



GRAND-DUCHÉ DE LUXEMBOURG

Ministère du Développement durable
et des Infrastructures
Département des Transports

L-2938 Luxembourg

SOCIÉTÉ NATIONALE DE
CERTIFICATION ET D'HOMOLOGATION

s.à r.l.

Registre de Commerce: B 27180

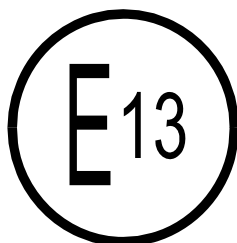
L-5201 Sandweiler



Référence: E13*110R00*110R00*0042*04

Annexes: - Rapport technique
- Fiche de renseignements du constructeur

Sandweiler, le 22 novembre 2010



Communication concernant: ~~la délivrance d'une homologation~~

Communication concerning:

~~approval granted~~

~~l'extension d'homologation~~

~~approval extended~~

~~le refus d'homologation~~

~~approval refused~~

~~le retrait d'homologation~~

~~approval withdrawn~~

~~l'arrêt définitif de la production~~

~~production definitely discontinued~~

d'un type d'organe GNC en application du Règlement N° 110

of a type of CNG component pursuant to Regulation N° 110

Homologation N°:

Approval number:

E13*110R00*110R00*0042*04

Marque d'homologation:

Approval mark:



110R-000042

1.

Organe GNC ⁽²⁾:

CNG component considered ⁽²⁾:

Cylinder multivalve

Type: **VB S1**

Versions: VB S1, VB A1, VB S1 MY07, VB A1 MY07

Réservoir(s) ou bouteille(s):

Container(s) or cylinder(s):

not applicable

Témoin de pression:

Pressure indicator:

not applicable

Soupape de surpression:

Pressure relief valve:

not applicable

Vanne(s) automatique(s):

Automatic valve(s):

Automatic cylinder valve

Limiteur de débit:

Excess flow valve:

Excess flow limiting device

	Capot étanche: Gas-tight housing:	Gas-tight housing
	Détendeur(s) de pression: Pressure regulator(s):	not applicable
	Soupape(s) de contrôle: Check valve(s):	not applicable
	Dispositif de surpression (à déclenchement thermique): Pressure relief device (PRD) (temperature triggered):	Pressure relief device
	Vanne manuelle: Manual valve:	Manual valve
	Flexibles: Flexible fuel lines:	not applicable
	Embout ou réceptacle de remplissage: Filling or receptacle:	not applicable
	Mélangeur gaz / air (injecteur(s)): Gas / air mixer (injector(s)):	not applicable
	Régulateur de débit: Gas flow adjuster:	not applicable
	Mélangeur gaz / air (carburateur): Gas / air mixer (carburetor):	not applicable
	Module de commande électronique: Electronic control unit:	not applicable
	Capteur(s) de pression et de température: Pressure and temperature sensor(s):	not applicable
	Filtre(s) à GNC: CNG filter(s):	not applicable
	Dispositif de surpression (à déclenchement manométrique): Pressure relief device (PRD) (pressure triggered):	not applicable
2.	Marque de fabrique ou de commerce: Trade name or mark:	MTM, BRC Gas equipment, IMPCO, <u>FSS</u>
3.	Nom et adresse du constructeur: Manufacturer's name and address:	M.T.M. s.r.l. Via La Morra, 1 I-12062 Cherasco (CN)
4.	Le cas échéant, nom et adresse du représentant du constructeur: If applicable, name and address of manufacturer's representative:	not applicable
5.	Présenté à l'homologation le: Submitted for approval on:	06. – 16.11.2010
6.	Autorité déléguée: Assigned authority:	<i>Société Nationale de Certification et d'Homologation L-5201 Sandweiler</i>
	Service technique chargé des essais d'homologation: Technical service responsible for type-approval tests:	Luxcontrol SA B.P. 349 L-4004 Esch-sur-Alzette

7. **Date du procès-verbal délivré par ce service:**
Date of test report issued by that service: 19.11.2010
8. **Numéro du procès-verbal:**
Number of test report: LCA 54 0280 017 10
9. **L'homologation est:**
Approval is: extended
10. **Raison(s) de l'extension (le cas échéant):**
Reason(s) of extension (if applicable): see: Annex A, page(s) 2 of technical report
11. **Lieu:**
Place: Sandweiler
12. **Date:**
Date: 22 novembre 2010
13. **Signature:**
Signature:

