TA-MATIC 3400

Thermostatic mixing valve for domestic hot water

HEIMEIER

Pressurisation & Water Quality › Balancing & Control › Thermostatic Control

ENGINEERING ADVANTAGE

Thermostatic mixing valve for control of domestic hot water systems in appartment blocks with or without hot water circulation. Perfect in systems with circulation pump.

Temperature range
The valve is available in three setting ranges 20-30°C, 30-45°C and 45-65°C.

Soldering connection
For easy installation.

Technical description

Application:
Domestic hot water systems

Function:
The TA-MATIC 3400 is intended mainly as a central mixing unit for domestic hot water systems in apartment buildings, in systems with or without hot water circulation.
It works best if the system has a circulation pump. If the system has a circulation pump, the unit can also be used as a central mixer for shower and bath facilities.

Dimensions:
DN 20-50

Pressure class:
PN 10

Temperature:
Max. working temperature: 90°C

Temperature range:
Each size can be supplied with three standard temperature settings: 25°C, 40°C or 55°C.
Factory-set standard temperatures can be adjusted within the limits: 20-30°C, 30-45°C, and 45-65°C.

Material:
Valve body: Gunmetal (SS 5204)
Seat: Stainless steel
Expansion medium in the thermostat sensing element are gaseous hydrocarbon, wax and pulverized copper.

Marking:
TA-MATIC 3400, JRGumat PN10 and dimension (ex. 32 • 1 ¼).

Connections:
Soldering connections are ordered separately.
The mains connection is included in the delivery.

Packaging:
The packaging of the TA-MATIC can be used to provide good insulation against heat losses.

General

Centrally controlled water mixer temperature increases safety and comfort and saves energy.

Comfort
Desired water temperature just by turning the tap. No other adjustment needed.

Safety
If the cold water supply fails for any reason, the hot water supply shuts down automatically to a level (drop leakage) where the mixed water will not cause scalding. The TA-MATIC 3400 improves the safety of any hot water installation.

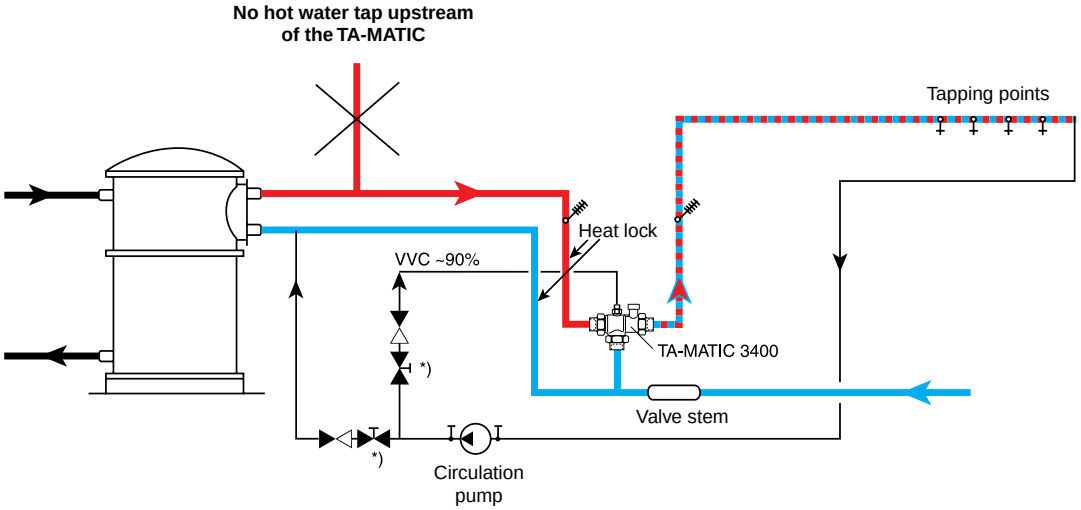
Energy saving
1. No water wastage while temperature is adjusted.
2. The normal temperature in the hot water pipes is considerably lower in TA-MATIC systems than in conventional systems. Heat loss decreases substantially.

Ordering example

To order, specify size (DN) and standard temperature plus Article No.
Example: TA-MATIC 3400 - 32/55°C, Article No 52 740-533.
Data can be obtained from the product tables.

