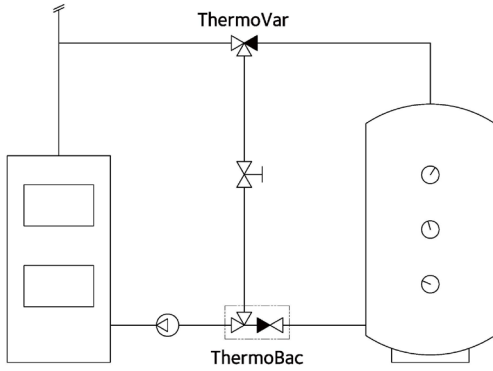
As soon as the boiler temperature has reached the selected opening temperature, the thermic valve allows return water from the storage tank to mix with supply water before it circulates back into the boiler. The return temperature is at least the selected opening temperature.

A balancing valve should be installed in the circuit between boiler and loading valve.

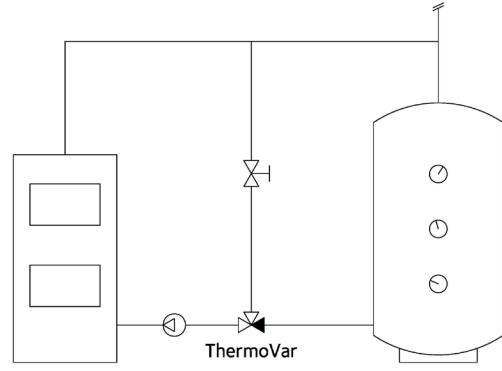
The installation should be equipped with an LK 822 Thermo-Bac check valve to prevent self-circulation from storage tank to boiler after the fire has gone out. In case of power failure or pump breakdown the check valve opens automatically for self-circulation.

The circulating pump should be controlled by a thermostat that measures the boiler's water or flue gas temperature.

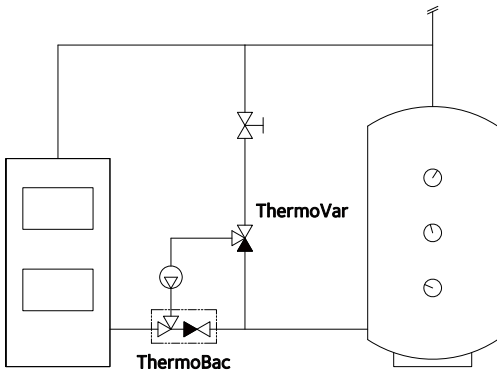
POSITION I



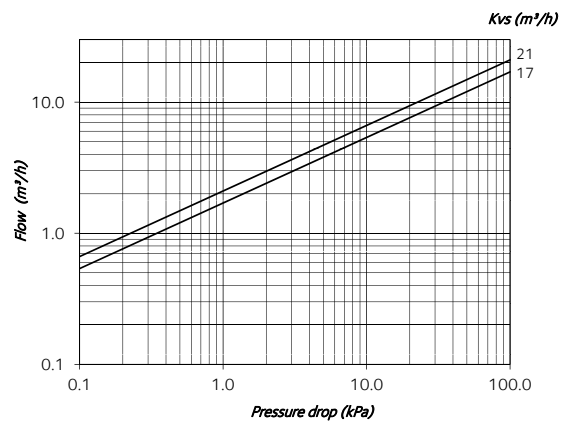
POSITION II



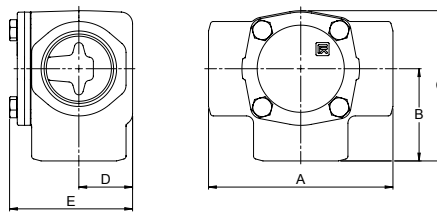
POSITION III



CAPACITY DIAGRAM

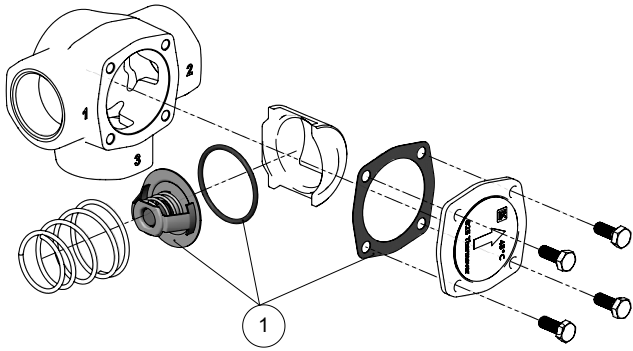


LK 825 - FEMALE THREAD



Article no.	Opening temperature	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
180201	45 °C	F 1½"	17	127	63.5	103	37	85	2.5
180204	45 °C	F 2"	21	127	63.5	106	44	101	4.0
180225	55 °C	F 1½"	17	127	63.5	103	37	85	2.5
180229	55 °C	F 2"	21	127	63.5	106	44	101	4.0
180249	61 °C	F 1½"	17	127	63.5	103	37	85	2.5
180254	61 °C	F 2"	21	127	63.5	106	44	101	4.0
180269	72 °C	F1½"	17	127	63.5	103	37	85	2.5
180272	72 °C	F 2"	21	127	63.5	106	44	101	4.0
180285	80 °C	F 1½"	17	127	63.5	103	37	85	2.5
180288	80 °C	F 2"	21	127	63.5	106	44	101	4.0

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
180602	Thermostatic element 825, 45°C	1
180603	Thermostatic element 825, 55°C	1
180604	Thermostatic element 825, 61°C	1
180605	Thermostatic element 825, 72°C	1
180606	Thermostatic element 825, 80°C	1

LK 822 ThermoBac



TECHNICAL DATA

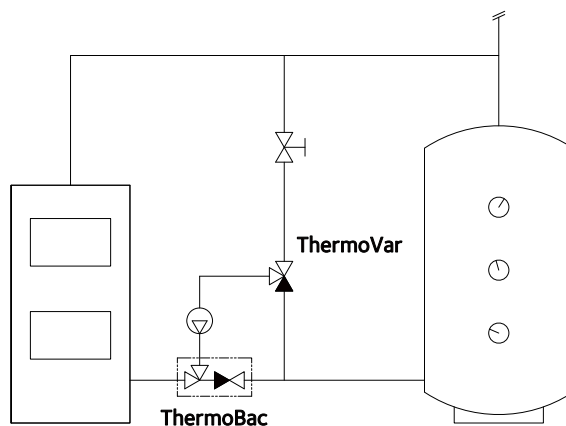
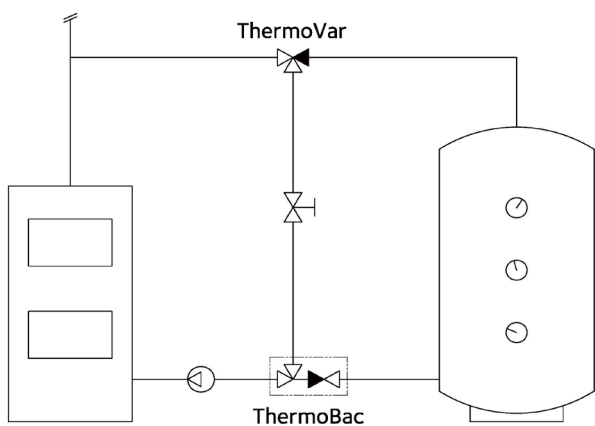
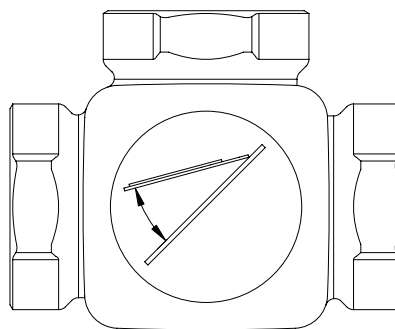
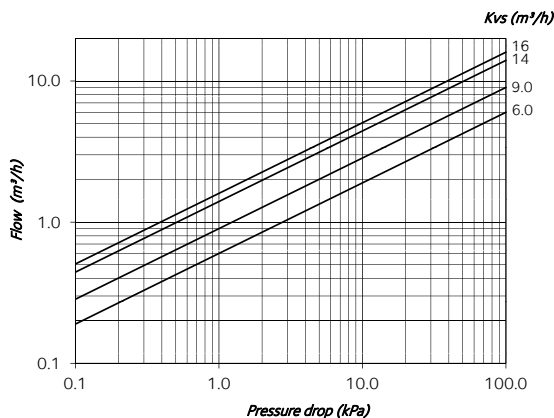
Working temperature	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12165 CW617N
Material, sealing	EPDM

LK 822 ThermoBac is a 3-way check valve with low opening pressure and high fluid capacity. The valve is especially suitable for heating systems with storage tanks. The check valve prevents self-circulation from storage tank to boiler after the fire has gone out. In case of power failure or pump breakdown LK 822 ThermoBac automatically opens for self-circulation.

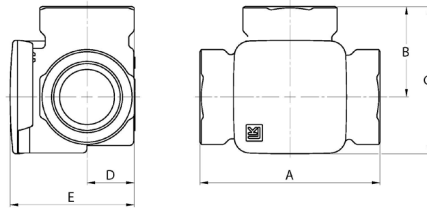
LK 822 can be equipped with an insulation - see under Accessories. For more information, please see the product sheet for insulations - page 49.

The valve should be mounted so that the flap in the check valve closes by its own weight.

CAPACITY DIAGRAM

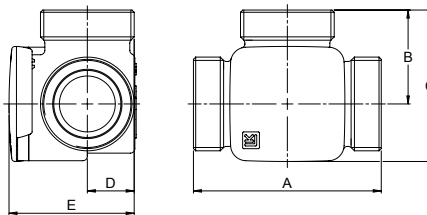


LK 822 - FEMALE THREAD



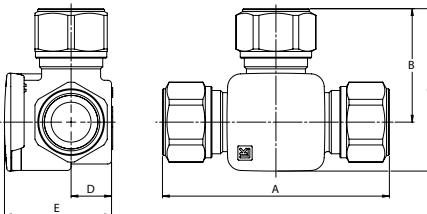
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
181107	F ½"	6.0	80	40	66	21	35	0.5
181108	F ¾"	9.0	80	40	66	21	35	0.5
181109	F 1"	14	82	41	67	21	35	0.7
181110	F 1¼"	16	84	42	68	24	39	0.7

LK 822 - MALE THREAD



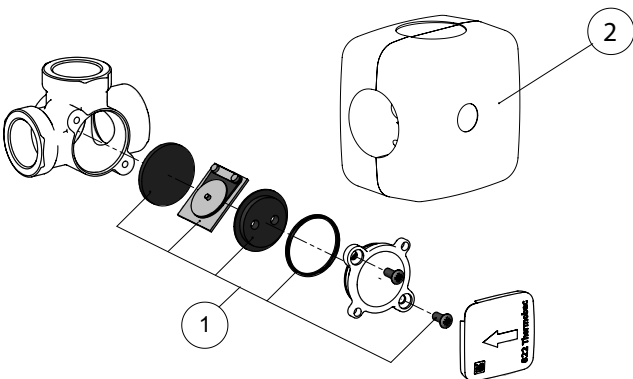
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
181111	M ¾"	6.0	80	40	66	21	35	0.5
181112	M 1"	9.0	80	40	66	21	35	0.5
181113	M 1¼"	14	84	42	68	21	35	0.7
181114	M 1½"	16	84	42	68	24	39	0.8

LK 822 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
181115	15 mm	6.0	114	57	83	21	35	0.6
181116	22 mm	6.0	114	57	83	21	35	0.5
181117	28 mm	9.0	120	60	86	21	35	0.7

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187072	Repair kit 822, DN 15-32	1
187107	Insulation, DN 15-20	2
187108	Insulation, DN 25-32	2

LK 826 ThermoBac



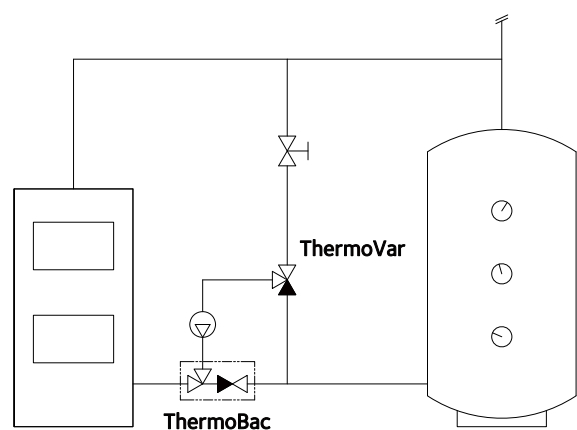
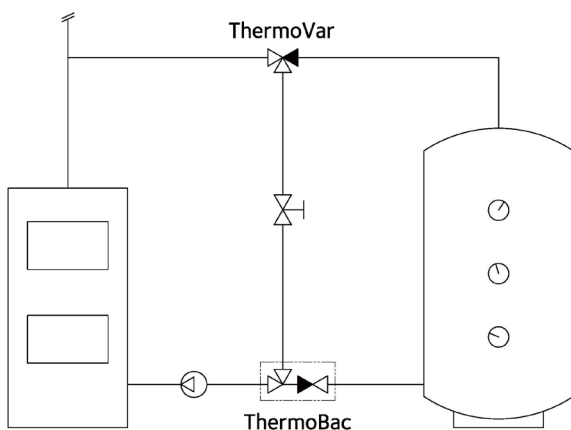
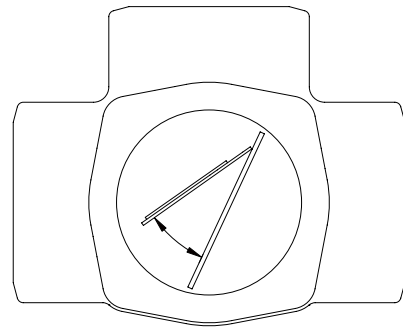
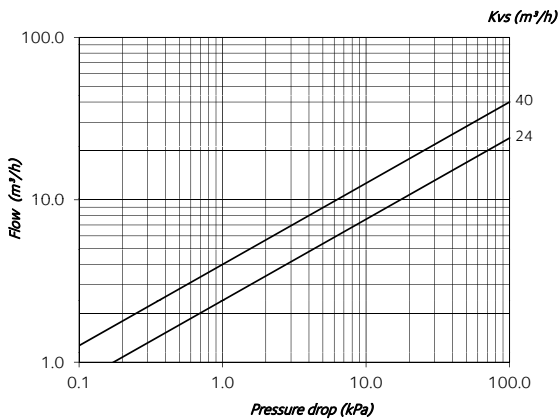
TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Media	Water - Glycol mixture max. 50%
Thread standard	Rp - female thread
Material, valve body	Cast Iron EN 1561 EN-GJL-200
Material, cover	Coated Aluminium
Material, cover sealing	Fibre
Material, sealing	EPDM

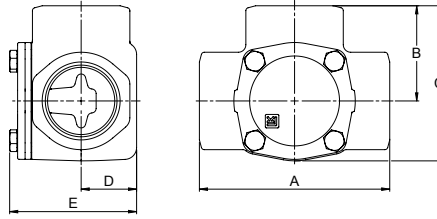
LK 826 ThermoBac is a 3- way check valve with low opening pressure and high fluid capacity. The valve is especially suitable for heating systems with storage tanks. The check valve prevents self-circulation from storage tank to boiler after the fire has gone out. In case of power failure or pump breakdown LK 826 ThermoBac automatically opens for self-circulation.

The valve should be mounted so that the flap in the check valve closes by its own weight.

CAPACITY DIAGRAM

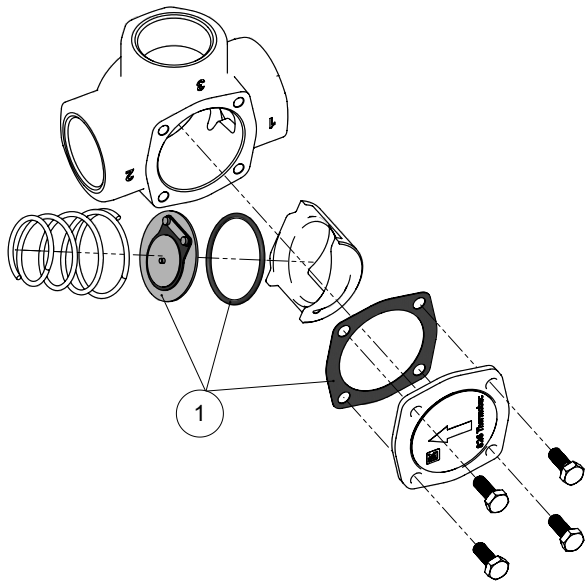


LK 826 - FEMALE THREAD



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	Weight kg
180485	F 1½"	24	127	63.5	103	37	85	2.5
180486	F 2"	40	127	63.5	106	44	101	4.0

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187051	Repair kit 826, DN 40-50	1

LK Insulation



TECHNICAL DATA

Working temperature	Min. -20°C / Max. +130°C
Ambient temperature	Min. -20°C / Max. +130°C
Material, insulation	Expanded Polypropylene EPP
Thermal conductivity	0.035 W/mK
Density	35 g/l

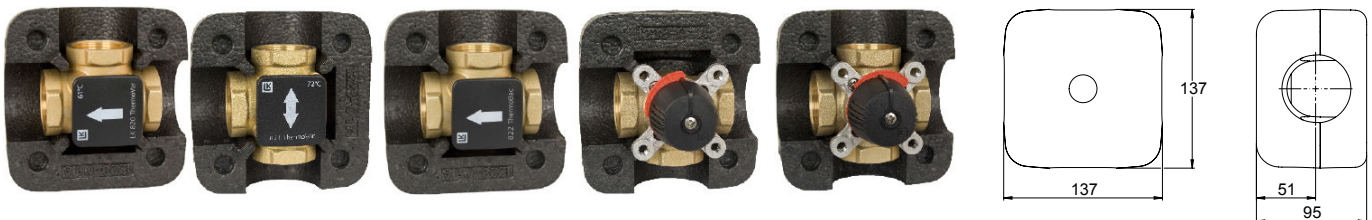
The LK Armatur insulation has been developed for ThermoVar thermic valves, ThermoBac check valves and ThermoMix mixing valves to provide effective protection against energy losses.

The insulation is available in two versions. One is designed for LK 823 ThermoVar. The other insulation for valve types LK 820, 821, 822, 840 and 841. In the standard design it fits LK 820, 821 ThermoVar and LK 822 ThermoBac.

Cut-outs for spindle and valve port are easily done to adapt the insulation to LK 840 and 841 ThermoMix, with or without an installed electronic controller.

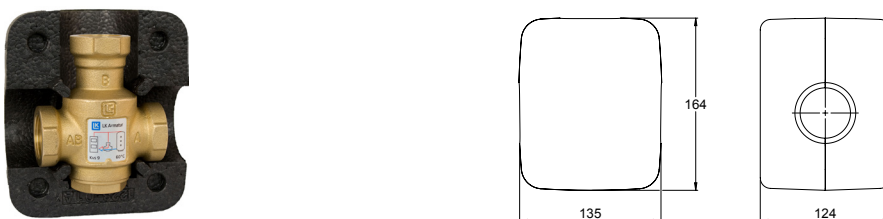
The insulation's closing function allows a quick and easy mounting.

LK INSULATION - LK 820, 821, 822, 840, 841

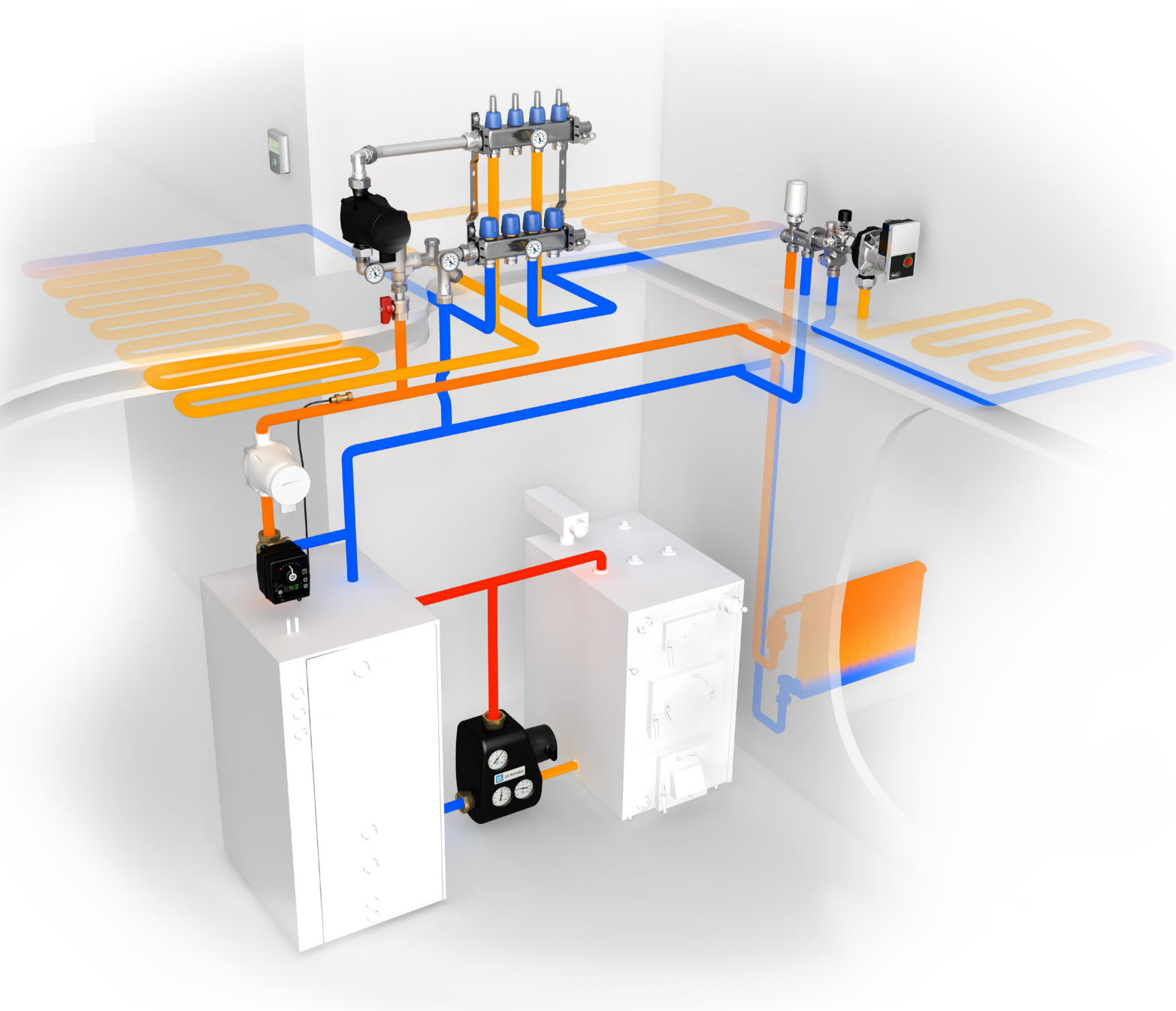


Article no.	Article	Type	Dimension	Weight kg
187107	Insulation, DN 15-20	820, 821, 822, 840, 841	M ¾", M 1", F ½", F ¾"	0.1
187108	Insulation, DN 25-32	820, 821, 822, 840, 841	M 1¼", M 1½", F 1", F 1¼"	0.1

LK INSULATION - LK 823



Article no.	Article	Type	Dimension	Weight kg
187109	Insulation, DN 25-32	823	M 1½", F 1", F 1¼"	0.1



Mixing Valves



LK 830 and LK 831 ThermoMix B
4-way bivalent mixing valves made of brass.



LK 840 and LK 841 ThermoMix
3- and 4-way mixing valves made of brass.



LK 845 and LK 846 ThermoMix
3- and 4-way mixing valves made of cast iron.



LK 850 and LK 851 ThermoMix H
3- and 4-way mixing valves made of brass.



LK 842 ThermoMix P
4-way mixing valves made of brass.



LK Insulation
Insulation for ThermoMix, ThermoVar and ThermoBac.

LK 830 ThermoMix B



TECHNICAL DATA

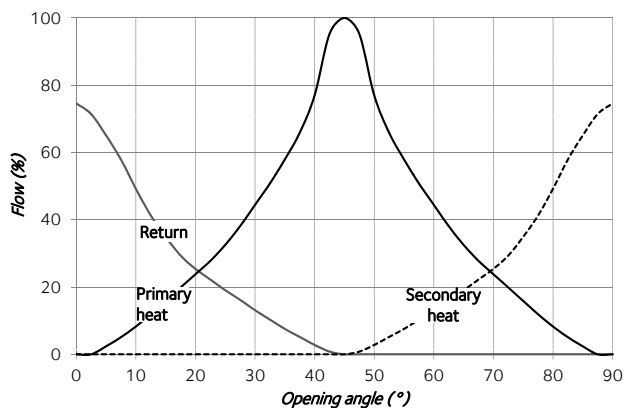
Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 0.5% of Kvs at 50 kPa
Angle of rotation	90°
Torque	< 1 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12165 CW617N
Material, slide/spindle	Brass EN 12164 CW614N
Material, sealing	EPDM
Spindle sealing	Two O-rings

LK 830 ThermoMix B 4-way bivalent mixing valves are designed for heating systems, where energy is taken from two heating units connected in series or parallel or for storage tank systems where energy is extracted from two levels.

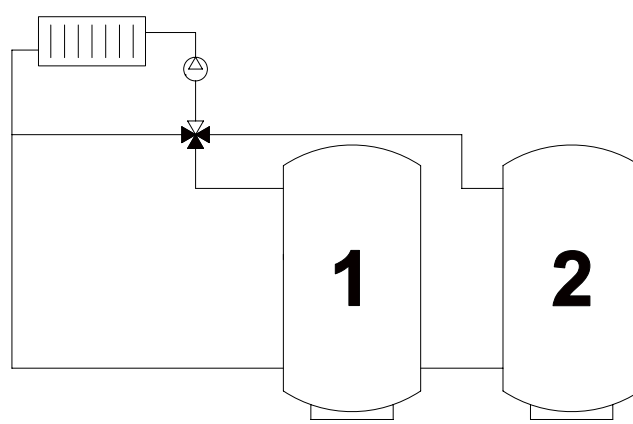
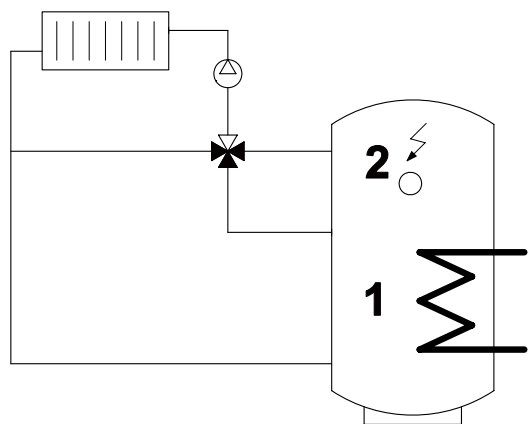
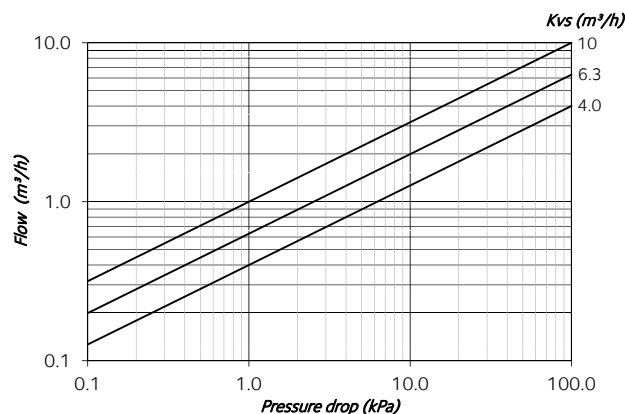
LK 830 ThermoMix B should be equipped with an automatic control unit to ensure that the most favourable heat source is prioritised at all times.

The valve can be mounted at any angle. Valve ports are marked 1-4. In the standard version the valve can be mounted according to 1=Supply, 2=Secondary heat, 3=Primary heat and 4=Return. LK 830 ThermoMix B can be adapted for right- or left-hand installation.

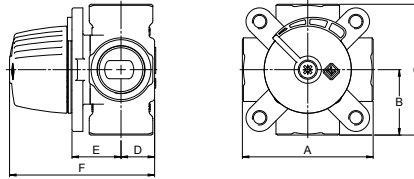
VALVE CHARACTERISTICS



CAPACITY DIAGRAM

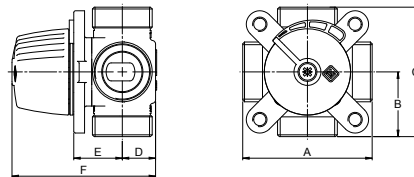


LK 830 - FEMALE THREAD



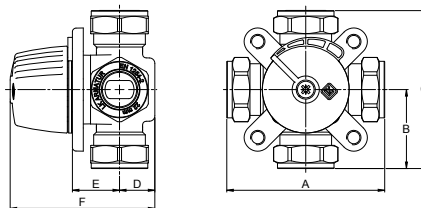
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180587	F ¾"	6.3	72	36	72	19	27	80	0.7
180589	F 1"	10	82	41	82	21	30	85	0.9

LK 830 - MALE THREAD



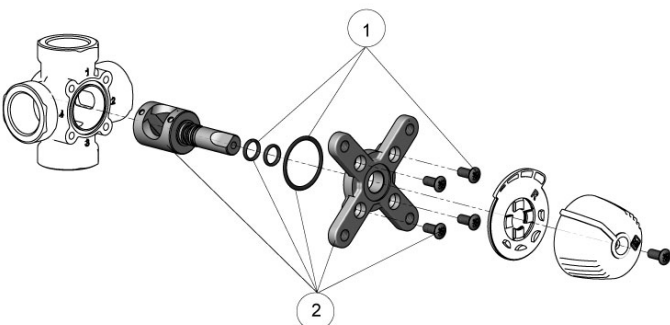
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180002	M ¾"	4.0	72	36	72	20	26	80	0.6
180004	M ¾"	6.3	72	36	72	20	26	80	0.6
180588	M 1"	6.3	72	36	72	19	27	80	0.7
180590	M 1¼"	10	82	41	82	21	30	85	1.0

LK 830 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180592	15 mm	4.0	87	43.5	87	20	26	80	0.7
180001	22 mm	4.0	87	43.5	87	20	26	80	0.7
180003	22 mm	6.3	87	43.5	87	20	26	80	0.7
180595	28 mm	6.3	112	56	112	19	27	80	1.1

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187059	Sealing kit 830/831, DN 15-20	1
187060	Sealing kit 830, DN 25	1
187061	Repair kit 830, DN 15-20, Kvs 4.0	2
187062	Repair kit 830, DN 15-20, Kvs 6.3	2
187063	Repair kit 830, DN 25, Kvs 6.3	2
187064	Repair kit 830, DN 25, Kvs 10	2

LK 831 ThermoMix B



TECHNICAL DATA

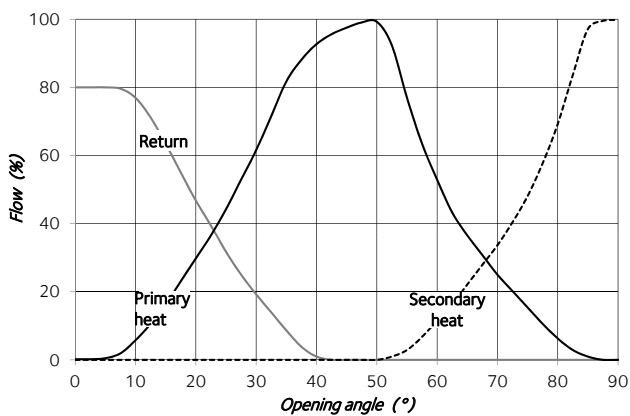
Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 1% of Kvs at 50 kPa
Angle of rotation	90°
Torque	< 1 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12165 CW617N
Material, slide/spindle	Brass EN 12164 CW614N
Material, sealing	EPDM
Spindle sealing	Two O-rings

LK 831 ThermoMix B 4-way bivalent mixing valves are designed for heating systems, where energy is taken from two heating units connected in series or parallel or for storage tank systems where energy is extracted from two levels.