Pour le Département des Transports



Marco FELTES
Inspecteur Principal

Pour la SNCH



Claude LIESCH
Directeur



14. **Des copies des documents soumis dans le dossier d'homologation ou d'extension d'homologation peuvent être obtenues sur demande:**
The documents filed with the application or extension of approval can be obtained upon request: see: INDEX to TYPE-APPROVAL REPORT

ADDITIF
ADDENDUM

1.	Renseignements complémentaires concernant l'homologation d'un type d'organe GNC en application du Règlement N° 110 ⁽¹⁾: Additional information concerning the type-approval of a type of CNG components pursuant to regulation N° 110 ⁽¹⁾ :	
1.1.	Réservoir(s) ou bouteille(s): Container(s) or cylinder(s):	not applicable
1.1.1.	Dimensions: Dimensions:	not applicable
1.1.2.	Matériau: Material:	not applicable
1.2.	Témoin de pression: Pressure indicator:	not applicable
1.2.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.2.2.	Matériau: Material:	not applicable
1.3.	Soupape de surpression (soupape de décompression): Pressure relief valve (discharge valve):	
1.3.1.	Pression(s) de fonctionnement: Working pressure(s):	max. 220 bar
1.3.2.	Matériau: Material:	see information document
1.4.	Vanne(s) automatique(s): Automatic valve(s):	
1.4.1.	Pression(s) de fonctionnement: Working pressure(s):	max. 220 bar
1.4.2.	Matériau: Material:	see information document
1.5.	Limiteur de débit: Excess flow valve:	
1.5.1.	Pression(s) de fonctionnement: Working pressure(s):	max. 220 bar
1.5.2.	Matériau: Material:	see information document
1.6.	Capot étanche: Gas-tight housing:	
1.6.1.	Pression(s) de fonctionnement: Working pressure(s):	10 kPa
1.6.2.	Matériau: Material:	see information document
1.7.	Régulateur(s) de pression: Pressure regulator(s):	not applicable
1.7.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.7.2.	Matériau: Material:	not applicable
1.8.	Soupape(s) de contrôle ou de antiretour: Check valve(s) or non-return valve(s):	not applicable
1.8.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.8.2.	Matériau: Material:	not applicable

1.9.	Dispositif de surpression (à déclenchement thermique): Pressure relief device (temperature triggered):	
1.9.1.	Pression(s) de fonctionnement: Working pressure(s):	max. 220 bar
1.9.2.	Matériau: Material:	see information document
1.10.	Vanne manuelle: Manual valve:	
1.10.1.	Pression(s) de fonctionnement: Working pressure(s):	max. 220 bar
1.10.2.	Matériau: Material:	see information document
1.11.	Flexibles: Flexible fuel lines:	not applicable
1.11.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.11.2.	Matériau: Material:	not applicable
1.12.	Embout ou réceptacle de remplissage: Filling unit or receptacle:	not applicable
1.12.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.12.2.	Matériau: Material:	not applicable
1.13.	Injecteur(s): Gas injector(s):	not applicable
1.13.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.13.2.	Matériau: Material:	not applicable
1.14.	Régulateur de débit: Gas flow adjuster:	not applicable
1.14.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.14.2.	Matériau: Material:	not applicable
1.15.	Mélangeur gaz / air: Gas / air mixer:	not applicable
1.15.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.15.2.	Matériau: Material:	not applicable
1.16.	Module de commande électronique (pour l'alimentation au GNC): Electronic control unit (CNG-fuelling):	not applicable
1.16.1.	Principes de base du logiciel: Basic software principles:	not applicable
1.17.	Capteur(s) de pression et de température: Pressure and temperature sensor(s):	not applicable
1.17.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.17.2.	Matériau: Material:	not applicable

1.18.	Filtre(s) à GNC: CNG filter(s):	not applicable
1.18.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.18.2.	Matériau: Material:	not applicable
1.19.	Dispositif de surpression (à déclenchement manométrique): Pressure relief device (pressure triggered):	not applicable
1.19.1.	Pression(s) de fonctionnement: Working pressure(s):	not applicable
1.19.2.	Matériau: Material:	not applicable

⁽¹⁾ **Indiquer les tolérances.**

Indicate the tolerances.

