



## **HAWIDO - REGULATING VALVES**

Instruction for

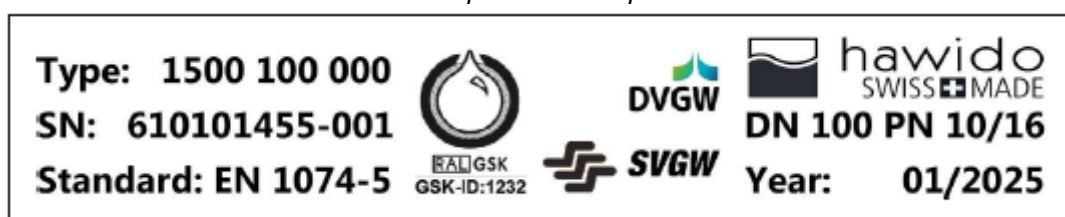
**On/Off valve for electrical actuation  
works step-by-step –  
without current – hydraulically closed  
Type 1795**

**DN40 - DN200**



Keep this instruction manual at the location of the valve!

*Example of a nameplate*



Once the commissioning work has been completed, enter the following data and always specify this additional information concerning the valve type, pressure and flow ratios, whenever you consult or have reason to question the manufacture or supplier:

Year of manufacture:..... DN: ..... PN: .....

Serial number: .....

# CONTENTS

<b>A. DESCRIPTION</b>	<b>2</b>
1. FUNCTION	2
2. GENERAL SAFETY INSTRUCTIONS	3
3. RECOMMENDED INSTALLATION	3
<b>B. COMMISSIONING</b>	<b>4</b>
1. FUNCTIONAL DIAGRAM (1795)	4
2. PREPARATORY WORK	4
3. VENTING	5
4. COMMISSIONING THE VALVE AND THE CONTROL SYSTEM	5
5. SETTING THE REACTION SPEED	5
6. CHECKING FOR LEAKAGE	5
<b>C. FAULT FINDING</b>	<b>6</b>
<b>D. PUTTING OUT OF SERVICE AND MAINTENANCE</b>	<b>7</b>
1. PUTTING OUT OF SERVICE	7
2. MAINTENANCE AND SERVICE	7
2.1 GENERAL INFORMATION	7
2.2 ANNUAL FUNCTIONAL CHECKS	7
2.3 4 TO 5-YEAR MAINTENANCE	8
3. REPAIR KITS AND SPARE PARTS	9
3.1 MAIN VALVE WITH STAINLESS STEEL CONNECTION DN 40 TO DN 200 (DRAWING)	10
3.2 MAIN VALVE (PARTS LIST)	11
3.3 CONTROL LINE AND ACCESSORIES	13
<b>E. ANNEX</b>	<b>18</b>
1. TORQUES	18
<b>F. HAWLE IN EUROPE</b>	<b>19</b>

### A. Description

## 1. Function

Note functional diagram on p. 4.

The stepwise working on/off valve for electrical control opens or closes hydraulically, as long one of the two electric solenoid valves (5A, 5B) is energised. The HAWIDO – valve (1) remains hydraulically **closed** when there is no voltage to the electric solenoid valves. The opening and closing speeds can be set on the one-way flow restrictors (4A, 4B).

Other versions:

Valve type 1796: normally **locked**

Valve type 1797: normally **open**

Areas of applications, always in conjunction with an external control system.

- Slow opening and closing of piping systems
- Regulation of the flow rates
- Regulation of water levels in basins

**Note:**

## Electrical controller on site!

**Solenoid valve setting:**

- 0 = voltage-free**
- 1 = under voltage**

Solenoid valve (5A)	Solenoid valve (5B)	Base valve setting
0	0	Base valve 100% closed, or closes
1	0⇒1 (short impulse)	Base valve opens gradually
1	0	Base valve hydraulically locked, fixed intermediate setting
1⇒0 (short voltage-free)	0	Base valve closes gradually
1 (or 0)	1	Base valve 100% open, or opens (Taking into consideration specific setting of the one-way flow restrictors 4A and 4B)

**Programming information:**

- Running time/switching time of solenoid valves 5A and 5B programmable as set values in steps of 0.1sec
- Pause time/waiting time of solenoid valves 5A and 5B programmable as set values in steps of 0.1sec depending on the inertia of the piping system, sufficient pause time should be allowed.

**Technical features:**

Medium:	Drinking water
Pressure stages:	PN 10 (from DN 200 Standard) PN16 (up to DN150 Standard) PN25
Flanges:	Connection dimensions according to DIN EN 1092 - 2
Pressure gauge:	EN 837-1; Accuracy class 1.0
Main valve material:	EN-GJS-400-15
Temperature range:	2 – 40 °C

## 2. General safety instructions

These instructions must be read through carefully and understood before starting the commissioning. Damage to property and injuries to persons could occur as a result of improper installation, commissioning, operation and maintenance.

The Hawle regulating valve (HAWIDO) has been designed for use in drinking water supplies. Other application media only after consultation with the manufacturer.