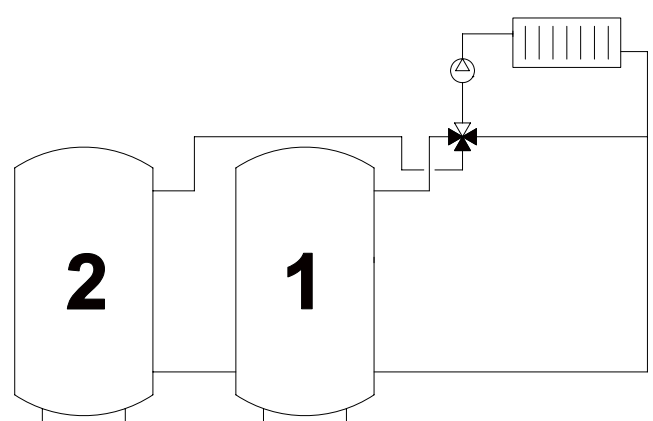
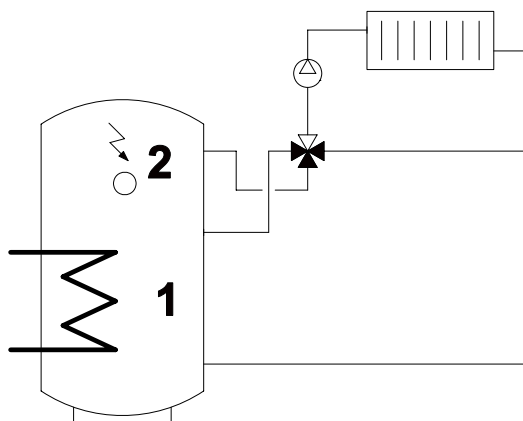
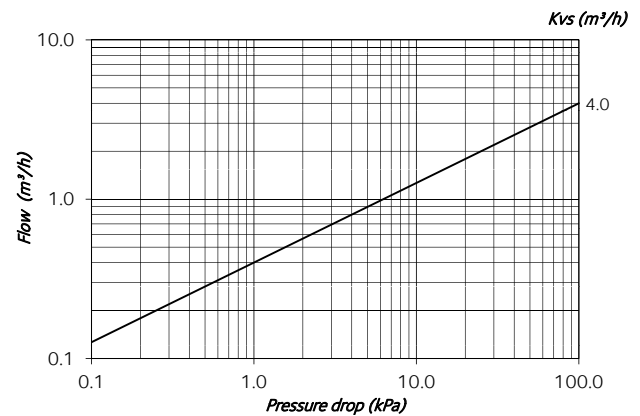
LK 831 ThermoMix B should be equipped with an automatic control unit to ensure that the most favourable heat source is prioritised at all times.

The valve can be mounted at any angle. Valve ports are marked 1-4. The valve is to be mounted according to 1=Supply, 2=Return, 3=Secondary heat and 4=Primary heat.

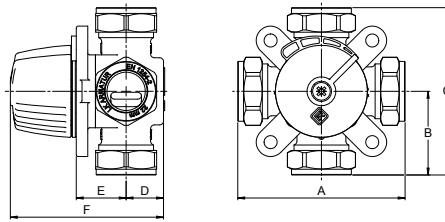
VALVE CHARACTERISTICS



CAPACITY DIAGRAM

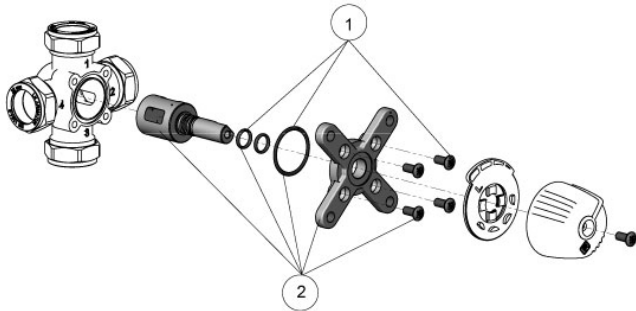


LK 831 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180591	22 mm	4.0	87	43.5	87	20	26	80	0.7

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187059	Sealing kit 830/831, DN 15-20	1
187065	Repair kit 831, DN 20, Kvs 4.0	2

LK 840 ThermoMix



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 1% of Kvs at 50 kPa
Angle of rotation	90°/360°
Torque	< 1 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, internal cover	PPS Composite
Material, external cover	Aluminium
Material, slide/spindle	Brass EN 12165 CW617N
Material, sealing	EPDM
Spindle sealing	Two O-rings

LK 840 ThermoMix is a 3-way valve that can be used as a mixing valve or as a diverting valve in heating systems.

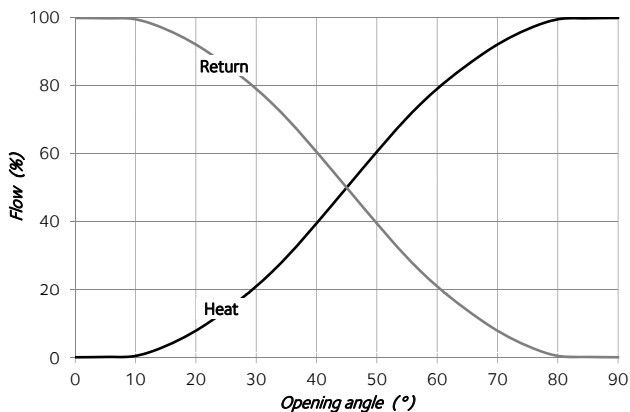
LK 840 ThermoMix is suitable for motorization.

LK 840 can be equipped with an insulation - see under Accessories. For more information, please see the product sheet for insulations - page 72.

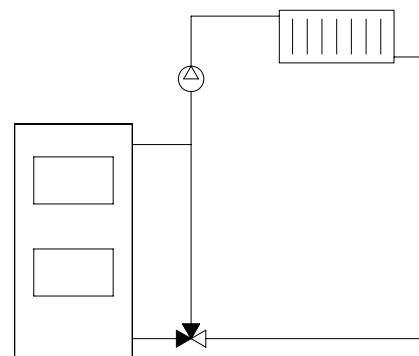
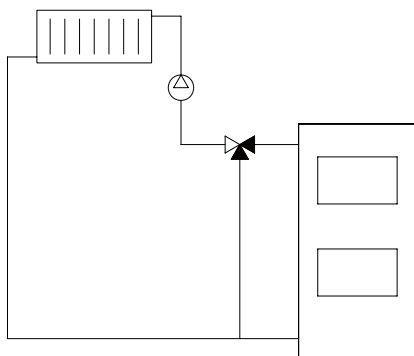
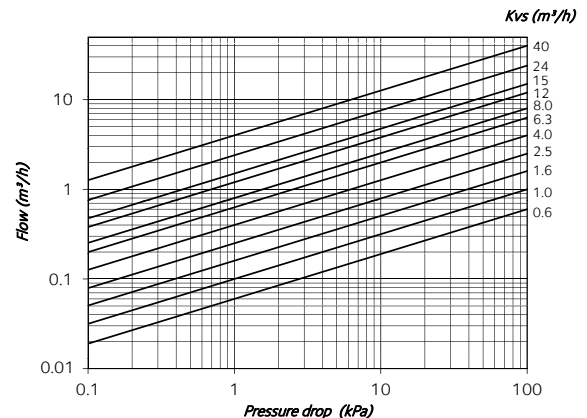
The valve can be mounted at any angle.

LK 840 ThermoMix can easily be adapted for right- or left-hand mounting.

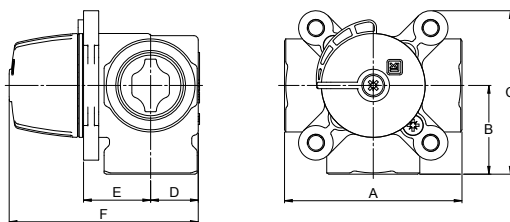
VALVE CHARACTERISTICS



CAPACITY DIAGRAM



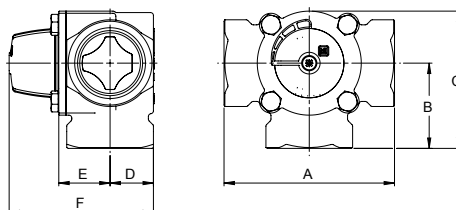
LK 840 - FEMALE THREAD



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181010	F 1/2"	0.6	80	40	75	20	28	82	0.7
181011	F 1/2"	1.0	80	40	75	20	28	82	0.7
181012	F 1/2"	1.6	80	40	75	20	28	82	0.7
180845	F 1/2"	2.5	80	40	75	20	28	82	0.7
180846	F 3/4"	4.0	80	40	75	20	28	82	0.7
180847	F 3/4"	6.3	80	40	75	20	28	82	0.7
180848	F 1"	8.0	82	41	76	22	31	87	0.8
180849	F 1"	12	82	41	76	22	31	87	0.8
180850	F 1 1/4"	15	84	42	77	25	32	91	0.9

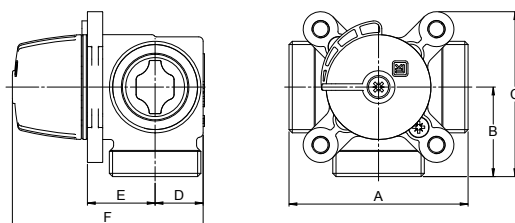
The valve is also available with the bevel of the spindle rotated 180° (Design E). For more information please contact our Sales Department.

LK 840 - FEMALE THREAD



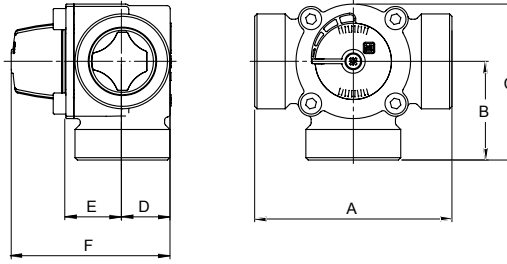
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181196	F 1 1/2"	24	118	59	95	30	36	100	2.1
181197	F 2"	40	127	63.5	100	35	40	109	2.4

LK 840 - MALE THREAD



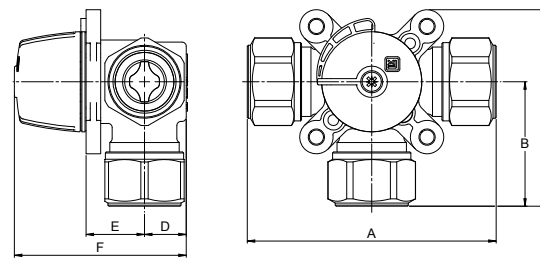
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180851	M 3/4"	2.5	80	40	75	20	28	82	0.7
180852	M 1"	4.0	80	40	75	20	28	82	0.7
180853	M 1"	6.3	80	40	75	20	28	82	0.7
180854	M 1 1/4"	8.0	82	41	76	22	31	87	0.8
180855	M 1 1/4"	12	82	41	76	22	31	87	0.8
180856	M 1 1/2"	15	84	42	77	24	32	90	0.9

LK 840 - MALE THREAD



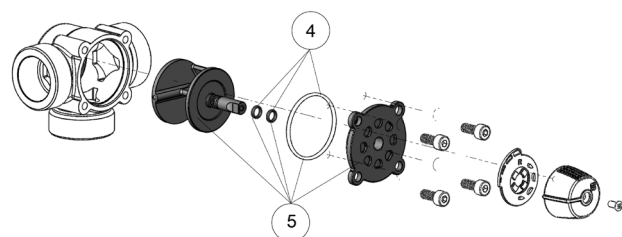
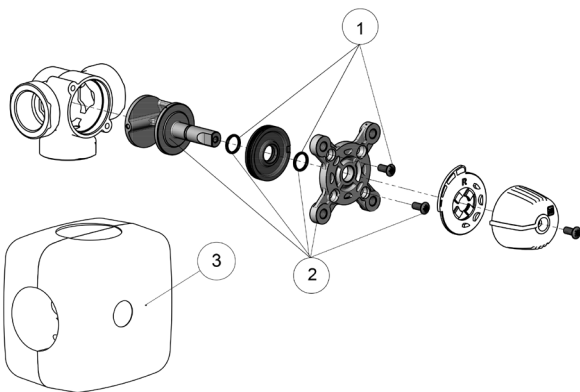
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181519	M 2"	24	124	62	98	30	36	100	2.1

LK 840 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180857	15 mm	2.5	114	57	92	20	28	82	0.8
180858	18 mm	2.5	114	57	92	20	28	82	0.8
180859	22 mm	2.5	114	57	92	20	28	82	0.8
180893	22 mm	6.3	87	44	78	20	28	82	0.8
180860	28 mm	4.0	120	60	95	20	28	82	0.8
180861	28 mm	6.3	120	60	95	20	28	82	0.8

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187066	Sealing kit 811/840/841, DN 15-20	1
187067	Sealing kit 840/841/842, DN 25-32	1
187068	Repair kit 840, DN 15-20	2
187070	Repair kit 840, DN 25-32	2
187107	Insulation, DN 15-20	3
187108	Insulation, DN 25-32	3
187078	Sealing kit 840/841, DN 40-50	4
187079	Repair kit 840, DN 40	5
187116	Repair kit 840, DN 50	5

LK 841 ThermoMix



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 1.5% of Kvs at 50 kPa
Angle of rotation	90°
Torque	< 1 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, internal cover	PPS Composite
Material, external cover	Aluminium
Material, slide/spindle	Brass EN 12165 CW617N
Material, sealing	EPDM
Spindle sealing	Two O-rings

LK 841 ThermoMix is a 4-way mixing valve suited for heating systems in which a high return temperature is needed to avoid corrosion, thus prolonging the life-time of the heat source.

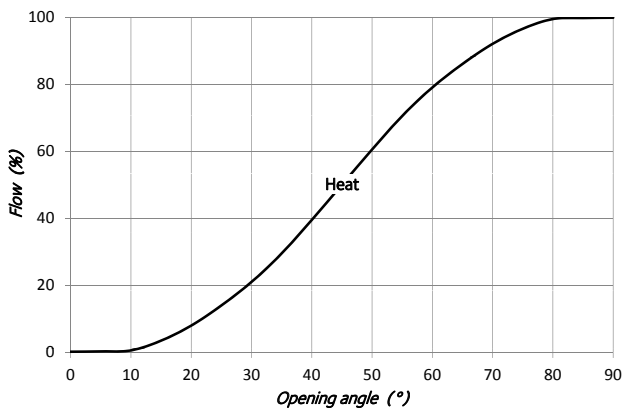
LK 841 ThermoMix is suitable for motorization.

LK 841 can be equipped with an insulation - see under Accessories. For more information, please see the product sheet for insulations - page 72.

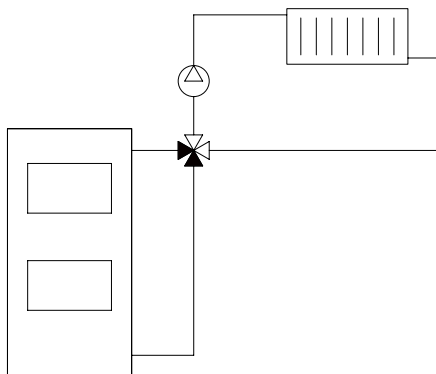
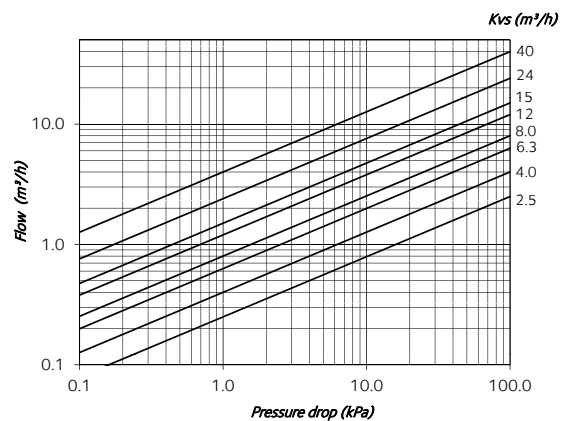
The valve can be mounted at any angle.

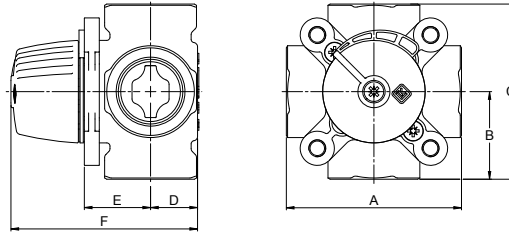
LK 841 ThermoMix can easily be adapted for right- or left-hand mounting.

VALVE CHARACTERISTICS

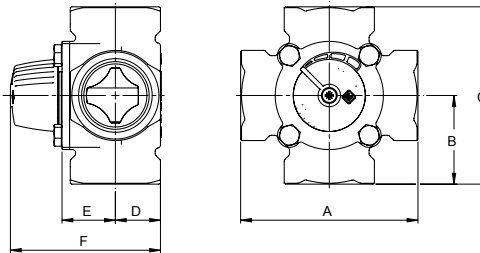


CAPACITY DIAGRAM

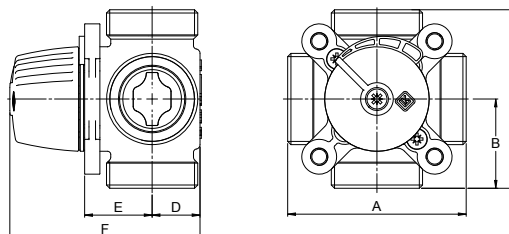


LK 841 - FEMALE THREAD


Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180862	F 1/2"	2.5	80	40	80	20	28	82	0.7
180863	F 3/4"	4.0	80	40	80	20	28	82	0.7
180864	F 3/4"	6.3	80	40	80	20	28	82	0.7
180865	F 1"	8.0	82	41	82	22	31	87	0.8
180866	F 1"	12	82	41	82	22	31	87	0.8
180867	F 1 1/4"	15	84	42	84	25	32	91	0.9

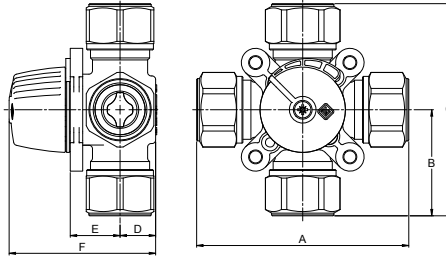
LK 841 - FEMALE THREAD


Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
181198	F 1 1/2"	24	118	59	118	30	36	100	2.3
181199	F 2"	40	127	63.5	127	35	40	109	2.7

LK 841 - MALE THREAD


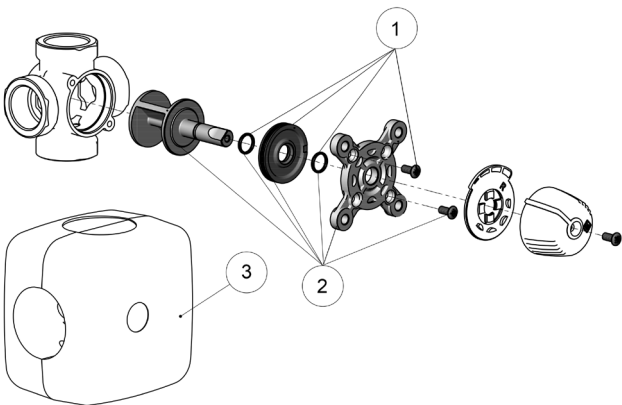
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180868	M 3/4"	2.5	80	40	80	20	28	82	0.7
180869	M 1"	4.0	80	40	80	20	28	82	0.7
180870	M 1"	6.3	80	40	80	20	28	82	0.7
180871	M 1 1/4"	8.0	82	41	82	22	31	87	0.8
180872	M 1 1/4"	12	82	41	82	22	31	87	0.8
180873	M 1 1/2"	15	84	42	84	24	32	90	0.9

LK 841 - COMPRESSION FITTING

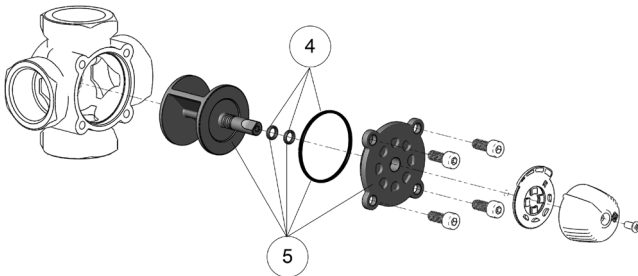


Article no.	Dimension	Kvs m³/h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180874	15 mm	2.5	114	57	114	20	28	82	1.0
180875	18 mm	2.5	114	57	114	20	28	82	1.2
180876	22 mm	2.5	114	57	114	20	28	82	1.0
180877	28 mm	4.0	120	60	120	20	28	82	1.0
180878	28 mm	6.3	120	60	120	20	28	82	1.0

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187066	Sealing kit 811/840/841, DN 15-20	1
187067	Sealing kit 840/841/842, DN 25-32	1
187069	Repair kit 841, DN 15-20	2
187071	Repair kit 841/842, DN 25-32	2
187107	Insulation, DN 15-20	3
187108	Insulation, DN 25-32	3
187078	Sealing kit 840/841, DN 40-50	4
187080	Repair kit 841, DN 40-50	5



LK 845 ThermoMix



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 2% of Kvs at 50 kPa
Angle of rotation	90°/360°
Torque	< 1 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	Rp - female thread
Material, valve body	Cast Iron EN 1561 EN-GJL-200
Material, cover	Coated Aluminium
Material, slide/spindle	Brass EN 12165 CW617N
Material, sealing	EPDM
Spindle sealing	Two O-rings

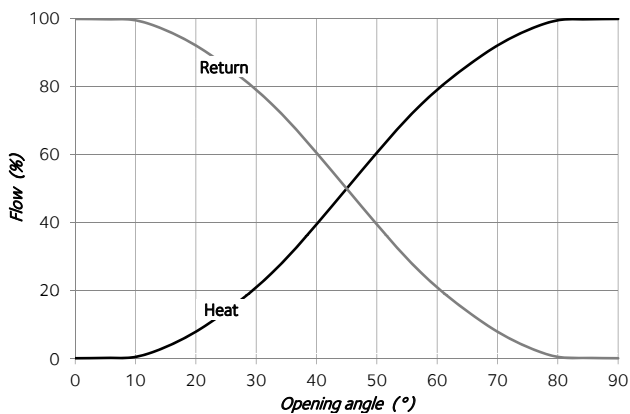
LK 845 ThermoMix is a 3-way valve that can be used as a mixing valve or as a diverting valve in heating systems.

LK 845 ThermoMix is suitable for motorization.

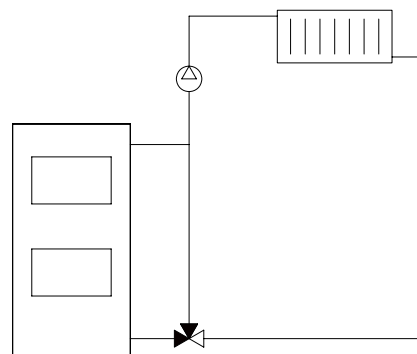
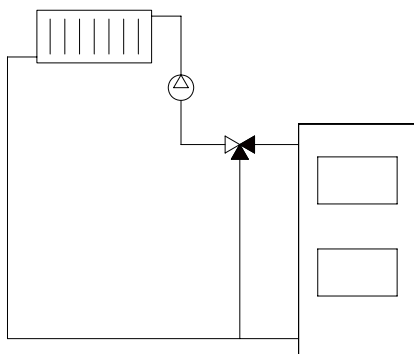
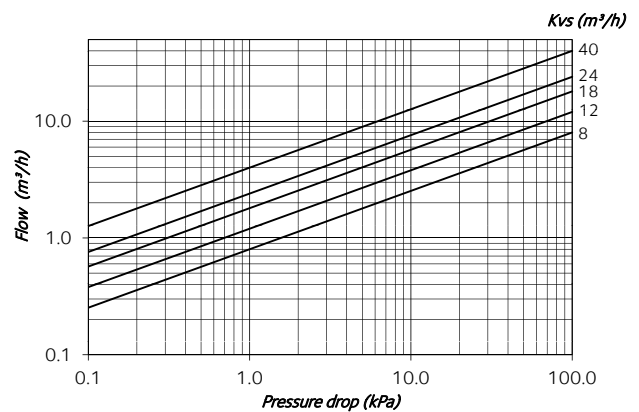
The valve can be mounted at any angle.

LK 845 ThermoMix can easily be adapted for right- or left-hand mounting.

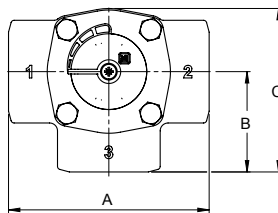
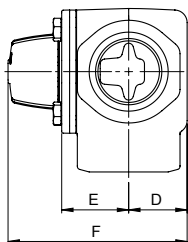
VALVE CHARACTERISTICS



CAPACITY DIAGRAM



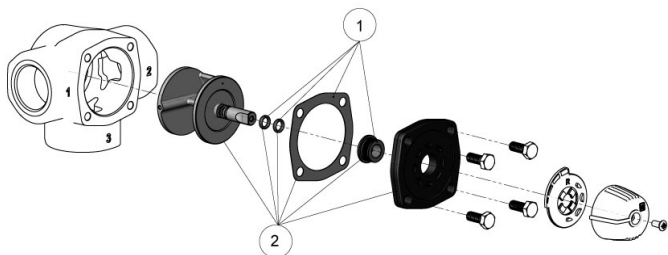
LK 845 - FEMALE THREAD



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180106	F 3/4"	8	112	56	96	36	35	106	2.2
180107	F 1"	12	112	56	96	36	35	106	2.1
180108	F 1 1/4"	18	127	63.5	103	37	42	113	3.0
180109	F 1 1/2"	24	127	63.5	103	37	42	113	2.8
180110	F 2"	40	127	63.5	106	44	51	122	4.3

The valve is also available with the bevel of the spindle rotated 180° (Design E). For more information please contact our Sales Department.

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187074	Sealing kit 845/846, DN 20-50	1
187075	Repair kit 845, DN 20-50	2

LK 846 ThermoMix



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 2% of Kvs at 50 kPa
Angle of rotation	90°
Torque	< 1 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	Rp - female thread
Material, valve body	Cast Iron EN 1561 EN-GJL-200
Material, cover	Coated Aluminium
Material, slide/spindle	Brass EN 12165 CW617N
Material, sealing	EPDM
Spindle sealing	Two O-rings

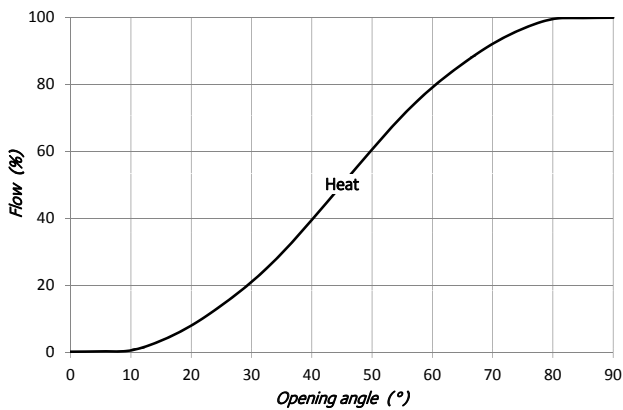
LK 846 ThermoMix is a 4-way mixing valve suited for heating systems in which a high return temperature is needed to avoid corrosion, thus prolonging the life-time of the heat source.

LK 846 ThermoMix is suitable for motorization.