⁽²⁾ **Biffer la mention inutile.**

Strike out what does not apply.



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L-5201 Sandweiler



Référence: E13*110R00*110R00*0042*04

Annexes: - Rapport technique
- Fiche de renseignements du constructeur

Sandweiler, le 22 novembre 2010

INDEX DU DOSSIER D'HOMOLOGATION INDEX TO TYPE-APPROVAL REPORT

Numéro d'homologation:

Approval number:

E13*110R00*110R00*0042*04

Révision:

Revision:

00

Marque de fabrique ou de commerce:

Trade name or mark:

MTM, BRC Gas equipment, IMPCO, FSS

Type:

Type:

VB S1

1. Procès-verbal d'essai:

Test report:

N° LCA 54 0280 017 10

- Technical report:

Page(s) 1 to 7;

- Index:

Annex A - Page(s) 1 & 2.

2. Dossier du constructeur:

Report of the manufacturer:

N° 0280 017 10

- Manufacturer's information document:

Page(s) 1 to 43, 44 to 48.

3. Autres documents annexés:

Other documents annexed:

not applicable

4. Date de délivrance de l'homologation initiale:

Date of issue of initial type approval:

30.05.2003

5. Date de la dernière délivrance de pages révisées:

Date of last issue of revised pages:

not applicable

6. Date de la dernière délivrance d'une homologation révisée:

Date of last extension:

22.11.2010



1. **General**

1.1. **Test Provisions**

The inspection was carried out according to the requirements of ECE-Regulation No. 110 including Revision 1 – Amendment 1 - Supplement 8 to the 00 series of amendments entered into force on July 22, 2009.

1.2. **Information concerning the vehicle type and the requested approval**

The statements below apply to the previous ECE type-approval as referred to on page 1.

1.2.1. [] Numbering according to the communication concerning the approval of ECE-R110

[1.] CNG component considered:

Cylinder multivalve

- **Type:** VB S1

- **Version:** VB S1, VB A1, VB S1 MY07, VB A1 MY07

[2.] Trade name or mark:

MTM, BRC Gas equipment, Impco, FSS

[3.] Manufacturer's name and address:

M.T.M. s.r.l.

Via La Morra, 1

I-12062 Cherasco (CN)

[4.] If applicable, name and address of manufacturer's representative:

not applicable

[5.] Submitted for approval on: **6-16.11.2010**

[10.] Reason(s) of extension:

alternative configurations to versions "VB S1 MY07" and "VB A1 MY07" (2 new variants for Excess flow valve, 2 new variant for clamping valve with cylinder, a new variant for cut-off valve), added trade name FSS.



1.2.2.	<u>[] Numbering according to the communication concerning the approval of ECE-R110, Annex 2B –Addendum</u>	
[1.]	Additional information concerning the type approval of a type of CNG components pursuant to Regulation No 110:	
[1.1.] - [1.2.]	not applicable	
[1.3.]	Pressure relief valve (discharge valve)	
[1.3.1.]	Working pressure(s):	max. 220 bar
[1.3.2.]	Material:	
	- O-rings, washer:	viton, NBR
	- O-rings, BK anti extrusion ring, shutter:	NBR, FKM, HNBR
	- knob, neutral cap, coil cover:	nylon PA6
	- sealing disk:	PA6 35% RFV, PVC
	- see information document for other material detail (metallic parts)	
[1.4.]	Automatic valve(s)	
[1.4.1.]	Working pressure(s):	see item [1.3.1.]
[1.4.2.]	Material:	see item [1.3.2.]
[1.5.]	Excess flow valve	
[1.5.1.]	Working pressure(s):	see item [1.3.1.]
[1.5.2.]	Material:	see item [1.3.2.]
[1.6.]	Gas tight housing	
[1.6.1.]	Working pressure(s):	10 kPa
[1.6.2.]	Material:	see item [1.3.2.]
[1.7.] – [1.8.]	not applicable	
[1.9.]	Pressure relief device (temperature triggered)	
[1.9.1.]	Working pressure(s):	see item [1.3.1.]
[1.9.2.]	Material:	see item [1.3.2.]
[1.10.]	Manual valve(s)	
[1.10.1.]	Working pressure(s):	see item [1.3.1.]
[1.10.2.]	Material:	see item [1.3.2.]
[1.11.] - [1.19.]	not applicable	

...



