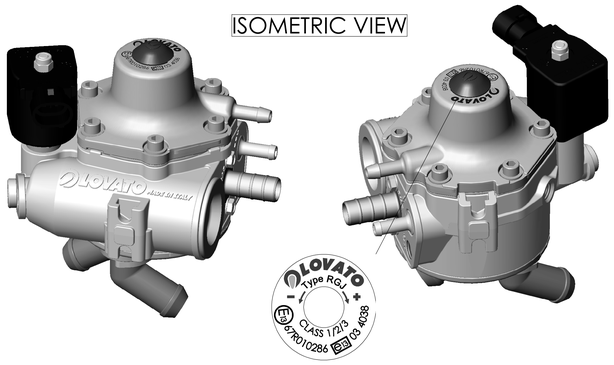
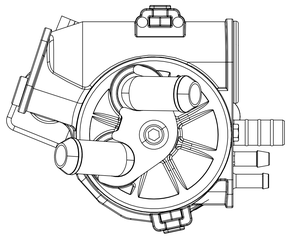
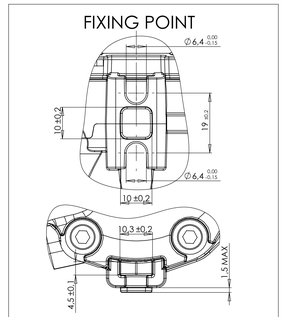
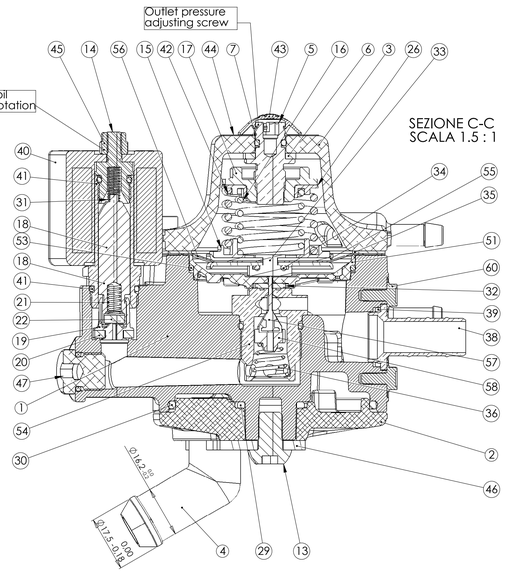
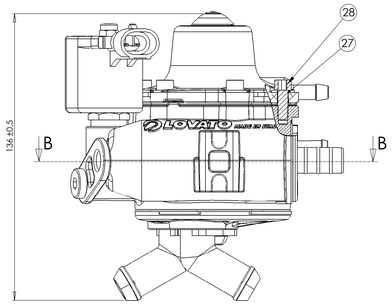
ISOMETRIC VIEW

