INSTALLATION INSTRUCTIONS
OUTSIDE COMBUSTION AIR INTAKE

BECKETT #5753

The outside Combustion Air Intake is designed for use only on R. W. Beckett Corporation Model AF/AFD/AFG oil burners.

It is for use on oil burner installations where it is desirable or necessary that combustion air be ducted from outside.

It is not intended to be used in combination with the Inlet Air Shutoff, RWB Part No. 5861. Make sure there is no Inlet Air Shutoff installed before attaching this accessory.

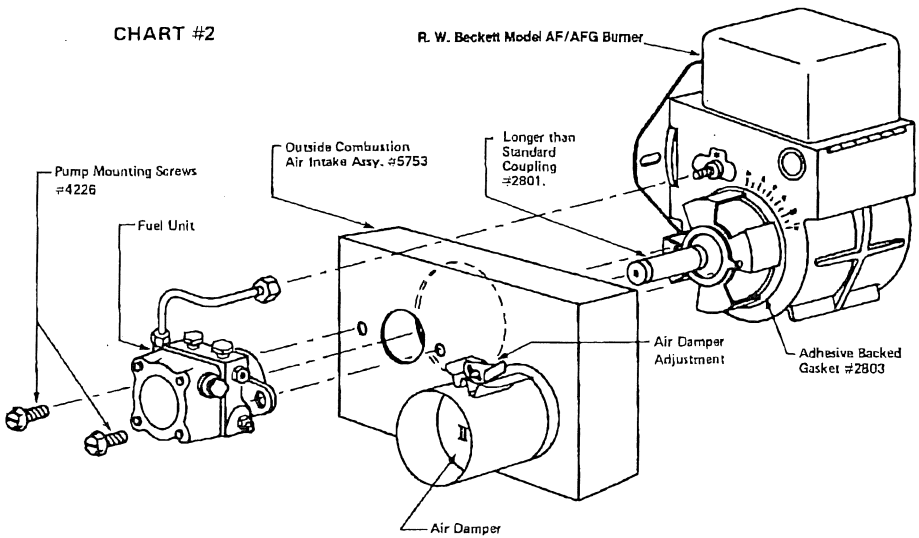
TYPICAL APPLICATIONS

- To reduce the exhausting of heated air from the building.
- To minimize poor stack draft conditions resulting from confined furnace room or exhaust air fans.
- Environments of excessive dust or lint.
- Combustible vapor environments.

FEATURES

- Simple attachment to the burner.
- Self contained combustion air control.
- Installed as an integral part of the burner.
- Completely assembled. Can be either factory or field installed.
- Compact size.
- U/L listed for use on the AF/AFD/AFG burners.

CHART #2



INSTALLATION INSTRUCTIONS

Installation should be done only by service personnel familiar with installation, operation and venting of fuel burning appliances.

The instructions under "Typical Installations" shall be followed. Improper installation can result in adverse burner operation which could create a hazardous condition.

When the combustion air intake is used, the following maximum and minimum firing rates must be used with each burner model and combustion head.

AF/AFG Air Tube Comb.		XZ/DR	XN/DY	YB/DB	XO/DO	XP/DP	XS
Burner Head AF/AFG		F0	F3	F6	F12	F22	F30
Minimum Rate—GPH	AF/AFG	.40	.75	.85	1.10	1.65	2.25
Maximum Rate—GPH	AF/AFD	.75	1.10	1.35	1.75	2.00	2.50
Maximum Rate—GPH	AFG	.75	1.25	1.65	2.00	2.50	2.50

Instructions for field installation of the combustion air intake on the AF/AFG burner. See Chart #2.

1. Disconnect the oil lines and remove the fuel unit.
2. Remove and discard the air shutter and air band.
3. Remove the fuel unit coupling and replace with the new longer coupling #2801.
4. Remove the protective backing from the urethane foam gasket and install the gasket on the flat side of the housing around the air intake section. See Chart #2.
5. Place the combustion air intake assembly over the burner housing assembly and into the burner housing. Make certain the fuel unit shaft engages the coupling correctly. Fasten the fuel unit and the air intake assembly to the burner housing with the two 1-1/4 x 1/4 screws #4226.
6. Reconnect the oil lines.
7. Connect the combustion air supply duct to the air intake assembly with sheet metal screws. Holes are provided in the air intake assembly for this purpose.

COMBUSTION AIR SUPPLY

The oil burner requires that the proper amount of combustion air be available to burn the fuel cleanly and efficiently. An inadequate combustion air supply can result in erractic operation of the burner, sooting of the heating appliance and possible fuel odors.

The combustion air intake must be connected to a source of air with an adequate diameter of smooth round duct. Use Chart #1 as a guide for determining the minimum allowable duct size in relationship to the burner head required for the appliance input.

TYPICAL INSTALLATIONS

The preferred location of the combustion air intake duct is through the side of the building on residential applications. The top of the chimney will be much higher than the combustion air intake opening. The difference in height prevents the possible reversal of the flue gas products during the off period of the burner.

On industrial applications, it is generally better to bring the combustion air intake through the roof. If the combustion air enters through the roof, it must terminate at least 12" below the top of the chimney.

A vent cap of the Breidert type must be installed on the combustion air intake duct where it terminates outside the building. One also must be installed on the chimney top. This is necessary to reduce the draft variables caused by wind velocity and to prevent moisture from entering the duct and the chimney.