2. **Inspections and their results**

2.1. **Version of the tested equipment**

The following variants have been used for testing (if not stated in part 1.2.1. of this report):

- versions VB S1 (main report)
- versions “VB S1 MY07” and “VB A1 MY07” (extensions 2 to 4)

2.2. **Inspection items**

	Inspectors	Location of test:	Date of receipt of test item:	Date of test:
Main	D. Durazzi	I-CSI/Bollate (MI)	November 02	Nov 02 –Mar 03
Ext. 1:	D. Durazzi	L-4004 Esch/Alzette	Not applicable	31 August 2005
Ext. 2:	D. Durazzi	I-CSI/Bollate (MI)	July 10, 2007	16/7/07- 14/9/07
Ext. 3:	D. Durazzi	I-CSI/Bollate (MI)	23 April 2008	23-24 April 2008
Ext. 4:	D. Durazzi	See item [3.]	6.11.2010	6-16.11.2010

2.2.1. **General**

The marking requirements according to item 4.1. and 4.2. of Part I of the Regulation are fulfilled.

Every material of the equipment in contact with CNG is compatible with it. The fitting of the CNG-component, approved by this regulation into a full installation of CNG-equipment, complies with relevant electromagnetic compatibility requirements according to Regulation R10.02 or equivalent. The cylinder multi valve has parts of class 0.



2.2.2. Inspections: (according to Annex 4A; Class 0 device)

Tests	Test results	Line item
Overpressure test	no rupture or permanent distortion at pressure test of 1.5 times the maximum working pressure maintained for a period of 180 seconds	Annex 5A
External leakage test	Leakage from stem or body seals or other joints less than 15 cm ³ / hour under a pressure of 1.5 times the maximum working pressure at room temperature, at - 40°C and at + 85°C	Annex 5B
High temperature test	Leakage from stem or body seals or other joints less than 15 cm ³ / hour under the maximum working pressure at temperature + 85°C, after 8 hours conditioning	Annex 5B
Low temperature test	Leakage from stem or body seals or other joints less than 15 cm ³ / hour under the maximum working pressure at temperature - 40°C, after 8 hours conditioning	Annex 5B
Internal leakage test	After previous external leakage tests (annex 5B), no leakage appeared when submitted to pressure test of 1.5 times the maximum working pressure	Annex 5C
Durability test	requirements fulfilled	Annex 5L
CNG compatibility	all plastic parts fulfill the requirements	Annex 5D
Corrosion resistance	requirements fulfilled	Annex 5E
Resistance to dry heat	all plastic parts fulfill the requirements	Annex 5F
Ozone aging	all plastic parts fulfill the requirements	Annex 5G
Temperature cycle	requirements fulfilled	Annex 5H
Vibration resistance	requirements fulfilled	Annex 5N
Operating temperatures	Components designed to operate at temperatures between – 40°C and + 85°C	Annex 5O
General provisions	requirements fulfilled	Par. 6.1
Provisions regarding automatic valve, check valve, pressure relief valve, pressure relief device and excess flow valve	requirements fulfilled	Annex 4A

...



2.3. Remarks

Inspection results are only applicable to items, which have been tested.

2.4. Test facilities

Calibration of measuring and test equipment used to carry out the inspections is in accordance with the EEC-Directive and/or ECE-Regulation stated in 1.1. of this report and with ISO 17025.

Inspectors stated under 2.2. of this report were in charge of performing and/or evaluating the tests.

3. Evaluation of test results

3.1. Variants and equipment covered

The tests carried out cover the following variations as far as these are relevant for the gas unit:

- versions and relative accessories configurations as stated in the information document

3.2. Remarks

3.2.1. Main report:

not applicable

3.2.2. Extension 1:

The added version is covered by previous tests.

3.2.3. Extension 2 to 4:

The stated change required new tests to be performed.



4. **Statement of compliance**

The inspections items and measurements carried out have shown the compliance of the vehicle type described in this report and the attached Annex with the requirements of ECE-Regulation No. 110 including Revision 1 – Amendment 1 - Supplement 8 to the 00 series of amendments entered into force on July 22, 2009.

