



EMPOWERED PERFORMANCE

OMAL S.p.A.
Rodengo Saiano
Brescia ITALY

Type: DAN0180411S F07-F10
P.nom= 5.6 bar P.max= 8.4 bar
T.min= -20°C T.max= +80°C

H2 INVICTUS

CATALOGUE

Code: D2129VKRC
Pressure: 5.6 bar / XM-19 / XM-19
T: -20°C / +85°C
OM 000272/0007



EMPOWERED PERFORMANCE

H2 INVICTUS

CATALOGUE





H2 INVICTUS



DANAL[®]
AUTOMATION

Code: D2129VKR06

Size: DN25-1" NPT

Pressure: 316 / XM-19 / XM-19

Materials: PN700

Temperature: -40°C / +85°C

01/24

OM 000272/0007

VALVOLE A SFERA H2 INVICTUS · INDICE

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• VALVOLE A SFERA H2 INVICTUS

- Caratteristiche generali valvole a sfera **H2 INVICTUS**


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- **H2 INVICTUS**

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Valvola a sfera per alta pressione per idrogeno

- Certificati valvola a sfera H2 INVICTUS 

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H2 INVICTUS BALL VALVES · INDEX

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• **H2 INVICTUS**

High pressure hydrogen ball valve

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H2 INVICTUS

VALVOLA A SFERA PER ALTA PRESSIONE PER IDROGENO
HIGH PRESSURE HYDROGEN BALL VALVE





FEATURES & BENEFITS

<p>Classe di pressione</p> <p><i>Pressure class</i></p>	<p>PN 550 H35</p>	<p>PN 700 H50</p>
<p>Corpo e manicotto</p> <p><i>Body and ends</i></p>	<p>Realizzati in ASTM A479 TP.316.</p> <p><i>Made of ASTM A479 TP.316.</i></p>	<p>Realizzati in ASTM A479 TP.316 con requisiti supplementari per utilizzo con idrogeno.</p> <p><i>Made of ASTM A479 TP.316 with additional requirements for hydrogen service.</i></p>
<p>Sfera e stelo</p> <p><i>Ball and stem</i></p>	<p>Realizzati in XM-19 (NITRONIC 50).</p> <p><i>Made of XM-19 (NITRONIC 50).</i></p>	
	<p>Abbinano una elevata resistenza meccanica con una struttura che minimizza il fenomeno di infragilimento da idrogeno.</p> <p><i>They combine high mechanical strength with a structure that minimises hydrogen embrittlement.</i></p>	
<p>Tenute</p> <p><i>Sealing</i></p>	<p>Garantita mediante guarnizioni a labbro insensibili a fenomeni di rapida decompressione.</p> <p><i>Guaranteed by lip seals insensitive to rapid decompression phenomena.</i></p>	
	<p>Maggiore durata grazie al suo modulo elastico.</p> <p><i>Longer life due to its elastic module.</i></p>	
<p>H2 Ready</p> <p><i>H2 Ready</i></p>	<p>Tutti i materiali selezionati sono idonei per servizio idrogeno e verificati mediante Material Assessment validato da TÜV SÜD.</p> <p><i>All selected materials are suitable for 100% H2 service and verified by Material Assessment validated by TÜV SÜD.</i></p>	
<p>Certificazione ISO 19880-3</p> <p><i>ISO 19880-3 certification</i></p>	<p>Servizio di shut-off – classe "A".</p> <p><i>Shut-off service - class "A".</i></p>	
	<p>Permette l'installazione all'interno delle stazioni di rifornimento idrogeno con designazione fino a H35.</p> <p><i>Allows installation inside hydrogen fuelling stations with a designation up to H35.</i></p>	<p>Permette l'installazione all'interno delle stazioni di rifornimento idrogeno con designazione fino a H50.</p> <p><i>Allows installation inside hydrogen fuelling stations with a designation up to H50.</i></p>
<p>Conformità direttiva europea 2014/34/UE ATEX</p> <p><i>In compliance with ATEX 2014/34/UE european directive</i></p>	<p>Ne consente l'installazione in presenza di ambiente potenzialmente esplosivo.</p> <p><i>Installation is possible in a potential explosive environment.</i></p>	



VALVOLA A SFERA H2 INVICTUS

BALL VALVE H2 INVICTUS



CARATTERISTICHE GENERALI:

