Carter® Ground Fueling
Underwing Refueling Nozzle

Model 64349

Powering Business Worldwide

Design Concepts

Eaton's Carter brand is the leading manufacturer of nozzles qualified in accordance with SAE AS5877 (MIL-N-5877). Model 64349H underwing refueling nozzle is listed as being qualified on the QPL. The specification defines four nozzles, D-1, D-1R, D-2 and D-2R. The D-1 and D-1R nozzles have an inlet body that includes a 45° elbow. The D-1R is a D-1 with the addition of a hose end regulator. The D-2 and D-2R (includes a regulator) have straight inlets. Both units have a military standard 6-bolt inlet flange in accordance with MS33786-40. In addition, Model 64349 can be purchased with various options to tailor a nozzle to fit the system requirements. These additional options, although widely utilized in the military, are not covered by any particular specification.

New Inlet Option

Model 64349 nozzle is now available with a D-3 inlet coupling that can be changed from the D-1 to the D-2 configuration and vice versa. This can be done without tools simply by swiveling the inlet to the configuration (0-45° and all angles in between) desired.

The new D-3 variable inlet has been approved for use and is listed on the QPL. This option can be procured as option N to the basic nozzle and it would replace either option H or J.

Features

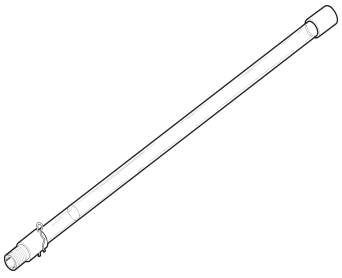
- Easy swiveling under all conditions. Swivel independent of quick disconnect (QD) coupling.
- Connects to 3-lug international standard aircraft adapter (MS24484 or MS29514)
- Lead-in ramps of stainless steel, not aluminum bronze, for longer life
- Self-adjusting pressure loaded nose seal. No mechanical adjustments or springs used. Leak free under extreme side loads, worn adapters and extreme temperatures.
- Nose seal can be changed with minimal disassembly. Arctic nose seal available.
- Positive mechanical interlock prevents fuel flow until nozzle is secured to aircraft adapter. Nozzle can not be disconnected from aircraft until closed.
- Flow control handle fully protected from damage. Two styles available.
- Flow control handles of high strength zinc-aluminum alloy
- Bicycle-type handles for ease of operation. Circular grip also available.
- Lightweight and rugged
- Modular construction. Optional inlet configurations include dry break disconnect and strainer ball valve.
- Hose end regulator and strainers optional
- Two bonding cables, vacuum breaker optional.
- Low pressure drop, under 12 psi (0.827 bar) at 600 USgpm (2,271 l/min)

Special Tools

Specially designed tools are recommended for the maintenance of Model 64349 nozzles.

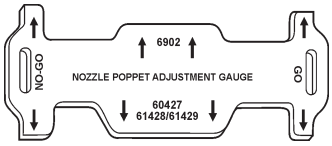
61607
Ball Tool

The ball removal & installation tool is utilized to collect and automatically count the balls used in the swivel joints of the nozzle. It is simple to use and assures that the proper installation is achieved. A minimum of two tools are required for the simplest of nozzle configurations (one for the collar swivel and one for the hose swivel). Three are required for a nozzle having a regulator or a ball valve.



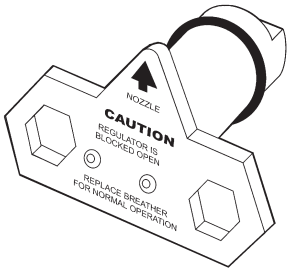
64000
Poppet Adjustment Gauge

This simple inexpensive gauge provides an accurate method of achieving the proper adjustment of the poppet of Model 64349 nozzle. The gauge can be used on all Carter brand underwing nozzles except Models 64200 and 64250. Use gauge 64250ST-1 for these later style nozzles.