Esch/Alzette, 19 November 2010

Luxcontrol s.a.
Service Homologation-automobile

David Durazzi
Ingénieur-Inspecteur

Mauro Moscardelli
Ingénieur-Inspecteur

Annex



Index to the information package, including a summary in chronological order, concerning extensions and/or amendments

EEC type-approval No.: E13*110R00*110R00*0042*00

Main Report

Technical Report No.: LCA 54 280 006 3 Page 1 to 7

Composition of the Annex:

A: Index Page 1

B: Information folder Page 1 to 13

Extension 1

Technical Report No.: LCA 54 280 007 5 Page 1 to 7

Composition of the Annex:

A: Index Page 1

B: Information folder
to be added

Page 14 to 22

Contents of the extension:

to be added:

- “VB A1” version without the automatic valve

to be updated:

- the stated amendment of the regulation

Extension 2

Technical Report No.: LCA 54 280 011 5 Page 1 to 7

Composition of the Annex:

Page 1 to 2

B: Information folder
to be added

Page 23 to 36

Contents of the extension:

to be added:

- versions “VB S1 MY07” and “VB A1 MY07” with relative accessories configurations
- trade mark “IMPCO”
- new optional discharge valve
- modified accessories part (automatic valve, manual valve, gas tight housing, excess flow valve)



to be corrected:

- gas tight housing working pressure
- the maximum working temperature

to be updated:

- the stated amendment of the regulation

Extension 3

Technical Report No.: LCA 54 0280 007 08	Page 1 to 7
Composition of the Annex:	
A: Index	Page 1 to 2
B: Information folder to be added	Page 37 to 43

Contents of the extension:

to be added:

- alternative configurations to versions “VB S1 MY07” and “VB A1 MY07” (new material in low melting cylinder, new core-bush thread liaison in automatic valve, 2 alternative tap group versions in manual valve)

Extension 4

Technical Report No.: LCA 54 0280 017 10	Page 1 to 7
Composition of the Annex:	
A: Index	Page 1 to 2
B: Information folder to be added	Page 44 to 48

Contents of the extension:

to be added:

- alternative configurations to versions “VB S1 MY07” and “VB A1 MY07” (2 new variants for Excess flow valve, a new variant for clamping valve with a steel or composite cylinder, a new variant for cut-off valve) with use of overmolded rubber for sealing between cursor and valve body
- trade name FSS

Index to the information folder:

- manufacturer's information document (page 1 to 48)
-

M.T.M. s.r.l.

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P.IVA 00525960043
CCIAA Cuneo n. 107283
Reg. Imp.Uff. Alba n. 1423
Capitale Sociale:
EURO 2.400.000 i.v.
(Lire 4.647.048.000)



VB S1 Cylinder valve

1. List of modifications.

All the modification has to be considered as alternative of the present configuration.

All the modification are applicable on Version MY 07 and on Version VB A1 MY 07

Referring to drawing 0000-8618 sheet 1 Excess flow valve

Type A1 present configuration with sphere (14)

Type B1 cursor (14) instead of metallic sphere cursor with square section , material brass.

Type C1 cursor (14) instead of metallic sphere cursor with hexagonal section, material brass.

See drawing 0000-8618 sheet 2-3 Lock off valve

The tightness between the valve body and the second stage cursor can be done by O-ring (33) figure A2 also or alternatively with a overmoulded (figure B2) rubber material on the cursor (32).

The over mould rubber part can be done with HNBR or Viton (FKM) or NBR and also the configuration with Oring (33) can be done with HNBR material as alternative at the present configuration Viton (FKM).

The Shutter (34) can be made also with VITON (FKM) or HNBR material.

The Oring (43) can have increased wire diameter and he can be produced HNBR as alternative.

See drawing 0000-8618 sheet 3-3 Clamping valve with cylinder

Solution A3 present configuration

Solution B3 Connection with cylindrical thread and O-Ring (60) for steel Cylinders and composite Cylinders.

For solution B3-C3 for the tightness is used and O-Ring (60), the material of the Oring can be FKM (Viton) or HNBR.

M.T.M. s.r.l.

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(Lire 4.647.048.000)



For solution B3-C3 the O-Ring (61) works as gas tight housing. The material of the Oring is NBR.