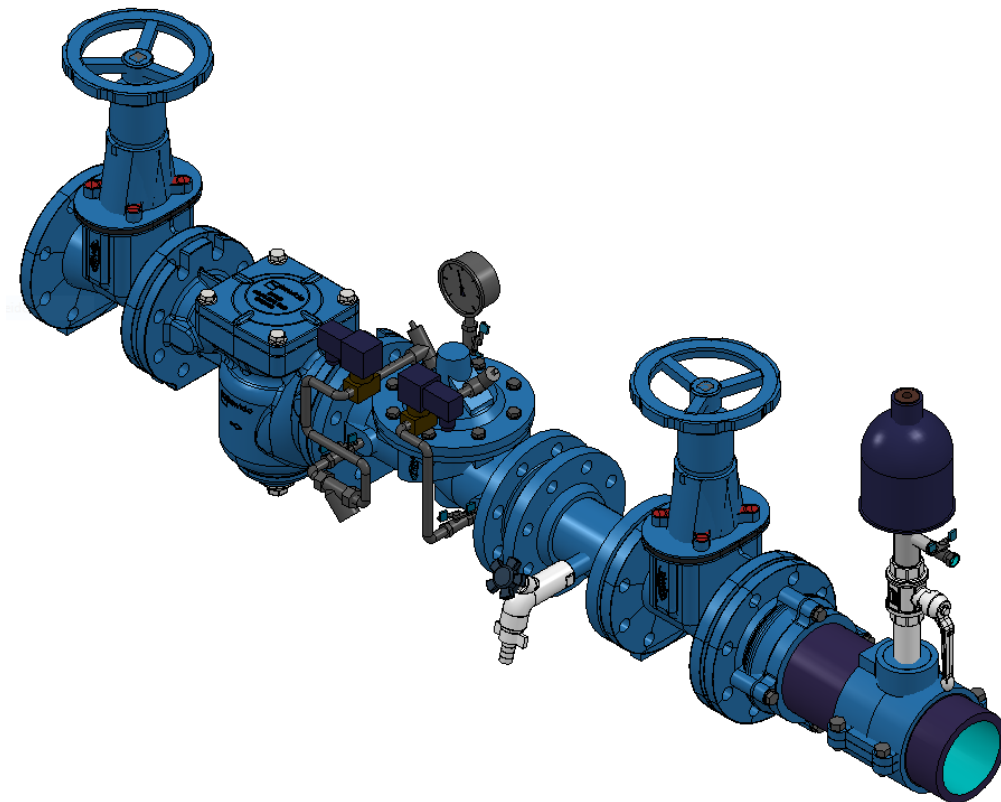
The technical regulations (e.g. SVGW, ÖVGW, DVGW...) and codes of practice (e.g. VDE, VDI ...), laws and standards are taken as a minimum standard, and must be adhered to and applied.

Work on electrical installations and parts (e.g. installation of electrical position indicators, solenoid valves, etc.) may only be carried out by personnel authorised for this work.

In principle, the responsibility for the layout, the installation position, the installation and the commissioning of the fittings in the pipe work lies with the designer, the installation company and/or the operator. Design or installation errors can adversely affect the safe operation of the regulating valve, and can represent a significant risk. Please consult us in case of doubt.

## 3. Recommended installation

Before the installation of the fitting, the pipe lines must be carefully blown or flushed through to prevent any foreign material, such as pieces of wood, stones etc., from entering the regulating valve.

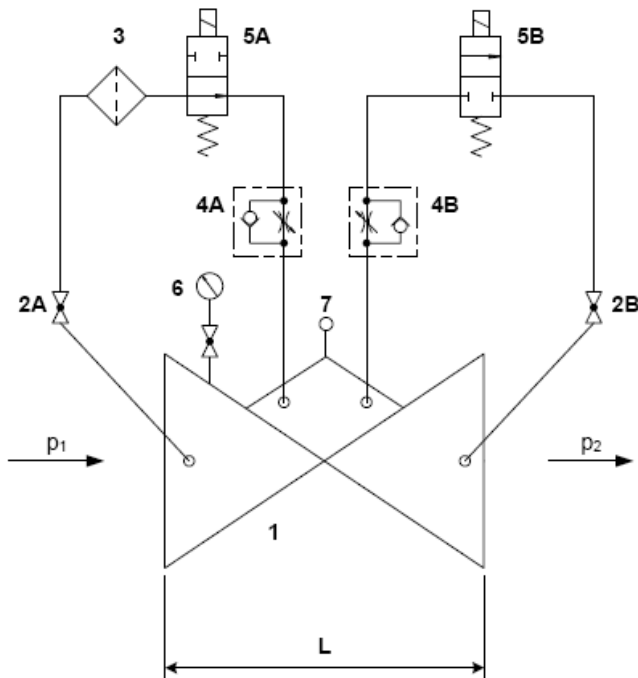


The HAWIDO must be installed horizontally with the valve cover upwards (other models available on request). We recommend that a gate valve and a dirt trap be fitted in front of the valve, as well as the mounting of a gate valve at the outlet. Before the installation, check that no coarse foreign objects can penetrate into the HAWIDO.

Please contact us for other types of installation.

## B. Commissioning

### 1. Functional diagram (1795)



#### Components

- |   |   |
|---|---|
| 1 | Main valve 1200                             |
| 2 | Ball valve (A, B, C)                        |
| 3 | Filter                                      |
| 4 | One-way flow restrictor (A, B)              |
| 5 | Solenoid valve (A, B)                       |
| 6 | Pressure gauge with ball valve              |
| 7 | Optical position indicator                  |
|   | (optional) Electrical position indicator    |
|   | (optional) analogue position indicator      |
|   | (optional) Valve opening limiter (optional) |

### 2. Preparatory work

Before commissioning the valve, check that the gate valves on the inlet and outlet sides of the valve are **closed** and that the flange connections have been correctly tightened and sealed.

