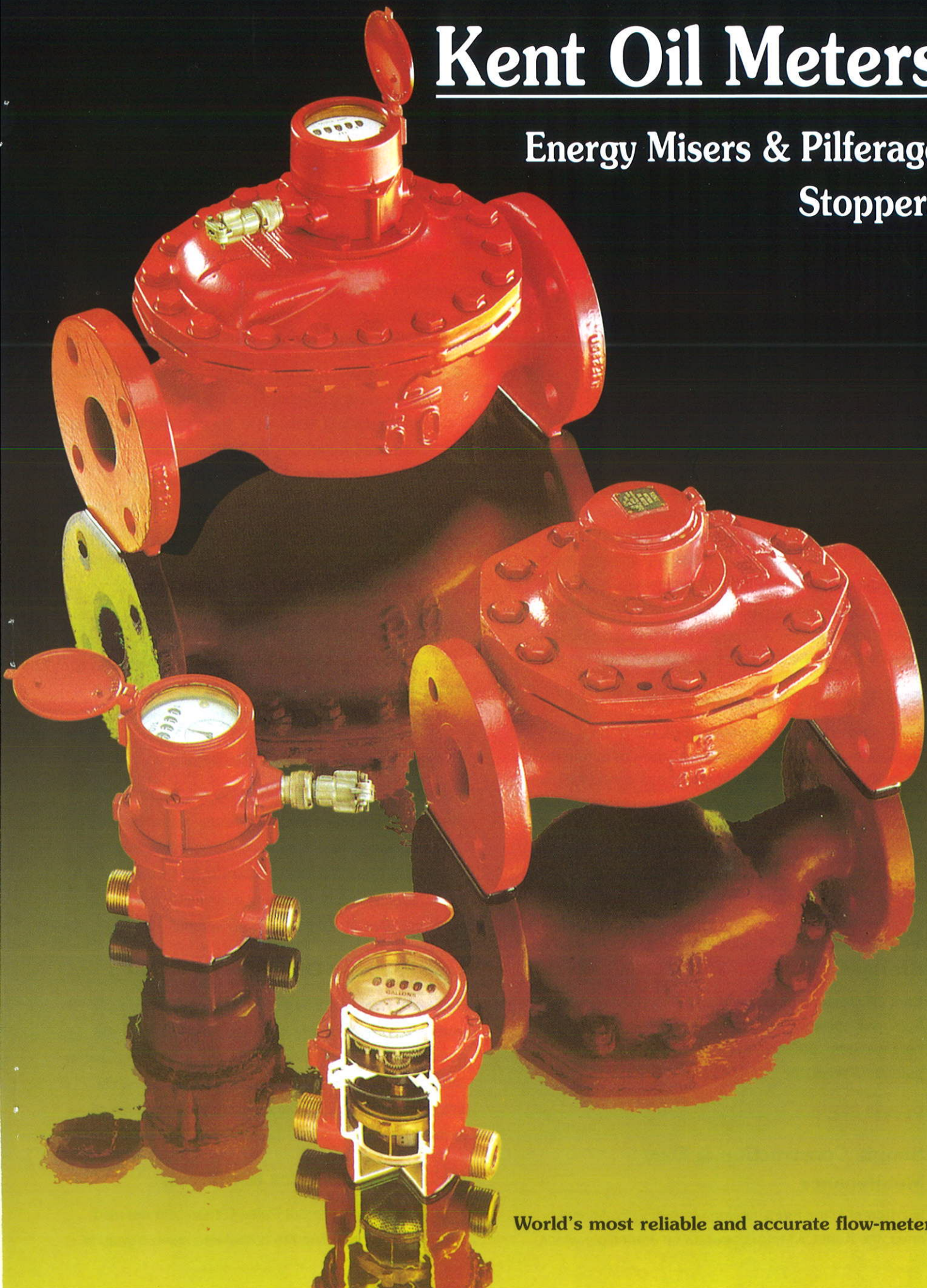


# Kent Oil Meters

Energy Misers & Pilferage  
Stoppers



World's most reliable and accurate flow-meters.