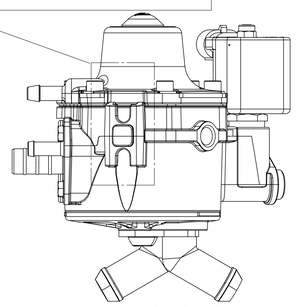


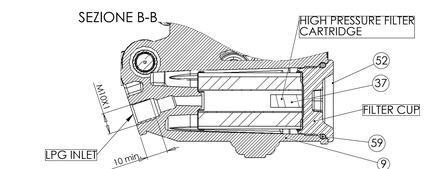


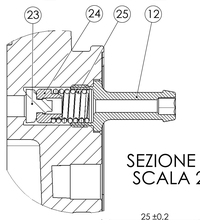


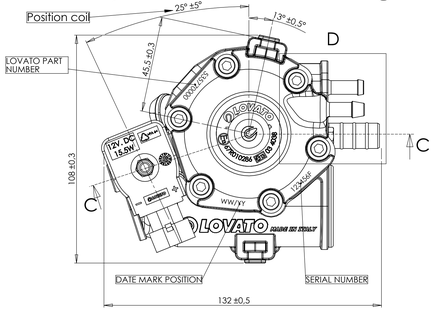


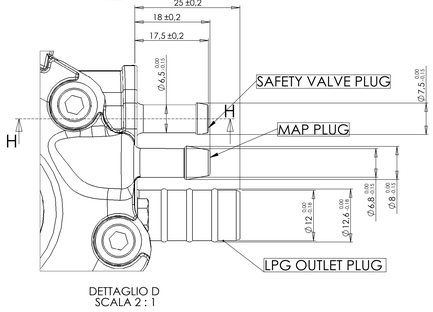




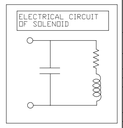








DETTAGLIO D
SCALA 2 : 1



ITEM	code number	DESCRIPTION	Material	Q.TY
60	7890020	SCREW M4x8 UNI 8111	UNI 8111	2
59	7450022	D.31,42x2,62 GREEN HNBR ORING	HNBR	1
58	5260003	RGJ SHUTTER GUIDE	POM	1
57	3460007	RGJ VULCANIZED SHUTTER	STEEL-RUBBER	1
56	4330004	RGJ DIAPHRAGM	RUBBER CANVAS	1
55	4510004	DIAPHRAGM PLATE	Steel - UNI EN 10139	2
54	4840014	BODY GAS FLOW CONTROL WITH HNBR ORING	HNBR	1
53	7450028	D.50,52x1,78 GREEN HNBR ORING	HNBR	1
52	5770006	M33x1.5 CUP FILTER	CB4FFKD EN119	1
51	5260004	PLATE	UNI EN AW 2011	1
47	407106	M12X1 CAP WITH HNBR ORING	UNI EN AW-2011	1
46	4740002	WATER PLUG BRACKET	DC 01 UNI EN 10139	1
45	137110	M5 SELF LOCKING NUT	UNI 7473 ZINCPLATED	1
44	9190024	HOMOLOGATION LABEL	PET	1
43	5770004	PLASTIC COVER	Plastic - PA	1
42	4370010	EXTERNAL SPRING	UNI EN 10270-3 (1.4310)	1
41	4830001	GUIDE PIPE WITH HNBR O-RING	UNI EN 12164 - CW617N	1
40	4065003	12V COIL AMP SUPERSEAL 1.5 CONNECTOR	COPPER WIRE PA COVERING	1
39	136238	OR 2062 HNBR 70 SH D.15,60x1.78	HNBR	1
38	4530003	OUTLET GAS CONNECTION	UNI EN 12164 - CW617N	1
37	317079	D.6x15 MAGNET	Al Ni Co V	1
36	4370012	SHUTTER SPRING	Steel - EN 10270-3 (1.4310)	1
34	7450008	D.6,75x1,78 HNBR GREEN ORING	Rubber - HNBR	1
33	4520002	DIAPHRAGM PIN	UNI EN 10277-3 (1.0737)	1
32	312537	SEAL	NBR	1
31	307063	SPRING	UNI EN 10270-3 (1.4310)	1
30	7450021	D.61,60x2,62 GREEN HNBR ORING	HNBR	1
29	7450020	D.15,88x2,62 GREEN HNBR ORING	HNBR	1
28	137407	M5x14 UNI 5931 8.8 ZN SCREW	8.8 STELL	6
27	137229	CRINKLE WASHER DIAMETER 5X11X1 H2	Steel - DIN 988	6
26	5260006	RGJ SPRING OVER GUIDE	PA 6	1
25	4370002	SAFETY DEVICE SPRING	UNI EN 10270-3 (1.4301)	1
24	4540001	SAFETY VALVE SEAT HOLDER	UNI EN AW-2011	1
23	5470007	SAFETY VALVE SEAT	HNBR	1
22	5470005	SEAT D.6.9	HNBR	1
21	319006	MOBIL CORE SPRING	UNI EN 10270-3 (1.4310)	1
20	5470003	SAFETY VALVE SEAT D.13	HNBR	1
19	4540004	SEAT HOLDER MOBIL CORE	UNI EN 12464 CW617N	1
18	4440007	MOBIL CORE	UNI EN 10277-3 (1.0737)	1
17	4230001	METAL RING ADJUSTER	UNI EN 10277-3 (1.0737)	1
16	4370011	INTERNAL SPRING	UNI EN 10270-3 (1.4310)	1
15	5260005	LOWER SPRING GUIDE	PA 6	1
14	4440013	FIXED CORED WITH O-RING	UNI EN 10277-3 (1.0737)	1
13	7890014	UNI 7380 M8x12 SCREW 10.9 ZN	UNI 7380 10.9 STEEL	1
12	4530004	SAFETY VALVE PLUG	UNI EN AW-2011	1
9	4205002	CARTRIDGE FILTER	PAPER	1
7	7020001	RADIAL SEEGER RING D.10 (DIN 7993)	AISI 304	1
6	312522	PTFE WASHER	Steel - DIN 988	1
5	4600004	PRESSURE ADJUST SCREW	Brass - UNI EN 12164 CW 617N	1
4	3530003	WATER UNION	PA	2
3	5125002	LPG COVER	UNI EN AB 46100	1
2	5125001	WATER COVER	UNI EN AB 46100	1
1	4139020	RGJ WORKED BODY	UNI EN 46100	1