- Esecuzione flottante;
- Corpo realizzato in 2-pezzi;
- PN550 / H35;
- PN700 / H50;
- Tenuta soft-seat in PEEK;
- Temperatura di utilizzo: -40°C/+ 85°C;
- Connessioni NPT-F (ANSI B1.20.1) e Cone & Thread (a richiesta);
- Range dimensionale:
da 1/8" a 1/2" con diametro di passaggio 8 mm
da 3/4" a 1" con diametro di passaggio 12 mm
- Antistatic device EN12266-2;
- Stelo anti blow-out;
- Foratura piano per attuatore a norma ISO 5211;
- Fluido intercettato: idrogeno;

CERTIFICAZIONI:

- ISO 19880-3 certificato a richiesta;
- Livello di sicurezza funzionale fino a SIL 3 in accordo a IEC 61508;
- Ex CE/UKCA;

NORME DI PROGETTAZIONE:

- ISO 19880-1;
- ASME B16.34, ASME VIII div.1, EN 12516;

MAIN FEATURES:

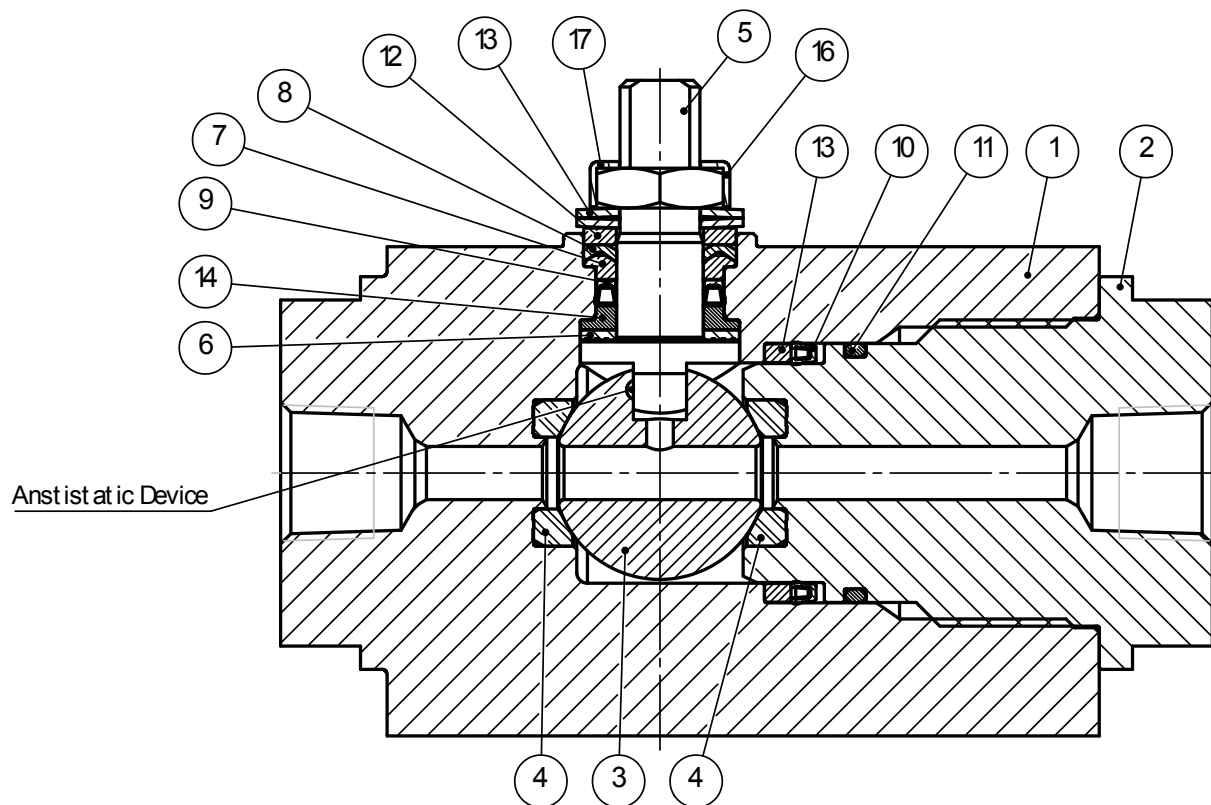
- Floating ball;
- 2-pieces body;
- PN550 / H35;
- PN700 / H50;
- Soft-seat seal PEEK;
- Operating temperature: -40°C/+ 85°C;
- NPT-F (ANSI B1.20.1) and Cone & Thread connections (on request);
- Size range:
from 1/8" to 1/2" with 8 mm passage diameter
from 3/4" to 1" with 12 mm passage diameter
- Antistatic device EN12266-2;
- Anti Blow-out stem;
- Actuator connection as per standard ISO 5211;
- Intercepted fluid: hydrogen;

