

THE NETHERLANDS
(N E D E R L A N D)

EC TYPE-APPROVAL CERTIFICATE

Communication concerning:

- EC type-approval ⁽¹⁾
 - ~~extension of EC type-approval ⁽¹⁾~~
 - ~~refusal of EC type-approval ⁽¹⁾~~
 - ~~withdrawal of EC type-approval ⁽¹⁾~~
- } of a type of
hydrogen component

with regard to Regulation (EC) number 79/2009, as implemented by Regulation (EU) number 406/2010.

EC type-approval number : e4*79/2009*406/2010*0034*00

Reason for extension : N.A.

SECTION I

- 0.1. Make (trade name of manufacturer) : Swagelok Company
- 0.2. Type : Non-return valve CH series
- 0.3. Means of identification of type, if marked on the component ⁽²⁾ : SS-CHS4-
SS-CHS5-
SS-CHS6-
SS-CHS8-
SS-CHS6MM-
SS-CHS8MM-
SS-CHS10MM-
SS-CHS12MM-
SS-CHS14MM-
SS-CHS15MM-
SS-CHS16MM-
SS-CHF4-
SS-CHM4-
SS-CHM6-
SS-CHM8-
- 0.3.1. Location of that marking : Body of the component (see drawing)



Approval number: e4*79/2009*406/2010*0034*00

- 0.5. Name and address of manufacturer : Swagelok Company
29500 Solon Road 44139
Solon, Ohio
United States of America
- 0.7. In the case of components and separate technical units, location and method of affixing of the EC approval mark : On the sample
- 0.8. Name(s) and address(es) of assembly plant(s) : Swagelok Company
Order Fulfillment Center (OFC)
29495 FA Lennon Drive
Solon, OH 44139
- 0.9. Name and address of manufacturer's representative (if any) :

SECTION II

1. Additional information (where applicable) : see Addendum
2. Technical service responsible for carrying out the tests : Kiwa Nederland B.V.
P.O.Box 137
7300AC Apeldoorn
The Netherlands
3. Date of test report : 06-08-2020
4. Number of test report : 191101447
5. Remarks (if any) : see Addendum
6. Place : Zoetermeer
7. Date : 22 October 2020
8. Signature :



R.F.R. Clement

- Attachments:
- Information package.
 - Test report.

⁽¹⁾ Delete where not applicable.

⁽²⁾ If the means of identification of type contains characters not relevant to describe the vehicle, component or separate technical unit types covered by this information document, such characters shall be represented in the documentation by the symbol '?' (e.g. ABC??123??).

ADDENDUM

to EC type-approval certificate number: e4*79/2009*406/2010*0034*00

relating to EC component type-approval of a hydrogen component or system

1. Additional information

1.1. ~~Hydrogen system designed to use liquid hydrogen/Hydrogen system designed to use compressed (gaseous) hydrogen/Hydrogen component designed to use liquid hydrogen/Hydrogen component designed to use compressed (gaseous) hydrogen~~ ⁽¹⁾

2. Specifications and test results

2.1. ~~Containers designed to use compressed (gaseous) hydrogen~~

2.1.1. ~~Container material specifications~~

Material specifications	Applicable to material						Details
	Steel	Aluminium alloy	Plastic liner	Fibre	Resin	Coating	
Material manufacturer	√	√	√	√	√		
Type of material	√	√	√	√	√		
Material identification	√	√	√	√	√		
Heat treatment definition	√	√					
Chemical composition	√	√					
Cold or cryoforming procedure	√						
Welding procedure definition	√	√					

2.1.2. ~~Container material test results~~

Material test	Applicable to material						Specified material value	Test value
	Steel	Aluminium alloy	Plastic liner	Fibre	Resin	Coating		
Tensile test	√	√	√					
Charpy impact test	√							
Bend test	√	√						
Macroscopic examination	√							



Material test	Applicable to material						Specified material value	Test value
	Steel	Aluminium alloy	Plastic liner	Fibre	Resin	Coating		
Corrosion test		√						
Sustained load cracking test		√						
Softening temperature test			√					
Glass transition temperature test					√			
Resin shear strength test					√			
Coating test						√		
Hydrogen compatibility test	√	√	√	√	√			

2.1.3. Container test results

Container test	Specified design value	Test result
Burst Test		
Ambient Temperature Pressure Cycle Test		
LBB Performance Test		
Bonfire test		
Penetration Test		
Chemical Exposure Test		
Composite Flaw Tolerance Test		
Accelerated Stress Rupture Test		
Extreme Temperature Pressure Cycle Test		
Impact Damage Test		
Leak Test		
Permeation Test		
Boss Torque Test		
Hydrogen Gas Cycling Test		

3. Restriction of use of the device (if any) : None

4. Remarks : None

⁽¹⁾ Delete where not applicable.

