

COMFORTMAKER - GUK UPFLOW

MODEL NUMBER:	GUK050A012	GUK100A016
	GUK075A012	GIL1251A020

BTU SIZES:	50,000 - 75,000 - 100,000 - 125,000 BTU'S
-------------------	---

ACCESSIBILITY CLEARANCE

30" clearance is recommended for servicing and access.

CLEARANCE FROM COMBUSTIBLE MATERIAL

Top - 1"	Back - 0"
Bottom - 0"	Front - 3"
RH - 0"	Flue - 0"
LH - 0"	

COLD AIR RETURN AIR DUCTS

Side or bottom return only.
Duct must terminate outside the space with NO holes on inlets in furnace space.

GARAGE

Burners and ignition

GENERAL

Direct vent model does not require ventilation air.

HIGH ALTITUDE INSTALLATIONS

Deration	See deration charts in Resource Manual (deration)
-----------------	---

Orifice	Orifice change (do not peen)
----------------	------------------------------

Regulator Pressure	Depends on altitude, check your Resource Manual (deration)
---------------------------	--

Pressure Switch	Needs high altitude pressure switch above 4000'
------------------------	---

MOBILE HOME

Not approved for mobile homes, trailers, or recreation vehicles.

VENTING MATERIAL AND REQUIREMENTS

Vent Pipe

PVC / CPVC / ABS / Cellular core Schedule 40
ANSI / ASTM standards - ASTM D1785, D2466, D2661, D2665, F-891

Vent Fittings

Elbows are DWV long radius type for 2" and 3" vents. Schedule 40 (sharp radius) for 2 1/2" pipe.

Maximum pipe length 40 feet up to five 90° elbows - see Table 1 - minimum pipe length 5 feet. The vent outlet must terminate in the same atmosphere pressure zone as the combustion air inlet. Inlet and outlet pipes may not be vented directly above each other.

VENT CLEARANCE FROM COMBUSTIBLE MATERIAL

0"

Vent termination - see Figures 14, 15, and 16.

VENTING PROCEDURE

Vent 1 1/4" slope upwards from furnace, horizontal pipe support every 5 feet, vertical every 6 feet. Use RTV sealant on joints connecting to combustion blower and air inlet pipe furnace.

MISCELLANEOUS INFORMATION/NOTES

Models designated for natural gas only are to be used for natural gas only.

Set heat anticipator with amp meter or probe.

Vent Termination Clearances

WARNING

Carbon monoxide poisoning, fire and explosion hazard.

Inlet and outlet pipes may NOT be vented directly above each other.

Failure to properly vent this furnace can result in property damage, personal injury and/or death.

1. Determine termination locations based on clearances specified in following steps and as shown in Figure 11, Figure 14, Figure 15, Figure 16.
2. The vent termination must be located at least 12 inches(300mm) above ground or normally expected snow accumulation levels.
3. Do NOT terminate over public walkways. Avoid areas where condensate may cause problems such as above planters, patios, or adjacent to windows where steam may cause fogging.
4. The vent termination shall be located at least 4 feet(1220mm) horizontally from any electric meter, gas meter, regulator, and any relief equipment. These distances apply ONLY to U.S. installations.
5. The vent termination is to be located at least 3 feet(914mm) above any forced air inlet located within 10 feet(3m) ; and at least 10 feet(3m) from a combustion air intake of another appliance, except another direct vent furnace intake.
6. In Canada, the *Canadian Fuel Gas Code* takes precedence over the preceding termination instructions. See *Appendix*.