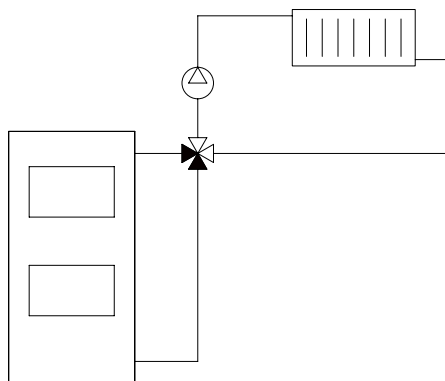
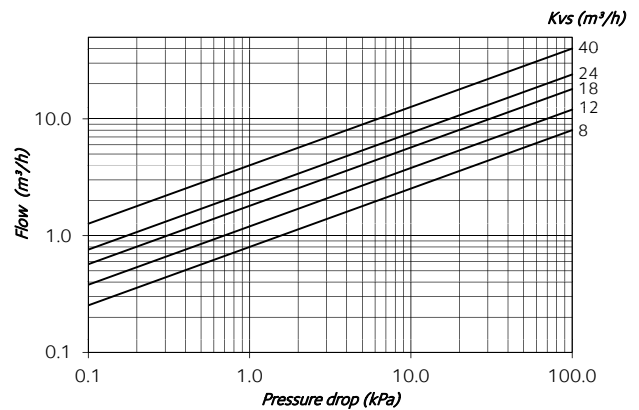
The valve can be mounted at any angle.

LK 846 ThermoMix can easily be adapted for right- or left-hand mounting.

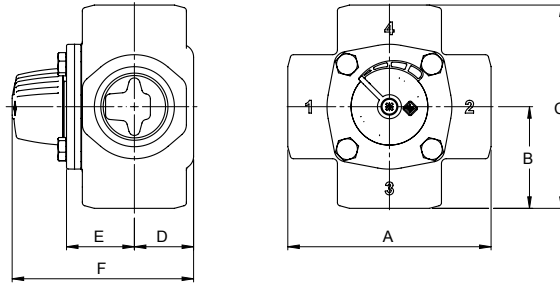
VALVE CHARACTERISTICS



CAPACITY DIAGRAM

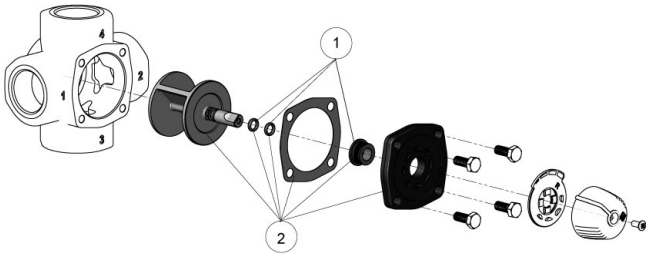


LK 846 - FEMALE THREAD



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
180111	F 3/4"	8	112	56	112	36	35	106	1.8
180112	F 1"	12	112	56	112	36	35	106	1.9
180113	F 1 1/4"	18	127	63.5	127	37	42	113	2.6
180114	F 1 1/2"	24	127	63.5	127	37	42	113	3.1
180115	F 2"	40	127	63.5	127	44	51	122	4.6

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187074	Sealing kit 845/846, DN 20-50	1
187076	Repair kit 846, DN 20-50	2

LK 850 ThermoMix H



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 0.5% of Kvs at 50 kPa
Angle of rotation	90°
Torque	< 3 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12165 CW617N
Material, slide/spindle	Brass EN 12165 CW617N
Material, sealing	EPDM
Spindle sealing	Two O-rings

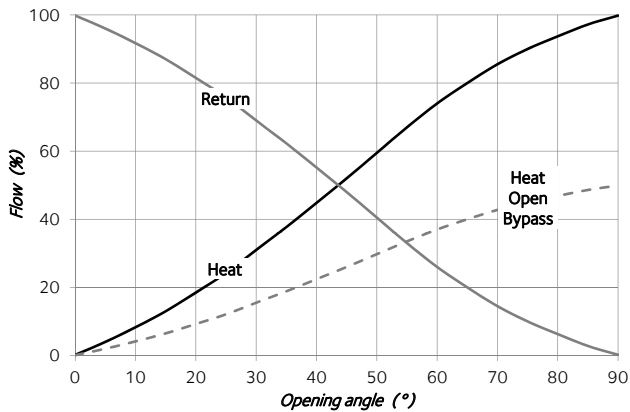
LK 850 ThermoMix H is a 3-way mixing valve with integrated, adjustable bypass. The bypass can be adjusted up to 50% of the total valve flow.

LK 850 ThermoMix H is suitable for motorization.

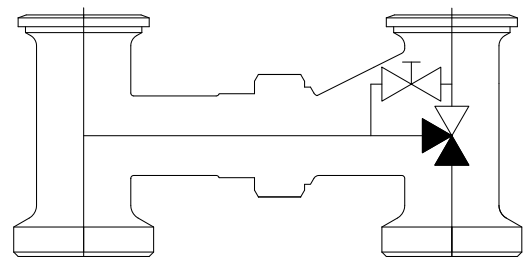
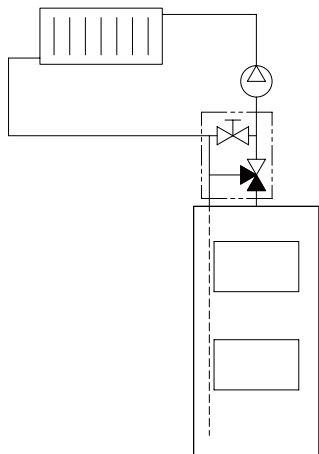
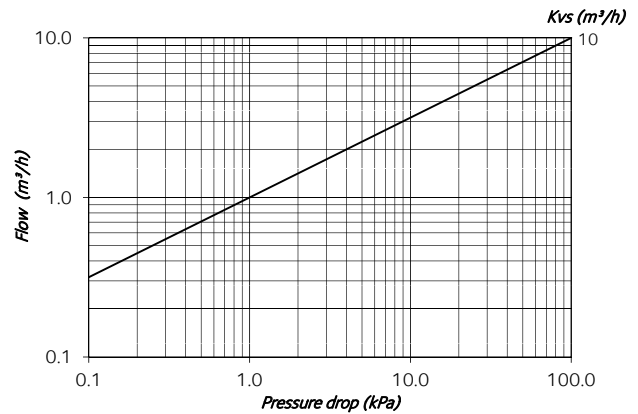
The valve can be mounted at any angle.

LK 850 ThermoMix H can easily be adapted for right- or left-hand mounting.

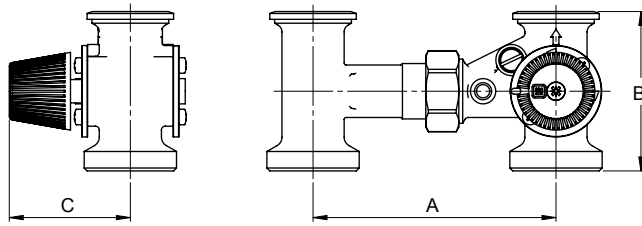
VALVE CHARACTERISTICS



CAPACITY DIAGRAM



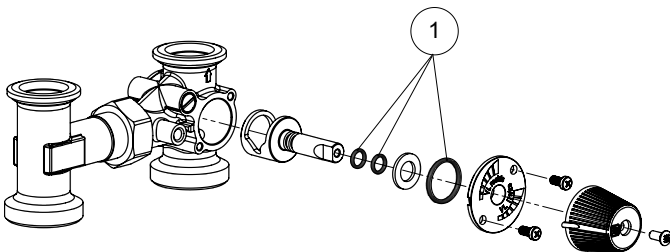
LK 850 - MALE THREAD / ROTATING NUT



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	Weight kg
181144	M 1½"	10	125	82	62	1.5

Two 1½" rotating nuts and two gaskets of EPDM are included in the delivery.

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187082	Sealing kit 850, DN 40	1

LK 851 ThermoMix H



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 0.5% of Kvs at 50 kPa
Angle of rotation	90°
Torque	< 3 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12165 CW617N
Material, slide/spindle	Brass EN 12165 CW617N
Material, sealing	EPDM
Spindle sealing	Two O-rings

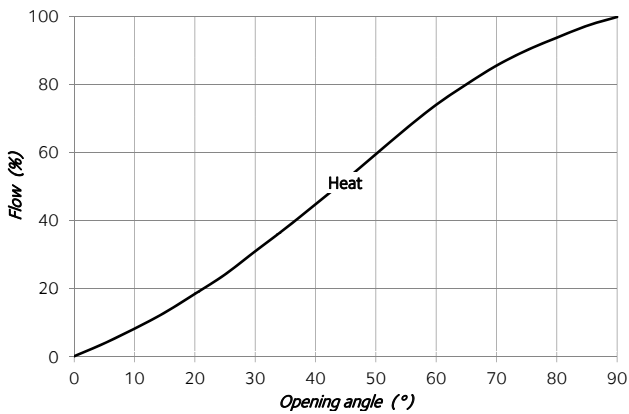
LK 851 ThermoMix H is a 4-way mixing valve suited for heating systems in which a high return temperature is needed to avoid corrosion, thus prolonging the life-time of the heat source.

LK 851 ThermoMix H is suitable for motorization.

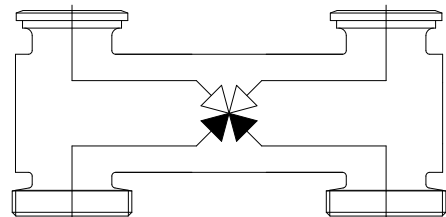
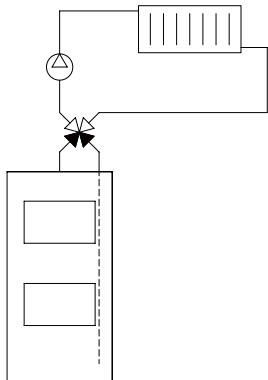
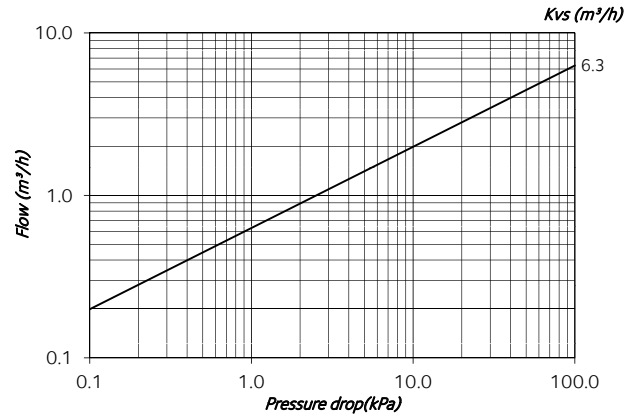
The valve can be mounted at any angle.

LK 851 ThermoMix H can easily be adapted for right- or left-hand mounting.

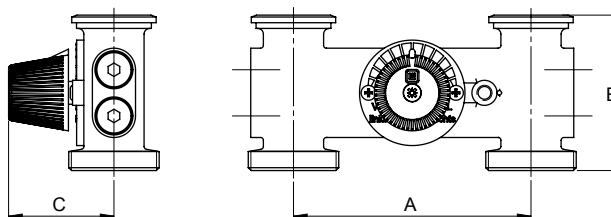
VALVE CHARACTERISTICS



CAPACITY DIAGRAM



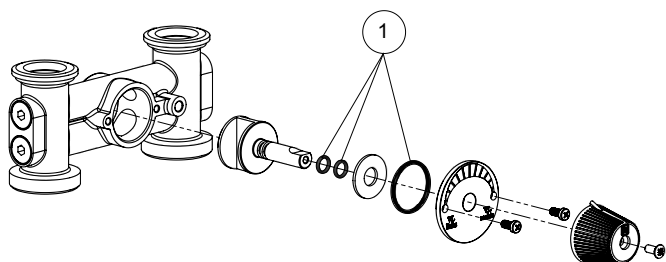
LK 851 - MALE THREAD / ROTATING NUT



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	Weight kg
181145	M 1½"	6.3	125	82	55	1.6

Two 1½" rotating nuts and two gaskets of EPDM are included in the delivery.

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187083	Sealing kit 851, DN 40	1

LK 842 ThermoMix P



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +110°C (+120°C briefly)
Ambient temperature	Min. +5°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	50 kPa
Leakage	< 1.5% of Kvs at 50 kPa
Angle of rotation	90°
Torque	< 1 Nm
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Material, valve body	Brass EN 1982 CB753S
Material, internal cover	PPS Composite
Material, external cover	Aluminium
Material, slide/spindle	Brass EN 12165 CW617N
Material, sealing	EPDM
Spindle sealing	Two O-rings

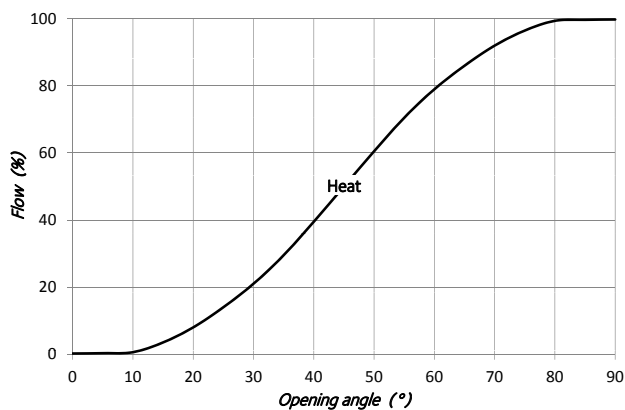
LK 842 ThermoMix P is a 4-way mixing valve for mounting on heating boilers.

LK 842 ThermoMix P is suitable for motorization.

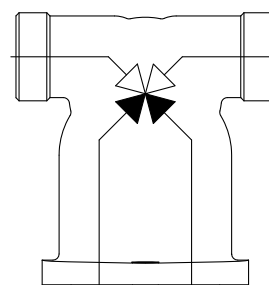
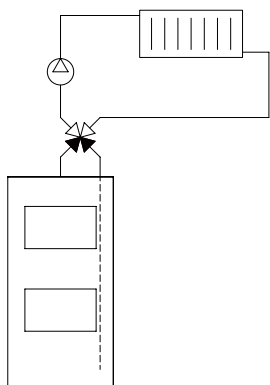
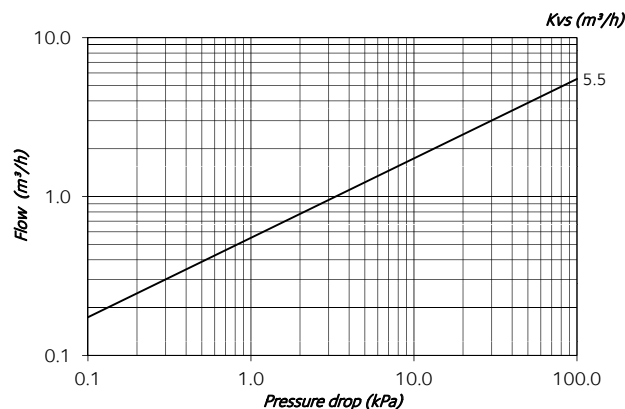
The valve can be mounted at any angle.

LK 842 ThermoMix P can easily be adapted for right- or left-hand mounting.

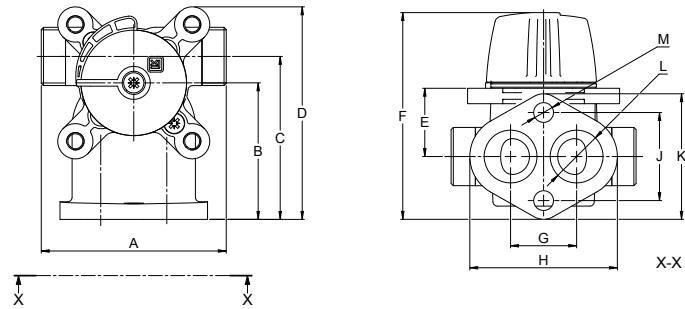
VALVE CHARACTERISTICS



CAPACITY DIAGRAM

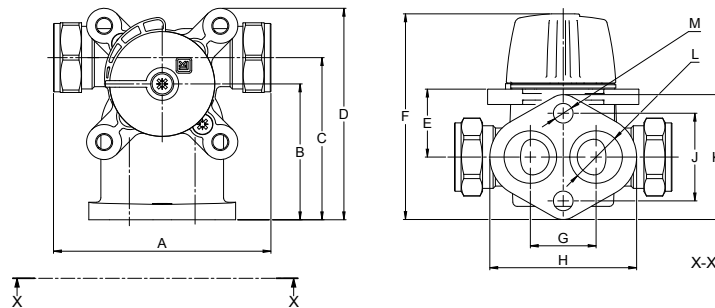


LK 842 - MALE THREAD



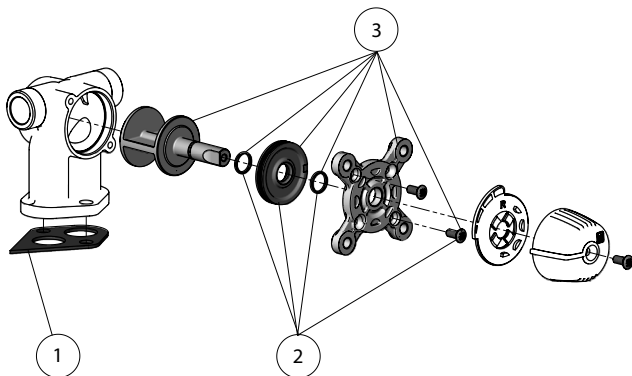
Article no.	Dim.	Kvs m³/h	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Weight kg
180879	M 3/4"	5.5	84	62	74	97	31	94	30	67	40	57	Ø 24	Ø 9	0.8

LK 842 - COMPRESSION FITTING



Article no.	Dim.	Kvs m³/h	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Weight kg
180880	15 mm	5.5	99	62	74	97	31	94	30	67	40	57	Ø 24	Ø 9	0.8
180881	22 mm	5.5	99	62	74	97	31	94	30	67	40	57	Ø 24	Ø 9	0.8

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
013083	Gasket 842	1
187067	Sealing kit 840/841/842, DN 25-32	2
187071	Repair kit 841/842, DN 25-32	3

LK Insulation



TECHNICAL DATA

Working temperature	Min. -20°C / Max. +130°C
Ambient temp.	Min. -20°C / Max. +130°C
Material, insulation	Expanded Polypropylene EPP
Thermal conductivity	0.035 W/mK
Density	35 g/l

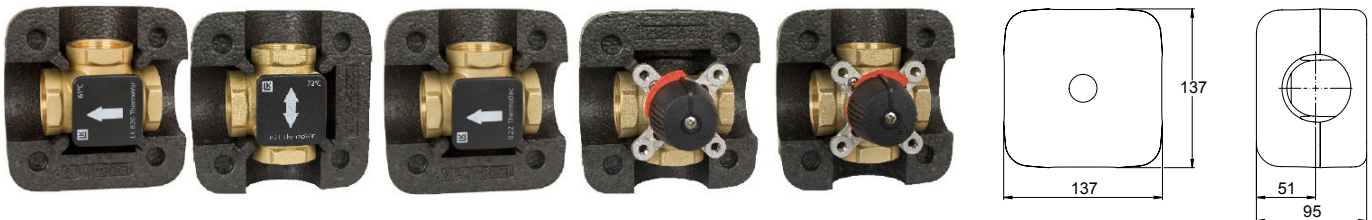
The LK Armatur insulation has been developed for ThermoVar thermic valves, ThermoBac check valves and ThermoMix mixing valves to provide effective protection against energy losses.

The insulation is available in two versions. One is designed for LK 823 ThermoVar. The other insulation for valve types LK 820, 821, 822, 840 and 841. In the standard design it fits LK 820, 821 ThermoVar and LK 822 ThermoBac.

Cut-outs for spindle and valve port are easily done to adapt the insulation to LK 840 and 841 ThermoMix, with or without an installed electronic controller.

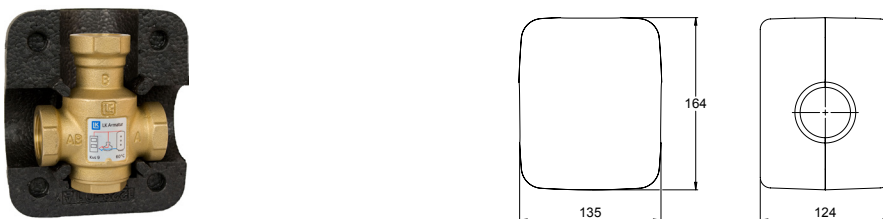
The insulation's closing function allows a quick and easy mounting.

LK INSULATION - LK 820, 821, 822, 840, 841



Article no.	Article	Type	Dimension	Weight kg
187107	Insulation, DN 15-20	820, 821, 822, 840, 841	M ¾", M 1", F ½", F ¾"	0.1
187108	Insulation, DN 25-32	820, 821, 822, 840, 841	M 1¼", M 1½", F 1", F 1¼"	0.1

LK INSULATION - LK 823



Article no.	Article	Type	Dimension	Weight kg
187109	Insulation, DN 25-32	823	M 1½", F 1", F 1¼"	0.1

Temperature Controllers



LK 100 SmartComfort CT

Electronic constant temperature controller for underfloor heating and solid fuel boilers.



LK 110 SmartComfort

Electronic weather compensated temperature controller for hydronic radiator and underfloor heating systems.



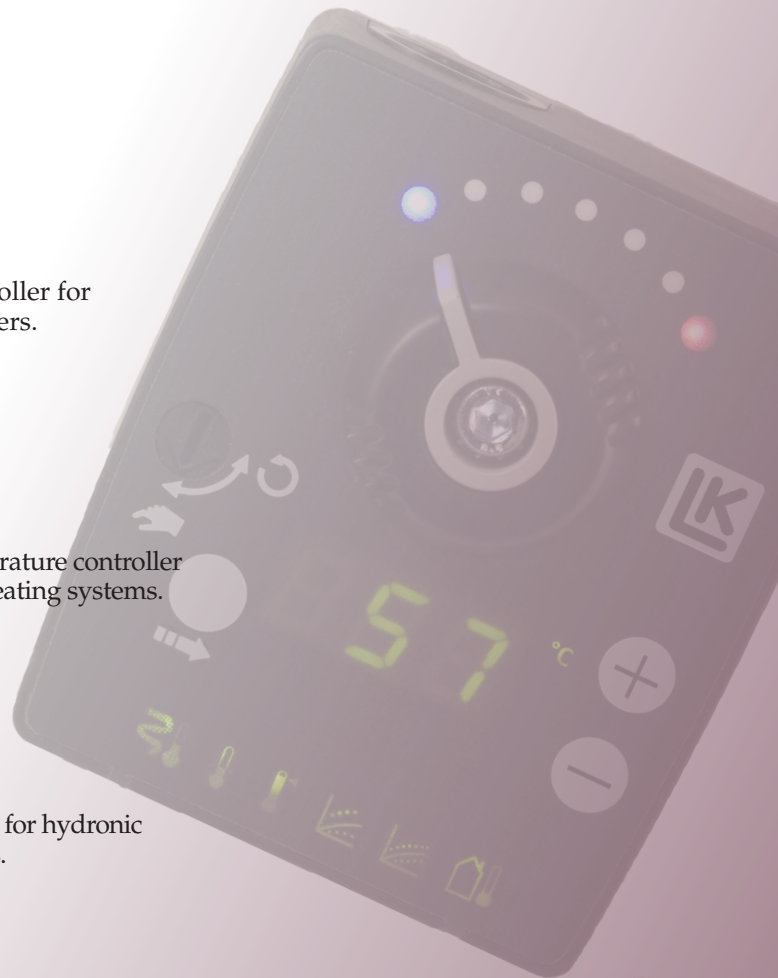
LK 120 SmartComfort

Electronic indoor temperature controller for hydronic radiator and underfloor heating systems.



LK 130 SmartComfort

Electronic, weather compensated, indoor temperature controller for hydronic radiator and underfloor heating systems.



LK 100 SmartComfort CT

Patent Pending



TECHNICAL DATA

Primary voltage, adapter	100-240 VAC, 50/60 Hz
Secondary voltage, adapter	24 VDC
Power consumption	< 3 VA
Ambient temperature	Min. 0°C/Max. +50°C (in operation)
Control range, flow temperature	5°C - 99°C
Angle of rotation	90°
Torque	5 Nm
Protection class	IP 40

ITEMS INCLUDED

- Constant temperature controller
- Adapter
- Mounting kit for mixing valve
- Supply temperature sensor with 1 m cable



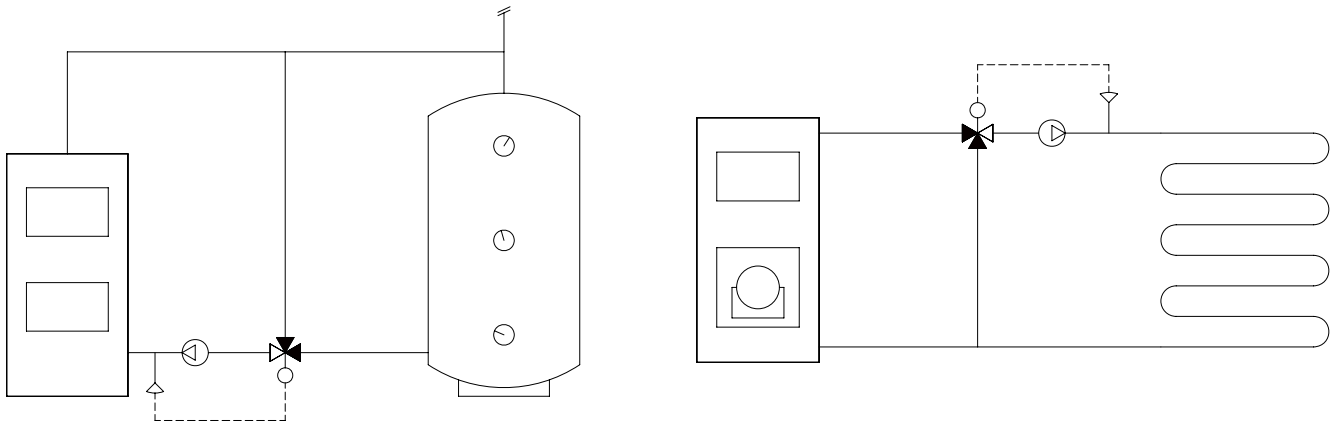
CONSTANT TEMPERATURE CONTROLLER

LK 100 SmartComfort CT is an electronic temperature controller designed to keep the supply temperature in underfloor heating systems or the return temperature to solid fuel boilers at a constant level.

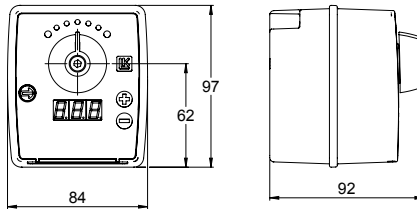
LK 100 SmartComfort CT has an automatic choice of direction to adapt to the direction of the mixing valve. LED-indicators show if the controller is opening or closing the valve. The flow temperature is adjustable 5°C - 99°C. The desired temperature is easily set with the push buttons marked “+” and “-“. The selected value will be shown on the LED-display.

LK 100 SmartComfort CT is easy to install onto new as well as existing mixing valves. Mounting kits for installation onto mixing valves of other brands are available - see separate page.

The plug-in adapter provides quick and easy do-it-yourself installation. In case of a power outage the controller will keep its settings and the actuator will stop in its current position. By disengaging the controller, the mixing valve can be manually operated.



LK 100 SMARTCOMFORT CT



Article no.	Article	Weight kg
181242	LK 100 SmartComfort CT - EU	0.5
181248	LK 100 SmartComfort CT - UK	0.5
181249	LK 100 SmartComfort CT - US	0.5

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187098	Constant temperature controller SmartComfort CT	1
025010	Adapter 24 VDC - EU	2
025011	Adapter 24 VDC - UK	2
025012	Adapter 24 VDC - US	2
181260	Mounting kit LK	3
025013	Supply temperature sensor, 1 m cable	4
025008	Extension cable for adapter, 1 m	5

LK 110 SmartComfort

Patent
Pending



TECHNICAL DATA

Primary voltage, adapter	100-240 VAC, 50/60 Hz
Secondary voltage, adapter	24 VDC
Power consumption	< 3 VA
Ambient temperature	Min. 0°C/Max. +50°C (in operation)
Min. supply temperature	+5°C - +40°C
Max. supply temperature	+20°C - +99°C
Curve slope	1.0 - 9.9
Parallel displacement	± 10°C
Angle of rotation	90°
Torque	5 Nm
Protection class	Actuator IP 40

For further energy saving a pump control, SmartComfort PC, can easily be connected to the controller - see under Accessories. SmartComfort PC stops the circulating pump when no heat is required and exercises pump and mixing valve separately every two days, thus eliminating the risk of pump or mixing valve stalling after an intermission.

Room temperature unit SmartComfort RT alternatively SmartComfort RTW is available as an accessory. For more information see product sheets for LK 120 and LK 130 SmartComfort.

WEATHER COMPENSATED TEMPERATURE CONTROLLER

LK 110 SmartComfort is an electronic weather compensated temperature controller for hydronic radiator and under-floor heating systems. By measuring the supply and outdoor temperatures LK 110 SmartComfort regulates the mixing valve to provide the system with the exact amount of heat required in the building at any given time. The current supply and outdoor temperatures can be read on the controller display.

LK 110 SmartComfort has an automatic choice of direction to adapt to the direction of the mixing valve. LED-indicators show if the controller is opening or closing the valve. The supply temperature can be limited with a minimum and a maximum value. Symbols on the controller show the chosen function and the LED display shows the setting or value of the function. Adjustments are easily made with the push buttons marked “+” and “-”.

Dependent on the dimension of the heating system and the insulation of the building, the heating curve may need to be adjusted in order to achieve the desired room temperature. The curve slope and the parallel displacement are easily adjustable with the push buttons.

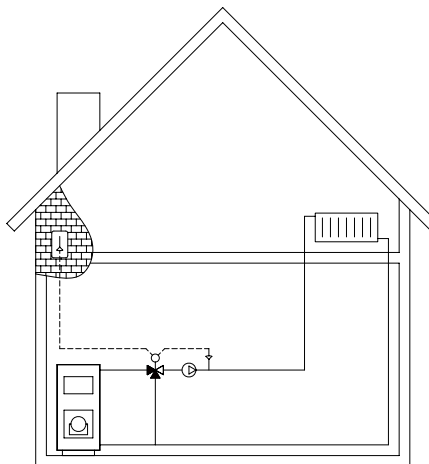
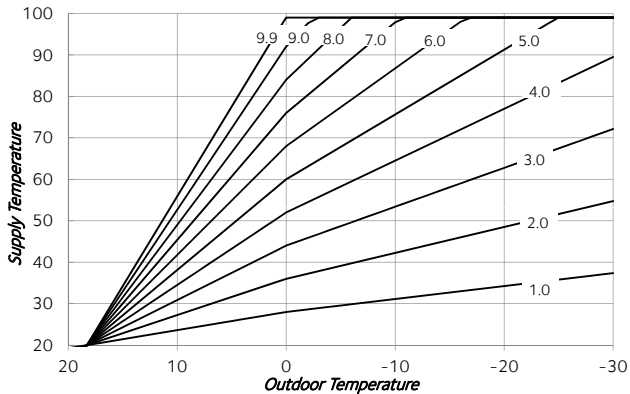
LK 110 SmartComfort is easy to install onto new as well as existing mixing valves. Mounting kits for installation onto mixing valves of other brands are available - see separate page. The plug-in adapter provides quick and easy do-it-yourself installation. In case of a power outage the controller will keep its settings and the actuator will stop in its current position. By disengaging the controller, the mixing valve can be manually operated.

