

CLEANENERGY

FUELING PRODUCTS



2018 CATALOG



www.opwglobal.com



DEFINING | WHAT'S NEXT

CLEANENERGY FUELING PRODUCTS



Helping You Make the World a Greener, Cleaner Place.

We are dedicated to continuous innovation in the design, engineering and manufacture of high-quality components used for alternative fueling applications, such as CNG (compressed natural gas). A division of OPW, the global leader in fueling solutions since 1892, CleanEnergy Fueling Products is a name synonymous with innovation, quality, reliability and Customer service. OPW CleanEnergy Fueling Products offers you a complete selection of alternative fueling products to meet your specification. Each product is designed and built to exacting standards for your fueling safety and efficiency.

You believe that blue skies, clean water and being green are good business. Through environmentally safe, alternative fueling systems, we can have a world of cleaner air, cleaner water and sustainable fueling. OPW CleanEnergy Fueling Products is Leading the Way in fueling your future, offering global solutions for Compressed Natural Gas products, including Nozzles, Breakaways, Adaptors and Factory Tested Hose Assemblies.

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Information may change at any time. Data contained herein shall not be used for construction or engineering purposes



CNG Fueling Nozzles (NGV1 & ISO14469)

OPW CleanEnergy Fueling Products offers an extensive line of CNG Fueling Nozzles to meet a wide variety of fueling applications. OPW CNG nozzles are used throughout the world.

NEW



NT2AP30 (Type 2 or 3)

The NEW NT2A Series nozzle is designed to be versatile for all of your Type-2 CNG fueling applications. The NT2A has true Class-A specified durability and will optimize your time-fill, fast-fill and fleet fueling sites. The ergonomic design, positive locking jaws and best in class internal seals will make this nozzle the preferred choice of your operators.

NEW



NT2AP36 (Type 2 or 3)



CNG Type 2 Fueling System

The OPW CleanEnergy CNG 3-Way Valve and Type 2 Nozzle features the latest in industrial and commercial fueling innovations. A Fueling System which bridges the gap between convenience and comfort, without sacrificing flow or reliability. Ergonomically designed to be easy to use and prevent unnecessary wear and tear during the fueling process.



1000 Series (Type 1)

OPW 1000 Series self-service nozzles are designed for high-flow public and private CNG fueling systems. Applications include quick-fill, self-service fueling of automobiles, light trucks, shuttle buses and vans.



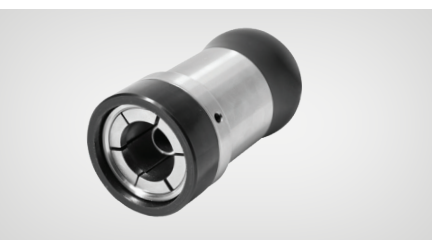
Pistol Grip Series Self-Service Nozzles (Type 1)

OPW Pistol Grip Series Self-Service Nozzles are designed for high-flow public and private CNG fueling systems. Applications include quick-fill, self-service fueling of automobiles, light trucks, shuttle buses and vans.



5000 Series (Type 1)

OPW 5000 Series nozzles are designed for extremely high-flow public and private CNG fueling systems. Applications include quick-fill, self-service fueling of transit buses and large trucks.



6000 Series (Type 2)

OPW 6000 Series nozzles are designed for extremely high-flow public and private CNG fueling systems when connected to OPW CL50 series receptacles. Applications include quick-fill, self-service fueling of transit buses and large trucks.



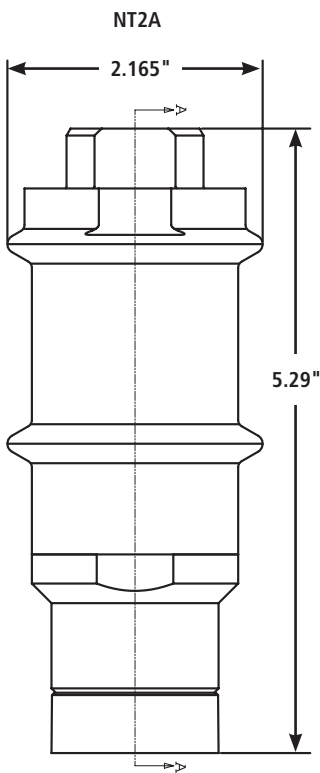
BDN Vehicle Defueling Nozzle

OPW has developed this tool to safely depressurize vehicles. This valve can also be used to transfer fuel from one vehicle to another in the event of a breakdown on the side of the road, or be used in areas where no refueling station is available.



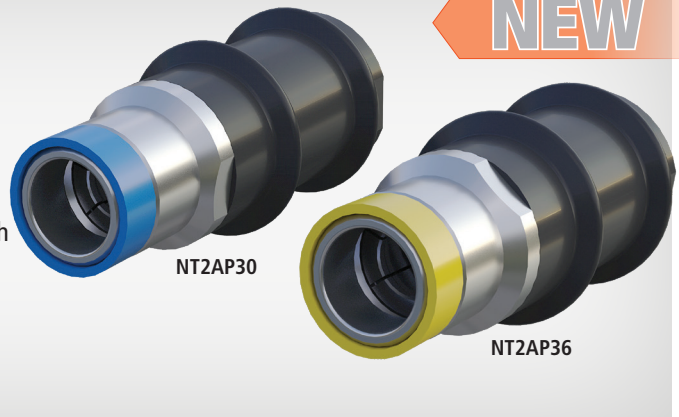
NT2A Series General Purpose Nozzles (NGV1 & ISO14469, Type 2 or 3)

The NEW NT2A Series nozzle is designed to be versatile for all of your Type-2 CNG fueling applications. The NT2A has true Class-A specified durability and will optimize your time-fill, fast-fill and fleet fueling sites. The ergonomic design, positive locking jaws and best in class internal seals will make this nozzle the preferred choice of your operators.



Materials

- Body:** Brass
- Jaws:** Stainless steel
- Seals:** Specially formulated polymers and elastomers specific to high pressure NGV applications.



Features

- ◆ **User-Friendly Push-On/Pull-Off Operation** - For smooth, simple engaging and disengaging of nozzle and receptacle without the added step of pulling back a collar. The NT2A is designed to remain securely connected to the receptacle until the nozzle is depressurized after fueling is complete.
- ◆ **Type** - Designed as a Type 2 or 3 nozzle.
- ◆ **Jaw-Lock Technology** - Designed specifically for the frequent coupling and uncoupling of the high-pressure gas connections of NGV fueling. Forces at the contact point are distributed over the entire surface area of the receptacle.
- ◆ **Ergonomic Design** - Has a comfortable specially designed Duratuff sleeve. Also incorporates stainless steel front sleeve for those hard to reach receptacles.
- ◆ **Durable Construction** - Brass & Stainless Steel construction provides excellent corrosion resistance in the harsh refueling environment.
- ◆ **Safe Disconnect** - Accidental disconnection under pressure is very difficult due to our unique force multiplier design.
- ◆ **Meets NGV1 and ISO14469 Fueling Standard** - Can be used to fuel any vehicle with approved profile receptacle.

Specifications:

Min. Flow Rate: 1200 SCFM @ 3000 psid
 Temperature Range: -40° F to 185° F
 (-40° C to 85° C)
 Cv: 0.84
 MAWP: 4532 psi (312.5 Bar)

Ordering Specifications

Product #	Inlet Thread Size	Color	Service Pressure	Weight.
NT2AP30	SAE - 6, 9/16" - 18 UNF	Blue	NGV1 P30 ISO14469 B200 3000 psi (200 bar)	1.30 lb. 0.59 kg
NT2AP36	SAE - 6, 9/16" - 18 UNF	Yellow	NGV1 P36 ISO14469 B200 36000 psi (250 bar)	1.30 lb. 0.59 kg

Connects to any L-Series-NGV-1 CNG Receptacle

Listings and Certifications



**NGV1
ISO14469**

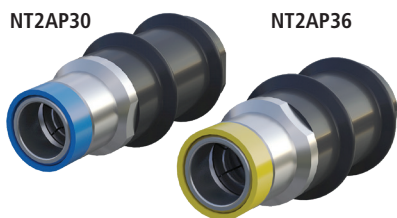


CNG Type 2 Fueling System

The OPW CleanEnergy CNG 3-Way Valve and Type 2 Nozzle features the latest in industrial and commercial fueling innovations. A Fueling System which bridges the gap between convenience and comfort, without sacrificing flow or reliability. Ergonomically designed to be easy to use and prevent unnecessary wear and tear during the fueling process.

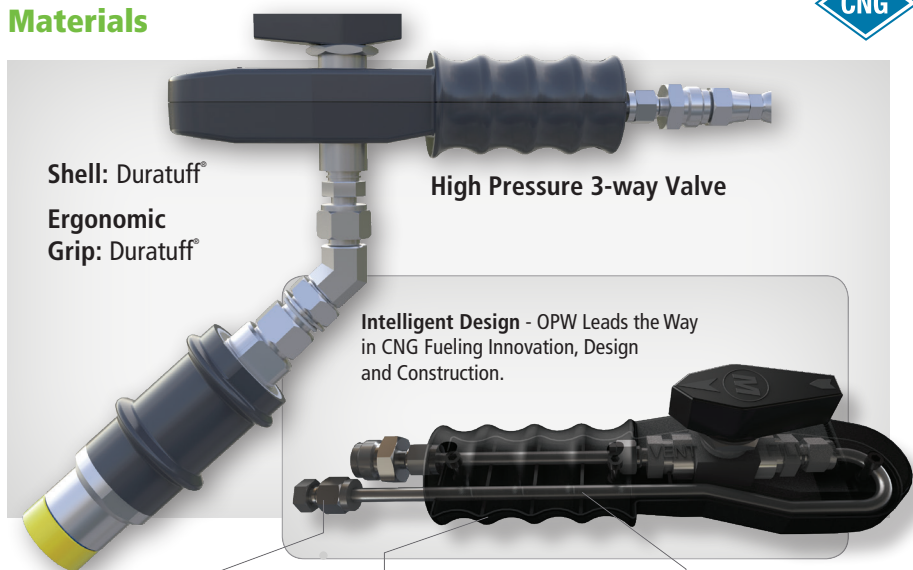
NT2A Series Fast-Fill/ Fleet-Fill Nozzles (NGV1 & ISO14469 Type 2 or 3)

OPW NT2A Series Fast-Fill/Fleet-Fill Nozzles are designed for high-flow CNG fueling systems. Applications include quick-fill fueling of automobiles, light trucks, shuttle buses, vans and time-fill or overnight fleet fueling.



Product #	Inlet Thread Size	Color	Service Pressure
NT2AP30	SAE - 6, 9/16" - 18 UNF	Blue	NGV1 P30 ISO14469 B200 3000 psi (200 bar)
NT2AP36	SAE - 6, 9/16" - 18 UNF	Yellow	NGV1 P36 ISO14469 G250 3600 psi (250 bar)

Materials



Shell: Duratuff®

Ergonomic Grip: Duratuff®

High Pressure 3-way Valve

Intelligent Design - OPW Leads the Way in CNG Fueling Innovation, Design and Construction.

Inlet Tubing Offset – designed to eliminate mis-connections on OPW CNG Hose Sets.

Duratuff® Shell construction provides maximum user comfort and protects tubing for added safety of the equipment.

Designed to have fewer leak paths than other fueling systems.

Features

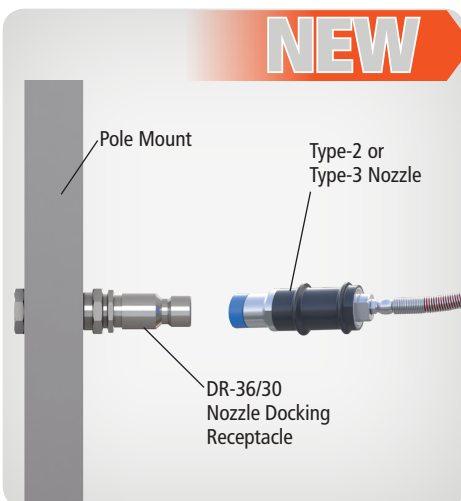
- ◆ **Hose Connection Options** - Time-Fill Applications - 4/4 Sized Hose (1/4" Inlet and 1/4" Vent). Fast-Fill Applications - 4/6 Sized Hose (3/8" Inlet and 1/4" Vent)
- ◆ **Ergonomic Grip** - Duratuff® Grip provides maximum user comfort and control
- ◆ **Duratuff® Shell** - Specifically designed to handle operational wear-and-tear as well as protecting your vehicle from dents and scratches during fueling.
- ◆ **CNG Type 2 Fueling System Extension Options** - Offers the convenience of connection flexibility. Operators can connect to vehicles regardless of the application. Use one of four different connection options; 3/4", 45°, 4" Rigid or 17" Flex Hose to help in fueling difficult-to-reach receptacles or tanks.
- ◆ **NT2A Series Nozzle** - Feature a field serviceable internal filter to capture gas-borne debris commonly found in CNG Fueling systems.

