



TRADE AND COMMERCE  
CANADA

S-GA.298

STANDARDS DIVISION

OTTAWA July 17, 1964.

TYPE APPROVAL

ROCKWELL SERIES "G" 6-INCH GAS TURBO-METER

The apparatus specified and illustrated herein has been duly approved by the Standards Branch under the provisions of the Gas Inspection Act, Chapter 129, R.S. 1952, and may be admitted to verification in Canada.

Apparatus Approved: Series "G" 6-Inch Gas Turbo-Meter manufactured by Rockwell Manufacturing Company, Dubois, P.A., U.S.A., and distributed in Canada by Rockwell Manufacturing Company of Canada, Ltd., Guelph, Ontario.

Rating of Apparatus: Rated Capacity ..... 30,000 Cu. ft/hr.  
Maximum Working Pressure 125 p.s.i.  
Connections ..... 6" flange

Description: The turbo-meter measures gas by utilizing the basic principle of a turbine.

It is an "in line" mounted meter consisting of two main assemblies: 1) the body and 2) the removable internal assembly.

Two essential parts contained in the body are a) a nose cone, located at the entrance to the meter and b) the braking mechanism consisting of two semi-annular hinged plates, spring linkages and a brake shoe. The plates are installed in the circular ring section downstream from the turbine.

The internal assembly contains the measuring mechanism which is composed essentially of the following:

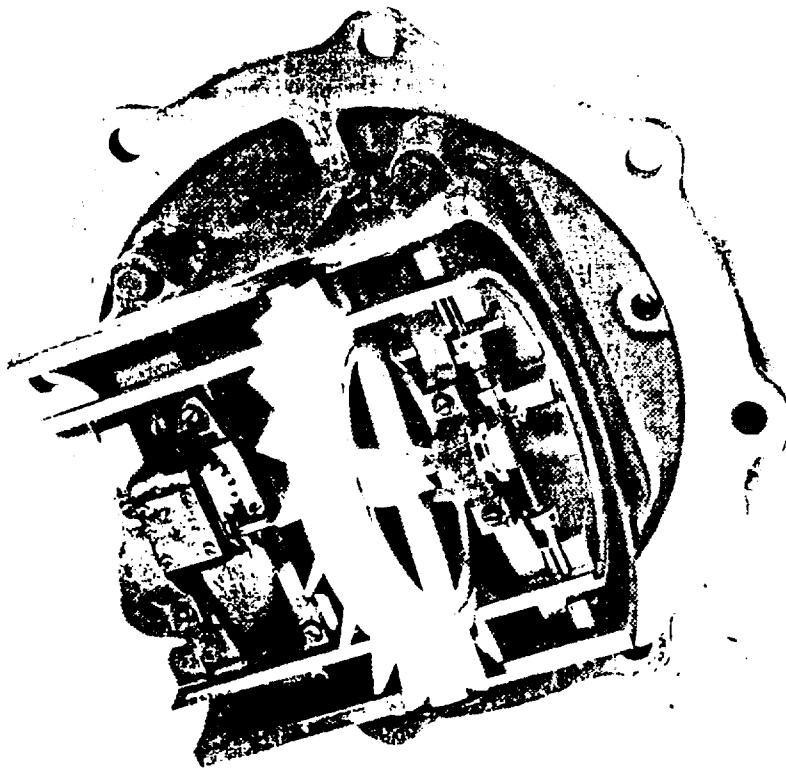
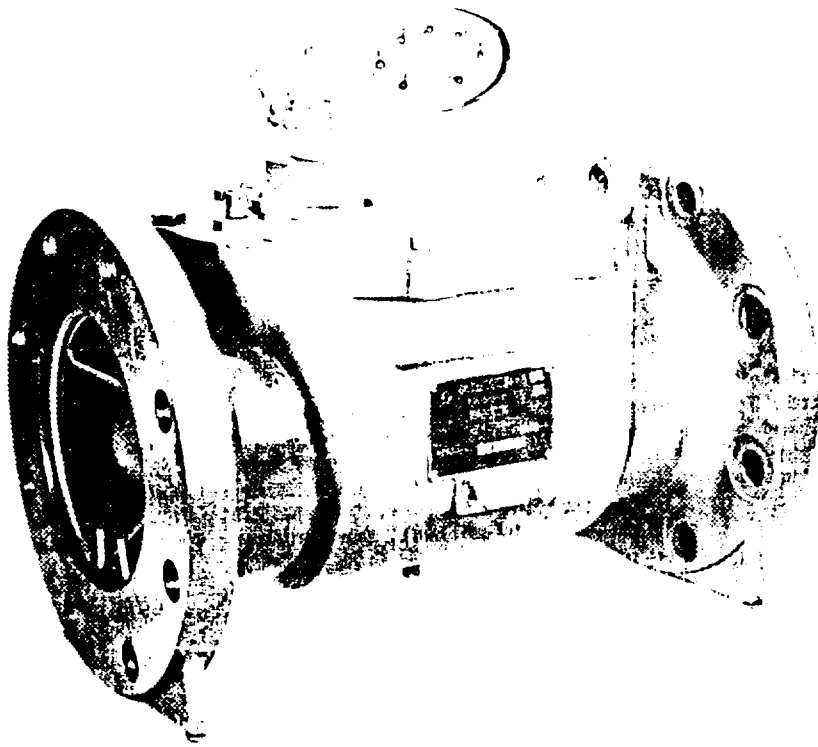
- a) a one-piece molded Delrin turbine blade and rotor unit and
- b) a worm gear arrangement, magnetic coupling drive and intermediate gear reduction train leading from the rotor unit to the index drive shaft.

The conventional stuffing box is replaced by the magnetic coupling drive unit and the entire shaft of the metering mechanism is magnetically suspended for balance and relative weightlessness. Suitable means of lubricating the bearings is provided at the rear of the index.

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ROCKWELL SERIES "G" 6-INCH GAS TURBO-METER





## Description (Con'd.)

The meter is designed to operate in a horizontal line and an upright position only. However, a variation of  $5^{\circ}$  from horizontal mounting is tolerable. Either a horizontal or vertical index can be used.

In operation, as gas enters the meter, the nose cone immediately diverts the flow into a channel surrounding the inside periphery of the meter body. By means of this channel, the flow of gas is directed axially toward the rotor blades. The passage of the gas stream over the blades exerts a force, that causes the rotor to revolve with an angular velocity directly proportional to the flow rate of the gas. The registration of the gas flow is accomplished through the gear linkage from the rotor unit to the index.

The braking mechanism operates as follows:

As gas is called for on the downstream side of the meter, a differential pressure is built up across the plates. At about 2" w.g., the plates, acting somewhat like butterfly valves, open permitting full gas flow. When the demand for gas ceases, the spring return closes the plates, and puts the brake shoe on the rotor drum, thereby stopping the rotor.

The meter should not be used for rates of flow greater than 30,000 C.F./H. for line pressures up to 50 p.s.i. For line pressures ranging from 50 to 125 p.s.i., a 10 inch differential is the limiting factor.

For gas of 0.6 s.g. the minimum rate of flow decreases from 2300 C.F./H., at a line pressure of 0.25 p.s.i., to 740 C.F./H. at a line pressure of 125 p.s.i. For gases of different specific gravity, the above values for minimum rates of flow would be altered accordingly.

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