ITEMS INCLUDED

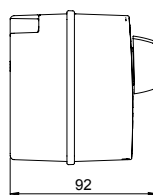
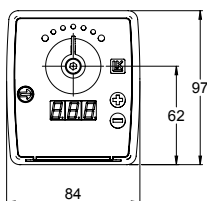
- Temperature controller
- Adapter
- Mounting kit for mixing valve
- Supply temperature sensor with 1 m cable
- Outdoor temperature sensor with 15 m cable and protective casing



CURVE SLOPE



LK 110 SMARTCOMFORT



Article no.	Article	Weight kg
181243	LK 110 SmartComfort - EU	0.7
181250	LK 110 SmartComfort - UK	0.7
181251	LK 110 SmartComfort - US	0.7

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187099	Temperature controller SmartComfort	1
025010	Adapter 24 VDC - EU	2
025011	Adapter 24 VDC - UK	2
025012	Adapter 24 VDC - US	2
181260	Mounting kit LK	3
025013	Supply temperature sensor, 1 m cable	4
025014	Outdoor temperature sensor, 15 m cable	5
025020	Protective casing for outdoor temperature sensor	6
187096	Room temperature unit SmartComfort RT	7
025025	Cable for SmartComfort RT, 15 m	8
025026	Extension cable for SmartComfort RT, 15 m	9
187097	Room temperature unit SmartComfort RTW	10
025024	Wireless receiver for SmartComfort RTW	11
187113	Room temperature unit SmartComfort RTW with wireless receiver	12
187095	Pump control SmartComfort PC	13
025027	Extension cable for outdoor temperature sensor, 15 m	14
025008	Extension cable for adapter, 1 m	15

LK 120 SmartComfort



TECHNICAL DATA

Primary voltage, adapter	100-240 VAC, 50/60 Hz
Secondary voltage, adapter	24 VDC
Power consumption	< 3 VA
Ambient temperature in operation	
Actuator	Min. 0°C/Max. +50°C
Room Temperature Unit	Min. 0°C/Max. +40°C
Min. supply temperature	+5°C - +40°C
Max. supply temperature	+20°C - +99°C
Control range	Min. +5°C/Max. +35°C
Angle of rotation	90°
Torque	5 Nm
Protection class	Actuator IP 40 Room Temperature Unit IP 20

INDOOR TEMPERATURE CONTROLLER

LK 120 SmartComfort is an electronic indoor temperature controller for hydronic radiator and underfloor heating systems. By measuring the supply and indoor temperatures LK 120 SmartComfort regulates the mixing valve to provide the system with the exact amount of heat required in the building at any given time.

LK 120 SmartComfort has an automatic choice of direction to adapt to the direction of the mixing valve. LED-indicators show if the controller is opening or closing the valve. The supply temperature can be limited with a minimum and a maximum value. Symbols on the controller show the chosen function and the LED display shows the setting or value of the function. Adjustments are easily made with the push buttons marked “+” and “-”.

LK 120 SmartComfort is delivered with a room temperature unit allowing easy setting of the desired indoor temperature. The room temperature unit is available in two versions; with fixed cable SmartComfort RT or wireless receiver SmartComfort RTW. For further energy saving and increased comfort there are nine preset programs with scheduled temperature changes. You can also create your own programs. Additional functions such as holiday and timer settings are available.

After a temperature setback the room temperature unit applies a booster function which briefly increases the supply temperature in order to quickly reach the desired room temperature. Should the room temperature unit sense a sudden

change in temperature, such as when airing a room, the unit disregards this change for the following half hour.

The room temperature unit is equipped with a connection port for external control, such as via a GSM modem, making it possible to activate a preset temperature change via mobile phone.

LK 120 SmartComfort is easy to install onto new as well as existing mixing valves. Mounting kits for installation onto mixing valves of other brands are available - see separate page.

The plug-in adapter provides quick and easy do-it-yourself installation. In case of a power outage the controller will keep its settings and the actuator will stop in its current position. By disengaging the controller, the mixing valve can be manually operated.

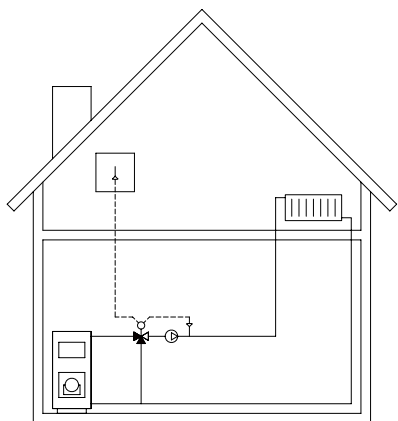
For further energy saving a pump control, SmartComfort PC, can easily be connected to the controller - see under Accessories. SmartComfort PC stops the circulating pump when no heat is required and exercises pump and mixing valve separately every two days, thus eliminating the risk of pump or mixing valve stalling after an intermission.

An outdoor temperature sensor is available as an accessory. For more information see product sheets for LK 110 and LK 130 SmartComfort.

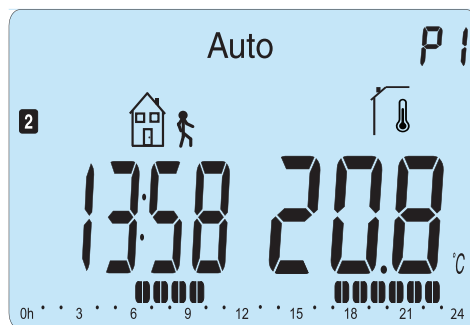
ITEMS INCLUDED

- Temperature controller
- Adapter
- Mounting kit for mixing valve
- Supply temperature sensor with 1 m cable
- Room temperature unit SmartComfort RT with 15 m cable or Room temperature unit SmartComfort RTW with wireless receiver

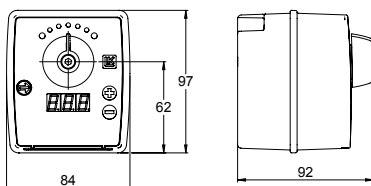




DISPLAY - ROOM TEMPERATURE UNIT



LK 120 SMARTCOMFORT



Article no.	Article	Type	Weight kg
181244	LK 120 SmartComfort - EU	with room temperature unit SmartComfort RT - 15 m cable	0.8
181245	LK 120 SmartComfort - EU	with room temperature unit SmartComfort RTW - wireless receiver	0.7
181252	LK 120 SmartComfort - UK	with room temperature unit SmartComfort RT - 15 m cable	0.8
181254	LK 120 SmartComfort - UK	med rumsenhet SmartComfort RTW - wireless receiver	0.7
181253	LK 120 SmartComfort - US	with room temperature unit SmartComfort RT - 15 m cable	0.8

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187099	Temperature controller SmartComfort	1
025010	Adapter 24 VDC - EU	2
025011	Adapter 24 VDC - UK	2
025012	Adapter 24 VDC - US	2
181260	Mounting kit LK	3
025013	Supply temperature sensor, 1 m cable	4
025014	Outdoor temperature sensor, 15 m cable	5
025020	Protective casing for outdoor temperature sensor	6
187096	Room temperature unit SmartComfort RT	7
025025	Cable for SmartComfort RT, 15 m	8
025026	Extension cable for SmartComfort RT, 15 m	9
187097	Room temperature unit SmartComfort RTW	10
025024	Wireless receiver for SmartComfort RTW	11
187113	Room temperature unit SmartComfort RTW with wireless receiver	12
187095	Pump control SmartComfort PC	13
025027	Extension cable for outdoor temperature sensor, 15 m	14
025008	Extension cable for adapter, 1 m	15

LK 130 SmartComfort



TECHNICAL DATA

Primary voltage, adapter	100-240 VAC, 50/60 Hz
Secondary voltage, adapter	24 VDC
Power consumption	< 3 VA
Ambient temperature in operation	
Actuator	Min. 0°C/Max. +50°C
Room Temperature Unit	Min. 0°C/Max. +40°C
Min. supply temperature	+5°C - +40°C
Max. supply temperature	+20°C - +99°C
Control range	Min. +5°C/Max. +35°C
Curve slope	1.0 - 9.9
Parallel displacement	± 10°C
Angle of rotation	90°
Torque	5 Nm
Protection class	Actuator IP 40, Room Temperature Unit IP 20

WEATHER COMPENSATED INDOOR TEMPERATURE CONTROLLER

LK 130 SmartComfort is an electronic, weather compensated, indoor temperature controller for hydronic radiator and underfloor heating systems. By measuring the supply, outdoor and indoor temperatures LK 130 SmartComfort regulates the mixing valve to provide the system with the exact amount of heat required in the building at any given time.

LK 130 SmartComfort has an automatic choice of direction to adapt to the direction of the mixing valve. LED-indicators show if the controller is opening or closing the valve. The supply temperature can be limited with a minimum and a maximum value. Symbols on the controller show the chosen function and the LED display shows the setting or value of the function. Adjustments are easily made with the push buttons marked “+” and “-”.

Dependent on the dimension of the heating system and the insulation of the building, the heating curve may need to be adjusted in order to achieve the desired room temperature. The curve slope and the parallel displacement are easily adjustable with the push buttons.

LK 130 SmartComfort is delivered with a room temperature unit allowing easy setting of the desired indoor temperature. The room temperature unit is available in two versions; with fixed cable SmartComfort RT or wireless receiver SmartComfort RTW. For further energy saving and increased comfort there are nine preset programs with scheduled temperature changes. You can also create your own programs. Additional functions such as holiday and

timer settings are available. The current outdoor temperature can be read on the room temperature unit.

After a temperature setback the room temperature unit applies a booster function which briefly increases the supply temperature in order to quickly reach the desired room temperature. Should the room temperature unit sense a sudden change in temperature, such as when airing a room, the unit disregards this change for the following half hour.

The room temperature unit is equipped with a connection port for external control, such as via a GSM modem, making it possible to activate a preset temperature change via mobile phone.

LK 130 SmartComfort is easy to install onto new as well as existing mixing valves. Mounting kits for installation onto mixing valves of other brands are available - see separate page.

The plug-in adapter provides quick and easy do-it-yourself installation. In case of a power outage the controller will keep its settings and the actuator will stop in its current position. By disengaging the controller, the mixing valve can be manually operated.

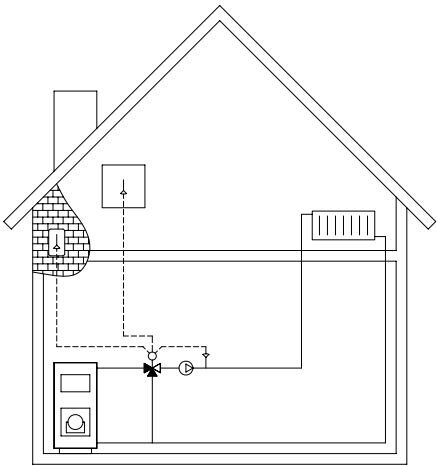
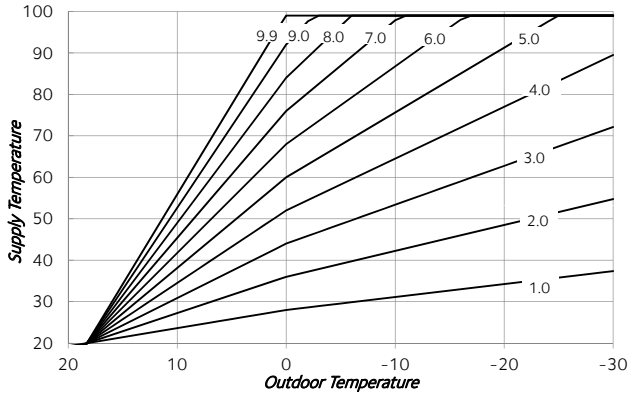
For further energy saving a pump control, SmartComfort PC, can easily be connected to the controller - see under Accessories. SmartComfort PC stops the circulating pump when no heat is required and exercises pump and mixing valve separately every two days, thus eliminating the risk of pump or mixing valve stalling after an intermission.

ITEMS INCLUDED

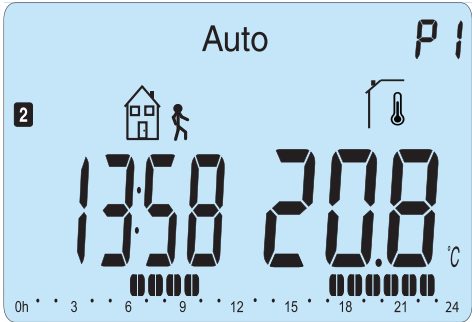
- Temperature controller
- Adapter
- Mounting kit for mixing valve
- Supply temperature sensor with 1 m cable
- Outdoor temperature sensor with 15 m cable and protective casing
- Room temperature unit SmartComfort RT with 15 m cable or Room temperature unit SmartComfort RTW with wireless receiver



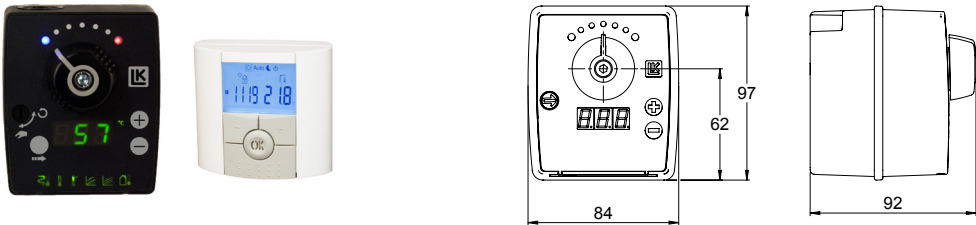
CURVE SLOPE



DISPLAY - ROOM TEMPERATURE UNIT



LK 130 SMARTCOMFORT

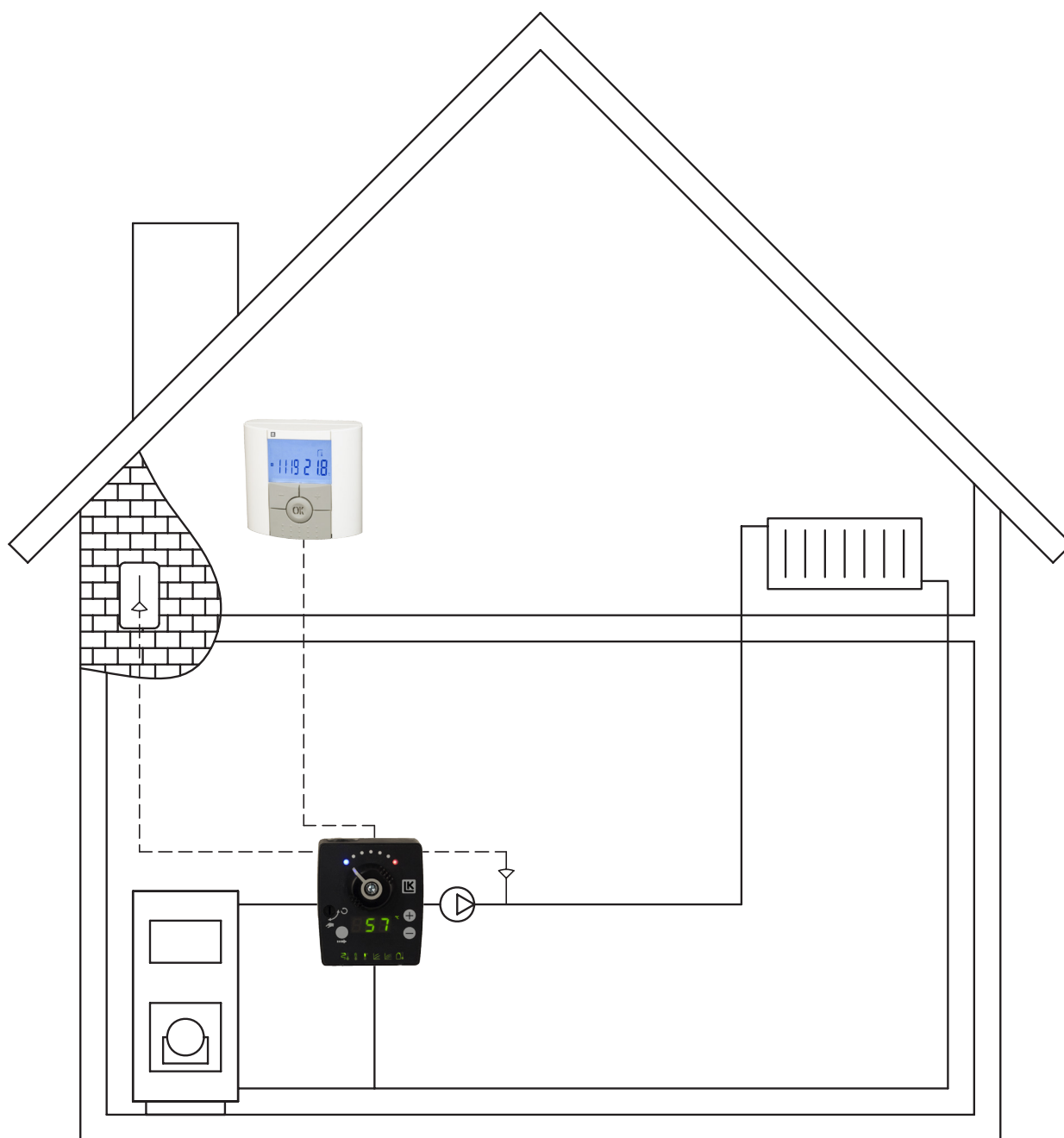


Article no.	Article	Type	Weight kg
181246	LK 130 SmartComfort - EU	with room temperature unit SmartComfort RT - 15 m cable	1.0
181247	LK 130 SmartComfort - EU	with room temperature unit SmartComfort RTW - wireless receiver	0.9
181256	LK 130 SmartComfort - UK	with room temperature unit SmartComfort RT - 15 m cable	1.0
181258	LK 130 SmartComfort - UK	with room temperature unit SmartComfort RTW - wireless receiver	0.9
181257	LK 130 SmartComfort - US	with room temperature unit SmartComfort RT - 15 m cable	1.0

SPARE PARTS AND ACCESSORIES

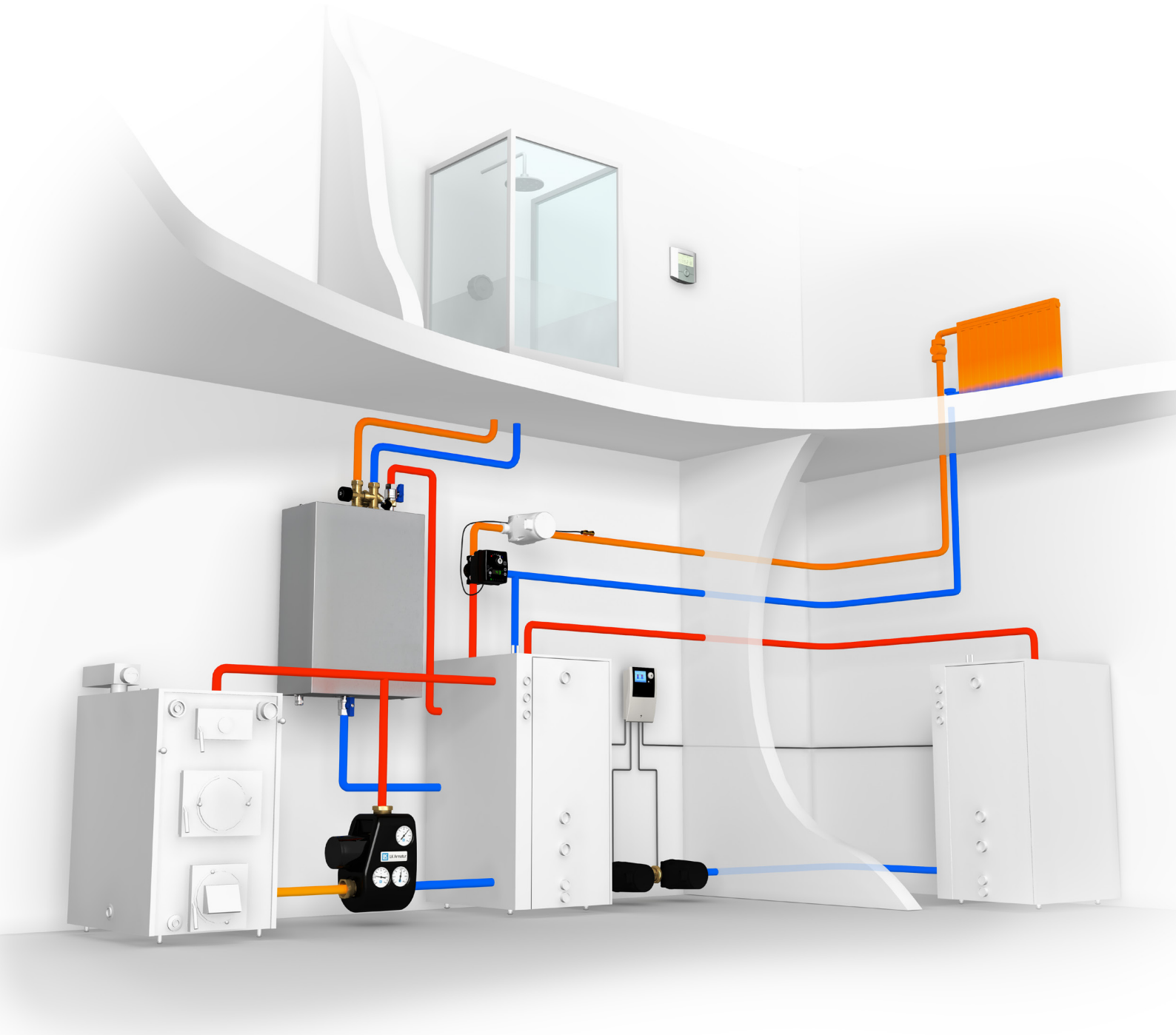


Article no.	Article	Position
187099	Temperature controller SmartComfort	1
025010	Adapter 24 VDC - EU	2
025011	Adapter 24 VDC - UK	2
025012	Adapter 24 VDC - US	2
181260	Mounting kit LK	3
025013	Supply temperature sensor, 1 m cable	4
025014	Outdoor temperature sensor, 15 m cable	5
025020	Protective casing for outdoor temperature sensor	6
187096	Room temperature unit SmartComfort RT	7
025025	Cable for SmartComfort RT, 15 m	8
025026	Extension cable for SmartComfort RT, 15 m	9
187097	Room temperature unit SmartComfort RTW	10
025024	Wireless receiver for SmartComfort RTW	11
187113	Room temperature unit SmartComfort RTW with wireless receiver	12
187095	Pump control SmartComfort PC	13
025027	Extension cable for outdoor temperature sensor, 15 m	14
025008	Extension cable for adapter, 1 m	15



SmartComfort – simple, user friendly products that cater to your needs in a smart way.

- Room temperature unit with cable or wireless receiver
- Automatic choice of direction
- Settings at the push of a button
- Preset programs
- Easy installation with plug-in adapter



Differential Temperature Controllers



LK 150 SmartSol

Electronic differential temperature controller for solar heating systems.



LK 160 SmartBio

Electronic differential temperature controller for heating systems with storage tanks.



LK 150 SmartSol



TECHNICAL DATA

Voltage	230 VAC \pm 10%, 50 Hz
Power consumption	3.5 VA
Relay output	Max. 240 VAC, 4 A
Triac outputs	230 VAC \pm 10%, 1 A, 200 VA
High-efficiency pump	Analog output 0 -10 V, max. 10 mA PWM output 100 Hz - 10 kHz
Sensors	PT 1000
Display	TFT backlit colour display 47 x 35 mm
Protection type	IP 20
Protection class	II

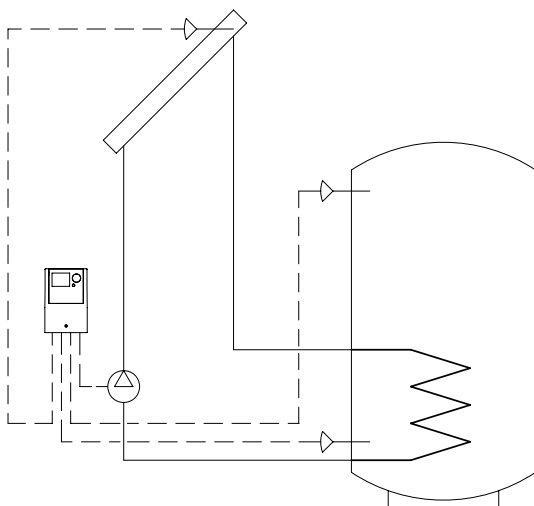
LK 150 SmartSol is an electronic differential temperature controller for solar heating systems. The controller has 16 preset hydraulic systems for different solar heating systems including 3 for swimming pool applications. The chosen hydraulic system and operating status is shown on the backlit colour display. Controls and settings are easily carried out using the rotating knob and the esc-button. LK 150 SmartSol can handle high efficiency pumps.

FEATURES

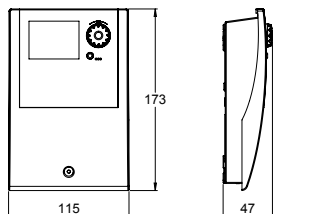
- 16 hydraulic systems including 3 for pool applications
- Controls two groups of collectors or two tanks
- Two speed controlled outputs for circulating pumps or valves
- Output for high efficiency pump
- Terminal block for four PT 1000 sensors
- Floating relay output
- Operation time counter for relay outputs
- Pump exercise
- Balancing of sensors
- Overheating protection for collectors and tanks
- Collector and tank cooling
- Anti-freeze
- Collector defrosting
- Tube collector function
- Additional heat
- Quick-charging
- Holiday function
- Integrated energy measuring
- Integrated clock with date
- Automatic summer/winter time
- Graphic, multilingual colour display
- Self-explanatory menu and user guide

ITEMS INCLUDED

- Differential temperature controller LK 150 SmartSol
- Collector sensor PT 1000 - 3 m cable
- Two tank sensors PT 1000 - 4 m cable

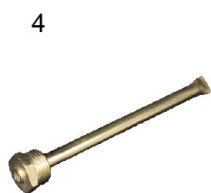


LK 150 SMARTSOL



Article no.	Article	Weight kg
180994	LK 150 SmartSol	0.7

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
025018	Differential temperature controller SmartSol	1
181187	Collector sensor PT 1000 Ø 5 mm - 3 m cable	2
181186	Tank sensor PT 1000 Ø 6 mm - 4 m cable	3
180812	Sensor pocket 150 mm	4

LK 160 SmartBio



TECHNICAL DATA

Voltage	230 VAC \pm 10%, 50 Hz
Power consumption	3.5 VA
Relay output	Max. 240 VAC, 4 A
Triac outputs	230 VAC \pm 10%, 1 A, 200 VA
High-efficiency pump	Analog output 0 -10 V, max. 10 mA PWM output 100 Hz - 10 kHz
Sensors	PT 1000
Display	TFT backlit colour display 47 x 35 mm
Protection type	IP 20
Protection class	II

LK 160 SmartBio is an electronic differential temperature controller with several preset hydraulic systems for energy efficiency in heating systems with storage tanks. The chosen hydraulic system and operation status is shown on the backlit colour display. Controls and settings are easily carried out using the rotating knob and the esc-button. LK 160 SmartBio can handle high efficiency pumps.

LK 160 SmartBio can also activate an immersion heater or burner if the temperature in the primary tank falls below the selected value. The additional heat has a sophisticated delay function that further adds to the efficiency of the system.

FEATURES

- Several hydraulic systems
- Two outputs for circulating pumps
- Output for high efficiency pump
- Pump exercise
- Floating relay output
- Sensor balancing
- Adjustable delay function for additional heat
- Graphic, multilingual colour display with time and date
- User-friendly menu system

HYDRAULIC SYSTEM 1

Hydraulic system 1 is intended for storage tank systems with a primary and secondary tank. LK 160 SmartBio controls the two circulating pumps between the tanks. When the primary tank is fully charged the charge pump starts at the chosen temperature to fill the secondary tank. When the temperature in the primary tank falls, the recharging pump starts and transfers energy back to the primary tank.

In order to prevent self-circulation in both directions a check valve with double acting flow should be mounted between the circulating pumps - see under Accessories.

HYDRAULIC SYSTEM 2

Hydraulic system 2 is intended for storage tank systems in which heating water and domestic hot water are taken from a secondary tank. Heat is to be transferred from the main tank to the secondary tank. By measuring the temperature difference between the tanks LK 160 SmartBio controls the charge pump.

HYDRAULIC SYSTEM 3

Hydraulic system 3 is intended for the charging of a storage tank with a pellet, oil or gas fired burner. By measuring the temperatures in the tank and boiler LK 160 SmartBio controls the burner and charge pump.

HYDRAULIC SYSTEM 4

Hydraulic system 4 is intended for storage tank systems with domestic hot water tanks. This system gives priority to the heat in the upper part of the main tank. This enables a fast transfer of heat to the domestic hot water tank. LK 160 SmartBio controls the charge pump to the domestic hot water tank, the zone valve of the main tank and the circulator in the heating loop.

