ESBE SYSTEM UNITS

CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

GRA211, GRA231 | GRA212, GRA232 | GRA261 | GRF211 | GRF221

GRA311 | GRA361 | GRA394

PRODUCT DESCRIPTION

The ESBE Circulation unit series GRA200 and GRA300 function as mixing units by mixing the primary circuit with the return from secondary circuit to achieve the desired flow temperature. The secondary circuit will have a constant flow rate, which is independent of the main circuit.

The units are supplied with a rotary 3-way valve which features a progressive flow characteristic. The valve's progressive characteristics gives high controllability in versatile system combinations, such as differing high temperature sources and low temperature emitters. Due to the valve's progressive characteristic, each variant of GRAx00 (DN20, DN25 & DN32) cover greater variation of heat demands (system sizes/structure) and also counteracts controller hunting during operation.

If equipped with an actuator, the temperature control mixing function, is driven by a signal from an external controller. The mixed temperature is then a result of the controller's setting parameters. For example, if the external controller is a weather compensated controller, the mixed temperature will be calculated based on the controller's heating curve settings. The groups are used in systems with controllers, and it depends on the controller type and functions and which level of comfort that will be delivered.

Products are equipped with two shut-off valves with colour coded thermometers, a check valve placed on the return line from the heating circuit and an insulation shell (except GRA394).

The units have adjustable wall bracket which simplifies mounting onto the wall.

KEY BENEFITS

- High class insulation of hydronic parts
- Compact design
- Pre tested and ready to use
- Easy to install with adjustable wall bracket
- Ready for 180mm pumps - applies to GRF200
- Symmetric design for left/right pump placement - applies to GRA200 and GRF200
- Designed to last and perform
- High-end product finish

VERSIONS

ESBE mixing function circulation units are available in three different version; standard design with and without pump, and a compact design for areas with limited space. For both standard and compact design, you can select Wilo pump depending on controlling preferencies. The compact version can be delivered with and without insulation shell and actuator.

VERSION OVERVIEW

Part \ Version	GRA210	GRA230	GRA260	GRA310	GRA360	GRA390	GRF210	GRF220
Pump	X	X	X	X	X	X	–	–
Actuator	X	X	–	X	–	–	–	X
Ball valves	X	X	X	X	X	X	X	X
Check valve	X	X	X	X	X	X	X	X
Insulation shell	X	X	X	X	X	–	X	X
Additional ball valves	–	–	X	–	X	–	–	–
Balancing valve	–	–	X	–	X	–	–	–

SERIES GRA200 - STANDARD DESIGN WITH PUMP

The ESBE series GRA200 is a circulation unit equipped with a pump and a 3-way rotary mixing valve with progressive characteristic. The series comes in two sizes, DN25 and DN32 with the possibility of pump choice, Wilo or Grundfos.

Series GRA210 is delivered with an assembled 3-point 230V actuator type ARA661.

Series GRA230 is delivered with an assembled proportional 24V AC/DC actuator type ARA639.

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CIRCULATION UNIT
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The Series GRA210 and GRA230 has an ESBE QuickFIT interface between actuator and valve that allows for assembly or disassembly of the actuator from the valve without any tools. For both series you can choose between a Wilo or Grundfos pump. The Wilo PARA pump can be set to constant speed, vaiable pressure or constant pressure. The Grundfos UPM3 Auto pump comes with AutoADAPT feature which adjust the available pump pressure and the flow to the current system requirements.

Series GRA260 is equipped with a Wilo Stratos PICO pump with a high level of connectivity. It can easily be monitored and controlled remotely via a Building Management System (BMS). The module BMS is sold separately; please see related accessories. Series GRA260 is delivered without any assembled actuator or controller. The valve comes with a knob for manual adjustments but can be equipped with your preferred actuator or controller. Suitable ESBE actuators and controllers are available as accessories. Two ball valves and one balancing valve to be assembled at suitable location for flow adjustment is included.

SERIES GRA300 - COMPACT DESIGN WITH PUMP

The ESBE series GRA300 is a compact but powerful circulation unit design for applications where space matters, however there is no room for compromises. The series GRA300 is a DN20 circulation unit with performance equals the corresponding DN25 groups. This could be possible by adjusting the pump curves and consider the pressure losses in the group. By putting focus on performance, we achived the smallest circulation unit with unique pump curves which are covering low and high demands.

The series GRA310 is equipped with a Wilo pump which can be set to variable or constant pressure, and iPWM1/2. It is also equipped with 3-way rotary mixing valve with progressive characteristic and an assembled 3-point 230V AC actuator series ARA661. Series GRA310 also has an ESBE QuickFIT interface between actuator and valve that allows for assembly or disassembly of the actuator from the valve without any tools.

Series GRA360 is equipped with the same Wilo Stratos Pico pump as series GRA260 meaning a pump with a high level of connectivity. It can easily be monitored and controlled remotely via a Building Management System (BMS). The module BMS is sold separately; please see related accessories. Series GRA360 is delivered without any assembled actuator or controller. The valve comes with a knob for manual adjustments but can be equipped with your preferred actuator or controller. Suitable ESBE actuators and controllers are available as accessories. Two ball valves and one balancing valve to be assembled at suitable location for flow adjustment is included.

The series GRA390 is equipped with a Wilo PARA 15/6 which can be set to constant speed, variable pressure or constant pressure. It has a 3-way rotary mixing valve with progressive characteristic and come with a knob for manual adjustments, but can be equipped with your preferred actuator or controller. The GRA390 is the only version that isn't equipped with insulation shell.

SERIES GRF200 - STANDARD DESIGN WITHOUT PUMP

The ESBE series GRF200 is a circulation unit with mixing function, available in size DN25 and DN32, designed to be used with almost any 180mm pump available on the market. The circulation unit is equipped with an insulation shell which can be adjusted according to pump design, even if the pump is delivered with its own insulation. ESBE have put a lot of effort to make the adjustment process easy and clear, and to make the result of product adjustment like factory assembly.

The series GRF200 are equipped with a 3-way rotary mixing valve with progressive characteristic. It comes in two versions; GRF211 which can be equipped with your prefered actuator or controller, and GRF221 which comes with assembled 3-point 230V AC actuator series ARA661.

SERVICE AND MAINTENANCE

The circulation unit does not require any specific maintenance under normal conditions.

RELATED ACCESSORIES

ESBE Pump accessory

The pump in the GRB361 series can be supplemented with a separate module for control and operating status reporting.

The module is connected to the pump via the Wilo-Connectivity-Interface.

Art. No.	
66100800	GOP853 Wilo-connect module BMS

ESBE Actuator

When an actuator is preferred ESBE recommend two different variants; ARA661 3-point 230V AC or a ARA639 prop. 24V AC/DC. Equipped with an actuator the units adjust the heating water temperature to required temperature for the heating circuit based on a signal from an external controller. The mixed temperature is a result of the controller parameters setting. For example, if the external controller is a weather/ outdoor temperature compensated controller, the mixed temperature will be calculated based on the controller's heating curve settings. See separate data sheet for further detailed information.

Art. No.	
12520100	ARA639 Prop./Multi 24VAC 15-120s 6Nm
12101300	ARA661 3-point SPDT 230VAC 120s 6Nm

ESBE Controller

When a controller is preferred, ESBE recommend four different variants: CRA211, CRB211, CRC211 and CRD221.

Equipped with a controller the units itself adjust the heating water temperature to the required temperature for the heating circuit based on the heating curve or measured indoor/outdoor temperature, depending on the choice of ESBE controller. See separate data sheet for further detailed information.

Art. No.	
12721100	CRA211 Const. temperature Controller 5-95°C
12663100	CRB211 Indoor Controller
12821100	CRC211 Outdoor Controller
12684200	CRD221 Indoor/Outdoor Controller

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CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

ESBE Controller with pump control
When a controller with PWM pump control is preferred, ESBE recommend four different variants: CRA217, CRB217, CRC217 and CRD227.

Art. No.
12721700 _____ CRA217 Const. temperature Controller 5-95°C
12663700 _____ CRB217 Indoor Controller, cable
12665700 _____ CRB227 Indoor Controller, wireless
12821700 _____ CRC217 Outdoor Controller
12684700 _____ CRD227 Indoor/Outdoor Controller

ESBE Manifold
Manifolds for Series GRF200 and GRA200. See separate data sheet for further detailed information.

Manifolds for 1, 2, or 3 circulation units with integrated hydraulic separation.

Art. No.
66001100 _____ GMA411- for 1 unit
66001600 _____ GMA521 - for 2 units
66001700 _____ GMA531 - for 3 units

Manifold for 2, 3, 4 or 5 circulation units without integrated hydraulic separation function.