Use Chart #3 as a guide for installation of the combustion air intake duct and vent caps.

NOTE: Remove barometric damper from the appliance flue pipe and replace with a section of the correct size flue pipe. Make certain that there is a 1/4" diameter hole in the flue pipe so that the combustion efficiency can be determined

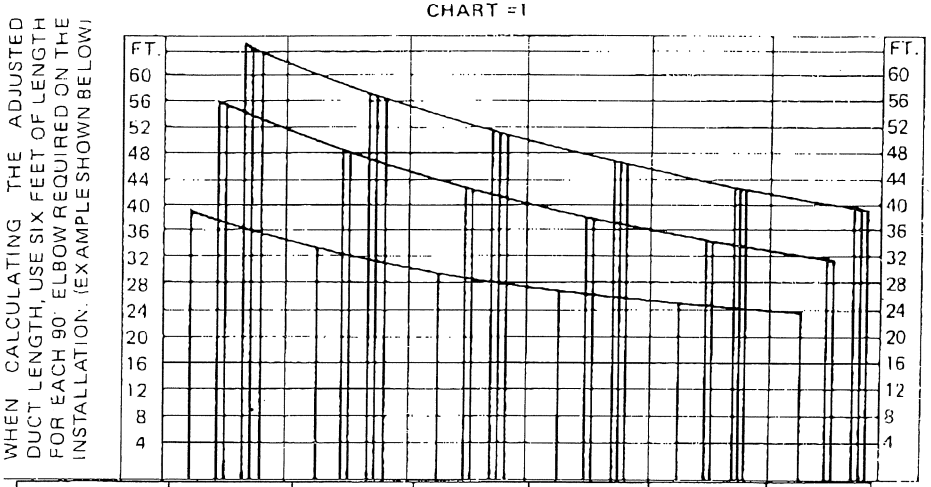
FINAL ADJUSTMENTS

After the installation is completed and before the burner is operated, open the air damper to its wide open position.

After allowing ten minutes for the heating appliance to warm up, the air damper should be set so that the smoke number is zero to a trace. The CO_2 measured in the stack should be at least 9% for oil rates 1.0 GPH or less and 10% for rates over 1.0 GPH. Be sure to tighten the lock screw on the air damper. On the lower firing rates and with short combustion air duct lengths, it may be necessary to partially close the air damper in order to operate the burner.

Check for oil leaks.

CHART =1



DUCT DIA.	4 5 6	4 5 6	4 5 6	4 5 6	4 5 6	4 5 6
HEAD	F0/F07	F3/F37	F6/F67	F12/F127	F22/F227	F30

Chart shows the maximum adjusted length of round smooth duct for each burner head.
NOTE: This chart cannot be used for flexible, spiral or corrugated duct

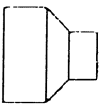
NOTE: EXAMPLE SHOWN BELOW MAXIMUM ADJUSTED FEET OF DUCT PERMITTED.

Example of Adjusted Duct Lengths: One 18' and one 6' length of straight duct with two 90° elbows.

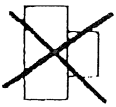
Straight Run – 18'
Straight Run – 6'
One 90° Elbow 6'
One 90° Elbow 6'
Adjusted Feet – 36'

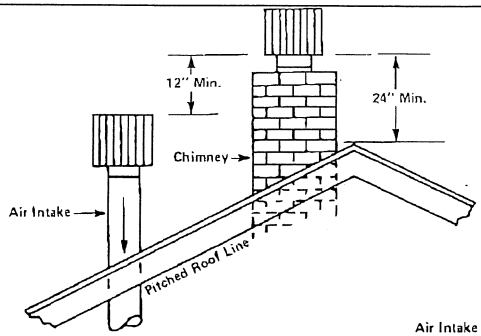
When larger than 4" duct is required, the transistion must be attached to the combustion air intake on the burner.

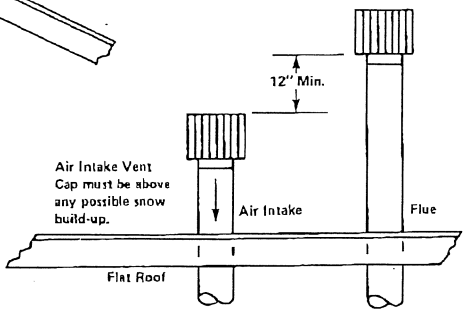
USE THIS TYPE OF TRANSISTION



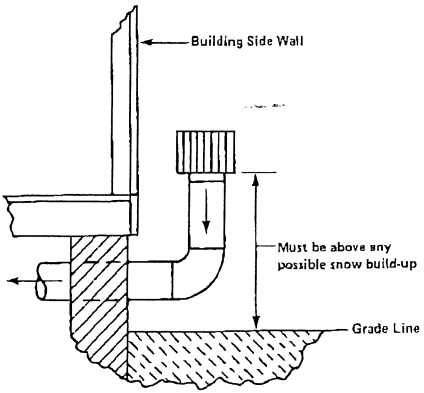
DO NOT USE THIS TYPE.







Chimney and combustion air intake must have **Breidert** type vent caps installed to prevent down drafts or excessively high chimney drafts. Vent caps must be the same size as the air intake duct and the chimney.



The information contained herein is general and not intended to cover any specific installation. Each installation must be evaluated on its own particular conditions.