CERTIFICATIONS:

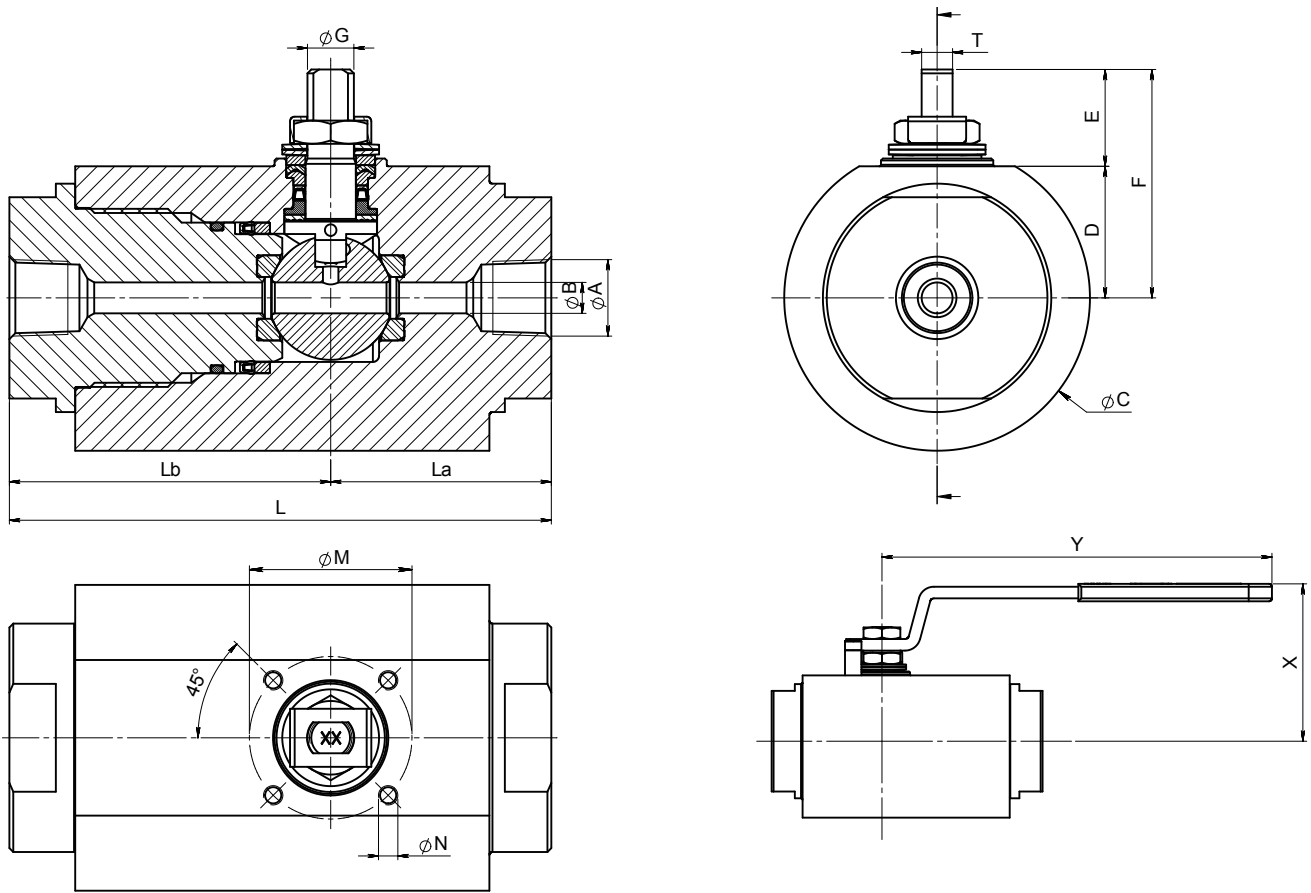
- ISO 19880-3 certificate on request;
- Safety integrity level up to SIL 3 according to IEC 61508;
- Ex CE/UKCA;

