Limiting Conditions: Approval covers only those meters for which a certificate has been obtained from the manufacturer showing the results of tests made with the 2800-cubic foot prover. Such tests shall provide the necessary data for determining the original proof and differential-rate curves; and the certificate therefore shall be accessible to the authorized officers of the Standards Division.

Description: The Rotary Displacement Gas Meter is a positive displacement meter which measures gas by a rotary movement of two figure-eight-shaped rotors or impellers. The rotors revolve, with fixed position relative to each other, inside a cylindrical housing. The measuring compartments are two in number and are formed by half the wall of the cylindrical housing and the surface of half the corresponding rotor. The impellers turn due to a slight difference of pressure between the inlet and outlet of the meter and sweep out each measuring compartment twice for each revolution of the rotor. The gas enters at the top and is discharged through the bottom of the meter. The impellers are geared together and rotate in opposite directions at speeds proportional to the volume of the gas flowing. The volume measured closely approximates twice the volume of the measuring chambers times the number of revolutions except at slow speeds where the small amount of slippage of the gas begins to show a more appreciable effect.

Meters are available for three maximum working pressures, viz., 25 p.s.i., 50 p.s.i. and 125 p.s.i. Meter sizes are designated by two figures, for example, 5" x 15" (see foregoing table), the first figure indicating the gear diameter and the second the impeller length in inches.

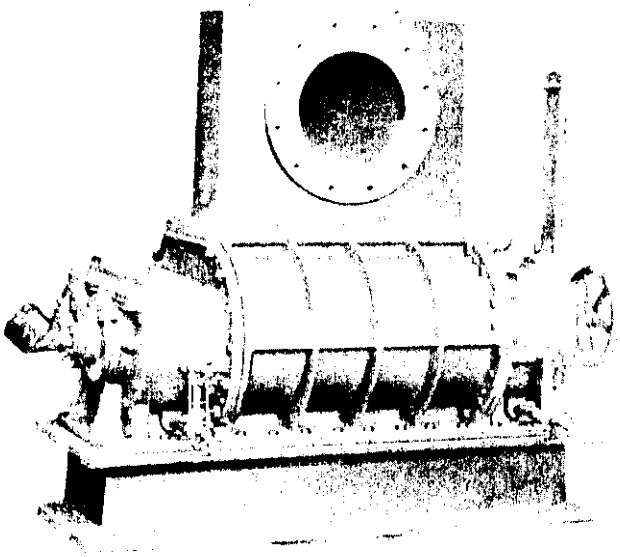
A meter for any application should be chosen so that it will operate between 10% and 100% of its rated capacity for the greater part of its time. However, rates up to 150% capacity are permissible. Rates below 10% will lower the proof noticeably but this will not appreciably affect the overall measurement provided the normal operation of the meter is at a sufficiently high rate.

E. F. Power

E. F. Power,
Assistant Director (E&G),
Standards Division.

R. W. MacLean,
Director,
Standards Division.

Ref: A-247



(Typical Low-Pressure Meter)