MODELS A-7000 & B-8000
SINGLE AND TWO-STAGE FUEL UNITS
INSTALLATION INFORMATION Form 2100-B20 - Ed.4 - 11/12/19

IMPORTANT INFORMATION:

INSTALLATION: This product is compatible with Fuel oil #2 and lighter, B6-B20 (blends from 6% up to 20% biodiesel, per ASTM D396). This product must be installed, adjusted and started only by a qualified and licensed technician and done so in accordance with all appropriate local and national codes and ordinances, such as National Fire Protection Standard for Liquid Fuel Equipment, NFPA 31, CSA B139-M91, etc.

⚠**WARNING: Inlet and Return Line Pressures**
THESE PRESSURES MUST NOT EXCEED 10 PSI, or seal damage can result! NFPA 31 further limits them to 3 PSI MAX.

⚠***AVERTISSEMENT : Pressions de ligne d'entrée et ligne retour***
Ces pressions ne doivent pas dépasser 10 PSI, cela peut remettre en cause l'étanchéité de la pompe, en particulier au niveau du joint d'arbre.
La NFPA limite la pression d'entrée à 3 PSI max.

⚠**WARNING: Check Valves with Fuel Oil Heating Equipment**
Do not use a check valve in the inlet line of a 1-pipe system (with or w/o a boost pump), or in the return line of a 2-pipe system. Check valve flow restriction in a return line can elevate pressures and damage fuel unit seals. Dangerous thermal expansion of oil trapped by an inlet line check valve can create extreme pressures that damage fuel unit seals, fittings, filters, gages and other components. A properly installed vacuum safety valve, such as Suntec PRV-38, having accumulator effect and pressure relief to tank is acceptable in the inlet line.

⚠***AVERTISSEMENT : Clapets anti-retour avec équipement de chauffage au fioul***
Pour une pompe de gavage ou de brûleur (utilisée avec ou sans pompe de gavage), ne pas utiliser de clapet anti-retour dans la ligne d'aspiration d'un système monotube, ou la ligne retour dans un système bitube. La restriction de débit faite par le clapet anti-retour dans la ligne retour peut augmenter la pression et endommager les joints de la pompe. Une dilatation thermique dangereuse de fioul piégée dans la ligne d'entrée par un clapet anti-retour peut conduire à des pressions extrêmes et endommager joints, raccords, filtres, jauges et autres composants de la pompe. Il est possible d'installer dans la ligne d'aspiration une soupape de sécurité sous vide, telle que la PRV-38 de Suntec ayant un effet accumulateur et limiteur de pression dans le reservoir.

GENERAL INFORMATION:

1. Most Model A & B units have a pressure regulating valve with cutoff function and may be mounted in any position except upside down for B models. Models without cutoff require an external shutoff valve (noted on decal).

2. See the 1-PIPE or 2-PIPE section for line sizing.
Lines must be airtight for proper operation. Pipe sealant may be used. DO NOT USE TEFLON TAPE OR COMPRESSION FITTINGS.

3. The unit may be primed with lube oil during start-up.

ONE-PIPE SYSTEM - INLET LINE ONLY (NO RETURN LINE):

⚠**WARNING: DO NOT INSTALL THE BYPASS PLUG! See 1-P sketch below.**
Units are shipped without the bypass plug installed; verify it has not been installed!

⚠***AVERTISSEMENT : NE PAS MONTER LE BOUCHON BY-PASS.*** Voir le schéma en monotube ci-dessous, Les pompes sont livrées sans le bypass monté, vérifier qu'il n'a pas été monté !

Line length formulas are:
3/8" line: L = (6-.75H)/.0086Q and
1/2" line: L = (6-.75H)/.00218Q where
L = line length (ft.) H = head (ft.) Q = firing rate (gph)
NOTE: If tank is above the pump, change the "-" to a "+".
NOTE: Elbows, valves & filters will further reduce line length.
NOTE: It is recommended to avoid 3/8" lines where feasible.
Inlet line joints must be perfectly tight to maintain prime! Max. recommended 1-P lift is 8' from tank bottom to pump. Prime by opening the easy flow bleed valve one turn CCW. Bleed the unit thoroughly until all air bubbles disappear (hurried bleeding may impair operation), then securely retighten the bleed valve.