Art. No.
66001200 _____ GMA421- for 2 units
66001300 _____ GMA431 - for 3 units
66001400 _____ GMA441 - for 4 units
66001500 _____ GMA451 - for 5 units

Manifold for Series GRA300 without integrated hydraulic separation function. See separate data sheet for further detailed information.

Art. No.
66000500 _____ GMA321- for 2 units
66000600 _____ GMA331 - for 3 units

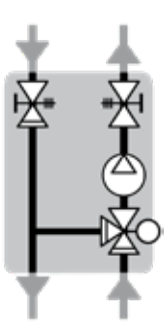
ESBE Manifold Box
Manifold Box for Series GRA300 with option of hydraulic separation easily set with a screw. See separate data sheet for further detailed information.

Art. No.
66000700 _____ GMB631 for 2 or 3 units

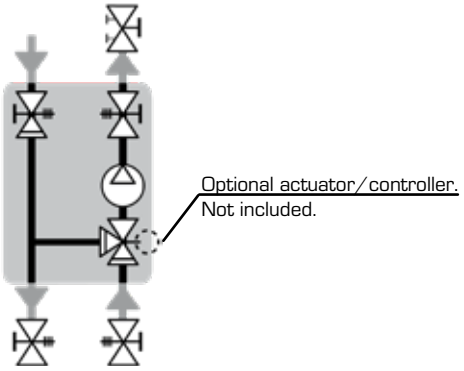
ESBE Balancing valve
ESBE Balancing valve series GOP830 is used to balance the flow in VVC, heating and cooling systems. See separate data sheet for further detailed information.

Art. No.
66101000 _____ GOP831 Balancing valve DN20
66101100 _____ GOP832 Balancing valve DN25
66101200 _____ GOP833 Balancing valve DN32

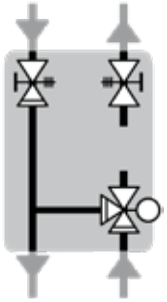
FLOW DISTRIBUTION



GRA2xx, GRA31x, GRA394



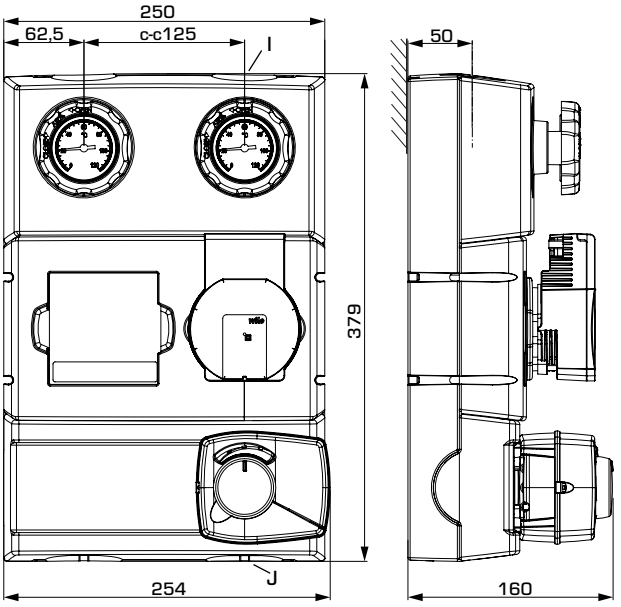
GRAx61



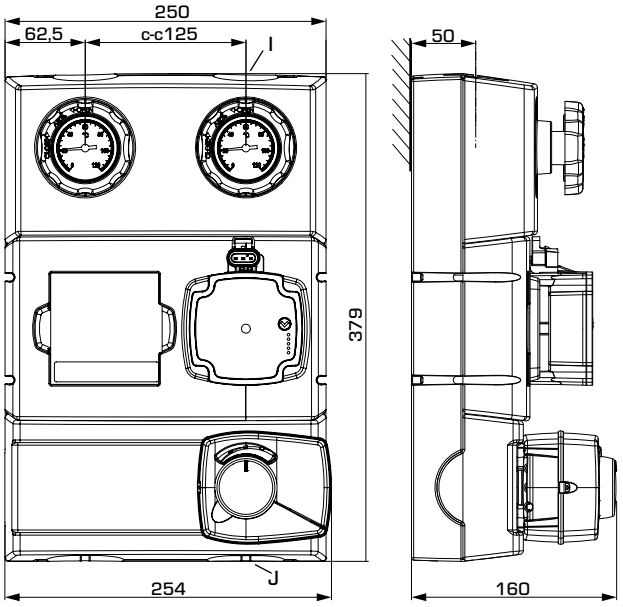
GRF221

CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

PRODUCT ASSORTMENT



GRA211, GRA231



GRA212, GRA232

SERIES GRA210

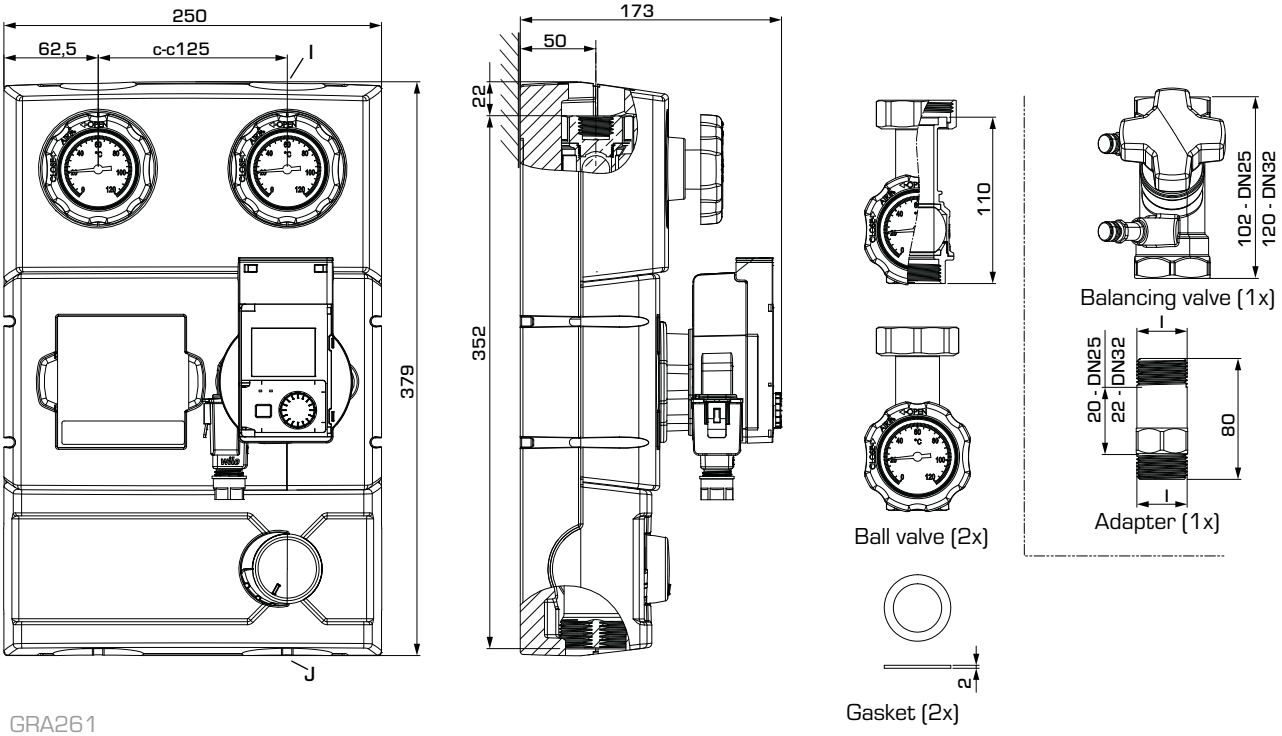
Art. No.	Reference	DN	Pump	Connections		Actuator type	Weight [kg]	Replaces
				I	J			
61042100	GRA211	25	Wilo PARA 25/6	G 1"	G 1½"	230V, 3 point control signal ARA661	5,8	61040100
61042200		32	Wilo PARA 25/8	G 1¼"	G 1½"		6,2	61040400
61042300	GRA212	25	Grundfos UPM3 AUTO 25-50	G 1"	G 1½"		5,9	61040500
61042400		32	Grundfos UPM3 AUTO25-70	G 1¼"	G 1½"		6,1	61040600

SERIES GRA230

Art. No.	Reference	DN	Pump	Connections		Actuator type	Weight [kg]	Replaces
				I	J			
61042500	GRA231	25	Wilo PARA 25/6	G 1"	G 1½"	24V, Proportional control signal ARA639	5,8	61043200
61042600		32	Wilo PARA 25/8	G 1¼"	G 1½"		6,2	61043300
61042700	GRA232	25	Grundfos UPM3 AUTO 25-50	G 1"	G 1½"		5,9	61043400
61042800		32	Grundfos UPM3 AUTO 25-70	G 1¼"	G 1½"		6,1	61043500

CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

PRODUCT ASSORTMENT

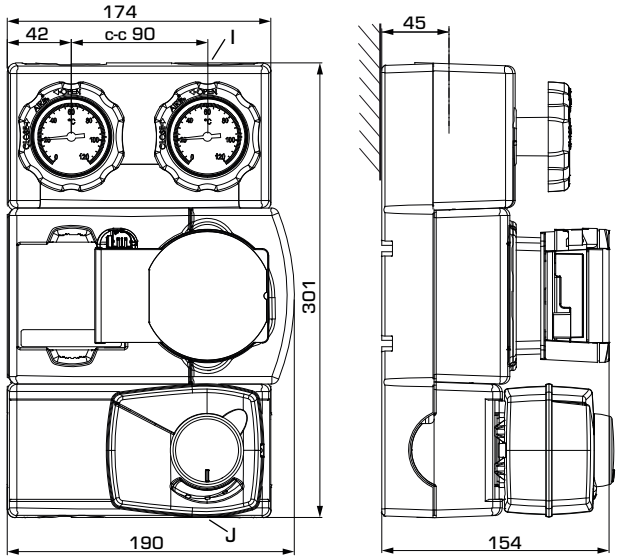


GRA261

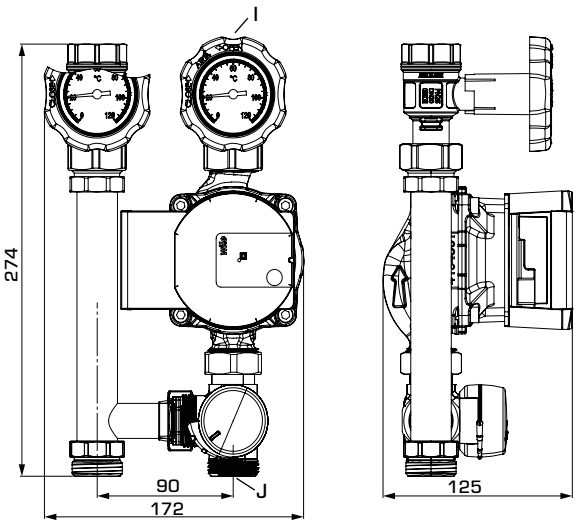
SERIES GRA260

Art. No.	Reference	DN	Pump	Connections		Weight [kg]	Note
				I	J		
61047100	GRA261	25	Wilo Stratos PICO 25/8	G 1"	G 1½"	7,6	2 Ball valves and 1 Balancing valve with adapters included. Without actuator.
61047200		32		G 1¼"	G 1½"	8,2	

CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00



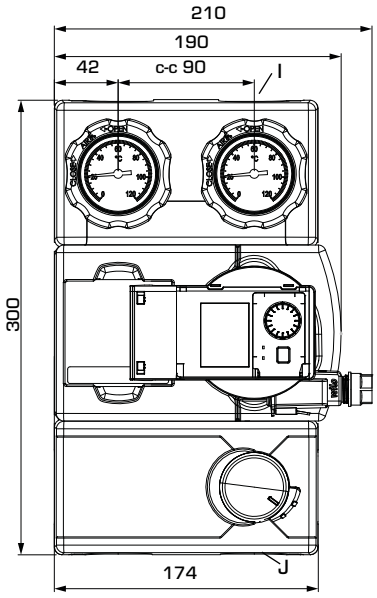
GRA311

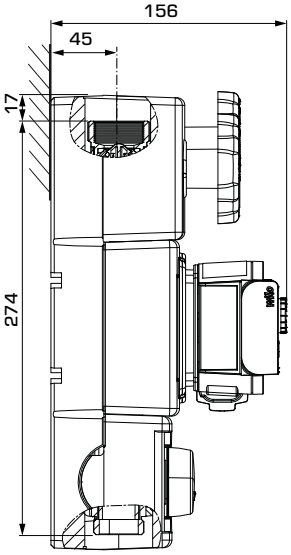


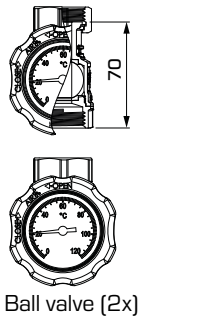
GRA394

SERIES GRA300

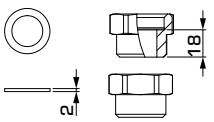
Art. No.	Reference	DN	Pump	Connections		Actuator type	Weight [kg]	Note
				I	J			
61043600	GRA311	20	Wilo PARA STG 15/8	G ¾"	G 1"	ARA661	4,5	Replaces 61043100
61045800	GRA394		Wilo PARA 15/6	G ¾"		–	3,4	Without actuator and insulation shell.



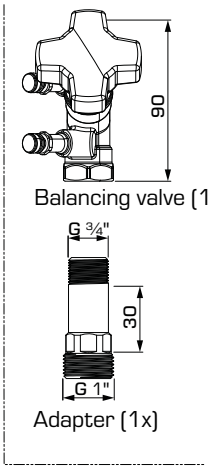




Ball valve (2x)



Gasket (4x) Adapter (2x)

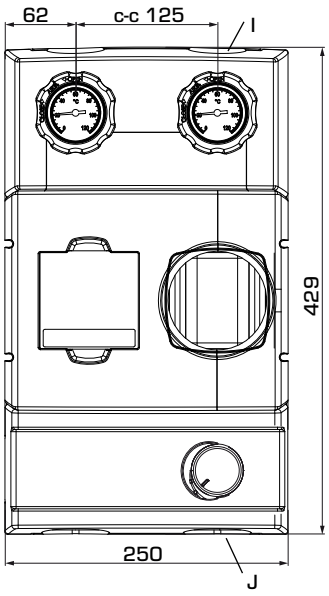


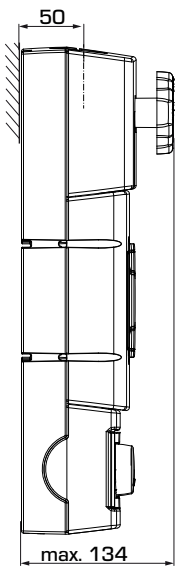
GRA361

SERIES GRA300

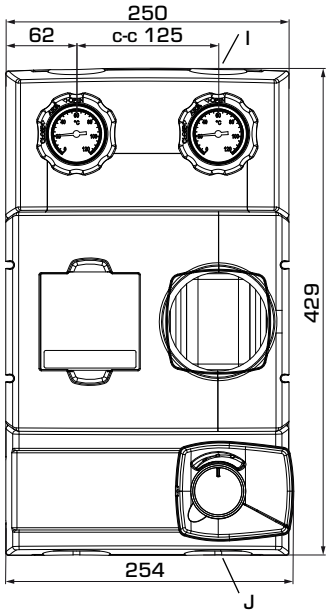
Art. No.	Reference	DN	Pump	Connections		Actuator type	Weight [kg]	Note
				I	J			
61043800	GRA361	20	Wilo Stratos 15/6	G 1"	G 1"	–	5,5	2 Ball valves and 1 Balancing valve with adapters included. Without actuator.

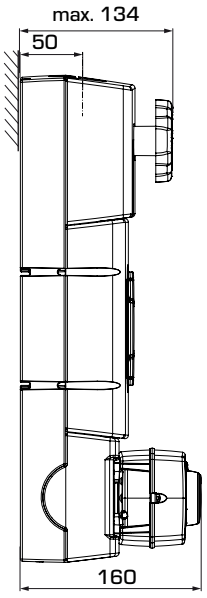
CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00