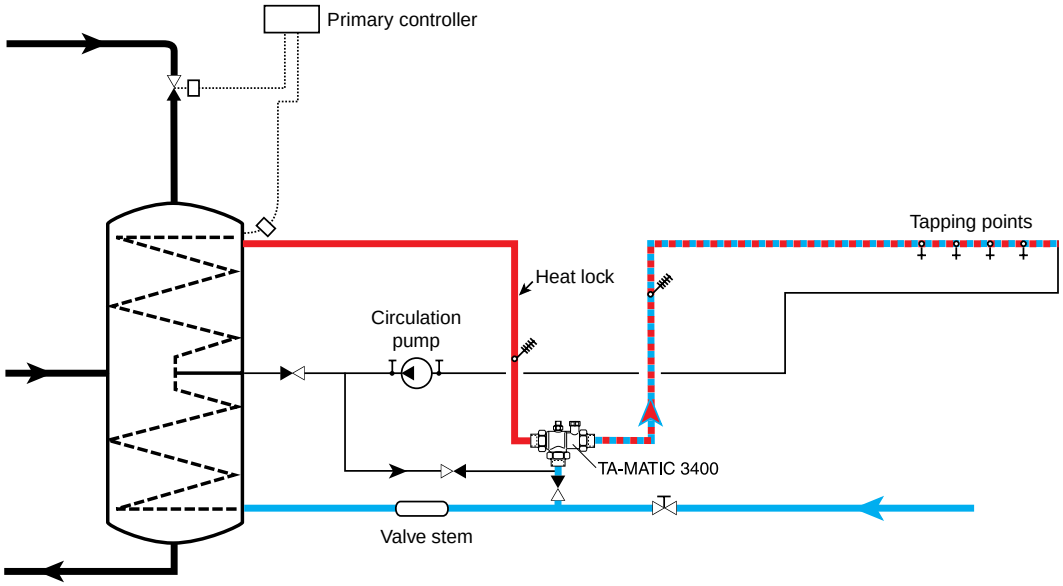
Application example

Example of hot water control from the boiler
System with constant circulation losses.



To achieve a heat lock, the TA-MATIC must be installed at less than half the height of the boiler.
*) Alternatively, install two STAD, two TRIM or two STK.

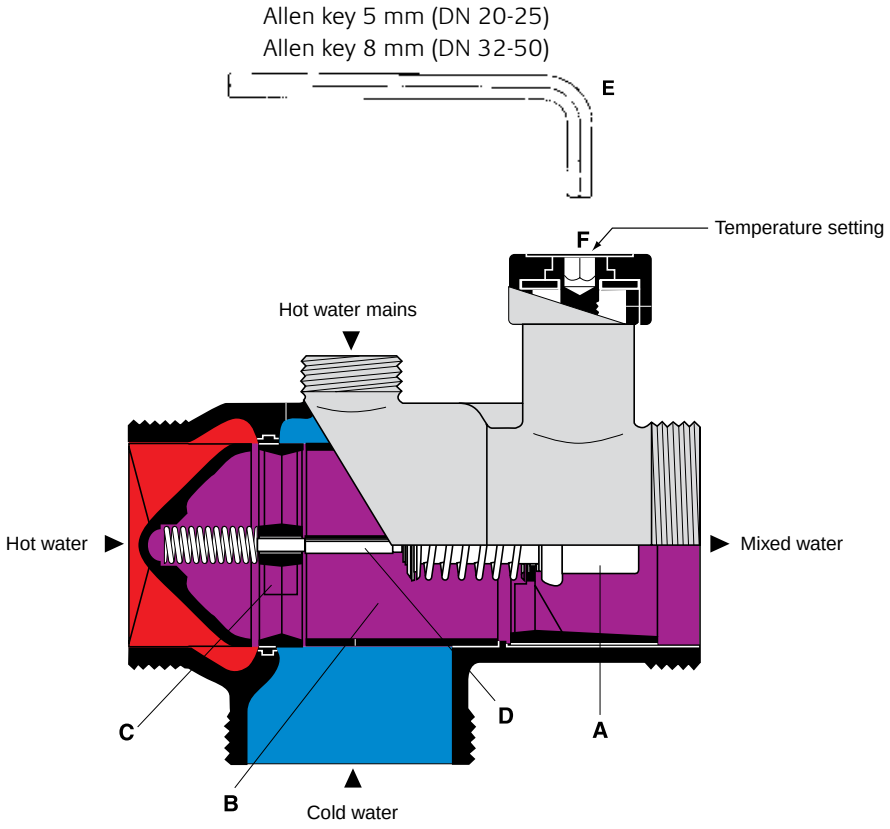
TA-MATIC 3400 as safety mixer in district heating systems
Install the TA-MATIC upstream of the valve stem to avoid circulating water being drawn back through the preheater and being warmed before reaching the cold-water port of the TA-MATIC. A mains outlet should be provided downstream of the check valve to the TA-MATIC cold water inlet.
The temperature setting of TA-MATIC should be higher than the setting of the primary controller.