ENGINEERING STANDARDS:

- ISO 19880-1;
- ASME B16.34, ASME VIII div.1, EN 12516;



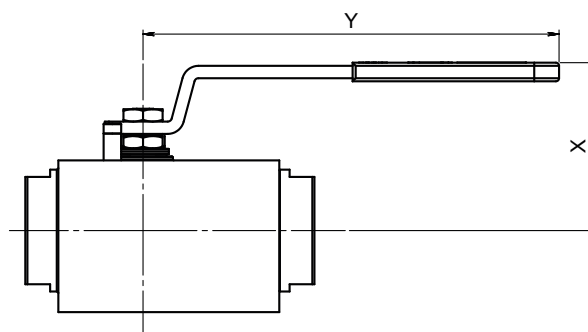
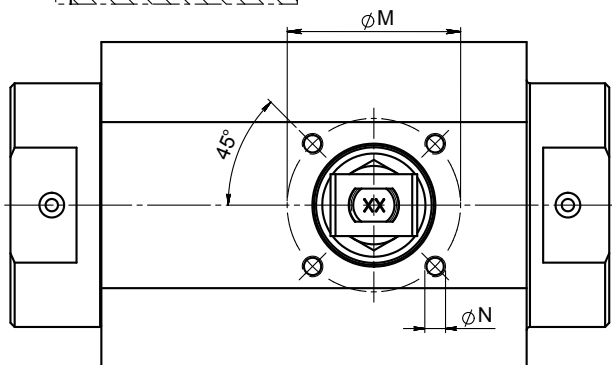
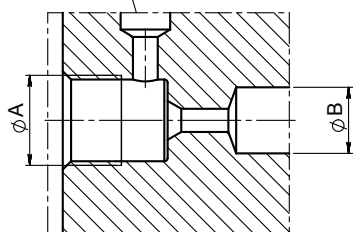
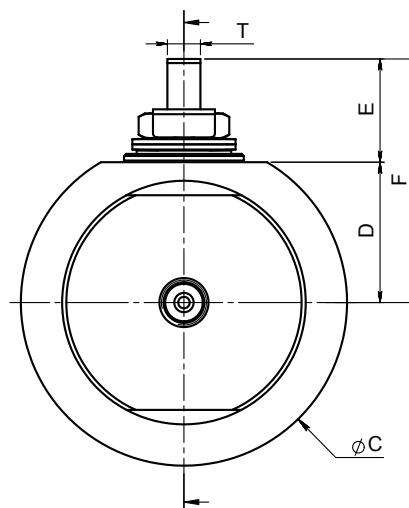
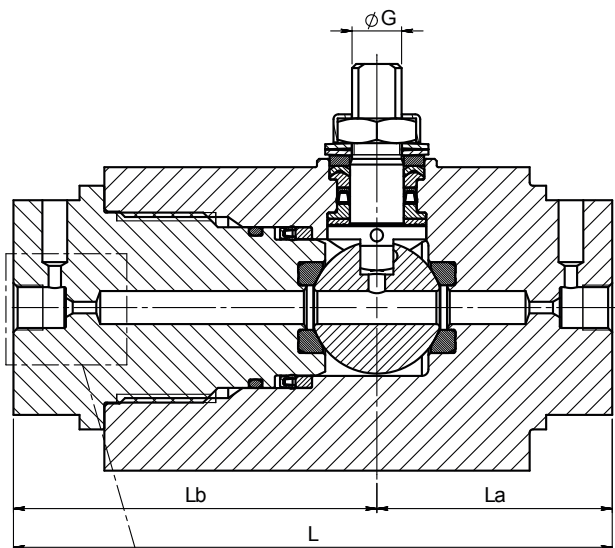
MATERIALI		MATERIALS
1	Corpo <i>Body</i>	A479 tp.316 / 1.4401
2	Manicotto <i>Ends</i>	A479 tp.316 / 1.4401
3	Sfera <i>Ball</i>	A479 tp.XM19 (Nitronic 50) cromata <i>Hard Chromium plated</i>
4	Seggi <i>Seats</i>	PEEK caricato <i>Filled PEEK</i>
5	Stelo <i>Stem</i>	A479 tp.XM19 (Nitronic 50)
6	Anello antifrizione <i>Bottom sealing</i>	DEVLON
7	Pacco a V inferiore <i>Lower Chevron ring</i>	PEEK caricato <i>Filled PEEK</i>
8	Pacco a V superiore <i>Upper Chevron ring</i>	DEVLON
9	Tenuta primaria stelo <i>Primary stem seal</i>	PEEK
10	Tenuta primaria corpo <i>Primary body seal</i>	PEEK
11	Tenuta secondaria corpo <i>Secondary body seal</i>	FKM 90
12	Anello premistoppa <i>Gland nut ring</i>	A479 tp.316 / 1.4401
13	Molle a tazza <i>Spring washer</i>	301 SS
14	Anello stelo <i>Stem ring</i>	A479 tp.XM19 (Nitronic 50)
16	Dado stelo <i>Stem nut</i>	A4-70
17	Fermo dado <i>Stem nut plate</i>	304 SS



