

# PILOT SOLENOID VALVES

## Series AA/AB

# AA

### Miniature electropilots U1

Direct intervention electropilots with poppet valve system and cushioned bottom seals

- Assembly on sub-base
- Threaded connections on the body
- CNOMO interface
- Orientable coil (360°) separated from mechanical part
- Versions: 2/2 3/2 NC - NO
- Original Univir SPEED modular sub-bases



### TECHNICAL FEATURES

Ambient temperature	-10 ÷ +50 °C			
Fluid temperature	max +95 °C			
Fluid	10 µm filtered air, lubricated or not, neutral gases (upon request other fluids can be used)			
Commutation system	direct intervention poppet valve system with cushioned seals			
Ways/Positions	2/2 NC, 3/2 NC, 3/2 NO <sup>(a)</sup>			
Pressure	2/2, 3/2 NC = 0 ÷ 10 3/2 NO = 3 ÷ 10			
Control	electric			
Return	mechanical spring			
Connections	on sub-base or with threaded connections on the body			
	sub-base	G 1/8	M5	CNOMO
Nominal Ø (mm)	1,2 ÷ 1,5	1 ÷ 1,5	1 ÷ 1,5	1,2 ÷ 1,5
Nominal flow rate (NI/min)	30 ÷ 60	28 ÷ 60	30 ÷ 60	33 ÷ 45

### CONSTRUCTIVE FEATURES

Materials see features below

### ELECTRIC FEATURES

Series	U1	U3
Coil	DA	DC
Power consumption	3,5 W (DC) - 5 VA (AC)	2,5 W (DC) - 3,3 VA (AC)
Connector	AM 5110	AM 5111
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC	
Protection degree	IP65	

For other electric features see section "Accessories>Coils"

(a) = Mechanical part designed to keep the air supply always from the body  
(Useful in case of assembly of more NC-NO pilots in series to have a unique supply port)

## U1 Sleeves - with moving core



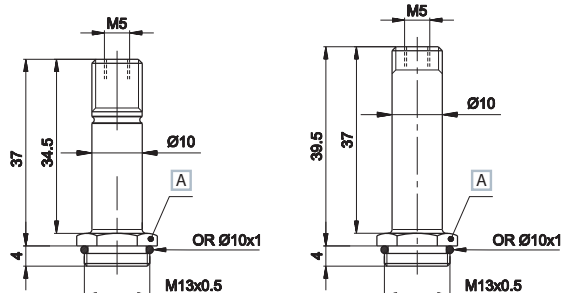
Material:	
sleeve	treated brass
cores and spring	stainless steel
seals	nitrile rubber

	Exhaust Ø mm	Pressure bar	Weight Kg	Part no.
3/2 NO	1,2	3÷10	0,030	AA-0150
3/2 NC	1,5	0÷10	0,030	AA-0157
2/2 NC	-	0÷10	0,030	AA-0170

Upon request viton seals and stainless steel sleeves (only NC versions)