#### On the valve:

- Open the ball valve (2A)
- Loosen the lock nut on the adjusting screw on the one-way flow restrictors (4A and 4B)
- Unscrew the adjusting screws on the one-way flow restrictors (4A and 4B) by approximately 10 turns. (The line to the control chamber is open).
- Close the ball valve (2B)
- Loosen the threaded pin in the central plug by a few turns.
- Slightly loosen a union of the control line at its highest point (approximately one turn).
- Remove power from the solenoid valves.

#### Caution:

Work on electrical installations and parts (e.g. installation of electrical position indicators, solenoid valves, etc.) may only be carried out by personnel authorised for this work.

### 3. Venting

**Procedure:**

Screw in the plug on the valve cover until approx. one turn before the sealing point.

**Slowly** open the inlet gate valve on the inlet side until water flows into the valve.

Once the valve venting procedure has caused all the air to be expelled from the control line, retighten the plug screw and the loosened union. Check that all the fittings are properly sealed, and re-tighten if necessary.

**Check:** If the shut-off gate valve on the outlet side is slightly opened, the valve should close or remain closed. Then close the shut-off gate valve again.

If the valve does not close, the commissioning procedure must be repeated from the previous chapter. Particular care must then be taken to ensure that the upper valve chamber and control lines are properly vented.

### 4. Commissioning the valve and the control system

The supplied electrical control system is commissioned by the **customer**.

**On the valve:**

- **Slowly** open the ball valve (2B)
- **Slowly** open the shut-off gate valve on the outlet side.
- Check electrical functions. The required flow rate can be regulated according to the one-way flow restrictor settings (4A and 4B; according to the following chapter) and the electrical actuations of the solenoid valves (5A and 5B). The base valve is locked hydraulically, if the solenoid valve (5A) is energised and solenoid valve (5B) is voltage-free

### 5. Setting the reaction speed

If the HAWIDO does not operate quietly, or if pressure shocks occur in the supply network, this can be corrected by the corresponding adjustment of the one-way flow restrictor (4A and 4B).

Strongly throttled one-way flow restrictors (4A and 4B) permit longer impulse times (contact the Hawle Company for basic settings of impulse and pause lengths).

**Procedure:**

Loosen the locknut. Screw in the set screw clockwise with a screwdriver until the valve operates quietly. Then retighten the locknut.

**Caution**

The setting screw must always remain at least 4 - 5 turns open, otherwise the valve will not reopen after the closing sequence. A special setting is necessary for very high inlet pressures.

### 6. Checking for leakage

The HAWIDO's are tested at the factory for both leakage and function before delivery. When checking for leakage under operational conditions, particular attention must therefore be given to the seals of the flange connections, the control line and the central plug screw on the valve cover. Where necessary, ensure the seal by retightening the connections.

**Notes:**

---

---

---

---



## C. Fault finding

Symptoms	Possible cause	Action
Valve does not open	One-way flow restrictor blocked	Replace, or unscrew the set screw several times until the valve functions properly
	One-way flow restrictor closed too far	Unscrew the set screw until the valve functions properly
Valve does not close	One-way flow restrictor blocked	Replace, or screw the set screw fully in and out several times and then re-set
	Filter in the control line blocked	Clean the filter
	Air in the control line / upper valve chamber	Vent
	Foreign matter in the main valve	Carry out service and remove any foreign matter
	Diaphragm defective	Carry out a service. Replace the diaphragm
	Valve spindle jammed by encrustation	Carry out service and remove any encrustation
Loud noise	Unfavourable operating conditions	Change pressure by approx. 0.1 to 0.2 bar. Slightly open or close the one-way flow restrictor. Contact the Hawle Customer Service department.
	Wrong valve size	Have the correct valve size calculated (contact Hawle)
Erratic operation	One-way flow restrictor incorrectly set	Reset (according to section setting the reaction speed)
	Changed operating conditions	Reset (see Setting-up paragraph)
EWS coating damaged	Transportation damage, installation damage	Repair with Hawle two-component repair set for coatings

## D. Putting out of service and maintenance

### 1. Putting out of service

**Comment:** Electrical work may only be carried out by qualified technical personnel. Power must be removed from the solenoid valves. The valve closes. Then:

- **Slowly** close the gate valves before and after the valve
- **Slowly** close the ball valves.

For further work on the HAWIDO valve, the voltage must be interrupted to the solenoid valves. The valve has now been taken out of operation, and a service can be carried out.

### 2. Maintenance and service

#### 2.1 General information

Through our many years of experience with diaphragm valves that are controlled by the flow medium, we know that our HAWIDO's normally function trouble-free for many years. Regular maintenance is a precondition for this, however.

Under normal operating conditions, the following should be carried out:

- The valve should be checked for correct operation once a year (functional check)
- The dirt trap upstream of the valve and the filter in the control line should be cleaned once a year
- The inner working components should be checked and worn parts be replaced every four to five years (maintenance).

Under unusual operating conditions (e.g. with water that contains quantities of suspended matter, very high pressure reduction, small flow rates etc.), the functional checks and the service work should be carried out more frequently.

#### **Maintenance label**

2028	2029	2030	2031	2032
Nächste Wartung Prochain Maintenance Prossima Manutenzione Next Maintenance				
2033	2034	2035	2036	2037

**Maintenance intervals are indicated by perforation or colored marking with a permanent marker**

#### 2.2 Annual functional checks

##### **Cleaning the dirt trap in the main line**

- Unscrew the lid
- Clean filter (use soft brushes, cloths or similar), or possibly replace filter
- Install the filter and screw the lid back on

#### **Cleaning the filter in the control line**

- Unscrew the lid of the filter
- Clean filter (use soft brushes, cloths or similar), or possibly replace filter
- Re-install the filter and screw the filter lid back on
- **Checking the valve**
- Remove the vent plug or assembled accessories from the valve cover.
- Check that the valve spindle moves easily by raising and lowering it with the threaded rod. Special attention must be paid to this test procedure, above all with valves with modified counter seats.