# **KENT OIL METERS** – providing the information industry needs to control oil consumption & receipts

Kent Oil Meters are the accurate, reliable and economical way of obtaining all the information a user needs to control oil consumption and monitor oil receipts. Wherever oil is received, stored, and used, Kent Oil Meters measure, totalise and record flows precisely. Kent Oil Meters can be installed in the pipeline and would totalise the flow of oil flowing through the line. Typical applications include:-

## **Measuring Oil Receipts**

Petroleum products like Diesel, Furnace Oil, LDO & LSHS are received in bulk by tank lorries or through Railway wagons. The present system of recording the quantity of oil receipt is either by dip-stick measurement or by weighment of tank lorries. Both these methods suffer from inadequate information and unscrupulous pilferage of costly fuels is quite common.

Now, one can install Kent Oil Meter at the receiving point and whenever oil is received, exact quantity can be recorded by decanting the product through the meter.

## **Monitoring Oil Consumption**

With the continual rising prices of oil, continuous management of oil consumption is more important than ever. Kent Oil Meters help to monitor oil consumption in oil consuming equipment like diesel generators, boilers, furnaces, thermopack etc. Monitoring of oil consumption in individual equipment on daily basis helps to reduce consumption by taking corrective maintenance action at the earliest.

## **Recording Draw-Off from Storage Tanks**

Kent Oil Meters can be installed in the lines supplying oil from main storage tanks to consumption points. They help to record and maintain inventory of costly petroleum products.

## **FEATURES**

### **Simple Construction & Easy Maintenance**

In contrast to the many designs including traditional ones, the Kent Oil Meters operate on a principle which

cannot be simplified any more. The volumetric rotary piston design means that accuracy is maintained irrespective of the plane in which the meter is mounted.

1. Parts in contact with the liquid are exceptionally small in number, which means only small pockets are present in the measuring chamber.
2. By employing a powerful magnetic coupling between the measuring chamber and the register, only one moving part is exposed to the metered fluid. Ease of maintenance and long life are the result.
3. Normally Kent Oil Meters are supplied with mechanical counters and do not require any power source. To assist reading at whatever angle the meter is mounted, the dial can be rotated and locked in any one of the four cardinal positions.

## **Positive Displacement Type**

Among the many flowmeter designs available today, it holds the top place both in performance and in field proven appraisal, is must for high viscosity fluids.

## **Finest Accuracy and Reliability**

Exceptional accuracy and reliability are the result of state-of-the-art machining techniques; advanced quality control programs; and the most advanced testing and proving facilities. Typical accuracy is better than  $\pm 0.5\%$  of reading indicated. Meters accurate to better than  $\pm 0.2\%$  can also be furnished upon request.

## **Low Pressure Drop**

Even with high viscosity products, the pressure drop across the meter is very low. The meter can operate even under 1" head of the oil. It is successfully utilized to receive oils; especially diesel, petrol, LDO etc. while unloading under gravity head without extra source of pumping.

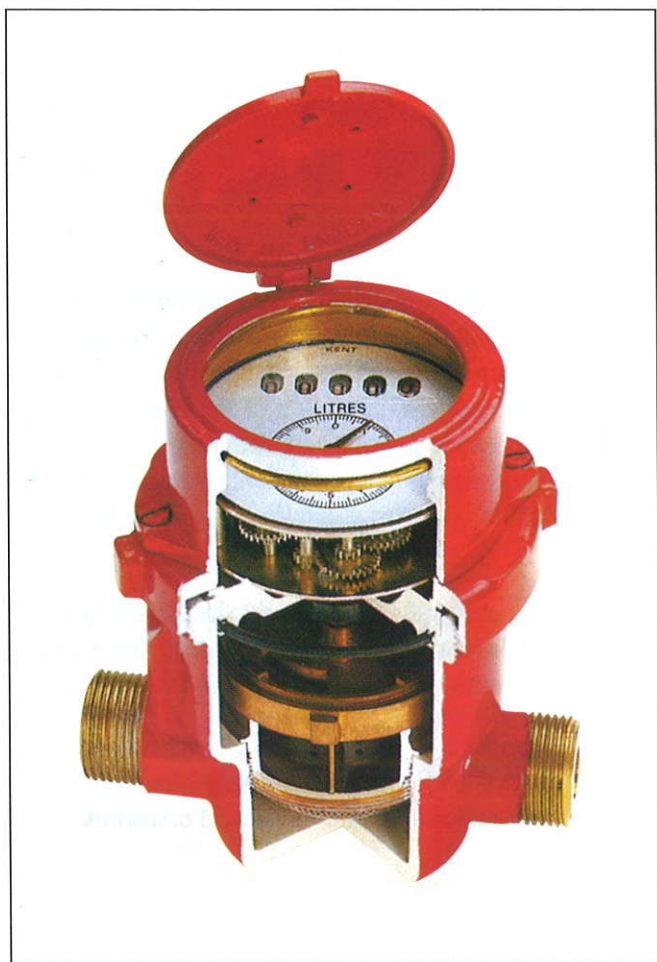
## **Reliable Electronics (Optional)**

As an optional equipment Pulse Generators are also available for converting the output into pulse signal for