COIL ELECTRICAL CARATTERISTICS

1	Make and type of the solenoid	LPG - CNG Lovato coil type: 4065003 code
2	Nominal voltage	12 VDC
3	Operating voltagerange	8V - 16V
4	Current drawn: - In rush current - nominal current	In rush current = nominal current (continuos +12V supplye) 1.29 A
5	Nominal power rating	15.5 W
6	Coil specifications / wire electrical properties	THERM 200 : Ø 0.4 Type THH Class. 200°C Ø Bare copper wire / Ø Rame nudo : 0.395mm - 0.405mm Ø Overall / smaltato esterno: 0.420mm - 0.442mm Overall Type / tipo si smalto: Polyester-immide mod. THEIC+Polyamide-immide Class H 200°C Resistance ohm /m : 0.136 Wire number: 1000 +/-3 Resistance at 20°C: (8.8/9.7) +/-0.3 ohm Heat shock / colpo di calore: 240-250°C
7	Operate time at nominal voltage	First filling: 30 ms (@ 20°C - Δp 1,0 MPa - 12 V) Normal work: 20 ms (@ 20°C - Δp 0,0 MPa - 12 V)
8	Release time at nominal voltage	@ 20°C - Δp 1,0 MPa - 12 V : 3 ms @ 20°C - Δp 0,0 MPa - 12 V : 5 ms
9	Material of Housing	PA 6 15% GF
10	Service requirement	No service required
11	connector details	Type: AMP SUPER SEAL 1.5 Female reference: part number cod. 282104-1 Terminal reference: part number cod. 183024-1
12	Range temperature	-40°C +120°C
13	Electrical over voltage	as per IS 15100 - ISO 15500
14	Insulation resistance	as per IS 15100 - ISO 15500

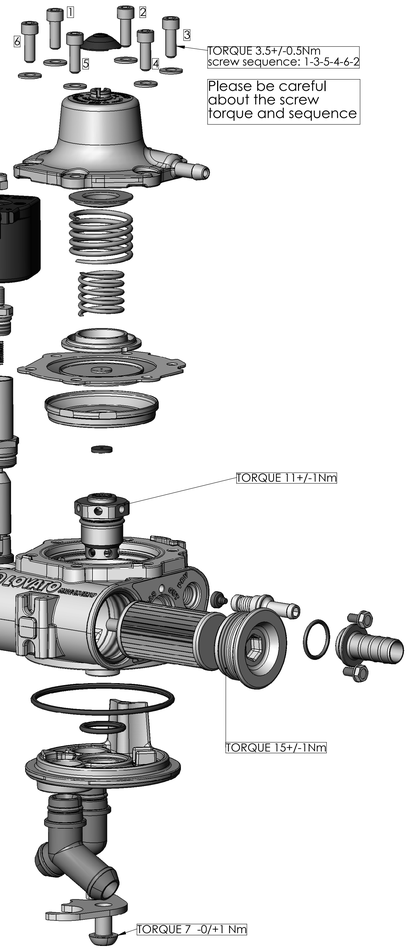
Main operating characteristics - Principali caratteristiche di lavoro

Parameter - Parametro	Symbol - simbolo	Measurement condition - condizioni di misura	Value - valore Min	Nom	Max	Unit - unità di misura
Inlet pressure pressione di ingresso	Pin		0.2		3	MPa
delta outlet pressure: tuning tolerance range in production with Pressure drop throug the fuel line to the rail	Δp out	20°C, 0.5 kg/h, 0.5 MPa inlet pressure	950	1000	1050	mbar
Outlet pressure variation between minimum and maximum static flow rate	δpout,Q	Relative to apout			100	mbar
Outlet pressure variation during transient acceleration	δpout, trans	Relative to apout: transient acceleration	Maximum duration 200 ms		150	mbar
Mass flow rate - portata di massa	Q lpg		0.1		15	Kg/h
Ambient Temperature (thermal-cycle resistance)			-40		120	°C
Thermal cycle resistance- Leakage detection condition as per R67-01	T fun		-40		120	°C
Storage temperature - temperature di immagazzinamento	T sto		-40		140	°C
Leakage		In accordance with ECE 67R-01 for different classes			15	cm3/h
Overpressure: regulator still works - Sovrapressione con riduttore ancora in lavoro					3	MPa
Overpressure: without destruction - Sovrapressione senza distruzione					6.7	MPa
Safety valve: maximum opening pressure - valvola di sicurezza: massima pressione di apertura	P prv			500	530	kPa abs p
Inlet filter - filtro di ingresso				12		µm
Type of Fuel: commercial LPG (mixture of Propane and Butane), certificated types LPG A and LPG B						
minimum water temperature to switch from petrol mode to LPG mode is 25°C						
LPG outlet temperature higher than 10°C in all working conditions						

