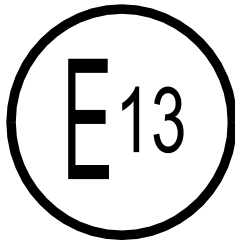




Référence: E13*110R04/02*0353*02

Annexes: - Rapport technique
- Fiche de renseignements du constructeur

Bertrange, le 08 décembre 2021



Communication concernant ⁽²⁾: - **Délivrance d'homologation**
Communication concerning ⁽²⁾: Approval granted
- **Extension d'homologation**
Approval extended
- **Refus d'homologation**
Approval refused
- **Retrait d'homologation**
Approval withdrawn
- **Arrêt définitif de la production**
Production definitively discontinued

d'un type d'organe GNC/GNL en application du Règlement N° 110
of a type of CNG/LNG component pursuant to Regulation N° 110


Homologation N°:

Approval number:

E13*110R04/02*0353*02

Marque d'homologation:

Approval mark:

 110R-040353 "C"

1.

Organe GNC/GNL:

CNG/LNG component considered:

Réservoir(s) ou bouteille(s):

Container(s) or cylinder(s):

not applicable

Réservoir(s) ou récipient(s):

Tank(s) or vessel(s):

not applicable

Accumulateur(s) de GNC:

CNG accumulator(s):

not applicable

Témoin de pression:

Pressure indicator:

applicable

Soupape de surpression: Pressure relief valve:	not applicable
Vanne(s) automatique(s): Automatic valve(s):	not applicable
Limiteur de débit: Excess flow valve:	not applicable
Capot étanche: Gas-tight housing:	not applicable
Détendeur(s): Pressure regulator(s):	not applicable
Clapet(s) antiretour: Non-return valve(s) or check valve(s):	not applicable
Dispositif de surpression (à déclenchement thermique): Pressure relief device (PRD) (temperature triggered):	not applicable
Vanne manuelle: Manual valve:	not applicable
Flexibles: Flexible fuel lines:	not applicable
Embout ou réceptacle de remplissage: Filling unit or receptacle:	not applicable
Injecteur(s) de gaz: Gas injector(s):	not applicable
Compresseur de GNC: CNG Compressor:	not applicable
Régulateur de débit de gaz: Gas flow adjuster:	not applicable
Mélangeur gaz / air: Gas / air mixer:	not applicable
Module électronique de commande: Electronic control unit:	not applicable
Capteur(s) de pression et de température: Pressure and temperature sensor(s):	applicable
Filtre(s) à GNC: CNG filter(s):	not applicable
Dispositif de surpression (à déclenchement manométrique): Pressure relief device (PRD) (pressure triggered):	not applicable
Rampe d'alimentation: Fuel rail:	not applicable
Echangeur(s) thermique(s) / vaporisateur(s): Heat exchanger(s) / vaporizer(s):	not applicable
Détecteur(s) de gaz naturel: Natural gas detector(s):	not applicable

	Réceptacle(s) de remplissage GNL: LNG filling receptacle(s):	not applicable
	Détendeur(s) GNL: LNG pressure control regulator(s):	not applicable
	Capteur(s) de pression et/ou de température GNL: LNG pressure and/or temperature sensor(s):	not applicable
	Vanne(s) manuelle(s) GNL: LNG manual valve(s):	not applicable
	Vanne(s) automatique(s) GNL: LNG automatic valve(s):	not applicable
	Clapet(s) antiretour GNL: LNG non-return valve(s):	not applicable
	Soupape(s) de surpression GNL: LNG pressure relief valve(s):	not applicable
	Limiteur(s) de débit GNL: LNG excess flow valve(s):	not applicable
	Pompe(s) à GNL: LNG fuel pump(s):	not applicable
2.	Marque de fabrique ou de commerce: Trade name or mark:	Logo see information document
3.	Nom et adresse du constructeur: Manufacturer's name and address:	<u>HUNAN HUKETEK MFG CO LTD</u> Room 404, 8th Building, Kingsha International Enterprise Centre, No. 68 Luositang Road, <u>Quantang Street</u> , Changsha Economic & Technological Development Zone, Hunan, P.R. China
4.	S'il y a lieu, 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:	04.11.2021
6.	Service technique chargé des essais d'homologation: Technical Service responsible for conducting approval tests:	ATEEL S.à r.l. 14, op Huefdreisch L-6871 Wecker
7.	Date du procès-verbal délivré par ce service: Date of report issued by that Service:	10.11.2021
8.	Numéro du procès-verbal: Number of report issued by that Service:	CN65CN-AL-00001-02C00
9.	L'homologation est ⁽²⁾: Approval ⁽²⁾ :	granted / refused / extended / withdrawn
10.	Raison(s) de l'extension (s'il y a lieu): Reason(s) of extension (if applicable):	see: Annex II of technical report N° CN65CN-AL-00001-02C00

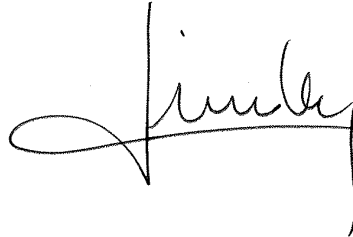
11. **Lieu:**
Place: Bertrange
12. **Date:**
Date: 08 décembre 2021
13. **Signature:**
Signature:

**Pour le Ministre de la Mobilité
et des Travaux publics**



Alain DISVISCOUR
Conseiller

Pour la SNCH



Laurent LINDEN
Directeur opérationnel



14. **Les 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/GNL en application du Règlement N° 110:**
Additional information concerning the type-approval of a type of CNG/LNG components pursuant to Regulation N° 110:
- 1.1. Système de stockage du gaz naturel**
Natural Gas Storage System
- 1.1.1. Réservoir(s) ou bouteille(s) (système GNC):**
Container(s) or cylinder(s) (for CNG system): not applicable
- 1.1.1.1. Dimensions:**
Dimensions: not applicable
- 1.1.1.2. Matériau:**
Material: not applicable
- 1.1.2. Réservoir(s) ou récipient(s) (système GNL):**
Tank(s) or vessel(s) (for LNG system): not applicable
- 1.1.2.1. Capacité:**
Capacity: not applicable
- 1.1.2.2. Matériau:**
Material: not applicable
- 1.1.3. Accumulateur de GNC:**
CNG accumulator: not applicable
- 1.1.3.1. Dimensions:**
Dimensions: not applicable
- 1.1.3.2. Matériau:**
Material: not applicable
- 1.1.3.3. Capacité:**
Capacity: not applicable
- 1.2. Témoin de pression:**
Pressure indicator: Type: **CNGauge A-01**
Variants: B101A, B201A, B207A, B211A, B221A, CNG201C, CNG201E, CNG206C, CNG221C, MT206E, ML206E, ML216E
- 1.2.1. Pression(s) maximale(s) de fonctionnement ⁽¹⁾:**
Working pressure(s) ⁽¹⁾: 20 MPa
- 1.2.2. Matériau:**
Material: see: Annex MID of technical report
N° CN65CN-AL-00001-02C00
- 1.3. Soupape de surpression (soupape de décompression):**
Pressure relief valve (discharge valve): not applicable
- 1.3.1. Pression(s) maximale(s) de fonctionnement ⁽¹⁾:**
Working pressure(s) ⁽¹⁾: not applicable
- 1.3.2. Matériau:**
Material: not applicable
- 1.4. Vanne(s) automatique(s):**
Automatic valve(s): not applicable
- 1.4.1. Pression(s) maximale(s) de fonctionnement ⁽¹⁾:**
Working pressure(s) ⁽¹⁾: not applicable
- 1.4.2. Matériau:**
Material: not applicable
- 1.5. Limiteur de débit:**
Excess flow valve: not applicable
- 1.5.1. Pression(s) maximale(s) de fonctionnement ⁽¹⁾:**
Working pressure(s) ⁽¹⁾: not applicable
- 1.5.2. Matériau:**
Material: not applicable

1.6.	Capot étanche: Gas-tight housing:	not applicable
1.6.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.6.2.	Matériau: Material:	not applicable
1.7.	Détendeur(s): Pressure regulator(s):	not applicable
1.7.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.7.2.	Matériau: Material:	not applicable
1.8.	Clapet(s) antiretour: Non-return valve(s) or check valve(s):	not applicable
1.8.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.8.2.	Matériau: Material:	not applicable
1.9.	Dispositif de surpression (à déclenchement thermique): Pressure relief device (temperature triggered):	not applicable
1.9.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.9.2.	Matériau: Material:	not applicable
1.10.	Vanne manuelle: Manual valve:	not applicable
1.10.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.10.2.	Matériau: Material:	not applicable
1.11.	Flexibles: Flexible fuel lines:	not applicable
1.11.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	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) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.12.2.	Matériau: Material:	not applicable
1.13.	Injecteur(s): Gas injector(s):	not applicable
1.13.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.13.2.	Matériau: Material:	not applicable
1.14.	Régulateur de débit: Gas flow adjuster:	not applicable
1.14.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.14.2.	Matériau: Material:	not applicable

1.15.	Mélangeur gaz / air: Gas / air mixer:	not applicable
1.15.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.15.2.	Matériau: Material:	not applicable
1.16.	Module électronique de commande: Electronic control unit:	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):	Type: CNGauge A-01 Variants: B101A, B201A, B207A, B211A, B221A, CNG201C, CNG201E, CNG206C, CNG221C, MT206E, <u>ML206E</u> , <u>ML216E</u>
1.17.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	20 MPa
1.17.2.	Matériau: Material:	see: Annex MID of technical report N° CN65CN-AL-00001-02C00
1.18.	Filtre(s) à GNC: CNG filter(s):	not applicable
1.18.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	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) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.19.2.	Matériau: Material:	not applicable
1.20.	Rampe(s) d'alimentation: Fuel rail(s):	not applicable
1.20.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.20.2.	Matériau: Material:	not applicable
1.21.	Echangeur(s) thermique(s) / vaporisateur(s): Heat exchanger(s) / vaporizer(s):	not applicable
1.21.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.21.2.	Matériau: Material:	not applicable
1.22.	Détecteur(s) de gaz naturel: Natural gas detector(s):	not applicable
1.22.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.22.2.	Matériau: Material:	not applicable
1.23.	Réceptacle(s) de remplissage GNL: LNG filling receptacle(s):	not applicable
1.23.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.23.2.	Matériau: Material:	not applicable

1.24.	Détendeur(s) GNL: LNG pressure control regulator(s):	not applicable
1.24.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.24.2.	Matériau: Material:	not applicable
1.25.	Capteur(s) de pression et/ou de température GNL: LNG pressure and/or temperature sensor(s):	not applicable
1.25.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.25.2.	Matériau: Material:	not applicable
1.26.	Vanne(s) manuelle(s) GNL: LNG manual valve(s):	not applicable
1.26.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.26.2.	Matériau: Material:	not applicable
1.27.	Vanne(s) automatique(s) GNL: LNG automatic valve(s):	not applicable
1.27.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.27.2.	Matériau: Material:	not applicable
1.28.	Clapet(s) antiretour GNL: LNG non-return valve(s):	not applicable
1.28.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.28.2.	Matériau: Material:	not applicable
1.29.	Soupape(s) de surpression GNL: LNG pressure relief valve:	not applicable
1.29.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.29.2.	Matériau: Material:	not applicable
1.30.	Limiteur de débit GNL: LNG excess flow valve:	not applicable
1.30.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.30.2.	Matériau: Material:	not applicable
1.31.	Pompe(s) à GNL: LNG fuel pump(s):	not applicable
1.31.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.31.2.	Matériau: Material:	not applicable
1.32.	Compresseur de GNC: CNG Compressor:	not applicable
1.32.1.	Pression(s) maximale(s) de fonctionnement ⁽¹⁾: Working pressure(s) ⁽¹⁾ :	not applicable
1.32.2.	Matériau: Material:	not applicable

⁽¹⁾ **Indiquer la tolérance.**
Specify the tolerance.