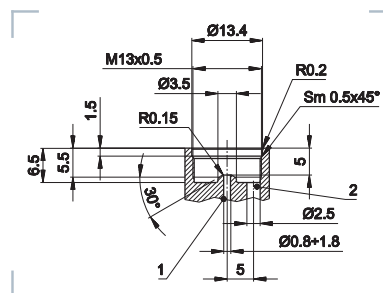
■ NC

■ NO



A Wrench 14

■ Particolare lavorazione sede



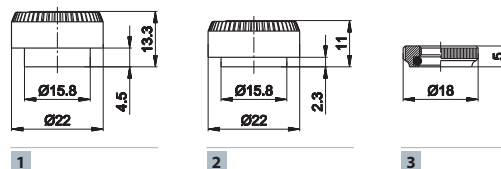
1 = Supply port  
2 = Use

## Locking rings for coils on sleeves



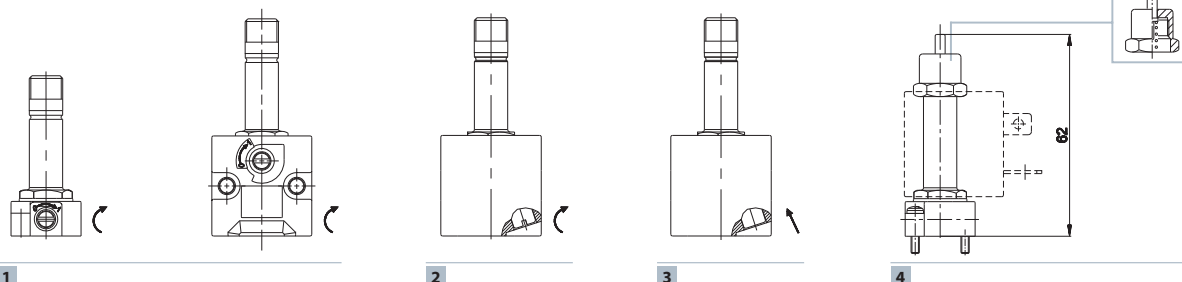
Version	Suitable for sleeves	Material	Coil	Part no.
1 = radial exhausts	3/2 NO	technopolymer	U1	AM-5213A
2 = radial exhausts	3/2 NC	technopolymer	U1	AM-5211A
3 = open exhausts	2/2 NC	brass	U1	AM-5211B

In order to convey exhausts, use version 3



## Standard manual overrides

Functionig	Suitable for sleeves	Symbol/Part no.
1 = with 2 position screw	all NC U1 electropilots that can use manual override	⊖
2 = with impulse 1-2 position screw	only CNOMO NC U1 electropilots	⊖
3 = with button with tool	only CNOMO NC U1 electropilots	→
4 = with button, 1 position	U1 3/2 NO electropilots	AM-5201 (a)



(a) = Mounted on the 3/2 NO sleeve


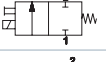
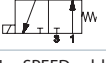
⊖ = with 2 position screw  
→ = with button with tool

## U1 2/2 - 3/2 Electropilot for assembling on sub-base



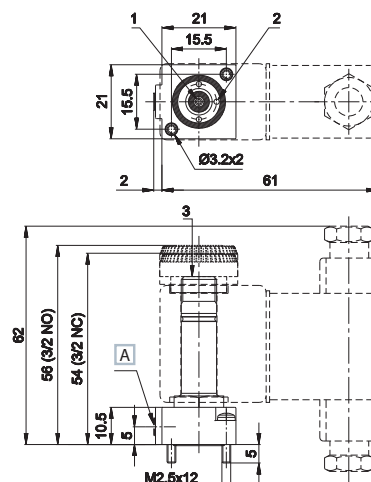
<b>Material:</b>	
valve body	technopolymer
sleeve	treated brass
core and spring	stainless steel
seals	nitrile rubber

Weight (Kg): 0,036

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1 → 2	2 → 3	En.	De-en.		
3/2 NC		1,5	60	80	12	12	⊖	AA-0184
2/2 NC		1,3	50	-	16	-	⊖	AA-0186
3/2 NO (b)		1,2	30	70	11	10	(c)	AA-0188

Use SPEED subbase to build Manifolds, see following pages.

Available upon request: brass valve body (without manual override), zamak valve body, stainless steel sleeve, other inner diameters.



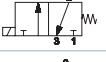
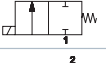

A Manual override 1 = Supply port  
2 = Use  
3 = Exhaust

## U1 2/2 - 3/2 G1/8 Electropilot



<b>Material:</b>	
valve body	brass
sleeve	treated brass
core and spring	stainless steel
seals	nitrile rubber