Listings and Certifications



NGV1 ISO14469

NEW

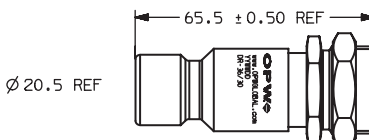


DR-36/30 Nozzle Docking Receptacle

This is a Nozzle Docking receptacle to be used ONLY for Type-2 & Type-3 nozzle mounting purposes. There are no working internals, therefore it may only be used as a docking storage device. **NOTE:** It shall not be used to dock a Type-1 nozzle.

Ordering Specifications

Product #	Description
DR-36/30	Nozzle Docking Receptacle



Nozzle Types

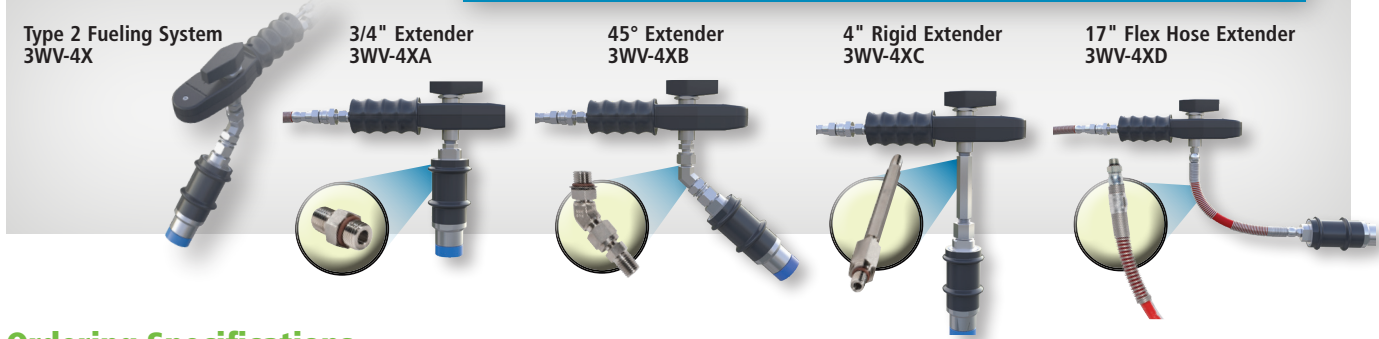
- Type 1** - Nozzle with an integrated vent valve system. This vent valve is controlled by the single lever operation which will safely vent the gas trapped between the receptacle check valve and the nozzle inlet valve. After the venting process, the nozzle will disconnect from the vehicle's receptacle.
- Type 2** - The vent valve operating mechanism is external to the nozzle. Venting is required prior to disconnection of this type of nozzle.
- Type 3** - The fueling hose is automatically depressurized below 50psi (3.4Bar) at dispenser shutdown. The nozzle will vent low pressure gas between the receptacle check valve and the nozzle inlet valve.

NOTE: This device shall not be installed on a vehicle nor be connected to a pressurized source of any type.



CNG Type 2 Fueling System

FOUR EXTENDER OPTIONS TO CHOOSE FROM



Ordering Specifications

Product #	Description	Connection		Approx. Weight	Service Pressure
		Fill	Vent		
3WV-44	3-way valve, cover and outlet tubing, connections				
3WV-44A	3-way valve, cover, outlet tubing				
3WV-44B	3-way valve, cover, outlet tubing and 45 degree extender	4- <small>SAE-AN</small>	4- <small>SAE-AN</small>	1.4 lb. (.63 kg)	up to 5,000 psi / 345 bar
3WV-44C	3-way valve, cover, outlet tubing, connections and 4" rigid extender				
3WV-44D	3-way valve, cover, outlet tubing, connections and whip-hose extender				
3WV-44AP30	3-way valve, cover, outlet tubing and 3/4" extender and NT2AP30				
3WV-44BP30	3-way valve, cover, outlet tubing and 45 degree extender and NT2AP30	4- <small>SAE-AN</small>	4- <small>SAE-AN</small>	2.74 lb. (1.24 kg)	3,000 psi / 200 bar
3WV-44CP30	3-way valve, cover, outlet tubing and 4" rigid extender and NT2AP30				
3WV-44DP30	3-way valve, cover, outlet tubing and whip-hose extender and NT2AP30				
3WV-44AP36	3-way valve, cover, outlet tubing and 3/4" extender and NT2AP36				
3WV-44BP36	3-way valve, cover, outlet tubing and 45 degree extender and NT2AP36	4- <small>SAE-AN</small>	4- <small>SAE-AN</small>	2.74 lb. (1.24 kg)	3,600 psi / 250 bar
3WV-44CP36	3-way valve, cover, outlet tubing and 4" rigid extender and NT2AP36				
3WV-44DP36	3-way valve, cover, outlet tubing and whip-hose extender and NT2AP36				
3WV-46	3-way valve, cover, outlet tubing				
3WV-46A	3-way valve, cover, outlet tubing and 3/4" extender				
3WV-46B	3-way valve, cover, outlet tubing and 45 degree extender	8- <small>SAE-AN</small>	4- <small>SAE-AN</small>	1.416 lb. (.63 kg)	up to 5,000 psi / 345 bar
3WV-46C	3-way valve, cover, outlet tubing and 4" rigid extender				
3WV-46D	3-way valve, cover, outlet tubing and whip-hose extender				
3WV-46AP30	3-way valve, cover, outlet tubing and 3/4" extender and NT2AP30				
3WV-46BP30	3-way valve, cover, outlet tubing and 45 degree extender and NT2AP30	8- <small>SAE-AN</small>	4- <small>SAE-AN</small>	2.74 lb. (1.24 kg)	3,000 psi / 200 bar
3WV-46CP30	3-way valve, cover, outlet tubing and 4" rigid extender and NT2AP30				
3WV-46DP30	3-way valve, cover, outlet tubing and whip-hose extender and NT2AP30				
3WV-46AP36	3-way valve, cover, outlet tubing and 3/4" extender and NT2AP36				
3WV-46BP36	3-way valve, cover, outlet tubing and 45 degree extender and NT2AP36	8- <small>SAE-AN</small>	4- <small>SAE-AN</small>	2.74 lb. (1.24 kg)	3,600 psi / 250 bar
3WV-46CP36	3-way valve, cover, outlet tubing and 4" rigid extender and NT2AP36				
3WV-46DP36	3-way valve, cover, outlet tubing and whip-hose extender and NT2AP36				



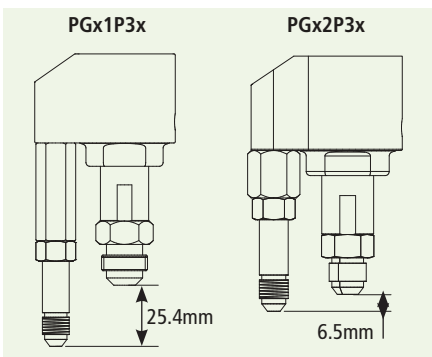
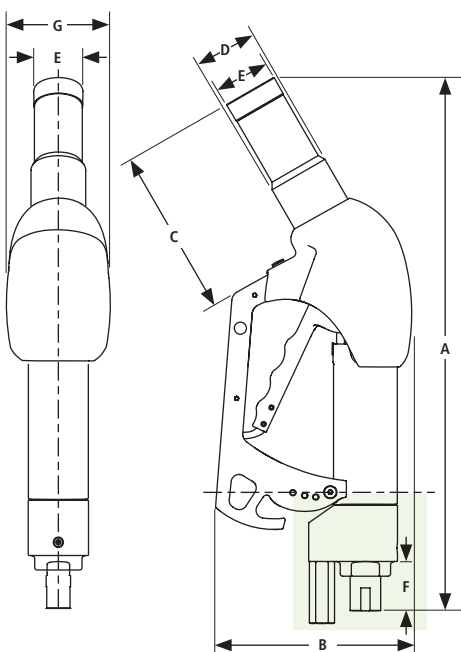
Pistol Grip Series Self-Service Nozzles (NGV1 & ISO14469, Type 1)

Designed for high-flow public and private CNG fueling systems. Applications include quick-fill, self-service fueling of automobiles, light trucks, shuttle buses and vans.

Dimensions Without Adaptors

Pistol Grip Nozzle

	in	mm
A	13.80	350.5
B	5.07	128.7
C	4.35	110.6
D	1.57	40.0
E	1.41	36.0
F	1.27	32.4
G	2.85	72.3



PGN Inlet Adaptor

Inlet Adaptors available to fit common hose configurations.

PGx1P3x	PGN Inlet Adaptor, 25.4 mm Offset
PGx2P3x	PGN Inlet Adaptor, 6.5 mm Offset

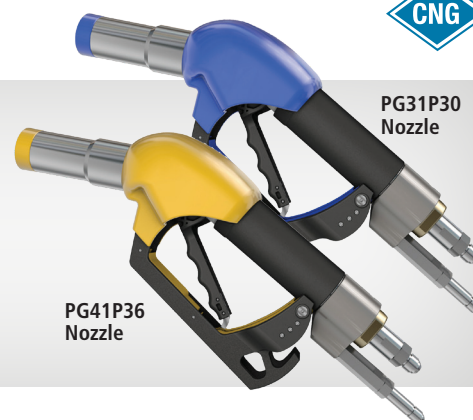
Materials

Body: Stainless Steel & Aluminum

Jaws: Stainless steel

Seals: Specialty polymers and elastomers for NGV applications

Inlet Filter & Magnet in hand guard are standard



Features

- ◆ **High-Flow/Fast-Fill Capability** - provides quick fueling of medium storage vehicles. Internal seals are designed for fast-fill NGV fueling.
- ◆ **Ergonomic Design** - simple squeeze and release motion ensures connection and dispensing by all users. Insulated body to protect operator's hand.
- ◆ **Directed Vent** - captures the gas vented at disconnect and directs it out of the nozzle via a 1/4" stainless steel vent which can be piped to a remote venting location or back to the upstream side of the compressor. Capturing vent gas is environmentally desirable by agencies such as the EPA and provides an added measure of safety by minimizing the amount of gas present at the filling site. It also reduces vent noise and eliminates escaped gas smell.
- ◆ **User-Friendly Lever-Action Operation (see visuals below)** - engage nozzle and receptacle with a familiar lever action. This secures nozzle jaws onto receptacle, activating a system of three internal valves that regulate fueling. The nozzle will not dispense gas until securely engaged

onto an appropriate receptacle. When fueling is complete, squeeze and release the lever to automatically stop the flow of gas into the vehicle, vent the trapped gas and release the nozzle from the receptacle. Designed for public or private self-service applications, no attendant is needed.

- ◆ **Jaw-Lock Technology** - designed specifically for the frequent coupling and uncoupling of the high-pressure gas connections of NGV fueling. Forces at the contact point are distributed over the entire surface area of the receptacle.
- ◆ **Meets NGV1 & ISO14469 Fueling Standard** - can be used to fuel any vehicle with appropriate profile receptacle.
- ◆ **Individually Leak Tested and Inspected with Traceable Serial Number**

Specifications:

Min. Flow Rate: 1200 SCFM @ 3000 psid

Temperature Range: -40° F to 185° F
(-40° C to 85° C)

MAWP: 4532 psi (312.5 Bar)

Insert nozzle onto receptacle.



Squeeze-and-click to FILL.



Squeeze-and-click to VENT.