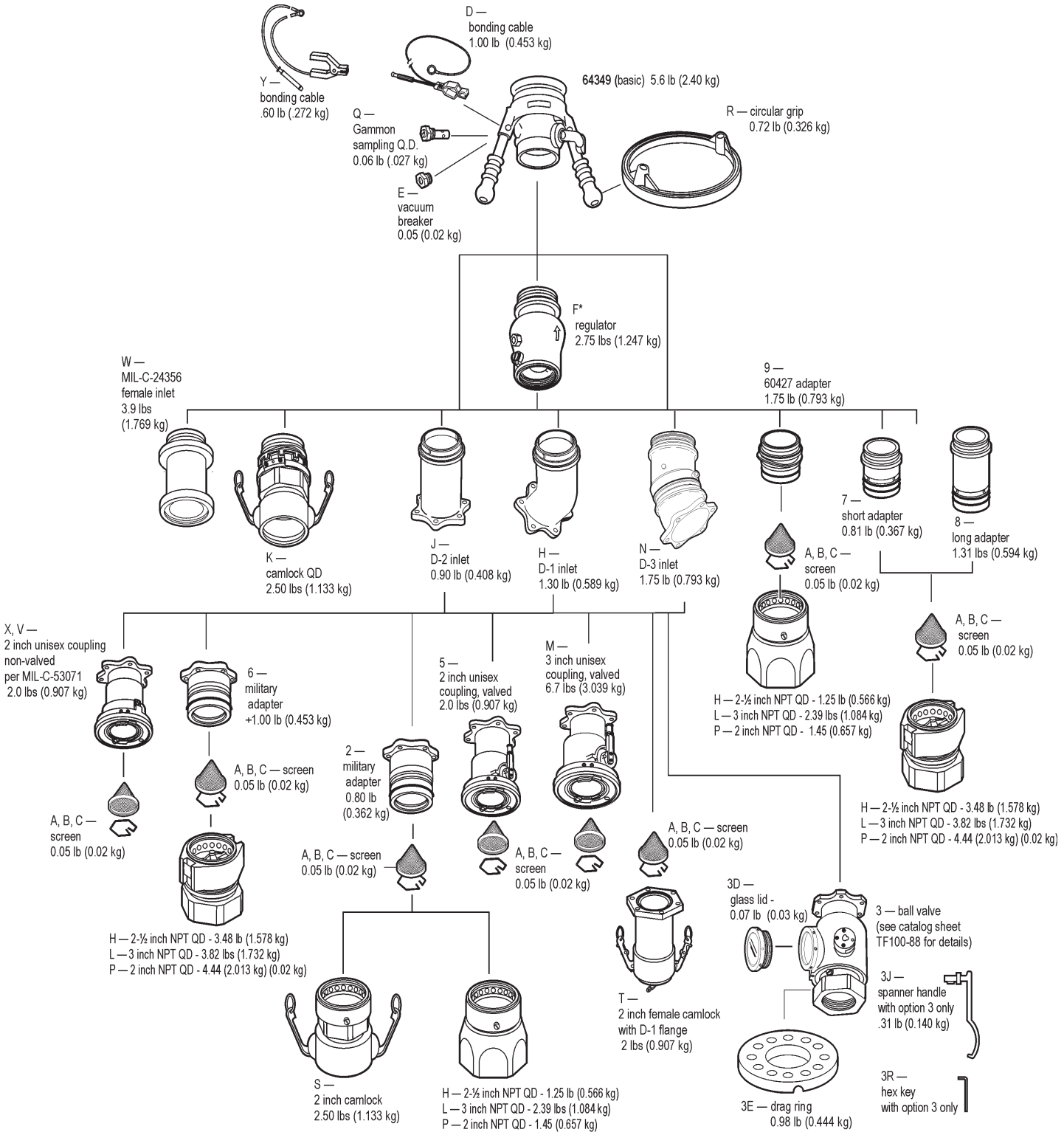


61656
Blockout Device

The blockout device is recommended for use when one defuels through a hose end regulator or it is necessary to check out the secondary pressure control device in a system. The blockout device does not introduce fuel into the ambient port of the regulator which can later become a dangerous spray during operation.



