DEPARTMENT OF CONSUMER AND CORPORATE AFFAIRS

STANDARDS BRANCH

G 36

OTTAWA, February 13, 1969.

NOTICE OF APPROVAL

FOR

FISHER AND PORTER MODEL 1543-AA-10

GAS SURVEY RECORDER

Apparatus

Primary Actuating Unit	Canadian Type 3 Base Volume Index
Pulsing Micro-Switch	Unimax Type USM-5 with model ATM-1 actuator
Max. Loop Resistance of Transmission Cable	0.25 ohms.
Recorder Readout Range	0 to 9,999 counts
Readout Intervals	15, 30 and 60 minutes
Readout Time	15 seconds maximum
Data Recording Tape	2-1/8" wide, 410 ± 5 feet long
Input Shaft Rotation	100 counts per revolution
Power Source	7½ volt battery
Starting Current	0.5 amperes
Running Current	100 mA
Timing Device	Ergas, jewelled, electromechanical unit
Ambient Temperature Range	+40°F to +100°F

Description

The Fisher and Porter Gas Survey Recorder is a battery operated punched tape recording instrument that employs mechanical means to convert angular positions of a rotating shaft into a coded digital output. Electrical pulses from the Primary Actuating Unit, Canadian Base Volume Index, Type 3 energize a stepping motor which produces the rotation of the input shaft.

The corrected volume register of the Base Volume Index is equipped with a suitable micro-switch which closes once every revolution of the register shaft, energizing a mercury relay through a cable connecting the B.V.I. with the recorder. The closure of the relay contacts energizes

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FISHER AND PORTER MODEL 1543-AA-10
GAS SURVEY RECORDER

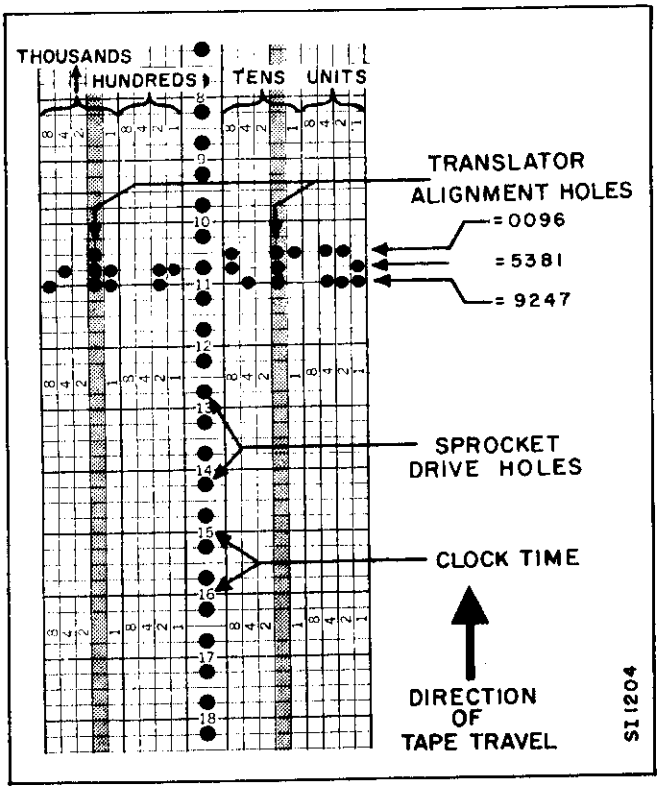


FIGURE I FACSIMILE OF DATA RECORDING TAPE

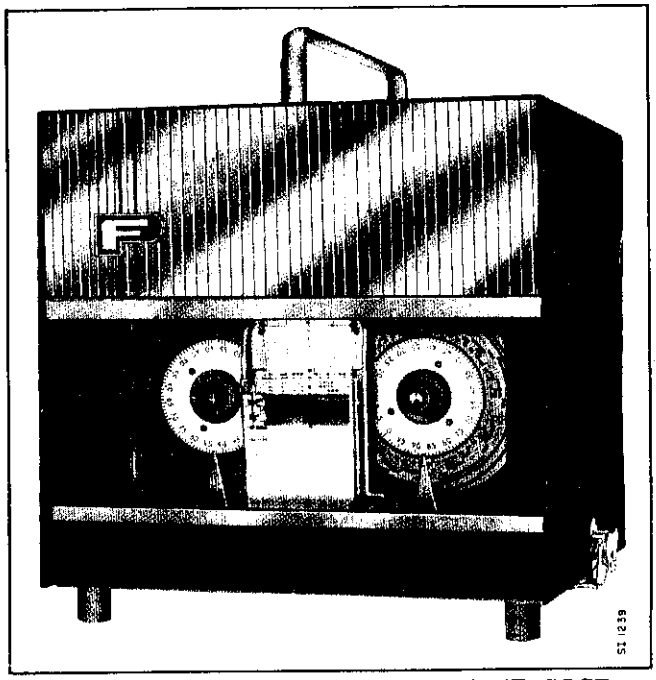
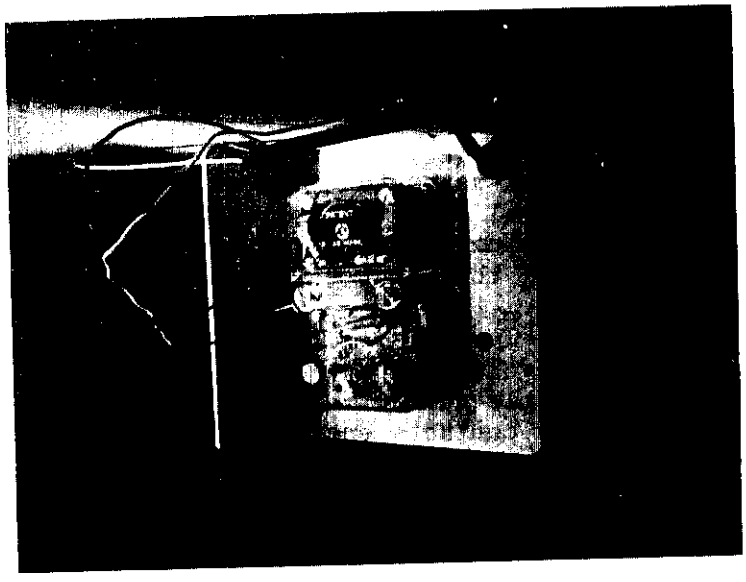