#### **Putting back into service**

- according to Commissioning paragraph

#### **Functional check of the valve**

- The function of the valve can be checked by actuating the solenoid valves (according to table in section *Principle of operation*).

## **2.3 4 to 5-year maintenance**

#### **Cleaning the dirt trap in the main line**

- Unscrew the lid
- Clean filter (use soft brushes, cloths or similar), or possibly replace filter
- Install the filter and screw the lid back on

#### **Cleaning the filter in the control line**

- Unscrew the lid of the filter
- Clean filter (use soft brushes, cloths or similar), or possibly replace filter
- Re-install the filter and screw the filter lid back on

#### **Base valve (see chapter: *Repair kits and spare parts*)**

- Loosen the screw connections and remove the complete control line.
- Dismantle the optical position indicator or assembled accessories and replace the gaskets.
- Undo the screws of the valve cover and remove the cover.
- Visually inspect all inner components for wear, dirt and scaling
- Clean the inner components, the seat and the inner surfaces, including the cover
- Dismantle the spindle guide in the body, flush the body interior.  
For valves DN 40 to DN 100 (from 2012 on) and DN 125 to DN 200 (from 2014 on) the spindle guide is dismantled from the inside. Here the thread of the spindle guide and the base valve must be **extremely clean**. Grease the thread thoroughly (e.g. Foodgrease Aqua, Art. no. 5292, see chapter "Control line individual parts and accessories").
- Replace the diaphragm, the O-ring and the seat seal.
- Grease the spindle guide area with a grease suitable for contact with food (e.g. Foodgrease Aqua). Check the easy movement of the spindle by lifting and lowering with the spindle lifting tool (article number 1199, see chapter "Control line individual parts and accessories").
- Reassemble the base valve (see table in the annex for torques). During the assembly, the easy movement of the spindle must be checked with the spindle lifting tool by lifting and lowering **several times**.

#### **Functional check of the one-way flow restrictor**

- Undo the locknut
- Screw in the throttle screw, and then unscrew it as far as it goes
- Screw in again a few turns. This process must be easy and meet little resistance

#### **Checking the valve**

- Remove the vent plug or assembled accessories from the valve cover.
- Check that the valve spindle moves easily by raising and lowering it with the threaded rod. Special attention must be paid to this test procedure, above all with valves with modified counter seats.

#### **Putting back into service**

- see Commissioning chapter

#### **Functional check of the valve**

- The function of the valve can be checked by actuating the solenoid valves (according to table in section *Principle of operation*).

### **3. Repair kits and spare parts**

Several spare parts are required for the four or five yearly maintenance. These can be obtained as a repair kit for:

- the main valve
- for the control valve
- for the control circuit
- optical position indicator

The article numbers are shown in the parts lists and spare parts lists.

#### **Attention:**

When ordering spare parts, always specify the valve type, serial number and year of manufacture.