⁽²⁾ **Biffer les mentions inutiles.**
Strike out what does not apply.



Référence: E13*110R04/02*0353*02

Annexes: - Rapport technique
- Fiche de renseignements du constructeur

Bertrange, le 08 décembre 2021

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

	Numéro d'homologation: Approval number:	E13*110R04/02*0353*02
	Révision: Revision:	00
	Marque de fabrique ou de commerce: Trade name or mark:	Logo see information document
	Type: Type:	CNGauge A-01
1.	Procès-verbal d'essai: Test report:	N° CN65CN-AL-00001-02C00
	- Technical report:	Page(s) 1 & 2;
	- Index:	Annex II - Page(s) 1 & 2;
	- General information:	Annex GI1 - Page(s) 1 to 7
	- General test report:	Annex T - Page(s) 1 to 4;.
2.	Dossier du constructeur: Report of the manufacturer:	N° CNGauge A-01-02-R110
	- Manufacturer's information folder:	Page(s) <u>1 to 16</u> .
3.	Autres documents annexés: Other documents annexed:	not applicable
4.	Date de délivrance de l'homologation initiale: Date of issue of initial type approval:	05.12.2016
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:	08.12.2021

Tests and inspection concerning

**Specific components of motor vehicles using compressed natural gas (CNG)
and/or liquefied natural gas (LNG) in their propulsion system**

according to the ECE Regulation No. 110 including all amendments up to Supplement 2 to
the 04 series of amendments - Date of entry into force: 25.09.2020

Manufacturer: HUNAN HUKETEK MFG CO LTD
Room 404, 8th Building, Xingsha
International Enterprise Centre, No. 68
Luositang Road, Quantang Street,
Changsha Economic & Technological
Development Zone, Hunan, P.R. China

Type: CNGauge A-01	Type Approval No.: E13*110R04/02*0353*02	Manufacturer: HUNAN HUKETEK MFG CO LTD
------------------------------	--	---

Conclusion: The tests and checks carried out have shown the compliance of the type described in this report and the attached annexes with the Regulation mentioned above.

Shanghai, 10.11.2021



Ying (Joanna) Xu
Ingénieur Inspecteur

Index: see Annex I1

1 Tests and inspection results

Refer to Annex T

2 Type and variants

The tests and inspections carried out and described in this technical report have been selected in order to include the following variants and versions of the type and its equipments, as far as these are relevant for the topic of this report, into the judgement:

As stated in Annex MID (Manufacturer's Information Document):

Item:

Make

1.2.4.5.8.1.1.,

1.2.4.5.12.1.

Variant(s)

1.2.4.5.8.1.2.,

1.2.4.5.12.2.

3 Remark

3.1 General:

None.

3.2 Extension 02:

New variants have been added. They are covered by previous test results.

Compilation of Dossier No.: CN65CN-AL-00001

Extension 00

Technical Report no.: 65CNA0001A

page 1 and 2

Composition of Annex:

I1:	Index	page 1
T:	General Test Report	page 1 to 3
GI1:	General Information	page 1 to 6
MID:	Manufacturer's Information Document	page 1 to 14

Index of the Manufacturer's Information Document: See Annex MID see Annex MID, page 1

Extension 01

Technical Report no.: 65CNA0001B

page 1 and 2

Composition of Annex:

I1:	Index	page 1
T:	General Test Report	page 1 to 3
GI1:	General Information	page 1 to 6
MID:	Manufacturer's Information Document	page 1 to 14

Index of the Manufacturer's Information Document: see Annex MID, page 1

to be added:

- New make M.T.M. s.r.l.

to be updated:

- the regulation up to supplement 6

to be changed:

- the editorial arrangement

Compilation of Dossier No.: CN65CN-AL-00001

Extension 02

Technical Report no.: CN65CN-AL-00001-02C00

page 1 and 2

Composition of Annex:

I1:	Index	page 1 to 2
GI1:	General Information	page 1 to 7
T:	General Test Report	page 1 to 4
MID:	Manufacturer's Information Document	page 1 to 16

Index of the Manufacturer's Information Document: see Annex MID, page 1

to be added:

- new variants ML206E, ML216E including characteristics

to be updated:

- the report up to supplement 2 to the 04 series of amendments
- the makes    HUKETEK
- the name and address of manufacturer
- the drawings of variant B201A, CNG201C, CNG201E

to be corrected:

- the material (Annex MID, page 5 to 14)

to be changed:

- the editorial arrangement
-

General Information

Numbering according to Annex 2B of the ECE Regulation No.110

1. CNG/LNG component considered:

Container(s) or cylinder(s)
Tank(s) or vessel(s)
CNG accumulator(s)
Pressure indicator

Type: CNGauge A-01
Variants: B101A, B201A, B207A, B211A,
B221A, CNG201C, CNG201E, CNG206C,
CNG221C, MT206E, **ML206E, ML216E**

~~Pressure relief valve~~
~~Automatic valve(s)~~
~~Excess flow valve~~
~~Gas-tight housing~~
~~Pressure regulator(s)~~
~~Non-return valve(s) or check valve(s)~~
~~Pressure relief device (PRD) (temperature triggered)~~
~~Manual valve~~
~~Flexible fuel lines~~
~~Filling unit or receptacle~~
~~Gas injector(s)~~
~~CNG Compressor~~
~~Gas flow adjuster~~
~~Gas/air mixer~~
~~Electronic control unit~~
Pressure and temperature sensor(s)

Type: CNGauge A-01
Variants: B101A, B201A, B207A, B211A,
B221A, CNG201C, CNG201E, CNG206C,
CNG221C, MT206E, **ML206E, ML216E**

~~CNG filter(s)~~
~~PRD (pressure triggered)~~
~~Fuel rail~~
~~Heat exchanger(s) / vaporizer(s)~~
~~Natural gas detector(s)~~
~~LNG filling receptacle(s)~~
~~LNG pressure control regulator(s)~~
~~LNG pressure and/or temperature sensor(s)~~
~~LNG manual valve(s)~~
~~LNG automatic valve(s)~~
~~LNG non-return valve(s)~~
~~LNG pressure relief valve(s)~~
~~LNG excess flow valve(s)~~
~~LNG fuel pump(s)~~

General Information

2. Trade name or mark:



3. Manufacturer's name and address:

HUNAN HUKETEK MFG CO LTD
Room 404, 8th Building, Xingsha
International Enterprise Centre, No. 68
Luositang Road, Quantang Street,
Changsha Economic & Technological
Development Zone, Hunan, P.R. China

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

Not applicable

5. Submitted for approval on:

04.11.2021

6. Technical service responsible for conducting approval tests:

ATEEL S.à r.l.
14, op Huefdreisch
L-6871 Wecker

7. Date of report issued by that service:

10.11.2021

8. Number of report issued by that service:

CN65CN-AL-00001-02C00

9.

10. Reason(s) of extension (if applicable):

See annex I1

11.
12.
13.
14.

General Information

Numbering according to Annex 2B-Addendum of the ECE Regulation No.110

- | | | |
|----------|--|------------------------------------|
| 1. | Additional information concerning the type approval of a type of CNG/LNG components pursuant to Regulation No. 110 | |
| 1.1. | Natural Gas Storage System | |
| 1.1.1. | Container(s) or cylinder(s) (for CNG system) | Not applicable |
| 1.1.1.1. | Dimensions: | Not applicable |
| 1.1.1.2. | Material: | Not applicable |
| 1.1.2. | Tank(s) or vessel(s) (for LNG system) | Not applicable |
| 1.1.2.1. | Capacity: | Not applicable |
| 1.1.2.2. | Material: | Not applicable |
| 1.1.3. | CNG accumulator | Not applicable |
| 1.1.3.1. | Dimensions: | Not applicable |
| 1.1.3.2. | Material: | Not applicable |
| 1.1.3.3. | Capacity: | Not applicable |
| 1.2. | Pressure indicator | |
| 1.2.1. | Working pressure(s): | 20 Mpa |
| 1.2.2. | Material: | See annex MID, item 1.2.4.5.8.1.5. |
| 1.3. | Pressure relief valve (discharge valve) | Not applicable |
| 1.3.1. | Working pressure(s): | Not applicable |
| 1.3.2. | Material: | Not applicable |
| 1.4. | Automatic valve(s) | Not applicable |
| 1.4.1. | Working pressure(s): | Not applicable |
| 1.4.2. | Material: | Not applicable |