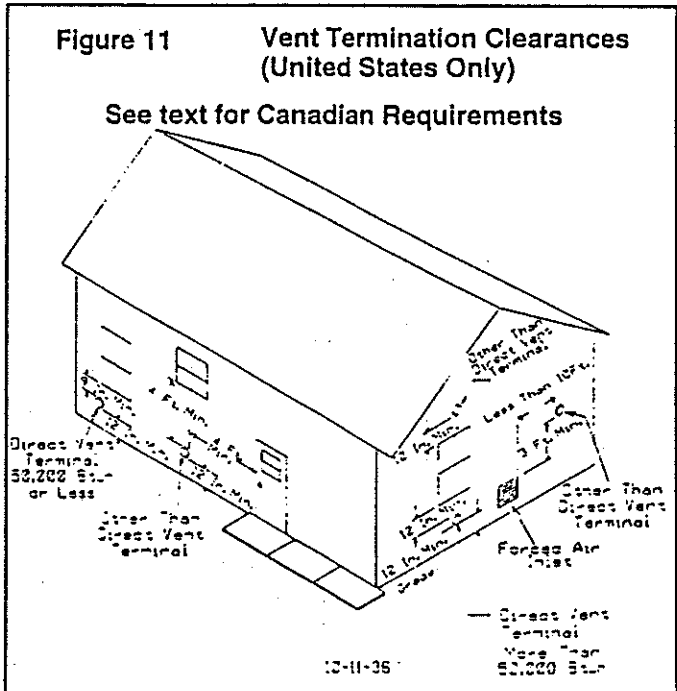


Table 1		Pipe Diameter Table Dual Piping ONLY						
50,000 Btuh Furnace								
Max No. Of Elbows on a Side S	Feet of Pipe*							
	0-9	10-14	15-19	20-24	25-29	30-34	35-40	
UP TO 5	All combinations use "A" a 2" Ex- haust and 2" Air Inlet Pipe							
75,000 Btuh Furnace								
Max No. Of Elbows on a Side S	Feet of Pipe*							
	0-9	10-14	15-19	20-24	25-29	30-34	35-40	
1	A	A	A	A	D,B	E,B	E,B	
2	A	A	A	D,B	E,B	E,B	C,F	
3	A	A	D,B	E,B	E,B	C,F	C,F	
4	A	D,B	E,B	E,B	C,F	C,F	C,F	
5	D,B	E,B	E,B	C,F	C,F	C,F	C,F	
100,000 Btuh Furnace								
Max No. Of Elbows on a Side S	Feet of Pipe*							
	0-9	10-14	15-19	20-24	25-29	30-34	35-40	
1	A	A	A	D,B	E,B	E,B	C,F	
2	A	A	D,B	E,B	E,F	C,F	C,F	
3	A	D,B	E,B	E,F	C,F	C,F	C,F	
4	D,B	E,B	E,F	C,F	C,F	C,F	C,F	
5	E,B	E,F	C,F	C,F	C,F	C,F	C,F	
125,000 Btuh Furnace								
Max No. Of Elbows on a Side S	Feet of Pipe*							
	0-9	10-14	15-19	20-24	25-29	30-34	35-40	
UP TO 5	All combinations use "F" a 3" Ex- haust and 3" Air Inlet Pipe							
<p>Possible combination legend:</p> <p>A = 2" Inlet with a 2" Exhaust</p> <p>B = 3" Inlet with a 2" Exhaust</p> <p>C = 3" Inlet with a 2 1/2" Exhaust</p> <p>D = 2 1/2" Inlet with a 2" Exhaust</p> <p>E = 2 1/2" Inlet with a 2 1/2" Exhaust</p> <p>F = 3" Inlet with a 3" Exhaust</p> <p>Elbows are DWV Long Radius Type for 2" and 3" vents. Schedule 40 (sharp radius) for 2 1/2"</p>								

Using Exterior Risers

1. Install elbows and pipe to form riser as shown in Figure 16.
2. Secure vent pipe to wall with galvanized strap or other rust resistant material to restrain pipe from moving.
3. Insulate pipe with Armaflex or equivalent moisture resistant closed cell foam insulation or Fiberglass insulation if boxed in and sealed against moisture.