2. Material

HNBR compound is used for some O-ring production

3. Trade name or Marks

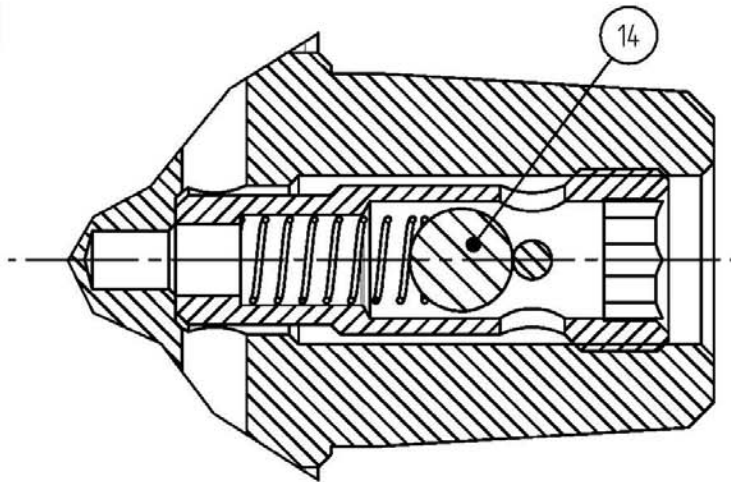
Trade name FSS (Fuel System Solution) shall be added.

4. Drawing

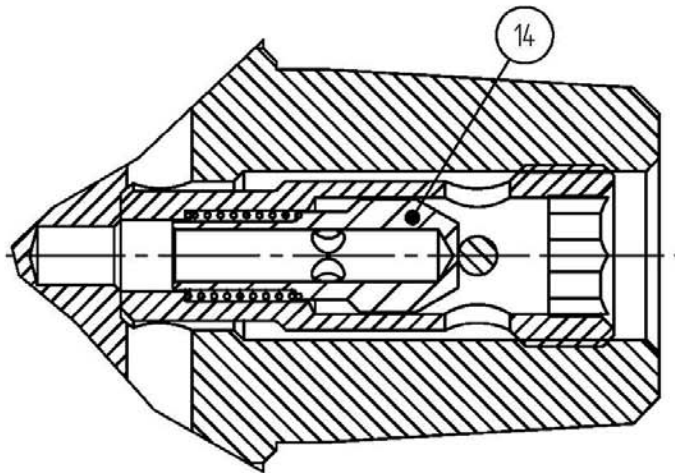
Enclosed Drawings 0000-8618 (sheets 1,2,3)

