



aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



## Alternative Fuel Products

Products and Custom Solutions



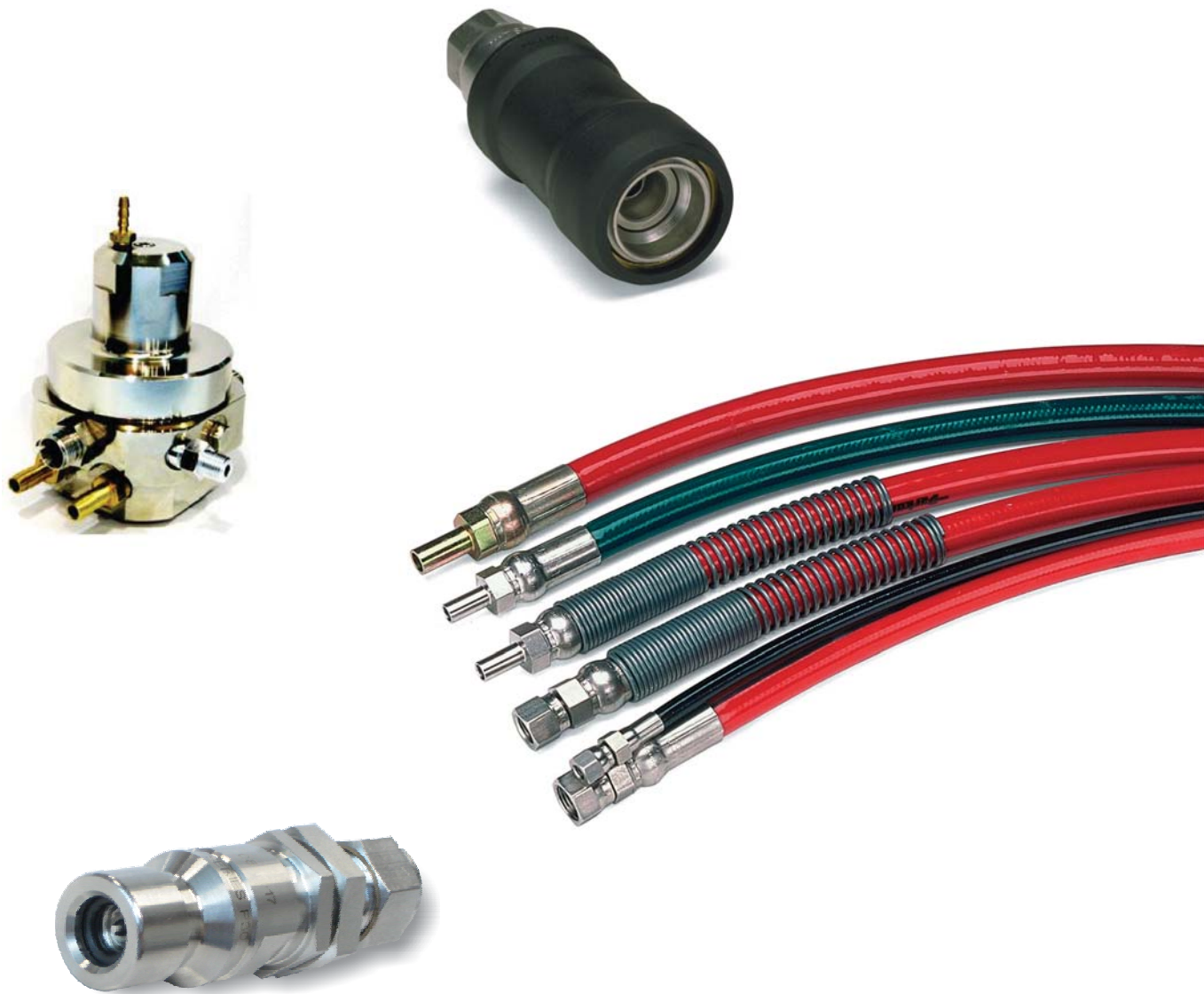
ENGINEERING YOUR SUCCESS.

# NGV

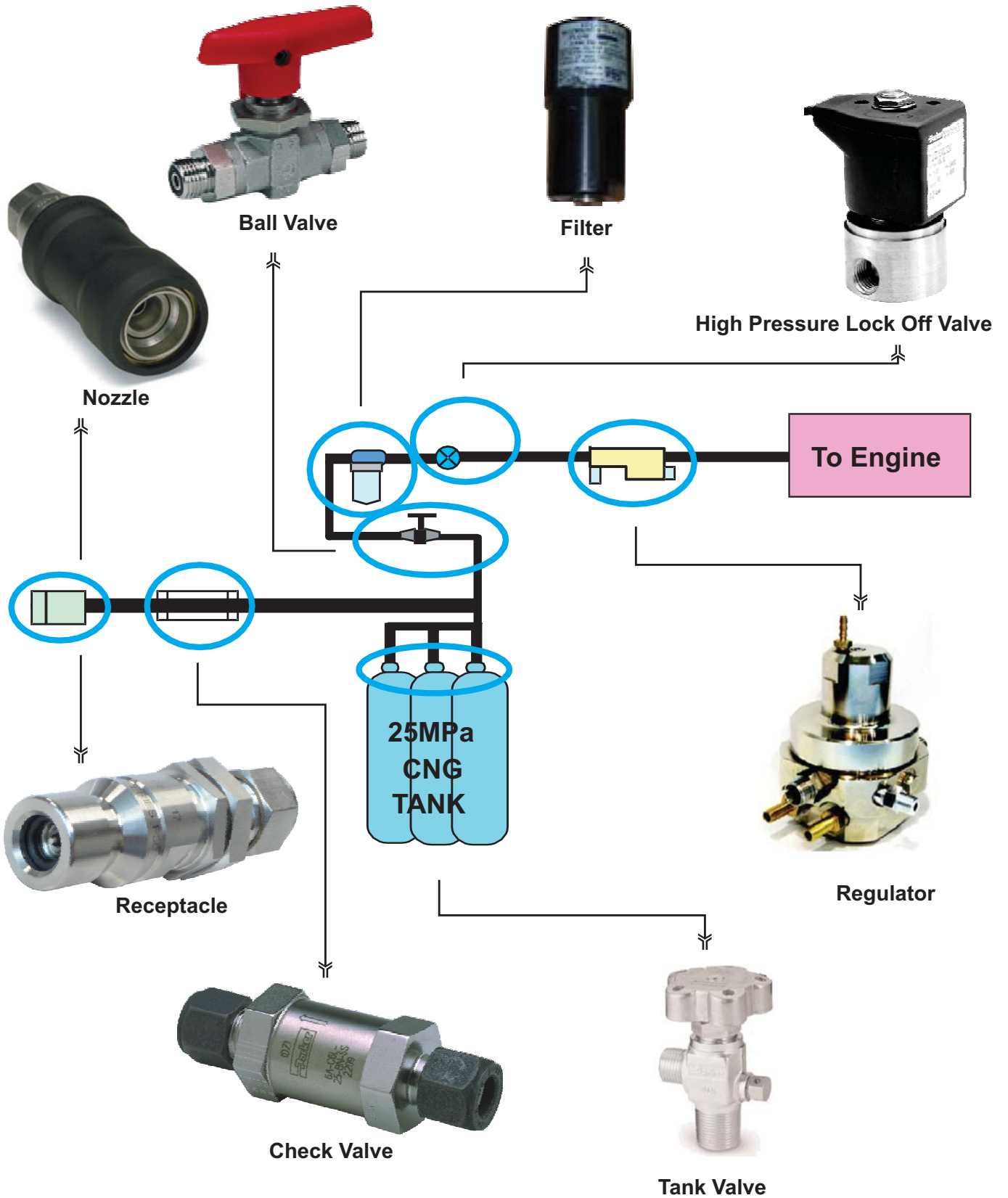
## NATURAL GAS VEHICLE

Parker Hannifin is the country's leader in designing and manufacturing products for delivering compressed(CNG) and Liguified Natural Gas(LNG). Parker makes the most complete products package for handling CNG including fittings, filters, couplings, valves, hoses, nozzles and receptacle. Parker's development of new technologies and steady growth in established markets have made Parker Hannifin a global leader in motion and control.

# CNG PRODUCTS



# [NGV SYSTEM COMPONENTS]



# [RECEPTACLES]

## NGV1 Profile Receptacles

Parker FM Series receptacle are designed for rigid mounting on a compressed natural gas vehicle. Receptacle can be employed in both fast-fill and time-fill dispensing application. The NGV1/ANSI standard used by FM Series receptacles, allows vehicle fueling to be accomplished with all CNG nozzles, conforming to the NGV1/ANSI standard.