Listings and Certifications

Pat. 9,527,720



NGV1
ISO14469

Pending
Listings and
Certifications

CRN



Ordering Specifications

EXAMPLES:

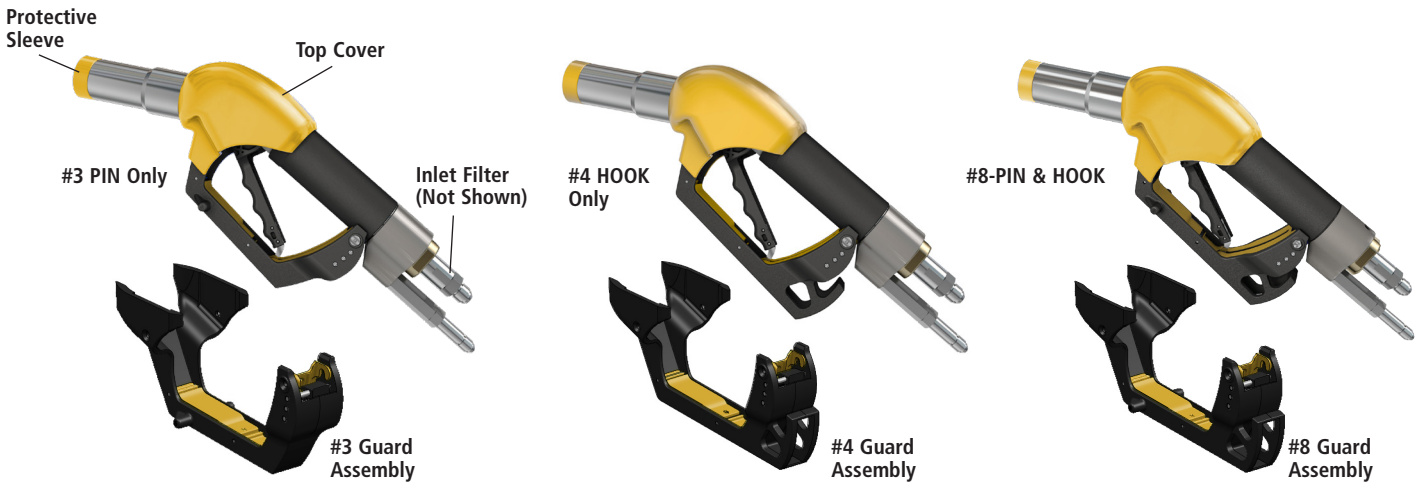
PG41P36 = #4 GUARD, #1 INLET HOSE CONFIGURATION; 3600 PSI (250 BAR)

PG82P30 = #8 GUARD, #2 INLET HOSE CONFIGURATION; 3000 PSI (200 BAR)

Pistol Grip Nozzle	Guard Style	Inlet Hose Configuration	Service Pressure	Connection Fill	Connection Vent	Approximate Weight
PG	3	1	NGV1P36 ISO14469 B250	3/4-16 UNF-2A, -8 37° JIC	-4 37° JIC	4.6 lbs.
	4	1	NGV1P36 ISO14469 B250	3/4-16 UNF-2A, -8 37° JIC	-4 37° JIC	4.6 lbs.
	8	1	NGV1P36 ISO14469 B250	3/4-16 UNF-2A, -8 37° JIC	-4 37° JIC	4.6 lbs.
	3	2	NGV1P36 ISO14469 B250	9/16-18 UNF-2A, -6 37° JIC	-4 37° JIC	4.6 lbs.
	4	2	NGV1P36 ISO14469 B250	9/16-18 UNF-2A, -6 37° JIC	-4 37° JIC	4.6 lbs.
	8	2	NGV1P36 ISO14469 B250	9/16-18 UNF-2A, -6 37° JIC	-4 37° JIC	4.6 lbs.
PG	3	1	NGV1P30 ISO14469 B200	3/4-16 UNF-2A, -8 37° JIC	-4 37° JIC	4.6 lbs.
	4	1	NGV1P30 ISO14469 B200	3/4-16 UNF-2A, -8 37° JIC	-4 37° JIC	4.6 lbs.
	8	1	NGV1P30 ISO14469 B200	3/4-16 UNF-2A, -8 37° JIC	-4 37° JIC	4.6 lbs.
	3	2	NGV1P30 ISO14469 B200	9/16-18 UNF-2A, -6 37° JIC	-4 37° JIC	4.6 lbs.
	4	2	NGV1P30 ISO14469 B200	9/16-18 UNF-2A, -6 37° JIC	-4 37° JIC	4.6 lbs.
	8	2	NGV1P30 ISO14469 B200	9/16-18 UNF-2A, -6 37° JIC	-4 37° JIC	4.6 lbs.

*NOTE: Inlet filter and magnet in hand guard are standard.

Guard Style



Inlet Hose Adaptors

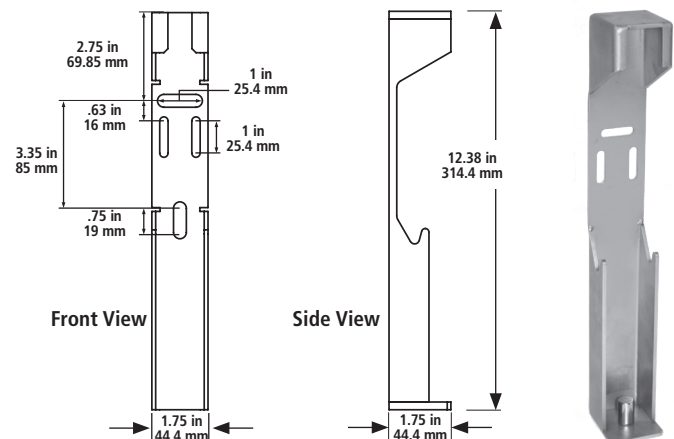
- Compatible with most CNG hose configurations in USA using -8 fill and -4 vent
- Compatible with most hose configurations using -6 fill and -4 vent

Parts

	P36 Yellow	P30 Blue
#3 Guard Assembly	210072	210240
#4 Guard Assembly	210055	210239
#8 Guard Assembly	210073	210242
Protective Sleeve	209018	209801
Top Cover Assembly	PG-TCSA-Yellow	PG-TCSA-Blue
Inlet Filter	001065	

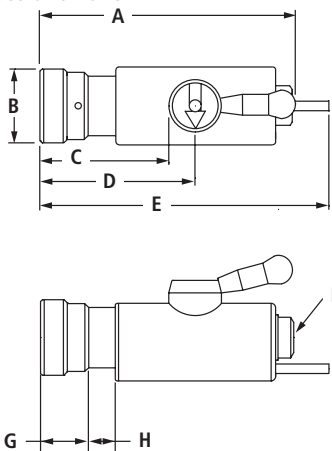
Dispenser Mount

211290 Stainless steel, II gage compatible with 3, 4 and 8 guards shown above



CT1000 Series Self-Service Nozzles (NGV1 & ISO14469 Type 1)

OPW 1000 Series Self-Service Nozzles are designed for high-flow public and private CNG fueling systems. Applications include quick-fill, self-service fueling of automobiles, light trucks, shuttle buses and vans.

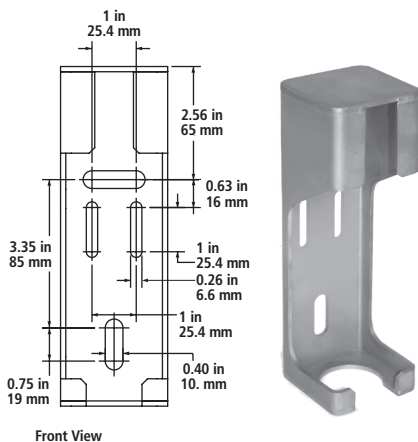


Dimensions

	CT1000SS		CT1000P36S / CT1000LS	
	in	mm	in	mm
A	6.69	167.8	7.32	185.8
B	1.94	48.9	1.94	48.9
C	3.37	85.1	4.0	102.1
D	4.06	102.4	4.69	119.4
E	7.5	191.0	8.19	208.0
F	Straight Thread O-ring Boss Port SAE-6 J1926 (9/16" - 18 UNF-2B)			
G	1.24	31.4	2.01	51.2
H	0.75	19	0.72	18.4

Dispenser Mount

210644 Stainless steel, II gage



Materials

Body: Brass
Jaws: Stainless steel
Seals: Specialty polymers and elastomers for NGV applications

CT1000P36S
Coupling End



CT1000P36S
Hose Connection End

Features

- ◆ **High-Flow/Fast-Fill Capability** - provides quick fueling of medium storage vehicles. Internal seals are designed for fast-fill NGV fueling.
- ◆ **User-Friendly Single-Action Operation** - engage nozzle and receptacle with a 180° rotation of the handle. This secures nozzle jaws onto receptacle, activating a system of three internal valves that regulate fueling. The nozzle will not dispense gas until securely engaged onto an appropriate receptacle. When fueling is complete, rotate the handle to the disconnect position to automatically stop the flow of gas into the vehicle, vent the trapped gas and release the nozzle from the receptacle. The 1000 Series nozzles connect directly to the hose, with no need for a three-way valve. Designed for public or private self-service applications, no attendant is needed.
- ◆ **Directed Vent (CT1000)** - captures the gas vented at disconnect and directs it out of the nozzle via a 1/4" stainless steel vent tube (requires -4 compression adaptor), which can be piped to a remote venting location or back to the upstream side of the compressor. Capturing vent gas is environmentally desirable by agencies such as the EPA and provides an added measure of safety by minimizing the amount of gas present at the filling site. It also reduces vent noise and eliminates escaped gas smell.
- ◆ **Jaw-Lock Technology** - designed specifically for the frequent coupling and uncoupling of the high-pressure gas connections of NGV fueling. Forces at the contact point are distributed over the entire surface area of the receptacle.
- ◆ **Ergonomic Design** - one simple and convenient motion ensures connection and dispensing by all users. Insulated jacket protects operator's hand.
- ◆ **Durable Construction** - heavy-duty brass and stainless steel construction provides corrosion resistance in the harsh refueling environment.
- ◆ **Tamper Resistant** - specially designed cam system actuates the front and rear module. Tampering with the valve results in immediate dispensing shut-off.
- ◆ **Individually Leak Tested and Inspected with Traceable Serial Number**

Specifications:

Min. Flow Rate: 1200 SCFM @ 3000 psid
Temperature Range: -40° F to 185° F
(-40° C to 85° C)

Cv: 0.84

MAWP: 4532 psi (312.5 Bar)

Ordering Specifications

Product #	Inlet Thread Size	Vent Tube Size OD	Service Pressure	Weight
CT1000SS	SAE - 6, 9/16" - 18 UNF	1/4"	NGV1P30 ISO14469 B200 3000 psi 200 bar	3.61 lbs. 1.63 kg
CT1000LS	SAE - 6, 9/16" - 18 UNF	1/4"	NGV1P30 ISO14469 B200 3000 psi 200 bar	3.66 lbs. 1.66 kg
CT1000P36S	SAE - 6, 9/16" - 18 UNF	1/4"	NGV1P36 ISO14469 B250 3600 psi 250 bar	3.65 lbs. 1.65 kg

Listings and Certifications



NGV1
ISO14469

CRN

See page 27 for Canadian Registration Number



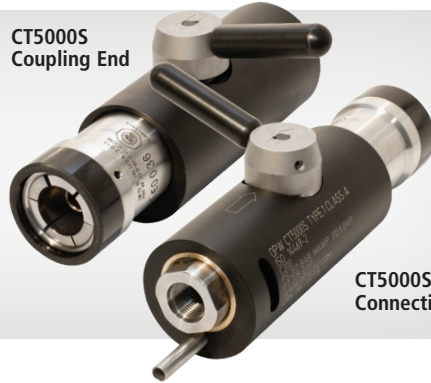
Materials

Body: Brass

Jaws: Stainless steel

Seals: Specially formulated polymers and elastomers specific to high-pressure NGV applications.

CT5000S Coupling End



CT5000S Hose Connection End

Features

- ◆ **High-Flow/Fast-Fill Capability** - to provide quick fueling of large storage vehicles. Internal seals are specially designed to meet the demands of fast-fill NGV fueling.
- ◆ **User-Friendly Single-Action Operation** - entire fueling operation is initiated by simply engaging nozzle and receptacle with a single 180° rotation of the handle. This automatically secures the nozzle jaws onto the receptacle and activates a system of three internal valves that regulate fueling. The nozzle will not dispense gas until securely engaged onto an appropriate receptacle. When fueling is completed, rotation of the handle to the disconnect position automatically stops the flow of gas into the nozzle, vents the trapped gas and releases the nozzle from the receptacle. The 5000 Series nozzles connect directly to the hose, eliminating the need for a three-way valve. They are designed for public or private self-service applications, eliminating the need for a trained attendant.
- ◆ **Directed Vent** - directs the gas vented at disconnect and directs it out of the nozzle via a 3/8" stainless steel tubing connection (requires -6 compression adaptor), which can be piped to a remote venting location or back to the upstream side of the compressor. Directing the vent gas is environmentally desirable and will provide an added measure of safety by minimizing the amount of gas present

at the filling site. It also reduces vent noise and escaped gas smell.