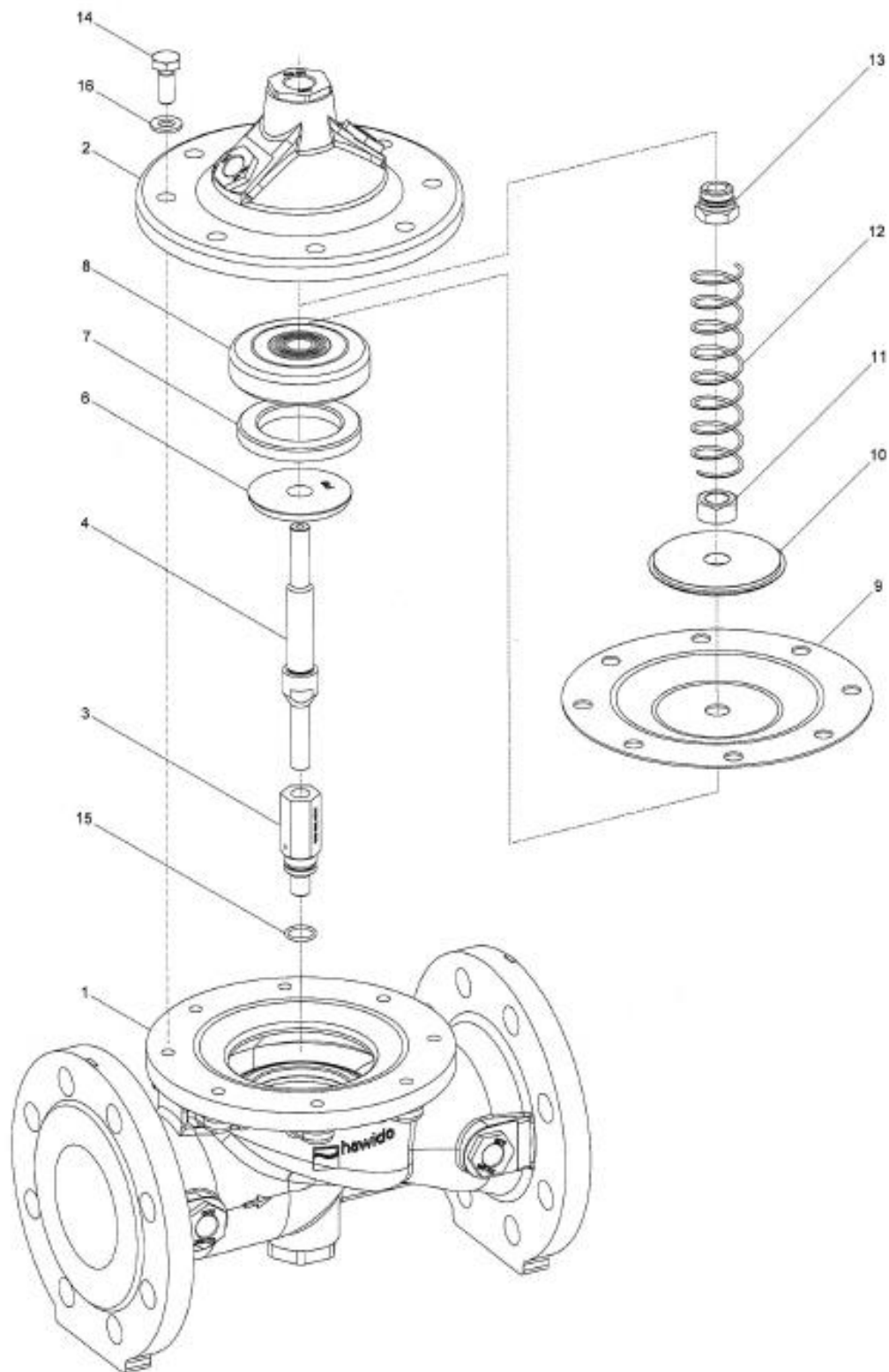
#### **Important:**

Spare parts of EPDM (membranes, seals, o- rings) have to be stored in a dark place, protected from UV radiation!

Durability in dark storage:

EPDM: eight years after production

### 3.1 Main valve with stainless steel connection DN 40 to DN 200 (drawing)



08.12.2011

### 3.2 Main valve (Parts list)

Item.	Description	Material	Article number				
			DN 40	DN 50	DN 65	DN 80	DN 100
1	Body °	GJS-400	1004 040 000	1004 050 000	1004 065 000	1004 080 000	1004 100 000
2	Valve cover	GJS-400	1014 050 000	1014 050 000	1014 065 000	1014 080 000	1014 100 000
3	Spindle guide cover	INOX	1024 900 000	1024 900 001	1024 900 002	1024 900 003	1024 900 004
4	Spindle	INOX	1026 050 000	1026 050 000	1026 065 000	1026 080 000	1026 100 000
5	Seat	INOX	*	*	*	*	*
6	Counter seat	INOX	1044 040 001	1044 050 001	1044 065 001	1044 080 001	1044 100 001
7	Seal	EPDM	1022 040 000	1022 050 000	1022 065 000	1022 080 000	1022 100 000
8	Seal carrier	INOX	1027 040 200	1027 050 200	1027 065 200	1027 080 200	1027 100 200
9	Diaphragm	EPDM	1021 050 001	1021 050 001	1021 065 001	1021 080 001	1021 100 001
10	Pressure disc	INOX	1047 050 000	1047 050 000	1047 065 000	1047 080 000	1047 100 000
11	Nut	INOX	0007 710 080	0007 710 080	0007 712 080	0007 716 080	0007 716 080
12	Spring	INOX	1049 050 000	1049 050 000	1049 065 000	1049 080 000	1049 100 000
	Spring for valves installed upright position	INOX	1050 050 000	1050 050 000	1050 065 000	1050 080 000	1050 100 000
13	Spindle guide cover	INOX	1042 900 000	1042 900 000	1042 900 001	1042 900 002	1042 900 002
14	Hexagonal screw	INOX	0006 608 025	0006 608 025	0006 610 025	0006 610 025	0006 612 030
15	O-ring	EPDM	0170 012 020	0170 012 020	0170 012 020	0170 016 020	0170 016 020
16	Washer	INOX	0008 208 000	0008 208 000	0008 210 000	0008 210 000	0008 212 000
	Main valve complete	PN10 - 25	1200 040 000	1200 050 000		1200 080 000	
	Main valve complete	PN10/16	--	--	1200 065 000		1200 100 000
	Main valve complete	PN25			1200 065 025		1200 100 025
	Repair kit for main valve with stainless steel connection, comprising item 7, 9, 15, 18	PN10 - 25	1080 040 000	1080 050 000	1080 065 000	1080 080 000	1080 100 000

° Pressure stage / check flange

Item	Description	Material	Article number		
			DN 125	DN 150	DN 200
1	Body °	GJS-400	1004 125 000	1004 151 000	1004 200 000
2	Valve cover	GJS-400	1014 125 000	1014 151 000	1014 200 000
3	Spindle guide cover	INOX	1024 900 005	1024 900 005	1024 900 006
4	Spindle	INOX	1026 125 000	1026 151 000	1026 200 000
5	Seat	INOX	*	*	*
6	Counter seat	INOX	1044 125 001	1044 150 001	1044 200 001
7	Seal	EPDM	1022 125 150	1022 151 000	1022 200 000
8	Seal carrier	INOX	1027 125 200	1027 151 200	1027 200 200
9	Diaphragm	EPDM	1021 125 001	1021 151 001	1021 200 001
10	Pressure disc	INOX	1047 125 150	1047 151 000	1047 200 000
11	Nut	INOX	0007 720 080	0007 720 080	0007 724 080
12	Spring	INOX	1049 125 150	1049 151 150	1049 200 000
	Spring for valves installed upright position	INOX	1050 125 150	1050 151 000	1050 200 000
13	Spindle guide cover	INOX	1042 900 003	1042 900 003	1042 900 004
14	Hexagonal screw	INOX	0006 616 035	0006 616 035	0006 620 045
15	O-ring	EPDM	0170 018 020	0170 018 020	0170 021 020
16	Washer	INOX	0008 216 000	0008 216 000	0008 220 000
21	Retaining bracket	INOX	--	--	1200 900 020
	Main valve complete	PN10	1200 125 000	1200 151 000	1200 200 000
	Main valve complete	PN16	1200 125 000	1200 151 000	1200 200 016
	Main valve complete	PN25	1200 125 025	1200 151 025	1200 200 025
	Repair kit for main valve with stainless steel connection, comprising item 7, 9, 15, 18	PN10 – 25	1080 125 150	1080 151 000	1080 200 000