STANDARD KIT

- Differential temperature controller LK 160 SmartBio
- Three sensors PT 1000 - 4 m cable

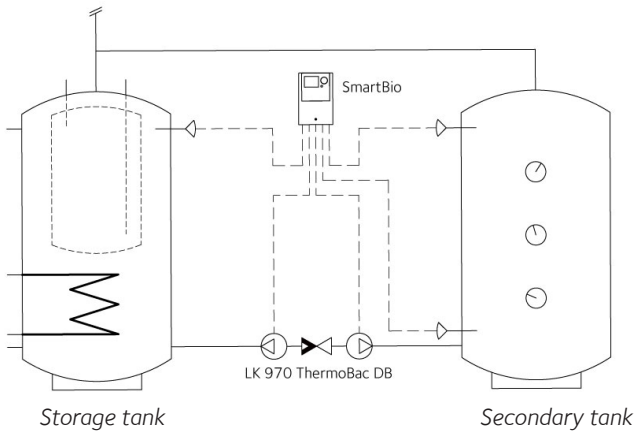


KIT FOR HYDRAULIC SYSTEM 1

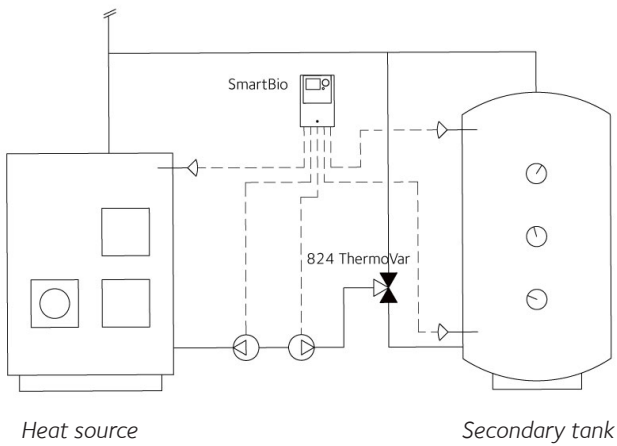
- Differential temperature controller LK 160 SmartBio
- Three sensors PT 1000 - 4 m cable
- Two circulating pumps Grundfos Alpha 2 L 25-60
- Two ball valves 1"
- Check valve with double acting flow LK 970 ThermoBac DB
- Four gaskets EPDM



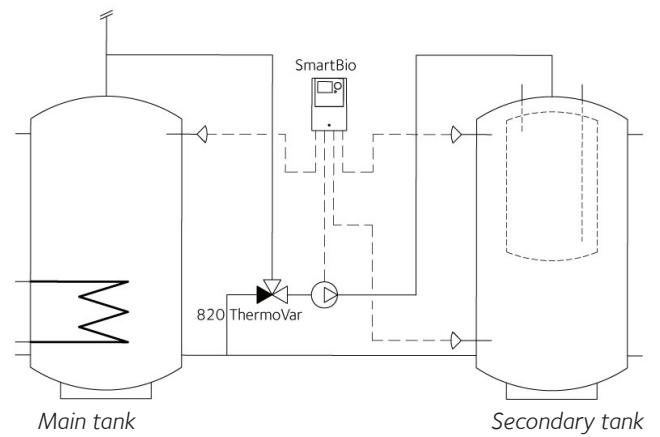
HYDRAULIC SYSTEM 1.1



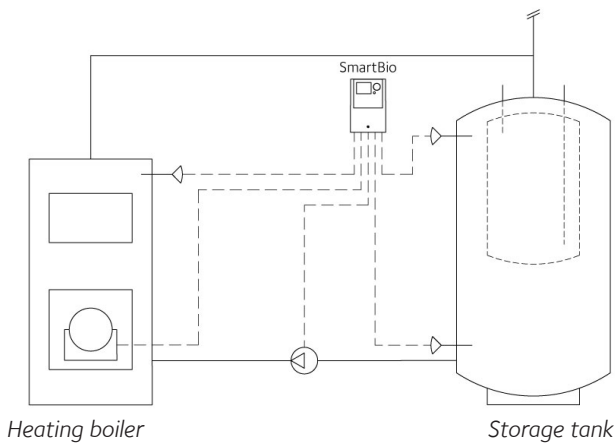
HYDRAULIC SYSTEM 1.2



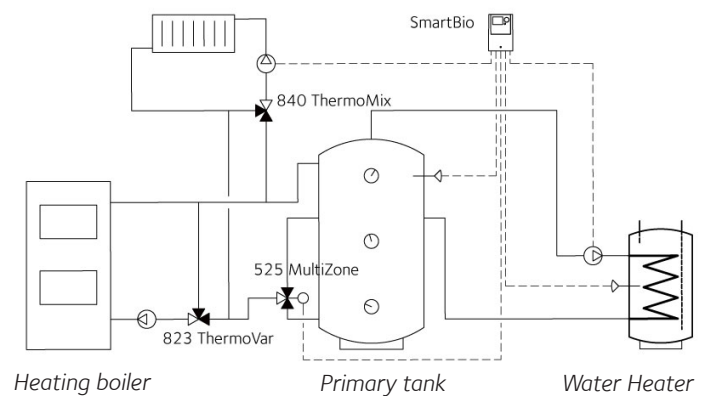
HYDRAULIC SYSTEM 2



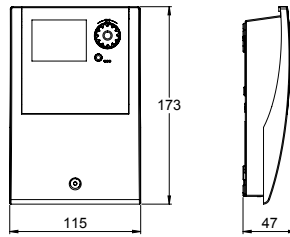
HYDRAULIC SYSTEM 3



HYDRAULIC SYSTEM 4



LK 160 SMARTBIO



Article no.	Article	Weight kg
181234	LK 160 SmartBio standard kit	0.7
181233	LK 160 SmartBio kit for hydraulic system 1	6.2

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
025017	Differential temperature controller SmartBio	1
181186	Tank sensor PT 1000 Ø 6 mm - 4 m cable	2
187129	Circulating pump Grundfos Alpha 2 L 25-60	3
187017	Ball valve F 1"	4
187018	Ball valve F 1¼"	5
187019	Ball valve 28 mm	6
180487	Check valve with double acting flow LK 970 ThermoBac DB	7
180812	Sensor pocket 150 mm	8
013025	Gasket EPDM 1½" - Ø44 x Ø27 x 2 mm	9
181553	LK 824 ThermoVar G 1½", 45°C	10
181554	LK 824 ThermoVar G 1½", 55°C	10
181555	LK 824 ThermoVar G 1½", 61°C	10
181556	LK 824 ThermoVar G 1½", 66°C	10
181557	LK 824 ThermoVar G 1½", 72°C	10
180810	Connection M 1½" x M 1½", L30 mm	11

Solar Pump Units



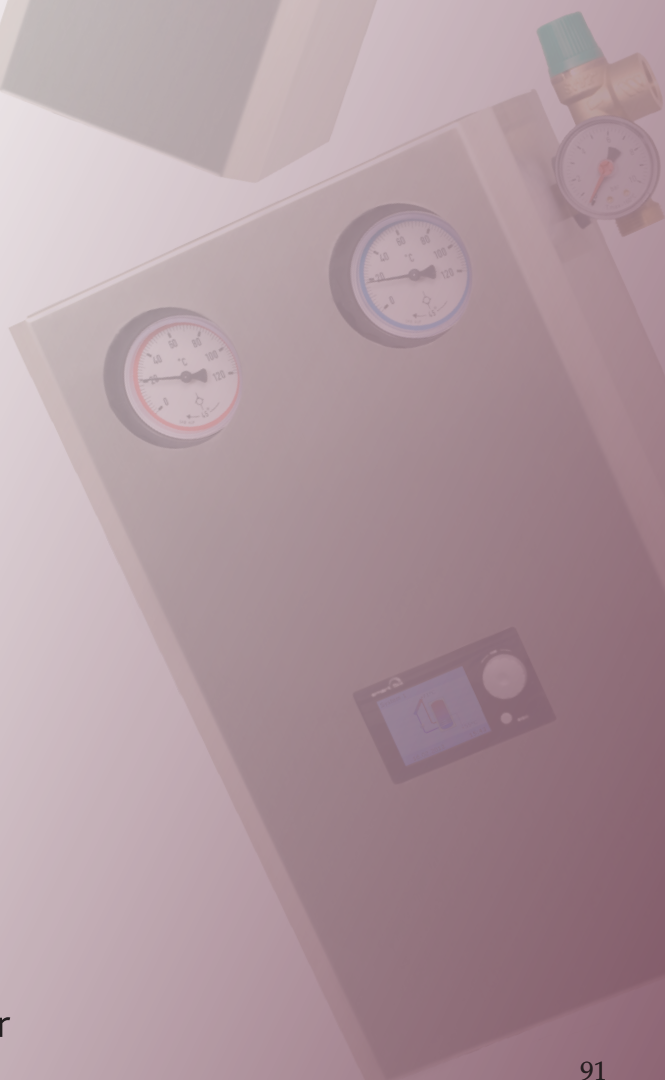
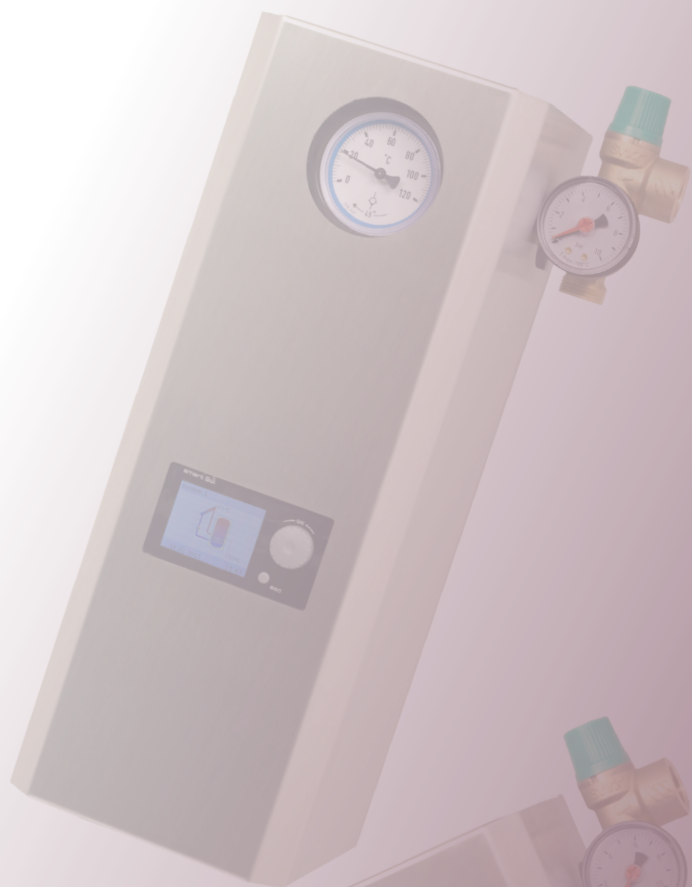
LK 201 SmartSolar

Compact single-pipe control unit for solar heating applications.



LK 202 SmartSolar

Compact dual-pipe control unit for solar heating applications.



LK 201 SmartSolar

TECHNICAL DATA

Voltage	230 VAC \pm 10%, 50 Hz
Working temperature	Min. 0°C/Max. +120 °C (+150°C briefly, 20 s)
Max. working pressure	1.0 MPa (10 bar)
Operating pressure	0.6 MPa (6 bar)
Media	Water - Propylene glycol mixture max. 50%
Thread standard	G - male thread
Circulating pump	Grundfos Solar Low Energy 25/65
Sensors	PT 1000
Protection type	IP 40

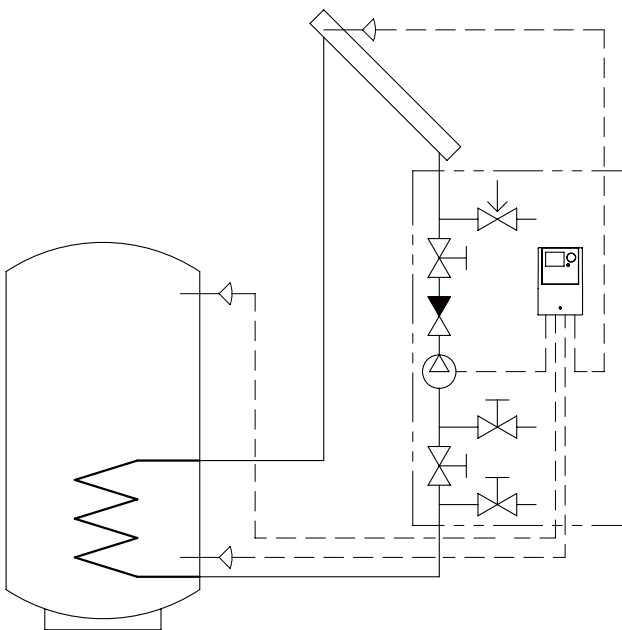


LK 201 SmartSolar is a compact single-pipe solar pump unit, with an insulated casing of brushed stainless steel. It contains all the necessary components for a safe operation and control of the solar heating system such as safety group, circulating pump, ball valve with integrated check valve and thermometer, flow meter with shut-off, filling and drainage valves as well as the electronic differential temperature controller LK 150 SmartSol with three sensors.

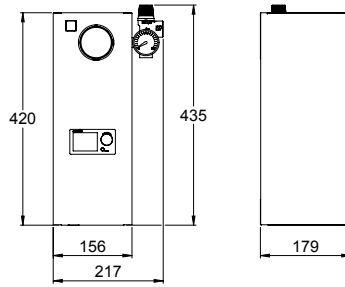
LK 150 SmartSol has 16 preset hydraulic schedules for different solar heating systems including 3 for swimming pool applications. The chosen hydraulic schedule and operating status is shown on the backlit colour display. Controls and settings are easily carried out using the rotating knob and the esc-button.

For more information about the functions of the solar controller - please see the product sheet for LK 150 SmartSol.

LK 201 SmartSolar is connected to the return pipe of the solar collector. The discharge pipe from the safety valve is run to a heat resistant collection vessel. The electrical installation must be performed by a qualified electrician.



LK 201 SMARTSOLAR – COMPRESSION FITTING



Article no.	Dimension 1	Dimension 2	Flow range	Note	Weight kg
180987	22 mm	M 3/4"	2-12 l/min.		7.1
181099	22 mm	M 3/4"	2-12 l/min.	without solar controller	6.5
180989	22 mm	M 3/4"	8-28 l/min.		7.1

Dimension 1 = Connection for solar collector pipe and storage tank

Dimension 2 = Connection for expansion vessel and filling / drainage valve

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
025018	Differential temperature controller SmartSol	1
181187	Collector sensor PT 1000 Ø 5 mm - 3 m cable	2
181186	Tank sensor PT 1000 Ø 6 mm - 4 m cable	3
180812	Sensor pocket 150 mm	4
187100	Circulating pump Grundfos 25/65	5

LK 202 SmartSolar

TECHNICAL DATA

Voltage	230 VAC \pm 10%, 50 Hz
Working temperature	Min. 0°C/Max. +120 °C (+150°C briefly, 20 s)
Max. working pressure	1.0 MPa (10 bar)
Operating pressure	0.6 MPa (6 bar)
Media	Water - Propylene glycol mixture max. 50%
Thread standard	G - male thread
Circulating pump	Grundfos Solar Low Energy 25/65
Sensors	PT 1000
Protection type	IP 40

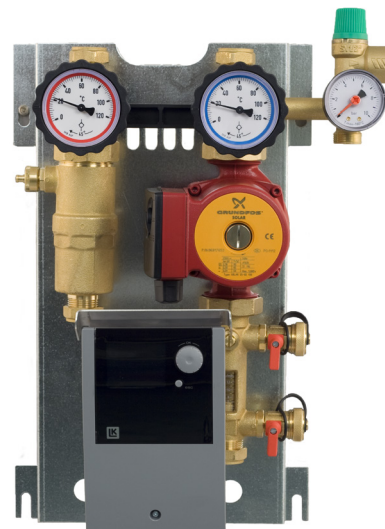
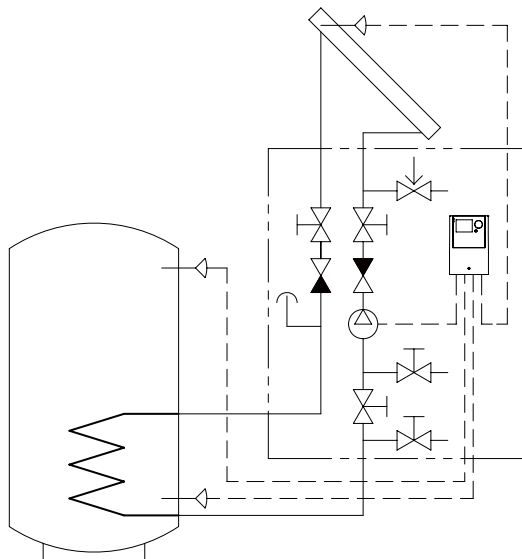


LK 202 SmartSolar is a compact dual-pipe solar pump unit, with an insulated casing of brushed stainless steel. It contains all the necessary components for a safe operation and control of the solar heating system such as safety group, circulating pump, ball valve with integrated check valve and thermometer, air separator with manual air vent connection, flow meter with shut-off, filling and drainage valves as well as the electronic differential temperature controller LK 150 SmartSol with three sensors.

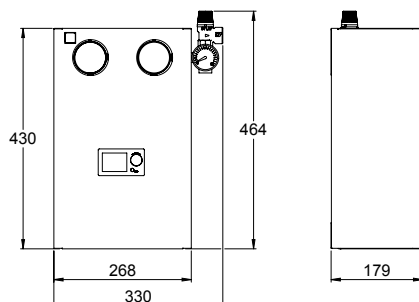
LK 150 SmartSol has 16 preset hydraulic schedules for different solar heating systems including 3 for swimming pool applications. The chosen hydraulic schedule and operating status is shown on the backlit colour display. Controls and settings are easily carried out using the rotating knob and the esc-button.

For more information about the functions of the solar controller - please see the product sheet for LK 150 SmartSol.

LK 202 SmartSolar is connected to the supply and return pipes of the solar collector. The discharge pipe from the safety valve is run to a heat resistant collection vessel. The electrical installation must be performed by a qualified electrician.



LK 202 SMARTSOLAR – COMPRESSION FITTING



Article no.	Dimension 1	Dimension 2	Flow range	Note	Weight kg
180986	22 mm	M 3/4"	2-12 l/min.		9.6
181100	22 mm	M 3/4"	2-12 l/min.	without solar controller	9.0
180988	22 mm	M 3/4"	8-28 l/min.		9.6

Dimension 1 = Connection for solar collector pipe and storage tank

Dimension 2 = Connection for expansion vessel and filling / drainage valve

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
025018	Differential temperature controller SmartSol	1
181187	Collector sensor PT 1000 Ø 5 mm - 3 m cable	2
181186	Tank sensor PT 1000 Ø 6 mm - 4 m cable	3
180812	Sensor pocket 150 mm	4
187100	Circulating pump Grundfos 25/65	5

Mounting Kits

MOUNTING KITS FOR MIXING VALVES OF OTHER BRANDS

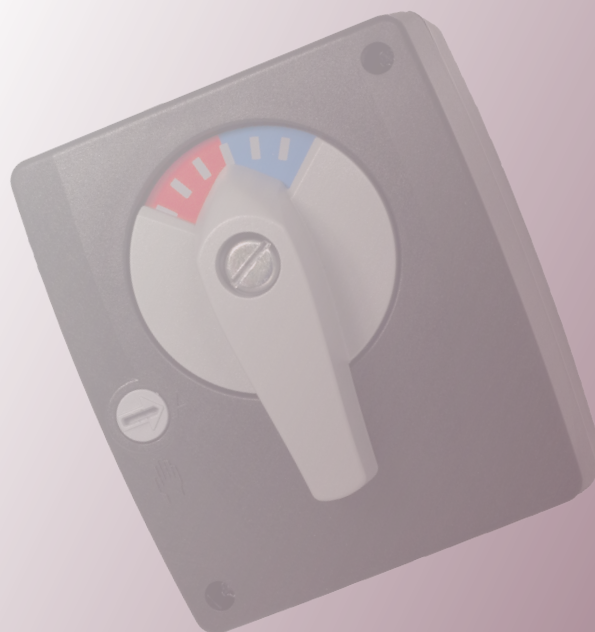
Article no.	Type	Note
187086	440, 450, 451, 460, 475, 476, W28	Valve brand: Barberi
187084	DR-GMLA, DR-GFLA (DN 15-35)	Valve brand: Centra
187087	DR-MA (DN 15-50)	Valve brand: Centra
180746		Valve brand: Danfoss
180403	VRG, VRB (DN 15-50)	Valve brand: ESBE
187088	BR80 SMD/SMV	Valve brand: Holter
187094	SERIES 2, VCI 31 (DN 20-40)	Valve brand: Landis & Staefa
187089	SERIES 1, B3F (DN 20-40)	Valve brand: Landis & Staefa
187090		Valve brand: Lazzari
187091	3W, 4W	Valve brand: Lovato
187092	MB	
187093	MBF	Valve brand: Satchwell
180747		Valve brand: Siemens
180740	3W, 4W, H	Valve brand: Wita / Oventrop / Meibes

Valve Actuators



LK 950 Valve Actuator

Actuator for operation of mixing valves.



LK 950 Valve Actuator



TECHNICAL DATA

Voltage*	230 VAC 50/60 Hz 24 VAC 50/60 Hz, 24 VDC/AC 50/60 Hz
Dimensioning*	1.5 - 3.5 VA
Power consumption*	1.5 - 3.5 W
Ambient temp.	Min. 0°C/Max. +50°C
Angle of rotation	90°, electrically limited
Torque*	5/10 Nm
Operation time*	35/70/140/280 s
Direction of operation	Selectable
Position indication	Reversible scale
Manual override	Disengagement of gears
Electrical connection*	Cable 1.5 m, 3 x 0.75 mm ²
Protection type	IP 40
Protection class*	II (Double Insulated) III (SELV)

Type approval certificate  (see Declaration of Conformity)

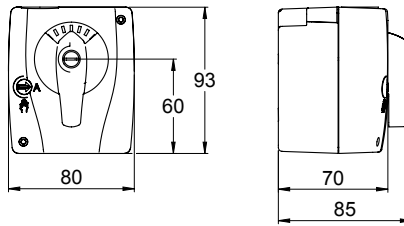
* = Depending on model

LK 950 is a series of valve actuators. Depending on model the actuator can be operated by a controller with a 3-point SPDT output or a proportional 2 (0) - 10 V output. The actuator is fitted with limit switches. The angle of rotation is electrically limited to 90°. An additional auxiliary adjustable switch can be ordered as an accessory.

The actuator can be mounted in any position except below the valve. The actuator is mounted directly onto the valve spindle with a screw. An anti-rotation bolt keeps the actuator in position. When needed, the actuator can be put into manual mode by turning the button on the housing cover 90° clockwise to disengage the gears. The actuator can now be put in any position by turning the handle on the front. The position is indicated on the reversible scale.

LK 950 fits most mixing valves. Mounting kits for mixing valves of other brands are available - please, see page 96.

LK 950 VALVE ACTUATOR



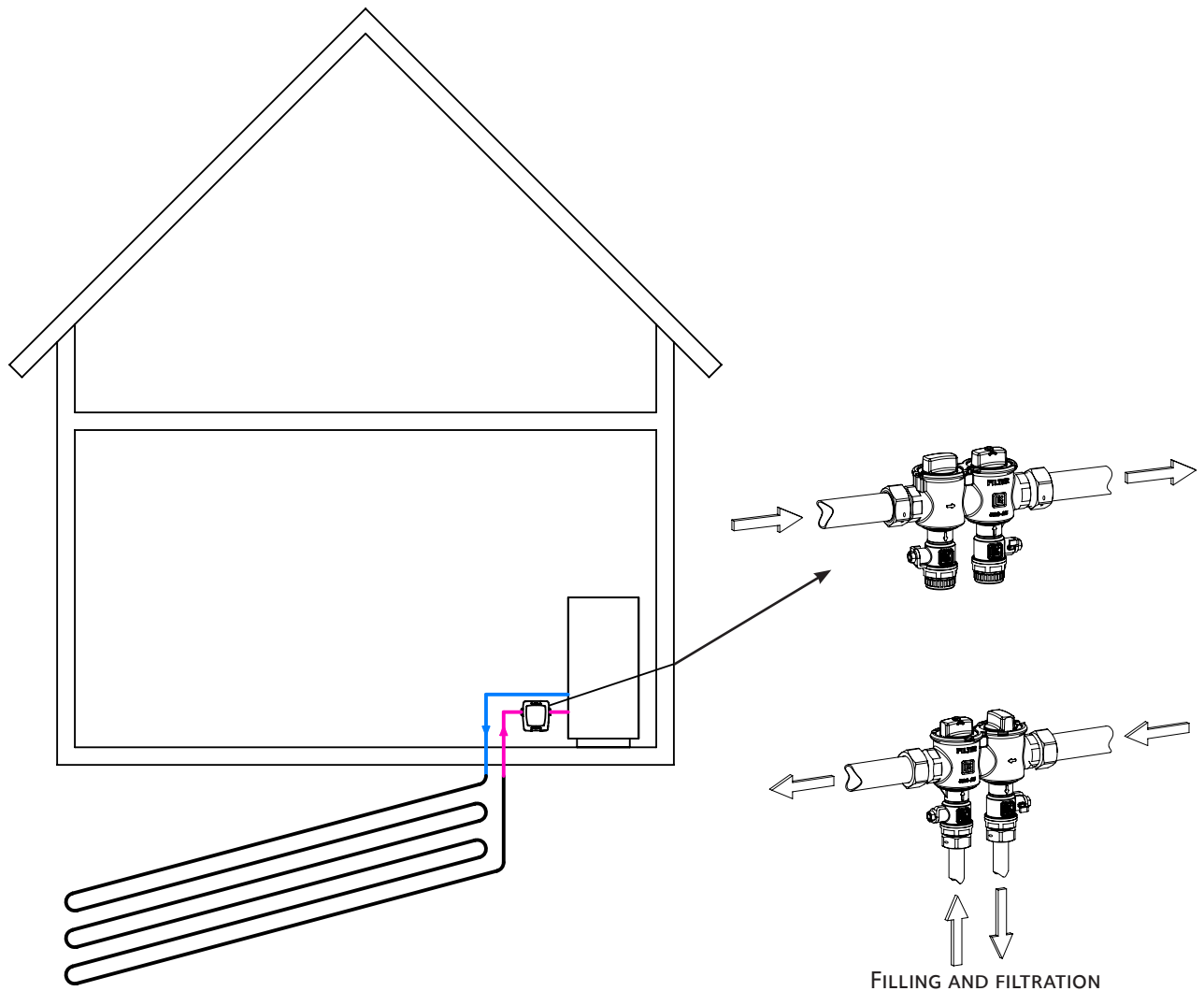
Article no.	Voltage	Torque	Operation time	Note	Weight kg
180742	24 VAC	5 Nm	70 s		0.5
180744	24 VAC	5 Nm	140 s		0.5
180755	24 VAC	10 Nm	280 s		0.5
180756	230 VAC	5 Nm	70 s		0.5
180759	230 VAC	5 Nm	140 s		0.5
180760	230 VAC	5 Nm	140 s	3 m cable	0.5
180762	230 VAC	10 Nm	280 s		0.5
180763	230 VAC	10 Nm	280 s	3 m cable	0.5
180764	230 VAC	10 Nm	140 s		0.5
181208	230 VAC	5 Nm	280 s	incl. auxiliary switch	0.5
180978	230 VAC	5 Nm	280 s		0.5
180765	24 VDC/AC	5 Nm	70 s	2 (0) - 10 V without cable	0.5
180767	24 VDC/AC	5 Nm	35 s	2 (0) - 10 V without cable	0.5

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
180739	Mounting kit 950	1
180741	Auxiliary switch 950	2
026223	Cable for auxiliary switch, 1.5 m	3

LK 520 MultiFill® – a complete solution



Why bother fitting together components to build a filling valve when there already is ONE complete solution?

LK 520 MULTIFILL® IS ONE VALVE WITH MANY FUNCTIONS AND ADVANTAGES:

- Filling
- Filtration
- Ventilation
- Included insulation
- For heating pumps up to 12 kW - MultiFill® 25 and up to 30 kW - MultiFill® 32
- A compact design allows for easy installation in tight spaces

MultiFill®



LK 520 MultiFill® 25

Combination valve for filling refrigerant fluid into ground source heat systems.



LK 520 MultiFill® 32

Combination valve for filling refrigerant fluid into ground source heat systems.



LK 520 MultiFill® 25

Registered
Design



TECHNICAL DATA

Working temperature	Min. -20°C/Max. +60°C
Max. working pressure	0.6 MPa (6 bar)
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Mash opening, filter	1.0 mm
Material, valve body	Brass EN 12165 CW617N
Material, cover	PPS Composite
Material, insulation	Expanded Polystyrene EPS
Material, filter element	POM
Material, sealing	EPDM

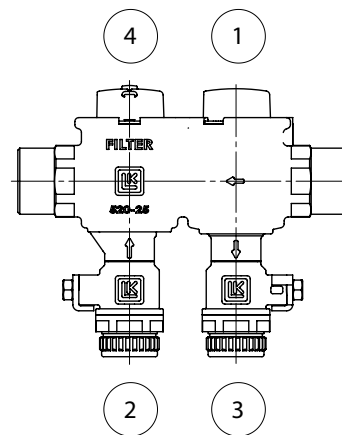
LK 520 MultiFill® 25 is a combination valve for easy filling of refrigerant fluid into ground source heat systems. The valve has a filter to protect the evaporator against possible grit. Its compact construction allows it to be installed in tight spaces. The valve is equipped with insulation to protect against condensation and possible icing. LK 520 MultiFill® 25 can also be used in other applications where filling and filtration are required.

Arrows on the valve body indicate the direction of the flow. The enclosed insulation should be used.

Apart from cleaning the filter no maintenance is required. The filter should be cleaned immediately after installation, a month later and then every other year or when refilling fluid to the system. Check the installation regularly.

