DEPARTMENT OF TRADE AND COMMERCE

STANDARDS BRANCH

CANADA

OTTAWA December 6, 1966.

NOTICE OF APPROVAL

FOR

ROOTS-CONNERSVILLE ROTARY-TYPE
POSITIVE DISPLACEMENT GAS METERS

Apparatus

Model	Max. Pressure P.S.I.G. Static	Max. Pressure P.S.I.G. Operating	Max. Displacement Cu. Ft./Hr.
3M125*	-	125	3,000
5M125**	-	125	5,000
7M125*	-	125	7,000
11M125*	-	125	11,000
16M125	-	125	16,000
23M125	-	125	23,000
38M125	-	125	38,000
56M125	-	125	56,000
102M125	-	125	102,000
102M300	300	300	102,000
2M900	1200	900	2,000
4.6M900	1200	900	4,600
8M400	600	400	8,000
11.5M400	600	400	11,500
19M400	600	400	19,000

* These meters are available with either cast iron or aluminum impellers. Meters with aluminum impellers will have green nameplates and letters "AL" will be appended to the model designation.

** Available only with aluminum impellers.

Description

The Rotary positive-displacement gas meter consists of two-figure-eight shaped impellers or rotors contained in a cylindrical housing enclosed by head plates at both ends. Two pressure sealed domes, bolted through these head plates, enclose the timing gears which fix the position of the impellers at 90 degrees to each other and provide for their contrarotation. The larger of the two end domes also contains the reduction gearing for the read-out counter or the instrument drive shaft. Both end-domes serve as oil sumps for the splash lubrication of the gears. Bullseye-type oil sight gauges are provided so that the oil can be maintained at the correct level. The size, strength and

..../2

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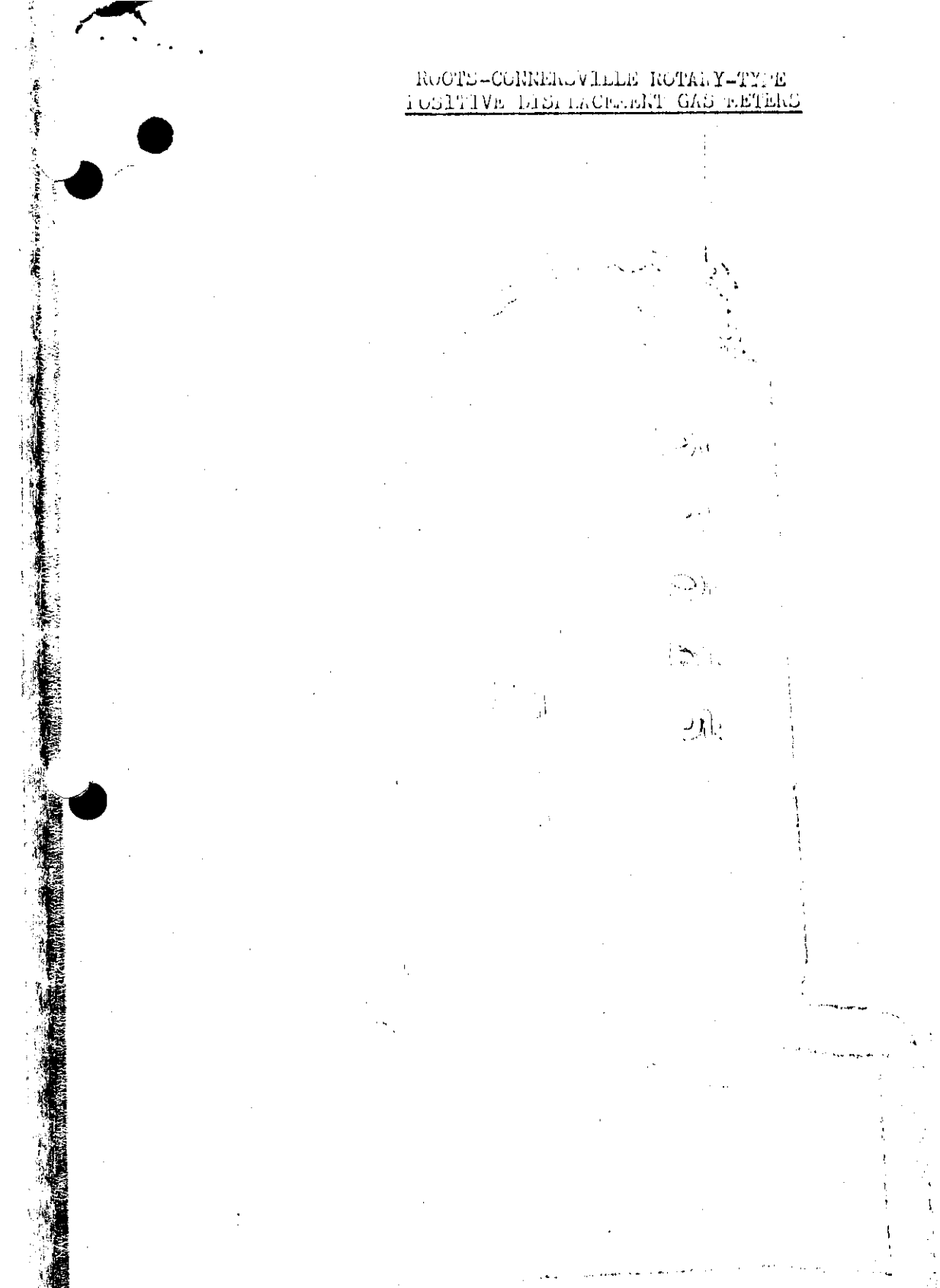