### Features

- FM Series receptacles can be used with all versions of Parker FM Series nozzles
- FM Series receptacles meet all dimensional and performance requirements of the NGV1/ANSI standard
- Receptacle employ a differential pressure-actuated valve
- Internal check valve provides unidirectional flow-natural gas will only flow from dispenser to vehicle
- Brass or Stainless steel Body construction available
- Ozone resist and rubber dust cap available
- Extensive end configurations and mounting methods available
- Internal components are 316 Stainless Steel
- Seal is comprised of a special Nitrile compound formulated for compressed natural gas service

### Materials of construction

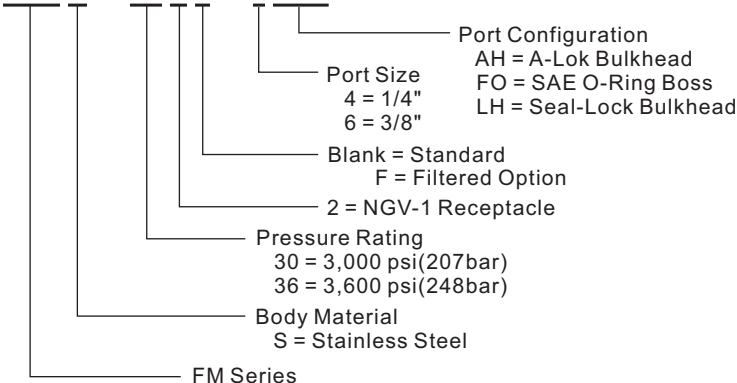
- Body : 316 Stainless Steel
- Adapter : 316 Stainless Steel
- Valving : 316 Stainless Steel
- Seal : Special CNG Nitrile Compound
- Dust Cap : Low temperature Nitrile Compound

### Specification

- Pressure : 3,000 or 3,600 psi (207 or 248bar) connected & disconnected
- Temperature : -40°F to +250°F(-40°C to +121°C)
- Rated Flow : 1,500 scfm
- Seal : Special CNG Nitrile Compound
- Dust Cap : Low temperature Nitrile Compound

### Receptacle Part Number

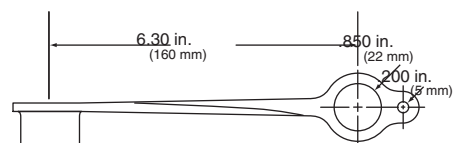
#### **FMS - 302F - 6FO**



### Dust Caps

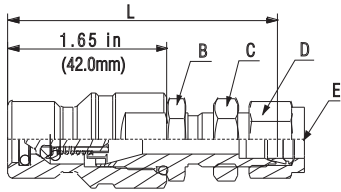
Parker Dust Caps are recommended to protect receptacle from environmental contaminants. Rubber compound has good resistance to oil, abrasion, ozone.

FM Series Receptacle Dust Cap	
Dust Cap Part No.	Material
FM-66M	Nitrile



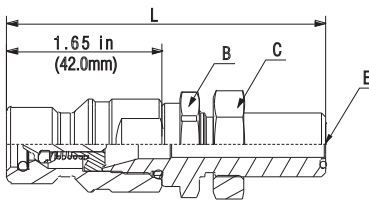
# [RECEPTACLES]

## NGV1 Profile Receptacles



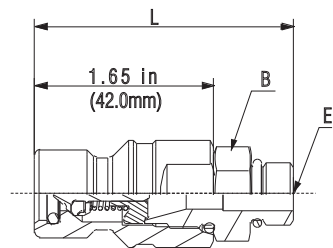
### FMS-3\*2-\*AH

Part No.	L		B Hex		C Lok-Nut Hex		D Nut Hex		E End Parts
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	
FMS-302-4AH FMS-362-4AH	2.71	68.8	0.75	19.0	0.75	19.0	0.56	14.3	1/4 A-Lok Bulkhead
FMS-302-6AH FMS-362-6AH	2.78	70.6	0.75	19.0	0.75	19.0	0.69	17.5	3/8 A-Lok Bulkhead
FMS-302-8AH FMS-362-8AH	3.09	78.4	1.00	25.4	1.06	27.0	0.88	22.2	1/2 A-Lok Bulkhead
FMS-302-M6AH FMS-362-M6AH	2.98	75.6	0.81	20.6	0.75	19.0	0.55	14.0	6mm A-Lok Bulkhead
FMS-302-M8AH FMS-362-M8AH	2.76	70.1	0.75	19.0	0.75	19.0	0.63	16.0	8mm A-Lok Bulkhead
FMS-302-M10AH FMS-362-M10AH	3.09	78.4	1.00	25.4	1.06	27.0	0.75	19.0	10mm A-Lok Bulkhead
FMS-302-M12AH FMS-362-M12AH	3.09	78.4	1.00	25.4	1.06	27.0	0.87	22.1	12mm A-Lok Bulkhead



### FMS-3\*2-\*LH

Part No.	L		B Hex		C Lok-Nut Hex		D Nut Hex		E End Parts
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	
FMS-302-4LH FMS-362-4LH	3.03	77.0	0.81	20.6	0.81	20.6	-	-	1/4 Seal-Lok Bulkhead
FMS-302-6LH FMS-362-6LH	3.38	85.9	1.00	25.4	1.00	25.4	-	-	3/8 Seal-Lok Bulkhead



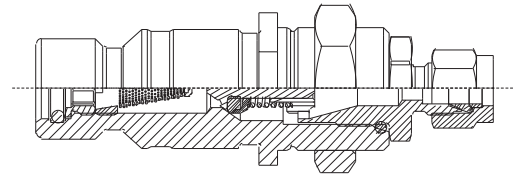
### FMS-3\*2-6MO

Part No.	L		B Hex		C Lok-Nut Hex		D Nut Hex		E End Parts
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	
FMS-302-6MO FMS-352-6MO	2.39	60.7	0.75	19.0	-	-	-	-	3/8 O-Ring Port

# [RECEPTACLES]

## NGV1 Profile Filtered Receptacles

Parker FM Series Receptacle are designed for rigid mounting on a compressed natural gas vehicle. Receptacle can be employed in both fast-fill and time-fill dispensing applications. The filter elements eliminates contaminants from the environment and unclean compressed natural gas sources. It serves both as a prefilter to on-board vehicle components and as a protection to the FM receptacle valving and seals. The NGV1 profile utilized by Filtered FM Receptacle allows.



### Features

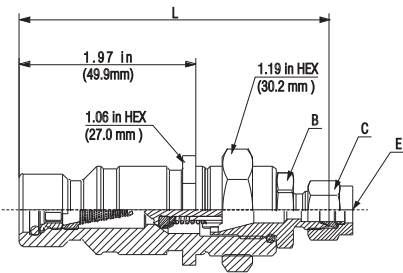
- Filter elements provides for protection to the FM receptacle valving and seals from external contaminants that can be introduced during fueling
- Filter element is field replaceable and can be simply cleaned by flushing with a reverse flow
- Filter can prevent expensive repairs, prolong useful life of down stream CNG components and reduce downtime for end users
- FM Series Filtered Receptacle are NGV1 certified
- Available with a 400 or 200 micron filter element

### Material of Construction

- Body : 316 Stainless Steel
- Adapter : 316 Stainless Steel
- Valving : 316 Stainless Steel
- Seal : Special CNG Nitrile Compound
- Dust Cap : Low temperature Nitrile Compound

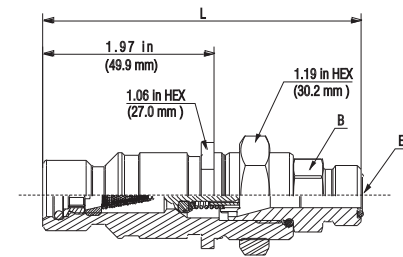
### Specification

- Pressure : 3,000 or 3,600 psi (connected & disconnected)
- Temperature : -40°F to +250°F (-40°C to +121°C)
- Seal : Special CNG Nitrile Compound
- Dust Cap : Low temperature Nitrile Compound