remote instrumentation and control. Electronic instruments for remote totalization, flow rate indication, batch controlling & computer interface are readily available.

## GENERAL SPECIFICATIONS

Flow rate	10 L/Hr-48M <sup>3</sup> /Hr.
Temperature	Upto 150° C
Pressure	0-21Kg/cm <sup>2</sup> (optional 40 kg/cm <sup>2</sup> )
Viscosity	1000 CP max.
Accuracy	Within $\pm 0.5\%$ (Within $\pm 0.2\%$ optionally available)
Nominal Bore Size	15 mm, 20mm, 25mm, 40mm, 50mm, 80mm
Liquids	Petroleum products (MS, HSD, SKD, LDO, FO, LSHS), vegetable oils/solvents and non-corrosive liquids.
Output	TOTALISATION OF FLOW (Mechanical Counter)-Optional Electronics.



## SELECTION

The size of the Kent Oil Meters for an application should be based on maximum oil flow rate in the pipeline, the pipeline size and pressure available at the meter point.

For unloading of oils under gravity head, we recommend use of 80 mm size Kent Oil Meter. Optionally 50 mm Kent Oil Meter may also be used. For unloading petroleum products by pump, install a 50mm/80mm size Kent Oil Meter.

For recording draw-offs from storage tanks use 40mm, 50mm or 80mm size Kent Oil Meter based on the maximum oil flow rate in the line.

For monitoring oil consumption, use 15mm, 20mm, or 25mm size Kent Oil Meter based on maximum oil flow rate and the head available. If the flow rate is small and the pipeline size is big, one may use reducers to fit the meter.

## INSTALLATION

Kent Oil Meters are supplied with either screwed ends or flanged ends. For 15mm, 20mm and 25mm size Kent Oil Meters, screwed as well as flanged ends are available. The 40mm, 50mm and 80mm size Kent Oil Meters are flanged only. Drilling are as per DIN ND10 specifications. Optionally, other drillings are also available.

A Strainer of not less than 100 mesh should be fitted up-stream of the meter. If such a filter is not fitted, the one year guarantee provided with all Kent Oil Meters is invalidated. Before the meter and filter are fitted, pipelines must be flushed thoroughly. To simplify subsequent servicing, it is recommended that each meter and its associated filter are installed with a bypass.

Use of Air Release System is also essential sometimes, to remove air in the stream which may otherwise cause metering error.

## APPROVALS

- \* Kent Oil Meters have been evaluated by National physical Laboratory and meet the requirement of accuracy and reliability;
- \* Kent Oil Meters have been approved by Weights & Measures Department;
- \* Kent Oil Meters are in use with large number of customers worldwide as well as in India.

## GUARANTEE

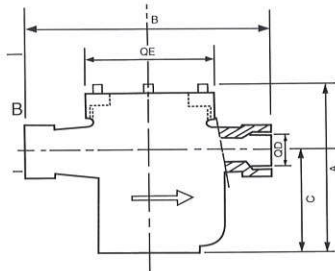
Kent Oil Meters are made of the finest material and are guaranteed against defects in material and workmanship for a period of one year from the date of shipment.