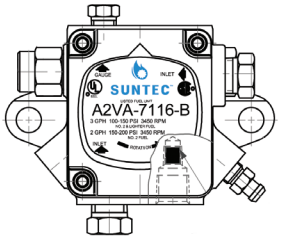
TWO-PIPE SYSTEM - INLET AND RETURN LINE:

REMOVE THE 1/4 NPTF PLUG FROM THE RETURN PORT AND DISCARD.
Then remove the 1/16" bypass plug from the plastic bag attached to the unit and, with a 5/32" Allen wrench, insert it securely into the recessed port inside the return port. Finally, insert the return line fitting into the 1/4 NPTF return port and attach the return line.

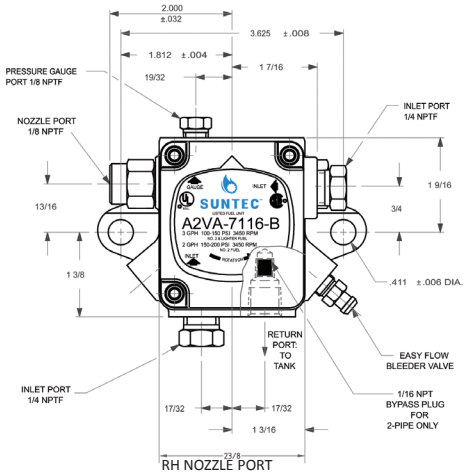
⚠ **WARNING:** DO NOT BLOCK OR RESTRICT THE 1/4 NPTF RETURN PORT OR THE RETURN LINE!

⚠ ***AVERTISSEMENT :*** *NE PAS BLOQUER OU RESTREINDRE LE RETOUR 1/4 NPTF OU LA LIGNE RETOUR !*

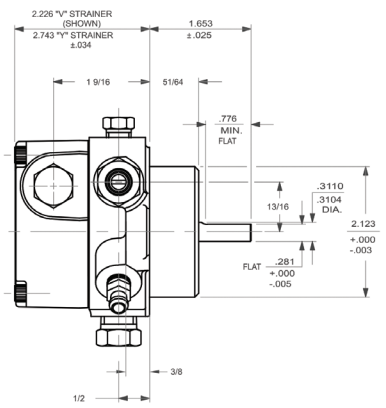
The return line must terminate in the supply tank 3-4" above the supply inlet, or air can be introduced and cause loss of prime.
Priming is automatic, but may be accelerated by opening the bleed valve. See 2-P sketches below and on p. 2, and see the chart on p. 2 for recommended line sizes and lengths.



RH NOZZLE PORT
(RH OR LH ROTATION)
1-PIPE HOOK-UP
(do not install bypass plug!)

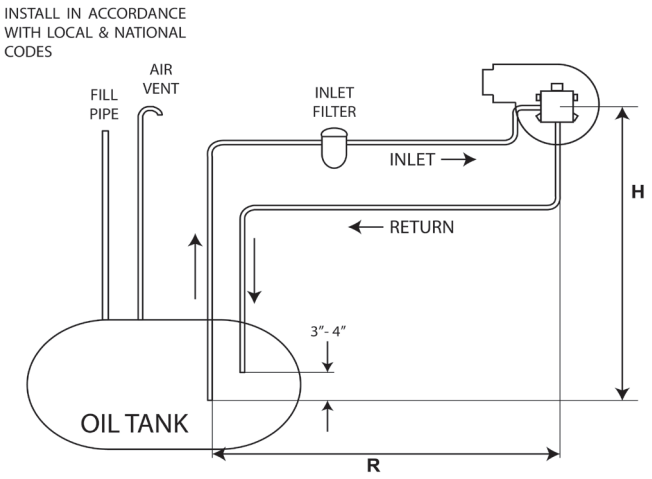


RH NOZZLE PORT
(RH OR LH ROTATION)
2-PIPE HOOK-UP
(do not block 1/4 NPTF return port!)



SIDE VIEW

TWO-PIPE HOOK-UP, INSIDE OR OUTSIDE TANK, FUEL UNIT ABOVE TANK



Pump ID System:

Example: **A 1 V A - 7116 - B**

A - Pump type (1-stage or 2-stage)
- A - single stage
- B - two-stage

1 - Shaft speed
- 1 - 1725 rpm
- 2 - 3450 rpm

V - UL strainer flow rating, #2 fuel
- V - 3 gph
- Y - 7 gph
- T - 23 gph
- G - 34 gph
- R - 30x30 mesh waste oil

A - Rotation/nozzle location *
- A - RH/RH
- B - RH/LH
- C - LH/LH
- D - LH/RH

7116 - Series number

B – B6-B20 : product compatible with fuel blends from 6% up to 20% biodiesel, as defined in ASTM D396. (Blue pad print)

* **NOTE:** rotation (RH = CW) & nozzle location determined by looking at the shaft when unit is oriented with shaft horizontal and decal readable (regulator valve on top).