GRF211



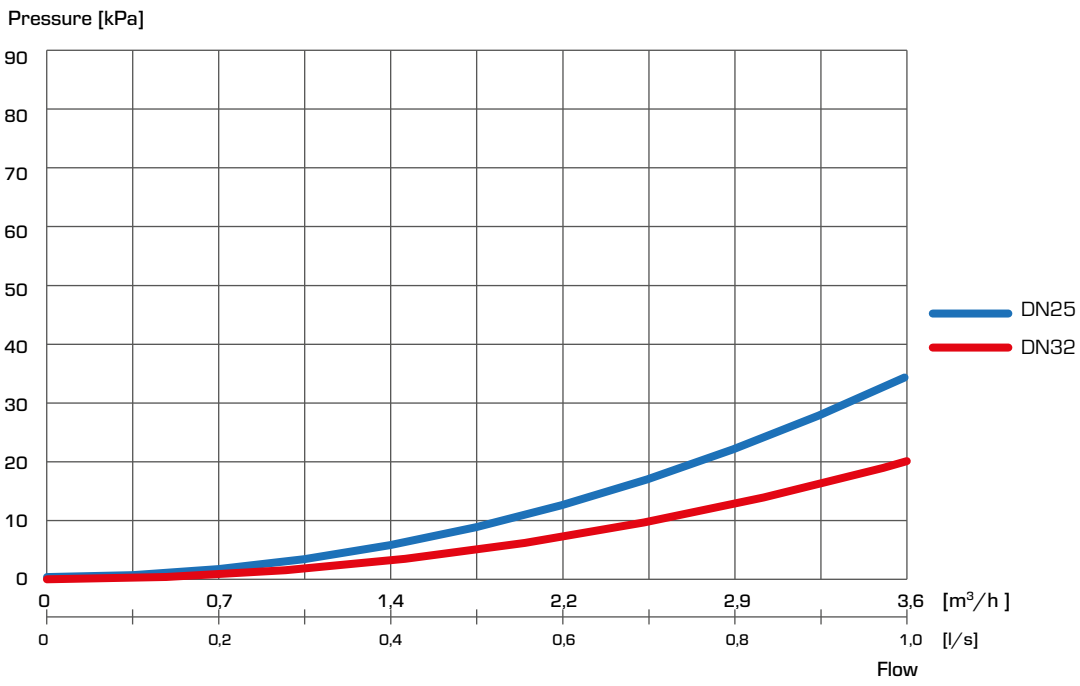


GRF221

SERIES GRF200

Art. No.	Reference	DN	Connections		Actuator type	Weight [kg]	Replaces	Note
			I	J				
61242100	GRF211	25	G 1"	G 1½"	–	3,5	61240100	Without pump
61242200		32	G 1¼"	G 1½"		3,7		
61242300	GRF221	25	G 1"	G 1½"	230V, 3 point control signal, ARA661	3,9	61241100	
61242400		32	G 1¼"	G 1½"		4,0		

DIMENSIONING, CIRCULATION UNIT CHARACTERISTICS - PRESSURE LOSSES GRF2X1



CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

TECHNICAL DATA Visit esbe.eu for further detailed information.

The Circulation unit, in general

Pressure class: PN 10
Working pressure: 1,0 MPa (10 bar)
Connections, Internal thread (G), ISO 228/1
External thread (G), ISO 228/1
Insulation: EPP λ 0,036 W/mK

EnEV2014

Media: Heating water (in accordance with VDI2035)
Water / Glycol mixtures, max. 50%.
Water / glycol mixtures are affecting the pump performance. In case of Applications where water / glycol mixtures are used, pump performance should be considered.

Series GRA211

Media temperature: max. +100°C
min. +5°C
Ambient temperature: max. +55°C
min. 0°C
Pump type, DN25: Wilo PARA 25-130/6-43/SC
DN32: Wilo PARA 25-130/8-75/SC
Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption – Wilo PARA 25/6: 3-43 W
– Wilo PARA 25/8 10-75 W
Enclosure rating: IP X4D
Insulation class: F
EEI (Energy Efficiency Index) - Wilo PARA 25/6: <0,20
- Wilo PARA 25/8: <0,21
Valve type: Mixing valve VRG432
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%
* Differential pressure 100kPa (1 bar)

Actuator type: ARA661
Control signal: 3-point
Power supply: 230 ± 10% V AC, 50 Hz
Power consumption: 5 VA
Running time 90°: 120s
Enclosure rating: IP41
Protection class: II

Material, in contact with water

Components: Brass, Cast iron, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, article 4.3

Series GRA212

Media temperature: max. +110°C
min. +5°C
Ambient temperature: max. +55°C
min. 0°C
Pump type, DN25: Grundfos UPM3 AUTO 25-50 130
DN32: Grundfos UPM3 AUTO 25-70 130
Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption – Grundfos UPM3 AUTO 25-50: 4-33 W
– Grundfos UPM3 AUTO 25-70 2-52 W
Enclosure rating: IP 44
Insulation class: N/A
EEI (Energy Efficiency Index): <0,20
Valve type: Mixing valve VRG432
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%
* Differential pressure 100kPa (1 bar)

Actuator type: ARA661
Control signal: 3-point
Power supply: 230 ± 10% V AC, 50 Hz
Power consumption: 5 VA
Running time 90°: 120s
Enclosure rating: IP41
Protection class: II

Material, in contact with water

Components of: Brass, Cast iron, Steel
Sealing material of: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, article 4.3

CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

TECHNICAL DATA Visit esbe.eu for further detailed information.

Series GRA231

Media temperature: max. +100°C
min. +5°C
Ambient temperature: max. +55°C
min. 0°C
Pump type, DN25: Wilo PARA 25-130/6-43/SC
DN32: Wilo PARA 25-130/8-75/SC
Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption - Wilo PARA 25/6: 3-43 W
- Wilo PARA 25/8 10-75 W
Enclosure rating: IP X4D
Insulation class: F
EEI (Energy Efficiency Index) - Wilo PARA 25/6: <0,20
- Wilo PARA 25/8: <0,21
Valve type: Mixing valve VRG432
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%

* Differential pressure 100kPa (1 bar)

Actuator type: ARA639
Control signal: proportional
Feedback signal: 2-10 V
Power supply: 24 ± 10% V AC/DC, 50/60 Hz
Power consumption - Operation, AC: 5 W
DC: 2,5 W
Power consumption - Dimensioning, AC: 11 VA
DC: 6 VA
Running time 90°: 15/30/60/120s
Enclosure rating: IP41
Protection class: II

Material, in contact with water

Components: Brass, Cast iron, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, artikel 4.3

Series GRA232

Media temperature: max. +110°C
min. +5°C
Ambient temperature: max. +55°C
min. 0°C
Pump type, DN25: Grundfos UPM3 AUTO 25-50 130
DN32: Grundfos UPM3 AUTO 25-70 130
Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption - Grundfos UPM3 AUTO 25-50: 4-33 W
- Grundfos UPM3 AUTO 25-70 2-52 W
Enclosure rating: IP 44
Insulation class: N/A
EEI (Energy Efficiency Index): <0,20
Valve type: Mixing valve VRG432
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%

* Differential pressure 100kPa (1 bar)

Actuator type: ARA639
Control signal: proportional
Feedback signal: 2-10 V
Power supply: 24 ± 10% V AC/DC, 50/60 Hz
Power consumption - Operation, AC: 5 W
DC: 2,5 W
Power consumption - Dimensioning, AC: 11 VA
DC: 6 VA
Running time 90°: 15/30/60/120s
Enclosure rating: IP41
Protection class: II

Material, in contact with water

Components: Brass, Cast iron, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, artikel 4.3

Series GRA261

Media temperature: max. +95°C
min. +5°C
Ambient temperature: max. +40°C
min. 0°C
Pump type: Wilo Stratos PICO 25/0,5-8-130
Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption: 3-75 W
Enclosure rating: IP X4D
Insulation class: F
EEI (Energy Efficiency Index): ≤0,23
Valve type: Mixing valve VRG432
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%

* Differential pressure 100kPa (1 bar)

Material, in contact with water

Components: Brass, Cast iron, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, artikel 4.3

CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

TECHNICAL DATA Visit esbe.eu for further detailed information.

Series GRA311, GRA394

Media temperature: max. +100°C
min. +5°C
Ambient temperature: max. +55°C
min. 0°C
Pump type, GRA311: Wilo PARA STG 15-130/8-60/0
GRA394: Wilo PARA 25-130/6-43/SCU
Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption: 2-60 W
Enclosure rating: IP X4D
Insulation class: F
EEI (Energy Efficiency Index): <0,20

Valve type: Mixing valve VRG438
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%
* Differential pressure 100kPa (1 bar)

Actuator type: ARA661
Control signal: 3-point
Power supply: 230 ± 10% V AC, 50 Hz
Power consumption: 5 VA
Running time 90°: 120s
Enclosure rating: IP41
Protection class: II

Material, in contact with water

Components: Brass, Cast iron, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, artikel 4.3

Series GRA361

Media temperature: max. +95°C
min. +5°C
Ambient temperature: max. +40°C
min. 0°C
Pump type: Wilo Stratos PICO 15/0,5-6-130
Power supply: 230 ± 10% V AC, 50/60 Hz
Power consumption: 3-40 W
Enclosure rating: IP X4D
Insulation class: F
EEI (Energy Efficiency Index): ≤0,18

Valve type: Mixing valve VRG438
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%
* Differential pressure 100kPa (1 bar)

Material, in contact with water

Components: Brass, Cast iron, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, artikel 4.3

CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

TECHNICAL DATA Visit esbe.eu for further detailed information.