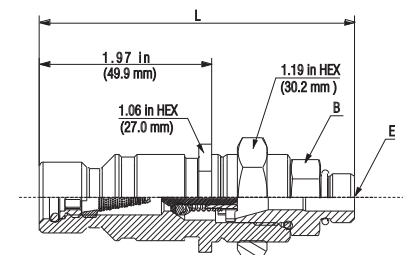
### FMS-3\*2F-\*AH

Part No.	L		B Hex		C Lok-Nut Hex		E End Parts
	Inch	mm	Inch	mm	Inch	mm	
FMS-302F-4AH FMS-362F-4AH	3.47	88.1	0.75	19.0	0.56	14.3	1/4 A-Lok Bulkhead
FMS-302F-6AH FMS-362F-6AH	3.53	89.7	0.75	19.0	0.69	17.5	3/8 A-Lok Bulkhead
FMS-302F-8AH FMS-362F-8AH	3.73	94.5	1.00	25.4	0.88	22.2	1/2 A-Lok Bulkhead
FMS-302F-M8AH FMS-362F-M8AH	3.50	88.8	0.75	19.0	0.63	16.0	8mm A-Lok Bulkhead



### FMS-3\*2F-\*LH

Part No.	L		B Hex		C Lok-Nut Hex		E End Parts
	Inch	mm	Inch	mm	Inch	mm	
FMS-302F-4LH FMS-362F-4LH	3.56	90.4	0.75	19.0	-	-	1/4 Seal-Lok Bulkhead
FMS-302F-6LH FMS-362F-6LH	3.67	93.2	0.75	19.0	-	-	3/8 Seal-Lok Bulkhead



### FMS-3\*2F-6MO

Part No.	L		B Hex		C Lok-Nut Hex		E End Parts
	Inch	mm	Inch	mm	Inch	mm	
FMS-302F-6MO FMS-362F-6MO	3.60	91.5	0.75	19.0	-	-	3/8 O-Ring Port

# [NOZZLES]

## Fast Fill, Push-To-Connect Refueling Nozzles For Public Or Private Use

Parker Push-To-Connect "FM" Series product line was designed specifically for transferring compressed natural gas from compressors and dispensers to the vehicles utilizing CNG. The Push-To-Connect "FM" Series nozzle will interchange with any receptacle conforming to the NGV1/ANSI standard. This Parker "FM" Series nozzle can be used stand-alone in self-depressurizing refueling systems (Type-3), or in conjunction with a 3-way valve in systems requiring the fill/vent function to be accomplished at the nozzle (Type-2)



Type-2&3 NGV1 Nozzle

### Features

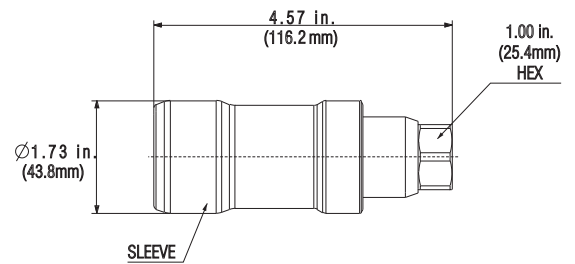
- Compatible with the NGV1/ANSI standard
- Push-To-Connect, pull on thermoplastic sleeve to disconnect
- Protective thermoplastic coating on nozzles prevents paint chipping of vehicles.
- Durable ball locking design for longer life
- This nozzle can be classified as Type-2 or Type-3 and subsequently can be used for both fast-fill or time fill service.
- Color options available for sleeves (Black, Blue, & Yellow)

### Materials of construction

- Body : Stainless Steel or Brass
- Valving : Stainless Steel
- Sleeve : Stainless Steel with Thermoplastic Coating
- Seal : Special CNG Nitrile Compound

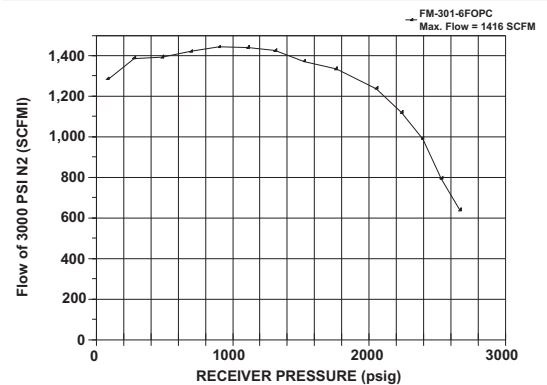
### Specification

- Pressure : Rated to 3,600psi (248bar)
- Temperature : -40°F to +250°F (-40°C to +121°C)
- Rated Flow : 1,416 scfm



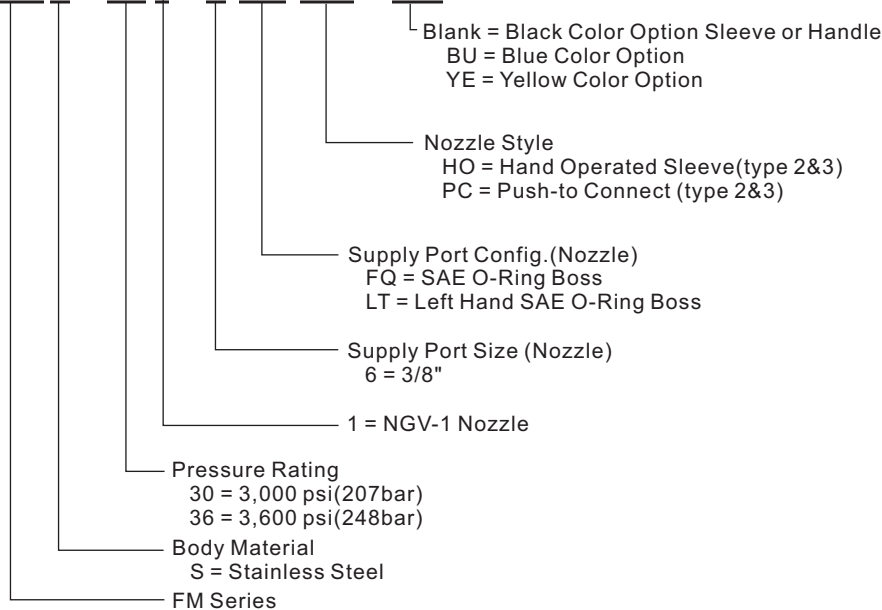
### High Pressure Gas Flow Performance

Parker CNG Nozzle (Part. No. FM-301-6FOPC)



### Nozzle Part Number

**FMS - 301 - 6 FO HO - YE**





# [NOZZLES]

## Fast Fill, Sleeve-Operated Refueling Nozzle

Parker's Sleeve-Operated "FM" Series product line was designed specifically for transferring compressed natural gas from compressors and dispensers to the vehicles utilizing CNG.

The Sleeve-Operated "FM" Series nozzle will interchange with any receptacle conforming to the NGV1/ANSI standard. This Parker "FM" Series nozzle can be used stand-alone in self-depressurizing refueling systems (Type-3), or in conjunction with a 3-way valve in systems requiring the fill/vent function to be accomplished at the nozzle (Type-2)



Type-2&3 NGV1 Nozzle

### Features

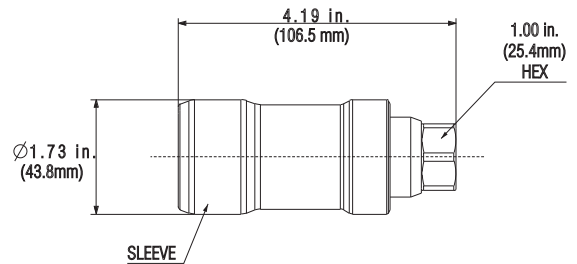
- Compatible with the NGV1/ANSI standard
- Sleeve-Lock connection operation : Retract locking ball sleeve, push on to receptacle, release sleeve. Nozzle is then firmly engaged to receptacle
- Thermoplastic sleeve coating prevents paint chipping on vehicle while refueling
- Durable ball locking design for longer life
- This nozzle can be classified as Type-2 or 3 and subsequently can be used for both fast-fill or time fill service.
- Left-Hand thread configurations available for use on home refueling units
- Color options available for sleeves (Black, Blue, & Yellow)

### Materials of construction

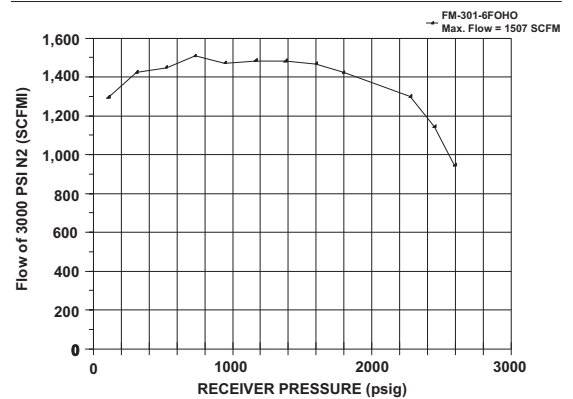
- Body : Brass
- Valving : Stainless Steel
- Sleeve : Brass with plastic cover
- Seal : Special CNG Nitrile Compound