- ◆ **Jaw-Lock Technology** - designed specifically for the frequent coupling and uncoupling of the high-pressure gas connections of NGV fueling. Forces at the contact point are distributed over the entire surface area of the receptacle.
- ◆ **Ergonomic Design** - one simple and convenient motion ensures connection and dispensing by all users. Insulated jacket provides thermal protection for operator's hand.
- ◆ **Durable Construction** - brass and stainless steel construction provides excellent corrosion resistance in the harsh refueling environment.
- ◆ **Tamper Resistant** - specially designed cam system actuates the front and rear valve module. Any tampering with the valve will result in an immediate shut-off of the dispensing process.
- ◆ **Individually Leak Tested and Inspected with Traceable Serial Numbers**

Specifications:

Min. Flow Rate: 5000 SCFM @ 3000 psid

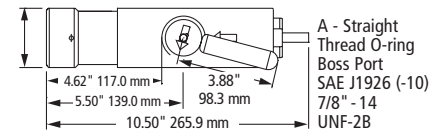
Temperature Range: -40° F to 185° F
(-40° C to 85° C)

Cv: 2.75

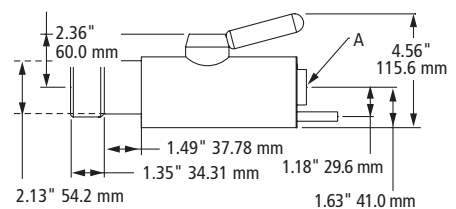
MAWP: 4532 psi (312.5 Bar)

CT5000 Series Bus/ Heavy-Duty Truck Nozzles (NGV1 & ISO14469 Type 1)

OPW 5000 Series nozzles are designed for extremely high-flow public and private CNG fueling systems. Applications include quick-fill, self-service fueling of transit buses and large trucks.



CT5000S and CT5000S-CE



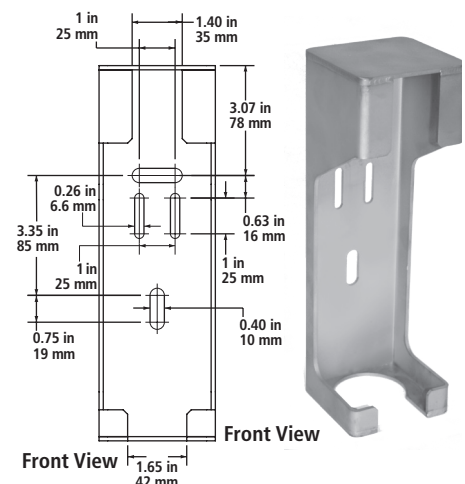
Ordering Specifications

Product #	Inlet Thread Size	Vent Tube Size OD	Service Pressure
CT5000S (directed vent)	SAE - 10 7/8" 14 UNF	3/8"	NGV1P30HD JAW profile w/service pressure rated to 3600 psi 8.77 lb. - 3.98 kg
CT5000S-CE (labeled for EU Markets)	SAE - 10 7/8" 14 UNF	3/8"	ISO14469 B200 JAW profile w/ service pressure marked as 200 bar 8.77 lb. - 3.98 kg

Connects to CL50 Series heavy-duty receptacles

Dispenser Mount

210642 Stainless steel, II gage



Listings and Certifications



PED
2014/68/EU

NGV1
ISO14469

CE 0036

CRN

See page 27 for Canadian Registration Number

CNG

CC6000 Series Bus/Heavy-Duty Truck Nozzles (NGV1 & ISO14469, Type 2)

OPW 6000 Series nozzles are designed for extremely high-flow public and private CNG fueling systems. Applications include quick-fill, self-service fueling of transit buses and large trucks. This Type 2 nozzle must be used with some type of secondary flow control valve that either vents down only the nozzle or the nozzle and hose.

Materials

Body: Stainless steel; acetal

Jaws: Stainless steel

Seals: Specially formulated polymers and elastomers specific to high-pressure NGV applications.

CC6000
Coupling End

CC6000
Hose Connection End



Features

- ◆ **High-Flow/Super Fast Fill Capability** - OPW's fastest flowing nozzle. This nozzle will provide quick fueling of large storage vehicles. Internal seals are specially designed to meet the demands of fast-fill NGV fueling.
- ◆ **User-Friendly Push-On/Pull-Off Operation** for smooth, simple engaging and disengaging of nozzle and receptacle without the added step of pulling back a collar. The CC6000 is designed to remain securely connected to the receptacle until the nozzle is depressurized after fueling is complete.
- ◆ **Type** - designed as a High-Flow Type 2 nozzle used in conjunction with CL50 receptacles.
- ◆ **Jaw-Lock Technology** - designed specifically for the frequent coupling and uncoupling of the high-pressure gas connections of NGV fueling. Forces at the contact point are distributed over the entire surface area of the receptacle, significantly reducing nozzle wear.

- ◆ **Ergonomic Design** - has a comfortable "tool-grip" like all other OPW Type 2 nozzles.
- ◆ **Durable Construction** - heavy-duty stainless steel construction provides excellent corrosion resistance in the harsh refueling environment.
- ◆ **Individually Leak Tested and Inspected With Traceable Serial Numbers**

Specifications:

Min. Flow Rate: 5000 SCFM @ 3000 psid
Temperature Range: -40° F to 185° F
(-40° C to 85° C)

Cv: 3.30

MAWP: 4532 psi (312.5 Bar)

Ordering Specifications

Product #	Inlet Thread Size	Vent Tube Size OD	Service Pressure	Weight
CC6000	SAE-10 J1926, 7/8" - 14 UNF	3/8"	NGV1P30HD JAW profile w/service pressure rated to 3600 psi	2.94 lb. - 1.33 kg

Connects to CL50 Series heavy-duty receptacles

Listings and
Certifications



PED
2014/68/EU

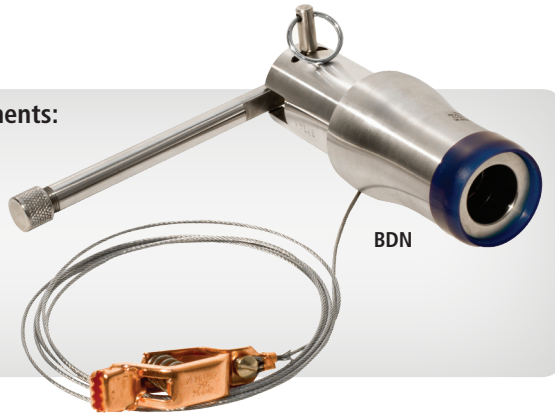
NGV1
ISO14469



Materials

Body and Internal Components:
316L stainless steel

Seals: Specially formulated polymers and elastomers specific to high-pressure NGV applications.



Features

- ◆ **Durable Corrosion-Resistant Construction** - stainless steel and brass provide improved durability and corrosion resistance in the harsh environments. All wetted components are CNG fuel compatible.
- ◆ **Jaw-Lock Connection** - to ensure against damage to the receptacle during the defueling process.
- ◆ **User-Friendly Operation** - low force actuation lever provides enough mechanical advantage to open receptacle check valves with up to 4500 psi pressure differentials.
- ◆ Shaft extenders are included inside the handle to open receptacle check valves.

- ◆ **NOTE:** Remove Filter from Receptical if present.
- ◆ **SAE -6 O-ring Outlet Port** allows for standard fittings to be used when connecting nozzle to hose.
- ◆ Check valves installed on the vehicle, behind the receptacle, will prevent the BDN from functioning.
- ◆ **Individually Leak Tested and Inspected with Traceable Serial Numbers**
- ◆ **CRN'S Pending**

Specifications:

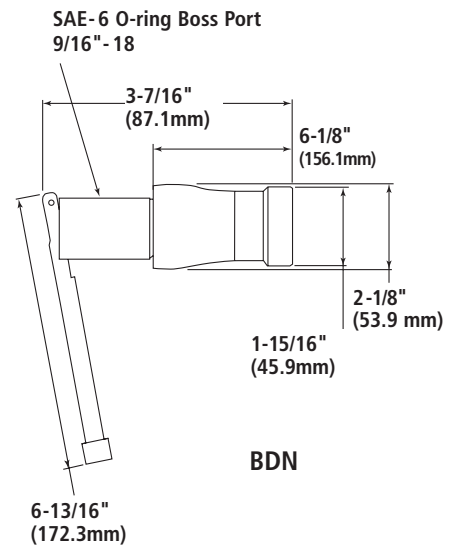
Temperature Range: -40° F to 185° F
(-40° C to 85° C)

Cv: 0.5

MAWP: 6250 psi (430 bar)

BDN Vehicle Defueling Nozzles

OPW tool to safely depressurize vehicles. This valve can also be used to transfer fuel from one vehicle to another in the event of a breakdown on the side of the road, or in areas where no refueling station is available. This nozzle should be hooked up to a check valve, three-way valve, hose and appropriate storage tank or fueling device.

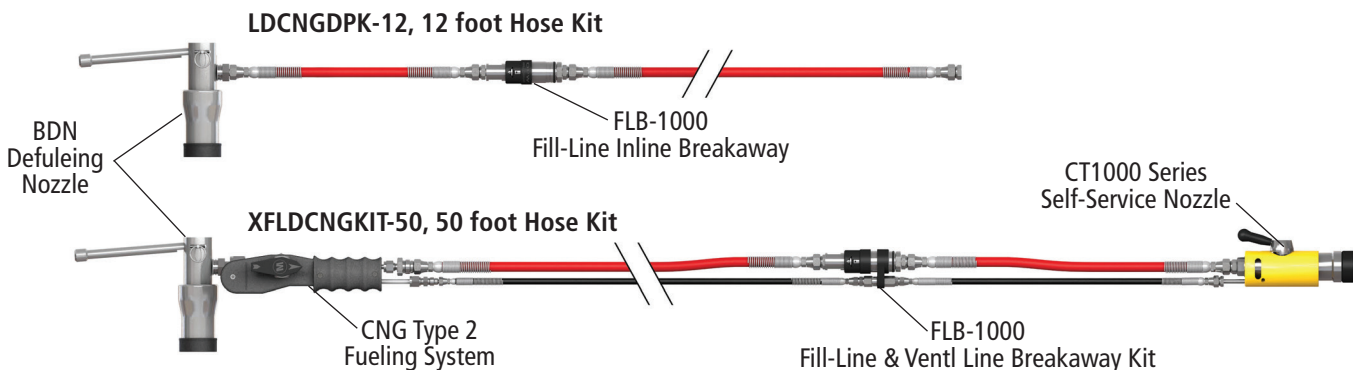


Ordering Specifications

Product #	Outlet Thread Size	Service Pressure	Weight
BDN for CNG Service	SAE -6, 9/16" 18 UNF	NGV1P30 profile JAW w/3600 psi rated service pressure	3 lb. (1.35 kg)

BDN Defueling Nozzle Hose Kits

Contact OPW for Alternate Configurations.



Listings and Certifications



CE 0036

CRN

See page 27 for Canadian Registration Number



CNG Fill-Line and Vent Line Breakaways and Accessories

OPW in-line breakaways are installed on fuel dispensing hoses between the nozzle and dispenser and will separate when subjected to a designated pull force, such as in the event of a drive-away. The dual valves seat automatically upon separation to stop the flow of gas while protecting the dispensing equipment from catastrophic damage. Defueling nozzles are designed to safely depressurize vehicles and can be used to transfer fuel from one vehicle to another. The fueling hoses are specially designed for dispensing compressed natural gas.



Fill-Line Breakaway (FLB-1000) Standard Duty

OPW has optimized the in-line breakaway for use in automotive NGV refueling applications. This unit will function consistently, independent of the inlet pressure.



Fill-Line Breakaway (FLB-5000) Heavy-Duty Truck/Bus

OPW has optimized the in-line breakaway for use in heavy-duty truck and bus NGV refueling applications. This unit will function consistently, independent of the inlet pressure.



Vent Line Breakaway (NGVLB)

The OPW NGVLB is an in-line breakaway that fits into the nozzle vent line. This new pressure balanced NGVLB unit will function consistently when used in conjunction with OPW high pressure In-line breakaways in the event of a drive-away.



In-Line Breakaway (ILB-1)

Designed for medium flow and automotive NGV and hydrogen refueling applications. This unit will function consistently, independent of the inlet pressure.

In-Line Breakaway (ILB-5) – Heavy-Duty Truck/Bus

Designed for high flow and heavy-duty truck and bus NGV and hydrogen refueling applications. This unit will function consistently, independent of the inlet pressure.

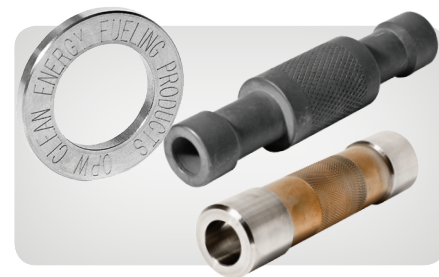


Hose And Hose Assemblies

OPW CNG hose assemblies are designed of electrically conductive polymer core tubing for working pressures of 3600 to 5000 psi. All hose assemblies conform to NFPA 52 and AGA/CGA, ANSI NGV 4.2

CNG Hose Retractor

OPW CNG Hose Retractors keep excess hose off the ground and out of the way, prolonging hose life and reducing potential hazards.



