

- Mounts vertically or horizontally
- Boost pressure (air only) up to 15 psi [103 kPa] (no fuel mixture allowed)
- Pre-set positive 0.4 ±0.1 inch of water idle outlet pressure at 1.0 CFM (with no boost applied)
- Designed for use in closed-loop systems
- Built to withstand extreme vibration conditions

## **N-H420 Turbo Vaporizer/Regulator**

**5233-1005  
Specification**

Woodward reserves the right to update any portion of this publication at any time. Information provided by Woodward is believed to be correct and reliable. However, no responsibility is assumed by Woodward unless otherwise expressly undertaken.

# N-H420 Turbo Vaporizer/Regulator 5233-1005

## General Information

The N-H420 Turbo two-stage regulator is an LPG liquid withdrawal, high-pressure regulator with an integrated heat exchanger vaporizer.

### WARNING

The N-H420 Turbo should be installed and maintained per these instructions and all applicable federal, state, and local laws and codes.

### WARNING

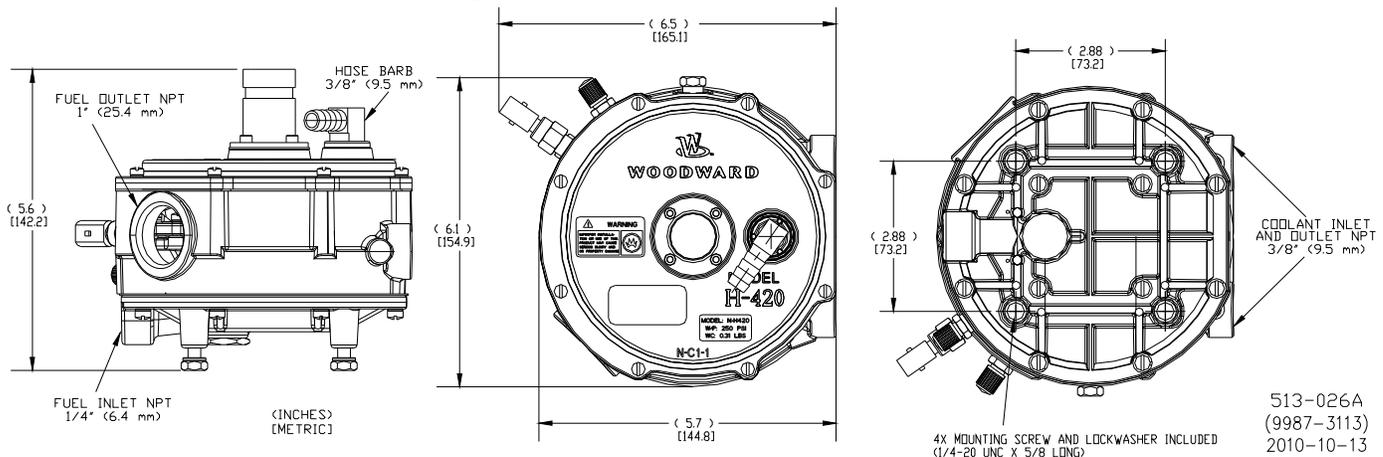
Per the National Fire Protection Association (NFPA) Standard 37 for Stationary Engine Installation and Use: an enclosure or engine room must have adequate ventilation to prevent an accumulation of flammable vapor/gas. If this is not practical, a detection system must be installed.

### IMPORTANT

**SPECIAL NOTE IN REGARDS TO NFPA PAMPHLET 58:** By NFPA definition, a regulator is not considered a positive shut-off valve. An approved automatic shut-off device is required to be installed. This will shut off the fuel supply should the engine fail while unattended. Shut-off devices come in vacuum- or solenoid-actuated configurations.

## Operation

Liquid propane enters the regulator primary chamber and is vaporized using heat from the engine's coolant. Tank pressure is reduced to 38–54 inches of water (approximately 1.5 psi). The idle outlet pressure is pre-set to positive 0.4 ±0.1 inch of water at 1.0 CFM with no boost applied. Turbo boost pressure up to 15 psi (103 kPa) may be applied at the hose barb fitting on the cover to maintain the 0.4 ±0.1 inch of water pressure differential across the secondary diaphragm during turbocharging. The primary diaphragm is referenced to the secondary chamber, so primary pressure is always equal to outlet pressure plus 38–54 inches of water. Schrader valves mounted in the primary and secondary chambers and a thermocouple transducer (for sensing secondary gas temperature) allow for quick diagnostics, and may be used in the fuel system closed-loop control strategy.