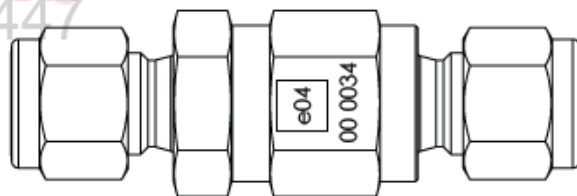
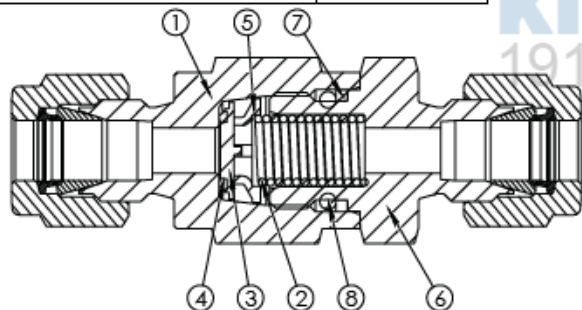


NOMINAL PRESSURE RATING: UP TO 35 Mpa (5,076 psi)
 MAWP AS TESTED PER EN406: 43.75 Mpa (6,345 psi)
 MARKING METHOD: LASER MARKED
 TEMPERATURE RATING: (-40C TO +85C)

O-RING MATERIAL	COMPOUND	Designator
EPDM	Parco 5775-75	EP
NEOPRENE	Parco 3110-70	NE

Spring Cracking Pressures (psi)	Designator
1/3	1/3
1	1
5	5
10	10
25	25

ITEM NO.	DESCRIPTION	MATERIAL	QTY.
1	INLET BODY	ASTM A276-316/316L	1
2	SPRING	ASTM A313-302	1
3	POPPET	ASTM A276-316/316L	1
4	BONDED POPPET ELASTOMER	FKM: ASTM D2000-03a M6HK710 A1-11 EF31 EO88 Z1 Z	1
5	POPPET STOP	ASTM A240-316	1
6	OUTLET BODY	ASTM A276-316/316L	1
7	BACKUP RING	PTFE: ASTM D1710-99, Type I, Grade 1, Class B	1
8	O-RING	SEE O-RING MATERIAL TABLE	1
9	SWAGELOK HARDWARE	ASTM A276-316/316L	2



kiwa
191101447

UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

.XX ±.01

.XXX ±.005

.XXXX ±.0015

ANGLES ±30 MINUTES

INTERPRET DIM. AND TOL. PER ASME Y14.5M-1994

TITLE

APPROVAL/SCHEDULE DRAWING

MATERIAL

SAP CHANGE
NUMBER

DCN-

SCALE

4:1

DATE

9/22/2020

DWG.
NO.

CH CHECK VALVE-EC79-APPROVAL

Swagelok

SHEET

1 of 2

VS.

REV.

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NOTE(S):

1.) THE TWO ENDS ARE AVAILABLE IN ANY COMBINATION.

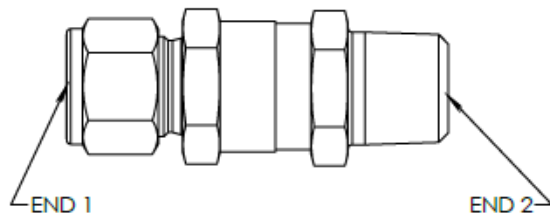
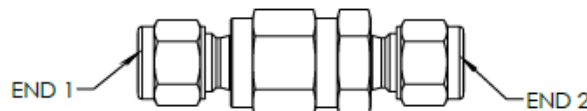
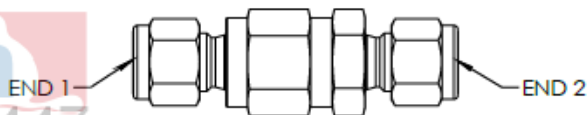
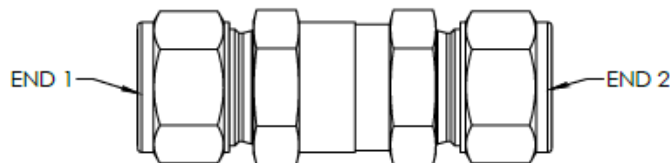
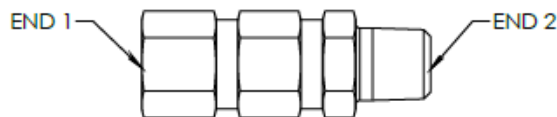
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MAWP AS TESTED PER EN406: 43.75 Mpa (6,345 psi)

MARKING METHOD: LASER MARKED

TEMPERATURE RATING: (-40C TO +85C)

End 1	End 2	Designator
400	400	S4
500	500	S5
600	600	S6
800	800	S8
6MO	6MO	S6MM
8MO	8MO	S8MM
10MO	10MO	S10MM
12MO	12MO	S12MM
14MO	14MO	S14MM
15MO	15MO	S15MM
16MO	16MO	S16MM
1/4" Female NPT	1/4" Female NPT	F4
1/4" Male NPT	1/4" Male NPT	M4
3/8" Male NPT	3/8" Male NPT	M6
1/2" Male NPT	1/2" Male NPT	M8



UNLESS OTHERWISE SPECIFIED

DIMENSIONS ARE IN INCHES

JXX ±.01

JXXX ±.005

JXXXX ±.0015

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CH CHECK VALVE-EC79-APPROVAL

Swagelok

SHEET

2 of 2

VS.

REV.

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