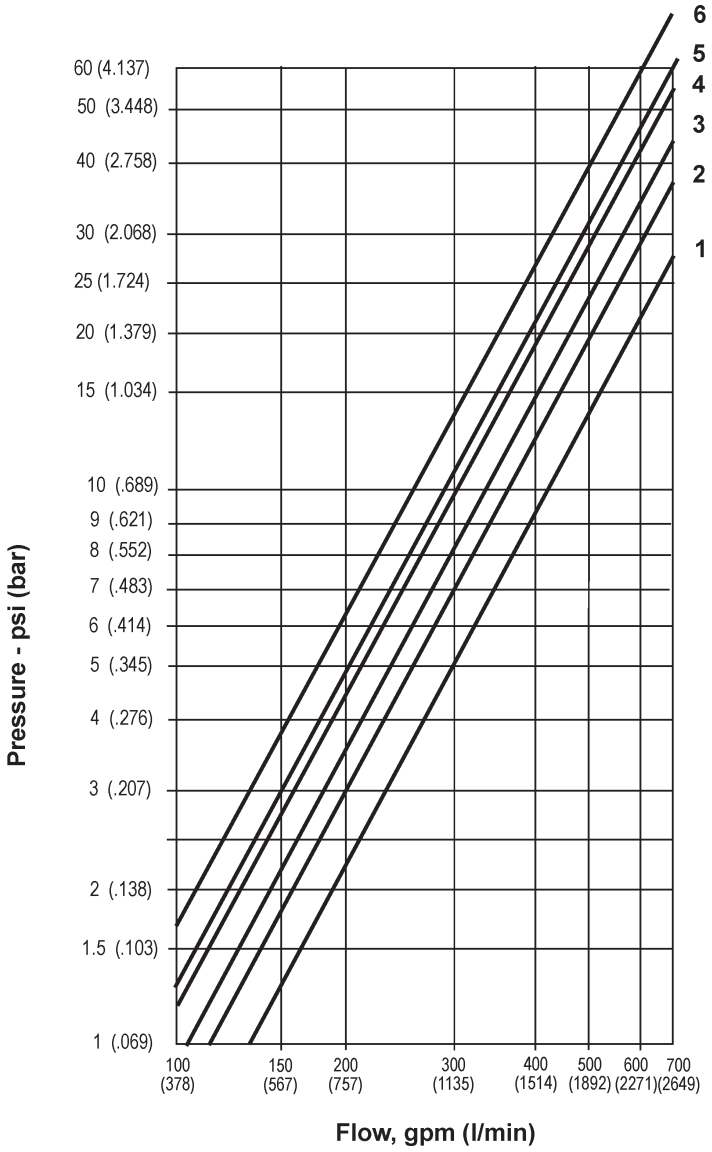
Illustrated Options



Technical Data

Flow Characteristics

The graph below represents typical curves (when nozzle is attached to a standard aircraft adapter).



Curve 1 64349J D-2, 64349H D-1, 64349N D-3

Curve 2 64349H6H D-1 with 61154 dry break

Curve 3 643498H Basic nozzle with 61154 dry break

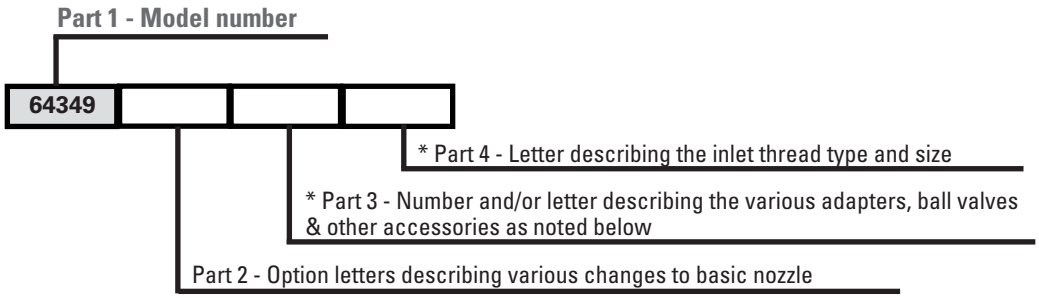
Curve 4 64349F5H6H D-1 with 55 psi (3.792 bar) regulator & 61154 dry break