Gages - RINGGO

Available for easily measuring worn receptacles, which may lead to connection/disconnection issues resulting from brinelling or other damage.

Gages - JAWGO

Available for easily measuring worn nozzles, which may lead to connection/disconnection issues resulting from brinelling or other damage.

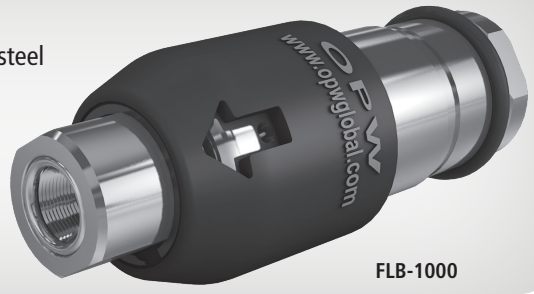


Materials

Body: Stainless steel

Internal Components: Stainless steel

Seals: Specially formulated polyurethane seals to withstand high pressure NGV applications



FLB-1000

Features

- ◆ **High-Flow/Fast Fill Capacity** - This NGV1 breakaway will provide quick fueling of large vehicles.
- ◆ **Durable, Corrosion-Resistant Construction** - stainless steel construction provides improved durability and corrosion resistance in harsh environments.
- ◆ **Reconnectable Design** - allows the component to be reused, reducing total cost of ownership
- ◆ **Innovative Valve System** - the sealing system in this breakaway minimizes the amount of vent gas released during a drive-away incident.
- ◆ **Reduced Size and Weight** - to allow for more applications where size may be a concern.
- ◆ **Easy Installation** - the in-line breakaway has SAE-6 O-ring fittings for easy installation in line between the dispenser and nozzle.
- ◆ **Disconnection Force** - 120 lbs. (+/- 30 lbs.) (534+/- 134 N).
- ◆ **100% Leak and Breakaway Tested, with Traceable Serial Numbers**

Fill-Line Breakaway (FLB-1000) - Standard Duty

OPW has optimized the in-line breakaway for use in automotive NGV refueling applications. This unit will function consistently, independent of the inlet pressure.

Specifications:

Max Flow Rate: 3,700 SCFM @ 3,600 psid

Temperature Range: -40° F to 185° F
(-40° C to 85° C)

Cv: 1.85

MAWP: 4,532 psi (312.5Bar)



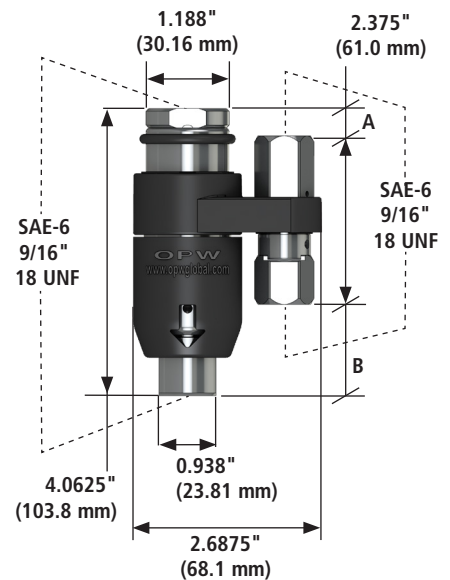
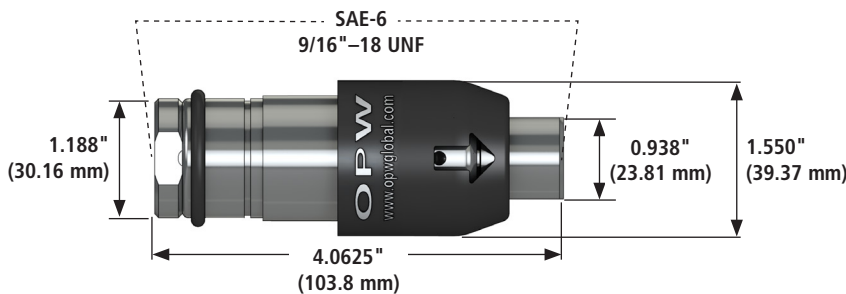
Fill-Line Breakaway Kit

CNGBREAKKIT-1000
(Includes NGVLB Breakaway)

Ordering Specifications

Product #	Inlet Thread Size	Outlet Thread Size	Service Pressure	Weight
FLB-1000	SAE - 6, 9/16" - 18 UNF (female)	SAE - 6, 9/16" - 18 UNF (female)	3,600 psi 250 bar	0.91 lb (0.41 kg)
CNGBREAKKIT-1000 (Includes FLB-1000 and NGVLB Breakaway)	FLB-1000 SAE - 6, 9/16" - 18 UNF (female)	FLB-1000 SAE - 6, 9/16" - 18 UNF (female)	3,600 psi 250 bar	1.13 lb (0.51 kg)
	NGVLB SAE - 6, 9/16" - 18 UNF	NGVLB SAE - 6, 9/16" - 18 UNF	3,600 psi 250 bar	

FLB-1000 Dimensions



A Offset = 0.386" (9.81mm)

B Offset = 1.299" (32.99mm)

Listings and Certifications



NGV 4.4

CRN

See page 27 for Canadian Registration Number

Fill-Line Breakaway (FLB-5000) - Heavy-Duty Truck/Bus

OPW has optimized the in-line breakaway for use in heavy-duty truck and bus NGV refueling applications. This unit will function consistently, independent of the inlet pressure.

Specifications:

Max Flow Rate: 7,500 SCFM @ 3,600 psid

Temperature Range: -40° F to 185° F
(-40° C to 85° C)

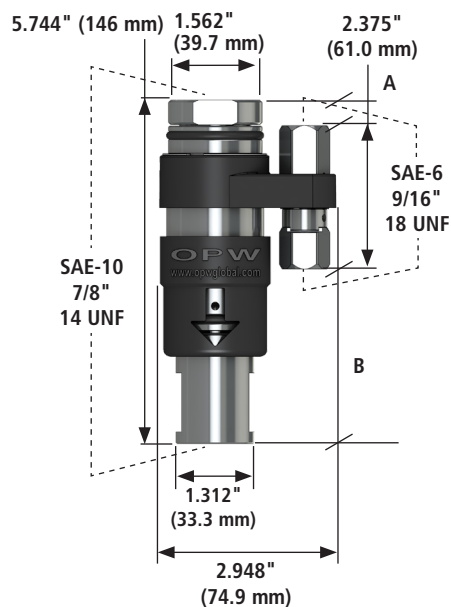
Cv: 3.91

MAWP: 4,532 psi (312.5 Bar)



Fill-Line Breakaway Kit

CNGBREAKKIT-5000
(Includes NGVLB Breakaway)



A Offset = 0.429"
(10.9mm)

B Offset = 2.917"
(74.1mm)

Materials

Body: Stainless steel

Internal Components: Stainless steel

Seals: Specially formulated polyurethane seals to withstand high pressure NGV applications



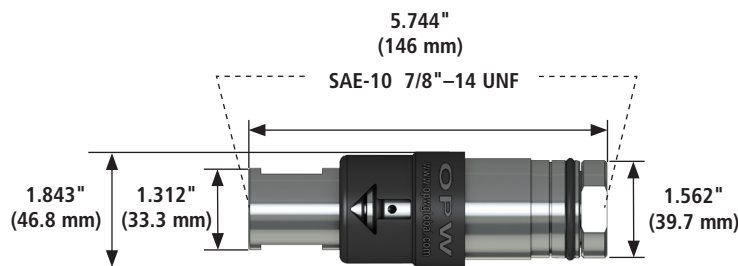
FLB-5000

Features

- ◆ **High-Flow/Fast Fill Capacity** - this is OPW's fastest flowing breakaway. This breakaway will provide quick fueling of large vehicles.
- ◆ **Durable, Corrosion-Resistant Construction** - stainless steel construction to provide improved durability and corrosion resistance in harsh environments.
- ◆ **Reconnectable Design** - allows the component to be reused, reducing total cost of ownership
- ◆ **Innovative Valve System** - the sealing system in this breakaway minimizes the amount of vent gas released during a drive-away incident.
- ◆ **Reduced Size and Weight** - to allow for more applications where size may be a concern.
- ◆ **Easy Installation** - the in-line breakaway has SAE-10 O-ring fittings for easy installation in line between the dispenser and nozzle.
- ◆ **Disconnection Force** - 120 +/- 30 lbs. (534 +/- 134 N).
- ◆ **100% Leak and Breakaway Tested, with Traceable Serial Numbers**

Ordering Specifications

Product #	Inlet Thread Size	Outlet Thread Size	Service Pressure	Weight
FLB-5000	SAE - 10, 7/8" - 14 UNF (female)	SAE - 10, 7/8" - 14 UNF (female)	3,600 psi 250 bar	2 lb (0.907 kg)
CNGBREAKKIT-5000 (Includes FLB-5000 and NGVLB Breakaway)	FLB-5000 SAE - 10, 7/8" - 14 UNF (female)	FLB-5000 SAE - 10, 7/8" - 14 UNF (female)	3,600 psi 250 bar	2.22 lb (1 kg)
	NGVLB SAE - 6, 9/16" - 18 UNF	NGVLB SAE - 6, 9/16" - 18 UNF	3,600 psi 250 bar	



FLB-5000 Dimensions

Listings and Certifications



NGV 4.4

PED
2014/68/EU

CE 0036

CRN

See page 27 for Canadian Registration Number



Materials

Body: Stainless Steel

Internal Components:
Stainless Steel

Seals: Specially formulated seals, specific to high pressure NGV applications



NGVLB

Features

- ◆ **Durability** - Stainless-steel construction provides improved performance, durability and corrosion resistance in harsh environments.
- ◆ **Reconnectable** - Allows the component to be reused, reducing maintenance cost.
- ◆ **Pressure Balanced** - Performance stability eliminates nuisance separation due to pressure surges in the vent line.
- ◆ **Passive design** allows pressure to freely move through the vent line.
- ◆ **Disconnection force** of 40 lbs. ± 15 lbs. (178N ± 67N)
- ◆ **No tools required for reconnection** (12 lbs./53 N reconnection force).

- ◆ **100% Leak and Breakaway Tested, with Traceable Serial Numbers**

Specifications:

Pressure balanced to 18,129 psi (1,250 bar)

Temperature Range: -40° F to 185° F
(-40° C to 85° C)

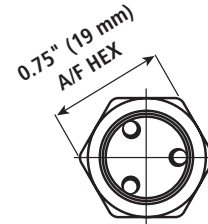
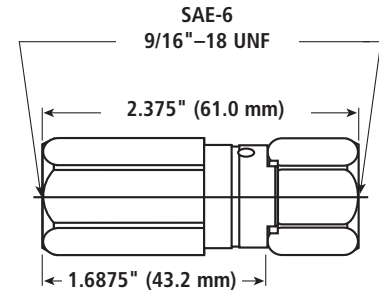
Cv: 0.24

1,000 SCFM @ 3,600 psi (250 bar)

MAWP: 4,532 psi (312.5 bar)

OPW Vent Line Breakaway (NGVLB)

The OPW NGVLB is an in-line breakaway that fits into the nozzle vent line. This new pressure balanced NGVLB unit will function consistently when used in conjunction with OPW high pressure In-line breakaways.



Ordering Specifications

Product #	Inlet Thread Size	Outlet Thread Size	Service Pressure		Weight
NGVLB	SAE - 6, 9/16" - 18 UNF	SAE - 6, 9/16" - 18 UNF	3600 psi	250 bar	0.22 lb (0.1 kg)

Listings and Certifications



NGV 4.4 With Exceptions

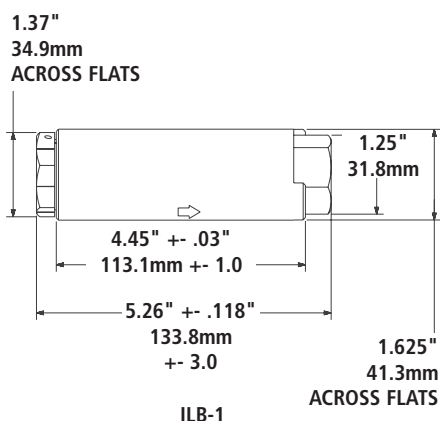
CRN

See page 27 for Canadian Registration Number



In-Line Breakaway (ILB-1)

Designed for medium flow and automotive NGV refueling applications. This unit will function consistently, independent of the inlet pressure.



Materials

Body: Stainless steel

Internal Components: Stainless steel

Seals: Specially formulated polymers and elastomers specific to high-pressure NGV applications.