° Pressure stage / check flange








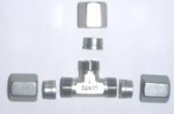




\* not interchangeable



10.02.2025/AWT

### 3.3 Control line and accessories


<b>Masternumber Description</b>	<b>Picture</b>	<b>Size</b> more sizes might be available	<b>Art. number</b>
<b>0130</b> <b>Composite sealing ring</b>		stainless steel /NBR 3/8" stainless steel /NBR 1/2" stainless steel /NBR 3/4" steel/NBR 1"	0130 012 000 0130 016 000 0130 025 000 0130 032 000
<b>0273</b> <b>Single component</b>		Fitting attachment (consisting of connecting nut and clamping ring) DN 12 stainless steel  Union nut (without clamping ring)	0273 012 000  0274 xxx xxx
<b>0275</b> <b>Support sleeve</b>		stainless steel d4 – 6 stainless steel d12 – 9 stainless steel d12 – 10	0275 006 004 0275 012 009 0275 012 010
<b>0283</b> <b>Clamping ring</b>		d6 stainless steel d12 stainless steel d18 stainless steel d8 - 6 stainless steel	0283 006 000 0283 012 000 0283 018 000 0283 008 006
<b>0284</b> <b>Orifice</b>		d12 stainless steel Ø 0.6 mm d12 stainless steel Ø 0.9 mm d12 stainless steel Ø 1.2 mm d12 stainless steel Ø 1.5 mm d12 stainless steel Ø 1.9 mm d12 stainless steel Ø 2.4 mm d12 stainless steel Ø 3.1 mm d18 stainless steel Ø 3.5 mm d18 stainless steel Ø 4.0 mm	0284 006 000 0284 009 000 0284 012 000 0284 015 000 0284 019 000 0284 024 000 0284 031 000 0284 035 010 0284 040 010
<b>0311</b> <b>Male adaptor union</b>		d 12 - 3/8" stainless steel d 12 - 1/2" stainless steel d 6 - 1/8" stainless steel d 6 - 1/4" stainless steel d 6 - 3/8" stainless steel d18 – 1/2" stainless steel	0311 012 012 0311 012 016 0311 006 004 0311 006 008 0311 006 012 0311 018 016
<b>0323</b> <b>Straight union</b>		DN 6 stainless steel DN 12 stainless steel	0323 006 000 0323 012 000
<b>0324</b> <b>Straight screw-on screw fitting</b>		d12 - 3/8" stainless steel	0324 012 012
<b>0351</b> <b>Reduction union</b>		d6 - d12 stainless steel	0351 012 006
<b>0361</b> <b>Female adaptor</b>		d 10 - 3/8" stainless steel d 12 - 3/8" stainless steel d 12 - 1/2" stainless steel d 18 – 1/2" stainless steel	0361 010 012 0361 012 012 0361 012 016 0361 018 016
<b>0371</b> <b>Male adaptor</b>		DN 12 - 3/8" stainless steel	0371 012 012

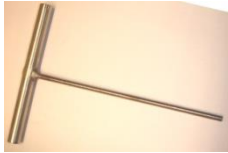



<b>0401 Sleeve</b>		3/8" stainless steel 1/2" stainless steel 3/4" stainless steel 1" stainless steel	0401 012 000 0401 016 000 0401 025 000 0401 032 000
<b>0411 Adjustable male adaptor</b>		DN 6 - 1/8" stainless steel DN12 - 3/8" stainless steel	0411 006 004 0411 012 012
<b>0431 Male adaptor elbow union</b>		DN 6 - 1/8" stainless steel DN6 - 1/4" stainless steel DN12 - 3/8" stainless steel DN18 - 1/2" stainless steel	0431 006 004 0431 006 008 0431 012 012 0431 018 016
<b>0431 Male adaptor elbow union with venting</b>		DN12 - 3/8" stainless steel	0431 012 013
<b>0451 Elbow union 90°</b>		DN6 stainless steel DN12 stainless steel DN18 stainless steel	0451 006 000 0451 012 000 0451 018 000
<b>0455 Female adaptor elbow union 90°</b>		IG 3/8" stainless steel IG 1/2" stainless steel IG 3/4" stainless steel IG 1" stainless steel	0455 012 000 0455 016 000 0455 025 000 0455 032 000
<b>0456 Female adaptor elbow union 90°</b>		IG 3/8" - AG 3/8" stainless steel IG 1/2" - AG 1/2" stainless steel IG 3/4" - AG 3/4" stainless steel IG 1" - AG 1" stainless steel	0456 012 000 0456 016 000 0456 025 000 0456 032 000
<b>0461 T-union</b>		d6 stainless steel d12 stainless steel d12 - 6 - 12 stainless steel d18 stainless steel	0461 006 000 0461 012 000 0461 012 006 0461 018 000
<b>0510 Plug</b>		AG 3/8" konisch stainless steel AG 1/2" konisch stainless steel	0510 012 000 0510 016 000
<b>0511 Plug aeration for Hawido</b>		AG 1/2" stainless steel AG 3/4" stainless steel AG 1" stainless steel (hexagon socket)	0511 016 000 0511 025 000 0511 032 001
<b>0520 Hexagonal male adaptor nipple</b>		d 1/8" stainless steel d 1/4" stainless steel d 3/8" stainless steel d 1/2" stainless steel d 3/4" stainless steel	0520 004 000 0520 008 000 0520 012 000 0520 016 000 0520 025 000
<b>0541 Ball valve</b>		DN 3/8" stainless steel DN 1/2" stainless steel DN 3/4" stainless steel	0541 012 001 0541 016 000 0541 025 000