DIMENSIONI NPT NPT DIMENSIONS

NPS	DN	ϕA	L	L_a	L_b	ϕB	ϕC	D	E	F	ϕG	T	ISO 5211	ϕM	ϕN	Y	X	Peso Weight kg
1/8"	06	1/8" NPT	140	57	83	8	79	34	25	59	12	8	F04	42	M5	201,5	81	4,8
1/4"	08	1/4" NPT																4,8
3/8"	10	3/8" NPT																4,7
1/2"	15	1/2" NPT	160	67	93	12	98	41	31	72	16	10	F05	50	M6	276,5	93	4,6
3/4"	20	3/4" NPT																8,2
1"	25	1" NPT																8,1

Dimensioni valide sia per la PN550 che PN700.
 Dimensions valid for both PN550 and PN700.



DIMENSIONI C&T C&T DIMENSIONS																			
C&T	ØA	ØP	ØB	L	La	Lb	ØB	ØC	D	E	F	ØG	T	ISO 5211	ØM	ØN	Y	X	Peso Weight kg
4M	7/16-20 UNF 2B	2,7	8	145	57	88	8	79	34	25	59	12	8	F04	45	M5	201,5	81	4,6
6M	9/16-18 UNF 2B	5,1																	4,6
9M	13/16-16 UN 2B	7,8	155	62	93	12	98	41	31	72	16	10	F05	50	M6	276,5	93	4,8	
12M	3/4-14 NPSM 2B	-	12	177	72	105	12	98	41	31	72	16	10	F05	50	M6	276,5	93	8,5

Dimensioni valide sia per la PN550 che PN700.
 Dimensions valid for both PN550 and PN700.



H2 INVICTUS PN550 NPT-F ASSE LIBERO *FREE SHAFT*

ASSE LIBERO *FREE SHAFT*

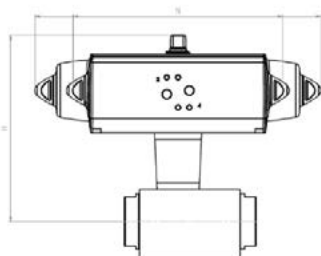
MISURA <i>SIZE</i>		ASSE LIBERO <i>FREE SHAFT</i>	
DN [mm]	[inch]		
DN 06	1/8"		VINV501N
DN 08	1/4"		VINV502N
DN 10	3/8"		VINV503N
DN 15	1/2"		VINV504N
DN 20	3/4"		VINV505N
DN 25	1"		VINV506N

H2 INVICTUS PN550 NPT-F CON LEVA *WITH LEVER*

CON LEVA *WITH LEVER*

MISURA <i>SIZE</i>		CON LEVA <i>WITH LEVER</i>	KIT LEVA <i>LEVER KIT</i>
DN [mm]	[inch]		
DN 06	1/8"	LINV501N	KLVINV04
DN 08	1/4"	LINV502N	KLVINV04
DN 10	3/8"	LINV503N	KLVINV04
DN 15	1/2"	LINV504N	KLVINV04
DN 20	3/4"	LINV505N	KLV48008
DN 25	1"	LINV506N	KLV48008