## ANCILLARY EQUIPMENT

### Simplex Strainers

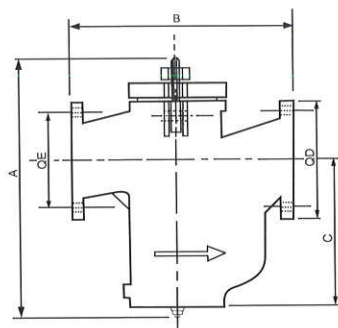
15, 20 & 25 mm size



The Strainer is installed immediately up-stream of the Kent Oil Meter. It protects the meter by trapping foreign solids (weld chips, scale, impurities in oil) contained in the stream. It is recommended to clean Strainers on weekly basis to increase life of the equipment. Strainers are available of Simplex design. The specifications of Strainers are :-

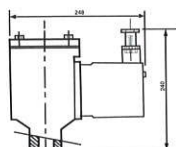
	15, 20, 25	40, 50, 80
Type	SIMPLEX	SIMPLEX
Body material	Cast iron	Cast iron
Screen material	100 mesh SS	100 mesh SS
Maximum working Pressure	21 Kg./cm <sup>2</sup>	11Kg./cm <sup>2</sup>

45, 50 & 80 mm size

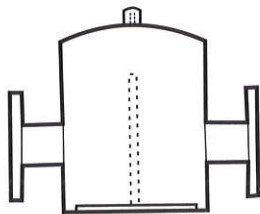


Size	A	B	C	Flange detail				Thread size (QD)
				Dia of Flange	PCD	No.of holes	Hole Dia	
15mm	148	212	90	-	-	-	-	1/2" BSP
20mm	148	212	90	-	-	-	-	3/4" BSP
25mm	148	212	90	-	-	-	-	1" BSP
40mm	342	263	205	151	110	4	18	-
50mm	365	282	205	165	125	4	18	-
80mm	416	361	250	200	160	8	18	-

### Air Eliminators



Air Relief Valve



Vent Tank

Air enters in the liquid through pump glands. The amount of air entering in the liquid is related to the condition of the pump. Entrain air in the liquid stream causes meter error because the meter records quantity of air as well. Therefore, an Air Eliminator installed up-stream of the flowmeter eliminates the air content in the liquid to ensure accurate flow measurement. It is regarded as an essential supplementary equipment, particularly for recording receipts of oil in the plant. We supply Air Relief Valves as well as vent tanks.

**Air Relief Valve** consists of body casing housing a float positioned at a Pre-determined height. The float is held in the position by ribs. The Valve is closed only when the oil level in the Valve rises and raises the float on to the sheet.

**Vent Tanks** are essential to remove and trap air due to high flow rate in the line. Vent Tanks allow certain residence time for oil and opportunity for air to escape.

## ELECTRONIC SYSTEMS



While the data generated by a Kent Oil Meter can be read manually at the point of flow, in many applications today, the oil meter is a part of a complex instrumentation and control system. Recognizing this, Kent Oil Meters are designed to interface with the electronic systems and for remote read outs

Following optional equipments are offered:-

## Pulse Generator (PG 1)



Pulse Generator transforms the mechanical motion of the meter into a pulse signal. It requires a 12 to 24 volt power supply (being supplied from Remote Totalizer) and it gives pulse output signal. Output is via three core cable.

## Remote Totalizer & Flow Rate Indicator (TF 200)



Pulse Signal from PG1 can be totalized as well as rate of flow indicated by this unit;

- 6 digit 0.3" LED display
- Displays total flow and rate of flow
- Size 96 mm (W) X 48mm (H) X 110 mm (D)
- Case material ABS housing
- Operating temperature range 0- 50° C
- Weight 600 gms
- Panel cut out 46 mm (H) X 92 mm (W)
- Mains voltage operated.

## FI Convertor (4-20mA Signal Generator)



The Pulse Output Signal from the pulse unit can be fed into FI convertor and 4-20mA signal is generated. This signal can be utilized for process controls. This can also be used as a parallel equipment with TF 200. The specifications are as under:-

- Input Pulse Signal
- Output 4-20mA
- Size 100 mm (W) X 70 mm (H) X 115 mm (D)
- 20 mA signal setting through thumb wheels
- Din Rail mounted enclosures.