FILLING OF REFRIGERANT FLUID

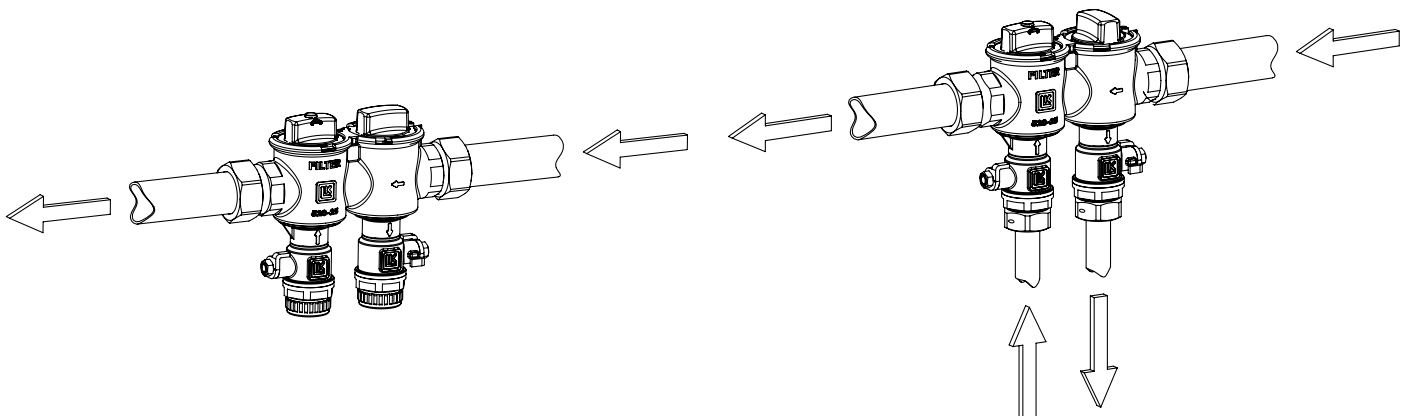
Close valve 1. Connect the refrigerant fill to valve 2 according to the flow arrow. Connect the refrigerant return to valve 3. After completion of the filling operation, close valves 2 and 3. Open valve 1. The included handle can be used to open and close the valves.



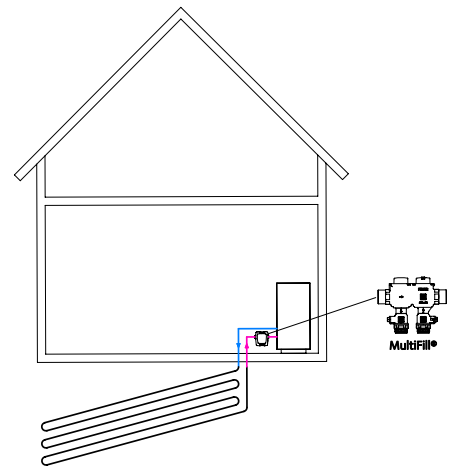
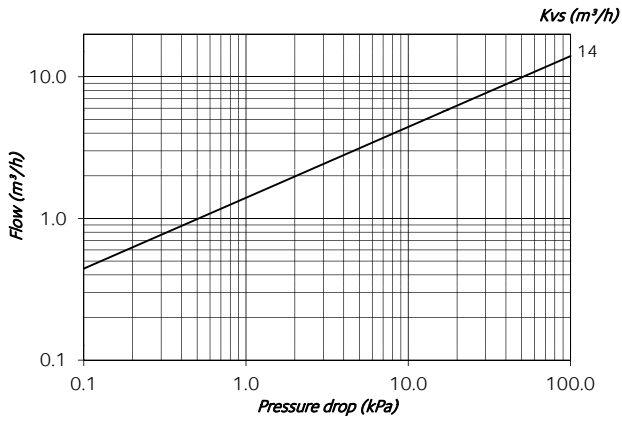
CLEANING THE FILTER

Close valve 4 and remove the knob using the included handle. Remove the filter and clean it with water. When refitting, the bevels on the filter and the filter holder must be on the same side. Vent the system.

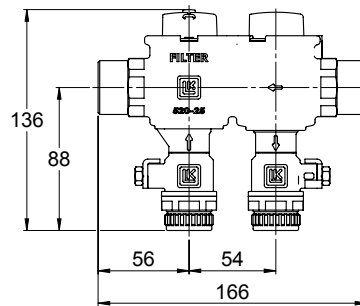
N.B. Water splashes may occur.



CAPACITY DIAGRAM



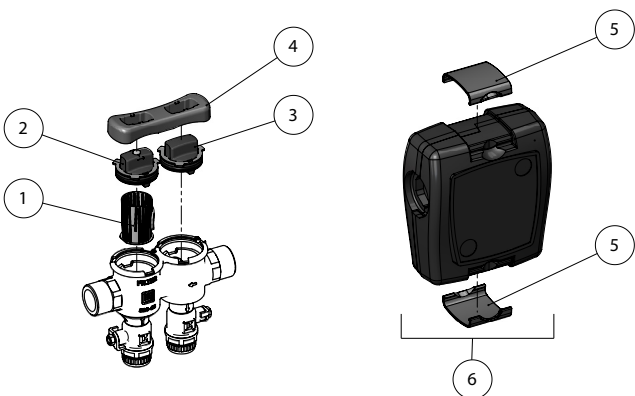
LK 520-25 MALE THREAD



Article no.	Dimension 1	Dimension 2	Kvs m ³ /h	Weight kg
091288	2 x M 1"	2 x M 3/4"	14	1.3

Dimension 1 - Pipe connection to collector hose
 Dimension 2 - Connection for filling of fluid

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
095168	Filter	1
095172	Knob with air vent	2
095169	Knob	3
095173	Handle	4
095171	Clips for insulation	5
095170	Insulation with clips (LxWxH - 148x168x76 mm)	6

LK 520 MultiFill® 32



TECHNICAL DATA

Working temperature	Min. -20°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Mash opening, filter	1.0 mm
Material, valve body	Brass EN 12165 CW617N
Material, insulation	Expanded Polystyrene EPS
Material, filter element	Stainless Steel
Material, sealing	EPDM

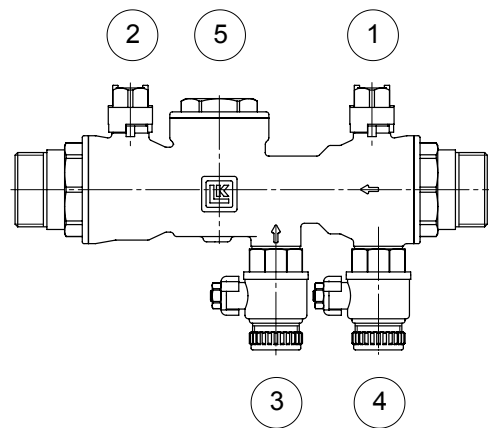
LK 520 MultiFill® 32 is a combination valve for easy filling of refrigerant fluid into ground source heat systems. The valve has a filter to protect the evaporator against possible grit. Its compact construction allows it to be installed in tight spaces. The valve is equipped with insulation to protect against condensation and possible icing. LK 520 MultiFill® 32 can also be used in other applications where filling and filtration are required.

Arrows on the valve body indicate the direction of the flow. The enclosed insulation should be used.

Apart from cleaning the filter no maintenance is required. The filter should be cleaned immediately after installation, a month later and then every other year or when refilling fluid to the system. Check the installation regularly.

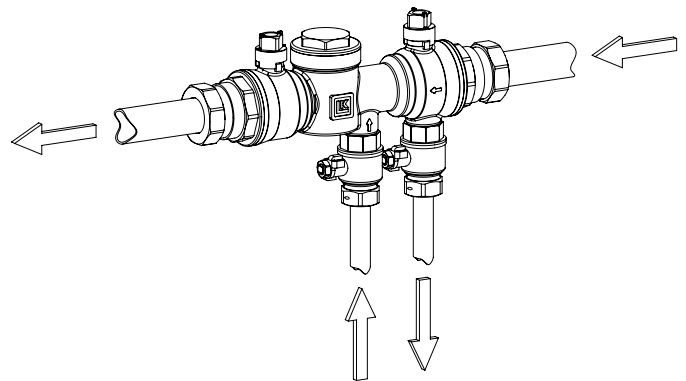
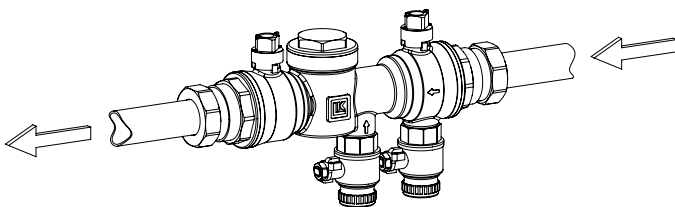
FILLING OF REFRIGERANT FLUID

Close valve 1. Connect the refrigerant fill to valve 3 according to the flow arrow. Connect the refrigerant return to valve 4. After completion of the filling operation, close valves 3 and 4. Open valve 1.

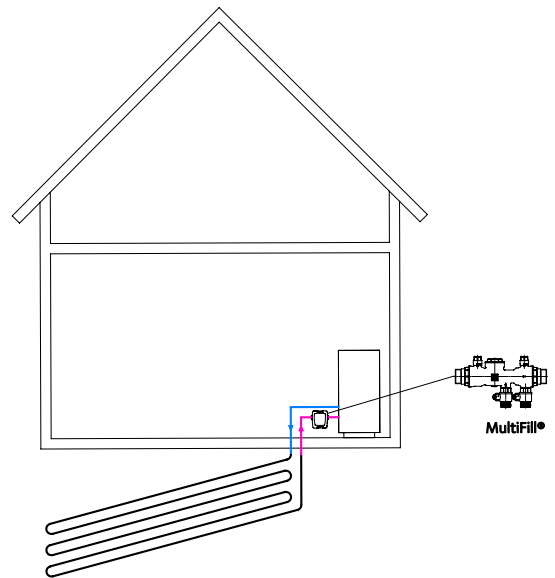
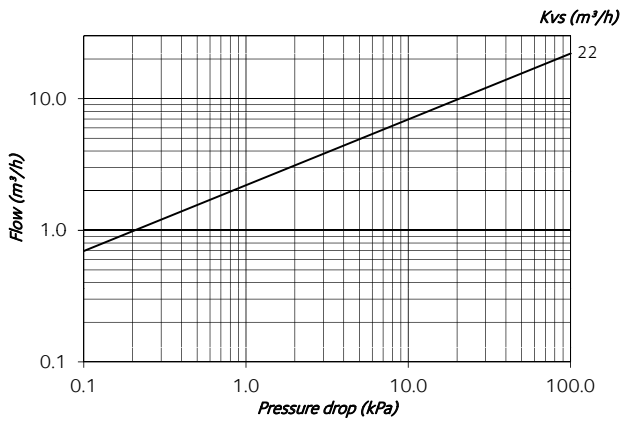


CLEANING THE FILTER

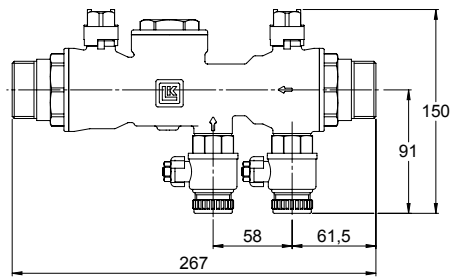
Close valves 1 and 2. Unscrew the filter cover 5. Clean the filter with water. When refitting, the tap below the filter holder should be fitted into the hole provided in the filter housing. Fill with a few centilitres of refrigerant fluid to prevent air from entering the system.



CAPACITY DIAGRAM



LK 520-32 MALE THREAD

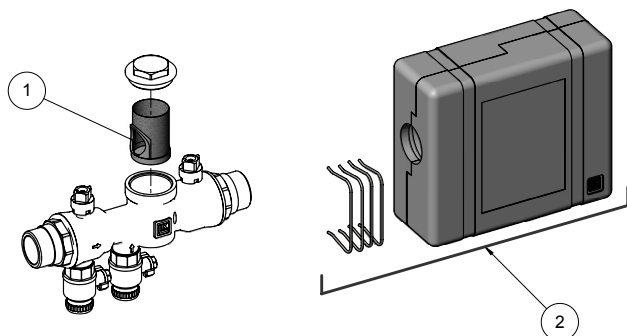


Article no.	Dimension 1	Dimension 2	Kvs m ³ /h	Weight kg
091193	2 x M 1 1/4"	2 x M 3/4"	22	3.2

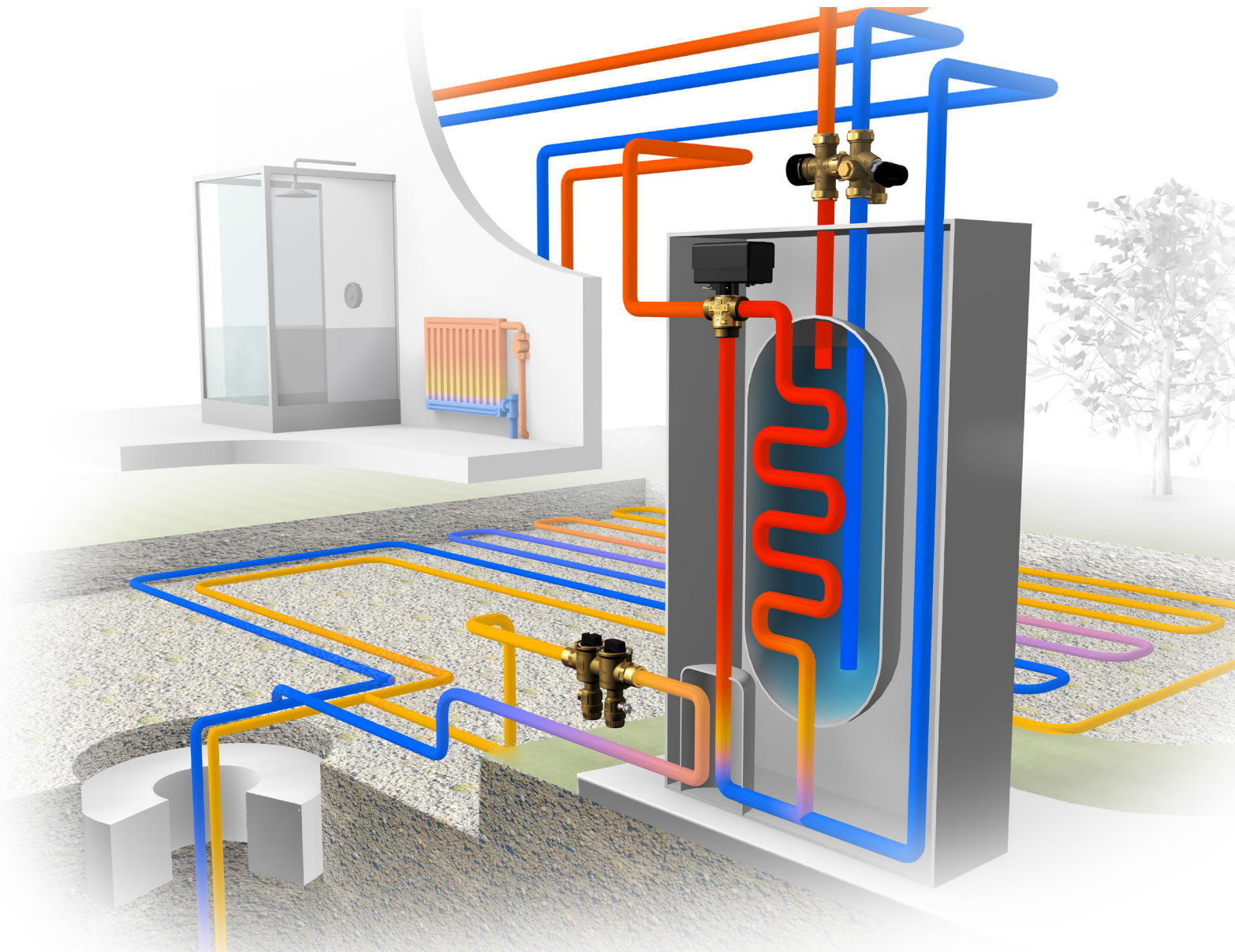
Dimension 1 - Pipe connection to collector hose

Dimension 2 - Connection for filling of fluid

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
095014	Filter and filter holder	1
095013	Insulation with clips (LxWxH - 231x200x90 mm)	2



Zone Valves



LK 525 MultiZone 2W

2-way zone valve for On/Off control.



LK 525 MultiZone 3W

3-way zone valve for On/Off control.



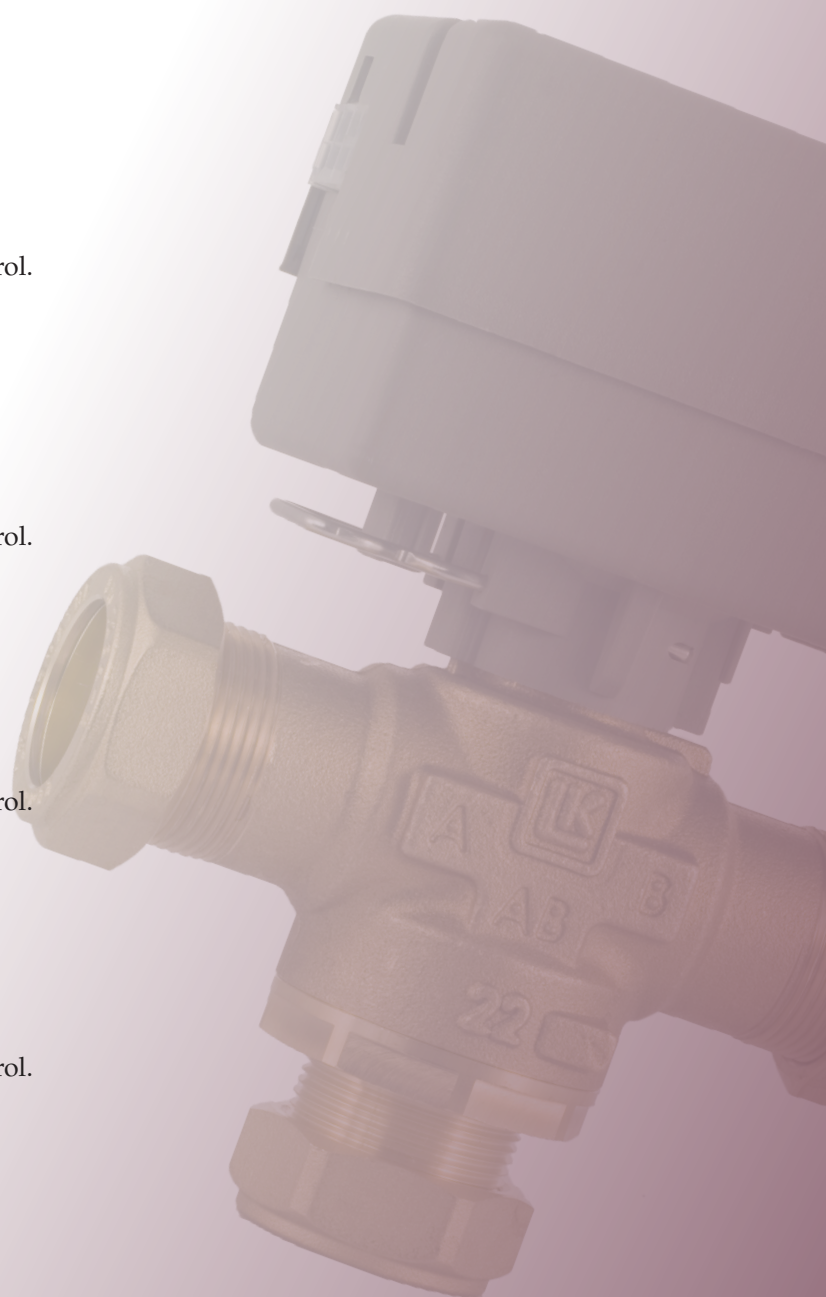
LK 525 MultiZone Polar

3-way zone valve for On/Off control.



LK 525 MultiZone Solar

3-way zone valve for On/Off control.



LK 525 MultiZone 2W



TECHNICAL DATA

Working temperature	Min. +5°C / Max. +80°C (+90°C briefly)
Ambient temperature	Min. +1°C / Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa
Leakage	< 0.1% of Kvs at 100 kPa
Angle of rotation	90°/360°
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Actuator	7 VA, 230 VAC, 50 Hz
Operation time	12 seconds (90°)
Electrical connection	Fixed wire
Signal connector	Single pole SPST
Protection class	IP 40
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12164 CW614N
Material, slide/spindle	PPS Composite

Cable specification

Dimension	3 x 0,75 mm ²
Wire colours	Blue, brown, black
External insulation	PVC

Type approval certificates - actuator only: 

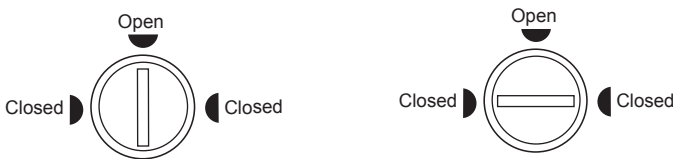
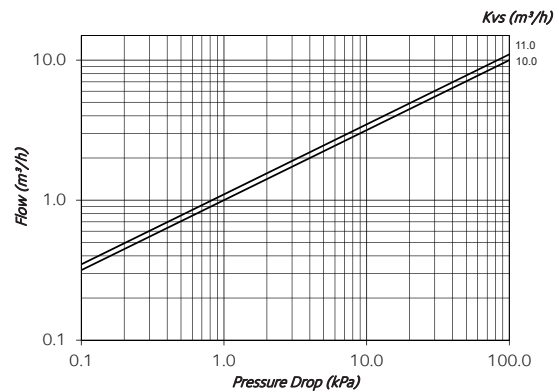
LK 525 MultiZone is a motorized 2-way zone valve for application in heating systems in which the flow through one or more zones is to be controlled. The zone valve has On/Off control and is designed with a turning slide which allows it to withstand a larger pressure difference and reduces the risk of it stalling after a long intermission. On the upper surface of the actuator is an indicator that shows which port is open.

The zone valve must not be installed with the motor underneath the valve unit.

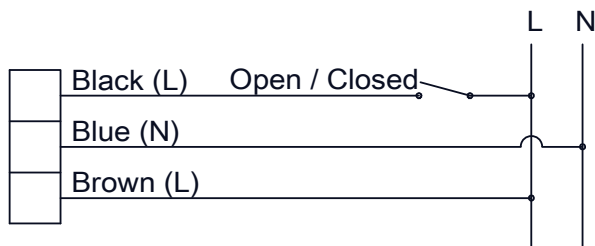
In case of a power failure, the valve cone stays in its current position. When the power is switched off, the valve can be manually set. Remove the motor and turn the spindle to your selected position. When the power is restored, turn the valve back to its original position and reinstall the motor.

Please note that the motor can be installed in only one position.

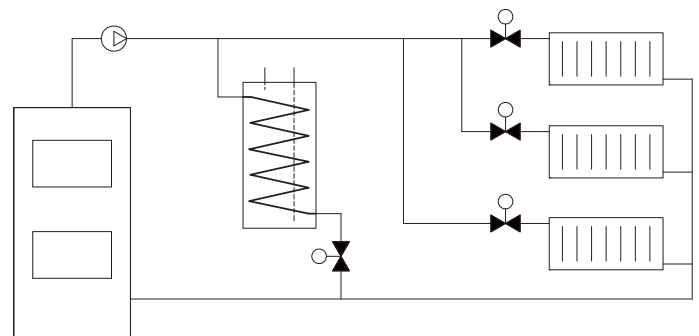
CAPACITY DIAGRAM



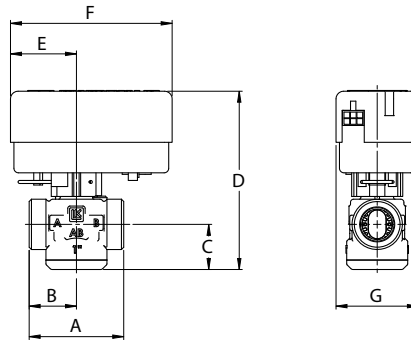
WIRING DIAGRAM



Valve and motor are available in closed or open position.
(NC; Normally Closed or NO; Normally Open)

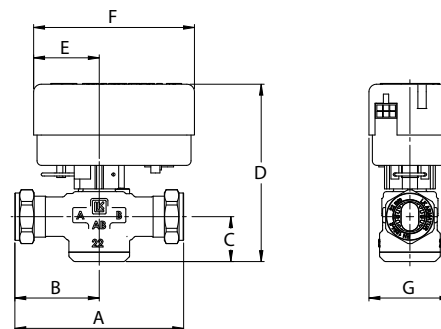


LK 525 2W - MALE THREAD



Article no.	Article	Type	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight kg
066112	Valve unit M 3/4"	NC	10	70	35	30	118	43	106	54	0.2
066102	Valve unit M 1"	NC	11	62	31	30	118	43	106	54	0.3
066103	Valve unit M 1 1/4"	NC	11	74	37	30	118	43	106	54	0.6
066115	Valve unit M 3/4"	NO	10	70	35	30	118	43	106	54	0.2
066113	Valve unit M 1"	NO	11	62	31	30	118	43	106	54	0.3
066114	Valve unit M 1 1/4"	NO	11	74	37	30	118	43	106	54	0.6
066111	EMV 110-K SPST Actuator 230 VAC Cable 1000 mm	NC									0.3
066199	EMV 110-K SPST Actuator 230 VAC Cable 1000 mm	NO									0.3

LK 525 2W - COMPRESSION FITTING



Article no.	Article	Type	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight kg
066104	Valve unit 22 mm	NC	11	110	55	30	118	43	106	54	0.4
066105	Valve unit 28 mm	NC	11	110	55	30	118	43	106	54	0.6
066116	Valve unit 22 mm	NO	11	110	55	30	118	43	106	54	0.4
066119	Valve unit 28 mm	NO	11	110	55	30	118	43	106	54	0.6
066111	EMV 110-K SPST Actuator 230 VAC Cable 1000 mm	NC									0.3
066199	EMV 110-K SPST Actuator 230 VAC Cable 1000 mm	NO									0.3

LK 525 MultiZone 3W



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +80°C (+90°C briefly)
Ambient temperature	Min. +1°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa
Leakage	< 0.1% of Kvs at 100 kPa
Angle of rotation	60°/360°
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Actuator	7 VA, 230 VAC, 50 Hz 7 VA, 24 VAC, 50 Hz
Operation time	8 seconds (60°)
Electrical connection	Fixed wire alternatively Molex®-compatible connector
Signal connector	Single pole SPST
Protection class	IP 40
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12164 CW614N
Material, slide/spindle	PPS Composite

Cable specification

Dimension	3 x 0.75 mm ²
Wire colours	Blue, brown, black
External insulation	PVC
Connection	Molex® or Molex®-compatible connector, 6-circuit

Type approval certificates - actuator only: 

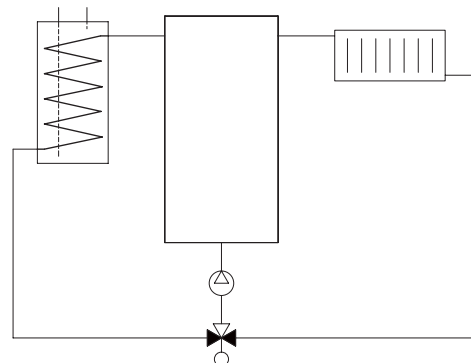
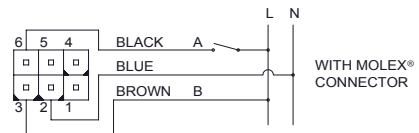
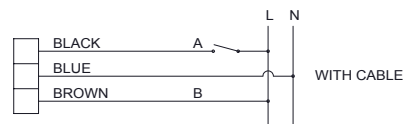
LK 525 MultiZone is a motorized 3-way zone valve for On/Off control. The zone valve is designed with a turning slide which allows it to withstand a larger pressure difference and reduces the risk of it stalling after a long intermission. This makes it especially suited for heat pump applications where there can be long intermissions between the changes to the direction of the flow during the warm season. On the upper surface of the actuator is an indicator that shows which port is open.

The zone valve must not be installed with the motor underneath the valve unit.

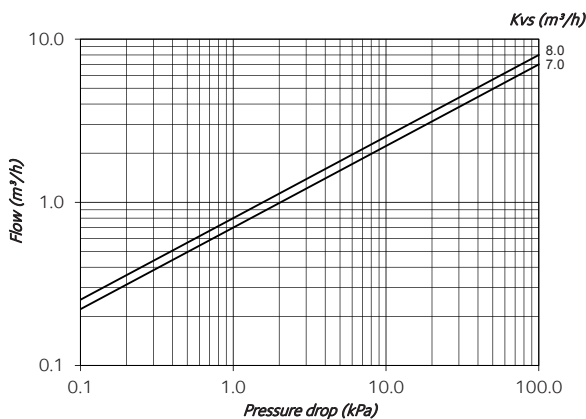
In case of a power failure, the valve cone stays in its current position. When the power is switched off, the valve can be manually set to the centre position, which distributes the flow between the heating and tap water circuits. Remove the motor and turn the spindle about 30° or turn until hot water flows through both valve ports. When the power is restored, turn the valve back to its original position and reinstall the motor.

Please note that the motor can be installed in only one position.