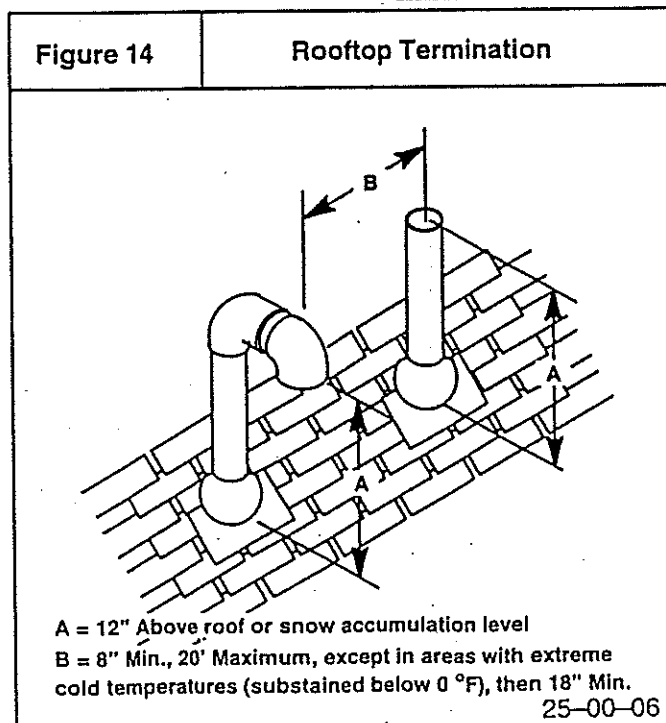
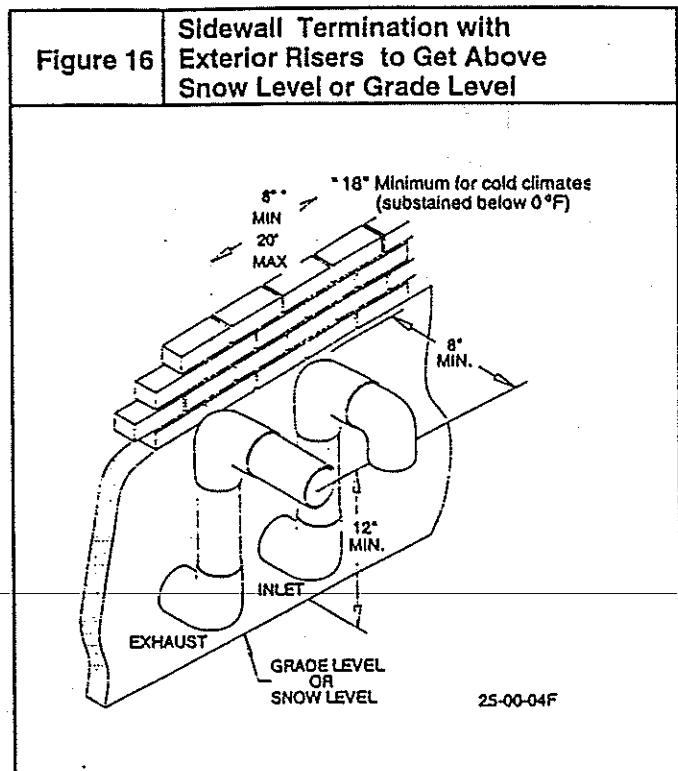
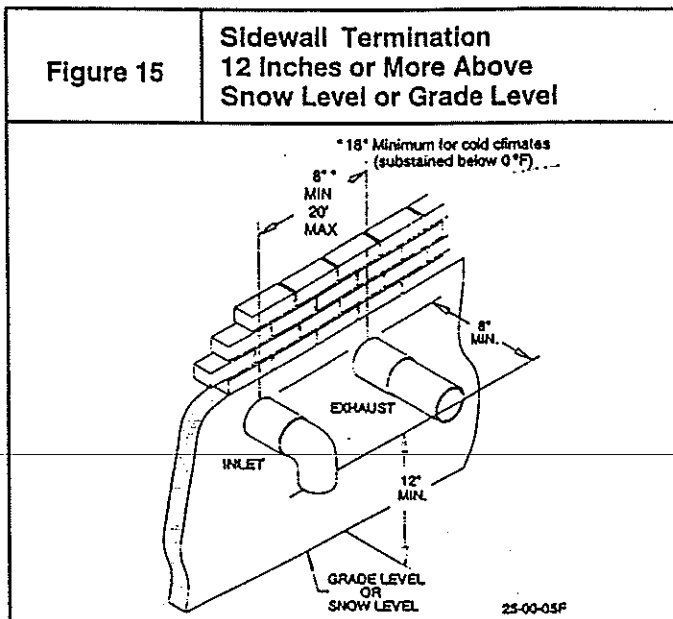
Optional Vent Screens

To prevent unwanted pests or foreign material from entering terminated pipes, plastic vent screens are available in 2" and 3" sizes. Use of these screens is recommended except in cold climate areas where ice is likely to form on them. Glue the screen inside the termination elbow using pipe cement. Screens should be inspected monthly for blockage and cleaned yearly prior to startup.