General Information

1.5.	Excess flow valve	Not applicable
1.5.1.	Working pressure(s):	Not applicable
1.5.2.	Material:	Not applicable
1.6.	Gas-tight housing	Not applicable
1.6.1.	Working pressure(s):	Not applicable
1.6.2.	Material:	Not applicable
1.7.	Pressure regulator(s)	Not applicable
1.7.1.	Working pressure(s):	Not applicable
1.7.2.	Material:	Not applicable
1.8.	Non-return valve(s) or check valve(s)	Not applicable
1.8.1.	Working pressure(s):	Not applicable
1.8.2.	Material:	Not applicable
1.9.	Pressure relief device (temperature triggered)	Not applicable
1.9.1.	Working pressure(s):	Not applicable
1.9.2.	Material:	Not applicable
1.10.	Manual valve	Not applicable
1.10.1.	Working pressure(s):	Not applicable
1.10.2.	Material:	Not applicable
1.11.	Flexible fuel lines	Not applicable
1.11.1.	Working pressure(s):	Not applicable
1.11.2.	Material:	Not applicable
1.12.	Filling unit or receptacle	Not applicable
1.12.1.	Working pressure(s):	Not applicable
1.12.2.	Material:	Not applicable

General Information

1.13.	Gas injector(s)	Not applicable
1.13.1.	Working pressure(s):	Not applicable
1.13.2.	Material:	Not applicable
1.14.	Gas flow adjuster	Not applicable
1.14.1.	Working pressure(s):	Not applicable
1.14.2.	Material:	Not applicable
1.15.	Gas/air mixer	Not applicable
1.15.1.	Working pressure(s):	Not applicable
1.15.2.	Material:	Not applicable
1.16.	Electronic control unit	Not applicable
1.16.1.	Basic software principles:	Not applicable
1.17.	Pressure and temperature sensor(s)	
1.17.1.	Working pressure(s):	20 Mpa
1.17.2.	Material:	See annex MID, item 1.2.4.5.8.1.5.
1.18.	CNG filter(s)	Not applicable
1.18.1.	Working pressure(s):	Not applicable
1.18.2.	Material:	Not applicable
1.19.	PRD (pressure triggered)	Not applicable
1.19.1.	Working pressure(s):	Not applicable
1.19.2.	Material:	Not applicable
1.20.	Fuel rail(s)	Not applicable
1.20.1.	Working pressure(s):	Not applicable
1.20.2.	Material:	Not applicable

General Information

1.21.	Heat Exchanger(s) / Vaporizer(s)	Not applicable
1.21.1.	Working pressure(s):	Not applicable
1.21.2.	Material:	Not applicable
1.22.	Natural gas detector(s)	Not applicable
1.22.1.	Working pressure(s):	Not applicable
1.22.2.	Material:	Not applicable
1.23.	LNG filling receptacle(s)	Not applicable
1.23.1.	Working pressure(s):	Not applicable
1.23.2.	Material:	Not applicable
1.24.	LNG pressure control regulator(s)	Not applicable
1.24.1.	Working pressure(s):	Not applicable
1.24.2.	Material:	Not applicable
1.25.	LNG pressure and/or temperature sensor(s)	Not applicable
1.25.1.	Working pressure(s):	Not applicable
1.25.2.	Material:	Not applicable
1.26.	LNG manual valve(s)	Not applicable
1.26.1.	Working pressure(s):	Not applicable
1.26.2.	Material:	Not applicable

General Information

1.27.	LNG automatic valve(s)	Not applicable
1.27.1.	Working pressure(s):	Not applicable
1.27.2.	Material:	Not applicable
1.28.	LNG non-return valve(s)	Not applicable
1.28.1.	Working pressure(s):	Not applicable
1.28.2.	Material:	Not applicable
1.29.	LNG pressure relief valve(s)	Not applicable
1.29.1.	Working pressure(s):	Not applicable
1.29.2.	Material:	Not applicable
1.30.	LNG excess flow valve(s)	Not applicable
1.30.1.	Working pressure(s):	Not applicable
1.30.2.	Material:	Not applicable
1.31.	LNG fuel pump(s)	Not applicable
1.31.1.	Working pressure(s):	Not applicable
1.31.2.	Material:	Not applicable
1.32.	CNG Compressor	Not applicable
1.32.1.	Working pressure(s):	Not applicable
1.32.2.	Material:	Not applicable

General Test Report

The data in this section refer only to the items submitted to testing or inspection.

0 Abstract

0.1 Type: CNGauge A-01

1 Dates and resources

1.1 Date of receipt of test item: **04.11.2021**

1.2 Date of inspection(s): **04.11.2021**

1.3 Place of inspection(s): SHANGHAI INSTITUTE OF SPECIAL EQUIPMENT
INSPECTION AND TECHNICAL RESEARCH
C3, No. 8, Lane 449, North Nujiang Road,
Shanghai, P.R. China

Suzhou Starlit Technologies Co., Ltd.
Suzhou, Jiangsu, China

1.4 Testing site and testing equipment:

All measuring and test equipment used to carry out the inspections are in accordance with ISO 17025 and the regulatory act(s) applied.

2 Test object

The tests were conducted with a test component which is representative of the component type to be approved. The characteristics of the selected component represent the worst case.

2.1 Description

Type: CNGauge A-01
Variants: B101A, B201A, B207A, B211A, B221A, CNG201C, CNG201E,
CNG206C, CNG221C, MT206E, **ML206E, ML216E**

Description: Multi-functional component combined by
Pressure sensor and Pressure indicator

Class: Class 0
Working pressure(WP): 20 MPa
Material: See annex MID, item 1.2.4.5.8.1.5

ID: Variants: B201A BBI00021, BBI00022, BBI00023
CNG201C ABE13717

General Test Report

3 Tests and inspections

3.1 General requirements

Item 8.1 of the Regulation are fulfilled.

3.2 Special requirements

3.2.1. CNG component general tests

Test item	Test requirement	Test result
Annex 5A Overpressure test (strength test)	Before and after durability test (Annex 5O): A CNG/LNG containing component shall withstand without any visible evidence of rupture or permanent distortion a hydraulic pressure of 1.5 times(class 0,1,5) or 2 times(class 2,3) the working pressure during a minimum of 3 minutes at room temperature with the outlet of the high-pressure part plugged.	Fulfilled
Annex 5B External leakage test	Before and after durability test (Annex 5O)/corrosion resistance test (Annex 5E)/vibration resistance test(Annex 5N)/temperature cycle test(Annex 5H)/LNG low temperature test(Annex 5P): A component shall be free from leakage through stem or body seals or other joints, and shall not show evidence of porosity in casting when tested in following conditions at any aerostatic pressure between 0 and 1.5 times(class 0,1,5) or 2 times(class 2,3) working pressure. (a) at room temperature (b) at the minimum operating temperature (c) at the maximum operating temperature The maximum and minimum operating temperatures are given in Annex 5O.	No leakage
Annex 5C Internal leakage test	Before and after corrosion resistance test (Annex 5E)/vibration resistance test(Annex 5N)/temperature cycle test(Annex 5H)/LNG low temperature test(Annex 5P): The tests are to be conducted on samples of valves or filling unit which have previously been subjected to the external leak test of Annex 5B above. The seat of the valves, when in the closed position, shall be free from leakage at any aerostatic pressure between 0 to 1.5 times the working pressure (kPa). For LNG components, the temperature used is the cryogenic temperature (see Annex 5O).	Not applicable

to be continued

General Test Report

<p>Annex 5L Durability test</p>	<p>The component shall be connected to a source of pressurized dry air or nitrogen by means of a suitable fitting and subjected to the number of cycles specified for that specific component. A cycle shall consist of one opening and one closing of the component. Durability test for LNG products are mentioned in their specific Annex 4I up to Annex 4O, where applicable.</p>	<p>Not applicable</p>
<p>Annex 5D CNG/LNG compatibility test</p>	<p>Resistance to n-pentane according to ISO 1817 with the following conditions: (a) Medium: n-pentane; (b) Temperature: 23 °C (tolerance according to ISO 1817); (c) Immersion period: 72 hours. Maximum change in volume 20 per cent; After storage in air with a temperature of 40 °C for a period of 48 hours the mass compared to the original value may not decrease more than 5 per cent.</p>	<p>Not applicable</p>
<p>Annex 5E Corrosion resistance test</p>	<p>A metal CNG/LNG containing component shall comply with the leakage tests mentioned in Annexes 5B and 5C and after having been submitted to 144 hours salt spray test according to ISO 15500-2, with all connections closed. A copper or brass CNG/LNG containing component shall comply with the leakage tests mentioned in Annexes 5B and 5C and after having been submitted to 24 hours immersion in ammonia according to ISO 15500-2 with all connections closed.</p>	<p>Fulfilled</p>
<p>Annex 5F Resistance to dry heat</p>	<p>The test has to be done in compliance with ISO 188. The test piece has to be exposed to air at a temperature equal to the maximum operating temperature for 168 hours. The allowable change in tensile strength should not exceed +25 per cent. The allowable change in ultimate elongation shall not exceed the following values: (a) Maximum increase 10 per cent; (b) Maximum decrease 30 per cent.</p>	<p>Not applicable</p>
<p>Annex 5G Ozone ageing</p>	<p>The test has to be in compliance with ISO 1431/1. The test piece, which has to be stressed to 20 per cent elongation, shall be exposed to air at 40 °C with an ozone concentration of 50 parts per hundred million during 72 hours. No cracking of the test piece is allowed.</p>	<p>Not applicable</p>

to be continued

General Test Report

Annex 5H Temperature cycle test	A non-metallic part containing CNG/LNG shall comply with the leakage tests mentioned in Annexes 5B and 5C after having been submitted to 96 hours temperature cycle from the minimum operating temperature up to the maximum operating temperature with a cycle time of 120 minutes, under maximum working pressure.				Not applicable
Annex 5I Pressure cycle test	The pressure cycle test applicable only to cylinders.				Not applicable
Annex 5M Burst/destructive test	The burst/destructive test applicable only to CNG cylinders.				Not applicable
Annex 5N Vibration resistance test	All components with moving parts shall remain undamaged, continue to operate, and comply with the component's leakage tests after 6 hours of vibration.				Fulfilled
Annex 5O Operating temperatures		Engine compartment	Assembled on the engine	On board	Fulfilled
	M	-20 °C to 105 °C	-20 °C to 120 °C	-20 °C to 85 °C	
	C	-40 °C to 105 °C	-40 °C to 120 °C	-40 °C to 85 °C	
	E	-162 °C to 105 °C	-162 °C to 120 °C	-162 °C to 85 °C	
Annex 5P LNG low temperature test	The component shall be operated through 96 per cent of the total cycles (given in the Annex 4 of the product) at less -162 °C temperature and working pressure. The component shall be operated through 4 per cent of the total cycles at the appropriate maximum temperature (specified in Annex 5O) and working pressure and shall comply with Annexes 5B and 5C at the completion of the temperature cycles.				Not applicable
Annex 5Q Compatibility with heat exchange fluids	The test samples shall be submerged in heat exchange medium for 168 hours at 90 °C then they shall be dried for 48 hours at a temperature of 40 °C. The composition of the heat exchange medium used of the test is water/ethyleneglycol fluid of 50 per cent/50 per cent. The test is deemed to be satisfactory if the change in volume is less than 20 per cent, the change in mass is less than 5 per cent, the change in tensile strength is less than -25 per cent and the change in elongation at break is within -30 per cent and +10 per cent.				Not applicable

3.2.2. CNG Component special test

The requirement of item 3.3 of Annex 4E is fulfilled.