Function

The mixing valve is a proportional controller.
The high thermostat sensitivity and short valve plug stroke ensure a mixing valve that reacts rapidly to incorrect thermostat temperature.
The thermostat is fitted at the valve outlet and controls a balanced cylindrical plug, which mixes hot and cold water flow to obtain the desired temperature. If the cold water supply fails, the hot water supply shuts down automatically to a level (drop leakage) where the mixed water will not cause scalding.
High water temperature plus hard water (dH°>20) can impair the function of the valve.

Fig. 1
Thermostat **A** is located in mixing chamber **B**. It is sensitive to all changes to the selected water temperature, and plug **C** acts immediately through the setting spindle **D**, which controls the hot and cold water supply.



Change of standard temperature

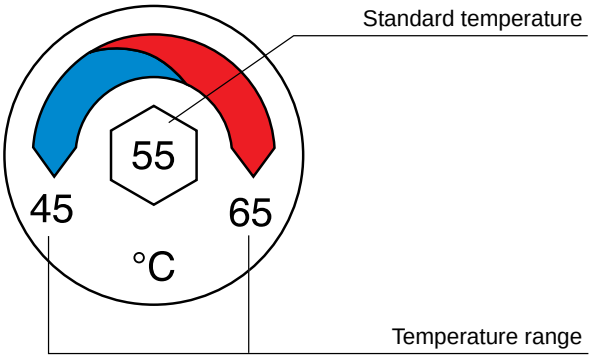
The TA-MATIC 3400 mixing valve has a thermostat set to one of the three standard temperature ranges.
The factory-set standard temperature is indicated on the temperature plate (Fig. 2). Different temperature settings are limited to the specified range and can be changed as follows:

Insert Allen key E in the centre of the temperature plate **F** (Fig. 1). **NOTE!** The temperature plate must not be removed.
Turning the screw clockwise increases the water temperature and turning it anticlockwise reduces it.
The volumetric flow must be in accordance with the diagram.

The hot water temperature must be at least 5°C above the thermostat setting.

Factory-set standard temperature [°C]	Temperature range [°C]	One full turn of the Allen key changes the temperature.	
		DN 20-25 (3/4"-1")	DN 32-50 (1 1/4"-2")
25	20-30	approx. 6K	approx. 4K
40	30-45		
48	36-53		
55	45-65		

Fig. 2
Example of the temperature plate.



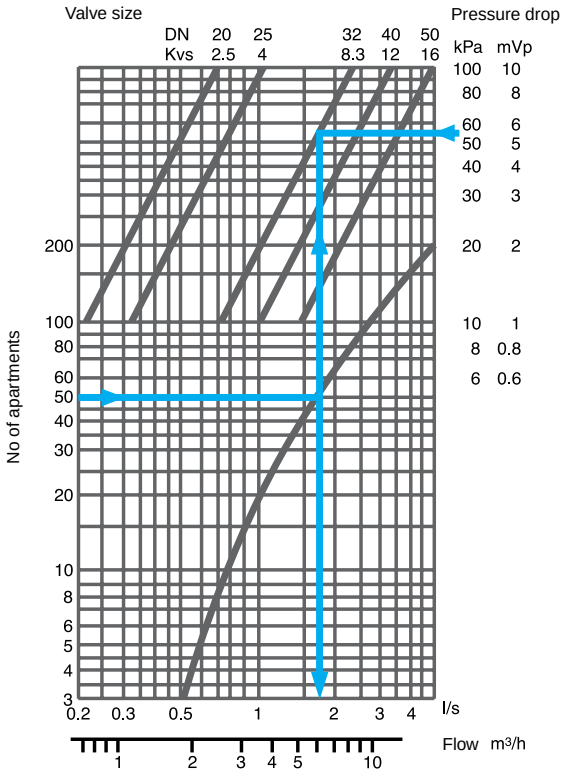
Determination of heat loss

To determine heat loss in systems with different sizes, use the table.

DN in mm Cu pipes	Insulation thickness in mm with heat transfer capacity of:	Heat loss in Watts per meter at the following differences between ambient temperature and hot water at:					
	0,035W/mK	20K	25K	30K	40K	50K	60K
22	20	3,75	4,70	5,64	7,55	9,46	11,37
28	30	3,53	4,42	5,31	7,10	8,89	10,68
35	30	4,04	5,05	6,07	8,20	10,15	12,20
42	40	3,92	4,90	5,58	7,86	9,83	11,81
54	50	3,98	4,97	5,97	7,97	9,97	11,98

The packaging of the TA-MATIC can be used to provide good insulation against heat losses.