Alternative Configuration Excess Flow

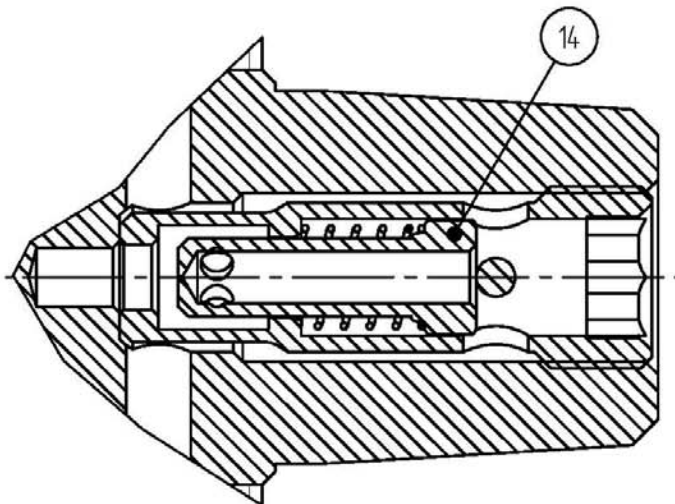
A1



B1

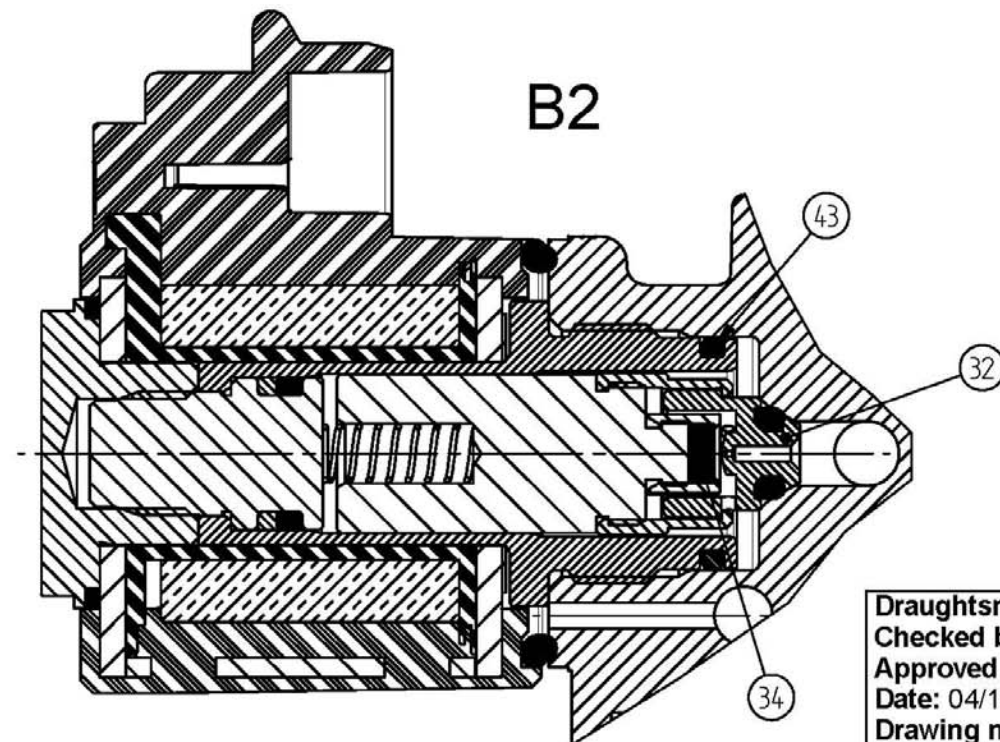
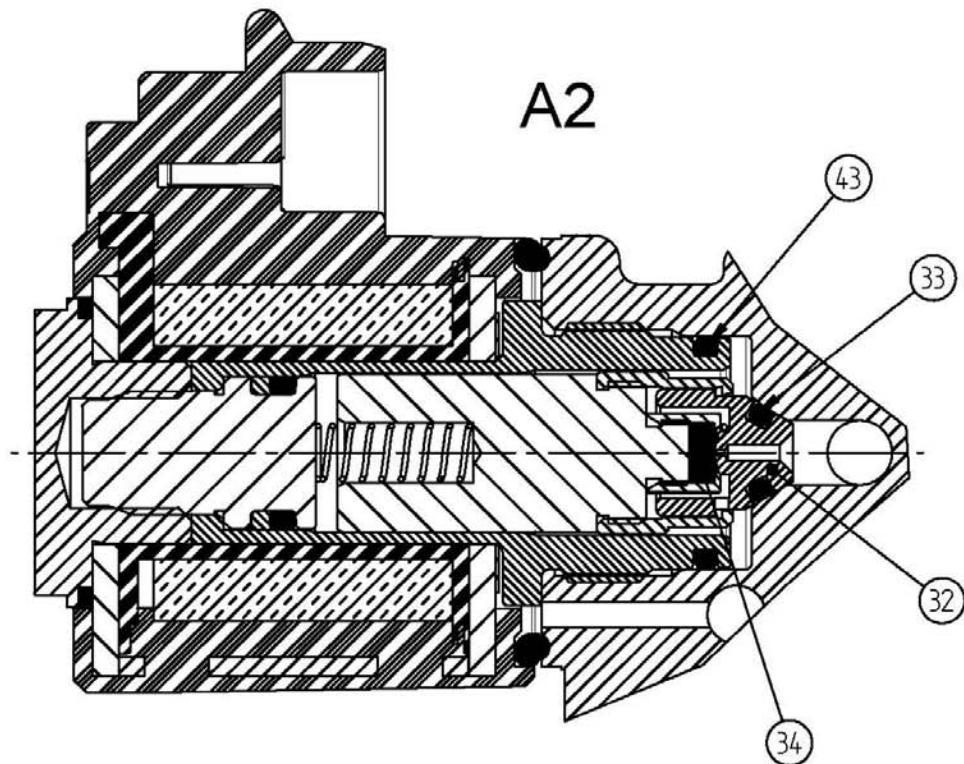