Vent Termination Shielding

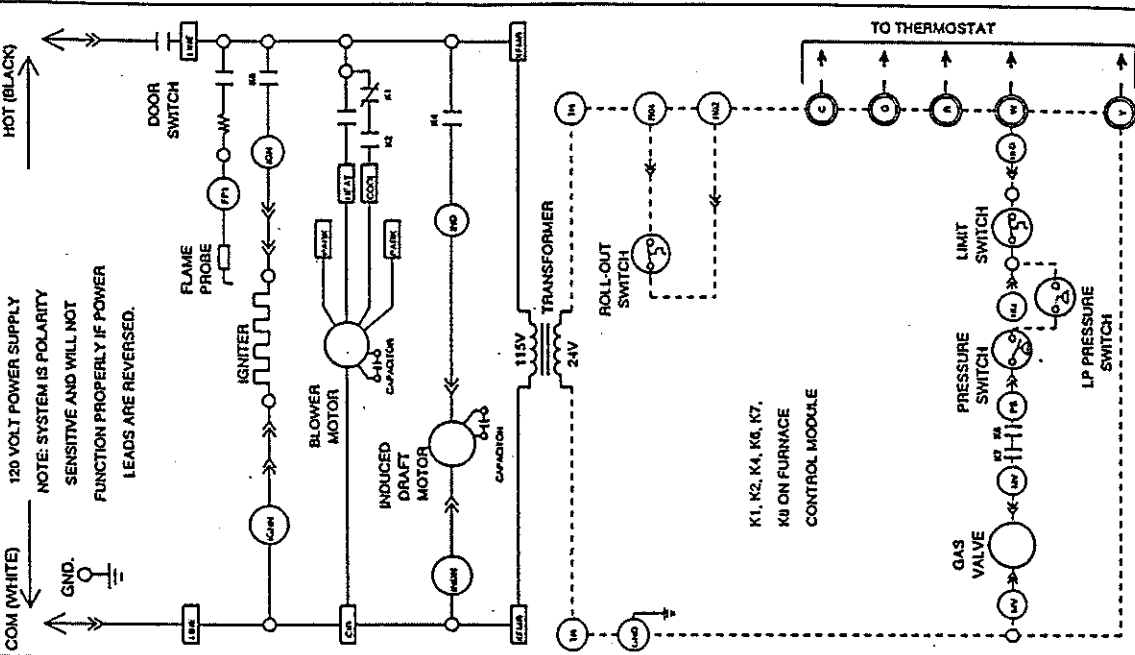
Under certain wind conditions some building materials may be affected by flue products expelled in close proximity to unprotected surfaces. Sealing or shielding of the exposed surfaces with a corrosion resistant material (such as aluminum sheeting) may be required to prevent staining or deterioration. The protective material should be attached and sealed (if necessary) to the building before attaching the vent terminal.

A metal shield is recommended 18" x 18" (457mm x 457mm) min. or 18" (457mm) min. diameter around the vent termination at the exterior wall to protect the house exterior materials from flue product or condensation (freezing) damage.