Series GRF211

Media temperature: max. +100°C*
min. +5°C*
Ambient temperature: max. +60°C*
min. 0°C*
*consider data for choosen pump

Pump type: N/A
Valve type: Mixing valve VRG432
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%
* Differential pressure 100kPa (1 bar)

Material, in contact with water

Components: Brass, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

PED 2014/68/EU, article 4.3

Series GRF221

Media temperature: max. +100°C*
min. +5°C*
Ambient temperature: max. +55°C*
min. 0°C*
*consider data for choosen pump

Pump type: N/A
Valve type: Mixing valve VRG432
Max. differential pressure drop: 100kPa (1bar)
Close off pressure: 200 kPa (2 bar)
Leakrate in % of flow*: < 0,05%
* Differential pressure 100kPa (1 bar)

Actuator type: ARA661
Control signal: 3-point
Power supply: 230 ± 10% V AC, 50 Hz
Power consumption: 5 VA
Running time 90°: 120s
Enclosure rating: IP41
Protection class: II

Material, in contact with water

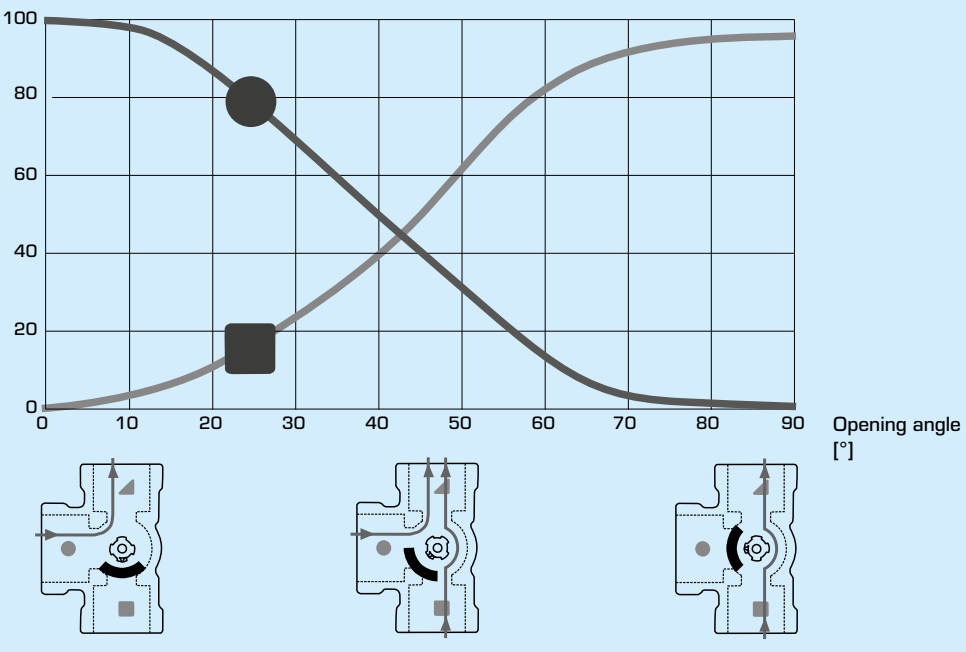
Components: Brass, Steel
Sealing material: PTFE, Aramid fibre, EPDM

Conformities and certificates

CE
LVD 2014/35/EU
EMC 2014/30/EU
RoHS3 2015/863/EU
ErP 2009/125/EU

PED 2014/68/EU, article 4.3

VALVE CHARACTERISTICS, MIXING VALVE VRG430



WIRING

Please see the Installation Instruction

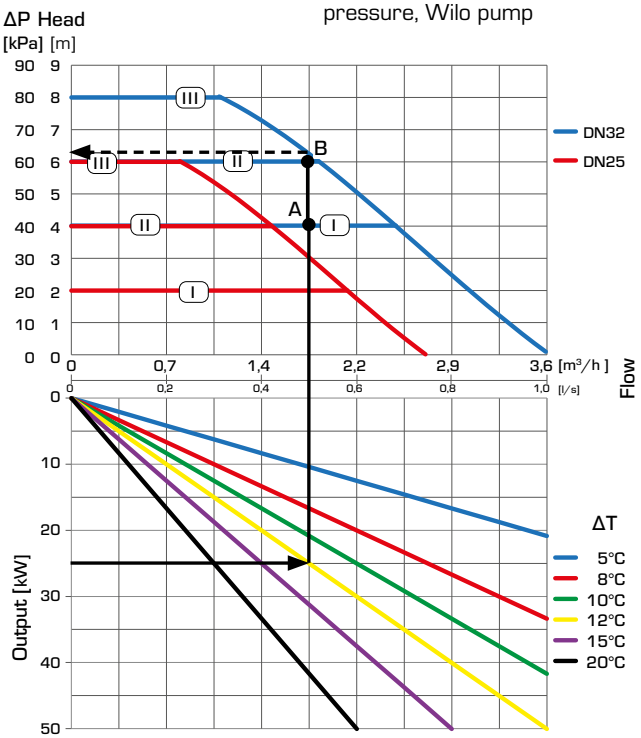
CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

DIMENSIONING, PUMP CAPACITY DIAGRAM

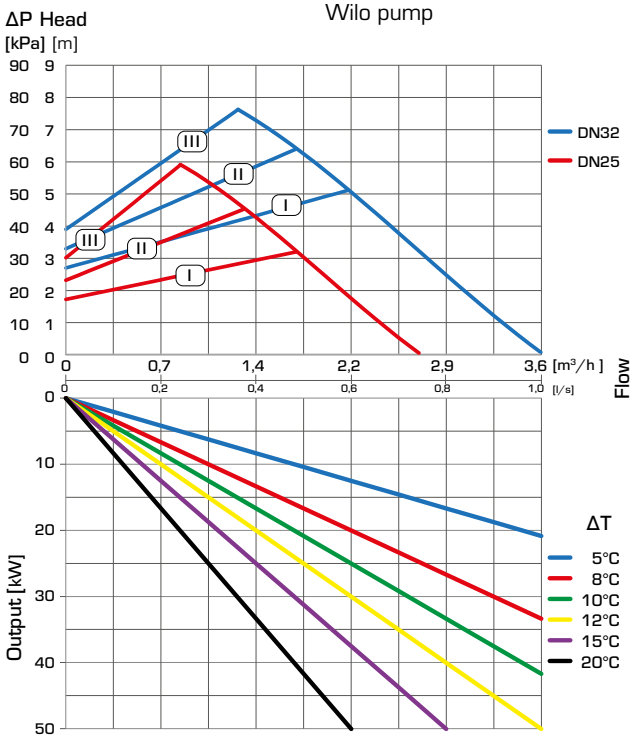
Example: Start with the heat demand of the heating circuit (e.g. 25 kW) and move horizontally to the right in the diagram to the ΔT = 12°C (temperature difference between flow and return of the heating circuit). Next go up and find the possible duty points.

Setting I gives duty point A with a residual pressure (head) of 22 kPa (62-40 kPa) for DN32. Setting II and III gives duty point B with a residual pressure of 2 kPa (62-60 kPa) for DN32.

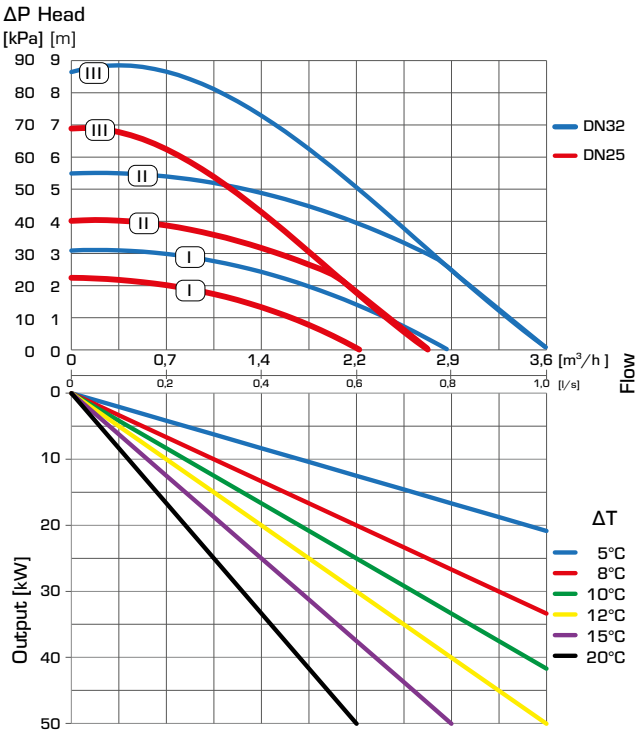
SERIES GRA211, GRA231 — Constant differential pressure, Wilo pump