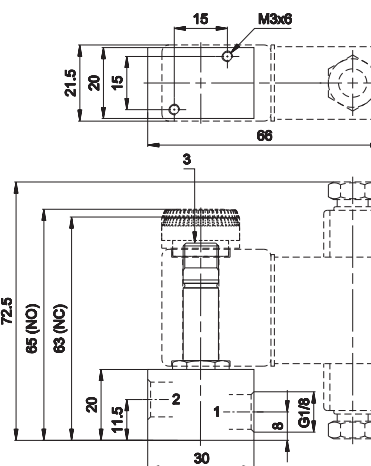
Weight (Kg): 0,105

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1 → 2	2 → 3	En.	De-en.		
3/2 NC		1,5	60	85	12	12	-	AA-0211
2/2 NC		1,3	60	-	16	-	-	AA-0219
3/2 NO (b)		1	28	75	11	9	(c)	AA-0213

Electropilot to be used done.

Brass body suitable for use with non-aggressive liquids. No manual override.

Available upon request: stainless steel sleeve - other inner diameters.






1 = Supply port  
2 = Use  
3 = Exhaust

## U1 2/2 - 3/2 M5 Electropilot



<b>Material:</b>	
valve body	brass
sleeve	treated brass
core and spring	stainless steel
seals	nitrile rubber

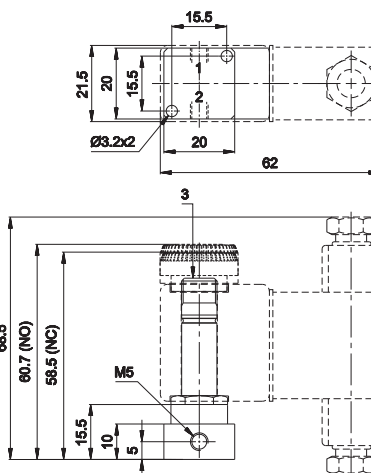
Weight (Kg): 0,065

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1 → 2	2 → 3	En.	De-en.		
3/2 NC		1,5	60	80	12	12	-	AA-0231
2/2 NC		1,3	50	-	16	-	-	AA-0239
3/2 NO (b)		1	30	70	11	10	(c)	AA-0233

Electropilot to be used done.

Brass body suitable for use with non-aggressive liquids. No manual override.

Available upon request: stainless steel sleeve - other inner diameters.



1 = Supply port  
2 = Use  
3 = Exhaust

(b) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one

(d) = the Ø shown on the 3/2 valves refers to the exhaust

Electropilots are supplied without coil, connector and locking ring

(c) = manual override on AM-5201 ring nut

⊖ = with 2 position screw

U1 CNOMO 2/2 - 3/2 Electropilot for mounting on sub-bases SPEED U2

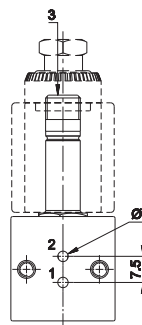
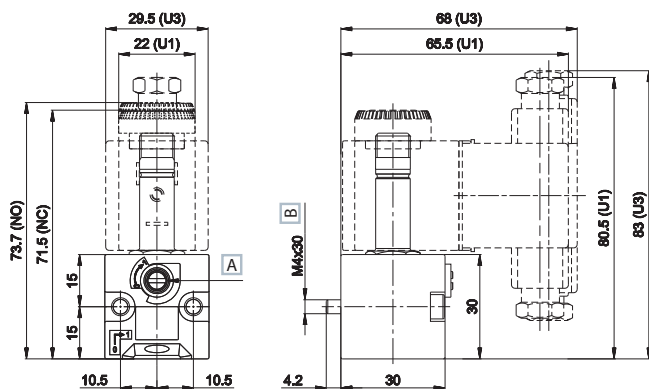


<b>Material:</b>	
valve body	technopolymer
sleeve	treated brass
core and spring	stainless steel
seals	nitrile rubber

Weight (Kg):	0,155
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	Symbol	Ø (d)	Flow rate (l/min)		Times (ms)		Manual	Part no.
		mm	1 → 2	2 → 3	En.	De-en.	override	
3/2 NC		1,5	45	77	12	12	⊖	AA-0400
		1,5	45	77	12	12	→	AA-0400U
2/2 NC		1,3	42	-	-	-	⊖	AA-0402
3/2 NO (b)		1,2	33	77	11	10	(c)	AA-0404

Sub-base: SPEED U2. Available upon request: brass valve body (without manual override). Zamak valve body. Stainless steel sleeve - other inner diameters.