Type: <i>CNGauge A-01</i>	<u>HUNAN HUKETEK MFG CO LTD</u>	Date : <u>04.11.2021</u>
		Ext. : <u>02</u>
UNIFORM PROVISIONS CONCERNING THE EC TYPE-APPROVAL OF: SPECIFIC COMPONENTS OF MOTOR VEHICLES USING COMPRESSED NATURAL GAS (CNG) AND/OR LIQUEFIED NATURAL GAS (LNG) IN THEIR PROPULSION SYSTEM REGULATION No. 110 (Information Document No. CNGauge A-01-02-R110)		

INDEX OF DOCUMENTATION

<i>Page</i>	<i>Concept</i>	<i>Date</i>
<u>2</u>	<u>GENERAL</u>	<u>04.11.2021</u>
<u>3-4</u>	<u>COMPONENT</u>	<u>04.11.2021</u>
<u>5-16</u>	<u>DRAWINGS</u>	<u>04.11.2021</u>

Type:	CNGauge A-01	Annex A Page 1 to <u>12</u>
Title:	Assembly drawing and material list of B101A <u>Assembly drawing and material list of B201A</u> Assembly drawing and material list of B207A Assembly drawing and material list of B211A Assembly drawing and material list of B221A <u>Assembly drawing and material list of CNG201C</u> <u>Assembly drawing and material list of CNG201E</u> Assembly drawing and material list of CNG206C Assembly drawing and material list of CNG221C Assembly drawing and material list of MT206E <u>Assembly drawing and material list of ML206E</u> <u>Assembly drawing and material list of ML216E</u>	Page 1 <u>Page 2</u> Page 3 Page 4 Page 5 <u>Page 6</u> <u>Page 7</u> Page 8 Page 9 Page 10 <u>Page 11</u> <u>Page 12</u>

APPLICATION HISTORY

Extension No.	Extension Reasons	APPLICATION DATE
00	Not applicable(Base Approval)	SEP. 2016
<u>01</u>	<u>To be added:</u> <u>- New make M.T.M. s.r.l.</u>	<u>MAR.2018</u>
<u>02</u>	<u>To be updated:</u> <u>- The makes</u> <u>- The name and address of manufacturer</u> <u>- The drawings of variant B201A, CNG 201C, CNG 201E</u> <u>- New variants ML206E, ML216E</u> <u>To be corrected:</u> <u>- The material</u>	<u>04.11.2021</u>

Type: *CNGauge A-01*

HUNAN HUKETEK MFG CO LTD

Date : **04.11.2021**

Ext. : **02**

GENERAL

0.1 Make (trade name of manufacturer):



0.2 Name and address of manufacturer:

HUNAN HUKETEK MFG CO LTD
Room 404, 8th Building, Xingsha International Enterprise Center, No. 68
Luositang Road, Quantang Street, Changsha Economic & Technological
Development Zone, Hunan, P.R. China








Name and address of authorised representative, if any: N.A.

0.3 Name and address(es) of assembly plant(s):

HUNAN HUKETEK MFG CO LTD
Room 404, 8th Building, Xingsha International Enterprise Center, No. 68
Luositang Road, Quantang Street, Changsha Economic & Technological
Development Zone, Hunan, P.R. China







Type: CNGauge A-01

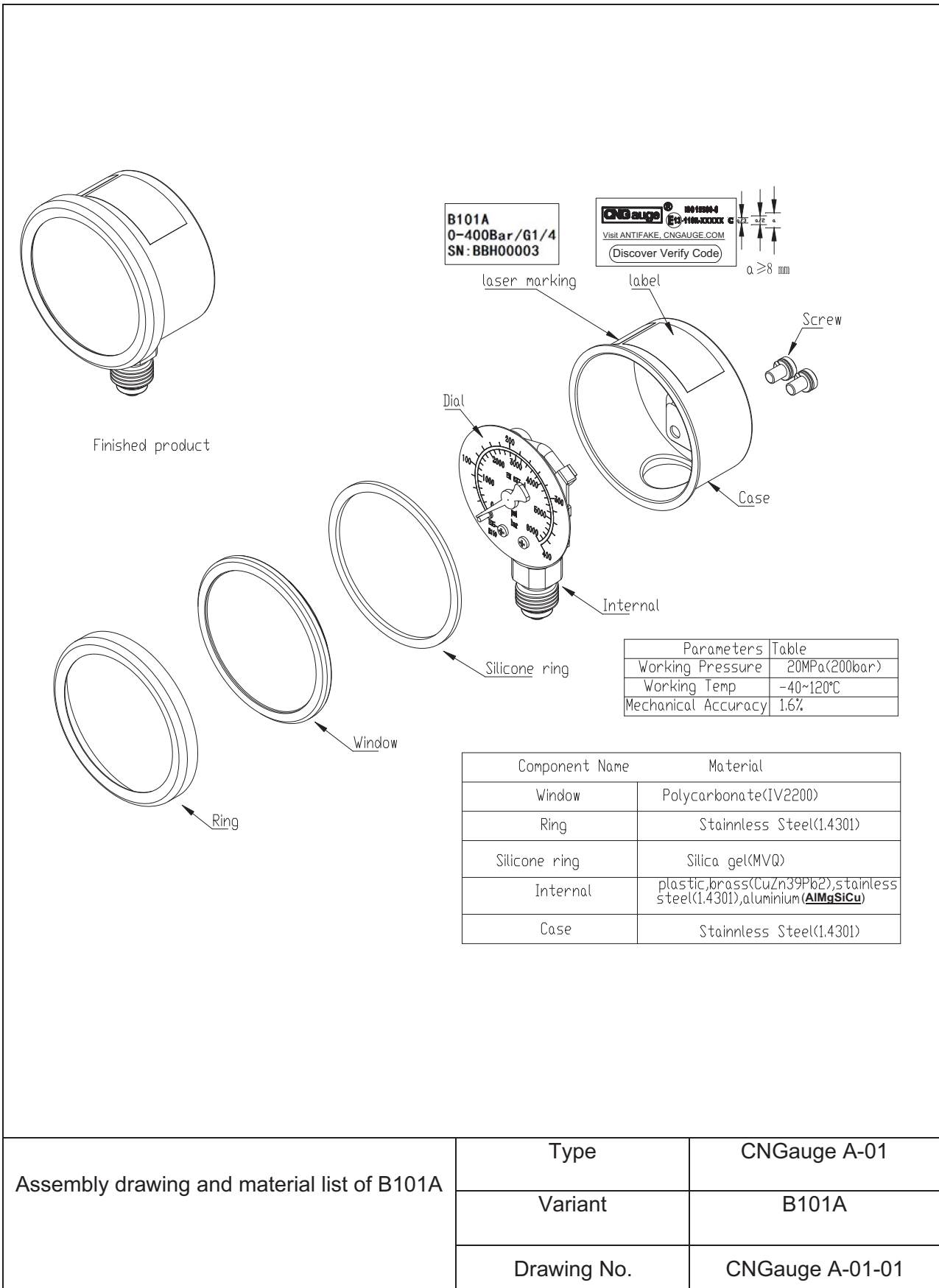
HUNAN HUKETEK MFG CO LTDDate : **04.11.2021**Ext. : **02****COMPONENT**