## Combined Batching, Totalizer and Rate of Flow unit (BTF 200)

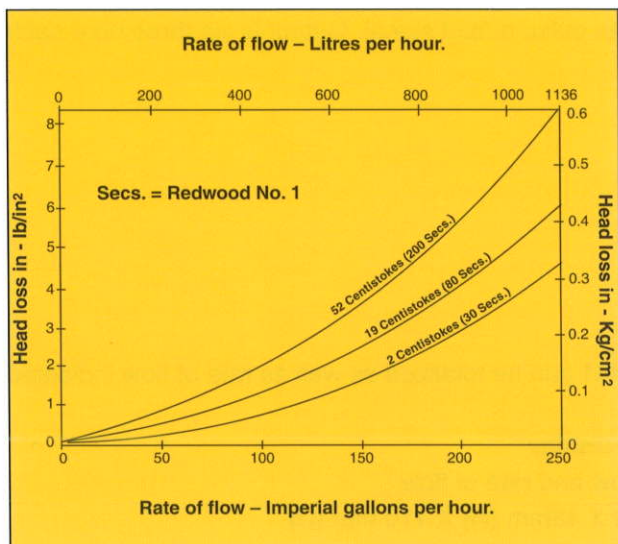


Combined with Pulse Generator, the unit totalises the flow of oil, indicates rate of flow and has two set points for dispensing of pre-determined quantities of liquids. With the help of this unit pre-determined quantities of liquid can be transferred and automatic controls generated. Specifications are as under :-

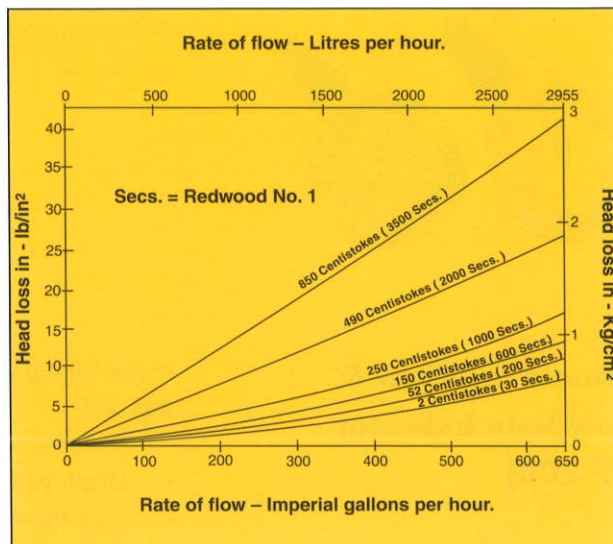
- 6 digit 0.3" LED, display
- Displays total flow and rate of flow
- Size 72 mm(W) X 72 mm(H) X 125 mm(D)
- Case material ABS housing
- Operating temperature range
- Weight 600 gms.
- Panel cut out 68 mm(H) X 68 mm (W)
- Number of set points 2
- Reset arrangement via front penal and rear terminal
- Output two relays, 1 CO each, 5A@ 230 VAC/24 V DC.