Curve 5 64349CH6H D-1 with 100-mesh strainer & 61154 dry break, or — 64349F57H D-1 with 55 psi (3.792 bar) regulator & 61154 dry break

Curve 6 64349CF5H6H D-1 with 100-mesh strainer, 55 psi (3.792 bar) regulator & 61154 dry break

Ordering Data

The part number for a complete nozzle consists of four parts as illustrated (right).



* Parts 3 & 4 not applicable for D-1, D-2 or D-3 configurations

Part 2

The following options may be added as part 2 of the part number as indicated above to order a unit to meet your requirements.

Option	Description	Option	Description
*A	Adds 40-mesh screen	J	Adds straight inlet (D-2 Style)
*B	Adds 60-mesh screen	K	Adds QD with 2 inch female camlock inlet
*C	Adds 100-mesh screen	N	Adds D-3 inlet coupling
D	Adds bonding cable	Q	Adds Gammon sampling QD
E	Adds vacuum breaker	R	Adds circular handle grip
F3	Adds 35 psi (2.413 bar) regulator	W	Adds straight inlet per MIL-C-24356
F4	Adds 45 psi (3.103 bar) regulator	Y	Adds extended grounding cable
F5	Adds 55 psi (3.792 bar) regulator	Z	Arctic weather nozzle
H	Adds 45° elbow — D-1 Style		

* Options A, B, & C only available with options V or X or when a male half or a ball valve from part 3 is specified

Part 3

The configuration of the outlet is defined by adding the appropriate number or number and option letter from the table (right) in conjunction with the appropriate option letter from part 4 below. The nozzle may terminate in an adapter half only, if desired. In this case leave part 4 blank. To obtain a female half QD or dry break, or to complete the specification of the ball valve outlet, part 4 must be completed.

Option	Description	Option	Description
2	Adds military male adapter, disconnect	6***	Adds military male adapter, dry break
*3	Adds ball valve to inlet flange. Options D, E, J & R below maybe added with option 3 only	7***	Adds dry break male adapter with option F
D	Adds glass inspection port to ball valve	8***	Adds dry break male adapter without option F
E	Adds drag ring to ball valve	**9	Adds male adapter half to mate 60427 style QD
J	Adds spanner handle	M	Adds 3 inch unisex coupling, valved
R	Adds hex key	V	Adds 2 inch uni-sex coupling, non-valved, green
5	Adds 2 inch unisex coupling, valved	X	Adds uni-sex coupling, non-valved, tan

* The inlet size and configuration option from part 4 must be included in the part number with option 3 to achieve a completed nozzle and ball valve

** Not used with options H, J or N from part 1

*** Safety clip (p/n 210641) for the 61154 dry break QD is considered FOD (Foreign Object Damage) and not included on military nozzle assemblies, howerver, it can be added as a no cost option.

Part 4

One of the following letters must be included as part 4 to specify the inlet thread size.

Option	Description	Option	Description
H	Inlet thread — 2-1/2 inch NPT	P	Inlet thread — 2 inch NPT
*L	Inlet thread — 3 inch NPT	S	2 inch camlock Inlet
		T	2 inch female camlock with locking handle to D1 flange with camlock dust cap

* 3 inch inlet threads not available with option 3 ball valves

Some of the above option letters may be duplicates of those found in part 2. They must be accompanied by a number from part 3 to be effective.

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