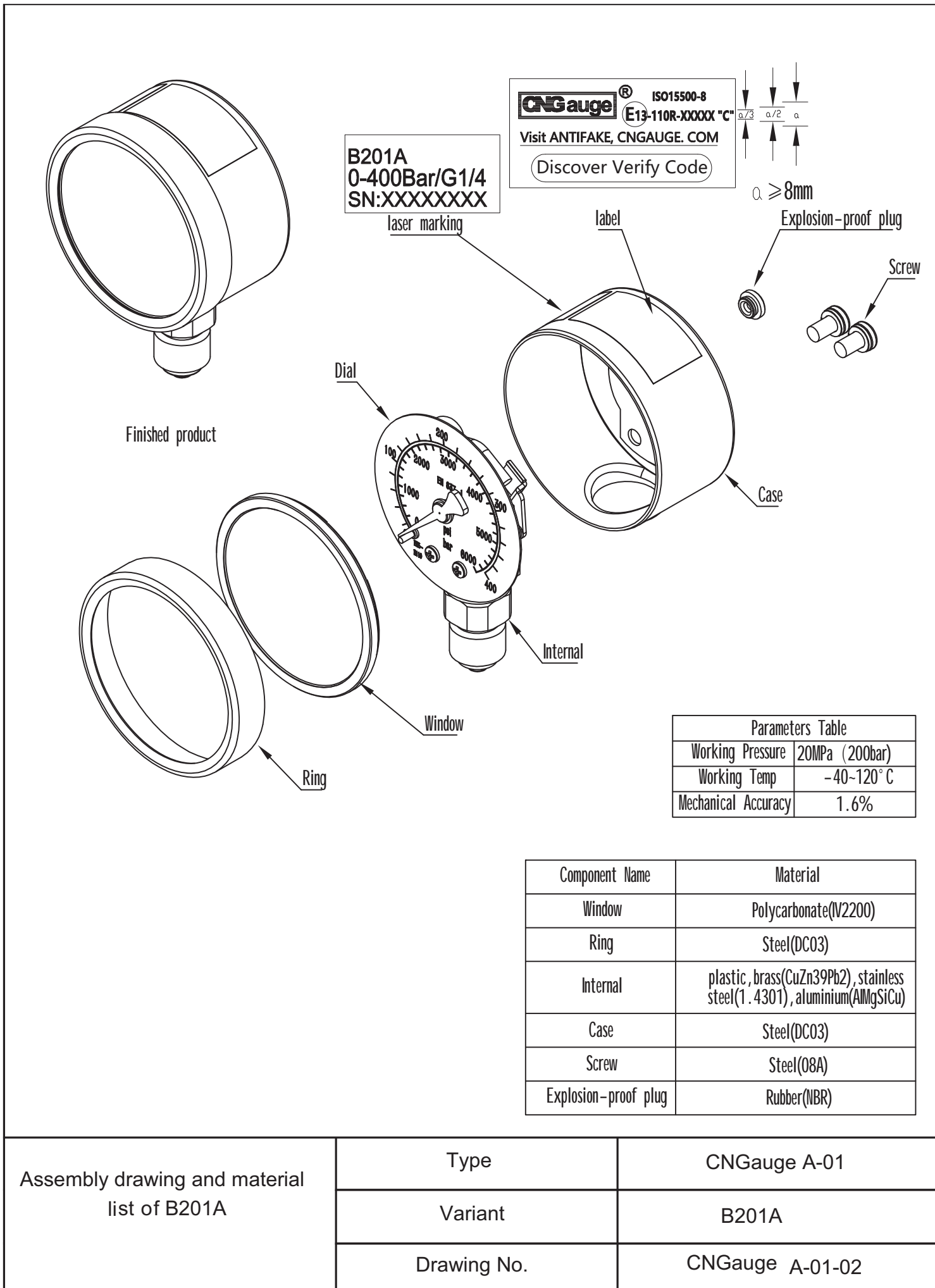
1. (Not allocated)
- 1.2.4.5.1. System description: ~~yes~~/ no
- 1.2.4.5.2. CNG Pressure regulator(s): ~~yes~~/no
CNG Compressor: ~~yes~~/no
- 1.2.4.5.3. CNG Gas/air mixer: ~~yes~~/no
- 1.2.4.5.4. CNG Gas flow adjuster: ~~yes~~/no
- 1.2.4.5.5. CNG Gas injector(s): ~~yes~~/no
- 1.2.4.5.6. Electronic Control Unit (CNG and/or LNG): ~~yes~~/no
- 1.2.4.5.7. CNG container(s) or cylinder(s): ~~yes~~/no
LNG tank(s) or vessel(s): ~~yes~~/no
CNG accumulator(s): ~~yes~~/no
- 1.2.4.5.8. CNG container/~~LNG tank~~ accessories
- 1.2.4.5.8.1. Pressure indicator: ~~yes~~/~~no~~
- 1.2.4.5.8.1.1. Make(s):  ,  ,  , 
 ,  , 
- 1.2.4.5.8.1.2. Type(s): CNGauge A-01
Variant: B101A, B201A, B207A, B211A, B221A, CNG201C, CNG201E, CNG206C, CNG221C, MT206E, **ML206E, ML216E**
- 1.2.4.5.8.1.3. Operating principle: ~~float~~/other (include description or drawings)
description: Pointer-sensing type
- 1.2.4.5.8.1.4. Working pressure(s): 20 MPa
- 1.2.4.5.8.1.5. Material: See annex A
- 1.2.4.5.8.1.6. Operating temperatures: -40°C to +120°C
- 1.2.4.5.9. Pressure relief device (temperature triggered): ~~yes~~/no
- 1.2.4.5.10. Filling unit or receptacle: ~~yes~~/no
- 1.2.4.5.11. Flexible fuel lines: ~~yes~~/no
- 1.2.4.5.12. Pressure and Temperature sensor(s): ~~yes~~/~~no~~

Type: CNGauge A-01

HUNAN HUKETEK MFG CO LTDDate : **04.11.2021**Ext. : **02**

- 1.2.4.5.12.1. Make(s): Make(s):  ,  ,  ,  ,
 ,  , **HUKETEK**
- 1.2.4.5.12.2. Type(s): CNGauge A-01
Variant(s): B101A, B201A, B207A, B211A, B221A, CNG201C, CNG201E, CNG206C, CNG221C, MT206E, **ML206E, ML216E**
- 1.2.4.5.12.3. Description: See Annex A
- 1.2.4.5.12.4. Working pressure(s): 20 MPa
- 1.2.4.5.12.5. Material: See Annex A
- 1.2.4.5.12.6. Operating temperatures: -40°C~+120°C
- 1.2.4.5.13. CNG filter(s): ~~yes~~/no
- 1.2.4.5.14. Non-return valve(s) or check valve(s): ~~yes~~/no
- 1.2.4.5.15. Connection to CNG/~~LNG~~ system for secondary engine system: ~~yes~~/no
- 1.2.4.5.16. PRD (pressure triggered): ~~yes~~/no
- 1.2.4.5.17. Fuel rail: ~~yes~~/no
- 1.2.4.5.18. Heat Exchanger /Vaporizer: ~~yes~~/no
- 1.2.4.5.19. Natural gas detector: ~~yes~~/no
- 1.2.4.5.20. LNG filling receptacle(s): ~~yes~~/no
- 1.2.4.5.21. LNG pressure control regulator(s): ~~yes~~/no
- 1.2.4.5.22. LNG Pressure and/or temperature sensor(s): ~~yes~~/no
- 1.2.4.5.23. LNG manual valve(s): ~~yes~~/no
- 1.2.4.5.24. LNG Automatic valve(s): ~~yes~~/no
- 1.2.4.5.25. LNG non-return valve(s): ~~yes~~/no
- 1.2.4.5.26. LNG pressure relief valve(s): ~~yes~~/no
- 1.2.4.5.27. LNG excess flow valve(s): ~~yes~~/no
- 1.2.4.5.28. LNG fuel pump(s): ~~yes~~/no
- 1.2.5. Cooling system: (liquid/air): Not applicable
- 1.2.5.1. System description/drawings with regard to the CNG/~~LNG~~ system: Not applicable

