

# PUMPWATCH PRODUCT SPECIFICATION

CFX 99 Series 20L Mk.2 Single Test Measure Pack

PPS C209-2PK

1. A **CFX 99 Series 20L Mk.2 Single Test Measure Pack** comprises
- 1 x CFX 20/99 Mk.2 volumetric test measure of the “integrated measure” type,
  - 1 x “20L” 2-wheel transport trolley
  - 1 x 20L discharge system
  - 1 x spare component (wear & tear) pack

**Measure Pack dims./wt.**

▪ footprint (in storage) mm	1020 x 600 x 1095
▪ footprint (in use) mm	1400 x 600 x 1095
▪ height (dispense position) mm	1095
▪ height (discharge position) mm	1210
▪ weight kg	11.63

- 1.1 **CFX 20/99 Mk.2 volumetric test measure – to contain 20L;** comp. ref. C209-21

Each CFX 99 Series Mk.2 “integrated measure” type volumetric test measure, comprises:

- a main measure vessel otherwise the “**main vessel**” - of carbon fibre composite construction;
- a tapered “**filling funnel**” of glass fibre construction is screwed into the upper neck of the main vessel;
- a vertical measurement tube vessel otherwise the “**measurement tube**” - of glass fibre composite construction, is bolted to the main vessel and connected to the upper neck of the main vessel by means of a short horizontal sloping glass fiber tube, the “**transfer tube**” that is fitted with a  $\varnothing$ 12mm ¼ turn valve;
- an adjustable volume displacement “**calibration piston**” located inside the lower end of the measurement tube allows precise calibration of the test measure. Comprising a dished piston fitted with an O-ring that seals the piston inside the measurement and, a 10mm opening that connects to a male threaded **piston tube** below, that in turn passes through a threaded **DELRIN collar**, set inside the end of the measurement tube, to connect to a  $\varnothing$ 12mm ¼ turn valve, this device provides the means for calibrating the test measure when desired and, for discharging the contents of the calibration piston and the measurement tube after each test to a short nylon tube that connects to the outlet from the main discharge valve;
- a 25mm ¼ turn “**main discharge valve**” fitted to the lower neck of the main vessel, is used to discharge the contents of the main vessel after each test. A  $\varnothing$ 25mm short vertical outlet pipe fitted to this valve is equipped on the discharge end with a cam-lock type male connector that allows rapid and secure connection of the desired **discharge system** to the main discharge valve outlet.
- each test measure is delivered complete with a hinged, press-formed aluminium “**transport case**” in which the test measure may be stored when not in use or when it is desired to send it for calibration.

**Test Measure dims./wts.**

▪ main vessel ID mm.	300
▪ height base of discharge valve to top of funnel rim mm.	1095
▪ test measure net weight kg.	3.94
▪ test measure gross weight incl. alu. transport case kg.	11.4
▪ alu. transport case dimensions (outer dims) mm.	L 880; H 360; W 380;
▪ alu. transport case dimensions (net weight) kg.	7.6

▪ measurement tube ID mm.	38.1	
▪ measurement tube scale length mm	350	
▪ measurement tube scale graduations	milliliter	- 200ml to 0 to +200ml x 2ml
▪ typical calibration MPE	% nominal volume	-1.00% to 0 to +1.00% x 0.01%;
	±0.02%	

- 1.2 “**20L” 2-wheel transport trolley;** comp. ref. C209-32:

Each 20L 2-wheel transport trolley comprises:

- 1.2.1 - **27L transport trolley chassis;** comp.ref.CM39-3201 with 2 x vertical tubular shoes, into which the 2 x vertical legs of a removable 20L H-frame are inserted when deployed for testing. The welded, light-weight construction chassis typically provided with a bottle green powder finish, comprises
- a longitudinal tubular steel **main-frame** into which the tubular arms of an adjustable length, **U-shaped handle** are telescoped and positioned in the most comfortable position according to the height of the user;
  - an **adjustable height device** that allows the chassis and the test measure suspended from the chassis to be positioned at a lower level, when it is desired to dispense fuel into the test measure or, at a higher level, when it is desired to discharge and drain the test measure after the test is complete.
  - **2 x pneumatic wheel/stub-axle sets** that are inserted into each end of the chassis wheel housing tube and held in position by spring-loaded positioning pins.

1.2.2

**“20L” H-frame; comp. ref. C209-2202** comprising:

2 x vertical light-weight tubular steel construction legs fitted with slots into which the suspension trunnions of the 20L test measure are inserted when deployed for testing.