Sizing



A standard apartment corresponds to a flow of 0,7 l/s.

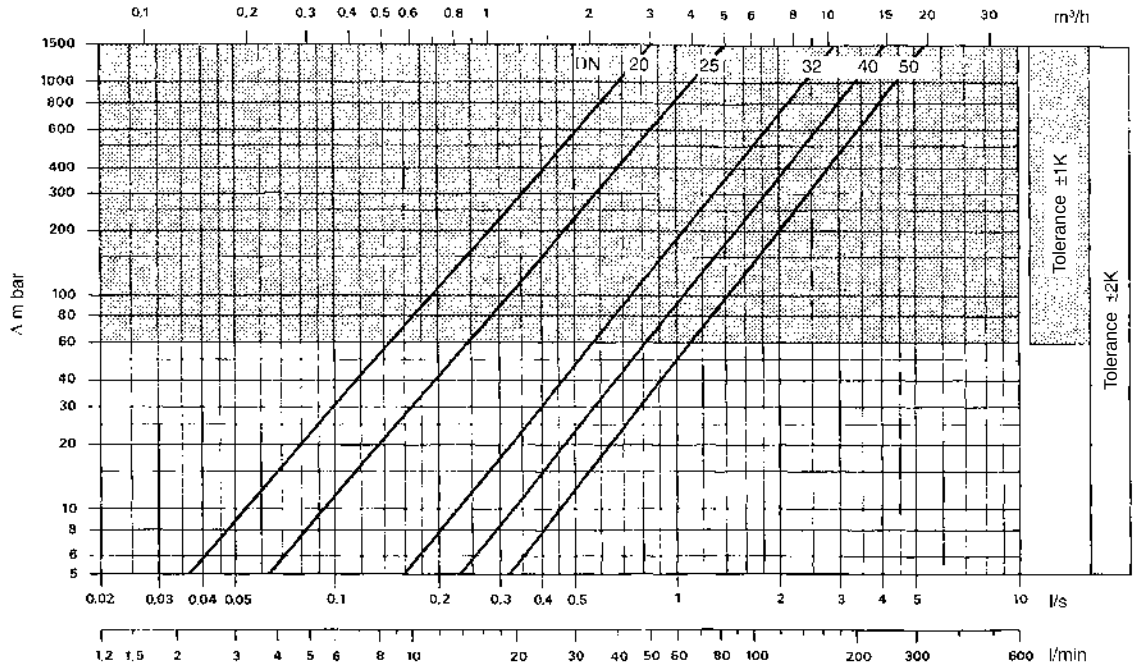
In the design diagram for the TA-MATIC 3400, hot water flow is calculated according to BFS 1995:17.
For safety, the mixing valve must be installed in accordance with the installation instructions.

Example:
The diagram shows choice of valves for a building with 50 apartments.
The diagram gives:

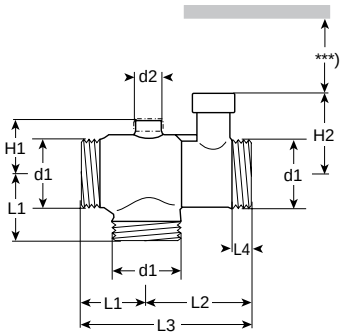
Water flow: 1.8 l/s
Pressure drop TA-MATIC: 55 kPa
Choose valve DN 32, Kvs = 8.3

If several alternative valve sizes are obtained, choose the one that results in the highest pressure drop.

Capacity diagram



TA-Matic 3400



Excl. couplings, incl. gaskets

For Cu pipe Ø22 and mains connection for Cu pipe Ø12

Article No	EAN	DN	°C*	°C**	d1	d2	L1	L2	L3	L4	H1	H2	Kg
52 740-221	7318792862304	20	25	20-30	G1 1/4	G1/2	40	60	100	10,5	32	49	0,7
52 740-421	7318792863301	20	40	30-45	G1 1/4	G1/2	40	60	100	10,5	32	49	0,7
52 748-421		20	48	36-53	G1 1/4	G1/2	40	60	100	10,5	32	49	0,7
52 740-521	7318792864308	20	55	45-65	G1 1/4	G1/2	40	60	100	10,5	32	49	0,7