### Specification

- Pressure : Rated to 3,600psi(248bar)
- Temperature : -40°F to +250°F (-40°C to +121°C)
- Rated Flow : 1,507 scfm

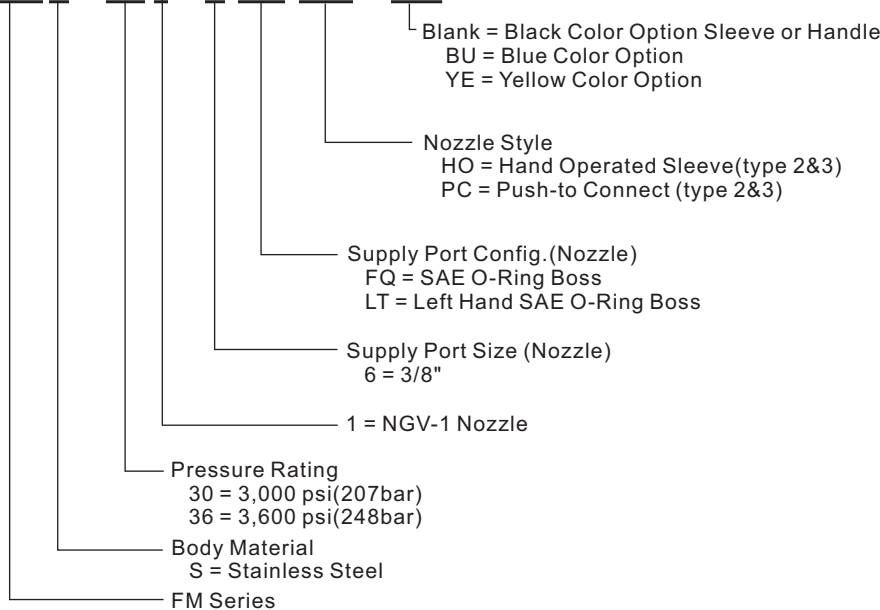


### High Pressure Gas Flow Performance Parker CNG Nozzle (Part. No. FM-301-6FOHO)



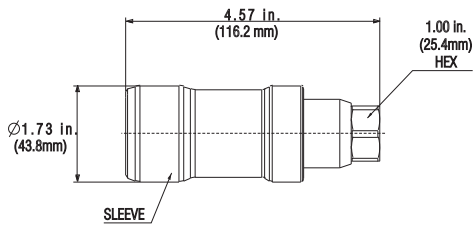
### Nozzle Part Number

## FMS - 301 - 6 FO HO - YE



# [NOZZLES]

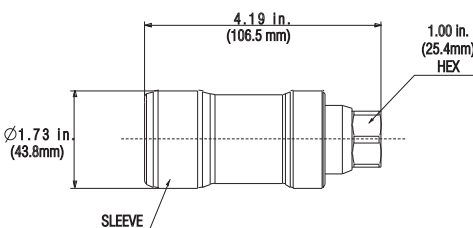
## Fast Fill, Push-To-Connect Refueling Nozzles For Public Or Private Use



Part No.	Material	Service Pressuer	Accepts Receptacles	End Parts
FM-301-4LTPC	Brass	3,000psi	All FM Series Receptacles 3,000psi and 3,600psi	1/4in. O-ring Boss (7/16-20UNF)
FM-361-4LTPC	Brass	3,600psi	FM Series Receptacles 3,600psi Only	1/4in. O-ring Boss (7/16-20UNF)
FMS-361-4LTPC	Stainless Steel	3,600psi	FM Series Receptacles 3,600psi Only	1/4in. O-ring Boss (7/16-20UNF)
FM-301-6FOPC	Brass	3,000psi	All FM Series Receptacles 3,000psi and 3,600psi	3/8in. O-ring Boss (9/16-18UNF)
FM-361-6FOPC	Brass	3,600psi	FM Series Receptacles 3,600psi Only	3/8in. O-ring Boss (9/16-18UNF)
FMS-361-6FOPC	Stainless Steel	3,600psi	FM Series Receptacles 3,600psi Only	3/8in. O-ring Boss (9/16-18UNF)
FM-301-6LTPC	Brass	3,000psi	All FM Series Receptacles 3,000psi and 3,600psi	3/8in. O-ring Boss (9/16-18UNF)
FM-361-6LTPC	Brass	3,600psi	FM Series Receptacles 3,600psi Only	3/8in. O-ring Boss (9/16-18UNF)
FMS-361-6LTPC	Stainless Steel	3,600psi	FM Series Receptacles 3,600psi Only	3/8in. O-ring Boss (9/16-18UNF)

# [NOZZLES]

## Fast Fill, Sleeve-Operated Refueling Nozzles For Public Or Private Use



Part No.	Material	Service Pressuer	Accepts Receptacles	End Parts
FM-301-4LTTHO	Brass	3,000psi	All FM Series Receptacles 3,000psi and 3,600psi	1/4in. O-ring Boss (7/16-20UNF)
FM-361-4LTTHO	Brass	3,600psi	FM Series Receptacles 3,600psi Only	1/4in. O-ring Boss (7/16-20UNF)
FM-301-6FOHO	Brass	3,000psi	All FM Series Receptacles 3,000psi and 3,600psi	3/8in. O-ring Boss (9/16-18UNF)
FM-361-6FOHO	Brass	3,600psi	FM Series Receptacles 3,600psi Only	3/8in. O-ring Boss (9/16-18UNF)
FM-301-6LTTHO	Brass	3,000psi	All FM Series Receptacles 3,000psi and 3,600psi	3/8in. O-ring Boss (9/16-18UNF)
FM-361-6LTTHO	Brass	3,600psi	FM Series Receptacles 3,600psi Only	3/8in. O-ring Boss (9/16-18UNF)

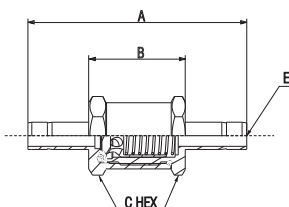
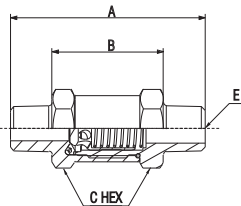
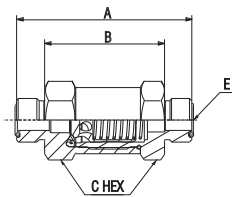
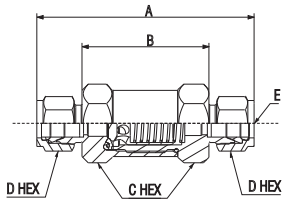
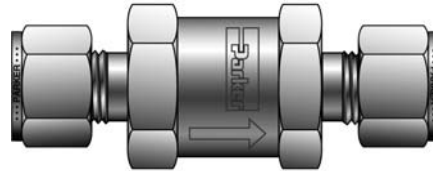
# [CHECK VALVE]

## Used after the Receptacle on Natural Gas Vehicles

Parker's C Series Check Valves are designed for uni-directional flow control of CNG. They are often installed immediately after the refueling receptacle as a redundant safety device, and are certified per ECE 110R

### Features

- Resilient, custom molded, blow-out resistant seat design
- Back stropped poppet minimizes spring stress
- 100% factory tested for both crack and reseal
- Cracking pressures : 1, 5, 10, 25, 50, 75, and 100 psi
- Port connections : CPI™ , A-LOK®, and Seal-Lok®
- Heat code traceability
- 100% factory tested



Part No.	A		B		C		D		E
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	End Parts
M6Z-C4L-*-BN-SS-K M6A-C4L-*-BN-SS-K	2.43	61.7	1.03	26.2	0.75	19.0	0.55	14.0	6mm CPI 6mm A-LOK
M8Z-C6L-*-BN-SS-K M8A-C6L-*-BN-SS-K	3.33	84.6	1.87	47.5	1.00	25.4	0.63	16.0	8mm CPI 8mm A-LOK
M10Z-C6L-*-BN-SS-K M10A-C6L-*-BN-SS-K	3.35	85.1	1.81	46.0	1.00	25.4	0.75	19.0	10mm CPI 10mm A-LOK
M12Z-C8L-*-BN-SS-K M12A-C8L-*-BN-SS-K	4.06	103.1	2.34	59.4	1.25	31.8	0.87	22.0	12mm CPI 12mm A-LOK
4Z-C4L-*-BN-SS-K 4A-C4L-*-BN-SS-K	2.42	61.5	1.03	26.2	0.75	19.0	0.56	14.3	1/4 inch CPI 1/4 inch A-LOK
6Z-C4L-*-BN-SS-K 6A-C4L-*-BN-SS-K	2.55	64.8	1.03	26.2	0.75	19.0	0.69	17.5	3/8 inch CPI 3/8 inch A-LOK
6Z-C6L-*-BN-SS-K 6A-C6L-*-BN-SS-K	3.27	83.1	1.75	44.5	1.00	25.4	0.69	17.5	3/8 inch CPI 3/8 inch A-LOK
8Z-C6L-*-BN-SS-K 8A-C6L-*-BN-SS-K	3.55	90.2	1.81	46.0	1.00	25.4	0.87	22.2	1/2 inch CPI 1/2 inch A-LOK
8Z-C8L-*-BN-SS-K 8A-C8L-*-BN-SS-K	4.08	103.6	2.34	59.4	1.25	31.8	0.87	22.2	1/2 inch CPI 1/2 inch A-LOK