C1



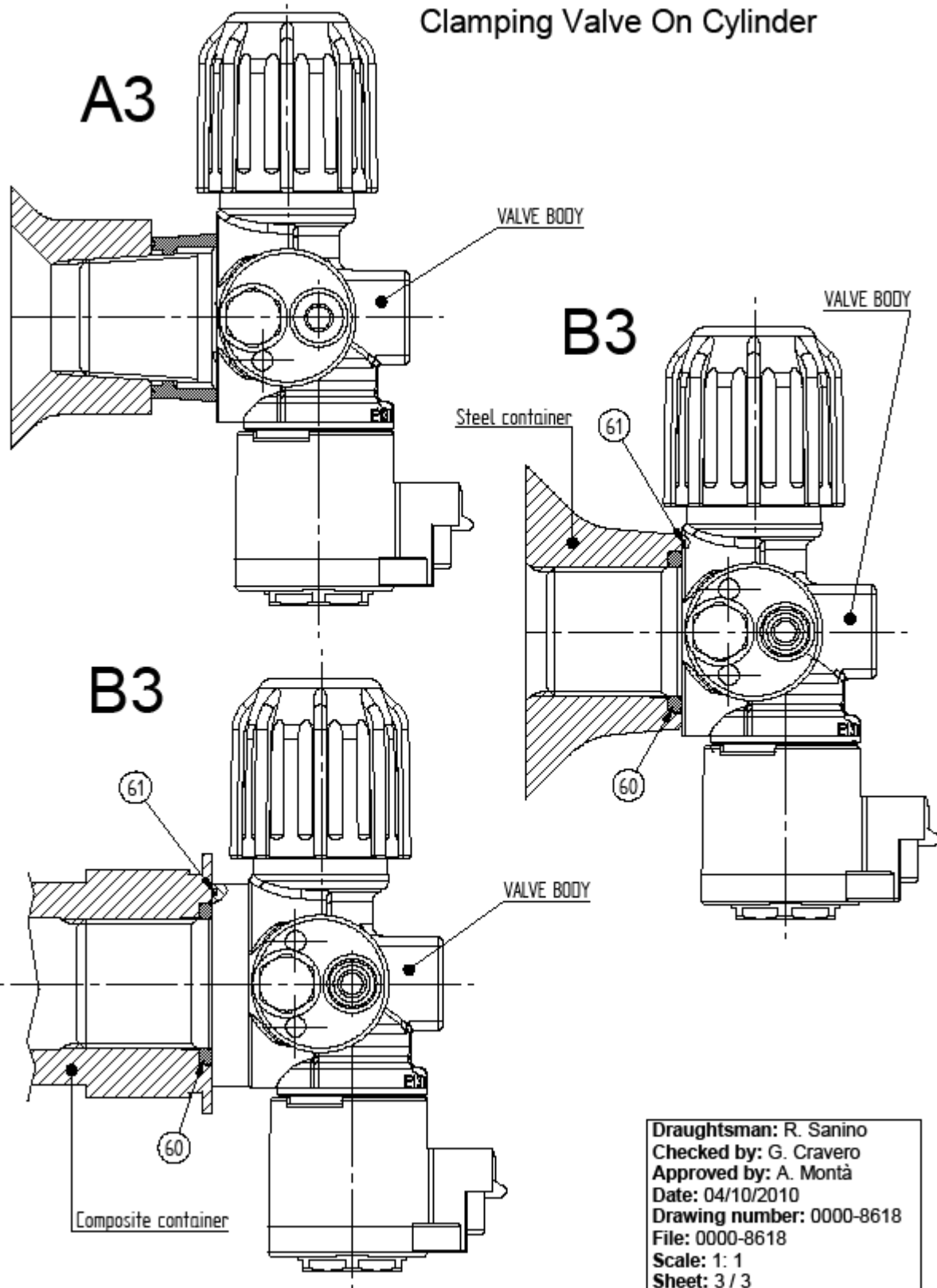
Draughtsman: R. Sanino
Checked by: G. Cravero
Approved by: A. Montà
Date: 04/10/2010
Drawing number: 0000-8618
File: 0000-8618
Scale: 2 : 1
Sheet: 1 / 3

Alternative Configuration Cut-Off Valve



Draughtsman: R. Sanino
Checked by: G. Cravero
Approved by: A. Montà
Date: 04/10/2010
Drawing number: 0000-8618
File: 0000-8618
Scale: 2 : 1
Sheet: 2 / 3

Clamping Valve On Cylinder



Draughtsman: R. Sanino
 Checked by: G. Cravero
 Approved by: A. Montà
 Date: 04/10/2010
 Drawing number: 0000-8618
 File: 0000-8618
 Scale: 1: 1
 Sheet: 3 / 3