H2 INVICTUS PN550 NPT-F CON ATTUATORE PNEUMATICO *WITH PNEUMATIC ACTUATOR*



CON ATTUATORE PNEUMATICO DOPPIO EFFETTO *WITH DOUBLE ACTING PNEUMATIC ACTUATOR*

MISURA <i>SIZE</i>		Codice articolo versione NPT <i>Item code NPT version</i>	Attuatore <i>Actuator</i>	Kit montaggio <i>Mounting kit</i>	N [mm]	H [mm]	Kg
DN [mm]	[inch]						
DN 06	1/8"	DINV501N	DAN0106411S	KCNBCHD6390	237	83,3	7,9
DN 08	1/4"	DINV502N	DAN0106411S	KCNBCHD6390	237	83,3	7,9
DN 10	3/8"	DINV503N	DAN0106411S	KCNBCHD6390	237	83,3	7,8
DN 15	1/2"	DINV504N	DAN0106411S	KCNBCHD6390	237	83,3	7,8
DN 20	3/4"	DINV505N	DAN0180411S	KCNCDHD6391	289,9	107,5	11,7
DN 25	1"	DINV506N	DAN0180411S	KCNCDHD6391	289,9	107,5	11,6

CON ATTUATORE PNEUMATICO SEMPLICE EFFETTO *WITH SPRING RETURN PNEUMATIC ACTUATOR*

MISURA <i>SIZE</i>		Codice articolo versione NPT <i>Item code NPT version</i>	Attuatore <i>Actuator</i>	Kit montaggio <i>Mounting kit</i>	N [mm]	H [mm]	Kg
DN [mm]	[inch]						
DN 06	1/8"	SINV501N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,4
DN 08	1/4"	SINV502N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,4
DN 10	3/8"	SINV503N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,3
DN 15	1/2"	SINV504N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,3
DN 20	3/4"	SINV505N	SRN0180401S	KCNCDHD6393	474	118	16,0
DN 25	1"	SINV506N	SRN0180401S	KCNCDHD6393	474	118	15,9



H2 INVICTUS PN700 NPT-F ASSE LIBERO *FREE SHAFT*

ASSE LIBERO *FREE SHAFT*

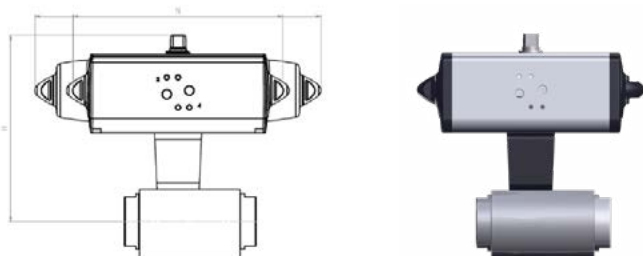
MISURA <i>SIZE</i>		ASSE LIBERO <i>FREE SHAFT</i>	
DN [mm]	[inch]		
DN 06	1/8"		VINV01N
DN 08	1/4"		VINV02N
DN 10	3/8"		VINV03N
DN 15	1/2"		VINV04N
DN 20	3/4"		VINV05N
DN 25	1"		VINV06N

H2 INVICTUS PN700 NPT-F CON LEVA *WITH LEVER*

CON LEVA *WITH LEVER*

MISURA <i>SIZE</i>		CON LEVA <i>WITH LEVER</i>	KIT LEVA <i>LEVER KIT</i>
DN [mm]	[inch]		
DN 06	1/8"	LINV01N	KLVINV04
DN 08	1/4"	LINV02N	KLVINV04
DN 10	3/8"	LINV03N	KLVINV04
DN 15	1/2"	LINV04N	KLVINV04
DN 20	3/4"	LINV05N	KLV48008
DN 25	1"	LINV06N	KLV48008

H2 INVICTUS PN700 NPT-F CON ATTUATORE PNEUMATICO *WITH PNEUMATIC ACTUATOR*



CON ATTUATORE PNEUMATICO DOPPIO EFFETTO *WITH DOUBLE ACTING PNEUMATIC ACTUATOR*


MISURA <i>SIZE</i>		Codice articolo versione NPT <i>Item code NPT version</i>	Attuatore <i>Actuator</i>	Kit montaggio <i>Mounting kit</i>	N [mm]	H [mm]	Kg
DN [mm]	[inch]						
DN 06	1/8"	DINV01N	DAN0106411S	KCNBCHD6390	237	83,3	7,9
DN 08	1/4"	DINV02N	DAN0106411S	KCNBCHD6390	237	83,3	7,9
DN 10	3/8"	DINV03N	DAN0106411S	KCNBCHD6390	237	83,3	7,8
DN 15	1/2"	DINV04N	DAN0106411S	KCNBCHD6390	237	83,3	7,8
DN 20	3/4"	DINV05N	DAN0180411S	KCNCDHD6391	289,9	107,5	11,7
DN 25	1"	DINV06N	DAN0180411S	KCNCDHD6391	289,9	107,5	11,6