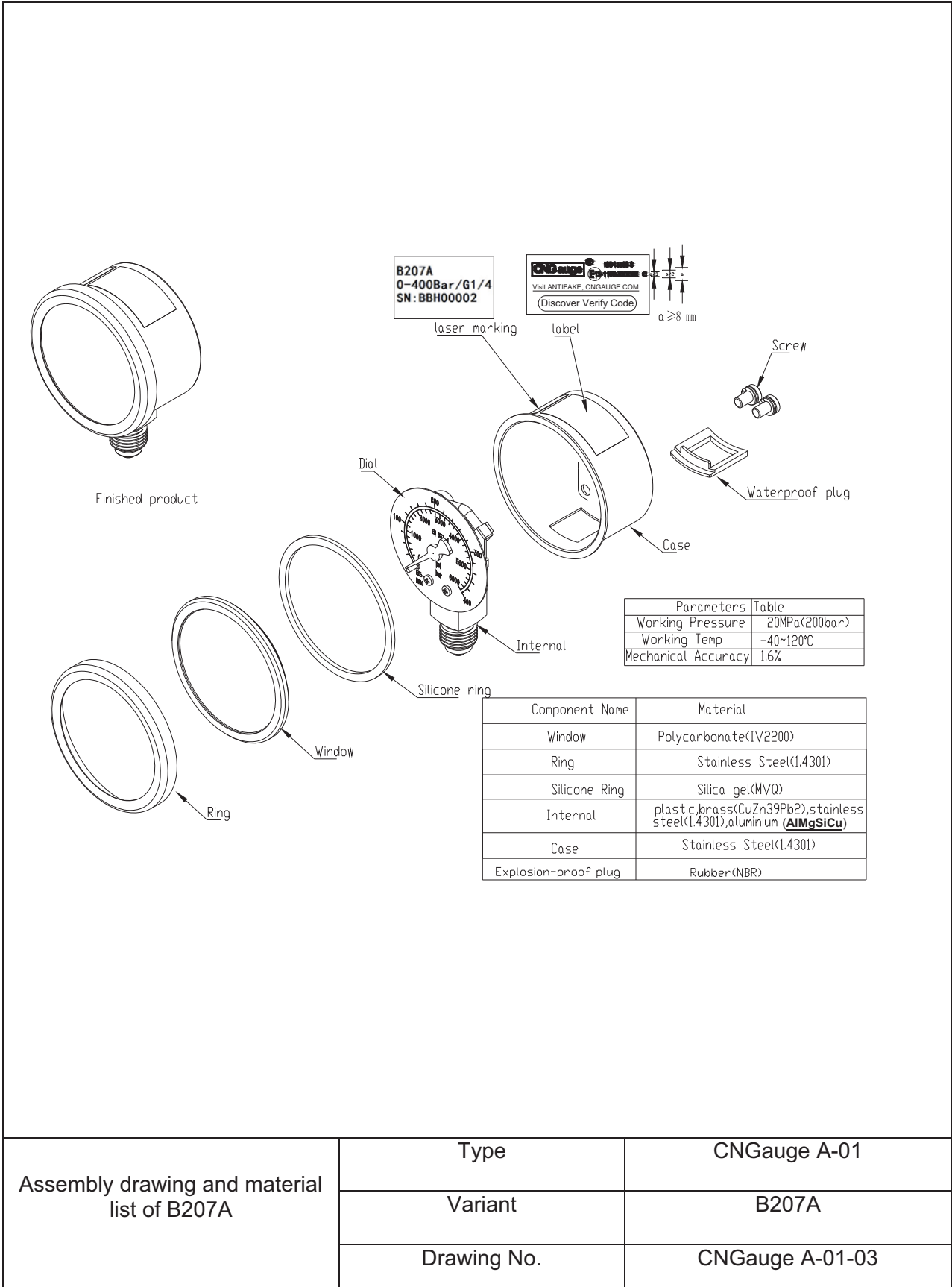




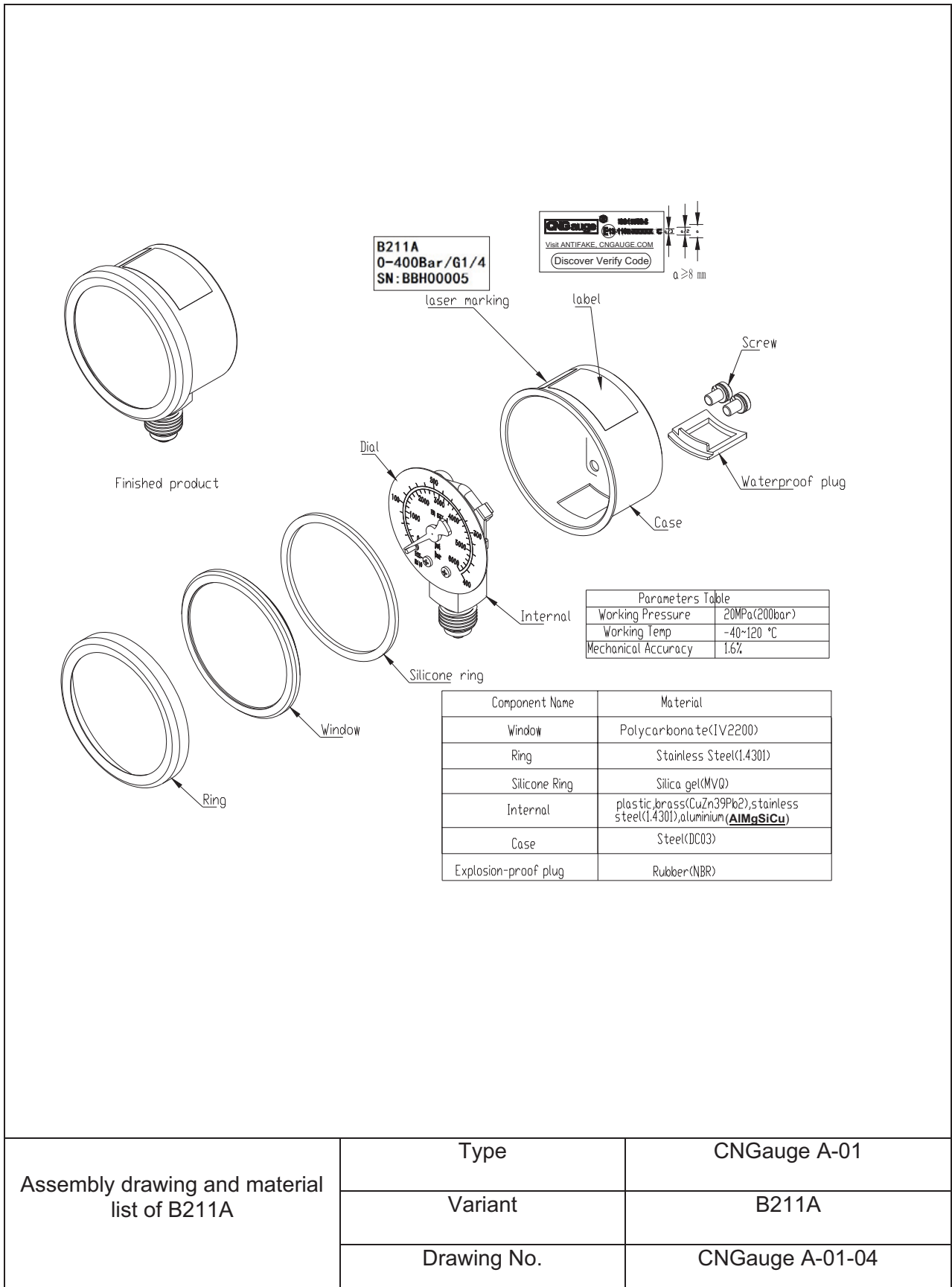
Parameters Table	
Working Pressure	20MPa (200bar)
Working Temp	-40-120° C
Mechanical Accuracy	1.6%

Component Name	Material
Window	Polycarbonate(V2200)
Ring	Steel(DC03)
Internal	plastic , brass(CuZn39Pb2) , stainless steel(1.4301) , aluminium(AlMgSiCu)
Case	Steel(DC03)
Screw	Steel(08A)
Explosion-proof plug	Rubber(NBR)

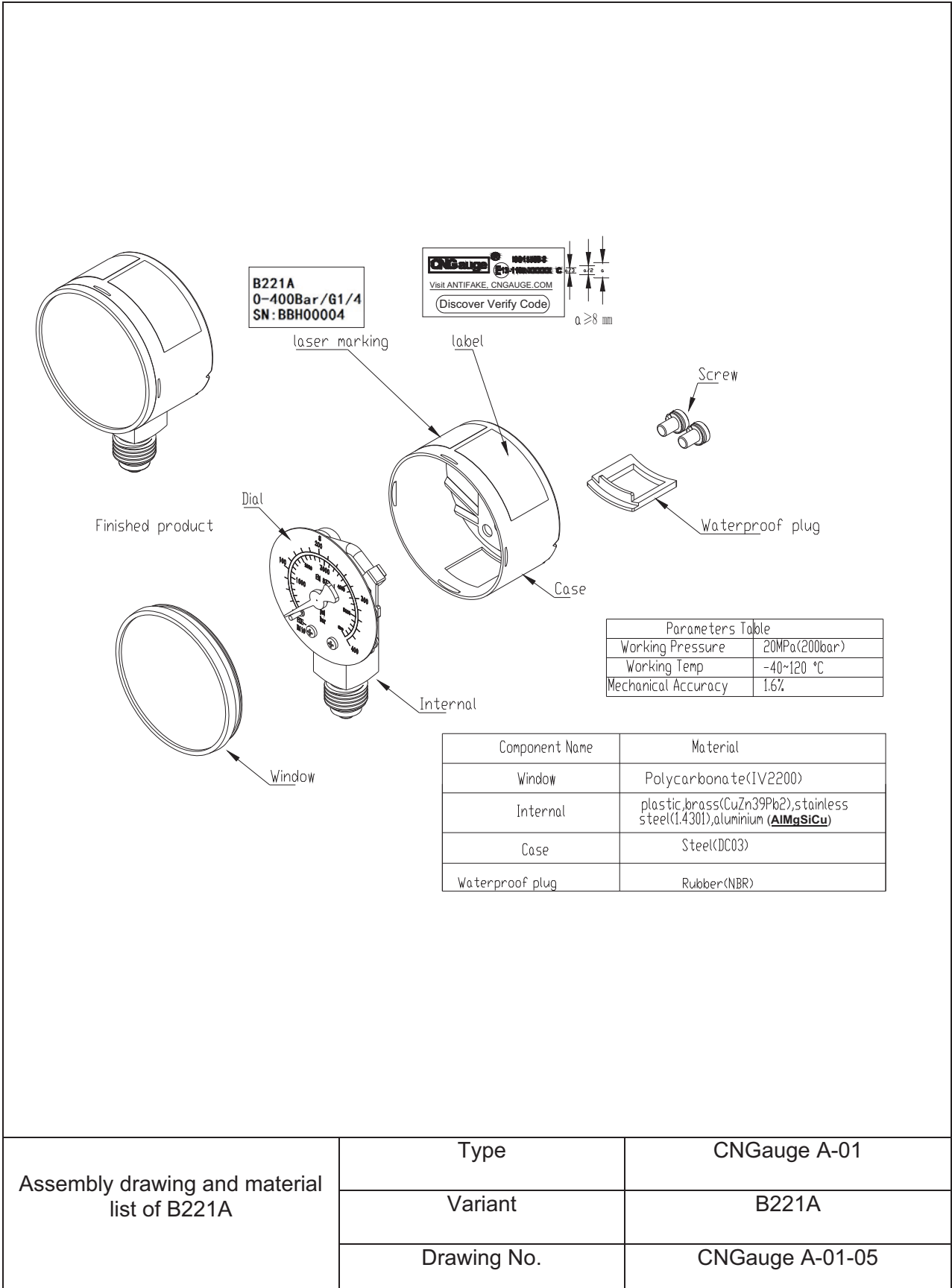
Assembly drawing and material list of B201A	Type	CNGauge A-01
	Variant	B201A
	Drawing No.	CNGauge A-01-02



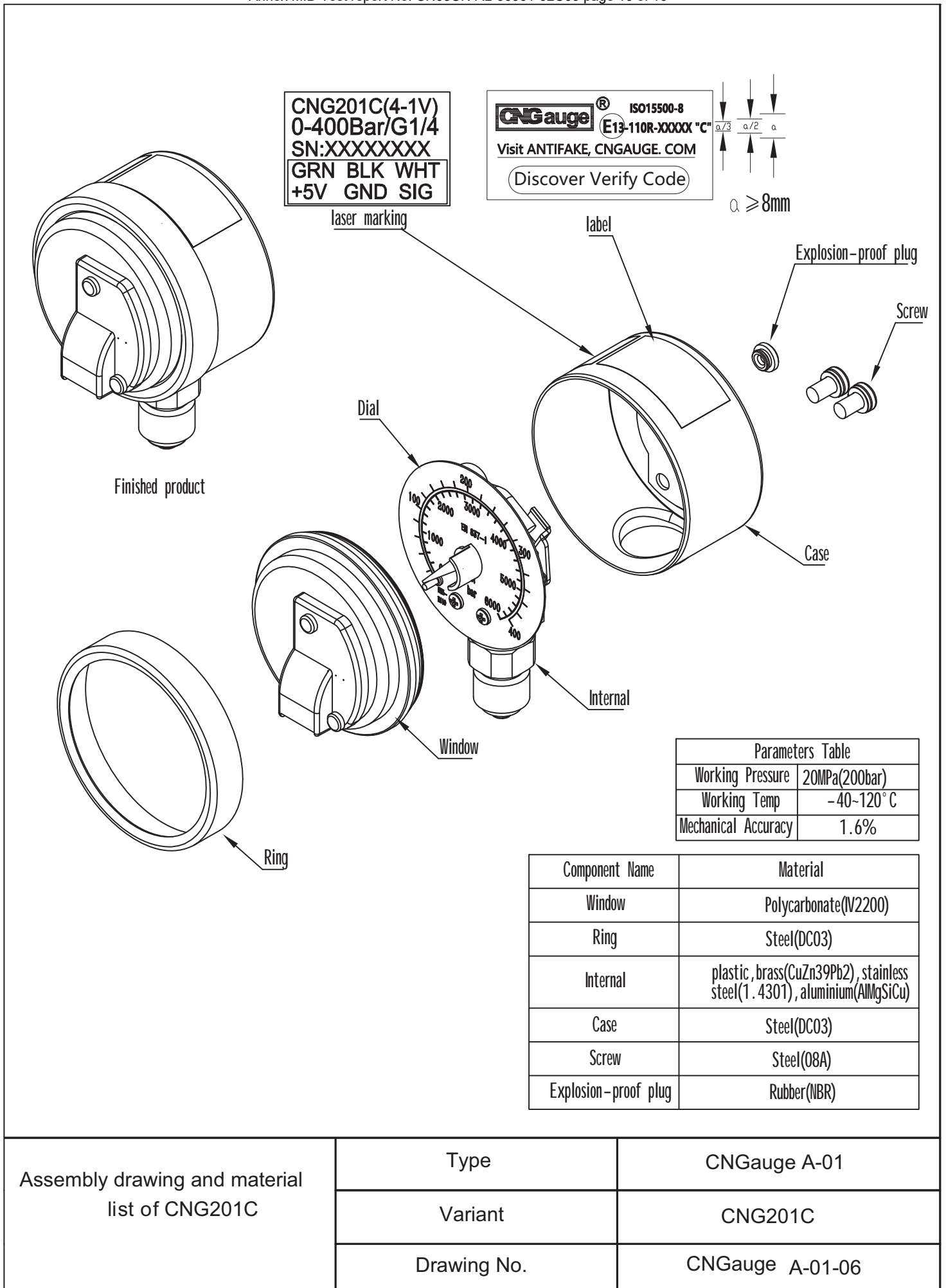
Assembly drawing and material list of B207A	Type	CNGauge A-01
	Variant	B207A
	Drawing No.	CNGauge A-01-03