SERIES GRA211, GRA231 — Variable differential pressure, Wilo pump



SERIES GRA211, GRA231 — Constant speed, Wilo pump



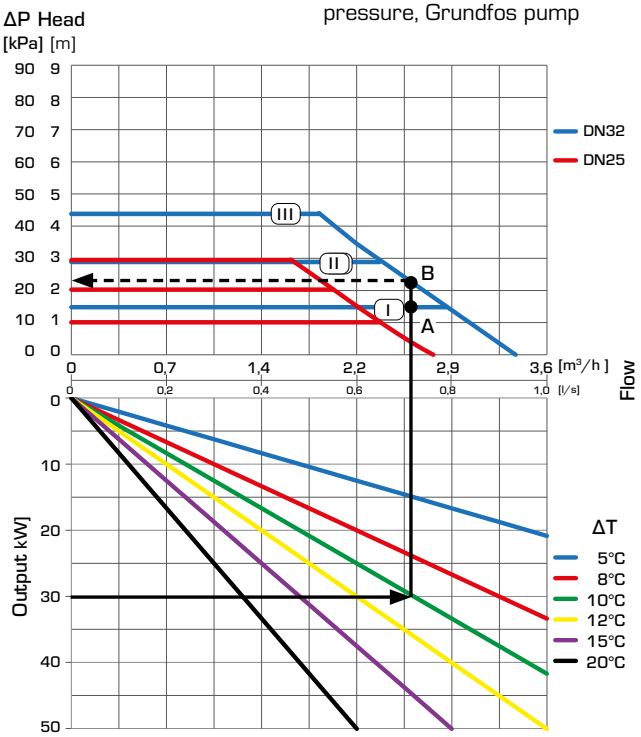
CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

DIMENSIONING, PUMP CAPACITY DIAGRAM

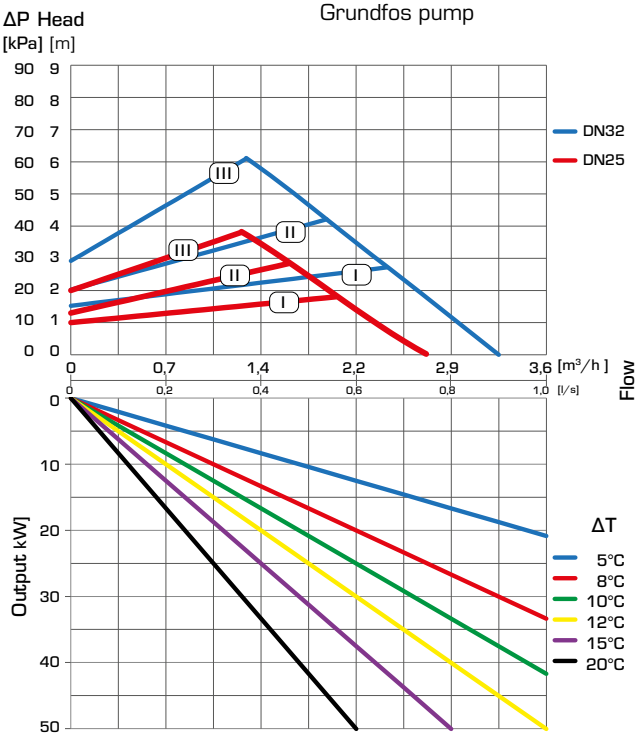
Example: Start with the heat demand of the heating circuit (e.g. 30 kW) and move horizontally to the right in the diagram to the ΔT = 10°C (temperature difference between flow and return of the heating circuit). Next go up and find the possible duty points.

Setting I gives duty point A with a residual pressure (head) of 8 kPa (23-15 kPa) for DN32. Setting II and III gives duty point B with a residual pressure of 0 kPa for DN32.

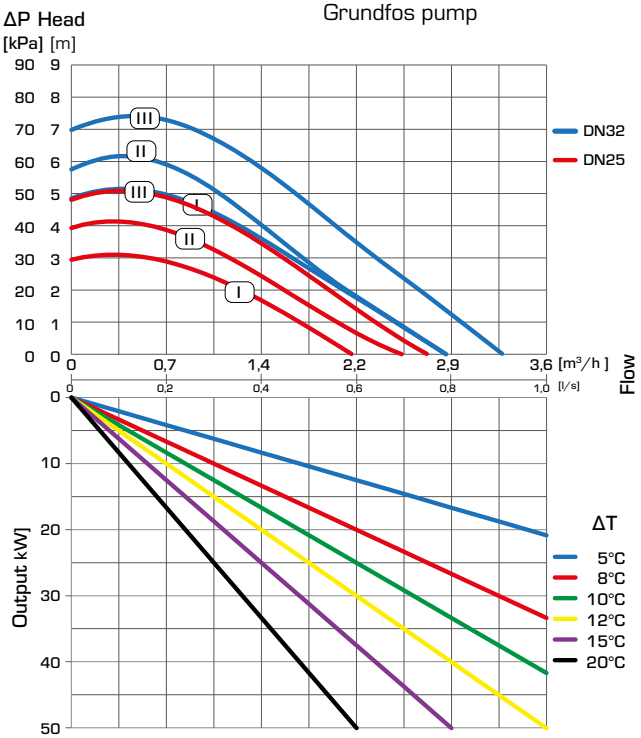
SERIES GRA212, GRA232 — Constant differential pressure, Grundfos pump



SERIES GRA212, GRA232 — Variable differential pressure, Grundfos pump



SERIES GRA212, GRA232 — Constant speed, Grundfos pump



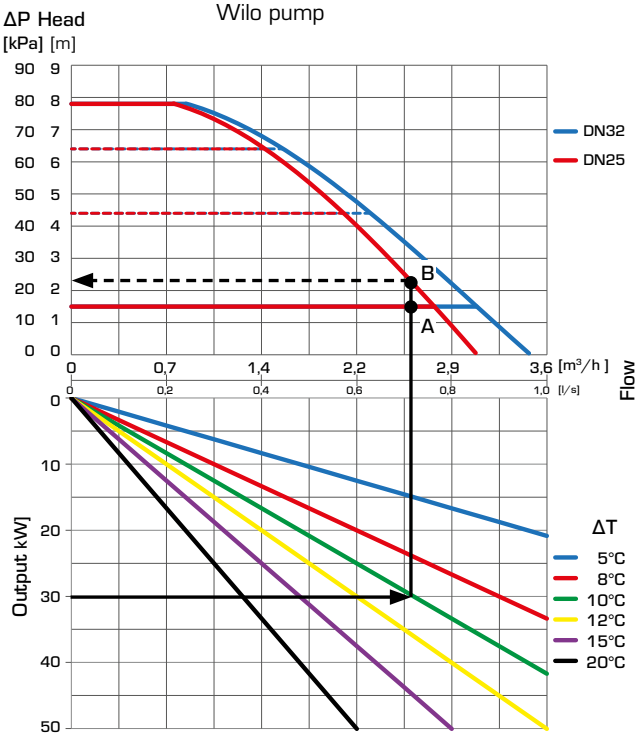
CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

DIMENSIONING, PUMP CAPACITY DIAGRAM

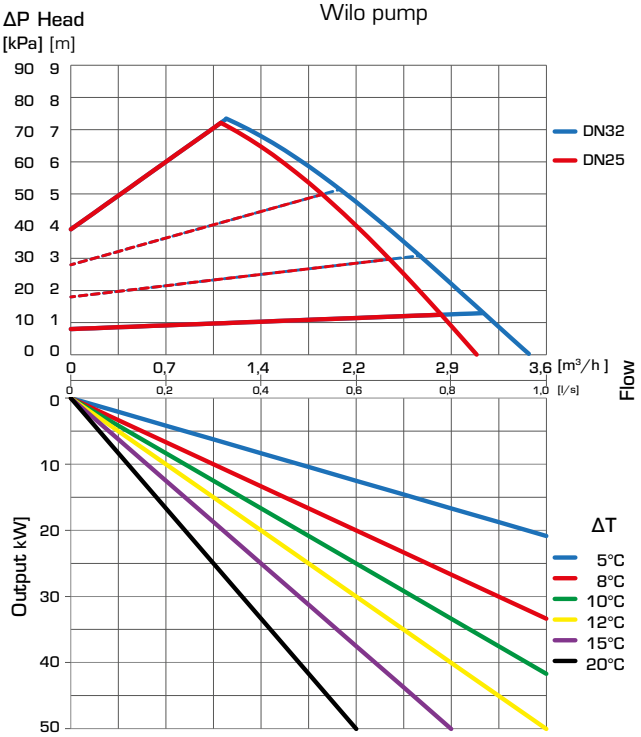
Example: Start with the heat demand of the heating circuit (e.g. 30 kW) and move horizontally to the right in the diagram to the ΔT = 10°C (temperature difference between flow and return of the heating circuit). Next go up and find the possible duty points.

Duty point A gives a residual pressure (head) of 8 kPa (23-15 kPa) for DN25. Duty point B with a residual pressure of 0 kPa for DN25.