CON ATTUATORE PNEUMATICO SEMPLICE EFFETTO *WITH SPRING RETURN PNEUMATIC ACTUATOR*

MISURA <i>SIZE</i>		Codice articolo versione NPT <i>Item code NPT version</i>	Attuatore <i>Actuator</i>	Kit montaggio <i>Mounting kit</i>	N [mm]	H [mm]	Kg
DN [mm]	[inch]						
DN 06	1/8"	SINV01N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,4
DN 08	1/4"	SINV02N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,4
DN 10	3/8"	SINV03N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,3
DN 15	1/2"	SINV04N	SRN0120401S	KCNBDHD6392	409,6	111,1	12,3
DN 20	3/4"	SINV05N	SRN0180401S	KCNCDHD6393	474	118	16,0
DN 25	1"	SINV06N	SRN0180401S	KCNCDHD6393	474	118	15,9



BESCHENIGUNG ■ CERTIFICATION ■ ATTESTATION ■ CONSTANCIA ■ شهادة ■ BELGE



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Statement of Compliance

The shut-off valve class "A"

H2 INVICTUS


manufactured by OMAL S.p.a fulfills the requirements of the

ISO 19880-3.

The valve was tested according to the following specifications:


Maximum allowable working pressure:	70 MPa
Operating Temperature:	-40°C to +85°C
Bore diameter:	8 mm
Connections:	NPT 1/8", NPT 1/4", NPT 3/8", NPT 1/2", 7/16-20 UNF, 9/16-20 UNF, 13/16-20 UNF

München, 10.03.2025



Raphael Mayer
Global Technical Lead Alternative Fuel Components

TÜV SÜD Industrie Service GmbH, Westendstraße 199, 80686 München, Germany



CERTIFICATE

The Certification Body of
TÜV SÜD Industrie Service GmbH
Energy and Systems

certifies the following components:

shut-off valve Class A Type H2 INVICTUS

Nominal ball diameter:	8mm, 12 mm
Connection geometries:	1/8" to 1" NPT 7/16"-4M to 1 3/8" 16M Cone & Thread
Operating temperature:	-40°C to +85°C
Maximum allowable working pressure:	55 MPa, 70 MPa
Hydrogen Service Level:	H35, H50

Manufacturer:



OMAL S.p.A. Società Benefit
Via Ponte Nuovo, 11
25050 Rodengo Saiano (Brescia)
Italy

The test results comply with the requirements defined in the TÜV SÜD Standard P-005

"Safe Hydrogen Component" REV00.

The requirements have been adapted in reference to ISO 19880-3:2018.

This certificate is only valid together with the corresponding report 500604323-20-0, dated 02.02.2026.

This certificate is valid till 16.02.2029.

Certificate – Register-No.: KC/500604323/30/26


Munich, 17.02.2026



Technical Certifier
Certification Body Energy and Systems
TÜV SÜD Industrie Service GmbH
Page 1 of 1



Certification Body
Energy and Systems
Westendstraße 199
D-80686 Munich
PIN: czw0



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Report from 25-03-04

Report No.: 500604323-60-01 Rev. 1

Material compatibility assessment within specified operating conditions for a ball valve for use in hydrogen service

On behalf of:

OMAL S.p.A. SB
Via ponte Nuovo 11
25050 Rodengo Saiano (BS) I

Based on a subcontract for:

TÜV Italia Srl
Via Carducci 125, pal. 23
20099 Sesto San Giovanni (MI)

Date: 25-03-04

Our reference: IS-ES24-MUCIengle-to

Report No. 500604323-60-01 Rev. 1

This Document consists of 11 pages and 1 annex, page 1 of 11

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The test results refer exclusively to the units under test.