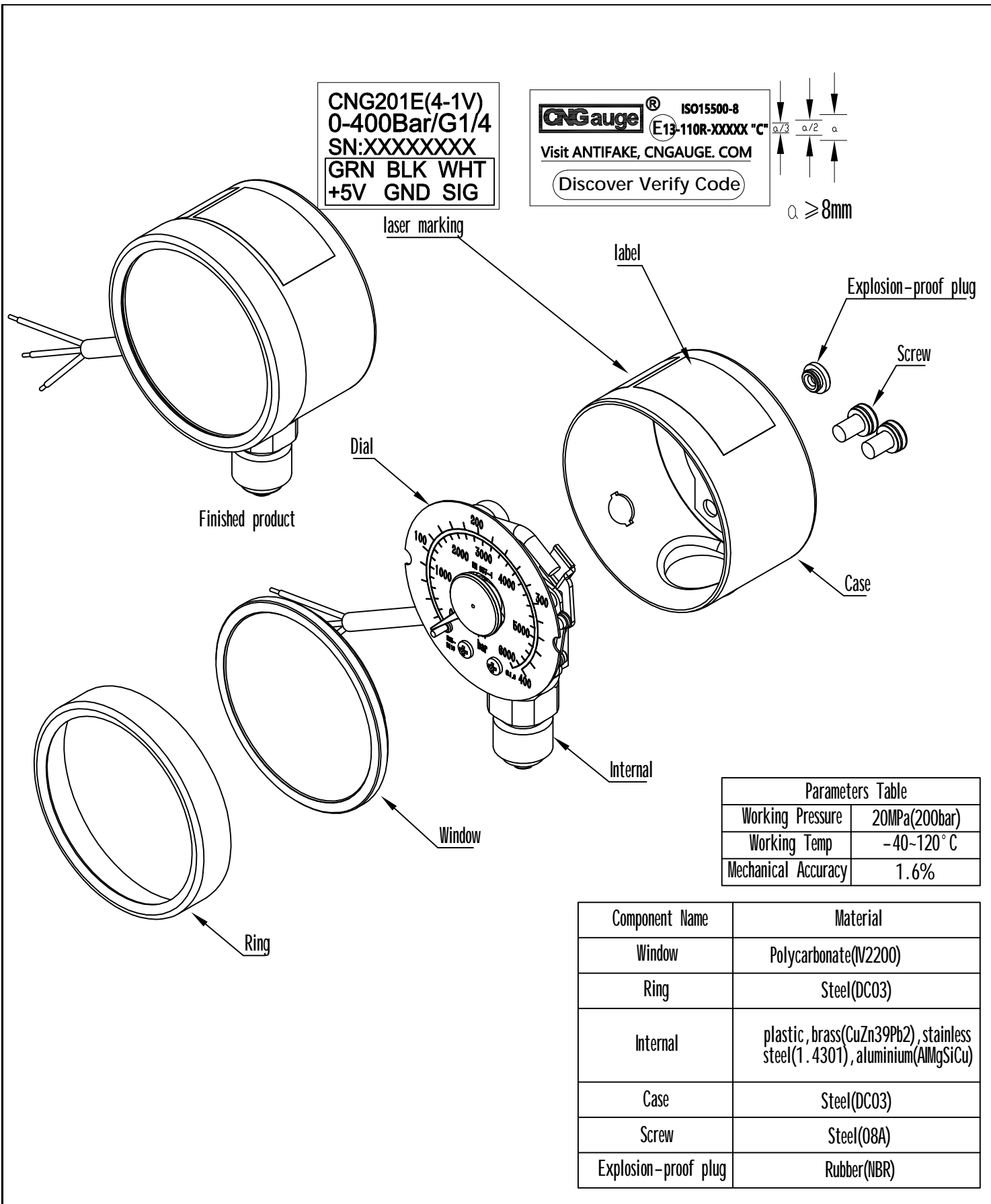


Assembly drawing and material list of B211A	Type	CNGauge A-01
	Variant	B211A
	Drawing No.	CNGauge A-01-04

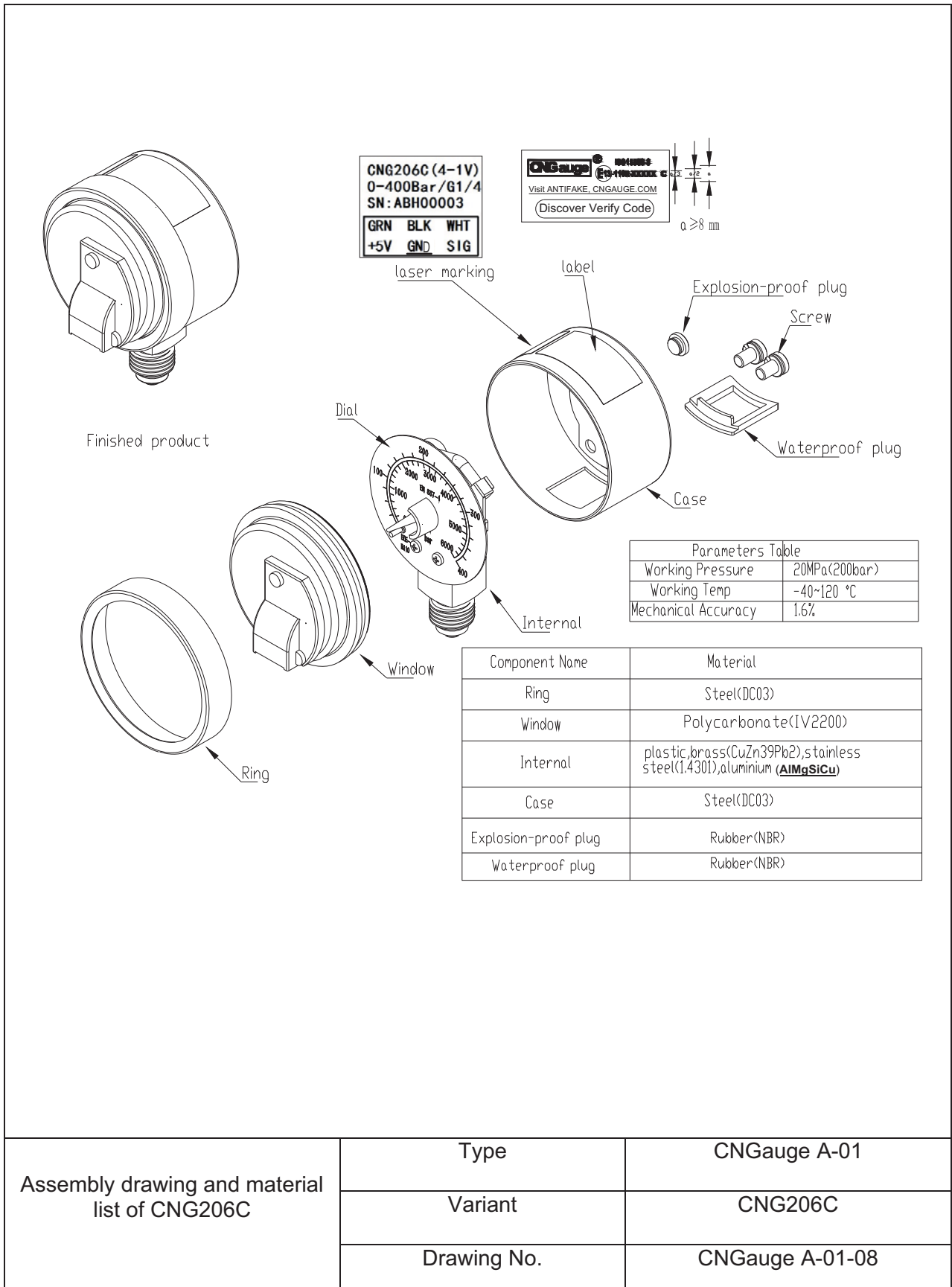


Assembly drawing and material list of B221A	Type	CNGauge A-01
	Variant	B221A
	Drawing No.	CNGauge A-01-05