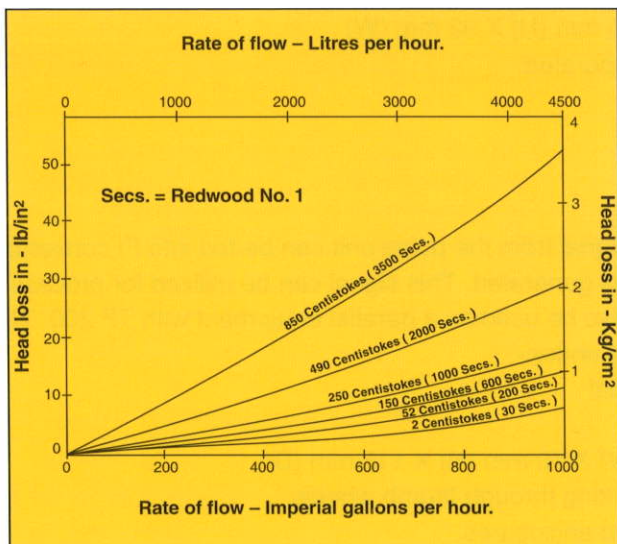
# PRESSURE LOSSES



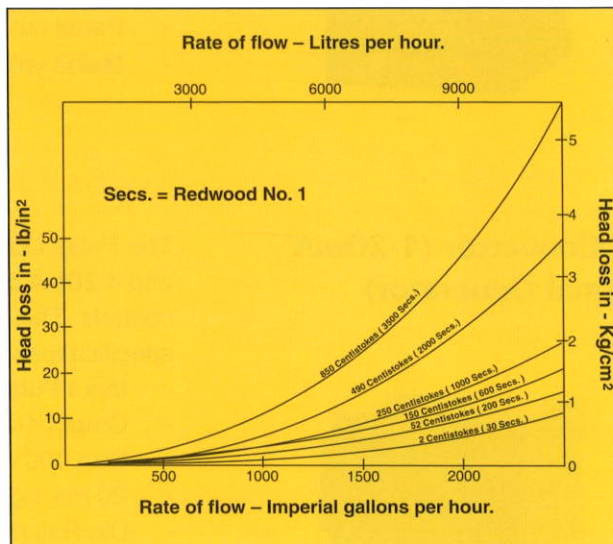
15 mm KENT OIL METER



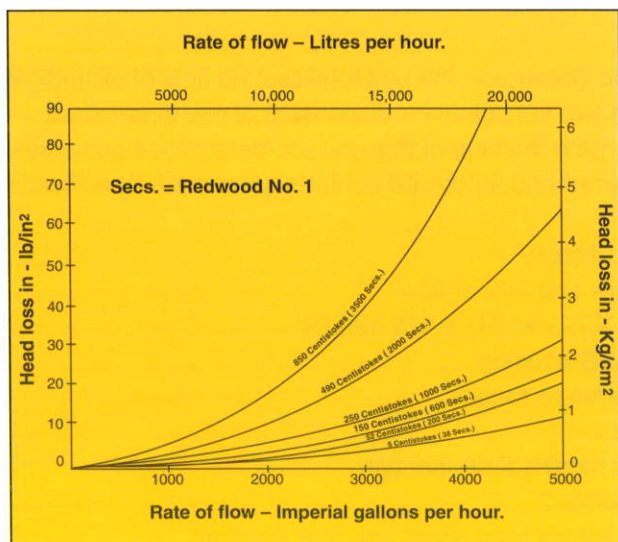
20 mm KENT OIL METER



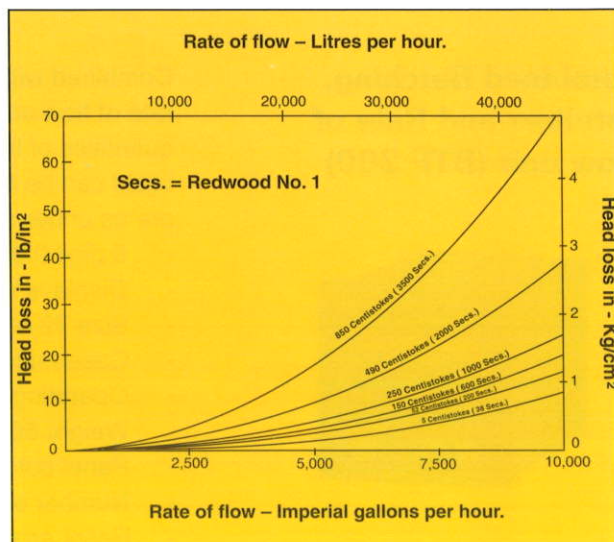
25 mm KENT OIL METER



40 mm KENT OIL METER



50 mm KENT OIL METER

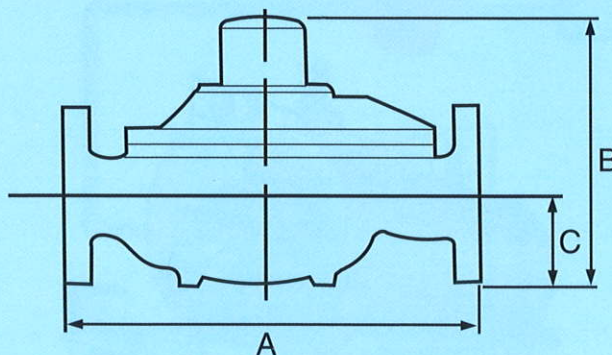
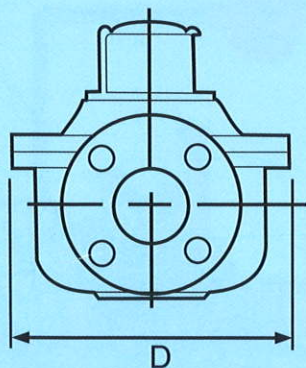