Part No.	A		B		C		D		E
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	End Parts
4L-C4L-*-BN-SS-K	1.82	46.2	1.03	26.2	0.75	19.0	-	-	1/4 inch SEAL-LOK
6L-C6L-*-BN-SS-K	2.65	67.3	1.77	45.0	1.00	25.4	-	-	3/8 inch SEAL-LOK
8L-C8L-*-BN-SS-K	3.22	81.8	2.21	56.1	1.25	31.8	-	-	1/2 inch SEAL-LOK

Part No.	A		B		C		D		E
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	End Parts
4M-C4L-*-BN-SS-K	2.18	55.4	1.04	26.4	0.75	19.0	-	-	1/4 inch Male NPT
6M-C6L-*-BN-SS-K	2.96	75.2	1.82	46.2	1.00	25.4	-	-	3/8 inch Male NPT
8M-C8L-*-BN-SS-K	3.56	90.4	2.05	52.1	1.25	31.8	-	-	1/2 inch Male NPT

Part No.	A		B		C		D		E
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	End Parts
4TA-C4L-*-BN-SS-K	2.35	59.7	1.07	27.2	0.75	19.0	-	-	1/4 inch Tube Adapter
6TA-C6L-*-BN-SS-K	3.24	82.3	1.80	45.7	1.00	25.4	-	-	3/8 inch Tube Adapter
8TA-C8L-*-BN-SS-K	4.04	102.6	1.78	45.2	1.25	31.8	-	-	1/2 inch Tube Adapter

# [CHECK VALVE]

## Specifications

- Pressure Rating : 316 Stainless Steel  
1/8" to 3/4" : 6,000psig CWP (414 bar)  
1" : 5,000psig CWP (345 bar)
- Temperature : Buna-N rubber  
-40°F to 250°F (-40°C to 121°C)
- Orifice : 0.187" to 0.656" (4.7mm to 16.7mm)
- C<sub>v</sub> Factor : 0.66 to 6.56

## Suggested Options

Body : Electron beam welded

ECE Certification

Note : To order valves certified by ECE 110R  
please contact the factory or your local Parker Distributor

## How to Order

The correct part number is easily derived by following the circled number sequence. The six product characteristics required are coded as shown below.

Note : If both the inlet and outlet ports are the same, eliminate the outlet port designator

12ZS      -      C12L      -      5      -      BN      -      SS  
 ①      ②      ③      ④      ⑤      ⑥  
 Inlet      Outlet      Body      Crack      Seat      Body  
 Port      Port      Size      Pressure      Material      Material

Describes a C Series Check Valve with 3/4" CPI™ compression inlet and outlet ports with silver plated ferrules, a 5 psi cracking pressure, Buna-N rubber seat and stainless steel body construction.

16M      16AS      -      C12L      -      10      -      BN      -      SS  
 ①      ②      ③      ④      ⑤      ⑥  
 Inlet      Outlet      Body      Crack      Seat      Body  
 Port      Port      Size      Pressure      Material      Material

Describes a C Series Check Valve with a 1" male NPT inlet and a 1" A-LOK® compression outlet port with silver plated ferrules, a 10 psi cracking pressure, Buna-N rubber seat and stainless steel body construction.

Inlet Port	Outlet Port	Body Size	Crack Pressure	Seat Material	Seat Material
4Z(A), 6Z(A), M6Z(A), 4L, 4M, 4TA	4Z(A), 6Z(A), M6Z(A), 4L, 4M, 4TA	4L	1/3 psi 1 psi 5 psi	BN- Buna-N Rubber	SS-316 Stainless Steel
6Z(A), 8Z(A), M8Z(A), M10Z(A), 6L, 6TA	6Z(A), 8Z(A), M8Z(A), M10Z(A), 6L, 6TA	6L	10 psi 25 psi 50 psi		
8Z(A), M12Z(A), 8L, 8M, 8TA	8Z(A), M12Z(A), 8L, 8M, 8TA	8L	75 psi 100psi		

## Available End Configurations

**A** - Two ferrule A-LOK®  
compression port



**Z** - Single ferrule CPI™  
compression port



**M** - ANSI/ASME B1.20.1 External pipe threads

**TA** - Tube adapter connection

**L** - SAE J1453, Fitting- O-ring face seal-External thread with O-ring groove designed to seal with an elastomer against a sleeve

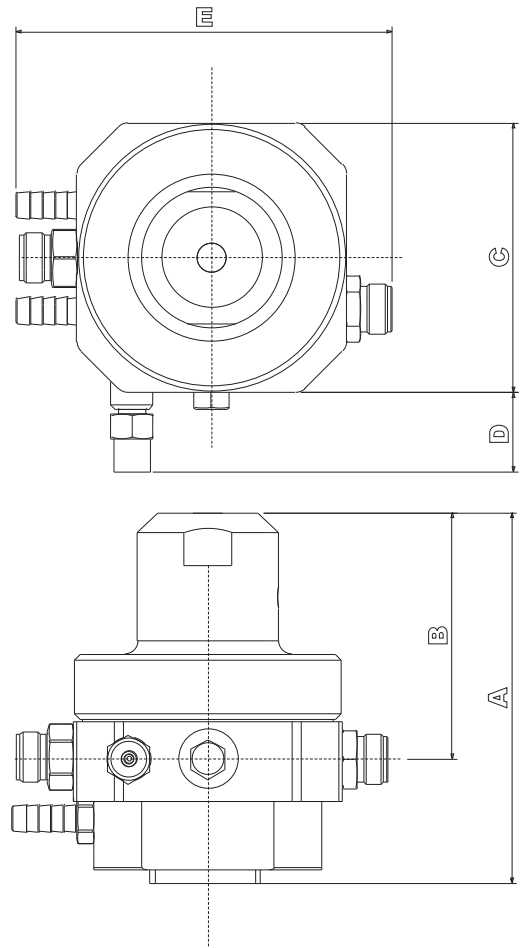
# [REGULATOR]

## High Pressure CNG Regulator

### CNR 301



#### Features



#### Dimensions

Div.	A	B	C	D	E
Inch	5.51	3.66	4.01	1.18	5.59
Metric	140	93	102	30	142

#### Specifications

- Media : CNG (Compressed Natural Gas)
- Max Flow Rate : 60kg/hr @ inlet 15bar
- Setting Pressure : 8bar
- Inlet Port : 9/16-18 UNF
- Outlet Port : 3/4-16 UNF
- Coolant Port : PT 3/8
- Outlet Pressure Range : 30~117psig(2 ~ 8 bar)
- Max Inlet Pressure : 3,600psig(250 bar)
- Temperature Range : -40 °C ~ 105 °C
- Meet ECE R110 Class 0

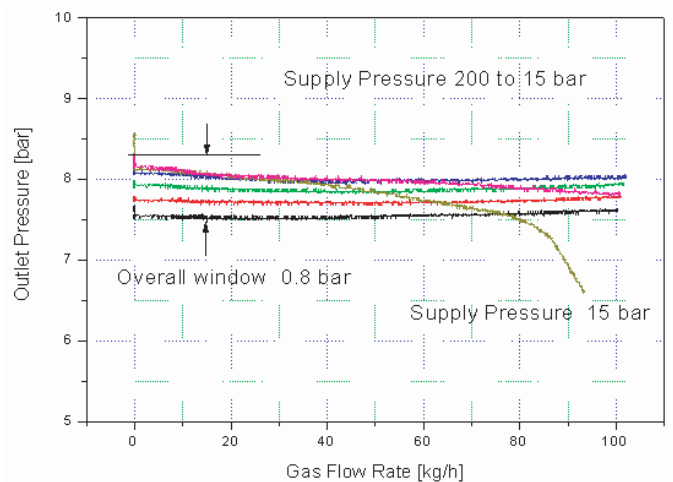
#### Materials of Construction

- Body : Aluminum
- Seat : PI
- Seal : NBR, Rubber Composite
- Diaphragm : Rubber Composite
- Inlet Fitting : 316 Stainless Steel
- Outlet Fitting : 316 Stainless Steel

#### Features

- Compatible with the ECE R110 standard.
- Excellent regulation at light loads.
- Self Relieving adjustment with wrench.
- Typical applications for commercial vehicle.