TÜV SÜD Industrie Service GmbH
Energy and Systems
Dept. Hydrogen Projects

Dr. Christopher Tom Engler


Tel. +49 (0) 89 5791 1421
christophertom.engler@tuvsud.com

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Trade Register Munich HRB 96 869
VAT ID No. DE129484218
Information pursuant to § 2 [1] DL-InfoV
(Germany) at tuv sud.com/print

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Board of Management:
Ferdinand Neuwieser (CEO)
Thomas Kainz
Simon Kellerer

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Appareil non électrique destiné à être utilisé en atmosphères explosibles
Non electrical equipment intended for use in potentially explosive atmospheres
Apparecchi non elettrici destinati ad essere utilizzati in atmosfera potenzialmente esplosiva

Directive 2014/34/EU
Directive 2014/34/UE
Direttiva 2014/34/UE

ACCUSÉ DE RECEPTION D'UN DOSSIER TECHNIQUE
ACKNOWLEDGE RECEIPT OF TECHNICAL DOCUMENTATION
AVVISO DI RICEVIMENTO DEL FASCICOLO TECNICO

Appareil / Equipment / Apparecchiatura : BALL VALVES

Type(s) / Type(s) / Tipo(i) : Wafer type, Split body type, Split Wafer type steel ball valves / Two-piece, Three-piece steel ball valve High-pressure - threaded ends / Two-piece brass ball valves threaded ends

Marquage / Marking / Marcatura : 

Dépositaire / Applicant / Richiedente : **OMAL S.p.A.**
Via Ponte Nuovo 11
25050 Rodengo Saiano (BS)

L'INERIS, organisme notifié et identifié sous le numéro 0090, conformément aux articles 17 et 21 de la Directive du Conseil 2014/34/UE du 26 février 2014, accuse réception du dossier conformément à la procédure décrite au chapitre 3, article 13 1) b) ii) de la Directive.

L'INERIS, organismo notificato e identificato under number 0090, in accordance with articles 17 and 21 of Council Directive 2014/34/UE of the 26 February 2014, confirms the receipt of the dossier according to the procedure described in chapter 3, article 13 1) b) ii) of the Directive.

La documentazione tecnica di riferimento : VS-19 dated 10/10/2019

The technical documentation referenced : VS-19 dated 10/10/2019

La documentazione tecnica di riferimento : VS-19 dated 10/10/2019

est consignée sous le numéro d'enregistrement : n° INERIS-EQEN 035241/19.

is consigned under the reference : n° INERIS-EQEN 035241/19.

è depositata con il numero di registrazione : n° INERIS-EQEN 035241/19.

Dans le cadre de cet enregistrement, l'INERIS n'a pas examiné le contenu de la documentation technique.

Within the scope of the recording, INERIS non ha esaminato il contenuto della documentazione tecnica.

Nei quadri di questa registrazione, INERIS non ha esaminato il contenuto della documentazione tecnica.

Date de fin de validité : 2029.11.07

Validity completion date : 2029.11.07

Data di fine di validità : 2029.11.07





Le Directeur Général de l'INERIS,
Par délégation,
The Chief Executive Officer of INERIS,
By delegation,
Il Direttore generale dell'INERIS,
Per Delega.

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Etablissement public à caractère industriel et commercial - RCS Nanterre 9 801 954 514 - Siret 981 954 514 00019 - APE 7120B - TVA Intracomm FR 75 381 984 901



TÜVNORD

CERTIFICATE

This certifies, that the company

Omal S.p.A.
Via Ponte Nuovo 11
25020 Rodengo Saiano (BS)
Italy

Is authorized to provide the product mentioned below

Description of product: **High pressure floating ball valve series H2 Invictus**

In accordance with: **EN 61508:2010 Parts 1, 2, 4, 5, 6, 7**
The product meets also the requirements of standard EN 17955:2024



Registration No 26 27336 01
Test Report No PS-2733625-M
File reference: 27336-01

TÜV Nord Italia S.r.l (TÜV NORD Group)
Via Turati, 70 - 20023 Cerro Maggiore (MI) - Italy

www.tuev-nord.it

Validity
from 2026-04-14
until 2029-04-14

Cerro Maggiore, 2026-04-14
prodoto@tuev-nord.it

TNI-QF(IND-SIL-01)-14-Rev01_18_08_2023-Certificate_Type A

Please also pay attention to the information stated overleaf



OMAL S.p.A. Società Benefit

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