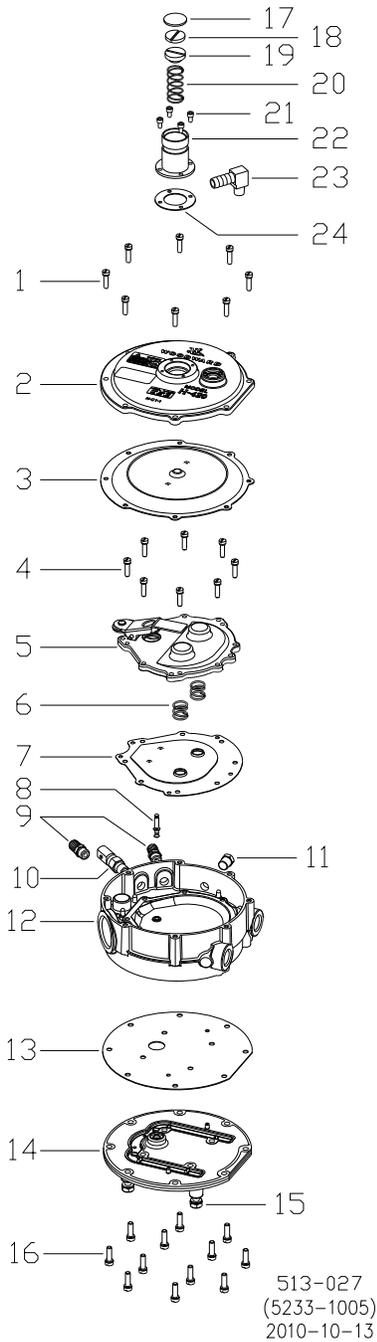


## Installation

The N-H420 Turbo should be mounted as close to the carburetor mixer/venturi as possible, with the fuel outlet placed in the lowest position for best flow.

## Service

The N-H420 Turbo should be periodically checked for leakage. If the unit requires service, we suggest you take it to a qualified service technician. If not available, Woodward will furnish a list of repair facilities or provide service information.



No.	Part No.	Description .....	Qty.
1	1031-1273	Screw – #8-32 x 0.625 Fillister, SEMS, Split Lock Washer .....	8
2	3550-1581	Cover – w/ Hole, Secondary Diaphragm, Regulator, N-H420 .....	1
3	6612-1010	Diaphragm – Assy, Secondary, Regulator, N-H420 .....	1
4	1031-1273	Screw – #8-32 x 0.625 Fillister, SEMS, Split Lock Washer .....	8
5	3550-1175	Cover – Assembly, Pos Pressure, Regulator, N-H420 .....	1
6	N-S3-4	Spring – Primary, Regulator, N-H420 .....	2
7	N-D1-3A	Diaphragm – Assembly, Primary, Regulator, N-H420 .....	1
8	N-P1-3	Pin – Primary Valve, Regulator, N-H420 .....	1
9	1310-913	Valve – Schrader 0.125 NPT .....	2
10	6913-007	Transducer – Natural Gas Temperature .....	1
11	1223-1150	Plug – 1/8 NPT Hex Pipe Plug N-2007 .....	1
12	N-B1-1A	Body – with Jet Sub-Assy, LPG, Regulator, N-H420 .....	1
13	N-G1-1	Gasket – Gas & Water Chamber, Regulator, N-H420 .....	1
14	N-C1-3A	Plate – Assembly, Inlet, LPG, Regulator, N-H420 .....	1
15	N00-6402	Screw – 1/4-20 UNC x 5/8 Hex Head, SEMS .....	4
16	1031-1311	Screw – 10-24 UNC x 0.625, Fil Hd, SEMS w/LW .....	12
17	N-C2-3	Cap – Primary Adjustment, Tamper Resistant, N-51 .....	1
18	3381-1010	Screw – Locking, Spring Adj, Model N-H420, Positive Pressure....	1
19	5352-1000	Screw – Spring Adjust, Model N-H420, Positive Pressure .....	1
20	N-S3-2-P	Spring – Secondary, Pos Pressure, Regulator, N-H420 .....	1
21	1036-611	Screw – Soc Hd Cap (T-077) #6-32, 0.250 Long, Stl .....	4
22	4250-1051	Cap – Spring Adjust, Positive Pressure, Regulator, N-H420 .....	1
23	N2-1039	Fitting – 1/8 NPT x 3/8 Hose, Brass .....	1
24	N00-5255-P	Gasket – Pos Pressure, Cover, Regulator, N-H420 .....	1

## Ordering Information

Part No.	Description
5233-1005	N-H420 Turbo Regulator, Positive Pressure, with 15 psi Boost

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