#### Performance Data



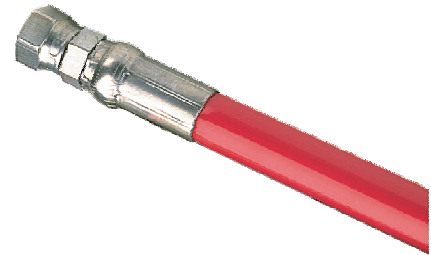
# [CNG HOSE]

## CNG-Compressed Natural Gas

Refueling hose assembly designed for conveying compressed natural gas. High-Strength conductive polymer core tube formulated to dissipate static electric buildup

### Features

- Electrically conductive nylon tube
- Perforated urethane cover
- Factory or certified assembly only
- All assemblies comply with AGA/CGA ANSINGV 4.2, CSA 12.25, and NFPA 52
- Spring guards or strain reliefs required on all applications
- Twinline assemblies available
  - Reduces installation time
  - Eliminates hoses tangling
  - Less part numbers



Notes : Refer to CNG hose assembly instruction Bulletin #4660-CNG

PART NUMBER	I.D.		MAXIMUM O.D.		MAXIMUM WORKING PRESSURE		MINIMUM BEND RADIUS		WEIGHT		WIRE SPRING GUARD PART NUMBER	VINYL GUARD PART NUMBER	CRIMP FITTING	
	INCH	MM	INCH	MM	WPSI	MPa	INCH	MM	LBS/FT	KG/M	#	#	SERIES	PG
#											#	#		
5CNG-3	3/16	5	0.43	11	5,000	345	1-1/2	38.1	.50	7.4	3PSG-3	CNGG5-3	55	53-77
5CNG-4	1/4	6	0.62	16	5,000	345	2	50.8	.110	16.4	5PSG-4	CNGG5-4	58	78-102
5CNG-6	3/8	10	0.77	20	5,000	345	3	76.2	.170	25.3	5PSG-6	CNGG5-6	58	78-102
5CNG-8	1/2	13	0.89	23	5,000	345	4	101.6	.205	30.5	5PSG-8	CNGG5-8	58	78-102
5CNG-12	3/4	19	1.15	28	5,000	345	7-1/2	191	.241	25.9	-	CNGG5-12	58H	78-102
5CNG-16	1	25	1.59	40	5,000	345	10	254	.358	53.3	-	CNGG5-16	58H	78-10

\*Wire spring guards must be used on ANSI/CSA design-certified CNG dispenser fill hose assemblies. Hose size -3 through -8, single and multi-line bonded assemblies. Vinyl guards are used on hose sizes -12 and -16. Min.Burst Pressure 4x Max.Working Pressure

<b>Tube:</b>	Electrically Conductive Nylon	<b>Vacuum Rating:</b>	28inch Hg
<b>Reinforcement:</b>	Fiber	<b>Temperature Range:</b>	-40°F to +180°F
<b>Cover</b>	Urethane, Perforated Cover		-40°C to + 82°C
<b>Cover Color:</b>	Red		



# LNG PRODUCTS

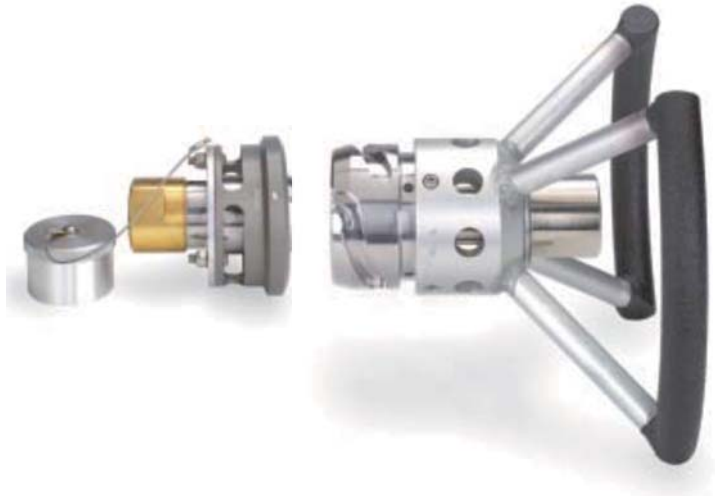


# [LNG NOZZLE & RECEPTACLE]

## Kodiak Cryogenic Couplings

### Features

- Single connect/disconnect action for quick and easy fueling.
- Valves automatically open when connected and close when disconnected.
- Nozzles and receptacles are supplied with dust caps/plugs.
- Hardened stainless steel wear surfaces.
- Dual interface seal technology for long service life.
- Thermal break between locking mechanism and cryogenic liquid.
- Integral swivel in the nozzle eliminates the need for additional hose swivels.
- Disconnect detent system allows for a controlled "zero pressure" disconnect.
- Field serviceable interface seals and valve seals.
- Versatile design may be used with other cryogenic fluids.
- Universal receptacle design will accept other manufactures nozzles.



### Specifications

Maximum Working Pressure:	300 PSI (20.7 bar)
Fluid Temperature:	-320 °F to +160 °F (-195°C to 71°)
Rated Flow:	50 GPM (190 lpm)
Spillage at Disconnect:	<1cc (<15ml)

### Applications

Parker's new **Kodiak™** Series Liquefied Natural Gas (LNG) Coupling is designed to make LNG vehicle fueling easy and trouble free. The Kodiak™ offers easy single action connection with integral shut-off valves and hose swivel. Its innovate design provides a thermal break to reduce freezing of the locking mechanism. The rugged Kodiak™ LNG nozzle and receptacle wear surfaces are manufactured from hardened stainless steel for maximum resistance to wear and damage. The dual interface seal technology provides improved seal life and is field serviceable.

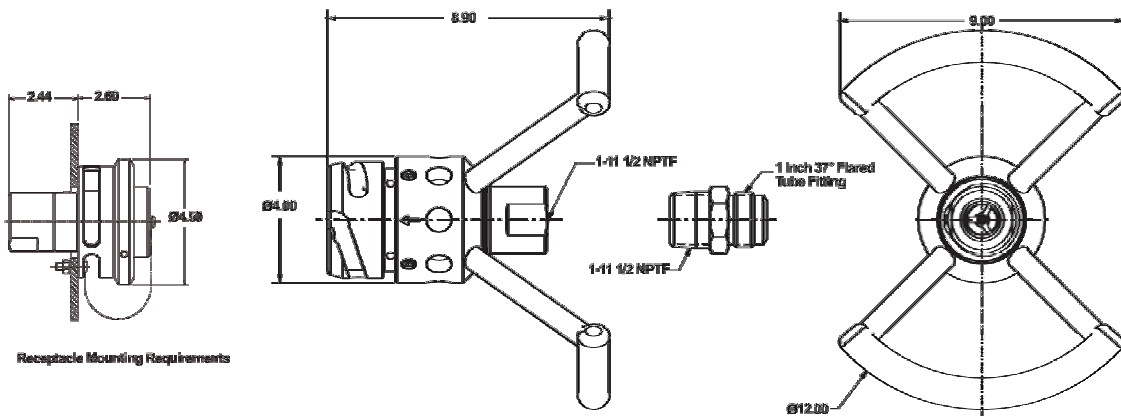
*Refer to Parker Hannifin Publication No.3 800-B1.0 for the selection and safe use of all Parker Quick Couplings.*

### Receptacle

Part Number	LG-1001-16FP LG-1001-12FP
Weight:	4.8 lbs. (2.2 kg)
Port Size:	1" or 3/4" NPTF
Material of Construction:	Stainless Steel, Brass
Seal Material:	UHMWP

### Nozzle

Part Number:	LG-1002-16FP
Weight:	10.0 lbs. (4.5 kg)
Port Size:	1" NPTF or 1" 37° Flare Fitting
Seal Material:	PTFE, PCTFE & UHMWP
Material of Construction:	Stainless Steel, Aluminum, Brass





# [METAL HOSE]

## Parker Parflex Flexible Metal Hose

Parflex Flexible Metal Hoses are the most flexible metal hoses available. These styles of hoses are used wherever temperature and permeation are a concern. NPT, JIC, a complete range of end connections are available to meet your needs.