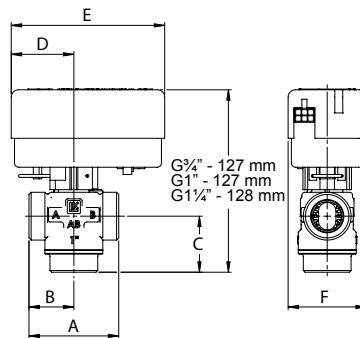
WIRING DIAGRAM



CAPACITY DIAGRAM

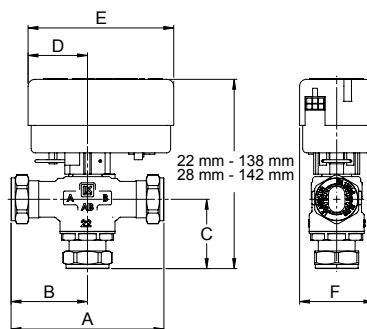


LK 525 3W - MALE THREAD



Article no.	Article	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
066089	Valve unit M 3/4"	7.0	70	35	39	43	106	54	0.3
066106	Valve unit M 1"	8.0	62	31	39	43	106	54	0.3
066107	Valve unit M 1 1/4"	8.0	74	37	40	43	106	54	0.6
066060	EMV 110-M SPST Actuator 230 VAC with Molex®								0.3
066061	EMV 110-K SPST Actuator 230 VAC with cable 1000 mm								0.3
066062	EMV 110-K SPST Actuator 230 VAC with cable 3000 mm								0.4
066063	EMV 110-M SPST Actuator 24 VAC with Molex®								0.3
066083	Cable-M 3x0.75 L=1000 mm with Molex®								0.1

LK 525 3W - COMPRESSION FITTING



Article no.	Article	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
066108	Valve unit 22 mm	8.0	110	55	50	43	106	54	0.4
066109	Valve unit 28 mm	8.0	110	55	54	43	106	54	0.6
066060	EMV 110-M SPST Actuator 230 VAC with Molex®								0.3
066061	EMV 110-K SPST Actuator 230 VAC with cable 1000 mm								0.3
066062	EMV 110-K SPST Actuator 230 VAC with cable 3000 mm								0.4
066063	EMV 110-M SPST Actuator 24 VAC with Molex®								0.3
066083	Cable-M 3x0.75 L=1000 mm with Molex®								0.1

LK 525 MultiZone Polar




TECHNICAL DATA

Working temperature	Min. -15°C/Max. +80°C (+90°C briefly)
Ambient temperature	Min. +1°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa
Leakage	< 0.1% of Kvs at 100 kPa
Angle of rotation	60°/360°
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Actuator	7 VA, 230 VAC, 50 Hz 7 VA, 24 VAC, 50 Hz
Operation time	8 seconds (60°)
Electrical connection	Fixed wire alternatively Molex®-compatible connector
Signal connector	Single pole SPST
Protection class	IP 40
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12164 CW614N
Material, slide/spindle	PPS Composite

Cable specification

Dimension	3 x 0.75 mm ²
Wire colours	Blue, brown, black
External insulation	PVC
Connection	Molex® or Molex®-compatible connector, 6-circuit

Type approval certificates - actuator only: 

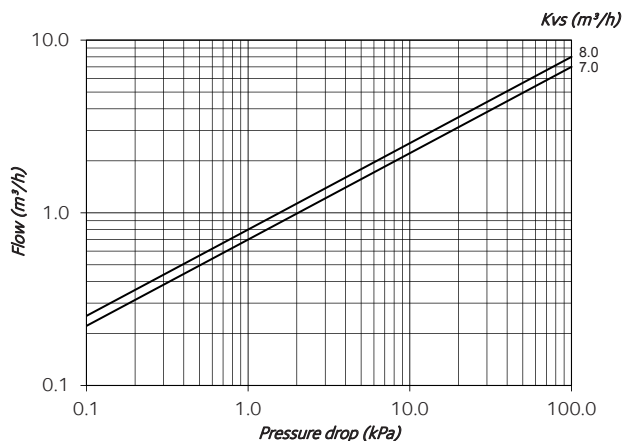
LK 525 MultiZone Polar is a motorized 3-way zone valve for On/Off control intended for use in cooling systems where the temperature of the media can go below 0°C. The plastic adapter is installed between the valve unit and the actuator to protect the actuator against condensation and icing. The zone valve is designed with a turning slide which allows it to withstand a larger pressure difference and reduces the risk of it stalling after longer periods of intermission. On the upper surface of the actuator is an indicator that shows which port is open.

The zone valve must not be installed with the motor underneath the valve unit. The valve needs to be insulated.

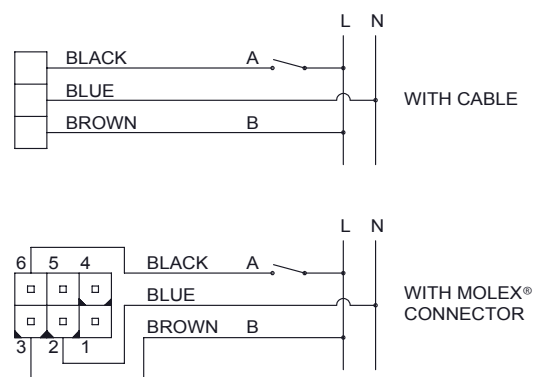
In case of a power failure, the valve cone stays in its current position. When the power is switched off, the valve can be manually set to the centre position, which distributes the flow between the circuits. Remove the motor and turn the spindle about 30° or turn until fluid flows through both valve ports. When the power is restored, turn the valve back to its original position and reinstall the motor.

Please note that the motor can be installed in only one position.

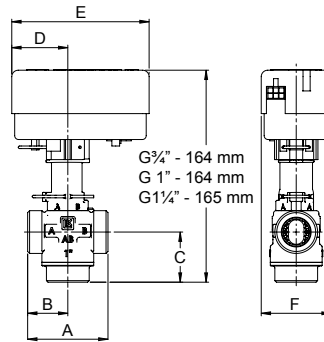
CAPACITY DIAGRAM



WIRING DIAGRAM

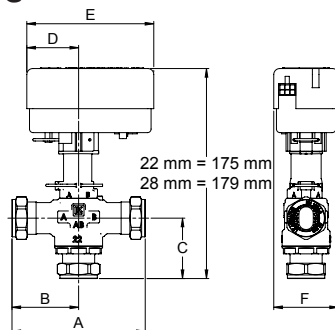


LK 525 POLAR – MALE THREAD



Article no.	Article	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
066089	Valve unit M 3/4"	7.0	70	35	39	43	106	54	0.3
066106	Valve unit M 1"	8.0	62	31	39	43	106	54	0.3
066107	Valve unit M 1 1/4"	8.0	74	37	40	43	106	54	0.6
066177	Adapter								
066060	EMV 110-M SPST Actuator 230 VAC with Molex®								0.3
066061	EMV 110-K SPST Actuator 230 VAC with cable 1000 mm								0.3
066062	EMV 110-K SPST Actuator 230 VAC with cable 3000 mm								0.4
066063	EMV 110-M SPST Actuator 24 VAC with Molex®								0.3
066083	Cable-M 3x0.75 L=1000 mm with Molex®								0.1

LK 525 POLAR – COMPRESSION FITTING



Article no.	Article	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
066108	Valve unit 22 mm	8.0	110	55	50	43	106	54	0.4
066109	Valve unit 28 mm	8.0	110	55	54	43	106	54	0.6
066177	Adapter								
066060	EMV 110-M SPST Actuator 230 VAC with Molex®								0.3
066061	EMV 110-K SPST Actuator 230 VAC with cable 1000 mm								0.3
066062	EMV 110-K SPST Actuator 230 VAC with cable 3000 mm								0.4
066063	EMV 110-M SPST Actuator 24 VAC with Molex®								0.3
066083	Cable-M 3x0.75 L=1000 mm with Molex®								0.1

LK 525 MultiZone Solar




TECHNICAL DATA

Working temperature	Min. -15°C/Max. +120°C (+160°C briefly)
Ambient temperature	Min. +1°C/Max. +60°C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa
Leakage	< 0.5% of Kvs at 100 kPa
Angle of rotation	60°/360°
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread
Actuator	7 VA, 230 VAC, 50 Hz 7 VA, 24 VAC, 50 Hz
Operation time	8 seconds (60°)
Electrical connection	Fixed wire alternatively Molex®-compatible connector
Signal connector	Single pole SPST
Protection class	IP 40
Material, valve body	Brass EN 12165 CW617N
Material, cover	Brass EN 12164 CW614N
Material, slide/spindle	PPS Composite

Cable specification

Dimension	3 x 0.75 mm ²
Wire colours	Blue, brown, black
External insulation	PVC
Connection	Molex® or Molex®-compatible connector, 6-circuit

Type approval certificates - actuator only: 

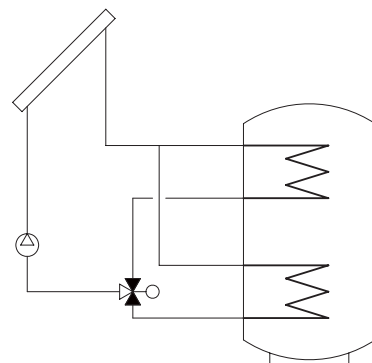
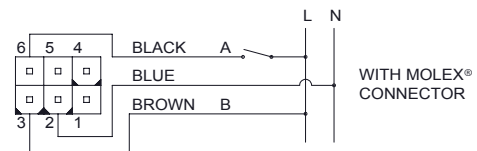
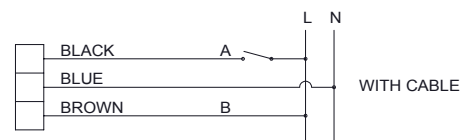
LK 525 MultiZone Solar is a motorized 3-way zone valve for On/Off control intended for use in solar heating systems where the temperature of the media can reach very high levels. The plastic adapter is installed between the valve unit and the actuator to protect the actuator against high temperatures. The zone valve is designed with a turning slide which allows it to withstand a larger pressure difference and reduces the risk of it stalling after longer periods of intermission. On the upper surface of the actuator is an indicator that shows which port is open.

The zone valve must not be installed with the motor underneath the valve unit.

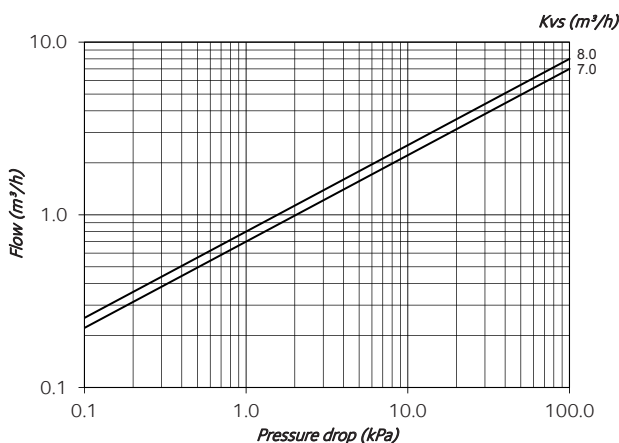
In case of a power failure, the valve cone stays in its current position. When the power is switched off, the valve can be manually set to the centre position, which distributes the flow between the circuits. Remove the motor and turn the spindle about 30° or turn until fluid flows through both valve ports. When the power is restored, turn the valve back to its original position and reinstall the motor.

Please note that the motor can be installed in only one position.

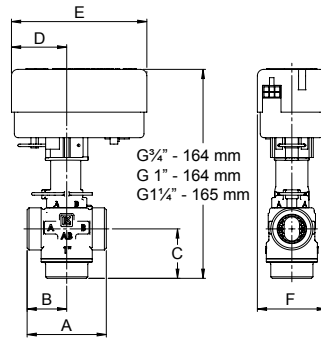
WIRING DIAGRAM



CAPACITY DIAGRAM

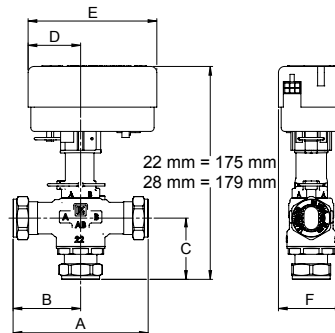


LK 525 SOLAR- MALE THREAD

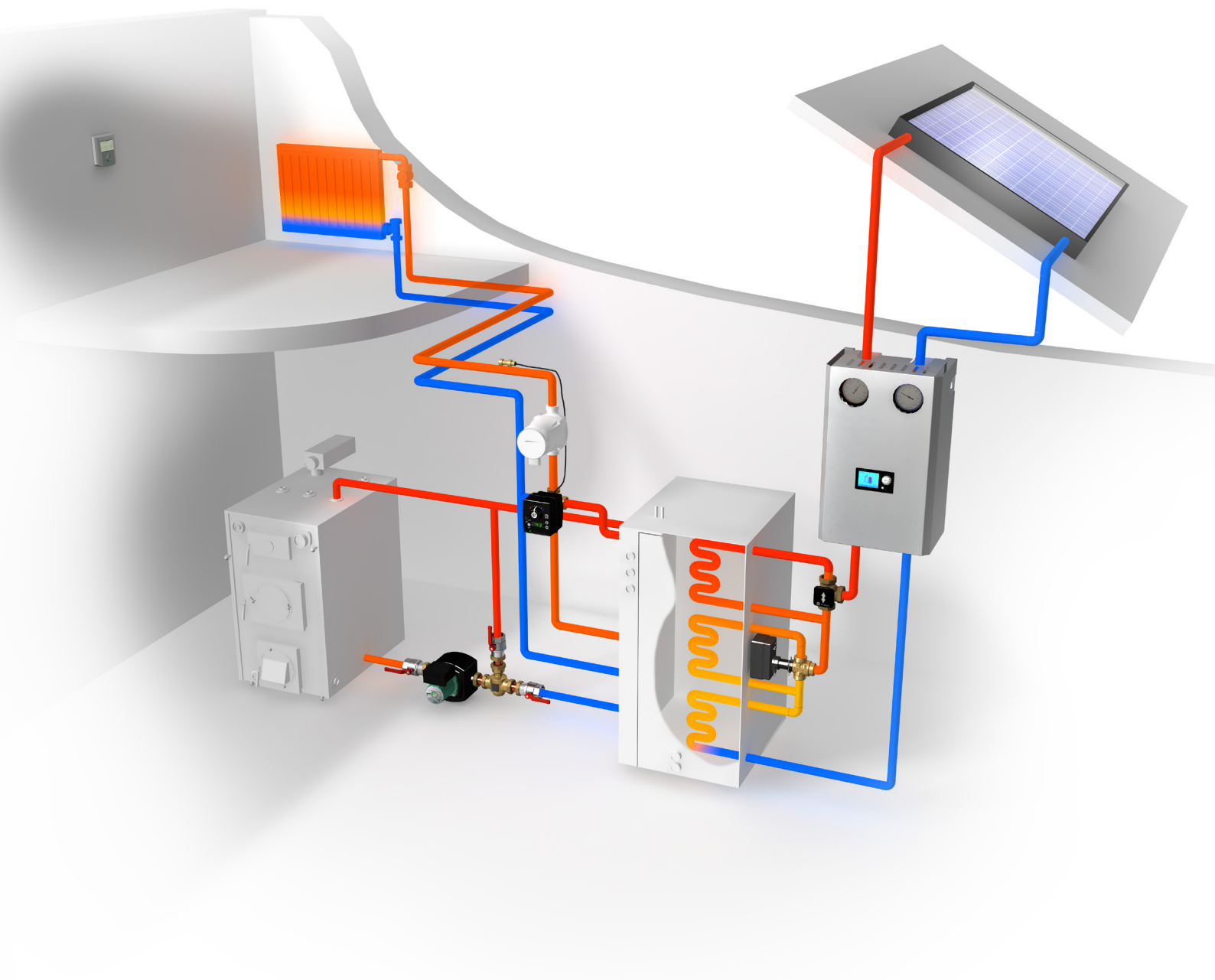


Article no.	Article	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
066089	Valve unit M 3/4"	7.0	70	35	39	43	106	54	0.3
066106	Valve unit M 1"	8.0	62	31	39	43	106	54	0.3
066107	Valve unit M 1 1/4"	8.0	74	37	40	43	106	54	0.6
066177	Adapter								
066060	EMV 110-M SPST Actuator 230 VAC with Molex®								0.3
066061	EMV 110-K SPST Actuator 230 VAC with cable 1000 mm								0.3
066062	EMV 110-K SPST Actuator 230 VAC with cable 3000 mm								0.4
066063	EMV 110-M SPST Actuator 24 VAC with Molex®								0.3
066083	Cable-M 3x0.75 L=1000 mm with Molex®								0.1

LK 525 SOLAR - COMPRESSION FITTING



Article no.	Article	Kvs m ³ /h	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg
066108	Valve unit 22 mm	8.0	110	55	50	43	106	54	0.4
066109	Valve unit 28 mm	8.0	110	55	54	43	106	54	0.6
066177	Adapter								
066060	EMV 110-M SPST Actuator 230 VAC with Molex®								0.3
066061	EMV 110-K SPST Actuator 230 VAC with cable 1000 mm								0.3
066062	EMV 110-K SPST Actuator 230 VAC with cable 3000 mm								0.4
066063	EMV 110-M SPST Actuator 24 VAC with Molex®								0.3
066083	Cable-M 3x0.75 L=1000 mm with Molex®								0.1



Valves for Water Heating



LK 514 MultiSafe

Safety relief valve for tap water installations as well as heating, recycling and cooling systems with thermal expansion only.



LK 548 AquaKit

Valve combination for water heating.



LK 550 AquaMix

Mixing valve for water heating.



LK 551 HydroMix

Mixing valve for water heating.



LK 514 MultiSafe



TECHNICAL DATA

Working temperature	Min. -15°C/Max. +90°C (+120°C briefly)
Thread standard	G - male thread
Material, valve body	DZR Brass EN 12165 CW602N
Material, sealing	EPDM

Type approval certificates  SWEDCERT TG 0197


LK 514 MultiSafe is a high lift, soft sealing safety relief valve for tap water installations as well as heating, recycling and cooling systems with thermal expansion only. The valve must not be used for steam. The outlet is fitted with compression fitting for simple installation of a discharge pipe.

The safety relief valve can be installed horizontally or vertically, i.e. with the valve knob facing outwards or upwards. In horizontal installations, the outlet must be positioned so that water pockets cannot be formed.

The male thread is designed for the LK Armatur system with O-ring seal where the valve is first tightened by hand until stop and then with a spanner, 0.5-1.5 turns until the desired position is achieved. If the valve is fitted to other components than an LKA valve, the thread has to be sealed in the usual manner.

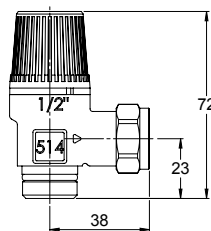
The safety relief valve requires no maintenance but the opening function should be checked 2-3 times per year according to the following:

Turn the knob counter-clockwise ¼ turn until a faint “click” is heard. Let the water flush through briefly, then turn another ¼ turn until a stronger “click” is heard and the valve closes.

This two-step opening function makes it possible to use the safety valve discharge pipe to drain e.g. a water heater.

It is normal for the safety relief valve to open and let out some water when the pressure level of the system is reached due to the water’s increasing volume during heating.

LK 514 MALE THREAD / COMPRESSION FITTING



Article no.	Dimension	Opening pressure	Discharge capacity	Weight kg
090109	M ½" / 15 mm	0.15 MPa	31 l/min.*	0.1
090108	M ½" / 15 mm	0.2 MPa	35 l/min.*	0.1
090110	M ½" / 15 mm	0.25 MPa	50 l/min.*	0.1
090111	M ½" / 15 mm	0.3 MPa	81 l/min.*	0.1
090112	M ½" / 15 mm	0.4 MPa	96 l/min.*	0.1
090113	M ½" / 15 mm	0.6 MPa	118 l/min.*	0.1
090114	M ½" / 15 mm	0.7 MPa	104 l/min.*	0.1
090115	M ½" / 15 mm	0.9 MPa	122 l/min.*	0.1
090116	M ½" / 15 mm	1.0 MPa	148 l/min.*	0.1

(According to Swedish Standard VVA 93)

LK 548 AquaKit



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +90°C
Operating temperature	Min. +38°C/Max. +65°C
Max. working pressure	1.0 MPa (10 bar)
Opening pressure, check valve	5 kPa
Material, valve body	DZR Brass EN 12165 CW602N
Material, sealing	EPDM

LK 548 is AquaKit a valve combination for water heating consisting of a shut-off/check valve and a thermostatic mixing valve. The shut-off valve closes the cold water inlet and has an integrated check valve preventing recirculation of warm water into the incoming cold water pipe. The mixing valve regulates the supply of cold water in order to achieve the desired temperature. The shut-off/check valve has two connections with female thread G ½" for fitting of a safety relief valve, vacuum breaker or filling valve.

Arrows on the valve body indicate the direction of the flow.

KV = incoming cold water

VV = incoming hot water

BV = outgoing warm water

Female thread connections are designed for the LK Armatur O-ring seal system. Other components are fitted in the usual way. When fitting to a male thread connection, adapter LK 373 is used - see under Accessories.

When fitted on top of boiler/storage tanks with built-in water heaters the valve combination should be installed with some space between boiler/storage tank and valve combination so as not to let the function of the valve combination be affected by heat radiation.

The valve knob is used to set the desired warm water temperature within the range of 38°C to 65°C. The maximum temperature can be calibrated as follows:

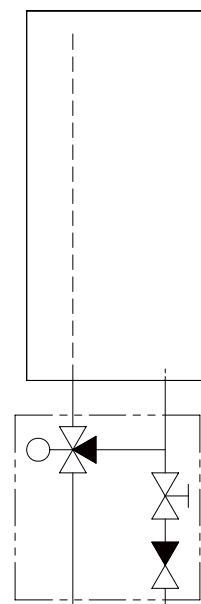
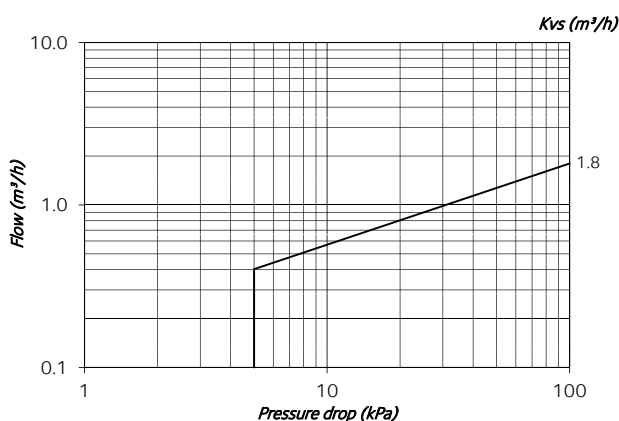
INCREASING THE MAXIMUM TEMPERATURE:

Turn the knob anticlockwise to (+). Loosen the screw and move the knob out to the side. Then turn the knob clockwise to (-) without it being engaged. Adjustments are carried out in small steps. A ¼ turn corresponds to approximately 7°C. Reinstall the knob and check that it engages with the teeth. Tighten the screw and then turn the knob to max (+). Max calibration for increasing the temperature is a ½ turn.

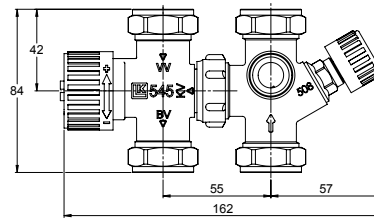
REDUCING THE MAXIMUM TEMPERATURE:

Do the procedure in reverse. Turn the knob clockwise to (-) and the disengaged knob anticlockwise to (+).

CAPACITY DIAGRAM

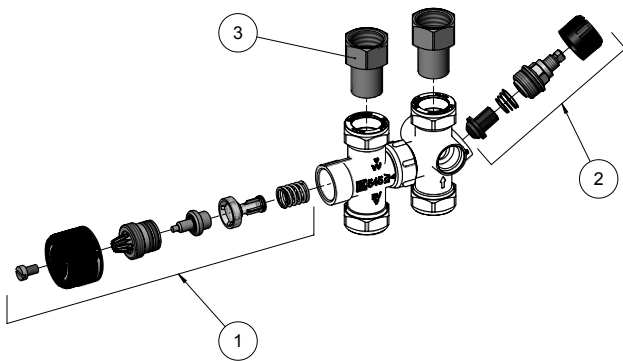


LK 548 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	Weight kg
090085	22 mm	1.8	0.7

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
4920723	LK 683 Repair kit Mixing valve	1
4311733	LK 684 Repair kit Shut-off/Check valve	2
1898055	Adapter LK 373 22xM ³ / ₄ "	3

LK 550 AquaMix



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +90°C
Operating temperature	Min. +38°C/Max. +65°C
Max. working pressure	1.0 MPa (10 bar)
Thread standard	G - male thread
Material, valve body	DZR Brass EN 12165 CW602N
Material, sealing	EPDM

LK 550 AquaMix is a mixing valve for water heating with a thermostatic element that regulates the supply of cold water in order to achieve the desired temperature. Self-circulation is prevented with a check valve installed in the cold water supply - see under Accessories. Valves with male thread G ½" and 15 mm compression fitting have an airvent for simple draining of smaller water heaters.

Arrows on the valve body indicate the direction of the flow.

KV = incoming cold water

VV = incoming hot water

BV = outgoing warm water

When fitting to a male thread connection adapter LK 373 is used - see under Accessories.

When fitted on top of boiler/storage tanks with built-in water heaters the valve should be installed with some space between boiler/storage tank and valve so as not to let the function of the valve be affected by heat radiation.

The valve knob is used to set the desired warm water temperature within the range of 38°C to 65°C. The maximum temperature can be calibrated as follows:

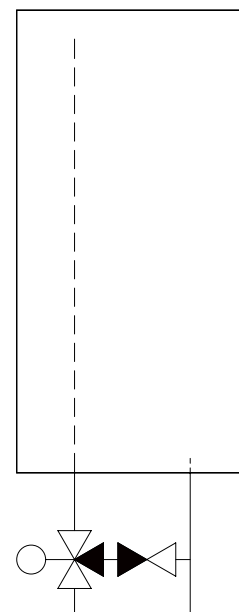
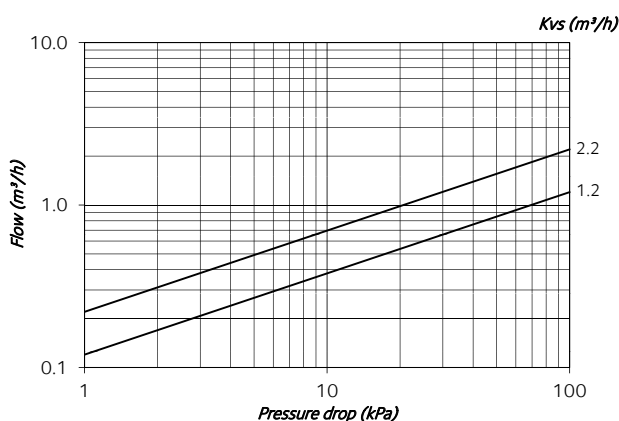
INCREASING THE MAXIMUM TEMPERATURE:

Turn the knob anticlockwise to (+). Loosen the screw and move the knob out to the side. Then turn the knob clockwise to (-) without it being engaged. Adjustments are carried out in small steps. A ¼ turn corresponds to approximately 7°C. Reinstall the knob and check that it engages with the teeth. Tighten the screw and then turn the knob to max (+). Max. calibration for increasing the temperature is a ½ turn.

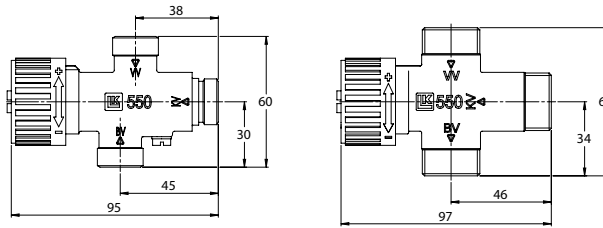
REDUCING THE MAXIMUM TEMPERATURE:

Do the procedure in reverse. Turn the knob clockwise to (-) and the disengaged knob anticlockwise to (+).

CAPACITY DIAGRAM

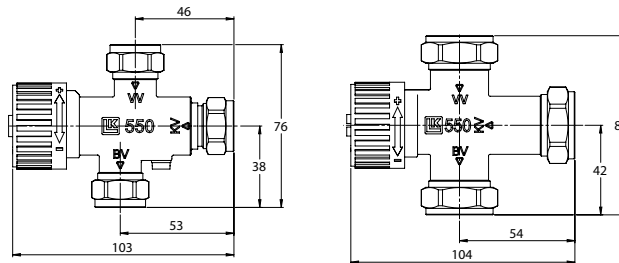


LK 550 - MALE THREAD



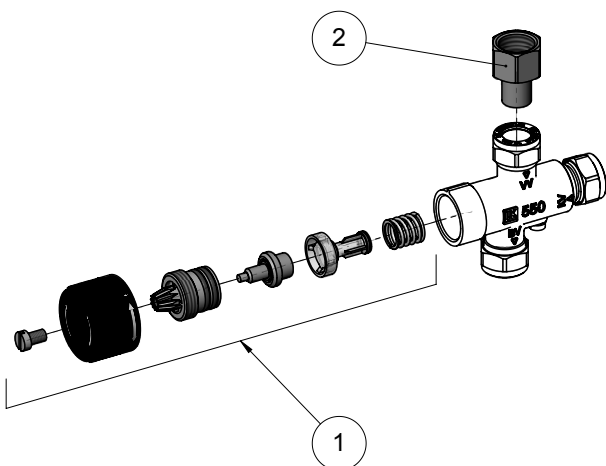
Article no.	Dimension	Kvs m ³ /h	Weight kg
090206	M 1/2"	1.2	0.3
090063	M 3/4"	2.2	0.4

LK 550 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	Weight kg
090200	15 mm	1.2	0.3
090205	22 mm	2.2	0.4

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
4920723	LK 683 Repair kit Mixing valve	1
1898022	Adapter LK 373 15xM1/2"	2
1898055	Adapter LK 373 22xM3/4"	2
092105	Cartridge Check valve 15 mm	-
092103	Cartridge Check valve 22 mm	-
055008	Check valve NN 1/2"	-
055009	Check valve NN 3/4"	-

LK 551 HydroMix

TECHNICAL DATA

Working temperature	Min. +5°C/Max. +95°C
Operating temperature	Min. +35°C/Max. +55°C
	Min. +35°C/Max. +65°C
Max. working pressure	1.0 MPa (10 bar)
Media 1	Water - Ethylene glycol mixture max. 50%
Media 2	Water - Propylene glycol mixture max. 50%
Media 3	Water - Ethanol mixture max. 50%
Thread standard	Rp - female thread, G - male thread
Material, valve body	DZR Brass EN 12165 CW626N
Temperature stability	±3°C

Registered Design



LK 551 HydroMix is a mixing valve for water heating and heating systems. The mixing valve has a thermostatic element that regulates the supply of cold as well as hot water in order to achieve the desired temperature. The valve has an anti-scald function that shuts off the incoming hot water flow in case of failure of cold water supply.

Arrows on the valve body indicate the direction of the flow.