The 2 vertical legs are connected by a horizontal tubular strut through which a **level adjustment screw** passes to bear against the lower neck of the suspended test measure

**Transport Trolley dims./wts.**

▪ overall length (in use) mm	1400
▪ overall length (in storage) mm	1020
▪ width incl. wheel sets mm	600
▪ width w/o wheel sets mm	410
▪ height incl. H-frame mm	825
▪ height without H-frame mm	360
▪ weight incl H-frame kg	11.89
▪ weight without H-frame kg	9.89
▪ height H-frame mm	605
▪ weight H-frame kg	1.13
▪ width (between vertical legs) mm	315
▪ pneumatic wheel OD mm	250
▪ pneumatic wheel width mm	50

1.3

**Discharge System** comp. ref CM39-23 comprises:

- a transparent, flexible, wire-reinforced polyurethane (pu) Discharge Hose that connects by means of a 135° elbow quick-coupling female cam-lock type connector to the 25mm discharge valve of the 20L test measure and, is fitted on the discharge end with a male quick coupling connector that allows an additional Discharge Hose Extension to be connected if required.

▪ length mm	1,000
▪ ID mm	25
▪ weight kg	0.6

1.4

**Spare components (wear & tear) pack;** comp. ref. C209-29 comprising:

- 1x 20L/10L **calibration piston o-ring (viton)** 32.99mm IDxø2.62 cross section comp.ref. CM39-110503
- 2 off plastic replacement **end-cap** ø10 x22 for level adjustment screw; comp.ref. CM00-120205
- 2 off **M4 self-locking nut zn.plt DIN985** comp.ref. CM00-110002
- 2 off **A4 washer zn.plt ø4.5x12x1** comp.ref. CM00-110004

## 2. Optional Items:

**2.1 Calibration Stand** a welded tubular steel construction support stand from which a PUMPWATCH CFX Series test measure is suspended during the calibration procedure. For a calibration conducted by volumetric means, the assembled calibration stand may be placed on a floor or bench in the calibration laboratory. For a calibration conducted by gravimetric means, the assembled calibration stand may be placed on the weighing surface of a laboratory weighing device or mass comparator..... procedures for use when calibrating a test measure or checking the calibration of an already calibrated test measure comprising;

Calibration Stand Base, a horizontal typically red powder-coated tubular steel base fitted with vertical tubular “shoes” into which the vertical legs of the Calibration Stand H-frame are inserted when assembling the stand;

Calibration Stand H-frame, a vertical red powder-coated tubular steel H-frame from which the test measure is suspended during calibration and c/w horizontal level adjustment screw for adjusting the position of the vertical axis of the suspended test measure relative to the H-frame, so that the axis is precisely vertical when the calibration is being conducted, as follows;

**20L/10L 2 Component Calibration Stand Assembly** comp.ref. CM39-36 for use when calibrating 20L and 10L test measures; comprising;

**20L/10L Calibration Stand Base** comp.ref. CM39-3601

▪ dimensions mm	L: 420; x W: 360; x H: 170;
▪ weight kg	3.36

**20L/10L Calibration Stand H-frame** comp.ref. CM39-3602

▪ dimensions mm	L: 640 (overall); x W: 319 (between legs);
▪ weight kg	2.1

**2.2 Vapour Control Cap** comp.ref. CM39-2112 for 20L/10L/5L/2L test measures, polyethylene (pe) construction to fit over the Filling Funnel of the test measure to prevent the escape of residual fuel fumes when the Measure Pack is not in use. Each cap comprises a formed pe lid with turn-down rim fitted internally with a bonded, flexible rubber foam sealing gasket.

▪ OD mm	240
▪ Height mm	50

**2.3 Data Plate(s) Set** as prescribed by DTI / NMO to be fixed to upper neck of each test measure details of the Supplier and Client indicating model ref. nominal Volume at temperature, and serial Number of the test measure

Aluminium Data Plate for attachment by means of 2 x pop rivets to upper neck of PUMPWATCH test measure. Gold painted, brushed aluminium with black printing and 2 x applications of clear lacquer to ensure that print is not removed by fuel

▪ dimensions mm	L: 78; x W: 0.5; x H: 33;
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**2.4 Discharge Hose Extension**  $\varnothing$ 25x1m comp. ref. CM39-23

▪ dimensions mm	$\varnothing$ 25mm x 1m with straight connector;
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