<b>0545</b> <b>Y-filter</b>		Y-filter stainless steel IG 3/8" Single components: Filter sieve stainless steel Plug complete Seal big for Y-filter O-Ring  Y-filter stainless steel 1/2"	0545 112 002  0545 900 051 0545 112 010 0545 112 011 0545 112 012  0545 116 000
<b>0549</b> <b>One-way flow restrictor &amp; Throttle valve</b>		Stainless steel IG 3/8" Typ B d 12 with a long spindle	0549 000 005
<b>0570</b> <b>Non-return valve</b>		3/8" Brass (max. 40 bar) 1/2" Brass (max. 40 bar)	0570 012 045 0570 016 045
<b>0600</b> <b>Manometer</b>		AG 3/8" 0 - 6 bar AG 3/8" 0 - 10 bar AG 3/8" 0 - 16 bar AG 3/8" 0 - 25 bar AG 3/8" 0 - 40 bar AG 3/8" 0 - 60 bar	0600 012 006 0600 012 010 0600 012 016 0600 012 025 0600 012 040 0600 012 060
<b>0610</b> <b>Solenoid valves</b>		Solenoid valve normally open 2/2 way valve (1795/96) <b>122K84</b>  Solenoid valve normally closed 2/2 way valve (1795/96) <b>E121K04</b>  Solenoid valve normally open 3/2 way valve (1703 up to DN 100 1603, 1706 PN 16 all diameters) <b>132K04</b>  Solenoid valve normally closed 3/2 way valve (1704 up to DN 100, 1604) <b>E131K04</b>  Solenoid valve normally open 2/2 way valve (1704 DN 125 and above 1304, 1404, 1504) (old version: E322 H73 06)  Solenoid valve normally closed 2/2 Wegeventil (zu 1703 ab DN 125, 1303, 1403, 1503, 1706 PN 25 ab DN 125) (old version: E321 H13)  Magnetventil universel 3/2 way valve (1706 PN 25 up to DN 100)  *****  Spare part : Diaphragm for solenoid type 0610 510 001 and 0610 510 002  Spare parts Kit for solenoid valve type 0610 510 001	0610 122 084  0610 121 004  0610 132 004  0610 131 004  0610 510 002  0610 510 001  0610 133 005  *****  0610 590 001  0610 590 002

<b>0620</b> <b>Coil</b>		Coil AC voltage Indicate the voltage  Coil DC voltage Indicate the voltage	0620 xxx xxx  0621 xxx xxx
<b>0630</b> <b>Appliance socket for electric coil</b>		Appliance socket for electric coil	0630 000 000
<b>0652, 0653</b> <b>Plug module Type LBV</b>		Plug module for solenoid valves Type LBV 24 DC = 8-14S incl. 2m cable  Plug module for solenoid valves Type LBV 24, IP 65 IN: 48-230VAC/DC OUT: 48VDC incl. 2m cable 3-wire  For use with 48VDC coils only	0653 024 008  0653 230 000
<b>0670</b> <b>Hexagonal overcut</b>		AG 3/8" IG 1/8" stainless steel AG 3/8" IG 1/4" stainless steel AG 1/2" IG 3/8" stainless steel AG 3/4" IG 3/8" stainless steel AG 1" IG 1/8" stainless steel	0670 012 004 0670 012 008 0670 016 012 0670 025 012 0670 032 012
<b>0671</b> <b>Threaded connection</b>		AG 3/8" IG 1/2" stainless steel AG 3/4" IG 1" stainless steel	0671 016 012 0671 032 025
<b>0680</b> <b>Male adaptor nipple</b>		AG 3/8" L = 30 mm stainless steel AG 3/8" L = 40 mm stainless steel AG 3/8" L = 50 mm stainless steel AG 3/8" L = 60 mm stainless steel AG 3/8" L = 70 mm stainless steel AG 3/8" L = 80 mm stainless steel AG 3/8" L = 110 mm stainless steel	0680 012 030 0680 012 040 0680 012 050 0680 012 060 0680 012 070 0680 012 080 0680 012 110
<b>0690</b> <b>Male reduction nipple</b>		AG 3/8" - 1/8" stainless steel AG 3/8" - 1/4" stainless steel AG 1/2" - 3/8" stainless steel AG 3/4" - 3/8" stainless steel AG 1" - 3/8" stainless steel	0690 012 004 0690 012 008 0690 016 012 0690 025 012 0690 032 012
<b>0711</b> <b>T-union</b>		IG 3/8" egal stainless steel IG 1/2" egal stainless steel IG 3/4" egal stainless steel IG 1" egal stainless steel	0711 012 000 0711 016 000 0711 025 000 0711 032 000
<b>0730</b> <b>Seamless pipe</b>		d6 x 1mm stainless steel d12 x 1.5 mm stainless steel d15 x 1.5 mm stainless steel d18 x 1.5 mm stainless steel	0730 006 010 0730 012 015 0730 015 015 0730 018 015
<b>0731</b> <b>PA-tube</b>		Tube AD 6 mm, ID 4 mm Tube AD 12 mm, ID 9 mm	0731 006 004 0731 012 009