OPERATING INFORMATION:

Max. Firing Rate: Use the decal nozzle rating, which may be less than the UL strainer rating

Vacuum Check: A vacuum gage may be installed in either 1/4 NPTF INLET PORT. Model A units should be used where the running vacuum does not exceed 6'' Hg single pipe or 12'' Hg two-pipe. Model B units should be used where the running vacuum does not exceed 17'' Hg.

Pressure Check: Use only the 1/8 NPTF GAGE PORT or 1/8 NPTF NOZZLE PORT. DO NOT USE THE EASY FLOW BLEEDER VALVE PORT, as the reading will be too high for nearly all models of this series, resulting in a WRONG operating pressure

Cutoff Pressure: Units having cutoff can be checked by installing a pressure gage directly into the NOZZLE PORT. Run the unit briefly, shut it off and watch for the pressure to drop and then hold above zero.

TWO-PIPE LENGHTS (FT)

(max. total line lenght L=H+R)
(calculated for fuel viscosity 57 SSU)

Inlet Tubing Size	Lift H (Ft.)	-Model A Single Stage-				Model B Two-Stage			
		1725 RPM		3450 RPM		1725 RPM		3450 RPM	
		3 GHP	7 GPH	3 GPH	7 GPH	3 GPH	7 GPH	3 GPH	7 GPH
3/8'' O.D. Copper Tubing	0	86	70	84	71	100	91	93	80
	2	75	60	73	62	100	83	85	73
	4	64	50	63	53	89	75	77	66
	6	54	41	52	44	80	67	69	59
	8	43	32	42	35	70	59	60	52
	10	32	22	31	27	61	51	52	45
	12	21	13	21	18	51	43	44	38
	14	-	-	-	-	41	35	36	31
	16	-	-	-	-	32	27	27	24
	18	-	-	-	-	22	-	-	-
1/2'' O.D. Copper Tubing	0	100	100	100	100	100	100	100	100
	2	100	100	100	100	100	100	100	100
	4	100	100	100	100	100	100	100	100
	6	100	100	100	100	100	100	100	100
	8	100	100	100	100	100	100	100	100
	10	100	90	100	100	100	100	100	100
	12	85	60	83	70	100	100	100	100
	14	42	30	41	35	100	100	100	100
	16	-	-	-	-	100	100	100	100
	18	-	-	-	-	88	74	76	65

All installations should be made in accordance with local and national codes.

⚠**WARNING:** Different aspects of the oil fired heating system can be affected by the use of a fuel/biodiesel blend (storage, piping system between the tank and the burner, burner components).
These units are designed to handle B6 to B20 biodiesel blends (fuel oil according to ASTM D396 with 6% to 20% biodiesel according to ASTM D6751 standard). Ensure that all components of the heating system, supply line and burner components are B20 compatible. Before first start-up, ensure that the oil storage tank has been thoroughly cleaned prior to the biodiesel blend delivery.
Biodiesel blends are likely to have reduced long-term storage stability performance. Aging and oxidation can lead to high acid numbers, high viscosity, and the formation of gums and sediments that may cause filter clogging and pump seizing.

⚠***AVERTISSEMENT:***
Différents aspects du système de chauffage peuvent être affectés par l'utilisation de mélanges composés de biodiesel (stockage, système d'alimentation entre le réservoir et le brûleur, composants du brûleur).
Ces éléments doivent être conçus de manière à être compatibles avec des mélanges B6 à B20 (mazout ed chauffage selon l'ASTM D396 avec 6% à 20% de biodiesel selon la norme ASTM D6751). Il est nécessaire de s'assurer que tous les composants du système de chauffage, de la ligne d'alimentation aux composants du brûleur, soient compatibles au B20. Avant le premier démarrage, vérifier que le réservoir ait été complètement nettoyé avant la livraison du mélange mazout/biodiesel.
Les biodiesels auront probablement une durée de stockage réduite sur le long terme. Vieillissement et oxydation peuvent conduire à des indices d'acide élevés, une importante viscosité, et à la formation de gommes et de sédiments pouvant causer le colmatage du filtre et le grippage de la pompe.

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