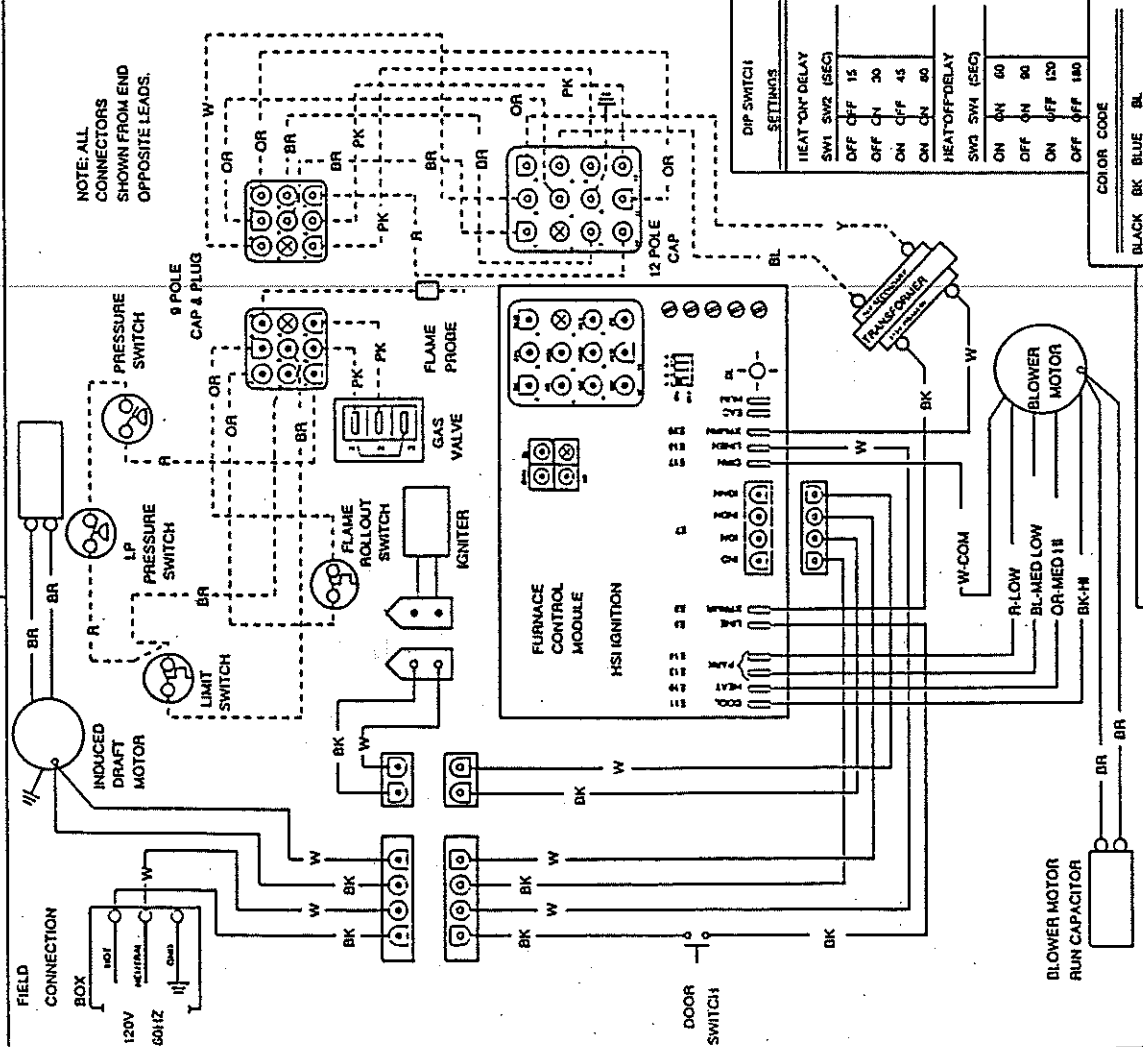
Wiring Diagram

LADDER DIAGRAM



IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE APPLIANCE MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE ANW-105°C-464 INSULATION WIRE OR ITS EQUIVALENT.

CONNECTION DIAGRAM



DIP SWITCH SETTINGS	
HEAT ONY DELAY SW1 SWR (SEC)	OFF OFF 15
	ON ON 30
HEAT OFF DELAY SW2 SWH (SEC)	ON ON 45
	ON ON 60
	ON ON 90
	ON OFF 120
	OFF OFF 180

COLOR CODE	
BLACK	BK
BLUE	BL
BROWN	BR
GREEN	G
ORANGE	O
RED	R
VIOLET	V
WHITE	W
YELLOW	Y
	PK

— LINE VOLTAGE FACTORY
 - - - - - LINE VOLTAGE FIELD
 - - - - - LOW VOLTAGE FACTORY
 - - - - - LOW VOLTAGE FIELD

*SEE TABLE IN MANUAL FOR C.F.M. VS. E.S.P. TO DETERMINE PROPER HEATING AND COOLING SPEED CONNECTIONS.

Optional Equipment

NOTE: All wiring (except thermostat) from furnace to optional equipment **MUST** conform to the temperature limitations of local codes or, in the absence of local codes, with the electrical codes of the country having jurisdiction. See Appendix. Install wiring in accordance with manufacturer's instructions.

Humidifier/Electronic Air Cleaner

The furnace is pre-wired for humidifier and/or electronic air cleaner connection.

CAUTION

Do **NOT** exceed 115V/1.0 amp maximum current load for both the EAC terminal and the HUM terminal combined.