Features

- ◆ **High-Flow** - the flow path has been matched to provide ample flow for all NGV-1 Type 1 and Type 2 nozzles.
- ◆ **Durable, Corrosion-Resistant Construction** - stainless steel and specially plated steel construction provide improved durability and corrosion resistance in harsh environments.
- ◆ **Reconnectable Design** - allows the component to be reused, reducing maintenance costs.
- ◆ **Innovative Valve System** - the sealing system in this breakaway minimizes the amount of vent gas released during a drive-away incident.
- ◆ **Reduced Size and Weight** - to allow for more applications where size may be a concern.
- ◆ **Easy Installation** - the in-line breakaway has SAE-6 O-ring fittings for easy installation in line between the dispenser and nozzle.
- ◆ **Disconnection Force**-150 lbs. (668 N).
- ◆ **Individually Inspected, Leak and Breakaway Tested, with Traceable Serial Numbers**

Specifications:

Min. Flow Rate: 2000 SCFM @ 3000 psid
Temperature Range: -40° F to 185° F
(-40° C to 85° C)

Cv: 1.17

MAWP (ILB-1): 4532 psi (312.5 Bar)

Ordering Specifications

Product #	Inlet Thread Size	Outlet Thread Size	Service Pressure	Weight.
ILB-1	SAE - 6, 9/16" - 18 UNF (female)	SAE - 6, 9/16" - 18 UNF (female)	3600 psi 250 bar	2.3 lb. - 1.04 kg

Listings and Certifications



NGV 4.4

CRN

See page 27 for Canadian Registration Number



Materials

Body: Stainless steel

Internal Components:
Stainless steel

Seals: Specially formulated polymers and elastomers specific to high-pressure NGV applications.



ILB-5

Features

- ◆ **High-Flow/Super Fast Fill Capacity** - This breakaway will provide quick fueling of large storage vehicles. Internal seals are specifically designed to meet the demands of fast-fill NGV fueling.
- ◆ **Durable, Corrosion-Resistant Construction** - stainless steel and specially plated steel construction provide improved durability and corrosion resistance in harsh environments.
- ◆ **Reconnectable Design** - allows the component to be reused, reducing maintenance costs.
- ◆ **Innovative Valve System** - the sealing system in this breakaway minimizes the amount of vent gas released during a drive-away incident.
- ◆ **Easy Installation** - the in-line breakaway has SAE-10 O-ring fittings for easy installation in line between the dispenser and nozzle.

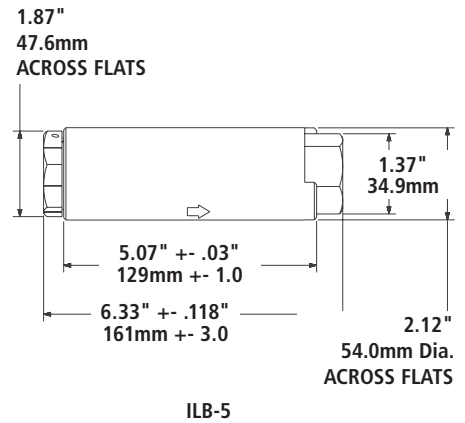
- ◆ **Disconnection Force** - 150 lbs. (668 N).
- ◆ **Individually Inspected, Leak and Breakaway Tested, with Traceable Serial Numbers**

Specifications:

Min. Flow Rate: 5500 SCFM @ 3000 psid
 Temperature Range: -40° F to 185° F
 (-40° C to 85° C)
 Cv: 3.6
 MAWP: 4532 psi (312.5 Bar)

In-Line Breakaway (ILB-5) - Heavy-Duty Truck/Bus

Designed for high flow and heavy-duty truck and bus NGV refueling applications. This unit will function consistently, independent of the inlet pressure.



ILB-5

Ordering Specifications

Product #	Inlet Thread Size	Outlet Thread Size	Service Pressure	Weight.
ILB-5	SAE - 10, 7/8" - 14 UNF (female)	SAE - 10, 7/8" - 14 UNF (female)	3600 psi 250 bar	5 lb. - 2.26 kg

Listings and Certifications



PED
2014/68/EU

NGV4.4

CE 0036

CRN

See page 27 for Canadian Registration Number

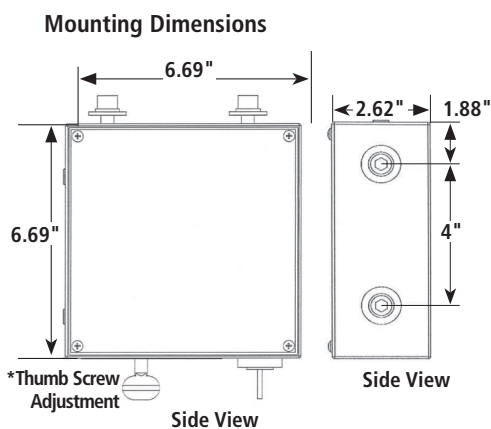
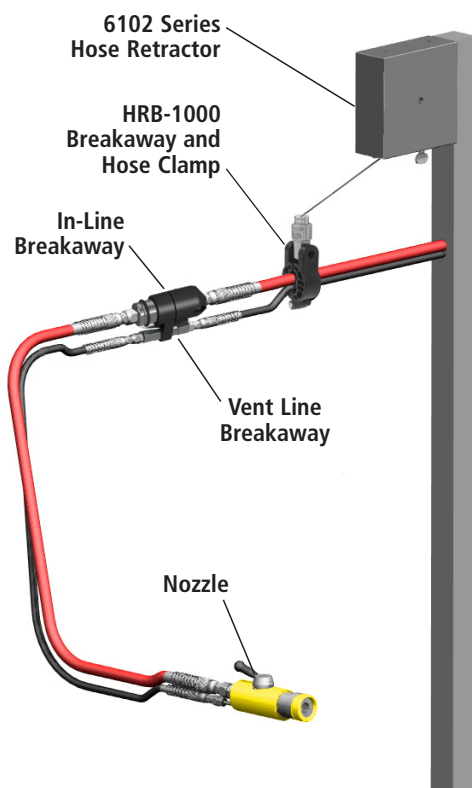


CNG Hose Retractor

OPW CNG Hose Retractors keep excess hose off the ground and out of the way, prolonging hose life and reducing potential hazards.

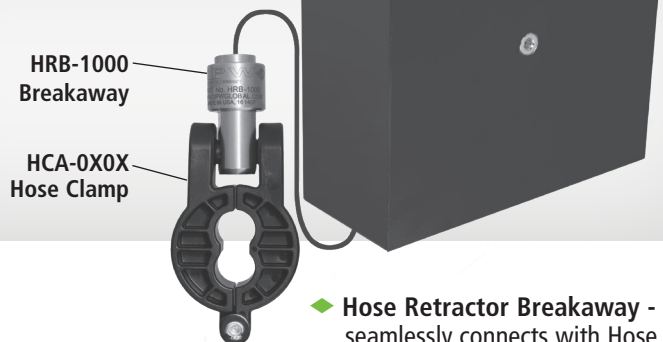
CNG Hose Retractor Sample Configuration

CNG Hose, Nozzle, Breakaways and mounting post are not included.



NEW

Hose Retractor
Heavy-Duty Spring
Reel Construction



Features

- ◆ **Easy-to-use** - the spring loaded reel and stretch resistant cable provide smooth and steady tension throughout hose extension and return.
- ◆ **Compact and versatile design** - that can be easily installed under a fast-fill dispenser canopy or on a time-fill fueling post.
- ◆ **Innovative Hose Clamp** - multiple designs to fit standard NGV-1 and heavy-duty hose combinations.
- ◆ **Hose Retractor Breakaway** - seamlessly connects with Hose Clamp to protect Hose Assemblies.
- ◆ **Robust reel** - designed especially for heavy-duty CNG fueling applications.
- ◆ **Easy to maintain** - the removable side plate provides full access to the mechanism for easy tension adjustment and unit maintenance.

* A convenient safety thumb screw is provided to lock the reel in place during tension adjustment.

Ordering Specifications

Product #	Description	Fill Line	Vent Line	Length of Cord	Shipping Weight	
					lbs.	kg
6102-CNG	CNG Hose Retractor with HRB-1000 and HCA-0604	3/8"	1/4"	10ft.	7 lbs.	3.1
6102-CNG2	CNG Hose Retractor with HRB-1000 and HCA-0806	1/2"	3/8"	10ft.	7 lbs.	3.1
6102-CNG3	CNG Hose Retractor with HRB-1000 and HCA-0804	1/2"	1/4"	10ft.	7 lbs.	3.1
6102-CNG4	CNG Hose Retractor with HRB-1000 and HCA-0404	1/4"	1/4"	10ft.	7 lbs.	3.1
6102-CNG5	CNG Hose Retractor with HRB-1000 and HCA-0606	3/8"	3/8"	10ft.	7 lbs.	3.1

Breakaway and Hose Clamp Assembly

HRB-0404	HRB-1000 with HCA-0404 for CNG Hose 1/4" Fill x 1/4" Vent [-4 x -4]
HRB-0604	HRB-1000 with HCA-0604 for CNG Hose 3/8" Fill x 1/4" Vent [-6 x -4]
HRB-0804	HRB-1000 with HCA-0804 for CNG Hose 1/2" Fill x 1/4" Vent [-8 x -4]
HRB-0806	HRB-1000 with HCA-0806 for CNG Hose 1/2" Fill x 3/8" Vent [-8 x -6]
HRB-0606	HRB-1000 with HCA-0606 for CNG Hose 3/8" Fill x 3/8" Vent [-6 x -6]

HRB-1000 Hose Retractor Breakaway

HRB-10000	Hose Retractor Breakaway
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STEP-BY-STEP OPW CNG

<p>STEP 1</p> <p>NOZZLE</p>  	<p>STEP 2</p> <p>3-WAY VALVE</p>  	<p>STEP 3</p> <p>HOSE COMBO</p>  	<p>STEP 4</p> <p>FILL BREAKAWAY</p>  	<p>STEP 5</p> <p>VENT BREAKAWAY</p>  
<p>Nozzle</p>	<p>3-Way Valve Options for NT2A series</p>	<p>Hose Combination: FILL Hose, WHIP Hose Sizes with Dispenser/Post Connection</p>	<p>Fill Breakaway</p>	<p>Vent Breakaway</p>
<p>T2 = NT2AP36 Page 4, 5 for NT2A details</p> <p>T11 = CT1000P36 Page 9 for CT1000 details</p> <p>T15 = CT5000 Page 10 for CT5000 details</p> <p>P31 = PG31P36 Page 7 for PG3136 details</p> <p>P41 = PG41P36 Page 7 for PG4136 details</p> <p>P81 = PG81P36 Page 7 for PG8136 details</p>	<p>4A = 3WV-44A w/ 3/4" extender</p> <p>4B = 3WV-44B w/ 45° extender</p> <p>4C = 3WV-44C w/ 4" extender</p> <p>4D = 3WV-44D w/17" flex extender</p> <p>6A = 3WV-46A w/3/4" extender</p> <p>6B = 3WV-46B w/ 45° extender</p> <p>6C = 3WV-46C w/ 4" extender</p> <p>6D = 3WV-46D w/17" flex extender</p> <p>00 = if using TYPE-1 nozzle</p> <p>See page 5 for 3Way Valve Options</p>	<p>WHIP HOSE DISPENSER CONNECTIONS are SAE (JIC) 37 DEGREE SWIVEL FEMALE THREAD</p> <p>44 = -4 x -4 [1/4"x 1/4"] Connection 7/16"-20 x 7/16"-20</p> <p>64 = -6 x -4 [3/8"x 1/4"] Connection 3/4"-16 x 7/16"-20</p> <p>66 = -6 x -6 [3/8"x 3/8"] Connection 3/4"-16 x 3/4"-16</p> <p>84 = -8 x -4 [1/2"x 1/4"] Connection 7/8"-14 x 7/16"-20</p> <p>86 = -8 x -6 [1/2"x 3/8"] Connection 7/8"-14 x 3/4"-16</p> <p>124 = -12 x -4 [3/4"x 1/4"] Connection 7/8"-14 x 7/16"-20</p> <p>126 = -12 x -4 [3/4"x 3/8"] Connection 7/8"-14 x 3/4"-16</p> <p>FILL hose is bonded, Whip hoses are not bonded</p>	<p>F1 = FLB-1000</p> <p>01 = ILB-1</p> <p>F5 = FLB-5000</p> <p>05 = ILB-5</p> <p>Page 14+15 for FLB details</p> <p>Page 17-18 for ILB details</p>	<p>N = NGVLB</p> <p>1 = ILB-1</p> <p>Page 14 for NGVLB details</p>