☐ A Manual override

☐ B ISO 4762

1 = Supply port  
2 = Use  
3 = Exhaust

## Modular sub-base "SPEED" series U1/U2 G1/8



Electropilot	Connections	Material	Weight Kg	Part no.
U1 for base	G 1/8	zamak	0,037	<b>AA-0450</b>
U2 for base	G 1/8	zamak	0,075	<b>AB-0900</b>

### Advantages

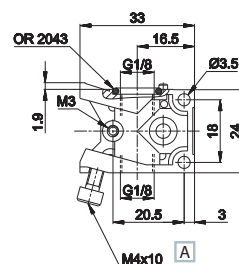
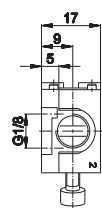
The original UNIVER "Speed" series was designed to solve some operational problems

- Possibility of defining the number of sub-bases at the moment of use
- Possibility of freely increasing or reducing the number of elements
- Quick assembly with special screw (built-in) standard supplied
- Reduction of stock holding
- Easy technical intervention

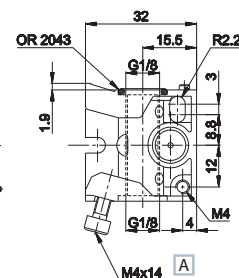
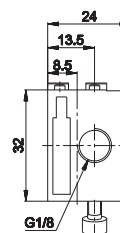
Air supply is rotated by 90° in comparison with side consumption  
Standard (built-in) screw and O-Ring

When assembling the manifold, put the bases on a flat surface and tighten the screw until the manifold is perfectly aligned.

- U1



■ U2



**A** ISO 4762

(b) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one      (c) = manual override on ring nut AM-5201

(d) = the Ø shown on the 3/2 valves refers to the exhaust

**Electropilots are supplied without coil, connector and locking ring**

⊖ = with 2 position screw  
→ = with button with tool

## Miniature electropilots U2

Direct intervention electropilots with poppet valve system and bottom cushioned seals

- Assembly on sub-base
- Threaded connections on the body
- CNOMO interface
- Orientable coil (360°) separated from mechanical part
- Versions: 2/2 3/2 - NC NO
- Original Univer SPEED modular sub-base



### TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C			
Fluid temperature	max +95 °C			
Fluid	filtered air 10 µm, lubricated or not (upon request other fluids can be used)			
Commutation system	direct intervention poppet valve system with cushioned seals			
Ways/Positions	<b>2/2 NC, 3/2 NC, 3/2 NO<sup>(a)</sup></b>			
Pressure	<b>2/2, 3/2 NC = 0 ÷ 10</b> <b>3/2 NO = 3 ÷ 10</b>			
Control	electric			
Return	mechanical spring			
Connections	on sub-base or with threaded connections on the body			
	sub-base	G 1/8	M5	CNOMO
Nominal Ø (mm)	2,1 ÷ 2,4	2,1 ÷ 2,4	1,6 ÷ 6	2,1 ÷ 2,4
Nominal flow rate (NI/min)	92 ÷ 150	100 ÷ 155	95 ÷ 650	92 ÷ 110

### CONSTRUCTIVE CHARACTERISTICS

Materials	see features below
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### ELECTRIC CHARACTERISTICS

Series	U2
Coil	DB
Power consumption	11W (DC) - 10 VA (AC)
Connector	AM 5111
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC

For other electric features see section "Accessories>Coils"

(a) = Mechanical part designed to keep the air supply always from the body  
(Useful in case of assembly of more NC-NO pilots in series to have a unique supply port)

## U2 Sleeves - with moving core



Material:	
sleeve	treated brass
cores and springs	stainless steel
seals	nitrile rubber