1. For connection of a humidifier, connect the spade terminal wires of the humidifier to the HUM and HUM Neutral.
2. For connection of an electronic air cleaner, connect the spade terminal wires of the humidifier to the EAC and EAC Neutral.

NOTE: The humidifier will be powered when the combustion blower is energized. The electronic air cleaner will be powered anytime the thermostat calls.

Wiring for Air Conditioning

1. Replace heating only thermostat and cable with heat/cooling thermostat and 4-wire thermostat cable if required.
2. Connect from W, G, R and Y on thermostat to W, G, R and Y on furnace low voltage terminal board.
3. Connect wires from contactor on condensing unit to Y and C on furnace low voltage terminal board.
4. Follow all instructions with condensing unit and evaporator coil.

NOTE: The furnace electronic fan control will change fan speeds automatically as heat and cool are selected at the thermostat.

Fan Control

NOTE: The fan control can be set to turn ON at 15, 30, 45, 60 seconds after the burners light. It can be adjusted to turn OFF at 60, 90, 120, and 180 seconds. Refer to Figure 27.

Operate the furnace and ensure that the blower turns ON and OFF at the appropriate time to provide the desired comfort level.

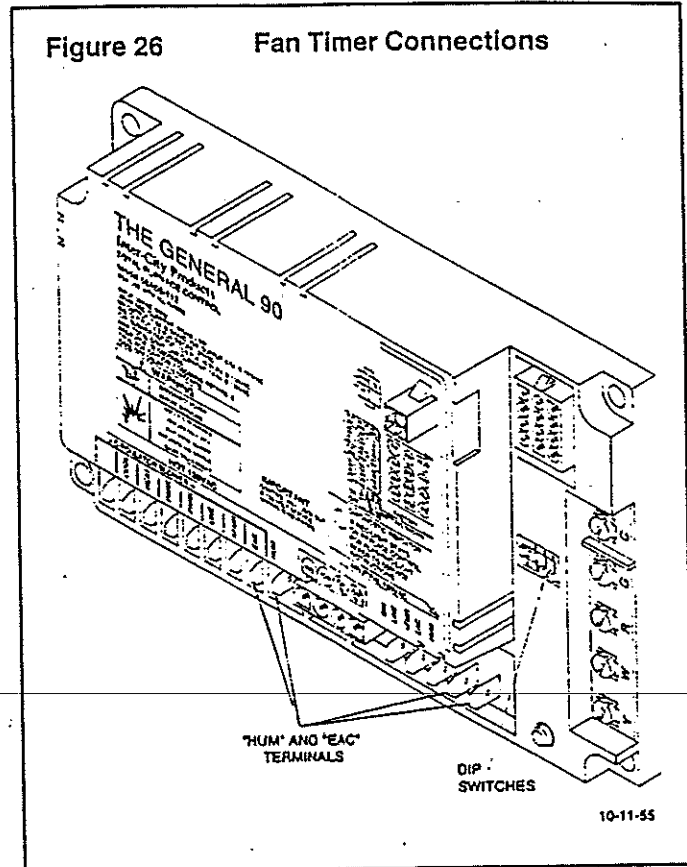
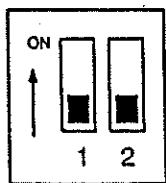


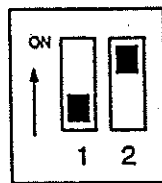
Figure 27

Fan DIP switch Settings

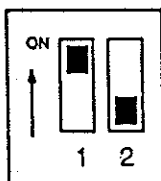
Fan ON Delay DIP switch Settings



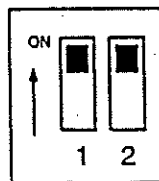
15 Sec.



30 Sec.

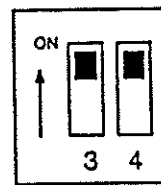


45 Sec.

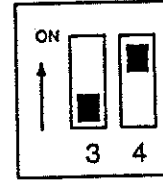


60 Sec.

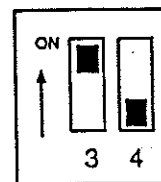
Fan OFF Delay DIP switch Settings



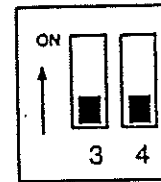
60 Sec.



90 Sec.



120 Sec.



180 Sec.