*Note: All assemblies are leak tested with 150 lbs. of Nitrogen for 30 seconds. Helium leak testing is also available.*

**Assemblies are factory made only.**

### Features:

- Most flexible metal hose available.
- Every assembly is leak tested before shipment.
- Working temperatures from -400°F to 1500°F
- 321 Stainless Steel tube. 316 available.
- Least permeable hose available.
- Three styles to precisely meet your pressure and flexibility requirements.

9A - Standard  
 9M - Ultra Flexible  
 9H - High Pressure

### Materials of Construction

**Core Tube:** 321/316 Stainless Steel  
**Exterior Braid:** 304 Stainless Steel

### Specifications

*(Working)*  
**Sizes:** 1/4" I.D. to 6" I.D.  
**Pressure:** 210 psi to 2,700 psi  
**Temperature:** -400°F to 1500°F

*Consult bulletin 4690-MH1 available from Parker Catalog Services for complete information and specifications on Standard, Ultra Flexible, and High Pressure Metal Hoses.*



### Standard 9A Specifications

Inside Diameter (in.)	Number of Braids	Outside Diameter (in.)	Static Min. Bend Radius (in.)	Dynamic Min. Bend Radius (in.)	Working Pressure (psi)	Burst Pressure (psi)	Weight Per Foot (lbs)
1/4	0	0.41	1.0	4.5	90	7233	0.04
	1	0.47			1,800		0.11
	2	0.53			2,700		0.18
3/8	0	0.65	1.2	5.0	70	6230	0.10
	1	0.71			1,668		0.20
	2	0.77			2,336		0.30
1/2	0	0.77	1.5	5.5	70	4743	0.11
	1	0.83			1,186		0.22
	2	0.89			1,779		0.33
5/8	0	0.96	1.8	7.0	57	4820	0.17
	1	1.02			1,205		0.33
	2	1.08			1,808		0.49
3/4	0	1.16	2.1	8.0	43	3591	0.19
	1	1.22			898		0.37
	2	1.28			1,347		0.55
1	0	1.47	2.7	9.0	43	2872	0.26
	1	1.53			718		0.50
	2	1.59			1,077		0.74
1-1/4	0	1.75	3.1	10.0	43	2581	0.29
	1	1.83			645		0.61
	2	1.91			968		0.93
1-1/2	0	2.08	3.9	11.0	28	2125	0.47
	1	2.16			531		0.85
	2	2.24			797		1.23
2	0	2.61	5.1	13.0	14	1797	0.59
	1	2.69			449		1.11
	2	2.77			674		1.63
2-1/2	0	3.40	6.8	16.0	14	1669	0.84
	1	3.50			417		1.64
	2	3.60			626		2.44
3	0	3.88	7.8	18.0	14	1384	1.18
	1	3.98			346		2.06
	2	4.08			519		2.94
4	0	4.96	9.8	22.0	14	1194	1.41
	1	5.06			299		2.47
	2	5.16			448		3.53
5	0	6.00	12.8	28.0	14	1099	2.18
	1	6.13			275		3.61
	2	6.25			412		5.04
6	0	7.01	14.8	32.0	11	839	2.69
	1	7.14			210		4.44
	2	7.26			315		6.19

# [SAFETY GUIDE]

## SAFETY GUIDE SELECTION AND USING QUICK ACTION COUPLINGS AND RELATED ACCESSORIES

**DANGER :** Failure or improper selection or improper use of quick action couplings or related accessories can cause death, personal injury and property damage. Possible consequences of failure or improper selection or improper use of quick action couplings or related accessories include but are not limited to:



- Couplings or parts thrown off at high speed.
- High velocity fluid discharge.
- Explosion or burning of the conveyed fluid.
- Contact with suddenly moving or falling objects that are to be held in position or moved by the conveyed fluid.

- Dangerously whipping hose.
- Contact with conveyed fluids that may be hot, cold, toxic, or otherwise injurious.
- Sparking or explosion while paint or flammable liquid spraying.

Before selecting or using any Parker quick action couplings or related accessories, it is important that you read and follow the following instructions.

**1.1 Scope:** This safety guide provides instructions for selecting and using (including installing connecting, disconnecting, and maintaining) quick action couplings and related accessories (including caps, plugs, blow guns, and two way valves). This safety guide is a supplement to and is to be used with, the specific Parker publications for the specific quick action couplings and related accessories that are being considered for use.

**1.2 Fail-Safe:** Quick action couplings or the hose they are attached to can fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of the quick action coupling or hose will not endanger persons or property.

**1.3 Distribution:** Provide a copy of this safety guide to each person that is responsible for selecting or using quick action coupling products. Do not select or use quick action couplings without thoroughly reading and understanding this safety guide as well as the specific Parker publication for the products considered or selected.

**1.4 User Responsibility:** Due to the wide variety of operating conditions and uses for quick action couplings, Parker and its distributors do not represent or warrant that any particular quick action coupling is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the quick action couplings.
- Assuring that the user's requirements are met and that the use presents no health or safety hazards.
- Providing all appropriate health and safety warnings on the equipment on which the quick action couplings are used.

**1.5 Additional Questions:** Call the appropriate Parker customer service department if you have any questions or require any additional information. For the telephone numbers of the appropriate customer service department, see the Parker publication for the product being considered or used.

### 2.0 QUICK ACTION COUPLING SELECTION INSTRUCTIONS

**2.1 Pressure:** Quick action couplings selection must be made so that the published rated pressure of the coupling is equal to or greater than the maximum system pressure. Surge pressures in the system higher than the rated pressure of the coupling will shorten the quick action coupling's life. Do not confuse burst pressure or other pressure values with rated pressure and do not use burst pressure or other pressure values for this purpose.

**2.2 Fluid Compatibility:** Quick action couplings selection must assure compatibility of the body and seal materials with the fluid media used. See the fluid compatibility chart in the Parker publication for the product being considered or used.

**2.3 Temperature:** Be certain that fluid and ambient temperatures, both steady and transient, do not exceed the limitations of the quick action couplings. Use caution and hand protection when connecting or disconnecting quick action couplings that are heated or cooled by the media they are conducting or by their environment.

**2.4 Size:** Transmission of power by means of pressurized liquid varies with pressure and rate of flow. The size of the quick action couplings and other components of the system must be adequate to keep pressure losses to a minimum and avoid damage due to heat generation or excessive fluid velocity.

**2.5 Pressurized Connect or Disconnect:** If connecting or disconnecting under pressure is required, use only quick action couplings designed for that purpose. The rated operating pressure of a quick action coupling may not be the pressure at which it may be safely connected or disconnected.

**2.6 Environment:** Care must be taken to ensure that quick action couplings are either compatible with or protected from the environment (that is, surrounding conditions) to which they are exposed. Environmental conditions including but not limited to ultraviolet radiation, ozone, moisture, water, salt water, chemicals and air pollutants can cause degradation and premature failure.

**2.7 Locking Means:** Ball locking quick action coupling can unintentionally disconnect if they are dragged over obstructions on the end of a hose or if the sleeve is bumped or moved enough to cause disconnect. Sleeves designed with flanges to provide better gripping for oily or gloved hands are especially susceptible to accidental disconnect and should not be used where these conditions exist. Sleeve lock or union (threaded) sleeve designs should be considered where there is a potential for accidental uncoupling.

**2.8 Mechanical Loads:** External forces can significantly reduce quick action couplings' life or cause failure. Mechanical loads which must be considered include excessive tensile or side loads, and vibration. Unusual applications may require special testing prior to quick action couplings selection.

**2.9 Specifications and Standards:** When selecting quick action couplings, government, industry, and Parker specifications must be reviewed and followed as applicable.

**2.10 Vacuum:** Not all quick action couplings are suitable or recommended for vacuum service. Quick action couplings used for vacuum applications must be selected to ensure that the quick action couplings will withstand the vacuum and pressure of the system.

**2.11 Fire Resistant Fluids:** Some fire resistant fluids require seals other than the standard nitrile used in many quick action couplings.

**2.12 Radiant Heat:** Quick action couplings can be heated to destruction or loss of sealability without contact by such nearby items as hot manifolds or molten metal. The same heat source may then initiate a fire. This can occur despite the presence of cool air around the quick action couplings.

**2.13 Welding and Brazing:** Heating of plated parts, including quick action couplings and port adapters, above 450°F (232°C) such as during welding, brazing, or soldering may emit deadly gases and may cause coupling seal damage.

### 3.0 QUICK ACTION COUPLING INSTALLATION INSTRUCTIONS

**3.1 Pre-Installation Inspection:** Before installing a quick action coupling, visually inspect it and check for correct style, body material, seal material, and catalog number. Before final installation, coupling halves should be connected and disconnected with a sample of the mating half with which they will be used.