Minimum water flow rate through the reducer

engine revolution (rpm)	water flow rate (liter / hour)
500	140
800	145
1000	150
1500	240
2000	340
2500	420
3000	510
3500	610
4000	690
4500	740
5000	750
5500	750

SERVICE INSTRUCTION



*1 Type of silicon oil:
- viscosity : 100 cSt
- density at 20°C: 0,97g./cc
kymax pharmoil 350 (Zep italia)
(or equivalent)

100% On line tested / Verifiche al 100% in linea

PARAMETRO - PARAMETER	unita' di misura / unit bar	perdita ammessa/ max leakage admited cc/h		condizioni di misura environment condition
1 - VERIFICA ALTA PRESSIONE / OVER PRESSURE PRESSURE TEST:				
- PROVA DI RESISTENZA AD ALTA PRESSIONE / OVER PRESSURE TEST	40			
- PROVA DI TENUTA CAMERA ALTA PRESSIONE - HIGT PRESSURE EXTERNAL LEAKAGE TEST	22	15 cc/h		
2 - VERIFICA TENUTA EV / SHUT-OFF VALVE LEAKAGE TEST	22	15 cc/h		
3 - VERIFICA APERTURA VALVOLA DI SICUREZZA / OPENING TEST SAFETY VALVE	5			
4 - VERIFICATENUTA VALVOLA DI SICUREZZA / LEAKAGE TEST SAFETY VALVE	3	15 cc/h		
5 - TARATURA PRESSIONE DI USCITA CON PORTATA DI 1 Kg/h D'ARIA E 0,5 Mpa PRESSIONE INGRESSO / OUTLET PRESSURE SETTING WITH AN AIR FLOWRATE OF 1 Kg/h AND 0,5Mpa INLET PRESSURE.	Please refer to "Main operating characteristics" table		**C**	T ambiente / T environment
6 - VERIFICA TENUTA DELL'OTTURATORE DI RIDUZIONE / SHUTTER REDUCTION LEAKAGE TEST	pressure regulation	15 cc/h		
7 - VERIFICA TENUTA VERSO L'ESTERNO CIRCUITO ACQUA / EXTERNAL WATER LEAKAGE TEST	700 mbar	15 cc/h		
8 - VERIFICA TENUTA VERSO L'ESTERNO CIRCUITO GAS / EXTERNAL LPG LEAKAGE TEST	300/1500 mbar	15 cc/h		
9 - VERIFICA TENUTA FRA CIRCUITO GAS E ACQUA / INTERNAL LEAKAGE TEST BETWEEN GAS CIRCUIT AND WATER CIRCUIT	300/700 mbar	15 cc/h		
10 - VERIFICA TENUTA MAP COPERCHIO / COVER MAP LEAKAGE TEST	- 0.5			

LPG PRESSURE REGULATOR according with the followings international normes:
a) ECE ONU E67-R01 CLASS 1/2/3
b) 72/245/CEE 2006/28/CE

REV.	DESCRIZIONE MODIFICA	DATA MODIFICA	DIS. MODIFICA
NOTE			

TRATTAMENTO SUPERFICIALE E/O TERMICO — MATERIALE: Weight : 1,05 kg

RAGGI NON QUOTATI — RUGOSITA' Ra

SMUSSI NON QUOTATI

	DISEGNATORE	APPROVATORE	QUOTE SENZA INDICAZIONE DI TOLLERANZA	SCALA 1:1
DATA	05/02/2010	05/02/2010	ISO 2768 mK	FORMATO A0
FIRMA	MENEGHINI	ING. GRITTI		

LOVATO ELETTRONICA S.R.L. — A NORMA DELLE VIGENTI LEGGI IL DISEGNO NON PUO' ESSERE COPIATO, RIPRODOTTO NE FORNITO A TERZI SENZA PREVENTIVA AUTORIZZAZIONE

DESCRIZIONE: LPG PRESSURE REGULATOR / RIDUTTORE RGJ

ANALISI DI MODIFICA	CODICE	REVISIONE
6287	535770000	0