80 mm KENT OIL METER

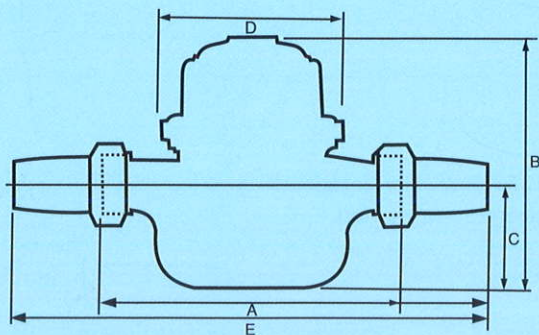


# TECHNICAL DATA

Size	Unit	15mm	20mm	25mm	40mm	50mm	80mm
Min. Flow for Accuracy to 0.5%	lph	68	114	180	410	818	1636
Min.flow for Accuracy to 2%	lph	30	68	136	205	410	818
Maximum recommended continuous flow	lph	720	1440	2160	5400	12000	24000
Peak flow for short duration	lph	1136	2955	4546	10800	24000	48000
Minimum counter registration	litre	0.1	0.1	0.1	1.0	1.0	1.0
Counter resets to zero at	litre	1,000,000	1,000,000	1,000,000	10,000,000	10,000,000	10,000,000
Net weight	kg	2.4	2.95	5.44	16	27	42
Dimensions							
A length	mm	114	165	198	280	346	422
B height	mm	137	137	162	216	248	281
B1 height with pulse unit	mm	171	171	196	250	282	315
C height to centreline	mm	20	57	71	59	81	94
D width	mm	100	100	117	198	234	274
E length with tailpiece	mm	190	267	311	-	-	-
Flanged meter Details	PCD in mm	65	75	85	110	125	160
	No.of Holes	4	4	4	4	4	8
	Dia of Hole	14	14	14	18	18	18



**40mm-80mm Dimensions**



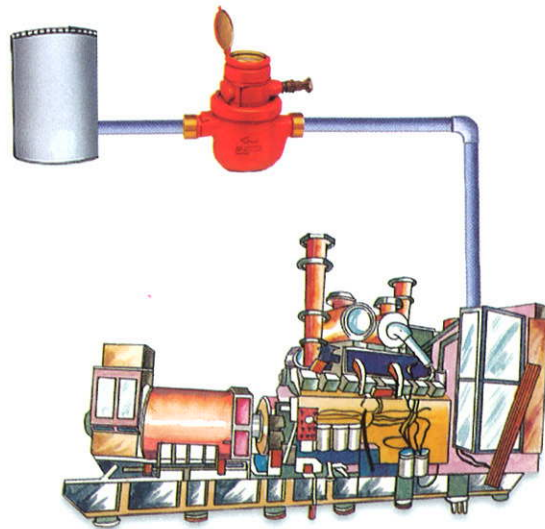
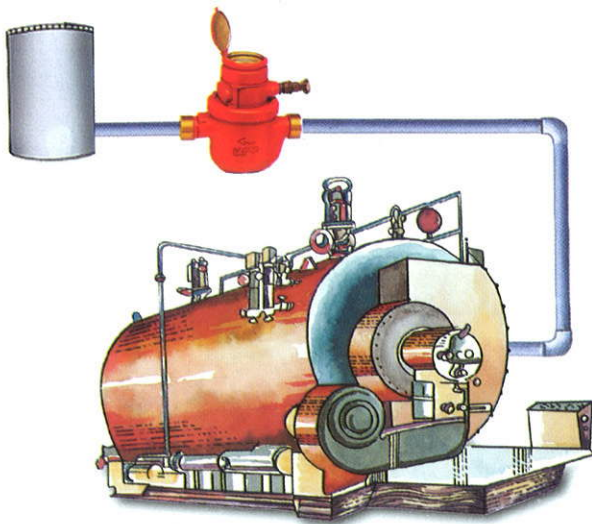
**15mm-25mm Dimensions**

## Materials of wet parts of meter

	15mm-25mm	40mm-80mm
Meter Body	Brass	Cast iron
Working Chamber	Brass	Bronze
Top Plate	Brass	Bronze
Joint Plate	Brass	Nickel Plated Brass
Piston	Anodized Aluminium Alloy	Anodized Aluminium Alloy
Internal Strainer	Nickel Plated Copper	Nickel Plated Copper
'O' Ring	Viton	Viton
Thimble	Bronze	Bronze
Joint Gasket	-	Special Compound



# Measure Exact Oil Consumption & Receipts



## ALFA ENGINEERING SOLUTIONS



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