HOSE KIT CONFIGURATOR

STEP 6

FILL HOSE LENGTH

STEP 7

WHIP HOSE LENGTH

STEP 8

YOUR DISPENSER CONNECTION TO WHIP HOSE FILL

STEP 9

YOUR DISPENSER CONNECTION TO WHIP HOSE VENT



LOCATE YOUR DISPENSER CONNECTION BELOW

Customer specified
Dispenser/Post Connection
WHIP Hose FILL

Customer specified
Dispenser/Post Connection
WHIP Hose VENT

MJ4 = MALE 37deg JIC 7/16" -20
 MJ6 = MALE 37deg JIC 3/4" -16
 MJ8 = MALE 37deg JIC 7/8" -14
 MO4 = Male ORFS 7/16" -20
 MO6 = Male ORFS 3/4" -16
 MO8 = Male ORFS 7/8" -14
 FO4 = Female ORFS 7/16" -20
 FO6 = Female ORFS 3/4" -16
 FO8 = Female ORFS 7/8" -14
 MS4 = Male SAE 7/16" -20
 MS6 = Male SAE 3/4" -16
 MS8 = Male SAE 7/8" -14
 FS4 = Female SAE 7/16" -20
 FS6 = Female SAE 3/4" -16
 FS8 = Female SAE 7/8" -14
 Specify

MJ4 = MALE 37deg JIC 7/16" -20
 MJ6 = MALE 37deg JIC 3/4" -16
 MJ8 = MALE 37deg JIC 7/8" -14
 MO4 = Male ORFS 7/16" -20
 MO6 = Male ORFS 3/4" -16
 MO8 = Male ORFS 7/8" -14
 FO4 = Female ORFS 7/16" -20
 FO6 = Female ORFS 3/4" -16
 FO8 = Female ORFS 7/8" -14
 MS4 = Male SAE 7/16" -20
 MS6 = Male SAE 3/4" -16
 MS8 = Male SAE 7/8" -14
 FS4 = Female SAE 7/16" -20
 FS6 = Female SAE 3/4" -16
 FS8 = Female SAE 7/8" -14
 Specify

FILL Hose Length (feet)

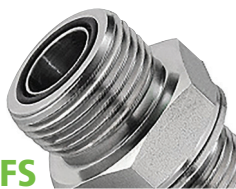
WHIP Hose Length (feet)

08
18
Specify

02
Specify

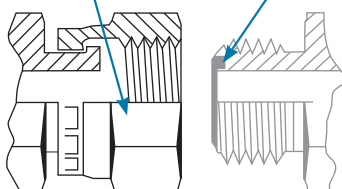
Specify your lengths & get a quote

MORFS

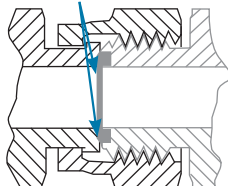


TUBE NUT

O-RING



SEAL CREATED

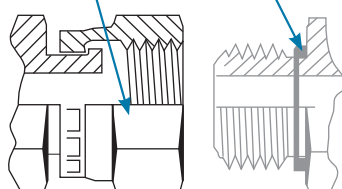


SAE

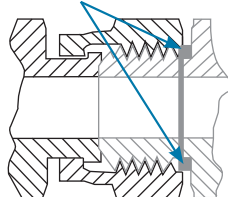


TUBE NUT

O-RING



SEAL CREATED

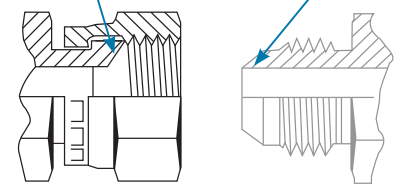


JIC

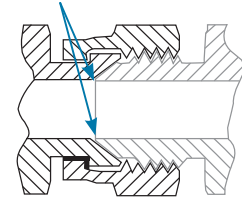


FEMALE FLARED SEAT

MALE SEAT



SEAL CREATED





L SERIES

OPW L Series fueling receptacles are designed for use on medium storage natural gas vehicles, including automobiles, light trucks, shuttle buses and vans.



Features

◆ High-Flow Capacity

The L Series receptacles have much larger flow capacity than conventional receptacles. The flow path allows very high flows, combined with low pressure drop and enhanced resistance to hydrate formation.

◆ Durable, Corrosion-Resistant Construction

All OPW receptacles are made from stainless steel.

◆ Non-Contact Check Valve

Each OPW receptacle contains a highly reliable non-contact check valve that opens only when differential pressure is present during fueling.

◆ Unique Sealing System

The sealing system in all OPW receptacles consists of a stainless steel poppet that aligns with a rearward facing, captured seal located in the receptacle body. This arrangement prevents: seal "wash-out" during high-flow conditions and "cratering" due to debris. The seal material has exceptionally long service life, resists creep and deformation and has exceptional wear resistance under all operating pressure and temperature conditions. The poppet is treated, impact-resistant stainless steel with a polished surface to provide reliable sealing at low back pressures.

◆ Bulkhead or Straight Thread

The L Series allows the user to order a complete receptacle or buy and assemble their own adaptor shaft. They come with and without bulkhead fitting and with or without filter. The external bulkhead nut costs less than conventional stainless steel fittings. L Series receptacles can be used with

parallel thread or compression tube fittings. L Series bodies come with either wrench flats or hex to ease vehicular mounting.

◆ Filtered Receptacle (LE)

Filters capture dirt and gas-borne debris commonly found in CNG systems. Filtered receptacles protect the receptacle seals and the vehicle fuel system. A 50-micron filter is incorporated ahead of the receptacle check valve.

◆ Design Your Own Sub-System

The OPW L Series receptacles come with the following standard features: rubber dust cap, mounting hex or wrench flats. LD and LE receptacles come with a standard external bulkhead nut.

The bulkhead fittings allow the use of inexpensive compression tube fittings. A 50-micron filter upstream of the poppet seal is available as an option. All adaptor shafts can be purchased from OPW or from your supplier of choice.

OPW L Series Receptacles are designed for medium storage NGV at 200 Bar (3000 psi) or 250 Bar (3600 psi) operating pressure.

◆ Rubber Dust Cap

Standard protective dust caps are supplied with all receptacles.

◆ Serviceable O-ring

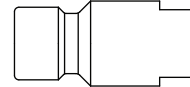
Designed to prevent leakage at the connection point.

CNG Receptacles

OPW offers a complete line of fueling receptacles for any natural gas vehicle (NGV) application. Our receptacles form part of a dedicated system designed specifically for fueling NGV.

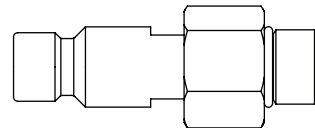
LB

- Wrench Flats



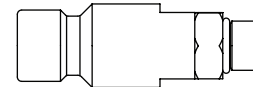
LBXX78

- 7/8 - 14 UNF - 2A



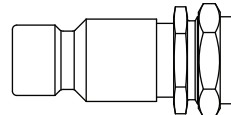
LBXX16

- 9/16 - 18 - UNF - 2A



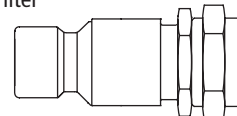
LD

- Bulk Head



LE

- Bulk Head
- Filter



**Listings and
Certifications**

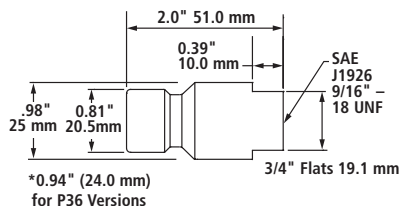


**NGV
ISO14469**

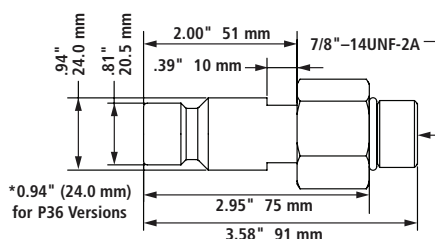


L Series Fueling Receptacles

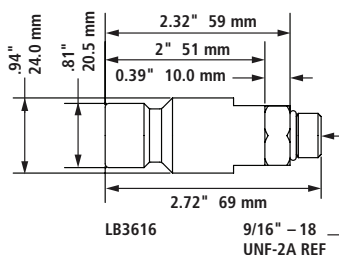
OPW L Series Refueling Receptacles are designed for use on medium storage natural gas vehicles, including automobiles, light trucks, shuttle buses and vans.



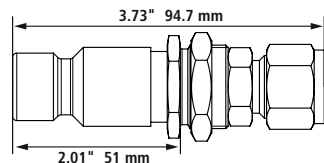
LB30 / LB36



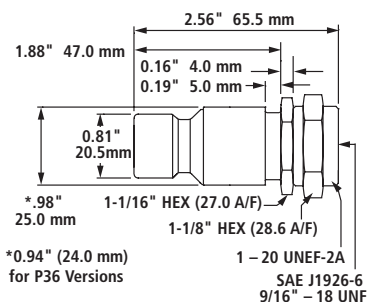
LBXX78



LB3616



LD36B50 / LE36B50



LD30 / LD36 / LE30 / LE36

Materials

Body: Stainless steel

Internal Parts: Stainless steel and brass

Seals: Specially formulated polymers and elastomers specific to high-pressure NGV applications.



LB30 or LB36

Features

- ◆ Protective Rubber Dust Caps - included with all OPW "L" series receptacles.

Specifications:

Min. Flow Rate: 1500 SCFM @ 3000 psid
 Temperature Range: -40° F to 250° F
 (-40° C to 120° C)

Cv: LB = 0.91

LD = 0.85

LE = 0.83

MAWP: 5000 psi (345 Bar)

Ordering Specifications

Product #	Type/Size	Service Pressure		Weight	
LB30	NGV1 P30; ISO14469 B200 Receptacle w/ 3/4" Flats	3000 psi.	200 bar	.31 lb.	.14 kg
LB36	NGV1 P36; ISO14469 B250 Receptacle w/ 3/4" Flats	3600 psi.	250 bar	.31 lb.	.14 kg
LB3078	LB30 + 50061	3000	200	0.68	0.31
LB3678	LB36 + 50061	3600	250	0.74	0.34
LB3616	LB36 + 50030	3600	250	0.42	0.19
LD30	NGV1 P30; ISO14469 B200 Receptacle w/ Bulkhead	3000 psi.	200 bar	.44 lb.	.2 kg
LD36	NGV1 P36; ISO14469 B250 Receptacle w/ Bulkhead	3600 psi.	250 bar	.44 lb.	.2 kg
LD36B50	LD36 + 212435	3600 psi.	250 bar	.44 lb.	.2 kg
LE30	NGV1 P30; ISO14469 B200 Receptacle w/ Bulkhead and Filter	3000 psi.	200 bar	.44 lb.	.2 kg
LE36	NGV1 P36; ISO14469 B250 Receptacle w/ Bulkhead and Filter	3600 psi.	250 bar	.44 lb.	.2 kg
LE36B50	LE36 + 212435	3600 psi.	250 bar	.44 lb.	.2 kg

1141 Replacement "Interface" O-ring for L Series receptacles

001147 Replacement Rubber Dust Cap

001147 ORANGE Orange Color Replacement Rubber Dust Cap



Adaptor Shafts: Can be threaded into LB/LD/LE receptacles above. Materials: Stainless steel

Adaptor Shafts P/N	Description	Weight	
		lbs.	kg
50030	Adaptor Shaft SAE-6 (9/16" - 18 UNF - 2A) x SAE-6 (9/16" - 18 UNF - 2A)	0.07	0.03
50061	Adaptor Shaft SAE-10 (7/8" - 14 UNF - 2A) x SAE-6 (9/16" - 18 UNF - 2A)	0.12	0.05
50066	SAE-6, (9/16" x 18 UNF) to 3/8" Tube Fitting with Cap, Ferrule and Swage Ring	0.09	0.04
212435	SAE-6, (9/16" x 18 UNF) to 1/2" Tube Fitting with Cap, Ferrule and Swage Ring	0.09	0.04

Listings and Certifications



CE 0036



NGV1 ISO14469



Materials

Body and Adaptor Shaft: Stainless steel

Internal Components: Stainless steel

Seals: Specially formulated polymers and elastomers specific to high-pressure NGV applications.



Features

- ◆ **High-Flow** - the flow path has been optimized to increase the amount of flow and decrease the pressure drop resulting in a reduction of noise and vibration from the check valve.
- ◆ **Durable, Corrosion-Resistant Construction** - stainless steel construction provides improved durability and corrosion resistance in the harsh on-highway, heavy-duty environment.
- ◆ **Non-Contact Check Valve** - each OPW CL series receptacle contains a highly reliable non-contact check valve that opens when differential pressure is present during refueling.
- ◆ **Sealing System** - the sealing system in all CL series receptacles consists of a stainless steel poppet that aligns with a rearward facing captured seal located in the receptacle body. This

arrangement prevents seal "wash out" during high-flow and has exceptional wear resistance under all operating pressure and temperature conditions.