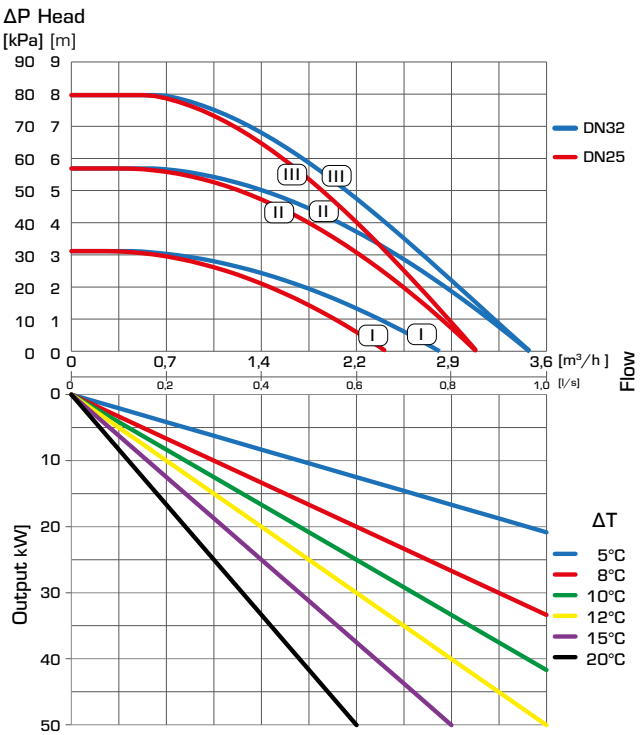
SERIES GRA261 — Constant differential pressure, Wilo pump



SERIES GRA261 — Variable differential pressure, Wilo pump



SERIES GRA261 — Constant speed, Wilo pump



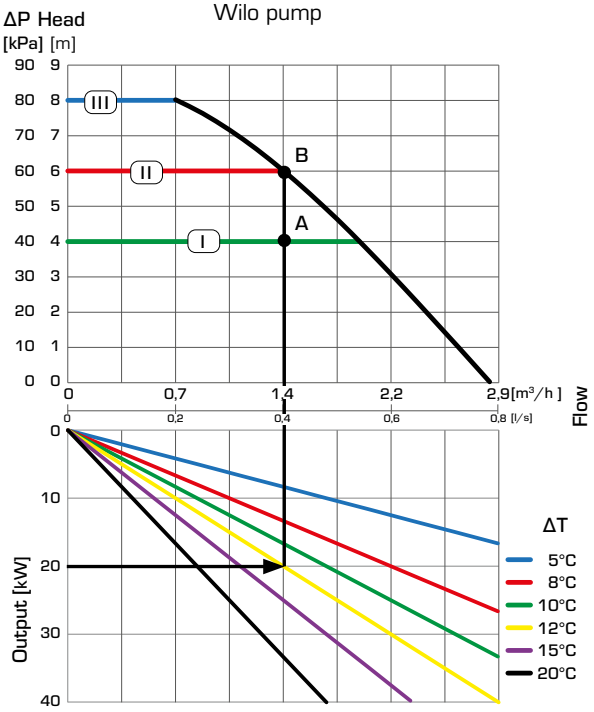
CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

DIMENSIONING, PUMP CAPACITY DIAGRAM

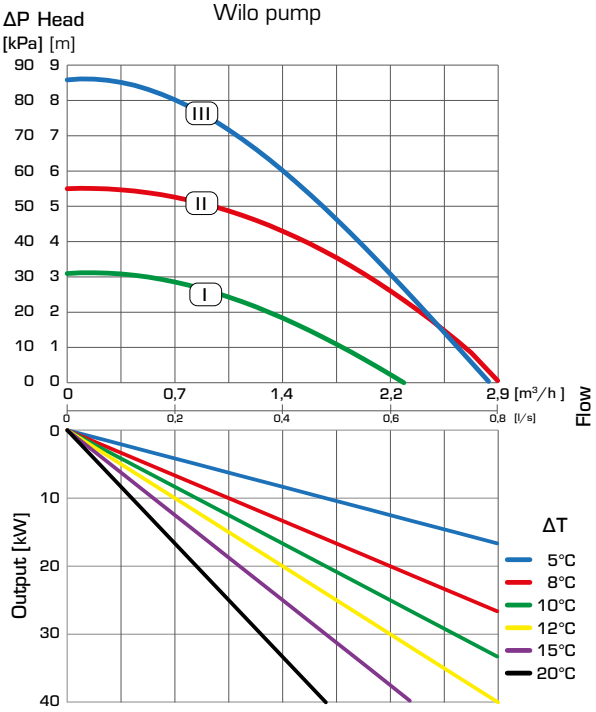
Example: Start with the heat demand of the heating circuit (e.g. 20 kW) and move horizontally to the right in the diagram to the choosen ΔT, which is the temperature difference between flow and return of the heating circuit (e.g. 12°C). Next go up and find the possible duty points.

Setting I gives duty point A with a residual pressure (head) of 20 kPa (60-40 kPa). Setting II and III gives duty point B with a residual pressure of 0 kPa.

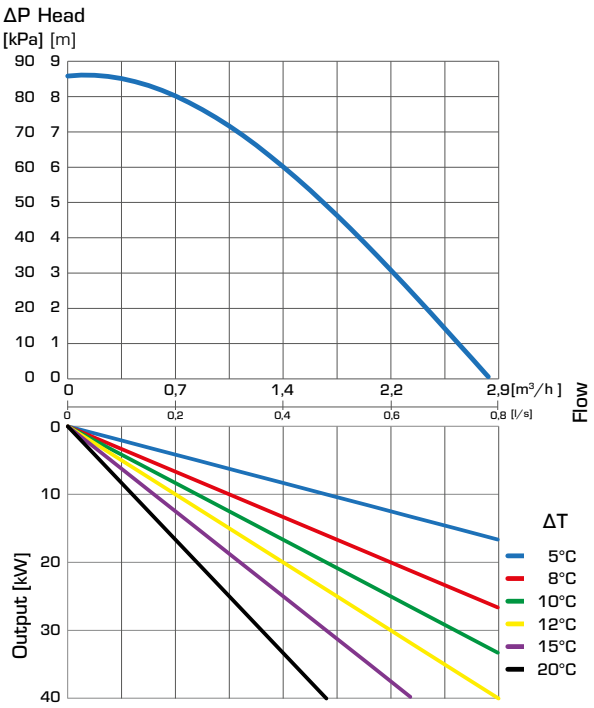
SERIES GRA311 — Constant differential pressure, Wilo pump



SERIES GRA311 — Variable differential pressure, Wilo pump



SERIES GRA311 — Ext iPWM 1/ iPWM 2, Wilo pump



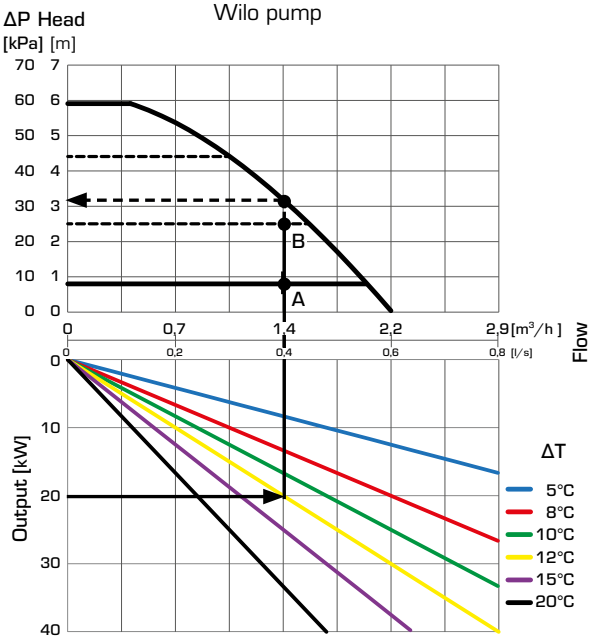
CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

DIMENSIONING, PUMP CAPACITY DIAGRAM

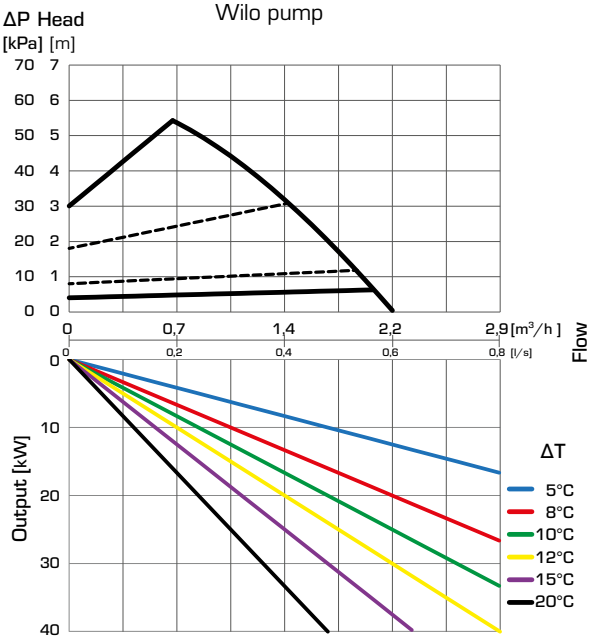
Example: Start with the heat demand of the heating circuit (e.g. 20 kW) and move horizontally to the right in the diagram to the choosen ΔT, which is the temperature difference between flow and return of the heating circuit (e.g. 12°C). Next go up and find the possible duty points.