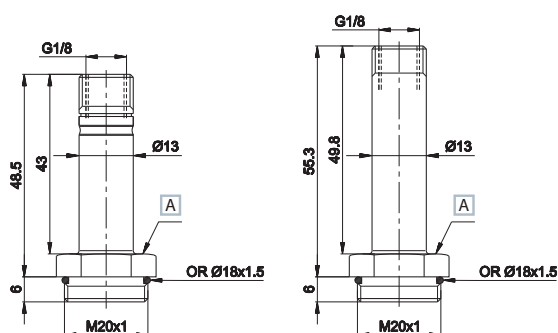
3/2 NO  
3/2 NC  
2/2 NC (a)  
2/2 NC

Exhaust Ø	Pressure	Weight	Part no.
mm	bar	Kg	
2,4	3÷10	0,060	AB-0600
2,4	0÷10	0,060	AB-0613
-	0÷10	0,060	AB-0640
-	0÷10	0,070	AB-0643

Upon request viton seals and stainless steel sleeves (only NC options)

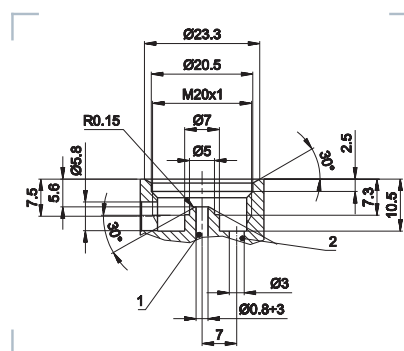
■ NC

■ NO



A Wrench 22

## Detail of machining



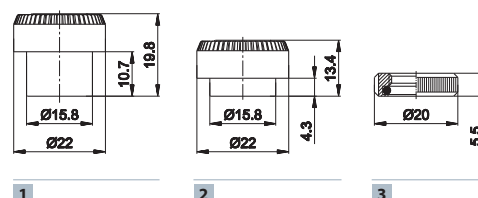
1 = Supply port  
2 = Use

## Locking rings for coils on sleeves



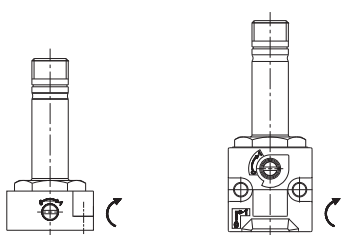
Version	Suitable for sleeves	Material	Coil	Part no.
1 = radial exhausts	3/2 NC	technopolymer	U2	AM-5212A
2 = radial exhausts	3/2 NO	technopolymer	U2	AM-5214A
3 = open exhausts	2/2 NC	brass	U2	AM-5212B

In order to convey exhausts, use version 3

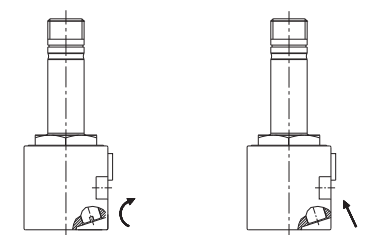


## Standard manual overrides with electropilots

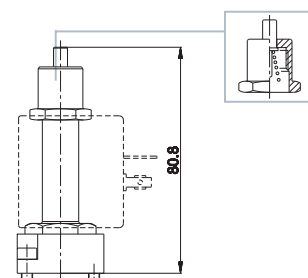
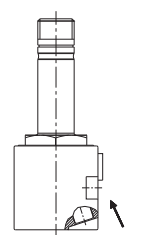
Functioning	Suitable for sleeves	Symbol/Part no.
1 = with 2 position screw	all NC U2 electropilots that can use manual override	⊖
2 = with impulse 1-2 position screw	only CNOMO NC U2 electropilots	⊖
3 = with button with tool	only CNOMO NC U2 electropilots	→
4 = with button, 1 position	U2 NO 3/2 electropilots	AM-5203 (b)



(a) = Suitable for sub-bases with diameter from 3 ÷ 6



(b) = Mounted on the 3/2 NO sleeve



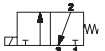
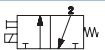
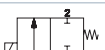
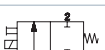
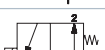
⊖ = with 2 position screw  
→ = with button with tool