**3.2 Quick Action Coupling Halves From Other Manufacturers:** If a quick action coupling assembly is made up of one Parker half and one half from another manufacturer, the lowest pressure rating of the two halves should not be exceeded.

**3.3 Fitting Installation:** Use a thread sealant, lubricant, or a combination of both when assembling pipe thread joints in quick action couplings. Be sure the sealant is compatible with the system fluid or gas. To avoid system contamination, use a liquid or paste type sealant rather than a tape style. Use the flats provided to hold the quick action coupling when installing fittings. Do not use pipe wrenches or a vice on other parts of the coupling to hold it when installing or removing fittings as damage or loosening of threaded joints in the coupling assembly could result. Do not apply excessive torque to taper pipe threads because cracking or splitting of the female component can result.

**3.4 Caps and Plugs:** Use dust caps and plugs when quick action couplings are not coupled to exclude dirt and contamination and to protect critical surfaces from damage.

**3.5 Coupling Location:** Locate quick action couplings where they can be reached for connect or disconnect without exposing the operator to slipping, falling, getting sprayed, or coming in contact with hot or moving parts.

**3.6 Hose Whips:** Use a hose whip (a short length of hose between the tool and the coupling half) instead of rigidly mounting a coupling half on hand tools or other devices. This reduces the potential for coupling damage if the tool is dropped and provides some isolation from mechanical vibration which could cause uncoupling.

### 4.0 QUICK ACTION COUPLING MAINTENANCE INSTRUCTIONS

**4.1** Even with proper selection and installation, quick action coupling life may be significantly reduced without a continuing maintenance program. Frequency should be determined by the severity of the application and risk potential. A maintenance program must be established and followed by the user and must include the following as a minimum:

**4.2 Visual Inspection of Quick Action Couplings:** Any of the following conditions require immediate shut down and replacement of the quick action coupling:

- Cracked, damaged, or corroded quick action coupling parts.
- Leaks at the fitting, valve or mating seal.
- Broken coupling mounting hardware, especially breakaway clamps

**4.3 Visual Inspection All Other:** The following items must be tightened, repaired or replaced as required:

- Leaking seals or port connections
- Remove excess dirt buildup on the coupling locking means or on the interface area of either coupling half.
- Clamps, guards, and shields.
- System fluid level, fluid type and any air entrapment.

**4.4 Functional Test:** Operate the system at maximum operating pressure and check for possible malfunctions and freedom from leaks. Personnel must avoid potential hazardous areas while testing and using the system.

**4.5 Replacement Intervals:** Specific replacement intervals must be considered based on previous service life, government or industry recommendations, or when failures could result in unacceptable downtime, damage or injury risk. See instruction 1.2 above.

# [OFFER OF SALE]

The items described in this document are hereby offered for sale at prices to be established by Parker Hannifin Corporation, Its subsidiaries and its authorized distributors, This offer and its acceptance by any customer("buyer") shall be governed by all of the following Terms and Condition. Buyer's order for any item drscribed in its document, when communicated to Parker Hannifin Corporation, its subsidiary or an authorized distributor("seller") verbally or in writing, shall constitute acceptance of this offer.

**1. Terms and Conditions of Sale:** All descriptions, quotations, proposals, offers, acknowledgments, acceptance and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

**2. Payment:** Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest of 1% for each month or a portion thereof that Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

**3. Delivery:** Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

**4. Warranty:** Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 365 days from the date of shipment to Buyer. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.

NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNERS OR SPECIFICATIONS.

**5. Limitation Of Remedy:** SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANYWAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

**6. Changes, Reschedules and Cancellations:** Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

**7. Special Tooling:** A tooling charge may be imposed for any special tooling, including without limitation, dies, Fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges therefore by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer therefore. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

**8. Buyer's Property:** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by the Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

**9. Taxes:** Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use of other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

**10. Indemnity For Infringement of Intellectual Property Rights:** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or action including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said items, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringement resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

**11. Force Majeure:** Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or supplier, shortages of materials and any other cause beyond Seller's control.

**12. Entire Agreement/Governing Law:** The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Korea. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (22) years after the cause of action accrues.

# Sales Offices

**AE – United Arab Emirates,**  
Abu Dhabi  
Tel: +971 2 67 88 587

**AR – Argentina,** Buenos Aires  
Tel: +54 3327 44 4129

**AT – Austria,** Wiener Neustadt  
Tel: +43 (0)2622 23501-0

**AT – Austria,** Wiener Neustadt  
(Eastern Europe)  
Tel: +43 (0)2622 23501 970

**AU – Australia,** Castle Hill  
Tel: +61 (0)2-9634 7777

**AZ – Azerbaijan,** Baku  
Tel: +994 50 2233 458

**BE – Belgium,** Nivelles  
Tel: +32 (0)67 280 900

**BR – Brazil,** Cachoeirinha RS  
Tel: +55 51 3470 9144

**BY – Belarus,** Minsk  
Tel: +375 17 209 9399

**CA – Canada,** Milton, Ontario  
Tel: +1 905 693 3000

**CH – Switzerland**  
See Germany

**CN – China,** Shanghai  
Tel: +86 21 5031 2525

**CN – China,** Beijing  
Tel: +86 10 6561 0520

**CZ – Czech Republic,** Klecany  
Tel: +420 284 083 111

**DE – Germany,** Kaarst  
Tel: +49 (0)2131 4016 0

**DK – Denmark,** Ballerup  
Tel: +45 43 56 04 00

**ES – Spain,** Madrid  
Tel: +34 902 33 00 01

**FI – Finland,** Vantaa  
Tel: +358 (0)20 753 2500

**FR – France,**  
Contamine-sur-Arve  
Tel: +33 (0)4 50 25 80 25

**GR – Greece,** Athens  
Tel: +30 210 933 6450

**HK – Hong Kong**  
Tel: +852 2428 8008

**HU – Hungary,** Budapest  
Tel: +36 1 220 4155

**IE – Ireland,** Dublin  
Tel: +353 (0)1 466 6370

**IN – India,** Mumbai  
Tel: +91 22 6513 7081-85

**IT – Italy,** Corsico (MI)  
Tel: +39 02 45 19 21

**JP – Japan,** Fujisawa  
Tel: +(81) 4 6635 3050

**KR – South Korea,** Seoul  
Tel: +82 2 559 0400

**KZ – Kazakhstan,** Almaty  
Tel: +7 3272 505 800

**LV – Latvia,** Riga  
Tel: +371 74 52601

**MX – Mexico,** Apodaca  
Tel: +52 81 8156 6000

**MY – Malaysia,** Subang Jaya  
Tel: +60 3 5638 1476

**NL – The Netherlands,**  
Oldenzaal  
Tel: +31 (0)541 585 000

**NO – Norway,** Ski  
Tel: +47 64 91 10 00

**NZ – New Zealand,** Mt Wellington  
Tel: +64 9 574 1744

**PL – Poland,** Warsaw  
Tel: +48 (0)22 573 24 00

**PT – Portugal,** Leca  
da Palmeira  
Tel: +351 22 999 7360

**RO – Romania,** Bucharest  
Tel: +40 21 252 1382

**RU – Russia,** Moscow  
Tel: +7 495 645-2156

**SE – Sweden,** Spånga  
Tel: +46 (0)8 59 79 50 00

**SG – Singapore**  
Tel: +65 6887 6300

**SL – Slovenia,** Novo Mesto  
Tel: +386 7 337 6650

**SK – Slovakia**  
See Czech Republic

**TH – Thailand,** Bangkok  
Tel: +662 717 8140

**TR – Turkey,** Merter/Istanbul  
Tel: +90 212 482 91 06 or 07

**TW – Taiwan,** Taipei  
Tel: +886 2 2298 8987

**UA – Ukraine,** Kyiv  
Tel: +380 44 494 2731

**UK – United Kingdom,**  
Warwick  
Tel: +44 (0)1926 317 878

**US – USA,** Cleveland  
(Industrial)  
Tel: +1 216 896 3000

**US – USA,** Lincolnshire  
(Mobile)  
Tel: +1 847 821 1500

**US – USA,** Miami  
(Pan American Division)  
Tel: +1 305 470 8800

**VE – Venezuela,** Caracas  
Tel: +58 212 238 5422

**ZA – South Africa,**  
Kempton Park  
Tel: +27 (0)11 961 0700

Bulletin 3850-KR/2009



Parker Hannifin Corporation  
**Fluid Connectors, Korea**  
215, Yoosan-Dong, Yangsan, South Korea, 626-230  
Phone : +82 55 371 3300  
Fax : +82 55 389 0111  
E-mail : yslee@parker.com