FIGURE II STANDARD INSTRUMENT CASE



Ergas Timing Device

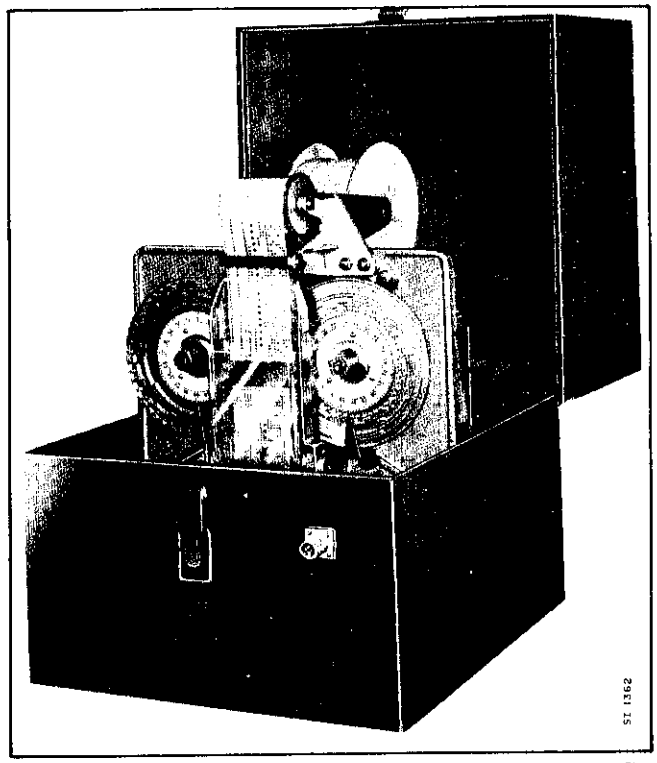


FIGURE III WEATHERPROOF INSTRUMENT CASE

the coils of the stepping motor, advancing its rotor one detent position.

The recorder may be considered as two basic interrelated mechanisms, which are: (1) the input counting mechanism with associated gearing and drive shaft, and (2) the punch programming cycle system. The input system receives the signals from the primary actuating unit and converts these into successive positions of two memory code discs. By means of a clock mechanism the punch programming system initiates the punch demand and establishes the various punching and reset operations required for recording measured values on the punch tape.

The two code discs are geared in the ratio 100:1, and each disc has an arrangement of hills and valleys, radially positioned on the front surface, which represent in binary decimal code the number of input shaft revolutions required to advance the code disc from zero to that particular scale position. Each disc has on its front a circular dial graduated and indexed in 100 units. Two pointers indicate the accumulated count at any position of the input shaft.

When the timing unit initiates a punch out, the code discs are locked in position for a part of a cycle and suitable provision is made to store the incoming counts during that period.

The illustration included in this circular shows a facsimile of data recording tape. Each horizontal row of punched holes represents the total number of pulses in digital form. The vertical columns, divided into four sections represent units, tens, hundreds and thousands. The summation of the binary coded (1-2-4-8) punched holes establishes the digital reading. The numbers in the center of the tape represent the time on 24 hour basis with 15 minute increments.

When the recorder is first placed in service, or when the tape is changed, it is necessary to synchronize the recording tape and the timer mechanism with the actual time of the day. Manufacturer's bulletins describe the procedure in detail.

The recorder may be housed in either a standard instrument case with a window for direct visual reading, or in a weatherproof case without a window.

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Each recorder shall have a nameplate, permanently attached, containing the following information:

Maker's name, Model and/or Type designation, Serial number, Punched tape count range, Volume per count in cubic feet, Base pressure, Base temperature, Punch-out interval, Maximum loop resistance of transmission line, Ambient operating temperature range and Power source.

Approval granted to:

Fisher and Porter(Canada) Limited,
Montreal, Quebec
and
Downsview, Ontario.

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