Duty point A gives a residual pressure (head) of 24 kPa (32-8 kPa). Duty point B gives a residual pressure of 7 kPa (32-25 kPa).

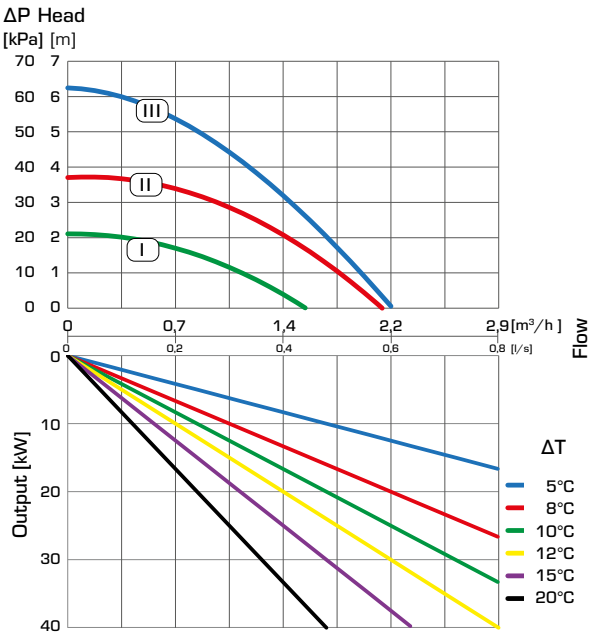
SERIES GRA361 — Constant differential pressure, Wilo pump



SERIES GRA361 — Variable differential pressure, Wilo pump



SERIES GRA361 — Constant speed, Wilo pump



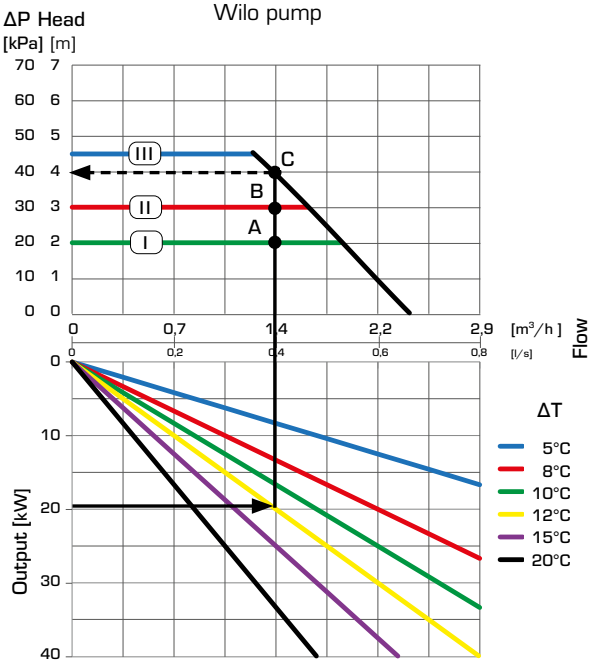
CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

DIMENSIONING, PUMP CAPACITY DIAGRAM

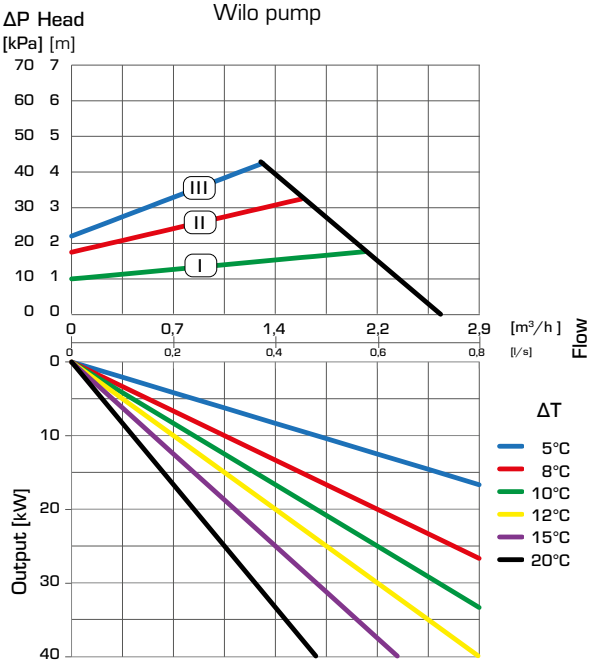
Example: Start with the heat demand of the heating circuit (e.g. 20 kW) and move horizontally to the right in the diagram to the choosen ΔT, which is the temperature difference between flow and return of the heating circuit (e.g. 12°C). Next go up and find the possible duty points.

Setting I gives duty point A with a residual pressure (head) of 20 kPa (40-20 kPa). Setting II gives duty point B with a residual pressure of 10 kPa (40-30 kPa) and III gives duty point C with a residual pressure of 0 kPa (40-40 kPa)

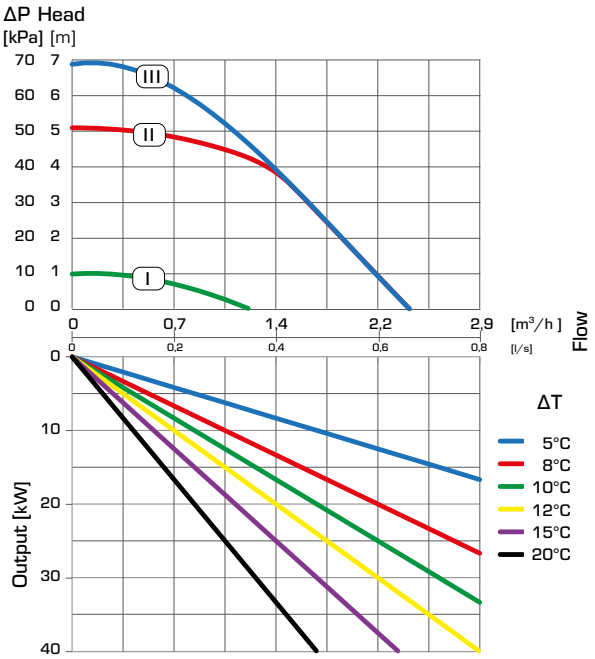
SERIES GRA394 — Constant differential pressure, Wilo pump



SERIES GRA394 — Variable differential pressure, Wilo pump



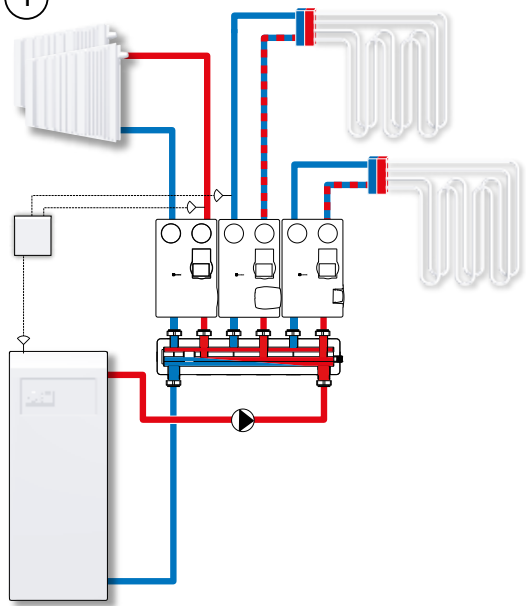
SERIES GRA394 — Constant speed, Wilo pump



CIRCULATION UNIT
MIXING FUNCTION BY 3-WAY VALVE, SERIES GRxX00

INSTALLATION EXAMPLES

1



The primary function of the motorized mixing Circulation unit (GRx) is flow temperature control, mixing function. The Series GRx are used in heating systems with controllers. The motorized mixing units need an external controller which will measure the flow temperature and control the actuator according to the system needs. The Circulation units Series GRx are the perfect choice for applications where mixing function is required, and the temperature comfort is set by an external controller.

The shown applications are only examples of product use!
Before using the product in any application, the regional and national regulations need to be checked.