For Cu pipe Ø28 and mains connection for Cu pipe Ø18

Article No	EAN	DN	°C*	°C**	d1	d2	L1	L2	L3	L4	H1	H2	Kg
52 740-226	7318792862502	25	25	20-30	G1 1/2	G3/4	43	67	110	11	36	51	0,9
52 740-426	7318792863509	25	40	30-45	G1 1/2	G3/4	43	67	110	11	36	51	0,9
52 748-426		25	48	36-53	G1 1/2	G3/4	43	67	110	11	36	51	0,9
52 740-526	7318792864506	25	55	45-65	G1 1/2	G3/4	43	67	110	11	36	51	0,9

For Cu pipe Ø35 and mains connection for Cu pipe Ø18

Article No	EAN	DN	°C*	°C**	d1	d2	L1	L2	L3	L4	H1	H2	Kg
52 740-233	7318792862700	32	25	20-30	G2	G3/4	52	78	130	11,5	41	75	1,6
52 740-433	7318792863707	32	40	30-45	G2	G3/4	52	78	130	11,5	41	75	1,6
52 748-433		32	48	36-53	G2	G3/4	52	78	130	11,5	41	75	1,6
52 740-533	7318792864704	32	55	45-65	G2	G3/4	52	78	130	11,5	41	75	1,6

For Cu pipe Ø42 and mains connection for Cu pipe Ø18

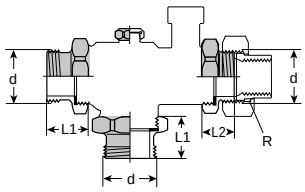
Article No	EAN	DN	°C*	°C**	d1	d2	L1	L2	L3	L4	H1	H2	Kg
52 740-241	7318792862908	40	25	20-30	G2 1/4	G3/4	58	92	150	12,5	50	77	2,1
52 740-441	7318792863905	40	40	30-45	G2 1/4	G3/4	58	92	150	12,5	50	77	2,1
52 748-441		40	48	36-53	G2 1/4	G3/4	58	92	150	12,5	50	77	2,1
52 740-541	7318792864902	40	55	45-65	G2 1/4	G3/4	58	92	150	12,5	50	77	2,1

For Cu pipe Ø54 and mains connection for Cu pipe Ø18

Article No	EAN	DN	°C*	°C**	d1	d2	L1	L2	L3	L4	H1	H2	Kg
52 740-251	7318792863103	50	25	20-30	G2 3/4	G3/4	70	110	180	14,5	60	85	3,4
52 740-451	7318792864100	50	40	30-45	G2 3/4	G3/4	70	110	180	14,5	60	85	3,4
52 748-451		50	48	36-53	G2 3/4	G3/4	70	110	180	14,5	60	85	3,4
52 740-551	7318792865107	50	55	45-65	G2 3/4	G3/4	70	110	180	14,5	60	85	3,4

*) Standard mixing temperature
**) Adjustable range
***) Minimum clearance 100 mm

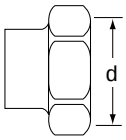
TA-Matic 3480 – Transition pieces



Complete kit, incl. gaskets.
For exchange of 3350 (older blending valve) to TA-MATIC 3400.

Article No	EAN	DN	d	L1	L2	R	Kg
52 744-020	7318792868702	20	G1 1/4	30,5	40,5		0,49
52 744-025	7318792868801	25	G1 1/2	38	34		0,76
52 744-032	7318792868900	32	G2	39,5	33,5		1,00
52 744-040	7318792869006	40	G2 1/4	44,5	30,5	2 pieces	1,18
52 744-050	7318792869105	50	G2 3/4	44,5	34,5	2 pieces	1,72

Accessories



Soldering connection

Article No	EAN	d	Valve DN	For Cu pipe Ø
52 742-020	7318792867002	G1 1/4	20	22
52 742-025	7318792867101	G1 1/2	25	28
52 742-032	7318792867200	G2	32	35
52 742-040	7318792867309	G2 1/4	40	42
52 742-050	7318792867408	G2 3/4	50	54

Soldering connection for hot water circulation

Article No	EAN	d	Valve DN	For Cu pipe Ø
52 742-012	7318792866807	G1/2	20	12
52 742-018	7318792866906	G3/4	25-50	18

Gasket kit for TA-MATIC 3400
The gasket kit consists of 3 gaskets and 1 plastic pipe insert for the main connection.

Article No	EAN	DN
52 743-320	7318792868108	20
52 743-325	7318792868207	25
52 743-332	7318792868306	32
52 743-340	7318792868405	40
52 743-350	7318792868504	50

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