## U2 2/2 - 3/2 Electropilot for assembling on sub-base

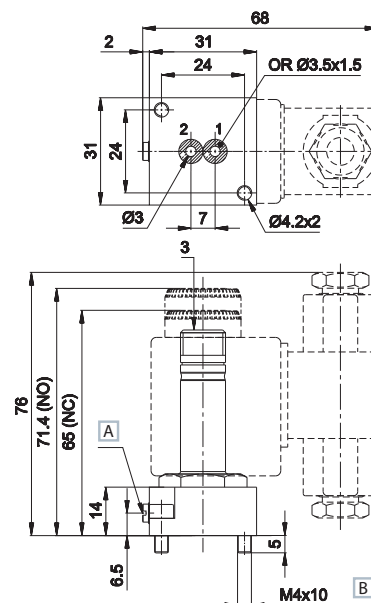


**Material:**  
 valve body zamak  
 sleeve treated brass  
 core and spring stainless steel  
 seals nitrile rubber

Weight (Kg): 0,125

	Symbol	Ø (d) mm	Flow rate (Nl/min)		Times (ms)		Manual override	Part no.
			1 → 2	2 → 3	En.	De-en.		
3/2 NC		2,4	150	160	13	10	—	AB-0681
3/2 NC		2,4	150	160	13	10	⊖	AB-0687
2/2 NC		2,1	130	-	13	-	—	AB-0722
2/2 NC		2,1	130	-	13	-	⊖	AB-0728
3/2 NO (c)		2,4	92	148	14	10	(e)	AB-0685

Sub-base: SPEED U2. Available upon request: stainless steel sleeve - other inner diameters.



A Manual override  
 B ISO 4762


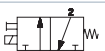
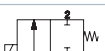
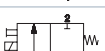
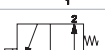
1 = Supply port  
 2 = Use  
 3 = Exhaust

## U2 2/2 - 3/2 G1/8 Electropilot

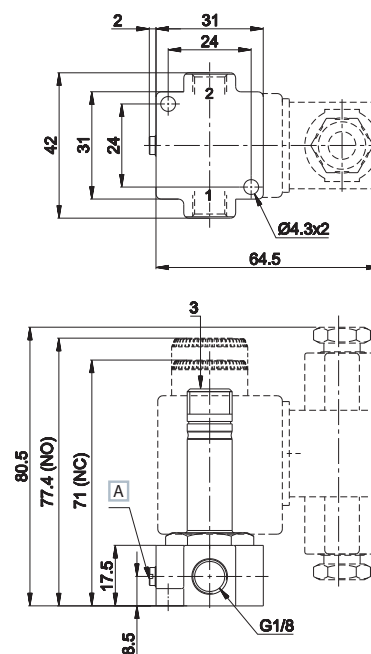


**Material:**  
 valve body zamak  
 sleeve treated brass  
 core and spring stainless steel  
 seals nitrile rubber

Weight (Kg): 0,145

	Symbol	Ø (d) mm	Flow rate (Nl/min)		Times (ms)		Manual override	Part no.
			1 → 2	2 → 3	En.	De-en.		
3/2 NC		2,4	155	210	13	10	—	AB-0751
3/2 NC		2,4	155	210	13	10	⊖	AB-0757
2/2 NC		2,1	155	-	12	-	—	AB-0765
2/2 NC		2,1	155	-	12	-	⊖	AB-0771
3/2 NO (c)		2,4	100	150	14	11	(e)	AB-0755

Available upon request: stainless steel sleeve - other inner diameters.



A Manual override

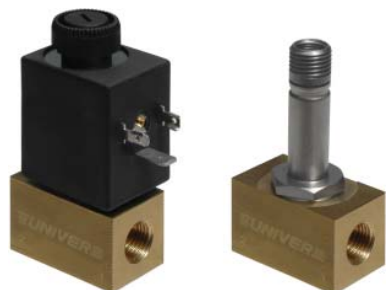
1 = Supply port  
 2 = Use  
 3 = Exhaust

(c) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one. (d) = the Ø shown on the 3/2 valves refers to the exhaust. ⊖ = with 2 position screw.