- ◆ **Rubber Dust Cap** - a standard protective dust cap is supplied with CL50 series receptacles.
- ◆ **Serviceable O-ring** - designed to prevent leakage at the connection point.
- ◆ Connects to CT5000S and CC6000 series heavy-duty CNG nozzles

Specifications:

Min. Flow Rate: 5000 SCFM @ 3000 psid

Temperature Range: -40° F to 250° F
(-40° C to 120° C)

Cv: 3.30

MAWP: 5000 psi (345 bar)

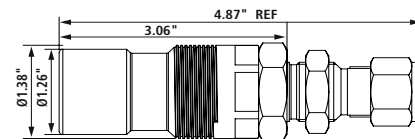
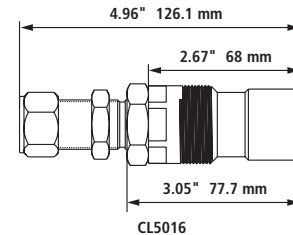
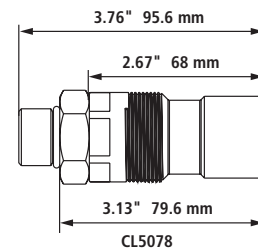
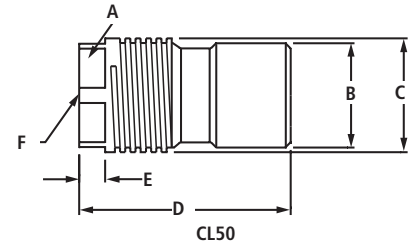
Ordering Specifications

Product #	Type/Size	Service Pressure*		Weight	
CL50	NGV1 P30HD; ISO14469 C200 7/8" - 14 SAE-10 Female Port	3600 psi.	(250 bar)	0.91 lb.	0.413 kg
CL5000	CL50 + 5/8" Double Ferrule Fitting	3600 psi.	(250 bar)	1.29 lbs.	0.585 kg
CL5078	CL50 + 001129	3600 psi.	(250 bar)	1.141 lbs.	0.518 kg
CL5016	CL50 + 001133	3600 psi.	(250 bar)	1.29 lbs.	0.585 kg
CL50B50	CL50 + 1/2" Double Ferrule Fitting	3600 psi.	(250 bar)	1.29 lbs.	0.585 kg
001129	7/8"-14 SAE-10 Male Fitting				
001133	16 mm Double Ferrule Fitting				
212433	7/8" - 14 SAE-10 to 1/2" Tube Fitting				
212439	1/2" Tube Nut and Ferrule Fitting				
001121	Replacement "Interface" O-ring for CL50 Series Receptacles				
001126	Replacement Rubber Dust Cap				

*CL series is certified for pressures NGV2P36 & ISO14469 C250

CL50 Series Bus/Heavy-Duty Truck Receptacles

OPW CL50 Series receptacles are designed for use on extremely high-flow, heavy-duty applications including quick-fill, self-service fueling of transit buses and large trucks.



Custom w/tube fitting available. Call Us!

Dimensions

	in	mm
CL50		
A	1.25	32
B	1.25	32
C	1.39	35
D	2.67*	68*
E	0.31	8
F	SAE J1926-10 7/8"-14 UNF	

*D-Dimensions for:

	in	mm
CL5000	4.80	122.1
CL5016	4.96	126.1
CL5078	3.76	95.6

**Listings and
Certifications**



**NGV1
ISO14469**

CE 0036



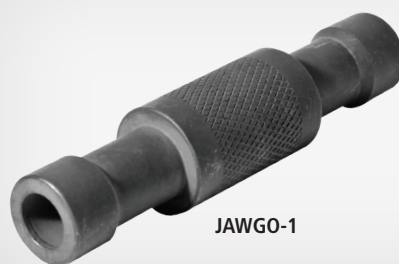


Gages - JAWGO

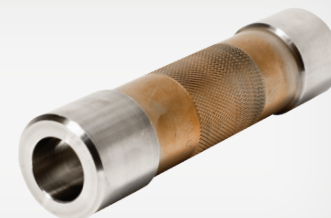
Available for easily measuring worn nozzles, which may lead to connection/disconnection issues resulting from brinelling or other damage. These gages are based on NGV1 and ISO-14469 "Tight Fit" tolerances, the maximum acceptable diameter. JAWGO are used for inspecting and identifying worn nozzle jaws.

Materials

Body: Stainless steel



JAWGO-1



JAWGO-5

Features

- ◆ **Durable Construction** - Stainless steel construction for long service life.
- ◆ **RINGGO-0001** - Compatible with L Series receptacles.
- ◆ **RINGGO-0005** - Compatible with CL Series receptacles.
- ◆ **JAWGO-1** - Used to test CC270, NT2A, CT1000 Series nozzles.
- ◆ **JAWGO-5** - Used to test CT5000 and CC6000 Series nozzle jaws.

Ordering Specifications

Product #	Description	Works with	Weight	
			lb.	kg
JAWGO-1	NGV1 Nozzle Go-No/Go Gage	NGV1 P30, P36 ISO14469 B200, B250	.62 lb.	.28 kg
JAWGO-5	Heavy Duty ISO-14469 Nozzle Go-No/Go Gage	NGV1 P30HD, P36HD ISO14469 C200, C250	1.3 lb.	.59 kg

Gages - RINGGO

Available for easily measuring worn receptacles, which may lead to connection/disconnection issues resulting from brinelling or other damage. This fit gage is based on NGV1 and ISO-14469 "Tight Fit" tolerances, the maximum acceptable diameter. RINGGO is used for inspecting and identifying worn receptacles.

Materials

Body: Stainless steel



RINGGO-0001

Features

- ◆ **Durable Construction** - stainless steel construction for long service life.

Ordering Specifications

Product #	Description	Works with	Weight	
			lb.	kg
RINGGO-0001	Receptacle Fit Gage	NGV1 P30, P36 ISO14469 B200, B250	.03	.01
RINGGO-0005	Heavy Duty Receptacle Fit Gage	NGV1 P30HD, P36HD ISO14469 C200, C250	.09	.03

Glossary of Terms

Interchangeability Between Service Pressures – The nozzle and receptacle have been designed such that to prevent a vehicle from being fueled by a higher rated dispenser than a lower rated vehicle service pressure. However, a lower rated dispenser system can fill a higher service pressure vehicle. This is controlled by the geometry of the receptacle and nozzle.

Nozzle Types – There are three types of nozzles:

- a. **Type 1** – This is a nozzle with an integrated vent valve system. This vent valve is controlled by the single lever operation which will safely vent the gas trapped between the receptacle check valve and the nozzle inlet valve. After the venting process, the nozzle will disconnect from the vehicle's receptacle.
- b. **Type 2** – The vent valve operating mechanism is external to the nozzle. Venting is required prior to disconnection of this type of nozzle.
- c. **Type 3** – The fueling hose is automatically depressurized below 50psi (3.4Bar) at dispenser shutdown. The nozzle will vent low pressure gas between the receptacle check valve and the nozzle inlet valve.

Nozzle Class – There are two nozzle classifications, Class A and Class B

- a. **Class A nozzle** – This nozzle has a high frequency of use, with a cycle life of 100,000 fueling cycles. This is approximately 100 fills per day for 3 years.
- b. **Class B nozzle** – This nozzle has a medium frequency of use, with a cycle life of 20,000 fueling cycles. This equates to approximately 10 fills per day for 5 years.

Receptacle Design Life – All receptacles are designed to be capable of a minimum of 10,000 connection/disconnection cycles to be compliant to ISO14469 and NGV1.

Breakaway Design Life – All breakaways are designed to be capable of a minimum of 102,000 fill cycle events to meet the NGV4.4 Standard.

Pressure Meanings

Service Pressure – OPW CNG products are designed to operate to pressures specified in ISO-14469 for Europe (World), NGV1 for North America. Defined as the settled pressure at a uniform gas temperature, World (15C), North America (70F)

- a. For North America the service pressures are 3000psi and 3600psi. NGV1 P30 and P36 & P30HD, P36HD.
- b. For Europe (World) the service pressures are 200bar and 250bar. ISO14469 B200, C200 and B250, C250.

Maximum Allowable Working Pressure (MAWP)

For all OPW Clean Energy products the MAWP is 1.25 times the rated service pressure.

Standard the Product is Certified to:

- a. NGV1, NGV4.4, ISO14469 and PED 2014/68/EU, E_h11OR

Certifying Agencies: Will be marked clearly on product

Generic Terms:

Breakaway Device – OPW sells “hose breakaways”. These are items that are downstream of the dispenser and connected to it by a whip hose. This will allow the breakaway to align to the direction of pull during a drive off event.

C_v – Flow Coefficient lets one compare the capacities of valves at different sizes, types and manufacturers. C_v combines the effects of all flow restrictions in the valve into a single number. When comparing flow rates, a higher C_v value indicates higher flow (less flow restriction), whereas a lower C_v value indicates lower flow (higher flow restriction).

Go – No Go or Fit Gage – A go-no go or fit gage is designed to test the wear on the jaws and front sleeve of OPW nozzles, or to test the condition of an NGV receptacle.

1. Nozzle:

- a. If the nozzle go-no go gage (JAWGO-1, JAWGO-5) connects properly to the Go side it's considered good, as long as it cannot connect to the No Go side. If the nozzle can connect to the No Go side or cannot connect to the Go side then the front sleeve and jaws of the nozzle should be replaced (replacement kits available).
- b. If the nozzle go-no go gage proves the jaws to be good, yet the jaws won't connect to the vehicle's receptacle, the receptacle should be replaced.

2. Receptacle:

- a. If the receptacle fit gage (RINGGO-0001) connects properly to the receptacle it is considered good. If the receptacle cannot connect to the fit gage then the receptacle should be replaced.
- b. If the receptacle fit gage proves the receptacle to be good yet the nozzle will not connect to the vehicle's receptacle, the nozzle jaws and front sleeve should be replaced (replacement kits available).

NPT Threads – OPW does not use NPT threads on its products. According to NGV1, “The use of threaded connections which rely on the joint between the male and female threads for sealing, such as NPT threads, is prohibited.”

NGV Profile – A receptacle that is NGV1 approved must comply with the geometry set forth in the NGV1 standard. Receptacles that meet NGV1 will not have interchangeability restrictions and will permit the safe connection/disconnection of the fueling nozzle.

References:

E/ECE/324, E/ECE/Trans/505

SAE International

ISO-TC197 N0489 Revised ISO DIS 17268.2

ISO14469

ANSI NGV1 / CSA NGV1

ANSI /AGA NGV3.1

ANSI/IAS NGV 4.4

Canadian Registration Numbers by Province

Canadian Registration Numbers OPW CleanEnergy Products	British Columbia	Alberta	Ontario	Quebec	Saskatchewan	Manitoba	Nova Scotia	New Brunswick
PG series	pending	pending	pending	pending	pending	pending	pending	pending
CT1000 series	0H13989.51	0H13989.52	0H13989.5	0H13989.56	0H13989.56	0H13989.56	pending	pending
CT5000	0H15417.51	0H15417.52	0H15417.5	0H15417.56	0H15417.56	0H15417.54	0H15417.58ADD1	pending
CC600 series	0H13989.51	0H13989.52	0H13989.5	0H13989.56	0H13989.56	0H13989.56	pending	pending
ILB-1	0H13989.51	0H13989.52	0H13989.5	0H13989.56	0H13989.56	0H13989.56	pending	pending
ILB-5	0H15417.51	0H15417.52	0H15417.5	0H15417.56	0H15417.56	0H15417.56	pending	pending
VLB	0H13989.51	0H13989.52	0H13989.5	0H13989.56	0H13989.56	0H13989.56	pending	pending
FLB-1000 (new)	0H17341.51	0H17341.52	0H17341.5	0H17341.56	0H17341.56	0H17341.56	0H17341.5987	0H17341.5987
FLB-5000 (new)	0H17341.51	0H17341.52	0H17341.5	0H17341.56	0H17341.56	0H17341.56	0H17341.5987	0H17341.5987
NGVLB (new)	0H17341.51	0H17341.52	0H17341.5	0H17341.56	0H17341.56	0H17341.56	0H17341.5987	0H17341.5987
BDN	Pending	0H17140.2	Pending	Pending	Pending	Pending	Pending	Pending

TUV Approved

- ◆ PGXXP3X Series
- ◆ CT1000 series nozzles
- ◆ CT5000 series nozzles
- ◆ CC 200 series nozzles
- ◆ CC 300 series nozzles
- ◆ CC 600 series nozzles
- ◆ CC 6000 series nozzles
- ◆ ILB series breakaways
- ◆ FLB series breakaways
- ◆ NGVLB series breakaways
- ◆ LB, LD, LE series receptacles
- ◆ CL series receptacles

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