G-27-1

thickness of the construction materials used for the case, end-domes and gearing of these meters depends on the requirements for capacity and working pressures.

In operation, the flow of gas causes the impellers to rotate, thus measuring the volume by each rotor sweeping out the compartment formed by half the wall of the cylindrical housing and the surface of half the corresponding rotor. The rotational speed of the impeller is proportional to the flow of gas through the meter and the measured volume closely approximates twice the volume of the measuring chambers times the number of the impeller's revolutions, except at low speeds where the small amount of slippage of the gas begins to have a more appreciable effect.

The meters are normally equipped with a counter type register which indicates the volume of gas in 100 cu. ft. increments at meter, or line conditions of temperature and pressure.

The last dial on the register has no numerals but it is subdivided into 10 equal increments, each representing one cu. ft. volume for 3M, 5M, 7M and 11M meters, and 10 cu. ft. volume for larger capacity meters. One of the ten lines on this dial is wider so that complete number of revolutions of this dial may be established when testing the meter.

The counter registers have five digits for meters up to, and inclusive, 11M models, and six digits for higher capacity meters.

Two types of registers are presently approved: - Veeder-Root counter used on models produced up to date, and Durant counter register which will be supplied on all meters of future production.

The meters may be equipped with an instrument drive gear box in place of the counter register for models 3M, 5M, 7M and 11M, or in addition to the counter for larger capacity meters.

The output shaft rotation of the instrument drive corresponds to 10 cu. ft. per rev. for 3M, 5M, 7M and 11M models, and to 100 cu. ft. per revolution for larger capacity meters.

Approved pressure, temperature, or pressure and temperature volume correcting devices may be used with the instrument drive provision for the purpose of indicating, recording or telemetering corrected gas flow results.

While the selection of meter size, type of readout and installation usually governs the choice of vertical or horizontal flow line positioning, the meters, types 2M900, 4.6M900, 8M400, 11.5M400, and 19M400 are at present available with top inlet only and are provided with a restricting orifice to prevent overspeeding.

Canadian Meter Company nameplates shall be used on these meters with an indication that they are manufactured by Roots-Connersville Ltd., Connersville, Indiana, U.S.A.

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G-27-1

This approval consolidates and amends coverage of all Roots-Connersville Rotary meters approved for distribution by Canadian Meter Company Limited under Circulars S-GA-208, S-GA.221, G7 and G27.

For more detailed information on Roots-Connersville meters refer to Technical Bulletin No. 3 and attached data sheet.

Approval granted to: Canadian Meter Company Limited,
Milton, Ontario.

and

Canadian Meter Company Limited,
Edmonton, Alberta.

W.J.S. Fraser

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Ref: SL-100-855L

SERIES 125 ROOTS METERS - STANDARD METERS WITH READOUT IN CUBIC FEET

PHYSICAL DATA	MODEL 3M	5M	7M	11M	16M	23M	38M	56M	102M
Maximum Capacity MCFH (Dial Rate)	3	5	7	11	16	23	38	56	102
Counter Displacement per Revolution	.02217	.03603	.06074	.09870	0.1765	0.2620	0.5128	0.8825	2.09
Planetary Gear Reduction Ratio	481.000 to 1	277.538 to 1	164.645 to 1	101.320 to 1	566.500 to 1	381.625 to 1	195.000 to 1	113.317 to 1	47.7 to
Counter Increments Cu. Ft.	100	100	100	100	100	100	100	100	100
Test Dial Increments - Cu. Ft.	1	1	1	1	10	10	10	10	10
Instrument Drive Rate Cu.Ft./Rev.	10	10	10	10	100	100	100	100	100
Number of Counter Digits	5	5	5	5	6	6	6	6	6
Maximum Volume Registration Cu.Ft.	10MM	10MM	10MM	10MM	100MM	100MM	100MM	100MM	10
Flange Connection Size - Inches	2	3	3	4	4	6	6	8	10
Shipping Weight - Lbs. (Approx.)	50	70	130	165	400	560	815	1215	245
Crated for Export Volume $Ft.^3$(Approx.)	1.03	1.13	2.0	2.2	9.7	13.4	15.3	27.1	54