(e) = manual override on AM-5203 ring nut

Electropilots are supplied without coil, connector and locking ring

## U2 3/2 G1/4 Electropilot

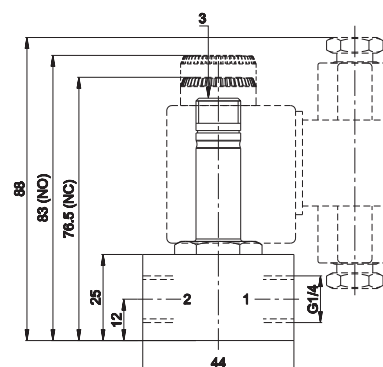
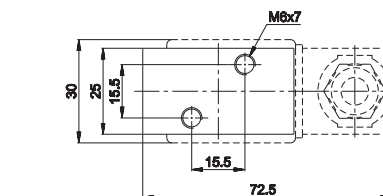


Material:	
valve body	brass\
sleeve	treated brass
core and spring	stainless steel
seals	nitrile rubber

Weight (Kg): 0,225

	Symbol	Ø (d) mm	Flow rate (l/min)		Times (ms)		Manual override	Part no.
			1 → 2	2 → 3	Ecc.	Dis.		
3/2 NC		2,1	200	210	13	11	—	AB-0822
3/2 NO (c)		2,1	95	160	12	10	(e)	AB-0819

Suitable for use with non-aggressive liquids. Upon request: stainless steel body and sleeve.



1 = Supply port  
2 = Use  
3 = Exhaust

## U2 2/2 G1/4 Electropilot



Material:	
valve body	brass
sleeve	treated brass
core and spring	stainless steel
seals	nitrile rubber

Weight (Kg): 0,220

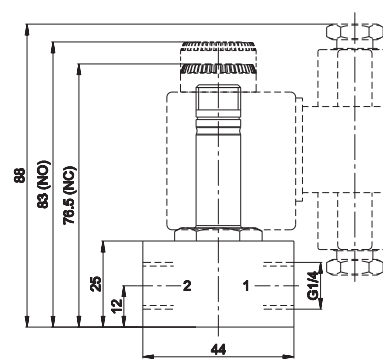
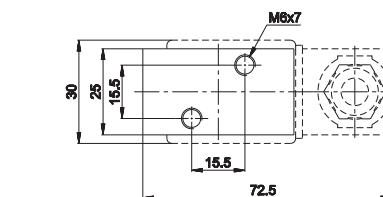
	Symbol	Ø (d) mm	Flow rate (l/min)	Pressure bar	Times (ms)		Part no.
					En.	De-en	
2/2 NC		1,6	108	0÷30	6	-	AB-0824
		2	165	0÷20	9	-	AB-0825
		2,4	210	0÷15	11	-	AB-0826
		3	280	0÷10	12	-	AB-0827
		3,5	350	0÷9	-	10	AB-0828
		4	450	0÷8	-	13	AB-0829
		4,5	500	0÷7	-	13	AB-0830
		5	550	0÷6,5	-	16	AB-0831
		5,5	600	0÷6	-	21	AB-0832
		6	650	0÷5	-	29	AB-0833

Suitable for use with non-aggressive liquids.



Coil U2 - 17 VA

Voltage  
24V AC - 50/60 Hz DB-0607  
110V AC - 50/60 Hz DB-0608  
220V AC - 50/60 Hz DB-0610



1 = Supply port  
2 = Use

(c) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one. (d) = the Ø shown on the 3/2 valves refers to the exhaust. ⊕ = with 2 position screw.

(e) = manual override on AM-5203 ring nut

Electropilots are supplied without coil, connector and locking ring

Technical modifications keep in reserve !

(2020/10)