C = incoming cold water

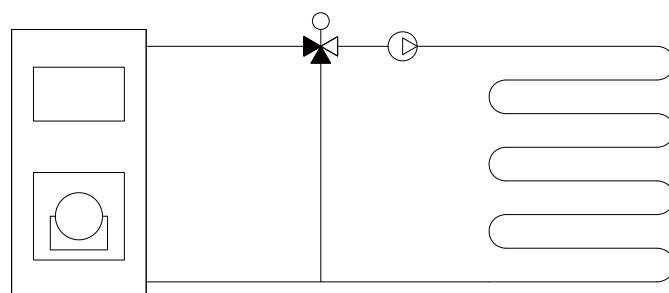
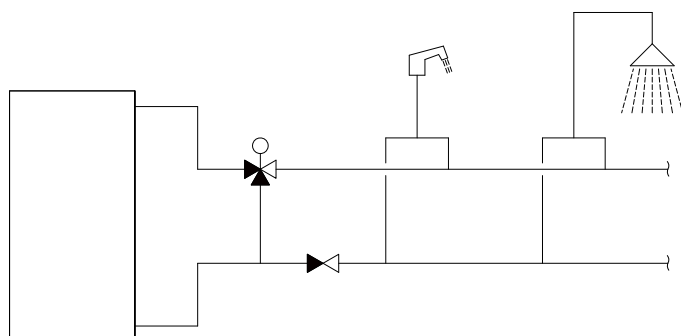
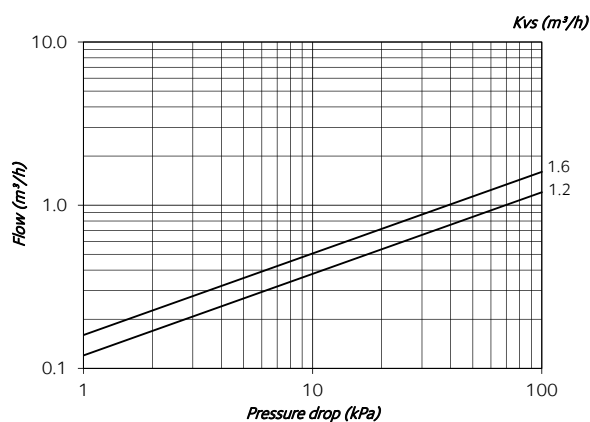
H = incoming hot water

M = outgoing warm water

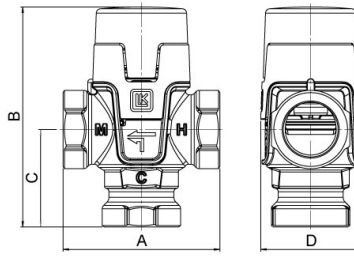
When fitted on top of boiler/storage tanks with built-in water heaters the valve should be installed with some space between boiler/storage tank and valve so as not to let the function of the valve be affected by heat radiation.

The valve knob is used to set the desired warm water temperature within the range of 35°C to 55°C/65°C. The protective cap prevents unintentional changes of the temperature setting.

CAPACITY DIAGRAM

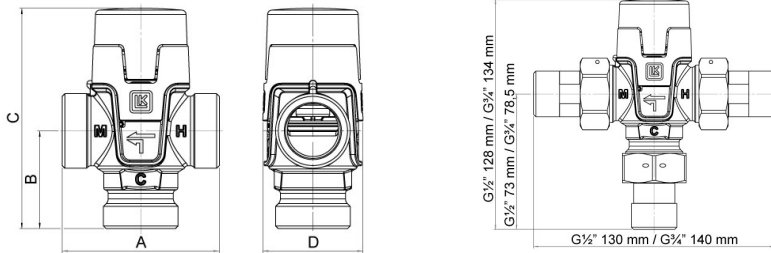


LK 551 - FEMALE THREAD



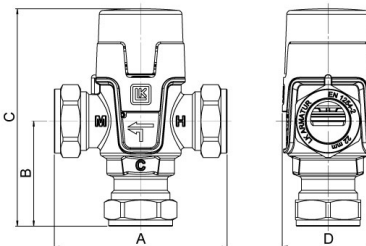
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	Operating temp.	Weight kg
181455	F 1/2"	1.5	70	43.5	99	45	+35°C - +65°C	0.5
181486	F 3/4"	1.6	70	43.5	99	45	+35°C - +65°C	0.5

LK 551 - MALE THREAD



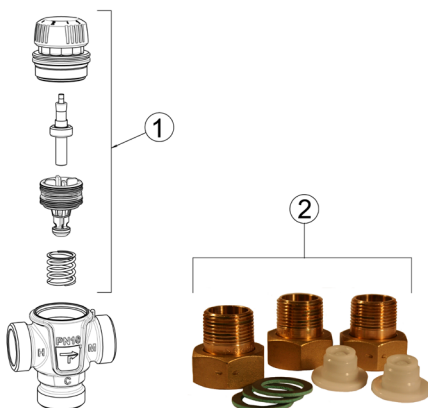
Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	Operating temp.	Weight kg
181452	M 1/2"	1.3	70	42.5	99	45	+35°C - +65°C	0.4
181453	M 3/4"	1.5	70	43.5	99	45	+35°C - +65°C	0.5
181454	M 1"	1.6	70	43.5	99	45	+35°C - +65°C	0.5

LK 551 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	A mm	B mm	C mm	D mm	Note	Weight kg
181456	15 mm	1.3	86,5	51	106	45	+35°C - +65°C	0.5
181523	15 mm	1.3	86,5	51	106	45	+35°C - +55°C	0.5
181457	22 mm	1.6	85	52	106	45	+35°C - +65°C	0.6
181487	22 mm	1.6	85	52	106	45	+35°C - +55°C	0.6

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
095234	Repair kit 551, 35°C - 65°C	1
095236	Repair kit 551, 35°C - 55°C	1
092054	Connection kit M 1/2" x 3/4" with rotating nut, gaskets, 1 check valve	2
092055	Connection kit M 1/2" x 3/4" with rotating nut, gaskets, 2 check valves	2
092052	Connection kit M 3/4" x 1" with rotating nut, gaskets, 1 check valve	2
092053	Connection kit M 3/4" x 1" with rotating nut, gaskets, 2 check valves	2

Other Valves



LK 538 ThermoFill EA
Filling valve for heating systems.



LK 539 ThermoFill EA
Filling valve for heating systems.



LK 435 OptiFlow
Group valve for flow adjustment.



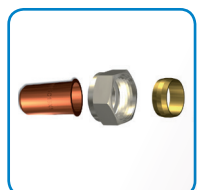
LK 519 ThermoSafe
Thermal safety relief valve.



LK 700/705 AeroMat
Automatic float vent valves.



Transition Fittings



Assembly Instructions for Compression Fittings / Media



LK 538 ThermoFill EA



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +90°C
Max. working pressure	1.0 MPa (10 bar)
Opening pressure, check valve	1 kPa
Thread standard	G - male thread
Material, valve body	DZR Brass EN 12165 CW602N
Check valve	Type EA according to EN 1717
Material, check valve	POM
Material, sealing	EPDM

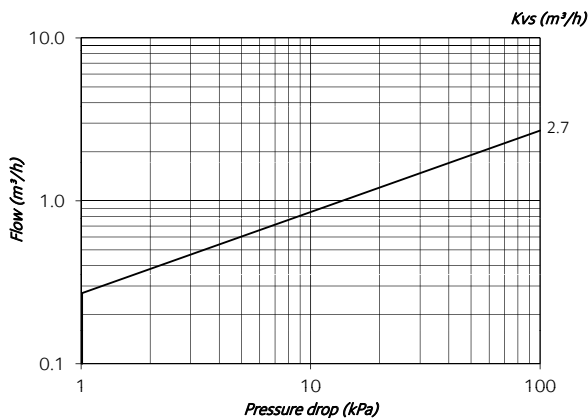
LK 538 ThermoFill EA is a filling valve for heating systems. The valve has an integrated shut-off/check valve which ensures opening even at low pressure differences. The check valve is inspectionable and classified as a back flow preventer Type EA according to EN 1717.

The arrow on the valve body indicates the direction of the flow.

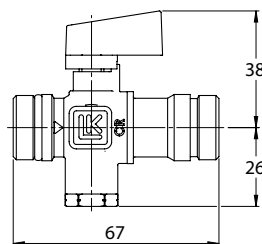
Male threads are sealed in the usual manner. Both the inlet side as well as the outlet side are designed according to the LK Armatur O-ring seal system. When connecting to this system, tighten first by hand until stop, then another 0.5-1.5 turns with an appropriate tool into the right position.

It is easier to fit the compression fitting if a lubricant is applied to the thread and bevel. Tighten first by hand and then with a box spanner. Number of turns to be tightened with a spanner: See the separate datasheet for compression fittings. Soft pipes are to be fitted with a support sleeve.

CAPACITY DIAGRAM

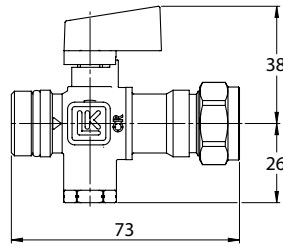


LK 538 - MALE THREAD



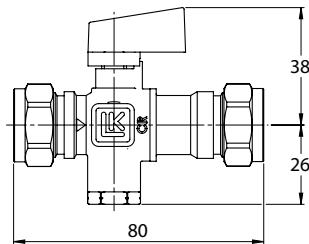
Article no.	Dimension	Kvs m³/h	Weight kg
090268	M 1/2"	2.7	0.1

LK 538 - MALE THREAD / COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	Weight kg
090269	M 1/2" / 15 mm	2.7	0.2

LK 538 - COMPRESSION FITTING



Article no.	Dimension	Kvs m ³ /h	Weight kg
090271	15 mm	2.7	0.2

LK 539 ThermoFill EA



TECHNICAL DATA

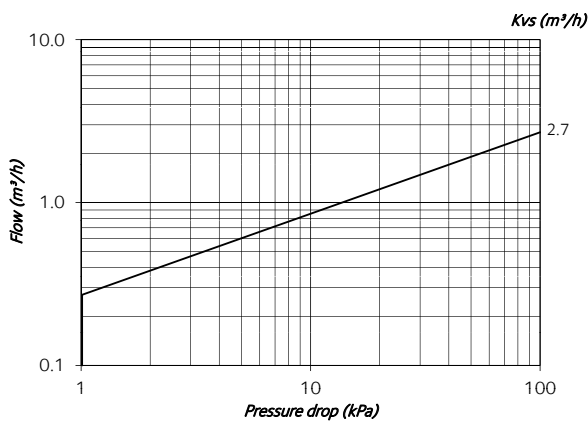
Working temperature	Min. +5°C/Max. +90°C
Max. working pressure	1.0 MPa (10 bar)
Opening pressure, check valve	1 kPa
Thread standard	G - male thread
Material, valve body	DZR Brass EN 12165 CW602N
Check valve	Type EA according to EN 1717
Material, check valve	POM
Material, sealing	EPDM

LK 539 ThermoFill EA is a filling valve for heating systems. The valve has an integrated shut-off/check valve, which ensures opening even at low pressure differences. The check valve is inspectionable and classified as a back flow preventer Type EA according to EN 1717.

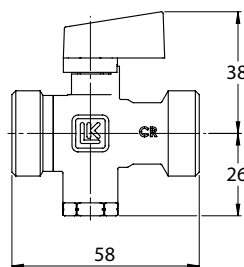
The arrow on the valve body indicates the direction of the flow.

Male threads are sealed in the usual manner, alternatively G 3/4" flat connection with captive nut and flat gasket.

CAPACITY DIAGRAM



LK 539 - MALE THREAD



Article no.	Dimension	Kvs m³/h	Weight kg
068008	M 3/4"	2.7	0.2

LK 435 OptiFlow



TECHNICAL DATA

Working temperature	
Water/Glycol 50/50%	Min. -20°C / Max. +80°C (+90°C briefly)
Water/Ethanol 70/30%	Min. -20°C / Max. +70°C (+85°C briefly)
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa
Media	Water - Glycol mixture max. 50% Ethanol mixture max. 30%
Material, valve body	Nickel-plated Brass EN 12165 CW617N
Flow ranges	2-16 l/min 4-36 l/min
Accuracy, flow meter	+/- 12%
Thread standard, adjustment valve inlet	G - male thread
Thread standard, adjustment valve outlet	G - female thread

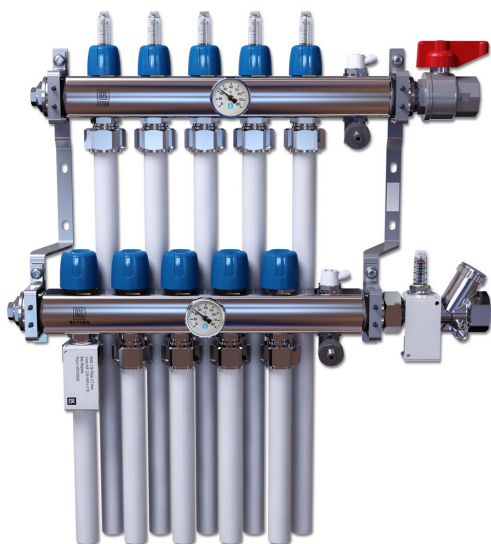
LK 435 OptiFlow is a group valve for flow adjustment of hydraulic systems such as underfloor heating, traditional heating and cooling systems. Adjustments are easily made using an Allen key. No measuring equipment is needed. The flow rate is read off directly from the visual flow indicator. The flow meter continuously measures and displays the actual flow rate during operation.

LK 435 OptiFlow has a MemoStop function for locking the setting. This means that the valve can be used as a shut-off valve without losing settings. A marking plate for labelling and documenting the setting is enclosed. LK 435 OptiFlow can be supplemented with a thermometer and threaded union parts, straight or angular, with rotating nut for simple assembly to, for example, an LK 430 Manifold RF - see under Accessories. The thermometer is placed in the valve's integrated sensor pocket.

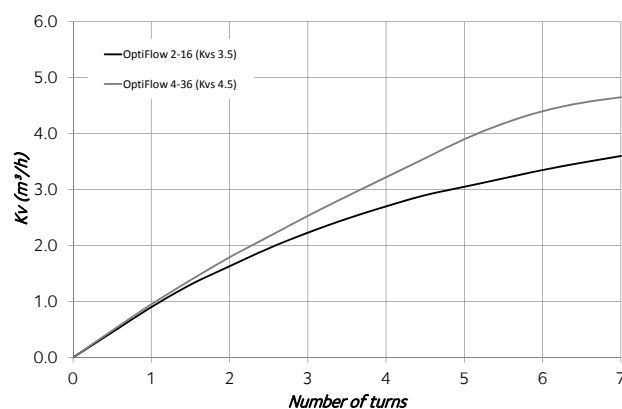
The valve can be mounted in any position. The arrow on the valve body indicates the flow direction. For accurate measurement a straight piece of tube at least of the same length as the valve body should precede the balancing valve. When assembling to an LK 430 Manifold RF the adjustment valve can be fitted directly to the manifold, thus replacing the shut-off valve.

The flow meter is designed so that the fluid does not flow through the glass in order to protect it from debris and dirt. However, after a period of time the glass may still have to be cleaned as the fluid often becomes contaminated and blackened. It is then easy to remove the glass to clean it. The function/setting of the valve is not affected by deposits in the glass.

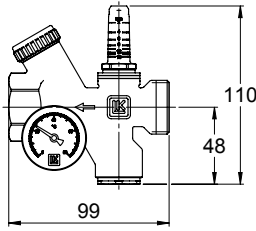
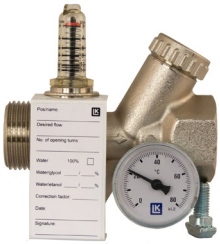
Except for cleaning of the glass, the group valve normally requires no maintenance. The installation should be checked regularly.



VALVE CHARACTERISTICS

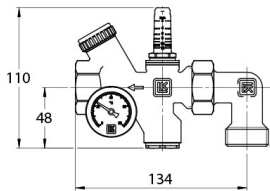
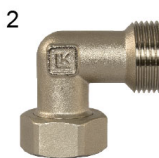
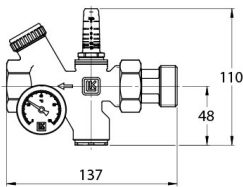


LK 435 - MALE THREAD / FEMALE THREAD



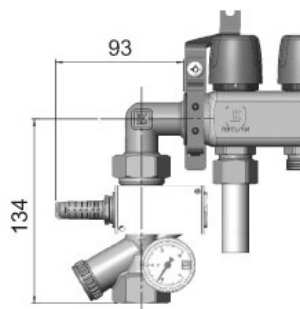
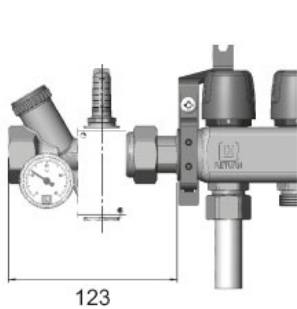
Article no.	Dimension	Kvs m³/h	Flow range	Weight kg
090275	Adjustment valve - M 1" / F 1"	3.5	2-16 l/min	0.5
090276	Adjustment valve - M 1" / F 1"	4.5	4-36 l/min	0.5

SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
095222	Threaded union part straight G 1" with rotating nut	1
095223	Threaded union part angle G 1" with rotating nut	2
095018	Thermometer T40, 0° - 80°C	-

WITH LK 430 MANIFOLD RF



LK 519 ThermoSafe



TECHNICAL DATA

Opening temperature	97±2°C
Working temperature	Min. +5°C / Max. +110°C
Max. working pressure	1.0 MPa (10 bar)
Thread standard	G - male thread, G - female thread
Max. discharge capacity	6.5 m ³ /h
Material, valve body	Nickel-plated Brass EN 12165-99 CW617N
Material, sensor pocket	Nickel-plated Brass EN 12165-99 CW617N
Material, spring	Stainless steel
Material, capillary pipe	Copper, length 1300 mm, with insulation
Material, sealing	Viton

Type approval certificates **CE** no 1115

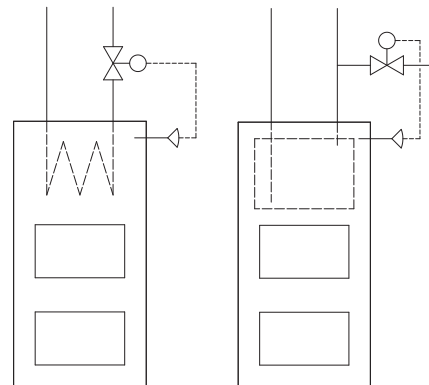
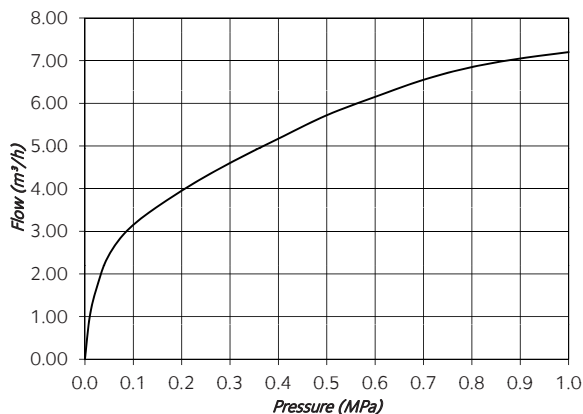


LK 519 ThermoSafe is a thermal safety relief valve for solid fuel boilers with built-in water heaters or cooling coils. The safety relief valve prevents the temperature of the boiler water from rising above the boiling point. When temperature levels are too high the valve opens to let cold water flow through water heater or cooling coil, thus reducing the temperature of the boiler. LK 519 ThermoSafe has two, separately functioning, temperature sensors for added safety.

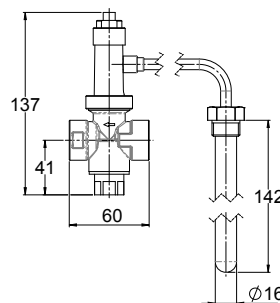
LK 519 ThermoSafe safety relief valve is installed on the outlet pipe of water heaters. The inlet pipe is recommended for cooling coils as such an installation would protect the armature from impurities caused by lime scale and other deposits. The arrow on the valve housing indicates the direction of the flow. The sensor pocket is screwed into the designated connection on the boiler. It is easier to install if the sensors are first removed from the pocket.

The installation should be checked regularly. It is necessary to clean the valve seat in order to remove foreign particles and deposits. To activate the manual discharge and thereby cleaning the seal seat, press a few times on the red button on top of the valve.

VALVE CHARACTERISTICS



LK 519 - FEMALE THREAD / MALE THREAD



Article no.	Dimension	Weight kg
091714	F ¾" / M ½"	0.7

LK 700/705 AeroMat



TECHNICAL DATA

Working temperature	Min. +5°C/Max. +130°C
Max. working pressure	1.6 MPa (16 bar)
Media	Water - Glycol/Ethanol mixture max. 50%
Thread standard	G - male thread, G - female thread
Material, body	Stainless Steel EN 10088 1.4301
Material, ball valve	Brass EN 12165 CW617N, externally sandblasted and nickel-plated. Chrome ball
Material, sealing	P.T.F.E

The installation should be checked regularly. Sediments around the air outlet show that the float vent needs to be cleaned.

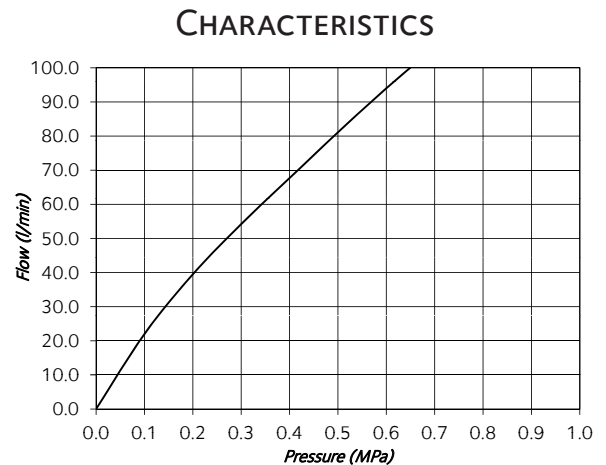
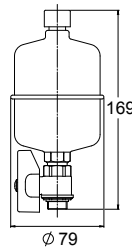
CLEANING THE FLOAT VENT VALVE

Close the shut-off valve and dismantle the float vent. Remove the black protective cap over the air outlet and unscrew the threaded union part underneath. Check that the outlet is free from impurities. If needed, clean with compressed air or cleaning needle. Clean the float vent by flushing it through with hot water from the top so that any impurities and sediments are removed. Reassemble the float vent valve in the reverse order.

LK 700 and 705 AeroMat are automatic free floating air vent valves suitable for heating and cooling systems where pressure, temperature or media place high performance demands on the air vent valve.

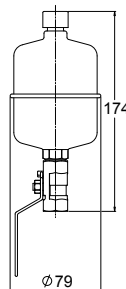
The float vent valve is mounted vertically at a high point in the system. The shut-off valve is to be installed first and thereafter the float vent valve. The system should be flushed through and pressurized before mounting the float vent and opening the shut-off valve. Threads towards the system and the float vent are sealed in the usual manner.

LK 700 - MALE THREAD



Article no.	Dimension	Note	Weight kg
094107	M 3/8"	without shut-off valve	0.4
4845228	M 3/8"	with shut-off valve	0.5

LK 705 - FEMALE THREAD



Article no.	Dimension	Note	Weight kg
4845244	F 3/8"	with shut-off valve	0.5

Transition Fittings

TECHNICAL DATA

Material, Union parts	Red brass, according to DIN 1705, ISO 1338
Material, Nuts	Brass
Material, Gaskets	Aramid fibre (type KLINGERSil C-4400)

MALE THREAD / ROTATING NUT



Article no. Union part	Article no. Nut	Article no. Gasket	Dimension Male thread	Dimension Rotating nut
051019	056093	013032	R 1/2"	G 3/4"
051050	056082	013035	R 3/4"	G 1"
051051	051045	013010	R 1"	G 1 1/4"
051063	051062	013038	R 1 1/4"	G 1 1/2"
051072	051064	013017	R 1 1/2"	G 2"

FEMALE THREAD / ROTATING NUT



Article no. Union part	Article no. Nut	Article no. Gasket	Dimension Female thread	Dimension Rotating nut
051039	056093	013032	Rp 3/8"	G 3/4"
051081	056082	013035	Rp 1/2"	G 1"
051082	051045	013010	Rp 3/4"	G 1 1/4"
051083	056023	013038	Rp 1"	G 1 1/2"
051084	051064	013017	Rp 1 1/4"	G 2"
051085	051078	013033	Rp 1 1/2"	G 2 1/4"
051086	051079	013034	Rp 2"	G 2 3/4"

INTERNAL SOLDER / MALE THREAD



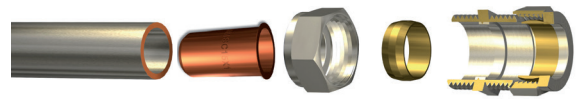
Article no. Threaded Union part	Dimension Internal solder	Dimension Male thread
2008126	15 mm	R 3/8"
2008134	15 mm	R 1/2"
2008142	15 mm	R 3/4"
2008209	18 mm	R 1/2"
2008217	18 mm	R 3/4"
2008233	22 mm	R 1/2"
2008241	22 mm	R 3/4"
2008258	22 mm	R 1"
051095	28 mm	R 1/2"
2008282	28 mm	R 3/4"
2008290	28 mm	R 1"
2008308	28 mm	R 1 1/4"
2008324	35 mm	R 1"
2008332	35 mm	R 1 1/4"
051096	35 mm	R 1 1/2"
051097	42 mm	R 1 1/4"
2008381	42 mm	R 1 1/2"
051098	42 mm	R 2"
051099	54 mm	R 1 1/2"
2008423	54 mm	R 2"

INTERNAL SOLDER / ROTATING NUT



Article no. Union part	Article no. Nut	Article no. Gasket	Dimension Female thread	Dimension Rotating nut
051015	056093	013032	15 mm	G 3/4"
051008	056093	013032	18 mm	G 3/4"
051101	056087	013062	18 mm	G 1"
051046	056082	013035	22 mm	G 1"
051047	051045	013010	28 mm	G 1 1/4"
051066	056023	013038	35 mm	G 1 1/2"
051067	051064	013017	42 mm	G 2"
051068	051065	013038	54 mm	G 2 1/2"

Assembly Instructions for Compression Fittings



Compression fittings are produced in high quality brass. As any copper-based material, brass is potentially subject to stress corrosion cracking. When compression fittings are used in cooling systems, this risk for stress corrosion cracking may be higher than in heating applications. This is due to the development of moisture that can contain some amount of ammonia or its derivatives.

The following good-installation practice shall be used when installing compression fittings in cooling systems in order to eliminate or, at least, to minimize the risk for stress corrosion cracking:

- Lubricate the compression fitting before installation.
- Only use box spanners during installation.
- Tighten first by hand and then with a box spanner. Do not overtighten. Spanner tightening as per the table below.

- After the compression fitting is tightened, wrap it by using an "ammonia-free" impervious tape. This will protect the nut against moisture. Please, consider that certain insulation materials develop ammoniacal derivatives - contact the manufacturer of the insulation material when in doubt.

Soft pipes are to be fitted with a support sleeve.

- Soft copper and steel pipes = Use a type SC support sleeve
- PEX pipes = Use a type WP support sleeve.

FOR FITTING WITH REDUCTION 68:

First tighten the nut until the chamfer "fails" and a "crack" is heard. Then tighten the nut further until a light resistance is felt, plus number of turns as per the table value corresponding to the reduced dimension. The reduction is not intended to be used on PEX pipes.

TIGHTENING - NUMBER OF TURNS

Outer Diameter	Copper Pipe	Soft Steel Pipe	Stainless Steel Pipe	Plastic Pipe	Spanner Flat Width
8	1¼	¾	¾		16.0
10	1¼	¾	¾	2	18.3
12	1¼	¾	¾	2	20.5
15	1¼	¾	¾	1¼	24.5
16	1¼	¾	¾	1¼	25.6
18	1¼	¾	¾	1¼	27.6
22	1	¾	¾	1½	32.8
28	¾	¾	½	1½	39.2
35	¾	½	½		46.9
42	¾	½	½		55.0
54	¾	½	½		70.2

Media

The Kvs values read from the capacity diagrams in this product catalogue are valid when water is the medium. The addition of glycol affects the viscosity and the heat

transfer coefficient which should be taken into account when selecting valve dimension. For mixtures with 30-50% glycol a valve with the nearest higher Kvs value should be selected.

The LK Group

- FOUR BUSINESS AREAS



Heating & Plumbing

LK Systems is one of Scandinavia's leading heating and plumbing suppliers and provides systems developed by the company itself for water heating, underfloor heating, tap water and radiator heating. The company is a market leader in several of these areas. **LK Systems AS** and **LK Systems OY** are independent companies in Norway and Finland.

LK Prefab designs and manufactures prefabricated constructions for drains as well as piping for heating and tap water.



PEX-Pipes

LK Pex – High-tech manufacturing of plastic pipes in PE-Xa, PE-RT and Softpex quality. The pipes are provided to the heating and plumbing industry throughout the world. LK Pex also supplies sister companies with PE-Xa-pipes for installation in underfloor heating and tap water systems.



Industrial & Marine Valves and Strainers

LK Valves develops and manufactures industrial valves, filters and actuators for the global marine industry. A production plant, **LK Valves Co. Ltd.**, has been established in Changzhou, China as well as a sales office, **LK Valves Asia Pte. Ltd.**, in Singapore.



Energy Saving Products and Valves

LK Armatur is Scandinavia's leading manufacturer of valves, components and prefabricated heating, water and sanitation products for the European OEM market. In addition to designing and manufacturing its own products the company also markets a complementary range of trade products. LK Armatur's products are mainly used for water heating systems, heating installations and equipment for hospitals and large kitchens. There is also an energy-saving range that is used in all kinds of hydronic heating systems.

A production facility for the prefabrication of pipes, **LK Armatur d.o.o.**, has been established in Zrenjanin, Serbia.



www.lkarmatur.se

Garnisonsgatan 49 • SE-254 66 Helsingborg • Sweden
Phone: +46 (0)42-16 92 00 • Fax: +46 (0)42-16 92 20
info@lkarmatur.se • order@lkarmatur.se
www.lkarmatur.se