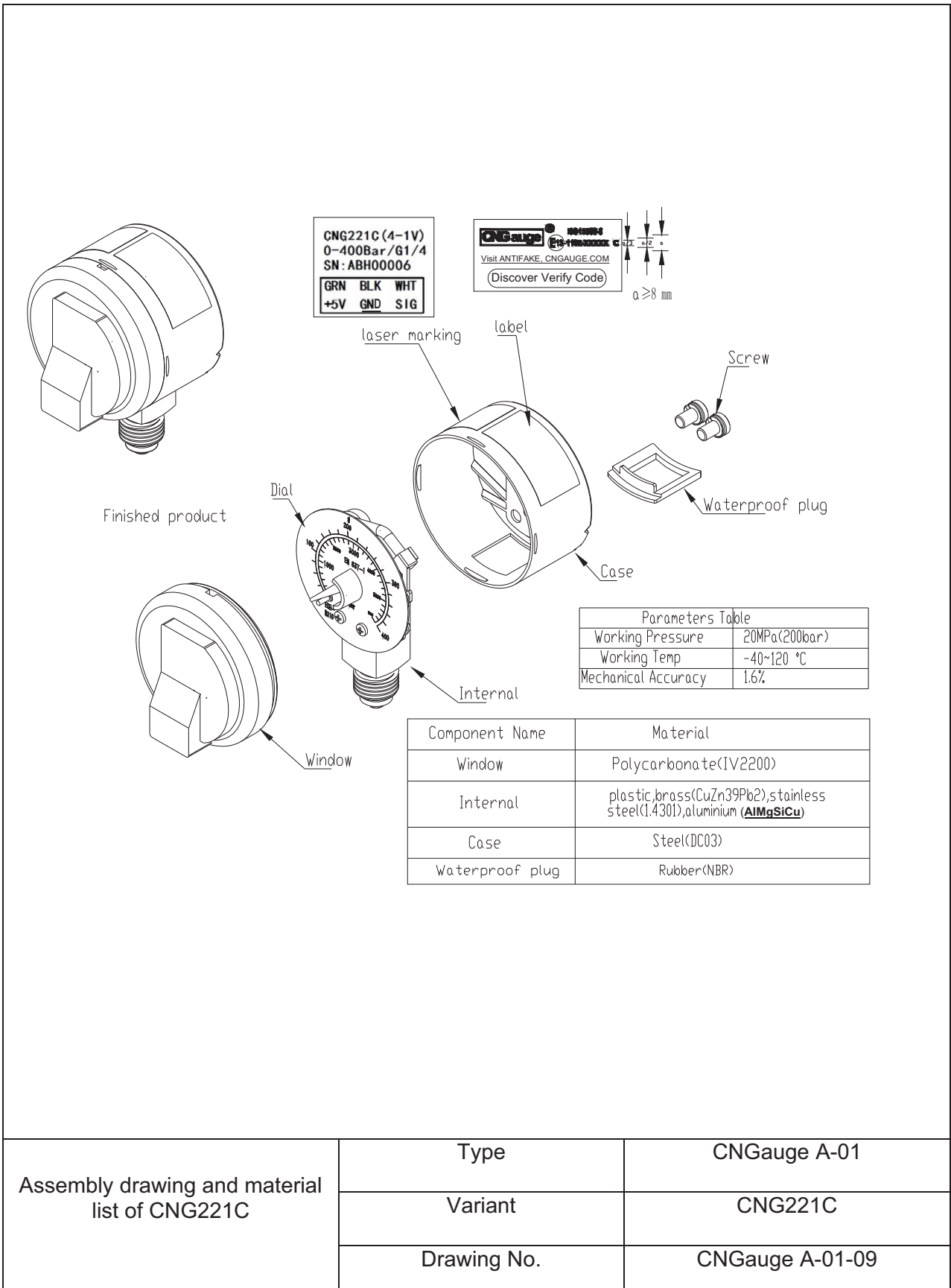


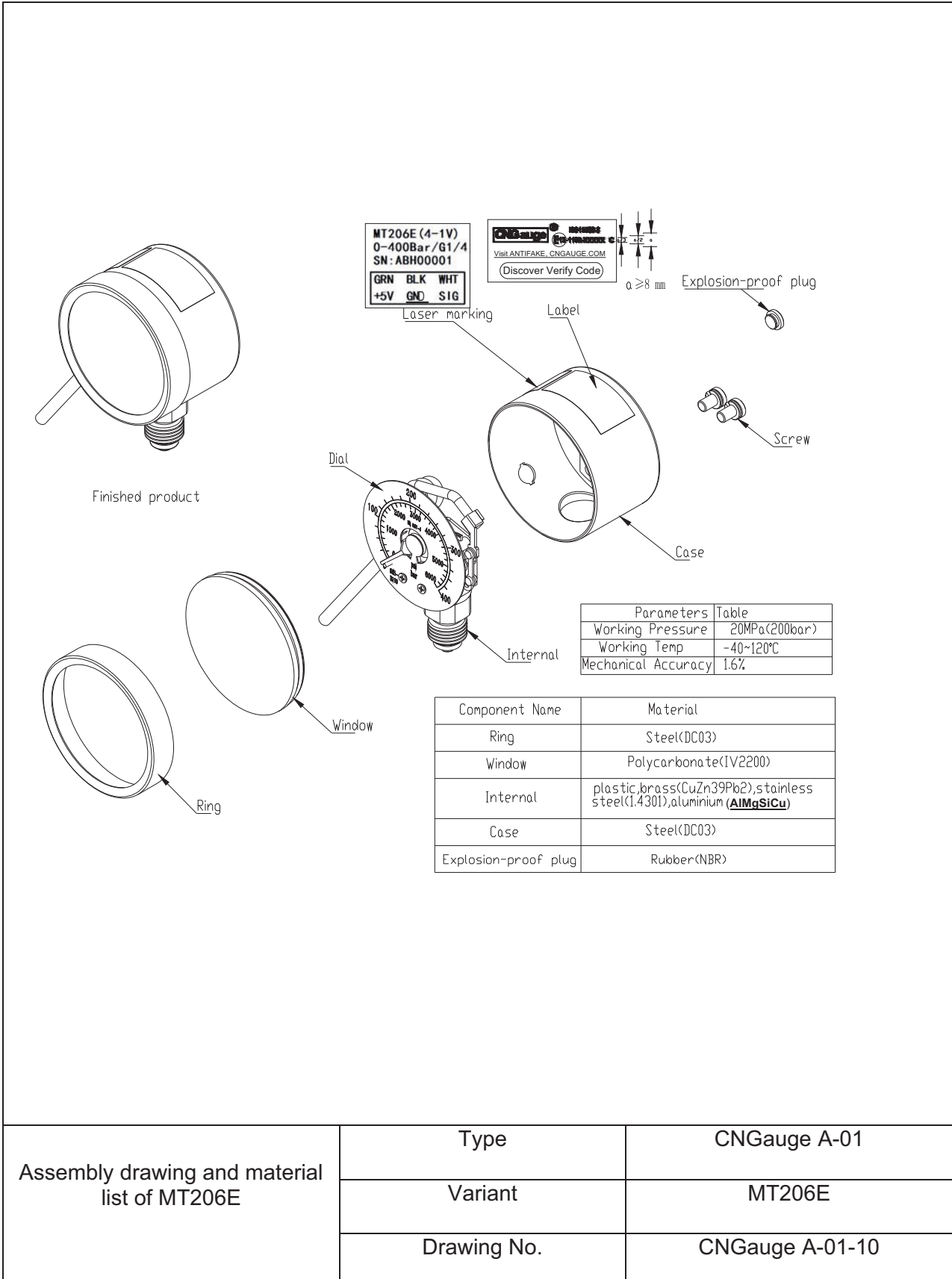


Assembly drawing and material list of CNG201E	Type	CNGauge A-01
	Variant	CNG201E
	Drawing No.	CNGauge A-01-07

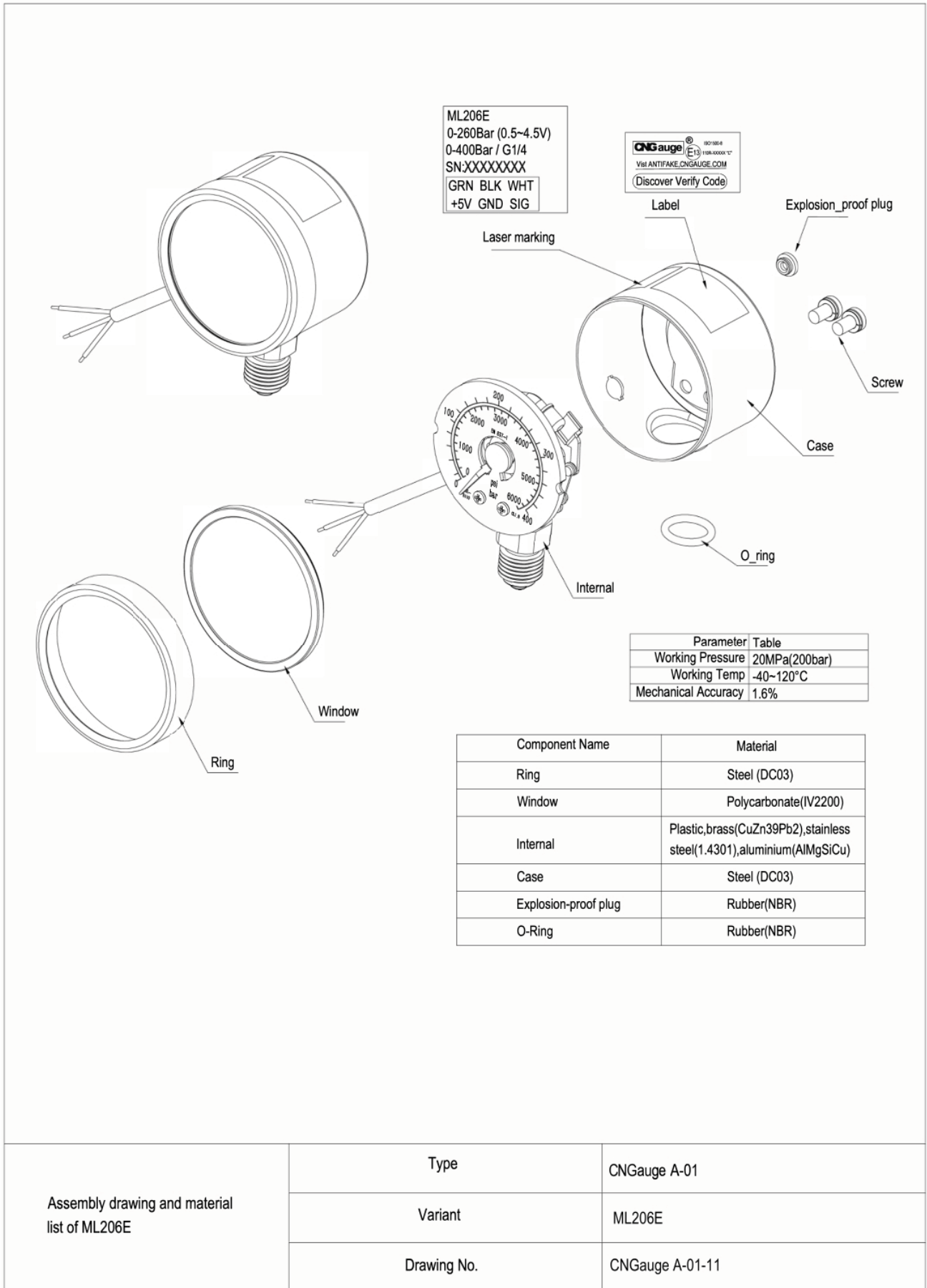


Assembly drawing and material list of CNG206C	Type	CNGauge A-01
	Variant	CNG206C
	Drawing No.	CNGauge A-01-08





Assembly drawing and material list of MT206E	Type	CNGauge A-01
	Variant	MT206E
	Drawing No.	CNGauge A-01-10



Assembly drawing and material list of ML206E

Type

CNGauge A-01

Variant

ML206E

Drawing No.

CNGauge A-01-11