<b>1188</b> <b>Rep. Set</b> <b>Control line</b>		<p>From serial number 14252 (Januar 2003)  DN40 bis 100  DN125 bis 300</p> <p>From serial number 25915 (Juni 2014,  Filter Typ B (0545 112 002)  DN40 bis 100  DN125 bis 200</p>	<p>1188 065 100  1188 125 300</p> <p>1188 000 000  1188 000 001</p>
---	---	--	---

Tools and accessories			
<b>1199</b> <b>Spindel stroke</b> <b>tester</b>		M5 M6	1199 000 000 1199 000 010
<b>1199</b> <b>Tool for seal holder</b>		Key for assembling the seal holder of the pilot valve	1199 000 020
<b>5292</b> <b>Grease</b>		Hawle Typ: VR 69-252 Tube à 90 g	5292 000 000

AG: Outside thread  
IG: Inside thread

AD: Outside diameter  
ID: Inside diameter

10.02.2025

## E. Annex

### 1. Torques

When assembling the base valve and the control valves all **bolts** are checked with a torque spanner according to the following list. Lightly grease the bolts before assembling!

Base valve	Nominal size DN	Hex bolt M	Strength class <sup>1)</sup>	Tightening torque	
				Target	Max. <sup>2)</sup>
	40 - 50	M 8	A4/80	22 Nm	25 Nm
	65 - 80	M 10		47 Nm	50 Nm
	100	M 12		84 Nm	87 Nm
	125 - 150	M 16		172 Nm	216 Nm
	200	M 20		285 Nm	423 Nm
	250	M 20		285 Nm	423 Nm
	300	M 20		380 Nm	423 Nm

Control valve	Type	Socket M	Strength class <sup>1)</sup>	Tightening torque	
				Target	Max.
	DRV / DAV	M 6	A2 / A4 / 70	8 Nm	8.5 Nm
	MBV / RBS				
	Control valve	Hex bolt M	Strength class	Target	Max.
	NAZ	M 6	A2 / A4 / 70	8 Nm	8.5 Nm

(Not for new applications)

Base valve	Nominal size DN	Hex bolt M	Strength class <sup>1)</sup>	Tightening torque	
				Target	Max.
	40 - 50	M 8	A2/70	17 Nm	19 Nm
	65	M 10		33 Nm	36 Nm
	80	M 10		40 Nm	40 Nm
	100	M 12		70 Nm	72 Nm
	125 - 150	M 16		172 Nm	172 Nm
	200	M 20		280 Nm	285 Nm
	250	M 20		280 Nm	285 Nm
	300	M 20		235 Nm	240 Nm

Attention: <sup>1)</sup> = Note designation on screw head A2 – 70 or A4 – 80!

<sup>2)</sup> = Maximum permitted torque according to strength analysis

Bolts according to SN EN ISO 4014 and SN EN ISO 4017

As at: FO 0065, Rev. 12 / 19.12.2017

## F. Hawle in Europe

### Addresses:

Hawle Armaturen AG  
Hawlestrasse 1  
CH-8370 Sirnach  
[www.hawle.ch](http://www.hawle.ch)

telephone +41 (0)71 969 44 22  
fax +41 (0)71 969 44 11

Hawle Armaturen GmbH  
Liegnitzer Strasse 6  
D-83395 Freilassing  
[www.hawle.de](http://www.hawle.de)

telephone +49 (0)8654 63 03 - 0  
fax +49 (0)8654 63 03 60

E. Hawle Armaturenwerke GmbH  
Wagrainerstr. 13  
A-4840 Vöcklabruck  
[www.hawle.at](http://www.hawle.at)

telephone +43 (0)76 72/72 576 0  
fax +43 (0)76 72 78 464

Hawle Kft  
Dobogókői út 5  
H-2000 Szentendre  
[www.hawle.hu](http://www.hawle.hu)

telephone +36 (0) 26 501 501  
fax +36 (0) 26 501 502

Hawle Armatury spol. s r.o.  
Ricanská 375  
CZ-25242 Jesenice u.Prahy  
[www.hawle.cz](http://www.hawle.cz)

telephone +420 (0)2 410 03 111  
fax +420 (0)2 41 00 33 33

Hawle Spółka zo.o  
ul. Piaskowa 9  
PL-62-028 Koziegłowy  
[www.hawle.pl](http://www.hawle.pl)

telephone +48 (0)61 811 14 00  
fax +48 (0)61 811 14 27

Hawle s.r.o.  
Pezinská c.30  
SK-903 01 Senec  
[www.hawle.sk](http://www.hawle.sk)

telephone +421 (0)2 45 92 21 87  
fax +421 (0)2 45 92 21 88

S.C. Hawle S.R.L.  
Calea Sagalui 104  
RO-300516 Timisoara  
[www.hawle.ro](http://www.hawle.ro)

telephone +40 268 47 78 81  
fax +40 356 80 06 68

DM Armaturen EOOD  
Ul. Lokomotiv 3  
BG-1220 Sofia  
[www.hawle.bg](http://www.hawle.bg)

telephone +359 (0)2 931 12 77  
Fax +359 2 931 04 36

Partners / Contact addresses:

---

---

---

---