BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G96.120.1
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AT&TCo Standard

ENGINE DRIVEN BLOWER
(AT-C 158X)

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1. GENERAL

1.01 This section replaces Issue 2. It covers the operation and maintenance of the United States Motors Corporation engine driven blower used primarily for ventilating manholes. It has been completely rewritten to change the method of operation as well as cover the availability of an LP-Gas Engine.

1.02 The amount of air required to adequately ventilate a manhole depends primarily upon the size of the manhole and its atmospheric condition both before and during ventilation. The Air Damper Control Lever permits rapid purging of a manhole with a large volume of air as well as making it possible to use a smaller volume of air while working in the manhole.

1.03 The precautions, operation and maintenance of the 4-cycle engines used to drive the blower fan are covered in other sections of the Practices. Section G96.010.1 covers the gasoline engine and G96.010.2 covers the propane engine.

1.04 Detailed instructions about the use of the Blower Hose to be used with this unit are covered in G96.130.1.

2. PRECAUTIONS

2.01 **Do not operate this unit in an enclosure unless there is full ventilation, and never operate or store it in a manhole. When operating the unit in the vicinity of a manhole, locate it so the fumes will not blow into the manhole.**

2.02 The blower should not be operated if leaks are detected in exhaust piping or muffler as exhaust gases may be picked up by the blower fan and blown into the manhole.

2.03 Never operate the blower with the air intake screen removed from the housing.

2.04 Locate the blower so that it will not be subject to damage, obstruct traffic or be hazardous to pedestrians.

2.05 **Never lower a blower hose in a manhole or leave it in a manhole unless the blower is operating.** Failure to follow this procedure may contribute to an explosion.

3. DESCRIPTION

3.01 A 4-cycle engine provided with a rewind starter is used to drive a squirrel cage type fan enclosed in a sheet metal housing. The volume of air output is controlled by means of a damper located in the air outlet and a speed control lever mounted on the carrying handle for varying the engine speed between 2000 and 2600 r.p.m. The unit is provided with three cylindrical rubber feet attached to a U-shaped base to prevent creepage and minimize vibration. A special muffler reduces the exhaust noise to a low level.

3.02 The rated air output at the end of a connected standard flexible blower hose, the blower hose size, and the weight and size of the portable blower are shown below:

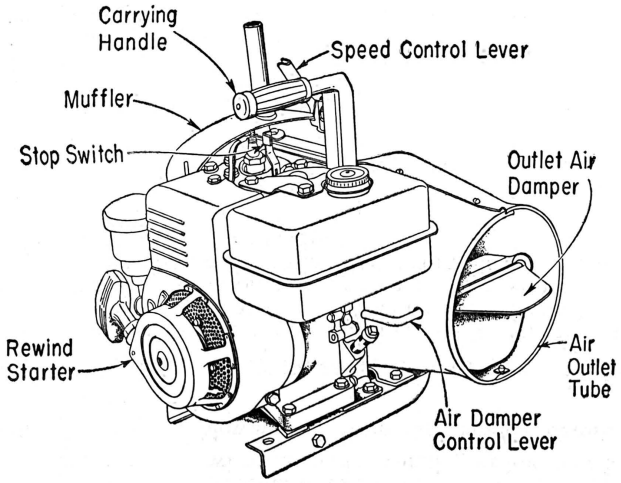
Rated Air Output (Cubic Feet per Min.)	Blower Hose Size (Length × Dia.)	Approximate Weight	Overall Dimensions (Inches)		
			Length	Width	Height
300-800	15 feet × 8 inches	42 pounds	18	15-1/4	17-1/2

3.03 The following safeguards are provided to eliminate possibilities of exhaust gases being picked up by the blower fan and blown into the manhole:

(a) Leak resistant exhaust system.

(b) Vertical tail pipe to direct the exhaust gases away from the unit.

3.04 The general appearance of the United States Motors manhole blower and the various parts referred to in this section are shown in the following sketch.



4. OPERATION

4.01 Prepare the engine in accordance with the instructions outlined in the sections covering 4-cycle engines.

4.02 Place the unit on a firm level base at least three feet from the manhole opening and in accordance with the safety precautions outlined in Part 2 of this Practice.

4.03 Attach the blower hose to the air outlet tube of the blower by slipping the end of the hose, which is equipped with a strap type clamp, over the air outlet tube and pulling the strap tight to hold the hose in place. **(Caution: Do not drop the end of the blower hose into the manhole until Paragraph 4.08 is reached.)**

4.04 A section of hose is 15 feet long; if one section is not long enough for the particular conditions, two sections may be connected together. For detailed information on the handling of blower hose, refer to the section of these Practices entitled "Manhole Blower Hose."

4.05 Set the speed control lever (hand throttle) in the low speed position and start the engine with the rewind starter.

4.06 Permit the engine to warm up and then slowly increase the engine speed with the speed control lever until maximum governed speed is reached.

4.07 **Let the blower run for a minute with the Outlet Air Damper open and with the hose out of the manhole.** Check the end of the hose to see that the blower unit is operating properly and that the hose is securely attached to the Air Outlet Tube.

4.08 After the blower has operated for at least a minute, lower the blower hose into the manhole. Adjust the position of the blower so that the hose will run directly into the manhole without any unnecessary bends and so that the end of the hose will hang at the desired level above the manhole floor.

4.09 The volume of air delivered by the blower depends on the engine speed and the position of the Outlet Air Damper in the Air Outlet Tube of the blower. With the engine running at maximum governed speed and the damper in the open position, the air output is about 800 cubic feet per minute. Lesser amounts of air are obtained as follows:

(1) Reduce engine speed to lowest speed setting at which point approximately 500 cubic feet of air per minute are delivered (Outlet Air Damper open).

(2) Close damper by means of the damper control lever. Volume of air is reduced to approximately 300 cubic feet of air per minute with the engine running at low speed.

4.10 Remove the blower hose from the manhole **before** the blower is turned off.

5. LUBRICATION, MAINTENANCE, AND STORAGE

5.01 Only the 4-cycle engine requires lubrication and when it is expected that the manhole blower will not be used for a period of 30 days or more the engine fuel system should be drained in accordance with instructions in the sections of the Practices covering 4-cycle engines.